

M9000-158 Tandem Mounting Kit

Installation

The M9000-158 Tandem Mounting Kit is intended for tandem mounting two M9116-GGx or HGx; M9124-AGx, GGx, or HGx; M9132-AGx or GGx; or M9216-BGx, GGx, or HGx actuators.

Use two actuators from the same torque and model group for tandem operation. Do not mix actuator models or torque ratings. The M9000-158 is not intended for remote mount applications or for tandem operation of M9104, M9106, M9108, or M9206 Series actuators.

The M9000-158 is mounted on the inside or outside of a duct, damper frame, or air handling unit. When mounted with the M9000-158, the M91xx or M9216 actuators are directly coupled to a damper blade pin extension or a jackshaft.

The M9000-158 can be used in valve applications only if a flat mounting surface is available.

Special Tools Needed

- drill with No. 15 (4.57 mm) or 3/16 in. drill bit
- 1/4 in. (7 mm) flat-blade screwdriver or 5/16 in. (8 mm) hex nut driver

Prior to installation, decide on the following:

- mounting position of the brackets in relation to the mounting position of the actuators
- operation of the damper, normally open or normally closed
- direction of rotation for the damper
- direction of action for the actuators, direct or reverse
- direction of spring return for the M9216 actuators, clockwise or counterclockwise

Refer to the *M9108, M9116, M9124, and M9132 Series Electric Non-spring Return Actuators Installation Instructions (Part No. 34-636-399)* or the *M9216 Series Electric Spring Return Actuators Installation Instructions (Part No. 34-636-461)* for information on configuring and installing the applicable actuators.

Mounting

Table 1: Components of the M9000-158

Item	Quantity	Description
1	1	Bottom mounting bracket
2	1	Top mounting bracket
3	6	No. 12-24 x 1/2 in. self-tapping hex washer-head screw

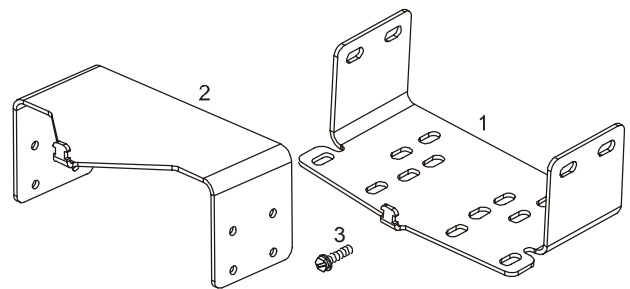


Figure 1: Components of the M9000-158

The mounting method chosen depends on the amount of space available for tandem configuration. The two mounting methods for the M9000-158 Tandem Mounting Kit are internal or external to the actuators. (See Figure 2.)

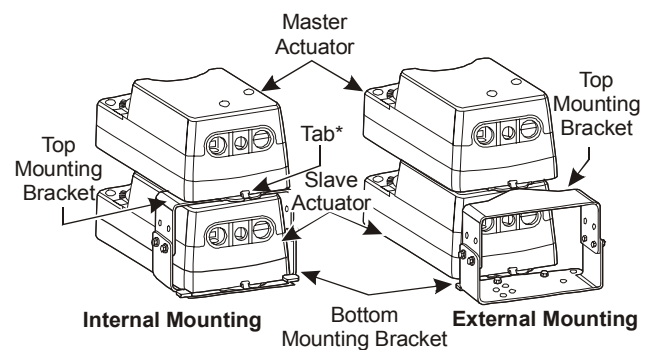


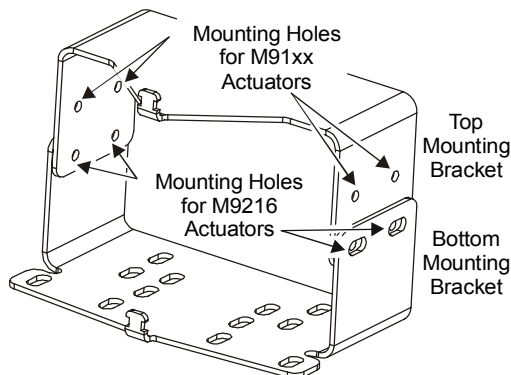
Figure 2: Mounting Methods

Note: For complete information on mounting the actuators, refer to the *Mounting* section in the applicable *M9108, M9116, M9124, and M9132 Series Electric Non-spring Return Actuators Installation Instructions (Part No. 34-636-399)* or *M9216 Series Electric Spring Return Actuators Installation Instructions (Part No. 34-636-461)*.

Internal

To install the M9000-158 internal to the actuators, refer to Internal Mounting in Figure 2 and proceed as follows:

1. Place the bottom mounting bracket in the desired location on the mounting surface.
2. Mark the hole locations for the bottom bracket on the mounting surface using a center punch, and drill two 0.18 in. (4.6 mm) holes.
3. Secure the bracket to the mounting surface with two No. 12-24 self-tapping screws.
4. Position the slave actuator onto the bottom bracket and the valve or damper shaft, making sure the tab fits midpoint in the slot at the bottom of the actuator as shown in Figure 2.
5. Refer to the appropriate actuator literature, and complete the wiring for the slave actuator before proceeding.
6. Select the appropriate holes for the actuator models used (shown in Figure 3), position the top mounting bracket over the bottom bracket, and secure the two brackets with four No. 12-24 self-tapping screws.



Note: There are four mounting holes each in the top and bottom mounting brackets.

Figure 3: Location of the Mounting Holes

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7. Position the master actuator onto the valve or damper shaft and over the top mounting bracket, making sure the tab fits midpoint in the slot at the bottom of the actuator as shown in Figure 2.

Note: If the shaft exhibits side play once the actuators are assembled in tandem, loosen the screws in the mounting holes shown in Figure 3. Adjust the top bracket in the direction of the shaft to secure it, while ensuring the tab remains midpoint in the master actuator slot.

External

To install the M9000-158 external to the actuators, refer to External Mounting in Figure 2 and proceed as follows:

1. Assemble the top and bottom mounting brackets as shown in Figure 3, selecting the correct holes for the actuators used.
2. Position the tandem bracket assembly onto the mounting surface, and mark the hole locations for the assembly using a center punch.
3. Drill two 0.18 in. (4.6 mm) holes, and secure the tandem bracket assembly with two No. 12-24 self-tapping screws.
4. Position the slave actuator onto the valve or damper shaft, making sure the tab on the bottom mounting bracket fits midpoint in the actuator slot as shown in Figure 2.
5. Refer to the appropriate actuator literature, and complete the wiring for the slave actuator before proceeding.
6. Place the master actuator onto the valve or damper shaft, making sure the tab on the top mounting bracket fits midpoint in the actuator slot as shown in Figure 2.

Note: If the shaft exhibits side play once the actuators are assembled in tandem, loosen the screws in the mounting holes shown in Figure 3. Adjust the top bracket in the direction of the shaft to secure it, while ensuring the tab remains midpoint in the master actuator slot.

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