

# NVO2 Oscillator V-Rail and Carriage Kit

## Description

The instruction sheet is for the replacement of the NV02 Oscillator V-rail and carriage assembly. Always replace the V-rail and carriage assemblies at the same time.

## Replacement



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

Read the following before performing these procedures:

- Remove the payload from the gun mounting plate assembly.
- Have the V-rail and Carriage Kit on hand.
- A block is required to secure the gun mounting plate assembly in the top stroke position. Make sure that the block can support the weight of the gun mounting plate assembly.

## Remove the Air Cylinder

See Figure 1. Remove the panel screws (1) from the panels (2).

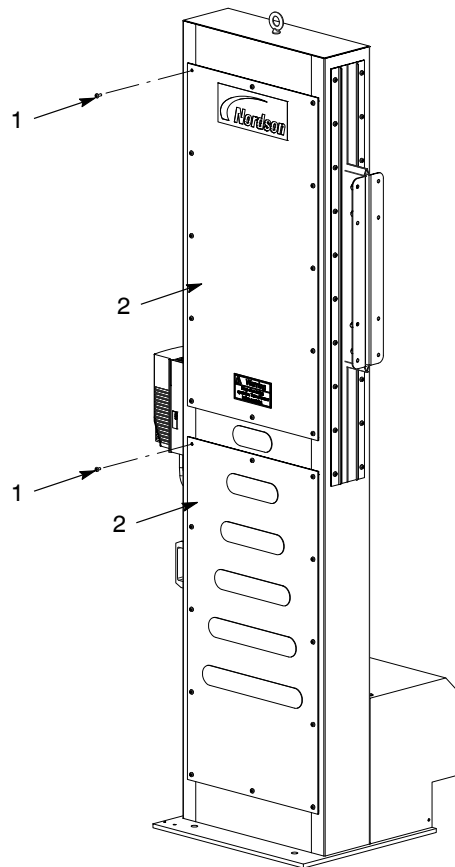


Figure 1 Removing the Panels

1. See Figure 2. Remove the guns and mounting hardware from the mounting plate bracket (1).
2. Move the gun mounting plate assembly (1) to the top stroke position. Use a block (2) as shown to secure the the assembly (1).
3. Relieve the air pressure to the oscillator.
4. Disconnect the air line (3) from the air cylinder fitting (4).
5. Remove the clips (6) and pin (7) securing the air cylinder (5) to the bracket (8).
6. Remove the two screws (9) securing the rod end mount (10) to the gun mount plate (11), and collapse the air cylinder rod into the housing. Remove the air cylinder from the oscillator.

**NOTE:** The gun mounting plate assembly needs to be guided down because it will drop down under its own weight.

7. Move the gun mounting plate assembly (1) to the bottom stroke position by carefully removing the block (2).

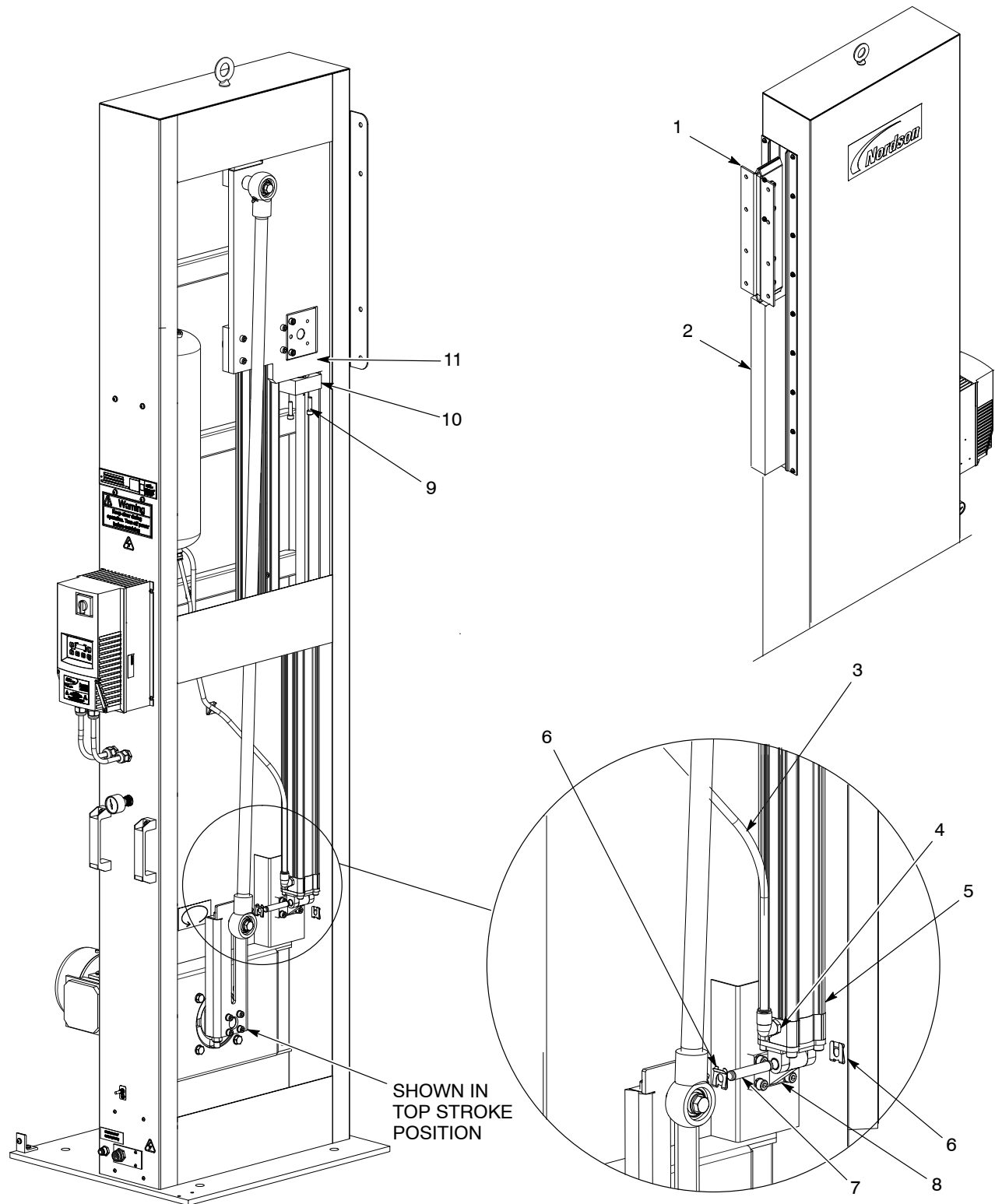


Figure 2 Removing the Air Cylinder

- |                           |                 |                     |
|---------------------------|-----------------|---------------------|
| 1. Mounting plate bracket | 5. Air cylinder | 9. Screws           |
| 2. Block                  | 6. Clips        | 10. Rod end mount   |
| 3. Air line               | 7. Pin          | 11. Gun mount plate |
| 4. Air cylinder fitting   | 8. Bracket      |                     |

## ***Remove the Carriage Assembly***

See Figure 3.



**CAUTION:** Be careful when removing the screw (7) in the next step. The gun carriages (1) will slide down until the gun plate assembly (4) contacts the bottom of the gun plate assembly opening.

1. Remove the screw (7) and washer (6) securing the connecting rod (2) to the gun plate (4). Swing the connecting rod to the left and away from the gun plate assembly.



**CAUTION:** Be careful when removing the screws (5) in the next step. The gun carriages (1) will slide off the V-rails (3) if no precaution is taken. Before removing the screws in the next step, secure cable ties around the V-rail and through the holes in the V-rail to keep the the gun carriages (1) from falling.

2. Remove the eight screws (5) securing the gun plate assembly (4) to the gun carriage (1). Remove the gun plate assembly (4).
3. Carefully, cut the cable ties from the V-rails (3) while guiding the gun carriages (1) down and off the V-rails.
4. Remove the screws (8) supporting the V-rail, and remove the V-rail from the oscillator.

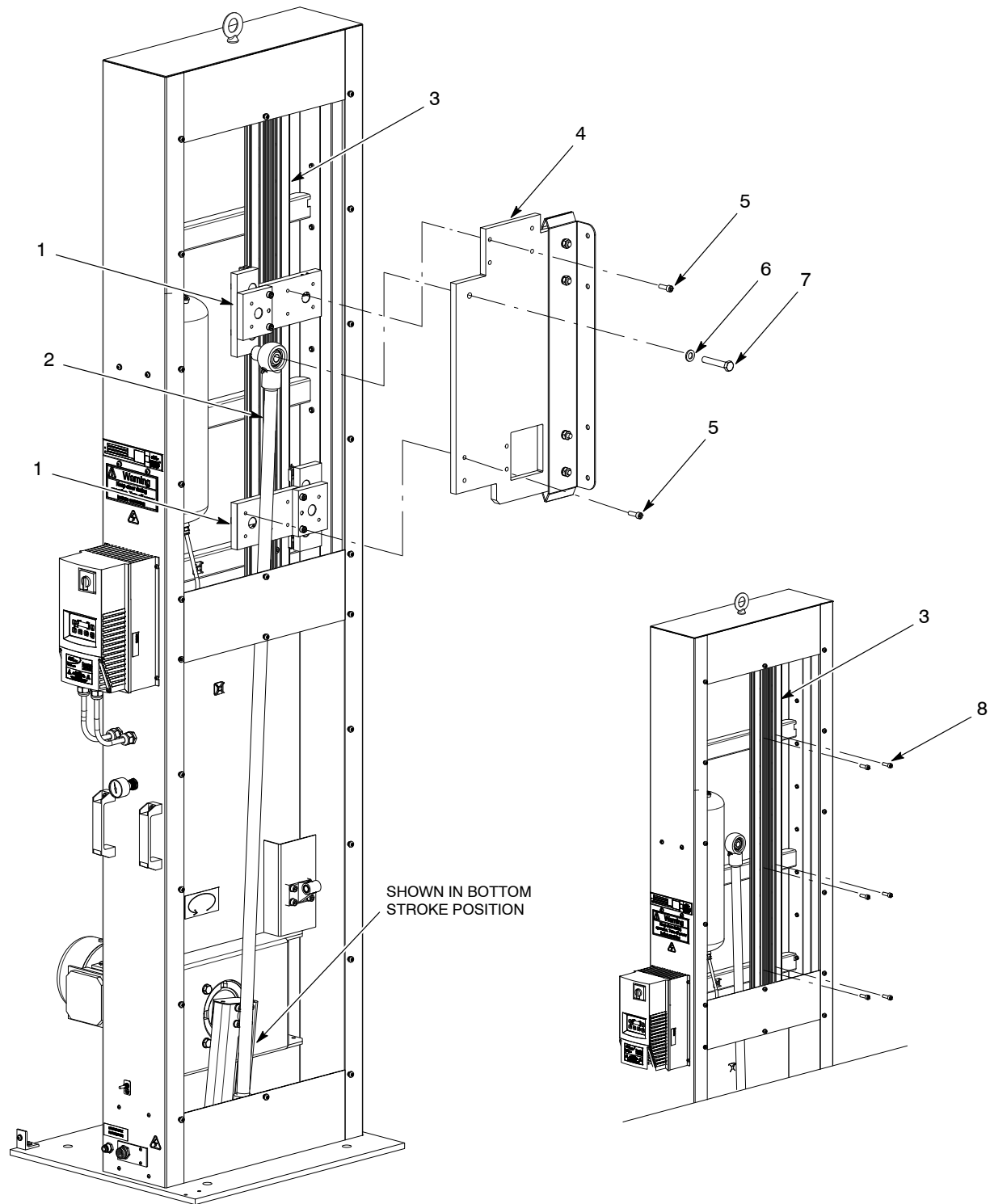


Figure 3 Removing the Carriage Assembly

- |                   |                                |                         |
|-------------------|--------------------------------|-------------------------|
| 1. Carriage       | 4. Gun mounting plate assembly | 7. Connecting rod screw |
| 2. Connecting rod | 5. Gun plate screws            | 8. V-rail screws        |
| 3. V-rail         | 6. Connecting rod washer       |                         |

## Install the V-rail and Carriage Assembly

The carriage assembly kit includes the carriages secured to the V-rail with carriage cable ties and V-rail cable ties. Do not remove either kind of cable tie until instructed to do so in the procedure below.

1. See Figure 4 and 5. Secure the V-rail to the oscillator using the V-rail screws (8).
2. Lubricate the V-rail running surface with a light coat of 3-IN-ONE<sup>®</sup> oil or ISO Grade 22–32 machine oil.
3. Cut and remove the carriage cable ties and install the gun mounting plate assembly (4) onto the upper and lower carriages (1) using the gun plate screws (5).
4. Once the gun plate assembly is secure, cut and remove the V-rail cable ties.
5. Apply grease to the threads of the connecting rod screw (7). Install the connecting rod (2) using the connection rod washer (6) and screw (7). Torque to 90–100 ft lbs.

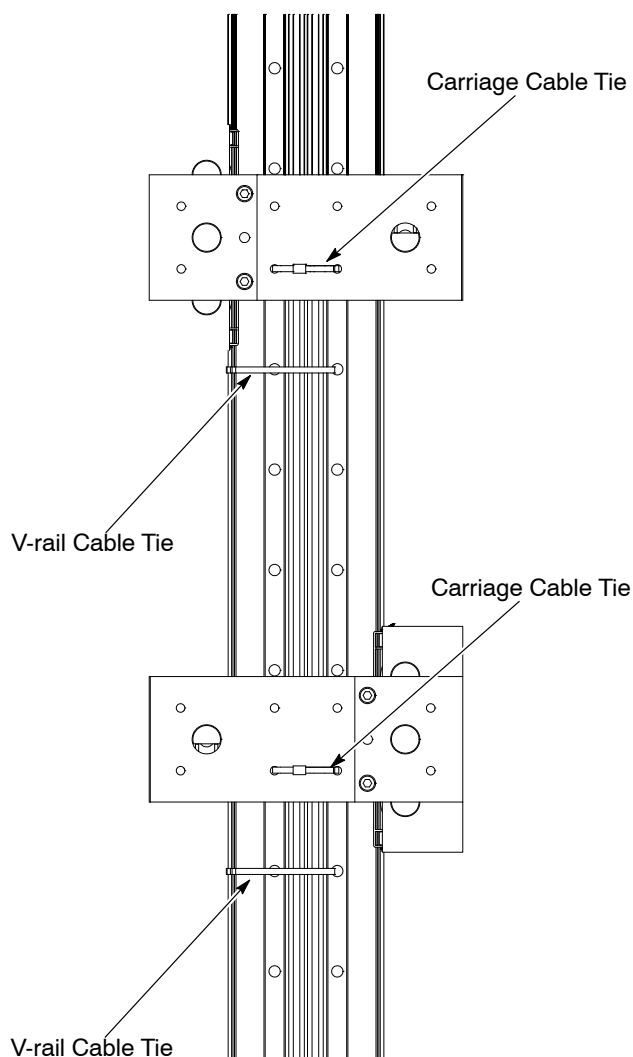


Figure 4 Removing Cable Ties from Carriage Assembly

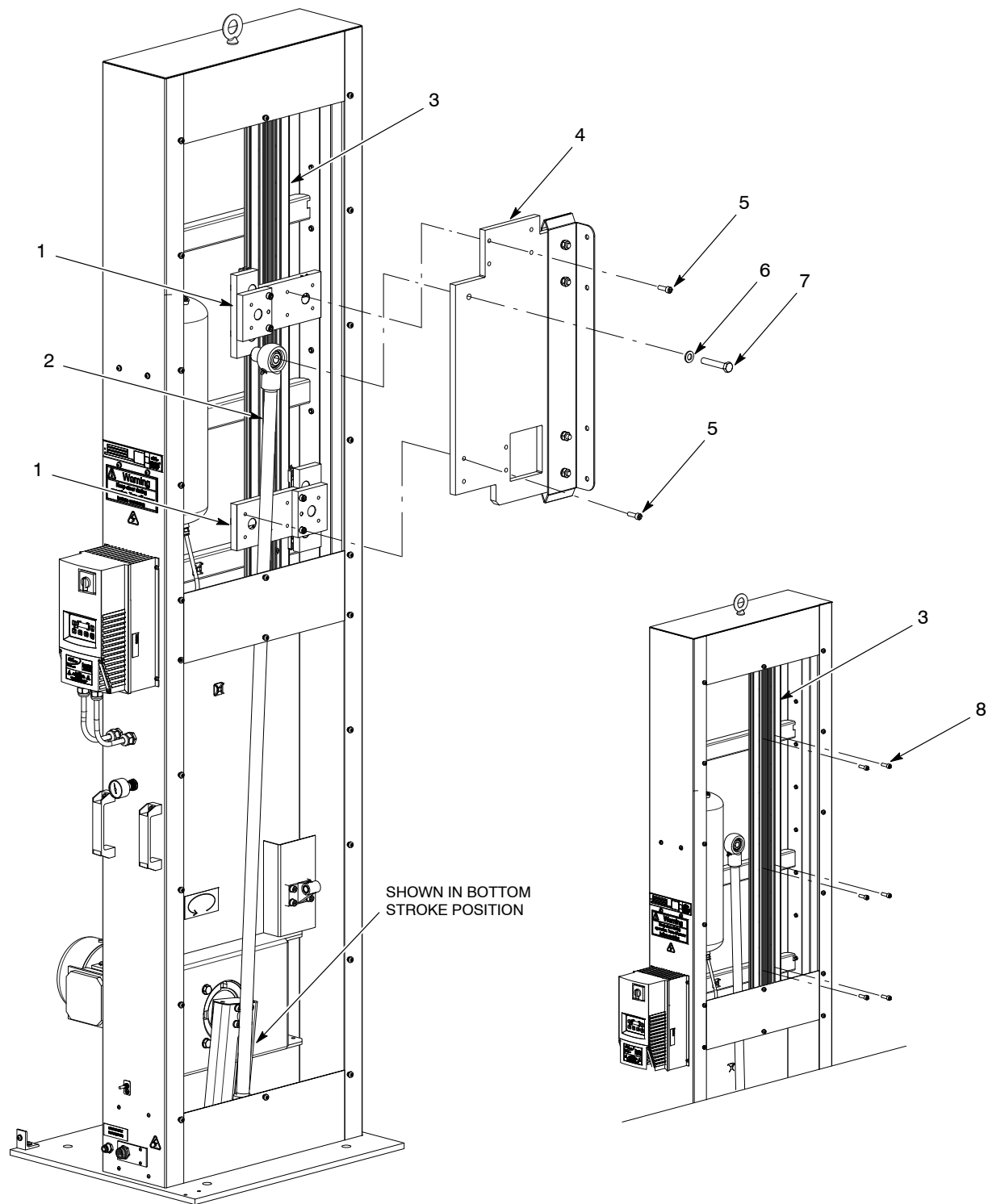


Figure 5 Installing the Carriage and Gun Mounting Plate Assemblies

- |                   |                                |                         |
|-------------------|--------------------------------|-------------------------|
| 1. Carriage       | 4. Gun mounting plate assembly | 7. Connecting rod screw |
| 2. Connecting rod | 5. Gun plate screws            | 8. V-rail screws        |
| 3. V-rail         | 6. Connecting rod washer       |                         |

### Install the Air Cylinder

1. See Figure 6. Move the gun mounting plate assembly (1) to the top stroke position. Use a block (2) as shown to secure the gun mounting plate assembly (1).
2. Install the upper part of the air cylinder (5) securing the rod end mount (10) to the gun mount plate (11) using the two rod end mount screws (9).
3. Secure the lower part of the air cylinder by using the pin (7) and clips (6).
4. Connect the airline (3) to the air cylinder fitting (4).

**NOTE:** The gun mounting plate assembly needs to be guided down because it will drop down under its own weight.

5. Move the gun mounting plate assembly (1) to the bottom stroke position by carefully removing the block (2). The gun mounting plate assembly should drift downward.
6. See Figure 1. Install the panels with the panel screws.



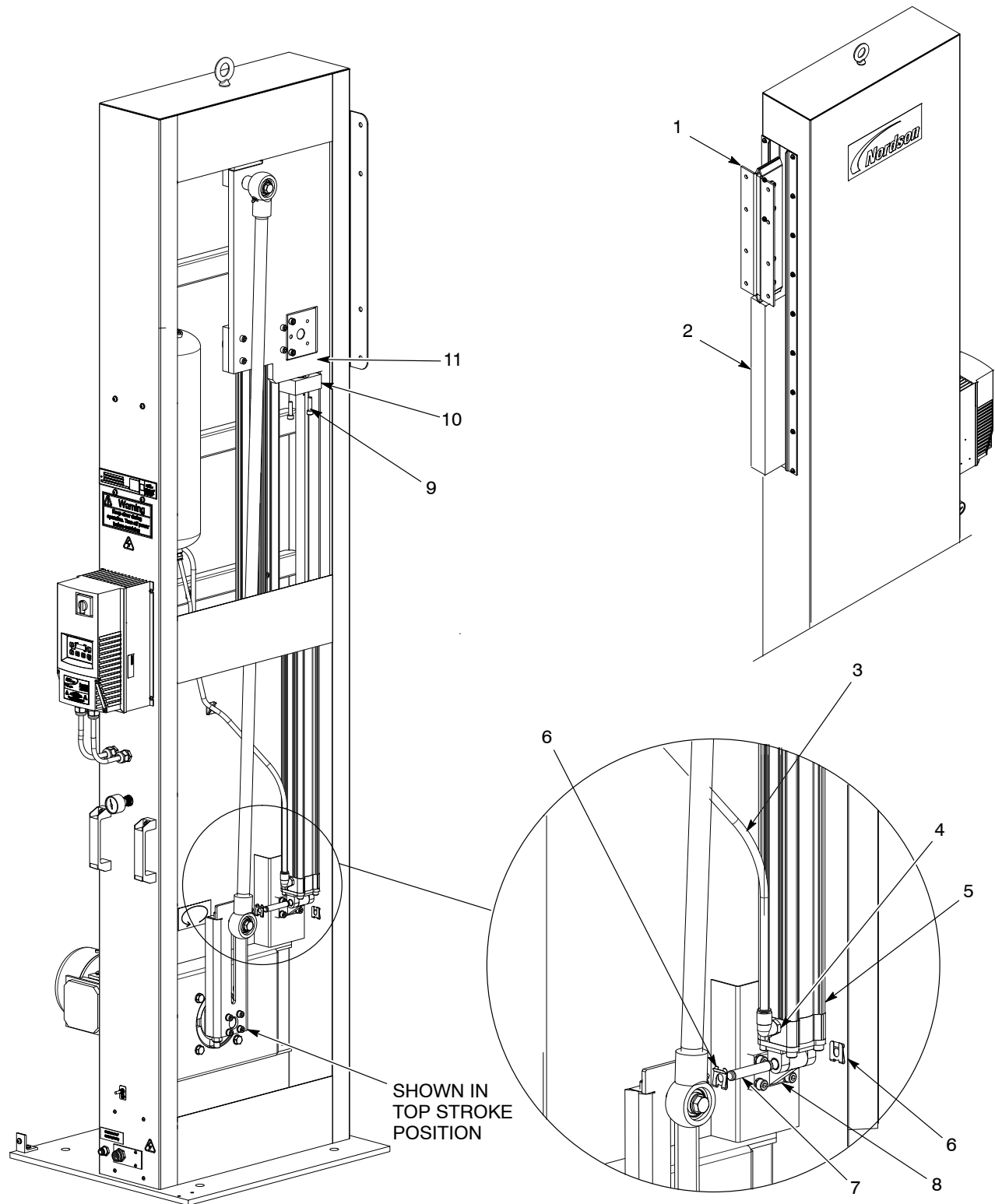


Figure 6 Installing the Air Cylinder

- |                                |                 |                         |
|--------------------------------|-----------------|-------------------------|
| 1. Gun mounting plate assembly | 5. Air cylinder | 9. Rod end mount screws |
| 2. Block                       | 6. Clips        | 10. Rod end mount       |
| 3. Air line                    | 7. Pin          | 11. Gun mount plate     |
| 4. Air cylinder fitting        | 8. Bracket      |                         |

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