

ENGINEERING
TOMORROW

Danfoss

Technical Information

Orbital Motors

Type OMP, OMR and OMH



A wide range of Orbital Motors

Orbital Motors Introduction

Danfoss is a world leader within production of low speed orbital motors with high torque. We can offer more than 3000 different orbital motors, categorized in types, variants and sizes (including different shaft versions).

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

- Small sized motors:
 - OML and OMM
- Medium sized motors:
 - OMP, OMR and OMH
 - OMP X and OMR X
 - DH and DS
 - OMEW
- Large sized motors:
 - OMS, OMT and OMV
 - TMK
 - TMT
 - TMTHW
 - TMVW

Speeds range up to approximate 2500 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 to 4000 N·m [115 to 35 400 lb·in] (peak) and maximum outputs are from 2.0 to 95 kW [2.7 to 128 hp].

Wide range of Danfoss orbital motors



F301 245

Orbital Motors Features

- 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

OMP versions and code numbers

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

- Section *OMP technical data* on page 14, specify the technical data for OMP X for each shaft type.
- In section *OMP function diagrams* on page 24, the diagram for each motor size is shown.
- See *OMP dimensions* on page 34 for outer main dimensions for the different OMP X motor types.

OMP versions and code numbers
OMP standard motors

Mounting flange: 2 hole oval flange (A2)

Spigot diameter		Ø82.5 mm [3.25 in]						
Bolt circle diameter		Ø106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	-	-	Yes	-	OMP	A1
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	-	Yes	-	OMP	A2
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	-	Yes	OMP	A3
Cyl. 1 in	G 1/2	Side port	-	-	Yes	-	OMP	A4
Cyl. 1 in	G 1/2	Side port	G 1/4	-	Yes	-	OMP	A5
Cyl. 1 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMP	A6
Splined 1 in	G 1/2	Side port	-	-	Yes	-	OMP	A7
Splined 1 in	G 1/2	Side port	G 1/4	-	Yes	-	OMP	A8

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
A1	151-0340	151-0341	151-0342	151-0310	151-0311	151-0312	151-0313	151-0314	151-0315	151-0316	151-0317	151-0318
A2	151-0640	151-0641	151-0652	151-0610	151-0611	151-0612	151-0613	151-0614	151-0615	151-0616	151-0617	151-0618
A3	-	-	-	151-5191	151-5192	151-5193	151-5194	151-5195	151-5196	151-5197	151-5198	151-5199
A4	-	-	11090903	151-0300	151-0301	151-0302	151-0303	151-0304	151-0305	151-0306	151-0307	151-0308
A5	-	-	-	151-0600	151-0601	151-0602	151-0603	151-0604	151-0605	151-0606	151-0607	151-0608
A6	151-7080	151-7081	151-7082	151-7041	151-7042	151-7043	151-7044*	151-7045	151-7046	-	151-7048	151-7049
A7	-	-	-	151-0330	151-0331	151-0332	151-0333	151-0334	151-0335	151-0336	151-0337	151-0338
A8	-	-	-	151-0630	151-0631	151-0632	151-0633	151-0634	151-0635	151-0636	151-0637	151-0638

* Motor painted black

Mounting flange : 4 hole oval flange (A4)

Spigot diameter		Ø82.5 mm [3.25 in]						
Bolt circle diameter		Ø106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø32 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMP	B1

OMP versions and code numbers
Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
B1	-	-	-	-	-	-	151-5004	151-5005	151-5006	151-5007	151-5008	151-5009

Mounting flange: Square flange (C)

Spigot diamer	Ø44.4 mm [1.75 in]											
Bolt circle diameter	Ø82.5 mm [3.25 in]											
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code				
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	-	Yes	OMP	C1				
Cyl. 1 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMP	C2				
Cyl. 1 in	1/2-14 NPTF	Side port	7/16-20 UNF	Yes	-	Yes	OMP	C3				

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
C1	-	-	-	151-5211	151-5212	-	-	-	151-5216	-	-	-
C2	-	-	11130216	151-7061	151-7062	151-7063	-	151-7065	151-7066	151-7067	151-7068	151-7069
C3	-	-	-	-	-	151-7023	-	-	151-7026	-	151-7028	-

Mounting flange: Wheel

Spigot diamer	Ø80 mm [3.15 in]											
Bolt circle diameter	Ø103 mm [4.06 in]											
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code				
Cyl. Ø25 mm	G 1/2	Side port	Yes	Yes	-	Yes	OMPW	D1				

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
D1	-	-	11036135	151-7101	151-7102	151-7103	151-7104	151-7105	151-7106	151-7107	151-7108	151-7109

OMP motors with corrosion resistant parts
Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]											
Bolt circle diameter	Ø106.4 mm [4.20 in]											
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code				
Cyl. Ø25 mm	G 1/2	Side port	G1/4	Yes	-	Yes	OMP C	E1				

OMP versions and code numbers

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
E1	151-5376	-	-	151-1208	151-1209	151-1210	-	151-1211	151-1212	151-1213	151-1214	-

OMP motors with needle bearings

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]							
Bolt circle diameter	Ø106.4 mm [4.20 in]							
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	G1/4	Yes	-	Yes	OMP N	F1

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
F1	-	-	11071283	151-5311	-	151-5313	-	-	151-5316	-	151-5318	-

OMPW motors with needle bearings

Mounting flange: Wheel

Spigot diamer	Ø80 mm [3.15 in]							
Bolt circle diameter	Ø103 mm [4.06 in]							
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	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 N	F2

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
F2	-	-	151-5324	151-5301	151-5302	151-5303	151-5304	151-5305	151-5306	151-5307	151-5308	151-5309

OMP motors with free running gerotor

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]							
Bolt circle diameter	Ø106.4 mm [4.20 in]							
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	G1/4	Yes	-	-	OMP	G1

OMP versions and code numbers

Code numbers

Conf. code	Displacement											
	25	32	40	50	80	100	125	160	200	250	315	400
G1	-	-	-	-	-	151-0622	151-0623	151-0624	151-0625	-	151-0627	-

Features available (options)

Low leakage (low speed valve)

Speed sensor

Viton shaft seal

Reverse rotation

Painted

OMP technical data
OMP with 25 mm and 1 in cylindrical shaft

 OMP 25 cm³ - 100 cm³

Type		OMP	OMP	OMP	OMP	OMP	OMP
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
		int. ¹⁾	1800	1720	1750	1540	960
Max. torque	N·m [lbf·in]	cont.	33 [290]	43 [380]	52 [460]	93 [820]	150 [1330]
		int. ¹⁾	47 [420]	61 [540]	74 [660]	120 [1060]	190 [1680]
Max. output	kW [hp]	cont.	4.5 [6.0]	5.8 [7.8]	7.0 [9.4]	10.0 [13.4]	10.0 [13.4]
		int. ¹⁾	6.1 [8.2]	7.8 [10.5]	10.6 [14.2]	12.0 [16.1]	13.0 [17.4]
Max. pressure drop	bar [psi]	cont.	100 [1450]	100 [1450]	100 [1450]	140 [2030]	140 [2030]
		int. ¹⁾	140 [2030]	140 [2030]	140 [2030]	175 [2540]	175 [2540]
		peak ²⁾	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. oil flow	l/min [US gal/min]	cont.	40 [10.6]	50 [13.2]	60 [15.9]	60 [15.9]	60 [15.9]
		int. ¹⁾	45 [11.9]	55 [14.5]	70 [18.5]	75 [19.8]	75 [19.8]
Max. starting pressure with unloaded shaft	bar [psi]	standard	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
		free running gerotor	-	-	-	-	2 [29]
Min starting torque	at max. press drop cont. N·m [lbf·in]		30 [270]	40 [350]	45 [400]	80 [710]	135 [1200]
	at max. press.drop int. ¹⁾ N·m [lbf·in]		40 [350]	55 [490]	63 [560]	100 [890]	170 [1510]

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

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

Technical data is based on splined 6B shaft.

 OMP 125 cm³ - 400 cm³

Type		OMP	OMP	OMP	OMP	OMP	OMP
Motor size		125	160	200	250	315	400
Geometric displacement	cm ³ [inch]	125.0 [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
		int. ¹⁾	600	480	385	310	245

OMP technical data

 OMP 125 cm³ - 400 cm³ (continued)

Type			OMP	OMP	OMP	OMP	OMP	OMP
Motor size			125	160	200	250	315	400
Max. torque	N•m [lbf•in]	cont.	240 [2120]	300 [2660]	300 [2660]	300 [2660]	300 [2660]	300 [2660]
		int.	290 [2570]	370 [3280]	380 [3360]	410 [3630]	390 [3450]	420 [3720]
Max. output	kW [hp]	cont.	10 [13.4]	10 [13.4]	8.0 [10.7]	6.0 [8.1]	5.0 [6.7]	4.0 [5.4]
		int.	12.0 [16.1]	12.0 [16.1]	11.0 [14.8]	9.0 [12.1]	7.0 [9.4]	6.0 [8.1]
Max. pressure drop	bar [psi]	cont.	140 [2030]	140 [2030]	115 [1670]	90 [1310]	75 [1090]	60 [870]
		int	175 [2540]	175 [2540]	150 [2180]	125 [1810]	100 [1450]	80 [1160]
		peak ²⁾	225 [3260]	225 [3260]	225 [3260]	180 [2610]	160 [2320]	130 [1890]
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]	standard	9 [130]	7 [100]	5 [75]	5 [75]	5 [75]	5 [75]
		free running gerotor	2 [29]	2 [29]	2 [29]	-	-	-
Min starting torque	at max. press drop cont. N•m [lbf•in]		210 [1860]	280 [2480]	270 [2390]	280 [2480]	280 [2480]	280 [2480]
	at max. press.drop int. N•m [lbf•in]		270 [2390]	350 [3100]	360 [3190]	390 [3450]	370 [3280]	400 [3540]

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

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

Technical data is based on splined 6B shaft.

Type	Max. inlet pressure	Max. return pressure with drain line		
OMP 25 - 400	bar [psi]	cont.	200 [2900]	200 [2900]
	bar [psi]	int. ¹⁾	225 [3263]	225 [3263]

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

OMP with 1 in splined and 28.5 mm tapered shaft

Type		OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP
Motor size		50	80	100	125	160	200	250	315	400
Geometric displacement	cm ³ [inch]	48.6 [2.97]	77.8 [4.76]	97.3 [5.95]	125.0 [7.65]	155.7 [9.53]	194.6 [11.91]	242.3 [14.83]	306.1 [18.73]	389.2 [23.82]
Maximum speed	min ⁻¹ [rpm]	cont.	1230	770	615	480	385	310	250	195
		int. ¹⁾	1540	960	770	600	480	385	310	245

OMP technical data

Type			OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	
Motor size			50	80	100	125	160	200	250	315	400	
Maximum torque	N·m [lbf·in]	cont.	93 [820]	150 [1330]	190 [1680]	240 [2120]	300 [2660]	360 [3190]	360 [3190]	360 [3190]	360 [3190]	
		int. ¹⁾	120 [1060]	190 [1680]	230 [2040]	290 [2570]	370 [3280]	450 [3980]	460 [4070]	470 [4160]	460 [4070]	
Maximum output	kW [hp]	cont.	10.0 [13.4]	10.0 [13.4]	11.0 [14.8]	10.0 [13.4]	10.0 [13.4]	10.0 [13.4]	8.0 [10.7]	6.0 [8.0]	5.0 [6.7]	
		int. ¹⁾	12.0 [16.1]	12.0 [16.1]	13 [17.4]	12.0 [16.1]	12.0 [16.1]	12.0 [16.1]	10.5 [14.1]	7.5 [10.1]	6.0 [8.0]	
Maximum pressure drop	bar [psi]	cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	105 [1520]	90 [1310]	70 [1020]
		int. ¹⁾	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	140 [2030]	120 [1740]	90 [1310]
		peak ²⁾	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	180 [2610]	160 [2320]	130 [1890]
Maximum 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]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
		int. ¹⁾	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Maximum starting pressure with unloaded shaft	bar [psi]		10 [145]	10 [145]	10 [145]	9 [130]	7 [100]	5 [75]	5 [75]	5 [75]	5 [75]	
Minimum starting torque	at max. press drop cont. N·m [lbf·in]		80 [710]	135 [1200]	170 [1510]	210 [1860]	280 [2480]	340 [3010]	330 [2920]	340 [3010]	345 [3050]	
	at max. press.drop int. ¹⁾ N·m [lbf·in]		100 [890]	170 [1510]	210 [1860]	270 [2390]	350 [3100]	420 [3720]	440 [3890]	450 [3980]	425 [3760]	

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

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

OMP with 32 mm cylindrical shaft

Type			OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	
Motor size			50	80	100	125	160	200	250	315	400	
Geometric displacement	cm ³ [inch]		48.6 [2.97]	77.8 [4.76]	97.3 [5.95]	125.0 [7.65]	155.7 [9.53]	194.6 [11.91]	242.3 [14.83]	306.1 [18.73]	389.2 [23.82]	
Maximum speed	min ⁻¹ [rpm]	cont.	1230	770	615	480	385	310	250	195	155	
		int. ¹⁾	1540	960	770	600	480	385	310	245	190	
Maximum torque	N·m [lbf·in]	cont.	93 [820]	150 [1330]	190 [1680]	240 [2120]	300 [2660]	360 [3190]	460 [4070]	470 [4160]	490 [4340]	
		int. ¹⁾	120 [1060]	190 [1680]	230 [2040]	290 [2570]	370 [3280]	450 [3980]	570 [5050]	620 [5490]	630 [580]	
Maximum output	kW [hp]	cont.	10.0 [13.4]	10.0 [13.4]	11.0 [14.8]	10.0 [13.4]	10.0 [13.4]	10.0 [13.4]	9.5 [12.7]	7.5 [10.1]	6.5 [8.7]	
		int. ¹⁾	12.0 [16.1]	12.0 [16.1]	13.0 [17.4]	12.0 [16.1]	12.0 [16.1]	12.0 [16.1]	12.0 [16.1]	9.0 [12.1]	7.5 [10.1]	
Maximum pressure drop	bar [psi]	cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	120 [1740]	95 [1380]
		int. ¹⁾	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	160 [2320]	125 [1810]
		peak ²⁾	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	180 [2610]

OMP technical data

Type			OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP	OMP
Motor size			50	80	100	125	160	200	250	315	400
Maximum 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]	60 [15.9]	60 [15.9]	60 [15.9]
		int. ¹⁾	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Maximum starting pressure with unloaded shaft	bar [psi]		10 [145]	10 [145]	10 [145]	9 [130]	7 [100]	5 [75]	5 [75]	5 [75]	5 [75]
Minimum starting torque	at max. press drop cont. N•m [lb•in]		80 [710]	135 [1200]	170 [1510]	210 [1860]	280 [2480]	340 [3010]	420 [3720]	460 [4070]	460 [4070]
		at max. press.drop int. ¹⁾ N•m [lb•in]	100 [890]	170 [1510]	210 [1860]	270 [2390]	350 [3100]	420 [3720]	530 [4690]	600 [5310]	600 [5310]

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

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

Type			Max. inlet pressure	Max. return pressure with drain line
OMP 25 - 400	bar [psi]	cont.	175 [2540]	175 [2540]
	bar [psi]	int. ¹⁾	200 [2900]	200 [2900]
	bar [psi]	peak ²⁾	225 [3260]	225 [3260]

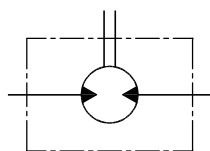
¹⁾ Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

Maximum permissible shaft seal pressure
OMP with High Pressure Shaft Seal (HPS)

OMP with HPS and without drain connection:

The shaft seal pressure equals the average of input pressure and return pressure.

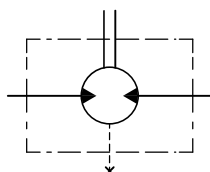


151-1743.10

$$P_{\text{seal}} = \frac{P_{\text{in}} + P_{\text{return}}}{2}$$

OMP with HPS and drain connection:

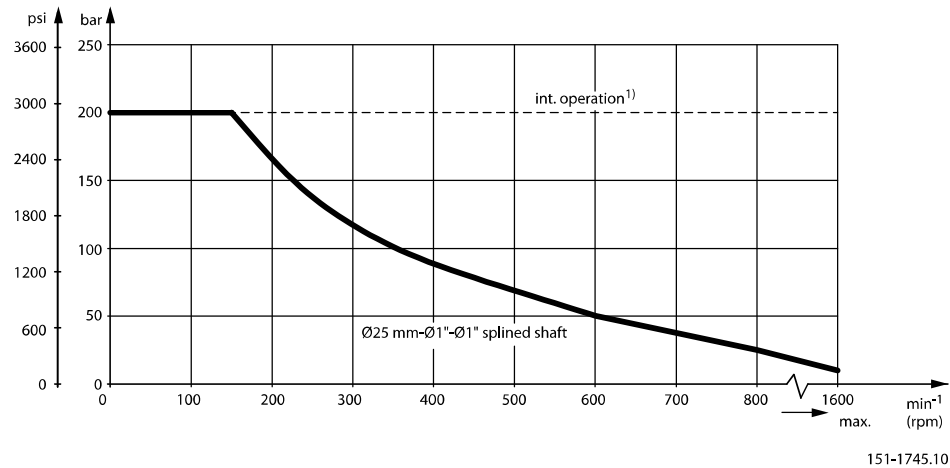
The shaft seal pressure equals the pressure in the drain line.



151-1855.10

OMP technical data

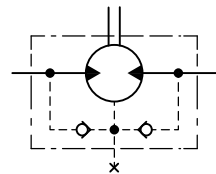
Maximum permissible shaft seal pressure



151-1745.10

OMP with standard shaft seal, check valves and without use of drain connection:

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

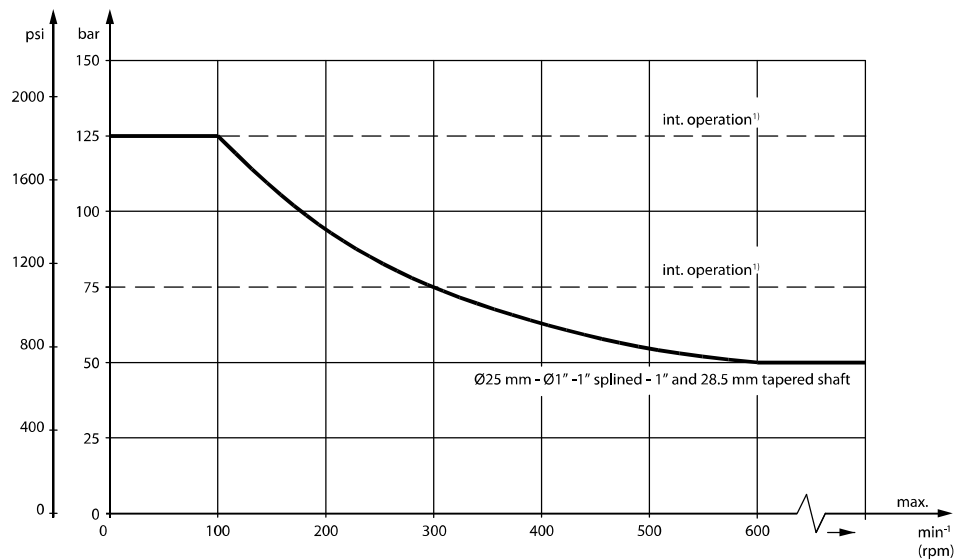


151-320.10

OMP with standard shaft seal, check valves and with drain connection:

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

Maximum return pressure without drain line or max. pressure in the drain line



P109279

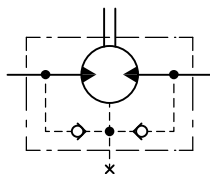
OMP technical data

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

OMP with Standard Shaft Seal

OMP with standard shaft seal, check valves and without use of drain connection:

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

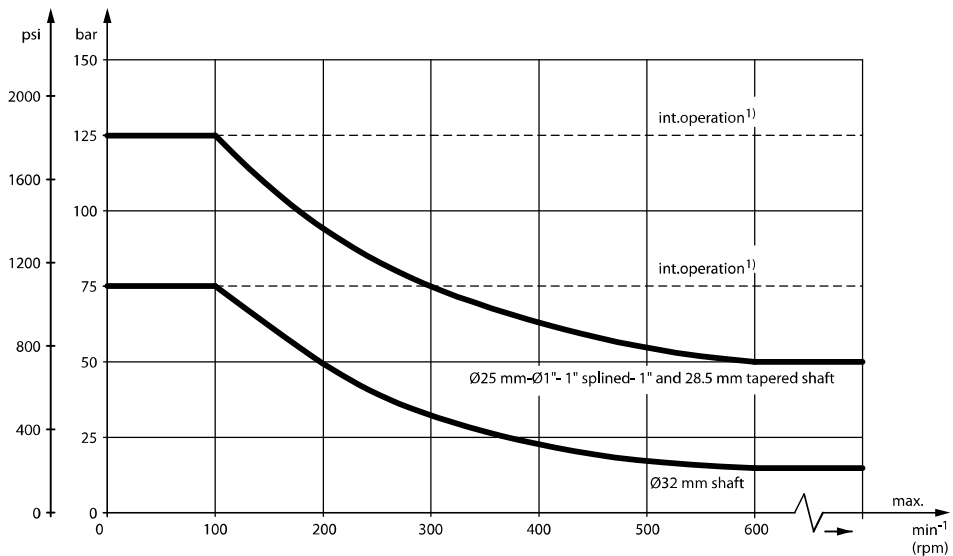


151-320.10

OMP with standard shaft seal, check valves and with drain connection:

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

Maximum return pressure without drain line or max. pressure in the drain line



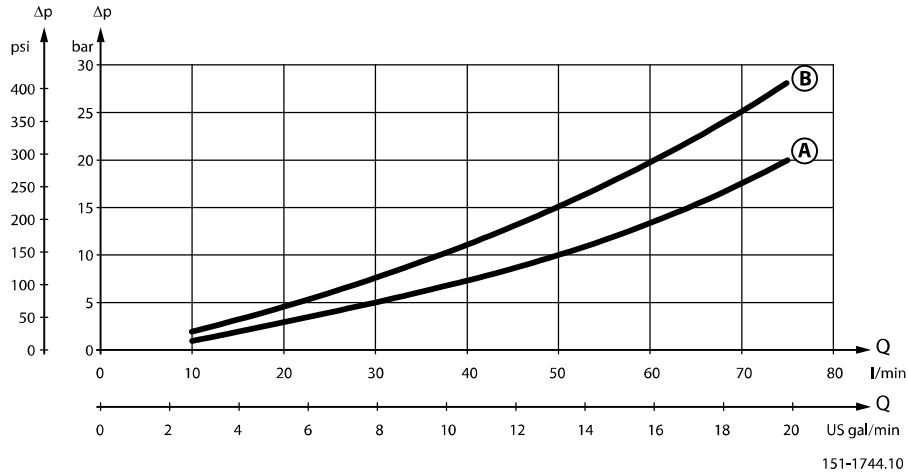
151-1563.10

OMP technical data

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

Pressure drop in OMP motor

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



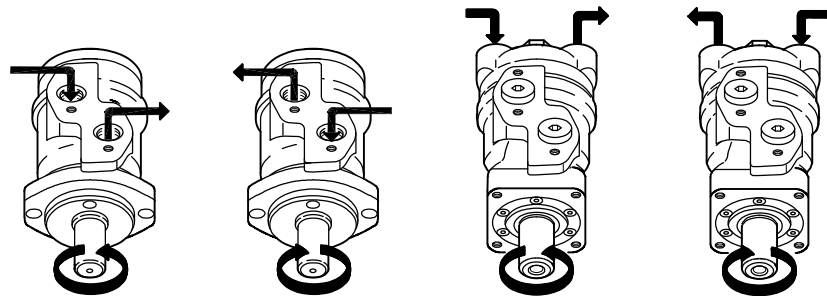
- A:** OMP 50 - 400
- B:** OMP 25 - 40 / OMPW

Oil flow in drain line

Max. oil flow in the drain line at return pressure less 5-10 bar

Pressure drop	100 bar [1450 psi]		140 bar [2030 psi]	
	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]
Max. oil flow	2.5 l/min [0.66 US gal/min]	1.8 l/min [0.78 US gal/min]	3.5 l/min [0.93 US gal/min]	2.8 l/min [0.74 US gal/min]

Direction of shaft rotation: clockwise



151-1836.10

Permissible shaft loads

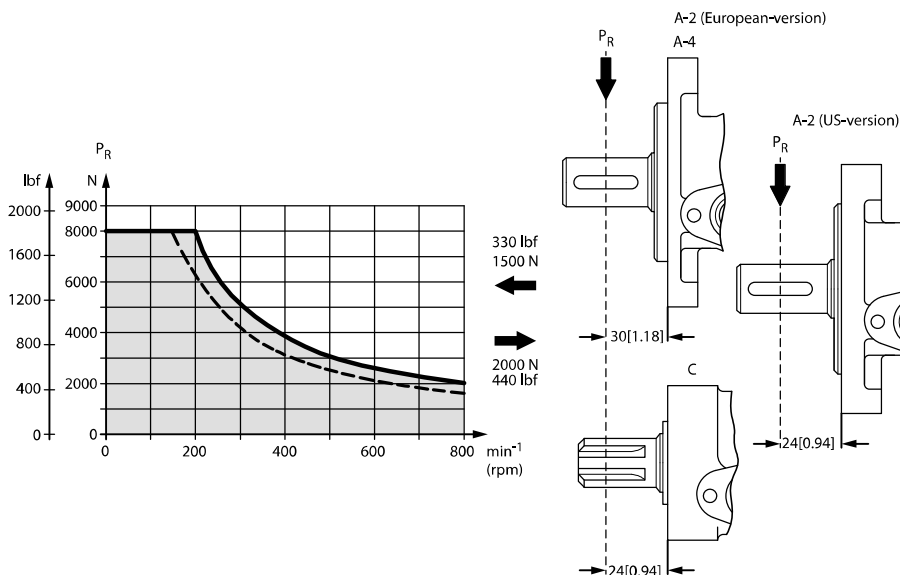
OMP technical data
OMP and OMR shaft loads

The permissible radial shaft load (P_R) depends on: a distance from the point of load to the mounting flange (L), speed (n), mounting flange and shaft version.

Mounting flange	4-oval flange** 2-hole oval flange (European version)	4-hole oval flange	Square flange** 2-hole oval flange (US-version)
Shaft version	25 mm cylindrical shaft 1 in splined shaft	32 mm cylindrical shaft	25 mm cylindrical shaft
Permissible shaft load (P_R) - l in mm	$\frac{800}{n} \cdot \frac{250000}{95 + L} \text{ N}^*$	$\frac{800}{n} \cdot \frac{187500}{95 + L} \text{ N}^*$	$\frac{800}{n} \cdot \frac{250000}{101 + L} \text{ N}^*$
Permissible shaft load (P_R) - l in inch	$\frac{800}{n} \cdot \frac{2215}{3.74 + L} \text{ lbf}^*$	$\frac{800}{n} \cdot \frac{1660}{3.74 + L} \text{ lbf}^*$	$\frac{800}{n} \cdot \frac{2215}{3.98 + L} \text{ lbf}^*$

** 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]; $= > P_{R\text{max}} = 8000 \text{ N}$ [1800 lbf]



151-1203.10

----- cylindrical shaft 32 mm [1.26 in]

_____ other shaft versions

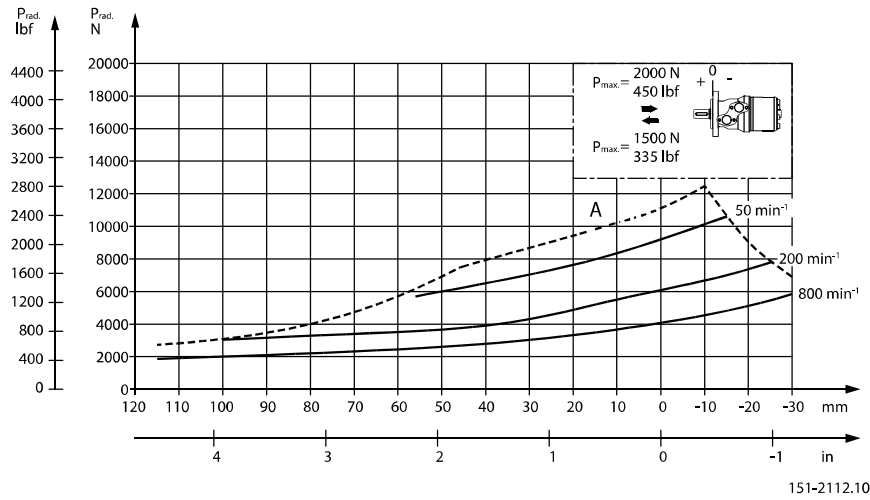
The curve shows the relation between P_R and n :

- when $l = 30 \text{ mm}$ [1.18 in] for motors with A2 (European version) and A4 oval mounting flange
- 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 technical data

OMP N shaft loads



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

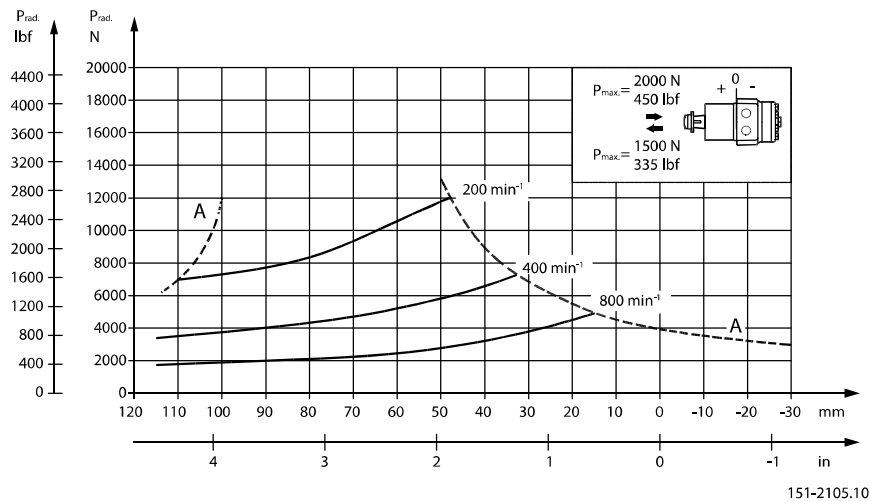
The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

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 B_{10} 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*, **BC0000083**.

OMPW with slide bearings shaft loads



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

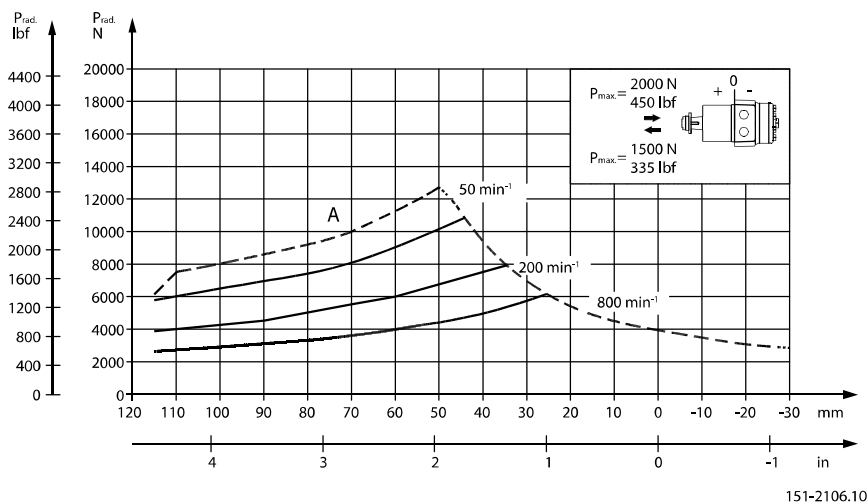
The permissible radial load on the shaft is shown for different speeds as a function of the distance from the mounting flange to the point of load application.

OMP technical data

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.

OMPW N with needle bearing shaft loads



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

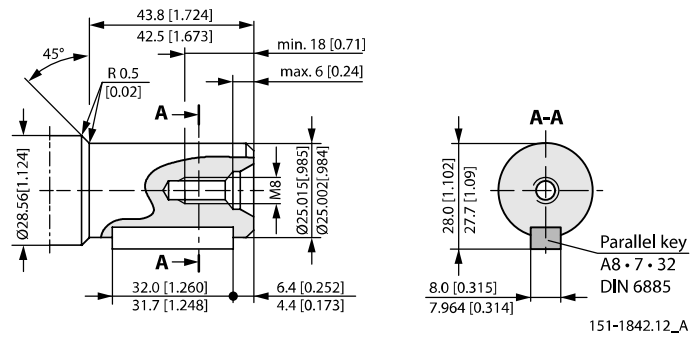
The other curves apply to a B₁₀ bearing life of 2000 hours at the number of revolutions indicated by the curve letter. Mineral based hydraulic oil with a sufficient content of anti-wear additives must be used.

Bearing life calculations can be made using the explanation and formula provided in the chapter "Bearing dimensioning" in the technical information *General Orbital Motors*, **BC00000083**.

OMP shaft version

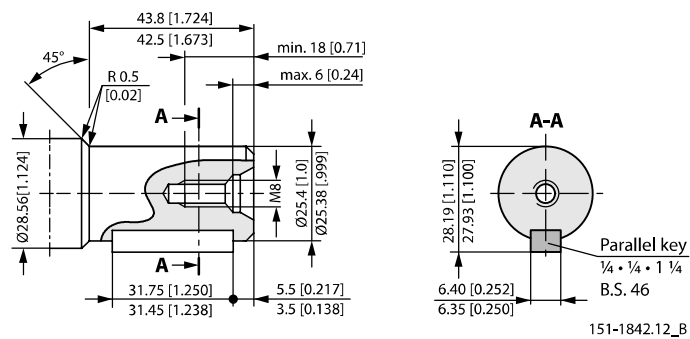
OMP shaft version

Cylindrical shaft 25 mm; Parallel key DIN 6885



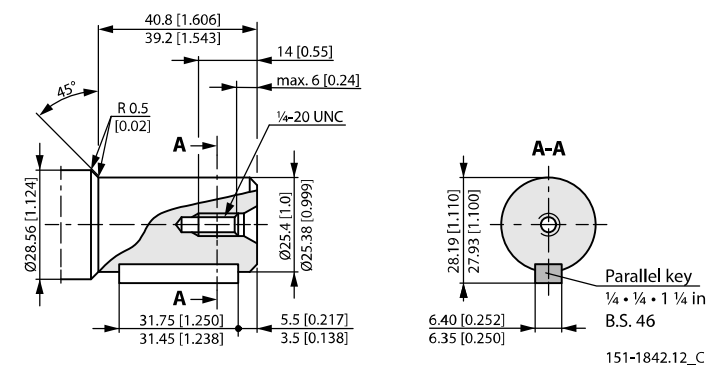
Max. torque: 360 N·m [3185 lb·in]

Cylindrical shaft 1 in; Parallel key B.S. 46



Max. torque: 360 N·m [3185 lb·in]

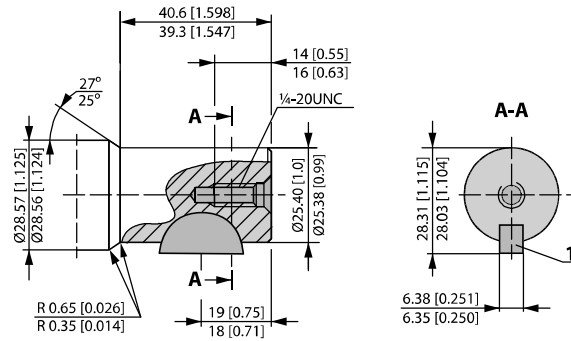
Cylindrical shaft 1 in; Parallel key B.S. 46 (US version)



Max. torque: 360 N·m [3185 lb·in]

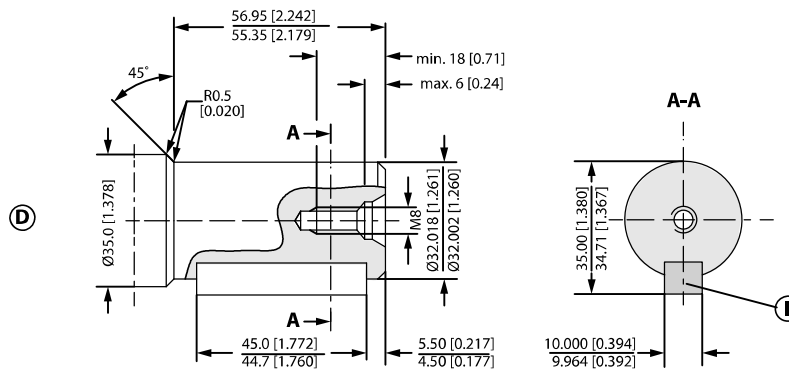
OMP shaft version

Cylindrical shaft 1 in (US version); SAE J502



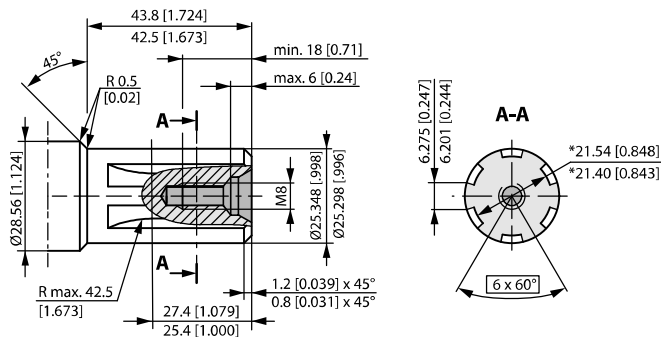
1 Woodruff key 1/4 x 1 in SAE J502

Cylindrical shaft 32 mm; DIN 6885



I Parallel key A10 · 8 · 45; DIN 6885

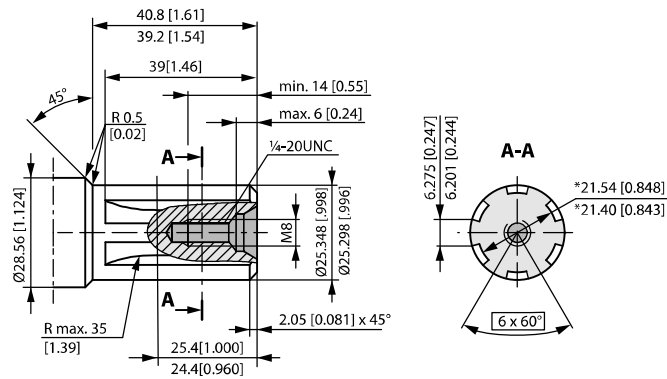
Splined shaft B.S. 2059 (SAE 6B)



Straight-sided, bottom fitting, dep. Fit 2, Nom. size 1 in; * Deviates from B.S. 2059 (SAE 6B)

OMP shaft version

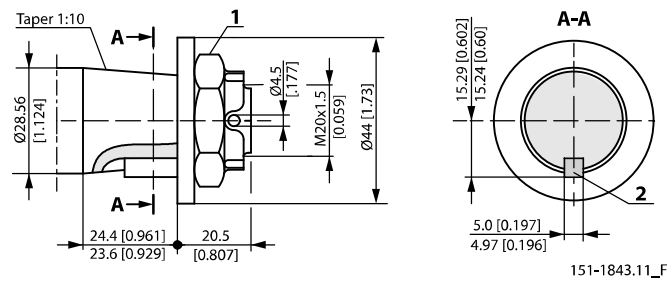
Splined shaft B.S. 2059 (SAE 6B); US version



Straight-sided, bottom fitting, deep. Fit 2; Nom. size 1 in, *Deviates from B.S. 2059 (SAE 6B)

Max. cont. torque 400 N·m [3540 lb·in]

Tapered shaft (taper 1:10); Parallel key DIN 6885

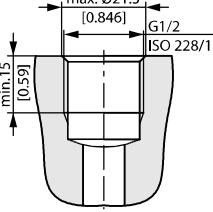
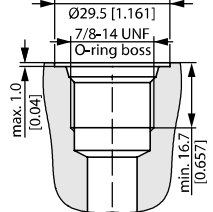
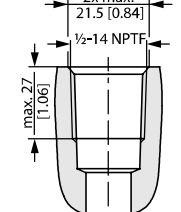
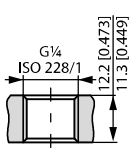
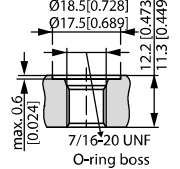


1. DIN 937 NV 30; Tightening torque: 100 ± 10 N·m [885 ± 88.5 lb·in]
2. Parallel key B5 · 5 · 14; DIN 6885

OMP port thread versions

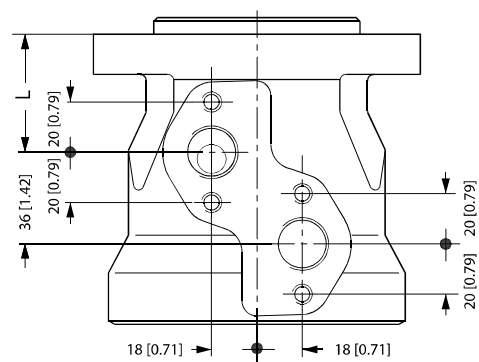
Main port thread versions

Main ports overview

G ISO 228/1 – G1/2	UNF 7/8–14 UNF O-ring boss	NPTF 1/2–14 NPTF	G drain ISO 228/1 – G1/4	UNF drain 7/16–20 UNF O-ring boss
 <p>max. Ø21.5 [0.846] G1/2 ISO 228/1 min. 1.5 [0.59]</p>	 <p>Ø30.5 [1.20] Ø29.5 [1.161] 7/8-14 UNF O-ring boss max. 1.0 [0.04] min. 16.7 [0.657]</p>	 <p>2x max. 21.5 [0.84] 1/2-14 NPTF max. 2.7 [1.06]</p>	 <p>G1/4 ISO 228/1 12.2 [0.473] 11.3 [0.449]</p>	 <p>Ø18.5 [0.728] Ø17.5 [0.689] 12.2 [0.473] 11.3 [0.449] 7/16-20 UNF O-ring boss max. 0.6 [0.024]</p>

OMP manifold mount

European version



151-2135.10

L: see dimensional drawing for given OMP motor:

- *OMP dimensions - European version* on page 34
- *OMP dimensions - US version* on page 42

L: see dimensional drawing for given OMR motor:

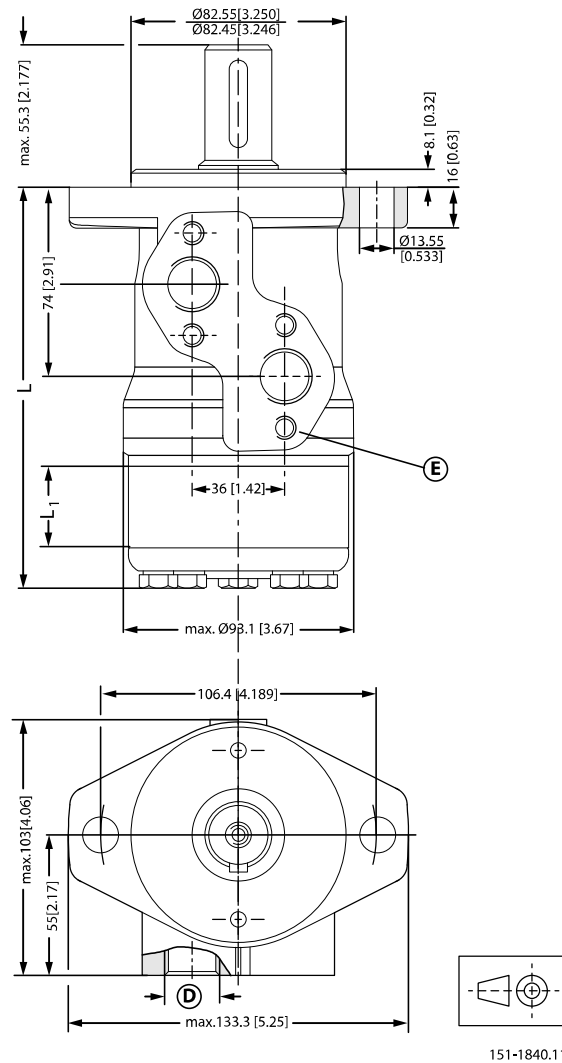
- *OMR dimensions - European version* on page 69
- *OMR dimensions - US version* on page 79

OMP dimensions

OMP dimensions - European version

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

Side port - European version



Tolerance for basic dimensions = ± 1 mm [0.04 in]

D: G 1/2; 15 mm [0.59 in] deep

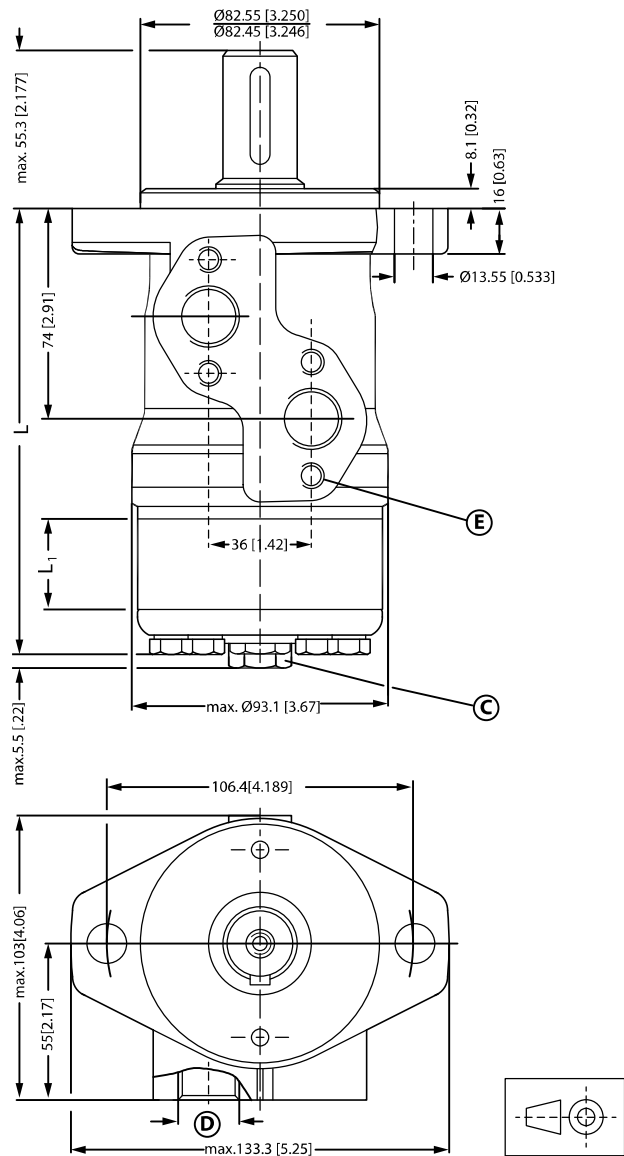
E: M8; 13 mm [0.51 in] deep (4 pcs.)

Type		OMP 25	OMP 32	OMP 40	OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm	130.8	131.9	133.2	133.2	137.2	139.7	143.5	147.5	152.7	159.2	167.6	178.7
	[in]	[5.15]	[5.19]	[5.24]	[5.24]	[5.40]	[5.50]	[5.65]	[5.81]	[6.01]	[6.27]	[6.60]	[7.04]
L ₁	mm	4.1	5.2	6.5	6.5	10.4	13.0	16.7	20.8	26.0	32.5	40.9	52.0
	[in]	[0.16]	[0.20]	[0.26]	[0.26]	[0.41]	[0.51]	[0.66]	[0.82]	[1.02]	[1.28]	[1.61]	[2.05]

OMP dimensions

EU version side port offset with 2-hole oval mounting flange (A2-flange) with drain connection

Side port - European version



151-1850.11

Tolerance for basic dimensions = ± 1 mm [0.04 in]

- C:** Drain connection G 1/4; 12 mm [0.47 in] deep
- D:** G 1/2; 15 mm [0.59 in] deep
- E:** M8; 13 mm [0.51 in] deep (4 pcs.)

Port connections:

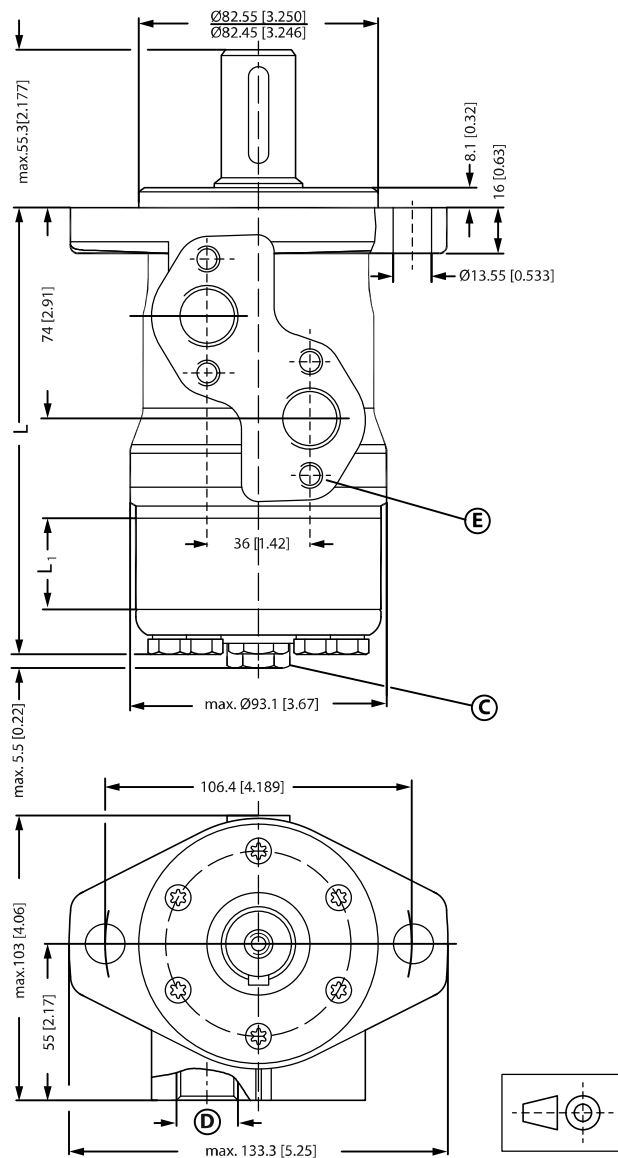
- A, B** Main ports: G 1/2; min 15 mm [0.59 in] deep
- C** Drain port: G 1/4; 11.5 mm [0.45 in]
- D** Thread: M8; 13 mm [0.51 in] deep

OMP dimensions

Type		OMP 25	OMP 32	OMP 40	OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	130.8 [5.15]	131.9 [5.19]	133.2 [5.24]	133.2 [5.24]	137.2 [5.40]	139.7 [5.50]	143.5 [5.65]	147.5 [5.81]	152.7 [6.01]	159.2 [6.27]	167.6 [6.60]	178.7 [7.04]
L ₁	mm [in]	4.1 [0.16]	5.2 [0.20]	6.5 [0.26]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

OMP C and OMP N-side port version with 2 hole oval mounting flange (A2-flange)

Side port - European version



151-1841.12

Tolerance for basic dimensions = ±1 mm [0.04 in]

C: Drain connection G ¼; 12 mm [0.47 in] deep

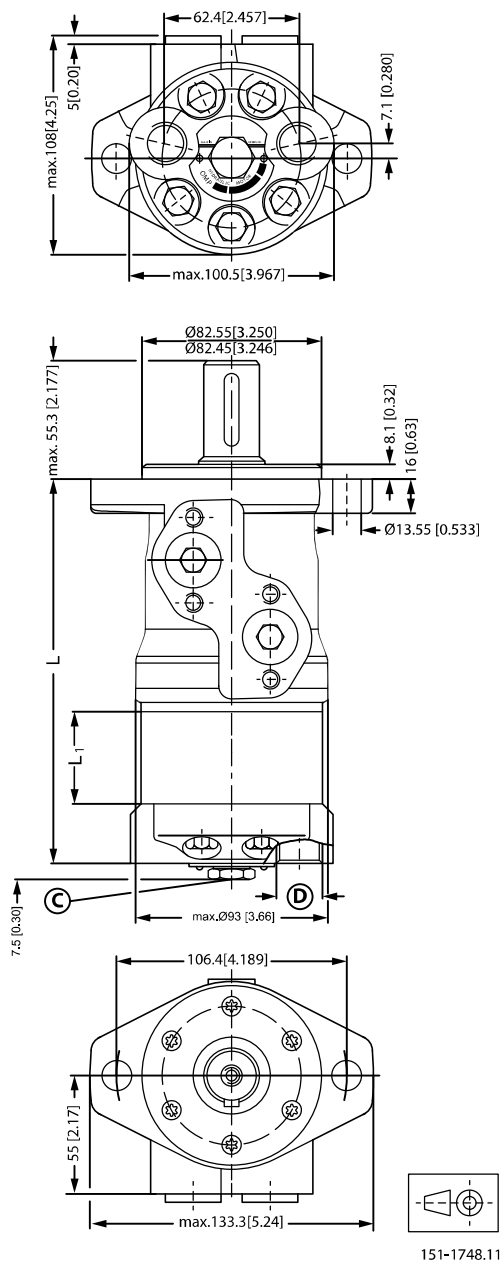
D: G ½; 15 mm [0.59 in] deep

OMP dimensions

E: M8; 13 mm [0.51 in] deep (4 pcs.)

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

End port - European version



Tolerance for basic dimensions = ± 1 mm [0.04 in]

C: Drain connection G 1/4; 12 mm [0.47 in] deep

D: G 1/2; 15 mm [0.59 in] deep

Port connections:

A, B Main ports: G 1/2; min 15 mm [0.59 in] deep

OMP dimensions

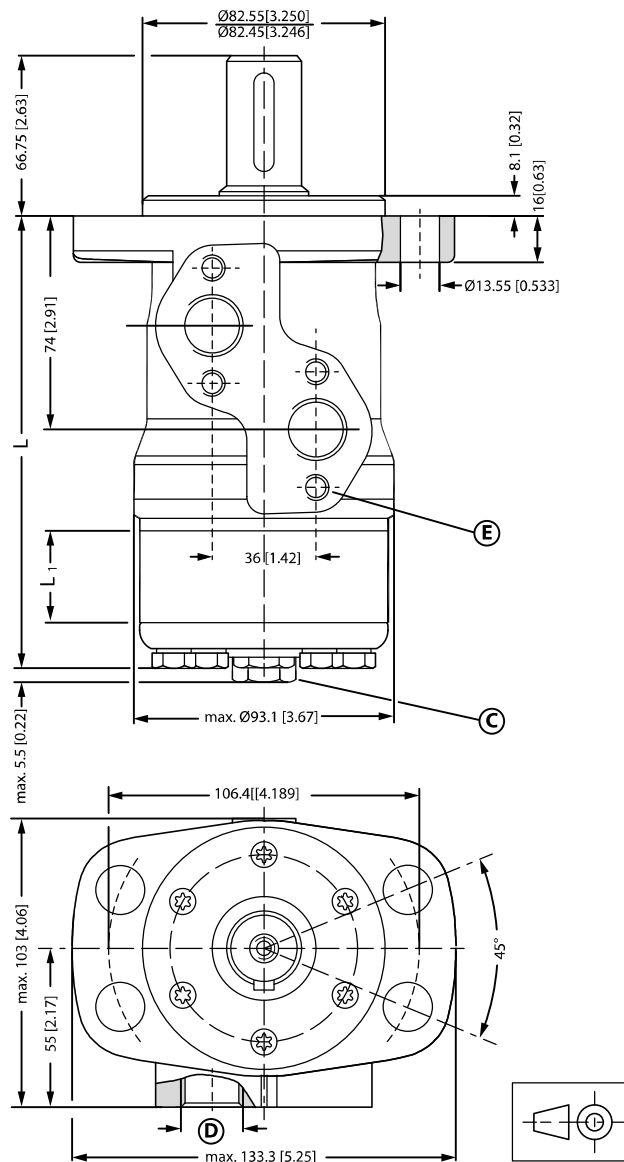
C Drain port: G 1/4; 12 mm [0.47 in] deep

D Thread: M8; 13 mm [0.51 in] deep

Type		OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	146.7 [5.78]	150.6 [5.93]	153.2 [6.03]	157.0 [6.18]	161.0 [6.34]	166.2 [6.54]	172.7 [6.80]	181.1 [7.13]	192.2 [6.57]
L ₁	mm [in]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

Side port version with 4 hole oval mounting flange (A4-flange)

Side port - European version



151-1747.13

Tolerance for basic dimensions = ±1 mm [0.04 in]

OMP dimensions

C: Drain connection G ¼; 12 mm [0.47 in] deep

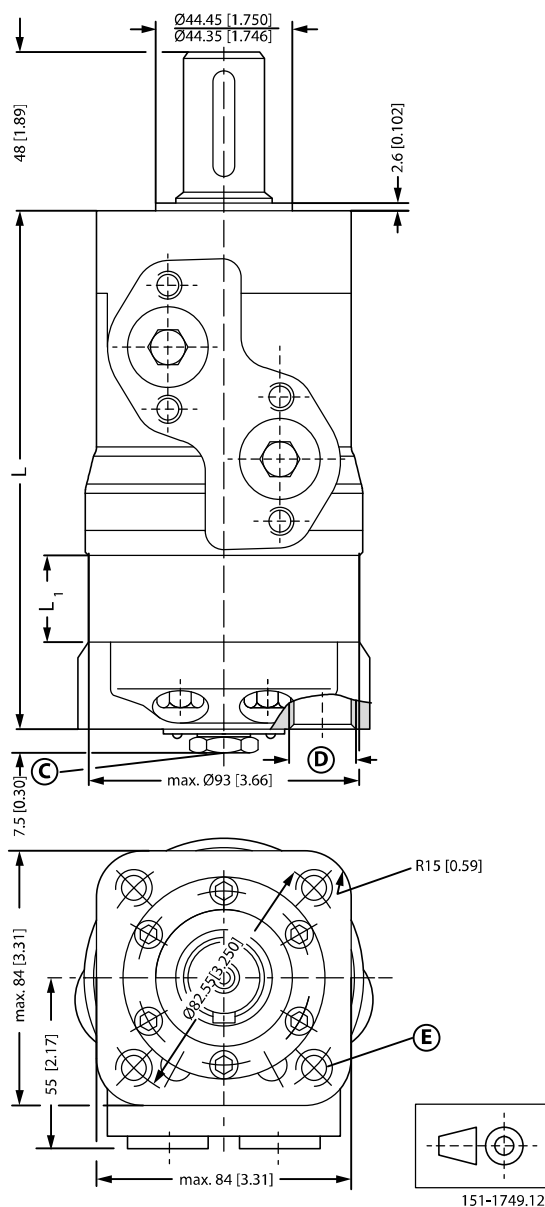
D: G ½; 15 mm [0.59 in] deep

E: M8; 13 mm [0.51 in] deep (4 pcs.)

Type		OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	133.2 [5.24]	137.2 [5.40]	139.7 [5.50]	143.5 [5.65]	147.5 [5.81]	152.7 [6.01]	159.2 [6.27]	167.6 [6.60]	178.7 [7.04]
L ₁	mm [in]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

End port version with square mounting flange (C-flange)

End port - European version



OMP dimensions

Tolerance for basic dimensions = ± 1 mm [0.04 in]

C: Drain connection G ¼; 12 mm [0.47 in] deep (4 pcs.)

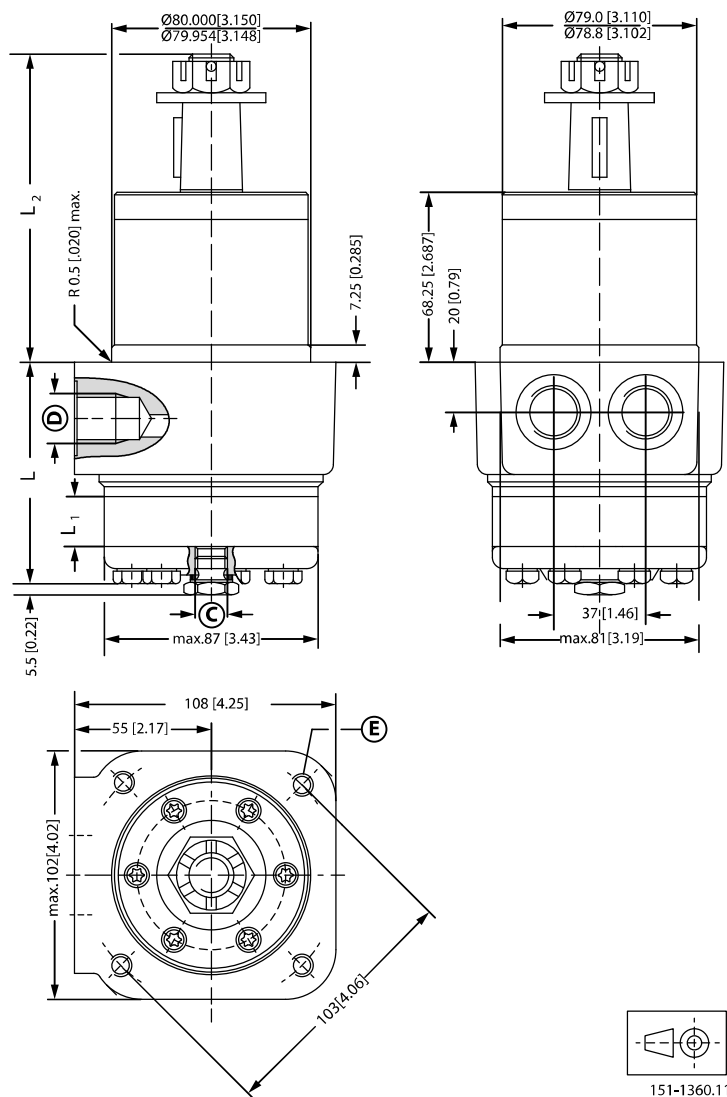
D: G ½; 15 mm [0.59 in] deep

E: M10; 15 mm [0.59 in] deep

Type		OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	152.7 [6.01]	156.6 [6.17]	159.2 [6.27]	162.9 [6.41]	167.0 [6.57]	172.2 [6.78]	178.7 [7.04]	187.1 [7.37]	198.2 [7.80]
L ₁	mm [in]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

EU version OMPW and OMPW N motors wheel type

Wheel motor -- European version



Tolerance for basic dimensions = ± 1 mm [0.04 in]

OMP dimensions

C: Drain connection G ¼; 12 mm [0.47 in] deep

D: G ½; 15 mm [0.59 in] deep

E: M10; 20 mm [0.79 in] deep (4 pcs.)

Port connections:

A, B Main ports: G 1/2; min 15 mm [0.59 in] deep

C Drain port: G 1/4; 12 mm [0.47 in] deep

D Thread: M10, 20 mm [0.78 in] deep

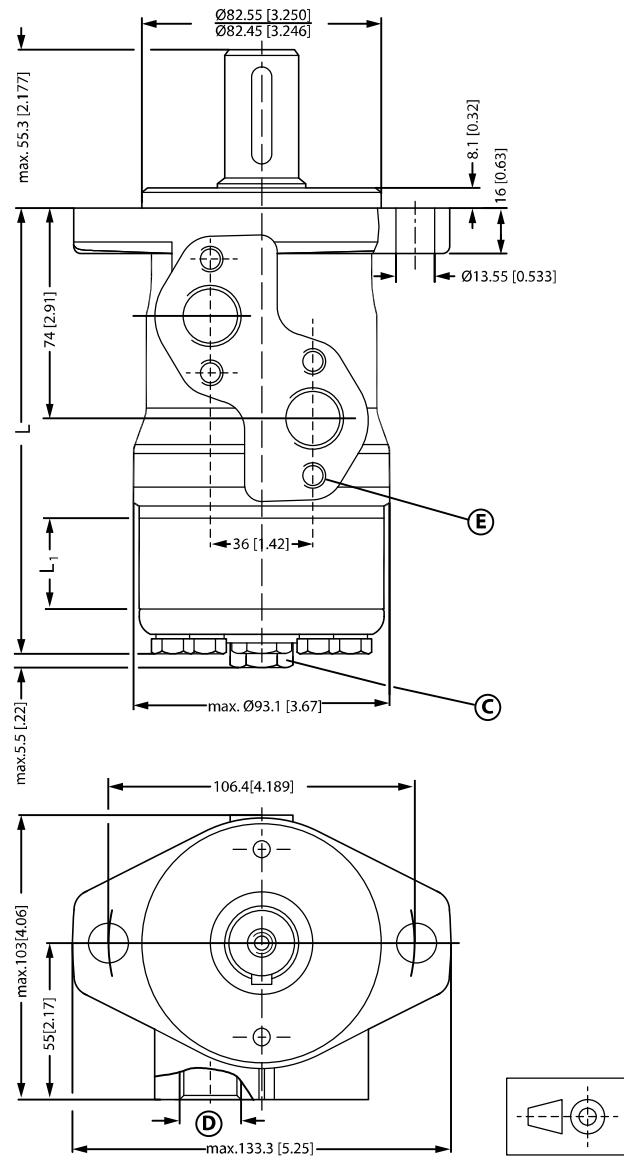
Type		OMP 40	OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	73.5 [2.89]	73.5 [2.89]	77.4 [3.05]	80.0 [3.15]	83.7 [3.30]	87.8 [3.46]	93.0 [3.66]	99.5 [3.92]	107.9 [4.25]	119.0 [4.69]
L ₁	mm [in]	6.5 [0.26]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

OMP dimensions

OMP dimensions - US version

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

Side port - US version



151-1850.11

Tolerance for basic dimensions = ± 1 mm [0.04 in]

- C:** Drain connection G $\frac{1}{4}$; 12 mm [0.47 in] deep
- D:** G $\frac{1}{2}$; 15 mm [0.59 in] deep
- E:** M8; 13 mm [0.51 in] deep (4 pcs.)

Port connections:

- A, B** Main ports: 7/8 - 14 UNF; min. 16.7 mm [0.66 in] deep
- C** Drain port: 7/16 - 20 UNF; 11.5 mm [0.45 in] deep

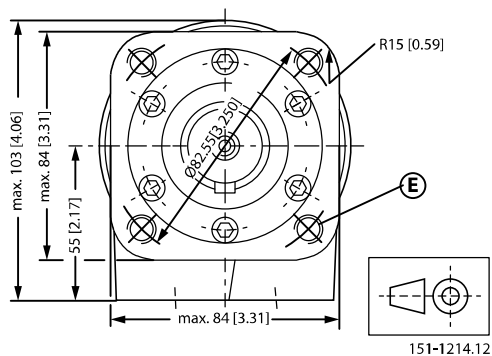
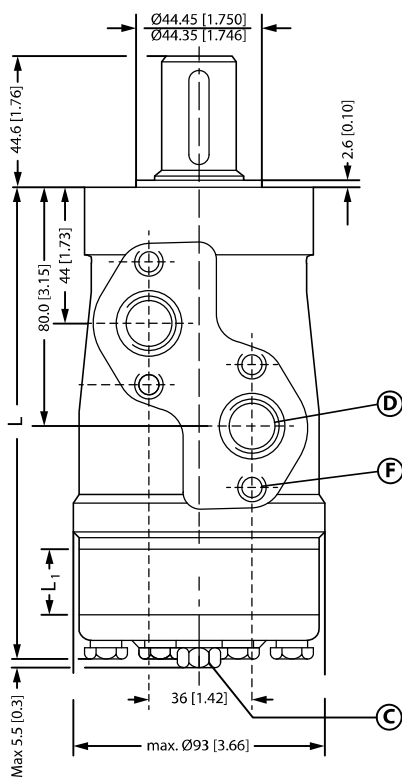
OMP dimensions

D Thread: M8; 13 mm [0.51 in] deep

Type		OMP 25	OMP 32	OMP 40	OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm	137.2	138.3	139.6	139.6	143.6	146.1	149.9	153.9	159.1	165.6	174.0	185.1
	[in]	[5.40]	[5.44]	[5.50]	[5.50]	[5.65]	[5.75]	[5.90]	[6.06]	[6.26]	[6.52]	[6.85]	[7.29]
L ₁	mm	4.1	5.2	6.5	6.5	10.4	13.0	16.7	20.8	26.0	32.5	40.9	52.0
	[in]	[0.16]	[0.20]	[0.26]	[0.26]	[0.41]	[0.51]	[0.66]	[0.82]	[1.02]	[1.28]	[1.61]	[2.05]

US version side port with square mounting flange (C-flange)

Side port - US version



Tolerance for basic dimensions = ±1 mm [0.04 in]

C: Drain connection 7/16 - 20 UNF; 12 mm [0.47 in] deep

OMP dimensions

D: 7/8 - 14 UNF; 16.76 mm [0.66 in] deep or 1/2 - 14 NPTF

E: 3/8 - 16 UNC; 15 mm [0.59 in] deep (4 off)

F: M8; 13 mm [0.51 in] deep (4 pcs.)

Port connections:

A, B Main ports: 7/8 - 14 UNF; min. 11.5 mm [0.45 in] deep

C Drain port: 7/16 - 20 UNF; 11.5 mm [0.45 in] deep

D Thread: 3/8 - 16 UNC; 15 mm [0.59 in] deep

Type		OMP 40	OMP 50	OMP 80	OMP 100	OMP 125	OMP 160	OMP 200	OMP 250	OMP 315	OMP 400
L _{Max.}	mm [in]	139.6 [5.50]	139.6 [5.50]	143.5 [5.65]	146.1 [5.75]	149.8 [5.90]	153.9 [6.06]	159.1 [6.26]	165.6 [6.52]	174.0 [6.85]	185.1 [7.29]
L ₁	mm [in]	6.5 [0.26]	6.5 [0.26]	10.4 [0.41]	13.0 [0.51]	16.7 [0.66]	20.8 [0.82]	26.0 [1.02]	32.5 [1.28]	40.9 [1.61]	52.0 [2.05]

OMR versions and code numbers
OMR versions and code numbers
OMR standard motors
Mounting flange: 2 hole oval flange (A2)

Spigot diamer		Ø82.5 mm [3.25 in]						
Bolt circle diameter		Ø106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	-	-	Yes	-	OMR	A1
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	-	Yes	Yes	OMR	A2
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	-	Yes	OMR	A3
Cyl. 1 in	G 1/2	Side port	-	-	Yes	-	OMR	A4
Cyl. 1 in	G 1/2	Side port	G 1/4	-	Yes	Yes	OMR	A5
Cyl. 1 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMR	A6
Splined 1 in	G 1/2	Side port	-	-	Yes	-	OMR	A7
Splined 1 in	G 1/2	Side port	G 1/4	-	Yes	Yes	OMR	A8
Splined 1 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMR	A9
Cyl. Ø32 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMR	A10
Tap. Ø28.5 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMR	A11

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
A1	151-0410	151-0411	151-0412	151-0413	151-0414	151-0415	151-0416	151-0417	151-0418
A2	151-0710	151-0711	151-0712	151-0713	151-0714	151-0715	151-0716	151-0717	151-0718
A3	151-6190	151-6191	151-6192	151-6193	151-6194	151-6195	151-6196	151-6197	151-6198
A4	151-0400	151-0401	151-0402	151-0403	151-0404	151-0405	151-0406	151-0407	151-0408
A5	151-0700	151-0701	151-0702	151-0703	151-0704	151-0705	151-0706	151-0707	151-0708
A6	151-7240	151-7241	151-7242	151-7243	151-7244	151-7245	151-7246	151-7247	151-7248
A7	151-0420	151-0421	151-0422	151-0423	151-0424	151-0425	151-0426	151-0427	151-0428
A8	151-0720	151-0721	151-0722	151-0723	151-0724	151-0725	151-0726	151-0727	151-0728
A9	151-7250	151-7251	151-7252	151-7253	151-7254	151-7255	151-7256	151-7257	151-7258
A10	151-0248	151-0242	151-0243	151-0208	151-0244	151-0245	151-0247	151-0246	151-6294
A11	151-0265	151-0266	151-0267	151-6295	151-0268	151-0269	151-0271	151-0270	151-6296

Mounting flange : 4 hole oval flange (A4)

Spigot diamer		Ø82.5 mm [3.25 in]						
Bolt circle diameter		Ø106.4 mm [4.20 in]						
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMR	B1
Cyl. Ø32 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMR	B2
Cyl. Ø1 1/4 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMR	B3

OMR versions and code numbers

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
B1	151-6010	151-6011	151-6012	151-6013	151-6014	151-6015	151-6016	151-6017	151-6018
B2	151-6000	151-6001	151-6002	151-6003	151-6004	151-6005	151-6006	151-6007	151-6008
B3	151-6110	151-6111	151-6112	151-6113	151-6114	151-6115	151-6116	151-6117	151-6118

Mounting flange: Square flange (C)

Spigot diamer	Ø44.4 mm [1.75 in]								
Bolt circle diameter	Ø82.5 mm [3.25 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code	
Cyl. Ø25 mm	G 1/2	End port	G 1/4	Yes	-	Yes	OMR	C1	
Cyl. 1 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMR	C2	

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
C1	151-6210	151-6211	151-6212	151-6213	151-6214	151-6215	151-6216	151-6217	151-6218
C2	151-7260	151-7261	151-7262	151-7263	151-7264	151-7265	151-7266	151-7267	151-7269

OMR motors with corrosion resistant parts

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]								
Bolt circle diameter	Ø106.4 mm [4.20 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code	
Cyl. Ø25 mm	G 1/2	Side port	G1/4	Yes	-	Yes	OMR C	D1	

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
D1	151-1231	151-1232	151-1233	151-1238	151-1234	151-1235	151-1236	151-1237	151-1243

OMR motors with needle bearings

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]								
Bolt circle diameter	Ø106.4 mm [4.20 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code	
Cyl. Ø25 mm	G 1/2	Side port	G1/4	Yes	-	Yes	OMR N	E1	

OMR versions and code numbers

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
E1	151-6380	151-6381	-	151-6383	151-6384	151-6385	151-6386	151-6387	151-6388

OMRW motors with needle bearings

Mounting flange: Wheel

Spigot diamer	Ø82.5 mm [3.25 in]								
Bolt circle diameter	Ø147.6 mm [5.81 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code	
Tap. Ø35 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMRW N	F1	
Tap. Ø 1 1/4 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMRW N	F2	

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
F1	151-6300	151-6301	151-6302	151-6303	151-6304	151-6305	151-6306	151-6307	151-6308
F2	151-6430	151-6431	151-6432	151-6433	151-6434	151-6435	151-6436	151-6437	151-6438

OMR motors with integrated brake

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]								
Bolt circle diameter	Ø106.4 mm [4.20 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code	
Cyl. Ø25 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMR F	G1	

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
G1	-	151-6461	151-6462	151-6463	151-6464	151-6465	151-6466	151-6467	151-6468

OMR motors with integrated brake and needle bearings

Mounting flange: 2 hole oval flange (A2)

Spigot diamer	Ø82.5 mm [3.25 in]								
Bolt circle diameter	Ø106.4 mm [4.20 in]								
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	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	OMR NF	H1	

OMR versions and code numbers
Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
H1	-	151-6471	151-6472	151-6473	151-6474	151-6475	151-6476	151-6477	151-6478

OMRW motors with integrated brake and needle bearings
Mounting flange: Wheel

Spigot diamer	Ø82.5 mm [3.25 in]							
Bolt circle diameter	Ø147.6 mm [5.81 in]							
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Tap. Ø35 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMRW NF	J1

Code numbers

Conf. code	Displacement								
	50	80	100	125	160	200	250	315	375
J1	-	-	151-6442	151-6443	151-6444	151-6445	-	-	-

Features available (options)

Low leakage (low speed valve) Reverse rotation

Speed sensor Painted

Viton shaft seal

OMR technical data
Technical data for OMR with 25 mm and 1 in cylindrical shaft

Type			OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR	
Motor size			50	80	100	125	160	200	250	315	375
Geometric displacement	cm ³		51.6	80.3	99.8	125.7	159.6	199.8	249.3	315.7	372.6
	[inch]		[3.16]	[4.91]	[6.11]	[7.69]	[9.77]	[12.23]	[15.26]	[19.32]	[22.80]
Max. speed	min ⁻¹	cont.	775	750	600	475	375	300	240	190	160
	[rpm]	int. ¹⁾	970	940	750	600	470	375	300	240	200
Max. torque	N·m [lbf·in]	cont.	100	195	240	300	300	300	300	300	300
			[890]	[1730]	[2120]	[2660]	[2660]	[2660]	[2660]	[2660]	[2660]
		int. ¹⁾	130	220	280	340	390	390	380	420	430
			[1150]	[1960]	[2480]	[3010]	[3450]	[3450]	[3360]	[3720]	[3810]
Max. output	kW [hp]	cont.	7.0	12.5	13.0	12.5	10.0	8.0	6.0	5.0	4.0
			[9.4]	[16.8]	[17.4]	[16.8]	[13.4]	[10.7]	[8.1]	[6.7]	[5.4]
		int. ¹⁾	8.5	15.0	15.0	14.5	12.5	10.0	8.0	6.5	6.0
			[11.4]	[20.1]	[20.1]	[19.4]	[16.8]	[13.4]	[10.7]	[8.7]	[8.1]
Max. pressure drop	bar [psi]	cont.	140	175	175	175	130	110	80	70	55
			[2030]	[2540]	[2540]	[2540]	[1890]	[1600]	[1160]	[1020]	[800]
		int. ¹⁾	175	200	200	200	175	140	110	100	85
			[2540]	[2900]	[2900]	[2900]	[2540]	[2030]	[1600]	[1450]	[1230]
Max. oil flow	l/min [US gal/min]	cont.	40	60	60	60	60	60	60	60	60
			[10.6]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]
		int. ¹⁾	50	75	75	75	75	75	75	75	75
			[13.2]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]
Max. starting pressure with unloaded shaft	bar		10	10	10	9	7	5	5	5	
	[psi]		[145]	[145]	[145]	[130]	[100]	[75]	[75]	[75]	
Min starting torque	at max. press drop cont. N·m [lbf·in]		80	150	200	250	240	260	240	260	240
			[710]	[1330]	[1770]	[2210]	[2120]	[2300]	[2120]	[2300]	[2120]
	at max. press.drop int. ¹⁾ N·m [lbf·in]		100	170	230	280	320	330	310	350	380
			[890]	[1510]	[2040]	[2480]	[2830]	[2920]	[2740]	[3100]	[3360]

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

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

Technical data for OMR with 1 in splined and 28.5 mm tapered shaft

Type			OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR	
Motor size			50	80	100	125	160	200	250	315	375
Geometric displacement	cm ³		51.6	80.3	99.8	125.7	159.6	199.8	249.3	315.7	372.6
	[inch]		[3.16]	[4.91]	[6.11]	[7.69]	[9.77]	[12.23]	[15.26]	[19.32]	[22.80]
Max. speed	min ⁻¹	cont.	775	750	600	475	375	300	240	190	160
	[rpm]	int. ¹⁾	970	940	750	600	470	375	300	240	200
Max. torque	N·m [lbf·in]	cont.	100	195	240	300	360	360	360	360	360
			[890]	[1730]	[2120]	[2660]	[3190]	[3190]	[3190]	[3190]	[3190]
		int. ¹⁾	130	220	280	340	430	440	470	470	460
			[1150]	[1950]	[2480]	[3010]	[3810]	[3890]	[4160]	[4160]	[4070]

OMR technical data

Type			OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR
Motor size			50	80	100	125	160	200	250	315	375
Max. output	kW [hp]	cont.	7.0	12.5	13.0	12.5	12.5	10.0	7.0	5.0	5.0
			[9.4]	[16.8]	[17.4]	[16.8]	[16.8]	[13.4]	[9.4]	[6.7]	[6.7]
	int. ¹⁾	8.5	15.0	15.0	14.5	14.0	13.0	9.5	8.0	7.0	
		[11.4]	[20.1]	[20.1]	[19.4]	[18.8]	[17.4]	[12.7]	[10.7]	[9.4]	
Max. pressure drop	bar [psi]	cont.	140	175	175	175	165	130	100	85	70
			[2030]	[2540]	[2540]	[2540]	[2390]	[1890]	[1450]	[1230]	[1020]
		int. ¹⁾	175	200	200	200	200	175	140	115	90
	[2540]		[2900]	[2900]	[2900]	[2900]	[2540]	[2030]	[1670]	[1310]	
	peak ²⁾	225	225	225	225	225	225	200	150	130	
		[3260]	[3260]	[3260]	[3260]	[3260]	[3260]	[2900]	[2180]	[1890]	
Max. oil flow	l/min [US gal/min]	cont.	40	60	60	60	60	60	60	60	60
			[10.6]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]
	int. ¹⁾	50	75	75	75	75	75	75	75	75	
		[13.2]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	[19.8]	
Max. starting pressure with unloaded shaft	bar		10	10	10	9	7	5	5	5	5
	[psi]		[145]	[145]	[145]	[130]	[100]	[75]	[75]	[75]	[75]
Min starting torque	at max. press drop cont. N·m [lbf·in]		80	150	200	250	300	300	290	315	300
			[710]	[1330]	[1770]	[2210]	[2660]	[2660]	[2570]	[2790]	[2660]
	at max. press.drop int. ¹⁾ N·m [lbf·in]		100	170	230	280	350	400	400	400	380
			[890]	[1510]	[2040]	[2480]	[3100]	[3540]	[3540]	[3540]	[3360]

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

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

Technical data for OMR with 32 mm, 1 ¼ in cylindrical shaft and 35 mm, 1 ¼ in tapered shaft

Type			OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR
Motor size			50	80	100	125	160	200	250	315	375
Geometric displacement	cm ³		51.6	80.3	99.8	125.7	159.6	199.8	249.3	315.7	372.6
	[inch]		[3.16]	[4.91]	[6.11]	[7.69]	[9.77]	[12.23]	[15.26]	[19.32]	[22.80]
Max. speed	min ⁻¹	cont.	775	750	600	475	375	300	240	190	160
	[rpm]	int. ¹⁾	970	940	750	600	470	375	300	240	200
Max. torque	N·m [lbf·in]	cont.	100	195	240	300	380	450	540	550	580
			[890]	[1730]	[2120]	[2660]	[3360]	[3980]	[4780]	[4870]	[5130]
	int. ¹⁾	130	220	280	340	430	500	610	690	690	
		[1150]	[1957]	[2480]	[3010]	[3810]	[4430]	[5400]	[6110]	[6110]	
Max. output	kW [hp]	cont.	7.0	12.5	13.0	12.5	12.5	11.0	10.0	9.0	7.5
			[9.4]	[16.8]	[17.4]	[16.8]	[16.8]	[14.8]	[13.4]	[12.1]	[10.1]
	int. ¹⁾	8.5	15.0	15.0	14.5	14.0	13.0	12.0	10.0	9.0	
		[11.4]	[20.1]	[20.1]	[19.4]	[18.8]	[17.4]	[16.1]	[13.4]	[12.1]	
Max. pressure drop	bar [psi]	cont.	140	175	175	175	175	175	175	135	115
			[2030]	[2540]	[2540]	[2540]	[2540]	[2540]	[2540]	[1960]	[1670]
		int. ¹⁾	175	200	200	200	200	200	200	175	150
	[2540]		[2900]	[2900]	[2900]	[2900]	[2900]	[2900]	[2540]	[2180]	
	peak ²⁾	225	225	225	225	225	225	225	210	175	
		[3260]	[3260]	[3260]	[3260]	[3260]	[3260]	[3260]	[3050]	[2540]	

OMR technical data

Type			OMR	OMR	OMR	OMR	OMR	OMR	OMR	OMR	
Motor size			50	80	100	125	160	200	250	315	375
Max. oil flow	l/min [US gal/min]	cont.	40	60	60	60	60	60	60	60	60
		int. ¹⁾	[10.6]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]	[15.9]
Max. starting pressure with unloaded shaft	bar		10	10	10	9	7	5	5	5	5
		[psi]	[145]	[145]	[145]	[130]	[100]	[75]	[75]	[75]	[75]
Min starting torque	at max. press drop cont. N•m [lbf•in]		80	150	200	250	320	410	500	500	470
		[710]	[1330]	[1770]	[2210]	[2830]	[3630]	[4430]	[4430]	[4170]	
Min starting torque	at max. press.drop int. ¹⁾ N•m [lbf•in]		100	170	230	280	370	460	550	660	570
		[890]	[1510]	[2040]	[2480]	[3280]	[4070]	[4870]	[5840]	[5050]	

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

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

Type			Max. inlet pressure	Max. return pressure with drain line
OMR 50 - 375	bar [psi]	cont	175 [2540]	175 [2540]
	bar [psi]	int. ¹⁾	200 [2900]	200 [2900]
	bar [psi]	peak ²⁾	225 [3260]	225 [3260]

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

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

Technical data for parking brake motor OMR F, OMR NF and OMRW NF

Technical data for brake motor		
Holding torque ¹⁾	N•m [lbf•in]	400 [3540]
Min. release pressure ²⁾	bar [psi]	21 [305]
Max. pressure in brake line	bar [psi]	200 [2900]

¹⁾ This brake is to be used only as a passive parking brake. It may not be used for dynamic braking.

²⁾ Brake motors must always have a drain line. The brake release pressure is the difference between the pressure in the brake release line and the pressure in the drain line.

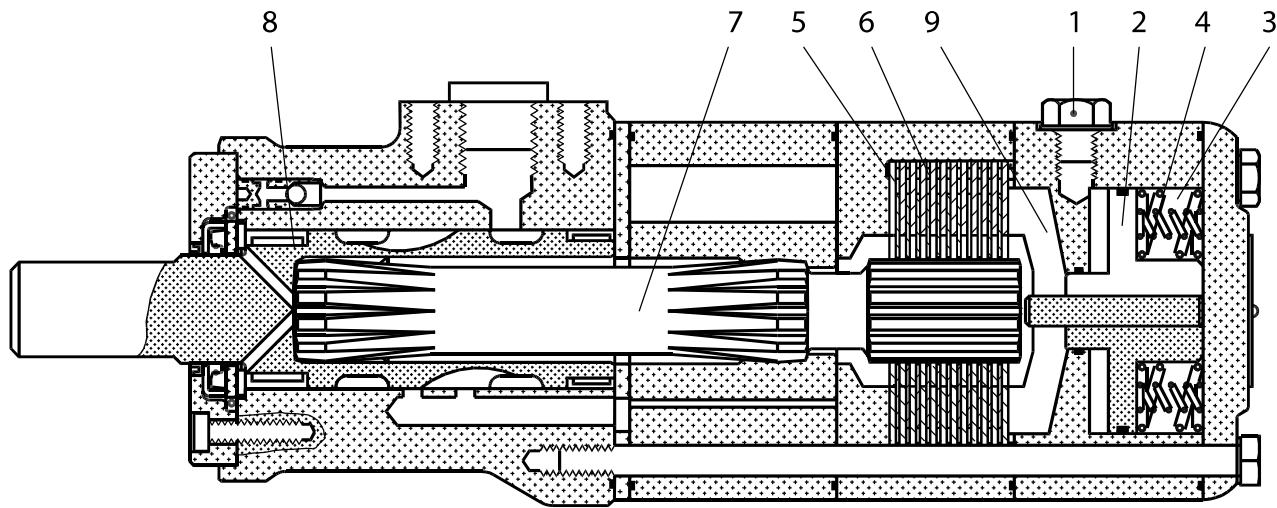
OMR F function

In normal condition where there is no pressure on the integrated brake in OMR, i.e. the brake is applied. The brake is released when hydraulic pressure of 21 bar [300 psi] min. is applied to the brake release port (1).

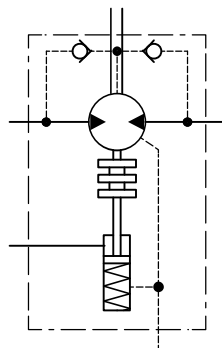
The pressure forces the piston (2) against the springs (3 and 4) disengaging the outer and inner discs (5 and 6) from each other so that the cardan shaft (7) and consequently output shaft (8) become free to rotate.

If the pressure on the brake release port is reduced to less than 21 bar [300 psi], the springs force the piston and pressure pad (9) against the brake discs and the cardan shaft/output shaft begin to lock up.

OMR technical data



151-1739.10.10

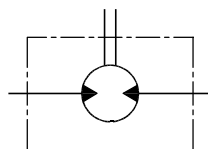


151-1726.10

Maximum permissible shaft seal pressure

High Pressure Shaft Seal (HPS) in motor

- OMR with HPS, without check valves and without drain connection:
 The shaft seal pressure equals the average of input pressure and return pressure



151-1743.10

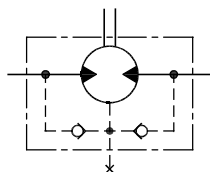
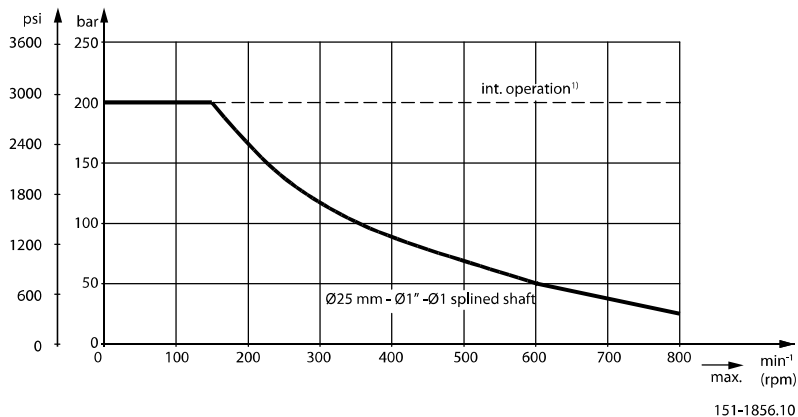
$$P_{\text{seal}} = \frac{P_{\text{in}} + P_{\text{return}}}{2}$$

- with HPS, check valves and

OMR technical data

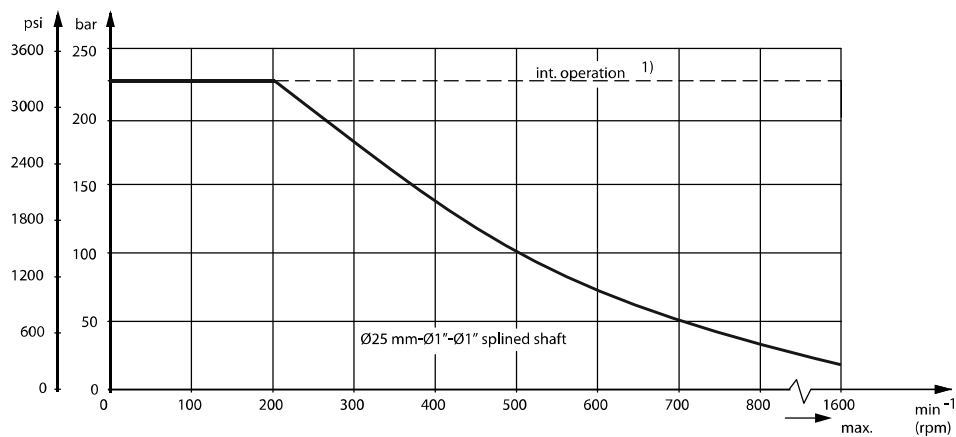
- with drain connection – **The shaft seal pressure equals the pressure in the drain line.**
- without drain connection – **The shaft seal pressure never exceeds the pressure in the return line.**

Max. permissible shaft seal pressure



151-320.10

Maximum permissible shaft seal pressure

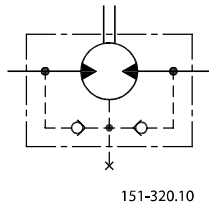


OMR with Standard Shaft seal

OMR with standard shaft seal, check valves and without use of drain connection:

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

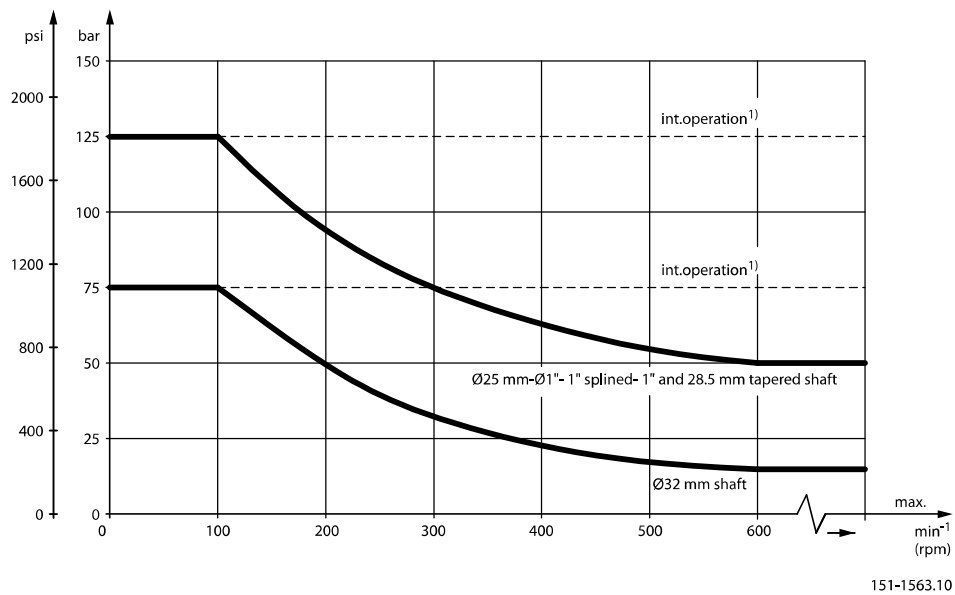
OMR technical data



OMR with standard shaft seal, check valves and with drain connection:

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

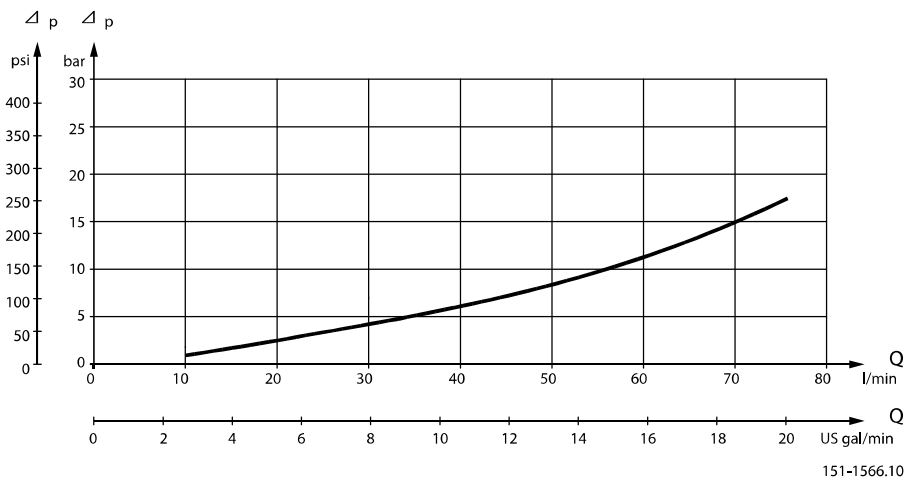
Max. return pressure without drain line or max. pressure in the drain line



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

Pressure drop in OMR motor

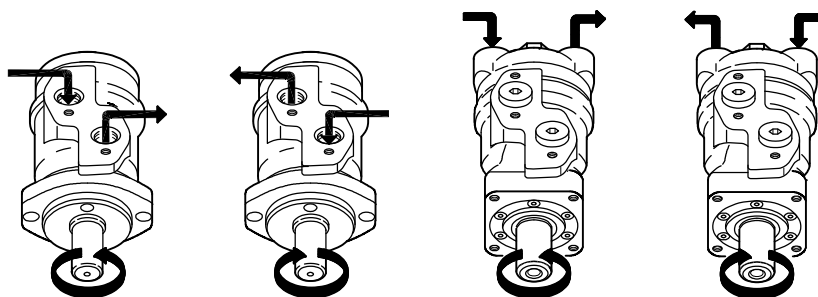
The curve applies to an unloaded motor shaft and an oil viscosity of 35 mm²/s [165 SUS]



OMR technical data
Oil flow in drain line

Max. oil flow in the drain line at return pressure less 5-10 bar

Pressure drop	100 bar [1450 psi]		140 bar [2030 psi]	
Viscosity	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]
Max. oil flow	2.5 l/min [0.66 US gal/min]	1.8 l/min [0.78 US gal/min]	3.5 l/min [0.93 US gal/min]	2.8 l/min [0.74 US gal/min]

Direction of shaft rotation: clockwise


151-1836.10

Permissible shaft loads
OMP and OMR shaft loads

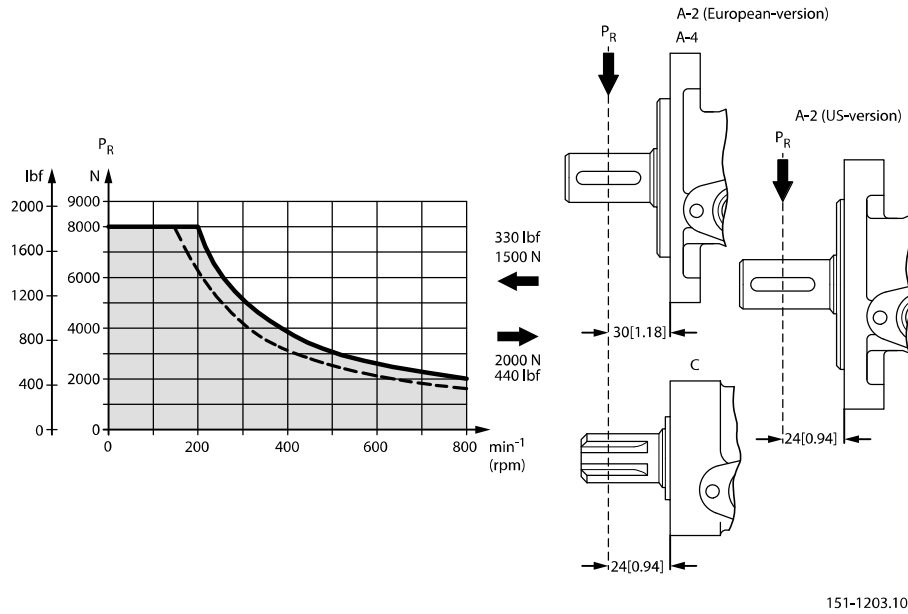
The permissible radial shaft load (P_R) depends on: a distance from the point of load to the mounting flange (L), speed (n), mounting flange and shaft version.

Mounting flange	4-oval flange** 2-hole oval flange (European version)	4-hole oval flange	Square flange** 2-hole oval flange (US-version)
Shaft version	25 mm cylindrical shaft 1 in cylindrical shaft 1 in splined shaft	32 mm cylindrical shaft	25 mm cylindrical shaft
Permissible shaft load (P_R) - l in mm	$\frac{800}{n} \cdot \frac{250000 \text{ N}^*}{95 + L}$	$\frac{800}{n} \cdot \frac{187500 \text{ N}^*}{95 + L}$	$\frac{800}{n} \cdot \frac{250000 \text{ N}^*}{101 + L}$
Permissible shaft load (P_R) - l in inch	$\frac{800}{n} \cdot \frac{2215 \text{ lbf}^*}{3.74 + L}$	$\frac{800}{n} \cdot \frac{1660 \text{ lbf}^*}{3.74 + L}$	$\frac{800}{n} \cdot \frac{2215 \text{ lbf}^*}{3.98 + L}$

** 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]; $= > P_{R\text{max}} = 8000 \text{ N}$ [1800 lbf]

OMR technical data



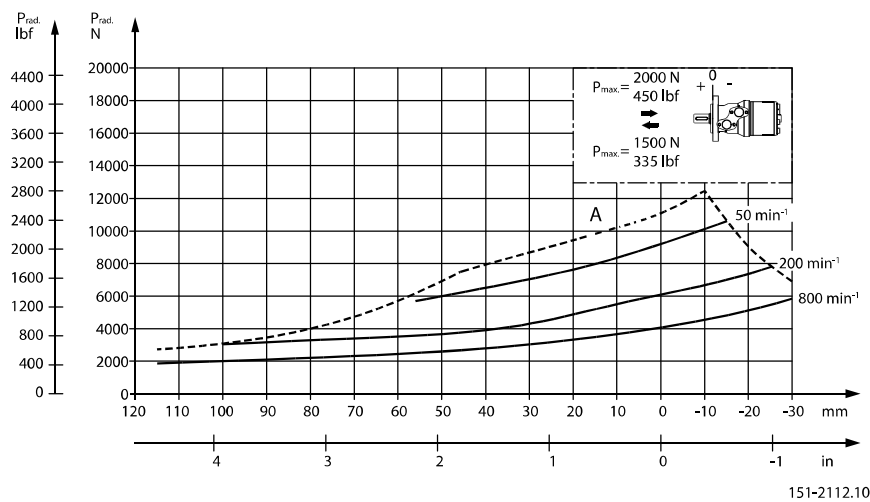
----- cylindrical shaft 32 mm [1.26 in]
 _____ other shaft versions

The curve shows the relation between P_R and n :

- when $l = 30$ mm [1.18 in] for motors with A2 (European version) and A4 oval mounting flange
- 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 N and OMR NF with needle bearings shaft loads



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

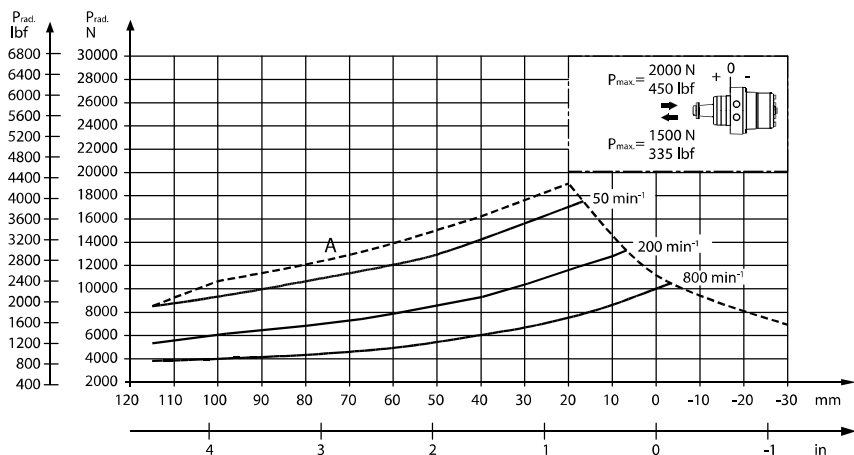
OMR technical data

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*, **BC0000083**.

OMRW N and OMRW NF with Needle Bearings



151-2113.10

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

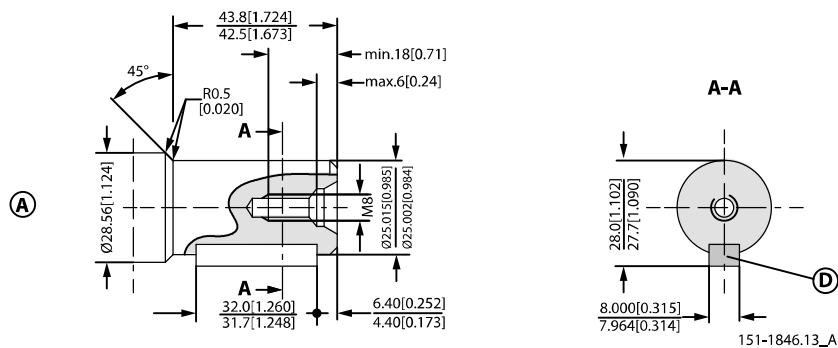
The other curves apply to a B₁₀ bearing life of 2000 hours at the number of revolutions indicated by the curve letter. Mineral based hydraulic oil with a sufficient content of anti-wear additives must be used.

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 Shaft version

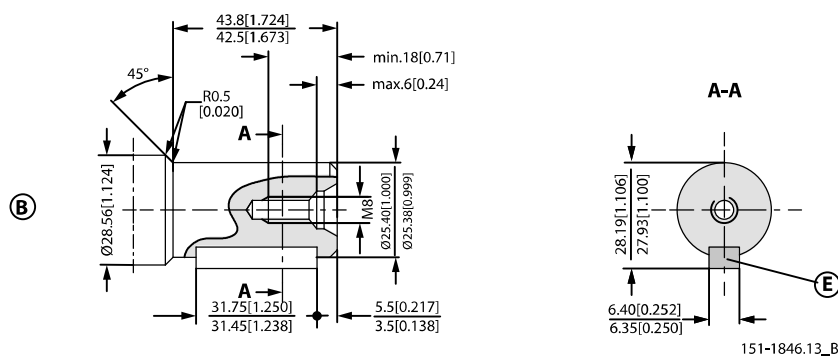
OMR shaft version

Cylindrical shaft 25 mm



- D:** Parallel key A8 · 7 · 32 DIN 6885
Max. torque 360 N·m [3185 lb·in]

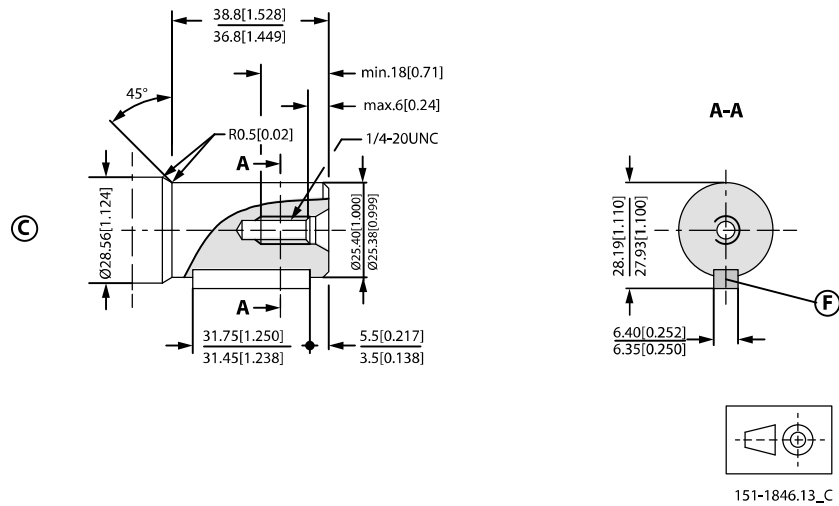
Cylindrical shaft 1 in



- E:** Parallel key $\frac{1}{4} \cdot \frac{1}{4} \cdot 1 \frac{1}{4}$ in B.S. 46
Max. torque 360 N·m [3185 lb·in]

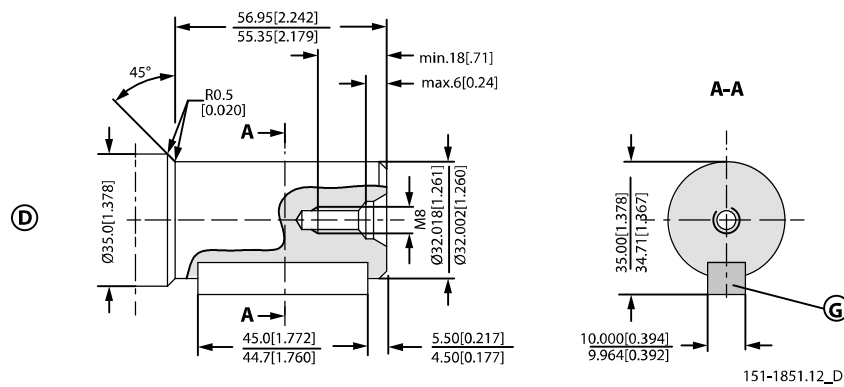
OMR Shaft version

Cylindrical shaft 1 in (US version)



F: Parallel key $\frac{1}{4} \cdot \frac{1}{4} \cdot 1 \frac{1}{4}$ in B.S. 46
 Max torque 360 N·m [3185 lb·in]

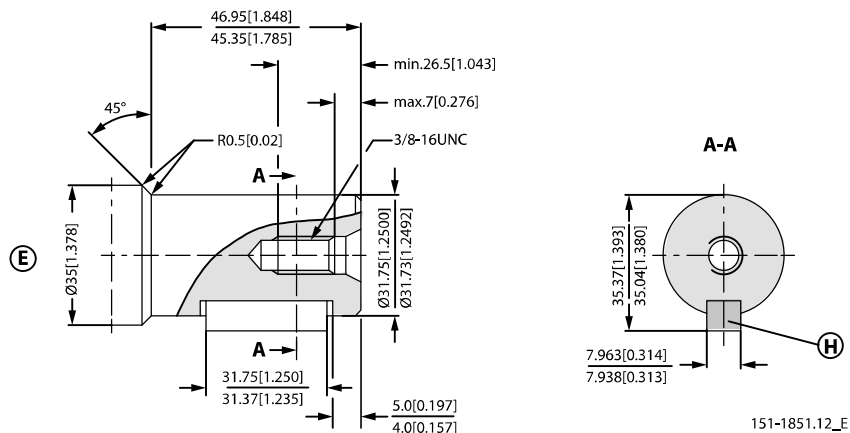
D – Cylindrical shaft 32 mm



G: Parallel key A10 · 8 · 45 DIN 6885

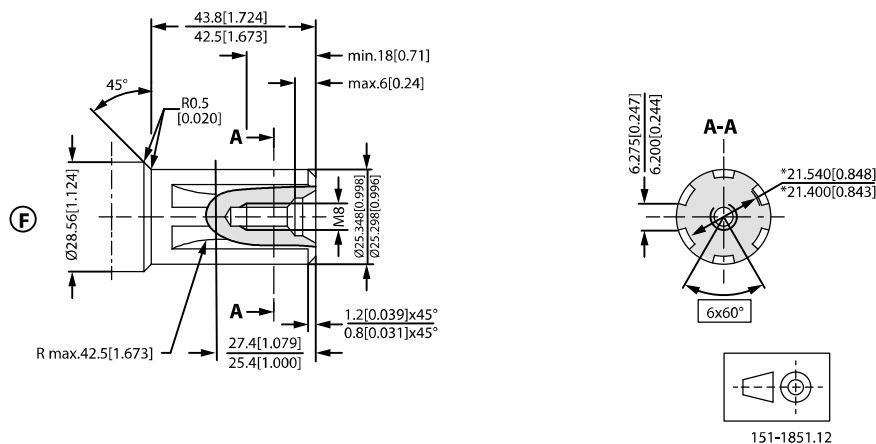
OMR Shaft version

E – Cylindrical shaft 1 ¼ in (US version)



H: Parallel key 5/16 • 5/16 • 1 ¼ in B.S. 46

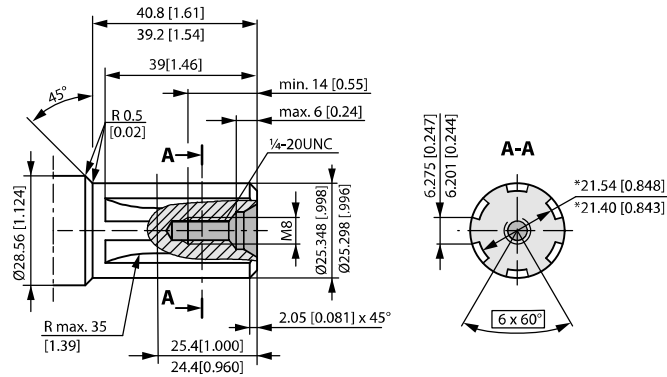
F – Involute splined shaft B.S. 2059 (SAE 6B)



F: Straight-sided, bottom fitting, deep. Fit 2; Nom. size 1 in

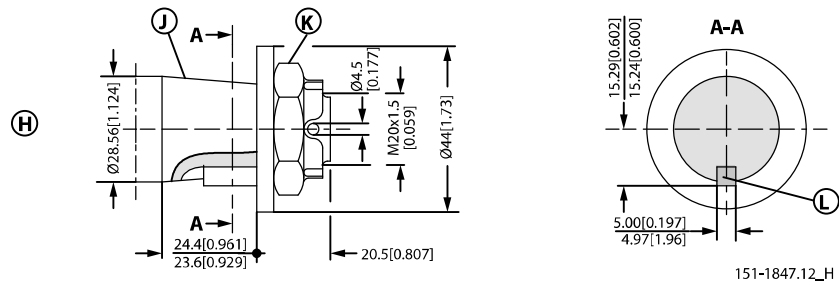
*Deviates from B.S. 2059 (SAE 6B)

Max. torque 360 N•m [3185 lb•in] Max. cont. torque 400 N•m [3540 lb•in]

OMR Shaft version
Splined shaft B.S. 2059 (SAE 6B - US version)


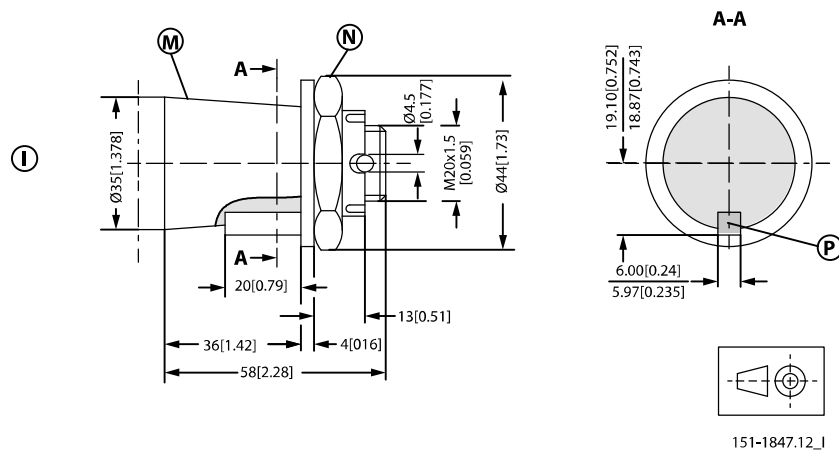
Straight-sided, bottom fitting, deep. Fit 2; Nom. size 1 in, *Deviates from B.S. 2059 (SAE 6B)

Max. cont. torque 400 N·m [3540 lb·in]

H – Tapered shaft 28.5 mm; ISO/R775 (taper 1:10)


K: DIN 937 NV 30 Tightening torque: 100 ± 10 N·m [885 ± 85 lb·in]

L: Parallel key B5 · 5 · 14 DIN 6885

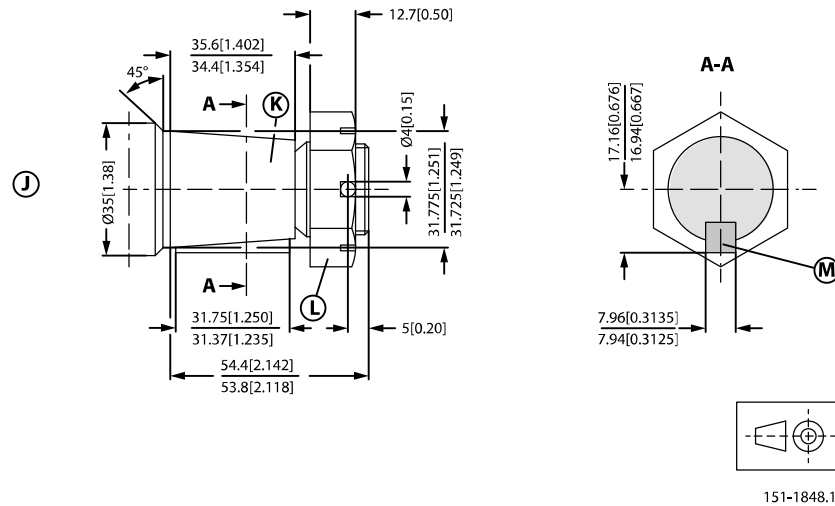
I – Tapered shaft 35 mm (taper 1:10)


N: DIN 937 NV 41 Tightening torque: 200 ± 10 N·m [1770 ± 85 lb·in]

P: Parallel key B6 · 6 · 20 DIN 6885

OMR Shaft version

J – Tapered shaft 1 ¼ in (taper 1:8); SAE J501



151-1848.12

L: 1 - 20 UNF across flats 1 7/16; Tightening torque: 200 ± 10 N•m [1770 ± 85 lb•in]

M: Parallel key 5/16 • 5/16 • 1 ¼ SAE J501; Max. cont. torque 400 N•m [3540 lb•in]

OMR port thread versions

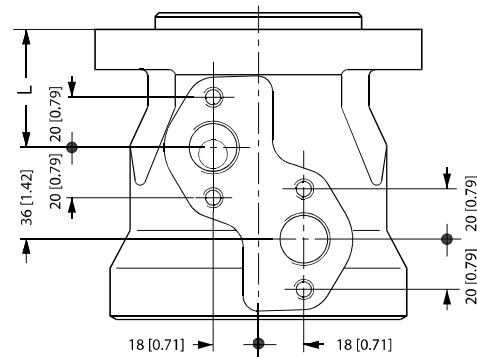
Main port thread versions

Main ports overview

G ISO 228/1 – G1/2	UNF 7/8–14 UNF O-ring boss	NPTF 1/2–14 NPTF	G drain ISO 228/1 – G1/4	UNF drain 7/16–20 UNF O-ring boss

OMR manifold mount

European version



151-2135.10

- L: see dimensional drawing for given OMR motor:
- *OMR dimensions - European version* on page 69
 - *OMR dimensions - US version* on page 79

- L: see dimensional drawing for given OMP motor:
- *OMP dimensions - European version* on page 34
 - *OMP dimensions - US version* on page 42

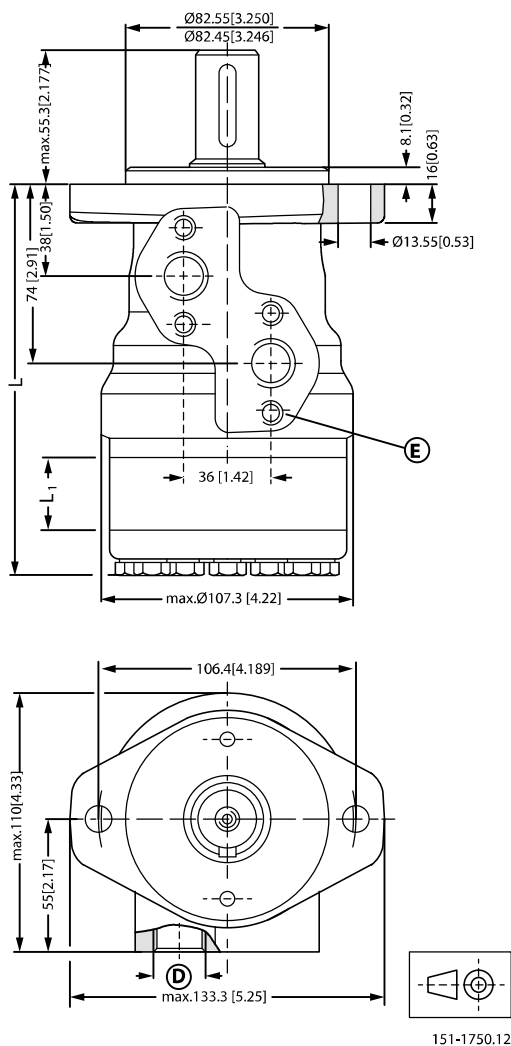
OMR dimensions

OMR dimensions - European version

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

- With high pressure shaft seal

Side port - European version



D: G ½; 15 mm [0.59 in] deep

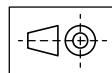
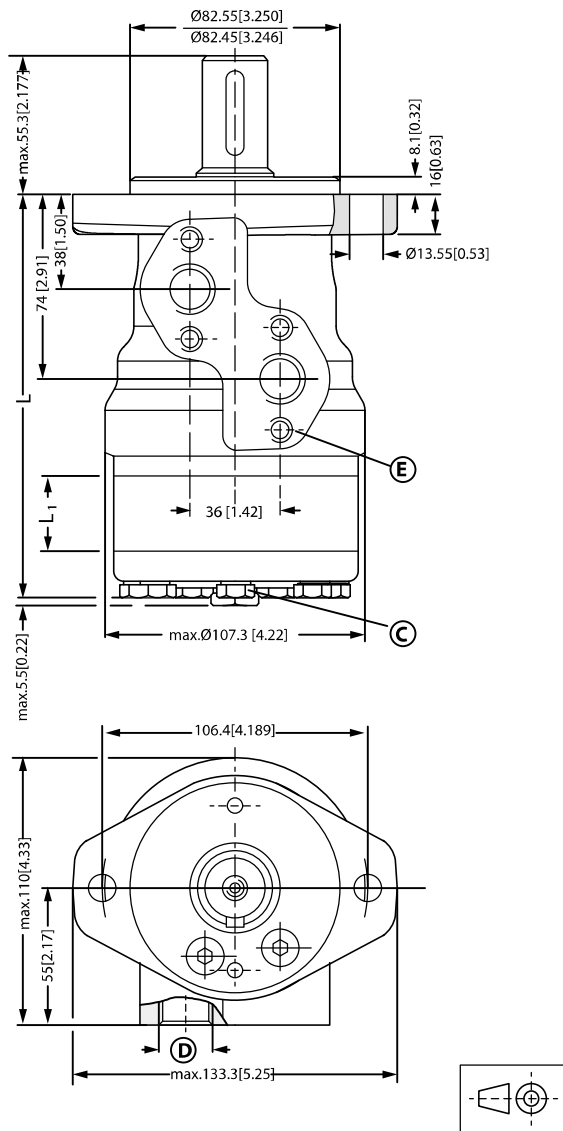
E: M8; 13 mm [0.51 in] deep (4 pcs.)

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{Max}	mm	137.8	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
	[in]	[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR dimensions

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

Side port - European version



151-1845.12

- C:** Drain connection G 1/4; 15 mm [0.47 in] deep
- D:** G 1/2; 15 mm [0.59 in] deep
- E:** M8; 13 mm [0.51 in] deep (4 pcs.)

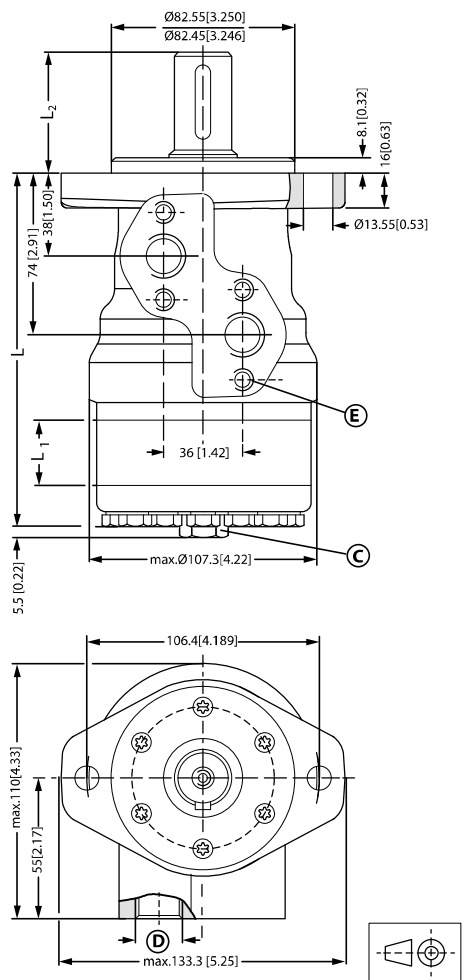
Port connections:

- A, B** Main ports: G 1/2; min 15 mm [0.59 in] deep
- C** Drain port: G 1/4; 12 mm [0.47 in] deep

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{MAX}	mm	137.8	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
	[in]	[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]

OMR dimensions

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR, OMR C and OMR N Side port version with 2-hole oval mounting flange (A2 flange)
Side port - European version


151-1849.14

C: Drain connection G ¼; 12 mm [0.47 in] deep

D: G ½; 15 mm [0.59 in] deep

E: M8; 13 mm [0.51 in] deep (4 pcs.)

Output shaft. max.		Cylindrical shaft 32 mm [1.26 in]	Cylindrical shaft 25 mm [0.98 in]	Tapered shaft 28.56 mm [1.12 in]
L _{2 max}	mm	68.3	55.3	56.65
	[in]	[2.69]	[2.18]	[2.23]

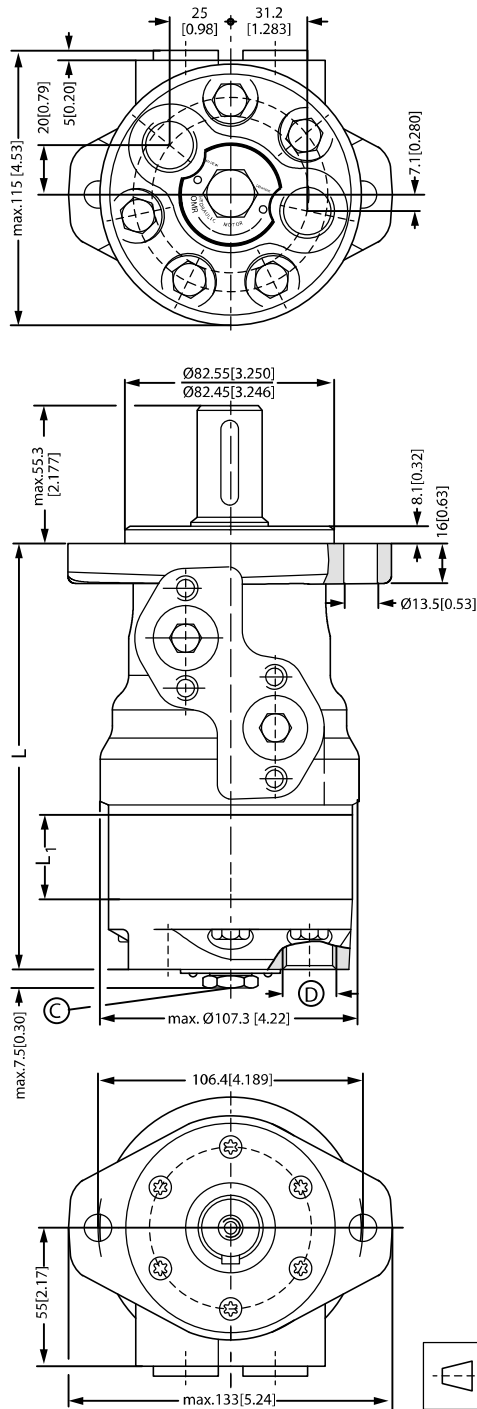
Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{max}	mm	137.8	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
	[in]	[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]

OMR dimensions

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

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

End port - European version



151-1752.12

OMR dimensions

C: G ¼; 12 mm [0.47 in] deep

D: G ½; 15 mm [0.59 in] deep

Port connections:

A, B Main ports: G 1/2; min 15 mm [0.59 in] deep

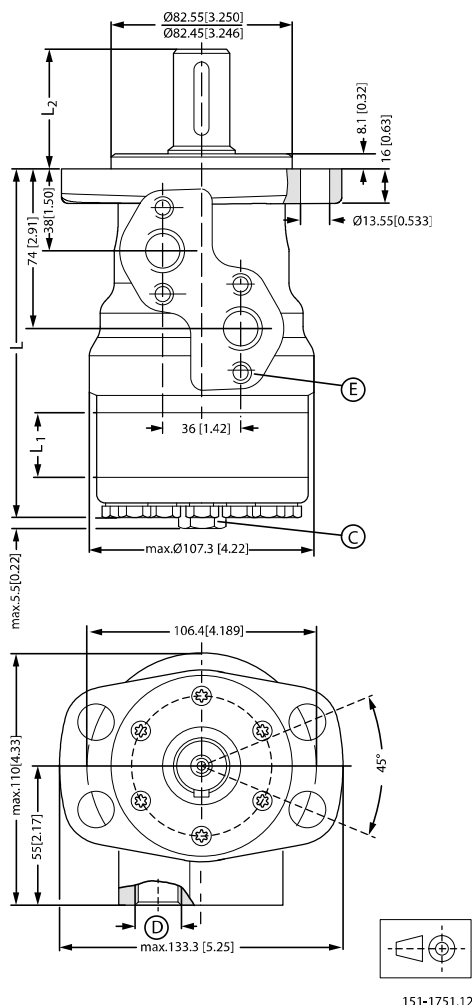
C Drain port: G 1/4; 12 mm [0.47 in] deep

D Thread: M8; 13 mm [0.51 in] deep

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{Max}	mm	152.2	157.2	160.6	165.0	171.0	178.0	186.7	198.0	208.2
	[in]	[5.99]	[6.19]	[6.32]	[6.50]	[6.73]	[7.01]	[7.35]	[7.80]	[8.20]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR Side port version with 4-hole oval mounting flange (A4 flange)

Side port - European version



C: Drain connection G ¼; 15 mm [0.47 in] deep

OMR dimensions

D: G ½; 15 mm [0.59 in] deep

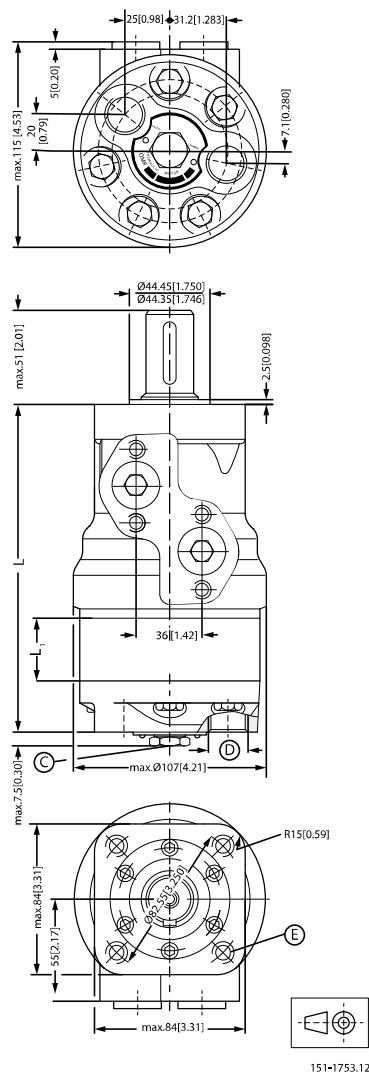
E: M8; 13 mm [0.51 in] deep (4 pcs.)

Output shaft.max.		Cylindrical shaft 32 mm [1.26 in]	Cylindrical shaft 25 mm [0.98 in]	Tapered shaft 28.56 mm [1.12 in]
L2	mm	68.3	55.3	56.3
	[in]	[2.69]	[2.18]	[2.22]

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{Max.}	mm	137.8	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
	[in]	[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR End port version with square mounting flange (C-flange)

End port - European version



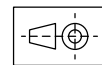
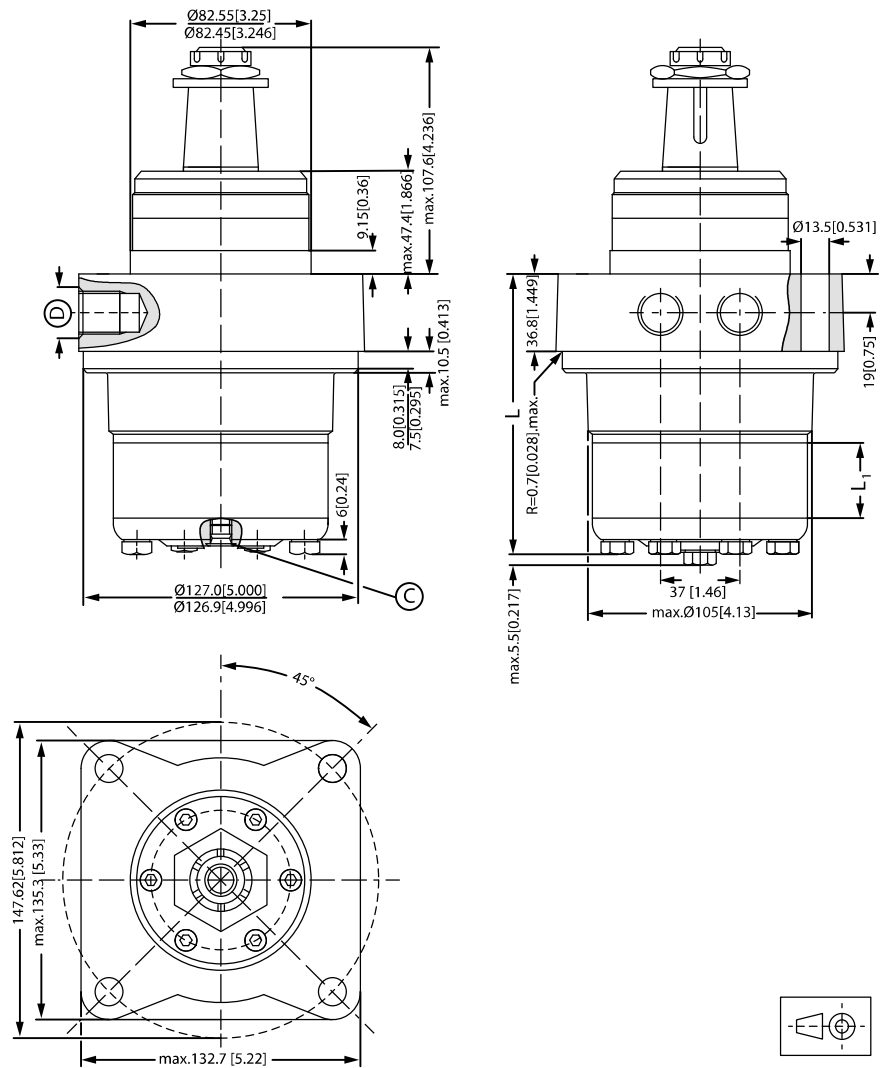
OMR dimensions

- C:** Drain connection G ¼; 12 mm [0.47 in] deep
- D:** G ½; 15 mm [0.59 in] deep
- E:** M10; 15 mm [0.59 in] deep (4 pcs.)

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{Max.}	mm	158.6	163.3	167.0	171.0	177.0	184.0	192.7	204.0	214.2
	[in]	[6.24]	[6.44]	[6.57]	[6.73]	[6.97]	[7.24]	[7.24]	[8.03]	[8.43]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMRW N wheel motor

Wheel motor - European version



151-1386.12

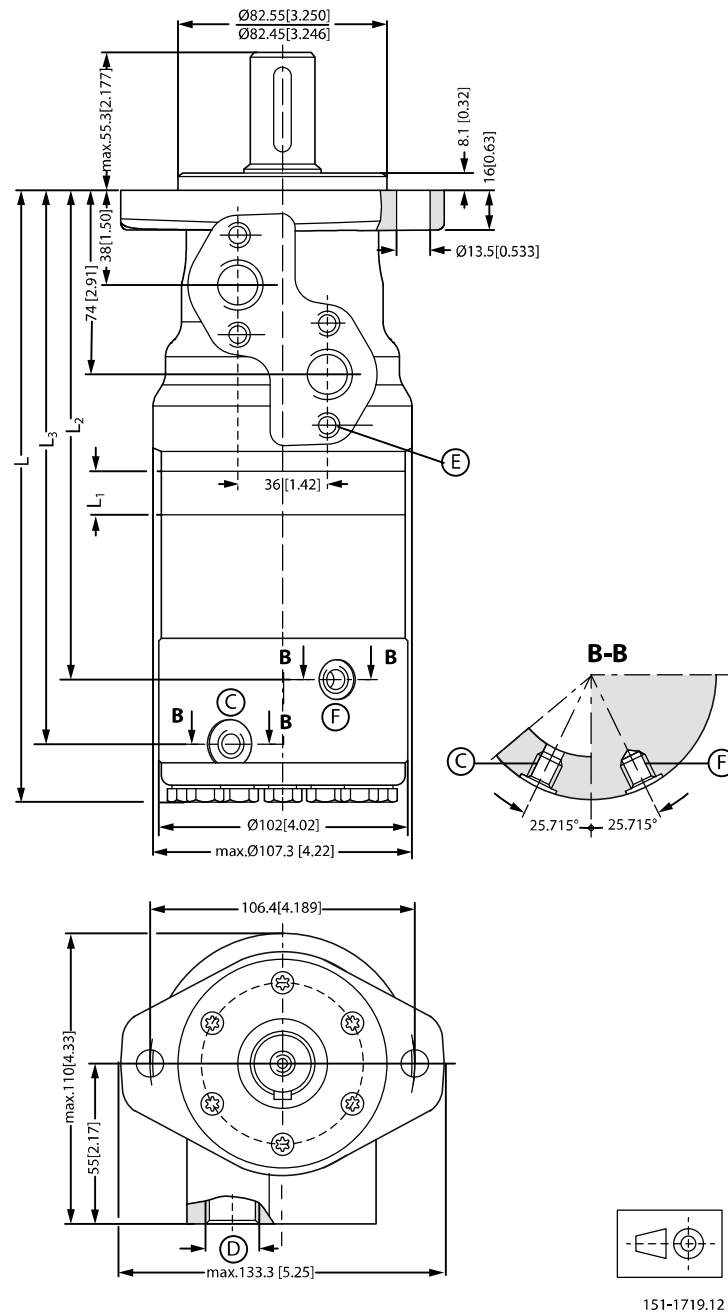
- C:** Drain connection G ¼; 12 mm [0.47 in] deep
- D:** G ½; 15 mm [0.59 in] deep

OMR dimensions

Type		OMRW 50 N	OMRW 80 N	OMRW 100 N	OMRW 125 N	OMRW 160 N	OMRW 200 N	OMRW 250 N	OMRW 315 N	OMRW 375 N
L _{Max.}	mm	113.7	114.7	118.1	122.5	128.5	135.1	144.2	155.5	165.7
	[in]	[4.48]	[4.52]	[4.65]	[4.82]	[5.06]	[5.33]	[5.68]	[6.12]	[6.52]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR F motor

F motor - European version



OMR dimensions

C: Drain connection G ¼; 12 mm [0.47 in] deep

D: G ½; 15 mm [0.59 in] deep

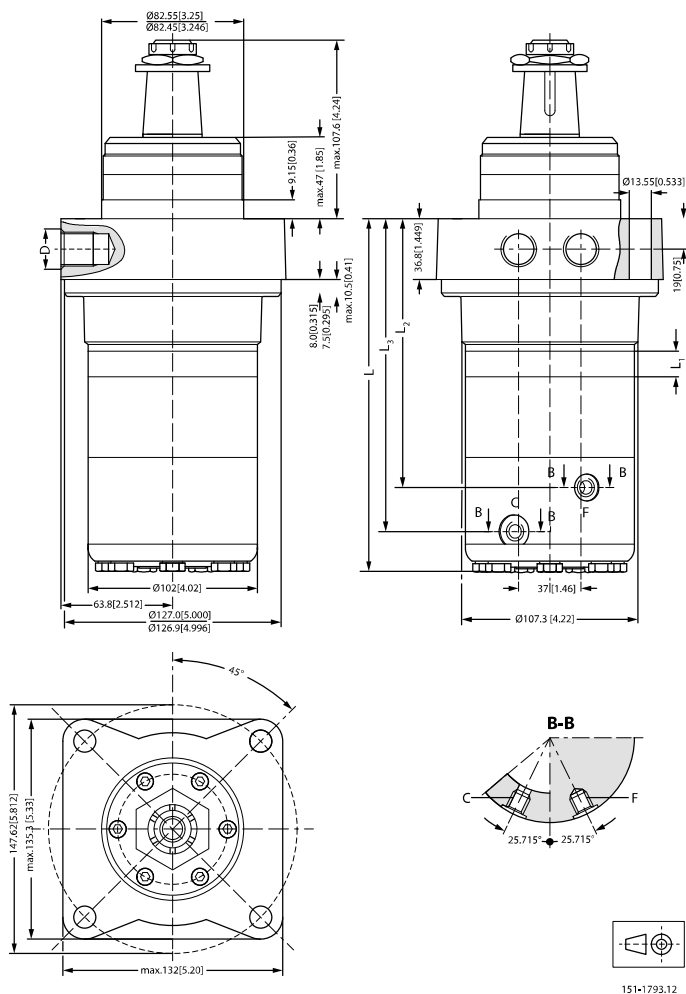
E: M8; 13 mm [0.51 in] deep

F: Brake release connection G ¼

Type		OMR 80 F	OMR 100 F	OMR 125 F	OMR 160 F	OMR 200 F	OMR 250 F	OMR 315 F	OMR 375 F
L _{max.}	mm	242.7	246.1	250.5	265.1	263.5	272.2	283.5	293.7
	[in]	[9.56]	[9.69]	[9.86]	[10.10]	[10.37]	[10.72]	[11.16]	[11.56]
L ₁	mm	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]
L ₂	mm	186.8	190.2	194.6	200.6	207.6	216.3	227.6	237.7
	[in]	[7.35]	[7.49]	[7.66]	[7.90]	[8.17]	[8.51]	[8.96]	[9.36]
L ₃	mm	210.3	213.7	218.1	224.1	231.1	239.8	251.1	261.2
	[in]	[8.28]	[8.41]	[8.58]	[8.82]	[9.10]	[9.45]	[9.88]	[10.28]

OMRW NF motor

NF motor - European version



OMR dimensions

- C:** Drain connection G ¼; 12 mm [0.47 in] deep
- D:** G ½; 15 mm [0.59 in] deep
- E:** M8; 13 mm [0.51 in] deep
- F:** Brake release connection G ¼

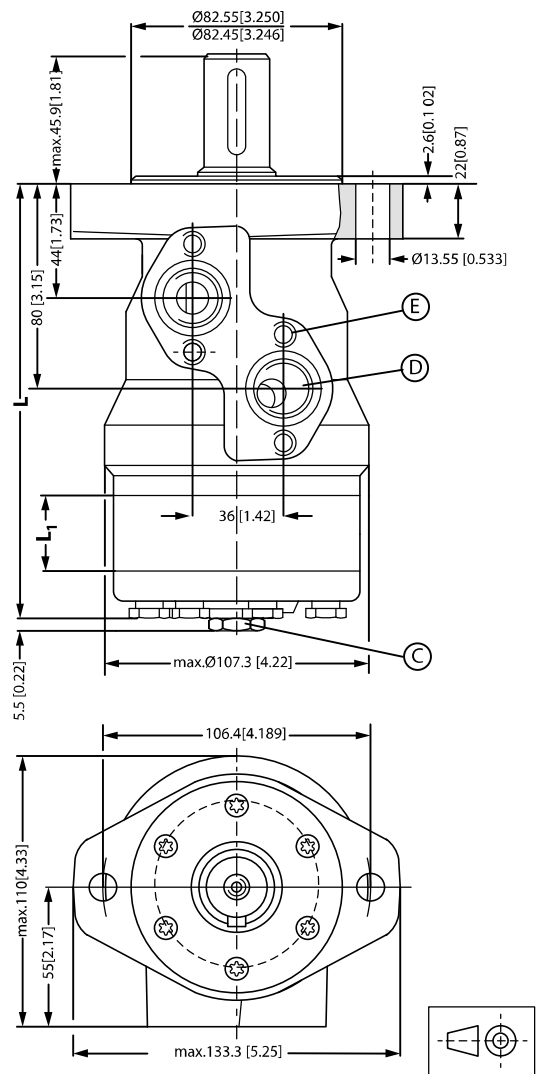
Type		OMRW 80 NF	OMRW 100 NF	OMRW 125 NF	OMRW 160 NF	OMRW 200 NF	OMRW 250 NF	OMRW 315 NF	OMRW 375 NF
L _{max.}	mm	213.2	218.0	222.4	228.4	235.4	242.7	254.0	264.2
	[in]	[8.39]	[8.58]	[8.76]	[8.99]	[9.27]	[9.56]	[10.0]	[10.40]
L ₁	mm	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]
L _{2 max}	mm	159.2	161.9	166.3	172.3	179.3	188.7	200.0	210.2
	[in]	[6.27]	[6.37]	[6.55]	[6.78]	[7.06]	[7.43]	[7.87]	[8.28]
L ₃	mm	182.7	185.4	189.8	195.8	202.8	212.2	223.5	233.7
	[in]	[7.19]	[7.30]	[7.47]	[7.71]	[7.98]	[8.35]	[8.80]	[9.20]

OMR dimensions

OMR dimensions - US version

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

Side port - US version



151-1223.13

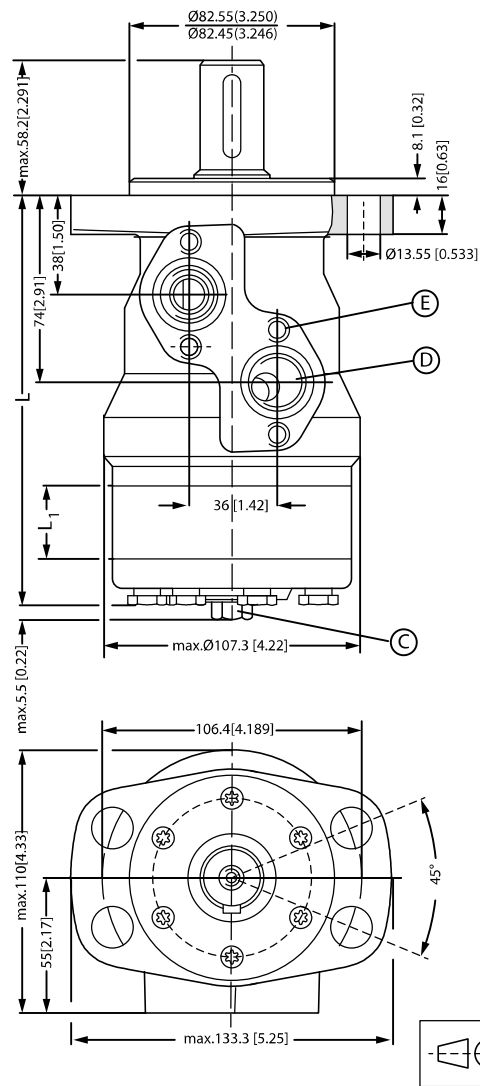
- C:** Drain connection 7/16 - 20 mm UNF; 12 mm [0.47 in] deep
- D:** 7/8 - 14 UNF; 16.76 mm [0.66 in] deep
- E:** M8; 13 mm [0.51 in] deep (4-off)

Port connections:

- A, B** Main ports: 7/8 - 14 UNF; min. 16.7 mm [0.66 in] deep
- C** Drain port: 7/16 - 20 UNF; 12 mm [0.47 in] deep
- D** Thread: M8; 13 mm [0.51 in] deep

OMR dimensions

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{max}	mm	143.7	148.7	152.1	156.5	162.5	169.5	178.2	189.5	199.7
	[in]	[5.66]	[5.85]	[5.99]	[6.16]	[6.40]	[6.67]	[7.02]	[7.46]	[7.86]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	64.8
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

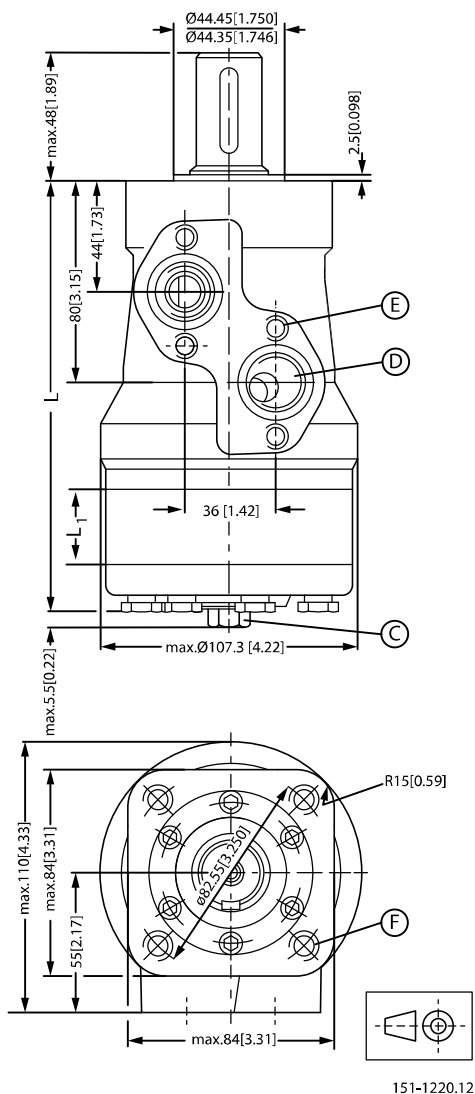
OMR Side port version with 4-hole oval mounting flange (A4-flange)
Side port - US version


151-1221.13

- C:** Drain connection 7/16 - 20 UNF; 12 mm [0.47 in] deep
- D:** 7/8 - 14 UNF; 17 mm [0.66 in] deep
- E:** M8; 13 mm [0.51 in] deep (4-off)

OMR dimensions

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{max}	mm	137.8	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
	[in]	[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

US version side port with square mounting flange (C-flange)
Side port - US version


- C:** Drain connection 7/16 - 20 mm UNF; 12 mm [0.47 in] deep
- D:** 7/8 - 14 UNF; 17 mm [0.66 in] deep
- E:** M8; 13 mm [0.51 in] deep (4-off)
- F:** 3/8 - 16 UNC; 15 mm [0.59 in] deep (4-off)

Port connections:

OMR dimensions

A, B Main ports: 7/8 - 14 UNF; min. 16.7 mm [0.66 in] deep

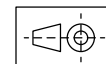
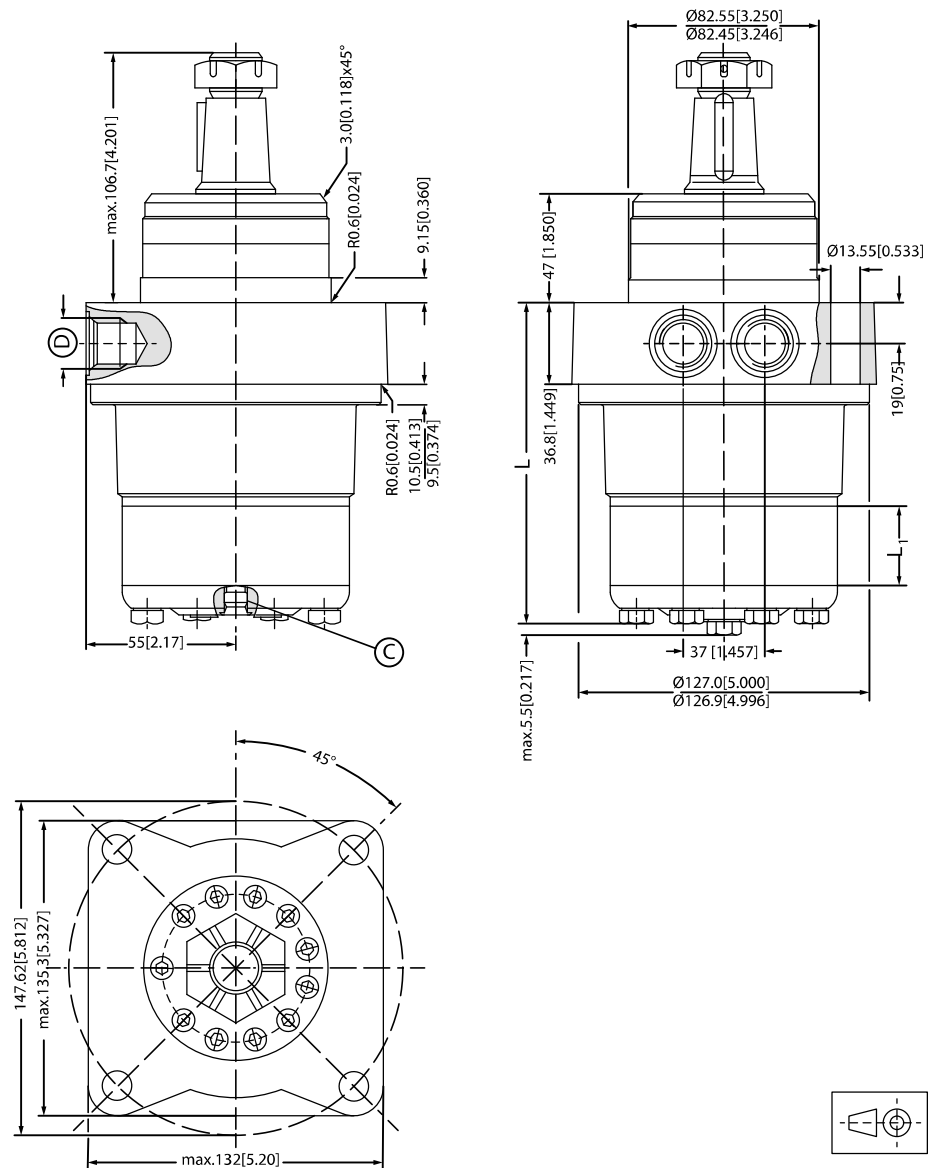
C Drain port: 7/16 - 20 UNF; 12 mm [0.47 in] deep

D Thread: 3/8 - 16 UNC; 15 mm [0.59 in] deep

Type		OMR 50	OMR 80	OMR 100	OMR 125	OMR 160	OMR 200	OMR 250	OMR 315	OMR 375
L _{max}	mm	143.8	148.8	152.2	156.6	162.6	169.6	178.3	189.6	199.8
	[in]	[5.66]	[5.86]	[5.99]	[6.17]	[6.40]	[6.68]	[7.02]	[7.46]	[7.87]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMRW N wheel motor

Wheel motor - US version



151-1625.12

OMR dimensions

C: Drain connection 7/16 - 20 UNF; 12 mm [0.47 in] deep

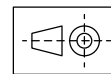
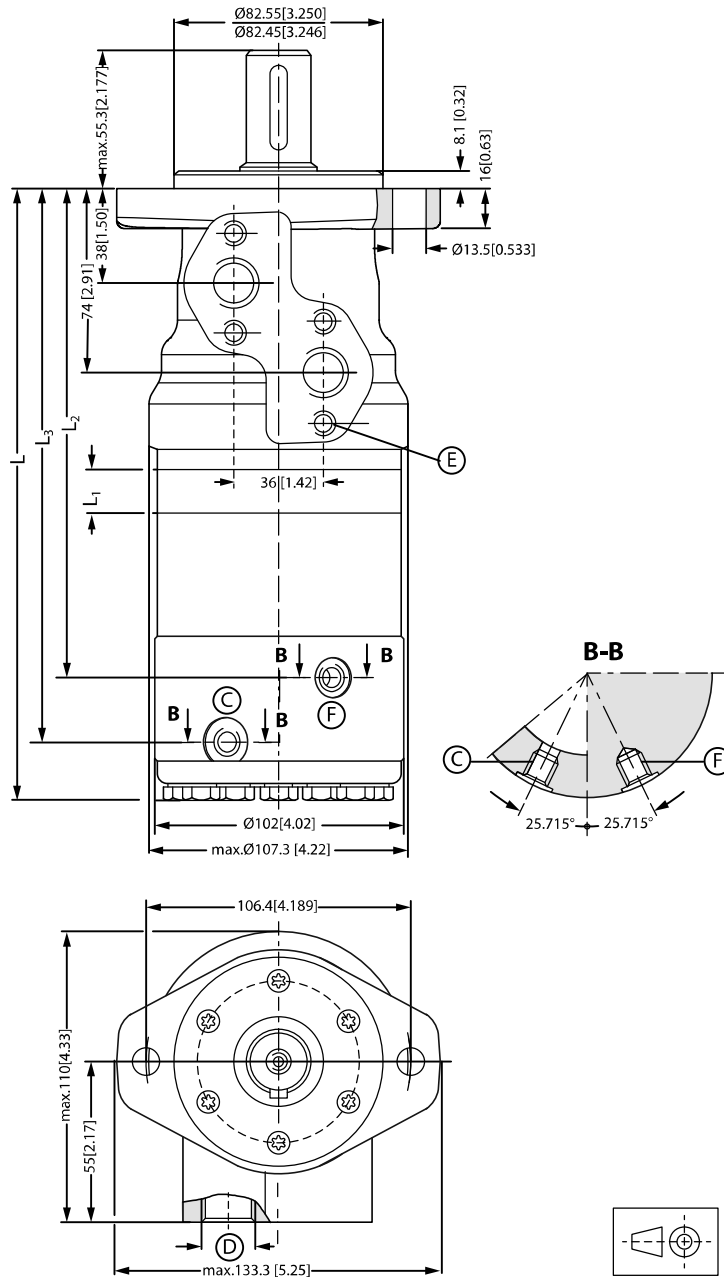
D: 7/8 - 14 UNF; 17 mm [0.66 in] deep

Type		OMRW 50 N	OMRW 80 N	OMRW 100 N	OMRW 125 N	OMRW 160 N	OMRW 200 N	OMRW 250 N	OMRW 315 N	OMRW 375 N
L _{max}	mm	113.7	114.7	118.1	122.5	128.5	135.1	144.2	155.5	165.7
	[in]	[4.48]	[4.52]	[4.65]	[4.82]	[5.06]	[5.33]	[5.68]	[6.12]	[6.52]
L ₁	mm	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMR dimensions

OMR NF motor

NF motor - US version



151-1719.12

- C:** Drain connection 7/16 - 20 UNF
- D:** 7/8 - 14 UNF, 0.66 in (15 mm) deep
- E:** M8; 0.51 in (13 mm) deep
- F:** Brake release connection 7/16 - 20 UNF

OMR dimensions

Type		OMR 80 NF	OMR 100 NF	OMR 125 NF	OMR 160 NF	OMR 200 NF	OMR 250 NF	OMR 315 NF	OMR 375 NF
L _{max}	mm	248.7	252.1	256.5	262.5	269.5	278.2	289.5	299.7
	[in]	[9.79]	[9.93]	[10.10]	[10.33]	[10.61]	[10.95]	[11.40]	[11.80]
L ₁	mm	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
	[in]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]
L ₂	mm	186.8	196.2	200.6	206.6	213.6	222.3	233.6	243.7
	[in]	[7.35]	[7.72]	[7.90]	[8.13]	[8.41]	[8.75]	[9.19]	[9.59]
L ₃	mm	216.3	213.7	224.1	230.1	237.1	245.8	257.1	267.2
	[in]	[8.51]	[8.41]	[8.82]	[9.06]	[9.33]	[9.68]	[10.12]	[10.52]

OMH versions and code numbers

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

- Section *OMH technical data* on page 87, specify the technical data for OMH for each shaft type.
- In section *OMH function diagrams* on page 92, the diagram for each motor size is shown.
- See *OMH dimensions* on page 100 for outer main dimensions for the different OMH motor types.

OMH versions and code numbers
OMH standard motors

Mounting flange: 4 hole oval flange (A4)

Spigot diameter	Ø82.5 mm [3.25 in]							
Bolt circle diameter	Ø106.4 mm [4.20 in]							
Shaft	Main port size	Port style	Drain port size	Standard shaft seal	High pressure shaft seal	Check valve	Main type designation	Conf. code
Cyl. Ø32 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMH	A1
Cyl. Ø35 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMH	A2
Cyl. 1 1/4 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMH	A3
Splined 1 in (SAE 6B)	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMH	A4
Splined 1 1/4 in	G 1/2	Side port	G 1/4	Yes	-	Yes	OMH	A5
Splined 1 1/4 in	7/8-14 UNF	Side port	7/16-20 UNF	Yes	-	Yes	OMH	A6
Tap. Ø35 mm	G 1/2	Side port	G 1/4	Yes	-	Yes	OMH	A7

Code numbers

Conf. code	Displacement				
	200	250	315	400	500
A1	151H1002	151H1003	151H1004	151H1005	151H1006
A2	151H1012	151H1013	151H1014	151H1015	151H1016
A3	151H1042	151H1043	151H1044	151H1045	151H1046
A4	151H1080	151H1082	151H1083	151H1084	151H1081
A5	151H1022	151H1023	151H1024	151H1025	151H1026
A6	151H1052	151H1053	151H1054	151H1055	151H1056
A7	-	-	151H1034	151H1035	151H1036

OMH technical data
Technical data for OMH with 1 in SAE 6 B splined shaft

Type			OMH	OMH	OMH	OMH	OMH
Motor size			200	250	315	400	500
Geometric displacement	cm ³ [inch]		201.3 [12.32]	252.0 [15.42]	314.9 [19.27]	396.8 [24.28]	470.6 [28.80]
Maximum speed	min ⁻¹	cont.	370	295	235	185	155
	[rpm]	int. ¹⁾	445	350	285	225	190
Maximum torque	N·m [lbf·in]	cont.	340 [3000]	340 [3000]	340 [3000]	340 [3000]	340 [3000]
		int. ¹⁾	510 [4500]	510 [4500]	540 [4800]	540 [4800]	520 [4600]
Maximum output	kW [hp]	cont.	11.2 [15.0]	7.5 [10.0]	5.2 [7.0]	4.8 [6.5]	3.7 [5.0]
		int. ¹⁾	17.2 [23.0]	11.9 [16.0]	9.7 [13.0]	8.2 [11.0]	6.0 [8.0]
Maximum pressure drop	bar [psi]	cont.	115 [1650]	90 [1300]	75 [1100]	60 [900]	50 [725]
		int. ¹⁾	170 [2500]	145 [2100]	120 [1750]	95 [1400]	75 [1100]
		peak ²⁾	215 [3120]	175 [2540]	145 [2100]	110 [1600]	90 [1300]
Maximum oil flow	l/min [US gal/min]	cont.	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
		int. ¹⁾	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]
Maximum starting pressure with unloaded shaft	bar [psi]		7 [100]	7 [100]	7 [100]	7 [100]	7 [100]
Minimum starting torque	at maximum press drop cont. N·m [lbf·in]		255 [2250]	270 [2400]	280 [2500]	290 [2550]	300 [2650]
	at maximum press.drop int. ¹⁾ N·m [lbf·in]		390 [3450]	435 [3850]	450 [4000]	450 [4000]	450 [4000]

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

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

Technical data for OMH with 32 mm and 1 1/4 in cylindrical shaft

Type			OMH	OMH	OMH	OMH	OMH
Motor size			200	250	315	400	500
Geometric displacement	cm ³ [inch]		201.3 [12.32]	252.0 [15.42]	314.9 [19.27]	396.8 [24.28]	470.6 [28.80]
Maximum speed	min ⁻¹	cont.	370	295	235	185	155
	[rpm]	int. ¹⁾	445	350	285	225	190
Maximum torque	N·m [lbf·in]	cont.	510 [4500]	610 [5400]	590 [5220]	590 [5220]	580 [5130]
		int. ¹⁾	580 [5130]	700 [6200]	670 [5930]	700 [6200]	680 [6020]

OMH technical data

Type			OMH	OMH	OMH	OMH	OMH
Motor size			200	250	315	400	500
Maximum output	kW [hp]	cont.	16.0 [21.5]	16.0 [21.5]	12.5 [16.8]	10.0 [13.4]	8.5 [11.4]
		int. ¹⁾	18.5 [24.8]	18.5 [24.8]	14.0 [18.8]	12.0 [16.1]	10.0 [13.4]
Maximum pressure drop	bar [psi]	cont.	175 [2540]	175 [2540]	135 [1960]	105 [1520]	85 [1230]
		int. ¹⁾	200 [2900]	200 [2900]	155 [2250]	125 [1810]	100 [1450]
		peak ²⁾	225 [3260]	225 [3260]	190 [2760]	155 [2250]	130 [1890]
Maximum oil flow	l/min [US gal/min]	cont.	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
		int. ¹⁾	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]
Maximum starting pressure with unloaded shaft	bar [psi]		7 [100]	7 [100]	7 [100]	7 [100]	7 [100]
Minimum starting torque	at max. press drop cont. N·m [lbf·in]		390 [3450]	520 [4600]	510 [4510]	490 [4340]	490 [4340]
	at max. press.drop int. ¹⁾ N·m [lbf·in]		450 [3980]	590 [5220]	590 [5220]	600 [5310]	600 [5310]

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

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

Technical data for OMH with 35 mm cylindrical, 1 1/4 in splined and 35 mm tapered shaft

Type			OMH	OMH	OMH	OMH	OMH
Motor size			200	250	315	400	500
Geometric displacement	cm ³ [inch]		201.3 [12.32]	252.0 [15.42]	314.9 [19.27]	396.8 [24.28]	470.6 [28.80]
Maximum speed	min ⁻¹	cont.	370	295	235	185	155
	[rpm]	int. ^{fn}	445	350	285	225	190
Maximum torque	N·m [lbf·in]	cont.	510 [4500]	610 [5400]	740 [6550]	840 [7440]	820 [7260]
		int. ^{fn}	580 [5130]	700 [6200]	820 [7260]	980 [8670]	1040 [9210]
Maximum output	kW [hp]	cont.	16.0 [21.5]	16.0 [21.5]	14.0 [18.8]	12.5 [16.8]	11.0 [14.8]
		int. ^{fn}	18.5 [24.8]	18.5 [24.8]	15.5 [20.8]	15.0 [20.1]	14.0 [18.8]
Maximum pressure drop	bar [psi]	cont.	175 [2540]	175 [2540]	175 [2540]	155 [2250]	125 [1810]
		int. ^{fn}	200 [2900]	200 [2900]	200 [2900]	190 [2760]	160 [2320]
		peak ²⁾	225 [3260]	225 [3260]	225 [3260]	210 [3050]	180 [2610]

OMH technical data

Type			OMH	OMH	OMH	OMH	OMH
Motor size			200	250	315	400	500
Maximum oil flow	l/min [US gal/min]	cont.	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
		int. ^{fn}	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]	90 [23.8]
Maximum starting pressure with unloaded shaft	bar [psi]		7 [100]	7 [100]	7 [100]	7 [100]	7 [100]
Minimum starting torque	at max. press drop cont. N•m [lbf•in]		390 [3450]	520 [4600]	660 [5840]	720 [6370]	720 [6370]
		at max. press.drop int. ^{fn} N•m [lbf•in]	450 [3980]	590 [5220]	730 [6460]	880 [7790]	880 [7790]

^{fn} Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

Type			Maximum inlet pressure	Maximum return pressure with drain line
OMH 200 - 500	bar [psi]	cont.	200 [2900]	175 [2540]
	bar [psi]	int. ¹⁾	225 [3260]	200 [2900]
	bar [psi]	peak ²⁾	250 [3630]	225 [3260]

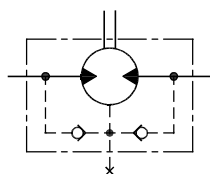
¹⁾ Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

Maximum permissible shaft seal pressure
OMH with Standard Shaft Seal

OMH with standard shaft seal, check valves and without use of drain connection:

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



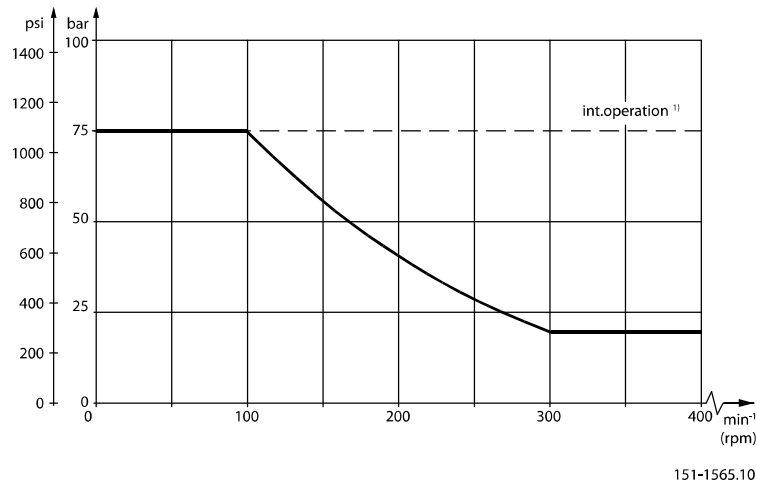
151-320.10

OMH with standard shaft seal, check valves and with drain connection:

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

OMH technical data

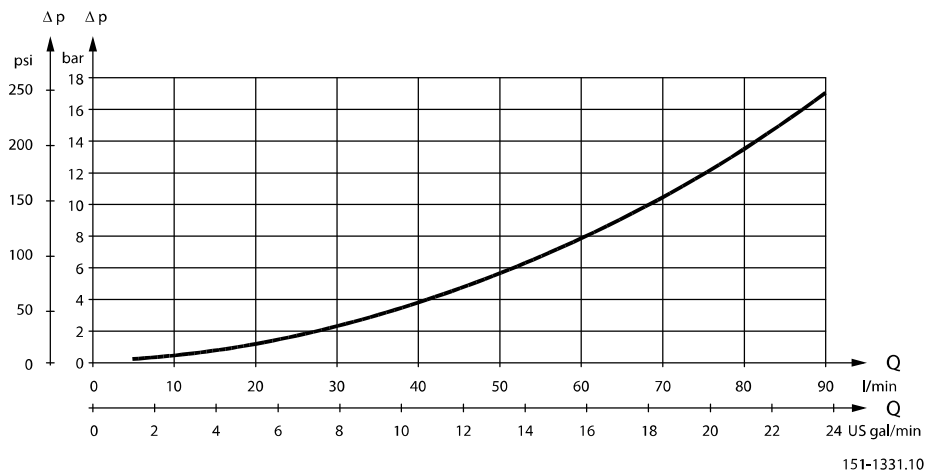
Maximum return pressure without drain line or max. pressure in the drain line



1)

Pressure drop in OMH motor

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



Oil flow in drain line

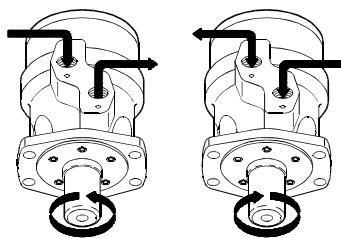
Max. oil flow in the drain line at return pressure less 5-10 bar

Pressure drop	100 bar [1450 psi]		140 bar [2030 psi]	
	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]	20 mm ² /s [100 SUS]	35 mm ² /s [165 SUS]
Max. oil flow	2.5 l/min [0.66 US gal/min]	1.8 l/min [0.78 US gal/min]	3.5 l/min [0.93 US gal/min]	2.8 l/min [0.74 US gal/min]

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

OMH technical data

Direction of shaft rotation



151-2107.10

Permissible shaft loads

OMH permissible shaft loads

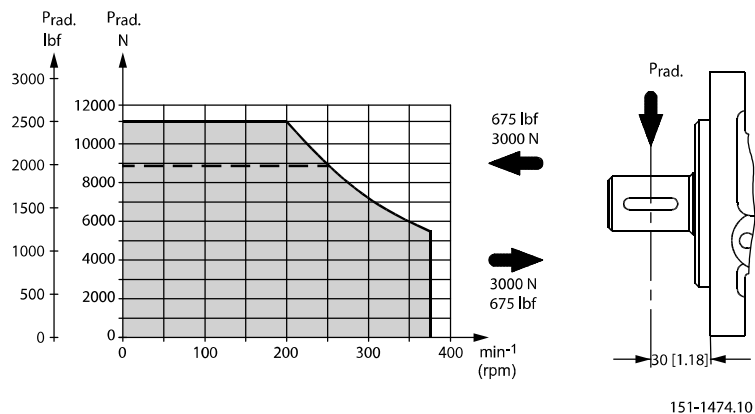
The permissible shaft load (P_{rad}) is calculated from the speed (n) and the distance (l) between the point of load application and the mounting flange.

$$P_{rad} = \frac{1100}{n} \cdot \frac{250000}{103.5 + l} \quad N^*; l \text{ in mm}$$

$$P_{rad} = \frac{1100}{n} \cdot \frac{2215}{4.07 + l} \quad \text{lbf}^*; l \text{ in inch}$$

* $n > 200 \text{ min}^{-1} \text{ (rpm)}$; $l < 60 \text{ mm [2.36 in]}$

$n < 200 \text{ min}^{-1} \text{ (rpm)}$; $\Rightarrow P_{Rmax} = 11000 \text{ N [2475 lbf]}$

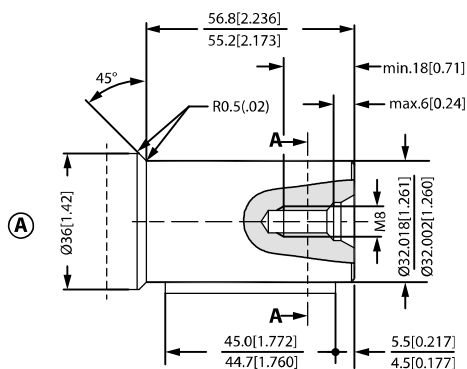


----- 1 in SAE 6B splined shaft

The drawing shows the permissible radial load when $l = 30 \text{ mm [1.18 in]}$.

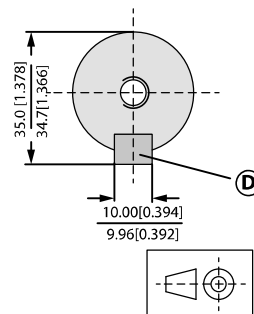
OMH shaft version

Shaft Version

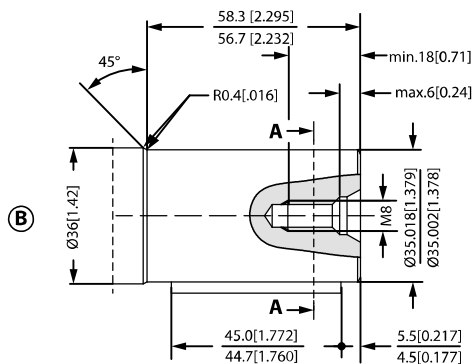


A: Cylindrical shaft 32 mm

D: Parallel key, A10 × 8 × 45, DIN 6895

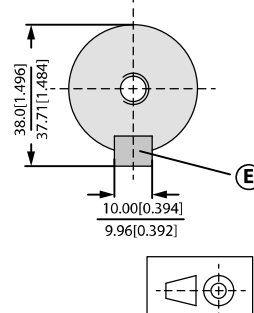


151-1852.12_A



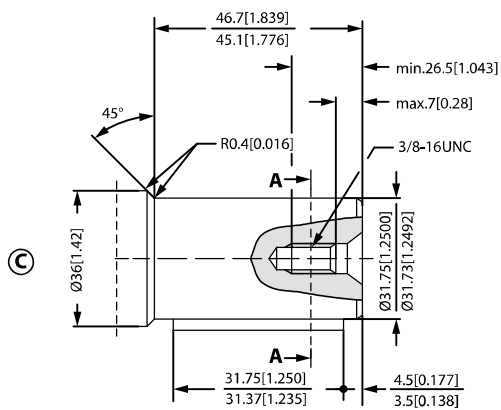
B: Cylindrical shaft 35 mm

E: Parallel key, A10 × 8 × 45, DIN 6895



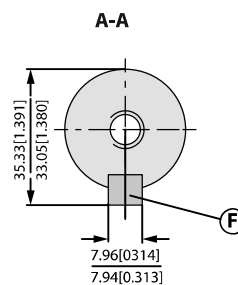
151-1852.12_B

US version



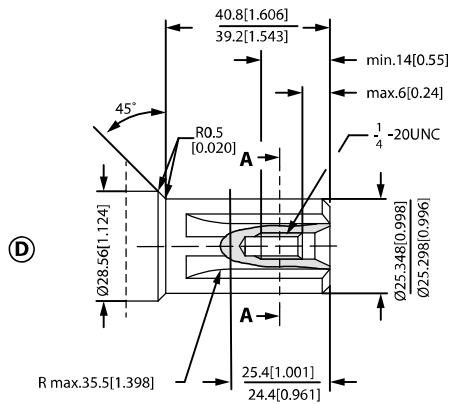
C: Cylindrical shaft 1 1/4 in

F: Parallel key, 5/16 × 5/16 × 11/4 in, SAE J 744



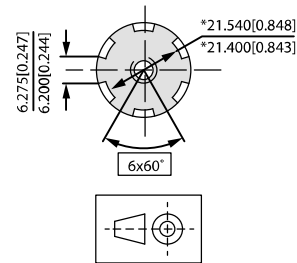
151-1852.12_C

OMH shaft version

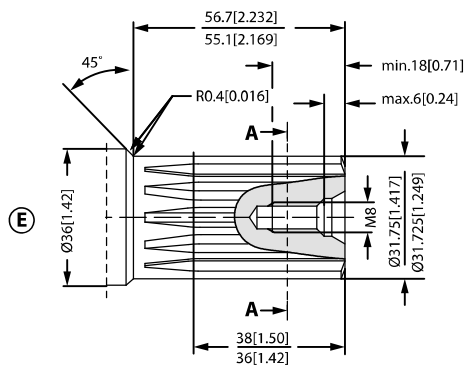


D: Splined shaft, SAE 6 B (B.S. 2059),
Straight-sided, bottom fitting,
deep. Fit 2, Nom. size 1 in

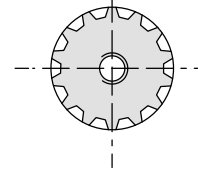
*Deviates from SAE 6 B (B.S. 2059)



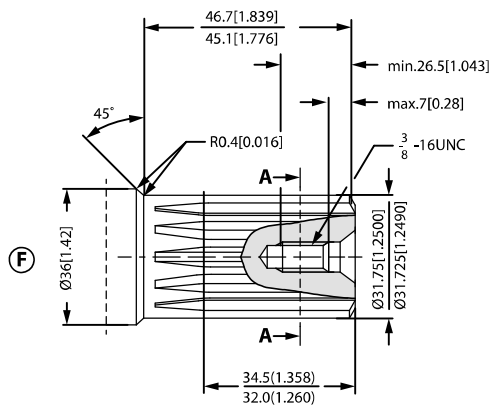
151-1853.12_D



E: Involute splined shaft, ANS B92.1 -
1996 standard, Flat root side fit,
Pitch 12/24, Teeth 14, Major dia.
1.25 inch, Pressure angle 30°

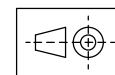
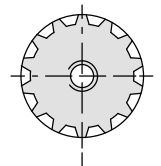


151-1853.12_E



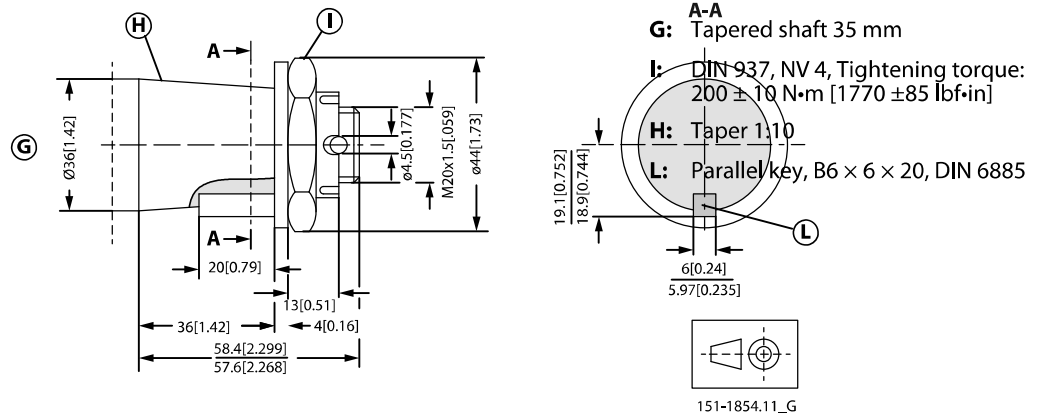
F: Involute splined shaft, ANS B92.1 -
1996 standard, Flat root side fit,
Pitch 12/24, Teeth 14, Major dia.
1.25 inch, Pressure angle 30°

A-A



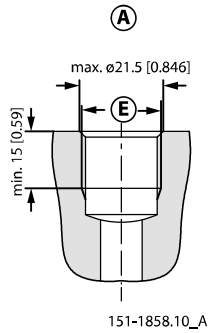
151-1854.11_F

OMH shaft version

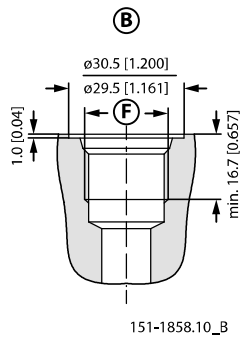


OMH port thread versions

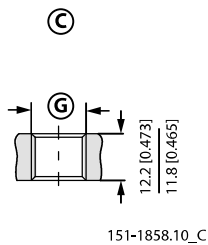
Port Thread Versions



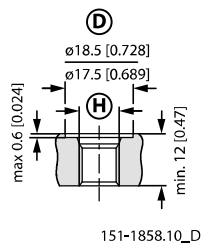
A: G main ports
E: ISO 228/1 - G1/2



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



C: G drain port
G: ISO 228/1 - G1/4

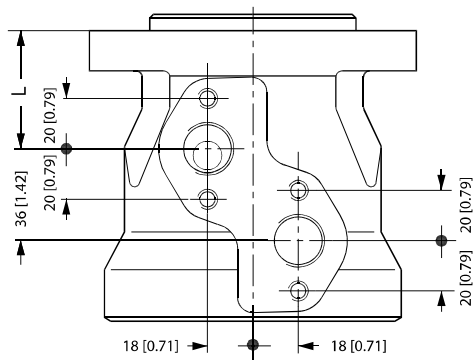


D: UNF drain port
H: 7/16 - 20 UNF, O-ring boss port

OMH port thread versions

OMH manifold mount

European version



151-2135.10

L: see dimensional drawing for given OMH motor:

OMH dimensions - European version on page 100

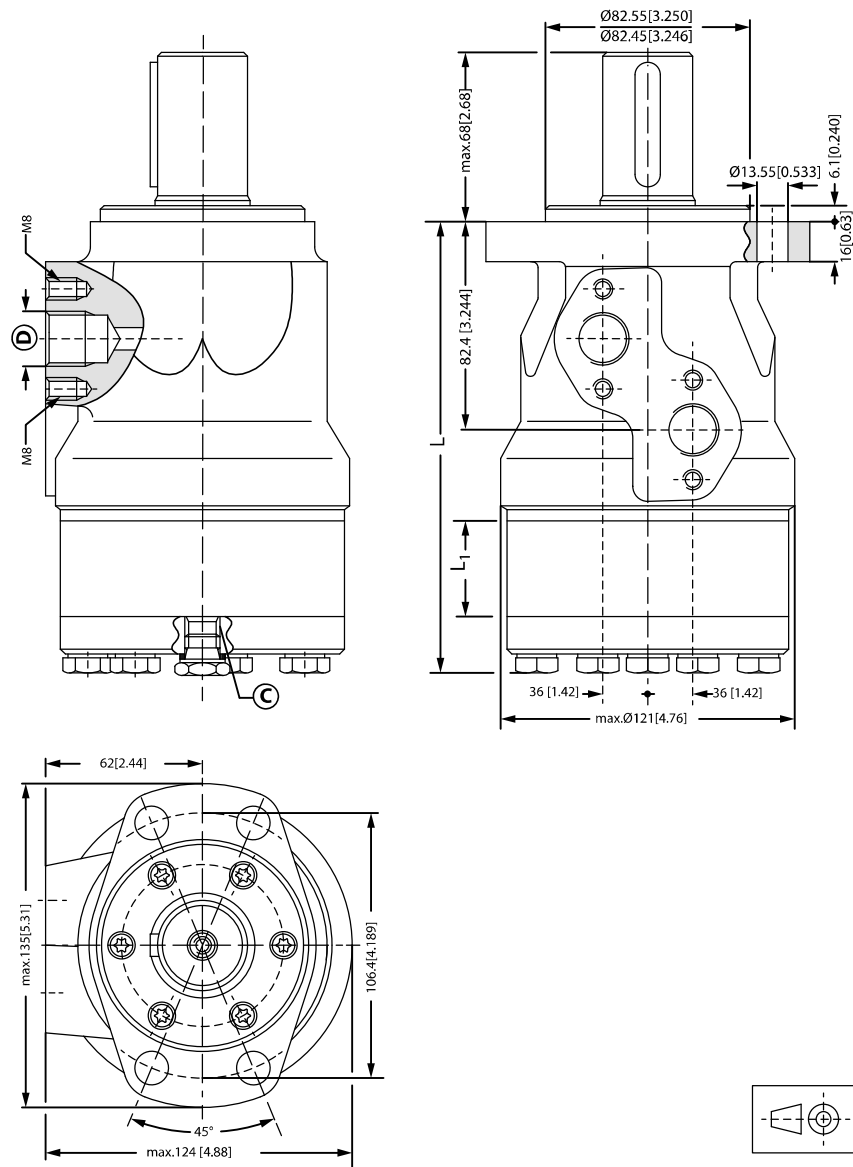
OMH dimensions - US version on page 101

OMH dimensions

OMH dimensions - European version

OMH side port version with 4 hole oval mounting flange (A4-flange)

Side port - European version



151-1324.12

C: Drain connection, G ¼; 12 mm [0.47 in] deep

D: G ½; 15 mm [0.59 in] deep

Type		OMH 200	OMH 250	OMH 315	OMH 400	OMH 500
L _{Max.}	mm	171.8	179.5	187.5	198.8	209.0
	[in]	[6.77]	[7.07]	[7.39]	[7.83]	[8.23]

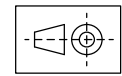
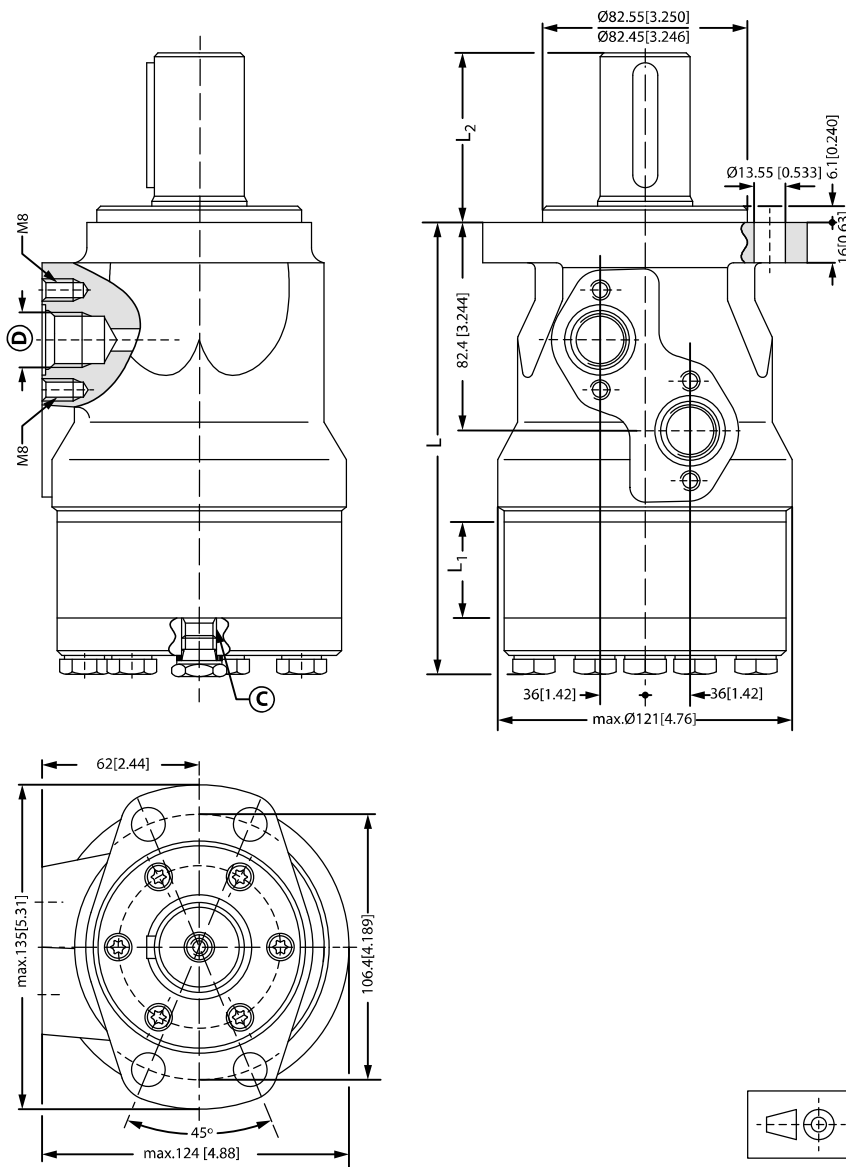
OMH dimensions

Type		OMH 200	OMH 250	OMH 315	OMH 400	OMH 500
L ₁	mm	27.8	34.8	43.5	54.8	65.0
	[in]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

OMH dimensions - US version

OMH side port version with 4 hole oval mounting flange (A4 flange)

Side port - US version



151-1324.12.22

- C:** Drain connection, 7/16 - 20 UNF; 12 mm [0.47 in] deep
- D:** 7/8 - 14 UNF; 15 mm [0.59 in] deep

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