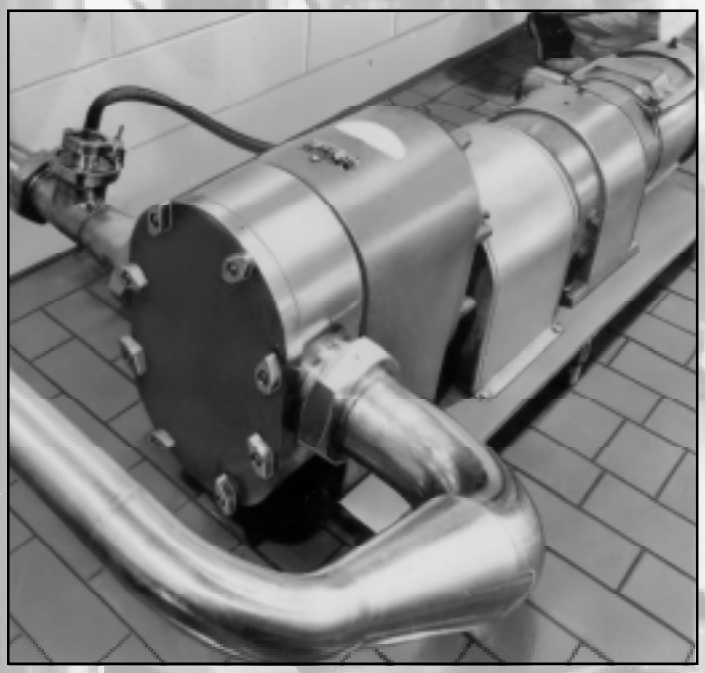


Tri-Clover® PR Series Positive Rotary Pump

Tri-Clover Inc.

PR - The Pump that was designed with the Processor in mind

The Tri-Clover PR line was designed to overcome many of the traditionally troublesome operating and maintenance difficulties which our customers have experienced with conventional positive displacement pumps.

Meeting these requirements, combined with precision fabrication and strict adherence to sanitary standards, have accorded the PR pump prompt and widespread acceptance – wherever product is processed, hygienically, in volume. All PRE/PRED pumps are designed to be in compliance with 3A and other regulatory standards.

Four reasons why progressive processors specify Tri-Clover Model PR Pumps:

- Low product loss to leakage – Static O-ring sealing action.
- Low maintenance characteristics:

  Fluid Head – Positive alignment
  Static O-ring sealing and precision rotors

  Gear Casing – Balanced load
  Two compartment lubrication
  Precision machined gears, bearings, and shafts
- Less downtime – PR can be disassembled and assembled faster than any other positive rotary pump you can buy.
- Selectivity – Choose from a variety of types and models to fill specific pumping requirements.

Take a look at the pumps that were designed with you in mind–then use this catalog to select the model for your operating requirements. The design features described below make PR the low maintenance, easy to live with pump for application. (Series PR illustrated – features also apply to PRE and PRED).

LUBRICATION . . .

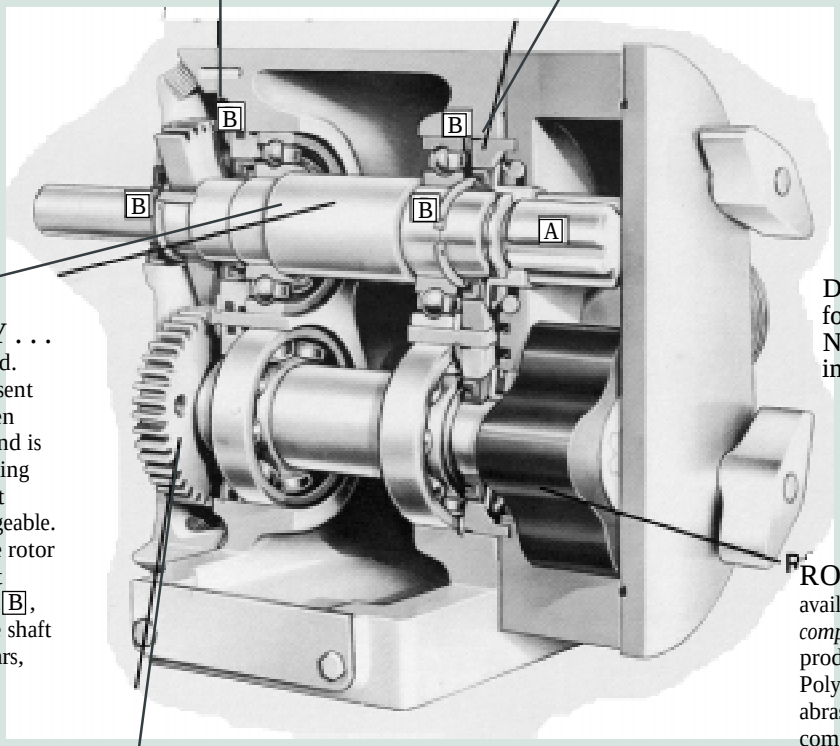
separate oil lubrication for timing gears. Dual compartment gear/bearing housing design assures that any condensates or contaminants present are flushed through bearings and sealed off from timing gear housing.

Gear Housing

Bearing Housing

LOCATING RING. . .

is pressed into frame bearing bores to promote rigidity and accurate alignment of pump casing so that proper clearance within fluid head will prolong wear life and operating efficiency. Wide locating area of ring permits innumerable assemblies and disassemblies of pump without ring replacement - and the need to realign pump head. Short ($^{3}/_{16}$" (4.8mm) or less) engagement of ring to casing permits easy takedown and assembly – *without cocking, binding, or hammering*.



SHAFT ASSEMBLY . . .

easily interchanged in field. Spline is involuted to present maximum contact between shaft and rotor profiles; and is located, in relation to timing gears and keyways, so that rotors are fully interchangeable. Two large teeth, A,locate rotor for proper timing and fast assembly. *Tru-Arc* Rings, B, positively locate complete shaft assemblies and timing gears, eliminating troublesome *shimming*. Precision machining permits full interchange of top and bottom shaft assemblies, in field, with minimum of time and effort.

Design eliminates need for threads or hubs . . . No hard-to-clean recesses in product zone.

ROTORS* . . .

available two- or four-lobe *polymer composition* rotors serve most product or flow requirements. Polymer rotor is recommended for abrasive products. Wear is compensated for by increased RPM. See Page 15 for temperature data requirements.

*(Model PR3 available with six-lobe polymer composition rotors only).

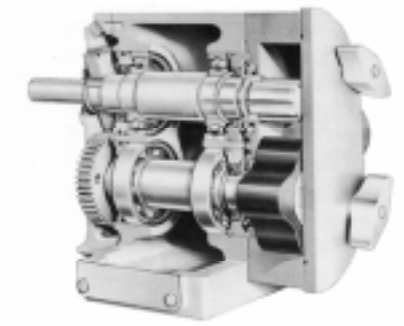
GEARS . . .

and shafts are factory pretimed and designed so that either one or both gears can be removed and replaced in the field without removal of shaft or bearings. Each gear and shaft assembly is assembled with two woodruff keys for rigidity and long service life.

 © 1997 Tri-Clover Inc.

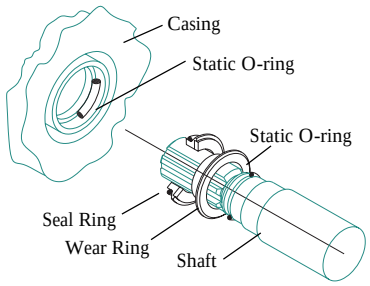
A complete range of sizes and seal styles to match your pumping requirements

PR Series



The construction features outlined on page 2 add up to rigid, efficient and maintenance-free service when you put PR on the line. Unlike many positive pumps, the design of PR acknowledges your need for periodic takedown and reassembly.

The PR Series is recommended for most transfer operations where temperatures do not exceed 200°F (93°C) and where products are nonabrasive or non-tacky.

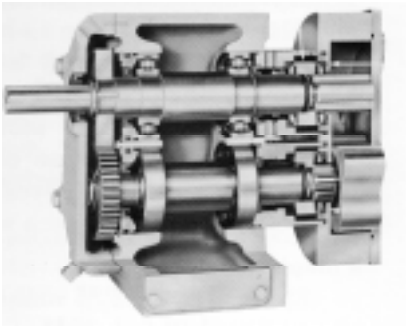


PR Seal Assembly

Leak-tight sealing action . . . with static o-ring sanitary seal. All o-rings contact non-rotating surfaces. Static o-ring design of rotary seal reduces friction to minimize wear and leakage and increase seal life. Sealing members consist of stainless steel seal rings with carbon-bonded insert, SS wear ring broached to match shaft spline to assure positive drive, and static o-rings to seal off any pumpage. Sealing action takes place between carbon insert of seal ring, held stationary in pump casing, and face of positively driven wear ring. Equally good seal life is assured under either high pressure or vacuum operations.

A water flush attachment, which can be installed in the field, is available for pumping service requiring it.

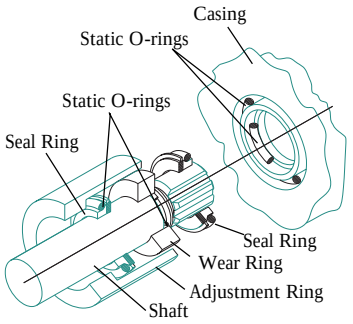
PRE/PRED Series



This line of PR pumps was introduced to provide optimum pumping performance on hot, tacky or viscous products. It provides a high degree of leakage detection and leakage safeguard capability. The same static o-ring seal principle as the PR Series (described at left) is used. Two series are available:

PRE Series – Single Seal. Ideal for use where visual leak detection is important.

PRED Series – Double Seal. For use where water flush is desirable, i.e., on evaporator operations, liquid sugar, tacky products such as corn syrup.



PRED Seal Assembly

(PRE seal assembly does not include second seal shown in green)

Additional protection for applications:

- requiring compatible solvent or water-flush
- requiring pressurized seal chamber. (Seal can be maintained at pressures above pump head pressure).
- with products that tend to buildup between seal faces, latex, PVA, etc.

These Series have a seal chamber to permit use of solvents or water for seal lubrication. On double seal pumps, chamber may be pressurized or non-pressurized, depending upon application.

Specifications

Pump Series PR/PRE/PRED	3	10	25	60	125	300
Maximum GPM (@ 20 PSI)	2.8	12	28	60	120	300
Pump Displacement (gallons/100 REV)	0.5	2.1	8.0	17.5	30.0	63.0
Intake & Discharge Port Size (inches)	1	1½	1½ & 3	2 & 3	2½ & 3	4 & 6

Standard Inlet

Rectangular Inlet
(Models 25 and 125 only)
(Uses only four lobe rotors)

Special Mountings

Side Mounted Pumps are recommended for handling viscous products. Side mounting allows the product to enter the pumping chamber by gravity flow from the outlet of tanks, vats or kettles, thus eliminating all restrictions on the inlet side of the pump. Can be equipped with constant speed or variable speed drives. Available with standard inlet or with rectangular type inlet as shown.

Drive Units

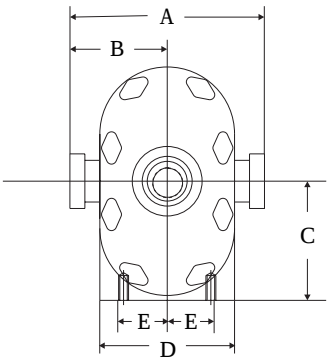
PR pumps are designed so that mounting holes, ports, shaft heights and shaft diameters permit interchangeability with other positive pumps of U.S. manufacturers. A variety of motors and drive units are available for constant and variable speed flow rates, including

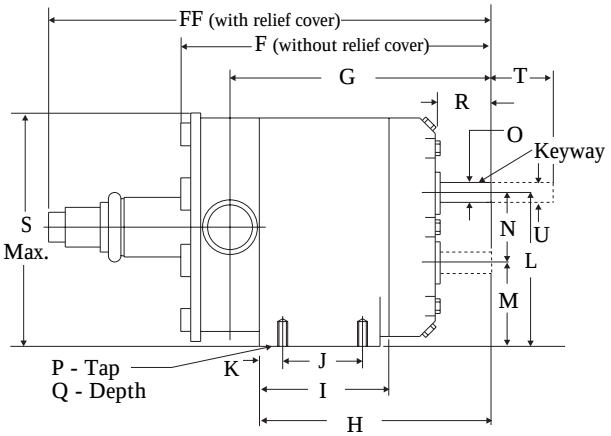
- Gearhead drive
- Mechanical variable speed
- V-Belt drive
- Hydraulic drive
- AC variable speed with constant speed gear drive

AC Adjustable Frequency Motor Controls

This drive system capability is highly cost efficient in terms of initial cost, potential energy savings, and its ability to provide pumping control that can reduce error, boost production, and increase raw material yield. An AC controller in your system can accept a signal from a computer, PC controller, or pressure/flow sensing instrument. Tri-Clover offers a variety of AC controllers, from ½ HP and up, for our positive pumps.

Dimensions
Series PR Pump





Model	Port Size*	A		B		C		D		E		F		FF		G	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
PR3	1"	4 7/8	123.8	2 7/16	62.0	3	76.2	3 3/8	85.7	1 3/32	27.8	8 3/16	208.0	11 1/2	292.1	6 7/8	174.6
PR10	1 1/2"	6 23/32	170.7	3 23/64	85.3	4 7/32	107.2	4 11/16	119.1	1 15/16	49.2	10 13/32	264.3	14 7/8	377.8	8 9/16	217.5
PR25	1 1/2"	8 3/8	212.7	4 3/16	106.4	5 7/32	132.5	6 3/8	162.0	2 5/16	58.7	12 5/16	312.7	16 1/4	412.8	10 11/32	262.7
PR25	3"	12 1/2	317.5	6 1/4	158.8	5 7/32	132.5	6 3/8	162.0	2 5/16	58.7	12 5/16	312.7	16 1/4	412.8	10 11/32	262.7
PR60	2"	10 5/8	270.0	5 5/16	135.0	7 5/16	185.7	8 3/16	208.0	3 1/2	89.0	15 1/4	387.4	21 15/16	557.2	12 9/16	319.1
PR60	3"	11 13/16	300.0	5 29/32	150.0	7 5/16	185.7	8 3/16	208.0	3 1/2	89.0	15 1/4	387.4	21 15/16	557.2	12 9/16	319.1
PR125	2 1/2"	10 5/8	270.0	5 5/16	135.0	7 5/16	185.7	8 3/16	208.0	3 1/2	89.0	16 3/8	416.0	23 1/16	585.8	13 1/8	333.4
PR125	3"	10 5/8	270.0	5 5/16	135.0	7 5/16	185.7	8 3/16	208.0	3 1/2	89.0	16 3/8	416.0	23 1/16	585.8	13 1/8	333.4
PR300	4"	13 1/8	333.4	6 9/16	166.7	9 3/8	238.1	10 3/8	263.5	3 3/4	95.3	20 3/4	527.1	31 3/16	792.2	17 1/8	435.0
PR300	6"	19 1/8	485.8	9 9/16	243.0	9 3/8	238.1	10 3/8	263.5	3 3/4	95.3	20 3/4	527.1	31 3/16	792.2	17 1/8	435.0

Model	Port Size*	H		I		J		K		L		M		N		O	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
PR3	1"	6 7/32	158.0	3 1/4	85.6	2	50.8	7/16	11.1	3 7/8	98.4	2 1/8	54.0	1 3/4	44.5	1/2	12.7
PR10	1 1/2"	7 9/16	192.1	4	101.6	2 5/16	58.7	15/32	12.0	5 1/2	139.7	2 15/16	74.6	2 9/16	65.1	3/4	19.0
PR25	1 1/2"	9 5/16	236.5	5 1/4	133.4	2 9/16	65.1	1 1/2	38.0	6 7/8	174.6	3 17/32	89.7	3 11/32	85.0	1	25.4
PR25	3"	9 5/16	236.5	5 1/4	133.4	2 9/16	65.1	1 1/2	38.0	6 7/8	174.6	3 17/32	89.7	3 11/32	85.0	1	25.4
PR60	2"	11 3/16	284.2	6 5/32	156.4	4 1/8	104.8	1 3/32	27.8	9 9/16	243.0	5 1/16	128.6	4 1/2	114.3	1 1/4	31.8
PR60	3"	11 3/16	284.2	6 5/32	156.4	4 1/8	104.8	1 3/32	27.8	9 9/16	243.0	5 1/16	128.6	4 1/2	114.3	1 1/4	31.8
PR125	2 1/2"	11 3/16	284.2	6 5/32	156.4	4 1/8	104.8	1 3/32	27.8	9 9/16	243.0	5 1/16	128.6	4 1/2	114.3	1 1/4	31.8
PR125	3"	11 3/16	284.2	6 5/32	156.4	4 1/8	104.8	1 3/32	27.8	9 9/16	243.0	5 1/16	128.6	4 1/2	114.3	1 1/4	31.8
PR300	4"	14 3/4	374.7	8 1/2	216.0	7 1/4	184.2	11/16	17.5	12 3/8	314.3	6 3/8	162.0	6	152.4	1 7/8	47.6
PR300	6"	14 3/4	374.7	8 1/2	216.0	7 1/4	184.2	11/16	17.5	12 3/8	314.3	6 3/8	162.0	6	152.4	1 7/8	47.6

Model	Port Size*	P		Q		R		S		T		U		Keyway	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
PR3	1"	1/4-20	M6 x 1 6H	5/8	15.9	1 11/16	43.0	5 7/8	149.2	—	—	—	—	1/8 x 1/16	3.2 x 1.6
PR10	1 1/2"	3/8-16	M10 x 1.5 6H	1/2	12.7	1 29/32	48.4	7 31/32	202.4	—	—	—	—	3/16 x 3/32	4.8 x 2.4
PR25	1 1/2"	3/8-16	M10 x 1.5 6H	5/8	15.9	2 11/32	69.5	10 13/32	264.3	2	50.8	15/16	23.8	1/4 x 1/8	6.4 x 3.2
PR25	3"	3/8-16	M10 x 1.5 6H	5/8	15.9	2 11/32	69.5	10 13/32	264.3	2	50.8	15/16	23.8	1/4 x 1/8	6.4 x 3.2
PR60	2"	1/2-13	M14 x 2 6H	3/4	19.0	2 17/32	64.3	13 25/32	350.0	2 1/2	63.5	1 3/16	30.2	1/4 x 1/8	6.4 x 3.2
PR60	3"	1/2-13	M14 x 2 6H	3/4	19.0	2 17/32	64.3	13 25/32	350.0	2 1/2	63.5	1 3/16	30.2	1/4 x 1/8	6.4 x 3.2
PR125	2 1/2"	1/2-13	M14 x 2 6H	3/4	19.0	2 17/32	64.3	13 25/32	350.0	2 1/2	63.5	1 3/16	30.2	1/4 x 1/8	6.4 x 3.2
PR125	3"	1/2-13	M14 x 2 6H	3/4	19.0	2 17/32	64.3	13 25/32	350.0	2 1/2	63.5	1 3/16	30.2	1/4 x 1/8	6.4 x 3.2
PR300	4"	1/2-13	M14 x 2 6H	3/4	19.0	3	76.2	17 7/8	454.0	3	76.2	1 3/4	44.5	1/2 x 1/4	12.7 x 6.4
PR300	6"	1/2-13	M14 x 2 6H	3/4	19.0	3	76.2	17 7/8	454.0	3	76.2	1 3/4	44.5	1/2 x 1/4	12.7 x 6.4

*Intake and discharge.

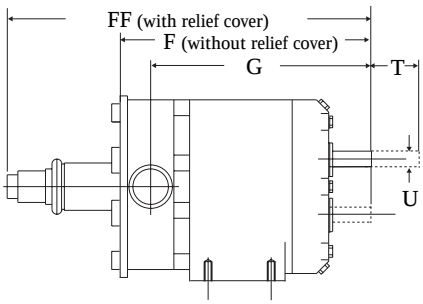
Series PRE
Series PRED

Dimensions shown in the table on previous page apply to the PR Series.
When ordering the PRE or PRED Series please also refer to the table below.
All other dimensions are the same as the PR Series. See designations at right:

PRE = Single Seal
PRED = Double Seal
PRRE = Single Seal with Relief Cover
PRRED = Double Seal with Relief Cover

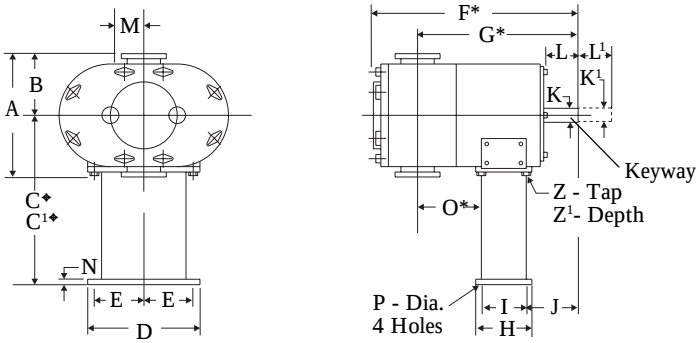
Model	Port Size*	F		FF		G		T		U	
		in	mm	in	mm	in	mm	in	mm	in	mm
PRE3 / PRED3	1"	9 3/16	233.4	12 1/2	317.5	7 7/8	200.0	—	—	—	—
PRE10 / PRED10	1 1/2"	11 29/32	302.4	16 3/8	416.0	10 1/16	255.6	—	—	—	—
PRE25 / PRED25	1 1/2"	13 13/16	350.8	17 3/4	451.0	11 27/32	300.8	2	50.8	15/16	23.8
PRE25 / PRED25	3"	13 13/16	350.8	17 3/4	451.0	11 27/32	300.8	2	50.8	15/16	23.8
PRE60 / PRED60	2"	16 3/4	425.5	23 7/16	595.3	14 1/16	357.2	2 1/2	63.5	1 3/16	30.2
PRE60 / PRED60	3"	16 3/4	425.5	23 7/16	595.3	14 1/16	357.2	2 1/2	63.5	1 3/16	30.2
PRE125 / PRED125	2 1/2"	17 7/8	454.0	24 9/16	624.0	14 5/8	371.5	2 1/2	63.5	1 3/16	30.2
PRE125 / PRED125	3"	17 7/8	454.0	24 9/16	624.0	14 5/8	371.5	2 1/2	63.5	1 3/16	30.2
PRE300 / PRED300	4"	22 1/2	571.5	32 15/16	836.6	18 7/8	479.4	3	76.2	1 3/4	44.5
PRE300 / PRED300	6"	22 1/2	571.5	32 15/16	836.6	18 7/8	479.4	3	76.2	1 3/4	44.5

*Intake and discharge.



Side Mounted Pumps

Note: Drawings illustrate PR Series Pump. For PRE and PRED Series dimensions–see footnote.



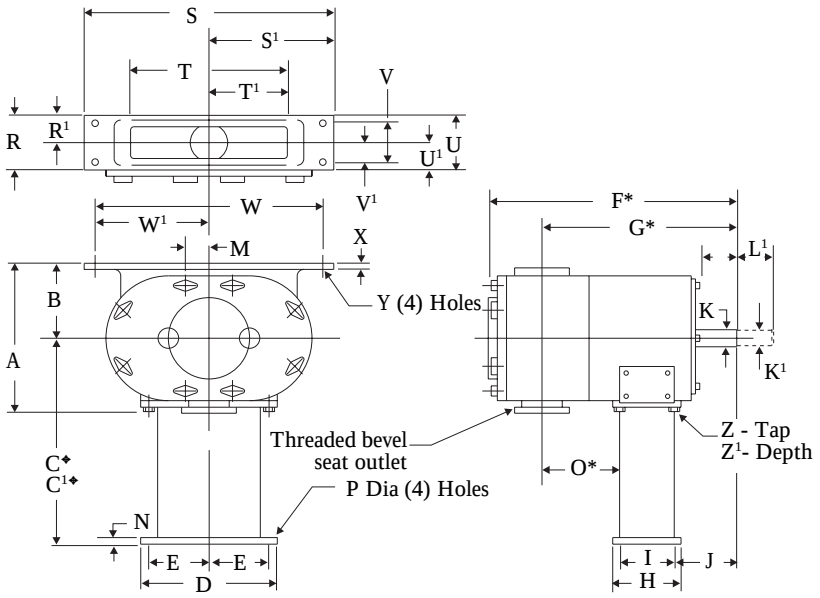
Models PR/PRE/ PRED	Port Size**	A		B		C✦		C1✦		D		E		F*		G*	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
10	1 1/2"	6 23/32	170.7	3 23/64	85.3	8 1/8	206.4	8 1/8	206.4	4 3/4	120.7	1 15/16	49.2	10 13/32	264.3	8 9/16	217.5
25	1 1/2"	8 3/8	212.7	4 3/16	106.4	6 3/32	154.8	8 31/32	227.8	5 1/2	139.7	2 5/16	58.7	12 5/16	312.0	10 11/32	262.7
60	2"	10 5/8	270.0	5 5/16	135.0	9 19/32	243.7	14 1/4	362.0	8	203.2	3 1/2	89.0	15 1/4	387.4	12 9/16	319.1
125	2 1/2"	10 5/8	270.0	5 5/16	135.0	9 19/32	243.7	14 1/4	362.0	8	203.2	3 1/2	89.0	16 3/8	416.0	13 1/8	333.4.
300	4"	13 1/8	333.4	6 9/16	166.7	19 1/4	489.0	19 1/4	489.0	9	228.6	3 3/4	95.3	20 3/4	527.1	17 1/8	435.0

Models PR/PRE/ PRED	Port Size**	H		I		J		K		K1		L		L1		M	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
10	1 1/2"	3 1/8	79.4	2 5/16	58.7	3 49/64	95.6	3/4	19.0	—	—	1 15/16	49.2	—	—	1 9/32	32.5
25	1 1/2"	3 1/2	89.0	2 9/16	65.1	5 1/8	130.2	1	25.4	—	—	2 5/16	58.7	—	—	1 43/64	42.5
60	2"	5 1/4	133.4	4 1/8	104.8	5 3/16	131.8	1 1/4	31.8	1 3/16	30.2	2 17/32	64.3	2 17/32	64.3	2 1/4	57.2
125	2 1/2"	5 1/4	133.4	4 1/8	104.8	5 3/16	131.8	1 1/4	31.8	1 3/16	30.2	2 17/32	64.3	2 17/32	64.3	2 1/4	57.2
300	4"	8 3/4	222.3	7 1/4	184.2	6 7/8	174.6	1 7/8	47.6	1 3/4	44.5	3	76.2	3	76.2	3	76.2

Models PR/PRE/ PRED	Port Size**	N		O*		P		R		Z		Z1		Keyway	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
10	1 1/2"	3/8	9.5	2 31/64	63.1	7/16	11.1	2 3/8	60.3	3/8-16	M10 x 1.5 6H	5/8	15.9	3/16 x 3/32	4.8 x 2.4
25	1 1/2"	3/8	9.5	2 21/32	67.5	7/16	11.1	3 7/32	81.8	3/8-16	M10 x 1.5 6H	5/8	15.9	1/4 x 1/8	6.4 x 3.2
60	2"	1/2	12.7	3 1/4	82.6	9/16	14.3	4 3/32	104.0	1/2-13	M14 x 2 6H	3/4	19.0	1/4 x 1/8	6.4 x 3.2
125	2 1/2"	1/2	12.7	3 13/16	96.8	9/16	14.3	4 3/32	104.0	1/2-13	M14 x 2 6H	3/4	19.0	1/4 x 1/8	6.4 x 3.2
300	4"	9/16	14.3	3	76.2	9/16	14.3	5 1/4	133.4	1/2-13	M14 x 2 6H	3/4	19.0	1/2 x 1/4	12.7 x 6.4

**For PRE and PRED Series add 1½" (38 mm) to dimensions F, G, and O for Models 10 through 125 and 1¾" (44.5 mm) for Model 300*
***Intake and Discharge C1✦ is standard, C is alternate short rise pedestal.*

Side Mounted Pumps with Rectangular Inlet



Pump Model	Intake	Discharge	A		B		R		R1		S		S1		T	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
PRS25	RECT.	1 1/2	7 31/32	202.4	3 25/32	96.0	1 1/2	38.0	3/4	19.0	8 1/2	216.0	4 1/4	108.0	4 1/2	114.3
PRS125	RECT.	3	10 7/16	265.1	5 1/8	130.2	2 5/8	66.7	1 5/16	33.3	15 1/4	387.4	7 5/8	193.7	9 1/4	235.0

Pump Model	Intake	Discharge	T1		U		U1		V		V1		W		W1	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
PRS25	RECT.	1 1/2	2 1/4	57.2	2 1/2	63.5	1 1/4	31.8	1 1/2	38.0	3/4	19.0	7	177.8	3 1/2	89.0
PRS125	RECT.	3	4 5/8	117.5	4	101.6	2	50.8	3	76.2	1 1/2	38.0	14	355.6	7	177.8

Pump Model	Intake	Discharge	X		Y		Keyway	
			in	mm	in	mm	in	mm
PRS25	RECT.	1 1/2	1/2	12.7	1/2 13NC - 2 TAP	M14 x 1.5 6H	1/4 x 1/8	6.4 x 3.2
PRS125	RECT.	3	3/4	19.0	17/32 DRILL THROUGH	13.5 DRILL THROUGH	1/4 x 1/8	6.4 x 3.2

Note: for dimensions C, C1, D, F, G, H, I J, K, L M, N, O, P, Z and Z1 — see table on bottom of page 13. They are identical.
✦C1 is standard, C is alternate short rise pedestal.