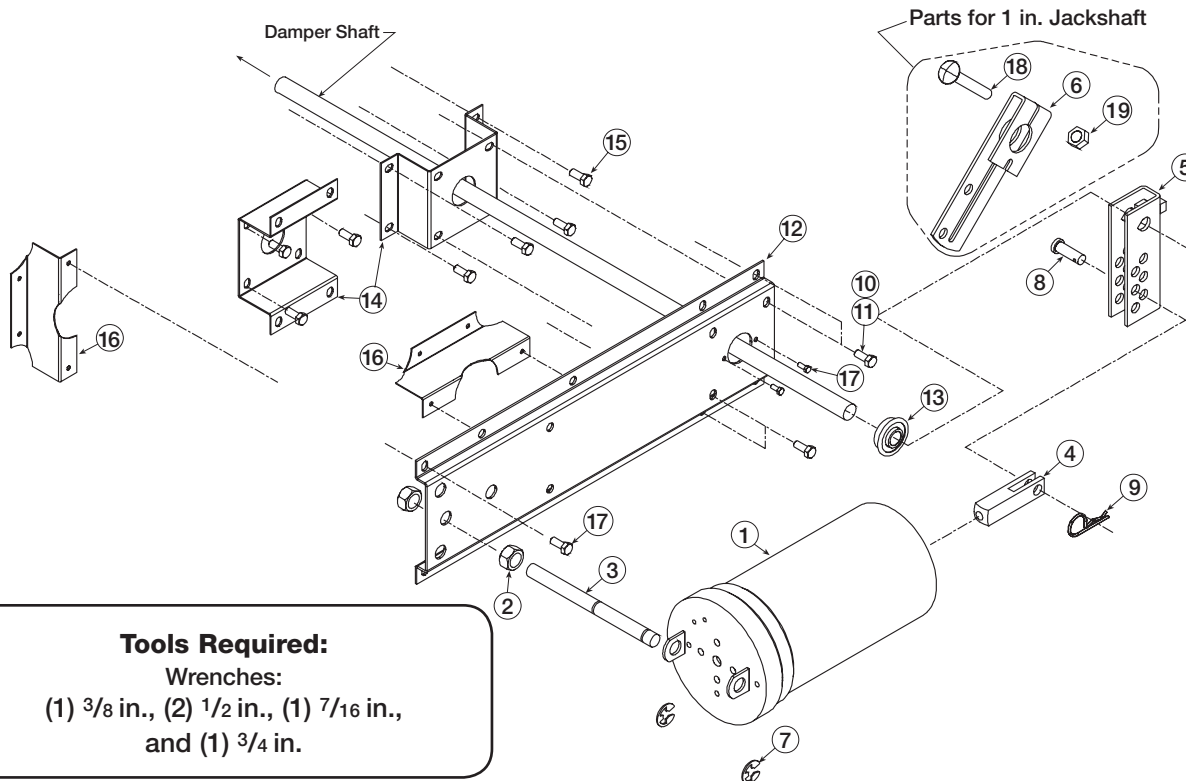


INSTALLATION INSTRUCTIONS

These instructions apply to the external field installation of Siemens actuators on Greenheck model VCD Control Dampers when they are duct mounted or sleeved.

These Siemens pneumatic actuators have an effective diaphragm area of 11 square inches and a 4 in. stroke. They all extend to their holding position when air pressure is applied and spring return to their fail position when the air supply is interrupted. All models have a maximum air pressure of 25 psi.



Tools Required:
Wrenches:
(1) 3/8 in., (2) 1/2 in., (1) 7/16 in.,
and (1) 3/4 in.

Part No.	Qty.	Description
1	1	Actuator Siemens #4
2	2	1/2 in.-20 Hex Nut
3	1	Post
4	1	Clevis
5	1	Crankarm 1/2 in.
6	1	Crankarm 1 in.
7	2	1/2 in. E-ring
8	1	3/8 in. Clevis Pin
9	1	Cotter Pin
10	4	1/4 in.- 20 x 1/2 in. Bolt

Part No.	Qty.	Description
11	4	1/4 in.-20 Spinlock Nut
12	1	Mounting Bracket
13	1	Ball Bearing
14	1	Stand Off Bracket
15	4	#14 x 3/4 in. Tek Screw
16	1	Auxiliary Bracket
17	4	#10 x 1/2 in. Tek Screw
18	1	3/8 in.-16 x 2 1/2 in. Carriage Bolt
19	1	3/8 in.-16 Spinlock Nut



WARNING

Equipment Damage or Electrical Power Hazard. Line voltage can cause death or serious injury and short equipment circuitry. Disconnect power supply before installation.



CAUTION

Device Malfunction Hazard. Improper set screw tightening causes device malfunction. Tighten set screws with proper torque to prevent damper shaft slippage.

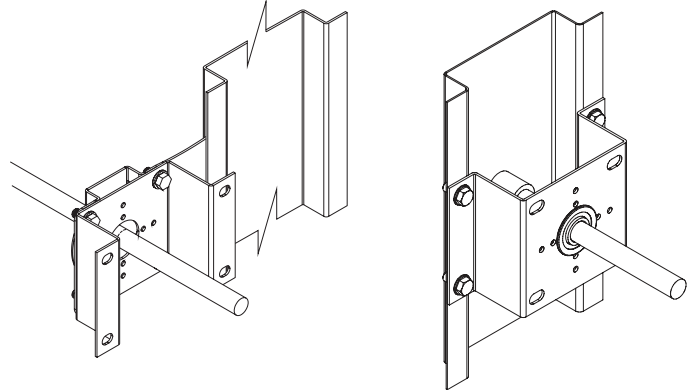
Instructions:

These installation instructions assume the damper is already mounted in a duct or sleeve with the damper shaft extending beyond the sleeve or duct 6 inches.

- 1. Install the stand off bracket.

Dampers with a jackshaft

- 1a. Mount the stand off bracket onto the jackshaft bracket with (4) 1/4 in.-20 X 1/2 in. thread cutting screws. Orient the stand off bracket perpendicular to the damper on the duct or sleeve so that the bracket's shaft hole is centered on the jackshaft.

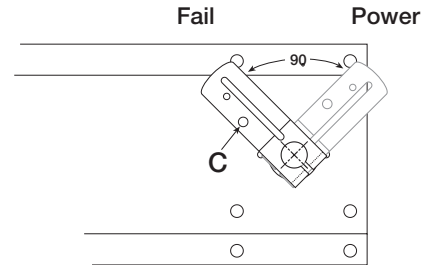
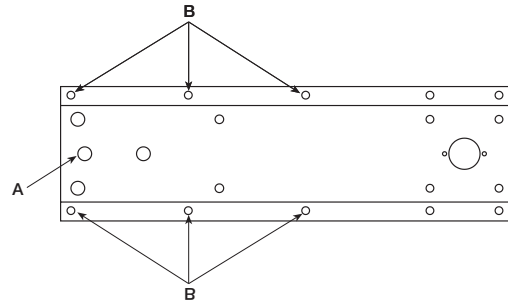


Orientation of Stand Off Bracket for a jackshaft driven damper

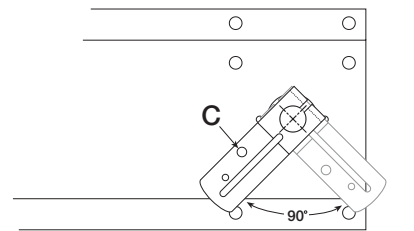
Orientation of Stand Off Bracket for a directly driven damper

Dampers without a jackshaft (shaft extension)

- 1b. Mount the stand off bracket spanning across the damper frame flanges. Orient the stand off bracket perpendicular to the damper on the duct or sleeve so that the bracket's shaft hole is centered on the jackshaft. Fasten to the damper frame with (4) #14 Tek screws, supplied with this kit. Be sure not to run the screws into the damper linkage, which is between the flanges.
- 2. Attach the auxiliary bracket, part #17, to the mounting bracket into two of the 6 holes labeled "B" at right, with (2) #10 Tek screws supplied.
- 3. Mount the mounting bracket to the stand off bracket using (4) 1/4 in.-20 x 1/2 in. bolts and (4) 1/4 in.-20 Spinlock nuts included with this kit. Use the outer four holes of the mounting bracket for jackshafted models and the inner four holes for directly driven models. Fasten the auxiliary bracket to the duct using (2) #10 Tek screws provided.
- 4. If the damper shaft has a diameter of 1/2 in., mount the roller bearing to the mounting plate using (2) #10 Tek screws supplied. If the damper shaft is 1 in. in diameter discard the roller bearing.
- 5. Assemble the mounting post, part #3, to the mounting bracket, part #12, with the (2) 1/2 in.-20 hex nuts supplied. Use the hole illustrated in "A" above.
- 6. Mount the actuator to the post using two E-rings supplied.
- 7. Note the damper shaft rotation for fail direction and orient the linkage appropriately. Position the crankarm in one of the positions shown to the right.



Crankarm Orientation for Counter Clockwise Fail Rotation



Crankarm Orientation for Clockwise Fail Rotation

- Note:**All fail rotations refer to the damper shaft rotation needed to achieve the desired blade fail position. Inspect the damper blades and the damper shaft to determine the proper damper shaft rotation for the desired blade fail position.
- 8. Attach the crankarm to the clevis on the actuator with the clevis pin and the hitch pin supplied through hole "C" shown above and to the right. For a 1/2 in. jackshaft, use crankarm, part #5, and locate the clevis at the hole 2 3/4 in. from the center of the jackshaft. For a 1 in. jackshaft, use the crankarm, part #6.
- 9. Run the supply pressure to the actuator and regulate it to a maximum of 25 psi.

- 10. Apply air pressure to the actuator. The damper blades should fully open or close and return to the fail position when power is disconnected; if they do not, adjustments can be made by resetting the crankarm position on the damper or actuator shaft or by changing the distance from the actuator face to the center of the hole in the clevis.

