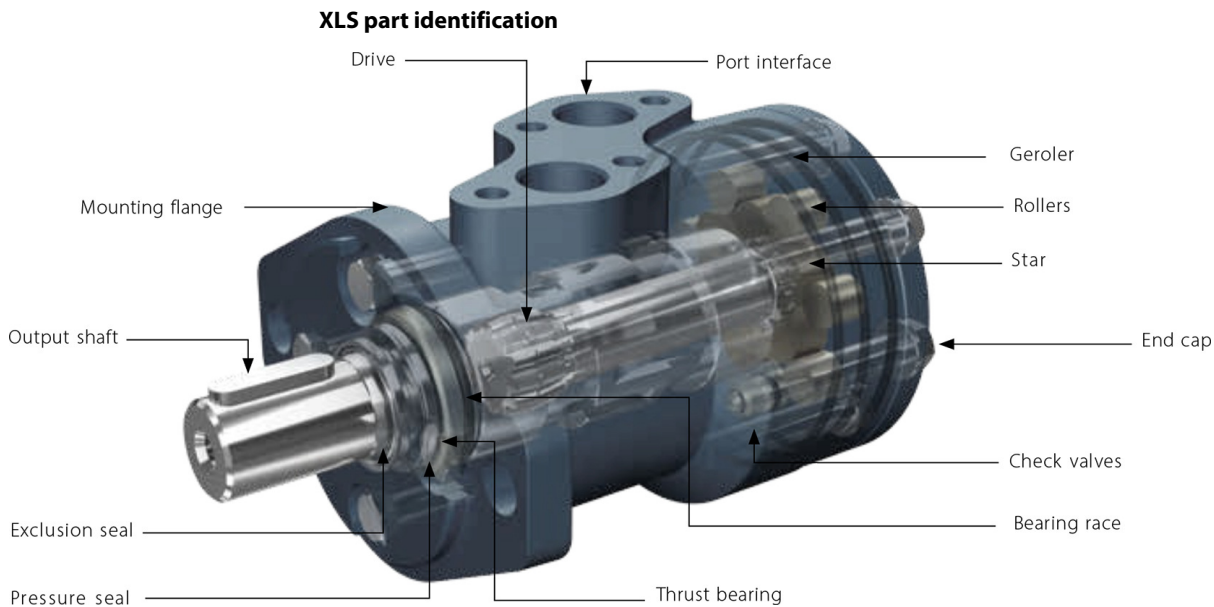


**XLH and XLS spool valve motor series**

**XLS series**



The XLS series features the same basic construction and layout as the XLH series. XLS uses geroler technology to further reduce friction and increase volumetric efficiency. XLS also has check valves as standard that drain the case chamber to the motor outlet port. In many applications, this feature enables the case drain to be omitted.

**XLS series technical data**

*XLS 50cc-160cc technical data - valid for ALL shaft types*

Motor size		50	80	100	130	160
Geometric displacement $\text{cm}^3/\text{r}$ [ $\text{in}^3/\text{r}$ ]		<b>50,6 [3.09]</b>	<b>80,6 [4.92]</b>	<b>101,6 [6.20]</b>	<b>130,6 [7.97]</b>	<b>158,1 [9.65]</b>
Flow l/min [US gal/min]	Continuous	53 [14.0]	61 [16.1]	61 [16.1]	61 [16.1]	61 [16.1]
	Intermittent	61 [16.1]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max speed rpm	Continuous	1037	757	600	467	386
	Intermittent	1193	931	738	574	474
Pressure $\Delta$ bar [psi]	Continuous	175 [2538]	175 [2538]	175 [2538]	175 [2538]	175 [2538]
	Intermittent	207 [3002]	207 [3002]	207 [3002]	207 [3002]	207 [3002]
Torque* N·m [in·lbs]	Continuous	127 [1124]	202 [1788]	248 [2195]	320 [2832]	380 [3363]
	Intermittent	150 [1328]	240 [2124]	290 [2567]	374 [3310]	454 [4018]
Max output power kW [hp]	Continuous	11.4 [15.5]	13.3 [18.1]	13.0 [17.6]	13.0 [17.6]	12.6 [17.2]
	Intermittent	13.2 [17.9]	11.4 [15.5]	15.8 [21.4]	15.3 [20.8]	15.3 [20.8]
Weight kg [lbs]		6.3 [13.8]	7.0 [15.4]	7.5 [16.5]	7.7 [16.9]	7.8 [17.2]

\* See shaft torque ratings for limitations.

## XLH and XLS spool valve motor series

XLS 195cc-395cc technical data - valid for shaft types 25 dia. straight, 25.4 dia. straight and 25.4 dia. splined

Motor size		195	245	305	395
Displacement cm <sup>3</sup> /r [in <sup>3</sup> ]/r		194,8 [11.89]	244,3 [14.91]	306,6 [18.71]	393,8 [24.03]
Flow l/min [US gal/min]	Continuous	61 [16.1]	61 [16.1]	61 [16.1]	61 [16.1]
	Intermittent	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max speed rpm	Continuous	313	250	199	155
	Intermittent	385	307	245	190
Pressure Δ bar [psi]	Continuous	144 [2089]	120 [1740]	97 [1407]	78 [1131]
	Intermittent	175 [2538]	150 [2176]	120 [1740]	90 [1305]
Torque* N·m [in·lbs]	Continuous	387 [3425]	410 [3629]	405 [3585]	410 [3629]
	Intermittent	465 [4116]	503 [4452]	490 [4337]	483 [4275]
Max output power kW [hp]	Continuous	10.7 [14.5]	8.7 [11.8]	7.0 [9.5]	5.6 [7.6]
	Intermittent	12.6 [17.1]	10.2 [13.9]	8.5 [11.6]	6.5 [8.8]
Weight kg [lbs]		8.0 [17.6]	8.4 [18.5]	9.4 [20.6]	9.6 [21.1]

\* See shaft torque ratings for limitations.

XLS 195cc-395cc technical data - valid for shaft type 32 dia. straight

Motor size		195	245	305	395
Displacement cm <sup>3</sup> /r [in <sup>3</sup> ]/r		194,8 [11.89]	244,3 [14.91]	306,6 [18.71]	393,8 [24.03]
Pressure Δ bar [psi]	Continuous	175	175	120	110
	Intermittent	207	207	140	125
Torque* N·m [in·lbs]	Continuous	468	508	492	575
	Intermittent	547	673	567	647
Max output power kW [hp]	Continuous	12.5 [17.0]	11.6 [15.7]	8.5 [11.6]	7.9 [10.7]
	Intermittent	14.9 [20.2]	14.0 [19.0]	9.8 [13.2]	8.9 [12.1]

\* See shaft torque ratings for limitations.

- Δ bar [psi]** The true pressure difference between inlet port and outlet port.
- Continuous rating** Motor may be run continuously at these ratings.
- Intermittent operation** 10% of every minute.

For maximum case pressure, see the case pressure seal limitation graph.

A simultaneous maximum torque and maximum speed is not recommended. To ensure best motor life, run motor for approximately 1 hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

### Recommended operating parameters

Data	Recommended
Max. inlet pressure	225 bar [3265 psi] <b>Caution</b> Do not exceed Δ pressure rating
Fluids	Premium quality, anti-wear type hydraulic oil with a viscosity of no less than 20-32 cSt at operating temperature.

**XLH and XLS spool valve motor series**

<b>Data</b>	<b>Recommended</b>
Operating temperature	82 °C [180 °F]
Filtration	Per ISO cleanliness code 4406:20/18/13

**XLH and XLS spool valve motor series**

**XLS product numbers**

*Design specifications*

<b>Flange</b>	<b>Sideport offset 2-hole oval mounting flange - A2 flange (AA)</b>			
<b>Specification</b>	<b>Ref. A1</b>	<b>Ref. A2</b>	<b>Ref. A3</b>	<b>Ref. A4</b>
Flange pilot diameter	Ø 82.5 mm [3.25 in]			
Flange bolt circle diameter	Ø 106.4 mm [4.20 in]			
Shaft	Cyl. Ø 25 mm (10)	6B splined 1 in (07)	Cyl. Ø 25 mm (10)	6B splined 1 in (07)
Main port	G 1/2	G 1/2	G 1/2	G 1/2
Drain port	G 1/4	G 1/4	G 1/4	G 1/4
Check valve	Yes	Yes	Yes	Yes
Shaft seal	High pressure shaft seal		Standard pressure shaft seal	
Paint	Painted black			

*Product numbers*

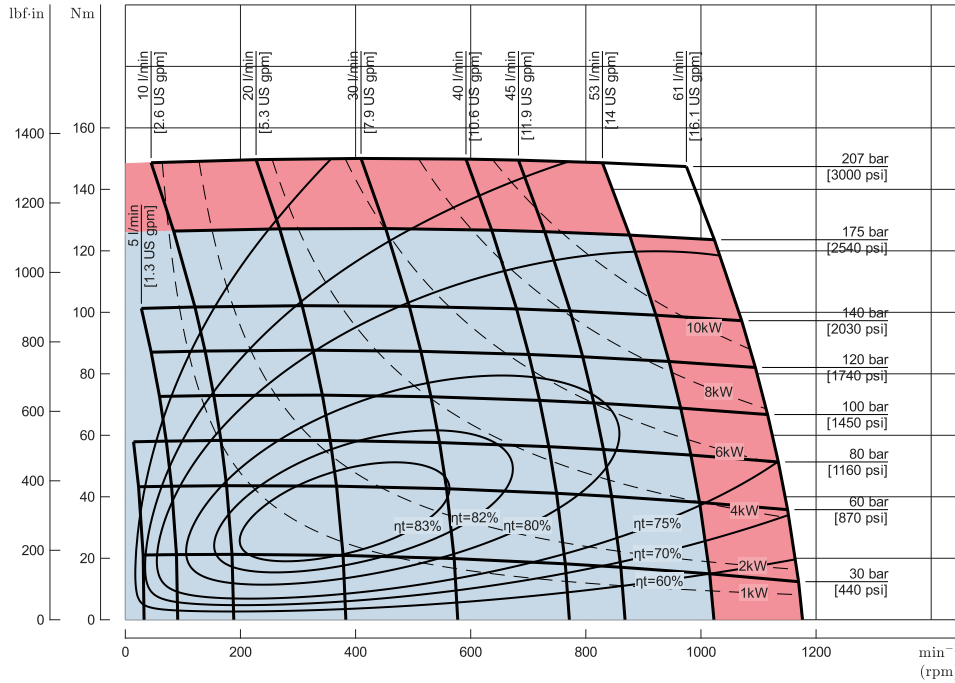
<b>Displacement</b>	<b>Ref. A1</b>	<b>Ref. A2</b>	<b>Ref. A3</b>	<b>Ref. A4</b>
50cc	036-0515-003	036-0497-003	036-0524-003	036-0506-003
80cc	036-0516-003	036-0498-003	036-0525-003	036-0507-003
100cc	036-0517-003	036-0499-003	036-0526-003	036-0508-003
130cc	036-0518-003	036-0500-003	036-0527-003	036-0509-003
160cc	036-0519-003	036-0501-003	036-0528-003	036-0510-003
195cc	036-0520-003	036-0502-003	036-0529-003	036-0511-003
245cc	036-0521-003	036-0503-003	036-0530-003	036-0512-003
305cc	036-0522-003	036-0504-003	036-0531-003	036-0513-003
395cc	036-0523-003	036-0505-003	036-0532-003	036-0514-003

**XLH and XLS spool valve motor series**

**XLS performance data**

Performance data is typical at 25 cSt (12 SUS). Actual data may vary slightly from unit to unit in production.

**XLS 050cc motor**

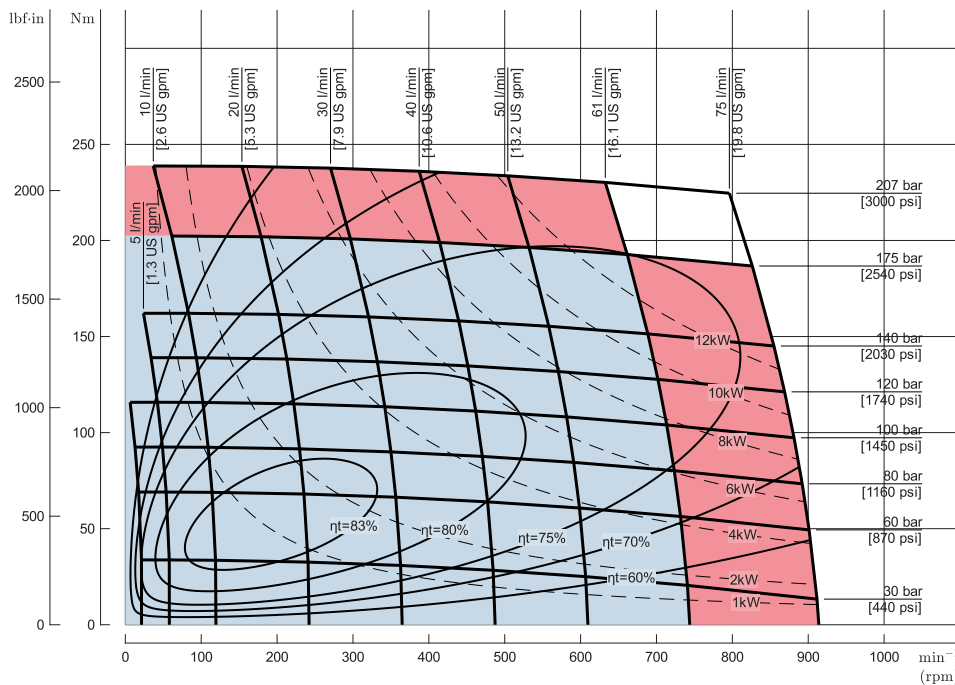


$\eta_t$  = overall efficiency

Continuous

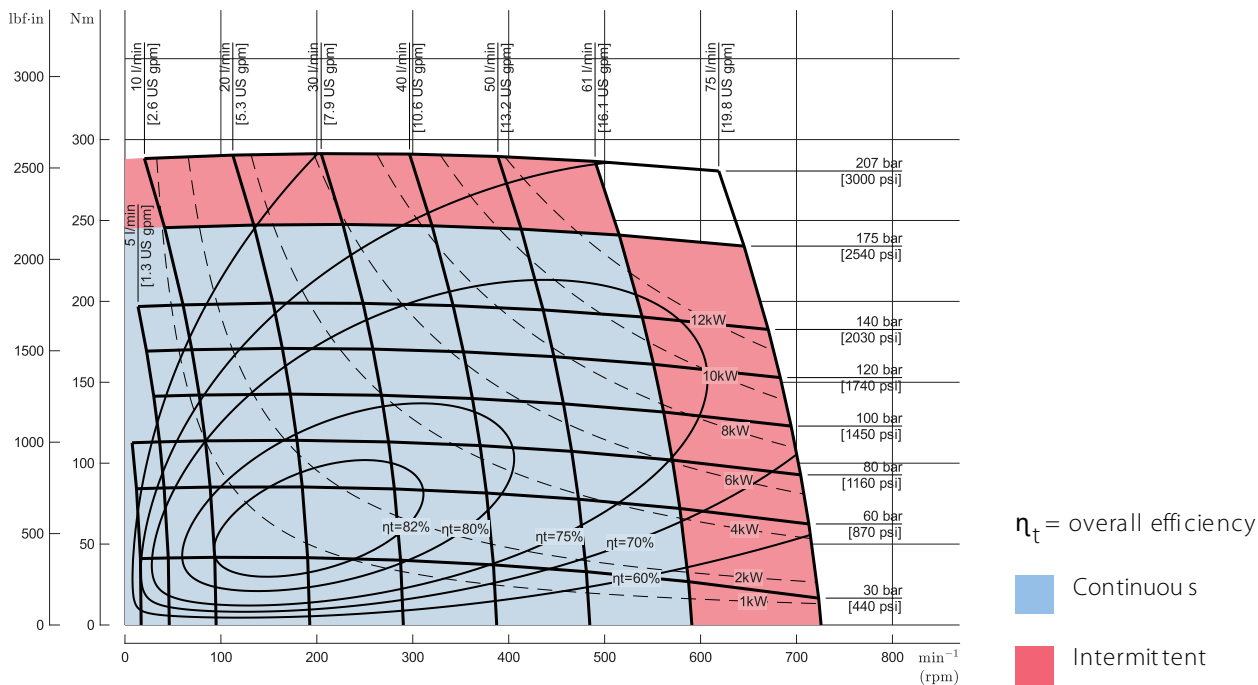
Intermittent

**XLS 080cc motor**

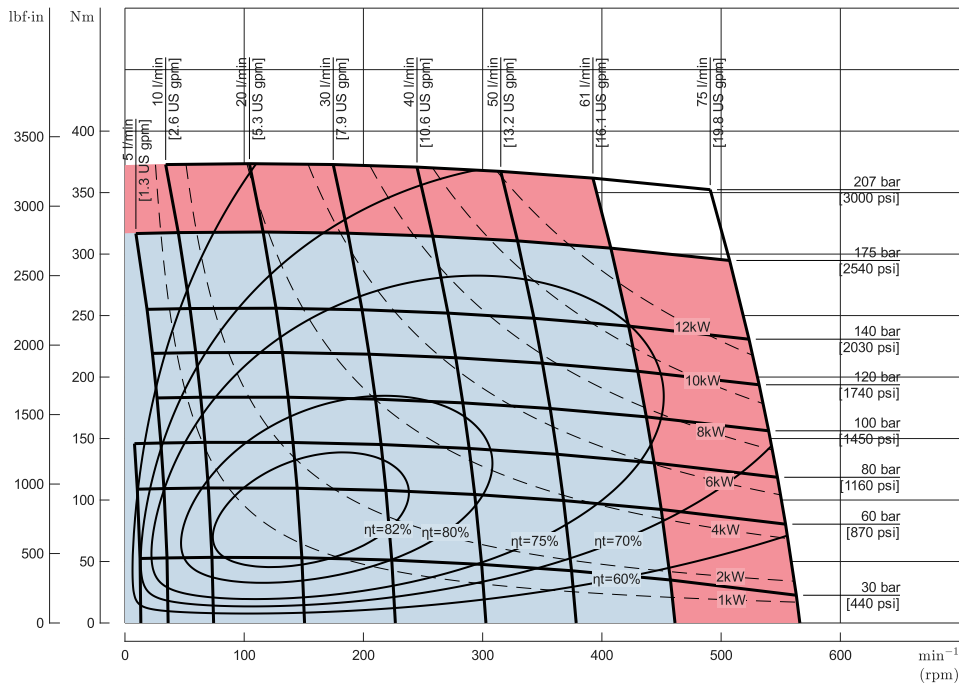


**XLH and XLS spool valve motor series**

**XLS 100cc motor**

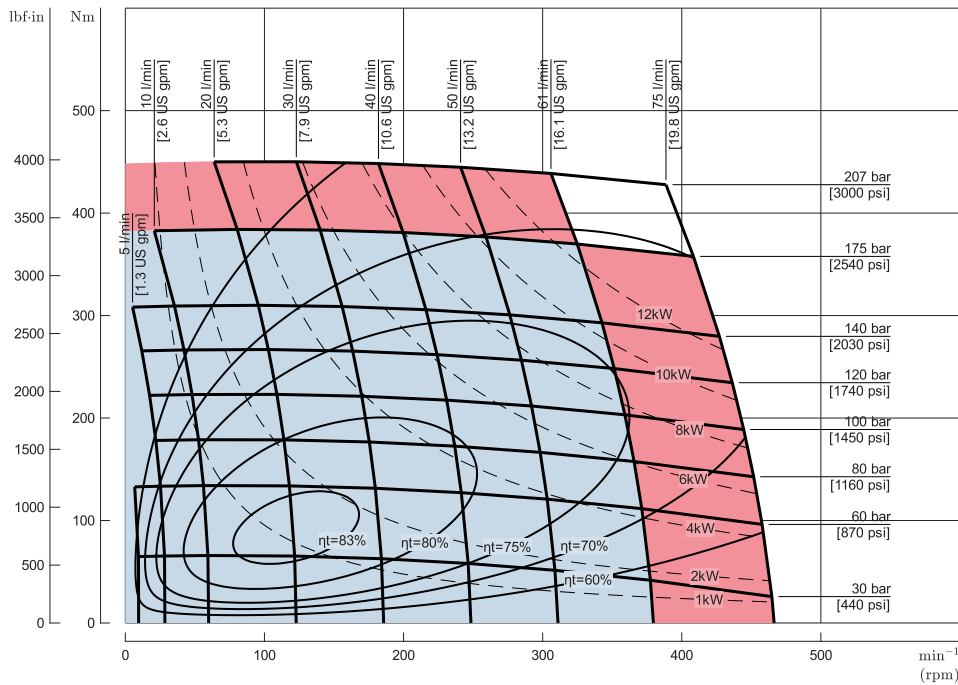


**XLS 130cc motor**



**XLH and XLS spool valve motor series**

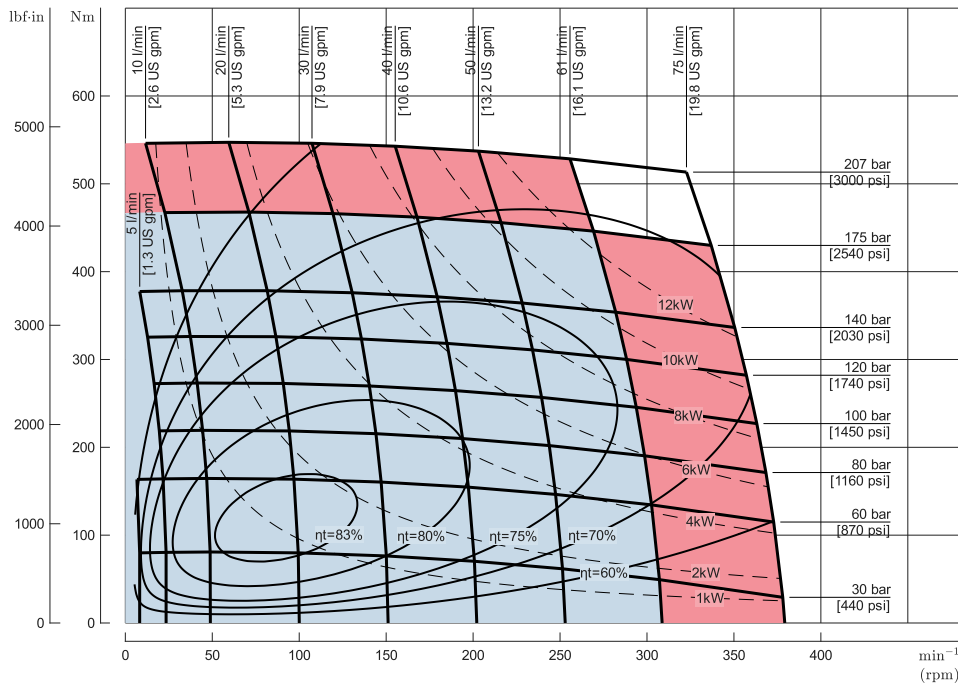
*XLS 160cc motor*



η<sub>t</sub> = overall efficiency

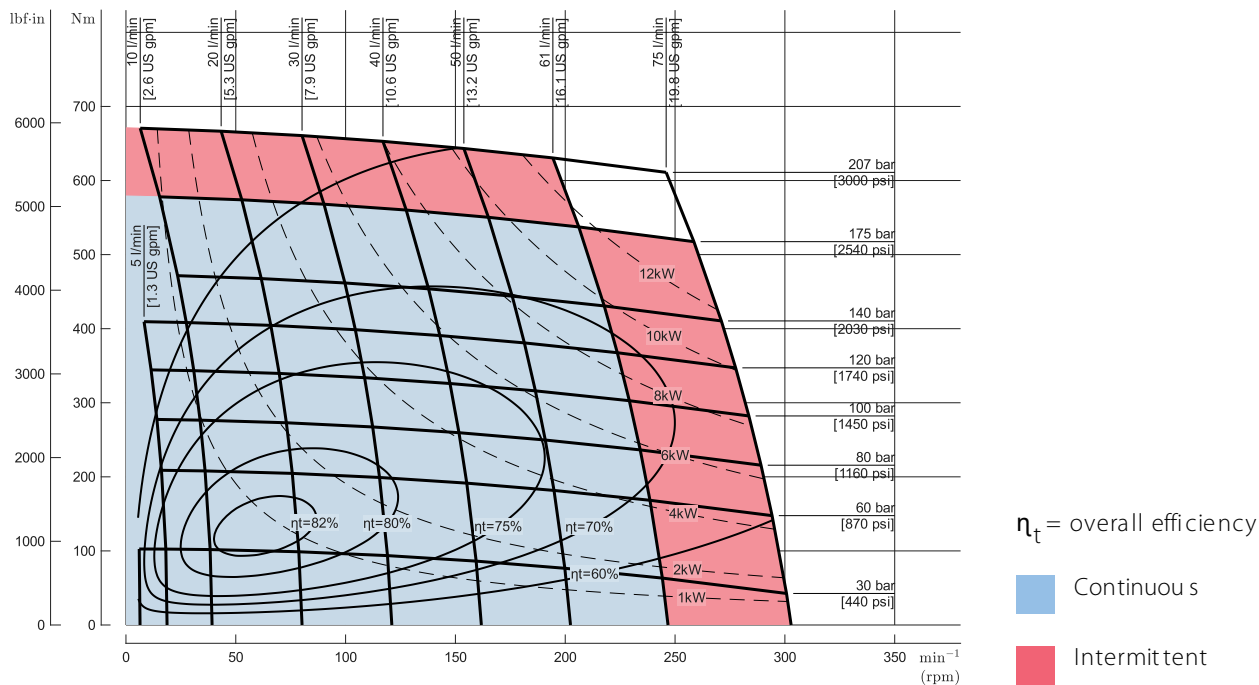
- Continuous
- Intermittent

*XLS 195cc motor*

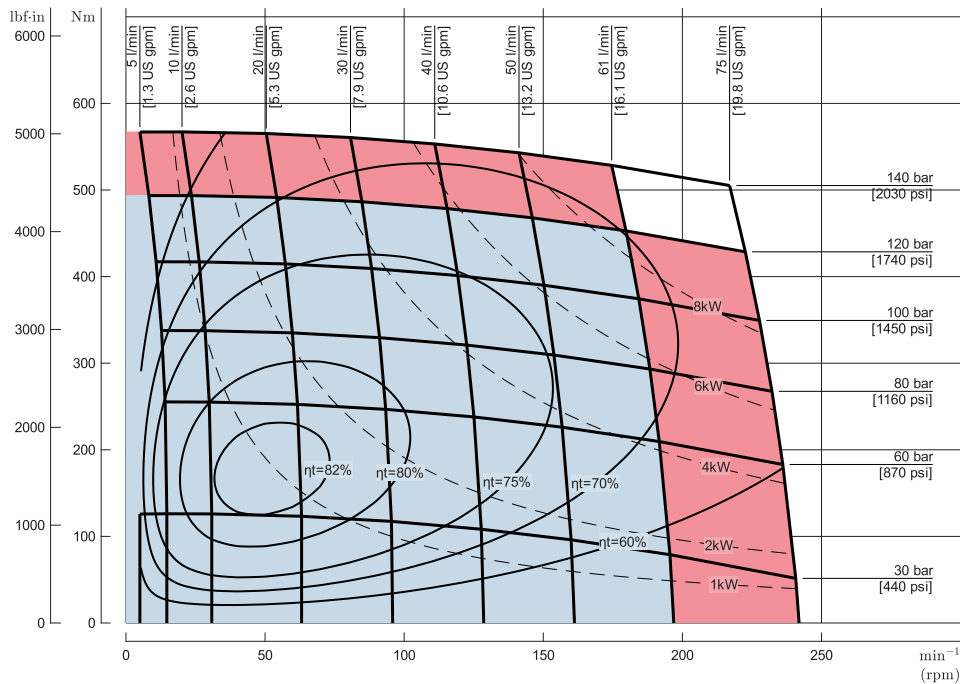


**XLH and XLS spool valve motor series**

**XLS 245cc motor**

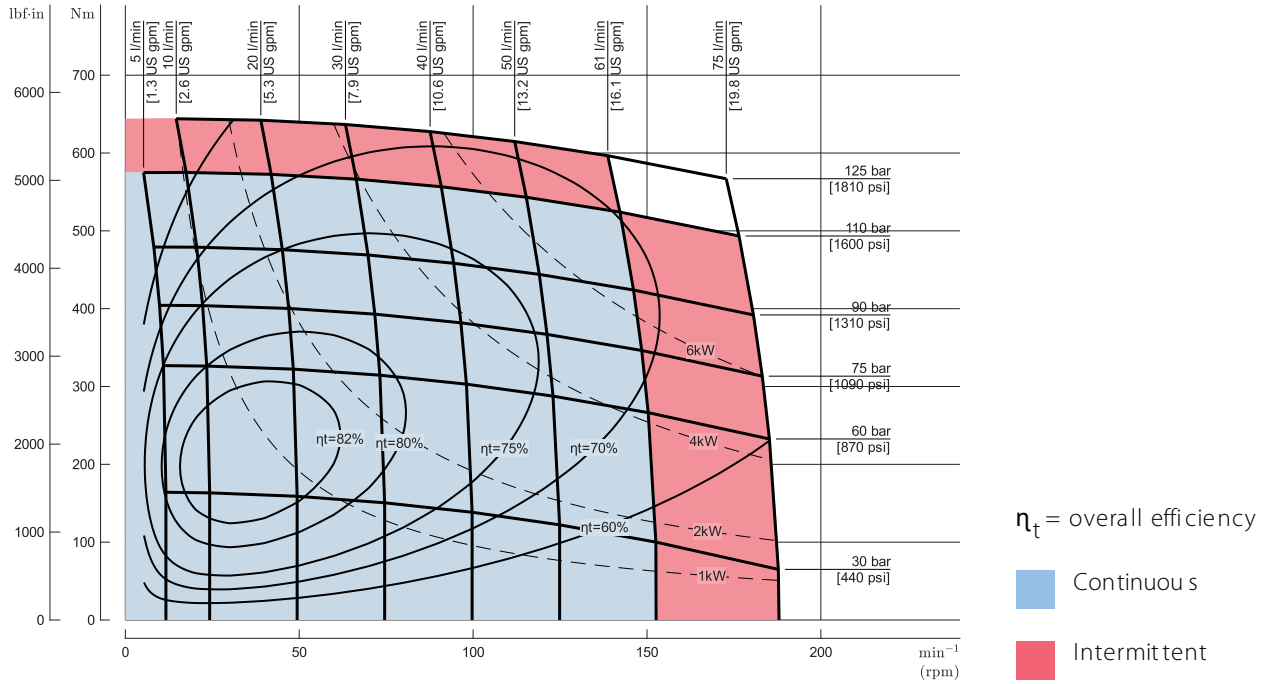


**XLS 305cc motor**



**XLH and XLS spool valve motor series**

*XLS 395cc motor*

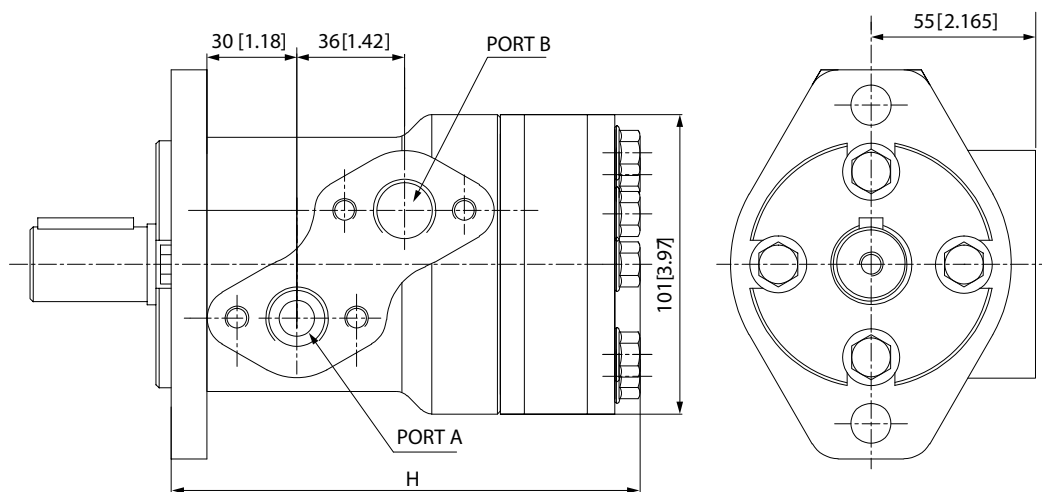


**XLH and XLS spool valve motor series**

**XLS dimensions**

Standard rotation viewed from shaft end

- Port A pressurized – CW
- Port B pressurized – CCW
- XLS standard shaft seal and section seal kit number: Z331-25
- XLS high pressure shaft seal and section seal kit number: Z331-59



*Dimension "H"*

Displacement cm <sup>3</sup> /r [in <sup>3</sup> /r]	"H" mm [in]
53 [3.1]	151 [5.94]
80 [4.9]	158 [6.22]
100 [6.2]	163 [6.42]
130 [8.0]	169 [6.65]
160 [9.6]	169 [6.65]
195 [11.9]	176 [6.93]
245 [14.9]	185 [7.28]
305 [18.7]	196 [7.72]
395 [24.0]	196 [7.72]

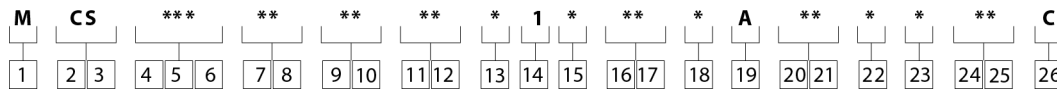
Data is based on mounting flange SAE A.

**XLH and XLS spool valve motor series**

**XLS model code**

The reference number in the model code corresponds with the product components.

*Model code identification*



**XLS product, series, displacement options**

*1 - product*

Code	Description
M	Motor

*2, 3 - series*

Code	Description
CS	XLS series

*4, 5, 6 - displacement cm<sup>3</sup>/r [in<sup>3</sup>/r]*

Code	Description
050	50 [3 .1]
080	80 [4 .9]
100	100 [6 .2]
130	130 [8 .0]
160	160 [9 .6]
195	195 [11 .9]
245	245 [14 .9]
305	305 [18 .7]
395	395 [24 .0]

**XLS mounting flange and output shaft options**

*7, 8 - mounting flange*

Code	Description
AA	2 bolt standard, SAE A, 82.55 x 5 pilot, pilot 2-13.5 dia. mounting holes on 106.4 dia.
AB	2 bolt standard, 82.55 x 5 pilot, continuous 2-13.5 dia. mounting holes on 106.4 dia. (prepared for seal guard)
AC	2 bolt standard, 82.55 x 2.8 pilot, 2-13.5 dia. mounting holes on 106.4 dia.
AD	4 bolt standard, 44.40 dia. x 2.8 pilot, 0.375-16 UNC-2B, mounting holes on 82.55 dia. B.C.
AE	4 bolt standard, 44.40 dia. x 2.8 pilot, M10x1 .5-6H mounting holes on 82.55 dia. B.C.
AQ*	4 bolt magneto, 82.55 x 8 pilot, 4-13.5 dia. mounting holes on 106.4 dia.

**XLH and XLS spool valve motor series**

*7, 8 - mounting flange (continued)*

Code	Description
AS*	2 bolt standard, 82.55 x 8 pilot, 2-13.5 dia. mounting holes on 106.4 dia.
AU	4 bolt magneto, 82.55 x 8 pilot, 4-13.5 dia. mounting holes on 106.4 dia.

\*Only together with output shaft 26 (32 dia. straight)

*9, 10 - output shaft*

Code	Description
01	25 dia. straight, parallel key A8 x 7 x 32, M8 thread in shaft end
04	25.4 dia. splined shaft, SAE 6B, .250-20 UNC 2B thread in shaft end
05	25.4 dia. straight, parallel key, .250-20 UNC 2B hole in the shaft end
06	25.4 dia. splined shaft, SAE 6B, M8 thread in shaft end
07	25.4 dia. splined shaft, SAE 6B, M8 X 1.25-6H thread in shaft end Extended length (54 mm from flange)
10	25 dia. straight, 5mm extra length parallel key A8 x 7 x 32, M8 thread in shaft end. Extended length (54 mm from flange)
26*	32 dia. straight, parallel key A10 x 8 x 45, M8 thread in shaft end

\*Only together with mounting AQ and AS.

***Main ports, case drain, geroler options***

*11, 12 - main ports*

Code	Description
AA	Staggered port 2-G1/2 ISO228/1 Manifold ports (4 x M8 mounting holes)
AE	Staggered port 2-0 .875-14 UNF-2B O-ring or manifold ports (4-M 8-6H mounting holes)

*13 - case drain*

Code	Description
1	G1/4 ISO228/1
3	0.4375-20 UNF-2B

*14 - geroler*

Code	Description
1	Standard geroler

**XLH and XLS spool valve motor series**

***Shaft, seal, speed sensor, manifold options***

*15 - shaft*

Code	Description
1	Revision C design

*16, 17 - shaft seal*

Code	Description
00	Standard seals
02	High pressure shaft seal
03	High pressure shaft seal and seal guard

*18 - speed sensor*

Code	Description
0	None
4	Speed pickup (30 pulse), 127 [5.0] lead wire with weather pack shroud connector
5	Speed pickup (30 pulse), M12 connector
6	Prepared for speed sensor (30 pulse)

*19 - manifold block*

Code	Description
A	None

***Special features, assembly, identification options***

*20, 21 - special features*

Code	Description
00	None

*22 - special assembly instructions*

Code	Description
0	None
1	Reverse rotation

*23 - paint*

Code	Description
C	Black primer

*24, 25 - customer identification or nameplate*

Code	Description
00	None