HYDRAULIC COMPONENTS

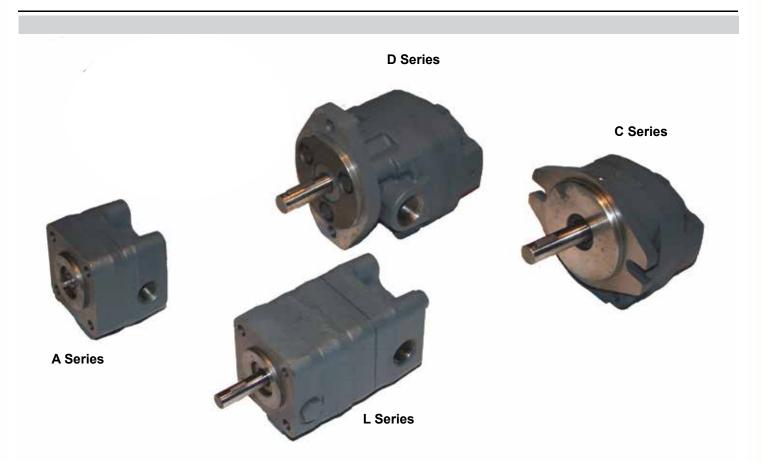
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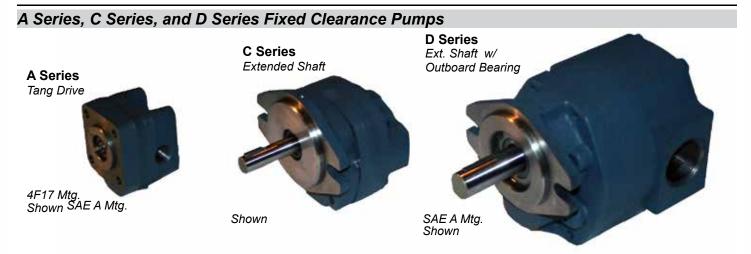
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L Series 2 Stage HI-LOW Pumps (Data Page) L6 and L8 Series 2 Stage HI-LOW Pumps	
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Delta's fixed clearance gear pumps are offered in three series A, C, and D with flows ranging from 0.5 GPM to 35 GPM. Delta pumps are designed to provide greater torque efficiencies – especially at high speeds. Numerous shaft, bearing, mounting and seal options are available. Each model is designed to operate as either a single rotation or bi-rotational pump, depending on the application.

A Series, C Series, and D Series hydraulic pumps are designed with long term performance in mind, including: high-strength cast iron bodies, hardened alloy gears and shafts, bronze bearings, and Buna-N sealing members. Integral check valves permit bidirectional rotation to simplify plumbing. The D Series pumps incorporate drive shaft thrust ball bearings to facilitate thrust and radial shaft loads.

Because of their long proven construction, these pumps are found in every type of mobile and industrial applications. They can be expected to perform for the life expectancy of the equipment on which installed.

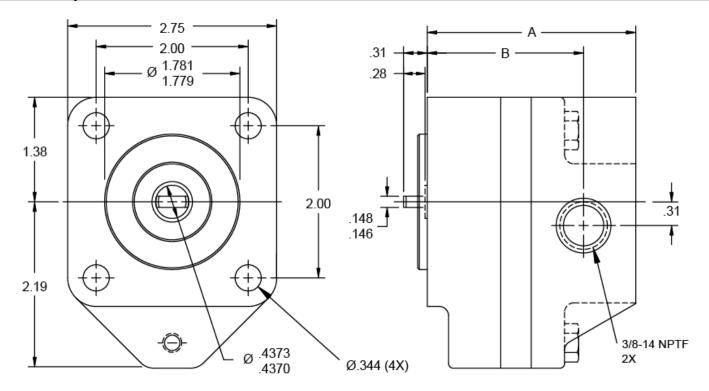
Installation Notes

On models A1-A8, C1-C8, and D1-D8 be especially careful since these units require that the mounting bolts are installed to complete the assembly. The two shipping bolts are not sufficient to make the assembly intact and care should be exercised while handling in that condition. Bolt torque requirements are 13 to 17 ft-lbs.

	MODEL	L GPM DISPLACEMENT SLIP GPM MAX. PSI		MAX.	Page				
		AT 1750 RPM	GAL./REV	IN³/REV	PER 100 PSI	INT. DUTY	CONT. DUTY	RPM	
	A1	0.49	0.00028	0.065	0.015	2500	1500	5000	5
	A2	0.82	0.00047	0.108	0.017	2500	1500	5000	5
	A4	1.41	0.00081	0.187	0.020	2250	1500	4000	5
RM	A6	2.39	0.00137	0.316	0.025	1650	950	3600	5
TANG DRIVE	A8	3.53	0.00202	0.468	0.030	1250	650	2500	5
TAN	A21	3.10	0.00178	0.411	0.040	2000	1500	5000	7
[A23	5.30	0.00304	0.702	0.045	1600	1200	4000	7
	A25	7.42	0.00425	0.981	0.055	1000	850	3500	7
	A27	11.10	0.00633	1.460	0.075	750	550	2400	7
	C1	0.49	0.00028	0.065	0.015	2500	1500	5000	9
	C2	0.82	0.00047	0.108	0.017	2500	1500	5000	9
	C4	1.41	0.00081	0.187	0.020	2500	1500	4000	9
	C6	2.39	0.00137	0.316	0.025	1850	1100	3000	9
F	C8	3.53	0.00202	0.468	0.030	1500	750	1800	9
EXTENDED SHAFT	C21	3.10	0.00178	0.411	0.040	2500	1500	5000	11
S S	C23	5.30	0.00304	0.702	0.045	2350	1500	4000	11
NDE	C25	7.42	0.00425	0.981	0.055	1500	1500	3000	11
E	C27	11.10	0.00633	1.460	0.075	1200	1100	1800	11
μ Ω	C41	11.90	0.0068	1.570	0.070	2500	1500	4000	13
	C43	17.80	0.0102	2.350	0.090	2450	1500	3000	13
	C45	23.10	0.0132	3.040	0.110	1850	1500	2300	13
	C47	29.50	0.0169	3.900	0.140	1500	1200	1800	13
	C49	33.60	0.0192	4.430	0.180	1000	700	1800	13
	D1	0.49	0.00028	0.065	0.015	2500	1500	5000	15
Q	D2	0.82	0.00047	0.108	0.017	2500	1500	5000	15
NR.	D4	1.41	0.00081	0.187	0.020	2500	1500	4000	15
BE	D6	2.39	0.00137	0.316	0.025	1850	1100	3000	15
8	D8	3.53	0.00202	0.468	0.030	1500	750	1800	15
30A	D21	3.10	0.00178	0.411	0.040	2500	1500	5000	17
5	D23	5.30	0.00304	0.702	0.045	2350	1500	4000	17
Ň	D25	7.42	0.00425	0.981	0.055	1500	1500	3000	17
FT	D27	11.10	0.00633	1.460	0.075	1200	1100	1800	17
EXT. SHAFT W/OUTBOARD BEARING	D41	11.90	0.0068	1.570	0.070	2500	1500	4000	19
Ĕ	D43	17.80	0.0102	2.350	0.090	2450	1500	3000	19
–	D45	23.10	0.0132	3.040	0.110	1850	1500	2300	19
1	D47	29.50	0.0169	3.900	0.140	1500	1200	1800	19
	D49	33.60	0.0192	4.430	0.180	1000	700	1800	19

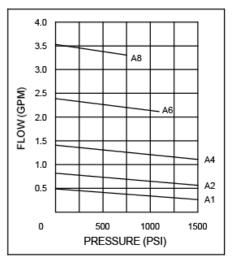
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluations, and testing for suitability.

A1-A8 Pump, Bi-Directional



For best performance: Inlet pressure should not exceed 10 PSI and vacuum should be limited to 8 inches of mercury at the pump. Inlet lines always must be large, straight, short and absolutely leak-proof, even more so as RPM increases. Suggested maximum inlet velocity is 6 feet per second.

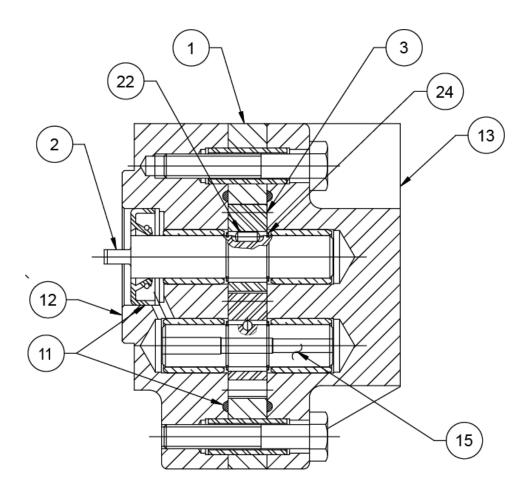
HYDRAULIC SCHEMATIC



MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. RPM	PRESS. MAX. CONTINUOUS	A	В
A1	0.49	0.00028	0.065	0.015	5000	1500	2.48	1.79
A2	0.82	0.00047	0.108	0.017	5000	1500	2.57	1.88
A4	1.41	0.00081	0.187	0.020	4000	1500	2.74	2.05
A6	2.39	0.00137	0.316	0.025	3600	1100	3.02	2.33
A8	3.53	0.00202	0.468	0.030	2500	750	3.34	2.65

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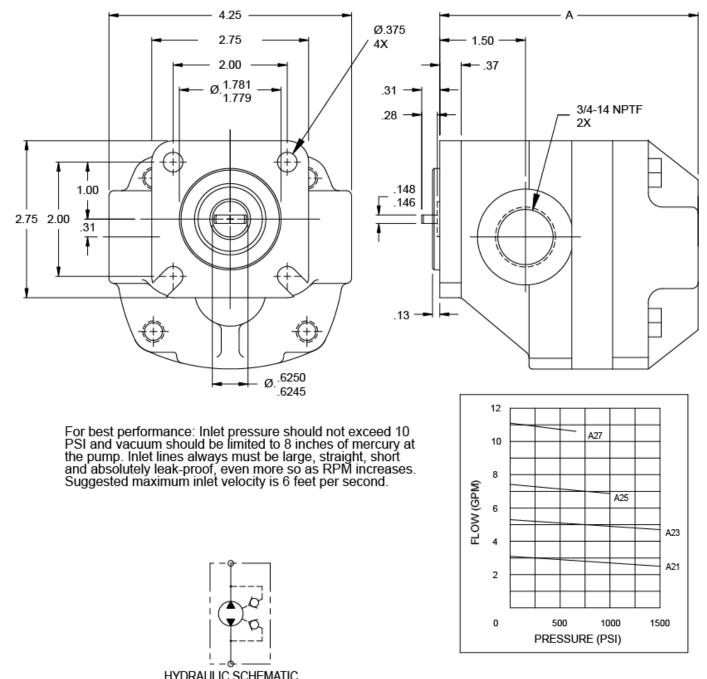
A1-A8 Pump, Bi-Directional



SECTION A-A

ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2

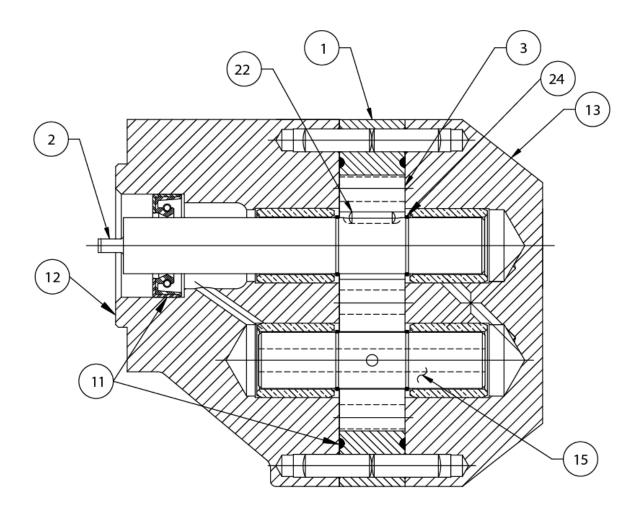
A21-A27 Pump, Bi-Directional



		TITDIWOLIC SCILL	AIIC				
MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. RPM	PRESS. MAX. CONTINUOUS	A
A21	3.10	0.00178	0.411	0.040	5000	1500	4.24
A23	5.30	0.00304	0.702	0.045	4000	1500	4.54
A25	7.42	0.00425	0.981	0.055	3500	1000	4.76
A27	11.10	0.00633	1.460	0.075	2400	700	5.32

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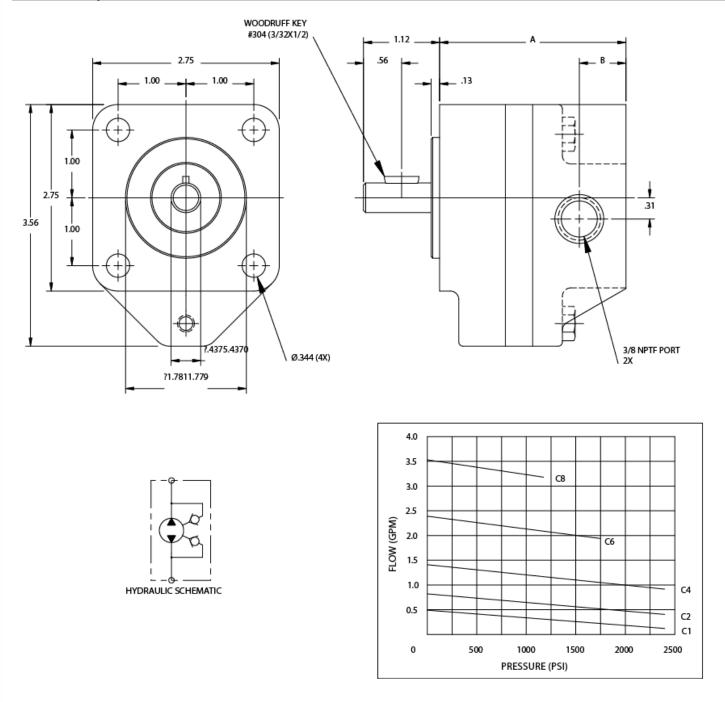
A21-A27 Pump, Bi-Directional



SECTION A-A

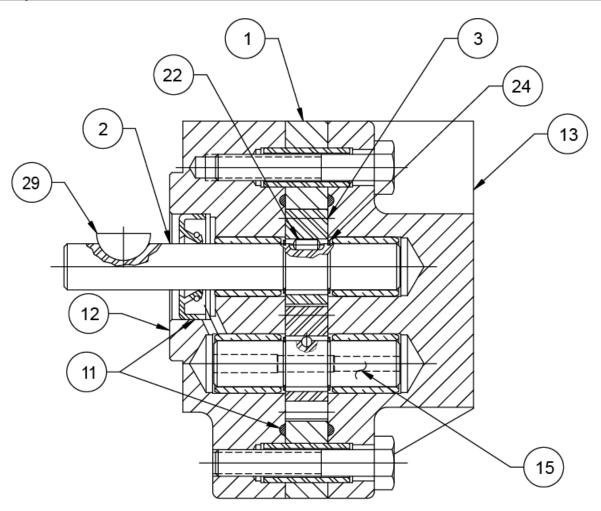
ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2

C1-C8 Pump, Bi-Directional



MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	А	В
C1	0.49	0.00028	0.065	0.015	2400	1500	5000	2.48	0.688
C2	0.82	0.00047	0.108	0.017	2400	1500	5000	2.57	0.688
C4	1.41	0.00081	0.187	0.020	2400	1500	4000	2.74	0.688
C6	2.39	0.00137	0.316	0.025	1750	1100	3000	3.02	0.688
C8	3.53	0.00202	0.468	0.030	1200	750	1800	3.34	0.688

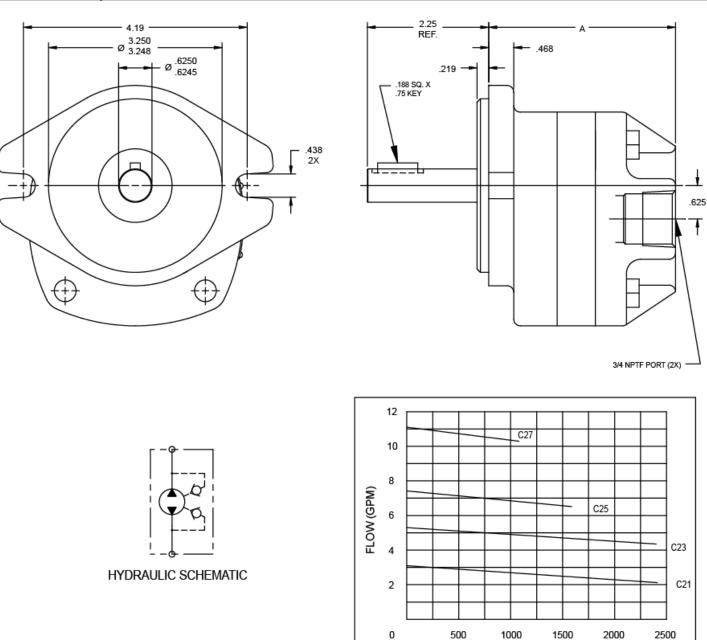
C1-C8 Pump, Bi-Directional



SECTION A-A

ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
29	DRIVE KEY	1

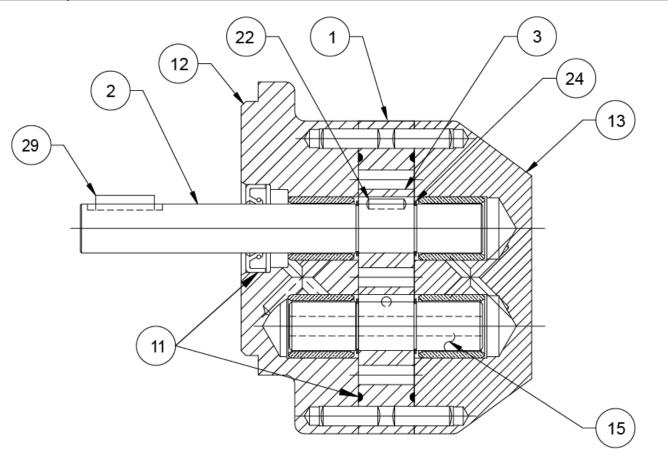
C21-C27 Pump, Bi-Directional



MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	A
C21	3.10	0.00178	0.411	0.040	2400	1500	5000	3.21
C23	5.30	0.00304	0.702	0.045	2400	1500	4000	3.56
C25	7.42	0.00425	0.981	0.055	1600	1000	3000	3.78
C27	11.10	0.00633	1.460	0.075	1100	700	1800	4.21

PRESSURE (PSI)

C21-C27 Pump, Bi-Directional

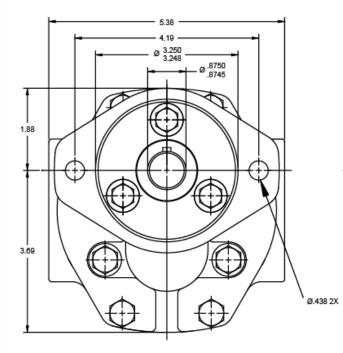


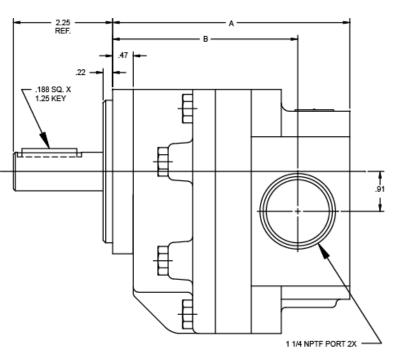


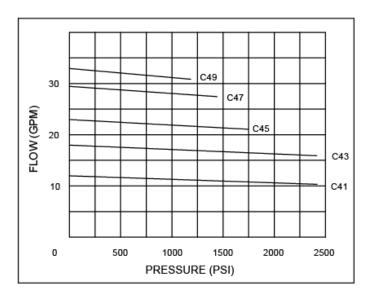
ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
29	DRIVE KEY	1

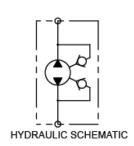
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C41-C49 Pump, Bi-Directional



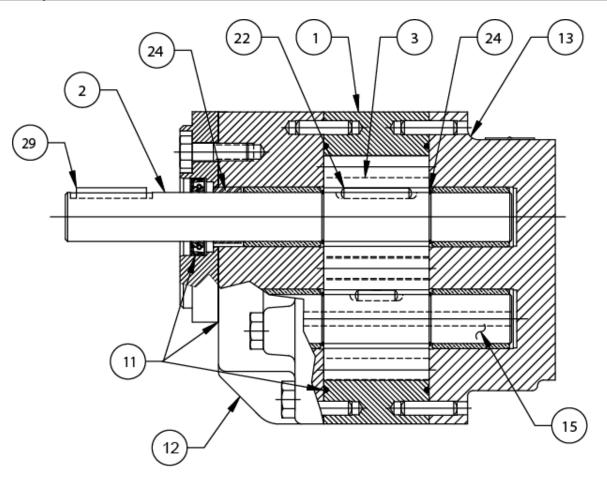






MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	А	В
C41	11.90	0.0068	1.570	0.070	2400	1500	4000	5.41	4.22
C43	17.80	0.0102	2.350	0.090	2400	1500	3000	5.72	4.59
C45	23.10	0.0132	3.040	0.110	1750	1100	2300	6.06	4.94
C47	29.50	0.0169	3.900	0.140	1450	900	1800	6.47	5.41
C49	33.60	0.0192	4.430	0.180	1200	750	1800	6.72	5.59

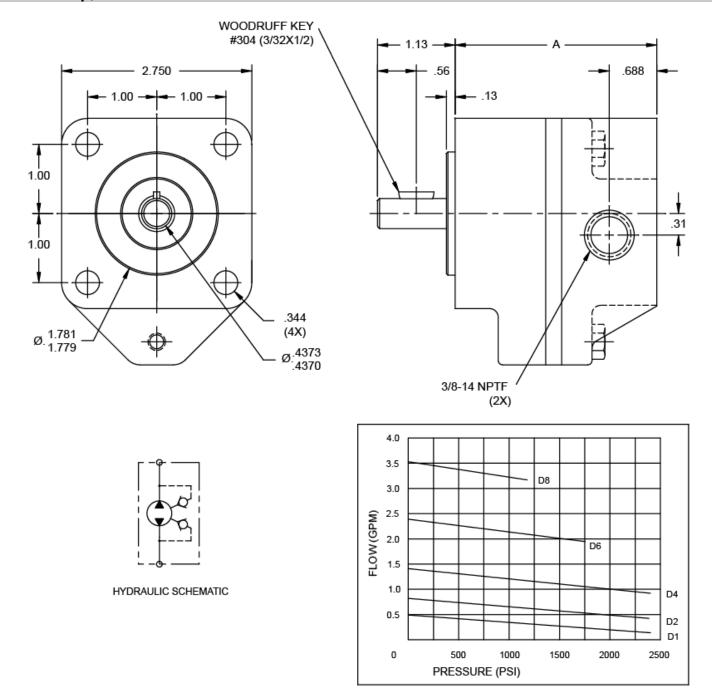
C41-C49 Pump, Bi-Directional



SECTION A-A

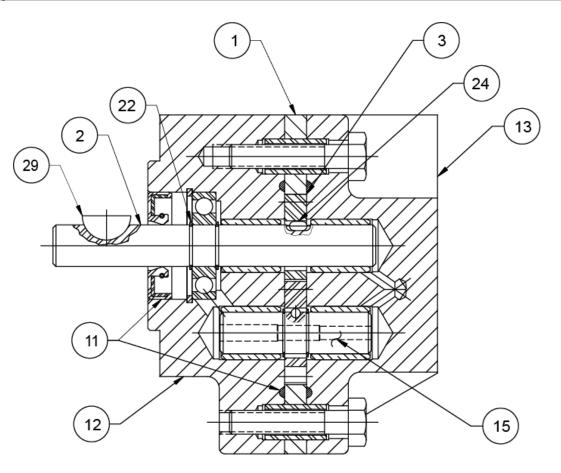
ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
29	DRIVE KEY	1

D1-D8 Pump, Bi-Directional



MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	A
D1	0.49	0.00028	0.065	0.015	2400	1500	5000	2.82
D2	0.82	0.00047	0.108	0.017	2400	1500	5000	2.91
D4	1.41	0.00081	0.187	0.020	2400	1500	4000	3.08
D6	2.39	0.00137	0.316	0.025	1750	1100	3000	3.36
D8	3.53	0.00202	0.468	0.030	1200	750	1800	3.68

D1-D8 Pump, Bi-Directional

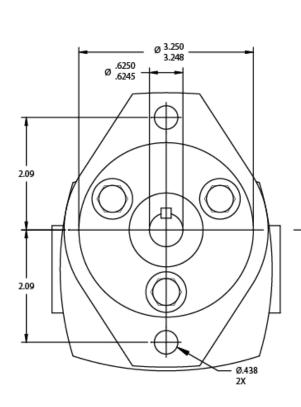


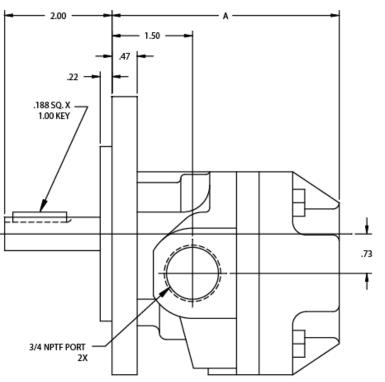
SECTION A-A

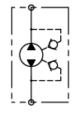
ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
28	OUTBOARD BEARING	1
29	DRIVE KEY	1
31	SNAP RING	1

WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluations, and testing for suitability.

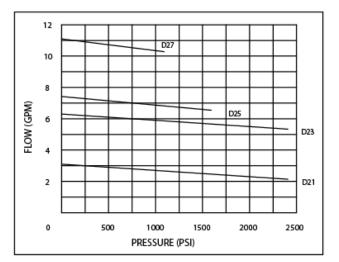
D21-D27 Pump, Bi-Directional





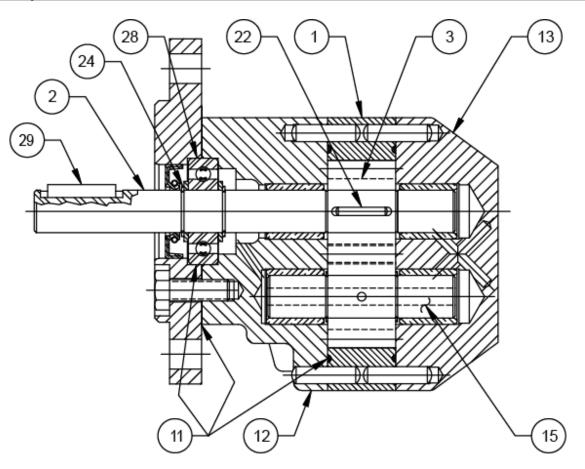


HYDRAULIC SCHEMATIC



MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	A
D21	3.10	0.00178	0.411	0.040	2400	1500	5000	3.21
D23	5.30	0.00304	0.702	0.045	2400	1500	4000	3.56
D25	7.42	0.00425	0.981	0.055	1600	1000	3000	3.78
D27	11.10	0.00633	1.460	0.075	1100	700	1800	4.21

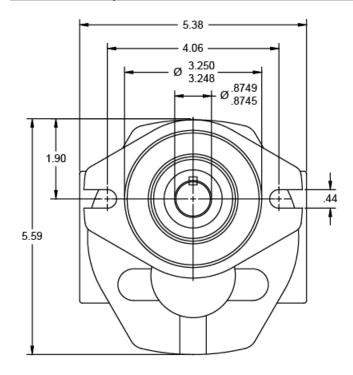
D21-D27 Pump, Bi-Directional



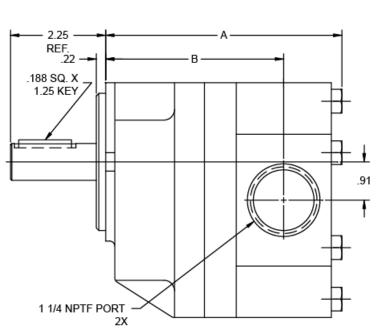
SECTION A-A

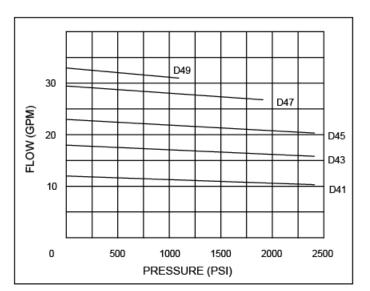
ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
28	OUTBOARD BEARING	1
29	DRIVE KEY	1

D41-D49 Pump, Bi-Directional



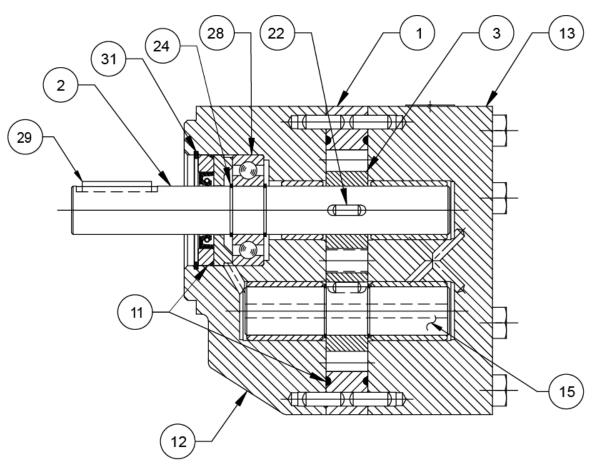
HYDRAULIC SCHEMATIC





MODEL	GPM AT 1750 RPM	0 PSI DISP. GAL./REV,	DISP. CU. IN./REV.	SLIP GPM PER 100 PSI	MAX. PUMP PRESSURE INTERMITTENT DUTY	MAX. PUMP PRESSURE CONTINUOUS DUTY	SPEED MAX. RPM	A	В
D41	11.90	0.0068	1.570	0.070	2400	1500	4000	5.34	4.22
D43	17.80	0.0102	2.350	0.090	2400	1500	3000	5.72	4.59
D45	23.10	0.0132	3.040	0.110	2400	1500	2300	6.06	4.94
D47	29.50	0.0169	3.900	0.140	1900	1200	1800	6.47	5.34
D49	33.60	0.0192	4.430	0.180	1100	700	1800	6.72	5.59

D41-D49 Pump, Bi-Directional



SECTION A-A

ITEM #	DESCRIPTION	QTY.
1	GEAR CASE	1
2	DRIVE SHAFT	1
3	GEAR	1
11	SEAL KIT	1
12	DRIVE PLATE ASS'Y	1
13	END PLATE ASS'Y	1
15	IDLER SHAFT ASS'Y	1
22	GEAR PIN	1
24	RETAINING RING	2
28	OUTBOARD BEARING	1
29	DRIVE KEY	1
31	SNAP RING	1

L Series 2 Stage HI-LO Pumps



While originally designed for log splitters, our enterprising distributors have found other unique applications.

Two pump sections with different size gear sets in a single housing that provides, high speed positioning capabilities with efficient working pressures.

With multi circuit integration through internal valving to provide low pressure, high volume flow in the first stage and high pressure, low volume flow in the second stage.

- Direct couple to gas engines or AC electric motors at approx (3600 RPM).
- Require only a fraction of the engine horsepower that would be necessary with single stage pumps while providing much higher overall efficiency.

MODEL	0 PSI DISP. IN³/ REV	MAX. PSI	MAX. RPM	~GPM AT 3450 RPM	HP REQUIRED	INLET	OUTLET	PAGE
L6-2	.316 +.108	3000	3600	6.0\1.0	4	3/4 NPTF	1/2 NPTF	21
L8-4	.468 + .187	3000	3600	9.0\2.0	6	3/4 NPTF	1/2 NPTF	21
L24-2	.880 + .222	3000	3600	16\2.5	10	1" TUBE	3/4 NPTF	23
L26-2	1.000 + .416	3000	3600	20\5.0	12	1.25 " TUBE	3/4 NPTF	23

To adapt to a variety of applications, all pumps have an SAE 4F17 mounting flange plus an optional K4 mounting bracket for foot mounting.

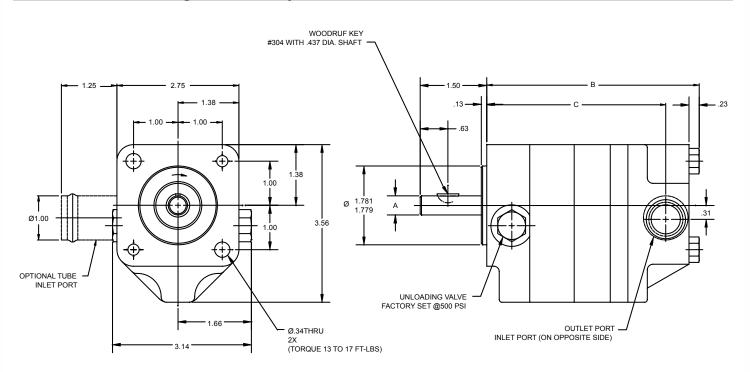
Note: Displacement given as larger gear set + smaller gear set.

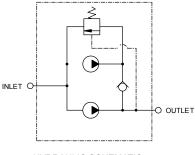
Operation @1725 RPM will give $\sim 50\%$ of combined flow and $\sim 40\%$ of sequenced flow.

Unloading Valve Settings: Factory set at 500 PSI for L6 and L8 models; 600 PSI for L24 and L26 models. Rotation: All models rotate clockwise facing pump shaft. Mounting: 4F17 four bolt all models.

[~] GPM given as combined flow\sequenced flow.

L6 and L8 Series 2 Stage HI-LO Pumps





HYDRAULIC SCHEMATIC

Unloading Valve is factory set at 500 PSI.

Rotation: All models rotate clockwise facing pump shaft or drive end (CWDE). Mounting: 4F17 four bolt all models.

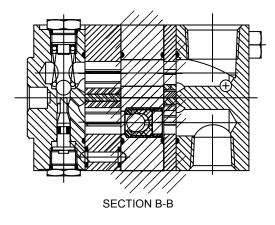
MODEL	0 PSI DISP. IN ³ /REV	MAX. PSI	MAX. RPM	~GPM AT 3450 RPM	HP REQUIRED	INLET	OUTLET	A	В	С
L6-2	.316 +.108	3000	3600	6.0/1.0	4	3/4 NPTF	1/2 NPTF	0.437	4.29	3.37
L8-4	.468 + .187	3000	3600	9.0/2.0	6	3/4 NPTF	1/2 NPTF	0.437	4.79	3.87

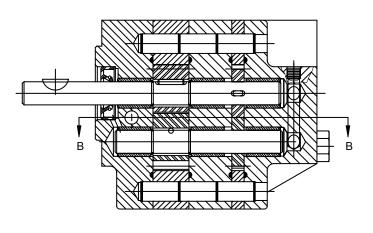
Note: Displacement given as larger gear set + smaller gear set.

~ GPM given as combined flow\sequenced flow.

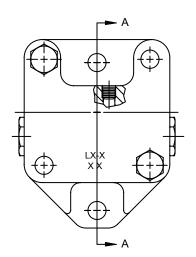
Operation @1725 RPM will give ~50% of combined flow and ~ 40% of sequenced flow.

L6 and L8 Series 2 Stage HI-LO Pumps

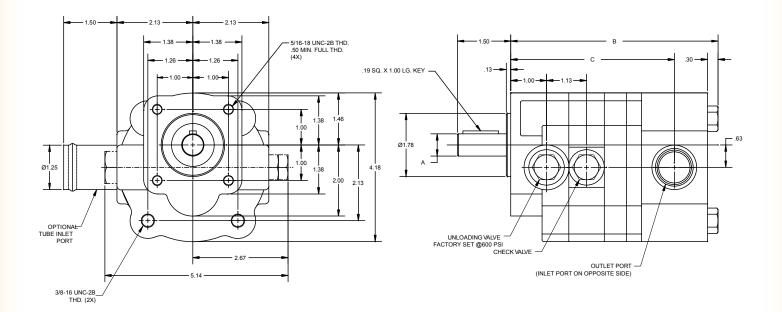


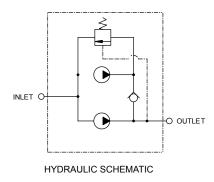


SECTION A-A



L24 and L26 Series 2 Stage HI-LO Pumps





Unloading Valve is factory set at 600 PSI. Rotation: All models rotate clockwise facing pump shaft or drive end (CWDE). Mounting: 4F17 four bolt all models.

MODEL	0 PSI DISP. IN ³ /REV	MAX. PSI	MAX. RPM	~GPM AT 3450 RPM	HP REQUIRED	INLET	OUTLET	A	В	С
L24-2	.880 + .222	3000	3600	16/2.5	10	1 NPTF	3/4 NPTF	0.625	5.52	4.30
L26-2	1.000 + .416	3000	3600	20/5.0	12	1.25" TUBE	3/4 NPTF	0.625	5.82	4.59

Note: Displacement given as larger gear set + smaller gear set.

~ GPM given as combined flow\sequenced flow.

Operation @1725 RPM will give ~50% of combined flow and ~ 40% of sequenced flow.