



Data Sheet

Orbital Motor VMR



Introduction

By introducing the VMR, Danfoss is introducing the second Orbital Motor of a new Series. In order to meet the demands for motors that have the right duty cycle and efficiency capabilities for a given function, Danfoss now has 3 Orbital Motor Series:

- T-Series: The Highest Torque
- O-Series: The Flexible Choice
- V-Series: The Core Solution

The V-Series is your quality benchmark in the medium duty market. Based on proven technology, these reliable motors will reduce your overall system costs while adding value to your machine. Perfect for many tasks.

The VMR Motor is designed by Danfoss Power Solutions in Denmark, who for more than 50 years has been developing state-of-the-art orbital motors. It is based upon the same design principles as the well-proven Danfoss OMR Motor.

Features and benefits

Features

- High pressure shaft seal
- All motors with drain connections
- All motors with check valves
- Proven orbital motor design
- 3-chamber motor design
- Suitable for medium and low duty

Key data

- Displacement range 80 to 315 cc
- Pressure drop up to 65 bar [2395 psi]
- Flow up to 75 l/min [19.8 US gal/min]
- Port connection G 1/2, [7/8-14 UNF]
- Output shaft ø 25 mm cylindrical shaft [1 inch cylindrical shaft]
- Mounting flange A2
- Pilot diameter ø 82.5 [3.25 in]

Benefits

- High power density
- High efficiency
- High constant quality
- Reliable

Applications

- Sweeper
- Winch
- Conveyor
- Crane
- Aerial lift
- Combine Harvester
- Seeder
- Spreader
- Auger
- Machine tool
- And more

Code numbers for VMP

G1/2 side-port version with A2 mounting flange, ø25 mm cyl. Shaft, drain connection and check-valves

With black paint	VMR 80	VMR 100	VMR 125	VMR 160	VMR 200	VMR 250	VMR 315
NO	11136673	11136674	11136675	11136676	11136677	11136678	11136679
YES	11125716	11125719	11125720	11125721	11125722	11125723	11125724

7/8-14 UNF side-port version with A2 mounting flange, ø1 inch cyl. Shaft, drain connection and check-valves

With black paint	VMR 80	VMR 100	VMR 125	VMR 160	VMR 200	VMR 250	VMR 315
NO	11141128	11141129	11141130	11141131	11141132	11141133	11141134
YES	11141135	11141136	11141137	11141138	11141139	11141140	11141141

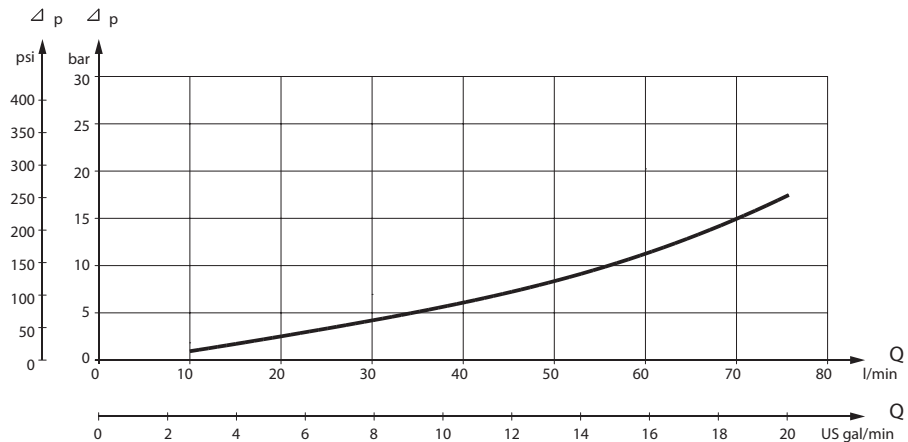
Technical data for VMR

Type	Motorsize		VMR 80	VMR 100	VMR 125	VMR 160	VMR 200	VMR 250	VMR 315
Geometric displacement	cm ³ [inch ³]		80.3 [4.9]	99.8 [6.1]	124.1 [7.6]	155.4 [9.5]	198.2 [12.1]	248.1 [15.1]	310.1 [18.9]
Max. pressure drop	bar [psi]	cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	110 [1595]	80 [1160]	70 [1015]
		int. ¹⁾	165 [2395]	165 [2395]	165 [2395]	165 [2395]	140 [2195]	110 [1595]	100 [1450]
Max. oil flow	l/min [US gal/min]	cont.	40 [10.6]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int. ¹⁾	50 [13.2]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]

Type			Max inlet pressure	Max return pressure with drain line
VMR 80 - 315	bar [psi]	cont.	165 [2395]	165 [2395]
		int. ¹⁾	185 [2695]	185 [2695]

¹⁾ Intermittent operation: The permissible values may occur for max. 10% of every minute.

Pressure drop in motor

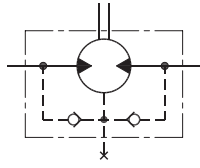


151-1566.10

The curve applies to an unloaded motor shaft and an oil viscosity of 35 mm²/s

VMR with high pressure shaft seal (HPS)

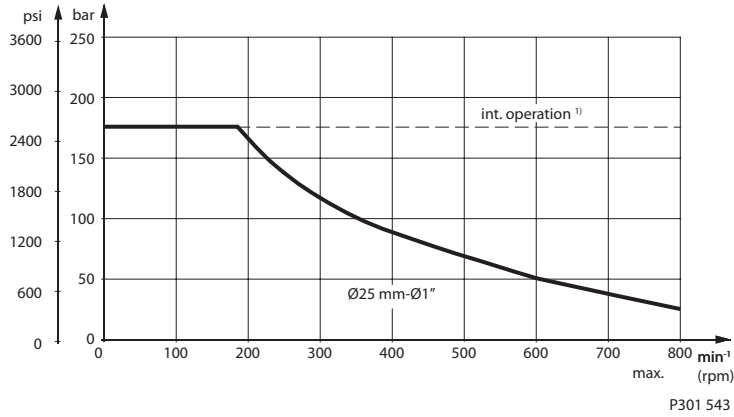
VMR with HPS, check valves and drain connection:
The shaft seal pressure equals the pressure in the drain line.



151-320.10

VMR with HPS, check valves and without drain connection:
The shaft seal pressure equals the pressure in the return line.

Max. permissible shaft seal pressure



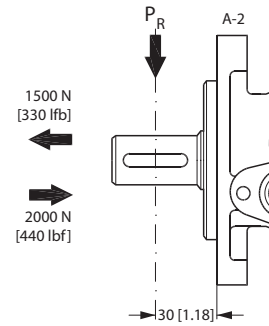
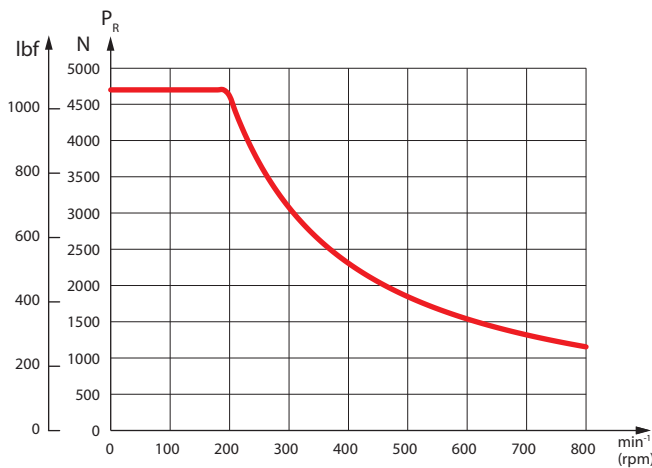
P301 543

Permissible shaft load

The permissible shaft load (P_R) depends on:

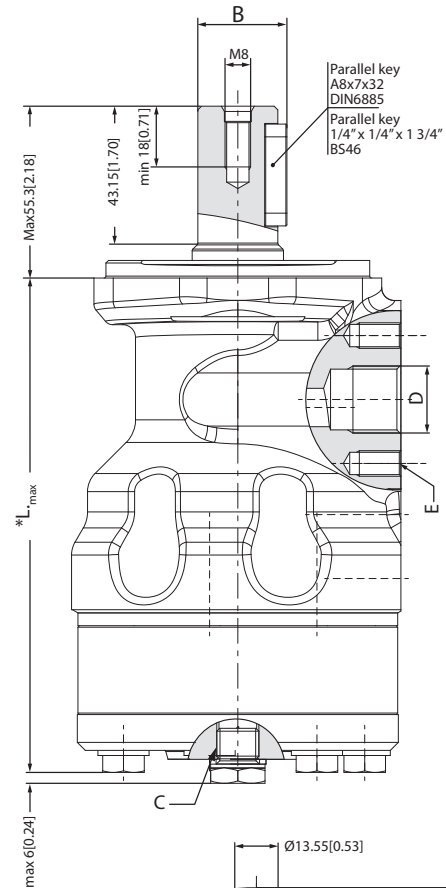
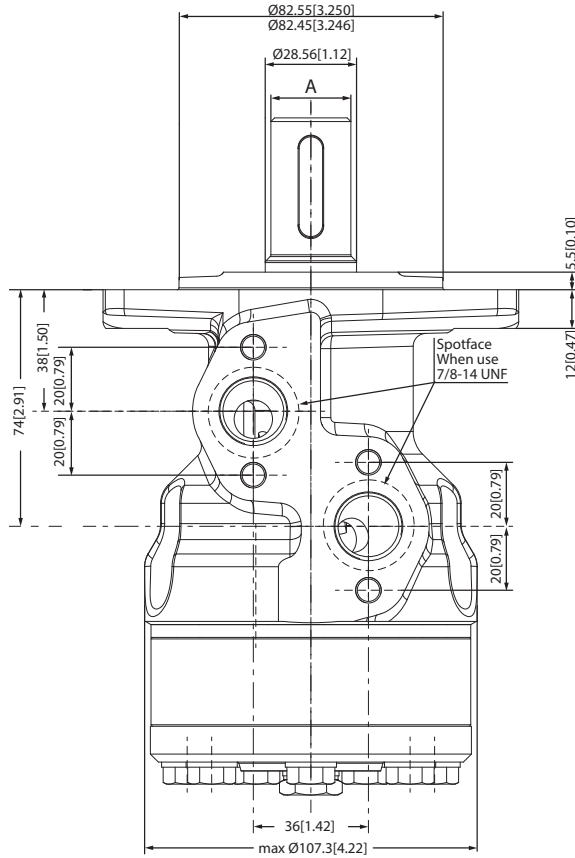
- n = Speed (min^{-1})
- L = Distance from the point of load to the mounting flange mm, [in]

Permissible shaft load (P_R) - l in mm	$\frac{800}{n} \cdot \frac{150000 \text{ N}^*}{100 + L}$
Permissible shaft load (P_R) - l in inch	$\frac{800}{n} \cdot \frac{1330 \text{ lbf}^*}{3.94 + L}$

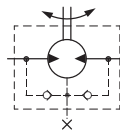


P301 544

Dimension

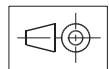
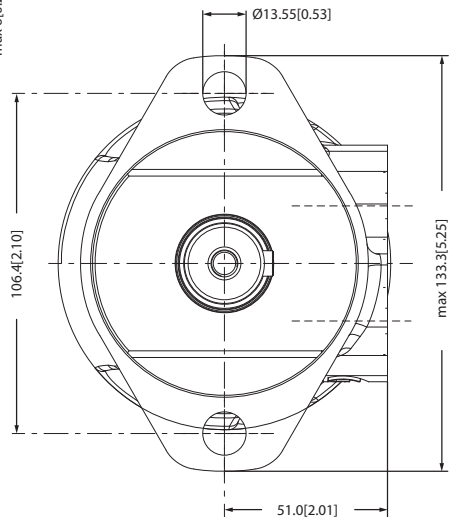


- A: Shaft Ø 25 (25.02-25.00)
Shaft Ø1" (1.000-0.999)
- B: Shaft Ø 25 (28.00-27.71)
Shaft Ø1" (1.11-1.10)
- C: Drain connection,
G1/4 min. 12 [0.472] deep
7/16-20 UNF min. 12 [0.472] deep
- D: Port connection,
G1/2 min 15 [0.591] deep
7/8-14 UNF min. 16.7 [0.657] deep
- E: M8, 13 [0.512] deep (4 pcs)



Tolerance for basic dimensions = ±1 [0.039]

Type	L _{MAX} mm [in]	Weight kg [lb]
VMR 80	143.1 [5.63]	6.3 [13.9]
VMR 100	143.1 [5.63]	6.3 [13.9]
VMR 125	146.7 [5.78]	6.4 [14.1]
VMR 160	150.9 [5.94]	6.7 [14.8]
VMR 200	156.9 [6.18]	6.9 [15.2]
VMR 250	163.9 [6.45]	7.3 [16.1]
VMR 315	172.6 [6.80]	7.7 [17.0]



P301 545

Danfoss Power Solutions US Company
2800 East 13th Street
Ames, IA 50010, USA
Phone: +1 515 239 6000

Danfoss Power Solutions GmbH & Co. OHG
Krokamp 35
D-24539 Neumünster, Germany
Phone: +49 4321 871 0

Danfoss Power Solutions ApS
Nordborgvej 81
DK-6430 Nordborg, Denmark
Phone: +45 7488 2222

Danfoss Power Solutions
22F, Block C, Yishan Rd
Shanghai 200233, China
Phone: +86 21 3418 5200

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.