

Sure Coat® Modular Gun Control System

**Part D:
Gun Purge Module**

Customer Product Manual
Part 334663B

Issued 4/03

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Section D 1

Description

Introduction

The gun purge module allows the operator to purge the automatic spray guns that are controlled by the Sure Coat modular gun control system. Regularly purging the guns allows the guns' powder paths to remain free of powder build up, which reduces maintenance and extends life of powder path parts.

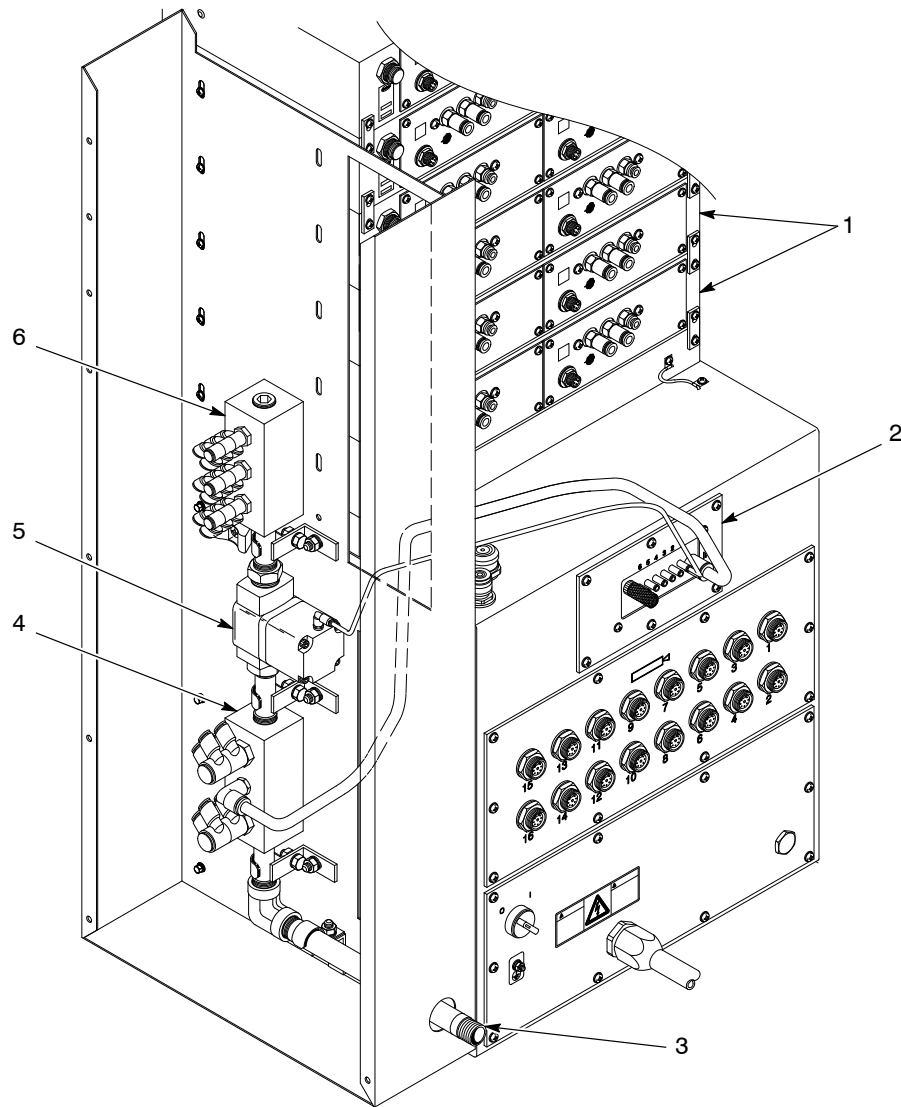
Components

See Figure D 1-1. The gun purge module is an optional part of the main pneumatic section of the modular gun control system. The gun purge module consists of a purge valve (5) and pneumatic manifold (6) which attach to the system air manifold (4). The purge manifold (2), which controls the operation of the purge valve, is located on the back of the main control cabinet.

Theory of Operation

See Figure D 1-1. Air enters the system at the main air connection (3). The system air manifold (4) sends constant air pressure to the pneumatic modules (1). The flow and atomizing air for each gun are regulated at the pneumatic modules.

The operator presses the GUN PURGE key on the central control unit to activate the gun purge module. When the key is pressed, a 24 Vdc signal is sent through the interface card to the purge manifold (2). The purge manifold sends a pilot air signal to open the purge valve (5), allowing unregulated air to flow from the pneumatic manifold (6) to the guns. Purge air remains on for as long as the operator presses the GUN PURGE key.



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Figure D 1-1 Gun Purge Module Components

- | | | |
|----------------------|------------------------|-----------------------|
| 1. Pneumatic modules | 3. Main air connection | 5. Purge valve |
| 2. Purge manifold | 4. System air manifold | 6. Pneumatic manifold |

Section D 2

Installation



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Introduction

The gun purge module comes either installed at the factory in a new system or as a field-retrofit kit for an existing system.

This section explains installation procedures for both configurations. Use the following guidelines when installing the gun purge module.

Purge Module	Installation Procedures
Factory installed	<i>Pneumatic Connections</i>
Field retrofit	<i>Purge Valve and Pneumatic Manifold</i> <i>Purge Manifold</i> <i>Pneumatic Connections</i>

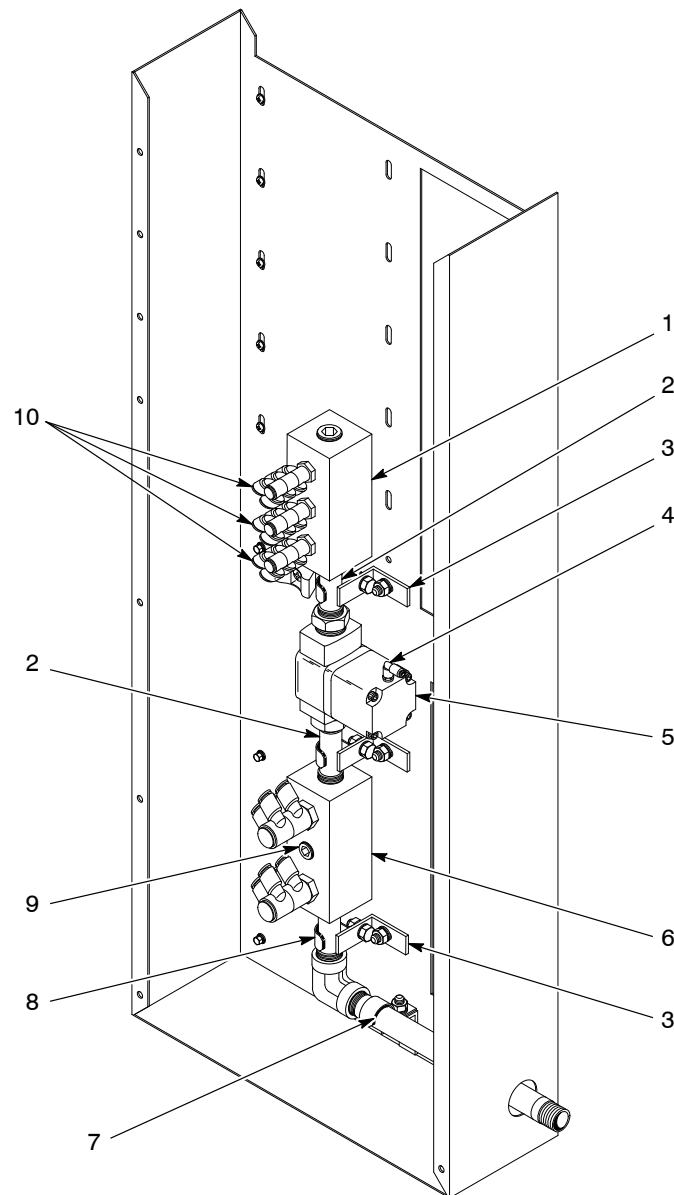
Purge Valve and Pneumatic Manifold



WARNING: System or material pressurized. Relieve system pressure before performing the following tasks. Failure to observe this warning could result in equipment damage, personal injury, or death.

1. Remove the sliding and front panels from the main pneumatic section.
2. See Figure D 2-1. Remove the clamp (8) from the main air line. Loosen the other clamps (7).
3. Carefully rotate the system air manifold (6) assembly so that it is at a 45° angle from the modular gun control system.
4. Remove the pipe plug from the top of the system air manifold.
5. Wrap the threads of the nipples (2) with PTFE tape. Install the first nipple into the top of the system air manifold.
6. Install the purge valve (5) onto the nipple. Make sure that the purge valve is oriented as shown in Figure D 2-1.
7. Wrap the threads of the 4-mm elbow (4) with PTFE tape. Install the 4-mm elbow into the purge valve.
8. Install the second nipple onto the outlet of the purge valve.
9. Install the pneumatic manifold (1) onto the second nipple.
10. Carefully rotate the system air manifold and pneumatic manifold assembly so that it is parallel to the side of the modular gun control system.
11. Install and tighten the brackets (3) and clamps (7, 8) in the locations illustrated.
12. Install the six-way connectors (10) onto the pneumatic manifold.

NOTE: Each six-way connector will supply purge air for up to six guns. Plug any unused holes in the connectors.
13. Remove the pipe plug (9) from the side of the system air manifold.
14. Wrap the threads of the included 10-mm elbow with PTFE tape. Install the 10-mm elbow into the system air manifold.



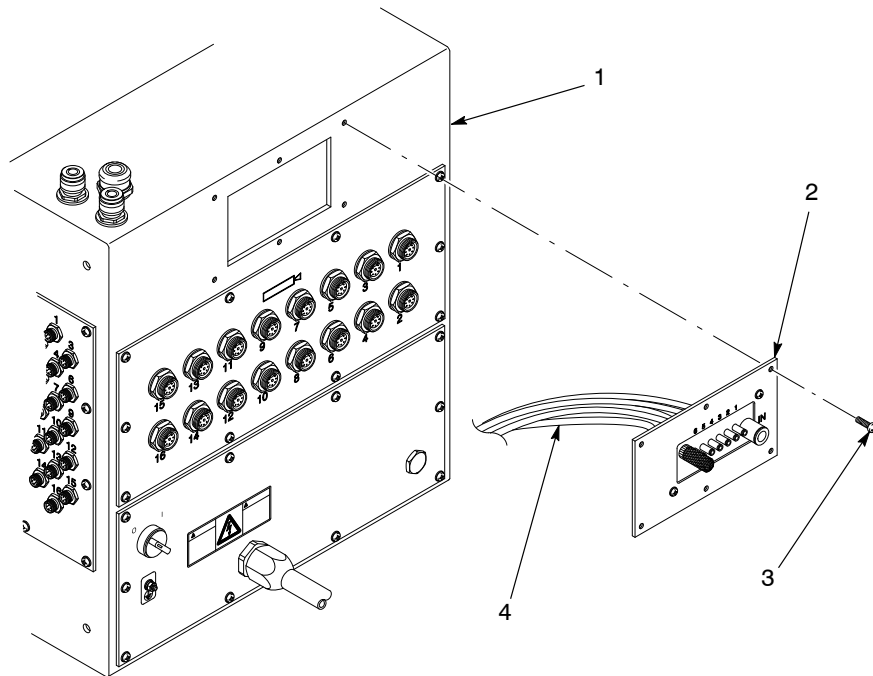
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Figure D 2-1 Installing the Gun Purge Module

- | | | |
|-----------------------|------------------------|-----------------------------|
| 1. Pneumatic manifold | 5. Purge valve | 8. Clamp (remove) |
| 2. Nipples | 6. System air manifold | 9. Pipe plug |
| 3. Brackets | 7. Clamp (loosen) | 10. 6-mm Six-way connectors |
| 4. 4-mm Elbow | | |

Purge Manifold

1. See Figure D 2-2. Remove the six screws (3) securing the blank panel to the back of the main control cabinet (1). Save the screws for reuse.
2. Remove the blank panel and discard it.
NOTE: There are two rubber grommets inside of the main control cabinet. The purge panel wires must be run through the grommet on the left.
3. Insert the purge manifold wires (4) into the opening in the main control cabinet. Route the wires through the rubber grommet in the interior of the main control cabinet.
4. Secure the purge manifold (2) to the main control cabinet using the six screws that you removed from the blank panel.
5. Install the interface card and connect the purge manifold wires to the interface card. Refer to the *Installation* section of Part C, *Interface Card*, for instructions.



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Figure D 2-2 Installing the Purge Panel

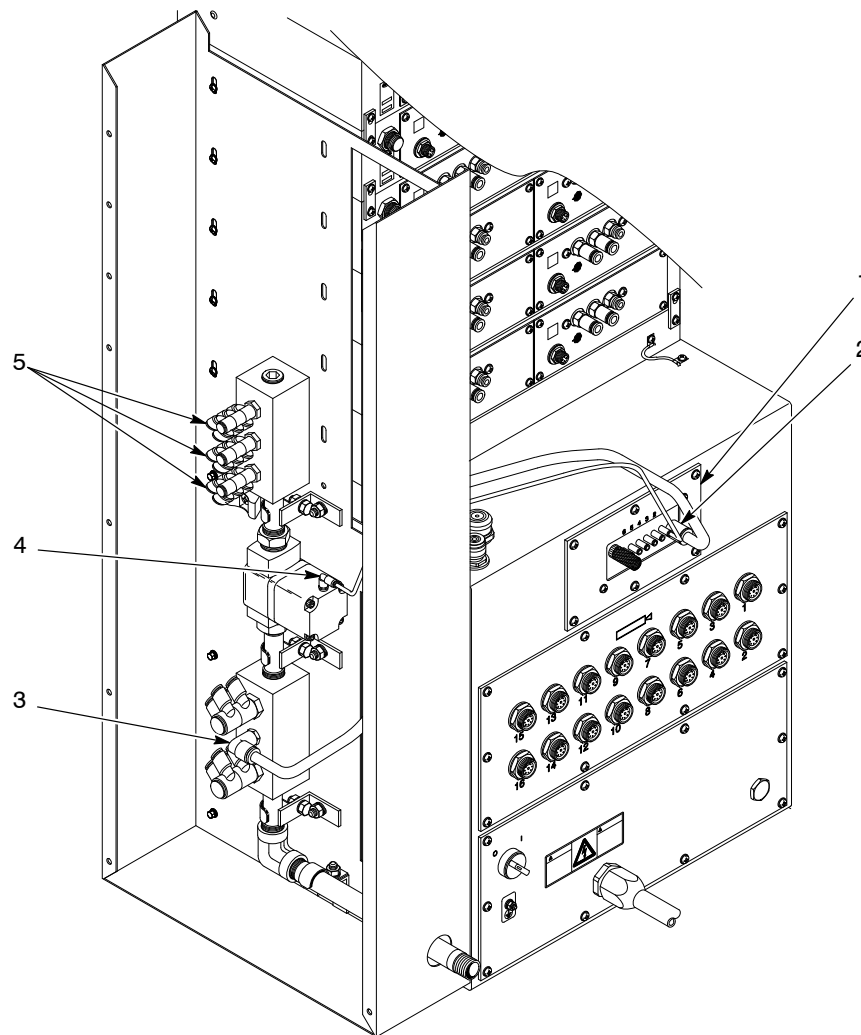
- | | |
|-------------------------|-------------------------|
| 1. Main control cabinet | 3. Screws |
| 2. Purge manifold | 4. Purge manifold wires |

Pneumatic Connections



WARNING: System or material pressurized. Relieve system pressure before performing the following tasks. Failure to observe this warning could result in equipment damage, personal injury, or death.

1. Remove the sliding and front panels from the main pneumatic section.
2. See Figure D 2-3. Connect 10-mm tubing to the 10-mm elbow (3). Connect the other end to the purge manifold's 10-mm connector (2).
3. Connect 4-mm tubing to the 4-mm elbow (4). Connect the other end to the connector marked 1 on the purge manifold.
4. Connect 6-mm tubing to the pneumatic manifold's six-way connectors (5). Connect the other end to the purge adapter on the gun.
5. Install the sliding and front panels onto the main pneumatic section.



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Figure D 2-3 Pneumatic Connections

- | | | |
|--------------------|----------------|----------------------------|
| 1. Purge manifold | 3. 10-mm Elbow | 5. 6-mm Six-way connectors |
| 2. 10-mm Connector | 4. 4-mm Elbow | |

Section D 3

Repair



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: System or material pressurized. Relieve system pressure before performing the following tasks. Failure to observe this warning could result in personal injury or death.

Replace the purge valve if the valve allows purge air to flow when the gun purge button is not pressed.

Preliminary Inspection

Depending on the severity of wear to the valve seat, you may only have to replace the purge valve module. Follow these steps to determine if you only need to replace the valve module.

1. Turn off and relieve air pressure from the modular gun control system.
2. Remove the sliding and front panels from the main pneumatic section.
3. See Figure D 3-1. Disconnect the pilot air line from the 4-mm elbow (3).
4. Remove the elbow from the purge valve and set it aside for reuse.

NOTE: There is also a pipe plug on the underside of the purge valve. Remove the pipe plug and save it for reuse.

5. Remove the four screws (5) and lock washers (4) securing the valve module (2) to the valve body (1).
6. Inspect the seat in the valve body.
 - If the seat is not worn or cracked, follow the *Valve Module Replacement* procedure.
 - If the seat appears worn or cracked, follow the *Valve Assembly Replacement* procedure.

Valve Module Replacement

1. See Figure D 3-1. Remove the four screws (5) and lock washers (4) securing the new purge valve's module (2) to the valve body (1).
2. Secure the new valve module to the existing valve body using the four screws and lock washers.
3. Install the 4-mm elbow (3) onto the new valve module.
4. Install the pipe plug into the underside of the new valve module.
5. Connect the pilot air tubing to the 4-mm elbow.
6. Install the sliding and side panels over the pneumatic section.

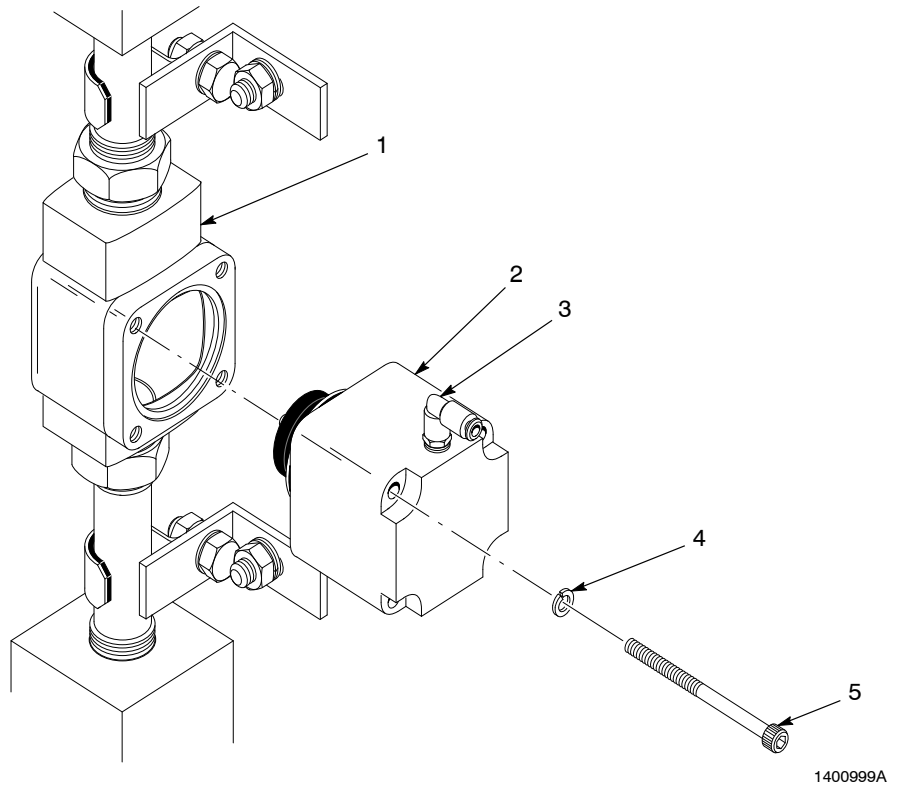


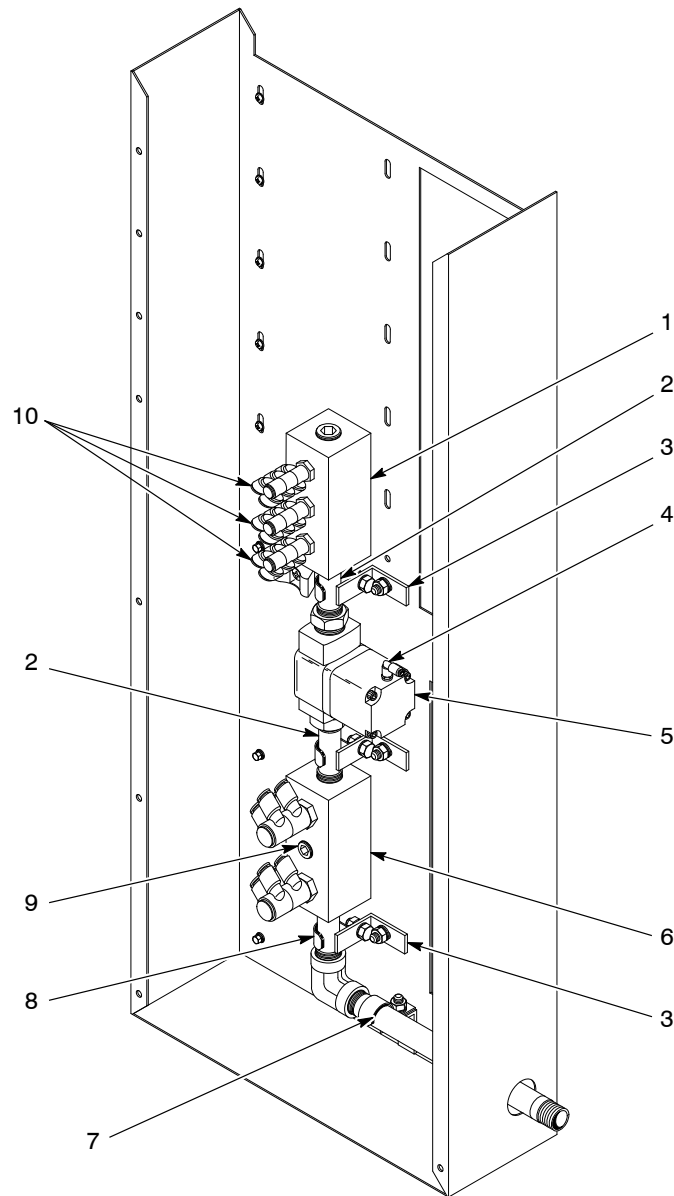
Figure D 3-1 Valve Module Replacement

- | | |
|-----------------|----------------|
| 1. Valve body | 4. Lock washer |
| 2. Valve module | 5. Screw |
| 3. 4-mm elbow | |

Valve Assembly Replacement

1. See Figure D 3-2. Disconnect the gun purge tubing from the 6-way connectors (10).
2. Remove the two lower clamps (7) from the assembly.
3. Carefully rotate the purge valve assembly away from the control system so that it is at a 45° angle to the main air line.
4. Unscrew the pneumatic manifold (1) and upper nipple (2) from the old purge valve.
5. Unscrew the old purge valve from the lower nipple (2).
6. Install the new purge valve (5) onto the lower nipple.
7. Install the upper nipple and pneumatic manifold onto the new purge valve.
8. Carefully rotate the purge valve assembly toward the controller so that it is at a 90° angle to the main air line.
9. Install and tighten the clamps in the locations illustrated.
10. Connect the gun purge tubing to the 6-way connectors.
11. Install the 4-mm elbow onto the new purge valve.
12. Connect the pilot air line to the 4-mm elbow.
13. Install the sliding and side panels over the pneumatic section.

Valve Assembly Replacement *(contd)*



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Figure D 3-2 Valve Assembly Replacement

- | | | |
|-----------------------|------------------------|-----------------------------|
| 1. Pneumatic manifold | 5. Purge valve | 8. Clamp (remove) |
| 2. Nipples | 6. System air manifold | 9. Pipe plug |
| 3. Brackets | 7. Clamp (loosen) | 10. 6-mm Six-way connectors |
| 4. 4-mm Elbow | | |

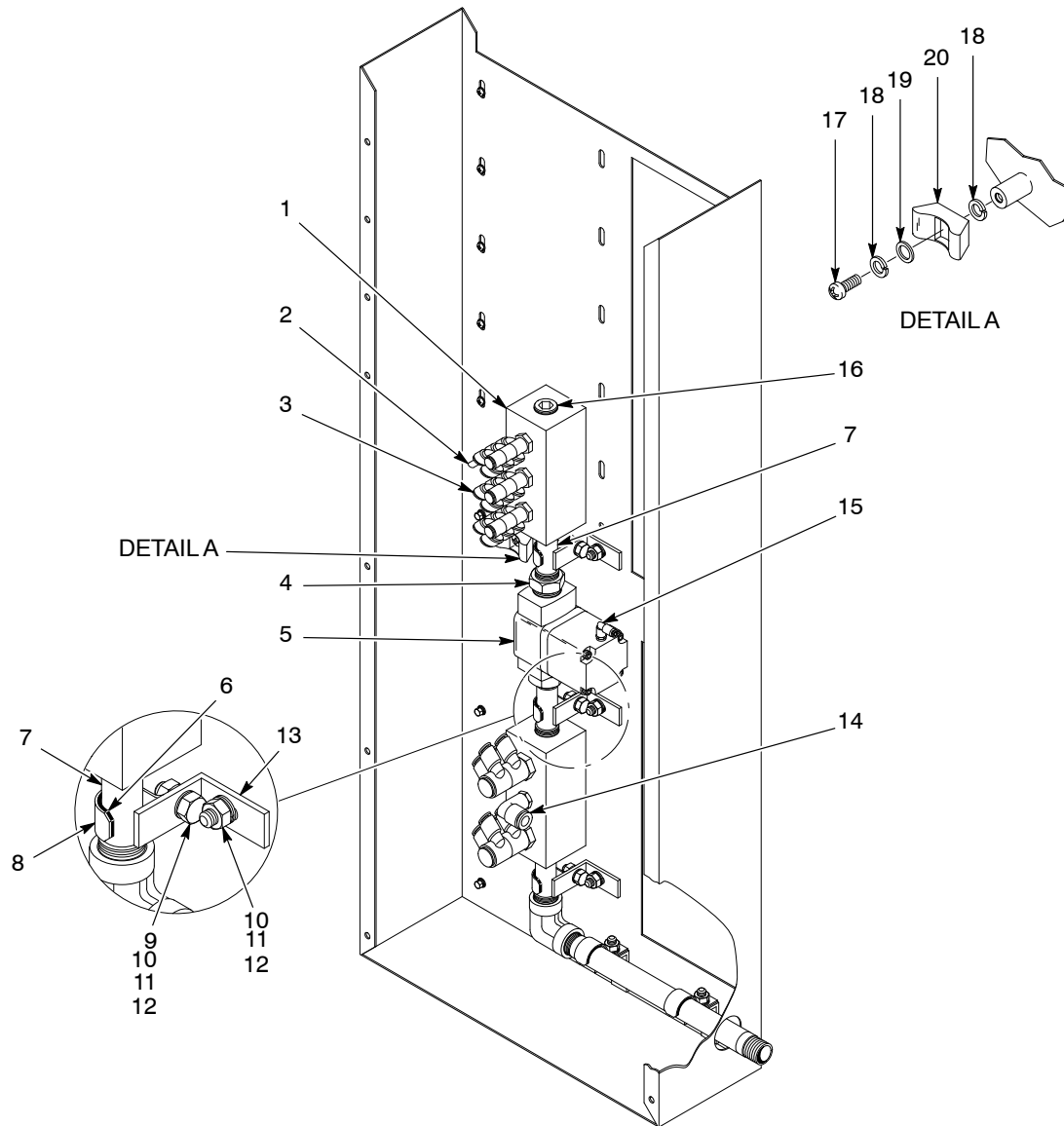
Section D 4

Parts

NOTE: Refer to the *Parts* section in Part A, *System Overview*, for an explanation of how to use the illustrated parts list.

See Figure D 4-1.

Item	Part	Description	Quantity	Note
—	1040836	KIT, Sure Coat, gun purge, upgrade	1	
1	-----	• MANIFOLD, pneumatic	1	
2	183804	• PLUG, blanking, 6-mm tubing	10	
3	303092	• FITTING, $\frac{3}{8}$ -in. NPTM, (6) 6 mm tube	3	
4	973360	• BUSHING, red, $\frac{3}{4} \times \frac{1}{2}$, in. steel, plain	2	
5	303132	• VALVE, $\frac{3}{4}$ -in. input/output, air operated	1	
6	334772	• GASKET, bulk, 0.25 x 0.50 in., with PSA	AR	
7	973077	• NIPPLE, steel, schedule 40, $\frac{1}{2}$, 3.0-in. long	2	
8	163435	• CLAMP, 0.75-in. conduit, one hole	2	
9	982129	• SCREW, hex, machine, M6 x 16, zinc	2	
10	983410	• WASHER, flat, M, narrow, M6, steel, zinc	6	
11	983409	• WASHER, lock, M, split, M6, steel, zinc	4	
12	984703	• NUT, hex, M6, steel, zinc	4	
13	183467	• BRACKET, L-shaped	2	
14	972124	• ELBOW, male, 10-mm tube x $\frac{3}{8}$ -in. universal	1	
15	303150	• ELBOW, male, 4 mm x $\frac{1}{8}$ -in.	1	
16	973431	• PLUG, pipe, socket, standard, $\frac{1}{2}$ in., zinc	1	
17	982320	• SCREW, pan, recessed, M5 x 16, black	3	
18	983401	• WASHER, lock, M, split, M5, steel, zinc	3	
19	983408	• WASHER, flat, M, narrow, M5, steel, zinc	1	
20	129538	• MOUNT, cable strap	3	
NS	973483	• PLUG, pipe, socket, $\frac{1}{8}$ in., steel	1	
NS	900481	• ADHESIVE, pipe/thread/hydraulic sealant	AR	
NS	341629	• PCA, timer interface	1	
NS	334700	• MANIFOLD, purge, gun	1	
NS	900617	• TUBING, 4 mm, clear, polyurethane	6 ft	
NS	900740	• TUBING, 10 mm, polyurethane	6 ft	
AR: As Required				
NS: Not Shown				



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Figure D 4-1 Gun Purge Module Parts