

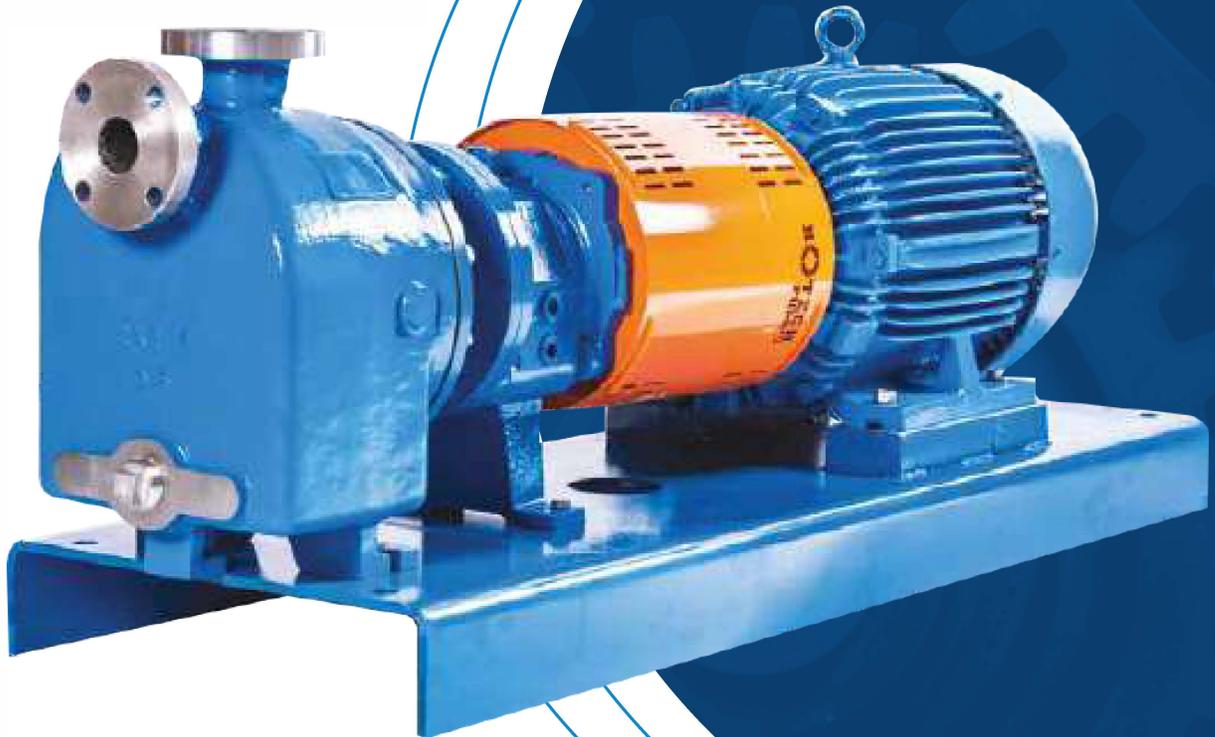
Daybreak- Rotech Pumps



ANSI SELF PRIMING PUMPS

1796 SERIES

ASME B73.1M STANDARD



FEATURES

- One-piece casing with intergal priming and air separation
- Positive retention of pumpage under siphon conditions
- Rapid priming time
- No suction check valve required
- Self-purge of vapors

DESIGN FEATURES

MAXIMUM SEALING FLEXIBILITY

- Choice of packed box or mechanical seal.
- Any type - inside or outside-single, double, unbalance & balanced mechanical seal.
- Almost any seal will fit without modification of pump.

ACCURATE MACHINED FITS MAINTAINS POSITIVE ALIGNMENT

- Accurate alignment of impeller to casing provides maximum hydraulic efficiency.
- Cocentricity of shaft to stuffing box bore assures low sealing maintenance.

OPEN IMPELLER

- Ideal for corrosive & abrasive liquid.
- Handles solid & string fibers with ease.
- Back Pump out vanes reduces pressure on shaft seal.
- Adjustment of clearance is easy when wear & tear takes place.

CASING

- One-piece casing with integral priming and air separation (no external priming chamber or air separator required).
- No suction check valve required.
- Rapid priming time.
- Positive retention of pumpage under siphon conditions.

POSITIVE LIQUID SEALING AT IMPELLER

- PTFE 'O' - Ring in controlled compression protects shaft against corrosion.
- Metal contact between shaft and impeller transmit torque & assures perfect alignment .

STUFFING BOX

- STANDARD BORE: Designed for packing. Also able to accomodates mechanical seal.
- BIG BORE: Enlarged Chamber for Increased seal life through improved cooling & lubrication.
- TAPER BORE: lower seal face tamperature, self venting & draining. Solid & Vapours circulated away from seal face.

RENEWABLE SHAFT SLEEVE

- Simplifies Maintenance, - renew sealing surface without shaft and bearing disassembly.
- PTFE 'O' - Ring protects shaft against liquid contact.

LABYRINTH OIL SEAL (INBOARD)

- Protection against contaminants and the corrosive effects of seal leakage or environmental conditions.
- extending bearing life, Easy to install one piece cartridge unit.

SIGHT GLASS

- To monitor oil level in oil chamber

OIL FILL PLUG

- To fill oil
- Vapor/Air circulation in bearing housing

HIGH THRUST CAPABILITY

- With double row thrust bearing & lock nut. keeps end play less then 0.025mm(0.001").
- Minimum shaft end play for effective stuffing box sealing.

LABYRINTH OIL SEAL (OUT BOARD)

- Protection against environmental conditions.
- extending bearing life.
- Easy to install one piece cartridge unit.

SHAFT

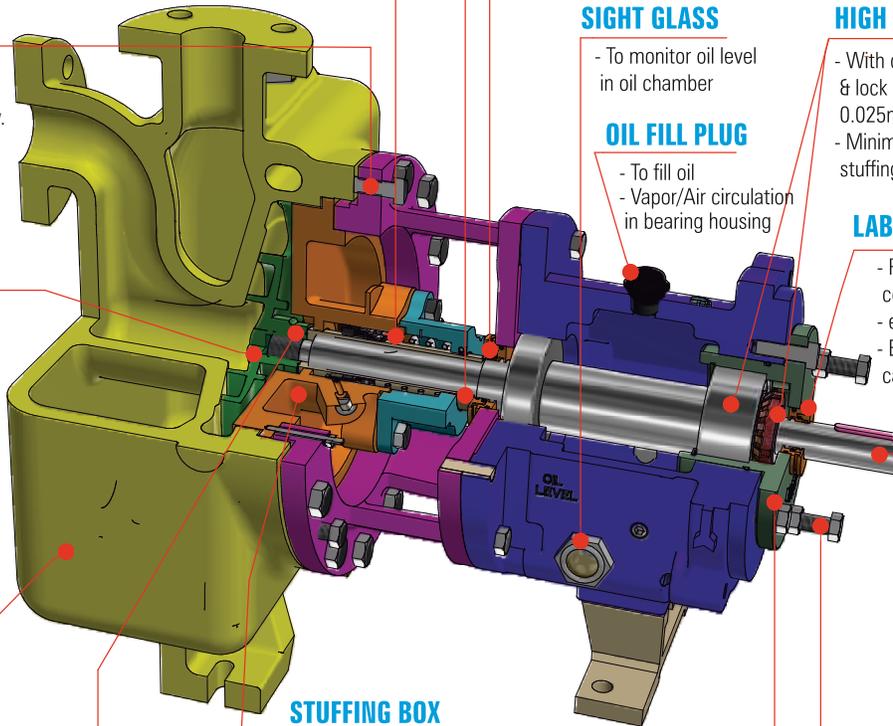
- Designed for toughest services.
- Maximum 0.05mm(0.002") deflection at stuffing box face at maximum load.
- 2 types - Sleeves or Solid. Standard - SS316 Shaft Sleeve with AISI 4140 Shaft. Optional - SS316 Shaft Sleeve with SS316 shaft.
- Solid shaft with SS316 or any other material.

EXTERNAL IMPELLER ADJUSTMENT

- Simple & fast with open wrench.
- No shimming required.

BEARING HOUSING

Sealed to prevent contamination from corrosive atmosphere, leakage & wash down.



ANSI 1796 SELF-PRIMING PUMP



Model 1796

1796 Series ANSI Self priming pumps are designed to provide self priming applications in chemical process and water and waste water industries. Daybreak - Rotech ANSI Self priming pumps offers interchange ability of parts with 1196 series of Pumps.

1796 series pumps and parts are replaceable with popular make Gould's 3796, Peerless 8796 and many others.

SELF-PRIMING ANSI PROCESS PUMPS

- ▶ Capacities up to 1250 GPM (284m³/h)
- ▶ Heads up to 430 feet (131 m)
- ▶ Temperatures up to 500° F(260° C)
- ▶ Pressure up to 375 PSIG (2586 kPa)
- ▶ Effective static lift up to 20 feet (6 m)

PERFORMING FEATURES FOR SELF-PRIMING SERVICES

FEATURES

- ▶ One-piece casing with integral priming and air separation
- ▶ Rapid priming time
- ▶ No suction check valve required
- ▶ Positive retention of pumpage under siphon conditions
- ▶ Self – Purge of vapors

EASE OF MAINTENANCE

- ▶ Back pull-out design
- ▶ External impeller adjustment
- ▶ Parts interchangeable with Rotech model 1196
- ▶ Easy retrofit

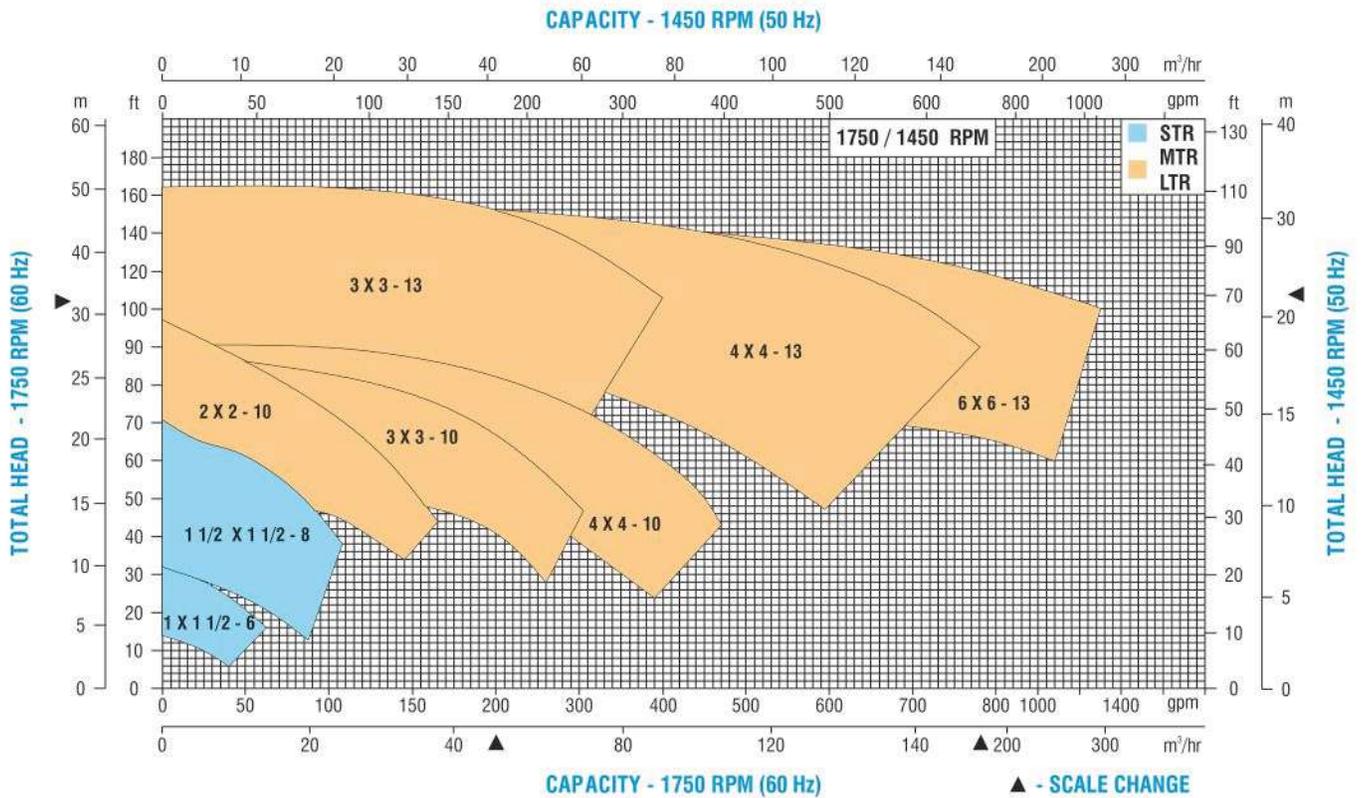
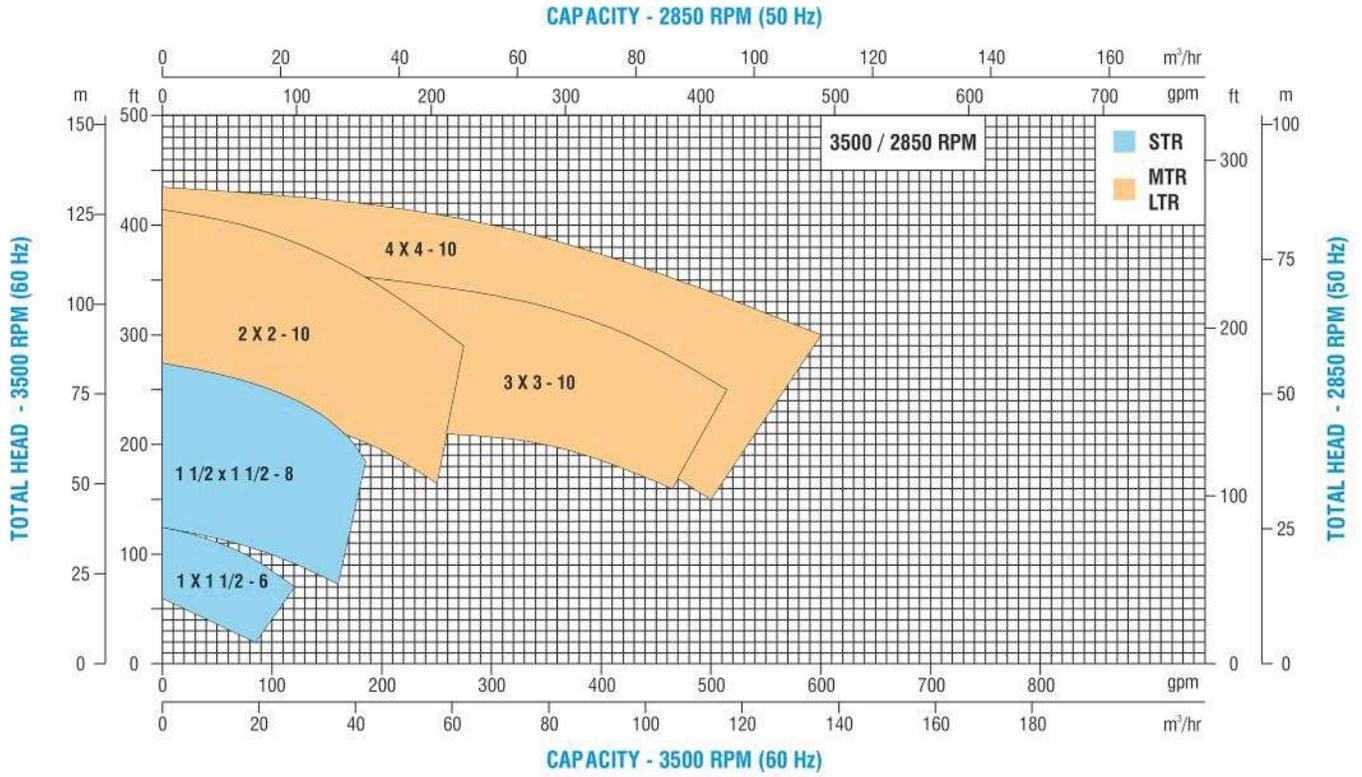
SAFETY

- ▶ ANSI B15.1 coupling guard
- ▶ Ductile iron frame adapter
- ▶ Fully serrated flanges

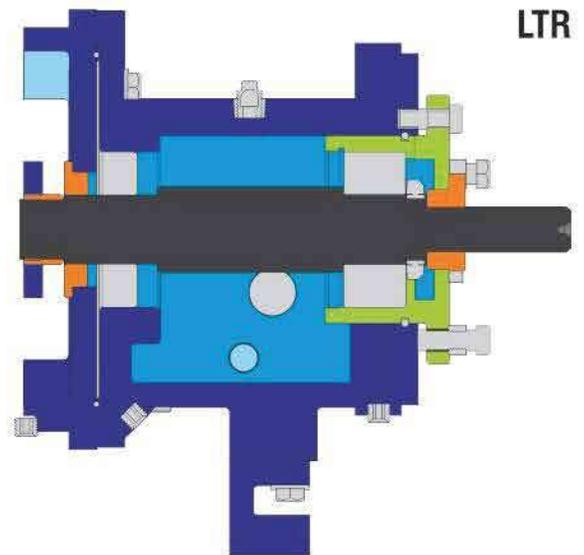
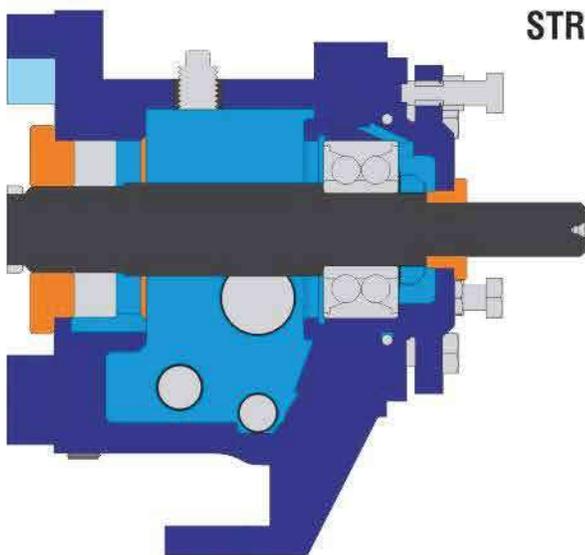
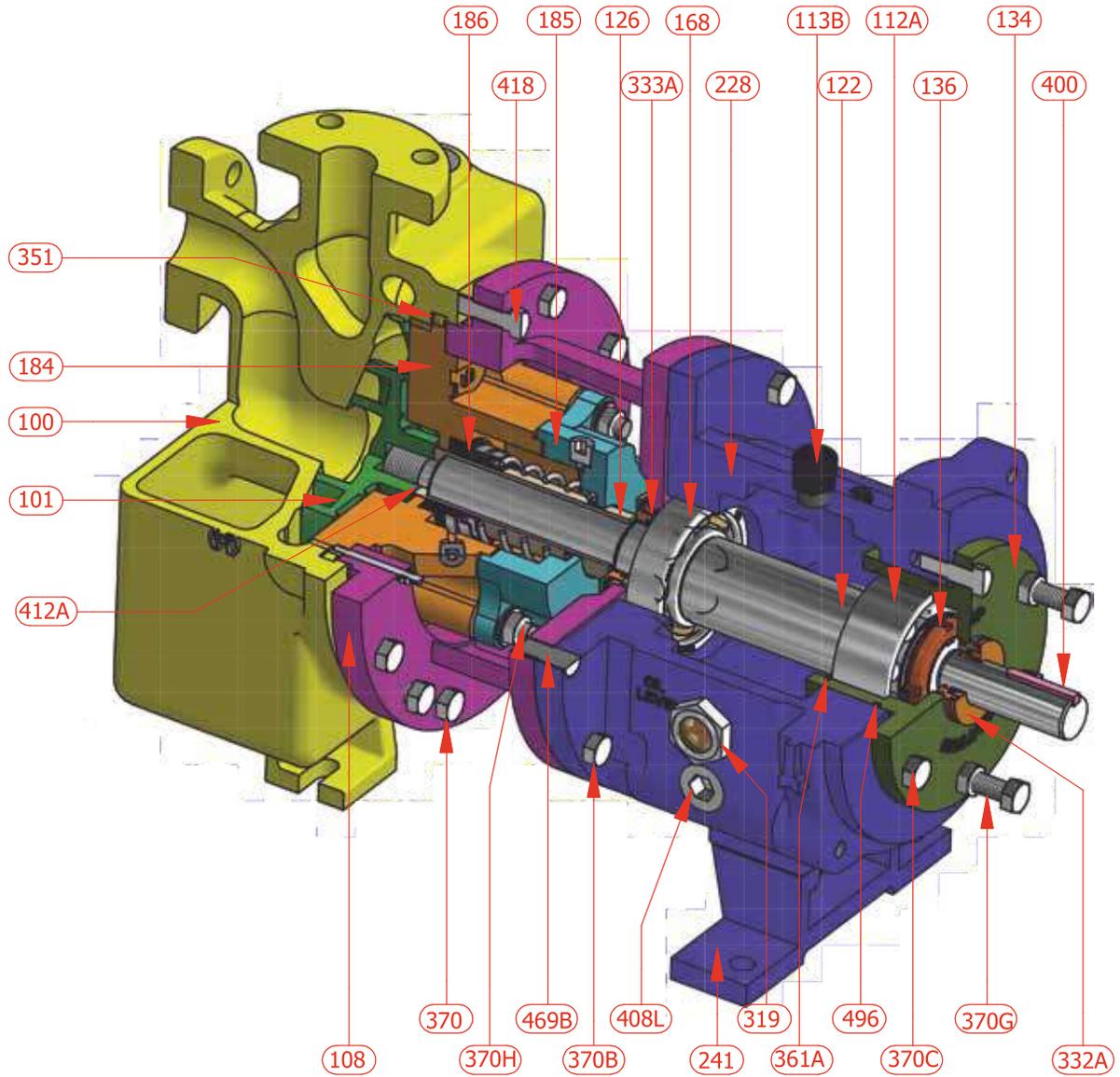
SERVICE

- ▶ Coal pile drainage
- ▶ Industrial sump
- ▶ Mine dewatering
- ▶ Chemical transfer
- ▶ Bilge water removal
- ▶ Filter systems
- ▶ Tank car unloading
- ▶ Petroleum transfer
- ▶ Column bottoms & reflux

HYDRAULIC COVERAGE



SECTIONAL VIEW



PART LIST & MATERIALS OF CONSTRUCTION

PART LIST & MATERIALS OF CONSTRUCTION

PART #	PART DESCRIPTION	MATERIAL OF CONSTRUCTION					
100	Casing	DI/ CARBON STEEL	SS304	SS316	CD4MCu	Alloy20	Hastelloy B&C
101	Impeller	WCB/ Carbon Steel	SS304	SS316	CD4MCu	Alloy20	Hastelloy B&C
108	Frame Adapter****	Cast Iron/ Duct Iron					
112A	Thrust Bearing	Double Row					
113B	Oil Fill Plug/ Breather	Steel					
122	Shaft less Sleeve (Optional)	SS316	SS316	SS316	CD4MCu	Alloy20	Hastelloy
122	Shaft With Sleeve	SS316	SS316	SS316	Alloy20		SS316
126	Shaft Sleeve	SS316			Alloy20		Hastelloy
134	Bearing Housing	Ductile Iron					
136	Bearing Locknut & Lockwasher	Steel					
168	Radial Bearing	Single Row					
184	Stuffing Box Cover	Carbon Steel	SS316	SS316	CD4MCu	Alloy20	Hastelloy
185	Seal Chamber/ Gland	Carbon Steel/ Ss316	SS316	SS316	CD4MCu	Alloy20	Hastelloy
186	Mechanical Seal						
187	SBC Gasket	Teflon/ Non- Asbestos					
228	Bearing Frame	Ductile Iron					
241	Frame Foot	Ductile Iron					
319	Oil Sight Glass	Glass/ Aluminium					
332A	Labyrinth Oil Seal (Outboard)	Bronze					
333A	Labyrinth Oil Seal (Inboard)	Bronze					
351	Casing Gasket	Aramid Fiber with EPDM Rubber or PTFE					
360F	Gasket, Frame to Adapter	Neoprene Rubber					
361A	Bearing Snap Ring	Steel					
370	Cap Screw, Adapter-to-Casing	Steel/ SS304					
370B	Bolt, Frame to Adapter	Steel/ SS304					
370C	Bolt, Bearing Housing	Steel/ SS304					
370F	Bolt, Frame Foot ***	Steel/ SS304					
370G	Stud c/w Nut	SS304					
370H	Stud/ Nut, Cover-to-Adapter	Steel/ SS304					
400	Shaft Key	Steel/ SS316					
408L	Finned Tube Cooler Inlet Plug 1/2" NPT	Steel					
412A	O-Ring, Impeller	Glass-Filled Teflon*					
418	Jacking Bolt	Steel/ SS304					
469B	Dowel Pin, Frame to Adapter	Steel					
496	O- Ring, Bearing Housing	Buna Rubber					

* E.I.DuPont Reg. Trademark

** LTR Power End Features Duplex Angular Contact

*** Not Illustrated in cross section drawing

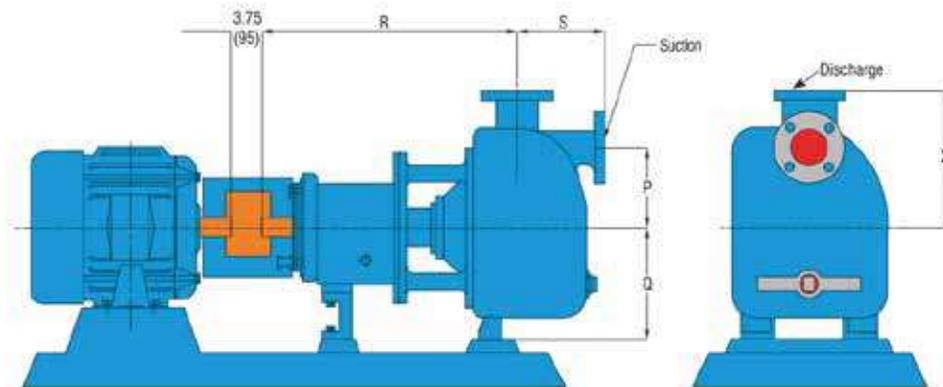
**** Integral with STR Frame

CONSTRUCTIONAL DETAILS

All dimension in inches (mm)

		STR	MTR	LTR
SHAFT	Diameter at Impeller	.75 (19)	1 (25)	1.25 (32)
	Diameter in Stuffing Box/ Seal chamber (Less Sleeve)	1.375 (35)	1.75 (45)	2.125 (54)
	(With Sleeve)	1.125 (29)	1.5 (38)	1.875 (48)
	Diameter between bearings	1.5 (38)	2.125 (54)	2.5 (64)
	Diameter at coupling	0.875 (22)	1.125 (29)	1.875 (48)
	Over hang	6.125 (156)	8.375 (213)	8.375 (213)
	Maximum Shaft Deflection		0.002 (0.05)	
SLEEVE	O.D. thru Stuffing Box/ Seal Chamber	1.375 (35)	1.75 (45)	2.125 (54)
BEARING	Radial	SKF 6207	SKF 6309	SKF 6311
	Thrust	SKF 5306 A/C3	SKF 5309 A/C3	SKF 7310 BECBM
	Bearing Span	4.125 (105)	6.75 (171)	SKF 7310 BECBM
	Average L ₁₀ Bearing Life		87,600 Hours	
BIGBORE SEAL CHAMBER	Bore	2.875	3.5 (89)	3.875 (98)
STUFFING BOX	Bore	2 (51)	2.5 (64)	2.875 (73)
POWER LIMITS	HP (kW) per 100 RPM	1.1(82)	3.4 (2.6)	5.6 (4.2)
MAXIMUM LIQUID TEMPERATURE CASTING	Oil / Grease Lubrication without cooling	350° F (177° C)		
	Oil Lubrication with Finned Cooler	500° F (260° C)		
	Corrosion Allowance	.125 (3)		

DIMENSIONAL DRAWING



DIMENSIONS:

GROUP	PUMP SIZE	DISCHARGE	SUCTION	R	S	Q	P	X	BARE PUMP WEIGHT IN LBS. (KG)
STR	1x1 1/2-6	1	1 1/2	15 1/2 (127)	15 1/2 (127)	7 1/2 (191)	4 (102)	7 1/4 (184)	170 (77)
	1 1/2X1 1/2-8	1 1/2	1 1/2					77/8 (200)	
MTR/LTR	2X2-10	2	2	21 3/4 (165)	6 1/2 (165)	10 (254)	6 (152)	10 (254)	270 (123)
	3X3-10	3	3	22 5/8 (575)	6 3/4 (171)				315 (143)
	4X4-10	4	4	23 3/8 (594)	9 3/4 (233)				370 (168)
	3X3-13	3	3	22 5/8 (575)	6 3/4 (171)			11 1/2 (292)	400 (182)
	4X4-13	4	4	23 3/8 (594)	9 3/16 (233)				470 (214)
	6X6-13	6	6	15 1/4 (387)	10 (254)				14 (356)

All dimension in inches & (mm).Not to be used for construction.