PRO Pump
And Equipment

3175

PaperStock/Process Pump

3175

Designedto Handlethe Toughest Jobs in the Pulp & Paper and Process Industries

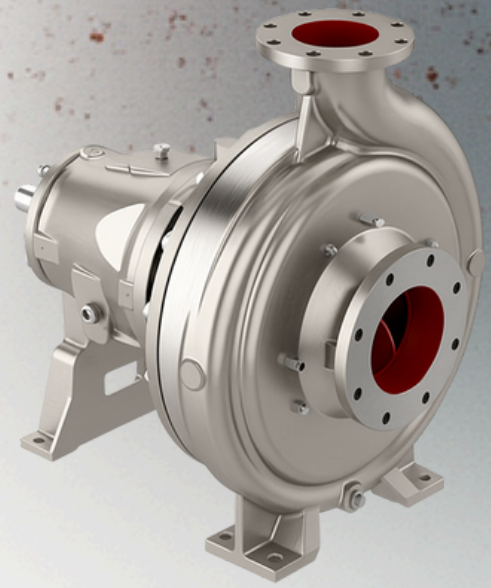
- Capacities to 28,000 GPM (6360 m3/h)
- Heads to 350 feet (107 m)
- Temperatures to 450°F (232° C)
- Pressures to 285 PSIG (1965 kPa)

Design Features

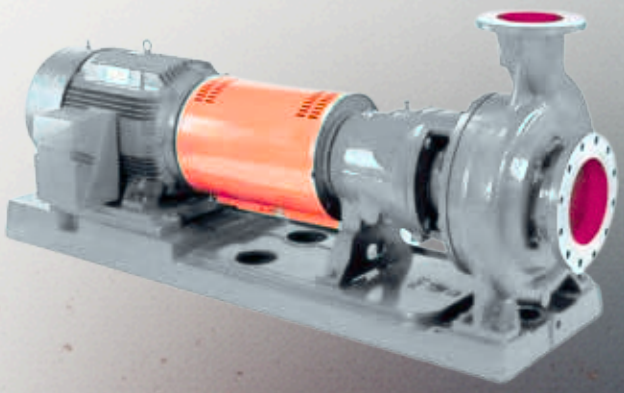
- Back Pull-Out
- Fully Open Impeller
- External Impeller Adjustment
- Renewable Wear Parts
- Maximum Sealing Flexibility
- Heavy Duty Construction
- Maximum Parts Interchangeability

Applications

- Pulp & Paper - Paper Stock through 6% Consistency, Black Liquor, Hydropulper and Broke Service, Low NPSH Digester Circulation, Blow Tank to Screens, Primary Screens Rejects, High Density Chlorine Tower to Washer, Flotation Cell Circulation
- Chemical - Evaporator and Reboiler Circulation, Slurry Services
- Petroleum - Corrosive/Abrasive Crude, Catalyst Slurry, Coke Fines
- Steel - Mill Descaling, Waste Treatment, Venturi Scrubber, Electro-Galvanizing Recirculation
- Food - Fruit Pulps, Grain Mash and Spent Grains, Evaporator Recirculation, Beet and Cane Sugar, Corn Products
- General - Waste Treatment, Air Pollution Abatement, Acid Mine Water, Textile Slurries



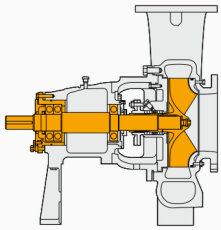
Wide Range of Materials
Stocked in Cast Iron and 316Stainless Steel. Available in any machinable alloy including 317SS, 317LSS, 316LSS, Alloy 20, CD4MCuN, 6-7% moly, Titanium, Hastelloy B and C



Long Life/Low Maintenance/Reliable Operation

External Impeller Adjustment

Impeller clearance can be easily reset by external adjustment to maintain hydraulic performance. Delivers long time energy savings, while downtime is kept to a minimum.

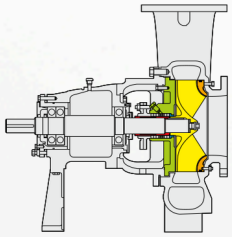


OptionalTaperBore™ Seal Chamber

Features an enlarged bore for improved lubrication and cooling of the mechanical seal. The tapered throat keeps solids away from seal faces and from building up in the chamber. Seal life is remarkably extended.

Renewable Wear Parts

Low maintenance costsbecause all wear parts...suction sideplate, impeller, stuffing box cover, shaft sleeve and throat bushing...are easily replaced.



Fully Open Impeller

Specialwarped vane, heavy duty open type for paper stock handling. Back pump-out vanes reduce stuffing box pressure, and help prevent solids from entering sealing chamber.

Heavy Duty Shaft

Designedfor continuousservice under most severe operating conditions—dry end broke, repulper, hydropulper, blowtank. Low deflection at maximum load for long seal and bearing life, extended MTBF.

Standard Labyrinth Oil Seals

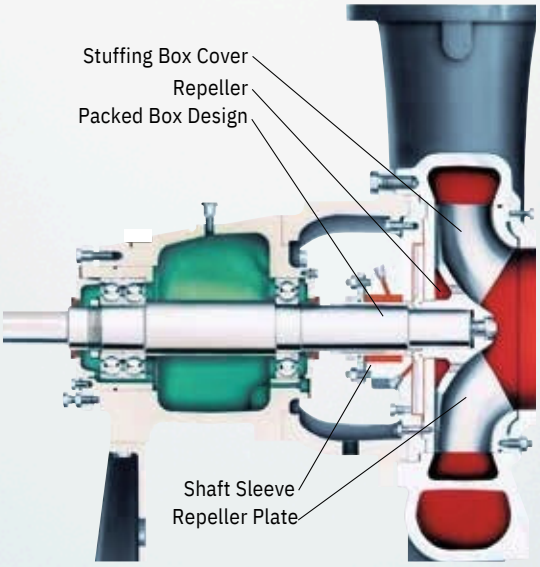
Prevent contamination of lubricant for extended bearing life.

Maximum Sealing Flexibility

DynamicSeal

Foreliminationofmechanical seal problems; reduced maintenance

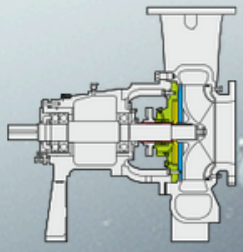
Goulds DynamicSealpumps are designedto handle the tough applications where conventional mechanical seals or packing require outside flush and constant, costly attention. The major advantage is that external seal water is not required, thus eliminating leakage, pumpage contamination, product dilution and problems associated with piping from a remote source.



Standard Model 3175 pumps can be fitted with a repeller between the stuffing box and impeller. At startup, the repeller functions like an impeller and pumps liquid from the stuffing box. When the pump is shut down, a conventional static seal prevents pumpage from leaking.

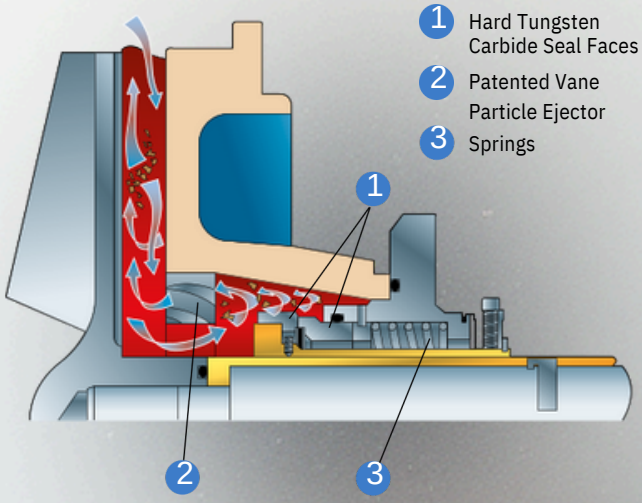
The 3175 is easily field converted to Dynamic Seal.

Goulds retrofit kit includes repeller, stuffing box cover, repeller plate, shaft sleeve and choice of static sealing arrangement.



TaperBore™ Seal Chamber

Goulds optional TaperBore™ seal chamber features an enlarged bore for improved lubrication and cooling of the mechanical seal. The design features a tapered throat and a vane particle ejector to keep solids away from seal faces and from building up in the seal chamber. Seal life is remarkably extended.



Goulds TaperBore™ seal chamber and cartridge mechanical seal. A full range of other seal types is available.

3175

Parts List and Materials of Construction

Item No.	Part Name	Materials Description					
		All Iron/CD4(1)	All 316SS	All 317SS	All CD4MCu	DI/CD4	5A Super Duplex
100	Casing	Cast Iron	316SS	317SS	CD4MCu	D.I.	5A Super Duplex
101	Impeller	316SS	316SS	317SS	CD4MCu	316SS	5A Super Duplex
105[1]	Lantern Ring(2)	Glass Filled Teflon					
106	Stuffing Box Packing	1/2" x 1/2" Non-Asbestos; 1" x 1" Non-Asbestos for XL					
107	Gland, Packed Box	316SS	316SS	317SS	316SS	316SS	5A Super Duplex
108	Frame Adapter	Cast Iron					
109A	Bearing End Cover-Coupling End	Cast Iron					
112A	Ball Bearing Coupling End	Steel					
119A	Bearing End Cover-inboard	Cast Iron					
122	Shaft	AISI 4140					
125	Stuffing Box Throat Bushing	Cast Iron	316SS	317SS	CD4MCu	Cast Iron	5A Super Duplex
126[2]	Shaft Sleeves (Packed Box)	316SS Hard Metal Coated		317SS	316SS HMC	316SS Hard Metal Coated	2507 Super Duplex
134A	Bearing Housing						
136	Bearing Locknut and Lockwasher	Cast Iron					
168A	Radial Bearing	Steel					
174	Suction Sideplate	Steel					
176	Suction Sideplate	Cast iron	316SS	317SS	CD4MCu	Cast Iron	5A Super Duplex
178	Impeller Key	Cast iron	316SS	317SS	CD4MCu	Cast Iron	5A Super Duplex
178J	Repeller Sleeve Key (Dynamic Seal)	AISI 303					
184	Stuffing Box Cover	AISI 304					
198	Impeller Screw	Cast Iron	316SS	317SS	CD4MCu	D.I.	5A Super Duplex
228	Bearing Frame	316SS					
241	Frame Foot	Cast Iron					
496	O-ring--Bearing Housing	Cast Iron					
264	Gasket-Backplate to S.B. Cover (Dynamic Seal)	Buna-N					
265	8.52736E+14	Aramid Fiber with EPDM Rubber Binder					
332A	Labyrinth Oil Seal-Coupling End	AISI 304					
333A	Labyrinth Oil Seal-Inboard	Bronze					
351	Gasket--S.B. Cover to Casing	Bronze					
353	Gland Stud/Nut	1/16" Non Asbestos					
356E	Stud/Nut--Suction sideplate	AISI 304					
360	Gasket-Inboard Bearing End Cover	AISI 303					
360A	Gasket-Outboard Bearing End Cover	Vellumoid					
360P	Gasket-Sideplate to Casing	Vellumoid					
412	O-ring--Shaft Sleeves	1/16"NonAsbestos					
412B	O-ring, Impeller Screw	Teflon					
412C	O-ring, Suction Sideplate	Teflon					
412U	O-ring, Repeller (Dynamic Seal)	Buna-N					
494	Cooling Coil (Optional)	PTFE					
		Copper/Steel					

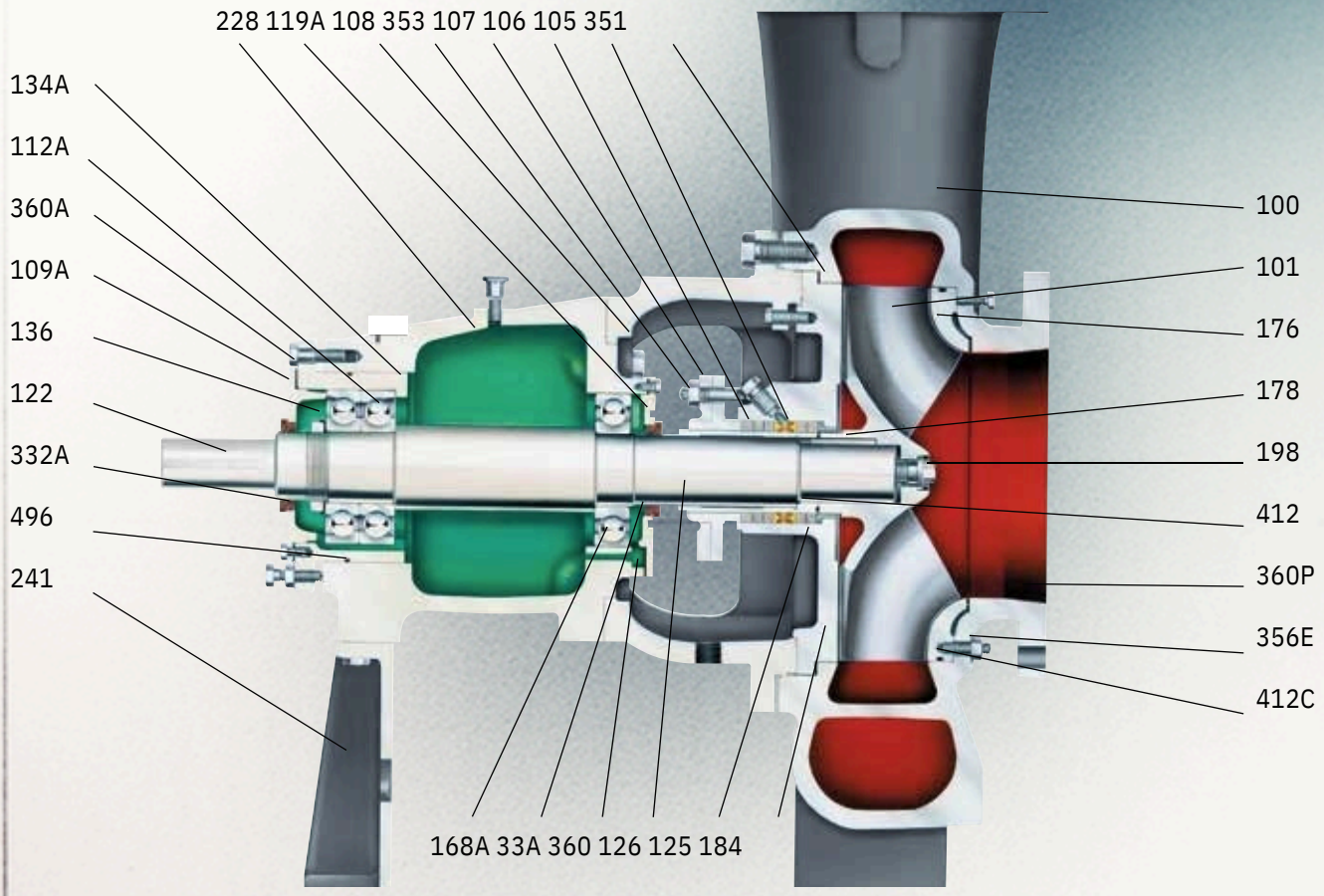
1. Group XL only: Cast Iron for All316SS trim, 316SS for All 316SS, 317SS for All 317SS, 316SS for All CD4MCu.

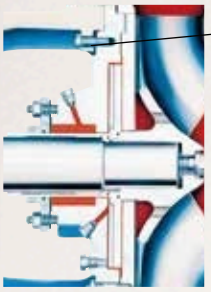
2. Standard sleeve for 317SS pumps with packed box is 317SS and is not hard-coated. Standard sleeve for pumps with 2 mechanical seal is 316SS (317SS on all 317SS).

Materials of Construction

Cast Iron	Cast Iron—ASTM A48, Class 20, 25, 30	303SS	303 Stainless Steel—ASTM A582 Type 303
316SS	316 Stainless Steel— (Cast) ASTM A743 Gr CF-8M (Wrought) ASTM A276 Type 316	304SS	304 Stainless Steel—ASTM A276 Type 304
		317SS	317 Stainless Steel—ASTM A743 Gr CG-8M
		CD4MCu	Iron-Chrome-Nickel Alloy—ASTM A743 Gr CD4MCu
		Steel	Carbon Steel—ASTM A322 Gr 4140

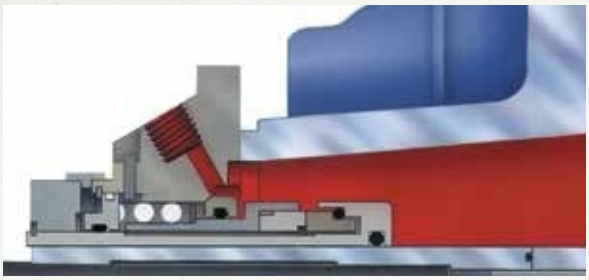
Sectional View



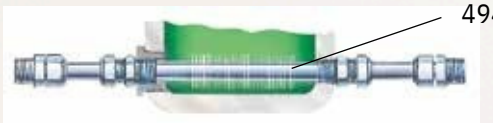


Dynamic Seal Option

Optional Suction Piece



TaperBore™Seal Chamber and Mechanical Seal Option



Optional High Efficiency Finned Cooler

3175 Paper Stock / Process Pumps

Heavy Duty Design Features for Handling the Toughest Services

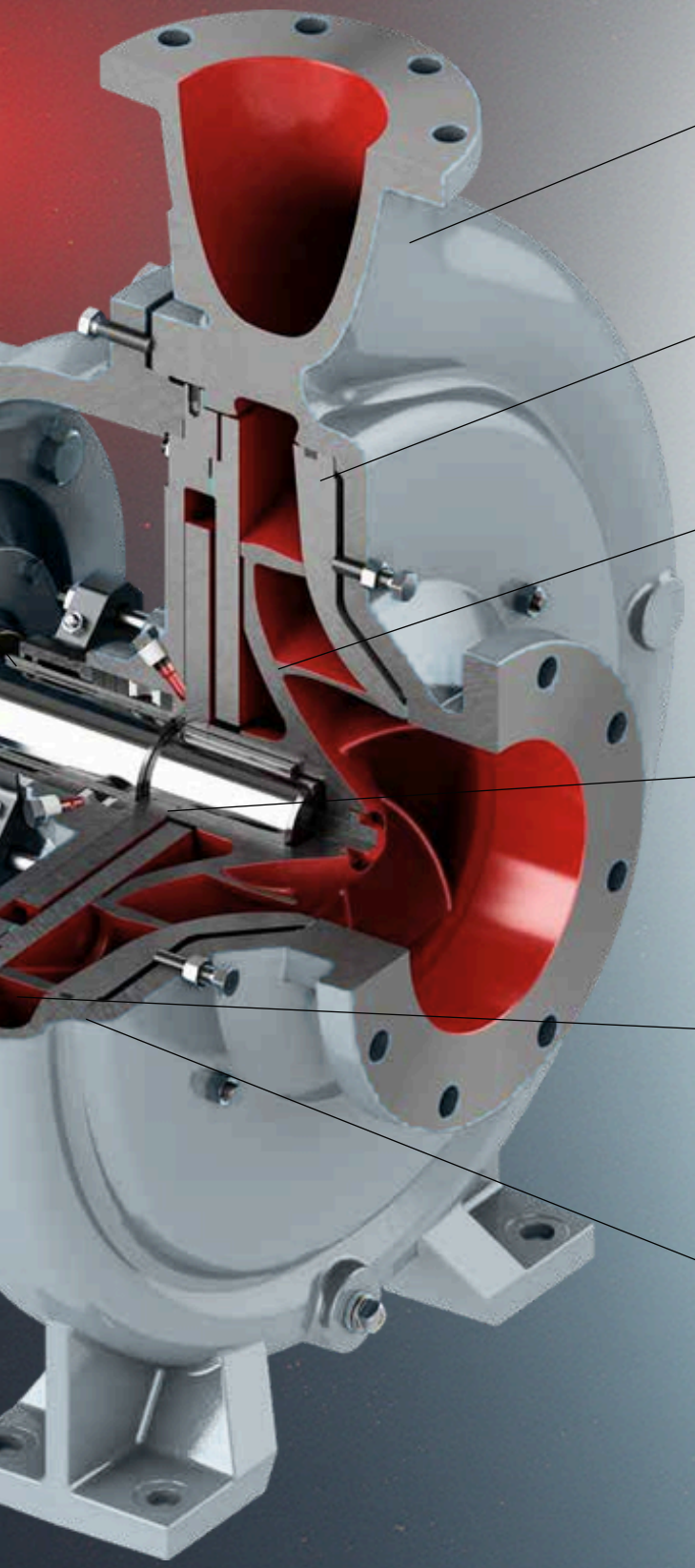
LABYRINTH SEALS
Standard Labyrinth OilSeals prevent premature bearing failurecaused by lubricant contaminationand loss of lubricant.

RENEWABLE SHAFT SLEEVE
Hook-type sleeve is positivelydriven by impeller key. Free to expandwith temperature changes.

HEAVY DUTY SHAFT
Designed forminimumdeflection at maximum load. Dry shaftdesign—sealed by O-rings at sleeve/impeller hub and impeller bolt.

OPTIONAL HIGHEFFICIENCY FINNED COOLER
Requires minimumcooling water; easily cleaned tomaintain bearing cooling efficiency.Corrosion resistant materials standard.

LUBRICATION FLEXIBILITY
Oillubrication standard. Grease and oil mist optional.



VERTICAL CENTERLINE DISCHARGE

Self-venting design for air handling. Casing provides maximum piping support.

RENEWABLE SIDEPLATE

Heavy suction sideplateminimizes maintenance costs. Positively sealed with O-ring and gasket.

FULLY OPEN IMPELLER

Designed for full range of services. Back pump-out vanes minimize stuffing box pressure, help prevent solids from entering seal chamber.

REPLACEABLE STUFFING BOX BUSHING

Minimizes packing and sleeve maintenance.

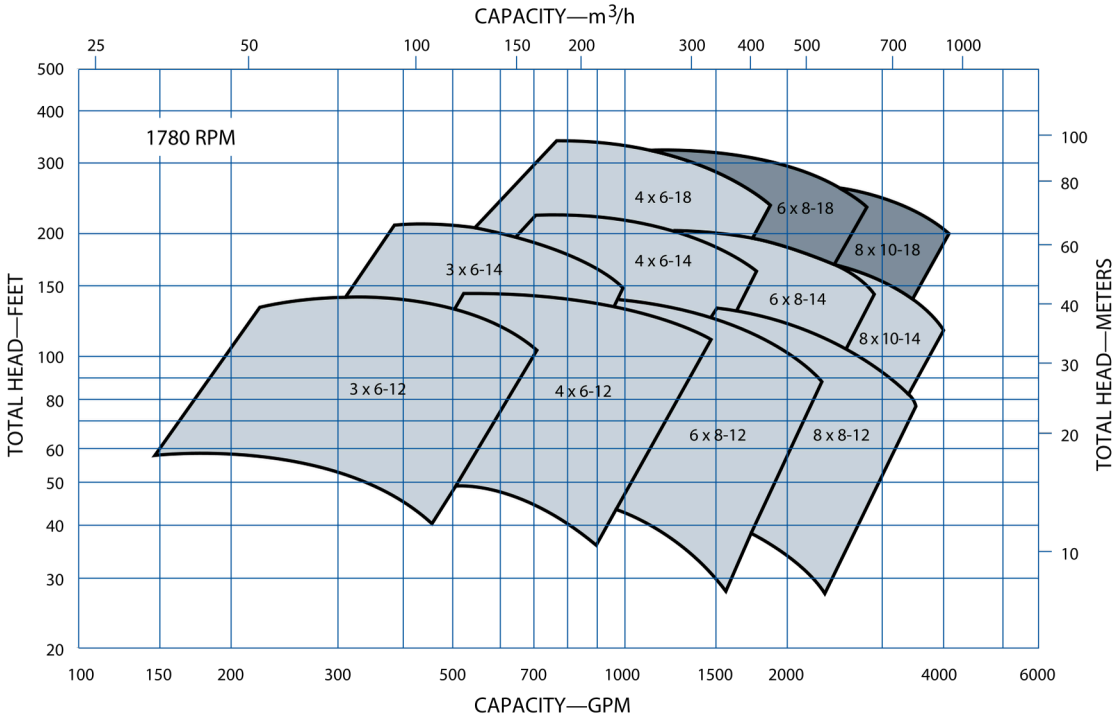
DUAL VOLUTE CASING

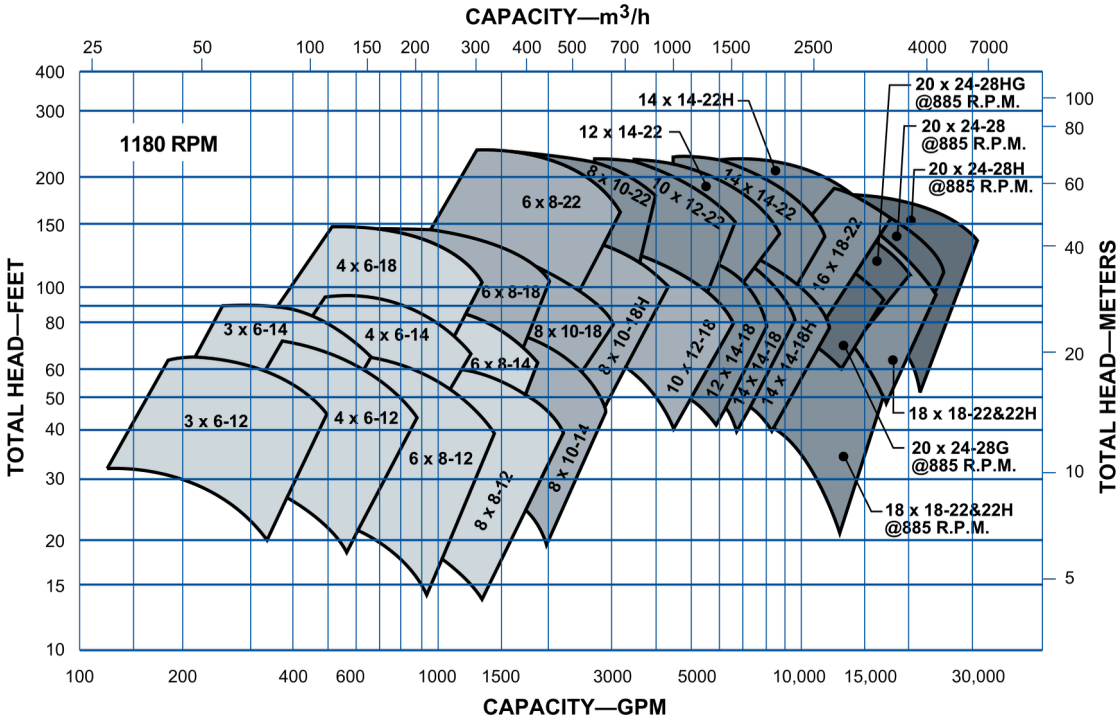
Provided onsizesas required to minimize radial unbalancefor long packing, mechanical sealand bearing life.

EXTRA THICK WALL SECTIONS

For extended wear life and reduced maintenance.

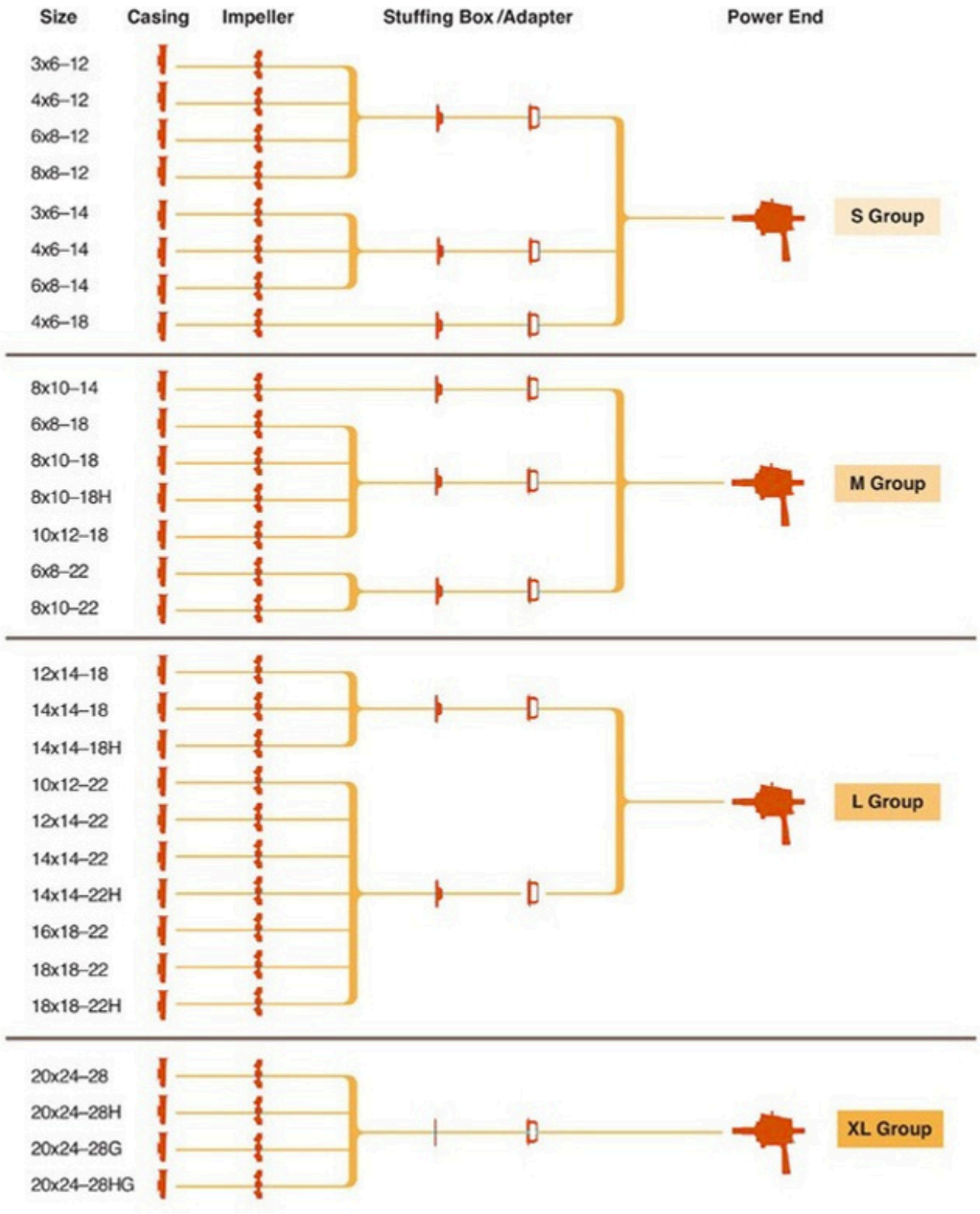
Hydraulic Coverage



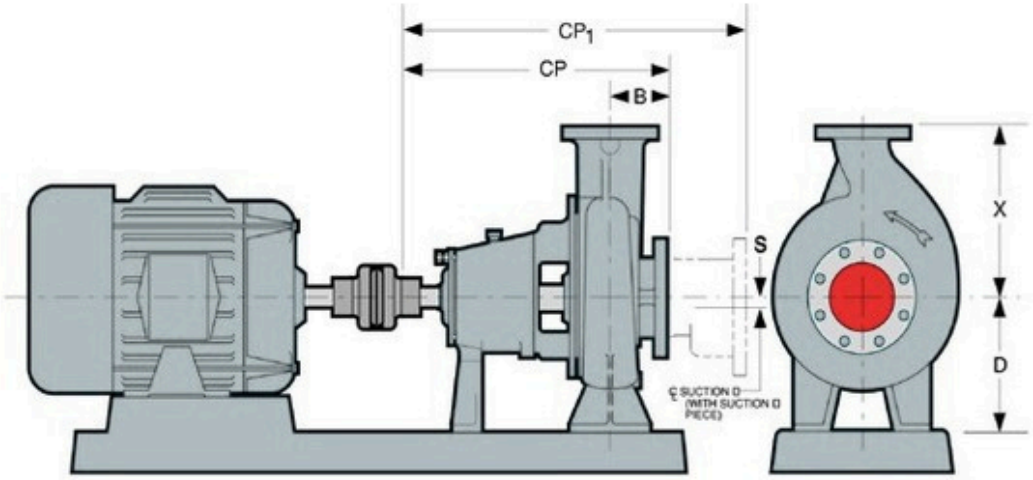


Modular Interchangeability

Minimum Parts Requirements



Dimensions



DIMENSIONS

Group	Pump Size	Disch. Size	Suct. Size	Suct. Size*	D	X	B	CP	CP1	S	Shaft Diameter at Coupling	Bare Pump Weight* Lbs. (kg.)
S	3x6-12	3	6	8	–	13 (330)				1 (25)		745 (338)
	4x6-12	4	6	10	12½ (318)	14½ (368)	7¼ (184)	39¾ (1010)	51 (1295)		1.875 (47.63)	810 (367)
	6x8-12	6	8			16 (406)				2 (51)	1.874 (47.60)	975 (442)
	8x8-12	8	8	12	14½ (368)	19 (483)	8⅛ (206)	41⅛ (1045)	52⅛ (1330)			1205 (547)
	3x6-14	3	6	8		13 (330)				1 (25)		850 (386)
	4x6-14	4	6	10	12½ (318)	14½ (368)	7¼ (184)	39¾ (1010)	51 (1295)		1.875 (47.63)	925 (420)
	4x6-18	4	6	10		16 (406)				2 (51)	1.874 (47.60)	1050 (476)
	6x8-14	6	8	12		16 (406)						1100 (499)
M	6x8-18	6	8	12	14½ (368)	18 (457)	7¼ (184)	39¾ (1010)	51 (1295)			1525 (692)
	6x8-22	6	8	12	17 (432)	21 (533)						1700 (771)
	8x10-14	8	10	14	14½ (368)	19 (483)						1550 (703)
	8x10-18	8	10	14	14½ (368)	21 (533)					2.375 (60.33)	1600 (726)
	8x10-18H	8	10	14	17 (432)	21 (533)	8⅛ (206)	41⅛ (1045)	53 (1346)	2 (51)	2.374 (60.30)	1725 (782)
	8x10-22	8	10	14	17 (432)	23 (584)						1800 (816)
	10x12-18	10	12	16	20 (508)	23 (584)						1900 (862)
L	10x12-22	10	12	16	20 (508)	25 (635)	8⅛ (206)	41⅛ (1045)	53 (1346)			2050 (930)
	12x14-18	12	14	18	20 (508)	25 (635)				2 (51)		2000 (907)
	12x14-22	12	14	18	20 (508)	27 (686)						2350 (1066)
	14x14-18 14x14-18H	14	14	20	20 (508)	27 (686)	8⅞ (225)	42½ (1080)	55 (1397)	3 (76)	3.375 (85.73)	2125 (964)
	14x14-22 14x14-22H	14	14	20	22 (559)	30 (762)					3.374 (85.70)	2800 (1270)
	16x18-22	16	18	–	28 (711)	32 (813)	12¼ (324)	47⅞ (1205)	–	–		3800 (1724)
	18x18-22	18	18	–	28 (711)	34 (864)	9⅞ (251)	43½ (1105)	–	–		4500 (2041)
	18x18-22H	18	18	–	28 (711)	34 (864)	16⅝ (422)	50¼ (1276)	–	–		4300 (less suction piece)
XL	20x24-28 20x24-28H 20x24-28G 20x24-28HG	20	24	–	30 (762)	40 (1016)	17½ (445)	66¼ (1695)	–	–	3.875 (98.43) 3.874 (98.40)	5300 (2404)

*With Suction Piece

All dimensions in inches and (mm). Not to be used for construction.

3175

Construction Details

		S Group	M Group	L Group	XL Group
Temperature Limits	Maximum Liquid Temperature—Oil Lubrication Without Cooling	250°F (121°C)			
	Maximum Liquid Temperature—Oil Lubrication with Frame Cooling	350°F (177°C)-Cast Iron 450°F (232°C)-Steel			
	Maximum Liquid Temperature—Grease Lubrication	250°F (121°C)			
Power Limits	HP (kW) per 100 RPM—904L and Alloy 20 Construction	9.52 (7.10)	23.8 (17.8)	63.5 (47.4)	113.6 (84.7)
	HP (kW) per 100 RPM—Constructions other than Alloy 20	17.4 (13.0)	31.9 (23.8)	82.2 (61.3)	129.0 (96.2)
Shaft Diameter	At Impeller	1 7/8 (48)	2 3/4 (70)	3 3/8 (86)	3 7/8 (98)
	Under Shaft Sleeve	2 1/2 (64)	3 5/16 (84)	4 5/16 (109)	5 (127)
	At Coupling	1 7/8 (48)	2 3/8 (60)	3 3/8 (86)	3 7/8 (98)
	Between Bearings	3 1/8 (79)	4 (102)	4 7/8 (124)	6 (152)
Sleeve	O.D. through Stuffing Box	3 (76)	3 7/8 (95)	4 3/4 (121)	5 1/2 (140)
Bearings	Thrust (Coupling End)	SKF 7313 BECBY	SKF 7317 BEGAM	SKF 7222 BECBM	SKF 7326 BCBM
	Radial (Inboard or Pump End)	SKF 6313	SKF 6317	SKF 6222	SKF 6326
	Bearing Span	12 1/4 (311)	11 11/16 (297)	11 1/8 (283)	18 (457)
	Shaft Overhang	10 11/16 (271) to 11 27/32 (301)	11 15/32 (290) to 12 5/16 (319)	11 7/8 (302) to 13 5/16 (344)	19 (483)
Stuffing Box	Bore	4 (102)	4 3/4 (121)	5 3/4 (146)	7 1/2 (191)
	Depth—to Stuffing Box Bushing	3 11/16 (94)			6 3/4 (171)
	Packing Size	1/2 x 1/2 (13 x 13)			1 x 1 (25 x 25)
	Distance from End of Stuffing Box to Nearest Obstruction	3 1/8 (79)		3 1/4 (83)	3 3/4 (95)