

## 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<br>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 <sup>3</sup> ] |      |      |      |      |      |                               | Technical data – Page | Dimensions – Page     |
|--------------|---------------------------------|------|------|------|------|------|-------------------------------|-----------------------|-----------------------|
|              | 8                               | 12.5 | 20   | 32   | 40   | 50   | Mounting flange <sup>1)</sup> |                       |                       |
| <b>151G</b>  | 0040                            | 0001 | 0002 | 0003 | 0277 | 0037 | 0211                          | 20                    | 28 (29) <sup>2)</sup> |
| <b>151G</b>  | 0041                            | 0004 | 0005 | 0006 | 0279 | 0013 | 0211                          | 20                    | 31 (32) <sup>2)</sup> |
| <b>151G</b>  | 0048                            | 0031 | 0032 | 0033 | -    | -    | -                             | 20                    | 30                    |
| <b>151G</b>  | 0049                            | 0034 | 0035 | 0036 | -    | 0094 | -                             | 20                    | 33                    |
| <b>151G</b>  | 0046                            | 0024 | 0025 | 0026 | -    | -    | 0211                          | 20                    | 28 (29) <sup>2)</sup> |
| <b>151G</b>  | 0047                            | 0027 | 0028 | 0029 | -    | -    | 0211                          | 20                    | 31 (32) <sup>2)</sup> |
| →            | 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.

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

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

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

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

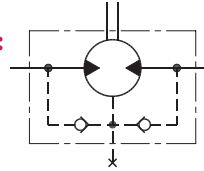
<sup>2)</sup> Peak load: the permissible values may occur for max. 1% of every minute.

<sup>3)</sup> 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.

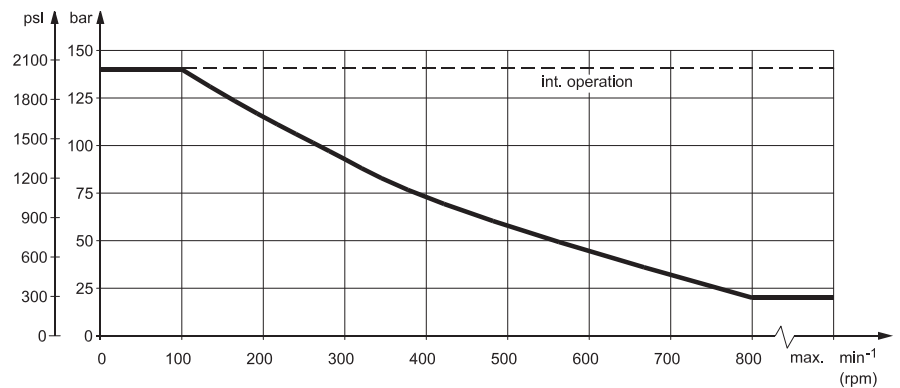


151-320.10

**OMM with check valves and  
drain connection:**

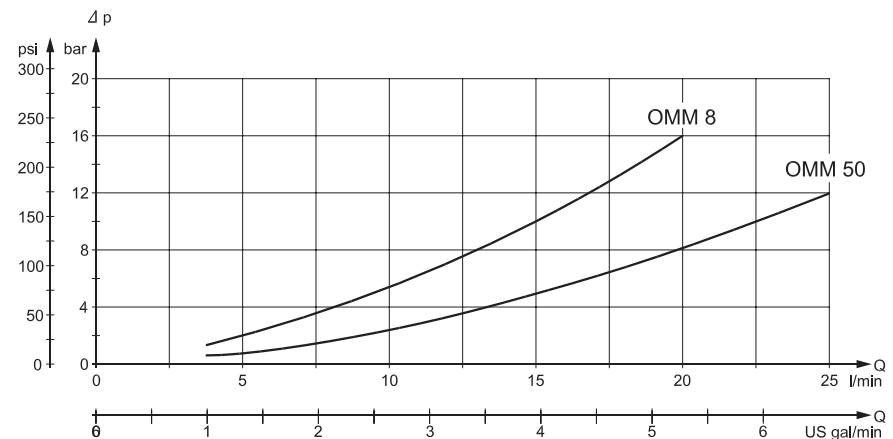
The shaft seal pressure equals the pressure on the drain line.

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



151-1671.10

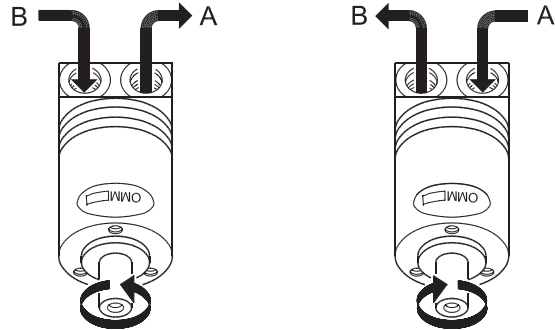
**PRESSURE DROP IN  
MOTOR**



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

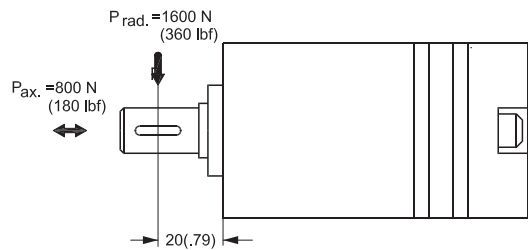
The permissible radial shaft load ( $P_{rad.}$ ) is calculated from the distance ( $l$ ) between the point of load and the mounting surface:

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

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

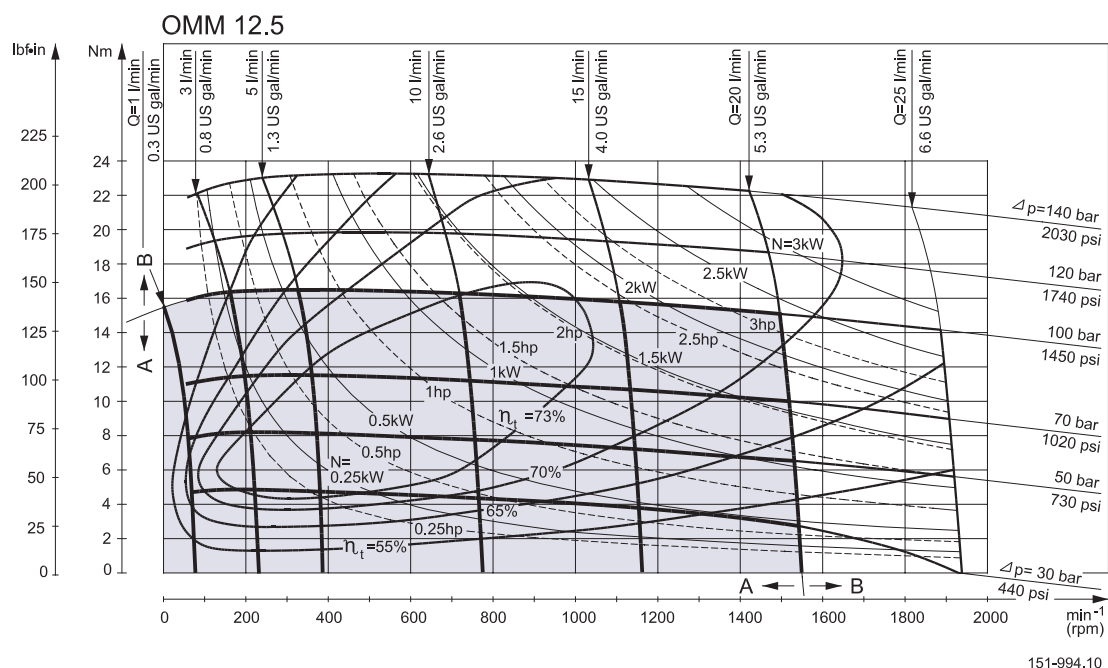
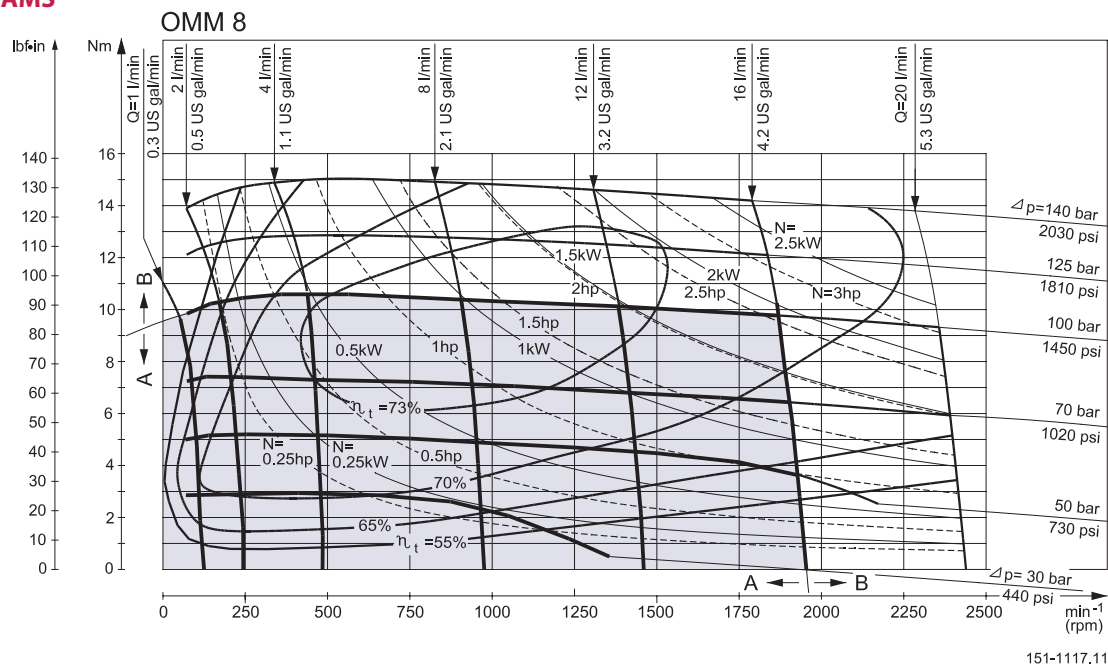
The drawing shows the permissible radial load when  $l = 15 \text{ mm [0.59 in]}$ .

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.

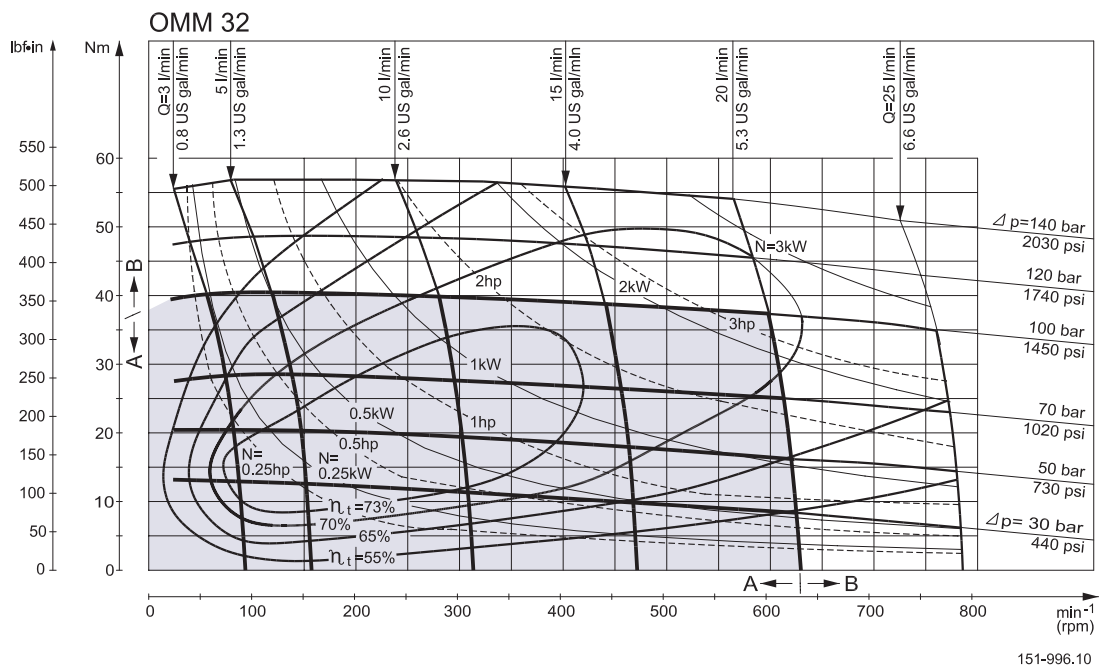
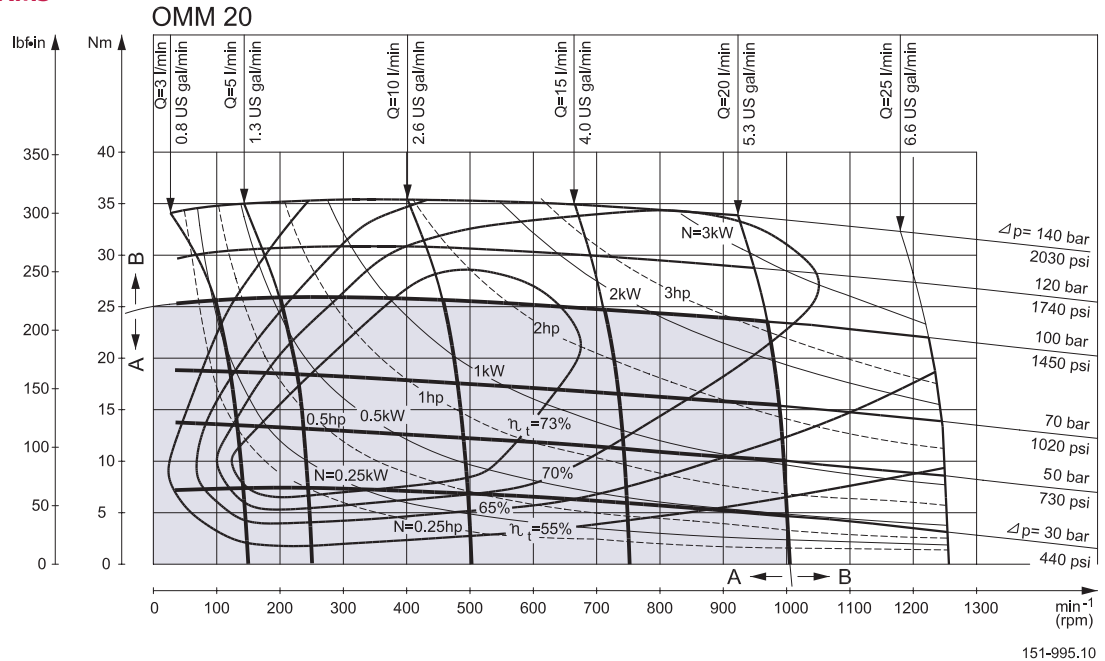
- A: Continuous range
- B: Intermittent range (max. 10% operation every minute)

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)

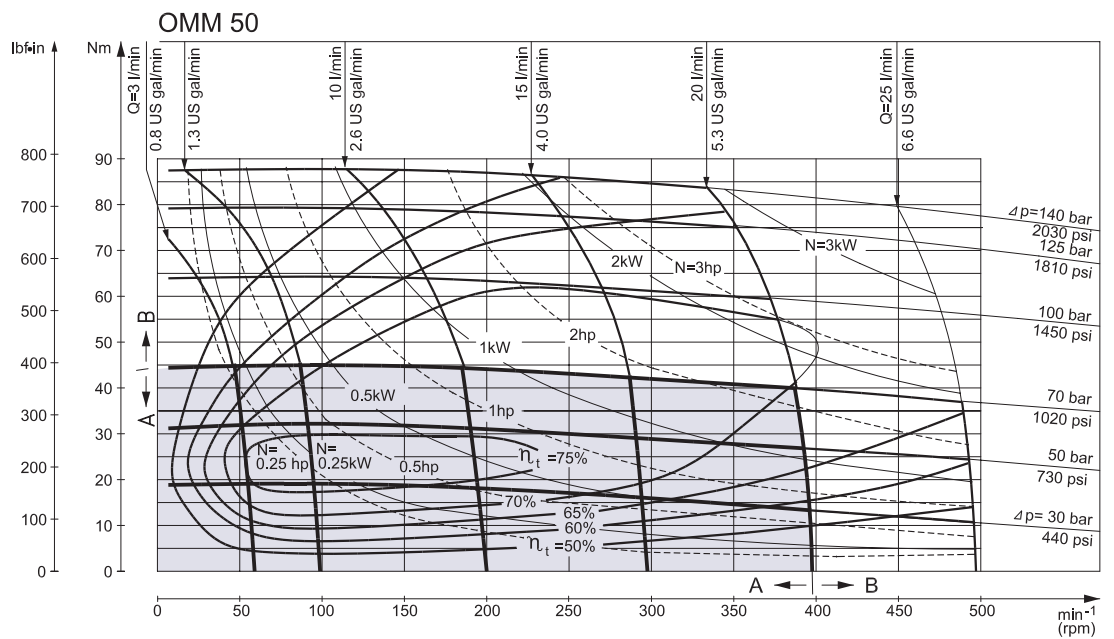
Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found on page 20.

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

## FUNCTION DIAGRAMS

### OMM 40

No function diagram available for OMM 40.



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

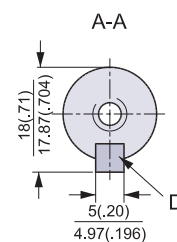
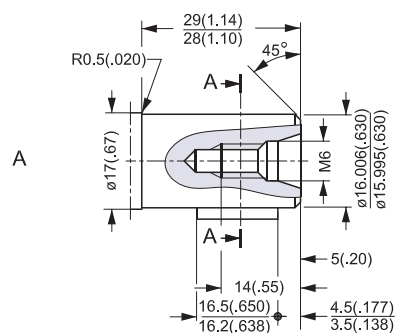
- A: Continuous range
- B: Intermittent range (max. 10% operation every minute)

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

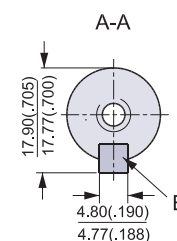
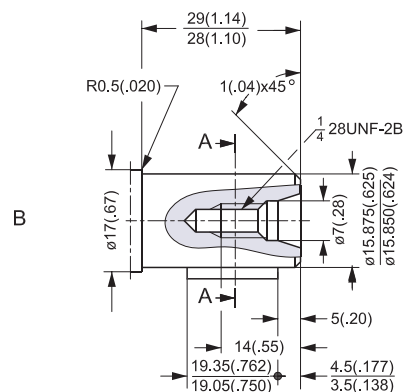
Note: Intermittent pressure drop and oil flow must not occur simultaneously.

## SHAFT VERSION

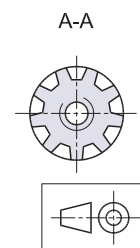
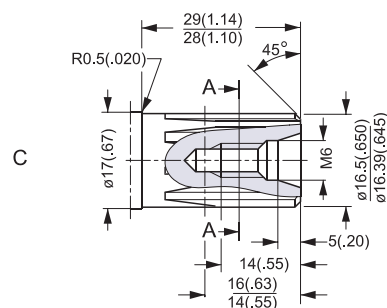
A: Cylindrical shaft  
16 mm (xx in)  
D: Parallel key  
A5 × 5 × 16  
DIN 6885



**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



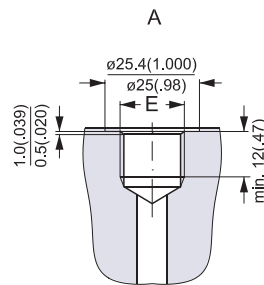
C: Involute splined shaft  
B17 × 14, DIN 5482



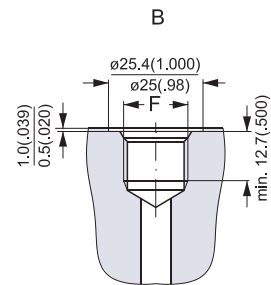
151-1866.10



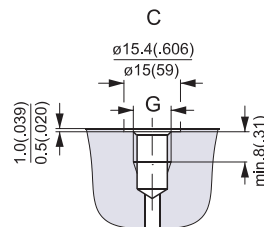
PORT THREAD VERSIONS



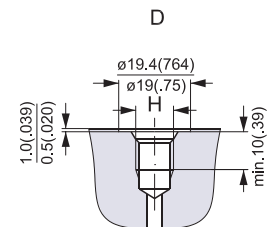
A: G main ports  
E: ISO 228/1 - G<sup>3</sup>/<sub>8</sub>



B: UNF main ports  
F: <sup>9</sup>/<sub>16</sub> - 18 UNF  
O-ring boss port



C: G drain ports  
G: ISO 228/1 - G<sup>1</sup>/<sub>8</sub>



D: UNF drain ports  
H: <sup>3</sup>/<sub>8</sub> - 24 UNF  
O-ring port

151-1869.10

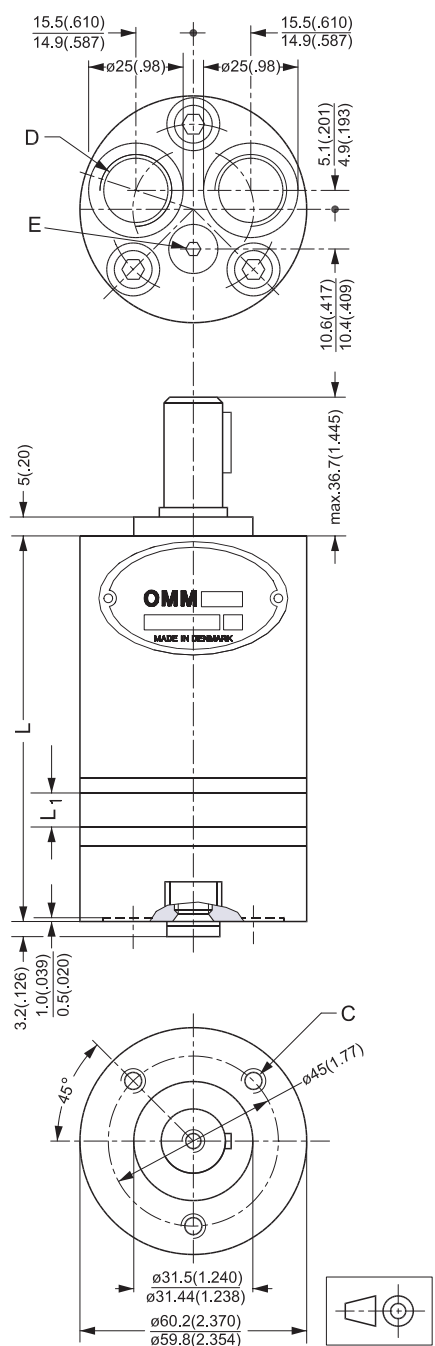
OMM  
Technical Information  
Dimensions – European version

## DIMENSIONS

OMM.  
End port version.

| Type     | L <sub>max</sub> | L <sub>1</sub> mm<br>[in] |
|----------|------------------|---------------------------|
| OMM 8    | 104.0<br>[4.09]  | 3.5<br>[0.14]             |
| OMM 12.5 | 106.0<br>[4.17]  | 5.5<br>[0.22]             |
| OMM 20   | 109.0<br>[4.29]  | 8.5<br>[0.33]             |
| OMM 32   | 114.0<br>[4.49]  | 13.5<br>[0.53]            |
| OMM 40   | 118.0<br>[4.65]  | 17.0<br>[0.67]            |
| OMM 50   | 122.0<br>[4.80]  | 21.5<br>[0.85]            |

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



151-1149.10

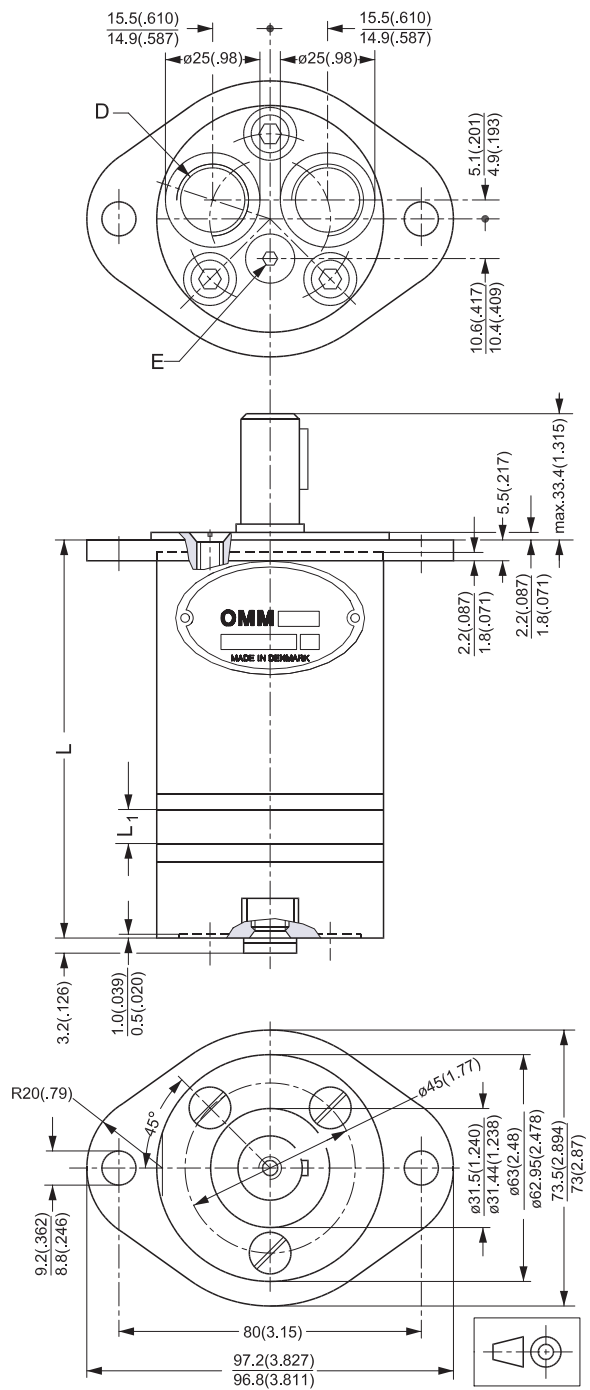
# OMM Technical Information Dimensions – European version

## DIMENSIONS

OMM.  
End port version with extra mounting flange.

| Type     | L <sub>max.</sub> | mm<br>L <sub>1</sub> [in] |
|----------|-------------------|---------------------------|
| OMM 8    | 107.5<br>[4.23]   | 3.5<br>[0.14]             |
| OMM 12.5 | 109.5<br>[4.31]   | 5.5<br>[0.22]             |
| OMM 20   | 112.5<br>[4.43]   | 8.5<br>[0.33]             |
| OMM 32   | 117.5<br>[4.63]   | 13.5<br>[0.53]            |
| OMM 40   | 118.0<br>[4.65]   | 17.0<br>[0.67]            |
| OMM 50   | 125.5<br>[4.94]   | 21.5<br>[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

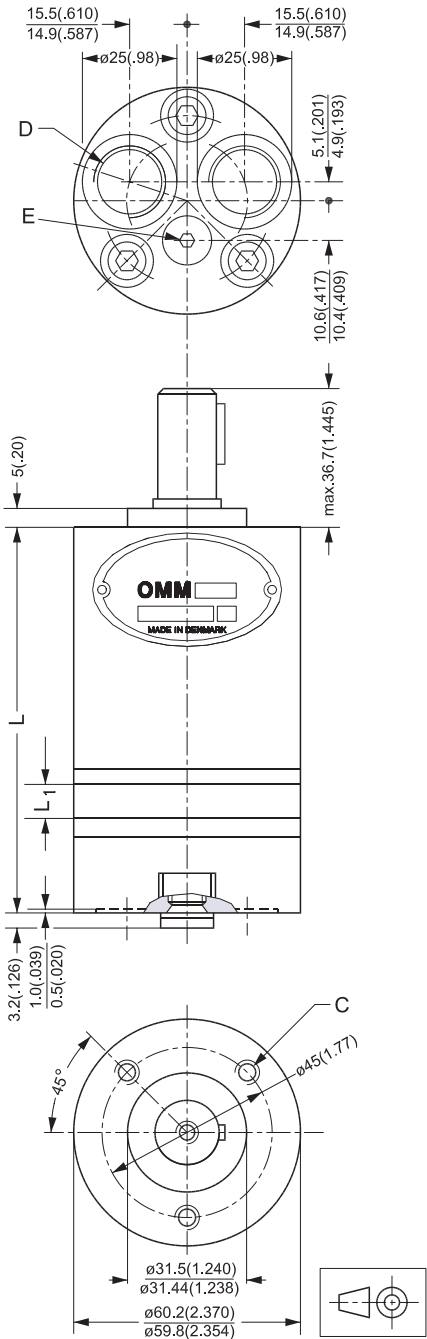
**OMM**  
Technical Information  
Dimensions – US version

**DIMENSIONS**

OMM.  
End port version.

| Type     | L <sub>max.</sub> | L <sub>1</sub> mm<br>[in] |
|----------|-------------------|---------------------------|
| OMM 8    | 104.0<br>[4.09]   | 3.5<br>[0.14]             |
| OMM 12.5 | 106.0<br>[4.17]   | 5.5<br>[0.22]             |
| OMM 20   | 109.0<br>[4.29]   | 8.5<br>[0.33]             |
| OMM 32   | 114.0<br>[4.49]   | 13.5<br>[0.53]            |
| OMM 50   | 122.0<br>[4.80]   | 21.5<br>[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

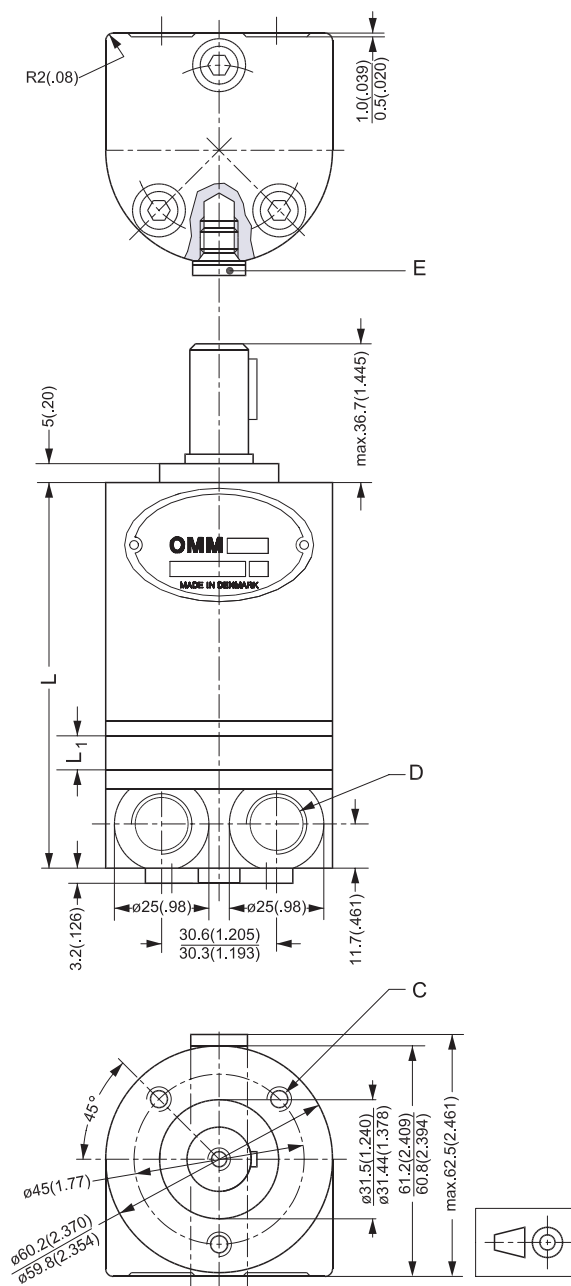
# OMM Technical Information Dimensions – European version

## DIMENSIONS

OMM.  
Side port version.

| Type     | L <sub>max.</sub> | L <sub>1</sub> mm<br>[in] |
|----------|-------------------|---------------------------|
| OMM 8    | 105.8<br>[4.17]   | 3.5<br>[0.14]             |
| OMM 12.5 | 107.8<br>[4.24]   | 5.5<br>[0.22]             |
| OMM 20   | 110.8<br>[4.36]   | 8.5<br>[0.33]             |
| OMM 32   | 115.8<br>[4.56]   | 13.5<br>[0.53]            |
| OMM 40   | 118.0<br>[4.65]   | 17.0<br>[0.67]            |
| OMM 50   | 123.8<br>[4.87]   | 21.5<br>[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



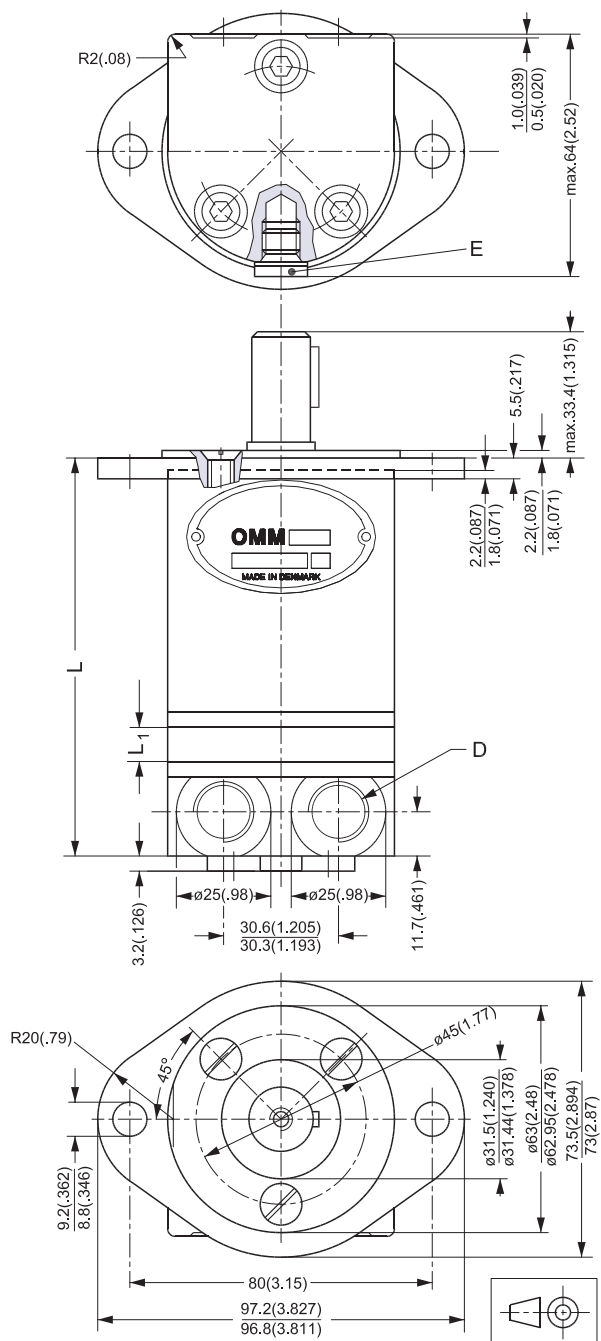
# OMM Technical Information Dimensions – European version

## DIMENSIONS

OMM.  
Side port version with extra mounting flange.

| Type     | L <sub>max.</sub> | L <sub>1</sub> mm<br>[in] |
|----------|-------------------|---------------------------|
| OMM 8    | 109.3<br>[4.30]   | 3.5<br>[0.14]             |
| OMM 12.5 | 111.3<br>[4.38]   | 5.5<br>[0.22]             |
| OMM 20   | 114.3<br>[4.50]   | 8.5<br>[0.33]             |
| OMM 32   | 119.3<br>[4.70]   | 13.5<br>[0.53]            |
| OMM 40   | 118.0<br>[4.65]   | 17.0<br>[0.67]            |
| OMM 50   | 127.3<br>[5.01]   | 21.5<br>[0.85]            |

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



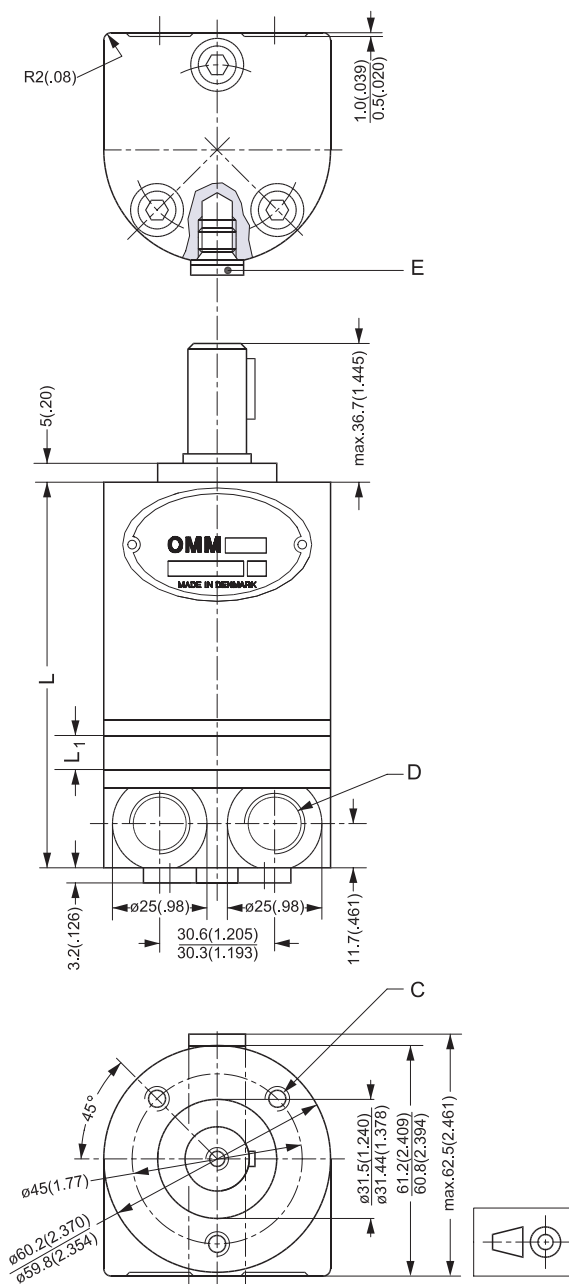
151-1147.10

#### DIMENSIONS

OMM.  
Side port version.

| Type     | L <sub>max.</sub> | mm<br>L <sub>1</sub> [in] |
|----------|-------------------|---------------------------|
| OMM 8    | 105.8<br>[4.17]   | 3.5<br>[0.14]             |
| OMM 12.5 | 107.8<br>[4.24]   | 5.5<br>[0.22]             |
| OMM 20   | 110.8<br>[4.36]   | 8.5<br>[0.33]             |
| OMM 32   | 115.8<br>[4.56]   | 13.5<br>[0.53]            |
| OMM 50   | 121.8<br>[4.80]   | 21.5<br>[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 entrappment.

*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 untill 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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Sauer-Danfoss is a comprehensive supplier providing complete systems to the global mobile market.

Sauer-Danfoss serves markets such as agriculture, construction, road building, material handling, municipal, forestry, turf care, and many others.

We offer our customers optimum solutions for their needs and develop new products and systems in close cooperation and partnership with them.

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