

CENTRIFUGAL PROCESS PUMPS



MODEL A100 ANSI B73.1



Heavy Duty Design Features Permit a Wide Range of Process Services

(Model A100 M illustrated. Same features apply to A100 S, M, L and X)
*ANSI B-73.1

All EAGLE A100 pumps have 150 lb. raised face flanges as standard except 13" casings which have 300 lb. raised face flanges as standard.

CARBON STEEL

Standard construction: Casing, impeller and stuffing box covers are supplied in carbon steel as a minimum. Higher metallurgies are available as an option.

FULLY OPEN IMPELLER

With back pump-out vanes—best design for solids handling, stringy material and corrosives/abrasives.

POSITIVE LIQUID SEALING AT IMPELLER

Impeller is threaded to the shaft with Teflon O-ring in controlled compression for positive seal—no bolt to corrode or gaskets to leak.

CASING DRAIN STANDARD

All Eagle A100 ANSI pumps are supplied with a plugged casing drain as standard.

POSITIVE SEALING AT CASING JOINT

With fully confined gasket. Alignment fit protected from liquid.

BONUS CASING THICKNESS

All 150 psi pumps have 300 psi wall thickness as standard for longer life under corrosive/erosive conditions.

RENEWABLE SHAFT SLEEVE

Hook-type shaft sleeve is free to expand with temperature variation. A drive pin assures positive rotation.

BEARING HOUSING

Sealed to prevent contamination from corrosive atmosphere, leakage and washdown. Available with bearing isolators or standard lip seals.

EXTERNAL IMPELLER ADJUSTMENT FOR CONTINUOUS HIGH PERFORMANCE

Original high efficiency maintained by simple adjustment resulting in long-term energy savings.

DOUBLE ROW THRUST BEARING

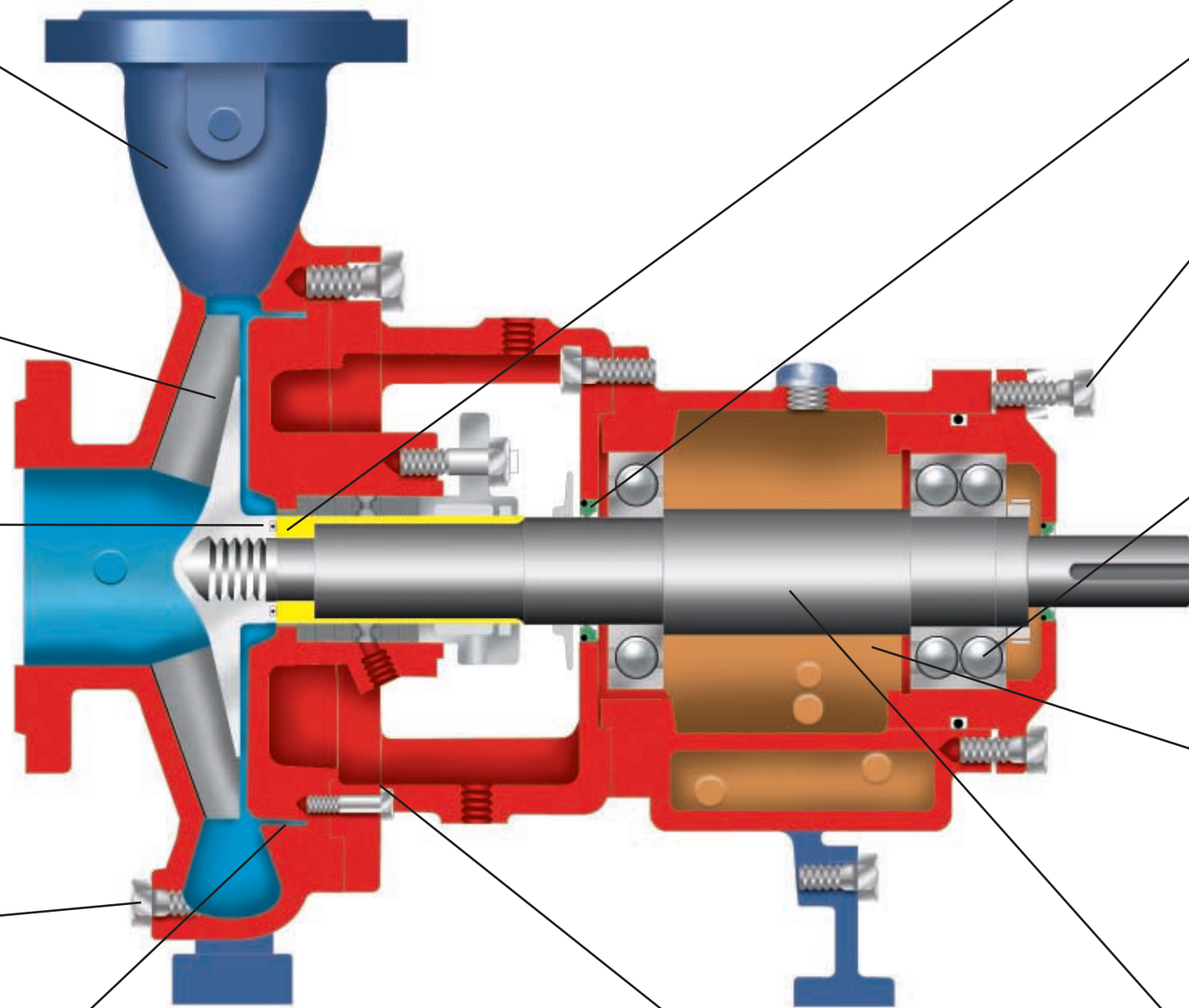
Permits operation exceeding speed and suction pressure capabilities of single row bearings—minimizes shaft end play for effective stuffing box sealing and maximum mechanical seal life.

OIL LUBRICATION STANDARD

- Oil level maintained by constant level oiler. Rugged bearing housing vent.
- Liquid cooled bearing frame available as an option.
- Oil return drains under bearings assure uniform oil circulation through bearings.

HEAVY DUTY SHAFT

Designed for toughest services. Insures long seal and bearing life, low maintenance. Maximum .002 inch deflection at stuffing box face at maximum loads.



ACCURATE MACHINED FITS MAINTAIN POSITIVE ALIGNMENT

Achieved by rabbeted joints for long seal life and maximum hydraulic efficiency.

SPECIFICATIONS—EAGLE A100 PUMPS

CASING:

Top centerline discharge and self-venting casing. Fully confined gasket. Piping and driver not disturbed when back pullout assembly is removed for inspection or maintenance. Foot support under casing for maximum resistance to misalignment and distortion from pipe loads. 150 lb. R.F. flanges standard, with 300 lb. R.F. flanges on 13" casing, 1/8" corrosion allowance. Drain opening supplied as standard.

IMPELLER:

Fully open, has partial shrouds for maximum vane support without high thrust inherent in full shroud designs. Matched to casing for high efficiency and low NPSH. Impeller is screwed on shaft, and threads are sealed by a Teflon O-ring. Smoothly contoured passages for good solids and slurry handling. All impellers are statically balanced as standard. Efficiency maintained by external impeller adjustment.

STUFFING BOX COVER:

Encloses back of casing and contains stuffing box chamber. Cover is fastened to frame adapter with bolts or studs and nuts.

Packed box has 5 rings of packing and a lantern ring. Quench gland with an auxiliary ring of packing is standard. Tapped opening to lantern ring permit external flushing or lubrication as required.

FRAME ADAPTER:

Frame adapter has machined pilot fit to stuffing box cover. Adapter has a tapped part that may be piped to drain.

BEARING FRAME:

Heavy cast iron construction. Contains large oil reservoir with optional cooling coil. Oil level maintained by constant level oiler with visible oil supply. Oil seals on each end and oil breather fully protect oil from contamination while allowing for expansion or contraction of air caused by ambient temperature change. Alignment between frame and adapter provided by precision aligners.

HEAVY DUTY SHAFT:

Designed for maximum .002" (.05 mm) deflection at stuffing box face at maximum loads. All bearing and packing surfaces ground to less than 32 micro-inches. Impeller threads are sealed by a Teflon O-ring. Choice of shaft with or without sleeve for utmost flexibility in solving sealing problems.

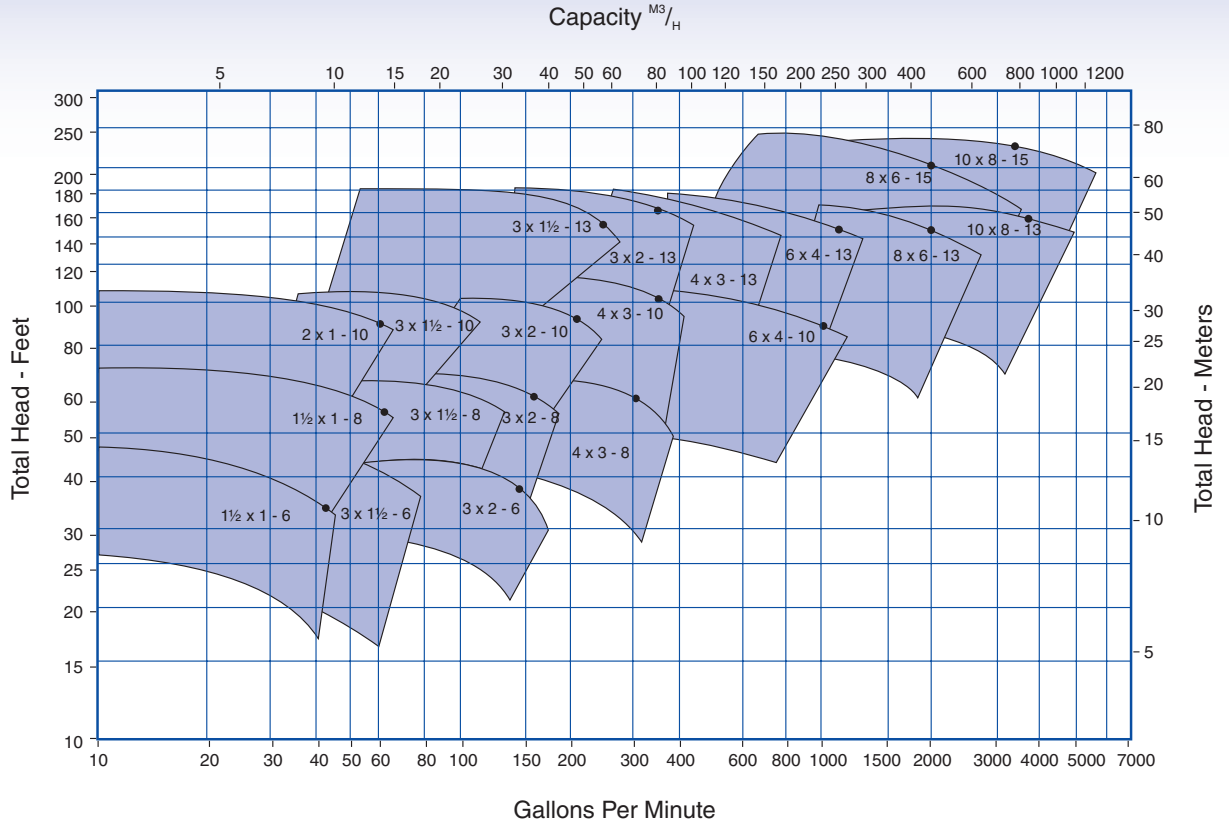
SHAFT SLEEVE:

Renewable shaft sleeve is a positively driven hook-type, with one end free to expand with temperature variations. A Teflon O-ring protects shaft against liquid contact. This low cost shaft sleeve eliminates expensive shaft replacement and permits applications of inside balanced mechanical seals where required.

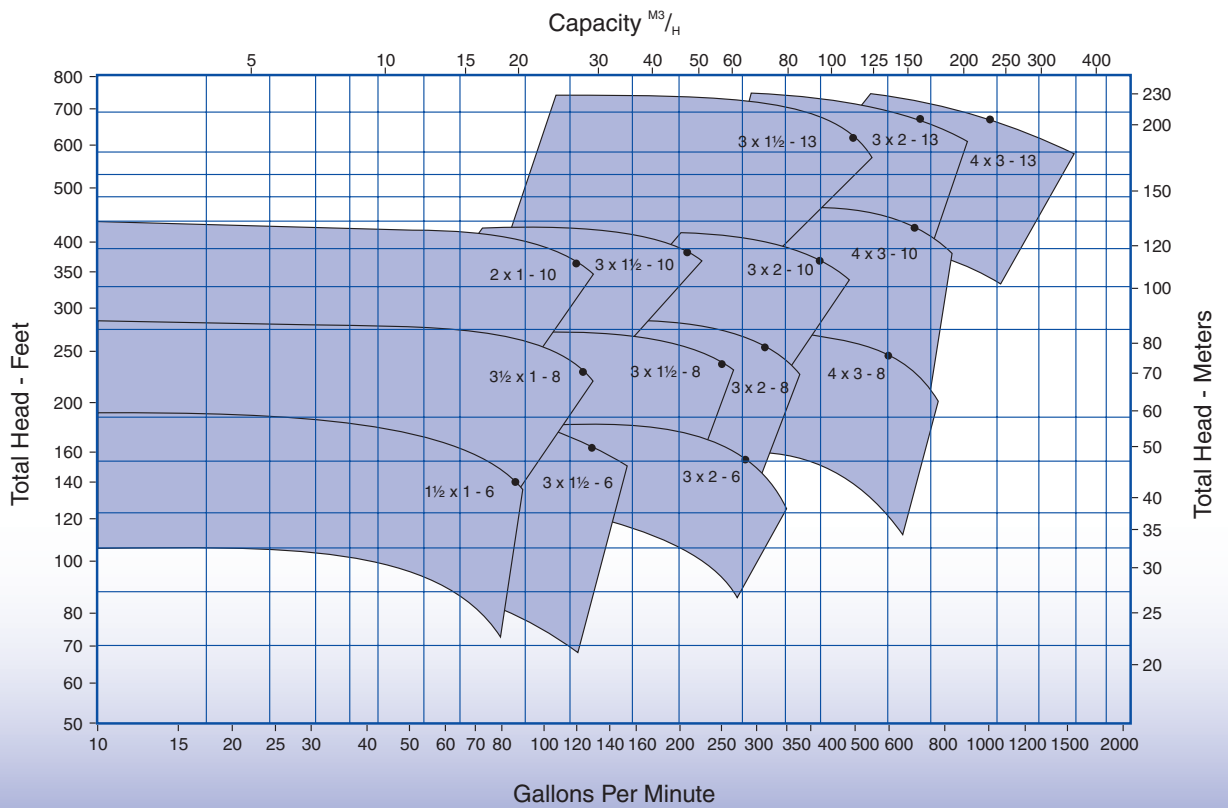
BEARING:

Inboard bearing is pressed on shaft and is free to float axially in frame—carries radial load only. Outboard bearing is shouldered and locked to the shaft with a locknut and washer to carry radial and any unbalanced axial thrust load. All bearings' fits are precision bored. Inboard bearing is single row, deep groove. Outboard bearing is double row, deep groove angular contact.

1750 R.P.M. Performance Curve



3500 R.P.M. Performance Curve

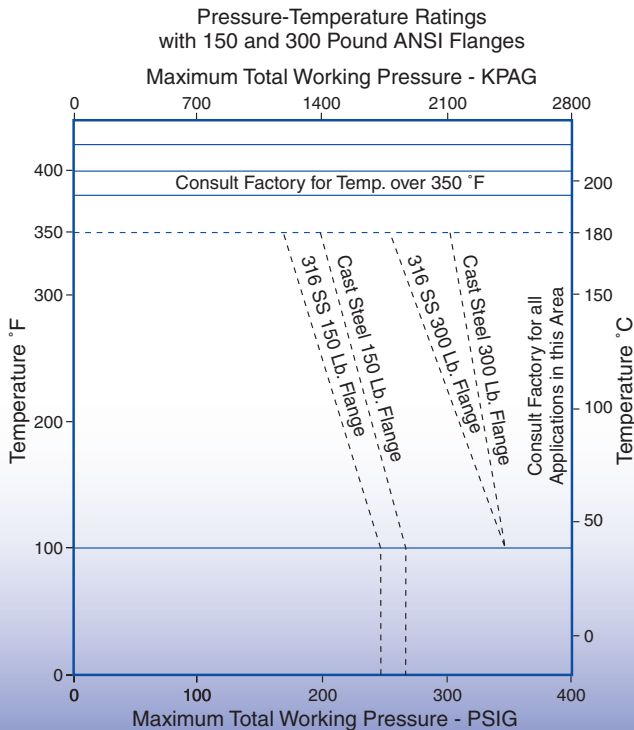


DIMENSIONS & SPECIFICATIONS

Construction Details Metric Equivalents in (mm)

POWER END		MODEL A100-S	MODEL A100-M	MODEL A100-L	MODEL A100-X																	
Shaft Diameters	At Impeller	3/4" (19.0)	1" (25.4)	1 1/4" (31.8)	1 1/2" (38.1)																	
	In Stuffing Box (Less Sleeve)	1 1/8" (28.6)	1 1/2" (38.1)	1 7/8" (47.6)	2" (50.8)																	
	In Stuffing Box (With Sleeve)	1 3/8" (34.9)	1 3/4" (44.5)	2 1/8" (54.0)	2 1/2" (63.5)																	
	Sleeve Outside Diameter	1 3/8" (34.9)	1 3/4" (44.5)	2 1/8" (54.0)	2 1/2" (63.5)																	
	Between Bearings	1 1/2" (38.1)	2 1/8" (54.0)	2 1/2" (63.5)	3 1/8" (79.4)																	
	At Coupling	7/8" (22.2)	1 1/8" (28.6)	1 7/8" (47.6)	2 3/8" (60.3)																	
Bearings	Radial	6207	6309	6311	6313																	
	Coupling End (Double Row)	3306	3309	3311	3313																	
	Bearing Span	4 1/4" (108.6)	6 15/16" (176)	6 3/4" (170.6)	9 1/4" (235)																	
	Shaft Overhang	5 7/8" (150)	8 3/8" (212)	8 1/4" (210)	9 31/32" (253)																	
	Bore	2" (50.8)	2 1/2" (63.5)	2 7/8" (73.0)	3 3/8" (85.7)																	
Stuffing Box	Depth	2 1/8" (54.0)	2 5/8" (66.7)	2 5/8" (66.7)	3" (76.2)																	
	Packing Size	5/16" x 5/16" (7.9 x 7.9)	3/8" x 3/8" (9.5 x 9.5)	3/8" x 3/8" (9.5 x 9.5)	7/16" x 7/16" (11.1 x 11.1)																	
	No. of Rings	5	5	5	5																	
	Width of Lantern Ring	7/16" (11.1)	5/8" (15.9)	5/8" (15.9)	5/8" (15.9)																	
	Distance to End of Box to Nearest Obstruction	2" (51)	2 7/8" (73)	2 7/8" (73)	3" (76.2)																	
PUMP END	A100-S					A100-M,L							A100-X									
		1 1/2x1-6	3x1 1/2-6	3x2-6	1 1/2x1-8	3x1 1/2-8	3x2-8	4x3-8	2x1-10	3x1 1/2-10	3x2-10	4x3-10	6x4-10	3x1 1/2-13	3x2-13	4x3-13	6x4-13	8x6-13	10x8-13	8x6-15	10x8-15	
	Maximum Diameter Solids	1 1/32" (8.6)	7/16" (11.2)	3/8" (9.5)	1 1/32" (8.6)	7/16" (11.2)	1/2" (12.7)	1 1/16" (17.5)	7/16" (11.2)	7/32" (5.6)	3/8" (9.5)	5/8" (15.9)	1" (25.4)	7/32" (5.6)	3/8" (9.5)	5/8" (15.9)	1" (25.4)	1 1/16" (17.5)	1" (25.4)	1 3/16" (20.6)	1 1/8" (28.6)	
	Minimum Casing Thickness	3/8" (9.5)					7/16" (11.2)		1/2" (12.7)					9/16" (14.3)		5/8" (15.9)		1/2" (12.7)		9/16" (14.3)		
	Casing Corrosion Allowance	1/8" (3.2)																				
	Working Pressure	See Pressure-Temperature Chart																				
	Test Pressure	150% of Working Pressure at 100 F (38 C)																				
	Max. Liquid Temp (w/out cooling)	350 F (177 C)																				
	Unit Weight lbs. (Kg)	See Dimensions																				

Code	Material and Specification
CS	Carbon Steel ASTM 216 GR. WCB
316	Cast Stainless ASTM A744 GR. CF-8M / Wrought Stainless ASTM A276 Type 316
CD4M	Cast Chrome—Nickel Alloy ASTM A744 GR. CD4MCu
Cast Iron	Cast Iron ASTM A48
SAE 4340	Wrought Steel ASTM A322 GR. 4340
304	Wrought Stainless ASTM A276 Type 304



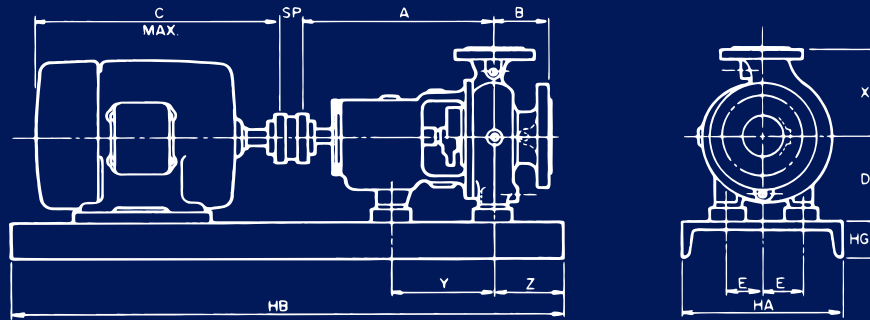
B.P.H. Limits Metric Equivalents in (kw)

MODEL	R.P.M.					
	3560	2900	1780	1450	1180	880
A100-S	40.8 (30.5)	33.4 (24.9)	20.4 (15.2)	16.6 (12.4)	13.6 (10.2)	10.1 (7.5)
A100-M	124.5 (92.8)	101.5 (75.7)	62.2 (46.4)	50.7 (37.8)	41.3 (30.8)	30.8 (23)
A100-L	204 (152.2)	168.3 (125.6)	102 (76.1)	83.1 (62)	67.7 (50.5)	50.5 (37.7)
A100-X	—	—	255 (190.3)	208.1 (155.3)	169.3 (126.3)	126.5 (94.4)

*PUMPS ARE SUPPLIED WITH RAISED FACE FLANGES AS STANDARD.

Dimensions Model A100

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



Dimensions Determined By Pump

MODEL	PUMP SIZE	ANSI DESIG.	SUCTION SIZE	DISCH. SIZE	X	A	B	D	Y	Z	E	SP	SHAFT DIAM. AT CPLG.	KEY-WAY	BARE PUMP WEIGHT LBS (KG.)
A100-S	1 1/2 x 1 - 6	AA	1 1/2	1	6 1/2 (165)	13 1/2 (343)	4 (102)	5 1/4 (133)	7 1/4 (184)	4 1/2 (114)	3 (76.2)	3 1/2 (88.9)	7/8 (22.2)	3/16 x 3/32 (4.8 x 2.4)	110 (50)
	3 x 1 1/2 - 6	AB	3	1 1/2											120 (55)
	3 x 2 - 6	A10	3	2											120 (55)
	1 1/2 x 1 - 8	AA	1 1/2	1											120 (55)
	3 x 1 1/2 - 8	AB	3	1 1/2											120 (55)
A100-M	3 x 2 - 8	A60	3	2	9 1/2 (242)	19 1/2 (495)	4 (102)	8 1/4 (210)	12 1/2 (318)	4 1/2 (114)	47/8 (124)	3 1/2 (88.9)	1 1/8 (28.6)	1/2 x 3/16 (12.7 x 4.8)	220 (100)
	4 x 3 - 8	A70	4	3	11 (280)										230 (104)
	2 x 1 - 10	A05	2	1	8 1/2 (216)										230 (104)
	3 x 1 1/2 - 10	A50	3	1 1/2	8 1/2 (216)										245 (111)
	3 x 2 - 10	A60	3	2	9 1/2 (242)										240 (109)
	4 x 3 - 10	A70	4	3	11 (280)										265 (120)
	6 x 4 - 10	A80	6	4	13 1/2 (343)										300 (136)
A100-L	3 x 1 - 13	A20	3	1 1/2	10 1/2 (267)	10 (254)									285 (129)
	3 x 2 - 13	A30	3	2	11 1/2 (292)										285 (129)
	4 x 3 - 13	A40	4	3	12 1/2 (318)										310 (140)
	6 x 4 - 13	A80	6	4	13 1/2 (343)										330 (150)
A100-X	8 x 6 - 13	A90	8	6	16 (406)	27 7/8 (708)	6 (152)	14 1/2 (368)	12 1/2 (476)	6 1/2 (165)	8 (203)	5 1/4 (133)	2 3/8 (60.3)	5/8 x 5/8 (15.8 x 15.8)	597 (271)
	10 x 8 - 13	A100	10	8	18 (457)										714 (324)
	8 x 6 - 15	A110	8	6	18 (457)										650 (295)
	10 x 8 - 15	A120	10	8	19 (483)										789 (358)

Dimensions Determined By Motor

MODEL	BASE-PLATE	MOTOR			BASEPLATE			APPROX. BASEPLATE WEIGHT LBS (KG.)
		MOTOR FRAME SIZES APPLIC.	C MAX.	HA	HB	HG ± 1/8 (3.2)		
A100-S	1	56 - 184T	15 1/2 (394)	10 (254)	39 (991)	25/8 (67)	50 (23)	
	2	213T 215T	19 5/16 (491)	12 (305)	44 (1117)	3 (76)	80 (36)	
	4	254T 256T	24 5/8 (625)	15 (381)	56 (1422)	3 1/2 (89)	160 (73)	
	2	143T - 184T	15 1/2 (394)	12 (305)	44 (1117)	3 (76)	80 (36)	
A100-M & A100-L	3	213T 215T	19 5/16 (491)	12 (305)	48 (1219)	3 (76)	85 (39)	
	4	254T- 286TS	26 9/16 (675)	15 (381)	56 (1422)	3 1/2 (89)	160 (73)	
	6	324T- 326T-	33 7/16 (849)	18 (457)	62 (1575)	4 (102)	175 (80)	
	8	404T- 405TS	38 7/8 (987)	24 (610)	66 (1676)	4 3/4 (121)	315 (143)	
	9	444T 445TS	48 3/4 (1238)	24 (610)	72 (1829)	4 3/4 (121)	342 (155)	
A100-X	1	213T- 256TS	24 (609)	20 (508)	64 (1625)	4 (102)	610 (277)	
	2	284T- 365TS	34 (863)	20 (508)	74 (1879)	4 (102)	1350 (613)	
	3	404T- 445TS	44 (1117)	24 (609)	84 (2133)	4 3/4 (121)	2290 (1040)	
	4	504T- 505TS	50 (1270)	28 (711)	90 (2286)	4 3/4 (121)	3550 (1613)	
	7	364T/TS 655T/TS	33 7/16 (849)	20 (508)	62 (1575)	4 (102)	220 (100)	

Tapped Opening

PURPOSE	NO OF TAPS	MODEL		
		S	M & L	X
Discharge Gauge	1	3/8"	3/8"	3/8"
Casing Drain*	1	3/8"	3/8"	1/2"
Suction Gauge	1	3/8"	3/8"	3/8"
Bearing Frame Cooling	2	3/8"	3/8"	3/8"
Lantern Ring Flush*	2	1/4"	3/8"	3/8"
Oil Drain*	1	1/4"	1/4"	3/4"
Constant Level Oiler*	1	1/4"	1/4"	1/4"
Stuffing Box Circulation Line	1	3/8"	3/8"	3/8"
Frame Adapter Drain*	1	1/2"	1/2"	1"

*FURNISHED AS STANDARD

PUMP MODEL A100-S IS ILLUSTRATED ABOVE. DIMENSIONS APPLY TO A100-S, -M, -L, -X AND ARE APPLICABLE FOR BOTH 150 AND 300 LB. RAISED FACE FLANGES. FLANGES ARE DRILLED TO ANSI DIMENSIONS.

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