

D-3031

Pneumatic Piston Damper Actuator

Description

The D-3031 Pneumatic Piston Damper Actuator is designed primarily for damper positioning on small terminal units. Models are furnished with 1 in. (25 mm) stroke, and have two movable adjustment stops to facilitate adjusting the stroke in 1/8 in. increments.

The D-3031 features a polycarbonate top and body and a threaded 5/16 in. (8 mm) diameter piston rod for convenient linkage attachment.

The D-3031 replaces the unit replacement for the D-160 and D-251 #2S actuators.

Refer to *D-3031 Pneumatic Actuator Product Bulletin (LIT-2681050P)* for important product information.

Applications

The D-3031 is designed for to operate normally open or normally closed dampers using either swivel or rigid type face mounting. The actuator can be rotated to locate the air connection in the preferred position.

Refer to *Installation Data D-3031-A* for mounting and bracket details and arrangements.

The D-3031 has a maximum stroke of 1 in. without stops. Two stroke adjustment stops are provided for limiting the stroke in 1/8 in. increments from 7/8 to 1/2 in.

Features


- high power-to-size ratio for locations in confined spaces
- swivel or rigid mounting options for flexible mounting configurations
- optional mounting kits to cover any application and replacement of obsolete units
- barbed fitting for 5/32 in. or 1/4 in. Outside Diameter (O.D.) tubing

Repair Information

The D-3031 is a sealed unit. If the D-3031 Pneumatic Piston Damper Actuator fails to operate within its specifications, replace the unit. For a replacement actuator, contact the nearest Johnson Controls® representative.



D-3031 Pneumatic Piston Damper Actuator



WARNING: Risk of Personal Injury and Property Damage.
 Do not install the D-3031 Pneumatic Piston Damper Actuator in any application using corrosive solvents or refrigerants. Use of the D-3031 Pneumatic Piston Damper Actuator with corrosive solvents or refrigerants may weaken the structure of the actuator resulting in a release of pressure which could cause property damage, severe personal injury, or death.

IMPORTANT: Clean with mild soap and water only. If other solvents are to be used, consult with factory for compatibility with polycarbonate.

IMPORTANT: The following solvents will harm polycarbonate: Acetone, all chlorinated solvents (Perchlorethylene, Trichloroethylene, Chlorothene NU T-9999-3, and others), Benzene, Carbon tetrachloride, Ethylacrylate (Leak Detector #7-P), Ethylene Dichloride, Freon (refrigerant and spray can propellant), Hydrochloric Acid (concentrated), Methyl Alcohol, Methylene Chloride, Nitro Cellulose Lacquer, Toluene, some synthetic compressor oils, and Xylene.

Selection Charts

D-3031 Pneumatic Piston Damper Actuator

Code Number	Nominal Spring Range, PSIG (kPa)
D-3031-3	5-10 (35-70)
D-3031-4	8-13 (56-91)

Accessories for D-3031 Pneumatic Piston Damper Actuator

Code Number	Description	Weight, lb (Kg)
D-3031-100	Mounting Bracket Kit	3.5 (1.59)
D-3031-101	Type W Mounting Plate	0.8 (0.36)
D-3031-102	Type W Linkage Kit with 5/16 in. crank arm for 45° movement	0.8 (0.36)
DMPR-KC005	Shaft Extension Kit	1.0 (0.45)

Maximum Actuator Force ¹

Supply Pressure, PSIG (kPa)	Nominal Spring Range PSIG (kPa)	Stroke	Force, lb (Newton)	Torque Output for 90° Rotation
15 (105)	5 to 10 (35 to 70)	Power	14 (62.3)	19.5 in·lb (2.2 N·m)
		Return	14 (62.3)	19.5 in·lb (2.24 N·m)
	8 to 13 (56 to 91)	Power	5.6 (24.9)	7.8 in·lb (0.9 N·m)
		Return	22.4 (99.6)	31.4 in·lb (3.6 N·m)
20 (140)	5 to 10 (35 to 70)	Power	28 (124.6)	39.2 in·lb (4.4 N·m)
		Return	14 (62.3)	19.5 in·lb (2.2 N·m)
	8 to 13 (56 to 91)	Power	19.6 (87.2)	27.3 in·lb (3.1 N·m)
		Return	22.4 (99.6)	31.4 in·lb (3.6 N·m)

1. Force calculated using 1.4 lb/PSIG available actuator force.

Pneumatic Piston Damper Actuator (Continued)

Technical Specifications

D-3031 Pneumatic Piston Damper Actuator		
Stroke		1 in. (25 mm); Adjustable with stops to 7/8, 3/4, 5/8, and 1/2 in. (22, 19, 16 and 13 mm)
Effective Diaphragm Area		2.8 Sq. in. (18 cm ²)
Spring Ranges	D-3031-3	5–10 PSIG (35–70 kPA)
	D-3031-4	8–13 PSIG (56–91 kPA)
Piston Rod		Threaded, 5/16 in. Diameter
Ambient Temperature Limits		-20–150°F (-29–66°C)
Control Pressure		15 or 20 PSIG (105 or 140 kPA); 25 PSIG (175 kPA) Maximum
Air Connection		Barbed Fitting for 5/32 or 1/4 in. O.D. Polytubing
Materials	Actuator & Nut	Polycarbonate
	Stops	Nylon
	Swivel Washers	Oilon
	Diaphragm	Synthetic Elastomer
	Rod & Spring	Steel
Mounting		Rigid or Swivel Type
Accessories	D-3031-100	Bracket Accessory Kit
	D-3031-101	Mounting Plate Kit
	D-3031-102	Linkage Kit
	D-251-2202	Shaft Extension Kit
Shipping Weight		0.5 lb