Eaton L2 Series Gear Pump Service Manual

Rotation	CCW or CW
Mounting Flange	SAE 2 Bolt B
Maximum Continuous† Pressure	248 bar [3600 PSI]*
Maximum Intermittent†† Pressure	276 bar [4000 PSI]**
Minimum Speed at Continuous Pressure	750 RPM
Maximum Continuous Inlet Temperature	107°C [225°F]
Minimum Operating Temperature	-29°C [-20°F]
Maximum Inlet Vacuum at 82°C [180°F] and Rated Speed	6.0 In. Hg

† Continuous - pump may be run continuously at these ratings.

†† Intermittent - Intermittent operation, 10% of every minute.

For side load limits consult your Eaton representative.

* 46.7 [2.85] displacement maximum continuous pressure is 224 bar [3250 PSI]
51.1 [3.12] displacement maximum continuous pressure is 207 bar [3000 PSI]
55.2 [3.37] displacement maximum continuous pressure is 190 bar [2750 PSI]

** 46.7 [2.85] displacement maximum intermittent pressure is 252 bar [3650 PSI]
51.1 [3.12] displacement maximum intermittent pressure is 234 bar [3400 PSI]
55.2 [3.37] displacement maximum intermittent pressure is 217 bar [3150 PSI]

Model	25500	25501	25502	25503	25504	25505	25506	25507	25508
Displacement cm³/r [in³/r]	21.3 [1.30]	25.4 [1.55]	29.2 [1.78]	33.6 [2.05]	38.2 [2.33]	42.8 [2.61]	46.7 [2.85]	51.1 [3.12]	55.2 [3.37]
Max. Continuous† Pressure bar [PSI]	248 [3600]	248 [3600]	248 [3600]	248 [3600]	248 [3600]	248 [3600]	224 [3250]	207 [3000]	190 [2750]
Max. Intermittent†† Pressure bar [PSI]	276 [4000]	276 [4000]	276 [4000]	276 [4000]	276 [4000]	276 [4000]	252 [3650]	234 [3400]	217 [3150]
Rated Speed (RPM)	3500	3000	3000	2750	2750	2500	2500	2500	2250
Minimum Output Flow at 207 bar [3000 PSI] and Rated Speed LPM [GPM]	61,3 [16.2]	64,7 [17.1]	78,0 [20.6]	83,3 [22.0]	94,6 [25.0]	96,1 [25.4]	105,2 [27.8]	115,1 [30.4]	112,0 [29.6]

The performance data in the table above and the following graphs was collected using a mineral base oil with a viscosity of 133 SUS at 49° C [120° F]. The following performance graphs are representative of the series.

† Continuous - pump may be run continuously at these ratings.

†† Intermittent - Intermittent operation, 10% of every minute.

Ordering information

Standard catalog assemblies

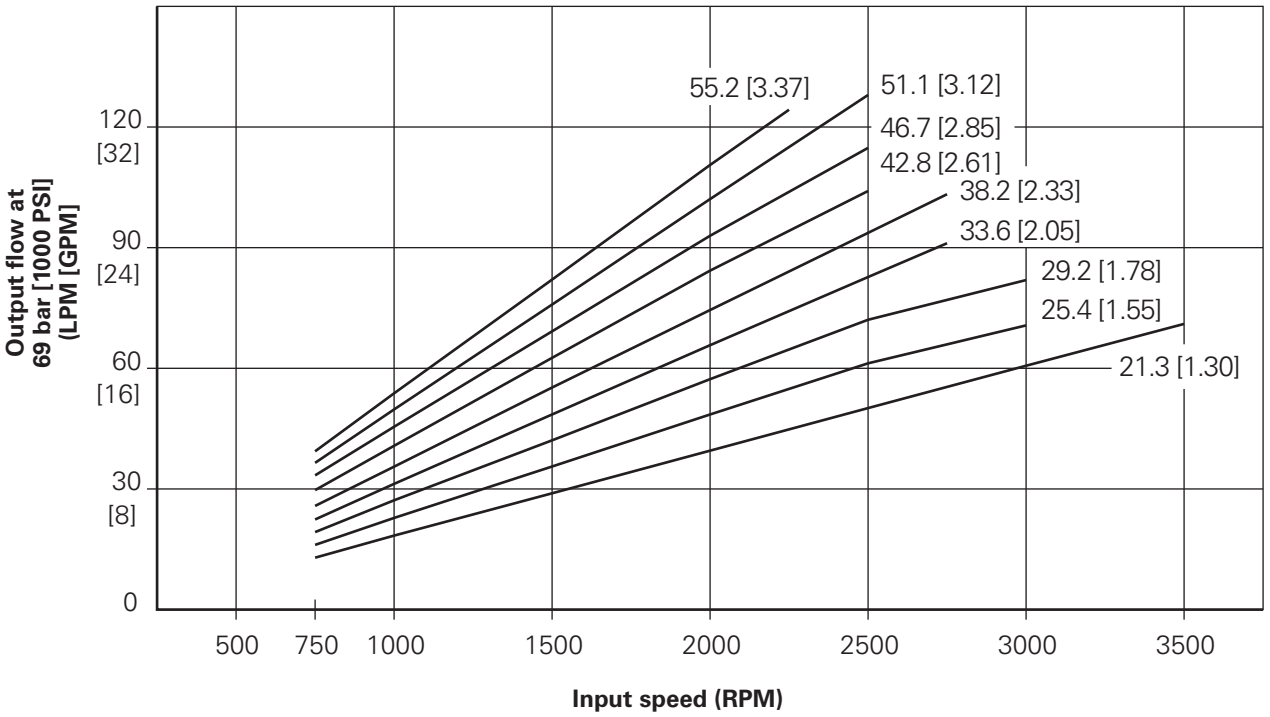
Standard Catalog Assemblies are built from high quality production parts and are the most economical pumps available in this series. Dimensions and order numbers for Standard Catalog Assemblies are given on pages 29-30.

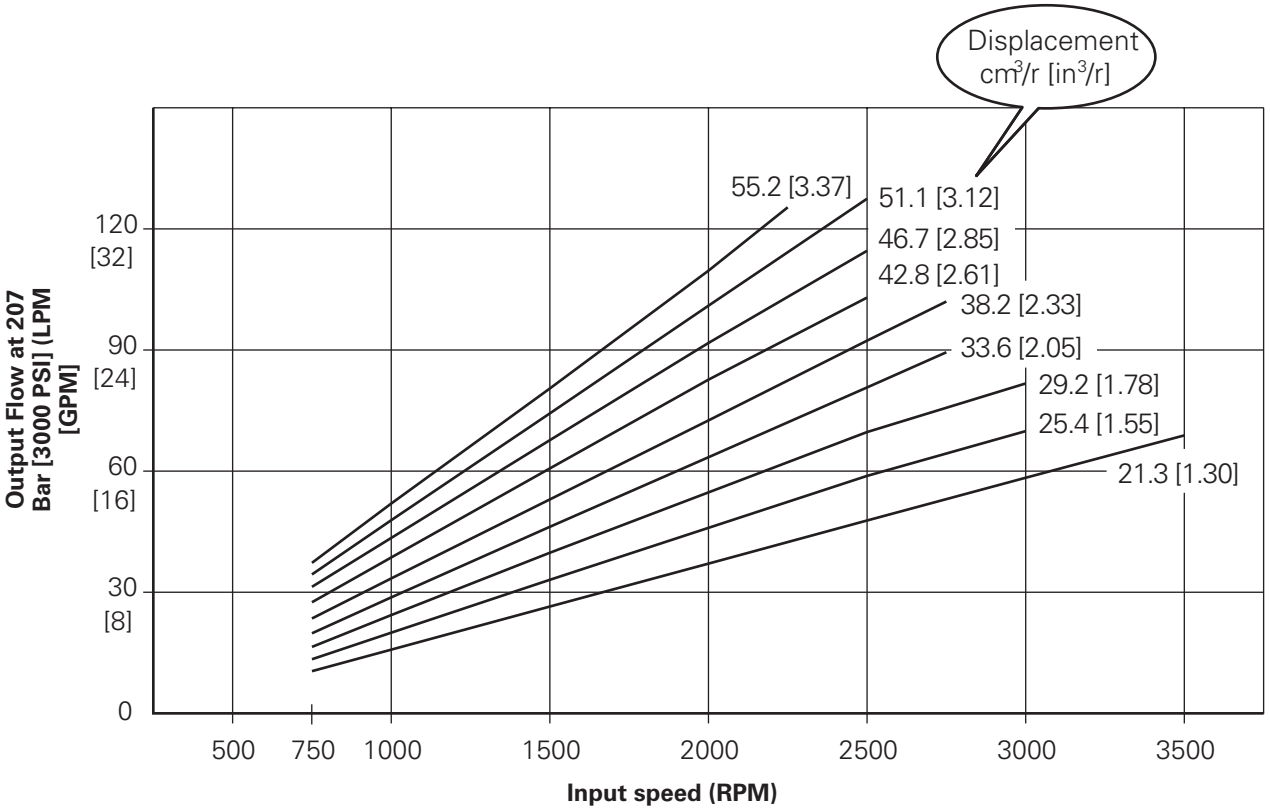
Optional configurations

Besides the Standard Catalog Assemblies, the L2 Series has several optional features. Flow divider and tandem backplates are available. Multiple gear pumps can also be built. If a variation from the Standard Catalog Assemblies is required, use the model codes on pages 35-36..

Series L2 pump
Performance data charts

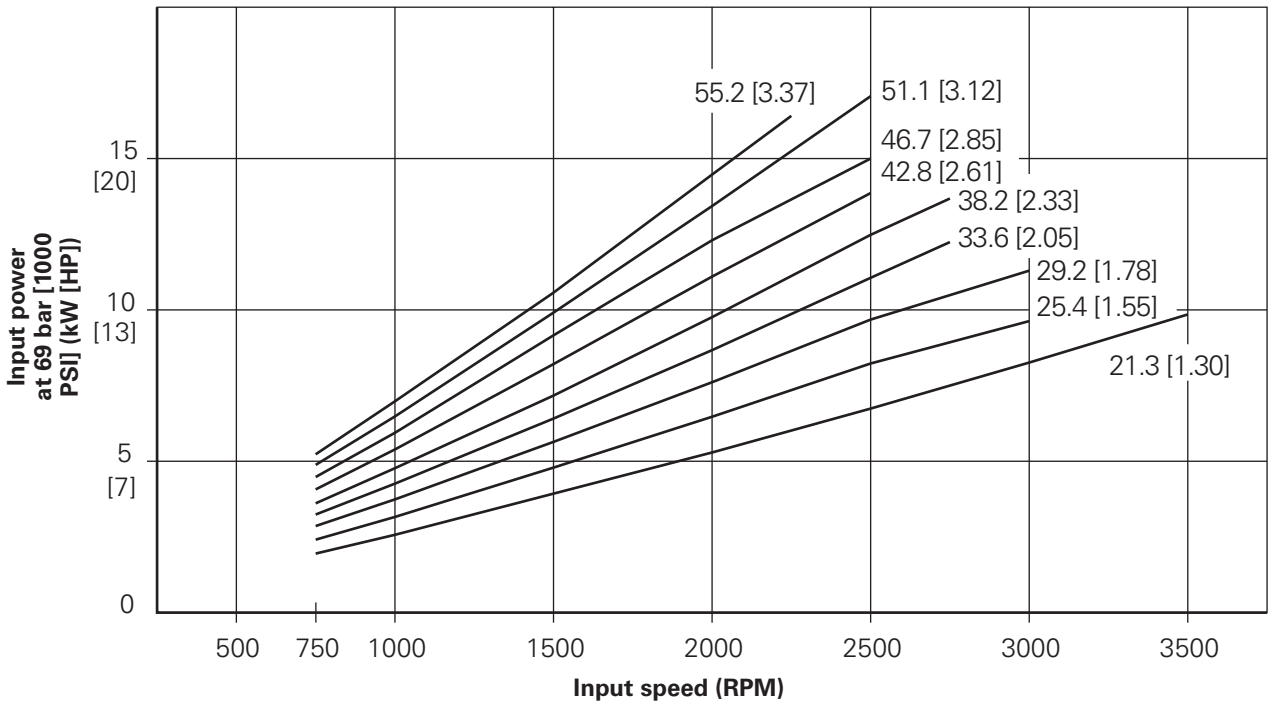
Output power vs speed

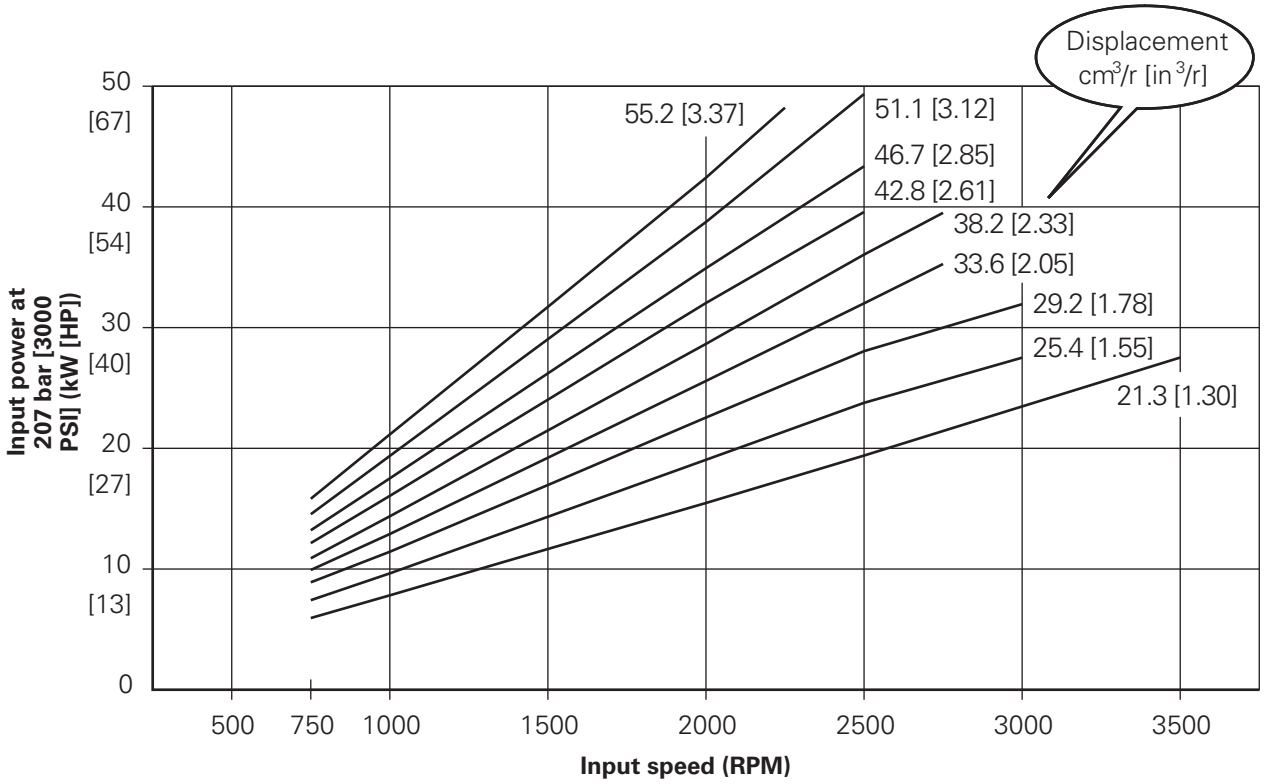




Series L2 pump
Performance data charts

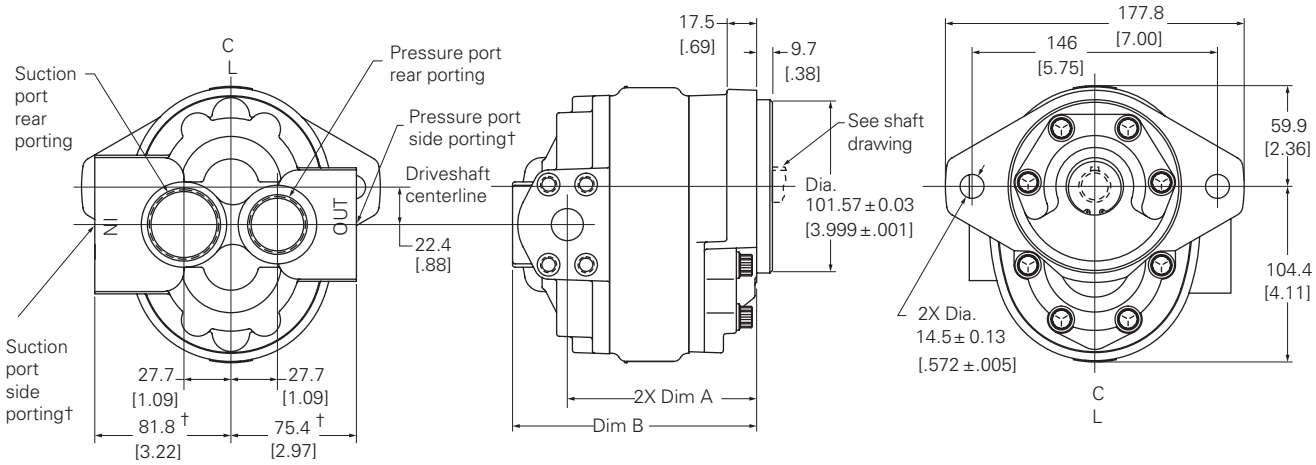
Input Power vs Speed





The performance data show in the graphs are representative of this series. Tests were performed per SAE specifications using mineral base oil with a viscosity of 133 SUS at 49° C [120° F].

Series L2 pump
Standard catalog assemblies - dimensions



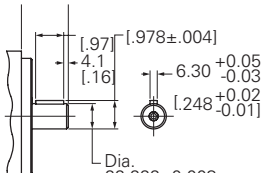
Left hand rotation shown

† For split flange porting subtract .8 [.03], available in side porting only

Model	25500	25501	25502	25503	25504	25505	25506	25507	25508
Displacement (cm³/r [in³/r])	21.3 [1.30]	25.4 [1.55]	29.2 [1.78]	33.6 [2.05]	38.2 [2.33]	42.8 [2.61]	46.7 [2.85]	51.1 [3.12]	55.2 [3.37]
Dimension A (mm [in.])	84.8 [3.34]	88.2 [3.47]	91.7 [3.61]	95.1 [3.75]	98.6 [3.88]	102.0 [4.02]	105.3 [4.14]	109.0 [4.29]	112.4 [4.43]
Dimension B (mm [in.])	117.3 [4.62]	120.8 [4.75]	124.2 [4.89]	127.7 [5.03]	131.1 [5.16]	134.6 [5.30]	137.8 [5.42]	141.5 [5.57]	145.0 [5.71]

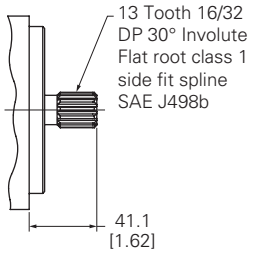
7/8 inch straight key

Maximum Input Torque††
170 Nm [1500 lb-in]



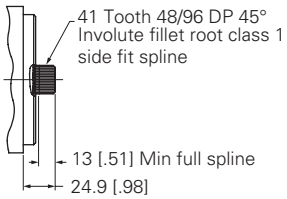
7/8 inch 13 tooth spline

Maximum Input Torque††
209 Nm [1850 lb-in]



7/8 inch 41 tooth spline

Maximum Input Torque††
316 Nm [2800 lb-in]



*** Multiple pump input torque limitations:**

The total torque for multiple pump displacements and pressure combinations cannot exceed the maximum input torque rating of the shaft. The proper formula is Pressure times Displacement divided by 6.28.

All dimensions are in mm [in].

Series L2 pump
Order numbers

Right hand rotation product no	Left hand rotation product no	Shaft	Port location	SAE pressure port size	SAE suction port size
Model 25500 – 21.3 cm³/r [1.30 in³/r] Displacement					
25500-RSA	25500-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25500-RSB	25500-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25500-RSC	25500-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25500-RSD	25500-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25500-RSE	25500-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25500-RSF	25500-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25501 – 25.4 cm³/r [1.55 in³/r] Displacement					
25501-RSA	25501-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25501-RSB	25501-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25501-RSC	25501-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25501-RSD	25501-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25501-RSE	25501-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25501-RSF	25501-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25502 – 29.2 cm³/r [1.78 in³/r] Displacement					
25502-RSA	25502-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25502-RSB	25502-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25502-RSC	25502-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25502-RSD	25502-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25502-RSE	25502-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25502-RSF	25502-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25503 – 33.6 cm³/r [2.05 in³/r] Displacement					
25503-RSA	25503-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25503-RSB	25503-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25503-RSC	25503-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25503-RSD	25503-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25503-RSE	25503-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25503-RSF	25503-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25504 – 38.2 cm³/r [2.33 in³/r] Displacement					
25504-RSA	25504-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25504-RSB	25504-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25504-RSC	25504-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25504-RSD	25504-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25504-RSE	25504-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25504-RSF	25504-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25505 – 42.8 cm³/r [2.61 in³/r] Displacement					
25505-RSA	25505-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25505-RSB	25505-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25505-RSC	25505-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25505-RSD	25505-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25505-RSE	25505-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25505-RSF	25505-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange

Series L2 pump
Order numbers

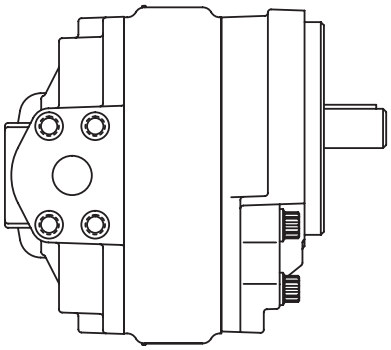
Right hand rotation product no	Left hand rotation product no	Shaft	Port location	SAE pressure port size	SAE suction port size
Model 25506 – 46.7 cm³/r [2.85 in³/r] Displacement					
25506-RSA	25506-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25506-RSB	25506-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25506-RSC	25506-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25506-RSD	25506-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25506-RSE	25506-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25506-RSF	25506-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25507 – 51.1 cm³/r [3.12 in³/r] Displacement					
25507-RSA	25507-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25507-RSB	25507-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25507-RSC	25507-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25507-RSD	25507-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25507-RSE	25507-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25507-RSF	25507-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange
Model 25508 – 55.2 cm³/r [3.37 in³/r] Displacement					
25508-RSA	25508-LSA	13 T Spline	Side	1-1/16-12	1-5/8-12
25508-RSB	25508-LSB	13 T Spline	Rear	1-1/16-12	1-5/8-12
25508-RSC	25508-LSC	7/8 Keyed	Side	1-1/16-12	1-5/8-12
25508-RSD	25508-LSD	7/8 Keyed	Rear	1-1/16-12	1-5/8-12
25508-RSE	25508-LSE	13 T Spline	Side	3/4 Split Flange	1-1/4 Split Flange
25508-RSF	25508-LSF	7/8 Keyed	Side	3/4 Split Flange	1-1/4 Split Flange

Series L2 pump
Optional configurations

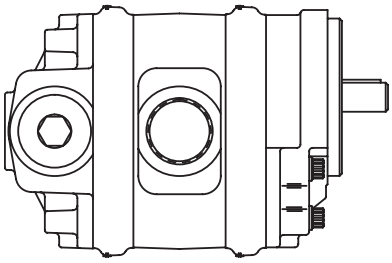
The L2 Series gear pump components can be assembled into many optional configurations. The versatile design allows you to assemble a pump to meet your specific needs.

Model codes for single and multiple pumps along with the component part dimension drawings are given on the following pages.

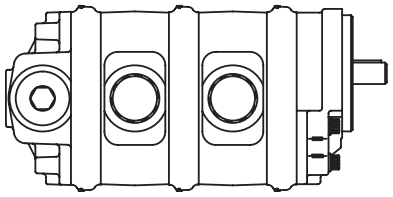
Single gear pump with spilt- flange ports



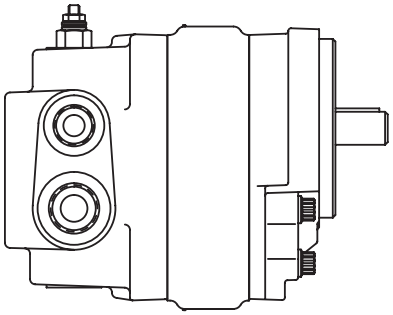
Double gear pump with common suction port



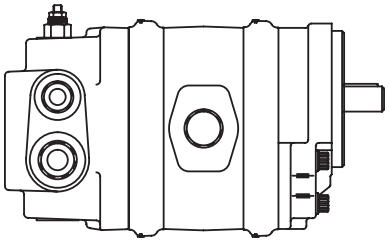
Triple gear pump with two suction ports



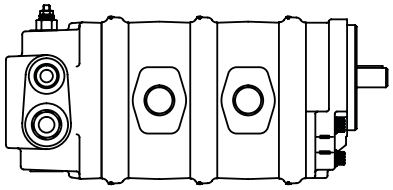
Single gear pump with flow divider



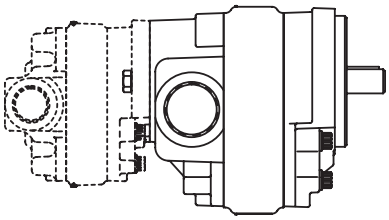
Double gear pump with flow divider



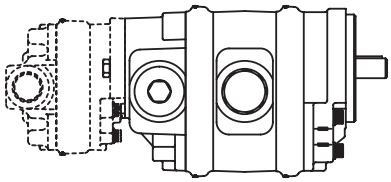
Triple gear pump with flow divider



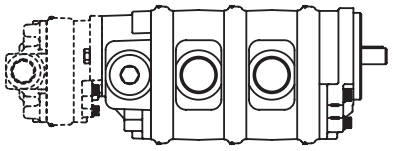
Single gear pump with SAE A flange auxiliary mount



Double gear pump with common suction port and SAE A flange auxiliary mount



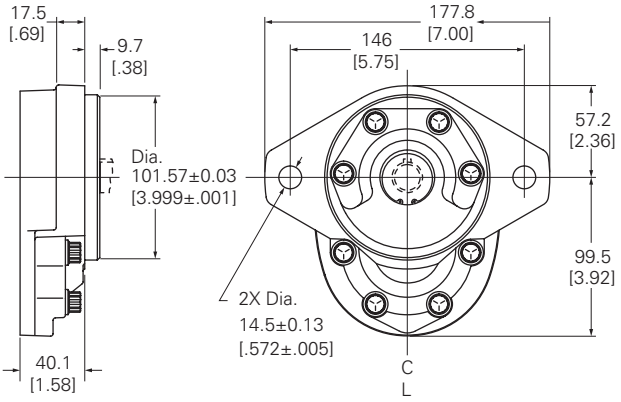
Triple gear pump with two suction ports and SAE A Flange auxiliary mount



Series L2 pump
Component parts - dimensions

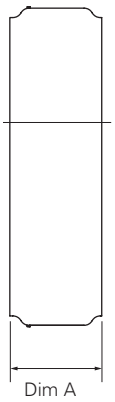
Front plate

SAE 2 Bolt B Mount.Used on all Standard Catalog Assemblies.



Body

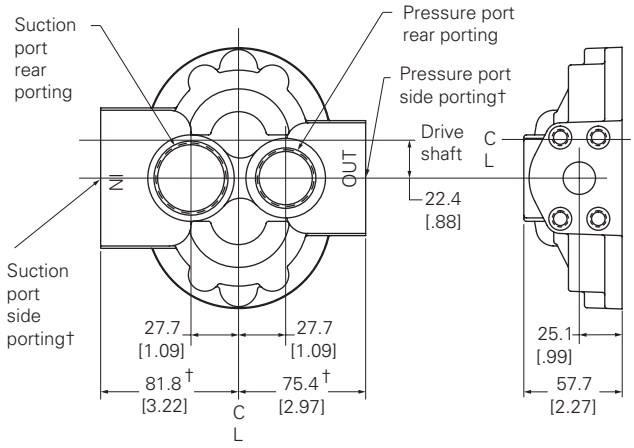
Used on Single and Multiple Pumps



Displacement cm³/r [in³/r]	Dimension A mm [in.]
21.3 [1.30	19.8 [.78]
25.4 [1.55]	23.1 [.91]
29.2 [1.78]	26.7 [1.05]
33.6 [2.05]	30.0 [1.18]
38.2 [2.33]	1.32 [33.5]
42.8 [2.61]	37.1 [1.46]
46.7 [2.85]	1.59 [40.4]
51.1 [3.12]	43.9 [1.73]
55.2 [3.37]	47.5 [1.87]

Backplate

Used on Single and Multiple Pumps

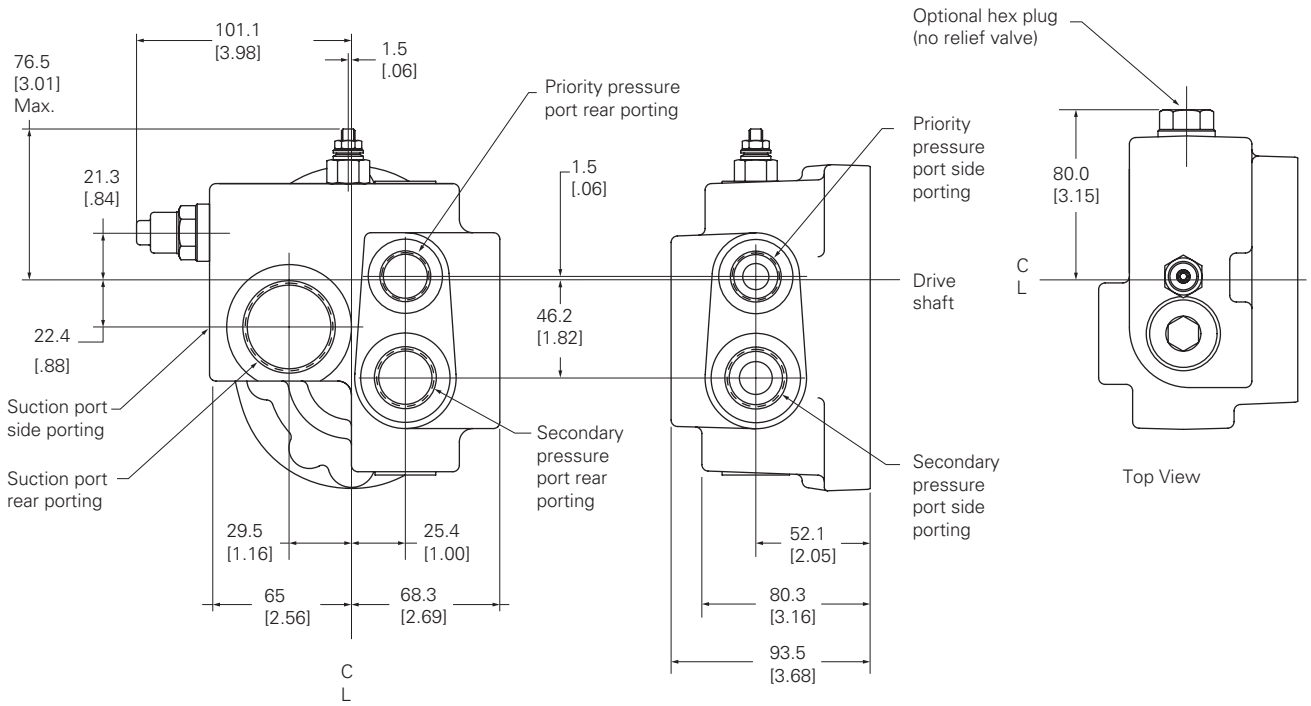


Left hand rotation shown

† For split flange porting subtract .8 [.03], available in side porting only

Flow divider backplate

Used on single and multiple pumps

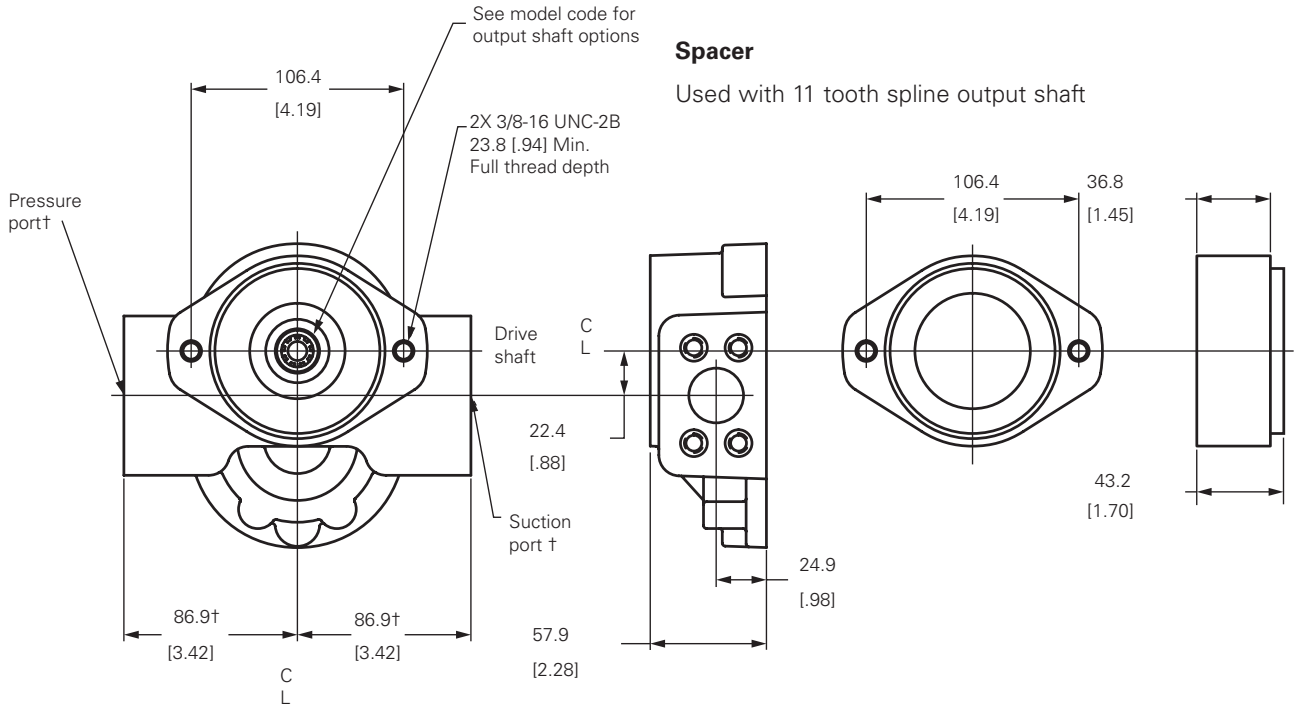


Left hand rotation shown

Series L2 pump
Component parts - dimensions

Tandem backplate with SAE 2 bolt a flange

Used on single and multiple pumps



Spacer

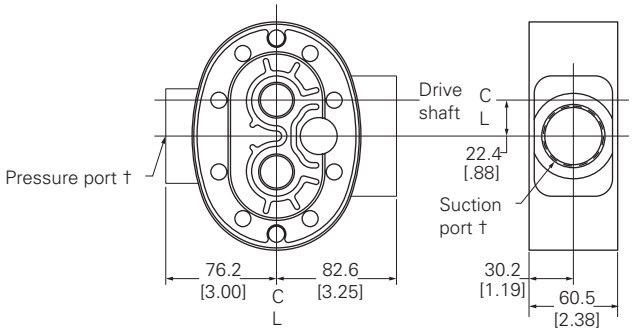
Used with 11 tooth spline output shaft

Right hand rotation shown

† For split flange porting subtract .8 [.03]

Adaptor plate

Used on multiple pumps



Right hand rotation shown

† For split flange porting subtract .8 [.03]

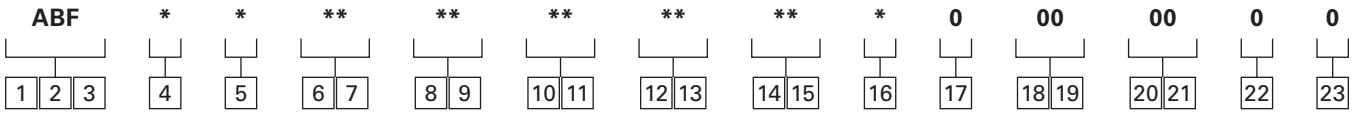
Series L2 Pump
Model code - single

L2 gear pumps can be ordered by using the following Model Code.

A twenty-three digit coding system has been designed to identify all of the features available on L2 single gear pumps. The characters and their relative positions within the code identify specific features.

Use the Model Code Matrix as an aid when assembling the model code for the pump with the features you desire. It may be helpful to photocopy the matrix and write the numbers and letters into the boxes as you select features.

All twenty-three digits of the code must be submitted when ordering. The seven zeros at the end of the model code are for factory use, be sure to include them when ordering.



1 2 3 L2 Series

ABF	Gear Pump - Single Unit

4 Unit type

A	Plain
B	Flow Divider with/without Relief Valve (Pos. 14-15)

5 Input rotation (viewed from input shaft end)

L	Left-hand Rotation CCW
R	Right-hand Rotation CW

6 7 Displacement (cm^3/r [in^3/r])

00	21.3 [1.30]
01	25.4 [1.55]
02	29.2 [1.78]
03	33.6 [2.05]
04	38.2 [2.33]
05	42.8 [2.61]
06	46.7 [2.85]
07	51.1 [3.12]
08	55.2 [3.37]

8 9 Input shaft

AA	7/8 Inch Dia. 13 Tooth Spline 16/32 Pitch Shaft Extension 41.1 [1.62]
AB	7/8 Inch Dia. Straight Keyed, Keyway 6.4 X 25.4 [.25 X 1.00] Shaft Extension 41.1 [1.62]
AD	7/8 Inch Dia. 41 Tooth Spline 48/96 Pitch Shaft Extension 24.9 [.98]

10 11 Ports, sizes and location- backplate

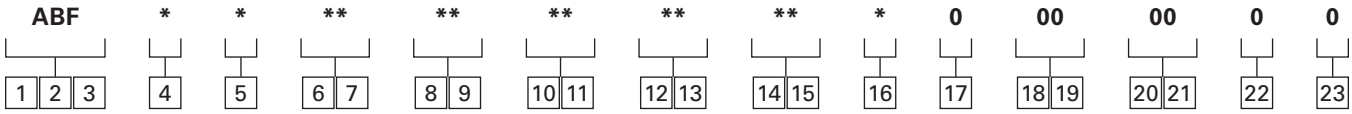
01	1 5/8-12 Suction; 1 1/16- 12 Pressure SAE Straight Thread O-ring Ports - Side
02	1 5/8-12 Suction; 1 1/16- 12 Pressure SAE Straight Thread O-ring Ports - Rear
03	1 1/4 Suction; 3/4 Pressure Split Flange Ports - Side
04	1 5/8-12 Suction; 7/8-14 Priority Pressure; 1 1/16-12 Secondary Pressure SAE Straight Thread O-ring Ports - Side
05	1 5/8-12 Suction; 7/8-14 Priority Pressure; 1 1/16-12 Secondary Pressure SAE Straight Thread O-ring Ports - Rear

12 13 Priority flow divider setting (LPM [GPM])

00	No Flow Setting
AA	3.8 [1.00]
AB	5.7 [1.50]
AC	7.6 [2.00]
AD	9.5 [2.50]
AE	11.4 [3.00]
AF	13.3 [3.50]
AG	15.1 [4.00]
AH	17.0 [4.50]
AJ	18.9 [5.00]
AK	20.8 [5.50]
AL	22.7 [6.00]
AN	26.5 [7.00]
AP	30.3 [8.00]
AR	34.1 [9.00]
AS	37.8 [10.00]

All dimensions are in inches.

Series L2 Pump
Model code - single



14 15 Relief valve full flow setting (bar [PSI])

00	No Relief Valve Setting
AA	34.5 [500]
AB	51.7 [750]
AC	68.9 [1000]
AD	86.2 [1250]
AE	103.4 [1500]
AF	120.6 [1750]
AG	137.9 [2000]
AH	155.1 [2250]
AJ	172.4 [2500]
AK	189.6 [2750]
AL	206.8 [3000]

16 Auxiliary rear mount

0	None
B	2 Bolt A SAE Flange Series 82-2 Output Shaft Accepts 9 Tooth Spline 16/32 Pitch, Shaft Extension 31.8 [1.25]
C	2 Bolt A SAE Flange Series 82-2, With 11 Tooth 16/32 Pitch External Spline Output Shaft, 17.5 [.69] Minimum Full Spline, Requires Spacer and Coupler to Accept 31.8 [1.25] Mating Shaft Extension

17 Test data

0	Generic
A	Unit Specific (required for flow divider and relief valve options.)

18 19 Special features

00	No Special Features
AB	Viton Shaft Seal

20 21 Paint

00	None
0A	Red Primer
0B	Black

22 Identification

0	Standard

23 Design code

A	A

All dimensions are in inches.

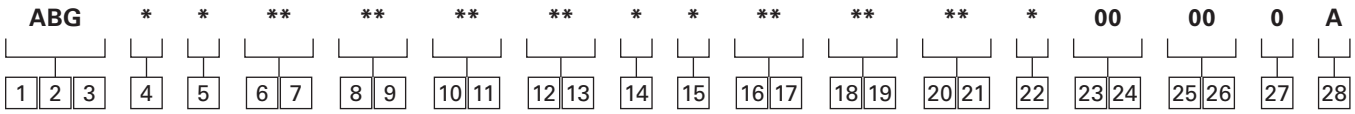
Series L2 pump
Model code - multiple

Multiple L2 gear pumps can be ordered by using the following Model Code.

A twenty-eight digit coding system has been designed to identify all of the features available on L2 double and triple gear pumps. The characters and their relative positions within the code identify specific features.

Use the Model Code Matrix as an aid when assembling the model code for the pump with the features you desire. It may be helpful to photocopy the matrix and write the numbers and letters into the boxes as you select features.

All twenty-eight digits of the code must be submitted when ordering. The six zeros at the end of the model code are for factory use, be sure to include them when ordering.



1 2 3 L2 Series

ABG	Gear Pump - Multiple Unit

4 Unit type

A	Plain
B	Flow Divider with/without Relief Valve (Pos. 20-21)

5 Input rotation (viewed from input shaft end)

L	Left-hand Rotation CCW
R	Right-hand Rotation CW

6 7 Displacement (cm^3/r [in^3/r])

00	21.3 [1.30]
01	25.4 [1.55]
02	29.2 [1.78]
03	33.6 [2.05]
04	38.2 [2.33]
05	42.8 [2.61]
06	46.7 [2.85]
07	51.1 [3.12]
08	55.2 [3.37]

8 9 Displacement of center section (cm^3/r [in^3/r])

00	21.3 [1.30]
01	25.4 [1.55]
02	29.2 [1.78]
03	33.6 [2.05]
04	38.2 [2.33]
05	42.8 [2.61]
06	46.7 [2.85]
07	51.1 [3.12]
08	55.2 [3.37]
99	No Center Displacement

10 11 Displacement of rear section (cm^3/r [in^3/r])

00	21.3 [1.30]
01	25.4 [1.55]
02	29.2 [1.78]
03	33.6 [2.05]
04	38.2 [2.33]
05	42.8 [2.61]
06	46.7 [2.85]
07	51.1 [3.12]
08	55.2 [3.37]

12 13 Input shaft

AA	7/8 Inch Dia. 13 Tooth Spline 16/32 Pitch Shaft Extension 41.1 [1.62]
AB	7/8 Inch Dia. Straight Keyed, Keyway 6.4 X 25.4 [.25 X 1.00] Shaft Extension 41.1 [1.62]
AE	7/8 Inch Dia. 41 Tooth Spline 48/96 Pitch Shaft Extension 24.9 [.98]

14 Front adaptor ports

1	1 5/8-12 Suction; 1 1/16- 12 Pressure – SAE Straight Thread O-ring Ports
3	1 1/4 Suction; 3/4 Pressure Split Flange Ports, Common Suction

All dimensions are in inches.

Series L2 pump
Model code - multiple

ABG	*	*	**	**	**	**	*	*	**	**	**	*	00	00	0	A
1 2 3	4	5	6 7	8 9	10 11	12 13	14	15	16 17	18 19	20 21	22	23 24	25 26	27	28

15 Rear adaptor ports (triple pumps)

0	No Rear Adaptor
1	1 5/8-12 Suction; 1 1/16- 12 Pressure – SAE Straight Thread O-ring Ports
3	1 1/4 Suction; 3/4 Pressure Split Flange Ports, Common Suction

16 17 Ports, sizes and location- backplate

03	1 5/8-12 Suction; 1 1/16- 12 Pressure SAE Straight Thread O-ring Ports - Rear
05	1 5/8-12 Suction; 7/8-14 Priority Pressure; 1 1/16-12 Secondary Pressure SAE Straight Thread O-ring Ports - Side
06	1 5/8-12 Suction; 7/8-14 Priority Pressure; 1 1/16-12 Secondary Pressure SAE Straight Thread O-ring Ports - Rear
07	1 5/8-12 Suction (Plugged); 1 1/16-12 Pressure SAE Straight Thread O-ring Ports - Rear
08	1 1/4 Suction; 3/4 Pressure Split Flange Ports - Side

18 19 Priority flow divider setting (LPM [GPM])

00	No Flow Setting
AA	3.8 [1.00]
AB	5.7 [1.50]
AC	7.6 [2.00]
AD	9.5 [2.50]
AE	11.4 [3.00]
AF	13.3 [3.50]
AG	15.1 [4.00]
AH	17.0 [4.50]
AJ	18.9 [5.00]
AK	20.8 [5.50]
AL	22.7 [6.00]
AN	26.5 [7.00]
AP	30.3 [8.00]
AR	34.1 [9.00]
AS	37.8 [10.00]

20 21 Relief valve full flow setting (bar [PSI])

00	No Relief Valve Setting
AA	34.5 [500]
AB	51.7 [750]
AC	68.9 [1000]
AD	86.2 [1250]
AE	103.4 [1500]
AF	120.6 [1750]
AG	137.9 [2000]
AH	155.1 [2250]
AJ	172.4 [2500]
AK	189.6 [2750]
AL	206.8 [3000]

22 Test data

0	Generic
A	Unit Specific (required for flow divider and relief valve options.)

23 24 Special features

00	No Special Features
AA	Viton Shaft Seal
AE	2 Bolt A SAE Flange Series 82-2 Output Shaft Accepts 9 Tooth Spline 16/32 Pitch, Shaft Extension 31.8 [1.25]
AF	2 Bolt A SAE Flange Series 82-2, With 11 Tooth 16/32 Pitch External Spline Output Shaft, 17.5 [.69] Minimum Full Spline, Requires Spacer and Coupler to Accept 31.8 [1.25] Mating Shaft Extension

25 26 Paint

00	None
0A	Red Primer
0B	Black

27 Identification

0	Standard

28 Design code

A	A

All dimensions are in inches.