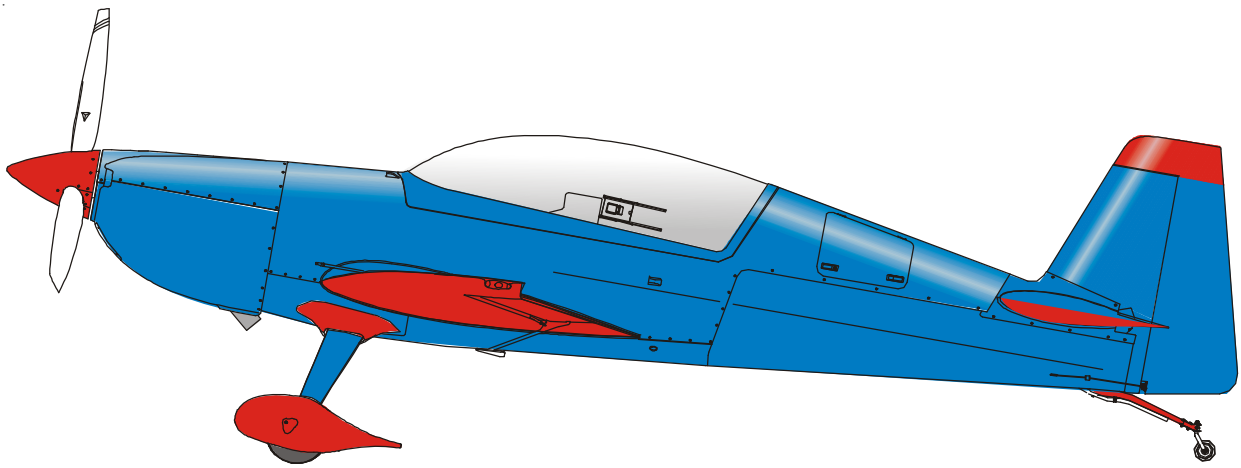
MAINTENANCE MANUAL
EXTRA 300LT

Doc. No: EA-0D702



EXTRA

FLUGZEUGPRODUKTIONS-
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List of Service Bulletins/Service Letters

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CONTENTS

STRUCTURES

PROPELLER

POWER PLANT

Chapter 1

Introduction

Table of Contents

01-00-00 GENERAL

According to the regulations of the FAR part 23, this maintenance manual provides educated maintenance staff with information necessary for servicing, maintaining and repairing the EXTRA 300LT. This manual contains a detailed description of systems including time limits for the particular components, troubleshooting and instructions for the performance of inspection and maintenance work.

01-00-01 Related Documents

The instructions, that are necessary for disassembly, check, repair, maintenance or overhaul of vendor equipment are not incorporated in this manual.

Use the most current revisions of the following documents in connection with this maintenance manual:

Aircraft:

- Pilot´s Operating Handbook and Airplane Flight Manual
- Parts Catalogue
- Service Bulletins
- Aircraft Record
- Airplane Log Book and Engine Log Book

NOTE

Check the following Airplane Log Book documents are up-to-date and in accordance with the current national aviation authority regulations.

Carried in the airplane:

- Aircraft Airworthiness Certificate
- Aircraft Registration Certificate
- Aircraft Radio Station Licence
- Certificate of Insurance

- Weight and Balance Data Sheet and associated papers
- Equipment list

Engine: **Lycoming AEIO-580-B1A**
incl.: **Christen Inverted Oil System**

- Operaton and Installation Manual AEIO-580 (P/N:60297-32)
- Maintenance and Overhaul Man. AEIO-580 (P/N: LMO-AEIO-580)
- Service Letters, Bulletins and Instructions INDEX
- Service Letters, Bulletins and Instructions

Manufacturer: LYCOMING ENGINES
652 Oliver Street,
Williamsport, PA 17 701, USA

Propeller: **MTV-9-B-C/C 198-25** **(3-blade)**

- Operation- and Installation Manual E-124
- Overhaul Manual and Parts List E-220
- Service Bulletins

Manufacturer: MT-Propeller Entwicklung GmbH,
Airport Straubing, 94348 Atting,
Germany

Governor: **P-880-5 and P-880-41**
A-210988 (Woodward)

- Operation- and Installation Manual E-1048

Manufacturer: MT-Propeller Entwicklung GmbH,
Airport Straubing, 94348 Atting,
Germany

Magneto: **SLICK No. 6350 and 6393**

- 4300/6300 Ser. Magneto Maintenance and Overhaul Manual (L-1363F)

- Service Bulletins (refer to Lycoming Service Letters, Bulletins and Instructions INDEX)

  Manufacturer: Champion Aerospace LLC
  1230 Old Norris Road
  Liberty, South Carolina , USA 29657

Magneto Start Booster: SlickSTART SS1001

- Operation, Maintenance and Troubleshooting Manual L-1492
- Service Bulletins

  Manufacturer: UNISON INDUSTRIES
  530 Blackhawk Part Avenue
  Rockford, IL 61104 , USA

Cleveland Wheels & Brakes

- Maintenance Manual AWBCMM0001
- Technician's Service Guide AWBTSG0001
- Illustrated Parts List
- Service Bulletins

  Manufacturer: Parker Hannifin Corporation
  1160 Center Road
  Avon, Ohio 44011, USA

Hooker Harness

- General Restraint System Installation Guidelines

  Manufacturer: HOOKER HARNESS
  324 East Stephenson Street
  Freeport, Illinois 61032, USA

Artex ME406 ELT

- Description, Operation, Installation and Maintenance Manual ME406 and ME406HM ELT (P/N: 570-1600)

  Manufacturer: Artex Aircraft Supplies
  P.O. Box 1270
  Canby, Oregon 97013

Aspen EFD1000/500 System

- Installation Manual #900-00003-001(Rev. G)
- ICA Document #900-00012-001 (latest revision)

  Manufacturer: Aspen Avionics Inc.
  5001 Indian School Rd. NE
  Albuquerque, NM 87110

Electronics International MVP-50P

- Installation Instructions II 0425051 (Rev. I)
- Operationg Instructions OI 1002051 (Rev. D)

  Manufacturer: Electronics International Inc.
  63296 Powell Butte Hwy
  Bend, OR 97701

Kannad 406 AF ELT

- Installation and Operation Manual 406 AF-COMPACT ELT (P/N: DOC08038E Rev. 04)
- Initial Installation Manual 406 AF-INTEGRA ELT (P/N: DOC09081C Rev. 02)
- Operation Manual 406 AF-INTEGRA ELT (P/N: DOC09078C Rev. 02)

  Manufacturer: Kannad Aviation (McMurdo Group)
  Orolia SAS
  Z.I. des 5 Chemins BP 23
  56520 Guidel (F)

Garmin G5

- Electronic Flight Instrument Part 23 AML STC Maintenance Manual 190-01112-11 Rev. 1

  Manufacturer: Garmin International, Inc
  1200 E. 151st Street
  Olathe, KS 66062 USA

Other Vendor Equipment

(Vendor publication should be obtained directly from the vendor.)

- Operation- and Installation Manuals
- Service Bulletins

01-00-02 Trade Marks

Even when the brand names used in this manual are not marked as registered trade-marks, this does not mean, that these names are free in the sense of trademark legislation.

01-10-00 SAFETY

To keep the security risks during the execution of the inspection and maintenance work as low as possible, observe the following points:

- Inspection and maintenance work has to be carried out only by qualified and authorized personnel.
- The execution has to be in accordance with the respective national safety requirements.
- Before beginning any work, this maintenance manual has to be read and understood. In case of doubt or lack of information the manufacturer has to be contacted for advice.
- The safety notes given in this manual are to be observed unconditionally.

Refer to Chapter 02-10-06 for information concerning safety notes.

Chapter 2

How to Use the Service Manual

Table of Contents

02-00-00 GENERAL

The set-up of the manual, the chapters and the handling correspond to the regulations of the Air Transport Association of America, ATA Specification No. 100. Only the numbering of the pages and the layout have been changed to make working with this manual easier.

02-10-00 MANUAL DESCRIPTION

02-10-01 Manual Set-Up

The manual consists of groups, which are subdivided in chapters. Additionally the preceding pages contain the List of Effective Pages, the Lists of Service Bulletins and the Record of Revisions. In the List of Chapters the groups are marked by capital characters.

02-10-02 Chapter Set-Up

The chapter numbering system used in this manual represents the chapter set-up. It is a conventional dash-number breakdown. The number is composed of three elements which consist of two digits each:

02-10-02

chapter - section - subject

The first element shows the chapter (here: "How to Use the Service Manual"). The second element shows the first subdivision, which is called "section" (here: "MANUAL DESCRIPTION"). The third element shows the "subject", which is handled within the respective section (here: "Chapter Set-Up"). The first three digits refer to the definitions of the ATA Specification 100, where they exist; the other digits are

defined by the manufacturer. If a more detailed breakdown is necessary, bold faced headlines like the following are used:

Powerplant

02-10-03 Page Numbering

The page numbering begins at the coversheet of each chapter with "Page 1". In contrast to the ATA Specification 100, the particular sections and subjects don't start with a new numbering.

02-10-04 Figure Numbering

The figures are numbered in such a way that the first figure in each chapter starts at "*Figure 1*".

02-10-05 Layout

Apart from the headers and footers the layout consists of two columns. The right column contains text, titles, tables, schedules and figures (figures also can fill the whole page); the left column contains the chapter numbering, boxed textmarkers for notes and safety notes as well as explanations. The following figure1shows more details:

① *manufacturer´s masthead and manual title*

② *section and subject titles*

③ *chapter numbering*

④ *title*

⑤ *bar marking revised parts*

⑥ *boxed textmarker for notes and safety notes*

⑦ *explanations e.g. to tables*

⑧ *figure title and number*

⑨ *date of first issue resp. last revision*

⑩ *chapter and page numbers*

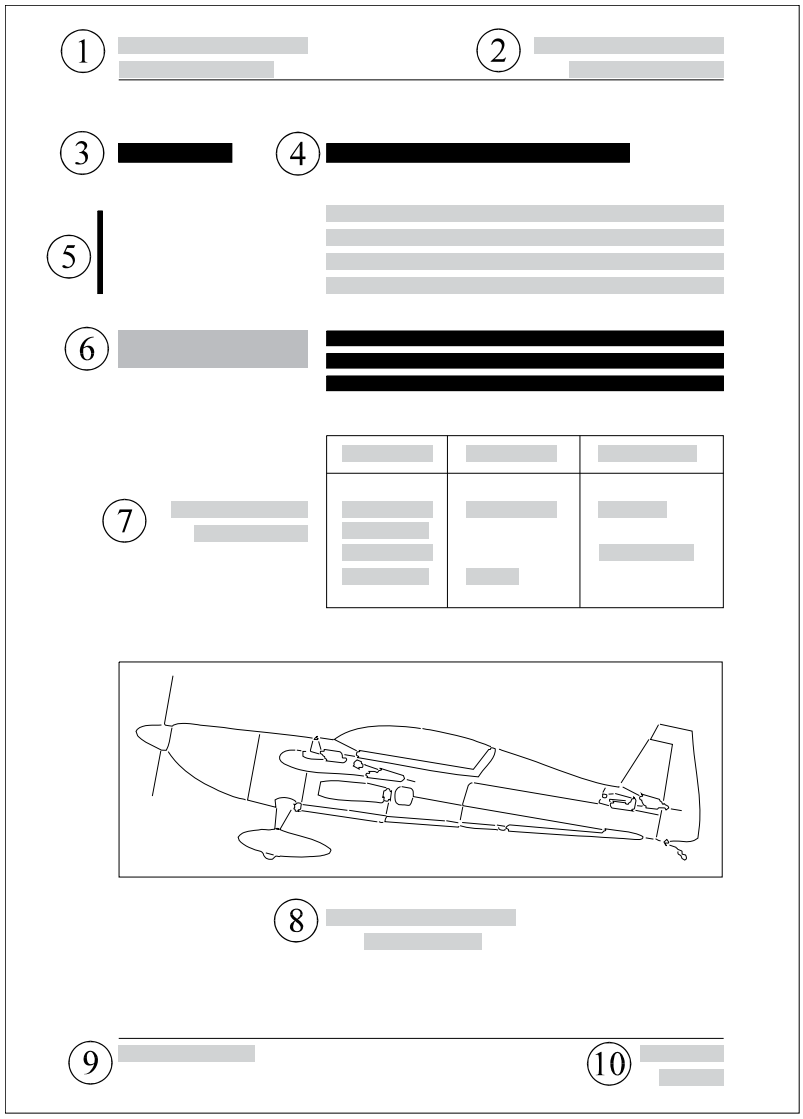


Figure 1 Layout

02-10-06 Notes/Safety Notes

Safety notes in this manual are marked by a boxed textmarker in the margin column and written in semi-bold characters. This manual distinguishes three warning levels:

DANGER — **Indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

WARNING — **Indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

CAUTION — **Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

Additional information given in this manual are also marked by boxed textmarkers in the left column and are written in semi-bold characters:

NOTICE — **Is used to address practices not related to physical injury.**

IMPORTANT — **Represents an important hint. Often used when the non-observation of this safety note could endanger pilot or passengers during aircraft operation.**

NOTE — **Represents an useful or remarkable hint.**

02-20-00 HANDLING

02-20-01 Revisions

Maintenance manuals and other technical publications in current revision status are available over the World Wide Web direct link:

http://www.extraaircraft.com/techservice.php

Cross-check your documents against these publications and replace pages as necessary. Paper copies of publications will continue to be available if this is your preferred format of publications. Orders can be placed by contacting Extra Aircraft
at e-mail: ExtraAircraft@ExtraAircraft.com
or facsimile: +49-(0) 2858-9137-30.

N O T E

Pages of this maintenance manual may not be exchanged and no alterations of or additions to the approved contents may be made without the EXTRA Flugzeug-produktuions- und Vertriebs GmbH/EASA approval.

If revision of pages is necessary, observe the following steps:

N O T E

Change revised pages immediately upon receipt.

1 Take out the old pages and destroy them.

2 Insert the new pages following the chapter and page numbers.

3 Replace the old pages "B-D = Log of Effective Pages".

4 Enter the date on page "A = Log of Revisions" and on page "2 = Record of Revision" of Ch. 04 if necessary.

Each revised page is marked at the bottom by the date of revision; revised parts of the new page are marked by a bar on the left margin.

02-20-02 Service Bulletin

The service bulletins describe *which* procedures and *how* and *when* they are to be carried out. Enter the receipt of each service bulletin in the Service Bulletin List (page E). Service Bulletins are also available under the Web-link given in section 02-20-01.

NOTE

The owner is responsible for incorporating service bulletins to the above mentioned Service Bulletins List (page E).

02-20-03 Checklists

Observe the following steps when working with checklists:

1 Copy the respective check list for performing a check.

2 Enter the date at the top of the table.

3 Select the items to be worked out. The "O" at the beginning of the line is written in the column which indicates the point of time when an item has to be worked out. Specifications for the first column are given by footnotes.

4 Work out the particular items and sign after execution (responsible mechanic and inspector) using the respective boxes behind the item.

5 After completion of the inspection check file the list with entries in the Aircraft Records.

6 Certify the completion of check in the Aircraft Log Book.

Chapter 3

General Description

Table of Contents

03-00-00 GENERAL

This chapter shows a short survey of the particular systems. A more detailed description of the systems you find in the respective chapters (see: CONTENTS).

The Extra 300LT (refer to figure 1) is designed as a light weight, single-engine, two seat, low-wing monoplane using composite and steel materials. It has a fixed main landing gear and a tail wheel unit with full-swivel capability.

Figure 1 ***View EXTRA 300LT***

03-10-00 DESCRIPTION

03-10-01 Construction

Manufacturer:	EXTRA-Flugzeugproduktions- und Vertriebs- GmbH Flugplatz Dinslaken D-46569 Hünxe, Germany
Fuselage:	steel tube design, covered with fabric, composite material resp. aluminium sheet metal, single piece canopy side hinged
Wing:	fibre composite design
Stabilizers :	fibre composite design
Landing gear:	2 main wheels, 1tail wheel, fibre composite strut design

Seats

Rear Seat:	Seat angle and seat back rest adjustable, 5 piece harness
Front seat:	non variable position, 5 piece harness

03-10-02 Flight Control System

Pitch control:	push-pull rods
Roll control:	push-pull rods
Yaw control:	cable system
Pitch trim:	trim tab on the right elevator, bowden cable, electrical trim-servo, trim switch, trim position indicator

03-10-03 Brake System

Main wheels:	hydraulically operated disc brakes, hydraulic cylinders actuated by brake pedals
Tail wheel:	no brake

03-10-04 Powerplant

Engine

Manufacturer:	TEXTRON LYCOMING Williamsport Division 652 Oliver Street Williamsport Plant 17 701 USA
Type:	AEIO - 580-B1A (6 cyl. air cooled, fuel injection, independent magneto ignition system, inverted flight oil system, special antivibration counter weights, retard breaker magneto, Slick Start system) Rated power: 315 hp at 2700 rpm

Propeller

Manufacturer:	MT Propeller Entwicklung GmbH & Co. KG Airport Straubing D-94348 Atting, Germany
Type:	MTV-9-B-C/C 198-25 (3-blade wood composite, hydraulic variable pitch with constant speed regulator, Propeller diameter: 198 cm)

03-10-05 Fuel System

Tanks:	2 integral wing tanks, 1 center and 1 acro tank behind the firewall (cockpit side)
Fuel supply:	mechanical engine driven pump, additional electrically operated boost pump

03-10-06 Electrical system

Power supply:	engine driven 12 V alternator, integrated DV converter, alternator switch, 28 Ah starter battery, battery switch
Circuits:	equipped with automatic circuit breakers
Ignition:	magneto system, independent from electrical power supply

03-10-07 Instruments

Standard (minimum) equipment installed (X):

Instrument Panel	rear	front
Ammeter	X	
Voltmeter	X	
Fuel quantity indicator (wing tank)	X	
Fuel quantity indicator (center tank)	X	
Fuel flow indicator	X	
Altimeter	X	X
Airspeed indicator	X	X
Mag. direction indicator	X	
RPM indicator	X	
Manifold pressure indicator	X	
Oil temperature indicator	X	
Oil pressure indicator	X	
EGT indicator	X	
CHT indicator	X	

Chapter 4

Airworthiness Limitations

Log of Revisions Chapter 4

Dates of issue for original and revised pages:	Date and sign of approval:
1st Edition ..... 30. April 2010	EASA MAJOR CHANGE APPROVAL N° 10030180 ..... 1. June 2010

Table of Contents

04-00-00 GENERAL

For each inspection listed here, refer to the applicable chapter in this manual.

IMPORTANT

It is the operator's responsibility to make sure that time limits or life limits for items in this chapter are not exceeded.

The airworthiness limitations items include mandatory replacement times and structural inspection intervals which may only be changed with permission of the applicable airworthiness authority.

This airworthiness limitation section is approved by the regulatory authority and specifies maintenance required under paragraphs 43.16 and 91.403 of the Federal Aviation Regulations, unless an alternative program has been approved by the regulatory authority.

04-00-01 Temperature Limit

Composite structure is qualified up to 72°C (162°F). Structure temperatures above this limit are not approved. Not to exceed this temperature limit, only appropriate colour specification for composite structure as given by the manufacturer document EA-03205.19 must be used when finish restoration is required.

In case of doubt regarding to the classification of colour, contact EXTRA-Flugzeugproduktions- und Vertriebs-GmbH.

04-00-02 Operating Time

Only the airframe and components as listed in Chapter 04-10-00 are subject to a permissible operating time; concerning all other components recommended replacement times are given in Chapter 05-10-03.

The reliability of the composite primary parts has been convincingly demonstrated by fatique testing (Two times design life 2x6000 = 12000 hrs).

IMPORTANT

Every 1000 flight hours the "Significant Items Inspection" contained in Chapter 05-30-00 of this manual must be performed. This 1000 hours inspection releases the aircraft for further 1000 hours operation, up to max. of 6000 hours.

IMPORTANT

Prior to 6000 flight hours the "Major Inspection" contained in Chapter 04-20-00 must be performed. This inspection may release the aircraft for further operation, subject to approval of the regulatory authority.

04-10-00 LIFE LIMITED COMPONENTS

04-10-01 General

The replacement time of the life limited components listed in Ch. 04-10-02 must be accomplished not later than the specified period of operation for that component or in accordance with the manufacturer´s service data or airworthiness directives.

04-10-02 Replacement Time

Items shown here must be replaced during the regular maintenance periods.

Item	Replace
Wing	6000 h
Aileron	6000 h
Vertical Stabilizer	6000 h
Rudder	6000 h
Horizonal Stabilizer	6000 h
Elevator	6000 h
Landing Gear Spring	6000 h

04-10-03 Service Life Limited Components

The service life of the EA 300LT composite structure as listed in section 04-10-02 has been set to 6000 flight hours. A "Major Inspection" on reaching 6000 flight hours may provide the necessary clearance for further flight. This "Major Inspection" is contained in Chapter 04-20-00.

04-20-00 MAJOR INSPECTION

The EXTRA 300LT has been manufactured utilizing the latest knowledge of composite construction and requires new experience about those parts subject to wear. Until now insufficient experience about this point has been acquired. When such information is available it will be accomodated in later revisions of this manual and will include a major inspection procedure.

Chapter 5

Time Limits/Maintenance Checks

Table of Contents

05-00-00 GENERAL

This chapter contains charts for time limits, scheduled maintenance and unscheduled maintenance, and enables licensed personnel to carry out correct inspections on the EXTRA 300LT. The periodic inspections and checks described and their recommended time intervals are minimum requirements for maintaining the aircraft in an airworthy condition. Further information will be given by the information service (Service Bulletins, Service Letters, etc.).

If operation of aircraft requires more frequent servicing, the check intervals may be shortened. However the check intervals must not be exceeded without explicit permission from the regulatory authority. Additional checks as well as changes must also be authorised.

In general this manual does not give any information about vendor equipment. Such information can be taken from the vendor equipment maintenance instructions (refer to chapter 1). However, for practicability reasons most of the applicable vendor equipment inspections are incorporated in the following checklists. But it has to be noted that the latest editions of inspections given by the vendors remain decisive. So, before beginning an inspection, the inspections of vendor equipment presented here must be compared with the originals referenced under the respective headlines of the checklists, and, in case of doubt (e.g. if originals have changed before changes could be transferred to this manual), contact EXTRA-Flugzeug-produktions- und Vertriebs-GmbH for advice. The maintenance instructions referenced in the checklists are also valid if further inspection of vendor equipment is necessary.

NOTE

For working with checklists refer to chapter 02-20-03.

⚠ DANGER

Do not rotate the propeller nor allow any person to stay in the propeller operating area when performing an inspection or check. The engine may be started unintentionally and may cause serious injuries or death.

05-10-00 TIME LIMIT COMPONENTS

05-10-01 General

All components not listed herein should be inspected as detailed in Chapter 05-20 „Maintenance Checks“ and repaired, overhauled as required. It is recommended that overhaul or replacement of components should be accomplished not later than the specified period of operation for that component or in accordance with the manufactures service data or airworthiness directives.

05-10-02 Overhaul Schedule

Items shown here must be overhauled at the times indicated.

Item	**Overhaul**
Engine (Textron Lycoming)	*
Engine accessories	together with engine
Magneto (Slick)	together with engine *
Propeller (MT-Propeller)	*
Governor (Woodward or MT-Propeller)	*
All other components	on condition

** refer to latest issue of Manufacturer´s Service Bulletin and Maintenance and Overhaul Manual*

05-10-03 Recommended Replacement Times

It is recommended to replace the items shown in the following schedule at the times indicated. The times may be modified by the respective national authorities.

Item	Replace
Battery Concorde	on condition
Batteries of the Artex ELT	5 years [1]
Batteries of the Kannad ELT	6 years [1]
Backup battery of Garmin G5	on condition [1]
Batteries of Garmin GNx 4x0W/ 530W and GTN 6xx/7xx	on condition [2]
Internal batteries of Aspen EFD1000/500	3 years or 2200 hours or if it fails the test acc. Aspen ICA [3]
Wheels (Cleveland, Parker)	on condition
Tires	on condition
Brake hoses (PTFE-type)	on condition
Fuel, oil & sensing hoses (PTFE Type MIL-DTL-25579)	on condition, but in engine comp. at the latest together with engine removal
Wingtip position/strobe light	If any one LED fails, the unit must be repaired or replaced
Seat belts (Hooker)	rework [4] or replace after a period of 6 years in use, service life limit of national aviation authority must be considered
First aid pack	as stated on the pack
Brake and brake assembly (Cleveland, Parker)	on condition
Rudder control cable	on condition
Fairleads	on condition
Shock mounts (Lord Kinematics, Barry Controls)	on condition, but at the latest at each engine overhaul
Bolts and Nuts	on condition [5]

[1]) *on the recommendation of the manufacturer*

[2]) *recommended replacement every 5 years to avoid unscheduled maintenance*

[3]) *refer to Chapter 01-00-01*

[4]) *reworking only by authorized services*

[5]) *if not stated otherwise*

05-10-04 Time Between Inspection

Inspect these equipment items at the times shown:

Item	Time between Inspection
Battery (Concorde)	Refer to Concorde Servicing Instruction (capacity check)
Static Pressure System	Every 24 calendar months in accordance with 14 CFR Ch. 1 Part 43 App. E
ATC Transponder	For US registered airplanes: Every 24 calendar months in accordance with 14 CFR Ch. 1 Part 43 App. F Par. C and F. For airplanes registered in other countries: Observe the latest national aviation regulations.
Aspen EFD1000/500	12 months
EI MVP-50P	12 months or 100 hours
Garmin G5	12 months

05-20-00 SCHEDULED MAINTENANCE CHECKS

05-20-01 General

Scheduled maintenance checks or tasks must be carried out at 25, 50, 100, 200, 300, 400, 500 and 1000 hour intervals. In addition an annual inspection equal to the 100 hour inspection has to be performed.

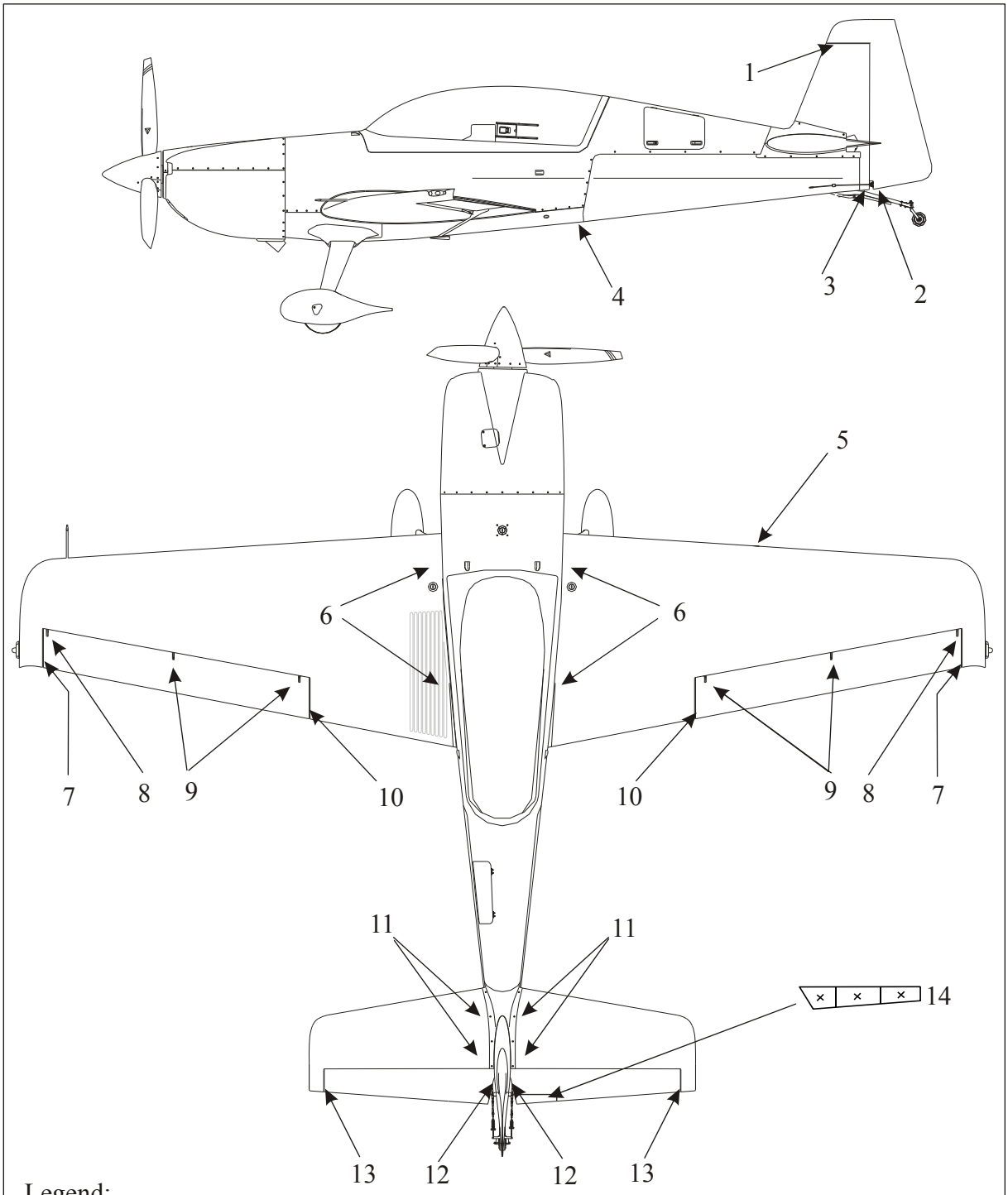
The following pages show a drain hole chart (figure 1) and lubrication charts (figures 2 - 4) which can be used in connection with the checklists.

05-20-02 25 Hour Inspection - Engine

A 25 hour inspection is necessary for the engine, because the engine is not equipped with an external oil filter. Therefore the engine oil has to be changed and the oil screen cleaned after every 25 hours. Refer to figure 2 "Lubrication Chart 25 hours".

05-20-03 25 Hour Inspection - Aircraft

After the first 25 hours, a check equal to the 100-hour maintenance check has to be performed. Refer to chapter 05-20-04.



Legend:

1. Rudder horn root rib web
2. Rudder root rib web
3. Tail (two holes)
4. Bottom fuselage cover (central hole)
5. Lower wing shell at stall warn transducer station in front of the main spar
6. Lower wing shell at root section
7. Wing tip trailing edge at aileron cutout
8. Nose rib web of aileron (hinge gaps, 1 hole each)
9. Nose rib web of aileron (hinge gaps, 2 holes each)
10. Aileron root rib at trailing edge
11. Horizontal stabilizer root rib web
12. Root rib of elevator
13. Stabilizer tip
14. Lower shell of trim tab (3 holes)

Figure 1 ***Drain and Vent Holes***

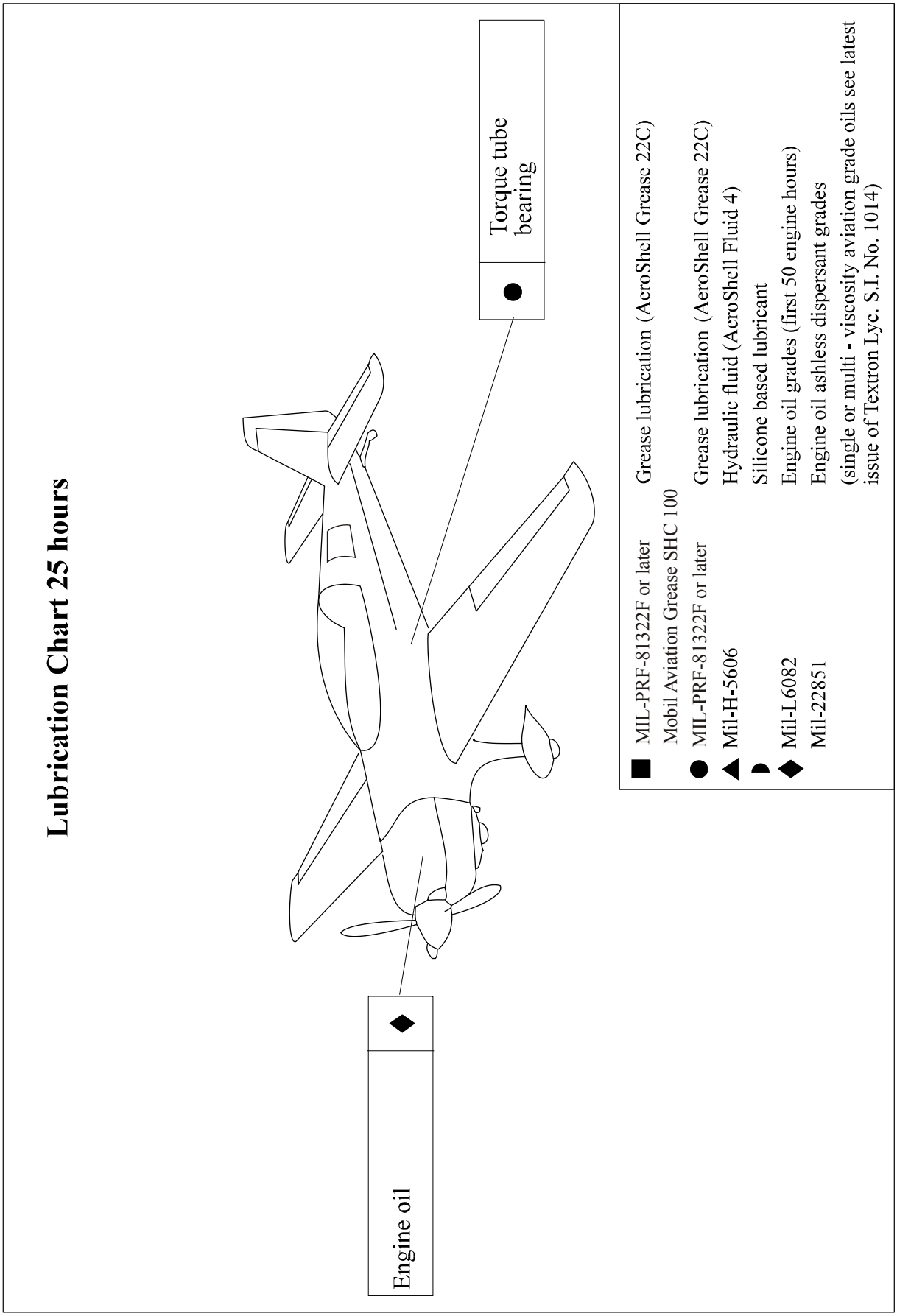


Figure 2 ***Lubrication Chart 25 hours***

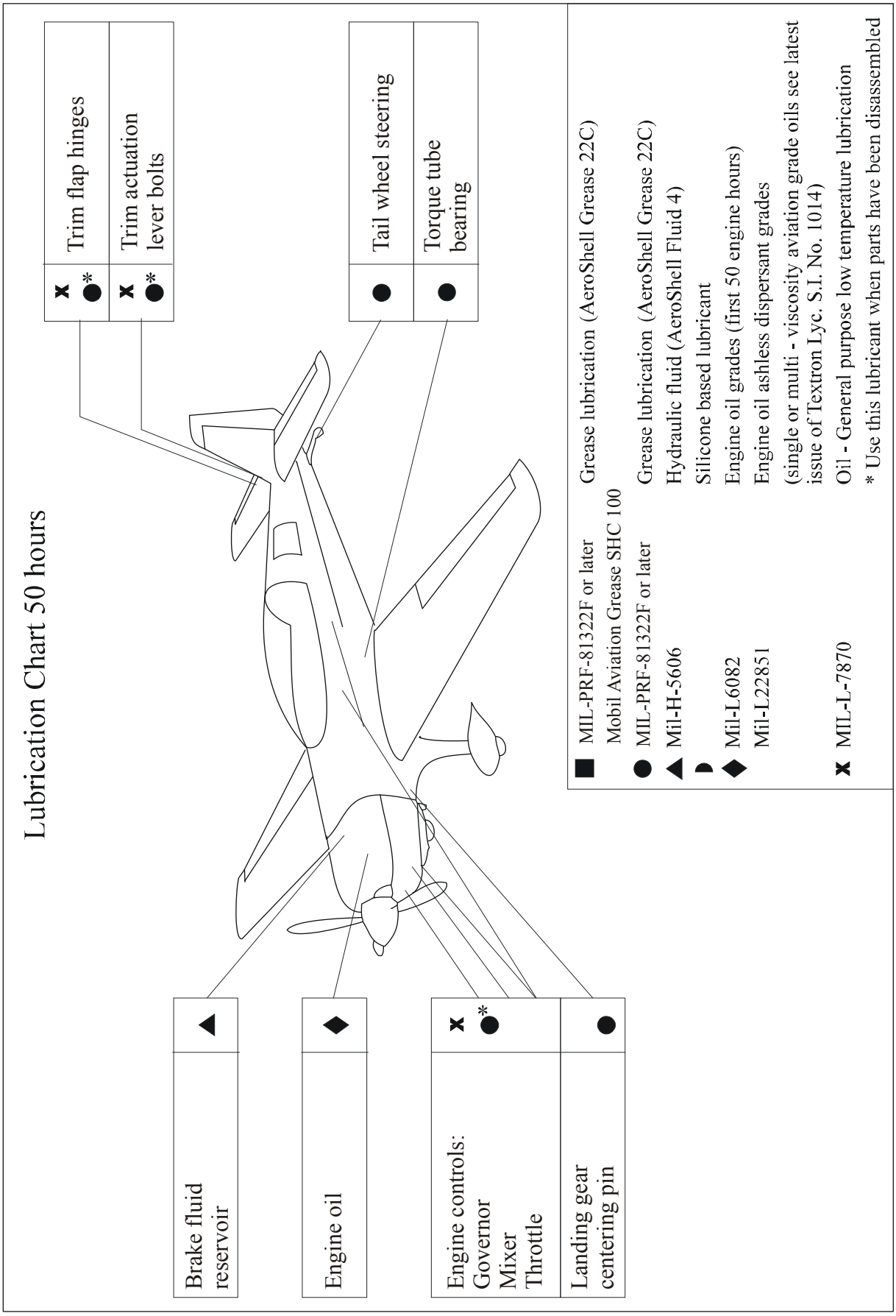


Figure 3 ***Lubrication Chart 50 hours***

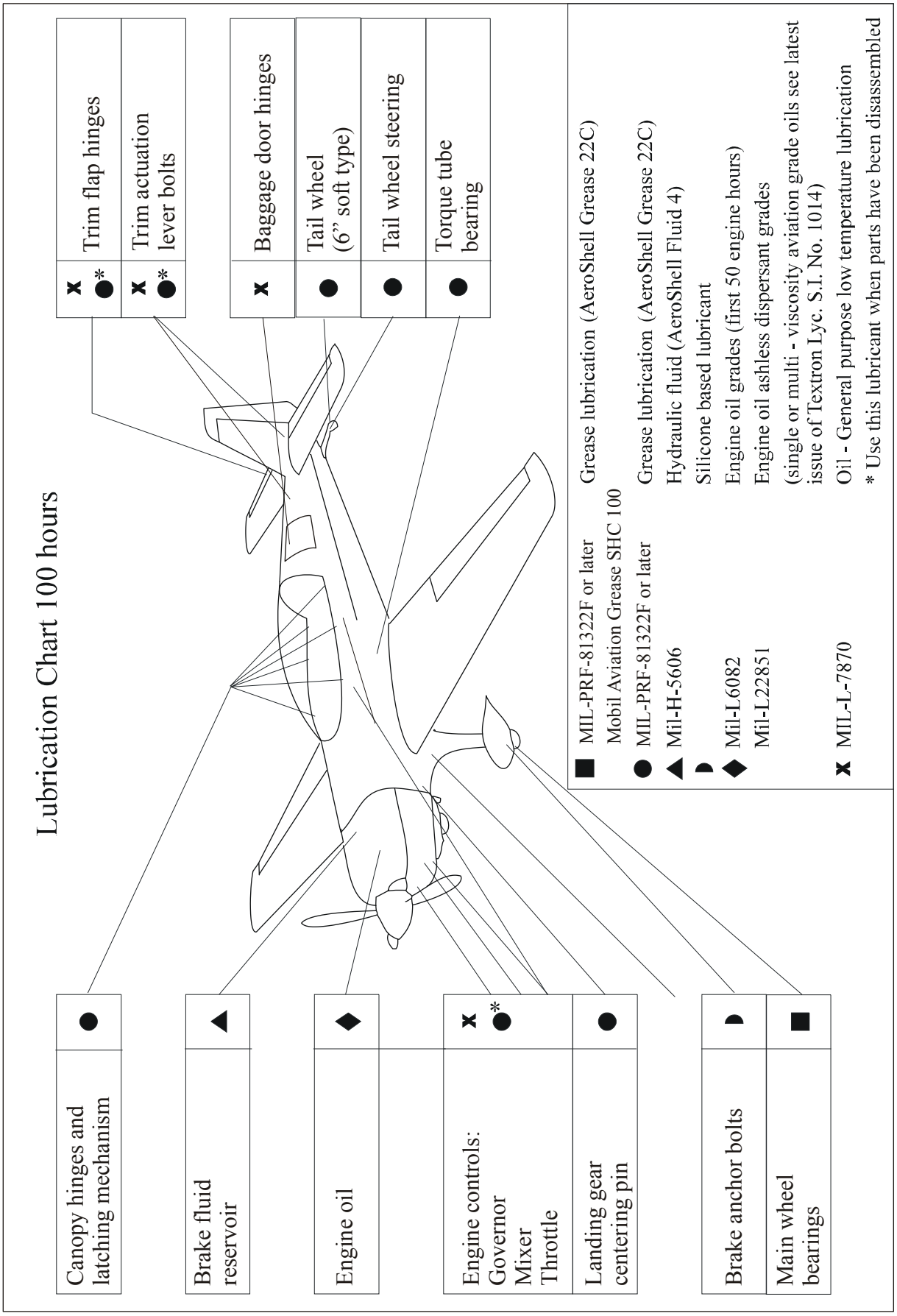


Figure 4 ***Lubrication Chart 100 hours***

05-20-04 Maintenance Checks Schedule

The maintenance checks described in this chapter include all the scheduled checks which must be performed. Use the following schedule and the lubrication charts (figures 2-4).

as specified	each 50 hours	each 100 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
			Operational Checks		
	O	O	1 Start engine (in accordance with the Pilot`s Operating Handbook)		
	O	O	2 Check the fuel quantity indication.		
	O	O	3 Check oil pressure and temperature.		
	O	O	4 Check generator output.		
	O	O	5 Check magneto RPM-drop at 1800 RPM. (Allowed drop is 175 RPM and no greater diff. between L + R than 50 RPM)		
	O	O	6 Check ignition OFF function at 1000 RPM for a short moment.		
	O	O	7 Check response of the engine by power setting changes.		
	O	O	8 Check the propeller response at 1800 RPM when changing pitch.		
	O	O	9 Check idle rpm is between 650 and 750.		
	O	O	10 Check the fuel flow and manifold pressure indicaton.		
	O	O	11 Check the EGT and CHT indicaton.		
	O	O	12 Check mixer function per CHT/EGT indication.		
	O	O	13 Check mixture at 1200 rpm.		
	O	O	14 Check the function of the fuel selector valve.		
	O	O	15 Check the radio and the other electronic equipment.		
	O	O	16 Shut down engine using mixture lever. Check the alternator warning light and ammeter.		

as specified	each 50 hours	each 100 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
	O	O	17 Check optional electronic g-meter for the maximum g-loading. If extreme value exceeds ±10 G, contact EXTRA-Flugzeug-produktions- und Vertriebs- GmbH.		
	O	O	18 Ignition OFF, main switch OFF, remove ignition key.		
	O	O	19 Check if ignition key is removable in OFF-position only, and if key functions in accordance with the requirements of the Teledyne Continental Service Bulletin No. 636.		
			Propeller		
			(refer to latest edition of MT-Propeller Operation and Installation Manual E-124 and Service Bulletins)		
			DANGER **Ground magneto primary circuit before working on propeller**		
		O	1 Remove spinner and inspect for cracks.		
	O	O	2 Check blade shake, max. 3 mm or 1/8 inch.		
	O	O	3 Check blade angle play, max. 2°.		
		O	4 Inspect outside condition of the hub and parts for cracks, corrosion, deterioration.		
		O	5 Inspect high pitch stop check nut for tightness.		
	O	O	6 Check all safety means to be intact.		
	O	O	7 Check flange bolts or stop nuts for tightness.		
		O	8 Check front and rear spinner plate for cracks and fixing.		
	O	O	9 Inspect blade root and hub for oil- and grease leaks.		
		O	10 Check position and condition of counterweights.		
	O	O	11 Inspect blades for cracks in the fibreglass-cover and blade erosion sheet. No cracks allowed. Refer to MT-Propeller SB No. 8		
O[1]			12 Overhaul propeller or perform a tear-down inspection.		

1 *refer to MT-Propeller Service Bulletin No. 1*

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
				Engine compartment		
				Refer to latest edition of Textron Lycoming Operation and Installation Manual, Maintenance and Overhaul Manual and SB's, Slick Magneto Maintenance and Overhaul Manual and SB's.		
				DANGER **Ground magneto primary circuit before working on engine**		
	O	O	1	Remove engine cowling as per chapter 71.		
	O	O	2	Inspect cowling and air inlet screen for damage, cracks, distortion, overheated areas and loose or missing blind nuts and secure attachment of oil level access plate.		
	O	O	3	Inspect landing light for dirt.		
	O	O	4	After this inspection clean cowling.		
			5,6	Deleted.		
O[1]	O[2]	O	7	Drain oil sump in accordance with Chapter 12-10-04 “Engine Oil Replenishing”		
O[1]	O	O	8	Clean oil suction screen at oil change, check suction screen for metal particles, shavings, or flakes. Consider Lyc. SB N° 480 latest issue.		
O[1]	O	O	9	Clean oil pressure screen at oil change, check pressure screen for metal particles, shavings, or flakes. Consider Lyc. SB N° 480 latest issue.		
		O	10	Inspect oil temperature sensor unit for leaks and security.		
	O	O	11	Inspect flexible oil lines, oil return lines and fittings for leaks, security, chafing, dents, and cracks (ref: FAA AC 43.13-1A). Replace flexible oil lines at engine TBO per Lyc. SB 240.		
		O	12	Clean and inspect oil radiator and attachment.		
O[3]			13	Remove and flush oil radiator.		
	O	O	14	Inspect Christen Inverted Oil System for general condition, leaks, secure mounting and tight connections.		

1 each 25 hours
2 a spectrographic oil analysis is recommended at every 50 hours oil change.
3 each 500 hours

as specified	each 50 hours	each 100 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
O[1]			15 Clean and flush the Inverted Oil System with a suitable petroleum solvent, such as Varsol according to Lycoming Operator's and Maintenance Manual.		
O[2]	O	O	16 Service engine with recommended lubricating oil in accordance with chapter 12-10-04.		
	O	O	17 Inspect condition of spark plugs (clean and adjust gap as required, adjust per Lycoming Service Instruction 1042). If fouling of spark plugs is apparent, rotate bottom plugs to upper plugs and vice versa.		
	O	O	18 Inspect spark plug cable leads and ceramics for corrosion and deposits.		
	O	O	19 Perform a hot engine differential compression check in accordance with FAA AC 43.13-1A.		
		O	20 Inspect cylinders for cracked or broken fins.		
	O	O	21 Check cylinders for evidence of excessive heat which is indicated by discoloration.		
		O	22 Check fuel injector nozzles for loseness. Tighten to 6.8 Nm (60 inch-pounds) torque. Check fuel lines for fuel stains which are indicative for fuel leaks.		
	O	O	23 Inspect rocker box covers for evidence of oil leaks. If found, replace gasket; torque cover screws 5.7 Nm (50 inch-pounds).		
O[3]			24 Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of valve tips, valve keeper, springs and spring seats.		

1 each 300 hours
2 each 25 hours
3 each 400 hours

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
		O	25	Inspect ignition harness for general condition, free from fraying or chafing and insulators for high tension leakage and continuity.		
		O	26	If Plane Power alternator installed: Remove drive belt and turn alternator rotor to check condition of bearings for abnormal noise or roughness.		
O[1]			27	Overhaul or replace magnetos.		
O[2]		O	28	Inspect magneto and accessories according to Slick Magneto Maintenance and Overhaul Manual.		
		O	29	Inspect SlickSTART, refer to Unison Operation, Maintenance and Troubleshooting Manual.		
		O	30	Check fuel injector for general condition, clean fuel inlet screen.		
	O	O	31	Inspect air intake gaskets and seal rings for leaks and flanges for tightness.		
	O	O	32	Inspect flexible fuel lines, fuel injection lines and fittings for leaks, security, chafing, dents, and cracks; replace or overhaul as required or at engine overhaul. Check fire protection.		
	O	O	33	Check fuel system for leaks.		
O[3]	O	O	34	Remove, clean and inspect gascolator screen and fuel filter bowl.		
	O	O	35	Inspect throttle, mixture, and propeller governor controls for security, travel, and operating conditions. Observe the hints given in the **Inspections**-paragraph of chapter 20-10-09 **Control Cables**.		
O[4]		O	36	Inspect all external exhaust surfaces for signs of leakage.		
O[4]		O	37	Inspect all external exhaust joints, slip joints, clamps, couplings for misalignment, warpage, broken, loose or missing fasteners, clamps, gaskets or seals and abnormal wear.		

1 together with engine
2 each 500 hours
3 clean at least every 90 days
4 at engine replacement

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
O[1]		O	38	Inspect all interior exhaust areas for blockage, restrictions, dents or protrusions into the exhaust flow path.		
O[1]		O	39	Inspect muffler, heat exchanger for general condition.		
O[1]		O	40	Inspect exhaust stack to flange interface for cracks in welds or weld heat affected area, blown out or missing gaskets.		
O[1]		O	41	Inspect all exhaust welds and areas adjacent to the welds for cracks or weld separation.		
O[1]		O	42	Inspect bent exhaust areas and turns for erosion, thinning, bulging or burn through.		
O[1]		O	43	Inspect surrounding exhaust structures for heat damage or burning.		
		O	44	Inspect engine crankcase for cracks, leaks, and security of seam bolts.		
	O	O	45	Check engine mounted accessories such as pumps, temperature and pressure sensing units for leaks, secure mounting and tight connections.		
	O	O	46	Inspect engine mount for cracks and loose mountings.		
	O	O	47	Inspect engine baffles for cracks and fraying.		
		O	48	Inspect all wiring connected to the engine or accessories.		
	O	O	49	Inspect engine shock mount for deterioration (replace as required).		
		O	50	Inspect firewall seals.		
		O	51	Inspect alternator, cable connections and accessories.		
		O	52	Inspect condition and tension of alternator drive belt.		
		O	53	Inspect security of alternator mounting.		
		O	54	Inspect starter and starter drive.		
	O	O	55	Clean engine if necessary.		
	O	O	56	Lubricate all controls per lubrication chart.		

1 at engine replacement

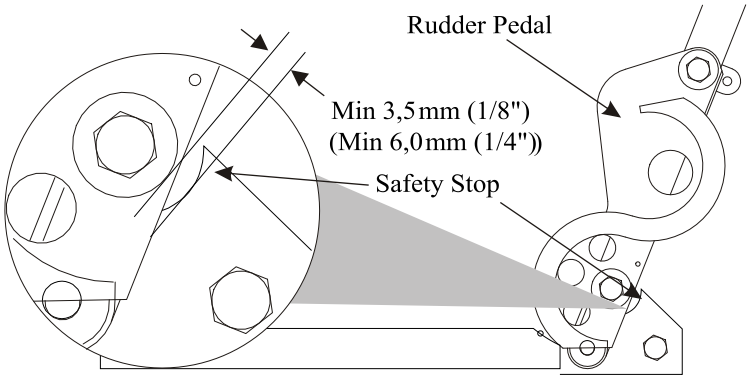
as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
O[1]			57	Overhaul or replace propeller governor as required.		
O[2]			58	Complete overhaul of engine or replace with factory re-built.		
				Fuselage		
	O	O	1	Remove tail fairing, tail side skins, main fuselage cover and landing gear cuffs per chapters 51 and 53.		
		O	2	Remove bottom fuselage cover including exhaust area covering sheet per chapter 53.		
	O	O	3	Inspect main and bottom fuselage cover including exhaust area covering sheet, tail fairing, tail side skins and landing gear cuffs for general condition, dents, cracks and loose screws.		
	O	O	4	Inspect baggage compartment structure for cracks and damage.		
	O	O	5	Inspect baggage net and tie-down straps for security, attachment, proper operation and condition.		
	O	O	6	Check installed parts for general condition and security of attachment.		
	O	O	7	Inspect fuselage for foreign objects.		
		O	8	Inspect steel tube construction for general condition, corrosion and cracks, above all in areas of load stress (e.g. wing, stabilizer, engine and seat attachments).		
	O	O	9	Visually inspect steel tube construction in the area of horizontal stabilizer attachment brackets for cracks. In case of doubt remove horizontal stabilizer and use a dye check penetrant. In case cracks are found contact EXTRA-Flugzeugproduktions- und Vertriebs- GmbH for repair advice.		
	O	O	10	Inspect fabric cover for general condition.		

1 refer to Woodward Service Bulletin No. 33580 or applicable MT-Propeller Instructions
2 *refer to Lycoming Service Instruction No. 1009*

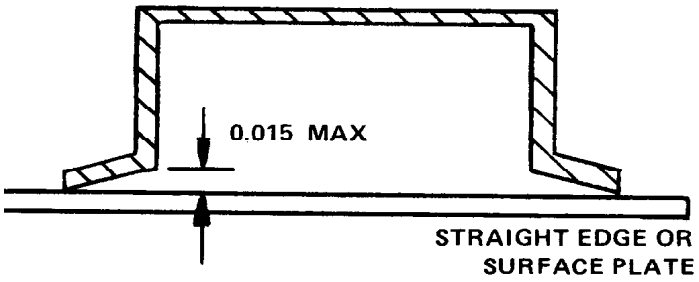
as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
		O	11	Inspect wooden longerons for damage.		
		O	12	Clean and lubricate canopy hinges and latching mechanism.		
		O	13	Inspect breather line for obstructions and security.		
		O	14	Inspect main and auxiliary wing spar connector for general condition.		
	O	O	15	Inspect seats for security, attachment, proper operation, and condition.		
	O	O	16	Check first-aid pack for attachment, complete contents and expiration date.		
				Seat belts		
		O	17	Check seat belts for security, attachment, proper operation, and condition.		
		O	18	Check webbing; inspect for fuzzy edges at the adjusters, inspect whether edges start to fray, inspect whether webbing lost its color (top and bottom sides have a different shades).		
		O	19	Check hardware; inspect for corrosion, check whether buckles mate properly. Check the buckles for easy opening .		
		O	20	Check ratchet assembly; inspect for corrosion, loss of plating, discoloration, slippage and wear; check for ease of operation. If the harness does not pass the check, it has to be reworked or replaced. Contact the harness manufacturer in case of doubt.		
		O	21	Check proper attachment of shoulder harness as per chapter 25-10-03.		

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
				Fuel system		
	O	O	22	Inspect the fuel lines for leaks, security, chafing, dents and cracks. Replace fuel lines as required.		
	O	O	23	Inspect fuel selector valve for operation and proper pointer indication. Check integrity as per chapter 28-20-01.		
	O	O	24	Drain fuel system.		
	O	O	25	Check acro- and center tank attachments.		
	O	O	26	Check acro-, center- and both wingtanks for leaks.		
	O	O	27	Check boost pump.		
	O	O	28	Check fuel filler caps and 'O'-rings for security and proper operation.		
	O	O	29	Check proper seat and condition of fuel filler sealing lip.		
				Flight controls		
	O	O	1	Remove wing access panels.		
	O	O	2	Inspect control surfaces for security of attachment, free movement, dents, delaminations and cracks.		
	O	O	3	Check spades visually for general condition. Inspect spade support for corrosion, cracks and deformations. Ensure proper attachment to aileron.		
	O	O	4	Inspect elevator trim system for proper operation and rigging.		
	O	O	5	Inspect hinges, hinge bolts, hinge bearings and selflocking nuts for condition, cracks and security.		
	O	O	6	Visual inspect bonding braid across the hinges for general condition.		
	O	O	7	Check free play in control system: torque tube, control surfaces, control sticks, rod end bearings and travel stops.		
O[1]	O	O	8	Lubricate rear torque tube bearing.		
	O	O	9	Lubricate trim flap hinges and trim actuation lever bolts.		

1 each 25 hours

as specified	each 50 hours	each 100 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
		O	10 Check rudder cable system including sleeves, fairleads, pulleys and cable retracting springs per FAA-AC 43.13-1A.		
	O	O	11 Check PTFE tube within the S-guidance at the rear seat rudder pedal for general condition.		
		O	12 Check for minimum 3.5 mm (1/8") clearance of rudder pedal versus safety stop when fully deflected for rudder cables having 50 h flight time minimum. On newly installed rudder cables the minimum spacing is 6 mm (1/4"). This check is to be performed with zero loading on the rudder pedals. 		
		O	13 Rough check of safety stop clearance. With a force of approx. 90 kg (200 lbs) acting on the fully deflected rudder pedal the safety stop shall not be reached. If the stop is reached the control system indicates too much flexibility which needs to be traced. In this case contact EXTRA Flugzeugproduktions- und Vertriebs- GmbH for advice.		
	O	O	14 Inspect all flight control surface ventilation holes for obstruction.		
		O	15 Inspect elevator balance weights for looseness, clearance, condition and interference with the composite structure.		
		O	16 Visual inspect push/pull control rods for corrosion, cracks, or other visible damage, especially at their end fittings. In case of suspected cracks, remove push/pull control rod, strip the paint in the suspected area and carry out a detailed inspection using a magnifying glass (x10). Replace the related control rod in case a crack is found otherwise reapply surface treatment and reinstall push/pull control rod.		

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
				Landing gear		
	O	O	1	Check landing gear for general condition.		
	O	O	2	Visually inspect main landing gear spring for dents and cracks.		
		O	3	Visually inspect main landing gear spring for deformations, especially in the area of the mounting clamps. Inspect the axle attachments, when wheels and brake callipers are removed (refer to paragraph "Wheels" below).		
	O	O	4	Inspect landing gear spring mounting clamps and bolts for security.		
		O	5	Lubricate landing gear centering pin and landing gear mounting clamps hinge bolts.		
		O	6	Check wheel rake (10° ± 1°) and toe-in (2.5° ± 0.5°) (landing gear not loaded) as per chapter 32.		
				Fairings		
	O	O	7	Remove and disassemble wheel fairings.		
	O	O	8	Check wheel fairings, inspection caps and heat protection sheet for dents and cracks.		
				Wheels		
			9	(Refer to on-aircraft inspections presented in the latest edition of Cleveland Wheels & Brakes Maintenance Manual and Service Bulletins for wheel, tire and brake inspections)		
	O	O	10	Visually inspect the wheels for slippage, corrosion, cracks or other visible damage.		
	O	O	11	Check the four bolts attaching the wheel axis to the landing gear spring. Inspect nuts for signs of starting to be pulled off the bolts. Nuts have to be on the inboard side of the landing gear spring.		
	O	O	12	Check wheel nuts to be sure they are properly installed. Bolt threads should be flush to 1-1/2 threads extending beyond the nut. Nuts have to be on the side of wheel opposite the brake disc (outboard side of wheel).		

as specified	each 50 hours	each 100 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
	O	O	13 Inspect the brake disc for rust, excessive grooves, large cracks, coning or other visible damage. Check if disc thickness is more than 0.325in/8.255mm. Coning of disc in excess of 0.015 in /0.381 mm is cause for replacement. 		
		O	14 Remove wheels and wheel bearings. Inspect wheel bearing grease for contamination and solidification.		
		O	15 Inspect snap rings and grease seals for distortion or wear. Replace grease seal felts if they are hard or contaminated. Lightly saturated grease seals should be replaced if cracked, dried out, or distorted.		
		O	16 Inspect wheel bearings for excessive wear or damage. Replace on condition.		
		O	17 Repack bearings with MIL-PRF-81322F or later, Mobil Aviation Grease SHC 100 or equivalent. Reinstall wheels and secure.		
	O	O	18 Check wheel bearing clearance and wheels for free rotation.		
			Tires		
	O	O	19 Visually inspect tires for cuts, flat spots, and tread or sidewall damage. If changing of tires is necessary, follow the instructions, including off-aircraft inspection of wheels, presented in the Cleveland Wheels & Brakes Component Maintenance Manual.		
	O	O	20 Check inflation pressure (3.4 bar / 49 psi). Proper inflation will provide maximum tire and wheel life.		

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
				Brake system		
	O	O	21	Inspect brake assemblies for general condition.		
	O	O	22	Inspect master cylinders for leaks.		
		O	23	Inspect brake lines for leaks, bulges and deterioration. Inspect brake lines for kinks, especially in the extreme positions of pedals. Inspect brake lines for chafing, especially in lead-through areas.		
		O	24	Lubricate anchor bolts using Silicone-base lubricant.		
	O	O	25	Visually inspect the brakes for corrosion, cracks, or other visible damage. Inspect inlet fitting bosses and anchor bolt lugs for cracks.		
	O	O	26	Check back plate attachment bolts to insure they are properly torqued and have not worked loose. Gaps between the back plate and cylinder would be evidence of this.		
	O	O	27	Check fit of brake cylinder anchor bolts in torque plate bushings for sloppiness. This can be accomplished by grasping the cylinder and moving it; slight movement is normal. Excessive movement is cause for removal and detailed inspection.		
	O	O	28	Visually inspect brake linings for extreme chipping on the edges. Lining worn to a minimum thickness of 0.100 inch (2.54 mm) must be replaced.		
	O	O	29	Visually check torque plate for corrosion, cracks, loose anchor bolt bushings, or other visible damage. Anchor bolt bushings must be flat against torque plate surface.		
	O	O	30	Check for any brake fluid leaks.		
	O	O	31	Check brake fluid level (fill as required).		
				Steerable tail wheel landing gear		
	O	O	32	Check tail wheel landing gear for general condition and function. Pay attention to the free movement of the rudder.		
	O	O	33	Check tail wheel landing gear spring for dents, cracks, and delaminations.		

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
	O	O	34	Check tail wheel rubber tire condition.		
	O	O	35	Inspect tail wheel fork and steering arm attachment stopnut for security.		
	O	O	36	Check the connector springs for light precompression.		
	O	O	37	Check the wheel fork for free rotation and steering function, damage, dents, cracks and corrosion.		
	O	O	38	Inspect axle bolt and nut for fretting, wear, damage and stretch.		
	O	O	39	Lubricate tail wheel steering.		
				Wing		
	O	O	1	Check wing for dents, cracks, and delaminations.		
		O	2	Inspect wing spar main bolts for looseness and security.		
		O	3	Check the safety wire and the safety screw of the wing main spar bolt.		
		O	4	Inspect wing spar flange bushing for looseness and bearing load by moving the wing tip up and down to detect play. No play allowed.		
		O	5	Inspect wing auxiliary spar attachment.		
		O	6	Inspect wing ventilation holes for obstruction.		
	O	O	7	Check inside wing structure in the area of access panels and root rib openings.		
				Stabilizer		
	O	O	1	Inspect stabilizer for dents, cracks, stone nicks and delaminations.		
	O	O	2	Inspect main bolts of the stabilizer spars for looseness and check security.		
	O	O	3	Inspect stabilizer auxiliary spars attachment.		
		O	4	Inspect stabilizer ventilation holes for obstruction.		

as specified	each 50 hours	each 100 hours		Inspections	Date: / Serial No.:	Inspector: / Mechanic:
				Instruments		
		O	1	Inspect panel mounting for security and safety.		
		O	2	Check operation, mounting, and wiring of switches for condition and safety.		
		O	3	Check automatic circuit breaker mounting and wiring for condition and safety.		
		O	4	Inspect stall warner system for condition and security of installation, perform operational check.		
	O	O	5	Check wingtip position/strobe lights for security and operation. If any one LED fails, the unit must be repaired or replaced. Inspect the lense. Replace if there is excessive scratching, discoloration or cracking.		
	O	O	6	Inspect compass and compass deviation card for proper indication and compensation.		
O[1]			7	Magnetic compass compensation.		
		O	8	Check pitot/static air pressure lines for condition and leaks, perform operational check.		
O[1]			9	Check ASPEN EFD1000 PFD and 1000 MFD (reversion mode) speed bands for compliance with instrument markings in the Pilot's Operating Handbook. Correct data if necessary per ASPEN Installation Manual.		
O[1]			10	Check ASPEN EFD(s) in accordance with Aspen ICA (Doc. # 900-00012-001 latest Revision).		
O[1]		O	11	Check MVP-50P per Electronics International Inc. ICA.		
O[1]		O	12	Check Garmin G5 for proper operation, secure attachment, integrity of connectors and wiring, cleanliness, leakage of hoses and tubes, and any evidence of damage.		
O[2]			13	If the optional Garmin G5 backup battery is installed, perform Garmin G5 *Battery Capacity Check* as per Garmin G5 *Maintenance Manual* (see Chapter 1).		

1 *Annual, every 12 calendar months*
2 *On the recommendation of the manufacturer, annual, every 12 calendar months*

as specified	each 50 hours	each 100 hours	Inspections (Date: / Serial No.: / Inspector: / Mechanic:)			
O[1]			14	Perform Garmin G5 Unit *Altimeter System Test* per Garmin G5 *Maintenance Manual* (see Chapter 1, c.f. step 8)		
				Electrical system		
	O	O	1	Check engine bonding.		
	O	O	2	Check tank bonding (wing- and center tank).		
		O	3	Check system wiring free from fraying or cracks.		
		O	4	Visually inspect battery and attachment.		
	O	O	5	Charge battery as per CONCORDE Service Instructions.		
O[2]			6	Perform battery capacity check.		
				General		
O[3]	O	O	1	Perform checks given for special equipment installed. Refer to manufacturer instructions and the *Handling, Servicing and Maintenance* paragraphs of the related POH supplements.		
O[3]	O	O	2	Perform checks and maintenance for the ELT. Follow the applicable instructions prepared by the respective ELT manufacturer (Refer to chapter 1).		
O[3]	O	O	3	Reinstall access panels as per chapter 51.		
	O	O	4	Check landing light for function.		
O[3]	O	O	5	Aircraft conforms to specifications of respective authority		
O[3]	O	O	6	All required airworthiness directives complied with.		
O[3]	O	O	7	All EXTRA mandatory Service Bulletins complied with.		
O[3]	O	O	8	All vendor Service Bulletins and Service Letters complied with.		
O[3]	O	O	9	Check for proper flight manual.		
O[3]	O	O	10	Aircraft papers in proper order.		

1 every 24 calendar months
2 Annual, each twelve calendar months or 200 h, whichever comes first
3 as required

05-20-05 Significant Items Inspection

Every **1000 flight** hours the "Significant Items Inspection" must be performed **in addition** to the 100-hour inspection.

It is recommended to replace all bolt connections, which are affected by this inspection. A complete inspection kit "EA300LT 1000 Std.Insp" is available from EXTRA.

1000 hours		Date: / Serial No.:	Inspector: / Mechanic:	
		Inspections		
		Wing		
O	1	Remove wing as per chapter 57.		
O	2	Inspect main spar bolts and auxiliary spar bolts for wear, grooves, dents and cracks.		
O	3	Magnaflux or fluorescent dye-check of the wing main spar bolts by authorized personnel is required.		
O	4	Remove ailerons as per chapter 27.		
O	5	Remove strobe/navigation lights as per chapter 33.		
		Leading edge		
O	6	Detailed visual inspection on the surface for erosion, scratches, stone nicks and impact damages.		
O	7	Detailed visual inspection on the top to bottom shell bonding for dents, cracks and delaminations.		
		Main spar section		
O	8	Check skin to spar bonding for delaminations by coin tapping (refer to chapter 20-10-05).		
O	9	Detailed visual inspection on the sparweb for dents, cracks and delaminations by visual inspection through wing access holes and strobe/navigation light openings using a boroscope.		
		Auxiliary spar section		
O	10	Check bonding skin/spar for delamination by coin tapping .		
O	11	Detailed visual inspection on the aux. spar web for dents, cracks and delaminations. Pay particular attention to the cutout for aileron cantilever.		
O	12	Inspect aileron cantilevers for cracks and deformations. Check for proper surface protection.		

1000 hours		Date: / Serial No.:	Inspector: / Mechanic:	
		Inspections		
O	13	Inspect aileron cantilever bearings for play. Check for free movement and cleanliness.		
O	14	Inspect attachment fitting for cracks, damage and corrosion. Check for link bolts security.		
		Spar carry-through		
O	15	Check main bolt sleeves for secure bonding to the spar.		
O	16	Visually inspect spar for dents and cracks. Inspect for delaminations by coin tapping.		
		Wing trailing edge		
O	17	Check top to bottom shell bonding for cracks and delaminations by coin tapping (refer to chapter 20-10-05).		
		Root and Tip		
O	18	Check metall fittings (power supply support) for secure bonding to the carbon laminate.		
O	19	Inspect grounding wires, pitot/static hoses and attachments.		
O	20	Inspect rivets of electrical bonding visually.		
O	21	Inspect root rib for cracks, delaminations and insecure bonding to skin and spars by coin tapping (refer to chapter 20-10-05).		
O	22	Check tip area visually for general condition (inside by boroscope through strobe/navigation light opening).		
		Surface general		
O	23	Check paint visually for general condition (blisters etc.).		
O	24	Check laminate for erosion, scratches and nicks.		
O	25	Visual inspect for damage caused by footsteps.		
		Aileron		
O	1	Check root and tip rib bonding to the skin laminate by coin tapping.		
O	2	Check skin to spar bonding for delaminations by coin tapping.		
O	3	Check top to bottom shell bonding for cracks and delaminations by coin tapping (refer to chapter 20-10-05).		
O	4	Check hinge points (mounting brackets) and actuator for damages and cracks. Ensure proper attachment.		

1000 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:	
O	5 Inspect spades visually for general condition. Check spade support for corrosion, cracks and deformations. Ensure proper attachment to aileron.			
O	6 Inspect ventilation holes for obstruction.			
	Surface general			
O	7 Check paint visually for general condition (blisters etc.).			
O	8 Check laminate for erosion, scratches and nicks.			
	Vertical Stabilizer			
	Leading edge			
O	1 Check surface for erosion, scratches, stone nicks and impact damages.			
O	2 Check left to right shell bonding for dents, cracks and delamination.			
	Front spar section			
O	3 Check skin to spar bonding for delamination by coin tapping (refer to chapter 20-10-05).			
O	4 Detailed visual sheet metal attachment fitting for damage, corrosion and link bolts security.			
	Rear spar section			
O	5 Check skin to spar bonding for delamination by coin tapping .			
O	6 Detailed visual inspection of rear spar web for dents, cracks and delamination. Pay particular attention to the cut out for rudder cantilever.			
O	7 Inspect cantilever bearings for play. Check for free movement and cleanliness.			
O	8 Check steel sleeve for secure bonding to the spar.			
O	9 Replace attachment bolts and stop nuts. Check for proper torque in accordance with chapter 20-10-02.			
	Root and Tip			
O	10 Check root rib for cracks, delamination and secure bonding to skin and spars by coin tapping.			
O	11 Inspect tip rib visually for general condition.			

1000 hours	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
	Rudder		
O	1 Remove rudder as per chapter 27.		
O	2 Inspect tip area bonding to the skin laminate by coin tapping.		
O	3 Inspect skin to lower horn rib bonding for delaminations by coin tapping and for cracks.		
O	4 Inspect skin to spar bonding for delamination by coin tapping.		
O	5 Inspect trailing edge bonding for cracks and delaminations by coin tapping.		
O	6 Detailed visual inspection of mounting brackets for damages and cracks. Ensure proper attachment. Replace bolts and stop nuts. Check for proper torque in accordance with chapter 20-10-02.		
O	7 Remove bottom hinge bracket and bellcrank as per chapter 27.		
O	8 Inspect rudder structure in the area of the bottom hinge for cracks and delamination by coin tapping.		
O	9 Reinstall bottom hinge bracket and bellcrank as per chapter 27.		
O	10 Check bellcrank for damage, cracks and proper attachment.		
O	11 Visually inspect ventilation holes for obstruction. Refer to chapter 05-20-01, Figure 1 "Drain and Vent Holes".		
O	12 Check paint visually for general condition (blisters etc.).		
O	13 Check laminate for erosion, scratches and stone nicks.		
	Horizontal Stabilizer		
O	1 Remove elevator as per chapter 27.		
	Leading edge		
O	2 Check surface for erosion, scratches, stone nicks and impact damage.		
O	3 Check top to bottom shell bonding for dents, cracks and delamination.		
	Front spar section		
O	4 Check skin to spar bonding for delamination by coin tapping.		
	Rear spar section		
O	5 Check skin to spar bonding for delamination by coin tapping.		

1000 hours		Date: / Serial No.:	Inspector: / Mechanic:	
		Inspections		
O	6	Inspect elevator cantilever bearings for play. Check for free movement and cleanliness.		
O	7	Inspect central attachment fitting for cracks, damage and corrosion. Check for link bolts security.		
		Spar carry-through		
O	8	Visually inspect spars for dents and cracks. Inspect for delaminations by coin tapping.		
O	9	Replace attachment bolts and stop nuts. Check for proper torque in accordance with chapter 20-10-02.		
O	10	Check steel sleeves for secure bonding to the spar.		
		Root and Tip		
O	11	Check root rib for cracks, delamination and secure bonding to skin and spars by coin tapping.		
O	12	Inspect tip area visually for general condition.		
O	13	Inspect tip area bonding to the skin laminate by coin tapping.		
		Elevator		
O	1	Check tip rib bonding to the skin laminate by coin tapping.		
O	2	Check bonding skin/spar for delaminations by coin tapping.		
O	3	Check trailing edge bonding and trim tab cutout for cracks and delamination by coin tapping.		
O	4	Detailed visual inspection of mounting brackets for damage, cracks and proper attachment. Replace stop nuts. Check for proper torque in accordance with chapter 20-10-02.		
O	5	Check center section for delamination by coin tapping.		
O	6	Remove elevator actuator.		
O	7	Detailed visual inspection of actuator lever for damage, cracks and proper attachment.		
O	8	Detailed visual inspection of mass balance attachments for deformation, corrosion, cracks and loose attachment.		
O	9	Detailed visual inspection of trim tab hinges, actuator lever for damage, cracks, excessive wear and proper bonding to the laminate. Detailed visual inspection for delamination.		
O	10	Inspect drain and vent holes for obstruction (refer to figure 1).		

1000 hours	Date: / Serial No.:	Inspector: / Mechanic:	
	Inspections		
	Surface general		
O	11 Check paint for general condition (blisters etc.).		
O	12 Check laminate for erosion, scratches, stone nicks and impact damages.		
O	13 Reinstall elevator actuator lever.		
	Fuselage		
O	1 Remove cuffs, main and bottom fuselage cover as per chapter 53.		
O	2 Inspect cuffs, main and bottom fuselage cover for soft areas, dents, cracks, delamination, damaged screw holes and tearing of edges. Inspect heat shield for cracks and loose rivets.		
O	3 Inspect tubular steel frame visually for corrosion, scratches and damages.		
O	4 Check wing main spar attachment for damage and corrosion. Inspect for dents and cracks.		
O	5 Detailed visual inspection of the sheet metal of the wing auxiliary spar attachment for damage, corrosion. Inspect the sheet metal supports using a fluorescent dye penetrant to insure no cracks are evident.		
	Control system		
O	1 Detailed visual inspection of torque tube for damages, cracks, free-play (especially in the rear torque tube bearing). Check travel stop adjustments.		
O	2 Inspect bell cranks for damage, corrosion, security of mounting and link bolts through wing access holes.		
O	3 Inspect control rods for corrosion.		
O	4 Inspect rod end bearing for play. Check for free movement and cleanliness.		
O	5 Inspect control rods for loose or popped rivets, and bearing play. Check for general condition.		
O	6 Inspect control sticks (rear & front) for full travel, proper rigging, free-play, security of mounting and direction of control surface movement with relation to stick movement.		
O	7 Check rod end bearings for free movement and cleanliness.		

1000 hours		Date: / Serial No.:	Inspector: / Mechanic:	
		Inspections		
O	8	Detailed visual inspection of control cables and PTFE-coating.		
O	9	Check condition, attachment and function of trim servo.		
O	10	Detailed visual inspection of trim tab actuator levers for damages and cracks. Ensure proper attachment and condition of friction.		
O	11	Check trim actuator rods for condition. Inspect for play.		
O	12	Check condition of trim bowden cable. Inspect for buckles and chafing.		
		Main landing gear		
O	1	Remove landing gear as per chapter 32.		
O	2	Remove wheels and brakes as per chapter 32.		
O	3	Visually inspect complete main landing gear spring for dents, cracks and deformations, especially in the area of mounting clamps and the axle attachments.		
O	4	Inspect main landing gear spring in the area of brakes for damage of overheating.		
O	5	Inspect the center bushing for wear and looseness.		
O	6	Check mounting clamps for damage and corrosion. Inspect for dents and cracks.		
O	7	Inspect mounting clamp bolts and nuts for fretting, wear, damage, and stretch. Check for proper torque (refer to chapter 20-10-03).		
O	8	Check brake discs for warping and wear. Inspect wheel brake cylinder mounting bracket for wear.		
O	9	Inspect brake lines for leakage, dents, cracks, chaffing, kinks and security of anchorage.		
O	10	Inspect axle attachment bolts and nuts for fretting, wear, damage, and stretch.		
O	11	Check tires for general condition.		

1000 hours	Date:	Inspector:	
	Serial No.:	Mechanic:	
	Inspections		
	Tail-wheel landing gear		
O	1 Inspect glass fibre spring visually for dents, cracks and delaminations.		
O	2 Inspect mounting bolts and nuts for fretting, wear, damage, stretch and proper torque.		
O	3 Check tail-wheel for general condition and function. Pay attention to the free movement of the rudder.		
O	4 Check connector springs for light precompression.		
O	5 Inspect wheelfork visually for damage, dents, cracks and corrosion.		
O	6 Inspect axle bolt and nut for fretting, wear, damage, and stretch.		
O	7 Check rubber tire for general condition.		
	Engine compartment		
O	1 Remove engine cowling halves.		
O	2 Check firewall for dents, cracks and deformation. Visual inspection of LJF PR 812 seals for porosity and general condition.		
O	3 Inspect tubular engine mount for dents, cracks and corrosion. Check all bolts for security and condition.		
O	4 Visual inspection of rubber mounts (shock mounts) for porosity and general condition.		
O	5 Inspect flexible hoses for damage and leakage.		
O	6 Check electric wiring for proper connection.		
O	7 If Plane Power alternator installed: Remove alt. field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less than .250” from edge of brush holder case.		
O	8 Check electrical bonding braids for proper connection.		
O	9 Visual inspection of inverted oil system for general condition according to CHRISTEN 801 instruction. Refer to the applicable TEXTRON LYCOMING Operator`s or Maintenance Manual (refer to chapter 1).		
O	10 Carry out general engine check as instructed by the applicable TEXTRON LYCOMING Operator`s or Maintance Manual (refer to chapter 1).		
O	11 Visual inspection of cowling for dents, cracks, delamination and smoke marks.		

1000 hours	Date: / Serial No.:	Inspector: / Mechanic:	
	Inspections		
	Hardware		
O	1 Check harness attachment fittings for cracks, deformations and corrosion.		
O	2 Check bolts and nuts in critical areas for fretting, wear, damage, stretch, proper torque and safety.		
O	3 Visual inspection of tank fastening straps for cracks, damage and corrosion.		
O	4 Visually inspect tanks and tank shell for leakage. Check proper drainage.		
O	5 Visual inspection of battery fastening straps for cracks, damage and corrosion.		
O	6 Check the "quick pins" of the seat adjustment for cracks, deformations and corrosion. Inspect wear and proper function.		
O	7 Visual inspection of rudder pedal mounting to the attachment fittings. Check bolts for security.		
O	8 Inspect instrument panel for cracks and damaged screw holes. Check proper attachment and support.		
O	9 Check instrument cover for dents, cracks, delamination, damaged screw holes and tearing of edges.		
	Surface general		
O	1 Visual check of paint for deteriorated paint.		
	General		
O	1 Reinstall the wing as per chapter 57.		
O	2 Check for security of the main spar bolts and safety-screws.		
O	3 Reinstall control surfaces as per chapter 27.		
O	4 Reinstall navigation/strobe lights as per chapter 33.		
O	5 Reinstall wheels and brakes as per chapter 32.		
O	6 Reinstall landing gear as per chapter 32.		
O	7 Reinstall wheel fairings as per chapter 51.		
O	8 Reinstall fuselage covers as per chapter 53.		

05-50-00 UNSCHEDULED MAINTENANCE CHECKS

Unscheduled checks are only performed following abnormal events, which could possibly have caused damage to the aircraft or impaired the airworthiness.

IMPORTANT

In case of abnormal events or any exceedance of given limitations (load factor, never exceed speed, etc.) the manufacturer has to be contacted to determine appropriate maintenance procedures. Therefore the procedures described in the following could be subject to changes.

05-50-01 Violent Stopping of the Engine (Propeller Strike)

Refer to Lycoming SB 533 (latest approved issue) if a propeller strike has occurred.

The propeller has to be checked and repaired by an authorized company according to MT-propeller instruction. Refer to MT-propeller "Operation- and Installation Manual E-124".

Magnetos must be overhauled according to Magneto Maintenance and Overhaul Manual (see Chapter 1).

05-50-02 Hard Landing

After an extremely hard landing or other unusual loads on the landing gear, perform a check as described in the following, even when there are no obvious signs of damage: If there are indications that structural parts are damaged, the manufacturer has to be consulted for possible and suitable repair methods.

	Inspections	Date: / Serial No.:	Inspector: / Mechanic:
	Landing gear		
O	1 Examine landing gear mounting clamps for defects (e.g. cracks and deformed areas).		
O	2 Check clamp bolts and anti abrasion strips of the landing gear for cracks and wear, replace when necessary.		
O	3 Examine wheel track and check if measurement corresponds to the value given in chapter 06-10-01.		
O	4 Remove and check the fairings for delamination, deformations and cracks.		
O	5 Check the landing gear spring for delamination, deformations and cracks, especially in the area of the axle and spring to fuselage attachment.		
O	6 Check fuselage structure in the area of landing gear attachment for deformation and cracks.		
O	7 Examine wheel base and check if measurement corresponds to the value given in chapter 06-10-01.		
O	8 Check tires for cuts in the side wall.		
O	9 Check wheel rim halves and brake discs for impacts, cracks and distortion according to CLEVELAND instruction.		
O	10 Check tail wheel for deformation and cracks, especially in the area of the axle attachment.		
O	11 Check fuselage structure in the area of the tail wheel for deformation and cracks.		
	Control surfaces		
O	12 Check control surfaces for proper operation.		
O	13 Check control surface hinges for cracks, security and free movement.		
O	14 Check the balance weights of the elevator for security of attachment.		
O	15 Check the spades for security of attachment.		
	Engine		
O	1 Check engine mount.		

05-50-03 Engine Fire

IMPORTANT **If a fire extinguisher has been used, clean engine mount and accessories immediately to prevent corrosion.**

For damage evaluation consult the manufacturer, before the aircraft is put back into service.

After an engine fire, perform a check as described in the following:

		Date:	Inspector:	
		Serial No.:	Mechanic:	
		Inspections		
O	1	Check all cables and hoses, replace when necessary.		
O	2	Clean engine and engine compartment.		
O	3	Check engine according to the Lycoming Manual		
O	4	Inspect firewall and engine cowling for damage by high temperatures (e.g. signs of blisters on the protective paint). If necessary renew LJF PR 812 seals. Protective paint does not need to be reapplied.		
O	5	Inspect engine cowling for delaminations by coin tapping.		

05-50-04 Lightning Strike

In the event of a lightning strike in flight or on ground check the following:

	Date:	Inspector:	
	Serial No.:	Mechanic:	
	Inspections		
O	1 Check engine according to Lycoming Service Bulletin 401.		
O	2 Check the skin of the strike area for burns and melting.		
O	3 Inspect bolts and fasteneners for burns and melting.		
O	4 Check the electrical system, with running engine, for correct operation.		
O	5 Check the avionics and antennas for correct operation.		
O	6 Check the magnetic compass for correct readings.		
O	7 Overhaul magnetos according to Magneto Maintenance and Overhaul Manual (see Chapter 1).		

05-50-05 Flightline Inspections

These checks include pre-flight and postflight checks, as they are described in Sections 3 and 4 ("EMERGENCY PROCEDURES" and "NORMAL PROCEDURES") of the PILOT´S OPERATING HANDBOOK. When the aircraft is in operation, perform these checks daily.

Chapter 6

Dimensions and Areas

Table of Contents

06-00-00 GENERAL

The for measuring and weighing the aircraft relevant reference planes are the following:

Reference Planes

Plane of upper longerons (horizontal plane)

Plane of rudder (Vertical/symmetry plane)

Fire wall plane (Vertical plane)

The following figure1shows the aircraft reference planes:

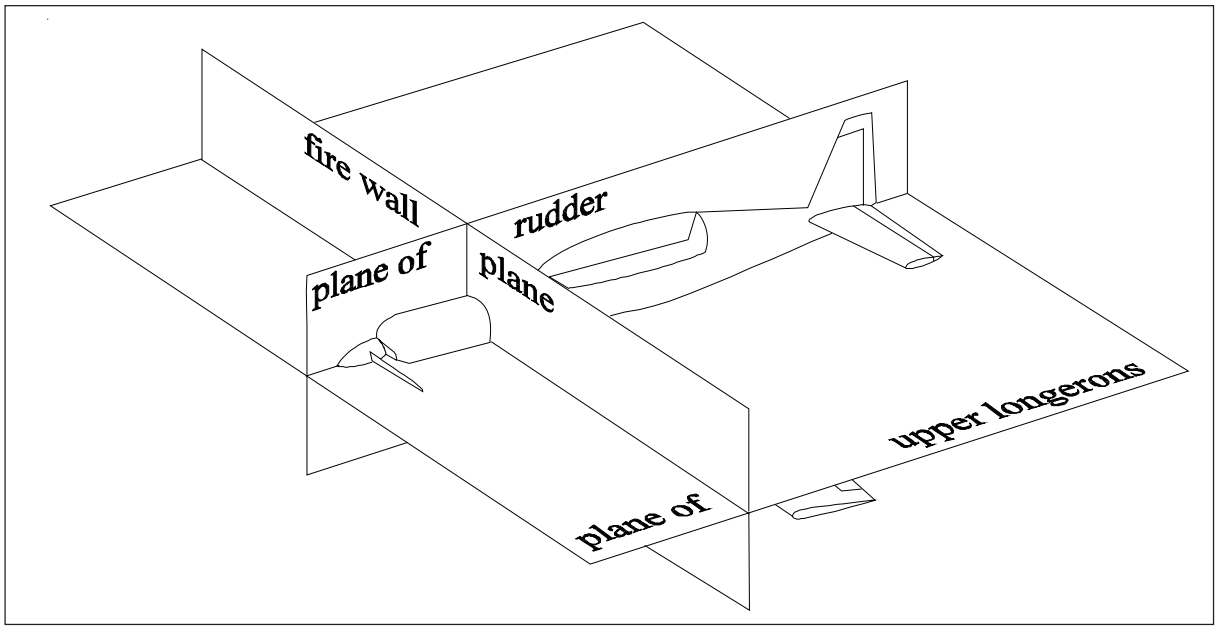


Figure 1 ***Axes and Planes***

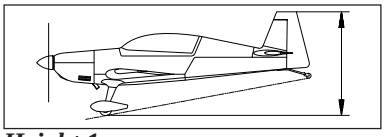
Unless otherwise stated, all measurements given in this manual are in metric (additional in feet) and are measured parallel to the corresponding reference planes.

06-10-00 MAIN DATA

06-10-01 Main Dimensions

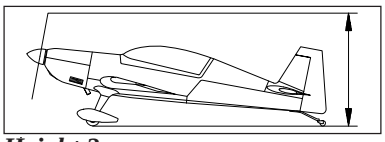
(Refer to figure 2 on page 6)

Length:	7.01 m (23.00 ft)



Height 1

Height 1:	2.62 m (8.60 ft)



Height 2

Height 2 :	2.59 m (8.45 ft)
Span:	8.00 m (26.25 ft)
Wheel base:	5.07 m (16.63 ft)
Wheel track:	1.80 m (5.91 ft)
MTOW:	Normal category & Acro III category 950 kg (2095 lbs) Acro II category 870 kg (1918 lbs) Acro I category 820 kg (1808 lbs)

06-10-02 Wing

Span:	8.0 m (26.25 ft)
Area:	10.84 m² (116.68 ft²)
Airfoil:	Root: NACA23015 (mod.) Tip: NACA23012 (mod.)
Chord:	Root: 1.88 m (6.17 ft) Tip: 0.843 m (2.77 ft)
MAC:	1.427 m (4.682 ft)
Aileron area:	2 x 0.757 m² (2 x 8.15 ft²)
Aileron deflection:	up 30°, down 20°, tolerance ± 2°

06-10-03 Horizontal Tail

Span:	3.20 m (10.50 ft)
Area:	2.55 m² (27.45 ft²)
Airfoil:	Wortmann FX 71-L-150/30

06-10-04 Elevator

Area:	0.772 m² (7.77 ft²)
Elevator-deflection:	up 25°, tolerance ± 2° down 25°, tolerance - 2°
Trim-tab-deflection:	up 35°, down 27°, tolerance ± 2°

06-10-05 Vertical Tail

Area:	1.38 m² (14.85 ft²)
Airfoil:	Wortmann FX 71-L-150/30

06-10-06 Rudder

Area:	0.52 m² (5.60 ft²)
Rudder deflection:	left 30°, right 30°, tolerance ± 2°

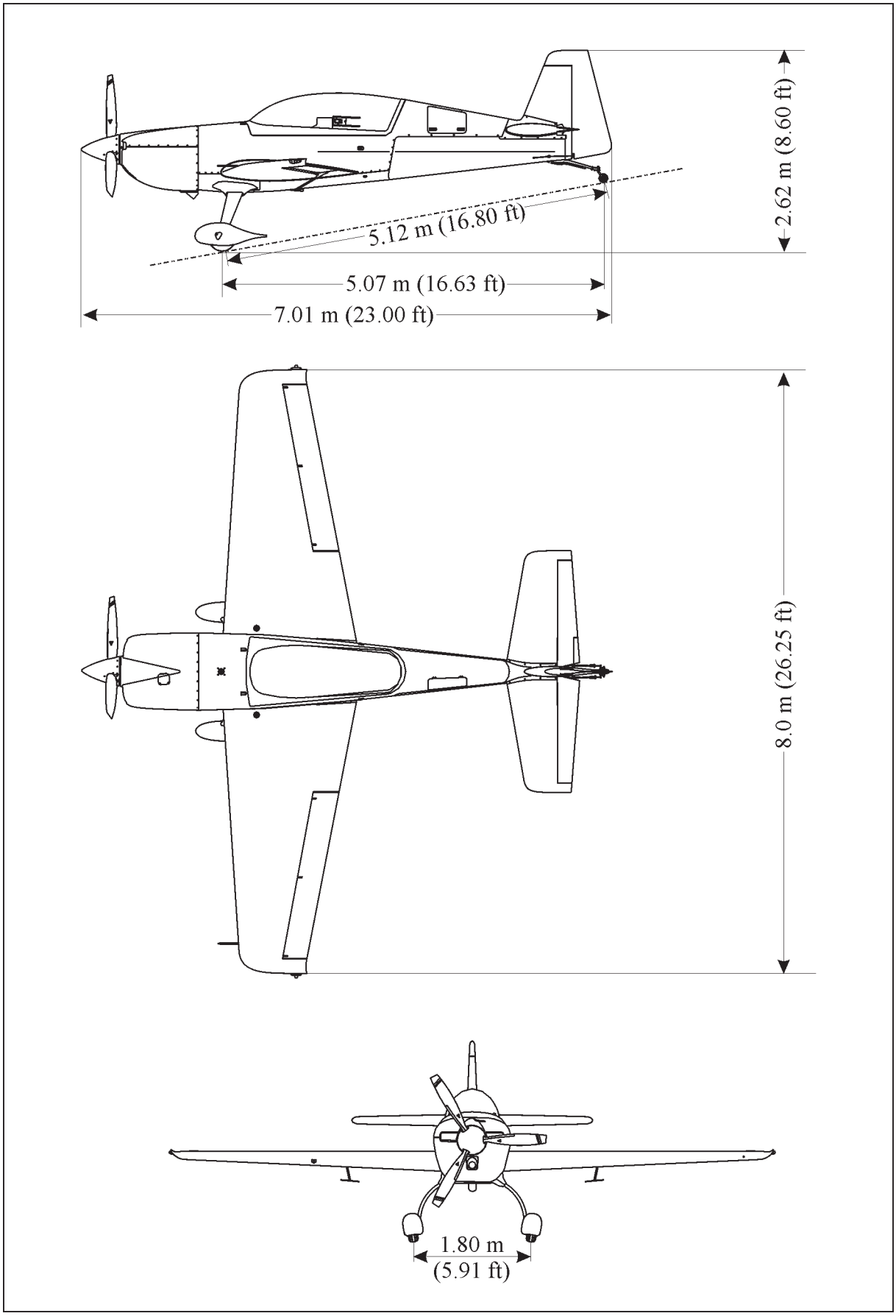


Figure 2 ***Three-View EXTRA 300LT***

Chapter 7

Lifting and Shoring

Table of Contents

07-10-00 JACKING

07-10-01 Balance Weight

Prior to the removal of the horizontal and/or vertical stabilizer(s) or prior to shoring the aircraft as described in chapter 07-20-00 it is necessary to weight the tail to prevent aircraft from tilting onto the nose. In this case follow the steps described below (refer to figure 1):

1 Put a weight (1) of min. 30 kg under the tail.

2 Remove the RH tail side skin and the tail cone access panel as per chapter 51.

3 Connect the weight with the now accessible steel tube (3) by means of a strap (2). Prevent damage of paint and control cables.

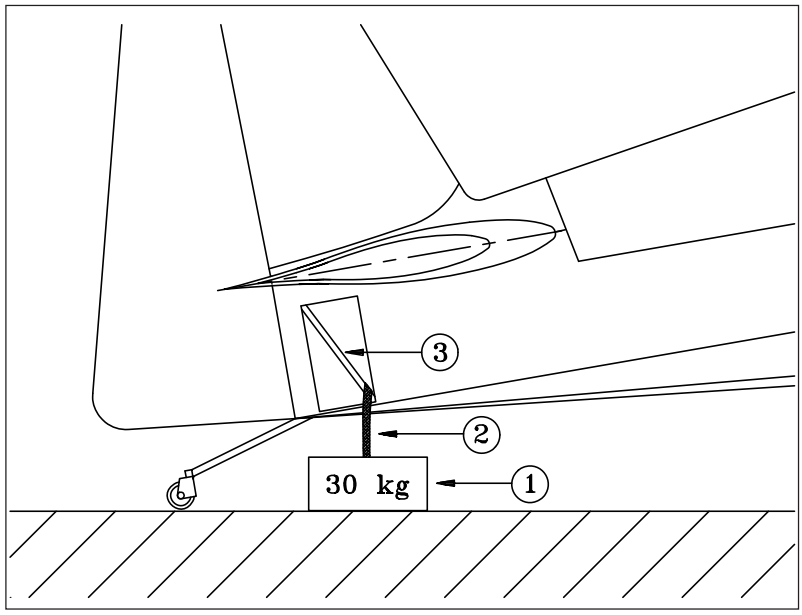


Figure 1 Balance Weight

07-20-00 SHORING

Shoring the Extra 300LT is necessary, when the main landing gear or the tail wheel has to be removed or installed.

07-20-01 Shoring the Front

1 Remove the engine cowlings as per chapter 71 and the bottom fuselage cover incl. cuffs as per chapter 53.

2 Install a balance weight (3, figure 2) at the tail as per chapter 07-10-01.

3 Hoist the aircraft by means of both engine hoisting points (1).

NOTICE

Prevent damage of ventilation tubing, brake lines and drains, when shoring the aircraft.

4 Shore the aircraft by means of two supports (2), which are to put under the left and right bottom longeron each in the area behind the landing gear as shown in figure 2. This is possible also, when the landing gear is installed.

WARNING

Maintain hoisting strap as a security device to prevent nose over of the aircraft during maintenance work.

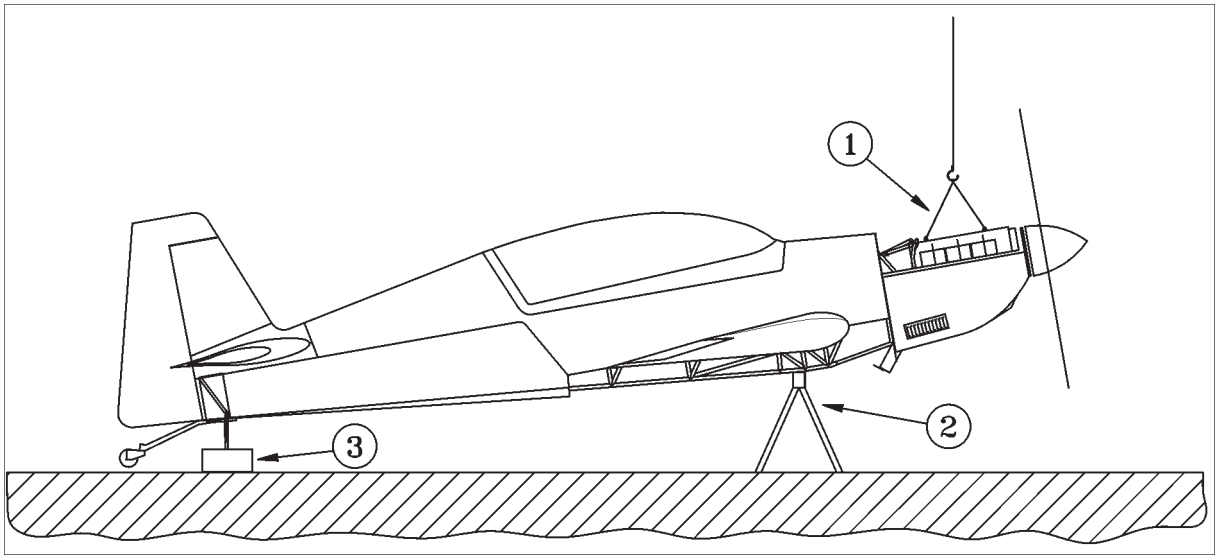


Figure 2 ***Shoring the Front***

07-20-02 Shoring the Tail

Refer to figure 3.

1 Secure the main wheels with wheel chocks.

2 Make available two approx. 2.5 feet high, approx. 1 foot wide and approx. 3 feet long supports.

3 Cushion the supports.

WARNING **Do not lift the tail higher than necessary for supporting. The aircraft may tilt onto the nose.**

NOTICE **Don´t handle the elevator when lifting the tail.**

4 Lift the tail some centimeters by handling carefully the horizontal fins and put the cushioned supports under each side of the horizontal stabilizer.

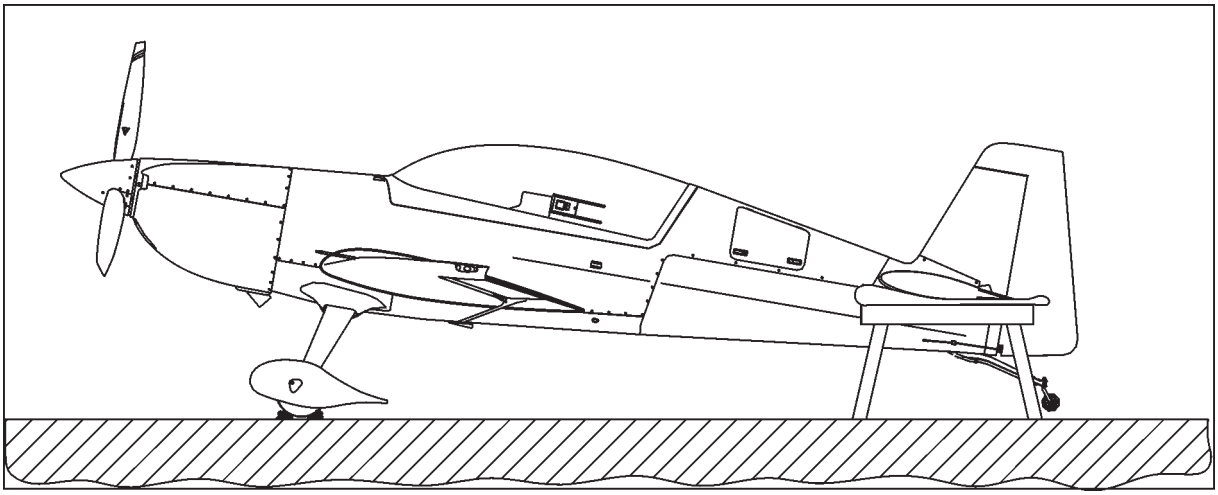


Figure 3 ***Shoring the Tail***

Chapter 8

Leveling and Weighing

Table of Contents

08-00-00 GENERAL

This chapter contains all information and procedures that are necessary for weighing and leveling the EXTRA 300LT and for determining the Center of Gravity.

Weigh the aircraft and determine the Center of Gravity each 5 years, after installation of additional equipment or after repairs.

IMPORTANT

Weigh, read the scales and calculate with carefulness. Incorrect weighing or determination of Center of Gravity can endanger the pilot and the aircraft.

08-10-00 WEIGHING AND CALCULATION OF C OF G

N O T E

Weigh the aircraft only on even floor and in closed shops (wind protected). Use three identical scales.

1 Ensure that the aircraft is fully equipped with equipment in locations according to the equipment list (Pilot´s Operating Handbook & Flight Manual (POH&FM), section 6.6).

N O T E

Empty weight includes unusable fuel.

2 Defuel the aircraft (wing tanks, center and acro tank) to the amount of unusable fuel.

3 Replenish engine oil to the minimum sump capacity for acrobatic flight (refer to POH&FM section 1.7)

4 Remove foreign objects (e.g. tools, luggage, parachutes).

5 Clean and dry the aircraft.

6 Put the rear seat to middle position and close canopy.

7 Weigh two of those wheel chocks that will be used for securing the main wheels. Enter the weight below in Page 5 "Tare weight scale 1/2 (chocks)".

8 Weigh the jack that will be used for jacking the tail wheel. Enter the weight below in Page 5 "Tare weight scale 3 (jack)".

9 Roll the main wheels onto the scales 1 and 2.

10 Level the aircraft as per chapter 08-20-00.

11 Drop perpendiculars from the underside of the fire wall, the centers of the main wheels and the tail wheel and mark on the floor to get the arms X_1 and X_2 (see page 6).

12 Enter the arms on Page 6.

13 Read the scales and enter the weights below. Calculate the net weights and transfer the values to page 6.

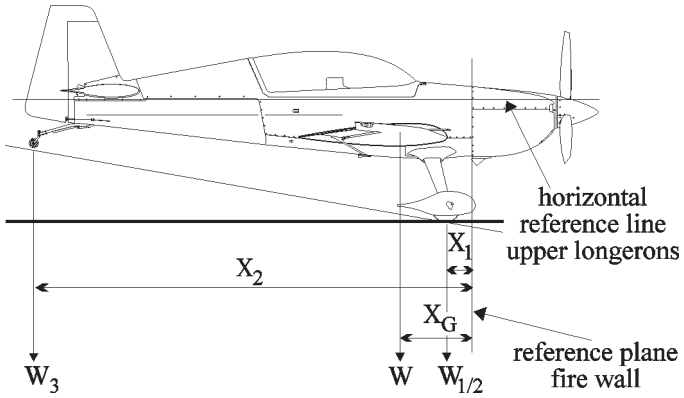
14 Calculate C of G using the formula given below (page 6).

Gross weight scale 1	..... kg
Tare weight scale 1 (chocks)	–..... kg
Net weight scale 1 (W_1)	..... kg
Gross weight scale 2	..... kg
Tare weight scale 2 (chocks)	–..... kg
Net weight scale 2 (W_2)	..... kg
Gross weight scale 3	..... kg
Tare weight scale 3 (jack)	–..... kg
Net weight scale 3 (W_3)	..... kg

Empty Weight and Center of Gravity Position
EXTRA 300LT

Data according to "TC Data-Sheet" and "Pilot´s Operating Handbook and EASA approved Airplane Flight Manual" Doc.-No.: EA - 0D701

Equipment according to Equipment List dated: . . . . . .



Legend:

X_1 = Arm: fire wall - main wheels
X_2 = Arm: fire wall - tail wheel
X_G = Arm: fire wall - Center of Gravity
W_1 = Net weight main wheel LH
W_2 = Net weight main wheel RH
W_3 = Net weight tail wheel
W = Empty weight

$$X_G = \frac{W_1 \cdot X_1 + W_2 \cdot X_1 + W_3 \cdot X_2}{W} \qquad W = W_1 + W_2 + W_3$$

Item	Weight	Arm	Moment
Main wheel LH	(W_1) . . . . . kg ·	(X_1) . . . . . cm =	. . . . . kgcm
Main wheel RH	(W_2) . . . . . kg ·	(X_1) . . . . . cm =	. . . . . kgcm
Tail wheel	(W_3) . . . . . kg ·	(X_2) . . . . . cm =	. . . . . kgcm
Empty weight	(W) . . . . . kg	**Total moment**	. . . . . kgcm

$$\frac{\text{Total moment}}{\text{Empty weight}} = X_G$$

Empty weight is (W) . . . . . kg*.

W_{min}: 646 kg
W_{max}: 723 kg (Normal Cat.)
W_{max}: 742 kg (Acro III)
W_{max}: 662 kg (Acro II)
W_{max}: 686 kg (Acro I)

Center of Gravity is (X_G) . . . . . cm aft fire wall.

Weighing performed by: . . . . . .

Aircraft Inspector: . . . . . Sign: . . . . . .

** If value exceeds the given tolerances, contact the manufacturer.*

08-20-00 LEVELING

NOTE

Level the aircraft only on even floor and in closed shops (wind protected).

1 Secure each main wheel with two wheel chocks.

WARNING

Do not lift tail wheel higher than necessary for leveling. The aircraft may tilt onto the nose.

NOTICE

Prior to levelling, ensure aircraft is clear of obstructions.

2 Lift tail and put the jack (height: ~90 cm (~3 ft)) under the tail wheel, which has to be in the rearmost position.

3 Level the aircraft to its horizontal reference line using a spirit level (2, figure 1), which is to put under the bolts of the rear main fuselage cover (1). Adjust pitch by changing the jack height.

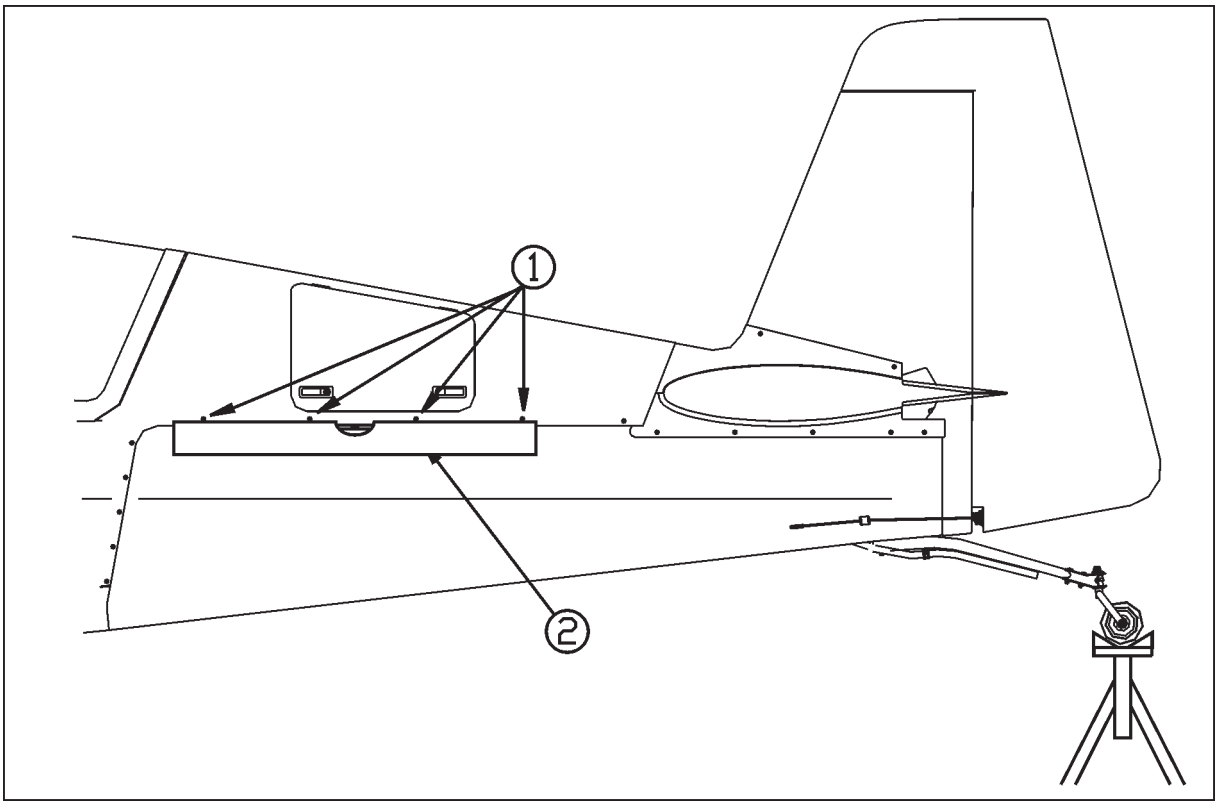


Figure 1 ***Leveling***

Chapter 9

Towing and Taxiing

Table of Contents

09-00-00 GENERAL

This chapter describes the procedures and precautions nescessary for proper ground handling of the EXTRA 300LT.

09-10-00 TOWING

DANGER

When preparing for ground handling operation ensure that the ignition switch is off.

The aircraft should be moved on the ground by hand without using a towing vehicle or tow bar. For moving the aircraft on the ground, push by hand the wing leading edges or pull at the inboard portion of the propeller blades.

09-20-00 TAXIING

Taxiing the aircraft shall be performed by qualified personnel only. All taxiing should be done at slow speed, and the controls should be positioned such that the effects of gusty wind are minimized.

NOTICE

Taxiing over loose gravel or cinders should be done at low engine speed to minimize damage to the airframe surfaces due to stone damage.

The aircraft is taxiing as follows:

1 Start and warm engine up in accordance with the Pilot´s Operating Handbook (PN: EA-0D701) section 4.3 "Starting Procedures".

NOTICE

Only operate with the propeller at minimum blade angle (High RPM).

2 Taxi forward a few feet and check brake effectiveness.

3 While taxiing, make shallow turns to test the brakes and the steerable tail wheel if installed.

4 Keep the Mixture in "FULL RICH" position.

Chapter 10

Parking, Mooring, Storage and Return to Service

Table of Contents

10-00-00 GENERAL

This chapter provides the procedures recommended to park or to moor the aircraft so that the likelihood of ground damage is minimized.

10-10-00 PARKING/STORAGE

Always park the aircraft with the nose in the wind. Additionally both main wheels must be chocked fore and aft to prevent movement of the aircraft.

NOTICE

When chocking the wheels, ensure that the chocks used are not too large to come in contact with the wheel fairings. The use of chocks that are too large may damage the fairings.

NOTE

For maximum protection, hangar the aircraft during severe weather and strong winds.

Outdoor storage requires adequate mooring and tie-down facilities. The following precautionary measures are recommended for keeping the aircraft serviceable and ready-to-fly.

1 Refer to chapter 10-20-00 "Mooring" for mooring instructions.

⚠ DANGER

Do not rotate the propeller with the master switch on and the battery connected. The engine could start unintenionally and may course serious injuries or death.

2 Maintain an oil film on internal engine parts, frequently rotate the propeller. Run the engine for 15 minutes at 1500 RPM (or until oil temperature normalizes) once every two weeks.

3 After the engine run, pressurize the fuel system, push the mixturecontrol to RICH, and open throttle half way to fill the fuel injector with fuel.

4 Install protective covers over pitot tube, engine cowling openings, canopy, etc.

5 Maintain a good wax finish on all exterior surfaces.

10-20-00 MOORING

This section provides the procedures recommended for a normal tie-down of the aircraft.

Proper tie-down procedure is the best precaution against damage to the aircraft by gusty or strong winds. To tie-down the aircraft securely, proceed as follows:

1 Head the aircraft into the wind

2 Place chocks fore and aft of each main wheel.

When chocking the wheels, ensure that the chocks used are not too large to come in contact with the wheel fairings. The use of chocks that are too large may damage the fairings.

3 Drive stakes into the ground approximately three feet outboard of each wing tip and to either side of tail wheel.

4 Install plastic washers and tie-down rings to the rear attachment point of the wing tip, if no sighting device is installed.

5 Tie a sufficiently strong rope to each wing tie-down ring and anchor to the ground stakes. Allow a little slack in each tiedown rope.

6 Tie the center of the rope to the tail wheel fork and anchor the rope ends to the ground stakes at either side of the tail wheel.

7 Ensure that the canopy and the baggage compartment is closed waterproof and locked.

10-30-00 RETURN TO SERVICE

If the aircraft has been storage for an extended period of time, it is advisable to perform a 50-hour periodic inspection. Refer to chapter "05-20-04 Scheduled Maintenance Checks".

Chapter 12

Servicing

Table of Contents

12-00-00 GENERAL

This chapter describes the procedures and precautions nescessary for proper servicing of the EXTRA 300LT. The specified intervals (refer to chapter 5) are considered adequate to meet average requirements under normal operating conditions.

It is advisable, however, to shorten service and maintenance intervals when operating under abnormal conditions, such as extreme temperature ranges, dusty atmospheric conditions, high humidity and moisture, unimproved airport facilities, or unusual operating requirements.

12-10-00 REPLENISHING

The replenishing procedures contained in this section provide the proper methods for replenishing consumed fuel, engine oil and brake fluid. Also included are methods for inflation of tires.

12-10-01 Refueling

Refueling is accomplished by pumping or pouring fuel into the two wing tanks and the center tank through their respective filler caps. When fueling the aircraft, the following safety precautions must be followed:

⚠ DANGER **Never refuel the aircraft with the engine running.**

* **Always ensure that the aircraft is grounded before refueling. Use the exhaust endpipe.**
* **Ensure that no one is smoking within 100 feet of the aircraft.**
* **Ensure that all aircraft electrical systems are deenergized while refueling.**
* **Ensure that no aircraft radar or powerful transmitters are operating within 100 feet of the aircraft during fueling.**
* **If fuel is spilled, ensure that the area of spillage is thoroughly flushed with water and that all residual fuel and vapor have dissipated or neutralized prior to starting the aircraft engine.**

Fuel Grade and Limitations

The recommended minimum aviation grade fuel for the AEIO-580-B1A engine is AVGAS 100 or 100LL.

IMPORTANT

Under no circumstances should fuel of lower octane rating or automotive fuel (regardless of octane rating) be used. It is recommended that personnel be familiar with Service Instruction No.1070 regarding specified fuel for Lycoming engines.

Fuel System Capacities

Wing tank LH	76 L	(20.1 US Gallons)
Wing tank RH	76 L	(20.1 US Gallons)
Center tank	60 L	(15.9 US Gallons)
Acro tank	9 L	(2.3 US Gallons)
Total fuel capacity	221 L	(58.4 US Gallons)
Usable fuel capacity	209 L	(55.2 US Gallons)
Usable fuel capacity for acrobatic	67 L	(17.7 US Gallon)

IMPORTANT

For acrobatic flight wing tanks must be empty.

IMPORTANT

After refueling, it has to be ensured that both fuel tank caps are securely installed prior to flight.

Additionally one has to wait at least five minutes for moisture and sediment to settle before draining and checking the fuel drain valves.

12-10-02 Defueling

DANGER

During aircraft defueling observe the safety precautions specified in section "12-10-01 Refueling".

Using appropriate containers, defuel the aircraft by opening both wing tank, the gascolator and the center tank drain valves.

The wing tanks and the center tank can be drained independently from the complete system by opening only the respective drain valves. Always drain both wing tanks simultaneously.

After wing tank defueling, drain the fuel line connecting the wing tanks as follows:

1 Place appropriate container under the 3-port tee-block fitting under the copilot seat.

2 Disconnect one wing tank line from the the 3-port tee-block fitting.

3 Allow draining the fuel which remained in the fuel line.

4 Reinstall the fuel line to the 3-port tee-block fitting.

12-10-03 Fuel Drains

The EXTRA 300LT has four fuel drain valves for drainage of moisture and sediment. One fuel drain valve labelled WING TANK DRAIN is located in the root section of the underside of each wing. The fuel drain valve for the center and acro tank (CENTER TANK DRAIN) is located at the bottom of the fuselage in the area of the landing gear. Another fuel drain valve which is interconnectecd to the fuel gascolator is located in the lowest point at the right side of the firewall (GASCOLATOR DRAIN).

DANGER

Do not drain the fuel system when the engine or the exhaust is hot or when the wind is strong.

A quantity of fuel must be drained prior to the first flight of the day and at least five min. after refueling to inspect for

water and/or contamination. Continue draining until free of water or contamination.

IMPORTANT

After draining, make sure that the fuel drain valve is returned to the closed position and the valve is not leaking outside the aircraft.

12-10-04 Replenishment of Engine Oil

The engine oil replenishment is accomplished by pouring oil into the oil filler tube. The oil quantity can be conveniently checked by use of the dipstick, which is attached to the oil filler cap.

Oil quantity

The oil quantity is checked as follows:

1 Check oil level after engine has been stopped long enough for oil to drain back into sump.

2 Open the hatch on the upper part of the cowling.

3 Unscrew oil filler cap with dipstick from engine oil filler tube.

4 Remove oil filler cap with dipstick from engine and wipe oil from dipstick with a clean cloth or paper towel.

5 Return oil filler cap with dipstick into oil filler tube and tighten finger tight.

6 Unscrew and remove oil filler cap with dipstick. Check oil level on dipstick versus the markings stamped on the dipstick.

7 If replenishment is required see "Replenishment of Engine Oil" below.

8 Return oil filler cap with dipstick into oil filler tube and tighten oil filler cap finger tight.

NOTICE

When tightening the oil filler cap ensure that it is secure. But do not overtighten, as this may damage the "O" ring seal in the cap.

9 Close the hatch on the upper part of the cowling.

Replenish engine oil

Replenish engine oil using oil of the following specification:

Aviation Grade Straight Mineral oil

MIL-L-6082 or SAE J1966 Aviation Grade Straight Mineral oil shall be used to replenish oil supply during the first 25 hours of operation and at the first 25-hour oil change. Continue to use this grade of oil the first 50 hours of operation or until oil consumption has stabilized. The aircraft is delivered from EXTRA-Flugzeugproduktions- und Vertriebs GmbH with proper break-in oil (MIL-L-6082 Aviation Grade Straight Mineral oil).

Ashless Dispersant Oil

MIL-L-22851 or SAE J1899 Ashless Dispersant Oil shall be used after the first 50 hours of the engine operation.

Additive Oil

If an engine has been operating on straight mineral oil for several hundred hours, a change to additive oil should be undertaken with caution. If the engine is in an extremely dirty condition, the switch to additive oil should be deferred until after engine has been overhauled.

When changing from straight mineral oil to additive oil take the following precautionary steps:

IMPORTANT

Do not mix additive oil and straight mineral oil. Drain straight mineral oil from engine and fill with additive oil.

* **Do not operate engine longer than five hours before again changing oil.**
* **Check oil screen for evidence of sludge.**

Change oil and clean oil screen element every 10 hours if sludge is evident. Resume normal oil drain periods after sludge conditions improve.

Recommended Viscosity of Engine Oil:

Average Ambient Air Temperature	MIL-L-6082 or SAE J1966 Spec. Mineral Grades	MIL-L-22851 or SAE J1899 Spec. Ashless Dispersant Grades
All Temperature	----------	SAE 15W50 or SAE 20W50
Above 27°C (80°F)	SAE 60	SAE 60
Above 16°C (60°F)	SAE 50	SAE 40 or SAE 50
-1°C (30°F) to 32°C (90°F)	SAE 40	SAE 40
-18°C (0°F) to 21°C (70°F)	SAE 30	SAE 30, SAE 40 or SAE 20W40
-18°C (0°F) to 32°C (90°F)	SAE 20W50	SAE 20W50 or SAE 15W50
Below -12°C (10°F)	SAE 20	SAE 30 or SAE 20W30

N O T E

Refer to latest revision of Lycoming Service Instruction No. 1014 for further information.

Replenish engine oil as follows:

1 Open the hatch on the upper part of the cowling and unscrew oil filler cap.

2 Using a clean paper towel wipe any oil foreign material from the edges of the oil filler tube opening. Also wipe oil from the dipstick.

3 Pour oil of proper specification and viscosity into oil filler tube to achieve desired oil level.

4 Reinstall oil filler cap with dipstick and tighten finger tight. Close the hatch on the upper part of the cowling and secure engine cowling.

Oil System Capacities:

	U.S. Quarts	Liters	Imp. Quarts
Total Engine Capacitiy	16	15.18	13.32
Minimum Safe Quantity	9	8.53	7.49

12-10-05 Oil Change

The engine oil must be changed after 25 hours of operation. It should be refilled in accordance with section "12-10-04 Engine Oil Replenishing" and the latest revision of Lycoming Service Instruction No. 1014.

At the time of oil change the engine oil screens should be removed, cleaned, and inspected for metal particles.

Change engine oil as follows:

1 Remove the cowling of the aircraft.

2 Cut the safety wire securing the oil drain plug.

3 Place a suitable container under the oil drain.

4 Unscrew engine oil drain plug and allow the oil to drain thoroughly.

5 Remove oil pressure screen housing from engine accessory housing.

6 Remove oil pressure screen from its housing.

7 Inspect oil pressure screen for metal particles and clean it.

8 Reinstall oil pressure screen in its housing.

9 Reinstall oil pressure screen housing to the engine accessory housing using a new gasket.

IMPORTANT **Ensure oil sump is empty prior to the following step.**

10 Disconnect oil hose from oil suction sump fitting.

11 Cut the safety wire and remove the hex sump plug with oil suction sump fitting.

12 Remove oil suction screen from sump, inspect for metal particles and clean it.

NOTICE

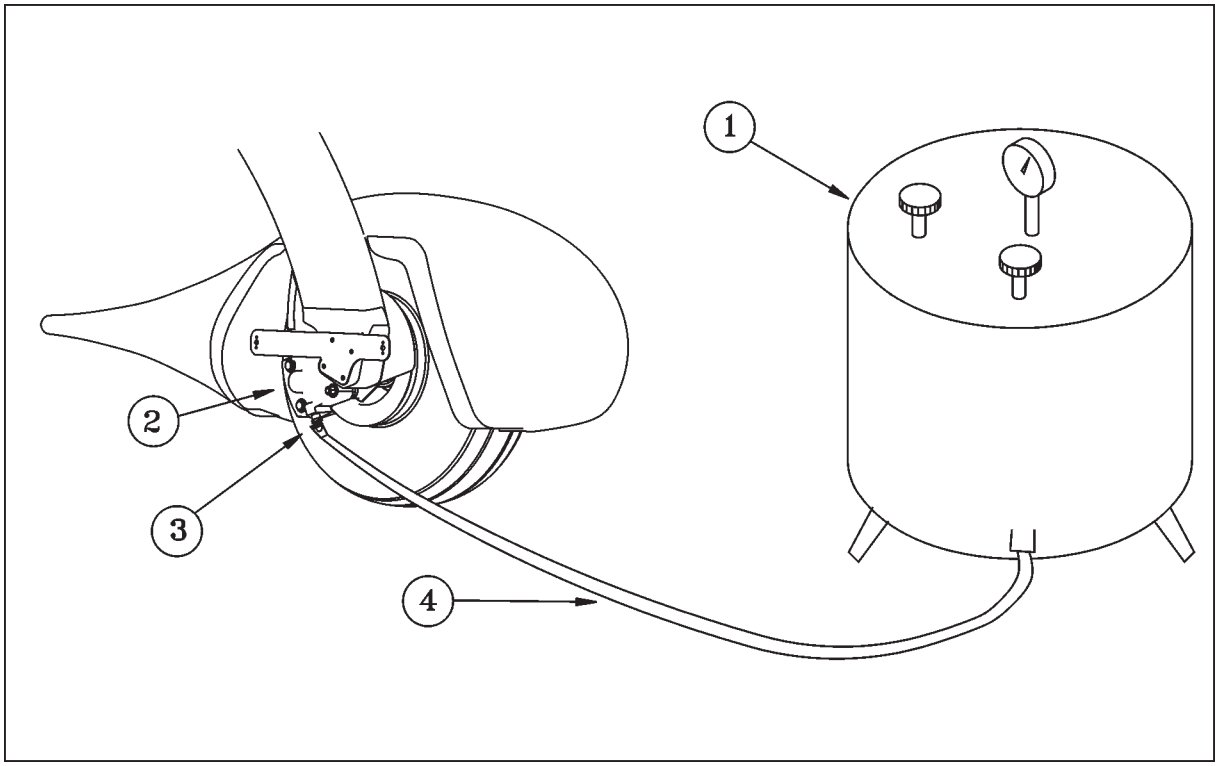
When the oil suction screen is removed, extreme care must be taken to ensure that the sump plug, located in the extreme end of the scavenger oil chamber is not dislodged from its location. If this plug is not secure in its correct location, a lubrication failure will occur with severe damage to the engine.

13 Reinstall the oil suction screen.

14 Reinstall hex sump plug using a new O-ring and secure with wire.

15 Connect oil hose with oil suction sump fitting. Fitting can be alligned by loosening and refastening its counternut.

16 Replenish oil as per Chapter 12-10-04.



12-10-06 Replenishment of Brake Fluid

In order to assure proper brake action, it is necessary to have positive transfer of hydraulic pressure through the system. Any air trapped in the system must be removed. Follow the procedure described below using a bleed tank (1, figure 1):

1 Remove engine cowlings as per chapter 51.

2 Remove wheel fairing cover plates as per chapter 51.

3 Remove fluid reservoir filler plug and screw a clear plastic hose with appropriate fitting into the filler hole at the top of the fluid reservoir.

4 Remove bleeder fitting cap (3) of the wheel brake assembly (2).

Figure 1 ***Replenishment of Brake Fluid***

5 Be certain that the bleeding equipment to be used is absolutely clean and is filled with brake fluid that conforms to Specification MIL-H-5606, (refer to Chapter 05-20 Lubrication Charts) and is uncontaminated.

6 Maintain an adequate supply of fluid during the entire operation. A low fluid supply will allow air to be drawn into the system.

7 Ensure master cylinders are in neutral position.

8 Attach the connector hose (4) to the bleeder fitting.

9 Turn the bleeder fitting 1/2 rotation to the left for opening.

10 Slowly pump clean hydraulic fluid in the system. Bleeding should continue until no more air bubbles are expelled from the system (observe the immersed end of the clear hose), and a firm brake pedal is obtained (fill each side of the system with min. 0.33 ltr (0.1 U.S Gallons) for complete change).

11 Fill the fluid reservoir up to full reservoir capacity.

12 Reinstall fluid reservoir filler plug.

13 Close bleeder fitting.

14 Disconnect the connector hose.

15 Reinstall bleeder fitting cap.

16 Check the brake operation.

17 Reinstall engine cowlings and wheel fairing cover plates.

12-10-07 Tire Inflation

For the EXTRA 300LT the required tire pressure is 3.4 bar (49 psi) for both main wheels.

Open the tire inflation access cap and use regulated air pressure.

12-20-00 SCHEDULED SERVICING

12-20-01 Exterior Cleaning

The painted surface of the aircraft features a long lasting, all-weather finish and should require no buffing or rubbing out in normal conditions. However, it is desirable to wash and polish it to preserve the outstanding exterior. Cleaning is best accomplished with cool water, mixed with a mild aircraft detergent, if required.

NOTICE

Do not use so called "mild" household detergents to wash aircraft exterior. Such detergents may damage finish and corrode aluminum components.

In order to remove especially heavy dirt from the wing leading edges due to insect splatter and the like, it is good practice to perform cleaning immediately after the flight, since deposits of this kind are more difficult to remove when dry. All lubricated components are to be covered before cleaning.

Roughly twice a year, the complete surface should be treated with a non-silicone car polish and repolished to high gloss. But do not apply wax or use pre-wax cleaners during initial paint curing period. Use only mild aircraft detergent and cool water when washing exterior during the first 90 days after repainting.

NOTICE

Never use cleaning agents containing silicone!

In order to maintain good visibility at all times, the canopy Plexiglas should be given good care and kept clean at all times. Techniques and materials used to clean glass should be avoided since Plexiglas is softer than glass and subject to damage by solvents and abrasive glass cleaning agents.

Therefore pay particular attention to using ample water applied with clean sponges and leather, otherwise even the smallest dust particles will tend to scratch the glazing.

NOTICE

Never polish plexiglass dry!

Dull or scratched canopy sections can be returned to their transparent state by treating them with especially formulated plexiglass cleaning agents.

12-20-02 Interior Cleaning

Prior to the first acrobatic flight of the day it is recommended to clean the interior with a vacuum cleaner to remove dust and loose dirt. If liquid is spilled on the cockpit floor, blot it up promptly with cleansing tissue or rags. Continue blotting until no more liquid is taken up.

NOTICE

Never use gasoline, benzine, alcohol, acetone, carbon tetracloride, fire extinguisher fluid, anti-ice fluid, lacquer thinner, or glass cleaner to clean the canopy. These materials will damange the canopy and may cause severe crazing.

12-20-03 Engine Cleaning

Accumulation of dirt and oil within the engine compartment creates a fire hazard and hampers inspection. All cleaning operations have to be performed in well ventilated work areas, and it is ensured that adequate fire-fighting and safety equipment is avaiable.

The engine is cleaned as follows:

1 Allow the engine to cool before cleaning.

NOTICE

The magnetos, alternator, starter, the air inlets and the engine cowling must be protected against cleaning agents. The inside of engine cowling is covered with water soluble fire protection paint (up to SN LT024).

3 Wash down engine compartment using a non-flammable engine cleaning agent.

4 Thorougly rinse with clean, warm water to remove all traces of cleaning agents.

5 It is very important not to start the engine before the cleaning agent has been completely removed or has evaporated.

12-30-00 UNSCHEDULED SERVICING

12-30-01 Removal of Snow and Ice

After snowfall, the snow should be removed immediately from the surfaces of the aircraft. Otherwise the water formed from melted snow will freeze on the surface or in slots and gaps of fairings.

NOTICE

Do not use sharp tools for removing the snow.

If the aircraft shows sign of ice formation, it is recommended to defrost in a room. Remove as much snow as possible with a soft bristle boom, make sure the wheels and brakes are clear, and tow the aircraft into a room with elevated temperature. This method is particularly desirable, since it will melt any undetected ice and snow that could constitute a flight hazard.

Chapter 20

Standard Practices - Airframe

Table of Contents

20-00-00 GENERAL

The design of the airframe is according to standard procedures and requires no special tools or procedures for maintenance. For that reason, only the bolts used in the Extra 300LT with relevant torque values and measuring techniques are described in the following.

20-10-00 STANDARD PRACTICES AIRFRAME

20-10-01 Type of Bolts

For the Extra 300LT, LN-bolts (LN="Luftfahrt Norm"), AN-bolts (AN="Army/Navy") and DIN-bolts (DIN="Deutsche Industrie Norm") are used. The type of bolt can be identified by the designation on the bolt head and by the surface treatment.

LN-Bolts

Hex head LN 9037, LN 9038 K and LN 9355 aircraft bolts are made of high-strength type 1.7220.5 alloy steel. The bolts are centerless ground, threaded after heat treatment and cadmium plated per specification LN 9368-3000.2.

Bolts according LN 9037 are standard aircraft bolts with undrilled shank. The specification LN 9355 indicates bolts with shanks drilled for cotter pins. The specification LN 9038 K indicates bolts with drilled head for safety wire and a shank up to the head.

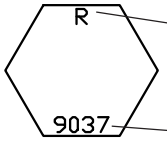
The added numbers after the dash of bolt spec. indicates the dimensions of the bolt. These numbers are not marked on the head of the LN bolt. Measure the diameter and length to specify the type dimension of the LN bolt. The length of a LN aircraft bolt is measured from under the head to the end of the shank.

Example: LN 9037-08042

Bolt Head Identification

Metric thread size
(08 = M8 = 8 mm/0.31 inch)
and Length
(042 = 42 mm/1.65 inch)

Bolt Head:



Letter (R,L,P,H = Identification of Manufacturer)

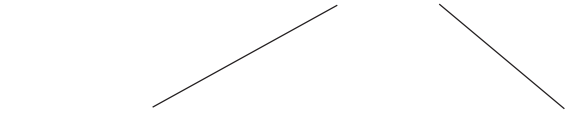
LN Specification

AN-Bolts

Hex head AN aircraft bolts are made of high-strength type 4037 or 8740 alloy steel. The bolts are centerless ground, threaded after heat treatment and cadmium plated per specification QQ-P-416A, Type II, Class 3.

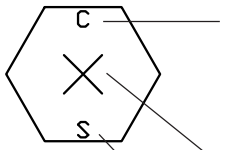
For the Extra 300LT bolts with shanks drilled for cotter pins or drilled heads for safety wires are used. The adding letter "A" after the dash number specifies bolts with undrilled shank. For bolts with drilled head a letter "H" is added after the AN number. The length of AN aircraft bolts is measured from under the head to the end of the shank.

Example: AN 3 - 5A



Bolt Head Identification
Diameter $^{3}/_{16}$" (4.8 mm)

AN hex head bolt
Length $^{5}/_{8}$" (15.9 mm)
Undrilled shank



Letter (Identification of Manufacturer, not always given.)

Cross (Alloy Steel)

Letter (special bolt) (also adjacent)

DIN-Bolts

Hex head DIN 931, DIN 933 and hex socket head DIN 912 bolts are standard bolts made of steel with undrilled shank. The surface treatment is chromatized yellow.

Unlike the DIN 931 and DIN 912 the shank of a DIN 933 bolt goes up to the head. The numerical code shown on the head of a DIN bolt specifies the strength type. Also, most bolts will bear a wide variety of initials or symbols which identify the manufacturer. Measure the diameter and length to specify the type dimension of the DIN bolt. The length of DIN bolt is measured from under the head to the end of the shank.

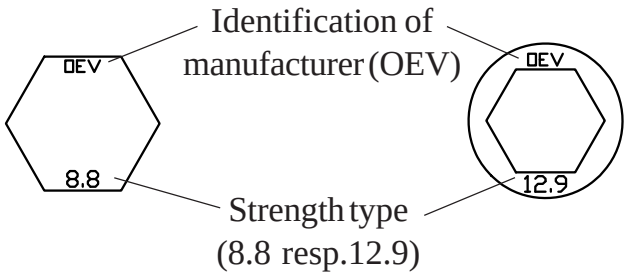
Example: DIN 931, M10 x 80 - 8.8

Bolt Head Identification

Standard hex head bolt
Metric thread size M10
Length 80mm (3.15")
Strength type 8.8

Bolt Head:

DIN 931: DIN 933:



20-10-02 Width Across Flats for Metric Bolts

Thread diameter	Width across flats
M4	7 mm
M5	8 mm
M6	10 mm
M8	13 mm
M10	17 mm
M12	19 mm
M16	24 mm
M20	30 mm
M24	36mm

20-10-03 Torque Values

Nuts, except of counter nuts are mainly stop nuts according to LN 9348 or selflocking nuts according to AN 365 (MS 21044).

a) Standard torque values allowed for nuts according to DIN and LN must be adhered to as follows:

Metric thread size	Torque value (Nm)	(in.lbs)
M4	1,8	16
M5	3.9-4.3	35-38
M6	6.2-6.8	55-60
M8	15.2-16.8	144-148
M10	29.5-32.5	261-287
M12x1.5	51-57	452-504

b) Standard torque values allowed for nuts according to MS must be adhered to as follows:

Inch thread size	Torque value (Nm) (in.lbs)	
1/4 -28	3,5-4,5	30-40
5/16 -24	6,7-9,5	60-85
3/8 -24	10,7-12,5	95-110
7/16 -20	30,5-33,9	270-300
1/2 -20	32,8-46,3	290-410
9/16 -18	88,1-67,8	480-600

IMPORTANT

On all bolt connections, the specified torque and locking method must be observed. Do not reuse stop nuts if they can be run up finger tight!

20-10-04 Special Torque Values

Special torque values for the following items must be adhered to:

Item	Torque value (Nm)	(in.lbs)
Top Half of the Main Landing Gear Mounting Clamp (Bolt LN9037-10054)	10	89
Brake Back Plate Bolts (Cleveland)	Refer to Cleveland Maintenance Manual	
Wheel Assembly Bolts (Cleveland)		
Engine Mounting (Bolts AN7-50A / Metal Stop Nut AN 363C-720 or MS 21046 C7)	55	480
Engine Mount to Fuselage (Bolt Din 912, M12-12.9 / Stop Nut DIN 985, M12-8-B2C)	80	720
Longeron Cutout Bridge (Bolt DIN 912 M8-8.8 / Stop Nut LN 9348-08)	18	160
Horizontal Stabilizer Front Spar Bolts (Bolt LN 9037-10054 / Stop Nut LN 9348-10)	33	292
Horizontal Stabilizer Rear Spar Bolts (Bolt LN 9037-10046 / Stop Nut LN 9348-10)	33	292
Vertical Stabilizer Rear Spar Bolt (Bolt LN 9037-10065 / Stop Nut LN 9348-10)	38	336
Wing Main Spar Safety-Bolts (Bolt LN 9038 K-08020)	15	133
Torque for Engine	Refer to Lycoming Overhaul Manual	
Torque for Propeller	Refer to MT-propeller Installation Manual E-124	
Drain Valve Nut (VD 82-2577)	11	100

20-10-05 Measuring Techniques

When using stop nuts, the safety torque (friction torque or braking torque) should be added to the table standard values. This value is indicated on the dial of the torquemeter, before the nut contacts the attachment surface.

Always torque nuts for fastening, if possible. When bolts are torqued there might be an additional torque value due to shaft friction. This torque can be determined by a torquemeter before the bolt head contacts the attachment surface and should be added to the table value.

20-10-06 Coin Tapping

Inspection for damage is more critical for composite structure than for conventional structures. A large washer or similar object is a valuable tool for detecting debonds in the airframe surface. When a large washer is lightly bounced against a solid structure, a clear metallic ring should be heard. If delamination is present, a dull thud will be heard. This procedure is shown in the following Figure 1:

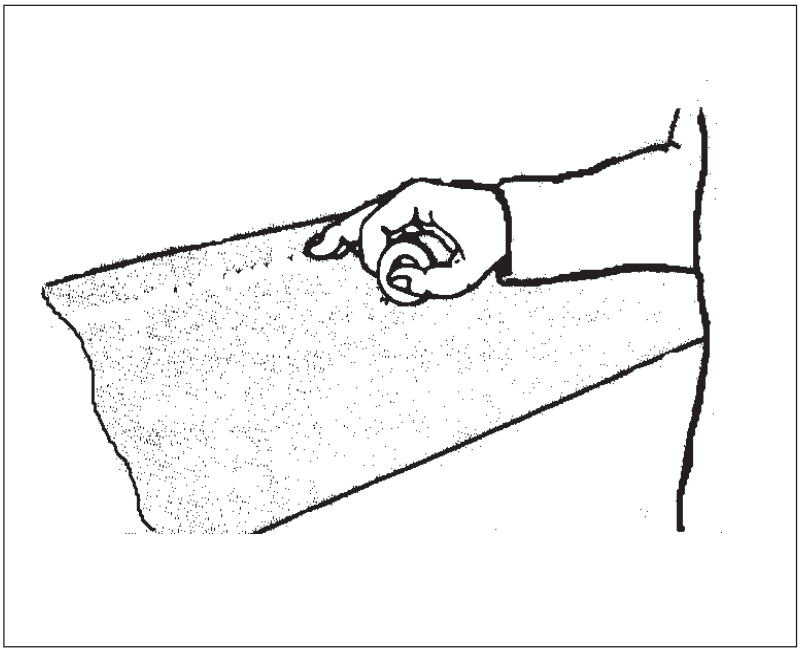


Figure 1 Coin Tapping

20-10-07 Flexible Hose

For the oil and fuel systems aft of the firewall the EXTRA 300LT is equipped with PTFE-hoses. For the brake system generally PA/high tensile synthetic fibre hoses are used, which are also installed as sense lines for engine instruments.

In the engine compartment PTFE hoses with integrated fire sleeves are used as fuel, oil and sensing lines.

Replacement of Flexible Hose

External forces can significantly reduce hose life or cause failure. Mechanical loads which must be considered include excessive flexing, twist, kinking, tensile or side loads, bend radius, and vibration. Any hose that has been kinked or bent to a radius smaller than the minimum bend radius, and any hose that has been cut or is cracked or is otherwise damaged should be removed and discarded. The entire hose assembly must be replaced, if damage or failure occurs within a flexible hose assembly.

Visual Inspection Hose/Fitting

Any of the following conditions require replacement of the hose assembly:

- Fitting slippage on hose,
- Damaged, cracked, cut or abraded cover (any reinforcement exposed);
- Hard, stiff, heat cracked, or charred hose;
- Cracked or damaged fittings;
- Leaks at fitting or in hose;
- Kinked, crushed, flattened or twisted hose; and
- Blistered, soft, degraded, or loose cover.

Installation of Flexible Hose Assemblies

In general hose assemblies should be handled with care to prevent excessive bending, twisting and kinking since this reduces the life of the hose assembly considerably. Particular attention must be given to preclude hoses from wear, snagging, kinking, bending smaller that minimum bend radius and cutting, any of which can cause premature hose failure. Large diameter hoses and very short hose assemblies are more prone to kinking. Special care must be taken to prevent twisting of hose assemblies that do not incorporate assembly fittings with spanner flats to counteract while the nut is turned to the connection fitting (e.g. Parker/Statoflex PTFE hose type 101). Twisting of the hose can be determined from the identification markings running along its length.

The flexible hose should be installed so that it will be subject to a minimum of flexing during operation.

Installation of PA Hose with Hoerbiger HS3AM Axial Plug

1 Install the plug-in screw into the adapter (e.g. firewall, brake) (see Figure 2, Sheet 2).

2 Simply insert the axial plug into the plug-in screw until it is snapped as outlined in Figure 2, Sheet 2.

Removal of PA Hose with Hoerbiger HS3AM Axial Plug

1 Screw out the plug-in screw together with the snapped axial plug (see Figure 2, Sheet 2).

2 Disconnect the plug-in screw from the axial plug by inserting a sleeve (7 x 30 x 0.5 mm) as outlined in Figure 2, Sheet 2.

Installation of PA Hose with Hoerbiger H31A Axial Plug

1 Install the plug coupling M into the adapter (e.g. firewall, brake) (see Figure 2, Sheet 2).

2 Insert the plug coupling W into plug coupling M until it is snapped as outlined in Figure 2, Sheet 2.

Removal of PA Hose with Hoerbiger H31A Axial Plug

1 Disconnect the plug coupling W from the plug coupling M by bending the clamps as outlined in Figure 2, Sheet 2.

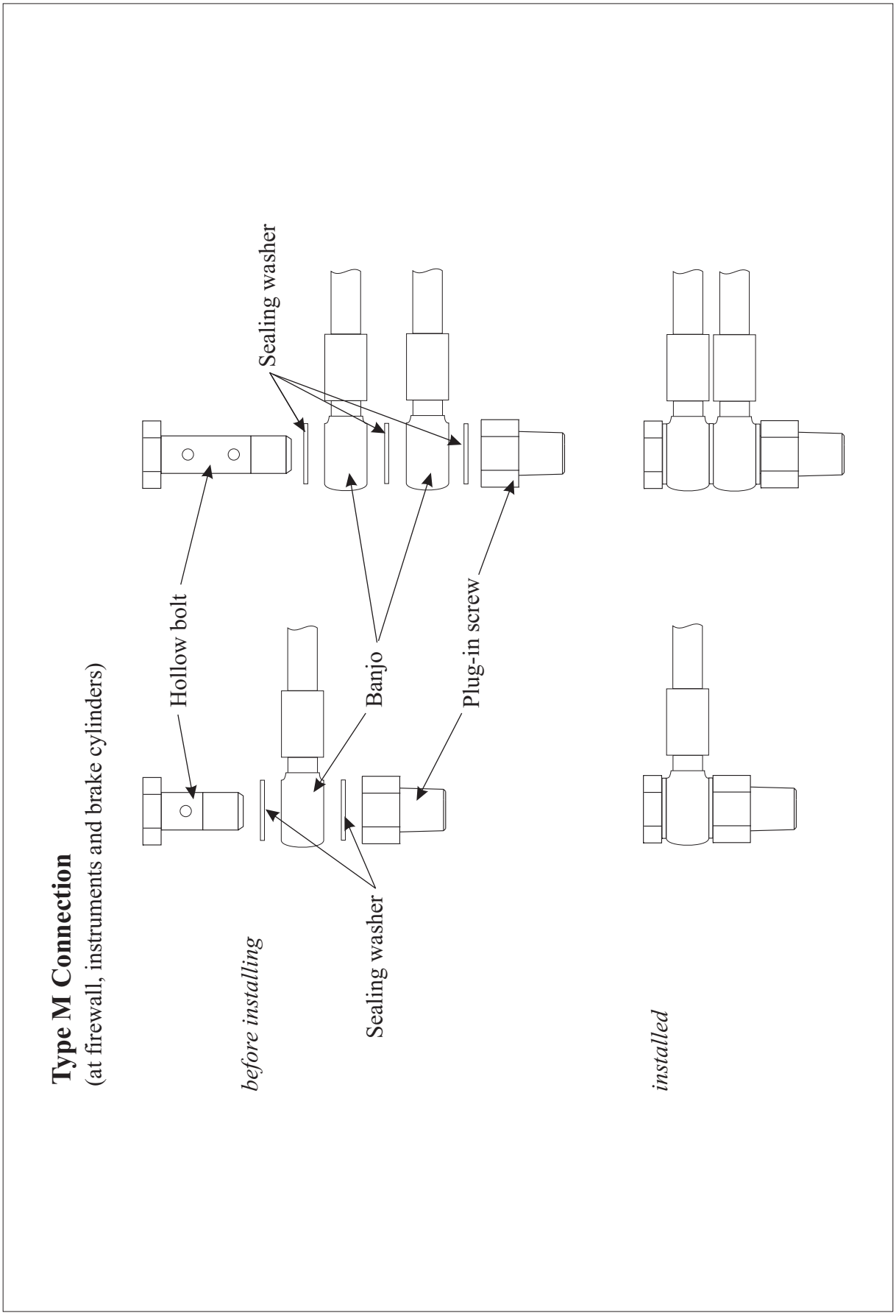


Figure 2, Sheet 1 ***Connection Types PA Hoses***

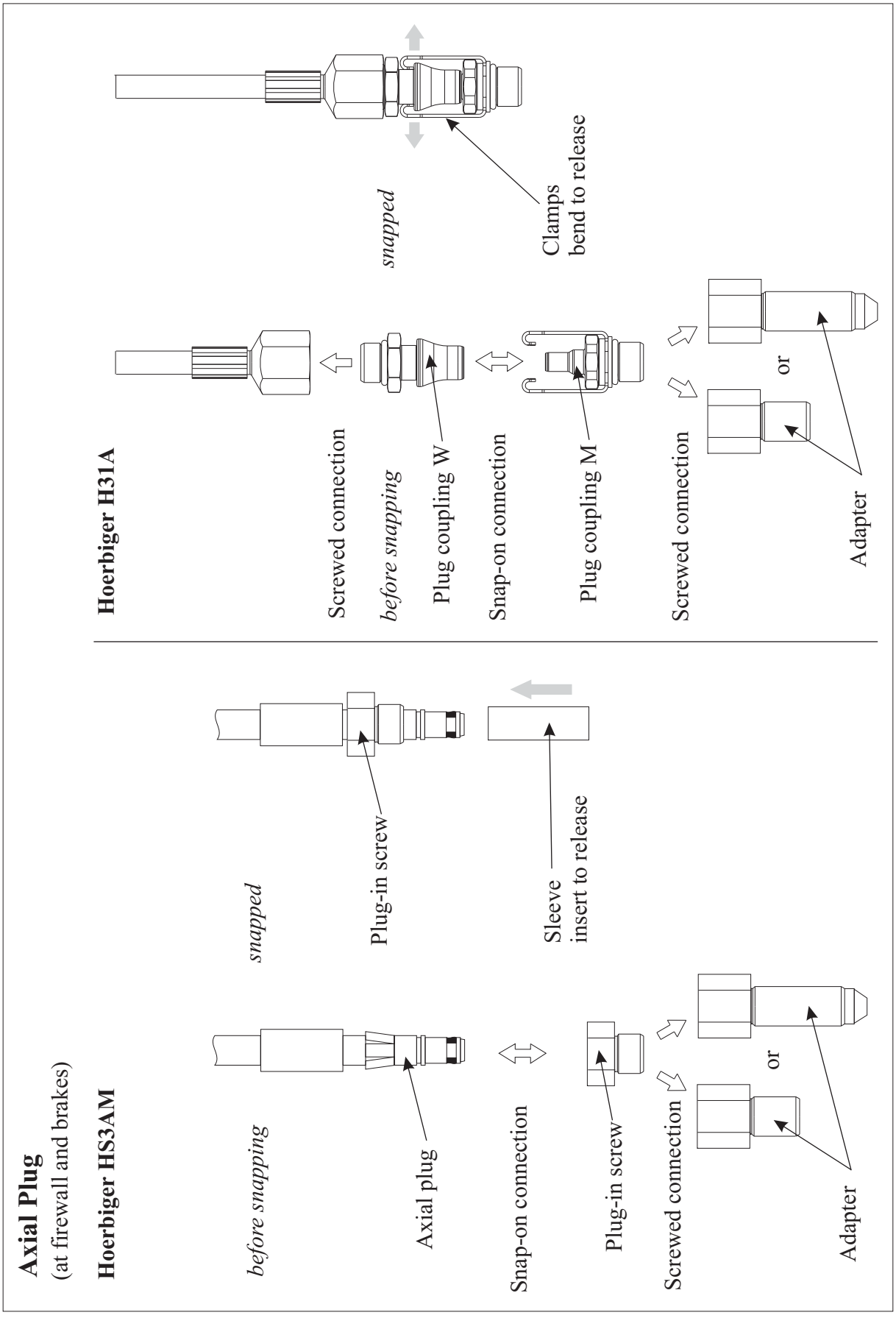


Figure 2, Sheet 2 ***Connection Types PA Hoses***

20-10-08 Fittings

For the oil lubrication and the fuel system only AN-fittings are used in the EXTRA 300LT. Generally these fittings are made of aluminium alloy and are colored blue for identification purposes. For firewall penetration special fittings made of stainless steel are used. The dash number following the AN number indicates the size of the hose for which the fitting is made, in 16ths of an inch. This size measures the inner diameter (I.D.) of hose. The material code letter (Aluminum alloy: code D) follows the dash number.

Example: Elbow AN 822-8D

N O T E

Apply Loctite 577 on all National Pipe Threads (NPT) before installation.

20-10-09 Control Cables

Control cables are used for the following systems of the 300LT:

- Engine (Throttle, Mixture and RPM)
- Trim
- Heating

Consider the following information when working on engine control cables. Refer to figure 2:

Hard and abrupt power control inputs may impose high dynamic peak loads to the related sliding parts at reaching the travel stops of the engine fuel injector servo. Repeating peak loads may result in unacceptable additional wear and free play at the pivot points. Once the free play of the pivot point would increase, the swivel angle of the sleeve might increase beyond limits. An increased swivel angle in combination with an unacceptable high friction of sliding parts may result in a kink occurring at the pivot point and the end of the swivel sleeve while pushing the control lever forward from idle to full throttle position. Finally the solid wire might be forced to bend at the pivot point and at its terminal connection, which would result in a failure because it is not designed to withstand a significant bending load.

A bent nickel-plated brass swivel sleeve as well as wear and excessive free play at the pivot (swivel) points and sliding parts are an indication of misalignment and/or hard and abrupt control inputs. Those signs should be found early within the regular maintenance. This is a clear indication of an unacceptable control cable condition, which might result in a malfunction.

As soon as a control cable becomes difficult to operate, the reason should be identified. An increase in no-load (cable free and unattached) friction or an increase in travel length of a control cable are a good indication of pending performance problems and/or control cable failure.

The following notes, cautions and warnings describe application and installation information

WARNING

Do not install the control cable with the power on or the engine running. Serious injury or death could result.

NOTICES

Protect the cable from contaminants such as fuel, oil, water, dirt and chemicals, which may damage the control cable.

Protect the control cable from physical damage by paint, kinking, vibration, etc., which may damage the control cable.

IMPORTANT

A gradual or sudden increase in the no-load (cable free and unattached) friction of a control cable is a good indication of pending performance problems and/or control cable failure. Serious injury or death may result. Replacement is required.

A gradual or sudden decrease in the stroke (travel) length of the control cable is a good indication of pending performance problems and/or control cable failure. Serious injury or death may result. Replacement is required.

Control cables which have moisture inside of them or have frozen, must be replaced. Do not apply heat to attempt to remove the moisture. Applying heat will not remove the moisture. Serious injury or death may result. Replacement is required.

NOTES

Installation should be accomplished by a licensed “A” and/or “P” mechanic.

Control cables are designed to be non-repairable. Do not perform any repairs to this control cable.

Cables are designed to be contaminant resistant; not contaminant proof.

The usable stroke must be centered within the available travel.

The swivel angle must be centered within the available swivel angle.

The minimum bend radius is 6".

Control cables are lubricated for the life of the control cable. Do not remove the seals or lubricate the control cable.

Inspections

Observe the following hints when performing inspections on the control cables:

A cable must be replaced whenever:

- excessive free play is felt at the control even after all cable connections have been verified as in good working order.
- visual inspection shows chafing, breakage or bent, loose or worn parts.
- evidence of moisture is found inside (or control cable has frozen).
- a gradual or sudden decrease in the stroke (travel) length of the control cable has been detected.
- a gradual or sudden increase in the no-load (cable free and unattached) friction of a control cable has been detected.

Correct routing of the control cable whenever:

- misalignment, unacceptable high internal friction due to bends below minimum radius of 6" or malfunction of sliding elements has been detected.
- the usable stroke is not centered within the available travel.

- the swivel angle is not centered within the available angle.

20-10-10 PR-812

Application

Also refer to PR-812 Technical Data Sheet available from PGG Aerospace.

IMPORTANT

Proper mixing and correct proportions are extremely important to obtain required results.

1 Prepare PR-812 firewall sealant by mixing brown part A with black part B with weight ratio 2.5:100.

2 Clean the surfaces to be sealed with solvents.

3 Immediately thereafter, dry these areas with a new dry cloth.

4 Seal the gap between the firewall and the respective component with PR-812 firewall sealant. Minimum sealant thickness on firewall side is 3 mm (1/8 inch).

Cure time @ 25°C (77°F), 50% RH for a fillet 3 mm (1/8 inch) thick:

- tack free: approx. 24 hours
- to tough rubber: approx. 72 hours
- to performance properties: approx. 14 days

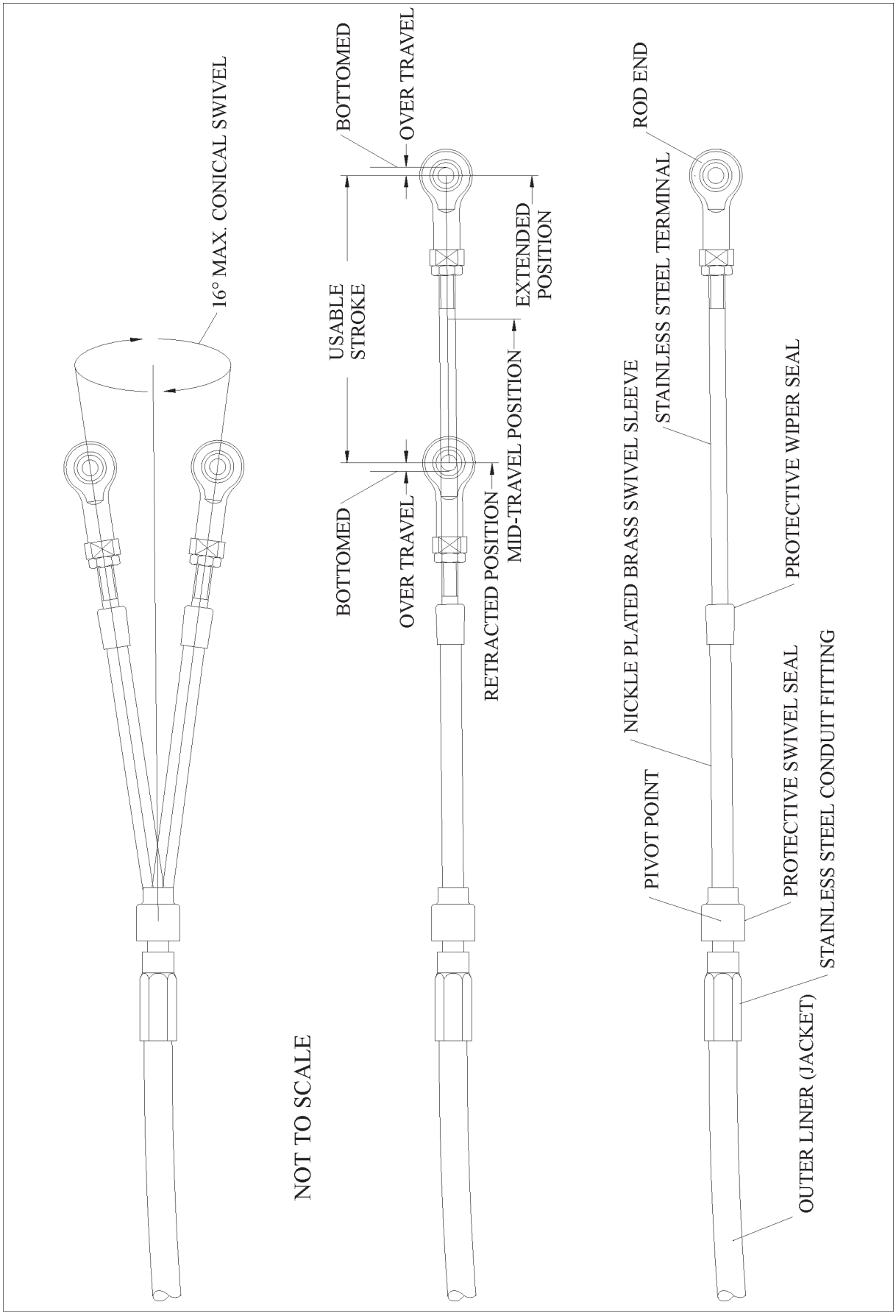


Figure 3 ***Control Cables***

20-20-00 ASSEMBLY INSTRUCTION

20-20-01 General

NOTE

Make appropriate logbook entry of compliance with this Assembly Instruction after Container Shipping.

In case of the aircraft is delivered in a container it has to be assembled on arrival.

For assembly of aircraft main components follow the instructions as outlined in the chapter 20-20-02.

These instructions can not replace the skill, craftsmanship and sound technical knowledge of qualified personnel. In case of doubt or lack of information, the manufacturer of the respective component should be contacted for advice.

Unless otherwise specified all bolts and connections should be torqued as listed in chapter 20-10-03. At some locations special torque values are considered necessary. Refer to chapter 20-10-04. The stated direction "Front" and "Rear" are to be considered in respect of pilot`s seating direction.

20-20-02 Assembly Instruction after Container Shipping

Complete each step of the assembly procedure in the order shown below.

1 Check the condition of fastening of the aircraft components in the container. Note any damage.

2 Remove the fuselage/engine assembly from the container. Prevent the aircraft from nosing over by keeping down the tail.

3 Weight the tail as per chapter 7.

4 Remove the aircraft components out of the container. Small parts, hardware, spinner dome and the wheel fairings you find in the cockpit.

5 Inspect all removed items for damage prior to assembly. Damaged items have to be replaced or if possible repaired according to chapter 51.

NOTICE

In order to prevent the aircraft from nosing over the assembly always has to start with the empennage.

6 Prior to assembly remove engine cowlings, canopy, main fuselage cover including the rear support angle as per chapters 51 and 53.

NOTE

In contrast to the instructions given in the respective chapters don‘t reinstall these items before completion of the whole assembly.

7 Remove provisional attached rudder and vertical stabilizer as per chapters 27 and 55.

8 Install horizontal stabilizer with elevator as per chapter 55. The procedure described there is also applicable to the installation of the complete horizontal tail. Remember to connect the ground bonding lead of the elevator too.

9 Connect elevator push pull rod actuator lever as per chapter 27-00-01.

10 Connect trim wire to the tab actuator lever using fitted clamp.

11 Inspect for full travel and elevator deflection in relation to stick movement.

12 Inspect for full travel and trim tab deflection in relation to trim switch activity.

13 Install the vertical stabilizer as per chapter 55.

14 Reinstall rudder to the vertical stabilizer as per chapter 27-20-01.

15 Inspect for full travel and rudder deflection in relation to rudder pedal movement.

16 Install the wing as per chapter 57.

17 Install navigation/strobe lights as per chapter 33-40-01.

18 Install propeller in accordance with MT-Propeller installation instructions E-124 latest revision.

19 Remove tail weight.

20 Check if all switches are in Off-position and connect battery.

21 Perform operational check of electrical equipment. Shut-off BATTERY and ALTERNATOR switches after completion.

22 Perform operational check and rigging of control system.

23 Inspect fluid filled lines for leaks.

24 Check security of main spar bolts.

25 Install wheel fairings, main fuselage cover and rear support angle, canopy, engine cowlings, and access panels (refer to chapter 51-00-01 and 53).

26 Check all control surfaces for freedom of movement and security.

27 Perform a compass compensation according to „Aircraft Inspection and Repair FAA AC 43.13“.

28 Check correct servicing of aircraft.

29 Perform an engine run up. Refer to chapter "05-20-04 Scheduled Maintenance Checks". Start the engine in accordance with the Pilot’s Operating Handbook and Airplane Flight Manual (POH).

30 Inspect aircraft for foreign objects.

31 Final inspection by licensed aircraft inspector.

IMPORTANT

After first flight check fuselage interior/exterior for fuel leaks. Check all bolts on fairings and cover sheets for tight fit.

Chapter 21

Air Conditioning

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21-40-00 HEATING

The 300LT is equipped with a cabin heating system, which allows feeding the front and rear cockpit independently with warm air. The system uses fresh outside air, which is heated up by the engine exhaust muffler. The system is controlled by two handles in the rear cockpit.

On the left front engine baffle a 3” air intake (1, figure 1) with screen is positioned. From there fresh air is routed through a 3" ducting (2) to the exhaust muffler heat shroud (3), where it is heated up. An inlet box (4) is placed on the engine side of the firewall. Using the main handle (9) the warm air can there be guided into the cockpit or dumped overboard. A distribution box (5) is located on the aft side of the firewall. Using the distribution handle (8) the ratio of warm air supply between front and rear can be controlled. Turning the handles to the right as far as they will go fixes the Bowden cables. The distribution box incorporates the warm air dispensers for the front occupant as well as the flange for the 2" ducting (6) to the air outlets (7) at the pilot’s feet.

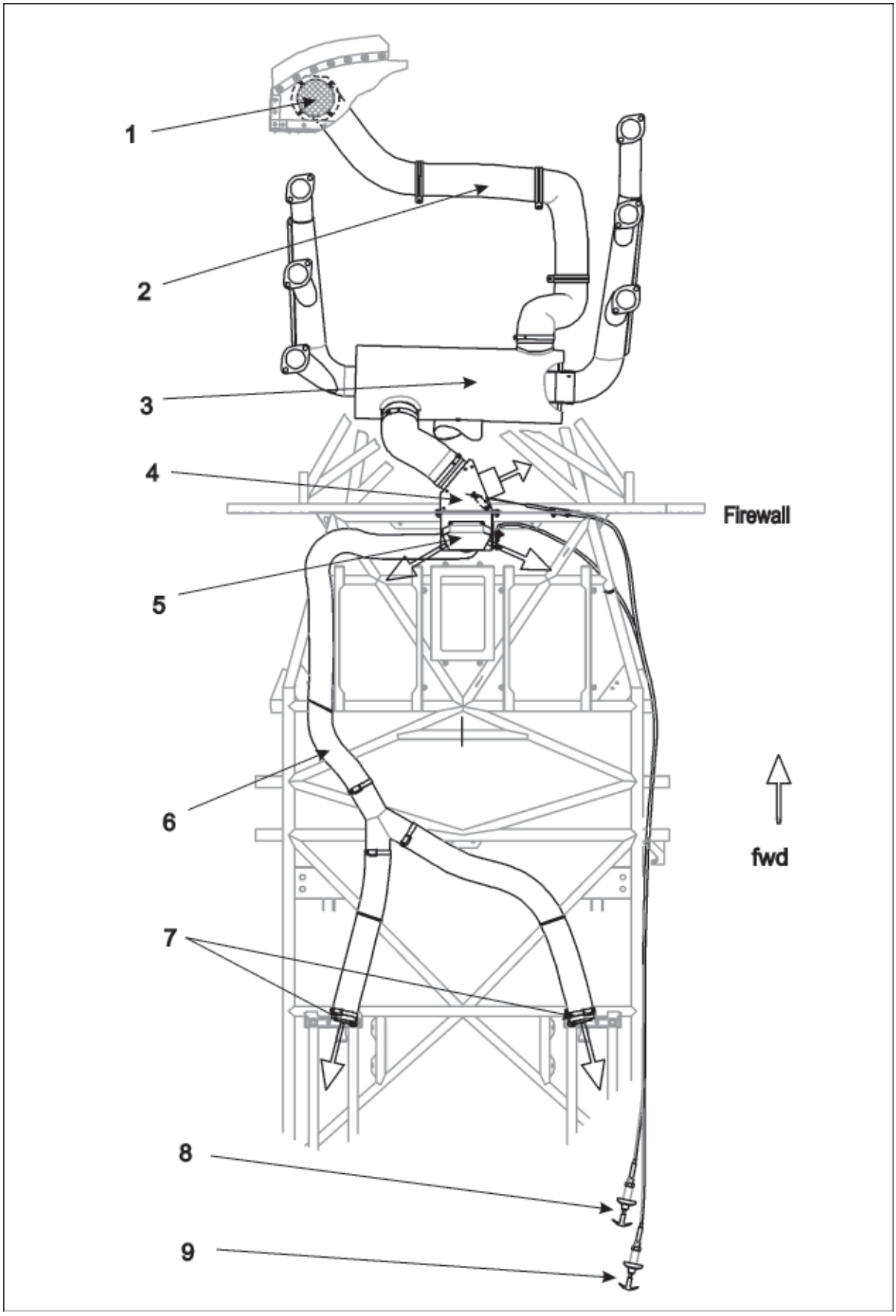

Figure 1 ***Heating System,***

21-40-01 Inlet Box

Removal/Installation

Refer to figure 2.

1 Remove engine cowlings as per chapter 71.

2 Remove bottom fuselage cover as per chapter 53.

3 Loosen the hose clamp (10).

4 Disconnect the hose (11) from the inlet box.

5 Loosen the Bowden cable attachment bolt (8).

6 Disconnect the Bowden cable (7) from the linkage.

NOTE

When removing the inlet box, the distribution box is also unfastened. Both boxes are attached by the same bolts.

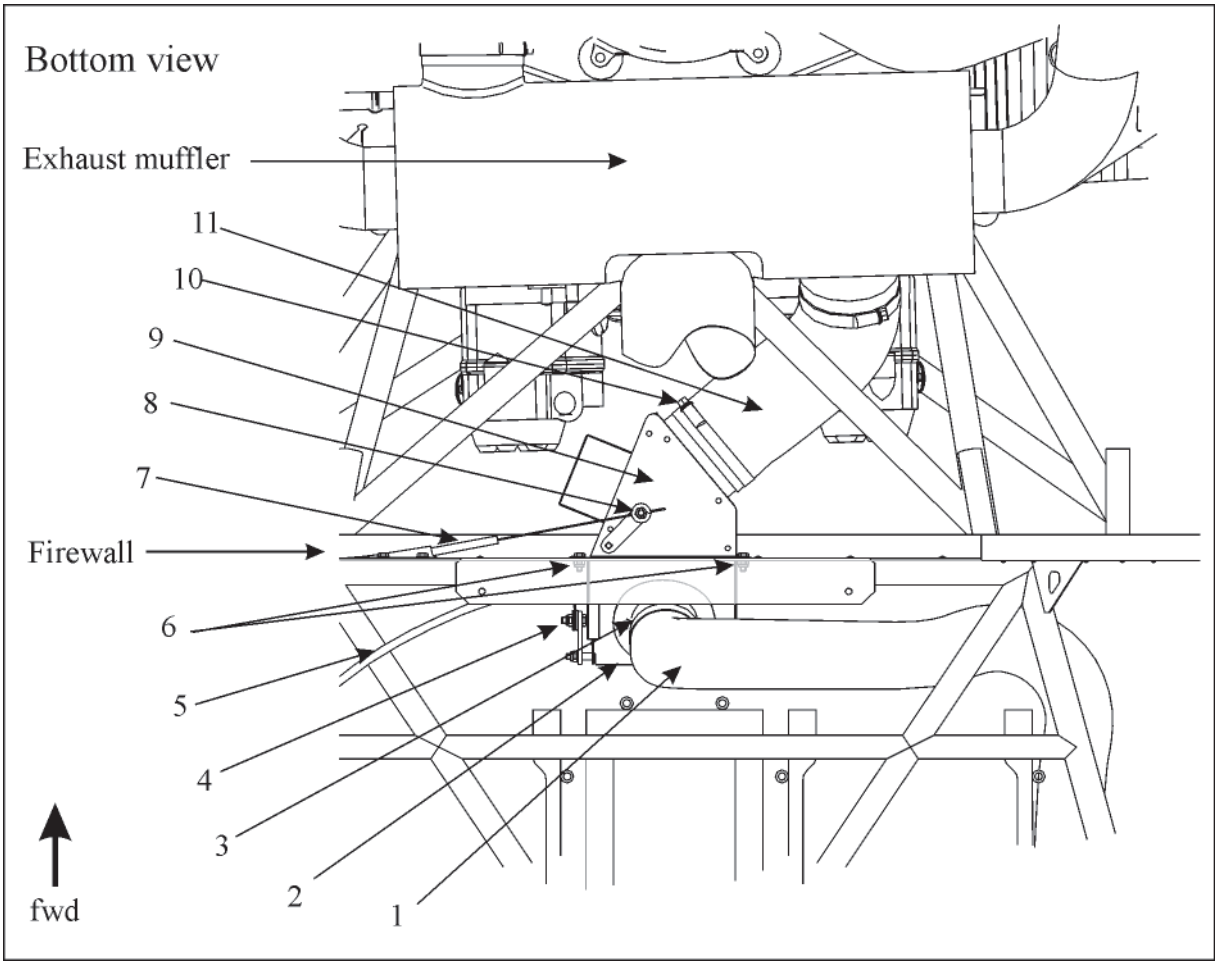

Figure 2 ***Heating Boxes***

7 Remove the four heating boxes attachment bolts (6).

8 Remove the inlet box (9).

9 Install in reverse sequence of removal.

21-40-02 Distribution Box

Removal/Installation

Refer to figure 2.

1 Remove engine cowlings as per chapter 71.

2 Remove bottom fuselage cover as per chapter 53.

3 Loosen the hose clamp (3).

4 Disconnect the hose (1) from the distribution box.

5 Loosen the Bowden cable attachment bolt (4).

6 Disconnect the Bowden cable (5) from the linkage.

NOTE

When removing the distribution box, the inlet box is also unfastened. Both boxes are attached by the same bolts.

7 Remove the four heating boxes attachment bolts (6).

8 Remove the distribution box (2).

9 Install in reverse sequence of removal. Seal contact areas of boxes with firewall with PRC 812 sealant.

21-40-03 Main Bowden Cable

Refer to chapter 20 for general information about handling of control cables.

Removal

Refer to figure 3.

1 Remove engine cowlings as per chapter 71.

2 Remove main and bottom fuselage cover as per chapter 53.

3 Disconnect Bowden cable from the inlet box actuator arm (14).

4 Remove clamp sheet (12, 15) attachment bolts on the firewall.

5 Loosen hose clamp (11).

6 Mark main Bowden cable (4) routing and remove the attachment self-clinching plastic straps (5).

7 Remove attachment nut and washer (7) of the main control unit (1).

8 Pull the main control unit (1) with the complete Bowden cable (4) aft to remove from aircraft. Secure label plate (8), clamp sheets (12, 15) and attachment nut and washer (7).

Installation

Refer to figure 3.

1 Thread the Bowden cable (4) end through the respective attachment tube (6).

2 Thread the attachment nut and washer (7) on the Bowden cable

3 Ensure nut (9) is fastened.

4 Place label plate (8) and align.

5 Attach the main control unit (1) and the label plate (8) by means of its attachment nut and washer (7).

6 Position the Bowden cable (4) along the prior marked routing.

7 Fasten the Bowden cable (4) with self-clinching plastic straps (5) in place.

8 Thread the Bowden cable end through the hoseclamp (11).

9 Thread the Bowden cable through the firewall.

10 Renew the sealing of the clamp sheets (12, 15). Use PRC 812 sealant.

NOTE

Ensure distance of cable housing end to clamp sheet is 50 mm (refer to detail C of figure 3) when installing the clamp sheets.

11 Install the clamp sheets (12, 15).

12 Fasten the hose clamp (11).

13 Ensure inlet box actuator is in closed position.

14 Push main handle (1) to the full forward position. Then pull aft 5 mm (refer to detail A of figure 3).

15 Install the Bowden cable to the inlet box actuator (14).

16 Check full travel.

Rigging

Refer to figure 3.

1 Loosen Bowden cable attachment bolt on the inlet box actuator (14).

2 Place inlet box actuator to the closed position.

3 Adjust main handle (1) to the full forward minus 5 mm position (refer to detail A of figure 1).

4 Fasten Bowden cable attachment bolt on the inlet box actuator (14).

5 Check full travel.

21-40-04 Distribution Bowden Cable

Refer to chapter 20 for general information about handling of control cables.

Removal

Refer to figure 3.

1 Remove main and bottom fuselage cover as per chapter 53.

2 Disconnect Bowden cable from the distribution box actuator (10).

3 Loosen hose clamp (13).

4 Mark distribution Bowden cable (3) routing and remove the attachment self-clinching plastic straps (5).

5 Remove attachment nut and washer (7) of the distribution control unit (2).

6 Pull the distribution control unit (2) with the complete Bowden cable (3) aft to remove from aircraft. Secure label plate (8) and attachment nut and washer (7).

Installation

Refer to figure 3.

1 Thread the Bowden cable (4) end through the respective attachment tube (6).

2 Thread the attachment nut and washer (7) on the Bowden cable.

3 Ensure nut (9) is fastened.

4 Place label plate (8) and align.

5 Attach the distribution control unit (1) and the label plate (8) by means of its attachment nut and washer (7).

6 Lay the Bowden cable (3) along the prior marked routing.

7 Fasten the Bowden cable (3) with self-clinching plastic straps (5) in place.

8 Thread the Bowden cable end through the hoseclamp (13).

NOTE

Ensure distance of cable housing end to hose clamp (13) is 40 mm (refer to detail B of figure 3) when fastening the hose clamp.

9 Fasten the hose clamp (13).

10 Ensure distribution box actuator is in upmost position.

11 Push distribution handle (1) to the full forward position. Then pull aft 5 mm (refer to detail A of figure 3).

12 Install the Bowden cable to the distribution box actuator (10).

13 Check full travel.

Rigging

Refer to figure 3.

1 Loosen Bowden cable attachmant bolt on the distribution box actuator (10).

2 Place distribution box actuator in the upmost position.

3 Push distribution handle (1) to the full forward position. Then pull aft 5 mm (refer to detail A of figure 3).

4 Fasten Bowden cable attachmant bolt on the distribution box actuator (14).

5 Check full travel.

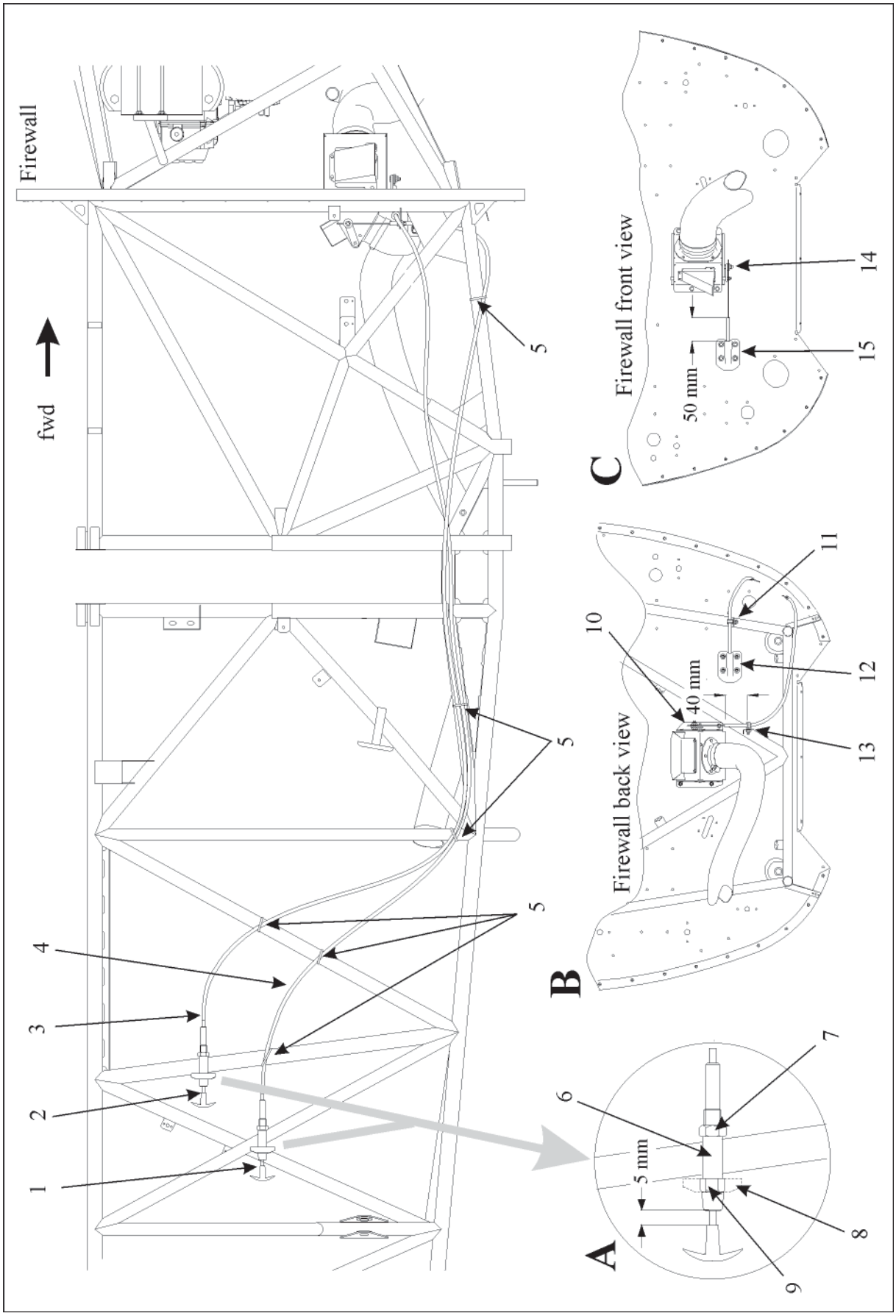

Figure 3 ***Heating Bowden Cables***

Chapter 23

Communication

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23-10-00 SPEECH COMMUNICATION

The EXTRA 300LT can be equipped with various communication systems. Refer to the Equipment List of the Pilot' Operating Handbook for identification of the units installed. Also refer to the applicable vendor documents for suitable maintenance information.

Independent from the equipment installed, the electric hardware such as switches, circuit breakers, sockets and wiring is the same.

The control sticks and power levers for pilot and copilot feature PTT switches. The sockets for connecting the headsets are located on the right side of the respective cockpit. The related wiring is generally fastened to the sticks, levers, torque tube or steel tubes with cable straps. The wiring can be easily traced from the switches and sockets to the instrument panel, where it is not guided through cable ducts.

23-10-01 VHF Whip Antenna

The VHF whip antenna is installed in the rear fuselage and is towered with the whip into the rudder fin (refer to figure 1). A "RG 50" coaxial cable is guided along the steel tube frame and connects this whip antenna directly to the respective transceiver.

Removal/Installation

1 Assure the BATTERY switch is OFF

2 Remove the main fuselage cover and the tail fairing (Refer to chapter 05-00-01).

3 Disconnect the antenna to the coaxial cable.

4 Remove the nut holding the antenna to the grounding plate.

5 Pull the antenna carefully out of the rudder fin.

6 Install in reverse sequence of removal.

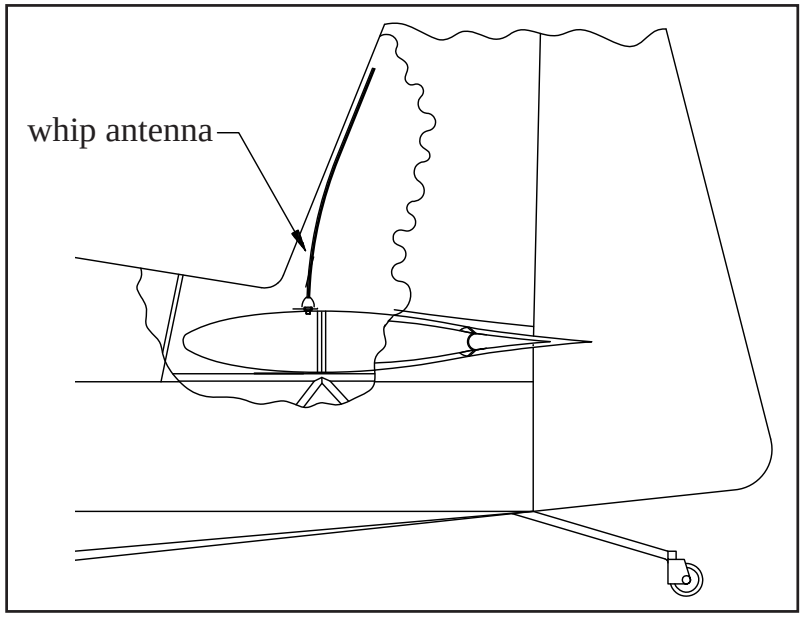

Figure 1 Whip Antenna

Chapter 24

Electrical Power

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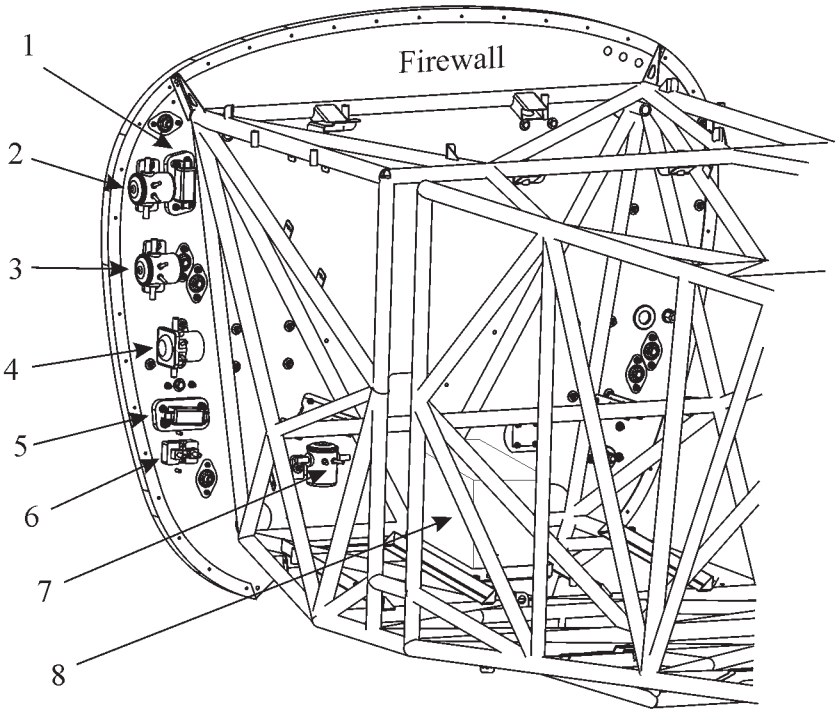
24-00-00 GENERAL

This chapter describes the electrical power system and its operation. This covers the battery system and the alternator system.

The electrical installations on the firewall are shown on Figure 1, Sheet 1 (up to SN LT004). From SN LT005 these installations are combined in the electrical main board (Figure 1, Sheet 2), which is attached to the lower left fuselage structure just behind the firewall.



Legend:
1 Alternator fuse (optional)
2 Alternator relay
3 External power relay
4 Starter relay
5 Battery fuse
6 Shunt
7 Battery relay
8 Battery

Figure 1, Sheet 1 ***Electrical Installations in Firewall Area***

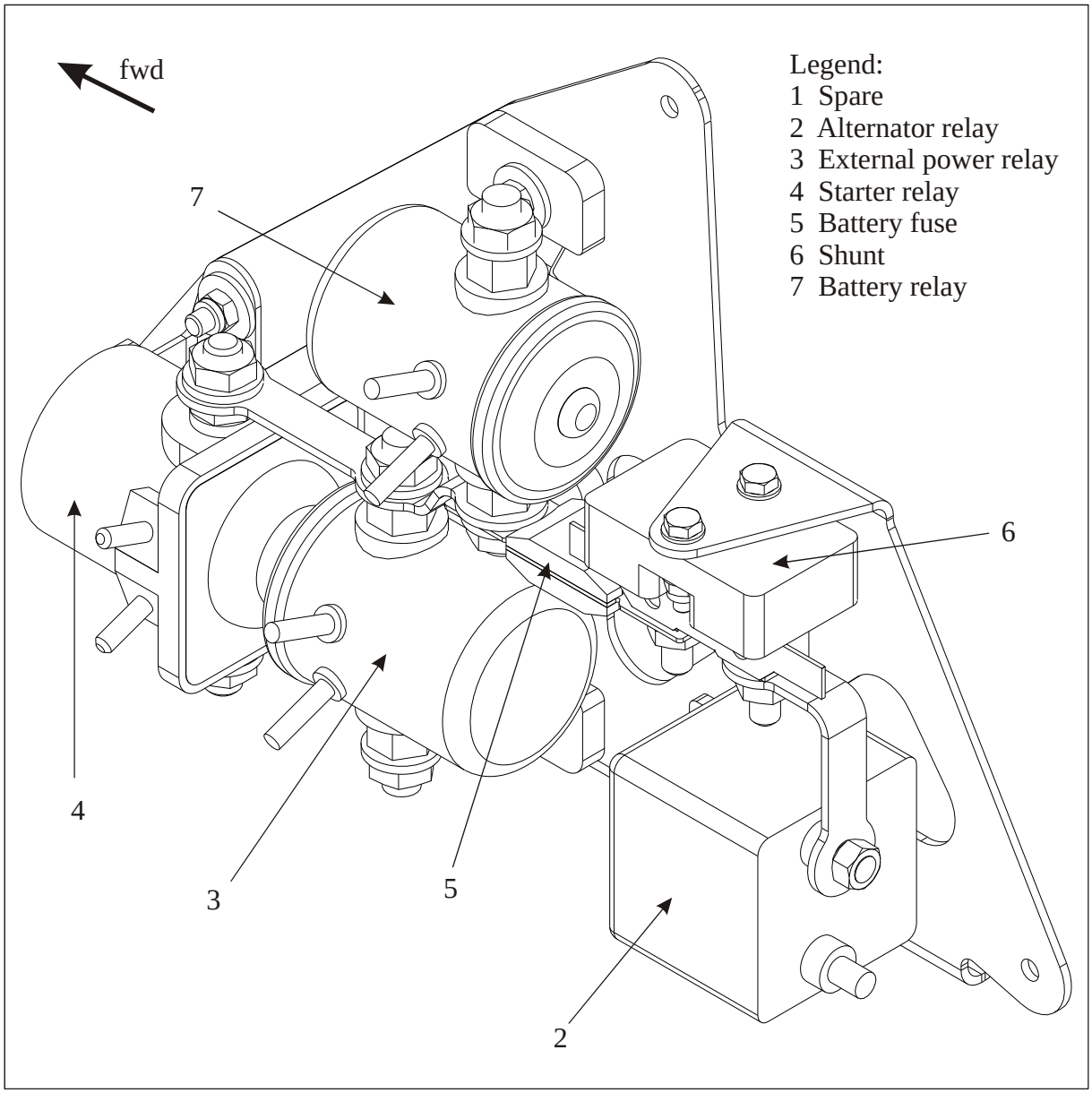


Figure 1, Sheet 2 ***Electrical Main Board***

A functional schematic of the complete electrical system is shown on Figure 2, Sheet 1 (up to SN LT004). Sheet 2 applies from SN LT005.

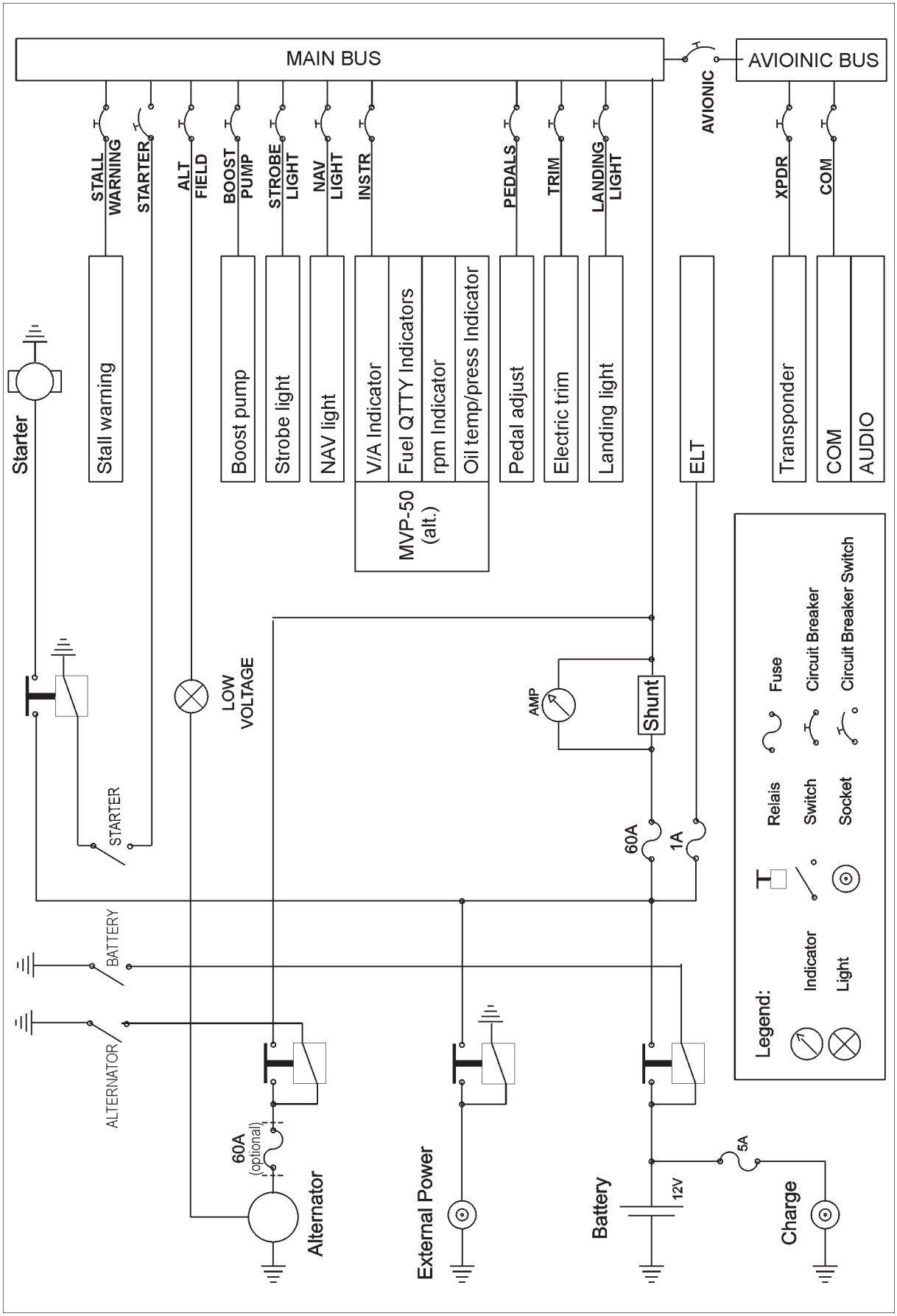


Figure 2, Sheet 1 ***Electrical System Schematic***

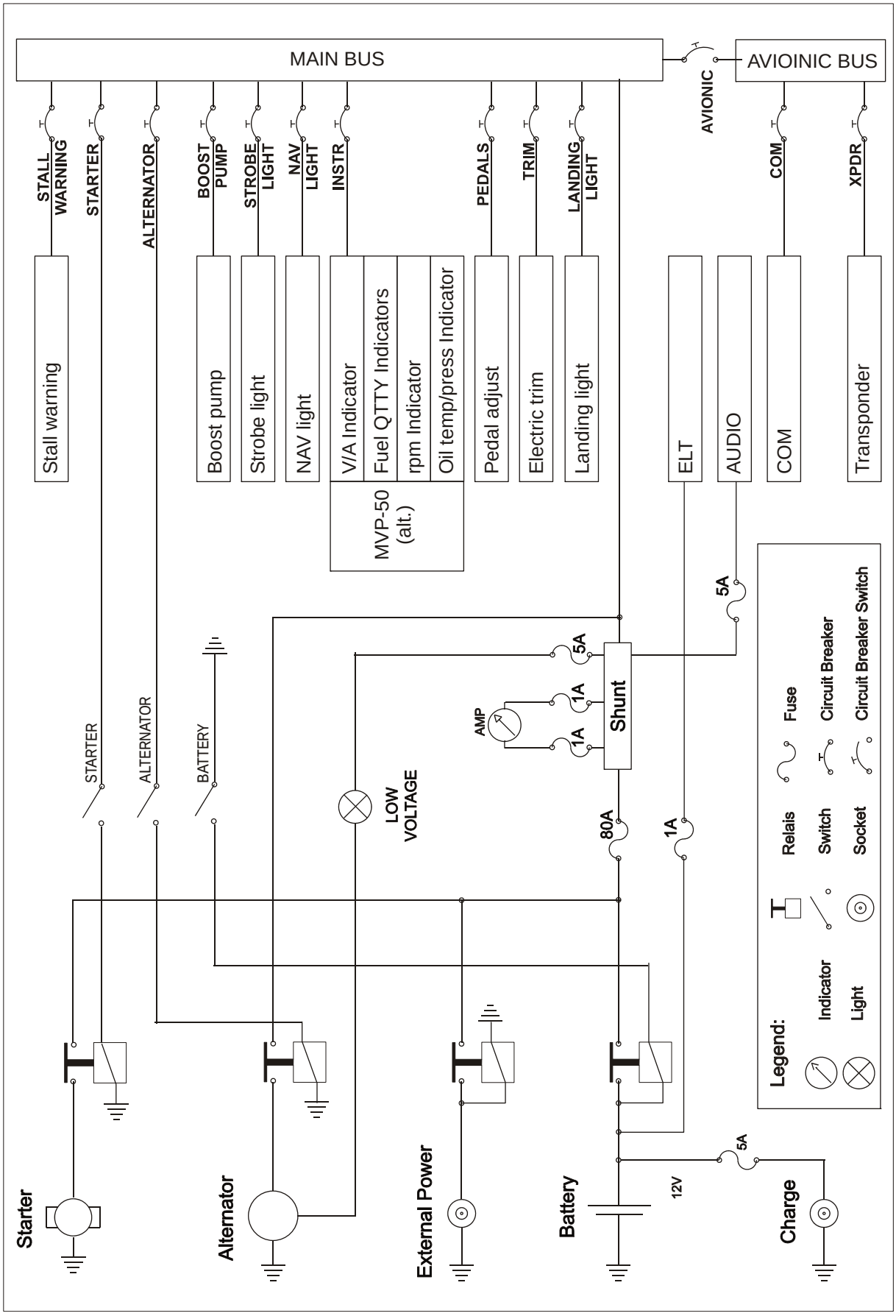


Figure 2, Sheet 2 ***Electrical System Schematic***

24-30-00 DC-GENERATION

(Refer to Figure 2) Power for the electrical system is provided by the battery and/or the alternator.

An ammeter is installed into the system to provide an indication of current flow from (discharge current, negative values) or to (charge current, positive values) the battery. The respective shunt (6, Figure 1) is installed on the left side of the firewall (Sheet 1 up to SN LT004) respectively on the electrical main board (Sheet 2, from SN LT005).

Note

When external power is used the ammeter indicates the current flow from the battery to the electrical system (positive value) but not the battery charge current flow.

The complete electrical system can be cut off by switching off both the BATTERY and ALTERNATOR switch.

24-30-10 Battery System

The battery is used for starting the engine and powering the electrical system when alternator power is not available (engine not running). The battery also powers the electrical system in case of alternator failure.

Up to SN LT004 and for SN LT009 and LT010 the battery system consists of the battery (8, Figure 1, Sheet 1), the battery relay (7), a 60 A fuse (5), the battery switch and the associated wiring. The battery is located in the middle of the fuselage just behind the firewall; the battery relay and the fuse at the lower left cockpit side of the firewall.

From SN LT005 (except SN LT009 and LT010) the battery system consists of the battery , the battery relay (7, Figure 1, Sheet 2), a 80 A fuse (5), the battery switch and the associated wiring. The battery is now located on the left side of the fuselage just behind the firewall; the battery relay and the fuse are parts of the electrical main board.

The BATTERY switch (all SN) is located on the left side of the rear cockpit. The toggle type BATTERY switch features a red cap.

The positive side of the battery is connected to the coil of the battery relay. This relay remains in open state until the BATTERY switch is placed to the ON-position. Placing the BATTERY switch in the ON-position provides a ground for the battery relay energizing this relay. With the battery relay energized, a circuit exists from the battery to the bus bar. The battery supplies power to the bus bar through the 60/80 A fuse.

The energized battery relay will also allow power from the battery to the starter relay (4).

External power is connected to the main bus by the external power relay (3). If the battery shall be charged via external power, the BATTERY switch must be in ON-position.

The battery can also be charged via the direct charge socket located on the left forward side of the bottom fuselage cover. In this case the BATTERY switch should be in the OFF-position.

24-30-11 Battery

Removal/Installation (Up to SN LT004)

NOTICE

Ensure the BATTERY switch is in Off-position.

1 Remove the engine cowling, the main fuselage cover and the LH cuff as per chapter 51.

2 Remove the front seat as per chapter 25.

3 Drain the center fuel tank.

4 Loosen the center fuel tank and move to the RH side.

5 Drain the smoke system.

6 Remove the smoke acro tank, remove the fitting.

7 Disconnect the electrical wiring from the battery.

8 Remove the 4 attachment nuts (LN9348-06) and the top attachment frame.

9 Lift the battery out of its bottom frame and remove.

10 Install in reverse sequence of removal.

Removal/Installation (from SN LT005)

N O T I C E

Ensure the BATTERY switch is in Off-position.

1 Remove the rear instrument panel cover as per chapter 31.

2 Remove the front seat as per chapter 25.

3 Disconnect the electrical wiring from the battery.

4 Remove the 4 attachment nuts (LN9348-06) and the top attachment frame.

5 Lift the battery out of its bottom frame and remove.

6 Install in reverse sequence of removal.

24-30-20 Alternator System

(Refer to Figure 2) The alternator serves as the main component to power the electrical system and charge the battery during normal conditions.

The alternator system consists of the alternator, the alternator relay (2, Figure 1), an optional 60 A fuse (1, Sheet 1), the alternator switch and the associated wiring.The alternator features an integrated DC converter and voltage regulator. The voltage regulator is adjusted to 14 Volts. The alternator is mounted at the right front of the engine.

Up to SN LT004 and for SN LT009 and LT010 the alternator relay (2, Figure 1, Sheet 1) and the fuse (1) are located at the lower left cockpit side of the firewall.

From SN LT005 (except SN LT009 and LT010) the alternator relay (2, Figure 1, Sheet 2) is part of the electrical main board. The optional fuse is now obsolete.

The ALTERNATOR switch (all SN) is located on the left side of the rear instrument panel. The toggle type ALTERNATOR switch features a red cap.

Placing the ALTERNATOR switch to the ON-position will energize the alternator solenoid which provides a circuit from the bus bar to the alternator. The voltage regulator will supply and control the exitation current to keep the output voltage of the alternator constant under varying output current requirements.

With the alternator power available, the battery will be charged from the bus bar. The ammeter, which is in series with the battery and the bus bar will indicate the current flow (positive value) to the battery. When the battery reaches a state of full charge, the ammeter will show an indication near "0".

24-30-21 Alternator

Instructions given below are only applicable for Bosch, Prestolite and Plane Power alternators included in the type design.

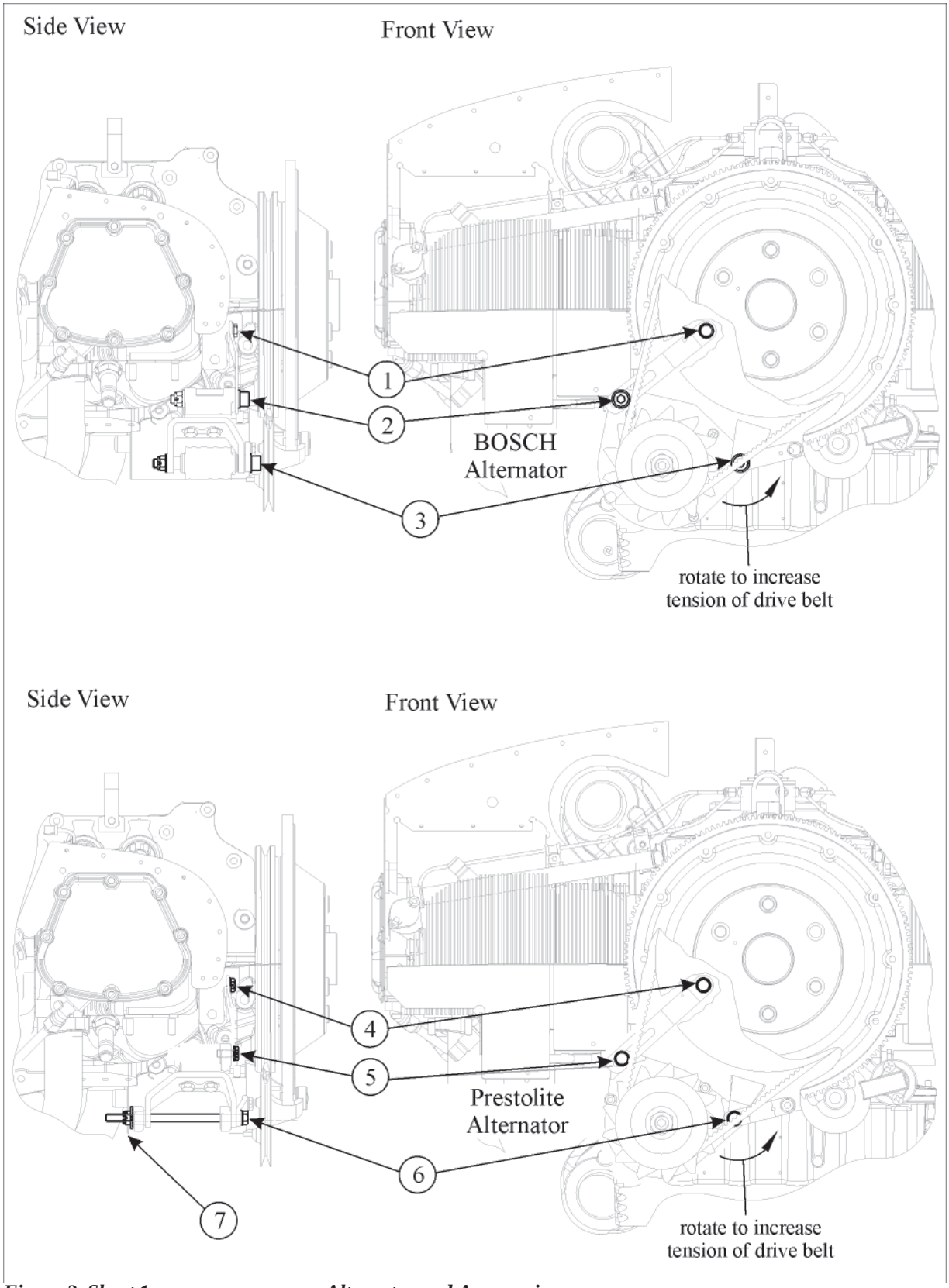


Figure 3, Sheet 1 ***Alternator and Accessories***

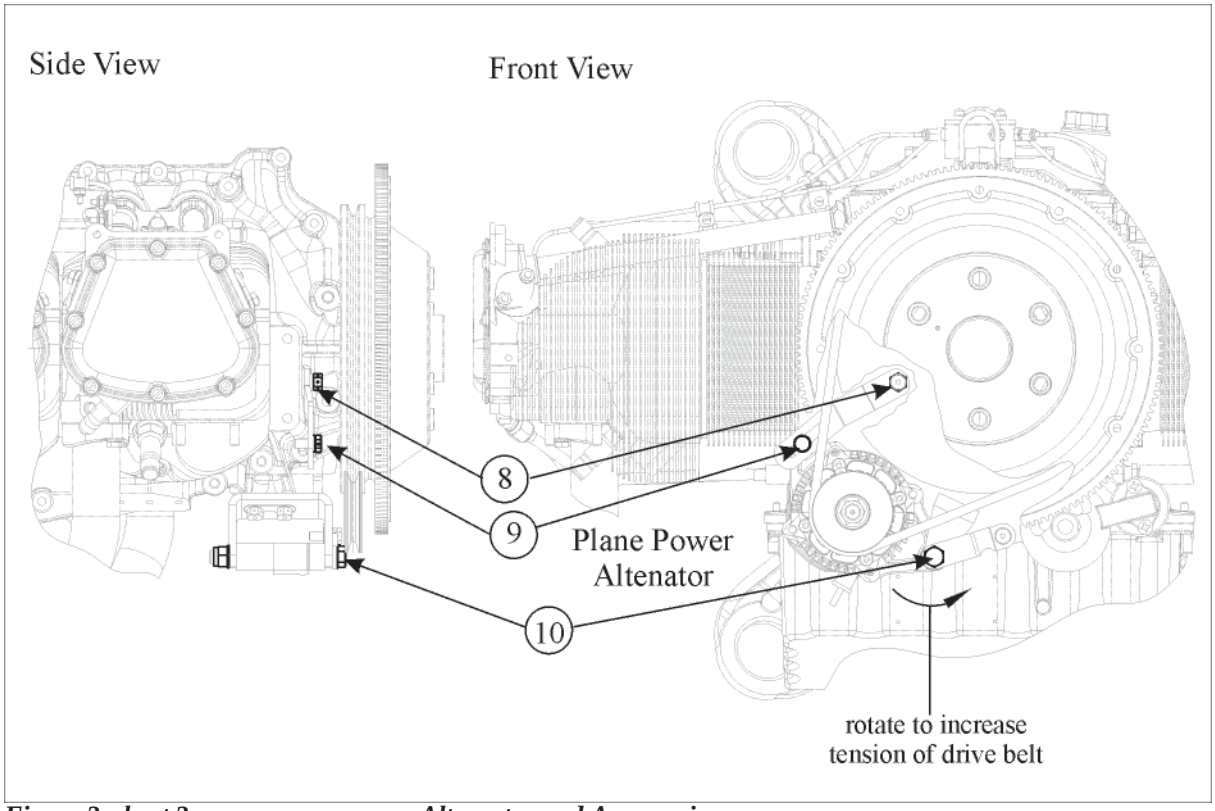


Figure 3, sheet 2 ***Alternator and Accessories***

Removal

1 Remove the upper and lower part of the cowling (ref. chapter 71).

2 Disconnect the wiring of the alternator.

3a (Bosch) Remove cotter pins at castle nuts (2 & 3, Figure 3) and safety wire at bolt (1).

3b (Prestolite) Remove cotter pin at castle nut (7, Figure 3) and safety wires at bolts (4 & 5).

3c (Plane Power) Remove safety wires at bolts (8 & 9, Figure 3).

4a (Bosch) Slightly loosen bolt (1) and castle nuts at bolts (2 & 3) to release drive belt tension.

4b (Prestolite) Slightly loosen bolts (4 & 5) and castle nut (7) to release drive belt tension.

4c (Plane Power) Slightly loosen bolts (8 & 9) and stop nut at bolt (10) to release drive belt tension.

5 Rotate the alternator clockwise around bolt connection (3, 6 or 10).

6 Detach belt from the alternator pulley.

7a (Bosch) Remove castle nuts (2 & 3) and pull bolts for removal of the alternator from the attachment.

7b (Prestolite) Remove castle nut (7) and pull bolts (5 & 6) for removal of the alternator from the attachment.

7c (Plane Power) Remove stop nut (10) and pull bolts (8 & 9) for removal of the alternator from the attachment.

Installation

Refer to Figure 3.

NOTE

When installing the Prestolite alternator, avoid unnecessary compression load at the mounting because this may exceed the structural capability of the alternator lugs. Thus do not torque castle nut (7, Figure 3) to the standard value for M8 bolts. Hand tighten castle nut (7) followed by max. one half (1/2) turn using a wrench just enough to eliminate axial free play of the bolt (6) and align nut and bolt for the clevis pin position. As a final check, try to turn the bolt (6) at its head. If the bolt (6) turns easily, it may be presumed to be tightened correctly.

1 Install in reverse sequence of removal. Refer to Chapter 20-10-03 for torque values of bolt connections.

2 Apply a proper tension to the drive belt by counter-clockwise rotating the alternator around bolt connection (3, 6 or 10, Figure 3).

3 Check tension of the drive belt and adjust if necessary per Chapter 24-30-22.

24-30-22 Drive Belt

Replacement

1 Remove cowling per Chapter 71.

2 Remove spinner per Chapter 51.

3 Remove Propeller according to MT Operation and Installation Manual E-124 (see Chapter 1).

4a (Bosch) Remove cotter pins at castle nuts (2 & 3, Figure 1) and safety wire at bolt (1).

4b (Prestolite) Remove cotter pin at castle nut (7, Figure 1) and safety wires at bolts (4 & 5).

4c (Plane Power) Remove safety wires at bolts (8 & 9, Figure 3).

5a (Bosch) Slightly loosen bolt (1) and castle nuts at bolts (2 & 3) to release drive belt tension.

5b (Prestolite) Slightly loosen bolts (4 & 5) and castle nut (7) to release drive belt tension.

5c (Plane Power) Slightly loosen bolts (8 & 9) and stop nut at bolt (10) to release drive belt tension.

6 Rotate the alternator clockwise around bolt connection (3, 6 or 10)).

7 Detach belt from the alternator pulley.

8 Remove starter ring gear according to applicable Lycoming installation manual (see Chapter 1).

9 Remove belt.

10 Install in reverse sequence of removal. Refer to Chapter 20-10-03 for torque values of bolt connections.

11 Apply a proper tension to the drive belt by counter-clockwise rotating the alternator around bolt connection (3, 6 or 10, Figure 3).

12 Check tension of the drive belt and adjust for new drive belt per next paragraphs.

13 Check drive belt tension after the first 1 to 1.5 hours of operation and then after 8 hours of operation and adjust for used drive belt per next paragraphs.

Tension Check

IMPORTANT

An improperly tensioned alternator drive belt can slip, wear prematurely, and reduce electrical output of the alternator.

Use the following simple method (Torque Method) to check proper tension of the drive belt. This method of checking drive belt tension consists of measuring the torque required to slip the drive belt at the small pulley and is accomplished as follows:

1 Secure the propeller to prevent rotation of the engine.

2 Apply a torque indicating wrench to the nut that attaches the pulley to the alternator and turn it in a clockwise rotation. Observe the torque shown on the wrench at the instant the pulley slips.

3 Check torque indicated in step 2 with the torque specified in the following.

N O T E

The higher drive belt tension specified in the following for the new drive belt is to compensate for the initial stretch that takes place as soon as it is operated. These higher tension values should not be applied to drive belts that have been used previously.

Condition:	Torque indicated at alternator pulley
New drive belt:	15 to 18 Nm (10 to 13 ft.lbs.)
Used drive belt:	10 to 12 Nm (7 to 9 ft.lbs.)

4 Adjust belt tension accordingly.

Tension Adjustment

1a (Bosch) Remove cotter pins at castle nuts (2 & 3, Figure 1) and safety wire at bolt (1).

1b (Prestolite) Remove cotter pin at castle nut (7, Figure 1) and safety wires at bolts (4 & 5).

1c (Plane Power) Remove safety wires at bolts (8 & 9, Figure 3).

2a (Bosch) Slightly loosen bolt (1) and castle nuts at bolts (2 & 3) to release drive belt tension.

2b (Prestolite) Slightly loosen bolts (4 & 5) and castle nut (7) to release drive belt tension.

2c (Plane Power) Slightly loosen bolts (8 & 9) and stop nut at bolt (10) to release drive belt tension.

3 Rotate the alternator counterclockwise around bolt connection (3, 6 or 10) to increase the belt tension. Rotate the alternator clockwise around bolt connection (3, 6 or 10) to decrease the belt tension.

4a (Bosch) Fasten the castle nuts at bolts (2 & 3) and fasten bolt (1).

4b (Prestolite) Fasten the castle nut (7) and fasten bolts (4 & 5).

4c (Plane Power) Fasten the stop nut at bolt (10) and fasten bolts (8 & 9).

5a (Bosch) Install new cotter pins at castle nuts of bolts (2 & 3) and safety wire at bolt (1).

5b (Prestolite) Install new cotter pins at castle nut (7) and safety wires at bolts (4 & 5).

5c (Plane Power) Install new safety wires at bolts (8 & 9).

24-30-23 Alternator Pulley

Removal

1 Remove the nut from the alternator drive shaft.

2 Remove the pulley from the alternator drive shaft.

Installation

1 Install in reverse sequence of removal.

2 Apply proper torque value of 50 +/-5 Nm (37 +/-3 ft. lbs.).

3 Apply inspection lacquer.

24-30-30 System Ground

The negative side of the battery is connected to the aircraft steel tube frame (negative ground). This provides a ground for the system through use of the steel tube frame.

24-60-00 DC ELECTRICAL LOAD DISTRIBUTION

(Refer to Figure 2) The bus bar powers the electrical equipment and accessories furnished on the aircraft. From the main bus, which physically corresponds to the bus bar, the electrical load is distributed through circuit breakers and switches.

The bus bar is located at the back side of the circuit breakers, the circuit breakers themselves are located at the rear instrument panel such as the toggle switches. Subminiature pushbotton switches for the radio resp. intercom are mounted on the control sticks and the throttle controls.

IMPORTANT

If replacement of wiring passing the firewall is necessary, renew the sealing of the bushing grooves and gaps at the engine side of the firewall. Use PRC-812 (Products Research & Chemical Corporation, USA) firewall sealant.

24-60-01 Circuit Breaker

Removal/Installation

NOTICE

Disconnect battery

1 Remove the instrument panel cover per chapter 31.

2 Disconnect the tubings from the resp. instruments.

3 Remove the instrument panel attachment screws.

4 Turn down the panel.

5 Loosen the bus bar attachment screws and remove bus bar if necessary.

6 Disconnect wiring.

7 Remove the attachment nut at the front side of the instrument panel.

8 Remove the circuit breaker.

9 Install in reverse sequence of removal.

24-60-02 Toggle Switch

Removal/Installation

NOTICE

Disconnect battery

1 Remove the instrument panel cover per chapter 31.

2 Disconnect the tubings from the resp. instruments.

3 Remove the instrument panel attachment screws.

4 Rotate the panel.

5 Disconnect wiring.

6 Remove the attachment nut at the front side of the instrument panel.

7 Remove the switch.

8 Install in reverse sequence of removal.

24-60-03 Subminiature Pushbutton Switch

Removal/Installation

NOTICE

Disconnect battery

1 Remove the attachment nut.

2 Pull out the switch some centimeters.

3 Loosen the soldered connections.

4 Remove the switch.

5 Install in reverse sequence of removal

24-60-04 Relay

Removal/Installation

1 Disconnect battery and external power.

2 Remove the cowling, the main fuselage cover and the LH cuff as per chapter 51.

NOTICE

Possible damage of internal relay mechanism due to rotational displacement of contact and coil eletrical terminals.
Use a back-up wrench to hold the bottom nut stationary when applying/releasing the outer nut.

3 Disconnect electrical wiring.

4 Remove the DIN933 M5x12 attachment bolts, the DIN9021 M5x20 washers and the LN9348-05 stopnuts.

5 Remove the relay.

6 Install in reverse sequence of removal.

⚠ DANGER

Serious injuries or death due to unintentional rotating of the propeller when switching on the master switch with defective starter relay.
Do not allow any person in the propeller operating area when switching on the master switch after having worked on the starter relay.

Chapter 25

Equipment and Furnishings

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25-10-00 FLIGHT COMPARTMENTS

The EXTRA 300LT is standard equipped with a pilot and a co-pilot seat including special aerobatic seat belt/shoulder harnesses for both seats. An aircraft document bag is installed in the rear cockpit.

25-10-01 Front Seat

The front seat is a nonadjustable one-piece composite design. It is connected to the fuselage by four screws at the top of the backrest and by two screws at each seat-to-pedal connection.

Removal/Installation

1 Remove rear instrument cover as per Chapter 31.

2 Loosen the leather protection cuff from the control stick.

3 Remove front seat attachment screws.

4 Remove front seat.

5 Disconnect crotch strap from seat if necessary.

6 Install in reverse sequence of removal.

25-10-02 Rear Seat

The rear seat assembly consists of two parts. The seat and the backrest are composite materials which are connected by bolts to a separate steel frame resp. steel tubes which allow adjustment. The front of the seat is connected to the fuselage by bolts. The seat to backrest connection and the connections to the fuselage are made by means of quickpins.

Removal/Installation

1 Loosen the leather protection cuff from the control stick.

2 Remove quickpins of the backrest steel tubes and the backrest-to-seat connection.

3 Remove rear seat backrest.

4 Disconnect backrest from the steel tubes if necessary by removing the resp. bolts.

5 Remove the seat attachment bolts (front side of the rear seat) and the quickpins of the seat steel frame.

6 Remove the seat.

7 Disconnect the seat from the steel frame and the crotch strap if necessary by removing the resp. bolts.

8 Assemble and install in reverse sequence of disassembly resp. removal.

25-10-03 Seat Belts

(Refer to figure 1) Each seat is equipped with a special aerobatic seat belt/shoulder harnesses from the manufacturer "Hooker custom Harness". Such an assembly of straps consists of a right and left shoulder harness, two right and two left seat belts and a crotch strap.

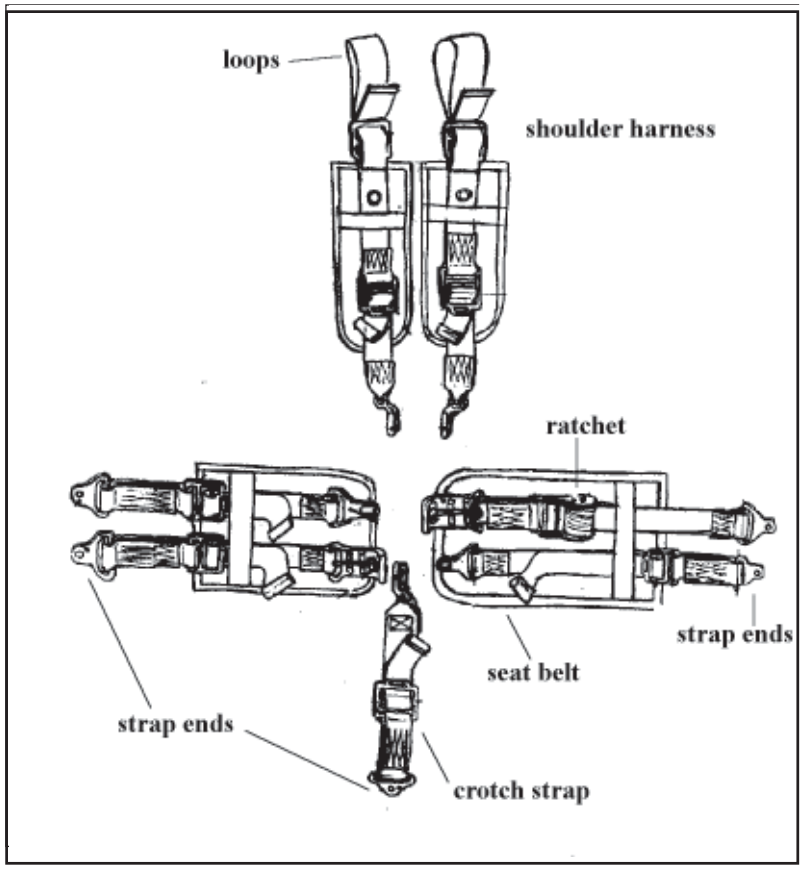


Figure 1 Strap Assembly

IMPORTANT

Keep belts from contact with chemicals, solvents, degreaser, battery acid and excessive exposure to direct sunlight.

Installation

Each strap end is fitted with bolts, stop nuts and washers to its own fitting at the steel frame resp. at the underside of the seat.

The shoulder strap loops of the front and rear seat are attached to the horizontal steel tubes as shown in figure 2.

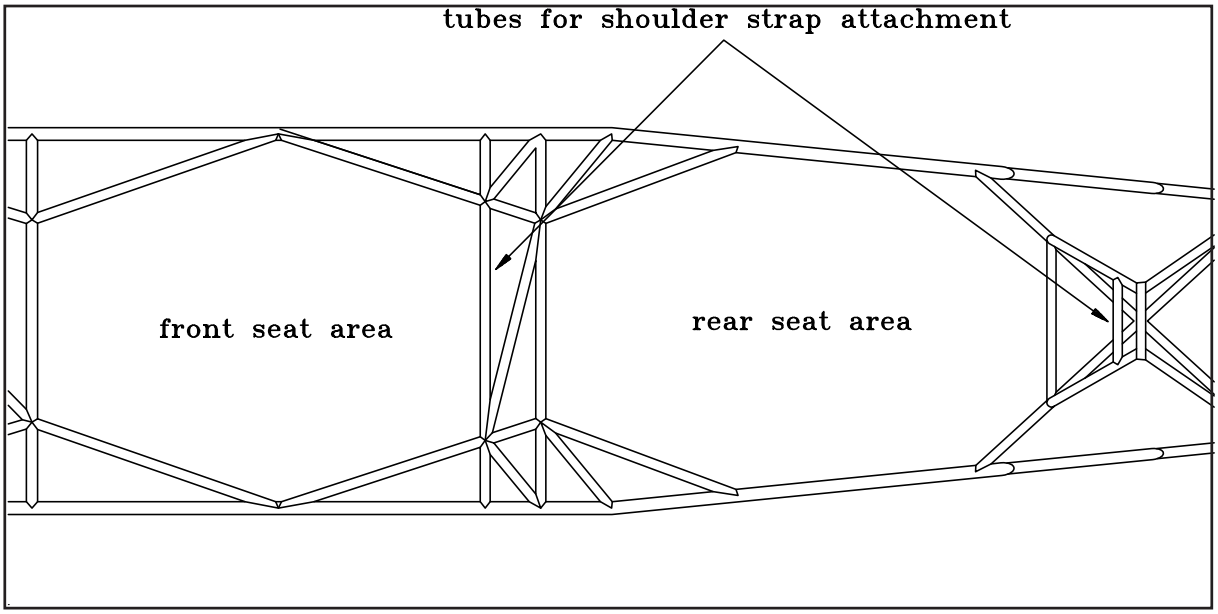


Figure 2 *Tubes for Shoulder Strap Attachment*

The shoulder harness shall be installed using the 3-bar slide as shown in figure 3.

IMPORTANT

Tuck excess webbing through the 3-bar slide. Failure to make this third pass through the 3-bar slide will cause the belt to slip under load.

IMPORTANT

Make shure that after the proper length is determined the 3-bar slide is positioned as close to the structure as possible.

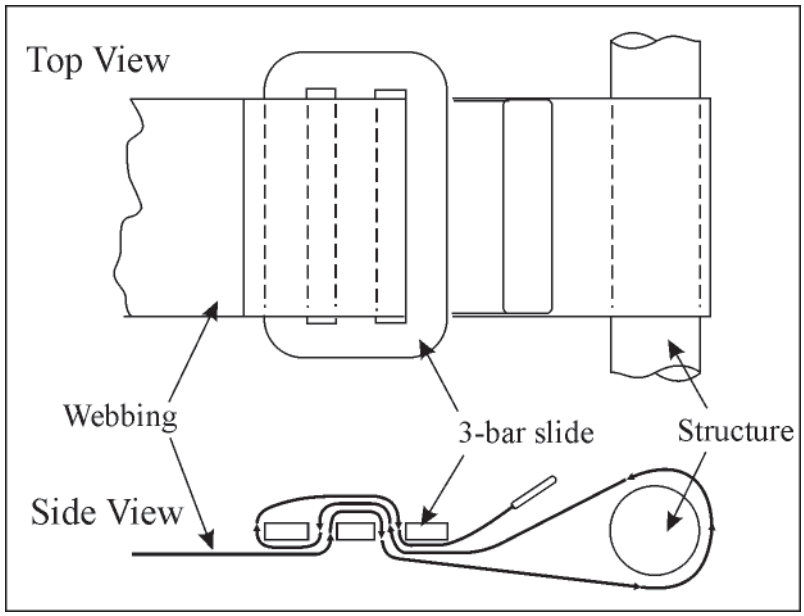


Figure 3 *Shoulder Strap Attachment*

25-10-04 Aircraft Document Bag

The rear cockpit of the EXTRA 300LT is furnished with an aircraft document bag. This aircraft document bag is mounted with three AN 526 C 1032 R8 bolts and DIN 9021 M5x20 washers to the right inside of the cockpit frame.

Chapter 27

Flight Controls

Table of Contents

27-00-00 GENERAL

(Refer to Figure 1) The EXTRA 300LT is standard equipped with full dual primary flight controls including conventional control sticks and adjustable rudder pedals. The control surfaces are operated by a direct mechanical linkage. The control surface deflections are shown in Figure 2.

For rear torque tube bearing lubrication there is a rubber plugged hole in the bottom fuselage cover.

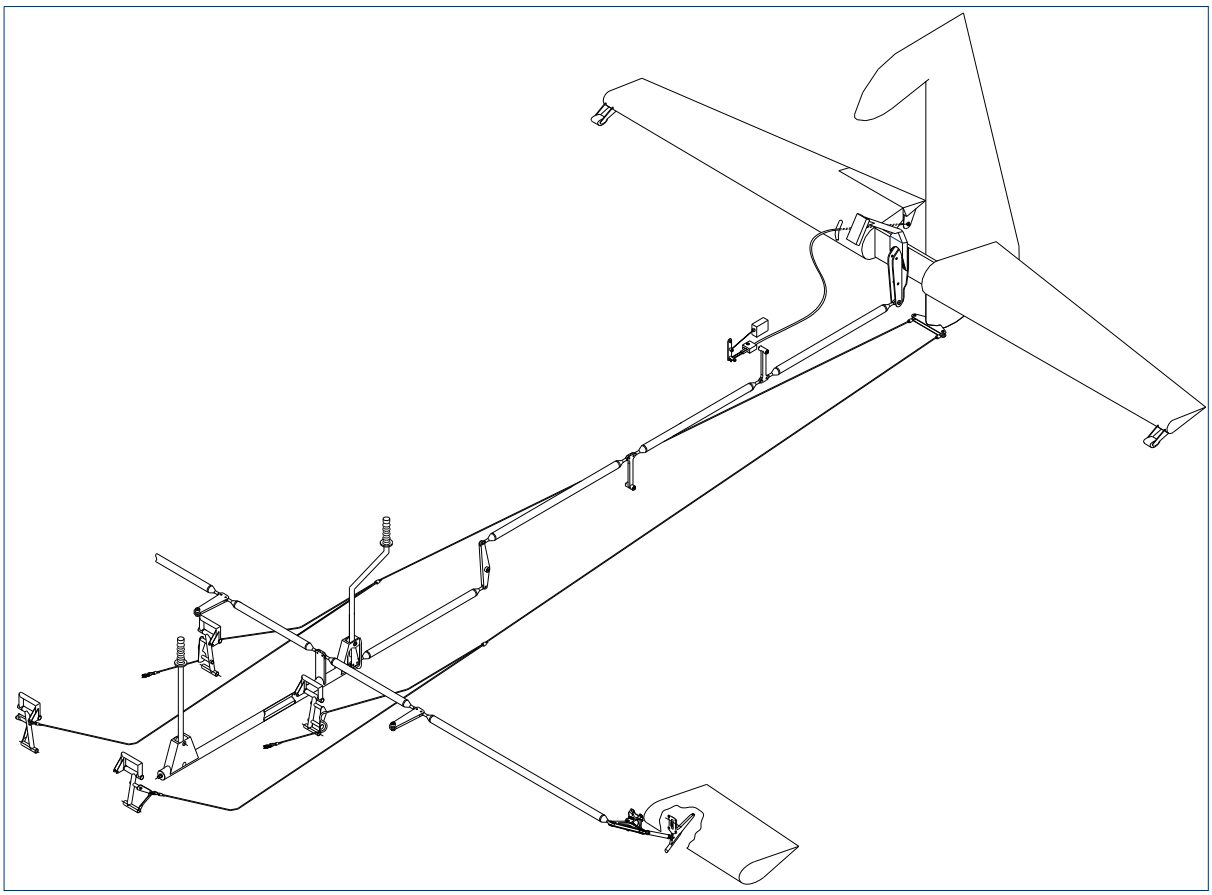


Figure 1 ***Controls***

N O T E

When installing a bellcrank or control stick the spacer sleeve inside the bearing could be displaced as shown in Figure 2. Use a mandrel to adjust the spacer sleeve.

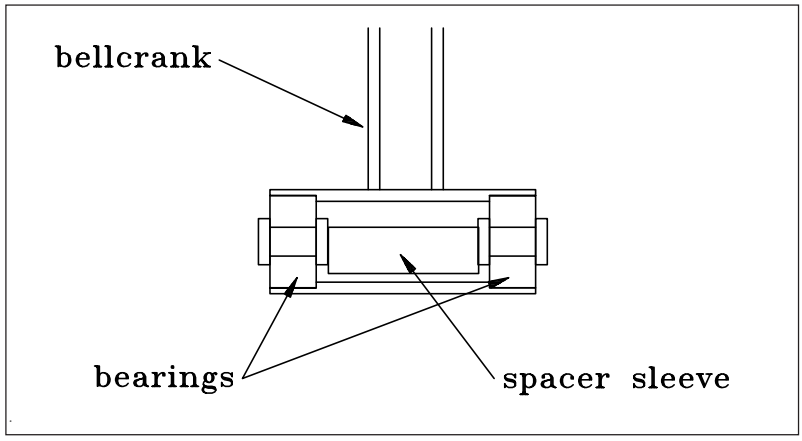


Figure 2 Spacer Sleeve Displaced

N O T E

When installing a control surface use mandrels as shown in the following Figure 3 to preset the control surface. Then press out each mandrel by pushing a bolt into the bearing.

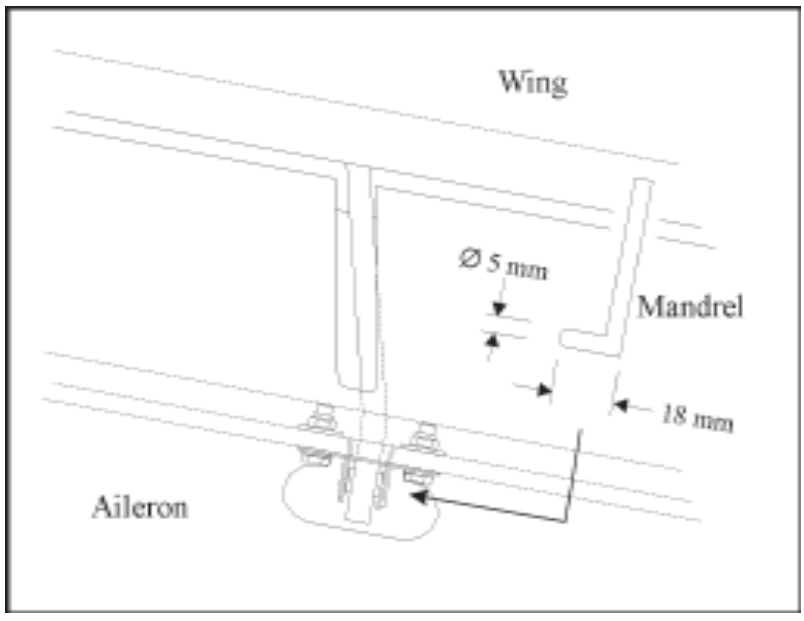


Figure 3 Control Surface Mounting Aid

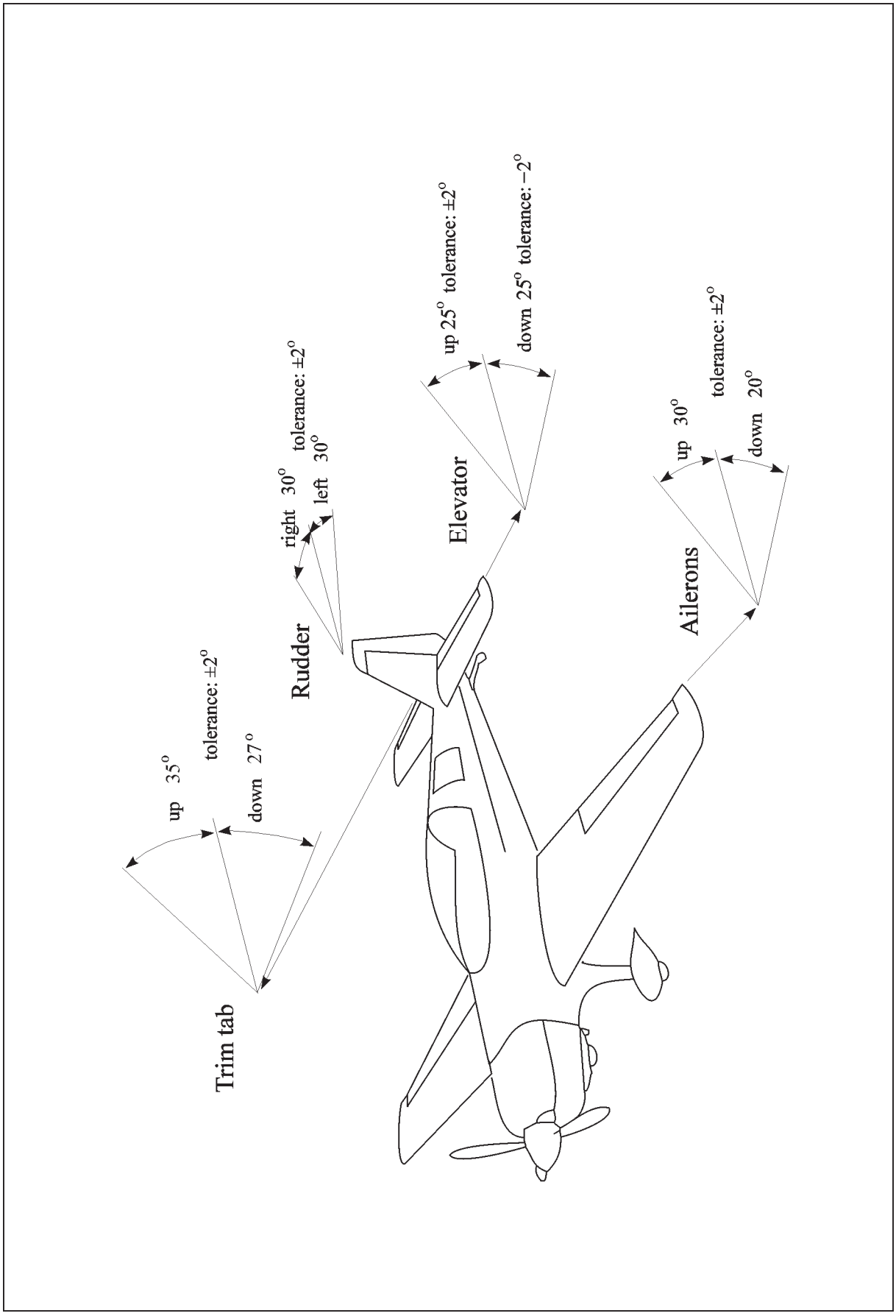


Figure 4 ***Control Surface Deflections***

Free Play in the Control System

With controls (stick and rudder pedals) locked, the free play measured at the control surfaces must not exceed the values listed:

** measured at the trailing edge and max. chord*

Aileron: ±1 mm*

Elevator: ±1 mm*

Trim tab: ±2 mm*

The rudder has a direct cable connection with retracting springs and is therefore always under tension.

27-00-01 Control Rods

Removal/Installation

Refer to Figure 8. All control rods are attached to the control levers in the same way with LN bolts, washers and self-locking nuts. The control rods inside the wing are interconnected by ground bonding leads fastened to the rod ends by additional nuts. So the rod ends have to be disassembled, when the ground bonding leads shall be disconnected. In this case also refer to Chapter 27-00-01.

1 Remove the respective access panels as per Chapter 51.

NOTE

In case of removal of the control rod connecting the control sticks also observe the instructions given in the Chapters 27-00-03 and -04.

2 Remove the M6 attachment bolts (1).

3 Remove the control rod.

4 Reverse procedure to install the control rod. Replace the selflocking nuts.

Lengths

The nominal measurements given in this Chapter refer to the distances between the centers of the rod end bearings (see Figure 5).

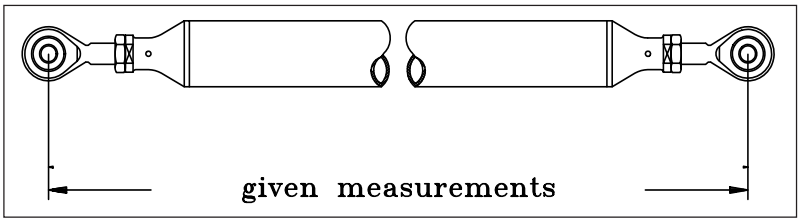


Figure 5 *Control Rod Measurement*

Refer to the following Figure 6 for identification of the control rods.

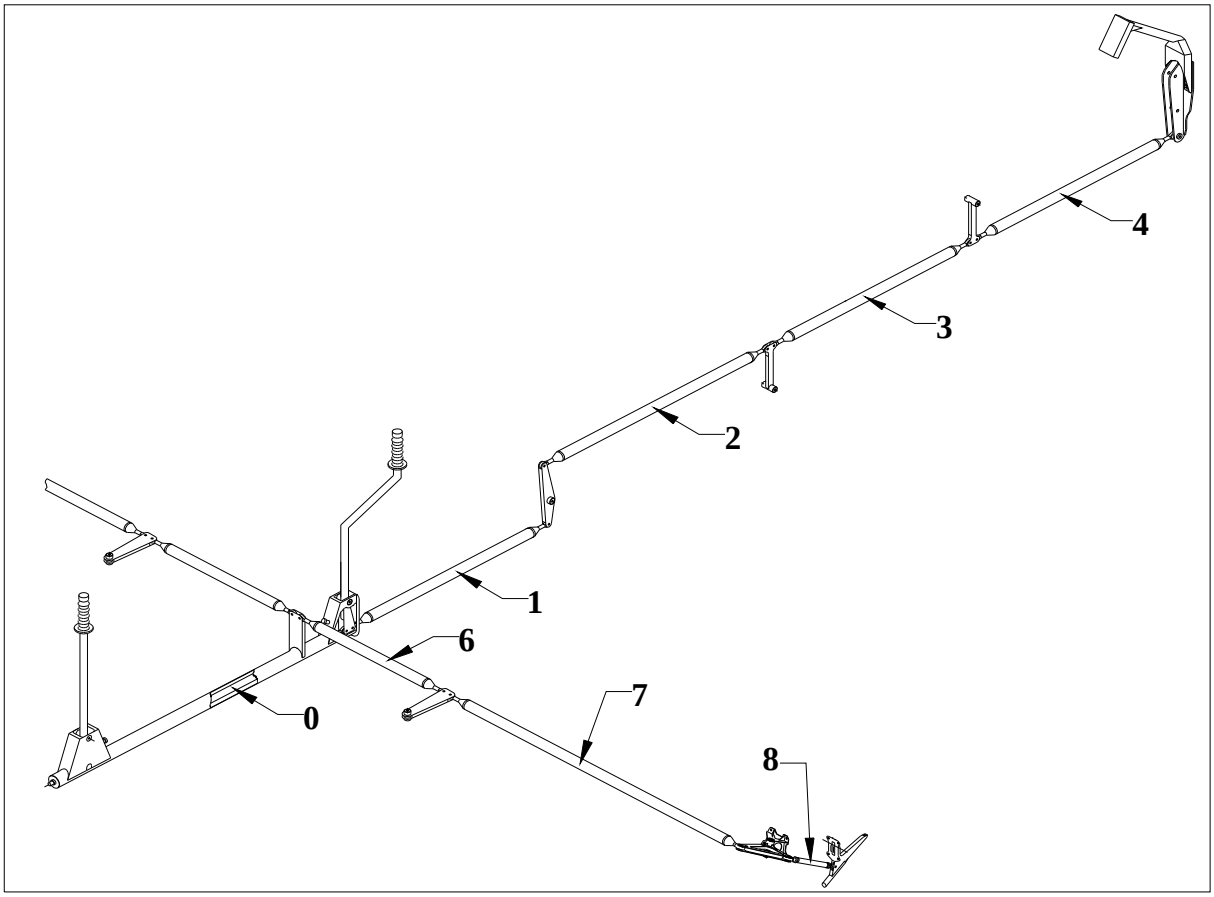


Figure 6 *Control Rod Identification*

Control Rod	Measurement	Rod end alignment
0	1020 mm	0°
1	809 mm	0°
2	645 mm	0°
3	737 mm	0°
4	764 mm	0°
6	532 mm	90°
7	1087 mm	20°
8	195 mm	0°

Table 1 *Control Rod Measurement & Rod End Alignment*

Length Adjustment

The standard measurements are given in the paragraph above.

1 Remove the respective access panels.

2 Disconnect one rod end from the respective bellcrank.

3 Loosen the check nut.

NOTE

It might be necessary to adjust both rod ends to get the correct length. In this case the free thread of both rod ends should have the same length.

IMPORTANT

Ensure that the rod ends of each control rod are exactly aligned to each other (see Table 1) after adjustment. This particularly applies for the control rod (1, Figure 6), which must allow the torque tube to rotate.

IMPORTANT

Observe that the rod ends joined to the rocker type bellcrank should be adjusted long enough not to obstruct the travel.

IMPORTANT

Ensure that the threaded rod is visible in the check hole (Figure 7) in any case.

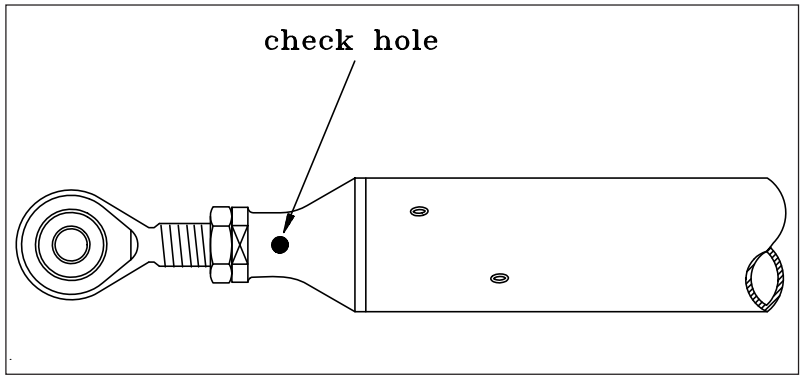


Figure 7 Control Rod Check Hole

4 Turn the rod end in the desired direction to change the length.

5 Ensure that the rod end is in proper alignment with the respective control lever and tighten the check nut.

6 Reinstall the control rod per Chapter 27-00-01.

7 Ensure that the control rods don't jam when the control sticks are moved between the extreme positions.

27-00-02 Bellcranks

Removal/Installation

Refer to Figure 8

1 Remove the respective access panels.

2 Remove the adjacent control rods per Chapter 27-00-01.

3 Remove the M5 attachment bolt (2).

4 Remove the bellcrank.

5 Reverse procedure to install the bellcrank using sufficient washers (min. 2) at the nut side of the bolt to cover the shank (except the rocker type bellcrank: use only one washer on each side). Replace the selflocking nuts. Observe the first note of Chapter 27-00-00. To ensure installation of the elevator rocker type bellcrank in correct direction this bellcrank is marked by an "F" which indicates the front side (refer to detail A of Figure 8).

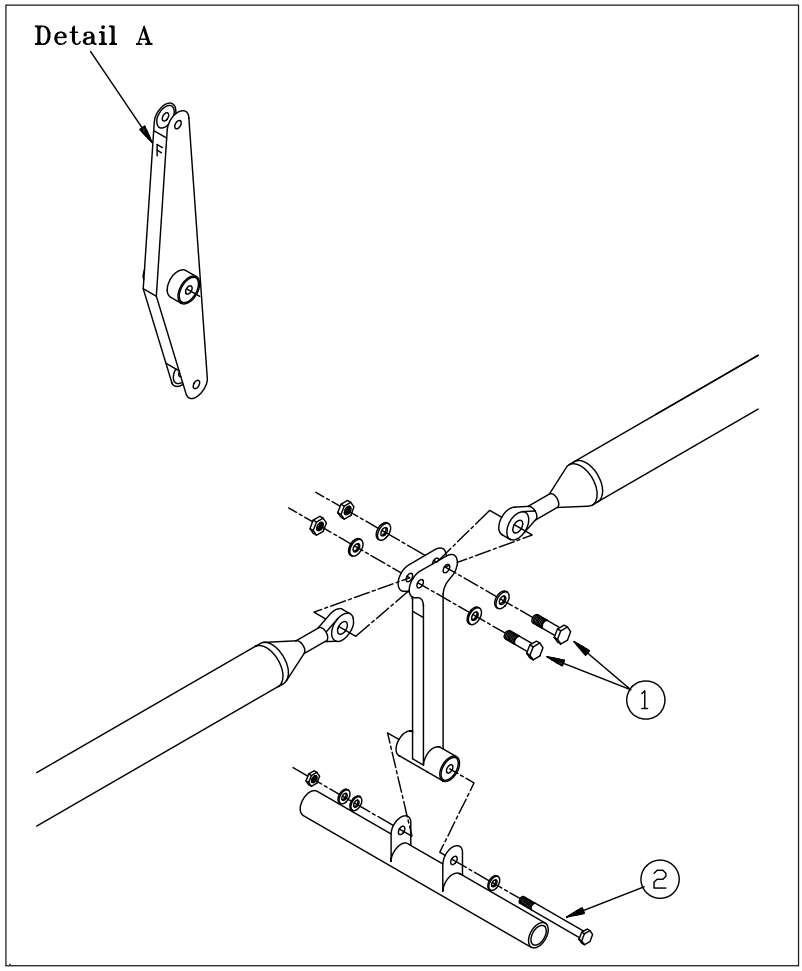


Figure 8 Control Levers and Rods Removal/Installation

27-00-03 Front Control Stick

Removal/Installation

Refer to Figure 9.

1 Remove front seat per Chapter 25-10-01.

2 Disconnect the electrical wiring.

3 Remove the control stick attachment bolt (1).

4 Disconnect the control stick from the control rod per Chapter 27-00-01. Use the control stick to move the control rod attachment bolt within the mounting hole area (2).

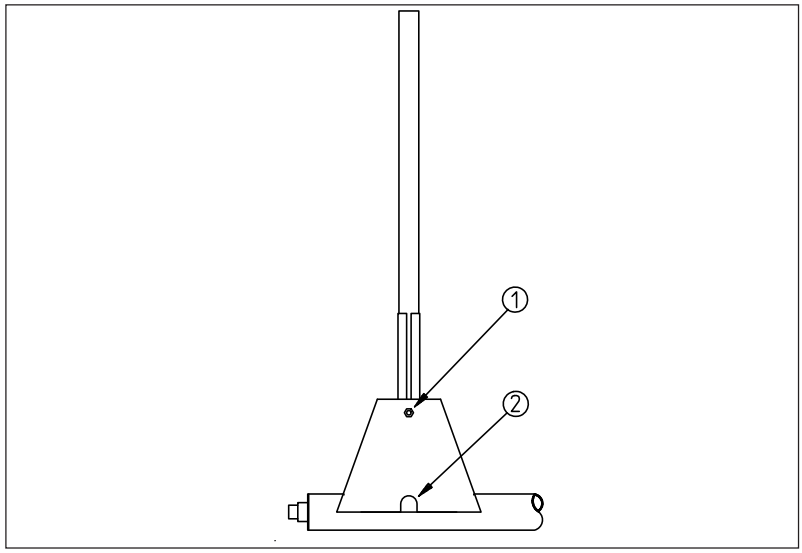


Figure 9 Front Control Stick Removal/Installation

5 Remove the control stick.

6 Reverse procedure to install the control stick. Replace the selflocking nuts. Observe the first note of Chapter 27-00-00.

7 Check for potential chafing of the wiring after installation.

27-00-04 Rear Control Stick

Removal/Installation

1 Remove rear seat as per Chapter 25-10-02.

2 Disconnect the electrical wiring.

3 Bring the control stick in the foremost position and disconnect the control stick from the control rods per Chapter 27-00-01.

4 Remove the control stick attachment bolt.

5 Remove the control stick.

6 Reverse procedure to install the control stick. Replace the selflocking nuts. Observe the first note of Chapter 27-00-00.

7 Inspect for potential chafing of the wiring after installation.

27-00-05 Torque Tube

Removal/Installation

1 Remove the bottom fuselage cover as per Chapter 51.

2 Remove the control sticks and rods as per Chapters 27-00-01 and 27-00-03/04.

3 Loosen the bolts of the front and rear bearing blocks.

4 Disassemble the bearing blocks and remove the torque tube.

5 Reverse procedure to install the torque tube. Ensure that the lubrication hole of the rear bearing block is on the bottom. Lubricate the rear bearing with MIL-G-81322D grease (Aeroshell grease 22C or equivalent).

27-10-00 AILERON CONTROL

(Refer to Figure 10) The aileron (3) is directly mechanically linked to the control sticks (1, 2) by the aileron actuator arm (4) with spade arm, push-pull rods (5), bellcranks (6) and the torque tube (8). The bell cranks have two sealed ball bearings. Each aileron is mounted at three points in spherical bearings pressed into aluminium hinge arms. For lightning protection reasons each hinge arm is electrically bonded to the corresponding attachment bracket at the aileron by bonding braids. The rod end bearings of the push-pull rods located in the wing are also interconnected by bonding braids. The travel stops (7) are located at the torque tube next to the rear control stick (8).

To reduce pilot's hand forces the ailerons are equipped with spades.

To prevent flutter the ailerons are mass balanced in the overhanging leading edge.

Two access panels on the bottom surface of each side of the wing allow access to the main parts of the aileron control.

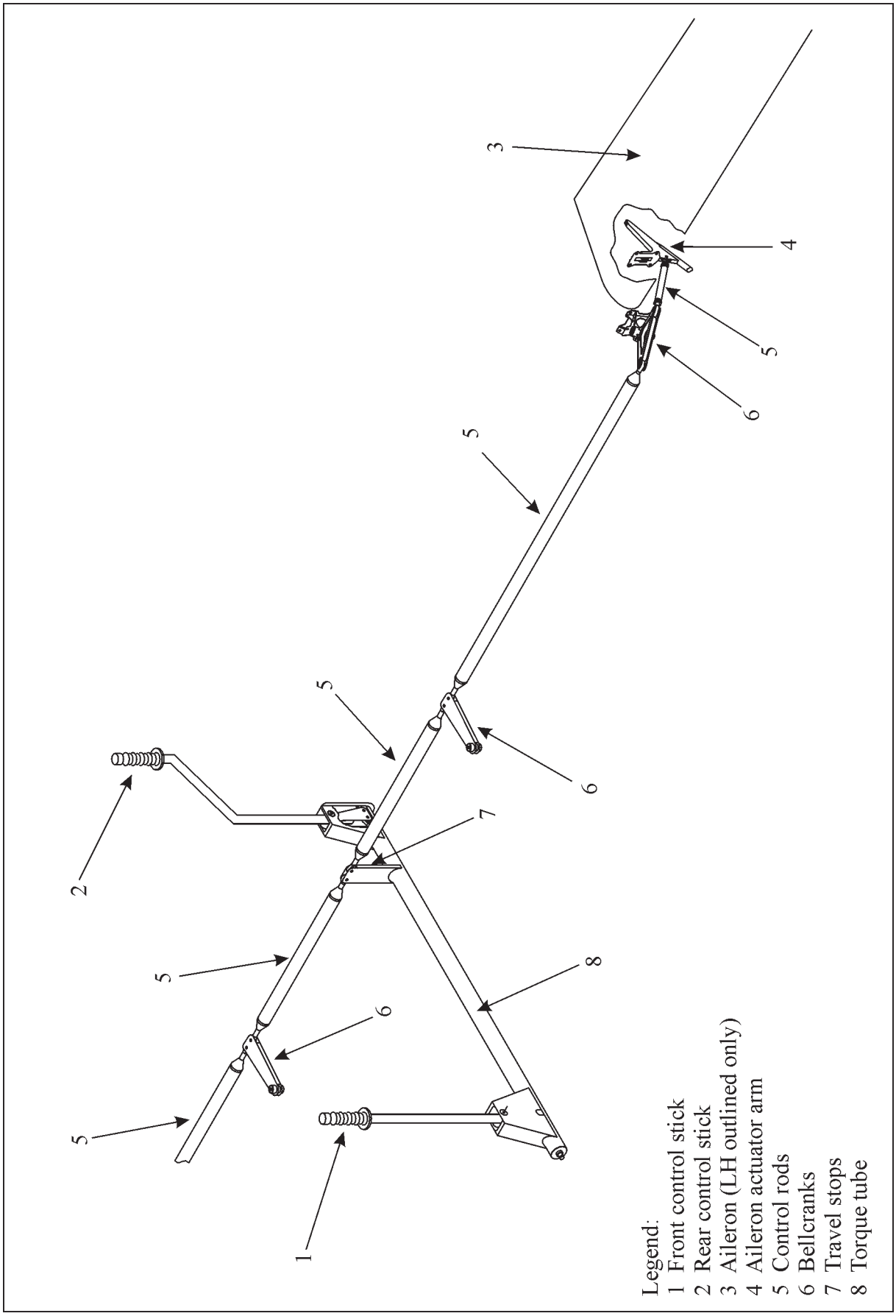


Figure 10 ***Aileron Control***

27-10-01 Ailerons

Removal/Installation

1 Disconnect the actuator rod from the aileron actuator arm.

2 Disassemble the spade if necessary observing the quantity and location of shimming washers.

3 Remove the PU tape from the hinge cutouts.

4 Loosen the hinge bolts and the ground bonding braids and remove the bolts.

5 Install in reverse sequence of removal. Ensure that the spade is installed with the same quantity and location of shimming washers (refer to Figure 12). Observe the second note of Chapter 27-00-00. Apply new 3M Scotch 8671 PU tape.

Rigging

Before beginning any adjustments inspect control rods, levers and hinges for signs of wear or damage. For new control rods check if lengths correspond to the measurements given in Chapter 27-00-01. If necessary replace parts and correct lengths per Chapter 27-00-01.

1 Secure the rear control stick in the neutral position.

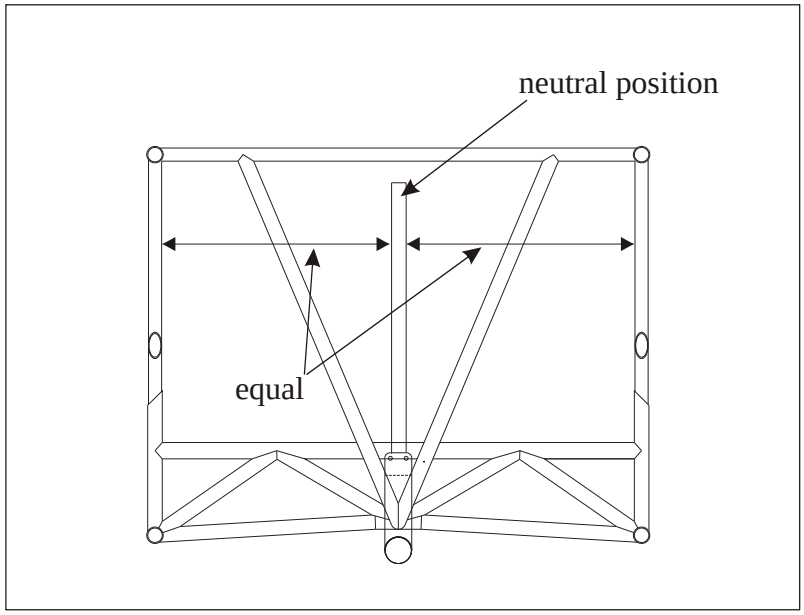


Figure 11 Neutral Position of Rear Control Stick

2 Remove inboard and outboard wing access panels.

3 Check neutral (87°) position of inboard bellcranks (refer to Figure 12).

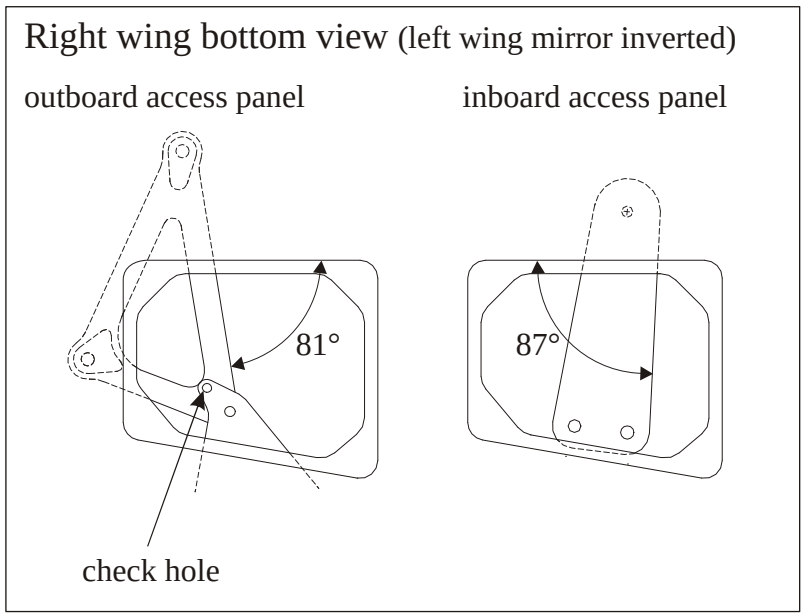


Figure 12 Neutral Position of Aileron Bellcranks

4 Adjust length of control rods 6 (Figure 6) if necessary per Chapter 27-00-01.

5 Check neutral (81°) position of outboard bellcranks using the respective check hole (refer to Figure 12).

6 Adjust length of control rods 7 (Figure 6) if necessary per Chapter 27-00-01.

7 Check if the ailerons are in 0°-position.

8 Adjust length of control rods 8 (Figure 6) if necessary per Chapter 27-00-01.

9 Release the control stick.

10 Check if the left aileron travel is within the given tolerances (up 30°/down 20°, tol. ±2°). Use a conventional protractor.

11 Adjust the travel stops if necessary.

12 If the travel of the ailerons exceeds the given tolerances, contact the manufacturer.

13 Perform the following checks:

a Check if the movement of the control sticks is free over the whole travel range.

b Check if control rod 1 (Figure 6) has several degrees radial play when control stick is in extreme positions.

c Check if the control stick travel is symmetrically to each side.

14 Contact the manufacturer when detecting faulty results.

15 Reinstall wing access panels.

27-10-02 Spades

Rigging

For roll trim the spade rigging angle of incidence has to be changed. Insert washer(s) between the spade and the mounting plate (refer to Figure 13). For example: When the aircraft rolls to the left, insert washer(s) at the front attachment bolt of the right spade.

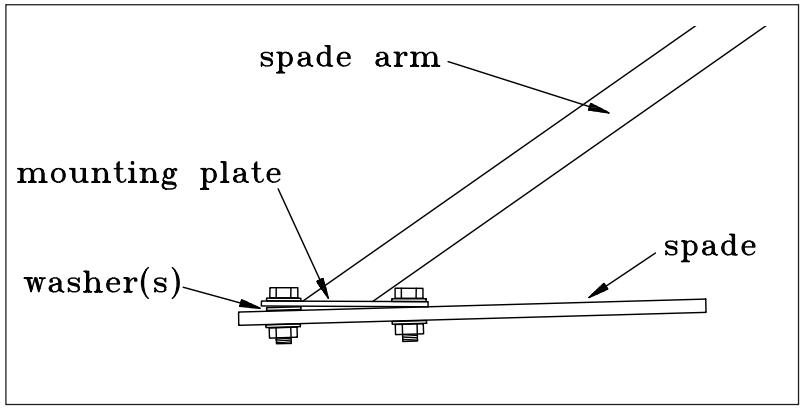


Figure 13 Spade Rigging

27-20-00 RUDDER CONTROL

(Refer to Figure 14) The rudder pedals (1) are connected via a cable system (2) to the bottom hinge bellcrank (3). The cables are guided by fairleads (6). Springs (9) keep the cables under tension when they are not operated. The rear pedals are electrically adjustable. The rudder (4) is mounted at three points in spherical bearings pressed into a aluminium hinge resp. into aluminium hinge arms. For lightning protection reasons each hinge (arm) is grounded to the corresponding attachment bracket at the rudder by bonding leads. A travel stop plate is located at the bottom hinge bracket. A second safety stop is located at the rudder pedal bearing having the only purpose of protecting the lower brake system fitting in case of rudder cable failure.

IMPORTANT

This second stop must not be reached under normal operation conditions. Misallignment or exessive elongation of the rudder cabels will result in misuse of this second stop and a subsequent overload of the rudder bearing. A subsequent inflight failure of the footrest could occur.

To prevent flutter the rudder is mass balanced. The mass balance weight of the rudder is installed in the rudder horn.

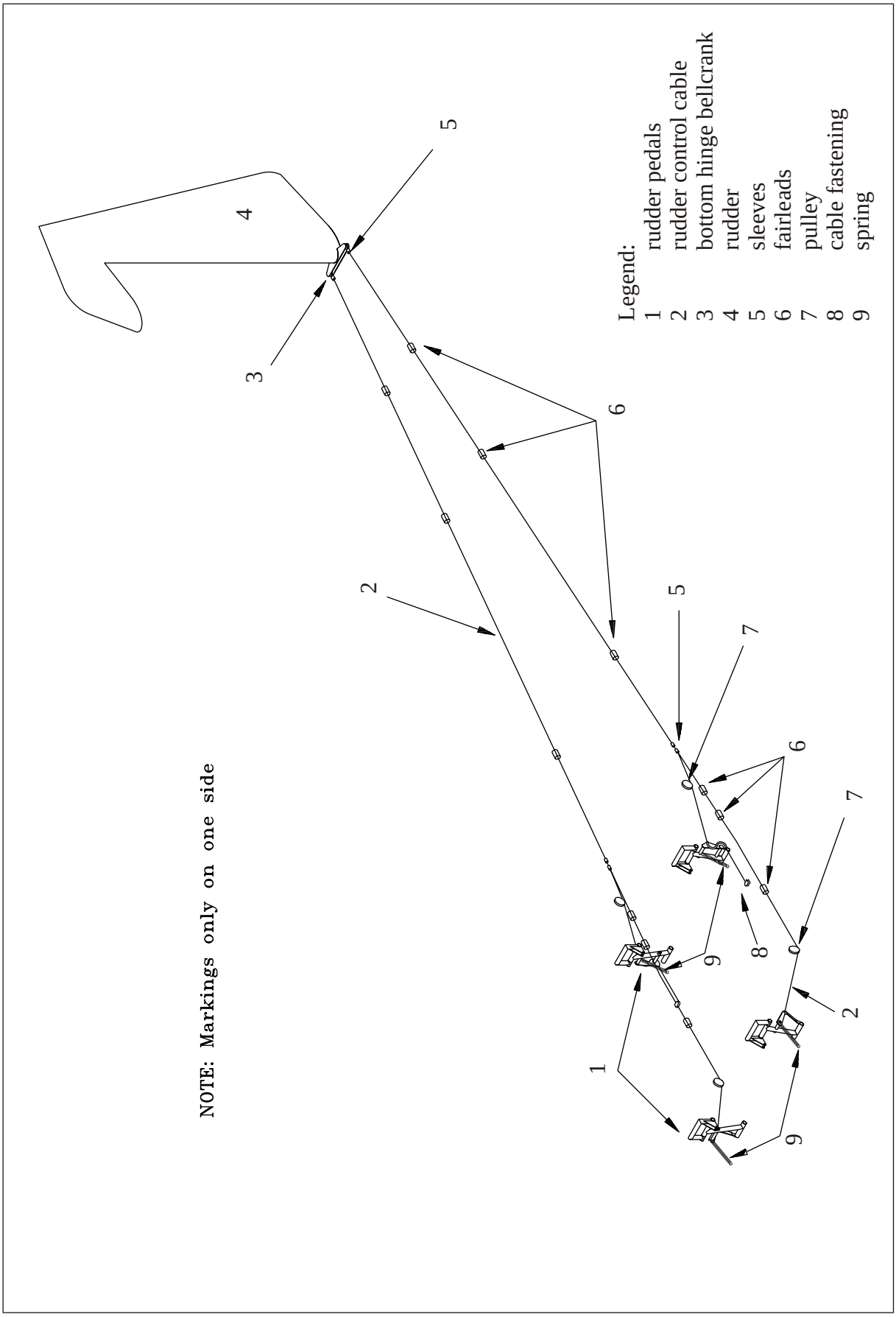


Figure 14 ***Rudder Control***

27-20-01 Rudder

IMPORTANT

Perform checks 10-12 of "Flight Controls" presented in Chapter 05-20-04 after each maintenance work affecting the rudder control cables.

Removal/Installation

1 Disconnect the rudder control cables from the bottom hinge bellcrank.

2 Loosen the hinge bolts and the ground bonding leads and remove the bolts.

3 Install in reverse sequence of removal. Observe the second note of Chapter 27-00-00.

Rigging

NOTE

Inspect the control cables, the pulleys, the fairleads and the bottom hinge assembly (with the travel stop plate) for signs of wear or damage before beginning any adjustments. Replace parts if necessary.

1 Secure the rudder pedals in neutral position.

2 Check if the rudder is in 0°-position. (Rudder horn leading edge in alignment with the leading edge of the vertical stabilizer.)

3 Replace the control cables and adjust the length as per Chapter 27-20-04 if necessary.

4 Check if the rudder travel is within the given tolerances (left/right 30° ±2°).

5 If the rudder travel is out of limits, contact the manufacturer for advice.

27-20-02 Bottom Hinge Bracket

Removal/Installation

1 Remove the rudder per Chapter 27-20-01.

2 Loosen the attachment bolts.

3 Remove the bottom hinge bracket with the travel stop plate.

4 Install in reverse sequence of removal.

27-20-03 Bottom Hinge Bellcranks

Removal/Installation

1 Remove the rudder per Chapter 27-20-01.

2 Loosen the attachment bolts.

3 Remove the bottom hinge bellcranks.

4 Install in reverse sequence of removal.

27-20-04 Control Cable

Removal

1 Remove the respective access panels

2 Remove the cable to fuselage attachment bolts.

3 Remove the cable to rudder bellcrank attachment bolts.

4 Cut the control cables behind the front shrinking sleeves and behind the cable to cable connection.

5 Remove the control cable parts by pulling out to the back.

Installation

Use only control cables manufactured by EXTRA Flugzeug-produktions- und Vertriebs- GmbH. Those cables are prepared for simple installation.

1 Remove the respective access panels as per Chapter 51.

2 Secure the rudder (4, Figure 14) in 0°-position.

3 Mount the pre-assembled eye end of the longer control cable to the LH cable fastening (8).

4 Check that the 550 mm teflon protective hose is on the pre-assembled control cable.

5 Thread the cable through the "S"-shaped tube at the pedal and the pulley (7).

6 Adjust rear rudder pedals (1) in rearmost position.

7 Let the front end of the protective hose extend to 20 mm in front of the pedal "S"-tube.

8 Slip 2 NICOPRESS (National Telephone Supply Co., Cleveland Ohio) 18-3-M or 28-3-M sleeves (5) and 100 mm 771095 shrinking sleeve on the control cable.

9 Thread the free end of the control cable through the rear fairleads (6) and the hole in the fabric to the tail.

10 Slip 80 mm 771095 shrinking sleeve and 850 mm teflon protective hose on the control cable end. The protective hose should extend 120 mm beyond the first fairlead inside the fuselage.

11 Adjust rear pedals 78 mm aft of the foremost position.

12 Fix rear pedals in almost vertical position (81° relative to the footrest). Use a template as shown in Figure 15.

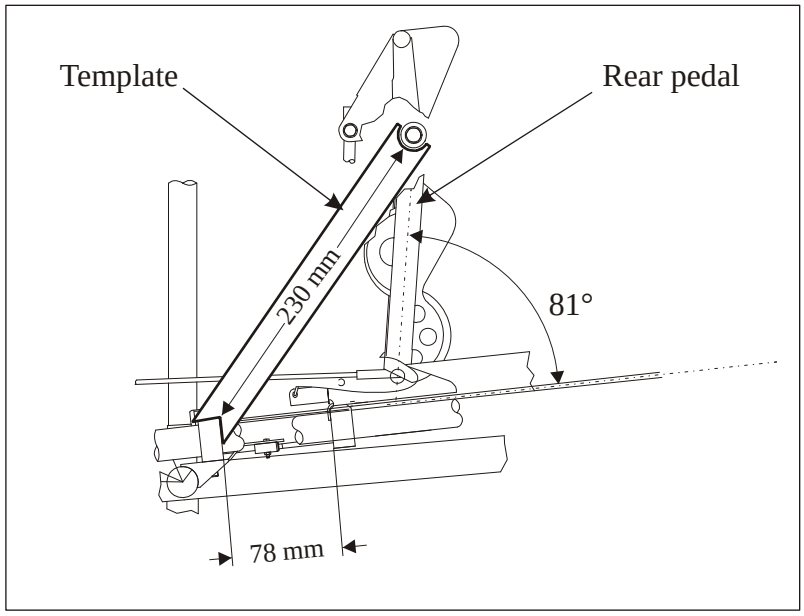


Figure 15 ***Rear Pedal Position and Template***

13 Pre-install the LN9037-06030 bolt, the DIN 125-8,4 washers (one on both sides of the thimble and one below the tailwheel steering attachment bracket), the DIN 125-6,4 washers, the bushing, the LN9348-06 nut and the thimble on the bottom hinge bellcrank.

14 Slip the 80 mm 771095 shrinking sleeve and a NICOPRESS 18-3-M or 28-3-M sleeve on the control cable end.

15 Move the cable around the thimble and stretch the control cable with a force that is equivalent to the tractive effort of the rear pedal retracting spring.

IMPORTANT

Clamping has to be performed in accordance with the Service Bulletin 300-1-93 and the Instruction No. 32 of the National Telephone Supply Co., Cleveland Ohio.

16 Consider to let a distance of 1 mm between the thimble and the sleeve and clamp the sleeve.

17 Cut the free end of the cable 20 mm in front of the sleeve.

18 Slip the 80 mm 771095 shrinking sleeve on the cable end and the protective hose, center on the protective hose end and heat up with a heat gun.

19 Slip the other 80 mm 771095 shrinking sleeve on the front end of the protective hose, center on the protective hose end and heat up with a heat gun.

20 Remove the pedal securing device.

21 Mount the pre-assembled shorter control cable to the front pedal using the shackle.

22 Thread the free end of the control cable through the pulley, the front fairleads and the pre-installed NICOPRESS 18-3-M or 28-3-M sleeves.

23 Fix the front pedal in almost vertical position (97° relative to the footrest). Use a template as shown in Figure 16.

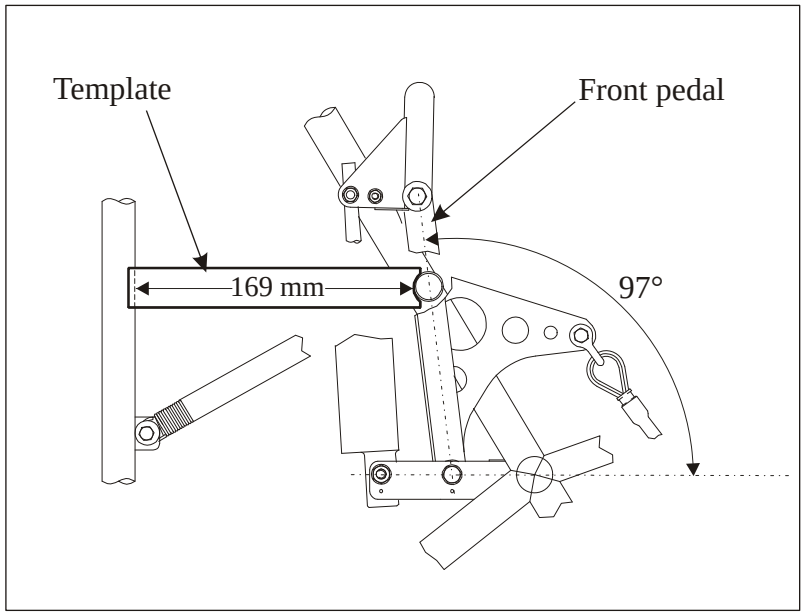


Figure 16 Front Pedal Position and Template

24 Stretch the shorter control cable with a force that is equivalent to the tractive effort of the front pedal retracting spring.

IMPORTANT

Clamping has to be performed in accordance with the Service Bulletin 300-1-93 and the Instruction No. 32 of the National Telephone Supply Co., Cleveland Ohio.

IMPORTANT

To prevent the cables from twisting, clamp the sleeves in the same plane.

25 Consider that the clamping area shall be 195 mm aft of the rear pulley and clamp the sleeves.

26 Cut the free end of the cable (20 mm behind the sleeve).

27 Slip the shrinking sleeve on the rear sleeve and heat up with a heat gun (the front sleeve can be left free for visual control of the cable-to-cable connection).

28 Remove the front pedal securing device.

29 Follow the steps 3 to 28 for the RH control cable.

30 Remove rudder securing devices.

31 Check free travel of rudder.

27-20-05 Fairlead

Removal/Installation

1 Remove the fairlead retaining clip.

2 Pull the fairlead halves out of the sleeve.

3 Reverse procedure to install the fairlead.

27-30-00 ELEVATOR CONTROL

Refer to Figure 17. The two control sticks (1, 4) are connected by a push-pull rod (3) inside the torque tube (2). The control movements are transferred from the rear control stick (2) to the elevator (11) by push-pull rods (3), bellcranks (13, 14) and the elevator actuator arm (12). The bellcranks have two sealed ball bearings. The elevator is mounted at five points in spherical bearings pressed into aluminium hinge arms. For lightning protection reasons each hinge arm is grounded to the corresponding attachment bracket at the elevator by bonding leads. The travel stops (15) are located at the torque tube.

Mass balance weights (9) are mounted on the elevator tips extending into the horizontal stabilizer when the elevator is in neutral or downward position. An additional optional mass balance weight (9a) can be installed on the elevator actuator arm.

An access panel is located at the right side of the rear fuselage.

Trim Tab

Pitch trim is done by means of the trim tab (10) on the right elevator trailing edge which is mounted by two piano hinges. It is operated by a trim servo (7) with rod (6), a trim lever (5) and a bowden cable mechanism (8).

Refer to Chapter 20 for general information about handling of control cables.

The elevator trim control switch is located on the control stick and the trim position indicator on the rear instrument panel.

The trim tab is not mass balanced.

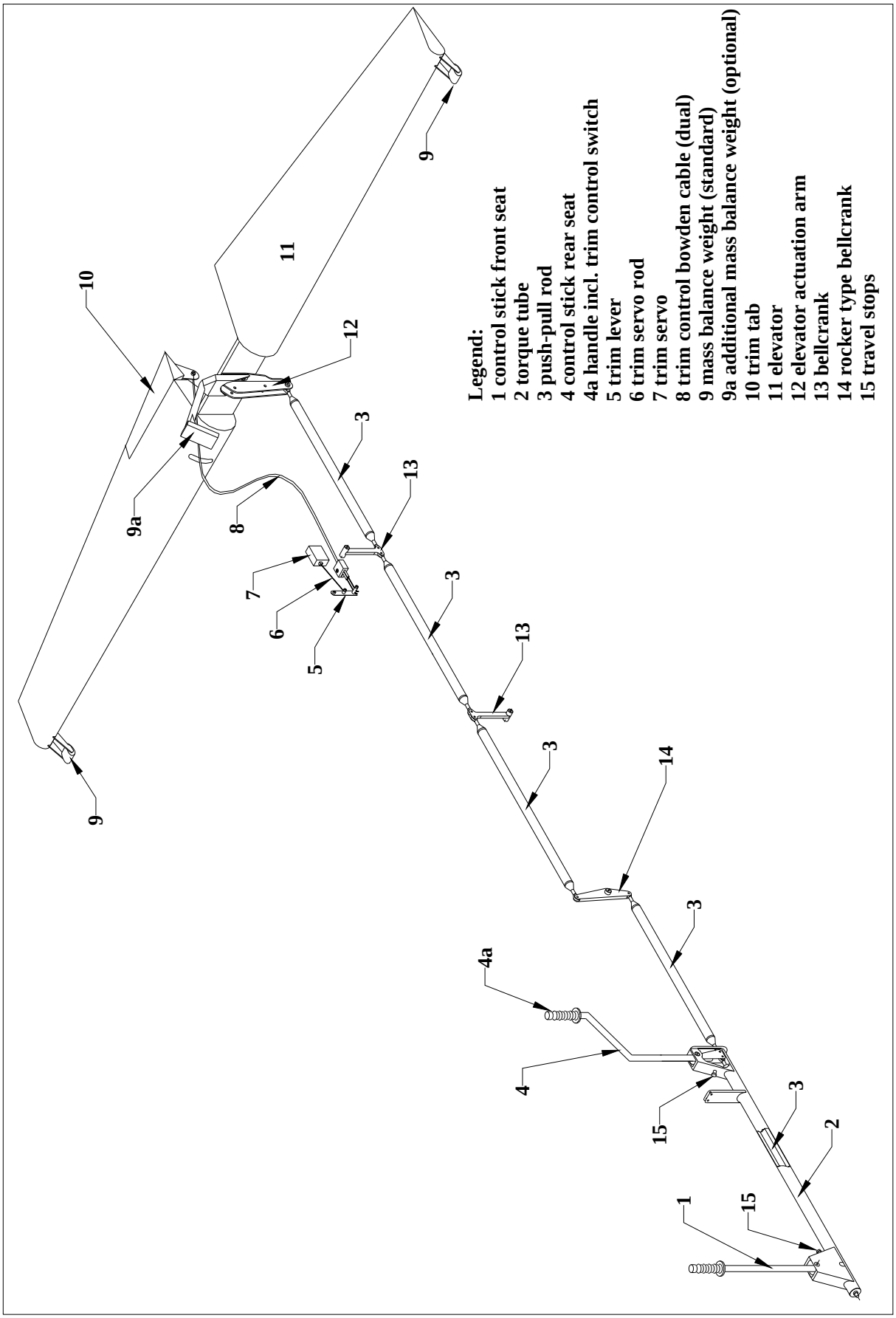


Figure 17 ***Elevator and Trim Tab Control***

27-30-01 Elevator

Removal/Installation

Before the removal of the elevator, the vertical stabilizer has to be disassembled.

1 Remove the respective access panels.

2 Remove the rudder as per Chapter 27-20-01

3 Remove the vertical stabilizer as per Chapter 55-30-00.

4 Loosen the bowden cables from the trim tab. If a replacement is necessary order new cable.

5 Disconnect the elevator actuator arm from the push-pull rod.

6 Loosen the hinge bolts and the ground bonding leads and remove the bolts.

7 Install in reverse sequence of removal. Observe the second note of Chapter 27-00-00.

Rigging

IMPORTANT

Before beginning any adjustments, inspect control rods, levers and hinges for signs of wear or damage and check if control rod lengths correspond with the measurements given in Chapter 27-00-02. Replace parts and correct lengths if necessary as per Chapter 27-00-01.

1 Remove the canopy and the main fuselage cover as per Chapter 53 and the seats as per Chapter 25.

2 Secure the rear control stick in the neutral position. (Vertical back plane of the torque tube parallel to the control stick like shown in Figure 18).

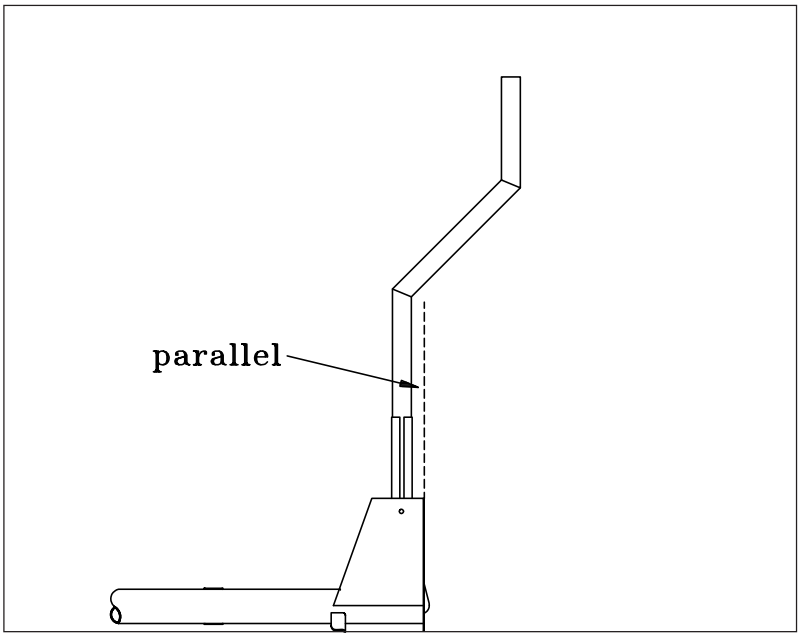


Figure 18 Neutral Position of the Rear Control Stick

3 Check if the elevator is in 0°-position. (Elevator trailing edge aligned to the stabilizer tip trailing edge.)

4 If necessary adjust the length of the middle tail control rod as per Chapter 27-00-01.

5 Check if the elevator travel is within the given tolerances (up 25° ±2°, down 25° -2°). Use a conventional protractor.

6 Adjust the travel stops if necessary.

7 Check if the rear control stick travel is symmetrical.

8 If it is not, contact the manufacturer.

27-30-02 Trim Tab

Removal/Installation

1 Loosen bowden cables. If a replacement is necessary order new cable.

2 Disconnect the safety cotter pins and remove the hinge pins.

3 Install in reverse sequence of removal.

Rigging

Refer to Figure 19.

1 Secure the rear control stick in normal position.

2 Adjust trim to slightly below middle position. 6th LED on trim position indicator illuminates (1).

3 Check trim lever (4) is in neutral position (angle of 11°, (tolerance ±2°) to the firewall plane or 79° to upper longerons). If it is not, proceed as follows:

a Remove the trim servo rod (2) from the trim servo (3) and the trim lever (4) by removing the clevis pins with cotter pins and washers.

b Loosen the counternut from the adjustable rod end and screw the rod end out or in as necessary to adjust the fuselage bellcrank in neutral position (default measure-ment is 147 mm). Ensure rod end is screwed in for min. 10 mm.

c Fasten the counternut.

d Renew locking varnish.

e Reconnect the rod end. Use new cotter pins.

4 Bring the trim tab (8) in 0°-position (upper surfaces of elevator (7) and trim tab (8) are in the same plane) by replacing the linkage bolts (5 and/or 9).

5 Trim to extreme positions and check if trim tab travel is up 35° and down 27° (tolerance ±2°). If it is not, check free travel of the trim lever (4) and bowden cable (6).

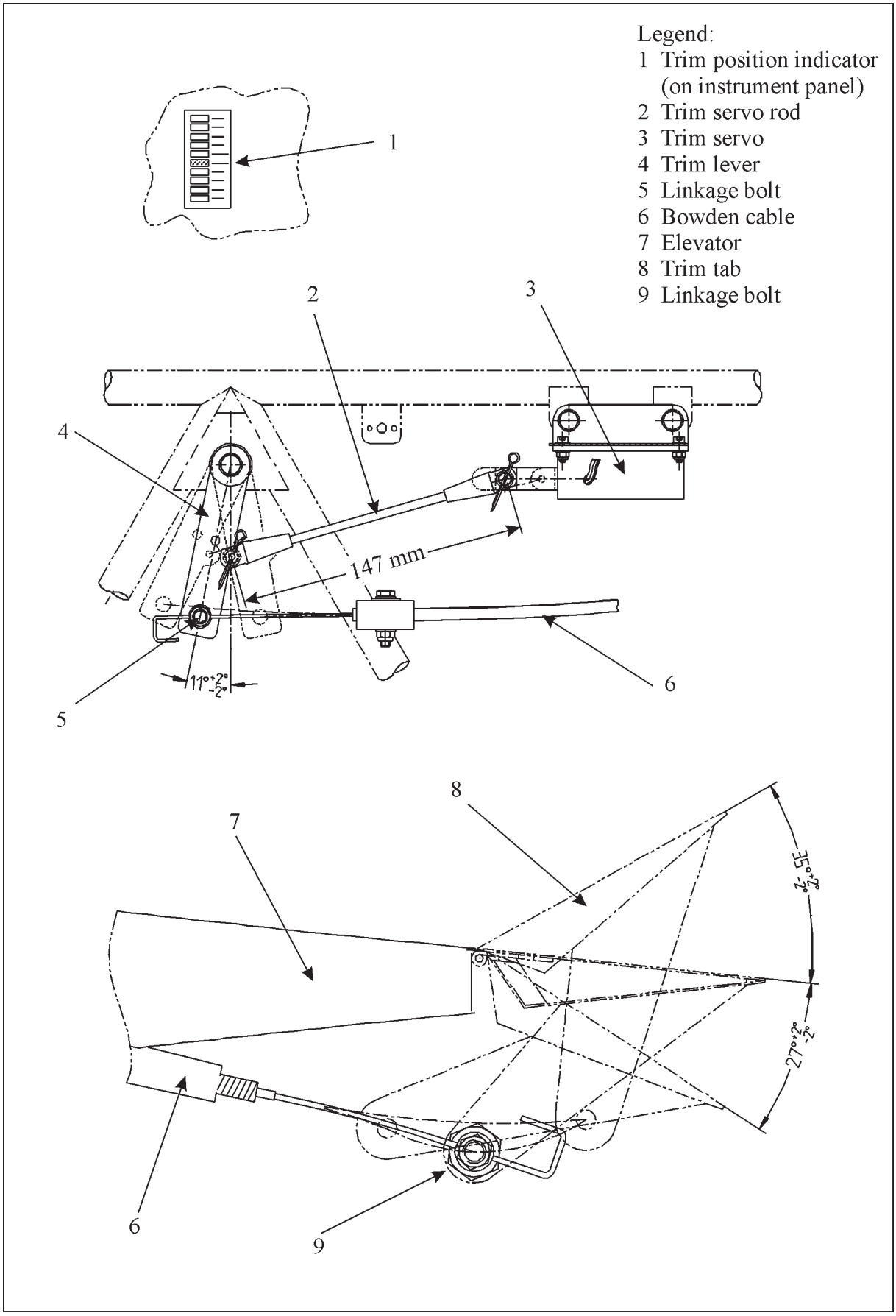


Figure 19 ***Trim Tab Rigging***

Chapter 28

Fuel

Table of Contents

28-00-00 GENERAL

The fuel system (refer to figure 1) consists of one center tank (3), an acro tank (8), two wing tanks (1), a fuel selector valve (2), a gascolator (9) , an electrically driven auxiliary pump (6), an engine driven rotary pump (7) and four fuel drains (5).

On the rear instrument panel one fuel quantity indicator for the center tank and one for the wing tanks (refer to chapter 31, figure 2) as well as the boost pump switch and circuit breaker are installed.

For fuel tank capacities refer to chapter 12-10-01.

Reduction of Fuel Tank Vapor Hazards

During all ventilation or maintenance procedures involving the fuel system, observe the following general precautions:

1 Defueling should be done outdoors with the aircraft at least 100 feet from hangars or other aircraft.

2 No smoking should be allowed within 100 feet of the aircraft.

3 Suitable fire fighting equipment should be available. Foam or soda type extinguishing agents are recommended.

4 Ground the aircraft to prevent static electricity from causing sparks. If a ramp ground is available it should be connected to the exhaust. If a ramp ground is not provided, a temporary ground can be obtained by driving a metal rod into the ground and attaching a ground wire between the rod and the aircraft exhaust.

5 Flame and spark producing equipment should not be operated within 100 feet of the aircraft.

6 The aircraft should have its battery disconnected. Remove negative and positive pole and cover the poles with adequate means for isolation.

7 Only personnel working on the aircraft should be allowed in the immediate area, and no other maintenance should be performed while the tanks are being worked on.

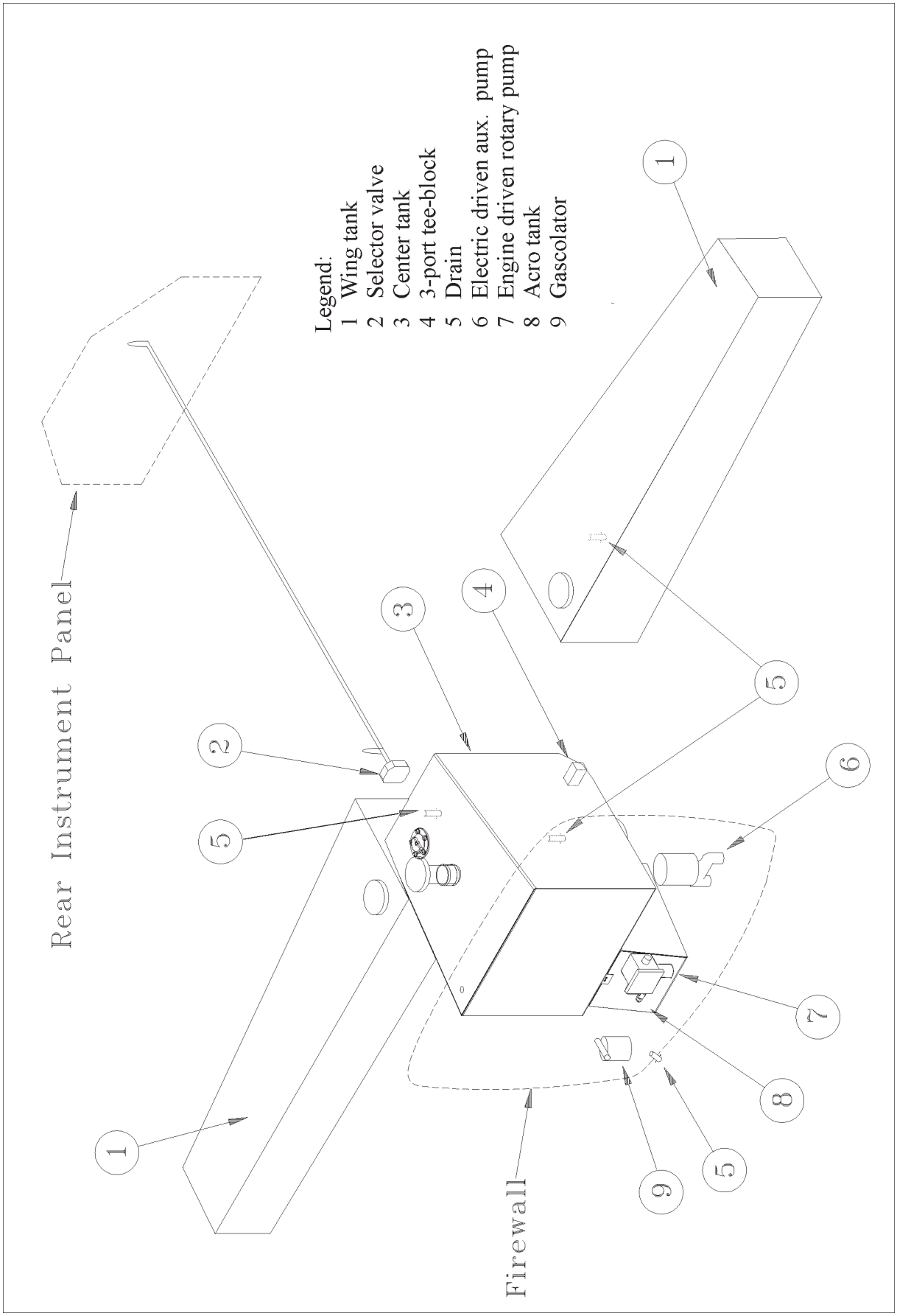


Figure 1 ***Fuel System***

8 When a fuel tank is opened for repair, air ventilation (refer to next paragraph) should be provided immediately to reduce vapor concentrations.

9 When draining fuel, ensure that suitable containers are available and that drained fuel is stored safely. Do not allow fuel to drip on the ground and form pools.

10 If it is necessary to ventilate a tank when the aircraft is in a hangar, ensure that vapors do not accumulate to explosive or toxic levels in the hangar.

WARNING

When fuel is being drained, there is little control over the release of fuel vapor. This vapor should be dissipated as quickly as possible. Compressed air or explosion-proof blowers may be used for the purpose.

Air Ventilation

1 Completely drain the fuel system as per chapter 12-10-02.

2 Remove inspection doors (refer to chapter 28-11-04) and tank caps.

3 Use compressed air or an explosion-proof blower to blow air into the tank until tank interior is dry and free of vapor.

4 Continue ventilation whenever tank is open and being worked on.

WARNING

If flammable vapors from cleaning solvents are allowed in the tank increase air circulation to dissipate them.

28-10-00 STORAGE

The EXTRA 300LT is equipped with two independent fuel systems: The center- and acro tank system and the wing tank system.

The acro tank (1, figure 2) incorporating an inverted flight fuel supply system is mounted in the fuselage just behind the firewall. It is connected by a flexible hose to the center tank (2) which is mounted in front of the main spar area. Fueling the center and acro tank is done by means of the fuselage 2" diameter filler cap (5). For leak detection purposes the center and the acro tank are furnished with a GRP tank shell. In case of leakage blue colored fuel is shining through. The center and the acro tank are grounded. The acro tank deaerates (a) into the center tank that itself deaerates by a ventilation tube (b) ending at the right side of the main landing gear spring.

The root section of each wing – behind the main spars – forms an integral fuel tank (4). Each wing tank has a 2" diameter filler cap (5) for gravity fueling. Sealing lips are installed at the filler necks inside the wing tank. For sealing 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) has been applied to the inside of the wing tanks. For lightning protection reasons the shell in the area of the wing tank has an outer layer of carbon fiber with incorporated aluminium thread (3). The wing tanks are grounded. Each tank is provided with an aluminum ventilation tube (c) for adequate venting. The ventilation tubes are interconnected to a main tube (d), ending outside of the fuselage at the right side of the main landing gear spring.

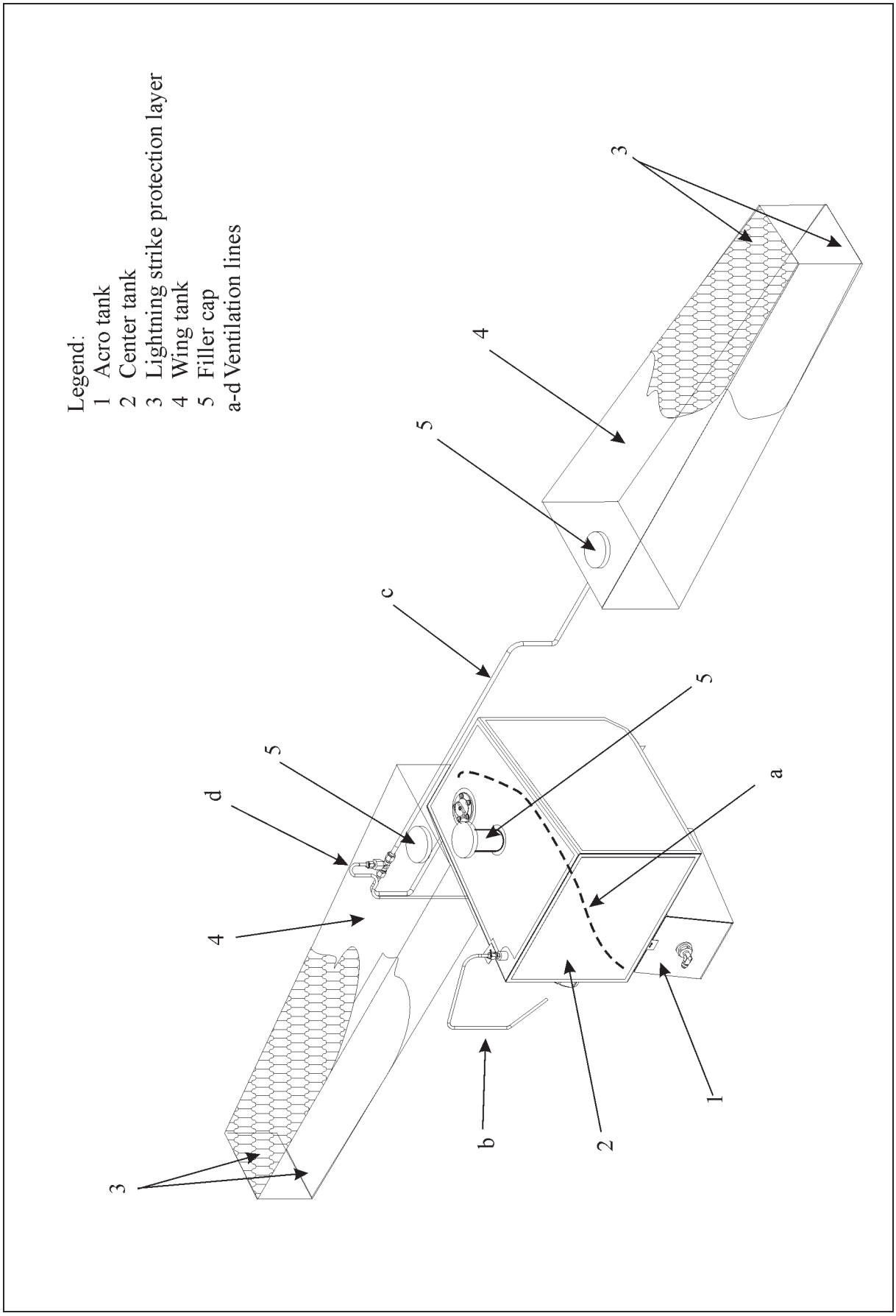


Figure 2 ***Storage***

28-10-01 Center Tank

Removal/Installation

1 Remove the main fuselage cover (refer to chapter 53-00-03).

2 Remove the front seat as per chapter 25-10-01.

3 Remove wing as per chapter 57-00-01.

4 Drain the fuel system as per chapter 12-10-02.

5 Loosen the electrical bonding, the fuel quantity transducer wiring and the hose fixtures.

6 Loosen and remove the metal attachment belts including the rubber strips.

7 Remove the center tank.

8 Install in reverse sequence of removal.

28-10-02 Acro Tank

Removal/Installation

1 Remove the main fuselage cover and the bottom fuselage cover as per chapter 53-00-03 & 53-00-04, respectively.

2 Remove the front seat as per chapter 25-10-01.

3 Drain the fuel system as per chapter 12-10-02.

4 Loosen the electrical bonding and the hose fixtures.

5 Loosen and remove the metal attachment belts including the rubber strips.

6 Remove the acro tank.

7 Install in reverse sequence of removal.

28-10-03 Acro Tank Flop Tube

Removal/Installation

1 Drain the fuel system as per chapter 12-10-02.

2 Disconnect the hose (5, figure 3) and the elbow fitting (4).

3 Remove the acro tank as per chapter 28-11-02.

4 Loosen the flop tube fitting (3) and take the flop tube assembly (2) out of the acro tank (1).

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

5 Clean the sealing surfaces mechanically and with Acetone.

NOTE

If the flop tube assembly has to be replaced install a complete new assembly.

6 Install in reverse sequence of removal after applying Loctite 577 to the flop tube fitting thread.

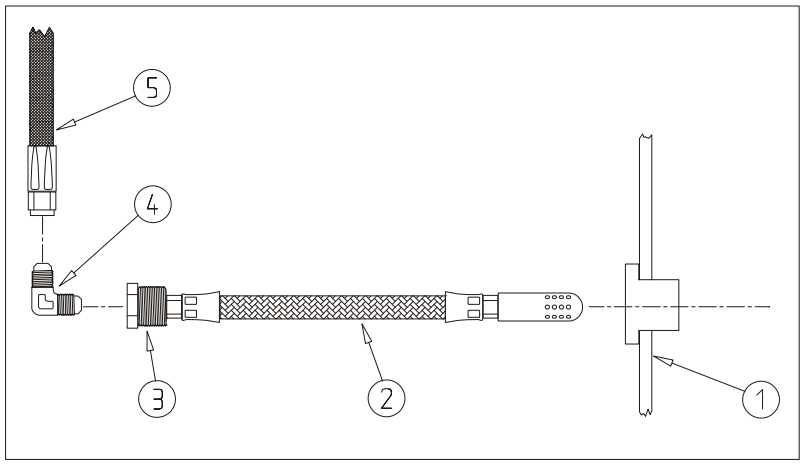


Figure 3 Flop Tube Removal/Installation

28-10-04 Wing Tank Inspection Door

Removal/Installation

1 Drain the wing tanks as per chapter 12-10-02.

2 Disconnect the ground bonding leads (2, figure 4) and if necessary the electrical wiring (1) of the fuel quantity transducer.

3 Remove the inspection door bolts.

4 Remove the inspection door flange (3).

5 Push the inspection door (4) into the tank, then turn and remove.

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

6 Clean the sealing surfaces mechanically and with Acetone.

7 Install in reverse sequence of removal after applying 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) to the sealing surfaces (inspection door (4) and tank root rib).

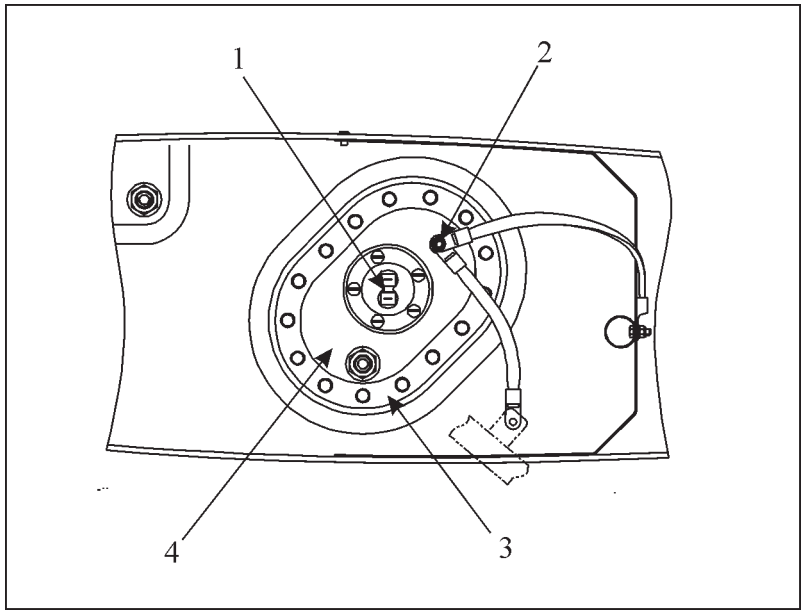


Figure 4 Inspection Door Removal/Installation

28-10-05 Wing Tank Outlets

Removal/Installation

1 Remove the inspection door (1) (refer to figure 5) per chapter 28-10-04.

2 Remove the union nuts (2) and the elbow tubes (3).

3 Remove AN 924 nut and washers and remove AN 832 fitting.

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

4 Clean sealing surfaces mechanically and with Acetone.

5 Install in reverse sequence of removal after applying 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) to the sealing surfaces (fitting to tank root rib). Ensure that the outlet end positions are as shown in figure 5 below).

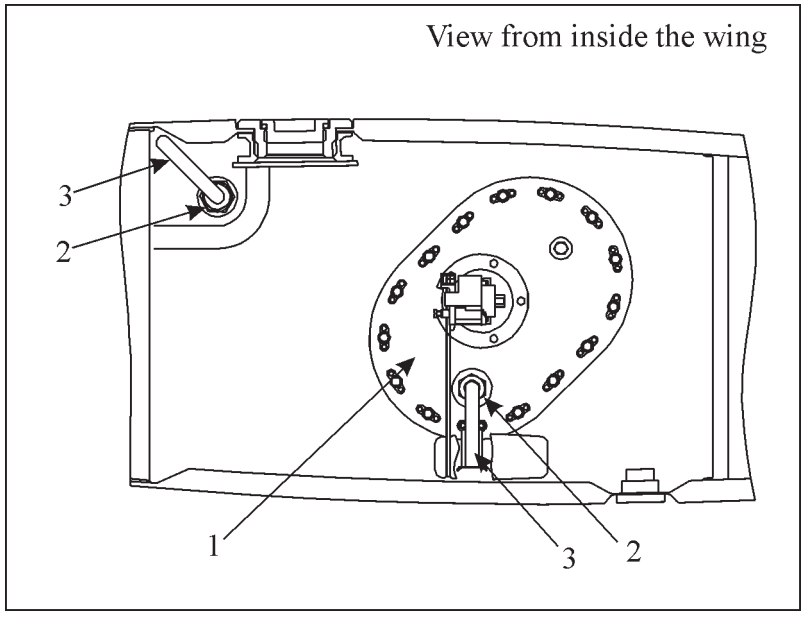


Figure 5 Wing Tank Outlets Removal/Installation

28-10-06 Center Tank Filler Neck

Removal/Installation

1 Remove the main fuselage cover as per chapter 53.

2 Completely drain the center tank as per chapter 12.

3 Loosen the lower hose clip.

4 Remove the filler neck.

5 Install in reverse sequence of removal.

28-10-07 Wing Tank Filler Neck

Removal/Installation

1 Completely drain the wing tanks as per chapter 12.

2 Remove wing tank inspection door as per chapter 28-11-04.

3 Unscrew filler neck lock ring (4, figure 6) with sealing lip (5) using a tool as shown in figure 6.

4 Remove filler neck (3) with filler cap (1) and O-ring (2).

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

5 Clean all sealing surfaces with Acetone.

6 Install in reverse sequence of removal after applying 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) to the sealing surfaces (wing/filler neck).

28-10-08 Filler Neck Sealing Lip

Replacement

1 Carefully drill out the body-bound rivets (7, figure 6).

2 Install the new sealing lip using new washers (6) and body-bound rivets.

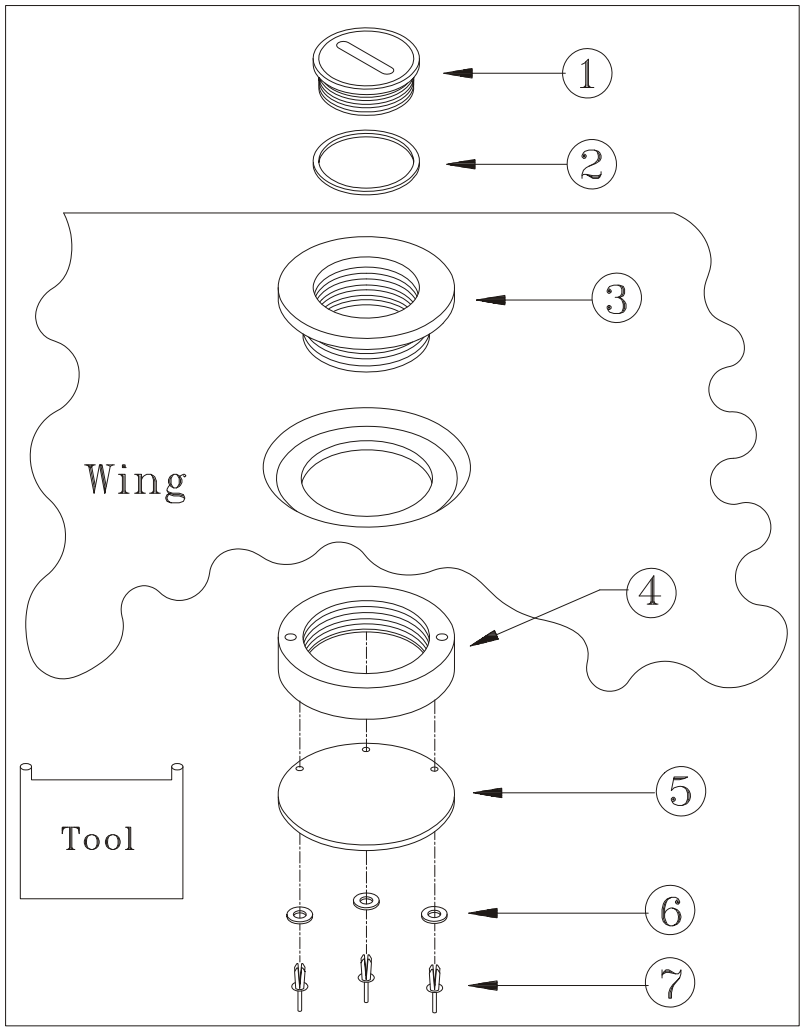


Figure 6 ***Filler Neck and Sealing Lip Removal/Installation***

28-10-09 Ventilation Line

Replacement

General information concerning fittings is given in chapter 20-10-08.

28-20-00 DISTRIBUTION

(Refer to figure 7) Flexible hoses and aluminium tubes (A-K) connect the particular components of the fuel system. The fuel lines connecting the wing tanks (D) meet at a tee-fitting (7) below the copilot seat.

In addition to the engine driven fuel pump (6), an electrically driven auxiliary pump (5) having sufficient capacity to feed the engine at take-off power is fitted as a safety device against failure of the engine driven pump. Both pumps feature drain lines (J, K) dumping fuel overboard in case of a malfunction. The auxiliary pump switch is located on the rear instrument panel. A gascolator (3) is installed between the fuel selector valve and the auxiliary fuel pump at the firewall (engine side). An Allen 6S122 type (1) fuel selector valve is located at the right side of the front cockpit behind the main spar on a separate support. A control rod connects the selector valve to the control handles (2). The fuel selector valve is marked by the letters "WT" (Wing Tank), "E" (Engine), and "CT" (Center Tank) to ensure correct installation of fuel lines (refer to detail A of figure 8).

The EXTRA 300LT has four fuel drain valves (4) for drainage of moisture and sediment. One fuel drain valve labelled WING TANK DRAIN is located in the root section of the underside of each wing. The fuel drain valve for the center and acro tank (CENTER TANK DRAIN) is located under the fuselage in the area of the landing gear. Another fuel drain valve which is connected to the fuel gascolator is located in the lowest point at the right side of the firewall (GASCOLATOR DRAIN).

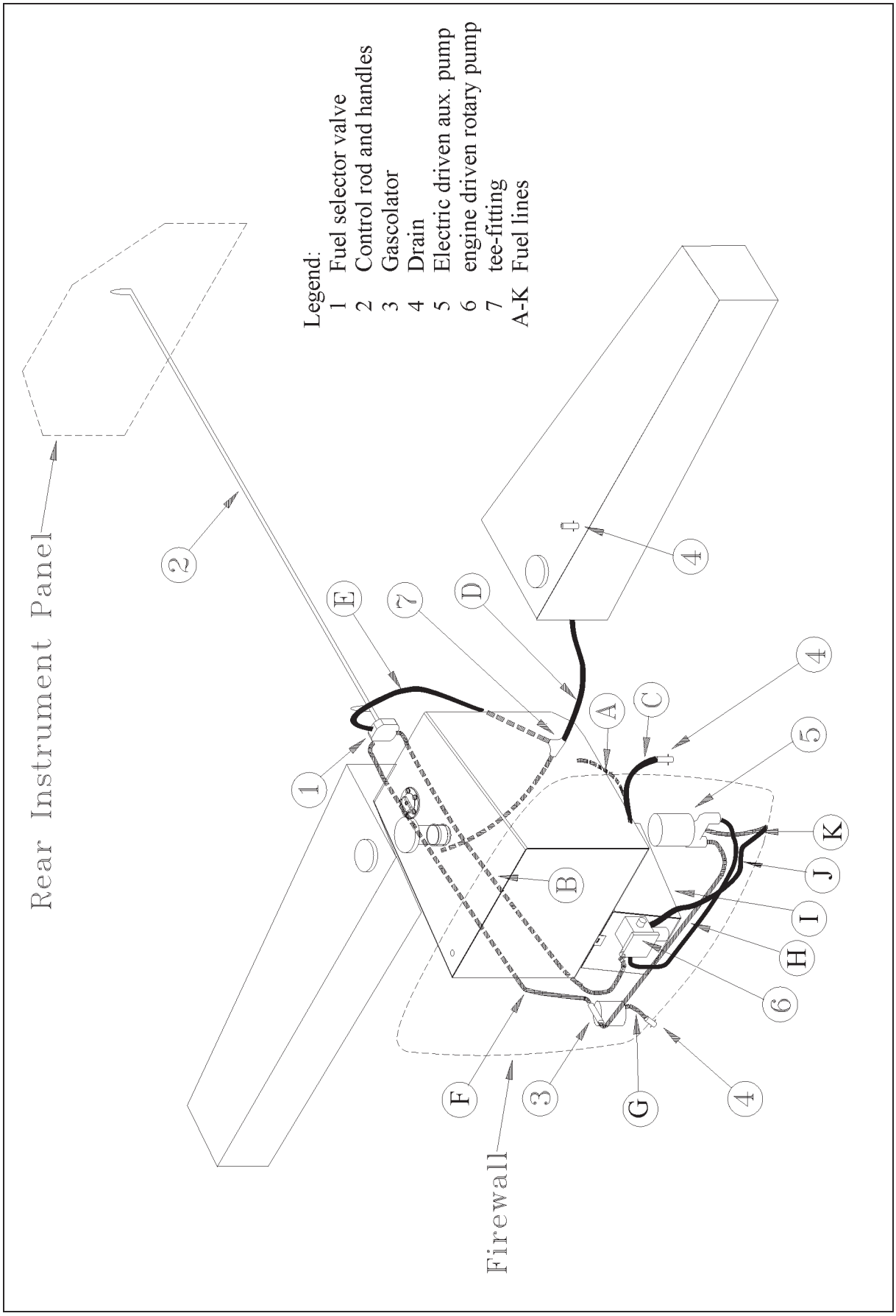


Figure 7 ***Distribution***

28-20-01 Fuel Selector Valve

NOTICE

Do not change fuel selector position while applying not more than 15 PSI hydraulic or pneumatic pressure to the fuel selector valve in case the valve shall be checked when removed. This could damage the O-ring.

Integrity Test

1 Completely drain wing tanks.

2 Fuel selector position: WING TANKS

3 Completely fill center tank.

4 Leave aircraft stationary for a minimum of three hours.

5 If fuel is found in the wing tanks, the fuel selector valve must be repaired or replaced.

Removal/Installation

(Refer to figure 8)

1 Drain the fuel system as per chapter 12-10-02.

2 Disconnect the fuel lines on the selector valve.

3 Remove the control rod attachment bolts (5).

4 Remove the attachment screw (4) if reasonable.

5 Remove the control bracket (3).

6 Remove the selector valve attachment bolts (2).

7 Remove the selector valve (1).

IMPORTANT

Ensure LOCTITE 243 cannot get into the selector valve. The selector valve could lock.

8 Install in reverse sequence of removal. Use LOCTITE 243 when installing the selector valve attachment bolts (2) and the attachment screw (4).

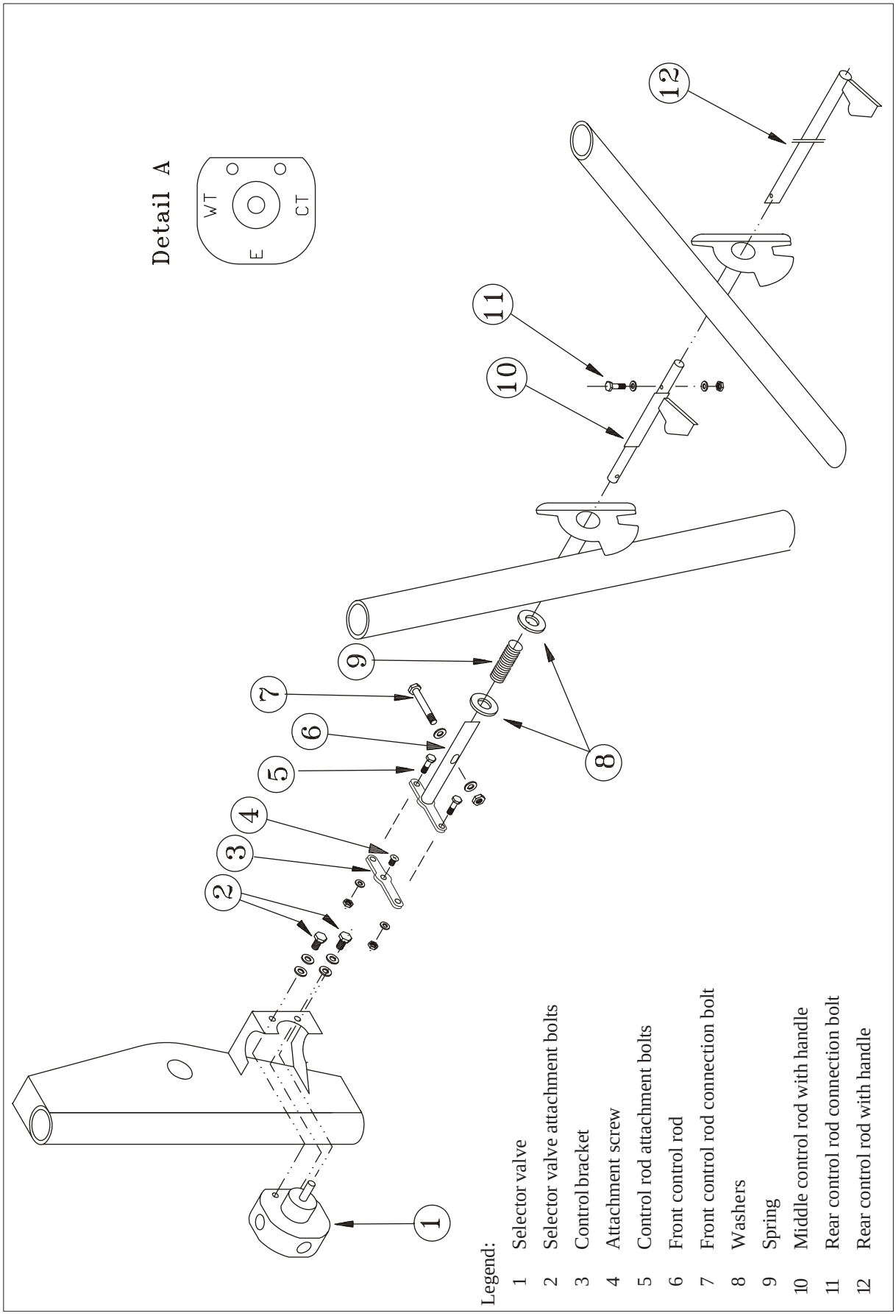


Figure 8 ***Fuel Selector Valve and Control Rod***

28-20-02 Selector Valve Control Rod

Removal/Installation

(Refer to figure 8)

1 Remove the rear control rod connection bolt (11).

2 Pull the control rod (12) to the rear.

3 Remove the control rod attachment bolts (5).

4 Remove the front control rod connection bolt (7).

5 Remove the washers (8) and the spring (9), the front (6) and the middle control rod (10).

6 Install in reverse sequence of removal.

28-20-03 Gascolator

Removal/Installation

1 Drain the fuel system per chapter 12-10-02.

2 Disconnect the fuel lines from the gascolator.

3 Loosen the knurled nut (1, figure 9).

4 Remove the mounting bracket (2).

5 Remove the fuel reservoir (3) and the sealing ring (4).

6 Remove the strainer (5) and the gascolator cover (6).

7 Install in reverse sequence of removal.

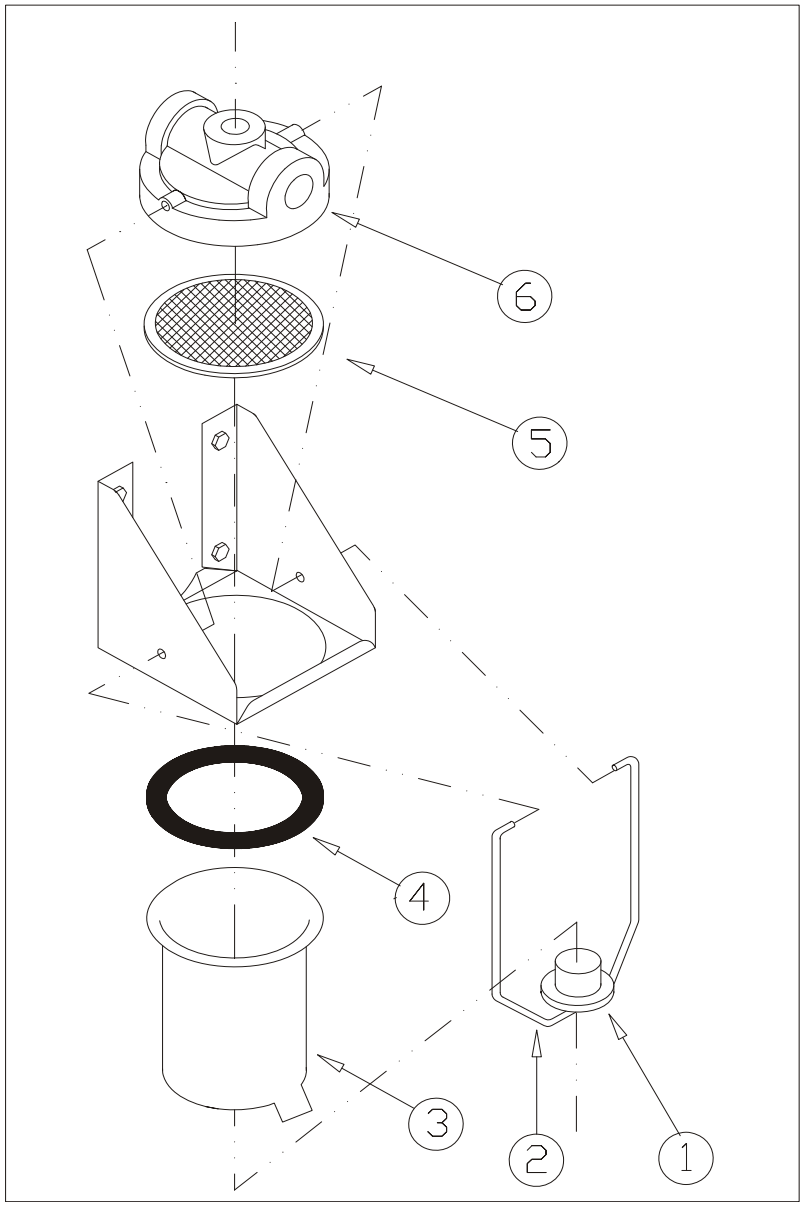


Figure 9 Gascolator Removal/Installation

28-20-04 Electrical Boost Pump

Removal/Installation

1 Drain the fuel system as per chapter 12-10-02.

2 Disconnect the plug and the fuel lines from the boost pump.

3 Loosen the screw clamps (1, figure 10).

4 Remove the boost pump (2).

5 Install in reverse sequence of removal.

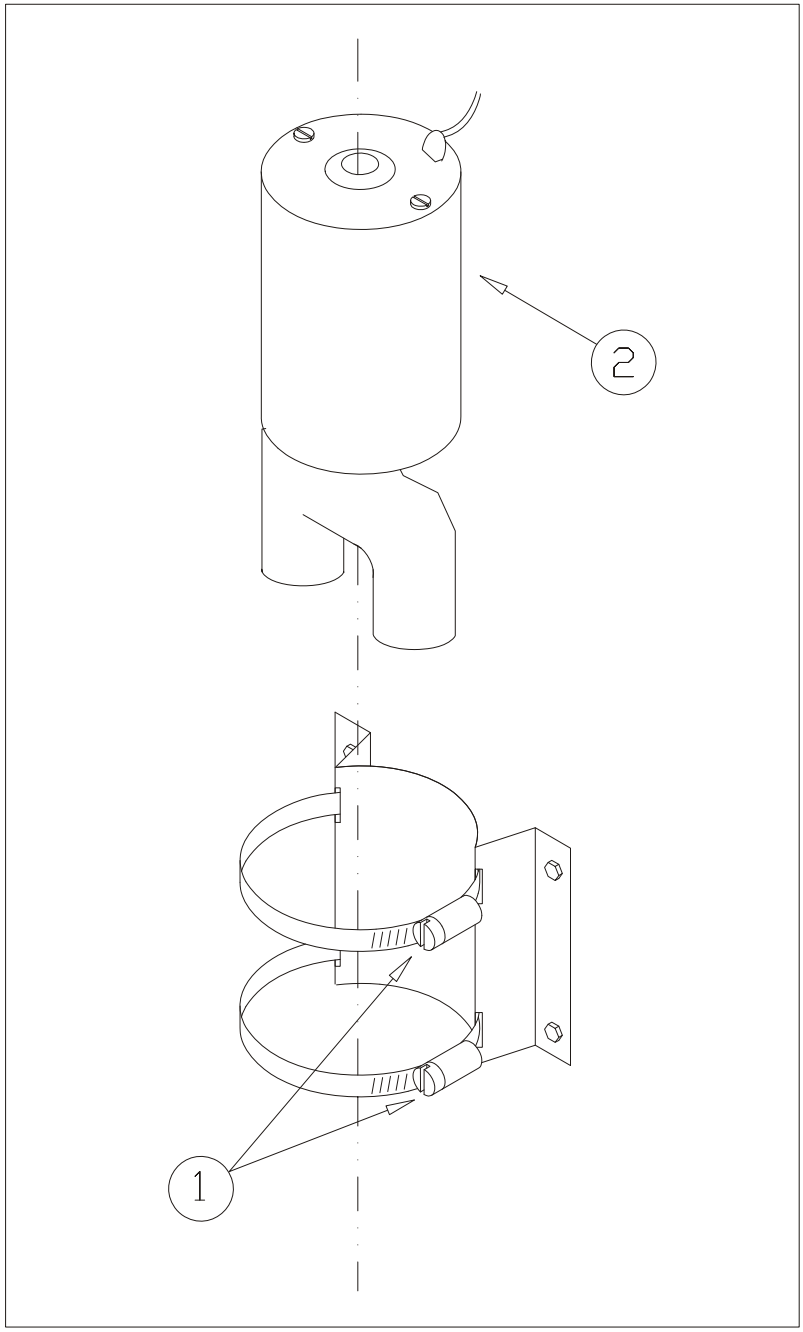


Figure 10 Boost Pump Removal/Installation

28-20-05 Fuel Lines

Replacement

General information concerning hoses and fittings you find in chapter 20-10-07/08.

IMPORTANT

If replacement of fuel lines passing the firewall is necessary, renew the sealing of the rubber grommet grooves and gaps at the engine side of the firewall. Use PRC-812 (Products Research & Chemical Corporation, USA) firewall sealant.

28-40-00 INDICATING

(Refer to figure 11) For fuel contents indicating the center tank is equipped with a tubular fuel quantity transducer (1) and the left wing tank with a lever-type fuel quantity transducer (2).

If the optional MVP-50P is installed the right wing tank is also equipped with a lever-type fuel quantity transducer (refer to chapter 77-40).

They transmit the fuel levels to the respective fuel quantity indicators at the instrument panel (3). In contrast to the fuel quantity indicator of the center tank the one of the wing tank is not adjustable. If the indication is inexact the float wire of the tank unit has to be adjusted (refer to chapter 28-40-05).

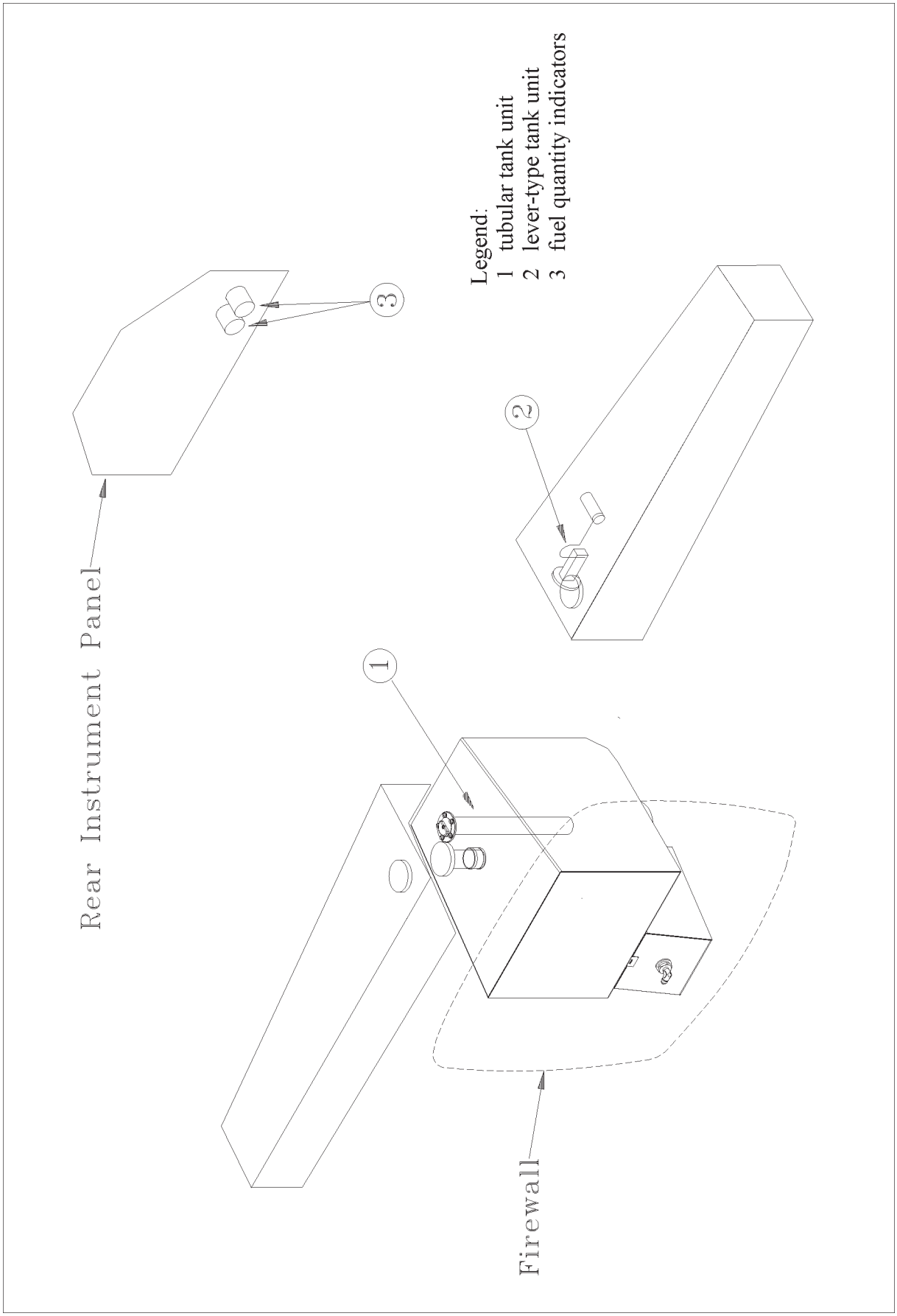
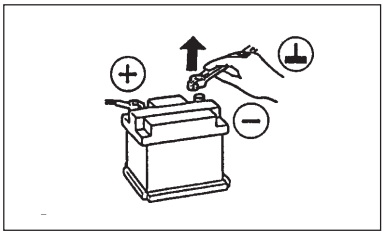


Figure 11 ***Indicating***

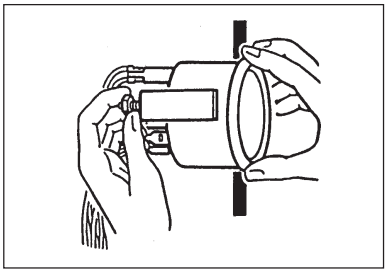
28-40-01 Fuel Quantity Indicator

Removal/Installation

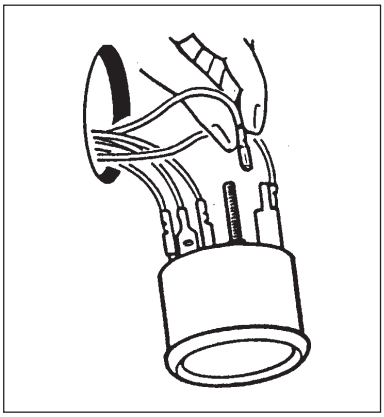
1 Disconnect battery.



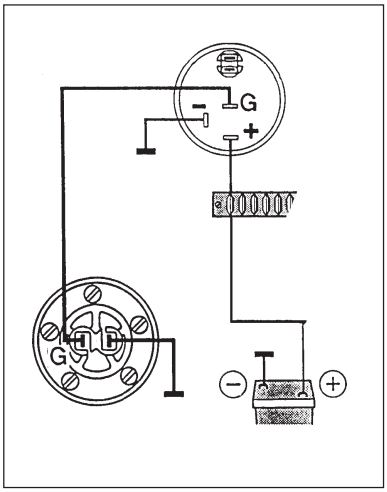
2 Loosen the nuts, remove the mounting bracket and remove the fuel quantity indicator.



3 Disconnect the wiring (the lamp is not used).



4 Install in reverse sequence of removal observing the wiring diagram.

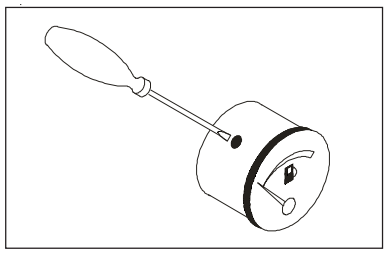


Calibration (Center Tank)

1 Drain the fuel system (refer to chapter 12-10-02).

2 Remove the fuel quantity indicator following step 2 of chapter 28-40-01.

3 Bring indicator to „0“-position by turning the adjustment screw.



4 Reinstall the fuel quantity indicator.

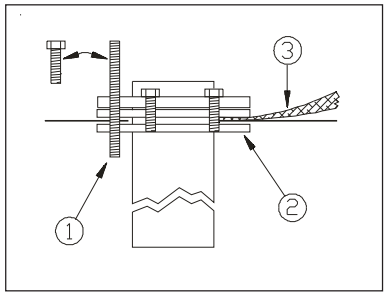
28-40-03 Fuel Quantity Transducer (Center Tank)

Removal/Installation

1 Drain the fuel system as per chapter 12-10-02.

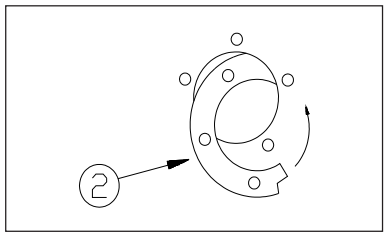
2 Loosen one bolt and replace by a M5 threaded rod (1) for securing the slotted retainer ring (2).

3 Remove the other bolts and the ground bonding lead (3).



4 Remove the transducer and the sealing ring while holding the threaded rod.

5 Remove the threaded rod and turn out the slotted retainer ring (2).



WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

6 Clean sealing surfaces mechanically and with Acetone.

7 Install in reverse sequence of removal after applying 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) for sealing to both sides of the sealing ring.

28-40-04 Fuel Quantity Transducer (Wing Tank)

Removal/Installation

(refer to figure 12)

1 Disconnect the electrical wiring.

2 Remove inspection door as per chapter 28-10-04

3 Remove tank unit bolts (1).

4 Remove the retainer ring (3) the tank unit (4) and the sealing ring (2).

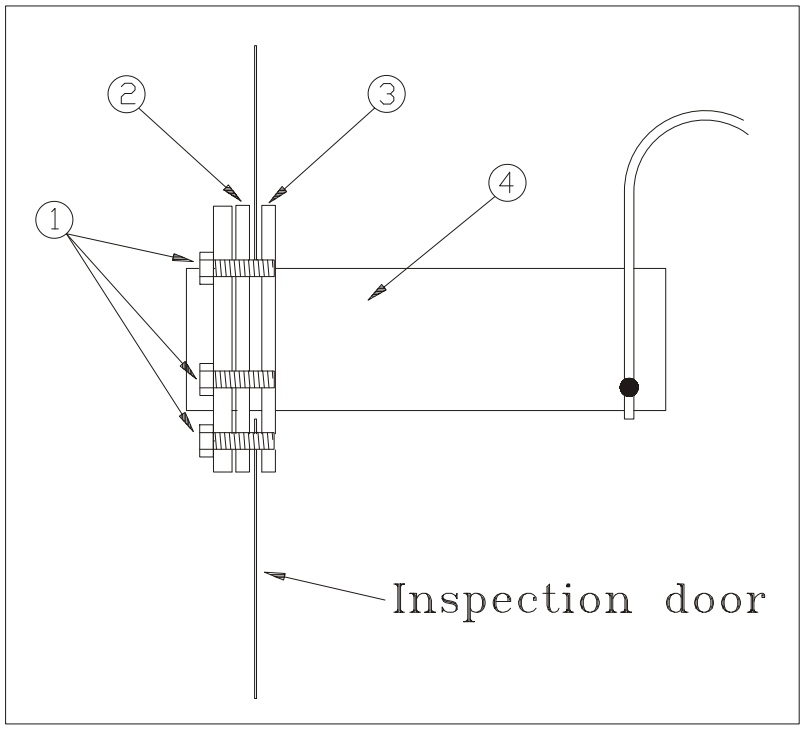


Figure 12 *Fuel Quantity Transducer (Wing Tank) Removal/Installation*

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

5 Clean sealing surfaces mechanically and with Acetone.

6 Install in reverse sequence of removal after applying 3M Brand Fuel Resistant Coating 776 (3M, St. Paul, USA) for sealing to both sides of the sealing ring and the grooves inside the tank.

7 Check proper shape and installation of float wire as per paragraph 28-40-05.

28-40-05 Float Wire

Adjustment

1 Remove the lever-type tank unit as per chapter 28-40-04.

NOTE

Figures 13 and 14 are mirror inverted also valid for the float wire in the RH wing tank if the optional MVP-50P is installed.

2 Remove the float wire and bend it in form like shown in the following figure 13:

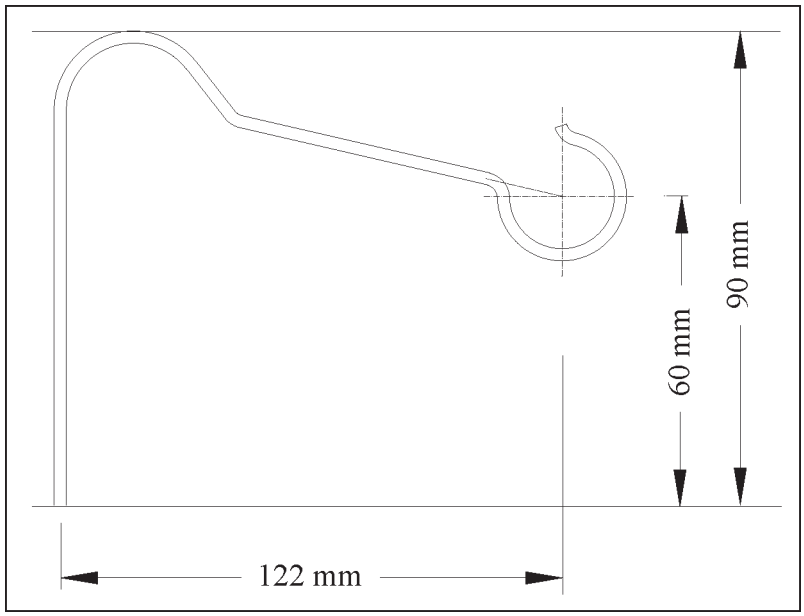


Figure 13 Float Wire Adjustment

3 Reinstall the float wire observing the dimensions shown in figure 14, pay attention to a proper alignment and tighten well the attachment bolt.

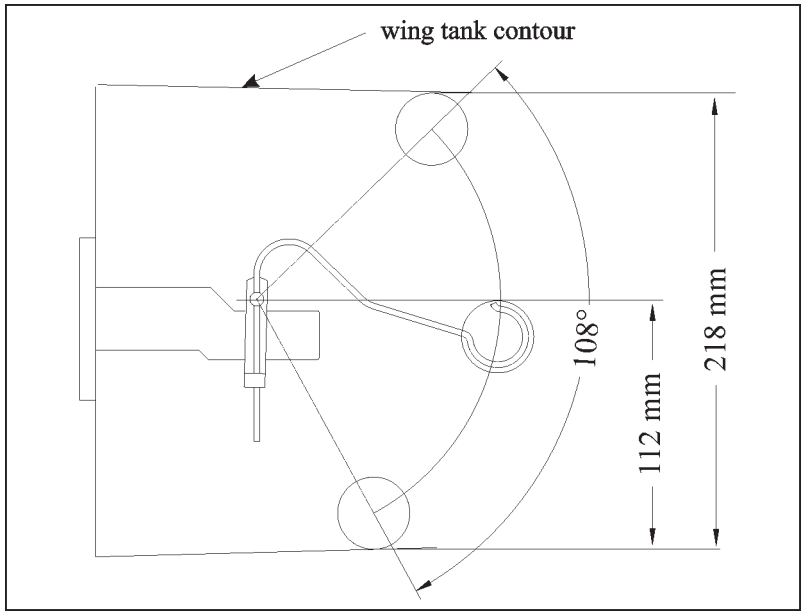


Figure 14 Float Wire Installation

4 Reinstall the lever-type tank unit as per chapter 28-40-04.

Chapter 31

Indication/Recording System

Table of Contents

31-00-00 GENERAL

The Extra 300LT is equipped with flight instruments in both cockpits. Instruments and placards can feature markings in either metric or English units (refer to Pilot's Operating Handbook , Section 2 "Markings and Placards"). The colour markings in instruments follow US-FAR, part 23 recommendations.

31-10-00 INSTRUMENT AND CONTROL PANELS

31-10-01 Rear Instrument Panel

The instrument panel of the rear cockpit consist of a top panel sheet (instrument panel) with an instrument cover and a center panel sheet (control switch and circuit breaker panel). When the MVP-50 is installed generally an additional sub-panel is installed (refer to Chapter 77-40-00).

The panels and the cover are mounted on the steel frame with AN 526 C 1032 R8 bolts.

For the standard panel arrangement of the rear cockpit refer to Figure 1 and 2 and the adjacent charts.

N O T E

The charts may be modified by the minimum equipment requirements of individual certifiying authorities.

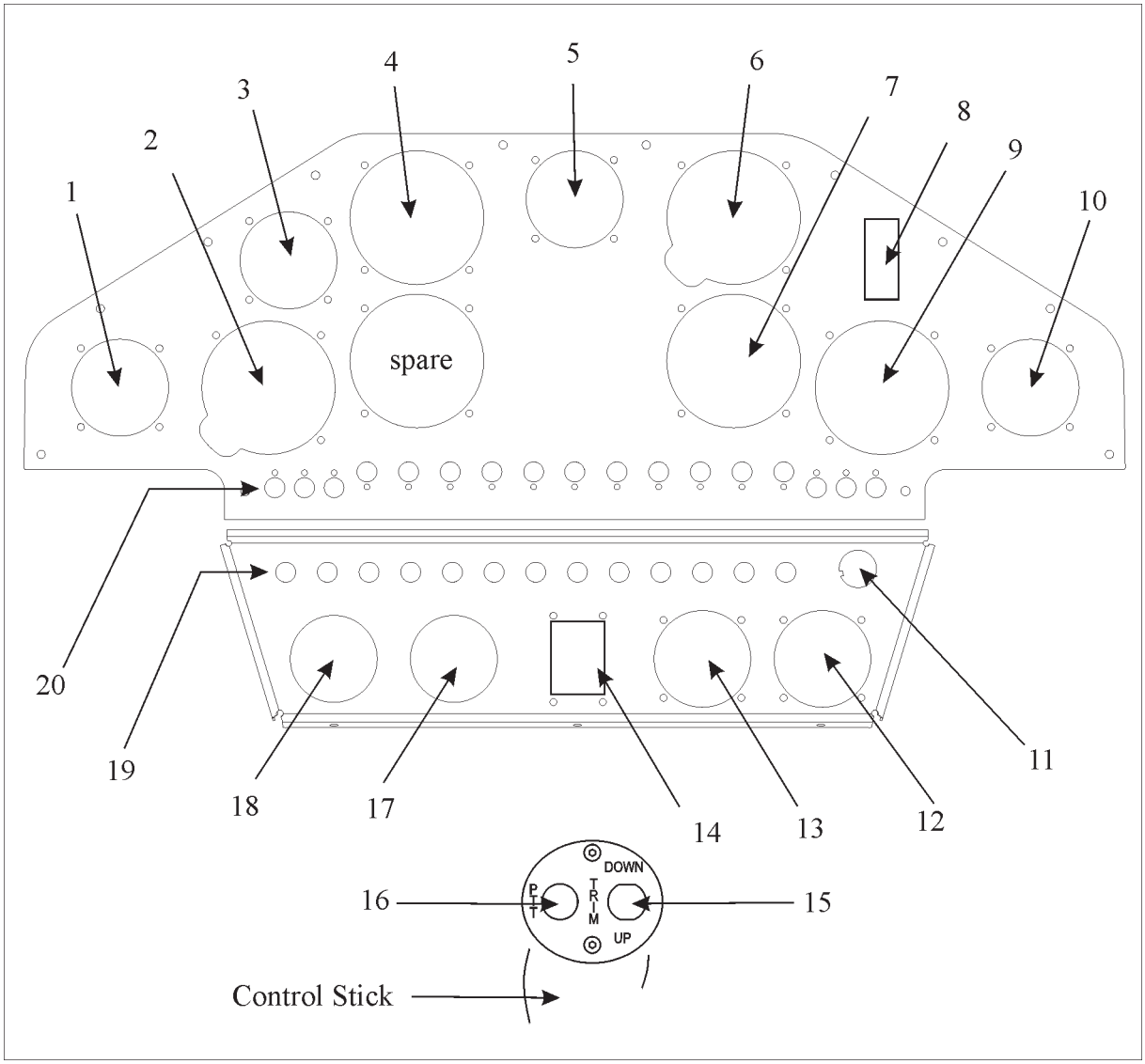


Figure 1 ***Rear Instrument Panel***

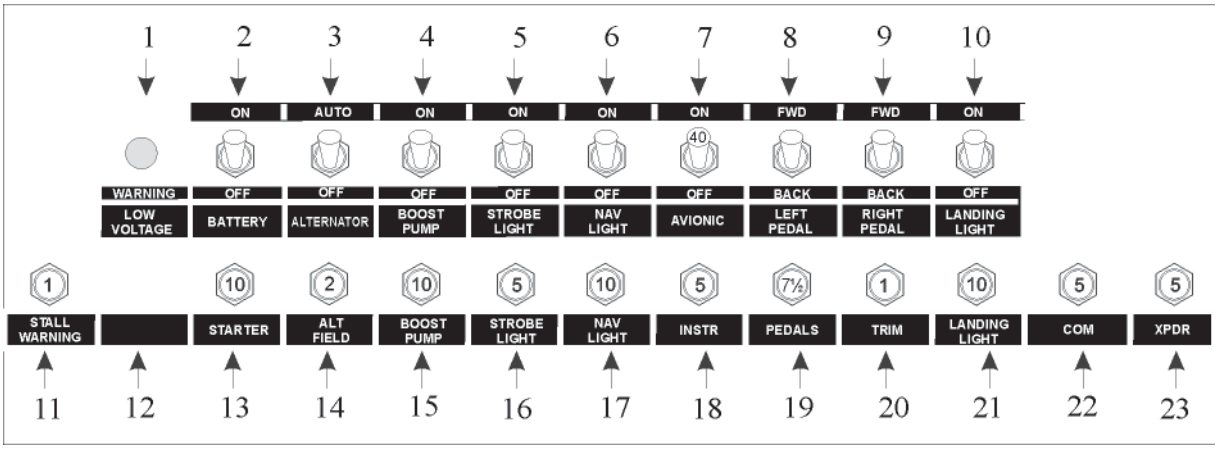


Figure 2 ***Rear Switches & Circuit Breakers***

Position Fig. 1	Item
1	COM
2	G-meter
3	Volt/Amperemeter
4	Airspeed indicator
5	Magn. direction indicator
6	Altimeter
7	Manifold pressure / fuel flow
8	Trim position indicator
9	RPM Indicator
10	Transponder
11	Magneto selector switch and starter
12	Oil pressure / oil temperature
13	EGT / CHT
14	ELT switch
15	Trim switch
16	PTT switch
17	Fuel quantity center tank
18	Fuel quantity wing tank
19	Circuit breakers
20	Switches

Position Fig. 2	Item
1	Alternator warning light incl. press-to-test feature
2	Battery switch (red cap)
3	Alternator switch (red cap)
4	Boost pump switch
5	Strobe light switch
6	NAV light switch
7	Avionic switch/circuitbreaker
8	Left pedal adjustment switch
9	Right pedal adjustment switch
10	Landing light switch
11	Stall warning circuit breaker
12	Spare
13	Starter circuit breaker
14	Alternator field circuit breaker
15	Boost pump circuit breaker
16	Strobe light circuit breaker
17	NAV light circuit breaker
18	Instruments circuit breaker
19	Electric pedal adjustment circuit breaker
20	Electric trim system circuit breaker
21	Landing light circuit breaker
22	COM circuit breaker
23	Transponder circuit breaker

31-10-02 Rear Instrument Cover

Removal/Installation

1 Remove the screws located at the top of the front seat back rest (1, Figure 3).

2 Remove the outer screws (2) of the rear instrument panel (The two inner screws connect the panel to the steelframe).

3 Remove the cockpit corner cover screws (3).

4 Remove the instrument and the cockpit corner covers.

5 Install in reverse sequence of removal.

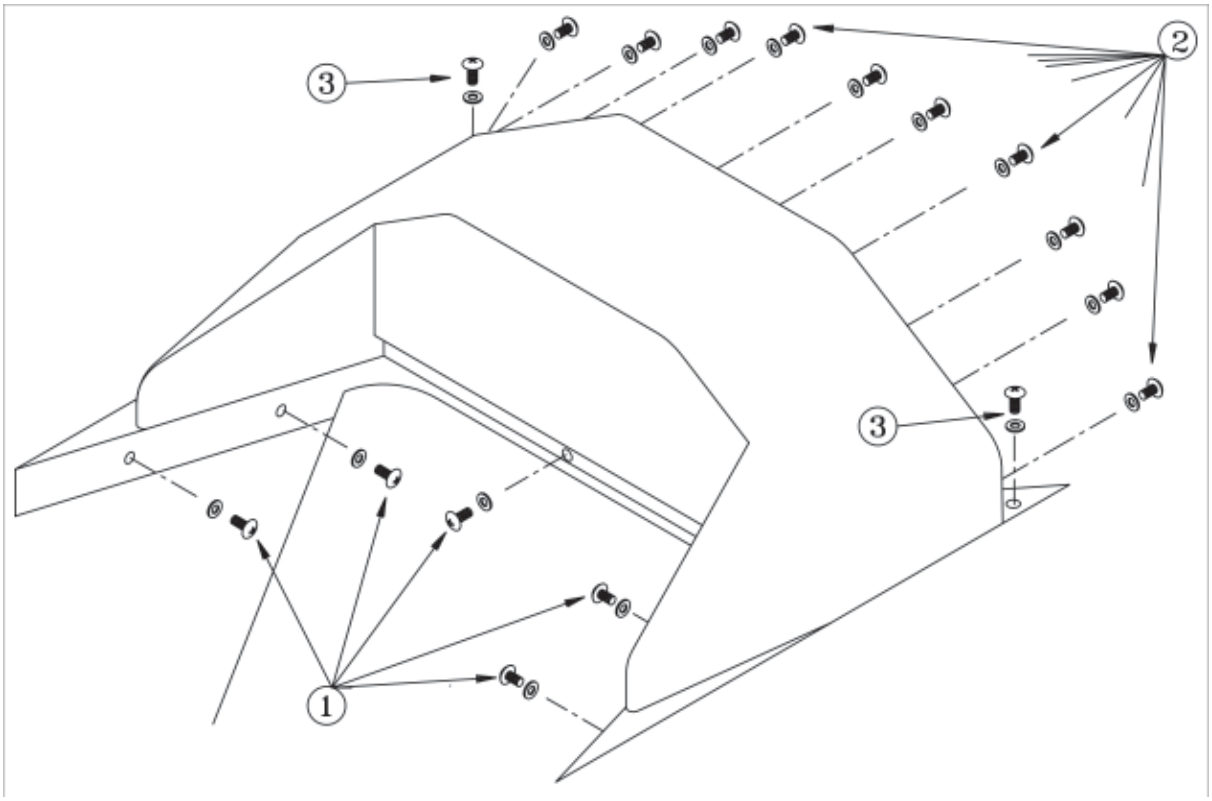


Figure 3 ***Rear Instrument Cover Removal/Installation***

31-10-03 Front Instrument Panel

An altimeter and airspeed indicator (2, 3, Figure 4) are installed on a separate removable instrument panel (1) in the main fuselage cover in front of the front pilot.

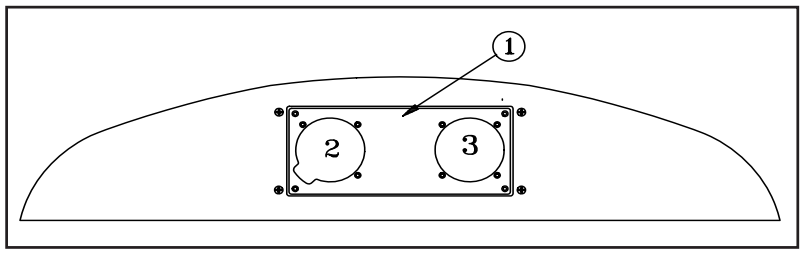


Figure 4 Front Instrument Panel

Removal/Installation

NOTICE

Hold instruments and panel by hand to prevent from falling down when removing the instrument panel attachment bolts.

1 Remove DIN 912 M4x5 bolts (2, Figure 5) and shock mounts (1) with LN 9348 M4 stop nuts.

2 Pull the front instrument panel with instruments aft some centimeter.

3 Disconnect the Pitot resp. static lines from the instruments (7). Mark lines for later identification.

4 Remove instrument panel (5).

5 Reverse procedure for installation.

31-10-04 Front Instrument Panel Frame

The front instrument panel is installed in frame which is connected to the main fuselage cover.

Removal/Installation

1 Remove front instrument panel as per Chapter 31-10-03.

2 Remove the AN526 C-1032-R6 frame attachment screws (3, Figure 5).

3 Remove the front instrument panel frame (6).

4 Reverse procedure for installation.

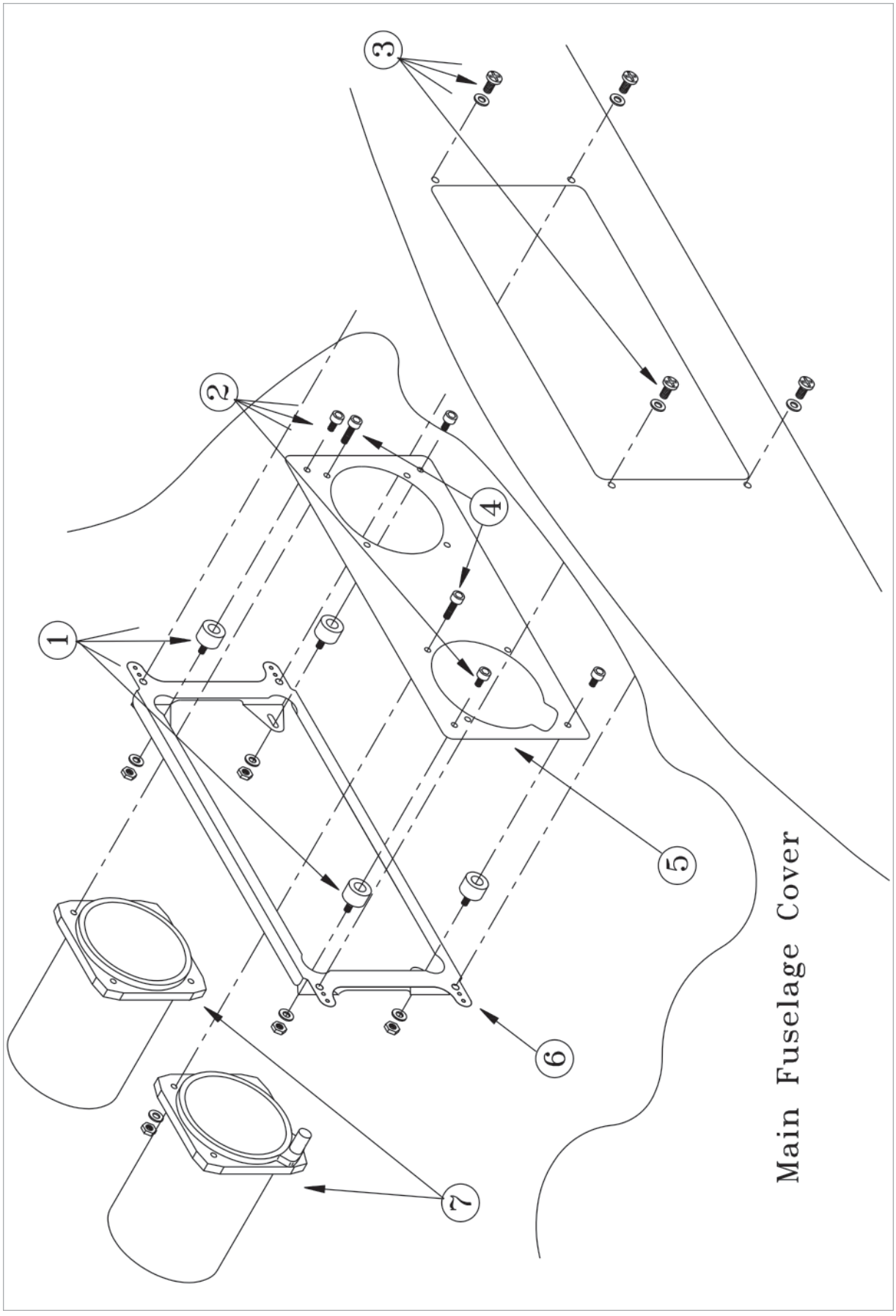


Figure 5 ***Front Instrument Panel and Frame Removal/Installation***

31-10-05 Front Instrument Panel with Garmin G5

As an option the front instrument panel (1, Figure 6) can be equipped with a Garmin G5 electronic flight instrument (2) and further instruments (3 & 4).

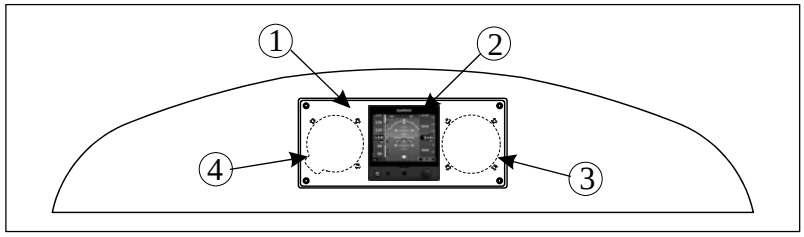


Figure 6 *Front Instrument Panel with Garmin G5*

Removal/Installation

NOTICE

Hold Garmin G5 and panel by hand to prevent from falling down when removing the instrument panel attachment screws.

1 Remove the AN526 C-1032-R6 instrument panel attachment screws (3, Figure 7).

2 Pull the front instrument panel with instruments aft some centimeter.

3 Disconnect the pitot resp. static lines from the Garmin G5 (4). Mark lines for later identification.

4 Remove instrument panel (2).

5 Reverse procedure for installation.

31-10-06 Front Instrument Panel Support (for Garmin G5)

In the case a Garmin G5 is installed the front instrument panel is attached to a support, which is directly connected to the fuselage.

Removal/Installation

1 Remove the main fuselage cover as per Chapter 53.

2 Remove the front instrument panel as per Chapter 31-10-04.

3 Hoist the aircraft front by means of both engine hoisting points just enough to relieve the bolts (5 and 6, Figure 7). Refer to Chapter 07-20-01.

4 Loosen the cutout bridge attachment bolts (5) on each fuselage side. Turn maximum 2 rotations.

5 Remove DIN 912 M12x220 bolts (6).

6 Remove front instrument panel support (1).

NOTICE

Damage to the fuselage steel tube frame can occur. Do not lower the aircraft front before all bolts (5 & 6) are reinstalled.

7 Reverse procedure for installation.

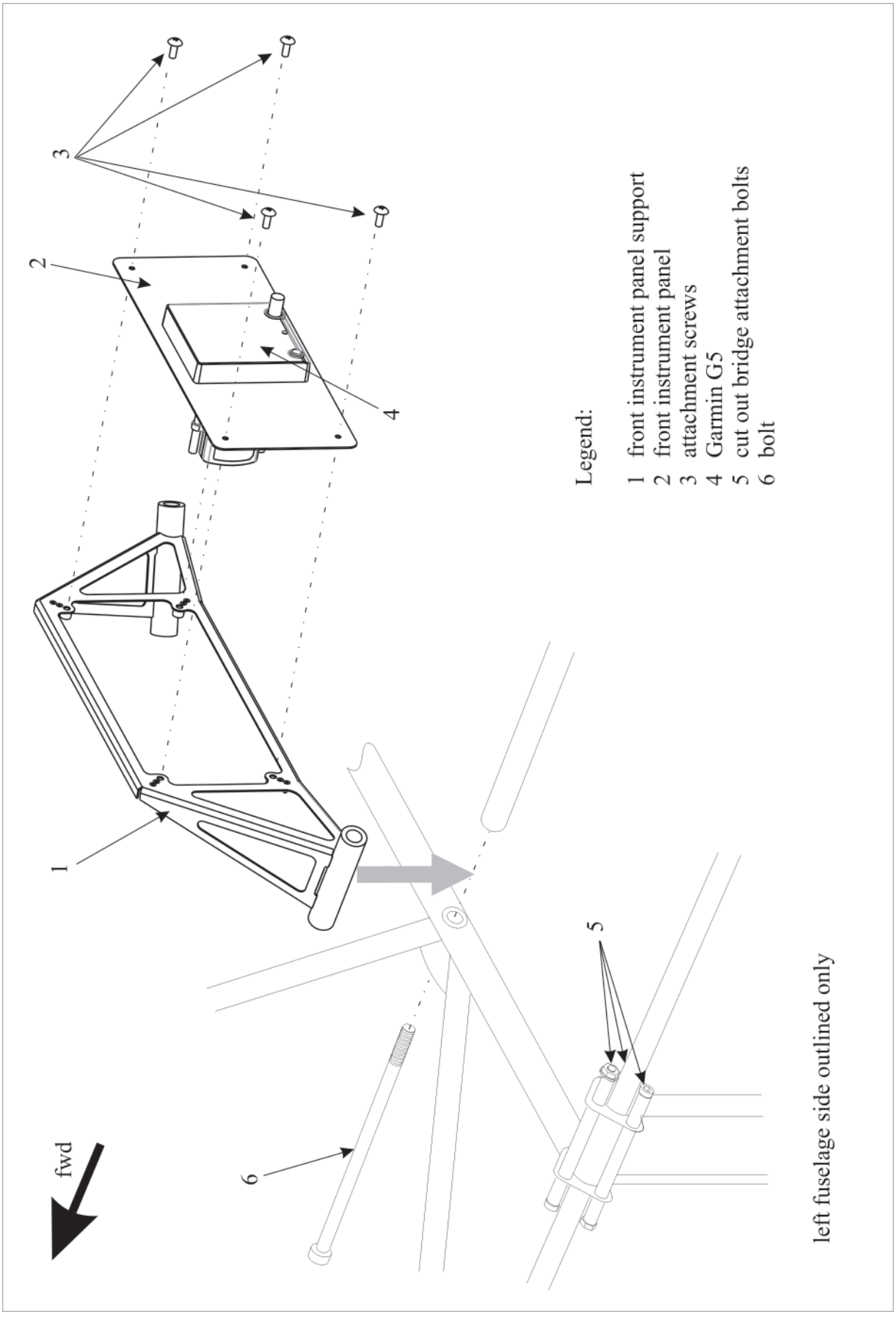


Figure 7 ***Front Instrument Panel Support (for Garmin G5) Removal/Installation***

31-10-07 Typical Instruments

Removal/Installation

In Figure 8 typical instrument attachments used in the EXTRA 300LT are outlined.

1 Switch off aircraft power

2 Remove main fuselage cover per Chapter 53.

3 Remove rear instrument panel cover if applicable per Chapter 31-10-02.

4 Disconnect cable and/or sense line from the instrument.

5 Remove screws, nuts or clipnuts as applicable.

6 Remove instrument from panel.

7 Install in reverse sequence of removal.

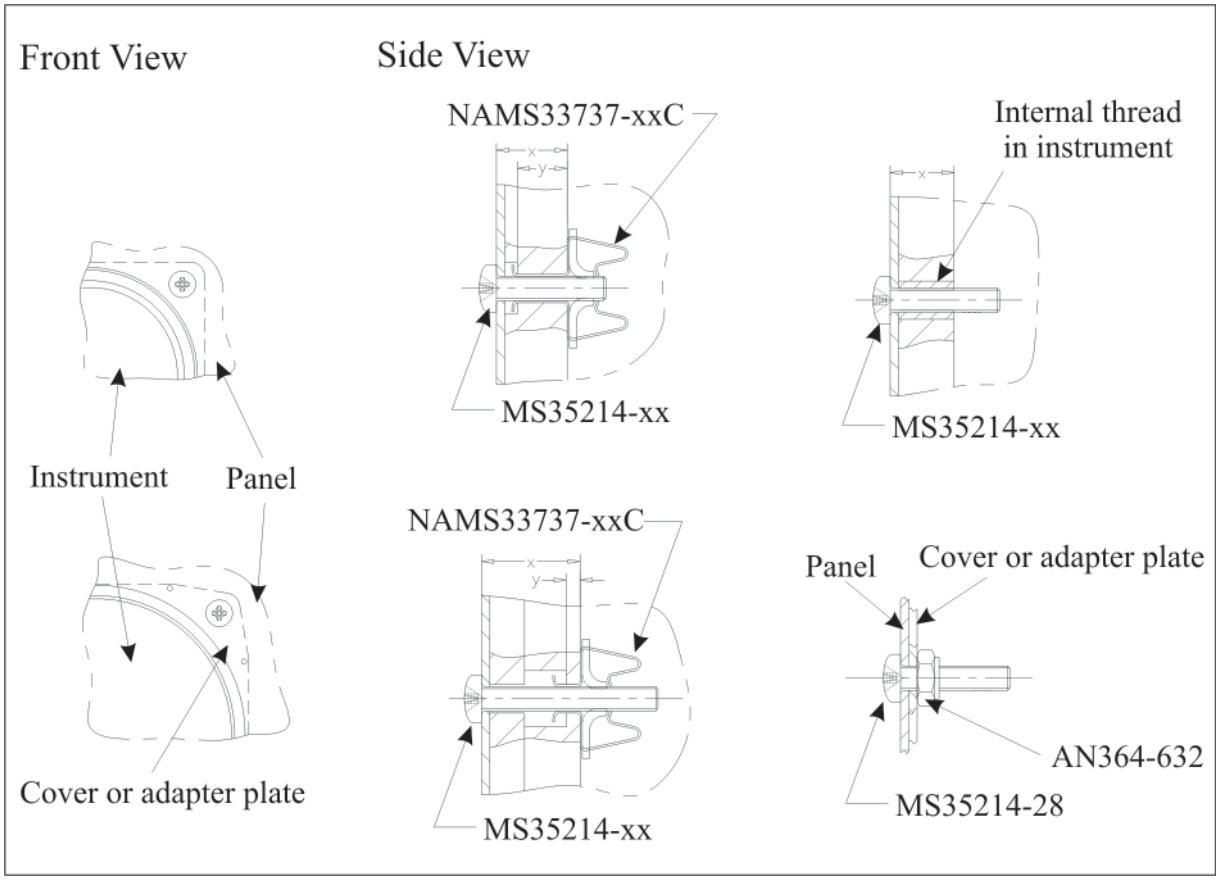


Figure 8 ***Typical Instrument Attachments***

31-10-08 Garmin G5

Removal/Installation

Refer to Garmin G5 Maintenance Manual (see Chapter 1) for:

- G5 Unit Removal/Installation
- G5 Battery Removal/Installation
  (if optional backup battery installed) and
- G5 Mounting Ring Replacement.

Test and Calibration Procedures

1 Perform a Pitot/static system Leak Check per Garmin G5 Maintenance Manual (see Chapter 1) whenever the system is opened up.

2 Perform Garmin G5 Calibration Procedures per Garmin G5 Maintenance Manual (see Chapter 1) after maintenance.

31-50-00 CENTRAL WARNING SYSTEMS

31-50-01 Stall Warning System

The EXTRA 300LT is equipped with a stall warning system as standard. This system is designed to warn the pilot by an audible alarm horn, which is fitted in the back of the front seat. The stall warning switch is located at the RH wing leading edge. The electrical circuit of the stall warner is independently protected with an automatic 1 ampere circuit breaker in the rear instrument panel.

The stall warning switch has been adjusted at the factory after a test flight. It is set to trigger the warning approx. 5-10 knots prior to stalling in normal flight. The switch should require no adjustment in normal service.

Chapter 32

Landing Gear

Table of Contents

32-10-00 LANDING GEAR

The EXTRA 300LT is designed as a conventional tail wheel airplane, with an unretractable landing gear.

The landing gear consists of a 2 wheel main landing gear and a tail wheel.

The main wheels are attached to the fuselage by means of the landing gear U-spring. This spring is of integral glasfibre design and incorporates wheel alignement, spring and dampening action.

IMPORTANT

New bolts are to be used when the wheel axles are replaced or refitted.

The tail wheel is steerable and features full swivel capability. The tail wheel steering is attached to the rudder bottom hinge bellcranks using the same bolts as the control cables.

The values for wheel rake and toe-in of main landing gear are given in Figure 1.

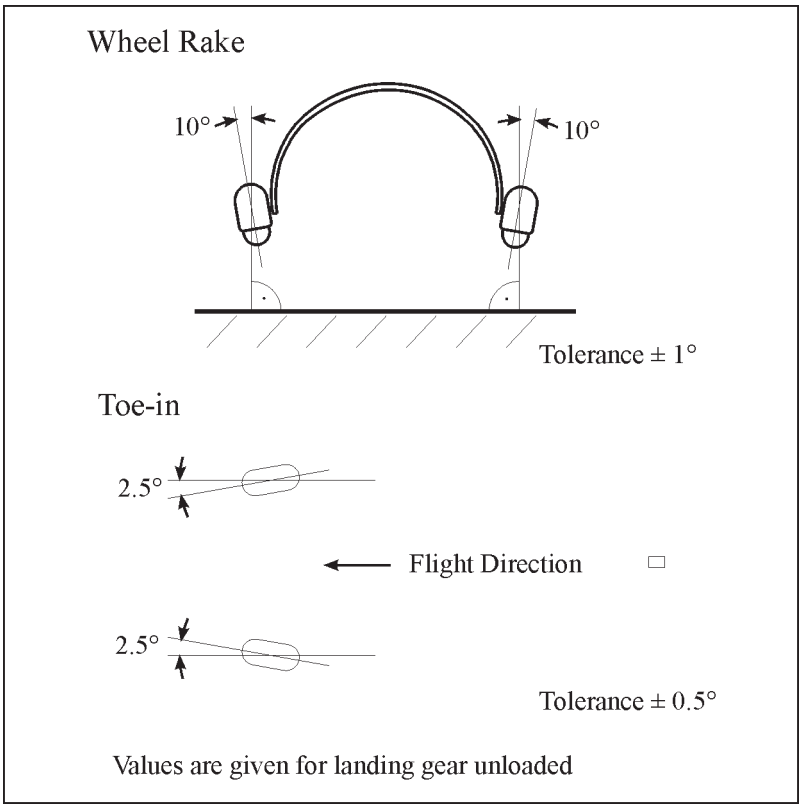


Figure 1 Wheel Rake and Toe-in

32-10-01 Main Landing Gear

Removal/Installation

Refer to figure 2

1 Remove the engine cowling, the landing gear cuffs and the bottom fuselage cover as per chapter 51.

2 Shore the aircraft as per chapter 07-20-00

3 Drain brake system.

4 Unfasten the ventilation tubings and brake lines, and disconnect the brake lines from the brake assembly.

5 Remove the four landing gear attachment stop nuts (1) and the washers.

6 Remove the bottom halves of the mounting clamps (2), the anti-abrasion strips (3) and the landing gear (4).

7 Install in reverse sequence of removal using new stop nuts. For correct position of landing gear the mandrel, which is located at the bottom of the fuselage, is to put into the respective sleeve at the top of the landing gear spring. Use 3M Scotch 8671 PU tape to fasten the ventilation tubings and brake lines. Replenish brake fluid.

32-10-02 Top Half of the Mounting Clamp

Removal/Installation

Refer to figure 2

1 Remove the main landing gear as per chapter 32-10-01.

2 Remove the stop nuts, the washers and the bolts (5).

3 Remove the top half of the mounting clamp (6).

4 Reverse procedure for installation. Apply AeroShell Grease 22C to the bolt (5) shaft and to the underside of the bolt head and torque according to the special torque value given in chapter 20.

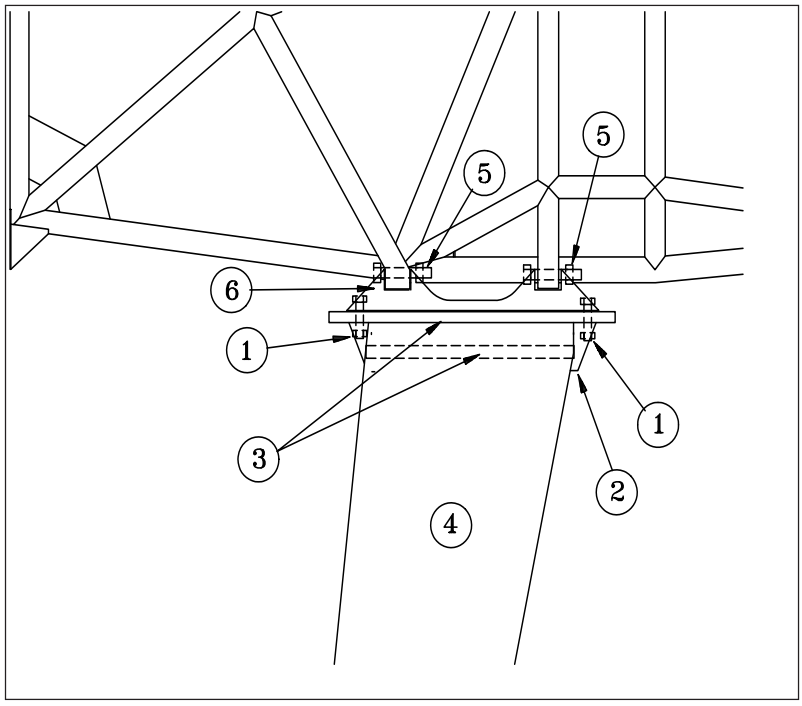


Figure 2 *Main Landing Gear Mounting*

32-10-03 Wheel Axis

Removal/Installation

1 Remove wheel fairing as per chapter 32-40-02.

2 Remove wheel.

3 Remove the four wheel axis attachment bolts and remove the axis, the reinforcement plate and the wheel fairing holder plate.

4 Install in reverse sequence of removal. Use new nuts and bolts.

32-10-04 Tail Spring

Removal/Installation

Refer to figure 3.

1 Shore the tail as per chapter 07-20-02.

2 Remove the tail cone access panel as per chapter 51-00-01.

3 Disconnect the steering chains (15) from the steering arm (8).

4 Remove the tail spring attachment bolts (1-3).

5 Remove the tail spring (4).

6 Remove bolts (6) for disassembly if appropriate.

7 Reverse procedure for installation; consider to fasten the breather line using the MS21919-DG12 clamp (5).

32-10-05 Tail Wheel Fork

Removal/Installation

Refer to figure 3.

1 Shore the tail as per chapter 07-20-02.

2 Remove the attachment stopnut (7) and washer.

3 Remove the steering arm (8) and the tail wheel fork (9).

4 Reverse procedure for assembly.

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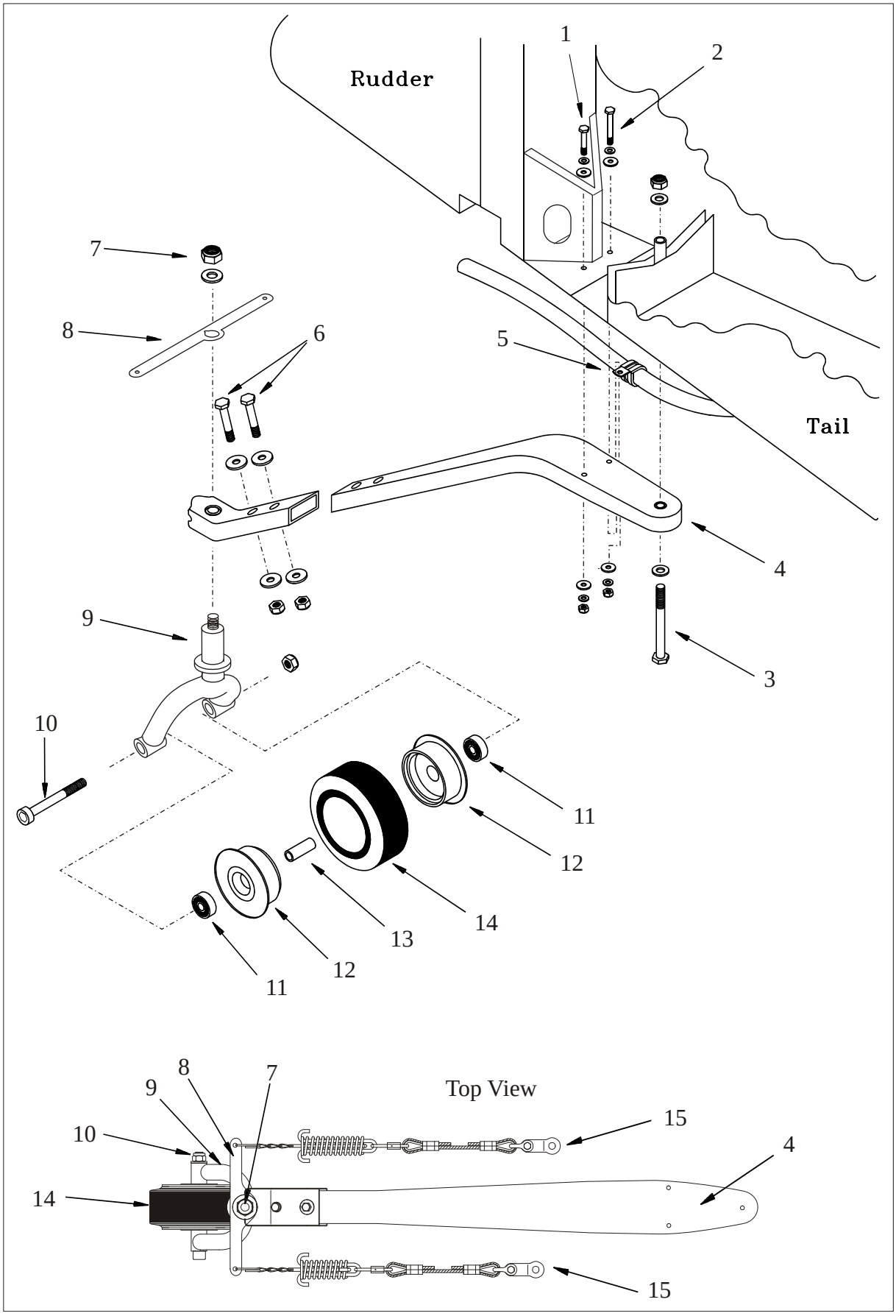

Figure 3 ***Tail Wheel, Fork and Spring***

32-40-00 WHEELS AND BRAKES

General

This chapter provides maintenance personnel with necessary procedures to accomplish both on-aircraft and off-aircraft maintenance of Cleveland design wheel and brake assemblies. Such maintenance shall include inspection, removal, servicing, refinishing, and installation of assemblies.

The main wheels have standard brand 500x5 rims, six-ply rated 5.00-5-tyres with tubes, according to FAA Standard TSO-C62. Cleveland 40-151 wheels with 30-164 brake assemblies are used. The main wheels are covered with carbon fibre designed fairings of which figure 5 shows the layer sequence.

The tailwheel consists of a 5 inch tire and an aluminium rim.

The Cleveland design features an external brake in which the disc is external to the wheel with the brake caliper floating over the disc.

The brake system (refer to figure 4) consists of a brake assembly located at the inner side of the wheel, a master cylinder (1) at the front and rear rudder pedals each, and a brake fluid reservoir (2) mounted at the engine side of the firewall. The master cylinders are mounted in line, so that the front cylinder looses his efficiency, when the rear cylinder has been actuated. The particular parts of the brake system are interconnected by brake lines consisting of aluminium tubes and flexible KNAPP hoses.

The tail wheel has no brake.

IMPORTANT

Test brakes after maintaining the brake system. Actuated brakes shall keep the aircraft standing with engine running at 1.800 rpm and maximum propeller angle of attack. With applied brakes and powersetting above 1800 rpm the wheels may slide on grass.

NOTE

For further information concerning main wheels and brakes refer to Cleveland Wheels and Brakes Component Maintenance Manual AWBCMM0001 and Technician's Service Guide AWBTSG0001.

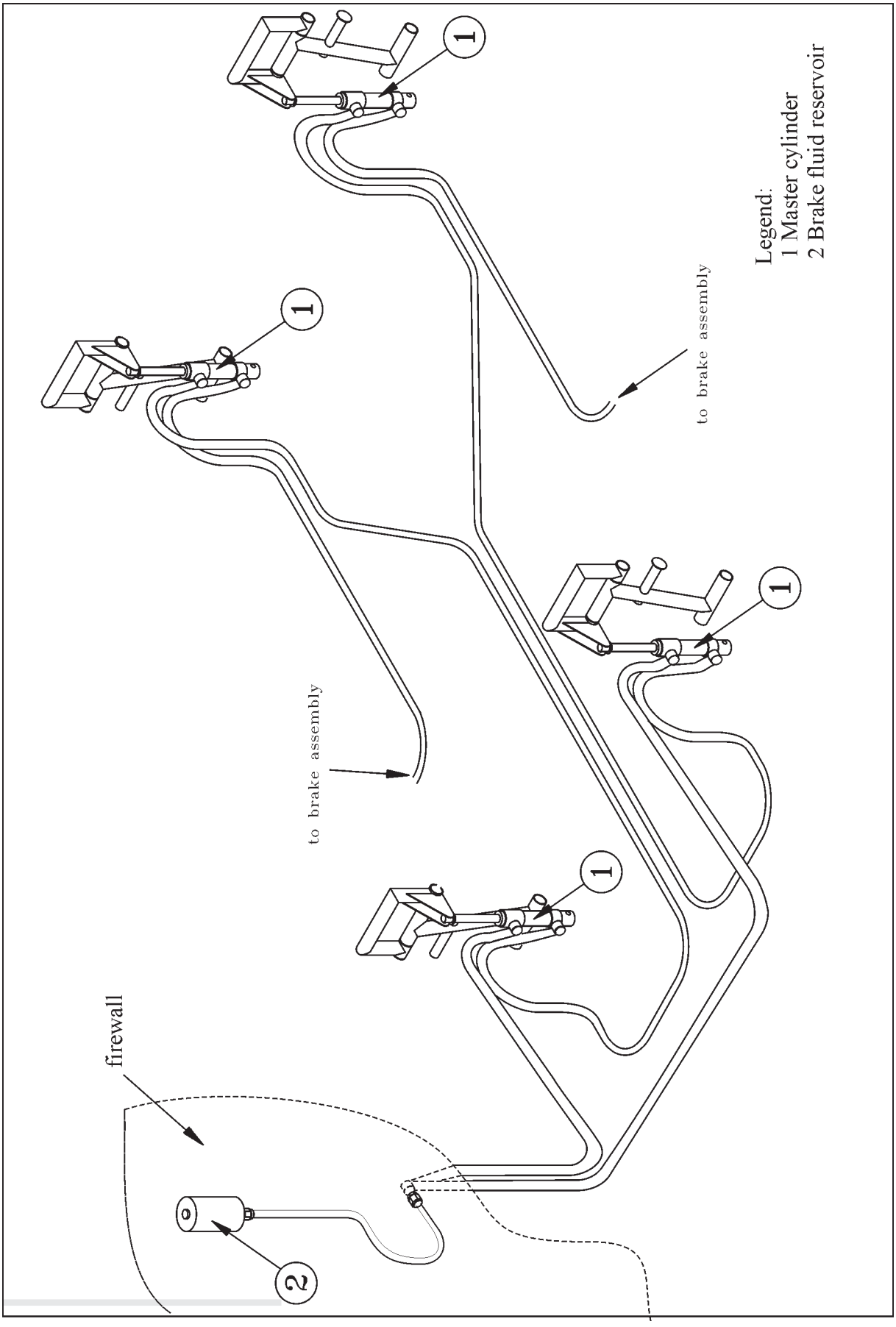

Figure 4 ***Brake System***

32-40-01 Master Cylinder

Removal/Installation

1 Drain the brake system.

2 Disconnect the brake lines.

3 Remove the attachment bolts.

4 Remove the master cylinder.

5 Install in reverse sequence of removal.

32-40-02 Wheel Fairing

The wheel fairings are made from carbon fiber with honeycomb. Each wheel fairing consists of the fairing body, a brake inspection panel on the inboard side and a tire inflation access cap on the outboard side.

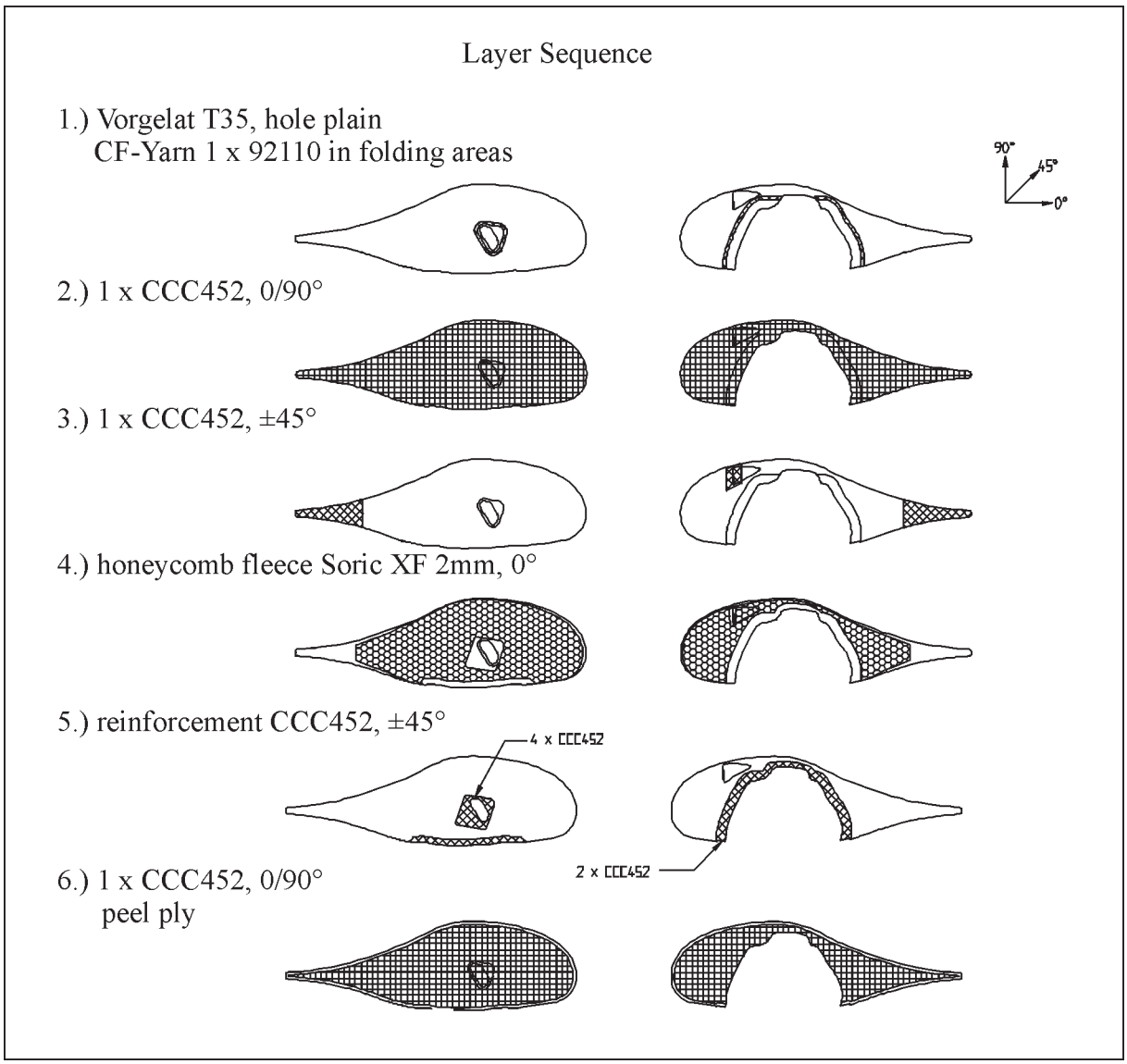

Figure 5 ***Layer Sequence Wheel Fairing***

Removal/Installation

The wheel fairings are screwed.

When installing the wheel fairing ensure a gap of minimum 1.5 mm from the fairing surface to the landing gear spring. Correct position if necessary prior to fastening the fairings.

32-40-03 Tail Wheel

Disassembly/Assembly

Refer to figure 3.

1 Shore the tail as per chapter 07-20-02.

2 Remove the axle bolt, washers, and stopnut (10).

3 Remove the tailwheel.

4 Disassemble the bearings (11), the wheel halves (12), the spacer sleeve (13), and the solid rubber tire (14).

5 Reverse procedure for assembly.

Chapter 33

Lights

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33-10-00 FLIGHT COMPARTMENT

33-10-01 Low Voltage Monitor

For monitoring the generator function a low voltage monitor is installed on the rear instrument panel (see Figure 2 of Chapter 31). The indicator is dimmable and has a built-in bulb testing device („press to test“).

NOTE

When the dimmer ring is turned to the rightmost position, the lamp is OFF.

Removal

1 BATTERY switch OFF.

2 Remove the instrument cover per Chapter 31-10-03.

3 Remove the indicator by turning the dimmer ring counter-clockwise.

4 Remove the attachment nut and washer.

5 Disconnect wiring if appropriate.

6 Remove the low voltage monitor housing.

Installation

The low voltage monitor shall be installed in such a way, that the rightmost dimming position is at the 2 o'clock position. This ensures an indication when the indicator is turned to the normal position.

1 BATTERY switch OFF.

2 Connect wiring if necessary.

3 Place the low voltage monitor housing in the respective bore hole of the instrument panel.

4 Install attachment nut and washer without tightening.

5 Install the indicator by turning the dimmer ring clockwise to the rightmost position.

6 Turn the indicator to the 2 o'clock position.

7 Fasten the attachment nut.

8 Turn the indicator to the 12 o'clock position.

9 Reinstall the instrument cover per Chapter 31-10-03.

33-40-00 EXTERIOR

The exterior light system of the EXTRA 300LT consists of a navigation/strobe light system and a Xenon respectively LED landing light system.

33-40-10 Navigation/Strobe Light System

Refer to Figure 1. The lighting units installed at the wing tips incorporate red or green navigation LED lights on the forward section, a strobe light in the center and a clear tail position LED light on the aft section. They are mounted at the wing tip. The strobe light power supply is mounted on the left wing root rib.

** LH wing only*

The wiring is routed through an aluminium tube inside the wing and along the left resp. right upper longeron to the rear instrument panel. Ground bonding leads are installed between the fuselage, the aluminium tube, (the pitot tube mount*), the strobe light power supply and the wing tip.

The switches and circuit breakers are located on the rear instrument panel (see Figure 2 of Chapter 31).

33-40-11 Navigation/Strobe Light

Removal/Installation

Refer to Figure 1.

WARNING

High Voltage! Wait 5 minutes after shutting off before starting any work on the strobe light system.

1 Disconnect the battery and wait 5 minutes.

NOTE

To change a navigation LED light or glass the removal of the Phillips screws (1) is sufficient for access.

2 Remove the lighting cover Phillips screws (6).

3 Remove the lighting cover and pull out the strobe light (2) some centimetres.

4 Remove the lighting unit attachment bolts (3).

5 Remove the lighting unit.

6 Install in reverse sequence of removal after applying Silicon between the wing tip and the lighting unit.

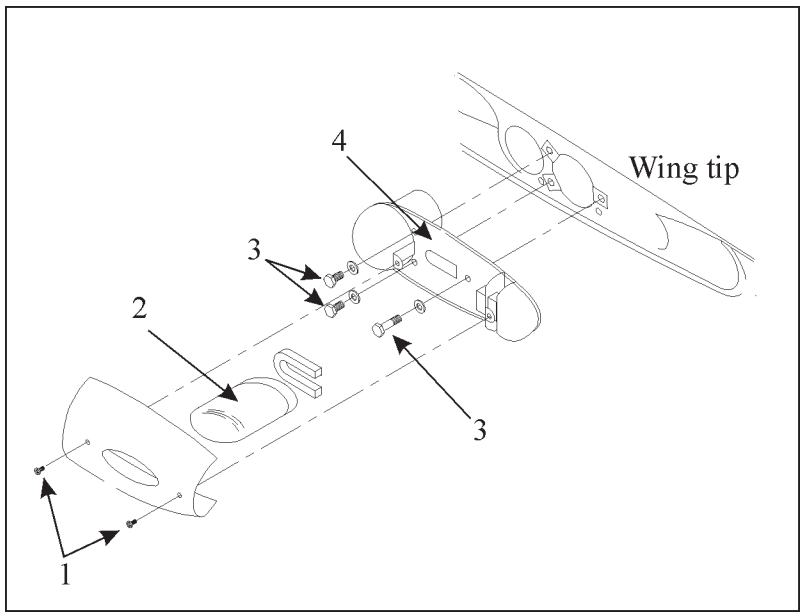

Figure 1 Navigation/Strobe Lights Removal/Installation

33-40-12 Strobe Light Power Supply

Removal/Installation

Refer to Figure 2.

WARNING **High Voltage! Wait 5 minutes after shutting off before starting any work on the strobe light system.**

1 Disconnect the electrical wiring of the power supply (1).

2 Remove the attachment bolts (2) and disconnect the ground bonding lead.

3 Remove the power supply.

NOTICE **DC units are polarity sensitive. Black lead is negative.**

4 Install in reverse sequence of removal.

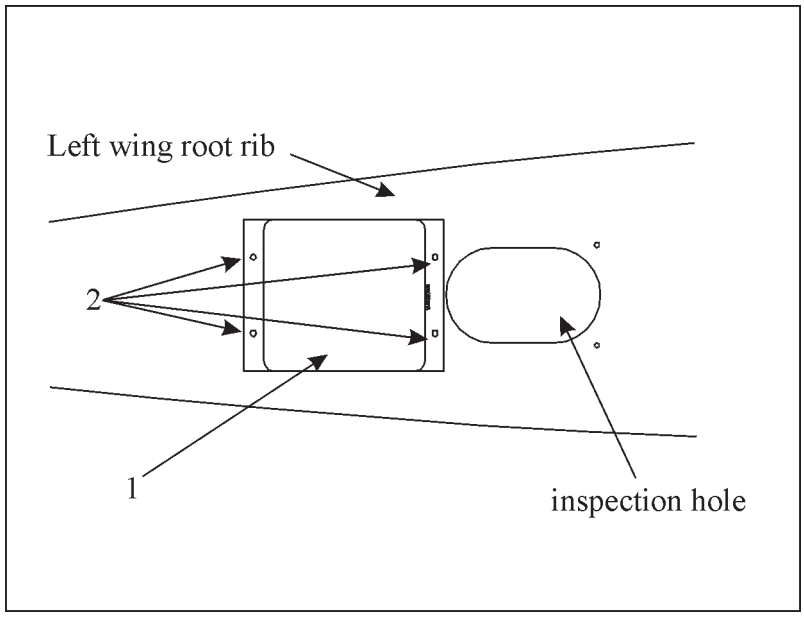

Figure 2 Strobe Light Power Supply Removal/Installation

33-40-20 LED Navigation/Strobe Light System

Refer to Figure 3. The lighting units (2) installed at the wing tips incorporate the red or green navigation LED lights on the forward section, a LED strobe light in the center and a clear tail position LED light on the aft section.

The wiring is routed through an aluminium tube inside the wing and along the left resp. right upper longeron to the rear instrument panel. Ground bonding leads are installed between the fuselage, the pitot tube mount* and the aluminium tube.

** LH wing only*

The switches and circuit breakers (5 A STROBE LIGHT, 2 A NAV LIGHT) are located on the rear instrument panel.

33-40-21 LED Navigation/Strobe Light

Removal/Installation

Refer to Figure 3.

1 Disconnect the battery.

2 Remove the Phillips screw (1).

3 Remove the lighting unit (2) and the rubber seal (3).

4 Disconnect the electrical connector (4).

5 Install in reverse sequence of removal.

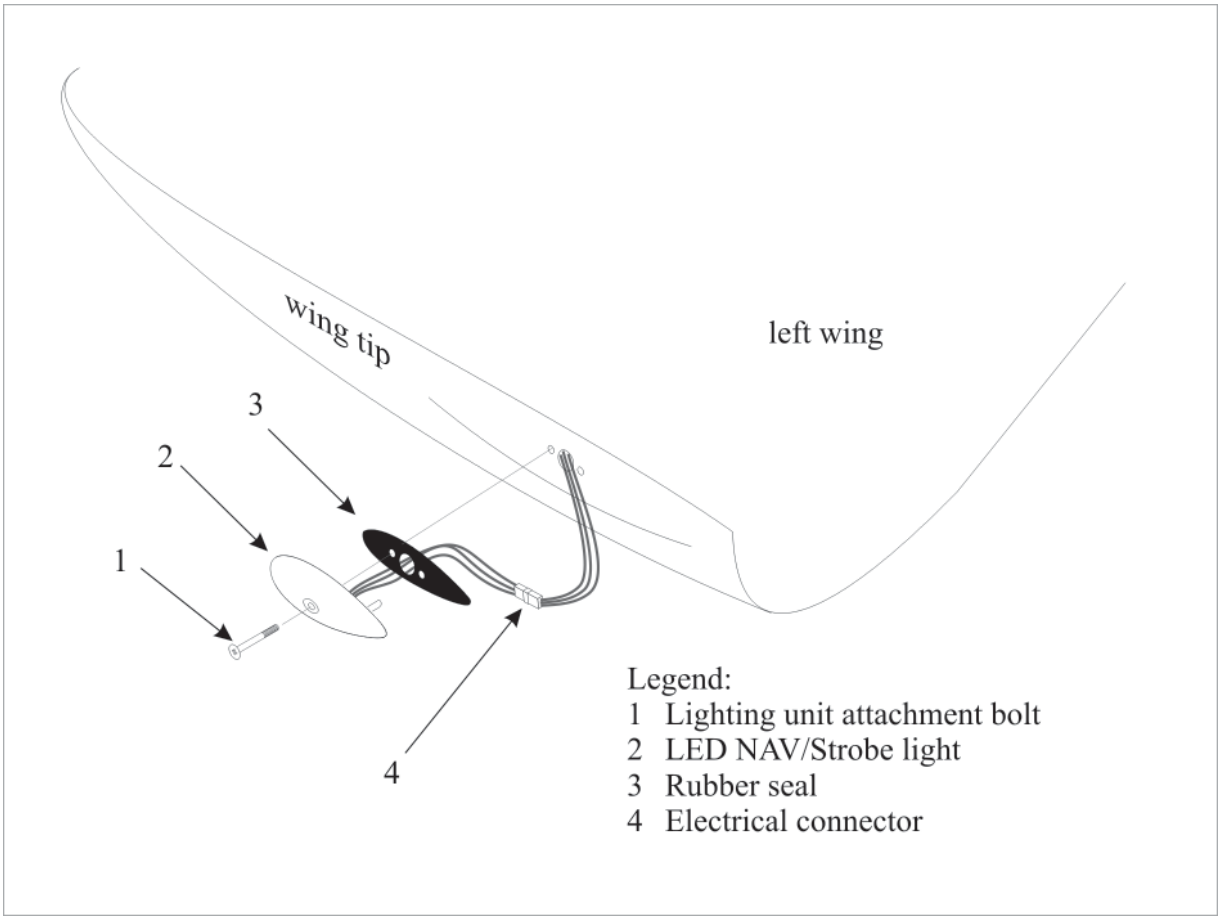

Figure 3 ***LED Navigation/Strobe Light Removal/Installation***

33-40-30 Landing Light System

A Xenon landing light (1) consisting of a hood (10), a glass (11) and the head lamp (6) is integrated in the RH bottom half of the engine cowling. It is energized by a power supply box (2) installed LH inside the lower cowling next to the firewall. The electrical wiring (3) connecting the landing light and the power supply box is fastened with cable straps (9) and cable retainers to the bottom half of the engine cowling. It features a plug-and-socket connection on each side (8, 13). Between firewall feed through and the power supply there is a further plug-and-socket connection (14, 15).

N O T E

When the cowling shall be removed the plug (15) must be disconnected.

The system is controlled by the LANDING LIGHT switch and is protected by the LANDING LIGHT circuit breaker both located on the aft right instrument panel (see Chapter 31-10-00).

33-40-31 Landing Light

Removal/Installation

1 BATTERY switch OFF.

2 Remove engine cowlings as per Chapter 71.

3 Disconnect the plug (8) from the head lamp (6) using the spring (7).

4 Remove the attachment bolts (4) and remove the hood (10) and the glass (11) which is located under the hood.

5 Install in reverse sequence of removal.

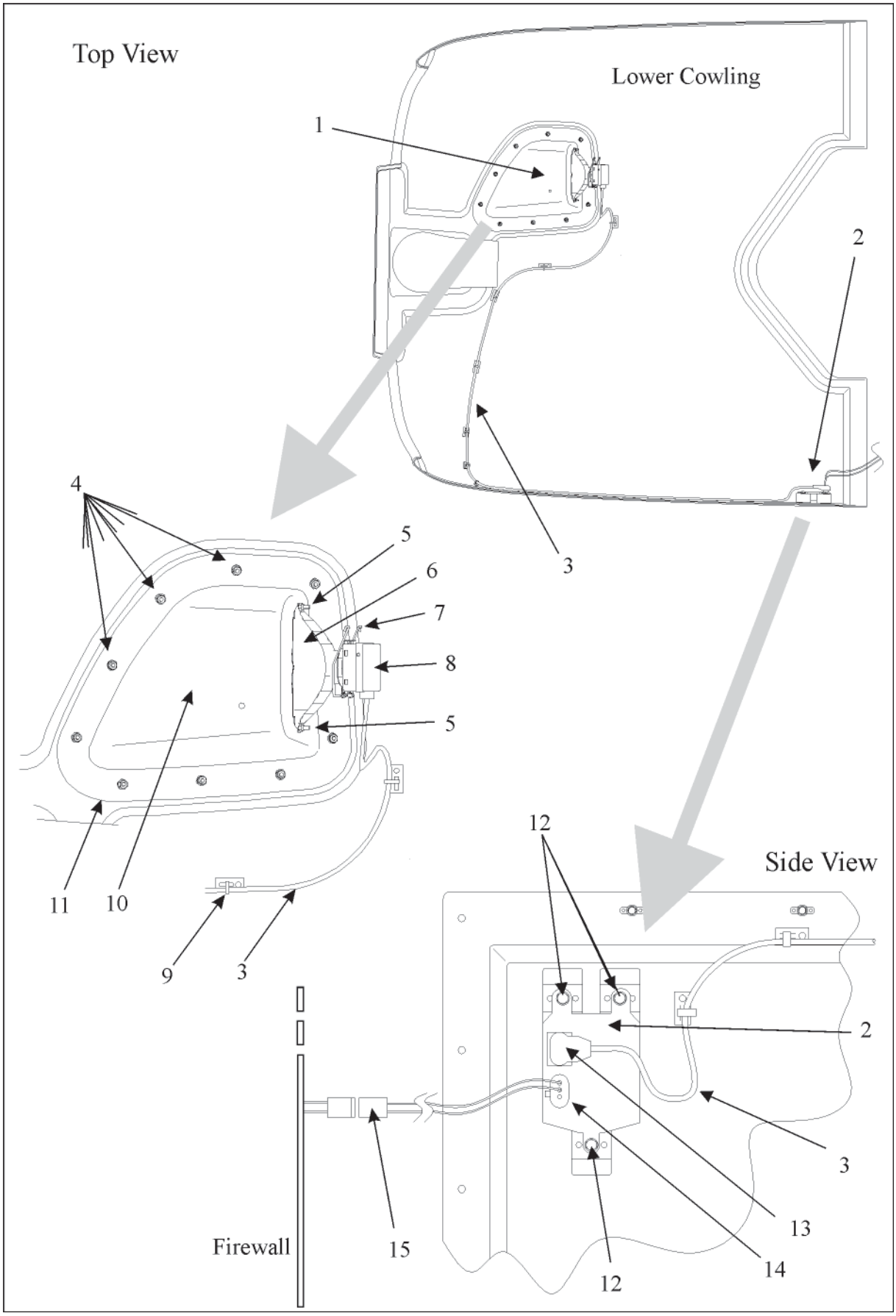

Figure 4 ***Landing Light***

33-40-32 Head Lamp

Removal/Installation

1 Remove landing light as per Chapter 33-40-21.

2 Remove the attachment bolts (5).

3 Remove the head lamp (6) from the hood (10).

4 Install in reverse sequence of removal.

33-40-33 Landing Light Power Supply

Removal/Installation

1 BATTERY switch OFF.

2 Remove engine cowlings as per Chapter 71.

3 Disconnect the plugs (13, 14) from the power supply (2).

4 Remove the attachment bolts (12) and remove the power supply (2).

5 Install in reverse sequence of removal.

33-40-40 LED Landing Light System

Refer to Figure 4. Alternatively a LED landing light (1) consisting of a hood (9), a glass (10) and a head lamp (8) is integrated in the RH bottom half of the engine cowling. The electrical wiring (4) connecting the LED landing light is fastened with cable straps (5) and cable retainers to the bottom half of the engine cowling. It features a plug-and-socket connection on each side (2, 3).

N O T E

When the cowling shall be removed the plug (3) must be disconnected.

The system is controlled by the LANDING LIGHT switch and is protected by the LANDING LIGHT circuit breaker both located on the rear instrument panel (see Chapter 31-10-00).

33-40-41 LED Landing Light

Removal/Installation

1 BATTERY switch OFF.

2 Remove engine cowlings as per Chapter 71.

3 Disconnect the plug (2, Figure 4) from the LED head lamp (8).

4 Remove the attachment bolts (6) and remove the hood (9) and the glass (10) which is located under the hood.

5 Install in reverse sequence of removal.

33-40-42 LED Head Lamp

Removal/Installation

1 Remove landing light as per Chapter 33-40-31.

2 Remove the attachment bolts (7, Figure 4).

3 Remove the LED head lamp (8) from the hood (9).

4 Install in reverse sequence of removal.

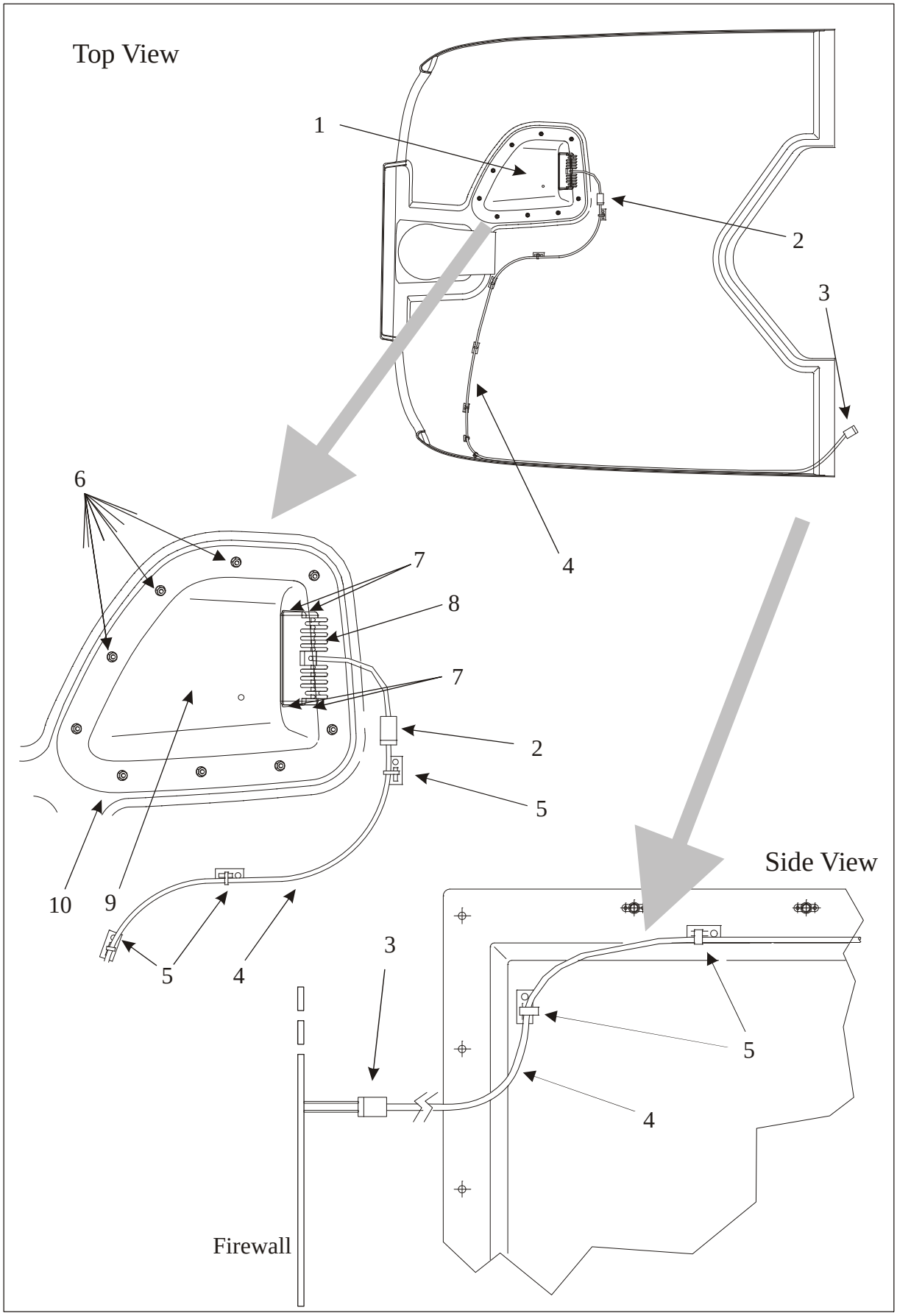

Figure 5 ***LED Landing Light***

Chapter 34

Navigation

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34-00-00 GENERAL

The Extra 300LT is equipped with an altimeter, an airspeed indicator and a magnetic compass in the rear cockpit. In the front cockpit an additional airspeed indicator and altimeter are installed.

Refer to the Equipment List of the Pilot's Operating Handbook for installed optional equipment.

The colour markings on the instruments follow US-FAR, part 23 recommendations.

To get the pitot and static pressure a pitot/static tube is installed at the LH wing leading edge.

IMPORTANT

Perform a leakage test on the pitot/static system whenever working on the system has been necessary.

34-10-00 FLIGHT ENVIRONMENT DATA

This Section describes that portion of the system which senses the environmental conditions and uses the data to influence navigation.

34-10-01 Pitot/Static System

The pitot/static tube is designed to pick up pitot pressure and static pressure. It is screwed through the L.H. outboard leading edge into an attachment block located at the rear web of the main spar. From there the pressures are transmitted by means of a vinyl tube which is routed through an aluminium tube inside the wing to the left side of the fuselage and further to the instrument panels. The ends of each vinyl tube are marked with the letters "P" or "S" for pitot resp. static pressure line. The pitot/static system can be drained by means of an U-shaped drain which is located at the left side of the cockpit as shown in figure 1.

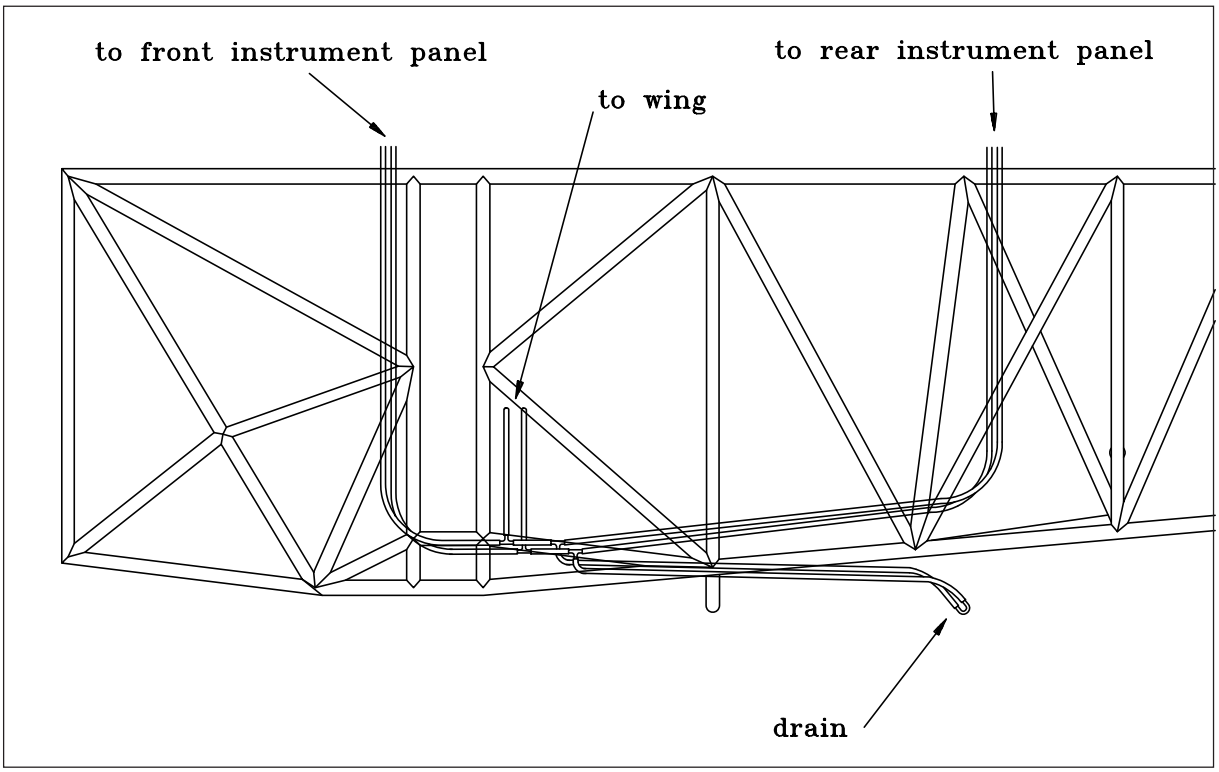


Figure 1 ***Pitot/Static Drain***

34-10-02 Altimeter

The altimeter is designed to measure pressure changes of the atmosphere by means of an aneroid capsule, the pressure changes corresponding to changes in altitude. In this instrument the pinion shaft drives the pointer shaft of the large pointer via gearwheels . Further gearwheels are used to move the small pointer. The altimeter has a scale marked in feet (ft) or meters (m). By turning the knob at the bottom left of the instrument, the barometric pressure reading is set in millibars and/or in.Hg.

Removal/Installation

1 Remove the instrument cover per chapter 31-10-03 (rear altimeter only).

2 Remove the vinyl tube and the tube-to-pipe adapter if necessary.

3 Remove the attachment bolts and clip nuts.

4 Remove the altimeter.

5 Install in reverse sequence of removal.

6 Perform an operation test.

34-10-03 Airspeed Indicator

The airspeed indicator shows the speed of the aircraft relative to the atmosphere. The airspeed indicator measures the difference between pitot pressure and static pressure, the former being picked up by the pitot tube at the pitot location of the air flow and applied to the airspeed indicator via tubing, the latter also being picked up by the pitot tube. The sensing element of the airspeed indicator is an open diaphragm which senses internally the pitot pressure and externally the static pressure, the difference between the two increasing with increasing speed. This difference produces distortion of the diaphragm which is translated to the pointer via a system of levers and gearwheels.

The reading of the airspeed indicator is in knots.

Removal/Installation

1 Remove the instrument cover per chapter 31-10-03 (rear airspeed indicator only).

2 Remove the vinyl tubing.

3 Remove the attachment bolts and clip nuts.

4 Remove the airspeed indicator.

5 Install in reverse sequence of removal. Observe correct installation of vinyl tubing: "Stat. Druck" = static pressure, "Meßdruck" = Pitot pressure.

6 Perform an operation test.

34-10-04 Pitot-Static Tube

Removal/Installation

The pitot-static tube consists of an inner aluminium tube, an outer aluminium tube and a top cap which are screwed.

1 Unscrew the top cap.

2 Unscrew the outer aluminium tube.

3 Unscrew the inner aluminium tube.

4 Install in reverse sequence of removal applying silicone in the gap between the outer aluminium tube and the hole of the wing leading edge.

34-10-05 Pitot-Static Tube Attachment Block

Removal/Installation

1 Remove the pitot-static tube per chapter 34-10-04.

2 Remove the LH outboard access panel.

3 Remove the attachment stop nuts and the washers from the pitot-static tube attachment block.

4 Remove the attachment block and disconnect the ground bonding leads.

5 Loosen clamps and disconnect the tubing.

6 Remove the fittings if necessary.

7 Install in reverse sequence of removal. Use new stop nuts.

34-20-00 ATTITUDE AND DIRECTION

This section describes that portion of the system which uses magnetic or inertia forces to sense and display the direction or attitude of the aircraft.

34-20-01 Magnetic Compass

The magnetic compass shows the course of the aircraft in relation to magnetic north. Its measuring range is 360° in increments of 5°. Its case is filled with silicone oil to dampen the movements. The compass correction card is located on the rear instrument panel.

The magnetic compass must be inspected as per chapter 5 and whenever the engine, magnetizable metals or parts of the electrical resp. ignition system have been replaced, changed or added.

Removal/Installation

1 Remove the instrument cover per chapter 31-10-03.

2 Remove the compass attachment bolts and nuts.

3 Remove the magnetic compass.

4 Install in reverse sequence of removal.

5 Perform a compass compensation and replace the compass correction card.

34-20-02 Attitude Indicator

An attitude indicator, also known as a gyro horizon or artificial horizon, is an instrument used in an aircraft to inform the pilot of the orientation of the airplane relative to the earth. It indicates pitch (fore and aft tilt) and bank (side to side tilt)

The incorporated Attitude and Heading Reference Systems (AHRS) actuates a display that has two dimensions of freedom, simultaneously displaying pitch and bank.

Removal/Installation

1 Remove the instrument cover per chapter 31-10-03.

2 Disconnect the electrical wiring from the attitude indicator.

3 Remove the attitude indicator attachment bolts and nuts.

4 Remove the attitude indicator.

5 Install in reverse sequence of removal.

34-50-00 DEPENDENT POSITION DETERMINING

34-50-01 Transponder

Various transponders can be installed in the EXTRA 300LT. A transponder is a radio transmitter and receiver that fulfills the role of the airborne beacon equipment according to the requirements of the Air Traffic Radar Beacon System (ATCRBS). It operates on radar frequencies, receiving ground radar interrogations at 1030 MHz and transmitting a coded response of pulses to ground-based radar on a frequency of 1090 MHz.

Rermoval/Installation

1 Remove instrument cover if transponder has to be installed from the rear. Refer to chapter 31-10-03.

2 Remove transponder following the Removal/Installation Instructions of the respective manufacturer.

3 Install in reverse sequence of removal.

4 Perform an operation test.

Chapter 51

Standard Practices and Structures - General

51-00-00 GENERAL

51-00-01 Access Panel Identification

For the EXTRA 300LT all removable covers and fairings are defined as access panels (refer to figure 1 and the adjacent chart). If maintenance or repair is not restricted to a small area it is advisable to remove all access panels before beginning work or checks.

With the exception of the oil filler access door, the baggage compartment door and the wheel fairing inspection cap all panels are screwed.

The following list shows, where detailled removal/installation information for the respective parts can be found:

Part	Chapter
Engine cowlings	71
Fuselage covers, canopy	53
Instrument cover	31
Wheel fairings	32

N O T E

Access panels partly overlap. Remove the front panels first.

Prior to unscrewing the air inlet screen remove bottom half of the engine cowling not to lose the attachment stopnuts and washers.

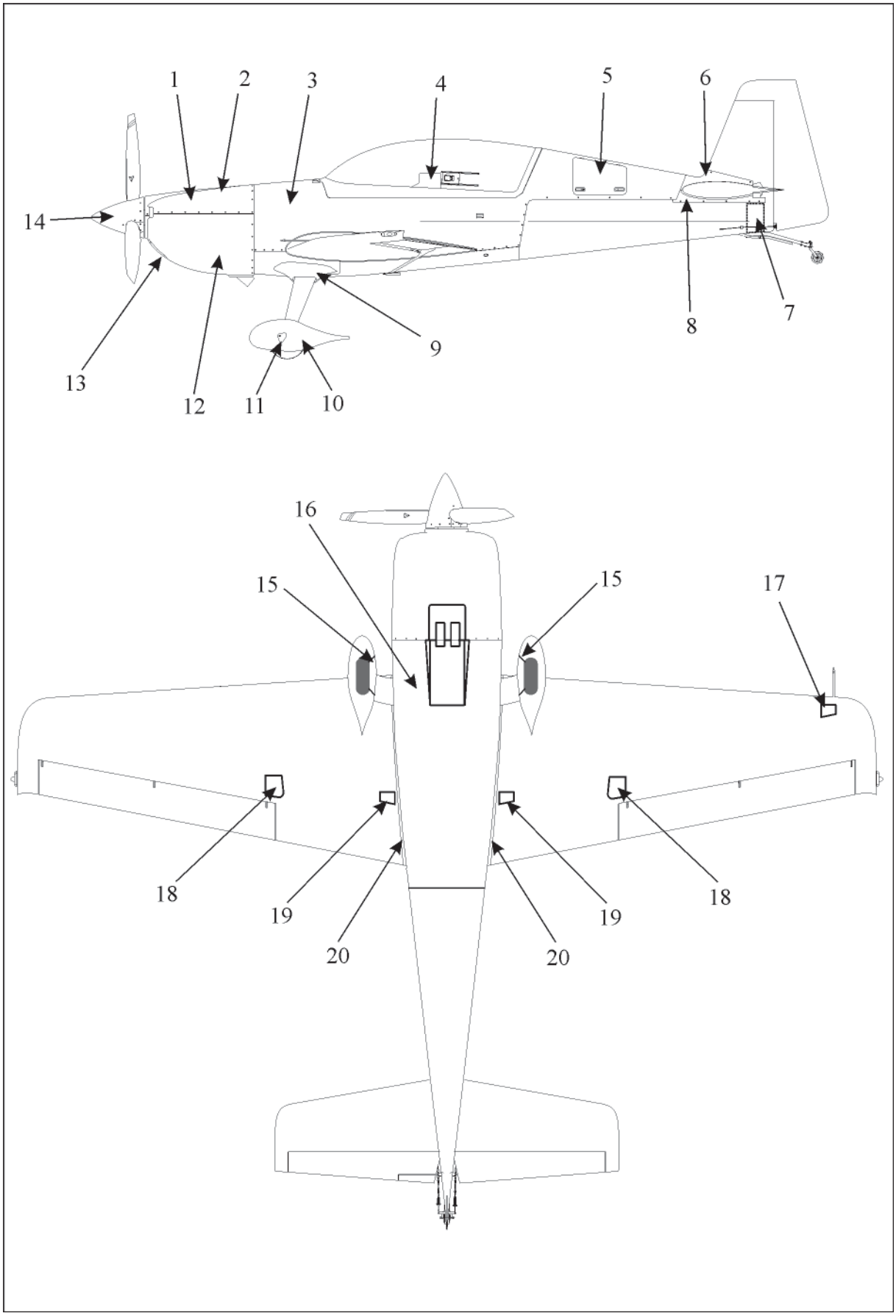


Figure 1 ***Access Panel Identification***

Pos.	Item
1	Top half of the engine cowling
2	Oil filler access door
3	Main fuselage cover
4	Instrument cover
5	Baggage compartment door
6	Tail fairing
7	Tail cone access panel (RH)
8	Tail side skin (RH/LH)
9	Cuff
10	Wheel fairing
11	Wheel fairing inspection cap
12	Bottom half of the engine cowling
13	Air inlet screen
14	Spinner
15	Brake inspection panel
16	Bottom fuselage cover
17	Pitot-static tube access panel
18	Wing outboard access panel
19	Wing inboard access panel
20	Wing gap cover

51-10-00 INVESTIGATION

51-10-01 Damage Classification

IMPORTANT

All damage of composite parts must first be classified by qualified personnel. In case of doubt with regard to the classification of damage, if a clear definition of the extent of damage is not possible, or if a repair of damage inspite of the valid manufacturer documentation is doubtful, contact EXTRA Flugzeugproduktions- und Vertriebs- GmbH.

IMPORTANT

Only the Damages Classes 2, 3 and 4 may be repaired by qualified personnel. In case of Damage Class 1 it has to be contacted EXTRA Flugzeugproduktions- und Vertriebs- GmbH.

According to the Luftfahrt-Bundesamt (Federal German Aviation Authority) four damage classes are defined:

Damage Class 1:

Large scale destruction requiring a partial reconstruction of the component or large scale repair. Each destruction over 300 mm diameter and each damage of a spar is a large scale destruction. EXTRA Flugzeugproduktions- und Vertriebs-GmbH has to be contacted prior to repair.

Damage Class 2:

Damage to primary structures and to secondary structures to the following extent: Holes and fractures extending through a sandwich component and a scale under 300 mm diameter.

Damage Class 3:

Damage to primary structures and to secondary structures to the following extent: Small holes or fractures in the external covering layers, if not accompanied by damage to supporting layers or internal covering layers.

Damage Class 4:

Erosion, scratches or nicks not accompanied by fractures or breakages. Damage to fairings belong to this class.

51-10-02 Repair Criteria and Limits

IMPORTANT

All damage of composite parts must first be classified prior to repair. Refer to chapter "51-10-01 Damage Classification".

IMPORTANT

Only the Damage Classes 2, 3 and 4 may be repaired by qualified personnel. In case of Damage Class 1 EXTRA Flugzeugproduktions- und Vertriebs- GmbH has to be contacted.

The decision whether to repair or replace a major unit of structure will be influenced by factors such as time and labor available, and by comparison of labor costs with the price of replacement assemblies. Past experience indicates that replacement, in many cases, is less costly than major repair. Certainly, when the aircraft must be restored to its airworthy condition within limited time, replacement is preferable.

51-30-00 MATERIALS

This Section describes metallic and non-metallic materials used in the repair of the EXTRA 300LT and gives the sources of supply (manufacturers and supplier).

51-30-01 Composite Parts

IMPORTANT

Only approved materials have to be used for the repair of composite parts.

Epoxy-system

Manufacturer: Hexion Specialty Chemicals GmbH
Varzinerstr. 49,
D-47138 Duisburg, Germany

Supplier: Brenntag GmbH
Stinnes Platz 1,
D-45472 Mühlheim, Germany

Resin: Epikote L20 / Rütapox L20

Hardener: Epikure Curing Agent 960 / Rütapox SL

Ratio of comp.: 100 parts *L20* / 34 parts *SL* (weight ratio)

Glass fibre fabrics

Manufacturer: P-D Interglas Technologie GmbH
Benzstraße 14,
D-89155 Erbach, Germany

Style	WLB-No.* LN 9169	US-style	weave patterns	weight g/m²
90070	8.4505.60	1610	plain	80
92110	8.4548.60	none	twill 2/2	163
92125	8.4551.60	none	twill 2/2	280
92140	8.4551.60	none	twill 2/2	390

*All glass fabric is made of alkali-free E glass with Volan-A finish or with finish I 550.

Carbon fibre fabrics

Manufacturer: C. Cramer GmbH & Co. KG
Division ECC
Weberstr. 21,
D-48619 Heek-Nienborg, Germany

Style ECC/CCC	WLB-No.* DIN 65147	US-style	weave patterns	weight g/m²
447	8.3507.80	none	plain	160
452	8.3520.80	none	twill 2/2	204
459	-	none	cross-twill	220
490	-	none	plain	120
495	-	none	5HS	120

*WLB: Werkstoff Leistungsblatt, according to German standard DIN-WL

Aramid fibre fabrics

Manufacturer: C. Cramer GmbH & Co. KG
Division ECC
Weberstr. 21,
D-48619 Heek-Nienborg, Germany

Style ECC/CCC	WLB-No.* DIN 65147	US-style	weave patterns	weight g/m²
502	-	none	twill 2/2	158

*WLB: Werkstoff Leistungsblatt, according to German standard DIN-WL

Glass rovings

Manufacturer: GEVETEX Textilglas-GmbH
Postfach 426,
D-5100 Aachen, Germany

Supplier: Lange & Ritter GmbH
Dieselstraße 25,
D-70839 Gerlingen, Germany

Type: Vetrotex EC14 - 2400-P185

Carbon rovings

Manufacturer: Toho Tenax Europe GmbH
Kasinostr. 19-21
D-42103 Wuppertal

Type: TENAX HTS5631 1600tex f24000 t 0
(WLB: 8.3614.1)

Carbon UD-Tape

Manufacturer: J.H. Vom Baur Sohn GmbH & Co. KG
Marktstr. 34
42369 Wuppertal

Type: CF UD tape 30 mm & 50 mm

Core material

a) PVC Foam

Manufacturer: Alcan Airex AG
Industrie Nord 26
CH-5643 Sins, Switzerland

Supplier: Gaugler & Lutz OHG
Habsburger Str. 12
D-73432 Aalen-Ebnat, Germany

Type: Airex C 71.55

b) Honeycomb

Manufacturer: EURO COMPOSITES S.A:
B.P.95, Zone Industrielle,
L-6401 Echternach / Luxembourg

Type: ECA-I-R 4.8-29 and ECA-R 4.8-48

or

Manufacturer: Schütz GmbH & Co. KGaA
Schützstr. 12
D-56242 Selters, Germany

Type: Coremaster C1-4.8-29 OX
Coremaster C1-4.8-48 OX

Filler material for resin

Manufacturer: EBERHARD Chemie GmbH
Olpener Straße 405,
D-51109 Köln 91 (Merheim), Germany

Supplier: STW Schwarzwälder Textilwerke
Heinrich Kaukmann GmbH
Aue 3
D-77773 Schenkenzell, Germany

Type: - Cotton flakes

Supplier: Brenntag GmbH
Stinnes-Platz 1
D-45472 Mühlheim, Germany

Type: - Microballoons BJO - 0930

Coating

Manufacturer: BASF Coatings GmbH
Glasuritstr. 1,
D-48165 Münster/Hiltrup, Germany

Supplier:	Wessels & Müller AG Pagenstecherstraße 121, D-49090 Osnabrück, Germany
Type:	
22	Glasurit HS-2K-Decklack
929-91/93/94	Glasurit HS Decklackhärter
352-50/91/216	Glasurit Einstellzusatz
55	Glasurit Zweischicht-Decklack Metallic/Uni/Perleffekt
352-50/91/216	Glasurit Einstellzusatz
90	Glasurit Zweischicht-Decklack Metallic/Uni/Perleffekt
93-E3	Glasurit Einstellzusatz
923-155	Glasurit MS-Klarlack
929-91/93/94	Glasurit HS Decklackhärter
352-50/91/216	Glasurit Einstellzusatz
285-100 VOC	Glasurit Rapidfüller VOC, weiß
929-55/56	Glasurit HS Füllerhärter
352-91	Glasurit Einstellzusatz
1006-26	Glasurit UP Spritzfüller, grau
948-22	Glasurit Härter
839-53	Glasurit UP-Schnellspachtel
948-36	Glasurit Härterpaste
293-10	Glasurit Einstellzusatz
934-0	Glasurit 1K-Kunststoffhaftprimer
Manufacturer:	PPG Aerospace PRC-DeSoto
Supplier:	Röder Präzision GmbH Am Flugplatz D-63329 Egelsbach, Germany
Type:	Fire protective coating N56582/T508 Clearcoat 4232-0303 Activator N39/1327 Thinner N39/3091

51-30-02 Metal Components

IMPORTANT

Only approved materials have to be used for the repair of metal components.

Steel tubing

Manufacturer: MHP
BENTELER International AG
Residenzstr. 1,
D-33104 Paderborn, Germany

Supplier: CP autosport GmbH
Zeppelinring 1 - 6,
D-33142 Büren, Germany

Type: WLB 1.7734.4
18 mm x 1.0 mm, 20 mm x 1.0 mm,
22 mm x 1.0 mm, 22 mm x 1.5 mm,
25 mm x 1.5 mm

Steel sheet metal

Manufacturer: BÖHLER Edelstahl GmbH
München, Germany

Supplier: Böhler-Uddeholm Deutschland GmbH
Hansa Allee 321,
D-40549 Düsseldorf, Germany

Type: WLB 1.7734.4
1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

Coating

Manufacturer: BASF Coatings GmbH
Glasuritstr. 1,
D-48165 Münster/Hiltrup, Germany

Supplier: Wessels & Müller AG
Pagenstecherstraße 121,
D-49090 Osnabrück, Germany

Type:

801-72 VOC	Glasurit Grundfüller EP VOC, grau
965-60	Glasurit Härter EP
352-91/216	Glasurit Einstellzusatz
22	Glasurit HS-2K-Decklack
929-91/93/94	Glasurit HS Decklackhärter
352-50/91/216	Glasurit Einstellzusatz

51-30-03 Aluminium Components

Aluminium sheet metal

Manufacturer: Kaiser Aluminium & Chem. Corp.
Spokane, Washington

Supplier: Westdeutscher Metallhandel
Friedrich W. Hermann GmbH
Manderscheidtstr. 76-78,
Postfach 104245
45141 Essen

Type: WLB 3.1364. T3511 or 2024 T3
0.6 mm; 0.8 mm; 1.2 mm

Control rod tubings

Manufacturer: Aluminium AG
CH-5737 Menziken

Supplier: Karstens & Knauer GmbH&Co
Hiligenwarf 9
D-28865 Lilienthal

Type: WLB 3.1354. T3
ø 25x1mm

Coating

Manufacturer: BASF Coatings GmbH
Glasuritstr. 1,
D-48165 Münster/Hiltrup, Germany

Supplier:	Wessels & Müller AG Pagenstecherstraße 121, D-49090 Osnabrück, Germany

Type:

283-150 VOC	Glasurit Grundfüller EP VOC
352-228	Glasurit Zusatzlösung
352-50/91	Glasurit Einstellzusatz
22	Glasurit HS-2K-Decklack
929-91/93/94	Glasurit HS Decklackhärter
352-50/91/216	Glasurit Einstellzusatz

Aluminium hardware metal (brackets, pedestals, castings, etc.)

Paint:

Manufacturer:	Parker & Anchem, Ambler, PA 19002
Supplier:	Aircraft Spruce
Chem. coating:	Alodine No. 1201 (MIL-C-5541)
Lacquer:	see above

51-30-04 Various Components

Urethane Adhesives (for e. g. Canopy Glass)

Manufacturer:	3M™ Aerospace and Aircraft Maintenance Department 3M Center, Building 225-3S-06, St. Paul, MN 55144-1000, USA www.3M.com/aerospace
Supplier:	Wesco Aircraft Germany GmbH Buschhoehe 10, 28357 Bremen, Germany
Adhesive Sys.:	Scotch Weld® 3549 B/A
Ratio of comp.:	100 parts base / 109 parts accelerator (by weight), 100 / 100 (by volume)

Manufacturer:	Henkel AG & Co.KGaA Henkelstraße 67 40589 Düsseldorf, Germany
Supplier:	Sahlberg GmbH Friedrich-Schüle-Straße 20 85622 Feldkirchen/München, Germany
Adhesive Sys:	Loctite® UK 8160 / Loctite® UK 5400
Ratio of comp.:	5 parts base / 1 parts accelerator (by weight), 4.2 / 1 (by volume)

Other Adhesives

Manufacturer:	Wacker Chemie
Supplier:	Drawin Vertriebs GmbH Rudolf Diesel Str. 15 85521 Riemerling/Ottobrunn
Type:	Silikon Elastosil E14
Manufacturer:	degussa/Evonic
Supplier:	Mecaplex AG Solothurnstr. 138 CH-2540 Grenchen
Type:	ACRIFIX 190/KATALYSATOR 20

Sealant

Manufacturer:	LE JOINT FRANCAIS
Supplier:	Aviation Products Europe GmbH Redcarstr. 44a 53842 Troisdorf-Spich
Type:	PRC 812
Manufacturer:	3M

Supplier:	Otto Kerner Schleif- & Klebetechnik e.K. Ungelsheimer Weg 5 D-40472 Düsseldorf
Type:	Scotch Clad 776

Tape

Manufacturer:	3M
Supplier:	Aviation Products Europe GmbH Redcarstr. 44a 53842 Troisdorf-Spich
Type:	Polyurethan (PU) tape Scotch 8671

Corrosion Preventive Compound

Manufacturer:	LEAR CHEMICAL RESEARCH P.O. Box 1040, Mississauga L4Y 3W3 Ontario, Canada
Supplier:	Global Aviation & Piper Parts GmbH Flughafen Kassel D-34379 Calden
Type:	ACF-50

51-60-00 CONTROL SURFACE BALANCING

51-60-01 Weighing and Determination of Control Surface Moments

All weighing of control surfaces is performed with surfaces removed from aircraft. Weighing and determination of control surface moments is necessary after repairs or painting. Weigh the control surfaces including the mass balances in disassembled condition. The aileron weight includes the spade. Copy Figure 4, enter the values (W, m, r) and check whether the surface weights and moments are within the given tolerances. If they are not, contact the manufacturer for advice.

For the determination of control surface moments follow the steps as described below and use two balancing mandrels like shown in the figure 2:

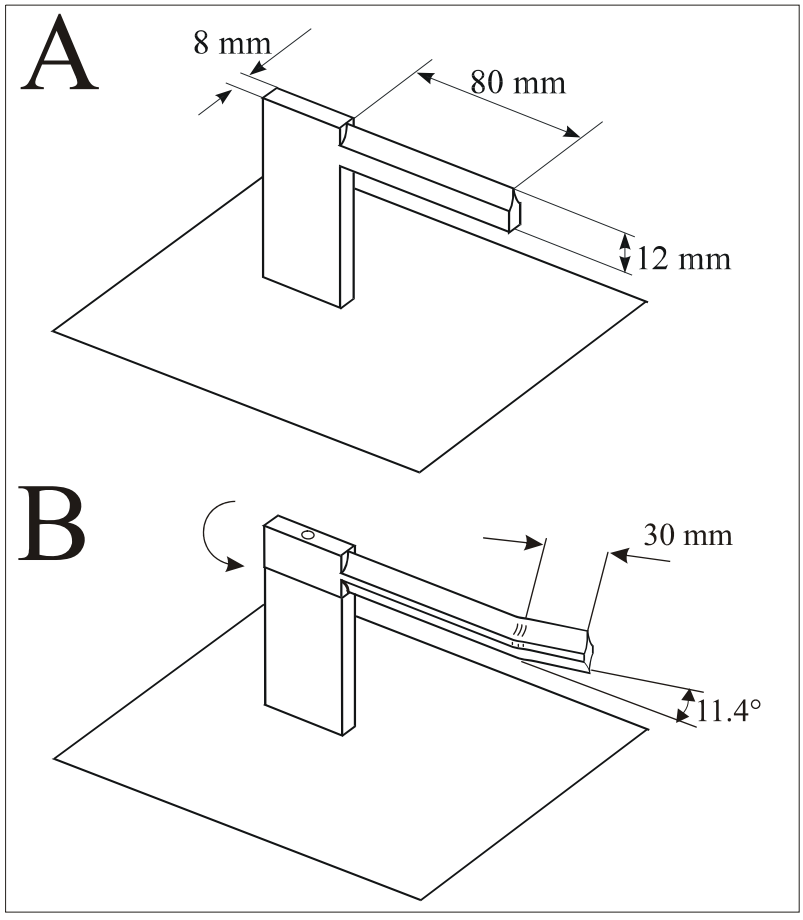


Figure 2 Balancing Mandrels

Procedure

1 Remove the control surface (refer to chapter 27).

2 Reinstall the bolts in two brackets.

3 Put the control surfaces on the balancing mandrels (use a wire for the trim tab).

4 Level control surfaces and weigh by means of a conventional spring balance (kg/g-indication) at the given weighing points (figure 3) and enter the weight (m) in figure 4.

5 Measure distance of hinge center line to weighing point (r) and enter the value in figure 4.

6 Calculate the control surface moment (M) in figure 4.

IMPORTANT

If values exceed the given tolerances in figure 4 contact the manufacturer before modifying of control surfaces.

7 Reinstall the control surfaces.

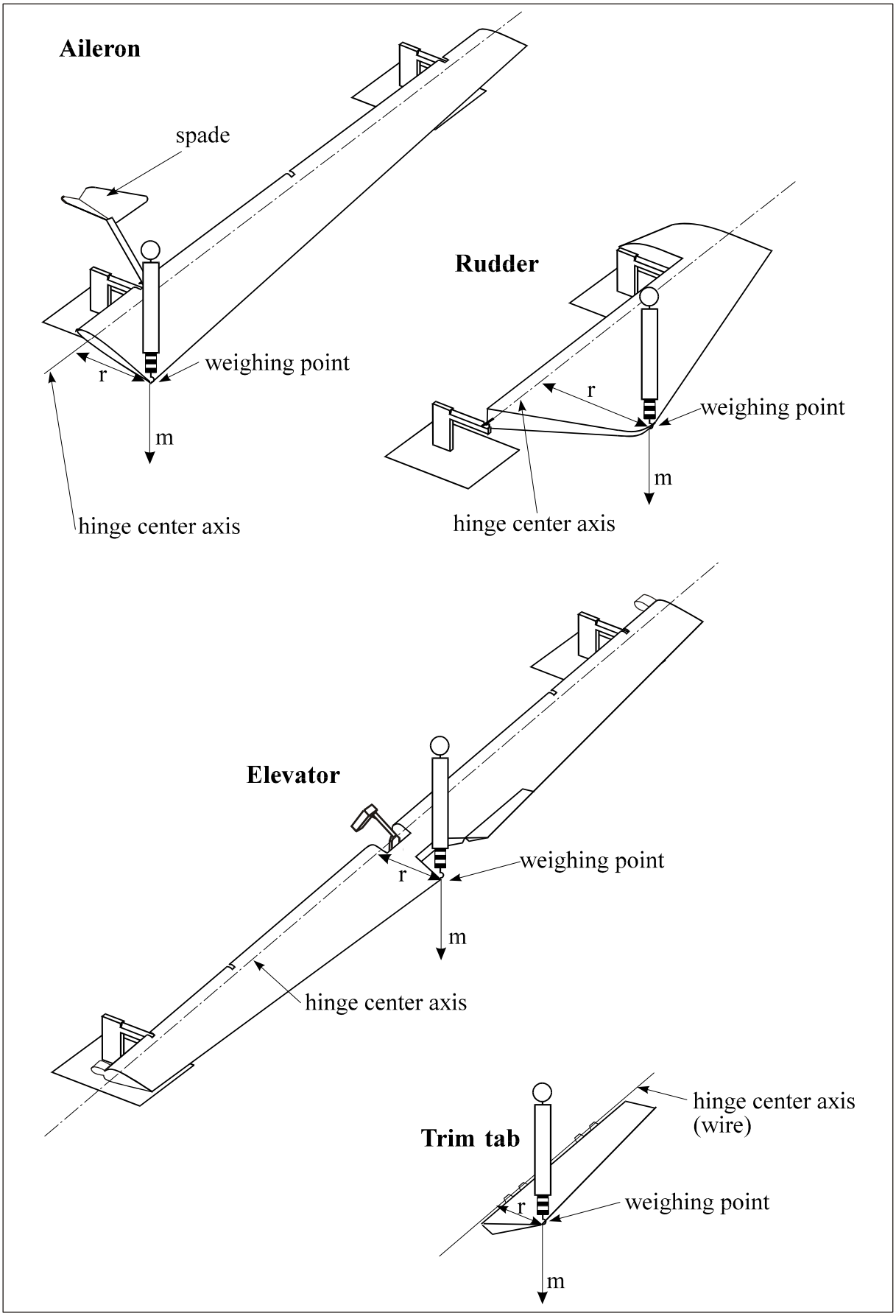
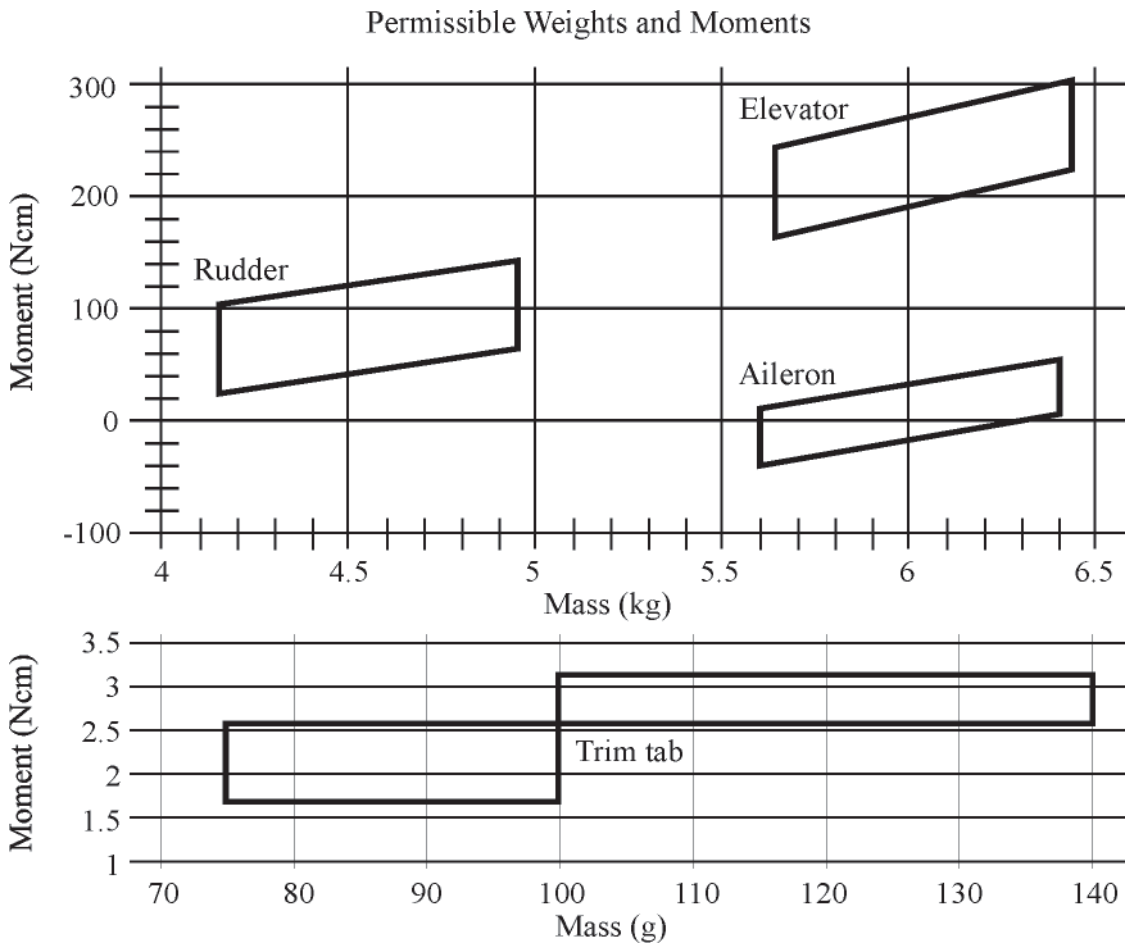


Figure 3 ***Determination of Control Surface Moments***



Weights

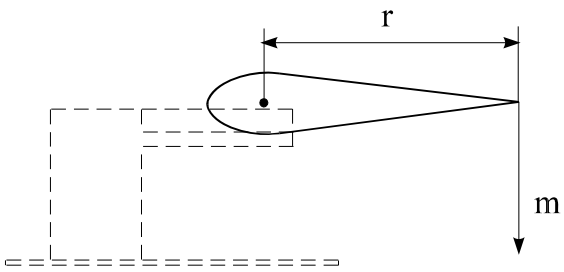
Aileron LH: (W) ..... kg

Aileron RH: (W) ..... kg

Rudder: (W) ..... kg

Elevator: (W) ..... kg

Trim Tab: (W) ..... kg



$$M\ (Ncm) = m\ (kg) \cdot g\ (m/s^2) \cdot r\ (cm)$$

Moments

Aileron LH: (m:) ..... kg · 9.81 m/s² · (r:) ..... cm = (M:) ..... Ncm

Aileron RH: (m:) ..... kg · 9.81 m/s² · (r:) ..... cm = (M:) ..... Ncm

Rudder: (m:) ..... kg · 9.81 m/s² · (r:) ..... cm = (M:) ..... Ncm

Elevator: (m:) ..... kg · 9.81 m/s² · (r:) ..... cm = (M:) ..... Ncm

Trim Tab: (m:) ..... kg · 9.81 m/s² · (r:) ..... cm = (M:) ..... Ncm

Figure 4 ***Control Surface Weights and Moments***

51-70-00 REPAIRS

51-70-01 Repair of Reinforced Glass and Carbon Fibre Components

IMPORTANT

Repair of composite parts has to be carried out only by qualified and authorized personnel.

If the aircraft is damaged, proceed as follows. First conduct a careful visual inspection of the surface and the damaged area. Frequently, the damage extends to futher components, sometimes a fracture will continue invisibly beneath the surface.

Perform the repair work with utmost care. The external shell of the wing and empennage is stressed; a failure of this bonded structure can lead to an aircraft crash. In order to eliminate dangerous stress concentrations, avoid changes in cross-sectional areas.

IMPORTANT

The resin-hardener mixture ratio must be precisely maintained (+0.5%). Clean cups and tools must be used. The weight ratio of glass fabric to resin mixture should be approximately 50:50.

Immediately prior to applying the wet laminate, sand and vacuum clean the repair area, so that no dirt and dust could prevent a secure adhesion.

WARNING

Sanding carbon and glass fibre laminates emits a fine dust that may cause skin and/or respiratory irritation unless suitable skin and respiration protection is used.

WARNING

Carbon-tetracloride or Acetone used for cleaning repair areas are flamable liquids and should be used with proper ventilation and safety equipment.

IMPORTANT

As with plywood grain, the direction of the various fibres (longitudinal or diagonal) is of great importance for the stability.

The number of layers required to restore the stability in the damaged area can be taken from the layer sequence/placement plan (refer to the respective chapters).

It is necessary to know the number and direction of layers in the damaged area, in order to be able to replace them with the original number. In all cases, the thickness of the laminate has to be measured with a vernier calliper for the exact determination of the laminate tickness.

One technique to learn about the number of layers is to burn a small piece taken from the damaged area. The resin will burn off, leaving the glass and/or carbon fabric to be inspected for the number of layers and the type of fabric.

Creating a scarfed overlap takes time. Sand away as much of the old material, so that the new fabric patches do not project beyond the contour.

In order to shorten the curing time, a heater can be used to increase the ambient temperature.

NOTICE

Too high temperatures will cause large air bubbles in the laminate. Local overtemperature can be prevented by using a foil tent which leads the hot air stream.

The curing cycle must be maintained as stated. Use a thermometer to monitor the temperature.

IMPORTANT

After repair of control surfaces, check for proper balance (refer to chapter 27, Flight Controls).

It is recommended to prepare test specimens at the same time as the actual repair is accomplished. These can then be subject to a material test to establish the quality of the laminate in the repaired part. To make this determination valid, the specimens must be assembled with the same style of fabric and resin mixture. Subsequently, the specimens must be subject to the curing pressures, temperatures and times identical with those in the actual repair.

51-70-02 Repair of Sandwich Material

Two types of core materials are used for sandwich on the EXTRA300LT:

- PVC hard foam
- Honeycomb

both with glass or carbon fibre shells.

The following section describes the repair of both types of sandwich. Different processing techniques for these materials, if necessary, are also described.

a) Minor surface damage

Around a visible crack, the laminate may be separated from the core material. Determine the extent of this area by coin tapping. Remove the separated laminate carefully using a sanding disk, sanding block or a sharp knife. Prepare a scarfed overlap of the laminate around the damaged area. Overlap lenght per fabric layer min. 20 mm;

IMPORTANT

Ratio (laminate thickness : overlay lenght) min. 1: 50 (refer to Figure 5).

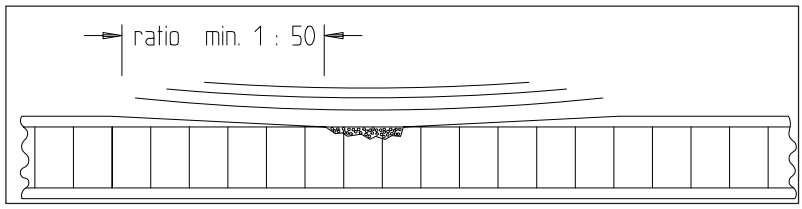


Figure 5 Minor surface damage

After preparing the scarfed overlap, clean the repair area thoroughly as follows:

1 Remove the sanding dust with a pneumatic vacuum cleaner

2 Clean the scarfed overlaps with carbon-tetrachloride or acetone in case of dirt or grease was introduced during the preparation.

Damaged core material has to refilled with a mixture of resin and microballoons (weight ratio 100:15). Apply resin mixture to the repair area and lay on fabric in accordance to the layer

sequence plans. Ensure to use correct style and direction of fabric.

IMPORTANT **Repair area must be clean of dirt, dust and grease!**

Lay out the required number and size of fabric pieces on a piece of colored plastic foil and soak (wet) them with resin mixture, subsequently position them on the repair area.

IMPORTANT **Remove the plastic foil after each positioning process.**

For a repair of honeycomb sandwich parts you have to observe the following: The repair area has to be cured under condition of vacuum bagging.

For vacuum bagging, proceed as follows:

1 Apply peel nylon fabric on the last repair fabric layer

2 Perforate a clean, thin plastic foil with a thick needle (max.spacing of holes: 20mm x 20mm) - mainly in the area of the honeycomb - and lay it on the repair area.

3 Lay a jute cloth (weave) or equivalent bleeder cloth on this perforated plastic foil.

4 Lay an air tight plastic foil upon the jute weave and seal their edges to the surrounding surface using an adhesive tape.

5 Apply suction with a vacuum pump (pressure approx. 0.7 bar/ 10 psi)

6 Apply the thermal curing cycle (refer to figure 3).

7 Following the curing cycle remove vacuum bagging material and peel nylon fabric.

After the pre-curing period at room temperature, the repaired area has to be cured according the temperature cycle as shown on Figure 6.

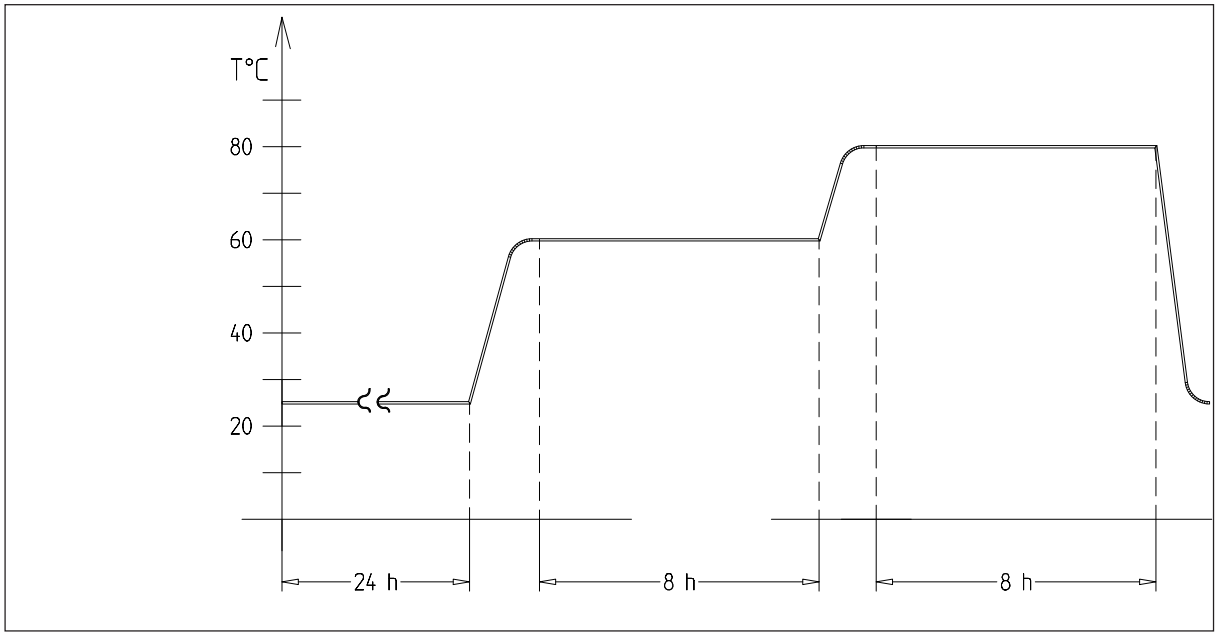


Figure 6 ***Curing cycle resin L20/SL***

After the curing process is completed, the repair area can be sanded level to the surrounding area.

N O T I C E

Sand only the edge thickness of repair laminate (refer to figure 7)**!**

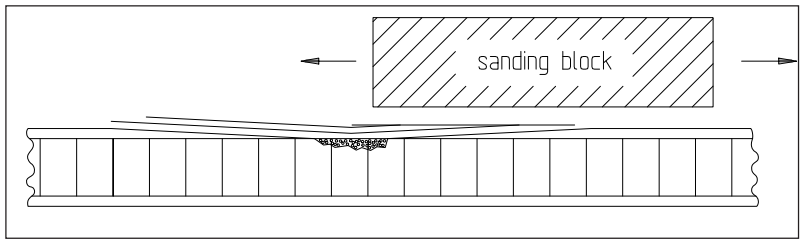


Figure 7 ***Level Sanding of Surrounding Area***

N O T E

For painting of the repair area refer to chapter 51-70-06.

b) Damage of complete sandwich

If the inner laminate is also damaged, first remove the upper laminate within the area, where no secure bond connection to the core material is suspected. Trim out the complete damaged portion of core material to a circular or elliptical shape.

The damaged area of the inner laminate has to be taken out as well. Make sure not to increase the disbond area when preparing the hole. Preferably use a hand held milling machine. In case of cutting with a saw, the pulsation stress may peel of the inner laminate (secondary damage). If the extent of the disbonded area on the inner laminate exceeds the prepared cut out, increase the cut out of material and upper laminate.

Prepare a scarfed overlap of laminate around the circular cut out. Overlap lenght of inner laminate should not be less than 20 mm.

IMPORTANT

Overlap lenght of the upper laminate should not be less than 1/50; (ratio: laminate thickness / overlap lenght).

Prepare a replacement block of core material (foam or honeycomb) with equivalent diameter and thickness. Cut it to fit snuggly in the trimmed hole. In case of foam core, coat one side with a mixture of resin and microballoons (ratio 100:15). Apply prelaminated fabric layers required for the inner laminate on this side of the core filler block. Ensure correct style and direction of fabric. After precuring the laminate at elevated room temperature (30°C), scarf the overlap and sand the upper overlapping core material down, up to the surrounding core material.

Subsequently clean the repair area thoroughly as follows:

1 Remove the sanding dust with a pneumatic vacuum cleaner.

2 Clean the scarfed overlaps with carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation.

⚠ WARNING

Carbon-tetracloride or Acetone used for cleaning repair areas are flamable liquids and should be used with proper ventilation and safety equipment.

IMPORTANT

Repair area must be free of dirt and grease.

Wet all surfaces of the backing plate and the scarfed area with resin mixture. Lay on prelaminated fabric layer in accordance

to the layer sequence plan. Ensure correct style and direction of fabric.

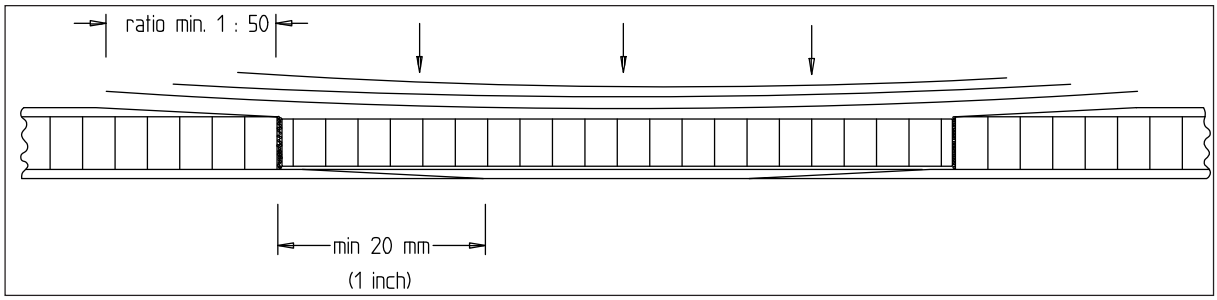


Figure 8 ***Damage of Complete Sandwich***

Lay out the required number and size of fabric pieces on a piece of plastic foil and wet them with resin mixture. Subsequently, position them on the repair area.

IMPORTANT

Remove the plastic foil after each positioning process.

The repair area has to be cured under condition of vacuum bagging. Proceed as follows:

1 Apply peel nylon fabric on the last repair fabric layer.

2 Perforate a clean, thin plastic foil with a thick needle (max. spacing of holes: 20mm x 20mm) - mainly in the area of the honeycomb - and lay it on the repair area.

3 Lay a jute cloth or equivalent bleeder cloth on this perforated plastic foil.

4 Lay a second plastic foil uppon the jute weave and seal their edges to the surrounding surface using an adhesive tape.

5 Apply suction with a vacuum pump (pressure approx. 0.7bar / 10psi).

6 Apply the thermal curing cycle.

7 Following the curing cycle carefully remove vacuum bagging material and peel nylon fabric.

NOTE

After the pre-curing period at room temperature, the repaired area has to be cured according the temperature cycle as shown on Figure 6.

After the curing process is completed, the repair area can be sanded level to the surrounding area.

IMPORTANT **Sand only the edge thickness of repair laminate!**

For painting of the repair area proceed like mentioned in chapter 51-70-06.

51-70-03 Repair of Laminates

a) Minor damage

Scarf the edges of the minor damage area with sandpaper. Minimum lenght of scarf per fabric layer approx. 20 mm; ratio **(laminate thickness : scarf lenght) approx. 1: 50.**

Following the scarf procedure, clean the repair area thoroughly:

1 Remove the sanding dust with a pneumatic vacuum cleaner.

2 Clean the scarfed overlaps with carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation.

NOTICE **Repair area must be free of dirt, dust and grease.**

Wet the prepared scarfed areas with resin mixture. Lay on prelaminated fabric layer in accordance to the layer sequence plan. Ensure correct style and direction of fabric. Apply peel nylon fabric on the last repair fabric layer.

NOTE **Lay out the required number and size of fabric pieces on a piece of colored plastic foil and wet them with resin mixture. Subsequently, position them on the repair area.**

IMPORTANT **Remove the plastic foil after each positioning process.**

After the curing process is completed, remove the peel nylon fabric. The repair area can be sanded level with the surrounding area.

NOTICE **Sand only the edge thickness of repair laminate!**

Refinish the surface according chapter 51-70-06.

If the extent of the damaged area exceeds 10 cm (4 inches) a large damage repair is required.

Carefully trim out the damaged portion to a circular or oval shape.

Prelaminate a backing plate from two layers of glass fibre fabric and resin mixture, which must be approx. 20 mm larger than the damaged area. Apply peel nylon fabric as external layer. Sandwich the resin wetted layers between two sheets of plastic foil.

Work the excess resin out and allow the plate to cure at elevated room temperature for 8 hours on a flat surface or a plasticfoil-covered surface of the proper curvature near the damaged area, or the same location on a comparable undamaged part.

Following the curing cycle remove plastic foil and peel nylon fabric. Bond the backing plate to the inside using a mixture of resin and cotton flocks, and adapt to the contour. Cure the bonding at elevated room temperature for 8 hours.

Subsequently scarf the edges of the damaged portion with sandpaper. Minimum lenght of scarf per fabric layer approx. 20 mm;

IMPORTANT

Ratio (laminate thickness : scarf lenght) approx. 1: 50.

Following the scarf procedure, clean the repair area thoroughly:

1 Remove the sanding dust with a pneumatic vacuum cleaner

2 Clean the scarfed overlaps with carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation of the overlap.

IMPORTANT

Repair area must be free of dirt, dust and grease.

Wet all surfaces of the backing plate and the scarfed area with resin mixture. Lay on prelaminated fabric layer in accordance to the layer sequence plan. Ensure correct style and direction of fabric.

NOTE

Lay out the required number and size of fabric pieces on a piece of colored plastic foil and wet them with resin mixture. Subsequently position them on the repair area.

IMPORTANT

Remove the plastic foil after each positioning process.

The repair area has to be cured under condition of vacuum bagging. Proceed as follows:

1 Apply peel nylon fabric on the last repair fabric layer.

2 Perforate a clean, thin plastic foil with a thick needle (max. spacing of holes: 20mm x 20mm) - mainly in the area of the honeycomb - and lay it on the repair area.

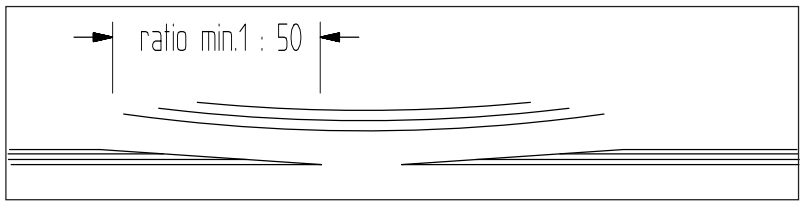


Figure 9 Repair of minor damage

b) Large damage

If the extent of the damaged area exceeds 10 cm (4 inches) a large damage repair is required.

Carefully trim out the damaged portion to a circular or oval shape.

Prelaminate a backing plate from two layers of glass fibre fabric and resin mixture, which must be approx. 20 mm larger than the damaged area. Apply peel nylon fabric as external layer. Sandwich the resin wetted layers between two sheets of plastic foil. Work the excess resin out and allow the plate to cure at elevated room temperature for 8 hours on a flat surface or a plasticfoil-covered surface of the proper curvature near the damaged area, or the same location on a comparable undamaged part.

Following the curing cycle remove plastic foil and peel nylon fabric. Bond the backing plate to the inside using a mixture of resin and cotton flocks, and adapt to the contour. Cure the bonding at elevated room temperature for 8 hours.

Subsequently scarf the edges of the damaged portion with sandpaper. Minimum lenght of scarf per fabric layer approx. 20 mm;

IMPORTANT

ratio (laminate thickness : scarf lenght) approx. 1: 50.

Following the scarf procedure, clean the repair area thoroughly:

1 Remove the sanding dust with a pneumatic vacuum cleaner.

2 Clean the scarfed overlaps with carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation of the overlap.

IMPORTANT

Repair area must be free of dirt, dust and grease.

Wet all surfaces of the backing plate and the scarfed area with resin mixture. Lay on prelaminated fabric layer in accordance to the layer sequence plan. Ensure correct style and direction of fabric.

NOTE

Lay out the required number and size of fabric pieces on a piece of colored plastic foil and wet them with resin mixture. Subsequently position them on the repair area.

IMPORTANT

Remove the plastic foil after each positioning process.

The repair area has to be cured under condition of vacuum bagging. Proceed as follows:

1 Apply peel nylon fabric on the last repair fabric layer.

2 Perforate a clean, thin plastic foil with a coarse needle (max. spacing of holes: 20mm x 20mm) - mainly in the area of the honeycomb - and lay it on to the repair area.

3 Lay a jute cloth or equivalent bleeder cloth on this perforated plastic foil.

4 Lay an air tight plastic foil upon the jute weave and seal their edges to the surrounding surface using an adhesive tape.

5 Apply suction with a vacuum pump (pressure difference approx. 0.7bar / 10psi).

6 Curing cycle.

7 Following the curing cycle carefully remove vacuum bagging material and peel nylon fabric.

After the pre-curing period at room temperature, the repaired area has to be cured according the temperature cycle as shown on figure 3.

After the curing process is completed, the repair area can be sanded level to the surrounding area.

NOTICE

Sand only the edge thickness of repair laminate!

Refinish the surface according chapter 51-10-06.

51-70-04 Repair of Spars

The spars consists of carbon roving caps, glass or carbon fibre webs and PVC foam cores.

IMPORTANT

The spars are higly stessed; a failure of this bonded structure can result in loss of the aircraft! In all cases, the repair of a spar must be considered as a large-scale repair with a Damage Class 1 (Refer to chapter 51-10-01 Damage Classification"). EXTRA Flugzeugproduktions- und Vertriebs- GmbH has to be contacted prior to repair!

51-70-05 Structural Repair of Steel Components

Restoration of a damaged fuselage to its original design strength, shape and alignment involves careful evaluation of the damage, followed by exact workmanship in performing the repairs.

IMPORTANT

Refer to "Aircraft Inspection and Repair FAA AC 43.13-1A" and "Aircraft Alterations Acceptable Methods, Techniques and Practices FAA AC 43.13-2A" for structural repairs.

IMPORTANT

Alterations or repair of the airplane must be accomplished by *licensed* personnel. Consult EXTRA Flugzeugproduktions- und Vertriebs- GmbH in case of doubt about a repair not specifically mentioned there.

WLB 1.7734.4 type steel is used (steel tube measurements are metric). Also refer to Chapter 51-30-02.

NOTE

If welding work must be performed, use only the TIG procedure (Tungsten Inert Gas). Use steel welding wire 1.7734.2 or equivalent for welding additive.

51-70-06 Painting of Composite Parts

WARNING

Coating materials may cause sensitization by inhalation and skin contact. Hardeners and coating materials ready for use can have an irritant and sensitizing effect upon the skin and respiratory tracts and cause allergic reactions.

WARNING

Provide for a continuous supply of fresh air during and also after the application, do not inhale the vapours and wear a breathing mask during the spray application of these materials. Persons suffering from an allergy or being prone to diseases of the respiratory tracts must not get in contact with coating materials.
Refer to the manufacturer technical information sheet!!

After the curing cycle the surface of repared area can be sanded with sandpaper (80 grade). Indentations are filled with white polyester filler. Subsequently achieve a surface as uniformly rough as possible using a finer dry sandpaper (150 or 320 grade). Prior to paint application, the surface of the repair area must be cleaned thoroughly of all sanding dust,

separation compounds and other foreign materials. Subsequently apply Glassodur Rapid Filler with a spray gun.

NOTE

The Rapid Filler must be completely dry before the covering paint can be applied.

For the final sanding, use 400 grade wet sandpaper to achieve a smooth clean surface. Allow surface to dry. Paint application of two component acryl paint is performed with a spray gun.

Paint can be mixed with small quantities of reducer. After completion of the painting, polish the repair area.

51-70-07 Aluminium and Steel Components Refinishing

Complete procedure necessary to remove existing paint from aluminium and steel components and then to repaint them as described in the following paragraphs.

Degreasing

WARNING

Cleaning solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

NOTICE

Before stripping parts, remove all fittings, O-rings, nuts, bolts, washers, pistons, bearingcups, etc.

1 Clean all metal parts by immersing in a clean degreasing solution. An alkaline based solution is recommended for aluminium and magnesium parts.

2 Hardened dirt or grease may be removed with soft bristle brush, or by soaking in cleaning solution.

3 Where necessary clean bearing cones carefully in a separate container of clean solvent.

NOTICE

Do not spin bearing cones with compressed air.

4 After cleaning, thoroughly dry all metal parts with filtered, dry compressed air.

5 It is recommended that all O-rings, backup rings, and wipers be replaced at each overhaul. However, if necessary, O-rings may be reused, but should be put back into the position from which they were removed.

6 Wipe down O-rings, backup rings, wipers, or other rubber parts with a clean dry cloth. Lubricate with a suitable O-ring lubricant prior to installation.

Paint Removal

Disassemble components to the level required for repainting, then proceed as follows.

WARNING

Stripping solvents can be toxic and volatile. Use only in well ventilated areas. Avoid physical contact with solvent and do not inhale vapors. Keep solvent containers covered when not in use.

NOTICE

Before stripping parts, remove all fittings, O-rings, nuts, bolts, washers, pistons, bearingcups, etc. Parts must be totally immersed in solvent, to maximize cleaning.

1 Degrease part per degreasing paragraph.

2 Totally immerse part in paint removing solvent. Portions not totally covered by solvent will begin to corrode.

NOTE

Stripping agents are commercially available for removing topcoat and primer. Follow manufacturer's recommendations for use and disposal of stripping solutions.

3 Remove part from solvent and rinse thoroughly with water heated to 160° to 180°F (71° to 82° C). Flush solvent from all cavities and threaded holes where entrapment might occur.

4 Thoroughly dry part with filtered, dry compressed air.

5 Where applicable refer to inspection procedures given in the respective chapters for specific parts to locate possible defects.

N O T E

Refinishing should be completed as soon as possible; unprotected parts will begin to corrode.

Repainting

Paint all surfaces exept those which are subjected to friction (bearing surfaces, anchor bolt bores, etc.). Proceed as follows:

1 Parts to be repainted should be cleaned and stripped per instruction in degreasing and paint removal paragraphs.

2 Aluminium parts should have a protective barrier between the topcoat and base metal. It is recommended they be treated with solutions listed in chapter 51-30.

3 For priming follow the procedures given by the coating manufacturers.

4 Paint parts with one coat of lacquer listed in chapter 51-30. Allow to dry thoroughly before reassembly.

51-70-08 Re-Bonding of Bushings

a) Re-bonding of loose bushings in empennage spars

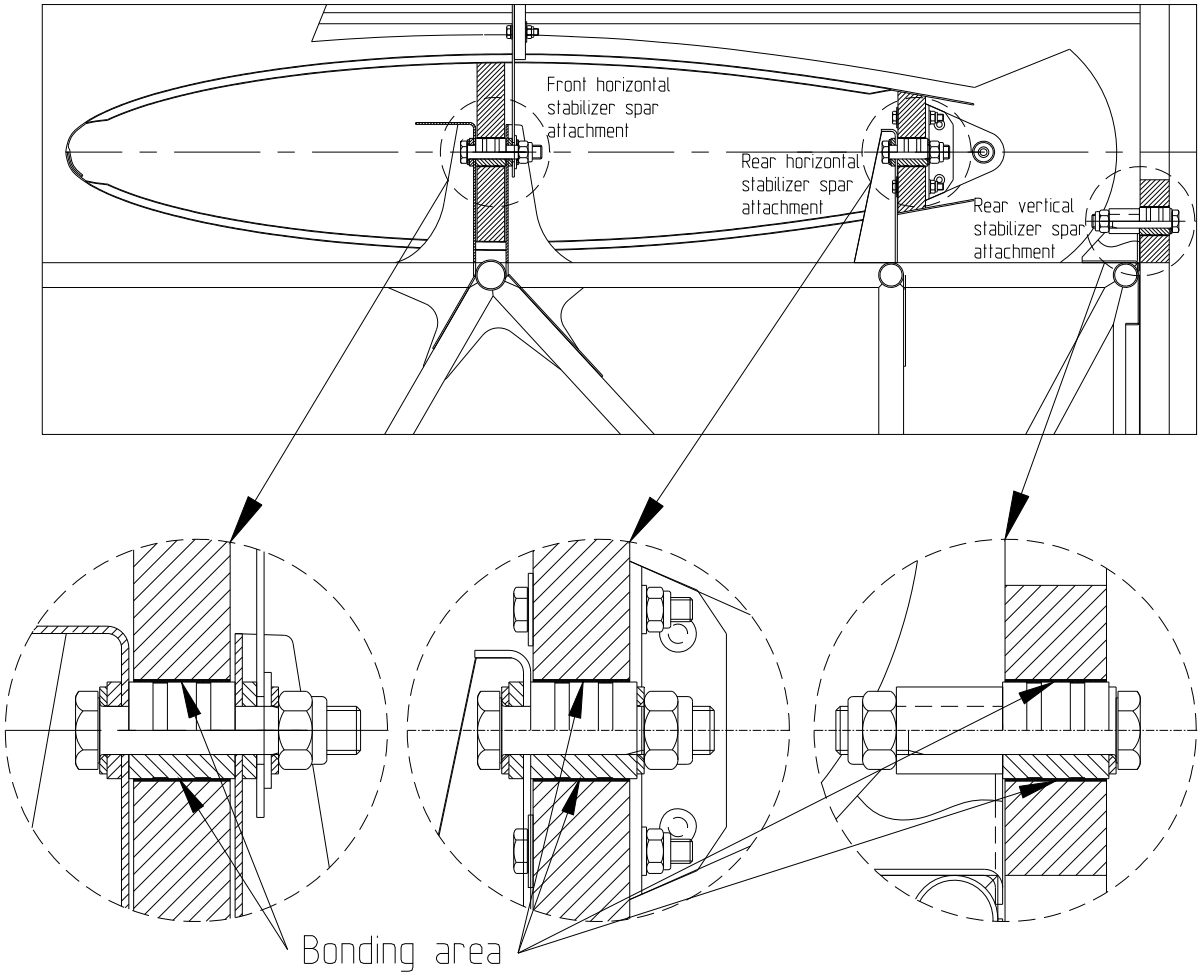


Figure 10 ***Empennage Attachment Bushings***

Re-bonding of main attachment bushings positioned in the web of the front and rear spar in the horizontal tail as well as in the main spar of the vertical stabilizer is only permissible if the hole in the related spar web is not elongated or has impermissible irregular wear which is evidence of bearing stress exceedance.

In case the bushing fits the hole in the spar web tightly, use epoxy-resin Epikote Resin L20 with Epikure Curing Agent 960 (ref. Chapter 51-30-01). If the gap between bushing and hole in the spar web exceeds 0.5mm (0.02") use a mixture of epoxy resin compound L20/960 and cotton flocks. The weight ratio should be 100 parts L20/960 with 7 up to 15 parts cotton flocks (so called "HB7" and "HB15").

For re-bonding of bushings the related stabilizer has to be removed from the fuselage first. To prevent misalignment, reinstallation is needed at the end of the re-bonding process of the bushings.

1 Remove stabilizer from the fuselage. Refer to the applicable Chapter of this Manual.

2 Carefully remove the loose bushing from the spar. If a tool is needed, handle with care to prevent damage of adjacent composite structure.

3 Visually check the hole in the spar web. In case an elongated hole, a crushed plywood insert or a fuzzy or delaminated surrounding fiber plies are identified, an oversized bushing might be needed. Contact Extra Flugzeugproduktions- und Vertriebs GmbH for advice and repair instructions.

4 Remove any residual resin debris existing on the outer bonding surface of the bushing. Protect the inner surface of bushing and sandblast or use 80-grit sandpaper to rough the outer surface which will be bonded later on (no remaining shiny areas are allowed). Existing grooves on the outer surface (if any) must be free of residual resin.

5 Solvent clean the bushing thoroughly with isopropyl alcohol, carbon-tetrachloride or acetone.

WARNING

Solvents used for cleaning re-bond areas are flammable liquids and should be used with proper ventilation and safety equipment.

6 Take 120-grit sandpaper and sand the surface area of the hole in the spar web where the bushing will be placed later on smooth. Any bulk material (deposits) within the hole must be removed.

NOTICE

Bonding area must be free of dirt, dust and grease.

7 Remove sanding dust with a pneumatic vacuum cleaner and solvent clean the surface area of the hole in the spar web with isopropyl alcohol, carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation.

8 Prepare a sufficient amount of epoxy resin compound L20/960. The weight ratio is: 100 parts L20 with 34 parts 960

(ref. Chapter 51-30-01). Record quantities of parts to be mixed, ambient air temperature and humidity.

9 Apply a sufficient amount of epoxy resin compound L20/960 to the surface area of the hole in the spar web. Remaining small cavities within the area should be filled with "HB20".

10 Apply a sufficient amount of epoxy resin compound L20/960 to the outer surface area of the bushing.

11 Insert the bushing to the hole. Protruding lenght of bushing out of the front and rear spar web should be equal. Slightly rotate the bushing clockwise or counterclockwise while it is inserted into the hole of the spar web. A continuous movement is required to minimize entrapped air. Avoid partly removing and reapplying, as this will cause air to become entrapped in the bonding gap.

12 Verify epoxy resin compound at entire bond line is continuous and free of gaps.

13 Remove excessive resin compound with cloth damped with isopropyl alcohol.

14 Apply mold-release agent to the related surfaces of the stabilizer mounting brackets of the fuselage and related mounting bolts.

15 Position the stabilizer to the fuselage mounting brackets by related mounting bolts. The related mounting bolts should be installed easily and hold the stabilizer in place for the following cure process (without nuts).

16 Do not apply any pressure on the stabilizer prior to complete cure cycle. Disturbing the stabilizer may create bonding voids.

17 Apply curing procedure (specified time and temperature): At elevated room temperature 25°C (77°F) for 10h followed by 60°C (140°F) for at least 15h (refer to 51-70-02).

18 Reinstall the stabilizer. Refer to the applicable Chapter of this Manual.

b) Re-bonding of loose main wing spar flange bushings

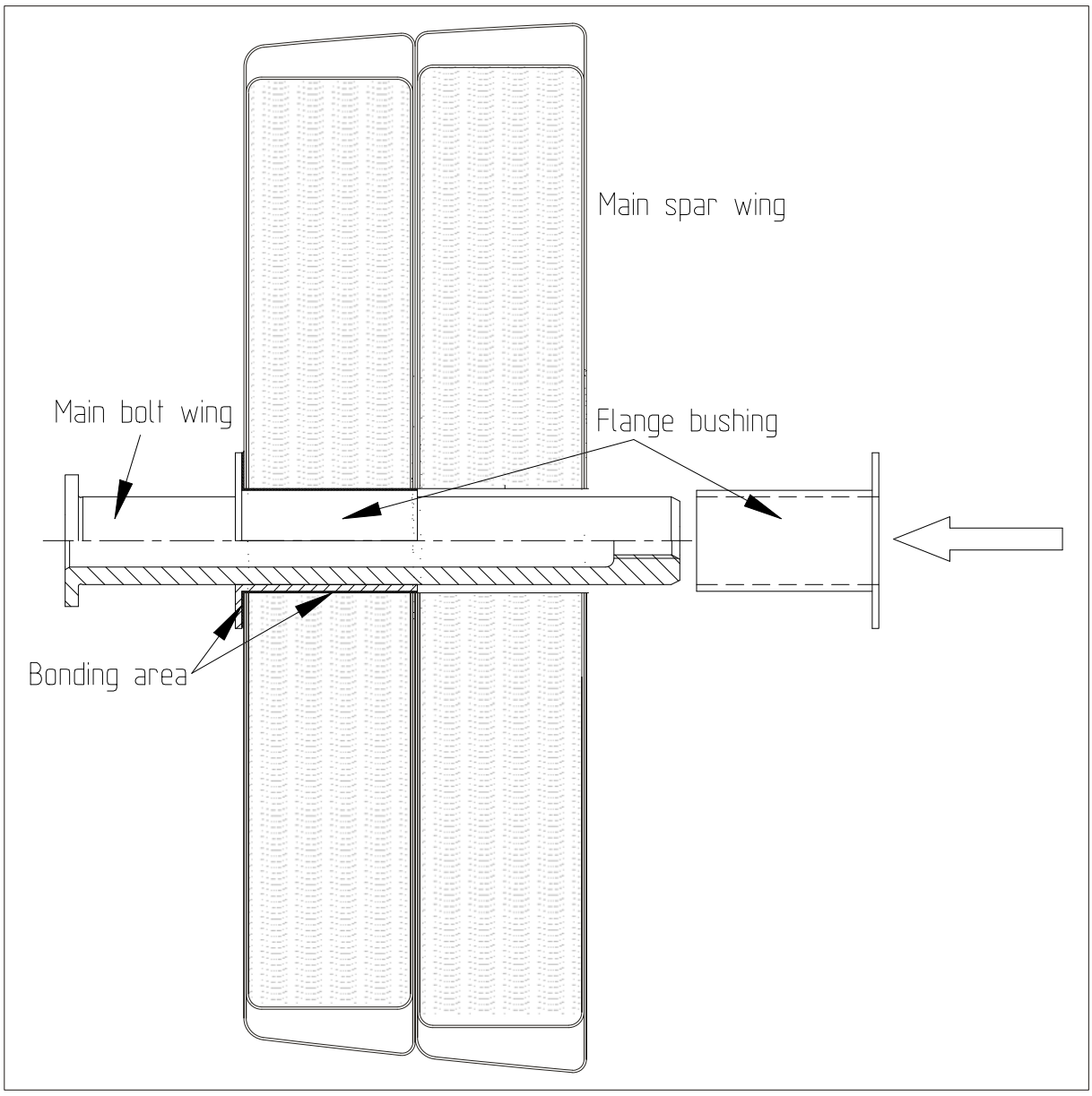


Figure 11 ***Wing Main Spar Attachment Flange Bushings***

Main attachment bushings positioned in the web of the main wing spar exists of a front and a rear flange bushing. The front and rear flange bushing will be re-bonded one after another. There is a defined bond gap between the flange bushings and the hole in the main spar web.

Re-bonding of main attachment flange bushings positioned in the web of the main wing spar is only permissible if the hole in the related spar web is not elongated or has impermissible irregular wear, which is evidence of bearing stress

exceedance. In case an elongated hole, a crushed plywood insert or fuzzy or delaminated surrounding fiber plies are identified, oversized flange bushing are needed. Contact Extra Flugzeugproduktions- und Vertriebs GmbH for advice and repair instructions.

Use a mixture of epoxy-resign Epikote Resin L20 with Epikure Curing Agent 960 (for mixing ratio ref. Chapter 51-30-01) and cotton flocks. The weight ratio should be 100 parts L20/960 with 7 up to 15 parts cotton flocks (so called "HB7" and "HB15").

For re-bonding of flange bushings the wing has to be removed from the fuselage first.

1 Remove wing from the fuselage. Refer to the applicable Chapter of this Manual.

2 Carefully remove the front or rear loose flange bushing from the main spar at a time. If a tool is needed, handle with care to prevent damage of adjacent composite structure. The remaining flange bushing will be used to align the removed flange bushing during the re-bonding process.

3 Visually check the exposed surface area of the hole in the spar web for any damage.

4 Remove any residual resin debris existing on the bonding surface of the flange bushing. Protect the inner surface of bushing and sandblast or use 80-grit sandpaper to rough the outer surface which will be bonded later on (no remaining shiny areas are allowed).

5 Solvent clean the bushing thoroughly with isopropyl alcohol, carbon-tetrachloride or acetone.

WARNING

Solvents used for cleaning re-bond areas are flammable liquids and should be used with proper ventilation and safety equipment.

6 Take 80-grit sandpaper and sand the exposed surface area of the hole in the spar web where the bushing will be placed later on smooth. Any remaining material from the initial bond within the hole must be removed. Use 120-grit sandpaper to rough the ring surface area of the main spar web where the flange of the bushing will be bonded to later on.

NOTICE **Bonding area must be free of dirt, dust and grease.**

7 Remove sanding dust with a pneumatic vacuum cleaner and solvent clean the surface area of the hole in the spar web with isopropyl alcohol, carbon-tetrachloride or acetone in case dirt or grease was introduced during the preparation.

8 Prepare a sufficient amount of epoxy resin compound L20/960. The weight ratio is: 100 parts L20 with 34 parts 960 (ref. Chapter 51-30-01). Record quantities of parts to be mixed, ambient air temperature and humidity.

9 Apply a sufficient amount of epoxy resin compound L20/960 to the exposed surface area of the hole and the ring surface area of the main spar web. Additionally apply "HB15" compound.

10 Apply a sufficient amount of epoxy resin compound L20/960 to the outer surface area of the flange bushing which will be bonded to the spar. Additionally apply "HB15" compound.

11 Apply mold-release agent to the surface of the related wing main bolt. Insert the bolt to the flange bushing which is still fixed in the main spar (opposite side) to provide a guidance for the flange bushing to be bonded to the spar.

12 Insert the flange bushing to the hole. Slide on the main bolt and slightly rotate the bushing clockwise or counterclockwise while it is moved into the hole of the spar web. A continuous movement is required to minimize entrapped air. Avoid partly removing and reapplying, as this will cause air to become entrapped in the bonding gap.

13 Verify epoxy resin compound at the edge of the flange bushing is continuous and free of gaps.

14 Remove excessive resin compound at the flange with cloth damped with isopropyl alcohol.

15 Do not apply any pressure on the flange bushing prior to complete curing cycle. Disturbing the flange bushing may create bonding voids.

16 Apply curing procedure (specified time and temperature): At elevated room temperature 25°C (77°F) for 10h.

17 Remove the main bolt from the flange bushing.

18 Proceed with final curing at 60°C (140°F) for at least 15h (refer to Chapter 51-70-02).

19 Repeat the procedure in case the flange bushing on the opposite side has to be re-bonded as well.

20 Reinstall the wing. Refer to Chapter 57-0-01.

Chapter 53

Fuselage

Table of Contents

53-00-00 GENERAL

The fuselage structure of the EXTRA 300LT consists of a TIG-welded steel tube construction integrating the wing and empennage connections (refer to figure 1).

The particular areas of the fuselage are covered with different materials (also refer to chapter 51-00-01 "Access Panel Identification"). Both halves of the engine cowling consist of carbon fibre laminate and honeycomb (refer to figure 11 and 12). The main fuselage cover consists of glass fibre, carbon fibre and aramid laminate (refer to figure 6). The bottom fuselage cover is made of carbon fibre and aramid fibre laminate (refer to figure 8), the cuffs of carbon fibre laminate (refer to figure 9). The lower rear part of the fuselage is covered with fabric. The window portion is of acrylic glass. The tail fairing consists of carbon fibre laminate (refer to figure 10) and the tail side skins are made of aluminium sheet metal. The layer sequences of the composite parts are shown in the related sub-chapters.

For protection against moisture and UV radiation all composite parts are coated with an unsaturated polyester gel-coat, filler and finally with paint.

For repair of composite parts and steel components refer to chapter 51. The repair of fabric has to be executed in accordance to the FAA AC 43.13-1A.

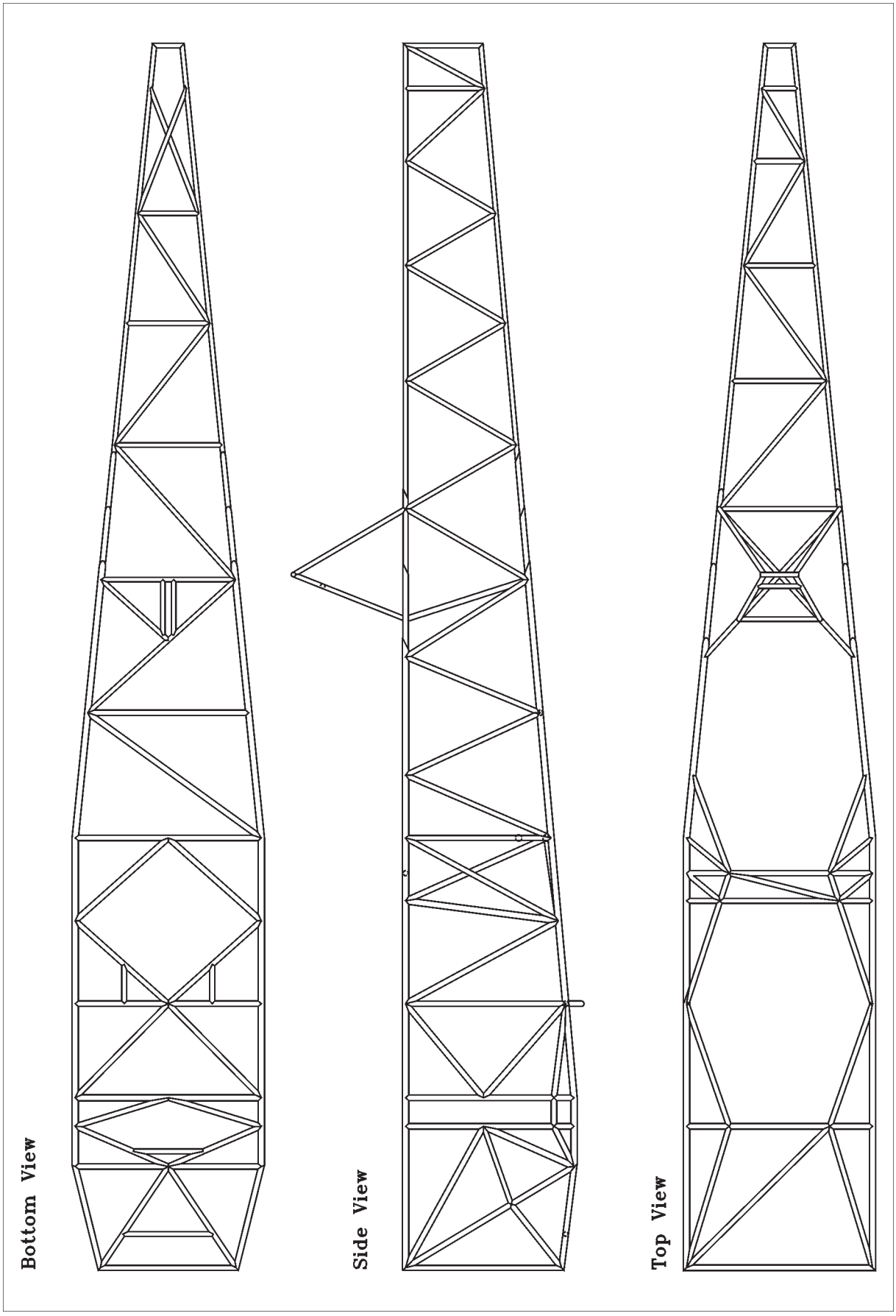


Figure 1 ***Fuselage Steel Tube Design***

53-00-01 Canopy

Removal/Installation

1 Open canopy.

NOTICE

Support the canopy by hand before disconnecting the opening limiter strap.

2 Remove the attachment bolt of the opening limiter strap.

3 Push canopy to front and remove.

4 Install in reverse sequence of removal.

53-00-02 Canopy Glass

Replacement

1 Remove canopy as per Chapter 53-00-01.

2 Remove the old canopy glass.

3 Gently remove remaining glue with a chisel.

4 Sand down the bonding area on the canopy frame completely (sandpaper grit/P120). Check that there are no reflecting areas left.

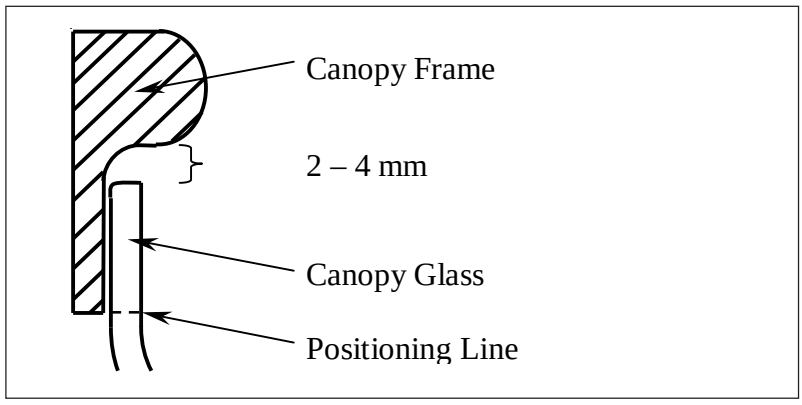


Figure 2 Typical Cross Section of Canopy Bonding Area

5 Fit the new canopy glass in the canopy frame. Opening between canopy glass and canopy frame about 2-4mm.

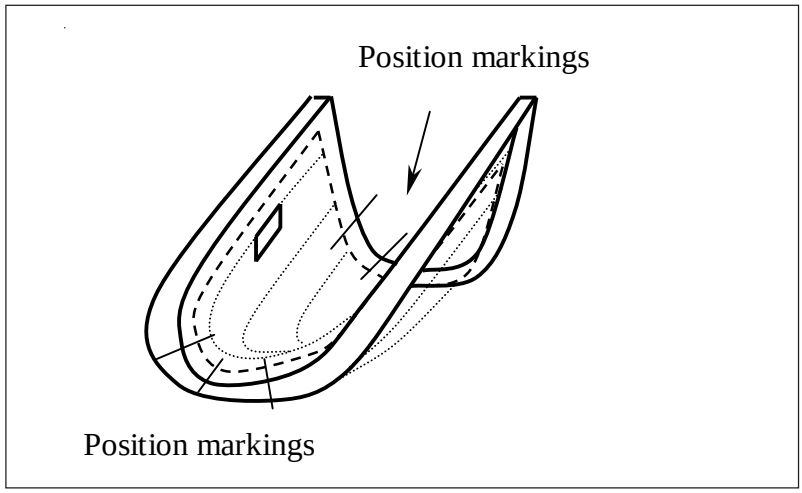


Figure 3 Canopy Position Markings

6 Secure the canopy glass in the frame. Draw a positioning line (see Figure 2) and position markings on the inside (see Figure 3).

7 Prepare canopy glass for bonding.

8 Remove a strip (width approx. 50mm) from the protective layer from the outside along the canopy glass bonding area.

9 Place fine tape (width 3mm) on the outside opposing the positioning line on the inside.

10 For protection purposes, place 3 layers of tape as depicted in figure 4.

11 Sand down the canopy glass up to the fine tape line (use Scotch Brite Handpad Medium). Check that there are no reflecting areas left.

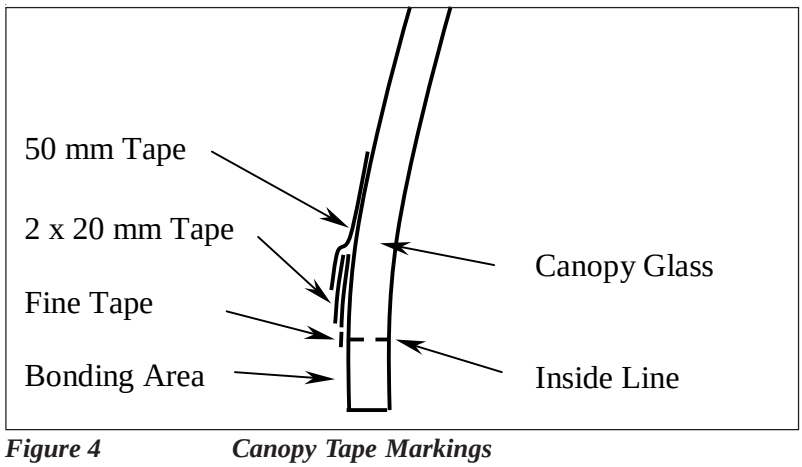


Figure 4 Canopy Tape Markings

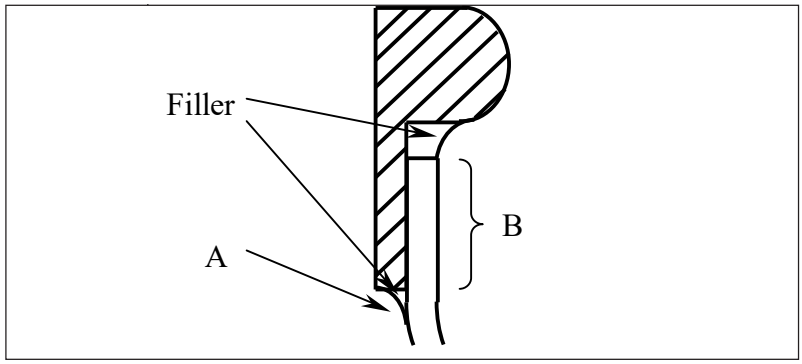


Figure 5 Canopy Adhesive Remainders

12 Remove the fine tape.

13 Prepare urethane adhesive (refer to Chapter 51-30-04 *Urethane Adhesives*):
Thoroughly mix approx. 300 g (approx. 10.6 oz.) adhesive (consider specified weight ratio and work life).
Mix approximately 15 seconds after a uniform color is obtained.

14 Put adhesive on the bonding area. For maximum bonding strength, apply product to both canopy glass and canopy frame.

15 Place canopy glass in canopy frame. Observe correct position using position markings.

16 Apply pressure on canopy glass using tightener to hold it in place.

17 Remove adhesive remainders with wooden spatula.

18 Curing time for fixed position (time to handling strength): min. 8h @ 24°C (75°F) or 15h @ 20°C (68°F)
(Time to reach full cure: 7 days @ 24°C (75°F))

19 The next day: Remove tightener and remove canopy from form.

20 Sand down (using Scotch Brite Handpad Fine) a small area around the outside edge between canopy frame and canopy glass (area A in figure 5).

21 Apply primer (EP801-72, curing time: 24h) before applying filler (Glasurit 839-53) and refinish the area (refer to Chapter 51-30).

NOTICE

Make sure, the filler does not get in contact with untreated canopy glass.

22 Sand down (using Scotch Brite Handpad Fine) the overlapping part between canopy glass and canopy frame on the inside (Area B in Figure 5).

23 Apply primer (Glasurit 934-0)(refer to Chapter 51-30) and refinish the area.

53-00-03 Main Fuselage Cover

Removal/Installation

1 Remove the canopy per chapter 53-00-01.

2 Remove the front instrument panel per Chapter 31-10-03/ 31-10-05.

3 Remove the rear instrument cover per Chapter 31.

4 Remove the rear canopy hinge.

5 Remove the filler neck attachment screws.

6 Remove the main fuselage cover attachment screws.

7 Remove the main fuselage cover.

8 Install in reverse sequence of removal. Perform pitot-static system test.

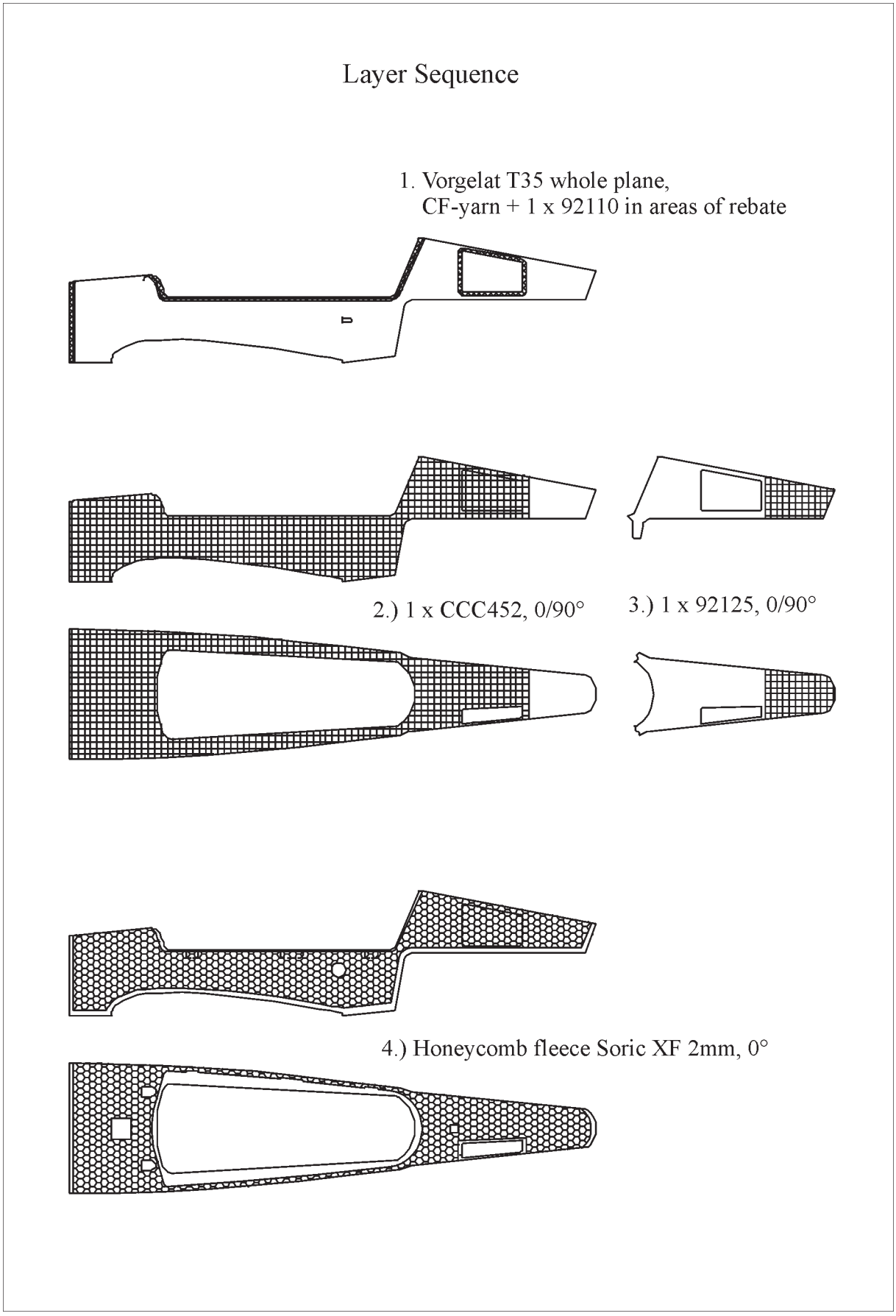
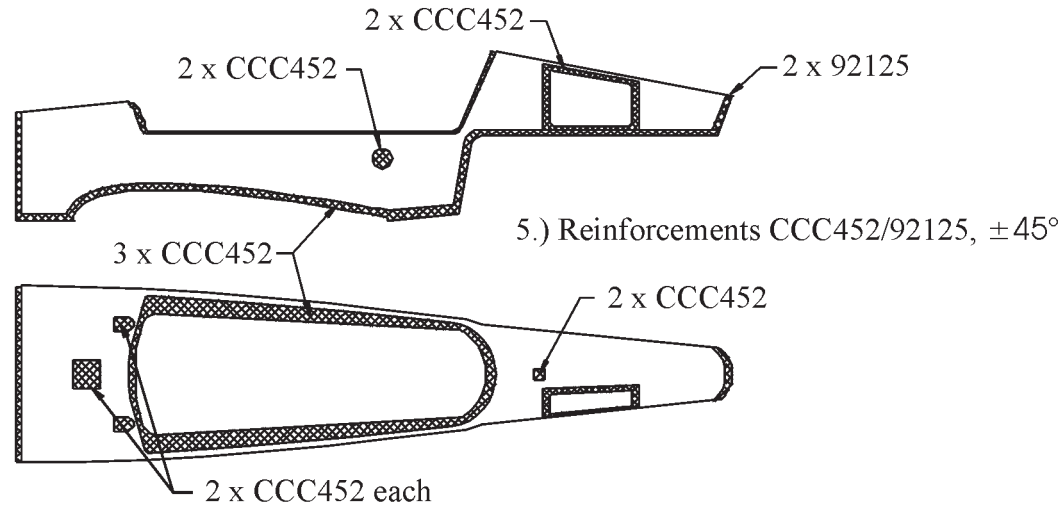
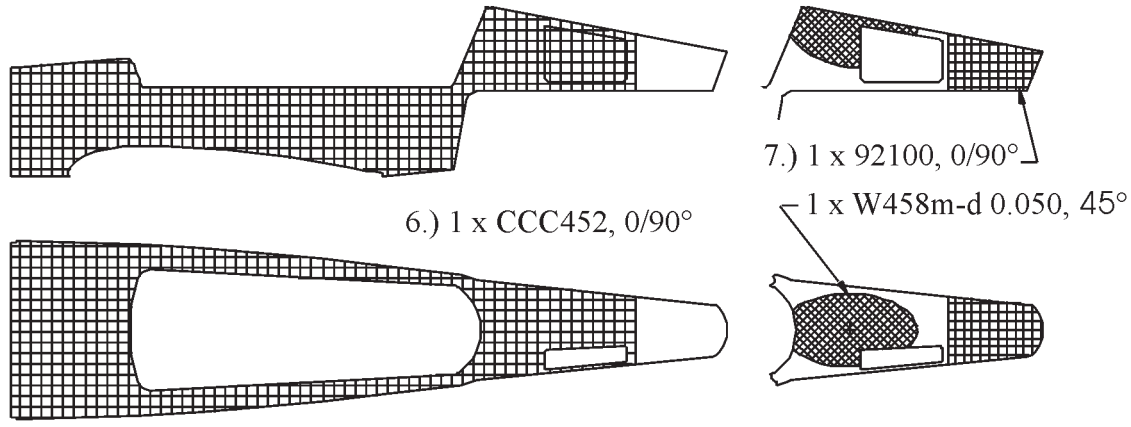


Figure 6, Sheet 1 ***Layer Sequence Main Fuselage Cover***





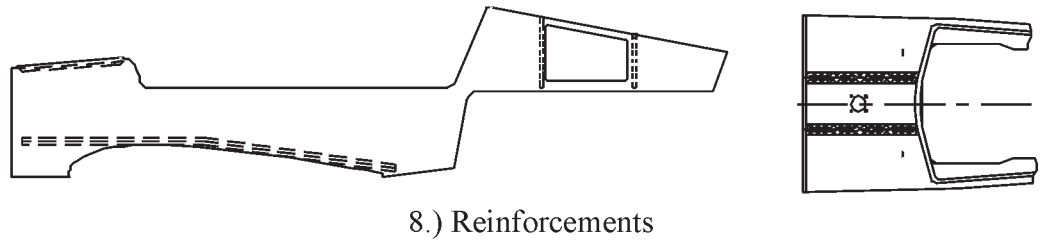


Figure 6, Sheet 2 ***Layer Sequence Main Fuselage Cover***

53-00-04 Bottom Fuselage Cover

Removal

1 Remove engine cowling as per Chapter 71, the landing gear cuffs and main fuselage cover in accordance with this chapter.

2 Pull the plug of OAT sensor wiring.

3 Disconnect the antenna wiring.

4 Remove bottom fuselage cover by removing the attachment screws.

Installation

IMPORTANT

The cockpit area must be thoroughly sealed and thus separated from the engine compartment. Gases or fluids could get into the cockpit area.

Critical areas to be observed are the following:
Position A and D of Figure 7, where different parts converge (firewall, aluminium profile, bottom fuselage cover and exhaust area covering sheet)
Position B and C, where a bent corner ends in a bore hole.

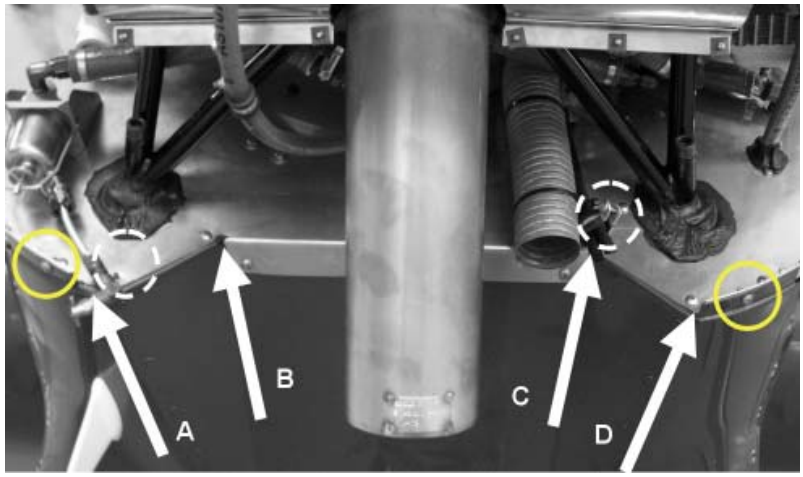


Figure 7 Forward View on Bottom Side Firwall

1 Position bottom fuselage cover in its original position.

2 Plug the OAT sensor wiring.

3 Connect the antenna wiring.

4 Install bottom fuselage cover attachment screws.

5 Install bottom cowling attachment screws (one on either side) without cowling present (see two outer circles in Figure 7).

6 Loosen clamp screws on gascolator drain and fuel pump vent lines for easy access (see inner dotted circles).

7 Prepare PR-812 firewall sealant by mixing brown part A with black part B with weight ratio 2.5:100.

8 Clean areas (from inside and outside) with solvents at four positions pointed out by the arrows in figure 7. Immediately thereafter, dry these areas with a new dry cloth.

9 At the gascolator drain (position A) seal the remaining gap between firewall and bottom fuselage cover from inside and outside with PR-812 firewall sealant. Minimum sealant thickness approximately 1/8 inch (= 3 mm).

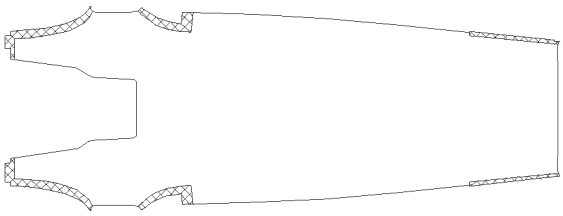
10 Repeat step 9 at positions B, C and D.

11 Cure for at least 24 hours at room temperature.

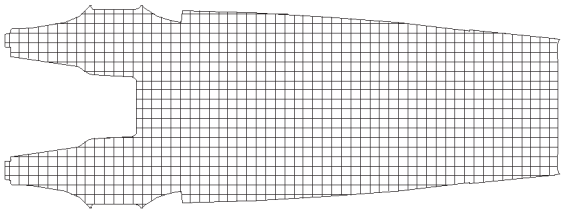
12 Fasten clamp screws on gascolator drain and fuel pump vent lines.

13 Remove the two bottom cowling attachment screws.

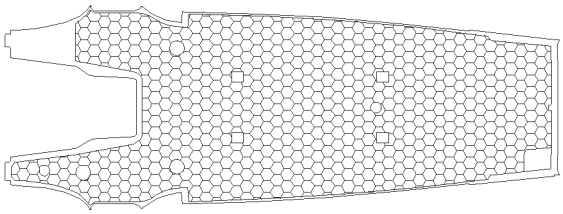
14 Reinstall main fuselage cover, landing gear cuffs and engine cowling in accordance with this chapter.



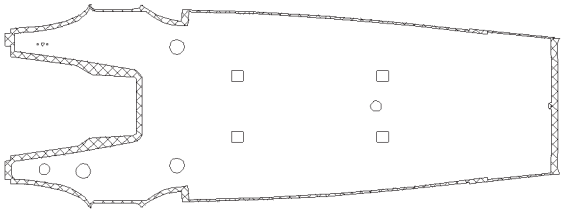
1) Vorgelat T35, whole plane
CF-Yarn + 1 x 92110 in areas of rebate



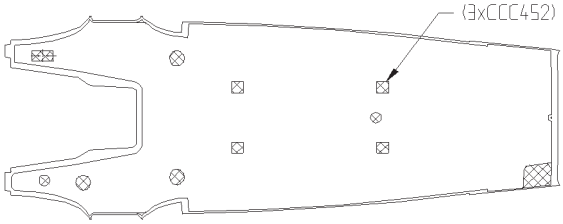
2.) 1 x CCC452, 0/90°



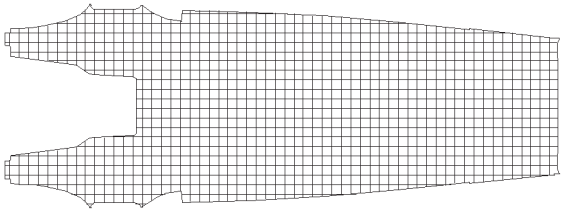
3.) Honeycomb fleece Soric XF 2mm, 0°



4.) Reinforcement of edges
3 x CCC452 ±45°, circumferential



5.) Reinforcement of openings,
1 x CCC452 ±45°
Reinforcement of attachment points,
3 x CCC452 ±45° each



6.) 1 x CCC452 0/90°

7.) Reinforcement angle

Figure 8 ***Layer Sequence Bottom Fuselage Cover***

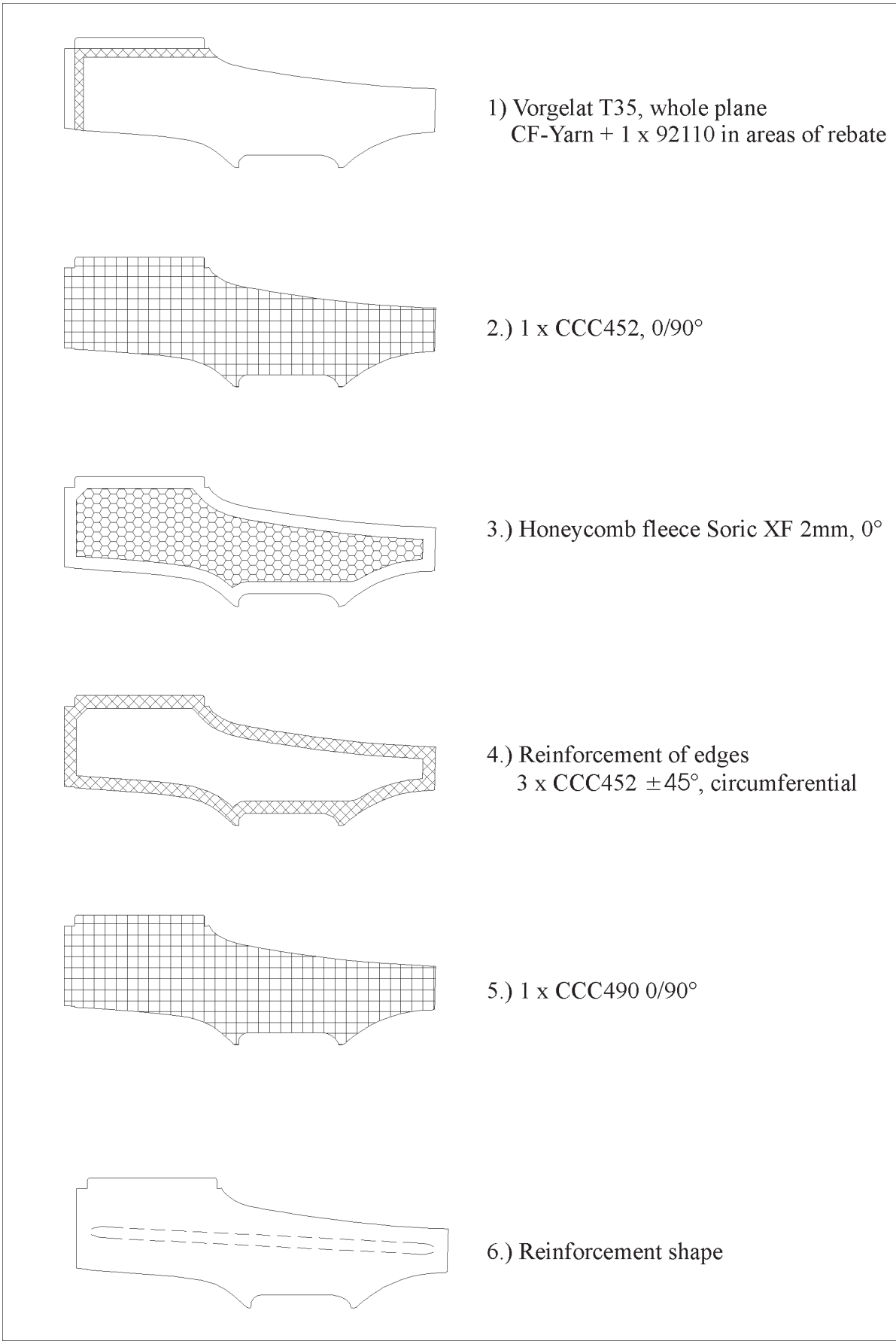
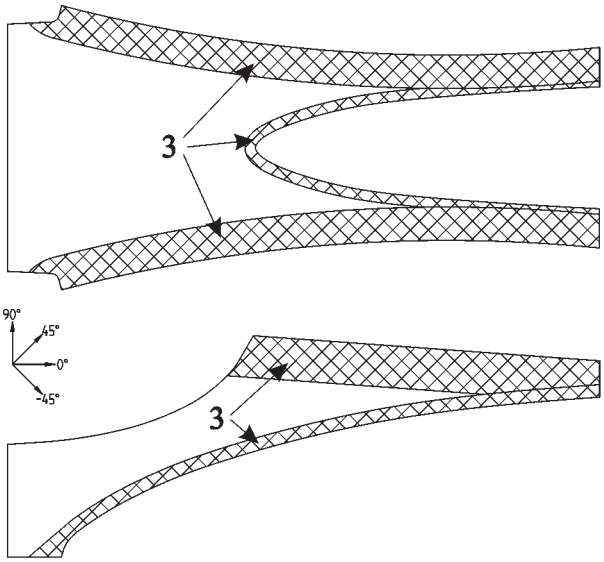


Figure 9 ***Layer Sequence Cuffs***



1) Vorgelat T35 or T30, whole plane

2.) 1 x CCC447, 0/90°, whole plane

3.) Reinforcement of edges
2 x CCC447 ±45°

4.) 1 x CCC447, 0/90°, whole plane

Figure 10 ***Layer Sequence Tail Fairing***

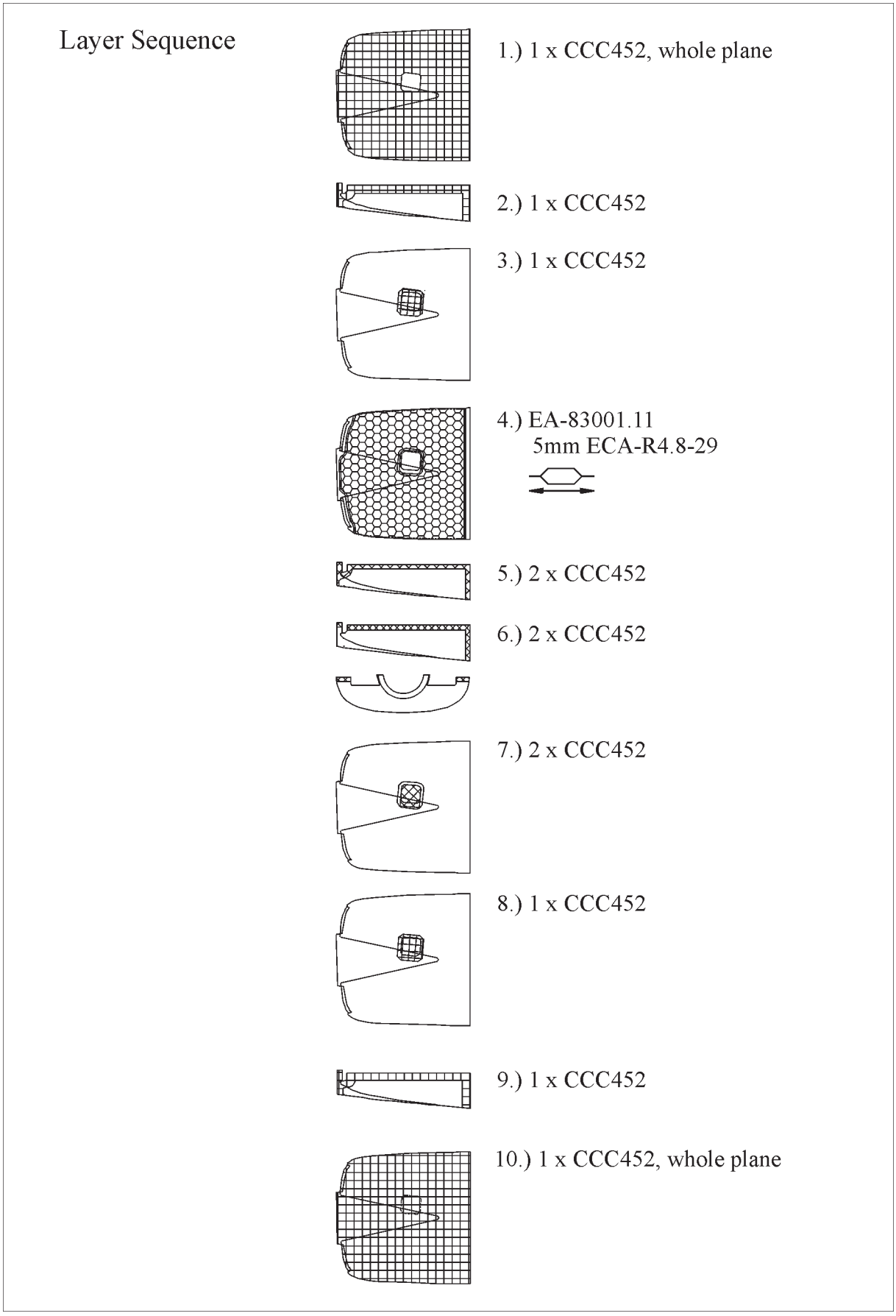


Figure 11 ***Layer Sequence Top Half of the Engine Cowling up to SN LT040***

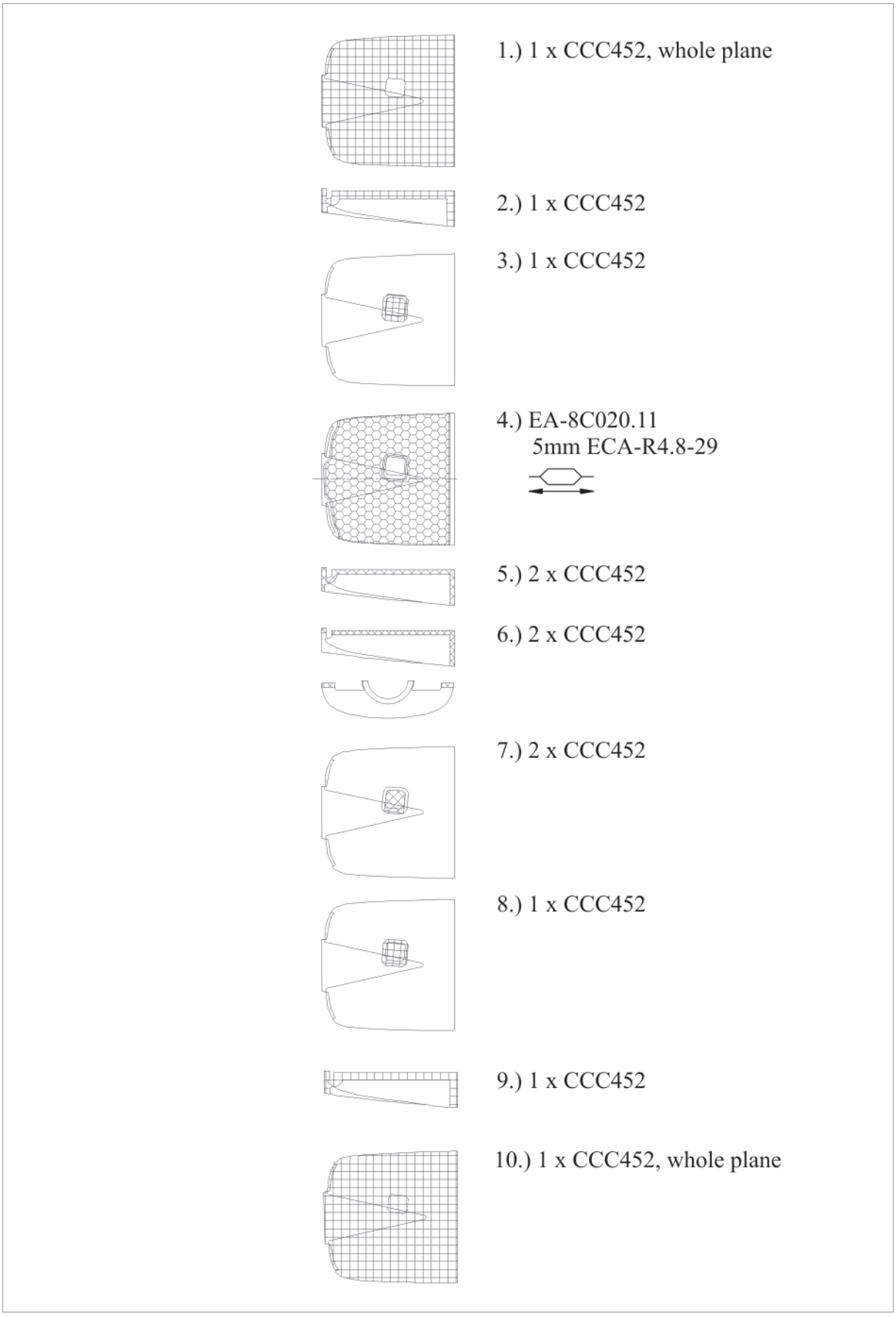
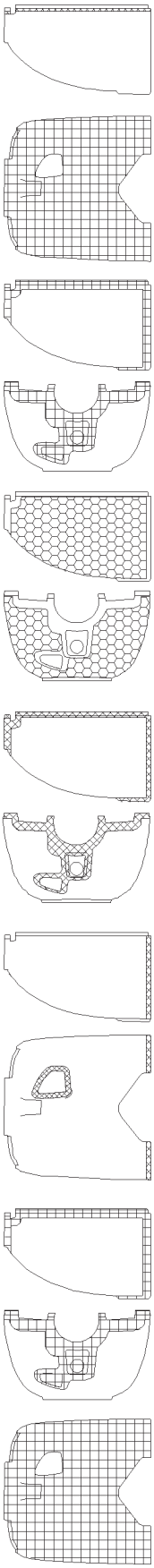


Figure 12 ***Layer Sequence Top Half of the Engine Cowling from SN LT041***



1.) 1 x 92100

2.) 1 x CCC452, whole plane

3.) 1 x CCC452

4.) EA-83001.21
5mm ECA-R4.8-29

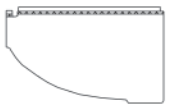
5.) 2 x CCC452

6.) 2 x CCC452

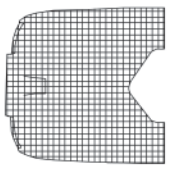
7.) 2 x CCC452

8.) 1 x CCC452, whole plane

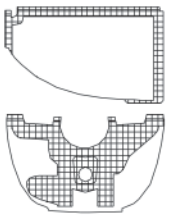
Figure 13 ***Layer Sequence Bottom Half of the Engine Cowling up to SN LT040***



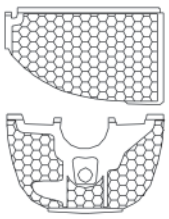
1.) 1 x 92110



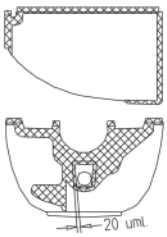
2.) 1 x CCC452, whole plane



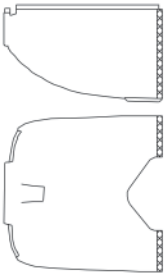
3.) 1 x CCC452



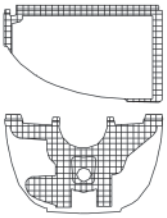
4.) EA-83001.21
5mm ECA-R4.8-29



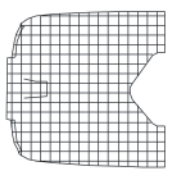
5.) 2 x CCC452



6.) 2 x CCC452



7.) 1 x CCC452



8.) 1 x CCC452, whole plane

Figure 14 ***Layer Sequence Bottom Half of the Engine Cowling from SN LT041***

Chapter 55

Stabilizers

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55-00-00 GENERAL

The EXTRA 300LT has a conventional empennage with stabilizers and moveable control surfaces. The spars consist of carbon roving caps, carbon fibre webs and PVC foam cores. The shell of the horitontal stabilizer are built of honeycomb sandwich with carbon fibre laminate. The vertical stabilizer shell is a glas fibre sandwich. Also buckling is prevented by plywood ribs. On the R/H elevator half a trim tab is fitted by means of two hinges.

The layer sequences of the stabilizers, the elevator and the rudder are shown in Figures 1, 3-4 and 6.

For protection against moisture and UV radiation all composite parts are coated with an unsaturated polyester gel-coat, a filler and finally with paint.

For repair of composite parts refer to chapter 51.

55-10-00 HORIZONTAL STABILIZER

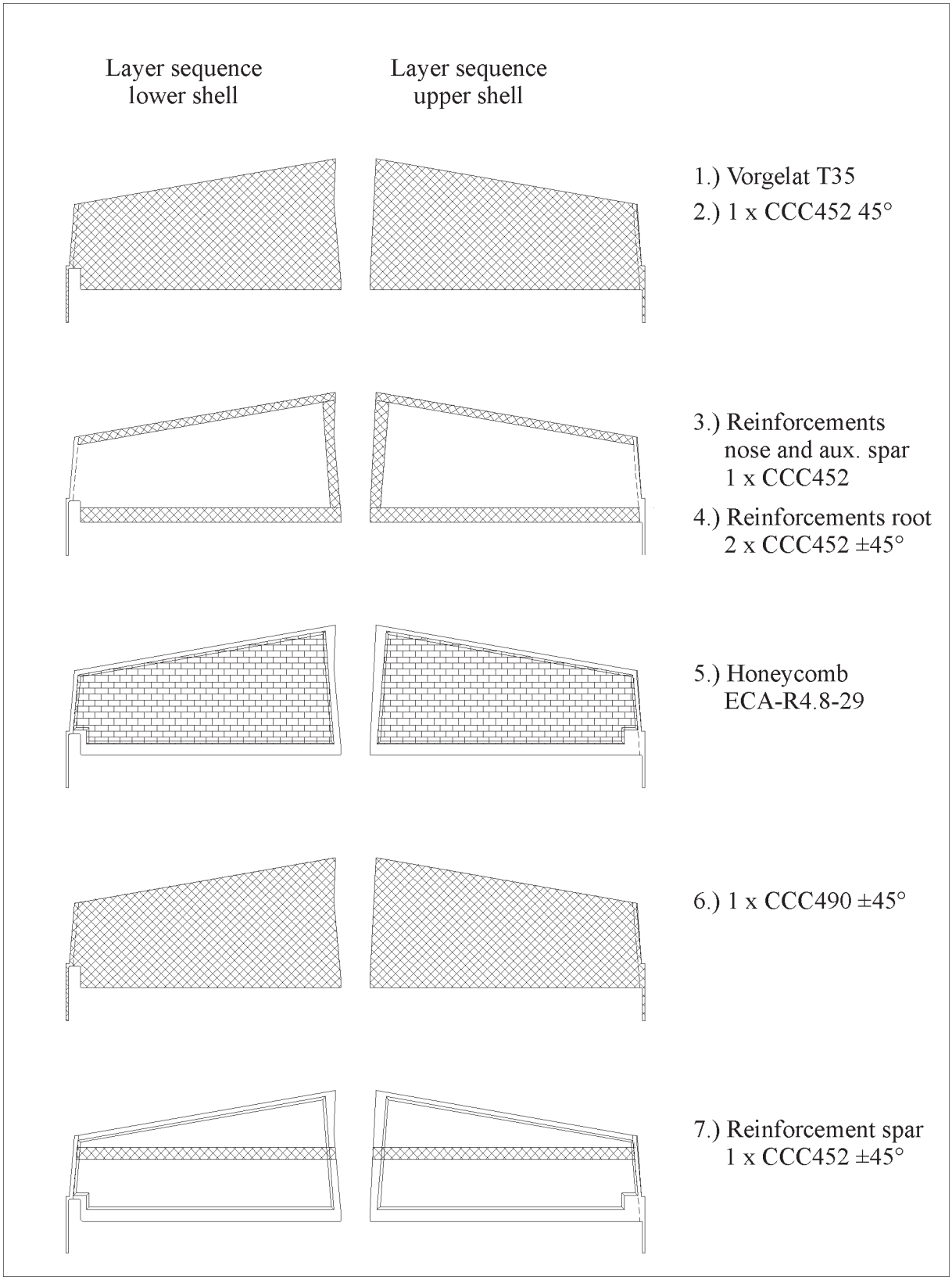

Figure 1, Sheet 1 ***Layer Sequence Horizontal Stabilizer (up to S/N LT020)***

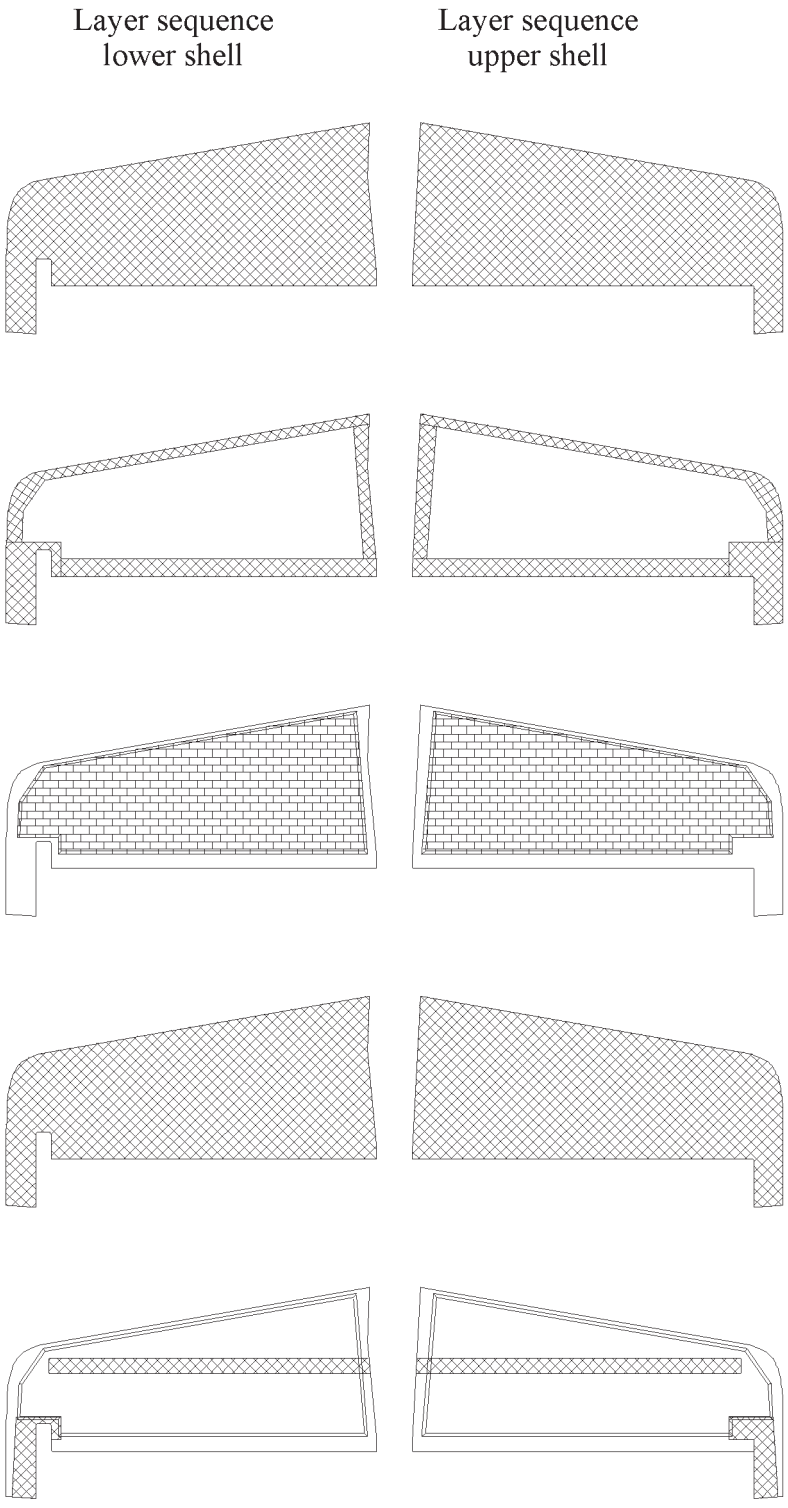

Figure 1, Sheet 2 ***Layer Sequence Horizontal Stabilizer (S/N LT021 and up)***

Removal

Remove elevator and rudder as per chapters 27-20-01 and 27-30-01, remove the vertical stabilizer as per chapter 55-30-00 and then reverse the installation procedure.

Installation

NOTICE

Make shure that the trim bowden cable will not be damaged when installing the horizontal stabilizer.

1 Slide the horizontal stabilizer with its front spar (1, figure 2) into the attach brackets (4) on fuselage. The rear spar (2) is positioned behind the rear attachment bracket (5) (trim tab is on the right side).

2 Slide in the front spar attachment bolts (8) with an additional washer under the bolt head from the front to the rear. These bolts are also used for the vertical stabilizer attachment. Therefore do not apply stop nuts before the vertical stabilizer is fitted to the fuselage.

3 Slide in the rear spar attachment bolts (7) from front to rear. Torque nuts for fastening.

4 Fasten the ground bonding lead (3) by means of the bolt (6), the washers and the stop nuts.

5 Follow the procedure of Vertical Stabilizer Installation (refer to chapter 55-30-00).

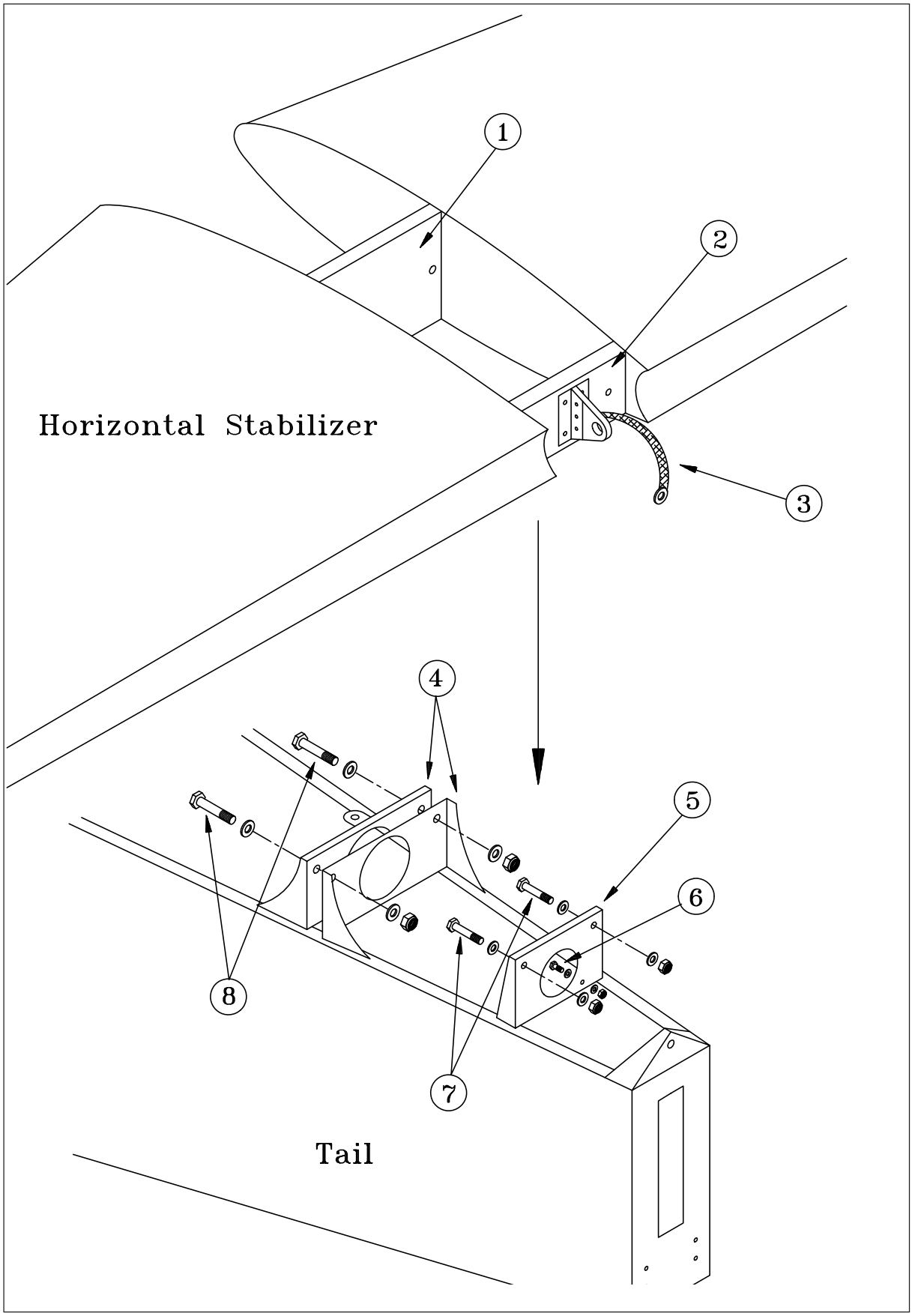

Figure 2 ***Horizontal Stabilizer Removal/Installation***

55-20-00 ELEVATOR

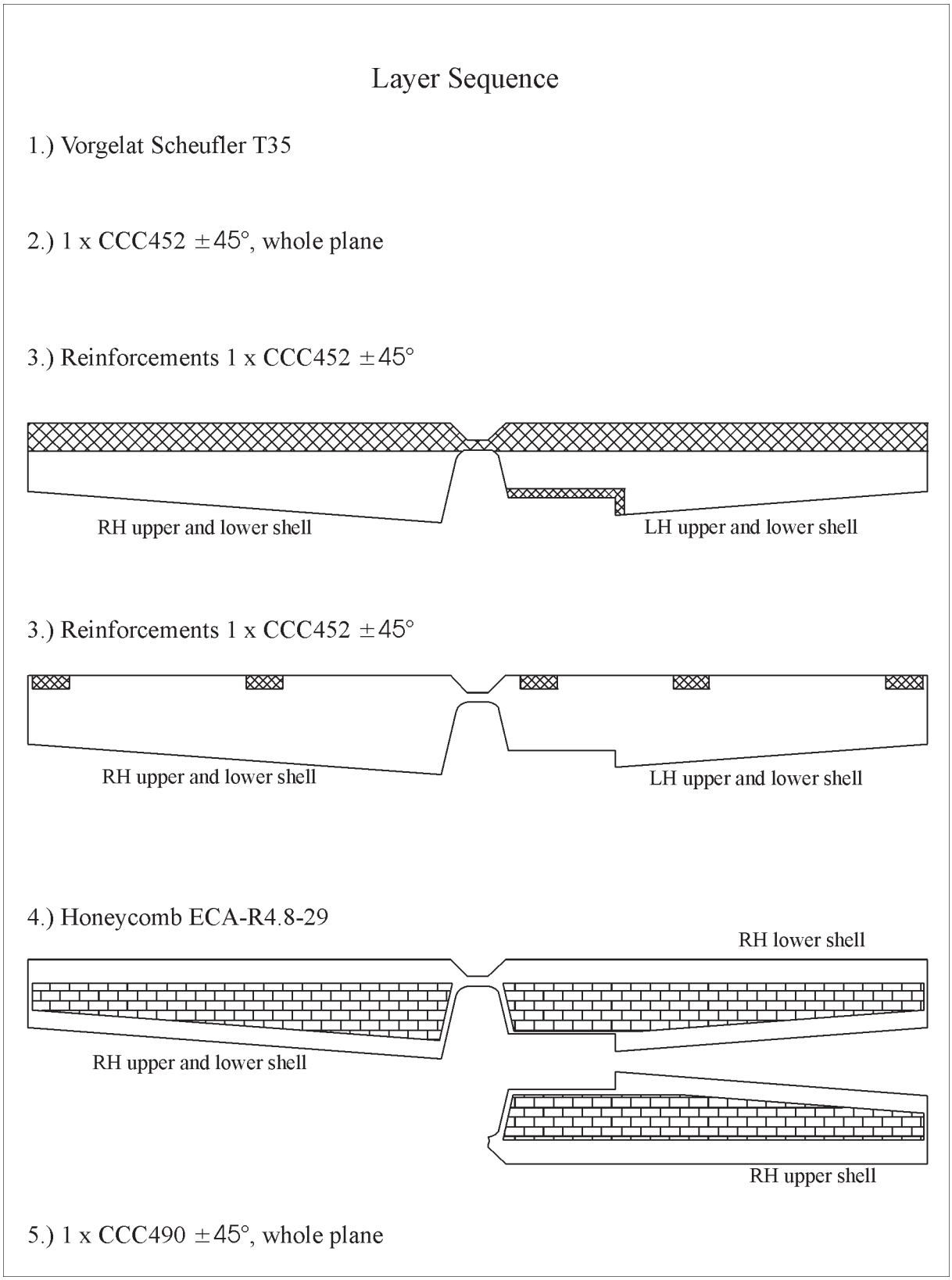

Figure 3 ***Layer Sequence Elevator***

55-30-00 VERTICAL STABILIZER

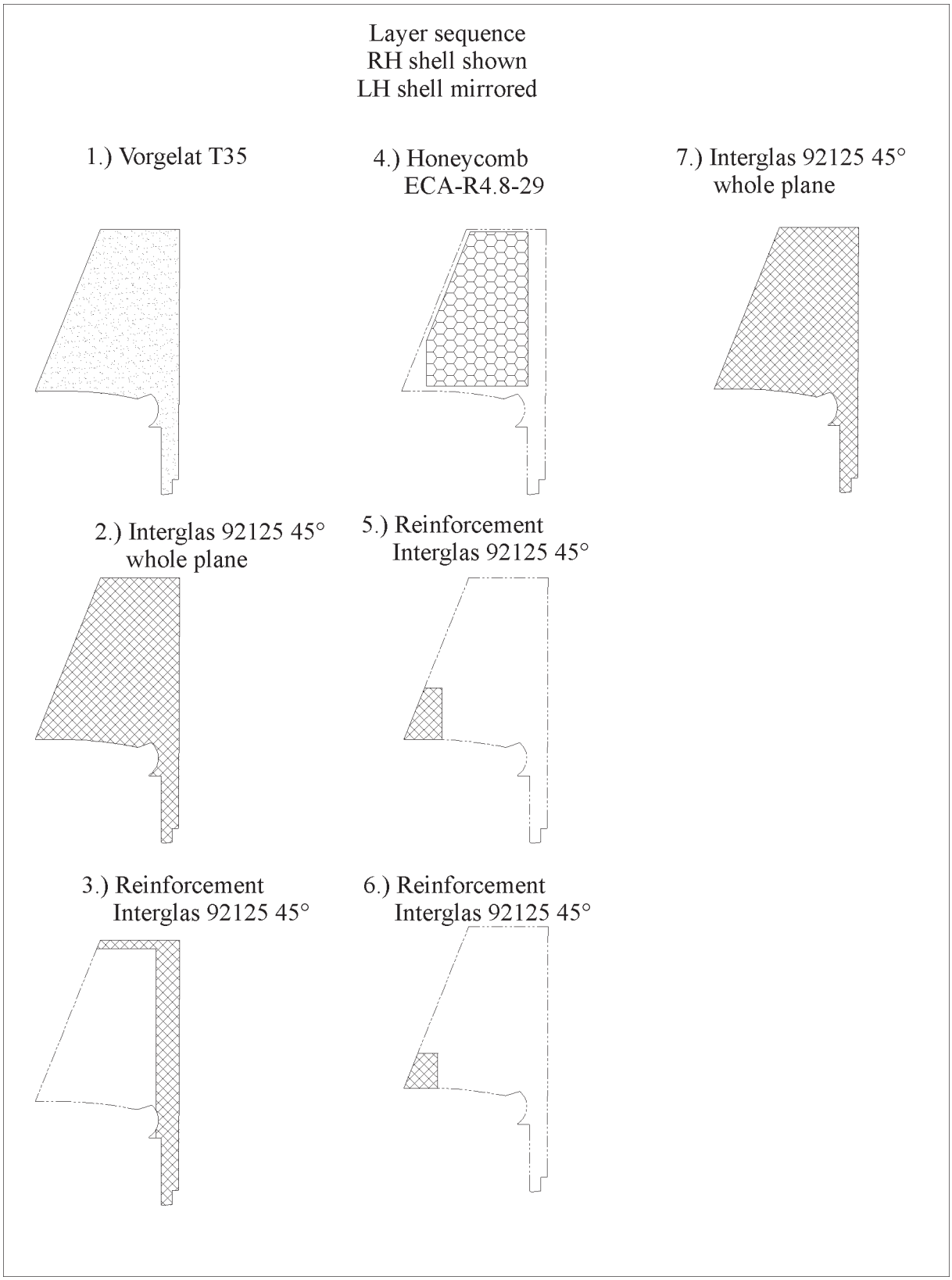

Figure 4 ***Layer Sequence Vertical Stabilizer***

Removal

1 Remove the tail fairing and the tail cone access panel as per chapter 51-00-01.

2 Remove the rudder as per chapter 27-20-01.

3 Remove the bottom hinge bracket assembly as per chapter 27-20-02.

4 Remove the two stop nuts (2, figure 5) and washers of the front main bolts.

5 Remove the rear main bolt (3) with the washers and the stop nut.

N O T I C E

Do not move the fin too far backward, the antenna could be damaged.

6 Move the fin backward and lift the fin over the antenna.

Installation

1 Put the vertical stabilizer leading edge over the antenna.

N O T I C E

Do not move the fin too far backward, the antenna could be damaged.

2 Slide the auxiliary spar attachment sheet (1, figure 5) of the vertical stabilizer from the rear over the preinstalled horizontal stabilizer front spar bolts and install the washers and stop nuts (2).

3 Insert the bolt (3) to the main spar from rear to front. Use stop nuts and washers.

4 Install the bottom hinge bracket to the tail as per chapter 27-20-02.

5 Reinstall the tail fairing, the tail side skins and the tail cone access panel as per chapter 51-00-01.

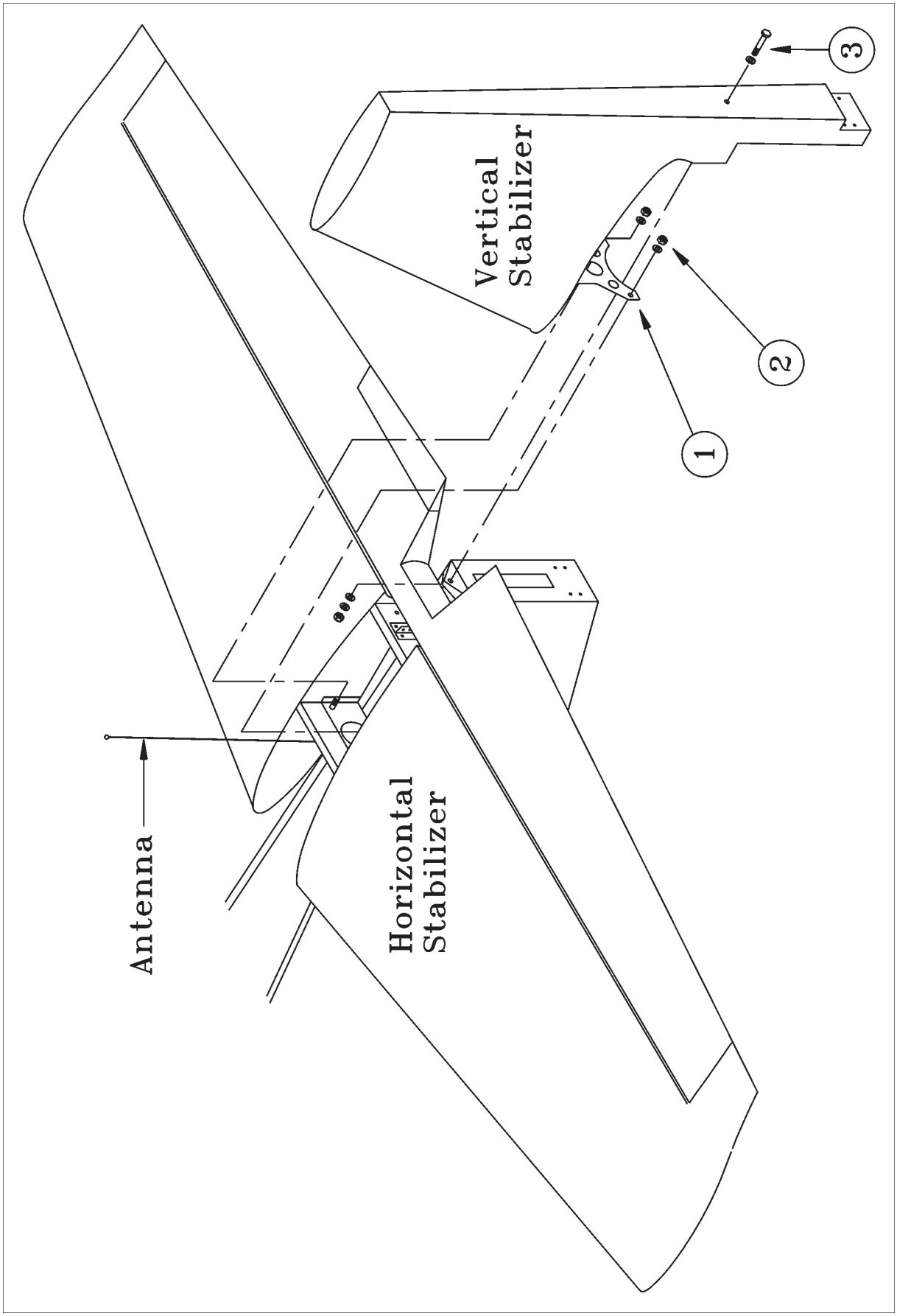

Figure 5 ***Vertical Stabilizer Removal/Installation***

55-40-00 RUDDER

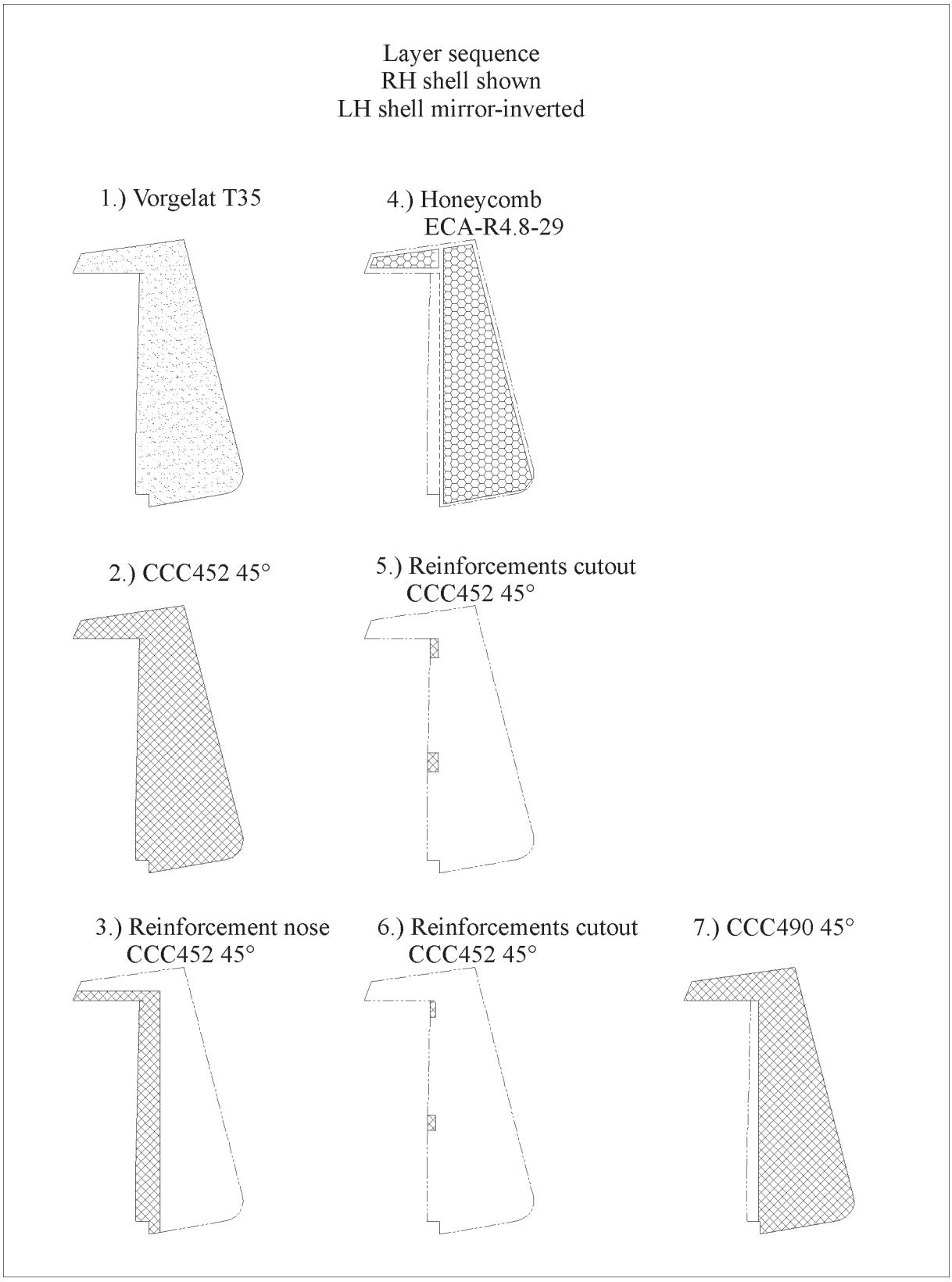

Figure 6 ***Layer Sequence Rudder***

Chapter 57

Wings

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57-00-00 GENERAL

The wing consists of a one-piece, dual chamber main spar with carbon fibre roving caps and carbon fibre webs. For the spar core PVC foam is used. The wing shells are a honeycomb sandwich construction with carbon fibre laminates. To prevent buckling of the shells, plywood ribs are used.

The layer sequence of the wing D-section is shown in figure 1.

For protection against moisture and UV radiation all composite parts are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

For repair of composite parts refer to chapter 51.

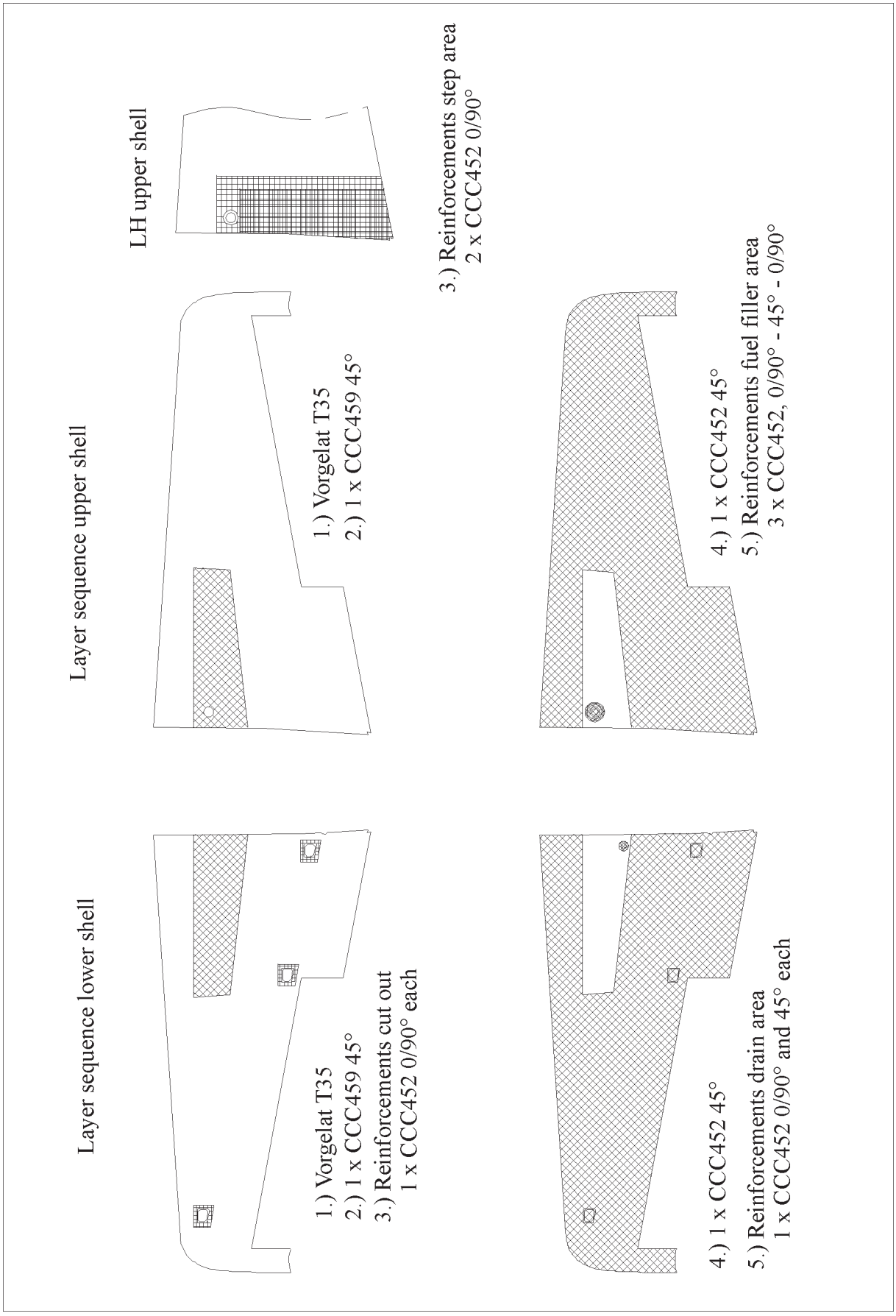

Figure 1, Sheet 1 ***Layer Sequence Wing***

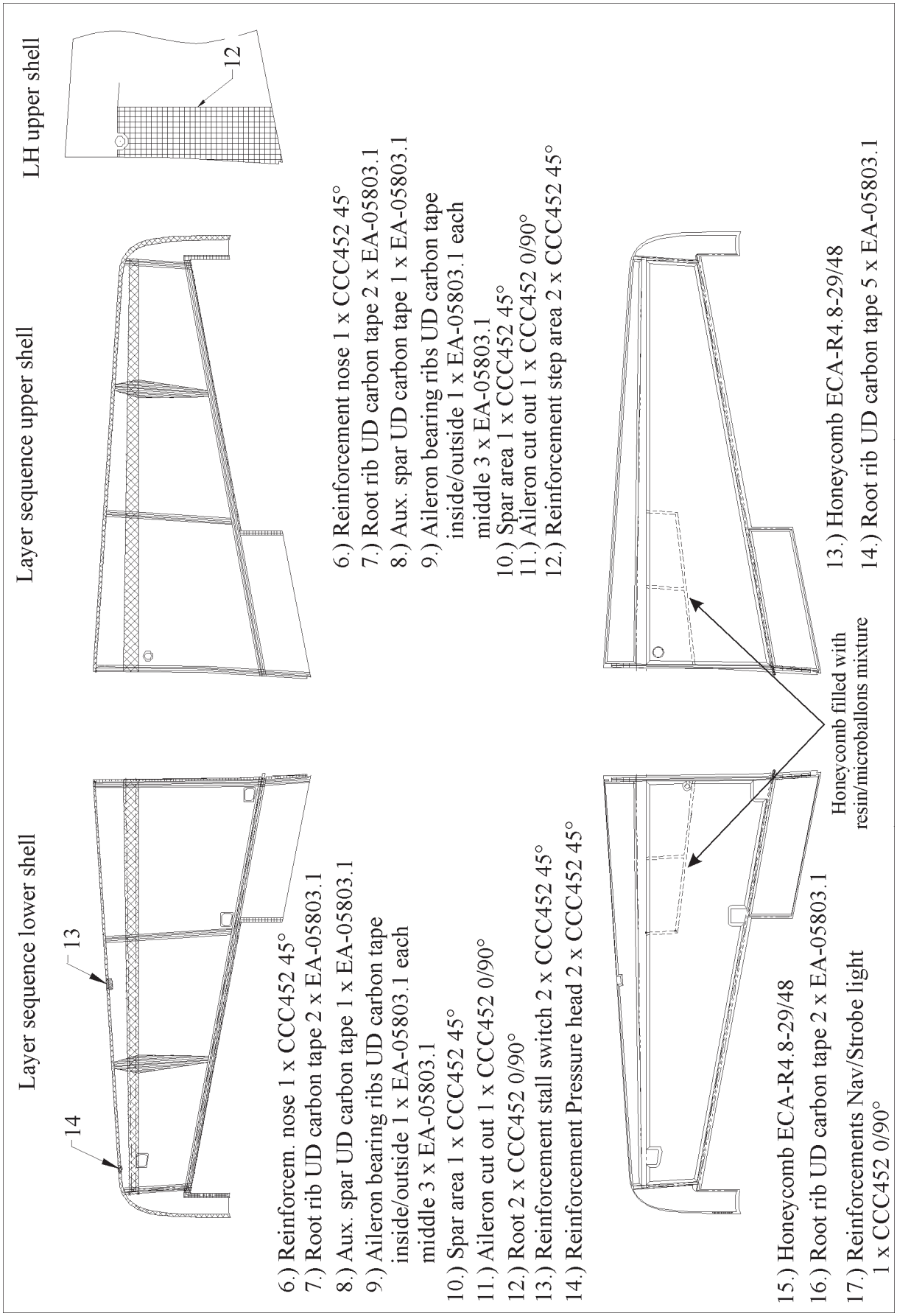

Figure 1, Sheet 2 ***Layer Sequence Wing***

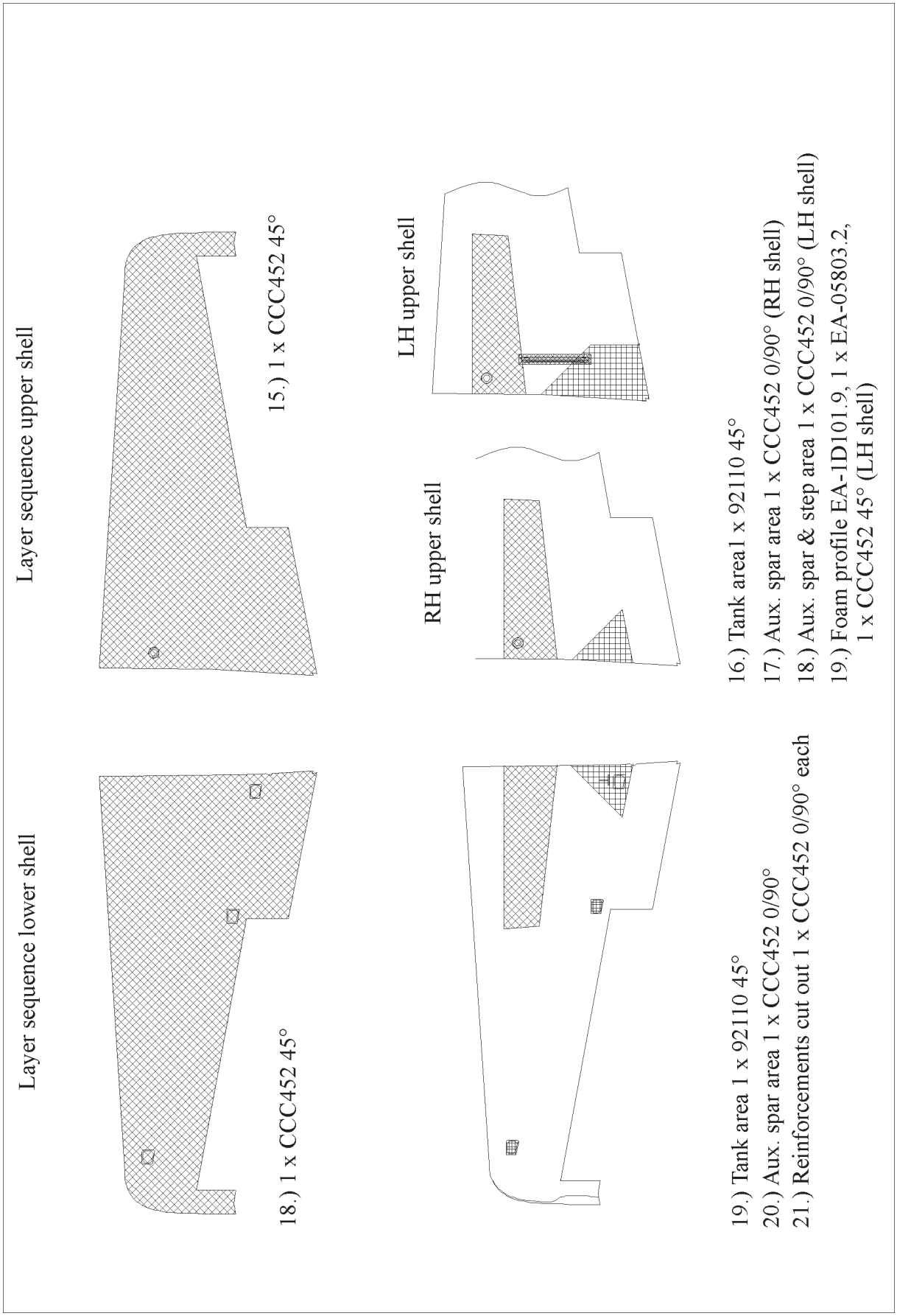

Figure 1, Sheet 3 ***Layer Sequence Wing***

57-00-01 Wing

Removal

Reverse procedure of installation omitting step 16.

Installation

1 Remove the canopy, the engine cowlings, the main fuselage cover and the wing gap cover as per chapter 51.

2 Remove the right front canopy hinge.

3 Loosen the breather line clamps located at the engine side of the firewall and in the main spar area, push the front part of the breather line some centimeters to the front until it is disconnected from the connecting hose (10, figure 3) and remove the breather line (5) by pulling it to the rear.

4 Fix throttle lever and control sticks in rearmost position.

5 Remove the provisionally installed RPM-Vernier-control as per Chapter 61 and bring cable out of the main spar area.

WARNING **Beware not to get jammed between wing and fuselage.**

NOTICE **Ensure that areas in which the wing shall be slided are clear of obstructions.**

NOTICE **Prevent cables and pitot/static lines from being damaged. Keep them at the rear of the main spar and outside of the upper longerons.**

NOTICE **Attend to the left front canopy hinge, the throttle and mixer cables and the heater lever, when sliding down the wing. These parts and the wing could be damaged.**

6 Slide wing down into fuselage attachment brackets (3).

7 Install auxiliary spar attach bolts (1) from front to rear. Use two washers and nuts at each side for fastening.

IMPORTANT

If there is clearance between the main spar and the attachment brackets (1, Figure 2), use shims (3) like shown below which are to be slided in the front gaps (2).

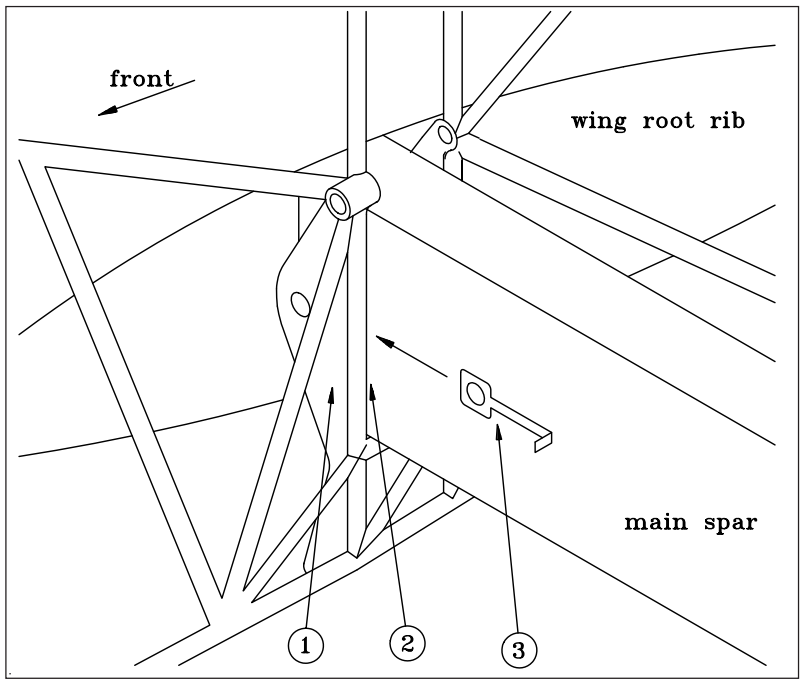

Figure 2 Shims Installation

8 Slide in shims if necessary and install the main spar tubular bolts (4, figure 3) to the wing flange bushings (11) from front to rear.

9 Secure main spar tubular bolts with bolts (2), DIN912 M8 and aluminum 30x11x4 washers. Torque security bolts for fastening and subsequently safety wire.

10 Install upper longeron cutout bridges (7) using at each side 3x DIN912 M8 x 180, 3x DIN125 M8 washers and 3x LN9348-08 stop nuts at the top and 1x DIN912 M10 x 230 bolt, DIN125 M10 washer and LN9348-10 stop nut at the bottom (6). Check cutout bridges for RH and LH marking. Install the bolts (except the upper outer bolts, see figure 3, detail A) from front (firewall) to rear (aircraft tail). Torque stop nuts for fastening.

11 Install the shear connectors (8). Use two DIN 912 M12x220 bolts and safety wire.

12 Reinstall the front canopy hinge.

13 Reinstall RPM-Vernier-control and adjust.

14 Unfix throttle lever and control sticks.

15 Install short aileron push pull rods as per chapter 27-00-01.

16 Perform an aileron rigging as per chapter 27-10-02.

17 Connect fuel system (fuel lines and vent lines), pitot/static system, stall warner, navigation/strobe light ground bonding leads and wing fuel indicator with prefitted plugs per respective chapters. Connect instrument wet lines if MVP-50 is not installed.

18 Reinstall breather line, main fuselage cover, engine cowlings and canopy as per chapter 51.

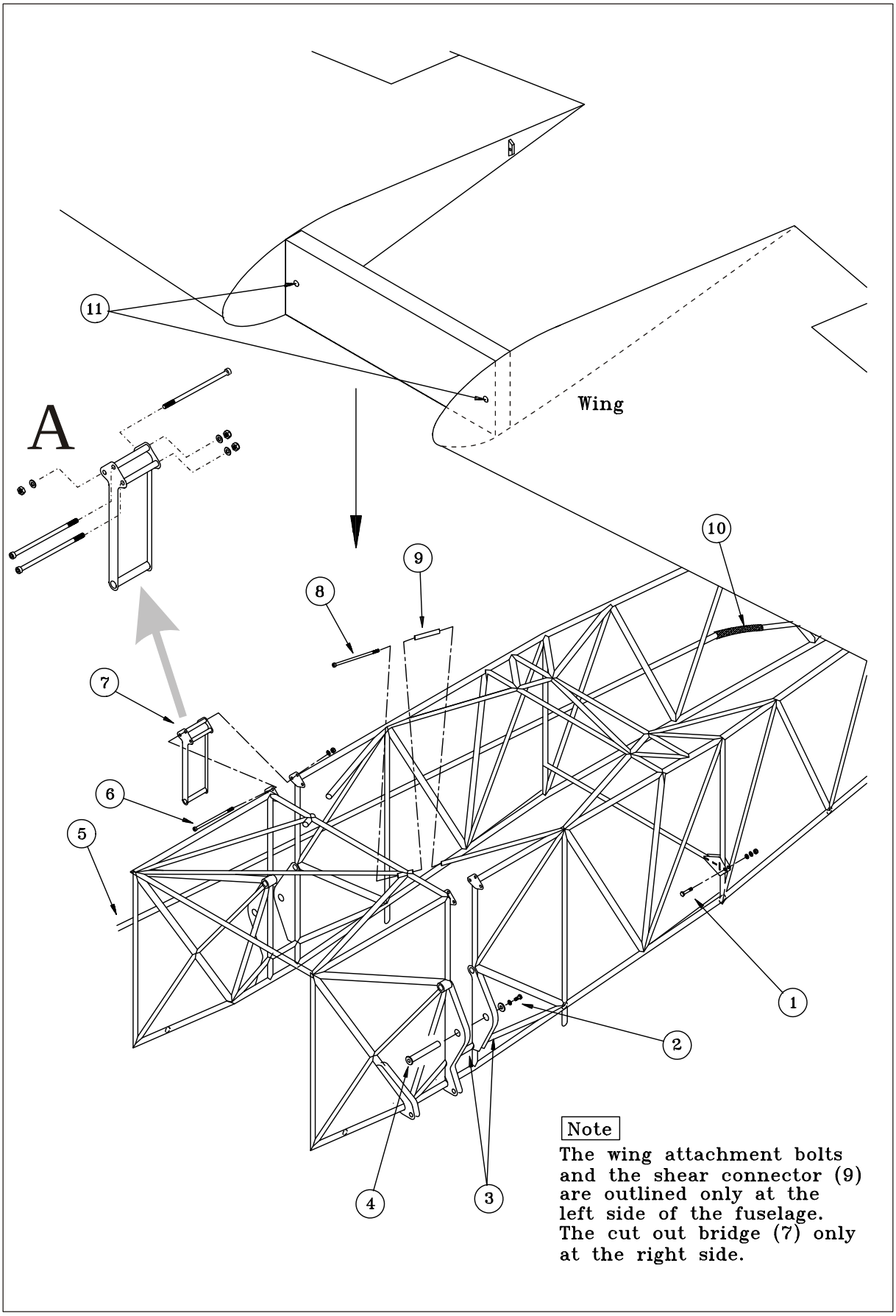

Figure 3 ***Wing Removal/Installation***

57-60-00 AILERONS

The ailerons are constructed in the same manner as the wing but with a single chamber spar. They are supported at three points in spherical bearings pressed into aluminium brackets. Furthermore the ailerons are equipped with "glass fibre laminate spades" to decrease pilots forces.

The layer sequence of the ailerons is shown in figure 4.

For protection against moisture and UV radiation all composite parts are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

For repair of composite parts refer to chapter 51.

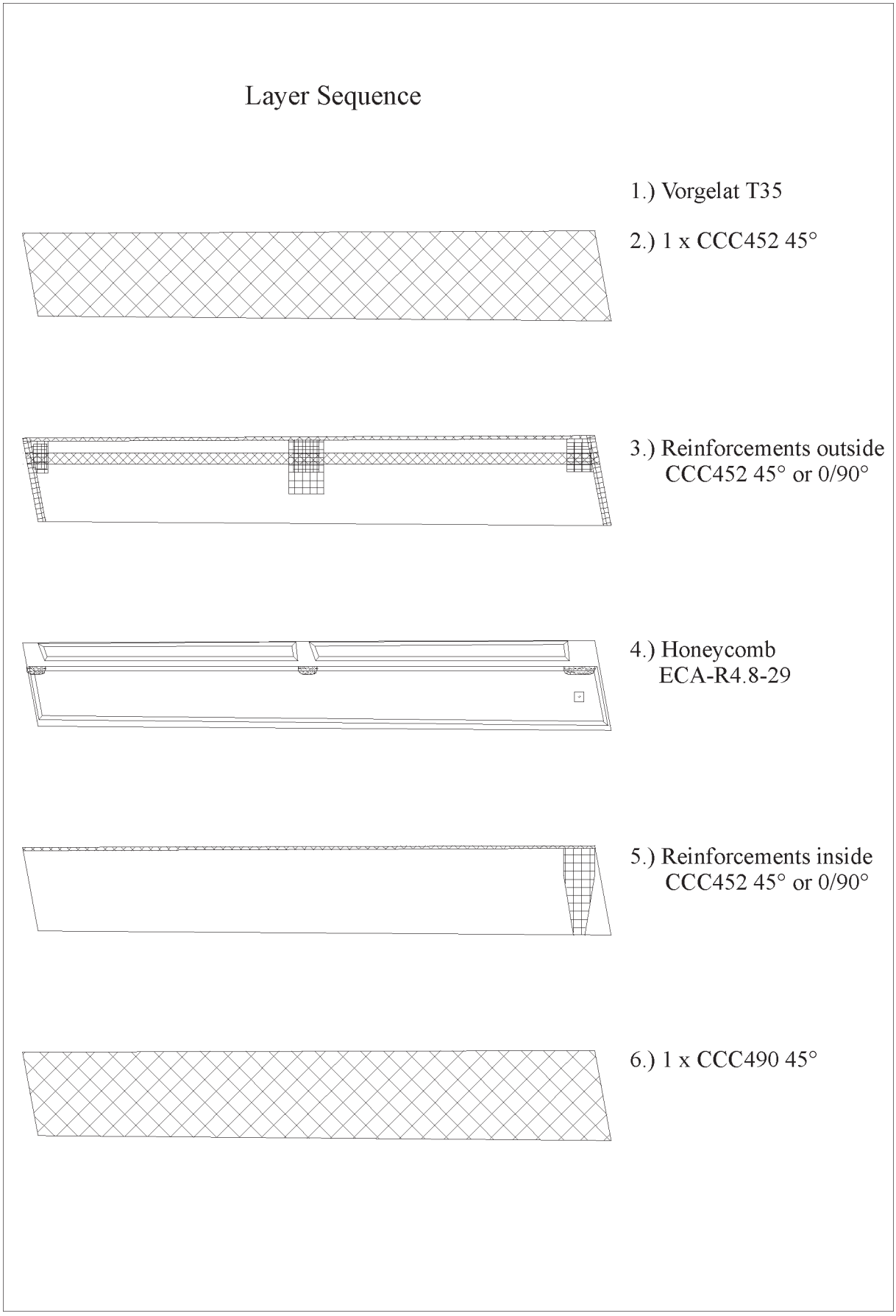

Figure 4 ***Layer Sequence Ailerons***

Chapter 61

Propeller

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61-00-00 GENERAL

The EXTRA 300LT is equipped with MTV-9-B-C/C 198-25 (3-blade) propeller. Maintenance work or overhaul of the propeller requires consultation of the propeller manufacturer MT-Propeller.

Proper control,operation and maintenance of the propeller is described in the Operation- and Installation Overhaul Manual E-124 of the manufacturer.

61-10-00 PROPELLER

The MTV-Propellers are made of laminated wood encased in glass-fiber reinforced plastic, which is painted to make it waterproof.

N O T E

For more information about the propeller refer to MT-Propeller Operation- and Installation Manual E-124.

61-20-00 CONTROLLING

The propeller blade pitch change is conducted by a governor (refer to Figure 1). Once an engine rotational speed is selected it will be held constant independent of airspeed or power variations.

The governor itself is actuated via a vernier control cable ending on the left side of the rear cockpit (blue control knob; 1, figure 1 & 8, figure 2). This cable is routed on the left side of the fuselage, penetrates the firewall, the rear engine baffles and is then routed to the governor. The cable is attached at its front end to the engine by a clamp block and in the cockpit area to the steel tube structure by self-clinching plastic tiedown straps. The RPM vernier control unit is mounted to a fuselage bracket. The firewall and engine baffle penetrations are covered with clamp sheets. The firewall penetration (2, figure 1) is additionally sealed with PRC-812 (Products Research & Chemical Corp., USA) firewall sealant.

Mechanical stops for low pitch and high pitch limit the pitch change level. In case the oil pressure is lost, the installed counterweights automatically force the blades into high pitch.

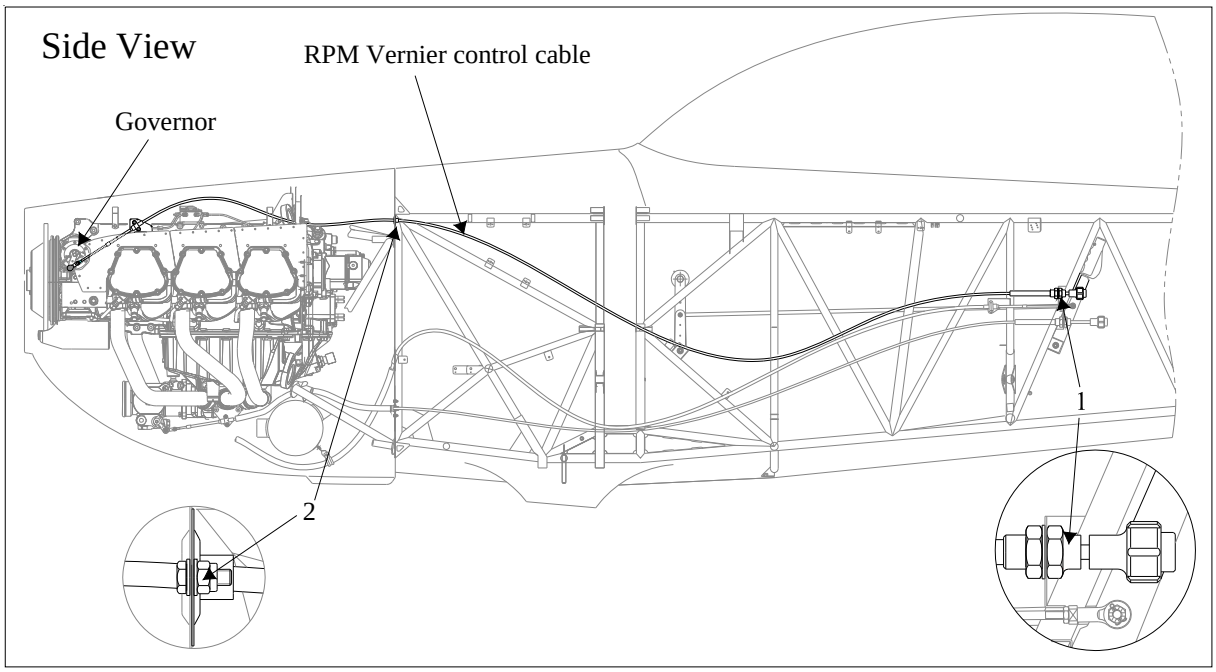

Figure 1 ***Controlling***

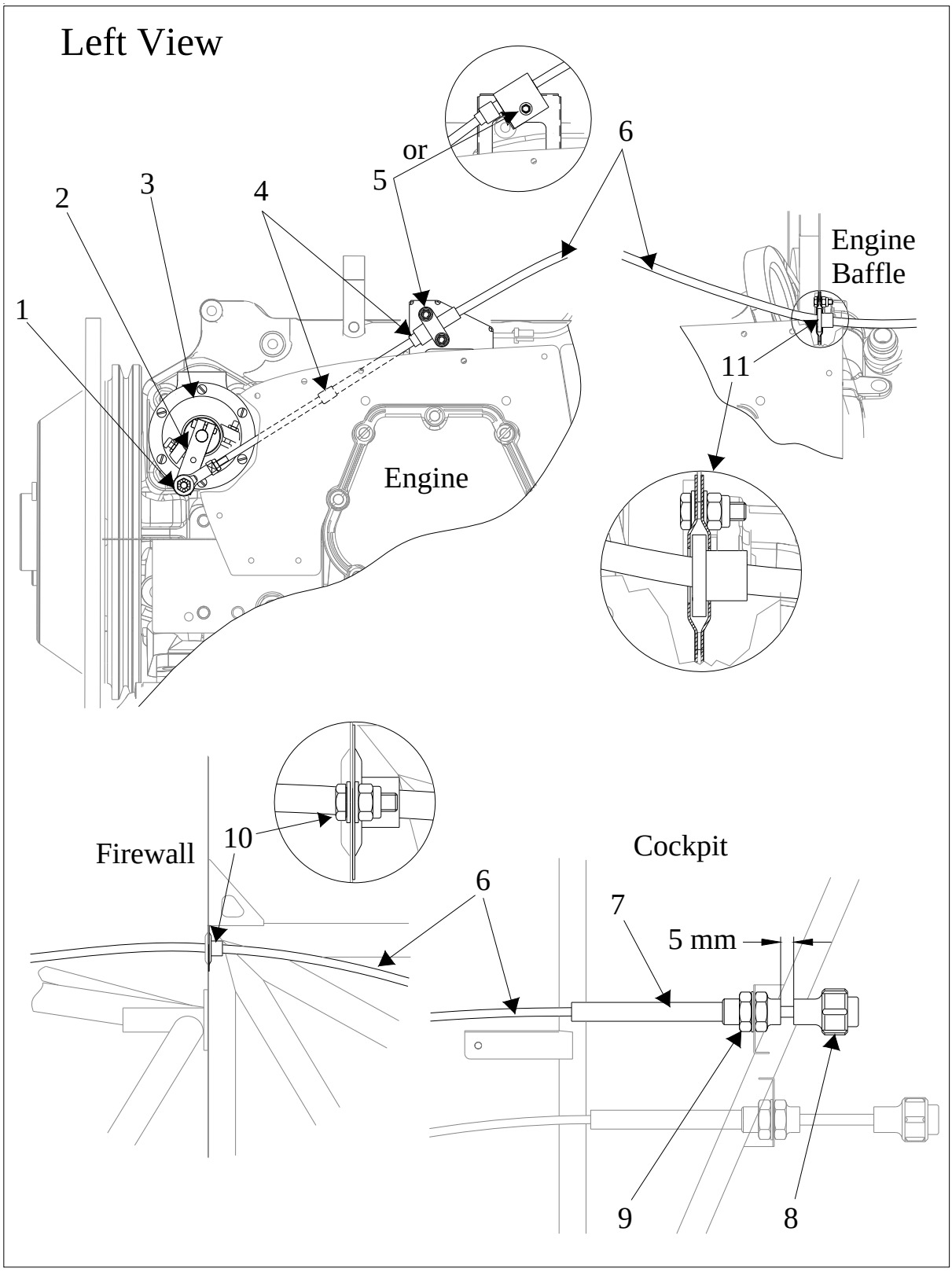

Figure 2 ***RPM Vernier Control Cable Installation***

61-20-01 Governor

One of the following governors is installed:

MT-Propeller P-880-5, preset for a max. 2700 rpm

Woodward A-210988, preset for a max. 2700 rpm

Refer to the MT-Propeller Operation- and Installation Manual E-1048 for further information.

NOTE

The lever position of the governor actuator is preset. Do not change this position.

61-20-02 RPM Vernier Control Cable

Refer to chapter 20 for general information about handling of control cables.

Removal

1 Ensure master switch is off.

2 Remove engine upper cowling per Chapter 71.

3 Remove main and bottom fuselage cover per Chapter 53.

4 Remove cotter pin, castle nut, washers and bolt from the rod end (1, Figure 2) to governor actuator (2) attachment.

5 Loosen counter nut and remove the rod end (1) from the vernier control cable (6).

6 Remove rod end counter nut and vernier control cable protective swivel and wiper seal (4).

7 Remove clamp block (5) attachment bolt(s).

8 Remove clamp block from the vernier control cable (6).

9 Remove 2 bolts of the clamp sheet attachment positioned at the rear engine baffle break through (11). Disconnect both clamp sheets and contained plastic guidance from the engine baffle.

10 Remove 2 bolts of the clamp sheet attachment positioned at the firewall break through (10). Disconnect clamp sheet and contained plastic guidance from the rear side of the firewall.

11 Mark vernier control cable routing and remove the self-clinching plastic tiedown straps in the cabin area.

12 Remove attachment nut (9) and washer of the vernier control unit (7).

13 To remove vernier control unit from its bracket, pull the unit slightly aft (about 15cm [0.5ft]) and then to the LH outside direction.

14 Pull complete vernier control cable (6) aft to remove from aircraft. Secure clamp sheets.

Installation

Install in reverse sequence of removal observing the following items:

1 Thread the respective clamp sheets and plastic guidance on the vernier control cable before penetrating the firewall and the rear engine baffle.

2 Distance between clamp sheet and clamp block is 755 mm.

3 Install rod end to the vernier control cable terminal. Ensure thread of control cable terminal is visible in the inspection hole.

4 Renew the sealing of the firewall break through at the engine side of the firewall. Use PRC-812 (Products Research & Chemical Corp., USA) firewall sealant.

5 Tighten the castle nut slightly. Ensure movability of governor control lever (2).

Rigging

1 Move vernier control knob (8, Figure 2) to the foremost position.

2 Check that the travel stop at the governor control lever is reached, and the over-travel of 5mm [3/16"] (tolerance +/-1 mm [1/32"]) is ensured at the rpm control knob (see figure 2).

3 Check full travel.

4 If necessary adjust rod end (1, figure 2) by the following steps:

a Remove cotter pin, castle nut, washers and bolt from the rod end (1) to governor control lever (2) attachment.

b Loosen the counter nut and adjust rod end (1) by turning. Ensure thread is visible in the inspection hole when fastening. Apply inspection lacquer on the counter nut.

c Reconnect the rod end (1) to the governor control lever (2).

Chapter 71

Power Plant

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71-10-00 COWLING

Description

The engine cowling is divided into two parts: The top half (1, figure 1) and bottom half (2) made of CFRP honeycomb sandwich.

The top half of the engine cowling features a hinged hatch (3) for access to the oil dip stick. This hatch is opened by two slotted head flush type Camloc® retainers. The bottom half features a Xenon or LED landing light (6). The Xenon power supply (7) and the electrical connector are installed on the left aft inside.

Both cowling halves are attached to each other and the airframe by means of truss head screws (4) and special washers (5).

The interior surface of both cowling halves is coated with a fire protection paint which is sealed by varnish coating (up to SN LT024). Additional aluminized heat blankets are placed in the bottom cowling half.

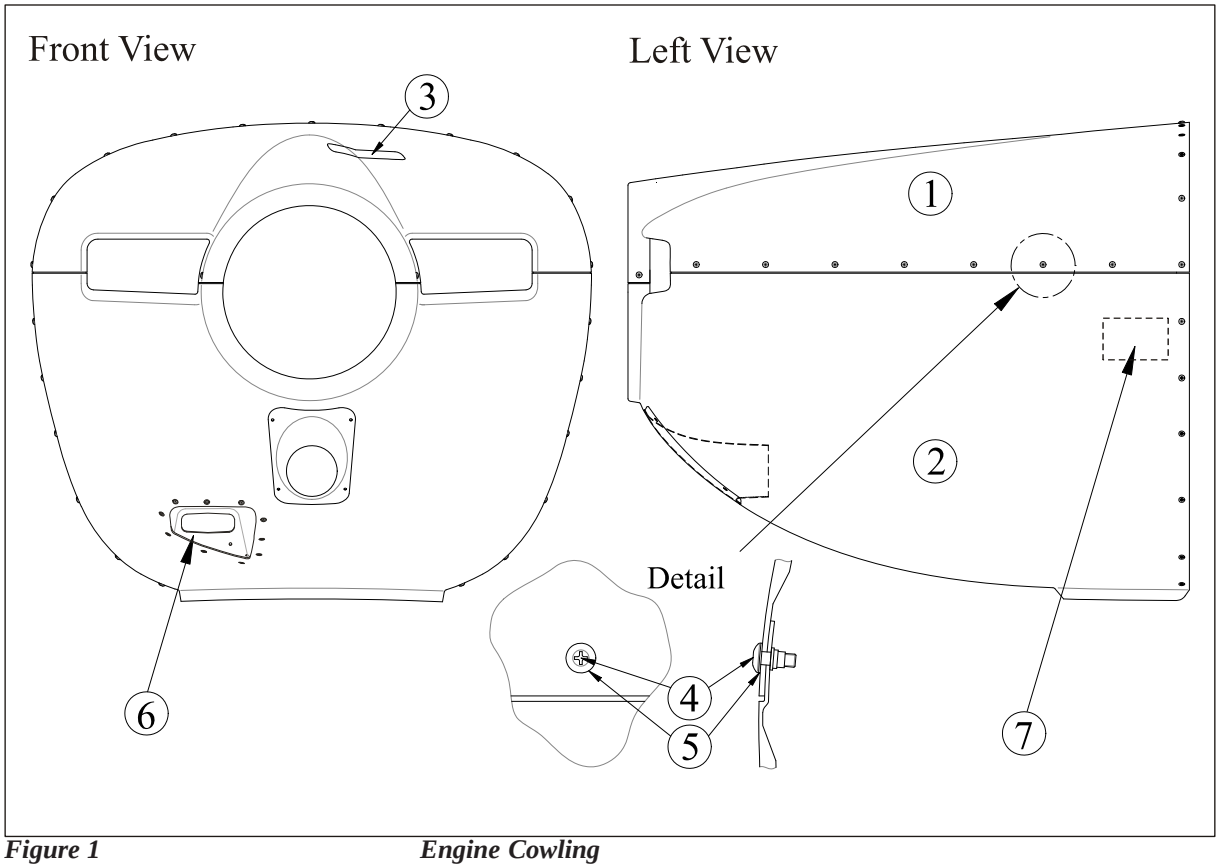

Figure 1 ***Engine Cowling***

Removal/Installation

NOTE

It is favourable to remove the cowling with two persons.

WARNING

Before rotating the propeller in the most convenient position for removal of the cowling, make sure that the ignition switch is in the "OFF" position.

1 Rotate the propeller in the most convenient position.

2 Remove the related truss head screws (4) & (5) of top cowling half (see Figure 1).

3 Remove top half of the engine cowling.

4 Disconnect the landing light wiring using the plug shown in Figure 2, Sheet 1 (Xenon) or Sheet 2 (LED).

5 Remove the remaining truss head screws (4) & (5) of the bottom cowling half (see Figure 1).

6 Remove the bottom half of the cowling.

NOTICE

Pay attention to the rubber flaps of the air baffles. Make shure they are not pushed outwards when installing the top half of the engine cowling.

7 Install in reverse sequence of removal.

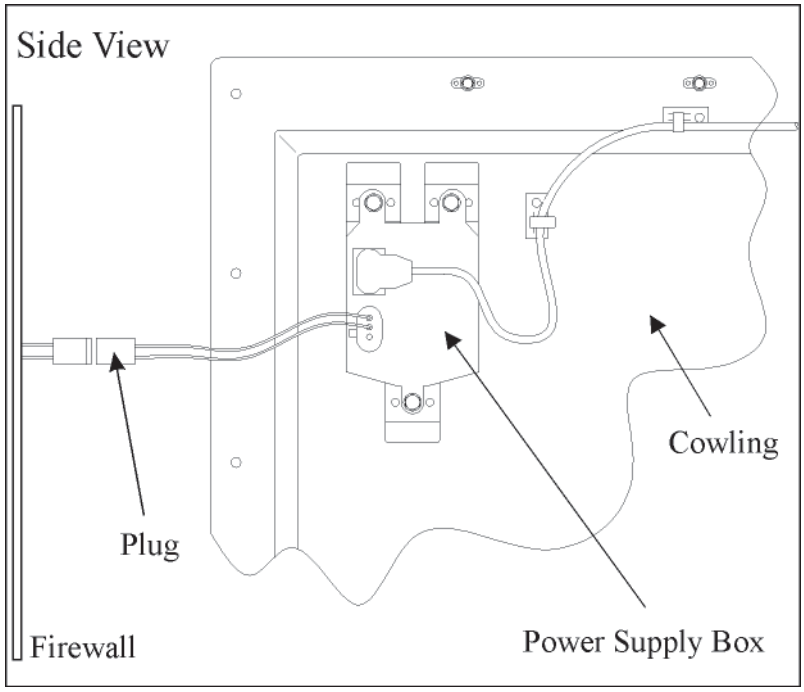

Figure 2, Sheet 1 ***Landing Light (Xenon) Disconnection Plug up to SN LT040***

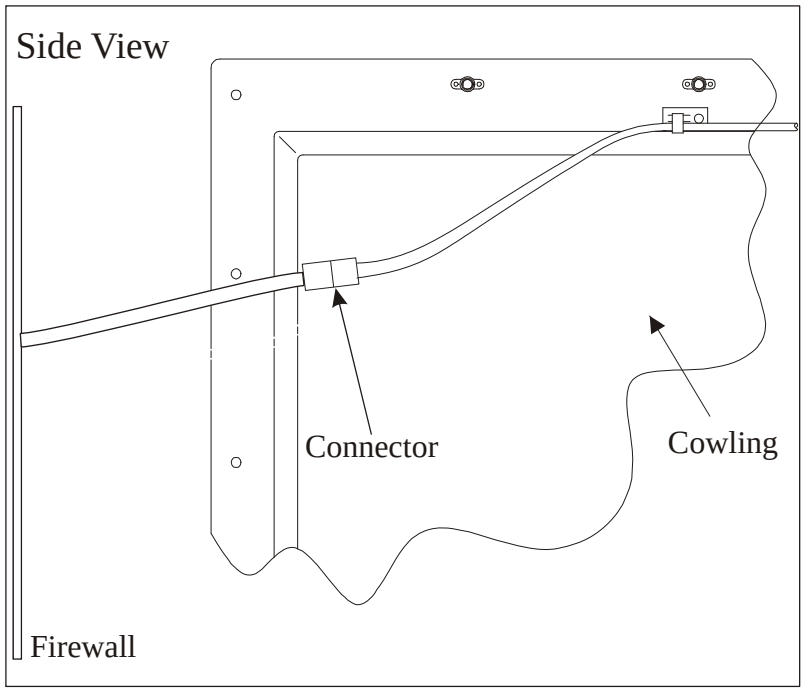

Figure 2, Sheet 2 ***Landing Light (LED) Disconnection Plug***

71-20-00 ENGINE MOUNT

Description

The engine is mounted on the airframe via the engine mount. The engine mount is constructed of welded steel tubes and is bolted to the firewall at 4 attachment points. The tubes of the engine mount structure are provided with an internal anti corrosion treatment. The engine mount itself carries the oil cooler and is used as a support for various hoses of the oil system as well as electrical wiring.

The engine is nested into the engine mount on a system of rubber shock mounts, each of which comprises two rubber elements and one tubular spacer (ref. figure 2). The shock mounts reduce the transmission of engine vibrations to the airframe.

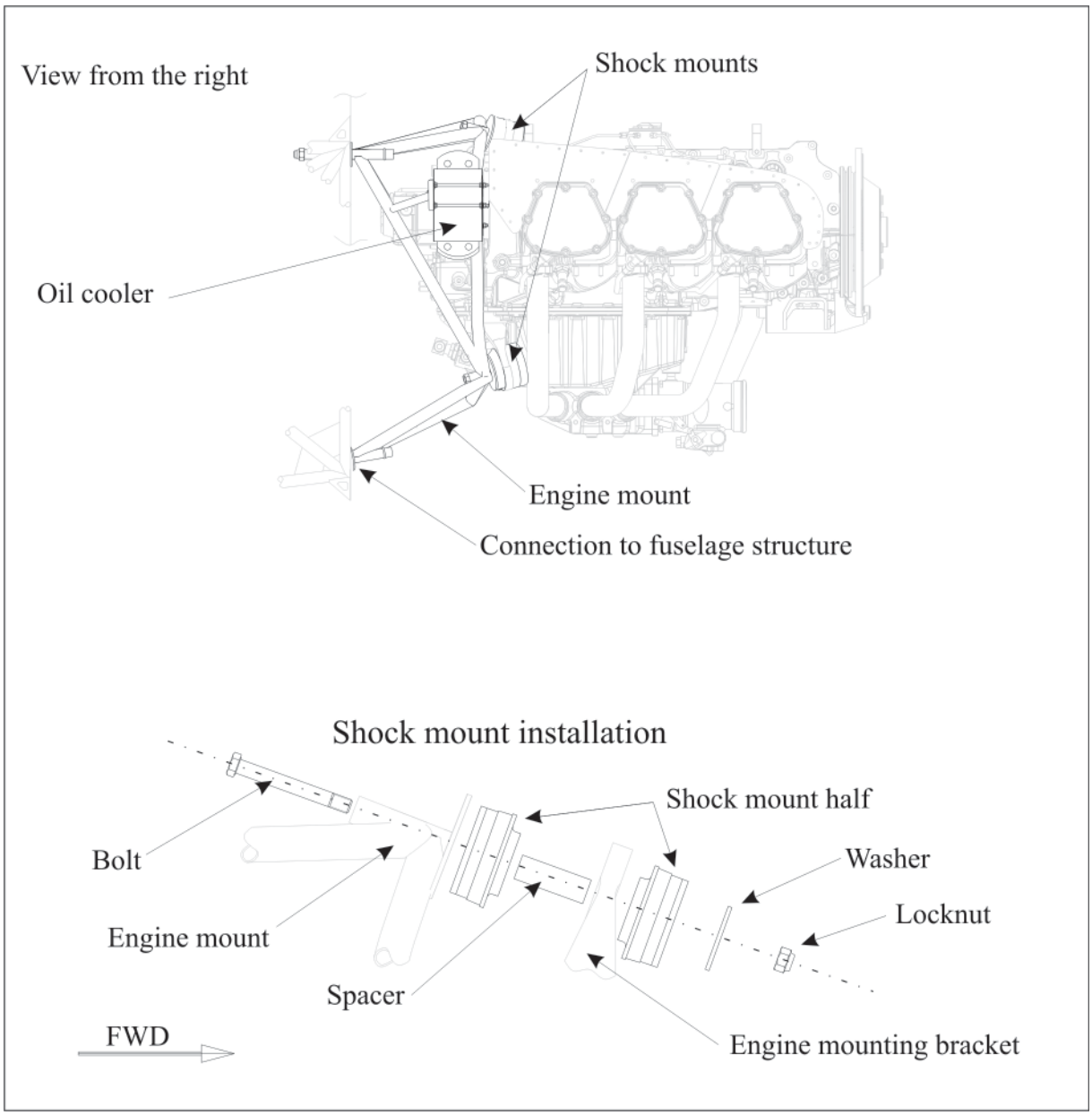

Figure 3 ***Engine Mount & Shock Mount Installation***

Removal

This paragraph describes the removal of the engine mount from the engine.

1 Disconnect oil cooler assembly from its supports at the engine mount by removing the connection bolts and nuts, remove baffles if necessary.

2 Unscrew locknuts of the mounting bolts (refer to figure 3) at the shock mounts.

3 Separate engine including oil cooler from engine mount. If necessary, push bolts outwards for removal.

Installation

Install in reverse sequence of removal

Torque locknuts of connection bolts to engine shock mounts with 55 Nm (40.5 ft. lbs.).

71-20-01 Shock Mounts

Description

The shock mounts serve as dampers to reduce the transmission of vibrations induced by the engine to the airframe.

The shock mounts consist of bonded rubber material with a metal spacer at the center.

Each of the 4 shock mounts consists of two rubber halfs and one tubular spacer (ref. figure 3) fixed by a single bolt.

Removal

NOTICE

Replace the extracted shock mount *before* proceeding with the removal of the next.

1 Support engine at its designated lifting lugs (ref. Lycoming Maintenance Manual).

2 Unscrew locknut of the mounting bolt at *one* shock mount (ref. figure 3).

3 Push bolt backwards to remove it.

4 Remove forward half of the shock mount.

5 Remove tubular spacer.

6 Extract aft half of the shock mount. If necessary, lower respectively lift the engine a little to get the needed clearance for removal of the aft shock mount half.

Installation

Install in reverse sequence of removal

Torque locknuts of connection bolts with 55 Nm (40.5 ft. lbs.).

71-60-00 AIR BAFFLES

Description

Refer to figure 4. Air baffles are screwed to the engine to achieve optimum engine cooling. These baffles are multi section items designed for separate removal of each section.

They are manufactured of plated aluminium sheets. The interface to the engine cowling is sealed by rubber strips, which are riveted to the outer edge of the baffles. Furthermore the forward LH baffle has a circular cutout, serving as a cooling air inlet that is connected with the exhaust's heat exchanger air intake via an air ducting.

Single oil cooler system:

The aft RH baffle has a rectangular cutout to provide airflow to the oil cooler.

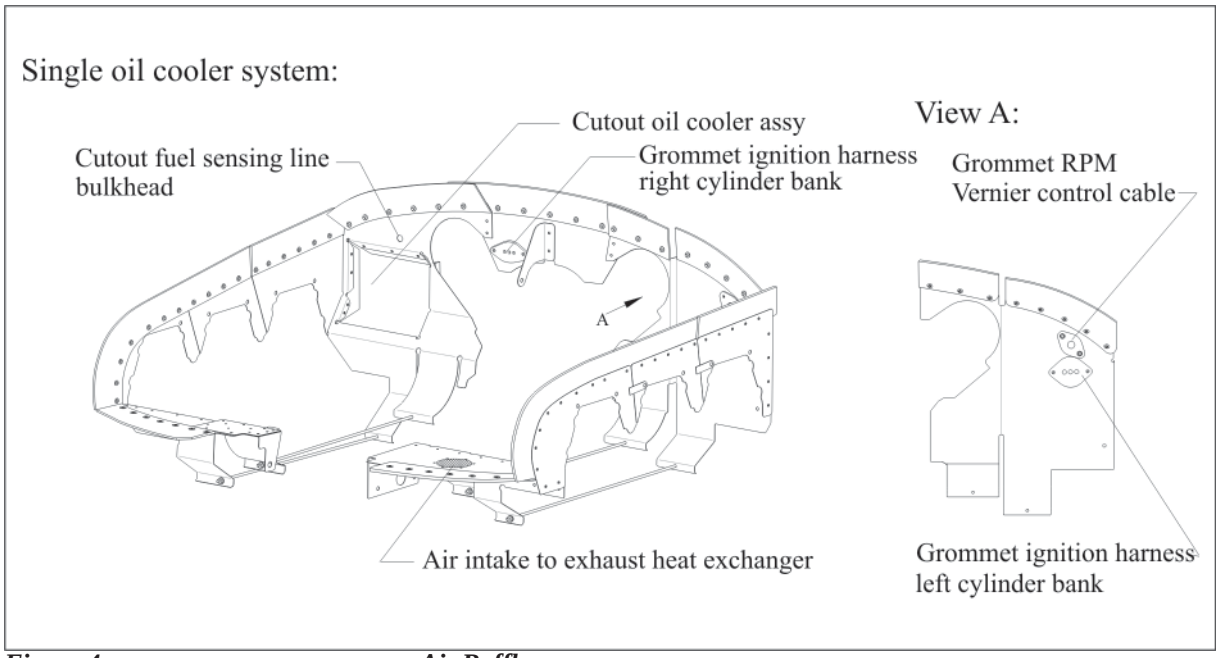

Figure 4 ***Air Baffles***

Removal

Refer to figure 4.

1 Disconnect bowden cable of RPM-control from engine (refer to Chapter 61).

2 Disconnect fuel pressure sensing line at bulkhead of aft RH baffle.

3 Disconnect ignition harness.

4 Disconnect air ducting to exhaust heat exchanger at air intake of forward LH baffle.

5 Unscrew grommets for ignition harness and RPM bowden cable from their cutouts and pull out ignition harness and RPM bowden cable.

6 Unscrew baffle plates.

Installation

Install in reverse sequence of removal.

N O T E

Minor cracks in the plating can be stopped by drilling a hole at the end of the crack. Serious damage requires replacement of the baffle concerned.

Chapter 72

Engine

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72-00-00 GENERAL

This chapter describes the engine installed in the EXTRA 300LT aircraft, together with its fitted assemblies. Operation and maintenance work of the engine requires consultation of the Lycoming Operator`s Manual (refer to chapter 1).

Proper control, operation and troubleshooting of the engine is also described there.

Troubleshooting

1 Start by discussing the problem with the pilot and the facility management people to assist you in narrowing down the causes.

2 Review maintenance logs and use appropriate diagnostic tools to eliminate simple and inexpensive solutions before proceeding to more complicated and expensive remedies. Often a quick visual inspection of the engine will provide evidence of obvious problems, such as intake and exhaust leaks, physical damage to ignition harness, blocked breathers, gas and oil stains, etc.

3 Consult the following Troubleshooting Chart as a diagnostic guide to the most common and recurring problems, causes, and solutions. The chart provides this information in a nonspecific format. Proceed from the simplest possible cause to the most complex.

Trouble	*Possible Cause*	*Remedy*
Engine will not start or is hard to start	Defective battery	Replace with a charged battery per Ch. 24.
Rough idle	Cracked engine mounts or defective shock mounts	Replace per Ch. 71.
	Engine shock mount improperly installed	Install per Ch. 71.
Poor idle cutoff	Improper rigging of mixture control linkage	Adjust per Ch. 73.
Engine will not turn static rpm or will not develop rated rpm.	Restriction in induction air system	Inspect and remove restriction.
	Propeller is out of adjustment (not reaching specified low pitch).	Adjust per Ch. 61.
	Propeller governor is not adjusted properly.	Adjust per MT-Propeller Document E-1048.
	Muffler's internal baffles are broken and blocking the exhaust outlet. Note: Broken baffles are free to move around in the muffler. The engine may turn static rpm's intermittently.	Strike muffler with a rubber mallet or soft object and listen for a rattle. A rattle indicates loose baffles. Remove muffler for thorough inspection. Replace as necessary per Ch. 78.
	Throttle lever not properly adjusted.	Adjust per Ch. 73.
Engine surges	Faulty governor	Inspect and replace as necessary per MT-Propeller Document E-1048.
	Breather line plugged	Inspect and remove any obstructions from breather.
High oil temperature	Insufficient cooling air	Verify the integrity of the air inlet and outlet ducting to the oil cooler. Repair or replace parts per Ch. 71.
	Oil cooler lines are plugged or partially plugged.	Remove oil cooler lines and flush out per Ch. 79.

72-10-00 ENGINE

The engine installed is a TEXTRON Lycoming 6-cylinder direct drive, horizontally opposed, air cooled engine.

Engine type:

AEIO-580-B1A 315 HP @ 2700 RPM

Figure 1 shows the Lycoming engine of the EXTRA 300LT:

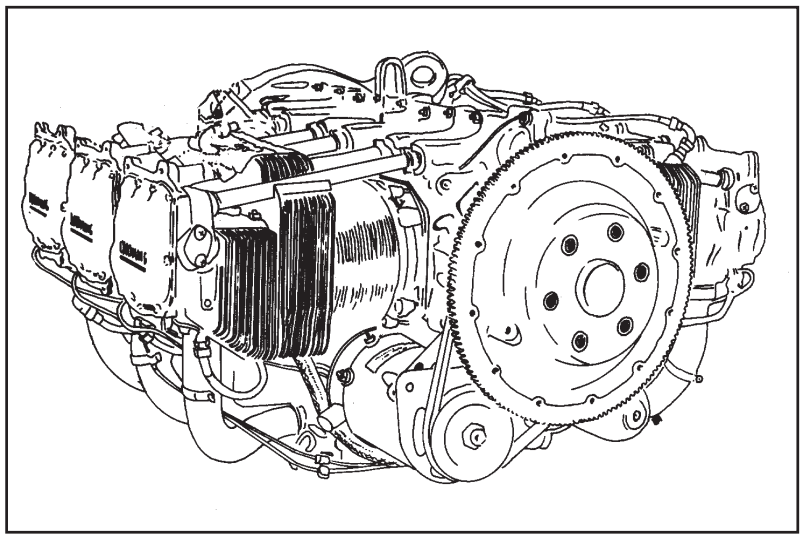


Figure 1 Lycoming Engine

The induction system is equipped with a BENDIX RSA-10 fuel injection system which is attitude independent.

The fuel is injected into the intake ports of each cylinder. The mixture control is proportional to the intake air flow. A manual mixture adjustment as an overriding system is provided. The power setting is done manually by means of a butterfly valve in the air induction tube.

The engine is air cooled. Baffles are provided to build up pressure and to force the air through the cylinder fins. The cooling air flow is dependent on engine speed and dynamic air pressure.

The engine is lubricated by means of an engine driven oil pump. The system uses an oil sump as reservoir. For acrobatic maneuvers, lubrication is assured via an inverted flight oil system (refer to CHRISTEN 801 Inverted Oil Sytem and chapter 79).

The oil temperature is limited by installation of an oil cooler.

The ignition is a magneto type with 2 independent systems. Additionally a Slick Start System is installed with the AEIO-580-B1A engine.

NOTE

For more information about the engine refer to Lycoming Operator´s Manual.

IMPORTANT

If replacement of the engine control cables is necessary, renew the sealing of the bushing grooves and gaps at the engine side of the firewall. Use PRC-812 (Products Research & Chemical Corporation, USA) firewall sealant. Cover the control cables with AEROQUIP AE102-6 Fire sleeves inside the engine department.

Removal

NOTE

In many cases it is favourable to remove the complete engine incl. engine mount and all components of the inverted oil system from the firewall; Then remove the engine mount, the exhaust and engine accessories as necessary.

After disconnection of lines and fittings, protect related inlet by appropriate plug or cap. Cut self-clinching plastic straps used for routing of lines and cables as appropriate.

This procedure is described in the following:

WARNING

Before commencing any work, disconnect the battery and short-circuit the magnetos with locking wire or disconnect all ignition cables from the spark plugs.

1 Remove the upper and lower part of the cowling (ref. chapter 71).

2 Support the engine at its two lifting lugs (ref. Lycoming Maintenance Instructions).

3 Remove the canopy and main fuselage cover (ref. chapter 53).

4 Remove the LH & RH cuff from bottom fuselage cover (ref. chapter 53).

5 Remove the propeller spinner and propeller in accordance with MT-Propeller Manual E-124, latest revision.

6 Close fuel selector valve.

7 Disconnect the fuel supply hose at inlet of mechanical (engine driven) pump.

8 Disconnect the drain tubing from mechanical fuel pump housing.

9 Disconnect the oil valve unit of the inverted oil system from the firewall.

10 Disconnect the crankcase vent hose at the fitting on top of the oil separator of the inverted oil system (worm drive hose clamp connection).

11 Detach the rod end of Bowden cables for throttle and mixture control at the control levers of the fuel control servo. Disconnect Bowden cable attachment to the engine.

12 Detach the rod end of Bowden cables for RPM control at the control levers of the propeller governor. Disconnect Bowden cable attachment to the engine and related fairlead at the LH aft engine cooling baffle.

13 Disconnect the GND cable from the engine accessory housing.

14 Remove the oil temperature sensor from engine oil screen housing connection.

15 Disconnect the exhaust gas and cylinder head tem-perature sensors.

16 Disconnect the short-circuit, P-leads and GND wire from engine magnetos.

17 Disconnect the slick start booster box from the engine magnetos.

18 Disconnect the wire from retard connection of LH magneto.

19 Disconnect the wiring from fuel flow transducer.

20 Disconnect the wiring of the alternator and starter at their electrical connection. Detach the fixation of the wirings

(which are covered with a firesleeve) to the oil sump of the engine.

21 Disconnect the smoke oil supply hose at the smoke oil injector nozzle on the exhaust end pipe (if a smoke system is installed).

22 Disconnect the wet sense lines at the firewall connection for engine manifold pressure, fuel pressure and oil pressure.

23 Unbolt the complete engine with engine mount from the airframe at the four attachments points.

24 Lift the complete engine from the airframe.

25 Refer to 71-20-00 for removal of the engine mount from the engine.

Installation

1 Install in reverse sequence. Refer to Chapter 20-10-04 for torque values specified for the mount to the engine and mount to the airframe connection.

2 Apply firewall sealant PR-812 (or equivalent) to the bolt connection to the firewall/airframe. Follow the applicable product instructions (mixing, application and curing instructions).

Chapter 73

Engine Fuel and Control

Table of Contents

73-20-00 CONTROLLING

73-20-10 Throttle

Refer to Figure 1. The throttle is controlled by means of the throttle control levers located on the left side of the cockpit. These levers are interconnected by the throttle control linkage. The throttle control levers transfer their movements to the throttle by means of the throttle control cable. This cable is routed on the left side of the fuselage, penetrates the firewall and is then routed centrally below the exhaust muffler to the throttle. In the engine compartment this cable is covered with a 690 mm fire sleeve. The cable is attached to the fuselage using clamp blocks at its ends, cable ties in the cockpit area, and a cushioned clamp at the exhaust muffler. Rod ends at both terminals of the control cable serve as a means for rigging. The fire wall penetration is sealed with PRC-812 (Products Research & Chemical Corp., USA) firewall sealant and covered with clamp sheets.

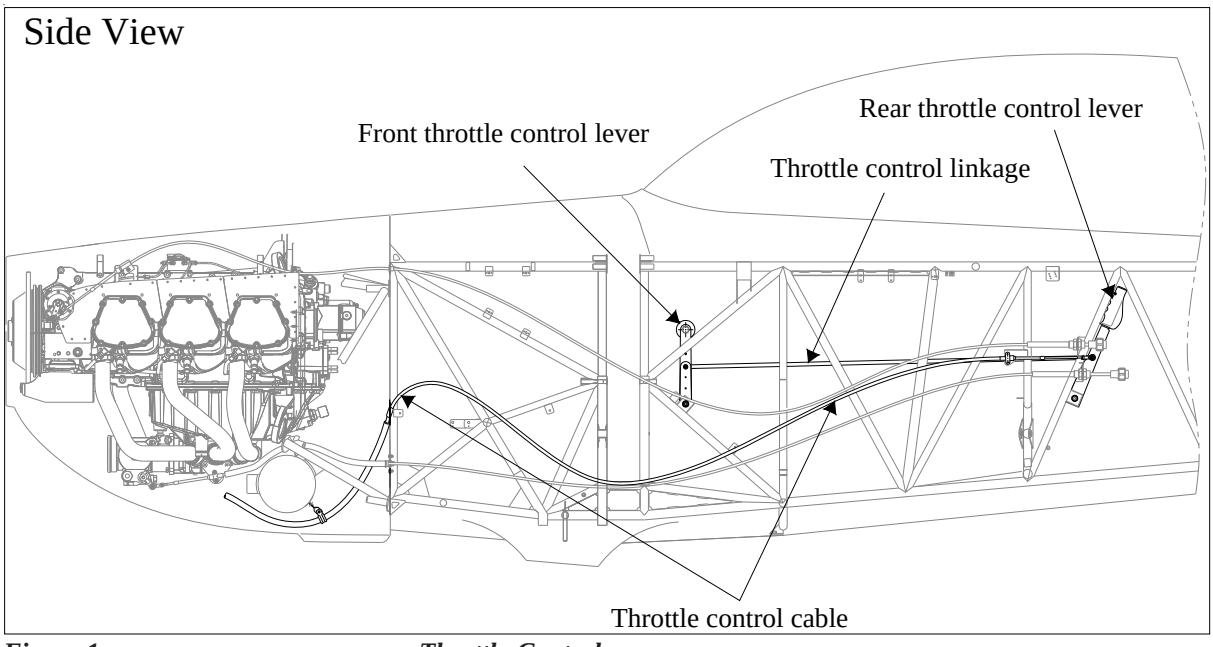


Figure 1 ***Throttle Control***

73-20-11 Throttle Control Cable

Refer to Chapter 20 for general information about handling of control cables.

Removal

1 Ensure master switch is off.

2 Remove engine cowling per Chapter 71.

3 Remove main fuselage cover per Chapter 53.

4 Remove cotter pin, castle nut, washers and bolt from the rod end (2, Figure 4) to throttle actuator (1) attachment.

5 Loosen counter nut and remove the rod end from the throttle control cable.

6 Remove rod end counter nut and throttle control cable protective swivel and wiper seal.

7 Remove clamp block (3) attachment bolt(s).

8 Remove clamp block from the throttle control cable.

9 Remove cushioned clamp (4).

10 Cut safety wires and remove fire sleeve from the throttle control cable.

11 Remove 4 bolts and firewall sealant of the clamp sheets (Figure 2) positioned at the firewall break through.

12 Mark throttle control cable routing and positions of the cable ties and remove the cable ties in the cabin area.

13 Remove cotter pin, castle nut, washers and bolt and remove the rod end (6, Figure 3) from the throttle control lever (5).

14 Loosen counter nut and remove the rod end from the throttle control cable.

15 Remove rod end counter nut and throttle control cable protective swivel and wiper seal.

16 Remove clamp block (4) attachment bolt(s).

17 Remove clamp block from the throttle control cable (8).

18 Pull complete throttle control cable aft to remove from aircraft. Secure clamp sheets.

Installation

Refer to Figure 3 and Figure 4.

1 Install the throttle control cable according to the prior marked routing. Ensure distance between clamp sheet at the firewall and clamp block is 705 mm (refer to Figure 2).

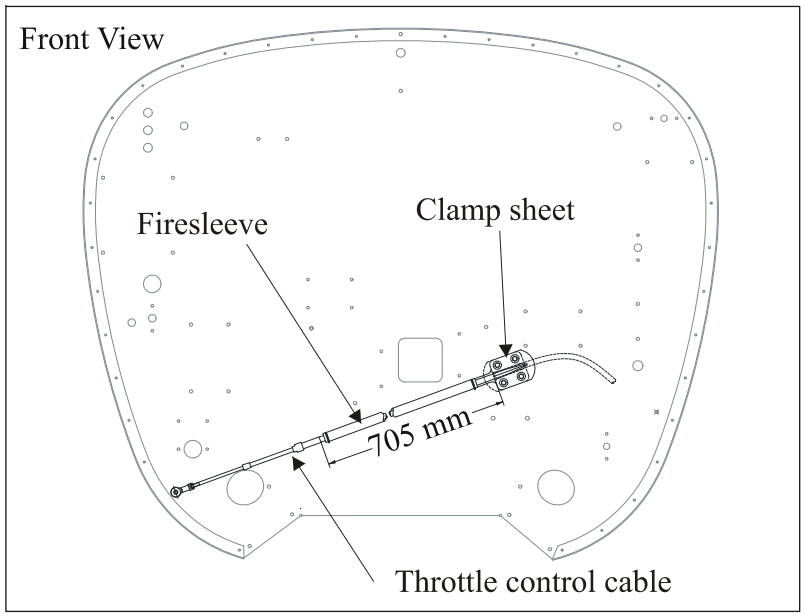


Figure 2 Clamp Sheet to Clamp Block Distance

2 Renew the sealing of the firewall breakthrough at the engine side of the firewall. Use PR-812 (Products Research & Chemical Corp., USA) firewall sealant as outlined in Chapter 20-10-10.

3 Let the sealant slightly cure before thightening the clamp sheet attachment bolts. This will strengthen the clamping.

4 Install the clamp sheets.

5 Install the cable ties in the cockpit area on positions as marked before.

6 Install the 690 mm firesleeve to the throttle control cable and secure with safety wire at both ends (refer to Figure 2).

7 Install the cushioned clamp (4, Figure 4).

8 Install the throttle control cable to the respective bracket by installing the clamp block (3, Figure 4) to the conduit fitting of the control cable.

9 Push the throttle actuator (1, Figure 4) to the full idle travel stop position.

NOTE

It is essential that the rod end is screwed onto the threaded terminal until the inspection hole of the rod end is completely filled with thread (minimum 8 turns).

10 Screw the rod end onto the threaded terminal to match the full idle travel stop throttle actuator position. Tighten the counternut.

11 Install rod end to throttle actuator with bolt, washers, castle nut and cotter pin (2, Figure 4). Tighten the castle nut slightly. Ensure movability of actuator.

NOTE

It is essential that the rod end is screwed onto the threaded terminal until the inspection hole of the rod end is completely filled with thread (minimum 8 turns).

12 Screw the rod end onto the threaded terminal on the throttle control lever side of the throttle control cable.

13 Tighten the counternut to prevent rod end from loosening.

14 Install the rod end to the throttle control lever with bolt, washers, castle nut and cotter pin (3, Figure 3). Tighten the castle nut slightly.

15 Ensure movability of throttle control lever.

16 Perform Throttle Control Lever Rigging (refer to Chapter 73-20-12).

73-20-12 Rear Throttle Control Lever

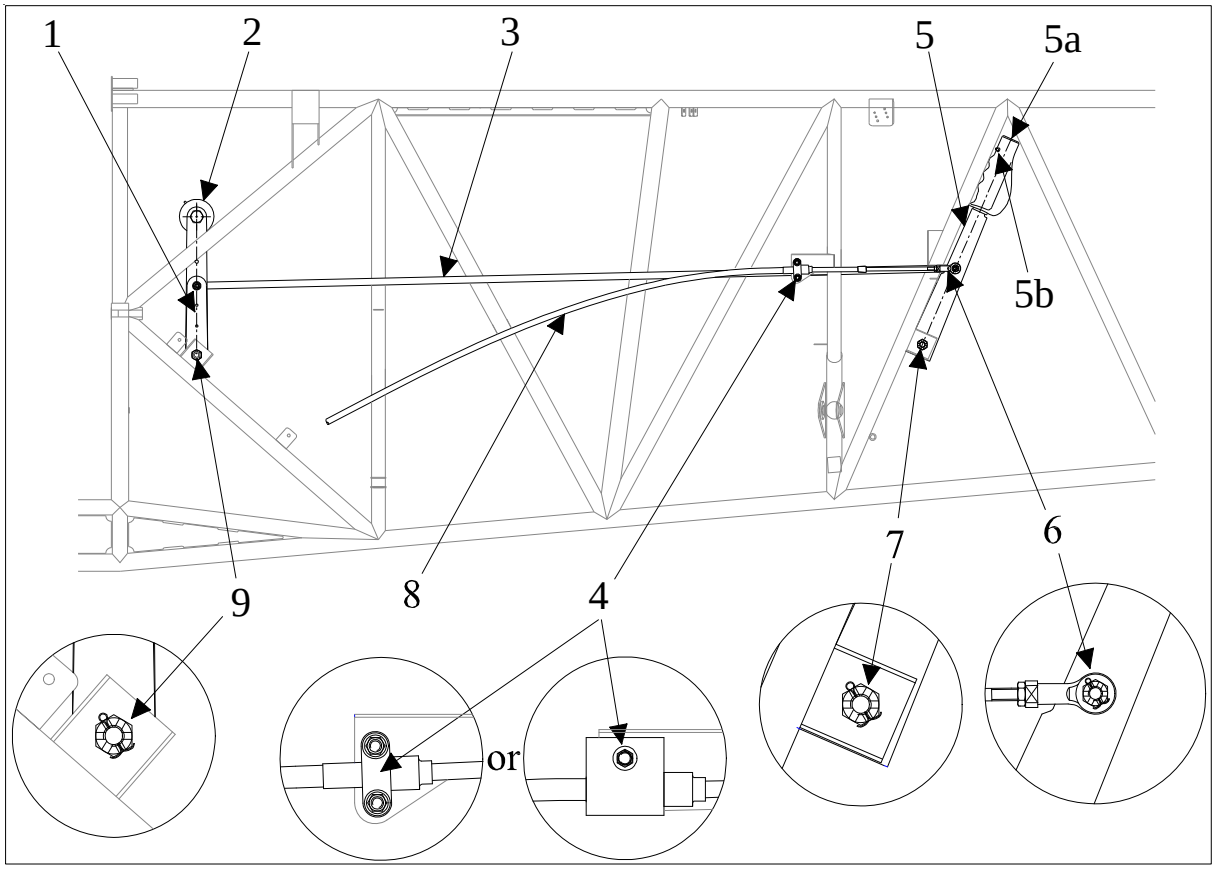


Figure 3 *Throttle Control Levers*

Removal

1 Ensure master switch is off.

2 Remove engine cowling per chapter 71.

3 Remove main fuselage cover per chapter 53.

4 Remove cotter pin, castle nut, washers and bolt (6, figure 3) and the throttle control linkage (3) from the throttle control lever (5).

5 Pull the smoke switch (5a, if installed) out of the throttle lever handle and disconnect switch wiring.

6 Remove intercom switch (5b) attachment nut. Remove self-clinching plastic tiedown straps of related wiring. Pull the intercom switch out of the throttle control lever grip.

7 Disconnect throttle control lever attachment by removing cotter pin, castle nut, washers and bolt (7). Remove throttle control lever.

Installation

Install in reverse sequence of removal observing the following items:

1 Thread the intercom switch (5b, Figure 3) and the smoke switch (5a) wiring through the throttle control lever (5) before mounting the lever to the attachment bracket.

2 Tighten the throttle control lever castle nut (7) slightly. Ensure movability of control levers (1 & 5).

Rigging

1 Move the rear throttle control lever (5, Figure 3) in idle position parallel to the adjoining fuselage structure steel tube (as shown in figure 3).

2 Check throttle lever (1, Figure 4) of the fuel injector servo reached travel stop for closed throttle.

3 Check usable stroke of control cable. The over-travel of the control cable in retracted and extended position shall be 8 to 13 mm [5/16"-1/2"]. Ref. to figure 2 of Chap. 20-10-09.

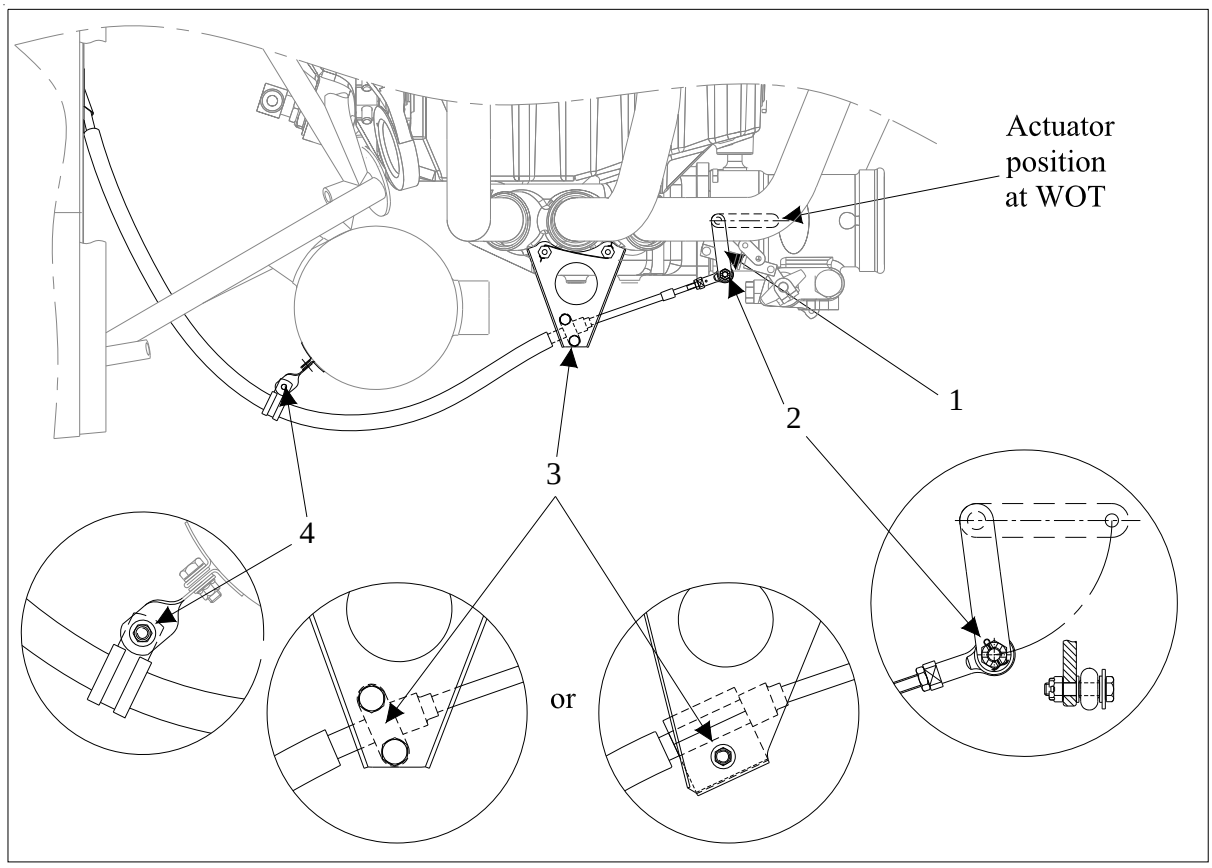


Figure 4 ***Throttle Control Cable Rigging***

4 If necessary adjust rod ends (2, Figure 4; 6, Figure 3) to ensure correct over-travel by the following steps:

a Remove cotter pin, castle nut, washers and bolt of the rod end from throttle lever (1, Figure 4) and rear throttle control lever (6, Figure 3).

b Loosen the counter nut at rod ends and adjust travel positions and over travel by turning related rod end(s). Ensure thread is visible in the inspection hole when fastening. Apply inspection lacquer on the counter nut.

c Reconnect the rod ends.

73-20-13 Front Throttle Control Lever

Removal/Installation

1 Ensure master switch is off.

2 Remove engine cowling per Chapter 71.

3 Remove main fuselage cover per Chapter 53.

4 Disconnect the throttle control linkage (3, Figure 3) from the front throttle control lever (1).

5 Disconnect the throttle control handle (2) from the front throttle control lever (1).

6 Disconnect throttle control lever attachment by removing cotter pin, castle nut, washers and bolt (9) and remove throttle control lever.

7 Install in reverse sequence of removal. Tighten the throttle control lever castle nut (9) slightly. Ensure movability of levers.

73-20-20 Mixture

Refer to Figure 5. The mixture of the fuel injector servo is controlled by means of the vernier mixture control cable located on the left side of the cockpit (red control knob). This cable is routed on the left side of the fuselage, penetrates the firewall and is then routed to the mixture control lever. In the engine compartment this cable is covered with a 540 mm firesleeve. The cable is attached to the fuselage using a clamp block at its front end and cable ties. The mixture vernier control unit (1) is mounted to a fuselage bracket. The fire wall penetration is sealed with PR-812 (Products Research & Chemical Corp., USA) firewall sealant and covered with a clamp sheet (2).

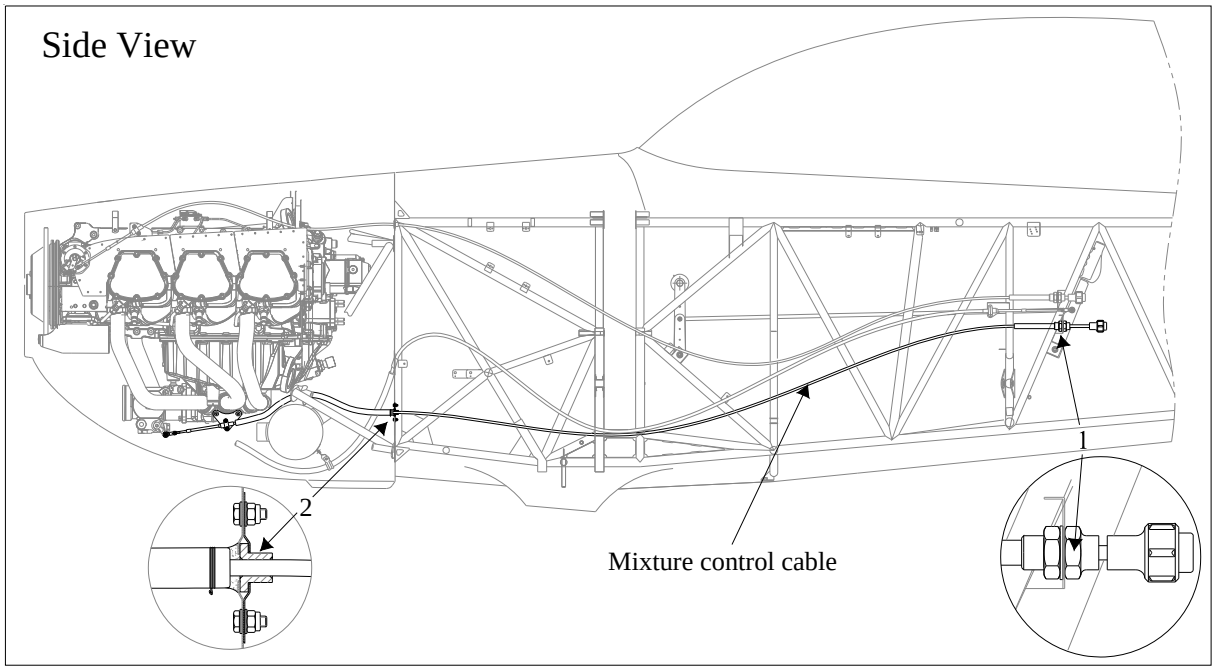


Figure 5 ***Mixture Control***

73-20-21 Mixture Vernier Control Cable

Refer to chapter 20 for general information about handling of control cables.

Removal

1 Ensure master switch is off.

2 Remove engine cowling per Chapter 71.

3 Remove main and bottom fuselage cover per Chapter 53.

4 Mark positions of the firewall forward cable ties and remove these cable ties.

5 Remove cotter pin, castle nut, washers and bolt from the rod end (2, Figure 8) to mixer control lever attachment (3).

6 Loosen counter nut and remove the rod end (2) from the mixture control cable.

7 Remove rod end counter nut and mixture vernier control cable protective swivel and wiper seal.

8 Remove clamp block (1) attachment bolt.

9 Remove clamp block (1) from the vernier mixture control cable.

10 Cut safety wires and remove fire sleeve from vernier mixture control cable.

11 Remove 2 bolts of the clamp sheet attachment positioned at the firewall break through (2, Figure 5). Remove firewall sealing and disconnect clamp sheet and contained plastic guidance from the rear side of the firewall.

12 Mark mixture vernier control cable routing and positions of the cable ties and remove the cable ties in the cabin area.

13 Remove attachment nut and washer of the mixture control unit (1, Figure 5).

14 To remove mixture vernier control unit from its bracket, pull the unit slightly aft (about 15cm [0.5ft]) and then to the LH outside direction.

15 Pull complete mixture vernier control cable aft to remove from aircraft. Secure clamp sheet.

Installation

Refer to Figure 3 and Figure 4.

1 Install the mixture control unit.

2 Move mixture control knob to the foremost position.

3 Thread the rear clamp sheet and plastic guidance for the firewall break through on the mixture control cable.

4 Install the mixture vernier control cable according to the previously marked routing. Ensure distance between firewall and clamp block is 555 mm (refer to Figure 6).

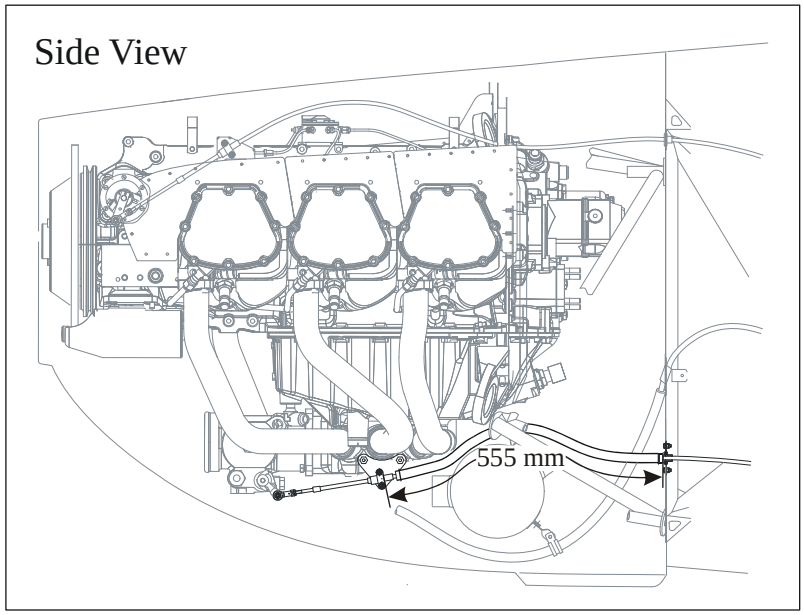


Figure 6 Clamp Sheet to Clamp Block Distance

5 Renew the sealing of the firewall breakthrough at the engine side of the firewall. Use PR-812 (Products Research & Chemical Corp., USA) firewall sealant as outlined in Chapter 20-10-10.

6 Let the sealant slightly cure before thightening the clamp sheet attachment bolts. This will strengthen the clamping.

7 Install the clamp sheet.

8 Install the cable ties in the cockpit area on positions as marked before.

9 Install the 540 mm firesleeve to the mixture vernier control cable and secure with safety wire at both ends.

10 Install the mixture vernier control cable to the respective bracket by installing the clamp block (1, Figure 8) to the conduit fitting of the control cable.

11 Push the mixture actuator (3, Figure 8) to the full forward position.

NOTE

It is essential that the rod end is screwed onto the threaded terminal until the inspection hole of the rod end is completely filled with thread (minimum 8 turns).

12 Screw the rod end onto the threaded terminal to match the full forward travel stop mixture actuator position. Tighten the counternut.

13 Install rod end to mixture actuator with bolt, washers, castle nut and cotter pin. Tighten the castle nut slightly. Ensure movability of actuator.

14 Install the firewall forward cable ties on positions as marked before.

15 Perform Mixture Vernier Control Cable Rigging.

Rigging

1 Move mixture control knob to the foremost position.

2 Check that the travel stop at the mixture control lever is reached, and the over-travel of 5mm [3/16"] (tolerance +/-1 mm [1/32"]) is ensured at the mixture control knob (see Figure 7).

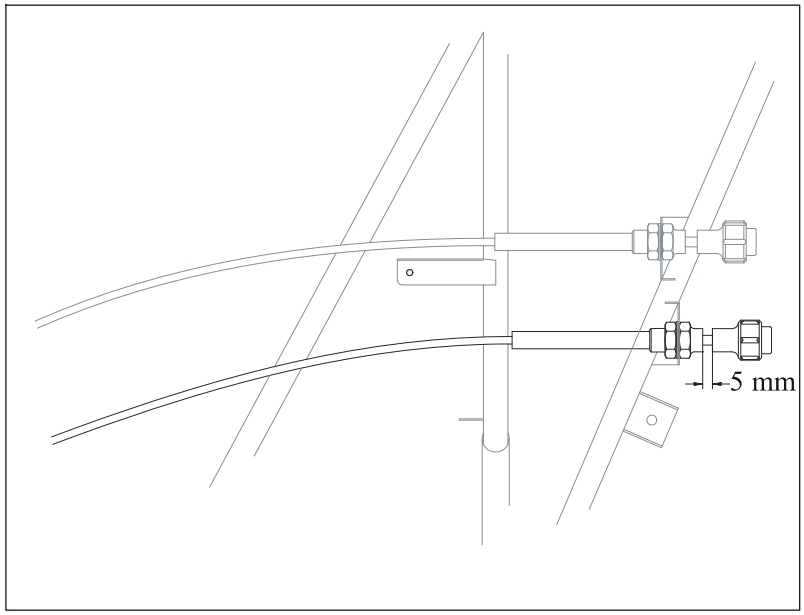


Figure 7 Over-travel at Mixture Control Unit,

3 Check full travel.

4 If necessary adjust rod end (2, Figure 8) by the following steps:

a Remove cotter pin, castle nut, washers and bolt from the rod end (2) to mixer control actuator (3) attachment.

b Loosen the counter nut and adjust rod end (2) by turning. Ensure thread is visible in the inspection hole when fastening. Apply inspection lacquer on the counter nut.

c Reconnect the rod end (2) to the mixture control actuator (3).

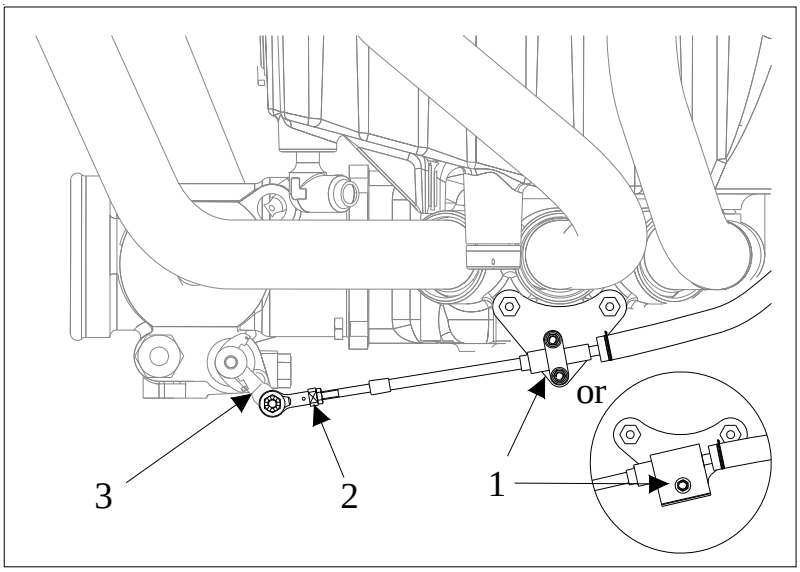


Figure 8 ***Mixture Vernier Control Cable Rigging***

73-30-00 INDICATING

Fuel pressure is sensed on the EXTRA 300LT engine and is indicated to the pilot in command.

Refer to chapter 77-40 if an integrated engine instrument system is installed.

Trouble Shooting

Trouble	*Possible Cause*	*Remedy*
No fuel pressure indication	Gauge defective	Replace gauge
Fuel pressure low	Orifice in engine fuel pressure fitting defective	Clean fitting
	Sense line leakage	Replace sense line

73-30-10 Fuel Pressure

The fuel pressure gauge is located in the rear instrument panel. The instrument takes fuel pressure from the sense line (refer to Figure 9).

Because the fuel flow to the engine cylinders is restricted, there is a direct relation between fuel pressure and fuel flow. This relation is shown on the Lycoming curve N° 13011 "Fuel Flow vs. Nozzle Pressure". So the fuel pressure gauge indicates fuel pressure but on a scale which is converted to fuel flow values (generally the fuel flow value is more useful for the pilot). The red line however shows a pressure value.

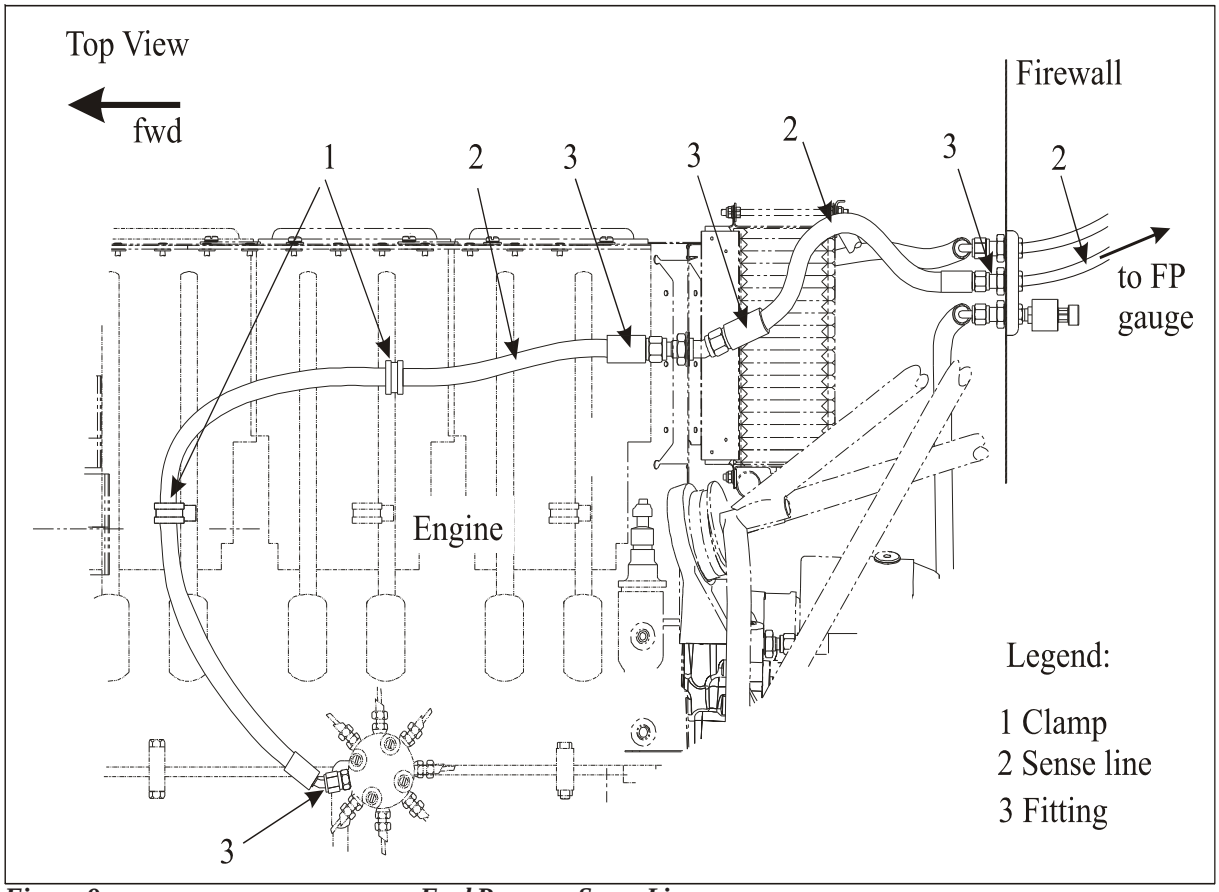


Figure 9 ***Fuel Pressure Sense Line***

73-30-11 Fuel Pressure Gauge

Removal/Installation

Refer to Chapter 31.

73-30-12 Sense Line

Removal/Installation

1 Remove cowling per Chapter 71.

2 Remove clamps.

NOTICE

Pick up spilling fluid, when disconnecting a sense line.

3 Disconnect the sense line from the fitting.

4 Remove the sense line.

5 Install in reverse sequence of removal. Torque sense line fittings with 15.3 – 16.9Nm (135-150lbs-inch) and apply inspection lacquer.

73-30-15 Fitting

Removal/Installation

1 Remove cowling per Chapter 71:

2 Disconnect the sense line as per Chapter 73-30-12.

3 Remove the fitting.

4 Install in reverse sequence of removal.

Chapter 77

Engine Indicating

Table of Contents

77-00-00 GENERAL

See also sub-Chapter 77-40 when MVP-50P is installed.

The following engine instruments are installed in the EXTRA 300LT:

1 tachometer

2 manifold pressure gauge

3 cylinder head temperature gauge

4 exhaust gas temperature gauge

Generally engine data is routed electrically from the engine sensors (refer to Figure 1) to the instruments. However, the manifold pressure line is routed through the firewall and directly fitted to the instrument. The engine data are indicated to the pilot in command.

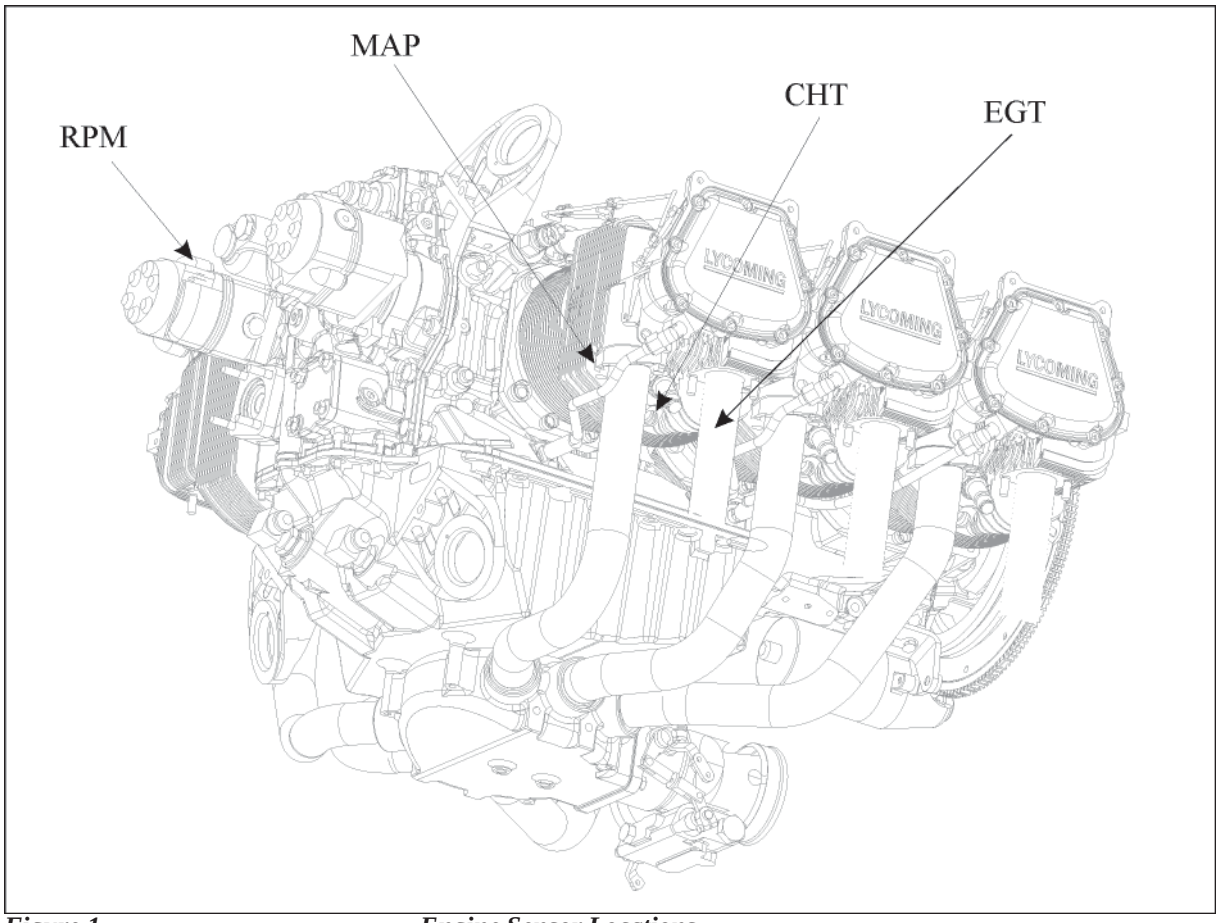


Figure 1 ***Engine Sensor Locations***

Trouble Shooting

Trouble	*Possible Cause*	*Remedy*
No engine speed indication	Tachometer defective	Replace tachometer
No MAP indication	Gauge defective	Replace gauge
No MAP variation with power setting	Sense line leakage	Replace sense line
No CHT indication	Sensor or cable defective	Replace sensor Repair cable defect
	CHT gauge defective	Replace gauge
No or incorrect EGT indication	Sensor defective Cable defective Gauge defective	Replace sensor with cable Replace cable with sensor Replace gauge

77-10-00 POWER

77-10-10 RPM

Engine speed data in the EXTRA 300LT is obtained from the ignition switch. The tachometer is located in the rear instrument panel and requires electrical supply bus voltage.

77-10-11 Tachometer

Removal/Installation

Refer to Chapter 31.

77-10-20 Manifold Pressure (MAP)

The manifold pressure sense line is connected to the air inlet of cylinder no. 5 (rear right-hand), refer to Figure 1. It is a wet line consisting of two parts divided by the firewall.

To protect the instrument from fuel vapor a sintered bronze filter is placed in the hose connection to the MAP gauge as outlined in Figure 2.

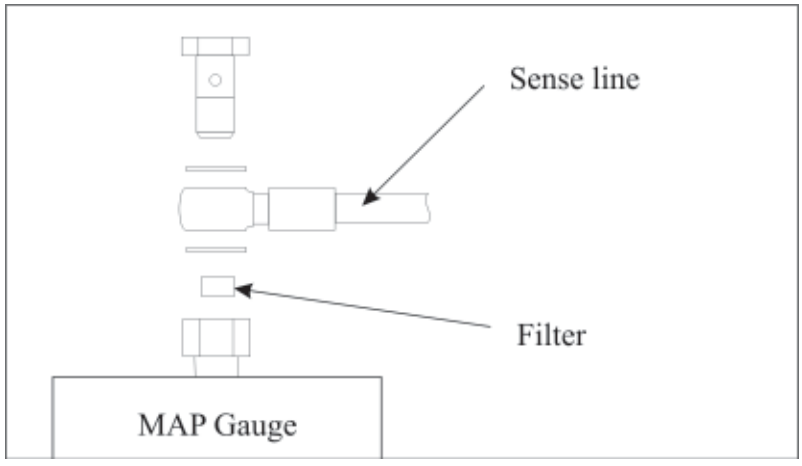


Figure 2 Sintered Bronze Filter Location

77-10-21 Manifold Pressure Gauge

Removal/Installation

Refer to Chapter 31.

77-10-22 Sense Line Engine Compartment

Removal/Installation

1 Remove cowling per Chapter 71.

2 Remove clamps if applicable.

3 Disconnect the sense line from the fittings.

4 Remove the sense line.

5 Install in reverse sequence of removal. Torque sense line fittings with 15.3 to 16.9Nm (135 to 150 inch lbs.) and apply inspection lacquer.

77-20-00 TEMPERATURE

77-20-10 Cylinder Head Temperature (CHT)

The cylinder head temperature gauge is located in the rear instrument panel. The sensor is located in the rear right-hand cylinder (No. 5).

77-20-11 Cylinder Head Temperature Gauge

Removal/Installation

Refer to Chapter 31.

77-20-12 CHT Sensor

The sensor is a bayonet type J thermocouple and is connected directly with the overbraided wiring. This wiring cannot be disconnected from the sensor and must not be shortened.

Removal/Installation

1 Remove cowling per Chapter 71.

2 Disconnect overbraided wires from the instrument.

3 Note correct wiring.

4 Remove sensor with mounting fitting and complete overbraided wires from engine.

5 Remove mounting fitting if reasonable.

6 Install in reverse sequence of removal. Make sure wires are connected correctly.

77-20-20 Exhaust Gas Temperature (EGT)

The exhaust gas temperature gauge is located in the rear instrument panel. The temperature sensor is located on the rear exhaust pipe on the right-hand side (refer to Figure 1). The sensor is mounted with a clamp. When leaning the engine using EGT gauge, follow the procedures of the engine manufacturer (Lycoming Service Instruction No. 1094).

77-20-21 Exhaust Gas Temperature Gauge

Removal/Installation

Refer to Chapter 31.

77-20-22 EGT Sensor

The sensor is a type K thermocouple and is connected directly with the overbraided wiring. This wiring cannot be disconnected from the sensor and must not be shortened.

Removal

1 Remove cowling per Chapter 71.

2 Disconnect overbraided wires from instrument.

3 Note correct wiring.

4 Remove the worm drive hose clamp from the exhaust pipe and remove sensor with complete overbraided wires.

5 Install in reverse sequence of removal. Make sure wires are connected correctly.

77-40-00 INTEGRATED ENGINE INSTRUMENT SYSTEMS

77-41-00 Electronics International MVP-50P

The EXTRA 300 LT can be equipped with the MVP-50P Glass Panel Engine Monitor. The complete system as installed in the EXTRA 300LT consists of:

Item	Location
Main Engine Screen	Rear instrument panel
Electronic Data Converter	Mounting sheet
Resistive Level Fuel Module	Mounting sheet
Fuel Quantity Transducers*	Wing root ribs
Manifold Pressure Transducer	Mounting sheet
Oil Pressure Transducer	Firewall
Fuel Pressure Transducer	Firewall
Fuel Flow Transducer	Left side engine
OAT Probe	Bottom fuselage cover
Oil Temperature Sensor	Aft engine
EGT Probes	Exhaust pipes
CHT Probes	Cylinder heads
Related Wiring and Tubing	Cockpit/engine comp.

*) An additional fuel quantity transducer identical to the standard one is installed in the RH wing, when the MVP-50P is used.

N O T E

Apart from the different probes and transducers used with the MVP-50P the engine installation including the wet lines is the same as described in the standard configuration description.

Troubleshooting

Refer to MVP-50P Installation Manual (see Chapter 1) for detailed troubleshooting information.

Passwords

The Level #1 password (for maintenance) is 00200.

For system configurations requiring the Level #2 Password, contact Extra Flugzeugproduktions- & Vertriebs-GmbH.

Features

Refer to the MVP-50P documentation of Electronics International Inc. (see Chapter 1) for detailed information about features.

The following features are not available in the configuration installed in the EXTRA 300LT:

- External dimmer potentiometer
- External warning and caution light
- Voice alarm
- System Screen
- Weight and Balance (not applicable, do not use!)
- Checklists 1 - 3 (not applicable, do not use!)
- Gear warning and TAS Setup Screen
- Pressure Altitude Calibration Screen
- Flaps, Trim and Special Function Calibration Screen
- Calibrating Airspeed
- Gear Position and Unsafe Indicators
- Gear Warning

Instrument Panel Layout

Generally an alternate panel is used to carry the MVP-50P. For that reason the circuit breaker layout also changes as shown in Figure 3.

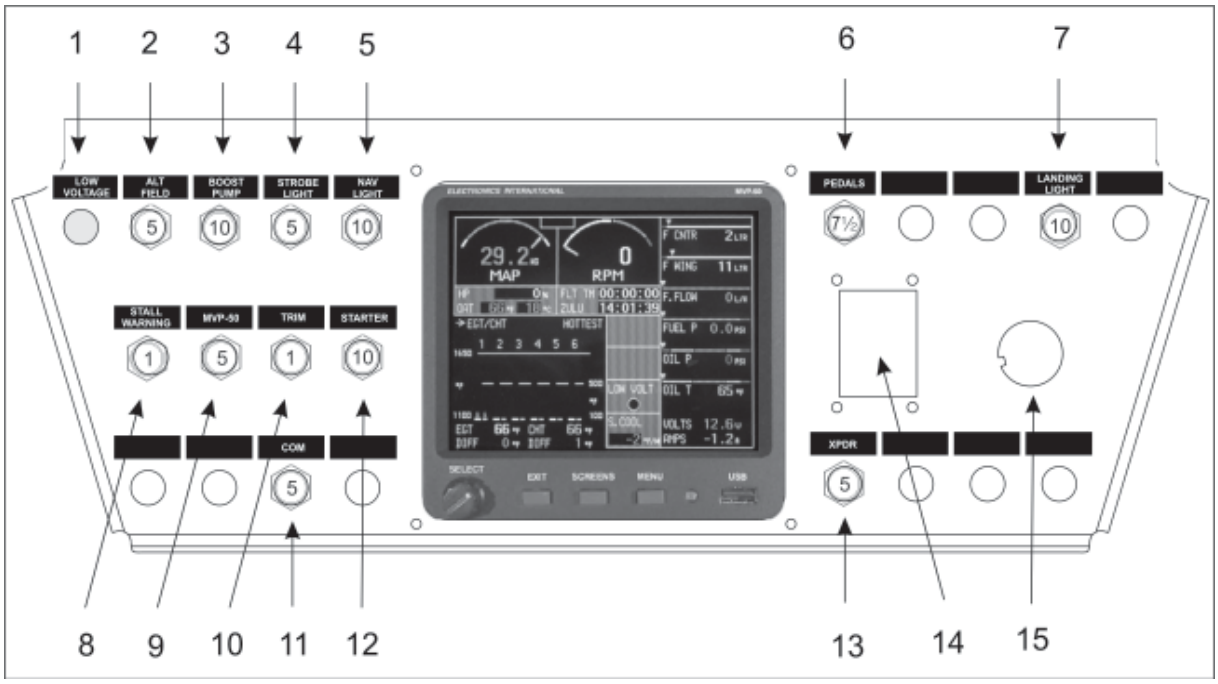


Figure 3 ***Alternate Panel Layout***

Pos.	Item
1	Alternator warning light incl. press-to-test feature (located in the switch-row, if sub panel is not used)
2	Alternator field circuit breaker
3	Boost pump circuit breaker
4	Strobe light circuit breaker
5	NAV light circuit breaker
6	Electrical pedal adjustment circuit breaker
7	Landing light circuit breaker
8	Stall warning circuit breaker
9	MVP-50 circuit breaker
10	Electrical trim system circuit breaker
11	COM circuit breaker
12	Starter circuit breaker
13	Transponder circuit breaker
14	ELT Switch
15	Starter switch

77-41-01 Main Engine Screen

The MVP-50P Main Engine Screen (see Figure 4) displays the primary engine and aircraft instruments. This screen is displayed on power-up and is the screen that should be monitored for most of the flight.

Figure 4 MVP-50P with Main Engine Screen

Buttons operate as follows:

Push-Select	Moves the cursor, selects functions and changes digits.
Exit	Exits out of a field or screen and returns the display to the Main Engine Screen.
Screens	Switches the display between screens as selected in the Screens Button Setup.
Menu	Displays a menu (if available) for the current screen.

Removal/Installation

Follow the procedure for typical instruments in Chapter 31.

77-41-02 Mounting Sheet

To carry the electronic data converter (1, Figure 5) and two modules (2 - 3) a mounting sheet (10) is installed on the right side of the fuselage just behind the firewall.

Removal/Installation

1 Remove main fuselage cover as per Chapter 53.

2 Remove the electronic data converter (1, Figure 5) and the modules (2 - 3) as per following sections.

3 Remove the attachment bolts and shock mounts (9) and remove the mounting sheet (10).

4 Reverse procedure for installation.

77-41-03 Electronic Data Converter

Removal/Installation

1 Remove main fuselage cover as per Chapter 53.

2 Disconnect the electrical wiring (8) from the electronic data converter (1, Figure 5).

3 Remove the attachment bolts (11) and remove the electronic data converter (1).

4 Reverse procedure for installation.

77-41-04 Module

Removal/Installation

1 Remove main fuselage cover as per Chapter 53.

2 Disconnect the electrical wiring (8) and/or tubing (7) from the module (2 or 3, Figure 5).

3 Remove the attachment bolts (12) and remove the module (2 or 3).

4 Reverse procedure for installation.

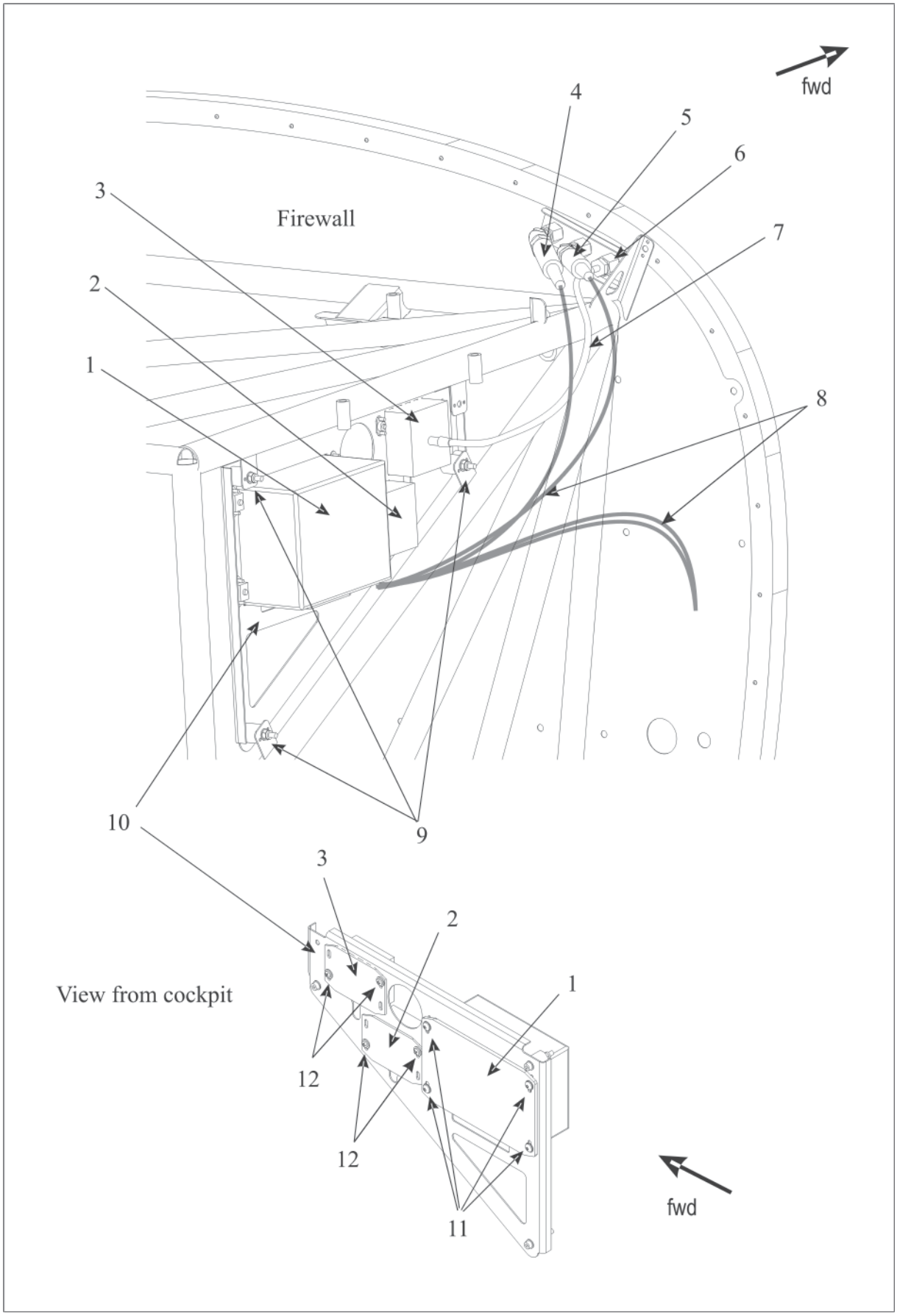


Figure 5 ***Mounting Sheet and MVP-50P Components***

77-41-05 Fuel Flow Transducer

Removal/Installation

CAUTION **Spilling fuel could inflame. Ensure exhaust is cool.**

1 BATTERY switch off.

2 Remove engine cowlings as per Chapter 71.

3 Remove the fire sleeve (6, Figure 6).

4 Disconnect the fuel hoses (3) from the transducer (4).

5 Disconnect the electrical wiring (1) from the transducer.

6 Remove the attachment bolts (2) and remove the transducer from the mounting sheet (5).

7 Reverse procedure for installation.

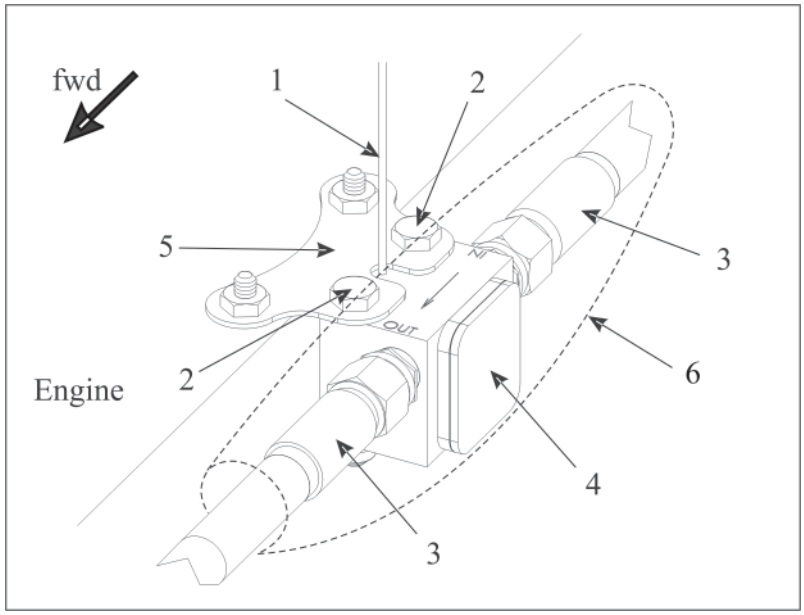


Figure 6 Fuel Flow Transduver

77-41-06 Probes and Transducers

The CHT probes are screwed to the respective ports on the engine (see Figure 7).

The EGT probes are attached to the exhaust pipes with clamps (see Figure 7).

The OT probe is screwed to the respective port on the aft engine side (see Figure 6 of Chapter 79).

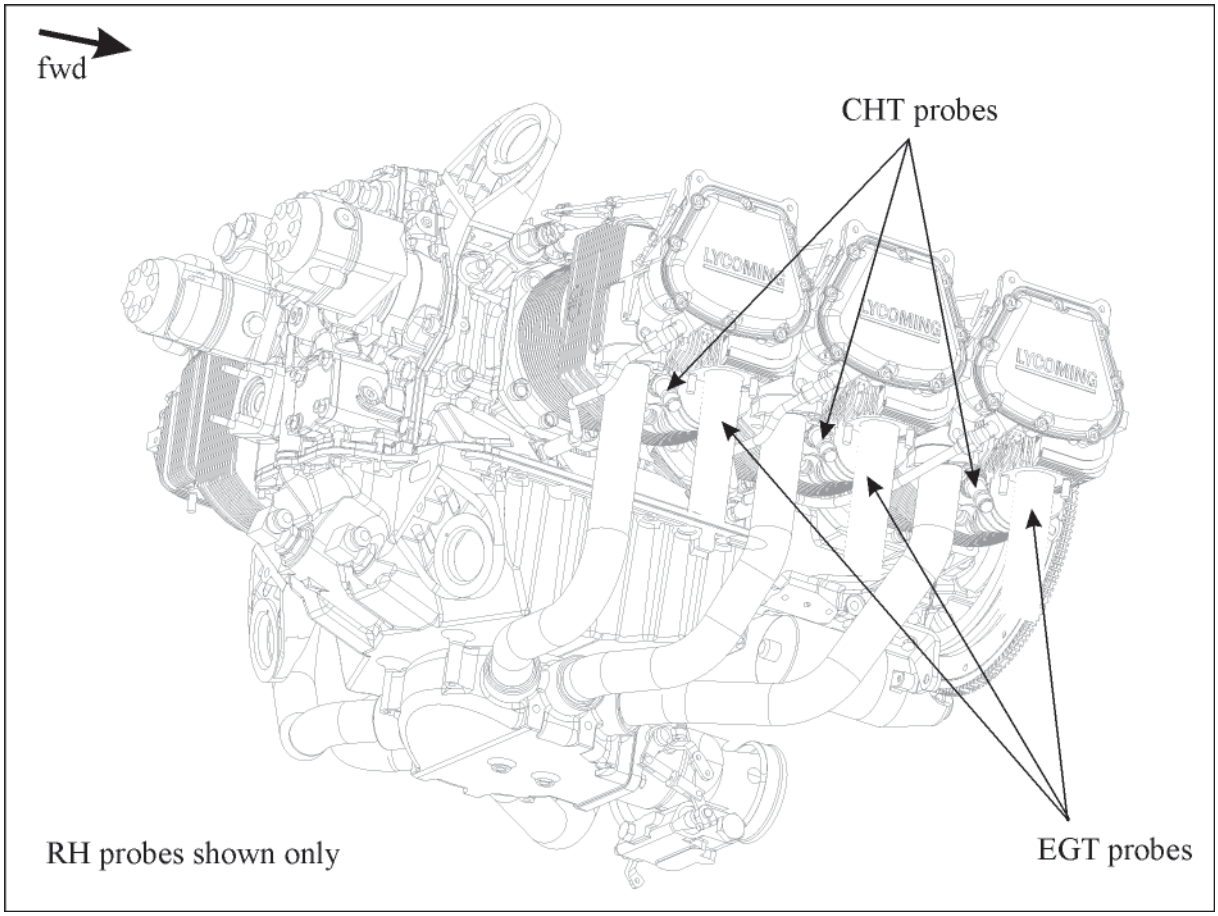
The oil (4, Figure 5) and fuel (5) pressure transducers are screwed to the respective fittings on the firewall.

Refer to Chapter 28 for fuel contents transmitters.

The MAP transducer is module 3 of Figure 4. The tubing (7) is routed from the module through a bulkead fitting (6) in the firewall to the engine (see also Figure 1).

The rpm signals are taken directly from the magnetos.

The OAT probe is fastened to the right side of the bottom fuselage cover (behind the center tank drain) by means of a nut. A plug allows easy disconnecting.



Chapter 78

Exhaust

Table of Contents

78-00-00 GENERAL

The EXTRA 300LT is generally equipped with a Gomolzig 6 in 1 exhaust system (refer to figure 1) with integrated silencer (muffler).

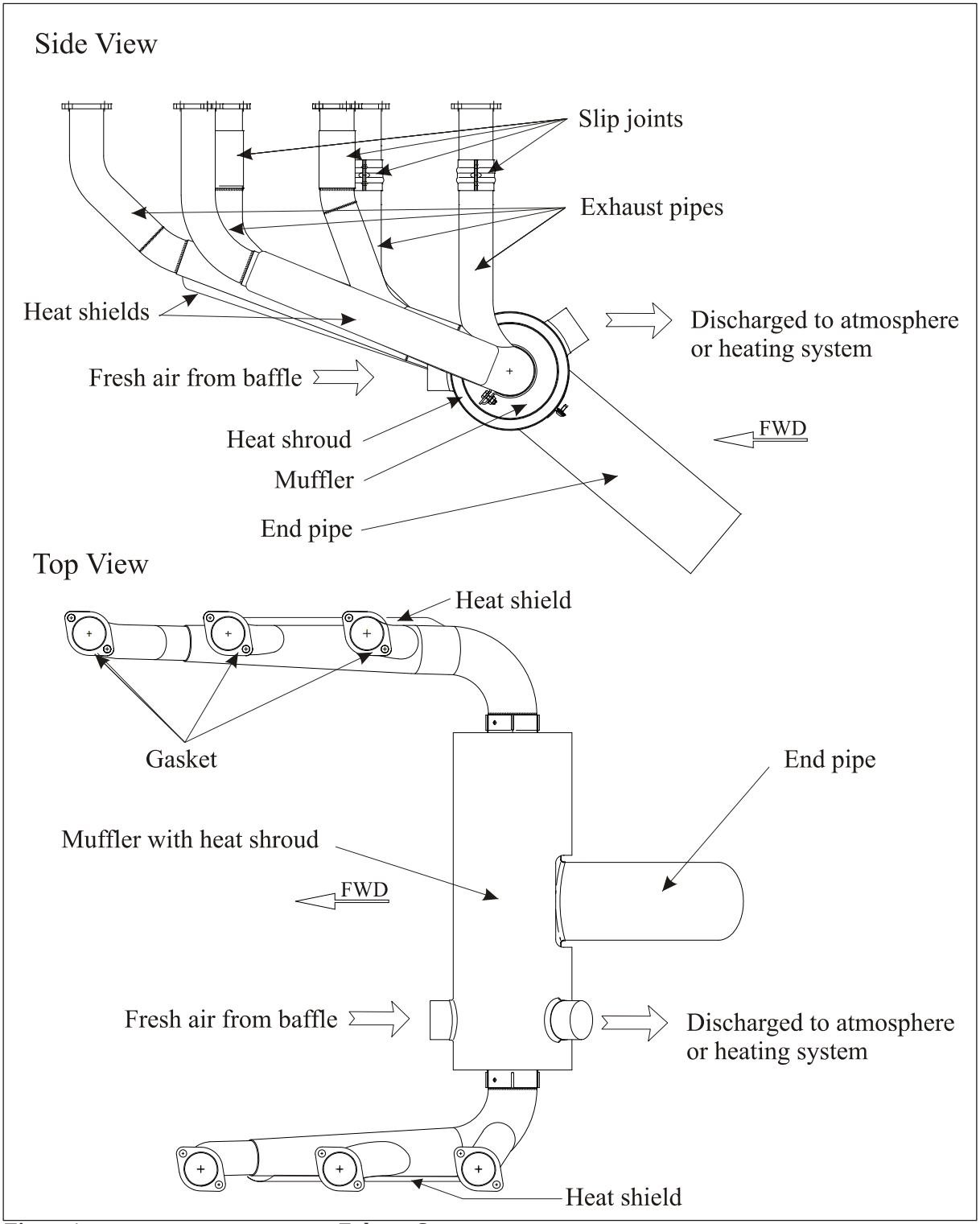


Figure 1 ***Exhaust System***

78-10-00 COLLECTOR/NOZZLE

Description

Each engine cylinder has a separate exhaust pipe routed down merging in collector tubes with increasing diameter. The collector tubes are equipped with heat shields to protect the lower engine cowling against the heat. Several exhaust pipes feature slip joints to allow for thermal expansion.

The left and right collector tubes are merged further aft in the muffler under the engine. An end pipe protrudes from the muffler through the lower engine cowling for exhaust gas discharge to the atmosphere.

Operation

The exhaust pipes are of welded stainless steel. These pipes are routed from the cylinders down to the muffler under the engine. The muffler comprises an inner pipe, which is perforated, and an outer pipe to form a welded, sealed structure.

The muffler is cooled using a surrounding heat shroud, which is fed with fresh air from the forward LH baffle which is then discharged to the athmosphere or to the heating system.

Trouble Shooting

Trouble	*Possible Cause*	*Remedy*
Engine to loud	Muffler defective	Replace muffler per Ch. 78-10-02.
Exhaust piping cracked	Muffler not secured	Reweld piping and tighten clamps on muffler
	Muffler too hot	Check fresh air ducting
Cylinder outside sooted	Gasket defective	Replace gasket per Ch. 78-10-03.
	Exhaust flange bent	Replace exhaust pipe per Ch. 78-10-01.
Cowling inside damaged	Heat shield defective	Replace heat shield per CH. 78-10-04.

NOTE

The use of new gaskets and seals is recommended when ever replacing or reinstalling exhaust system components.

Removal

1 Remove upper and lower engine cowling per Ch. 71.

2 Remove EGT sensor on the right hand side rear cylinder (No.5) per chapter 77.

3 Remove throttle control cable at the injector, at the attachment clamp block near the injector and at the cushioned clamp on the muffler (refer to chapter 73).

4 Remove the cooling air ducting on both forward and rearward flanges on the muffler.

5 In case a smoke system is installed, remove the smoke oil hose from the smoke oil injector nozzle on the exhaust end pipe.

6 Loosen the nuts on the exhaust flanges and remove the exhaust system.

Installation

Install in reverse sequence of removal observing the following items:

1 Use new gaskets.

2 Use new toothed lock washers.

3 Apply copper paste to the studs at the engine exhaust openings.

4 Hold the exhaust system in place and tighten the nuts (torque limit: minimal 4.5 Nm / 40 in.lb).

5 Be sure to correctly install the double ply flexible ducting on the flanges (inner ply could obstruct flow).

Leakage Testing

This can be done without having to remove the system.

1 Loosen the screws that hold the heat shroud.

2 Inspect the muffler for cracks and corrosion.

3 Reweld minor cracks.

4 Replace parts which show major damage.

5 Reinstall the heat shroud.

78-10-01 Exhaust Pipe

Replacement

1 Remove exhaust system per chapter 78-10-00.

2 For cylinders 1-2 replace entire collector tube.

3 For cylinders 3-4 pull the exhaust pipe out of the slip joint and replace the exhaust pipe.

4 For cylinder 5-6 loosen the clamps on the slip joints and replace the exhaust pipe.

5 Drill 4,8 mm (3/16") hole for EGT sensor(s) at identical location.

6 Reinstall exhaust system in reverse sequence of re-moval.

78-10-02 Muffler

Replacement

1 Remove exhaust system per chapter 78-10-00

2 Loosen the clamps on the muffler side flanges and remove the left and right collector tubes

3 Replace muffler and reinstall in reverse sequence of removal

78-10-03 Gasket

Replacement

1 Remove exhaust system per chapter 78-10-00.

2 Replace gaskets

3 Reinstall exhaust system in reverse sequence of removal

78-10-04 Heat Shield

Replacement

Refer to figure 2

1 Remove cowling per chapter 71.

2 Remove heat shield worm drive hose clips.

3 Replace heat shield.

4 Reinstall in reverse sequence of removal.

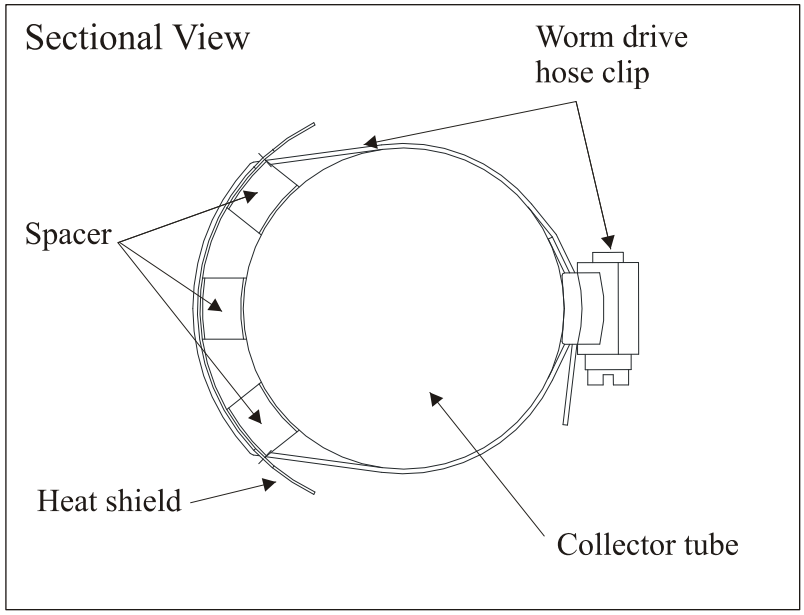


Figure 2 Heat Shield Replacement

Chapter 79

Oil System

Table of Contents

79-00-00 GENERAL

The EXTRA 300LT is equipped with a modification of a Christen Inverted Oil System (CHRISTEN 801 series). Maintenance work or overhaul of this system requires consultation of the manufacturer. (Refer to Christen Product Manual and Lycoming Operaton and Installation Manual (refer to chapter 1). Additionally, the lubrication system of the EXTRA 300LT has a single oil cooler which is connected to the engine by flexible tubing.

79-01-00 Christen Inverted Oil System

Description and Operation

The standard Christen 801 Inverted Oil System is a kit-form accessory for Lycoming aircraft engines which permits normal engine lubrication, with minimal oil loss, during aerobatic flight. When installed, it becomes a self-contained extension of the normal aircraft engine oil and breather systems. As the system control valves are gravity-operated, no connection to aircraft power sources is required (refer to figure 1 and 2).

The system works in all inverted and negative-g flight conditions and is particularly suited for high-performance aircraft used for unlimited-class aerobatic competitions.

The need for modification of the standard Christen 801 Inverted Oil System results from installation requirements for different system components of the Lycoming engine.

Normal flight

During normal flight, the weighted ball valve at the top of the oil separator is open, allowing blow-by gases from the engine crankcase to be vented from the breather port to the top of the oil separator and out through the overboard breather line. The top ball valve of the oil valve is closed and the bottom ball valve is open, allowing oil to flow from the sump fitting to the oil pump and out to the engine lubrication points.

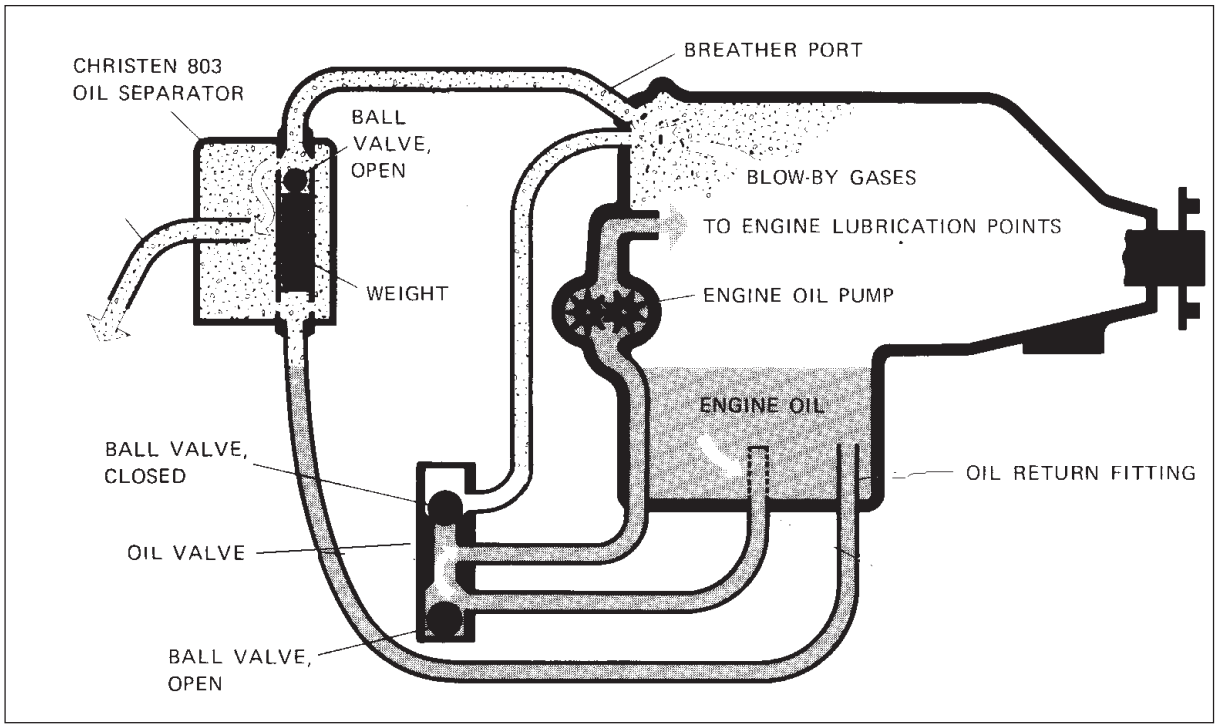


Figure 1 ***Inverted Oil System, Normal Flight***

Inverted flight

When the aircraft is inverted, engine oil falls to the top of the crankcase. The weighted ball valve in the oil seperator closes, preventing overboard loss of oil through the top of the oil separator. Blow-by gasses from the engine crankcase are vented from the sump to the bottom of the oil separator and out through the overboard breather line. The top ball valve of the oil valve is open, and the bottom valve is closed, allowing oil to flow out from the breather port to the oil valve to the oil pump and out to the engine lubrication points.

Any oil in the lines which fails to return to the sump during the transition between normal and inverted flight drains into the oil separator. This oil then returns to the sump from the bottom of the oil separator during periods of normal flight.

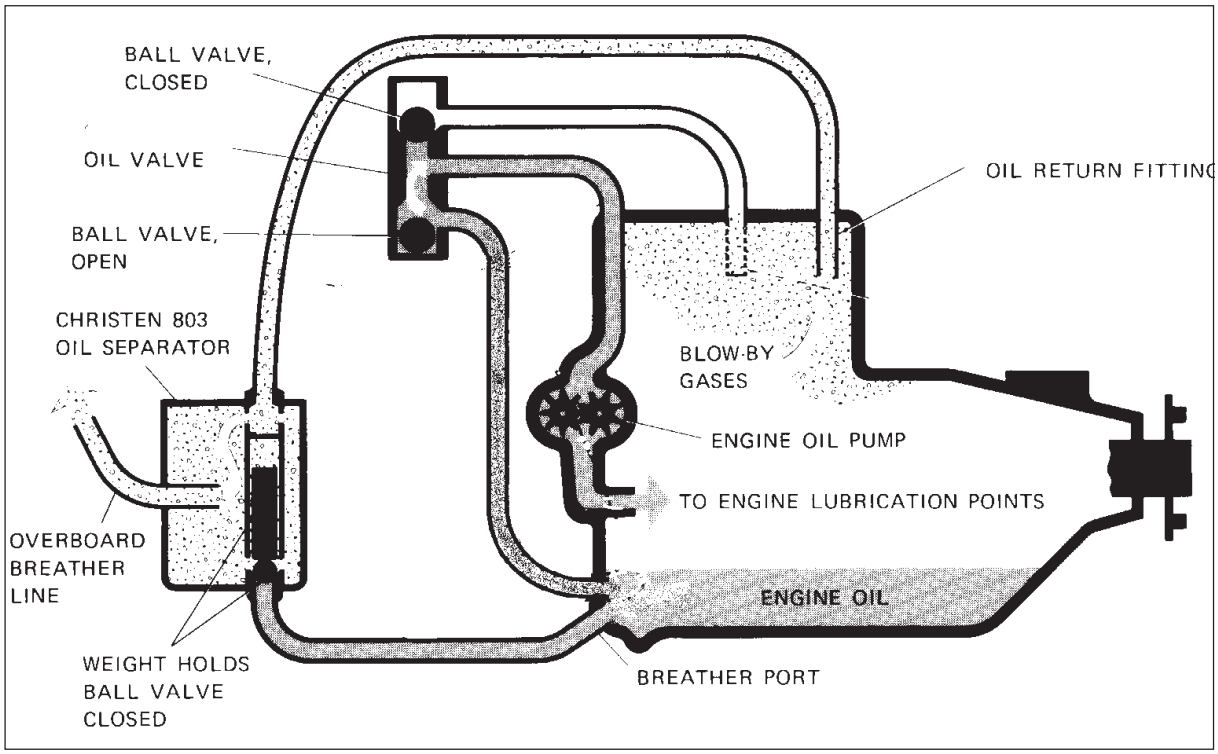


Figure 2 ***Inverted Oil System, Inverted Flight***

Maintenance Practices

The inverted oil system normally requires no maintenance. During major overhauls or when repairs require sump removal, inspect sump for excessive deposits of sludge, varnish, or foreign material. If sump is dirty, remove and thoroughly clean all hoses and components; then use compressed air blast for drying and cleanout before reassembly.

Cleaning

The inverted oil system must be flushed with a suitable petroleum solvent, such as varsol, every 300 (three hundred) hours of engine operation or when there is evidence of the loss of oil through the breather line after normal flight.

79-01-01 Valve Balls

Reseating

Marginal oil loss through the oil valve may result from nicks in the valve seats which cause leakage when the valve should be closed. Such nicks can be caused by mishandling or by small chips of metal being caught between the ball and the seat as the valve operates during initial run-in of a new or overhauled engine. For more information of the valves refer to Lycoming Operaton and Installation Manual (see chapter 1).

79-20-00 DISTRIBUTION

The hose and fitting installation is modified compared to the standard Christen Inverted Oil System. The connections of the Inverted Oil System still consist of AN (Army/Navy) Standard fittings.

The flexible hoses of the oil cooling system are connected by AN Standard fittings with equal sizes (8D), but different connection angles.

Maintenance Practices

Before making installations and repairs to the aircraft plumbing, it is important to make accurate identification of plumbing materials.

79-20-01 Oil Cooler

Description and Operation

The lubrication system of the EXTRA 300LT has a single oil cooler which is mounted on the aft right hand side of the engine. It is connected to the engine by hoses.

During operation the hot lubricating oil leaving the engine is pumped by an engine-driven pump via a hose to the oil cooler. The oil is cooled in passing through the oil cooler and returned to the engine lubricating circuit through the return hose.

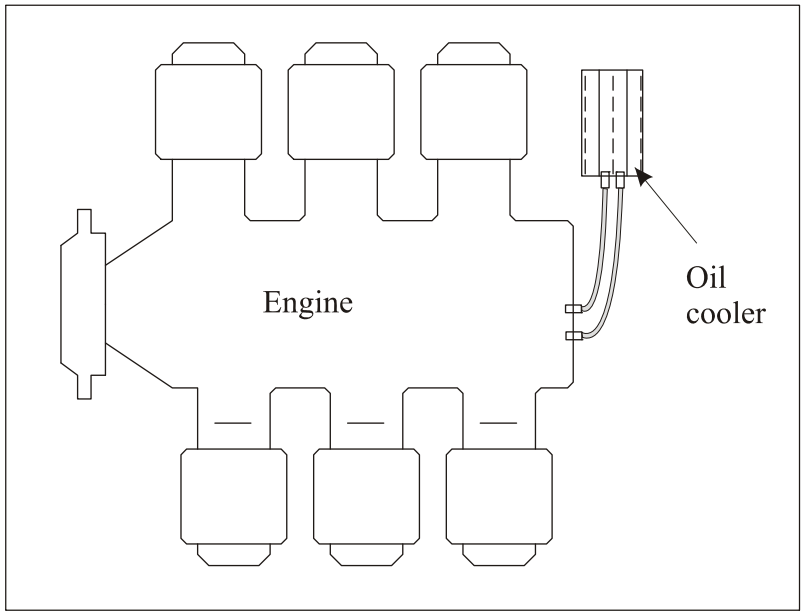


Figure 3 ***Oil Cooling System***

79-20-02 Fittings

General information concerning fittings used in the EXTRA 300LT can be found in chapter 20-10-08.

79-20-03 Flexible Hoses

General information concerning flexible hoses can be found in chapter 20-10-07.

79-30-00 INDICATING

Oil pressure and oil temperature are sensed on the EXTRA 300LT engine and are indicated to the pilot in command.

Refer to chapter 77-40 if an integrated engine instrument system is installed.

Trouble Shooting

Trouble	*Possible Cause*	*Remedy*
No oil pressure indication	Sensor defective	Replace sensor.
	Gauge defective	Replace gauge.
Oil pressure low	Engine oil pressure low	Check engine oil pressure with calibrated equipment.
	Orifice engine fitting blocked	Clean fitting.
	Sense line leakage	Replace sense line.
Oil temperature high	Sensor or cable defective	Replace sensor. Repair cable defect.
	Gauge defective	Replace gauge.
	Incorrect engine oil	Perform engine oil change.

79-30-10 Oil Pressure

The oil pressure gauge is located in the rear instrument panel. The gauge receives its data electrically from a pressure sensor located on the aft side of the firewall (refer to figure 4). The pressure sensor (1) is connected to a bulkhead fitting (2) on the cold side of the firewall. A sense (wet) line (3) connects the bulkhead fitting to the reducer fitting (4) at the engine.

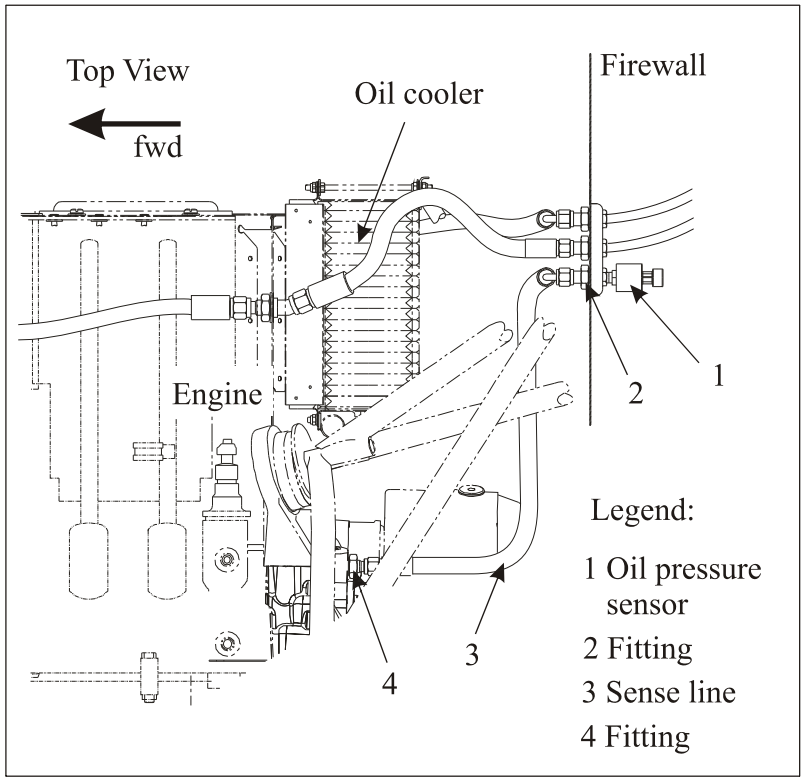


Figure 4 Oil Pressure Sensor & Wet Line

79-30-11 Oil Pressure Gauge

Oil pressure indication is combined with the oil temperature indication in a single unit.

Removal/Installation

Refer to chapter 31.

79-30-12 Oil Pressure Wet Line

Removal/Installation

1 Remove upper cowling per chapter 71

2 Disconnect the sense wet line at firewall bulkhead fitting and at engine fitting (refer to figure 4).

3 Install in reverse sequence of removal. Torque sense line fittings with 15.3 to 16.9Nm (135 to 150 in.lbs.) and apply inspection lacquer.

79-30-13 Engine Fitting

Removal/Installation

1 Remove upper cowling per Chapter 71.

2 Disconnect the sense wet line per Chapter 79-30-12.

3 Remove the engine fitting.

4 Install in reverse sequence of removal. Torque engine fitting with 15.3 to 16.9Nm (135 to 150 in.lbs.) and apply inspection lacquer.

79-30-20 Oil Temperature

The oil temperature gauge is located in the rear instrument panel. The gauge receives its data electrically from a sensor located on the engine in front of the oil filter screen (refer to figure 5).

79-30-21 Oil Temperature Gauge

Oil temperature indication is combined with the oil pressure indication in a single unit.

79-30-22 Oil Temperature Sensor

Removal/Installation

The sensor can be easily removed and installed without special equipment.

1 Remove upper cowling per Chapter 71.

2 Remove oil temperature sensor (refer to figure 5).

3 Install in reverse sequence of removal.

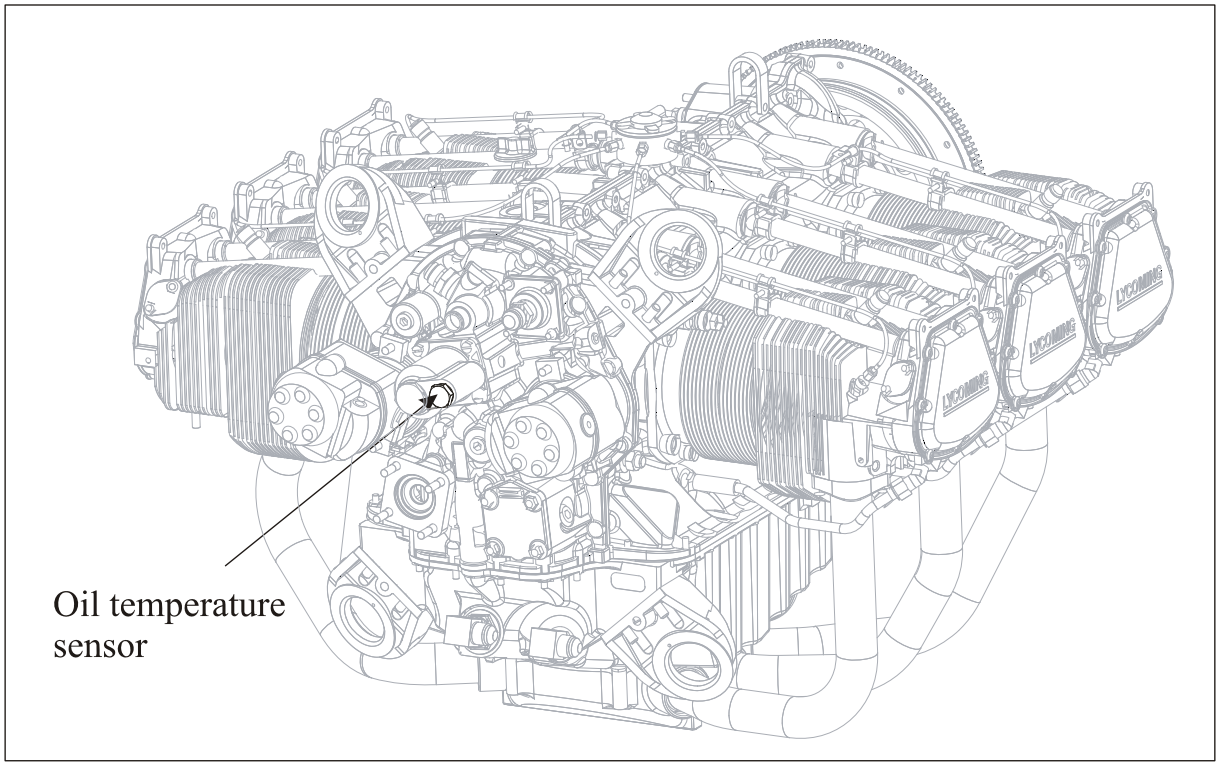


Figure 5 ***Oil Temperature Sensor Location***

Chapter 91

Charts

N O T E

Drawings and corresponding equipment are generally introduced with serial number LT001 or from the serial number given behind the drawing. Check the individual installation.

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EA-93102.26	Transponder ATC4401
EA-9D102.27	Volt/Ampere Indication
EA-9D102.30A	RPM Indication
EA-96102.31A	Starter Engaged Light
EA-9D102.34A	Oil Press/Temp Indication (up to SN LT038)
EA-9D102.34B	Oil Press/Temp Indication (from SN LT039)
EA-94102.39	Smoke System (Single Pump) (up to SN LT038)
EA-94102.39A	Smoke System (Single Pump) (from SN LT039)
EA-9D102.42	ARTEX ME 406 ELT (up to SN LT019)
EA-9D102.42A	ARTEX ME 406 ELT (SN LT020 thru 38)
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EA-93102.43	Transponder BXP-6401-x & Enc
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EA-9D102.46	Aspen EFD1000 PFD (up to SN LT019)
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EA-9D102.47A	Aspen EFD500/1000 MFD (from SN LT020)
EA-9D102.48	Garmin GNC 420W
EA-96102.49	RC Allen RCA2600
EA-96102.49A	RC Allen RCA2600
EA-9D102.51	Intercom NAT AA 83 (up to SN LT019)
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EA-9D102.52A Sheet 1	Digital Indication MVP-50P (from SN LT020)
EA-9D102.52 Sheet 2	Digital Indication MVP-50P (up to SN LT019)
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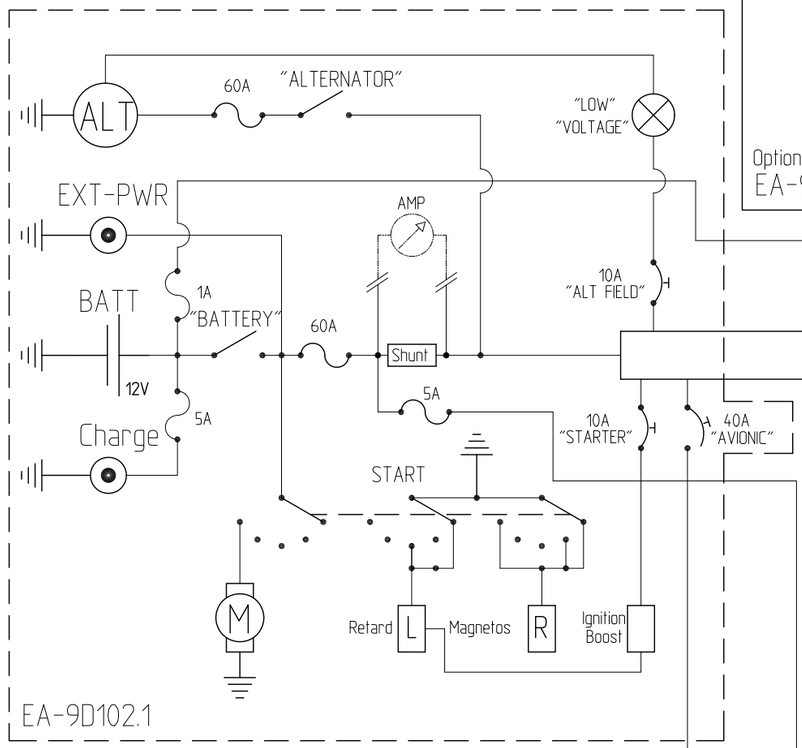
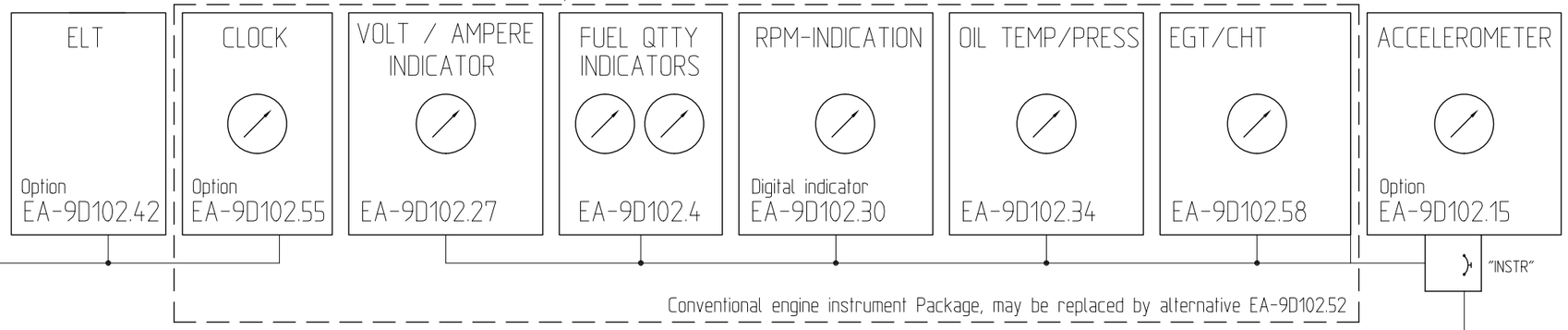
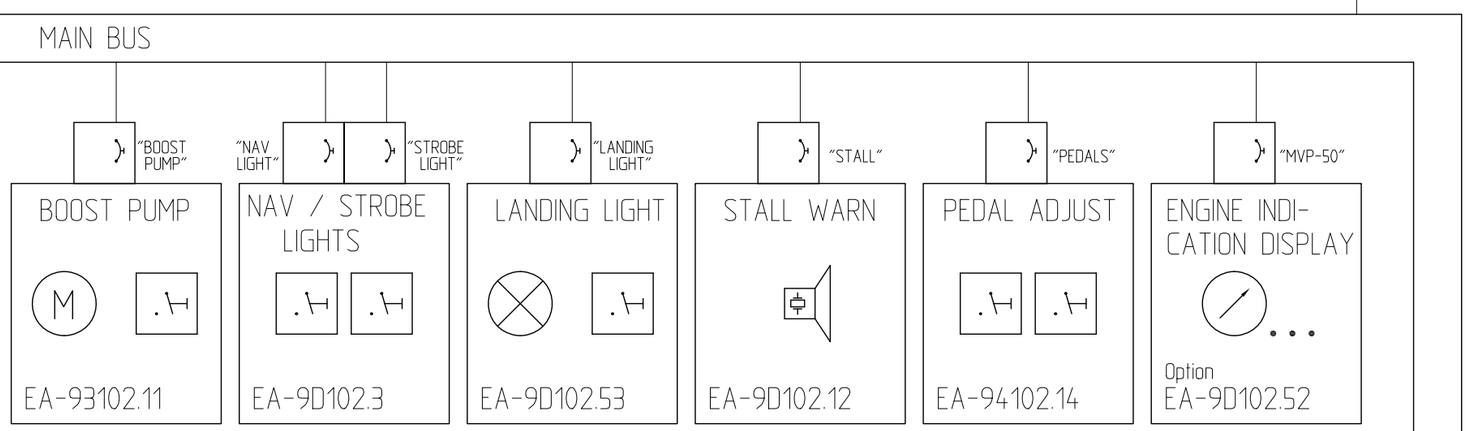
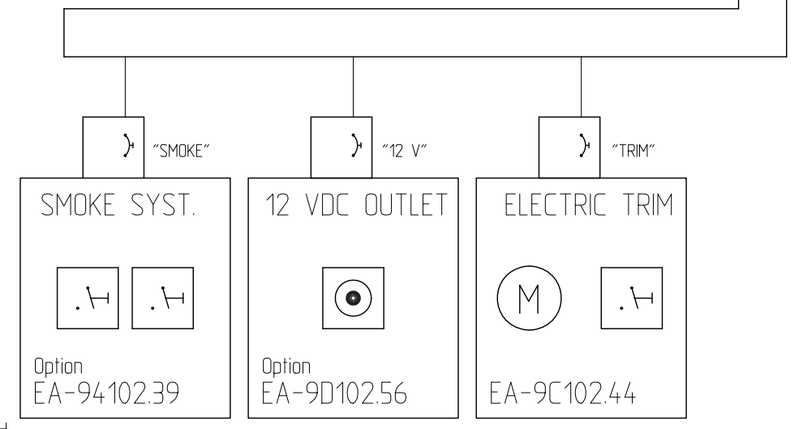
EA-9D102.68	PANELDOCK IPAD MINI
EA-9C102.69	KANNAD 406 AF ELT
EA-9D102.70	DUAL USB CHARGING PORT
EA-9D102.73	EFI GARMIN-G5









2 Option *.47 requires option *.46 to be installed

1 Option *.46 requires either option *.48 or *.54 to be installed

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Stueck / Version									
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03									
02									
01	Basisflugzeug								

Die Gueltigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links/rechts wird mit "/" in allen Feldern angegeben

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03					
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Letzte Bearbeitung 17.12.10 MW

	Datum	Name
gez.	2010-04-27	RT
gepr.		
gepr.		

Maßstab 1:1 auf A3 | Projektion ISO
Sicherheitsklasse n.a. | Freimaßtoleranz n.a.
Oberfl.-Schutz n.a. | Oberflächengüte

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

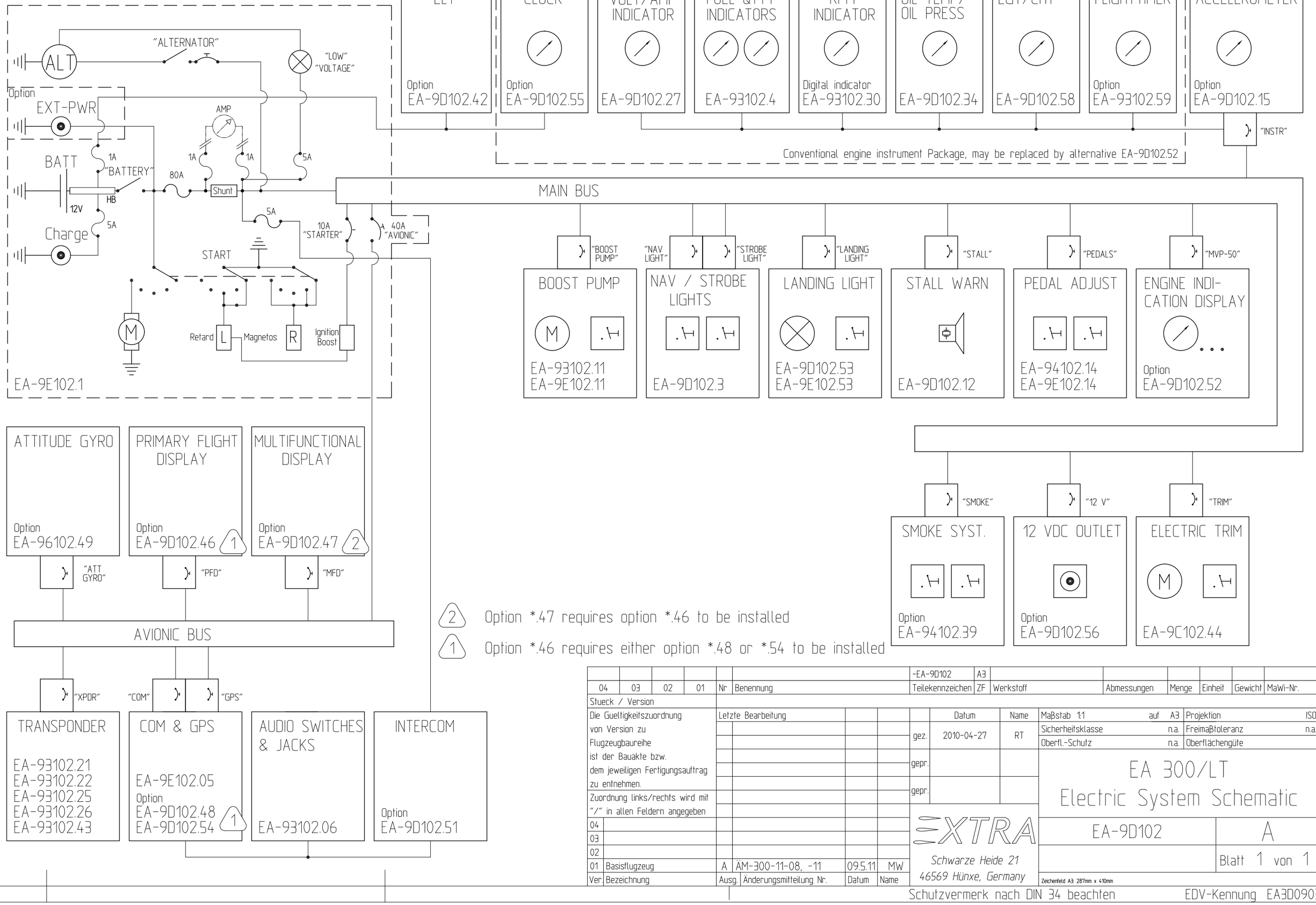
EA 300/LT
Electric System Schematic

EA-9D102

Blatt 1 von 1

Zeichenfeld A3: 287mm x 410mm

EDV-Kennung EA3D0903



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dem jeweiligen Fertigungsauftrag											Electric System Schematic				
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Ver.	Bezeichnung			Ausg.	Änderungsmitteilung Nr.	Datum	Name								

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Zeichenfeld A3: 287mm x 410mm

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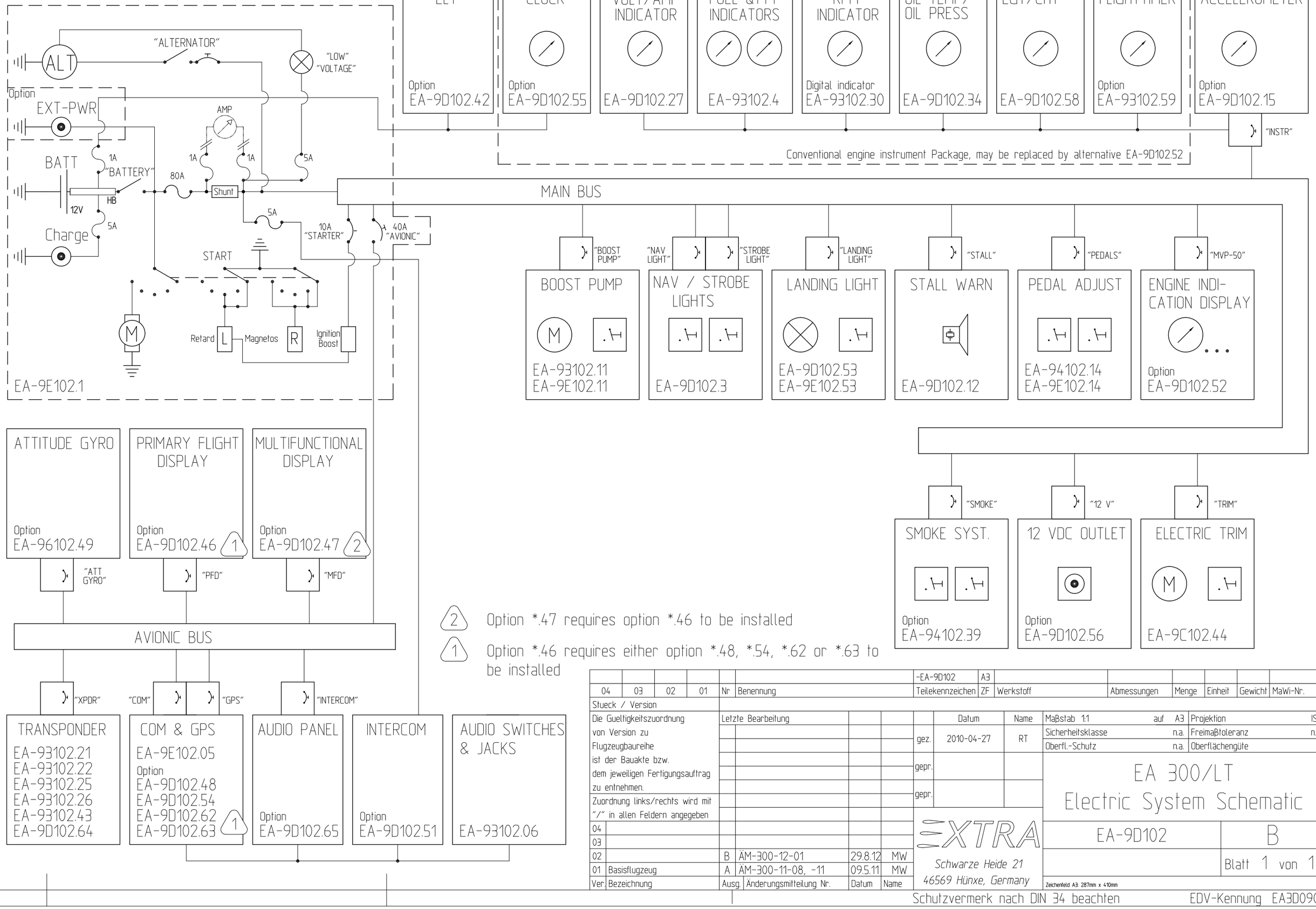

2 Option *.47 requires option *.46 to be installed

1 Option *.46 requires either option *.48, *.54, *.62 or *.63 to be installed

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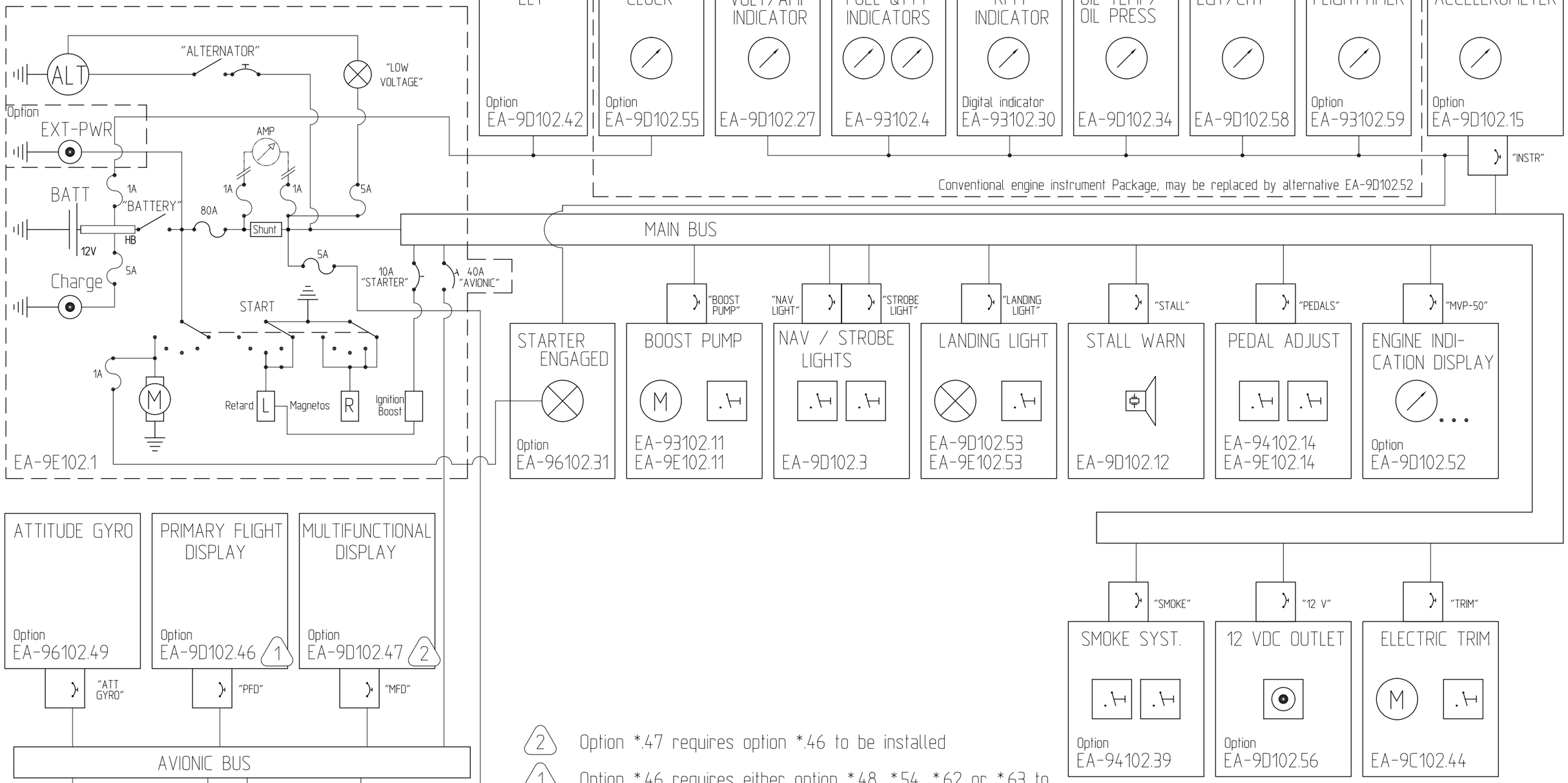
EA 300/LT
Electric System Schematic

EA-9D102 | B

Blatt 1 von 1

Zeichenfeld A3: 287mm x 410mm

EDV-Kennung EA3D0903



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Stueck / Version									

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Maßstab 1:1	auf A3	Projektion	ISO
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Oberfl.-Schutz	n.a.	Oberflächengüte	

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EA 300/LT
Electric System Schematic

EA-9D102 | C

Blatt 1 von 1

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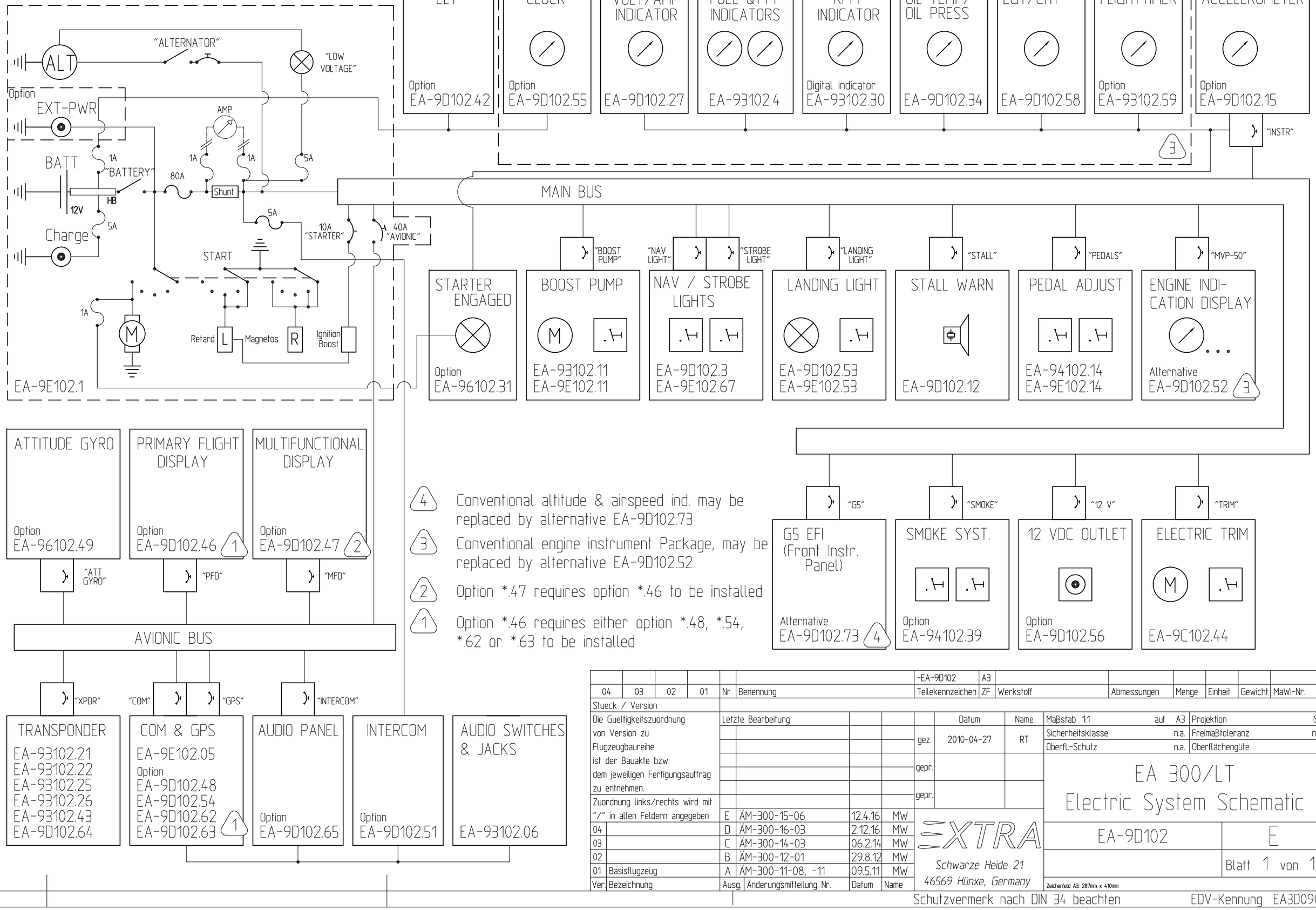

4 Conventional altitude & airspeed ind. may be replaced by alternative EA-9D102.73

3 Conventional engine instrument Package, may be replaced by alternative EA-9D102.52

2 Option *.47 requires option *.46 to be installed

1 Option *.46 requires either option *.48, *.54, *.62 or *.63 to be installed

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Stueck / Version									

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	Datum	Name
gez.	2010-04-27	RT
gepr.		
gepr.		

Maßstab 1:1	auf A3	Projektion	ISO
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Oberfl.-Schutz	n.a.	Oberflächengüte	

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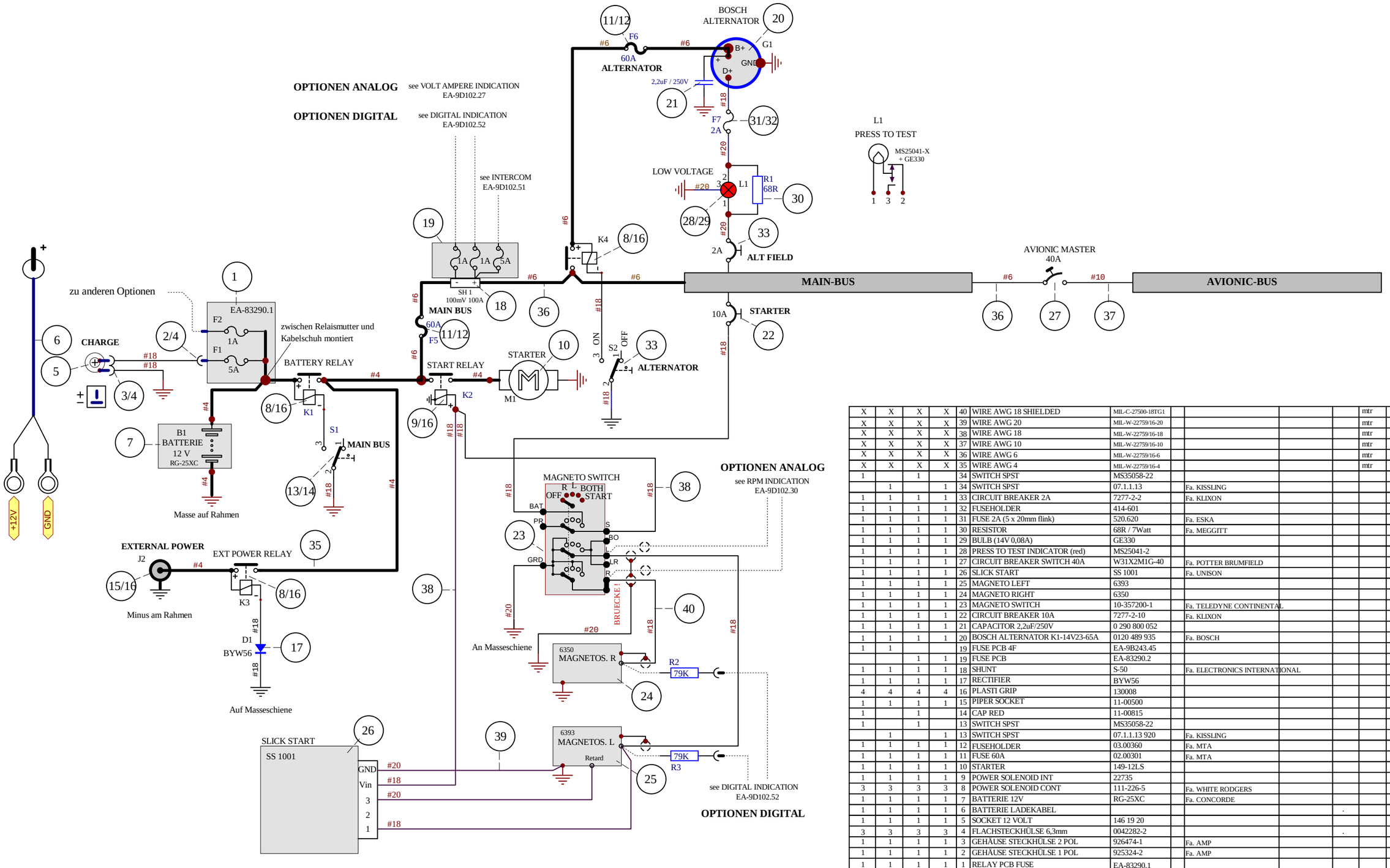
EA 300/LT
Electric System Schematic

EA-9D102 | E

Blatt 1 von 1

Zeichenfeld A3: 287mm x 410mm

EDV-Kennung EA3D0903



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X	X	X	X	38	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
X	X	X	X	37	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
X	X	X	X	36	WIRE AWG 6	MIL-W-22759/16-6					mtr	.	33081
X	X	X	X	35	WIRE AWG 4	MIL-W-22759/16-4					mtr	.	200005
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	1		1	34	SWITCH SPST	07.1.1.13	Fa. KISSLING					.	FE 4025
1	1	1	1	33	CIRCUIT BREAKER 2A	7277-2-2	Fa. KLIXON					.	31508
1	1	1	1	32	FUSEHOLDER	414-601						.	30033
1	1	1	1	31	FUSE 2A (5 x 20mm flink)	520.620	Fa. ESKA					.	31878
1	1	1	1	30	RESISTOR	68R / 7Watt	Fa. MEGGITT					.	33341
1	1	1	1	29	BULB (14V 0,08A)	GE330						.	01569
1	1	1	1	28	PRESS TO TEST INDICATOR (red)	MS25041-2						.	00140
1	1	1	1	27	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40	Fa. POTTER BRUMFIELD					.	03618
1	1	1	1	26	SLICK START	SS 1001	Fa. UNISON					.	32598
1	1	1	1	25	MAGNETO LEFT	6393							
1	1	1	1	24	MAGNETO RIGHT	6350							
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		1	1	19	FUSE PCB	EA-83290.2							83290.002-1
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1	1	1	1	17	RECTIFIER	BYW56						.	FE4292
4	4	4	4	16	PLASTI GRIP	130008						.	02198
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1		1		14	CAP RED	11-00815							31763
1		1		13	SWITCH SPST	MS35058-22							01602
	1		1	13	SWITCH SPST	07.1.1.13 920	Fa. KISSLING					.	FE 4028
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3	3	3	3	4	FLACHSTECKHÜLSE 6,3mm	0042282-2				.			00093
1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1	Fa. AMP						01168
1	1	1	1	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2	Fa. AMP					.	00098
1	1	1	1	1	RELAY PCB FUSE	EA-83290.1						.	93243.02
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 04 = 40A AVIONIK LAST mit MS SWITCH und Option INTERCOM
OPTION 03 = 40A AVIONIK LAST mit KISSLING SWITCH und Option INTERCOM
OPTION 02 = 40A AVIONIK LAST mit MS SWITCH
OPTION 01 = 40A AVIONIK LAST mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Baukate bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	21.04.10	HW
Gepr.:		
Gepr.:		

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

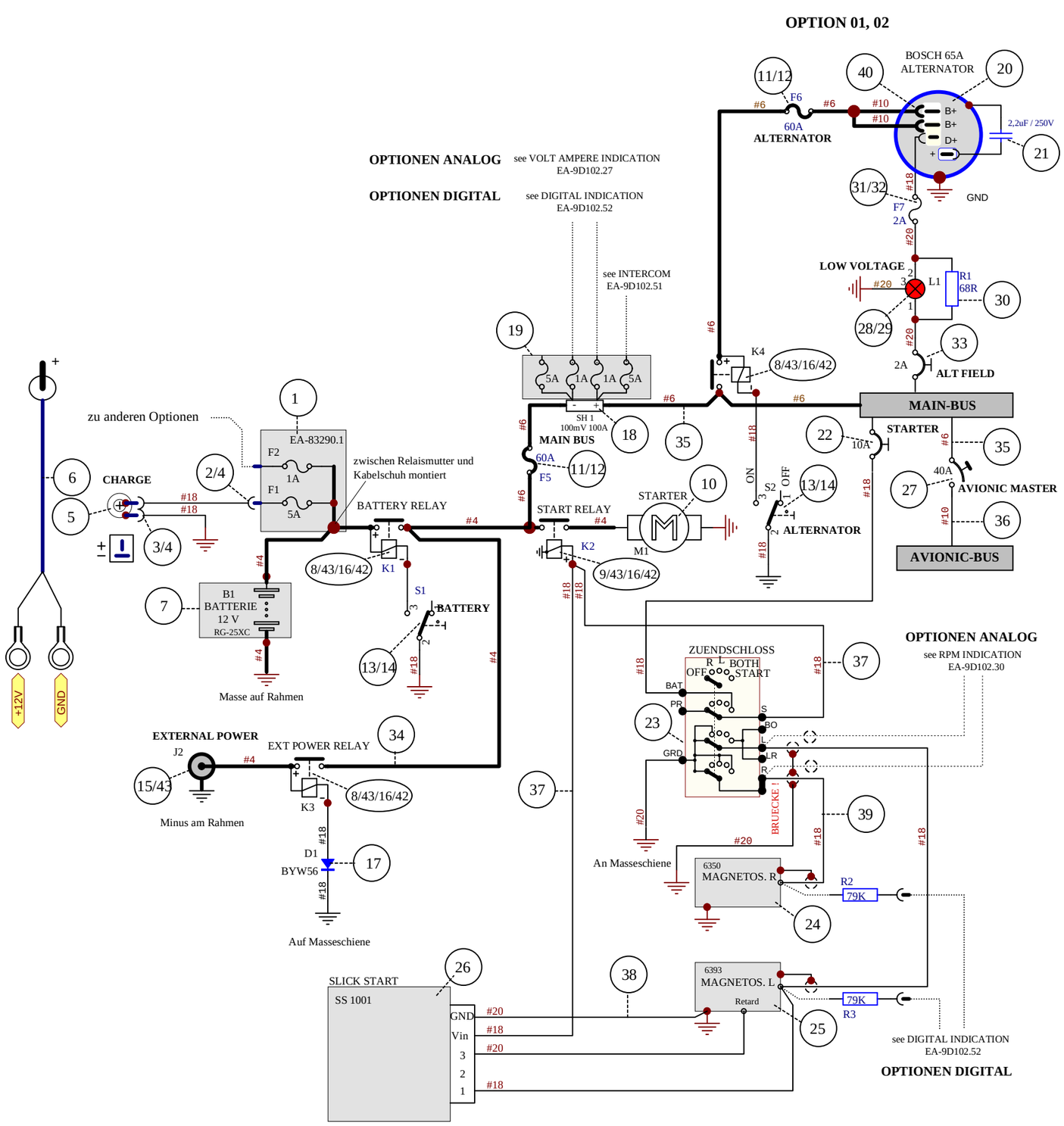
EA 300/LT
ELEKTRIK SYSTEM

EA-9D102.1

A3 | Blatt1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0900**



OPTION 04 = PRESTOLITE ALTERNATOR 65A/70A mit 40A AVIONIK LAST mit MS SWITCH und Option INTERCOM
OPTION 03 = PRESTOLITE ALTERNATOR 65A/70A mit 40A AVIONIK LAST mit KISSLING SWITCH und Option INTERCOM
OPTION 02 = BOSCH ALTERNATOR 65A mit 40A AVIONIK LAST mit MS SWITCH und Option INTERCOM
OPTION 01 = BOSCH ALTERNATOR 65A mit 40A AVIONIK LAST mit KISSLING SWITCH und Option INTERCOM

9	9	9	9	43	SCHUTZKAPPE	MS25171-3S		=					00781
5	5	4	4	42	SCHUTZKAPPE	MS25171-1S		=					00786
1	1			41	RINGÖSE AWG8 6mm	0033461-0		=					FE4178
		1	1	40	POWER CONNECTOR	1 297 011 001		Fa. BOSCH			=		FE0001
X	X	X	X	39	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr		02199
X	X	X	X	38	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
X	X	X	X	37	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
X	X	X	X	36	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
X	X	X	X	35	WIRE AWG 6	MIL-W-22759/16-6					mtr	=	33081
X	X	X	X	34	WIRE AWG 4	MIL-W-22759/16-4					mtr	=	200005
1	1	1	1	33	CIRCUIT BREAKER 2A	7277-2-2		Fa. KLIXON				=	31508
1	1	1	1	32	FUSEHOLDER	414-601						=	30033
1	1	1	1	31	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA				=	31878
1	1	1	1	30	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC				=	33341
1	1	1	1	29	BULB (14V 0,08A)	GE330						=	01569
1	1	1	1	28	PRESS TO TEST INDICATOR (red)	MS25041-2						=	00140
1	1	1	1	27	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD				=	03618
1	1	1	1	26	SLICK START	SS 1001		Fa. UNISON				=	32598
1	1	1	1	25	MAGNETO LEFT	6393							
1	1	1	1	24	MAGNETO RIGHT	6350							
1	1	1	1	23	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL					00185
1	1	1	1	22	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON				=	31505
1	1	1	1	21	CAPACITOR 2,2uF/250V	0 290 800 052							31608
		1	1	20	BOSCH ALTERNATOR K1-14V23-65A	0120 489 935		Fa. BOSCH					FT0001
1	1			20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE					33558
1	1	1	1	19	FUSE PCB 4F	EA-9B243.45							9B243.45
1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL					FA3008
1	1	1	1	17	RECTIFIER	BYW56						=	FE4292
4	4	4	4	16	RINGZUNGE ROT 5mm	130008						=	02198
1	1	1	1	15	PIPER SOCKET	11-00500							31731
2		2		14	CAP RED	11-00815							31763
2		2		13	SWITCH SPST	MS35058-22							01602
	2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING				=	FE 4028
1	1	1	1	12	FUSEHOLDER	03.00360		Fa. MTA				=	31239
1	1	1	1	11	FUSE 60A	02.00301		Fa. MTA				=	33407
1	1	1	1	10	STARTER	149-12LS							30552
1	1	1	1	9	POWER SOLENOID INT	22735							00114
3	3	3	3	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS					00136
1	1	1	1	7	BATTERIE 12V	RG-25XC		Fa. CONCORDE				=	03617
1	1	1	1	6	BATTERIE LADEKABEL						=		03543
1	1	1	1	5	SOCKET 12 VOLT	146 19 20							02636
4	4	3	3	4	FLACHSTECKHÜLSE 6,3mm	0042282-2					=		00093
1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP					01168
2	2	1	1	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP				=	00098
1	1	1	1	1	RELAY PCB FUSE	EA-83290.1						=	93243.02
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM 300-10-08	27.10.10	HW

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

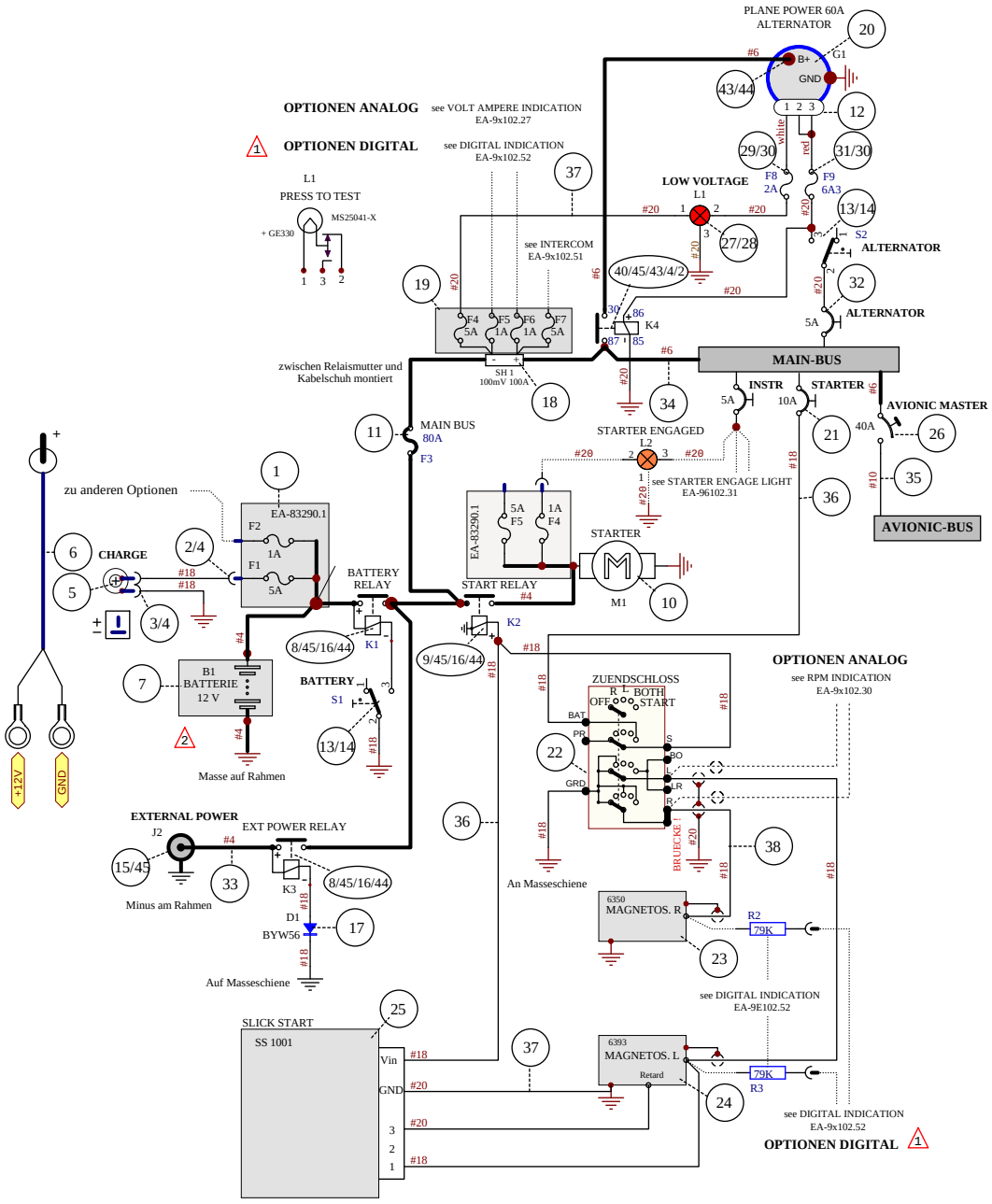
EA 300/LT
ELEKTRIK SYSTEM

EA-9D102.1	A
A3	Blatt 1 von 1

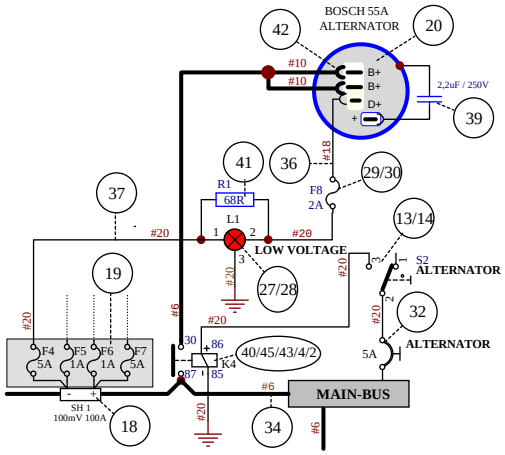
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0900a**

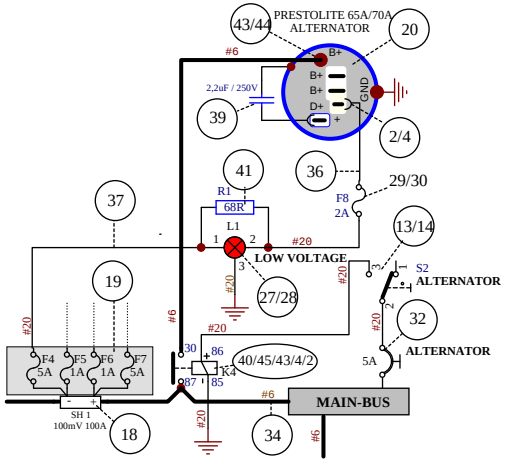
OPTION 01, 02, 07, 08



OPTION 03, 04, 09, 10



OPTION 05, 06, 11, 12



OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

1 im Musterumfang EA-300/LT enthalten
im Musterumfang EA-300/LC NICHT enthalten

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Baukate bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02		B	ÄM-300-14-03	07.02.14	HW
01		A	ÄM-300-11-17	22.06.11	HW

Letzte Bearbeitung:

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**B**
A3	Blatt 1 von 2

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0900b**

12	11	10	09	08	07	06	05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
△2	△2	△2	△2	△2	△2																
5	5	5	5	5	5	5	5	5	5	5	5	45	SCHUTZKAPPE	MS25171-3S							00781
4	4	3	3	4	4	4	4	3	3	4	4	44	SCHUTZKAPPE	MS25171-1S							00786
1	1			3	3	1	1			3	3	43	RINGÖSE AWG8 6mm	0033461-0							FE4178
		1	1					1	1			42	POWER CONNECTOR	1 297 011 001		Fa. BOSCH					FE0001
1	1	1	1			1	1	1	1			41	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC					33341
1	1	1	1	1	1	1	1	1	1	1	1	40	RELAIS RP/120-12	1.016.158.00		Fa. MRS					33586
1	1	1	1			1	1	1	1			39	CAPACITOR 2,2uF/250V	0 290 800 052							31608
X	X	X	X	X	X	X	X	X	X	X	X	38	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr		02199
X	X	X	X	X	X	X	X	X	X	X	X	37	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
X	X	X	X	X	X	X	X	X	X	X	X	36	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
X	X	X	X	X	X	X	X	X	X	X	X	35	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
X	X	X	X	X	X	X	X	X	X	X	X	34	WIRE AWG 6	MIL-W-22759/16-6					mtr		33081
X	X	X	X	X	X	X	X	X	X	X	X	33	WIRE AWG 4	MIL-W-22759/16-4					mtr		200005
1	1	1	1	1	1	1	1	1	1	1	1	32	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
1	1	1	1	1	1	1	1	1	1	1	1	31	FUSE 6,3A (5 x 20mm flink)	520.625		Fa. ESKA					31880
1	1	1	1	2	2	1	1	1	1	2	2	30	FUSEHOLDER	414-601							30033
1	1	1	1	1	1	1	1	1	1	1	1	29	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA					31878
1	1	1	1	1	1	1	1	1	1	1	1	28	BULB (14V 0,08A)	GE330							01569
1	1	1	1	1	1	1	1	1	1	1	1	27	PRESS TO TEST INDICATOR (red)	MS25041-2							00140
1	1	1	1	1	1	1	1	1	1	1	1	26	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD					03618
1	1	1	1	1	1	1	1	1	1	1	1	25	SLICK START	SS 1001		Fa. UNISON					32598
1	1	1	1	1	1	1	1	1	1	1	1	24	MAGNETO LEFT	6393							32860
1	1	1	1	1	1	1	1	1	1	1	1	23	MAGNETO RIGHT	6350							02337
1	1	1	1	1	1	1	1	1	1	1	1	22	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL					00185
1	1	1	1	1	1	1	1	1	1	1	1	21	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON					31505
		1	1					1	1			20	BOSCH ALTERNATOR 55A	0120 489 917		Fa. BOSCH					33508
1	1					1	1					20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE					33558
				1	1					1	1	20	PLANE POWER ALTERNATOR 60A	AL 12-EI60/B		Fa. PLANE POWER					33552
1	1	1	1	1	1	1	1	1	1	1	1	19	FUSE PCB 4F	EA-7E291.10							7E291.010
1	1	1	1	1	1	1	1	1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL					FA3008
1	1	1	1	1	1	1	1	1	1	1	1	17	RECTIFIER	BYW56							FE4292
5	5	5	5	5	5	5	5	5	5	5	5	16	RINGZUNGE ROT 5mm	130008							02198
1	1	1	1	1	1	1	1	1	1	1	1	15	PIPER SOCKET	11-00500							31731
2		2		2		2		2		2		14	CAP RED	11-00815							31763
2		2		2		2		2		2		13	SWITCH SPST	MS35058-22							01602
	2		2		2		2		2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING					FE 4028
				1	1					1	1	12	PLUG ASSEMBLY	11-1010		Fa. PLANE POWER	in Pos. 20/01-02				31239
1	1	1	1	1	1	1	1	1	1	1	1	11	FUSE 80A	0298080							33591
1	1	1	1	1	1	1	1	1	1	1	1	10	STARTER	149-12NL							30552
1	1	1	1	1	1	1	1	1	1	1	1	9	POWER SOLENOID INT	22735			alt. 111-225-5				00114
2	2	2	2	2	2	2	2	2	2	2	2	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS					00136
1	1	1	1	1	1							7	BATTERIE 12V 11Ah	RG-12LSA		Fa. CONCORDE					33697
						1	1	1	1	1	1	7	BATTERIE 12V 24Ah	RG-25XC		Fa. CONCORDE					03617
1	1	1	1	1	1	1	1	1	1	1	1	6	BATTERIE LADEKABEL								03543
1	1	1	1	1	1	1	1	1	1	1	1	5	SOCKET 12 VOLT	146 19 20							02636
4	4	3	3	5	5	4	4	3	3	5	5	4	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
1	1	1	1	1	1	1	1	1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP					01168
2	2	1	1	2	2	2	2	1	1	2	2	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
1	1	1	1	1	1	1	1	1	1	1	1	1	RELAY PCB FUSE	EA-83290.1							83290.1

△2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	ÄM-300-14-03	07.02.14	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

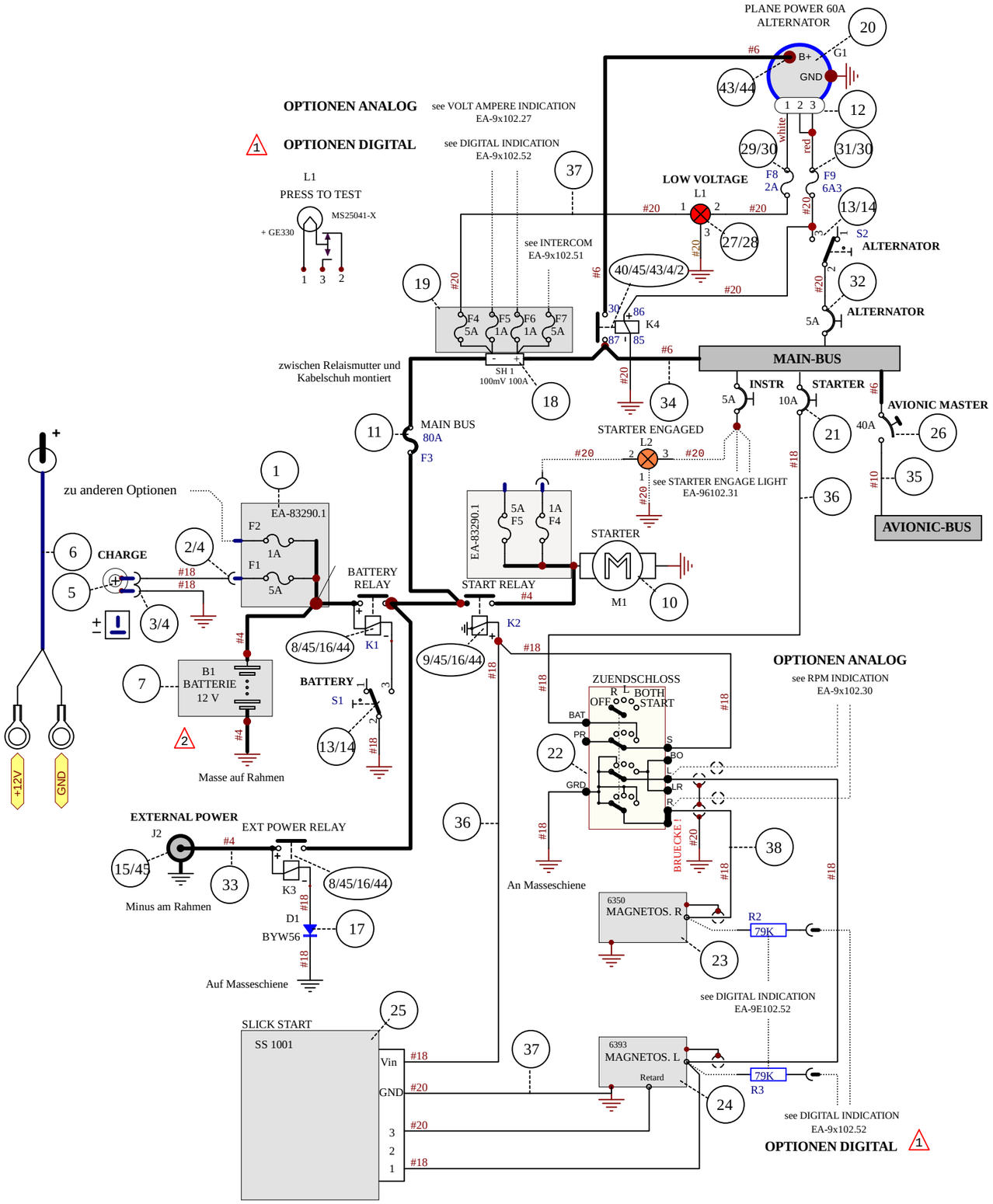
EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**B**
A4	Blatt 2 von 2

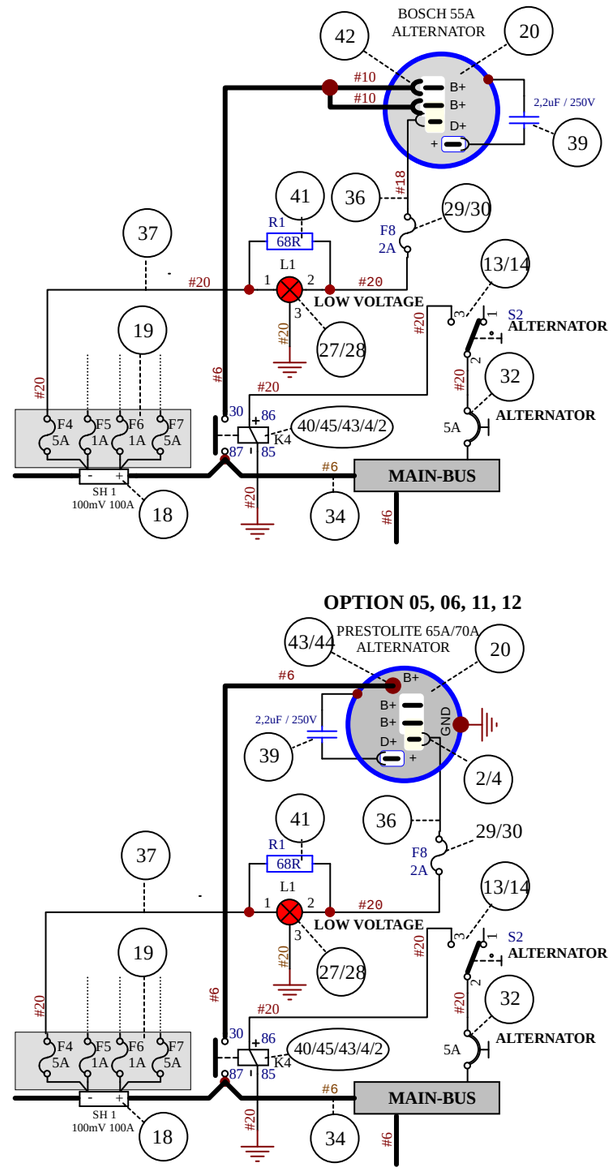
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0900a2**

OPTION 01, 02, 07, 08



OPTION 03, 04, 09, 10



OPTION 05, 06, 11, 12

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

1 im Musterumfang EA-300/LT enthalten
im Musterumfang EA-300/LC NICHT enthalten

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Baukate bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. N.:	Datum	Name
C	ÄM-300-14-17	16.05.15	HW
B	ÄM-300-14-03	07.02.14	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EDV-Kennung: **EA3E0900c**

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	C
A3	Blatt 1 von 2

Schutzvermerk nach DIN 34 beachten.

12	11	10	09	08	07	06	05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
5	5	5	5	5	5	5	5	5	5	5	5	45	SCHUTZKAPPE	MS25171-3S							00781
4	4	3	3	4	4	4	4	3	3	4	4	44	SCHUTZKAPPE	MS25171-1S							00786
1	1			3	3	1	1			3	3	43	RINGÖSE AWG8 6mm	0033461-0							FE4178
		1	1					1	1			42	POWER CONNECTOR	1 297 011 001		Fa. BOSCH					FE0001
1	1	1	1			1	1	1	1			41	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC					33341
1	1	1	1	1	1	1	1	1	1	1	1	40	RELAIS RP/120-12	1.016.158.00		Fa. MRS					33586
1	1	1	1			1	1	1	1			39	CAPACITOR 2,2uF/250V	0 290 800 052							31608
X	X	X	X	X	X	X	X	X	X	X	X	38	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr		02199
X	X	X	X	X	X	X	X	X	X	X	X	37	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
X	X	X	X	X	X	X	X	X	X	X	X	36	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
X	X	X	X	X	X	X	X	X	X	X	X	35	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
X	X	X	X	X	X	X	X	X	X	X	X	34	WIRE AWG 6	MIL-W-22759/16-6					mtr		33081
X	X	X	X	X	X	X	X	X	X	X	X	33	WIRE AWG 4	MIL-W-22759/16-4					mtr		200005
1	1	1	1	1	1	1	1	1	1	1	1	32	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
1	1	1	1	1	1	1	1	1	1	1	1	31	FUSE 6,3A (5 x 20mm flink)	520.625		Fa. ESKA					31880
1	1	1	1	2	2	1	1	1	1	2	2	30	FUSEHOLDER	414-601							30033
1	1	1	1	1	1	1	1	1	1	1	1	29	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA					31878
1	1	1	1	1	1	1	1	1	1	1	1	28	BULB (14V 0,08A)	GE330							01569
1	1	1	1	1	1	1	1	1	1	1	1	27	PRESS TO TEST INDICATOR (red)	MS25041-2							00140
1	1	1	1	1	1	1	1	1	1	1	1	26	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD					03618
1	1	1	1	1	1	1	1	1	1	1	1	25	SLICK START	SS 1001		Fa. UNISON					32598
1	1	1	1	1	1	1	1	1	1	1	1	24	MAGNETO LEFT	6393							32860
1	1	1	1	1	1	1	1	1	1	1	1	23	MAGNETO RIGHT	6350							02337
1	1	1	1	1	1	1	1	1	1	1	1	22	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL					00185
1	1	1	1	1	1	1	1	1	1	1	1	21	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON					31505
		1	1					1	1			20	BOSCH ALTERNATOR 55A	0120 489 917		Fa. BOSCH					33508
1	1					1	1					20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE					33558
				1	1					1	1	20	PLANE POWER ALTERNATOR 60A	AL 12-EI60/B		Fa. PLANE POWER					33552
1	1	1	1	1	1	1	1	1	1	1	1	19	FUSE PCB 4F	EA-7E291.10							7E291.010
1	1	1	1	1	1	1	1	1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL					FA3008
1	1	1	1	1	1	1	1	1	1	1	1	17	RECTIFIER	BYW56							FE4292
5	5	5	5	5	5	5	5	5	5	5	5	16	RINGZUNGE ROT 5mm	130008							02198
1	1	1	1	1	1	1	1	1	1	1	1	15	PIPER SOCKET	11-00500							31731
2		2		2		2		2		2		14	CAP RED	11-00815							31763
2		2		2		2		2		2		13	SWITCH SPST	MS35058-22							01602
	2		2		2		2		2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING					FE 4028
				1	1					1	1	12	PLUG ASSEMBLY	11-1010		Fa. PLANE POWER	in Pos. 20/01-02				31239
1	1	1	1	1	1	1	1	1	1	1	1	11	FUSE 80A	0298080							33591
1	1	1	1	1	1	1	1	1	1	1	1	10	STARTER	149-12NL							30552
1	1	1	1	1	1	1	1	1	1	1	1	9	POWER SOLENOID INT	70-111-225-5							32978
2	2	2	2	2	2	2	2	2	2	2	2	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS					00136
1	1	1	1	1	1							7	BATTERIE 12V 11Ah	RG-12LSA		Fa. CONCORDE					33697
						1	1	1	1	1	1	7	BATTERIE 12V 24Ah	RG-25XC		Fa. CONCORDE					03617
1	1	1	1	1	1	1	1	1	1	1	1	6	BATTERIE LADEKABEL								03543
1	1	1	1	1	1	1	1	1	1	1	1	5	SOCKET 12 VOLT	146 19 20							02636
4	4	3	3	5	5	4	4	3	3	5	5	4	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
1	1	1	1	1	1	1	1	1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP					01168
2	2	1	1	2	2	2	2	1	1	2	2	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
1	1	1	1	1	1	1	1	1	1	1	1	1	RELAY PCB FUSE	EA-83290.1							83290.1

2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
C	ÄM-300-14-17	16.05.15	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

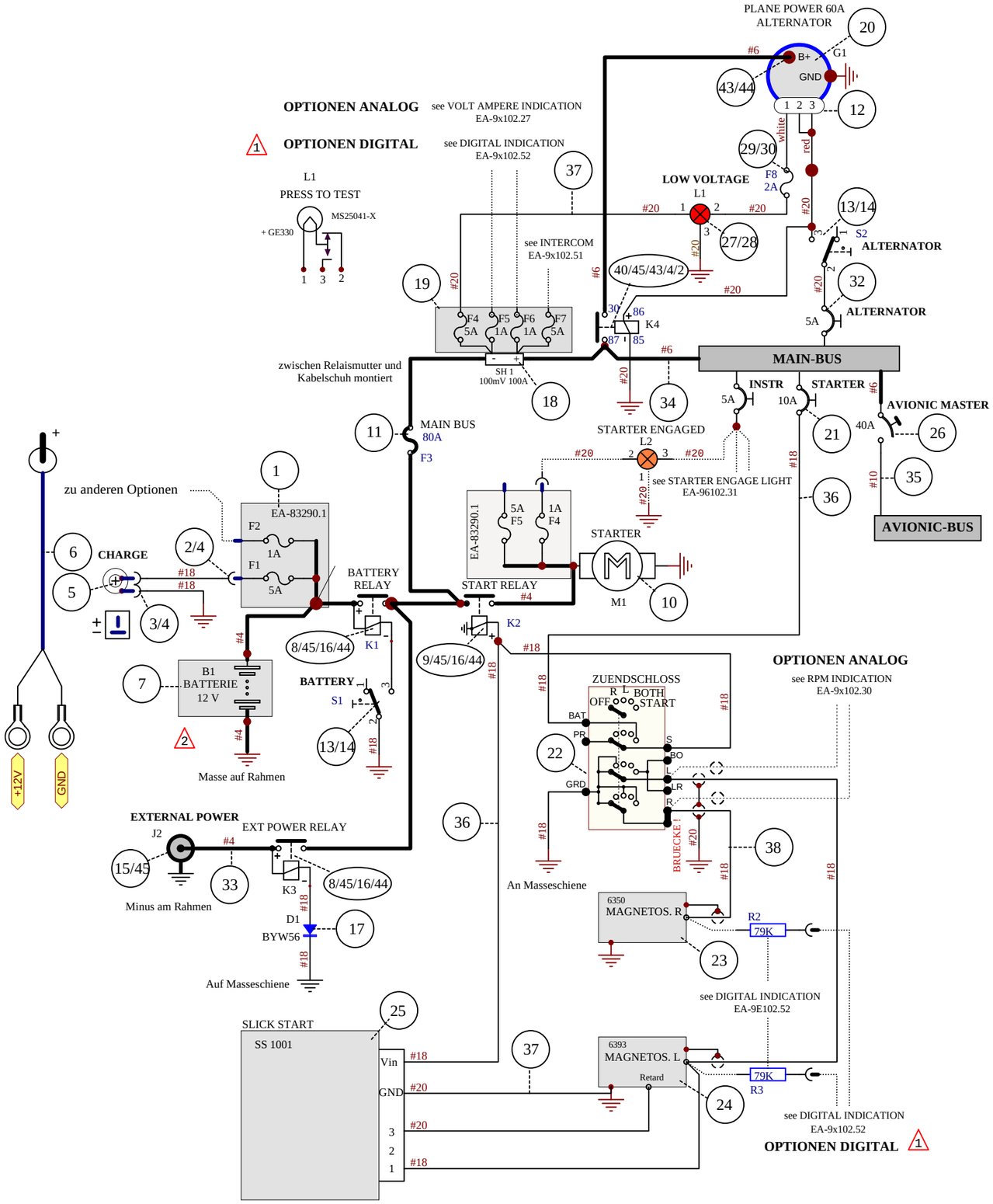
EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**C**
A4	Blatt 2 von 2

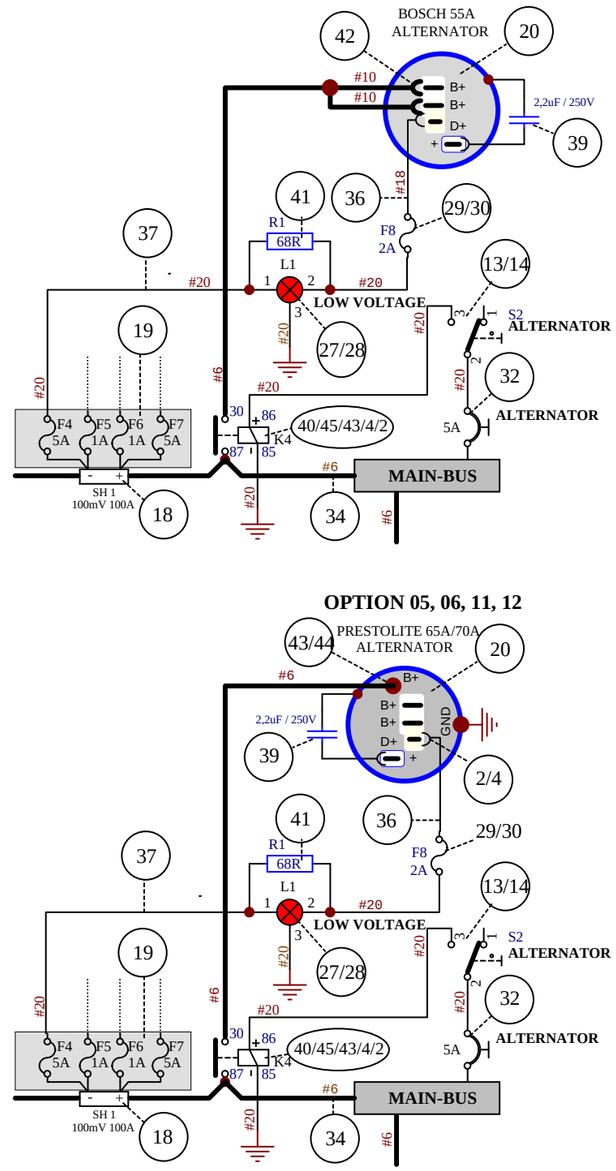
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0900c**

OPTION 01, 02, 07, 08



OPTION 03, 04, 09, 10



OPTION 05, 06, 11, 12

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

1 im Musterumfang EA-300/LT enthalten
im Musterumfang EA-300/LC NICHT enthalten

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04		D	ÄM-300-15-02	15.09.15	HW
03		C	ÄM-300-14-17	16.05.15	HW
02		B	ÄM-300-14-03	07.02.14	HW
01		A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EDV-Kennung: **EA3E0900d**

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	D
A3	Blatt 1 von 2

Schutzvermerk nach DIN 34 beachten.

5	5	5	5	5	5	5	5	5	5	5	5	45	SCHUTZKAPPE	MS25171-3S								00781
4	4	3	3	4	4	4	4	3	3	4	4	44	SCHUTZKAPPE	MS25171-1S								00786
1	1			3	3	1	1			3	3	43	RINGÖSE AWG8 6mm	0033461-0								FE4178
		1	1					1	1			42	POWER CONNECTOR	1 297 011 001		Fa. BOSCH						FE0001
1	1	1	1			1	1	1	1			41	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC						33341
1	1	1	1	1	1	1	1	1	1	1	1	40	RELAIS RP/120-12	1.016.158.00		Fa. MRS						33586
1	1	1	1			1	1	1	1			39	CAPACITOR 2,2uF/250V	0 290 800 052								31608
X	X	X	X	X	X	X	X	X	X	X	X	38	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr			02199
X	X	X	X	X	X	X	X	X	X	X	X	37	WIRE AWG 20	MIL-W-22759/16-20					mtr			00775
X	X	X	X	X	X	X	X	X	X	X	X	36	WIRE AWG 18	MIL-W-22759/16-18					mtr			00776
X	X	X	X	X	X	X	X	X	X	X	X	35	WIRE AWG 10	MIL-W-22759/16-10					mtr			FE 0003
X	X	X	X	X	X	X	X	X	X	X	X	34	WIRE AWG 6	MIL-W-22759/16-6					mtr			33081
X	X	X	X	X	X	X	X	X	X	X	X	33	WIRE AWG 4	MIL-W-22759/16-4					mtr			200005
1	1	1	1	1	1	1	1	1	1	1	1	32	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON						31506
1	1	1	1	1	1	1	1	1	1	1	1	30	FUSEHOLDER	414-601								30033
1	1	1	1	1	1	1	1	1	1	1	1	29	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA						31878
1	1	1	1	1	1	1	1	1	1	1	1	28	BULB (14V 0,08A)	GE330								01569
1	1	1	1	1	1	1	1	1	1	1	1	27	PRESS TO TEST INDICATOR (red)	MS25041-2								00140
1	1	1	1	1	1	1	1	1	1	1	1	26	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD						03618
1	1	1	1	1	1	1	1	1	1	1	1	25	SLICK START	SS 1001		Fa. UNISON						32598
1	1	1	1	1	1	1	1	1	1	1	1	24	MAGNETO LEFT	6393								32860
1	1	1	1	1	1	1	1	1	1	1	1	23	MAGNETO RIGHT	6350								02337
1	1	1	1	1	1	1	1	1	1	1	1	22	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL						00185
1	1	1	1	1	1	1	1	1	1	1	1	21	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON						31505
		1	1					1	1			20	BOSCH ALTERNATOR 55A	0120 489 917		Fa. BOSCH						33508
1	1					1	1					20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE						33558
				1	1					1	1	20	PLANE POWER ALTERNATOR 60A	AL 12-EI60/B		Fa. PLANE POWER						33552
1	1	1	1	1	1	1	1	1	1	1	1	19	FUSE PCB 4F	EA-7E291.10								7E291.010
1	1	1	1	1	1	1	1	1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL						FA3008
1	1	1	1	1	1	1	1	1	1	1	1	17	RECTIFIER	BYW56								FE4292
5	5	5	5	5	5	5	5	5	5	5	5	16	RINGZUNGE ROT 5mm	130008								02198
1	1	1	1	1	1	1	1	1	1	1	1	15	PIPER SOCKET	11-00500								31731
2		2		2		2		2		2		14	CAP RED	11-00815								31763
2		2		2		2		2		2		13	SWITCH SPST	MS35058-22								01602
	2		2		2		2		2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING						FE 4028
				1	1					1	1	12	PLUG ASSEMBLY	11-1010		Fa. PLANE POWER	in Pos. 20/01-02					31239
1	1	1	1	1	1	1	1	1	1	1	1	11	FUSE 80A	0298080								33591
1	1	1	1	1	1	1	1	1	1	1	1	10	STARTER	149-12NL								30552
1	1	1	1	1	1	1	1	1	1	1	1	9	POWER SOLENOID INT	70-111-225-5								32978
2	2	2	2	2	2	2	2	2	2	2	2	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS						00136
1	1	1	1	1	1							7	BATTERIE 12V 11Ah	RG-12LSA		Fa. CONCORDE						33697
						1	1	1	1	1	1	7	BATTERIE 12V 24Ah	RG-25XC		Fa. CONCORDE						03617
1	1	1	1	1	1	1	1	1	1	1	1	6	BATTERIE LADEKABEL									03543
1	1	1	1	1	1	1	1	1	1	1	1	5	SOCKET 12 VOLT	146 19 20								02636
4	4	3	3	5	5	4	4	3	3	5	5	4	FLACHSTECKHÜLSE 6,3mm	0042282-2								00093
1	1	1	1	1	1	1	1	1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP						01168
2	2	1	1	2	2	2	2	1	1	2	2	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP						00098
1	1	1	1	1	1	1	1	1	1	1	1	1	RELAY PCB FUSE	EA-83290.1								83290.1
12	11	10	09	08	07	06	05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht		MaWi-Nr.

2 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04		D	ÄM-300-15-02	15.09.15	HW
03		C	ÄM-300-14-17	16.05.15	HW
02					
01		A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

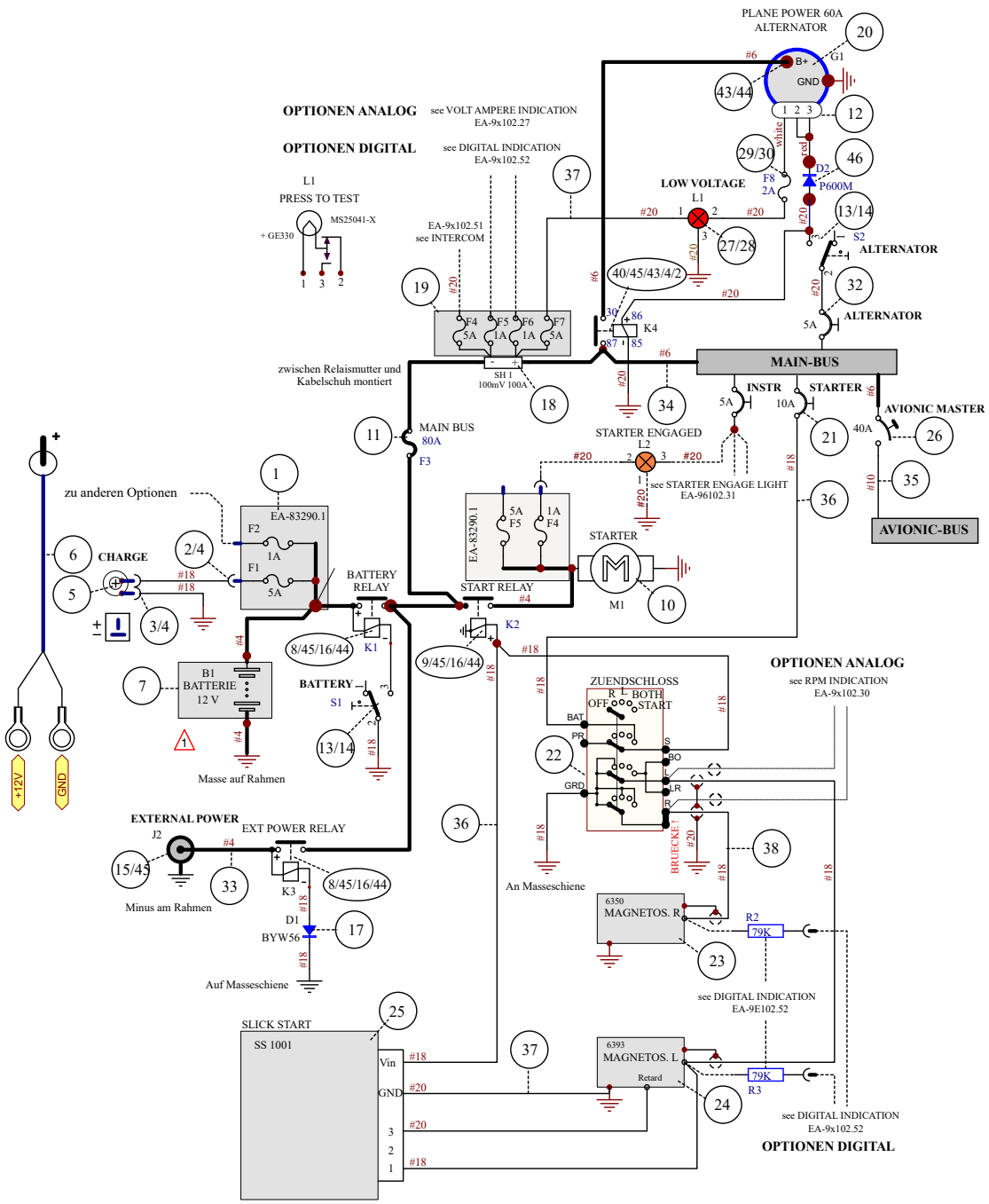
EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**D**
A4	Blatt 2 von 2

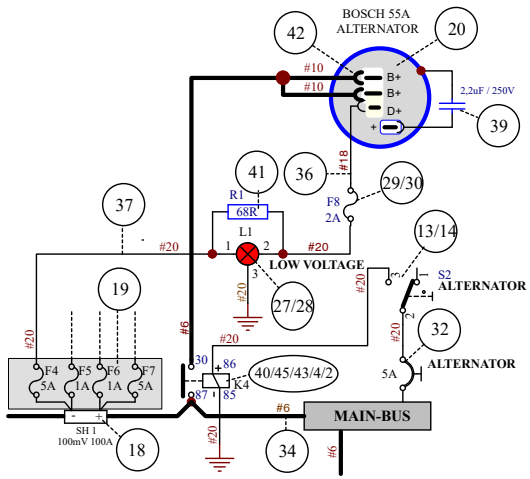
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0900d2**

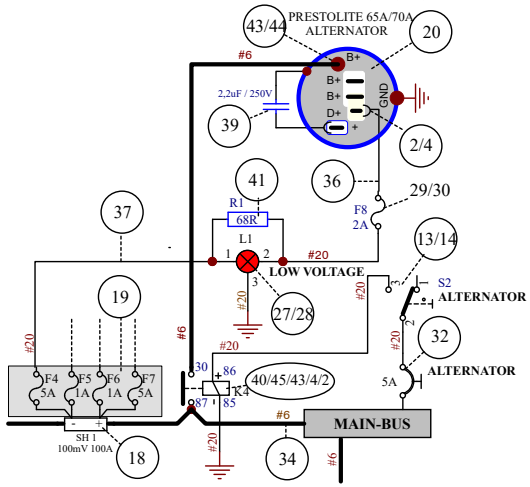
OPTION 01, 02, 07, 08



OPTION 03, 04, 09, 10



OPTION 05, 06, 11, 12



OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
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OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
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1 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.	Änderung/Mod. Nr.	Datum	Name
E	ÄM-300-17-03	24.02.17	HW
D	ÄM-300-15-02	15.09.15	HW
C	ÄM-300-14-17	16.05.15	HW
B	ÄM-300-14-03	07.02.14	HW
A	ÄM-300-11-17	22.06.11	HW

EDV-Kennung: EA3E0900e1

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**E**
A3	Blatt 1 von 2

Schutzvermeck nach DIN 34 beachten.

⚠1 ⚠1 ⚠1 ⚠1 ⚠1 ⚠1

				1	1					1	1	46	DIODE P600M, 6A	P600M							FE4221
5	5	5	5	5	5	5	5	5	5	5	5	45	SCHUTZKAPPE	MS25171-3S							00781
4	4	3	3	4	4	4	4	3	3	4	4	44	SCHUTZKAPPE	MS25171-1S							00786
1	1			3	3	1	1			3	3	43	RINGÖSE AWG8 6mm	0033461-0							FE4178
		1	1					1	1			42	POWER CONNECTOR	1 297 011 001		Fa. BOSCH					FE0001
1	1	1	1			1	1	1	1			41	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC					33341
1	1	1	1	1	1	1	1	1	1	1	1	40	RELAIS RP/120-12	1.016.158.00		Fa. MRS					33586
1	1	1	1			1	1	1	1			39	CAPACITOR 2,2uF/250V	0 290 800 052							31608
X	X	X	X	X	X	X	X	X	X	X	X	38	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr		02199
X	X	X	X	X	X	X	X	X	X	X	X	37	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
X	X	X	X	X	X	X	X	X	X	X	X	36	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
X	X	X	X	X	X	X	X	X	X	X	X	35	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
X	X	X	X	X	X	X	X	X	X	X	X	34	WIRE AWG 6	MIL-W-22759/16-6					mtr		33081
X	X	X	X	X	X	X	X	X	X	X	X	33	WIRE AWG 4	MIL-W-22759/16-4					mtr		200005
1	1	1	1	1	1	1	1	1	1	1	1	32	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
1	1	1	1	1	1	1	1	1	1	1	1	30	FUSEHOLDER	414-601							30033
1	1	1	1	1	1	1	1	1	1	1	1	29	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA					31878
1	1	1	1	1	1	1	1	1	1	1	1	28	BULB (14V 0,08A)	GE330							01569
1	1	1	1	1	1	1	1	1	1	1	1	27	PRESS TO TEST INDICATOR (red)	MS25041-2							00140
1	1	1	1	1	1	1	1	1	1	1	1	26	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD					03618
1	1	1	1	1	1	1	1	1	1	1	1	25	SLICK START	SS 1001		Fa. UNISON					32598
1	1	1	1	1	1	1	1	1	1	1	1	24	MAGNETO LEFT	6393							32860
1	1	1	1	1	1	1	1	1	1	1	1	23	MAGNETO RIGHT	6350							02337
1	1	1	1	1	1	1	1	1	1	1	1	22	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL					00185
1	1	1	1	1	1	1	1	1	1	1	1	21	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON					31505
		1	1					1	1			20	BOSCH ALTERNATOR 55A	0120 489 917		Fa. BOSCH					33508
1	1					1	1					20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE					33558
				1	1					1	1	20	PLANE POWER ALTERNATOR 60A	AL 12-EI60/B		Fa. PLANE POWER					33552
1	1	1	1	1	1	1	1	1	1	1	1	19	FUSE PCB 4F	EA-7E291.10							7E291.010
1	1	1	1	1	1	1	1	1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL					FA3008
1	1	1	1	1	1	1	1	1	1	1	1	17	RECTIFIER	BYW56							FE4292
5	5	5	5	5	5	5	5	5	5	5	5	16	RINGZUNGE ROT 5mm	130008							02198
1	1	1	1	1	1	1	1	1	1	1	1	15	PIPER SOCKET	11-00500							31731
2		2		2		2		2		2		14	CAP RED	11-00815							31763
2		2		2		2		2		2		13	SWITCH SPST	MS35058-22							01602
	2		2		2		2		2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING					FE 4028
				1	1					1	1	12	PLUG ASSEMBLY	11-1010		Fa. PLANE POWER	in Pos. 20/01-02				31239
1	1	1	1	1	1	1	1	1	1	1	1	11	FUSE 80A	0298080							33591
1	1	1	1	1	1	1	1	1	1	1	1	10	STARTER	149-12NL							30552
1	1	1	1	1	1	1	1	1	1	1	1	9	POWER SOLENOID INT	70-111-225-5							32978
2	2	2	2	2	2	2	2	2	2	2	2	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS					00136
1	1	1	1	1	1							7	BATTERIE 12V 11Ah	RG-12LSA		Fa. CONCORDE					33697
						1	1	1	1	1	1	7	BATTERIE 12V 24Ah	RG-25XC		Fa. CONCORDE					03617
1	1	1	1	1	1	1	1	1	1	1	1	6	BATTERIE LADEKABEL								03543
1	1	1	1	1	1	1	1	1	1	1	1	5	SOCKET 12 VOLT	146 19 20							02636
4	4	3	3	5	5	4	4	3	3	5	5	4	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
1	1	1	1	1	1	1	1	1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP					01168
2	2	1	1	2	2	2	2	1	1	2	2	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
1	1	1	1	1	1	1	1	1	1	1	1	1	RELAY PCB FUSE	EA-83290.1							83290.1
12	11	10	09	08	07	06	05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

⚠1 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
E	ÄM-300-17-03	24.02.17	HW
D	ÄM-300-15-02	15.09.15	HW
C	ÄM-300-14-17	16.05.15	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

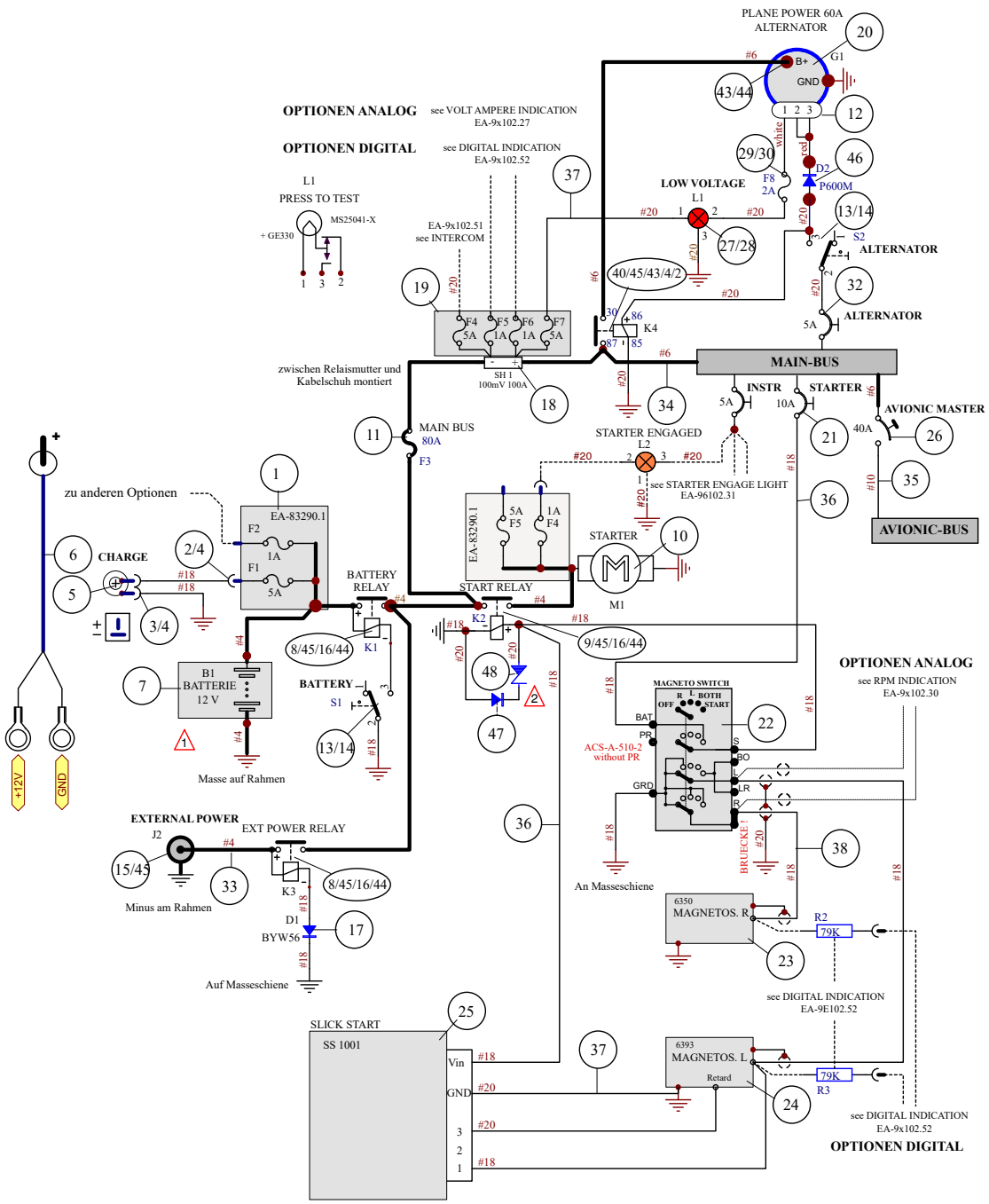
EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	**E**
A4	Blatt 2 von 2

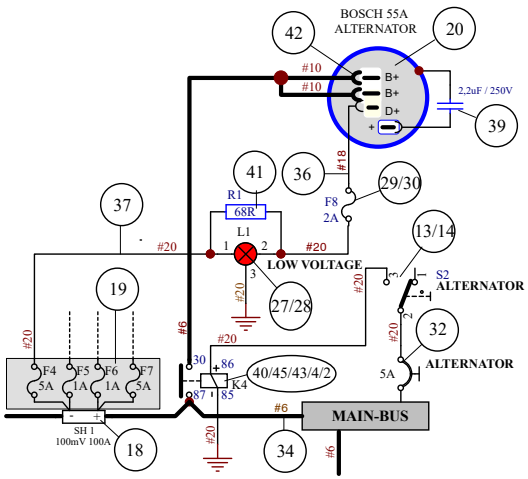
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0900e2**

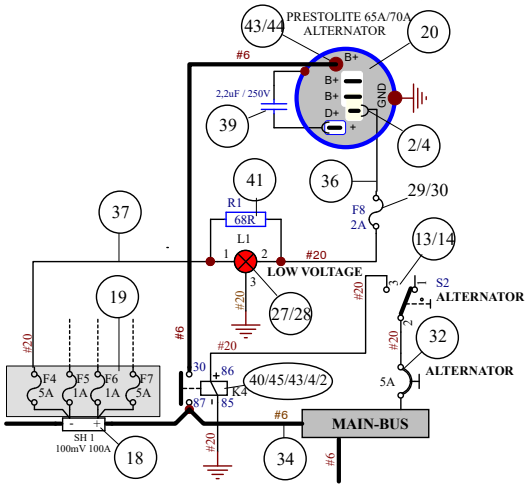
OPTION 01, 02, 07, 08



OPTION 03, 04, 09, 10



OPTION 05, 06, 11, 12



OPTION 13 = DIODEN zusätzlich, wenn ACS A-510-2 MAGNETO SWITCH verwendet wird
OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 11 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 10 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 09 = BATTERIE RG-12LSA und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 08 = BATTERIE RG-12LSA und PLANE POWER 60A mit MS SWITCH
OPTION 07 = BATTERIE RG-12LSA und PLANE POWER 60A mit KISSLING SWITCH
OPTION 06 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
OPTION 05 = BATTERIE RG-25XC und PRESTOLITE ALTERNATOR 65A mit KISSLING SWITCH
OPTION 04 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit MS SWITCH
OPTION 03 = BATTERIE RG-25XC und BOSCH ALTERNATOR 55A mit KISSLING SWITCH
OPTION 02 = BATTERIE RG-25XC und PLANE POWER 60A mit MS SWITCH
OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

2 OPTION 13 = DIODEN zusätzlich, wenn ACS A-510-2 MAGNETO SWITCH verwendet wird

1 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
F	ÄM 300-21-05	26.07.21	HW
E	ÄM-300-17-03	24.02.17	HW
D	ÄM-300-15-02	15.09.15	HW
C	ÄM-300-14-17	16.05.15	HW
B	ÄM-300-14-03	07.02.14	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EDV-Kennung: EA3E0900f1

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	F
A3	Blatt 1 von 2

Schutzvermeck nach DIN 34 beachten.

13	12	11	10	09	08	07	06	05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
												1	48	RECTIFIER ZENER DIODE	2M12Z							35842
													47	RECTIFIER DIODE	BYW56							FE4292
					1	1					1	1	46	DIODE P600M, 6A	P600M							FE4221
	5	5	5	5	5	5	5	5	5	5	5	5	45	SCHUTZKAPPE	MS25171-3S							00781
	4	4	3	3	4	4	4	4	3	3	4	4	44	SCHUTZKAPPE	MS25171-1S							00786
	1	1			3	3	1	1			3	3	43	RINGÖSE AWG8 6mm	0033461-0							FE4178
			1	1					1	1			42	POWER CONNECTOR	1 297 011 001		Fa. BOSCH					FE0001
	1	1	1	1			1	1	1	1			41	RESISTOR 68R / 6WATT	ER5868RJT		Fa. TYCO ELEKTRONIC					33341
	1	1	1	1	1	1	1	1	1	1	1	1	40	RELAIS RP/120-12	1.016.158.00		Fa. MRS					33586
	1	1	1	1			1	1	1	1			39	CAPACITOR 2,2uF/250V	0 290 800 052							31608
	X	X	X	X	X	X	X	X	X	X	X	X	38	WIRE AWG 18 SHIELDED	MIL-C-27500-18TG1					mtr		02199
	X	X	X	X	X	X	X	X	X	X	X	X	37	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
	X	X	X	X	X	X	X	X	X	X	X	X	36	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
	X	X	X	X	X	X	X	X	X	X	X	X	35	WIRE AWG 10	MIL-W-22759/16-10					mtr		FE 0003
	X	X	X	X	X	X	X	X	X	X	X	X	34	WIRE AWG 6	MIL-W-22759/16-6					mtr		33081
	X	X	X	X	X	X	X	X	X	X	X	X	33	WIRE AWG 4	MIL-W-22759/16-4					mtr		200005
	1	1	1	1	1	1	1	1	1	1	1	1	32	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
	1	1	1	1	1	1	1	1	1	1	1	1	30	FUSEHOLDER	414-601							30033
	1	1	1	1	1	1	1	1	1	1	1	1	29	FUSE 2A (5 x 20mm flink)	520.620		Fa. ESKA					31878
	1	1	1	1	1	1	1	1	1	1	1	1	28	BULB (14V 0,08A)	GE330							01569
	1	1	1	1	1	1	1	1	1	1	1	1	27	PRESS TO TEST INDICATOR (red)	MS25041-2							00140
	1	1	1	1	1	1	1	1	1	1	1	1	26	CIRCUIT BREAKER SWITCH 40A	W31X2M1G-40		Fa. POTTER BRUMFIELD					03618
	1	1	1	1	1	1	1	1	1	1	1	1	25	SLICK START	SS 1001		Fa. UNISON					32598
	1	1	1	1	1	1	1	1	1	1	1	1	24	MAGNETO LEFT	6393							32860
	1	1	1	1	1	1	1	1	1	1	1	1	23	MAGNETO RIGHT	6350							02337
1													22	MAGNETO SWITCH	A-510-2		Fa. ASC					35595
	1	1	1	1	1	1	1	1	1	1	1	1	22	MAGNETO SWITCH	10-357200-1		Fa. TELEDYNE CONTINENTAL					00185
	1	1	1	1	1	1	1	1	1	1	1	1	21	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON					31505
			1	1					1	1			20	BOSCH ALTERNATOR 55A	0120 489 917		Fa. BOSCH					33508
	1	1					1	1					20	PRESTOLITE ALTERNATOR 65A/70A	66021637		Fa. PRESTOLITE					33558
					1	1					1	1	20	PLANE POWER ALTERNATOR 60A	AL 12-EI60/B		Fa. PLANE POWER					33552
	1	1	1	1	1	1	1	1	1	1	1	1	19	FUSE PCB 4F	EA-7E291.10							7E291.010
	1	1	1	1	1	1	1	1	1	1	1	1	18	SHUNT	S-50		Fa. ELECTRONICS INTERNATIONAL					FA3008
	1	1	1	1	1	1	1	1	1	1	1	1	17	RECTIFIER	BYW56							FE4292
	5	5	5	5	5	5	5	5	5	5	5	5	16	RINGZUNGE ROT 5mm	130008							02198
	1	1	1	1	1	1	1	1	1	1	1	1	15	PIPER SOCKET	11-00500							31731
	2		2		2		2		2		2		14	CAP RED	11-00815							31763
	2		2		2		2		2		2		13	SWITCH SPST	MS35058-22							01602
		2		2		2		2		2		2	13	SWITCH SPST	07.1.1.13 920		Fa. KISSLING					33600
					1	1					1	1	12	PLUG ASSEMBLY	11-1010		Fa. PLANE POWER	in Pos. 20/01-02				31239
	1	1	1	1	1	1	1	1	1	1	1	1	11	FUSE 80A	0298080							33591
	1	1	1	1	1	1	1	1	1	1	1	1	10	STARTER	149-12NL							30552
	1	1	1	1	1	1	1	1	1	1	1	1	9	POWER SOLENOID INT	70-111-225-5							32978
	2	2	2	2	2	2	2	2	2	2	2	2	8	POWER SOLENOID CONT	111-226-5		Fa. WHITE RODGERS					00136
	1	1	1	1	1	1							7	BATTERIE 12V 11Ah	RG-12LSA		Fa. CONCORDE					33697
							1	1	1	1	1	1	7	BATTERIE 12V 24Ah	RG-25XC		Fa. CONCORDE					03617
	1	1	1	1	1	1	1	1	1	1	1	1	6	BATTERIE LADEKABEL								03543
	1	1	1	1	1	1	1	1	1	1	1	1	5	SOCKET 12 VOLT	146 19 20							02636
	4	4	3	3	5	5	4	4	3	3	5	5	4	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
	1	1	1	1	1	1	1	1	1	1	1	1	3	GEHÄUSE STECKHÜLSE 2 POL	926474-1		Fa. AMP					01168
	2	2	1	1	2	2	2	2	1	1	2	2	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
	1	1	1	1	1	1	1	1	1	1	1	1	1	RELAY PCB FUSE	EA-83290.1							83290.1

1 OPTION 07 - 12 = BATTERIE RG-12LSA nicht fuer Muster EA-300/LT
OPTION 13 = zusätzlich, wenn ACS A-510-2 MAGNETO SWITCH verwendet wird
OPTION 12 = BATTERIE RG-12LSA und PRESTOLITE ALTERNATOR 65A mit MS SWITCH
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OPTION 01 = BATTERIE RG-25XC und PLANE POWER 60A mit KISSLING SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
F	ÄM 300-21-05	26.07.21	HW
E	ÄM-300-17-03	24.02.17	HW
D	ÄM-300-15-02	15.09.15	HW
C	ÄM-300-14-17	16.05.15	HW
B	ÄM-300-14-03	07.02.14	HW
A	ÄM-300-11-17	22.06.11	HW

	Datum	Name
Bearb.:	10.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

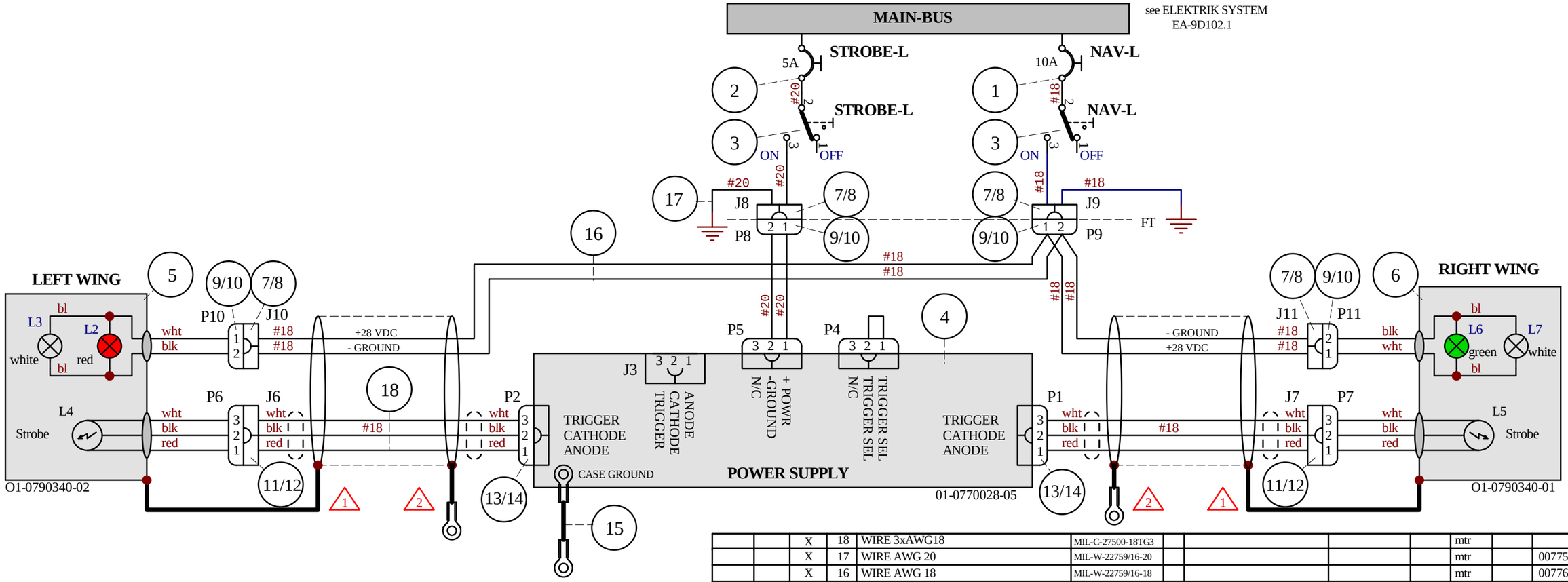
Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
ELEKTRIK SYSTEM

EA-9E102.1	F
A4	Blatt 2 von 2

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: EA3E0900f2



		X	18	WIRE 3xAWG18	MIL-C-27500-18TG3					mtr		
		X	17	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		X	16	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
		1	15	GROUND WIRE	EA-86201.1							
		6	14	PIN	163558-2		Fa. AMP					FE 4306
		2	13	PIN GEHÄUSE 3 POLIG	1-0480305-0		Fa. AMP					FE 4308
		6	12	BUCHSE	163557-2		Fa. AMP					FE 4305
		2	11	BUCHSEN GEHÄUSE 3 POLIG	1-0480303-0		Fa. AMP					FE 4307
		8	10	FLACHSTECKER PIN 6,3mm	42565-2		Fa. AMP					00097
		4	9	PIN GEHÄUSE 2 POLIG	180924-0		Fa. AMP					00103
		8	8	FLACHSTECKER BUCHSE 6,3mm	0042282-2		Fa. AMP					00093
		4	7	BUCHSEN GEHÄUSE 2 POLIG	180923-0		Fa. AMP					00099
		1	6	LAMP ASSY R/H (90340)	O1-0790340-01		Fa. WHELEN					32989
		1	5	LAMP ASSY L/H (90340)	O1-0790340-02		Fa. WHELEN					32990
		1	4	POWER SUPPLY (A413A HDACF)	01-0770028-05		Fa. WHELEN					33427
		2	3	SWITCH	07.1.1.13		Fa. KISSLING					FE 4025
		1	2	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
		1	1	CIRCUIT BREAKER 10A	7277-2-10		Fa. KLIXON					31505
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

2 bonding of lighting protection tube: refer to drawing EA-10101.0

1 bonding of strobe lights: refer to drawing EA-10101.0

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

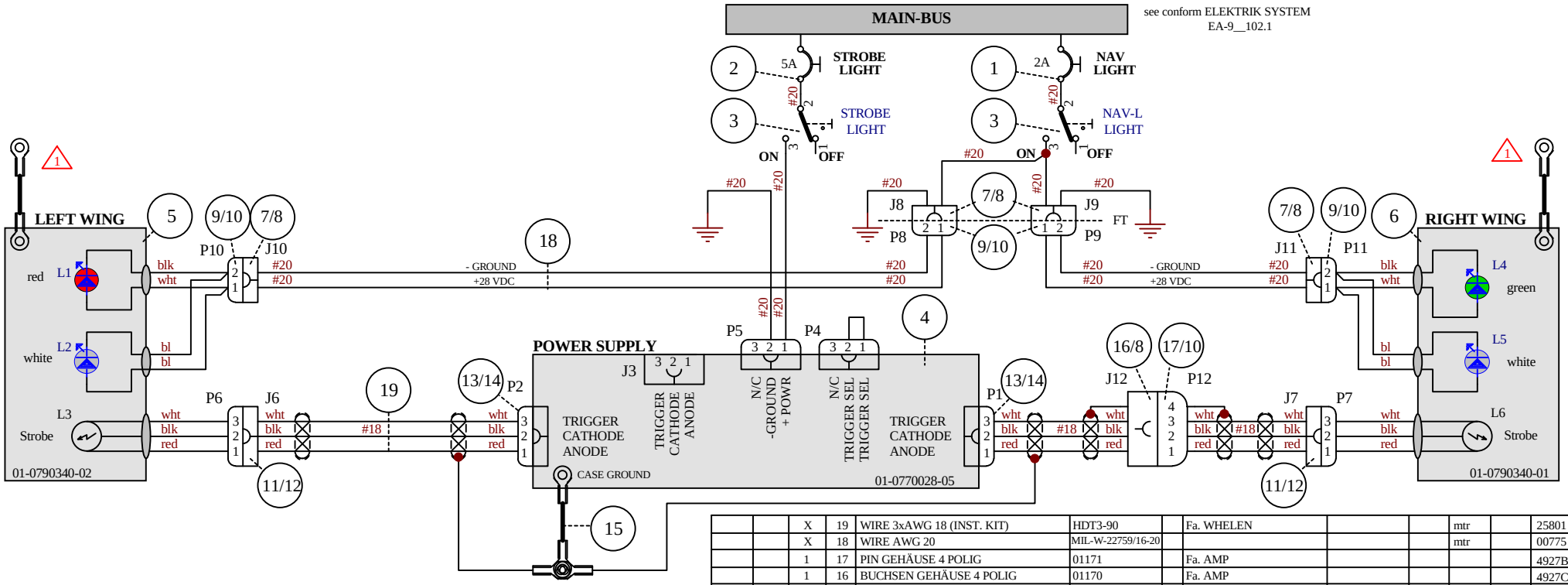
NAV-STROBE LIGHTS

EA-9D102.3

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0910**



		X	19	WIRE 3xAWG 18 (INST. KIT)	HDT3-90		Fa. WHELEN			mtr		25801
		X	18	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	17	PIN GEHÄUSE 4 POLIG	01171		Fa. AMP					4927B
		1	16	BUCHSEN GEHÄUSE 4 POLIG	01170		Fa. AMP					4927C
		1	15	GROUND WIRE	EA-86201.1							
		6	14	PIN	163558-2		Fa. AMP					FE 4306
		2	13	PIN GEHÄUSE 3 POLIG	1-0480305-0		Fa. AMP					FE 4308
		6	12	BUCHSE	163557-2		Fa. AMP					FE 4305
		2	11	BUCHSEN GEHÄUSE 3 POLIG	1-0480303-0		Fa. AMP					FE 4307
		12	10	FLACHSTECKER PIN 6,3mm	42565-2		Fa. AMP					00097
		4	9	PIN GEHÄUSE 2 POLIG	180924-0		Fa. AMP					00103
		12	8	FLACHSTECKER BUCHSE 6,3mm	0042282-2		Fa. AMP					00093
		4	7	BUCHSEN GEHÄUSE 2 POLIG	180923-0		Fa. AMP					00099
		1	6	LAMP ASSY R/H (90340)	01-0790340-01		Fa. WHELEN					32989
		1	5	LAMP ASSY L/H (90340)	01-0790340-02		Fa. WHELEN					32990
		1	4	POWER SUPPLY (A413A HDACF)	01-0770028-05		Fa. WHELEN					33427
		2	3	SWITCH	07.1.1.13		Fa. KISSLING					FE 4025
		1	2	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
		1	1	CIRCUIT BREAKER 2A	7277-2-2		Fa. KLIXON					31508
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01		A	ÄM 300-11-06	01.02.11	HW

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

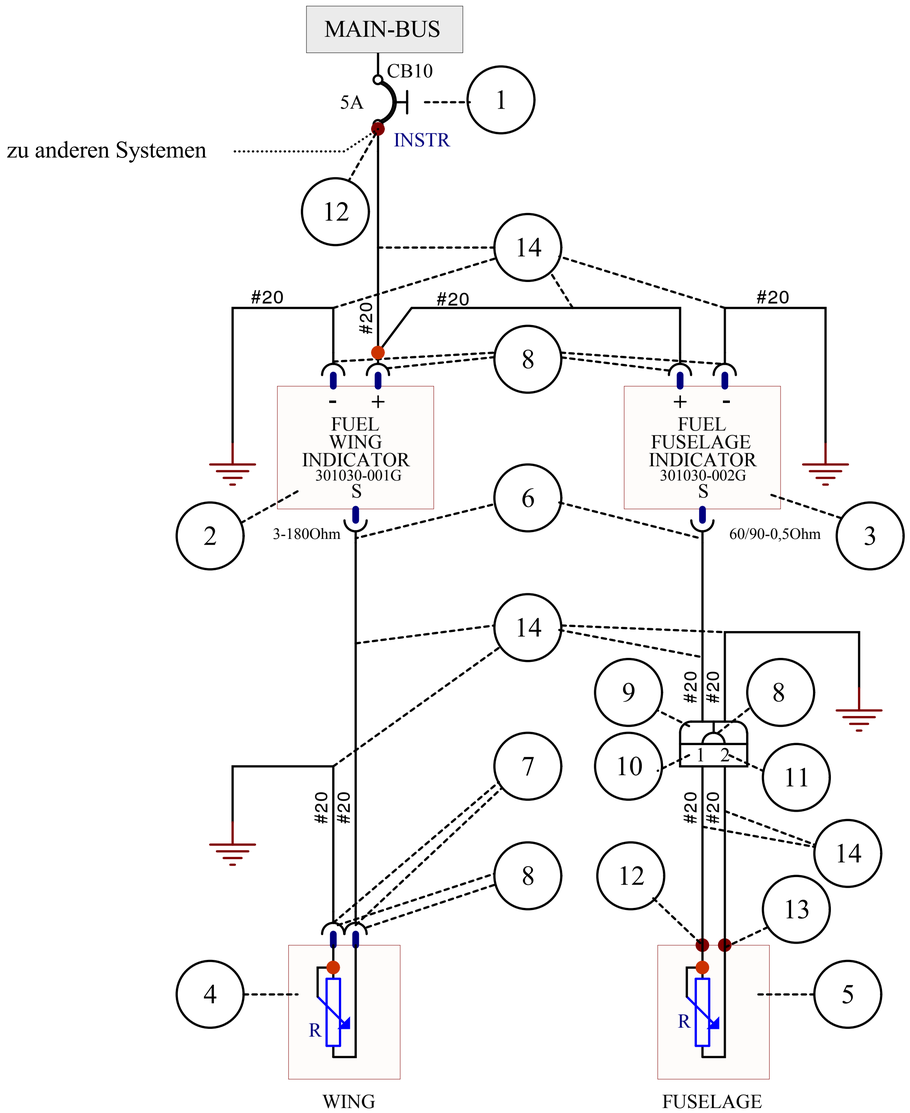
NAV-STROBE LIGHTS

EA-9D102.3	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0910a**

1 bonding of strobe lights: refer to drawing EA-1D101.0



X	X	X	X	14	KABEL AWG 20	MIL-W-22759/16-20				2	mtr		00775
1	1	1	1	13	RINGÖSE ROT 5mm	130008							02198
2	2	2	2	12	RINGÖSE ROT 4mm	031890							01417
2	2	2	2	11	FLACHSTECKER PIN 6,3mm	42565-2							00097
1	1	1	1	10	PIN GEHÄUSE 2 POLIG	180924-0							00103
1	1	1	1	9	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
10	10	10	10	8	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
2	2	2	2	7	BUCHSEN GEHÄUSE 1 POLIG	925324-2							00098
2	2	2	2	6	BUCHSEN GEHÄUSE 3 POLIG	X39-000-000-002							00386
1	1			5	FUSELAGE FUEL SENSOR	224 082 006 097 R							200174
		1		5	FUSELAGE FUEL SENSOR	224 082 007 004R							01920
			1	5	FUSELAGE FUEL SENSOR	224 082 008 021R							00387
1	1	1	1	4	WING FUEL SENSOR	226 801 015 001G							FM4006
1	1	1	1	3	FUSELAGE FUEL INDICATOR	301 030 002 G							00390
1	1	1	1	2	WING FUEL INDICATOR	301 030 001 G							200171
1				1	CIRCUIT BREAKER 5A	W23X1A1G-5							00105
	1	1	1	1	CIRCUIT BREAKER 5A	7277-2-5							31506
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 04 = EA-300/200
OPTION 03 = EA-300L
OPTION 02 = EA-300S
OPTION 01 = EA-300

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	AM-300-05-22	15.12.05	HW
	AM-300-05-18		
	AM-300-98-03		

	Datum	Name
Bearb.:	30.10.90	KHP
Gepr.:		
Gepr.:		

XTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

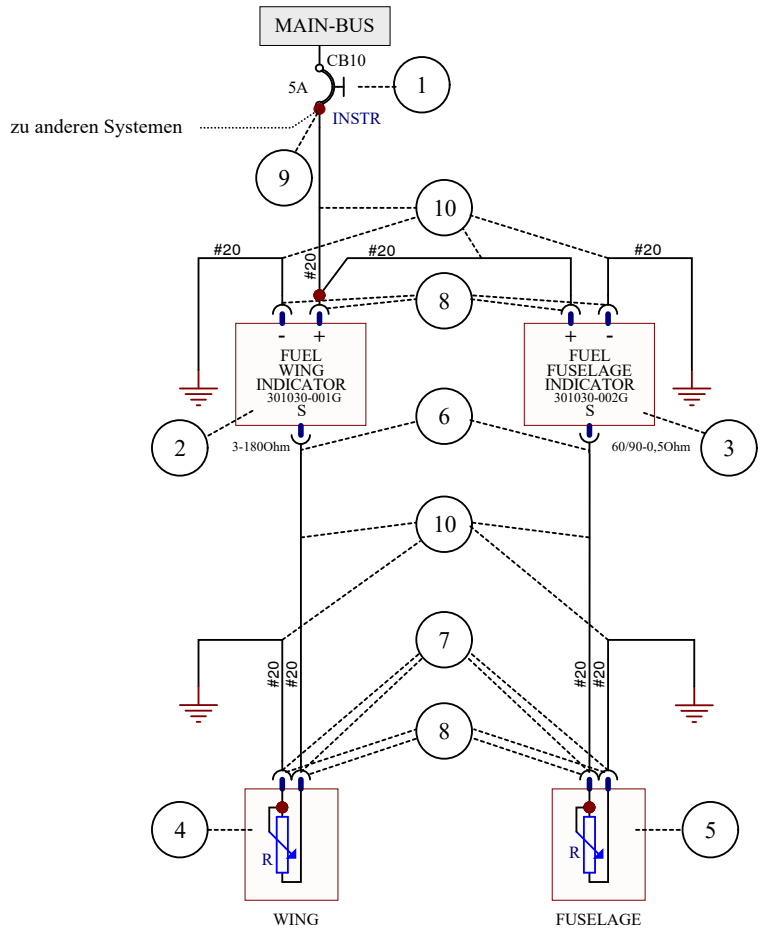
FUEL-GAGES

EA-93102.4

A4 Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung **EA300908**



X	X	X	X	10	KABEL AWG 20	MIL-W-22759/16-20				2	mtr		00775
1	1	1	1	9	RINGÖSE ROT 4mm	031890							01417
10	10	10	10	8	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
4	4	4	4	7	BUCHSEN GEHÄUSE 1 POLIG	925324-2							00098
2	2	2	2	6	BUCHSEN GEHÄUSE 3 POLIG	X39-000-000-002							00386
1	1			5	FUSELAGE FUEL SENSOR	224 082 006 097R							200174
		1		5	FUSELAGE FUEL SENSOR	224 082 007 004R							01920
			1	5	FUSELAGE FUEL SENSOR	224 082 008 021R							00387
1	1	1	1	4	WING FUEL SENSOR	226 801 015 001G							FM4006
1	1	1	1	3	FUSELAGE FUEL INDICATOR	301 030 002 G							00390
1	1	1	1	2	WING FUEL INDICATOR	301 030 001 G							200171
1				1	CIRCUIT BREAKER 5A	W23X1A1G-5							00105
	1	1	1	1	CIRCUIT BREAKER 5A	7277-2-5							31506
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 04 = EA-300/200
OPTION 03 = EA-300L
OPTION 02 = EA-300S
OPTION 01 = EA-300

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04		B	ÄM-300-15-07	28.03.16	HW
03		A	ÄM-300-05-22	15.12.05	HW
02			ÄM-300-05-18		
01			ÄM-300-98-03		

	Datum	Name
Bearb.:	30.10.90	KHP
Gepr.:		
Gepr.:		

EDV-Kennung: **EA300908b**

XTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

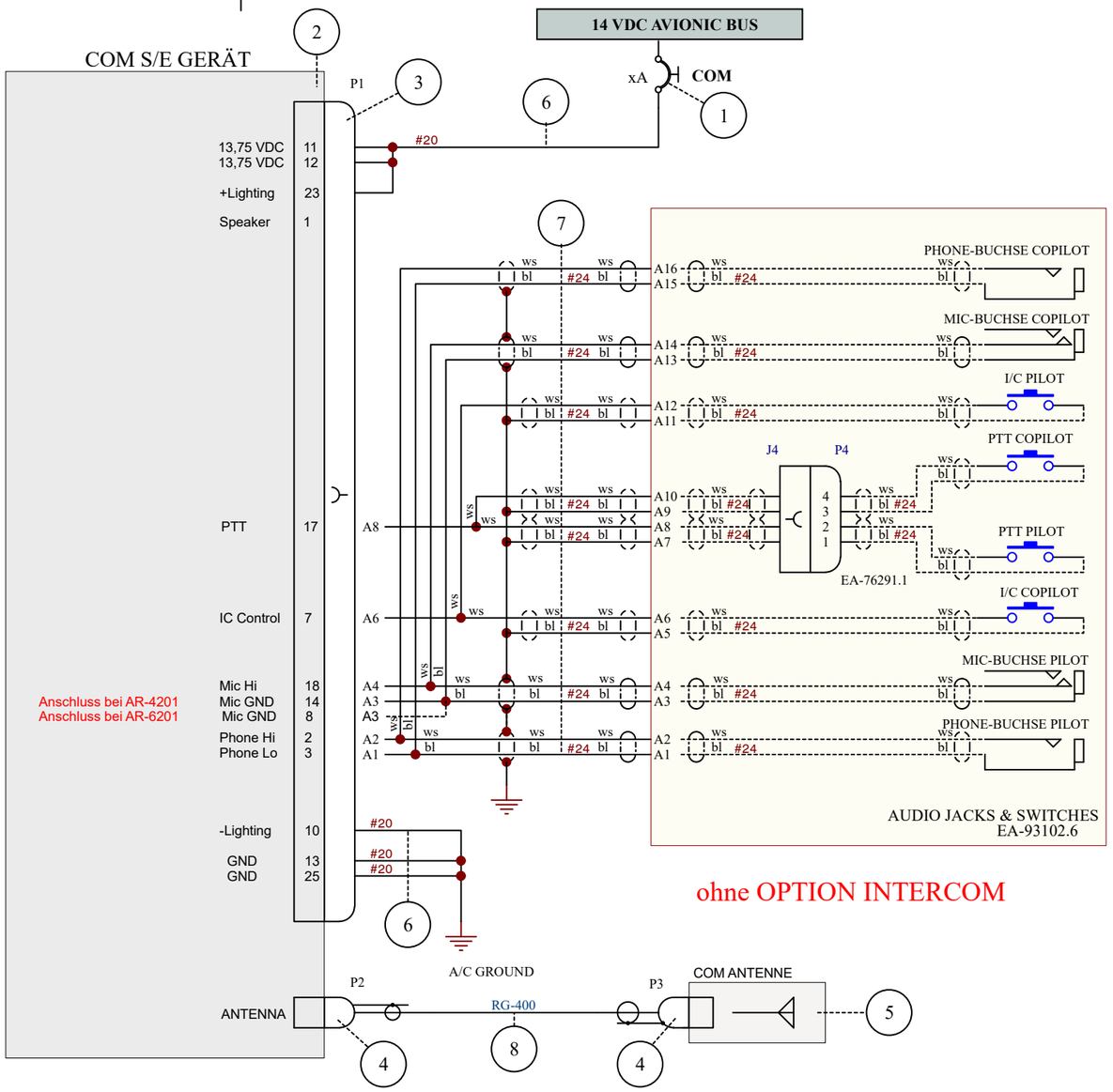
EA 300

FUEL-GAGES

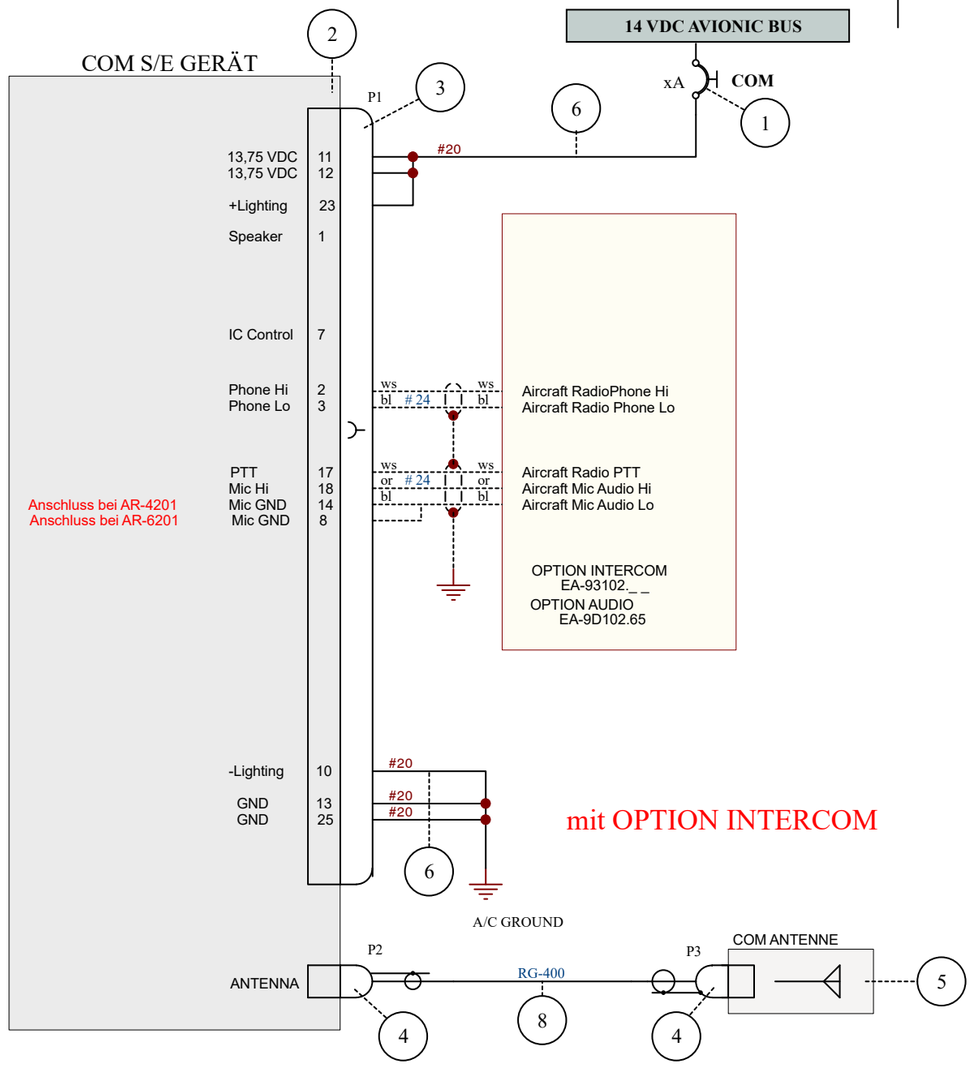
EA-93102.4	**B**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

OPTION 01 - 04



ohne OPTION INTERCOM



mit OPTION INTERCOM

	X	X	X	X	8	WIRE RG-400	RG-400					mtr		FE4111
	X	X	X	X	7	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4006
	X	X	X	X	6	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
	1	1	1	1	5	VHF ANTENNA	3001-10							FE4254
	2	2	2	2	4	BNC CONNECTOR	11BNC-50-3-52/133							30705
	1	1	1	1	3	CONNECTOR KIT								in Pos. 2
	1	1			2	COM S/E GERAET AR-4201	0894.011-07							00652
			1	1	2	COM S/E GERAET AR-6201	0610-321-9xx							33041
	1				1	CIRCUIT BREAKER 5A	W23X1A1G-5							00105
		1			1	CIRCUIT BREAKER 5A	7277-2-5							31506
			1		1	CIRCUIT BREAKER 7,5A	W23X1A1G-7,5							32113
				1	1	CIRCUIT BREAKER 7,5A	7277-2-7,5							32112
05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 06.11.16 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	09.12.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC
COM S/E GERÄT

EA-9E102.5

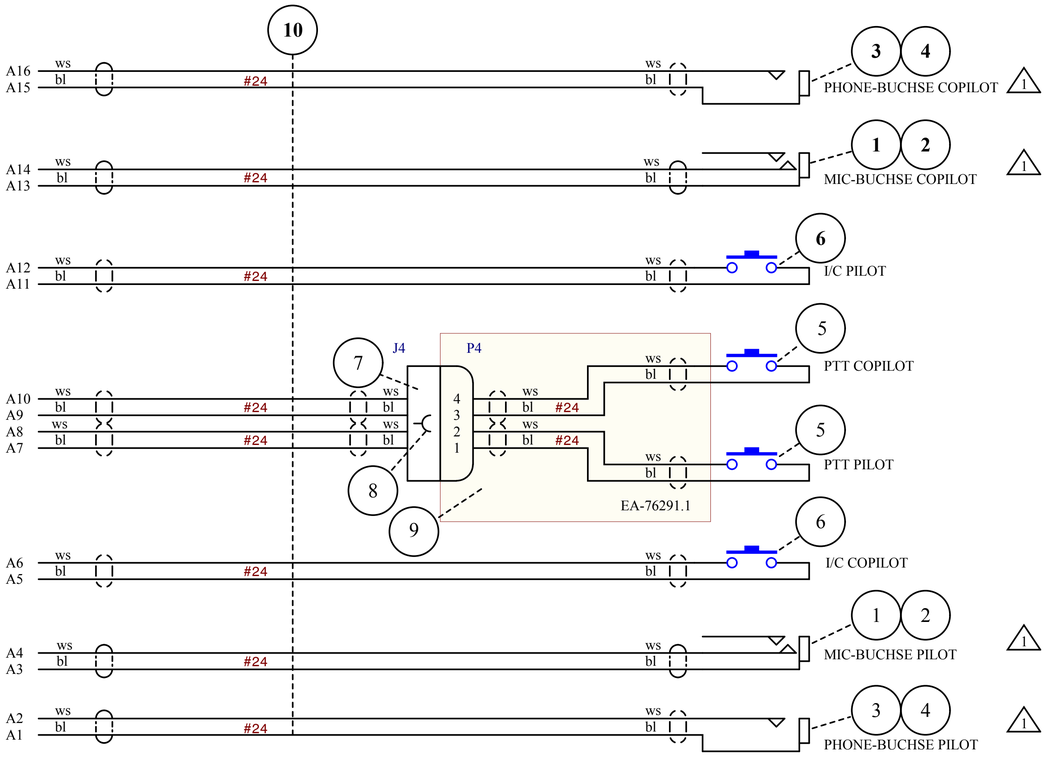
A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E09111I2**

OPTION 04 = BECKER COM AR-4201 mit POTTER-BRUMFIELD CB
OPTION 03 = BECKER COM AR-4201 mit KLIXON CB
OPTION 02 = BECKER COM AR-6201 mit POTTER-BRUMFIELD CB
OPTION 01 = BECKER COM AR-6201 mit KLIXON CB

COM S/E-GERÄT
oder
INTERCOM



				X	10	WIRE 2xAWG24	MIL-C-27500-24TG2				=	mtr		FE4006
				1	9	PTT-KABELBAUM	EA-76291.1				=			=
				4	8	BUCHSE	43030-0007							FE4079
				1	7	BUCHSENGEHÄUSE	43025-0400							FE4256
				2	6	PUSH BUTTON	701548							01430
				2	5	PUSH BUTTON	1174599							FE4301
				4	4	WASHER	04-00975							31382
				2	3	PHONE JACK	JJ-034							00195
				4	2	WASHER	04-00976							31381
				2	1	MIC JACK	JJ-033							00196
05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

1 Fuer alle Buchsen Isolationsscheiben benutzen

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	AM-300-05-18	15.02.06	HW
	Wegfall Audiobox		
	Wegfall NAV		
A	AM-300-96-06	25.04.96	MB

	Datum	Name
Bearb.:	02.11.90	KHP
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

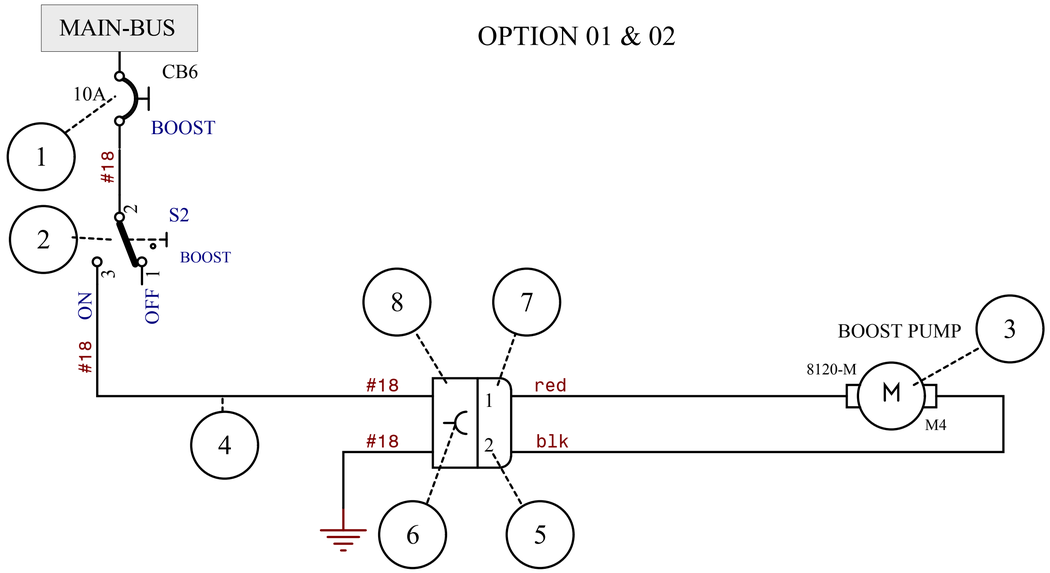
AUDIO SWITCHES & JACKS

EA-93102.6	**B**
A3	Blatt 1 von 1

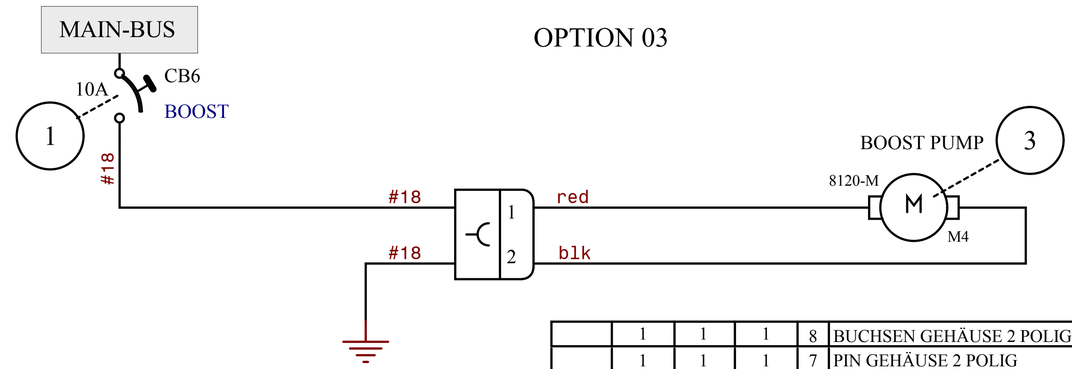
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300915b**

OPTION 01 & 02



OPTION 03



	1	1	1	8	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
	1	1	1	7	PIN GEHÄUSE 2 POLIG	180924-0				=			00103
	2	2	2	6	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
	2	2	2	5	FLACHSTECKER PIN 6,3mm	42565-2				=			00097
	X	X	X	4	WIRE AWG 18	MIL-W-22759/16-18				=	mtr		00776
	1	1	1	3	FUEL PUMP	8120.M				=			01207
		1		2	SWITCH SPST	MS35058-22							01602
			1	2	SWITCH SPST	07.1.1.13							FE4025
	1			1	CIRCUIT BREAKER SWITCH 10A	W31X2M1G-10						=	02701
		1		1	CIRCUIT BREAKER 10A	W23X1A1G-10						=	00126
			1	1	CIRCUIT BREAKER 10A	7277-2-10						=	31505
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	ÄM 300-05-33	09.02.06	HW
	ÄM 300-05-18		
A	Boost-Pump CB	31.08.92	MJB

	Datum	Name
Bearb.:	28.10.90	KHP
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

FUEL BOOST PUMP

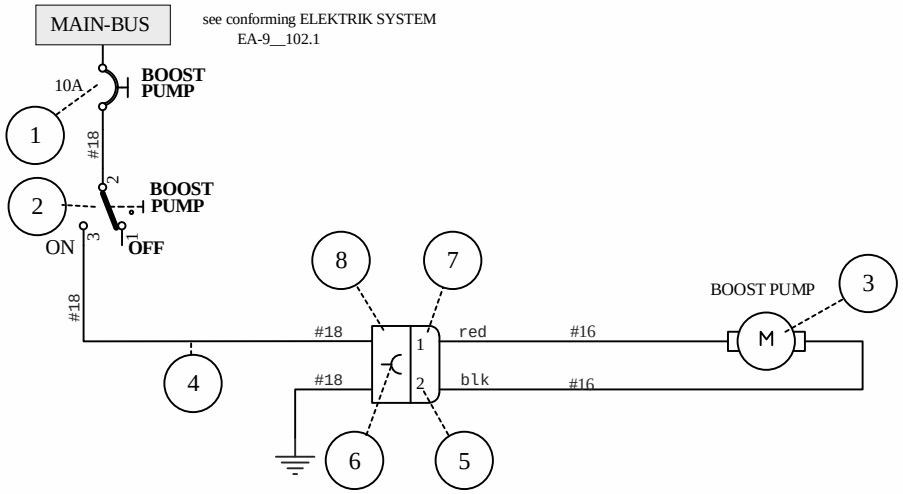
EA-93102.11	**B**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300905b**

OPTION 03 = EA-300/200
OPTION 02 = EA-300; EA-300/L; EA-300/S (MS SWITCH & POTTER-BRUMFIELD CB)
OPTION 01 = EA-300; EA-300/L; EA-300/S (KISSLING SWITCH & KLIXON CB)

OPTION 01 & 02



		1	1	8	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
		1	1	7	PIN GEHÄUSE 2 POLIG	180924-0							00103
		2	2	6	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
		2	2	5	FLACHSTECKER PIN 6,3mm	42565-2							00097
		X	X	4	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
		1	1	3	FUEL PUMP	PX580-TC-XT							33551
		1		2	SWITCH SPST	MS35058-22							01602
			1	2	SWITCH SPST	07.1.1.13							FE4025
		1		1	CIRCUIT BREAKER 10A	W23X1A1G-10							00126
			1	1	CIRCUIT BREAKER 10A	7277-2-10							31505
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	10.12.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC

FUEL BOOST PUMP

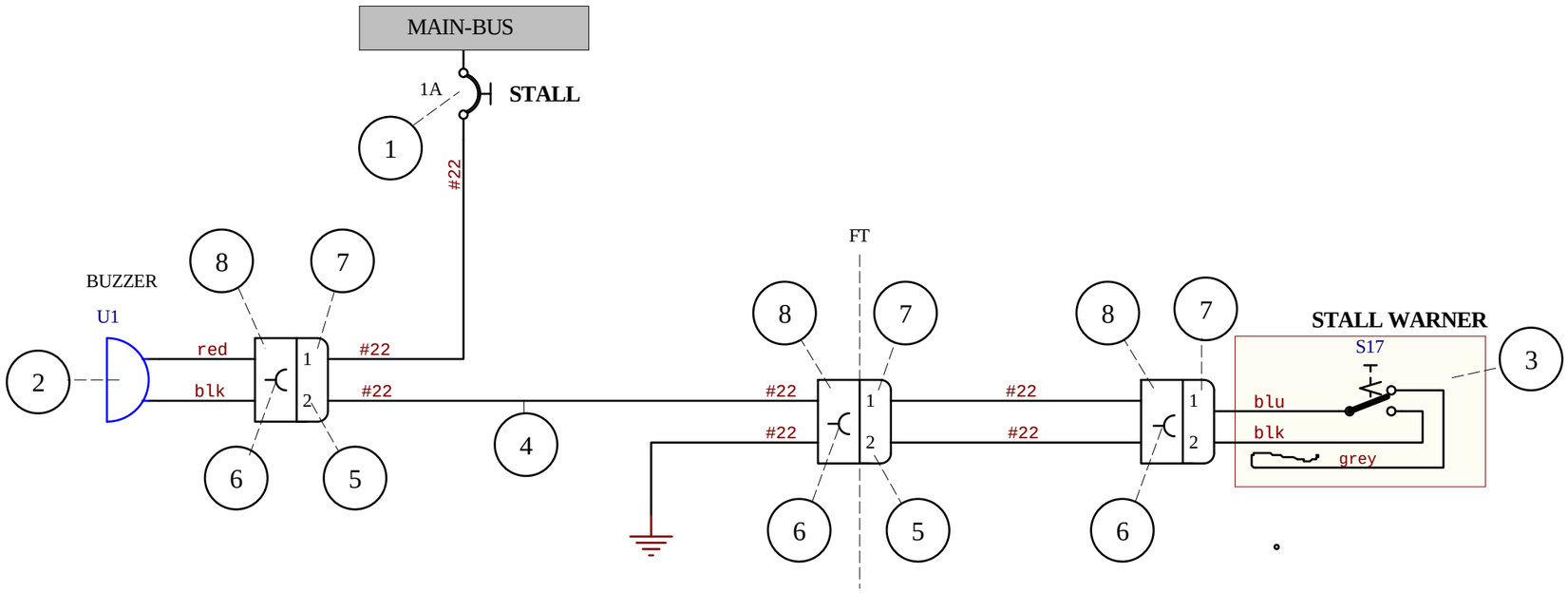
EA-9E102.11

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0905**

OPTION 02 = mit MS SWITCH & POTTER-BRUMFIELD CB
OPTION 01 = mit KISSLING SWITCH & KLIXON CB



			3	8	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
			3	7	PIN GEHÄUSE 2 POLIG	180924-0				.			00103
			6	6	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
			4	5	FLACHSTECKER PIN 6,3mm	42565-2				.			00097
			X	4	WIRE AWG 22	MIL-W-22759/16-22				.	mtr		01694
			1	3	STALL WARNER	EA-7D106.1				.			.
			1	2	BUZZER	EM-S 110P							01600
			1	1	CIRCUIT BREAKER 1A	7277-2-1							31526
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
.	.	.	.

	Datum	Name
Bearb.:	27.02.10	hw
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

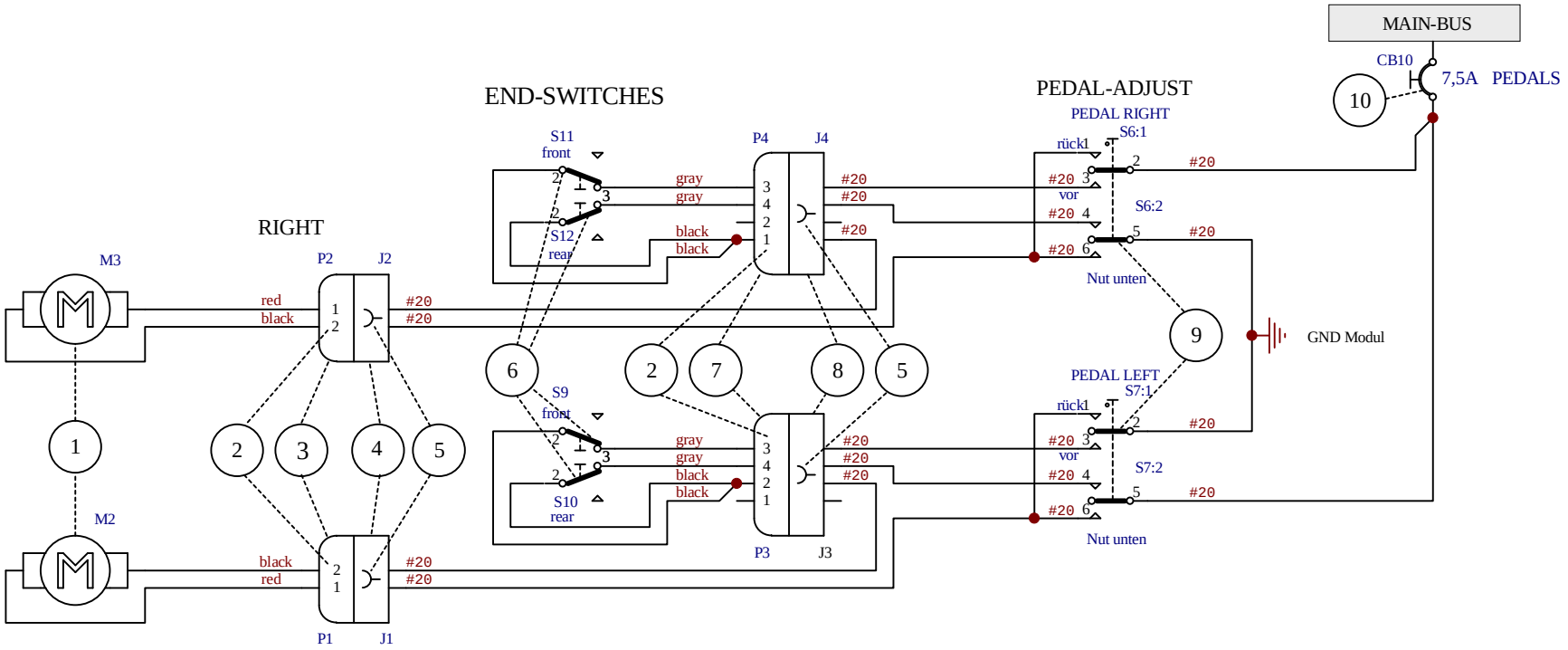
EA 300/LT
STALL WARNING SYSTEM

EA-9D102.12

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0904**



		1		10	CIRCUIT BREAKER 7,5A	7277-2-7.5							32112
	1		1	10	CIRCUIT BREAKER 7,5A	W23X1A1G-7.5							32113
	2			9	SCHALTER 2 POLIG TAST-OFF-TAST	7205 (204-7685)							01983
		2		9	SCHALTER 2 POLIG TAST-OFF-TAST	07.2.1.17							30636
			2	9	SCHALTER 2 POLIG TAST-OFF-TAST	MS35059-27							31488
	2	2	2	8	BUCHSEN GEHÄUSE 4 POLIG	180900-0							01170
	2	2	2	7	PIN GEHÄUSE 4 POLIG	180900-1							01171
	4	4	4	6	MICROSCHALTER	V4NCSK2A7-0,5M		alternativ DC1C-C3LD (01738)					33626
	10	10	10	5	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
	2	2	2	4	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
	2	2	2	3	PIN GEHÄUSE 2 POLIG	180924-0							00103
	10	10	10	2	FLACHSTECKER PIN 6,3mm	42565-2							00097
	2	2	2	1	PEDALMOTOR	CARR 20X20X1							01996
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 01 = STANDARDPANEL
OPTION 02 = KOHLEPANEL
OPTION 03 = STANDARDPANEL MIT ALTEM PEDALSCHALTER

Ab EA-300/L Werk Nr. 1209

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04		C	ÄM-300-11-03	25.02.11	HW
03		B	ÄM-300-06-28	17.10.06	HW
02		A	ÄM-300-05-33	29.11.05	HW
01			ÄM 300-05-18		

	Datum	Name
Bearb.:	19.06.92	NH
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

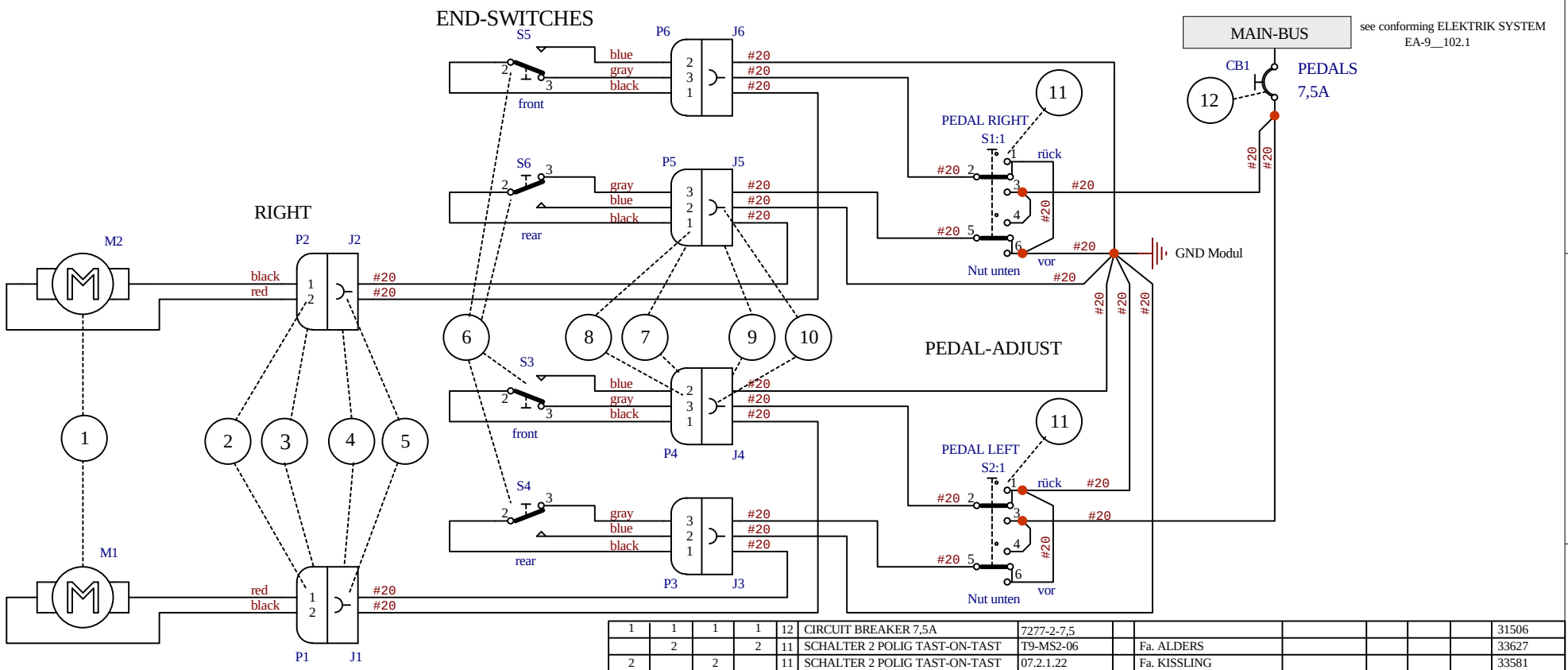
EA 300/S

PEDAL ADJUSTMENT SYSTEM

EA-94102.14	**C**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3S0920c**



1	1	1	1	12	CIRCUIT BREAKER 7,5A	7277-2-7,5								31506
	2		2	11	SCHALTER 2 POLIG TAST-ON-TAST	T9-MS2-06		Fa. ALDERS						33627
2		2		11	SCHALTER 2 POLIG TAST-ON-TAST	07.2.1.22		Fa. KISSLING						33581
12	12	12	12	10	BUCHSE	163557-2								FE4305
4	4	4	4	9	BUCHSEN GEHÄUSE 3 POLIG	1-0480303-0								FE4308
12	12	12	12	8	PIN	163558-2								FE4306
4	4	4	4	7	PIN GEHÄUSE 3 POLIG	1-0480305-0								FE4308
4	4			6	MICROSCHALTER Burgess	V4NCSK2A7-0,5M		Fa. CONRAD	702333					33626
		4	4	6	MICROSCHALTER Cherry	DC1C-C3LD								01738
4	4	4	4	5	FLACHSTECKER BUCHSE 6,3mm	0042282-2								00093
2	2	2	2	4	BUCHSEN GEHÄUSE 2 POLIG	180923-0								00099
2	2	2	2	3	PIN GEHÄUSE 2 POLIG	180924-0								00103
4	4	4	4	2	FLACHSTECKER PIN 6,3mm	42565-2								00097
2	2	2	2	1	PEDALMOTOR	CARR 20X20X1								01996
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.	

OPTION 04 = KISSLING SWITCH & BURGESS MICRO SWITCH
OPTION 03 = MS SWITCH & BURGESS MICRO SWITCH
OPTION 02 = KISSLING SWITCH & CHERRY MICRO SWITCH
OPTION 01 = MS SWITCH & CHERRY MICRO SWITCH

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung
04	
03	
02	
01	

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-11-32	07.11.11	HW

	Datum	Name
Bearb.:	21.02.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

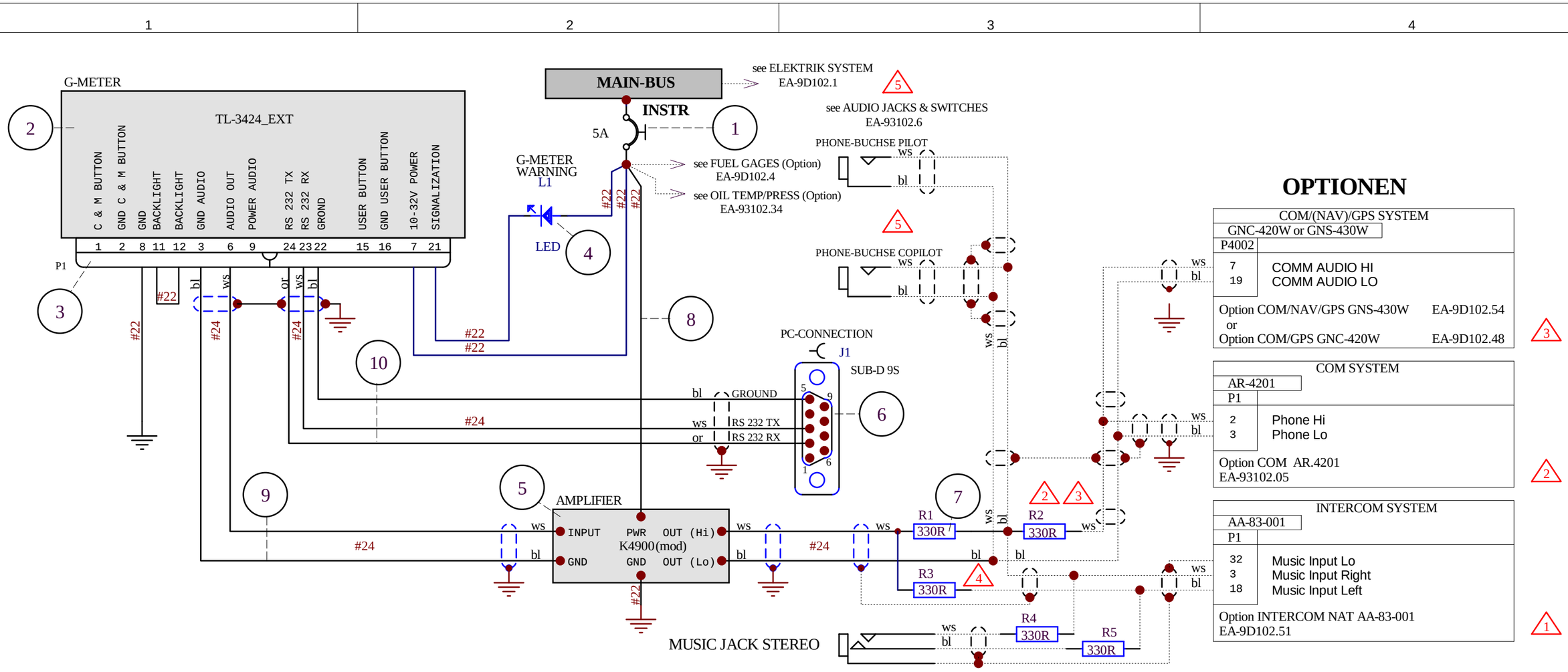
EA 300/LC

PEDAL ADJUSTMENT SYSTEM

EA-9E102.14	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0920**



OPTIONEN

COM/(NAV)/GPS SYSTEM
GNC-420W or GNS-430W
P4002

7	COMM AUDIO HI
19	COMM AUDIO LO

Option COM/NAV/GPS GNS-430W EA-9D102.54
or
Option COM/GPS GNC-420W EA-9D102.48

COM SYSTEM
AR-4201
P1

2	Phone Hi
3	Phone Lo

Option COM AR.4201
EA-93102.05

INTERCOM SYSTEM
AA-83-001
P1

32	Music Input Lo
3	Music Input Right
18	Music Input Left

Option INTERCOM NAT AA-83-001
EA-9D102.51

5 entfällt bei Option INTERCOM NAT AA-83-001

4 R1, R3 - R5 bei Option INTERCOM NAT AA-83-001

3 optional COM requires GNC-420W or GNS-430W and R1 & R2 to be installed

2 optional COM requires AR-4201 and R1 & R2 to be installed

1 optional INTERCOM requires NAT AA-83-001 to be installed

		X	10	WIRE 3xAWG24	MIL-C-27500-24TG3							
		X	9	WIRE 2xAWG24	MIL-C-27500-24TG2							FE4006
		1	8	WIRE AWG22	MIL-W-22759/16-22							01694
		2	7	RESISTOR 330R 0,25W	.							
		1	6	CONNECTOR SUBD 9S	.							
		1	5	AMPLIFIER	K4900 (mod)							32583
		1	4	LED WARNING	RS 285-6633							
		1	3	CONNECTOR SUBD 25S	.							
		1	2	G-METER INDICATOR	TL-3424_EXT							32582
		1	1	CIRCUIT BREAKER 5A	7277-2-5							31506
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01					

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

EA 300/LT
ACCELEROMETER

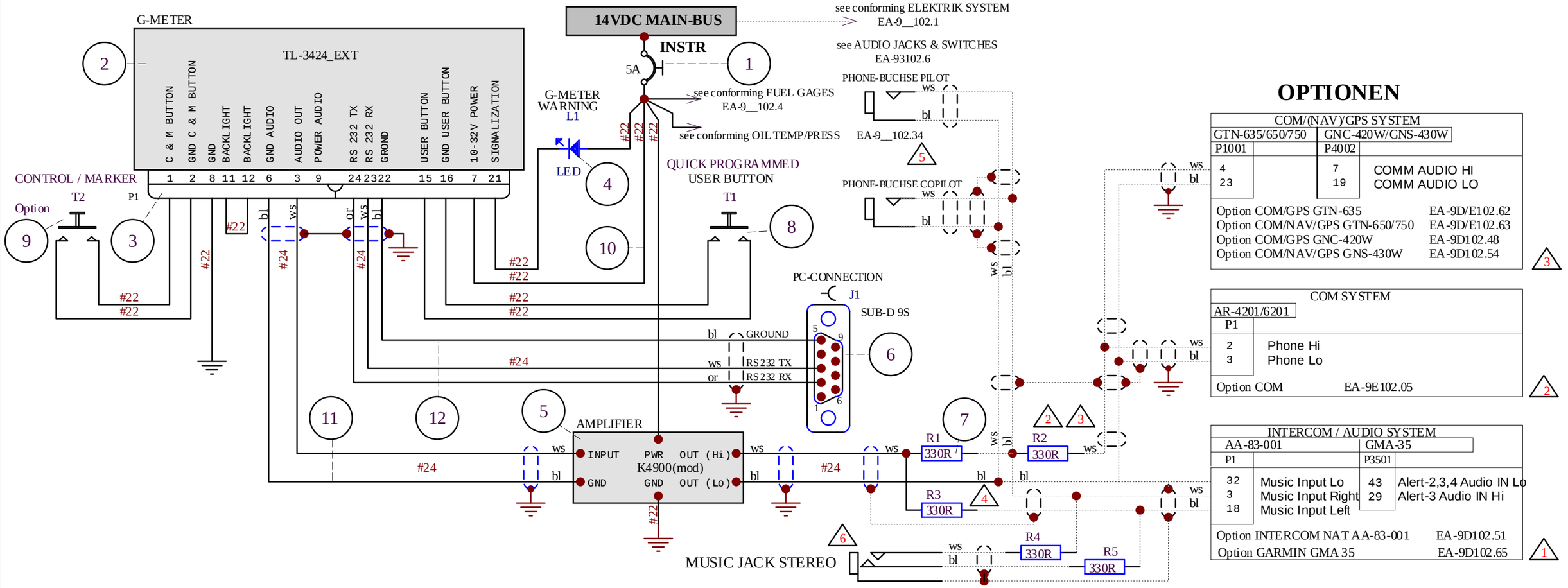
EA-9D102.15

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0916**

XTRA
Schwarze Heide 21
46569 Hünxe, Germany



OPTIONEN

COM/(NAV)/GPS SYSTEM

GTN-635/650/750 P1001	GNC-420W/GNS-430W P4002	
4	7	COMM AUDIO HI
23	19	COMM AUDIO LO

Option COM/GPS GTN-635	EA-9D/E102.62
Option COM/NAV/GPS GTN-650/750	EA-9D/E102.63
Option COM/GPS GNC-420W	EA-9D102.48
Option COM/NAV/GPS GNS-430W	EA-9D102.54

△3

COM SYSTEM

AR-4201/6201 P1

2	Phone Hi
3	Phone Lo

Option COM EA-9E102.05 △2

INTERCOM / AUDIO SYSTEM

AA-83-001 P1		GMA-35 P3501	
32	Music Input Lo	43	Alert-2,3,4 Audio IN Lo
3	Music Input Right	29	Alert-3 Audio IN Hi
18	Music Input Left		

Option INTERCOM NAT AA-83-001 EA-9D102.51
Option GARMIN GMA 35 EA-9D102.65 △1

03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
		X	12	WIRE 3xAWG24	MIL-C-27500-24TG3							
		X	11	WIRE 2xAWG24	MIL-C-27500-24TG2							FE4006
		X	10	WIRE AWG22	MIL-W-22759/16-22							01694
		1	9	PUSH BUTTON								
		1	8	PUSH BUTTON								
		2	7	RESISTOR 330R 0,25W								
		1	6	CONNECTOR SUBD 9S								
		1	5	AMPLIFIER	K4900 (mod)							32583
		1	4	LED WARNING	RS 285-6633							
		1	3	CONNECTOR SUBD 25S								
		1	2	G-METER INDICATOR	TL-3424_EXT							32582
		1	1	CIRCUIT BREAKER 5A	7277-2-5							31506

△6 entfällt bei Option GARMIN AUDIO GMA-35
△5 entfällt bei Option INTERCOM NAT AA-83-001
△4 R1, R3 - R5 bei Option INTERCOM NAT AA-83-001
△3 optional COM requires GNC-420W/GNS-430W/GTN-635/650/750 and R1 & R2 to be installed
△2 optional COM requires AR-4201 and R1 & R2 to be installed
△1 optional INTERCOM requires NAT AA-83-001 or GARMIN GMA-35 to be installed

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-12-01	01.09.12	HW

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

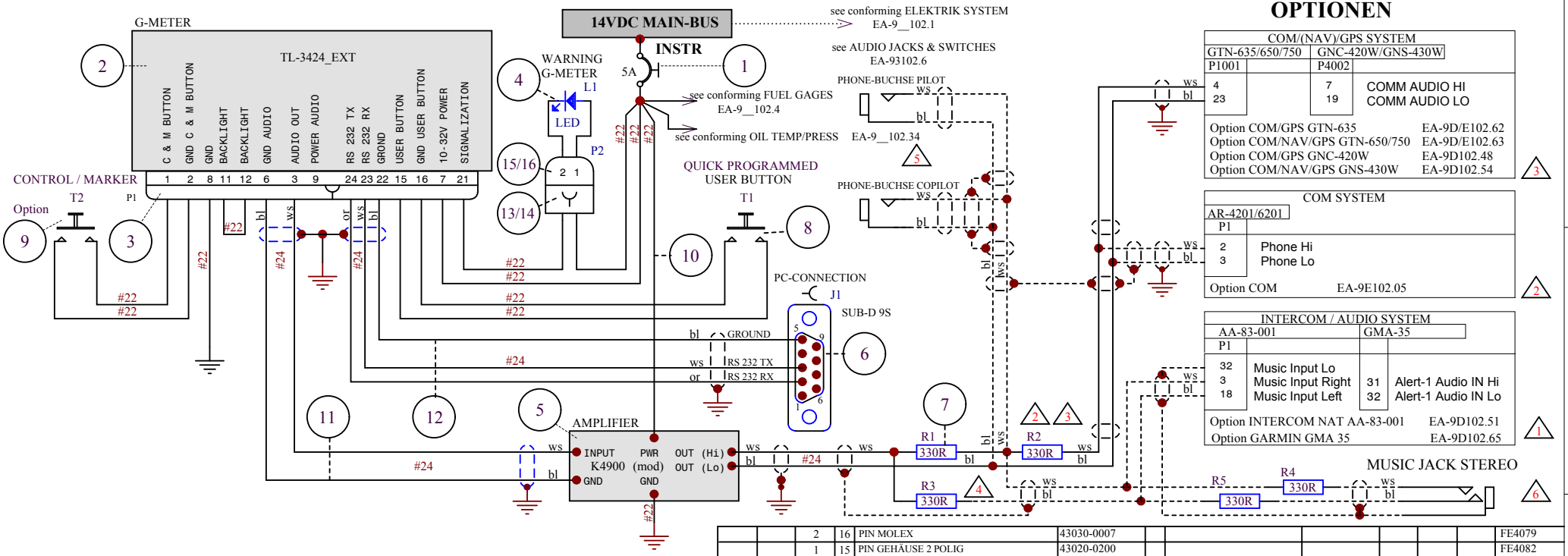
Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

EA 300/LT
ACCELEROMETER

EA-9D102.15 | **A**
A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0916**



OPTIONEN

COM/(NAV)/GPS SYSTEM

GTN-635/650/750 P1001	GNC-420W/GNS-430W P4002	
4	7	COMM AUDIO HI
23	19	COMM AUDIO LO

Option COM/GPS GTN-635	EA-9D/E102.62
Option COM/NAV/GPS GTN-650/750	EA-9D/E102.63
Option COM/GPS GNC-420W	EA-9D102.48
Option COM/NAV/GPS GNS-430W	EA-9D102.54

△3

COM SYSTEM

AR-4201/6201

P1	
2	Phone Hi
3	Phone Lo

Option COM EA-9E102.05 △2

INTERCOM / AUDIO SYSTEM

AA-83-001 P1		GMA-35	
32	Music Input Lo		
3	Music Input Right	31	Alert-1 Audio IN Hi
18	Music Input Left	32	Alert-1 Audio IN Lo

Option INTERCOM NAT AA-83-001	EA-9D102.51
Option GARMIN GMA 35	EA-9D102.65

△1

		2	16	PIN MOLEX	43030-0007								FE4079
		1	15	PIN GEHÄUSE 2 POLIG	43020-0200								FE4082
		1	14	BUCHSEN GEHÄUSE 2 POLIG	43025-0200								FE4081
		2	13	BUCHSE Molex	43031-0007								FE4080
		X	12	WIRE 3xAWG24	MIL-C-27500-24TG3								
		X	11	WIRE 2xAWG24	MIL-C-27500-24TG2								FE4006
		X	10	WIRE AWG22	MIL-W-22759/16-22								01694
		1	9	PUSH BUTTON									
		1	8	PUSH BUTTON									
		2	7	RESISTOR 330R 0,25W									
		1	6	CONNECTOR SUBD 9S									
		1	5	AMPLIFIER	K4900 (mod)								32583
		1	4	LED WARNING	RS 285-6633								
		1	3	CONNECTOR SUBD 25S									
		1	2	G-METER INDICATOR	TL-3424_EXT								32582
		1	1	CIRCUIT BREAKER 5A	7277-2-5								31506
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

△6 entfällt bei Option GARMIN AUDIO GMA-35

△5 entfällt bei Option INTERCOM NAT AA-83-001

△4 R1, R3 - R5 bei Option INTERCOM NAT AA-83-001

△3 optional COM requires GNC-420W/GNS-430W/GTN-635/650/750 and R1 & R2 to be installed

△2 optional COM requires AR-4201 and R1 & R2 to be installed

△1 optional INTERCOM requires NAT AA-83-001 or GARMIN GMA-35 to be installed

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	ÄM-300-15-07	17.11.16	HW
A	ÄM-300-12-01	29.08.12	HW

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

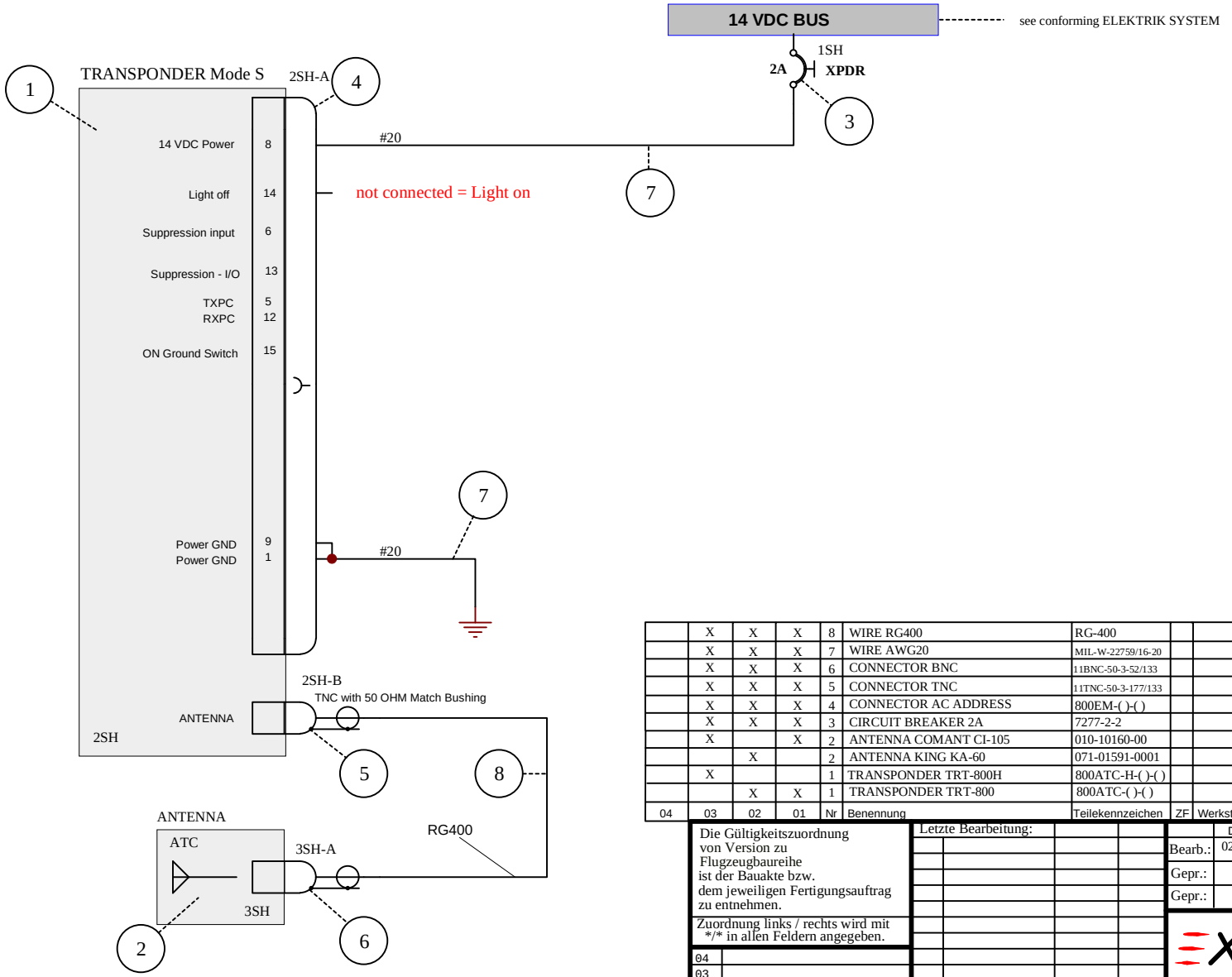
EA 300/LT
ACCELEROMETER

EA-9D102.15 | **B**

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0916b**



	X	X	X	8	WIRE RG400	RG-400				2,9	mtr		FE4111
	X	X	X	7	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		in Pos. 1
	X	X	X	6	CONNECTOR BNC	11BNC-50-3-52/133				1	Stueck		30705
	X	X	X	5	CONNECTOR TNC	11TNC-50-3-177/133				1	Stueck		FE4242
	X	X	X	4	CONNECTOR AC ADDRESS	800EM-( )-( )				1	Stueck		in Pos. 1
	X	X	X	3	CIRCUIT BREAKER 2A	7277-2-2				1	Stueck		31508
	X		X	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
		X		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
	X			1	TRANSPONDER TRT-800H	800ATC-H-( )-( )				1	Stueck		32090
		X	X	1	TRANSPONDER TRT-800	800ATC-( )-( )				1	Stueck		31437
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 03 = TRT-800H mit COMANT CI-105 ANTENNE (für EA 300/SC & EA 300/LC)
OPTION 02 = TRT-800 mit KING KA-60 ANTENNE
OPTION 01 = TRT-800 mit COMANT CI-105 ANTENNE

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01		A	ÄM-300-14-05	24.03.14	HW

	Datum	Name
Bearb.:	02.11.05	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

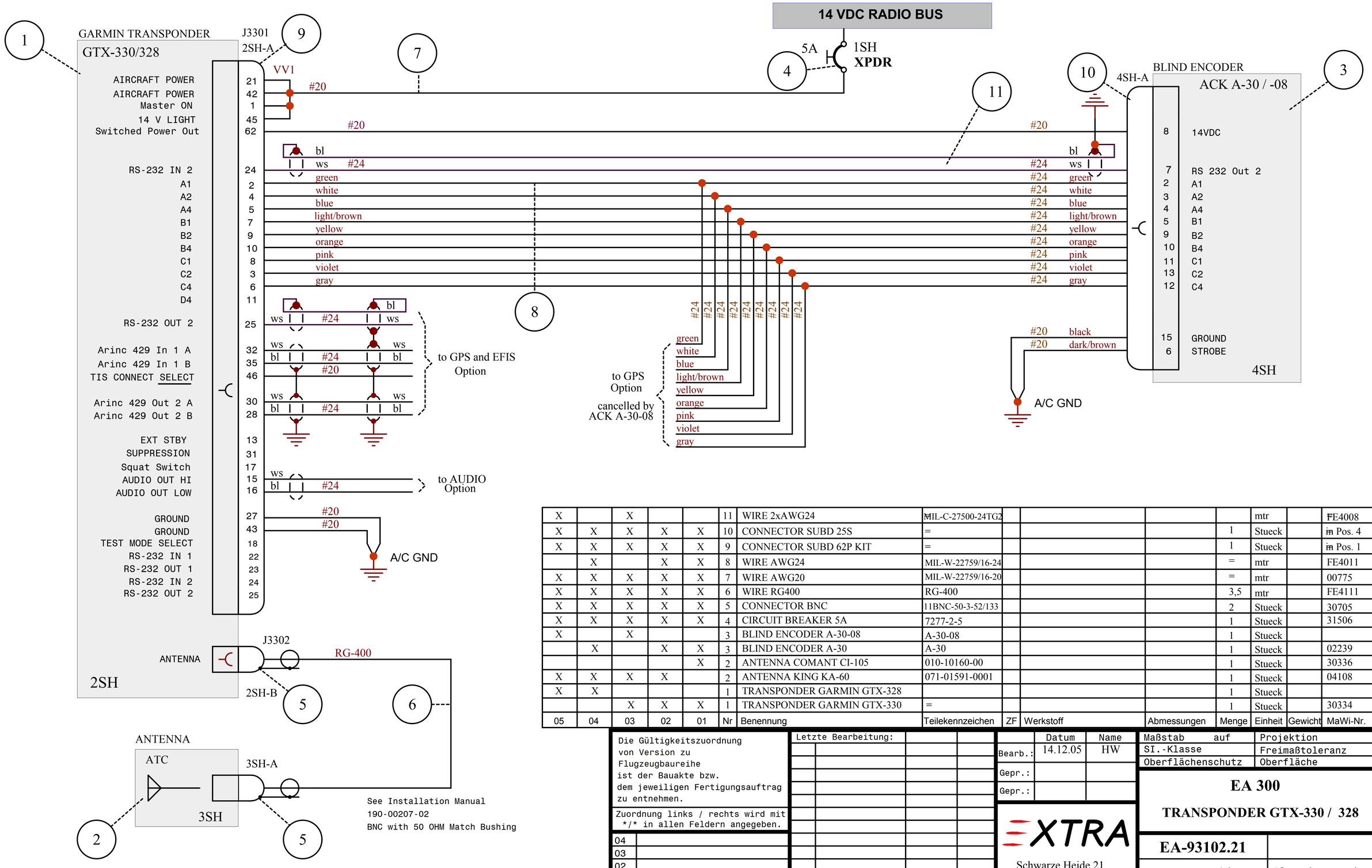
EA 300

TRANSPONDER TRT-800(H)

EA-93102.20	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300929a**



X		X			11	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4008
X	X	X	X	X	10	CONNECTOR SUBD 25S	=				1	Stueck		in Pos. 4
X	X	X	X	X	9	CONNECTOR SUBD 62P KIT	=				1	Stueck		in Pos. 1
	X		X	X	8	WIRE AWG24	MIL-W-22759/16-24				=	mtr		FE4011
X	X	X	X	X	7	WIRE AWG20	MIL-W-22759/16-20				=	mtr		00775
X	X	X	X	X	6	WIRE RG400	RG-400				3,5	mtr		FE4111
X	X	X	X	X	5	CONNECTOR BNC	11BNC-50-3-52/133				2	Stueck		30705
X	X	X	X	X	4	CIRCUIT BREAKER 5A	7277-2-5				1	Stueck		31506
X		X			3	BLIND ENCODER A-30-08	A-30-08				1	Stueck		
	X		X	X	3	BLIND ENCODER A-30	A-30				1	Stueck		02239
				X	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
X	X	X	X		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
X	X				1	TRANSPONDER GARMIN GTX-328					1	Stueck		
		X	X	X	1	TRANSPONDER GARMIN GTX-330	=				1	Stueck		30334
05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-09-04	01.05.09	HW

	Datum	Name
Bearb.:	14.12.05	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

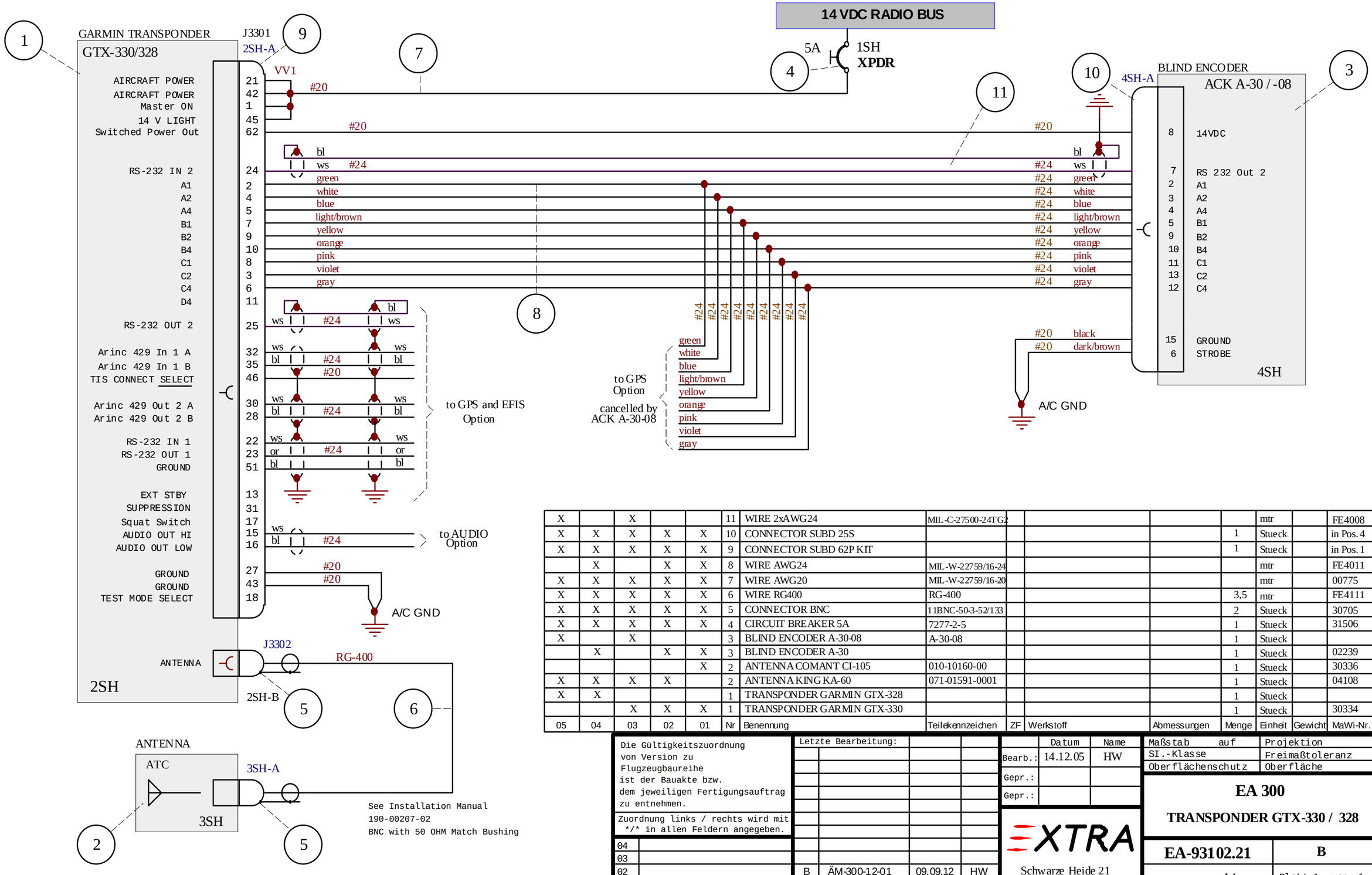
TRANSPONDER GTX-330 / 328

EA-93102.21

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300930a**



05	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
X		X			11	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4008
X	X	X	X	X	10	CONNECTOR SUBD 25S					1	Stueck		in Pos. 4
X	X	X	X	X	9	CONNECTOR SUBD 62P KIT					1	Stueck		in Pos. 1
	X		X	X	8	WIRE AWG24	MIL-W-22759/16-24					mtr		FE4011
X	X	X	X	X	7	WIRE AWG20	MIL-W-22759/16-20					mtr		00775
X	X	X	X	X	6	WIRE RG400	RG-400				3,5	mtr		FE4111
X	X	X	X	X	5	CONNECTOR BNC	11BNC-50-3-52/133				2	Stueck		30705
X	X	X	X	X	4	CIRCUIT BREAKER 5A	7277-2-5				1	Stueck		31506
X		X			3	BLIND ENCODER A-30-08	A-30-08				1	Stueck		
	X		X	X	3	BLIND ENCODER A-30					1	Stueck		02239
				X	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
X	X	X	X		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
X	X				1	TRANSPONDER GARMIN GTX-328					1	Stueck		
		X	X	X	1	TRANSPONDER GARMIN GTX-330					1	Stueck		30334

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	ÄM-300-12-01	09.09.12	HW
A	ÄM-300-09-04	01.05.09	HW

	Datum	Name
Bearb.:	14.12.05	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

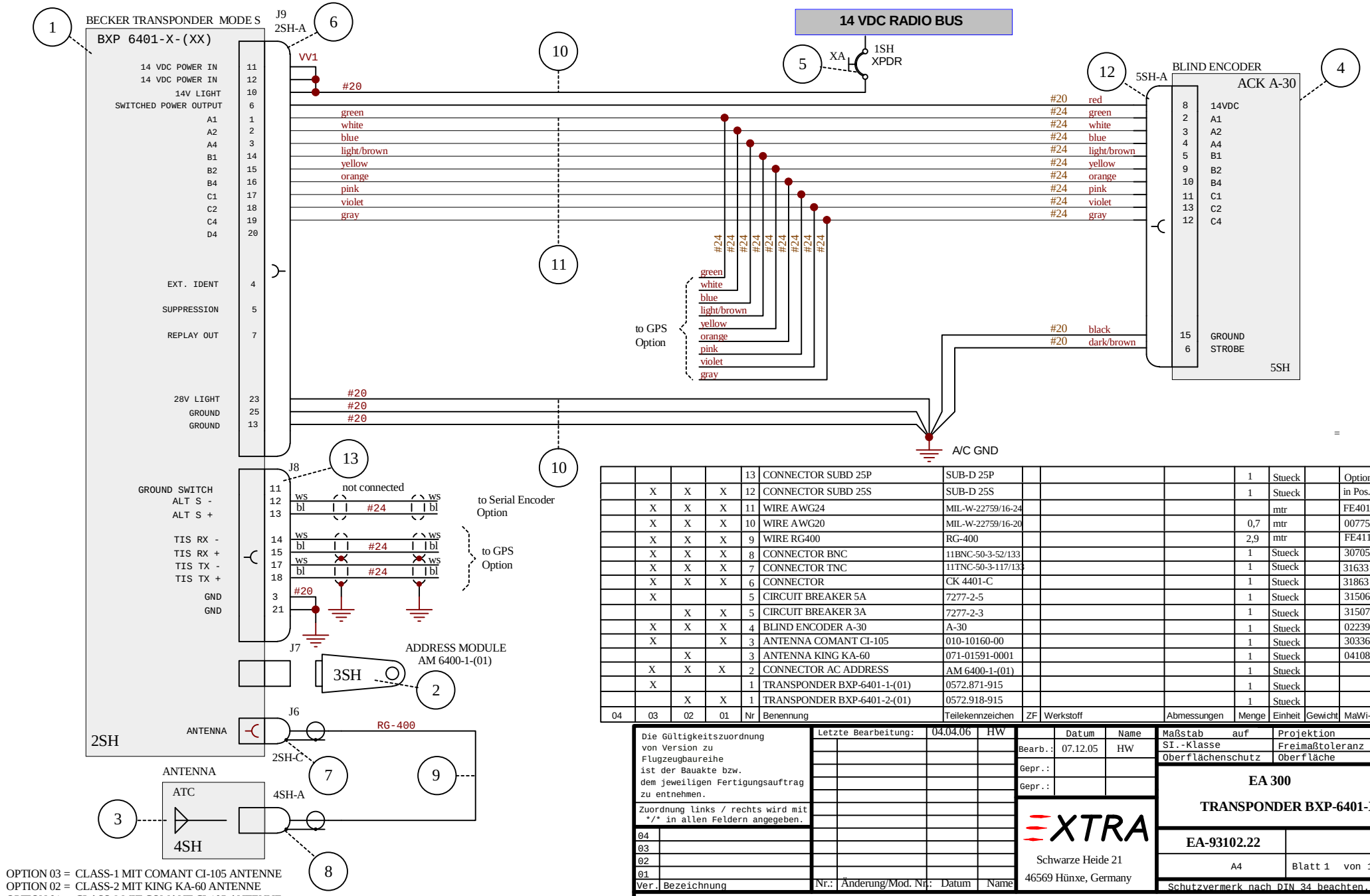
TRANSPONDER GTX-330 / 328

EA-93102.21 | **B**

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300930**



				Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
				13	CONNECTOR SUBD 25P	SUB-D 25P				1	Stueck		Option
	X	X	X	12	CONNECTOR SUBD 25S	SUB-D 25S				1	Stueck		in Pos. 4
	X	X	X	11	WIRE AWG24	MIL-W-22759/16-24					mtr		FE4011
	X	X	X	10	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		00775
	X	X	X	9	WIRE RG400	RG-400				2,9	mtr		FE4111
	X	X	X	8	CONNECTOR BNC	11BNC-50-3-52/133				1	Stueck		30705
	X	X	X	7	CONNECTOR TNC	11TNC-50-3-117/133				1	Stueck		31633
	X	X	X	6	CONNECTOR	CK 4401-C				1	Stueck		31863
	X			5	CIRCUIT BREAKER 5A	7277-2-5				1	Stueck		31506
		X	X	5	CIRCUIT BREAKER 3A	7277-2-3				1	Stueck		31507
	X	X	X	4	BLIND ENCODER A-30	A-30				1	Stueck		02239
	X		X	3	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
		X		3	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
	X	X	X	2	CONNECTOR AC ADDRESS	AM 6400-1-(01)				1	Stueck		
	X			1	TRANSPONDER BXP-6401-1-(01)	0572.871-915				1	Stueck		
		X	X	1	TRANSPONDER BXP-6401-2-(01)	0572.918-915				1	Stueck		

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:	04.04.06	HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	07.12.05	HW
Gepr.:		
Gepr.:		

XTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

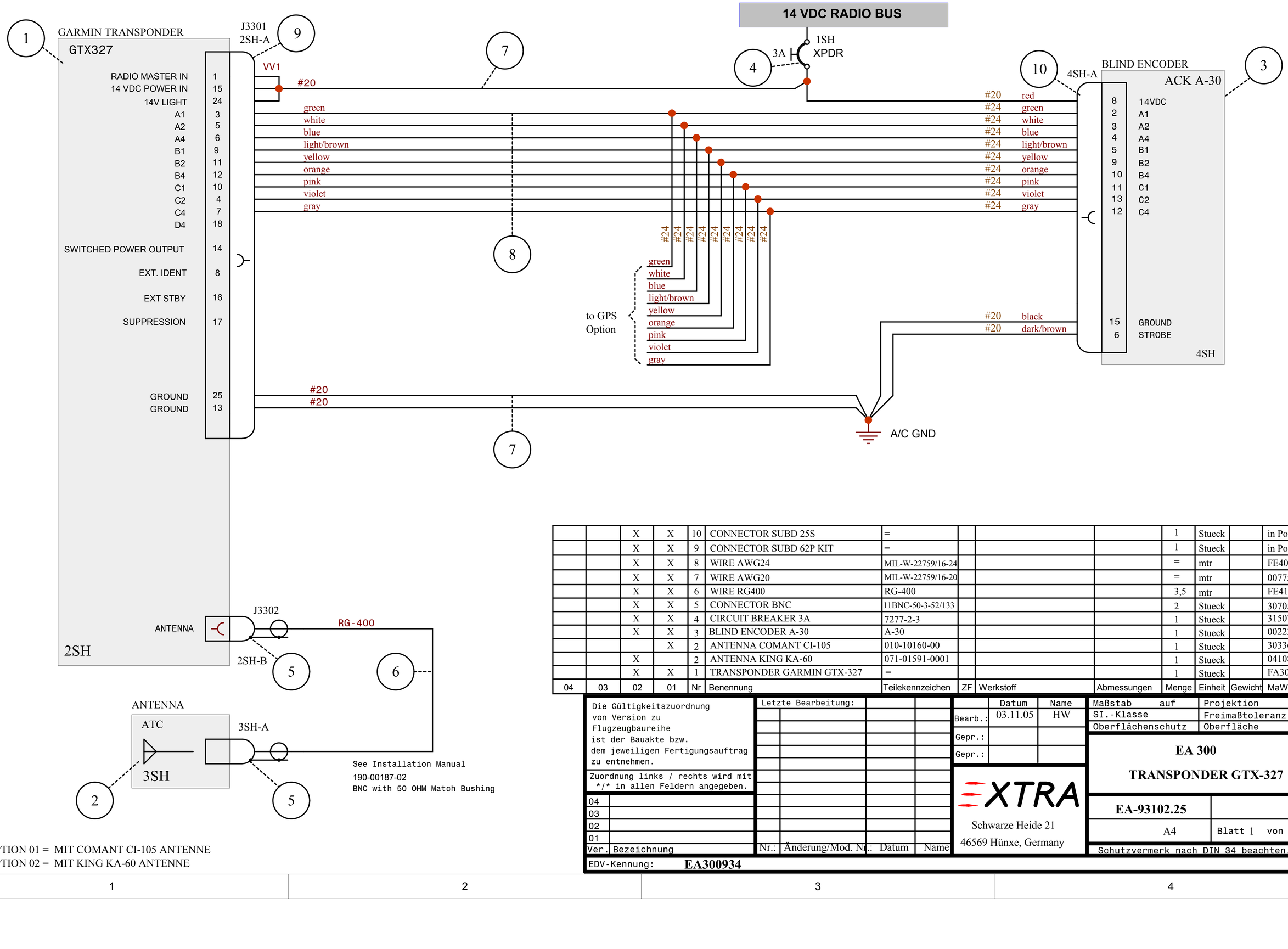
TRANSPONDER BXP-6401-X

EA-93102.22

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300931**



OPTION 01 = MIT COMANT CI-105 ANTENNE
OPTION 02 = MIT KING KA-60 ANTENNE

		X	X	10	CONNECTOR SUBD 25S	=				1	Stueck		in Pos. 3
		X	X	9	CONNECTOR SUBD 62P KIT	=				1	Stueck		in Pos. 1
		X	X	8	WIRE AWG24	MIL-W-22759/16-24				=	mtr		FE40111
		X	X	7	WIRE AWG20	MIL-W-22759/16-20				=	mtr		00775
		X	X	6	WIRE RG400	RG-400				3,5	mtr		FE4111
		X	X	5	CONNECTOR BNC	11BNC-50-3-52/133				2	Stueck		30705
		X	X	4	CIRCUIT BREAKER 3A	7277-2-3				1	Stueck		31507
		X	X	3	BLIND ENCODER A-30	A-30				1	Stueck		002239
			X	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
		X		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
		X	X	1	TRANSPONDER GARMIN GTX-327	=				1	Stueck		FA3009
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	03.11.05	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

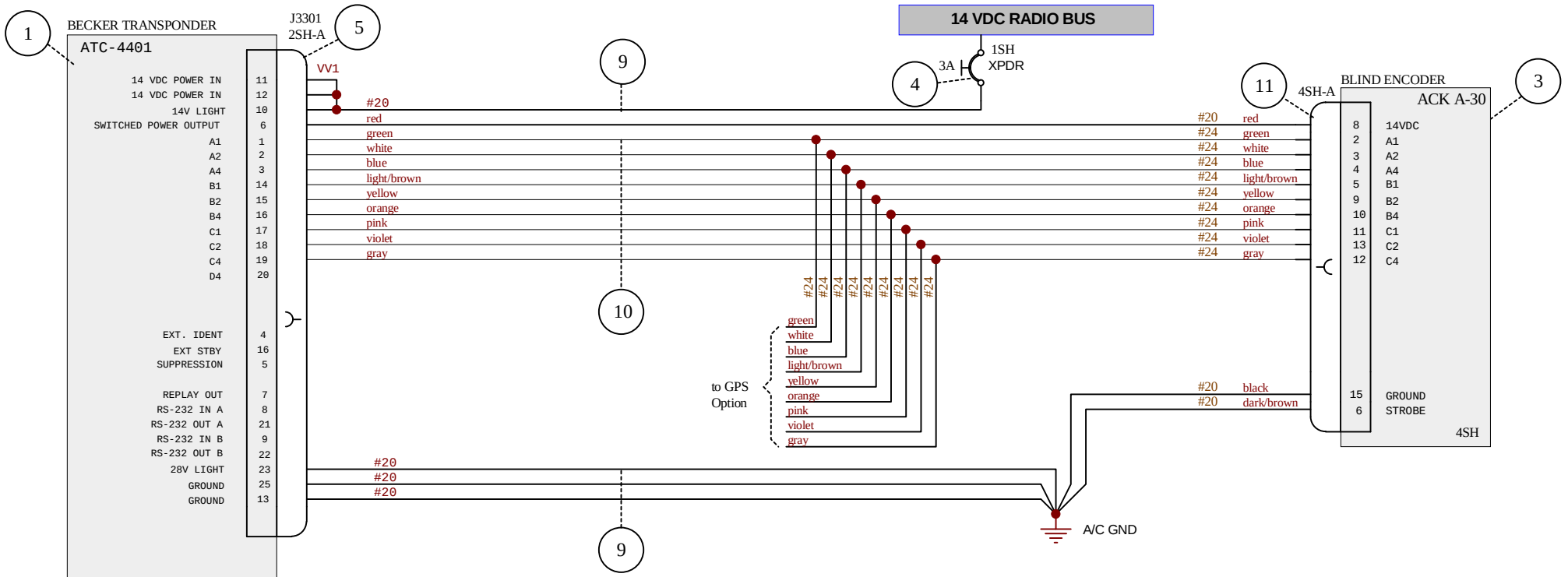
EA 300

TRANSPONDER GTX-327

EA-93102.25	
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300934**



				Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
		X	X	11	CONNECTOR					1	Stueck		in Pos 3
		X	X	10	WIRE AWG24	MIL-W-22759/16-24					mtr		FE4011
		X	X	9	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		00775
		X	X	8	WIRE RG400	RG-400				2,9	mtr		FE4111
		X	X	7	CONNECTOR BNC	11BNC-50-3-52/133				1	Stueck		30705
		X	X	6	CONNECTOR TNC	11TNC-50-3-117/133				1	Stueck		31633
		X	X	5	CONNECTOR SUBD 25S	CK 4401-C				1	Stueck		31863
		X	X	4	CIRCUIT BREAKER 3A	7277-2-3				1	Stueck		31508
		X	X	3	BLIND ENCODER A-30	A-30				1	Stueck		02239
			X	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
		X		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
		X	X	1	TRANSPONDER ATC-4401-1	ATC-4401-1-175				1	Stueck		31002

OPTION 01 = MIT COMANT CI-105 ANTENNE
OPTION 02 = MIT KING KA-60 ANTENNE

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Nr.:	Änderung/Mod. Nr.:	Datum	Name
	Letzte Bearbeitung:	04.04.06	HW

	Datum	Name
Bearb.:	07.12.05	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

TRANSPONDER ATC-4401

EA-93102.26

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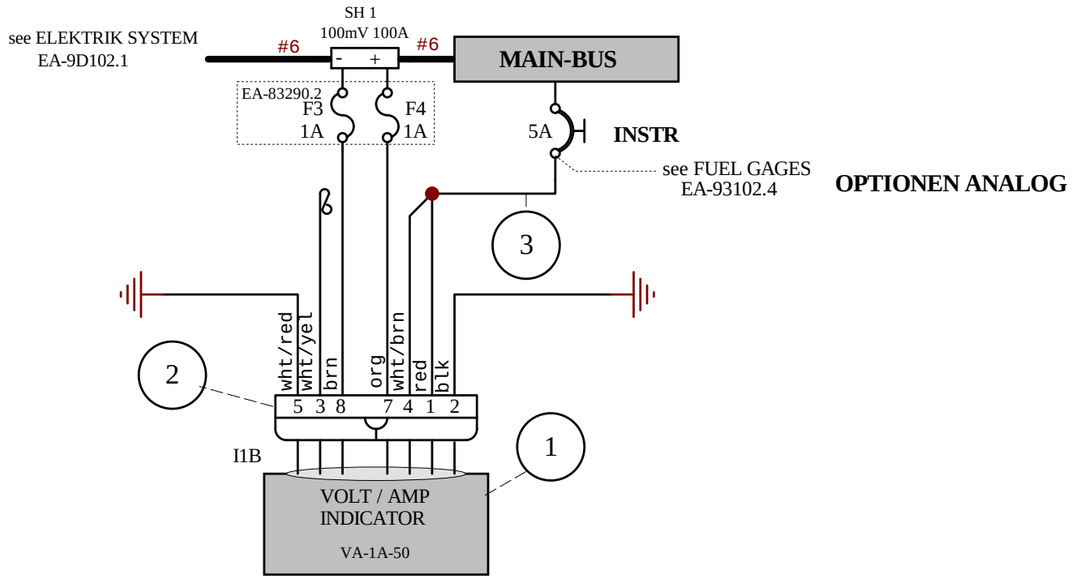
Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300935**



		X	3	WIRE AWG 20	MIL-W-22759/16-20				0,5	mtr		00775
		1	2	CONNECTOR KIT	KIT VA-1A-XX							FA3007
		1	1	DIGITAL AMPERE METER	VA-1A-50							FA3007
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
.	.	.	.
.	.	.	.

	Datum	Name
Bearb.:	27.03.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

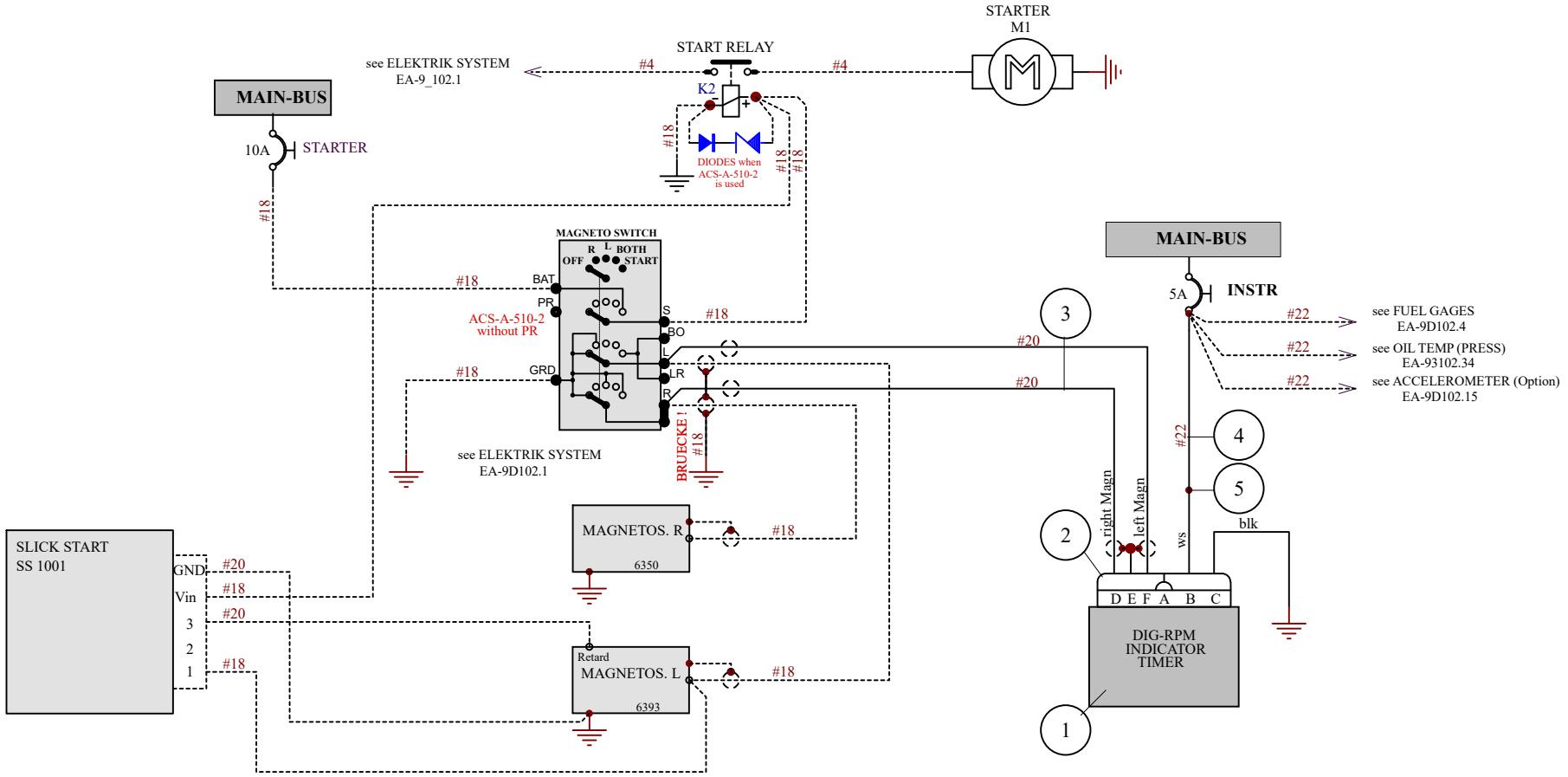
VOLT / AMPERE INDICATION

EA-9D102.27

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0936**



			1	5	VERBINDER ROT	320559-0								01422
			X	4	KABEL AWG 20	MIL-W-22759/16-20					3	mtr		00775
			X	3	KABEL AWG 20 GESCHIRMT	MIL-W-27500-20TGT14					5	mtr		FE4002
			1	2	STECKER	MS-3106E14S-6S								in 1
			1	1	DIGITAL RPM INDICATOR	P100230-643-00								02489
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM 300-21-05	26.07.21	HW

	Datum	Name
Bearb.:	21.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

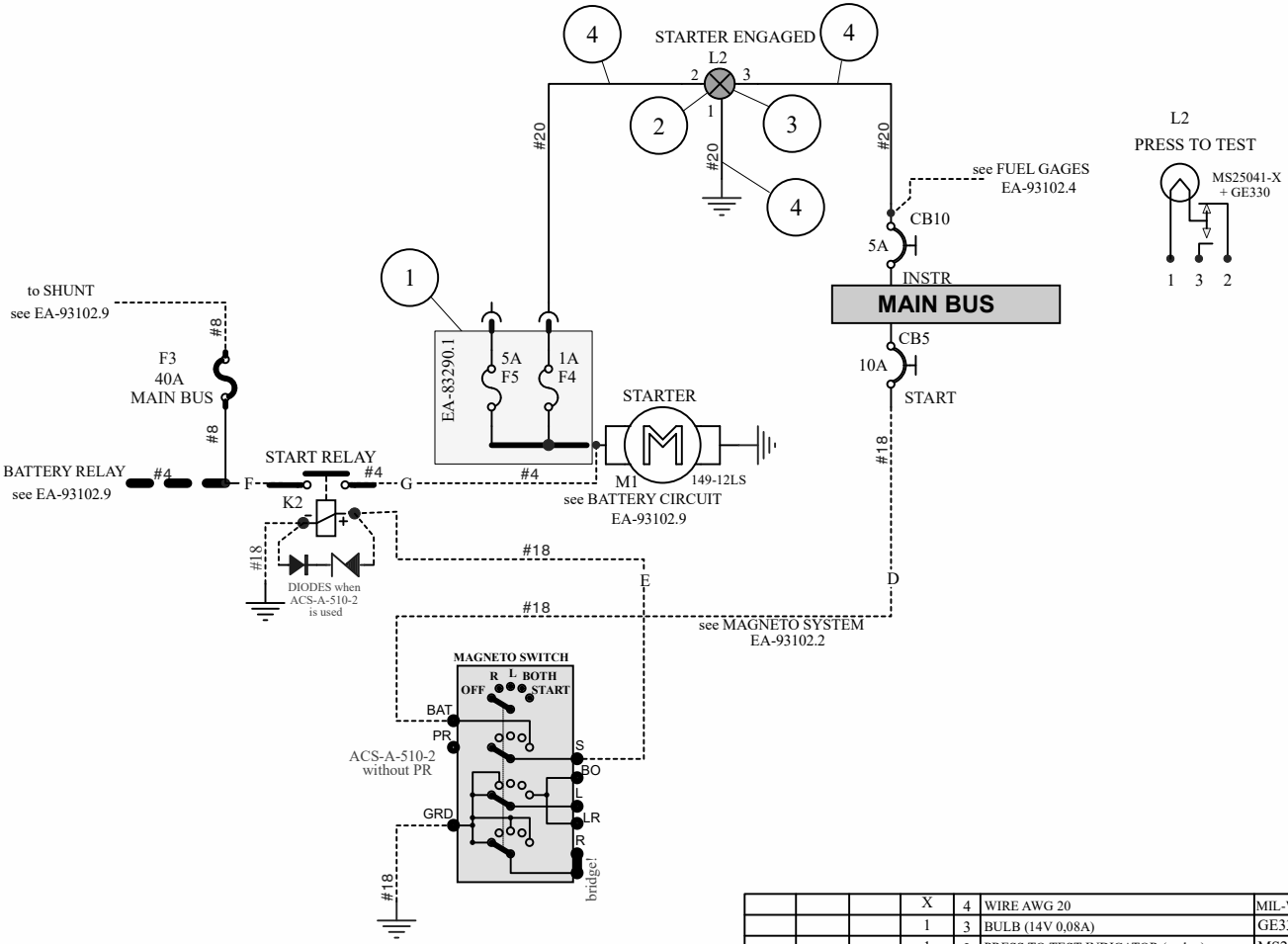
Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
RPM INDICATION

EA-9D102.30	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0939a**



			X	4	WIRE AWG 20	MIL-W-22759/16-20				3,5	mtr		00775
			1	3	BULB (14V 0,08A)	GE330							01569
			1	2	PRESS TO TEST INDICATOR (amber)	MS25041-4						14	31732
			1	1	PCB FUSE 1A	83290.001-VB							83290.001VB
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	AM 300-21-05	26.07.21	HW

	Datum	Name
Bearb.:	30.01.06	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

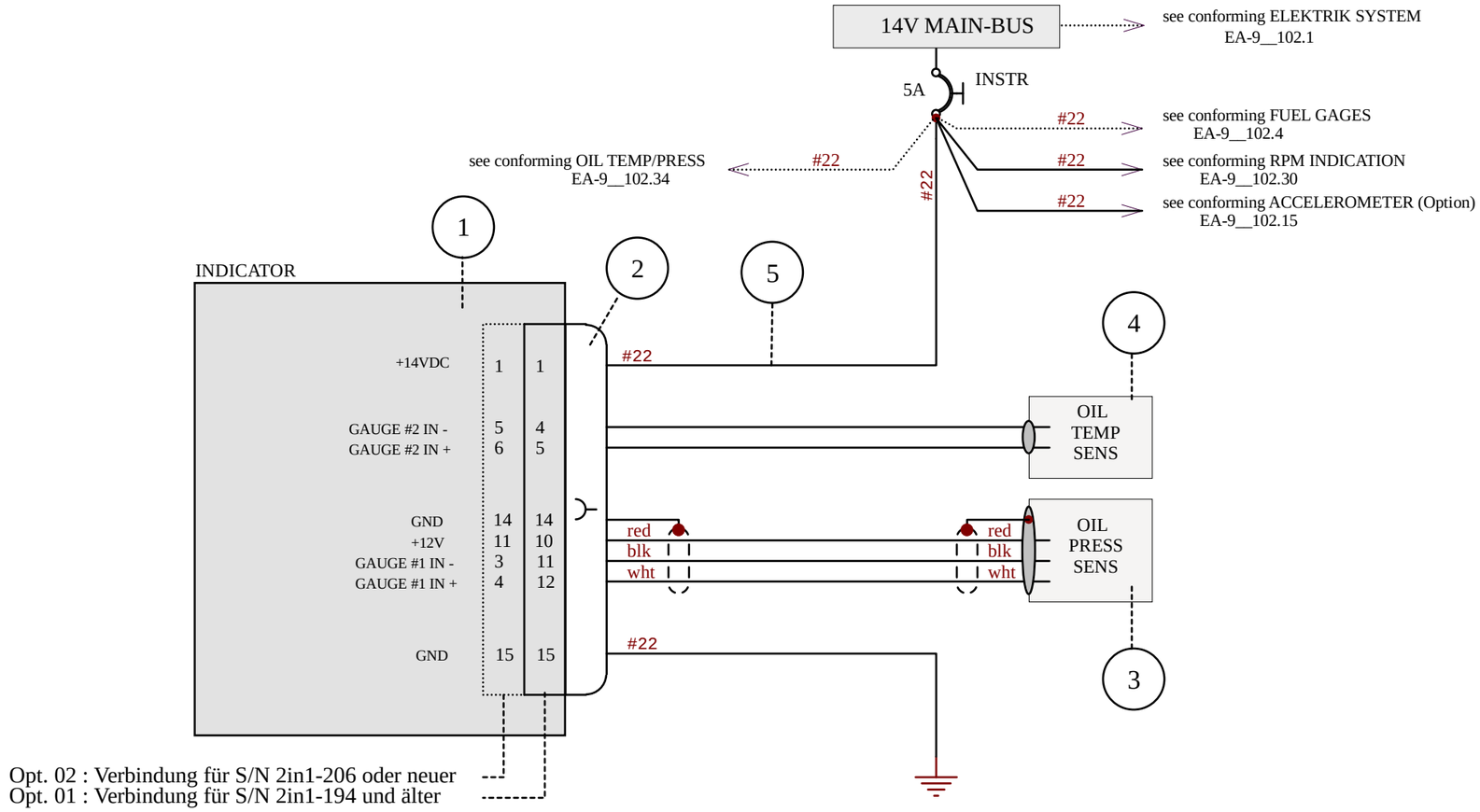
EA 300/L

STARTER ENGAGED LIGHT

EA-96102.31	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3L0940a**



Opt. 02 : Verbindung für S/N 2in1-206 oder neuer
Opt. 01 : Verbindung für S/N 2in1-194 und älter

Zwischen S/N 2in1-195 und S/N 2in1-205
ist die Verdrahtung zu prüfen

		X	5	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	4	OIL TEMP SENSOR	1B3A							
		1	3	OIL PRESS SENSOR	N1EU150G/T1EU150G							
		1	2	CONNECTOR DSUB 15								in Pos. 1
		1	1	INDICATOR (2 1/4")	D2-OP130U-0T300U-00							
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-13-07	29.07.13	HW

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EDV-Kennung: **EA3D0943**

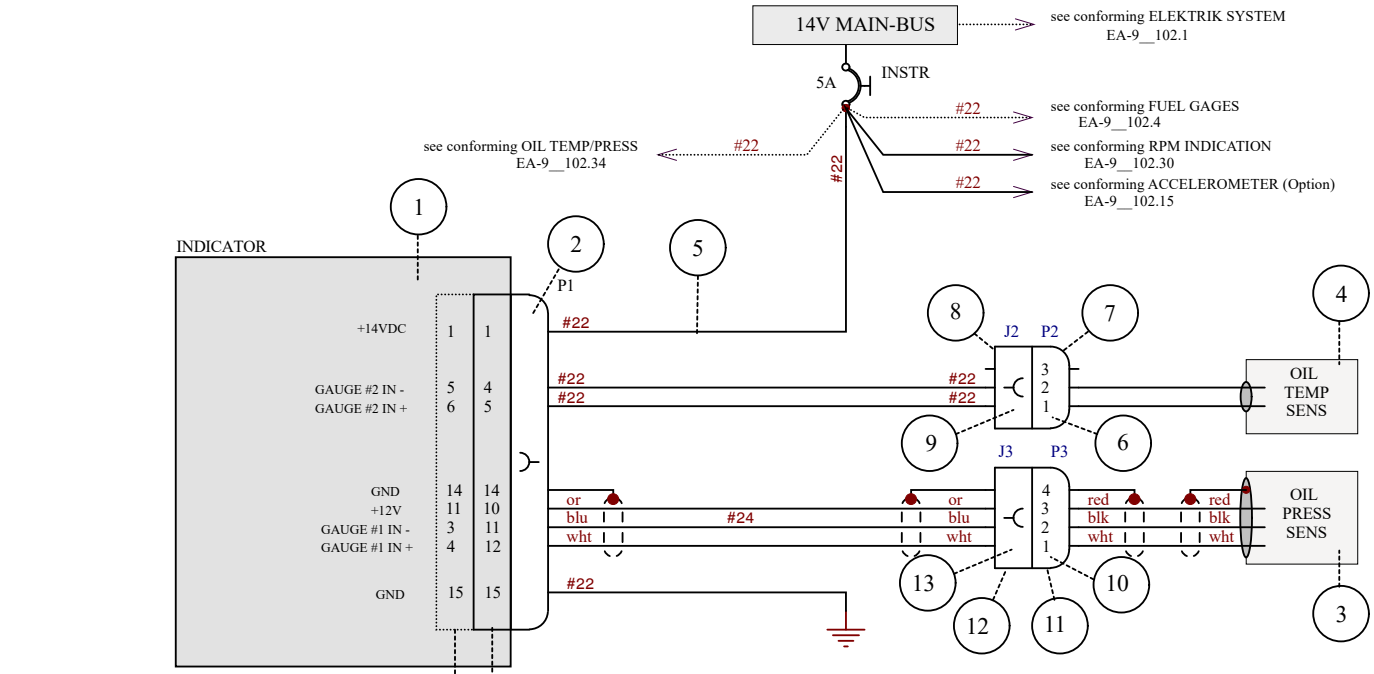
EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
OIL TEMP (PRESS)

EA-9D102.34	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.



Opt. 02 : Verbindung für S/N 2in1-206 oder neuer
Opt. 01 : Verbindung für S/N 2in1-194 und älter

Zwischen S/N 2in1-195 und S/N 2in1-205 ist die Verdrahtung zu prüfen

		4	13	FLACHSTECKER 6,3MM SOCKET	42282-2								00093
		1	12	STECKER HOUSING 4 6,3MM SOCKET	180900-0								01170
		1	11	STECKER HOUSING 4 6,3MM PIN	180901-0								01171
		4	10	FLACHSTECKER 0,8-2,1MM PIN	42565-2								00097
		3	9	MATE-N-LOCK SOCKET	163557-2								FE4305
		1	8	MATE-N-LOCK HOUSING 3 SOCKET	1-0480303-0								FE4307
		1	7	MATE-N-LOCK HOUSING 3 PIN	1-0480305-0								FE4308
		3	6	MATE-N-LOCK PIN	163558-2								FE4306
		X	5	WIRE AWG 20	MIL-W-22759/16-20						mtr		00775
		1	4	OIL TEMP SENSOR	1B3A								34541
		1	3	OIL PRESS SENSOR	N1EU150G/T1EU150G								34542
		1	2	CONNECTOR DSUB 15									in Pos. 1
		1	1	INDICATOR (2 1/4")	D2-OP130U-0T300U-00								33428
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht		MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
B	ÄM-300-15-07	03.03.16	HW
A	ÄM-300-13-07	29.07.13	HW

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

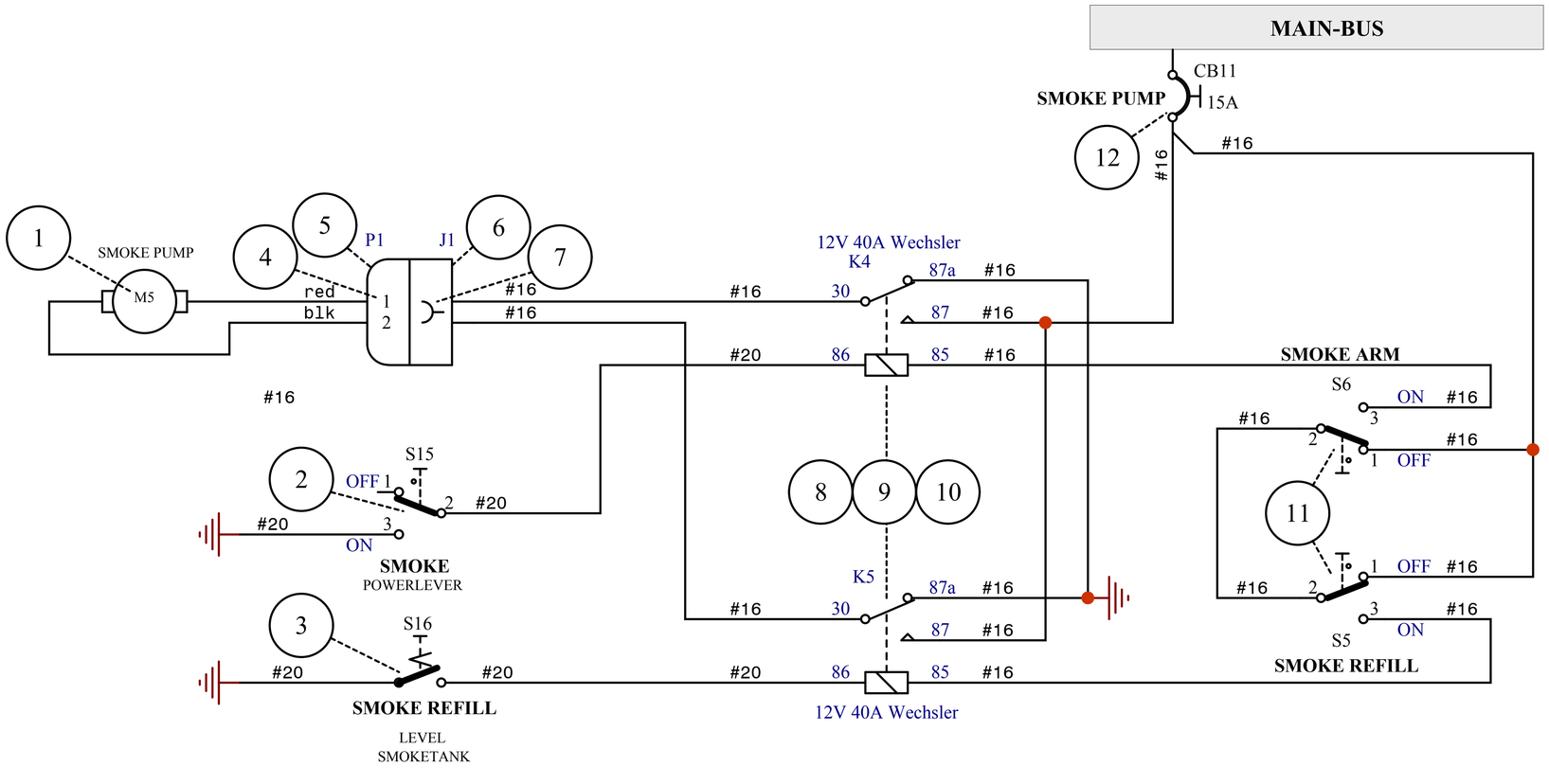
EA 300/LT

OIL TEMP (PRESS)

EA-9D102.34	**B**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0943**



		1		12	CIRCUIT BREAKER 15A	7277-2-15							31504
			1	12	CIRCUIT BREAKER 15A	W23X1A1G-15							30675
		2		11	SCHALTER 1 POLIG ON-OFF	07.1.1.13							FE4025
			2	11	SCHALTER 1 POLIG ON-OFF	MS35058-23							07006
		10	10	10	FLACHSTECKER BUCHSE 6,3mm	42282-1 (-2)							=
		2	2	9	FLACHSTECKER BUCHSE 5*6,3mm	VCF4-1001							=
		2	2	8	RELAY12V-40A-WECHSLER	V23134-A1052-C643							31614
		2	2	7	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
		1	1	6	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
		1	1	5	PIN GEHÄUSE 2 POLIG	180924-0							00103
		2	2	4	FLACHSTECKER PIN 6,3mm	42565-2							00097
		1	1	3	SCHWIMMERSCHALTER	331-017							00654
		1	1	2	WIPPENSCHALTER	700339							01432
		1	1	1	PUMPE SMOKE	UP3/OIL-12V							31634
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 01 = STANDARDPANEL
OPTION 02 = KOHLEPANEL

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
=	=	=	=

	Datum	Name
Bearb.:	18.07.06	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/S

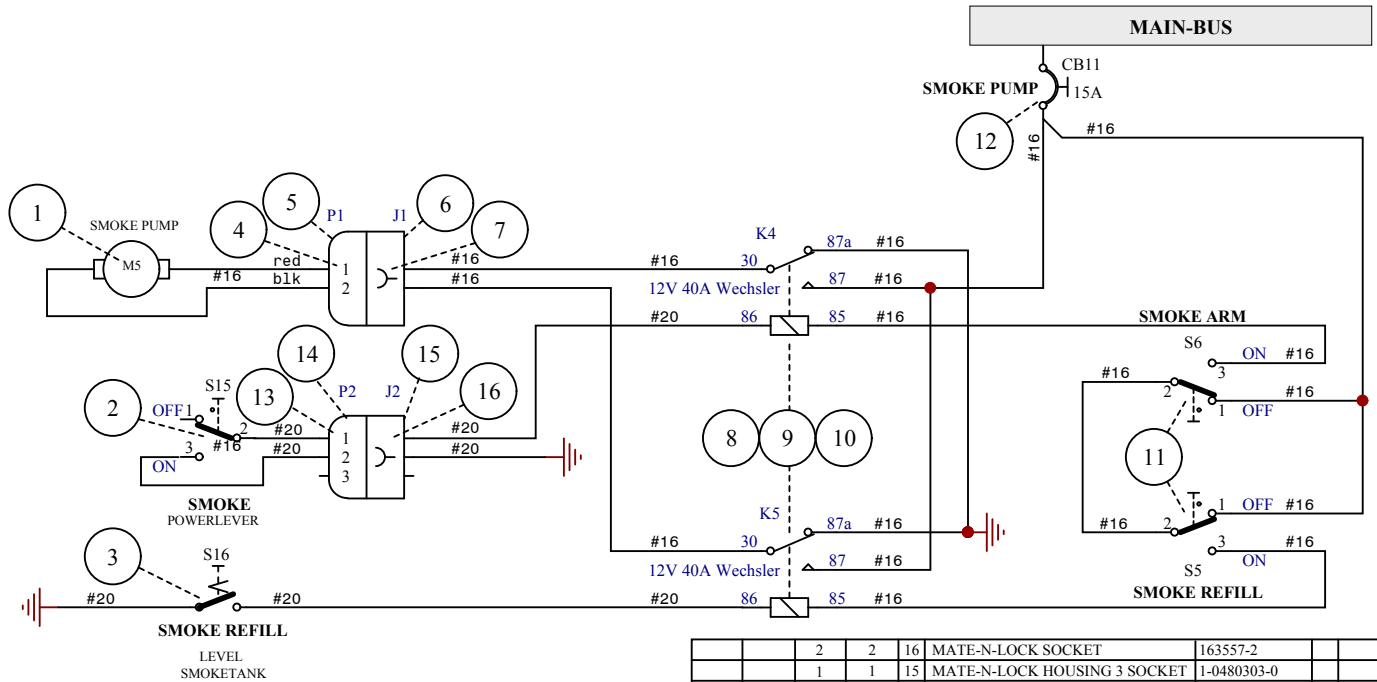
SMOKE SYSTEM (Single Pump)

EA-94102.39

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3S0948**



		2	2	16	MATE-N-LOCK SOCKET	163557-2								FE4305
		1	1	15	MATE-N-LOCK HOUSING 3 SOCKET	1-0480303-0								FE4307
		1	1	14	MATE-N-LOCK HOUSING 3 PIN	1-0480305-0								FE4308
		2	2	13	MATE-N-LOCK PIN	163558-2								FE4306
		1		12	CIRCUIT BREAKER 15A	7277-2-15								31504
			1	12	CIRCUIT BREAKER 15A	W23X1A1G-15								30675
		2		11	SCHALTER 1 POLIG ON-OFF	07.1.1.13								FE4025
			2	11	SCHALTER 1 POLIG ON-OFF	MS35058-23								07006
		10	10	10	FLACHSTECKER BUCHSE 6,3mm	42282-1 (-2)								=
		2	2	9	FLACHSTECKER BUCHSE 5*6,3mm	VCF4-1001								=
		2	2	8	RELAY12V-40A-WECHSLER	V23134-A1052-C643								31614
		2	2	7	FLACHSTECKER BUCHSE 6,3mm	0042282-2								00093
		1	1	6	BUCHSEN GEHÄUSE 2 POLIG	180923-0								00099
		1	1	5	PIN GEHÄUSE 2 POLIG	180924-0								00103
		2	2	4	FLACHSTECKER PIN 6,3mm	42565-2								00097
		1	1	3	SCHWIMMERSCHALTER	331-017								00654
		1	1	2	WIPPENSCHALTER	700339								01432
		1	1	1	PUMPE SMOKE	UP3/OIL-12V								31634
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen		Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 01 = STANDARDPANEL
OPTION 02 = KOHLEPANEL

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.	Änderung/Mod. Nr.	Datum	Name
A	ÄM-300-15-07	21.02.16	HW

	Datum	Name
Bearb.:	18.07.06	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

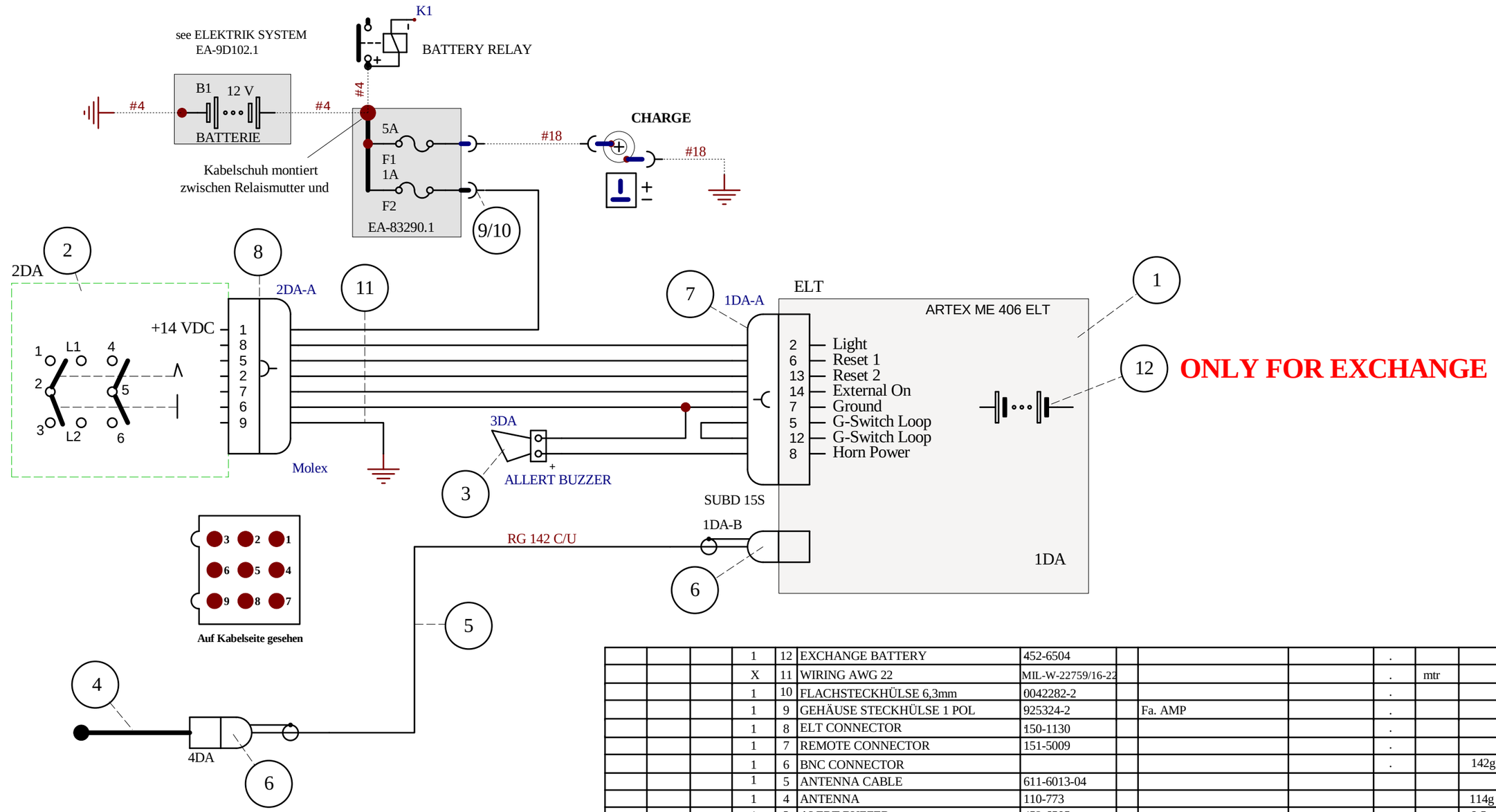
EA 300/S

SMOKE SYSTEM (Single Pump)

EA-94102.39	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3S0948a**



			1	12	EXCHANGE BATTERY	452-6504				.			
			X	11	WIRING AWG 22	MIL-W-22759/16-22				.	mtr		01694
			1	10	FLACHSTECKHÜLSE 6,3mm	0042282-2				.			00093
			1	9	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP		.			00098
			1	8	ELT CONNECTOR	150-1130				.			.
			1	7	REMOTE CONNECTOR	151-5009				.			.
			1	6	BNC CONNECTOR					.		142g	.
			1	5	ANTENNA CABLE	611-6013-04							
			1	4	ANTENNA	110-773						114g	.
			1	3	ALERT BUZZER	452-6505						9,5g	.
			1	2	REMOTE SWITCH	345-6196						46g	.
			1	1	TRANSMITTER ASSY	ME 406 ELT						936g	
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	23.03.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

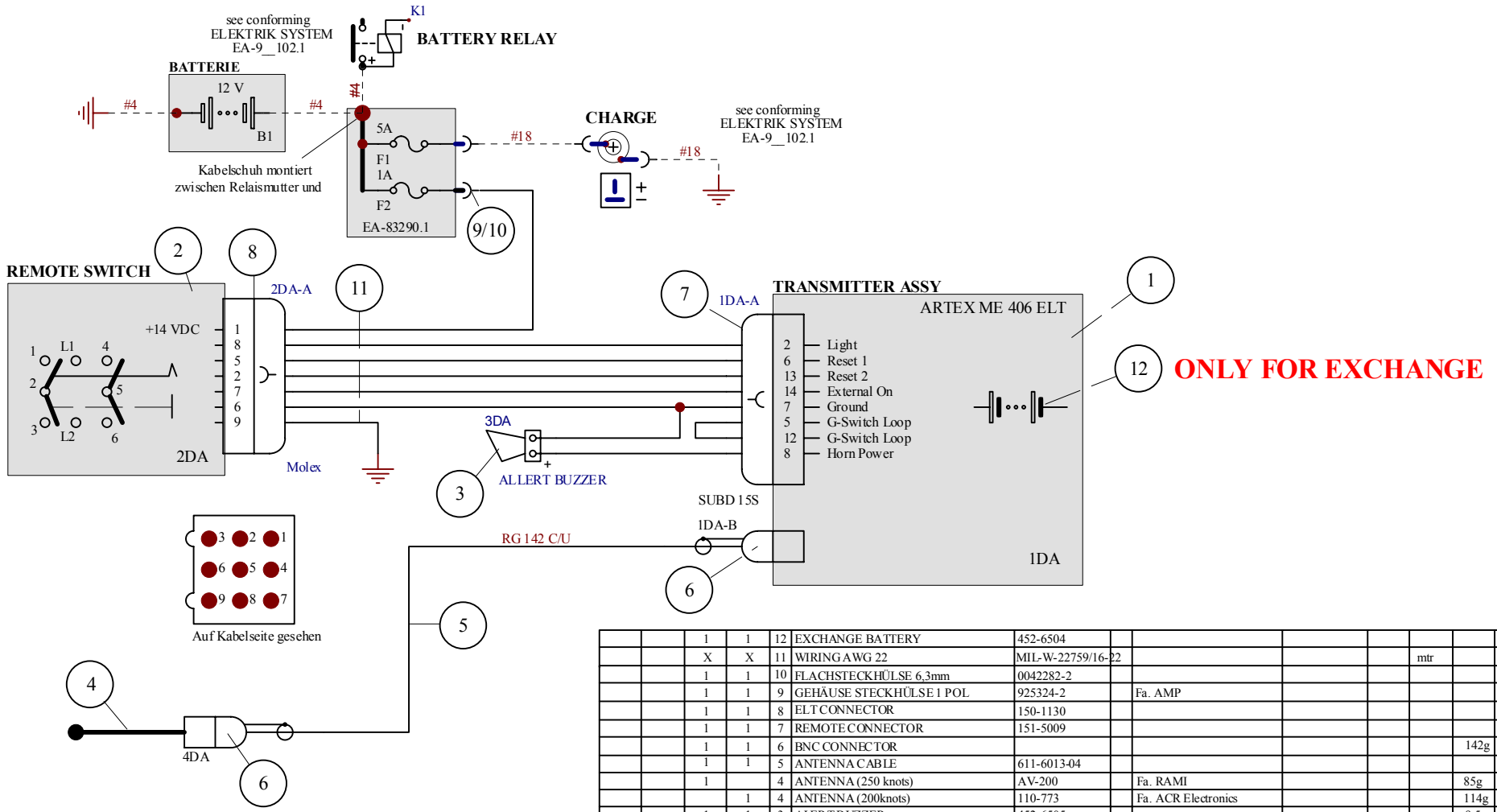
ELT ARTEX ME 406

EA-9D102.42

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0951**



		1	1	12	EXCHANGE BATTERY	452-6504							
		X	X	11	WIRING AWG 22	MIL-W-22759/16-22					mtr		01694
		1	1	10	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
		1	1	9	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
		1	1	8	ELT CONNECTOR	150-1130							
		1	1	7	REMOTE CONNECTOR	151-5009							
		1	1	6	BNC CONNECTOR							142g	
		1	1	5	ANTENNA CABLE	611-6013-04							
		1		4	ANTENNA (250 knots)	AV-200		Fa. RAMI				85g	33965
			1	4	ANTENNA (200knots)	110-773		Fa. ACR Electronics				114g	
		1	1	3	ALERT BUZZER	452-6505						9,5g	
		1	1	2	REMOTE SWITCH	345-6196						46g	
		1	1	1	TRANSMITTER ASSY	ME 406 ELT						936g	
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 02 = mit Antenne RAMI AV-200 (250 knots)
OPTION 01 = mit Antenne ACR Electronics 110-773 (200 knots)

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
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02	
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Letzte Bearbeitung:

Nr.:	Änderung/Mod.	Nr.:	Datum	Name
A	ÄM 300-12-10		22.07.12	HW

	Datum	Name
Bearb.:	23.03.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

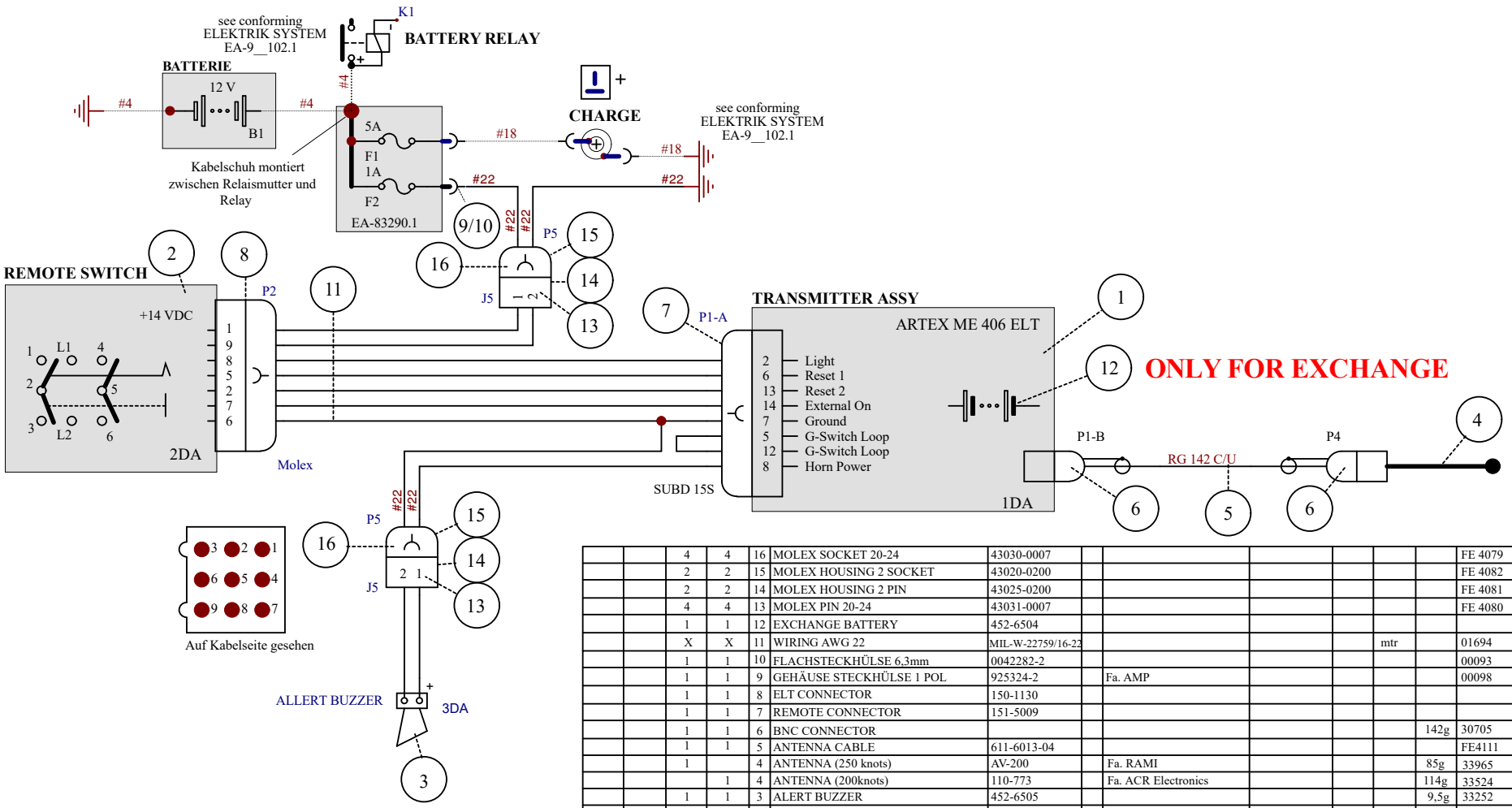
Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
ELT ARTEX ME 406

EA-9D102.42	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0951a**



		4	4	16	MOLEX SOCKET 20-24	43030-0007							FE 4079
		2	2	15	MOLEX HOUSING 2 SOCKET	43020-0200							FE 4082
		2	2	14	MOLEX HOUSING 2 PIN	43025-0200							FE 4081
		4	4	13	MOLEX PIN 20-24	43031-0007							FE 4080
		1	1	12	EXCHANGE BATTERY	452-6504							
		X	X	11	WIRING AWG 22	MIL-W-22759/16-22					mtr		01694
		1	1	10	FLACHSTECKHÜLSE 6,3mm	0042282-2							00093
		1	1	9	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP					00098
		1	1	8	ELT CONNECTOR	150-1130							
		1	1	7	REMOTE CONNECTOR	151-5009							
		1	1	6	BNC CONNECTOR							142g	30705
		1	1	5	ANTENNA CABLE	611-6013-04							FE4111
		1		4	ANTENNA (250 knots)	AV-200		Fa. RAMI				85g	33965
			1	4	ANTENNA (200knots)	110-773		Fa. ACR Electronics				114g	33524
		1	1	3	ALERT BUZZER	452-6505						9,5g	33252
		1	1	2	REMOTE SWITCH	345-6196						46g	33896
		1	1	1	TRANSMITTER ASSY	ME 406 ELT						936g	32173
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod.	Nr.:Datum	Name
B	ÄM-300-15-07	03.03.16	HW
A	ÄM 300-12-10	22.07.12	HW

	Datum	Name
Bearb.	23.03.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

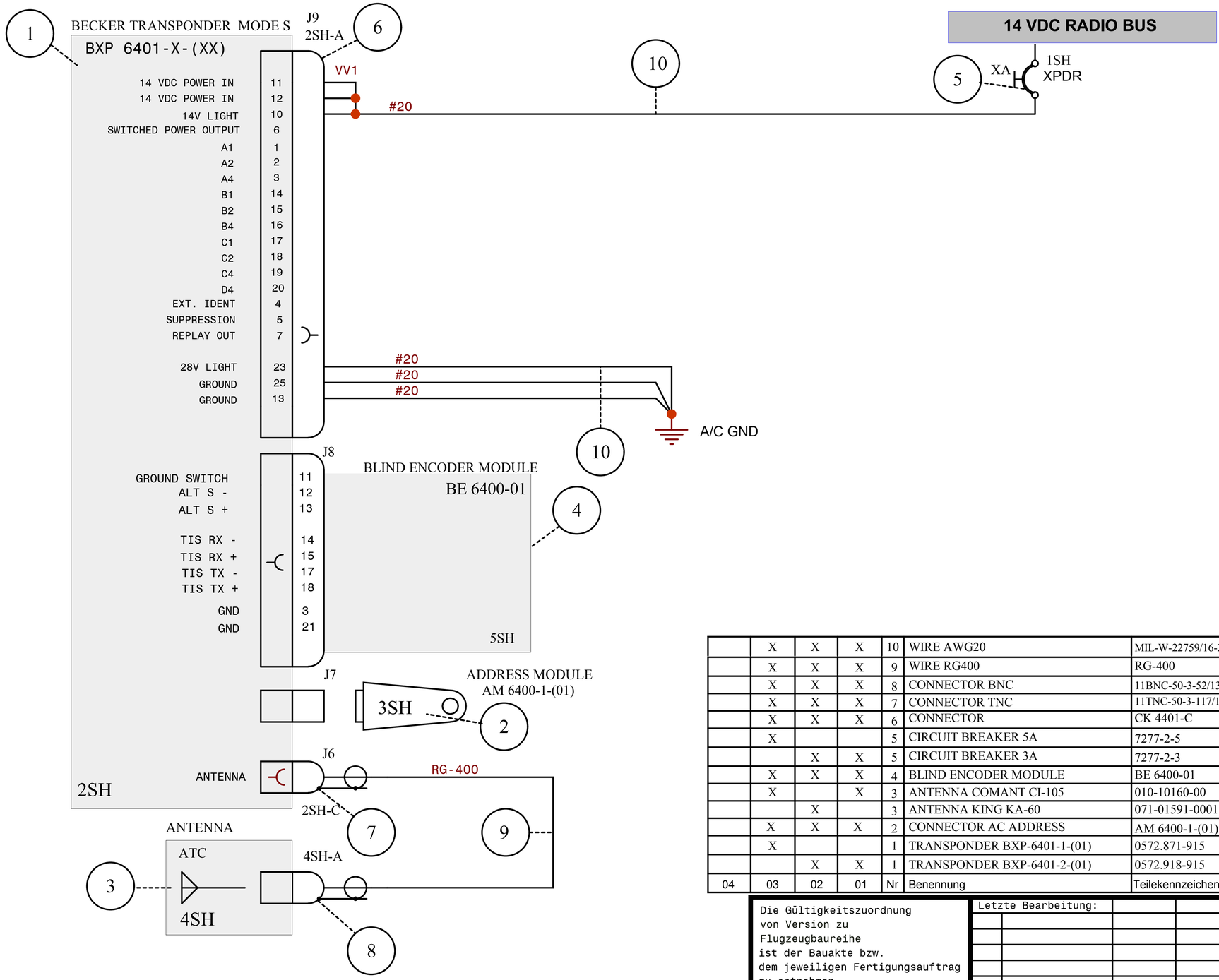
ELT ARTEX ME 406

EA-9D102.42	**B**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0951a**

OPTION 02 = mit Antenne RAMI AV-200 (250 knots)
OPTION 01 = mit Antenne ACR Electronics 110-773 (200 knots)



OPTION 03 = CLASS-1 MIT COMANT CI-105 ANTENNE
OPTION 02 = CLASS-2 MIT KING KA-60 ANTENNE
OPTION 01 = CLASS-2 MIT COMANT CI-105 ANTENNE

	X	X	X	10	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		00775
	X	X	X	9	WIRE RG400	RG-400				2,9	mtr		FE4111
	X	X	X	8	CONNECTOR BNC	11BNC-50-3-52/133				1	Stueck		30705
	X	X	X	7	CONNECTOR TNC	11TNC-50-3-117/133				1	Stueck		31633
	X	X	X	6	CONNECTOR	CK 4401-C				1	Stueck		31863
	X			5	CIRCUIT BREAKER 5A	7277-2-5				1	Stueck		31506
		X	X	5	CIRCUIT BREAKER 3A	7277-2-3				1	Stueck		31507
	X	X	X	4	BLIND ENCODER MODULE	BE 6400-01				1	Stueck		
	X		X	3	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
		X		3	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
	X	X	X	2	CONNECTOR AC ADDRESS	AM 6400-1-(01)				1	Stueck		
	X			1	TRANSPONDER BXP-6401-1-(01)	0572.871-915				1	Stueck		
		X	X	1	TRANSPONDER BXP-6401-2-(01)	0572.918-915				1	Stueck		
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	24.10.06	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

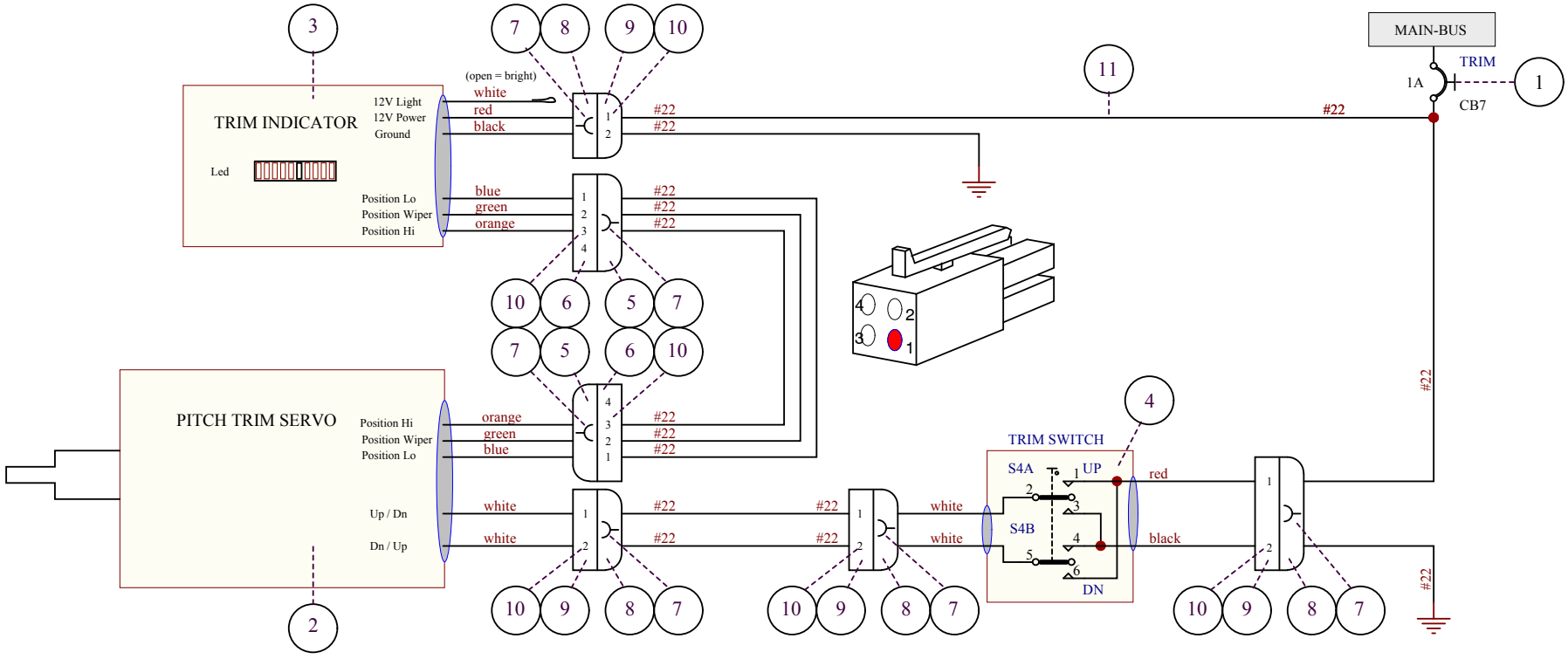
TRANSPONDER BXP-6401-X & ENC

EA-93102.43

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300952**



		X	X	11	KABEL AWG 22	MIL-W-22759/16-22					mtr		01694
		14	14	10	PIN MOLEX	43030-0007	*						FE4079
		4	4	9	PIN GEHÄUSE 2 POLIG	43020-0200	*						FE4082
		4	4	8	BUCHSEN GEHÄUSE 2 POLIG	43025-0200	*						FE4081
		14	14	7	BUCHSE Molex	43031-0007	*						FE4080
		2	2	6	PIN GEHÄUSE 4 POLIG	43020-0400	*						FE4257
		2	2	5	BUCHSEN GEHÄUSE 4 POLIG	43025-0400	*						FE4256
		1		4	TRIM SWITCH	SL-2211C1B2							33274
			1	4	TRIM SWITCH	MS35059-27							31488
		1	1	3	TRIM INDICATOR	RP3-LED							(31668)
		1	1	2	PITCH TRIM SERVO	T3-12A							31668
		1	1	1	CIRCUIT BREAKER 1A	7277-2-1							31506
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

* NOTE
Alternative zu Pos.-Nr. 5 - 10
Crimpverbinder rot PN. D-436-36 (Raychem)
MaWi-Nr. FE4108

OPTION 02 = MIT TRIM SWITCH IM STICK
OPTION 01 = MIT TRIM SWITCH IM PANEL

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 17.11.16 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-09-23	30.11.09	HW

	Datum	Name
Bearb.:	05.05.08	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

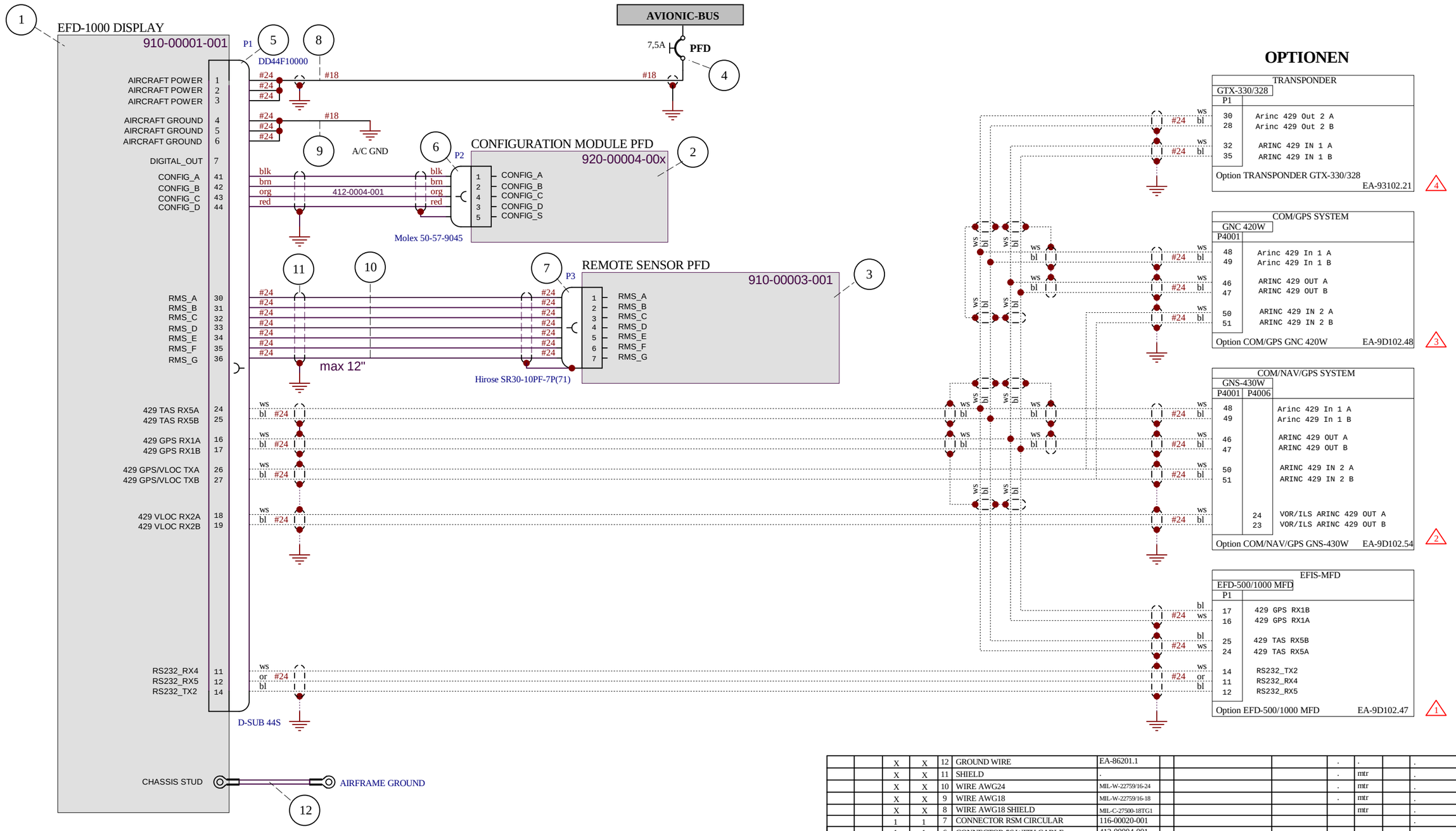
Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/SC
ELECTRIC TRIM SYSTEM

EA-9C102.44	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3C0952al2**



		X	X	12	GROUND WIRE	EA-86201.1				.	.		.
		X	X	11	SHIELD	.				.	mtr		.
		X	X	10	WIRE AWG24	MIL-W-22759/16-24				.	mtr		.
		X	X	9	WIRE AWG18	MIL-W-22759/16-18				.	mtr		.
		X	X	8	WIRE AWG18 SHIELD	MIL-C-27500-18TG1					mtr		.
		1	1	7	CONNECTOR RSM CIRCULAR	116-00020-001							.
		1	1	6	CONNECTOR 5S WITH CABLE	412-00004-001							.
		1	1	5	CONNECTOR SUBD 44S	116-00022-002							.
		1	1	4	CIRCUIT BREAKER 7,5A	7277-2-7,5							.
		1	1	3	REMOTE SENSOR MODULE	910-00003-001						.	.
		1		2	CONFIGURATION MODULE (PFD-PRO)	920-00004-002							.
			1	2	CONFIGURATION MODULE (PFD-PIL)	920-00004-001							.
		1	1	1	EFD 1000 (DISPLAY)	910-00001-001						.	.
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

4 optional PFD installation requires GTX-330 or GTX-328 to be installed

3 optional PFD "Pilot" requires GNC-420W to be installed

2 optional PFD "Pro" requires GNS-430W to be installed

1 additional MFD installation is optional

Option 02 = PDF "Pro" installation (including HSI)

Option 01 = PFD "Pilot" installation (no HSI)

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

04
03
02
01
Ver. Bezeichnung

Letzte Bearbeitung:

Nr.: Änderung/Mod. Nr.: Datum Name

	Datum	Name
Bearb.:	21.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

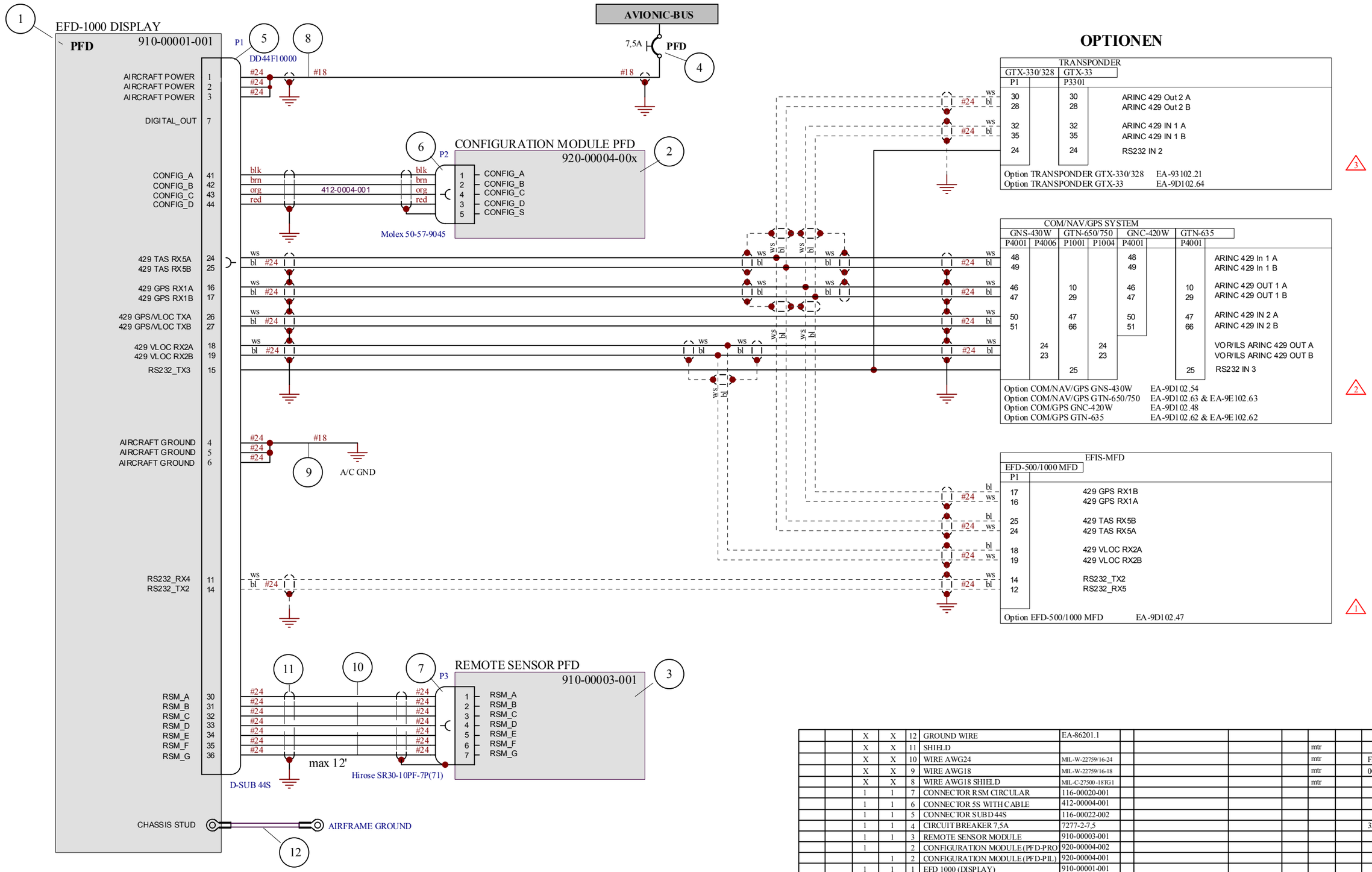
EA 300/LT
EFD 1000 PFD

EA-9D102.46

A3 Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0955**



OPTIONEN

TRANSPONDER

GTX-330/328 P1	GTX-33 P3301	
30	30	ARINC 429 Out 2 A
28	28	ARINC 429 Out 2 B
32	32	ARINC 429 IN 1 A
35	35	ARINC 429 IN 1 B
24	24	RS232 IN 2

Option TRANSPONDER GTX-330/328 EA-93102.21
Option TRANSPONDER GTX-33 EA-9D102.64

△3

COM/NAV/GPS SYSTEM

GNS-430W P4001	GNS-430W P4006	GTN-650/750 P1001	GTN-650/750 P1004	GNC-420W P4001	GTN-635 P4001	
48				48		ARINC 429 In 1 A
49				49		ARINC 429 In 1 B
46		10		46	10	ARINC 429 OUT 1 A
47		29		47	29	ARINC 429 OUT 1 B
50		47		50	47	ARINC 429 IN 2 A
51		66		51	66	ARINC 429 IN 2 B
	24		24			VOR/ILS ARINC 429 OUT A
	23		23			VOR/ILS ARINC 429 OUT B
		25			25	RS232 IN 3

Option COM/NAV/GPS GNS-430W EA-9D102.54
Option COM/NAV/GPS GTN-650/750 EA-9D102.63 & EA-9E102.63
Option COM/GPS GNC-420W EA-9D102.48
Option COM/GPS GTN-635 EA-9D102.62 & EA-9E102.62

△2

EFIS-MFD

EFD-500/1000 MFD P1	
17	429 GPS RX1B
16	429 GPS RX1A
25	429 TAS RX5B
24	429 TAS RX5A
18	429 VLOC RX2A
19	429 VLOC RX2B
14	RS232_TX2
12	RS232_RX5

Option EFD-500/1000 MFD EA-9D102.47

△1

				Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
		X	X	12	GROUND WIRE	EA-86201.1							
		X	X	11	SHIELD						mtr		
		X	X	10	WIRE AWG24	MIL-W-22759/16-24					mtr		FE4011
		X	X	9	WIRE AWG18	MIL-W-22759/16-18					mtr		00776
		X	X	8	WIRE AWG18 SHIELD	MIL-C-27500-18TG1					mtr		
		1	1	7	CONNECTOR RSM CIRCULAR	116-00020-001							
		1	1	6	CONNECTOR 5S WITH CABLE	412-00004-001							
		1	1	5	CONNECTOR SUBD 44S	116-00022-002							
		1	1	4	CIRCUIT BREAKER 7,5A	7277-2-7,5							32112
		1	1	3	REMOTE SENSOR MODULE	910-00003-001							
		1		2	CONFIGURATION MODULE (PFD-PRO)	920-00004-002							
			1	2	CONFIGURATION MODULE (PFD-PIL)	920-00004-001							
		1	1	1	EFD 1000 (DISPLAY)	910-00001-001							

04 03 02 01

△3 optional PFD installation requires GTX-330; GTX-328 or GTX-33 to be installed

△2 optional PFD "Pro" requires GNS-430W or GTN-650/GTN-750 to be installed. PDF "Pilot" requires GNC-420W or GTN-635 to be installed.

△1 additional MFD installation is optional

Option 02 = PDF "Pro" installation (including HSI)
Option 01 = PFD "Pilot" installation (no HSI)

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

EDV-Kennung: **EA3D0955**

Letzte Bearbeitung:		20.10.12	HW
Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-12-01	05.09.12	HW

	Datum	Name
Bearb.:	21.04.10	HW
Gepr.:		
Gepr.:		

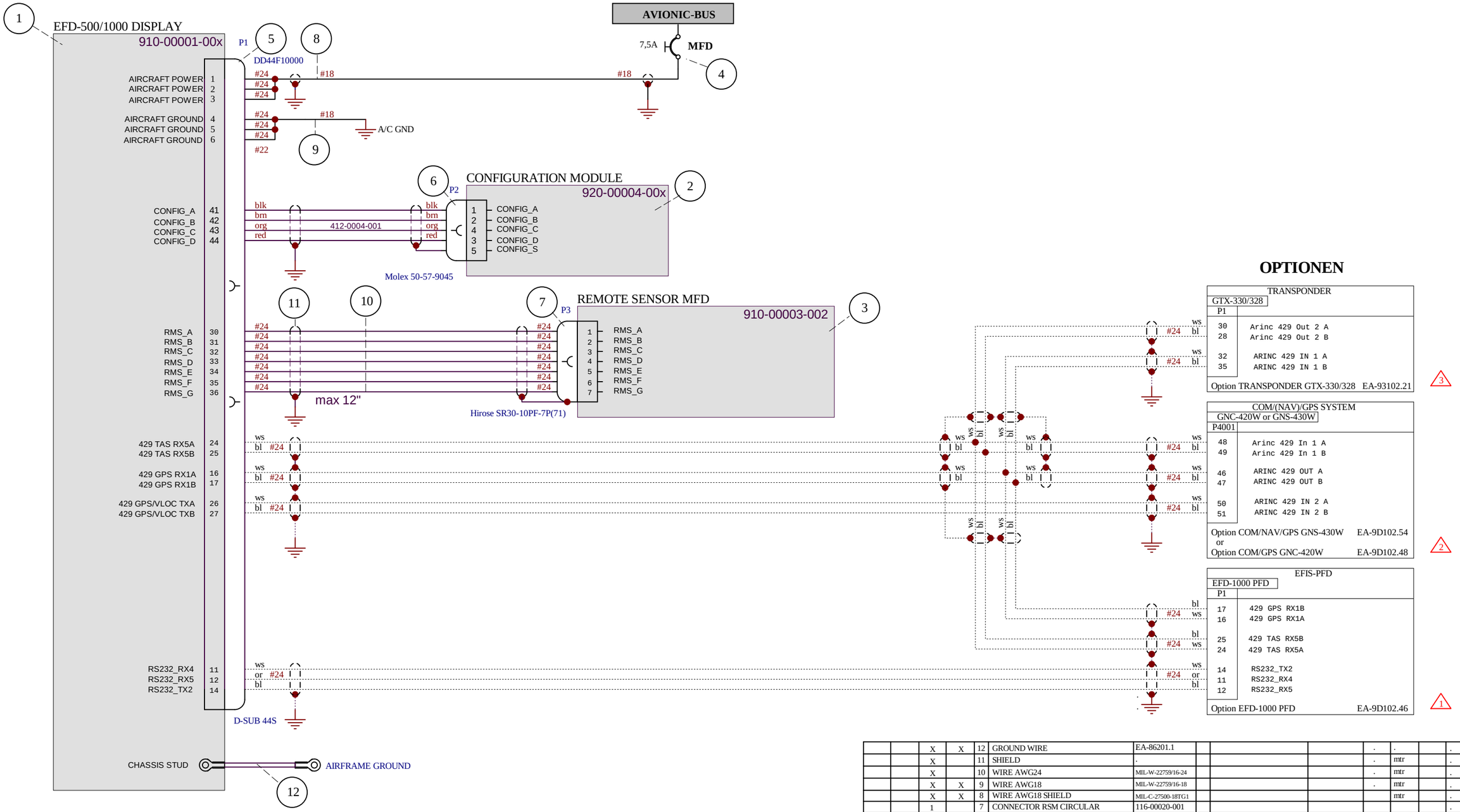
EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
EFD 1000 PFD

EA-9D102.46	A
A3	Blatt von 1

Schutzvermerk nach DIN 34 beachten.



		X	X	12	GROUND WIRE	EA-86201.1				.	.		.
		X		11	SHIELD	.				.	mtr		.
		X		10	WIRE AWG24	MIL-W-22759/16-24				.	mtr		.
		X	X	9	WIRE AWG18	MIL-W-22759/16-18				.	mtr		.
		X	X	8	WIRE AWG18 SHIELD	MIL-C-27500-18TG1					mtr		.
		1		7	CONNECTOR RSM CIRCULAR	116-00020-001							.
		1	1	6	CONNECTOR 5S WITH CABLE	412-00004-001							.
		1	1	5	CONNECTOR SUBD 44S	116-00022-002							.
		1	1	4	CIRCUIT BREAKER 7,5A	7277-2-7,5							.
		1		3	REMOTE SENSOR MODULE	910-00003-002						.	.
		1		2	CONFIGURATION MODULE (1000MFD)	920-00004-004							.
			1	2	CONFIGURATION MODULE (500MFD)	920-00004-005							.
		1		1	EFD 1000 (DISPLAY)	910-00001-001							.
			1	1	EFD 500 (DISPLAY)	910-00001-003						.	.
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

△3 optional MFD requires GTX-330 or GTX-328 to be installed

△2 optional MFD requires GNC-420W or GNS-430W to be installed

△1 optional MFD requires PFD to be installed

Option 02 = MFD-1000 installation (with 2nd ADAHRS)

Option 01 = MFD-500 installation (without ADAHRS)

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Baukte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	14.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

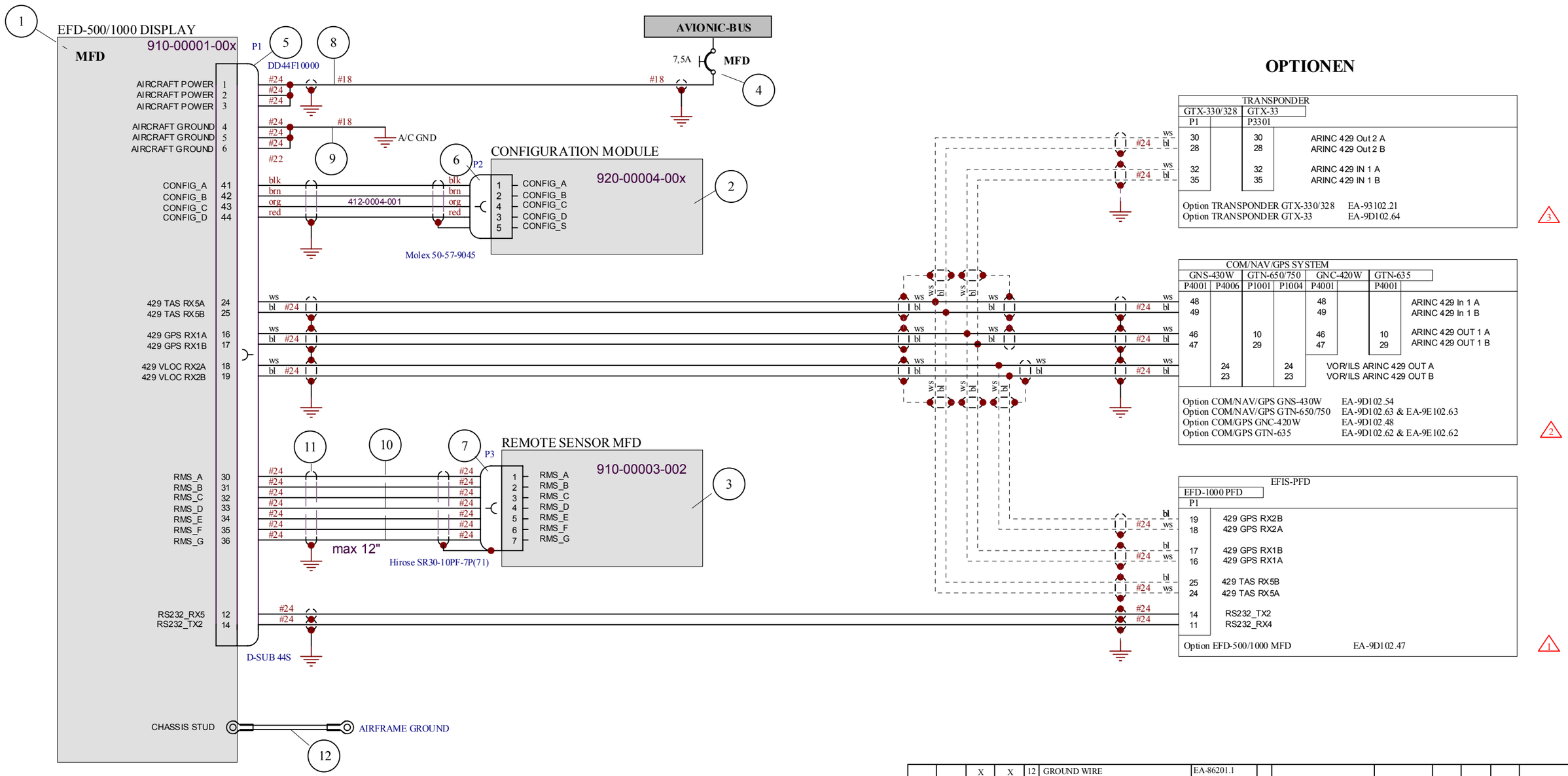
EA 300/LT
EFD 500/1000 MFD

EA-9D102.47

A3 Blatt1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0956**



		X	X	12	GROUND WIRE	EA-86201.1							
		X		11	SHIELD						mtr		
		X		10	WIRE AWG24	MIL-W-22759/16-24					mtr		
		X	X	9	WIRE AWG18	MIL-W-22759/16-18					mtr		
		X	X	8	WIRE AWG18 SHIELD	MIL-C-27500-18TG1					mtr		
		1		7	CONNECTOR RSM CIRCULAR	116-00020-001							
		1	1	6	CONNECTOR 5S WITH CABLE	412-00004-001							
		1	1	5	CONNECTOR SUBD 44S	116-00022-002							
		1	1	4	CIRCUIT BREAKER 7,5A	7277-2-7,5							
		1		3	REMOTE SENSOR MODULE	910-00003-002							
		1		2	CONFIGURATION MODULE (1000MFD)	920-00004-004							
			1	2	CONFIGURATION MODULE (500MFD)	920-00004-005							
		1		1	EFD 1000 (DISPLAY)	910-00001-001							
			1	1	EFD 500 (DISPLAY)	910-00001-003							
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

3 optional MFD requires GTX-330/328 or GTX-33 to be installed

2 optional PFD "Pro" requires GNS-430W or GTN-650/GTN-750 to be installed. PDF "Pilot" requires GNC-420W or GTN-635 to be installed.

1 optional MFD requires PFD to be installed

Option 02 = MFD-1000 installation (with 2nd ADAHRS)

Option 01 = MFD-500 installation (without ADAHRS)

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 20.10.12 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-12-01	09.09.12	HW

	Datum	Name
Bearb.:	14.04.10	HW
Gepr.:		
Gepr.:		

EDV-Kennung: **EA3D0956**

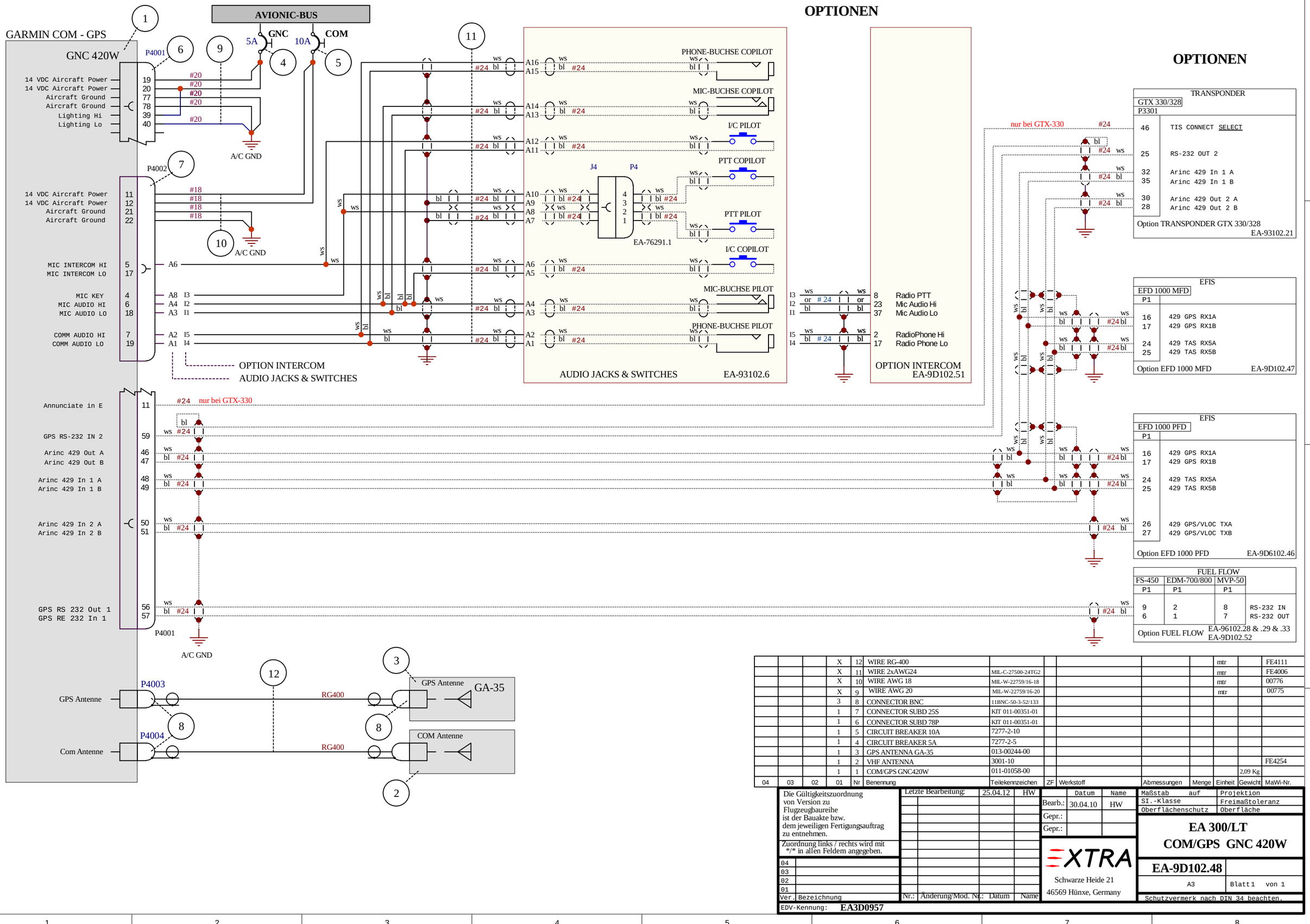
EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
EFD 500/1000 MFD

EA-9D102.47	**A**
A3	Blatt von 1

Schutzvermerk nach DIN 34 beachten.



			X	12	WIRE RG-400						mtr		FE4111
			X	11	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4006
			X	10	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
			X	9	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			3	8	CONNECTOR BNC	11BNC-50-3-52/133							
			1	7	CONNECTOR SUBD 25S	KIT 011-00351-01							
			1	6	CONNECTOR SUBD 78P	KIT 011-00351-01							
			1	5	CIRCUIT BREAKER 10A	7277-2-10							
			1	4	CIRCUIT BREAKER 5A	7277-2-5							
			1	3	GPS ANTENNA GA-35	013-00244-00							
			1	2	VHF ANTENNA	3001-10							FE4254
			1	1	COM/GPS GNC420W	011-01058-00						2,09 Kg	
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 25.04.12 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

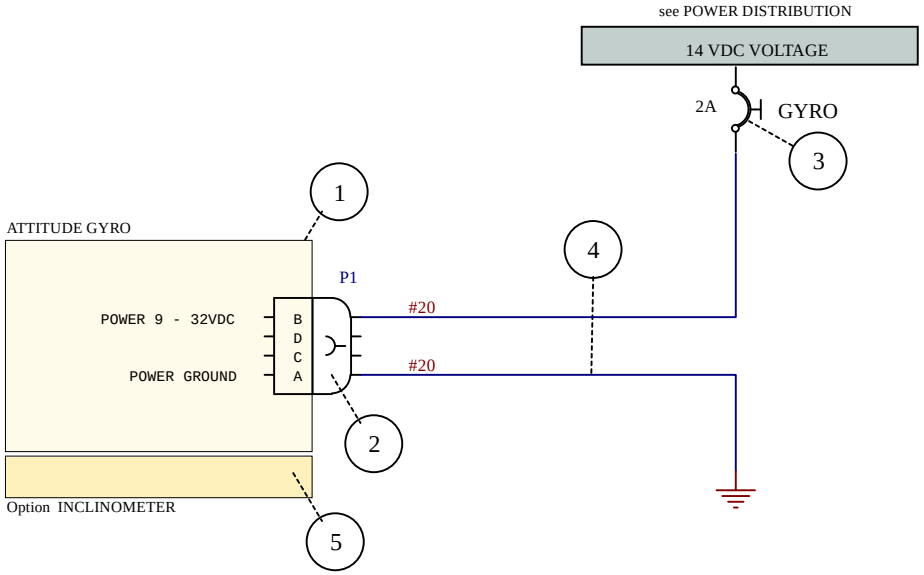
EA 300/LT
COM/GPS GNC 420W

EA-9D102.48

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0957**



1		1		5	INCLINOMETER	RCA 444-0010-01				1	Stueck		33529
X	X	X	X	4	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		
X	X	X	X	3	CIRCUIT BREAKER 2A	7277-2-2				1	Stueck		31508
X	X	X	X	2	CONNECTOR	MS3116E-4S				1	Stueck		
1	1			1	ATTITUDE GYRO 3"	RCA 2600-3				1	Stueck	16oz	33217/33882
		1	1	1	ATTITUDE GYRO 2"	RCA 2600-2				1	Stueck	8.5oz	33027/33881
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:	07.11.13	HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	07.06.09	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/L

ATTITUDE GYRO

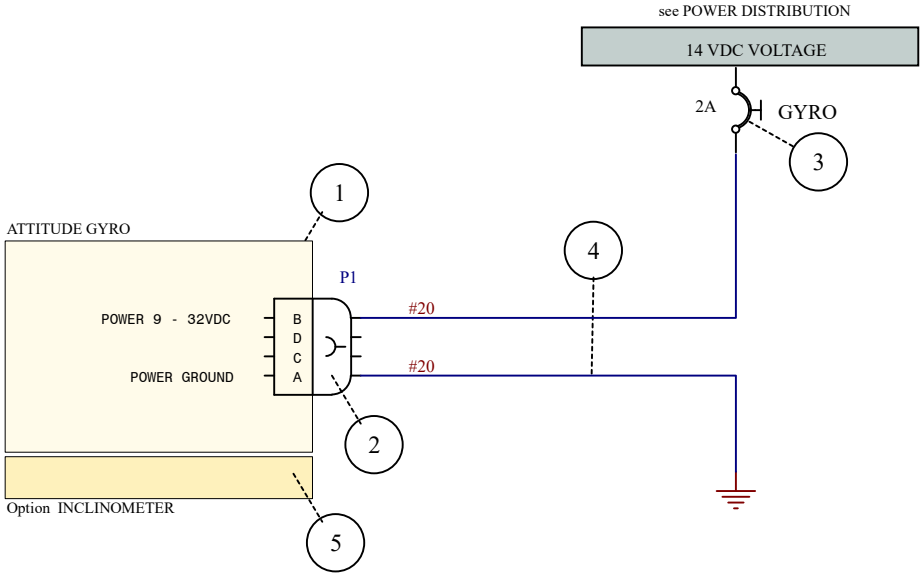
EA-96102.49

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3L0964**

OPTION 04 = 3 Inch VERSION with INCLOMETER
OPTION 03 = 3 Inch VERSION
OPTION 02 = 2 Inch VERSION with INCLOMETER
OPTION 01 = 2 Inch VERSION



*	*	*	*	5	INCLINOMETER	RCA 444-0010-01				1	Stueck		33529
X	X	X	X	4	WIRE AWG20	MIL-W-22759/16-20				0,7	mtr		00775
X	X	X	X	3	CIRCUIT BREAKER 2A	7277-2-2				1	Stueck		31508
X	X	X	X	2	CONNECTOR	MS3116E-4S				1	Stueck		in Pos. 1
1				1	ATTITUDE GYRO 3"	RCA 2610-3-G		102- 0403-01-03		1	Stueck	191g	34924
	1			1	ATTITUDE GYRO 2"	RCA 2610-2-G		102- 0402-01-03		1	Stueck	135g	34923
		1		1	ATTITUDE GYRO 3"	RCA 2610-3		102- 0403-01-01		1	Stueck	191g	34922
			1	1	ATTITUDE GYRO 2"	RCA 2610-2		102- 0402-01-01		1	Stueck	135g	34921
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

* POS 5 INCLINOMETER OPTIONAL
OPTION 04 = 3 Inch VERSION
OPTION 03 = 2 Inch VERSION
OPTION 02 = 3 Inch VERSION with pitch Sync feature
OPTION 01 = 2 Inch VERSION with pitch Sync feature

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

04	
03	
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Ver.	Bezeichnung

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM 300-18-03	28.11.18	HW

	Datum	Name
Bearb.:	07.06.09	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

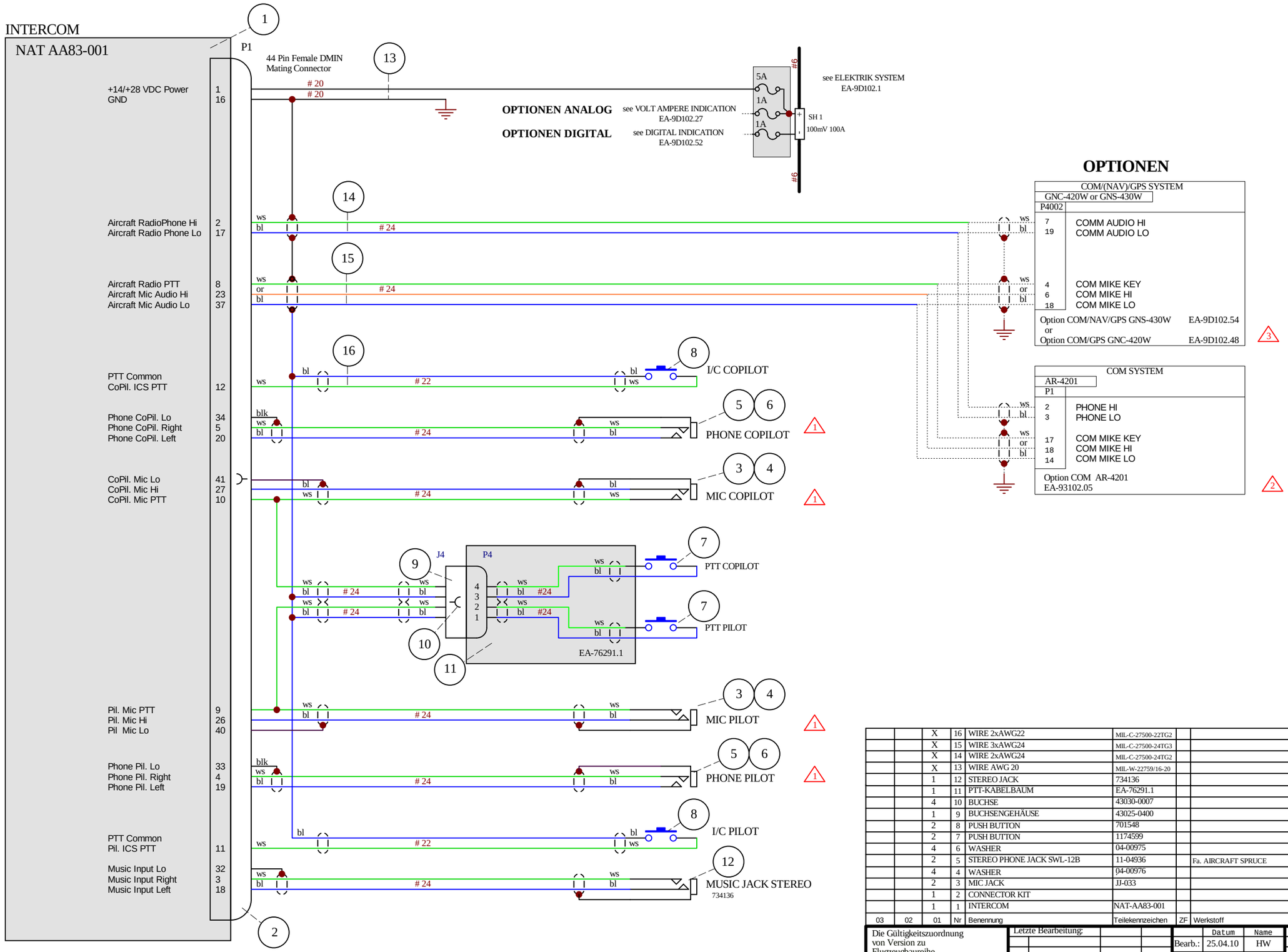
Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/L
ATTITUDE GYRO

EA-96102.49	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3L0964a**



3 optional COM requires GNC-420W or GNS-430W to be installed

2 optional COM requires AR-4201 to be installed

1 Fuer alle Buchsen Isolationsscheiben benutzen

		X	16	WIRE 2xAWG22	MIL-C-27500-22TG2					mtr		FE4005
		X	15	WIRE 3xAWG24	MIL-C-27500-24TG3					mtr		FE4009
		X	14	WIRE 2xAWG24	MIL-C-27500-24TG2				.	mtr		FE4006
		X	13	WIRE AWG 20	MIL-W-22759/16-20				.	mtr		00775
		1	12	STEREO JACK	734136							30362
		1	11	PTT-KABELBAUM	EA-76291.1							.
		4	10	BUCHSE	43030-0007							FE4079
		1	9	BUCHSENGEHÄUSE	43025-0400							FE4256
		2	8	PUSH BUTTON	701548							01430
		2	7	PUSH BUTTON	1174599							FE4301
		4	6	WASHER	04-00975							31382
		2	5	STEREO PHONE JACK SWL-12B	11-04936		Fa. AIRCRAFT SPRUCE					03305
		4	4	WASHER	04-00976							31381
		2	3	MIC JACK	JJ-033							00196
		1	2	CONNECTOR KIT								in Pos. 2
		1	1	INTERCOM	NAT-AA83-001							31659
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
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01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	25.04.10	HW
Gepr.:		
Gepr.:		

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

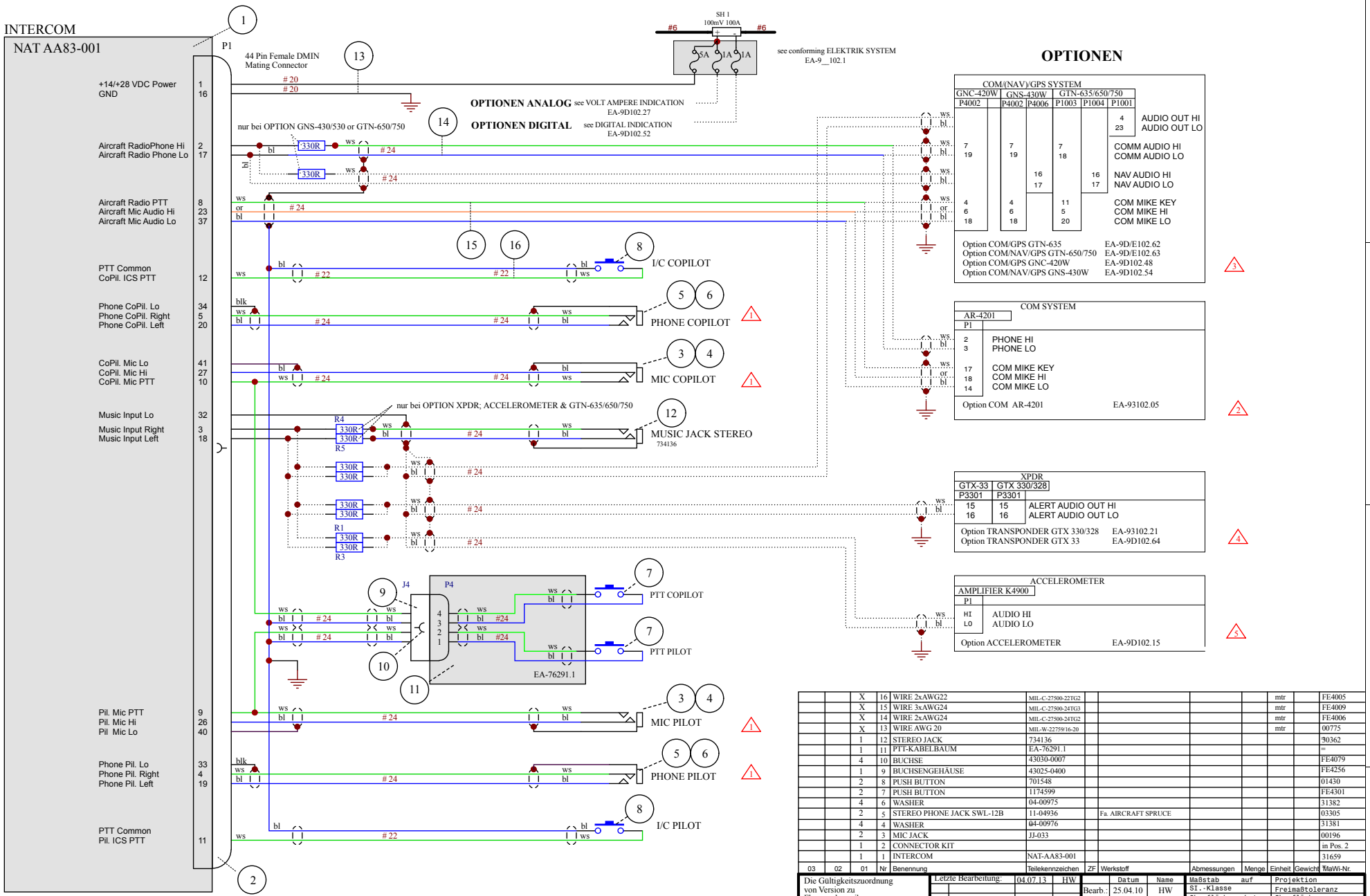
EA 300/LT
INTERCOM NAT-AA83

EA-9D102.51

A3 Blatt von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0960**



			Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.
		X	16	WIRE 2xAWG22	MIL-C-27500-22TG2					mtr		FE4005
		X	15	WIRE 3xAWG24	MIL-C-27500-24TG3					mtr		FE4009
		X	14	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4006
		X	13	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	12	STEREO JACK	734136							30362
		1	11	PTT-KABELBAUM	EA-76291.1							=
		4	10	BUCHSE	43030-0007							FE4079
		1	9	BUCHSENGEHÄUSE	43025-0400							FE4256
		2	8	PUSH BUTTON	701548							01430
		2	7	PUSH BUTTON	1174599							FE4301
		4	6	WASHER	04-00975							31382
		2	5	STEREO PHONE JACK SWL-12B	11-04936		Fa. AIRCRAFT SPRUCE					03305
		4	4	WASHER	~~04~~-00976							31381
		2	3	MIC JACK	JJ-033							00196
		1	2	CONNECTOR KIT								in Pos. 2
		1	1	INTERCOM	NAT-AA83-001							31659

5 optional ACCELEROMETER requires TL-3424-EXT to be installed
4 optional XPDR requires GTX-330/328 OR GTX-33 to be installed
3 optional COM requires GNC-420W, GNS-430W, GTN-635, GTN-650 or GTN-750 to be installed
2 optional COM requires AR-4201 to be installed
1 Fuer alle Buchsen Isolationsscheiben benutzen

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.
Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung	Nr.	Änderung/Mod. Nr.	Datum	Name
04					
03					
02					
01		A	ÄM-300-12-01	05.09.12	HW

Letzte Bearbeitung: 04.07.13 HW

	Datum	Name
Bearb.:	25.04.10	HW
Gepr.:		
Gepr.:		

EDV-Kennung: EA3D0960

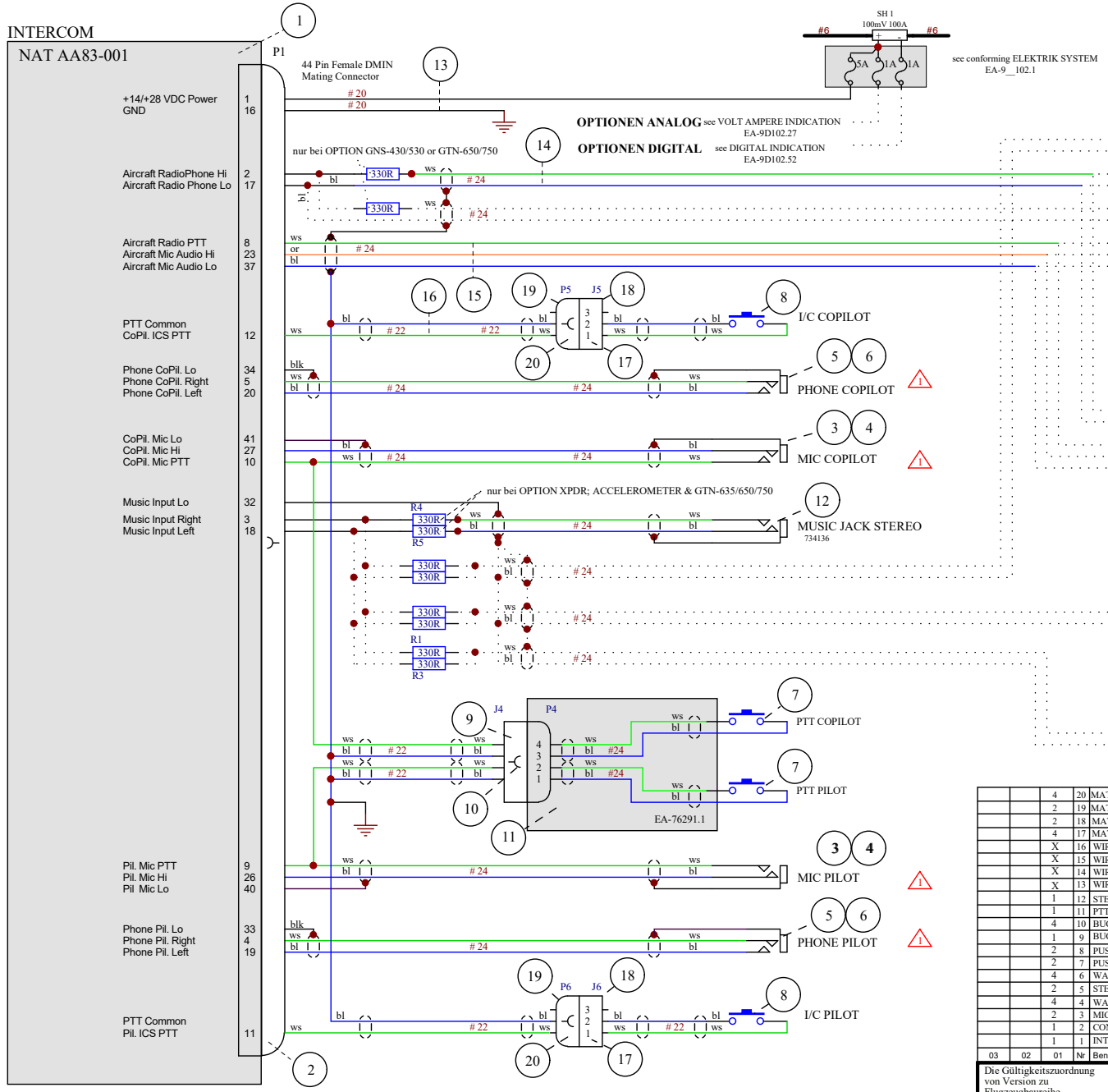
XTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

EA 300/LT
INTERCOM NAT-AA83

EA-9D102.51 | **A**
A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.



OPTIONEN

COM/(NAV)/GPS SYSTEM

GNC-420W P4002	GNS-430W P4002	GTN-650 P4006	GTN-635/650/750 P1003	GTN-635/650/750 P1004	GTN-635/650/750 P1001	
					4	AUDIO OUT HI
					23	AUDIO OUT LO
7	7		7			COMM AUDIO HI
19	19		18			COMM AUDIO LO
		16		16		NAV AUDIO HI
		17		17		NAV AUDIO LO
4	4		11			COM MIKE KEY
6	6		5			COM MIKE HI
18	18		20			COM MIKE LO

Option COM/GPS GTN-635 EA-9D/E102.62
Option COM/NAV/GPS GTN-650/750 EA-9D/E102.63
Option COM/GPS GNC-420W EA-9D102.48
Option COM/NAV/GPS GNS-430W EA-9D102.54

3

COM SYSTEM

AR-4201 P1	AR-6201 P1	
2	2	PHONE HI
3	3	PHONE LO
17	17	COM MIKE KEY
18	18	COM MIKE HI
14	8	COM MIKE LO

Option COM AR-4201/AR-6201 EA-9E102.05

2

XPDR

GTX-33 P3301	GTX 330/328 P3301	
15	15	ALERT AUDIO OUT HI
16	16	ALERT AUDIO OUT LO

Option TRANSPONDER GTX 330/328 EA-93102.21
Option TRANSPONDER GTX 33 EA-9D102.64

4

ACCELEROMETER

AMPLIFIER K4900 P1	
HI	AUDIO HI
LO	AUDIO LO

Option ACCELEROMETER EA-9D102.15

5

		4	20	MATE-N-LOCK SOCKET	163557-2							FE4305
		2	19	MATE-N-LOCK HOUSING 3 SOCKET	1-0480303-0							FE4307
		2	18	MATE-N-LOCK HOUSING 3 PIN	1-0480305-0							FE4308
		4	17	MATE-N-LOCK PIN	163558-2							FE4306
		X	16	WIRE 2xAWG22	MIL-C-27500-22TG2					mtr		FE4005
		X	15	WIRE 3xAWG24	MIL-C-27500-24TG3					mtr		FE4009
		X	14	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4006
		X	13	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	12	STEREO JACK	734136							30362
		1	11	PTT-KABELBAUM	EA-76291.1							
		4	10	BUCHSE	43030-0007							FE4079
		1	9	BUCHSENGEHÄUSE	43025-0400							FE4256
		2	8	PUSH BUTTON	701548							01430
		2	7	PUSH BUTTON	1174599							FE4301
		4	6	WASHER	04-00975							31382
		2	5	STEREO PHONE JACK SWL-12B	11-04936		Fa. AIRCRAFT SPRUCE					03305
		4	4	WASHER	~~04~~-00976							31381
		2	3	MIC JACK	JJ-033							00196
		1	2	CONNECTOR KIT								in Pos. 2
		1	1	INTERCOM	NAT-AA83-001							31659
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.	Änderung/Mod. Nr.	Datum	Name
C	ÄM-300-11-08	07.11.16	HW
B	ÄM-300-15-07	21.02.16	HW
A	ÄM-300-12-01	05.09.12	HW

	Datum	Name
Bearb.:	25.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

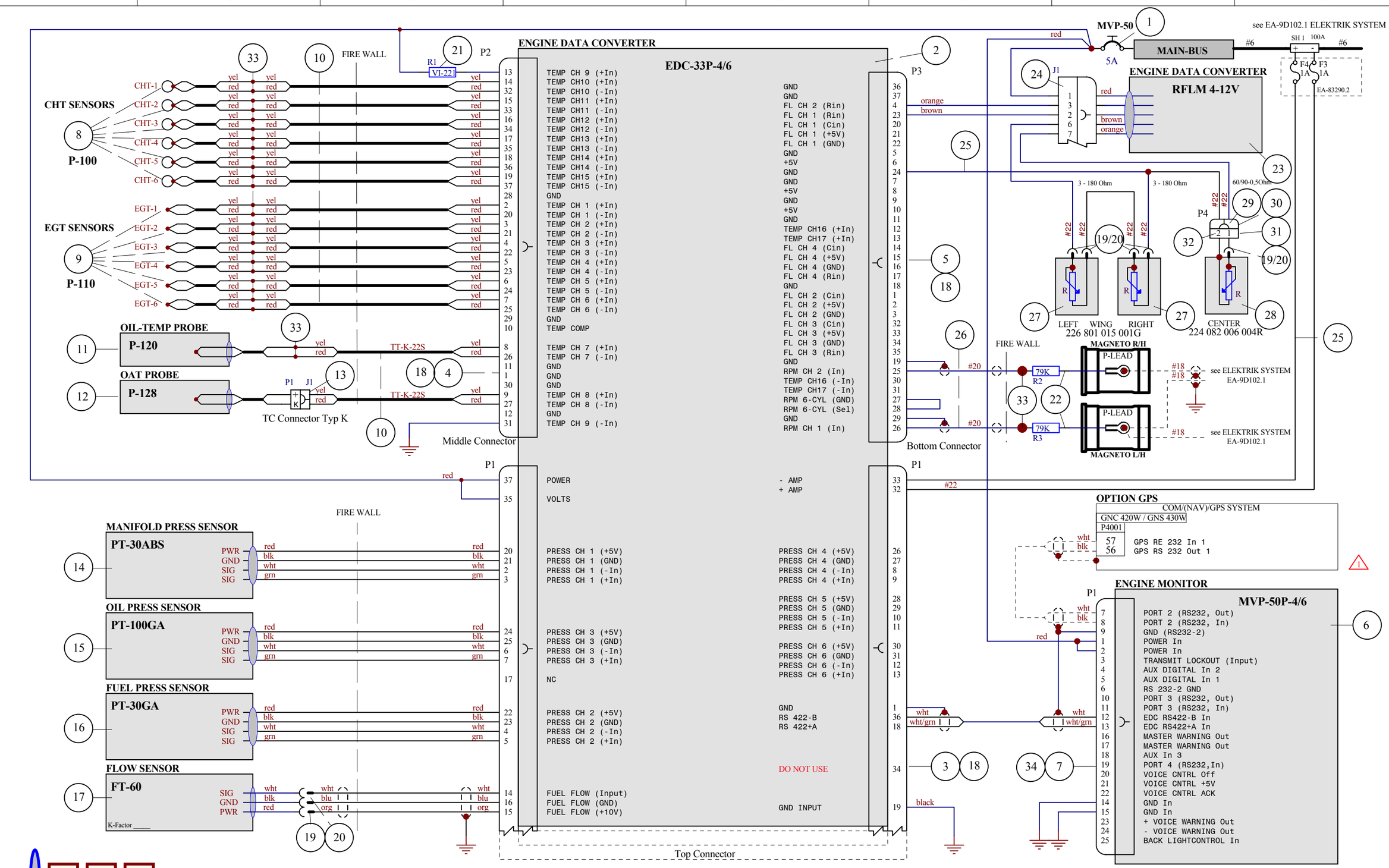
EA 300/LT
INTERCOM NAT-AA83

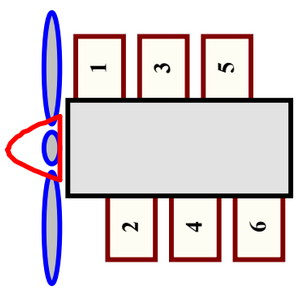
EA-9D102.51	C
A3	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0960c**

5 optional ACCELEROMETER requires TL-3424-EXT to be installed
4 optional XPDR requires GTX-330/328 OR GTX-33 to be installed
3 optional COM requires GNC-420W, GNS-430W, GTN-635, GTN-650 or GTN-750 to be installed
2 optional COM requires AR-4201 or AR-6201 to be installed
1 Fuer alle Buchsen Isolationsscheiben benutzen





⚠1 optional MFD requires GNC-420W or GNS-430W to be installed

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	29.04.10	HW
Gepr.:		
Gepr.:		

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

EA 300/LT

DIGITAL INDICATION MVP-50P

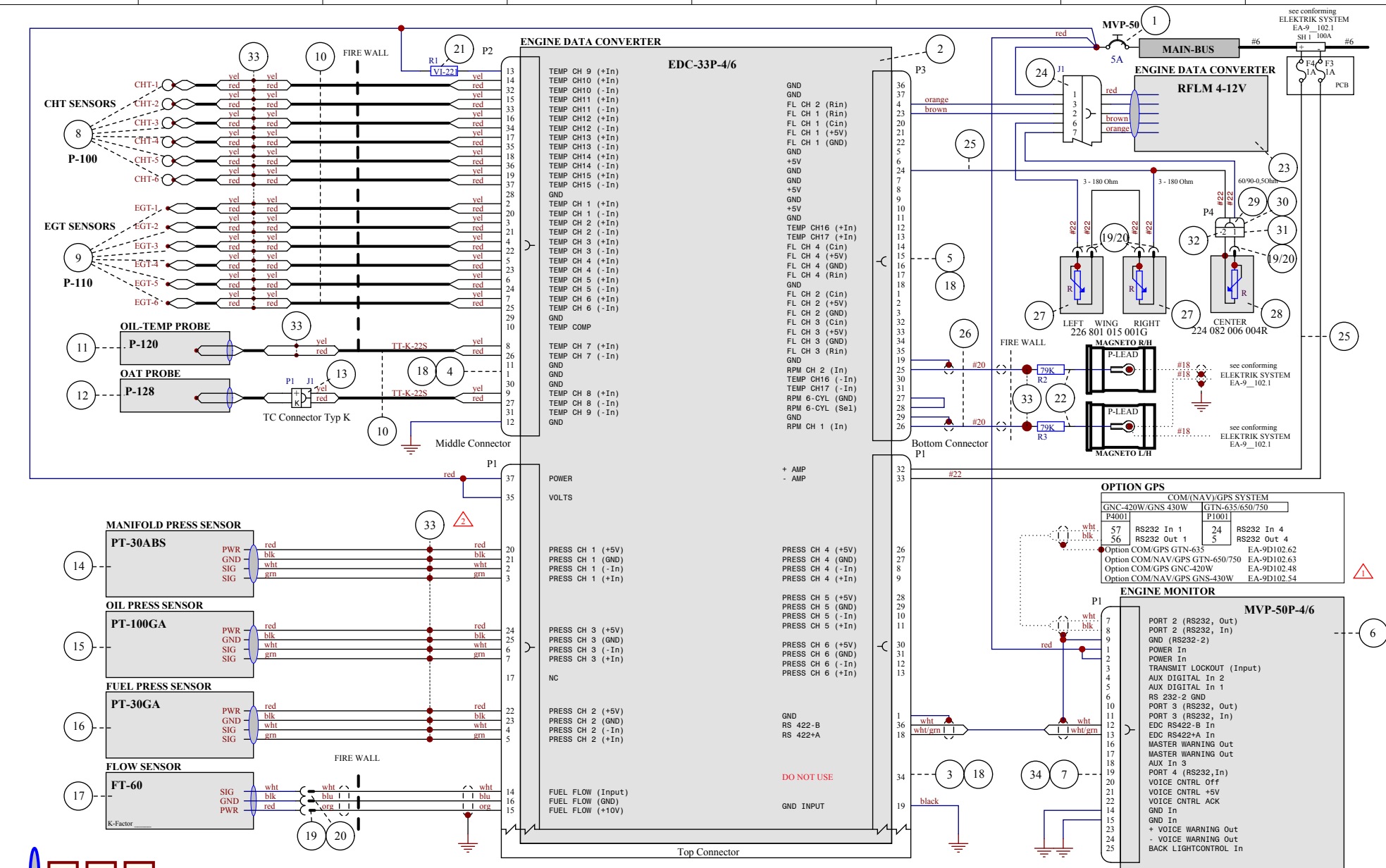
EA-9D102.52_1

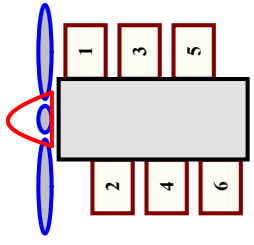
A3

Blatt 1 von 2

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0961**





2 Add Splice if necessary

1 optional COM requires GNC-420W, GNS-430W, GTN-635, GTN-650 or GTN-750 to be installed

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung	Nr.	Änderung/Mod. Nr.	Datum	Name
04					
03					
02					
01		A	AM-300-12-01	09.09.12	HW

Letzte Bearbeitung: 17.11.16 HW

	Datum	Name
Bearb.:	29.04.10	HW
Gepr.:		
Gepr.:		

EDV-Kennung: EA3D0961

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

EA 300/LT
DIGITAL INDICATION MVP-50P

EA-9D102.52_1 | A

A3 | Blatt 1 von 2

			1	34	GEHÄUSE 25 POLIG	165X16399X							33349
			28	33	SPLICE	FTS D436-37							FE 4086
			2	32	PIN								
			1	31	PIN GEHÄUSE 2 POLIG								
			2	30	BUCHSEN								
			1	29	BUCHSEN GEHÄUSE 2 POLIG								
			1	28	FUEL SENSOR	224 082 006 004R							
			2	27	FUEL SENSOR	226 801 015 001G							
			X	26	WIRE AWG 20 SHIELDED	MIL-C-27500-20TG1					mtr		
			X	25	WIRE AWG 22	MIL-W-22759/16-22					mtr		
			1	24	CIRCULAR CONNECTOR			supplid by EI (Kit)					
			1	23	ENGINE DATA CONVERTER	RFLM 4-12V							
			2	22	RESISTOR 79K	79K							
			1	21	RESISTOR	VI-221							
			5	20	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
			3	19	BUCHSEN GEHÄUSE 1 POLIG	925324-2							00098
			3	18	GEHÄUSE 37 POLIG	165X16409X							33350
			1	17	FLOW SENSOR	FT-60							
			4	16	FUEL PRESS SENSOR	PT-30GA							
			1	15	OIL PRESS SENSOR	PT-100GA							
			1	14	MANIFOLD PRESS SENSOR	PT-30ABS							
			1	13	TC CONNECTOR SOCKET TYP K	0220 0002		Fa. FARNELL					
			1	12	OAT PROBE	P-128							
			1	11	OIL-TEMP PROBE	P-120							
			X	10	THERMOKABEL	TT-K-22S		supplid by EI (Kit)			mtr		
			6	9	EGT SENSORS	P-110							
			6	8	CHT SENSORS	P-100							
			1	7	CONNECTOR			supplid by EI (Kit)					
			1	6	ENGINE MONITOR	MVP-50P-EX-01							33108
			1	5	CONNECTOR			supplid by EI (Kit)					
			1	4	CONNECTOR			supplid by EI (Kit)					
			1	3	CONNECTOR			supplid by EI (Kit)					
			1	2	ENGINE DATA CONVERTER	EDC-33P-4/6							33283
			1	1	CIRCUIT BREAKER 5A	7277-2-5							31506
04	03	02	01	Nr	Benennung	Teilekennzeichen		Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA

Schwarze Heide 21

46569 Hünxe, Germany

Maßstab auf	Projektion
SL.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

DIGITAL INDICATION MVP-50P

EA-9D102.52_2

A4 | Blatt 2 von 2

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0961_2**

			1	34	GEHÄUSE 25 POLIG	165X16399X							33349
			40	33	SPLICE	FTS D436-37							FE 4086
			2	32	PIN								
			1	31	PIN GEHÄUSE 2 POLIG								
			2	30	BUCHSEN								
			1	29	BUCHSEN GEHÄUSE 2 POLIG								
			1	28	FUEL SENSOR	224 082 006 004R							
			2	27	FUEL SENSOR	226 801 015 001G							
			X	26	WIRE AWG 20 SHIELDED	MIL-C-27500-20TG1					mtr		
			X	25	WIRE AWG 22	MIL-W-22759/16-22					mtr		
			1	24	CIRCULAR CONNECTOR			supplid by EI (Kit)					
			1	23	ENGINE DATA CONVERTER	RFLM 4-12V							
			2	22	RESISTOR 79K	79K							
			1	21	RESISTOR	VI-221							
			5	20	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
			3	19	BUCHSEN GEHÄUSE 1 POLIG	925324-2							00098
			3	18	GEHÄUSE 37 POLIG	165X16409X							33350
			1	17	FLOW SENSOR	FT-60							
			1	16	FUEL PRESS SENSOR	PT-30GA							
			1	15	OIL PRESS SENSOR	PT-100GA							
			1	14	MANIFOLD PRESS SENSOR	PT-30ABS							
			1	13	TC CONNECTOR SOCKET TYP K	0220 0002		Fa. FARNELL					
			1	12	OAT PROBE	P-128							
			1	11	OIL-TEMP PROBE	P-120							
			X	10	THERMOKABEL	TT-K-22S		supplid by EI (Kit)			mtr		
			6	9	EGT SENSORS	P-110							
			6	8	CHT SENSORS	P-100							
			1	7	CONNECTOR			supplid by EI (Kit)					
			1	6	ENGINE MONITOR	MVP-50P-6C TSO							see Config..
			1	5	CONNECTOR			supplid by EI (Kit)					
			1	4	CONNECTOR			supplid by EI (Kit)					
			1	3	CONNECTOR			supplid by EI (Kit)					
			1	2	ENGINE DATA CONVERTER	EDC-33P-4/6							33283
			1	1	CIRCUIT BREAKER 5A	7277-2-5							31506
04	03	02	01	Nr	Benennung	Teilekennzeichen		Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

04	
03	
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Ver.	Bezeichnung

Letzte Bearbeitung: 27.08.16

Ver.	Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-12-01		03.09.12	HW

EDV-Kennung: **EA3D0961_2**

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

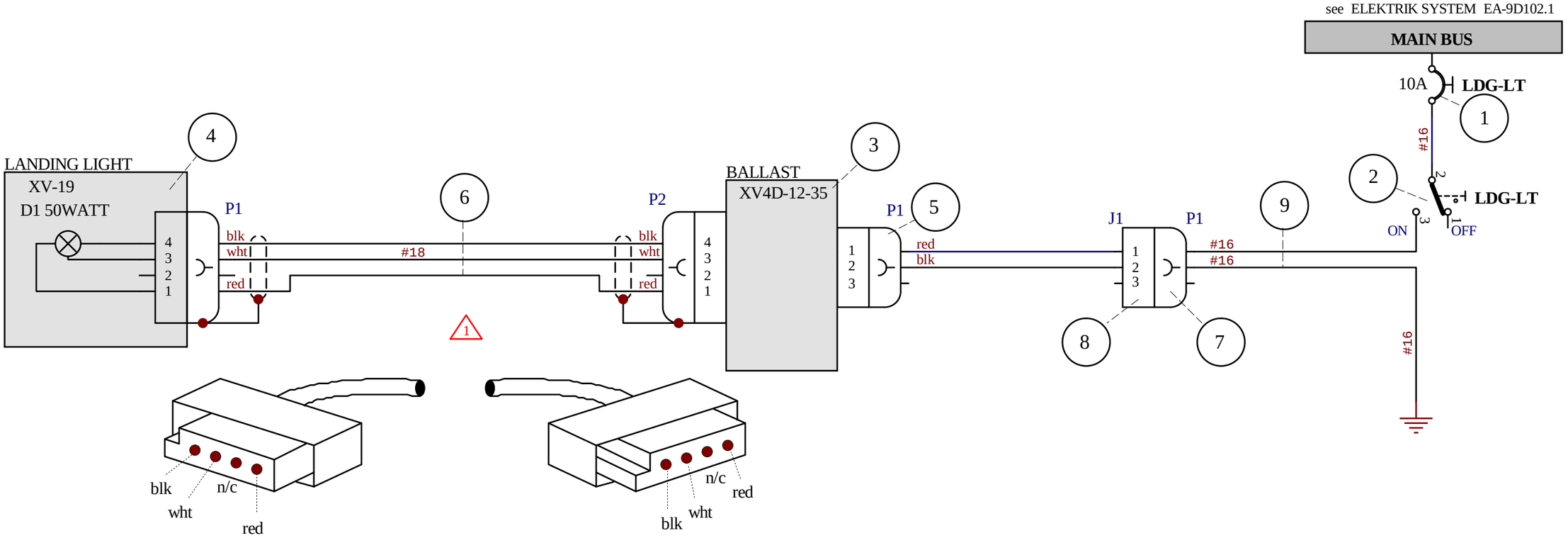
EA 300/LT

DIGITAL INDICATION MVP-50P

EA-9D102.52_2	**A**
A4	Blatt 2 von 2

Schutzvermerk nach DIN 34 beachten.

see ELEKTRIK SYSTEM EA-9D102.1



		X	9	WIRE AWG 16	MIL-W-22759/16-16					mtr		.
		1	8	CONNCTOR	AMP 1-0480303-0							FE 4307
		1	7	CONNECTOR	AMP 1-0480305-0				.			FE 4308
		1	6	CABLE HARNESS	XVLC-6-S							33079
		1	5	POWER CONNECTOR HARNESS	XVPP-3D-(2,3)				.			33079
		1	4	LANDING LIGHT XV-19	XV-19-D1S				.			33079
		1	3	BALLAST XV4D	XV4D-12-35				.			33079
		1	2	SWITCH	07.1.1.13							.
		1	1	CIRCUIT BREAKER 10A	7277-2-10							.
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	27.03.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
LANDING LIGHT

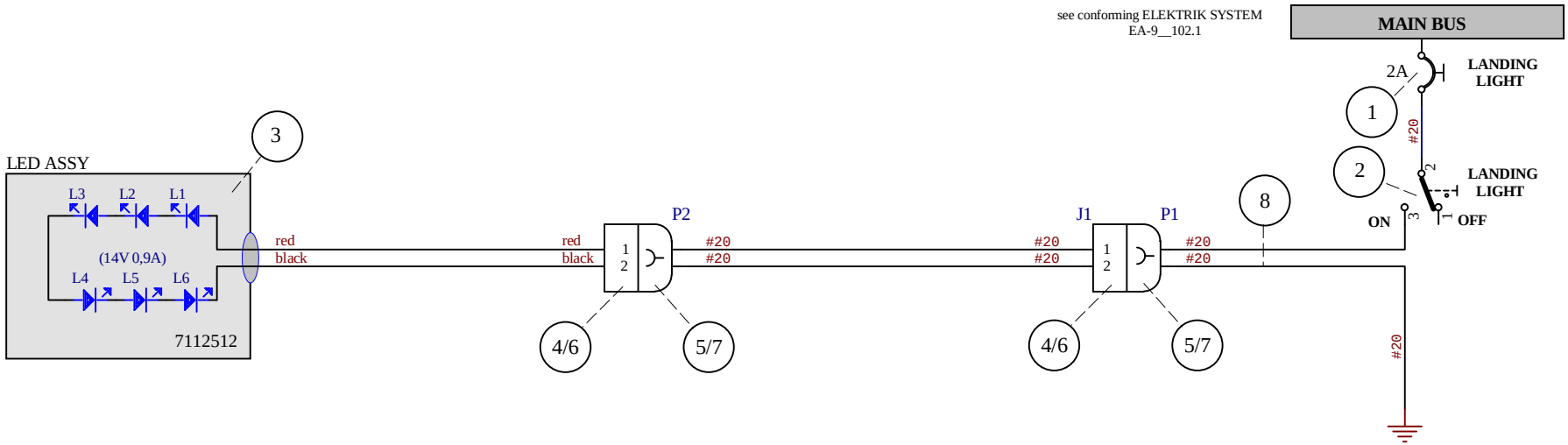
EA-9D102.53

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0962**

1 mechanical installation drawing: EA-8D001.50



		X	X	8	WIRE AWG 20	MIL-W-22759/16-20					mtr		00776
		2	2	7	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
		2	2	6	PIN GEHÄUSE 2 POLIG	180924-0							00103
		4	4	5	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
		4	4	4	FLACHSTECKER PIN 6,3mm	42565-2							00097
		1	1	3	LAMP ASSY L/H (7112512)	01.0771125-12		Fa. WHELEN					33588
		1		2	SWITCH SPST	MS35058-22							01602
			1	2	SWITCH SPST	07.1.1.13							FE4025
		1		1	CIRCUIT BREAKER 2A	W23X1A1G-2							00129
			1	1	CIRCUIT BREAKER 2A	7277-2-2							31508
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 02 = MS SWITCH & POTTER-BRUMFIELD CB

OPTION 01 = KISSLING SWITCH & KLIXON CB

1 mechanical installation drawing: EA-8E001.50

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	10.12.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

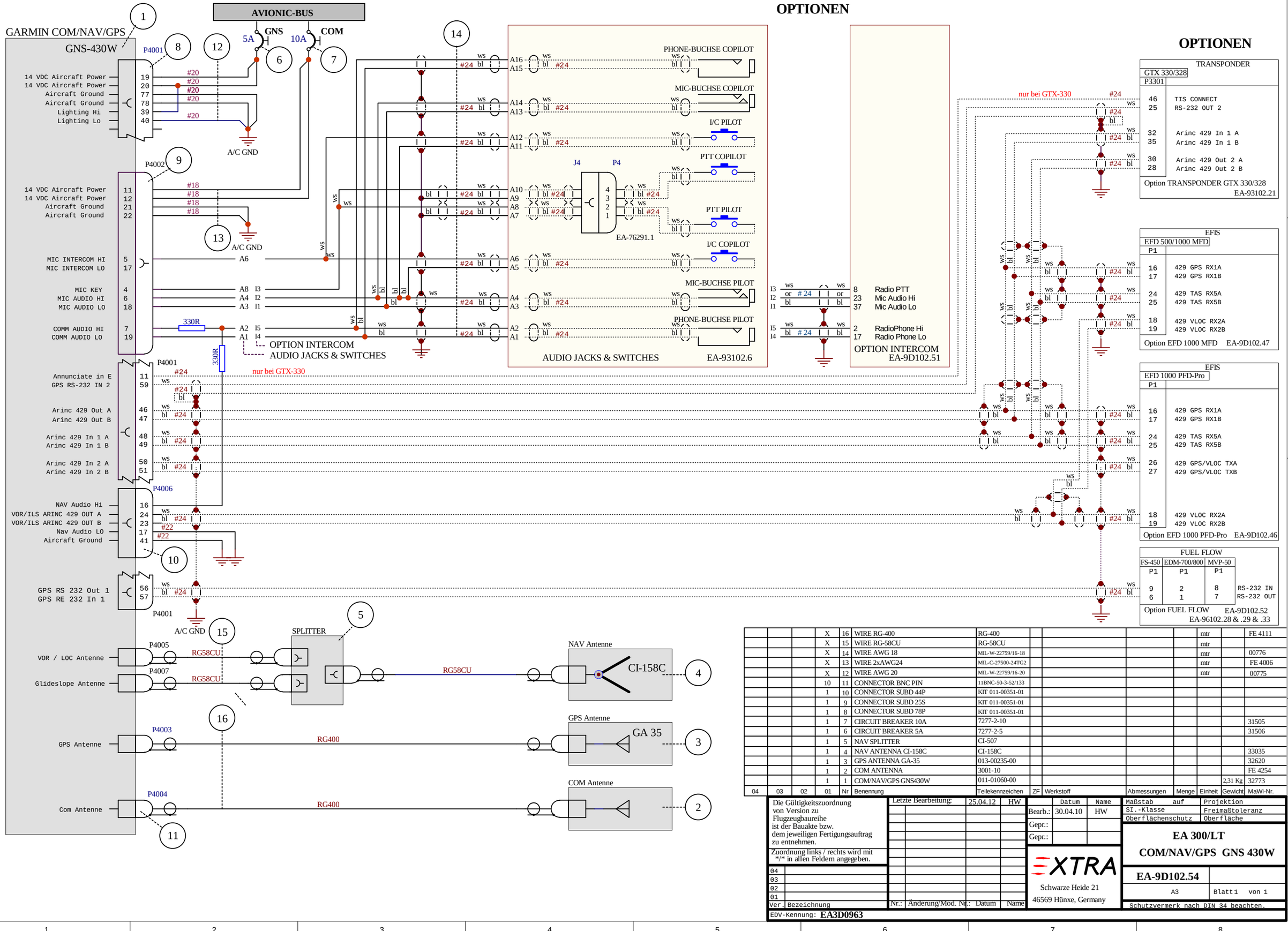
EA 300/LC
LANDING LIGHT

EA-9E102.53

A4 Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0962**



			X	16	WIRE RG-400	RG-400					mtr		FE 4111
			X	15	WIRE RG-58CU	RG-58CU					mtr		
			X	14	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
			X	13	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE 4006
			X	12	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			10	11	CONNECTOR BNC PIN	11BNC-50-3-52/133							
			1	10	CONNECTOR SUBD 44P	KIT 011-00351-01							
			1	9	CONNECTOR SUBD 25S	KIT 011-00351-01							
			1	8	CONNECTOR SUBD 78P	KIT 011-00351-01							
			1	7	CIRCUIT BREAKER 10A	7277-2-10							31505
			1	6	CIRCUIT BREAKER 5A	7277-2-5							31506
			1	5	NAV SPLITTER	CI-507							
			1	4	NAV ANTENNA CI-158C	CI-158C							33035
			1	3	GPS ANTENNA GA-35	013-00235-00							32620
			1	2	COM ANTENNA	3001-10							FE 4254
			1	1	COM/NAV/GPS GNS430W	011-01060-00						2,31 Kg	32773
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 25.04.12 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

Maßstab auf | Projektion
SI.-Klasse | Freimaßtoleranz
Oberflächenschutz | Oberfläche

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

EA 300/LT
COM/NAV/GPS GNS 430W

EA-9D102.54

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0963**

OPTIONEN

GARMIN COM/NAV/GPS

GNS-430W

AVIONIC-BUS

GNS 5A

COM 10A

P4001

14 VDC Aircraft Power 19
14 VDC Aircraft Power 20
Aircraft Ground 77
Aircraft Ground 78
Lighting Hi 39
Lighting Lo 40

#20

A/C GND

P4002

14 VDC Aircraft Power 11
14 VDC Aircraft Power 12
Aircraft Ground 21
Aircraft Ground 22

#18

A/C GND

MIC INTERCOM HI 5
MIC INTERCOM LO 17
MIC KEY 4
MIC AUDIO HI 6
MIC AUDIO LO 18
COMM AUDIO HI 7
COMM AUDIO LO 19

330R

OPTION INTERCOM
AUDIO JACKS & SWITCHES

P4001

Annunciate in E 11
GPS RS-232 IN 2 59
Arinc 429 Out A 46
Arinc 429 Out B 47
Arinc 429 In 1 A 48
Arinc 429 In 1 B 49
Arinc 429 In 2 A 50
Arinc 429 In 2 B 51
RS-232 IN 3 42
RS-232 OUT 3 41

nur bei GTX-330

P4006

NAV Audio Hi 16
VOR/ILS ARINC 429 OUT A 24
VOR/ILS ARINC 429 OUT B 23
Nav Audio LO 17
Aircraft Ground 41

#22

P4001

GPS RS 232 Out 1 56
GPS RE 232 In 1 57

A/C GND

SPLITTER

P4005 VOR / LOC Antenne RG58CU

P4007 Glideslope Antenne RG58CU

RG58CU

NAV Antenne CI-158C

P4003 GPS Antenne RG400

GPS Antenne GA 35

P4004 Com Antenne RG400

COM Antenne

AUDIO JACKS & SWITCHES EA-93102.6

PHONE-BUCHSE COPILOT
MIC-BUCHSE COPILOT
I/C PILOT
PTT COPILOT
PTT PILOT
I/C COPILOT
MIC-BUCHSE PILOT
PHONE-BUCHSE PILOT

J4 P4 EA-76291.1

OPTION INTERCOM EA-9D102.51

8 Radio PTT
23 Mic Audio Hi
37 Mic Audio Lo
2 RadioPhone Hi
17 Radio Phone Lo

OPTIONEN

TRANSPONDER

GTX 330/328 P3301

46	TIS CONNECT
25	RS-232 OUT 2
32	Arinc 429 In 1 A
35	Arinc 429 In 1 B
30	Arinc 429 Out 2 A
28	Arinc 429 Out 2 B

Option TRANSPONDER GTX 330/328 EA-93102.21

EFIS

EFD 500/1000 MFD P1

16	429 GPS RX1A
17	429 GPS RX1B
24	429 TAS RX5A
25	429 TAS RX5B
18	429 VLOC RX2A
19	429 VLOC RX2B

Option EFD 1000 MFD EA-9D102.47

EFIS

EFD 1000 PFD-Pro P1 / G5 P51

16	429 GPS RX1A
17	429 GPS RX1B
24	429 TAS RX5A
25	429 TAS RX5B
26	429 GPS/VLOC TXA
27	429 GPS/VLOC TXB
18	429 VLOC RX2A
19	429 VLOC RX2B
5	RS-232 TX1
4	RS-232 RX1

Option EFD 1000 PFD-Pro EA-9D102.46
Option EFIS G5 EA-9D102.73

FUEL FLOW

FS-450	EDM-700/800	MVP-50	
P1	P1	P1	
9	2	8	RS-232 IN
6	1	7	RS-232 OUT

Option FUEL FLOW EA-9D102.52
EA-96102.28 & .29 & .33

			X	16	WIRE RG-400	RG-400					mtr		FE 4111
			X	15	WIRE RG-58CU	RG-58CU					mtr		
			X	14	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
			X	13	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE 4006
			X	12	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			10	11	CONNECTOR BNC PIN	11BNC-50-3-52/133							
			1	10	CONNECTOR SUBD 44P	KIT 011-00351-01							
			1	9	CONNECTOR SUBD 25S	KIT 011-00351-01							
			1	8	CONNECTOR SUBD 78P	KIT 011-00351-01							
			1	7	CIRCUIT BREAKER 10A	7277-2-10							31505
			1	6	CIRCUIT BREAKER 5A	7277-2-5							31506
			1	5	NAV SPLITTER	CI-507							
			1	4	NAV ANTENNA CI-158C	CI-158C							33035
			1	3	GPS ANTENNA GA-35	013-00235-00							32620
			1	2	COM ANTENNA	3001-10							FE 4254
			1	1	COM/NAV/GPS GNS430W	011-01060-00						2,31 Kg	32773
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Baukate bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-16-03	12.01.17	HW

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

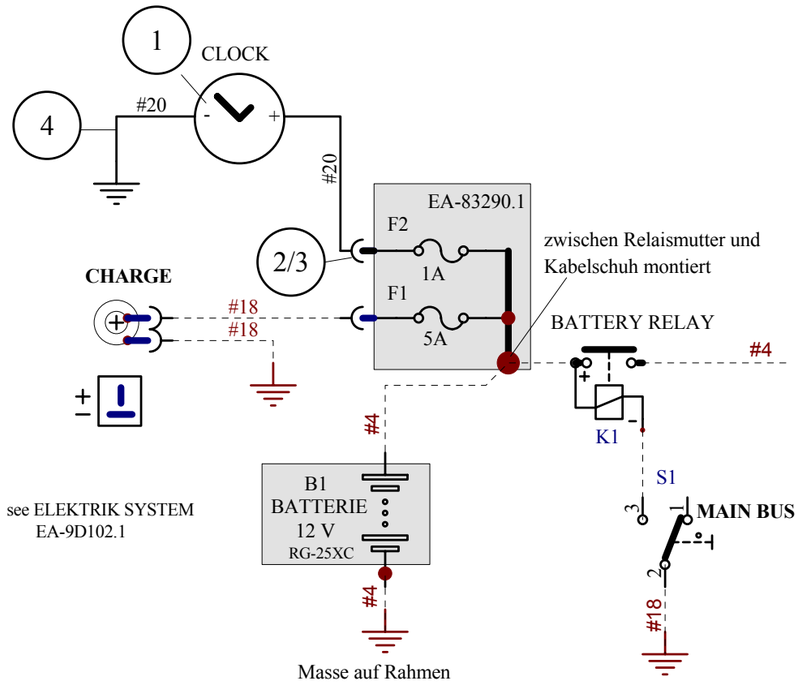
EA 300/LT
COM/NAV/GPS GNS 430W

EA-9D102.54 | **A**

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0963a**



		X	4	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		3	3	FLACHSTECKHÜLSE 6,3mm	0042282-2				.			00093
		1	2	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP				.	00098
		1	1	CLOCK LC2	AT 420000						0,12Kg	FE 0004
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:			
Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	30.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

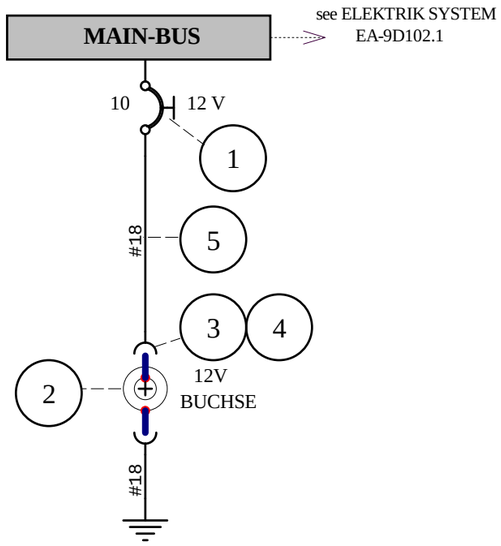
CLOCK

EA-9D102.55

A4 | Blatt von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0957**



		X	5	WIRE AWG 18	MIL-W-22759/16-18				mtr		00776
		2	4	FLACHSTECKHÜLSE 6,3mm	0042282-2				.		00093
		2	3	GEHÄUSE STECKHÜLSE 1 POL	925324-2		Fa. AMP			.	00098
		1	2	BUCHSE	1218		Fa. SUTARS			.	31494
		1	1	CIRCUIT BREAKER 10A	7277-2-10					.	31505
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
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Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	27.04.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

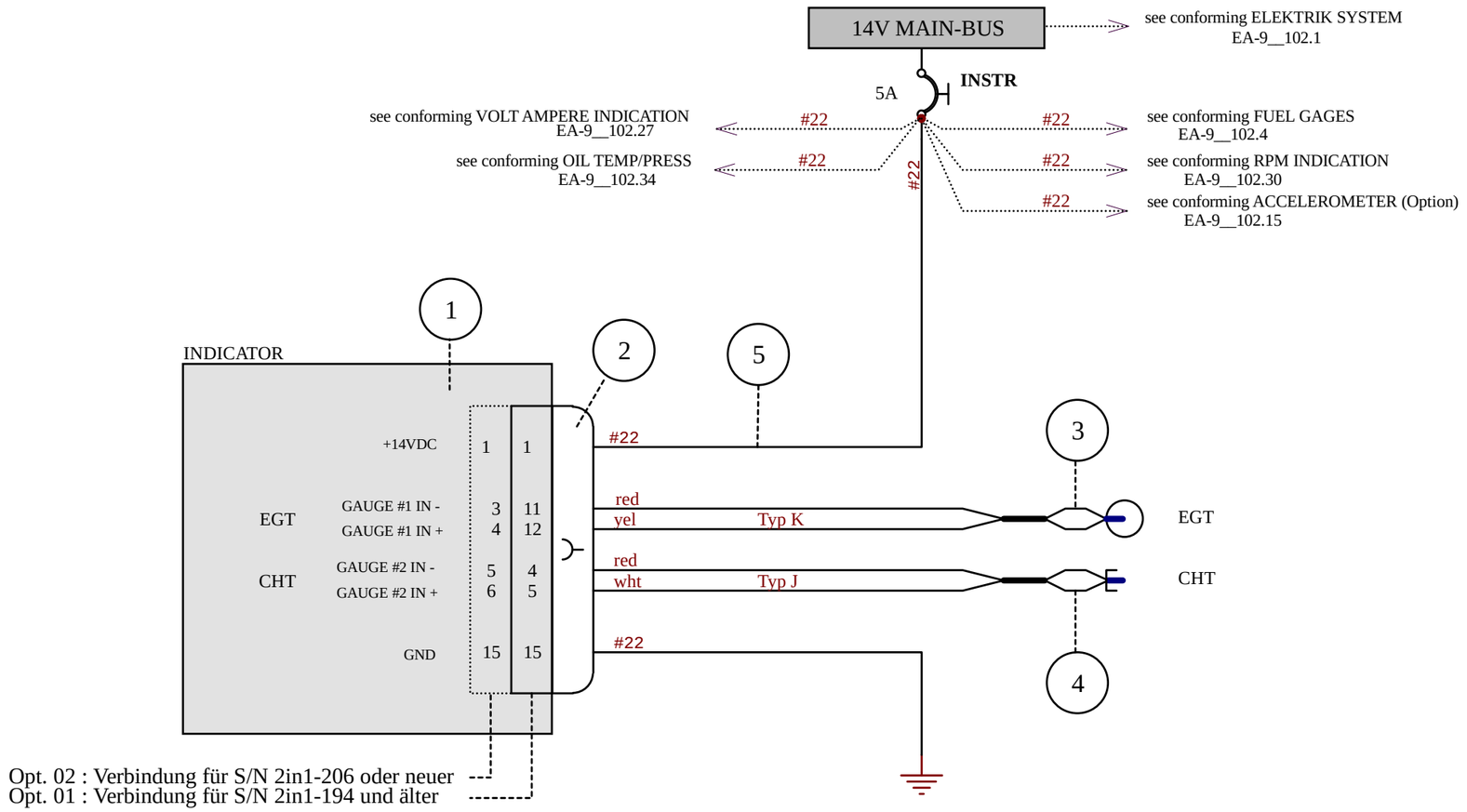
12VDC OUTLET

EA-9D102.56

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0917**



		X	5	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	4	CHT TEMP SENSOR (J) 3/8-24 w/snap	2B02		Fa. UMA					in Pos. 1
		1	3	EGT TEMP SENSOR (K) 1 5/8 - 2 1/2	2BU20 (2B20)		Fa. UMA					in Pos. 1
		1	2	CONNECTOR DSUB 15	KIT in Pos.1		Fa. UMA					in Pos. 1
		1	1	INDICATOR (2 1/4")	D2-ET1K7K-CT6000-00		Fa. UMA					33438
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
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Letzte Bearbeitung:				
Nr.:	Änderung/Mod. Nr.:		Datum	Name
A	ÄM-300-13-07		29.07.13	HW

	Datum	Name
Bearb.:	16.12.10	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

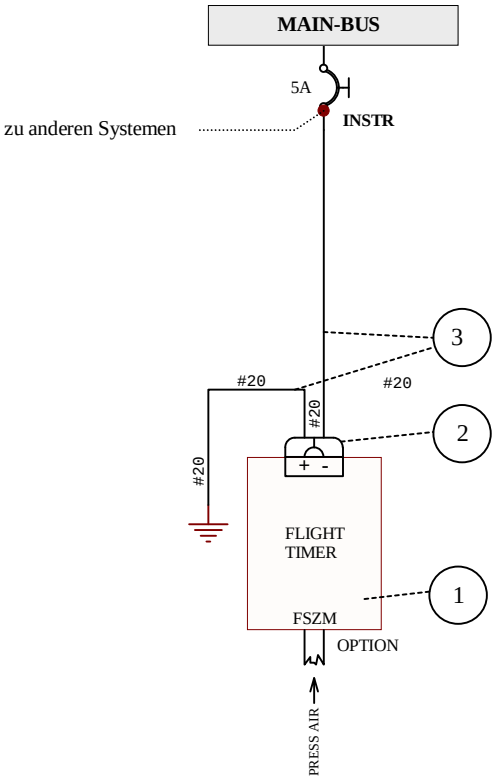
Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
EGT & CHT INDICATION

EA-9D102.58	**A**
A4	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0918**



			X	3	KABEL AWG 20	MIL-W-22759/16-20					mtr		00775
			1	2	STECKER	STECKER FÜR FSZM							30755
			1	1	FLIGHT TIMER FSZM	1510							01605
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
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Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	09.05.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300

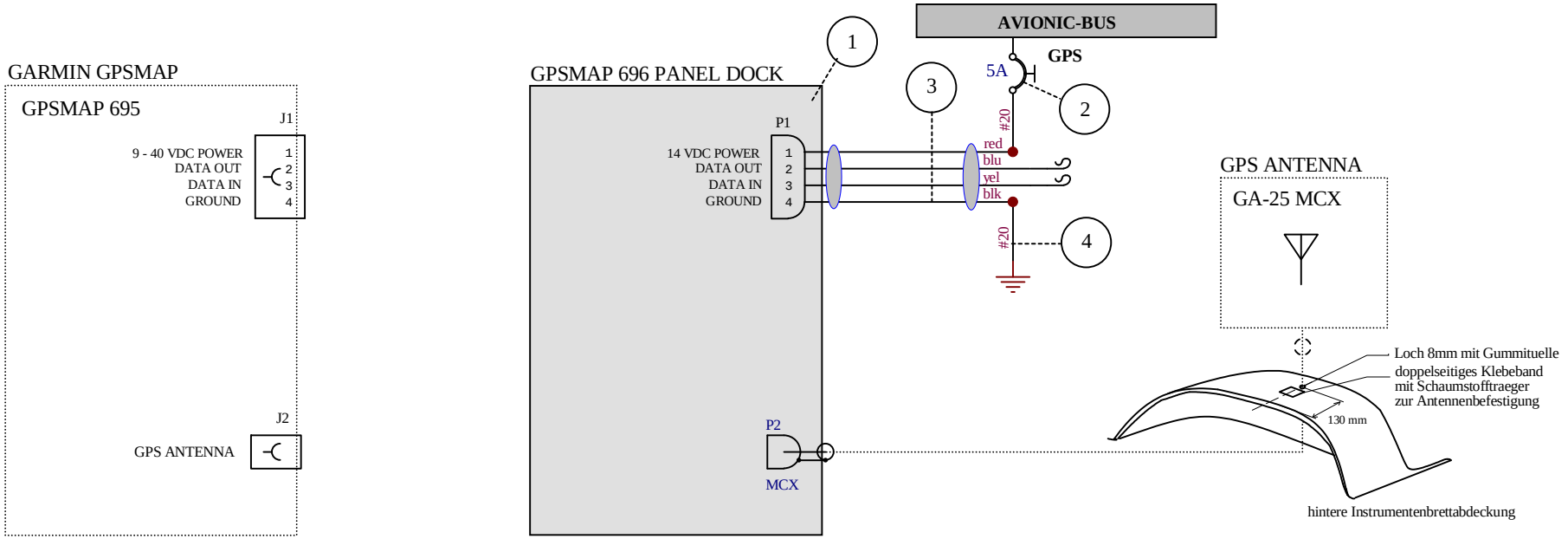
FLIGHT TIMER

EA-93102.59

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA300927**



		X	4	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	3	POWER DATA CABLE	010-11206-15							33668
		1	2	CIRCUIT BREAKER 5A	7277-2-5							31506
		1	1	PANEL DOCK	GPSMAP 696 PANEL DOCK			AIR GIZMOS				33665
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01					

	Datum	Name
Bearb.:	19.05.11	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LC

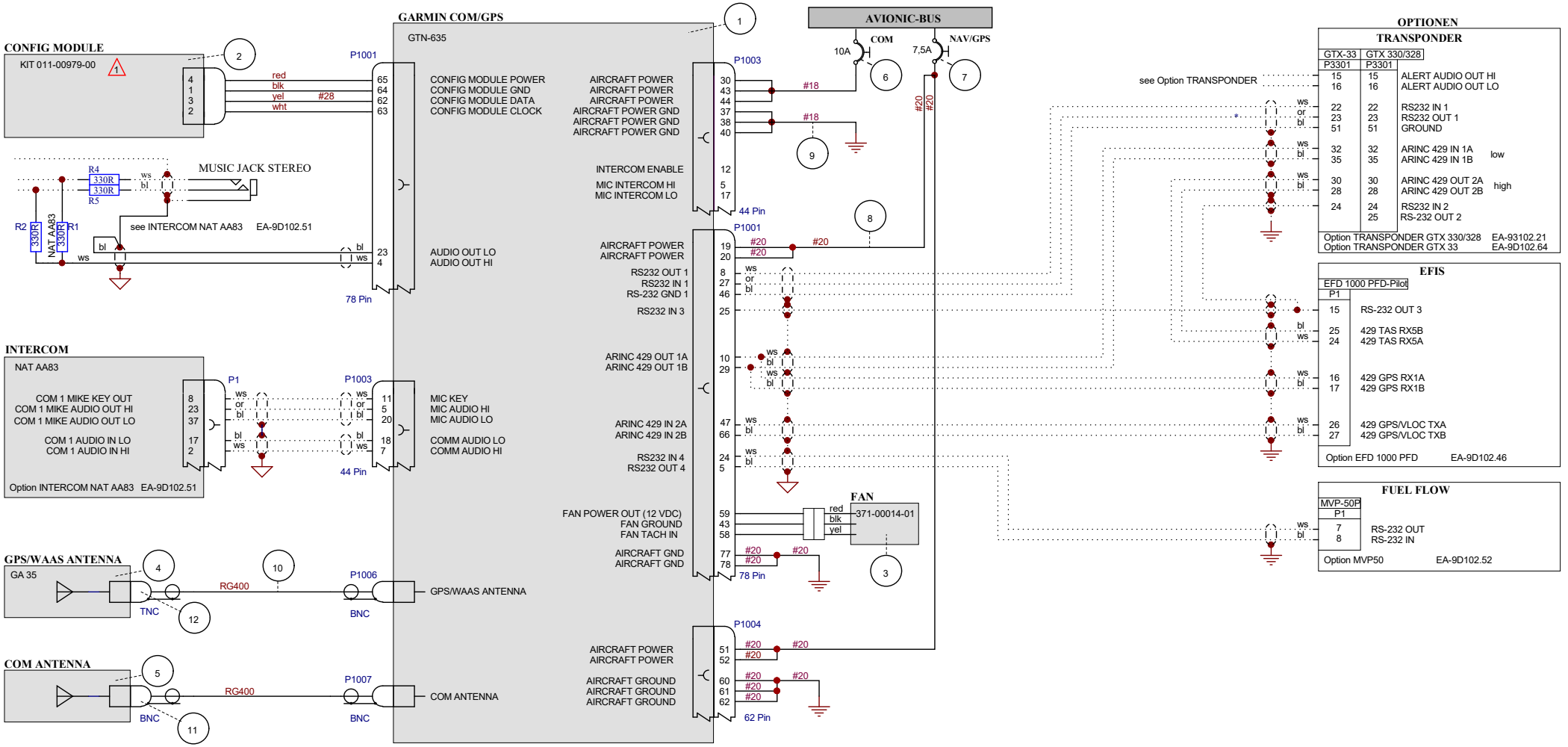
GPSMAP 695

EA-9E102.60

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0919**



			1	12	CONNECTOR TNC	11TNC-50-3-1	7/133						31633
			3	11	CONNECTOR BNC	11BNC-50-3-52	/133						30705
			X	10	WIRE RG-400	RG-400					mtr		FE 4111
			X	9	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
			X	8	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			1	7	CIRCUIT BRAKER 7,5A	7277-2-7,5							32112
			1	6	CIRCUIT BRAKER 10A	7277-2-10							31505
			1	5	COM ANTENNA	3001-10							FE 4254
			1	4	GPS/WAAS ANTENNA GA-35	013-00235-00							32620
			1	3	FAN	371-00014-01		PART von POS. 1					
			1	2	CONFIG MODULE	011-00979-00		PART von POS. 1					
			1	1	COM/NAV/GPS GTN-635	010-00812-50							33772
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

1 CONFIG Module in P1001 eingebaut

Alle Kabel AWG 24 wenn nicht anders angegeben.

SHIELD BLOCK GROUND

AIRFRAME GROUND

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung: 26.04.16 HW

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.	09.09.12	HW
Gepr.:		
Gepr.:		

XTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

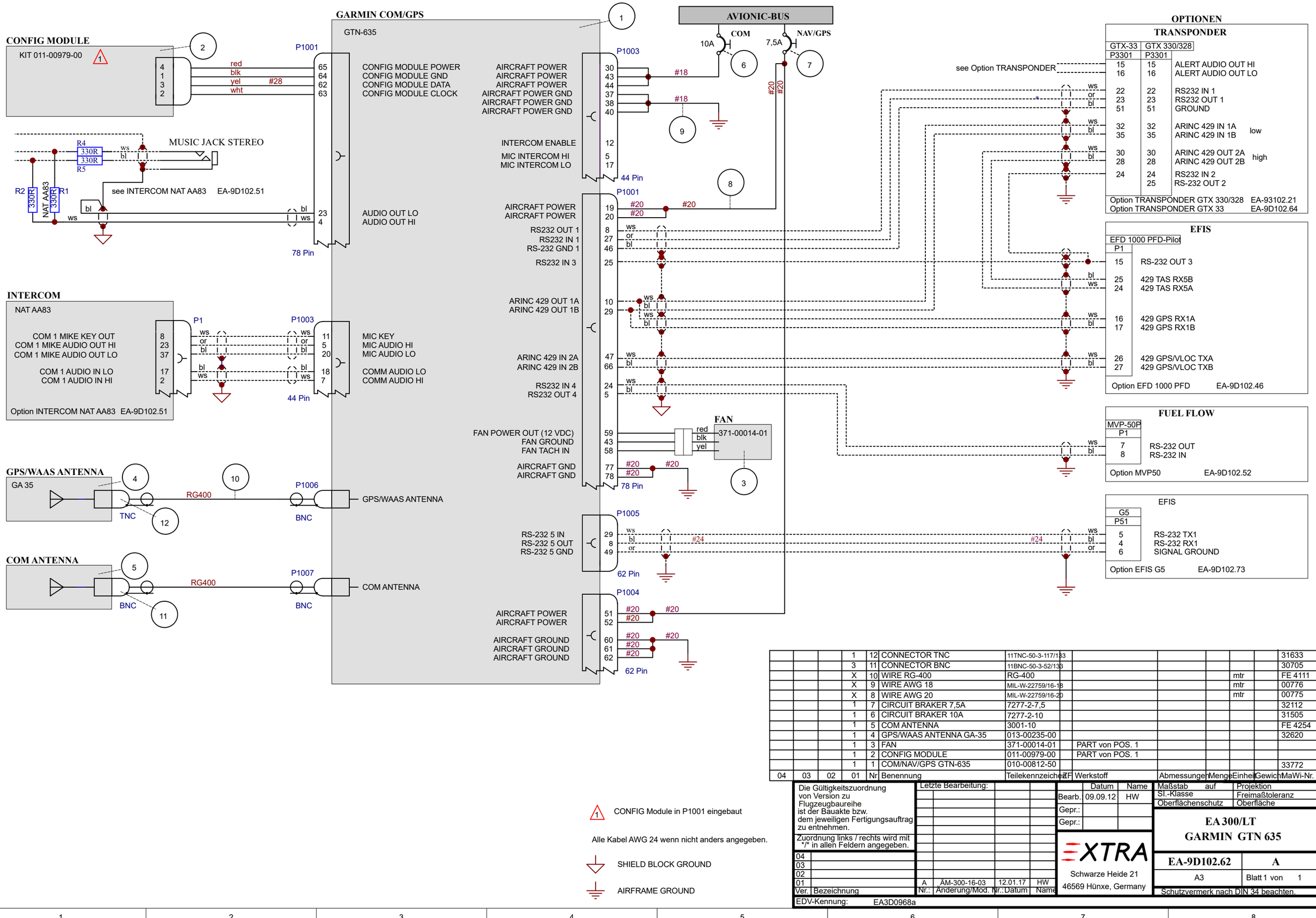
EA 300/LT
GARMIN GTN 635

EA-9D102.62

A3 Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: EA3D0968



			1	12	CONNECTOR TNC	11TNC-50-3-117/133							31633
			3	11	CONNECTOR BNC	11BNC-50-3-52/133							30705
			X	10	WIRE RG-400	RG-400					mtr		FE 4111
			X	9	WIRE AWG 18	MIL-W-22759/16-18					mtr		00776
			X	8	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			1	7	CIRCUIT BRAKER 7,5A	7277-2-7,5							32112
			1	6	CIRCUIT BRAKER 10A	7277-2-10							31505
			1	5	COM ANTENNA	3001-10							FE 4254
			1	4	GPS/WAAS ANTENNA GA-35	013-00235-00							32620
			1	3	FAN	371-00014-01		PART von POS. 1					
			1	2	CONFIG MODULE	011-00979-00		PART von POS. 1					
			1	1	COM/NAV/GPS GTN-635	010-00812-50							33772
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

1 CONFIG Module in P1001 eingebaut

Alle Kabel AWG 24 wenn nicht anders angegeben.

SHIELD BLOCK GROUND

AIRFRAME GROUND

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit "/" in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name
A	ÄM-300-16-03	12.01.17	HW

	Datum	Name
Bearb.:	09.09.12	HW
Gepr.:		
Gepr.:		

EDV-Kennung: EA3D0968a

Maßstab	auf
Projektion	
SI.-Klasse	
Freimaßtoleranz	
Oberflächenschutz	
Oberfläche	

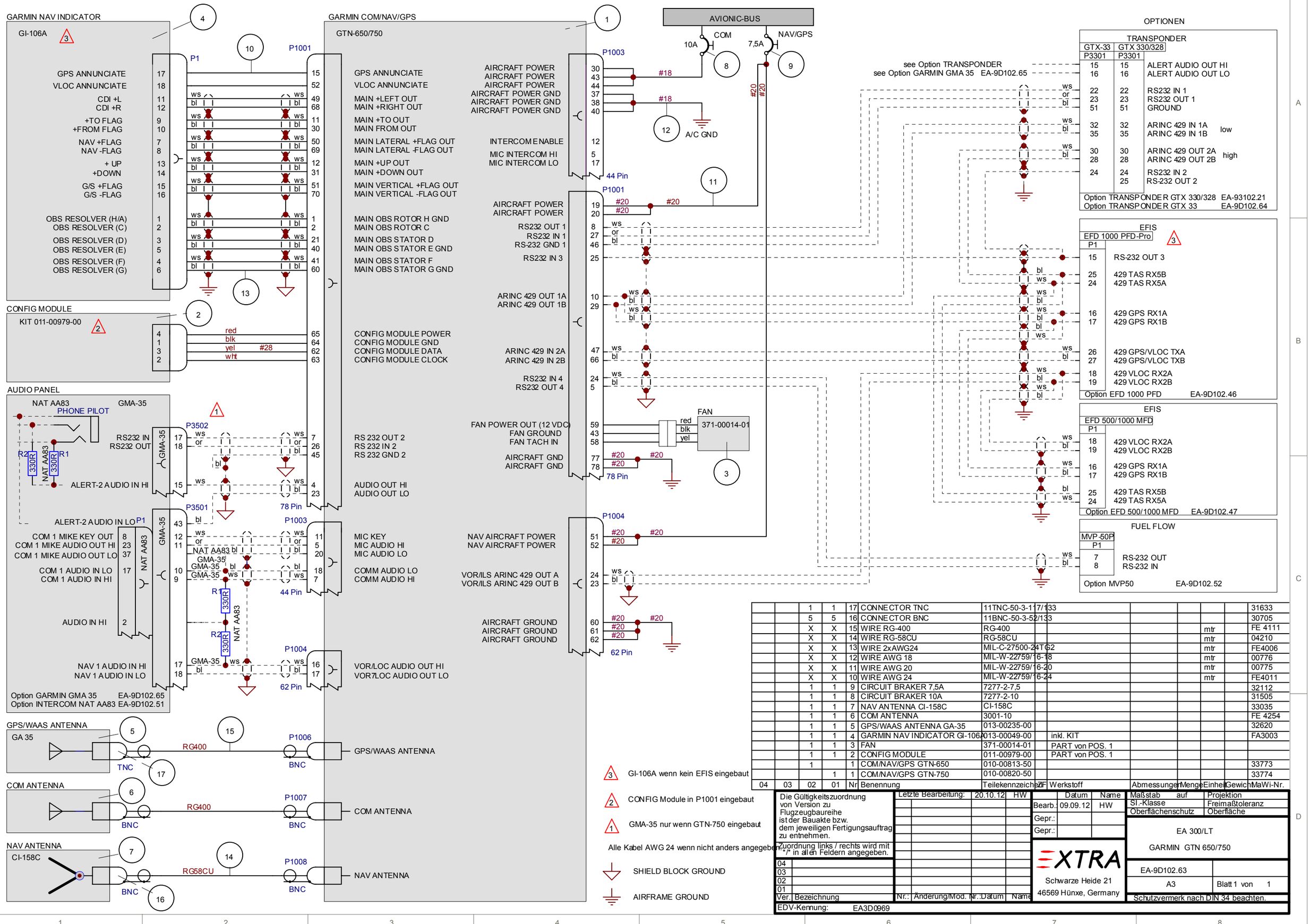
EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

EA 300/LT
GARMIN GTN 635

EA-9D102.62 | **A**

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.



		1	1	17	CONNECTOR TNC	11TNC-50-3-1	17/133					31633
		5	5	16	CONNECTOR BNC	11BNC-50-3-52	/133					30705
		X	X	15	WIRE RG-400	RG-400					mtr	FE 4111
		X	X	14	WIRE RG-58CU	RG-58CU					mtr	04210
		X	X	13	WIRE 2xAWG24	MIL-C-27500-24TC2					mtr	FE4006
		X	X	12	WIRE AWG 18	MIL-W-22759/16-18					mtr	00776
		X	X	11	WIRE AWG 20	MIL-W-22759/16-20					mtr	00775
		X	X	10	WIRE AWG 24	MIL-W-22759/16-24					mtr	FE4011
		1	1	9	CIRCUIT BRAKER 7,5A	7277-2-7,5						32112
		1	1	8	CIRCUIT BRAKER 10A	7277-2-10						31505
		1	1	7	NAV ANTENNA CI-158C	CI-158C						33035
		1	1	6	COM ANTENNA	3001-10						FE 4254
		1	1	5	GPS/WAAS ANTENNA GA-35	013-00235-00						32620
		1	1	4	GARMIN NAV INDICATOR GI-106A	013-00049-00	inkl. KIT					FA3003
		1	1	3	FAN	371-00014-01	PART von POS. 1					
		1	1	2	CONFIG MODULE	011-00979-00	PART von POS. 1					
		1		1	COM/NAV/GPS GTN-650	010-00813-50						33773
			1	1	COM/NAV/GPS GTN-750	010-00820-50						33774
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.
Zuordnung links / rechts wird mit "*/*" in allen Feldern angegeben.

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01					

Letzte Bearbeitung: 20.10.12 HW

	Datum	Name
Bearb.:	09.09.12	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

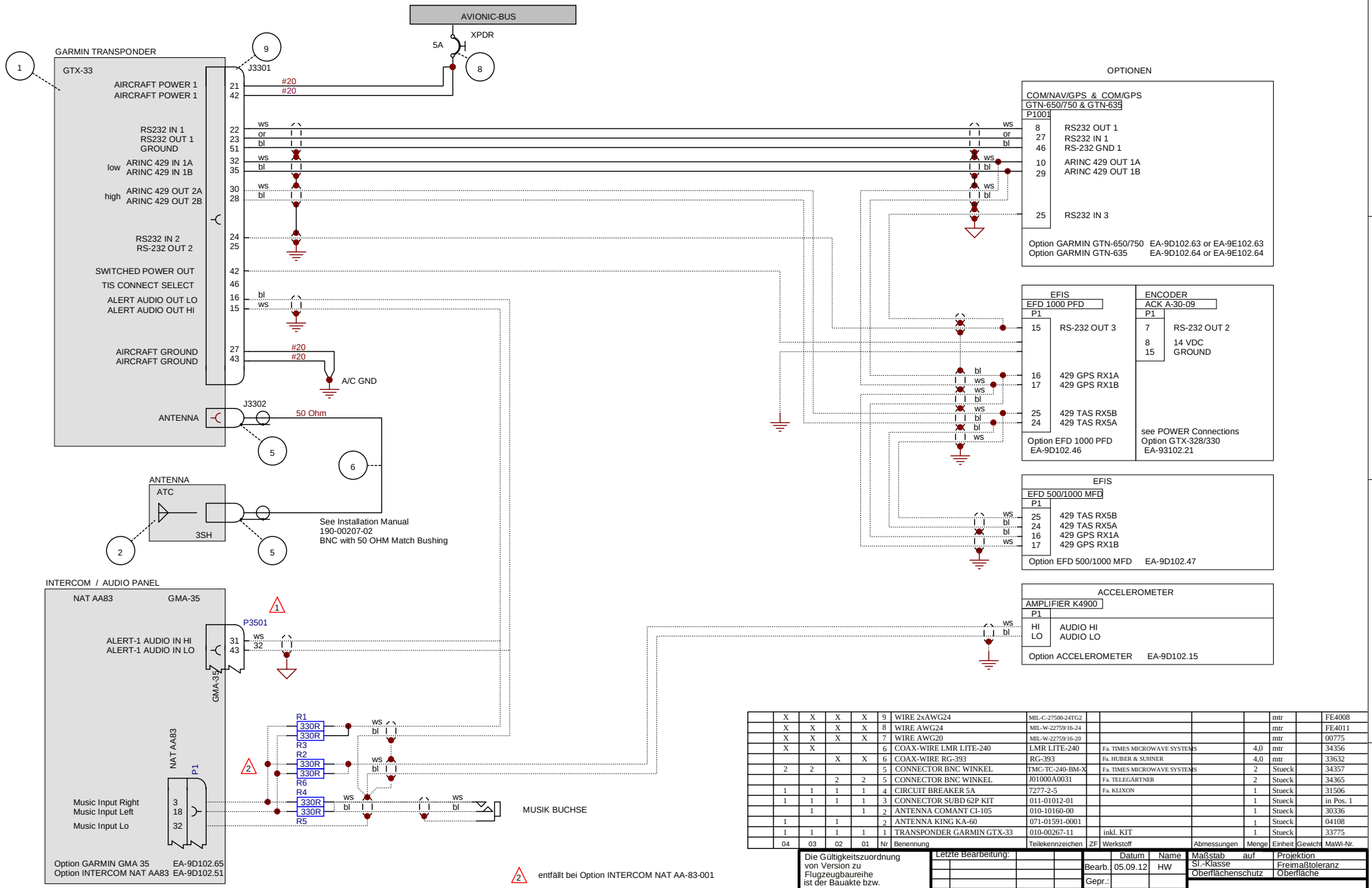
GARMIN GTN 650/750

EA-9D102.63

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: EA3D0969



	X	X	X	X	9	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4008
	X	X	X	X	8	WIRE AWG24	MIL-W-22759/16-24					mtr		FE4011
	X	X	X	X	7	WIRE AWG20	MIL-W-22759/16-20					mtr		00775
	X	X			6	COAX-WIRE LMR LITE-240	LMR LITE-240		Fa. TIMES MICROWAVE SYSTEMS		4,0	mtr		34356
			X	X	6	COAX-WIRE RG-393	RG-393		Fa. HUBER & SUHNER		4,0	mtr		33632
	2	2			5	CONNECTOR BNC WINKEL	TMC-TC-240-BM-X		Fa. TIMES MICROWAVE SYSTEMS		2	Stueck		34357
			2	2	5	CONNECTOR BNC WINKEL	J01000A0031		Fa. TELEGÄRTNER		2	Stueck		34365
	1	1	1	1	4	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON		1	Stueck		31506
	1	1	1	1	3	CONNECTOR SUBD 62P KIT	011-01012-01				1	Stueck		in Pos. 1
	1			1	2	ANTENNA COMANT CI-105	010-10160-00				1	Stueck		30336
	1		1		2	ANTENNA KING KA-60	071-01591-0001				1	Stueck		04108
	1	1	1	1	1	TRANSPONDER GARMIN GTX-33	010-00267-11		inkl. KIT		1	Stueck		33775
	04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Option 04 = ANTENNE KA-60 MIT COAXKABEL LMR-LITE-240
Option 03 = ANTENNE CI-105 MIT COAXKABEL LMR-LITE-240
Option 02 = ANTENNE KA-60 MIT COAXKABEL RG-393
Option 01 = ANTENNE CI-105 MIT COAXKABEL RG-393

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.
Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

04	
03	
02	
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Letzte Bearbeitung:

Ver.	Nr.	Bezeichnung / Änderung/Mod. Nr.	Datum	Name
A	ÄM-300-14-08		27.06.14	HW

EDV-Kennung: EA3D0970a

	Datum	Name
Bearb.	05.09.12	HW
Gepr.:		
Gepr.:		

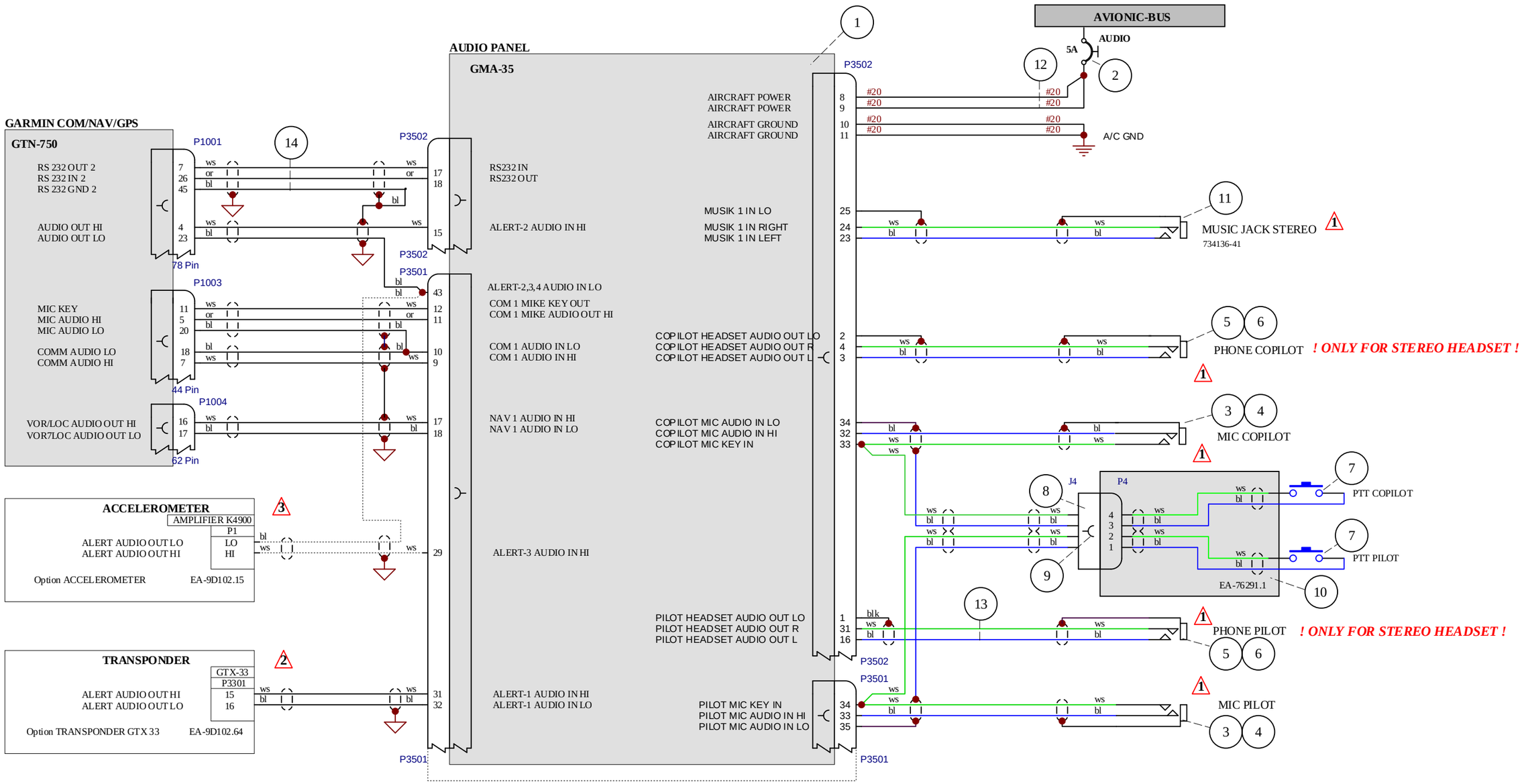
EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT
GARMIN GTX 33

EA-9D102.64	**A**
A3	Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.



			X	14	WIRE 3xAWG24	MIL-C-27500-24TG3					mtr		FE4009
			X	13	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE4006
			X	12	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
			1	11	STEREO JACK	734136-41							30362
			1	10	PTT-KABELBAUM	EA-76291.1							
			4	9	BUCHSE	43030-0007							FE4079
			1	8	BUCHSENGEHÄUSE	43025-0400							FE4256
			2	7	PUSH BUTTON	913X		Fa. SWITCHCRAFT					33212
			4	6	WASHER	04-00975							31382
			2	5	STEREO PHONE JACK SWL-12B	11-04936		Fa. AIRCRAFT SPRUCE					03305
			4	4	WASHER	04-00976							31381
			2	3	MIC JACK	JJ-033							00196
			1	2	CIRCUIT BREAKER 5A	7277-2-5		Fa. KLIXON					31506
			1	1	AUDIO PANEL GMA-35 (Remote)	010-00831-01		inkl. KIT					33902
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff		Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

3 optional ACCELEROMETER requires TL-3424 to be installed

2 optional XPDR requires GTX-33 to be installed

1 Fuer alle Buchsen Isolationsscheiben benutzen

Alle Kabel AWG 24 wenn nicht anders angegeben.

SHIELD BLOCK GROUND

AIRFRAME GROUND

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.	Änderung/Mod. Nr.	Datum	Name

	Datum	Name
Bearb.:	03.09.12	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

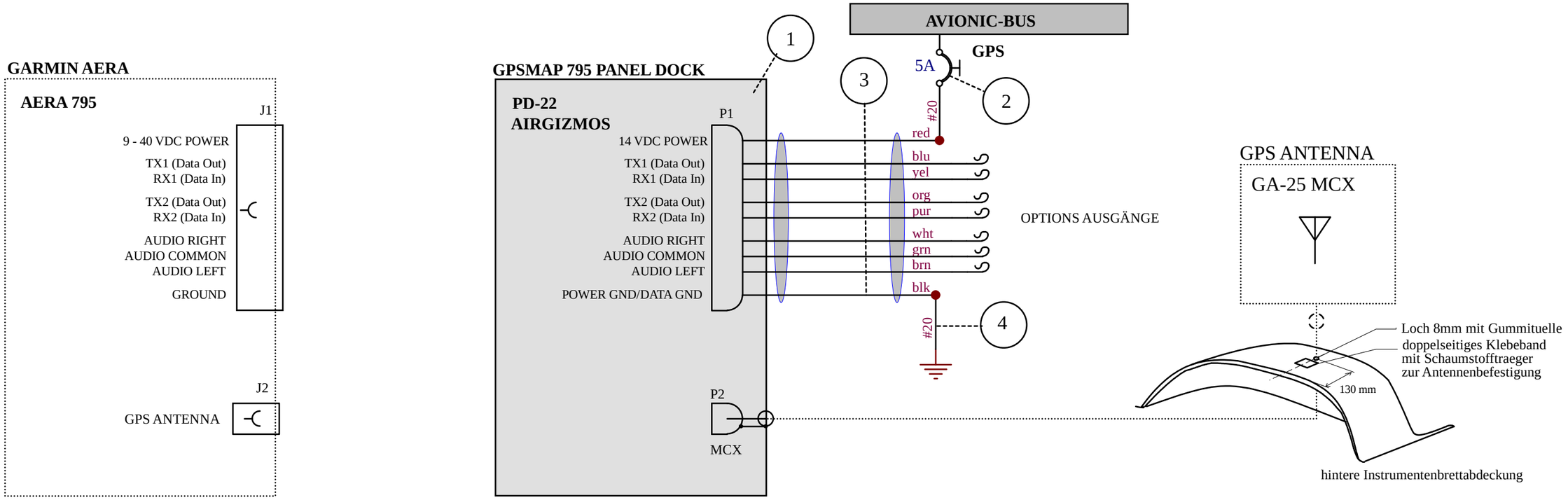
EA 300/LT
GARMIN GMA 35

EA-9D102.65

A3 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0971**



		X	4	WIRE AWG 20	MIL-W-22759/16-20					mtr		00775
		1	3	POWER DATA CABLE	010-11756-01							34215
		1	2	CIRCUIT BREAKER 5A	7277-2-5							31506
		1	1	PANEL DOCK	GPSMAP 795 PANEL DOCK			AIR GIZMOS				.
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	08.08.13	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

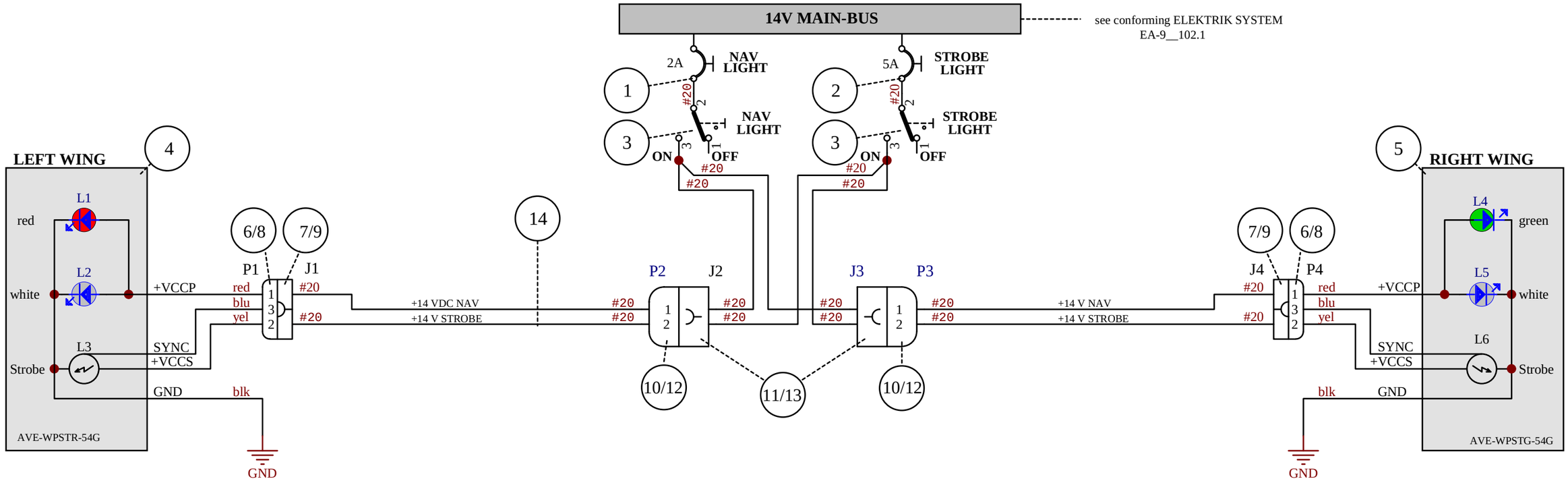
EA 300/LC
AERA 795

EA-9E102.66

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0972**



OPTION 02 = MS SWITCH & POTTER-BRUMFIELD CB

OPTION 01 = KISSLING SWITCH & KLIXON CB

		X	X	14	WIRE AWG 20	MIL-W-22759/16-20					mtr		00776
		2	2	13	BUCHSEN GEHÄUSE 2 POLIG	180923-0							00099
		2	2	12	PIN GEHÄUSE 2 POLIG	180924-0							00103
		4	4	11	FLACHSTECKER BUCHSE 6,3mm	0042282-2							00093
		4	4	10	FLACHSTECKER PIN 6,3mm	42565-2							00097
		2	2	9	BUCHSEN GEHÄUSE 3 POLIG	1-0480305-0							FE4307
		2	2	8	PIN GEHÄUSE 3 POLIG	1-0480303-0							FE4308
		4	4	7	KONTAKT BUCHSE	163557-2							FE4305
		6	6	6	KONTAKT PIN	163558-2							FE4306
		1	1	5	LAMP ASSY R/H (green)	AVE-WPSTG-54G		Fa. Aveo Engineering					34334
		1	1	4	LAMP ASSY L/H (red)	AVE-WPSTR-54G		Fa. Aveo Engineering					34335
		2		3	SWITCH SPST	MS35058-22							01602
			2	3	SWITCH SPST	07.1.1.13							FE4025
		1		2	CIRCUIT BREAKER 5A	W23X1A1G-5							00105
			1	2	CIRCUIT BREAKER 5A	7277-2-5							31506
		1		1	CIRCUIT BREAKER 2A	W23X1A1G-2							00129
			1	1	CIRCUIT BREAKER 2A	7277-2-2							31508
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	24.03.14	HW
Gepr.:		
Gepr.:		

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

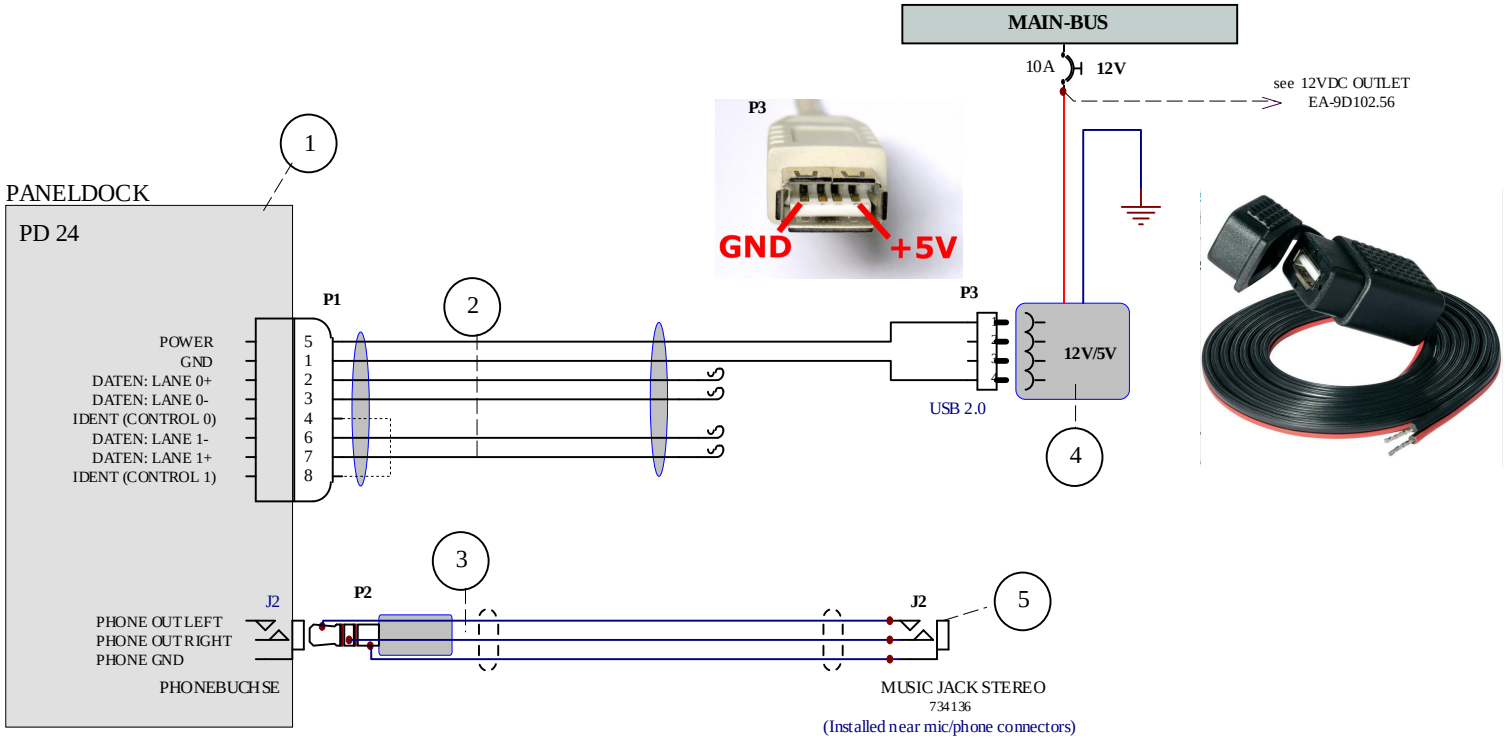
EA 300/LC
NAV-STR-LGT ULTRA GAL.

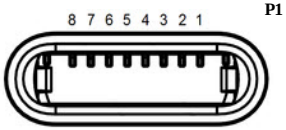
EA-9E102.67

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3E0973**





		1	5	STEREO JACK	734136							30362
		1	4	12V TO 5V ADAPTER 68302111	856741-62		Fa. CONRAD					
		1	3	PHONE CABLE	11-07783		Fa. Aircraft Spruce					
		1	2	APPLE CABLE LIGHTNING	in POS. 1							
		1	1	PANELDOCK	PD 24							
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

	Datum	Name
Bearb.:	05.10.14	HW
Gepr.:		
Gepr.:		

Maßstab	auf	Projektion
SI.-Klasse		Freimaßtoleranz
Oberflächenschutz		Oberfläche

Ver.	Bezeichnung
04	
03	
02	
01	

Nr.:	Änderung/Mod. Nr.:	Datum	Name

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

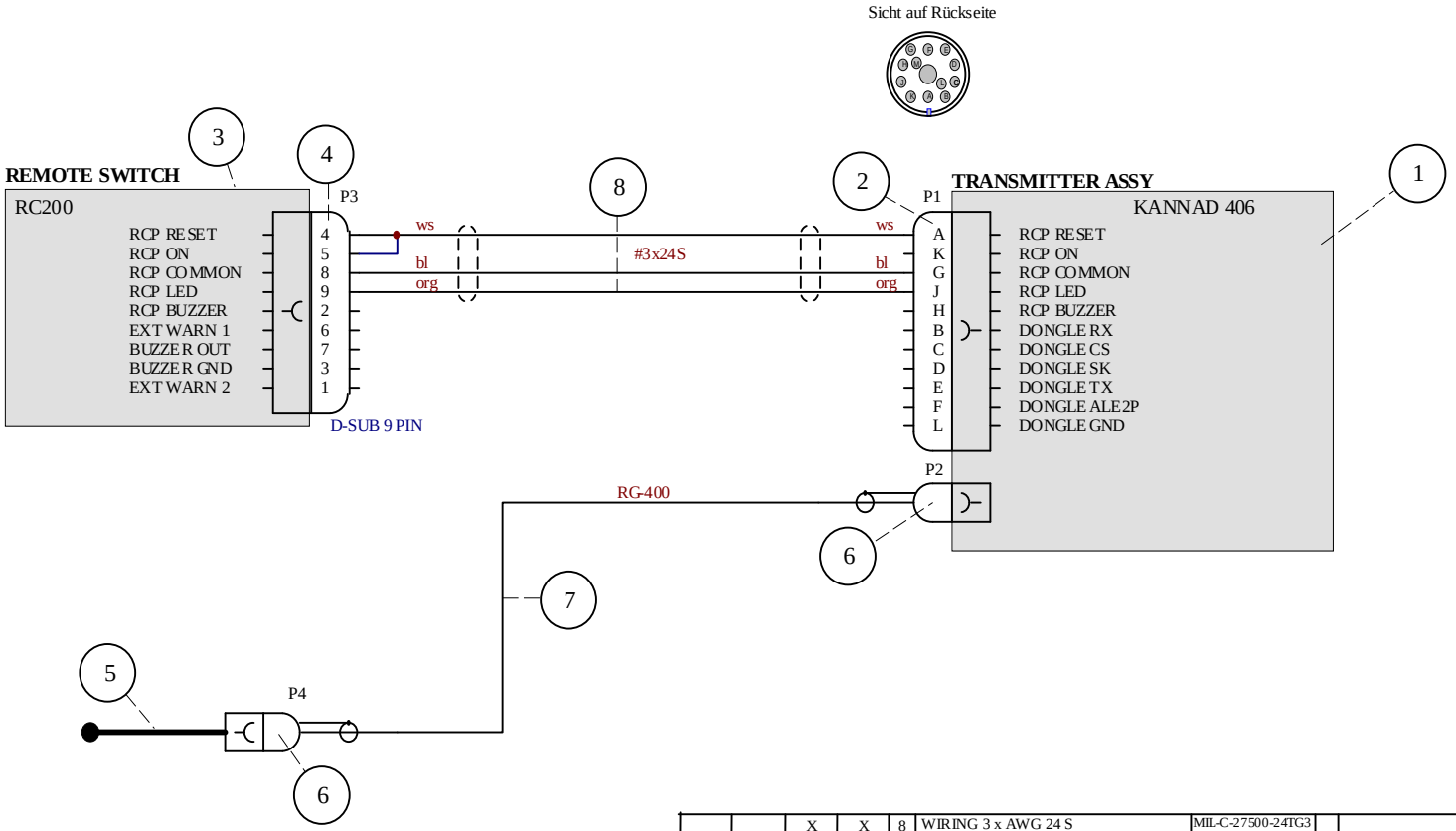
EA 300/LT
PANELDOCK IPAD MINI

EA-9D102.68

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0974**



		X	X	8	WIRING 3 x AWG 24 S	MIL-C-27500-24TG3				3,5	mtr		FE4009
		X	X	7	ANTENNA CABLE	RG-400				1,6	mtr		FE4111
		2	2	6	BNC CONNECTOR	11BNC-50-3-52/133							30705
		1	1	5	ELT ANTENNA AV-200	0146150		Fa. RAMI					33965
		1	1	4	REMOTE CONNECTOR, D-SUB 9P	D-SUB 9 Pin		Fa. KANNAD AVIATION	in Pos. 1				
		1	1	3	REMOTE CONTROL, Kit RC200	S1820513-18		Fa. KANNAD AVIATION	in Pos. 1				
		1	1	2	ELT CONNECTOR, Din 12	S1820514-03		Fa. KANNAD AVIATION	in Pos. 1				
		1		1	ELT KANNAD 406 AF-INTEGRA	S1840501-02		Fa. KANNAD AVIATION					34422
			1	1	ELT KANNAD 406 AF-COMPACT	S1840501-01		Fa. KANNAD AVIATION					34210
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

OPTION 02 = ELT KANNAD 406 AF-INTEGRA
OPTION 01 = ELT KANNAD 406 AF-COMPACT

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	
02	
01	

Letzte Bearbeitung:

Nr.:	Änderung/Mod. Nr.:	Datum	Name

	Datum	Name
Bearb.:	04,10,14	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

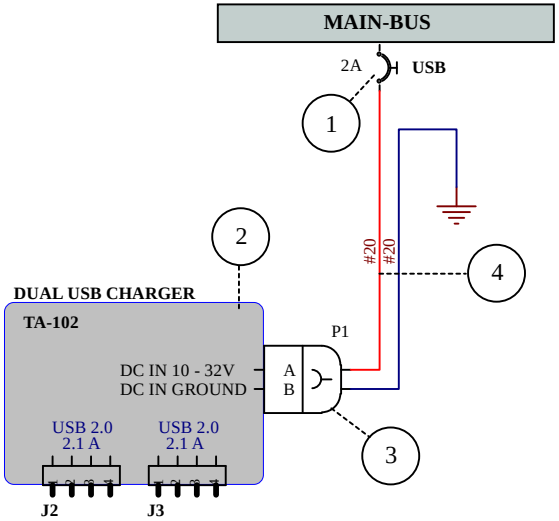
EA 300/SC
ELT KANNAD 406AF

EA-9C102.69

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3C0976**



OPTION 02 = EINBAU IN 2.25 ZOLL INSTRUMENTEN LOCH

OPTION 01 = EINBAU IM LINKEN ODER RECHTEM INTERIOR COVER △1

△1 mechanical installation drawings: EA-8D504.16 & EA-8D504.40

△2 When TA-102 is installed, the 10A CB of the regular 12V socket must be replaced with a 7,5A CB.

	1		5	MOUNT ADAPTER KIT 2.25 ZOLL	9017947		Fa. MID-CONTINENT					34455
	X	X	4	KABEL AWG 20	MIL-W-22759/16-20				2	mtr		00775
	1	1	3	MATING CONNECTOR KIT	9017960		Fa. MID-CONTINENT					in Pos. 2
	1	1	2	DUAL USB CHARGER TA102	6430102-1		Fa. MID-CONTINENT					34454
	1	1	1	CIRCUIT BREAKER 2A	7277-2-2							31508
03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Letzte Bearbeitung:

	Datum	Name
Bearb.:	26.05.15	HW
Gepr.:		
Gepr.:		

Maßstab auf	Projektion
SI.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

Ver.	Bezeichnung	Nr.:	Änderung/Mod. Nr.:	Datum	Name
04					
03					
02					
01					

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

EA 300/LT

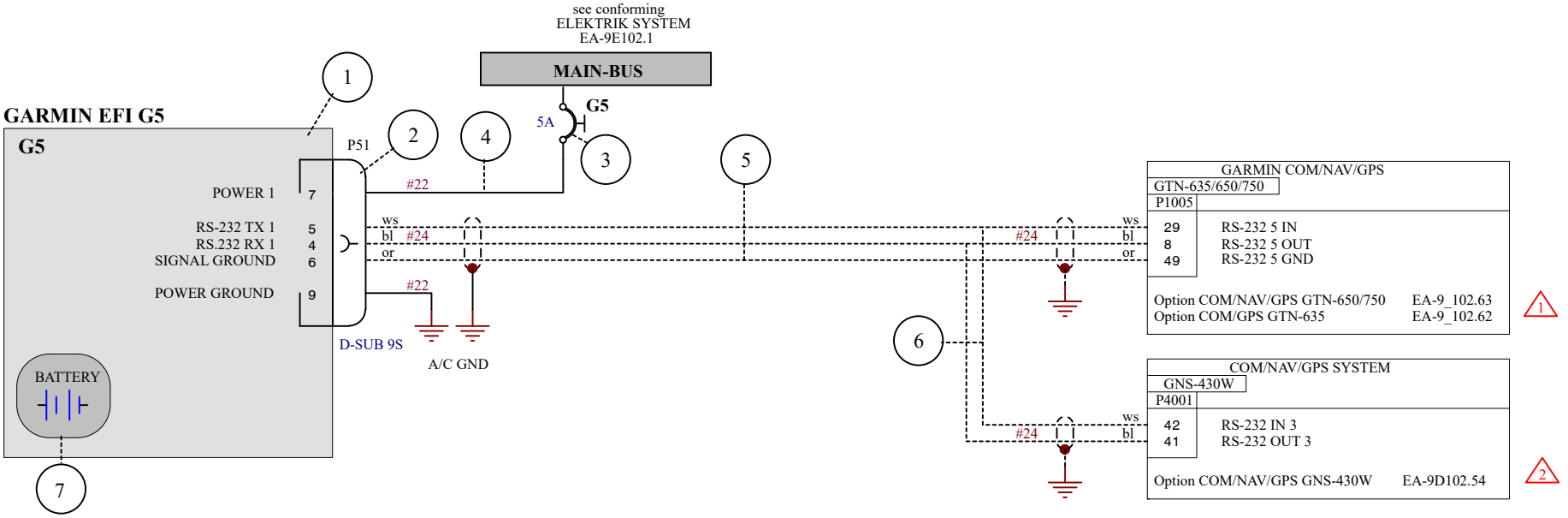
DUAL USB CHARGING PORT

EA-9D102.70

A4 | Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0979**



	1	1	1	7	BATTERY PACK	010-12493-00							34751
	X			6	WIRE 2xAWG24	MIL-C-27500-24TG2					mtr		FE 4006
		X		5	WIRE 3xAWG24	MIL-C-27500-24TG3					mtr		FE4009
	X	X	X	4	WIRE AWG 22	MIL-W-22759/16-22					mtr		01694
	1	1	1	3	CIRCUIT BREAKER 5A	7277-2-5							31506
	1	1	1	2	CONNECTOR SUBD 9S	330-00625-09							in 34750
	1	1	1	1	GARMIN EFI G5	010-01485-00							34749
04	03	02	01	Nr	Benennung	Teilekennzeichen	ZF	Werkstoff	Abmessungen	Menge	Einheit	Gewicht	MaWi-Nr.

2 optional EFI requires GNS-430W to be installed

1 optional EFI requires GTN-635/650/750 to be installed

OPTION 03 = EFI G5 with GNS-430 installed

OPTION 02 = EFI G5 with GTN-635/650/750 installed

OPTION 01 = EFI G5 stand alone

Die Gültigkeitszuordnung von Version zu Flugzeugbaureihe ist der Bauakte bzw. dem jeweiligen Fertigungsauftrag zu entnehmen.

Zuordnung links / rechts wird mit */* in allen Feldern angegeben.

Ver.	Bezeichnung
04	
03	Connected to GPS
02	Connected to GPS
01	Stand alone

Letzte Bearbeitung:

Nr.:	Änderung/Mod.	Nr.:	Datum	Name

	Datum	Name
Bearb.	07.11.16	HW
Gepr.:		
Gepr.:		

EXTRA
Schwarze Heide 21
46569 Hünxe, Germany

Maßstab auf	Projektion
Sl.-Klasse	Freimaßtoleranz
Oberflächenschutz	Oberfläche

EA 300/LT

EFI GARMIN-G5

EA-9D102.73

A4 Blatt 1 von 1

Schutzvermerk nach DIN 34 beachten.

EDV-Kennung: **EA3D0980**

Chapter 96

Smoke

Table of Contents

96-00-00 GENERAL

Description

On pilot's demand the smoke system produces a trail of smoke by injection of smoke oil (straight paraffin oil) into the engine exhaust. The smoke oil is vaporised by the exhaust gas heat and is visible as dense smoke after leaving the exhaust.

From SN LT011 the smoke system has been changed. The smoke acro tank and the smoke tank drain have been placed in the middle of the aircraft (refer to Figure 1, Sheet 2).

The system consists of (refer to Figure 1):

Main smoke oil tank (1)

Smoke oil acro tank (7)

Ventilation lines (9)

Overpressure/check valve in smoke oil supply line to the nozzle (3)

Refill/Injection pump (2)

Two relais (changeover contact type) for pump control (15)

Smoke switch (ON-OFF type) on the throttle lever (13)

SMOKE REFILL switch in the instrument panel (11)

SMOKE ARM switch in the instrument panel (12)

SMOKE SYSTEM circuit breaker in the instrument panel (14)

Float switch (10)

Filter element in the refill line (4)

Smoke tank drain (5)

Quick connector in the bottom fuselage cover (6)

Injector nozzle (8)

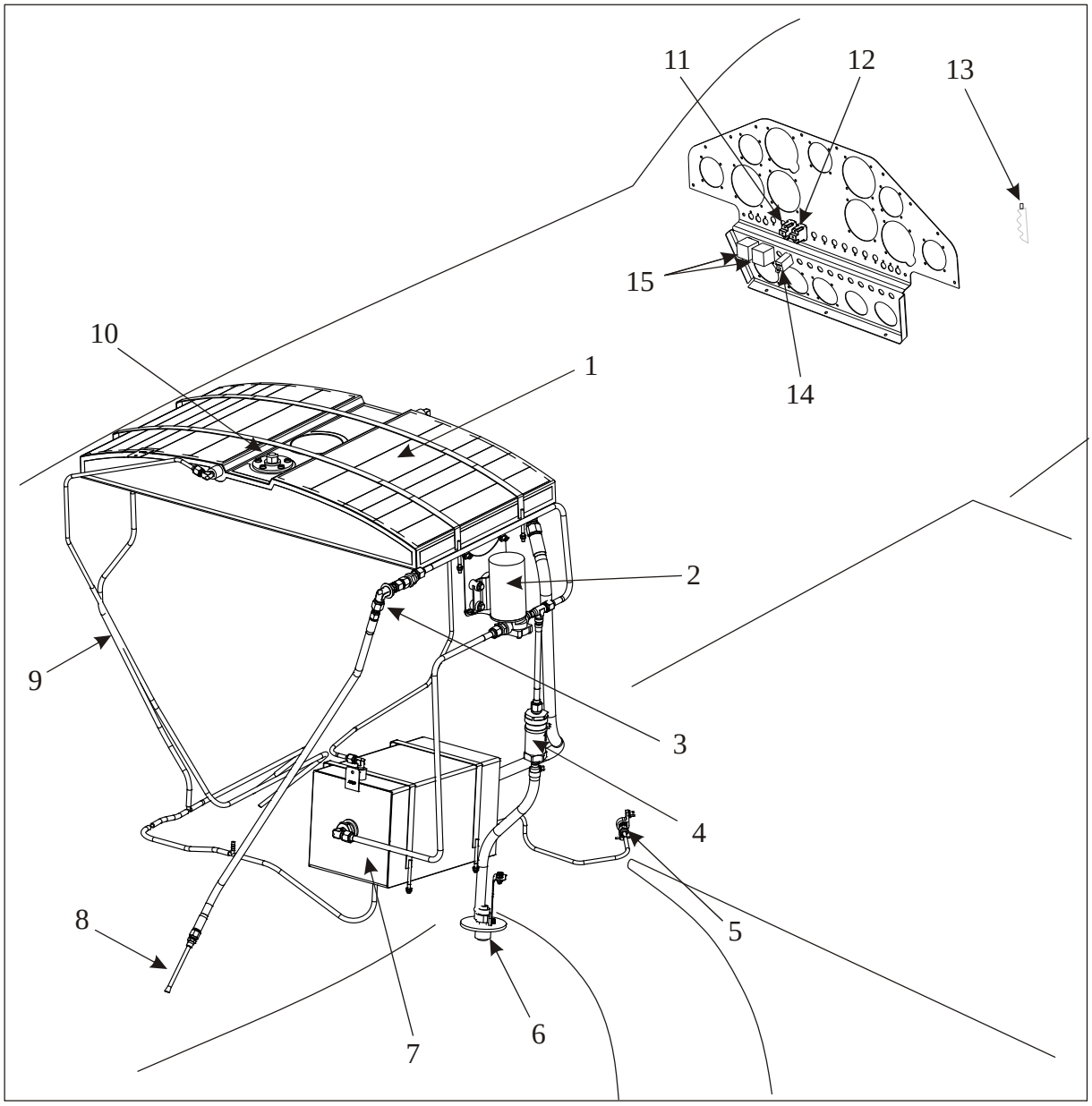


Figure 1, Sheet 1 ***Smoke System up to SN LT010***

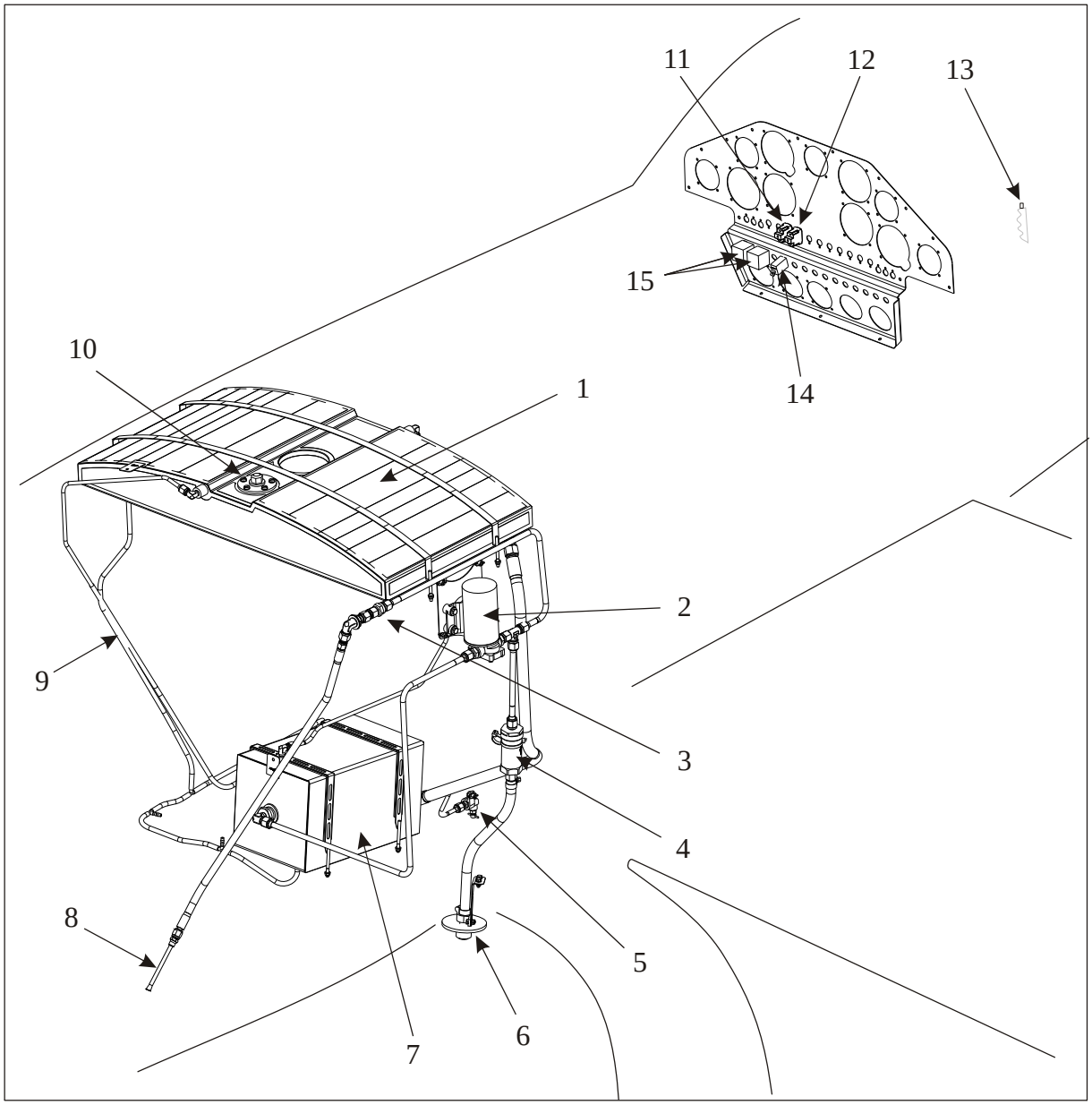


Figure 1, Sheet 2 ***Smoke System from SN LT011***

96-10-00 STORAGE

Refer to Figure 1. The smoke oil is stored in both the smoke oil main (1) and acro tank (7). The tanks are provided with ventilation lines (9) for adequate venting. The tanks are filled by a pump (2) (reversed polarity) through a quick connector (6) located in the aircraft bottom fuselage cover. This line includes a filter (4) to prevent dirt to enter the smoke system.

For refilling the smoke oil tanks the SMOKE REFILL switch (11) has to be switched to the ON-position. Filled smoke oil tanks are detected by a float switch (10) placed in the main tank which shuts the pump off.

96-10-01 Smoke Oil Main Tank

Removal/Installation

1 Remove canopy, main fuselage cover, instrument cover as per Chapter 51.

2 Drain the smoke system.

3 Disconnect the electrical facilities from the smoke oil main tank.

4 Disconnect the smoke oil line from the smoke oil main tank.

5 Disconnect the ventilation line from the smoke oil main tank.

CAUTION

Prevent the drain tube of the GRP tank shell from breaking when handling the smoke oil main tank.

6 Remove the metal attachment belts with the rubber stripes.

7 Remove the smoke oil main tank.

8 Install in reverse sequence of removal.

96-10-02 Smoke Oil Acro Tank

Removal/Installation

1 Remove canopy, main fuselage cover, instrument cover as per Chapter 51 and the front seat as per Chapter 25.

2 Drain the smoke system.

3 Loosen the center fuel tank and move to the RH side.

4 Remove the battery as per Chapter 24.

5 Disconnect the smoke oil lines from the smoke oil acro tank.

CAUTION

Prevent the drain tube of the GRP tank shell from breaking when handling the smoke oil acro tank.

6 Remove the metal attachment belts with the rubber stripes.

7 Remove the smoke tank through the cockpit.

8 Install in reverse sequence of removal.

96-20-00 DISTRIBUTION

Refer to Figure 1. The same pump (2) which is used for refilling the tanks (normal polarity) injects the smoke oil from the smoke oil tanks through an overpressure/check valve (3) and the injector nozzle (8) into the hot exhaust gas to generate smoke. The pump is controlled by the SMOKE switches (11, 12) and the relais (15). The smoke system is electrically protected by the SMOKE SYSTEM circuit breaker (14).

For smoke system activation the SMOKE ARM switch (12) has to be switched to the ON-position. Then the smoke ON-OFF toggle switch (13) can be used to control the smoke.