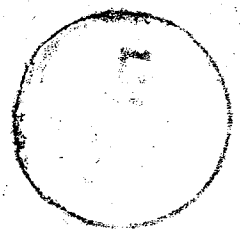
E34 p11
1

Formerly AP 4601A Vol 4 Pt 6.



AP 105D-1306-5F

Issued June 1974

HUNTER

BAY SERVICING SCHEDULE

POWERED FLYING CONTROL UNITS

PART NO. AH 957 AND AH 958

(FAIREY HYDRAULICS)

BY COMMAND OF THE DEFENCE COUNCIL

Michael Carr

(Ministry of Defence)

FOR USE IN THE ROYAL AIR FORCE

AMENDMENT RECORD CERTIFICATE

1. This certificate is for Ministry of Defence (Air) ALs only.
2. Amendments are to be inserted in numerical sequence except where Non-Availability slips for particular A.L.s are issued.

A.L. No	A.L. MONTH AND YEAR OF ISSUE	AMENDMENT INCORPORATED SIGNATURE	DATE OF INCORPORATION
1			
2			
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POWERED FLYING
CONTROL UNITS
SUPPLEMENTARY SERVICING

ITEM No	ITEM	OPERATION

REF NO.	EQUIPMENT AND TOOLS	QTY
	Kits Tool Airframe Fitter to Scale A2 AP830 Vol 3 Pt A	1
27KF/683	Seal, Manipulating, Tool (Set of 3) Pt No.FHQ 100	1
27KF/698	Clamps,Vice Pt No.FHQ 161	1
27KF/688	Tool, Manipulating Pt No. FHQ 164	1
1A/4390	Balance, Spring 0-10 lb	1
1C/7150	Wrench, Torque 60-360 lbf in.	1
4G/5902	Test Rig Powered Flying Controls Mk2	1
1B/910089	Indicator, Dial Test,Universal	2

SPARES

Refer to AP4515P Vol 3 Pt 1
Sect 2 Chap 1

	MATERIALS	NATO CODE NO.	
30A/3055	Locking Wire, 22 SWG		As required
34B/2241973	Grease, XG-287	G-354	

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SERVICING NOTES

1. AP105D-0001-5F is to be complied with throughout the work detailed in this schedule.

2. Unless otherwise stated all component parts are to be cleaned using oil, OM-15.

3. Connecting pieces, seals and sealing washers are to be immersed in oil,OM-15 immediately before fitting.

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ITEM No	ITEM	OPERATION
1.	Preparation	
1.1	Servicing Notes.	Read.
2.	Dismantling	
2.1	Release unit locking bolt.	Unscrew until clear of ram notch.
2.2	Release unit.	Remove.
2.3	Release unit locking bolt.	Tighten sufficiently to retain.
2.4	Servo valve eye end.	(i) Remove. (ii) Discard tab washer.
2.5	External pipe.	Remove.
2.6	Servo valve banjo bolts.	(i) Remove. (ii) Discard bonded seals.
2.7	Servo valve banjo unions.	Remove.
2.8	Hydraulic connexions.	Fit protection plugs.
2.9	Servo valve attachment bolts.	(i) Remove. (ii) Discard tab washers.
2.10	Servo valve.	Remove, ensuring bottom platen remains in servo valve body.
2.11	Platen retaining washers.	Remove and discard.
2.12	Protection plugs.	Fit to bottom platen.
2.13	Servo valve protection cover.	Fit to base of servo valve.
2.14	Connecting pieces.	(i) Remove from jack platform. (ii) Remove and discard seals. (iii) Place in polythene bag and attach to jack.
2.15	Protection plugs.	Fit to jack platform.

Continued overleaf

ITEM No	ITEM	OPERATION
2.16	Platform protection cover.	Fit.
2.17	By-pass valve banjo bolt.	(i) Remove. (ii) Discard bonded seals.
2.18	By-pass valve banjo union.	Remove.
2.19	Hydraulic connexion.	Fit protection plug.
2.20	Unit identification plate.	Remove.
2.21	Release unit.	Bay service as detailed in AP105D-1304-5F.
2.22	Servo valve.	Bay service as detailed in AP105D-1309-5F.
2.23	Jack.	Bay service as detailed in AP105D-1305-5F.
3.	Examination	
3.1 3.2 3.3 3.4 3.5	Eye end. External pipe. Banjo bolts. Banjo unions. Unit identification plate.	(i) Clean. (ii) Examine.
4.	Assembling	
4.1	Jack.	Support in vice using vice blocks.
4.2	Platform protection cover.	Remove.
4.3	Protection plugs.	Remove from jack platform.
4.4	Connecting pieces.	(i) Fit new seals. (ii) Fit to jack platform.
4.5	Servo valve protection plate.	Remove.
4.6	Protection plugs.	Remove from bottom platen.
4.7	Platen retaining washers.	Ensure fitted, cones towards valve.
4.8	Servo valve.	Fit to jack platform, spindle facing away from jack ram.

ITEM No.	ITEM	OPERATION
4.	Assembling (Contd)	
4.9	Servo valve attachment bolts.	Fit and tighten, do not lock tab washers.
4.10	Hydraulic connexion protection plugs.	Remove.
4.11	Servo valve double banjo union.	Fit to servo valve upper connexion.
4.12	Banjo bolt.	
4.13	Bonded seals.	
4.14	Servo valve single banjo union.	Fit to servo valve lower connexion.
4.15	Banjo bolt.	
4.16	Bonded seals.	
4.17	By-pass valve protection plug.	Remove.
4.18	By-pass valve banjo union.	Fit to by-pass valve.
4.19	Banjo bolt.	
4.20	Bonded seals.	
4.21	External pipe.	Fit.
4.22	Lock nut.	Fit to eye end.
4.23	Tab washer.	
4.24	Eye end.	Fit, do not lock tab washer.
4.25	Jack.	Remove from vice and vice blocks.
5.	Testing (Internal Leakage Test)	
5.1	Connexion A.	Connect to test rig supply line. (Fig 1 refers).
5.2	Connexion B.	Connect to test rig return line.
5.3	PFCU.	Bleed.
5.4	Piston spindle.	Move in.

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Continued overleaf

ITEM No	ITEM	OPERATION
5.5	Connexion A.	(i) Apply pressure of between 3850 and 4150 lbf/in2. (ii) Maintain for 3 minutes. No external seepage is permissible. (iii) Release pressure.
5.6	Connexion B.	(i) Disconnect from test rig return. (ii) Fit blank.
5.7	Connexion A.	(i) Apply pressure of between 1 and 10 lbf/in2. (ii) Maintain for 2 minutes. No seepage is permissible. (iii) Release pressure.
5.8	Connexion B.	(i) Remove blank. (ii) Connect to test rig return.
5.9	Piston spindle.	(i) Move out. (ii) Repeat Sub-items 5.5 to 5.7 inclusive.
5.10	Connexion B.	Remove blank.
5.11	Connexion A.	(i) Apply pressure of between 2880 and 3120 lbf/in2. (ii) Maintain pressure with pump on for 4 minutes. During fourth minute check seepage from connexion B does not exceed 100cm3/min. (iii) Release pressure.
5.12	Piston spindle.	Move in.
5.13	Connexion A.	Repeat Sub-item 5.11.
6.	Establishing Valve Neutral	
6.1	Connexion A.	Apply pressure of between 1920 and 2080 lbf/in2.
6.2	Piston spindle.	Move to extend jack ram.
6.3	Jack ram dial test indicator (DTI).	Fit to jack ram end with plunger at least 0.010 in. from fully bottomed position.
6.4	Balance spindle DTI.	Fit to end of balance spindle, plunger slightly depressed.
6.5	Piston spindle.	Move until jack ram is clear of stop.
6.6	Jack ram DTI.	Set to zero.
6.7	Piston spindle.	Move in until jack ram moves.

ITEM No	ITEM	OPERATION
6.	Establishing Valve Neutral (Contd)	
6.8	Balance spindle DTI.	Set to zero.
6.9	Piston spindle.	Move out until jack ram moves.
6.10	Balance spindle DTI.	(i) Note indication. (ii) Set to zero at half recorded indication. Note: Zero indication now indicates piston spindle neutral position.
6.11	Connexion A.	Release pressure.
7.	External Leakage Test	
7.1	Piston spindle.	Move to neutral.
7.2	Connexion B.	(i) Connect to test rig pressure line. (ii) Apply pressure of between 960 and 1040 lbf/in2.
7.3	Connexion A.	Apply pressure of between 1920 and 2080 lbf/in2.
7.4	Connexions A and B.	Maintain pressure for 2 minutes. No external seepage permissible.
7.5	Connexion B.	Reduce pressure to between 1 and 10 lbf/in2.
7.6	Connexions A and B.	(i) Maintain pressures for further 2 minutes. No external seepage permissible. (ii) Release pressure.
8.	Operating Load Tests	
8.1	Connexion B.	Connect to test rig return line.
8.2	Connexion A.	Apply pressure of between 2880 and 3120 lbf/in2.
8.3	Piston spindle.	Move in and out.

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Continued overleaf

ITEM No	ITEM	OPERATION
8.4	Spring balance.	(i) Connect to piston spindle. (ii) Pull and note indication at which piston spindle starts to move. (iii) Repeat over entire stroke. Note: Maximum load is not to exceed 6 lb. Maximum variation between indications is not to exceed 2.5 lb.
8.5	Piston spindle.	Adjust until jack ram is stationary and clear of stops.
8.6	Spring balance.	Measure load required to cause jack ram to move. Load is not to exceed 2.5 lb.
NB	Sub-items 8.5 and 8.6 are to be repeated for movement of ram in opposite direction.	
8.7	Piston spindle.	Move to neutral.
8.8	Spring balance.	(i) After maintaining pressure for 5 minutes measure load required to move piston spindle. Load is not to exceed 10 lb. (ii) Repeat in opposite direction. Load is not to exceed 10 lb.
8.9	Connexion A.	Release pressure.
8.10	Connexion B.	Disconnect from test rig.
8.11	Piston spindle.	Move in 0.030 in. from neutral position.
8.12	Connexion A.	(i) Gradually raise pressure until flow starts at connexion B. (ii) Note pressure at which flow falls to normal seepage rate. This pressure is not to exceed 500 lbf/in2. (iii) Increase pressure to between 2880 and 3120 lbf/in2., then gradually decrease and ensure pressure at which flows re-commences at connexion B is not less than 200 lbf/in2.
8.13	Piston spindle.	Move out 0.03 in. from neutral position.
8.14	Connexion A.	(i) Repeat Sub-item 8.12. (ii) Release pressure. (iii) Disconnect from pressure line.
8.15	PFCU.	(i) Fully retract ram. (ii) Ensure unit is left full of fluid. (iii) Fit storage blanks to hydraulic connexions.

Continued

ITEM No	ITEM	OPERATION
9.	Completion	
9.1	Servo valve attachment bolts.	Lock tab washers.
9.2	Servo valve bleed screws.	Lock with wire.
9.3	External pipe unions.	
9.4	Banjo bolts.	
9.5	Release unit.	Slide onto ram.
9.6	Release unit locking bolt.	Screw in and ensure pawl engages cleanly in ram notch.
9.7	Jack ram.	Coat with grease, XG-287.
9.8	Release unit pawl.	
9.9	Eye end.	(i) Remove.
9.10	Lock nut.	(ii) Place in polythene bag and attach firmly to PFCU.
9.11	Tab-washer.	
9.12	Unit identification plate.	(i) Ensure data correct. (ii) Fit.
9.13	Servicing forms.	Sign.

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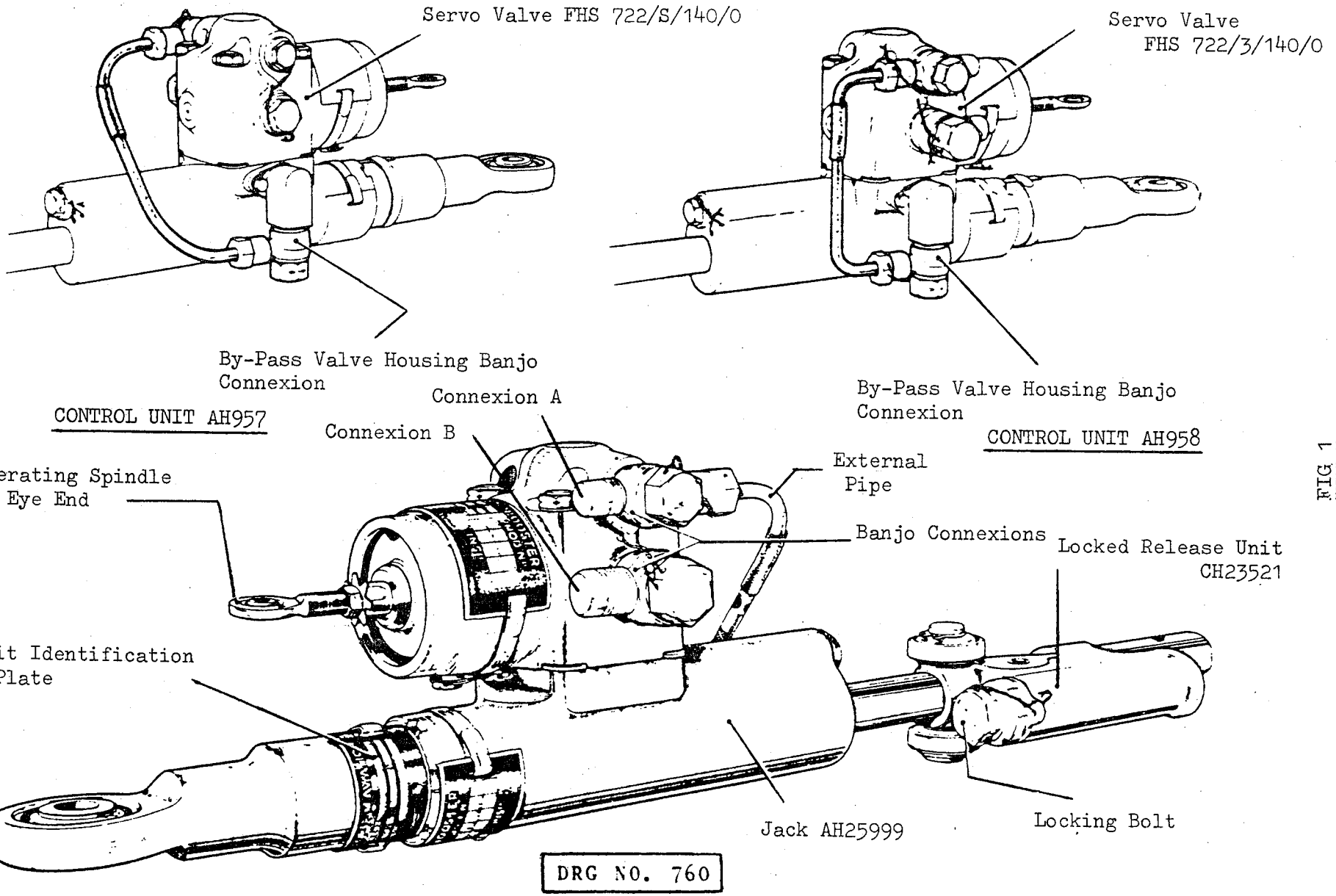

FIG 1

DRG NO. 760