MWS

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SELECTOR VALVE
DOWTY AEROSPACE HYDRAULICS
Part No 08832YA02

GENERAL AND TECHNICAL INFORMATION (-1)
PARTS CATALOGUE AND RELATED INFORMATION (-3)

BY COMMAND OF THE DEFENCE COUNCIL

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GENERAL

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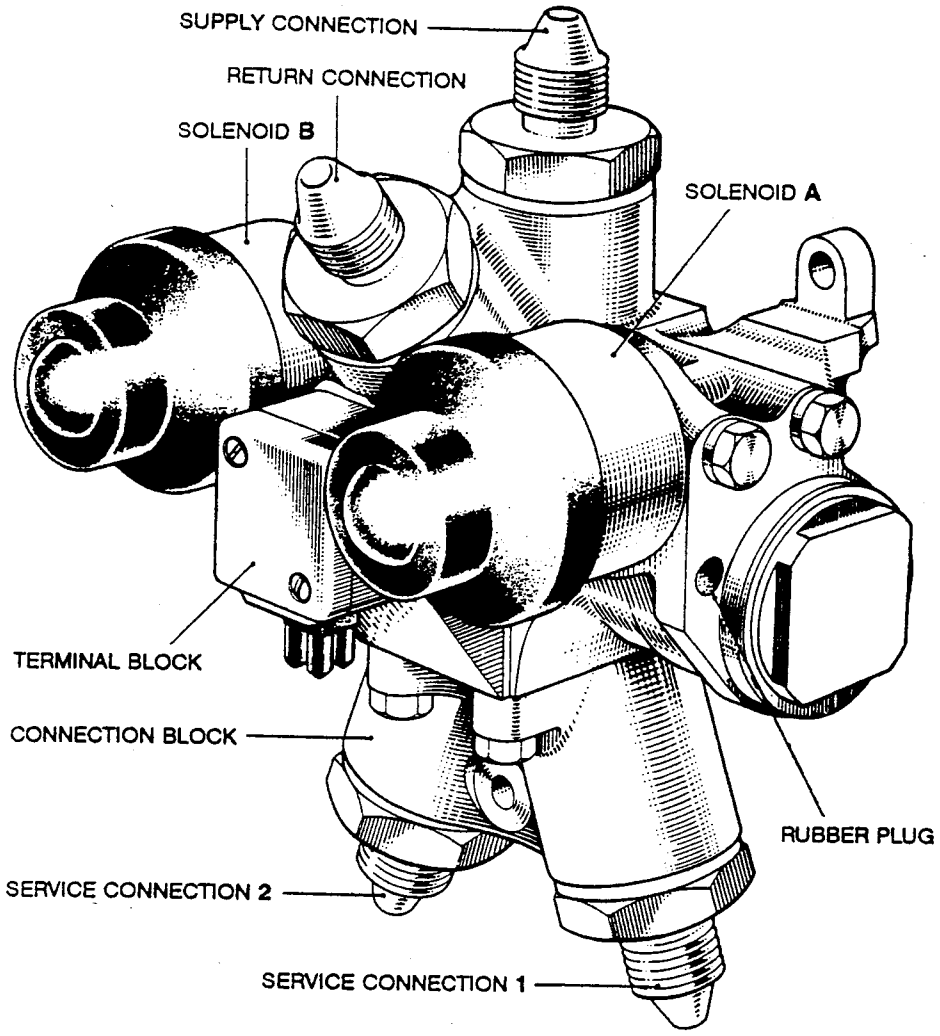
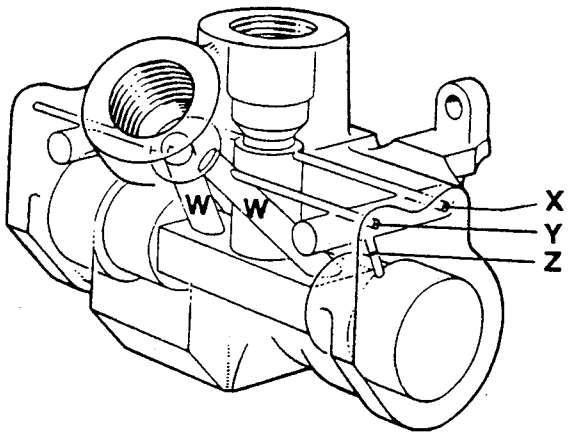




DAHC6018-1

Fig 1 Selector valve

Leading particulars

1 Leading particulars for this unit are as follows:

1.1	System fluid	Oil OM15
1.2	Test pressure	6600 lbf/in^2
1.3	Connections P, R and S	0.250 in BSP
1.4	Solenoid (continuous rating)	0,4 A (max) at 24 volts DC

Modification state

2 The information in this topic includes all appropriate modifications up to and including issue 20.

Introduction

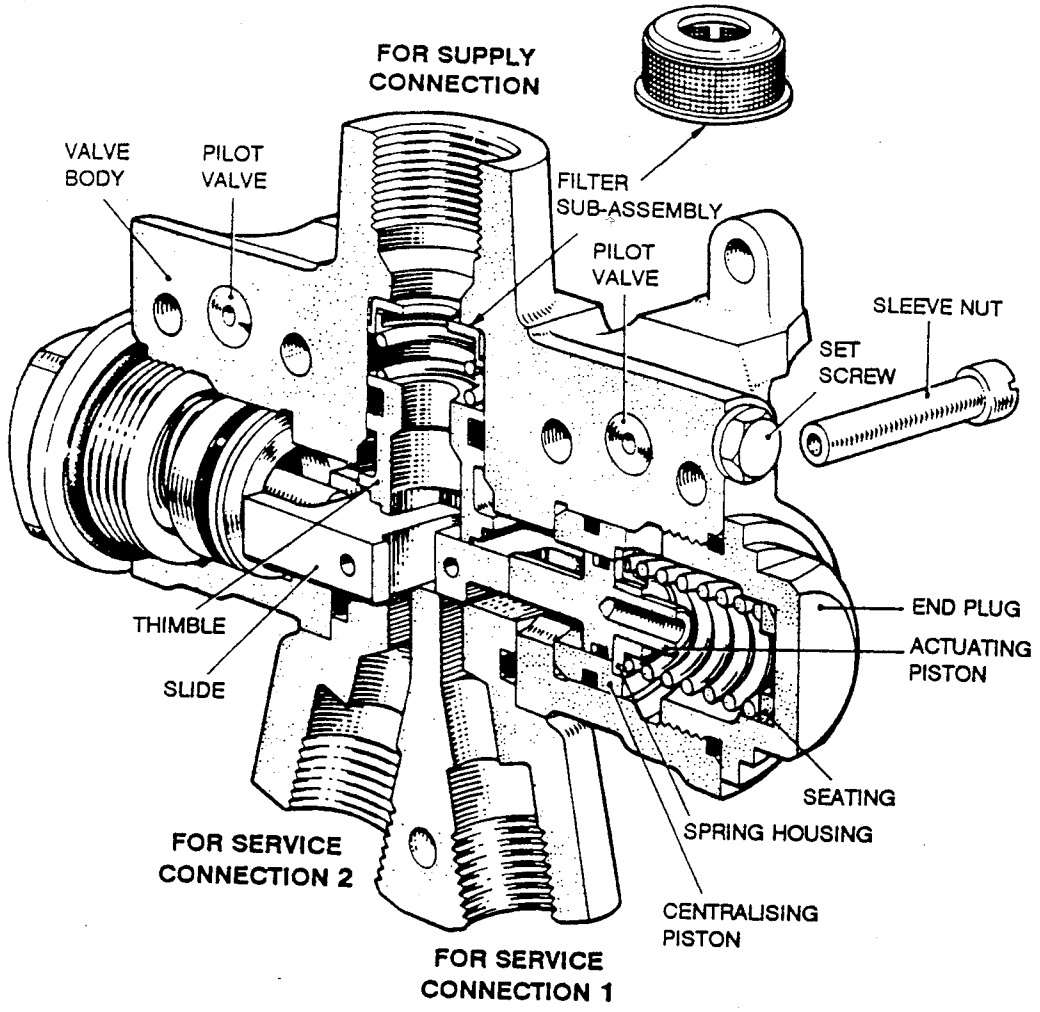
3 This unit is an electrically-operated solenoid valve which, when energised, directs fluid from supply to one of two services and simultaneously opens the return line for the other service.

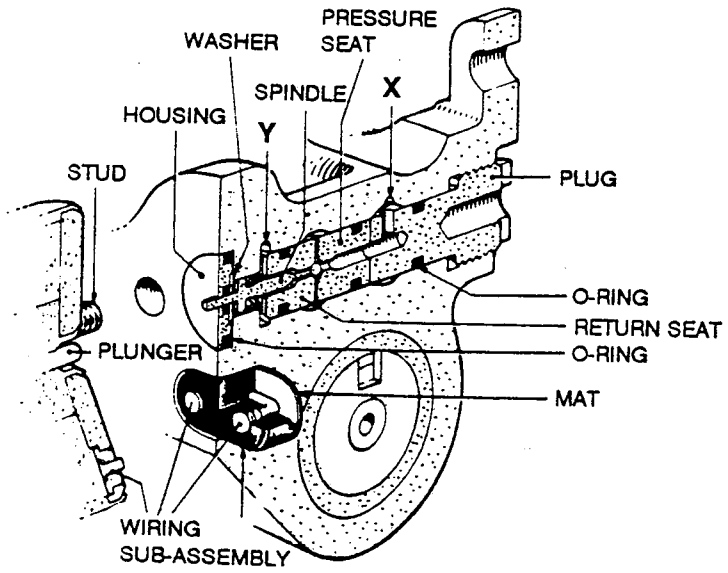
Constructional description (Fig 1 and 2)

4 The valve body houses two pilot valve assemblies, a slide and two pistons all interconnected by drillings for the flow of fluid. Two integral bosses locate the connections for the supply P and return R lines. A connection block, incorporating service connections 1 and 2, is bolted to the valve body opposite to the supply connection P. A thimble, housed in the bore of the connection P, is spring-loaded against the slide holding it in contact with the connection block. The thimble spring is seated within a filter sub-assembly, which in turn seats against an integral flange in the supply connection P. A solenoid is installed on each side of the supply P connection boss.

5 The slide is slotted and operates across the main fluid supply. It is actuated by two opposing actuating pistons. Each actuating piston is fitted with an O-ring and an anti-extrusion ring. The actuating pistons are retained in two centralising pistons, each sealed with an O-ring. A seating, spring, washer and spring housing hold the actuating pistons against the slide. Two end plugs, each fitted with an O-ring, close the bores in which the pistons operate.

6 The pilot valve assemblies are located above the actuating pistons, one on each side of the main supply port. Each pilot valve assembly consists of a spring-loaded spindle, one end of which operates against a ball located between a pressure seat and a return seat. The other end of the spindle protrudes through a washer and sealed housing to contact the solenoid plunger. The pilot valve assembly is retained in the valve body with a sealed plug. Holes in the plug connect with the drillings in the valve body.





SECTION THROUGH PILOT VALVE

DAHC6019-1

Fig 2 Selector valve assembly

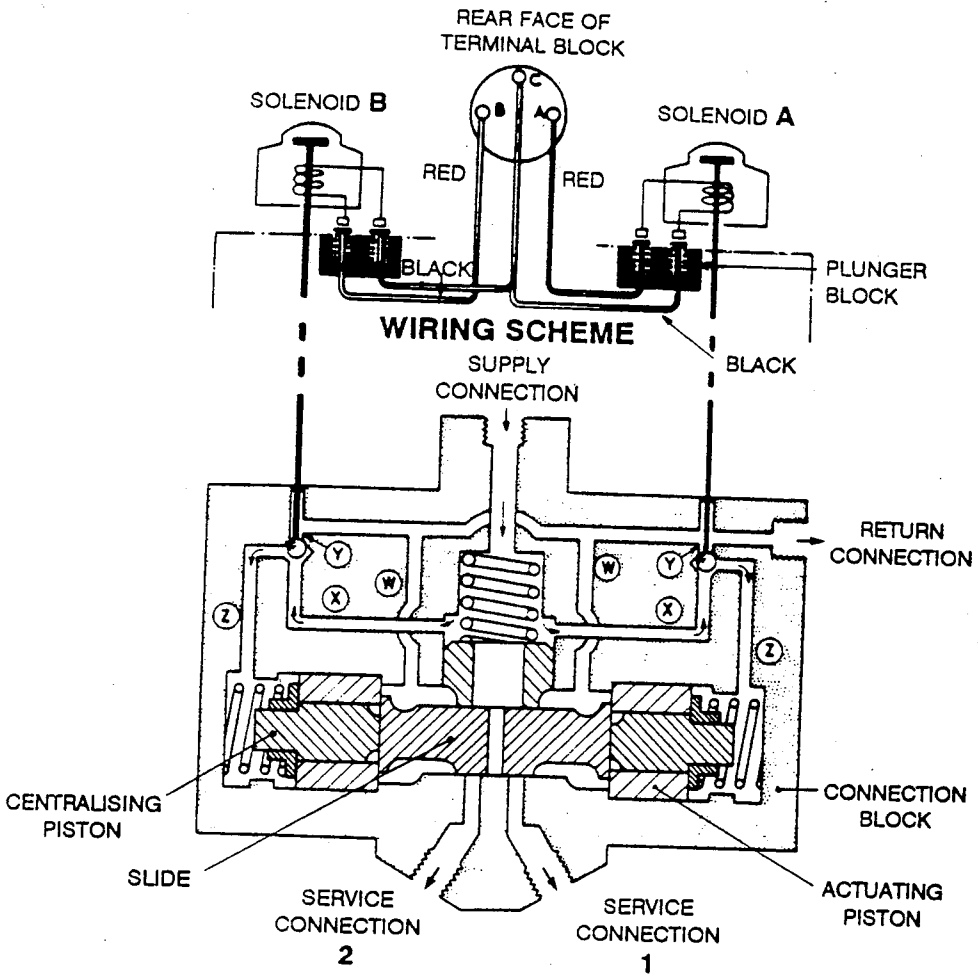
7 The two solenoids are located adjacent to the pilot valve assemblies and each is secured to the body by two studs and sleeve nuts. A terminal block sub-assembly, fitted between the solenoids and attached to the valve body by four screws, is wired to two plunger blocks. Each block is backed by an insulating mat and housed in a slot below the pilot valve. The leads of the terminal block sub-assembly pass to each plunger block through an insulating tube housed in the body and sealed at the ends by rubber plugs. A soft rubber shroud is fitted over each solenoid to permit manual operation if required.

8 Three annular grooves in each bore for the pilot valve assemblies connect the fluid ways X, Y and Z to drillings in the seats and the plug. The main supply is connected through the fluid way X, and drillings in the plug and the pressure seat, which permits the fluid to pass through the fluid way Z to the slide pistons. When the ball is held against the pressure seat, the fluid from the pistons may pass through the fluid way Z, through the return seat and the fluid way Y to the return connection.

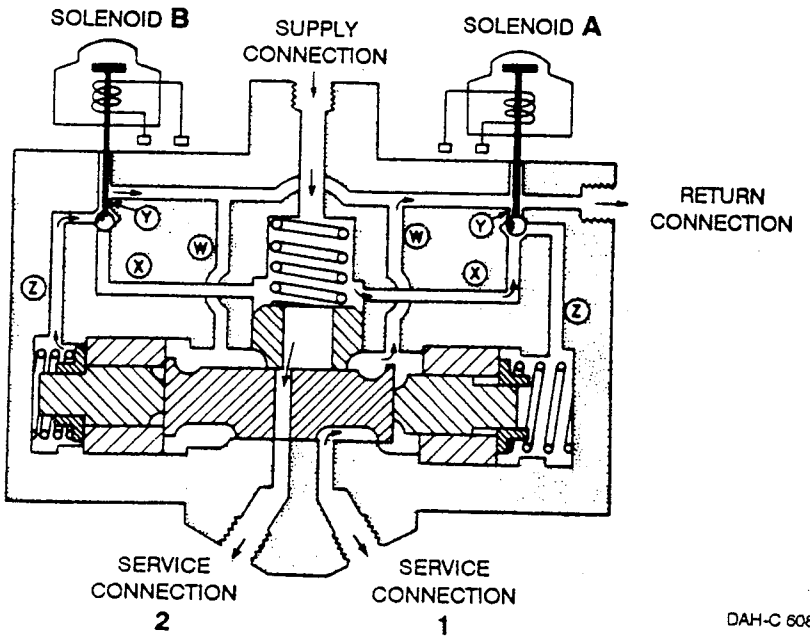
Functional description (Fig 3)

9 When both of the solenoids are de-energised, the spindle in each pilot valve assembly is held away from the ball by its spring. Pressurised fluid entering the unit at the supply connection flows through drilling X to the pilot valves and through drilling Z to the actuating pistons. The springs hold the slide central. While these conditions apply, the fluid entering at the supply connection is unable to pass through the unit since the slot in the slide lies mid-way between those in the connection block. The slide also overlaps the slots in the connection block effectively creating a hydraulic lock for the fluid in the service pipelines.

10 When a solenoid is energised, its plunger moves the spindle of the pilot valve to thrust the ball against the pressure seat. Fluid from the pressure line is prevented from reaching the relevant actuating piston and pressure on this piston is dissipated by way of the open return seat. The pressure, acting only on the opposite piston, moves the slide along the main bore. The slide pushes the two 'idle' pistons along with it until the centralising piston contacts the stop. Fluid on this side is swept back to return through drilling Z, the orifice in the return seat and drilling Y. The slot in the slide aligns with one of those in the connection block, permitting fluid from the supply connection to pass through the relevant connection in the block to operate the service. Fluid, returned from the service, enters the unit through the adjacent connection and slot in the block. The movement of the slide leaves this fluid a clear passage to the return line, through one of the ducts W and the return connection.



(a) BOTH SOLENOIDS DE-ENERGISED



(b) SOLENOID B ENERGISED SOLENOID A DE-ENERGISED

Fig 3 Functional diagram

11 When the solenoid is again de-energised, the spring in the pilot valve bore then reacts to withdraw the spindle and solenoid plunger from the ball. Fluid in the pressure line then pushes the ball back on the return seat and equal pressure is once more applied to the actuating pistons. While the slide is off centre, the pressure applied at one end of the combined area of both the actuating piston and centralising piston is transmitted to the slide. At the other end, as the centralising piston is not in contact with the slide, the pressure is effective only on the actuating piston. The resulting differential loading moves the slide back towards the central position. When the moving centralising piston has reached the limit of its inward travel, the pressure is effective only on the actuating piston and is equal at both ends. The slide, which is then centralised, ceases to move. In the central position, the slot in the slide is again mid-way between the two slots in the connection block. The fluid supply is then cut off and the service connections are hydraulically locked.

MAINTENANCE

Special tools and equipment

12 The following special tools, equipment and materials are required to carry out the maintenance procedures detailed.

Part No	Description	Application
ST1923	Assembly post	Assembling
ST1952	Assembly post	Assembling
ST1964	Assembly post	Assembling
ST1966	Spring compressor	Assembling
ST2081	Assembly post	Assembling
ST2760	Adapter	Assembling
-	Torque spanner	Assembling
-	Trichloroethane (TS367D)	Cleaning
-	White spirit (BS245)	Cleaning
-	Oil OM15 (DTD585)	Assembling
-	Grease MS4	Assembling
-	Corrosion preventative PX1	Preservation
-	Locking wire (DTD189A)	Locking parts

Safety and maintenance notes

13 Safety and maintenance notes or other general safety/maintenance requirements appropriate to the equipment, or to the main equipment, must be complied with where relevant throughout the work detailed in this publication.

BAY MAINTENANCE

Dismantling (Fig 1 and 2)

WARNING

SPECIFIC INTERNAL DETAILS OF THIS UNIT ARE SUBJECT TO SPRING PRESSURE AND CARE MUST BE EXERCISED WHEN DISMANTLING.

14 Discard all forms of sealing rings after removal from the unit.

14.1 Remove the supply, the return and the service connections.

14.2 Remove the four sleeve nuts and withdraw the two solenoid assemblies from the valve body.

NOTE

The two solenoid assemblies must not be dismantled further.

14.3 Remove the four bolts and withdraw the connection block.

14.4 Remove the two end plugs and withdraw the seatings, the springs, the washers, the spring housings, the actuating pistons, the centralising pistons and the slide.

14.5 Remove the thimble, the spring and the filter sub-assembly.

14.6 Carefully remove the housings, the washers, the spindles and the springs.

14.7 Remove the plugs and withdraw the pressure seats, the balls and the return seats.

14.8 Remove all O-ring seals, bonded seals and the anti-extrusion rings.

NOTE

Do not disturb the wiring sub-assemblies, terminal block sub-assemblies and the rubber plugs unnecessarily.

Cleaning

WARNING

CLEANING AGENT SHOULD BE USED IN A WELL VENTILATED AREA, AWAY FROM NAKED FLAMES. CARE SHOULD BE TAKEN NOT TO BREATHE THE FUMES OR ALLOW UNDUE CONTACT WITH THE SKIN.

CAUTION

Chlorinated solvents can combine with minute amounts of water found in operating hydraulic systems to form hydrochloric acid which will corrode internal metallic surfaces. It is imperative that all internal surfaces are dry and free from any traces of residual solvent prior to assembly and installation. For those applications where it is difficult to remove all traces of solvent, clean unused white spirit is recommended.

15 To enable all items to be visually examined for damage and wear, each part must be thoroughly cleaned using the appropriate cleaning agents and methods. When cleaning is completed, parts must be dried using compressed air; clean, lint-free cloth or tissues and all subsequent handling must be with clean PVC or polythene gloves. If delays occur before assembly, parts must be suitably protected against corrosion using temporary corrosion preventative PX1.

Examination and checking

16 Visually examine all parts for damage and corrosion. Check parts for permissible wear in accordance with fits and clearances paragraph 21.

Superficial damage

17 Superficial damage in the form of external isolated scores, smooth dents and abrasions free from cracks are to be regarded as negligible provided that internal dimensions are not affected and the damage is within the following limits:

17.1 Not exceeding 0.500 in long.

17.2 Not exceeding 0.010 in deep.

17.3 Not less than 0.250 in from any hole or bearing surface.

NOTE

Burrs must be removed and sharp edges blended out. Minor scores and abrasions in non-sealing bores may be ignored provided that proud portions of the abrasion are removed.

Checking data

18 Spring 500Y585

18.1 Number of working coils: 3

18.2 Wire size: 0.064 in (16 SWG)

18.3 Free length: 0.460 to 0.480 in

18.4 Check length: 0.330 in

18.5 Load at check length: 9 to 11 lbf.

19 Spring 500Y454

19.1 Number of working coils: 7

19.2 Wire size: 0.093 in

19.3 Free length: 1.100 to 1.120 in

19.4 Check length: 0.800 in

19.5 Load at check length: 39 to 45 lbf.

20 Spring 500Y371

20.1 Number of working coils: 2.5

20.2 Wire size: 0.0156 in

20.3 Free length: 0.105 to 0.125 in

20.4 Check length: 0.070 in

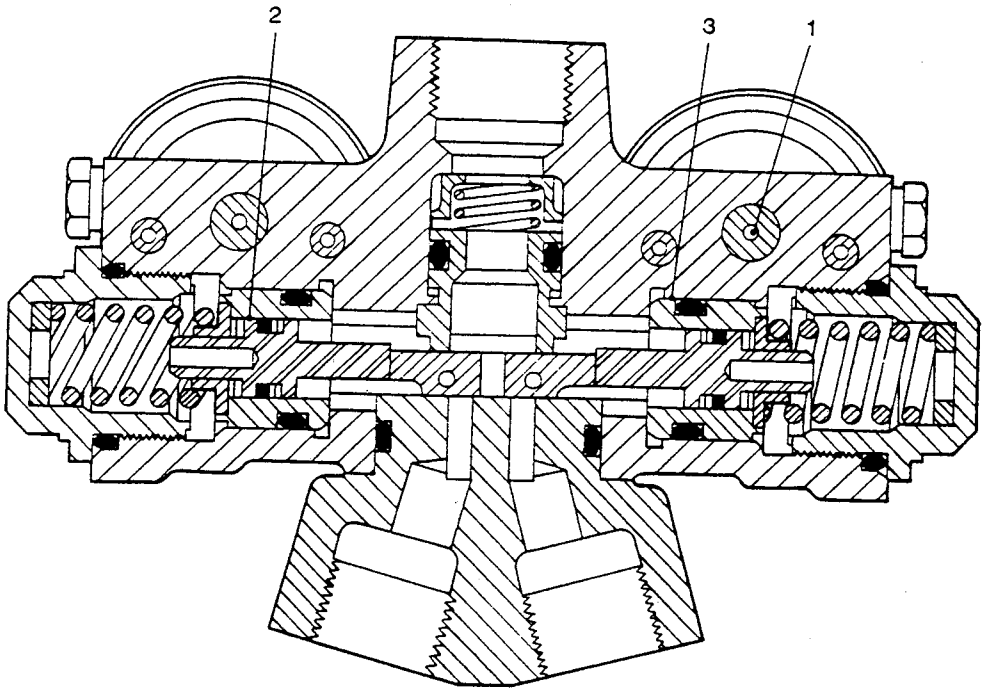
20.5 Load at check length: 0.600 to 1 lbf.

Fits and clearances (Fig 4)

21 Check that dimensions are within the specified limits.

FITS, CLEARANCES AND REPAIR TOLERANCES

Ref No on Fig 4	Parts and Description	Dimension New	Permissible Worn Dimension		Permissible Clearance		Remarks
			Interchangeable Assembly	Selective Assembly	New	Worn	
1	SPINDLE IN RETURN SEAT						
	Return seat i/d	0.09425 / 0.09325	0.09530	0.09570	0.00250 / 0.00050	0.00400	
	Spindle o/d	0.09275 / 0.09175	0.09130	0.09030			
2	ACTUATING PISTON IN CENTRALISING PISTON						
	Centralising piston i/d	0.5005 / 0.4995	0.5010	0.5015	0.0025 / 0.0005	0.0035	
	Actuating piston o/d	0.4990 / 0.4980	0.4975	0.4970			
3	CENTRALISING PISTON IN VALVE BODY						
	Valve body i/d	0.87575 / 0.87450	0.87630	0.87670	0.00350 / 0.00075	0.00450	
	Centralising piston o/d	0.87375 / 0.87225	0.87180	0.87130			



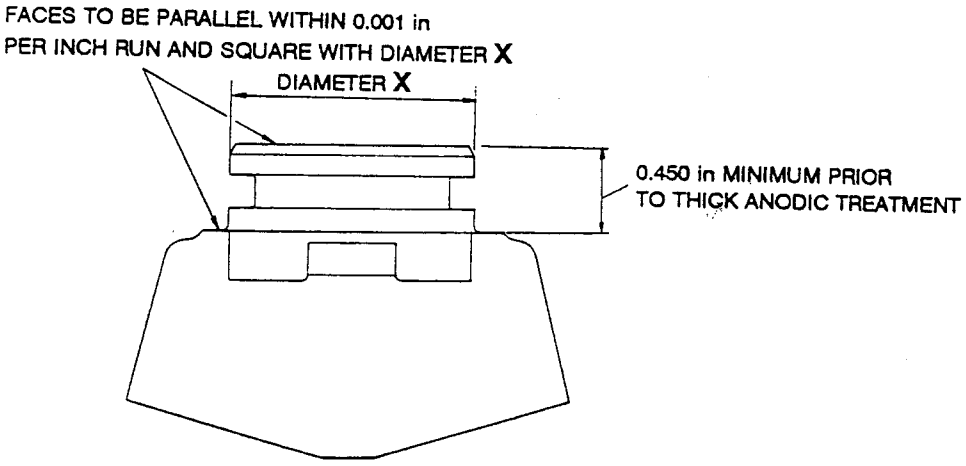


Fig 4 Fits and clearances

Assembling (Fig 1, 2 and 4)

22 Lightly lubricate all forms of sealing rings with clean oil OM15, before assembling into the unit.

22.1 Using assembly post ST1952, fit the O-rings to the return seats.

22.2 Using assembly post ST1923, fit the O-rings to the plugs and to the pressure seats.

22.3 Insert the return seats, the balls and the pressure seats into the bores of the pilot valves. Secure by fitting the plugs.

22.4 Assemble the small O-rings into the housings. Fit the springs over the spindles. Fit the washers onto the spindles and carefully slide the spindles, flanged end trailing, into the housings.

22.5 Fit the large O-rings on the housings and carefully slide the housings into the bores over the spindles.

22.6 Fit the O-ring to the thimble. Insert the filter sub-assembly, spring and thimble into the valve body.

22.6.1 Hold the thimble in position through the connection block aperture.

22.6.2 Insert the spring compressor ST1966 through the orifice of the supply connection (Fig 5, Stage 1) and allow the prongs of the centre piece to engage with the internal shoulder in the thimble.

22.6.3 Push the pin into the centre piece to ensure that the prongs are held in contact with the internal shoulder in the thimble (Stage 2).

22.6.4 Turn the nut and draw the thimble inwards against the spring to allow for the insertion of the slide.

22.6.5 Locate the slide centrally under the thimble. Withdraw the pin to its fullest extent and remove the spring compressor completely by giving it a sharp pull.

22.7 Assemble the O-ring to the connection block. Insert the connection block into the valve body and secure with the four bolts.

22.8 Fit the O-rings to the centralising pistons. Using assembly post ST1964, fit the O-rings and the anti-extrusion rings to the actuating pistons. If a new anti-extrusion ring is fitted, the feeder on the side of the ring must be cut off flush with the surface and then radially cut through to facilitate assembly to the piston. It must be assembled with the flush surface nearest to the centre of the unit when the piston is assembled.

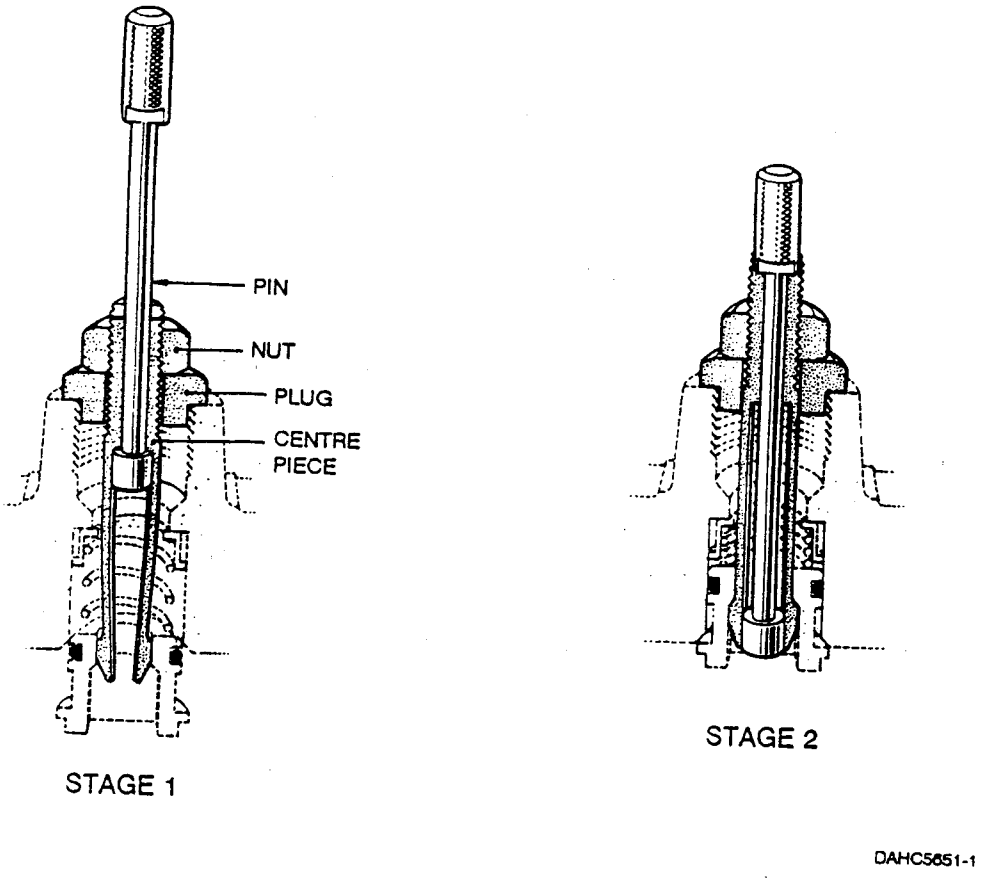


Fig 5 Use of spring compressor ST1966

22.9 Position the actuating pistons in the centralising pistons and insert the assemblies into the bore of the valve body, with the actuating pistons engaged with the slide.

22.10 Fit a spring housing followed by a spring, over the stem of each actuating piston.

NOTE

If necessary, a washer may be fitted between the spring housing and spring to meet the test requirements of Testing, paragraph 26.15 and 26.16.

22.11 Insert a seating into the bore of each end plug, with the chamfered face of the seating against the inner face of the end plug. Fit the O-rings to the end plugs using assembly post ST2081 and screw the end plugs into the valve body.

22.12 Use the adapter ST2760 and a torque spanner to torque tighten the two end plugs to between 50 and 55 lbf.ft.

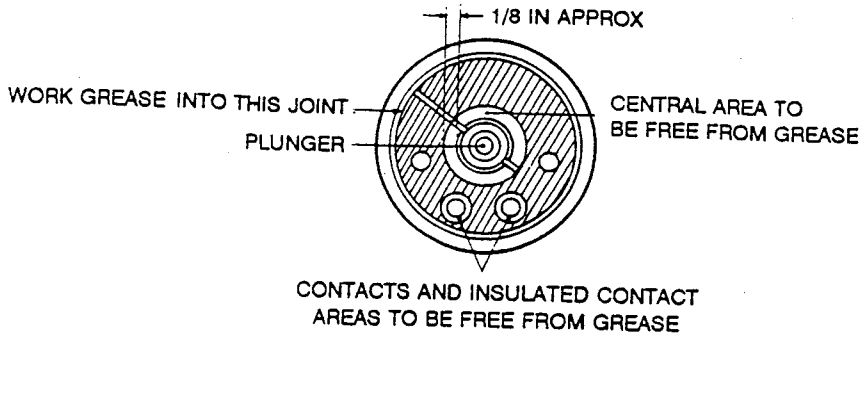


Fig 6 Solenoid greasing details

22.13 Before attaching the solenoids:

22.13.1 Ensure that the contact faces of the two solenoid assemblies and the valve body are clean.

22.13.2 Check for true engagement between the solenoid assemblies and the valve body in order that correct transfer of heat is made from the solenoid assemblies to the valve body.

22.13.3 Check by electrical test that the leads between the plug and the plunger block have been wired correctly.

22.13.4 Refer to Figure 6 and apply a thin film of grease MS4 to the contact faces of the solenoid assemblies excluding the area within 0.125 in of the aperture for the plunger housing, the contacts and insulated contact area. Work the grease into the joint and the groove around the outer periphery.

22.14 Position the two solenoid assemblies so that the contacts are in alignment with the wiring sub-assembly contacts. Insert the solenoid studs into the valve body. Screw in the four sleeve nuts from the opposite side of the valve body and torque tighten them incrementally to between 15 and 21 lbf.in.

22.15 Fit the bonded seals to the adapters for the supply, the return and the service connections 1 and 2 and screw them into the tappings of the valve body and the connection block.

22.16 When all tests have been satisfactorily completed, re-tighten the two end plugs to a torque of between 50 and 55 lbf.ft. Check for tightness of all external retaining nuts, bolts and the pilot valve retaining plugs. Wirelock the unit.

TESTING

Special tools and test equipment

23 The following special tools and test equipment are required to carry out the test procedures detailed.

Part No	Description	Application
-	Static hydraulic test rig with hand pump	Testing
-	Powered hydraulic test rig, capable of producing 3,700 lbf/in^2 at a flow rate of 2 gallons per minute	Testing
-	Electrical power supply 16 to 28 VDC	Testing
-	500 VDC insulation tester	Testing
-	Blanking adapter with bleed plug (Qty 2)	Testing
-	Slave jack	Testing
-	Electro-magnetic counter (Qty 2)	Slave jack and selector valve operations recording

Testing the unit (Fig 1 and 3)

WARNING

VOLTAGES IN EXCESS OF 30 VOLTS (RMS) AC OR 50 VOLTS DC CAN, IN CERTAIN CIRCUMSTANCES, BE LETHAL. WHEN WORKING ON SUCH SYSTEMS REQUIRING EXPOSURE TO LIVE UNPROTECTED CONDUCTORS, A SECOND PERSON MUST ALWAYS BE IN ATTENDANCE.

24 Ensure the selector valve is hydraulically full and bled free of air. All tests must be carried out using clean oil OM15. Using the equipment specified in paragraph 22. Carry out the following test procedures:

Electrical test

25 Before and on completion of all tests, an insulation test must be carried out. Connect the 500 VDC insulation tester between the valve body and each pin of the plug in turn. The insulation resistance must be greater than 20 megohms.

Adjustment and pressure tests

26

26.1 Connect the test rig supply line to the supply connection and fit the blanking adapters to service connections 1 and 2. Close the bleed plugs of the blanking adapters.

26.2 Connect the electrical power supply to the electrical plug ensuring that pin C is connected to earth. Adjust the power supply to 16 VDC.

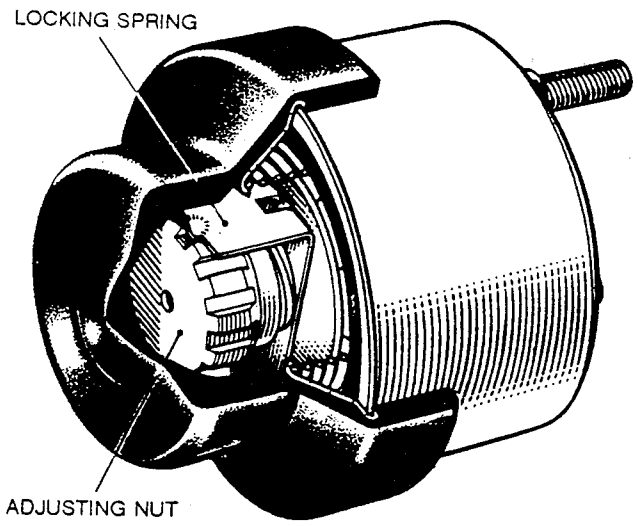


Fig 7 Location of solenoid plunger adjusting nut

26.3 Remove the rubber shrouds from both the solenoid assemblies and slacken the solenoid adjusting nuts. Refer to Figure 7. Energise solenoid A and apply a hydraulic pressure of 1000 lbf/in^2.

26.4 Screw down the solenoid adjusting nut until the ball of the pilot valve assembly is moved from its seat. This will be indicated by a drop in pressure.

26.5 Continue to screw down the nut until a pressure of 5200 lbf/in^2 can be held without leakage. Ensure that the locking spring is engaged in a serration of the adjusting nut and then screw down the nut by a further three clicks of the locking spring.

26.6 De-energise solenoid A and apply a pressure of 5200 lbf/in^2.

26.7 Energise solenoid A. The operation of the pilot valve will be indicated by a drop in pressure and a spurt of fluid from the return connection. It should be possible to raise the pressure again to 5200 lbf/in^2 without leakage from the return connection.

26.8 De-energise solenoid A and release the pressure.

26.9 Repeat the tests in paragraphs 26.3 to 26.8 for the solenoid B and its relevant pilot valve assembly. Release the pressure.

26.10 With both solenoids de-energised and the bleed plugs of the blanking adapters at service connections 1 and 2 opened, slowly apply a pressure of 300 lbf/in^2 and then gradually increase it to 6600 lbf/in^2. Leakage must not occur. Release the pressure.

26.11 Close the bleed plug at service connection 1 and energise solenoid A. Apply a pressure of 300 lbf/in^2. Open the bleed plug at service connection 1 and the pressure should be released.

26.12 Close the bleed plug at service connection 1 and de-energise solenoid A.

26.13 Close the bleed plug at service connection 2, energise solenoid B and apply a pressure of 300 lbf/in^2. Open the bleed plug at service connection 2 and the pressure should be released.

26.14 Close the bleed plug at service connection 2 and de-energise solenoid B. Raise the pressure to between 150 and 300 lbf/in^2 to centralise the slide. Release the pressure and remove the blanking adapters.

26.15 Slowly apply a pressure up to 300 lbf/in^2 and operate solenoid A. The valve must operate at a pressure between 175 and 300 lbf/in^2 when the solenoid is energised. Fluid must flow from service connection 1 within one second after energising the solenoid and must be a continual trickle and not just a fast drip. Increase the pressure to permit a fast flow through service connection 1 and then reduce the pressure to 50 lbf/in^2 and de-energise the solenoid. The flow from the service connection 1 should stop, but leakage at a rate of drops which can be counted easily is allowed.

26.16 Repeat the tests in paragraph 26.15 for solenoid B. Fluid should flow from service connection 2 and the same rate of leakage will apply.

NOTE

If necessary, a washer may be fitted under the appropriate spring to satisfy the test requirements of paragraphs 26.15 and 26.16. Refer to Assembling, paragraph 22.10.

26.17 With both solenoids de-energised, apply a pressure of 200 lbf/in^2 to centralise the slide. Release the pressure.

26.18 Connect a branch from the supply line to service connection 1. Apply a pressure of 300 lbf/in^2 simultaneously to supply connection and service connection 1 then gradually increase the pressure to 6600 lbf/in^2. Leakage from service connection 2 or return connection must not occur. Release the pressure and disconnect the branch line.

NOTE

A separate hand pump may be used in place of a branch supply line, but, if this procedure is adopted, the pressure must be released at the service connection before releasing the pressure at the supply connection.

26.19 Connect the branch line to service connection 2. Apply a pressure of 300 lbf/in^2 simultaneously to supply connection and service connection 2 then gradually increase the pressure to 6600 lbf/in^2. Leakage from service connection 1 or return connection must not occur. Release the pressure and disconnect the branch supply line.

26.20 Connect the supply line of a separate hand pump to the return connection. Apply and maintain a pressure between 1750 and 2000 lbf/in^2 at the supply connection and slowly apply a pressure of 100 lbf/in^2 at the return connection, gradually increasing the pressure to 1500 lbf/in^2. Leakage must not occur. Release the pressure first at the return connection and then at the supply connection. Disconnect the supply lines.

Power rig test

27

NOTE

During these tests, the fluid temperature must not rise above 45°C.

27.1 Connect the selector valve to the powered hydraulic test rig. Connect the service connections 1 and 2 to the head and to the piston rod end of the slave jack and the return line to the return connection. The supply line of the test rig must be connected to the supply connection.

27.2 Connect the electrical power supply and adjust to between 24 and 28 VDC.

27.3 Operate the selector valve for 500 cycles. One cycle is the extension and retraction of the slave jack with the test rig pump operating at 4000 to 4300 lbf/in^2 at the end of each stroke.

27.4 Record the slave jack cycles and selector valve operations on separate electro-magnetic counters. On completion of the cycling test, compare the recordings to ascertain whether any malfunctioning of the unit has occurred.

NOTE

The switching arrangement should be such that, if a pilot valve fails to operate, the switching system is rendered inoperative so that the solenoids will not continue to operate.

27.5 On conclusion of the 500 cycles, apply the following check to ensure that the pilot valves function satisfactorily.

27.5.1 Energise solenoid A to operate the slave jack and allow the pump pressure to build up to between 4000 and 4300 lbf/in^2.

27.5.2 De-energise solenoid A and disconnect the return line from the return connection.

27.5.3 Energise solenoid A and after an initial spurt of oil, leakage from the return connection must not exceed 10 drops per minute.

27.5.4 De-energise solenoid A and after an initial spurt of oil, leakage from the return connection must not exceed 10 drops per minute.

27.5.5 Reconnect the return line to the return connection and repeat the tests in paragraphs 27.5.1 to 27.5.4 for solenoid B.

27.5.6 Adjust the electrical power supply to 16 VDC and check that the selector valve still operates satisfactorily.

Static rig test

28 At the conclusion of the power rig test, carry out the following tests to check the operation of the pilot valve.

28.1 Connect the selector valve to the test rig as detailed in paragraphs 26.1 and 26.2.

28.2 Screw back both the solenoid adjusting nuts sufficiently to drop the pressure below 5200 lbf/in^2 with the solenoids energised.

28.3 Repeat the tests detailed in paragraphs 26.4 and 26.5 for solenoid A and B.

28.4 Repeat the tests detailed in paragraphs 26.6 to 26.8 for solenoid A and B.

28.5 Repeat the tests detailed in paragraphs 26.10 to 26.20. The pressure in paragraphs 26.10, 26.18 and 26.19 must not exceed 5200 lbf/in^2.

28.6 Finally, perform the operations detailed in paragraph 22.16.

PARTS CATALOGUE AND RELATED INFORMATION

FOR

SELECTOR VALVE

DOWTY AEROSPACE HYDRAULICS - CHELTENHAM

Part No 08832YA02

MODIFICATION RECORD

Mod No	AL No	Mod No	AL No	Mod No	AL No	Mod No	AL No	Mod No	AL No	Mod No	AL No
AC5592	*										

* Incorporated in initial issue of Catalogue
NA Mod not applicable to this Catalogue
C Mod cancelled
AS Amendment Sheet

PARTS CATALOGUE AND RELATED INFORMATION (TOPIC 3)

MEMORANDUM OF INSTRUCTIONS

Demands

1 Requirements for demands are:

1.1 The demand must quote the appropriate Reference Number for each item. Unreferenced parts are not normally provisioned as spares and demands for such items must quote the maker's Part Number and the name and type of the equipment. The location of each part within the equipment should be clearly indicated.

1.2 Demands are to be prepared in accordance with the procedure laid down in AP 830 Volume 1 or BR4.

Local manufacture

2 Parts annotated 'LM' are to be manufactured from local resources. If the manufacture of such items is beyond the capacity of the Unit, the demand is to be endorsed 'Unable to manufacture locally'.

Major repair

3 'MR' indicates that an item is required for major repair purposes only and will not normally be held in store by Units other than those authorised to undertake major repair of the equipment.

Units per assembly

4 The number quoted is the quantity required per next higher assembly in the position shown except 'attaching parts' which quote the quantity required to attach one item. The letters 'AR' in the 'Units per Assy' column indicate that the quantity is 'as required'. Where applicable the quantity normally fitted is shown as a nominal figure, eg (Nom 3). Where an item is listed only for reference purposes the letters 'RF' are quoted.

Classification of equipment

5 The Class of Store is indicated by a single letter as laid down in AP 1830 Volume 1 or BR4.

Fitting code (FC)

6 The FC is indicated by one of the following letters and is only quoted against parts which are not directly interchangeable:

V Open up holes on assembly
W Partially assembled
X Ream or machine on assembly
Y Drill or drill and tap on assembly
Z Trim on assembly

Obsolescent stock

7 An asterisk in the 'Part No' column indicates that no further purchases of the item will be made but the part is to be used until stocks are exhausted.

Modifications

8 When items are affected by a modification the 'Mod No' is quoted in the description. Modifications incorporated in the catalogue are listed in the Modification Record.

Manufacturers NATO code

9 The NATO supply code for manufacturers is an alpha-numeric code for non-US based approved manufacturers and a numeric code for US based approved manufacturers. Manufacturers details related to a specific code are contained in the following publications available from DCA, Kentigern House, 65 Brown Street, Glasgow G2 8EX.

99-H4-1 Name to Code
99-H4-2 Code to Name

Usage code

10 The usage code column is normally left blank indicating full applicability of all items. Where a code letter is shown, it indicates that all items with that letter form part of the same assembly or sub-assembly.

INDEX OF PART NUMBERS

Part Number	DMC	Reference Number	Fig/Index	C of S or LM	FC
SCREW, DRIVE PARKER KALON, 0 X 1/8 IN DIA			1-5		
BALL, 1/16 IN DIA			1-39		
AGS1186D	28F	5330-99-2077439	1-2	C	
AGS1186-3		5330-99-8274247	1-42	C	
AGS1754-14			1-50		
AGS596B	28N	5340-99-4043800	1-52		
AS43A24	28S	5305-99-9446553	1-51		
A5151YMK126		5945-99-8021755	1-10		
C4600Y12	27Q	4820-99-4117796	1-25	C	
C4600Y13		1650-99-5805433	1-26		
C4600Y24			1-12		
C4600Y25	27Q	5330-99-5805351	1-43	C	
C4600Y32	27Q	4820-99-4117795	1-38	C	
C4600Y38	27Q	1620-99-4708782	1-22	C	
C4600Y6	27Q	4730-99-4143336	1-36	C	
C4600Y8			1-40		
C5156YA			1-44		
D5149Y2			1-48		
D5149Y3	27Q	5940-99-4117773	1-46		
GD1309B1-2	27QA	5330-99-5802881	1-32	C	
GD1309B5	27QA	5330-99-5802879	1-31	C	
SP826-1C	27Q	5305-99-1031567	1-11	C	
SP880B		5310-99-9452626	1-53		
SP885C46	27Q	5305-99-5805348	1-41	C	
SP900-10	27QA	5330-99-5802282	1-27	C	
SP900-20	27QA	5330-99-9143527	1-13	C	
SP900-3	27QA	5330-99-9440406	1-37	C	
SP900-7	27QA	5330-99-9431638	1-21	C	
07471Y023	27Q	4820-99-4117777	1-8	L	
08817Y002		1650-99-4204564	1-4		
08822Y002	27Q	5365-99-4117875	1-14	C	
08832YA01	27Q	1650-99-4680097	1-3		
08832YA02	27QM	4820-99-4117869	1		
1220Y34	5CW	5325-99-4401013	1-49		
20000Y244		9905-99-5802913	1-7		
2000Y117		9905-99-4143343	1-6		

INDEX OF PART NUMBERS

Part Number	DMC	Reference Number	Fig/Index	C of S or LM	FC
3300Y1262	27Q	5330-99-4140140	1-24	C	
3300Y1819	27Q	4820-99-4117877	1-16	C	
3300Y808A	78BA	1440-99-9016745	1-29		
500Y371	27Q	5360-99-5808404	1-35	C	
500Y454	27Q	5340-99-8021760	1-17	C	
500Y585		5360-99-5805352	1-28		
5149Y		4810-99-8021567	1-45		
5149Y14	27Q	5330-99-4117775	1-47		
5149Y7	27Q	5330-99-4117774	1-47A		
5770Y5	27Q	1650-99-4140138	1-19	C	
5770Y7	27Q	5310-99-4143351	1-18	C	
7425Y2	27Q	4820-99-4117873	1-23	C	
7425Y3	27Q	4820-99-4117874	1-20	C	
7439Y4	27Q	1650-99-5808685	1-30	C	
7439Y5	27Q	5310-99-5805336	1-33	C	
7439Y6	27Q	1650-99-4143338	1-34		
7439Y7	27Q	5310-99-5805337	1-9	C	
7471Y4	27Q	5330-99-5802896	1-15	C	
750060103	27QA	5330-99-9440406	1-37A	C	
750060107		5330-99-7141034	1-21A	C	
750060110			1-27A	C	
750060120		5330-99-7141036	1-13A	C	
750150105	6TN	5330-99-8021606	1-31A	C	
750150605			1-32A	C	
9952-1			1-1		

DETAILED PARTS LIST

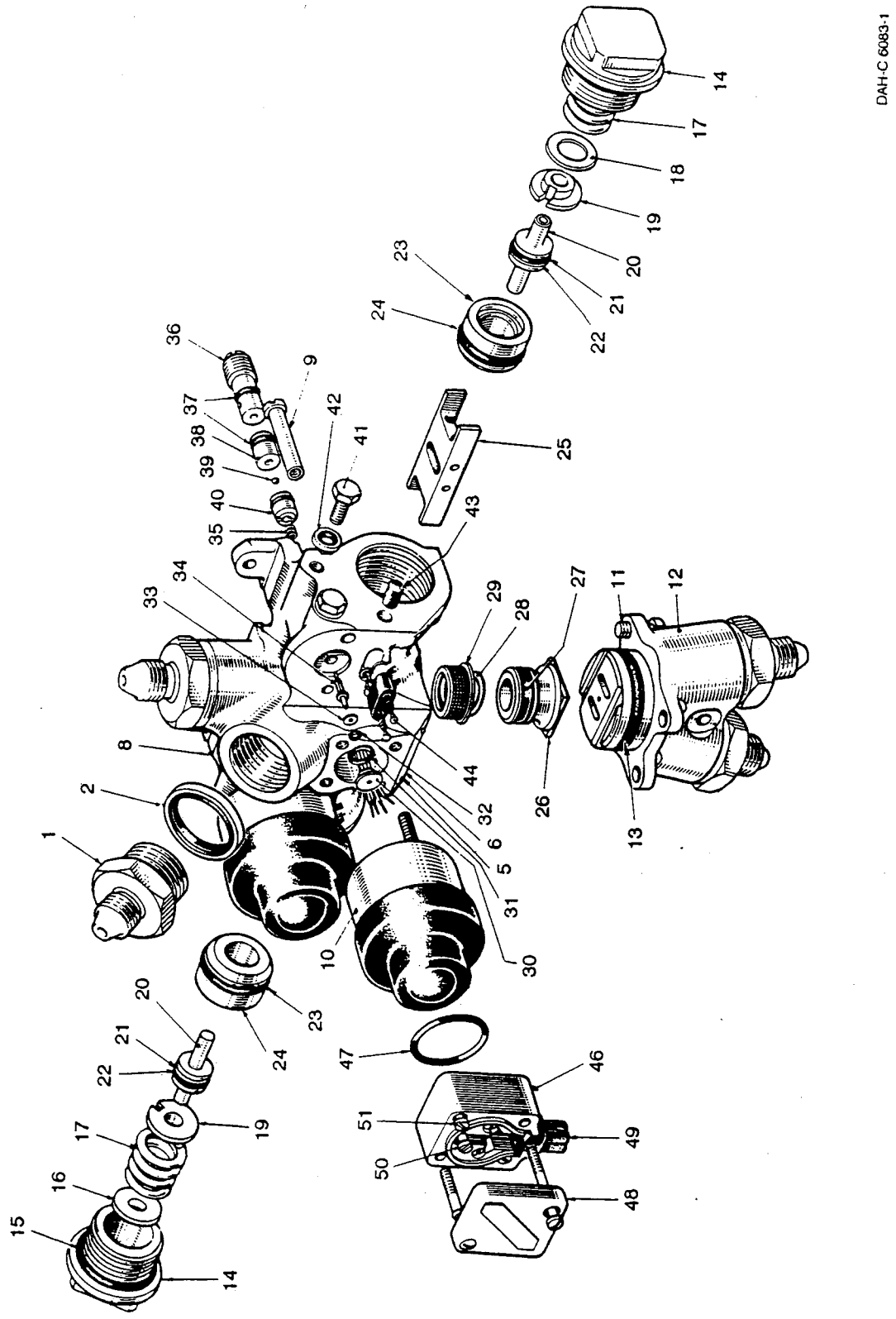


Fig 1 Selector valve

SELECTOR VALVE

Fig/ Index No	Part No	1 2 3 4 5 6 Nomenclature	Mnfrs NATO Code	Usage Code	Units per Assy
1	08832YA02	Valve, selector (Mod AC5592)			RF
-1	9952-1	. Union, reducing			4
-2	AGS1186D	. Seal, bonded			4
-3+	08832YA01	. Valve assembly, selector			1
-4+	08817Y002	. . Body sub-assembly			1
-5	ND	. . . Screw, drive, Parker Kalon, 0 x 1/8 in dia			4
-6	2000Y117	. . . Nameplate			1
-7+	20000Y244	. . . Plate, identification			1
-8	07471Y023	. . . Body, valve			1
-9	7439Y7	. . Nut, sleeve			4
-10	A5151YMK126	. . Solenoid assembly			2
-11	SP826-1C	. . Bolt			4
-12	C4600Y24	. . Block, connection			1
-13	SP900-20	. . O-ring			1
	or	(Alternative)			
-13A+	750060120	. . O-ring			1
-14	08822Y002	. . Plug, end			2
-15	7471Y4	. . O-ring			2
-16	3300Y1819	. . Seating			2
-17	500Y454	. . Spring			2
-18	5770Y7	. . Washer			2 max
-19	5770Y5	. . Housing, spring			2
-20	7425Y3	. . Piston, actuating			2

+ Item not illustrated

SELECTOR VALVE

Fig/ Index No	Part No	1 2 3 4 5 6 Nomenclature	Mnfrs NATO Code	Usage Code	Units per Assy
1-21	SP900-7 or	. . O-ring (Alternative)			2
-21A+	750060107	. . O-ring			2
-22	C4600Y38	. . Ring, anti-extrusion			2
-23	7425Y2	. . Piston, centralising			2
-24	3300Y1262	. . O-ring			2
-25	C4600Y12	. . Slide			1
-26	C4600Y13	. . Thimble			1
-27	SP900-10 or	. . O-ring (Alternative)			1
-27A+	750060110	. . O-ring			1
-28	500Y585	. . Spring			1
-29	3300Y808A	. . Filter sub-assembly			1
-30	7439Y4	. . Housing			2
-31	GD1309B5 or	. . O-ring (Alternative)			2
-31A+	750150105	. . O-ring			2
-32	GD1309B1-2 or	. . O-ring (Alternative)			2
-32A+	750150605	. . O-ring			2
-33	7439Y5	. . Washer			2
-34	7439Y6	. . Spindle			2
-35	500Y371	. . Spring			2
-36	C4600Y6	. . Plug			2
-37	SP900-3 or	. . O-ring (Alternative)			6
-37A+	750060103	. . O-ring			6

+ Item not illustrated

SELECTOR VALVE

Fig/ Index No	Part No	1 2 3 4 5 6 Nomenclature	Mnfrs NATO Code	Usage Code	Units per Assy
1-38	C4600Y32	. . Seat, pressure			2
-39	ND	. . Ball, 1/16 in dia			2
-40	C4600Y8	. . Seat, return			2
-41	SP885C46	. . Screw, set			4
-42	AGS1186-3	. . Seal, bonded			4
-43	C4600Y25	. . Plug, rubber			2
-44	C5156YA	. . Wiring sub-assembly			2
-45+	5149Y	. . Block sub-assembly, terminal			1
-46	D5149Y3	. . . Block sub-assembly, terminal			1
-47	5149Y14	. . . O-ring (for use with terminal block marked TX) (Alternative)			1
	or				
-47A+	5149Y7	. . . O-ring (for use with terminal block marked T or without marking)			1
-48	D5149Y2	. . . Cover assembly			1
-49	1220Y34	. . . Grommet			1
-50	AGS1754-14	. . . Screw and washer			3
-51	AS43A24	. . . Screw, cheesehead			4
-52+	AGS596B	. Cap, dust (Storage and transit)			4
-53+	SP880B	. Washer, sealing (Storage and transit)			4

+ Item not illustrated