

Danfoss TMVW 400 151Z8210 orbital hydraulic motor

Manufacturer: Danfoss

Manufacturer part number / published order designation: 151Z8210

Published model: 151Z8210

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-0400-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

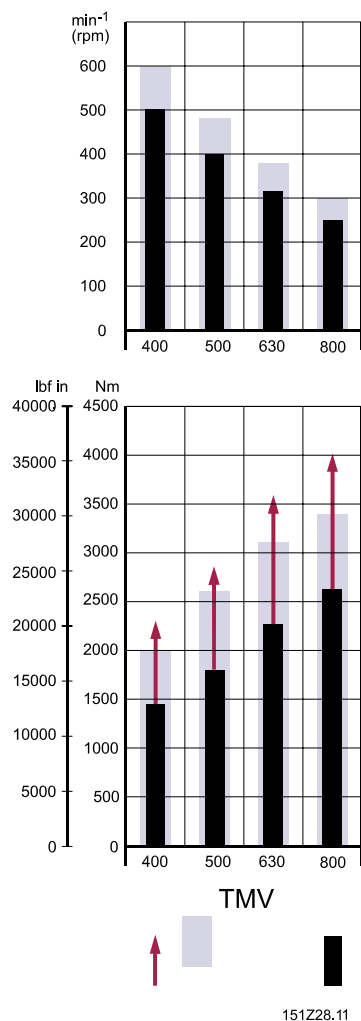
Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

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 ³)					
	400	500	630	800		
151Z	8205	8206	8207	8208	Technical data for TMVW on page 9	European version on page 13
151Z	8210	8211	8212	8213	Technical data for TMVW on page 9	US version on page 14

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

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

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

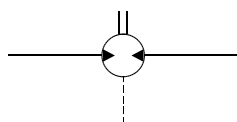
Type			Maximum inlet pressure	Maximum return pressure
TMVW 400 - 800	bar [psi]	cont.	270 [3915]	140 [2030]
	bar [psi]	int. ⁽¹⁾	370 [5365]	175 [2540]
	bar [psi]	peak ⁽²⁾	420 [6090]	210 [3045]

Technical data

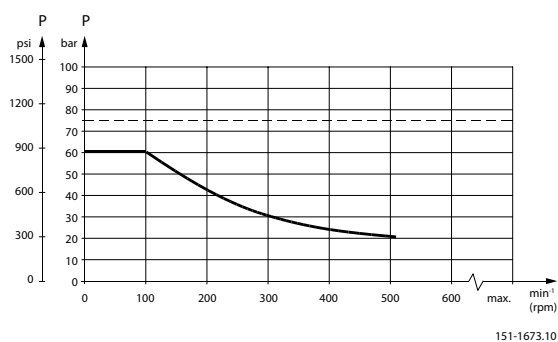
Maximum permissible shaft seal pressure

TMVW with standard shaft seal and drain connection

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



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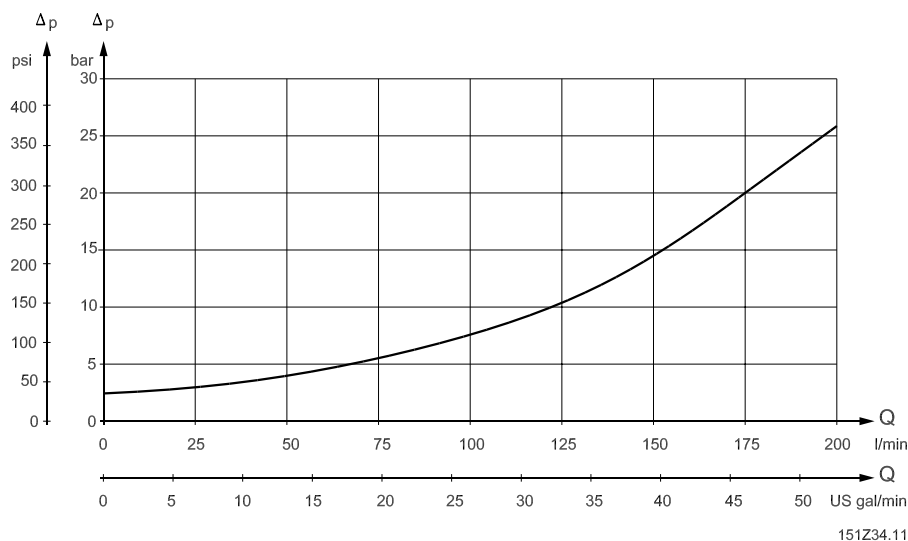
[dotted] Intermittent operation: The permissible values may occur for max. 10% of every minute.

[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 mm²/s [165 SUS].

Technical Information **TMVW Orbital Motors**

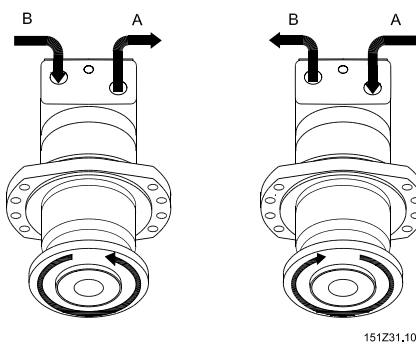
Technical data

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].

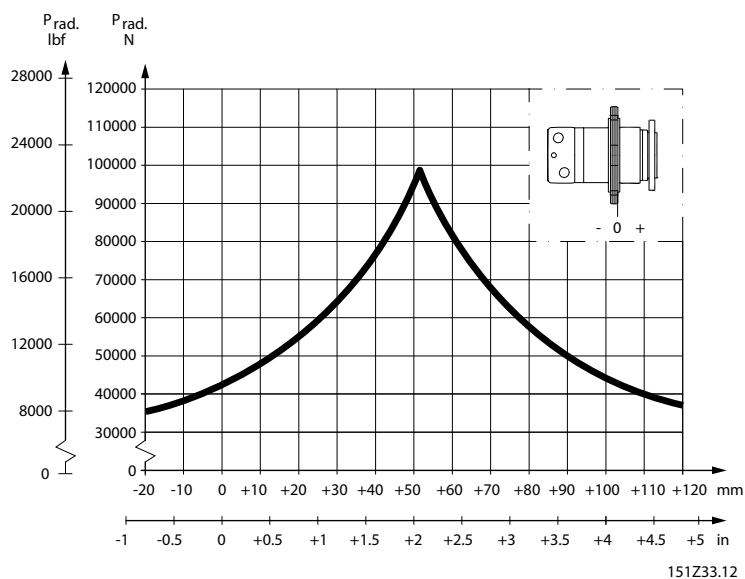
Pressure drop		Viscosity		Oil flow in drain line	
bar	[psi]	mm ² /s	[SUS]	l/min	[US gal/min]
200	[2900]	20	[100]	2.5	[0.66]
		35	[165]	1.5	[0.4]
275	[3990]	20	[100]	4.0	[1.1]
		35	[165]	2.5	[0.66]

Direction of shaft rotation



Permissible shaft load for TMVW

Permissible shaft load for TMVW



Permissible radial shaft load

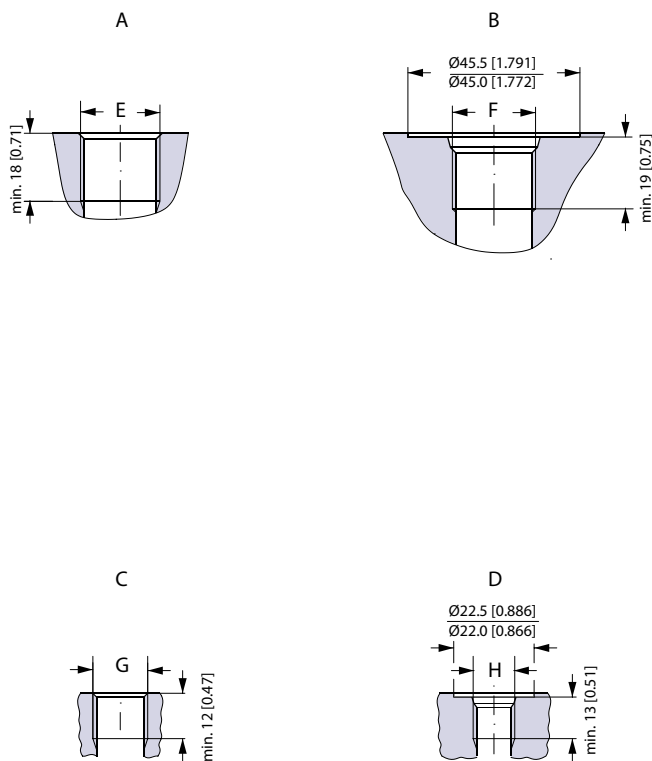
The output shaft runs in tapered roller bearings that permit high axial and radial forces.

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 B₁₀ Bearing life (2000 hours or 12 000 000 shaft revolutions at 100 min⁻¹) 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

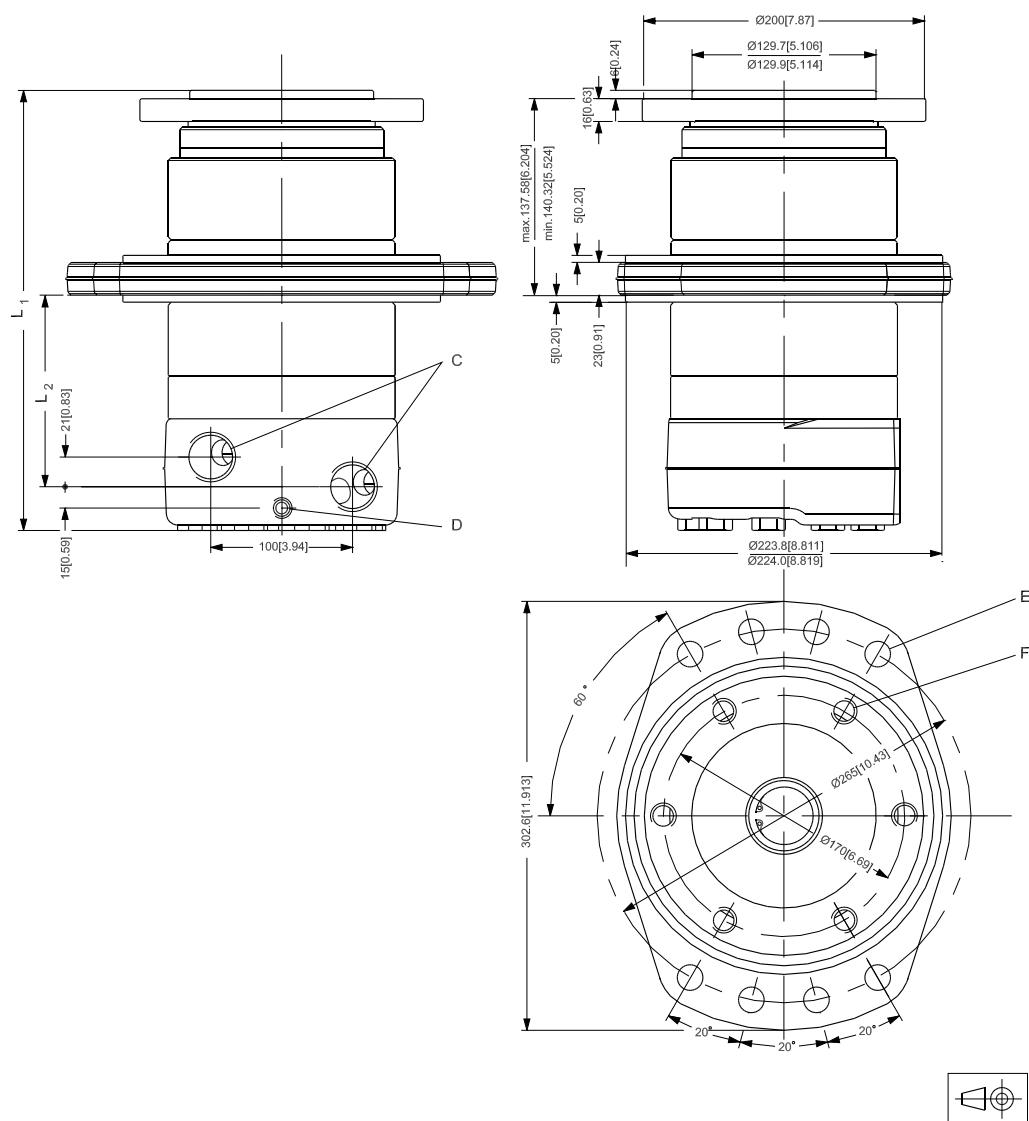
Dimensions

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

Type	L ₁		L ₂	
	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



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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 ₁		L ₂	
	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]