TM 55-6610-296-40

TECHNICAL MANUAL

GS MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

REMOTE ATTITUDE INDICATOR

PART NUMBER DSA 274

HEADQUARTERS, DEPARTMENT OF THE ARMY

28 MAY 1971

WARNING

PRECAUTIONARY DATA

Personnel performing instructions involving operations, procedures, and practices which are included or implied in this technical manual shall observe the following instructions. Disregard of these warnings and precautionary information can cause serious injury, death, or an aborted mission.

USING TOXIC MATERIALS. Due to the toxicity of the solvents and solutions used in the cleaning procedures, adequate ventilation must be provided, Avoid prolonged contact with solutions and chemicals.

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC., 19 *November* 1975

GS Maintenance Manual
Including Repair Parts and Special Tools List

REMOTE ATTITUDE INDICATOR

PART NUMBER DSA 274

TM 55-6610-296-40, 28 May 1971, is changed as follows:

1. Remove and insert pages as indicated below.

	Remove pages	Insert pages
Section III	3-7 and 3-8	3-7 and 3-8

2. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

3. Retain this sheet in front of manual for reference purposes.

By Order of the Secretory of the Army:

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General, United States Army
Chief of Staff

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To be distributed in accordance with DA Form 12-31 Direct and General Support Maintenance Requirements for UH-1B, UH-1C/M and UH-1D/H aircraft.

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *6 December 1974*

GS Maintenance Manual
Including Repair Parts and Special Tools List

REMOTE ATTITUDE INDICATOR

PART NUMBER DSA 274

TM 55-6610-296-40, 28 May 1971, is changed as follows:

1. Remove and insert pages as indicated below.

	Remove pages	Insert pages
Section I	1-3 and 1-4	1-3 and 1-4

2. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

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SECTION I

INTRODUCTION

1-1. General Information.

a. This technical manual comprises overhaul instructions and test procedures for Remote Attitude Indicator, Model DSA 274 (fig. 1-1), manufactured by Consolidated Airborne Systems, Inc., Carle Place, Long Island, New York, Federal Manufacturer's Code 05808.

b. Report of errors, omissions, and recommendations for improving this publication is encouraged. Use DA Form 2028 (Recommended Changes to DA Publications) and forward it directly to the Commanding General, U.S. Army Aviation Systems Command, ATTN: AMSAV-R-M, P.0. Box 209, St. Louis, Missouri 63166,

1-2. Purpose of Equipment.

The remote attitude indicator presents to the aircraft pilot, or co-pilot, information showing the pitch and roll angles of an aircraft relative to the earth's surface.

1-3. Equipment Records.

The Army Maintenance Management system established in TM 38-750 applies to this equipment. The applicable forms as referenced by TM 38-750 will be used.

1-4. Description of Equipment.

The remote attitude indicator is controlled by an external vertical gyroscope which provides attitude reference signals to the pitch and roll servo systems in the indicator. The actuation of the pitch and roll servos causes the yoke and spherical assembly to rise and fall and to rotate left and right. A stationary pointer on the yoke indicates roll attitude and is shown by indication markings on the light guide dial assembly. Markings on the sphere, with respect to a stationary miniature airplane attached to the cover glass, indicate pitch attitude. The indicator operates on 115vac power; the indicator lights utilize 28vdc power. When power is not applied, a flag alarm marked OFF is visible through the cover of the indicator. A pitch control knob, located at the lower right corner, and roll control knob, located at the upper right corner of the indicator, have an arrow and scale, respectively, indicating whether the aircraft is in level flight, a right bank, or left bank attitude.

1-5. Leading Particulars.

The major characteristics of the remote attude indicator are given in table 1–1.

Table 1-1. Leading Particulars

ITEM	CHARACTERISTIC
Power requirements:	
Indicator	115 vac, ±2 vac, 400±20 cps
Lighting	28V ± 0.6 vdc
Power consumption	20 VA maximum
Dimensions (overall)	
Height	5-1/2 inches
Width	5 inches
Depth	8-1/2 inches
Mounting-hole spacing:	
Horizontal	4.505 inches maximum
Vertical	4.755 inches maximum
Weight	5.5 pounds

Table 1-1. Leading Particuavs-Continued

ITEM	CHARACTERISTIC
Operating Ambient temperature	-56° C to +71° C
HumiditY	up to 100%
Altitude	80,500 feet maximum
Filling medium	90% nitrogen, 10% helium, 99.95% pure. Containing not more than 0.006 milligrams of water per liter.
Leak rate	Not to exceed 0.522 micron cubic feet per hour at one atmosphere pressure differential

1-6. Test Equipment.

The test equipment listed in table 1-2 is required to support overhaul activities.

1-7. Special Tools.

No special tools or jigs are required for overhaul of the DSA 274 indicator. However

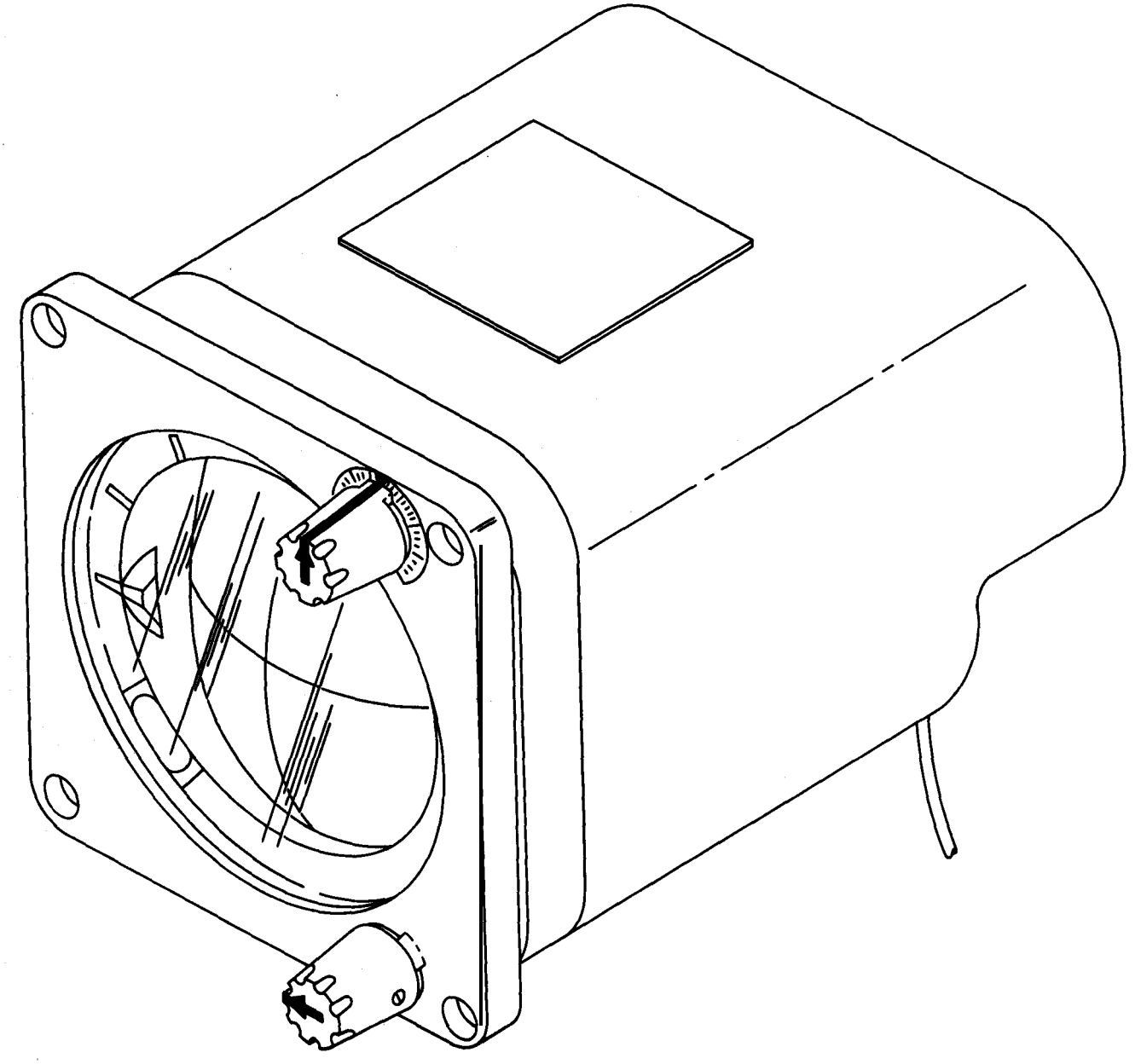


Figure 1-1, Remote Attitude Indtiator, DSA 274.

two items to be fabricated locally are listed in table 1-3.

1–8. Consumable Materials.

The consumable materials required for overhaul are listed in table 1-4.

Table 1–2. Test Equipment Required

PART, MODEL OR MIL DES	NOMENCLATURE	TECHNICAL DESCRIPTION	FMC
TE217A	Test Fixture	Processes and routes test signals to indicator	05808
TE286	Test Transmitter	Consists of master synchro transmitter	05808
TS–352-B/U	AC Voltmeter		28480
13616–3A	Power Supply	0–28VDC, 0.05VDC resolution	06840
TE176A	Test Synchro	Consists of synchro and manual synchro positioner	05808
TE244 (with T-311)	Test Fixture	For null adjustment of pitch synchro	05808

Table 1–3. Special Tools Required

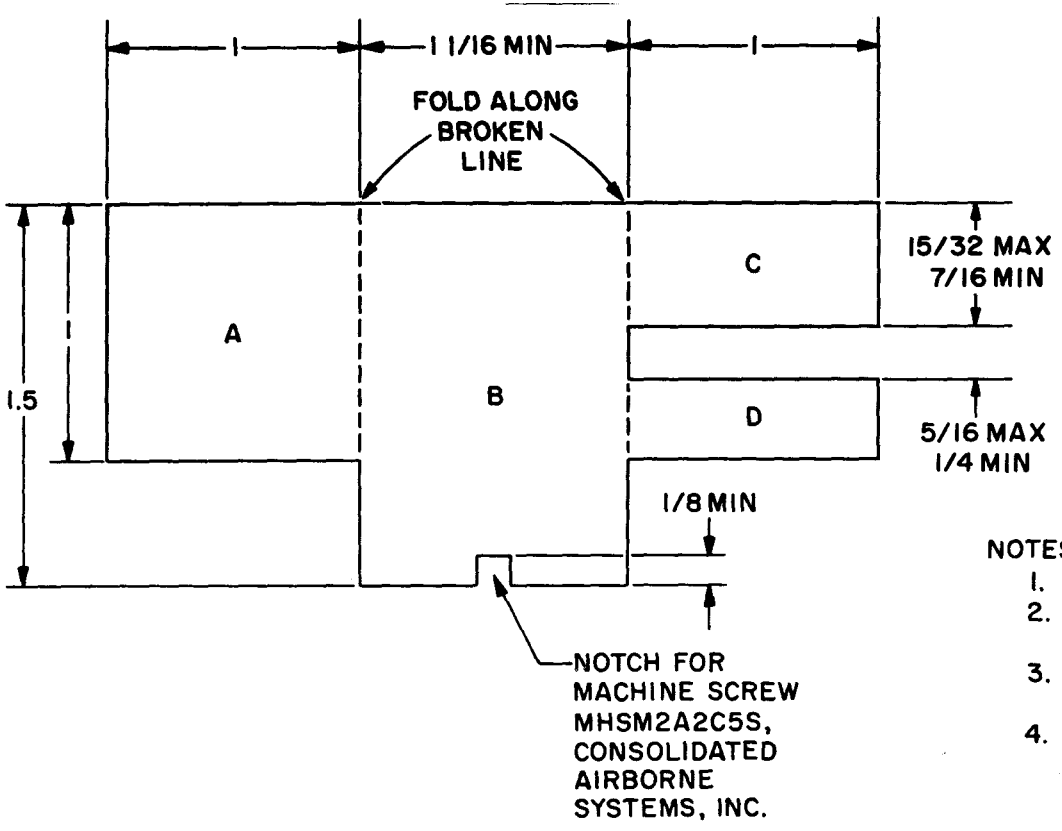
PART, MODEL, OR MIL DES (OR EQUIVALENT)	NOMENCLATURE	APPLICATION OR DESCRIPTION
Local Manufacture; (fig. 2-10)	Solderband block	Shaping of solderband. 1.670 inches long by 0.7690 inches wide. Dimension of depth is not critical, but should be at least 0.25 inches. Can be constructed from any rigid material.
Local Manufacture; (figure 1-2)	Brush-block shield	Protective cover for brush block during disassembly of indicator. Refer to figure 1–2 for description.

Table 1–4. Consumable Materials Required

ITEM NO.	MATERIAL	TYPE OR GRADE	GOVERNMENT SPECIFICATION OR MANUFACTURER'S NO.
1	Solvent, Dry Cleaning		P-D-680
2	Enamel, Black, Lusterless		MIL-E-5556 Color code: 37038
3	Polishing Powder	4/0 crocus paper, Type 1	
4	Lubricating Oil, General Purpose, Low Temperature		MIL-L-7870
5	Twine, Impregnated (Spot Ties)		MIL-T-713A

Table 1-4. Consumable Materials Required-Continued

ITEM NO.	MATERIAL	TYPE OR GRADE	GOVERNMENT SPECIFICATION OR MANUFACTURER'S NO.
6	Adhesive	EC 2216	FMC 76381
7	Tape, Adhesive, Pressure Sensitive	Corrosion resistant	MIL-T-4053
8	Tube, Copper, 0.125 In. Dia., 0.018 In. Thk.		



NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. ALL DIMENSIONS ARE APPROXIMATE, EXCEPT AS INDICATED.
3. CONSTRUCTION MAY BE FROM ANY RIGID MATERIAL.
4. WITH THE PATTERN ORIENTED AS SHOWN, FOLD PIECES A, C, AND D UP UNTIL THEY FORM A RIGHT ANGLE WITH B.

Figure 1-2. Construction of Brush-Block Shield.

SECTION II

ITEM MAINTENANCE

NOTE

Before overhauling the indicator, perform the final test procedures of Section III to determine the extent of overhaul required. Disassemble the indicator, if necessary, only to the extent required to replace the defective part or make repairs.

2-1. Disassembly.

Disassemble the indicator in accordance with the following procedures.

a. *Disassembly of Overall Indicator.*

(1) Cut evacuation tube (6, fig. 2-1).

(2) Loosen four setscrews (8) securing knobs (7) to indicator. Remove knobs.

(8) Remove connector gasket (10).

(4) Remove tearband *(2)* by stripping away paint with scraper, running a hot soldering iron along edges of tearband, and lifting loose edge with scraper.

(5) Remove solderband (3) on case (1) by applying hot soldering iron to edges of band, starting at one corner, and prying off band with pliers,

(6) Remove case (1). Perform additional troubleshooting.

(7) Remove insulator (4) and evacuation tube (6).

(8) Remove dial (9) by prying loose.

(9) Visually inspect all parts for signs of damage.

CAUTION

Install brush-block shield over brush-block assembly (22 and 25, fig. 2-5) as a protective measure before proceeding with the overhaul.

b. Disassembly of Indicator Subassembly. Disassemble the indicator subassembly in accordance with the following procedures.

(1) Remove four screws (2 and 3, fig. 2–2), eight washers (4 and 5), eight sleeve spacers (6), two terminal studs (7), and two posts (8), and remove the electronic components assembly (1) and electronic control amplifier (9).

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2-1-	DSA 274 ----------	INDICATOR, ATTITUDE REMOTE----------	1
-1	MEC317 ----------	. CASE ----------	1
		. (ATTACHING PARTS)	
–2	MAT305 ----------	. TEARBAND ----------	1
-3	MV204-4 ---------	. SOLDERBAND ----------	1
		- - - - - -	
-4	MV1307 -------	. INSULATOR ----------	1
-5	MDP336 ----------	. PLATE, Identification ----------	1
-6	M3V03C002 --- ----	. TUBE, Evacuation ----------	1
–7	MNC301 _____	.KNOB ----------	2
		(ATTACHING PARTS)	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2-1-8	MS51030-3	.SETSCREW	4
-9	MDS335	.DIAL, Scale	1
-10	MSG304-2	.GASKET, Connector	1
-11	1853	.INDICATOR Subassy, Attitude (See figure 2-2 for breakdown)	1

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2-2-	1853	INDICATOR Subassy, Attitude (See item 11, figure 2-1 for NHA)	REF
-1	1678	.ELECTRONICS COMPONENTS ASSEMBLY (See figure 2-3 for breakdown)	1
		(ATTACHING PARTS)	
-2	MHSM1A4C18S	.SCREW, Machine	2
-3	MHSM1A4C24S	.SCREW, Machine	2
-4	MS35337-78	.WASHER, Lock	4
-5	MS15795-303	.WASHER, Flat	4
-6	M3V03B039	.SPACER, Sleeve	8
-7	EJT344	.TERMINAL, Stud, insulated	2
-8	M3V03B040	.POST, Electrical mechanical equipment	2
-9	1670	.AMPLIFIER, Electronic control (See figure 2-4 for breakdown)	2
-lo	1856	. SERVO ASSEMBLY, Roll (See figure 2-5 for breakdown)	1
		(ATTACHING PARTS)	
-11	MSL314	.POST, Electrical mechanical equipment	2
-12	MHSM2A3C2S	.SCREW, Machine	4
-18	MS35337-77	.WASHER, Lock	4
-14	1857	.SERVO AND SPHERIOD ASSEMBLY, Pitch (See figure 2-6 for breakdown)	1
		(ATTACHING PARTS)	
-15	MHSM2A4C12S	.SCREW, Machine	4
-16	MS35337-78	.WASHER, Lock	4
-17	MFB302	.BLOCK, Clamping	2
-18	MCS 328	.BRACKET, Bank pointer	2
		(ATTACHING PARTS)	
-19	MHSM2A2C2S	. SCREW, Machine	4
-20	MPP 306	.POINTER, Dial	1
-21	1854	.FRONT END ASSEMBLY (See figure 2-7 for breakdown)	1

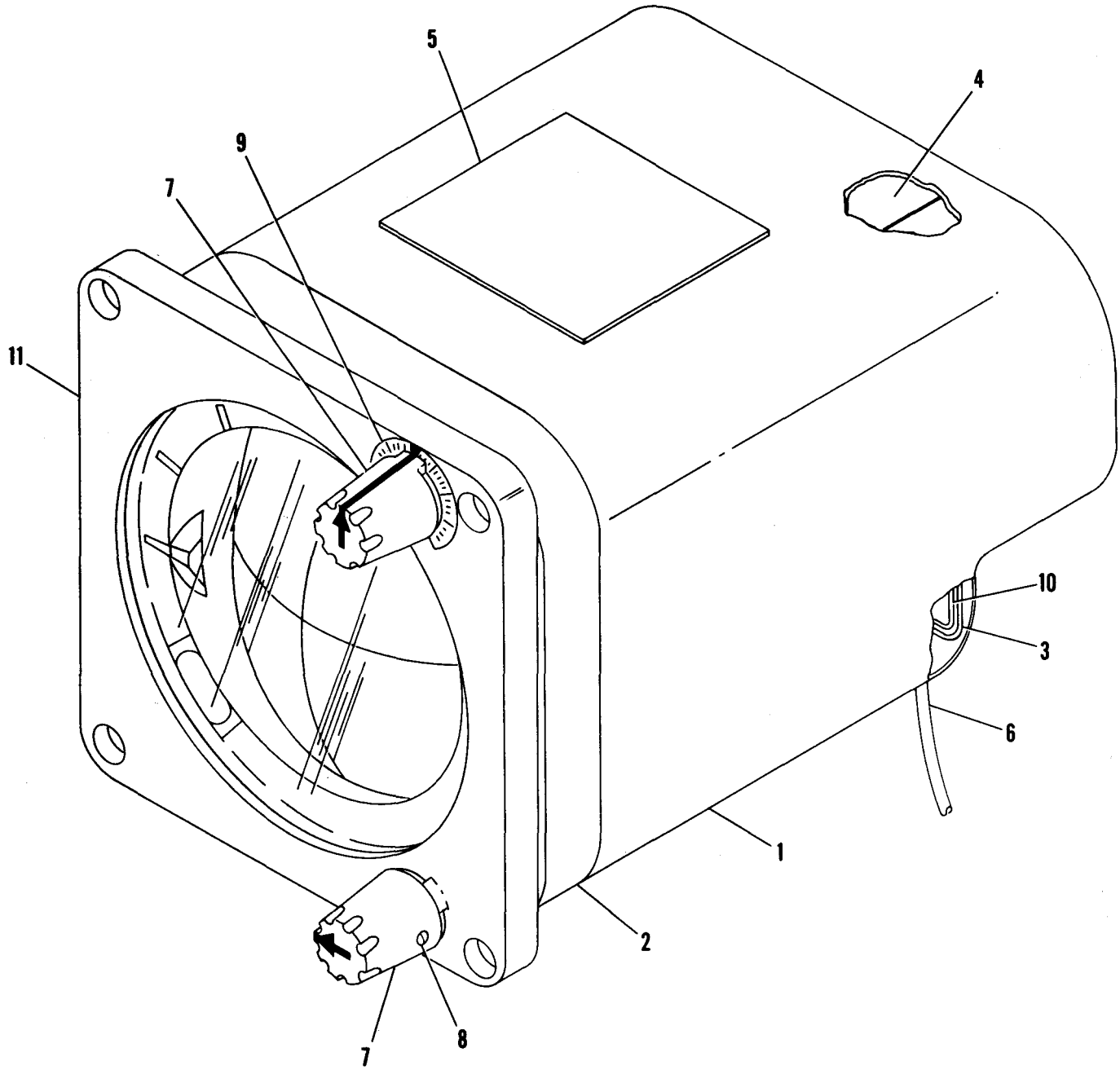


Figure 2-1. Remote Attitude Indicator.

(2) Cut spot ties on posts (11).

CAUTION

When removing roll servo assembly in next step, be careful not to pull too hard on wires.

(3) remove two posts (11), two screws (12), and two washers (13). Remove roll servo assembly (10).

(4) With a pencil, draw a line across bracket (18) and item to which bracket is attached. Also draw a line around the edge of the bracket. These lines will be used as guides for proper orientation and alignment during reassembly.

(5) Remove four screws (19) and remove bracket (18).

(6) remove dial pointer (20) and front end assembly (21).

(7) Remove four screws (15), four washers (16), and clamping block (17).

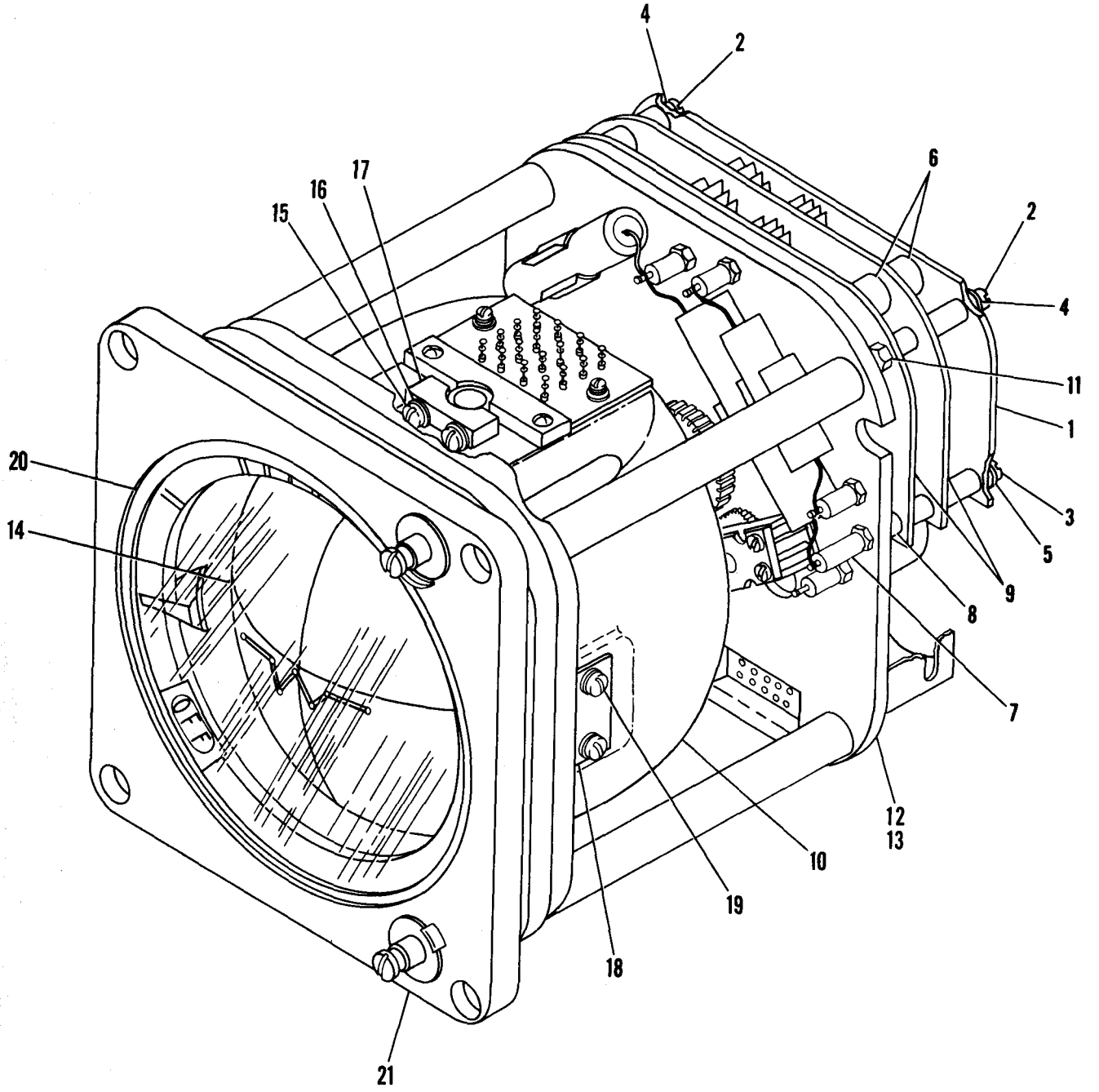


Figure 2-2. Indicator Subassembly.

(8) Remove screws (2, fig. 2-6) holding either the black or gray half of spheroid (1) to plate of spur gear (17). (The spheroid will require a few rotations to gain access to all screws.)

(9) Remove spheroid half (1).

(10) Remove screws (2) holding the other half of spheroid (1) to plate of spur gear (17).

(11) Remove other spheroid half (1).

(12) Remove pitch servo and spheroid assembly (14, fig. 2–2), exerting care not to pull on wires connected from assembly to terminal board (40, fig. 2-5).

c. Disassembly of Electronic Components Assembly. Disassemble and repair as necessary.

d. Disassembly of Electronic Control Amplifier. Disassemble and repair as necessary.

e. Disassembly of Roll Servo Assembly.

(1) Remove screws (23, fig. 2-5) and washers (24) securing bracket (22) and remove bracket.

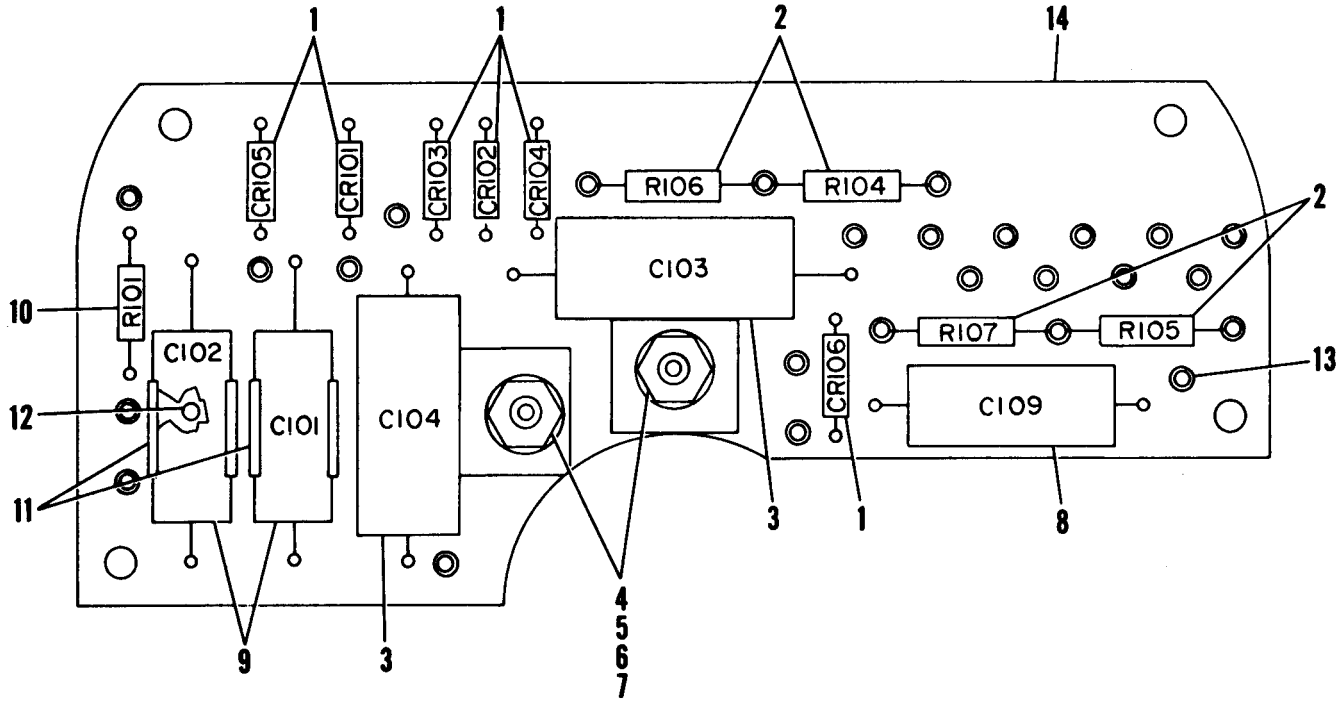


Figure 2-3. Electronic Components Assembly,

FIG. & INDEX NO.	PART NO.	1 2 3 4 5 6 7	DESCRIPTION	UNITS PER ASSY
2-3-	1673		ELECTRONIC COMPONENTS ASSEMBLY	REF
			(See item 1, figure 2-2 for NHA)	
-1	1N645		. SEMICONDUCTOR DEVICE, Diode	6
-2	RC20GF***J		. RESISTOR, Fixed, composition (select at assy)	4
-3	CP10A1KB-154K3		. CAPACITOR, Fixed, paper dielectric	2
			(ATTACHING PARTS)	
-4	MS35649-44		.NUT, Plain, hexagon	2
-5	MS35337-78		.WASHER, Lock	2
-6	MS15795-303		.WASHER, Flat	2
-7	MHSM1A4C5S		.SCREW, Machine	2
-8	CS13AG100K		. CAPACITOR, Fixed, electrolytic	1
-9	CL65CJ250K3		. CAPACITOR, Fixed, electrolytic	2
-10	RC07GF473J		.RESISTOR, Fixed, composition	1
–	MYT321		.TERMINAL BOARD	1
-11	MFC8-11A		.. RETAINER, Capacitor	2
			(ATTACHING PARTS)	
-12	MHE2R30B		.. EYELET, Metallic	4
-13	SE12XC1		.. TERMINAL, Stud	26
-14	MYB320		.. PRINTED CIRCUIT BOARD	1

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2-4-	1670	AMPLIFIER, ELECTRONIC CONTROL (See item 9, figure 2-2 for NHA)	REF
-1	RC07GF332J	. RESISTOR, Fixed, composition	2
-2	2N1893	. TRANSISTOR	4
-3	MHWS4-1	. INSULATOR, Transistor	4
-4	RC07GF331J	. RESISTOR, Fixed, composition	2
-5	RC20GF202J	. RESISTOR, Fixed, composition	8
-6	EVF301	. FUSE, cartridge	2
-7	CS13AE100K	. CAPACITOR, Fixed, electrolytic	1
-8	2N657	. TRANSISTOR	2
-9	MHWS4-1	. INSULATOR, Transistor	2
-10	MVD303	. HEAT SINK, Electrical-electronic component	2
-11	RC07GF103J	. RESISTOR, Fixed, composition	1
-12	CS13AG1R8K	. CAPACITOR, Fixed, electrolytic	2
-13	RC20GF223J	. RESISTOR, Fixed, composition	2
-14	RC20GF562J	. RESISTOR, Fixed, composition	2
-15	CS134E470K	. CAPACITOR, Fixed, electrolytic	2
-16	RC07GF473 J	. RESISTOR, Fixed, composition	2
-17	1N645	. SEMICONDUCTOR, DEVICE, diode	2
-18	RC20GF3R9J	. RESISTOR, Fixed, composition	2
-19	RC20GF331J	. RESISTOR, Fixed, composition	1
-20	RC07GF152J	. RESISTOR, Fixed, composition	2
-21	CS13BG106K	. CAPACITOR, Fixed, electrolytic	2
-22	RC07GF392F	. RESISTOR, Fixed, composition	1
-23	CK05CW102M	. CAPACITOR, Fixed, ceramic dielectric	1
-24	MYB319	. PRINTED CIRCUIT BOARD	1

CAUTION

Brush **block (25), which is attached to bracket (22), can be easily damaged. Make certain that brush block is set aside and protected by brush-block shield.**

(2) Remove retaining ring (30), thrust washer (31), and shims (32).

(3) Remove yoke (54).

(4) Remove bearing housing (33) by removing screws (34, 35, and 36) and washers (37).

(5) Remove bearings (29) and (38).

(6) Remove screws (41) and washers (42 and 43) and remove terminal board (40) on yoke (54),

(7) Remove insulator (44) and remove trunnion block (45), by removing screws (46), washers (47), and nuts (48).

(8) Remove slip ring (49).

(9) Remove spring pin (51), screws (52), and washer (53) and remove gear shaft assembly.

(10) Remove bearing plate (55) by removing screws (56) and washers (57).

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2-5-	1856	SERVO ASSEMBLY, Roll (See item 10, figure 2-2 for NHA)	REF
-1	1680	. CONNECTOR PLATE ASSEMBLY (ATTACHING PARTS)	1

FIG. & INDEX NO.	PART NO.	1 2 3 4 5 6 7 DESCRIPTION	UNITS PER ASSY
2–5–2	MHSM2A2C3S	. SCREW, Machine	2
–3	MS35337–77	. WASHER, Lock	2
		***	
–4	ETP3132	. TRANSFORMER, Power	1
		(ATTACHING PARTS)	
–5	MHSM2A8C4S	. SCREW, Machine	2
–6	MS35337–80	. WASHER, Lock	2
		***	
–7	EB212	. SYNCHRO, Control transformer	1
		(ATTACHING PARTS)	
–8	MHSM2A4C6S	. SCREW, Machine	2
–9	MS35337–78	. WASHER, Lock	2
–10	MFS2–2	. CLAMP, Rim, clenching	2
–11	MHSS1A1F2S	. SETSCREW	2
		***	
–12	EA209	. MOTOR, Tachometer, generator	1
		(ATTACHING PARTS)	
–13	MHSM2A4C6S	. SCREW, Machine	2
–14	MS35337–78	. WASHER, Lock	2
–15	MFS2–2	. CLAMP, Rim clenching	2
		***	
–16	ESC301–01	. CAPACITOR, Fixed	2
–17	ESC301–02	. CAPACITOR, Fixed	2
–18	RW69V101	. RESISTOR, Fixed, wire-wound	2
–19	EJT345	. TERMINAL, Stud	8
		(ATTACHING PARTS)	
–20	MS35649–44	. NUT, Plain, hexagon	8
–21	MS35337–78	. WASHER, Lock	8
		***	
–22	MCB322	. BRACKET, Brush block	1
		(ATTACHING PARTS)	
–23	MHSM2A2C5S	. SCREW, Machine	2
–24	MS35337–77	. WASHER, Lock	2
		***	
–25	ESS301A	.. BLOCK, Brush	1
		(ATTACHING PARTS)	
–26	MHSM2A2C7S	.. SCREW, Machine	4
–27	MS35337–77	.. WASHER, Lock	4
–28	MS15795–302	.. WASHER, Flat	4
		***	
–29	MJBA7–0A	. BEARING, Ball	1
		(ATTACHING PARTS)	
–30	MS16624–4037	. RING, Retaining	1
–31	MWT304	. WASHER, Thrust	1
–32	MWS305	. SHIM	AR
		***	
–33	MBH314	. HOUSING, Bearing	1
		(ATTACHING PARTS)	
–34	MHSM2A4C4S	. SCREW, Machine	1
–35	MHSM1A4C5S	. SCREW, Machine	1
–36	MHSM2A4C5S	. SCREW, Machine	2

FIG, & INDEX NO.	PART NO.	1 2 3 4 5 6 7 DESCRIPTION	UNITS PER ASSY
2–5–37	MS35337–78	. WASHER, Lock	4
		***	
–38	MJBA7–0A	. BEARING, Ball	1
–39	MGS316–1	. GEAR, Spur	1
	1858	. YOKE ASSY	1
–40	MYB317–1	.. TERMINAL BOARD	1
		(ATTACHING PARTS)	
–41	MHSM2A2C3S	.. SCREW, Machine	2
–42	MS35337–77	.. WASHER, Lock	2
–43	MS15795–302	.. WASHER, Flat	2
		***	
–44	MYB318	.. INSULATOR	1
–45	MFB303	.. BLOCK, Trunnion	2
		(ATTACHING PARTS)	
–46	MHSM2A4C4S	.. SCREW, Machine	4
–47	MS35337–78	.. WASHER, Lock	4
–48	M2HNS23	.. NUT, Plain, hexagon	4
		***	
–49	ESS301B	.. SLIP RING	1
–50	MGR318	.. GEAR SHAFT ASSY	1
		(ATTACHING PARTS)	
–51	MHPS8N5	.. PIN, Spring	1
–52	MHSM2A4C5S	.. SCREW, Machine	4
–53	MBW313	.. WASHER, Flat	1
		***	
–54	MCY317	. YOKE	1
	1671–2	. GEAR ASSY, Speed decreaser	1
–55	MZP305	.. PLATE, Bearing	1
		(ATTACHING PARTS)	
–56	MHSM1A4C3S	.. SCREW, Machine	4
–57	MS35377–78	.. WASHER, Lock	4
		***	
–58	MJBB02CB	.. BEARING, Ball	2
–59	MLP312	.. POST, Gearplate	4
–60	MGC314	.. GEAR CLUSTER	1
–61	MGC315	.. GEAR CLUSTER	1
–62	MZP305	.. PLATE, Bearing	1
		(ATTACHING PARTS)	
–63	MHSM2A4C6S	.. SCREW, Machine	2
–64	MHSM2A4C3S	.. SCREW, Machine	2
–65	MS35337–78	.. WASHER, Lock	4
		***	
–66	MJBB02CB	.. BEARING, Ball	2
–67	1681	.. PLATE ASSY, Servo	1

(11) Remove bearing (58), gear plate post (59), and gear cluster (60 and 61).

(12) Remove screws (63 and 64) and washers (65) and remove bearing post (62).

(13) Remove bearing (66) from servo plate assembly (67).

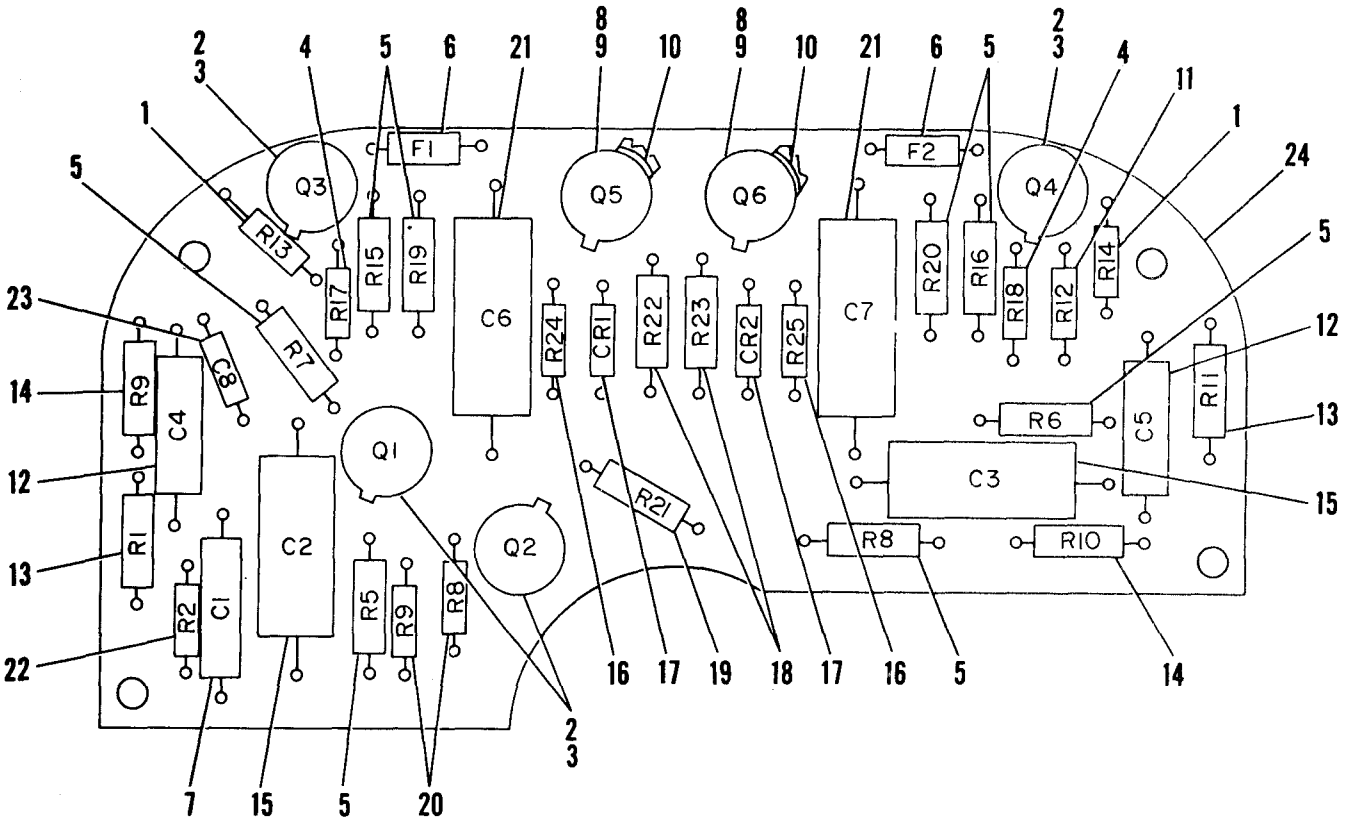


Figure 2–4. Electronic Control Amplifier.

f. Disassembly of Pitch Servo and Spheroid Assembly.

NOTE

Pitch servo and spheriod assembly (fig. 2-6) is wired to terminal board (40, fig. 2-6). The assembly can be disassembled without removing wires, except when disassembling bearings (15), end bell (16), collar (20), and counterweight (21).

(1) Remove screws (3, fig. 2-6) and washers (4 and 5) and remove spheroid lighting assembly.

(2) Remove lamp (6) and electrical contact (7).

(3) Remove screw (9), washer (10), and nut (11), and remove lug (8).

(4) Remove reflector (12) and loosen setscrew (14) securing shaft collar (13) and remove shaft collar and bearing (15).

(5) Remove end bell (16), bearing (15), spur gear (17), and bearing (18).

(6) Loosen setscrew (20) and remove collar (19).

(7) Remove screws (22) and remove counterweight (21).

(8) Remove setscrew (23) and remove spur gear assembly.

(9) Remove spur gears (25 and 26) and gear shaft (27). Remove screws (30), washers (31), and clamps (32) and remove tachometer motor (28).

(10) Remove screws (30), washers (31), and clamps (32), and remove control synchro (29).

(11) Remove bearing plate (33) from gear assembly by removing screws (34 and 35) and washer (36).

(12) Remove bearings (37), gear plate posts (38) and gear clusters (39 and 40).

(13) Remove screws (42) and washers (43) and remove bearing plate (41).

(14) Remove bearings (44) from disassembled mounting plate (45).

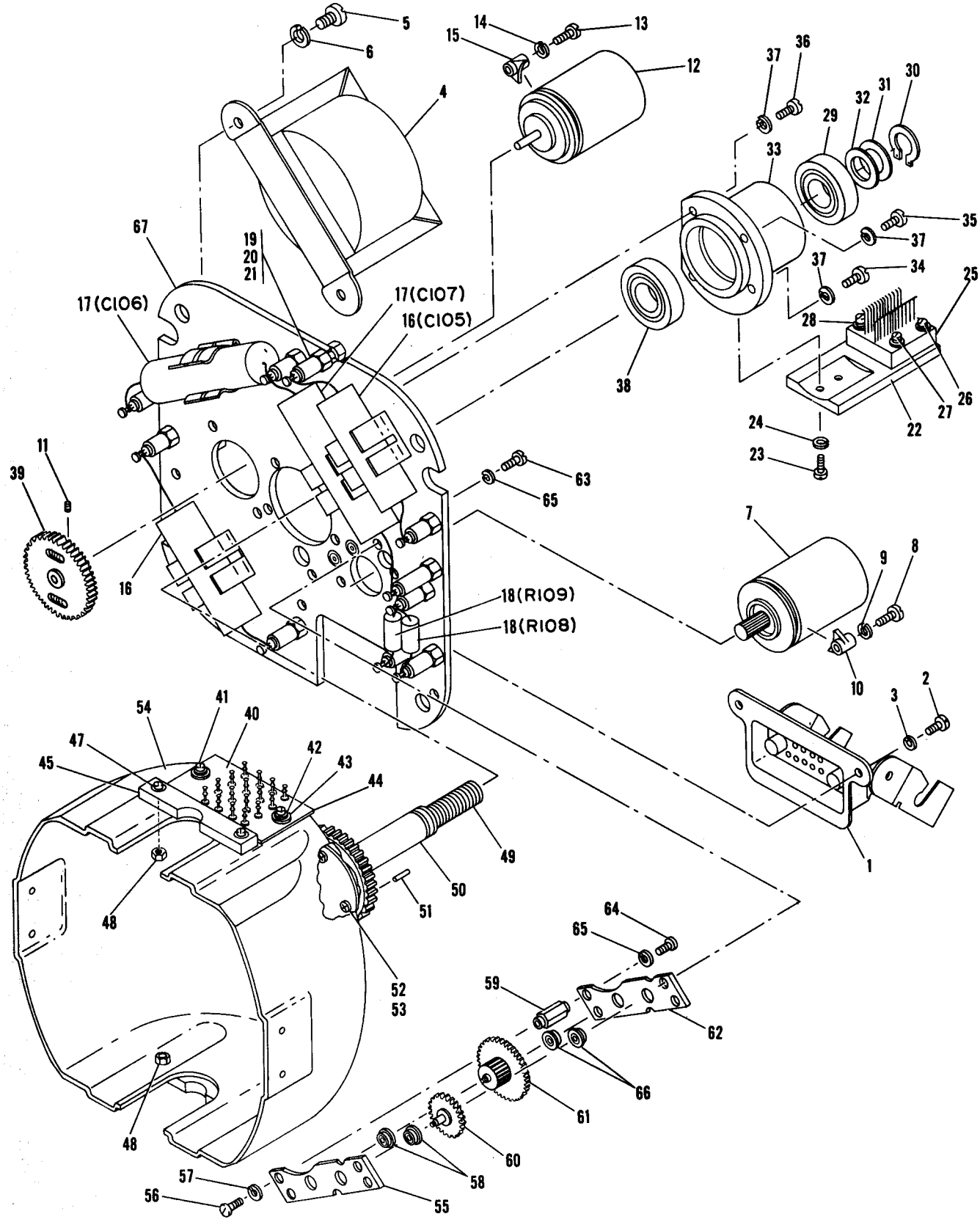


Figure 2-5. Roll Servo Assembly

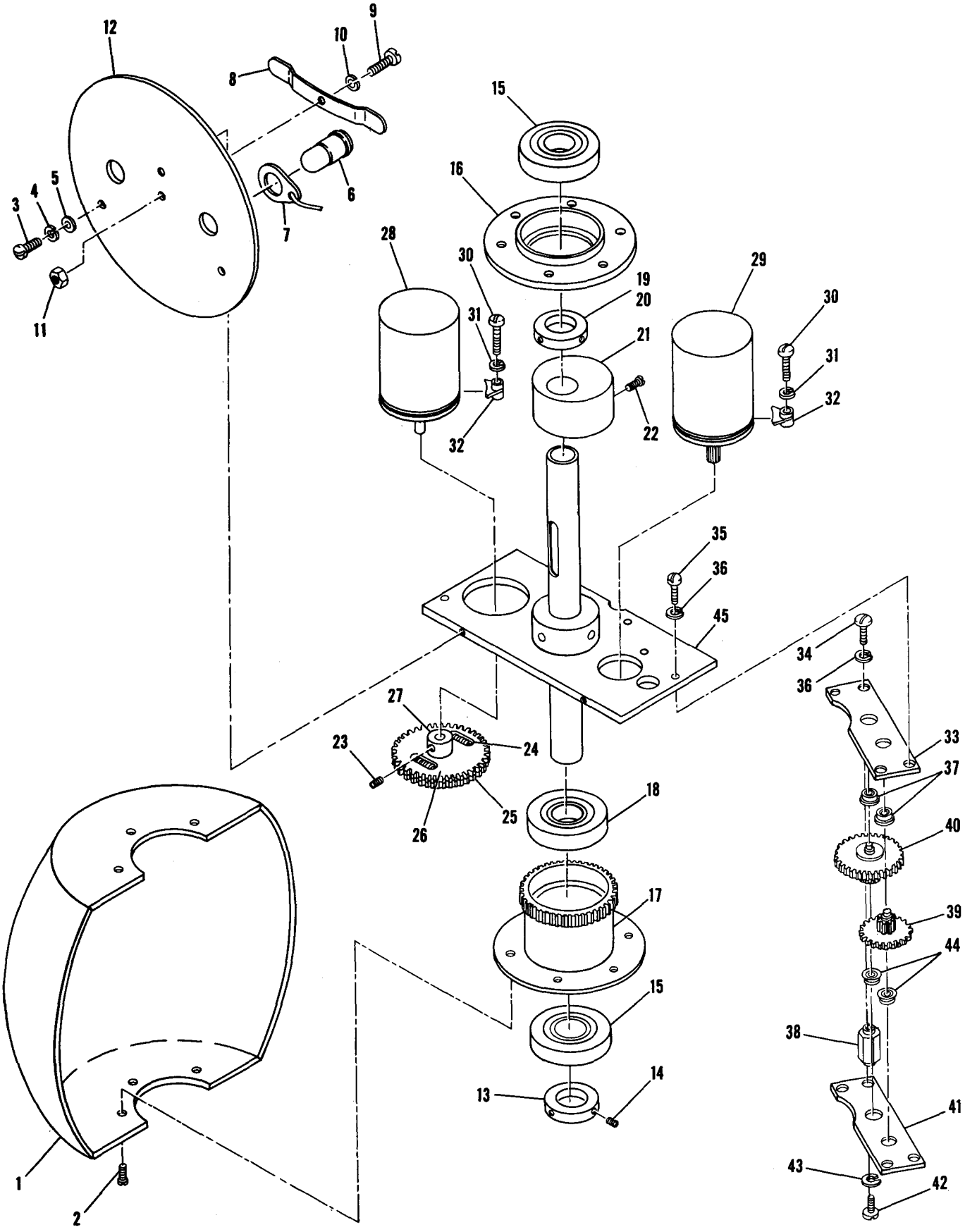


Figure 2-6. Pitch Servo and Spheroid Assembly.

g. Disassembly of Front End Assembly.

(1) Remove post (1, fig. 2-7) and washer (2).

(2) Remove screw (4) and washer (5), and remove flag clamp (3).

(3) Remove flag (6) and remove the incandescent lamp (7) from the bank dial assembly.

(4) Remove screw (9) and washer (10) and remove terminal board (8).

(5) Remove terminal lug (11), scale dial (12), and dished lens (13) and lighting mask (14).

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2–6–	1857	SERVO AND SPHEROID ASSY, Pitch	REF
		(See item 16, figure 2–2 for NHA)	
–1	MDD333	. SPHEROID	2
		(ATTACHING PARTS)	
–2	MHSM3A0F2S	. SCREW, Machine	12
		–––*–––	
	1859	. LIGHTING ASSY, Spheroid	1
		(ATTACHING PARTS)	
–3	MS35233–2	. SCREW, Machine	2
–4	MS35337–77	. WASHER, Lock	2
–5	MS15795–302	. WASHER, Flat	2
		–––*–––	
–6	MS25237–327R15	.. LAMP, Incandescent	2
–7	EJL306	.. CONTACT, Electrical	1
–8	EJLA2011	.. TERMINAL, Lug	2
		(ATTACHING PARTS)	
–9	MS35233–2	.. SCREW, Machine	2
–10	MS35337–77	.. WASHER, Lock	2
–11	MS35649–24	.. NUT, Plain, hexagon	2
		–––*–––	
–12	MYR31	.. REFLECTOR	
–13	MBC316	. COLLAR, Shaft	1
		(ATTACHING PARTS)	
–14	MS51022–1	. SETSCREW	2
		–––*–––	
–15	MJBA7–0A	. BEARING, Ball	2
–16	MBB312	. END BELL, Bearing	1
–17	MGF317	. GEAR, Spur	1
–18	MJBA7–0A	. BEARING, Ball	1
–19	MBC316	. COLLAR, Shaft	1
		(ATTACHING PARTS)	
–20	MS51022–1	. SETSCREW	2
		–––*–––	
–21	MBC315	. COUNTERWEIGHT	1
		(ATTACHING PARTS)	
–22	MHSM2A4C7S	. SCREW, Machine	2
		–––*–––	
	MGS316	. GEAR ASSEMBLY, Spur	1
		(ATTACHING PARTS)	
–23	MHSS1A1F2S	. SETSCREW	2
		–––*–––	

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2–6–24	MKE302	. . SPRING, Helical, extension	2
–25	MGS316–1	. . GEAR, Spur	1
–26	MGS316–2	. . GEAR, Spur	1
–27	MGS316–3	. . GEARSHAFT	1
–28	EA209	. MOTOR, Tachometer, gen	1
–29	EB212	. SYNCHRO, Control transformer	1
		(ATTACHING PARTS)	
–30	MHSM2A4C6S	. SCREW, Machine	4
–31	MS35337–78	. WASHER, Lock	4
–32	MFS2–2	. CLAMP, Rim, clenching	4
		–––*–––	
	1671–1	. GEAR ASSEMBLY, Speed decreaser	1
–33	MZP305	. . PLATE, Bearing	1
		(ATTACHING PARTS)	
–34	MHSM2A4C3S	. . SCREW, Machine	2
–35	MHSM2A4C6S	. . SCREW, Machine	2
–36	MS35337–78	. . WASHER, Lock	4
		–––*–––	
–37	MJBB02CB	. . BEARING, Ball	2
–38	MLP312	. . POST, Gear plate	4
–39	MGC314	. . GEAR CLUSTER	1
–40	MGC315	. . GEAR CLUSTER	1
–41	MZP305	. . PLATE, Bearing	1
		(ATTACHING PARTS)	
–42	MHSM1A4C3S	. . SCREW, Machine	4
–43	MS35337–78	. . WASHER, Lock	4
		–––*–––	
–44	MJBB02CB	. . BEARING, Ball	2
–45	1682	. PLATE, Mounting	1

(6) Remove two resistors (15), retaining rings (16), glass cover (17) and bezel (18).

2-2. Cleaning.

To insure proper cleaning of vertical gyro indicator detailed parts, perform the following steps:

a. *Sphere Markings and Indices.* Remove dust or dirt from painted surfaces with pencil eraser. To remove grease, use a soft cloth dampened with kerosene, followed by use of pure white soap on a damp cloth. Wipe dry with a clean, damp lint-free cloth.

b. Metallic Parts. Submerge solid nonporous metallic parts, which do not bear markings made with radio-active paint, in a bath of dry-cleaning solvent (item 1, table 1-4), and dry thoroughly with filtered, low-pressure air. Use a lint-free cloth, dampened with dry-cleaning solvent to clean porous metallic parts,

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2–7–	1854	FRONT END ASSEMBLY	REF
		(See item 23, figure 2–2 for NHA)	
–1	MLP313	. POST, Electrical, mechanical equipment	4
–2	NAS620C10L	. WASHER, Flat	4

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
2–7–3	MFC301	. CLAMP, Flag	1
		(ATTACHING PARTS)	
–4	MS35233–2	. SCREW, Machine	2
–5	MS35337–77	. WASHER, Lock	2
		–––*–––	
–6	EF2123	. FLAG	1
	1855	. DIAL ASSEMBLY, Bank	1
–7	MS25237–327R15	.. LAMP, Incandescent	6
–8	MYL312–1	.. TERMINAL BOARD	1
		(ATTACHING PARTS)	
–9	MS35233–4	.. SCREW, Machine	6
–10	MS35337–77	.. WASHER, Lock	6
		–––*–––	
–11	FJL305	.. TERMINAL, Lug	6
–12	MDD334	.. DIAL, Scale, bank	1
–13	MDD332	.. LENS, Dished	1
–14	MCM315	.. MASK, Lighting	1
	1684	. BEZEL, Subassy	1
–15	ERT13	.. RESISTOR, Variable	2
–16	MAR303	.. RING, Retaining	1
–17	MAG304	.. COVER, Glas s	1
–18	MRB301	.. BEZEL, Instrument mounting	1

CAUTION

Do not submerge any casting normally enclosed within the outer cover of vertical gyro indicator in dry-cleaming solvent. The cash ings, being porous, will absorb some of the solvent. Normal heat generated by operating vertical gyro indicator evaporates the solvent, causing bezel glass to fog.

c. *Electrical Parts.* Use a clean, lint-free cloth, dampened with dry-cleaning solvent (item 1, table 1-4) to wipe electrical parts clean,

d. Oil-Lubricated *Ball Bearing,* Rinse oil-lubricated ball bearing clean in dry-cleaning solvent (item 1, table 1–4). Let bearing drain, and dry with filtered, moisture-free, compressed air.

2-3. Inspection.

Perform the inspection requirements listed in table 2-1,

2-4. Repair or Replacement.

Replace all parts which are found damaged or defective during inspection and testing. Minor repairs on detailed parts can be accomplished by the following instructions:

a. Bezel Casting. If paint is chipped, touch up with lusterless black enamel (item 2, table 1-4).

b. Case. If paint is chipped, touch up with lusterless black enamel (item 2, table 1-4).

Table 2-1. Inspection Requirements

PART	LOOK FOR
Bezel casting	Mutilation or chipped paint.
Trim indicator	Restriction of movement.

Table 2-1. Inspection Requirements—Continued

PART	LOOK FOR
Insulators and gaskets	Bend, distortion, cracks, deterioration, or other damage.
Bezel subassembly	Flaws or chips; poor condition of metallized edges.
Paint markings	Chipped paint.
Metal contacts	Bends, cracks, or other damage.
Cover, plate and case	Bends, breaks, mutilation, and chipped paint.
Sphere and horizon bar	Bent parts, wear, and disfigurement.
Bearing plate assembly	Bends, breaks, or distortion of bearing plate; excessive wear in bushings.
Gears, gear clusters and shafts	Stripped gear teeth; bent or distorted shafts.
Springs	Bends, distortion, or signs of fatigue due to stress.
Bearings	Noisy, rough, or binding.

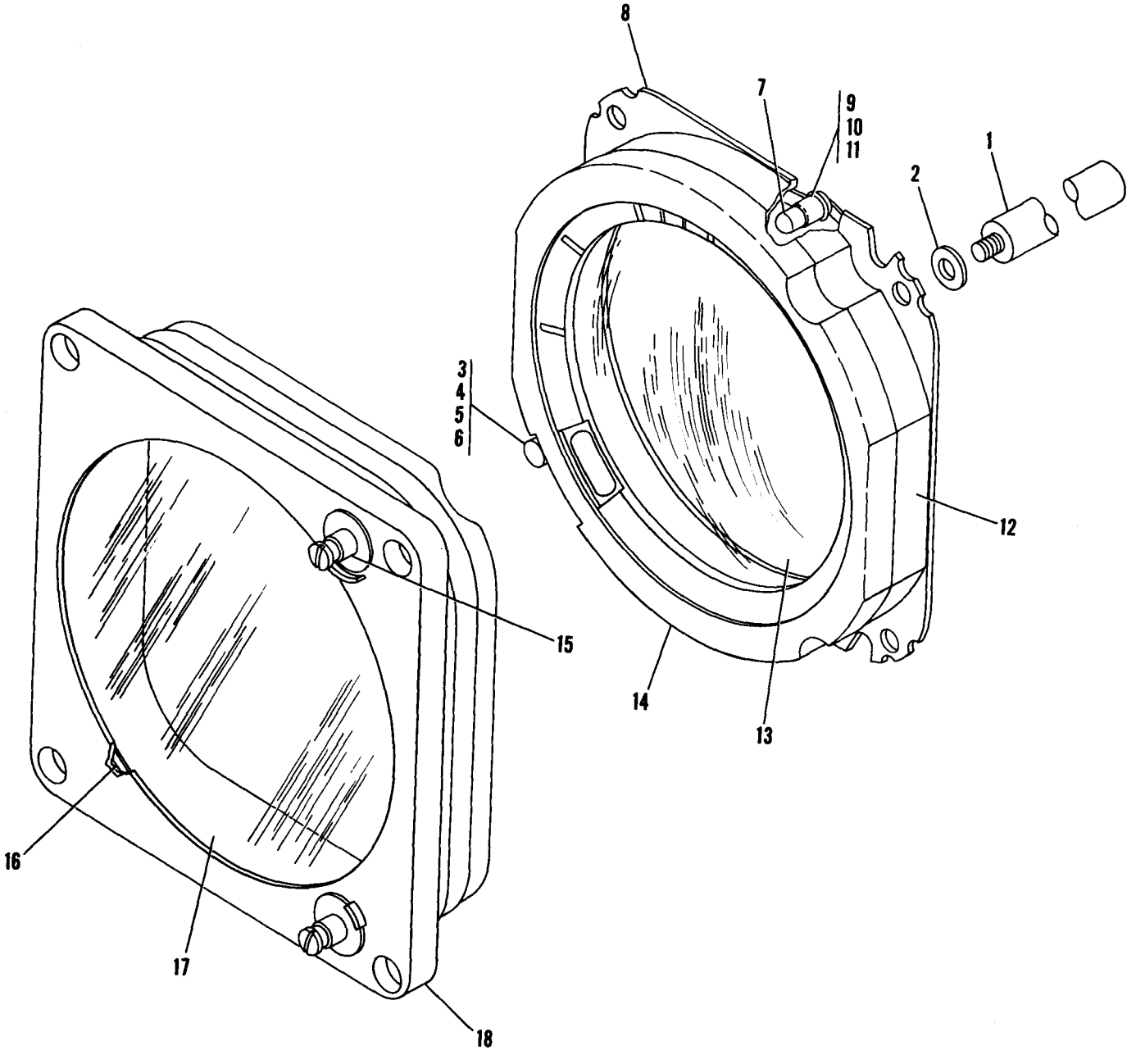


Figure 2-7. Front End Assembly.

CAUTION

Do not attempt to repair damaged or dirty electrical conductors. These should be replaced.

c. Machined Surfaces. Burrs and deep scratches must be removed from machined surfaces. Where there is movement between surfaces, they must be visibly perfect. Use polishing powder (item 3, table 1-4) to smooth defective surf aces.

d, Soldered Connections. Make all soldered connections in accordance with the following:

(1) Secure the wire mechanically whenever possible before soldering. Use only resin core solder.

(2) Clean the part thoroughly with alcohol to remove excess resin.

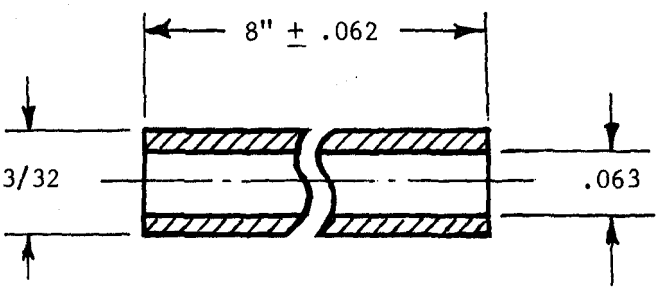


Figure 2-8. Fabrication Instructions for Evacuation Tube.

(3) Do not soften or char the insulation. Insulation must be more than 1/16 in. from soldered connections.

CAUTION

Do not drop solder, resin, flux, or other foreign materials into the vertical gyro indicator. Inspect carefully after soldering.

e. Ball Bearings. Replace all worn or defective bearings.

f. Hardware. Replace all hardware with stripped or damaged threads.

g. Evacuation Tube. Replace tube if corroded, distorted, or damaged, Manufacture tube from copper tube (item 8, table 1-4) in accordance with figure 2-8.

2-5. Lubrication.

Bearings are the only parts that require lubrication. When necessary, lubricate very sparingly, using low temperature lubricating oil (item 4, table 1-4).

2-6. Painting Requirements.

Table 2-2 provides the only painting requirements.

Table 2-2. Painting Requirements

ITEM NAME	PAINT TYPE AND SPECIFICATION	METHOD OF APPLICATION	NO. OF COATS	NOTES
Case	Zinc Cromate Primer, MIL-P-8585	Spray	1	Exterior only
Case	Black Enamel, MIL-E-5556, Color Code: 37038	Spray	As required	Exterior only

2-7. Reassembly.

Reassemble components of the remote attitude indicator in accordance with the following procedures and referenced illustrations.

a. Assembly of Front End Assembly.

(1) Install two resistors (15, fig, 2-7), glass cover (17), and retaining ring (16) in bezel (18).

(2) Test bezel subassembly at this point using a mixture of the filling medium (table 1-1 **),** The leakage at 1 atmosphere pressure differential should not exceed 0.522 micron cubic feet per hour.

(3) Assemble dished lens (13) to mask (14) using adhesive (item 6, table 1-4) at four equidistant places.

(4) Install six terminal lugs (11) and bank dial scale (12).

(5) Assemble terminal board (8) to assembly using six screws (9) and lockwashers (10).

(6) Install incandescent lamp (7) in bank dial assembly and install flag (6).

(7) Install flag clamp (3) using two screws (4) and lockwashers (5).

(8) Install four flat washers (2) and four posts (1).

b. Assembly of Roll Servo Assembly.

(1) Install two bearings (58, fig. 2-5) in bearing plate (55).

(2) Install four screws (56) and lockwashers (57) in bearing plate (55) and thread screws into four gear plate posts (59). Do not tighten screws (56).

(3) Install gear clusters (60 and 61) as shown in figure 2-5.

(4) Assemble two bearings (66) to bearing plate (62), and carefully align bearing plate (62) with previously assembled speed decreaser assembled speed decreaser assembly components. Attach bearing plate (62) and entire speed decreaser assembly to servo plate assembly (67), using two screws (64) and two lockwashers (65). Thread screws (63 and 64) into gear plate posts (59). Do not tighten screws.

(5) Refer to figure 2-5 and tighten all four screws (56). Now tighten screws (64). (Screws (64) are designated “Y” in fig. 2-9). Check that gears (60 and 61, fig. 2-5) can run freely. Do not tighten screws (63) (Screws 63 are designated “X” in fig. 2-9). Screws (63) should be engaged for. at least 1/16” of threads.

(6) With “B” shaft assembly (fig, 2-9) locked, shaft “C” should be free and non-sticking. Replace gear clusters if backlash is excessive.

(7) Install slip ring (49) on gear shaft assembly (50) and install gear shaft assembly using four screws (52), flat washer (53), and pin (51).

(8) Install insulator (44), Install trunnion block (45) using four screws (46), four washers (47), and four nuts (48),

(9) Install terminal board (40) using two screws (41), two washers (42) and two washers (43). This completes the yoke assembly.

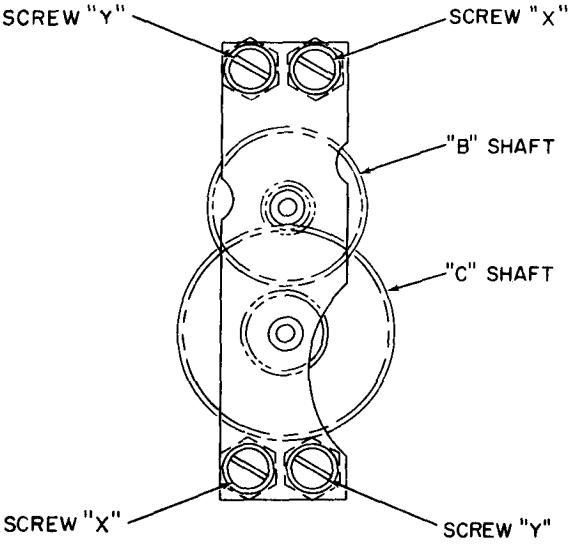


Figure 2–9. Speed Decreaser Adjustments.

(10) Install spur gear (39) and tighten setscrew (11). Load spur gear by rotating gear approximately three teeth and then inserting a locking pin. (This pin is temporarily installed.)

(11) Install bearings (38) and (29).

(12) Install bearing housing (33) using screws (34) and (35), two screws (36), and lockwashers (37).

(13) Install yoke (54).

(14) Install shims (32) and thrust washer (31). Secure with retaining ring (30).

(15) Remove locking pin from spur gear (39).

(16) Referring to figures 2-5 and 2-9, position the speed decreaser so that there is minimum backlash or binding of speed decreaser gears (60 and 61, fig. 2–5). Then tighten both “X” screws (fig. 2–9). Again check gears for minimum backlash and binding. If necessary, loosen “X” screws and repeat adjustment to obtain required results.

(17) Install brush block assembly (22 and 25, fig, 2–5), using two screws (23) and ‘two washers (24).

(18) Install eight terminal studs (19) using eight washers (21) and eight nuts (20).

(19) Install two capacitors (16), two capacitors (17) and two resistors (18).

(20) Install synchro control transformer (7) using two screws (8), two washers (9) and two clamps (10).

(21) Install tachometer generator motor (12) using two screws (13), two washers (14) and two clamps (15).

(22) Install power transformer (4) using two screws (5) and two washers (6).

(23) Install connector plate assembly (1) using two screws (2) and two washers (3).

c. Assembly of Electronic Control Amplifier. Reassemble as necessary.

NOTE

When installing heat sink (10, fig. 2-4), on transistors, make certain that the beveled edge of each heat sink faces the edge of the printed circuit board.

d. Assembly of Electronic Components Assembly. Reassemble as necessary.

e. Assembly of Pitch Servo and Spheroid Assembly.

(1) Install two bearings (44, fig. 2-6) in bearing plate (41).

(2) Install four screws (42) and lockwashers (43) in bearing plate (41) and thread screws into four gear plate posts (38). Do not tighten screws (42).

(3) Install gear clusters (39 and 40).

(4) Assemble two bearings (37) to bearing plate (38), and carefully align bearing plate (33) with previously assembled speed decreaser assembly components. Attach bearing plate (33) using two screws ($34), two screws (35) and four lockwashers (36). Thread screws (34 and 35) into gear plate posts (38). Do not tighten screws

(5) Refer to figure 2-6 and tighten all four screws" (42). Now tighten two screws (34). (Screws 34 are designated "X" in figure 2-9.) Check that gears (39 and 40, fig. 2-6), can run freely. Do not fully tighten screws (35). (Screws (35) are designated "Y" in figure 2-9.) Screws (35) should be engaged for at least 1/16" of threads.

(6) With "B" shaft assembly (fig, 2-9) locked, shaft "C" should be free and non-sticking. Replace gear clusters if backlash is excessive.

(7) Install motor tachometer generator (28, fig. 2-6) and control synchro (29) using two rim clenching clamps (32), two washers ***(31)*** and two screws (30) for each.

(8) Install spur gear assembly (24 through 27) with setscrew (23). Load spur gear assembly by rotating gear approximately three teeth and then installing locking pin. (Locking pin is installed temporarily.)

(9) Install counterweight (21) with two screws (22).

(10) Install collar (19) with two setscrews (20).

(11) Install bearing (18), spur gear (17), bearing (15), and shaft collar (13). Secure shaft collar (13) with setscrew (14).

(12) Install endbell (16) and bearing (15).

(13) Remove locking pin from spur gear assembly (24 through 27). Referring to figures 2–6 and 11, position the speed decreaser so that there is minimum backlash and binding of gears (39 and 40, fig. 2–6). Then tighten both "Y" screws (figure 11). Again check the gears for minimum backlash and binding. If necessary, loosen "Y" screws and repeat adjustment to obtain the required results.

(14) Install lug (8) on reflector (12) using screw (9), washer (10), and nut (11).

(15) Install lamp (6) and electrical contact (7).

(16) Install assembled reflector components to mounting plate (45) with two screws (3), two washers (4), and two washers (5).

NOTE

If the gears or synchro of the pitch servo and spheroid assembly have been previously disassembled, refer to the adjustment procedures of paragraphs 2-8a and 2–8b before performing step 17. If not, proceed directly to step 17.

(17) Install both spheroids (1) with six screws (2).

f. Assembly of Attitude Indicator Subassembly.

(1) Secure dial pointer (20, fig. 2-2) to front end assembly (21).

(2) Install two brackets (18) using four screws (19), (Be certain to align brackets with lines that were penciled during disassembly.)

(3) Install pitch servo and spheroid assembly (14) using two clamping blocks (17), four washers (16), and four screws (15).

(4) Install two electronic control amplifiers (9), roll servo assembly (10), and electronic components assembly (1) using eight sleeve spacers (6), two terminal studs (7), two posts (8), two posts (11), four washers (13) and screws (12), four washers (5), four washers (4), two screws (3), and two screws (2).

(5) Apply spot ties (item 5, table 1-4) to posts (11).

g. *Final Assembly of Remote Attitude Indicator.*

(1) Mount connector gasket (10, fig. 2-1) to attitude indicator subassembly (11).

(2) Attach dial (9) using adhesive (item 6, table 1-4) and install knobs (7). Secure with four setscrews (8).

NOTE

If the gears, synchro, or yoke assembly of the roll servo assembly have been previously disassembled, perform the adjustment procedures of paragraph 2-8c before performing step 3. If not, proceed directly to step 3.

(3) Install evacuation tube (6), identification plate (5), and insulator (4).

(4) Refer to Section III and perform the final test procedures. When all tests are successfully completed, perform the remaining reassembly procedures below.

(5) Construct the solderband (3) as follows: Cut off about 5-1/2 inches of solderband (MV204-4). Fold band along longitudinal axis as shown in 'A' of figure 2-10. Now shape the band by wrapping it around solderband block (table 1-3). (At the corners of the block, the base of the band must be slit so that the band can be bent.) When the solderband is completed, trim off excess band. The completed solderband is shown in 'B' of figure 2-10.

(6) Solder base of solderband (8) to case (1).

(7) Install case (1), Wrap adhesive tape (item 7, table 1-4) around case to hold case to chassis.

(8) Cut off approximately 11 inches of tearband (MAT305). Solder the band to case (over adhesive tape) to form the solderband (2).

2-8. Adjustment Before Completion of Reassembly.

The pitch servo and spheroid assembly and the roll servo assembly may require adjustment before they are completely reassembled. Refer to paragraphs 2–7e and 2–7g to determine if the adjustments are applicable.

a. Pitch-Synchro Null Adjustment. To null the output of the pitch synchro, proceed as follows:

(1) Connect test fixture TE244 (with T-311 phasing unit) to 115-vac, 400-cps source. Set switch S1 to off position.

(2) Unsolder the leads of the pitch synchro from the indicator. Connect the leads to the test-fixture terminals. Make certain that each lead is connected to the terminal of the same color (red lead to terminal marked RED, etc.).

(3) Connect AC Voltmeter (TS-352 B/U) across terminals COM and M1 on the test fixture,

(4) On the test fixture, set switch S1 to the on position,

(5) Rotate the pitch synchro for a minimum null on the voltmeter, while holding 'A' as shown in figure 2-11.

(6) Connect the voltmeter to terminals COM and M2 and observe the voltmeter indication.

(7) On the test fixture, press switch S2 and observe that the voltmeter indication decreases.

(8) If the indication increases, rotate the pitch synchro 180 degrees and repeat steps 3 through 7. Then place a small dot of paint as shown in figure 2-11.

(9) Remove the pitch synchro from the test fixture and resolder to the indicator.

b. Pitch-Sgnchro Fine Adjustment. To perform the fine adjustment of the pitch synchro, proceed as follows:

(1) Connect the indicator to the test equipment, as shown in figure 3-3. Apply power

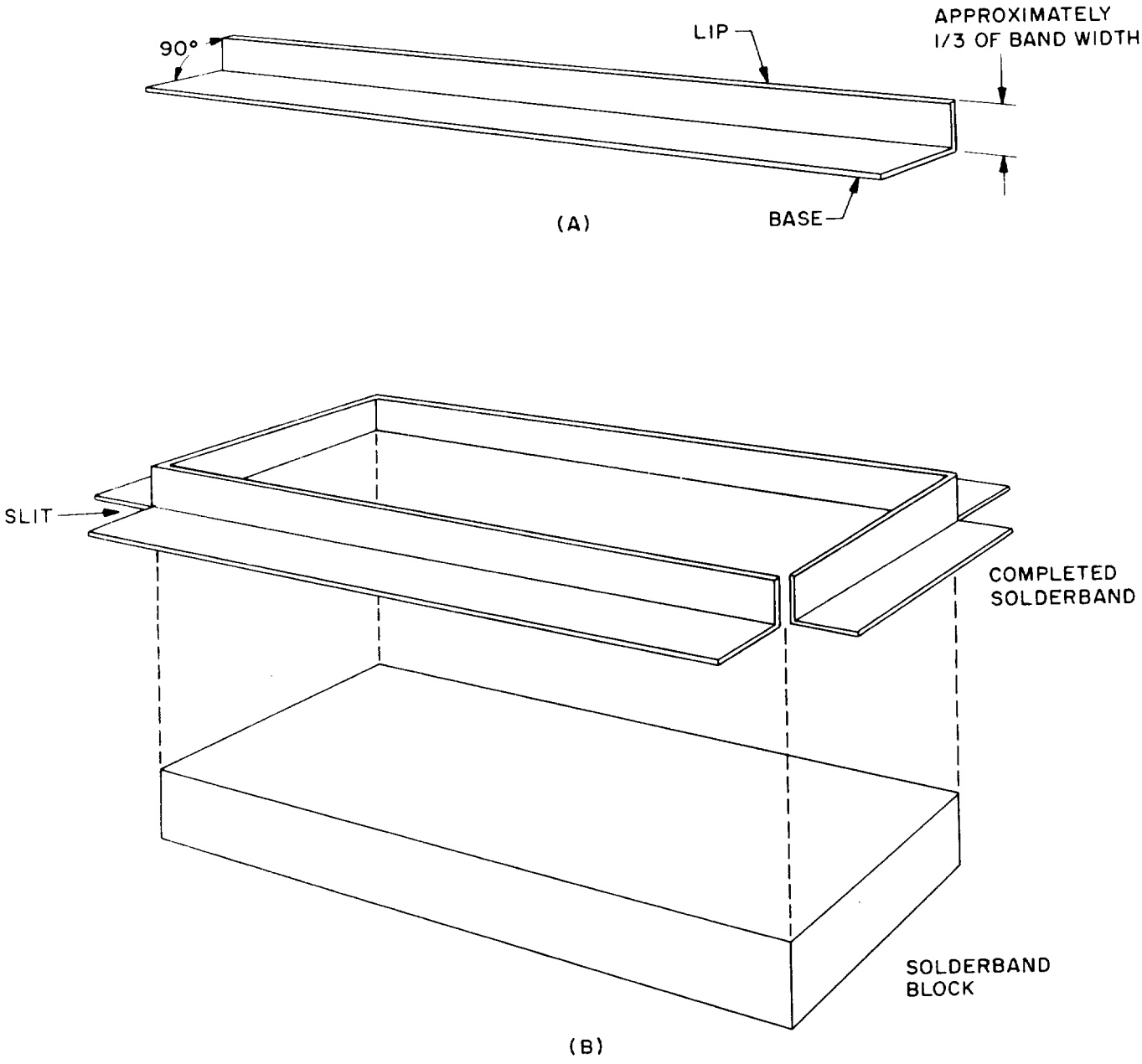


Figure 2–10. Construction of Solderband.

(2) Set switch S6 to PITCH.

(3) Adjust test synchro for 180°.

(4) Adjust the pitch trim knob for minimum voltage, as measured at pin C. Do not disturb this setting once it is made.

(5) Loosen the two screws (15, fig. 2-2) on either side of the sphere, using an offset, flat-tip screwdriver.

(6) Insert the screwdriver into the inner shaft of the pitch servo and spheroid assembly and rotate the shaft for a zero pitch indication on the indicator.

(7) Tighten screws (15, fig. 2–2). Make certain that the screws are tightened evenly.

(8) Recheck the pitch for zero indication, ± 1/4°. Repeat steps 5 through 8, if necessary.

(9) Remove test equipment. Complete the assembly procedures for the pitch servo and spheroid assembly (paragraph 2–7e, step 17).

c. Roll Synchro Adjustment. To adjust the roll synchro, proceed as follows:

(1) Connect the indicator to the test equipment, as shown in figure 3–3. Apply power.

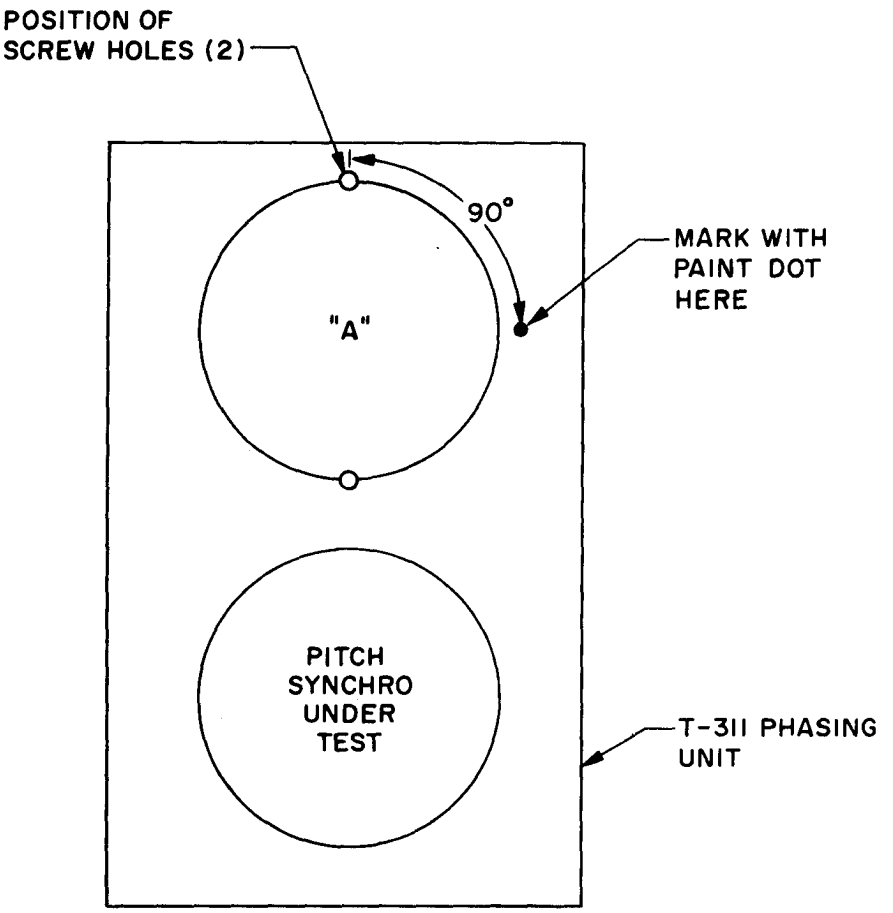


Figure 2-11. Pitch Synchro Null Adjustment.

(2) Set switch S6 to ROLL.

(3) Set test synchro to 180°.

(4) Adjust the pitch trim knob for minimum voltage, as measured at PIN N. Do not disturb this setting once it is made.

(5) Loosen the roll synchro (7, fig. 2-5) and rotate for an indicator display of zero roll.

(6) Retighten the synchro.

(7) Again check the indicator display for a roll of 0° ± 1/4°. Repeat stepe 5 through 7, if necessary.

(8) Remove test equipment. Complete the assembly procedures for the indicator (paragraph 2-7g, step 3).

2-9. Filling Procedures.

CAUTION

During the filling procedures, make certain that the following conditions are met:
Evacuation of both the indicator and the chamber must be performed so that the internal indicator pressure does not exceed 5 inches Hg (2.5 psi) above the chamber pressure.
The baking temperature must always be 70°C ± 2°C (158°F ±4°F).
The vacuum pressure during the baking procedure must be 28 inches Hg or greater.

a. Preheat the evacuation chamber to 70°C ±2°C (158° F ±4° F).

b. Place indicator in chamber.

c. Apply vacuum and bake indicator for 5 minutes,

d. Fill indicator with filling medium (table 1-1) and bake for 25 minutes.

e. Repeat steps *c* and *d.*

f. Apply vacuum to indicator and then bake for 1 hour and 45 minutes.

g. Fill indicator with filling medium and bake for 15 minutes.

h. Repeat steps *f* and *g*.

i. Repeat steps *c* and *d* twice. At this point, six cycles of evacuating and filling have been completed and the indicator should be filled with gas.

j. Open chamber and seal indicator vent.

k. Close chamber and bake the sealed indicator at ambient pressure for 15 minutes.

NOTE

The following fog test must be performed within 30 seconds after the indicator is removed from the chamber.

l. Remove indicator from chamber, hold face up, and rub an ice cube on the indicator glass face for 55 to 65 seconds. When the cube is removed, observe that there is no evidence of fogging on the inside of the glass.

m. Test the indicator for leakage. The leak rate should not exceed 0.522 micron cubic feet per hour at one atmospheric pressure differential.

NOTE

After the filling procedures are successfully completed, repeat the final test procedures in Section III.

SECTION III

FINAL TEST PROCEDURES

3-1. Final Testing.

These tests should be initially performed to determine the extent of overhaul required, and also after overhaul or any major repair to determine acceptability of the remote attitude indicater. The tests are arranged in a prescribed sequence. If for any reason, tests are stopped, the remote attitude indicator must be retested in full sequence. Refer to figures 3-1 and 3-2 for circuit-element values and location, and for any troubleshooting procedures that may be necessary. Unless otherwise specified, all tests must be performed under the following standard conditions:

a. Temperature . . . Room ambient 25 ± 10°C

b. Attitude ------- Normal ground

c. Humidity -----Room ambient up to 90% relative

3-2. Preliminary Starting.

With all power off, connect the indicator as shown in figure 3-3. Apply power. The word OFF should disappear on the face of the indicator.

3-3 Pitch and Roll Trim Tests.

a. Set switch S6 to PITCH and set the test synchro to 180°.

b. Turn the pitch trim knob 1/4 turn CW from zero position. The horizon line should move up. Rezero the pitch indication with the test synchro. The test synchro shall require at least 8° shift, from the 180° position.

c. Turn the pitch trim knob 1/2 turn CCW from zero position, The horizon line shall move down. Rezero the pitch indication with the test synchro. The test synchro shall require at least 16° shift, from the 180° position.

d. Return the test synchro to 180° and the pitch trim knob to its zero position. The indicator shall indicate zero pitch within 1/2 of the horizontal line width.

e. Set switch S6 to ROLL and set the roll trim knob to its maximum CW position. The airplane shall indicate right bank (right wind below horizon line).

f. Rezero the roll indication with the test synchro. The. test synchro shall require 8° to 20° shift.

g. Set the roll trim knob to its maximum CCW position and rezero the roll indication with the test synchro. The test synchro shall require between 8° and 20° shift.

h. Turn power off and connect a second indicator to the test fixture (fig. 3-3). Set the roll and pitch trim knobs at zero.

i. Apply power, set switch S6 to PITCH and zero the pitch indication of the second indicator with the test synchro.

j. Set the pitch trim knob of the first indicator to its maximum CW position and rezero the pitch indication of the second. It shall not require a change in test synchro of more than ±1/2°.

k. Repeat steps i and j except set pitch trim knob to maximum CCW position.

1. Remove power from test setup.

m. Remove the second indicator from the test setup.

3-4. Pitch and Bank Zero Tests.

a. Set switch S6 to the PITCH position and set the pitch indication to zero. The test synchro shall read 180° & 1/2°.

b. Move indication off zero by several degrees and reset the pitch indication to zero. The test synchro shall read 180°& 1/2° and be within ±1/4° of the value determined in step a.

c. Set switch S6 to the ROLL position and set the roll indication to zero. The test synchro shall read 180° ±1/2°.

d. Repeat step b except set roll indication to zero,

3-5. Sensitivity Tests.

a. With the pitch and roll trim knobs in their zero positions and switch S6 to ROLL, move the test synchro in right bank until the indicator display moves. The test synchro shall read not more than 180.25°(Return the test synchro to 180° and turn it for left bank until the indicator display moves. The test synchro shall read not less than 179.75°.

b. Repeat step a for the pitch indication with switch S6 to PITCH position, The test synchro shift shall be not more than 1/4°.

c. Repeat steps *a* and *b* with the pitch and roll trim knobs in their maximum CW positions except the test synchro shall not shift more than 1/2° in each direction.

d. Repeat steps *a* and *b* with the pitch and roll trim knobs in their maximum CCW positions except the test synchro shall not shift more than 1/2° in each direction.

3-6. Follow-Up Rate Tests.

a. Set switch S6 to PITCH and set the test transmitter to drive its transmitter at 90° per second (15 RPM). The error signal at the PIN N test point shall not exceed 1.65 volts ac when measured with a voltmeter,

b. Set switch S6 to ROLL and set the test transmitter to drive its transmitter at 300° per second (50 RPM). The error signal at the PIN N test point shall not exceed 3.31 volts ac when measured with a voltmeter.

c. Return switch S6 to TE 176A.

3-7. Follow-Up Accuracy Tests.

a. Set the switch S6 to ROLL and vary the test synchro for an indicator reading of 10° right bank. The test synchro shall read 190 ± 1°.

b. Repeat step a for 30° left bank, The test synchro shall read 150 ± 1°.

c. Repeat step *a* for 60° right bank. The tekt synchro shall read 240 ± 2.0°.

d. Repeat step *a* for 60° left bank. The test synchro shall read 120° ± 2.0°.

e. Repeat step *a* for 90° right bank. The test synchro shall read 270 ± 2.0°.

f. Set switch S6 to PITCH and vary. the test synchro for an indicator reading of 10° climb. The test synchro shall read 190 ± 1°.

g. Repeat step *f* for 20° dive. The test synchro shall read 160 & 1°.

h. Repeat step *f* for 40° climb. The test synchro shall read 220 ± 2.0°.

i. Repeat step *f* for 60° dive. The test synchro shall read 120 ± 2.0°.

j. Repeat step *f* for 90° climb. The test synchro shall read 270° ± 2.0°.

3-8. Gimbal Freedom Tests.

a. Repeat follow-up rate tests given in paragraph 3–5, except monitor test points at PIN N and PIN C with a VTVM.

b. The indicator should follow smoothly without sticking and overshooting, The ac voltage at PIN N should not vary more than ± 0.33 volts and the ac voltage at PIN C should not vary more than ± 0.6 volts.

c. Return S3 to TE 176A and set the test synchro to 180°.

3-9. Power Warning Indicator.

a. Remove power. The word OFF should appear on the indicator face.

b. Reapply power. The flag should cover the word OFF.

c. Operate switch S5. The word OFF should appear.

3-10. Lighting Tests.

a. Connect the indicator as shown in figure 3–4 and apply power.

b. Set dc power for 28.00 ± .05 vdc.

c. Visually compare the two indicators displays. They shall appear identical in color.

d. Set the power for 15.00 ± .05 vdc.

e. Visually compare the two indicators displays. There shall be no visual difference in brightness between the indicators.

3-11. Sense Tests.

a. Connect the indicator as shown in figure 3-3, and apply power.

b. Set switch S2 to 180° position and test synchro to 180°.

c. Set switch S6 to PITCH. The indicator should indicate zero pitch and roll and the bank pointer should be pointing up.

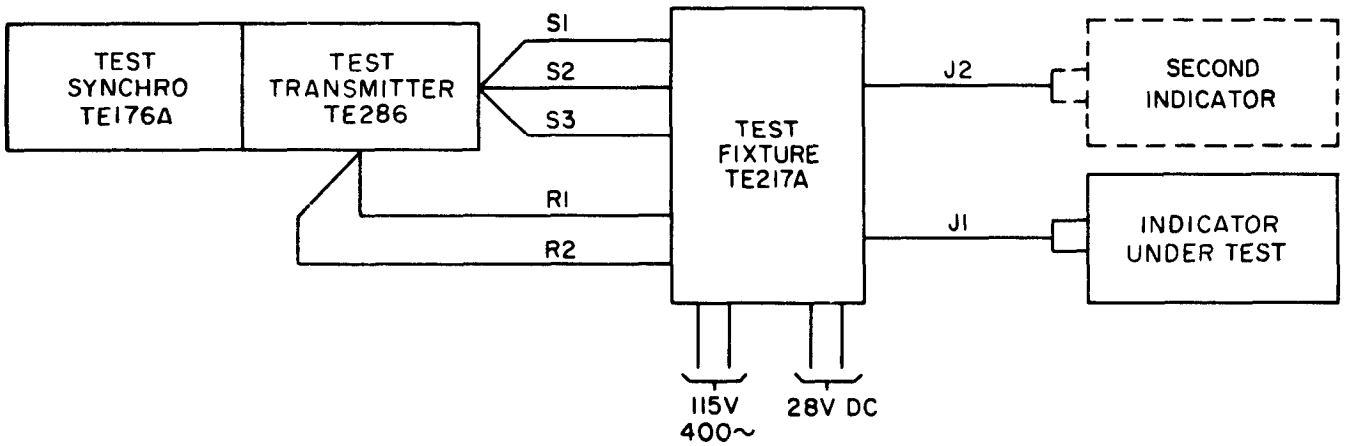


Figure 3–3. Normal Test Setup.

d. Increase scale setting of test synchro approximately 10°. The indicator should show a climb condition.

e. Set switch S6 to ROLL. Indicator should show a right bank.

3-12. Damping Selection and Sensitivity Test.

a. Connect light bulb to test points TP1 and TP2 and indicator to TE 217A. Set switch S4 to position 1 and apply power.

b. Observe that light bulb appears dim. This indicates that there are no shorts in the indicator. If light bulb appears bright, there is a short and power should be removed.

e. If there are no shorts, set switch S4 to position 2 and the pitch and roll trim knobs for nulls at PIN C and PIN N test points respectively.

d. With power off connect the unit under test as shown in test setup (fig. 3-3) except replace test transmitter with TE 218 test. fixure. Connect green, yellow and blue terminals of TE 226 (resistance decade box) to terminals 7, 8, and 37, respectively, on electronic components assembly.

e. Connect VTVM to PIN N test point and set switch S6 to ROLL.

f. Set TE 218 to drive its transmitter at 300° per second (50 RPM) and adjust the TE 226 for a VTVM reading at PIN N test point of 3.0 + .2 -.3 volts ac.

g. With the TE 226 still in the circuit, at the setting determined in step *f*, remove the TE 218 and reconnect the test transmitter.

h. Set the pitch and roll trim knobs to their zero positions and set test transmitter to 180° (approach the 180° setting in the CW direction).

i. Slowly move the test transmitter CW and observe the voltage at PIN N test point. This null voltage will increase slowly, then suddenly drop in value. Record reading at the moment of voltage drop.

j. Reverse direction and watch for the same type of rise and drop in null voltage. Record the test transmitter reading. The difference between the test transmitter reading obtained in step *i* and the reading obtained in this step shall not exceed 30 minutes. Record this difference as sensitivity.

k. Install two RC20GF–J resistors as R105 and R107 of the same value as shown on the TE 226 decade box.

NOTE

If both values above and below the ideal TE 226 setting result in too high or too low a null voltage, use the high value resistor of the lower setting and the low value resistor of the higher setting. For example: If the TE 226 setting falls between the 7.5/2.4 setting and the 8.2/1.8 setting and both result in an out of tolerance null, voltage at PIN N or PIN C test points, then use the 7.5/1.8 combination.

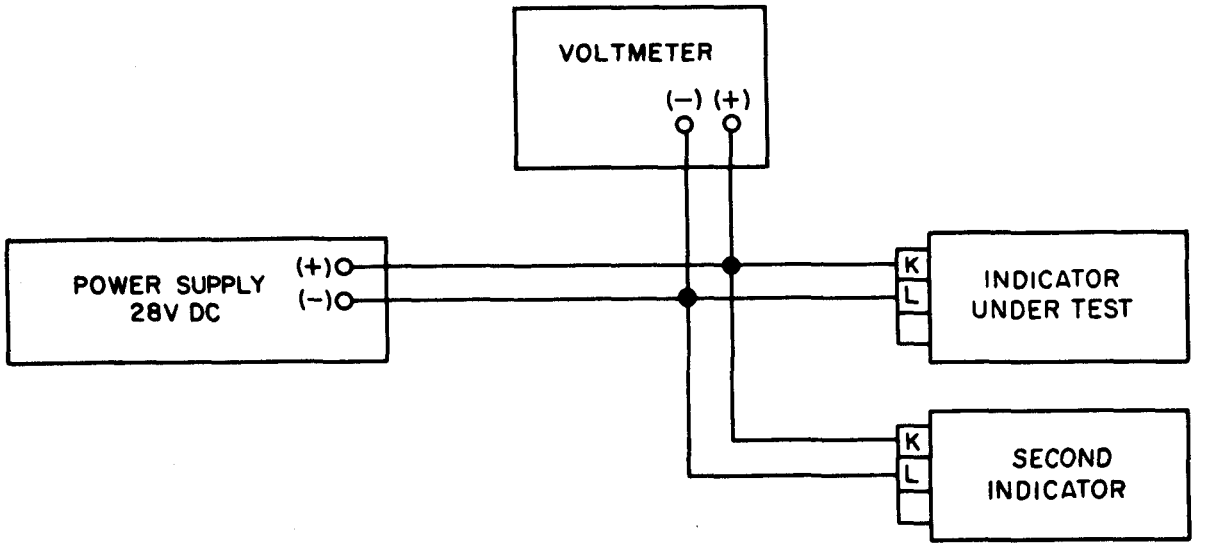


Figure 3–4. Lighting Test Setup.

l. Set switch S6 to PITCH and reconnect the green, yellow, and blue terminals of TE 226 to terminals 10, 11, and 38 respectively on the electronic components assembly.

m. Remove test transmitter and install the, TE 218.

n. Set TE 218 to drive its transmitter at 90° per second (15 RPM) and connect VTVM to monitor the PIN C test point.

o. Adjust TE 226 for a VTVM reading at PIN C test point of 0.5 ± 0.1 volts ac.

p. Remove TE 218 and install test transmitter.

q. Set test transmitter to 180° (approach the 180° setting in the CW direction).

r. Repeat steps i and j.

s. Repeat step k for resistors R106 and R104.

t. Install a protective cover over the potentiometer knobs attached by 10/32 **x 1** 5/8 machine screws and 10/32 nuts. Two fabricated spacers made of 5/16" aluminum tubing 1 3/16" long will be required also. The protective cover can be fabricated from .040" aluminum stock 5 1/4" by 2 3/4". Bend the 2 3/4" dimension at right angle. Drill 2 holes in the 1 1/2" side to match the holes in the indicator. Insert the screws through the bracket, the spacers and the indicator and attach the two nuts (fig. 3-5).

☆ U. S. GOVERNMENT PRINTING OFFICE: 1975--665689/99

SECTION IV

PRESERVATION, PACKAGING, PACKING, AND MARKING REQUIREMENTS

Preservation, packaging, packing, and marking requirements for remote attitude indicator, part number DSA 274, will be in accordance with figure 4-1.

PRESERVATION, PACKAGING, PACKING AND MARKING REQUIREMENTS

NOMENCLATURE	STOCK NUMBER
Indicator, Attitude, Remote	6610-910-0210
	PART NUMBER: DSA 274

NET WEIGHT	DIMENSIONS	GROSS WEIGHT	CUBIC FEET
4 lbs	10.5 x 10.5 x 12.9	12.5 lbs	.5

All specifications and standards applicable to the requirements herein shall be the issue in effect on date of invitation for bids.

PACKAGING

☒ LEVEL A ☐ LEVEL C

☒ PACKAGING SHALL BE IN ACCORDANCE WITH SPECIFICATION MIL-P-116, THE FOLLOWING DETAILED REQUIREMENTS SHALL APPLY:

UNIT PKG QTY	METHOD	PRESERVATIVE	WRAP	DUNNAGE	CONTAINER
1	IId	None	MIL-A-148	PPP-C-1120 or MIL-C-81013	MIL-D-6054

☐ OTHER

☐ PRESERVATION AND PACKAGING SHALL BE SUCH AS TO PREVENT DETERIORATION OR DAMAGE DURING HANDLING AND SHIPMENT TO THE FIRST DESTINATION

PACKING ☐ LEVEL A ☒ LEVEL C

☐ ITEMS SHALL BE PACKED IN CONTAINERS CONFORMING TO SPECIFICATION NO.

☐ PLYWOOD USED SHALL BE STANDARD GRADE WITH EXTERIOR GLUE OF GROUP B OF NN-P-530. THIS PLYWOOD SHALL BE TREATED WITH A WATER REPELLANT CONFORMING TO TT-W-572. PLYWOOD CONTAINERS SHALL BE CONSTRUCTED WITH FILLER CLEATS ON ALL PANELS: EITHER BE BEVELED OR NOTCHED 1/4 INCH ON THE BOTTOM OF EACH END, OR SHALL BE OF SUCH LENGTH AS TO LEAVE A 1/4 INCH CHANNEL FOR DRAINAGE ON EACH END, PER PPP-B-601.

☒ ITEM SHALL BE PACKED IN A MANNER TO INSURE CARRIER ACCEPTANCE AND SAFE DELIVERY AT DESTINATION. CONTAINERS SHALL BE IN ACCORDANCE WITH UNIFORM FREIGHT CLASSIFICATION RULES OR REGULATIONS OF OTHER CARRIERS APPLICABLE TO THE MODE OF TRANSPORTATION.

☐ OTHER.

MARKING

☒ a. MARKING FOR SHIPMENTS (1968 JUN)
THE CONTRACTOR SHALL MARK ALL SHIPMENTS UNDER THIS CONTRACT IN ACCORDANCE WITH THE EDITION OF MIL-STD-129, "MARKING FOR SHIPMENT AND STORAGE," IN EFFECT AS OF THE DATE OF THIS SOLICITATION. (ASPR 7-104.68) IN ADDITION, PART NUMBER AND SERIAL NUMBER SHALL BE MARKED ON UNIT CONTAINER.

☐ b. ADDITIONAL MARKING REQUIREMENTS. EACH INTERIOR PACKAGE SHALL BE MARKED ON AT LEAST TWO (2) SIDES WITH A SILHOUETTE OF THE AIRCRAFT. (WHERE THE SIZE OF THE UNIT CONTAINER IS TOO SMALL TO PERMIT THE APPLICATION OF TWO (2) LABELS, A SINGLE LABEL SHALL BE APPLIED. IF THE PACKAGE IS TOO SMALL FOR ONE (1), NONE WILL BE REQUIRED.) WHEN THE UNIT CONTAINER IS THE SHIPPING CONTAINER AND THE ITEM IS PACKED "LEVEL A", EACH CONTAINER SHALL BE MARKED ON TWO (2) SIDES, TOP AND ONE (1) END WITH A SILHOUETTE OF THE AIRCRAFT. THE SIZE OF THE SILHOUETTE MAY VARY, BUT WILL BE LARGE ENOUGH TO FACILITATE EASY VISUAL IDENTIFICATION WITHOUT OBSCURING OTHER MARKINGS. THE CONTRACTING OFFICER WILL SUPPLY LABELS ON REQUEST. THE NOMENCLATURE OF THE MAJOR COMPONENTS SHALL BE EXTENDED TO INDICATE THE END ITEM APPLICATION AND THE POSITION OF THE PART; e.g., GEAR BOX, MAIN FOR (APPLICABLE AIRCRAFT); WING ASSEMBLY, RIGHT, FOR (APPLICABLE AIRCRAFT).

☒ c. MATERIEL CONDITION MARKING SHALL BE APPLIED IN ACCORDANCE WITH PARAGRAPH 5.5.17 OF MIL-STD-129. A MATERIEL CONDITION TAG OF THE APPLICABLE TYPE WILL BE SECURELY ATTACHED DIRECTLY TO ALL UNINSTALLED OR STORED AERONAUTICAL OR AIR DELIVERY ITEMS. WHEN SUCH ITEMS ARE PLACED OR STORED IN CARTONS, PACKAGES, CRATES OR METAL SHIPPING CONTAINERS, A DUPLICATE MATERIEL CONDITION TAG OR LABEL WILL BE SECURELY ATTACHED TO THE EXTERIOR OF THE PACKAGE OR CONTAINER IN SUCH A MANNER THAT WILL AFFORD MAXIMUM PROTECTION FROM HANDLING AND WEATHER. TAGS WILL BE COMPLETED EITHER BY TYPEWRITTEN OR PRINTED BLACK LEAD PENCIL ENTRIES. ITEMS OF A COMMON OR NONTECHNICAL NATURE (i.e., COMMON HARDWARE, BULK MATERIALS, ETC.) THE SERVICEABILITY OF WHICH IS OBVIOUS, AND THE IDENTITY AND INSPECTION REQUIREMENTS ADEQUATELY INDICATED BY COMMERCIAL TAGS, LABELS OR MARKINGS, MAY BE RECEIVED, STORED, ISSUED OR SHIPPED WITHOUT MATERIEL CONDITION TAGS.

☐ d. OTHER

Figure 4–1. Preservation, Packaging, Packing, and Marking Requirements.

APPENDIX A

REFERENCES

TM 38-750	The Army Maintenance Management System

APPENDIX B

REPAIR PARTS AND SPECIAL TOOLS LIST

(Current as of 1 December 1970)

Section I. INTRODUCTION

B-1. Scope.

This appendix. lists repair parts, special tools, test and support equipment, and ,maintenance supplies required for the performance of general support maintenance of the indicator, attitude.

B-2. General.

This Repair Parts and Special Tools Listing is divided into the following sections:

a. Repair Parts—Section II. A list of repair parts authorized for the performance of maintenance at the general support level in figure and item number sequence. Maintenance supplies (MSUP) are listed within the section in ascending Federal stock number sequence.

b. Special Tools, Test and Support Equipment-section III. A list of special tools, test and support equipment authorized for the performance at the general support level.

c. Federal Stock Number and Reference Number Index—Section IV. This section is divided as follows:

(1) A list of Federal stock numbers in ascending numerical sequence cross-referenced to the illustration figure and item number.

(2) A list of reference numbers in ascending alphanumerical sequence cross-referenced to the manufacturer's Federal supply code, illustration figure and item number.

8-3. Explanation of Columns.

The following provides an explanation of columns in the tabular lists in sections II and III:

a. Source, Maintenance and Recoverability Codes (SMR), Column 1.

(1) Source code indicates the selection status and source for the listed item. Source codes are:

CODE	EXPLANATION
P	Repair Parts, Special Tools and Test Equipment supplied from the GSA/ DSA, or Army supply system, and authorized for use at indicated maintenance categories.
P2	Repair Parts, Special Tools and Test Equipment which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.
P9	Assigned to items which are NSA design controlled: unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC Logistic System and which are not subject to the provisions of AR 380-41.
P10	Assigned to items which are NSA design controlled: special tools, test, measuring and diagnostic equipment for COMSEC support, which are accountable under the provisions of AR 380-41, and which are stocked and supplied by the Army COMSEC Logistic System.
M	Repair Parts, Special Tools and Test Equipment which are not procured or stocked, as such, in the supply system but are to be manufactured at indicated maintenance levels.
A	Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the re-

CODE	EXPLANATION
	quired assembly at indicated maintenance categories.
X	Parts and assemblies that are not procured or stocked because the failure rate is normally below that of the applicable end item of component. The failure of such part or assembly should result in retirement of the end item from the supply system.
X1	Repair parts which are not procured or stocked. The requirement for such items will be filled by the next higher assembly or component.
X2	Repair Parts, Special Tools, and Test Equipment which are not stocked and have no foreseen mortality. The indicated maintenance category requiring such repair parts will attempt to obtain the parts through cannibalization or salvage. The item may be requisitioned with exception data, from the end item manager, for immediate use.
G	Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above the DS and GS level or returned to depot supply level.

NOTE: Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded Xl and aircraft support items as restricted by AR 700-42.

(2) Maintenance code indicates the lowest category of maintenance authorized to install the listed item. The maintenance level codes are:

CODE	EXPLANATION
C	Crew or operator maintenance.
O	Organizational maintenance.
F	Direct support maintenance.
H	General support maintenance.

(3) Recoverability code indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are nonrecoverable, Recoverability codes are:

CODE	EXPLANATION
R	Applied to repair parts, (assemblies and components) special tools and test equipment which are considered economically reparable at direct and general support maintenance levels, When the item is no longer economically reparable, it is normally disposed of at the GS level. When supply considerations dictate, some of these repair parts may be listed for automatic return to supply for depot level repair as set forth in AR 710-50. When so listed, they will be replaced by supply on an exchange basis.
S	Repair Parts, Special Tools, Test Equipment and assemblies which are economically reparable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically reparable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T	Higher dollar value recoverable repair parts, special tools, and test equipment which are subject to special handling and are issued on an exchange basis. Such items will be repaired or overhauled at depot maintenance activities only. No repair may be accomplished at lower levels.
U	Repair Parts, Special Tools and Test Equipment specifically selected for salvage by reclamation units because of precious metal content, critical materials, high dollar value or reusable casings or castings.

b. Federal Stock Number, Column 2. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes, Items source coded A, M, X1, or X2 are not assigned a Federal stock number.

c. Description, Column 3. Indicates the Federal item name and any additional description of the item required. The description column contains the following subcolumns.

(1) *Reference number and manufacturer's code.* Indicates a part number or other

reference number for the listed item followed by the applicable five-digit Federal supply code for manufacturers, in parentheses.

(2) *Usable on code.* Not applicable.

d. Unit of Measure (U/M), Column 4. A 2-character alphabetical abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., FT, EA, PR.

e. Quantity Incorporated in Unit, Column 5. Indicates the quantity of the item used in the assembly. A "V" appearing in this column in lieu of a quantity indicates that a definite quantity cannot be indicated.

f. Thirty-day GS Maintenance Allowance, Column 6.

(1) The allowance column is divided into three subcolumns, Indicated in each subcolumn, opposite the first appearance of each item, is the total quantity of items authorized for the number of equipments supported. Subsequent appearances of the same item will have the letters "REF" in this column. Items authorized for use as required, but not for initial stockage, are identified with an asterisk (*) in the allowance column.

(2) The quantitative allowance for GS level of maintenance will represent initial stockage for a 30-day period for the number of equipments supported.

(3) Determination of the total quantity of parts required for maintenance of more than 100 of these equipments can be accomplished by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized allowance for 51-100 allowance column. Example: authorized allowance for 51-100 equipments is 40; for 150 equipments, multiply 40 by 1,50, or 60 parts required.

(4) The basis of issue for authorized special tools, test and support equipment is the number of end items of equipment supported.

g. one-year Allowance per 100 Equipments/ Contingency Planning Purposes, Column 7. Indicates the first appearance of each item, the total quantity required for distribution and contingency planning purposes. The range of items indicates total quantities of all authorized items required to provide for adequate support of 100 equipments for one year,

h. Depot Maintenance Allowance per 100 Equipments, Column 8. Not applicable.

i. *Illustration, Column 9.* Illustrations appear in the narrative portion of this manual. This column is divided as follows:

(1) *Figure number, column 9a.* Indicates the figure number of the illustration in which the item is shown. Appearances of the letters "MSUP" in this column indicate maintenance supplies located in section II; the letters "TOOL" indicate special tools located in section III.

(2) *Item number, column 9b.* Indicates the callout number to reference the item in the illustration.

B-4. Special Information.

a. Attaching parts are listed following the part (s) they attach and in the same indent. They are separated from the part(s) by the words "attaching parts" in the description column. When they attach an assembly which is broken down to show detail parts, the attaching parts are separated from the details of the assembly by the symbol "- - –*- ––." Details of the asembly are then indented one space to the right of their next higher assembly, which appears above the attaching parts.

b. Parts which require manufacture or assembly at a category higher than that authorized for installation will indicate in the source code column the higher category.

B-5. How to Locate 'Repair Parts.

a. When Federal Stock Number or Reference Number is Unknown:

(1) First. Find the exploded view illustration of the assembly or subassembly to which the repair part belongs.

(2) Second. Identify the repair part on the illustration and note the illustration figure and item number of the repair part.

(3) *Third.* Using the Repair Parts Listing, find the figure and item number listed in the illustration column.

b. When Federal Stock Number or Reference Number is Known:

(1) First. Using the Index of Federal Stock Numbers and Reference Numbers, find the pertinent Federal stock number or reference number. This index is in ascending Federal stock

number sequence followed by a list of reference numbers in ascending alphanumerical sequence, cross-referenced to the illustration figure and item number.

(2) *Second.* Using the Repair Parts Listing, find the figure and item number listed in the illustration column referenced in the Index of Federal Stock Numbers and Reference Numbers.

8-4. Federal 'Supply Codes for Manufacturers.

CODE	MANUFACTURER
06808	Consolidated Airborne Systems Inc 115 Old Country Rd Carle Place NY 11514
35351	Lear Siegler Inc Instrument Division 4141 Eastern Ave S E Grand Rapids MI 49508
76381	Minnesota Mining and Mfg Co 3M Center St Paul MN 55101
77045	Edison Thomas A Instrument Division McGraw-Edison Company of Fort Lauderdale Florida 1400 Commercial Blvd P O Box 8364 Fort Lauderdale FL 33310
80205	National Aerospace Standards Committee Aerospace Industries Association of America Inc 1725 De Sales N W Washington DC 20036
81349	Military Specifications Promulgated by Standardization Div Directorate of Logistic Services DSA
82260	Hoffman Electronics Corp Military Products Division Hoffman Electronic Park El Monte CA 91734
96906	Military Standards Promulgated by Standardization Div Directorate of Logistic Services DSA

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE			USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY GS MAINT ALW (a) 1-20	(b) 21-50	(c) 51-100	(7) 1-YR ALWPER 100 EQUIP CNTGCY	(8) DEPOT MAINT ALWPER 100 EQUIP	(9) ILLUSTRATION (a) FIG NO	(b) ITEM NO
	6610-905-0210	DSA274	(05808)	INDICATOR,ATTITUDE.....		EA							1-1	
				SECTION II REPAIR PARTS REMOTE ATTITUDE INDICATOR										
X2-H--		MEC317	(05808)	HOUSING,INDICATOR.....		EA	1						3-1	1
P--H--	6610-244-2800	MAT305	(05808)	SHIM.....		EA	1	*	*	*			3-1	2
P--H--	6680-952-2263	MV204-4	(05808)	BAND,TEAR.....		EA	1	*	*	*			3-1	3
P--H--	5340-135-3043	MV1307	(05808)	INSULATOR.....		EA	1	*	*	*			3-1	4
X2-H--		MDP336	(05808)	PLATE,IDENTIFICATION.....		EA	1						3-1	5
M--H--		M3V03C002	(05808)	SPACER,SLEEVE-TUBE.....			1						3-1	6
P--H--	5355-220-2681	MNC301	(05808)	KNOB.....		EA	2	*	*	*			3-1	7
P--H--	6610-131-2053	MDS335	(05808)	SCALE,ROLL TRIM.....		EA	1	*	*	*			3-1	9
P--H--	5935-948-7579	MSG304-2	(05808)	GASKET,ELECTRICAL.....		EA	1	*	*	*			3-1	10
X1----		1853	(05808)	INDICATOR SUBASSEMBLY.....			1						3-1	11
				INDICATOR SUBASSEMBLY										
X1----		1853	(05808)	INDICATOR SUBASSEMBLY.....			1						3-2	
P--H--	6610-128-7745	1673	(05808)	.CIRCUIT CARD ASSEMBLY.....		EA	1	*	*	*			3-2	1
P--H--	5305-820-5946	1889900632	(82260)	.SCREW,MACHINE.....		EA	2	*	*	*			3-2	2
P--H--	5305-403-7733	MHSM1A4C24S	(05808)	.SCREW,MACHINE.....		EA	2	*	*	*			3-2	3
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	4	*	*	*			3-2	4
P--H--	5310-595-6211	MS15795-303	(96906)	.WASHER,FLAT.....		EA	4	*	*	*			3-2	5
P--H--	5340-107-2036	M3V03B039	(05808)	.SPACER,SLEEVE.....		EA	8	*	*	*			3-2	6
P--H--	5940-177-6764	EJT344	(05808)	.TERMINAL,STUD.....		EA	2	*	*	*			3-2	7
P--H--	5340-135-5076	M3V03B040	(05808)	.SPACER,SLEEVE.....		EA	2	*	*	*			3-2	8
P--H--	6110-133-1206	1670	(05808)	.PANEL ASSEMBLY,AMPLIFIER.....		EA	2	*	*	*			3-2	9
X1----		1856	(05808)	.ROLL SERVO ASSEMBLY.....			1						3-2	10
P--H--	5340-135-1031	MSL314	(05808)	.POST,ELECTRICAL.....		EA	2	*	*	*			3-2	11
P--H--	5310-928-2690	MS35338-134	(96906)	.WASHER,LOCK.....		EA	4	*	*	*			3-2	13
X1----		1857	(05808)	.PITCH SERVO AND SPHEROID ASSEMBLY.....			1						3-2	14
P--H--	5305-941-3570	MS35275-219	(96906)	.SCREW,MACHINE.....		EA	4	*	*	*			3-2	15
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	4	*	*	*			3-2	16
P--H--	6610-128-7778	MFB302	(05808)	.CLAMP,SHAFT.....		EA	2	*	*	*			3-2	17
P--H--	6610-128-7752	MCS328	(05808)	.BRACKET,POINTER.....		EA	2	*	*	*			3-2	18
P--H--	5305-941-3538	MS35275-201	(96906)	.SCREW,MACHINE.....		EA	4	*	*	*			3-2	19
P--H--	6610-128-7743	MPP306	(05808)	.RING,BANK POINTER.....		EA	1	*	*	*			3-2	20
X1----		1854	(05808)	.BEZEL ASSEMBLY.....			1						3-2	21

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE			USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY MAINT ALW (a) 1-20	(b) 21-50	(c) 51-100 GS	(7) 1-YR ALWPER 100 EQUIP CNTGCY	(8) DEPOT MAINT ALWPER 100 EQUIP	(9) ILLUSTRATION (a) FIG NO	(b) ITEM NO
				ELECTRONICS COMPONENTS ASSEMBLY										
P--H--	6610-128-7745	1673	(05808)	CIRCUIT CARD ASSEMBLY.....		EA	1	*	*	*			3-3	
X1----		MYT321	(05808)	.TERMINAL BOARD ASSEMBLY.....			1						3-3	
X1----		MYB320	(05808)	..PRINTED CIRCUIT,BOARD.....			1						3-3	14
				ELECTRONIC CONTROL AMPLIFIER										
P--H--	6110-133-1206	1670	(05808)	PANEL ASSEMBLY,AMPLIFIER.....		EA	1	*	*	*			3-4	
X1----		EVF301	(05808)	.FUSE,CARTRIDGE.....			2						3-4	6
X1----		MYB319	(05808)	.PRINTED CIRCUIT BOARD.....			1						3-4	24
				ROLL SERVO ASSEMBLY										
X1----		1856	(05808)	ROLL SERVO ASSEMBLY.....			1						3-5	
P--H--	5935-456-6060	1680	(05808)	.INSERT-SHELL,ELECTRICAL.....		EA	1	*	*	*			3-5	1
P--H--	5305-922-8777	MS35275-202	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	2
P--H--	5310-928-2690	MS35338-134	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-5	3
P--H--	5950-133-8939	ETP3132	(05808)	.TRANSFORMER,POWER.....		EA	1	*	*	*			3-5	4
P--H--	5305-939-9221	MS35275-241	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	5
P--H--	5310-933-8119	MS35338-137	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-5	6
P--H--	6105-228-1674	EB212	(05808)	.MOTOR-TACHOMETER,GENERATOR.....		EA	1	*	*	*			3-5	7
P--H--	5305-941-9437	MS35275-215	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	8
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-5	9
P--H--	5340-760-5724	MFS2-2	(05808)	.CLAMP,RIM CLENCHING.....		EA	2	*	*	*			3-5	10
P--H--	5305-689-7369	341-122-0042	(77045)	.SETSCREW.....		EA	2	*	*	*			3-5	11
P--H--	5990-125-4100	EA209	(05808)	.SYNCHRO,CONTROL.....		EA	1	*	*	*			3-5	12
P--H--	5305-941-9437	MS35275-215	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	13
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-5	14
P--H--	5340-760-5724	MFS2-2	(05808)	.CLAMP,RIM CLENCHING.....		EA	2	*	*	*			3-5	15
P--H--	5905-080-5899	RW69V101	(81349)	.RESISTOR,FIXED,WIRE WOUND.....		EA	2	*	*	*			3-5	18
P--H--	5940-914-9919	EJT345	(05808)	.TERMINAL,STUD.....		EA	8	*	*	*			3-5	19
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	8	*	*	*			3-5	21
P--H--	6610-128-7761	MCB322	(05808)	.BRACKET,BRUSH BLOCK.....		EA	1	*	*	*			3-5	22
				ATTACHING PARTS										
P--H--	5305-948-4042	MS35275-204	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	23
P--H--	5310-928-2690	MS35338-134	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-5	24
				---*---										
P--H--	5305-941-6402	MS35275-206	(96906)	..SCREW,MACHINE.....		EA	4	*	*	*			3-5	26

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE			USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY MAINT ALW (a) 1-20	(b) 21-50	(c) 51-100	(7) 1-YR ALWPER 100 EQUIP CNTGCY	(8) DEPOT MAINT ALWPER 100 EQUIP	(9) ILLUSTRATION (a) FIG NO	(b) ITEM NO
P--H--	5310-928-2690	MS35338-134	(96906)	..WASHER,LOCK.....		EA	4	*	*	*			3-5	27
P--H--	3110-516-5413	MS115-00609-0100	(96906)	.BEARING,BALL.....		EA	1	*	*	*			3-5	29
P--H--	5340-282-7120	MS16624-4037	(96906)	.RING,RETAINING.....		EA	1	*	*	*			3-5	30
P--H--	5310-199-1037	MWT304	(05808)	.WASHER,FLAT.....		EA	1	*	*	*			3-5	31
P--H--	6610-128-7739	MBH314	(05808)	.LINER,BEARING HOUSING.....		EA	1	*	*	*			3-5	33
P--H--	5305-941-3551	MS35275-213	(96906)	.SCREW,MACHINE.....		EA	1	*	*	*			3-5	34
P--H--	5305-054-5648	MS51957-14	(96906)	.SCREW,MACHINE.....		EA	1	*	*	*			3-5	35
P--H--	5305-925-4774	MS35275-214	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-5	36
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK.....		EA	4	*	*	*			3-5	37
P--H--	3110-516-5413	MS115-00609-0100	(96906)	.BEARING,BALL.....		EA	1	*	*	*			3-5	38
X1----		MGS316-1	(05808)	.GEAR,SPUR.....			1						3-5	39
X1----		1858	(05808)	.YOKE ASSEMBLY.....			1						3-5	
P--H--	5305-922-8777	MS35275-202	(96906)	..SCREW,MACHINE.....		EA	2	*	*	*			3-5	41
P--H--	5310-928-2690	MS35338-134	(96906)	..WASHER,LOCK.....		EA	2	*	*	*			3-5	42
P--H--	5970-144-7301	MYB318	(05808)	..INSULATOR.....		EA	1	*	*	*			3-5	44
P--H--	6610-128-7755	MFB303	(05808)	..CLAMP,SHAFT,TRUNNION.....		EA	2	*	*	*			3-5	45
P--H--	5305-941-3551	MS35275-213	(96906)	..SCREW,MACHINE.....		EA	4	*	*	*			3-5	46
P--H--	5310-933-8118	MS35338-135	(96906)	..WASHER,LOCK.....		EA	4	*	*	*			3-5	47
P--H--	5310-486-2386	M2HNS23	(05808)	..NUT,PLAIN,HEXAGON.....		EA	4	*	*	*			3-5	48
P--H--	6610-128-7779	MGR318	(05808)	..GEAR,ROLL.....		EA	1	*	*	*			3-5	50
P--H--	5315-145-1635	MHPS8N5	(05808)	..PIN,SPRING.....		EA	1	*	*	*			3-5	51
P--H--	5305-925-4774	MS35275-214	(96906)	..SCREW,MACHINE.....		EA	4	*	*	*			3-5	52
P--H--	5365-221-9677	MBW313	(05808)	..SPACER,PLATE.....		EA	1	*	*	*			3-5	53
P--H--	6610-128-7732	MCY317	(05808)	.YOKE,INDICATOR.....		EA	1	*	*	*			3-5	54
X1----		1671-2	(05808)	.GEAR ASSEMBLY,SPEED DECREASER.....			1						3-5	
P--H--	6610-131-2076	MZP305	(05808)	..PLATE,BEARING.....		EA	1	*	*	*			3-5	55
P--H--	5305-054-5646	MS51957-12	(96906)	..SCREW,MACHINE.....		EA	4	*	*	*			3-5	56
P--H--	5310-933-8118	MS35338-135	(96906)	..WASHER,LOCK.....		EA	4	*	*	*			3-5	57
P--H--	3110-628-3084	MJBB02CB	(05808)	..BEARING,BALL.....		EA	2	*	*	*			3-5	58
P--H--	6610-128-7782	MLP312	(05808)	..POST,GEAR PLATE.....		EA	4	*	*	*			3-5	59
P--H--	6610-132-1056	MGC314	(05808)	..GEARSHAFT,SPUR.....		EA	1	*	*	*			3-5	60
P--H--	6610-131-2070	MGC315	(05808)	..GEARSHAFT,SPUR.....		EA	1	*	*	*			3-5	61
P--H--	6610-131-2076	MZP305	(05808)	..PLATE,BEARING.....		EA	1	*	*	*			3-5	62
P--H--	5305-941-9437	MS35275-215	(96906)	..SCREW,MACHINE.....		EA	2	*	*	*			3-5	63
P--H--	5305-945-0505	MS35275-212	(96906)	..SCREW,MACHINE.....		EA	2	*	*	*			3-5	64
P--H--	5310-933-8118	MS35338-135	(96906)	..WASHER,LOCK.....		EA	4	*	*	*			3-5	65
P--H--	3110-628-3084	MJBB02CB	(05808)	..BEARING,BALL.....		EA	2	*	*	*			3-5	66
P--H--	6610-128-7762	1681	(05808)	..PLATE ASSEMBLY,ROLL.....		EA	1	*	*	*			3-5	67
				PITCH SERVO AND SPHEROID ASSEMBLY										
X1----		1857	(05808)	PITCH SERVO AND SPHEROID ASSEMBLY..			1						3-6	
P--H--	6610-132-1057	MDD333	(05808)	.SPHEROID,MARKED.....		EA	2	*	*	*			3-6	1
P--H--	5305-940-9442	NAS1635-00-2	(80205)	.SCREW,MACHINE.....		EA	12	*	*	*			3-6	2
		1859	(05808)	.LIGHTING ASSEMBLY,SPHEROID.....			1						3-6	
				ATTACHING PARTS										
P--H--	5305-054-5636	MS51957-2	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-6	3

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) REFERENCE NUMBER & MFR CODE		DESCRIPTION	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY MAINT ALW (a) 1-20	(b) 21-50	(c) 51-100	(7) 1-YR ALWPER 100 EQUIP CNTGCY	(8) DEPOT MAINT ALWPER 100 EQUIP	(9) ILLUSTRATION (a) FIG NO	(b) ITEM NO
P--H--	5310-928-2690	MS35338-134	(96906)	.WASHER,LOCK		EA	2	*	*	*			3-6	4
				---*---										
P--H--	6240-991-0091	MS25237-327R15	(96906)	..LAMP,INCANDESCENT		EA	2	*	*	*			3-6	6
P--H--	6610-179-4331	EJL306	(05808)	..CONTACT		EA	1	*	*	*			3-6	7
P--H--	6150-177-6563	EJLA2011	(05808)	..BUS BAR		EA	2	*	*	*			3-6	8
P--H--	5305-054-5636	MS51957-2	(96906)	..SCREW,MACHINE		EA	2	*	*	*			3-6	9
P--H--	5310-928-2690	MS35338-134	(96906)	..WASHER,LOCK		EA	2	*	*	*			3-6	10
P--H--	5310-938-2013	MS35649-224	(96906)	..NUT,PLAIN,HEXAGON		EA	2	*	*	*			3-6	11
P--H--	6610-132-1055	MBC316	(05808)	.COLLAR,SHAFT		EA	1	*	*	*			3-6	13
P--H--	3110-516-5413	MS115-00609-0100	(96906)	.BEARING,BALL,ANNULAR		EA	2	*	*	*			3-6	15
P--H--	6610-455-6193	MBB312	(05808)	.END BELL,ELECTRICAL		EA	1	*	*	*			3-6	16
P--H--	3020-456-1317	MGF317	(05808)	.GEAR,SPUR		EA	1	*	*	*			3-6	17
P--H--	3110-516-5413	MS115-00609-0100	(96906)	.BEARING,BALL,ANNULAR		EA	1	*	*	*			3-6	18
P--H--	6610-132-1055	MBC316	(05808)	.COLLAR,SHAFT		EA	1	*	*	*			3-6	19
P--H--	6610-133-1280	MBC315	(05808)	.COUNTERWEIGHT		EA	1	*	*	*			3-6	21
P--H--	6610-229-6739	MGS316	(05808)	.GEAR,ANTIBACKLASH,SPUR		EA	1	*	*	*			3-6	
				ATTACHING PARTS										
P--H--	5305-689-7369	341-122-0042	(77045)	.SETSCREW		EA	2	*	*	*			3-6	23
				---*---										
X1----		MKE302	(05808)	..SPRING,HELICAL,EXTENSION			2						3-6	24
X1----		MGS316-1	(05808)	..GEAR,SPUR			1						3-6	25
X1----		MGS316-2	(05808)	..GEAR,SPUR			1						3-6	26
X1----		MGS316-3	(05808)	..HUB,BODY			1						3-6	27
P--H--	5990-125-4100	EA209	(05808)	.SYNCHRO,CONTROL		EA	1	*	*	*			3-6	28
P--H--	6105-228-1674	EB212	(05808)	.MOTOR-TACHOMETER		EA	1	*	*	*			3-6	29
P--H--	5305-941-9437	MS35275-215	(96906)	.SCREW,MACHINE		EA	4	*	*	*			3-6	30
P--H--	5310-933-8118	MS35338-135	(96906)	.WASHER,LOCK		EA	4	*	*	*			3-6	31
P--H--	5340-760-5724	MFS2-2	(05808)	.CLAMP,RIM CLENCHING		EA	4	*	*	*			3-6	32
X1----		1671-1	(05808)	.GEAR ASSEMBLY,SPEED DECREASER			1						3-6	
P--H--	6610-131-2076	MZP305	(05808)	..PLATE,BEARING		EA	1	*	*	*			3-6	33
P--H--	5305-945-0505	MS35275-212	(96906)	..SCREW,MACHINE		EA	2	*	*	*			3-6	34
P--H--	5305-941-9437	MS35275-215	(96906)	..SCREW,MACHINE		EA	2	*	*	*			3-6	35
P--H--	5310-933-8118	MS35338-135	(96906)	..WASHER,LOCK		EA	4	*	*	*			3-6	36
P--H--	3110-628-3084	MJBB02CB	(05808)	..BEARING,BALL		EA	2	*	*	*			3-6	37
P--H--	6610-128-7782	MLP312	(05808)	..POST,GEAR PLATE		EA	4	*	*	*			3-6	38
P--H--	6610-132-1056	MGC314	(05808)	..GEARSHAFT,SPUR		EA	1	*	*	*			3-6	39
P--H--	6610-131-2070	MGC315	(05808)	..GEARSHAFT,SPUR		EA	1	*	*	*			3-6	40
P--H--	6610-131-2076	MZP305	(05808)	..PLATE,BEARING		EA	1	*	*	*			3-6	41
P--H--	5305-054-5646	MS51957-12	(96906)	..SCREW,MACHINE		EA	4	*	*	*			3-6	42
P--H--	5310-933-8118	MS35338-135	(96906)	..WASHER,LOCK		EA	4	*	*	*			3-6	43
P--H--	3110-628-3084	MJBB02CB	(05808)	..BEARING,BALL		EA	2	*	*	*			3-6	44
P--H--	6610-128-7731	1682	(05808)	.SERVO PLATE ASSEMBLY		EA	1	*	*	*			3-6	45
				FRONT END ASSEMBLY										
X1----		1854	(05808)	BEZEL ASSEMBLY			1						3-7	
P--H--	5340-400-2778	MLP313	(05808)	.POST,ELECTRICAL AND MECHANICAL		EA	4	*	*	*			3-7	1

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE			USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY GS MAINT ALW (a) 1-20	(b) 21-50	(c) 51-100	(7) 1-YR ALWPER 100 EQUIP CNTGCY	(8) DEPOT MAINT ALWPER 100 EQUIP	(9) ILLUSTRATION (a) FIG NO	(b) ITEM NO
P--H--	5310-781-9483	NAS620C10L	(80205)	.WASHER,FLAT.....		EA	4	*	*	*			3-7	2
P--H--	5340-132-1424	MFC301	(05808)	.STRAP,RETAINING.....		EA	1	*	*	*			3-7	3
P--H--	5305-054-5636	MS51957-2	(96906)	.SCREW,MACHINE.....		EA	2	*	*	*			3-7	4
P--H--	5310-928-2690	MS35338-134	(96906)	.WASHER,LOCK.....		EA	2	*	*	*			3-7	5
P--H--	6610-250-1170	EF2123	(05808)	.FLAG MECHANISM.....		EA	1	*	*	*			3-7	6
X1----		1855	(05808)	.DIAL ASSEMBLY-BLANK.....			1						3-7	
P--H--	6240-991-0091	MS25237-327R15	(96906)	..LAMP,INCANDESCENT.....		EA	6	*	*	*			3-7	7
P--H--	6610-133-3434	MYL312-1	(05808)	..PRINTED WIRING BOARD.....		EA	1	*	*	*			3-7	8
P--H--	5305-054-5638	MS51957-4	(96906)	..SCREW,MACHINE.....		EA	6	*	*	*			3-7	9
P--H--	5310-928-2690	MS35338-134	(96906)	..WASHER,LOCK.....		EA	6	*	*	*			3-7	10
P--H--	5940-135-6747	EJL305	(05808)	..TERMINAL,LUG.....		EA	6	*	*	*			3-7	11
P--H--	6610-128-7783	MDD332	(05808)	..LENS,INDICATOR.....		EA	1	*	*	*			3-7	13
P--H--	6610-128-7751	MCM315	(05808)	..RING,MASK.....		EA	1	*	*	*			3-7	14
X1----		1684	(05808)	.BEZEL SUBASSEMBLY.....			1						3-7	
P--H--	5905-131-6468	ERT13	(05808)	..RESISTOR,VARIABLE.....		EA	2	*	*	*			3-7	15
P--H--	6610-128-7746	MAR303	(05808)	..RING,RETAINING.....		EA	1	*	*	*			3-7	16
P--H--	6610-131-2052	MAG304	(05808)	..WINDOW,DIAL.....		EA	1	*	*	*			3-7	17
P--H--	6695-127-3067	MRB301	(05808)	..BEZEL,INSTRUMENT MOUNTING.....		EA	1	*	*	*			3-7	18
				MAINTENANCE SUPPLIES										
P--O--	4020-247-1737			TWINE,VEGETABLE FIBER-TYPE N,..... MIL-T-713,1 LB TUBE		FT	V	*	*	*			MSUP	
P--H--	4710-684-0100			TUBE,COPPER-0.125 IN.DIA,..... 0.018 IN.THK		FT	V	*	*	*			MSUP	
P--O--	5350-221-0872			CLOTH,ABRASIVE-9 IN.W,11 IN.LG,.... FED P-C-458		EA	V	*	*	*			MSUP	
P--O--	6850-264-9038			DRY CLEANING SOLVENT-TYPE 1,..... FED P-D-680,5 GAL DRUM		GL	V	*	*	*			MSUP	
P--F--	8010-687-3636			ENAMEL-BLACK,MIL-E-5557,1 QT CAN...		QT	V	*	*	*			MSUP	
P--O--	8030-530-6375			TAPE,PRESSURE,SENSITIVE ADHESIVE-.. 1 IN.W,60 YD LG,MIL-T-4053		YD	V	*	*	*			MSUP	
P--F--	8040-145-0019	EC2216	(76381)	ADHESIVE KIT.....		KT	V	*	*	*			MSUP	
P--O--	9150-263-3490			LUBRICATING OIL,GENERAL PURPOSE-... MIL-L-7870,1 QT CAN		QT	V	*	*	*			MSUP	
				SECTION III SPECIAL TOOLS, TEST, AND SUPPORT EQUIPMENT										
P--H--	6625-590-0168	LT3164	(35351)	TESTER,ATTITUDE INDICATOR.....		EA	1	*	*	*			TOOL	

SECTION IV

FEDERAL STOCK NUMBER AND REFERENCE NUMBER INDEX

STOCK NUMBER	FIGURE NUMBER	ITEM NUMBER
3020-456-1317	3-6	17
3110- 516-5413	3-5	29
3110-516-5413	3-5	38
3110-516-5413	3-6	15
3110-516-5413	3-6	18
3110-628-3084	3-5	58
3110-628-3084	3-5	66
3110-628-3084	3-6	37
3110-628-3084	3-6	44
4020-247-1737	MSUP	
4710-684-0100	MSUP	
5305-054-5636	3-6	3
5305-054-5636	3-6	9
5305-054-5636	3-7	4
5305-054-5638	3-7	9
5305-054-5646	3-5	56
5305-054-5646	3-6	42
5305-054-5648	3-5	35
5305-403-7733	3-2	3
5305-689-7369	3-5	11
5305-689-7369	3-6	23
5305-820-5946	3-2	2
5305-922-8777	3-5	2
5305-922-8777	3-5	41
5305-925-4774	3-5	36
5305-925-4774	3-5	52
5305-939-9221	3-5	5
5305-940-9442	3-6	2
5305-941-3538	3-2	19
5305-941-3551	3-5	34
5305-941-3551	3-5	46
5305-941-3570	3-2	15
5305-941-6402	3-5	26
5305-941-9437	3-5	8
5305-941-9437	3-5	13
5305-941-9437	3-5	63
5305-941-9437	3-6	30
5305-941-9437	3-6	35
5305-945-0505	3-5	64
5305-945-0505	3-6	34
5305 -948-4042	3-5	23
5310-199-1037	3-5	31
5310 -486-2386	3-5	48
5310-595-6211	3-2	5
5310 -781-9483	3-7	2
5310-928-2690	3-2	13
5310-928-2690	3-5	3
5310-928-2690	3-5	24
5310-928-2690	3-5	27
5310-928-2690	3-5	42
5310-928-2690	3-6	4
5310-928-2690	3-6	10
5310-928-2690	3-7	5
5310-928-2690	3-7	10
5310-933-8118	3-2	4
5310-933-8118	3-2	16
5310-933-8118	3-5	9
5310-933-8118	3-5	14
5310-933-8118	3-5	21
5310-933-8118	3-5	37
5310-933-8118	3-5	47
5310-933-8118	3-5	57
5310-933-8118	3-5	65
5310-933-8118	3-6	31
5310-933-8118	3-6	36
5310-933-8118	3-6	43
5310-933-8119	3-5	6
5310-938-2013	3-6	11
5315-145-1635	3-5	51
5340-107-2036	3-2	6
5340-132-1424	3-7	3
5340-135-1031	3-2	11
5340-135-3043	3-1	4
5340-135-5076	3-2	8
5340-282-7120	3-5	30
5340-400-2778	3-7	1
5340-760-5724	3-5	10
5340-760-5724	3-5	15
5340-760-5724	3-6	32
5350-221-0872	MSUP	
5355-220-2681	3-1	7
5365-221-9677	3-5	53
5905-080-5899	3-5	18
5905-131-6468	3-7	15
5935-456-6060	3-5	1
5935-948-7579	3-1	10
5940-135-6747	3-7	11
5940-177-6764	3-2	7
5940-914-9919	3-5	19
5950-133-8939	3-5	4
5970-144-7301	3-5	44
5990-125-4100	3-5	12
5990-125-4100	3-6	28
6105-228-1674	3-5	7
6105-228-1674	3-6	29
6110-133-1206	3-2	9
6110-133-1206	3-4	
6150-177-6563	3-6	8
6240-991-0091	3-6	6
6240-991-0091	3-7	7
6610-128-7731	3-6	45
6610-128-7732	3-5	54
6610-128-7739	3-5	33
6610-128-7743	3-2	20
66 10-128-7745	3-2	1
6610 -12 8-7745	3-3	
6610-128-7746	3-7	16
6610-128-7751	3-7	14
6610-128-7752	3-2	18
6610-128-7755	3-5	45
6610-128-7761	3-5	22
6610-128-7762	3-5	67
6610-128-7778	3-2	17
6610-128-7779	3-5	50
6610-128-7782	3-5	59
6610-128-7782	3-6	38
6610-128-7783	3-7	13
6610-131-2052	3-7	17
6610-131-2053	3-1	9
6610-131-2070	3-5	61
6610-131-2070	3-6	40
6610-131-2076	3-5	55
6610-131-2076	3-5	62
6610-131-2076	3-6	33
6610-131-2076	3-6	41
6610-132-1055	3-6	13
6610-132-1055	3-6	19
6610-132-1056	3-5	60
6610-132-1056	3-6	39
6610-132-1057	3-6	1
6610-133-1280	3-6	21
6610-133-3434	3-7	8
6610-179-4331	3-6	7
6610-229-6739	3-6	
6610-244-2800	3-1	2
6610-250-1170	3-7	6
6610-455-6193	3-6	16
6610-905-0210	1-1	
6625-590-0168	TOOL	
6680-952-2263	3-1	3
6695-127-3067	3-7	18
6850-264-9038	MSUP	
8010-687-3636	MSUP	
8030-530-6375	MSUP	
8040-145-0019	MSUP	
9150-263-3490	MSUP	

SECTION IV (Cont)

REFERENCE NUMBER	MFG CODE	FIG NUMBER	ITEM NUMBER	REFERENCE NUMBER	MFG CODE	FIG NUMBER	ITEM NUMBER
DSA274	05808	1-1		MS16624-4037	96906	3-5	30
EA209	05808	3-5	12	MS25237-327R15	96906	3-6	6
EA209	05808	3-6	28	MS25237-327R15	96906	3-7	7
EB212	05808	3-5	7	MS35275-201	96906	3-2	19
EB212	05808	3-6	29	MS35275-202	96906	3-5	2
EC2216	76381	MSUP		MS35275-202	96906	3-5	41
EF2123	05808	3-7	6	MS35275-204	96906	3-5	23
EJLA2011	05808	3-6	8	MS35275-206	96906	3-5	26
EJL305	05808	3-7	11	MS35275-212	96906	3-5	64
EJL306	05808	3-6	7	MS35275-212	96906	3-6	34
EJT344	05808	3-2	7	MS35275-213	96906	3-5	34
EJT345	05808	3-5	19	MS35275-213	96906	3-5	46
ERT13	05808	3-7	15	MS35275-214	96906	3-5	36
ETP3132	05808	3-5	4	MS35275-214	96906	3-5	52
EVF301	05808	3-4	6	MS35275-215	96906	3-5	8
LT3164	35351	TOOL		MS35275-215	96906	3-5	13
MAG304	05808	3-7	17	MS35275-215	96906	3-5	63
MAR303	05808	3-7	16	MS35275-215	96906	3-6	30
MAT305	05808	3-1	2	MS35275-215	96906	3-6	35
MBB312	05808	3-6	16	MS35275-219	96906	3-2	15
MBC315	05808	3-6	21	MS35275-241	96906	3-5	5
MBC316	05808	3-6	13	MS35338- 134	96906	3-2	13
MBC316	05808	3-6	19	MS35338-134	96906	3-5	3
MBH314	05808	3-5	33	MS35338- 134	96906	3-5	24
MBW313	05808	3-5	53	MS35338-134	96906	3-5	27
MCB322	05808	3-5	22	MS35338-134	96906	3-5	42
MCM315	05808	3-7	14	MS35338-134	96906	3-6	4
MCS328	05808	3-2	18	MS35338-134	96906	3-6	10
MCY317	05808	3-5	54	MS35338- 134	96906	3-7	5
MDD332	05808	3-7	13	MS35338-134	96906	3-7	10
MDD333	05808	3-6	1	MS35338-135	96906	3-2	4
MDP336	05808	3-1	5	MS35338- 135	96906	3-2	16
MDS335	05808	3-1	9	MS35338-135	96906	3-5	9
MEC317	05808	3-1	1	MS35338-135	96906	3-5	14
MFB302	05808	3-2	17	MS35338- 135	96906	3-5	21
MFB303	05808	3-5	45	MS35338-135	96906	3-5	37
MFC301	05808	3-7	3	MS35338-135	96906	3-5	47
MFS2-2	05808	3-5	10	MS35338-135	96906	3-5	57
MFS2-2	05808	3-5	15	MS35338- 135	96906	3-5	65
MFS2-2	05808	3-6	32	MS35338- 135	96906	3-6	31
MGC314	05808	3-5	60	MS35338-135	96906	3-6	36
MGC314	05808	3-6	39	MS35338- 135	96906	3-6	43
MGC315	05808	3-5	61	MS35338-137	96906	3-5	6
MGC315	05808	3-6	40	MS35649-224	96906	3-6	11
MGF317	05808	3-6	17	MS51957-12	96906	3-5	56
MGR318	05808	3-5	50	MS51957-12	96906	3-6	42
MGS316	05808	3-6		MS51957-14	96906	3-5	35
MGS316-1	05808	3-5	39	MS51957-2	96906	3-6	3
MGS316- 1	05808	3-6	25	MS51957-2	96906	3-6	9
MGS316-2	05808	3-6	26	MS51957-2	96906	3-7	4
MGS316-3	05808	3-6	27	MS51957-4	96906	3-7	9
MHPS8N5	05808	3-5	51	MV1307	05808	3-1	4
MHSM1A4C24S	05808	3-2	3	MV204-4	05808	3-1	3
MJBB02CB	05808	3-5	58	MWT304	05808	3-5	31
MJBB02CB	05808	3-5	66	MYB318	05808	3-5	44
MJBB02CB	05808	3-6	37	MYB319	05808	3-4	24
MJBB02CB	05808	3-6	44	MYB320	05808	3-3	14
MKE302	05808	3-6	24	MYL312-1	05808	3-7	8
MLP312	05808	3-5	59	MYT321	05808	3-3	
MLP312	05808	5-6	38	MZP305	05808	3-5	55
MLP313	05808	3-7	1	MZP305	05808	3-5	62
MNC301	05808	3-1	7	MZP305	05808	3-6	33
MPP306	05808	3-2	20	MZP305	05808	3-6	41
MRB301	05808	3-7	18	M2HNS23	05808	3-5	48
MSG304-2	05808	3-1	10	M3V03B039	05808	3-2	6
MSL314	05808	3-2	11	M3V03B040	05808	3-2	8
MS115-00609-0100	96906	3-5	29	M3V03C002	05808	3-1	6
MS115-00609-0100	96906	3-5	38	NAS1635-00-2	80205	3-6	2
MS115-00609-0100	96906	3-6	15	NAS620C10L	80205	3-7	2
MS115-00609-0100	96906	3-6	18	RW69V101	81349	3-5	18
MS15795-303	96906	3-2	5	1670	05808	3-2	9

SECTION IV (Cont)

REFERENCE NUMBER	MFG CODE	FIG NUMBER	ITEM NUMBER	REFERENCE NUMBER	MFG CODE	FIG NUMBER	ITEM NUMBER
1670	05808	3-4		1854	05808	3-7	
1671-1	05808	3-6		1855	05808	3-7	
1671-2	05808	3-5		1856	05808	3-2	10
1673	05808	3-2	1	1856	05808	3-5	
1673	05808	3-3		1857	05808	3-2	14
1680	05808	3-5	1	1857	05808	3-6	
1681	05808	3-5	67	1858	05808	3-5	
1682	05808	3-6	45	1859	05808	3-6	
1684	05808	3-7		1889900632	82260	3-2	2
1853	05808	3-1	11	341-122-0042	77045	3-5	11
1853	05808	3-2		341-122-0042	77045	3-6	23
1854	05808	3-2	21				

This publication has been printed for the use of all concerned.

By Order of the Secretary of the Army:

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General, United States Army,
Chief of Staff.

Official:

VERNE L. BOWERS,
Major General, United States Amy,
The Adjutant General.

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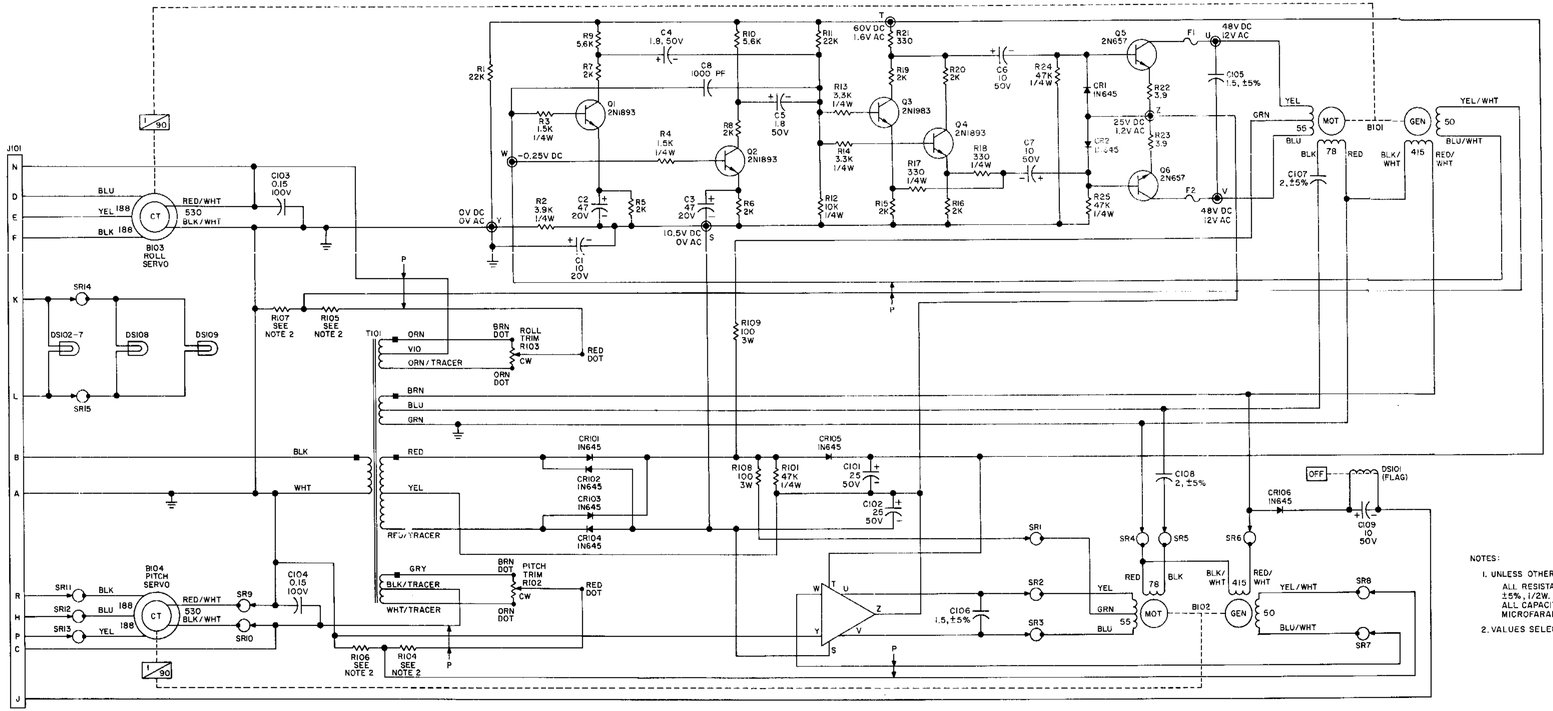

Figure 3-1. Remote Attitude Indicator, Schematic Diagram.

NOTES:

1. UNLESS OTHERWISE INDICATED;
   ALL RESISTANCE VALUES ARE IN OHMS, ±5%, 1/2W.
   ALL CAPACITANCE VALUES ARE IN MICROFARADS, ±10%, 200V DC W.
2. VALUES SELECTED AT TEST.

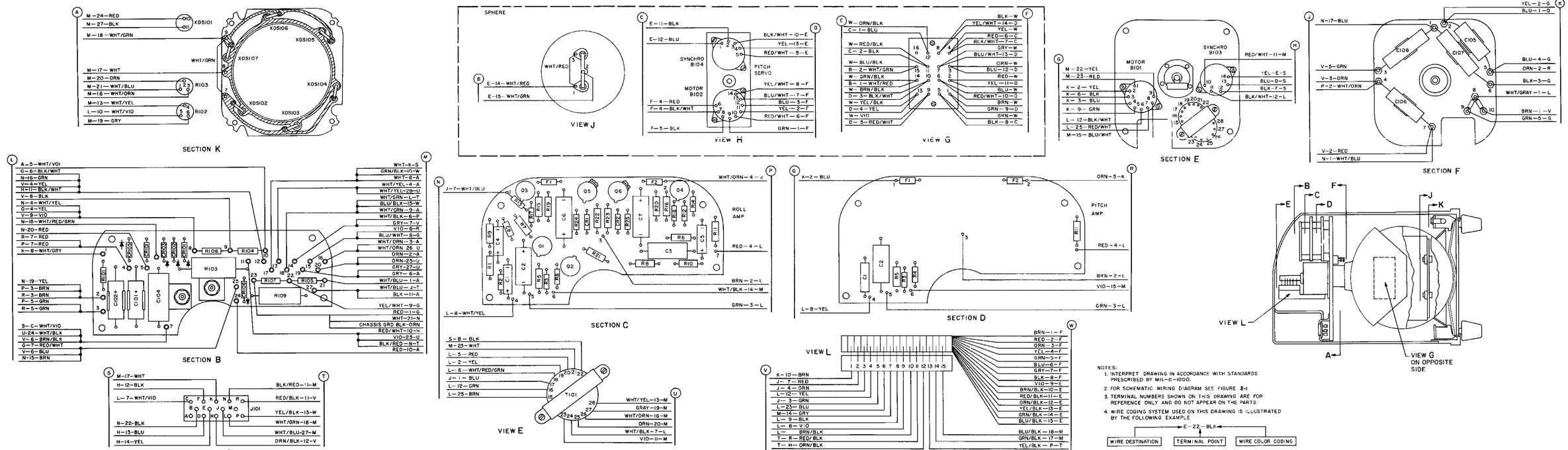

Figure 3-2. Remote Attitude Indicator, Wiring Diagram.