



M9203-100 Remote Mounting Kit

Installation Guide

M9203-100

Part No. 34-636-2308, Rev. B
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Applications

IMPORTANT: Use this M9203-100 Remote Mounting Kit only to control equipment under normal operating conditions. Where failure or malfunction of the remote mounting kit could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the remote mounting kit.

IMPORTANT : Utiliser ce M9203-100 Remote Mounting Kit uniquement pour commander des équipements dans des conditions normales de fonctionnement. Lorsqu'une défaillance ou un dysfonctionnement du remote mounting kit risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du remote mounting kit.

The M9203-100 Remote Mounting Kit enables remotely mounted, linkage-driven applications of the M9204 Series Electric Spring Return Actuator when the hardware required for final connection to the damper is pre-existing or is supplied separately. The M9203-100 Remote Mounting Kit is intended for applications that require displacement perpendicular or parallel to the mounting surface. For applications requiring hardware to complete the connection to damper blades, especially Johnson Controls® D1300 Series Dampers, consider the more complete M9203-250 Remote Mounting Kit.

Installation

Mount the M9203-100 Remote Mounting Kit internally or externally on a duct, damper, or air handling unit. Discard the factory installed actuator gripper and retaining ring when you use the M9203-100 Remote Kit.

Parts Included

See Figure 1 for the parts included in the M9203-100 Remote Mounting Kit.

Note: Refer to the appropriate installation instructions listed in Table 1 for complete actuator mounting and adjustments.

Table 1: Actuators and corresponding documentation for M9203-100 Remote Mounting Kit

Actuator	Documents
M9204-Bxx-2(Z)	<i>M9204-Bxx-2(Z) Series On/Off Electric Spring Return Actuators Installation Guide (Part No. 34-1791-24)</i>
M9204-AGx-2(Z)	<i>M9204-AGx-2(Z) Series On/Off and Floating Point Electric Spring Return Actuators Installation Guide (Part No. 34-1791-8)</i>
M9204-GGx-2(Z)	<i>M9204-GGx-2(Z) Series Proportional Electric Spring Return Actuators Installation Guide (Part No. 34-1791-16)</i>

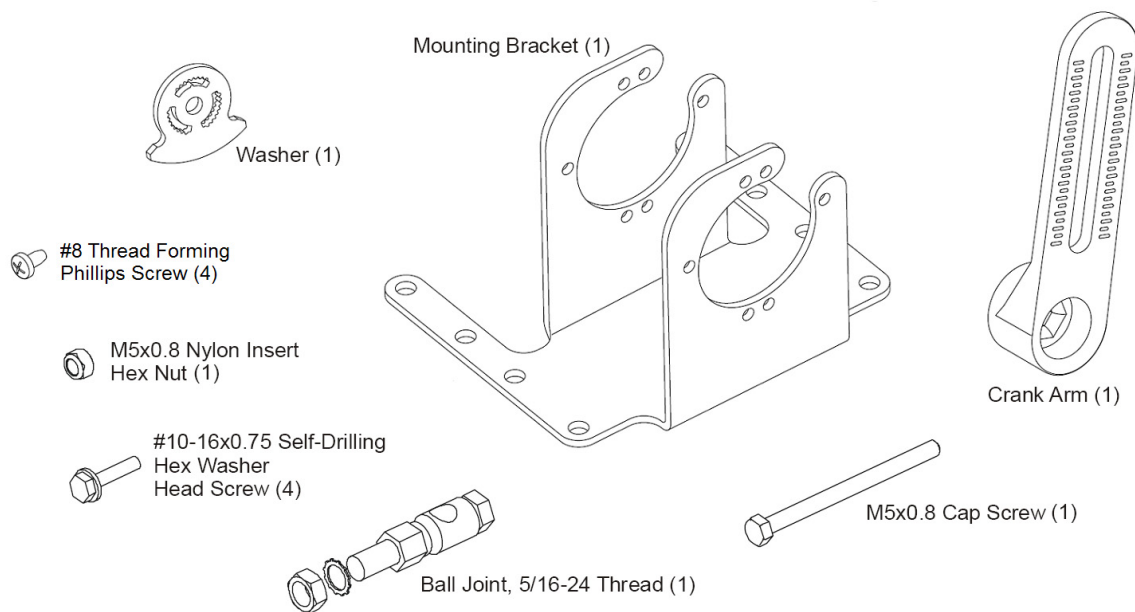


Figure 1: Parts included in M9203-100 Remote Mounting Kit

Dimensions

See Figure 2 and Figure 3 for overall dimensions and proper mounting orientations.

The actuator has two general mounting positions, horizontal and vertical, but can be mounted in six different ways: horizontal left, vertical, and horizontal right (each with the option of side A or side B direction). See Figure 3.

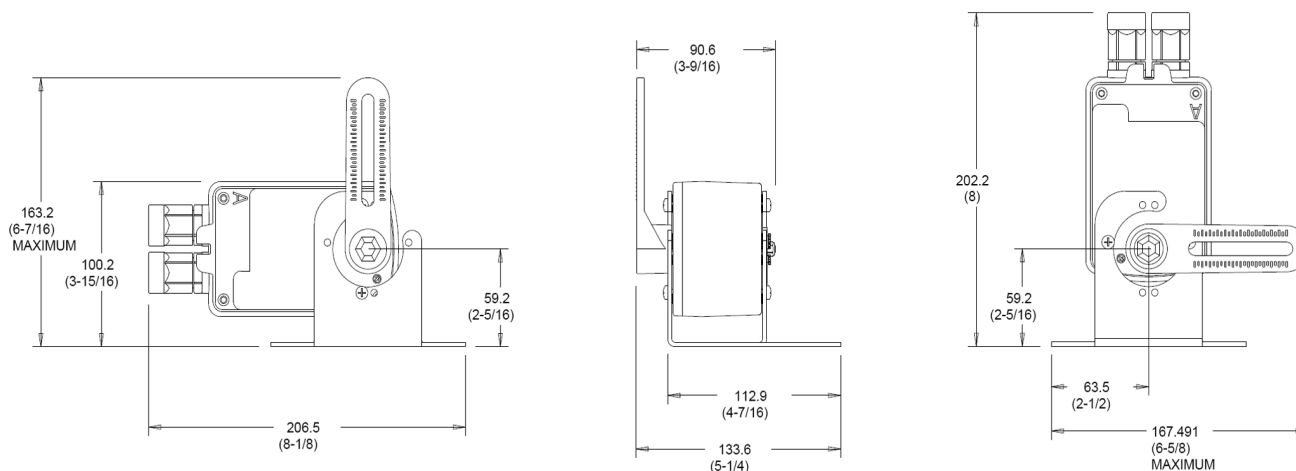


Figure 2: M9203-100 Remote Mounting Kit overall dimensions, mm (in.)

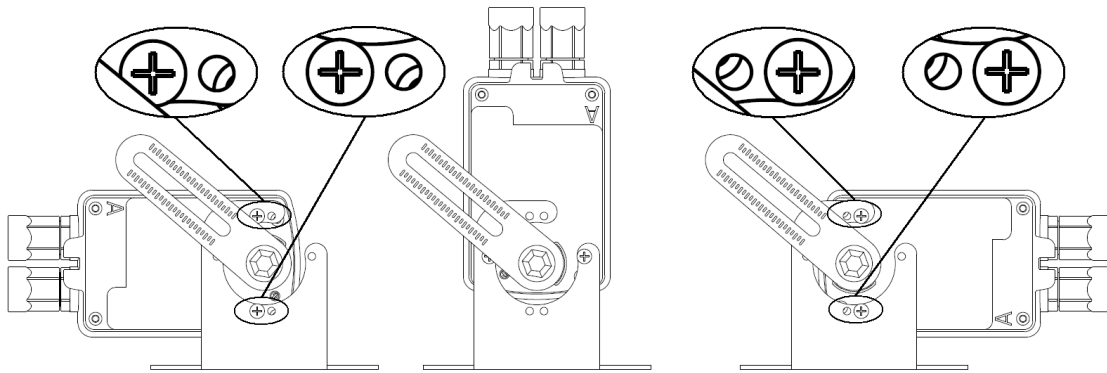


Figure 3: M9203-100 Remote Mounting Kit with actuator horizontal left, vertical, and horizontal right

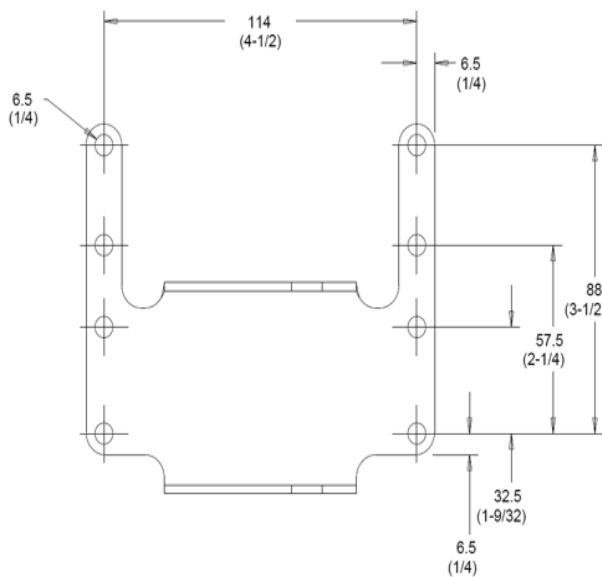


Figure 4: Hole patterns in mounting brackets with dimension, mm (in.)

Mounting

Location considerations

Prior to installation, consider the following factors to determine the best location:

- mounting position of the actuator: internal or external to damper frame or duct
- mounting position of the actuator crank arm
- operation of the damper: Normally Open (N.O.) or Normally Closed (N.C.)
- direction of rotation for the damper
- actuator spring return direction: Clockwise (CW) or Counterclockwise (CCW)

Note: If the actuator is in a difficult-to-reach location, adjust the auxiliary switches and stroke settings before continuing with the installation. Adjustable stroke instructions are detailed in the section [Setup and adjustments](#).

Mounting positions

The M9203-100 Remote Mounting Kit allows the installer to select spring-return direction as required by the application. The label on the actuator indicates the spring-return direction.

To set the spring-return direction of the actuator when mounted in a bracket, rotate the actuator as required. Choose CW or CCW spring-return direction by flipping the actuator over.

Installing the remote mounting kit

See Figure 4 for the hole mounting pattern of the mounting brackets. The hole pattern locates the actuator crankarm assembly with respect to the drive blade, jackshaft, or crankarm to be driven.

IMPORTANT: Remote-mounted M9203 Series actuators can develop high linear and rotational forces. Confirm that mounting surfaces are sufficiently rigid and strong before installing the remote mounting kit.

To install the mounting bracket:

1. Locate the mounting bracket to the desired position.
2. Use a center punch to mark the hole locations for the bracket in the duct or damper frame. See Figure 4.
3. Fasten the mounting bracket by drilling the No. 10-16 x 0.75 in. self-drilling screws through the holes in the mounting bracket and into the duct or damper frame.

4. Locate the actuator mounting holes that are located under the label at the  symbol printed on the label, shown in Figure 5.

IMPORTANT: All user adjustable features of the actuator are accessible when mounted in the bracket. Depending on the orientation and model used, the bracket may cover up the scale on the label for the adjustable switch. Use a sharp object to puncture the label to help the tread forming screws.

Note: Ensure that the orientation of the actuator is correct with respect to the application. Observe the spring-return direction of the actuator during the installation.

5. Using the four #8 Thread Forming Phillips Screws, secure the actuator to the mounting bracket as shown in Figure 2 and Figure 3. Use the recommended torque of 1.7 to 2.3 N·m (15 to 20 lb·in). Note the location in horizontal mounting; the output hub of the actuator must be in the center of the bracket.

Note: Proper orientation of the crankarm is critical for correct operation. Observe the full open and close positions of the actuator, and ensure that the crankarm does not interfere with the mounting surface.

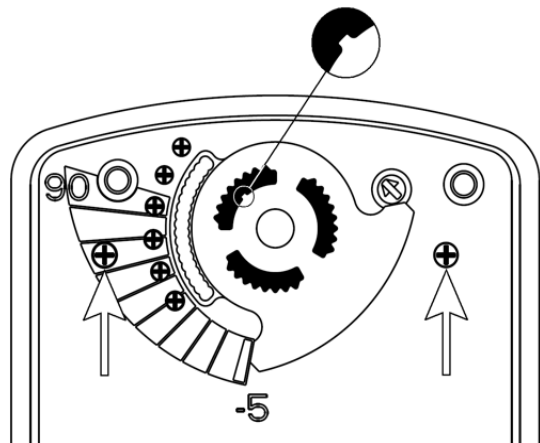


Figure 5: Washer orientation on actuator and location of mounting holes

6. If desired, install an adjustable end-stop on the washer side to limit the stroke.

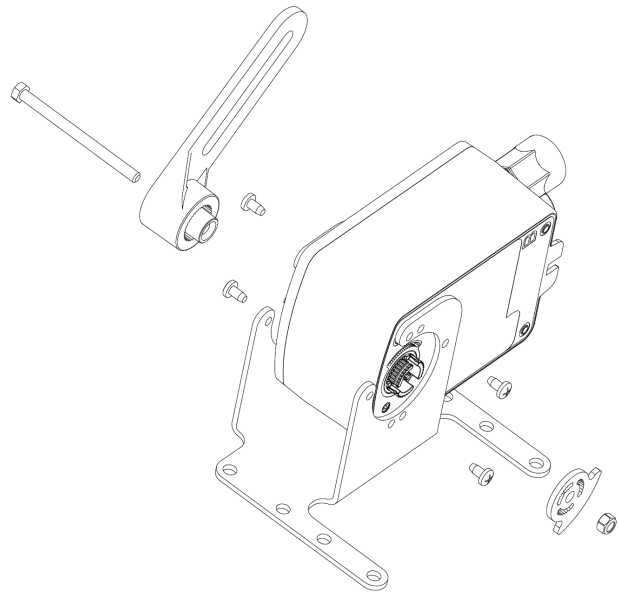


Figure 6: Actuator crank arm with washer assembly

7. Assemble the 5/16-24 ball joint in the crankarm:
 - a. Remove the hex nut and washer from the ball joints.
 - b. Insert the ball joint through the slot in the crankarm.
 - c. Add the serrated lock washer and tighten the ball joint hex nut using the recommended torque of 2.3 to 2.8 N·m (20 to 25 lb·in.). See Figure 7 for the crank arm slot dimensions.

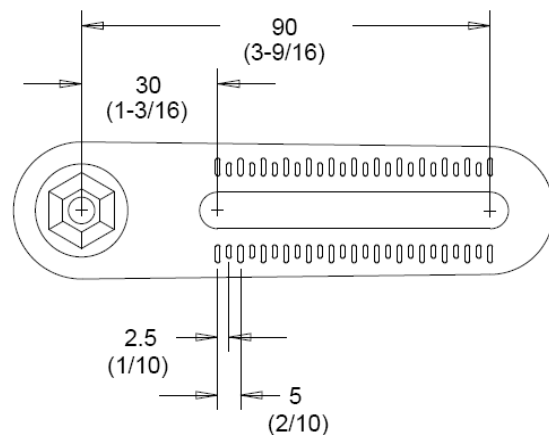


Figure 7: Crank arm dimensions

8. Proceed with the installation of the remaining hardware required to connect the actuator crank arm to the drive blade, jackshaft, or crank arm to be driven.

Setup and adjustments

Adjusting the linkage

**CAUTION: Risk of Property Damage.**

Before applying power to an electric actuator that is installed in a damper application using a remote-mount linkage kit, confirm that actuator end stops are used to control the stroke applied to the damper linkage. Failure to use actuator end stops to control the stroke can lead to premature equipment failure and/or property damage.

MISE EN GARDE : Risque de dégâts matériels.

Avant la mise sous tension d'un actionneur électrique installé dans une application de registre utilisant un kit d'accouplement monté à distance, vérifier que les butées de fin de course de l'actionneur sont utilisées pour contrôler la course appliquée à l'accouplement de registre. La non-utilisation des butées de fin de course de l'actionneur pour contrôler la course de l'accouplement de registre peut provoquer une défaillance prématurée de l'équipement et/ou des dégâts matériels.

Make the necessary adjustments to fit the actuator's stroke limit to the application:

- Adjust the field-supplied linkage components to use the actuator's internal end-stops for stroke control, whenever practical.

- Apply the external adjustable end-stop if linkage adjustment is not practical. An end-stop kit is available separately for the M9203 Series Actuators (M9203-603 Adjustable Stop Kit). Refer to the *Rotation Range Using Optional M9203-603 Adjustable Stop Kit* section of the appropriate actuator installation instructions, listed in Table 1, for limiting the stroke of the actuator. When you use the M9203-100 Remote Mounting Kit, the washer is used to limit the stroke in place of the gripper.

Checkout

Use the following steps to ensure that the actuator assembly components function properly, and that the actuator operates freely from one rotation limit to the other.

1. Connect all control wires to the actuator.

Note: Refer to the *Wiring* section of the appropriate actuator installation instructions listed in Table 1.

2. Apply power to the actuator.
3. Cycle the actuator fully in both CW and CCW directions. Ensure that the mechanism's stroke is limited by the actuator internal or external end-stops.
4. Ensure that the crankarm properly exercises the full range of the drive blade, jackshaft, or crankarm as required by the application without over-driving the linkage hardware.

If the actuator is not operating properly, refer to the appropriate actuator installation instructions indicated in Table 1.

