

Rhino[®] XD2H Heated Control Modules

Description

NOTE: Throughout this document the Rhino XD2H Heated Control Modules are referred to as the Control Module.

See Figure 1. The Control Module (2) provides the pneumatic operating functions for Rhino heated XD2H bulk unloaders (1). See Figure 2 and refer to Table 1 for a list of the Control Module components.

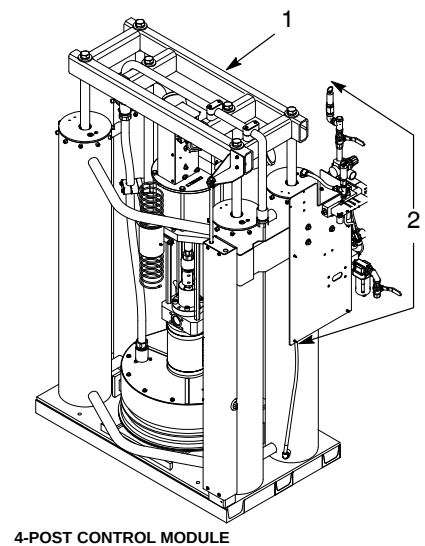
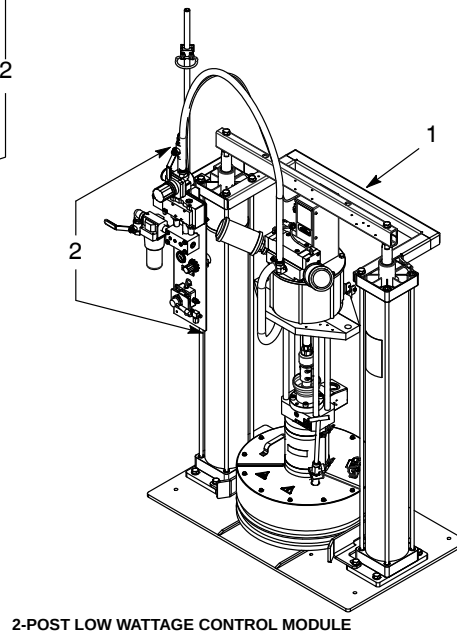
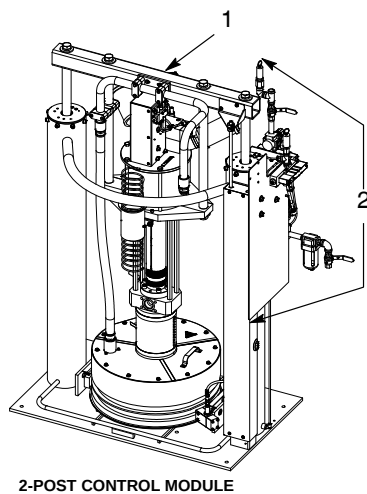


Figure 1 Rhino Heated XD2H Control Modules

NOTE: The two-post low wattage control module does not use all of these components.

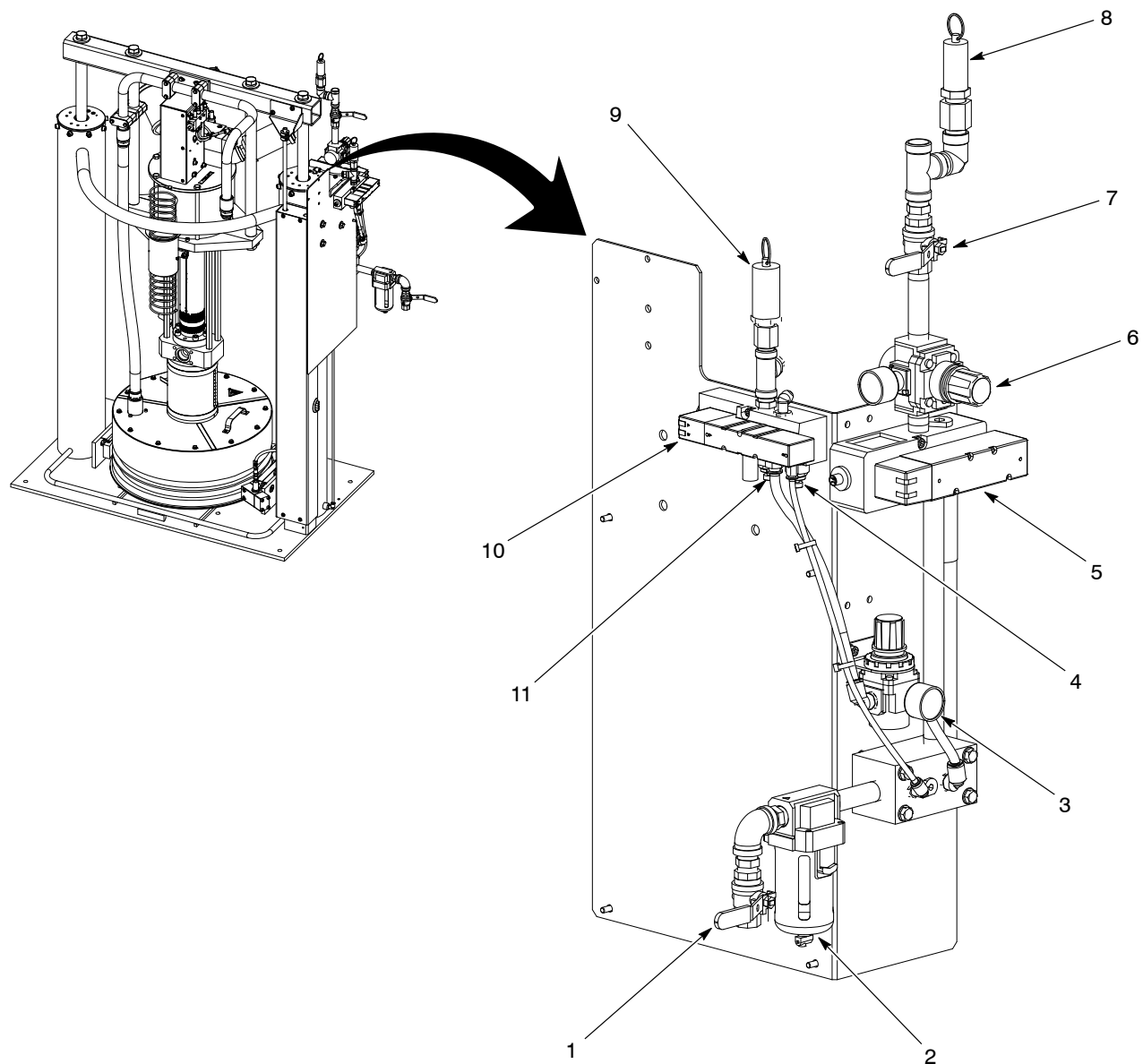


Figure 2 Typical Control Module Components

Table 1 Control Module Component Descriptions

Item	Description
1	Master Air Lockout Ball Valve: When this valve is in the Open position, it supplies air to the bulk unloader pneumatic circuit. Closing the valve disables the bulk unloader and vents the supply air to the control valves.
2	Filter/Separator: Five-micron filter that removes most contaminants and moisture from the supply air.
3	Ram Up/Down Regulator: Sets the amount of air pressure going to the ram cylinders which determines the amount of pressure the follower plate exerts on the material.
4	Ram Down Speed Adjuster: An exhaust flow-control muffler controls ram speed in the Down direction. Turning the adjustment screw clockwise decreases ram speed movement. Turning the adjustment screw counterclockwise increases ram speed movement. NOTE: The ram speed is not adjustable on the 4-post control module because it is configured with a nonadjustable muffler.
5	Air Motor Control Valve: Receives signals from the system controller to control the air motor..
6	Air Motor Regulator: Sets the amount of air pressure to the air motor and determines the amount of material pressure exiting the bulk unloader.
7	Air Motor Lockout Valve: When this valve is in the Close position it locks out and vents air pressure to the air motor. It also prevents the pump from stroking but it does not shut off the ram air supply. The ram air supply is required to raise and lower the ram when the air motor is deactivated.
8	Air Motor Relief Valve: A safety feature that limits the operating air pressure to the air motor. It limits the potential output pressure of the bulk unloader pump. The pressure value is system-dependent and is selected based on overall systems parameters.
9	Ram Control Relief Valve: A safety feature that limits the operating air pressure to the ram cylinders. It limits the potential output pressure of the ram cylinders and is set at 109 psi (7.5 bar).
10	Ram Up/Down Control Valve: Receives signals from the system controller to control ram movement: • Ram Up raises the ram and follower plate assembly. • Neutral halts ram movement and pneumatically locks the rams. • Ram Down lowers the ram and follower plate assembly. NOTE: The Neutral position does not lock the ram. Air pressure remains in the ram cylinders. Small air leaks in the circuit can cause the ram to drift upward or downward. Never leave the bulk unloader in the Neutral position to perform maintenance, or when it is not in use for long periods of time. When performing maintenance, make sure that the ram and follower plate assembly is on the bulk unloader base or secured using support blocks.
11	Ram Up Speed Adjuster: An exhaust flow-control muffler controls ram speed in the Up direction. Turning the adjustment screw clockwise decreases ram speed movement. Turning the adjustment screw counterclockwise increases ram speed movement. NOTE: The ram speed is not adjustable on the 4-post control module because it is configured with a nonadjustable muffler.

Installation



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

NOTE: Read and understand the *Safety* section in the *Nordson System Documentation* that shipped with the system before installing the Control Module.

1. See Figure 3. Mount the Control Module (3) onto the bulk unloader using the supplied screws (4) and washers (5). Tighten the screws securely.
2. Connect the Ram Down tubing (6) to the upper cylinder fitting (7).
3. Connect the Ram UP tubing (2) to the lower cylinder fitting (1).

Operation

Control Module operation is dependent on the system application. Refer to the *Nordson System Documentation* that shipped with the system for specific application parameters and operating procedures.

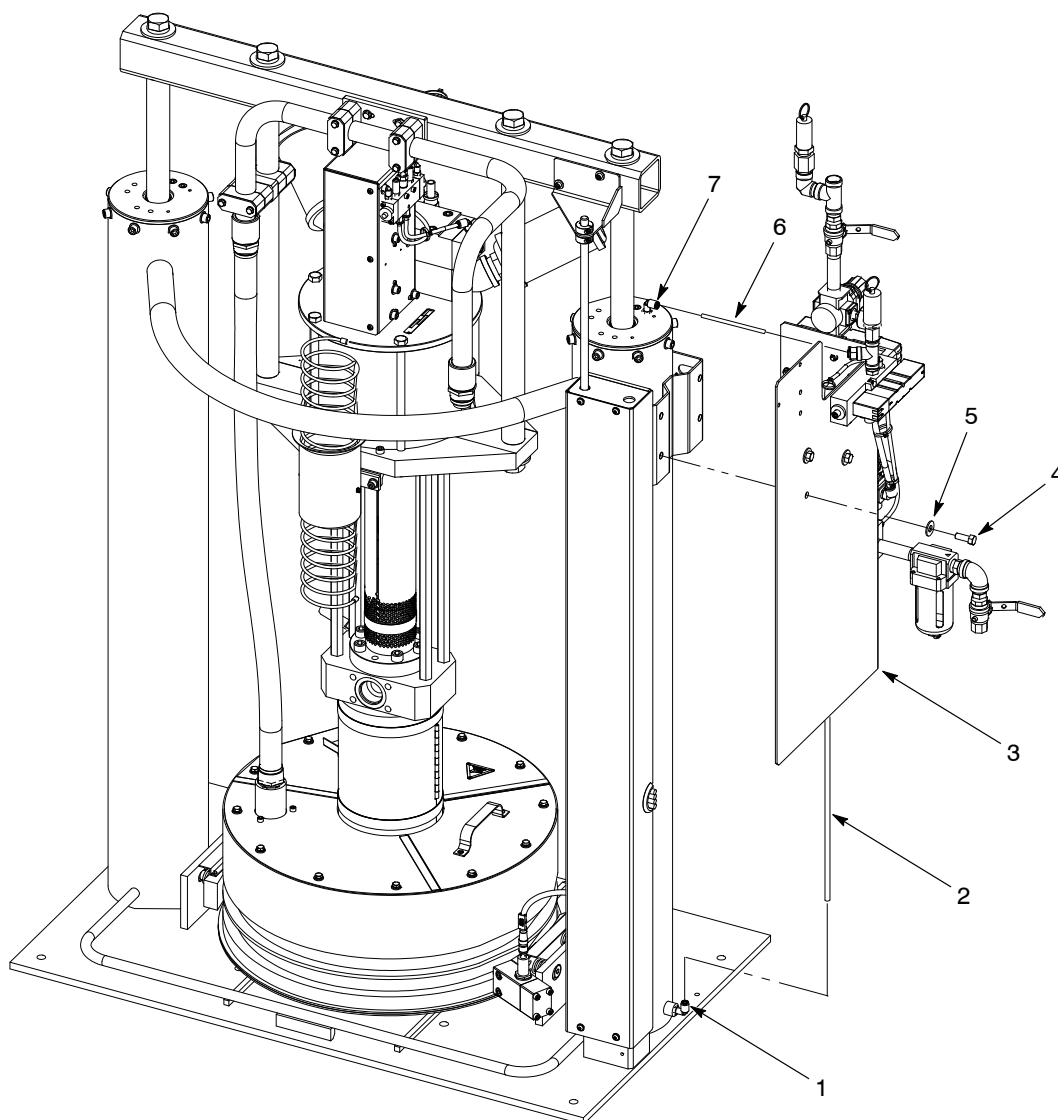


Figure 3 Typical Installation

Parts

To order parts, call the Nordson Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

Control Modules

See Figure 4 and the following parts list.

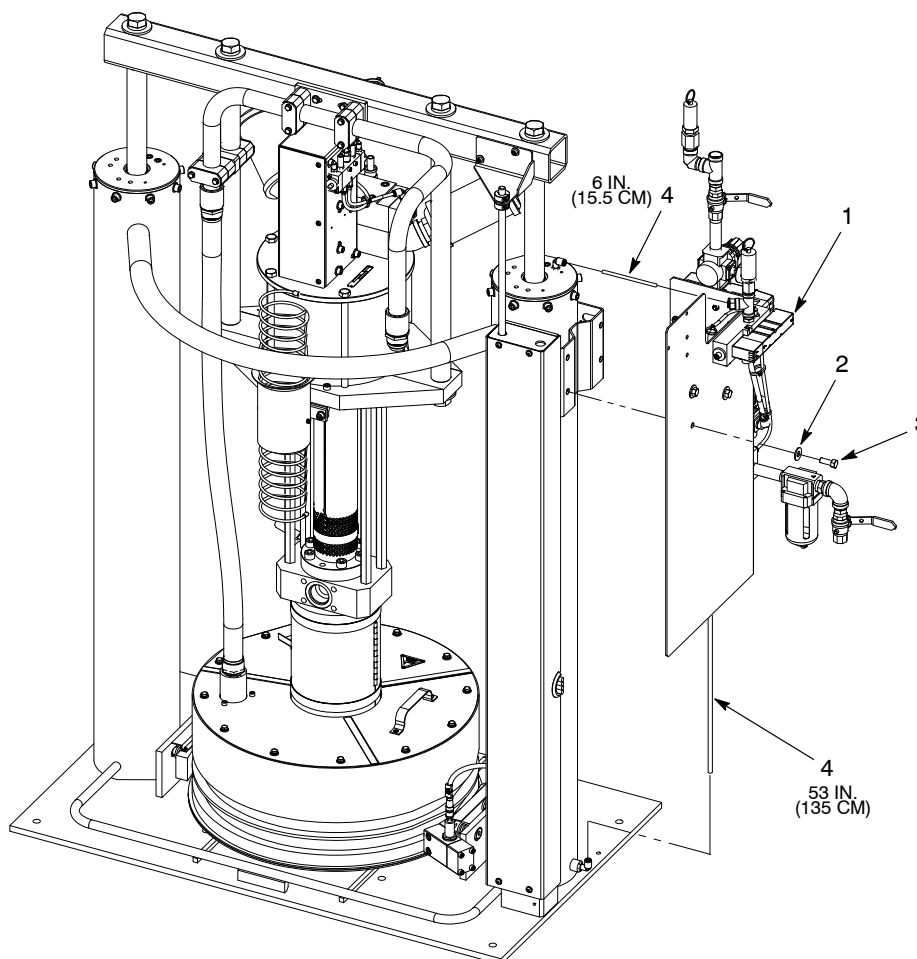


Figure 4 Typical Control Module Parts

Item	Part	Part	Part	Description	Qty	Note
—	1082752			Module, controls, heated XD2H	1	
		1088688		Module, controls, heated XD2H, 4-post	1	
			1614607	Module, controls, heated XD2H, low wattage	1	
1	1081877	1088689	1614615	Controls, heated XD2H	1	A
2	983061	983061	983061	• Washer, flat, 0.406 x 0.812 x 0.065, per ISO 7089	4	
3	981710	981710	981710	• Screw, hex, 3/8-16 x 0.750, Grade 5 per ISO 4018	4	
4	1082731			• Tubing, 6 mm nylon, blue, flame resistant	5 ft	
		1088500		• Tubing, 12 mm nylon, blue, flame resistant	5 ft	
			1610260	• Tubing, 8 mm Polyurethane, black, flame resistant	5 ft	

NOTE A: Refer to the *Controls* parts section for detailed parts information.

XD2H and 4-Post XD2H Controls

See Figure 5 and the following parts list.

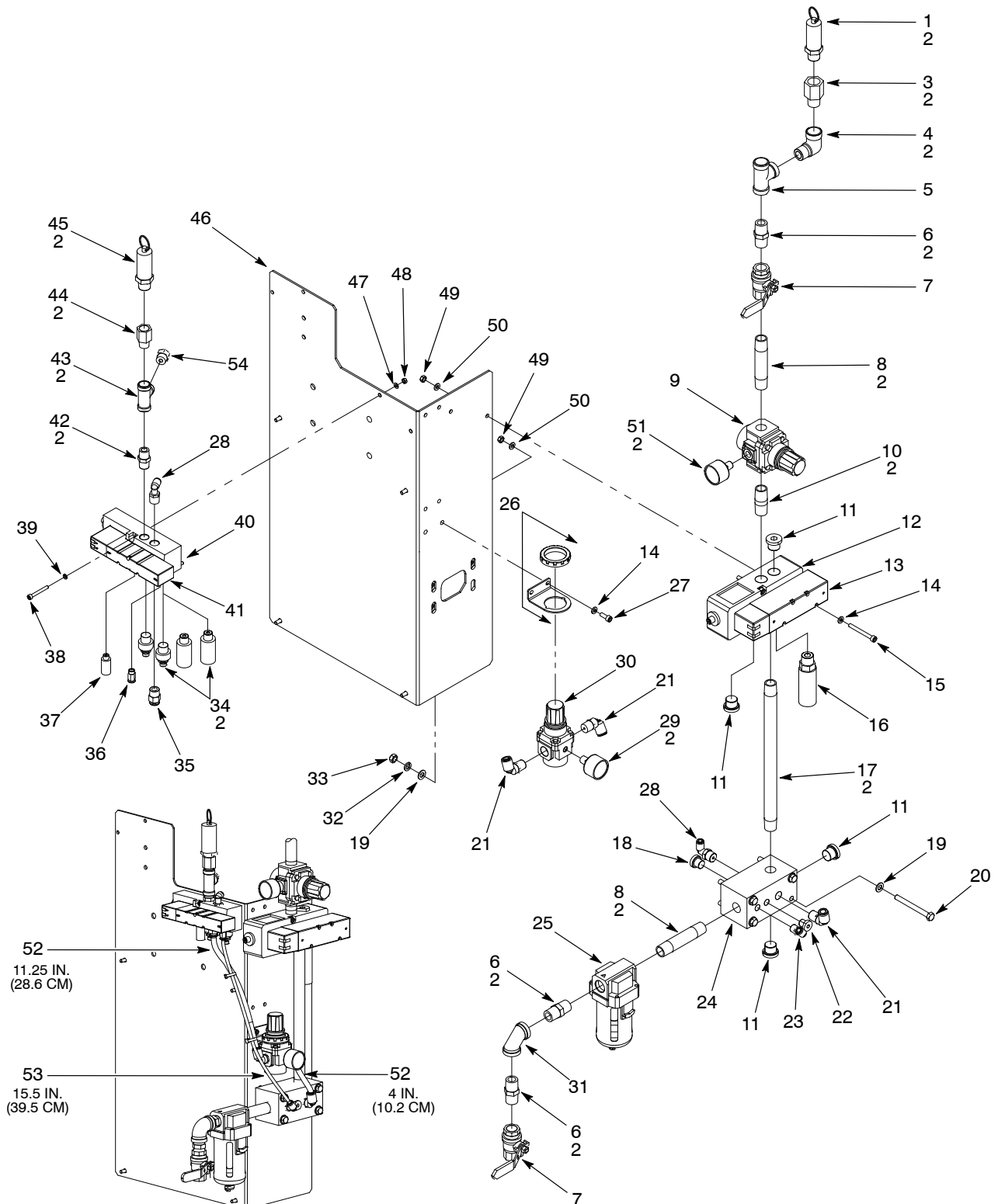


Figure 5 XD2H and 4-Post XD2H Controls Parts

Item	Part	Part	Description	Qty
—	1081877		Controls, heated XD2H, 2-Post	1
		1088689	Controls, heated XD2H, 4-Post	1
1	1082152	1082152	• Valve, relief, 4.2 bar, 61 psi, 1/2 NPT	1
2	900481	900481	• Adhesive, sealant	AR
3	1082813	1082813	• Adapter, R1/2 x 1/2 NPT	1
4	1082348	1082348	• Elbow, 90, street, R1/2, galvanized	1
5	1082167	1082167	• Tee, pipe, R1/2, galvanized	1
6	1082156	1082156	• Nipple, hex, R1/2 x R1/2	3
7	1082133	1082133	• Valve, ball	2
8	1082345	1082345	• Nipple, schedule 40, R1/2 x 4, galvanized	2
9	1082148	1082148	• Regulator, 0- 145 psi	1
10	1082346	1082346	• Nipple, schedule 40, R1/2 x 2, galvanized	1
11	1082154	1082154	• Plug, pipe, socket, G1/2I	4
12	1082142	1082142	• Base, manifold, G/2, 5- port, VQ5000	1
13	1082180	1082180	• Valve, 2 position, 4- way, 24 Vdc, VQC5000	1
14	983409	983409	• Washer, lock, M6	4
15	982292	982292	• Screw, socket, M6 x 55	2
16	1082141	1082141	• Muffler, R1/2, 40 db	1
17	1082343	1082343	• Nipple, schedule 40, R1/2 x 12, galvanized	1
18	1082344	1082344	• Plug, pipe, socket, G3/8	1
19	983013	983013	• Washer, flat, M8	8
20	982325	982325	• Screw, hex, cap, M8 x 80	4
21	1082191	1082191	• Elbow, male, 10 mm tube x G3/8	3
22	1082153	1082153	• Plug, pipe, socket, G1/4	1
23	1082190	1082190	• Elbow, male, 6 mm tube x G1/4	1
24	1081933	1081933	• Manifold, air, XD2	1
25	1082134	1082134	• Filter, air, G1/2	1
26	1082165	1082165	• Bracket assembly, SMC AR30k regulator	1
27	982176	982176	• Screw, socket, M6 x 16	2
28	1082390		• Elbow, male, 6 mm tube x G3/8	1
		1088499	• Elbow, male, 12 mm tube x G3/8	1
29	1082472	1082472	• Gage, air, 0- 160 psi, 1.1 mpa, R1/8, back mount	1
30	1081938	1081938	• Regulator, 0- 125 psi, G3/8	1
31	1082159	1082159	• Elbow, pipe, 90, R1/2, galvanized	1
32	983404	983404	• Washer, lock, M8	4
33	984707	984707	• Nut, hex, M8	4
34	1082169		• Muffler, flow- control, G3/8, 250 psi	2
		1082205	• Muffler, R3/8	2
35	1082189	1082189	• Connector, male, 10 mm tube x G3/8	1
36	1082187	1082187	• Connector, male, 6 mm tube x G1/8	1
37	1082500	1082500	• Muffler, R1/8	1
38	982374	982374	• Screw, socket, M5 x 40	2
39	983401	983401	• Washer, lock, M5	2

Continued...

Item	Part	Part	Description	Qty
40	1082143	1082143	• Base, manifold, G3/8, 5-port, VQ4000	1
41	1082181	1082181	• Valve, 3 position, 4-way, 24 Vdc, VQC4000	1
42	1082162	1082162	• Nipple, hex, R3/8 x R3/8	1
43	1082166	1082166	• Tee, pipe, RP 3/8	1
44	973624	973624	• Reducer, 3/8 BSPP x 3/8 NPT	1
45	1082151	1082151	• Valve, relief, 7.5 bar, 109 psi, 3/8 NPT	1
46	1082315	1082315	• Panel, controls, XD2	1
47	983035	983035	• Washer, flat, M5	2
48	984706	984706	• Nut, hex, M5	2
49	984703	984703	• Nut, hex, M6	4
50	983029	983029	• Washer, flat, M6	4
51	1082139	1082139	• Gage, air, 0–160 psi, 1.1 mpa, R1/4, back mount	1
52	1085033	1085033	• Tubing, 10 mm nylon, blue, flame resistant	1.3 ft
53	1082731	1082731	• Tubing, 6 mm nylon, blue, flame resistant	1.3 ft
54	1082188		• Connector, male, 6 mm tube x G3/8	1
		1088498	• Connector, male, 12 mm tube x G3/8	1

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XD2H Low Wattage Controls

See Figure 6 and the following parts list.

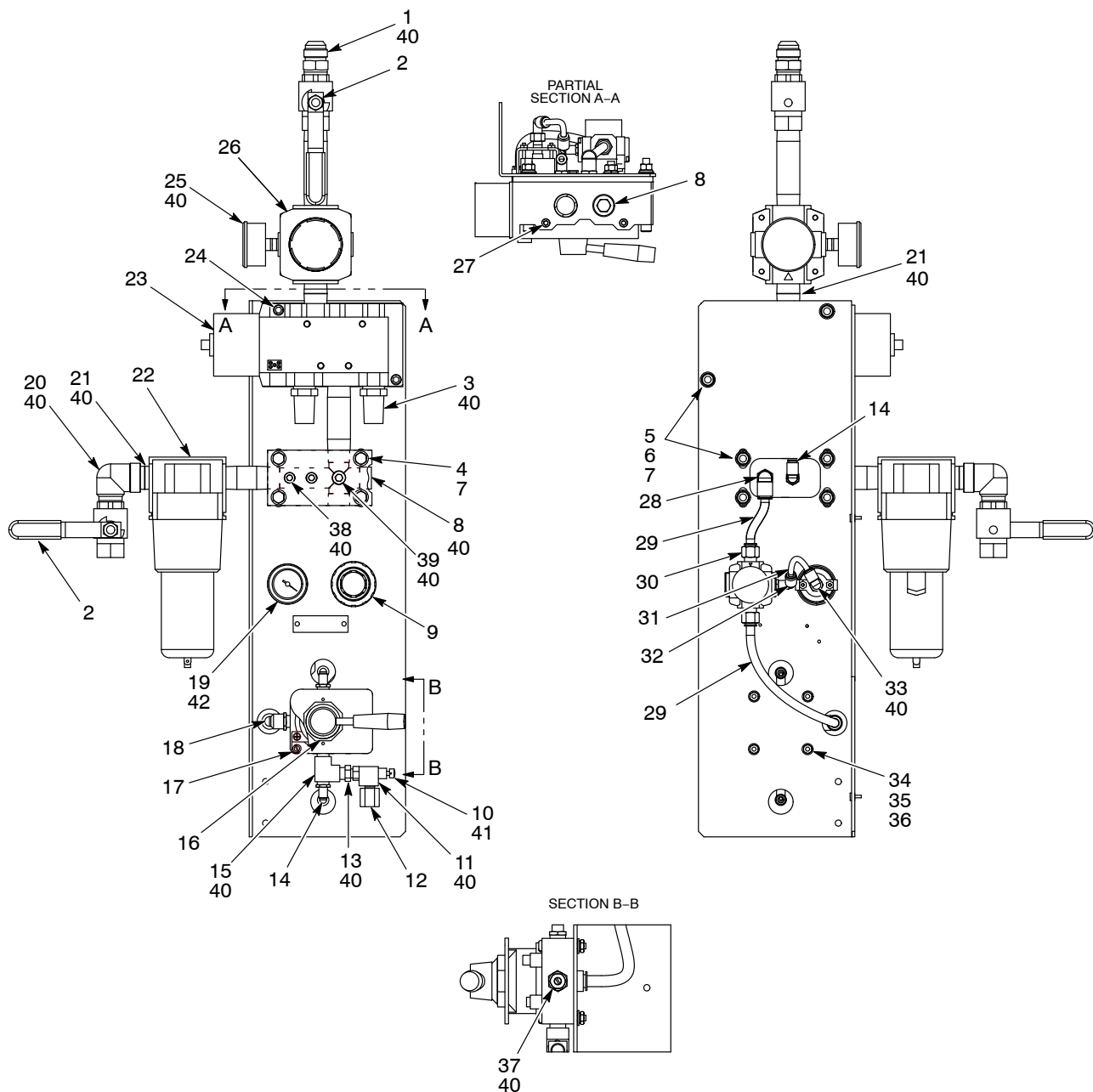


Figure 6 2-Post XD2H Low Wattage Control Parts

Item	Part	Description	Qty	Note
—	1614615	CONTROLS, XD2H, low wattage	1	
1	972105	• CONNECTOR, male, 37 degree, 1 ¹ / ₁₆ - 12 x ¾, steel	1	
2	1063004	• VALVE, ball, 2- 2, F, ¾ NPT, 250 P, brass	2	
3	124851	• MUFFLER, ¾ NPT, 40-micron	2	
4	- - - - -	• SCREW, hex, 5 ⁵ / ₁₆ - 18 x 3.250, cap, zinc, Grade 5, per ISO 4018	4	
5	- - - - -	• NUT, hex, regular, 5 ⁵ / ₁₆ - 18, Grade 8, zinc, per ISO 4034	6	
6	- - - - -	• WASHER, lock, regular, 5 ⁵ / ₁₆ , zinc, DIN127	6	
7	- - - - -	• WASHER, flat, 0.375 x 0.875 x 0.083, steel zinc, per ISO 7089	10	
8	973442	• PLUG, pipe, socket, flush, ¾, zinc	3	
9	1043084	• REGULATOR, air, ¼ NPT, with check valve	1	
10	124787	• BUTTON, push, manual	1	
11	1073267	• VALVE, poppet, air-operated, 2-way, normally closed, ½ NPT	1	
12	972685	• ADAPTER, female, ¼- 18 x ⅝- 27, brass	1	
13	973564	• NIPPLE, hex, ¼ x ⅝ x 1.188, steel zinc	1	
14	971266	• ELBOW, male, 0.25 tube x 0.25 NPT	3	
15	973275	• TEE, pipe, ¼, brass	1	
16	124797	• VALVE, rotary, 3-position, ¼-in. ports	1	
17	- - - - -	• SCREW, pan, 10- 32 x 1.500, steel zinc, per ISO 1580	4	
18	972183	• ELBOW, male, ⅜ tube x ¼ NPT	1	
19	1073357	• GAGE, air, 0- 100 psi, 1.5 in. dial, ⅝ MNPT	1	
20	973226	• ELL, pipe, hydraulic, 90 degree, ¾, steel zinc	1	
21	973103	• NIPPLE, steel, schedule 40, ¾, 1.37	2	
22	1029533	• FILTER, air, ¾ NPT	1	
23	1043425	• BASE, manifold, ¾ NPT, 5-port, ISO size 3	1	
24	- - - - -	• SCREW, socket, 5 ⁵ / ₁₆ - 18 x 3, black, Grade 8, per ISO 4762	2	
25	1073207	• GAGE, air, 0- 100 psi, 2-in. dial, 1 ¹ / ₄ MNPT	1	
26	1029522	• REGULATOR, 8- 125 psi, ¾ NPT	1	
27	973483	• PLUG, pipe, socket, ⅝, steel	2	
28	972194	• ELBOW, male, ⅜ tube, x ⅜ NPT, with sealant	1	
29	1010777	• TUBING, ⅜ OD Polyethylene, flame resistant	1.08 ft	
30	971177	• CONNECTOR, male, ⅜ T x ¼ NPT	2	
31	- - - - -	• TUBING, ¼ OD Polyethylene, flame resistant	0.67 ft	
32	972119	• ELBOW, male, ¼ tube x ⅝ NPT	1	
33	- - - - -	• ELBOW, female, push-in, ¼ T x ⅝ FPT	1	
34	- - - - -	• WASHER, flat, 0.219 x 0.500 x 0.049, zinc, per ISO 7089	4	
35	- - - - -	• WASHER, lock, #10, steel, nickel, DIN 127	4	
36	- - - - -	• NUT, hex, machine, #10- 32, steel, zinc 14448- FA	4	
37	- - - - -	• MUFFLER, flow-control, ¼ NPT, 250 psi	1	
38	973422	• PLUG, pipe, socket, flush, ⅜, zinc	1	
39	973411	• PLUG, pipe, socket, flush, ¼, zinc	2	
40	900481	• ADHESIVE, pipe/thd/hyd sealant (PST)	AR	
41	900439	• ADHESIVE, Loctite® 271, red, 50 ml	AR	
42	900464	• ADHESIVE, Loctite 242, blue, removable, 50 m	AR	
AR: As Required				

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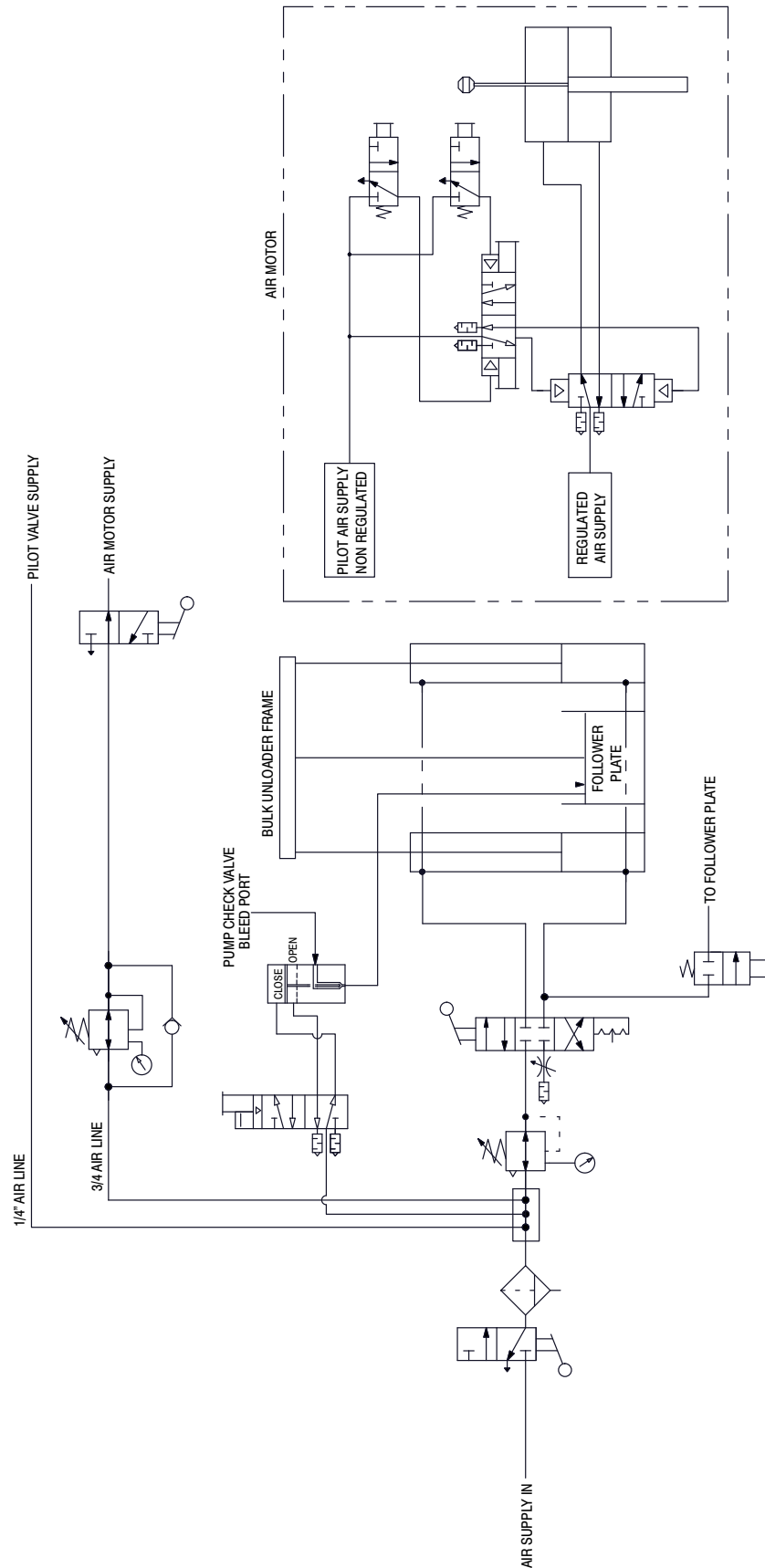


Figure 8 2-Post Low Wattage Heated Control Module

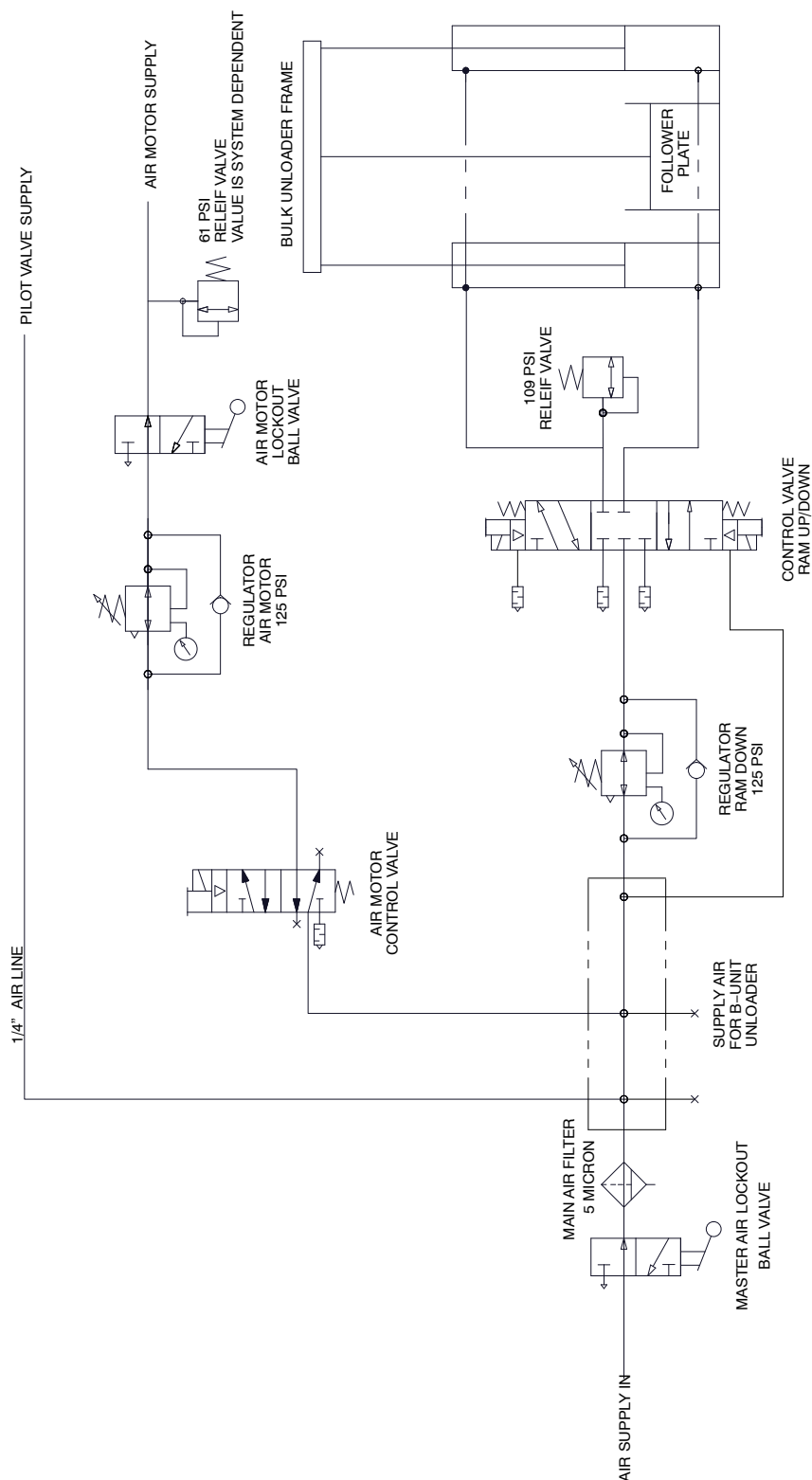


Figure 9 4-Post Heated Control Module

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