

# Danfoss TMVW 630 151Z8212 orbital hydraulic motor

Manufacturer: Danfoss

Manufacturer part number / published order designation: 151Z8212

Published model: 151Z8212

## About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

## Execution notes and conditions

Factory model code: TMV-0630-B-NN-W57-AV-2F-K11-A-E-2C-0-N-NN-AAE23-NN-NN-NN-SP-NNN

Current exact factory article verified separately from the September 2015 technical reference.

Representative factory photograph; use the applicable execution drawings.

Separate catalogue limits; check operating point, shaft loading and drain requirements.

## Source-page index

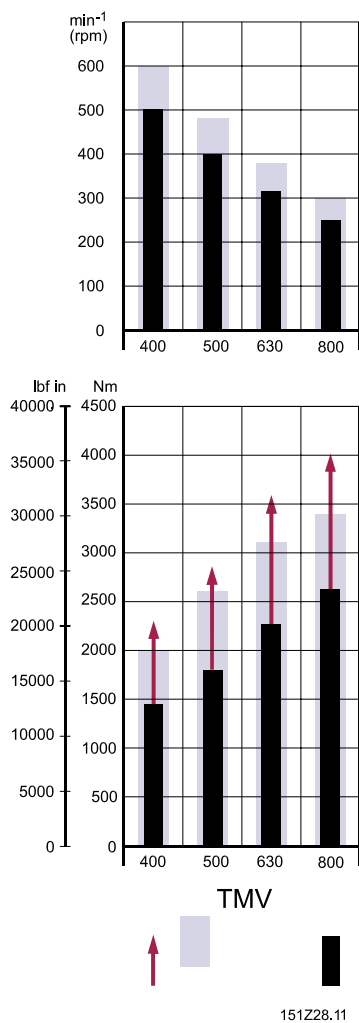
Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

### Source A: Danfoss TMV technical information - September 2015

| Original pages | Compiled pages | Relevant content                                                                              |
|----------------|----------------|-----------------------------------------------------------------------------------------------|
| 6-12           | 2-8            | Applicable original version, hydraulic limits, installation, shaft, ports or mounting drawing |
| 14-15          | 9-10           | Applicable original version, hydraulic limits, installation, shaft, ports or mounting drawing |

## Data survey

### Speed and torque



Peak values / Intermittend values / Continuous values

The bar diagrams above are useful for a quick selection of relevant motor size for the application.

## Technical Information    TMVW Orbital Motors

### Versions

#### Version

| Mounting flange | Spigot diameter | Bolt circle diameter (BC) | Shaft              | Port size      | European version | US version | Side port version | End port version | Standard shaft seal | Drain connection | Check valve | Main type designation |
|-----------------|-----------------|---------------------------|--------------------|----------------|------------------|------------|-------------------|------------------|---------------------|------------------|-------------|-----------------------|
| Wheel           | 223.9 mm        | 265 mm                    | Thread hole flange | G 1            | X                |            | X                 |                  | X                   | X                | No          | TMVW                  |
|                 | 223.9 mm        | 265 mm                    | Thread hole flange | 1 5/16 - 12 UN |                  | X          | X                 |                  | X                   | X                | No          | TMVW                  |

Motors are painted black.

## Technical Information    TMVW Orbital Motors

### Code numbers

#### Code numbers

| Code numbers | Displacement (cm <sup>3</sup> ) |      |      |      |                                                   |                                             |
|--------------|---------------------------------|------|------|------|---------------------------------------------------|---------------------------------------------|
|              | 400                             | 500  | 630  | 800  |                                                   |                                             |
| 151Z         | 8205                            | 8206 | 8207 | 8208 | <a href="#">Technical data for TMVW on page 9</a> | <a href="#">European version on page 13</a> |
| 151Z         | 8210                            | 8211 | 8212 | 8213 | <a href="#">Technical data for TMVW on page 9</a> | <a href="#">US version on page 14</a>       |

### Ordering

Add the four digit prefix "151Z" to the four digit numbers from the chart for complete code number.

Example:

151Z8207 for an TMVW 630 with mounting flange Ø 223.9 mm, port size G 1 and side port version.

Orders will not be accepted without the four digit prefix.

## Technical Information TMVW Orbital Motors

### Technical data

#### Technical data for TMVW

##### TMVW technical data

| Type                                          |                                       |                                                           | TMVW              | TMVW              | TMVW              | TMVW              |
|-----------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| Motor size                                    |                                       |                                                           | 400               | 500               | 630               | 800               |
| Geometric displacement                        | cm <sup>3</sup><br>[in <sup>3</sup> ] |                                                           | 400.9<br>[24.46]  | 499.6<br>[30.49]  | 629.1<br>[38.39]  | 801.8<br>[48.93]  |
| Maximum speed                                 | min-1<br>[rpm]                        | cont.                                                     | 500               | 400               | 315               | 250               |
|                                               |                                       | int. <sup>(1)</sup>                                       | 600               | 480               | 380               | 300               |
| Maximum torque                                | N·m<br>[lbf·in]                       | cont.                                                     | 1,440<br>[12,745] | 1,800<br>[15,930] | 2,270<br>[20,090] | 2,590<br>[22,880] |
|                                               |                                       | int. <sup>(1)</sup>                                       | 2,000<br>[17,700] | 2,600<br>[23,010] | 3,100<br>[27,440] | 3,400<br>[30,090] |
|                                               |                                       | peak <sup>(2)</sup>                                       | 2,300<br>[20,355] | 2,860<br>[25,315] | 3,600<br>[31,860] | 4,020<br>[35,580] |
| Maximum Output                                | kW<br>[hp]                            | cont.                                                     | 67<br>[90]        | 67<br>[90]        | 67<br>[90]        | 67<br>[90]        |
|                                               |                                       | int. <sup>(1)</sup>                                       | 112<br>[150]      | 112<br>[150]      | 112<br>[150]      | 112<br>[150]      |
| Maximum pressure drop                         | bar<br>[psi]                          | cont.                                                     | 250<br>[3,630]    | 250<br>[3,630]    | 250<br>[3,630]    | 225<br>[3,263]    |
|                                               |                                       | int. <sup>(1)</sup>                                       | 350<br>[5,080]    | 350<br>[5,080]    | 350<br>[5,080]    | 300<br>[4,350]    |
|                                               |                                       | peak <sup>(2)</sup>                                       | 400<br>[5,800]    | 400<br>[5,800]    | 400<br>[5,800]    | 400<br>[5,800]    |
| Maximum oil flow                              | l/min<br>[US gal/min]                 | cont.                                                     | 200<br>[63.4]     | 200<br>[63.4]     | 200<br>[63.4]     | 200<br>[63.4]     |
|                                               |                                       | int. <sup>(1)</sup>                                       | 240<br>[63.4]     | 240<br>[63.4]     | 240<br>[63.4]     | 240<br>[63.4]     |
| Maximum starting pressure with unloaded shaft | bar<br>[psi]                          |                                                           | 5<br>[70]         | 5<br>[70]         | 5<br>[70]         | 5<br>[70]         |
| Minimum starting torque                       |                                       | at max. press. drop<br>cont.: N·m [lbf·in]                | 1,245<br>[11,020] | 1,551<br>[13,730] | 1,953<br>[17,290] | 2,490<br>[22,035] |
|                                               |                                       | at max. press. drop<br>int. <sup>(1)</sup> : N·m [lbf·in] | 1,743<br>[15,425] | 2,172<br>[19,220] | 2,735<br>[24,205] | 2,988<br>[26,440] |

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

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

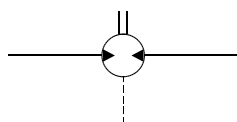
| Type           |              |                     | Maximum inlet pressure | Maximum return pressure |
|----------------|--------------|---------------------|------------------------|-------------------------|
| TMVW 400 - 800 | bar<br>[psi] | cont.               | 270<br>[3915]          | 140<br>[2030]           |
|                | bar<br>[psi] | int. <sup>(1)</sup> | 370<br>[5365]          | 175<br>[2540]           |
|                | bar<br>[psi] | peak <sup>(2)</sup> | 420<br>[6090]          | 210<br>[3045]           |

## Technical data

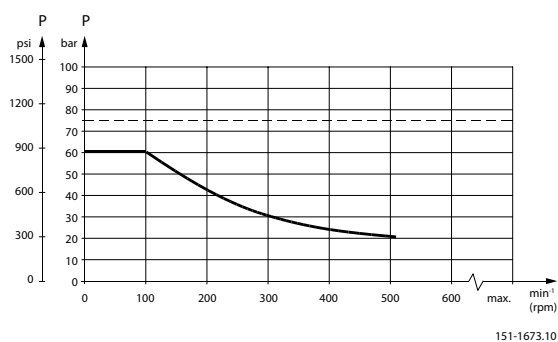
### Maximum permissible shaft seal pressure

TMVW with standard shaft seal and drain connection

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



151-1983.10



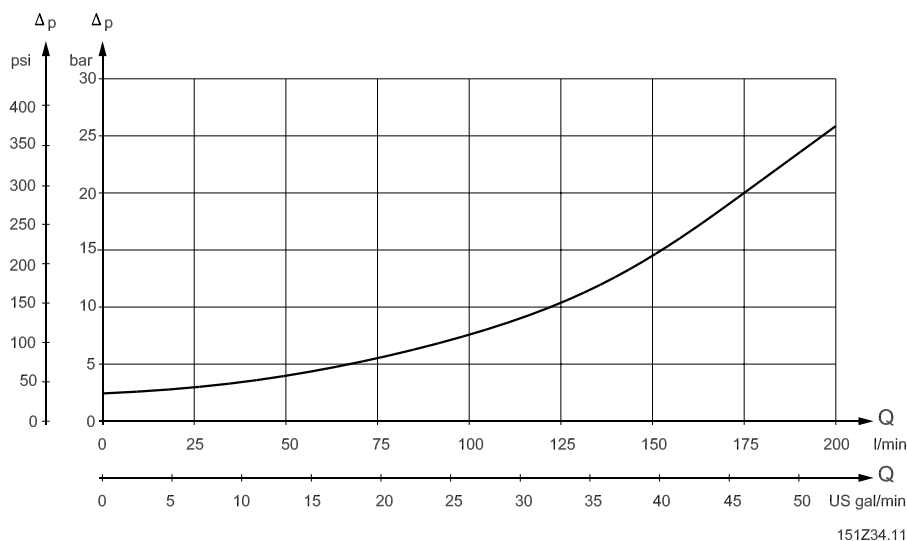
**[dotted]** Intermittent operation: The permissible values may occur for max. 10% of every minute.

**[solid]** Continuous operation

### Warning

Drain line should always be used.

### Pressure drop in motor



The curve applies to an unloaded motor shaft and an oil viscosity of 35 mm<sup>2</sup>/s [165 SUS].

## Technical Information    **TMVW Orbital Motors**

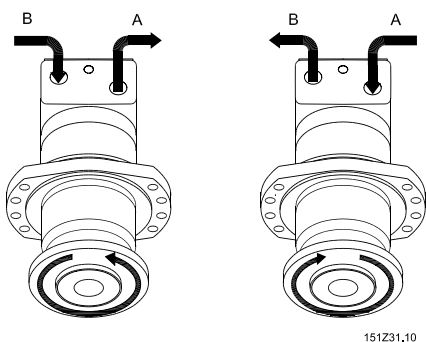
### Technical data

#### Oil flow in drain line

The table below shows the maximum oil flow in the drain line at a return pressure less than 5-10 bar [75-150 psi].

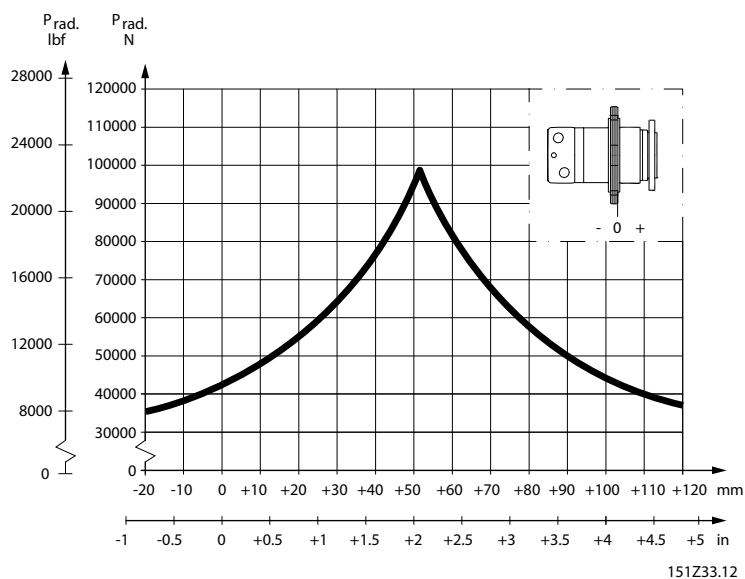
| Pressure drop |        | Viscosity          |       | Oil flow in drain line |              |
|---------------|--------|--------------------|-------|------------------------|--------------|
| bar           | [psi]  | mm <sup>2</sup> /s | [SUS] | l/min                  | [US gal/min] |
| 200           | [2900] | 20                 | [100] | 2.5                    | [0.66]       |
|               |        | 35                 | [165] | 1.5                    | [0.4]        |
| 275           | [3990] | 20                 | [100] | 4.0                    | [1.1]        |
|               |        | 35                 | [165] | 2.5                    | [0.66]       |

#### Direction of shaft rotation



#### Permissible shaft load for TMVW

*Permissible shaft load for TMVW*



#### Permissible radial shaft load

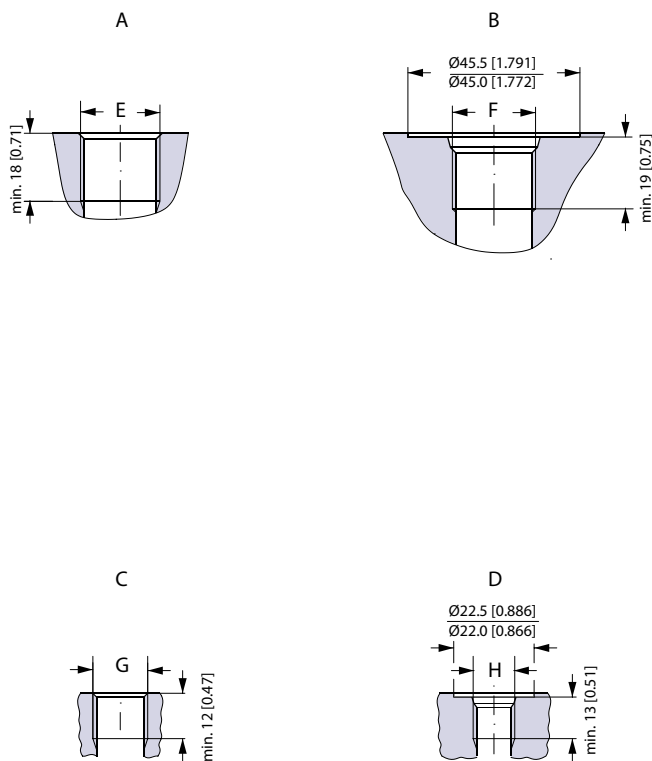
The output shaft runs in tapered roller bearings that permit high axial and radial forces.

## Technical data

The permissible radial load on the shaft is shown for an axial load of 0 N as a function of the distance from the mounting flange to the point of load application.

The curve is based on B<sub>10</sub> Bearing life (2000 hours or 12 000 000 shaft revolutions at 100 min<sup>-1</sup>) at rated output torque, when mineral-based hydraulic oil with a sufficient content of anti-wear additives, is used.

## Port thread versions



151-1978.10

- A:**                    G Main port
- E:**                    ISO 228/1 – G 1
- B:**                    UNF Main port
- F:**                    1 5/16 – 12 UN, O-ring boss port
- C:**                    G Drain port
- G:**                    ISO 228/1 – G 1/4
- D:**                    UNF Drain port
- H:**                    9/16 – 18 UNF, O-ring boss port

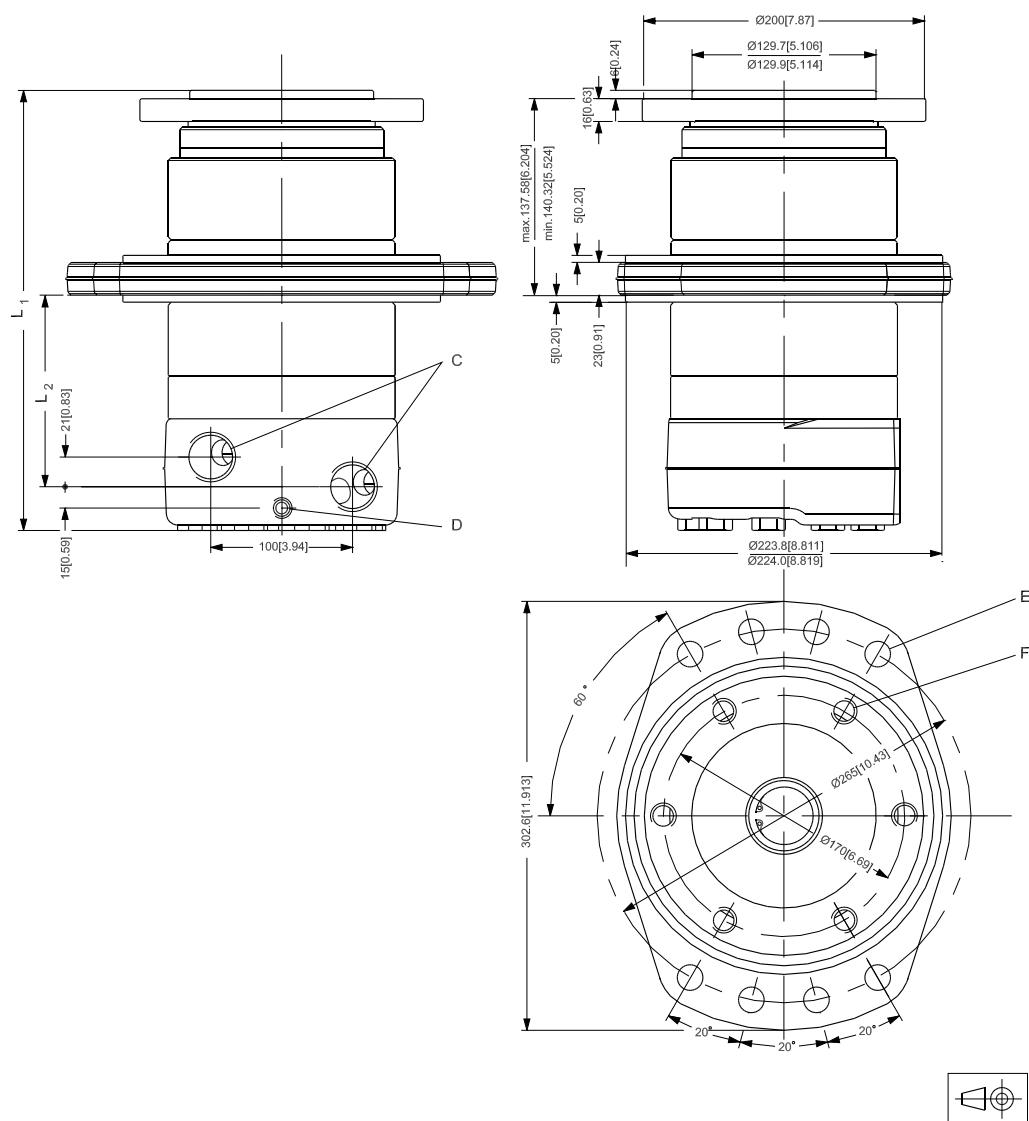
## Dimensions

Wheel flange-spigot diameter  $\varnothing 223.9$  mm - BC  $\varnothing 265$  mm

| Type     | L <sub>1</sub> |        | L <sub>2</sub> |       |
|----------|----------------|--------|----------------|-------|
|          | mm             | [in]   | mm             | [in]  |
| TMVW 400 | 293.4          | [11.6] | 116.5          | [4.6] |
| TMVW 500 | 301.4          | [11.9] | 124.5          | [4.9] |
| TMVW 630 | 311.9          | [12.3] | 135            | [5.3] |
| TMVW 800 | 325.9          | [12.8] | 149            | [5.9] |

### US version

Wheel flange-spigot diameter  $\varnothing 223.9$  mm - BC  $\varnothing 265$  mm



151209.12

**C:** 1 5/16 - 12 UN; 19 mm [0.75 in] deep

## Technical Information    TMVW Orbital Motors

### Dimensions

**D:** Drain connection, 9/16 - 18 UNF; 13 mm [0.51 in] deep

**E:**  $\varnothing$  17.6

**F:** 6 • M16 • 1.5

*Wheel flange-spigot diameter  $\varnothing$  223.9 mm - BC  $\varnothing$  265 mm*

| Type     | L <sub>1</sub> |        | L <sub>2</sub> |       |
|----------|----------------|--------|----------------|-------|
|          | mm             | [in]   | mm             | [in]  |
| TMVW 400 | 293.4          | [11.6] | 116.5          | [4.6] |
| TMVW 500 | 301.4          | [11.9] | 124.5          | [4.9] |
| TMVW 630 | 311.9          | [12.3] | 135            | [5.3] |
| TMVW 800 | 325.9          | [12.8] | 149            | [5.9] |