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AEROSPACE SYSTEMS & COMPONENTS, INC.

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OVERHAUL MANUAL  
WITH PARTS LIST

OXYGEN SHUTOFF VALVES

4401 AND 4402 SERIES

OM-4401/4402-1 REV B

BRUCE GEALY  
PREPARED BY

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ENGINEERING APPROVAL

KEN SEAMAN  
MANUFACTURING CONCURRENCE

BRUCE GEALY  
QUALITY CONTROL CONCURRENCE

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AEROSPACE SYSTEMS & COMPONENTS, INC.  
WICHITA, KANSAS



1.0 INTRODUCTION

This document is intended to provide instructions for the minor overhaul of any of the two types of 440X-X oxygen shutoff valves manufactured by ASC. The two valve types are identified as type A and B for the purposes of these instructions. There are two separate sets of instructions for the two valve types. Use the appropriate instructions for the desired part number in accordance with the following list:

<u>TYPE A</u>	<u>TYPE B</u>
4401-1	4401-4
4401-2	4401-5
4401-3	4401-6
4402-1	4402-2
4402-3	4402-4
4402-6	4402-5

**TYPE A VALVE INSTRUCTIONS**  
(Reference Figures 1A, 2A, and 3A)

A2.0 DISASSEMBLY

- A2.1 Match mark the body [1] and lever assembly [2] to indicate alignment.
- A2.2 Remove screws [15] and separate lever assembly [2] from body [1].
- A2.3 Remove setscrew [8] and discard.
- A2.4 Remove cap [14] or solenoid [3] from body [1] depending upon model. Retain the loose spring [5].
- A2.5 Do not remove lower spool [7] at this time. Maintain pressure forcing spool into body.
- A2.6 With a screwdriver in slot in lower spool [7] or solenoid plunger [4] in soft vise jaws, remove cap nut [12].
- A2.7 Remove washer [11], shims [10], upper spool [6], lower spool [7], and O-ring [9] from body.

A3.0 INSPECTION AND CLEANING

- A3.1 Remove O-rings and clean spools and interior of body with clean degreaser solvent and air dry.

DO NOT DRY WITH SHOP COMPRESSED AIR!

- A3.2 Check all O-rings for nicks, tears, scuff marks, or cuts; replace if questionable.

A4.0 ASSEMBLY

- A4.1 Lubricate O-rings with a *light* coat of lubricant. *Lightly* lubricate OD of spools.

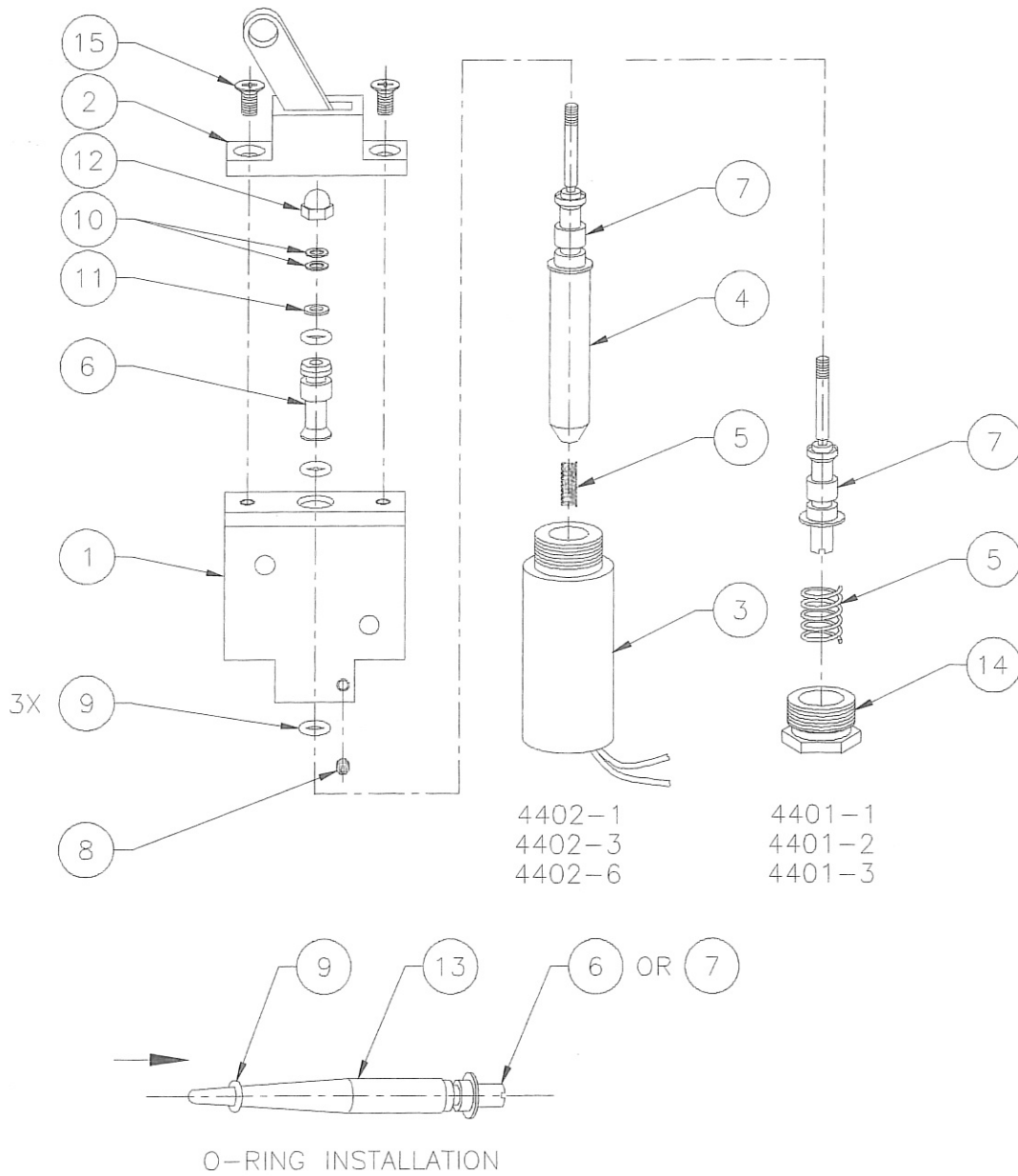
**WARNING**  
THE USE OF LUBRICANTS OTHER THAN REFERENCED IN THIS MANUAL  
CAN CAUSE AN EXPLOSIVE REACTION WITH OXYGEN

- A4.2 Install O-rings [9] onto spools [6] and [7] as shown using tool [13] to prevent damage.
- A4.3 Carefully insert lower spool [7] into body. Maintain pressure forcing spool into body.
- A4.4 Drop a pre-lubricated O-ring [9] into top of body and over the stud portion of the lower spool.
- A4.5 Carefully insert upper spool [6] into body. Light pressure between spools will force loose O-ring into place.
- A4.6 Install washer [11] and shims [10]. Apply Loctite primer and medium strength threadlock adhesive to lower spool [7] threads. Install cap nut [12] and torque 8 to 10 in-lbs.
- A4.7 Put spring [5] in place. Apply Loctite primer and medium strength threadlock adhesive to cap [14] or solenoid [3] threads. Install cap or solenoid and torque to approximately 30 in-lbs.

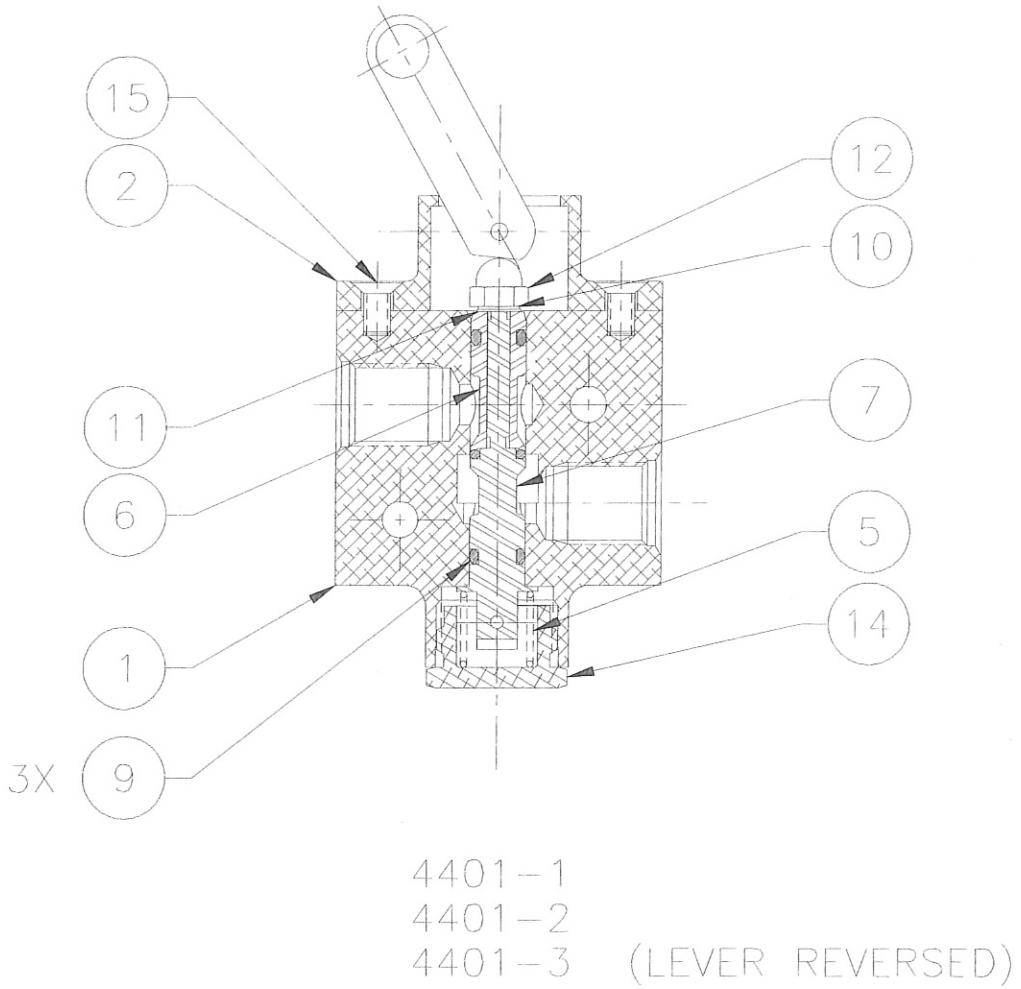
- A4.8 Align mark on lever assembly [2] with mark on body [1]. Apply Loctite primer and medium strength threadlock adhesive to screws [15]. Install screws and torque 8 to 10 in-lbs.
- A4.9 Apply Loctite primer and medium strength threadlock adhesive to setscrew [8] threads. Install setscrew and torque 4 to 5 in-lbs.

**WARNING**

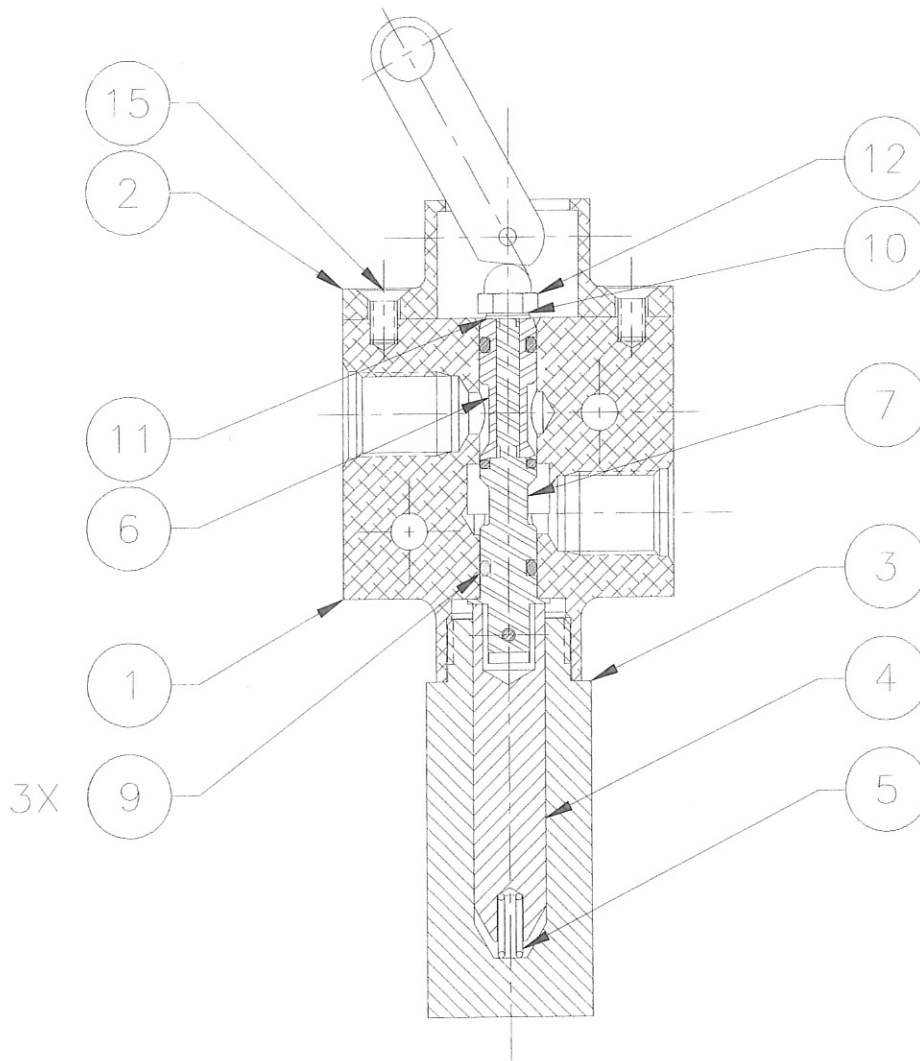
DO NOT ATTEMPT TO TEST VALVE WITH SHOP AIR OR GAGES THAT MAY CONTAIN HYDROCARBON LUBRICANTS. THE BEST WAY TO CHECK OUT YOUR WORK IS ON THE AIRCRAFT AFTER INSTALLATION.



**FIGURE 1A**  
TYPE A VALVE EXPLODED VIEW



**FIGURE 2A**  
TYPE A VALVE CUTAWAY VIEW  
WITHOUT SOLENOID



4402-1  
4402-3  
4402-6

**FIGURE 3A**  
TYPE A VALVE CUTAWAY VIEW  
WITH SOLENOID

**TYPE B VALVE INSTRUCTIONS**  
(Reference Figures 1B, 2B, and 3B)

**B2.0** DISASSEMBLY

- B2.1 Match mark the body [1] and lever assembly [2] to indicate alignment.
- B2.2 Remove screws [15] and separate lever assembly [2] from body [1].
- B2.3 Remove setscrew [8] and discard.
- B2.4 Remove cap [14] or solenoid [3] from body [1] depending upon model. Retain the loose spring [5].
- B2.5 Do not remove lower spool [7] at this time. Maintain pressure forcing spool into body.
- B2.6 With a screwdriver in slot in lower spool [7] or solenoid plunger [4] in soft vise jaws, remove cap nut [12].
- B2.7 Remove washer [11], shims [10], upper spool [6], lower spool [7], and O-ring [9] from body.
- B2.8 Remove O-ring [16] from body.

**B3.0** INSPECTION AND CLEANING

- B3.1 Remove O-rings and clean spools and interior of body with clean degreaser solvent and air dry.  
DO NOT DRY WITH SHOP COMPRESSED AIR!
- B3.2 Check all O-rings for nicks, tears, scuff marks, or cuts; replace if questionable.

**B4.0** ASSEMBLY

- B4.1 Lubricate O-rings with a *light* coat of lubricant. *Lightly* lubricate OD of spools.

<p><b>WARNING</b> THE USE OF LUBRICANTS OTHER THAN REFERENCED IN THIS MANUAL CAN CAUSE AN EXPLOSIVE REACTION WITH OXYGEN</p>
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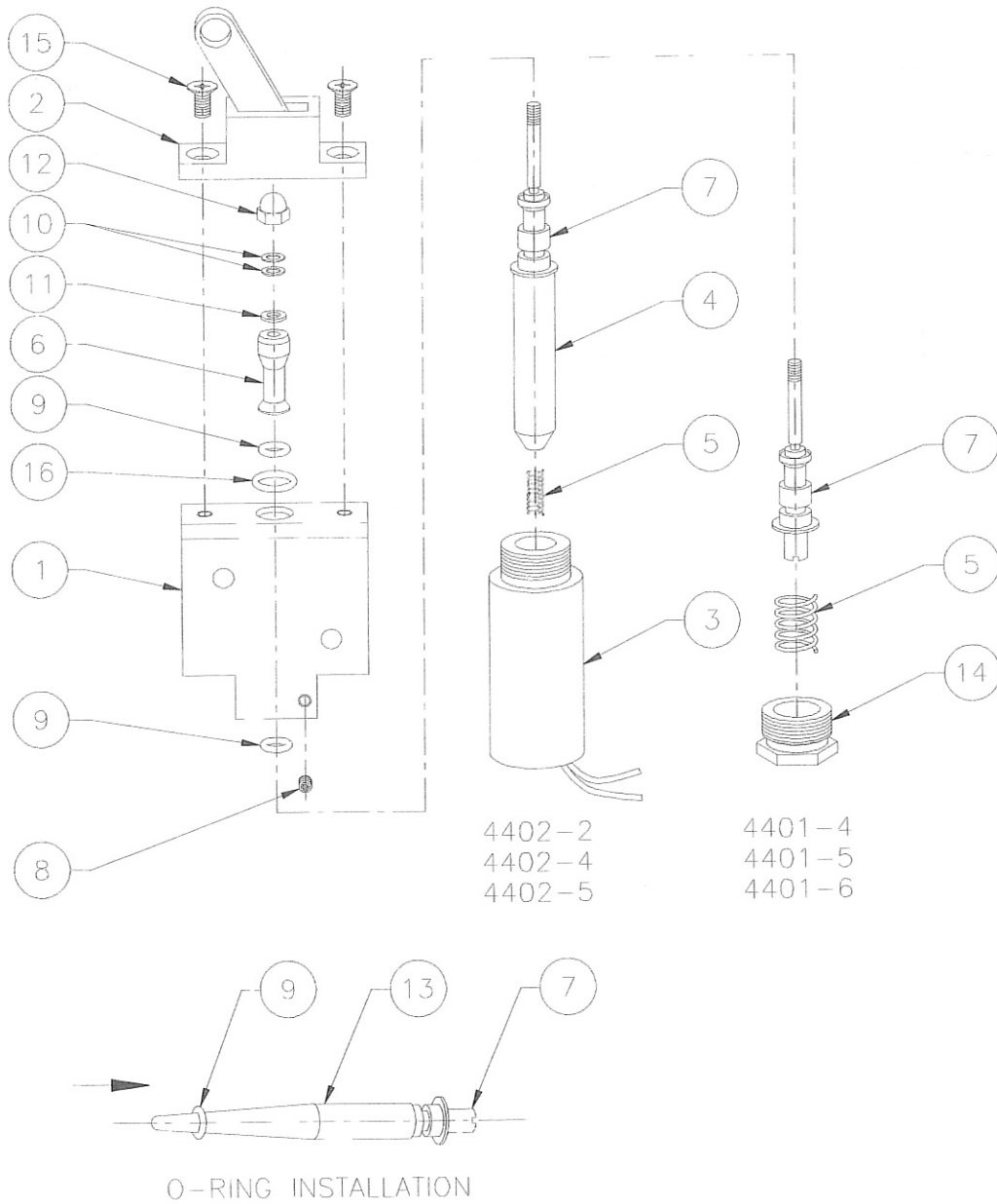
- B4.2 Install O-ring [16] in groove in body.
- B4.3 Install O-ring [9] onto spool [7] as shown using tool [13] to prevent damage.
- B4.4 Carefully insert lower spool [7] into body. Maintain pressure forcing spool into body.
- B4.5 Drop a pre-lubricated O-ring [9] into top of body and over the stud portion of the lower spool.
- B4.6 Carefully insert upper spool [6] into body. Light pressure between spools will force loose O-ring into place.

## 4401 AND 4402 SERIES

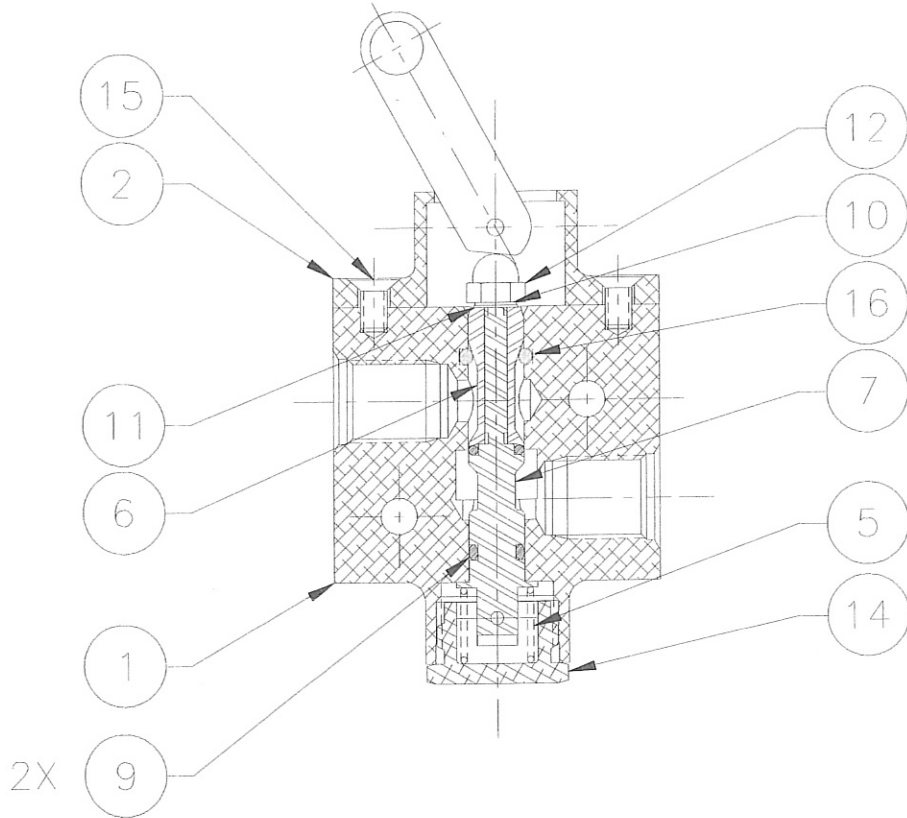
- B4.7 Install washer [11] and shims [10]. Apply Loctite primer and medium strength threadlock adhesive to lower spool [7] threads. Install cap nut [12] and torque 8 to 10 in-lbs.
- B4.8 Put spring [5] in place. Apply Loctite primer and medium strength threadlock adhesive to cap [14] or solenoid [3] threads. Install cap or solenoid and torque to approximately 30 in-lbs.
- B4.9 Align mark on lever assembly [2] with mark on body [1]. Apply Loctite primer and medium strength threadlock adhesive to screws [15]. Install screws and torque 8 to 10 in-lbs.
- B4.10 Apply Loctite primer and medium strength threadlock adhesive to setscrew [8] threads. Install setscrew and torque 4 to 5 in-lbs.

**WARNING**

DO NOT ATTEMPT TO TEST VALVE WITH SHOP AIR OR GAGES THAT MAY CONTAIN HYDROCARBON LUBRICANTS. THE BEST WAY TO CHECK OUT YOUR WORK IS ON THE AIRCRAFT AFTER INSTALLATION.

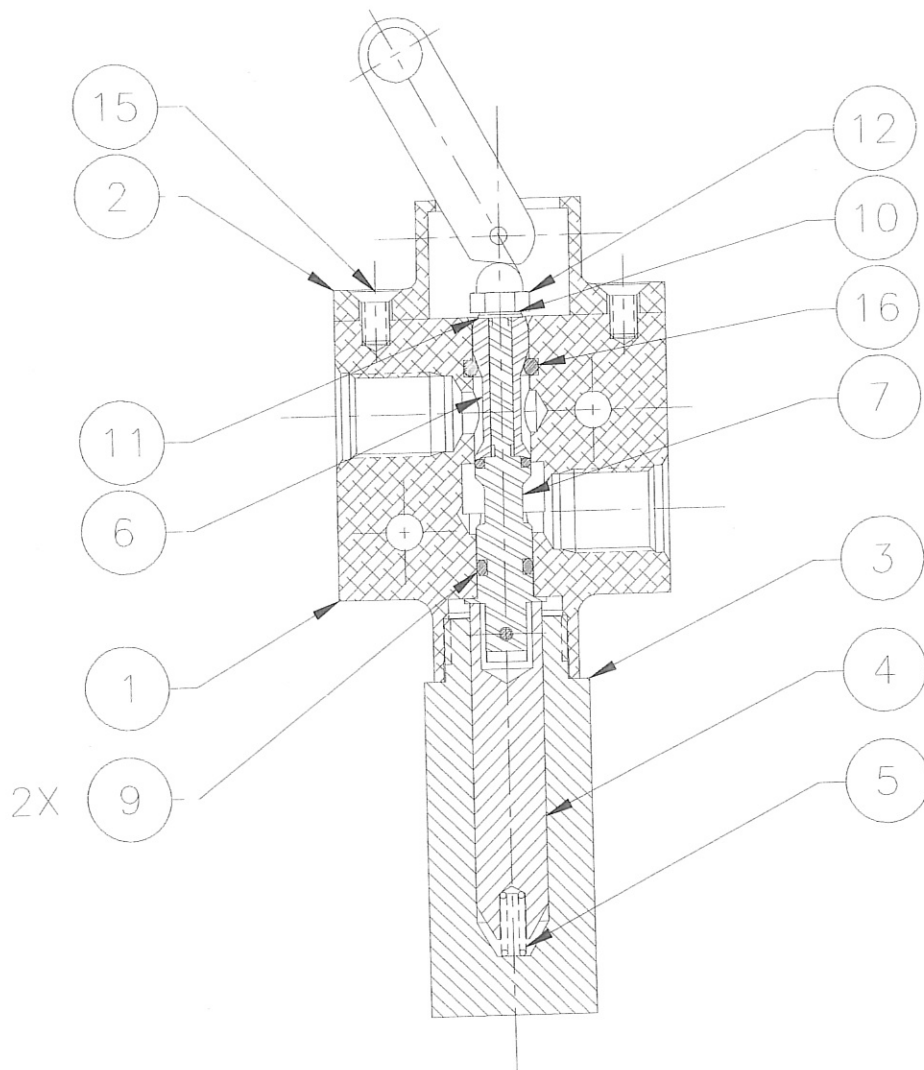


**FIGURE 1B**  
TYPE B VALVE EXPLODED VIEW



4401-4 (LEVER REVERSED)  
4401-5  
4401-6

**FIGURE 2B**  
TYPE B VALVE CUTAWAY VIEW  
WITHOUT SOLENOID



4402-2  
4402-4 (LEVER REVERSED)  
4402-5

**FIGURE 3B**  
TYPE B VALVE CUTAWAY VIEW  
WITH SOLENOID

6.0 PARTS

6.1 4460102-1 Kit

- 1 ea. Item [8] Set Screw
- 3 ea. Item [9] O-ring (.210 ID; use 3 ea. Type A, 2 ea. Type B)
- 2 ea. Item [15] Screw
- 1 ea. Item [16] O-ring (.340 ID; use 1 ea. Type B only)
- 1 ea. 4460102-4 Overhaul Manual

6.2 4460102-2 Kit

- 1 ea. Item [13] Tool

6.3 4460102-5 Kit

- 1 ea. 1 cc Tube Lubricant

6.4 4460102-4 Kit

- 1 ea. Overhaul Manual

7.0 ADDITIONAL SERVICE

No other parts are available for the purpose of this overhaul manual. If there exists additional damage the unit should be returned to ASC for overhaul.