D-3031 Pneumatic Piston Damper Actuator Catalog Page

Description

Figure 1: D-3031 Pneumatic Piston Damper Actuator



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

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

Applications

The D-3031 is designed 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 *D-3031 Pneumatic Actuator (Part No. 34-175-2)* 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

If the product fails to operate within its specifications, replace the unit. For a replacement, contact the nearest Johnson Controls® representative.

Selection chart

Table 1: Selection chart

Code number	Nominal spring range, psig (kPa)
D-3031-3	5 to 10 (35 to 70)
D-3031-4	8 to 13 (56 to 91)

Accessories

Table 2: 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)

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Table 2: Accessories

Code number	Description	Weight, lb (kg)
D-3031-102	Type W linkage kit with 5/16 in. crankarm for 45° movement	0.8 (0.36)
DMPR-KC005	Shaft extension kit	1.0 (0.45)

Table 3: 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 lb·in (2.2 N·m)
		Return	14 (62.3)	19.5 lb·in (2.24 N·m)
	8 to 13 (56 to 91)	Power	5.6 (24.9)	7.8 lb·in (0.9 N·m)
		Return	22.4 (99.6)	31.4 lb·in (3.6 N·m)
20 (140)	5 to 10 (35 to 70)	Power	28 (124.6)	39.2 lb·in (4.4 N·m)
		Return	14 (62.3)	19.5 lb·in (2.2 N·m)
	8 to 13 (56 to 91)	Power	19.6 (87.2)	27.3 lb·in (3.1 N·m)
		Return	22.4 (99.6)	31.4 lb·in (3.6 N·m)

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

Technical specifications

Table 4: 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 $in.^2$ (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 in. diameter
Ambient temperature limits		-20 to 150°F (-29 to 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 and nut	Polycarbonate
	Stops	Nylon
	Swivel washers	Oilon
	Diaphragm	Synthetic elastomer
	Rod and 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
	DMPR-KC005	Shaft extension kit
Shipping weight		0.5 lb (0.23 kg)

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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 propellent), Hydrochloric Acid (concentrated), Methyl Alcohol, Methylene Chloride, Nitro Cellulose Lacquer, Toluene, some synthetic compressor oils, and Xylene.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Single point of contact

APAC	Europe	NA/SA
JOHNSON CONTROLS	JOHNSON CONTROLS	JOHNSON CONTROLS
C/O CONTROLS PRODUCT MANAGEMENT	VOLTAWEG 20	507 E MICHIGAN ST
NO. 32 CHANGJIANG RD NEW DISTRICT	6101 XK ECHT	MILWAUKEE WI 53202
WUXI JIANGSU PROVINCE 214028	THE NETHERLANDS	USA
CHINA		

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