

MUNCIE[®]



K/L SERIES

PUMP & MOTOR

K/L SERIES

PUMP & MOTOR FEATURES

K SERIES: SEVEN PUMP SIZES — 4, 6, 8, 11, 13, 15, 17 GPM @ 1000 RPM (15, 23, 30, 42, 49, 57, 64 LPM @ 1000 RPM).

L SERIES: SEVEN PUMP SIZES — 14, 16, 19, 23, 25, 27, 30 GPM @ 1,000 RPM (53, 61, 72, 87, 95, 102, 114 LPM @ 1,000 RPM).

BI-ROTATIONAL PUMP/MOTOR — Designed to meet both application needs with a single unit. Bi-rotational feature reduces inventory requirements even further.

HIGH GRADE CAST IRON — Castings are poured from high-grade iron to meet the high performance requirements of your application.

VERSATILE 4-PORT DESIGN — N.P.T. or SAE porting at both the side and rear gives you installation flexibility for those tight fitting chassis hook-ups.

HIGH SPEEDS — Premium roller bearings provide for a broad range of speeds from 600 – 3,600 RPM to meet the most severe application needs, yet provide long product life.

HIGH PRESSURES — Up to 3,000 PSI (207 BAR) capability for severe requirements.

QUALITY CONTROL — All pumps are 100% tested before shipment. Manufacturing Statistical Process Control (SPC) ensures that the highest quality components are used.

OPTIONS — Eight different shaft types and four different mounting flanges provide optimum flexibility in connecting to your power source. Added system protection is available with the optional relief valve.

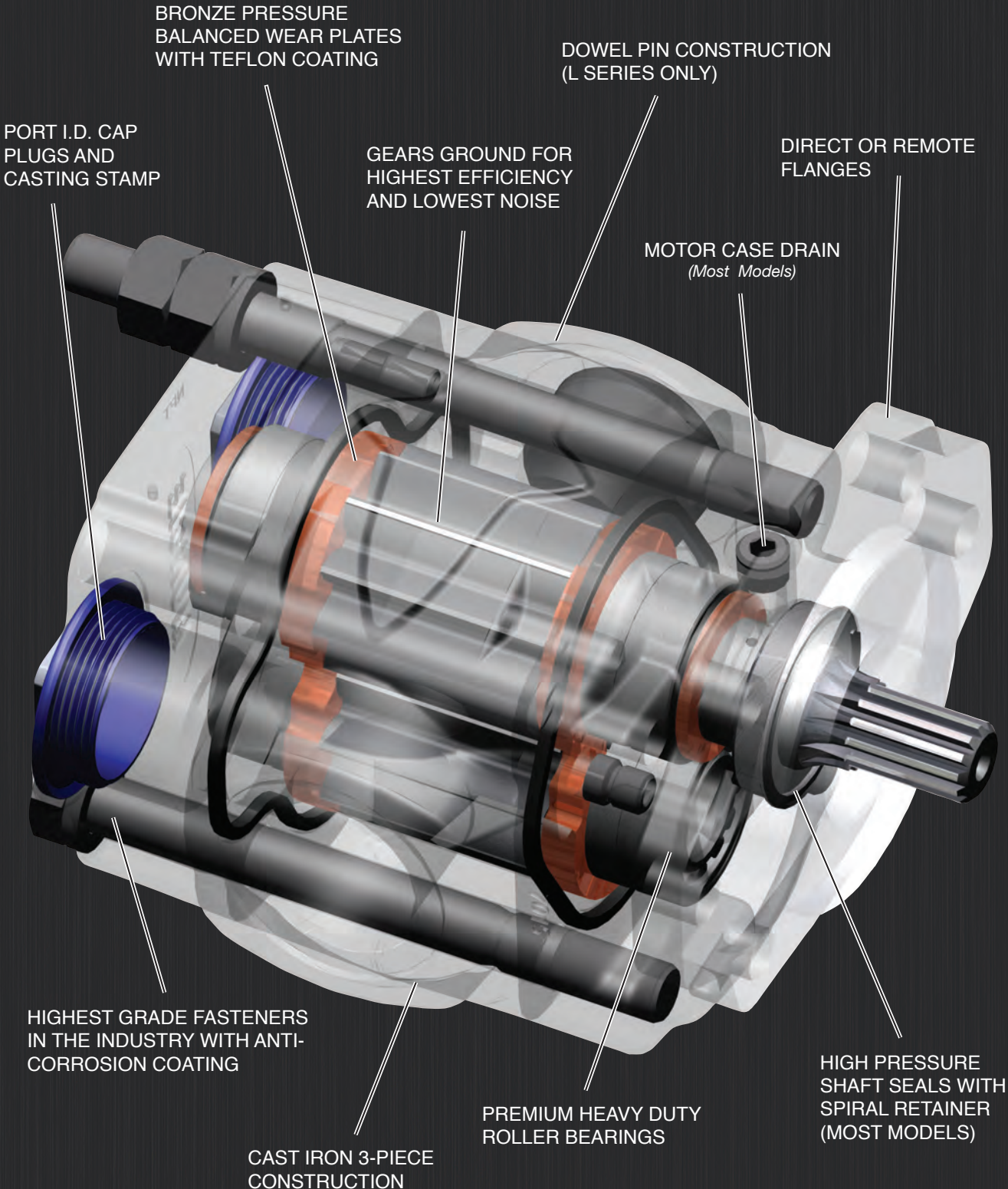
VARIETY OF APPLICATIONS

- Snow & Ice Control
- Farm Bodies
- Tow Trucks
- Small Hoists
- Utility & Line Equipment
- Lift Gates
- Refuse Equipment
- Equipment Trailers
- Live Floor Trailers
- Product Pumps Motors

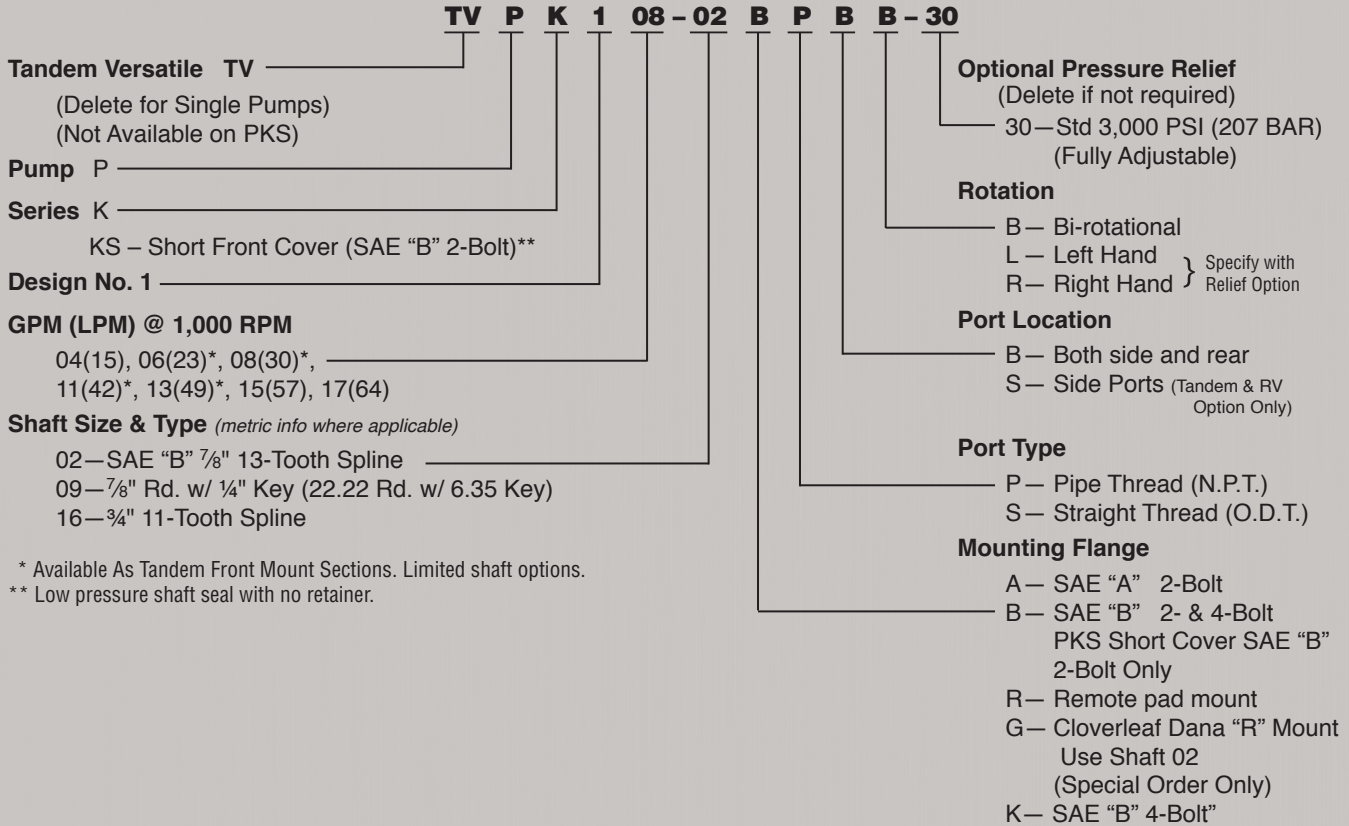


**DIRECT OR REMOTE
MOUNT PUMPS**

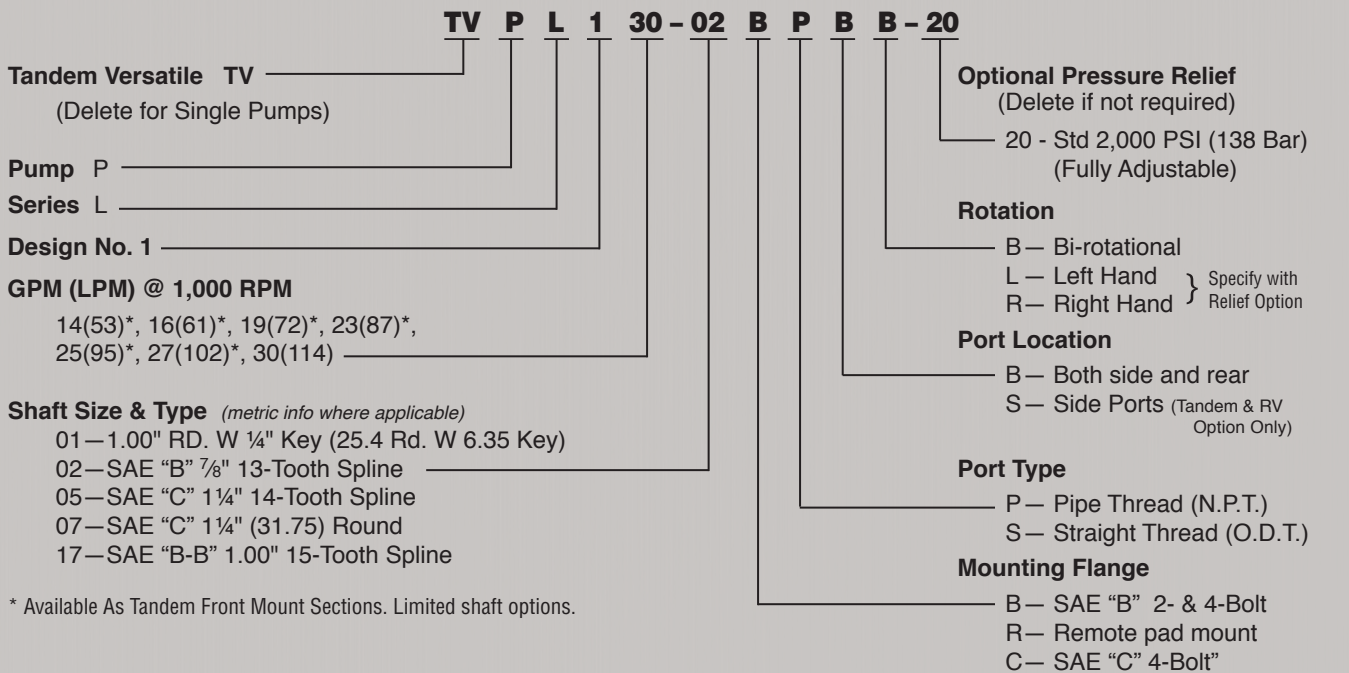
K/L SERIES PUMP CONSTRUCTION



K SERIES MODEL NUMBER CONSTRUCTION



L SERIES MODEL NUMBER CONSTRUCTION



K PUMP SPECIFICATIONS

MODEL NO.	DISPL. CU IN(CC)	MAX RPM	MIN RPM	MAX PSI(BAR)	N.P.T. SIDE PORTS	O.D.T. SIDE PORTS	N.P.T. REAR PORTS	O.D.T. REAR PORTS	MAX INLET VACUUM
PK104	0.98 (16)	3,600	600	3,000 (207)	½	⅝	1	1	5In.Hg.(.17BAR)
PK106	1.47 (24)	3,600	600	3,000 (207)	¾	¾	1	1	5In.Hg.(.17BAR)
PK108	1.97 (32)	3,000	600	3,000 (207)	1	1	1	1	5In.Hg.(.17BAR)
PK111	2.46 (40)	3,000	600	3,000 (207)	1	1	1	1	5In.Hg.(.17BAR)
PK113	2.96 (48)	2,500	600	3,000 (207)	1¼	1¼	1	1	5In.Hg.(.17BAR)
PK115	3.45 (57)	2,500	600	2,500 (172)	1¼	1¼	1	1	5In.Hg.(.17BAR)
PK117	3.94 (65)	2,500	600	2,500 (172)	1¼	1¼	1	1	5In.Hg.(.17BAR)

L PUMP SPECIFICATIONS

MODEL NO.	DISPL. CU IN(CC)	MAX RPM	MIN RPM	MAX PSI(BAR)	N.P.T. SIDE PORTS	O.D.T. SIDE PORTS	N.P.T. REAR PORTS	O.D.T. REAR PORTS	MAX INLET VACUUM
PL114	3.18 (52)	3,000	600	3,000 (207)	1	1	1½	1¼	5In.Hg.(.17BAR)
PL116	3.82 (63)	3,000	600	3,000 (207)	1	1	1½	1¼	5In.Hg.(.17BAR)
PL119	4.46 (73)	3,000	600	3,000 (207)	1¼	1¼	1½	1¼	5In.Hg.(.17BAR)
PL123	5.20 (85)	3,000	600	2,500 (172)	1¼	1¼	1½	1¼	5In.Hg.(.17BAR)
PL125	5.73 (93)	2,500	600	2,500 (172)	1½	1½	1½	1¼	5In.Hg.(.17BAR)
PL127	6.37 (104)	2,500	600	2,500 (172)	1½	1½	1½	1¼	5In.Hg.(.17BAR)
PL130	7.01 (115)	2,500	600	2,000 (138)	1½	1½	1½	1¼	5In.Hg.(.17BAR)

K MOTOR SPECIFICATIONS

MODEL NO.	DISPL. CU IN(CC)	MAX RPM	MIN RPM	MAX PSI(BAR)	N.P.T. SIDE PORTS	O.D.T. SIDE PORTS	N.P.T. REAR PORTS	O.D.T. REAR PORTS	MAX MOTOR BACK PRES.
PK104	0.98 (16)	3,600	600	3,000 (207)	½	⅝	1	1	150 PSI (10 BAR)
PK106	1.47 (24)	3,600	600	3,000 (207)	¾	¾	1	1	150 PSI (10 BAR)
PK108	1.97 (32)	3,000	600	3,000 (207)	1	1	1	1	150 PSI (10 BAR)
PK111	2.46 (40)	3,000	600	3,000 (207)	1	1	1	1	150 PSI (10 BAR)
PK113	2.96 (48)	2,500	600	3,000 (207)	1¼	1¼	1	1	150 PSI (10 BAR)
PK115	3.45 (57)	2,500	600	2,500 (172)	1¼	1¼	1	1	150 PSI (10 BAR)
PK117	3.94 (65)	2,500	600	2,500 (172)	1¼	1¼	1	1	150 PSI (10 BAR)

L MOTOR SPECIFICATIONS

MODEL NO.	DISPL. CU IN(CC)	MAX RPM	MIN RPM	MAX PSI(BAR)	N.P.T. SIDE PORTS	O.D.T. SIDE PORTS	N.P.T. REAR PORTS	O.D.T. REAR PORTS	MAX MOTOR BACK PRES.
PL114	3.18 (52)	3,000	600	3,000 (207)	1	1	1½	1¼	150 PSI (10 BAR)
PL116	3.82 (63)	3,000	600	3,000 (207)	1	1	1½	1¼	150 PSI (10 BAR)
PL119	4.46 (73)	3,000	600	3,000 (207)	1¼	1¼	1½	1¼	150 PSI (10 BAR)
PL123	5.20 (85)	3,000	600	2,500 (172)	1¼	1¼	1½	1¼	150 PSI (10 BAR)
PL125	5.73 (93)	2,500	600	2,500 (172)	1½	1½	1½	1¼	150 PSI (10 BAR)
PL127	6.37 (104)	2,500	600	2,500 (172)	1½	1½	1½	1¼	150 PSI (10 BAR)
PL130	7.01 (115)	2,500	600	2,000 (138)	1½	1½	1½	1¼	150 PSI (10 BAR)

OTHER SPECIFICATIONS

PUMP APPROXIMATE WEIGHTS:

K SERIES

MODEL	LBS	(KG)
PK104	26.5	(12.1)
PK106	27.8	(12.6)
PK108	29.0	(13.1)
PK111	30.3	(13.8)
PK113	31.6	(14.3)
PK115	33.0	(15.0)
PK117	34.1	(15.5)

L SERIES

MODEL	LBS	(KG)
PL114	39.9	(18.1)
PL116	41.7	(18.9)
PL119	43.4	(19.7)
PL123	45.2	(20.5)
PL125	46.9	(21.3)
PL127	48.7	(22.1)
PL130	51.0	(23.2)

- Never use Teflon Tape on pipe ports.
- Higher return line pressures or surges will require case drain to be plumbed and run directly back to reservoir on motors.
- Maximum Temperature: 200°F (93°C)
- Recommended Filtration: 10 Micron
- For water based fluids, reduce maximum pressure by 500 PSI (34 BAR). Maximum speed is 2,000 RPM.
- Hydraulic Oil (See Page 9)

NOTE: Weight shown for single direct mount pumps.

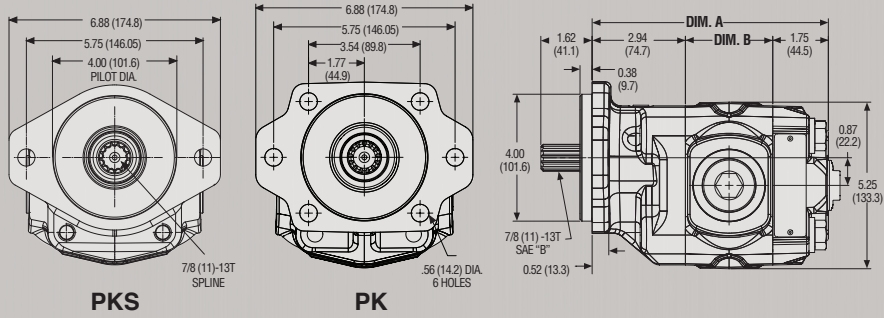


K INSTALLATION DIMENSIONS

SINGLE PUMP "B" DIRECT MOUNT (SAE "B")

MODEL NO.	DIM A PK IN.(MM)	PKS IN.(MM)	DIM B IN.(MM)
04	5.94 (150.9)	4.81 (122.2)	1.25 (31.8)
06	6.19 (157.2)	5.06 (128.5)	1.50 (38.1)
08	6.44 (163.6)	5.31 (134.9)	1.75 (44.5)
11	6.69 (169.9)	5.56 (141.2)	2.00 (50.8)
13	6.94 (176.3)	5.81 (147.6)	2.25 (57.2)
15	7.19 (182.6)	6.06 (153.9)	2.50 (63.5)
17	7.44 (189.0)	6.31 (160.3)	2.75 (69.9)

Dim C: PK 2.94 (74.7); PKS 1.81 (46.0)

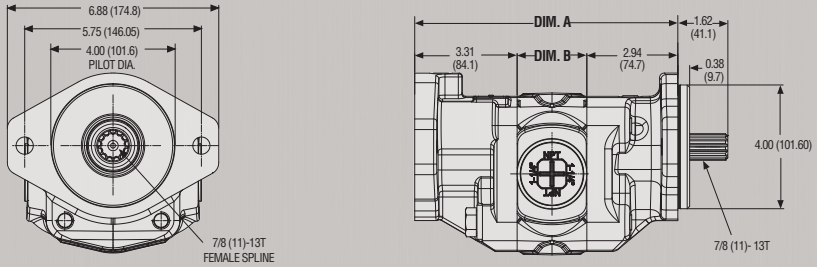


PKS

PK

TANDEM VERSATILE (FRONT PUMP) SAE "B" SHOWN

MODEL NO.	DIM A IN.(MM)	DIM B IN.(MM)
04	7.81 (198.4)	1.50 (38.1)
08	8.06 (204.7)	1.75 (44.5)
11	8.21 (208.5)	2.00 (50.8)
13	8.56 (217.4)	2.25 (57.2)



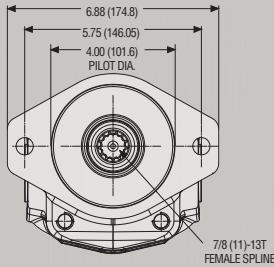
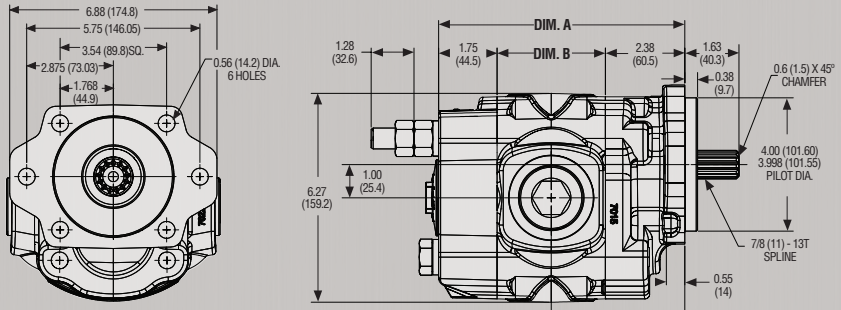
Rear Pump Flange
SAE "B" 2 Bolt

L INSTALLATION DIMENSIONS

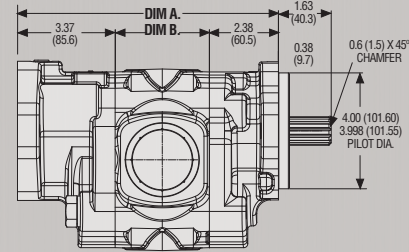
SINGLE PUMP "B" DIRECT MOUNT (SAE "B")

MODEL NO.	DIM A* IN.(MM)	DIM B IN.(MM)
14	6.12 (155.4)	2.00 (50.8)
16	6.38 (162.1)	2.25 (57.2)
19	6.62 (168.1)	2.50 (63.5)
23	6.88 (174.8)	2.75 (69.9)
25	7.12 (180.8)	3.00 (76.2)
27	7.38 (187.5)	3.25 (82.6)
30	7.62 (193.5)	3.50 (88.9)

*Add 1.00 (25.4) to "A" dimension for round shaft with O.B. bearing



Rear Pump Flange
SAE "B" 2 Bolt



TANDEM VERSATILE (FRONT PUMP) SAE "B" SHOWN

MODEL NO.	DIM A IN.(MM)	DIM B IN.(MM)
14	7.74 (196.6)	2.00 (50.8)
16	8.00 (203.2)	2.25 (57.2)
19	8.24 (209.3)	2.50 (63.5)
23	8.50 (215.9)	2.75 (69.9)

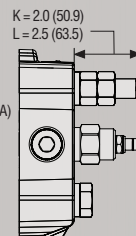
K/L Shaft Torque Limitations: The pump input shaft can withstand torques up to the designed shaft torque limitation (STL). This figure is based on multiplying the pump cu. in. displacement x the pump pressure (IE: $D \times P \leq STL$). Tandem pumps are two pumps with individual calculated STLs added together not to exceed limitation figure.

Note: Connector shaft STL for the tandem pump is $\leq 16,000$.

BUILT-IN RELIEF VALVE OPTION

K Series:
Bypass Port - 10SAE (NPT bypass N/A)
R.V. Preset: 3000PSI (207 BAR)

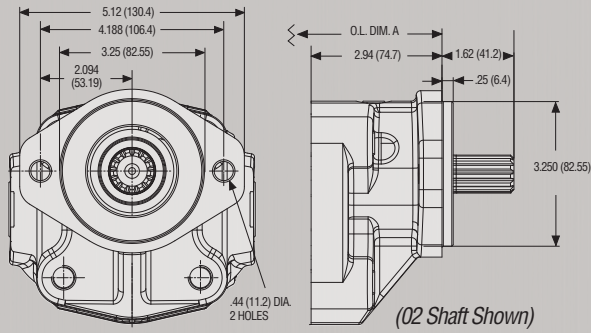
L Series:
Bypass Port - 16SAE or 16NPT
R.V. Preset: 2000PSI (138 BAR)



K FRONT COVER OPTIONS

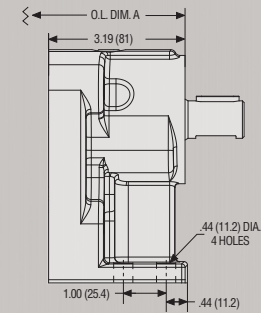
"A" DIRECT MOUNT (SAE "A") IN(MM)

MODEL NO.	O.L. DIM A
04	5.94 (150.9)
06	6.19 (157.2)
08	6.44 (163.6)
11	6.69 (169.9)
13	6.94 (176.3)
15	7.19 (182.6)
17	7.44 (189.0)



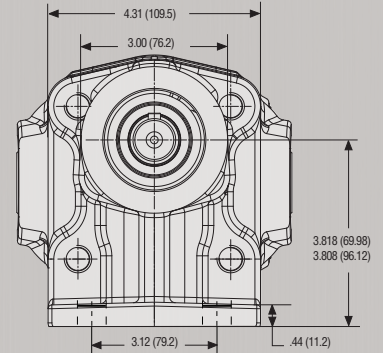
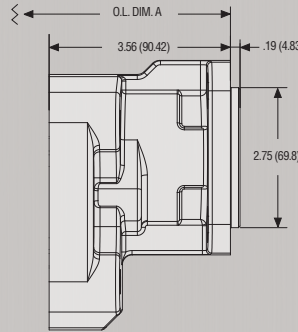
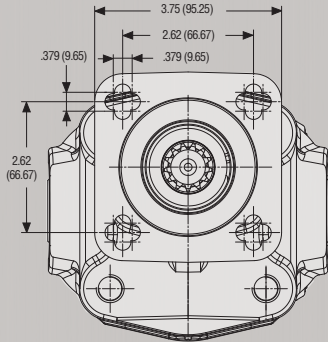
"R" REMOTE MOUNT IN(MM)

MODEL NO.	O.L. DIM A
04	6.19 (157.2)
06	6.44 (163.6)
08	6.69 (169.9)
11	6.94 (176.3)
13	7.19 (182.6)
15	7.44 (189.0)
17	7.69 (195.3)



"G" DIRECT MOUNT IN(MM)

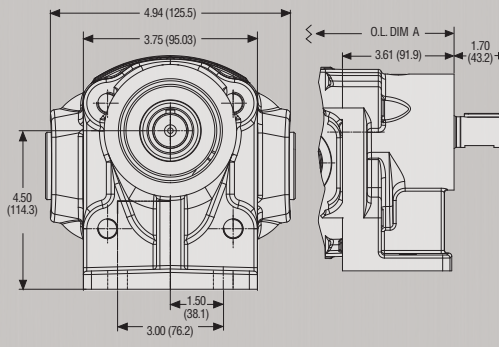
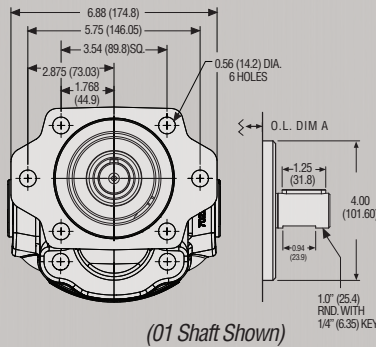
MODEL NO.	O.L. DIM A
04	6.56 (166.6)
06	6.81 (172.9)
08	7.06 (179.3)
11	7.31 (185.6)
13	7.56 (192.0)
15	7.81 (198.4)
17	8.06 (201.7)



L FRONT COVER OPTIONS

"B" DIRECT MOUNT (SAE "B") IN(MM)

MODEL NO.	O.L. DIM A
14	7.12 (180.8)
16	7.38 (187.5)
19	7.62 (193.5)
23	7.88 (200.2)
25	8.12 (206.2)
27	8.38 (212.9)
30	8.62 (218.9)

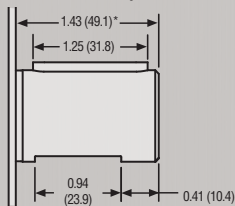


"R" REMOTE MOUNT IN(MM)

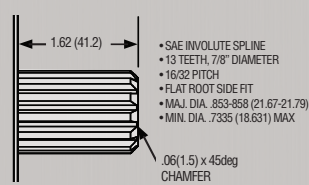
MODEL NO.	O.L. DIM A
14	7.38 (187.5)
16	7.62 (193.5)
19	7.88 (200.2)
23	8.12 (206.2)
25	8.38 (212.9)
27	8.62 (218.9)
30	8.88 (225.6)

K/L SHAFT OPTIONS (See bottom of page 6 for shaft torque limitations.)

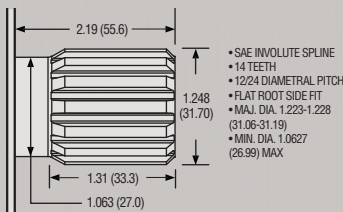
SHAFT TYPE: 01 L 1.00" RND. - 1/4" Key • STL ≤ 16,900



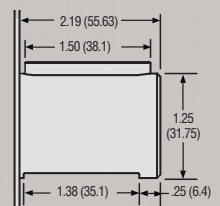
SHAFT TYPE: 02 KL 7/8" - 13T (SAE "B") • STL ≤ 16,550



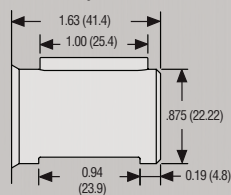
SHAFT TYPE: 05 L 1-1/4" - 14T (SAE "C") • STL ≤ 35,900



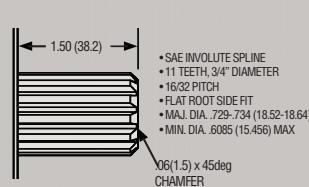
SHAFT TYPE: 07 L 1-1/4" RND. - 5/16" Key • STL ≤ 33,300



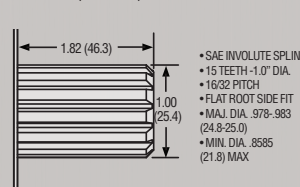
SHAFT TYPE: 09 K 7/8" RND. - 1/4" Key • STL ≤ 11,200



SHAFT TYPE: 16 K 3/4" - 11T • STL ≤ 10,114



SHAFT TYPE: 17 L 1.00" - 15T (SAE "B") • STL ≤ 25,650

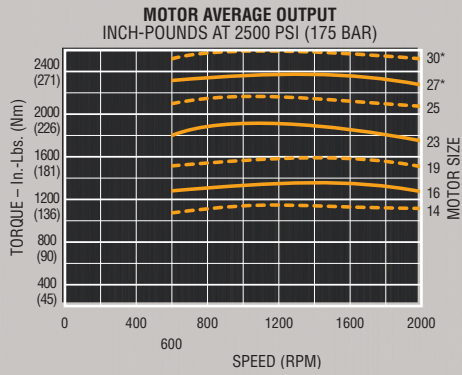
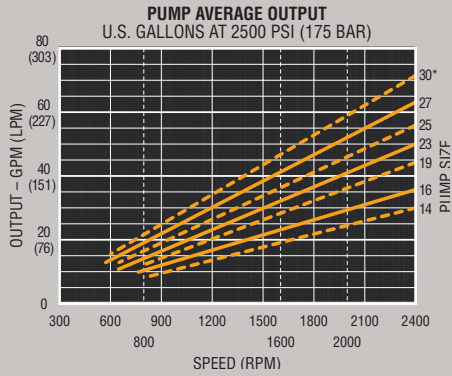


* "R" Mount - 23(5.8) shorter

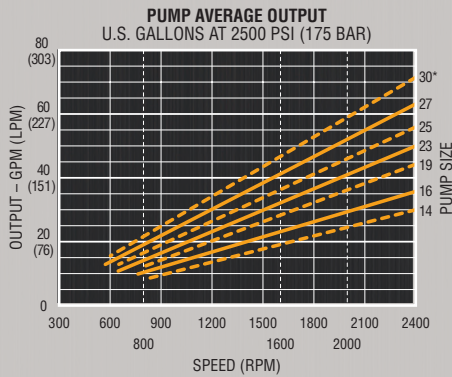


OUTPUT

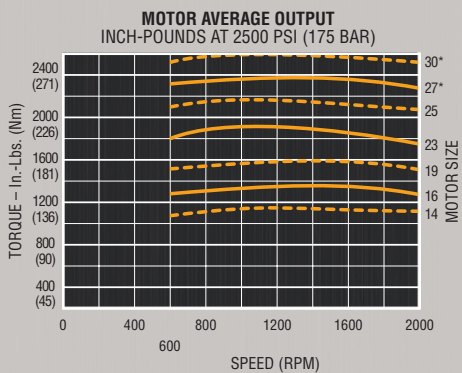
K SERIES



L SERIES



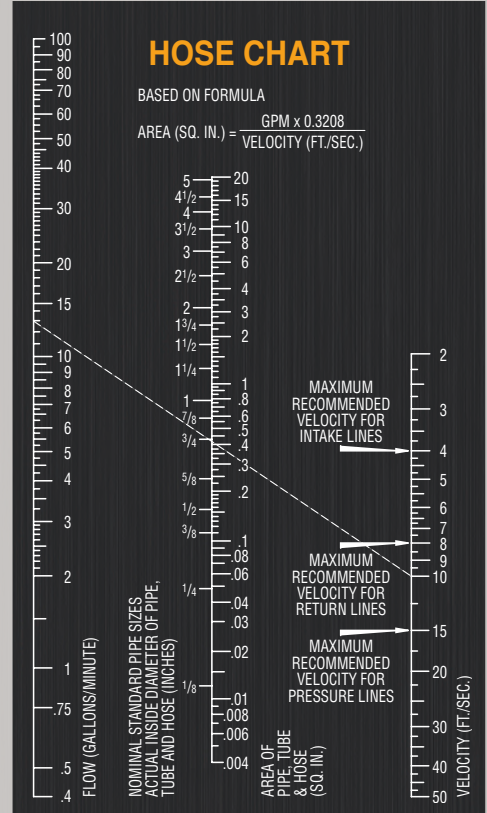
*TEST AT 2000 PSI (138 BAR)



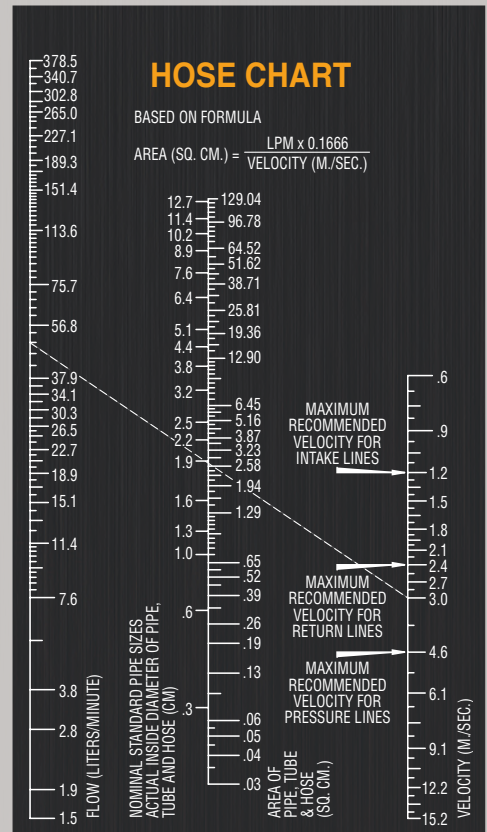
*TEST AT 2000 PSI (138 BAR)

FLOW CAPACITIES

NON METRIC



METRIC



TROUBLESHOOTING GUIDE FOR HYDRAULICS

Hydraulic analysis and proper repair require the use of a vacuum gauge and pressure gauge for testing.

POSSIBLE PUMP TROUBLE	CAUSE	CURE
Aeration and cavitation: noisy pump Use Vacuum gauge to isolate problem.	Low oil supply. Heavy oil / cold oil / wrong oil. Dirty suction strainer. Suction line too small. Restriction in suction line.	Fill to proper level. Change to proper oil. Clean and replace. Increase size. Remove and replace.
Pump takes too long to respond or fails to respond	Low oil supply. Insufficient relief valve pressure. Pump worn or damaged.	Fill to proper level. Use gauge to reset pressure. Repair or replace.
Oil heating up	Contamination in relief valve. Oil too light. Dirty oil. Oil level too low. Reservoir capacity too small. Insufficient relief valve pressure Pump slippage.	Remove. Drain and refill with proper oil. Drain, flush, refill with clean oil. Fill to proper level. Install oil cooler. Use gauge to reset pressure. or pressure too high. Repair or replace.
Oil foaming	Air leaking into suction line from tank to pump. Wrong kind of oil. Oil level too low. Improper tank or reservoir baffle. Return line above oil level. Damaged or worn shaft seal on pump.	Tighten all connections Drain & refill w/non-foaming oil. Fill to proper level. Baffle correctly. Install below oil level. Replace shaft seal(s).
Actuator slips	Contamination damages control valve and allows check valve to leak. Cylinder or piston packing defective. Valve is cracked. Spool not centering. Incorrect oil. Load check stuck.	Clean out the system. Repair or replace. Replace. Clean contaminants from valve or replace. Replace with correct oil. Open.

OIL RECOMMENDATIONS

Muncie does not promote specific manufacturers' brands of oil. Recommendations below are guidelines; consult oil manufacturer for exact application needs.

Viscosity Range:

Viscosity Minimum: 50-60 SUS (7.5-10.5 cST)
 Viscosity Optimum Continuous: 60-100 SUS (10.5-21.6 cST)
 Viscosity Maximum @ Startup: 7,500 SUS (1600 cST)
 Viscosity Index: 90 Minimum

Aniline Point: 175 Minimum

Pour Point: 15°F (-10°C) Maximum
 Foam Resistance: Recommended
 Rust Resistance Inhibitors: Recommended
 Corrosion Resistance: Recommended
 Oxidation Stability: Recommended
 Anti-Wear Additive: .06% Zinc Minimum*

Note: Cold weather operation requires special oil considerations. Viscosity should not exceed 7,500 SUS (1,600 cST) at lowest startup temperature. Continuous operation should range between 60-1,000 SUS (10.5-216 cST) for all temperature ranges. Never use diesel fuel or kerosene to thin oil.

*Anti-Wear Additives may be recommended by some motor manufacturers. However, they are optional and typically not required for gear pump or gear motors.



ONE-YEAR PUMP WARRANTY



The Muncie Cast Iron/Roller Bearing Pump/Motor Series “K” or “L” is warranted against any defect in material and workmanship which existed at the time of sale by Muncie, according to the following provisions, subject to the requirements that the Pump/Motor must be used only in accordance with catalog and package instructions.

The Pump/Motor is warranted for a period of one year from the date of installation. If during the warranty period the Pump/Motor fails to operate to Muncie’s specifications due to a defect in any part in material or workmanship that existed at the time of sale by Muncie, the defective part will be repaired or replaced, at Muncie’s election, at no charge, if the defective part is returned to Muncie with transportation prepaid.

WARNING. The above warranty shall terminate if any alterations or repairs are made to the Pump/Motor other than at a Service Center owned by Muncie, or if the Pump/Motor is used on any equipment other than the equipment upon which it is first installed.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES, INCLUDING NEGLIGENCE AND ALL WARRANTIES OF MERCHANTABILITY AND SUITABILITY, EXPRESSED OR IMPLIED, AND STATE MUNCIE’S ENTIRE AND EXCLUSIVE LIABILITY AND THE BUYER’S EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH THE SALE, REPAIR OR REPLACEMENT OF THE ABOVE GOODS, THEIR DESIGN, INSTALLATION OR OPERATION. MUNCIE WILL IN NO EVENT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND OUR LIABILITY WILL UNDER NO CIRCUMSTANCES EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

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