

Gardner Denver

ROTARY VANE COMPRESSORS/VACUUM PUMPS
FOR VACUUM TANKERS

Wittig **RFW**





Rotary Vane Compressors
& Vacuum Pumps for
Vacuum Tankers

The Wittig Advantage

Reliable & Cost-Effective

Assembled and tested with great care, our rotary vane compressor/vacuum pumps are renowned for their reliability, safety in operation, long life and cost effectiveness. They have few rotating parts, ensuring that maintenance requirements are minimal.

Practically Pulsation-Free Compressed Air

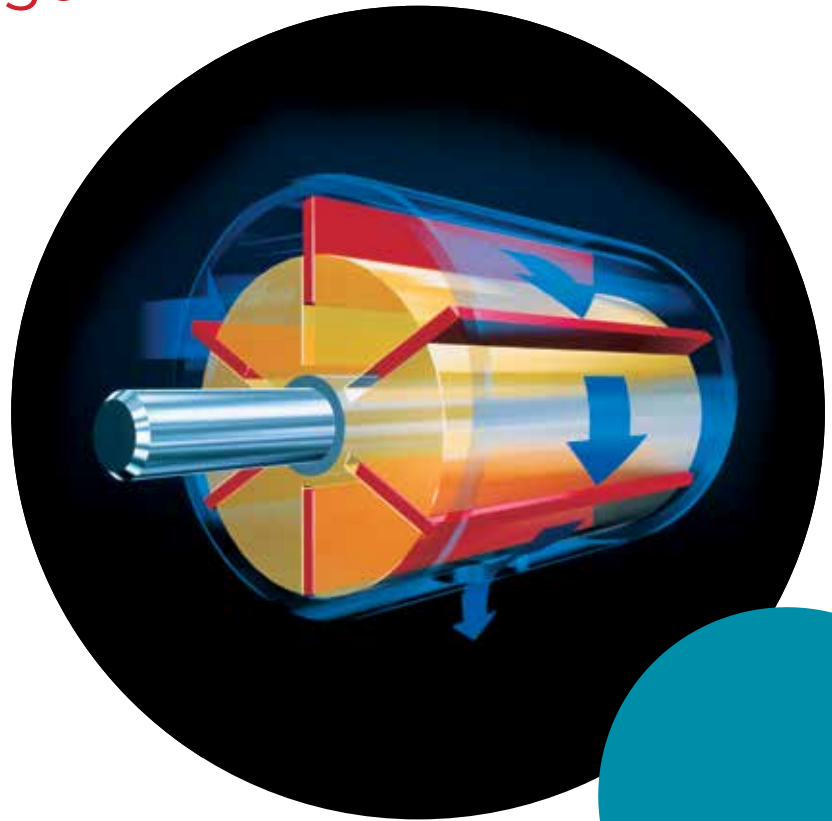
A typical feature of our rotary vane compressor/vacuum pumps is the supply of a nearly pulsation-free and constant gas flow. This is a significant advantage on many applications where compressed air or vacuum is required.

Compact Design Delivered Ready for Connection/Installation

Compact design is a typical characteristic of our machines. For ease of mounting and quick start up, we ship all machines ready for installation and connection.

The Wittig Way

Gardner Denver Wittig has expertise in both vacuum applications for loading liquids or sludge onto waste tankers and compressor applications for unloading bulk road tankers. We did the pioneering work on rotary vane compressor/vacuum pumps and have maintained a program of development and improvement ever since.



Wittig RFW

Oil Tank & Lubrication

Generously sized oil tank for extended operating times.

Integral oil pump for continuous and reliable oil supply.

Oil Level Control

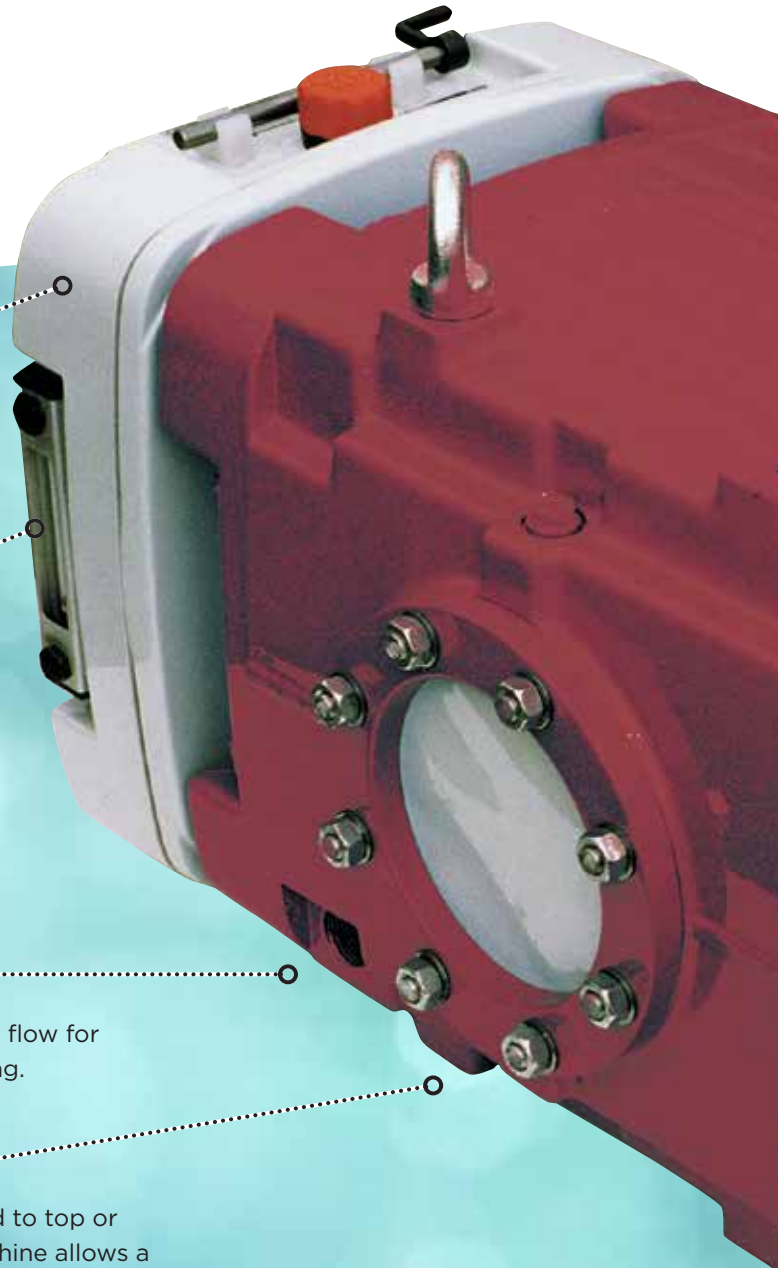
Oil level indicator on both sides of the machine for oil level control.

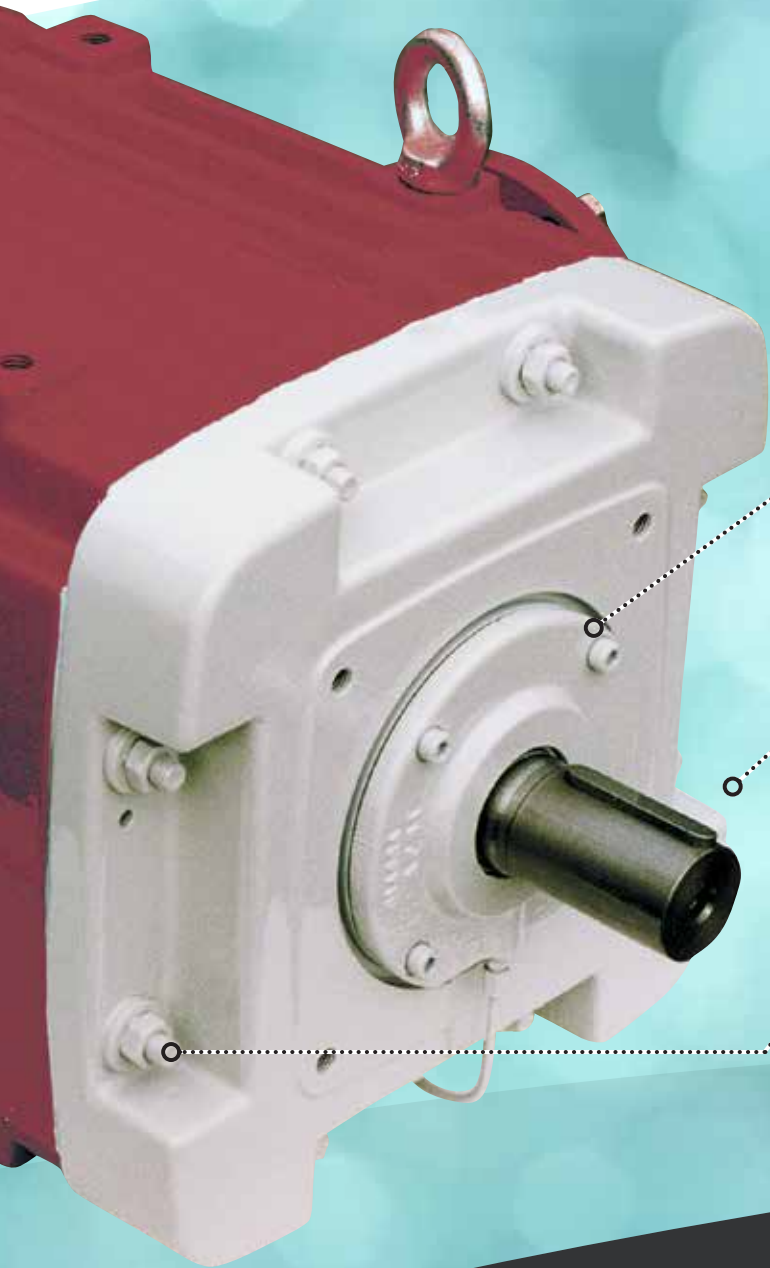
Cooling

Targeted cooling water flow for optimal machine cooling.

Mounting

Mounting feet attached to top or underneath of the machine allows a standing or suspended installation.





Drive

Central mounting point for the easy fitting of a hydraulic drive motor if required.

Dimensions

Shaft ends suitable for alternative V-belt drive.

Innovation

Slotted casing end plate mounting holes permit lateral movement of both rotor and end plate in the event of a vane breakage.

This system reduces the risk of more serious damage as a result of vane debris jamming between rotor and casing.

The Efficient Choice

FACTS, FIGURES, & DATA

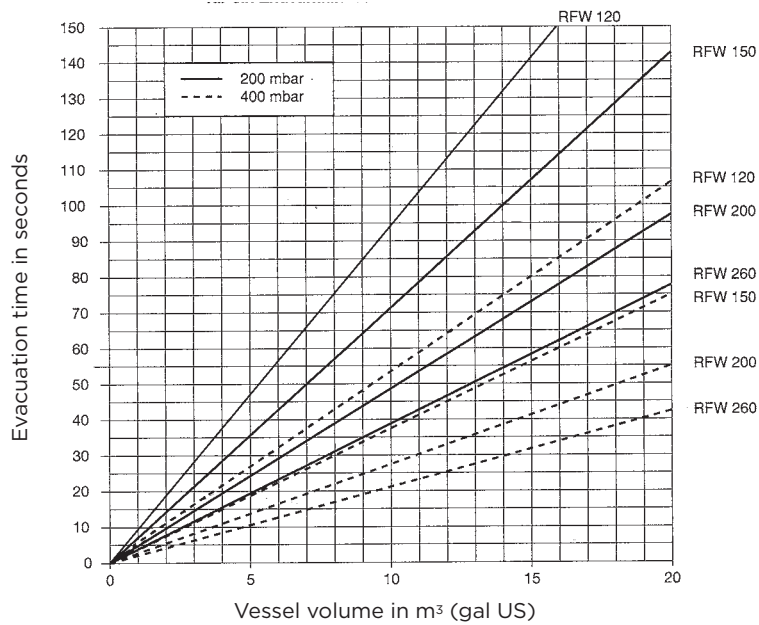
COMPRESSOR/VACUUM PUMP		RFW 120 DV	RFW 150 DV	RFW 200 DV	RFW 260 DV
FREE AIR FLOW	m ³ /h cfm	720 424	860 506	1240 730	1600 942
FLOW RATE @ 400 MBAR RESIDUAL PRESSURE/60% VACUUM	m ³ /h cfm	680 400	820 483	1180 694	1540 906
MAX. DISCHARGE PRESSURE GAUGE	barg psig	2 29	2 29	2 29	2 29
MAX. DISCHARGE PRESSURE V-BELT DRIVE	barg psig	2 29	2 29	1.5 22	0.5 7
SHAFT SPEED	rpm	1500	1500	1500	1500
POWER REQUIREMENT AT SHAFT @ 0.5 BAR/7.25 PSIG	kw hp	27.5 37	30 40	45 60	58 78
OIL CONSUMPTION	liters/h gal/h	0.2 0.05	0.2 0.05	0.3 0.08	0.4 0.11
MASS MOMENT OF INERTIA	kgm ² lb.sq. ft	0.52 12.34	0.52 12.34	0.73 17.32	0.95 22.54
MAX. VACUUM CONTINUOUS OPERATION	mbar/% inHg	200/80 24	200/80 24	200/80 24	200/80 24
MAX. VACUUM INTERMITTENT OPERATION (MAX. 15 MIN.)	mbar/% inHg	100/90 27	100/90 27	100/90 27	100/90 27
NOISE LEVEL AT 7 M (22 FT) DISTANCE & AT 400 MBAR/0.5 BAR RANGE (18 inHG/7.25 PSIG)	dB A	68 73.5	71 74	75 79	76 82
OIL TANK CAPACITY	l gal	7.5 1.98	7.5 1.98	7.5 1.98	7.5 1.98
WEIGHT INCLUDING NON-RETURN VALVE	kg lb	220 485	220 485	280 617	360 794
DIMENSIONS	A mm in	200 7.9	200 7.9	350 13.8	500 19.7
	L mm in	735 29.0	735 29.0	885 35.0	1035 41.0

WATER COOLING SYSTEM DATA

COMPRESSOR/VACUUM PUMP		RFW 120 DV	RFW 150 DV	RFW 200 DV	RFW 260 DV
COOLING WATER CIRCULATION QUANTITY PE = 0.5 BAR G (7.25 PSIG)	l/min gal/min	15 4.0	15 4.0	25 6.6	35 9.2
COOLING WATER CIRCULATION QUANTITY PE = 2.0 BAR G (29 PSIG)	l/min gal/min	20 5.3	20 5.3	29 7.7	40 10.6
HEAT TO BE DISSIPATED PE = 0.5 BAR G, 7.5 PSIG	kw hp	11.5 15.4	11.5 15.4	19 25.5	24 32.2
HEAT TO BE DISSIPATED PE = 2.0 BAR G, 29 PSIG	kw hp	14.5 19.5	14.5 19.5	20 26.8	28 37.5
EXPANSION TANK CAPACITY	l gal	10 2.64	10 2.64	10 2.64	10 2.64
PIPEWORK DIMENSIONS	inches	1	1	1	1

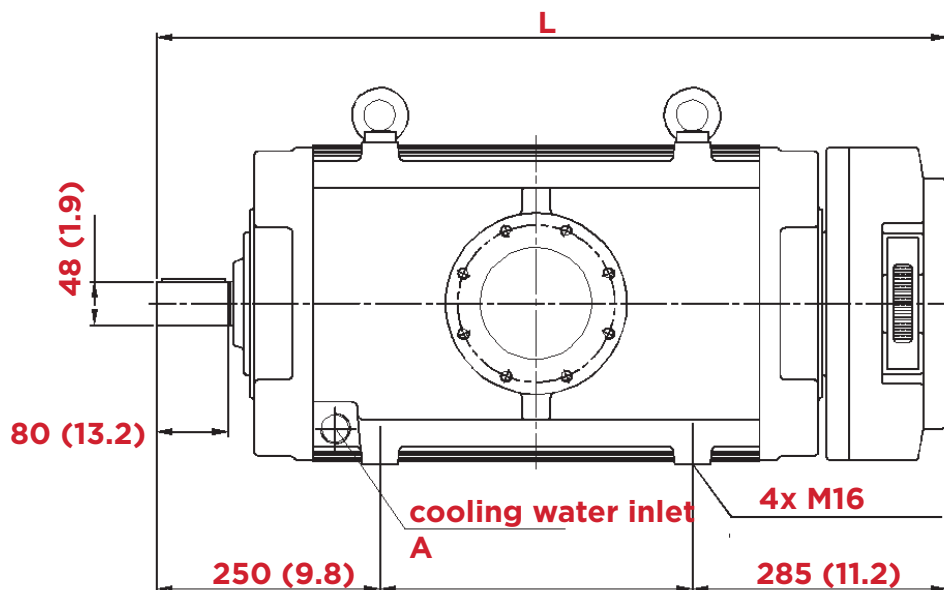
VESSEL EVACUATION TIMES for RFW 120, 150, 200, 260

For a final vacuum of 200 mbar (24 inHg) and
400 mbar (18 inHg) respectively.



Evacuation Times

The evacuation times t_{ev} are represented as a function of the vacuum and of the vessel volume V . These times are intended for guidance only. The actual times are governed by the condition of the entire system.



All dimensions shown in mm.(inches)

Facts, Figures & Data

The water cooled RFW Series from Gardner Denver Wittig is particularly designed for installation on waste vacuum tankers and combination jetting/vacuum vehicles.

The compressor/vacuum pump produces the vacuum necessary to load the waste liquid into the vehicle tank and also provides compressed air necessary to unload it again.

A four-way valve is used to switch between vacuum and pressure as required. Compact dimensions guarantee maximum flexibility when installing the unit.

The compactness of the package, low weight and low noise level are the true advantages of the RFW Series.

Application

- Installation in sludge-suction vehicles
- Installation in high-capacity jetting and suction vehicles

Drive

- (Optional clockwise or counterclockwise rotation) from the vehicle engine via an auxiliary drive and universal shaft
- Via V-belts
- By hydraulic motor
- Via flexible coupling
- By diesel engine or electric motor
- Machines can be changed at any time from clockwise to counterclockwise rotation.

Cooling

- Water cooling by means of a forced circulation system

Lubrication

- The automatic lubrication system lubricates all sliding elements. The lube oil pump is installed in the oil tank and is driven directly by the rotor shaft. The oil level can be checked through sight glasses which are visible in all mounting positions.

Installation

- Compact/efficient mounting dimensions
- Mounting by means of 4 threaded bores at bottom or at top
- Able to be turned through the longitudinal axis by 90°
- Flanges and feet are arranged symmetrically to the centre of shaft



RFW-DV COMPRESSOR/VACUUM PUMP

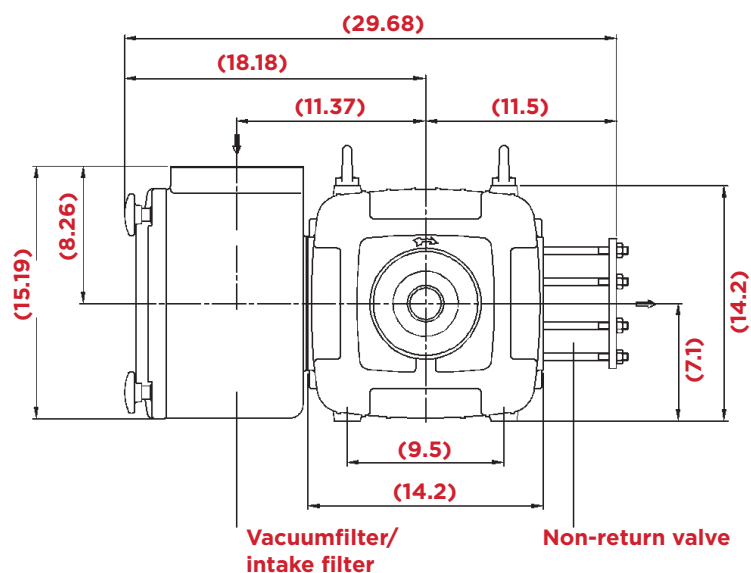
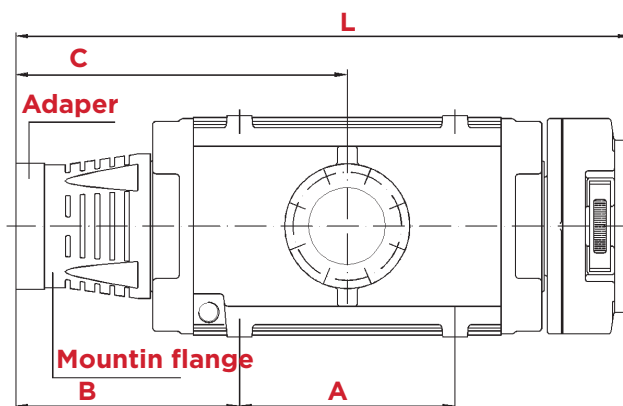
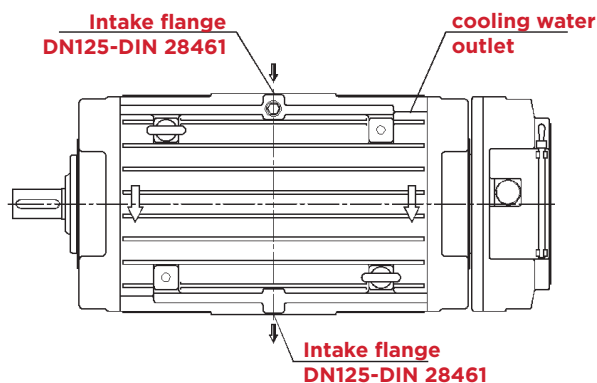
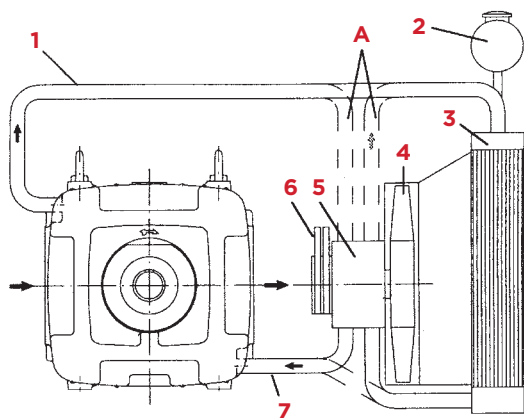
Driven by Hydraulic Motor

WEIGHT		RFW 120 & 150 DV	RFW 200 DV	RFW 260 DV
	kg	228	288	368
	LB	503	635	811
DIMENSIONS		RFW 120 & 150 DV	RFW 200 DV	RFW 260 DV
A	mm	200	350	500
	inch	7.9	13.8	19.7
C	mm	465	540	635
	inch	18.3	21.2	25.0
L	mm	850	1000	1170
	inch	33.5	39.4	46.1
B	mm	365	365	385
	inch	14.3	14.3	14.3

Intermediate flange for hydraulic motor including coupling 13 kg (28.6 lb)

Water Cooling for a Rotary Vane Compressor/Vacuum Pump

1. Return Line
2. Expansion Tank
3. Cooler
4. Cooling Fan
5. Water Pump
6. Drive (V-Belt)
7. Supply Line
8. Alternative
Pipework Route



All dimensions shown in mm (inches)

Accessories

The following accessories can be supplied as additional equipment. All components involved are of optimum design for use with our compressor/vacuum pumps and have proved their efficiency under the most severe operating conditions.

Suction Filter

This protects the compressor/vacuum pump against coarse and fine-grained impurities but not against liquids. The VFD 4 filter with an integrated fine filter is fitted directly to the suction flange. VFD 4 filters are particularly necessary on vehicles carrying dangerous goods on public roads. They are designed for 11 bar abs. (160 psig).

Discharge Silencer

For reduction of air discharge noise during suction operations. This silencer is installed in the line which discharges to atmosphere. Combined discharge silencer/oil separator for reduction of air discharge noise during suction and compression operations (up to 1.5 bar abs/22 psig). Includes a separator for removal of discharged compressor oil. It is installed between the vacuum pump and four-way changeover valve.



Vacuum Relief Valve

The vacuum relief valve ensures that the permissible or desired operating vacuum is maintained at the correct level by allowing atmospheric air to flow in during suction operations. It is installed in the suction line.

Intermediate Flange for Hydraulic Motor

For direct mounting the hydraulic motor (gauge ring and 4 threaded holes in the casing cover) with flexible coupling. The intermediate flange also serves as a coupling guard.

Non-Return Valve

Prevents return of atmospheric air during suction operations, and reverse flow of compressed air during pressure operations, together with entrained impurities. Fitted directly to the delivery port.

Water Cooling

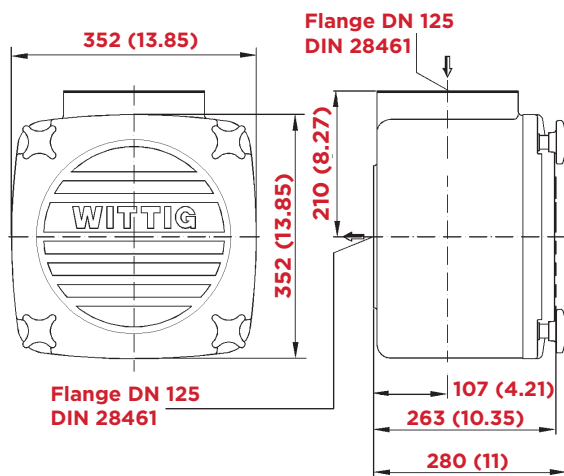
For cooling of the compressor/vacuum pump a cooling package is incorporated. This comprises a heat exchanger, motorized fan and water pump.

Further Accessories

- Non-Return Valve
- Low Oil Level Warning
- Pressure/Vacuum Gauge
- Flexible Drive Coupling & Guard
- Water Cooling
- Four-Way Changeover Valve
- Hydraulic Motor

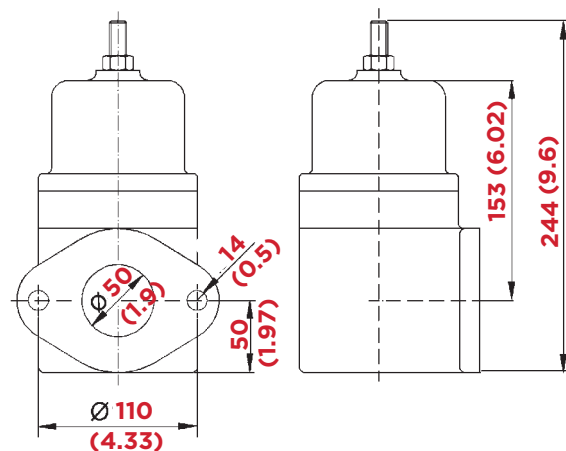
Suction Filter VFD 4

Weight 22 kg (48.5 lb)



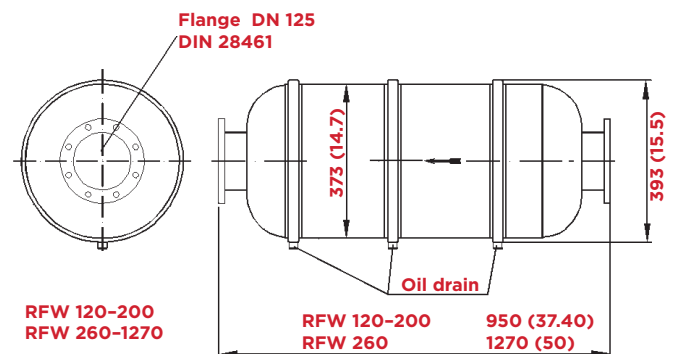
Vacuum Relief Valve

Weight 6.2 kg (13.7 lb)



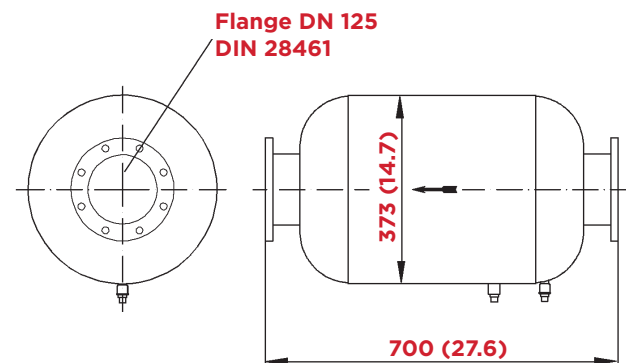
Discharge Silencer/Oil Separator

Weight 50 kg (110.25 lb)



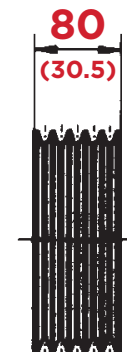
Discharge Silencer

Weight 27 kg (59.5 lb)



V-Belt Pulley

Weight 12 kg (26.5 lb)



All dimensions shown in mm (inches)

The leader in every market we serve
by continuously improving all business processes
with a focus on innovation and velocity

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Denver®**

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NATIONAL TANK TRUCK CARRIERS

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GDT-W-RFW 2nd Ed. 2/16



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