



Series  
DCS/RDCS

# Springless Diaphragm Valves



The Series DCS/RDCS Springless Dust Collection Valves are ideal for use with the Series DCT1000 and Series DCT500 dust 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

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

### ACCESSORY

A-237, Muffler

### SPECIFICATIONS

**Service:** Compatible gases, filtered and oil free.

#### Wetted Materials:

- Body: Aluminum;
- Diaphragm disc: Thermoplastic polyurethane;
- Solenoid seals: NBR;
- Diaphragm core and spring: 304 SS.

#### Other Materials:

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

**Pressure Limits:** Minimum of 4.4 psi (0.3 bar), maximum 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 Approval:** CE.

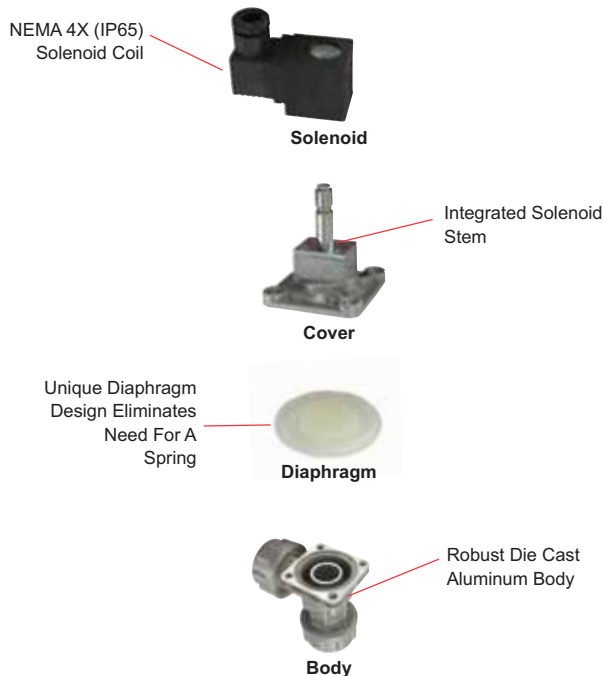
Model	Size	Solenoid	Connection	Number of Diaphragms	Cv Factor (gal/min)
RDCS20T	3/4"	Remote	NPT	1	14
RDCS20C		Remote	Coupling		
DCS20T1D		Integral*	NPT		
DCS20C1D		Integral*	Coupling		
RDCS25T	1"	Remote	NPT	1	23
RDCS25C		Remote	Coupling		
DCS25T1D		Integral*	NPT		
DCS25C1D		Integral*	Coupling		
RDCS35T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

\*110 VAC with DIN Connector

### Series DCS/RDCS Model Guide

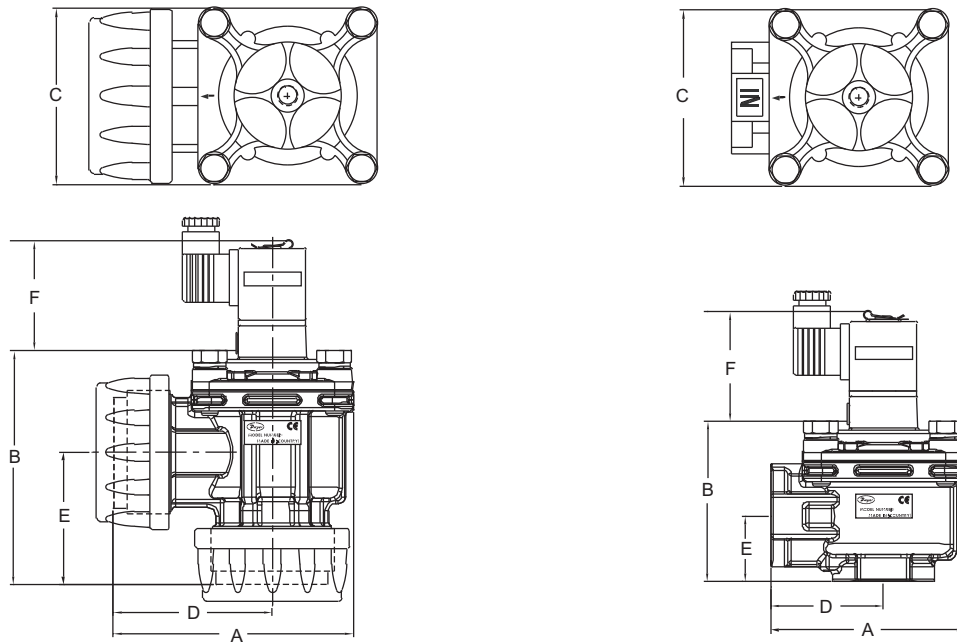
Construction	DCS	RDCS			Integrated coil Remote coil
Size			20		3/4"
			25		1"
			35		1-1/2"
Connection				T	NPT
				C	Coupling
Voltage				1D	110 VAC DIN (for integrated coil only)
				2D	220 VAC DIN (for integrated coil only)
				3D	24 VDC DIN (for integrated coil only)

### DIAPHRAGM VALVE CONSTRUCTION



VALVES

## DCS/ RDCS Dimensional Chart



DCS Dimensional Chart

Connection	Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
NPT	DCS20TxD	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	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	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)
Coupling	DCS20CxD	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	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	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)

RDCS Dimensional Chart

Connection	Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
NPT	RDCS20T	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	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	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)
Coupling	RDCS20C	4-9/64" (105.17)	3-25/64" (86.1)	2-45/64" (68.66)	2-39/64" (66.28)	1-51/64" (45.64)
	RDCS25C	4-7/16" (112.71)	4-43/64" (118.67)	2-53/64" (71.83)	3" (76.20)	2-49/64" (70.25)
	RDCS35C	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.

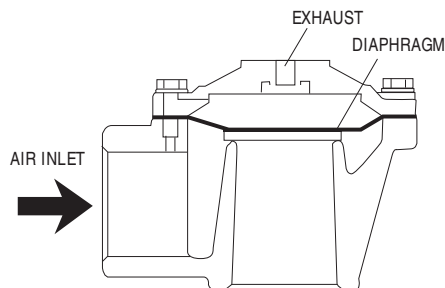


Figure 1: Closed Position

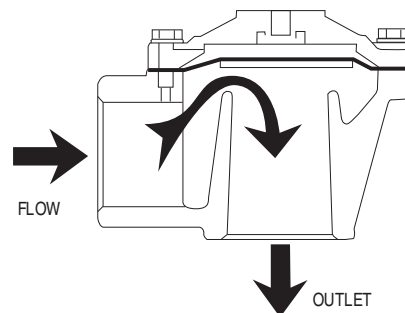


Figure 2: Open Position