

D-3240 Series

Pneumatic Piston Damper Actuator

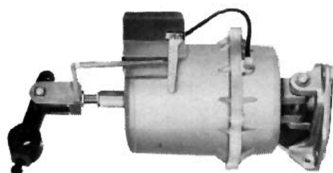
Description

The D-3240 Series Pneumatic Piston Actuators are multipurpose positioning devices designed for operating inlet vanes on centrifugal fans and compressors, in direct response to the output signal of a pneumatic controller. These actuators can also be used on other applications that require a large amount of positioning power from a single actuator, such as large damper applications, provided that the damper is designed to withstand the high torque capabilities of the actuator.

Refer to *D-3240 Series Pneumatic Piston Actuators Product Bulletin (LIT-2681055P)* for important product information.

Features

- all-aluminum housing which is lightweight and non-combustible
- swivel, single pedestal or duplex pedestal mounting options for flexible mounting configurations



D-3240 Series Swivel Mounted Actuator and Positioner

Applications

The D-3240 Series Actuators are furnished with an 8 to 13 PSIG (56 to 91 kPa) spring range and are available in two mounting configurations: swivel-mounted and pedestal (single or duplex) floor-mounted. Floor-mounted models are furnished with a factory installed and calibrated D-9502 Positioner; swivel-mounted models are available with or without the positioner. The positioner may also be ordered separately at a later date for additional positioning power should the application require it.

These actuators are used where large amounts of positioning power from a single actuator, or high torque capabilities are required.



D-3240 Series Duplex Pedestal Mounted Actuator

Repair Information

If the D-3240 Series Pneumatic Piston Damper Actuator fails to operate within its specifications, replace the unit. For a list of maintenance parts, see the selection charts. For a replacement actuator, contact the nearest Johnson Controls® representative.

Selection Charts

D-3240 Series Pneumatic Piston Damper Actuator

Code Number	Description	Ship. Weight lb (kg)
D-3244-1	Single 8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner, floor mounted damper actuator with 18 inch (457 mm) lever arm	45.5 (20.66)
D-3244-2	Duplex 8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner, floor mounted damper actuator with 18 inch (457 mm) lever arm	62.5 (28.38)
D-3244-3	Single 8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner, swivel mount bracket, clevis, and crank arm	15.0 (6.81)
D-3244-4	Single 8 to 13 psig (56 to 91 kPa) spring, swivel mount bracket, clevis, and crank arm	14.0 (6.36)
D-3246-3	Duplex 8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner, floor mounted damper actuator with 18 inch (457 mm) lever arm	75.0 (34.05)
D-3246-1	Single 8 to 13 psig (56 to 91 kPa) spring, swivel mount bracket, clevis, and crank arm	15.5 (7.04)
D-3246-2	Single 8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner, swivel mount bracket, clevis, and crank arm	16.5 (7.49)
D-3246-5	8 to 13 psig (56 to 91 kPa) spring with D-9502-5 positioner	15.0 (6.81)

Accessories and Maintenance Parts

Code Number	Description
D-3244-100	Crank Arm
D-3244-101	Swivel Mounting Bracket
D-3244-618	Rubber Boot Kit
D-3244-6001	Replacement Actuator Body Only
D-3246-6001	Replacement Actuator Body Only
D-3244-615	Replacement Diaphragm (pkg of 12)

Pneumatic Piston Damper Actuator (Continued)

Technical Specifications

D-3240 Series Pneumatic Actuator	
Stroke	D-3244 - 4 in. (102 mm) D-3246 - 6 in. (152 mm)
Mounting	D-3244 - Swivel and single or duplex pedestal D-3246 - Swivel and duplex pedestal
Ambient Operating Conditions	-20 to 150°F (-29 to 66°C)
Effective Diaphragm area	23.4 in ² (151 cm ²)
Spring Range (nominal)	8 to 13 psig (56 to 91 kPa)
Control Air Pressure	25 psig (175 kPa) Maximum
Air Connection	1/8 in. NPT Barbed fitting for 5/32 or 1/4 in. O.D. Poly tubing
Air Consumption	2 SCIM (0.55 mL/s) Maximum
Materials	Body - Die cast aluminum Diaphragm - Synthetic Elastomer

Maximum Actuator Force at 20 psig (140 kPa) — Maximum Available Torque at Various Angular Rotations

Angular Rotation Degrees	D-3244-1 ¹ Torque lb-in (N·m)	D-3244-3 & D-3244-4 ² Torque lb-in (N·m)	Control Arm Length in. (mm)	D-3246-1 & D-3246-2 ² Torque lb-in (N·m)	Control Arm Length in. (mm)
30.0	1223 (138)	1223 (138)	7.73 (196)	1835 (207)	11.60 (295)
32.5	1124 (127)	1124 (127)	7.15 (182)	1686 (191)	10.72 (272)
35.0	1039 (117)	1039 (117)	6.65 (169)	1559 (176)	9.98 (253)
37.5	965 (109)	965 (109)	6.22 (158)	1447 (164)	9.33 (237)
40.0	900 (102)	900 (102)	5.85 (149)	1352 (153)	8.78 (223)
42.5	842 (95)	842 (95)	5.52 (140)	1264 (143)	8.28 (210)
45.0	792 (89)	792 (89)	5.23 (133)	1187 (134)	7.84 (199)
47.5	745 (84)	745 (84)	4.97 (126)	1117 (126)	7.43 (189)
50.0	703 (79)	703 (79)	4.73 (110)	1054 (119)	7.10 (180)
52.5	664 (75)	664 (75)	4.52 (115)	996 (113)	6.78 (172)
55.0	629 (71)	629 (71)	4.33 (110)	944 (107)	6.50 (165)
57.5	597 (67)	597 (67)	4.16 (106)	896 (101)	6.24 (158)
60.0	568 (64)	568 (64)	4.00 (102)	851 (96)	6.00 (152)
62.5	540 (61)	540 (61)	3.86 (98)	809 (91)	5.78 (147)
65.0	514 (58)	514 (58)	3.72 (94)	771 (87)	5.58 (142)
67.5	490 (55)	490 (55)	3.60 (91)	735 (83)	5.40 (137)
70.0	468 (53)	468 (53)	3.49 (89)	703 (79)	5.24 (133)
72.5	447 (51)	447 (51)	3.38 (86)	670 (76)	5.07 (129)
75.0	427 (48)	427 (48)	3.28 (83)	641 (72)	4.92 (125)
77.5	408 (46)	408 (46)	3.20 (81)	612 (69)	4.79 (122)
80.0	390 (44)	390 (44)	3.11 (79)	585 (66)	4.66 (118)
82.5	374 (42)	374 (42)	3.03 (77)	560 (63)	4.55 (116)
85.0	358 (40)	358 (40)	2.96 (75)	536 (61)	4.44 (113)
87.5	342 (39)	342 (39)	2.89 (73)	514 (58)	4.34 (110)
90.0	328 (37)	328 (37)	2.83 (72)	491 (55)	4.25 (108)

1. Torque for actuator with a 20 psig (140kPa) supply, 8 to 13 psig (56 to 91 kPa) nominal spring range.

2. Torque for actuator with a 20 psig (140kPa) supply, 8 to 13 psig (56 to 91 kPa) nominal spring range.

Note: Multiply the torque needed to operate the inlet vanes by 1.5 safety factor. The torque for duplex actuators is two times the listed single actuator torque.