

D-4073

Pneumatic Piston Damper Actuator



Description

The D-4073 Pneumatic Actuator is a multipurpose positioning device used to accurately position small dampers primarily on unit ventilator, Variable Air Volume (VAV), terminal units, and small ventilating dampers in response to output signals of a pneumatic controller or electro-pneumatic transducer.

The actuator is also recommended for use on other air flow control dampers, in interior locations, up to a maximum area of 6.75 square feet for proportional volume control and 11.7 square feet for two position actuation provided that the torque requirements are compatible with the specific application.

The D-4073 is a direct replacement for existing D-3073 actuators and a functional replacement for former D-251 actuators.

Features

- 2-way swivel connection ensures non-binding movement and full power delivery
- glass reinforced polymer housing which is lightweight, corrosion and chemical resistant
- telescoping linkage for fast and flexible installation

Applications

When an 8 to 13 psig spring range is used with proportional control, the damper size is limited to 6.75 square feet maximum. As a two position control, damper size is limited to 11.7 square feet.

Three nominal spring ranges are available: 3 to 7 psi, 5 to 10 psi, and 8 to 13 psi. The control air pressure for normal HVAC operation is 0-20 psig.

The D-4073 incorporates several internal and external features that add functional flexibility. A 2-way swivel connection on the actuator cylinder head provides non-binding movement. All actuators have a telescoping piston rod for easy linkage of the damper for

attachment points up to 8-3/4 inches (222 mm) away from the face of the actuator. A swivel ball joint and slotted crank arm connector are furnished on all actuators for optional methods of linkage to the damper.

A stop screw kit is available for special applications to limit the power stroke of the actuator when required. A 4 foot (122 cm) linkage rod is also available for special applications to reach extended linkage when required.

Where precision sequential operation is desired, or additional positioning power is necessary, use a D-9502 pilot positioner. Up to four more D-4073 actuators may be slaved from one pilot positioner for coupled dampers.

Repair Parts

Field repairs must not be made. There are no repair parts available. For a replacement D-4073, contact the nearest Johnson Controls representative.

To Order

Specify the code number from the following selection chart.

Accessories

Code Number	Description	Weight, lb (Kg)
D-3073-100	Rubber Boot Kit (includes ball joint and cover)	0.2 (0.10)
D-3153-104	Stop Screw Kit	0.5 (0.23)
D-3073-105	Mounting Post Kit, 5 per kit	0.5 (0.23)
D-3073-604	Ball Joint - weather resistant	0.5 (0.23)
D-3153-103	Rod - 8-3/4 in. (222 mm) replacement	1.0 (0.45)
D-3153-106	Auxiliary Mounting Bracket	1.0 (0.45)
D-3153-111	E-rings for Pivot Post, 10 per kit	0.5 (0.23)
D-3153-112	Mounting Nuts for Pivot Post, 10 per kit	0.5 (0.23)
DMPR-KC050	Crank Arm: 7/16 in. shaft radius adjustable to 2-3/4 in. radius	0.5 (0.23)
DMPR-KC051	Crank Arm: 3/8 in. shaft radius adjustable to 2-3/4 in. radius	0.5 (0.23)
DMPR-KC053	Crank Arm: 1/2 in. shaft radius adjustable to 2-3/4 in. radius	0.5 (0.23)
DMPR-KC054	Blade Arm Kit	1.3 (0.59)
DMPR-KC102	Rod - 4 feet (122 cm)	2.0 (0.91)
DMPR-KC251	Universal Mounting Bracket	3.5 (1.13)
DMPR-KC300	Swivel Ball Joint	0.5 (0.23)
D-9502-12	Proportional Pilot Positioner Kit	2.0 (0.91)

Selection Chart

Code Number	Nominal Spring Range, psig (kPa)
D-4073-1	8-13 (56-91) with D-9502 and Universal Mounting Bracket
D-4073-2	8-13 (56-91) with Universal Mounting Bracket
D-4073-3	5-10 (35-70) with Universal Mounting Bracket
D-4073-4	8-13 (56-91) with D-9502 and Auxiliary Mounting Bracket
D-4073-5	8-13 (56-91) with Auxiliary Mounting Bracket
D-4073-6	5-10 (35-70) with Auxiliary Mounting Bracket
D-4073-7	3-7 (21-49) with Auxiliary Mounting Bracket
D-4073-6001	3-7 (21-49) body only
D-4073-6002	5-10 (35-70) body only
D-4073-6003	8-13 (56-91) body only

Note: Refer to reference bulletins in the *Pneumatic Control Manual (FAN 717.1)* for models applying to unit ventilators and other types of units.

D-4073 Pneumatic Piston Damper Actuator (Continued)

Specifications

D-4073 Pneumatic Actuator	
Stroke	3 in. (76 mm)
Control Air Pressure	0-20 psig for HVAC 25 psig (175 kPa) Maximum
Air Connections	1/8 in. NPT straight barbed fitting for 5/32 or 1/4 in. O.D. polytubing (furnished)
Ambient Operating Conditions	-20 to 150°F (-29 to 66°C)
Effective Diaphragm Area	6.7 in ² (45 cm ²)
Housing Material	Glass reinforced polymer, UL 94 HB flame class rating
Dimensions (H x W x D)	3-7/8 in. diameter x 11 in. long
Shipping Weight, lb (Kg)	D-4073-1 7.9 (3.6) D-4073-3 6.4 (2.9) D-4073-5 4.9 (2.2) D-4073-7 4.9 (2.2) D-4073-2 6.4 (2.9) D-4073-4 6.4 (2.9) D-4073-6 4.9 (2.2)

Maximum Force Values at 20 PSIG (140 kPa) Supply

Spring Range, psig (kPa)	Stroke	Force, lb (Newtons)	Torque Output for 90° Rotation
8 to 13 (56 to 91)	Power	47 (209)	71 in·lb (8.0 N·m)
	Return	54 (240)	81 in·lb (9.1 N·m)
5 to 10 (35 to 70)	Power	67 (298)	101 in·lb (11.3 N·m)
	Return	34 (151)	51 in·lb (5.8 N·m)
3 to 7 (21 to 49)	Power	87 (388)	131 in·lb (14.8 N·m)
	Return	20 (89)	30 in·lb (3.4 N·m)

Note: Force calculated using 6.7 lb/psig available actuator force.