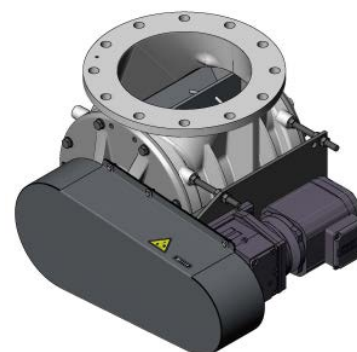


Application

The Coperion ZRD/ZRC DuroProtect™ Heavy-Duty Premium rotary valve is specially designed for abrasive applications. It is often used as a discharging and metering valve for conveying products in powder and granular form (smaller than 1 mm). The ZRD/ZRC DuroProtect is engineered for heavy-duty industrial service with pressure differentials up to 1.5 bar(g) [21 psi(g)] and temperatures up to 100°C [212°F].

The design incorporates erosive wear protection. High wear resistance ensures long-term low leakage gas rates.

Development of the protective design is based on long-term studies in the Coperion test center and experience in the field, and is adapted to Mohs' hardness of bulk material respectively to wear characteristics of typical bulk materials. The DuroProtect design is optimized for product properties (in particular abrasiveness) and operating conditions (particularly pressure difference).



Design

- Explosion pressure shock proof: 10 bar(g) [145 psi(g)], due to heavy duty design
- Large inlet/outlet: Without restriction of the cross section for highest capacities
- Outboard bearings with lifetime seal: Separated from product by purged seal arrangement and drop out opening
- Rotor: 5 DuroProtect levels available, depending on application requirements:
 - (ZRD) DP1: 10 blades, open-end, flat tips
 - (ZRC) DP2, 3 and 4: 10 blades, closed-end with massive end plates, flat tips
 - (ZRC) DP5: 12 blades, closed-end with massive end plates, flat tips
- Seal purge gas unit (completely mounted): Including stainless steel tubing, solenoid valve 24 VDC, 8 W DC, filter regulator, gauge protects sealing rings and hub from wear

Technical Data

Standard Mechanical Specifications

- Inlet/Outlet flange: Round, drilled according to DIN PN 10 or ANSI 150 lbs (Rectangular models are available on request. Refer to I-500143.)
- Wear resistant materials of construction according to DuroProtect level adjusted to your application (see table for details)
- Shaft sealing: Two FKM lip seals with labyrinth ring, prepared for seal purge
- Rotary valves with DP level 4 or 5, sizes 200 to 700, are supplied with stiffened rotor
- CE compliant (standard configuration)

Drive

Chain drive with spur gear motor: TEFC inverter duty rated for a 5:1 turndown

US Voltage 230/460 V, 3 Phase, 60 Hz

EU Voltage 230/400 V, 3 Phase, 50 Hz

Options

Housing

- Rectangular (refer to I-500143)

Shaft Seals

- Alternative materials for shaft sealings: PTFE

Operating Temperature

- Special configurations for temperatures up to +220°C [428°F]; DP5 up to +150°C [302°F] only

Drive

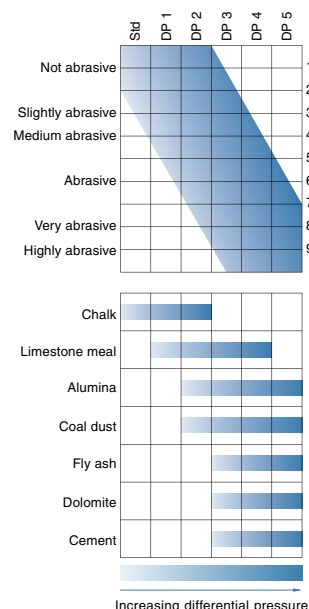
- Direct drive with parallel shaft gear motor, TEFC inverter duty rated for a 5:1 turndown (up to 100° C [212° F] only)

Hazardous Location Options

- NEC or ATEX executions available
- Execution for application in Ex-Zones (ATEX) and as protection system (flameproof for dust ST2) available

Accessories

- Leakage gas collector with loose flange (mild Steel) for application below full product column
- Leakage gas separator with free ends (mild Steel) for application at pre-closed operation
- Discharge adapter / Feeding shoe with fixed flange (mild Steel)
- Rotation sensor / Speed monitor



WEAR RESISTANCE CONCEPT AVAILABLE IN 5 LEVELS FOR ROTARY VALVES FOR POWDERS

Wear resistance level	Standard	DUROPROTECT 1	DUROPROTECT 2	DUROPROTECT 3	DUROPROTECT 4	DUROPROTECT 5
Housing	Cast iron	DUROCHROM™	DUROCHROM	DUROCHROM	DUROCHROM	DUROCERA™
Rotor	D-rotor mild steel	D-rotor mild steel	C-rotor mild steel	C-rotor DUROCHROM	C-rotor DUROCARB	C-rotor DUROCARB™
Abrasiveness/ pressure difference	Low High					

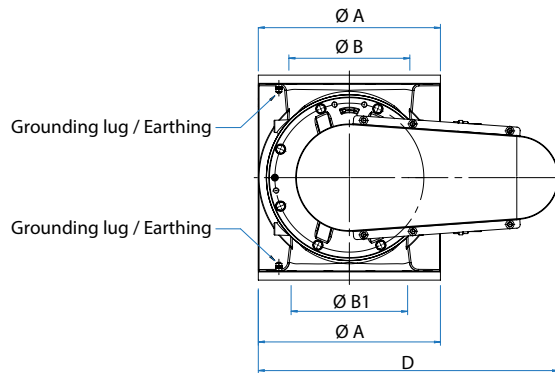
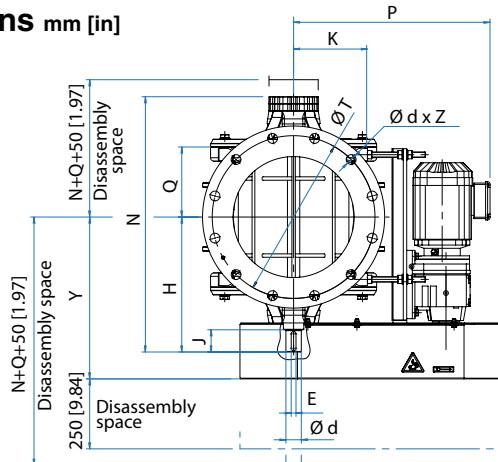
Increasing differential pressure

Coperion Product Specification

ZRD/ZRC DuroProtect™ Rotary Valve

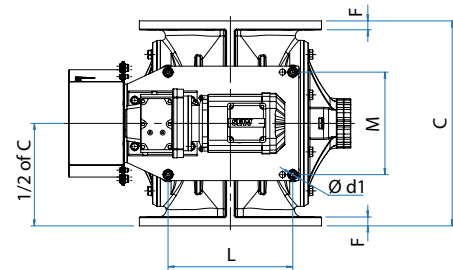
ZRD/ZRC
DuroProtect™
Rotary Valve

Dimensions mm [in]



Grounding lug / Earthing

Grounding lug / Earthing



Model	DIN		ANSI		ØA	ØB	ØB1	C - 0.5 [-0.02]	D***	F	H chain drive
	Ø d x Z	T ±0.3 [0.012]	Ø d x Z	T ±0.3 [0.012]							
150	23 [0.91] x 8	240 [9.45]	23 [0.91] x 8	240 [9.45]	285 [11.22]	166 [6.54]	155 [6.10]	260 [10.24]	514.5 [20.26]	11 [0.43]	228.5 [9]
200	22 [0.87] x 8	295 [11.61]	22.2 [0.87] x 8	298.5 [11.75]	341 [13.43]	213 [8.39]	207 [8.15]	340 [13.39]	556.1 [21.89]	18 [0.71]	276.5 [10.89]
250	22 [0.87] x 12	350 [13.78]	25.4 [1] x 12	362 [14.25]	412 [16.22]	272 [10.71]	259 [10.20]	400 [15.75]	622 [24.49]	18 [0.71]	306 [12.05]
320	22 [0.87] x 12	400 [15.75]	25.4 [1] x 12	431.8 [17]	482 [18.98]	322 [12.68]	310 [12.20]	500 [19.69]	891 [35.08]	19 [0.75]	369.5 [14.55]
400	22 [0.87] x 16	460 [18.11]	28.6 [1.13] x 12	476.3 [18.75]	533 [20.98]	354 [13.94]	341 [13.43]	600 [23.62]	997 [39.25]	26 [1.02]	395 [15.55]
480	26 [1.02] x 16	515 [20.28]	28.4 [1.12] x 16	539.7 [21.25]	597 [23.50]	410 [16.14]	400 [15.75]	750 [29.53]	1113.5 [43.84]	28 [1.10]	486 [19.13]
550	27 [1.06] x 20	620 [24.41]	31.7 [1.25] x 20	635 [25]	700 [27.56]	500 [19.69]	480 [18.90]	800 [31.50]	1230 [48.43]	28 [1.10]	556.5 [21.91]
630	30 [1.18] x 20	725 [28.54]	35.1 [1.38] x 20	749.3 [29.5]	816 [32.13]	600 [23.62]	590 [23.23]	900 [35.43]	1368 [53.86]	30 [1.18]	587 [23.11]
700	30 [1.18] x 24	840 [33.07]	35 [1.38] x 28	863.5 [34]	927 [36.50]	710 [27.95]	695 [27.36]	1000 [39.37]	1538.5 [60.57]	35 [1.38]	-

Model	N chain drive	Q	Ø d h6	J direct drive	E P9 direct drive	K	L ±0.3 [0.012]	M ±0.3 [0.012]	d1	P (max.)**	Y (max.)**	Weights kg [lb]*
												GC kg [lb]
150	414 [16.30]	92.5 [3.64]	25 [0.98]	60 [2.36]	8 [0.31]	91 [3.58]	156 [6.14]	180 [7.09]	M12	372 [14.65]	235 [9.25]	36 [79]
200	511 [20.12]	106 [4.17]	30 [1.18]	65 [2.56]	8 [0.31]	120 [4.72]	172 [6.77]	185 [8.28]	M12	385.6 [15.18]	330 [12.99]	53 [117]
250	559 [22.01]	125 [4.92]	35 [1.38]	76 [2.99]	10 [0.39]	145 [5.71]	205 [8.07]	215 [8.46]	M12	416 [16.38]	349 [13.74]	80 [176]
320	674 [26.54]	157.5 [6.20]	40 [1.57]	95.5 [3.76]	12 [0.47]	185 [7.28]	275 [10.83]	250 [9.84]	M16	650 [25.59]	421 [16.57]	140 [309]
400	747 [29.41]	205 [8.07]	45 [1.77]	65 [2.56]	14 [0.55]	216 [8.5]	365 [14.37]	300 [11.81]	M16	730 [28.74]	474 [18.66]	260 [573]
480	895 [35.24]	250 [9.84]	50 [1.97]	90 [3.54]	14 [0.55]	300 [11.81]	440 [17.32]	480 [18.9]	M20	815 [32.09]	553 [21.77]	490 [1080]
550	1016 [40]	275 [10.83]	60 [2.36]	110 [4.33]	14 [0.55]	330 [12.99]	450 [17.72]	520 [20.47]	M20	880 [34.65]	605 [23.82]	690 [1521]
630	1095 [43.11]	320 [12.60]	65 [2.56]	110 [4.33]	18 [0.71]	400 [15.75]	415 [16.34]	400 [15.75]	M20	960 [37.80]	637 [25.08]	1100 [2425]
700	-	375 [14.76]	80 [3.15]	-	-	440 [17.32]	400 [15.75]	460 [18.11]	M24	1075 [42.32]	688 [27.09]	1590 [3505]

NOTES:

* Valve weights shown DO NOT include drive or modifications, deviating weights for DP2 to DP5.

** Dimensions of motor may change. For details refer to order.

*** Dimensions of motor may exceed dimensions of chain guard.

Caution: Measurements are for general reference only. Please consult dimensional drawing for exact measurements.