PENTAIR

AURORA® 3500 SERIES
MODEL 3560 ASME/ANSI B73.1M INDUSTRIAL PROCESS PUMPS

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AURORA® 3500 SERIES
Model 3560 ASME/ANSI B73.1M Industrial Process Pumps

Capacities to 7000 GPM (1590 m^3/hr)
Heads to 725 Ft. (221 m)
Temperatures to 650°F (343°C)
Pressures to 375 PSIG (2586 kPa)

ANSI Pumps

The Aurora Model 3560 was designed to perform in the toughest industrial applications whether in the chemical, petro-chemical, mining, pulp and paper, consumer products or general industry.

If you are considering an ANSI pump for an industrial application, look to Aurora Model 3560 for your pumping solution.

Model 3560 Groups 1, 2 and 3

The Aurora Model 3560–Groups 1, 2 & 3 were developed with the standard features required to withstand the most difficult applications and maximize mean-time-between-failures (MTBF).

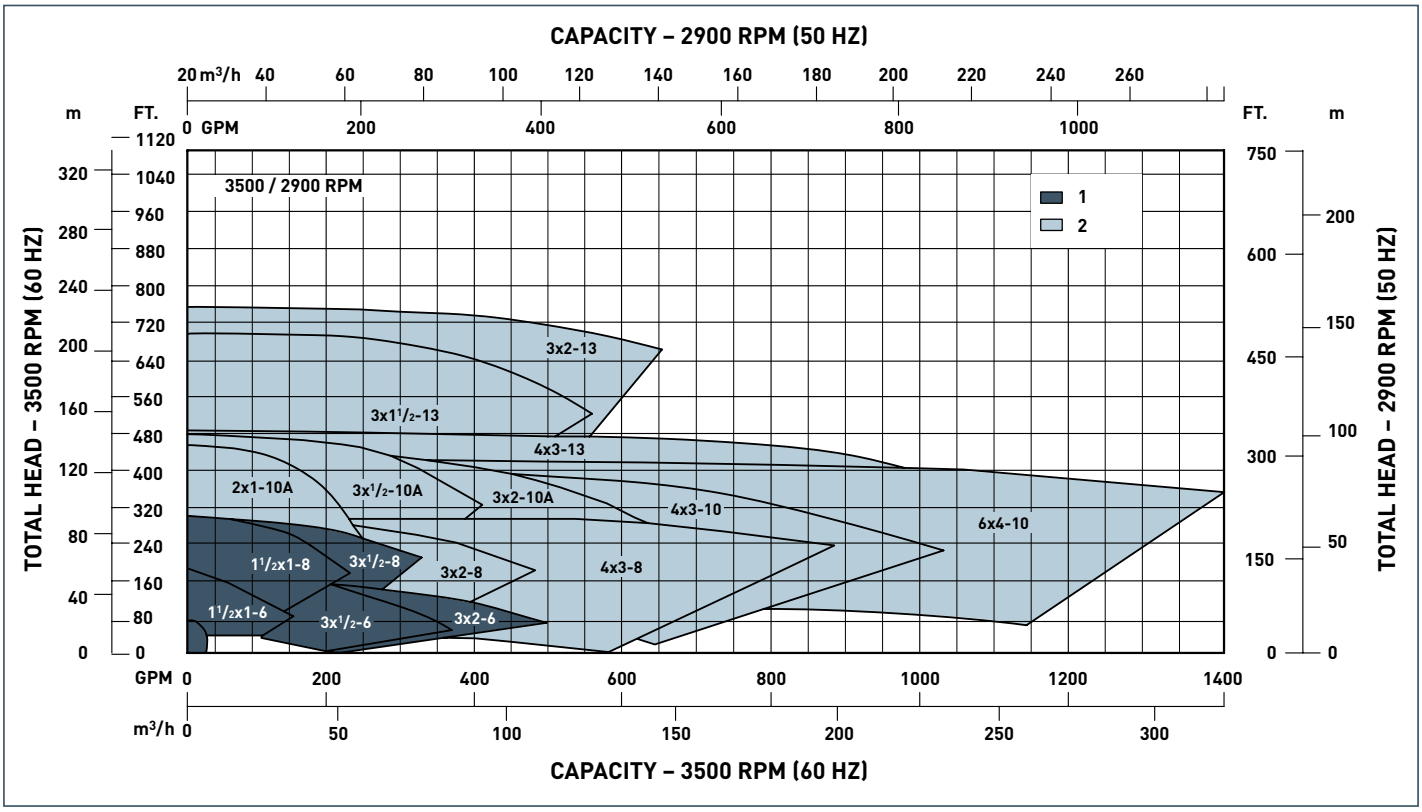
- Model 3560-1 – 5 ASME/ANSI Pumps
- Model 3560-2 – 13 ASME/ANSI Pumps
- Model 3560-3 – 7 ASME/ANSI Pumps

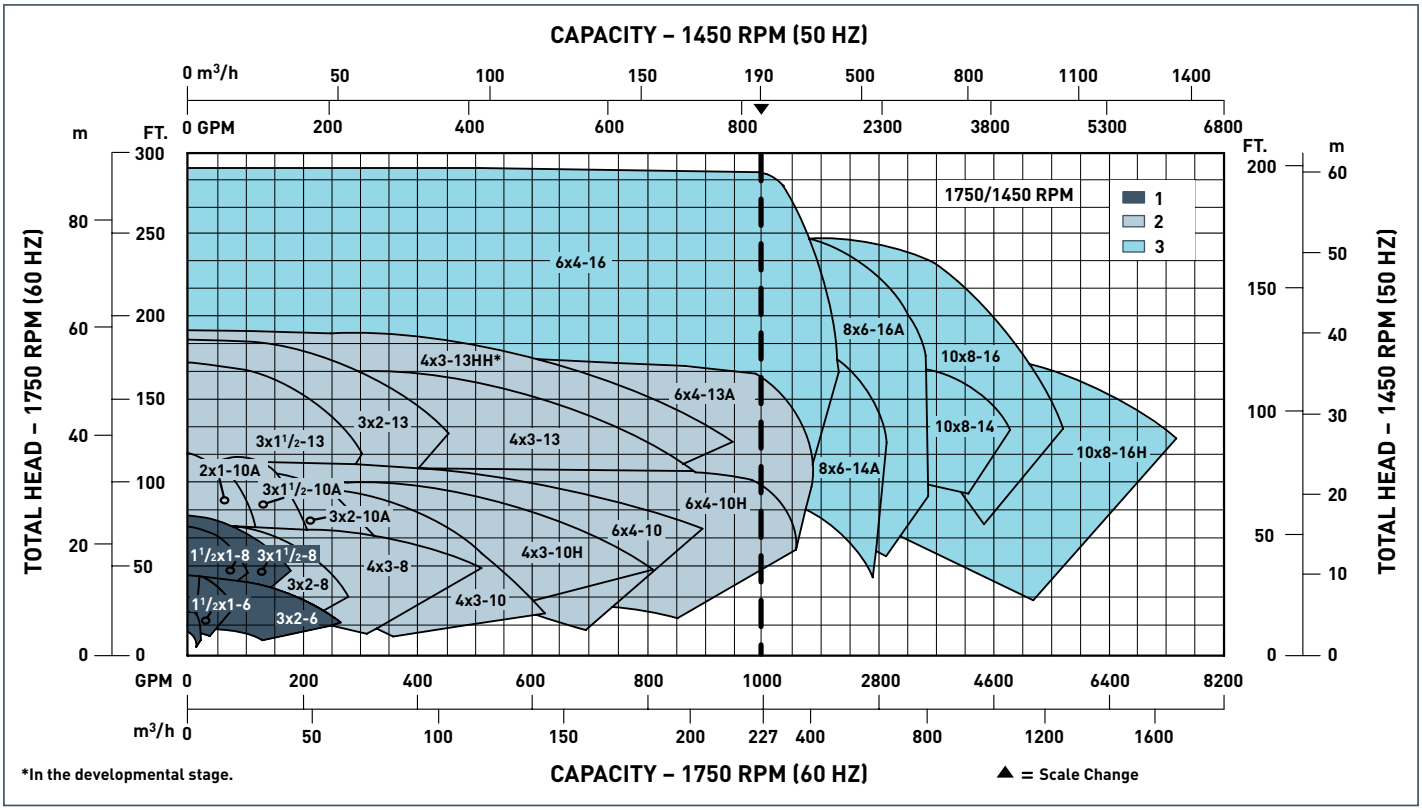
Model 3560-3

Model 3560-2

Model 3560-1

3500/2900 and 1750/1450 RPM Range Charts





Pump Features

A. Lip Type Oil Seals
- Prevent external contaminants
- Lower oil temperature
- Optional labyrinth seals
- Dramatically improve bearing life

B. Oversized Shaft
- Shaft deflection less than .002 in. per ANSI B73.1M
- Decreased vibration
- Significantly increases both seal and bearing life

C. Heavy Duty Bearing
- Designed for maximum hydraulic loads
- Optional duplex (40°/40° angular contact) thrust bearings
- Bearings can perform under the toughest conditions

D. External Impeller Adjustment
- Optimizes energy consumption
- Reduces repairs
- Simple external adjustments
- Long-term energy and repair savings

E. Large Capacity Oil Sump
- Cooler oil temperature
- Better heat transfer
- Increased bearing life

F. Lubrication Flexibility
- Oil flooded
- Oil mist
- Greased
- Maximum lubrication options

G. Large Sight Glass
- Assures proper oil levels
- Allows monitoring of oil condition
- Helps increase bearing life

H. Magnetic Drain Plug
- Removes magnetic particles
- Increases bearing life

I. Heavy Duty Casing
- Class 150 flanges with Class 300 casing wall thickness
- Self-venting
- Back pullout design
- Integral cast feet
- Serrated flange surfaces
- Standard Class 150 FF and optional Class 150 RF, 300 FF/RF
- Designed for increased reliability, ease of maintenance and maximum life

J. Sealing Options
- Packing
- Conventional single/double
- Cartridge single/double
- Sealing options to accommodate almost any fluid and temperature combinations

K. Positive Sealing
- Fully confined gasket
- Protects alignment fit
- Provides ease of maintenance and increased safety

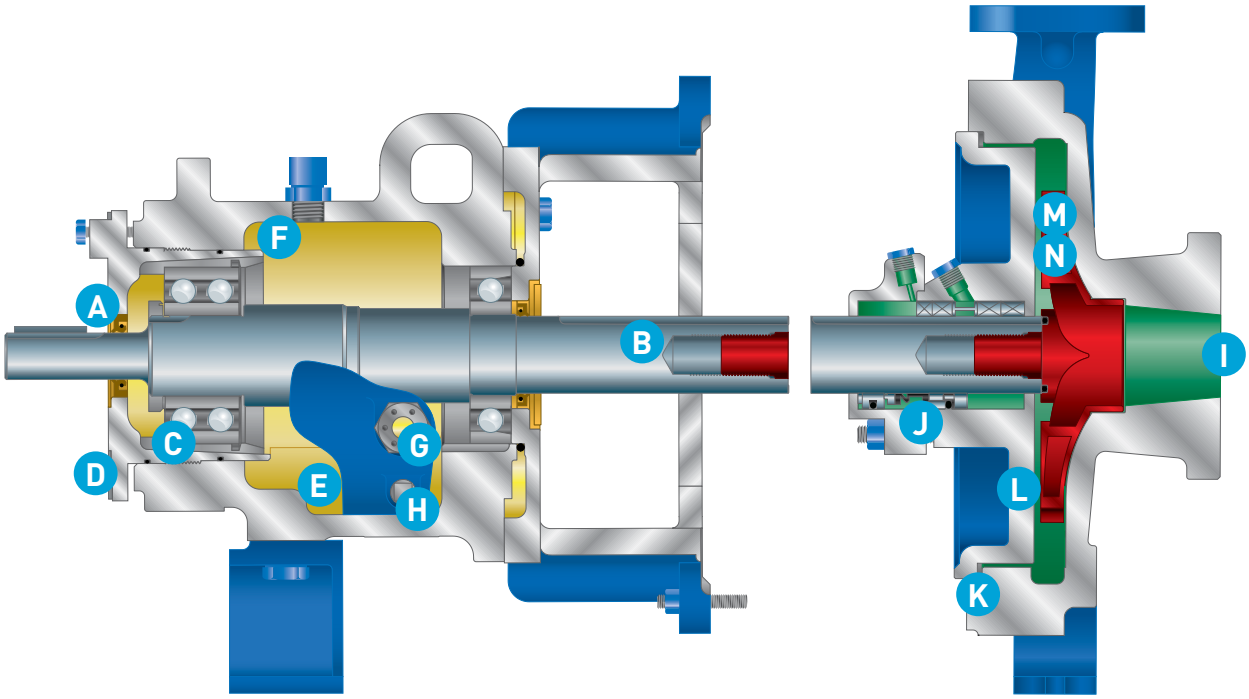
L. Engineered Seal Chambers
- Standard bore
- Large bore
- Taper bore / modified flow
- Designed to provide optimum seal environment

M. Fully Open Impeller
- Back pump-out vanes
- Reduced radial/thrust loads
- Lower seal chamber pressure
- Double the wear area of a closed impeller
- Designed for the toughest applications including solids handling, stringy materials, abrasives and corrosives

N. Enclosed Impeller
- Low seal chamber pressure
- Lower thrust loads
- NPSHR values are lower
- Impeller adjustment in shop
- Ideal for clear liquids
- Enclosed impellers have enhanced performance and maintenance advantages

Pump Features

The Model 3560 power and wet ends were developed with the standard features required to withstand the most difficult applications and maximize mean-time-between-failures (MTBF).



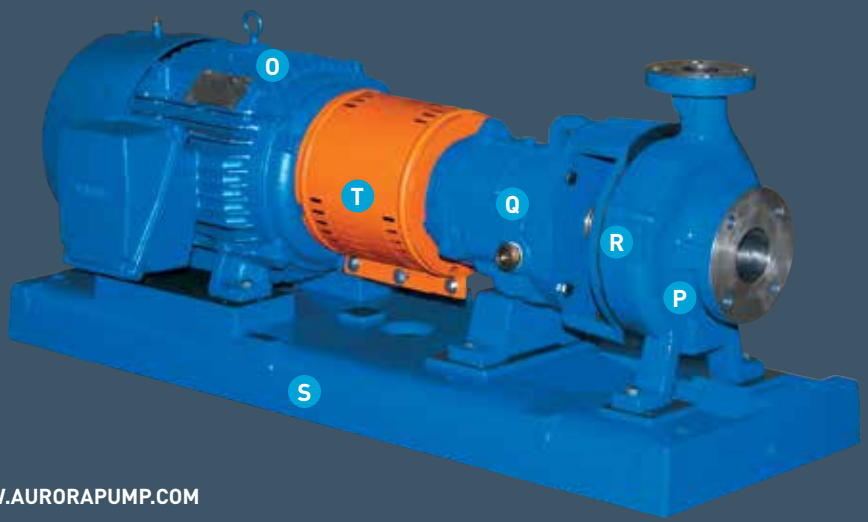
The Aurora® Model 3560 has a broad range of engineered options and upgrades that will support a variety of process requirements and meet almost any fluid processing application.

O. Drivers

- Electric motors ODP / TEFC / XP
- Variable frequency drives

P. Process Temperature Control

- Jacketed casings
- Jacketed seal chamber



Q. Oil Temperature Control

- Bearing frame cooling coil

R. Seal Flush / Cooling

- Most ASME/ANSI B73.1M seal flush and cooling plans available

S. Mounting Baseplates

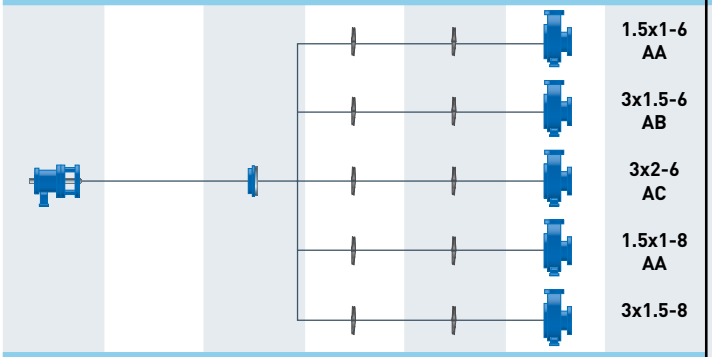
- Fabricated steel per ASME/ANSI B73.1M
- Cast Iron in compliance with PIP
- Heavy-duty epoxy resin based polymer composite to ASME/ANSI B73.1M

T. Couplings and Guards

- OSHA approved coupling guards
- Various coupling options

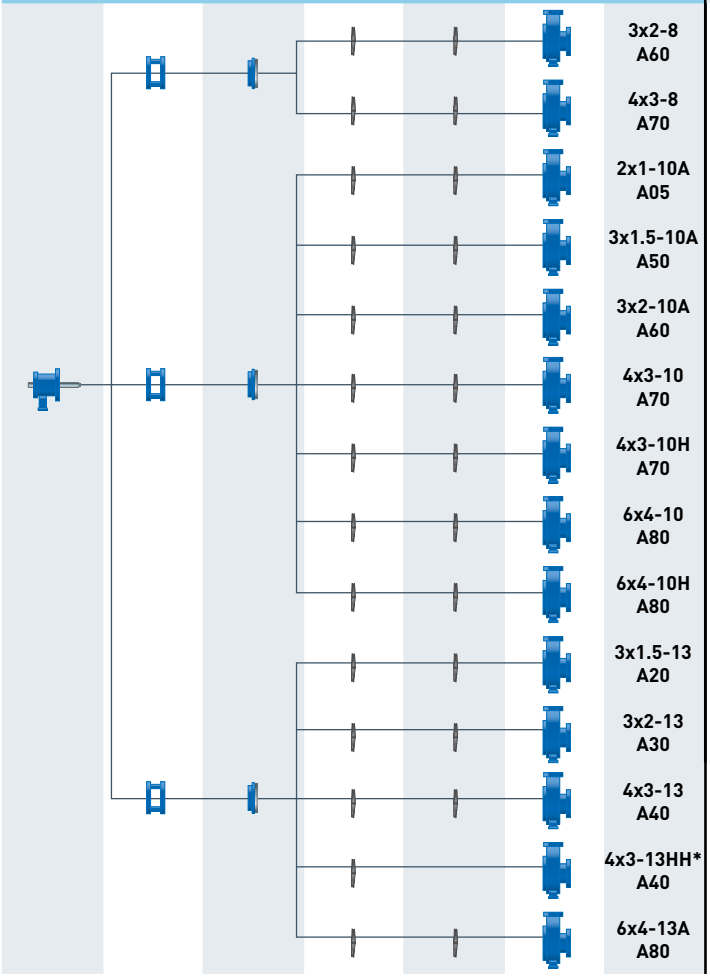
Modular/Dimensional Interchangeability

GROUP 1



POWER END	ADAPTERS	SEAL CHAMBER	REVERSE VANE IMPELLER OR FRONT VANE OPEN STYLE IMPELLER	CASING	SIZE
					1.5x1-6 AA
					3x1.5-6 AB
					3x2-6 AC
					1.5x1-8 AA
					3x1.5-8

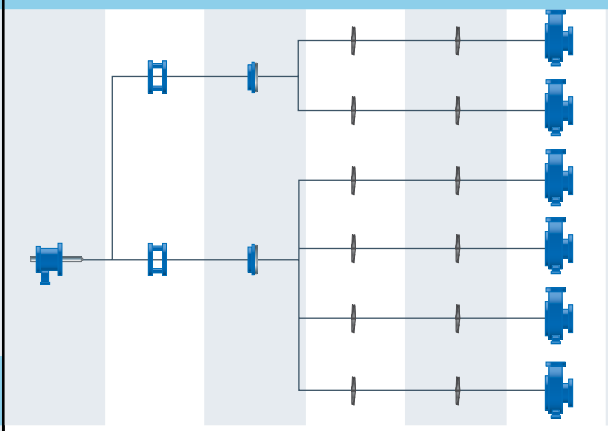
GROUP 2



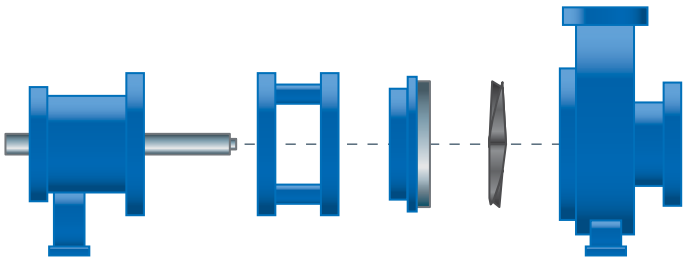
POWER END	ADAPTERS	SEAL CHAMBER	REVERSE VANE IMPELLER OR FRONT VANE OPEN STYLE IMPELLER	CASING	SIZE
					3x2-8 A60
					4x3-8 A70
					2x1-10A A05
					3x1.5-10A A50
					3x2-10A A60
					4x3-10 A70
					4x3-10H A70
					6x4-10 A80
					6x4-10H A80
					3x1.5-13 A20
					3x2-13 A30
					4x3-13 A40
					4x3-13HH* A40
					6x4-13A A80

*In the developmental stage.

GROUP 3



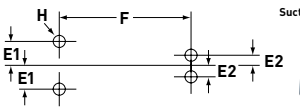
POWER END	ADAPTER	SEAL CHAMBER	REVERSE VANE IMPELLER OR FRONT VANE OPEN STYLE IMPELLER	CASING	SIZE
					8x6-14A A90
					10x8-14 A100
					6x4-16
					8x6-16A A110
					10x8-16 A120
					10x8-16H A120

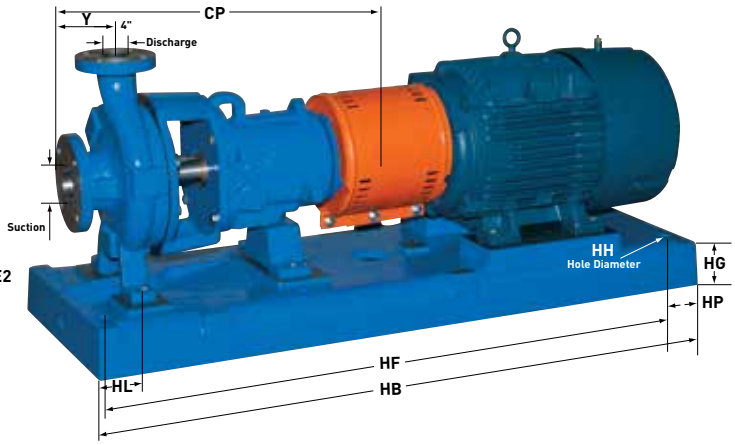


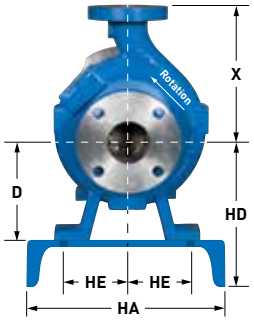
Pump Dimensions

Notes:

1. All dimensions are in inches.
2. Motor should not extend beyond end of baseplate.
3. Includes 0.13 shimming allowance where motor height controls.
4. Baseplate/Mounting surface width.







Pump Group	Pump Size Suction x Discharge	ANSI Designation	Pump Weight kg (lb)	X mm (in)	D mm (in)	E1 mm (in)	E2 mm (in)	CP mm (in)	F mm (in)	H mm (in)	Y mm (in)
1	1-1/2x1-6	AA	44 (97)	165 (6-1/2)	133 (5-1/4)	76 (3)	0	445 (17-1/2)	184 (7-1/4)	16 (5/8)	102 (4)
	3x1-1/2-6	AB	51 (112)								
	3x2-6	AC	53 (116)								
	1-1/2x1-8	AA	47 (103)								
	3x1-1/2-8		56 (124)	190.5 (7-1/2)	177.8 (7)						
2	3x2-8	A60	90 (200)	242 (9-1/2)	210 (8-1/4)	124 (4-7/8)	92 (3-5/8)	597 (23-1/2)	318 (12-1/2)	16 (5/8)	102 (4)
	4x3-8	A70	103 (227)	280 (11)							
	2x1-10A	A05	95 (210)	216 (8-1/2)							
	3x1-1/2-10A	A50	100 (220)	216 (8-1/2)							
	3x2-10A	A60	103 (226)	242 (9-1/2)							
	4x3-10	A70	101 (225)	280 (11)							
	4x3-10H	A40	112 (249)	318 (12-1/2)	254 (10)						
	6x4-10	A80	130 (290)	343 (13-1/2)							
	6x4-10H	A80	149 (328)	343 (13-1/2)							
	3x1-1/2-13	A20	112 (250)	266 (10-1/2)							
	3x2-13	A30	116 (258)	292 (11-1/2)							
	4x3-13	A40	126 (281)	318 (12-1/2)							
	4x3-13HH	A40	126 (281)	318 (12-1/2)							
	6x4-13A	A80	145 (324)	343 (13-1/2)							
3	8x6-14A	A90	306 (680)	406 (16)	368 (14-1/2)	203.2 (8)	114.3 (4-1/2)	860 (33-7/8)	476 (18-3/4)	22 (7/8)	152 (6)
	10x8-14	A100	408 (899)	457 (18)							
	6x4-16		291 (641)	406 (16)							
	8x6-16A	A110	377 (832)	457 (18)							
	10x8-16	A120	416 (917)	483 (19)							
	10x8-16H	A120	450 (992)	483 (19)							

Pump Group	Maximum Motor Frame	Baseplate Number	Weight lb	A Min. (Note 4)	HA	HB	HD Max. (Note 3)					HE	HF	HG Max.	HH	HP
							D=5.25	D=7	D=8.25	D=10	D=14.5					
1	184T	139	111	12	15	39	9.000	10.750	NA	NA	NA	4-1/2	36-1/2	3-3/4	3/4	1.25
	215T	148	163	15	18	48	9.500	11.125	NA	NA	NA	6	45-1/2	4-1/8		1.25
	256T			15			10.500	11.125	NA	NA	NA					1.25
	286T	153	212	18	21	53	11.875	11.875	NA	NA	NA	7-1/2	50-1/2	4-3/4		1.25
	326TS			18			12.875	12.875	NA	NA	NA					1.25
2	184T	245	129	12	15	45	NA	NA	12.000	13.750	NA	4-1/2	42-1/2	3-3/4		1.25
	215T	252	177	15	18	52	NA	NA	12.375	14.125	NA	6	49-1/2	4-1/8		1.25
	286T	258	234	18	21	58	NA	NA	13.000	14.750	NA	7-1/2	55-1/2	4-3/4	1	1.25
	326T	264	328	18	22	64	NA	NA	13.000	14.750	NA		61-1/2			1.25
	365T			18			NA	NA	13.875	14.750	NA					1.25
	405TS	268	409	22	26	68	NA	NA	14.875	14.875	NA	9-1/2	65-1/2			1.25
	449TS	280	481	22		80	NA	NA	15.875	15.875	NA		77-1/2			1.25
3	286T	368	470	22		68	NA	NA	NA	NA	19.250		65-1/2	4-3/4		1.25
	405T	380	601	22		80	NA	NA	NA	NA	19.250		77-1/2	4-3/4		1.25
	449T	398	746	22		98	NA	NA	NA	NA	19.250		95-1/2	4-3/4		1.25

Parts and Material Composition

Item Number	Required Per Pump	Part Name	All Steel	All 316SS	All Alloy 20	All CD4MCu	All Titanium	Hastelloy® B&C
100	1	Casing	Steel	316SS	Alloy 20	CD4MCu	Titanium	Hastelloy B&C
103	1	Impeller	Steel	316SS	Alloy 20	CD4MCu	Titanium	Hastelloy B&C
106	1	Lantern Ring	Glass Filled Teflon®					
112	1	Packing	Teflon Impregnated Fibers					
113	1	Packing Gland	316SS		Alloy 20		Titanium	Hastelloy B&C
108	1	Frame Adapter	Ductile Iron					
121	1	Outboard (Thrust) Bearing	Double Row Angular Contact					
105	1	Shaft – Less Sleeve (Optional)	316SS					
105	1	Shaft – With Sleeve	SAE4140				316SS	
177	1	Shaft Sleeve	316SS	316SS	Alloy 20	316SS	Titanium	Hastelloy B&C
201	1	Bearing Housing	Cast Iron					
124	1	Lock Nut / Lock Washer	Steel					
120	1	Inboard (Radial) Bearing	Single Row Deep Groove					
106	1	Seal Box	Steel	316SS	Alloy 20	CD4MCu	Titanium	Hastelloy B&C
119	1	Bearing Frame	Cast Iron (Ductile for Group 1)					
109	1	Bearing Frame Foot	Cast Iron					
110	1	Gland	316SS		Alloy 20			
200	1	Sight Oil Gauge	316SS					
129	1	Lip Type Oil Seal (Outboard)	Optional Labyrinth Oil Seal					
118	1	Lip Type Oil Seal (Inboard)	Optional Labyrinth Oil Seal					
107	1	Casing Gasket	Aramid Fiber with EPDM Rubber					
111	4	Gland Stud	316SS					
111A	4	Gland Nut	304SS					
140	3	Bearing Housing Hex Bolt	Steel					
201B	1	Bearing Housing O-Ring	Buna Rubber					
105	1	Impeller O-Ring	Glass Filled TFE					

Group		1	2	3
Volute		single		
Nominal Case Thickness (inches)		3/8, 7/16	1/2, 7/16	1/2, 5/8, 9/16
Corrosive Allowance at Maximum		1/8		
Working Pressure		Limits set by ANSI B16.5		
Maximum Working PSIG		See Pressure / Temperature charts		
Hydro Test PSIG at 100°F		150% of working pressure at 100°F (38°C)		
Maximum Liquid Temperature (°F)		350°F without cooling / 650°F with cooling		
Shaft Diameter	At Coupling (inches)*	.875	1.125	2.375
	Sleeve Diameter Under Seal (inches)	1.375	1.875	2.625
	Under Sleeve (inches)	1.125	1.50	2.125
	Overhang (inches)	5.969	7.688	10.250

*For 6x4-10 & 6x4-10H the shaft diameter at the coupling end is 1.50".

Group		1	2	3
Bearings	Radial	SKF 6207	SKF 6310	SKF 6314
	Thrust	SKF 5306 A/C3	SKF 5310 A/C3	SKF 5314 A/C3
	Bearing Span	3.593	6.875	10.50
Mechanical Seal Size (inches)		1.375	1.875	2.625
Stuffing Box – Standard Bore	I.D. (inches)	2.125	2.625	3.625
	Depth (inches)	2.187	2.625	3.250
	Distance End of Box to Nearest Obstruction	2.156	3	3.593
Stuffing Box – Large Bore	I.D. (inches)	2.875	3.625	4.625
	Depth (inches)	2	2	3
	Distance End of Box to Nearest Obstruction	2.343	3.625	3.843
Lantern Ring Width (inches)		.437	.625	.625

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