

Description

NOTE: Throughout this document the Rhino SD2/XD2 CE Two-Hand Control Module is referred to as the control module.

See Figure 1. The control module (2) provides the pneumatic operating functions for Rhino SD2/XD2 bulk unloaders (1). See Figure 2 and refer to Table 1 for a list of the control module components.

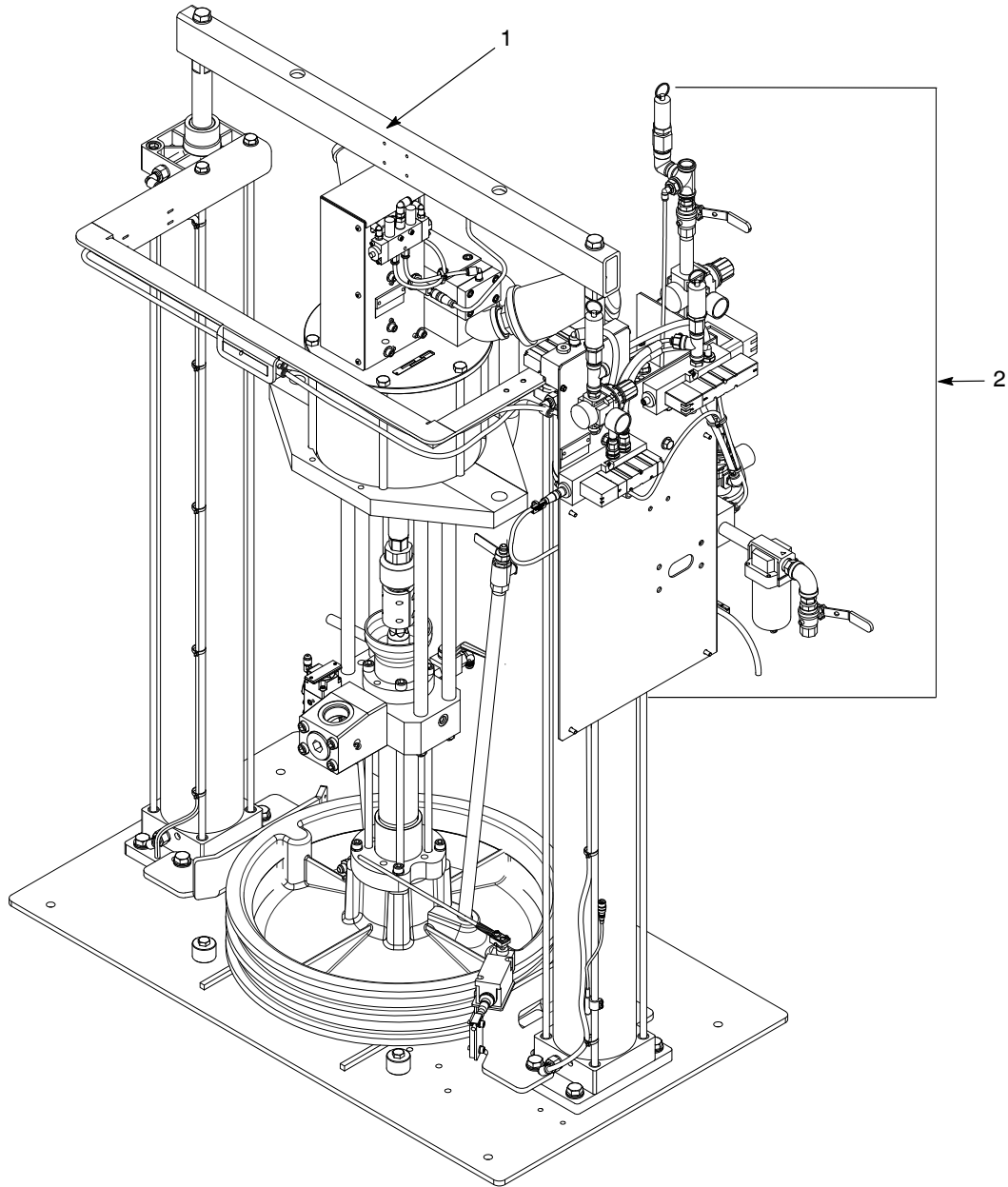


Figure 1 Rhino SD2/XD2 CE Control Module

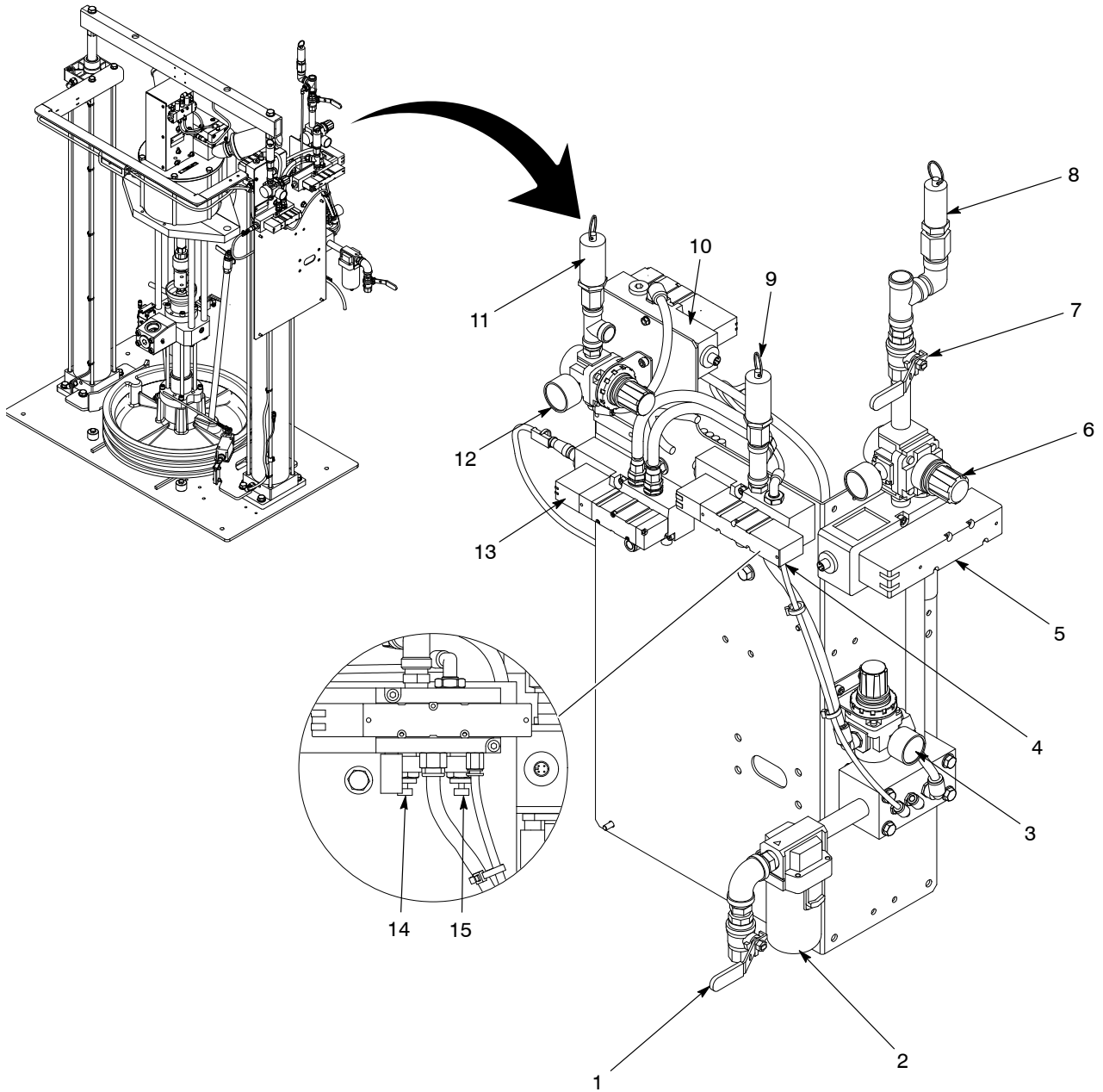


Figure 2 Control Module Components

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 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. |
| 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 | Blow-Off Control Valve: Receives signals from the system controller to control the flow of air underneath the follower plate when removing the material drum from the bulk unloader. |
| 11 | Blow-Off Relief Valve: A safety feature that limits the air pressure to the follower plate. It limits the potential pressure within the material drum and is set at 15 psi (1 bar). |
| 12 | Blow-Off Regulator: Sets the amount of air pressure to the follower plate. |
| 13 | Depressurization (optional): Relieves material pressure from downstream of the hose and pump. Using an Auto-Flo gun attached to the follower plate, the depressurization module relieves material pressure by flowing material under the follower plate and into the material container. |
| 14 | 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. |
| 15 | <p>Ram Up/Down Control Valve: Receives signals from the system controller to control ram movement:</p> <ul style="list-style-type: none"> • Ram Up raises the ram and follower plate. • Neutral halts ram movement and pneumatically locks the rams. • Ram Down lowers the ram and follower plate. <p>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 is on the bulk unloader base or secured using support blocks.</p> |

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.

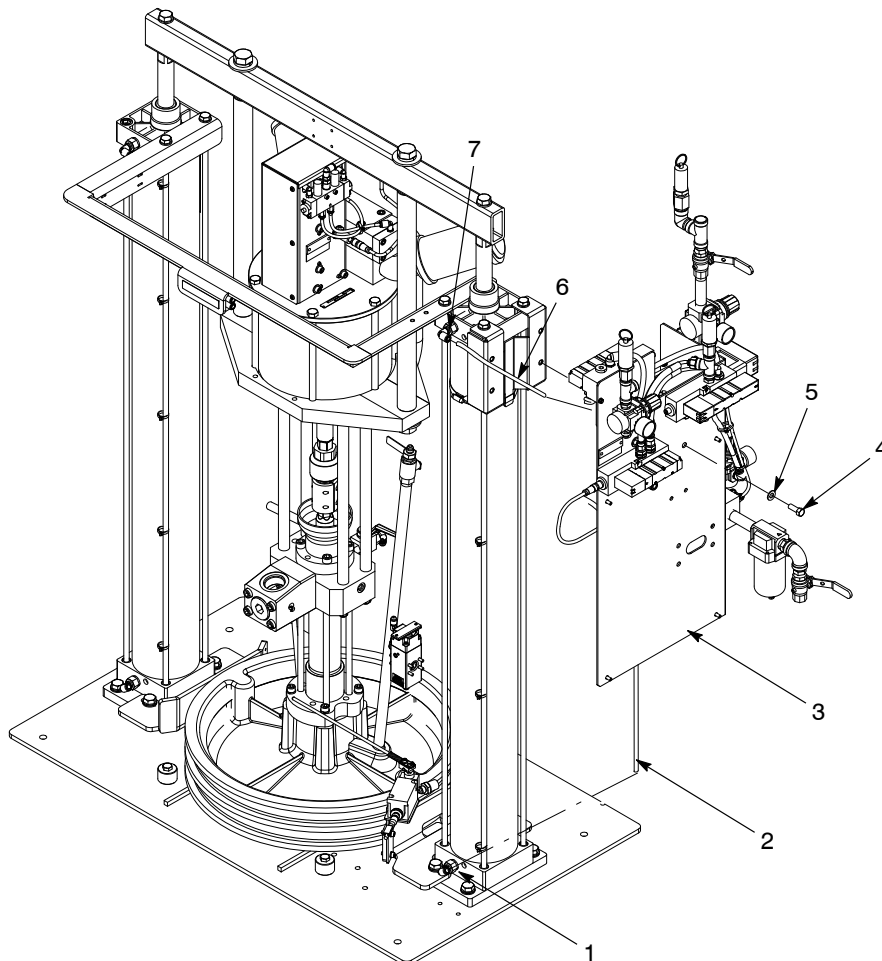


Figure 3 Installation

Parts

To order parts, call the Nordson Customer Service Center or your local Nordson representative.

Control Module

See Figure 4 and the following parts list.

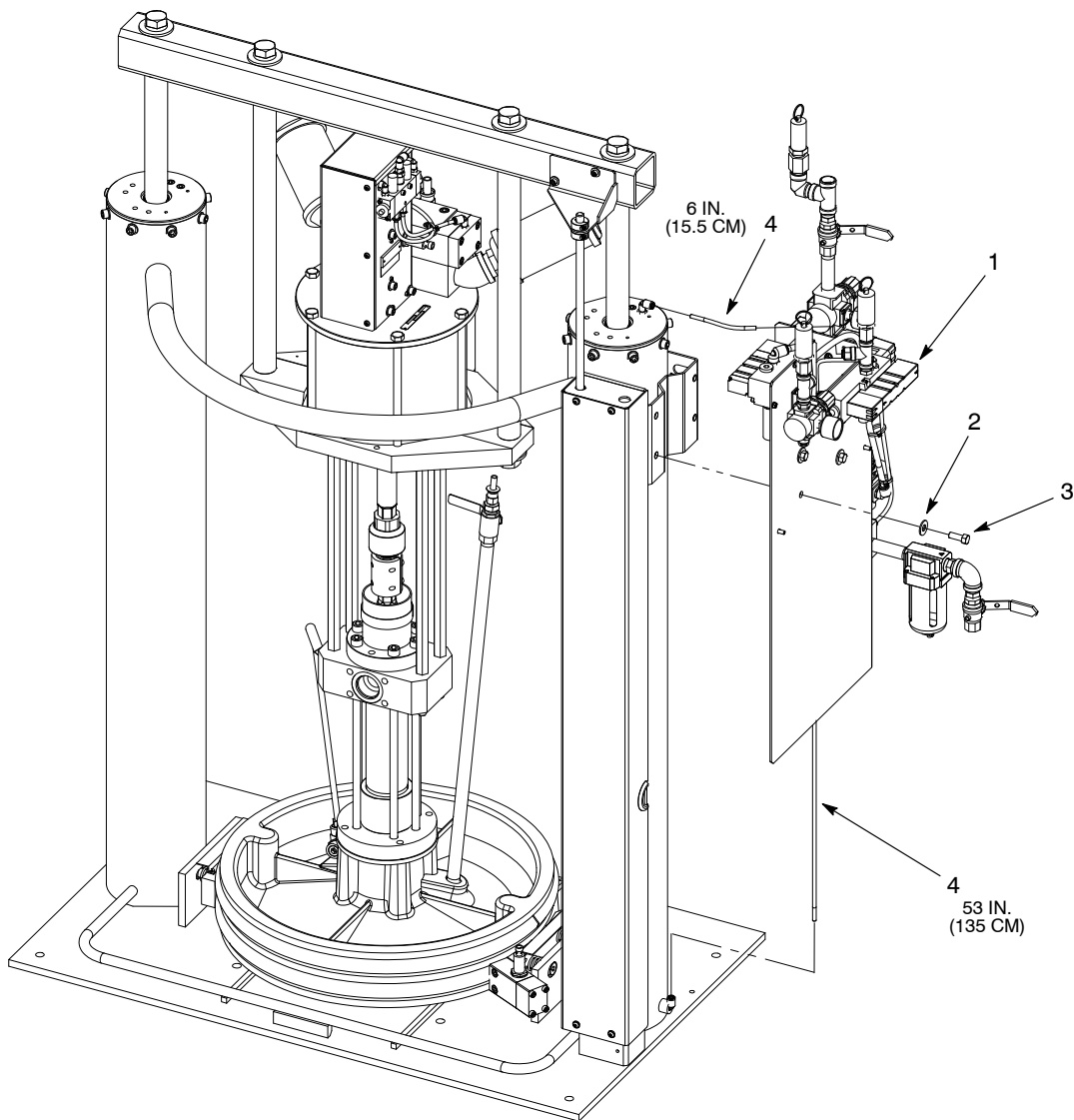


Figure 4 Control Module Parts

| Item | Part | Description | Quantity | Note |
|------------------------------------------------------------------------------------|---------|-----------------------------------------------------|----------|------|
| — | 1082754 | MODULE, controls, 2-hand down CE | 1 | |
| 1 | ----- | CONTROLS, heated 2-hand down CE | 1 | A |
| 2 | ----- | • WASHER, flat, 0.406 x 0.812 x 0.065, per ISO 7089 | 4 | |
| 3 | ----- | • 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 | |
| NOTE A: Refer to the <i>Controls</i> parts section for detailed parts information. | | | | |

Control Module B/U

See Figure 5 and the following parts list.

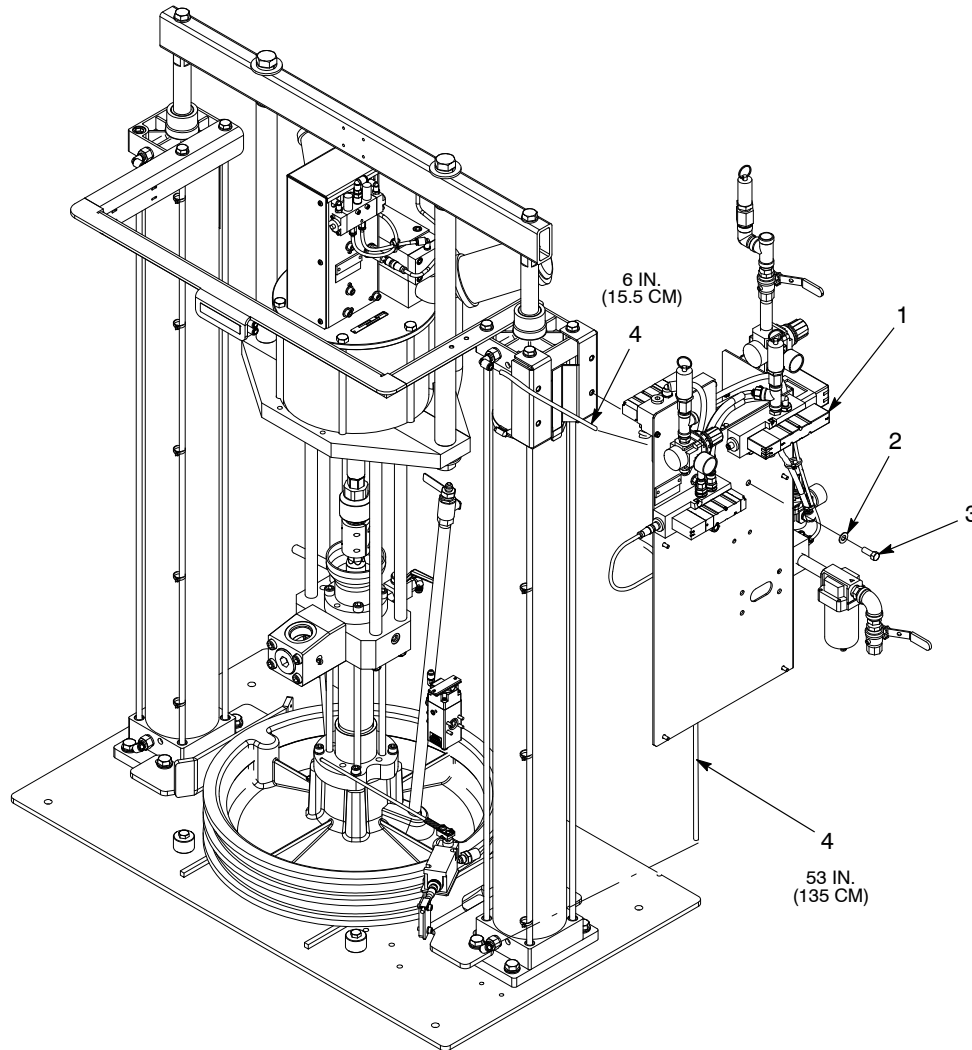


Figure 5 Control Module B/U Parts

| Item | Part | Description | Quantity | Note |
|------------------------------------------------------------------------------------|---------|-----------------------------------------------------|----------|------|
| — | 1613456 | MODULE, controls, B/U, 2-hand down CE, 125 mm | 1 | |
| 1 | ----- | CONTROLS, B/U, 2 hand down, CE, 125 mm | 1 | A |
| 2 | ----- | • WASHER, flat, 0.406 x 0.812 x 0.065, per ISO 7089 | 4 | |
| 3 | ----- | • SCREW, hex, 3/8-16 x 0.750, grade 5, per ISO 4018 | 4 | |
| 4 | 1606745 | • TUBING, 5/16 OD, nylon, flame resistant, blue | 8 ft | |
| NOTE A: Refer to the <i>Controls</i> parts section for detailed parts information. | | | | |

This page intentionally left blank.

Controls

See Figure 6 and the following parts list.

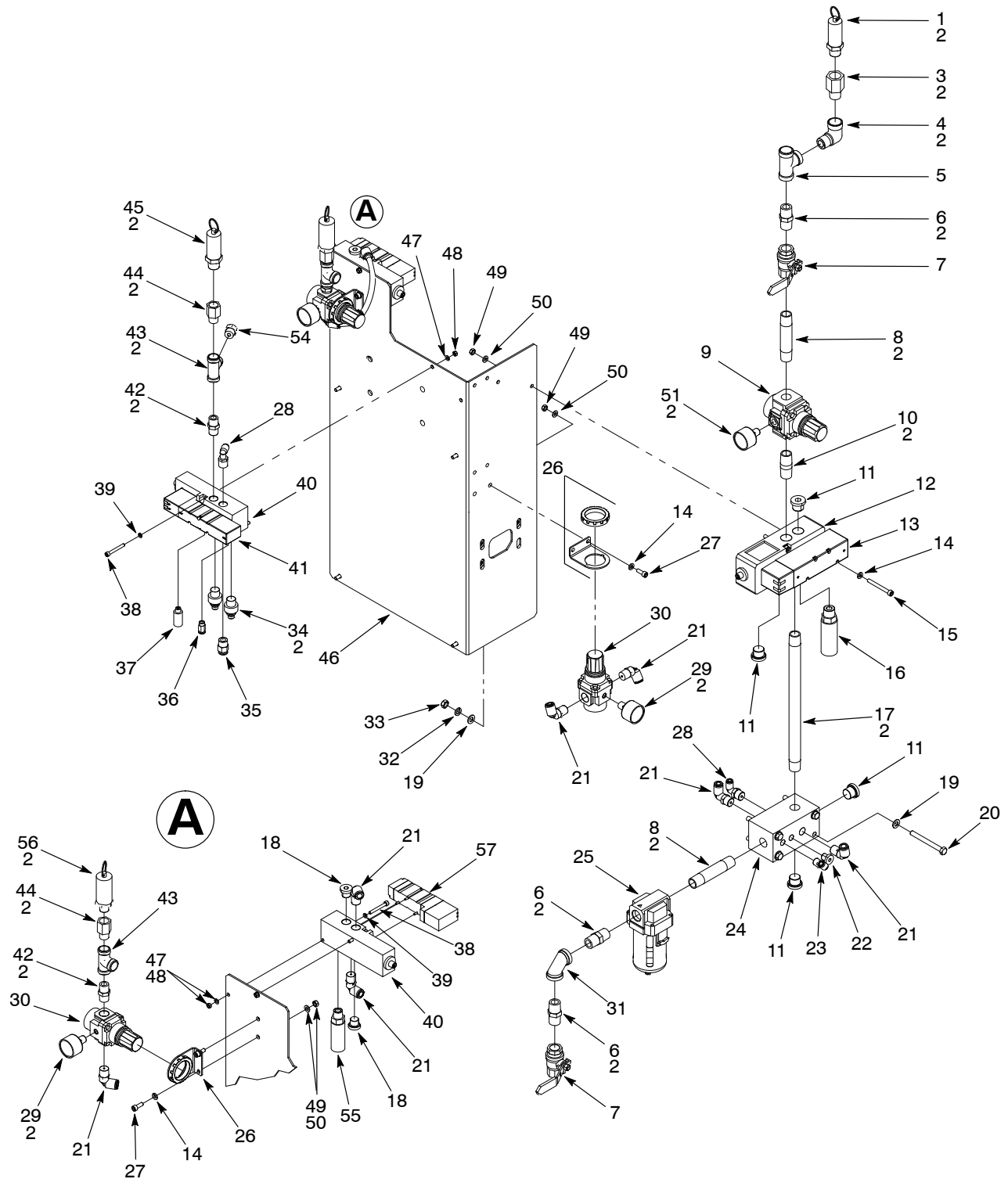


Figure 6 Controls Parts

| Item | Part | Description | Quantity | Note |
|------|---------|----------------------------------------------------|----------|------|
| — | ----- | CONTROLS, XD2. two-hand | 1 | |
| — | ----- | CONTROLS, B/U, two-hand down, CE, 125 mm | 1 | |
| 1 | 1082152 | • VALVE, relief, 4.2 bar, 61 psi, ½ NPT | 1 | |
| 2 | 900481 | • ADHESIVE, sealant | AR | |
| 3 | 1082813 | • ADAPTER, R½ x ½ NPT | 1 | |
| 4 | 1082348 | • ELBOW, 90, street, R½, galvanized | 1 | |
| 5 | 1082167 | • TEE, pipe, R½, galvanized | 1 | |
| 6 | 1082156 | • NIPPLE, hex, R½ x R½ | 3 | |
| 7 | 1082133 | • VALVE, ball | 2 | |
| 8 | 1082345 | • NIPPLE, schedule 40, R½ x 4, galvanized | 2 | |
| 9 | 1082148 | • REGULATOR, 0-145 psi | 1 | |
| 10 | 1082346 | • NIPPLE, schedule 40, R½ x 2, galvanized | 1 | |
| 11 | 1082154 | • PLUG, pipe, socket, G½ | 4 | |
| 12 | 1082142 | • BASE, manifold, G/2, 5-port, VQ5000 | 1 | |
| 13 | 1082180 | • VALVE, 2 position, 4-way, 24 Vdc, VQC5000 | 1 | |
| 14 | ----- | • WASHER, lock, M6, per ISO 7089 | 6 | |
| 15 | ----- | • SCREW, socket, M6 x 55, class 12.9, per ISO 4762 | 2 | |
| 16 | 1082141 | • MUFFLER, R½, 40 db | 1 | |
| 17 | 1082343 | • NIPPLE, schedule 40, R½ x 12, galvanized | 1 | |
| 18 | 1082344 | • PLUG, pipe, socket, G¾ | 2 | |
| 19 | ----- | • WASHER, flat, M8, per ISO 7089 | 8 | |
| 20 | ----- | • SCREW, hex, cap, M8 x 80, class 12.9, per 4762 | 4 | |
| 21 | 1082191 | • ELBOW, male, 10 mm tube x G¾ | 7 | |
| 22 | 1082153 | • PLUG, pipe, socket, G¼ | 1 | |
| 23 | 1082190 | • ELBOW, male, 6 mm tube x G¼ | 1 | |
| 24 | 1081933 | • MANIFOLD, air, XD2 | 1 | |
| 25 | 1082134 | • FILTER, air, G½ | 1 | |
| 26 | 1082165 | • BRACKET ASSEMBLY, SMC AR30k regulator | 2 | |
| 27 | ----- | • SCREW, socket, M6 x 16, class 12.9, per ISO 4762 | 4 | |
| 28 | 1082390 | • ELBOW, male, 6 mm tube x G¾ | 1 | A |
| | 1613464 | • ELBOW, male, 8 mm tube x G¾ | 1 | B |
| 29 | 1082472 | • GAUGE, air, 0-160 psi, 1.1 mpa, R⅛, back mount | 2 | |
| 30 | 1081938 | • REGULATOR, 0-125 psi, G¾ | 2 | |
| 31 | 1082159 | • ELBOW, pipe, 90, R½, galvanized | 1 | |
| 32 | ----- | • WASHER, lock, M8. Per ISO 7089 | 4 | |
| 33 | ----- | • NUT, hex, M8, class 8, per ISO 4032 | 4 | |
| 34 | 1082169 | • MUFFLER, flow-control, G¾, 250 psi | 2 | |
| 35 | 1082189 | • CONNECTOR, male, 10 mm tube x G¾ | 1 | |
| 36 | 1082187 | • CONNECTOR, male, 6 mm tube x G⅝ | 1 | |
| 37 | 1082500 | • MUFFLER, R⅛ | 1 | |
| 38 | ----- | • SCREW, socket, M5 x 40, class 12.9, per ISO 4762 | 4 | |
| 39 | ----- | • WASHER, lock, M5, per ISO 7089 | 4 | |

Continued...

10 Rhino SD2/XD2 CE Two-Hand Operation Control Module

| Item | Part | Description | Quantity | Note |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------|----------|------|
| — | ----- | CONTROLS, XD2. two-hand | 1 | |
| — | ----- | CONTROLS, B/U, two-hand down, CE, 125 mm | 1 | |
| 40 | 1082143 | • BASE, manifold, G $\frac{3}{8}$, 5-port, VQ4000 | 2 | |
| 41 | 1082181 | • VALVE, 3 position, 4-way, 24 Vdc, VQC4000 | 1 | |
| 42 | 1082162 | • NIPPLE, hex, R $\frac{3}{8}$ x R $\frac{3}{8}$ | 2 | |
| 43 | 1082166 | • TEE, pipe, RP $\frac{3}{8}$ | 2 | |
| 44 | 1082812 | • ADAPTER, R $\frac{3}{8}$ x R $\frac{3}{8}$ NPT | 2 | |
| 45 | 1082151 | • VALVE, relief, 7.5 bar, 109 psi, $\frac{3}{8}$ NPT | 1 | |
| 46 | 1082315 | • PANEL, controls, XD2 | 1 | |
| 47 | ----- | • WASHER, flat, M5, per ISO 7089 | 4 | |
| 48 | ----- | • NUT, hex, M5, class 8, per ISO 4032 | 4 | |
| 49 | 984703 | • NUT, hex, M6, class 8, per ISO 4032 | 6 | |
| 50 | 983029 | • WASHER, flat, M6, per ISO 7089 | 6 | |
| 51 | 1082139 | • GAUGE, air, 0-160 psi, 1.1 mpa, R $\frac{1}{4}$, back mount | 1 | |
| 52 | 1085033 | • TUBING, 10 mm nylon, blue, flame resistant | 4.52 ft | |
| 53 | 1082731 | • TUBING, 6 mm nylon, blue, flame resistant | 1.3 ft | |
| 54 | 1082188 | • CONNECTOR, male, 6 mm tube x G $\frac{3}{8}$ | 1 | A |
| | 1613465 | • CONNECTOR, male, 8 mm tube x G $\frac{3}{8}$ | 1 | B |
| 55 | 1082205 | • MUFFLER, R $\frac{3}{8}$ | 1 | |
| 56 | 1082310 | • VALVE, relief, 1 bar, 15 psi, $\frac{3}{8}$ NPT | 1 | |
| 57 | 1082349 | • VALVE, 2-position, 4-way, 24 Vdc, VQC4000 | 1 | |
| <p>NOTE A: Two-hands down XD2 controls B: B/U two-hands down controls, 125 mm CE AR: As Required NS: Not Shown</p> | | | | |

Control Tubing

Refer to Figure 7 for tubing lengths for the control connections.

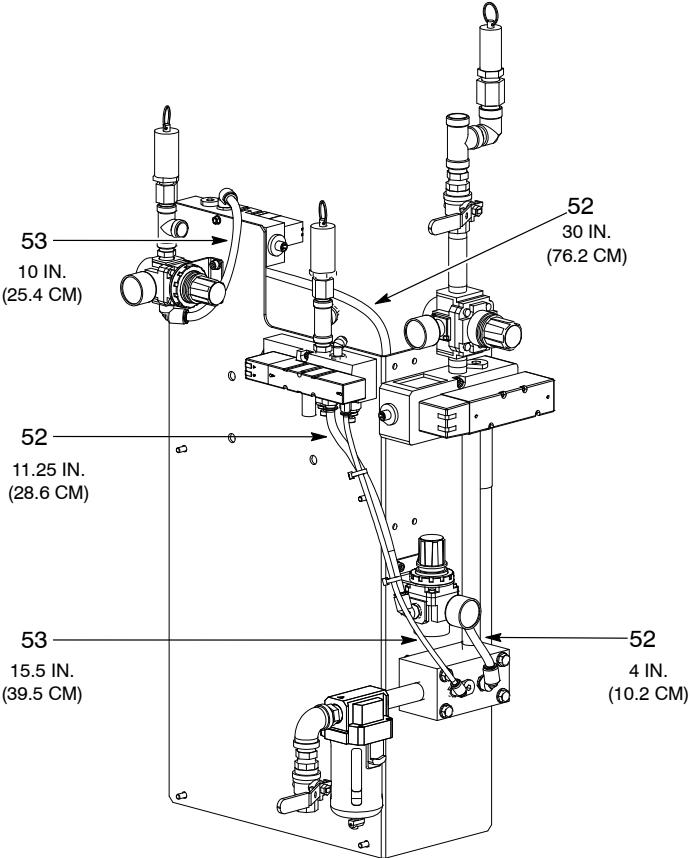
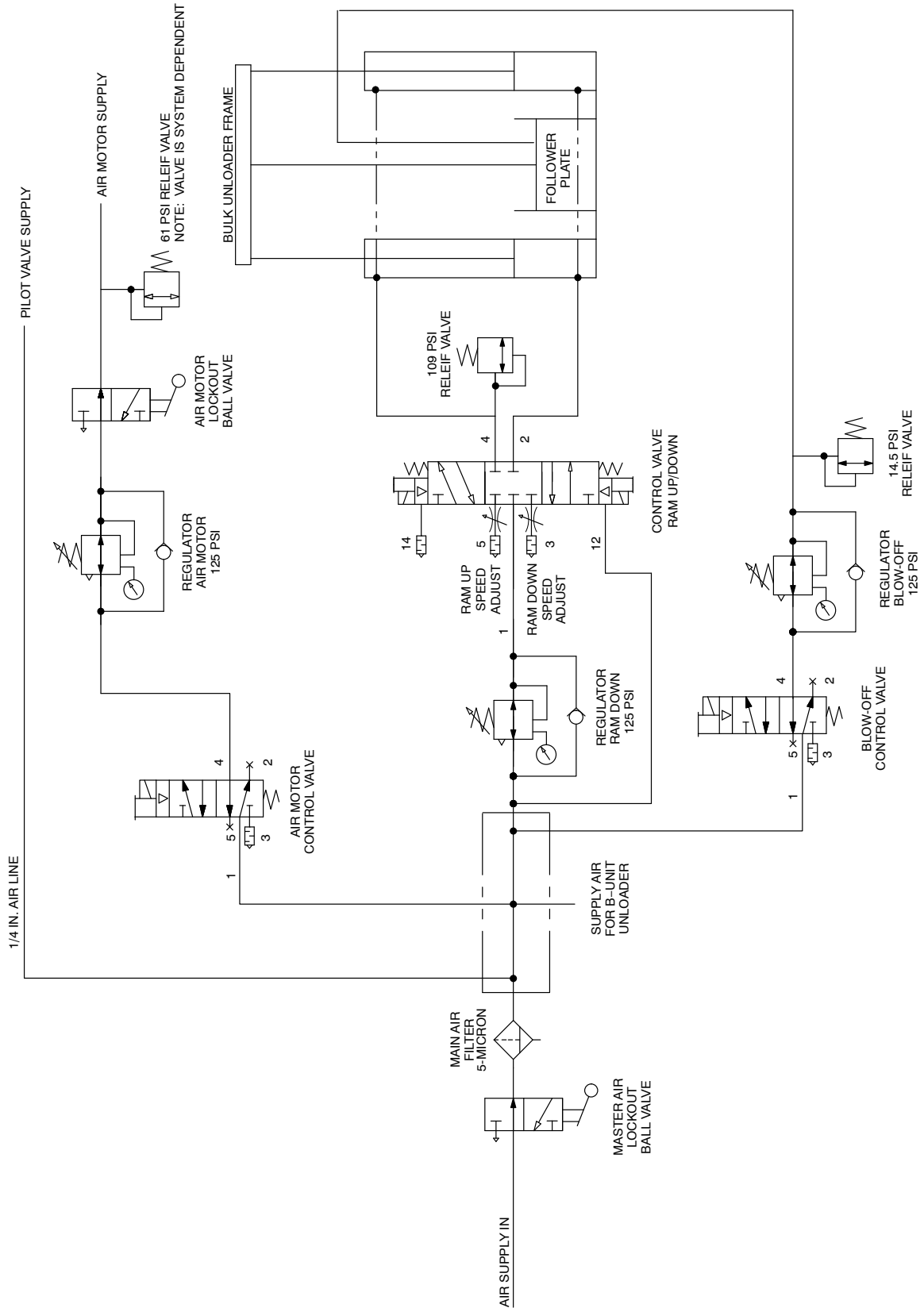


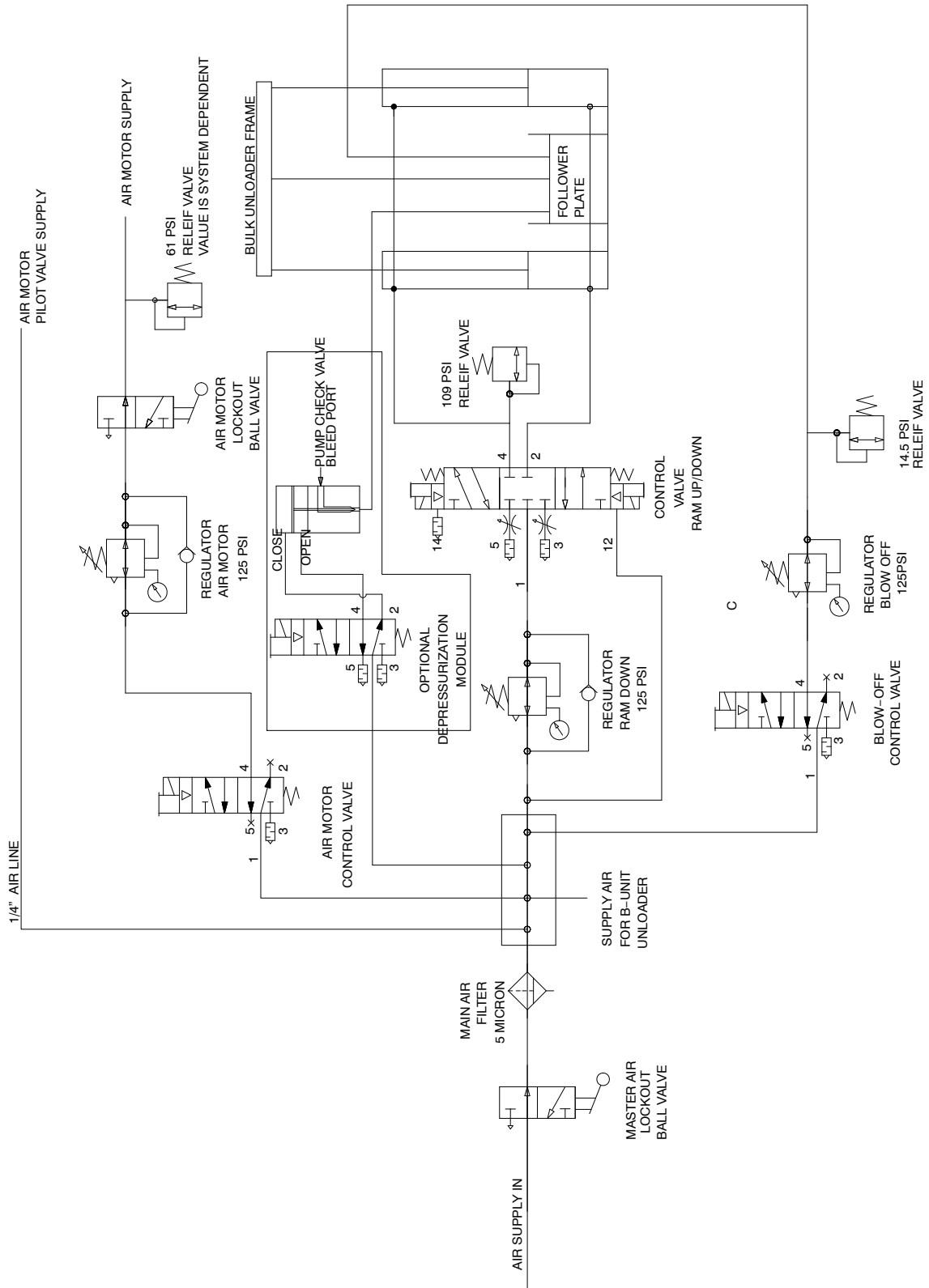
Figure 7 Tubing

Pneumatic Schematics

Standard Configuration



Depressurization Equipped Configuration



Contact Us

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address: <http://www.nordson.com>.

Address all correspondence to:

Nordson Corporation
Attn: Customer Service
555 Jackson Street
Amherst, OH 44001

Notice

This is a Nordson Corporation publication which is protected by copyright. Original copyright date 2019. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Nordson Corporation. The information contained in this publication is subject to change without notice.

Trademarks

Nordson, the Nordson logo, and Rhino are registered trademarks of Nordson Corporation.

All other trademarks are the property of their respective owners.