

# Service Instruction



## 1. General

(a) No.:	36
(b) Issue / Date	Issue B / December-2023
(c) Title:	Change of fuel cylinder Vertical Outlet QSO valve assembly to Horizontal outlet.
(d) Description:	This document provides instructions for the conversion of fuel cylinder vertical outlet QSO valve assembly to horizontal outlet.
(e) Applicability:	All types and models using cylinders with vertical outlet quick shut-off valve assembly (VQSO)
(f) Effectivity:	All

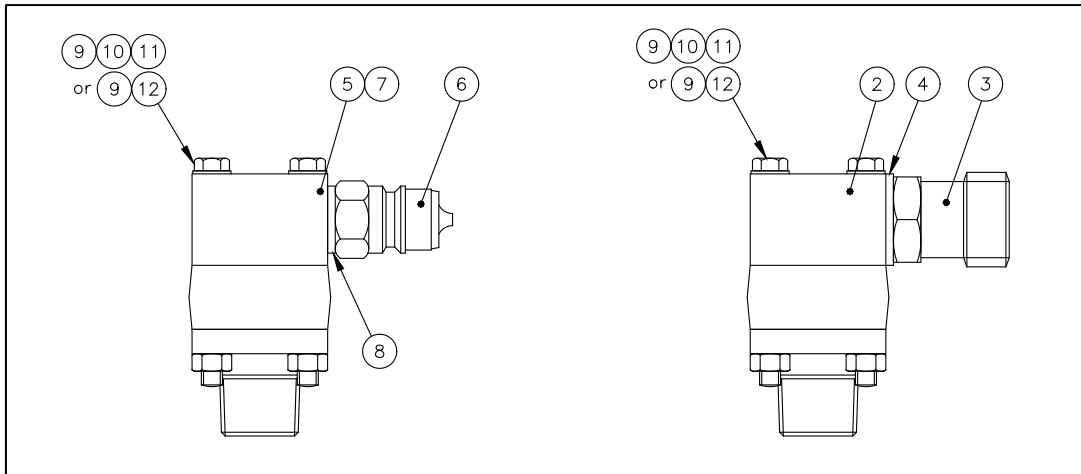
**Note:** Applicability= All types and variants to which the change can be applied.  
Effectivity= Actual CN or group of CN's to which the bulletin has been/will be applied.

## 2. Accomplishment Instructions

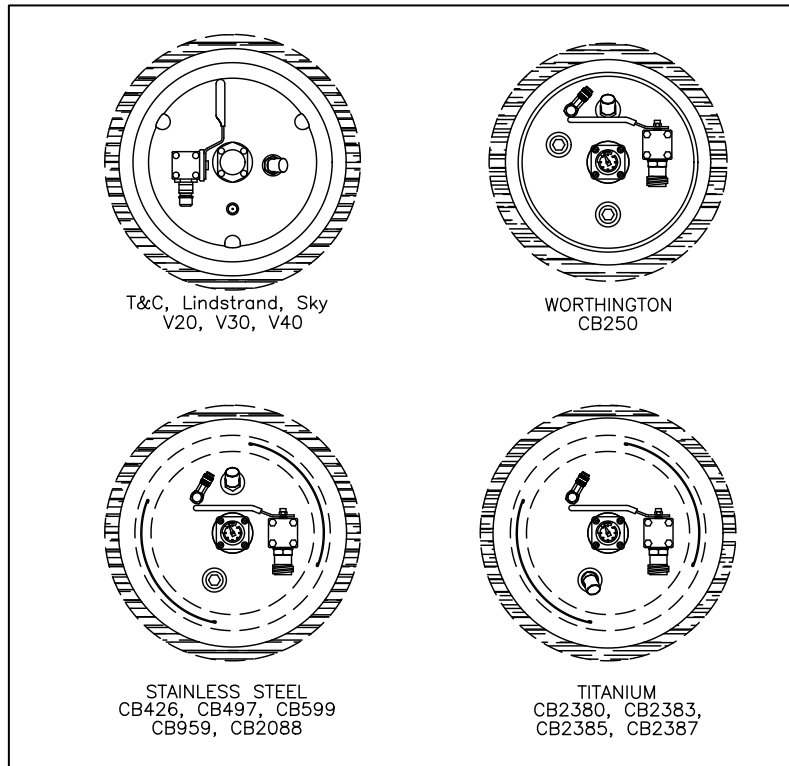
1. Empty, purge, and fully de-pressurise the cylinder as described in MMS 7.52 before starting work.
2. Undo and discard the four M6 bolts to dismantle the valve assembly.
3. Discard the outlet flange, Rego connector and Dowty seal (The Tema connector may be re-used if it is in good condition).
4. Place the adaptor block (Item 2, Rego, or Item 5, Tema) in a vice. Protect the gripped faces (especially the sealing face) from damage.
5. Rego outlet: Fit the bonded seal (4) over the UNF threaded end of Rego outlet (3). Apply Loctite 270 to the threads. Screw the connector into the adaptor block (2) and torque to 50 Nm.
6. Tema outlet: Apply Loctite 270 to one end of the threaded adaptor (7). Screw the threaded adaptor fully into the Tema coupling (6). Fit the bonded seal (8) over the thread. Apply Loctite to the thread, insert into the adaptor block (5) and torque to 50 Nm.
7. Replace the seals in the Worcester valve as required. The face seals must be replaced.
8. Assemble the adaptor block and Worcester valve onto the cylinder flange. Orientation of the Worcester valve and liquid outlet are shown in Fig 2.
9. Check the length of the M6 bolts (Item 10 or 12) is correct before assembly, especially ensuring clearance between the end of the bolt and the domed end of the cylinder. Fit washers (Item 9) under the bolt heads.

Apply Loctite 270 to the bolts and torque to 8 Nm. Note that nuts are not fitted if the holes in the cylinder adaptor are threaded.

10. Perform a Pneumatic Leak Test (Ref MMS 7.52.6) and a Functional Test of the cylinder.
11. Release the cylinder to service with reference to Cameron Balloons Service Instruction 36, *Change of fuel cylinder Vertical Outlet QSO valve assembly to Horizontal outlet.*
12. This change may not be released to service by a Pilot Owner.



**Fig 1: Tema and Rego outlet QSO valve assemblies (non-threaded flange adaptor shown)**



**Fig 2: Valve orientation**

### 3. Materials

Item No	Part No	Description	Rego	Tema
1	CB-0392-0018	WORCESTER VALVE SEAL KIT	1	1
2	CB-8409-0000	REGO ADAPTOR BLOCK QUICK SHUT OFF	1	-
3	CB-7901-0000	REGO 7141M 7/8 UNEF THREAD	1	-
4	CB-0671-0004	7/8 UNEF DOWTY SEAL	1	-
5	CB-8410-0000	TEMA ADAPTOR BLOCK QUICK SHUT OFF	-	1
6	CB-0671-0007	TEMA 3800 SERIES MALE COUPLING	-	1 *
7	CB-0671-0006	WORCESTER/TEMA THREADED ADAPTOR	-	1
8	CH-3800-0003	3/8BSP DOWTY SEAL	-	1
			<b>Plain flange</b>	<b>Threaded flange</b>
9	CY-0006-2006	PLAIN WASHER, M6 STAINLESS STEEL	4	4
10	CY-0006-0065	M6 X 65 HEX HEAD BOLT, STAINLESS STEEL	-	4
11	CY-0006-1001	M6 FULL NUT, STAINLESS STEEL	4	-
12	CY-0006-0070	M6 X 70 HEX HEAD BOLT, STAINLESS STEEL	4	-

\*Existing outlet may be re-used

**Table 1:** Parts list

An angled outlet adaptor is available which may be useful in some configurations, particularly Lindstrand T30 cylinders and Worthington cylinders when long Rego 7141F adaptors are used for refuelling.



**Fig 3:** Angled QSO outlet


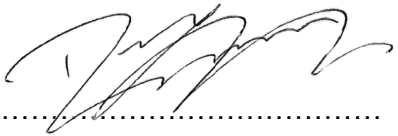
Angled adaptor block QSO Rego - CB-7915-0000

Angled adaptor block QSO Tema - CB-7916-0000

Longer bolts are used for these adaptors, CY-0006-0070 for a threaded flange adaptor and CY-0006-0075 when nuts are used.

### 4. Other Publications Affected None

### 5. Remarks None

Compiled by:  .....		Notes:  None
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<b>6. Design Organisation Approval</b>		
<b>Approval Statement</b> The technical content of this document is approved under the authority of DOA nr UK.21J.0140   .....		
Date: 18-12-2023	Name: D J Cameron	