

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 ventilators, VAVs, 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 airflow control dampers, in interior locations, up to a maximum area of 6.75 sq. ft for proportional volume control and 11.7 sq. ft 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.

Refer to the *D-4073 Pneumatic Actuator Product Bulletin (LIT-2681074)* for important product application information.

Features

- two-way swivel connection ensures non-binding movement and full power delivery
- glass-reinforced polymer housing, which is lightweight and 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 sq. ft maximum. As a two-position control, damper size is limited to 11.7 sq. ft.

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 to 20 psig.

The D-4073 incorporates several internal and external features that add functional flexibility. A two-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 in. (222 mm) away from the face of the actuator. A swivel ball joint and slotted crankarm 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 ft (122 cm) linkage rod is also available for special applications to reach extended linkage when required.



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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 Information

If the D-4073 Pneumatic Actuator fails to operate within its specifications, replace the unit. For a replacement actuator, contact the nearest Johnson Controls® representative.

Selection Chart

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

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	Crankarm: 7/16 in. Shaft Radius Adjustable to 2-3/4 in. Radius	0.5 (0.23)
DMPR-KC051	Crankarm: 3/8 in. Shaft Radius Adjustable to 2-3/4 in. Radius	0.5 (0.23)
DMPR-KC053	Crankarm: 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 ft (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)

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)

Technical Specifications

D-4073 Pneumatic Piston Damper Actuator				
Stroke	3 in. (76 mm)			
Control Air Pressure	0 to 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. Poly tubing (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	3-7/8 in. Diameter x 11 in. Long			
Shipping Weight, lb (kg)	D-4073-1 7.9 (3.6) D-4073-2 6.4 (2.9)	D-4073-3 6.4 (2.9) D-4073-4 6.4 (2.9)	D-4073-5 4.9 (2.2) D-4073-6 4.9 (2.2)	D-4073-7 4.9 (2.2)

Maximum Force¹ Values at 20 psig (140 kPa) Supply

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

1. Force calculated using 6.7 lb/psig available actuator force