TO: ALL HOLDERS OF FLAP POSITION AND STALL WARNING TRANSMITTER GEAR BOX ASSEMBLY OVERHAUL MANUAL, 27-56-51

REVISION NO. 6, DATED DEC 1/94

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D&O	D/Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Added torque range to assembly of BACN10JC9 nut						X	X						

FLAP POSITION AND STALL WARNING TRANSMITTER GEARBOX ASSEMBLY

27-56-51

BOEING P/N 65-80055-1, -4 thru -6

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		MC 3400-20K	Jun 10/72
		PRR 31960-3	Jun 10/72
		PRR 32121-10	Jun 10/72

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	27-56-51					
	T-1	Jun 10/72				
	T-2	BLANK				
*	LEP-1	Dec 1/94				
	LEP-2	BLANK				
	T/C-1	Dec 25/75				
	T/C-2	BLANK				
	1	Dec 25/75				
	2	Dec 25/75				
	3	Dec 25/75				
	4	Dec 25/75				
*	5	Dec 1/94				
	6	Jan 5/77				
*	7	Dec 1/94				
	8	BLANK				
	9	Jan 5/77				
	10	Jan 5/77				
	11	Dec 5/87				
	12	Jun 10/72				

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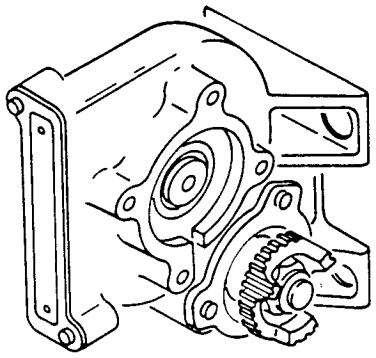
*[1] Special instructions not required. Use standard industry practices.

FLAP POSITION AND STALL WARNING TRANSMITTER GEARBOX ASSEMBLY



Flap Position and Stall Warning Transmitter Gearbox Assembly
Figure 1

1. DESCRIPTION AND OPERATION

A. Description

(1) The flap position and stall warning transmitter gearbox assembly consists of bearing-mounted drive and pinion gears enclosed in a housing. Externally splined couplings are attached to the ends of the pinion gear.

B. Leading Particulars

Length -- 5.94 inches
Width -- 3.96 inches
Height -- 5.51 inches

2. INSPECTION/CHECK (Fig. 7)

A. Check all parts for obvious defects in accordance with standard industry practices. See Fig. 5 for wear limits.

B. Perform magnetic particle examination per 20-20-01 on pin (40), gear (55), coupling half (90) and pinion (110).

C. Perform penetrant examination per 20-20-02 on retainers (70, 105) and housing (125).

3. REPAIR (Fig. 7)

A. Repair

(1) Remove minor defects and corrosion by polishing lightly with 220 grit, or finer, abrasive cloth. Refinish as necessary for protection against corrosion.

(2) Remove minor defects from threaded parts with small triangular file or thread chaser.

B. Refinish

NOTE: Refer to 20-30-02 for stripping of protective finishes and to 20-41-01 for explanation of F and SRF finish symbols.

(1) Deleted

(a) Cover (25) and retainers (70, 105) -- Alodize or anodize and apply one coat BMS 10-11, type 1 primer (SRF-2.30), then apply BMS 10-60 enamel (SRF-14.9813) all over. Material: Al alloy.

(b) Pin (40) -- Fig. 2.

(c) Gear (55) -- Fig. 3.

(d) Coupling half (90) -- Cadmium plate (F-1.1926) all over, except 0.0002-0.0003 single plating thickness. Material: 4340 steel (150-170 ksi).

(e) Pinion (110) -- Fig. 4.

(f) Housing (125, 65-80049-2 and -5) -- Chromic acid anodize (F-2.26) all over. Apply BMS 10-11, type 1 primer (SRF-12.205) all over, except in bores for bearings and inserts. Material: Al alloy.

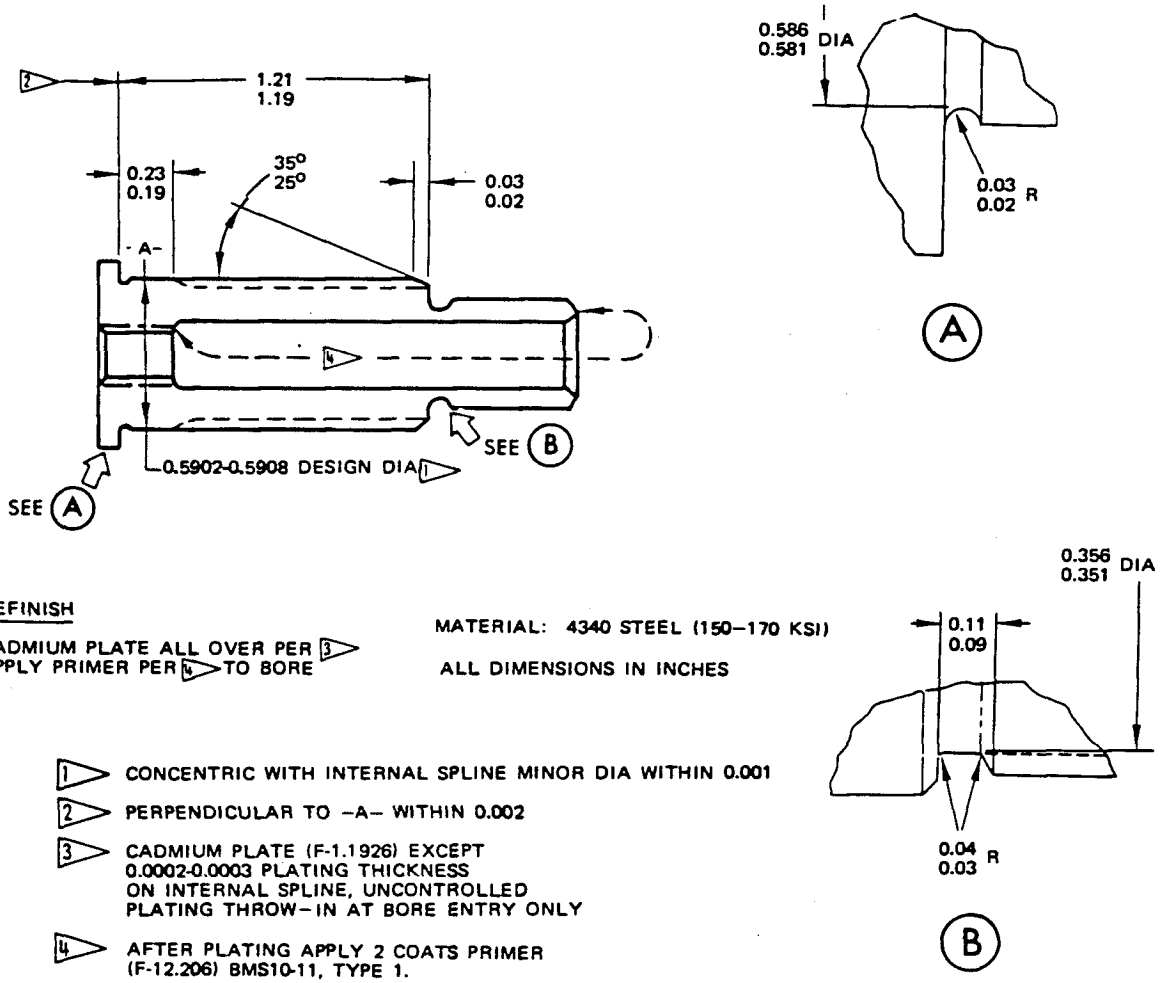
(g) Housing (125, 65-80049-11 and -12) -- Chromic acid anodize (F-2.26) all over. Apply BMS 10-11, type 1 primer (SRF-12.205) followed by BMS 10-60 enamel (SRF-14.9813) all over, except in bores for bearings and inserts. Material: Al alloy.

C. Replacement

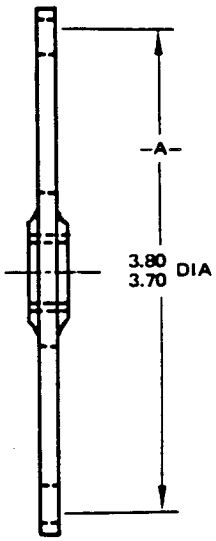
(1) If inserts (130 and 135) require replacement, remove and proceed as follows:

(a) Apply BMS 10-11, type 1 primer to all faying surfaces of hole and on insert.

(b) While primer is wet, seat insert 1/2 to 1-1/2 turns below surface of housing. Break off tang.



Refinish Diagram
Figure 2



REFINISH

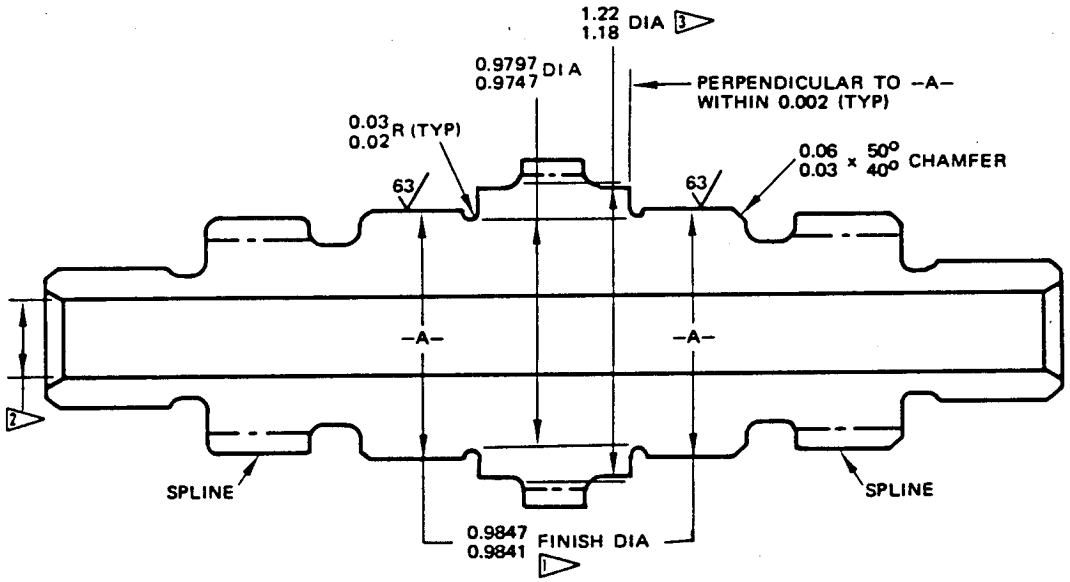
CADMIUM PLATE (F1.1926) WITHIN DIA -A- EXCEPT 0.0002-0.0003 PLATING THICKNESS ON SPLINE TEETH. NO FINISH REQUIRED OUTSIDE DIA -A-

MATERIAL: 4340 STEEL (180-200 KSI)

ALL DIMENSIONS ARE IN INCHES

DRIVE GEAR (55)

Refinish Diagram
Figure 3



REFINISH

CADMIUM PLATE ALL OVER PER 1 EXCEPT AS NOTED BY 3. UNCONTROLLED PLATING THROW-IN PERMITTED IN BORE APPLY PRIMER PER 2 TO BORE

MATERIAL: 4340 STEEL (180-200 KSI)

ALL DIMENSIONS IN INCHES

1. CADMIUM PLATE (F1.1926) EXCEPT 0.0002-0.0003 PLATING THICHNESS ON -A- DIAMETERS AND SPLINES.
2. AFTER PLATING APPLY 2 COATS PRIMER (F-12.206), BM510-11, TYPE 1
3. NO FINISH REQUIRED OUTSIDE THIS DIAMETER

PINON (110)

Refinish Diagram
Figure 4

1. ASSEMBLY (Fig. 7).

A. Lightly coat ID and OD of bearing (115), faying surface of pinion (110) and bearing bore in housing with grease per MIL-G-21164. Press bearing onto pinion and insert into housing (125).

B. Install retainer (105) on housing (125) using washers (101) and screws (100).

C. Lightly coat ID and OD of bearing (95), all surfaces of pinion (110) and bearing bore in housing with grease. Apply grease liberally to gear teeth.

D. Press bearing (95) onto pinion (110) and into housing.

E. Install coupling halves (90) on pinion (110) using washers (85) and nuts (80). Tighten nuts to torque range noted in Fig. 6.

F. Lightly coat gear (55), spacers (50), ID and OD of bearing (45) and pin (40) with grease. Apply grease liberally to gear teeth.

G. Press bearing (45) onto pin (40) until bottomed against shoulder of pin. Place one spacer (50) on pin.

H. Place gear (55) in housing. Insert pin (40) and attached parts into gear until bearing (45) is seated in housing.

I. Lightly coat OD of bearing (75) and bearing bore in housing with grease.

J. Install second spacer (50) on pin. Press bearing (75) onto pin (40) and into housing. Secure pin with washer (35) and nut (30). Tighten nut to torque range noted in Fig. 6.

K. Install retainer (70) using washers (65) and screws (60).

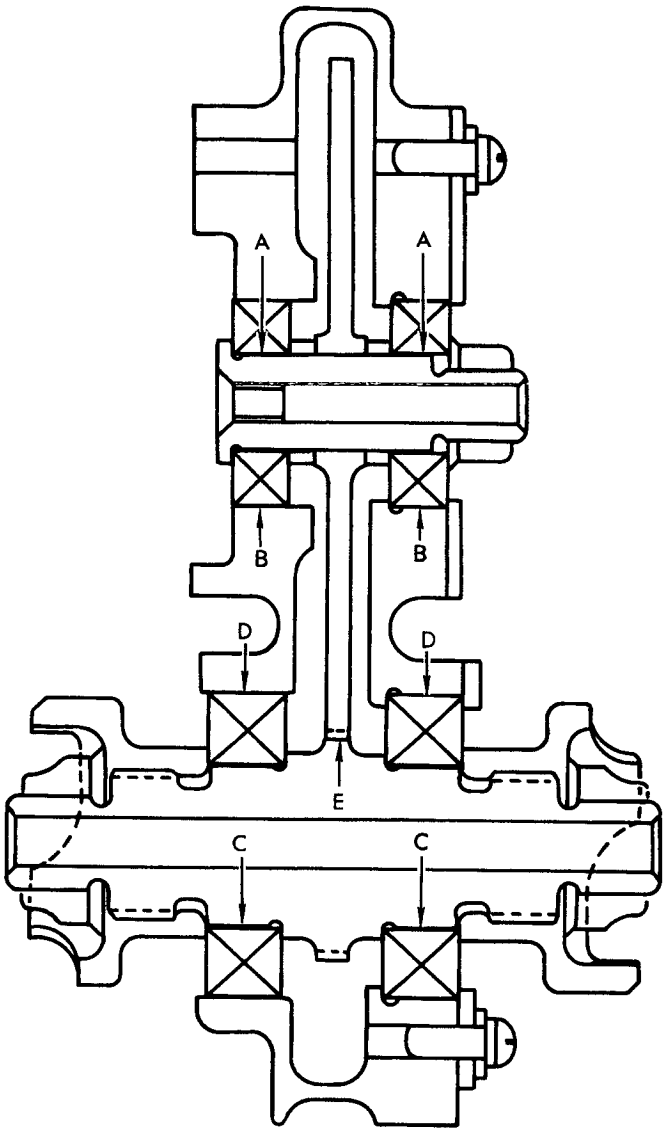
L. Check that gears and bearings run freely with no evidence of binding in any position, and that backlash between drive gear (55) and pinion (110) is 0.004 to 0.008-inch.

M. Install cover assembly (15) using washers (10) and screws (5).

N. Lockwire all screws using double-twist method.

5. FITS AND CLEARANCES

A. and B. Deleted



Fits and Clearances
Figure 5 (Sheet 1)

Ref Letter Fig.	Mating Item No. Fig.	Design Dimensions				Service Wear Limits		
		Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inches)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
A	ID 45,75 OD 40	0.5903 0.5902	0.5906 0.5908	-0.0005	0.0004			
B	ID 125 OD 45,75	1.2598 1.2593	1.2608 1.2598	0.0000	0.0015			
C	ID 95,115 OD 110	0.9839 0.9837	0.9843 0.9841	-0.0002	0.0006			
D	ID 125 OD 95,115	1.8504 1.8499	1.8514 1.8504	0.0000	0.0015			
E	55, 110			0.004 *[1]	0.008 *[1]			

*[1] Backlash measured at assembly.

Fits and Clearances
Figure 5 (Sheet 2)

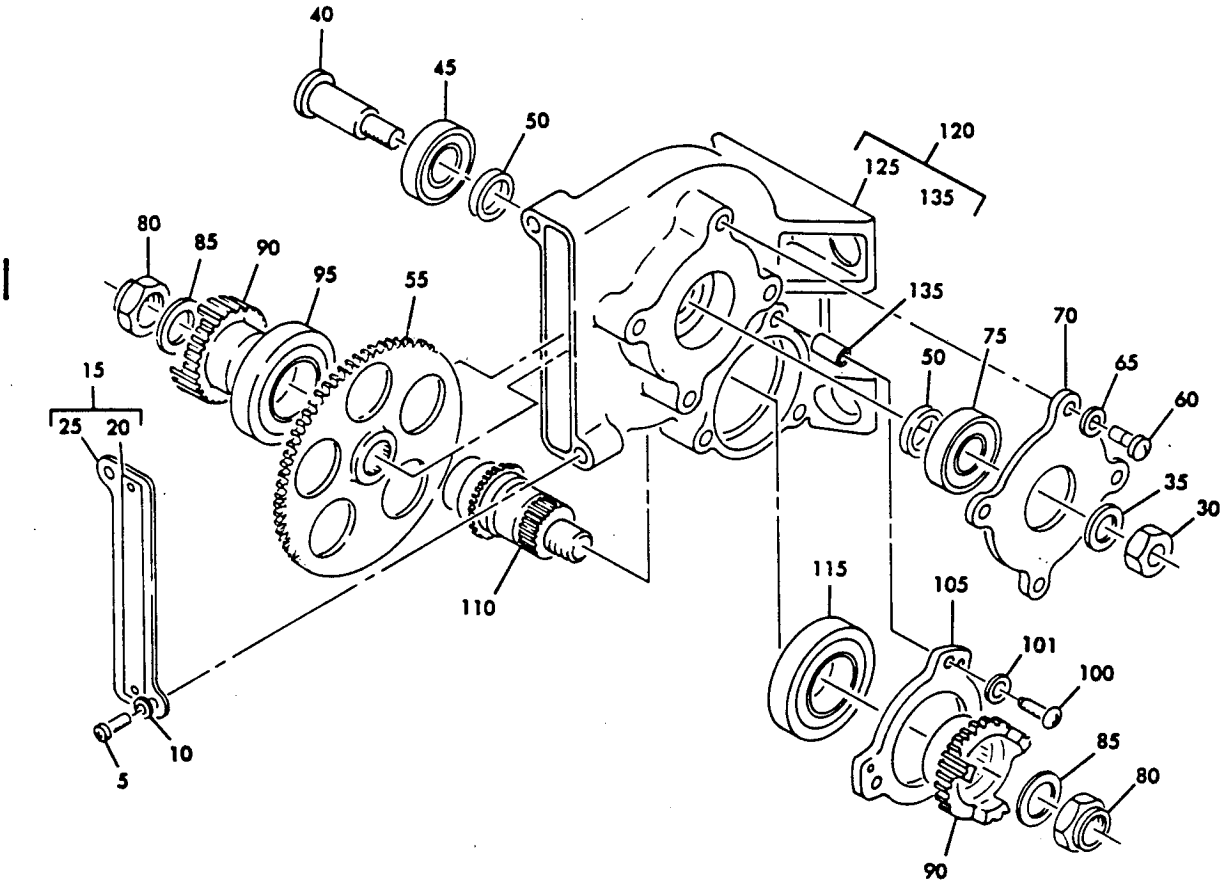
C. Assembly Torque Ranges (Fig. 4).

(1) Tighten all fasteners to a standard torque range unless otherwise specified in assembly instructions. Tighten fasteners listed in Fig. 6 to torque range indicated.

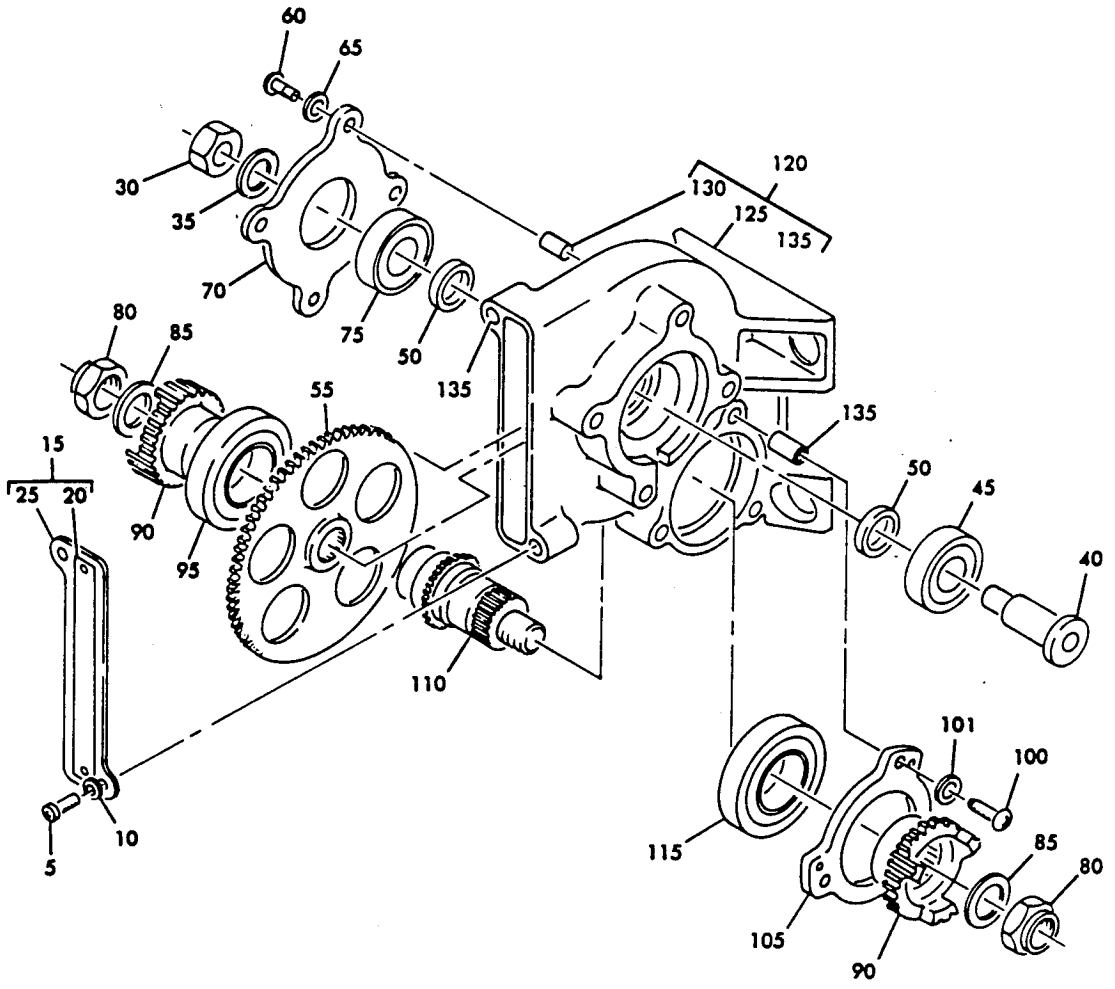
Item No. Fig. 6	Torque Range (Pound-Inches)	
	Min	Max
30	120	170
80	300	400

Assembly Torque Ranges
Figure 6

6. ILLUSTRATED PARTS LIST



P/N 65-80055-1, -5



P/N 65-80055-4, -6

Flap Position and Stall Warning Transmitter
Figure 7 (Sheet 2)

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
7-					
	65-80055-1		GEARBOX ASSY, FLAP POSITION AND STALL WARNING TRANSMITTER	A	
	65-80055-4		GEARBOX ASSY, FLAP POSITION AND STALL WARNING TRANSMITTER	B	
	65-80055-5		GEARBOX ASSY, FLAP POSITION AND STALL WARNING TRANSMITTER	C	
	65-80055-6		GEARBOX ASSY, FLAP POSITION AND STALL WARNING TRANSMITTER	D	
5	AN502-10-8		. SCREW (REPLD BY BACB30NE3-H-2)		2
5	BACB30NE3-H-2		. SCREW (REPLS AN502-10-8)		2
10	AN960PD10		. WASHER		2
15	69-73379-1		. COVER PLATE		1
15	65-80055-2		. COVER ASSY (OPT)	AB	1
15	65-80055-7		. COVER ASSY (OPT)	CD	1
20	69-62265-1		. . NAMEPLATE		1
25	69-62243-1		. . COVER	AB	1
25	69-62243-4		. . COVER	CD	1
30	BACN10JC7		. NUT		1
35	AN960PD716		. WASHER		1
40	65-80048-1		. PIN, GEAR SUPPORT		1
45	BACB10BA15PP		. BEARING		1
50	69-52005-4		. SPACER		2
55	65-80052-1		. GEAR, DRIVE		1
60	AN502-10-8		. SCREW (REPLD BY BACB30NE3-H-2)	AC	4
60	AN502-10-6		. SCREW (REPLD BY BACB30NE3-H-2)	BD	4
60	BACB30NE3-H-2		. SCREW (REPLS AN502-10-6 AND AN502-10-8)		4
65	AN960PD10		. WASHER		4
70	69-62243-3		. RETAINER	AB	1
70	69-62243-6		. RETAINER	CD	1
75	BACB10BA15PP		. BEARING		1
80	BACN10JC9		. NUT		2
85	AN960PD916		. WASHER		2
90	69-46619-1		. COUPLING HALF		2
95	BACB10BA25PP		. BEARING		1
100	AN502-10-8		. SCREW (REPLD BY BACB30NE3-H-2)		3
100	BACB30NE3-H-2		. SCREW (REPLS AN502-10-8)		3
101	AN960PD10		. WASHER		3
105	69-62243-2		. RETAINER	AB	1
105	69-62243-5		. RETAINER	CD	1
110	65-80047-1		. PINION		1
115	BACB10BA25PP		. BEARING		1
120	65-80049-1		. HOUSING ASSY	A	1
120	65-80049-4		. HOUSING ASSY	B	1
120	65-80049-9		. HOUSING ASSY	C	1
120	65-80049-10		. HOUSING ASSY	D	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
7-					
125	65-80049-2		. . HOUSING	A	1
125	65-80049-5		. . HOUSING	B	1
125	65-80049-11		. . HOUSING	C	1
125	65-80049-12		. . HOUSING	D	1
130	MS21209F1-15		. . INSERT	BD	4
135	MS21209F1-20		. . INSERT	BD	9
135	MS21209F1-20		. . INSERT	AC	13