Chapter 7
OMR technical data

Topics:

- *Technical data for OMR with 25 mm and 1 in cylindrical shaft*
- *Technical data for OMR with 1 in splined and 28.5 mm tapered shaft*
- *Technical data for OMR with 32 mm , 1 ¼ in cylindrical shaft and 35 mm, 1 ¼ in tapered shaft*
- *Technical data for parking brake motor OMR F, OMR NF and OMRW NF*
- *Maximum permissible shaft seal pressure*
- *Pressure drop in motor*
- *Oil flow in drain line*
- *Direction of shaft rotation: clockwise*
- *Permissible shaft loads*

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

Type			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
	[in^3]		*[3.16]*	*[4.91]*	*[6.11]*	*[7.69]*	*[9.77]*	*[12.23]*	*[15.26]*	*[19.32]*	*[22.80]*
Maximum 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]*
Maximum torque	*N•m*	cont.	100	195	240	300	300	300	300	300	300
	[lbf•in]		*[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]*
Maximum output	*kW*	cont.	7.0	12.5	13.0	12.5	10.0	8.0	6.0	5.0	4.0
	[hp]		*[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]*
Maximum pressure drop.	*bar*	cont.	140	175	175	175	130	110	80	70	55
	[psi]		*[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]*
		peak[2)]	225	225	225	225	225	225	200	150	130
			[3260]	*[3260]*	*[3260]*	*[3260]*	*[3260]*	*[3260]*	*[2900]*	*[2180]*	*[1890]*
Maximum 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]*
Maximum 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	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]*

Table 18 Technical data for OMR with 25 mm and 1 in cylindrical shaft

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								
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
	[in^3]		*[3.16]*	*[4.91]*	*[6.11]*	*[7.69]*	*[9.77]*	*[12.23]*	*[15.26]*	*[19.32]*	*[22.80]*
Maximum 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]*
Maximum torque	*N•m*	cont.	100	195	240	300	360	360	360	360	360
	[lbf•in]		*[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]*
Maximum output	*kW*	cont.	7.0	12.5	13.0	12.5	12.5	10.0	7.0	5.0	5.0
	[hp]		*[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]*
Maximum pressure drop.	*bar*	cont.	140	175	175	175	165	130	100	85	70
	[psi]		*[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]*
Maximum oil flow	*l/min*	cont.	40	60	60	60	60	60	60	60	60
	[US gal/ min]		*[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]*
Maximum 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]*

Table 19 Technical data for OMR with 1 in splined and 28.5 mm tapered shaft

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								
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
	$[in^3]$		[3.16]	[4.91]	[6.11]	[7.69]	[9.77]	[12.23]	[15.26]	[19.32]	[22.80]
Maximum 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]
Maximum torque	N•m	cont.	100	195	240	300	380	450	540	550	580
	[lbf•in]		[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]
Maximum output	kW	cont.	7.0	12.5	13.0	12.5	12.5	11.0	10.0	9.0	7.5
	[hp]		[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]
Maximum pressure drop.	bar	cont.	140	175	175	175	175	175	175	135	115
	[psi]		[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]
Maximum oil flow	l/min	cont.	40	60	60	60	60	60	60	60	60
	[US gal/ min]		[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]
Maximum 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]
	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]

Table 20 Technical data for OMR with 32 mm , 1 ¼ in cylindrical shaft and 35 mm, 1 ¼ in tapered shaft

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 pressure

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

Table 21 OMR 50-375 Maximum pressures

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]

Table 22 Technical data for brake motor OMR F, OMR NF, OMRW NF

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 conditions, 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.

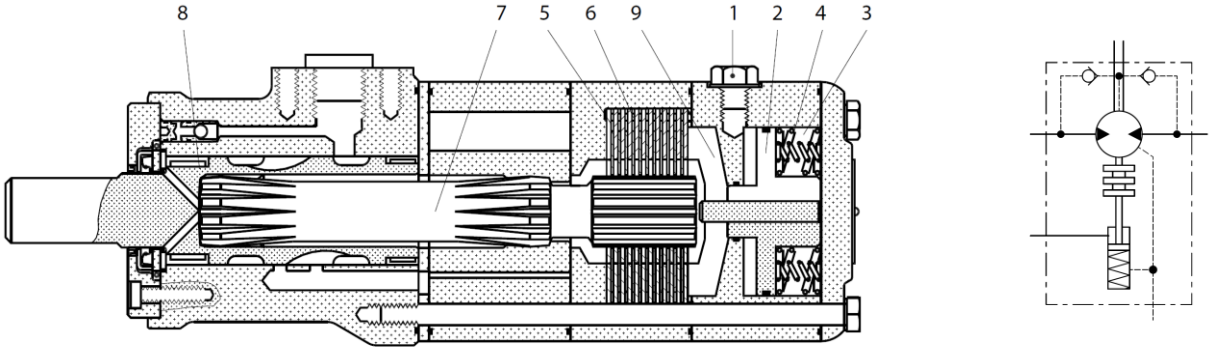


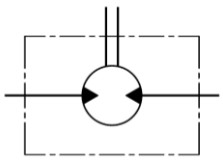
Figure 52 OMR F

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



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

Figure 53 OMR with HPS, without check valves and without drain connection

OMR with HPS, check valves and:

- with drain connection – **The shaft seal pressure equals the pressure in the drain line.**

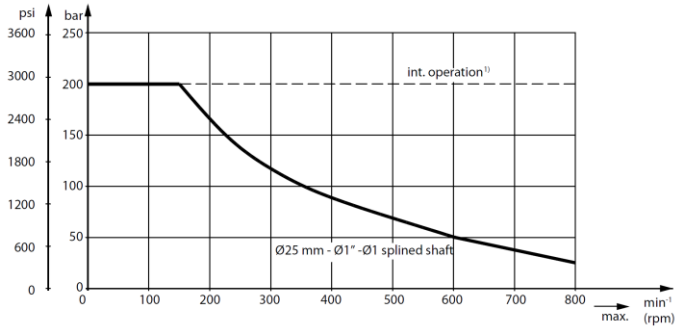


Figure 54 OMR with HPS, check valves and drain connection max. permissible shaft seal pressure

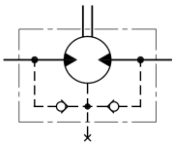


Figure 55 OMR with HPS, check valves and drain connection

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

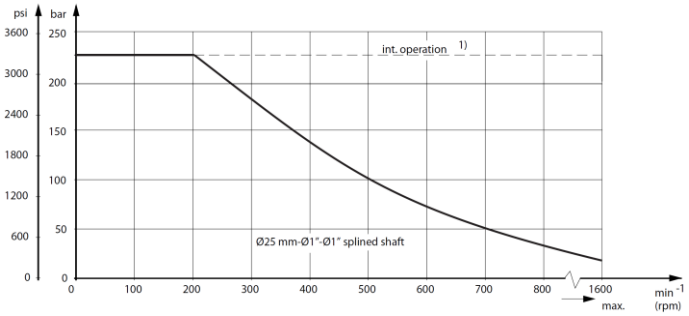


Figure 56 OMR with HPS, check valves and without drain connection max. permissible shaft seal pressure

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

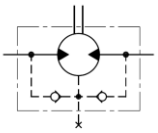
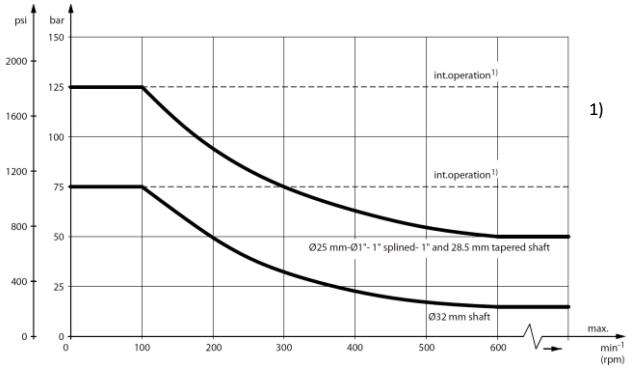


Figure 57 OMR with standard shaft seal, check valves and without use of drain connection

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

The shaft seal pressure equals the pressure on the drain line



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

Figure 58 OMR with standard shaft seal, check valves and with drain connection max. return pressure without drain line or max. pressure on drain line

Pressure drop in motor

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

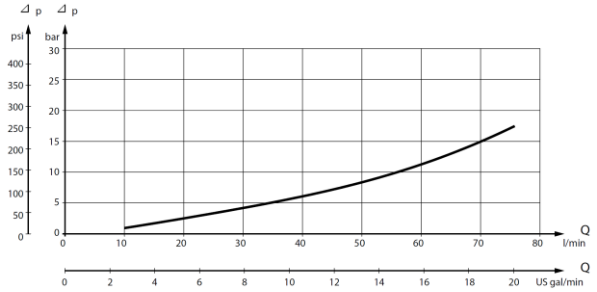


Figure 59 Pressure drop in OMR motor

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 mm²/s [100 SUS]	35 mm²/s [165 SUS]	20 mm²/s [100 SUS]	35 mm²/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]

Table 60 OMR oil flow in drain line

Direction of shaft rotation: clockwise

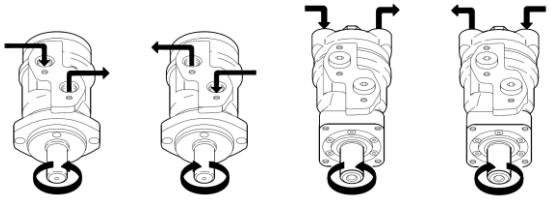


Figure 61 OMR Direction of shaft rotation

Permissible shaft loads

OMP and OMR shaft loads

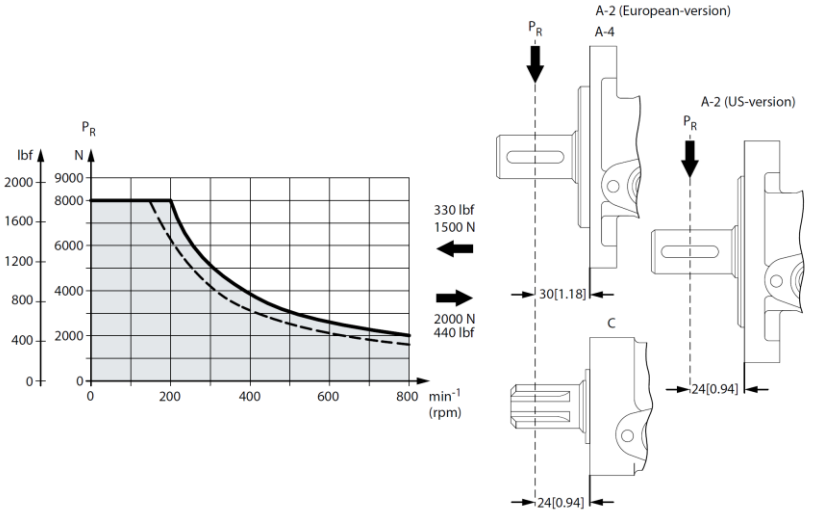
The permissible radial shaft load (P_R) depends on a distance from the point of load to the mounting flange (L), speed (n), mounting flange and shaft version.

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	$\frac{800}{n} \times \frac{250\,000N^{\dagger}}{95+L}$	$\frac{800}{n} \times \frac{187\,500N^{1}}{95+L}$	$\frac{800}{n} \times \frac{250\,000N^{1}}{101+L}$
Permissible shaft load (P_R) - l in inch	$\frac{800}{n} \times \frac{2515\,lbf^{1}}{3.74+L}$	$\frac{800}{n} \times \frac{1660\,lbf^{1}}{3.74+L}$	$\frac{800}{n} \times \frac{2215\,lbf^{1}}{3.98+L}$

Table 23 OMP and OMR shaft loads

* *For both European and US-version*

† *n≥ 200 min⁻¹ [rpm]; ≤ 55 mm [2.2 in]. n< 200 min⁻¹ [rpm]; = > PR_{max} = 8000 N [1800 lbf]*



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

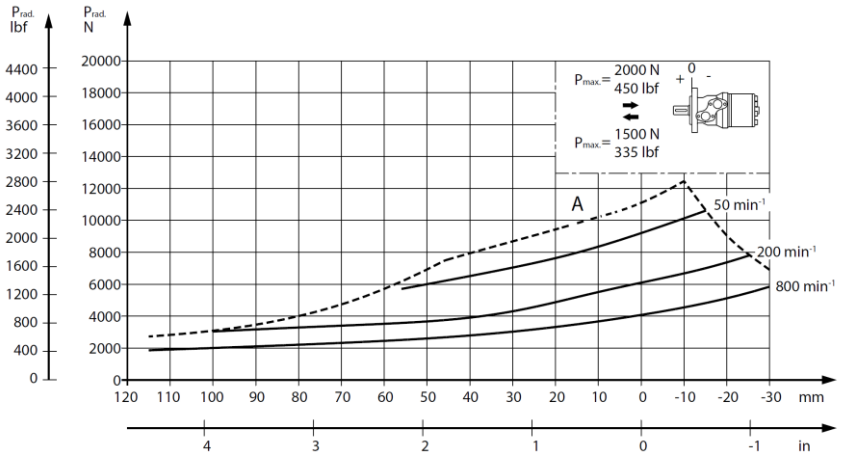
Figure 62 OMP and OMR Permissible shaft loads

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



- - - Max. Radial shaft load
___ based on B_{10} bearing life at rated output torque

Figure 63 Permissible shaft loads (OMR N and OMR NF)

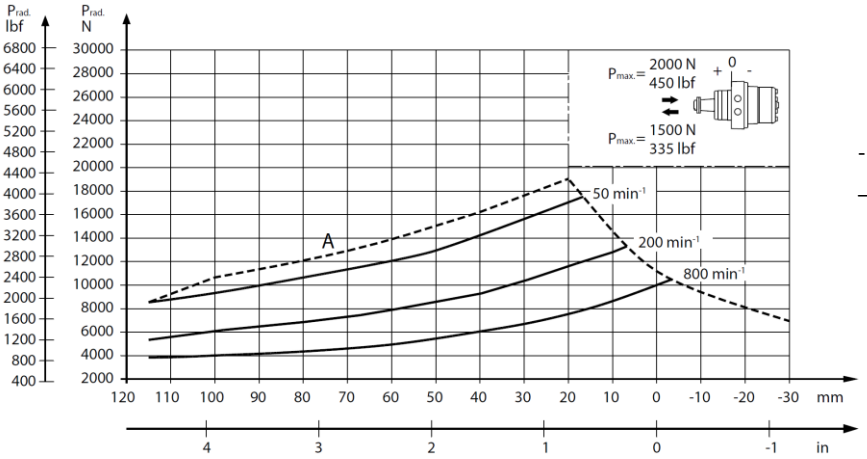
The output shaft on OMR N and OMR NF runs in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to OMR motors with slide bearings.

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.

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.

OMRW N and OMRW NF with Needle Bearings



- - - Max. Radial shaft load
___ based on B_{10} bearing life at rated output torque

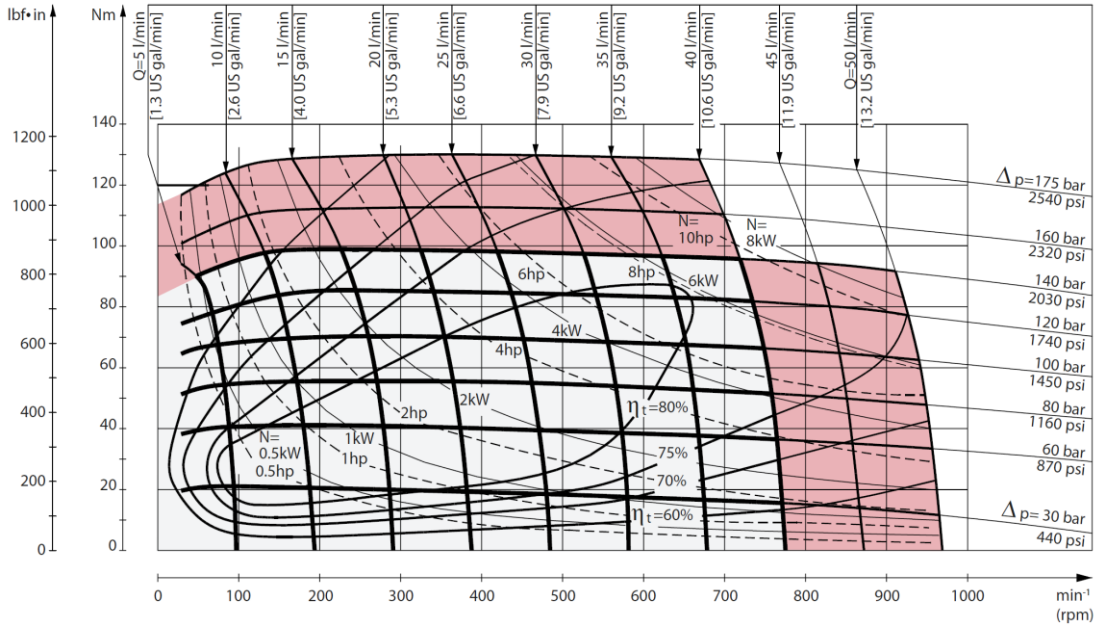
Figure 64 Permissible shaft loads (OMRW N and OMRW NF)

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.

Chapter 8
OMR function diagrams

Topics:

OMR 50 function diagram

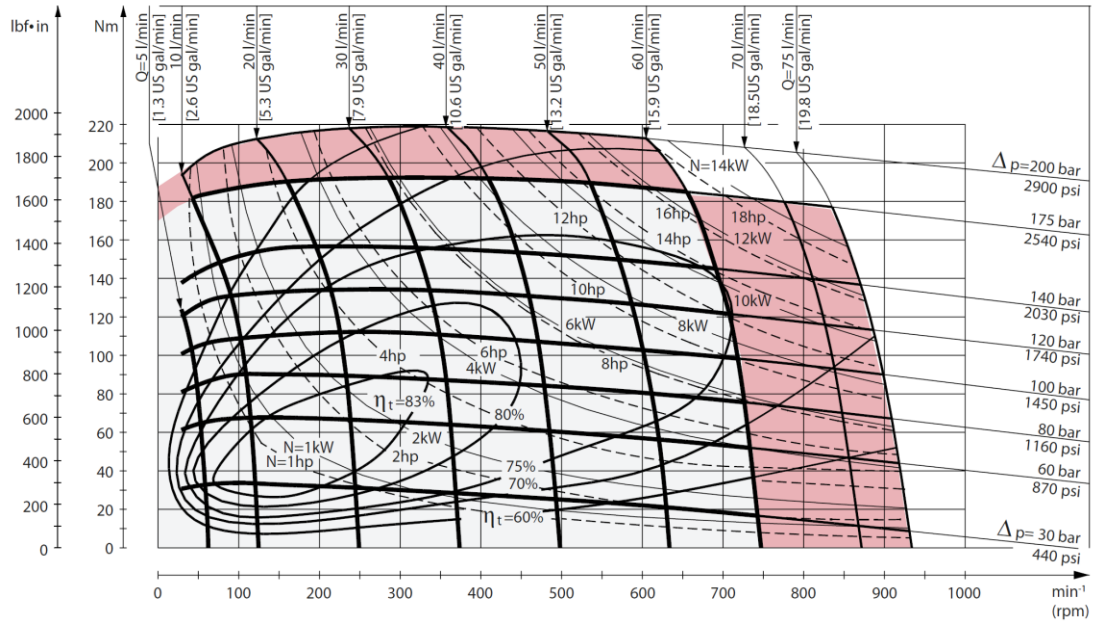


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 65 OMR 50 function diagram

OMR 80 function diagram

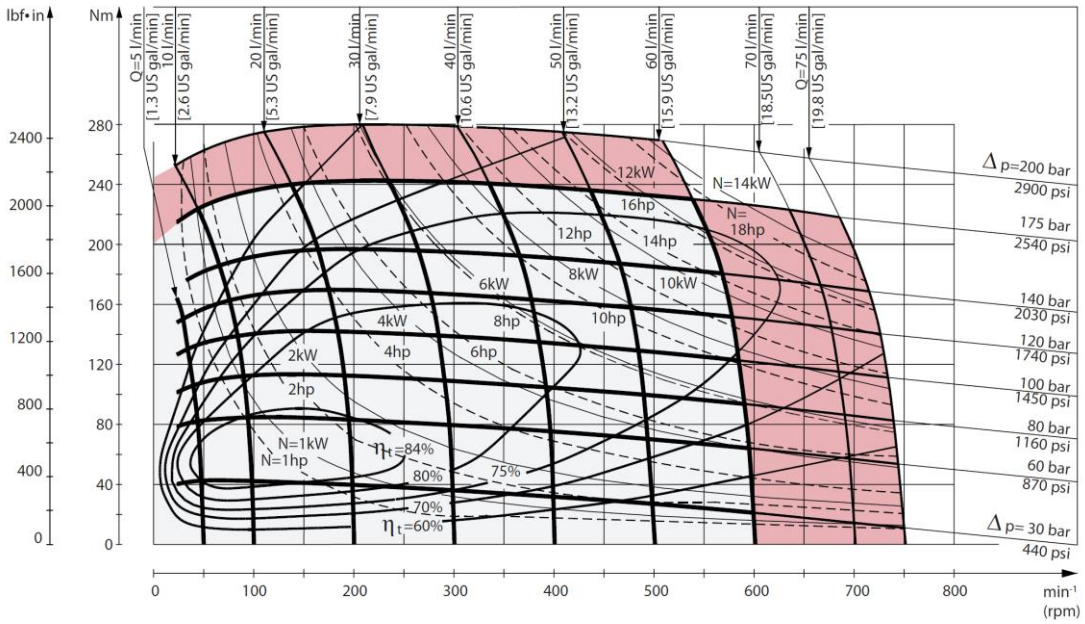


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 66 OMR 80 function diagram

OMR 100 function diagram

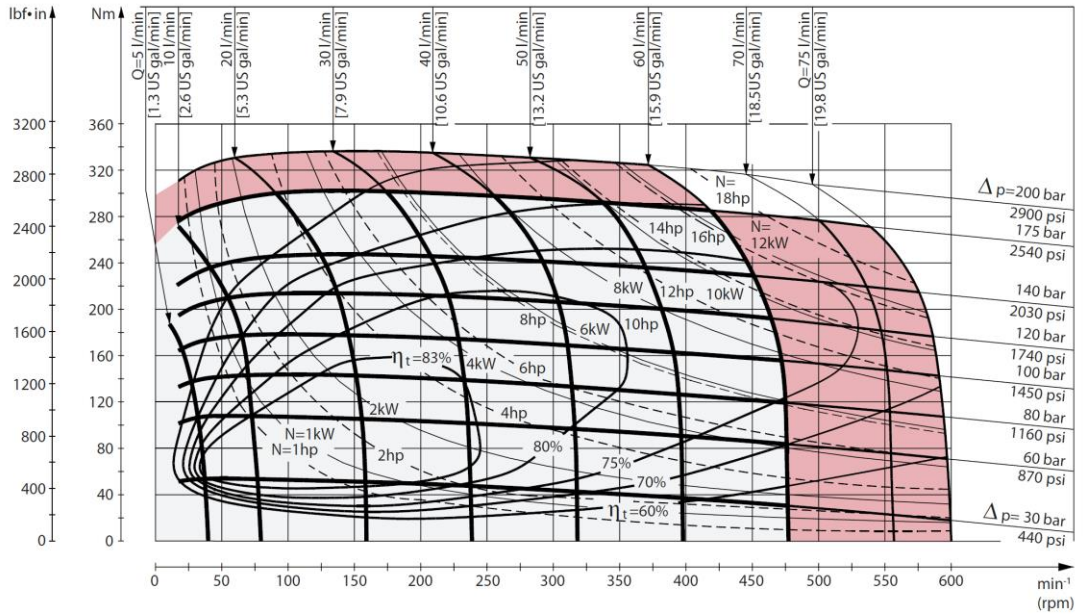


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 67 OMR 100 function diagram

OMR 125 function diagram

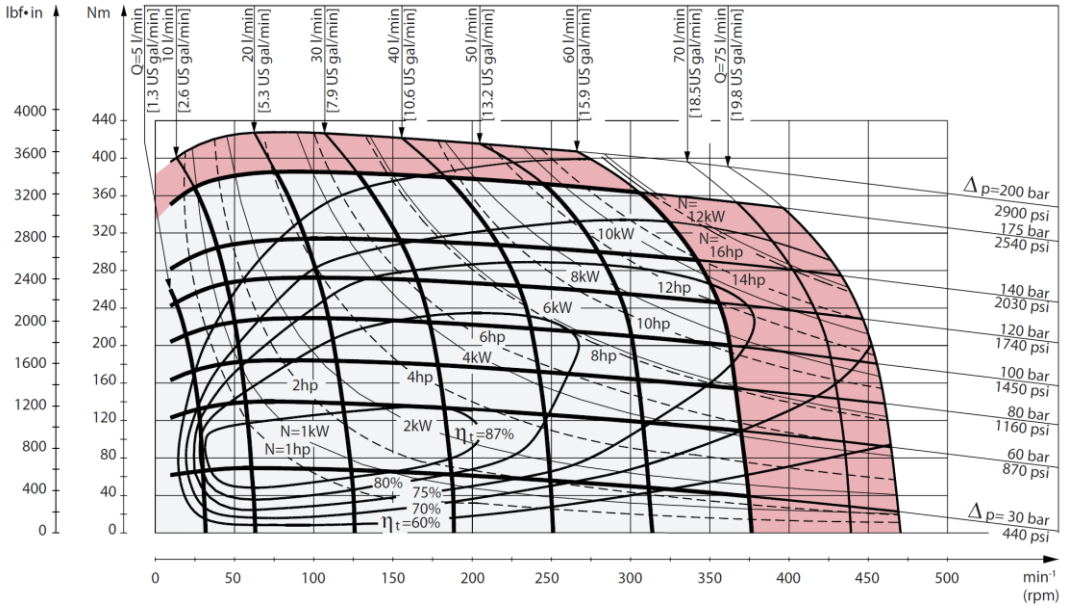


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 68 OMR 125 function diagram

OMR 160 function diagram

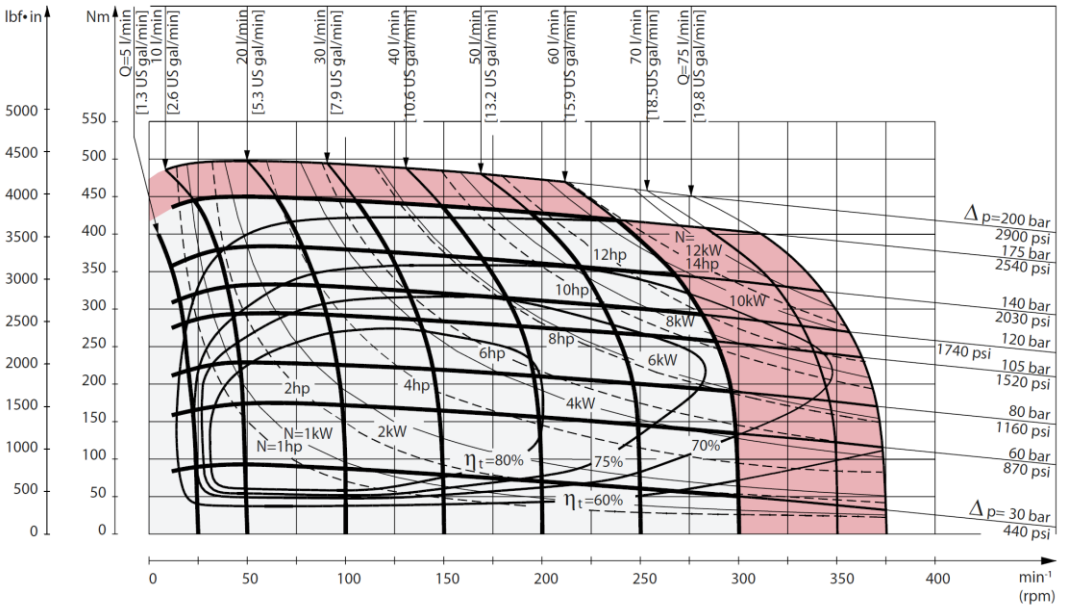


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 69 OMR 160 function diagram

OMR 200 function diagram



Continuous range

Intermittent range (max. 10% operation every minute)

Figure 70 OMR 200 function diagram

OMR 250 function diagram

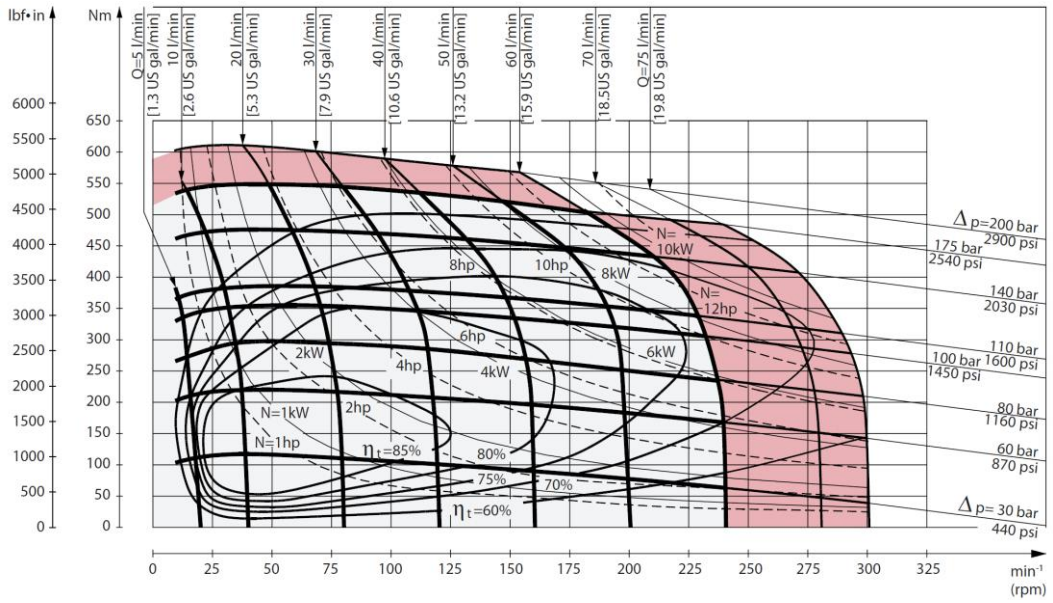


Figure 71 OMR 250 function diagram

Continuous range

Intermittent range (max. 10% operation every minute)

OMR 315 function diagram

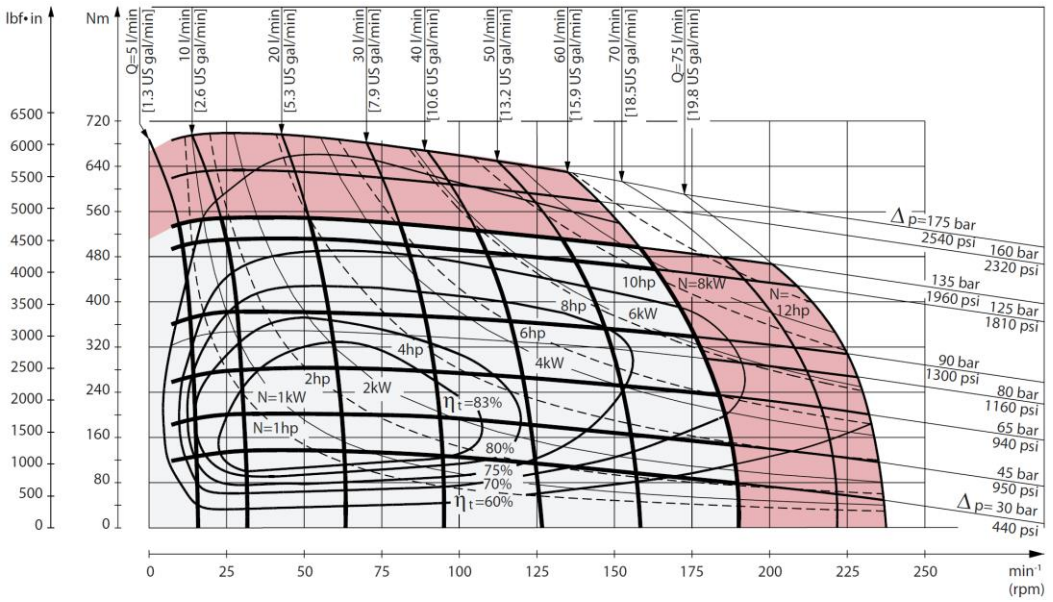
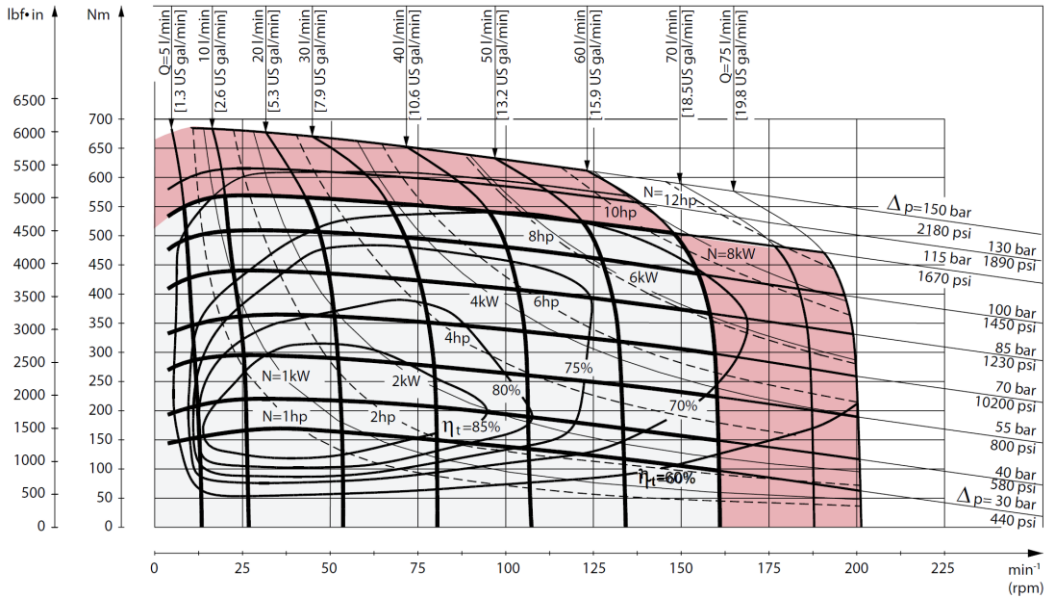


Figure 72 OMR 315 function diagram

Continuous range

Intermittent range (max. 10% operation every minute)

OMR 375 function diagram



Continuous range

Intermittent range (max. 10% operation every minute)

Figure 73 OMR 375 function diagram

Chapter 9
OMR Shaft version

Topics:

- *A - Cylindrical shaft 25 mm*
- *B - Cylindrical shaft 1 in*
- *C - Cylindrical shaft 1 in (US version)*
- *D – Cylindrical shaft 32 mm*
- *E – Cylindrical shaft 1 ¼ in (US version)*
- *F – Involute splined shaft B.S. 2059 (SAE 6B)*
- *Splined shaft B.S. 2059 (SAE 6B - US version)*
- *H – Tapered shaft 28.5 mm; ISO/R775 (taper 1:10)*
- *I – Tapered shaft 35 mm (taper 1:10)*
- *J – Tapered shaft 1 ¼ in (taper 1:8); SAE J501*

A - Cylindrical shaft 25 mm

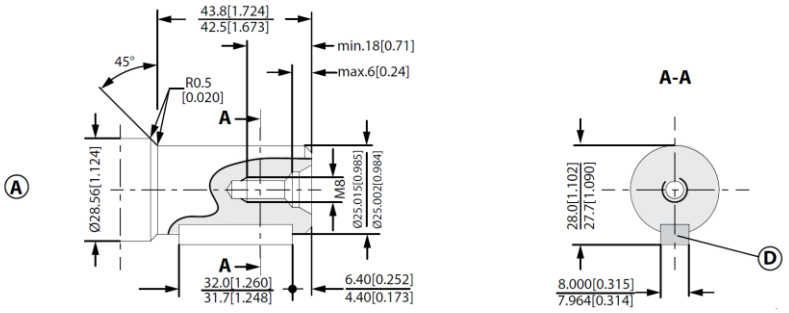


Figure 74 OMR shaft version: Cylindrical shaft 25 mm

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

B - Cylindrical shaft 1 in

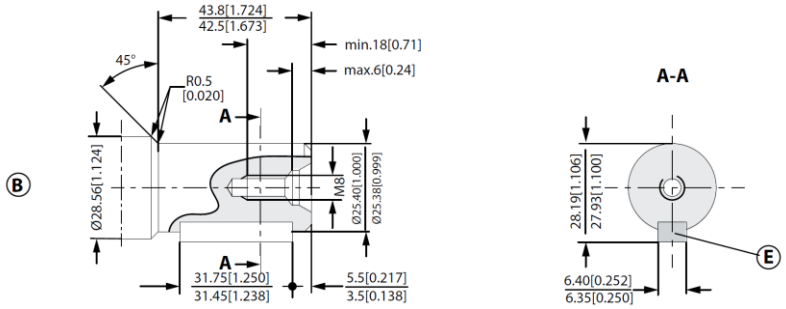


Figure 75 OMR shaft version: Cylindrical shaft 1 in

***E**: Parallel key ¼ • ¼ • 1 ¼ in B.S. 46*
Max. torque 360 N•m [3185 lb•in]

C - Cylindrical shaft 1 in (US version)

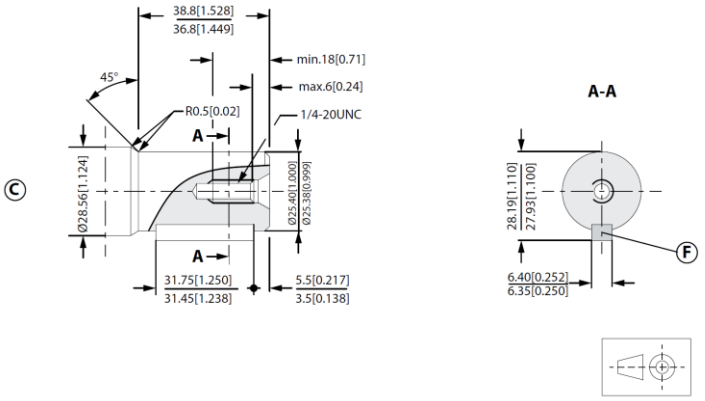


Figure 76 OMR shaft version: Cylindrical shaft 1 in (US version)

***F**: Parallel key ¼ • ¼ • 1 ¼ in B.S. 46*
Max torque 360 N•m [3185 lb•in]

D – Cylindrical shaft 32 mm

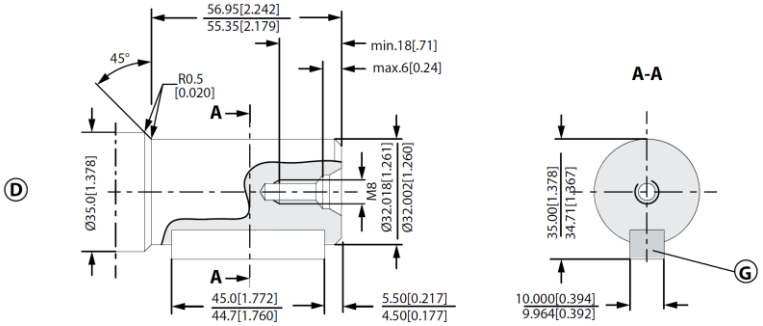
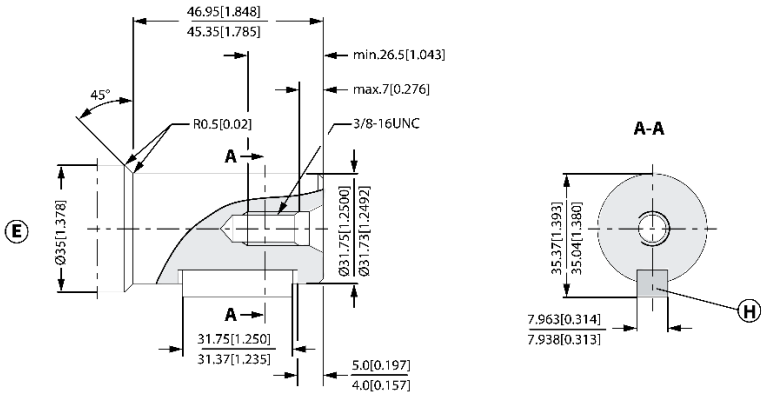


Figure 77 OMR shaft version: Cylindrical shaft 32mm

***G**: Parallel key A10 • 8 • 45 DIN 6885*

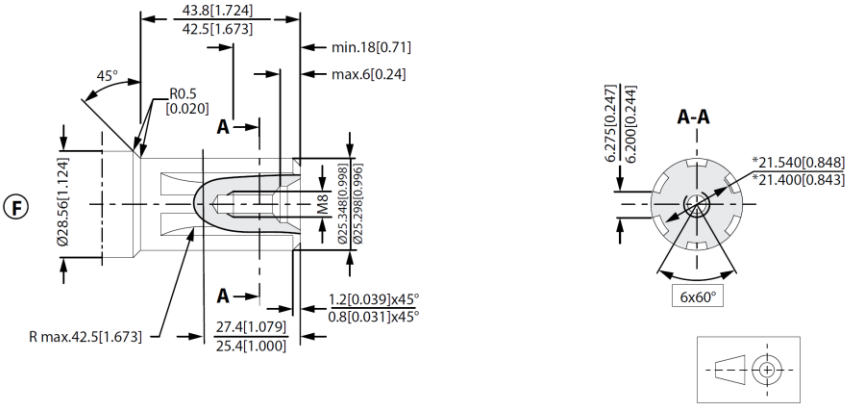
E – Cylindrical shaft 1 ¼ in (US version)



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

Figure 78 OMR shaft version: Cylindrical shaft 1 ¼ in (US version)

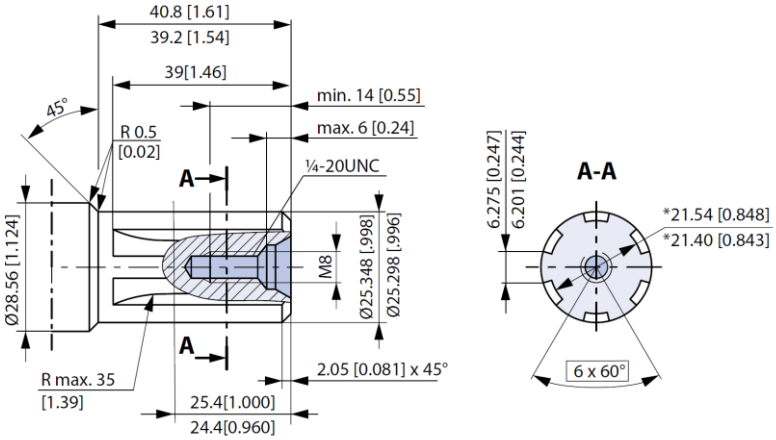
F – Involute splined shaft B.S. 2059 (SAE 6B)



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]

Figure 79 OMR shaft version: Involute splined shaft B.S. 2059 (SAE 6B)

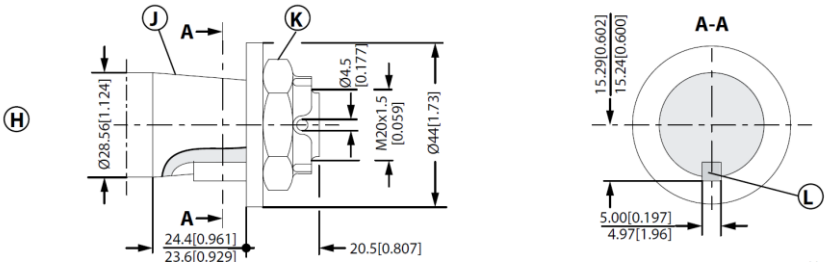
Splined shaft B.S. 2059 (SAE 6B - US version)



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]

Figure 80 OMR shaft version: Splined shaft B.S. 2059 (SAE 6B - US version)

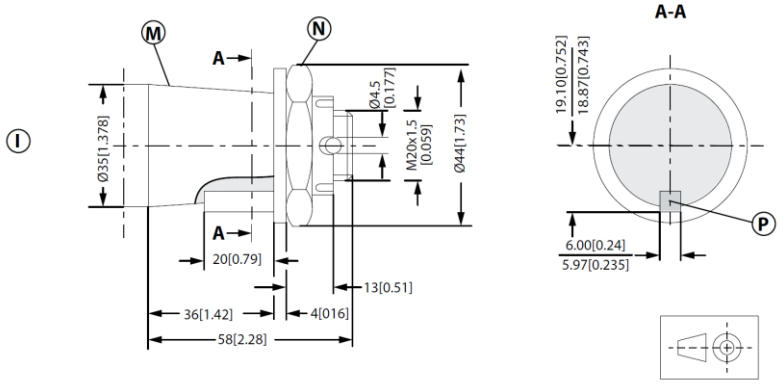
H – Tapered shaft 28.5 mm; ISO/R775 (taper 1:10)



K: DIN 937 NV 30
Tightening torque: 100 ± 10 N•m [885 ± 85 lb•in]
L: Parallel key B5 • 5 • 14 DIN 6885

Figure 81 OMR shaft version: Tapered shaft 28.5 mm; ISO/R775 (taper 1:10)

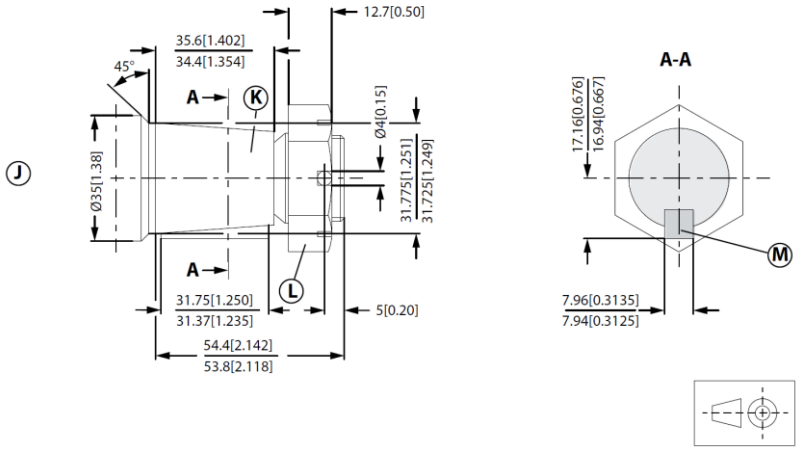
I – Tapered shaft 35 mm (taper 1:10)



N: DIN 937 NV 41
Tightening torque: 200 ± 10 N•m [1770 ± 85 lb•in]
P: Parallel key B6 • 6 • 20 DIN 6885

Figure 82 OMR shaft version: Tapered shaft 35 mm (taper 1:10)

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



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]

Figure 83 OMR shaft version: Tapered shaft 1 ¼ in (taper 1:8); SAE J501

Chapter 10
OMR port thread versions

Topics:

- *Main port thread versions*
- *OMR manifold mount*

Main port thread versions

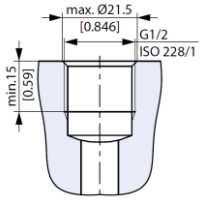
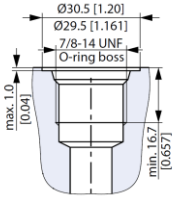
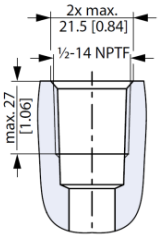
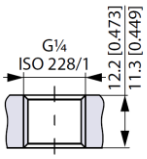
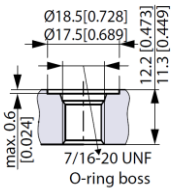
G ISO 228/1 – G1/2	UNF 7/8–14 UNF O-ring boss	NPTF 1/2–14 NPTF	G drain ISO 228/1 – G1/4	UNF drain 7/16–20 UNF O-ring boss
 *Figure 84 OMR port thread version: ISO 228/1 - G1/2*	 *Figure 85 OMR port thread version: 7/8 - 14 UNF O-ring boss*	 *Figure 86 OMR port thread version: 1/2 - 14 NPTF*	 *Figure 87 OMR port thread version: ISO 228/1 - G1/4*	 *Figure 88 OMR port thread version: 7/16 - 20 UNF O-ring boss*

Table 24 OMR Main ports overview

OMR manifold mount

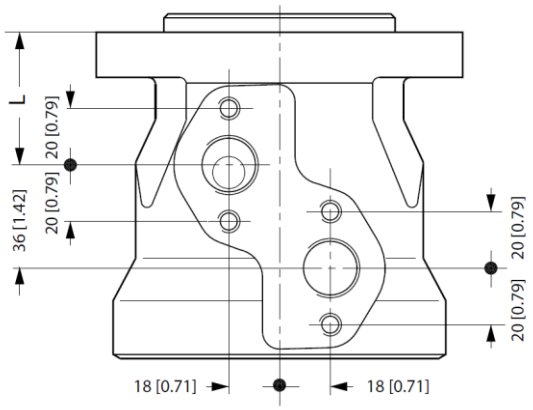


Figure 89 OMR manifold mount

L: see dimensional drawing for given OMP/OMR motor:

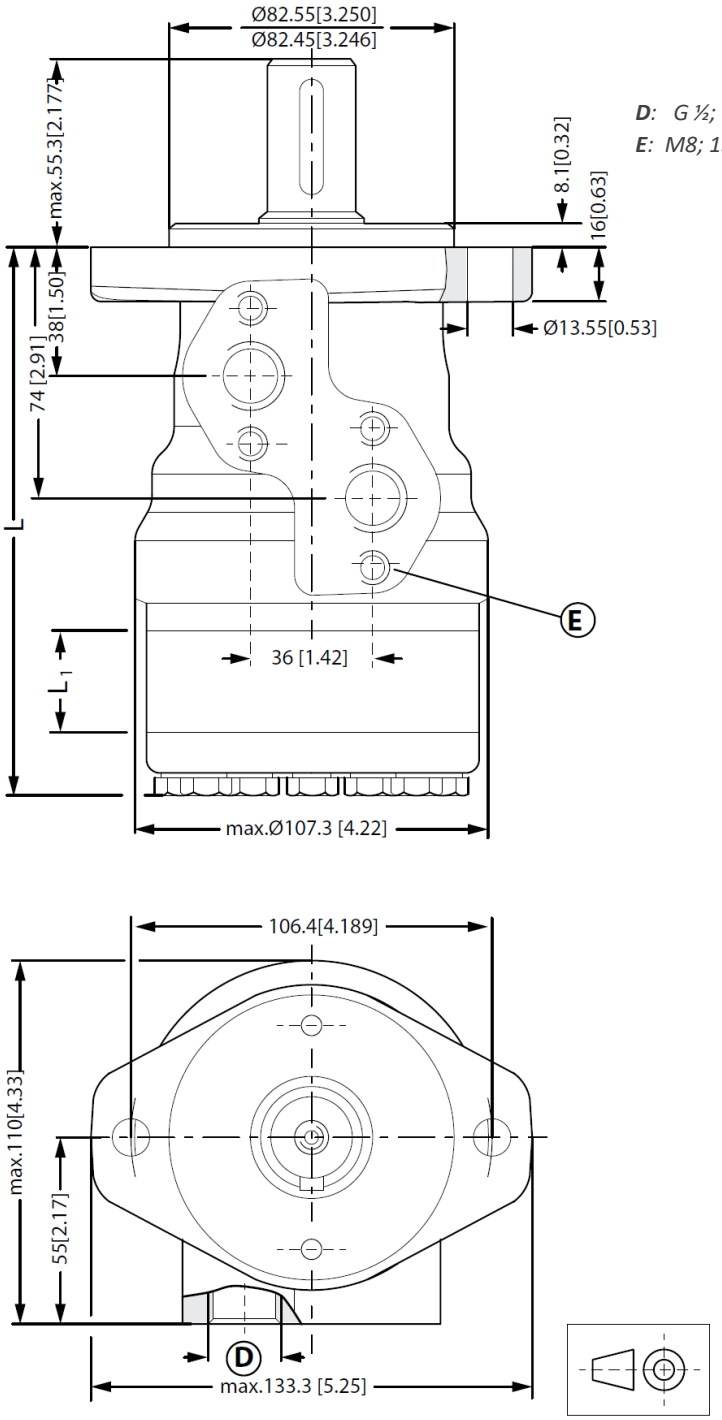
- *OMP dimensions*
- *OMR dimensions*

Chapter 11
OMR dimensions

Topics:

OMR dimensions - European version

OMR Side port version with 2-hole oval mounting flange (A2 flange) with high pressure shaft seal



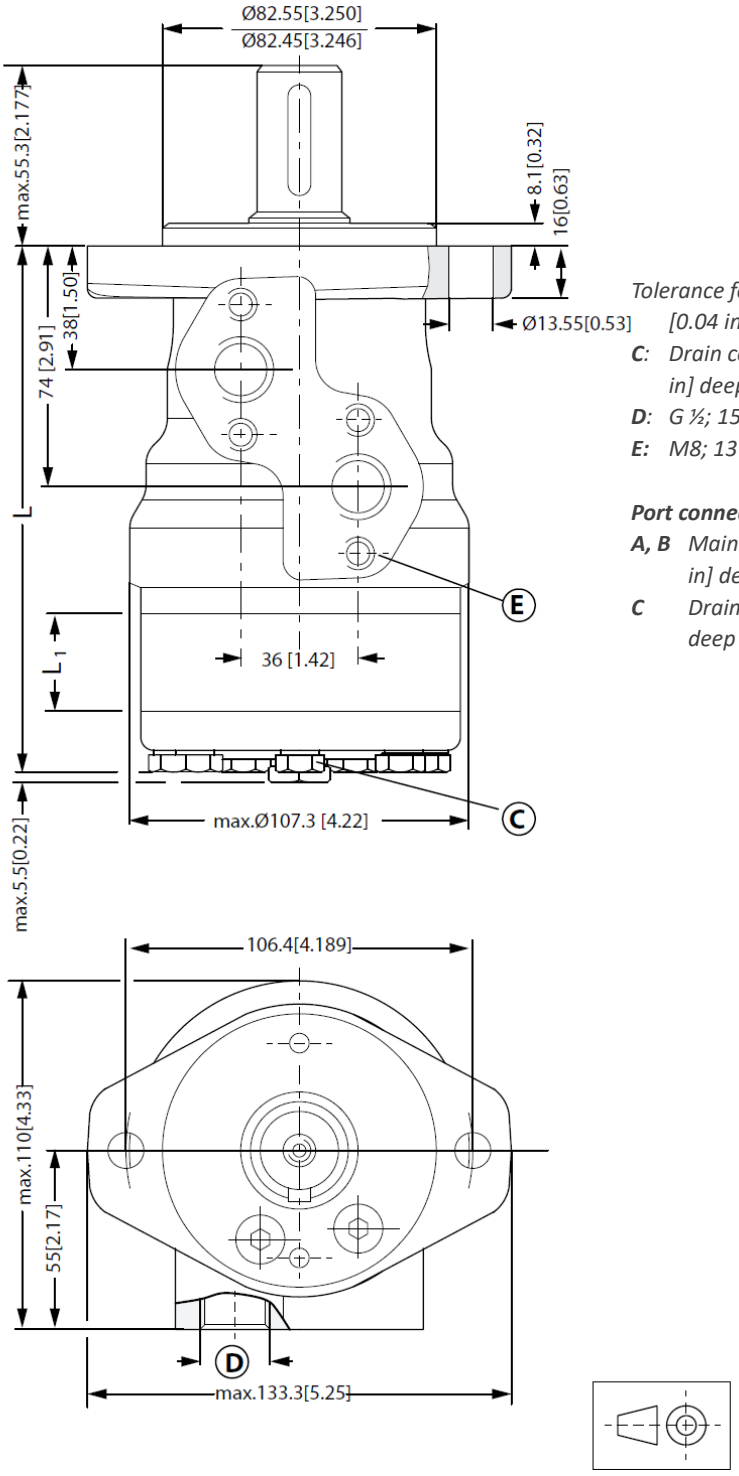
D: G ½; 15 mm [0.59 in] deep
E: M8; 13 mm [0.51 in] deep (4 pcs.)

Figure 90 OMR Side port with A2-flange (EU version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	137.9	142.8	146.2	150.6	156.6	163.6	172.3	183.6	193.8
		[5.43]	[5.62]	[5.76]	[5.93]	[6.17]	[6.44]	[6.78]	[7.23]	[7.63]
	L_1 mm [in]	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
		[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

Table 25 OMR Side port version with A2-flange dimensions (EU version)

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



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

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

D: *G ½; 15 mm [0.59 in] deep*

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

Port connections:

A, B *Main ports: G ½; min 15 mm [0.59 in] deep*

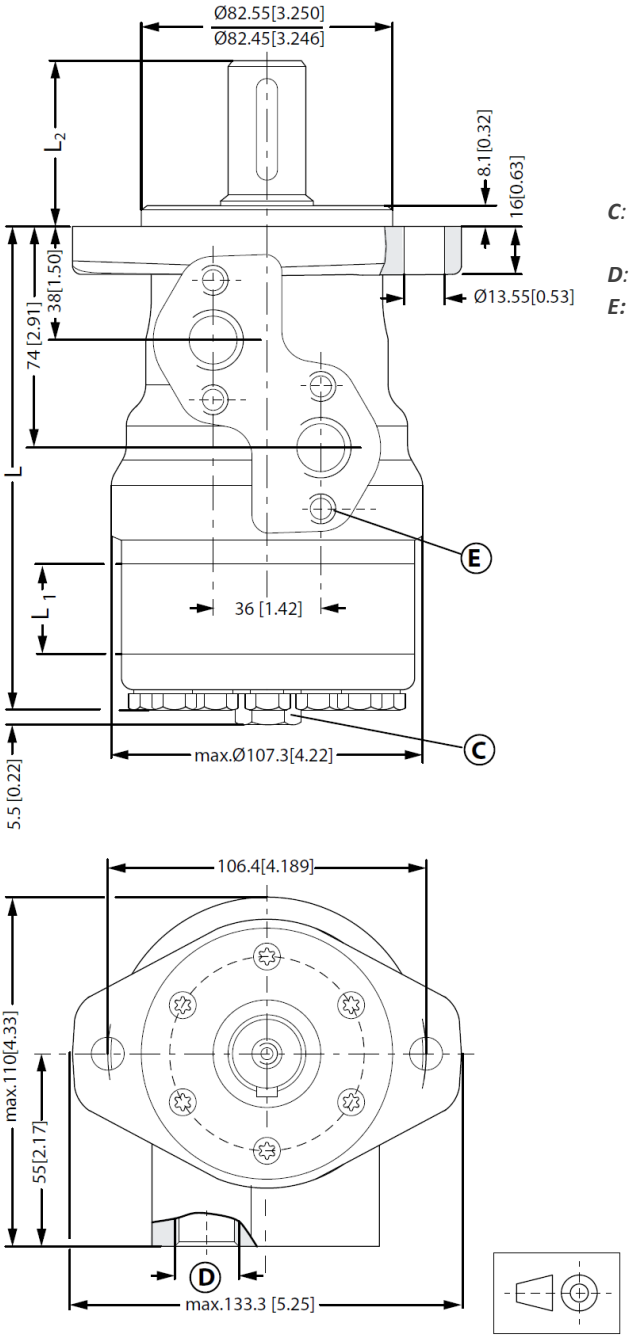
C *Drain port: G ¼; 11.5 mm [0.47 in] deep*

Figure 91 OMR Side port with A2-flange (EU version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	137.9 [5.43]	142.8 [5.62]	146.2 [5.76]	150.6 [5.93]	156.6 [6.17]	163.6 [6.44]	172.3 [6.78]	183.6 [7.23]	193.8 [7.63]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 26 OMR Side port with A2-flange dimensions (EU version)

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



C: *Drain connection G ¼; 15 mm [0.47 in] deep*
D: *G ½; 15 mm [0.59 in] deep*
E: *M8; 13 mm [0.51 in] deep (4 pcs.)*

Figure 92 OMR, OMR C and OMR N Side port version with A2 flange (EU version)

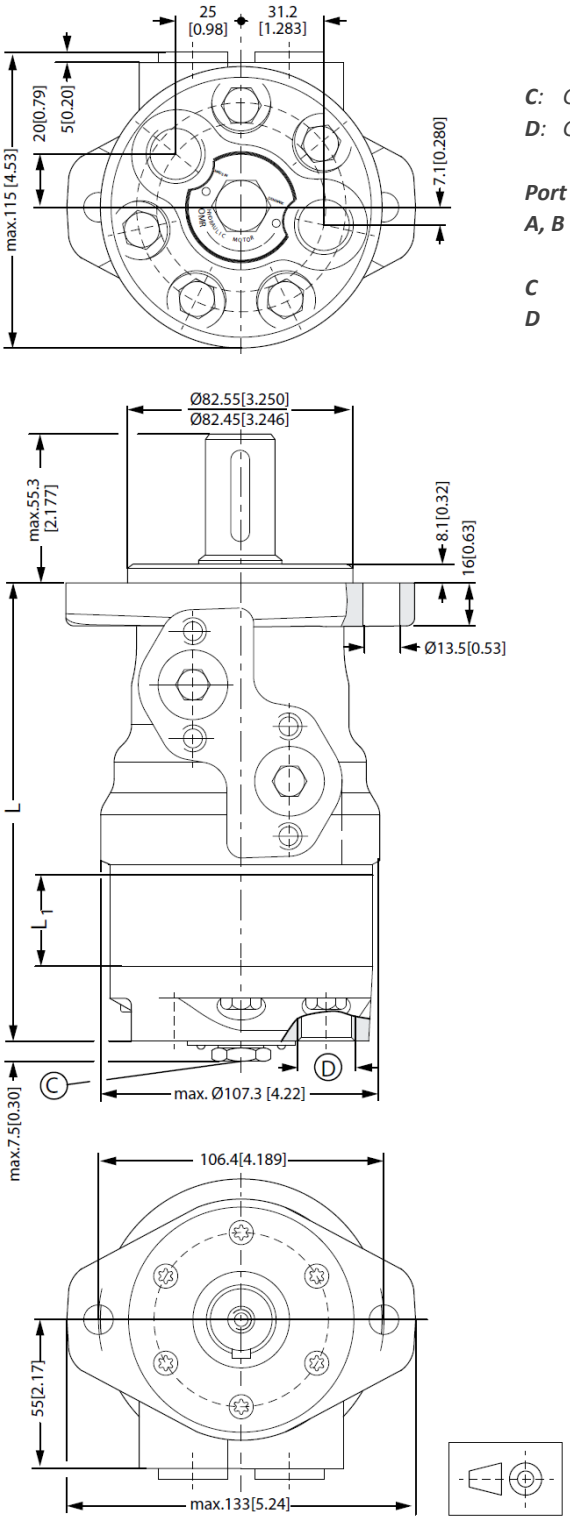
Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	137.9 [5.43]	142.8 [5.62]	146.2 [5.76]	150.6 [5.93]	156.6 [6.17]	163.6 [6.44]	172.3 [6.78]	183.6 [7.23]	193.8 [7.63]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 27 OMR, OMR C and OMR N Side port version with A2 flange dimensions (EU versions)

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]

Table 28 OMR, OMR C, OMR N Output shaft. max.

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



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

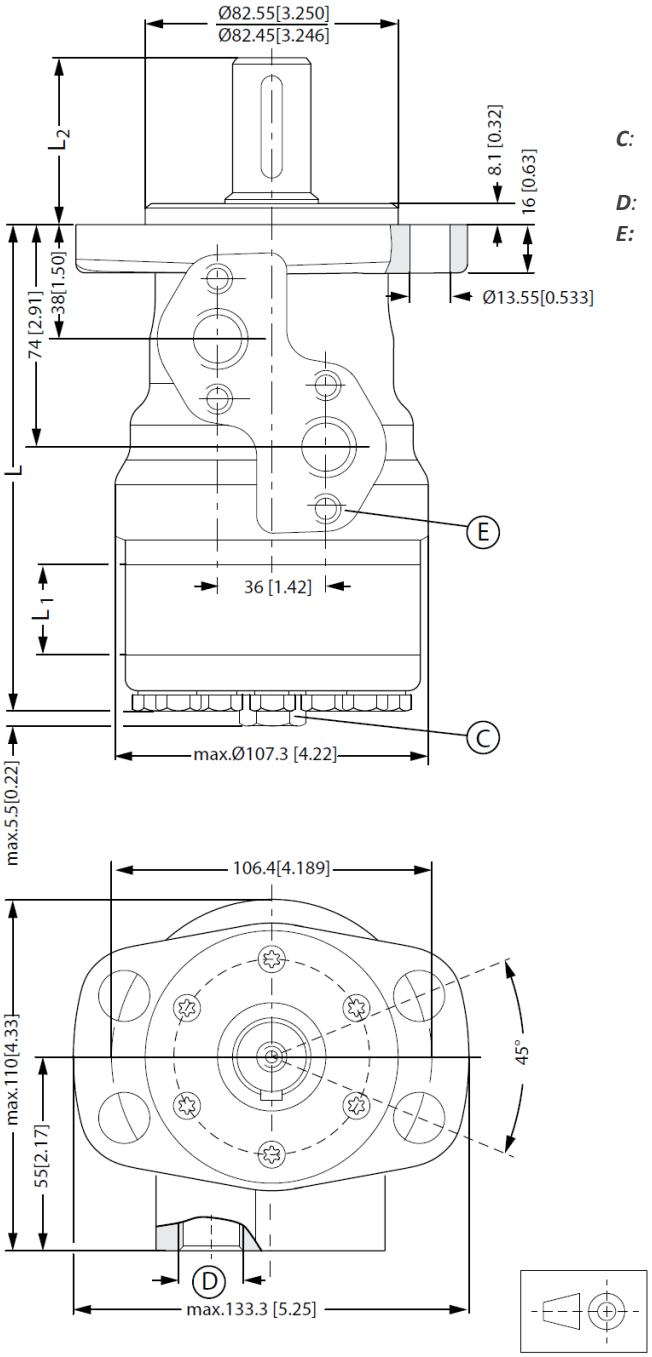
Port connections:
***A, B** Main ports: G ½; min 15 mm [0.59 in] deep*
***C** Drain port: G ¼; 12 mm [0.47 in] deep*
***D** Thread: M8; 13 mm [0.51 in] deep*

Figure 93 OMR, OMR C and OMR N End port version with A2-flange (EU version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	152.2 [5.99]	157.2 [6.19]	160.6 [6.32]	165.0 [6.50]	171.0 [6.73]	178.0 [7.01]	186.7 [7.35]	198.0 [7.80]	208.2 [8.20]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 29 OMR, OMR C and OMR N End port version with A2 flange dimensions (EU version)

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



C: *Drain connection G ¼; 15 mm [0.47 in] deep*
D: *G ½; 15 mm [0.59 in] deep*
E: *M8; 13 mm [0.51 in] deep (4 pcs.)*

Figure 94 OMR Side port version with A4-flange (EU version)

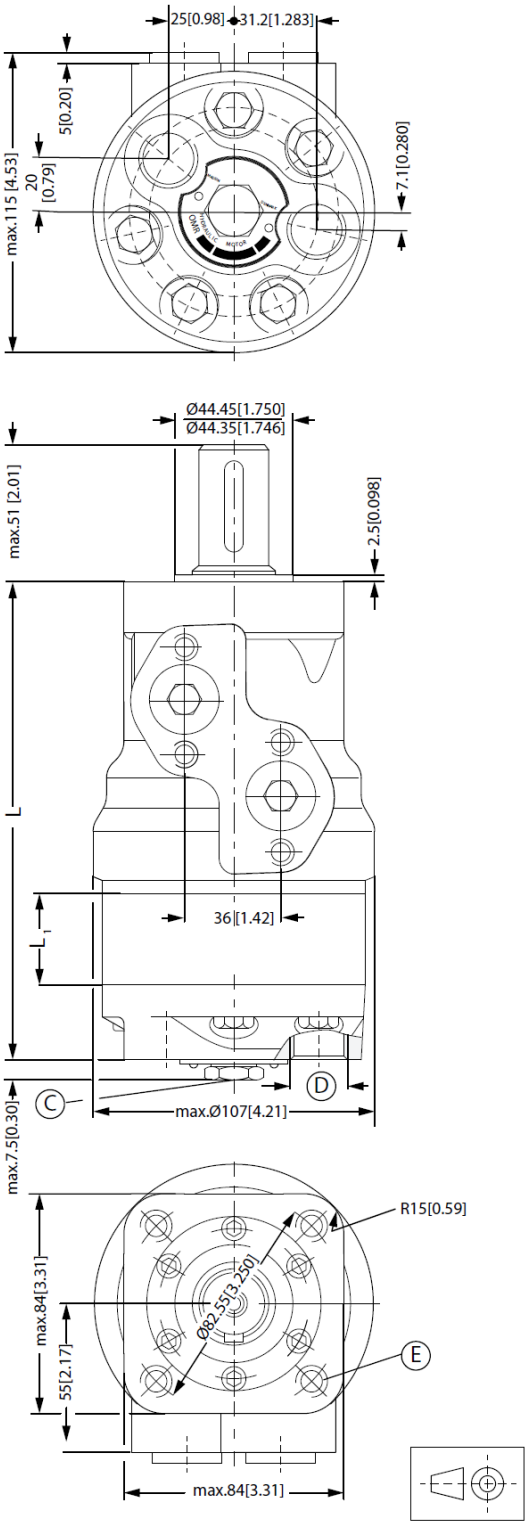
Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	137.9 [5.43]	142.8 [5.62]	146.2 [5.76]	150.6 [5.93]	156.6 [6.17]	163.6 [6.44]	172.3 [6.78]	183.6 [7.23]	193.8 [7.63]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 30 OMR Side port version with A4-flange

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]

Table 31 OMR Output shaft. max.

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



***C**: Drain connection G ¼; 12 mm [0.47 in] deep*
***D**: G ½; 15 mm [0.59 in] deep*
***E**: M10; 15 mm [0.51 in] deep (4 pcs.)*

Figure 95 OMR End port version with C-flange (EU version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	158.6 [6.24]	163.3 [6.44]	167.0 [6.57]	171.0 [6.73]	177.0 [6.97]	184.0 [7.24]	192.7 [7.59]	204.0 [8.03]	214.2 [8.43]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 32 OMR End port version with C-flange dimensions (EU version)

OMRW N wheel motor

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

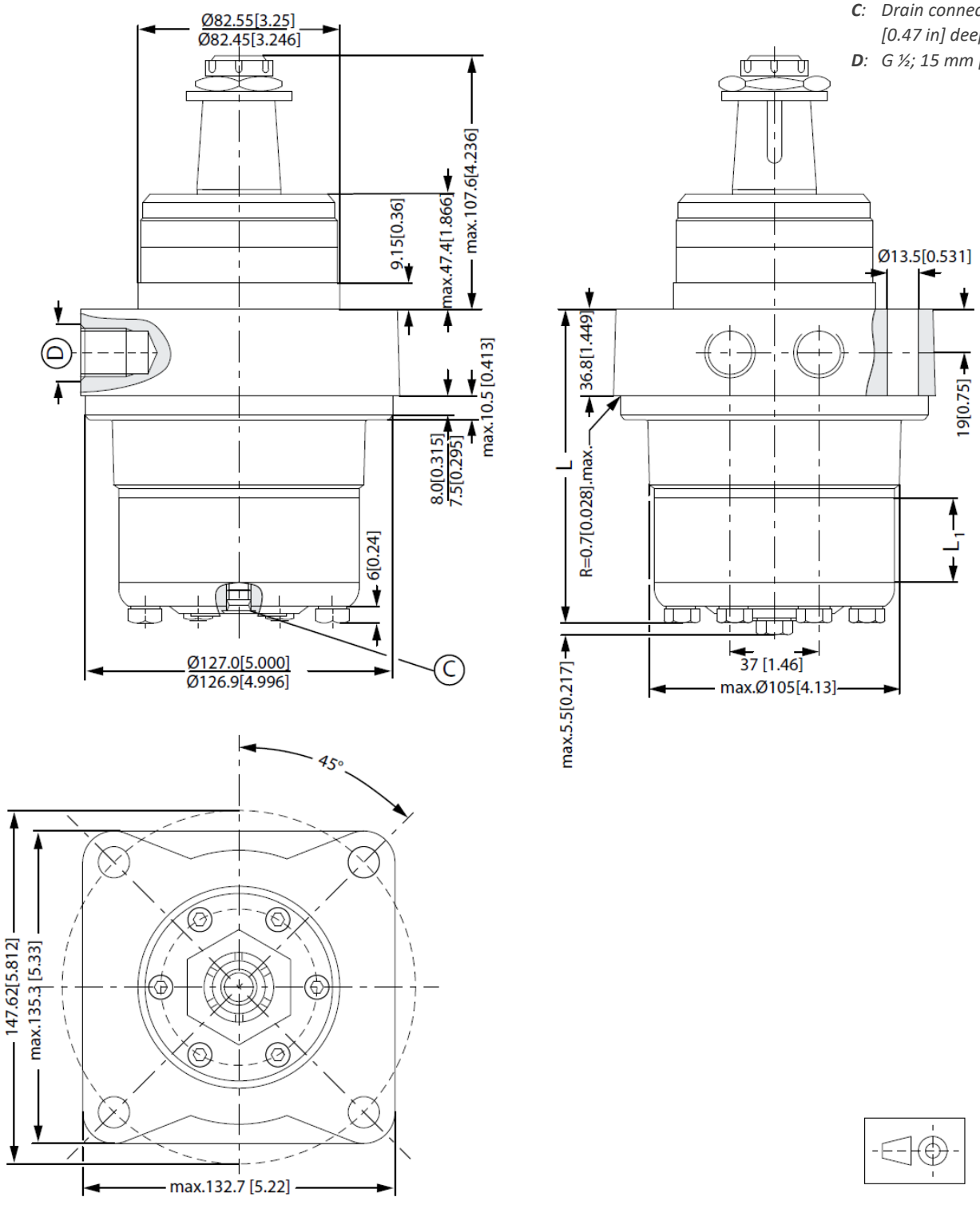
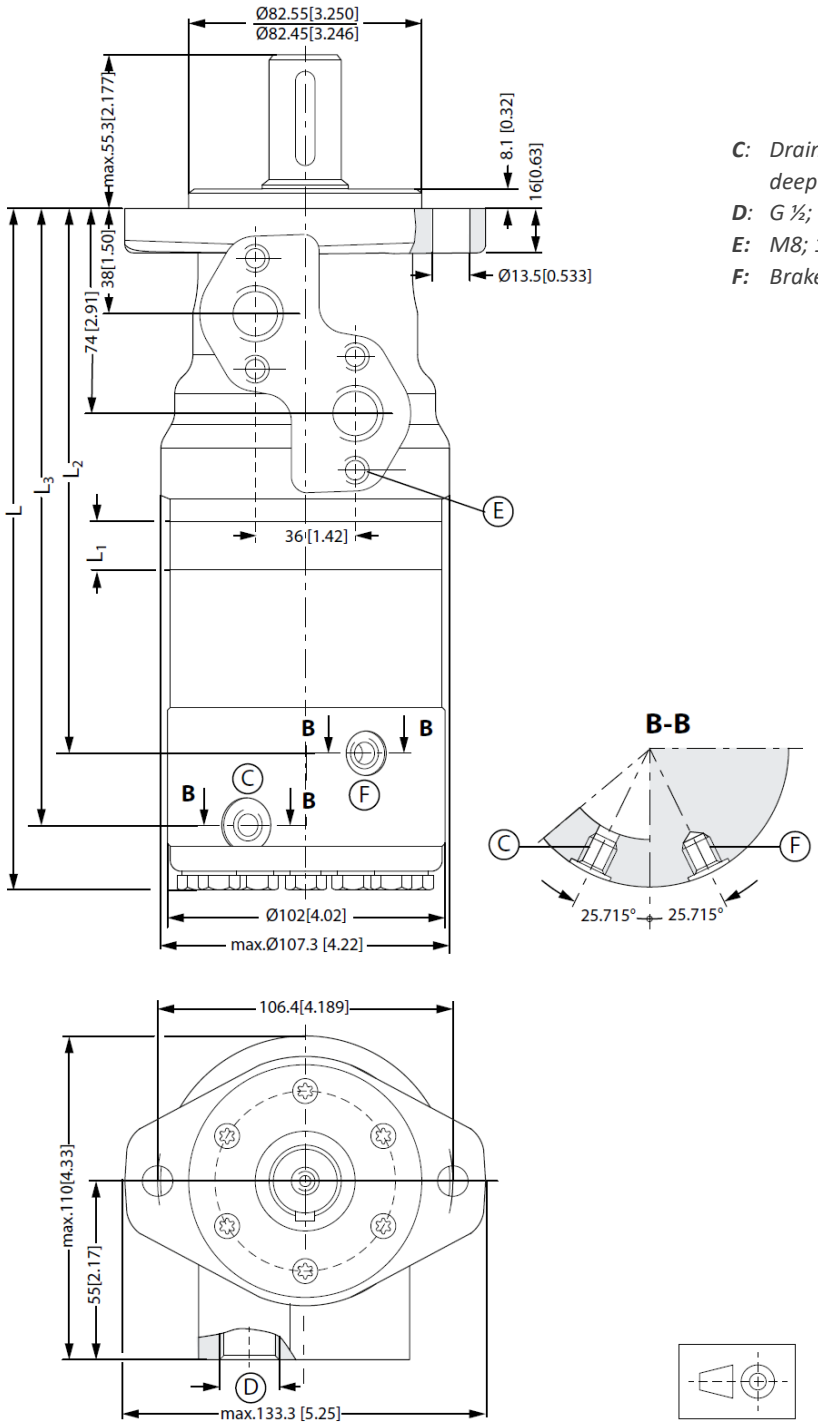


Figure 96 OMRW N (EU version)

Type		OMRW N								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	113.7	114.7	118.1	122.5	128.5	135.1	144.2	155.5	165.7
		[4.48]	[4.52]	[4.65]	[4.82]	[5.06]	[5.33]	[5.68]	[6.12]	[6.52]
	L_1 mm [in]	9.0	14.0	17.4	21.8	27.8	34.8	43.5	54.8	65.0
		[0.35]	[0.55]	[0.69]	[0.86]	[1.09]	[1.37]	[1.71]	[2.16]	[2.56]

Table 33 OMRW N dimensions (EU version)

OMR F motor



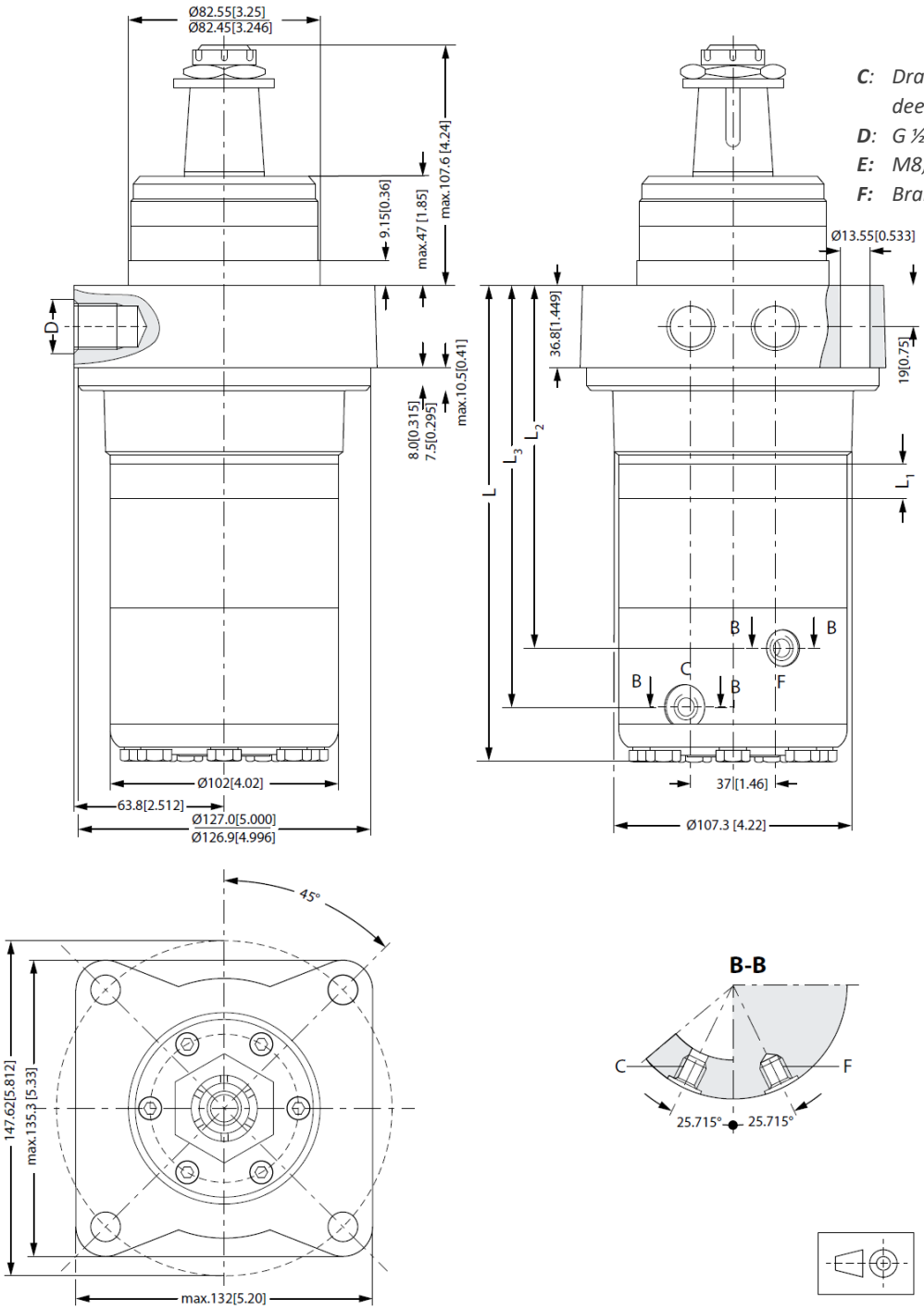
- ***C:*** *Drain connection G ¼; 12 mm [0.47 in] deep*
- ***D:*** *G ½; 15 mm [0.59 in] deep*
- ***E:*** *M8; 13 mm [0.51 in] deep*
- ***F:*** *Brake release connection G ¼*

Figure 97 OMR F (EU version)

Type		OMR F							
		80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	242.7 [9.56]	246.1 [9.69]	250.5 [9.86]	256.5 [10.10]	263.5 [10.37]	272.2 [10.72]	283.5 [11.16]	293.7 [11.56]
	L_1 mm [in]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]
	L_2 mm [in]	186.8 [7.35]	190.2 [7.49]	194.6 [7.66]	200.6 [7.90]	207.6 [8.17]	216.3 [8.51]	227.6 [8.96]	237.7 [9.36]
	L_3 mm [in]	210.3 [8.28]	213.7 [8.41]	218.1 [8.58]	224.1 [8.82]	231.1 [9.10]	239.8 [9.45]	251.1 [9.88]	261.2 [10.28]

Table 34 OMR F dimensions (EU version)

OMRW NF motor



- ***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*

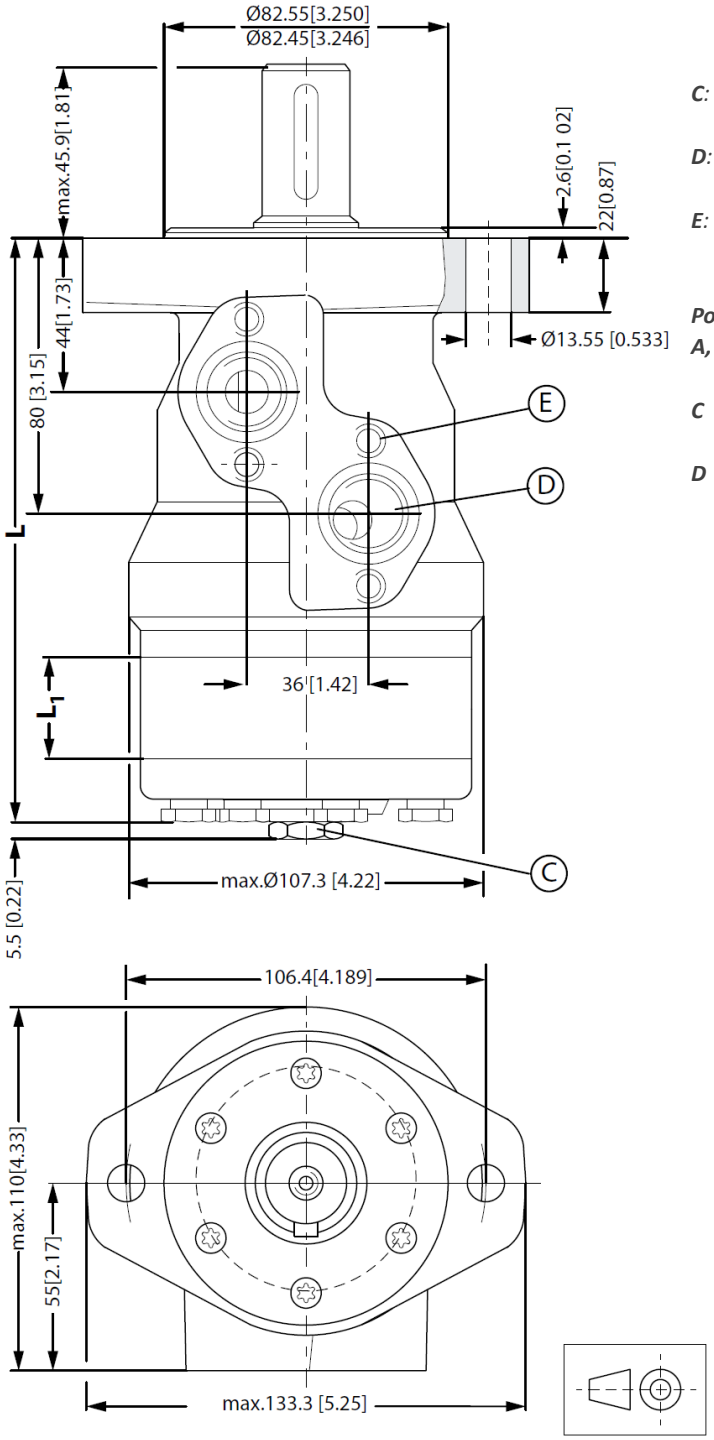
Figure 98 OMRW NF (EU version)

Type		OMRW NF							
		80	**100**	**125**	**160**	**200**	**250**	**315**	**375**
Length	**L_{max}** mm [in]	213.2 [8.39]	218.0 [8.58]	222.4 [8.76]	228.4 [8.99]	235.4 [9.27]	242.7 [9.56]	254.0 [10.00]	264.2 [10.40]
	L_1 mm [in]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]
	L_2 mm [in]	159.2 [6.27]	161.9 [6.37]	166.3 [6.55]	172.3 [6.78]	179.3 [7.06]	188.7 [7.43]	200.0 [7.87]	210.2 [8.28]
	L_3 mm [in]	182.7 [7.19]	185.4 [7.30]	189.8 [7.47]	195.8 [7.71]	202.8 [7.98]	212.2 [8.35]	223.5 [8.80]	233.7 [9.20]

Table 35 OMR NF dimensions (EU version)

OMR dimensions - US version

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



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*

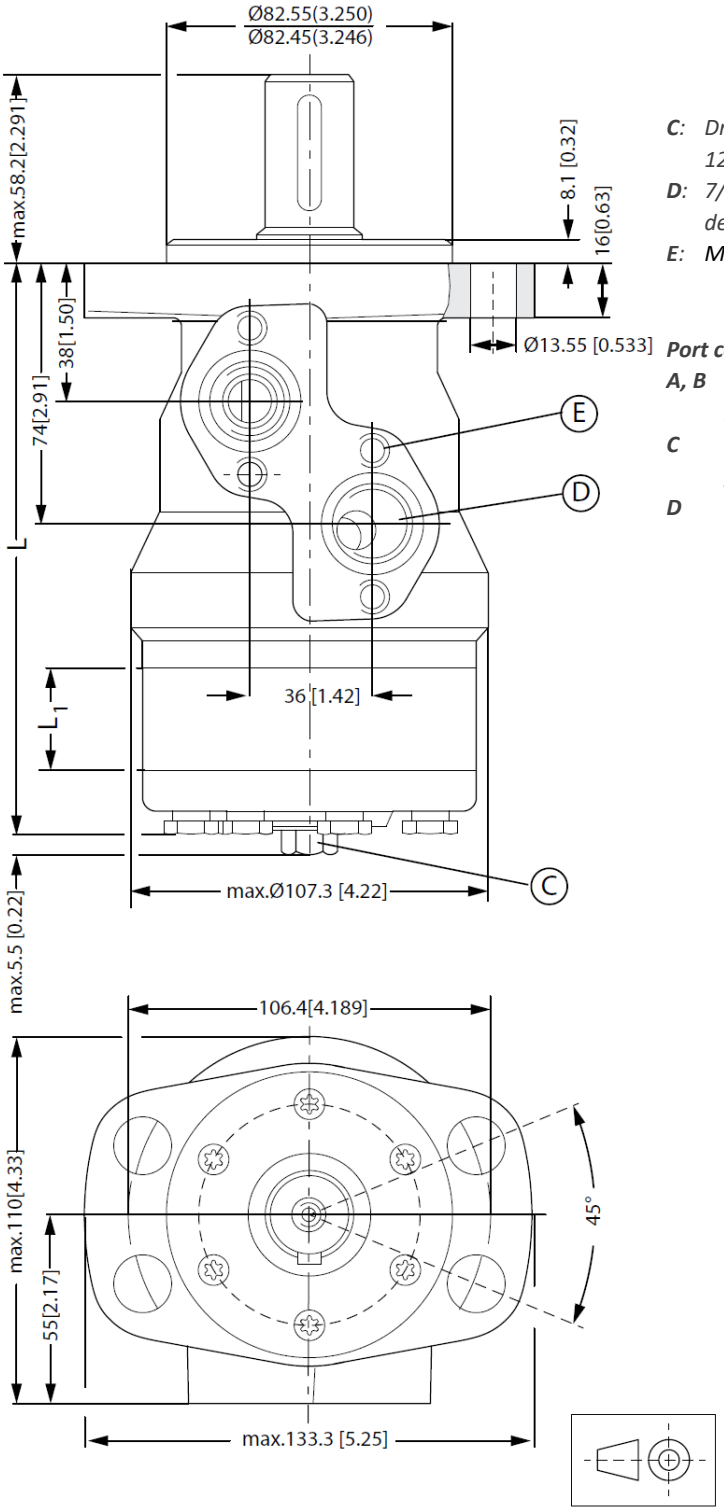
D *Thread: M8; 13 mm [0.51 in] deep*

Figure 99 OMR Side port with A2-flange (US version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	143.7 [5.66]	148.7 [5.85]	152.1 [5.99]	156.5 [6.16]	162.5 [6.40]	169.5 [6.67]	178.2 [7.02]	189.5 [7.46]	199.7 [7.86]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 36 OMR Side port with A2-flange dimensions (US version)

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



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*

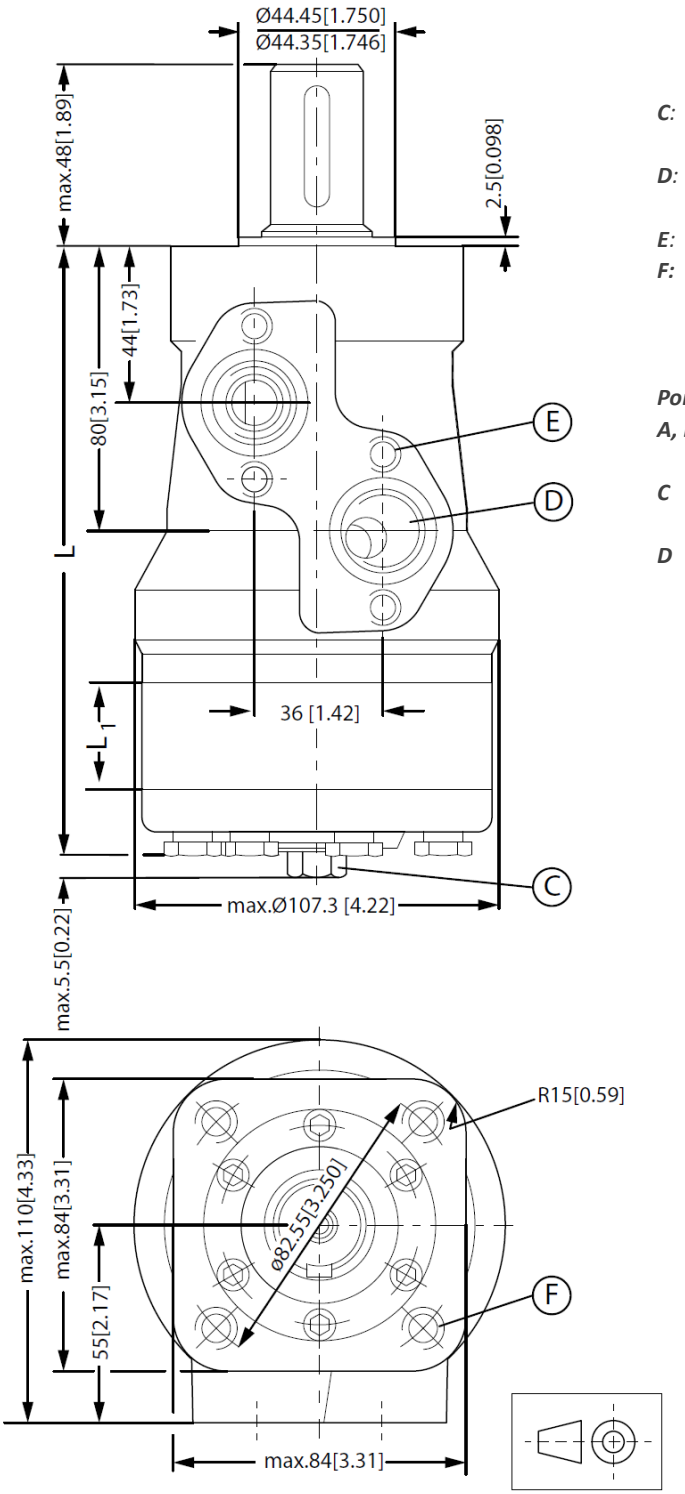
D *Thread: M8; 13 mm [0.51 in] deep*

Figure 100 OMR Side port version with A4-flange (US version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	137.9 [5.43]	142.8 [5.62]	146.2 [5.76]	150.6 [5.93]	156.6 [6.17]	163.6 [6.44]	172.3 [6.78]	183.6 [7.23]	193.8 [7.63]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 37 OMR Side port version with A4-flange dimensions (US version)

OMR Side port with square mounting flange (C-flange)



***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)*
***F**: 3/8 - 16 UNC; 15 mm [0.59 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: 3/8-16 UNC; 15 mm [0.59 in] deep*

Figure 101 OMR side port with C-flange (US version)

Type		OMR								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	143.7 [5.66]	148.8 [5.86]	152.2 [5.99]	156.6 [6.17]	162.6 [6.40]	169.6 [6.68]	178.3 [7.02]	189.6 [7.46]	199.8 [7.87]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 38 OMR side port with C-flange dimensions (US version)

OMRW N wheel motor

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

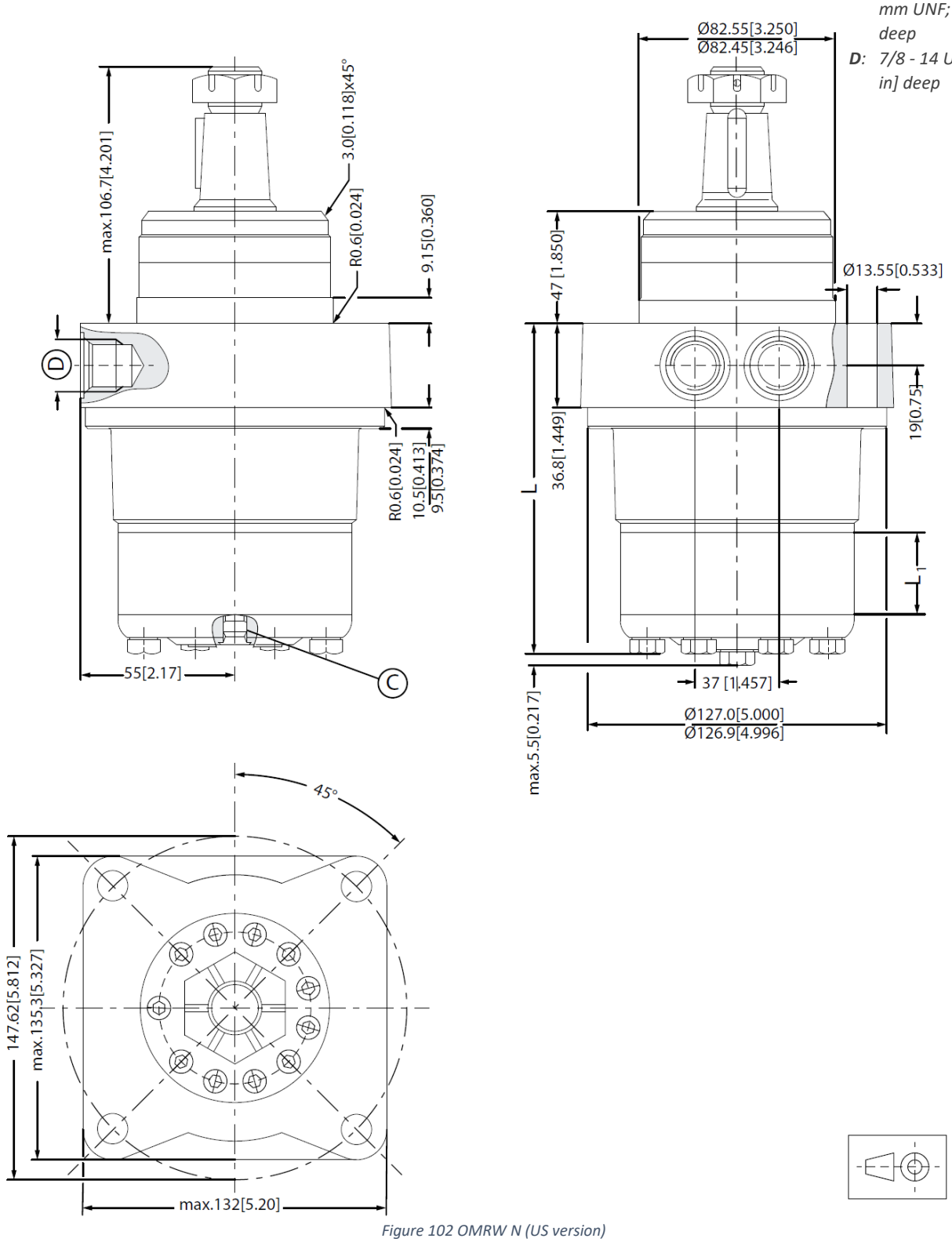
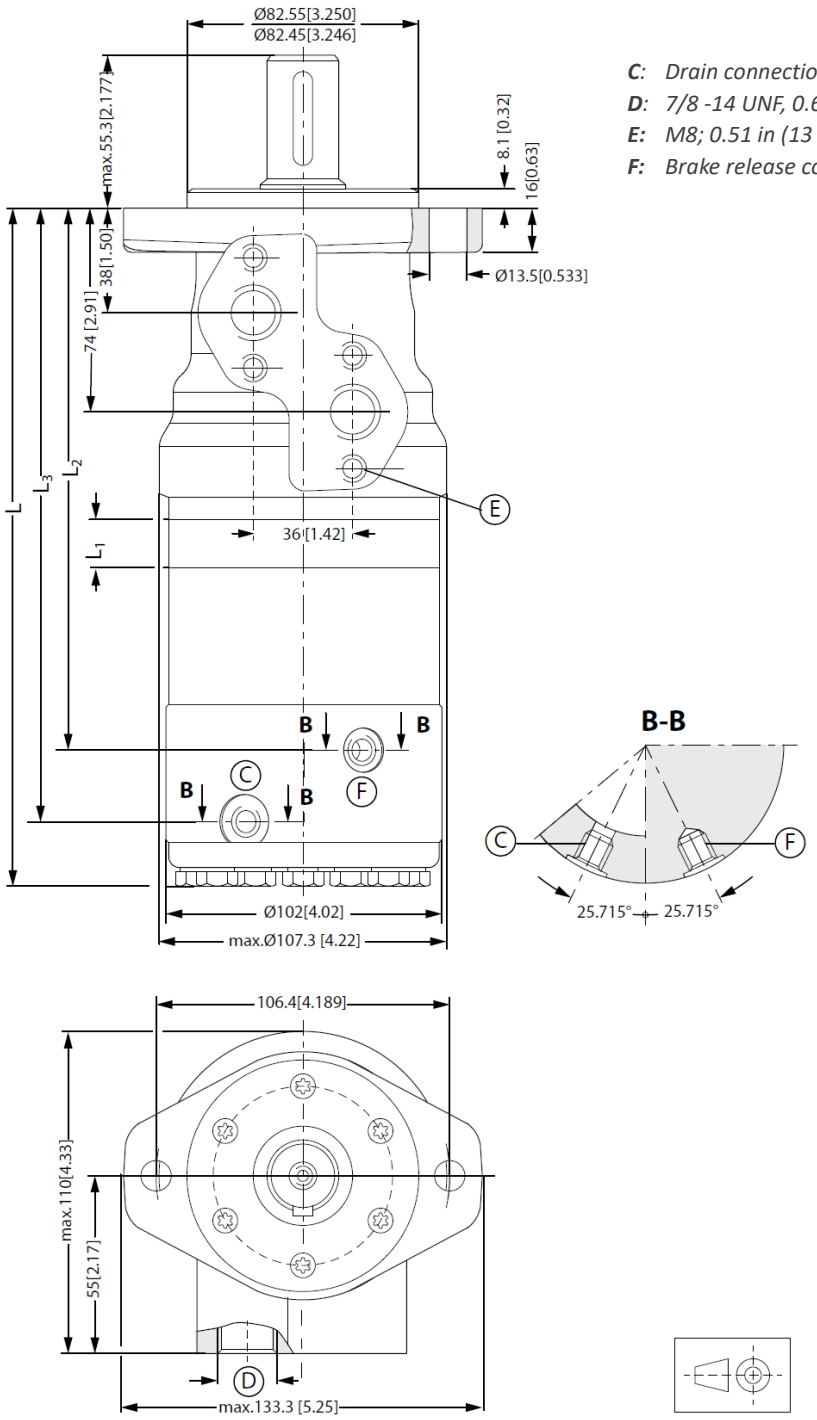


Figure 102 OMRW N (US version)

Type		OMRW N								
		50	80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	113.7 [4.48]	114.7 [4.52]	118.1 [4.65]	122.5 [4.82]	128.5 [5.06]	135.1 [5.33]	144.2 [5.68]	155.5 [6.12]	165.7 [6.52]
	L_1 mm [in]	9.0 [0.35]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]

Table 39 OMRW N dimensions (US version)

OMR NF motor



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

Figure 103 OMR NF (US version)

Type		OMR NF							
		80	100	125	160	200	250	315	375
Length	L_{max} mm [in]	248.7 [9.79]	252.1 [9.93]	256.5 [10.10]	262.5 [10.33]	269.5 [10.61]	278.2 [10.95]	289.5 [11.40]	299.7 [11.80]
	L_1 mm [in]	14.0 [0.55]	17.4 [0.69]	21.8 [0.86]	27.8 [1.09]	34.8 [1.37]	43.5 [1.71]	54.8 [2.16]	65.0 [2.56]
	L_2 mm [in]	186.8 [7.35]	196.2 [7.72]	200.6 [7.90]	206.6 [8.13]	213.6 [8.41]	222.3 [8.75]	233.6 [9.19]	243.7 [9.59]
	L_3 mm [in]	216.3 [8.51]	213.7 [8.41]	224.1 [8.82]	230.1 [9.06]	237.1 [9.33]	245.8 [9.68]	257.1 [10.12]	267.2 [10.52]

Table 40 OMR NF dimensions (US version)