

D-3031

Pneumatic Piston Damper Actuator



Description

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

in 1/8 inch increments. The D-3031 features a polycarbonate top and body and a threaded 5/16 inch (8 mm) diameter piston rod for convenient linkage attachment.

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

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 inch or 1/4 inch O.D. tubing

Applications

The D-3031 is designed for either swivel or rigid type face mounting to operate power fail open or power fail closed dampers. The actuator can be rotated as required to locate the air connection in the preferred position. Refer to Installation Data D-3031-A for mounting bracket details and arrangements.

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

Repair Parts

The D-3031 is a sealed unit and field repairs cannot be made. For a replacement, 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-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 inch crank arm for 45° movement	0.8 (0.36)
DMPR-KC005	Shaft Extension Kit	1.0 (0.45)

Selection Chart

Code Number	Nominal Spring Range, psig (kPa)
D-3031-3	5-10 (35-70)
D-3031-4	8-13 (56-91)
D-3031-18	10 - 15 (70-105)

Maximum Actuator Force

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)

Notes: Force calculated using 1.4 lb/psig available actuator force.

WARNING: The following solvents will harm polycarbonate: Acetone, all chlorinated solvents (Perchloroethylene, Trichloroethylene, Chloroethene 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.

Specifications

D-3031 Pneumatic Actuator	
Mounting	Rigid or Swivel Type
Control Pressure	0 to 15 or 20 psig (0 to 105 or 140 kPa), 25 psig maximum (175 kPa maximum)
Stroke	1 inch (25 mm): Adjustable with stops to 7/8, 3/4, 5/8, and 1/2 inch (22, 19, 16, and 13 mm)
Effective Diaphragm Area	2.8 in. ² (18 cm ²)
Spring Ranges	D-3031-3, 5 to 10 psig (35 to 70 kPa) D-3031-4, 8 to 13 psig (56 to 91 kPa)
Piston Rod	Threaded, 5/16 inch diameter
Air Connection	Barbed fitting for 5/32 or 1/4 inch O.D. Polytubing
Ambient Temperature Conditions	-20 to 150°F (-29 to 66°C)
Materials	Actuator and Nuts: Polycarbonate Stops: Nylon Swivel Washers: Oilon Diaphragm: Synthetic Elastomer Rod and Spring: Steel
Dimensions	2-1/2 inch diameter x 4-15/16 inch long (barbed fitting extends 5/16 inch from diameter)