OMAX® Air Actuator Installation and Maintenance

This document explains how to install and maintain an air actuator valve assembly that is attached to a Motorized Z nozzle assembly ① and also to a dump valve ② in all OMAX, EnduroMAX®, and MAXIEM® high-pressure pumps.

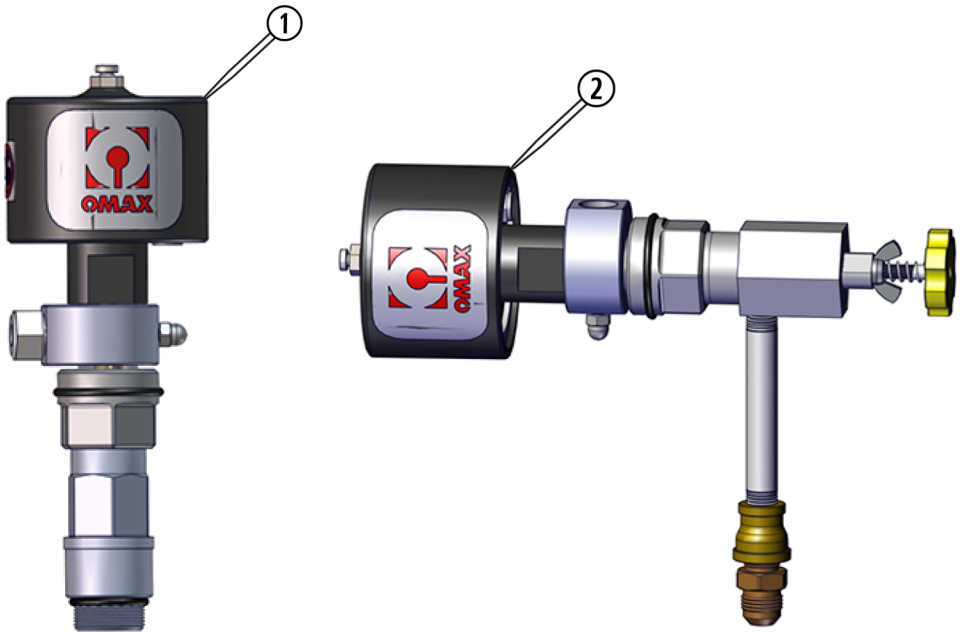


Figure 1

CAUTION!

The same type of air actuator (oiled or oil free) must be installed on the pump and table. Do not mix.
The same type of pneumatic tubing must be used for the table and pump actuators (same ID and OD).
The same tubing length connecting the air solenoid valves with each air actuator must be identical.

Contents

Safety

It is important to follow proper safety procedures when performing maintenance work on your equipment. Follow safety procedures specified by your company as well as those listed in your equipment guide.

The following safety instructions must be followed when installing, operating or servicing OMAX equipment. If ignored, physical injury or death may follow, or damage may occur to the equipment. Always observe applicable safety precautions when working with this equipment.

WARNING!

Indicates the presence of life-threatening voltages. Never access areas labeled as such without first taking appropriate safety precautions: locking out power, verifying no voltage present on circuits prior to maintenance activities, etc.

WARNING!

Indicates potential health, physical and environmentalhazards which, if not avoided, can result in serious damage to the product or injury or death. Always proceed using extreme caution.

MANDATORY ACTION!

Lock out power

Never do maintenance on your OMAX equipment with the main AC disconnect ON, unlocked, or with the pump in operation. Always follow standard lockout/tagout procedures.

MANDATORY ACTION!

Read the user's guide

Read your equipment's user's guide for specific operator instructions and additional safety requirements.

Air Actuator Operation Overview

An air actuator valve **opens** when air pressure is vented from the **air cylinder** ① and water pressure ④ pushes its **stem** ② away from the **on/off valve seat** ③.

NOTE:
The valve body is not shown in the following images for clarity.

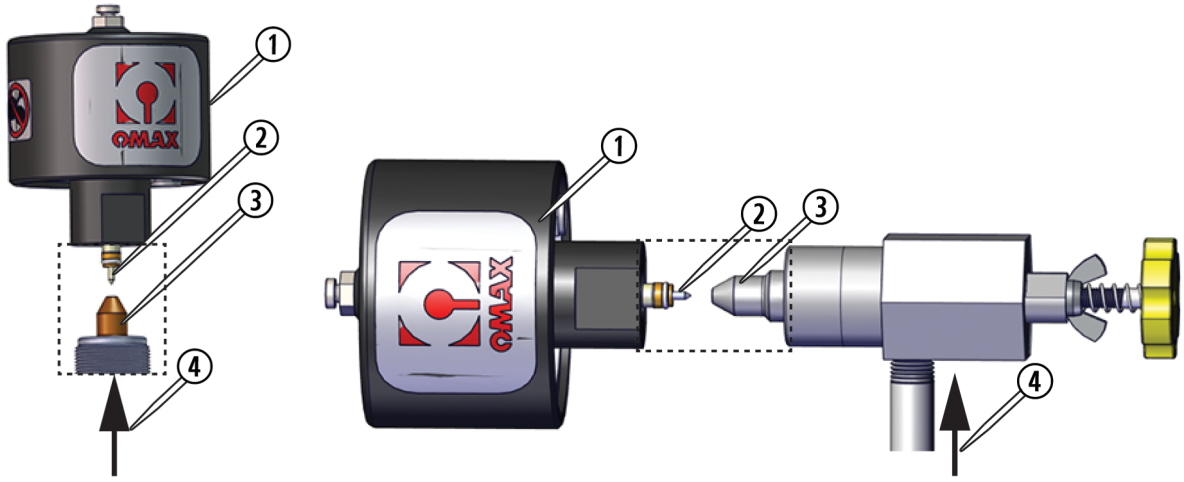


Figure 2

An air actuator valve **closes** when air pressure ① is applied into the **air cylinder** ② via its pneumatic input port, and the plunger forces the **stem** ③ back into the **on/off valve seat** ④.

NOTE:
The valve body is not shown in the following images for clarity.

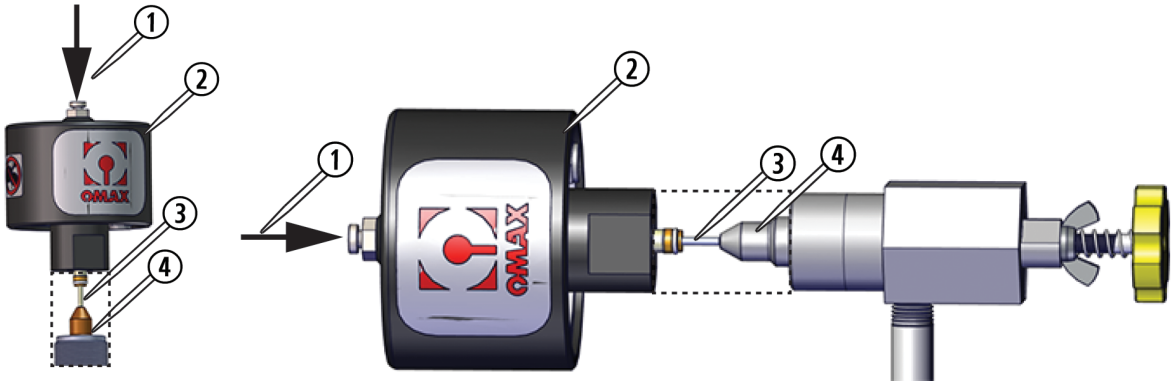


Figure 3

When one air actuator valve is shut ①, water pressure builds to open the other valve ②.

NOTE:
The valve body is not shown in the following images for clarity.

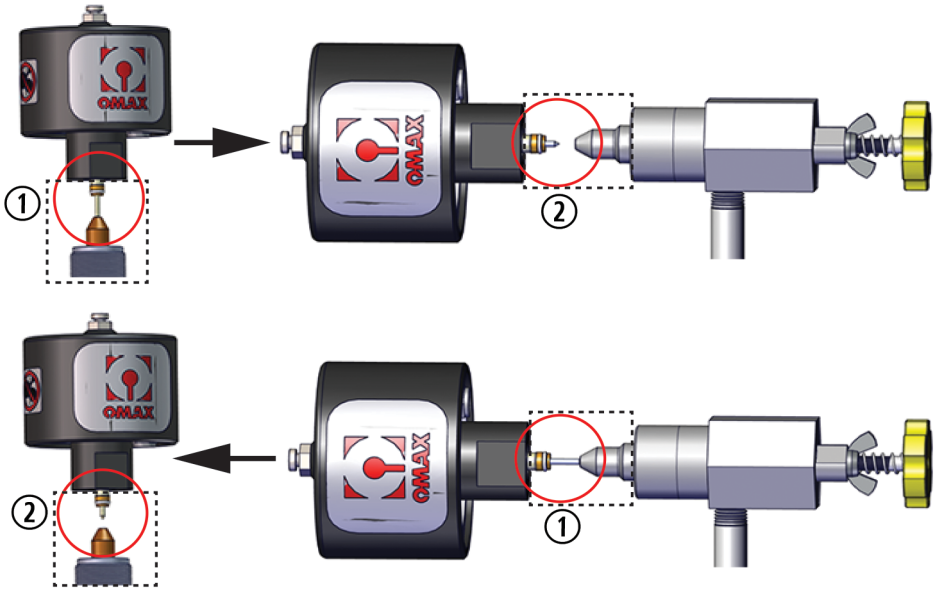


Figure 4

NOTE:
The more on/off cycles, the more the air actuator assembly wears.

Pull to Open Valve Assembly

Another type of air actuator is the pull to open valve assembly:

Figure 5

Rebuild and maintenance for the pull to open valve assembly is not covered in this document.

Air Actuator Maintenance

The air actuator should be replaced once a year or whenever it fails to operate properly, whichever comes first.

Required Tools and Materials

Icon	Tool	Size(s)
	Crow's foot	1-1/8 in.
	Torque wrench	21 ft-lb / 28.5 N•m
	Loctite® 248 Quickstix™	

Air Actuator Installation

Before installing the air actuator assembly, make sure all component surfaces are clean and free of debris and contamination.

CAUTION!

A clean work environment is very important. Always work on a clean surface and thoroughly clean parts before assembly. Contamination from dust, garnet particles, or other sources can adversely affect the performance and life of your equipment.

1. For best results, clean all surfaces with Loctite Clean-Up Solvent and allow to dry.

Figure 6

NOTE:

If reinstalling a used actuator assembly, inspect it to ensure there is no component damage. If an air actuator is damaged, it must be replaced.

2. Apply a small amount of Blue Loctite 248 from a Quickstix to the first two **leading threads** of the **male fitting**.

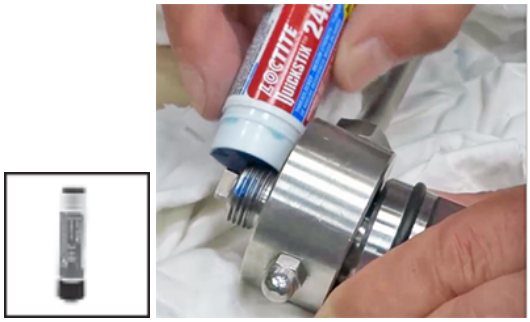


Figure 7

3. Force the material into the **threads** to thoroughly fill the voids and wipe off any excess.

CAUTION!

Do not allow any of the Loctite to get on any of the other component surfaces.

4. Screw the **air actuator assembly** onto the **male threads** of the mating component until it is hand tight.

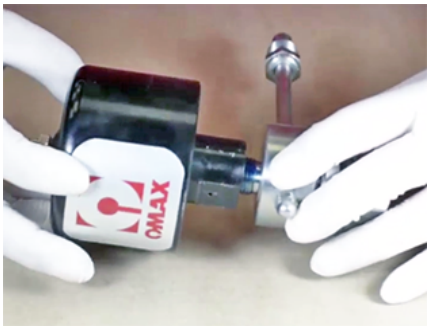
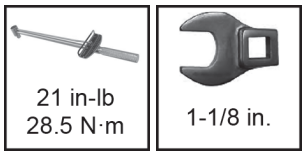


Figure 8

5. Torque the **air actuator assembly** to 21 ft lbs (28.5 N•M).



CAUTION!

For accurate results when setting a torque value using a crows foot, always rotate the crows foot at a 90 degree position in relation to the torque wrench bar as illustrated below; never take a torque reading with it set in the same direction as the wrench: