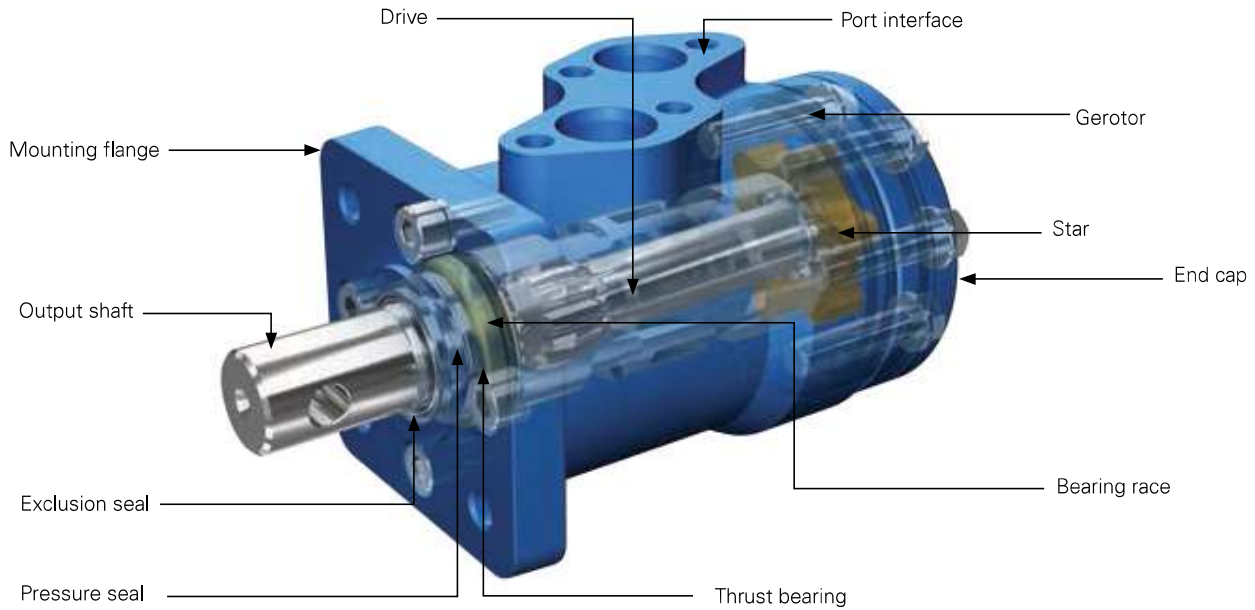


# Xcel XLH Series (016-)

## Specifications



### Specification Data

Displacement cm <sup>3</sup> /r [in <sup>3</sup> /r]		53 [3.2]	63 [3.8]	80 [4.9]	100 [6.2]	125 [7.6]	160 [9.6]	200 [12.2]	245 [14.9]	315 [19.2]	390 [23.8]	485 [30.0]
Flow LPM [GPM]	Continuous	38 [10]	45 [12]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]
	Intermittent	45 [12]	53 [14]	68 [18]	68 [18]	68 [18]	68 [18]	68 [18]	68 [18]	68 [18]	68 [18]	68 [18]
Max. Speed RPM	Continuous	721	693	710	568	462	354	286	234	174	144	114
	Intermittent	864	806	848	678	551	421	341	282	209	171	138
Pressure ΔBar [Δpsi]	Continuous	124 [1800]	124 [1800]	124 [1800]	124 [1800]	124 [1800]	115 [1650]	110 [1600]	100 [1450]	90 [1300]	83 [1200]	69 [1000]
	Intermittent	138 [2000]	138 [2000]	138 [2000]	138 [2000]	138 [2000]	124 [1800]	124 [1800]	124 [1800]	124 [1800]	110 [1600]	90 [1300]
Torque* Nm [lb-in]	Continuous	83 [735]	104 [920]	130 [1150]	162 [1430]	200 [1770]	242 [2140]	287 [2540]	318 [2815]	377 [3340]	419 [3705]	426 [3770]
	Intermittent	93 [825]	116 [1025]	145 [1285]	181 [1600]	223 [1975]	260 [2300]	324 [2870]	391 [3460]	508 [4495]	547 [4840]	507 [4485]
Weight Kg [lbs]		5 [11.0]	5.3 [11.6]	5.5 [12.1]	6.1 [13.4]	6.2 [13.6]	6.4 [14.1]	6.7 [14.7]	7.1 [15.6]	7.4 [16.3]	7.7 [16.9]	8 [17.6]

Maximum Case Pressure: See case pressure seal limitation graph

\*See shaft torque ratings for limitations.

**Note:** A simultaneous maximum torque and maximum speed NOT recommended. To assure 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.

#### Max. inlet pressure:

150 bar [2175 psi]

Do not exceed Δ pressure rating (see chart above)

#### ΔBar[Δpsi]:

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

#### Recommended fluids:

Premium quality anti-wear type hydraulic oil with a viscosity of not less than 20-32 cSt at operating temperature.

#### Recommended system operating temp :

82°C [180 °F]

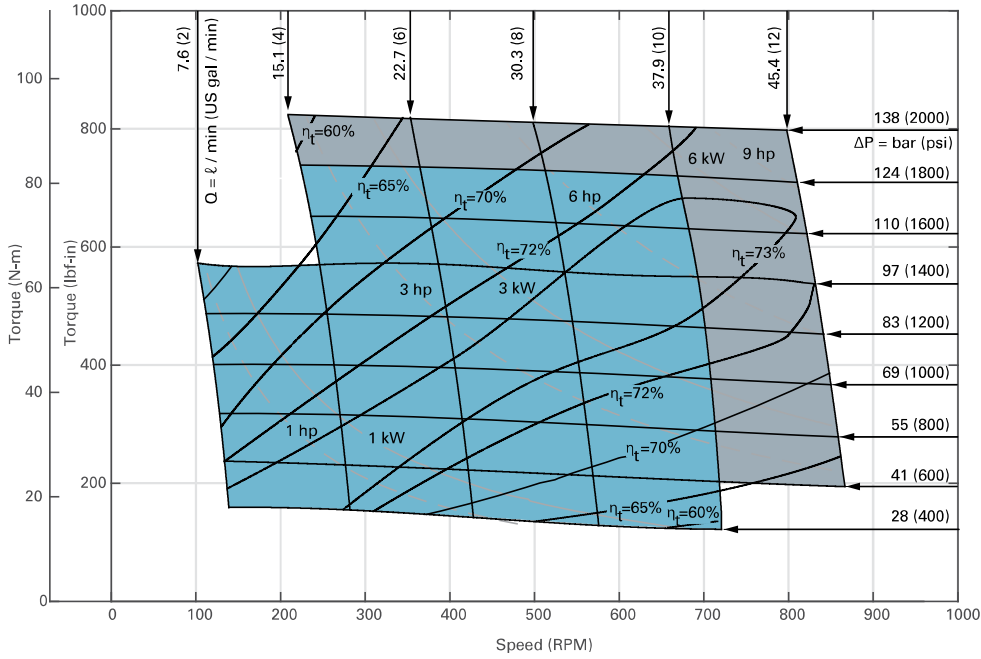
#### Recommended filtration

Per ISO Cleanliness code, 4406:20/18/13

# Xcel XLH Series (016-)

## Performance Data

**Function Diagram: XLH motor 53cc**

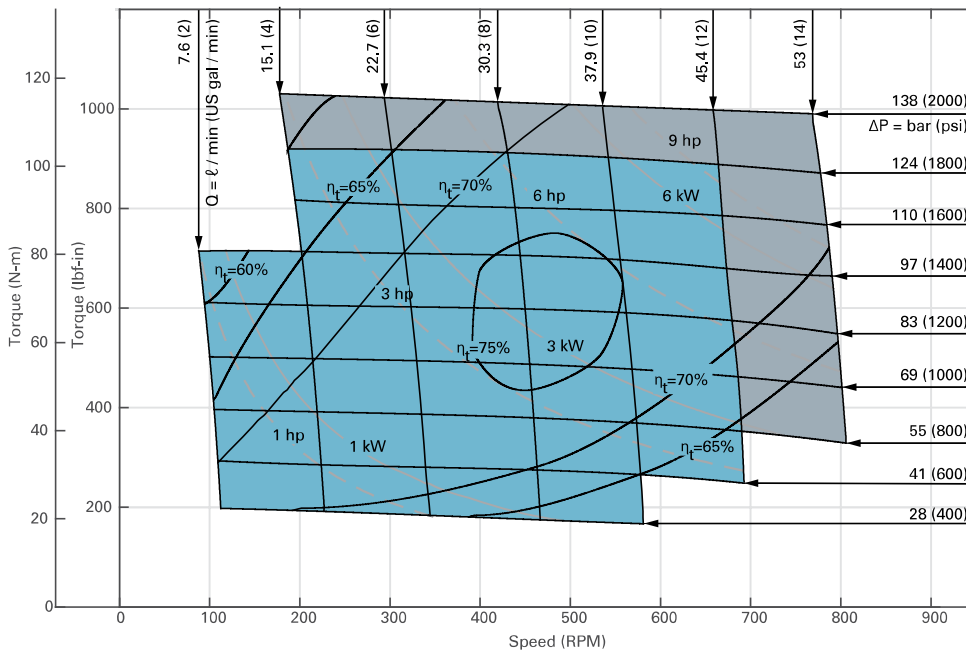


Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

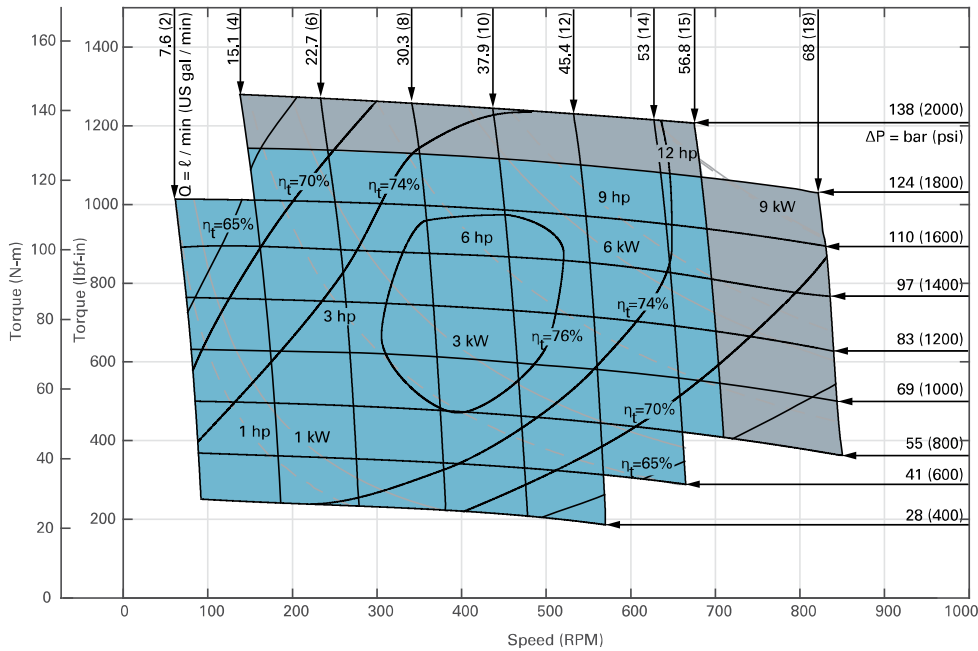
$\eta_t$  = overall efficiency

- Continuous
- Intermittent

**Function Diagram: XLH motor 63cc**



**Function Diagram: XLH motor 80cc**



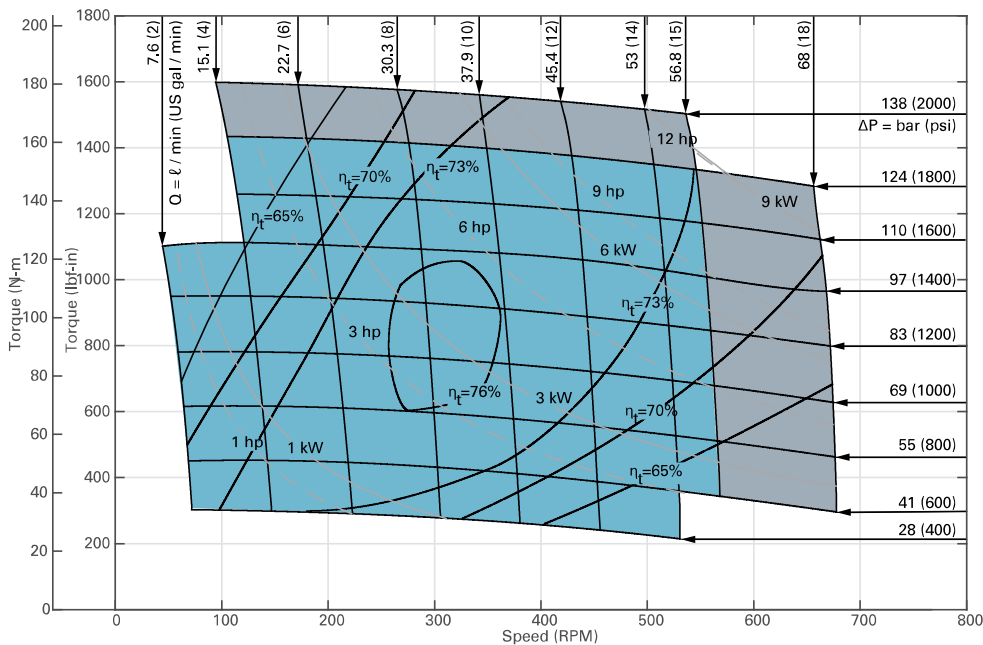
Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

$\eta_t$  = overall efficiency

Continuous

Intermittent

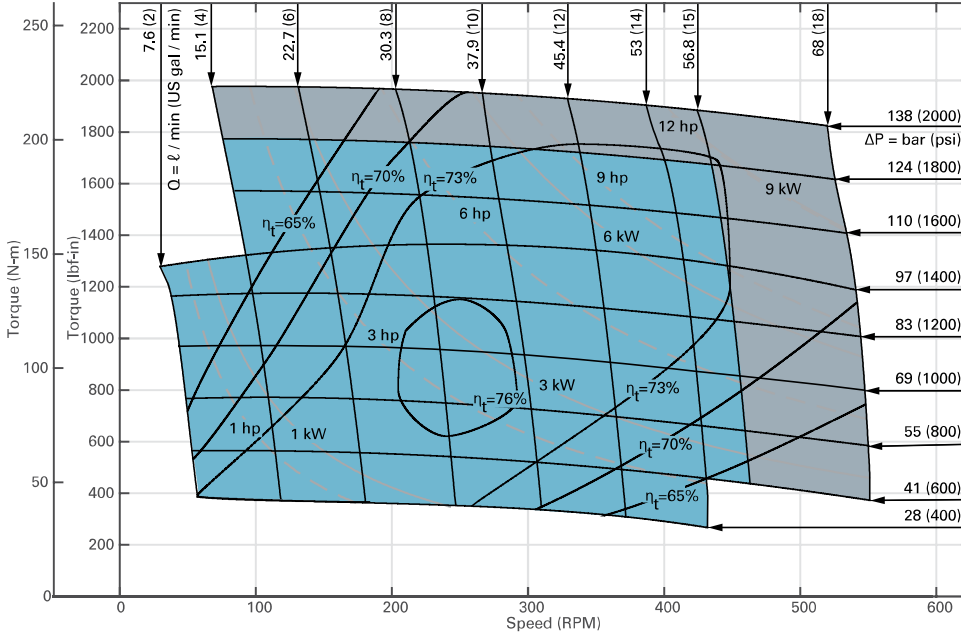
**Function Diagram: XLH motor 100cc**



# Xcel XLH Series (016-)

## Performance Data

Function Diagram: XLH motor 125cc

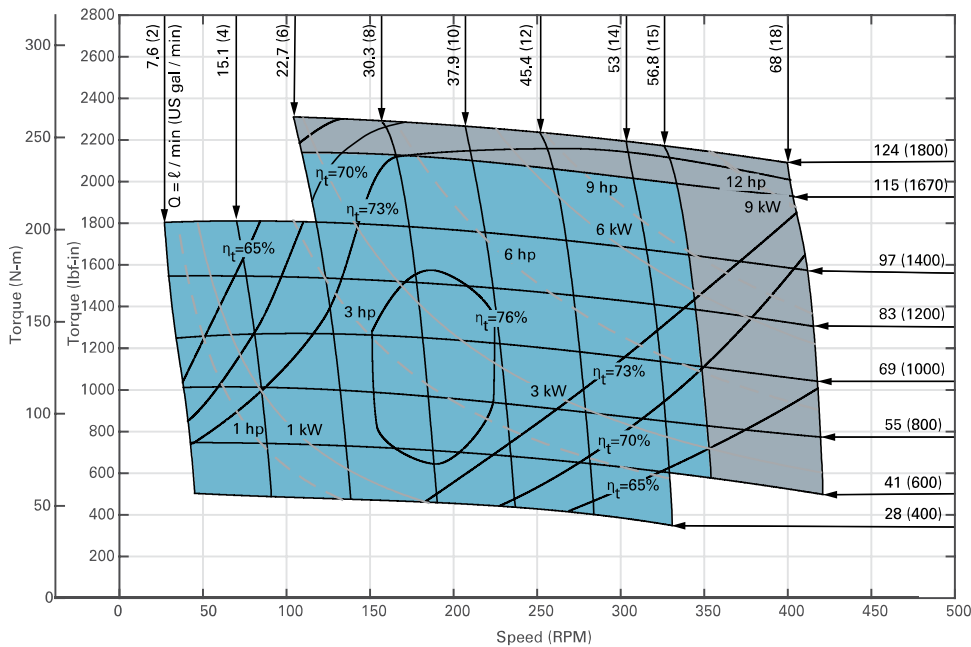


Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

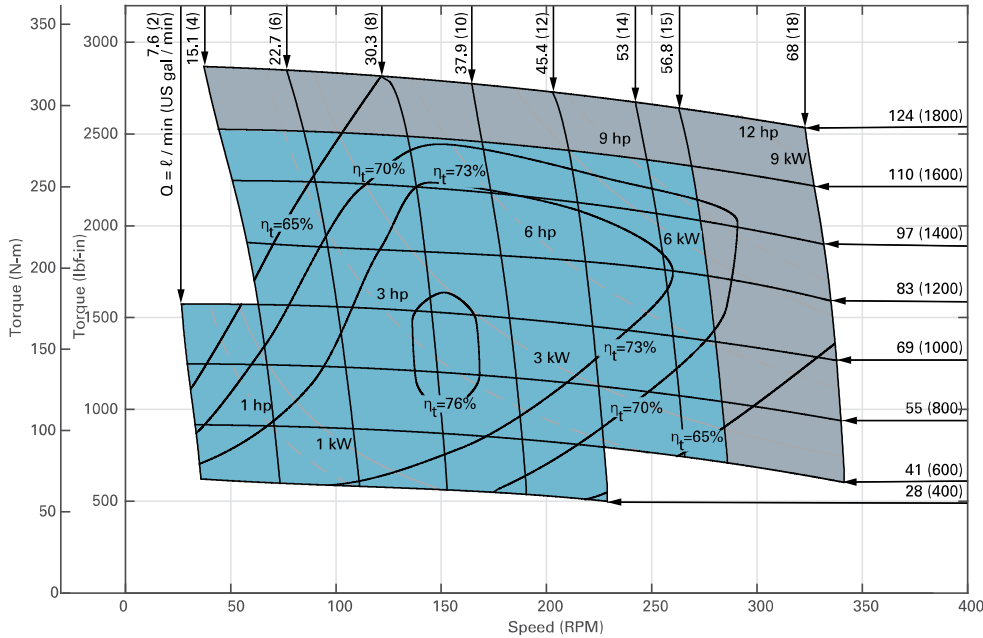
$\eta_t$  = overall efficiency

- Continuous
- Intermittent

Function Diagram: XLH motor 160cc



**Function Diagram: XLH motor 200cc**



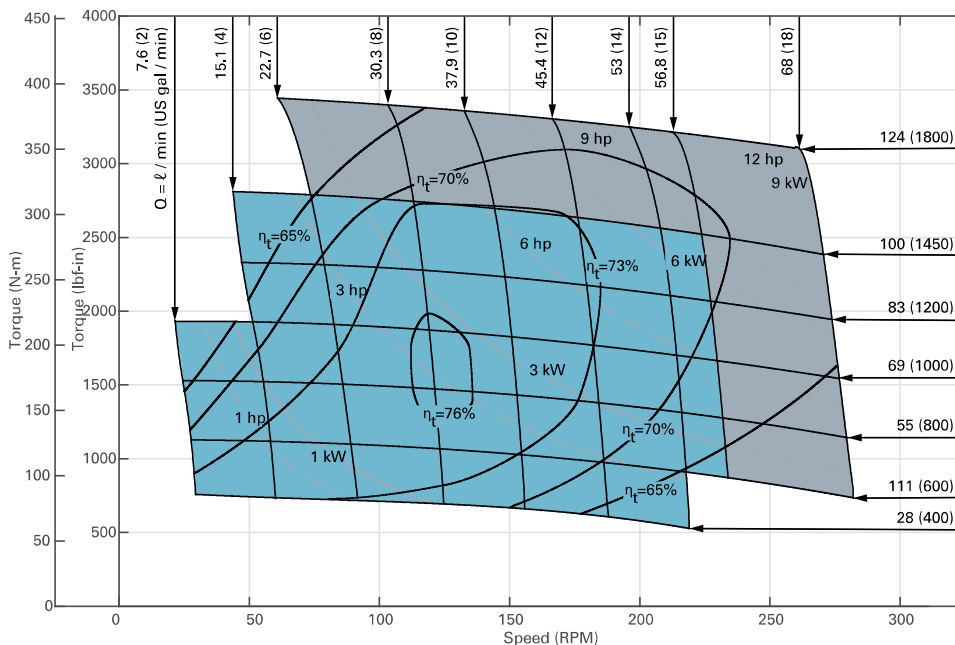
Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

$\eta_t$  = overall efficiency

Continuous

Intermittent

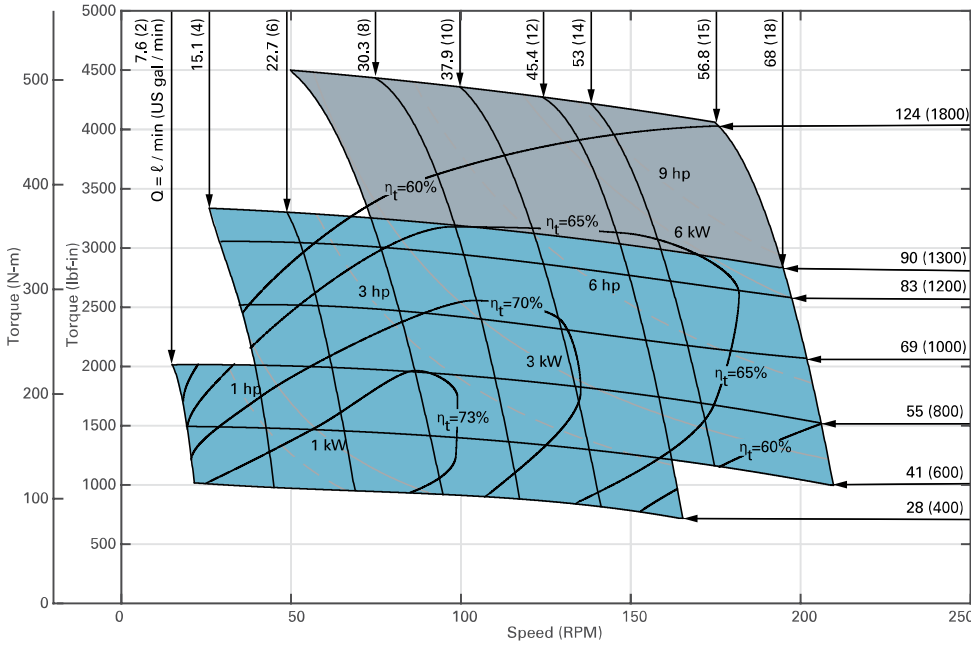
**Function Diagram: XLH motor 245cc**



# Xcel XLH Series (016-)

## Performance Data

Function Diagram: XLH motor 315cc



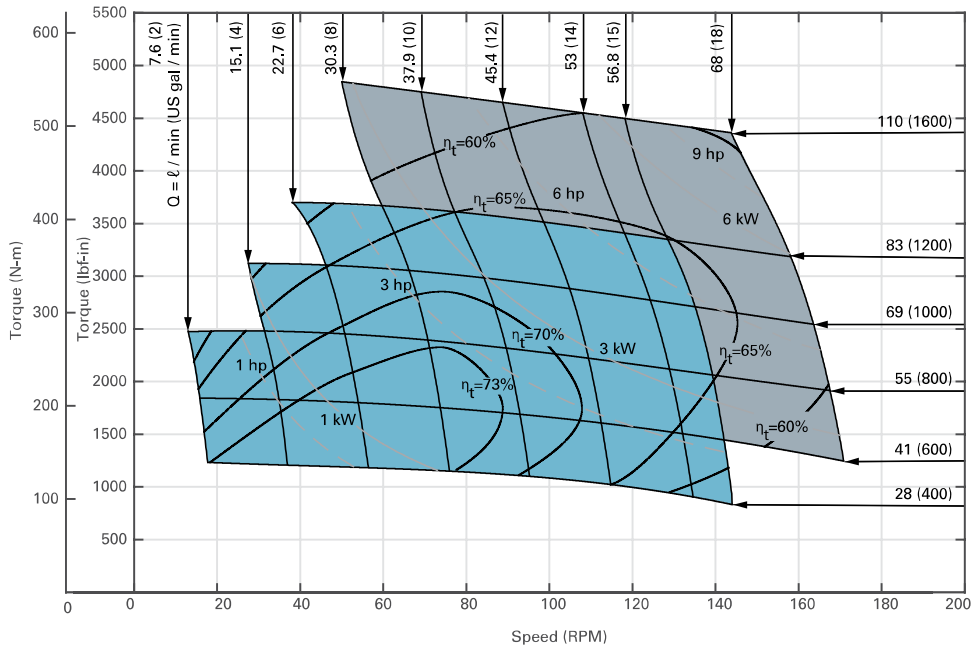
Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

$\eta_t$  = overall efficiency

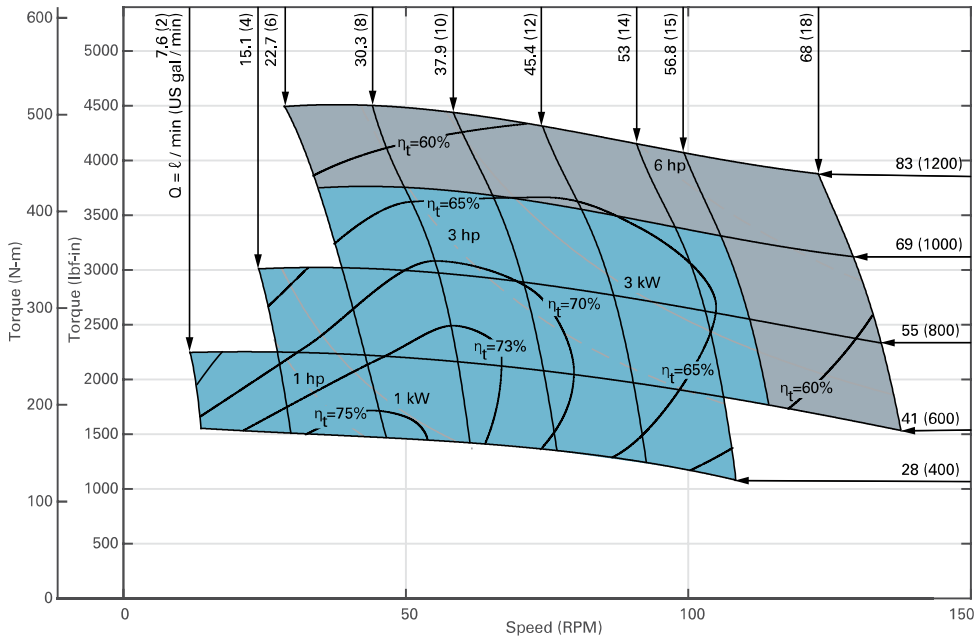
Continuous

Intermittent

Function Diagram: XLH motor 390cc



**Function Diagram: XLH motor 485cc**



Performance data is typical at 25 cSt (120 SUS). Actual data may vary slightly from unit to unit in production.

$\eta_t$  = overall efficiency

Continuous

Intermittent

# Xcel XLH Series (016-)

## Dimensions Xcel XLH Series - Outline

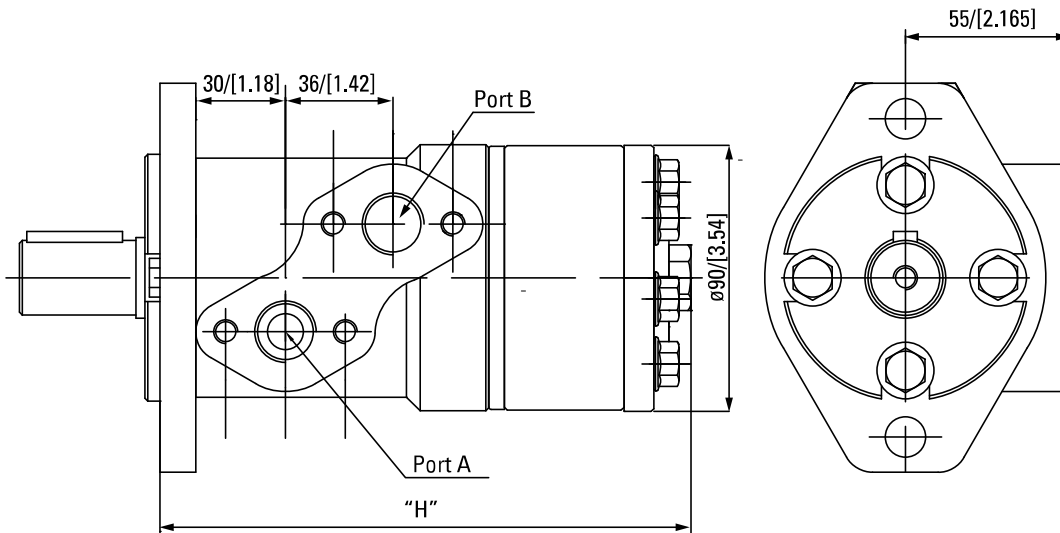
### Standard Rotation Viewed from Shaft End

Port A pressurized – CW

Port B pressurized – CCW

XLH Standard Shaft Seal and Section Seal Kit Number: **Z331-23**

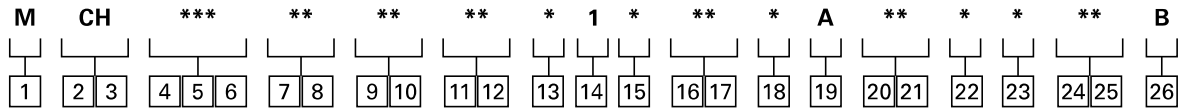
XLH High Pressure Shaft Seal and Section Seal Kit Number: **Z331-41**



<b>Disp. cc/r [in<sup>3</sup>/r]</b>	53 [3.2]	63 [3.8]	80 [4.9]	100 [6.2]	125 [7.6]	160 [9.6]	200 [12.2]	245 [14.9]	315 [19.2]	390 [23.8]	485 [30.0]
<b>H mm [in]</b>	142 [5.59]	144 [5.67]	146 [5.75]	148 [5.83]	151 [5.95]	157 [6.18]	161 [6.34]	167 [6.57]	177 [6.96]	187 [7.36]	199 [7.83]

\* Based on the mounting flange SAE A.





**1** **Product**  
**M** Motor

**2** **3** **Series**  
**CH** XLH Series

**4** **5** **6** **Displacement cm<sup>3</sup>/r [in<sup>3</sup>/r]**

<b>053</b>	53 [3.2]
<b>063</b>	63 [3.8]
<b>080</b>	80 [4.9]
<b>100</b>	100 [6.2]
<b>125</b>	125 [7.6]
<b>160</b>	160 [9.6]
<b>200</b>	200 [12.2]
<b>245</b>	245 [14.9]
<b>315</b>	315 [19.2]
<b>390</b>	390 [23.8]
<b>485</b>	485 [30.0]

**7** **8** **Mounting flange**

<b>AA</b>	2 bolt standard, SAE A, 82.55x5, pilot 2-13.5 Dia. Mounting holes on 106.4 Dia
<b>AC</b>	2 bolt standard, 82.55x2.8 pilot. 2-13.5 Dia. Mounting holes on 106.4 Dia.
<b>AD</b>	4 Bolt standard, 44.40 Dia, x 3.05 Pilot, 375-16 UNC-2B, Mounting Holes on 82,55 Dia, B.C.
<b>AE</b>	4 Bolt standard, 44.40 Dia, x 3.05 Pilot, M10x1.5-6H Mounting Holes on 82.55 Dia, B.C.

**9** **10** **Output shaft**

<b>01</b>	25 dia. Straight, parallel key A8x7x32, M8 hole in shaft end. DIN 6885
<b>02</b>	25 Dia. Straight, 5mm extra length. parallel key A8x7x32, M8 hole in shaft end, DIN 6885
<b>03</b>	25.4Dia. Straight, parallel key ¼x¼x1¼, M8 hole in shaft end, BS 46
<b>04</b>	25.4 Dia. Splined shaft, SAE 6B, .250-20 UNC-2B hole in the shaft end.
<b>05</b>	25.4 Dia. Straight, woodruff key, .250-20 UNC-2B hole in the shaft end.
<b>08</b>	25.4 Dia. Straight, 10.3 [.405] Dia. Cross hole 15.7 [.618] from .250-20 UNC-2B hole in the shaft end.

**11** **12** **Main ports**

<b>AA</b>	Staggered port 2-G1/2 ISO228/1
<b>AE</b>	Staggered port 2-0.875-14UNF-2B O-ring or manifold ports (4-M8-6H mounting holes)

**13** **Case drain options**

<b>0</b>	None
<b>1</b>	G1/4 ISO228/1
<b>3</b>	0.4375-20UNF-2B

**14** **Gerotor options**

<b>1</b>	Standard Gerotor
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**15** **Shaft options**

<b>0</b>	Standard shaft
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**16** **17** **Seal options**

<b>00</b>	Standard seals
<b>01</b>	Seal guard
<b>02</b>	High pressure seal shaft

**18** **Speed sensor options**

<b>0</b>	None
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**19** **Manifold block options**

<b>A</b>	None
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**20** **21** **Special features (hardware)**

<b>00</b>	None
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**22** **Special assembly instructions**

<b>0</b>	None
<b>1</b>	Reverse rotation

**23** **Paint**

<b>C</b>	Black primer
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**24** **25** **Customer identification or name plate**

<b>00</b>	None
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**26** **Design code**

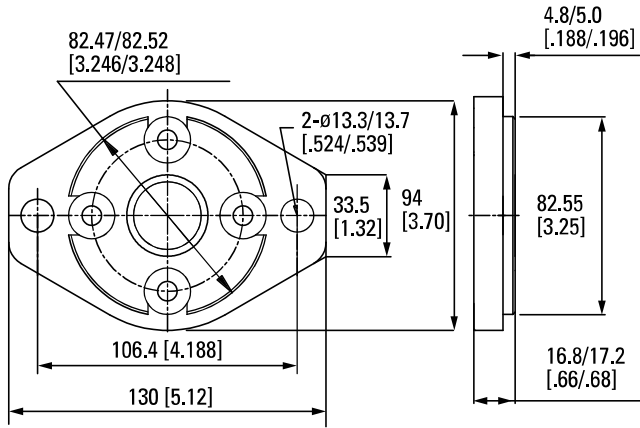
<b>B</b>	Second
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# Xcel Spool Valve Motors

## Dimensions - Mounts

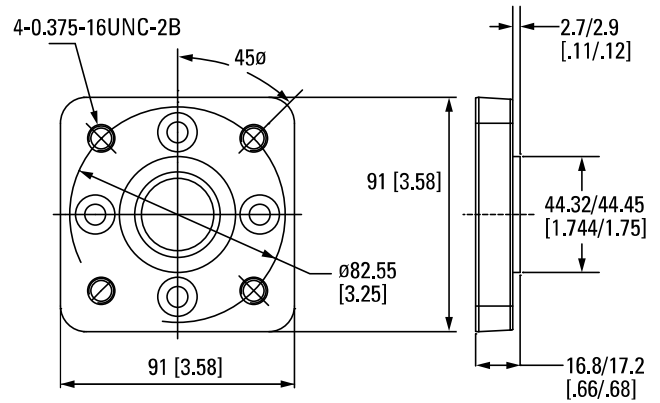
### Code AA

SAE A  
 2 bolt  
 82.55 x 5  
 [3.25]x[.196] pilot



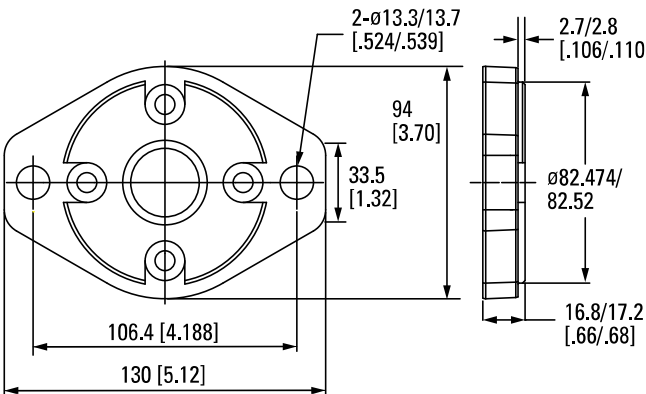
### Code AD

SAE A  
 4 bolt  
 44.40 [1.748] pilot



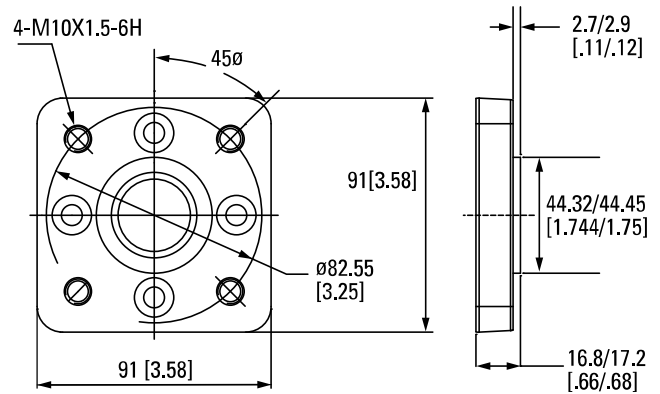
### Code AC

SAE A  
 2 bolt  
 ø82.55 x 2.5  
 [3.25]x[.110]



### Code AE

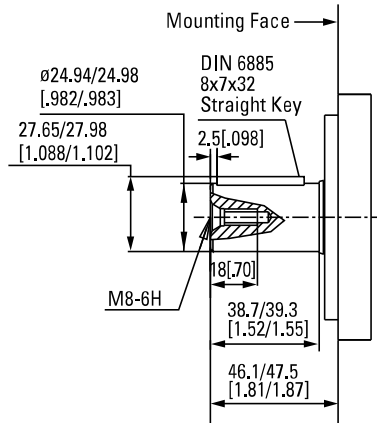
SAE A  
 4 bolt  
 44.40 [1.748] pilot  
 Metric



SAE 6B splined shaft (Code 04) recommended whenever operation above 260Nm [2300 in-lb] of torque, especially for those applications subject to frequent reversals.

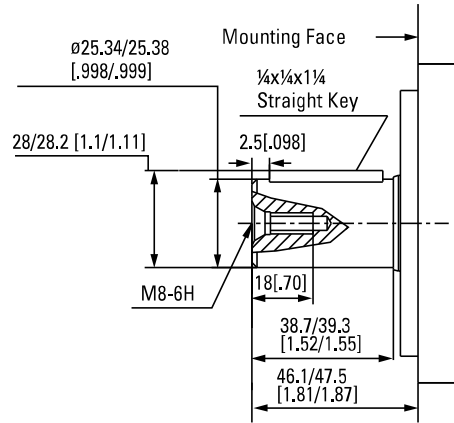
### 25mm Straight Shaft (01)

395Nm [3500 in-lb] Max. torque



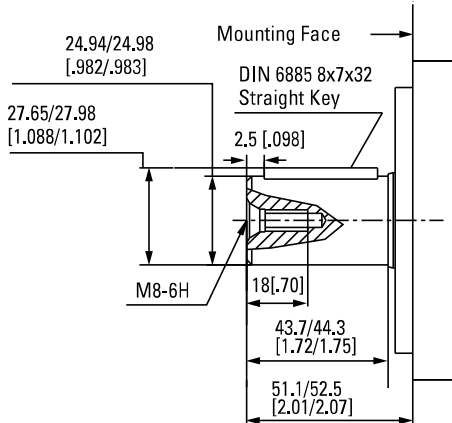
### Straight Shaft (03)

395Nm [3500 in-lb] Max. torque



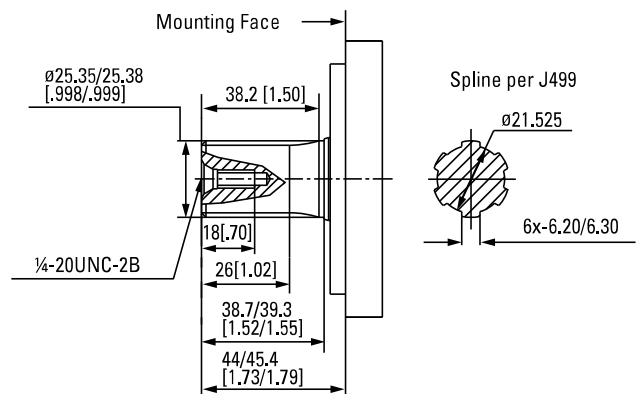
### 25 mm Straight Shaft w/ 5mm extra length (02)

395Nm [3500 in-lb] Max. torque



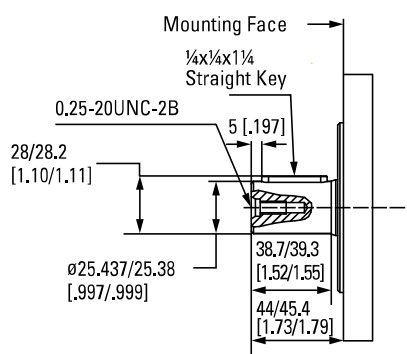
### SAE 6B Spline (04)

395Nm [3500 in-lb] Max. torque



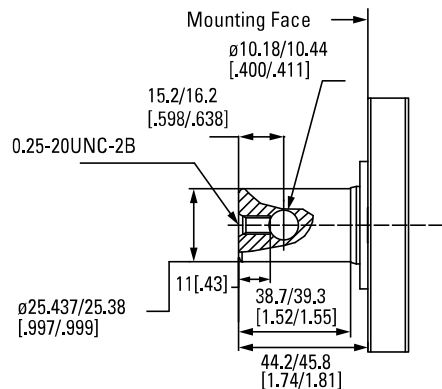
### 25.4 [1.00] Straight Shaft (05)

395Nm [3500 in-lb] Max. torque



### 25.4 [1.00] Straight Shaft w/ Crosshole (08)

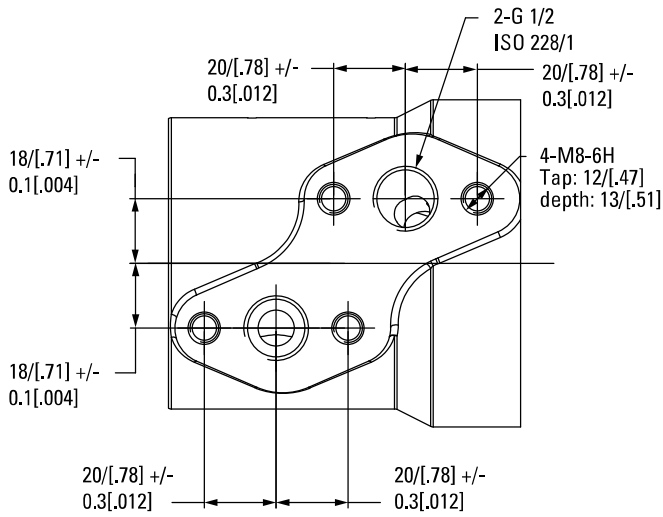
338Nm [3000 in-lb] Max. torque



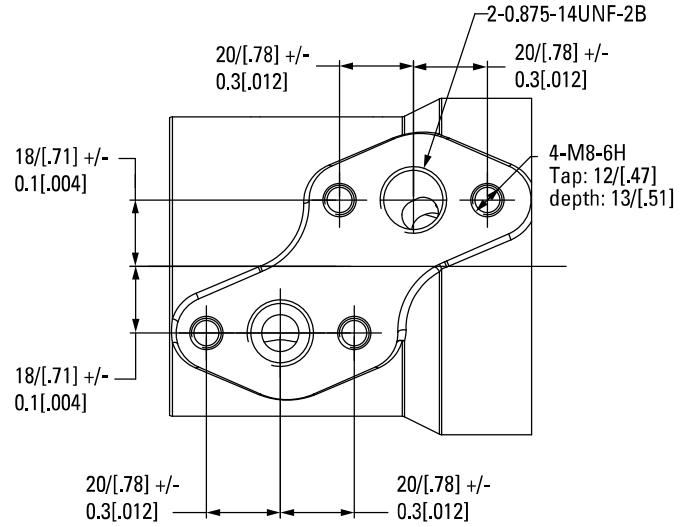
# Xcel Spool Valve Motors

## Dimensions - Ports

### Code AA



### Code AE



# Xcel Spool Valve Motors

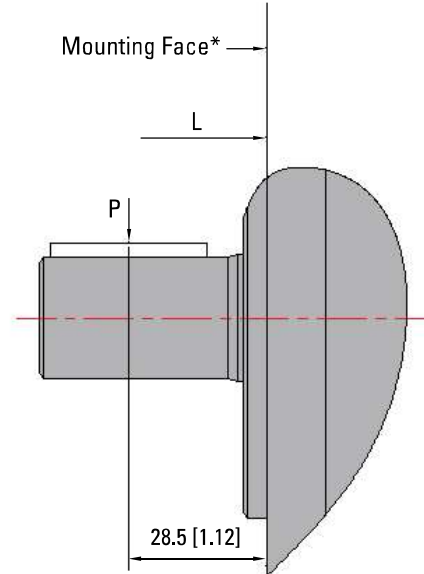
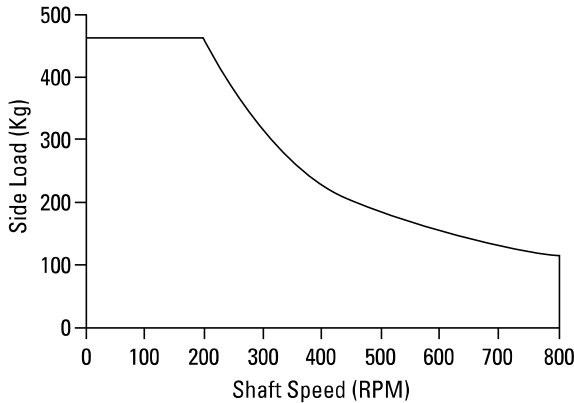
## Shaft Side Load Capacity and Case Pressure

$$\text{Side Load } P \text{ (Kg)} = \frac{800}{N} \left( \frac{15000}{L+100} \right) \text{ from 200-800 RPM}$$

Where N = Shaft Speed (RPM)

L = Distance from Mounting Surface (mm)

P = Side Load (Kg)



### Case Pressure/Shaft Seal

Refer to the case pressure/shaft seal chart below. Allowable case pressure is highest at low shaft speeds. Motor life will be shortened if case pressure exceeds recommended ratings.

Case pressure is as follows:

$$P_c = 0.6\Delta P + P_2 \quad \Delta P = P_1 - P_2$$

$P_c$  = Case Pressure,

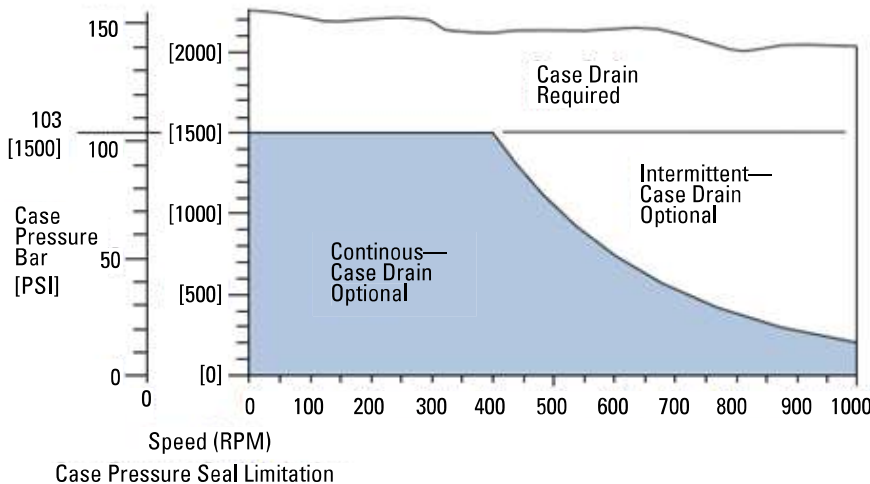
$P_1$  = Inlet Line Pressure

$P_2$  = Outlet Pressure

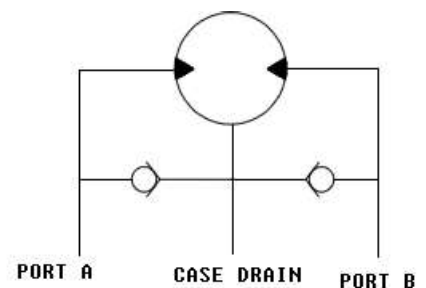
The motor life is improved from use of a case drain line.

- Contamination control – flushing the motor case
- Motor cooler – exiting oil draws motor heat away.
- Extend motor seal life – maintain low case pressure with a preset restriction installed in the case drain line.

When case drain line is used, make sure the motor is always filled with oil.



### XLS Series Only



**Note:** With check valves as standard on the XLS motor, case pressure can be considered the same as the outlet pressure/backpressure.

**Note:** Check Valves are not available on the XLH Series.