

# MINI PNEUMATIC ACTUATOR - USER INSTRUCTIONS

## DESCRIPTION

The mini pneumatic actuator (MPA) allows any of the AFP two-position rotary valves to switch positions by introducing pulses of air into the actuator using a solenoid. The air goes through the two ports identified as 'Port A' and 'Port B' on the MPA (see figure 1).

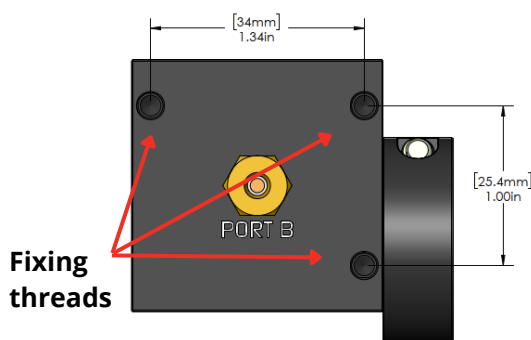
**Figure 1.** Mini Pneumatic Actuator



Various standoff assemblies can be used to mount the two-position rotary valves on the MPA. As a result, the user can isolate the actuator from the valve outside a heated area. AFP standoff assemblies come in 2", 3" and 4" lengths.

The MPA has three fixing threads (M4x0.7 mm), which can be used to mount the actuator on a plate. They are located on the 'Port B' face of the MPA (see figure 2).

**Figure 2.** Port B face



**Table 1.** Specifications

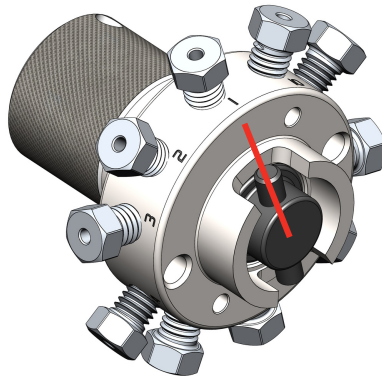
Port connection	1/8" (3.2mm)
Standoff lengths	2", 3" and 4"
Actuator pressure inlet	min 40 psig, max 80 psi
Air consumption per stroke	1.1 In <sup>3</sup> (18cc)
Actuator max. working temperature	257°F (125°C)

## INSTALLATION OF A TWO-POSITION VALVE ON THE MPA

### Step 1:

Use the drive adaptor to align the MRV (mini rotary valve) rotor tab to the neutral position. To do so, place the drive adaptor towards 'port 1' as shown in figure 3.

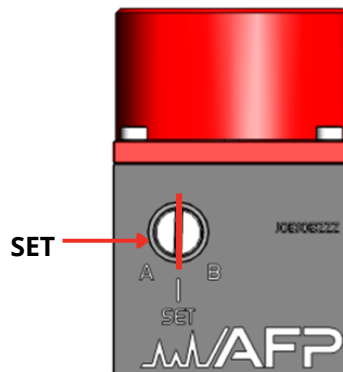
**Figure 3.** MRV neutral position



### Step 2:

Position the MPA to a neutral position (SET) using a flat screwdriver as shown in figure 4.

**Figure 4.** MPA neutral position



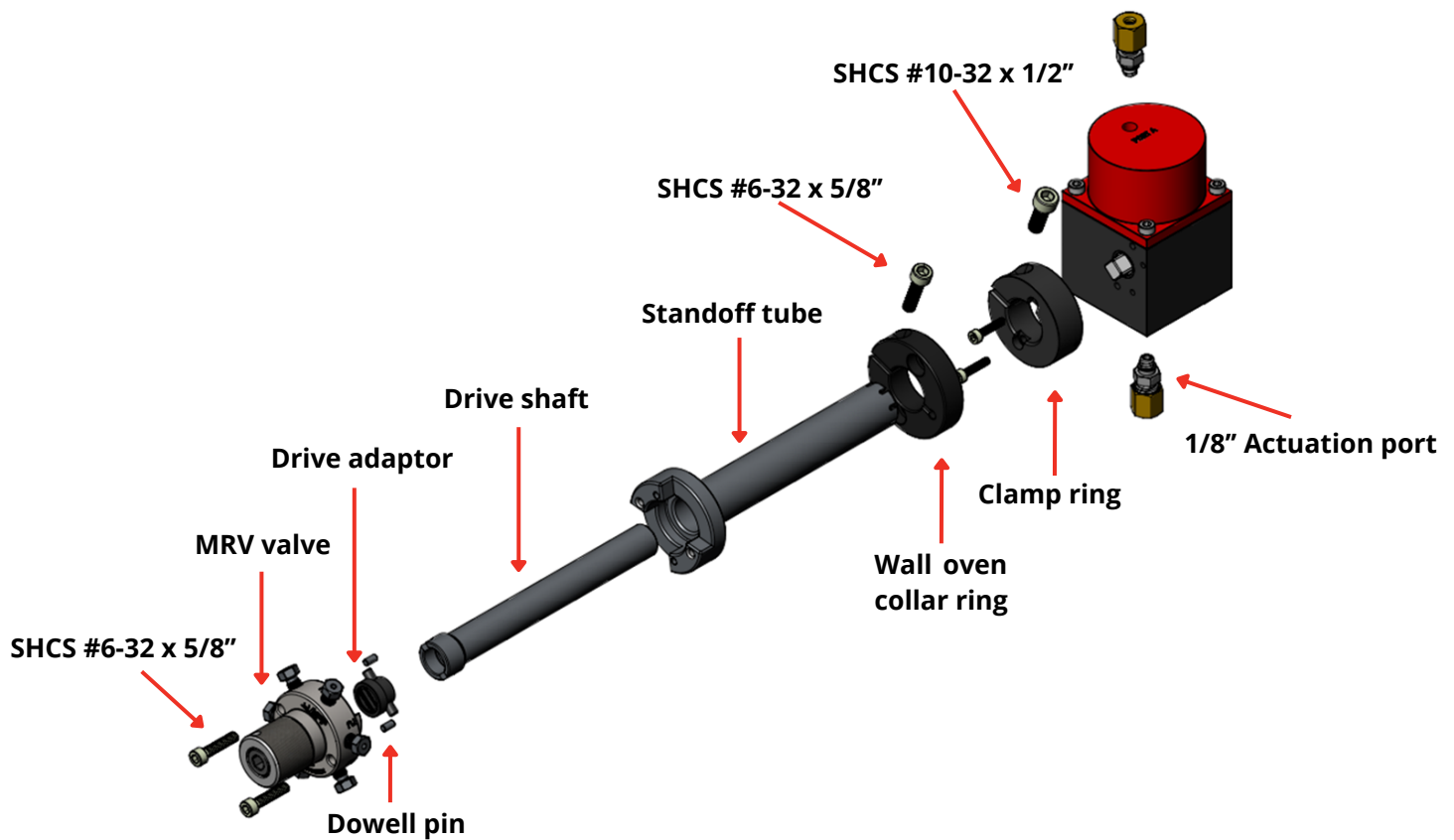
### Step 3:

Mount the standoff on the oven wall or mounting bracket using the wall oven collar. Fix the screw (SHCS #6-32 x 5/8") with a torque of 20 in-lb.

### Step 4:

Install the external part of the standoff onto the MPA. Use the clamp ring on the actuator to assure the fixation. Recommended torque for the clamp ring screw (SHCS #10-32 x 1/2") is 45 in-lb.

**Figure 5.** Exploded view of MPA assembly



**Step 5:**

Verify that the drive shaft and the drive adaptor are aligned with the neutral position of the rotary valve.

**Step 6:**

Install the valve on the standoff using the dowel pins and mounting screws (SHCS #6-32 x 5/8"). If necessary, use a screwdriver on the MPA setting screw to assist the alignment between the MRV rotor tab and the actuator. Torque the screws to 30 in-lb.

**Step 7:**

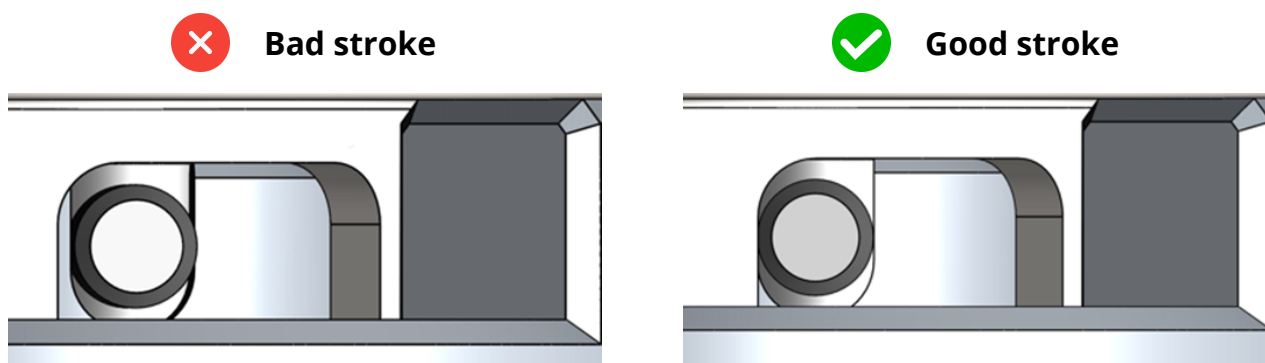
Connect the actuation gas to the 'Port A' and 'Port B' of the MPA using recommended pressure (see table 1).

**NOTE:** AFP recommends the use of bottled instrument air or nitrogen as actuation gas. If plant air from a compressor is used, AFP recommends the use of oil and water filters to extend the lifetime of the product.

**Step 8:**

Actuate the valve to 'Position A' using a solenoid 5x2 and verify that the actuation is complete. There should be no space between the drive adaptor pin and the wall of the MRV (see figure 6).

**Figure 6.** Drive adaptor pin



**Step 9:**

Repeat step 7 for 'Position B'.



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