

VERSIONS

Mounting	Shaft	Port size	European version	US version	Side port version	End port version	Flange port version	Standard shaft seal	High pressure shaft seal	Drain connection	Check valve	Specials	Main type designation
Front; 3 × M6	Cyl. 16 mm	G 3/8	X			X		X		Yes	Yes		OMM
		G 3/8	X		X			X		Yes	Yes		OMM
Front; 3 × 1/4 - 28 UNF	Cyl. 5/8 in	9/16-18 UNF		X		X		X		Yes	Yes		OMM
		9/16-18 UNF		X	X			X		Yes	Yes		OMM
Front; 3 × M6	Splined B17×14	G 3/8	X			X		X		Yes	Yes		OMM
		G 3/8	X		X			X		Yes	Yes		OMM

Function diagram - see page : →

Features available (options) :

Speed sensor
Reverse rotation
Drain
Corrosion protected
Painted

CODE NUMBERS

CODE NUMBERS	DISPLACEMENT [cm ³]							Technical data – Page	Dimensions – Page
	8	12.5	20	32	40	50	Mounting flange ¹⁾		
151G	0040	0001	0002	0003	0277	0037	0211	20	28 (29) ²⁾
151G	0041	0004	0005	0006	0279	0013	0211	20	31 (32) ²⁾
151G	0048	0031	0032	0033	-	-	-	20	30
151G	0049	0034	0035	0036	-	0094	-	20	33
151G	0046	0024	0025	0026	-	-	0211	20	28 (29) ²⁾
151G	0047	0027	0028	0029	-	-	0211	20	31 (32) ²⁾
→	23	23	24	24	25	25			

1) To be ordered separately. Mounting screws included.

2) Dimension with extra mounting flange.

Ordering

Add the four digit prefix “151G” to the four digit numbers from the chart for complete code number.

Example:

151G0035 for an OMM 20 with front mounting ($3 \times \frac{1}{4}$ - 28 UNF), cyl. $\frac{5}{8}$ in shaft and port size $\frac{9}{16}$ - 18 UNF.

Note: Orders will not be accepted without the four digit prefix.

TECHNICAL DATA FOR OMM WITH 16 MM AND 5/8 IN CYLINDRICAL SHAFT

Type			OMM	OMM	OMM	OMM	OMM	OMM
Motor size			8	12.5	20	32	40	50
Geometric displacement	cm ³ [in ³]		8.2 [0.50]	12.9 [0.79]	19.9 [1.22]	31.6 [1.93]	39.8 [2.43]	50.3 [3.08]
Max. speed	min ⁻¹ [rpm]	cont.	1950	1550	1000	630	500	400
		int. ¹⁾	2450	1940	1250	800	630	500
Max. torque	Nm [lbf-in]	cont.	11 [95]	16 [140]	25 [220]	40 [350]	45 [400]	46 [410]
		int. ¹⁾	15 [135]	23 [200]	35 [310]	57 [500]	70 [620]	88 [780]
		peak ²⁾	21 [185]	33 [290]	51 [450]	64 [570]	82 [725]	100 [890]
Max. output	kW [hp]	cont.	1.8 [2.4]	2.4 [3.2]	2.4 [3.2]	2.4 [3.2]	2.2 [3.0]	1.8 [2.4]
		int. ¹⁾	2.6 [3.5]	3.2 [4.3]	3.2 [4.3]	3.2 [4.3]	3.2 [4.3]	3.2 [4.3]
Max. pressure drop	bar [psi]	cont.	100 [1450]	100 [1450]	100 [1450]	100 [1450]	90 [1310]	70 [1020]
		int. ¹⁾	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]
		peak ²⁾	200 [2900]	200 [2900]	200 [2900]	160 [2320]	160 [2320]	160 [2320]
Max. oil flow	l/min [gpm]	cont.	16 [4.2]	20 [5.3]	20 [5.3]	20 [5.3]	20 [5.3]	20 [5.3]
		int. ¹⁾	20 [5.3]	25 [6.6]	25 [6.6]	25 [6.6]	25 [6.6]	25 [6.6]
Max. starting pressure with unloaded shaft	bar [psi]		4 [60]	4 [60]	4 [60]	4 [60]	4 [60]	4 [60]
Min. starting torque	at max. press. drop Nm [lbf-in]	cont.	7 [60]	12 [105]	21 [185]	34 [300]	38 [335]	41 [365]
		at max. press. drop int. ¹⁾	10 [90]	17 [150]	29 [255]	48 [425]	62 [550]	79 [700]
Min. speed ³⁾	min ⁻¹ [rpm]		50	40	30	30	30	30

Type		Max. inlet pressure
OMM 8 - 50	bar [psi] cont.	140 [20309]
	bar [psi] int. ¹⁾	175 [25409]
	bar [psi] peak ²⁾	225 [3260]

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

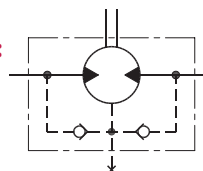
²⁾ Peak load: the permissible values may occur for max. 1% of every minute.

³⁾ Operation by lower speeds may be slightly less smooth.

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

OMM with check valves and without use of drain connection:

The pressure on the shaft seal
never exceeds the pressure in
the return line.

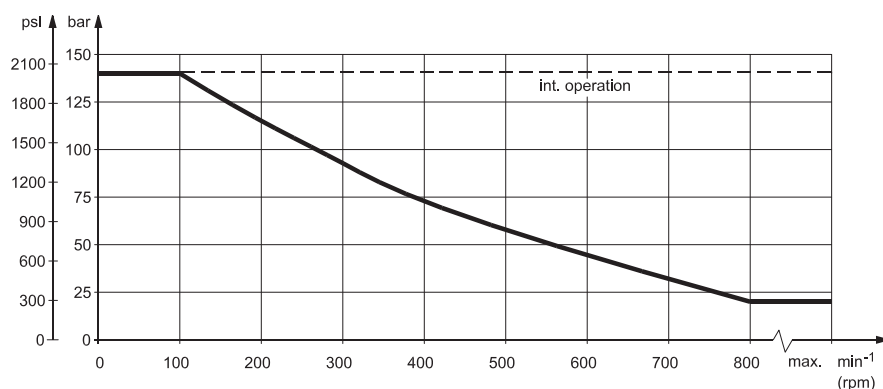


151-320.10

OMM with check valves and drain connection:

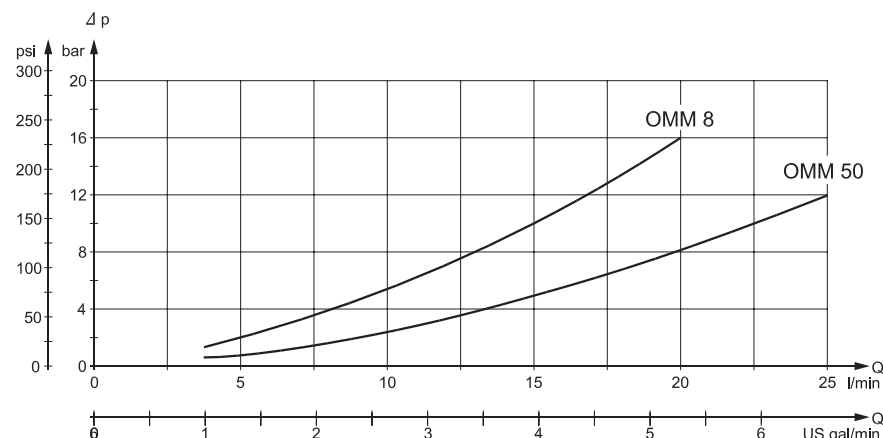
The shaft seal pressure equals
the pressure on the drain line.

Max. return pressure without drain line or max. pressure in drain line



151-1671.10

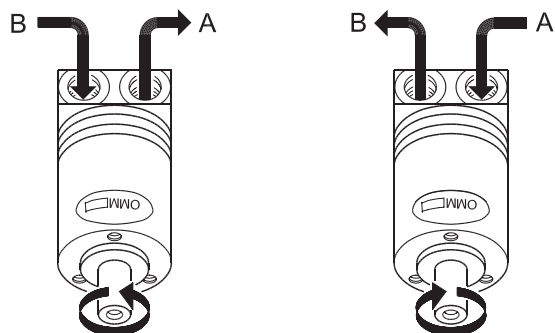
PRESSURE DROP IN MOTOR



151-1367.10

The curve applies to an unloaded motor shaft and an oil viscosity of 35 mm²/s [165 SUS]

DIRECTION OF SHAFT ROTATION



151-1051.10

PERMISSIBLE SHAFT LOADS FOR OMM

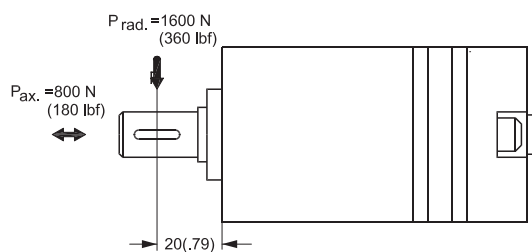
The permissible radial shaft load ($P_{rad.}$) is calculated from the distance (l) between the point of load and the mounting surface:

$$P_{rad.} = \frac{130400}{61.5 + l} \text{ N (l in mm; } l \leq 80 \text{ mm)}$$

$$P_{rad.} = \frac{748}{2.54 + l} \text{ lbf (l in inch; } l \leq 3.15 \text{ in)}$$

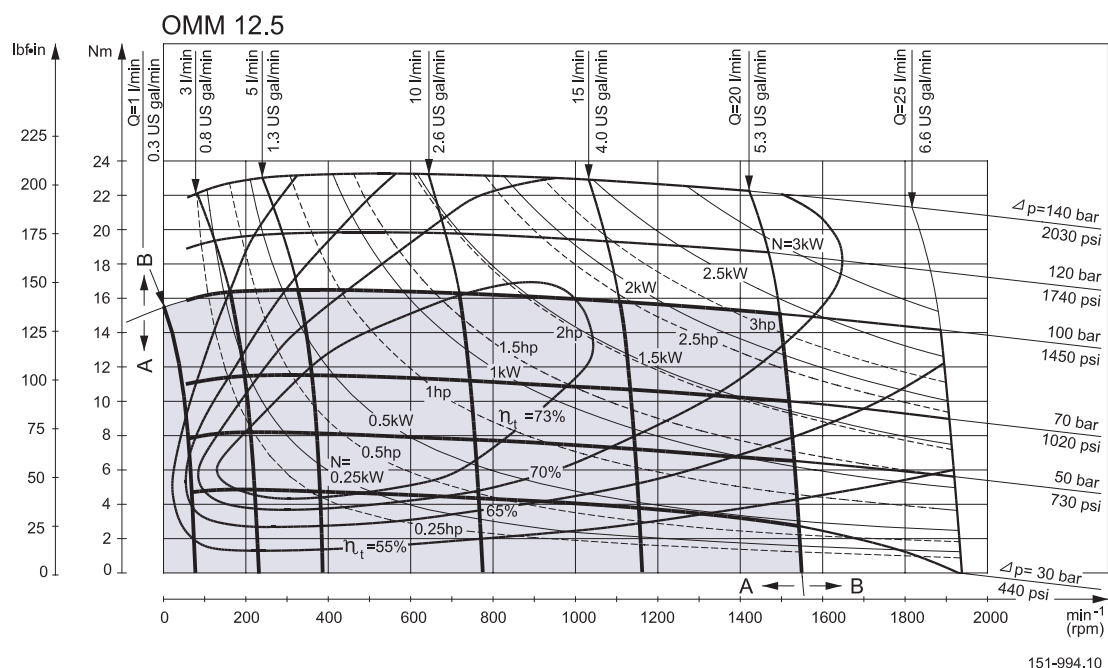
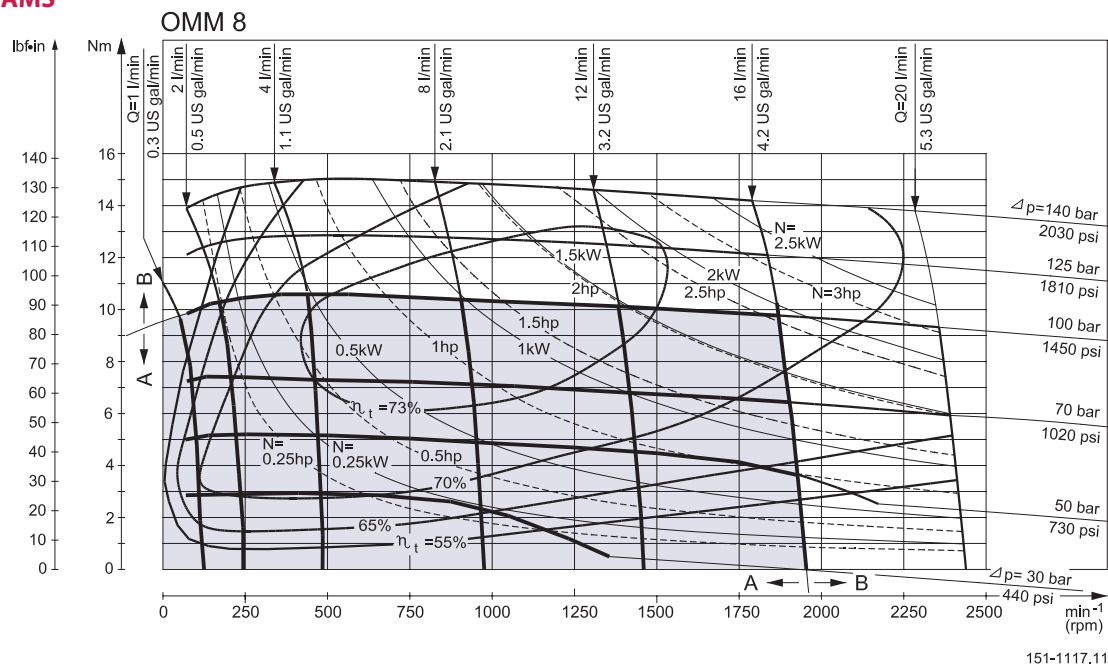
The drawing shows the permissible radial load when $l = 15 \text{ mm [0.59 in]}$.

The calculated shaft load should never exceed the permissible value.



151-980.11

FUNCTION DIAGRAMS



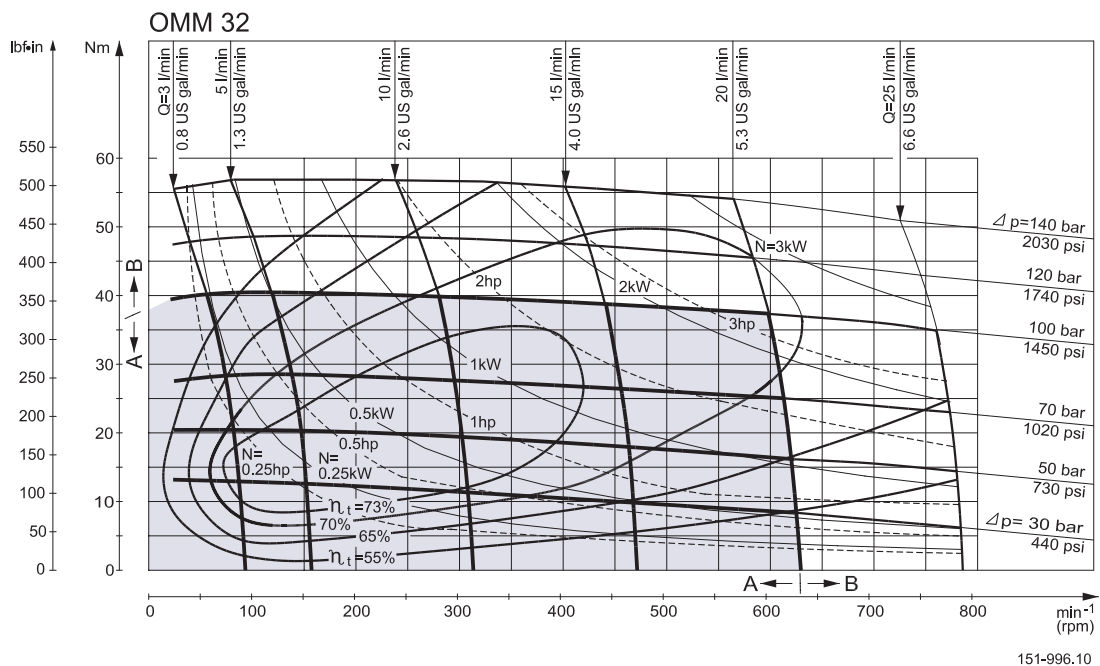
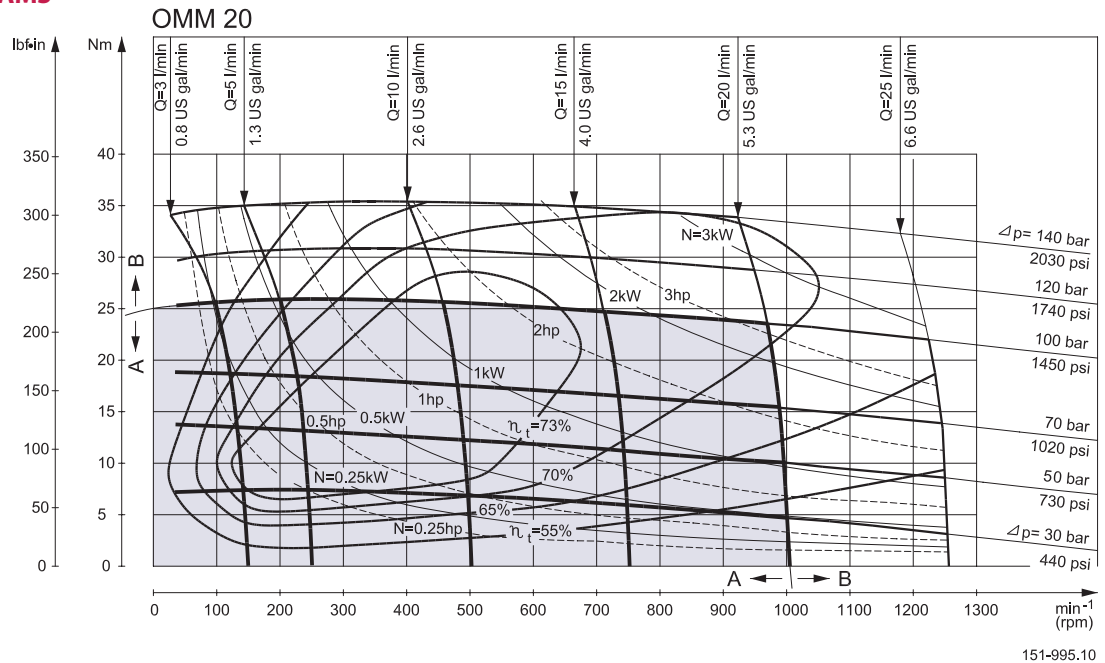
Explanation of function diagram use, basis and conditions can be found on page 4.

- A: Continuous range
- B: Intermittent range (max. 10% operation every minute)

Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found on page 20.

Note: Intermittent pressure drop and oil flow must not occur simultaneously.

FUNCTION DIAGRAMS



Explanation of function diagram use, basis and conditions can be found on page 4.

- A: Continuous range
- B: Intermittent range (max. 10% operation every minute)

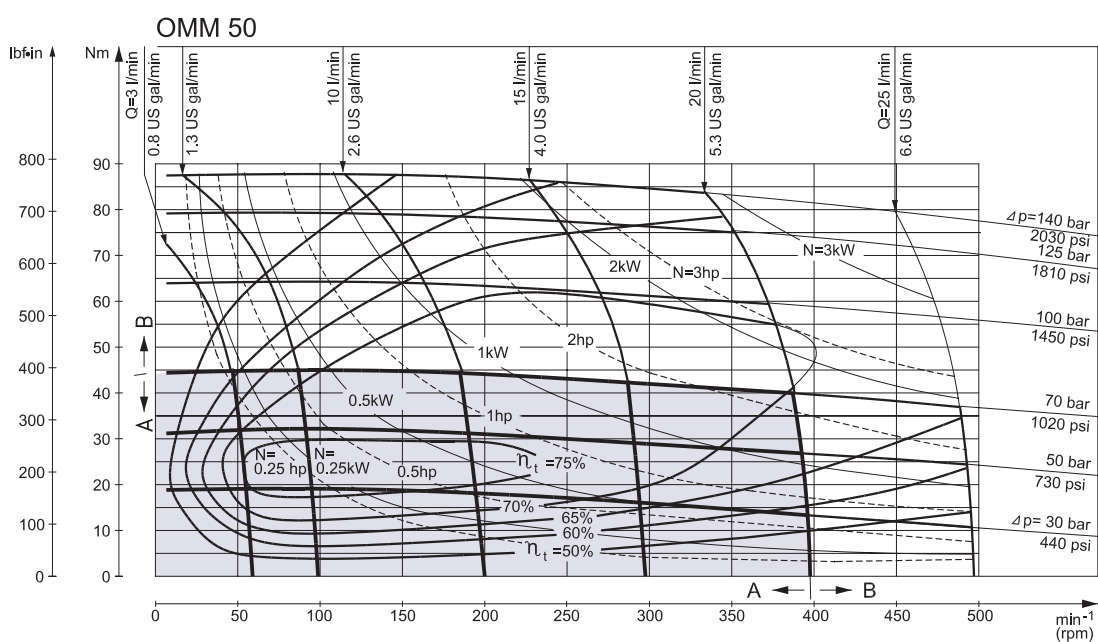
Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found on page 20.

Note: Intermittent pressure drop and oil flow must not occur simultaneously.

FUNCTION DIAGRAMS

OMM 40

No function diagram available for OMM 40.



151-1660.10

Explanation of function diagram use, basis and conditions can be found on page 4.

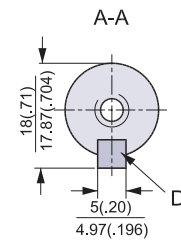
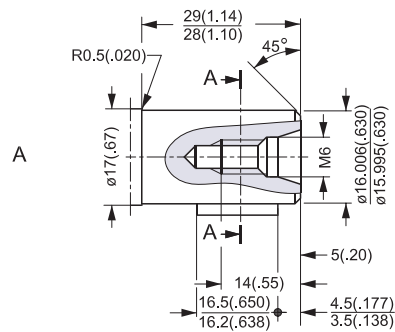
- A: Continuous range
- B: Intermittent range (max. 10% operation every minute)

Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found on page 20.

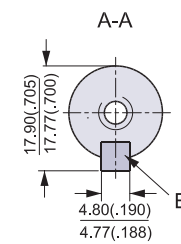
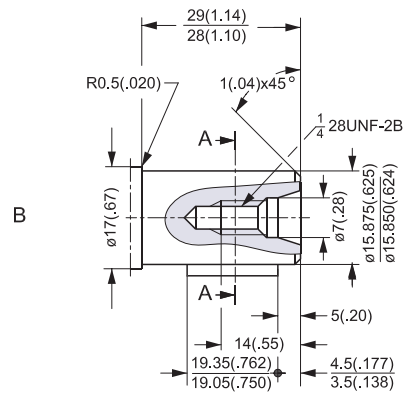
Note: Intermittent pressure drop and oil flow must not occur simultaneously.

SHAFT VERSION

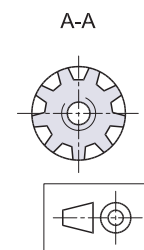
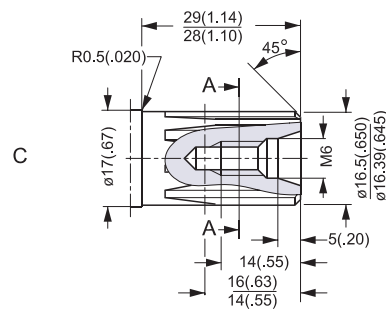
A: Cylindrical shaft
16 mm (xx in)
D: Parallel key
A5 × 5 × 16
DIN 6885



US version
B: Cylindrical shaft
 $\frac{5}{8}$ in
E: Parallel key
 $\frac{3}{16} \times \frac{3}{16} \times \frac{3}{4}$ in
B.S. 46

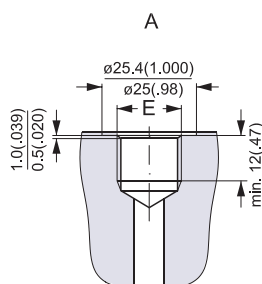


C: Involute splined shaft
B17 × 14, DIN 5482

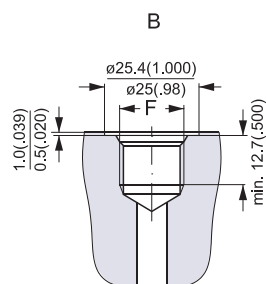


151-1866.10

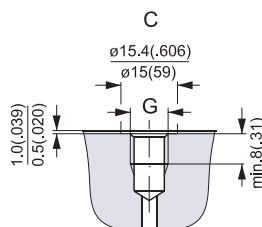
PORT THREAD VERSIONS



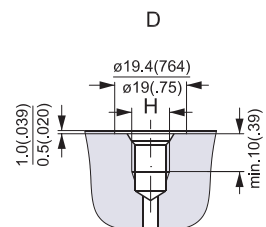
A: G main ports
E: ISO 228/1 - G³/₈



B: UNF main ports
F: ⁹/₁₆ - 18 UNF
O-ring boss port



C: G drain ports
G: ISO 228/1 - G¹/₈



D: UNF drain ports
H: ³/₈ - 24 UNF
O-ring port

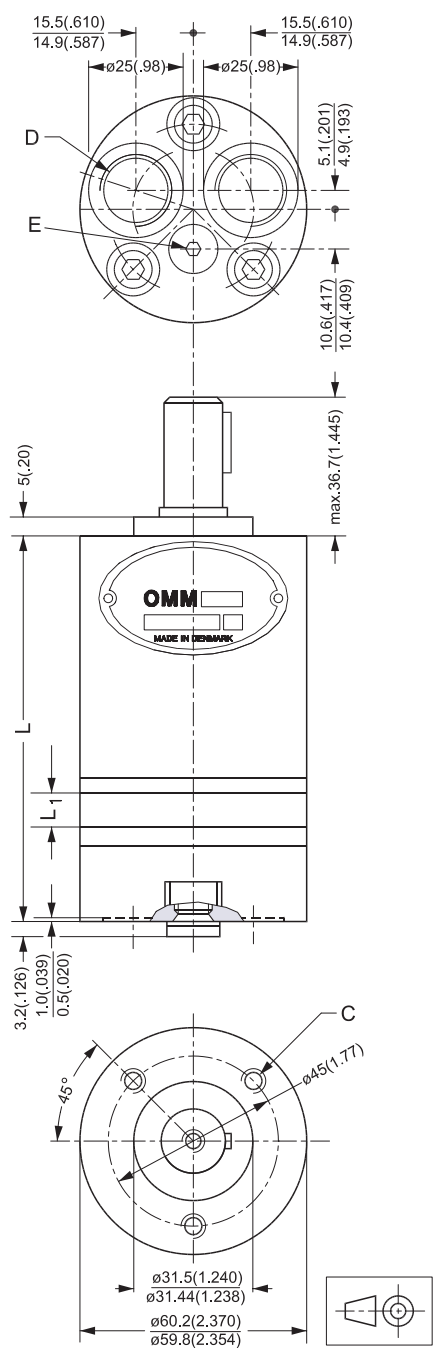
151-1869.10

DIMENSIONS

OMM.
End port version.

Type	L _{max.}	L ₁ mm [in]
OMM 8	104.0 [4.09]	3.5 [0.14]
OMM 12.5	106.0 [4.17]	5.5 [0.22]
OMM 20	109.0 [4.29]	8.5 [0.33]
OMM 32	114.0 [4.49]	13.5 [0.53]
OMM 40	118.0 [4.65]	17.0 [0.67]
OMM 50	122.0 [4.80]	21.5 [0.85]

C: M6; 10 mm [0.39 in] deep
D: G 3/8; 12 mm [0.47 in] deep
E: Drain connection G 1/8;
8 mm [0.39 in] deep



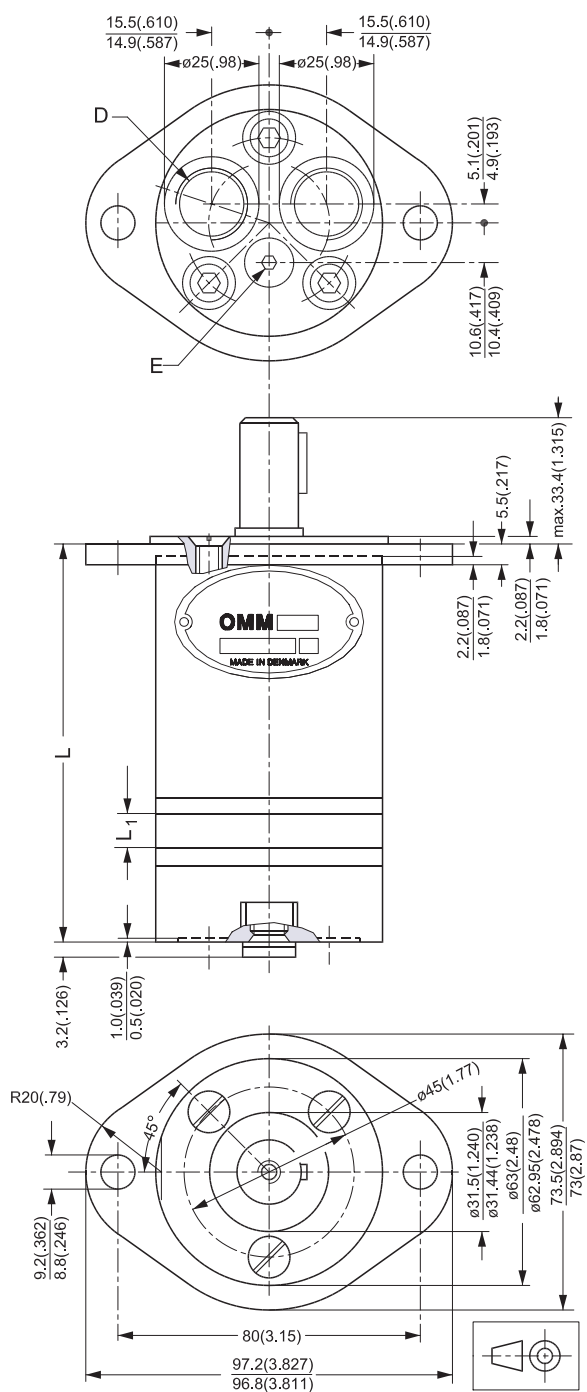
151-1149.10

DIMENSIONS

OMM.
End port version with extra mounting flange.

Type	L _{max.}	mm L ₁ [in]
OMM 8	107.5 [4.23]	3.5 [0.14]
OMM 12.5	109.5 [4.31]	5.5 [0.22]
OMM 20	112.5 [4.43]	8.5 [0.33]
OMM 32	117.5 [4.63]	13.5 [0.53]
OMM 40	118.0 [4.65]	17.0 [0.67]
OMM 50	125.5 [4.94]	21.5 [0.85]

D: G $\frac{3}{8}$; 12 mm [0.47 in] deep
E: Drain connection G $\frac{1}{8}$;
8 mm [0.39 in] deep



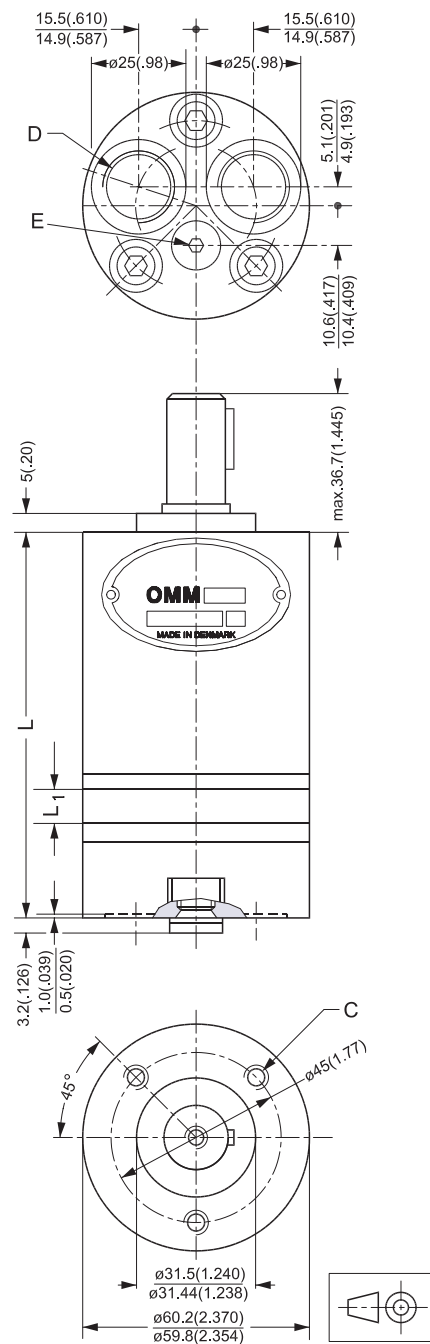
151-1148.10

DIMENSIONS

OMM.
End port version.

Type	L _{max.}	L ₁ mm [in]
OMM 8	104.0 [4.09]	3.5 [0.14]
OMM 12.5	106.0 [4.17]	5.5 [0.22]
OMM 20	109.0 [4.29]	8.5 [0.33]
OMM 32	114.0 [4.49]	13.5 [0.53]
OMM 50	122.0 [4.80]	21.5 [0.85]

C: 1/4 - 28 UNF - 2B;
min. 10 mm [0.39 in] deep
D: 9/16 - 18 UNF;
12 mm [0.47 in] deep
O-ring boss port
E: 3/8 - 24 UNF;
8 mm [0.39 in] deep
O-ring port



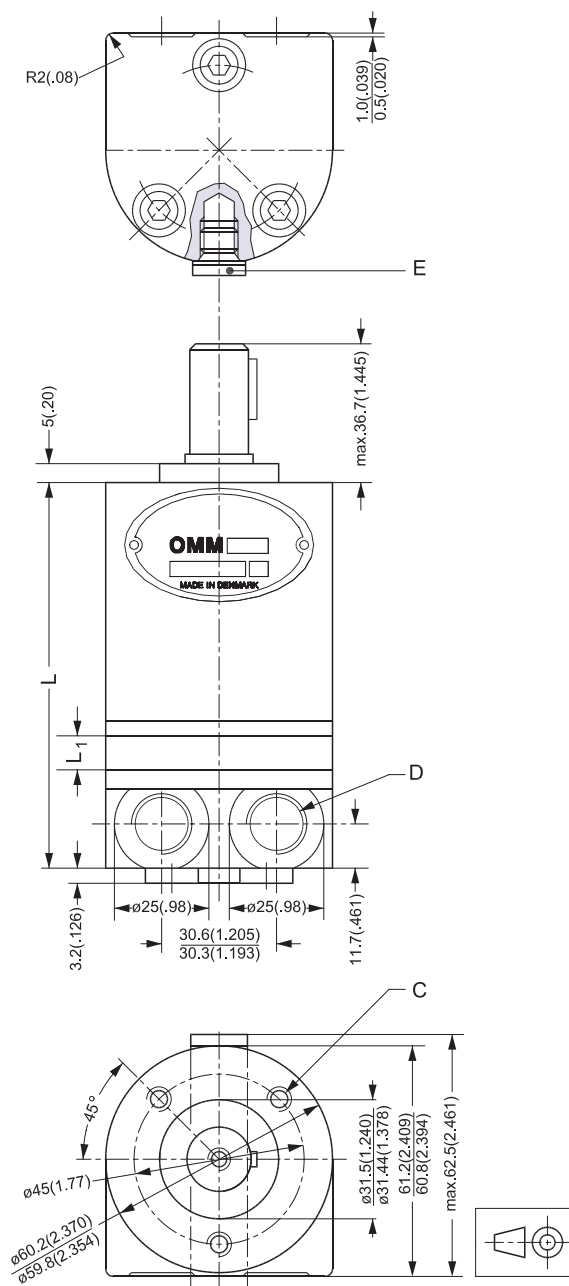
151-1149.10

DIMENSIONS

OMM.
Side port version.

Type	L _{max.}	mm L ₁ [in]
OMM 8	105.8 [4.17]	3.5 [0.14]
OMM 12.5	107.8 [4.24]	5.5 [0.22]
OMM 20	110.8 [4.36]	8.5 [0.33]
OMM 32	115.8 [4.56]	13.5 [0.53]
OMM 40	118.0 [4.65]	17.0 [0.67]
OMM 50	123.8 [4.87]	21.5 [0.85]

C: M6; 10 mm [0.39 in] deep
D: G 3/8; 12 mm [0.47 in] deep
E: Drain connection G 1/8;
8 mm [0.39 in] deep



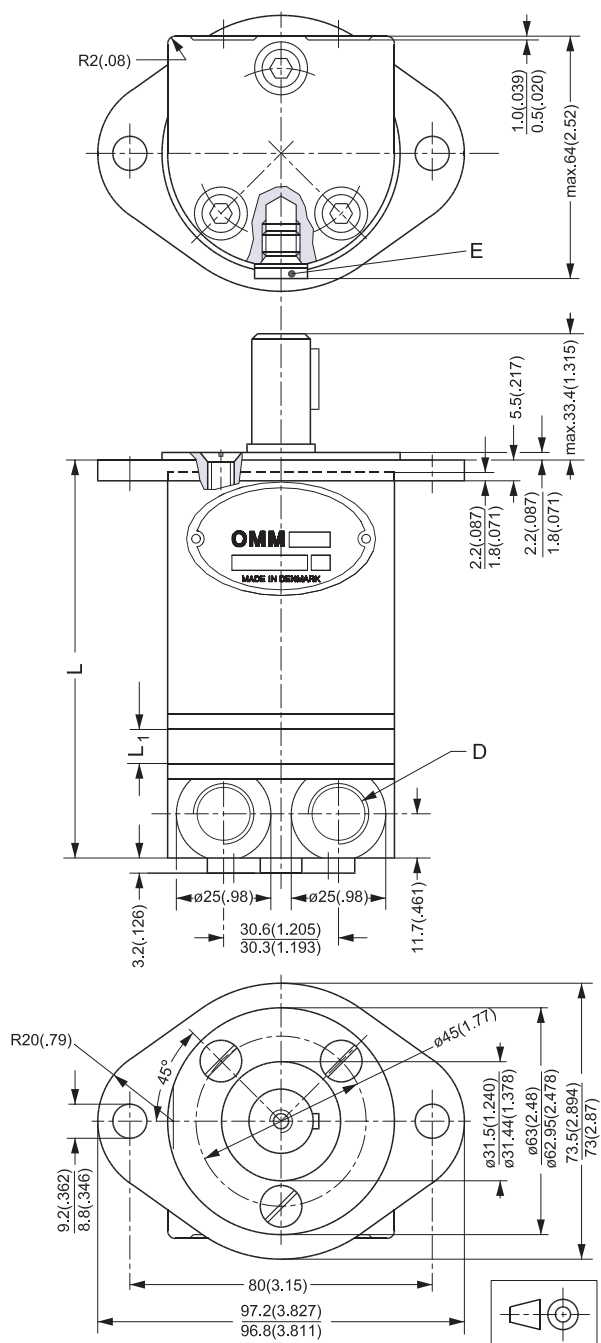
151-1146.10

DIMENSIONS

OMM.
Side port version with extra mounting flange.

Type	L _{max}	L ₁ ^{mm} [in]
OMM 8	109.3 [4.30]	3.5 [0.14]
OMM 12.5	111.3 [4.38]	5.5 [0.22]
OMM 20	114.3 [4.50]	8.5 [0.33]
OMM 32	119.3 [4.70]	13.5 [0.53]
OMM 40	118.0 [4.65]	17.0 [0.67]
OMM 50	127.3 [5.01]	21.5 [0.85]

D: G ³/₈; 12 mm [0.47 in] deep
E: Drain connection G ¹/₈;
8 mm [0.39 in] deep



151-1147.10

DIMENSIONS

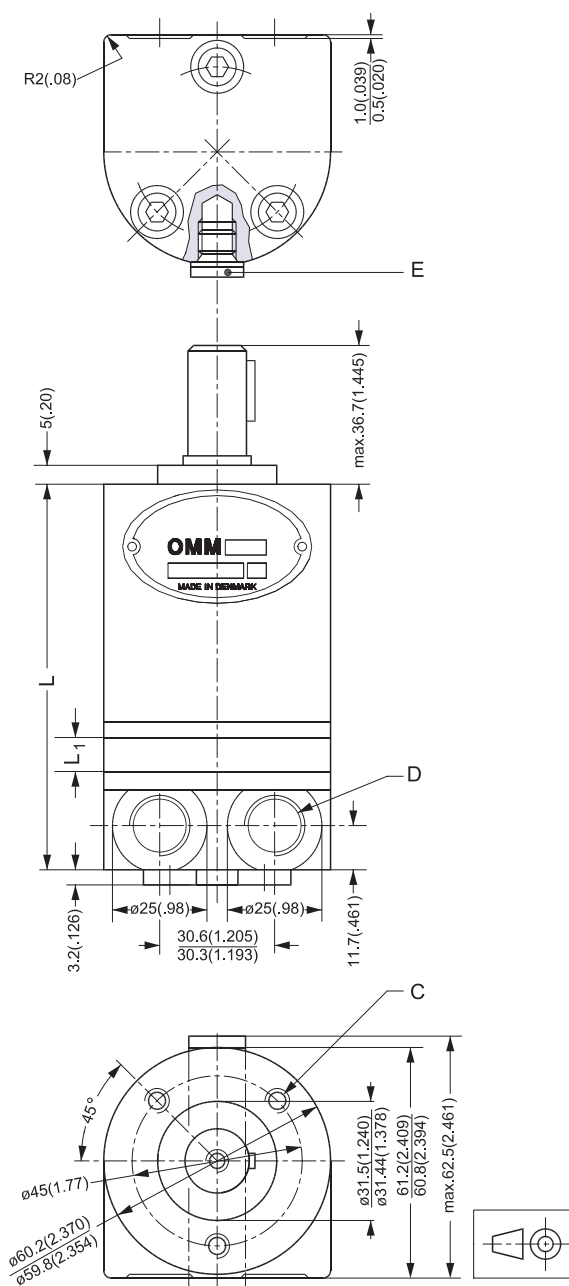
OMM.
Side port version.

Type	L _{max.}	mm L ₁ [in]
OMM 8	105.8 [4.17]	3.5 [0.14]
OMM 12.5	107.8 [4.24]	5.5 [0.22]
OMM 20	110.8 [4.36]	8.5 [0.33]
OMM 32	115.8 [4.56]	13.5 [0.53]
OMM 50	121.8 [4.80]	21.5 [0.85]

C: 1/4 - 28 UNF - 2B;
min. 10 mm [0.39 in] deep

D: 9/16 - 18 UNF;
12 mm [0.47 in] deep

E: 3/8 - 24 UNF;
8 mm [0.39 in] deep



151-1146.10

WEIGHT OF MOTORS

Code no.	Weight	
	kg	lb
151G0001	2.0	4.4
151G0002	2.1	4.6
151G0003	2.2	4.8
151G0004	2.0	4.4
151G0005	2.1	4.6
151G0006	2.2	4.8
151G0013	2.4	5.3
151G0024	2.0	4.4
151G0025	2.1	4.6
151G0026	2.2	4.8
151G0027	2.0	4.4
151G0028	2.1	4.6
151G0029	2.2	4.8

Code no.	Weight	
	kg	lb
151G0031	2.0	4.4
151G0032	2.2	4.8
151G0033	2.2	4.8
151G0034	2.0	4.4
151G0035	2.2	4.8
151G0036	2.2	4.8
151G0037	2.4	5.3
151G0040	1.9	4.2
151G0041	1.9	4.2
151G0046	1.9	4.2
151G0047	1.9	4.2
151G0048	1.9	4.2

Code no.	Weight	
	kg	lb
151G0049	1.9	4.2
151G0094	2.4	5.3
151G0277	2.3	5.1
151G0279	2.3	5.1
151G2001	1.0	2.2
151G2002	1.0	2.2
151G2003	1.1	2.4
151G2004	1.2	2.6
151G2021	1.0	2.2
151G2022	1.0	2.2
151G2023	1.1	2.4
151G2024	1.2	2.6

INSTALLATION OF THE SAUER-DANFOSS ORBITAL MOTORS

About the design

- To ensure efficient operation all hydraulic components must be installed according to their individual instructions.
- The pump line must include a manometer connection.
- To ensure designed contact and minimise the tension all mounting flanges must be flate.

Hydraulic lines must be fitted correctly to prevent air entrapment.

About the assembly

- Follow the mounting instructions printed on the inside of the cardboard box.
- To prevent contamination, do not dismantle the plastic plugs from the connection ports until the fittings are ready to be assembled.
- Check that there is full face contact between the motor mounting flange and the mating part.
- Do not force the motor into place when tightening the mounting screws.
- Avoid unsuitable sealing material on fittings such as pack twine, teflon and others. Use only bonded seals, O-rings, steel washers and the like.
- When tightening the fittings never use a torque higher than the max. tightening torque stated in the instructions.
- Make sure that the cleanliness of the oil used is better than 20/16 (ISO 4406). Always use a filter for oil refilling.

STARTING UP AND RUNNING IN THE HYDRAULIC SYSTEM

- Through a small-meshed filter fill up the tank with oil to the upper oil level mark.
- Start the drive engine, and if possible, let it work at its lowest speed. If the motor is provided with bleed screws, keep these open until the emerging oil is non-foaming.
- Check that all components are correctly connected (pump following the right direction of rotation etc.).
- In load-sensing systems, also make sure that the signal lines are bled.
- Indications of air in the hydraulic system:
 - oam in the tank
 - jerky movements of motor and cylinder
 - noise
- If so required, refill with oil.
- Connect the system to a separate tank that includes a filter (fineness max. 10 µm) with twice the capacity of the max. oil flow. Let the entire system run without load (no pressure) for about 30 minutes.
- Do not load the system until it is all bled and clean.
- Check the tightness of the system and make sure that its performance is satisfactory.
- Change the oil filter, and if so required, refill with oil.

OPERATION

- Do not expose the motor to pressures, pressure drops and speeds above the max. values stated in the catalogue.
- Filter the oil to ensure that the contamination level 20/16 (ISO 4406) or better.

MAINTENANCE

- When working with hydraulic systems, the main criteria of operating safety and endurance is careful maintenance
- Always renew and replace oil, oil filters and air filters according to the instructions given by the respective manufacturers
- Regularly check the condition of the oil
- Frequently check system tightness and oil level

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Directional spool valves
Cartridge valves
Hydraulic integrated circuits
Hydrostatic transaxles
Integrated systems
Fan drive systems
Electrohydraulic controls
Digital electronics and software
Battery powered inverter
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