AP 105D-1301-5F

Issued May 1974

HUNTER

BAY SERVICING SCHEDULE

POWERED FLYING CONTROL UNITS PART NO. AH 949 AH 950 AH 1890 AND AH 1892 (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			
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E0306 (1) Issued May 74

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	Tool, Seal Manipulating (Set of 3).	1
27KF/688	Tool, Manipulating. Pt No.FHQ 164.	1
27KF/1244	Vice Blocks. Pt No.FHQ 271.	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, Mk 2.	1
	Plug, Protection. Pt No.D706C3	1
	Plate, Cover. Pt No.FHS505	1

SPARES

Refer to AP4515P Vol 3 Pt 1 Sect 2 Chap 3.

	MATERIALS	NATO CODE NO.	
30A/3055	Wire, Locking, Nickel Chrome, 22 SWG.		As required
34B/2241973	Grease, XG-287.	G-354	" "
34B/9100572	Oil, OM-15.	H-515	" "

P.T.O.

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 fork end.	Remove.
2.5	Servo valve eye end.	(i) Remove. (ii) Discard tab washer.
2.6	External pipe.	Remove.
2.7	Servo valve banjo bolt.	(i) Remove. (ii) Discard bonded seals.
2.8	Servo valve banjo unions.	Remove.
2.9	Hydraulic connexions.	Fit protection plugs.
2.10	Servo valve attachment bolts.	(i) Remove. (ii) Discard tab washers.
2.11	Servo valve.	Remove, ensuring bottom platen remains in servo valve body.
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.
2.16	Platform protection cover.	Fit.

Continued overleaf

ITEM No	ITEM	OPERATION
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-1302-5F.
2.23	Jack.	Bay service as detailed in AP105D-1303-5F.
3	Examination	
3.1 3.2 3.3 3.4 3.5 3.6	Fork end. 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	Servo valve.	Fit to jack platform, spindle facing away from jack ram.
4.8	Servo valve attachment bolts.	(i) Fit new tab washers. (ii) Fit and tighten, do no lock tab washers.
4.9	By-pass valve protection plug.	Remove.

ITEM No	ITEM	OPERATION
4	Assembling (Contd)	
4.10 4.11	Bonded seals.) Banjo union.)	Fit to banjo bolt.
4.12	Banjo bolt.	Fit to by-pass valve hydraulic connexion.
4.13	External pipe.	Fit.
4.14 4.15	Lock nut.) Tab washer.)	Fit to eye end.
4.16	Eye end.	Fit, do not lock tab washer.
4.17	Jack.	Remove from vice and vice blocks.
5	Testing	
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.
5.5	Connexion A.	(i) Apply pressure of between 3850 and 4150 lbf/in2. (ii) Maintain for 3 minutes. No external seepage is permissible. Note: Jack Pre mod FHB157 ram seals are rubber/fabric and a slight dampness of the jack ram during operation can be accepted as inherent. (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.

Continued overleaf

ITEM No	ITEM	OPERATION
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 100 cm3/min. (iii) Release pressure.
5.12	Piston spindle.	Move in.
5.13	Connexion A.	Repeat Sub-item 5.11.
5.14	Connexion A.	Apply pressure of between 1920 and 2080 lbf/in2.
5.15	Jack ram dial test indicator (DTI).	Fit to jack ram end with plunger 0.010 in. from fully bottomed positioned.
5.16	Balance spindle DTI.	Fit to end of balance spindle, plunger slightly depressed.
5.17	Piston spindle.	Move until jack ram is clear of stop.
5.18	Jack ram DTI.	Set to zero.
5.19	Piston spindle.	Move in until jack ram moves.
5.20	Balance spindle DTI.	Set to zero.
5.21	Piston spindle.	Move out until jack ram moves.
5.22	Balance spindle DTI.	(i) Note indication. (ii) Set to zero at half the recorded indication. Note: Zero indication now indicates piston spindle position.
5.23	Connexion A.	Release pressure.
5.24	Piston spindle.	Move to neutral.
5.25	Connexion B.	(i) Connect to test rig pressure line. (ii) Apply pressure of between 960 and 1040 lbf/in2.
5.26	Connexion A.	Apply pressure of between 1920 and 2080 lbf/in2.

Continued

ITEM No	ITEM	OPERATION
5	Testing (Contd)	
5.27	Connexions A and B.	Maintain pressures for 2 minutes. No external seepage is permissible.
5.28	Connexion B.	Reduce pressure to between 1 and 10 lbf/in2.
5.29	Connexions A and B.	(i) Maintain pressures for further 2 minutes. No external seepage permissible. (ii) Release pressure.
5.30	Connexion B.	Connect to test rig return line.
5.31	Connexion A.	Apply pressure of between 2880 and 3120 lbf/in2.
5.32	Piston spindle.	Move in and out.
5.33	Spring balance.	(i) Connect to piston spindle. Pull and note indication at which piston spindle starts to move. (ii) Repeat over entire stroke. Note: Maximum load is not to exceed 6 lb. Maximum variation between indications is not to exceed 2.5 lb.
5.34	Piston spindle.	Adjust until jack ram is stationary and clear of stops.
5.35	Spring balance.	Measure load required to cause jack ram to move. Load is not to exceed 2.5 lb.
NB	Repeat Sub-item 5.34 and 5.35 for movement of ram in opposite direction.	
5.36	Piston spindle.	Move to neutral.
5.37	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.
5.38	Connexion A.	Release pressure.
5.39	Connexion B.	Disconnect from test rig.
5.40	Piston spindle.	Move in 0.03 in. from neutral position.

Continued overleaf

ITEM No	ITEM	OPERATION
5.41	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 note pressure at which flow recommences at connexion B. This pressure is not to be less than 200 lbf/in2.
5.42	Piston spindle.	Move out 0.03 in. from neutral position.
5.43	Connexion A.	(i) Repeat Sub-item 5.41. (ii) Release pressure. (iii) Disconnect from pressure line.
5.44	PFCU.	(i) Fully retract ram. (ii) Ensure unit is left full of fluid. (iii) Fit storage blanks to hydraulic connexions.
6	Completion	
6.1	Servo valve attachment bolts.	Lock tab washers.
6.2	Servo valve bleed nipples.	Lock with wire.
6.3	External pipe unions.	Lock with wire to adjacent banjo bolts.
6.4	Release unit.	Slide onto ram
6.5	Release unit locking bolt.	Screw in and ensure pawl engages cleanly in ram notch.
6.6 6.7	Jack ram. Release unit pawl.	Coat with grease, XG-287.
6.8 6.9 6.10 6.11 6.12 6.13	Eye end. Fork link. Bolt. Washer. Nut. Split pin.	Place in polythene bag and attach firmly to PFCU.
6.14	Unit identification plate.	Ensure data correct.
6.15	Servicing forms.	Sign.

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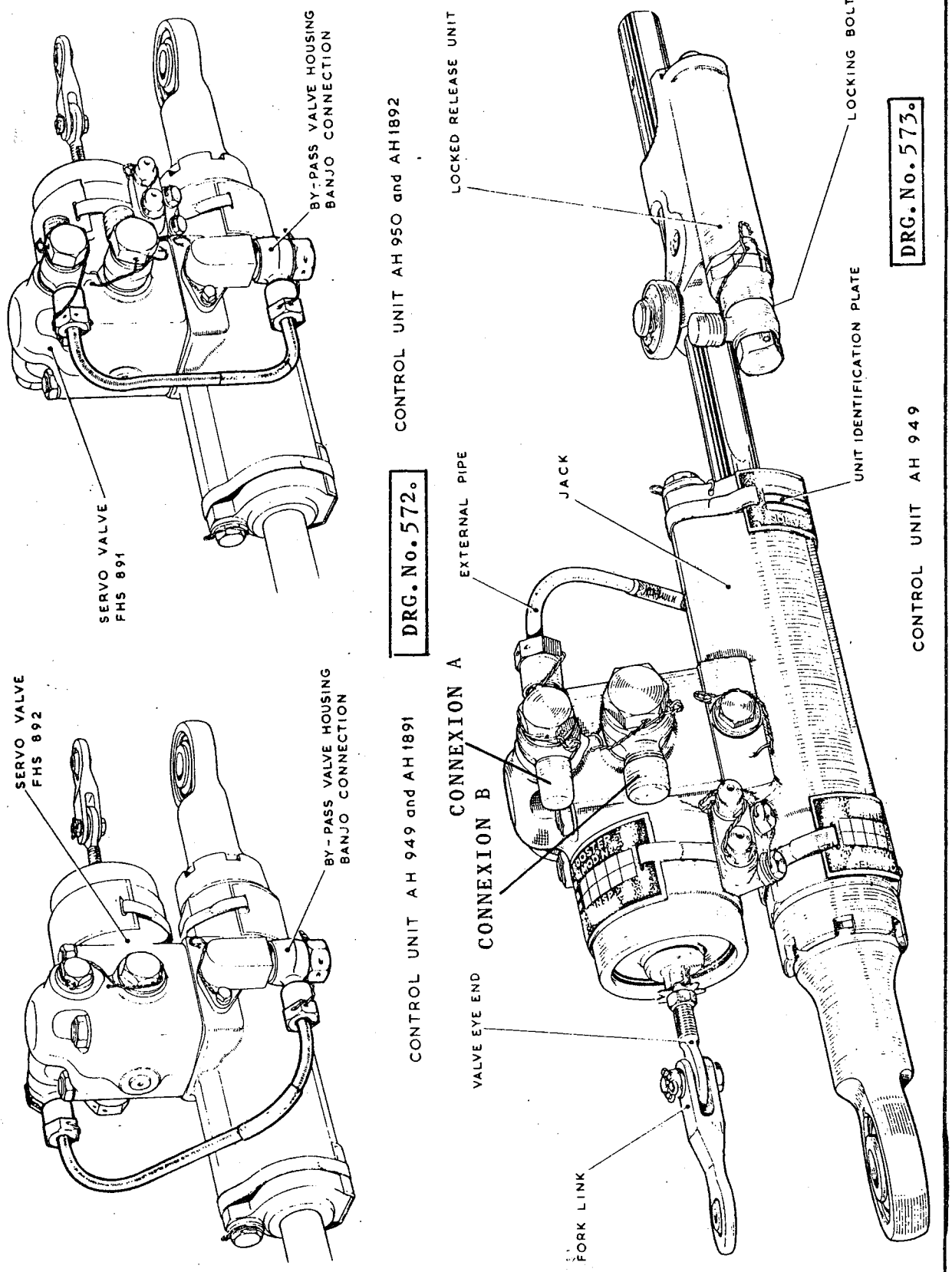
SERVO VALVE FHS 891
BY-PASS VALVE HOUSING BANJO CONNECTION
CONTROL UNIT AH 950 and AH 1892
DRG. No. 572.
SERVO VALVE FHS 892
BY-PASS VALVE HOUSING BANJO CONNECTION
CONTROL UNIT AH 949 and AH 1891
CONNEXION A
CONNEXION B
EXTERNAL PIPE
VALVE EYE END
FORK LINK
LOCKED RELEASE UNIT
JACK
LOCKING BOLT
UNIT IDENTIFICATION PLATE
DRG. No. 573.
CONTROL UNIT AH 949

FIG 1

P.F.6.