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AP 4515B Vol 3 Pt 1 Sect 2 Chap 5,
AP 4515B Vol 3 Pt 1 Chap 9 and
AP 4515B Chap 15)

**ONE-WAY RESTRICTOR VALVE
DOWTY AEROSPACE GLOUCESTER
Part Nos 03371YB01, D6306Y,
D4141Y and 06207YB01**

**GENERAL AND TECHNICAL INFORMATION (-1)
PARTS CATALOGUES AND RELATED INFORMATION (-3)**

BY COMMAND OF THE DEFENCE COUNCIL

W. J. G. Jones

DERA

Ministry of Defence

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Service users should send their comments through
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WARNINGS

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH

MAKE SURE YOU KNOW THE SAFETY PRECAUTIONS AND FIRST AID INSTRUCTIONS BEFORE
YOU USE A HAZARDOUS SUBSTANCE

READ THE LABEL ON THE CONTAINER IN WHICH THE SUBSTANCE IS SUPPLIED

READ THE DATA SHEET APPLICABLE TO THE SUBSTANCE

OBEY THE LOCAL ORDERS AND REGULATIONS

WARNINGS

- (1) WHITE SPIRIT. THIS PUBLICATION CONTAINS PROCEDURES WHICH USE WHITE SPIRIT. REFER TO AP100B-10, DATA SHEET S2803.
- (2) LOTOXANE. THIS PUBLICATION CONTAINS PROCEDURES WHICH USE LOTOXANE. REFER TO AP100B-10, DATA SHEET S2802.
- (3) PREVENTATIVE PX1. THIS PUBLICATION CONTAINS PROCEDURES WHICH USE PREVENTATIVE PX1. REFER TO AP100B-10, DATA SHEET S3301.

GENERAL

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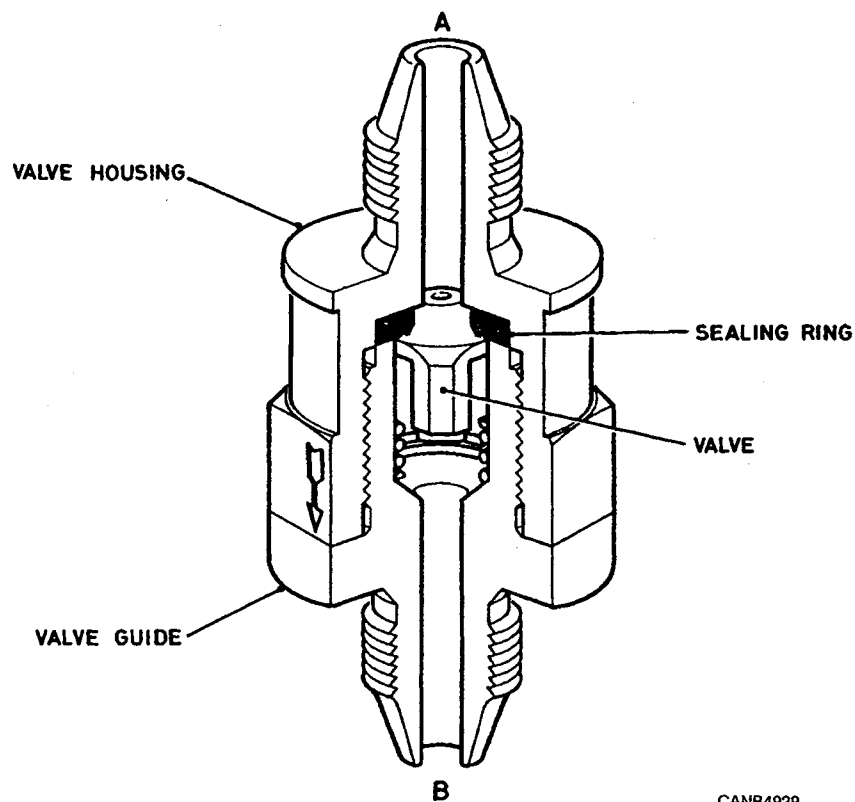
- A One-way restrictor valve, Dowty Aerospace Hydraulics - Cheltenham Part No 03371YB01
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Leading particulars

- 1 Refer to the appropriate annex for the leading particulars.

Modification state

- 2 Refer to the appropriate annex for the modification state.



CANB4929

Fig 1 One-way restrictor

Introduction

3 These valves are fitted in specific hydraulic systems to restrict the fluid flow in one direction and yet allow an unrestricted flow in the opposite direction. The basic type of valve is described, and variants are detailed in the annexes.

Constructional description (Fig 1)

4 The unit consists of a spring-loaded valve contained in a valve guide which is screwed into a valve housing against a sealing ring. The sealing ring forms the valve seat. The outer ends of the housing and the guide, form the fixed olive type pipe connections.

Functional description

- 5 Fluid entering the unit through connection B passes through the valve which restricts the flow through connection A.
- 6 Fluid entering the unit through connection A lifts the valve off the sealing ring against the spring, allowing the fluid to flow unrestricted through connection B,

MAINTENANCESpecial tools and equipment

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

<u>Part No</u>	<u>Description</u>	<u>Application</u>
▶ —	Lotoxane (MIL-T-81533A)	Cleaning ◀
—	White spirit (BS245)	Cleaning
—	Oil OM-15 (DTD585)	Assembling
—	Corrosion preventative (PX-1)	Preservation
—	Locking wire (DTD189A)	Locking parts

Safety and servicing notes

- 8 Safety and servicing notes or other general safety/servicing requirements appropriate to the equipment, or to the main equipment, are to be complied with where relevant throughout the work detailed in this publication.

ROUTINE BAY SERVICINGDismantling (Fig 1)WARNING ...

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

- 9 Discard the sealing ring and the locking wire on removal from the unit.
- 9.1 Unscrew the valve guide from the valve housing.
- 9.2 Withdraw the valve, the spring and the sealing ring.

Cleaning► WARNING ...

(1) LOTOXANE. LOTOXANE IS USED IN THE MAINTENANCE OF THIS EQUIPMENT. REFER TO THE WARNING IN THE PRELIMINARY PAGES OF THIS PUBLICATION.

(2) PREVENTATIVE PX-1. PREVENTATIVE PX-1 IS USED IN THE MAINTENANCE OF THIS EQUIPMENT. REFER TO THE WARNING IN THE PRELIMINARY PAGES OF THIS PUBLICATION.

(3) WHITE SPIRIT. WHITE SPIRIT IS USED IN THE MAINTENANCE OF THIS EQUIPMENT. REFER TO THE WARNING IN THE PRELIMINARY PAGES OF THIS PUBLICATION.

10 To enable all items to be visually examined for damage and wear, each part must be thoroughly cleaned using lotoxane or white spirit. 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 PX-1.

Examination and checking

11 Visually examine all parts for damage and corrosion.

Superficial damage

12 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:

- 12.1 Not exceeding 0.500 in long.
- 12.2 Not exceeding 0.010 in deep.
- 12.3 Not less than 0.250 in from any hole or bearing surface.

NOTE ...

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

Checking data

13 Spring SP310-25

- 13.1 Number of working coils: -
- 13.2 Wire size: 0.028 in (22 SWG)
- 13.3 Free length: 0.500 in
- 13.4 Check length: 0.390 in
- 13.5 Load at check length: 1.250 lbf.

Assembling (Fig 1)

14 Lightly lubricate the sealing ring with clean oil OM15 before assembling into the unit.

- 14.1 Install the sealing ring with the chamfered edge leading into the valve housing.
- 14.2 Insert the spring and the valve into the valve guide.
- 14.3 Screw the valve guide tightly into the valve housing.
- 14.4 Check that the valve has been correctly assembled by carefully inserting a bar of suitable diameter, in turn, through each connection. The deepest penetration should be from the valve guide connection. During this operation, when the bar is inserted in the valve housing connection, check the minimum lift of the valve, which should be 0.08 in.
- 14.5 When the test detailed in paragraph 16 is satisfactorily completed, wirelock the valve guide to the valve housing.

TESTING

Special tools and test equipment

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

<u>Part No</u>	<u>Description</u>	<u>Application</u>
-	Static hydraulic test rig	Testing
-	Blank	Testing

Testing the unit (Fig 1)

16 Using the equipment specified in paragraph 15, carry out the following test procedure:

16.1 Connect the test rig supply line to connection A and blank off connection B.

16.2 Operate the test rig and gradually apply a pressure of 5000 lbf/in². Leakage must not occur.

16.3 Release the pressure, disconnect the supply line and remove the blank.

Annex AONE-WAY RESTRICTOR VALVEDOWTY AEROSPACE GLOUCESTERPart No 03371YB01Leading particulars

1 Leading particulars of this unit are as follows:

1.1	System fluid	Oil OM15
1.2	Test pressure	5000 lbf/in ²
1.3	Connections A and B	0.375 in BSP

Modification state

2 The information in this annex includes all appropriate modifications up to and including issue 10.

Introduction

3 This unit is identical to that described and illustrated in the general text.

Annex BONE-WAY RESTRICTOR VALVEDOWTY AEROSPACE GLOUCESTERPart No D6306YLeading particulars

1 Leading particulars of this unit are as follows:

1.1	System fluid	Oil OM15
1.2	Test pressure	4050 lbf/in ²
1.3	Connections A and B	0.375 in BSP

Modification state

2 The information in this annex includes all appropriate modifications up to and including issue 8.

Introduction

3 This unit is similar to that described and illustrated in the general text except that a filter is incorporated in the valve, the connections are the loose olive type and the test pressure is different. The valve guide and valve housing are dimensionally different.

Testing

4 Test the unit in accordance with paragraph 16 of the general text but substitute the pressure in paragraph 16.2 for 4050 lbf/in².

Annex CONE-WAY RESTRICTOR VALVEDOWTY AEROSPACE GLOUCESTERPart No D4141YLeading particulars

1 Leading particulars of this unit are as follows:

1.1	System fluid	Oil OM15
1.2	Test pressure	4950 lbf/in ²
1.3	Connections A and B	0.125 in BSP

Modification state

2 The information in this annex includes all appropriate modifications up to and including issue 6A.

Introduction

3 This unit is similar to that described and illustrated in the general text except for dimensional differences and a different test pressure.

Testing

4 Test the unit in accordance with paragraph 16 of the general text but substitute the pressure in paragraph 16.2 for 4950 lbf/in².

Annex DONE-WAY RESTRICTOR VALVEDOWTY AEROSPACE GLOUCESTERPart No 06207YB01Leading particulars

1 Leading particulars of this unit are as follows:

1.1	System fluid	Oil OM15
1.2	Test pressure	4950 lbf/in ²
1.3	Connections A and B	0.250 in BSP

Modification state

2 The information in this annex includes all appropriate modifications up to and including issue 12.

Introduction

3 This unit is similar to that described and illustrated in the general text except for dimensional differences, a different test pressure and a filter is incorporated in the valve.

Testing

4 Test the unit in accordance with paragraph 16 of the general text but substitute the pressure in paragraph 16.2 for 4950 lbf/in².

PARTS CATALOGUES AND RELATED INFORMATION

FOR

ONE-WAY RESTRICTOR VALVE

DOWTY AEROSPACE GLOUCESTER

Part Nos 03371YB01, D6306Y, D4141Y and 06027YB01

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
AC4357	*										
AC4360	*										
AC4580	*										
AC4584	*										
AC6079	*										
AC6820	*										

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

PARTS CATALOGUES AND RELATED INFORMATION (TOPIC 3)

PREFACE

Demands

1 Requirements for demands are:

1.1 The demand must quote the appropriate Vocabulary Section and Reference/Stock Number for each item. Unreferenced parts are not normally provisioned as spares and demands for such items must quote the Vocabulary Section, 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 to 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, e.g. (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 AP830 Volume 1 or BR4.

Condition of supply (Interchangeability Code)

6 Condition of Supply 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 Nomenclature. Modifications incorporated in the catalogue are listed in the Modification Record.

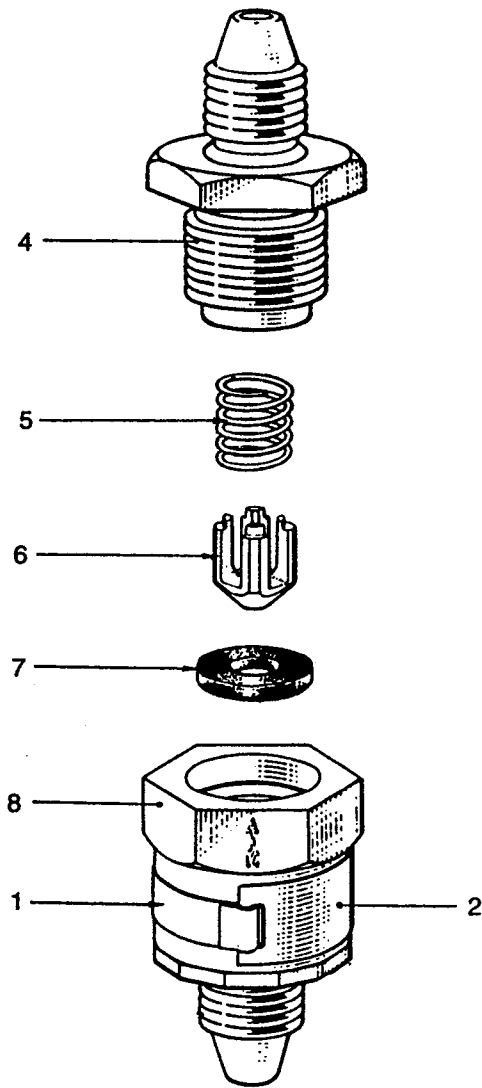
Usage code

9 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	Vocab Sect	NATO Stock No Ref No or LM	Fig/ Index No
AGS596A	28N	5340-99-9128964	1-9A
AGS596B	28N	5340-99-9128965	1-9B
AGS596C	28N	5340-99-9143884	1-9
D3371Y1			1-8
D3371Y3			1-6C
D4141Y	27Q	4820-99-4117615	1
D4141Y1			1-3B
D4141Y2			1-8B
D4141Y3			1-4B
D6306Y	27Q	6685-99-4154011	1
SP310-25	27Q	5340-99-4143274	1-5
03371YB01	27Q	1650-99-4143237	1
			1-3
06207YB01	27Q	4820-99-4117622	1
06207Y002	27Q	5330-99-9441759	1-7
			1-7B
			1-7D
06207Y003			1-3C
2000Y108			1-2
2000Y15		5340-99-4170071	1-1
2000Y75			1-2A
3371Y10	27Q	4820-99-4154013	1-8A
3371Y11			1-4A
3371Y15			1-6A
3371Y2			1-4
3371Y3			1-6
3371Y4			1-8C
3371Y5			1-4C
454Y6			1-7A
			1-7C
6306Y1			1-3A
6307Y1			1-6B
6308Y12	27Q	4820-99-4117626	1-6D

DETAILED PARTS LIST



CANB4753

Fig 1 One-way restrictor valve

ONE-WAY RESTRICTOR VALVE

Fig/ Index No	Part No	1 2 3 4 5 6 Nomenclature	Usage Code	Units per Assy
1	03371YB01	Valve, restrictor, one-way (Mod AC6820)	A	RF
1+	D6306Y	Valve, restrictor, one-way (Mod AC4580)	B	RF
1+	D4141Y	Valve, restrictor, one-way (Mod AC6079)	C	RF
1+	06207YB01	Valve, restrictor, one-way (Mod AC4584)	D	RF
-1	2000Y15	. Strap, nameplate		1
-2	2000Y108	. Nameplate	ABC	1
-2A+	2000Y75	. Nameplate	D	1
-3+	03371YB01	. Valve assembly, restrictor, one-way	A	1
-3A+	6306Y1	. Valve assembly, restrictor, one-way	B	1
-3B+	D4141Y1	. Valve assembly, restrictor, one-way	C	1
-3C+	06207Y003	. Valve assembly, restrictor, one-way	D	1
-4	3371Y2	. . Guide, valve	A	1
-4A+	3371Y11	. . Guide, valve	B	1
-4B+	D4141Y3	. . Guide, valve	C	1
-4C+	3371Y5	. . Guide, valve	D	1
-5	SP310-25	. . Spring		1
-6	3371Y3	. . Valve	A	1
	or			
-6A+	3371Y15	. . Valve	A	1
-6B+	6307Y1	. . Valve	B	1
-6C+	D3371Y3	. . Valve	C	1
-6D+	6308Y12	. . Valve	D	1

+ Item not illustrated

ONE-WAY RESTRICTOR VALVE

Fig/ Index No	Part No	1 2 3 4 5 6 Nomenclature	Usage Code	Units per Assy
1-7	06207Y002	. . Ring, sealing	AD	1
-7A+	454Y6	. . Ring, sealing (Pre Mod AC4357)	B	1
-7B+	06207Y002	. . Ring, sealing (Mod AC4357)	B	1
-7C+	454Y6	. . Ring, sealing (Pre Mod AC4360)	C	1
-7D+	06207Y002	. . Ring, sealing (Mod AC4360)	C	1
-8	3371Y1	. . Housing, valve	A	1
-8A+	3371Y10	. . Housing, valve	B	1
-8B+	D4141Y2	. . Housing, valve	C	1
-8C+	3371Y4	. . Housing, valve	D	1
-9+	AGS596C	. Cap, dust (Storage and transit)	AB	2
-9A+	AGS596A	. Cap, dust (Storage and transit)	C	2
-9B+	AGS596B	. Cap, dust (Storage and transit)	D	2

+ Item not illustrated



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