

SPRINGLESS DIAPHRAGM VALVES

Pulse Valve, Ideal for Dust Collection Systems and Bag Houses



DCS35T1D



DCS35C1D



RDCS20C



RDCS35T



RDCS35C



The **SERIES DCS/RDCS** Springless Dust Collection Valves are ideal for use with the Series DCT1000 and Series DCT500 duct collection timer boards. A springless design offers not only durability, but also reliability for an exceptional cleaning pulse. Both the Series DCS and RDCS have the option for either coupling or NPT connections. The coupling connection allows for a quick and simple installation. Only the stub pipe and blowtube need to be cleaned and deburred before the valve is fit into position. The "T" Series DCS has female threaded connections and the "C" Series DCS has a coupling connection. Both the "T" and "C" versions have a 90° angle between the inlet and outlet; the most suitable configuration for pulse valve applications. The valves are offered in both integrated and remote coil configurations.

FEATURES/BENEFITS

- Thermoplastic polyurethane diaphragm for longer life
- High flow factor for effective cleaning
- Unique diaphragm design eliminates spring
- Valve can be mounted in any position
- Quick on & off response time

MODEL CHART

Model	Size	Solenoid	Connection	Number of Diaphragms	Cv Factor (gal/min)
RDCS20T	3/4"	Remote	NPT	1	14
RDCS20C	3/4"	Remote	Coupling	1	14
DCS20T1D	3/4"	Integral*	NPT	1	14
DCS20C1D	3/4"	Integral*	Coupling	1	14
RDCS25T	1"	Remote	NPT	1	23
RDCS25C	1"	Remote	Coupling	1	23
DCS25T1D	1"	Integral*	NPT	1	23
DCS25C1D	1"	Integral*	Coupling	1	23
RDCS35T	1-1/2"	Remote	NPT	1	42
RDCS35C	1-1/2"	Remote	Coupling	1	42
DCS35T1D	1-1/2"	Integral*	NPT	1	42
DCS35C1D	1-1/2"	Integral*	Coupling	1	42

*110 VAC with DIN connector

MODEL CHART - GUIDE

Example	DCS	20	T	1D	DCS20T1D
Construction	DCS RDCS				Integrated coil Remote coil
Size		20 25 35			3/4" 1" 1-1/2"
Connection			T C		NPT Coupling
Voltage				1D 2D 3D	110 VAC DIN (for integrated coil only) 220 VAC DIN (for integrated coil only) 24 VDC DIN (for integrated coil only)

ACCESSORIES

Model	Description
A-237	Muffler
BDA-5030-Q	3/4" DCS/RDCS pulse valve replacement diaphragm
BDA-5230-Q	1" DCS/RDCS pulse valve replacement diaphragm
BDA-5430-Q	1-1/2" DCS/RDCS pulse valve replacement diaphragm
RSV1D-COIL	110 VAC DIN replacement solenoid coil
RSV2D-COIL	220 VAC DIN replacement solenoid coil
RSV3D-COIL	24 VAC DIN replacement solenoid coil

SPECIFICATIONS

Service: Compatible gases, filtered and oil free.

Wetted Materials: Body: Aluminum; Diaphragm disc: Thermoplastic polyurethane; Solenoid seals: NBR.

Other Materials: Cover: Aluminum; Body bolts: Zinc plated SS; Solenoid: Nylon.

Pressure Limits: Min. of 4.4 psi (0.3 bar), max. of 124.7 psi (8.6 bar).

Temperature Limits: Ambient: -4 to 140°F (-20 to 60°C); Operating: -4 to 185°F (-20 to 85°C).

Power Requirements: 110 VAC, 220 VAC, or 24 VDC for DCS models.

Power Consumption: 12 W; Inrush: 17 VA; Holding: 14.5 VA for DCS models.

Electrical Connection: DIN connection for DCS models.

Enclosure Rating: NEMA 4X (IP65) for DCS models.

Process Connection: See model chart.

Mounting Orientation: Any position.

Agency Approvals: CE.

DIAPHRAGM VALVE CONSTRUCTION

NEMA 4X (IP65)
solenoid coil



Solenoid

Integrated solenoid
stem



Cover

Unique diaphragm
design eliminates
need for a spring



Diaphragm

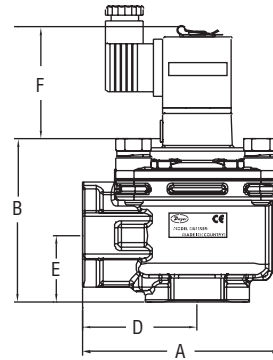
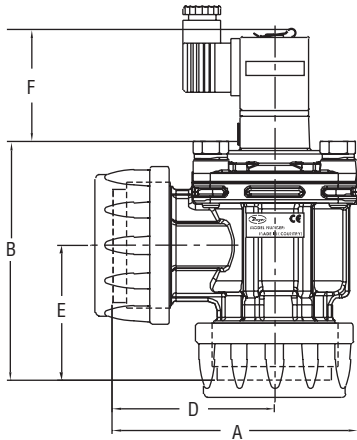
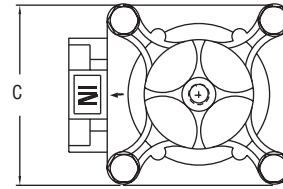
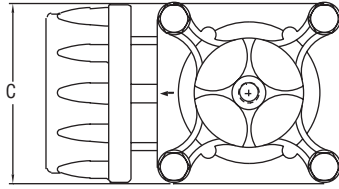
Robust die cast
aluminum body



Body

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DIMENSIONAL CHART							
Model	Connection	A in [mm]	B in [mm]	C in [mm]	D in [mm]	E in [mm]	F in [mm]
DCS20TxD	NPT	3-1/8" [79.38]	2-47/64" [69.45]	2-45/64" [68.66]	1-37/64" [40.08]	1-15/64" [31.35]	2-5/32" [54.77]
DCS25TxD	NPT	3-19/64" [83.74]	3-7/32" [81.76]	2-53/64" [71.83]	1-55/64" [47.23]	1-31/64" [37.70]	2-11/32" [59.53]
DCS35TxD	NPT	4-11/32" [110.33]	3-43/64" [93.27]	3-1/2" [88.9]	2-17/32" [64.29]	1-15/32" [37.31]	2-3/8" [60.33]
DCS20CxD	Coupling	4-9/64" [105.17]	3-25/64" [86.10]	2-45/64" [68.66]	2-39/64" [66.28]	1-51/64" [45.64]	2-11/64" [55.17]
DCS25CxD	Coupling	4-7/16" [112.71]	4-43/64" [118.67]	2-53/64" [71.83]	3" [76.20]	2-49/64" [70.25]	2-23/64" [59.93]
DCS35CxD	Coupling	5-23/64" [136.13]	5-21/64" [135.33]	3-1/2" [88.9]	3-35/64" [90.09]	2-61/64" [75.01]	2-3/8" [60.33]
RDCS20T	NPT	3-1/8" [79.38]	2-47/64" [69.45]	2-45/64" [68.66]	1-37/64" [40.08]	1-15/64" [31.35]	-
RDCS25T	NPT	3-19/64" [83.74]	3-7/32" [81.76]	2-53/64" [71.83]	1-55/64" [47.23]	1-31/64" [37.70]	-
RDCS35T	NPT	4-11/32" [110.33]	3-43/64" [93.27]	3-1/2" [88.9]	2-17/32" [64.29]	1-15/32" [37.31]	-
RDCS20C	Coupling	4-9/64" [105.17]	3-25/64" [86.10]	2-45/64" [68.66]	2-39/64" [66.28]	1-51/64" [45.64]	-
RDCS25C	Coupling	4-7/16" [112.71]	4-43/64" [118.67]	2-53/64" [71.83]	3" [76.20]	2-49/64" [70.25]	-
RDCS35C	Coupling	5-23/64" [136.13]	5-21/64" [135.33]	3-1/2" [88.9]	3-35/64" [90.09]	2-61/64" [75.01]	-

OPERATING PRINCIPLE

The valve is divided into two chambers by a diaphragm. These upper and lower chambers are connected by a small air passage so both chambers see the same pressure. When the exhaust is closed air cannot vent out of the upper chamber and the valve stays closed as shown in Figure 1. When the exhaust on the upper chamber is opened the air pressure decreases on top of the diaphragm allowing the air pressure on the bottom to force open the valve by pushing the diaphragm up as shown in Figure 2. When the valve opens an abrupt air blast comes through the valve outlet and is directed by the dust collector to the dirty filter. The air pulse then blows out through the filter from the inside blowing the particulate accumulation off of the filter to clean it. After the air pulse the pressure in the upper and lower chamber will equalize and the diaphragm will return to the closed position. The valve exhaust port is controlled by either an integral or remote solenoid.

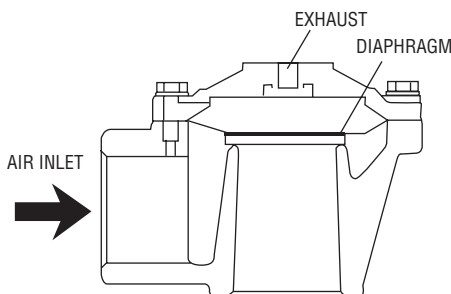


Figure 1: Closed Position

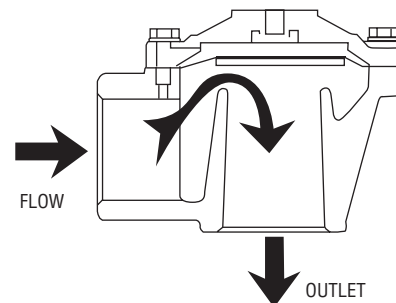


Figure 2: Open Position