

ENGINEERING
TOMORROW



Technical Information

Orbital Motors

Type OMP X and OMR X



Revision history

Table of revisions

Date	Changed	Rev
February 2017	First edition	0101

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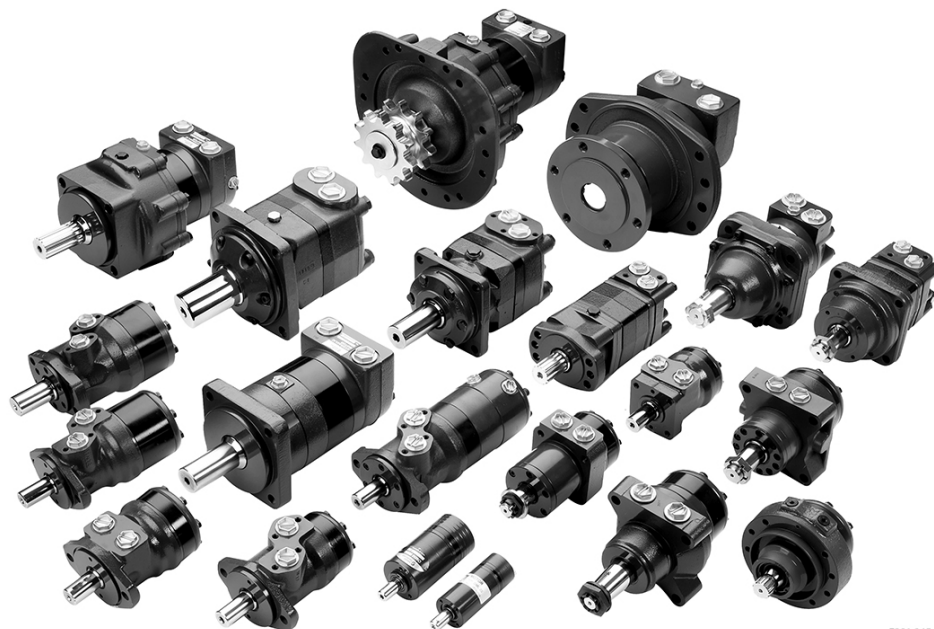
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A wide range of Orbital Motors

Characteristic, features and application areas of Orbital Motors



Danfoss is a world leader within production of low speed orbital motors with high torque. We can offer more than 3,000 different orbital motors, categorised in types, variants and sizes (including different shaft versions).

The motors vary in size (rated displacement) from 8 cm³ [0.50 in³] to 800 cm³ [48.9 in³] per revolution.

Speeds range up to approximate 2,500 min⁻¹ (rpm) for the smallest type and up to approximate 600 min⁻¹ (rpm) for the largest type.

Maximum operating torques vary from 13 N•m [115 lbf•in] to 4,000 N•m [35,400 lbf•in] (peak) and maximum outputs are from 2.0 kW [2.7 hp] to 95 kW [128 hp].

Characteristic features of Danfoss Orbital Motors

- Smooth running over the entire speed range
- Constant operating torque over a wide speed range
- High starting torque
- High return pressure without the use of drain line (High pressure shaft seal)
- High efficiency
- Long life under extreme operating conditions
- Robust and compact design
- High radial and axial bearing capacity
- For applications in both open and closed loop hydraulic systems
- Suitable for a wide variety of hydraulics fluids

Technical features of Danfoss Orbital Motor

The programme is characterised by technical features appealing to a large number of applications and a part of the programme is characterised by motors that can be adapted to a given application. Adaptions comprise the following variants among others:

A wide range of Orbital Motors

- Motors with corrosion resistant parts
- Wheel motors with recessed mounting flange
- OMP, OMR- motors with needle bearing
- OMR motor in low leakage version
- OMR motors in a super low leakage version
- Short motors without bearings
- Ultra short motors
- Motors with integrated negative holding brake
- Motors with integrated flushing valve
- Motors with speed sensor
- Motors with tacho connection
- All motors are available with black finish paint

The Danfoss Orbital Motors are used in the following application areas:

- Construction equipment
- Agricultural equipment
- Material handling & Lifting equipment
- Forestry equipment
- Lawn and turf equipment
- Special purpose
- Machine tools and stationary equipment
- Marine equipment

Survey of literature with technical data on Danfoss Orbital Motors

Detailed data on all Danfoss Orbital Motors can be found in our motor catalogue, which is divided into more individual subcatalogues:

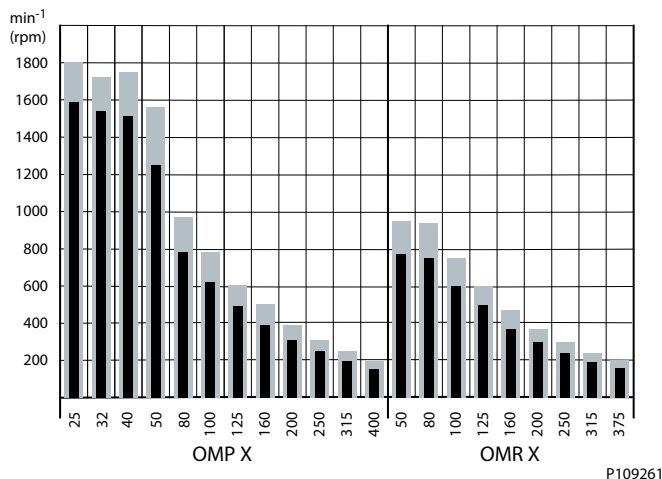
- General information on Danfoss Orbital Motors: function, use, selection of orbital motor, hydraulic systems, etc.
- Technical data on small motors: OML and OMM
- Technical data on medium sized motors: OMP, OMR, OMH
- Technical data on medium sized motors: DH and DS
- Technical data on medium sized motors: OMEW
- Technical data on medium sized motors: OMP X and OMR X
- Technical data on large motors: OMS, OMT and OMV
- Technical data on large motors: TMK
- Technical data on large motors: TMT
- Technical data on large motors: TMTHW
- Technical data on large motors: TMVW

A general survey brochure on Danfoss Orbital Motors gives a quick motor reference based on power, torque, speed and capabilities.

A wide range of Orbital Motors

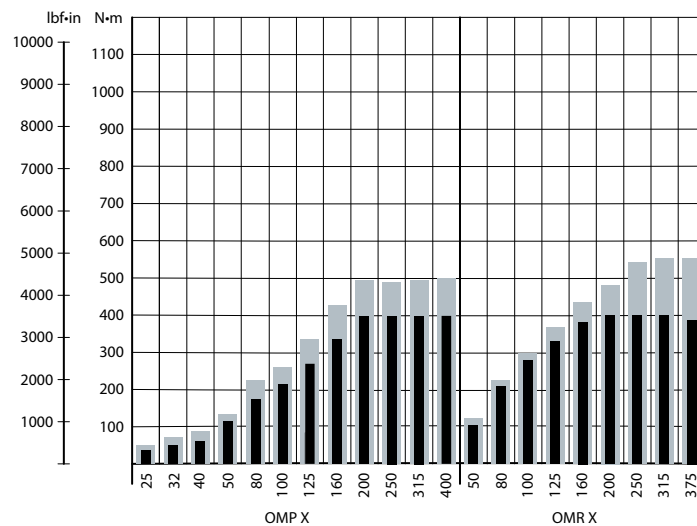
Speed, torque and output

Maximum speed



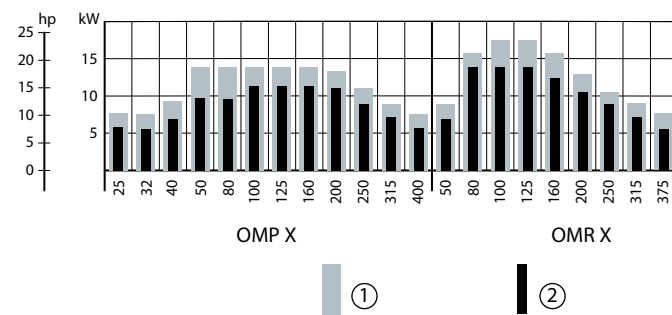
P109261

Maximum torque



P109262

Maximum output



P109263

A wide range of Orbital Motors

1. Intermittent values
2. Continuous values

The bar diagrams above are useful for a quick selection of relevant motor size for the application. The final motor size can be determined by using the function diagram for each motor size.

- OMP X and OMPW X: see [OMP function diagrams](#)
- OMR X: see [OMR function diagrams](#)

The function diagrams are based on actual tests on a representative number of motors from our production. The diagrams apply to a return pressure between 5 and 10 bar. [75 and 150 psi] when using mineral based hydraulic oil with a viscosity of 35 mm²/s [165 SUS] and a temperature of 50°C [120°F]. For further explanation concerning how to read and use the function diagrams, please consult the paragraph "Selection of motor size" in the technical information *General Orbital Motors* **520L0232**.

OMP X versions and code numbers

This section shows the different versions/configuration codes and the ordering numbers.

- Section [OMP X technical data](#) on page 12, specify the technical data for OMP X for each shaft type.
- In section [OMP X function diagrams](#) on page 19, the diagram for each motor size is shown.
- See [OMP X dimensions](#) on page 30 for outer main dimensions for the different OMP X motor types.

OMP X versions and code numbers
OMP standard motors

Mounting flange: Side port offset with 2 hole oval mounting flange (A2-flange)

Spigot diameter	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port offset	G 1/4	Yes	Yes	OMP	A1
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	Yes	OMP	A2
Cyl. 1 in	G 1/2	Side port offset	G 1/4	Yes	Yes	OMP	A3
Cyl. 1 in	7/8 -14 UNF	Side port offset	7/16-20 UNF	Yes	Yes	OMP	A4
Splined 1 in	G 1/2	Side port offset	G 1/4	Yes	Yes	OMP	A5

Code numbers for OMP X 25 cm³ - 100 cm³

Conf. code	Displacement					
	25	32	40	50	80	100
A1	11185769	11185775	11186719	11185771	11186721	11186725
A2	-	-	11185711	11185710	11185713	11185714
A3	-	-	-	11186729	11185808	11186730
A4	11185720	11185721	11185723	11185722	11185724	11185726
A5	-	-	-	11186738	11186739	11186740

Code numbers for OMP X 125 cm³ - 400 cm³

Conf. code	Displacement					
	125	160	200	250	315	400
A1	11185743	11186705	11186708	11186711	11186712	11186714
A2	-	11185704	11185705	11185706	11185707	11185708
A3	11185792	11186726	11185796	11185798	11186728	11185802
A4	11185725*	11185715	11185716	-	11185718	11185719
A5	11186731	11186732	11185819	11186820	11185827	11186737

* Motor painted black

OMP X versions and code numbers

Mounting flange: Side port aligned with 2 hole oval mounting flange (A2-flange)

Spigot diameter	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. 1 in	7/8 - 14 UNF	Side port	7/16 - 20 UNF	Yes	Yes	OMP X	A6
Cyl. 1 in	1/2 - 14 UNF	Side port	7/16-20 UNF	Yes	Yes	OMP X	A7
Splined 1 in	7/8 - 14 UNF	Side port	7/16-20 UNF	Yes	Yes	OMP X	A8

Code numbers

Conf. code	Displacement									
	36	50	80	100	125	160	200	250	315	400
A6	11186086	11186085	11186695	11186090	11186075	11186076	11186077	11186079	11186081	11186083
A7	11186116	11186115	11186117	11186118	-	11186110	11186111	11186112	11186113	11186818
A8	11186071	11186069	11186072	11186073	-	11186064	11186065	11186066	11186067	11186068

Mounting flange: Side port aligned with square mounting flange (C-flange)

Spigot diameter	Ø 44.4 mm [1.75 in]						
Bolt circle diameter	Ø 82.5 mm [3.25 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. 1 in	7/8 - 14 UNF	Side port	7/16 - 20 UNF	Yes	Yes	OMP X	B1
Cyl. 1 in	1/2 - 14 NPTF	Side port	7/16-20 UNF	Yes	Yes	OMP X	B2

Code numbers

Conf. code	Displacement									
	36	50	80	100	125	160	200	250	315	400
B1	11186056	11186054	11186693	11186059	11186691	11186044	11186046	11186047	11186049	11186052
B2	11186132	11186131	11186133	11186134	11186125	11186126	11186127	11186128	11186129	11186130

Mounting flange: Wheel

Spigot diameter	Ø 80 mm [3.15 in]						
Bolt circle diameter	Ø 103 mm [4.06 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	Yes	Yes	OMPW X	C1

Code numbers for OMP X 25 cm³ - 100 cm³

Conf. code	Displacement					
	25	32	40	50	80	100
C1	-	-	11185874	11185873	11185875	11185877

OMP X versions and code numbers
Code numbers for OMP X 125 cm³ - 400 cm³

Conf. code	Displacement					
	125	160	200	250	315	400
C1	11185876	11186746	11186747	11185870	11185871	11185872

OMPW X N motors with needle bearings
Mounting flange: Wheel

Spigot diameter	Ø 80 mm [3.15 in]						
Bolt circle diameter	Ø 103 mm [4.06 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Tap. Ø28.5 mm	G 1/2	Side port	G 1/4	Yes	Yes	OMPW X N	E1

Code numbers for OMP X 25 cm³ - 100 cm³

Conf. code	Displacement					
	25	32	40	50	80	100
E1	11185887	-	11185889	11185888	11185890	11185892

Code numbers for OMP X 125 cm³ - 400 cm³

Conf. code	Displacement					
	125	160	200	250	315	400
E1	11186750	11185882	11186748	11185884	11185885	11185886

OMP X motors with free running gerotor
Mounting flange: Side port offset with 2 hole oval mounting flange (A2-flange)

Spigot diameter	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	Yes	Yes	OMP	F1

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
F1	-	-	-	-	-	11185790	11185746	11186707	11185751	-	11185761	-

OMP X technical data
OMP X with 1 inch splined 6B and 28.5 mm tapered shaft
OMP 25 cm³ - 100 cm³

Type			OMP X					
Motor size			25	32	40	50	80	100
Geometric displacement	cm ³ [inch]		25.0 [1.53]	32.0 [1.96]	40.0 [2.45]	48.6 [2.97]	77.8 [4.76]	97.3 [5.95]
Max. speed	min ⁻¹ [rpm]	cont.	1600	1560	1500	1230	770	615
		int.*	1800	1720	1750	1550	960	770
Max. torque	N·m [lbf·in]	cont.	40 [355]	50 [445]	52 [460]	110 [975]	170 [1505]	210 [1860]
		int.	50 [445]	70 [620]	90 [795]	125 [1105]	220 [1950]	260 [2300]
Max. output	kW [hp]	cont.	5.4 [7.2]	6.7 [9.0]	7.0 [9.4]	9.8 [13.1]	9.8 [13.1]	11.2 [15.0]
		int.	7.5 [10.0]	9.3 [12.5]	11.2 [15.0]	14.0 [18.8]	14.0 [18.8]	14.0 [18.8]
Max. pressure drop	bar [psi]	cont.	115 [1670]	115 [1670]	115 [1670]	160 [2320]	160 [2320]	160 [2320]
		int.	160 [2320]	160 [2320]	160 [2320]	200 [2900]	200 [2900]	200 [2900]
Max. oil flow	l/min [US gal/min]	cont.	40 [10.6]	50 [13.2]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int.	45 [11.9]	55 [14.5]	70 [18.5]	75 [19.8]	75 [19.8]	75 [19.8]
Max. starting pressure with unloaded shaft	bar [psi]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min starting torque at max. pressure drop	N·m [lbf·in]	cont.	35 [310]	45 [400]	55 [485]	155 [1370]	135 [1200]	190 [1680]
		int.	50 [440]	65 [575]	75 [660]	190 [1680]	170 [1510]	240 [2125]

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

OMP 125 cm³ - 400 cm³

Type			OMP X					
Motor size			125	160	200	250	315	400
Geometric displacement	cm ³ [inch]		125 [7.65]	155.7 [9.53]	194.6 [11.91]	242.3 [14.83]	306.1 [18.73]	389.2 [23.82]
Max. speed	min ⁻¹ [rpm]	cont.	480	385	310	250	195	155
		int.*	600	480	385	310	245	190
Max. torque	N·m [lbf·in]	cont.	270 [2390]	335 [2965]	400 [3540]	400 [3540]	400 [3540]	400 [3540]
		int.	335 [2965]	425 [3760]	495 [4380]	490 [4335]	495 [4380]	500 [4425]
Max. output	kW [hp]	cont.	11.2 [15.0]	11.2 [15.0]	10.9 [14.5]	8.4 [11.3]	7.0 [9.4]	5.3 [7.0]
		int.	14.0 [18.8]	14.0 [18.8]	13.7 [18.3]	10.9 [14.5]	8.8 [11.7]	6.7 [8.9]

OMP X technical data

OMP 125 cm³ - 400 cm³ (continued)

Type			OMP X					
Motor size			125	160	200	250	315	400
Max. pressure drop	bar [psi]	cont.	160 [2320]	160 [2320]	155 [2250]	120 [1740]	100 [1450]	75 [1090]
		int.	200 [2900]	200 [2900]	195 [2830]	155 [2250]	125 [1810]	95 [1380]
Max. oil flow	l/min [US gal/min]	cont.	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int.	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max. starting pressure with unloaded shaft	bar [psi]		9 [130]	7 [100]	5 [75]	5 [75]	5 [75]	5 [75]
Min starting torque at max. pressure drop	N·m [lbf·in]	cont.	240 [2125]	320 [2830]	375 [3320]	375 [3320]	380 [3365]	370 [3275]
		int.	300 [2655]	400 [3540]	470 [4160]	480 [4250]	475 [4205]	470 [4160]

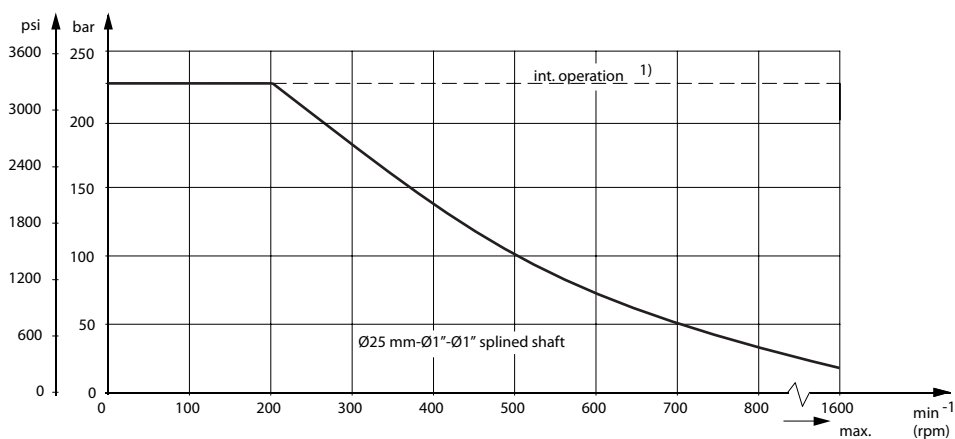
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

Type		Max inlet pressure drop N·m [lbf·in]	Max return pressure with drain line N·m [lbf·in]
OMP X 25 cm ³ - 400 cm ³	cont.	200 [2900]	200 [2900]
	int.	225 [3260]	225 [3260]

Maximum permissible shaft seal pressure

OMP X with High Pressure Shaft Seal (HPS)

Maximum permissible shaft seal pressure

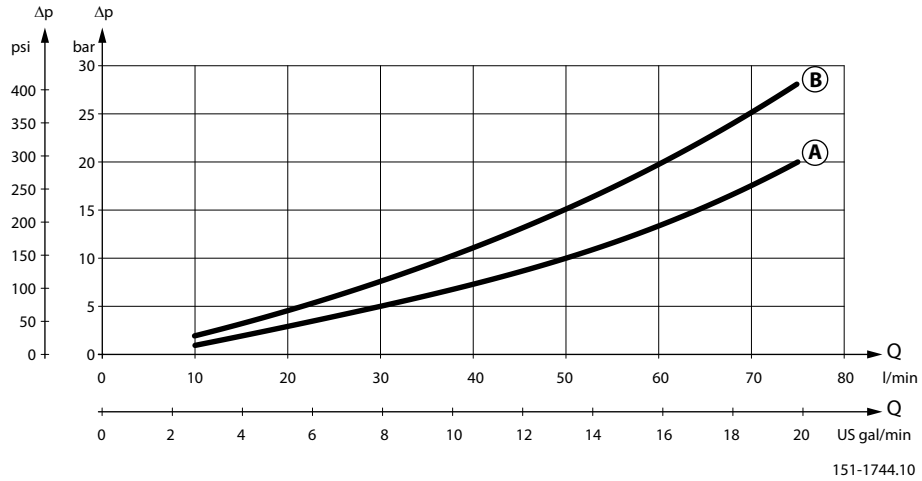


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OMP X technical data

Pressure drop in OMP X motor

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



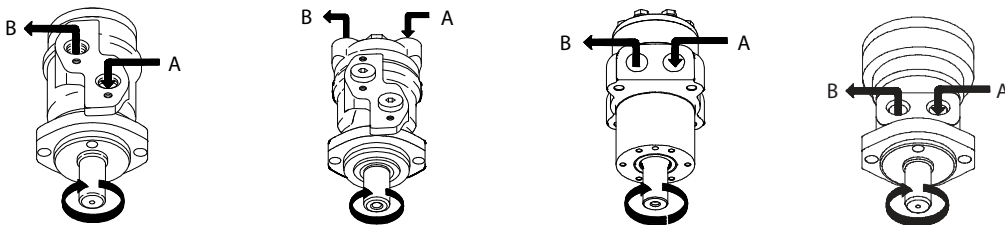
- A:** OMP X 50 - 400
- B:** OMP X 25 - 40 / OMPW X

Oil flow in drain line

The table 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]
100	[1450]	20	[100]	2.5	[0.66]
		35	[165]	1.8	[0.78]
140	[2030]	20	[100]	3.5	[0.93]
		35	[165]	2.8	[0.74]

Direction of shaft rotation: clockwise



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Permissible shaft loads

OMP X and OMR X

The permissible radial shaft load (P_R) depends on:

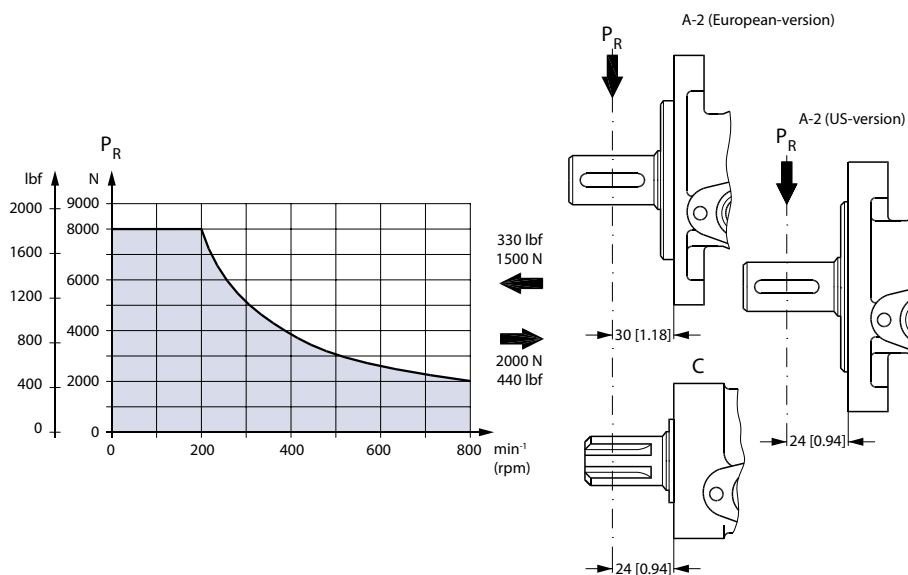
OMP X technical data

- Speed (n)
- Distance (L) from the point of load to the mounting flange
- Mounting flange version
- Shaft version

Mounting flange	2-hole oval flange (European version)	Square flange** 2-hole oval flange (US-version)
Shaft version	25 mm cylindrical shaft 28.5 mm tapered shaft 1 in cylindrical shaft 1 in splined shaft	25 mm cylindrical shaft 1 in splined shaft
Permissible shaft load (P _R) - l in mm	$\frac{800}{n} \cdot \frac{250000 \text{ N}^*}{95 + L}$	$\frac{800}{n} \cdot \frac{250000 \text{ N}^*}{101 + L}$
Permissible shaft load (P _R) - l in inch	$\frac{800}{n} \cdot \frac{2215 \text{ lbf}^*}{3.74 + L}$	$\frac{800}{n} \cdot \frac{2215 \text{ lbf}^*}{3.98 + L}$

** For both European and US-version

* $n \geq 200 \text{ min}^{-1}$ [rpm]; $\leq 55 \text{ mm}$ [2.2 in]. $n < 200 \text{ min}^{-1}$ [rpm]; $\Rightarrow P_{Rmax} = 8000 \text{ N}$ [1800 lbf]



P109266

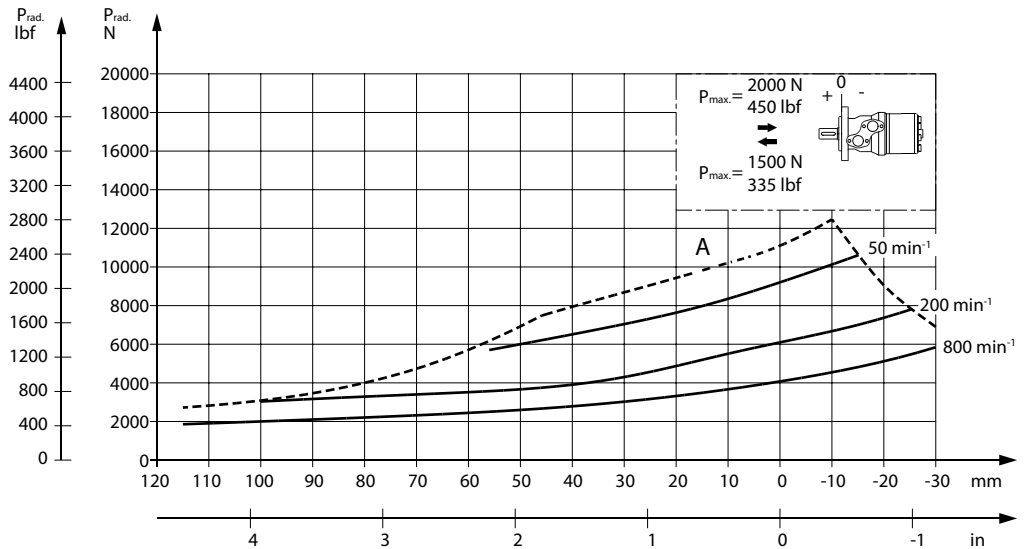
The curve shows the relation between P_R and n

- when $l = 30 \text{ mm}$ [1.18 in] for motors with A2 (European version)
- when $l = 24 \text{ mm}$ [0.94 in] for motors with square mounting flange and A2 (US version)

For applications with special performance requirements we recommend OMP and OMR with the output shaft running in needle bearings.

OMP X technical data

OMP X N



151-2112.10

The output shaft on OMP X N can be offered in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to OMP X motors.

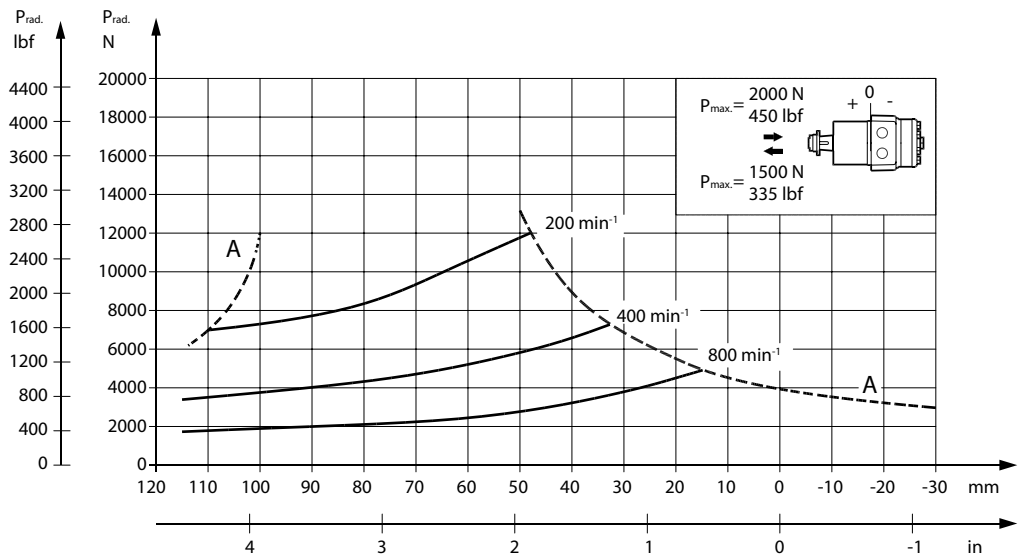
The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

Curve A indicates the max. radial shaft load. Any shaft load exceeding the values quoted in curve A will involve risk of breakage.

The other curves apply to a B10 bearing life of 2000 hours at the number of revolutions indicated by the curve letter. Mineral based hydraulic oil with a sufficient content of anti-wear additives must be used.

Bearing life calculations can be made using the explanation and formula provided in the chapter "Bearing dimensioning" in the technical information *General Orbital Motors 520L0232*.

OMP X N with slide bearings



151-2105.10

OMP X technical data

The output shaft on OMPW X can be offered in slide bearings similar to the other OMP X motors. The permissible higher radial load is therefore due to the recessed mounting flange moving the point of load closer to the motor bearings.

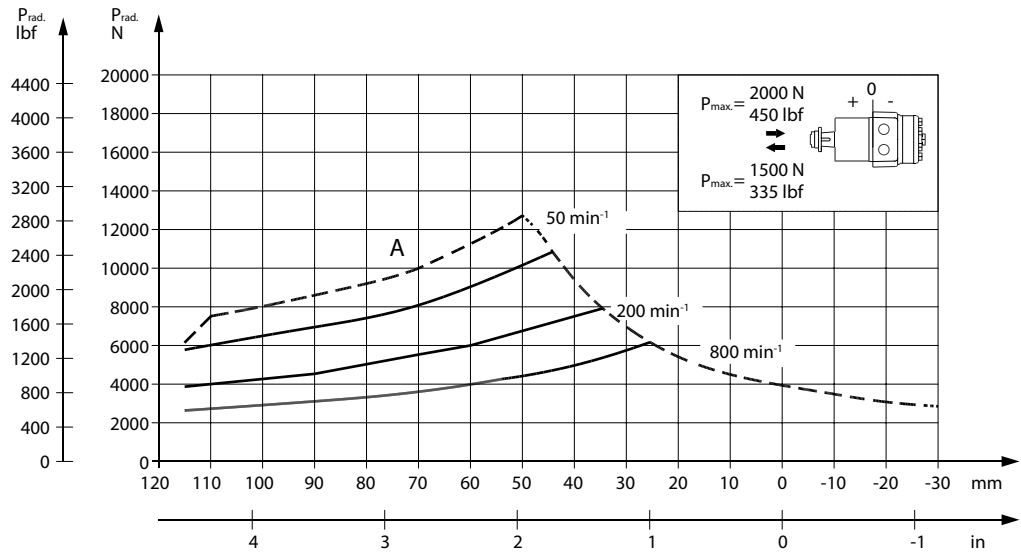
The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

The curves are not based on calculations of B10 bearing life. They represent absolute limits that must not be exceeded.

Curve A indicates the max. radial shaft load. Any shaft load exceeding the values quoted in curve A will involve risk of breakage.

OMP X technical data

OMPW X N with needle bearing



151-2106.10

The output shaft on OMPW X N can be offered in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to OMP X motors.

The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

Curve A indicates the max. radial shaft load. Any shaft load exceeding the values quoted in curve A will involve risk of breakage.

The other curves apply to a B10 bearing life of 2000 hours at the number of revolutions indicated by the curve letter. Mineral based hydraulic oil with a sufficient content of anti-wear additives must be used.

Bearing life calculations can be made using the explanation and formula provided in the chapter "Bearing dimensioning" in the technical information *General Orbital Motors 520L0232*.

OMP X function diagrams

Explanation of function diagram use, basis and conditions can be found in [Speed, torque and output](#) on page 7.

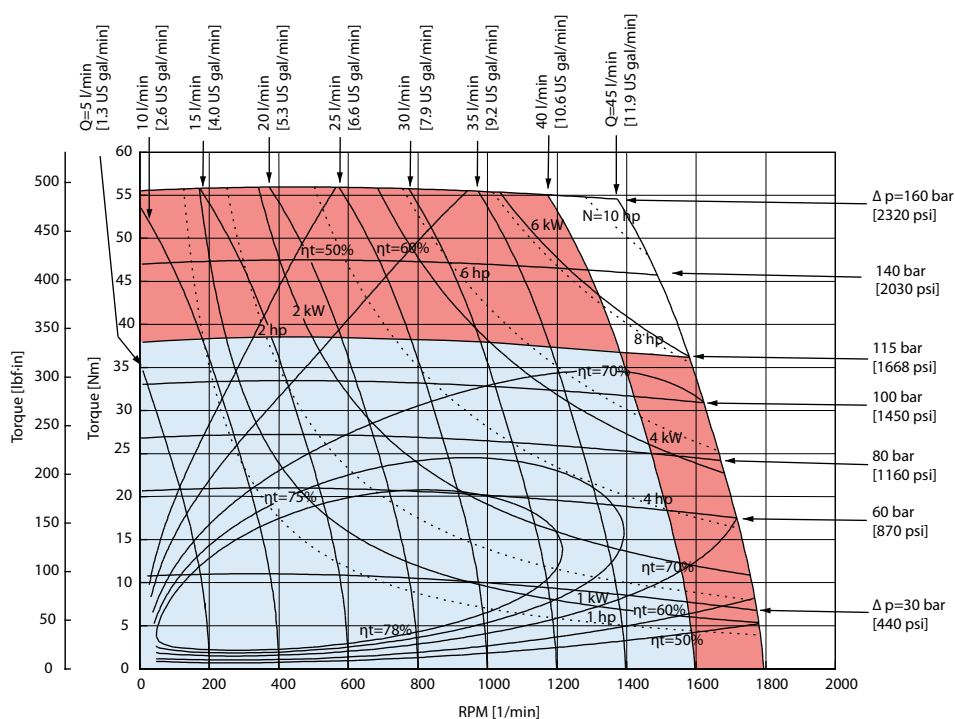
- Continuous range
- Intermittent range (max. 10% operation every minute)

Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found in [OMP X technical data](#) on page 12.

Intermittent pressure drop and oil flow must not occur simultaneously.

OMP X function diagrams

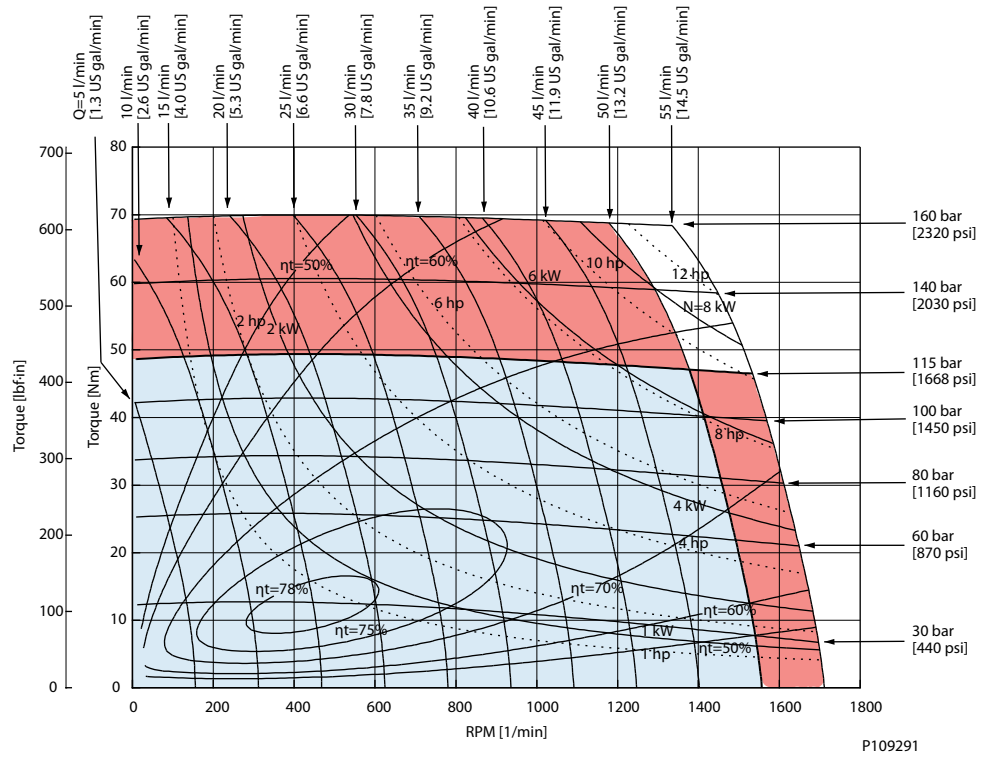
OMP X 25



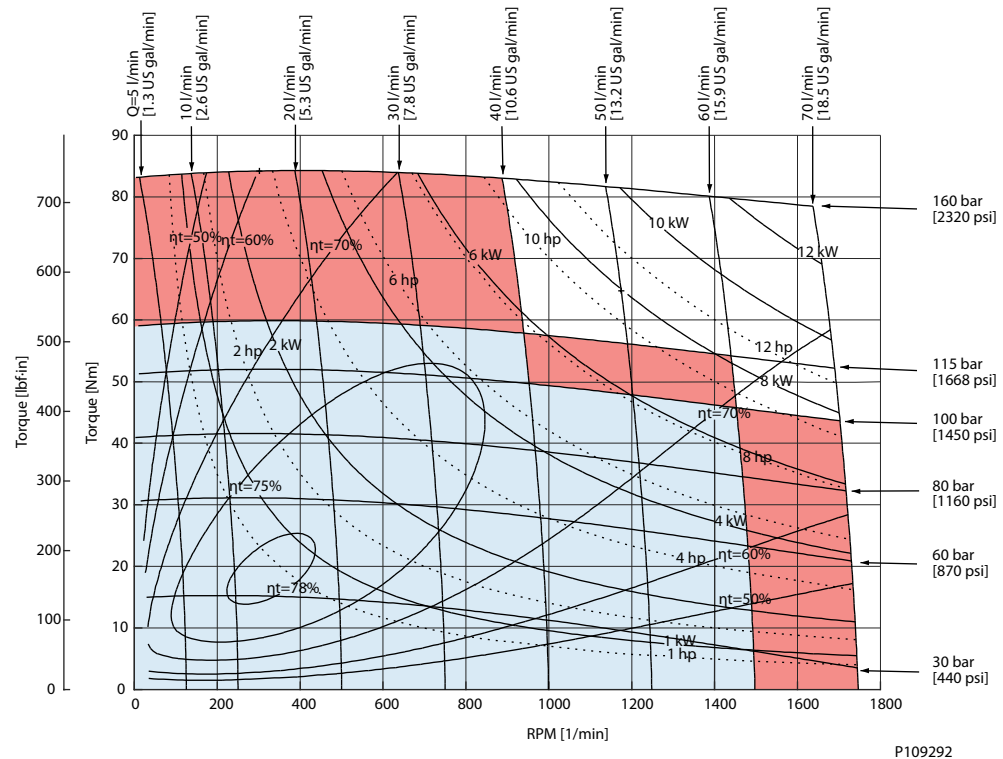
P109290

OMP X function diagrams

OMP X 32

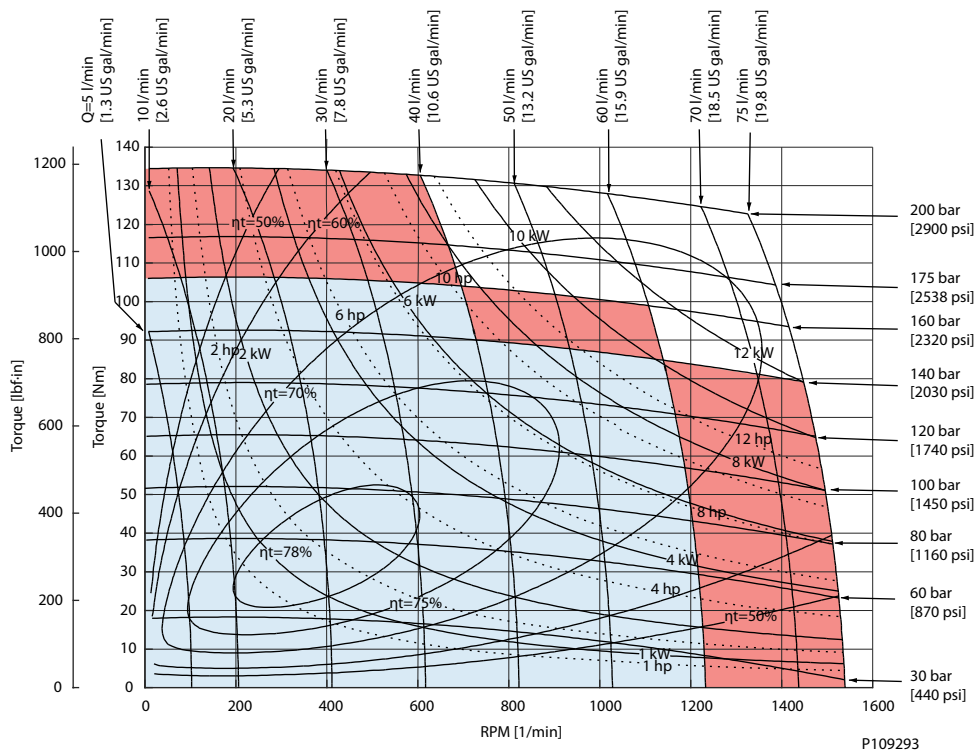


OMP X 40

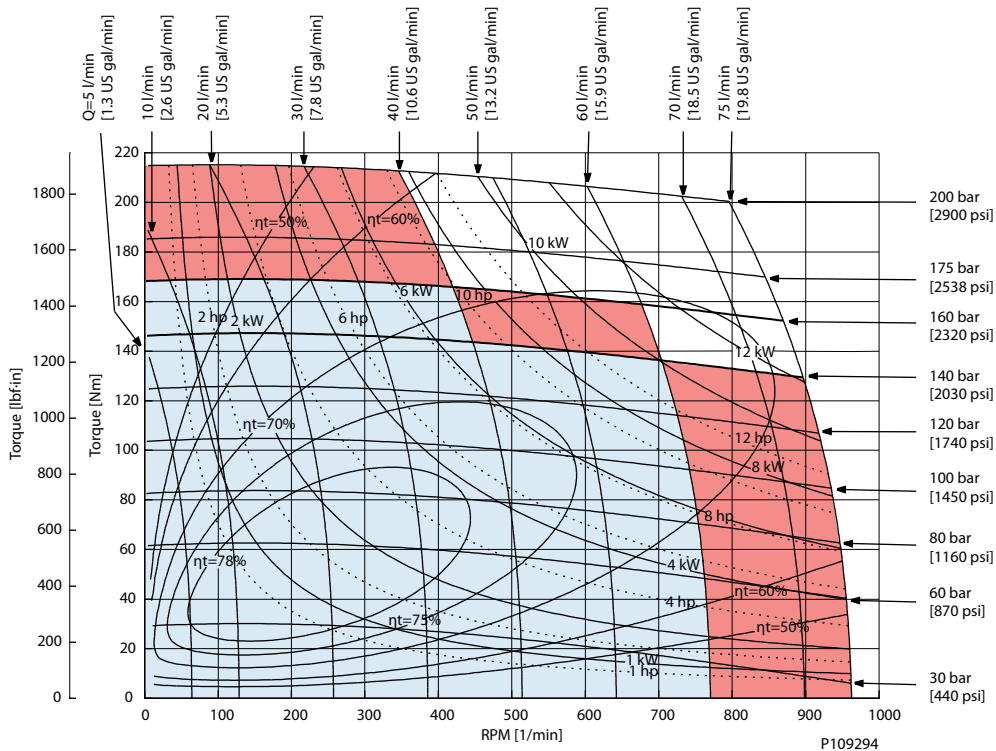


OMP X function diagrams

OMP X 50

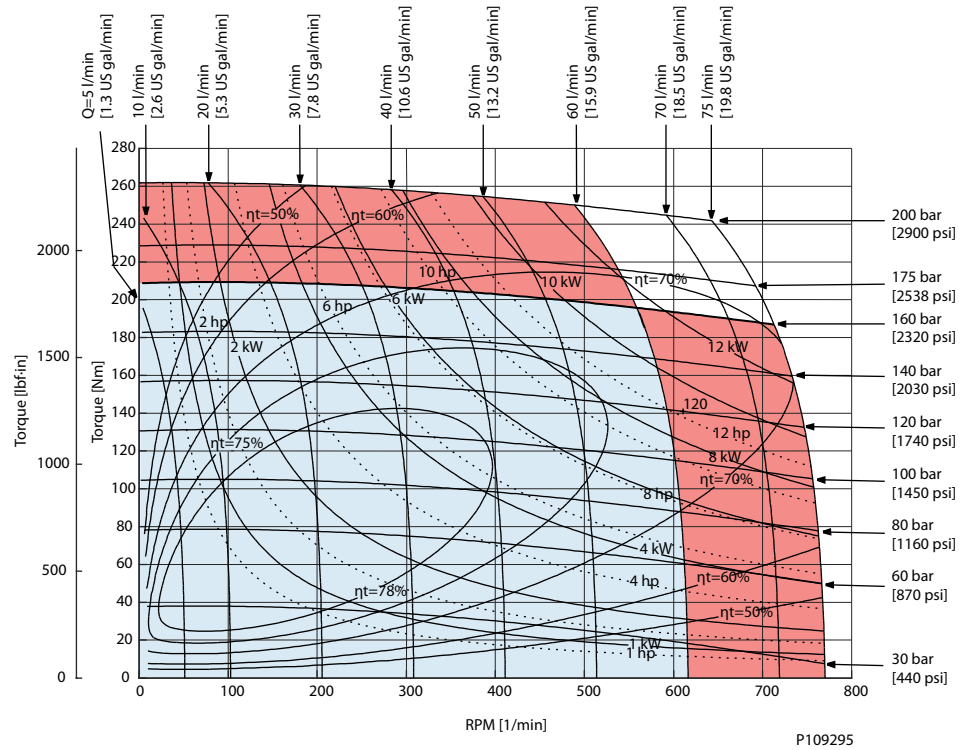


OMP X 80

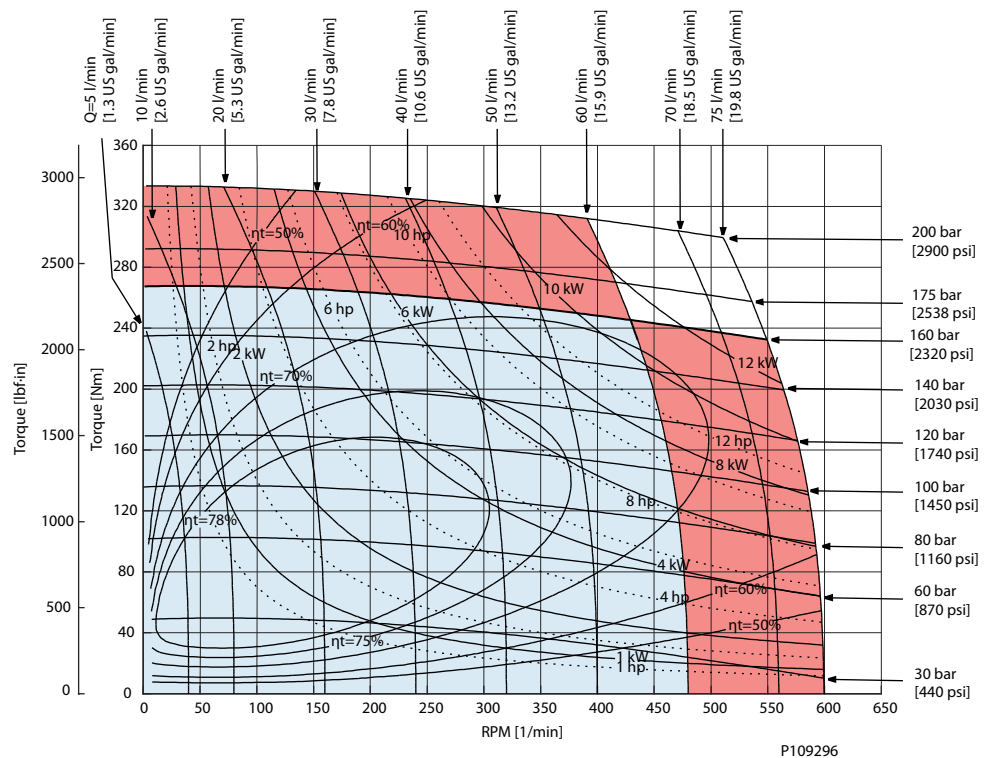


OMP X function diagrams

OMP X 100

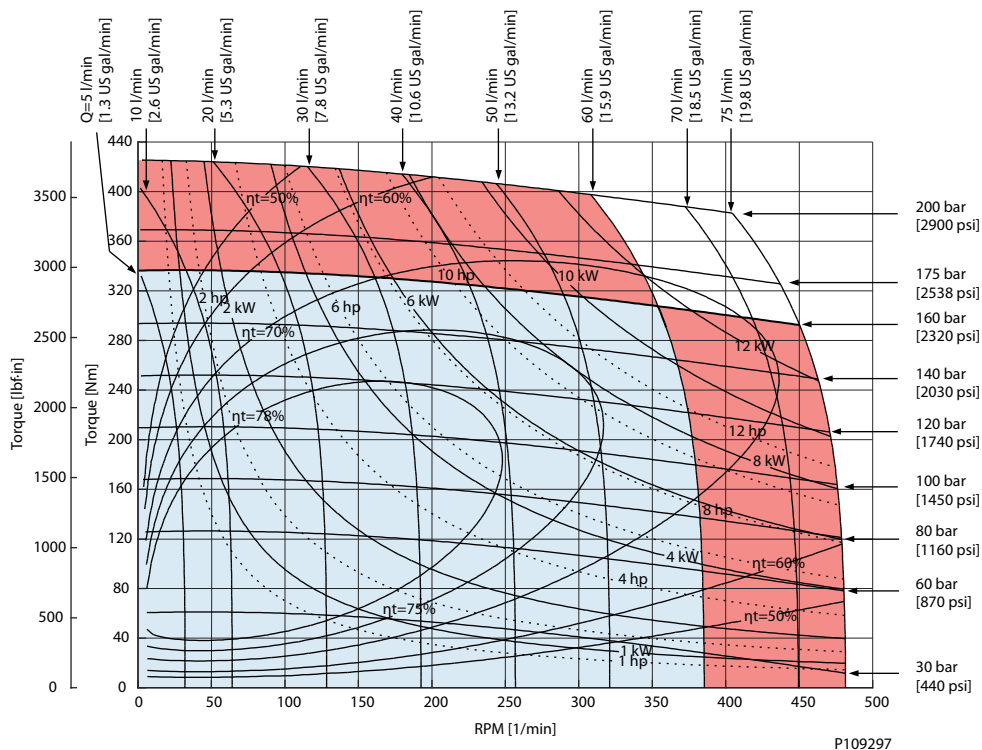


OMP X 125

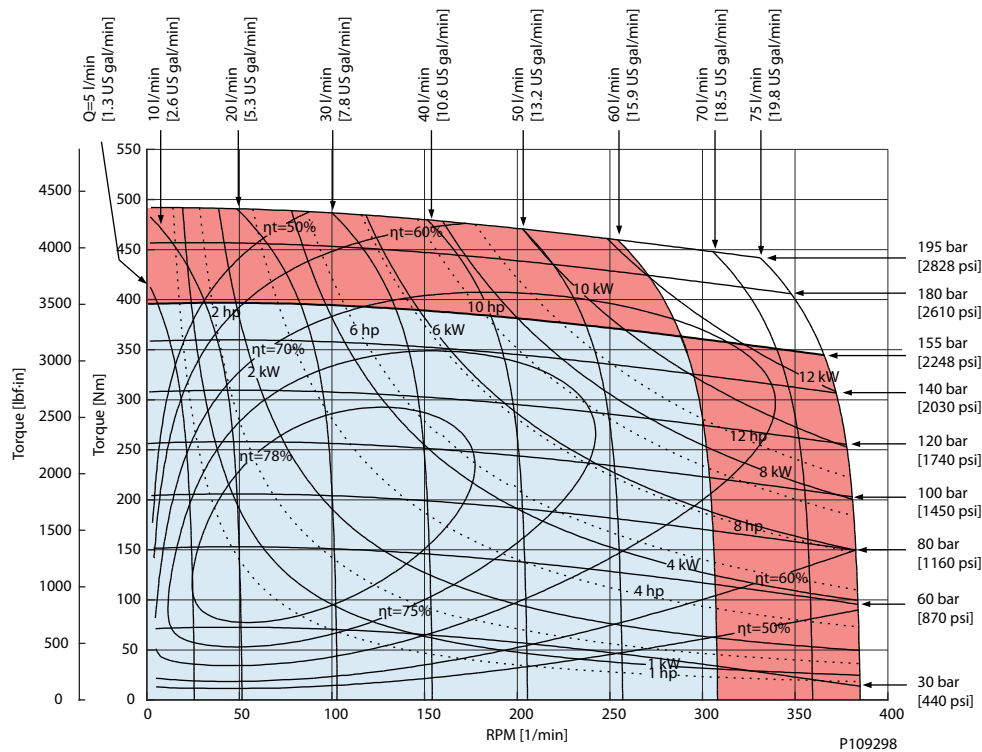


OMP X function diagrams

OMP X 160

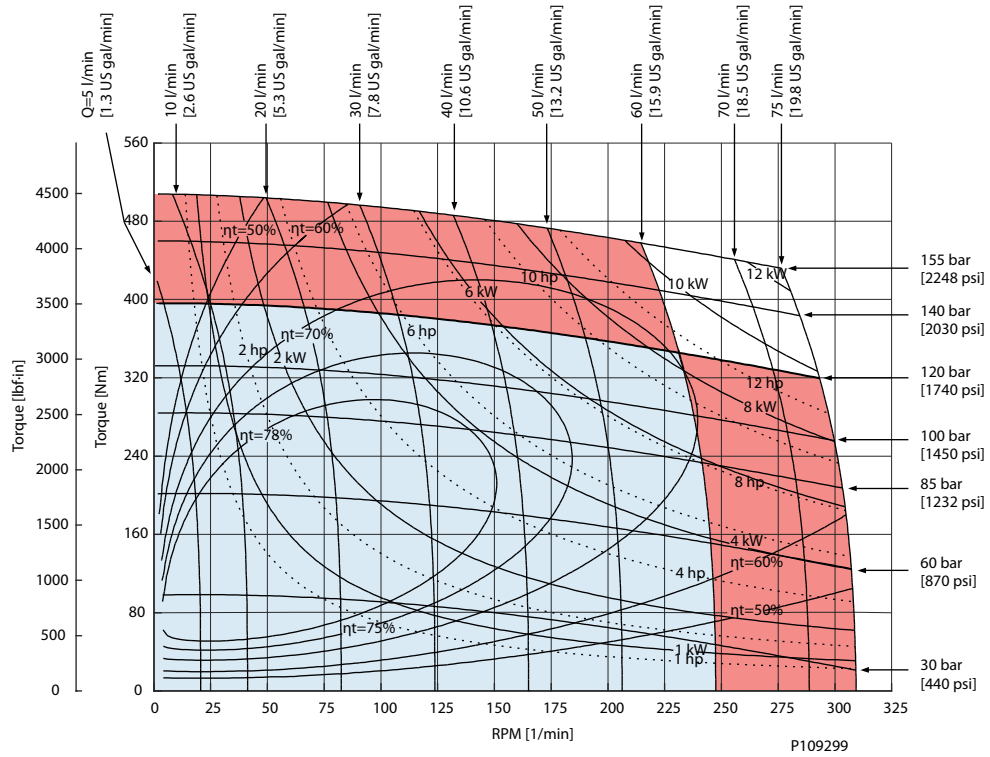


OMP X 200

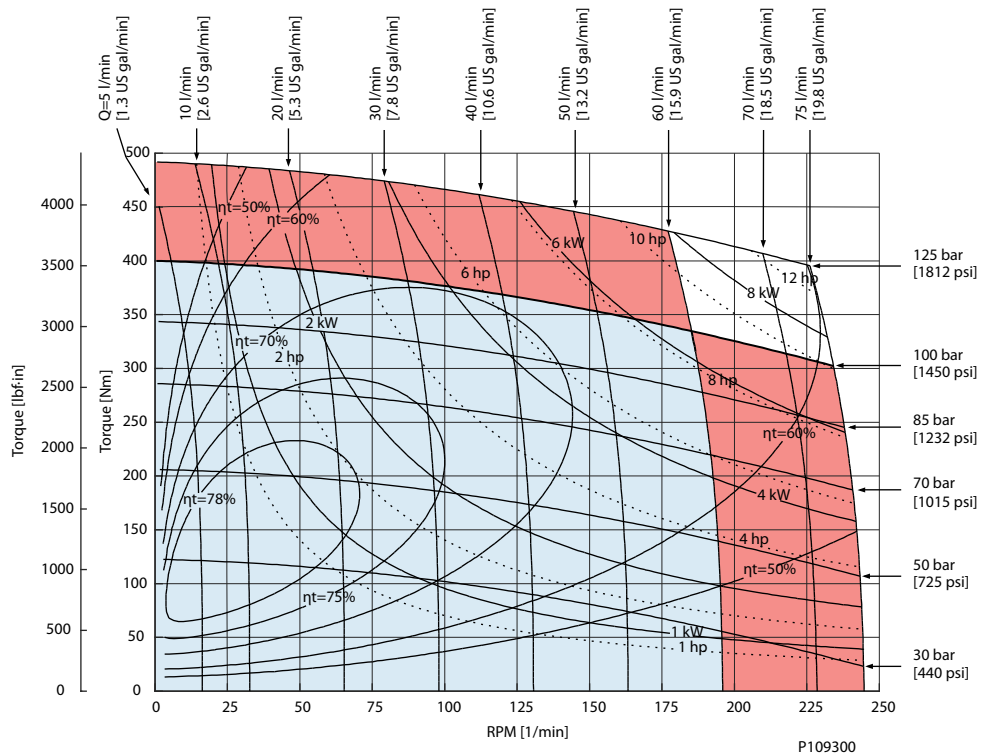


OMP X function diagrams

OMP X 250

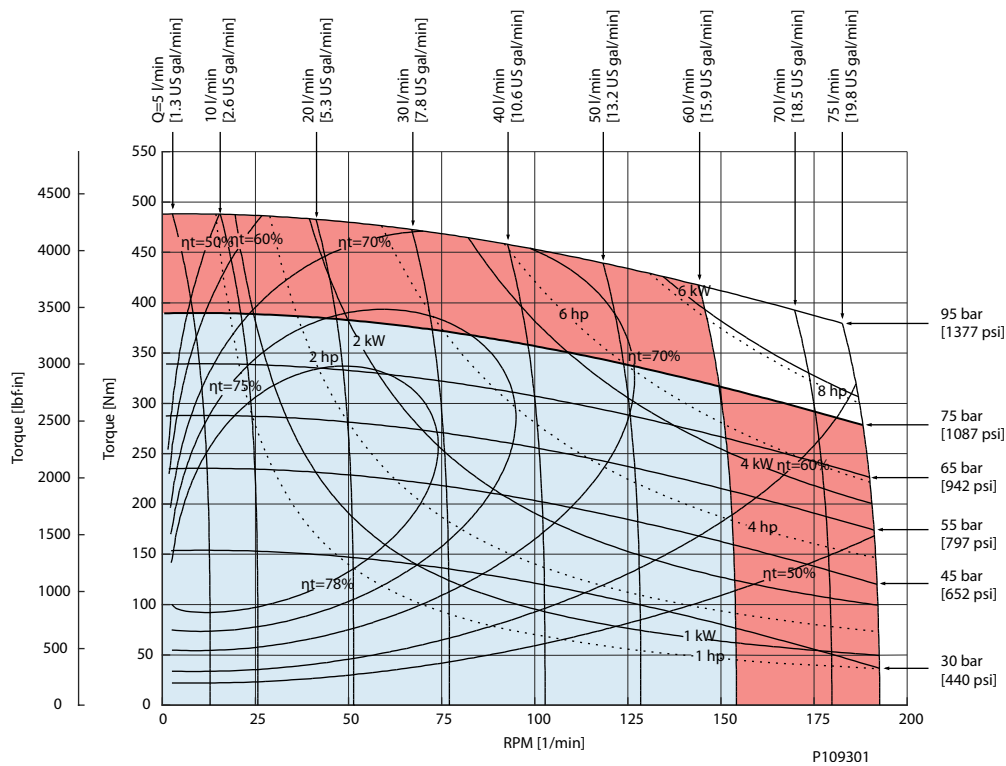


OMP X 315



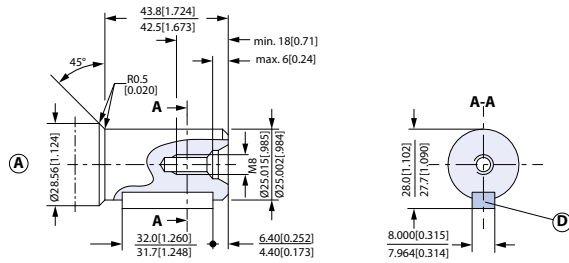
OMP X function diagrams

OMP X 400



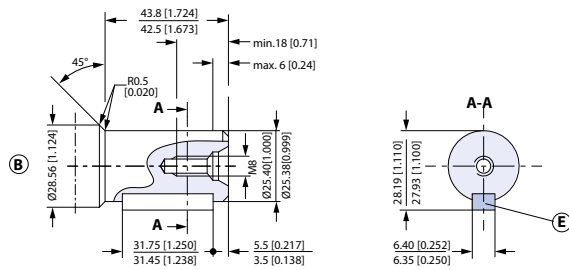
OMP X shaft version

OMP X shaft version



151-1842.12_A

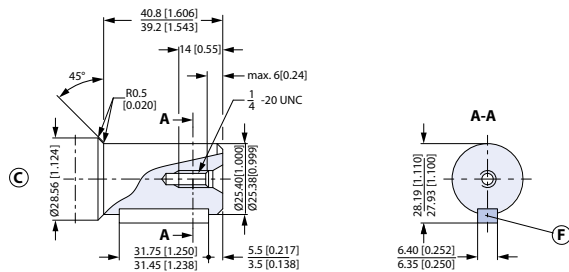
- A:** Cylindrical shaft 25 mm
- D:** Parallel key A8 • 7 • 32 DIN 6885
Max cont. torque: 340 Nm [3010 lbf-in]
Max int. torque 450 Nm [3980 lbf-in]



151-1842.12_B

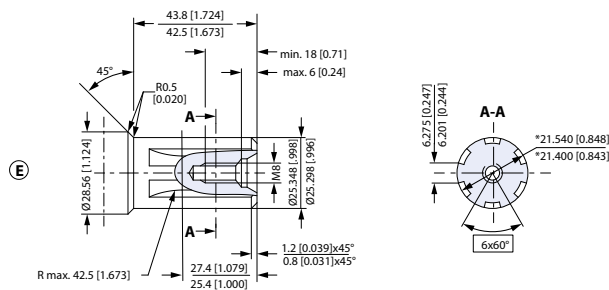
- B:** Cylindrical shaft 1 in
- E:** Parallel key 1/4 • 1/4 • 11/4 in B.S. 46
Max cont. torque: 340 Nm [3010 lbf-in]
Max int. torque: 450 Nm [3980 lbf-in]

US version



151-1842.12

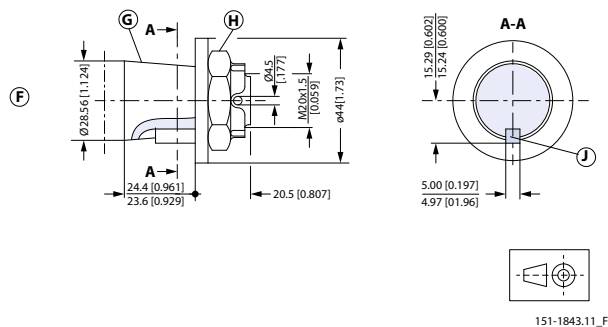
- C:** Cylindrical shaft 1 in
- F:** Parallel key 1/4 • 1/4 • 11/4 in B.S. 46
Max cont. torque: 340 Nm [3010 lbf-in]
Max int. torque 450 Nm [3980 lbf-in]



151-1843.11_E

- E:** Splined shaft B.S. 2059 (SAE 6 B)
Straight-sided, bottom fitting, dep. Fit 2 Nom. size 1 in
* Deviates from BS 2059 (SAE 6B)
Max cont. torque: 400 Nm [3540 lbf-in]

OMP X shaft version

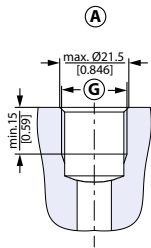


- F:** Tapered shaft
- H:** DIN 937 NV 30. Tightening torque:
100 ± 10 N·m [885 ± 88.50 lbf·in]
- G:** Taper 1:10
- J:** Parallel key B5 5 14 DIN 6885
Max cont. torque: 400 Nm [3540 lbf·in]

151-1843.11_F

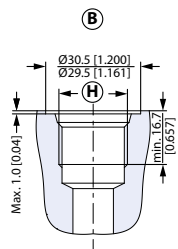
OMP X port thread versions

Port thread versions



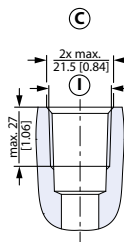
151-1844.11_A

- A:** G main ports
- G:** ISO 228/1 - G1/2



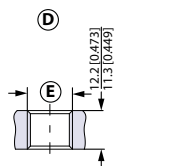
151-1844.11_B

- B:** UNF main ports
- H:** 7/8 - 14 UNF O-ring boss port



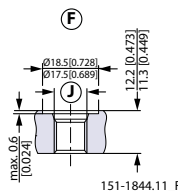
151-1844.11_C

- C:** NPTF main ports
- I:** 1/2 - 14 NPTF



151-1844.11_D

- D:** G drain port
- E:** ISO 228/1 - G1/4



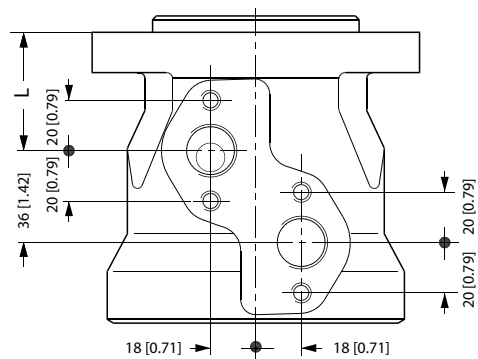
151-1844.11_F

- F:** UNF drain port
- J:** 7/16 - 20 UNF O-ring boss port

OMP X port thread versions

OMP X manifold mount

European version



151-2135.10

L: see dimensional drawing for given OMP X motor:

- [OMP X dimensions - European version](#) on page 30
- [OMP X dimensions - US version](#) on page 35

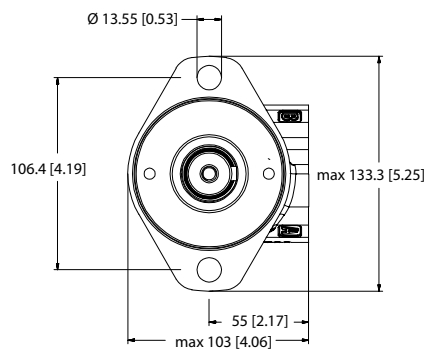
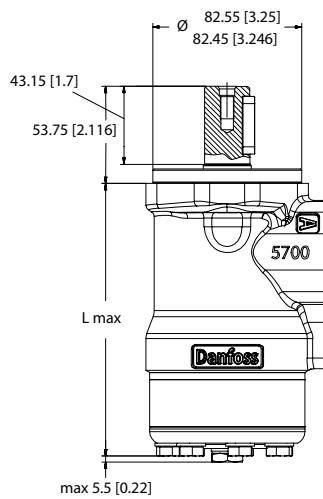
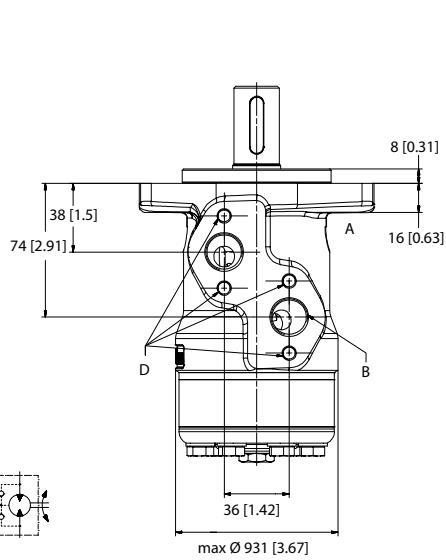
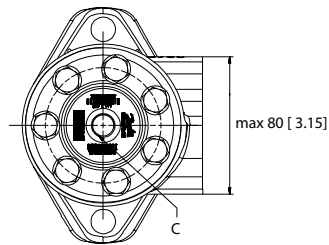
L: see dimensional drawing for given OMR X motor:

- [OMR X dimensions - European version](#) on page 57
- [OMR X dimensions - US version](#) on page 61

OMP X dimensions

OMP X dimensions - European version

Side port offset version with 2 hole oval mounting flange (A2-flange).



P109273

Port connections A, B

G 1/2; min 15 [0.599] deep

Drain connection: C

G 1/4; 11.5 [0.45]

Threaded connection holes: D

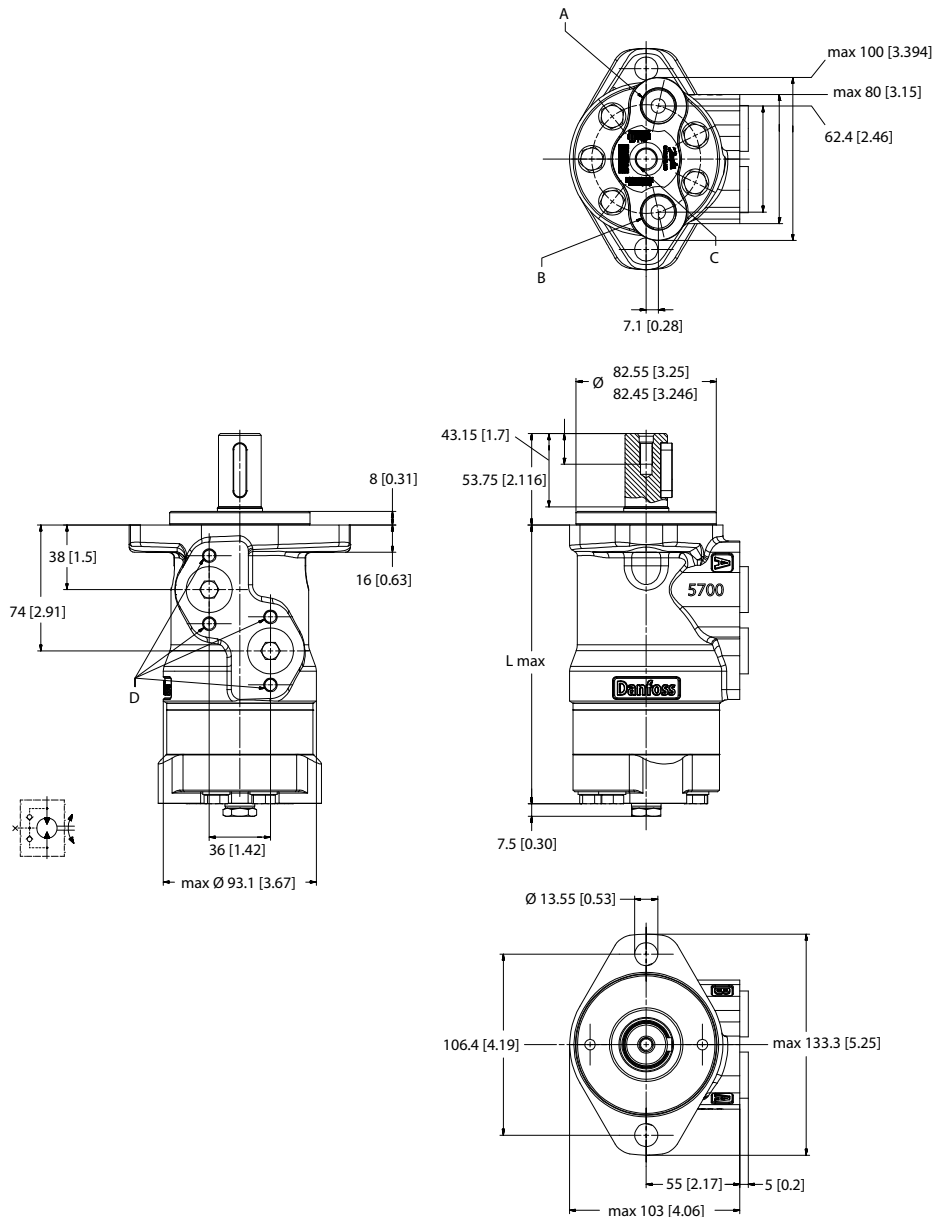
M8; 13 [0.51] deep

OMP X dimensions

Type	Displacement	L max: mm [in]
OMP X	25	130.8 [5.15]
	32	131.9 [5.22]
	40	133.2 [5.25]
	50	133.2 [5.25]
	60	134.6 [5.3]
	80	137.1 [5.4]
	100	139.7 [5.5]
	125	143.4 [5.65]
	160	147.5 [5.81]
	200	152.7 [6.02]
	250	159.2 [6.27]
	315	167.6 [6.6]
	400	178.7 [7.04]

OMP X dimensions

End port version with 2 hole oval mounting flange (A2-flange)



P109275

Port connections: A, B

G 1/2; min 15 [0.59] deep

Drain connection: C

G 1/4; 12 [0.47] deep

Threaded connection holes: D

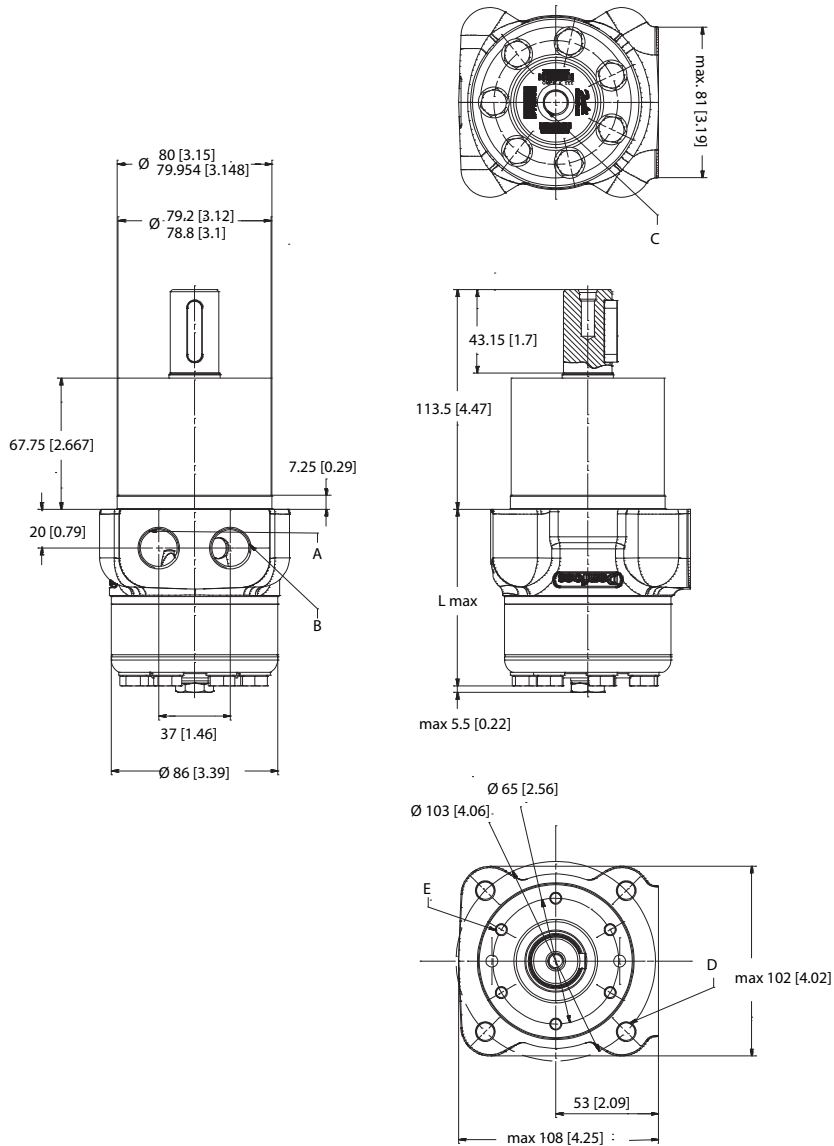
M8; 13 [0.51] deep

OMP X dimensions

Code number	Displacement	L max: mm [in]
OMP X	40	146.8 [5.78]
	50	146.8 [5.78]
	80	150.7 [5.94]
	100	153.3 [6.04]
	160	161.1 [6.35]
	200	166.3 [6.55]
	250	172.8 [6.81]
	315	181.2 [7.14]
	400	192.2 [7.58]

OMP X dimensions

OMPW X and OMPW X N wheel motor



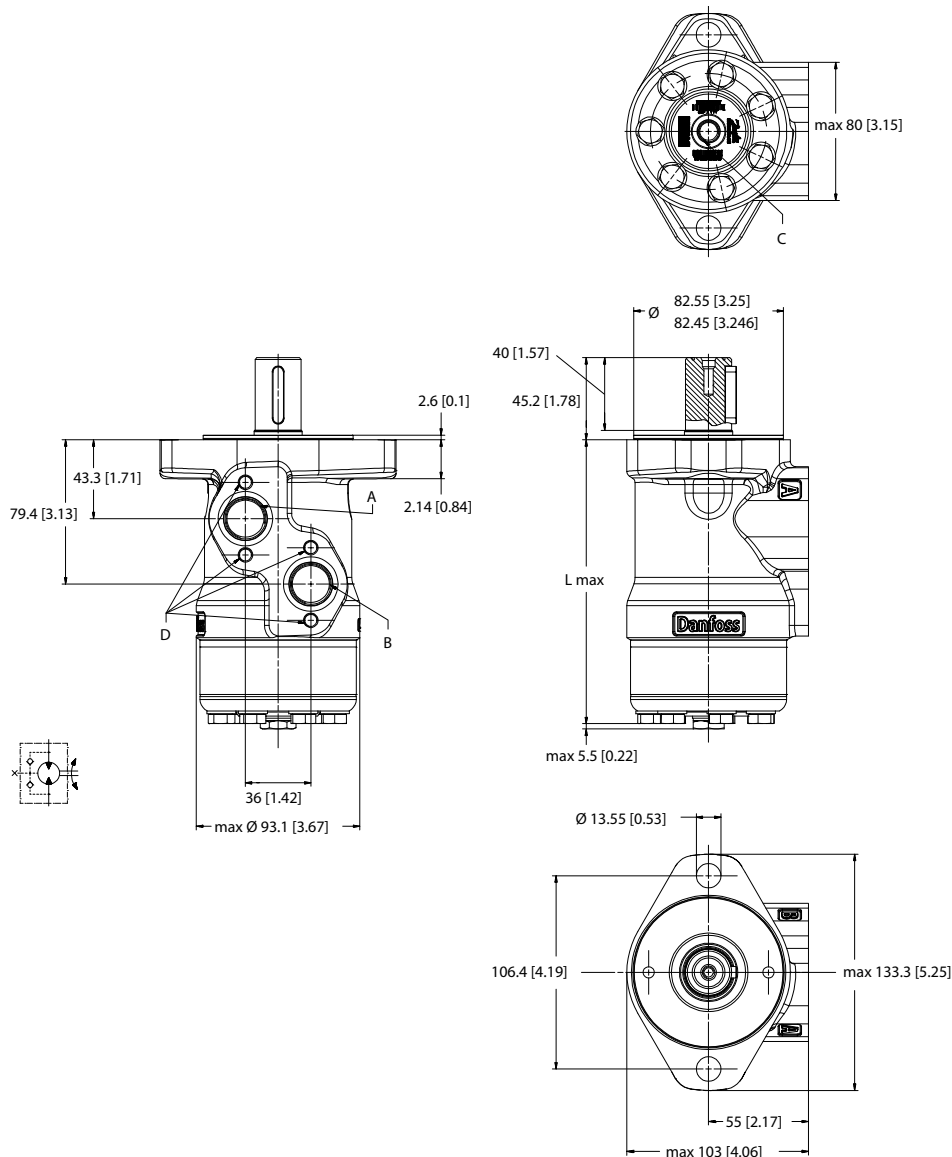
P109267

Type	Displacement	L max: mm [in]
OMP X	50	73.4 [2.89]
	80	77.3 [3.05]
	100	79.9 [3.15]
	125	83.7 [3.3]
	160	87.7 [3.46]
	200	92.9 [3.66]
	250	99.4 [3.92]
	315	107.8 [4.25]
400	118.9 [4.69]	

OMP X dimensions

OMP X dimensions - US version

Side port offset version with 2 hole oval mounting flange (A2-flange)



P109277

Port Connections: A, B

7/8 - 14 UNF; min 16.7 [0.660] deep

Drain connection: C

7/16 - 20 UNF; 11.5 [0.51] deep

Threaded connection holes: D

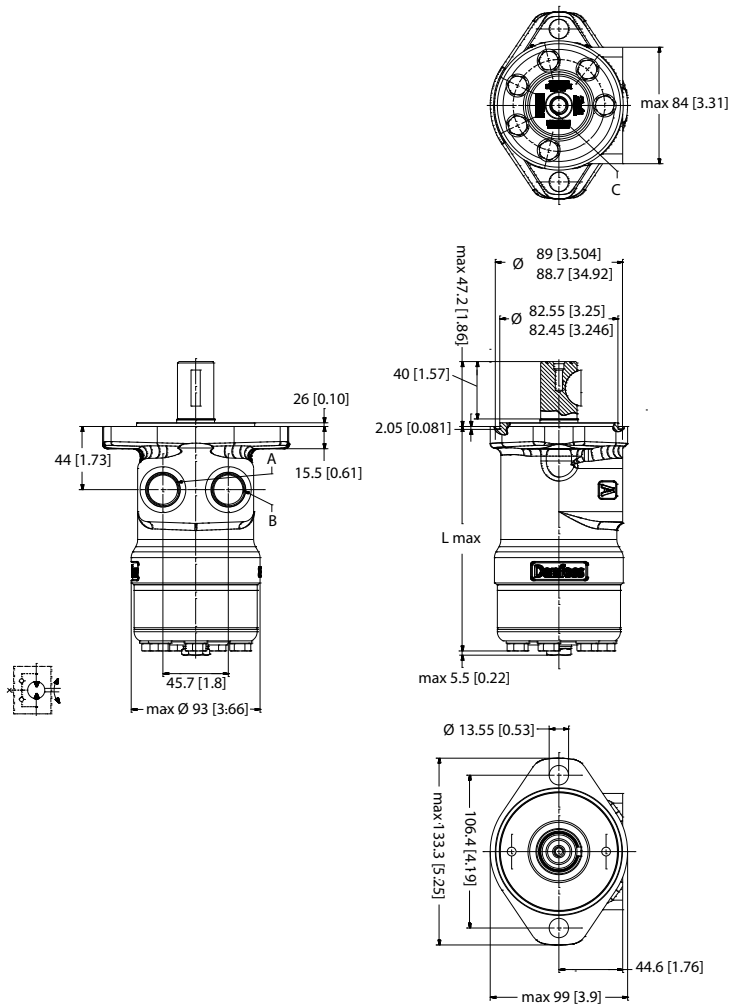
M8; 13 [0.51] deep

OMP X dimensions

Type	Displacement	L max: mm [in]
OMP X	25	136.2 [5.37]
	32	137.3 [5.41]
	40	138.6 [5.46]
	50	138.6 [5.46]
	80	142.5 [5.62]
	100	145.1 [5.72]
	160	152.9 [6.02]
	200	158.1 [6.82]
	400	173.0 [6.82]
	400	184.1 [7.25]

OMP X dimensions

Sideport aligned with 2 hole oval mounting flange (A2)



P109282

Port connections: A, B

7/8 - 14 UNF; min 16.7 [0.66] deep

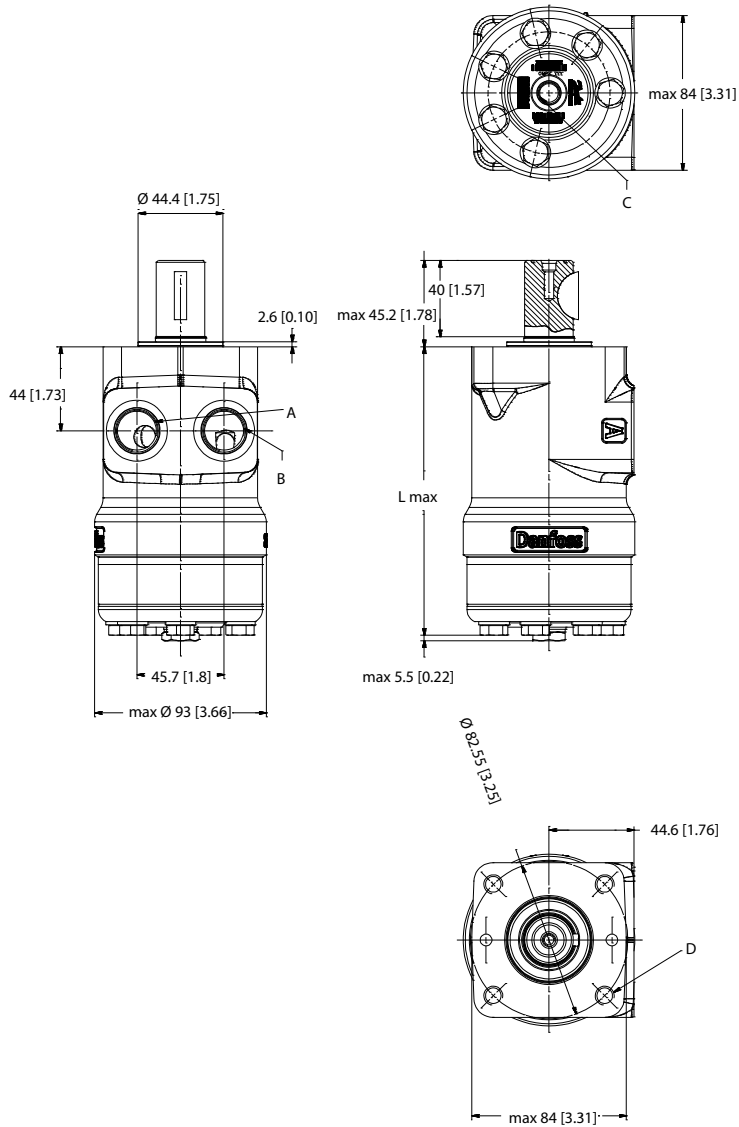
Drain connection: C

7/16 - 20 UNF; 11.5 [0.45] deep

Type	Displacement	L max mm [in]
OMR X	36	137.9 [5.43]
	50	138.6 [5.46]
	80	142.5 [5.62]
	100	145.1 [5.72]
	125	148.8 [5.86]
	160	152.9 [6.02]
	200	158.1 [6.23]
	250	164.6 [6.49]
	315	173 [6.82]
400	184.1 [7.25]	

OMP X dimensions

Side port aligned offset with square mounting flange (C-flange)



P109283

Port connections: A, B

7/8 - 14 UNF; 11.5 mm [0.45 in]

Drain connection: C

7/16 - 20 UNF; 11.5 mm [0.45 in] deep

Threaded connection holes: D

3/8 - 19 UNC; 15 mm [0.59 in] deep

OMP X dimensions

Type	Displacement	L max: mm [in]
OMP X	36	137.9 [5.43]
	50	138.6 [5.46]
	80	142.5 [5.62]
	100	145.1 [5.72]
	125	148.8 [5.86]
	160	152.9 [6.02]
	200	158.1 [6.23]
	250	164.6 [6.49]
	315	173 [6.82]
	400	184.1 [7.25]

OMR X versions and code numbers
OMR X versions and code numbers
OMR standard motors

Mounting flange: Side port offset with 2 hole oval mounting flange (A2-flange)

Spigot diamer	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port offset	G 1/4	Yes	Yes	OMR X	A1
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	Yes	OMR X	A2
Cyl. 1 in	G 1/2	Side port offset	G 1/4	Yes	Yes	OMR X	A3
Cyl. 1 in	7/8-14 UNF	Side port offset	7/16-20 UNF	Yes	Yes	OMR X	A4
Splined 1 in	G 1/2	Side port offset	G 1/4	Yes	Yes	OMR X	A5
Splined 1 in	7/8-14 UNF	Side port offset	7/16-20 UNF	Yes	Yes	OMR X	A6
Tap. Ø28.5 mm	G 1/2	Side port offset	G 1/4	Yes	Yes	OMR X	A7

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
A1	11185537	11186671	11186674	11186655	11186658	11186665	11186667	11186652	11185531
A2	11185473	11185474	11186645	11185468	11185469	11186642	11185471	11185467	11186644
A3	11185558	11185560	11185562	11185548	11185549	11185551	11185554	11185545	11185556
A4	11185488	11185489	11185490	11185483	11185484	11185485	11185486	11185482	11185487
A5	11185584	11185585	11185588	11185567	11185570	11185573	11185576	11185564	11185580
A6	11185497	11185498	11185499	11185492	11185493	11185494	11185495	11185491	11185496
A7	11185609	11185610	11185611	11185604	11185605	11185606	11185607	11185603	11185608

Mounting flange: Side port aligned with 2 hole oval mounting flange (A2-flange)

Spigot diamer	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. 1 in wk	7/8 - 14 UNF	Side port aligned	7/16 - 20 UNF	Yes	Yes	OMR X	B1
Cyl. 1 in	1/2 - 14 NPTF	Side port aligned	7/16-20 UNF	Yes	Yes	OMR X	B2
Splined 1 in	7/8 - 14 NPTF	Side port aligned	7/16 - 20 UNF	Yes	Yes	OMR X	B3

Code numbers

Conf. Code	Displacement								
	50	80	100	125	160	200	250	315	400
B1	11186162	11186163	11186164	11186157	11186158	11186159	11186160	11186156	11186161
B2	-	11186189	11186190	-	11186185	11186186	11186187	-	11186188
B3	-	11186154	11186155	11186151	-	11186152	-	11186150	11186153

OMR X versions and code numbers

Mounting flange: Side-port aligned with square mounting flange (C-flange)

Spigot diameter	Ø 44.4 mm [1.75 in]						
Bolt circle diameter	Ø 82.5 mm [3.25 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. 1 in	7/8 - 14 UNF	side port aligned	7/16 - 20 UNF	Yes	Yes	OMR X	C1
Cyl. 1 in	1/2 - 14 NPTF	Side port aligned	7/16-20 UNF	Yes	Yes	OMR X	C2

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	400
C1	11186146	11186147	11186148	11186646	11186647	11186143	11186144	11185479	11186145
C2	11186197	-	11186198	-	11186193	11186194	11186195	-	11186196

OMR X N motors with needle bearings

Mounting flange: Side port offset with 2 hole oval mounting flange (A2-flange)

Spigot diameter	Ø 82.5 mm [3.25 in]						
Bolt circle diameter	Ø 106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø 25 mm	G 1/2	Side port offset	G1/4	Yes	Yes	OMR X N	D1

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
D1	11185526	11185601	-	11185594	11185595	11185596	11185598	11185593	11185599

OMR X technical data
OMR X with 1 inch splined 6B and 28.5 mm tapered shaft
OMR 50 cm³ - 160 cm³

Type			OMR X				
Motor size			50	80	100	125	160
Geometric displacement	cm ³ [in ³]		51.6 [3.16]	80.3 [4.91]	99.8 [6.11]	124.1 [7.57]	155.4 [9.48]
Max. speed	min ⁻¹ [rpm]	cont.	775	750	600	475	385
		int.*	970	940	750	600	480
Max. torque	Nm [lbf-in]	cont.	100 [890]	215 [1900]	275 [2435]	330 [2920]	380 [3365]
		int.	120 [1060]	235 [2080]	300 [2655]	360 [3185]	435 [3580]
Max. output	kW [hp]	cont.	7.0 [9.4]	14.0 [18.8]	14.0 [18.8]	14.0 [18.8]	12.6 [16.9]
		int.	8.8 [11.7]	15.8 [21.1]	17.5 [23.5]	17.5 [23.5]	15.8 [21.1]
Max. pressure drop	bar [psi]	cont.	150 [2175]	200 [2900]	200 [2900]	200 [2900]	180 [2610]
		int.	175 [2540]	225 [3260]	225 [3260]	225 [3260]	215 [3120]
Max. oil flow	l/min [US gal/min]	cont.	40 [10.6]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int.	50 [13.2]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max. starting pressure with unloads shaft	bar [psi]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min. starting torque at max. pressure drop	Nm [lbf-in]	cont.	85 [750]	190 [1680]	230 [2035]	295 [2610]	335 [2965]
		int.	100 [890]	215 [1900]	255 [2255]	335 [2965]	400 [3540]

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

OMR 200 cm³ - 400 cm³

Type			OMR X			
Motor size			200	250	315	375
Geometric displacement	cm ³ [in ³]		198.2 [12.09]	248.1 [15.14]	310.1 [18.92]	363.5 [22.18]
Max. speed	min ⁻¹ [rpm]	cont.	305	240	195	165
		int.	380	300	245	205
Max. torque	Nm [lbf-in]	cont.	400 [3540]	400 [3540]	400 [3540]	390 [3450]
		int.	480 [4250]	540 [4780]	550 [4870]	550 [4865]
Max. output	kW [hp]	cont.	10.5 [14]	8.8 [11.7]	7.0 [9.4]	5.6 [7.5]
		int.	13.1 [17.5]	10.5 [14.1]	8.9 [11.9]	7.8 [10.5]

OMR X technical data
OMR 200 cm³ - 400 cm³ (continued)

Type			OMR X			
Motor size			200	250	315	375
Max. pressure drop	bar [psi]	cont.	150 [2175]	125 [1815]	100 [1450]	80 [1160]
		int.	195 [2830]	170 [2465]	140 [2030]	115 [1670]
Max. oil flow	l/min [US gal/min]	cont.	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int.	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max. starting pressure with unloads shaft	bar [psi]		10 [145]	7 [100]	7 [100]	7 [100]
Min. starting torque at max. pressure drop	Nm [lbf-in]	cont.	350 [3100]	370 [3275]	370 [3275]	335 [2965]
		int.	460 [4070]	500 [4425]	515 [4560]	480 [4250]

Type		Max inlet pressure drop N·m [lbf-in]	Max return pressure with drain line N·m [lbf-in]
OMR X 50 cm ³ - 400 cm ³	cont.	200 [2900]	200 [2900]
	int.	225 [3260]	225 [3260]

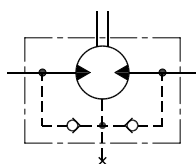
Maximum permissible shaft seal pressure
OMR X with High Pressure Shaft seal (HPS)

OMR X with HPS, check valves and with drain connection:

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

OMR X with HPS, check valves and without drain connection:

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

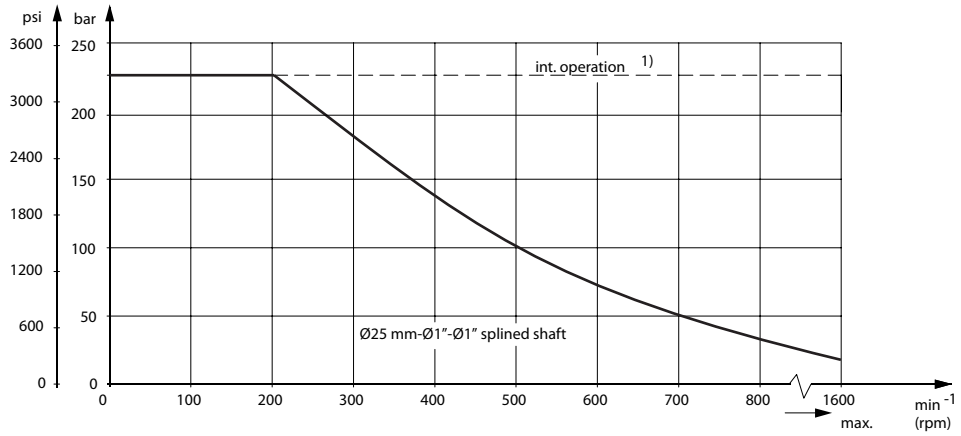


151-320.10

OMR X technical data

Max. permissible shaft seal pressure

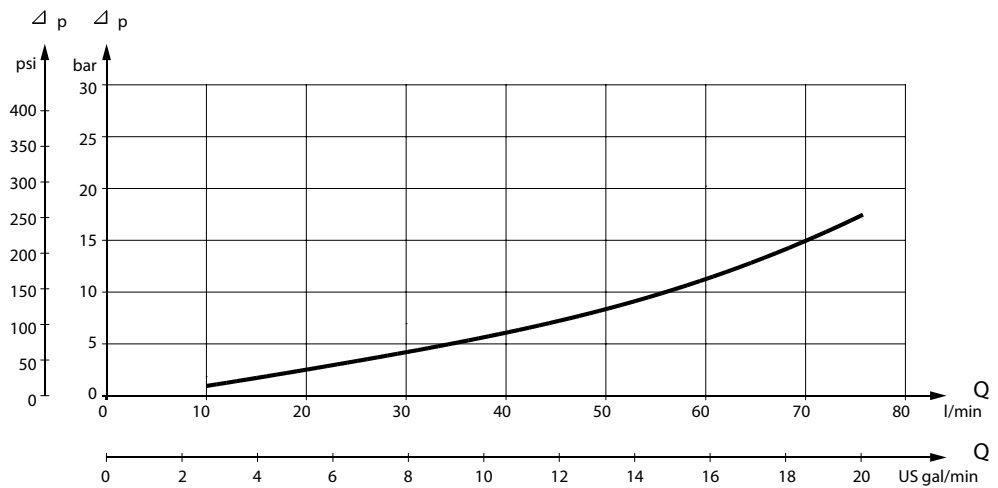
Maximum permissible shaft seal pressure



P109264

Pressure drop in OMR X motor

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



151-1566.10

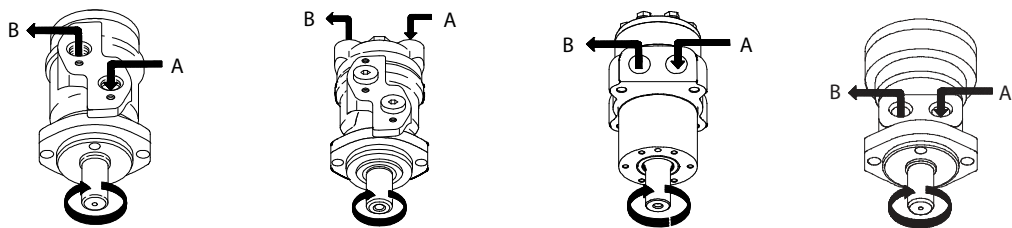
Oil flow in drain line

The table 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]
100	[1450]	20	[100]	2.5	[0.66]
		35	[165]	1.8	[0.78]
140	[2030]	20	[100]	3.5	[0.93]
		35	[165]	2.8	[0.74]

OMR X technical data

Direction of shaft rotation: clockwise



P109280

Permissible shaft loads

OMP X and OMR X

The permissible radial shaft load (P_R) depends on:

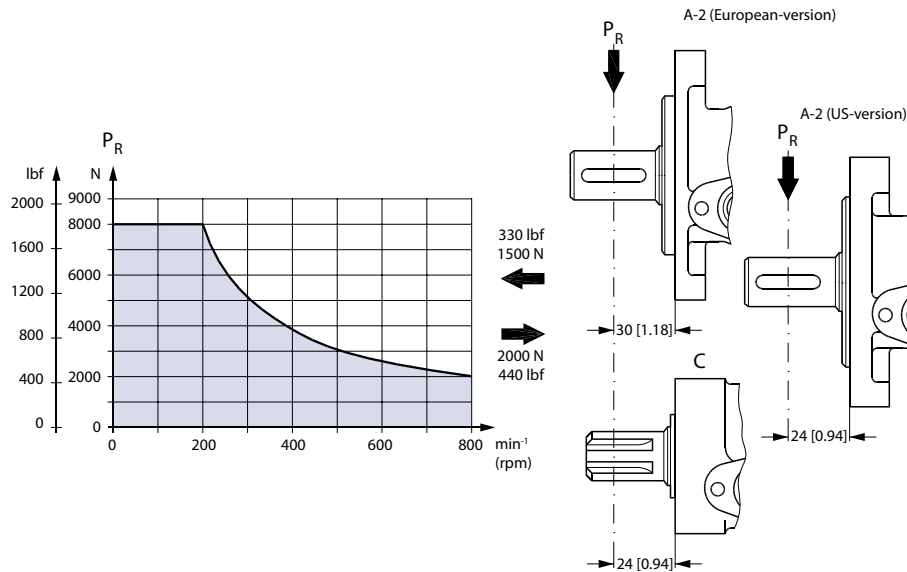
- Speed (n)
- Distance (L) from the point of load to the mounting flange
- Mounting flange version
- Shaft version

Mounting flange	2-hole oval flange (European version)	Square flange** 2-hole oval flange (US-version)
Shaft version	25 mm cylindrical shaft 28.5 mm tapered shaft 1 in cylindrical shaft 1 in splined shaft	25 mm cylindrical shaft 1 in splined shaft
Permissible shaft load (P_R) - l in mm	$\frac{800}{n} \cdot \frac{250000}{95 + L} \text{ N}^*$	$\frac{800}{n} \cdot \frac{250000}{101 + L} \text{ N}^*$
Permissible shaft load (P_R) - l in inch	$\frac{800}{n} \cdot \frac{2215}{3.74 + L} \text{ lbf}^*$	$\frac{800}{n} \cdot \frac{2215}{3.98 + L} \text{ lbf}^*$

** For both European and US-version

* $n \geq 200 \text{ min}^{-1}$ [rpm]; $\leq 55 \text{ mm}$ [2.2 in]. $n < 200 \text{ min}^{-1}$ [rpm]; $= > P_{Rmax} = 8000 \text{ N}$ [1800 lbf]

OMR X technical data



P109266

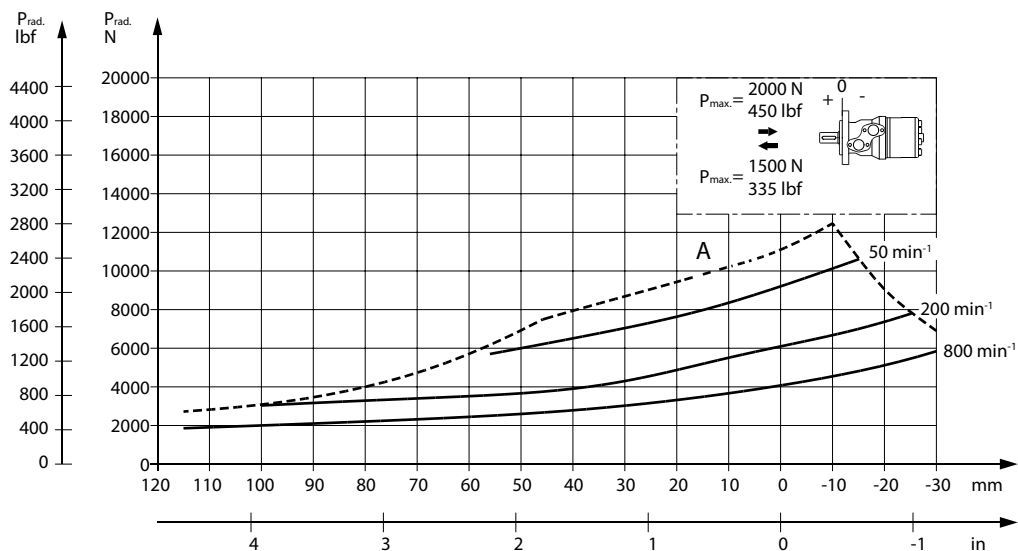
The curve shows the relation between P_R and n

- when $l = 30$ mm [1.18 in] for motors with A2 (European version)
- when $l = 24$ mm [0.94 in] for motors with square mounting flange and A2 (US version)

For applications with special performance requirements we recommend OMP and OMR with the output shaft running in needle bearings.

OMR X technical data

OMR X N with Needle Bearings



151-2112.10

The output shaft on OMR X N runs in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to OMR X motors with slide bearings.

The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

Curve A shows max. radial shaft load. Any shaft load exceeding the values quoted in the curve will involve a risk of breakage.

The other curves apply to a B10 bearing life of 2000 hours at the number of revolutions indicated by the curve letter. Mineral based hydraulic oil with a sufficient content of anti-wear additives must be used.

Bearing life calculations can be made using the explanation and formula provided in the chapter *Bearing dimensioning* in the technical information *Orbital Motors General 520L0232*.

OMR X function diagrams

Explanation of function diagram use, basis and conditions can be found in [Speed, torque and output](#) on page 7.

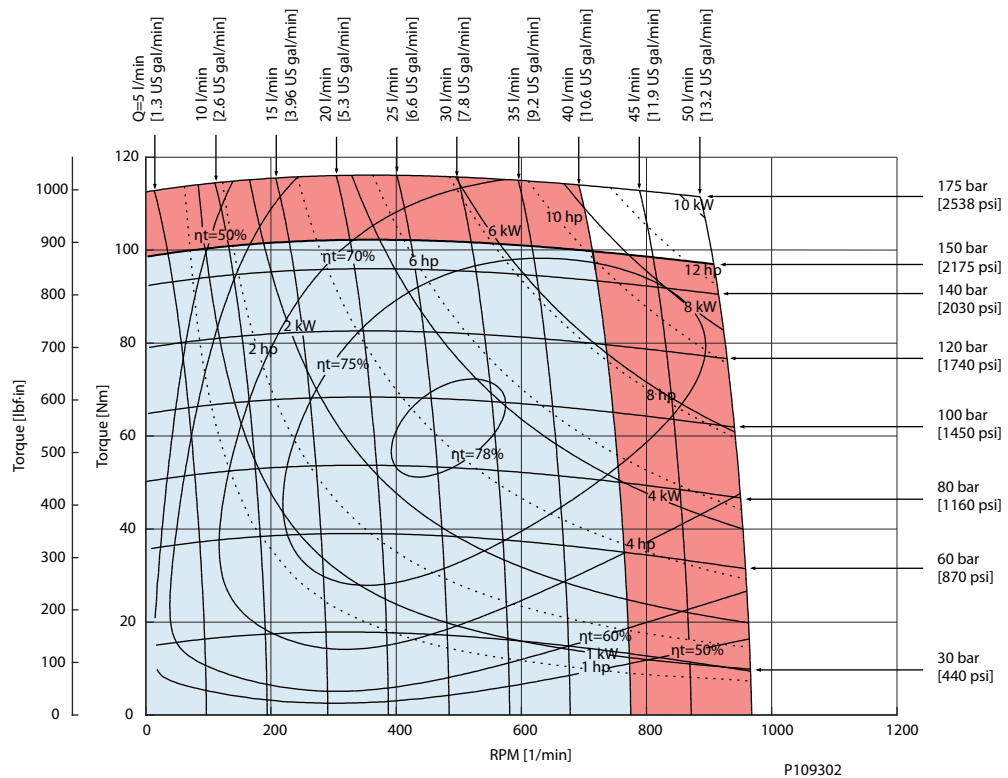
- Continuous range
- Intermittent range (max. 10% operation every minute)

Max. permissible continuous/intermittent pressure drop for the actual shaft version can be found in [OMR X technical data](#) on page 42.

Intermittent pressure drop and oil flow must not occur simultaneously.

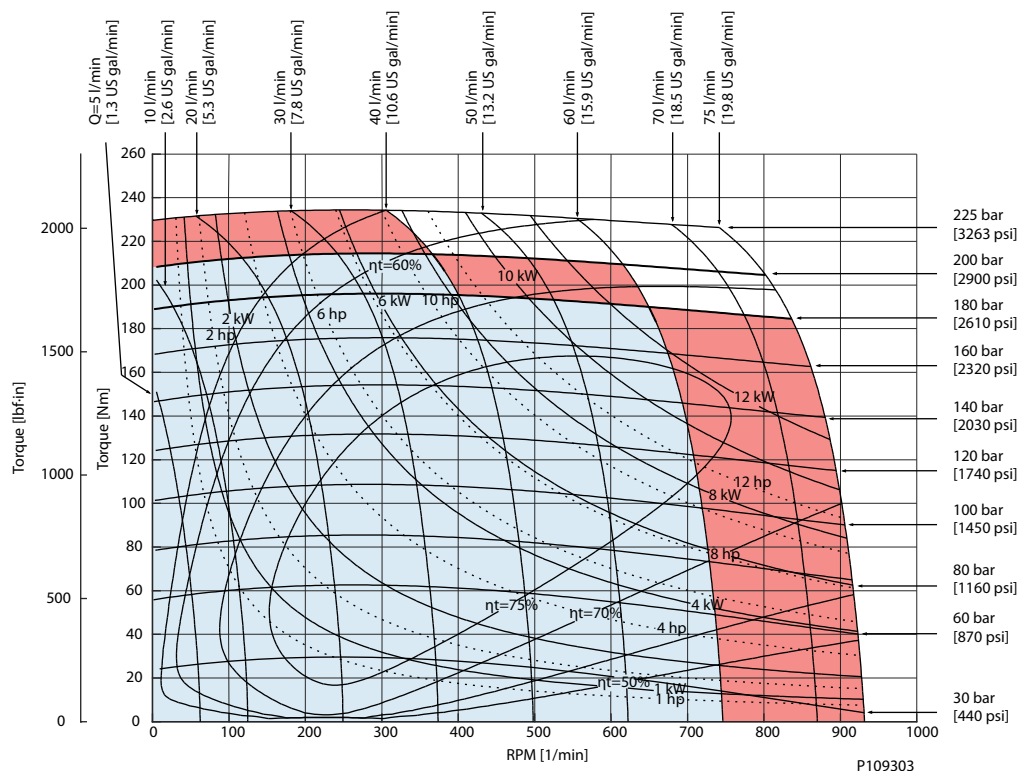
OMR X function diagrams

OMR X 50

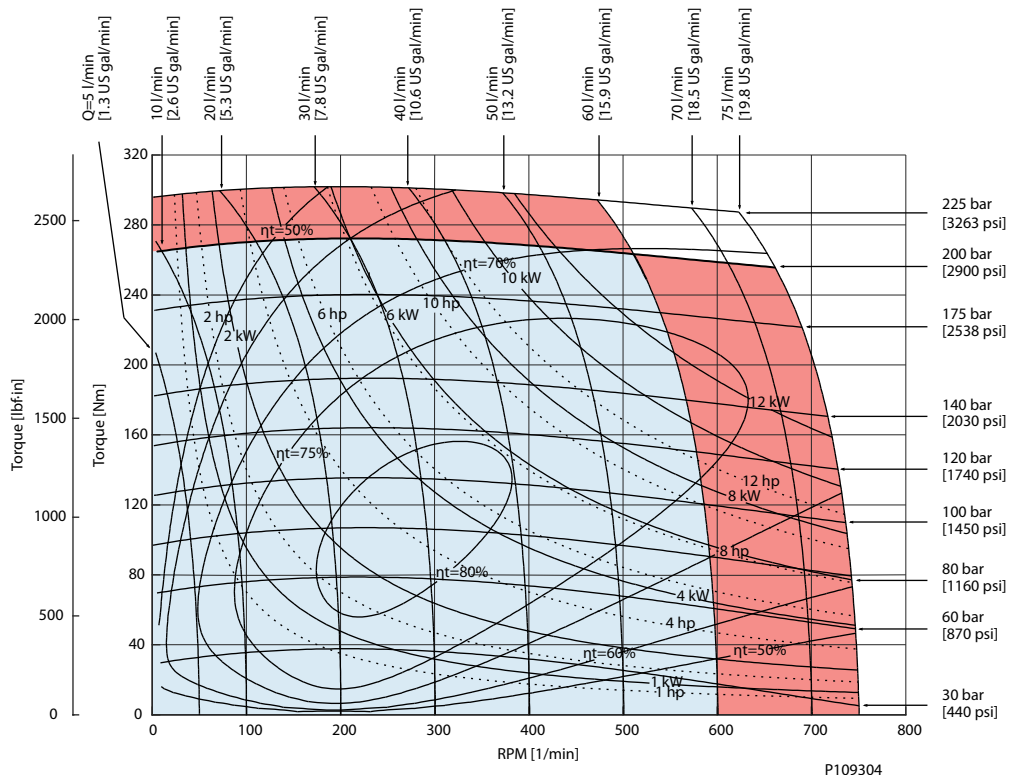


OMR X function diagrams

OMR X 80

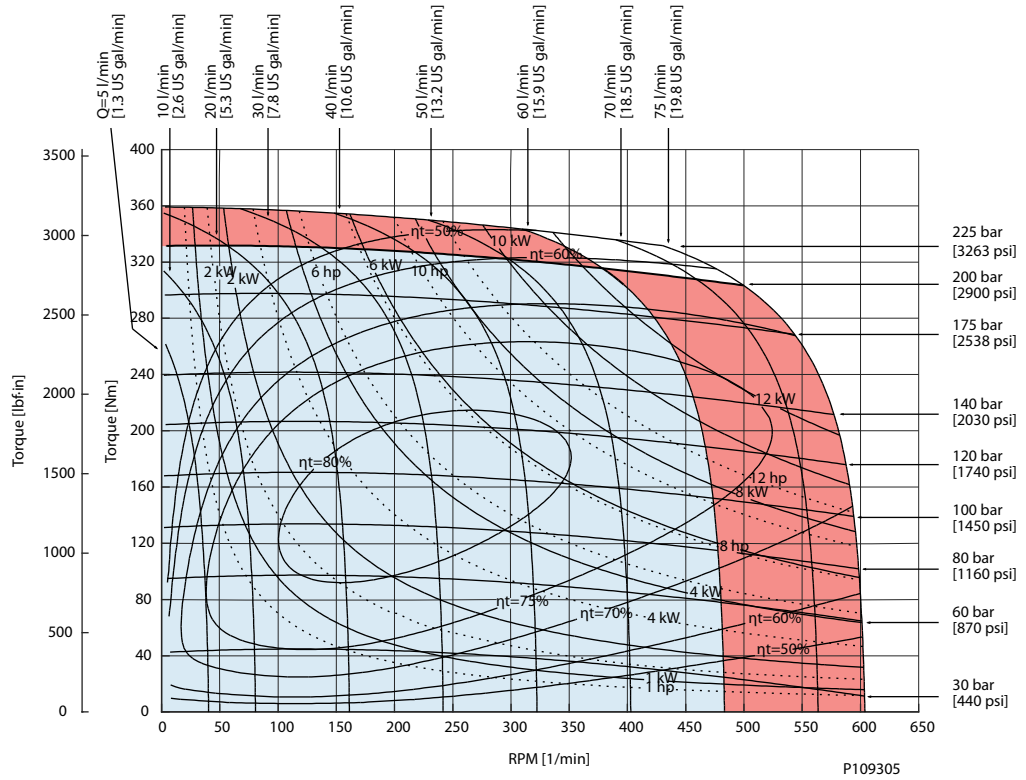


OMR X 100

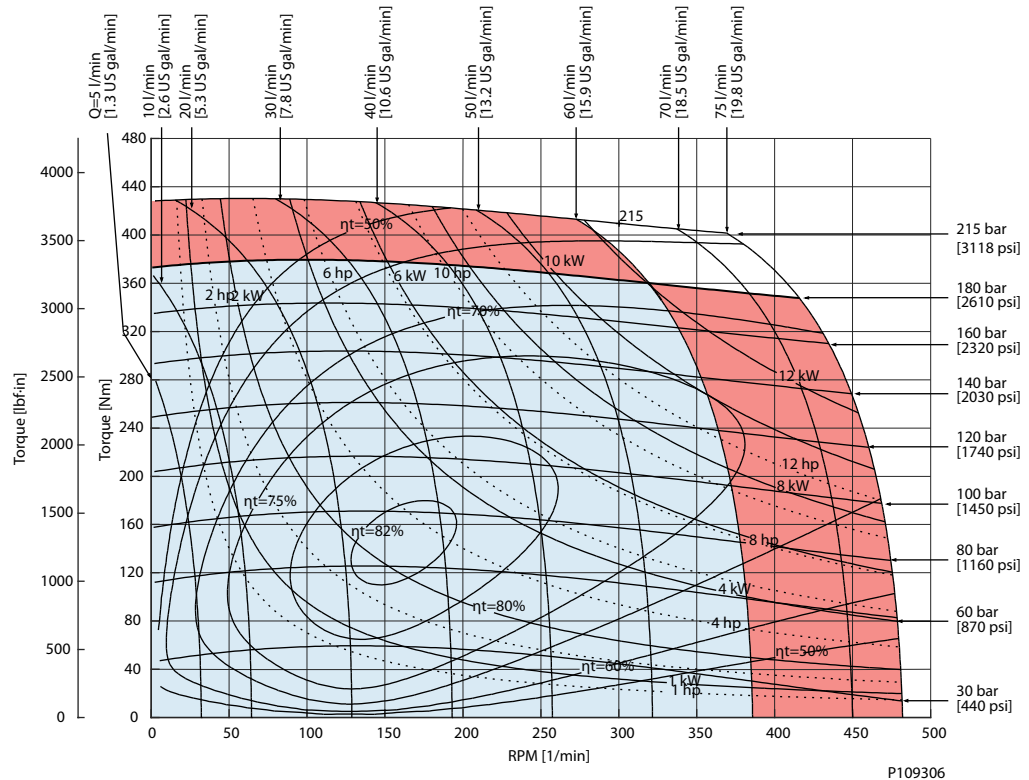


OMR X function diagrams

OMR X 125

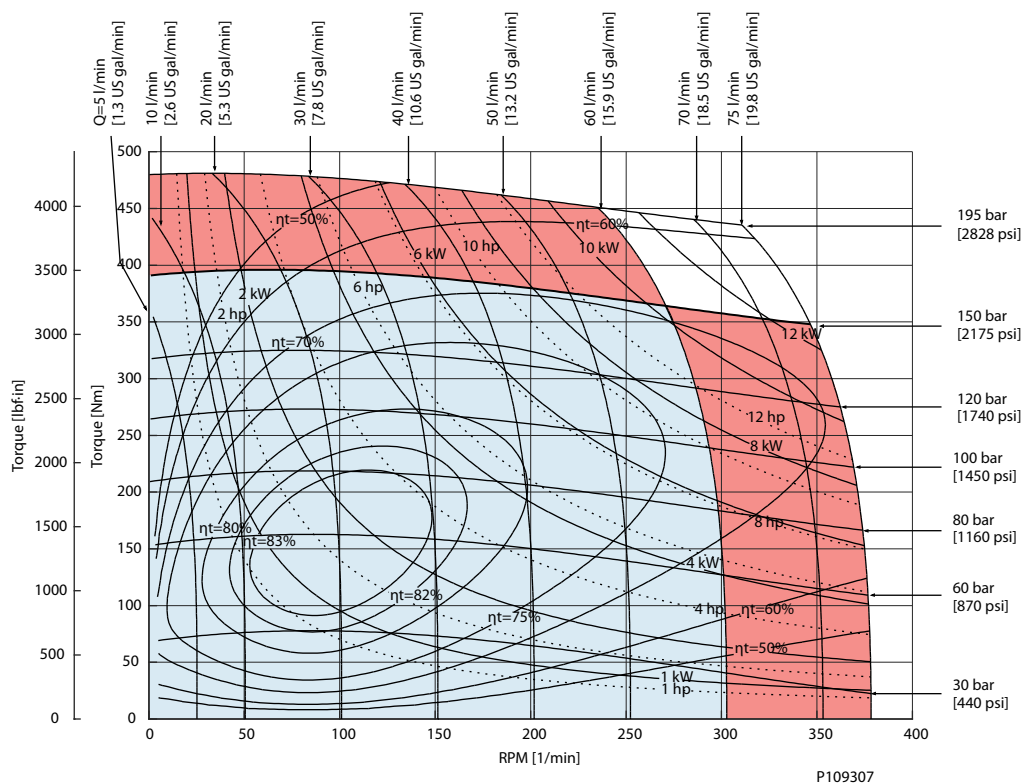


OMR X 160

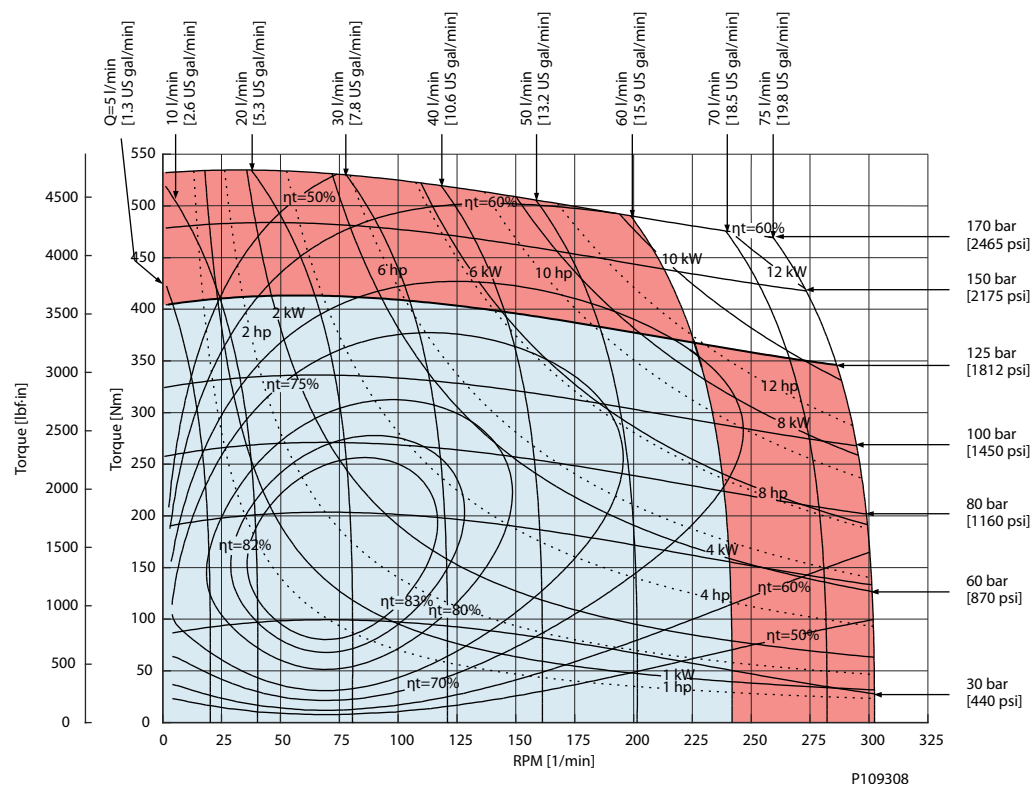


OMR X function diagrams

OMR X 200

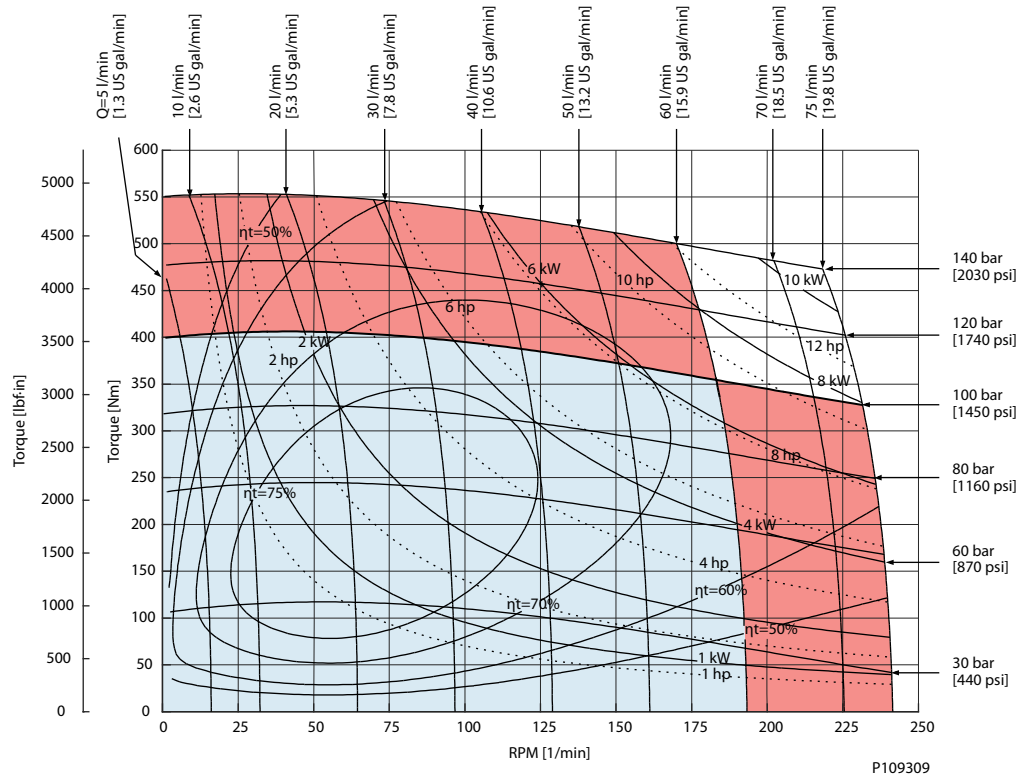


OMR X 250

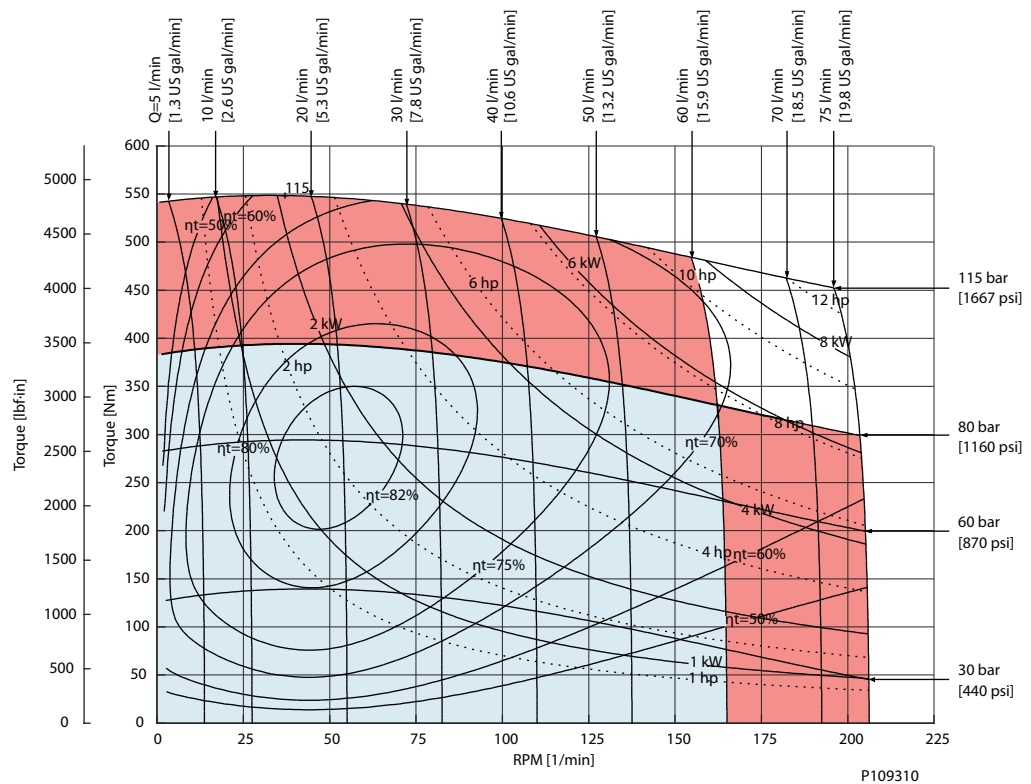


OMR X function diagrams

OMR X 315

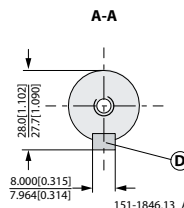
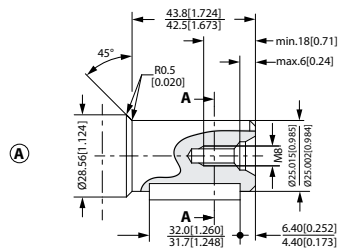


OMR X 375

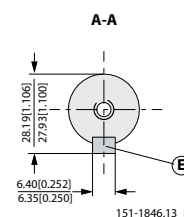
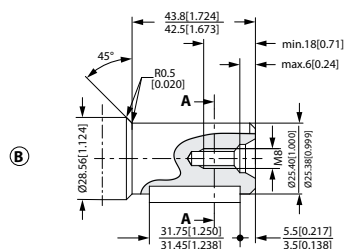


OMR X Shaft version

OMR X shaft version

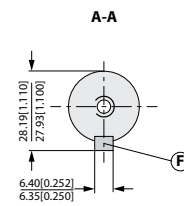
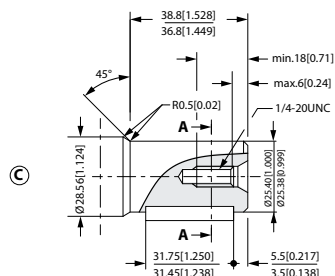


- A:** Cylindrical shaft 25 mm
- D:** Parallel key A8 • 7 • 32 DIN 6885
- Max cont. torque 340 Nm [3010 lbf-in]
- Max int. torque 450 Nm [3983 lbf-in]



- B:** Cylindrical shaft 1 in
- E:** Parallel key ¼ • ¼ • ¼ in B.S. 46
- Max cont. torque 340 Nm [3010 lbf-in]
- Max int. torque 450 Nm [3983 lbf-in]

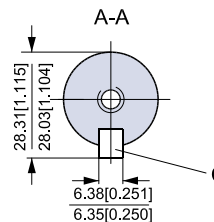
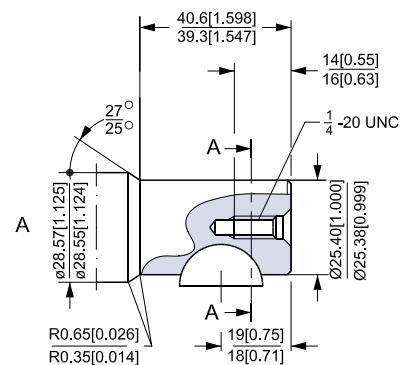
US version



- C:** Cylindrical shaft 1 in
- F:** Parallel key ¼ • ¼ • ¼ in B.S. 46
- Max cont. torque 340 Nm [3010 lbf-in]
- Max int. torque 450 Nm [3983 lbf-in]



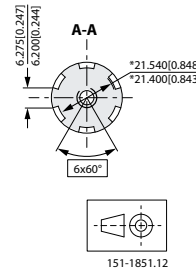
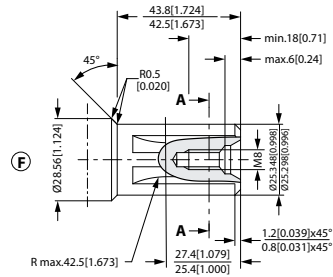
US version



- A:** Cylindrical shaft 1 in
- C:** Woodruff key 1/4 x 1 in SAE J502

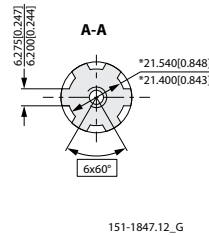
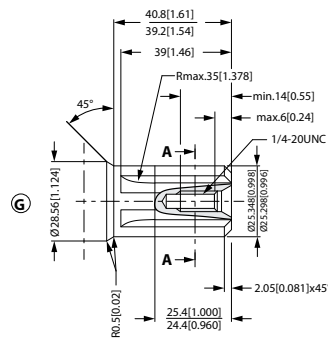
151-1876.10

OMR X Shaft version

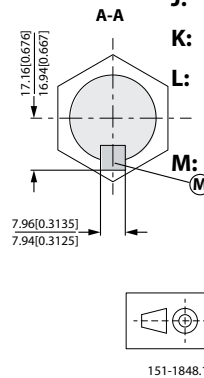
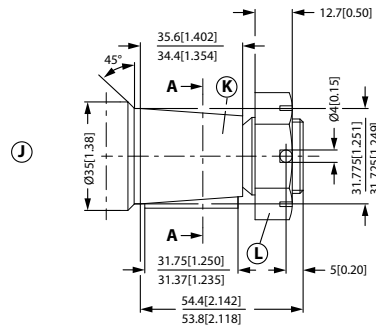


F: Involute splined shaft B.S. 2059 (SAE 6 B) Straight-sided, bottom fitting, deep. Fit 2 Nom. size 1 in *Deviates from B.S. 2059 (SAE 6 B)
Max cont. torque 400 Nm [3540 lbf-in]

US version



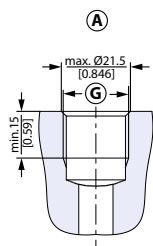
G: Splined shaft SAE 6 B (B.S. 2059) Straight-sided, bottom fitting, deep. Fit 2; Nom. size 1 in *Deviates from SAE 6 B (B.S. 2059)
Max cont. torque 400 Nm [3540 lbf-in]



J: Tapered shaft 1 1/4 in
K: Cone 1:8 SAE J501
L: 1 - 20 UNEF Across flats 1 7/16 Tightening torque: 200 ± 10 N·m [1770 ± 85 lbf-in]
M: Parallel key 5/16 • 5/16 • 1 1/4 SAE J501
Max cont. torque 400 Nm [3540 lbf-in]

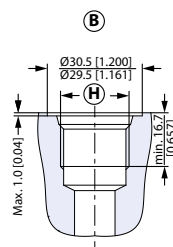
OMR X port thread versions

Port thread versions



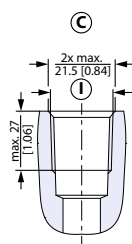
151-1844.11_A

- A:** G main ports
- G:** ISO 228/1 - G1/2



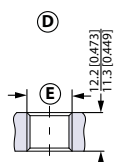
151-1844.11_B

- B:** UNF main ports
- H:** 7/8 - 14 UNF O-ring boss port



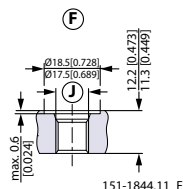
151-1844.11_C

- C:** NPTF main ports
- I:** 1/2 - 14 NPTF



151-1844.11_D

- D:** G drain port
- E:** ISO 228/1 - G1/4



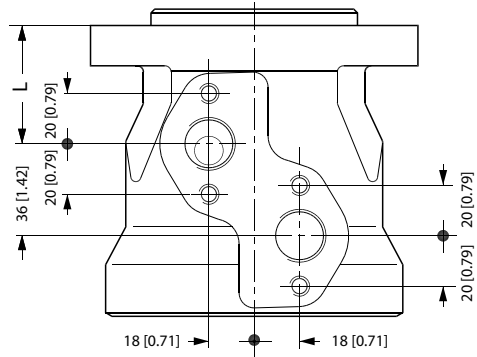
151-1844.11_F

- F:** UNF drain port
- J:** 7/16 - 20 UNF O-ring boss port

OMR X port thread versions

OMR X manifold mount

European version



151-2135.10

L: see dimensional drawing for given OMR X motor:

- [OMR X dimensions - European version](#) on page 57
- [OMR X dimensions - US version](#) on page 61

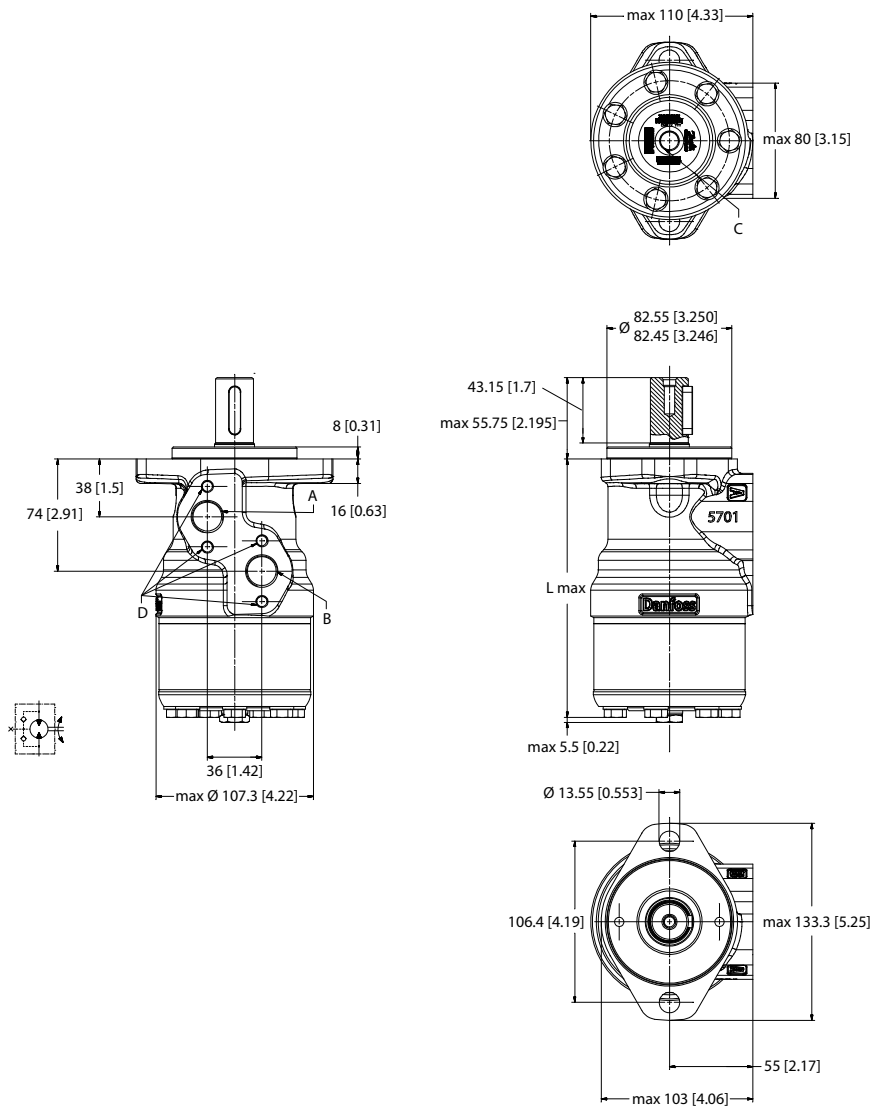
L: see dimensional drawing for given OMP X motor:

- [OMP X dimensions - European version](#) on page 30
- [OMP X dimensions - US version](#) on page 35

OMR X dimensions

OMR X dimensions - European version

Side port offset version with 2-hole oval mounting flange (A2 flange)



P109285

Port connections: A, B

G 1/2; min 15 [0.59] deep

Drain connection: C

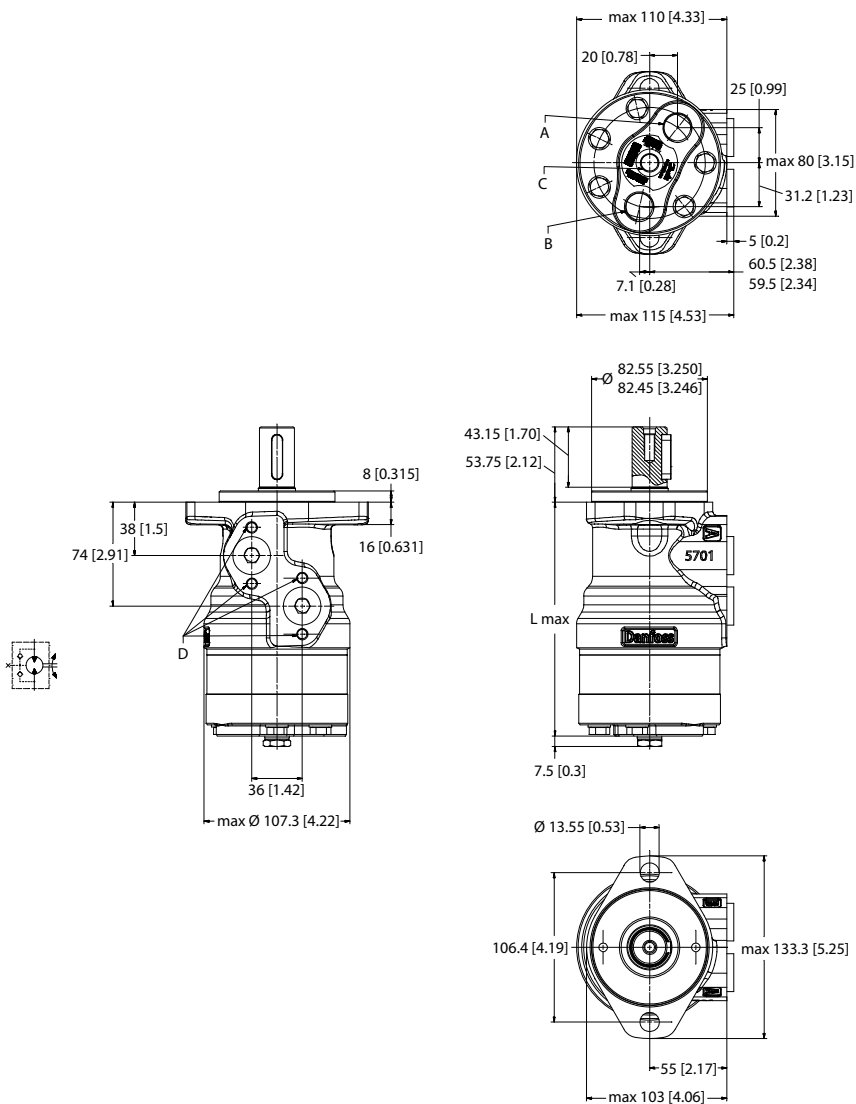
G 1/4; 12 [0.47] deep

OMR X dimensions

Type	Displacement	L max: mm [in]
OMR X	50	137.8 [5.43]
	80	142.8 [5.63]
	100	142.8 [5.63]
	125	146.2 [5.76]
	160	150.6 [5.93]
	200	156.6 [6.17]
	250	163.6 [6.45]
	315	172.3 [6.79]
	375	179.8 [7.08]
	400	183.6 [7.23]

OMR X dimensions

End port version with 2-hole oval mounting flange (A2-flange)



P109287

Port connections: A, B

G 1/2; min 15 [0.59] deep

Drain connection: C

G 1/4; 12 [0.47] deep

Threaded connection holes: D

M8 13 [0.51] deep

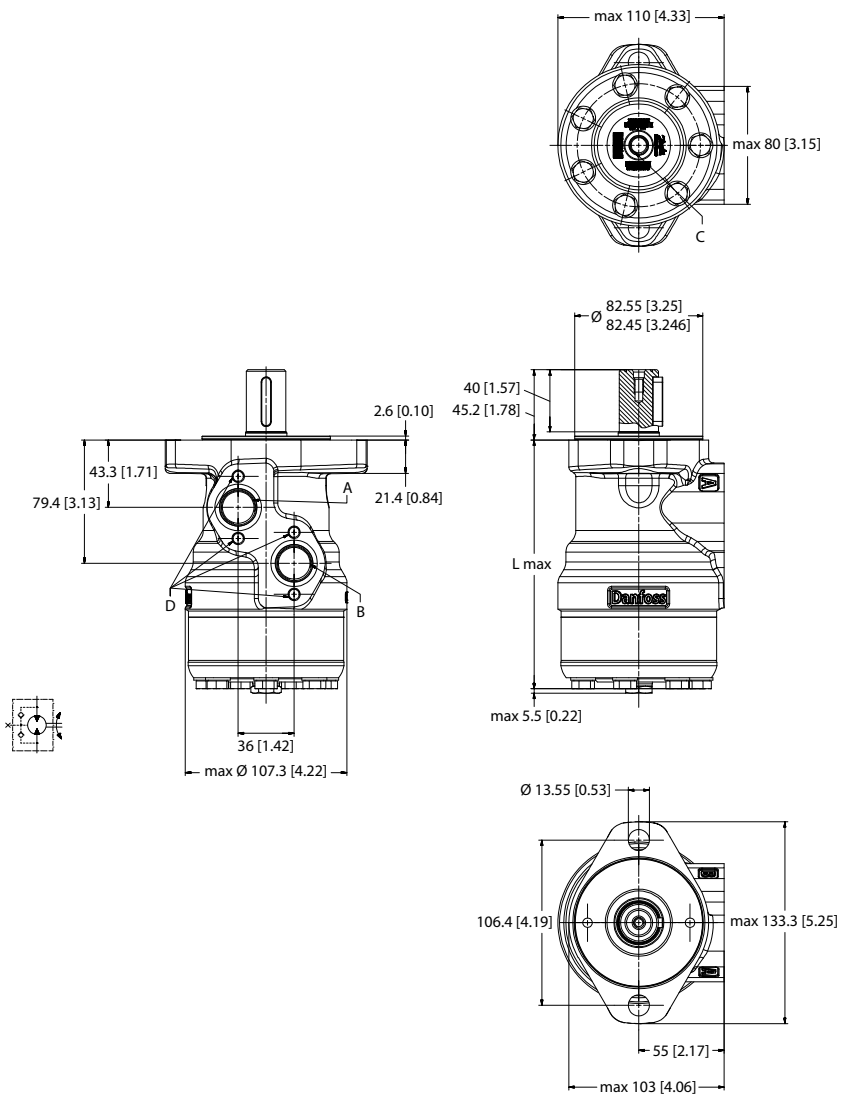
OMR X dimensions

Type	Displacement	L max: mm [in]
OMR X	50	150.3 [5.82]
	80	155.3 [6.12]
	100	155.3 [6.12]
	125	158.7 [6.25]
	160	163.1 [6.43]
	200	169.1 [6.66]
	250	176.1 [6.94]
	315	184.6 [7.28]
	375	192.3 [7.58]

OMR X dimensions

OMR X dimensions - US version

Side port offset version with 2-hole oval mounting flange (A2-flange)



P109288

Port connections: A,B

7/8 - 14 UNF; min 16.7 [0.66] deep

Drain connection C

7/16 - 20 UNF; 12 [0.47] deep

Threaded connection holes D

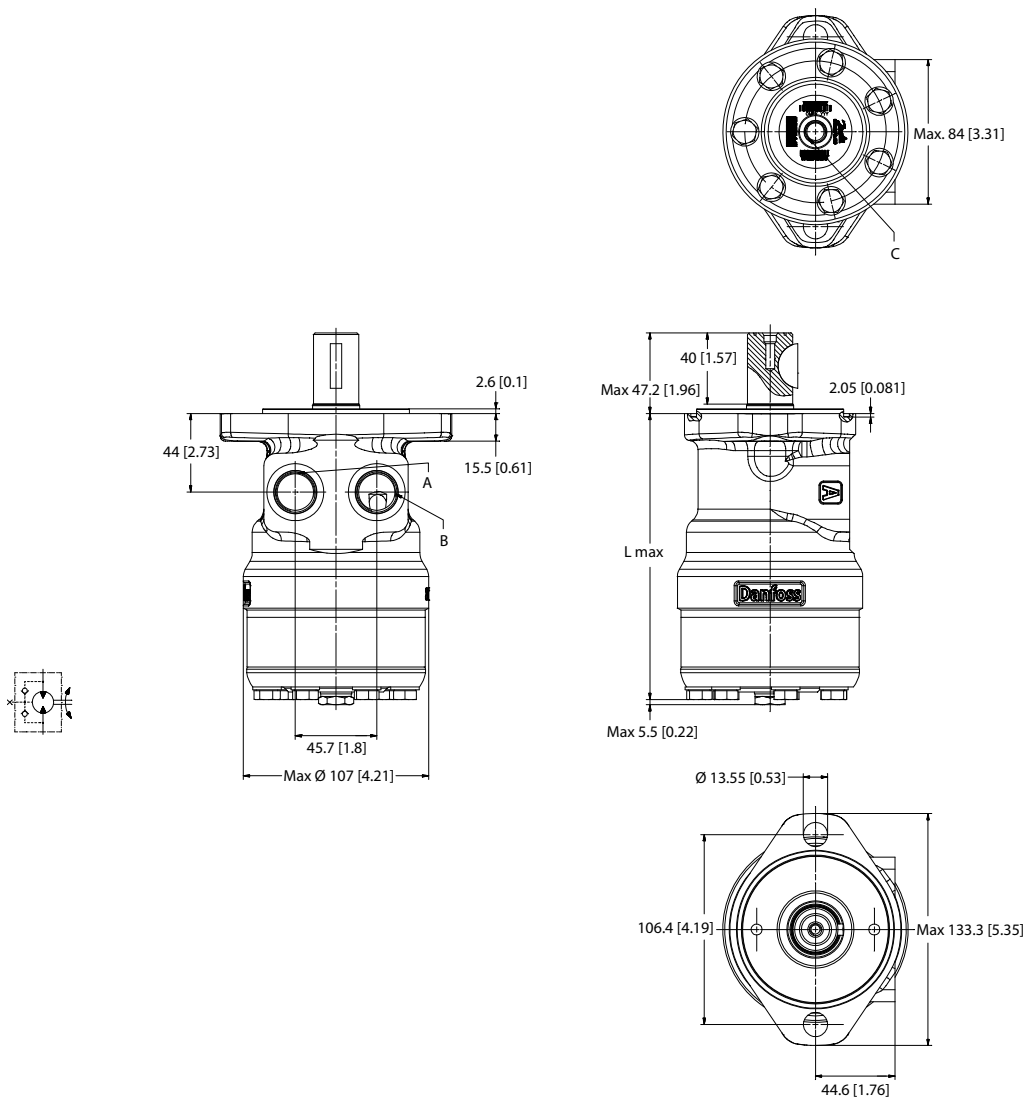
M8; 13 [0.51] deep

OMR X dimensions

Type	Displacement	L max: mm [in]
OMR X	50	143.2 [5.64]
	80	148.2 [5.84]
	100	148.2 [5.84]
	125	151.6 [5.97]
	160	156.0 [6.15]
	200	162.0 [6.38]
	250	169.0 [6.66]
	315	177.7 [7.00]
	375	185.2 [7.30]

OMR X dimensions

Side port aligned version with 2 hole oval mounting flange (A2)



P109445

Port connections: A, B

7/8 - 14 UNF; min 16.7 [0.66] deep

Drain connection: C

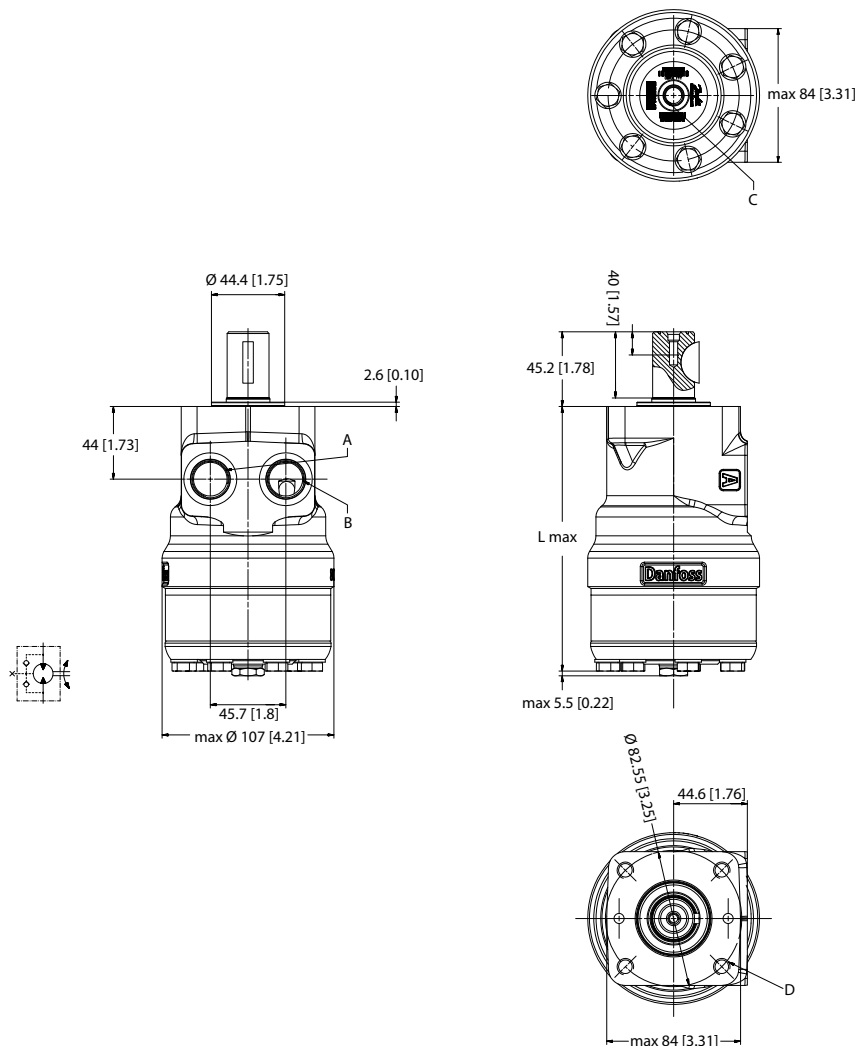
7/16 - 20 UNF; 12 [0.47] deep

OMR X dimensions

Type	Displacement	L max: mm [in]
OMR X	50	137.8 [5.43]
	80	142.8 [5.63]
	100	142.8 [5.63]
	125	146.2 [5.76]
	160	150.6 [5.93]
	200	156.6 [6.17]
	250	163.6 [6.45]
	315	172.3 [6.79]
	375	179.8 [7.08]
	400	183.6 [7.23]

OMR X dimensions

Side port aligned version with square mounting flange (C-flange)



P109289

Port connections: A, B

7/8 - 14 UNF; min 16.7 [0.66] deep

Drain connection: C

7/16 - 20 UNF; 12 [0.47] deep

Threaded connection holes: D

3/8 - 16 UNC; 15 [0.59]

Type	Displacement	L max: mm [in]
OMR X	80	148.2 [5.84]
	100	148.2 [5.84]
	125	151.6 [5.97]
	160	156 [6.15]
	200	162 [6.38]
	250	169 [6.66]
	315	177.7 [7]
	375	189 [7.45]

Weight of motors

Weight of OMP X and OMR X motors

Weight of OMP X and OMR X motors

Code no	Weight	
	kg	[lb]
11185609	6.7	[14.8]
11185610	6.9	[15.2]
11185611	7.0	[15.4]
11185605	7.5	[16.5]
11185606	8.0	[17.6]
11185603	9.0	[19.8]
11185607	8.5	[18.7]
11186729	5.6	[12.3]
11185808	5.7	[12.6]
11186730	5.9	[13.0]
11185792	6.0	[13.2]
11186726	6.2	[13.7]
11185796	6.4	[14.1]
11185798	6.6	[14.6]
11186728	6.9	[15.2]
11185802	7.4	[16.3]
11185771	5.6	[12.3]
11186721	5.7	[12.6]
11186725	5.9	[13.0]
11186700	6.0	[13.2]
11186705	6.2	[13.7]
11186708	6.4	[14.1]
11186711	6.6	[14.6]
11186712	6.9	[15.2]
11186714	7.4	[16.3]
11186699	5.6	[12.3]
11186738	5.6	[12.3]
11186739	5.7	[12.6]
11186740	5.9	[13.0]
11186731	6.0	[13.2]
11186732	6.2	[13.7]
11185819	6.4	[14.1]
11186820	6.6	[14.6]
11185827	6.9	[15.2]
11185769	5.5	[12.1]
11185775	5.5	[12.1]
11186719	5.6	[12.3]
11185558	6.7	[14.8]
11185560	6.9	[15.2]
11185562	7.0	[15.4]
11185548	7.2	[15.9]
11185549	7.5	[16.5]

Weight of motors

Weight of OMP X and OMR X motors (continued)

Code no	Weight	
	kg	[lb]
11185551	8.0	[17.6]
11185554	8.5	[18.7]
11185545	9.0	[19.8]
11185556	9.5	[20.9]
11185537	6.7	[14.8]
11186671	6.9	[15.2]
11186674	7.0	[15.4]
11186655	7.2	[15.9]
11186658	7.5	[16.5]
11186665	8.0	[17.6]
11186667	8.5	[18.7]
11186652	9.0	[19.8]
11185531	9.5	[20.9]
11185584	6.7	[14.8]
11185585	6.9	[15.2]
11185588	7.0	[15.4]
11185567	7.2	[15.9]
11185570	7.5	[16.5]
11185573	8.0	[17.6]
11185576	8.5	[18.7]
11185564	9.0	[19.8]
11185580	9.5	[20.9]
11185790	5.9	[13.0]
11186707	6.2	[13.7]
11185751	6.4	[14.1]
11185761	6.9	[15.2]
11186737	7.4	[16.3]
11185710	6.1	[13.4]
11185710	6.2	[13.7]
11185714	6.4	[14.1]
11185704	6.7	[14.8]
11185705	6.9	[15.2]
11185706	7.1	[15.7]
11185707	7.4	[16.3]
11185708	7.9	[17.4]
11185888	5.5	[12.1]
11185890	5.6	[12.3]
11185892	5.8	[12.8]
11186750	5.9	[13.0]
11185882	6.1	[13.4]
11186748	6.3	[13.9]
11185884	6.5	[14.3]
11185885	6.8	[15.0]

Weight of motors

Weight of OMP X and OMR X motors (continued)

Code no	Weight	
	kg	[lb]
11185886	7.3	[16.1]
11186742	5.6	[12.3]
11185851	5.9	[13.0]
11185844	6.4	[14.1]
11185846	6.9	[15.2]
11185473	7.3	[16.1]
11185474	7.5	[16.5]
11186645	7.6	[16.8]
11185468	7.8	[17.2]
11185469	8.1	[17.9]
11186642	8.6	[19.0]
11185471	9.1	[20.1]
11185467	9.6	[21.2]
11186644	10.1	[22.3]
11185604	7.2	[15.9]
11185608	9.5	[20.9]
11185526	6.7	[14.8]
11185601	6.9	[15.2]
11185594	7.2	[15.9]
11185595	7.5	[16.5]
11185596	8.0	[17.6]
11185598	8.5	[18.7]
11185593	9.0	[19.8]
11185599	9.5	[20.9]
11185722	5.6	[12.3]
11185724	5.7	[12.6]
11185726	5.9	[13.0]
11185725	5.4	[11.9]
11185715	6.2	[13.7]
11185716	6.4	[14.1]
11185718	6.9	[15.2]
11185719	7.4	[16.3]
11185720	5.4	[12.0]
11185721	5.4	[12.0]
11185723	5.6	[12.3]
11185873	5.5	[12.1]
11185875	5.6	[12.3]
11185877	5.8	[12.8]
11185876	5.9	[13.0]
11186746	6.1	[13.4]
11186747	6.3	[13.9]
11185870	6.5	[14.3]
11185871	6.8	[15.0]

Weight of motors

Weight of OMP X and OMR X motors (continued)

Code no	Weight	
	kg	[lb]
11185872	7.3	[16.1]
11185488	6.7	[14.8]
11185489	6.9	[15.2]
11185490	7.0	[15.4]
11185483	7.2	[15.9]
11185484	7.5	[16.5]
11185485	8.0	[17.6]
11185486	8.5	[18.7]
11185482	9.0	[19.8]
11185487	9.5	[20.9]
11185497	6.7	[14.8]
11185498	6.9	[15.2]
11185499	7.0	[15.4]
11185492	7.2	[15.9]
11185493	7.5	[16.5]
11185494	8.0	[17.6]
11185495	8.5	[18.7]
11185491	9.0	[19.8]
11185496	9.5	[20.9]
11186086	6.1	[13.5]
11186085	6.1	[13.5]
11186695	6.2	[13.7]
11186090	6.4	[14.1]
11186075	6.5	[14.3]
11186076	6.7	[14.8]
11186077	6.9	[15.2]
11186079	7.1	[15.7]
11186081	7.4	[16.3]
11186083	7.9	[17.4]
11186116	6.1	[13.5]
11186115	6.1	[13.5]
11186117	6.2	[13.7]
11186118	6.4	[14.1]
11186110	6.7	[14.8]
11186111	6.9	[15.2]
11186112	7.1	[15.7]
11186113	7.4	[16.3]
11186818	7.9	[17.4]
11186071	6.1	[13.5]
11186069	6.1	[13.5]
11186072	6.2	[13.7]
11186073	6.4	[14.1]
11186064	6.7	[14.8]

Weight of motors

Weight of OMP X and OMR X motors (continued)

Code no	Weight	
	kg	[lb]
11186065	6.9	[15.2]
11186066	7.1	[15.7]
11186067	7.4	[16.3]
11186068	7.9	[17.4]
11186056	5.8	[12.8]
11186054	5.8	[12.8]
11186693	5.9	[13.0]
11186059	6.1	[13.5]
11186691	6.2	[13.7]
11186044	6.4	[14.1]
11186046	6.6	[14.6]
11186047	6.8	[15.0]
11184049	7.1	[15.7]
11186052	7.6	[16.8]
11186132	5.8	[12.8]
11186131	5.8	[12.8]
11186133	5.9	[13.0]
11186134	6.1	[13.5]
11186125	6.2	[13.7]
11186126	6.4	[14.1]
11186127	6.6	[14.6]
11186128	6.8	[15.0]
11186129	7.1	[15.7]
11186130	7.6	[16.8]
11186162	6.9	[15.2]
11186163	7.1	[15.7]
11186164	7.1	[15.7]
11186157	7.2	[15.9]
11186158	7.4	[16.3]
11186159	7.7	[17.0]
11186160	8.2	[18.0]
11186156	8.7	[19.2]
11186161	9.2	[20.3]
11186189	7.1	[15.7]
11186190	7.1	[15.7]
11186185	7.4	[16.3]
11186186	7.7	[17.0]
11186187	8.2	[18.0]
11186188	9.2	[20.3]
11186154	7.1	[15.7]
11186155	7.1	[15.7]
11186151	7.2	[15.9]
11186152	7.7	[17.0]

Weight of motors

Weight of OMP X and OMR X motors (continued)

Code no	Weight	
	kg	[lb]
11186150	8.7	[19.2]
11186153	9.2	[20.3]
11186146	6.6	[14.6]
11186147	6.8	[15.0]
11186148	6.8	[15.0]
11186646	6.9	[15.2]
11186647	7.1	[15.7]
11186143	7.4	[16.3]
11186144	7.9	[17.4]
11185479	8.4	[18.5]
11186145	8.9	[19.6]
11186197	6.6	[14.6]
11186198	6.6	[14.6]
11186193	7.1	[15.7]
11186194	7.4	[16.3]
11186195	7.9	[17.4]
11186196	8.9	[19.6]

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