Chapter 6
OMR X Technical Data

Topics:

- OMR X motor specifications
- High Pressure Shaft Seal in OMP X and OMR X motors
- Pressure drop
- Oil flow in drain line
- Direction of shaft rotation: clockwise
- OMP X and OMR X shaft loads
- OMR X Model Code

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OMR X motor specifications

Type			OMR X									
Motor size			**50**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**375**	**400**
Geometric displacement	cm^3		51.6	80.3	99.8	124.1	155.4	198.2	248.1	310.1	363.5	390.7
	$[in^3]$		*[3.16]*	*[4.91]*	*[6.11]*	*[7.57]*	*[9.48]*	*[12.09]*	*[15.14]*	*[18.92]*	*[22.18]*	*[23.84]*
Maximum speed	min^{-1}	cont.	775	750	600	475	385	305	240	195	165	155
	[rpm]	int.[1)]	970	940	750	600	480	380	300	245	205	195
Maximum torque	N•m	cont.	100	215	275	330	380	400	400	400	400	400
	[lbf•in]		*[890]*	*[1900]*	*[2435]*	*[2920]*	*[3365]*	*[3540]*	*[3540]*	*[3540]*	*[3540]*	*[3540]*
		int. [1)]	120	235	300	360	435	480	540	550	550	480
			[1060]	*[2080]*	*[2655]*	*[3185]*	*[3580]*	*[4250]*	*[4780]*	*[4870]*	*[4870]*	*[4250]*
Maximum output	kW	cont.	7.0	14.0	14.0	14.0	12.6	10.5	8.8	7.0	5.6	4.9
	[hp]		*[9.4]*	*[18.8]*	*[18.8]*	*[18.8]*	*[16.9]*	*[14]*	*[11.7]*	*[9.4]*	*[7.5]*	*[6.6]*
		int.[1)]	8.8	15.8	17.5	17.5	15.8	13.1	10.5	8.9	7.8	6.1
			[11.7]	*[21.1]*	*[23.5]*	*[23.5]*	*[21.1]*	*[17.5]*	*[14.1]*	*[11.9]*	*[10.5]*	*[8.2]*
Maximum pressure drop.	bar	cont.	150	200	200	200	180	150	125	100	80	70
	[psi]		*[2175]*	*[2900]*	*[2900]*	*[2900]*	*[2610]*	*[2175]*	*[1815]*	*[1450]*	*[1160]*	*[1015]*
		int.[1)]	175	225	225	225	215	195	170	140	115	90
			[2540]	*[3260]*	*[3260]*	*[3260]*	*[3120]*	*[2830]*	*[2465]*	*[2030]*	*[1670]*	*[1305]*
Maximum oil flow	l/min	cont.	40	60	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]*	*[15.9]*
		int.[1)]	50	75	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]*	*[19.8]*
Maximum starting pressure with unloaded shaft	bar [psi]		10	10	10	10	10	10	7	7	7	5
			[145]	*[145]*	*[145]*	*[145]*	*[145]*	*[145]*	*[100]*	*[100]*	*[100]*	*[75]*
Minimum starting torque	N•m [lbf•in]	cont.	85	190	230	295	335	350	370	370	335	325
			[750]	*[1680]*	*[2035]*	*[2610]*	*[2965]*	*[3100]*	*[3275]*	*[3275]*	*[2965]*	*[2875]*
		int.[1)]	100	215	255	335	400	460	500	515	480	420
			[890]	*[1900]*	*[2255]*	*[2965]*	*[3540]*	*[4070]*	*[4425]*	*[4560]*	*[4250]*	*[3715]*

Table 13 OMR X motor specification

1) Maximum torque values for the different output shafts can be found in *OMP X and OMR X shaft versions*.
2) Intermittent operation, permissible values may occur for max. 10% of every minute.

Maximum pressure

Type			Maximum inlet pressure	Maximum return pressure with drain line
OMR X	bar [psi]	cont.	200 [2900]	200 [2900]
		int.	225 [3260]	225 [3260]

Table 14 OMR X Pressure limits

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High Pressure Shaft Seal in OMP X and OMR X motors

For information, see *OMP X shaft and port thread version.*

Pressure drop

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

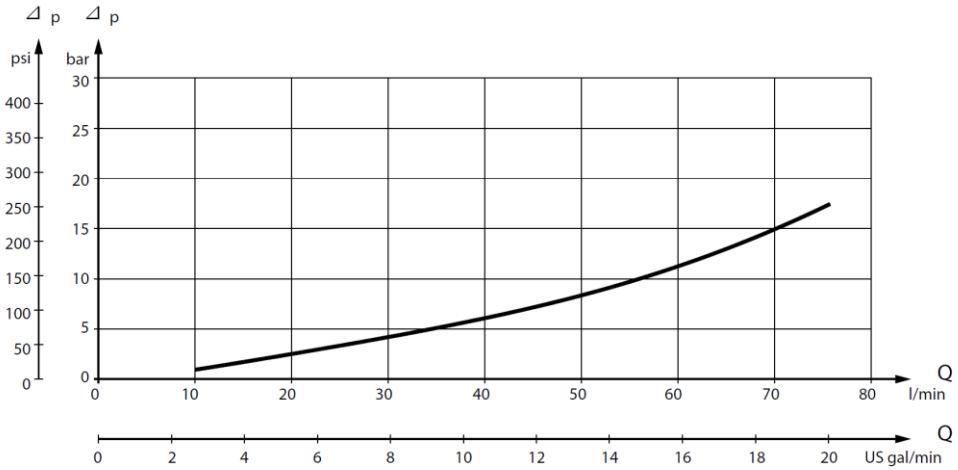


Figure 36 OMR X pressure drop

Oil flow in drain line

Pressure drop bar [psi]	**Viscosity** mm²/s [SUS]	**Oil flow in drain line** l/min [US gal/min]
100 [1450]	20 [100]	2.5 [0.66]
	35 [165]	1.8 [0.78]
140 [2030]	20 [100]	3.5 [0.78]
	35 [165]	2.8 [0.74]

Table 15 OMR X Max. oil flow in the drain line at return pressure less 5-10 bar

Direction of shaft rotation: clockwise

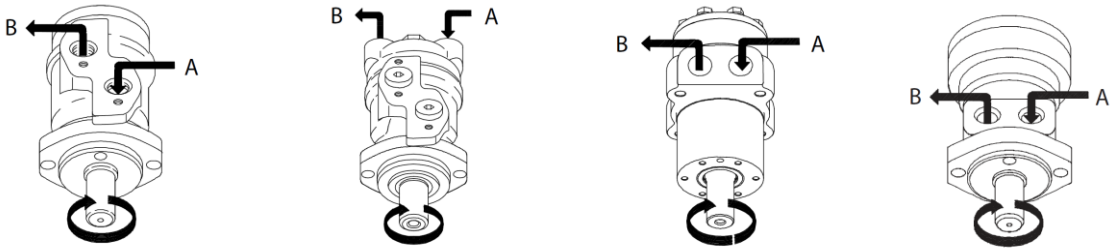


Figure 37 OMR X Direction of shaft rotation: clockwise

OMP X and OMR X shaft loads

For information see *Shaft loads*

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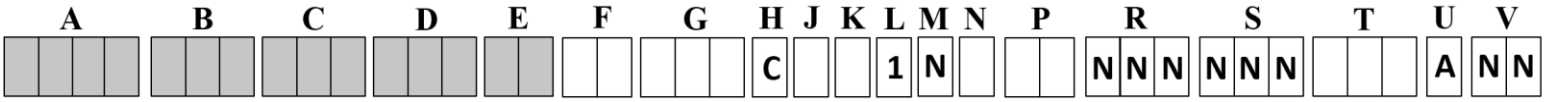
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OMR X Model Code

The coding system has been developed to identify the configuration options for the OMP X motors. The model code begins with the motor family and the remaining fields are filled in to configure the motor with the desired features, all fields must be filled in.

Example: *OMPX-200-NNN-B11-SO-A3-A11-C-E-B-1-N-N-NN-NNN-NNN-NNN-A-NN.*



A – Main motor family

OMRX	*OMR X motor series*

B – Motor displacement

Code	***Displacement,*** *cm³/rev [in³/rev]*	*Code*	***Displacement,*** *cm³/rev [in³/rev]*
036	*36.9 [2.25]*	***200***	*198.2 [12.09]*
050	*51.6 [3.15]*	***250***	*248.1 [15.14]*
080	*80.3 [4.90]*	***315***	*310.1 [18.92]*
100	*99.8 [6.09]*	***375***	*363.5 [22.18]*
125	*124.1 [7.57]*	***400***	*390.7 [23.84]*
160	*155.4 [9.48]*		

C – Motor type (Align with options: D, E and F)

NNN	*Standard motor*
B13	*Standard motor with needle bearing*

D – Mounting type (Align with options: E and F)

B11	*A2 flange; 82.5 Dia x 8 Pilot; 106.4 Dia. B.C.*
B12	*A2 flange; 82.5 Dia x 2.6 Pilot; 106.4 Dia. B.C.*
C10	*C flange; 44 Dia x 2.6 Pilot; 83 Dia. B.C.; 3/8-16 mounting*

E – Port type (Align with options: D, F and G)

SO	*Side port – Offset*
SA	*Side port – Aligned*
EA	*End port*

F – Main ports thread type

A3	*G 1/2*
A8	*7/8-14 UNF*
A9	*1/2-14 NPTF*
B7	*M22 x 1,5 according to ISO 6149*
C1	*Manifold*

G – Shaft type (Align with options: C, F and K)

A11	*Cylindrical 25 mm with 8 mm key; M8 hole in shaft end*
B11	*Cylindrical 1 inch with 1/4 in key; M8 hole in shaft end*
B12	*Cylindrical 1 inch with 1/4 in key; 1/4-20UNC hole in shaft end*
B13	*Cylindrical 1 inch with Woodruff key; 1/4-20UNC hole in shaft end*
B14	*Cylindrical 1 inch with cross hole 10.3; 1/4-20UNC hole in shaft end*
B15	*Cylindrical 1 inch with cross hole 8.0*
C11	*Spline 7/8" – 13T*
C13	*1 inch 6B Spline; M8 hole in shaft end*
C14	*1 inch 6B Spline; 1/4-20UNC hole in shaft end*
E10	*Tapered 28.5 mm – 1:10*
F10	*Tapered 1" – 1:8, WK3/16x3/4*

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H – Shaft seal

C	*High pressure shaft seal - NBR*

J- Dust seal

B	*Dust seal integrated in shaft seal plus seal guard*
E	*Dust seal integrated in shaft seal*

K – Drain port (Align with options: F and G)

B	*G1/4*
D	*7/16 – 20 UNF*
K	*M12 x 1,5 according to ISO 6149*
M	*No drain port due to EMD*

L – Check valve

1	*Yes*

M – Brake release port

N	*None*

N- Speed sensor

N	*None*
A	*Prepared for EMD speed sensor*

P - Painting

NN	*No paint*
AA	*Black, 9005; Corr. class C3; Standard covering*
AB	*Black, 9005; Corr. class C3; Surface covering*

R - Valve option

NNN	*None*

S – Specific visible features

NNN	*None*

T – Specific non-visible features

NNN	*None*

U – Packaging

A	*Single pack*

V – Name tags: Motor and box

NN	*Name tag*

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Chapter 7
OMR X function diagrams

Topics:

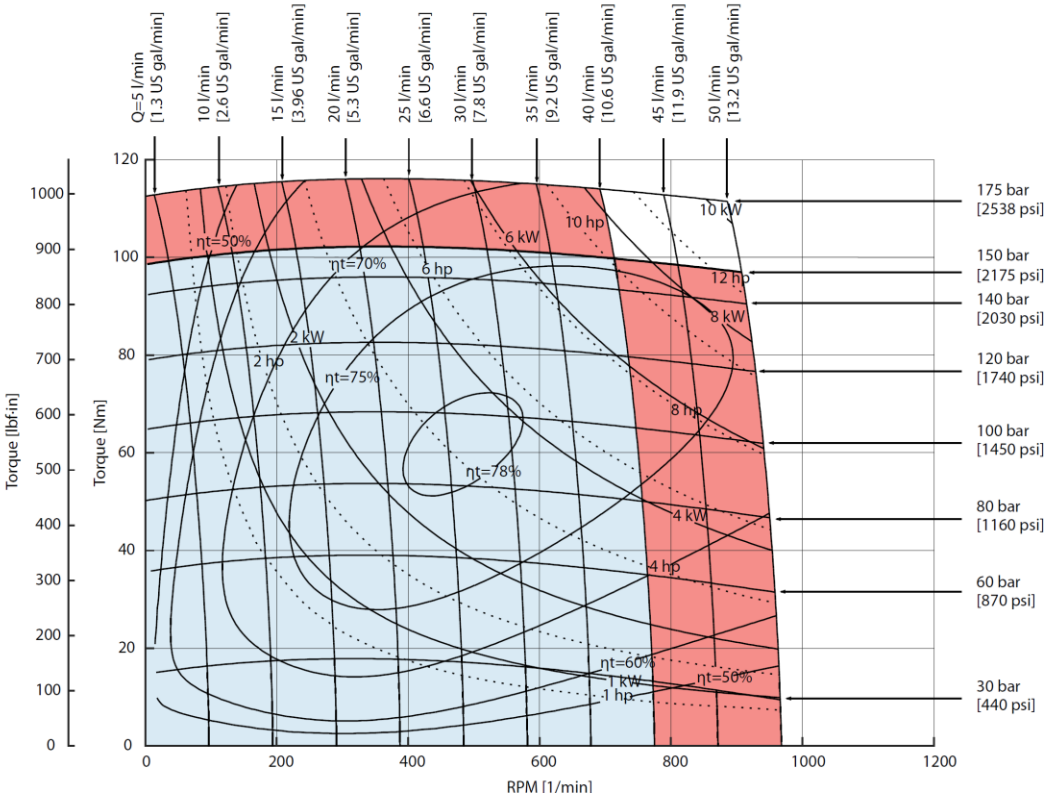
- OMR X 50
- OMR X 80
- OMR X 100
- OMR X 125
- OMR X 160
- OMR X 200
- OMR X 250
- OMR X 315
- OMR X 375
- OMR X 400

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OMR X 50

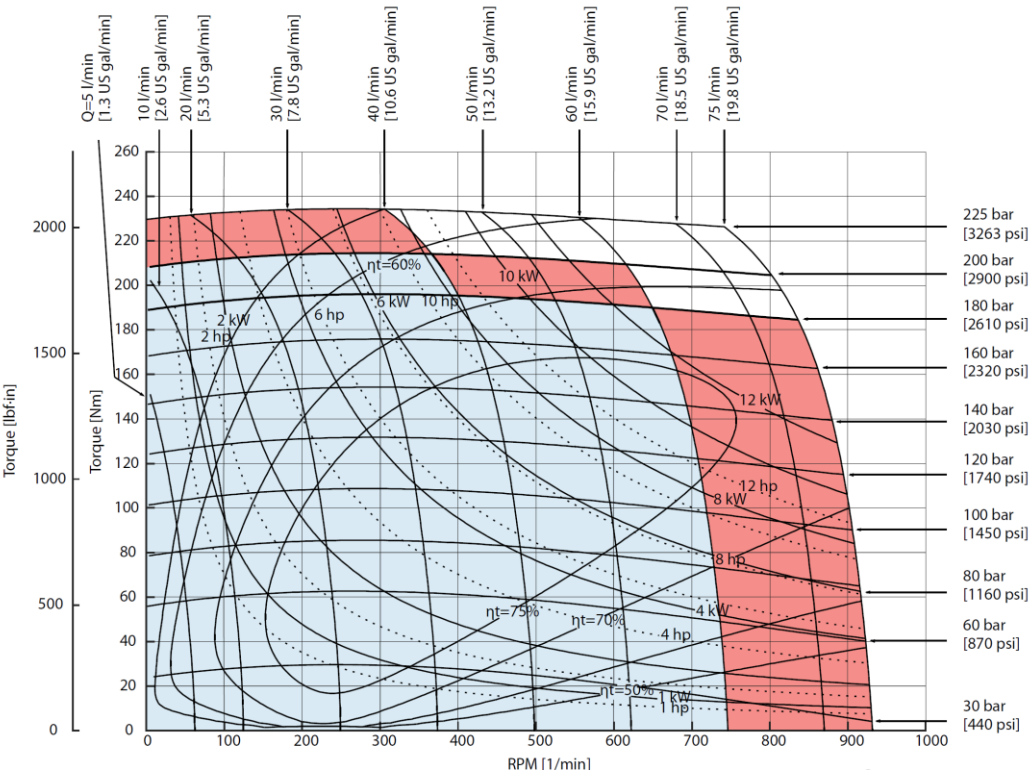


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 38 OMR X 50 function diagram

OMR X 80



Continuous range

Intermittent range (max. 10% operation every minute)

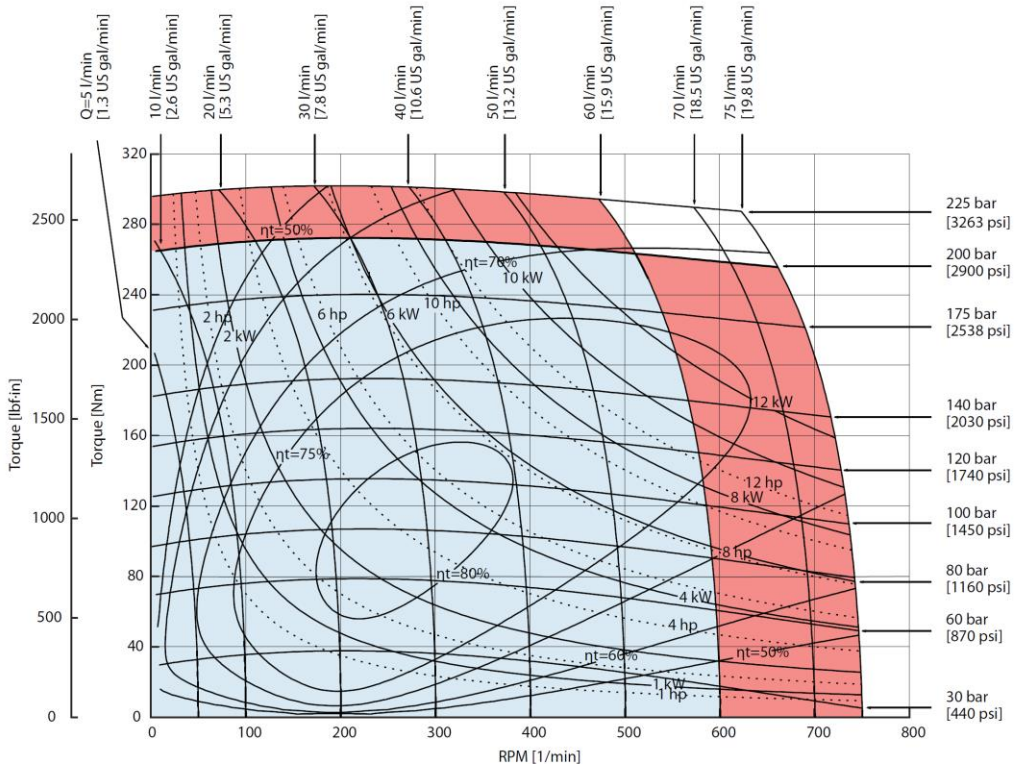
Figure 39 OMR X 80 function diagram

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OMR X 100

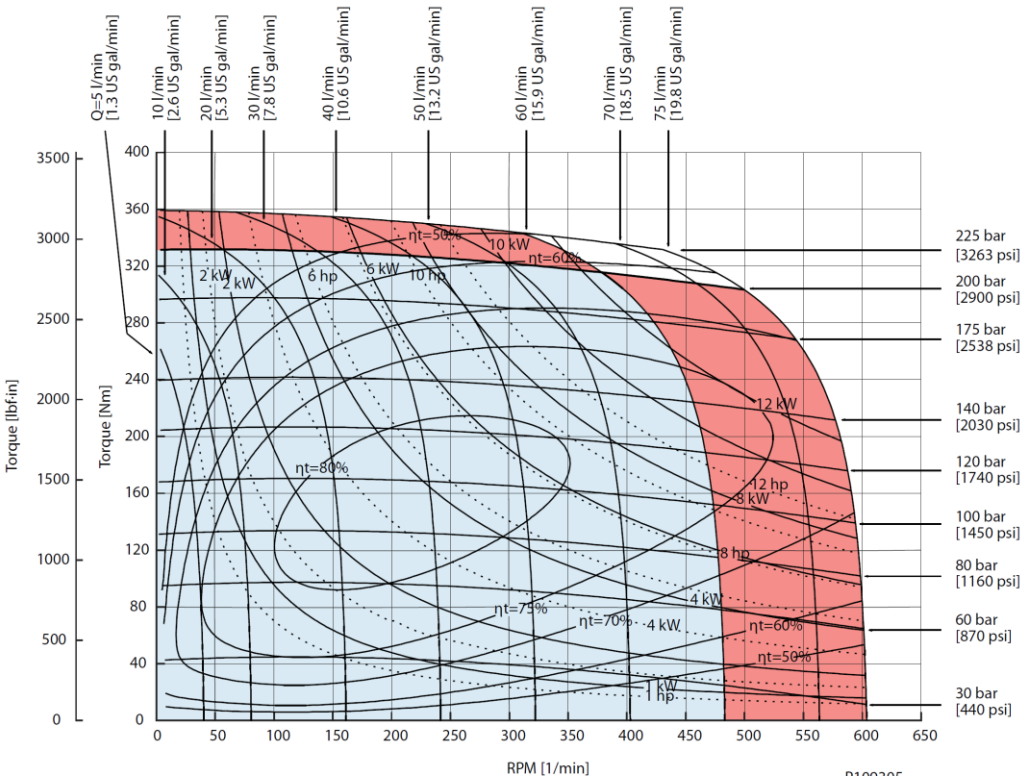


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 40 OMR X 100 function diagram

OMR X 125



Continuous range

Intermittent range (max. 10% operation every minute)

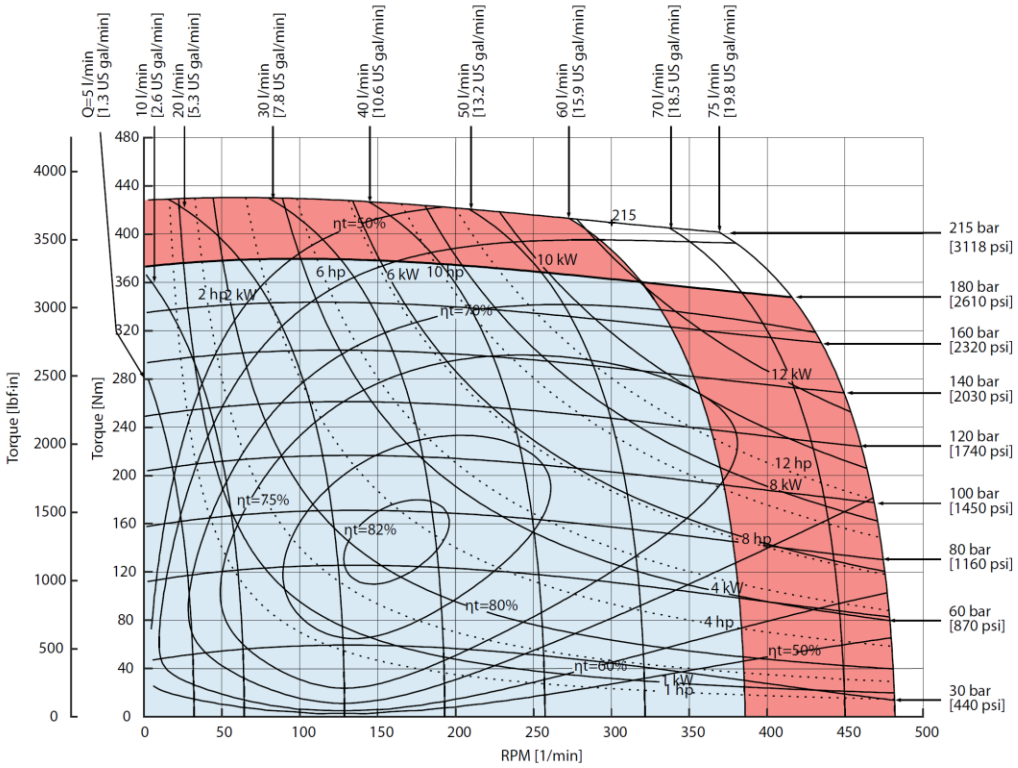
Figure 41 OMR X 125 function diagram

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OMR X 160

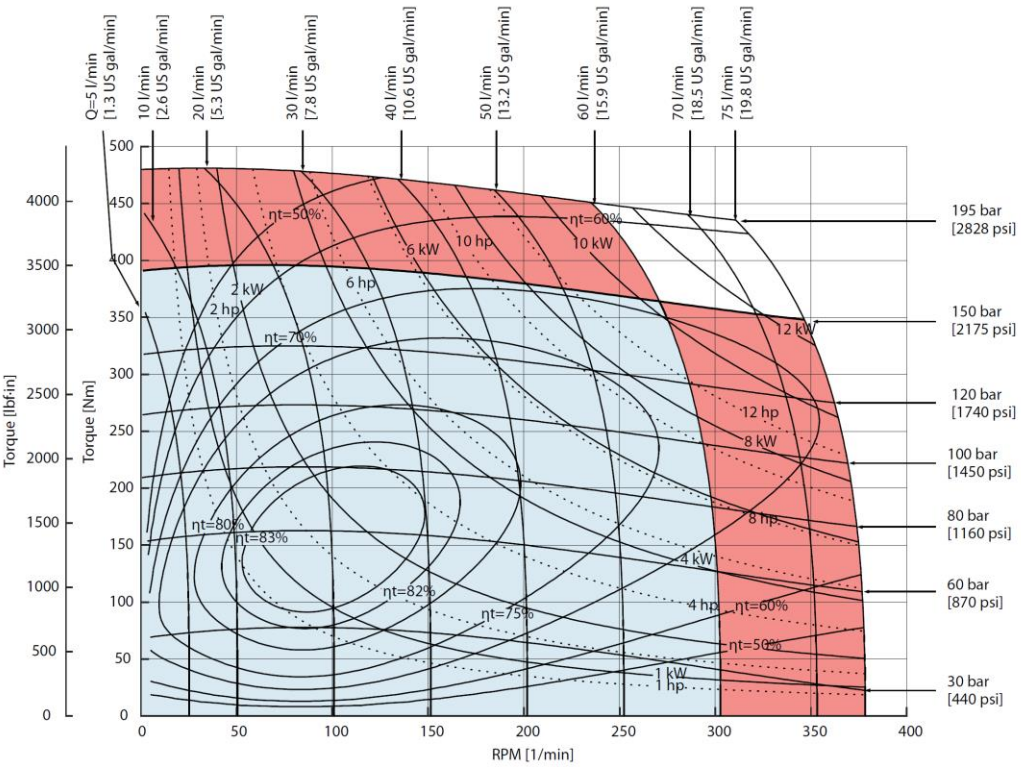


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 42 OMR X 160 function diagram

OMR X 200



Continuous range

Intermittent range (max. 10% operation every minute)

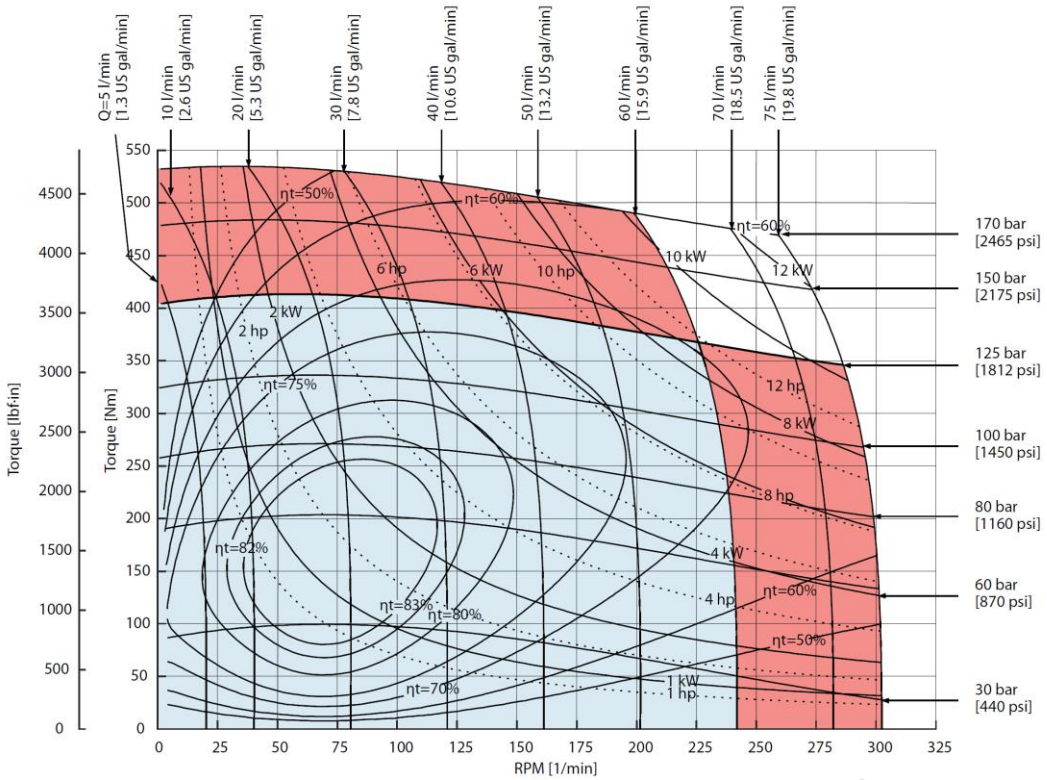
Figure 43 OMR X 200 function diagram

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OMR X 250

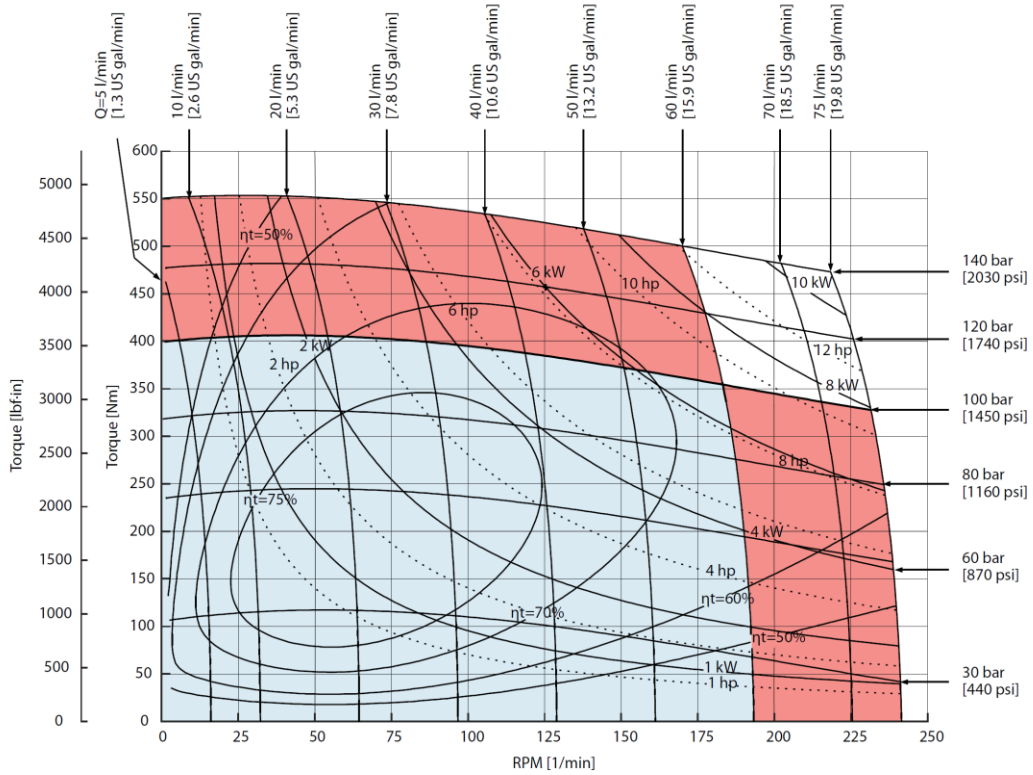


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 44 OMR X 250 function diagram

OMR X 315



Continuous range

Intermittent range (max. 10% operation every minute)

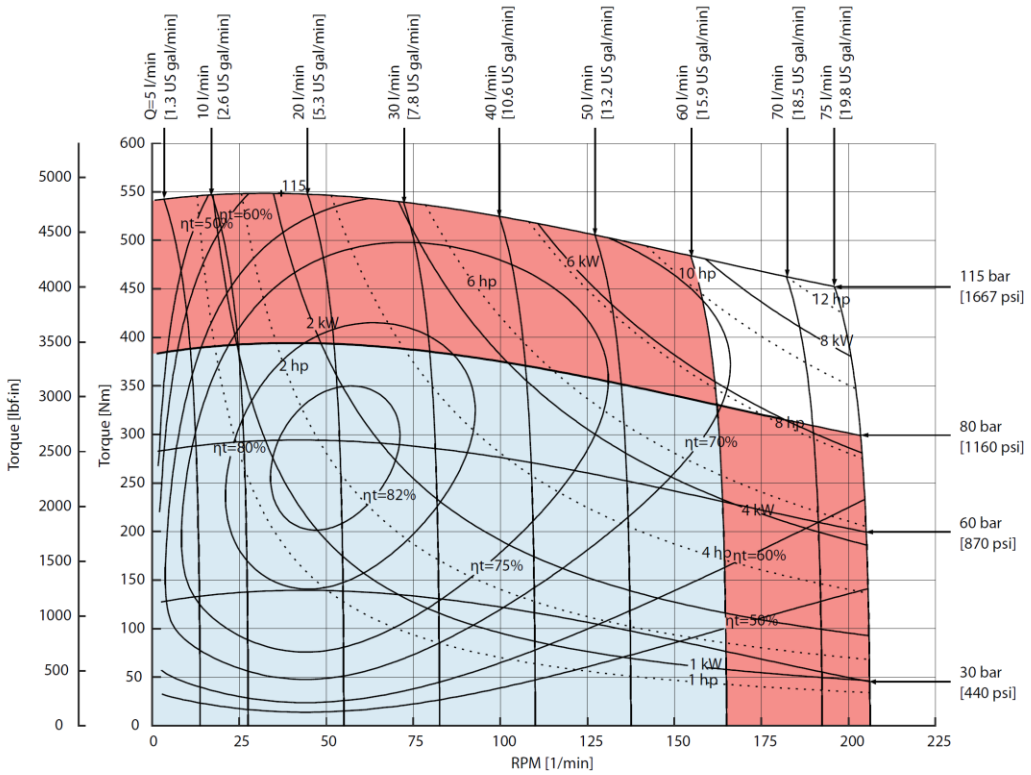
Figure 45 OMR X 315 function diagram

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OMR X 375

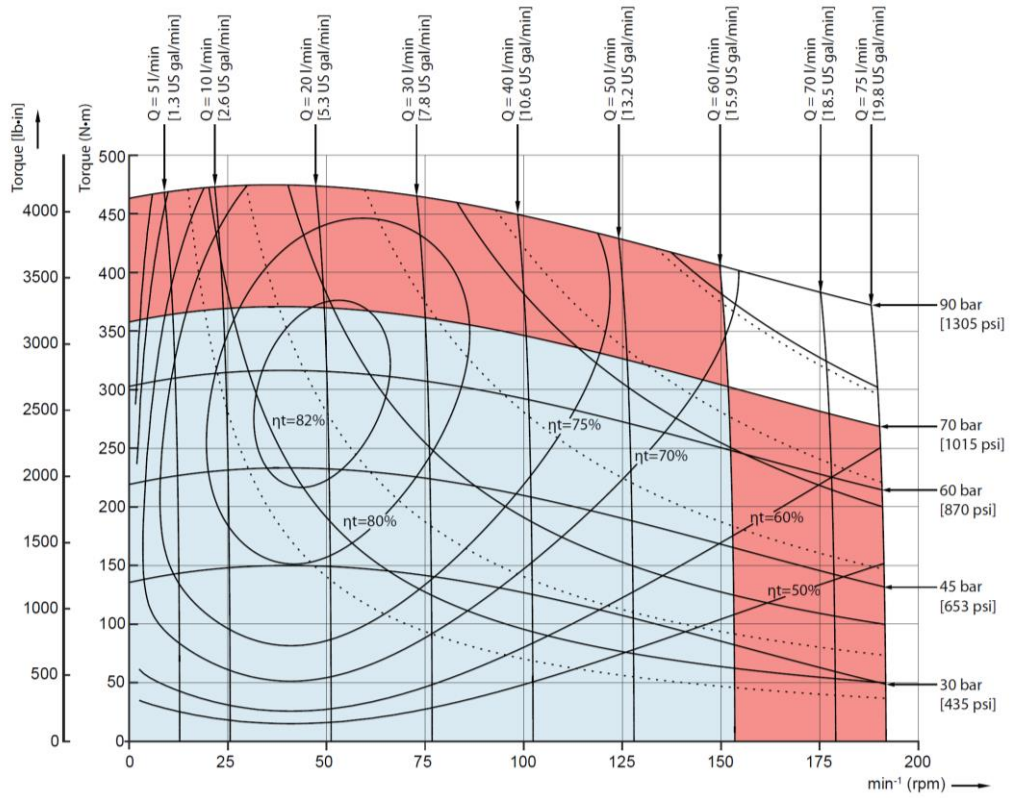


Continuous range

Intermittent range (max. 10% operation every minute)

Figure 46 OMR X 375 function diagram

OMR X 400



Continuous range

Intermittent range (max. 10% operation every minute)

Figure 47 OMR X 400 function diagram

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Chapter 8
OMR X dimensions

Topics:

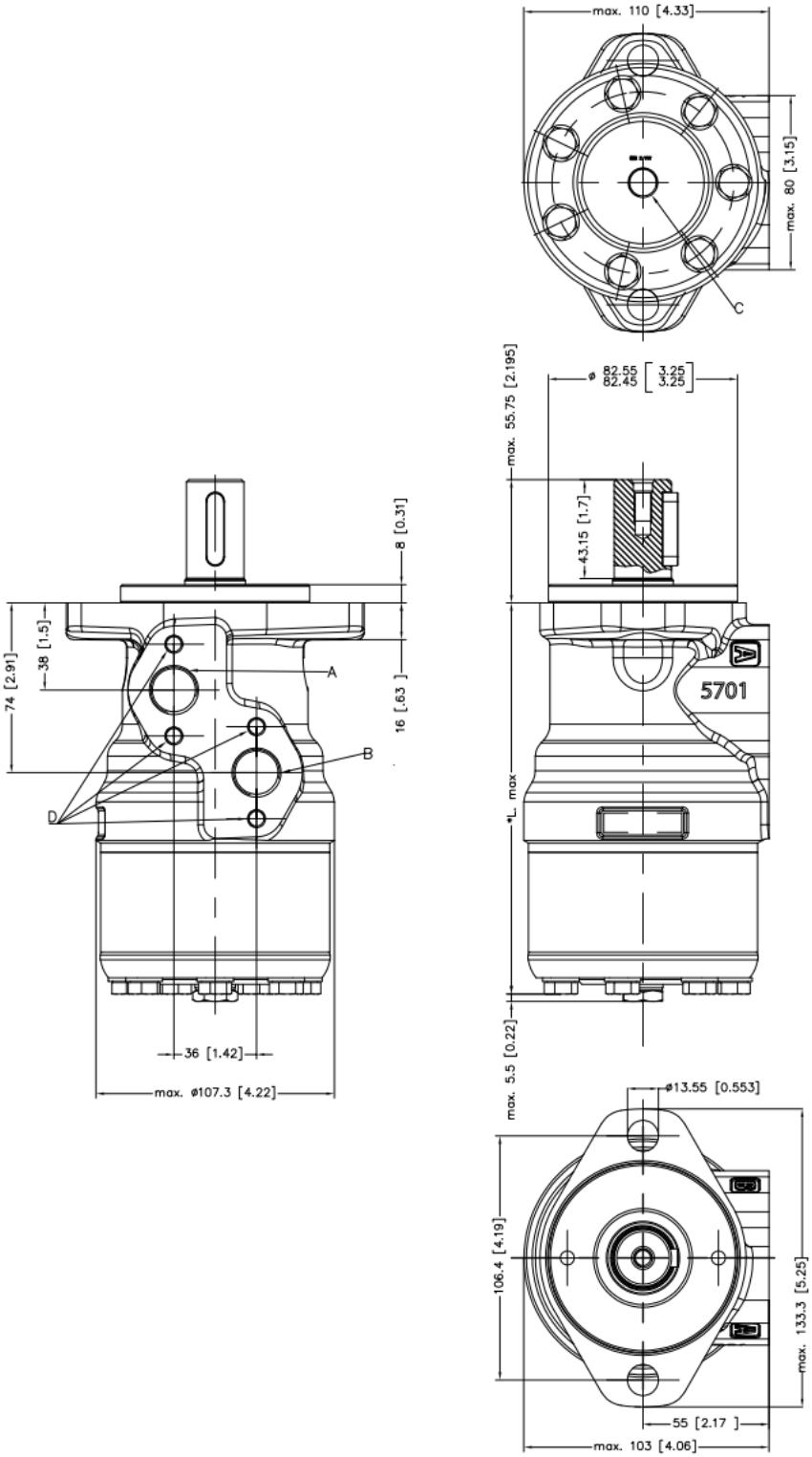
- EU version side port offset with 2-hole oval mounting flange (A2)
- EU version end port version with 2-hole oval mounting flange (A2)
- US version side port offset with 2-hole oval mounting flange (A2)
- US version side port aligned with 2 hole oval mounting flange (A2)
- US version side port aligned with square mounting flange (C-flange)

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



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]*

Figure 48 OMR X side port (A2- flange) EU version

Dimension mm [in]	**OMR X**									
	50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**375**	**400**
$L_{max.}$	137.8 *[5.43]*	142.8 *[5.63]*	142.8 *[5.63]*	146.2 *[5.76]*	150.6 *[5.93]*	156.6 *[6.17]*	163.6 *[6.45]*	172.3 *[6.79]*	179.8 *[7.08]*	183.6 *[7.23]*

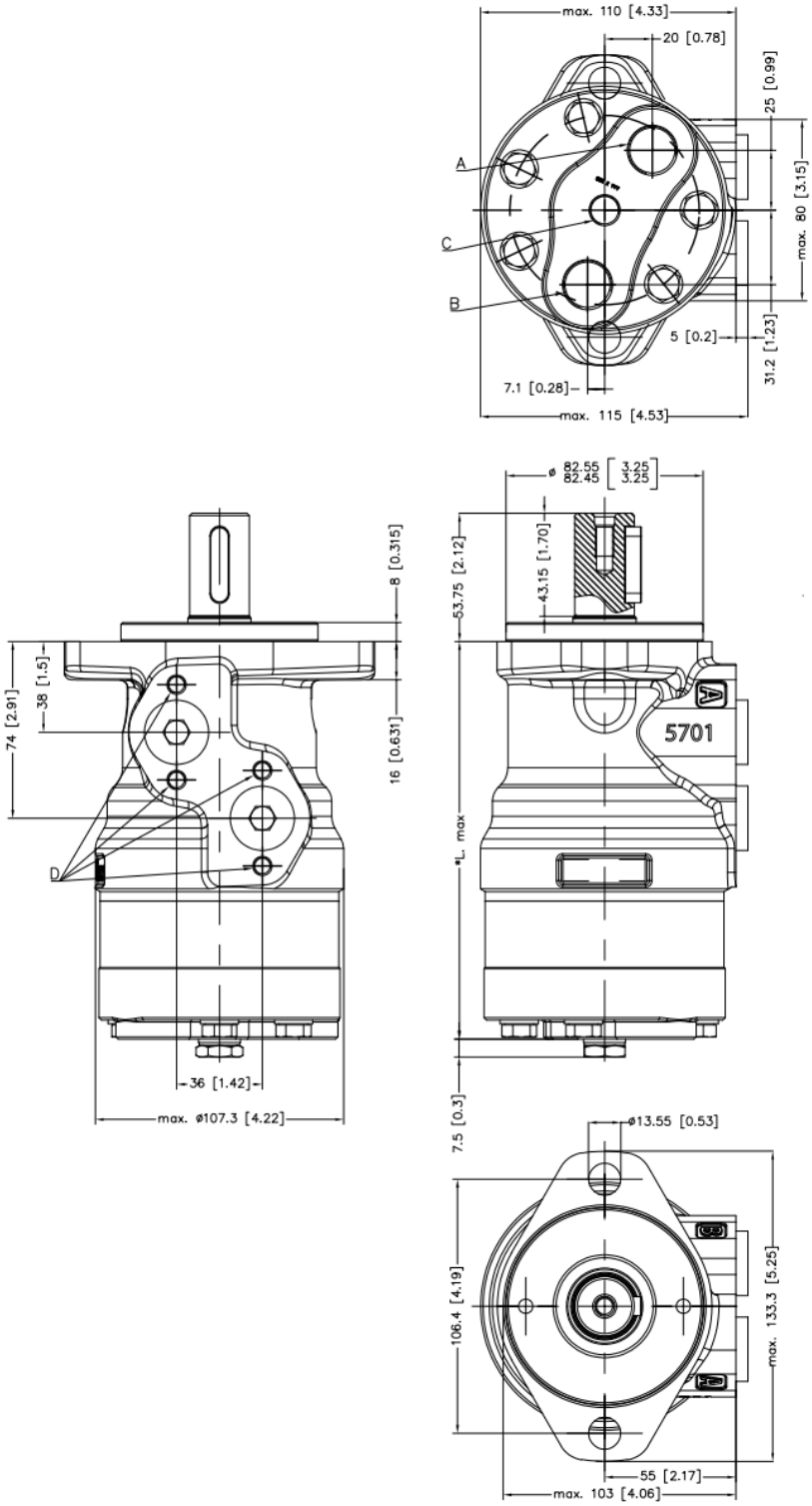
Table 16 OMR X side port (A2- flange) EU version dimensions

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



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*

Figure 49 OMR X end port version (A2- flange) EU version

Dimension mm [in]	**OMR X**								
	50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**375**
$L_{max.}$	150.3 *[5.82]*	155.3 *[6.12]*	155.3 *[6.12]*	155.3 *[6.12]*	163.1 *[6.43]*	169.1 *[6.66]*	176.1 *[6.94]*	184.6 *[7.28]*	192.3 *[7.58]*

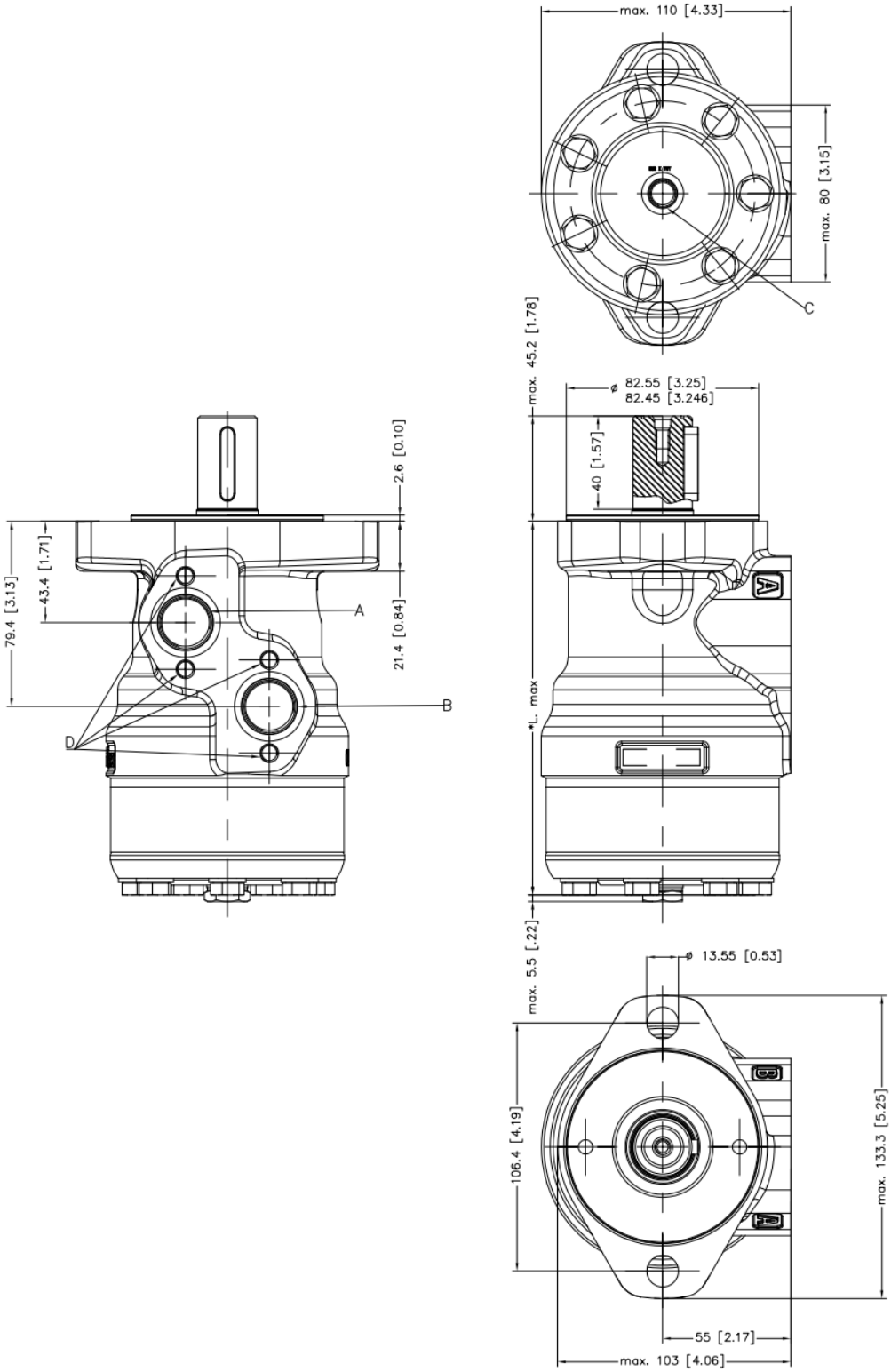
Table 17 OMR X end port version (A2- flange) EU version dimensions

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



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 50 OMR X side port offset (A2- flange) US version

Dimension mm [in]	**OMR X**								
	50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**375**
$L_{max.}$	143.2 *[5.64]*	148.2 *[5.84]*	148.2 *[5.84]*	151.6 *[5.97]*	156 *[6.15]*	162 *[6.38]*	169 *[6.66]*	177.7 *[7.00]*	185.2 *[7.30]*

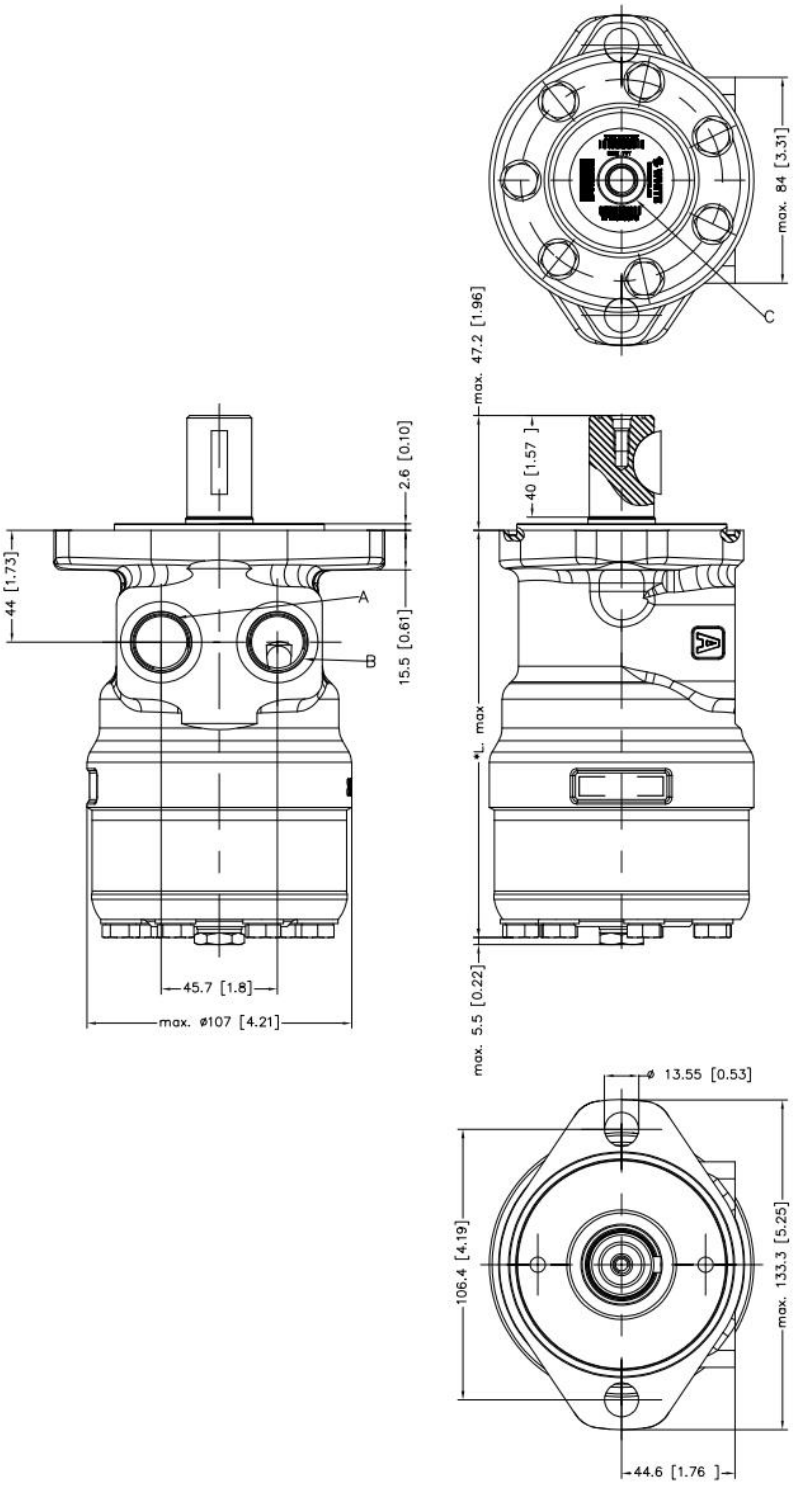
Table 18 OMR X side port offset (A2- flange) US version dimensions

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



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 51 OMR X side port (A2-flange) US version

Dimension mm [in]	**OMR X**									
	50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**375**	**400**
$L_{max.}$	137.8 *[5.43]*	142.8 *[5.63]*	142.8 *[5.63]*	146.2 *[5.76]*	150.6 *[5.93]*	156.6 *[6.17]*	163.6 *[6.45]*	172.3 *[6.79]*	179.8 *[7.08]*	183.6 *[7.23]*

Table 19 OMR X side port (A2-flange) US version dimensions

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