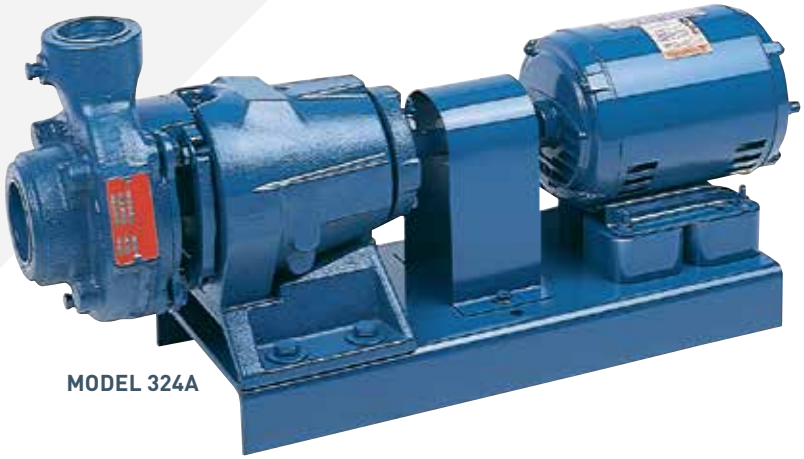
PENTAIR

MODEL 323

MODEL 321



MODEL 324A

AURORA® 320 SERIES
SINGLE STAGE END SUCTION PUMPS

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AURORA® 320 SERIES
Single Stage End Suction Pumps

Capacities to 400 G.P.M. (75 m^3/hr)
Heads to 210 Feet (42 Meters)
Temperatures to 225°F (107°C)

Setting New Standards of Efficiency.

Liquid handling requirements are much more involved than they were five years ago. The variety of liquids being handled has increased along with temperatures and pressures. Today's installations demand quiet, smooth-running pumps with long life. Aurora Pump's 90 years of experience with design, sales and manufacturing of centrifugal pumps has led to the 320 Series. These modern pumps with a clean, straightforward design were developed with maximum interchangeability in mind. Aurora's highly reliable 320 pumps offer an economical solution to your liquid handling problems.

Standard Features

- Top center-line mounted casing
- Stainless steel shaft
- O-ring casing gasket
- Case wearing ring
- Buna-N and 316 stainless steel mechanical seal
- Grease lubricated bearings (Model 324A)
- Vacuum cast impeller
- Coupling guard (Model 324A)

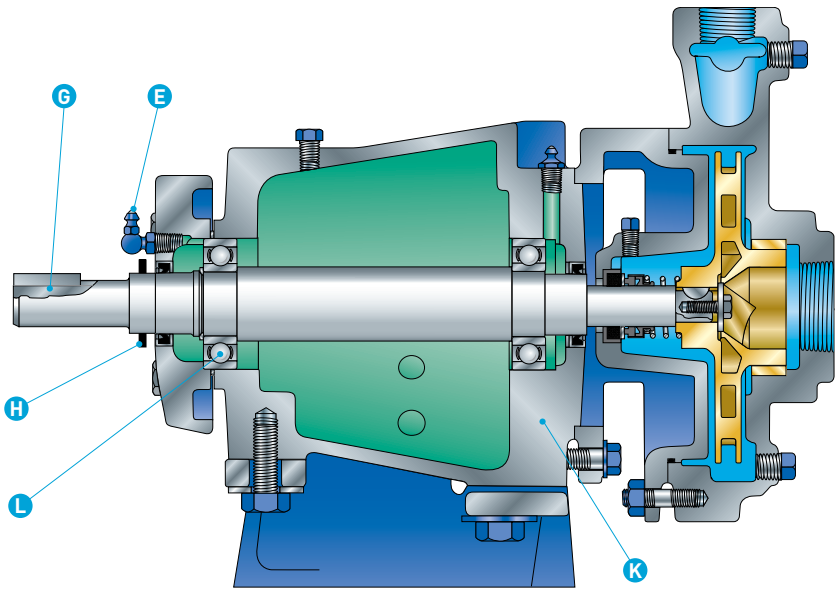
Optional Features

- Totally enclosed motors
- Optional discharge positions (see page 6)

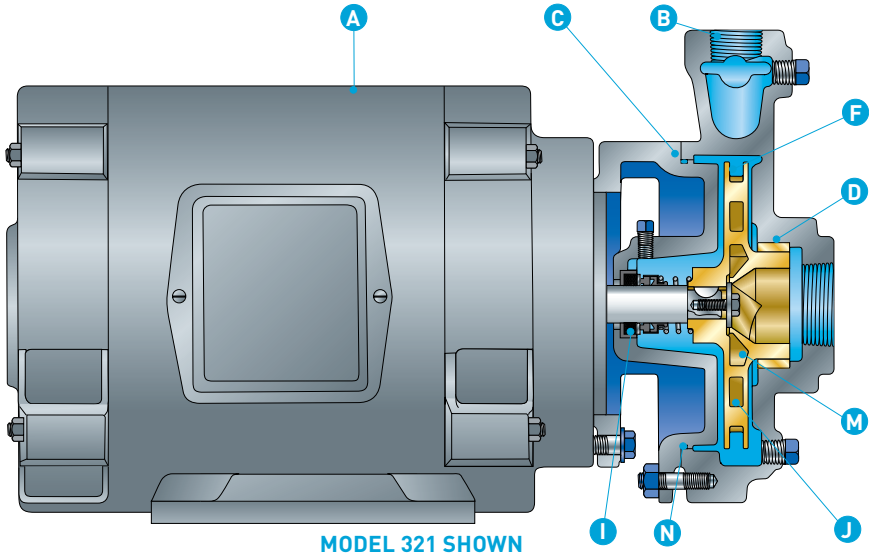
Optional Features – Model 324A Only

- Oil lubricated bearings and sealed bearings
- Formed steel base
- Steel drip-rim bases
- Hazardous location motors

Pump Features



MODEL 324A SHOWN



MODEL 321 SHOWN

A. Low Noise Level Close Coupled Motors
are built to Aurora® Pump's exacting vibration specifications.

B. Vertical Center-Line Discharge
makes pump self-venting, avoids vapor locks and minimizes pipe strain.

C. Back Pullout Design
simplifies disassembly. The suction and discharge piping is not disturbed.

D. Case Wearing Ring
prevents wear on casing and is easily and inexpensively replaced. Standard ring is bronze.

E. Lubrication Fittings
are conveniently located for quick accessibility and provide positive bearing lubrication.

F. Dynamically Balanced Impeller
is keyed to the shaft and secured by a 316 stainless steel capscrew and washer.

G. Stainless Steel Shaft
designed for minimum deflection, not to exceed .002" at the sealing faces at maximum load.

H. Oil Seals and Nonsparking Neoprene
rotating slingers protect both bearings during pump operation and wash-down.

I. Mechanical Seal
has Buna-N bellows and cup with 316 stainless steel parts precision made for long life.

J. Enclosed Impeller
design provides highest efficiency and lowest wear for long service life.

K. Computer Machined
major components with 360 degree registered fits to assure concentricity of all parts.

L. Bearings
selected for 2 year minimum life at maximum conditions of load. Available as grease, oil lubricated or sealed.

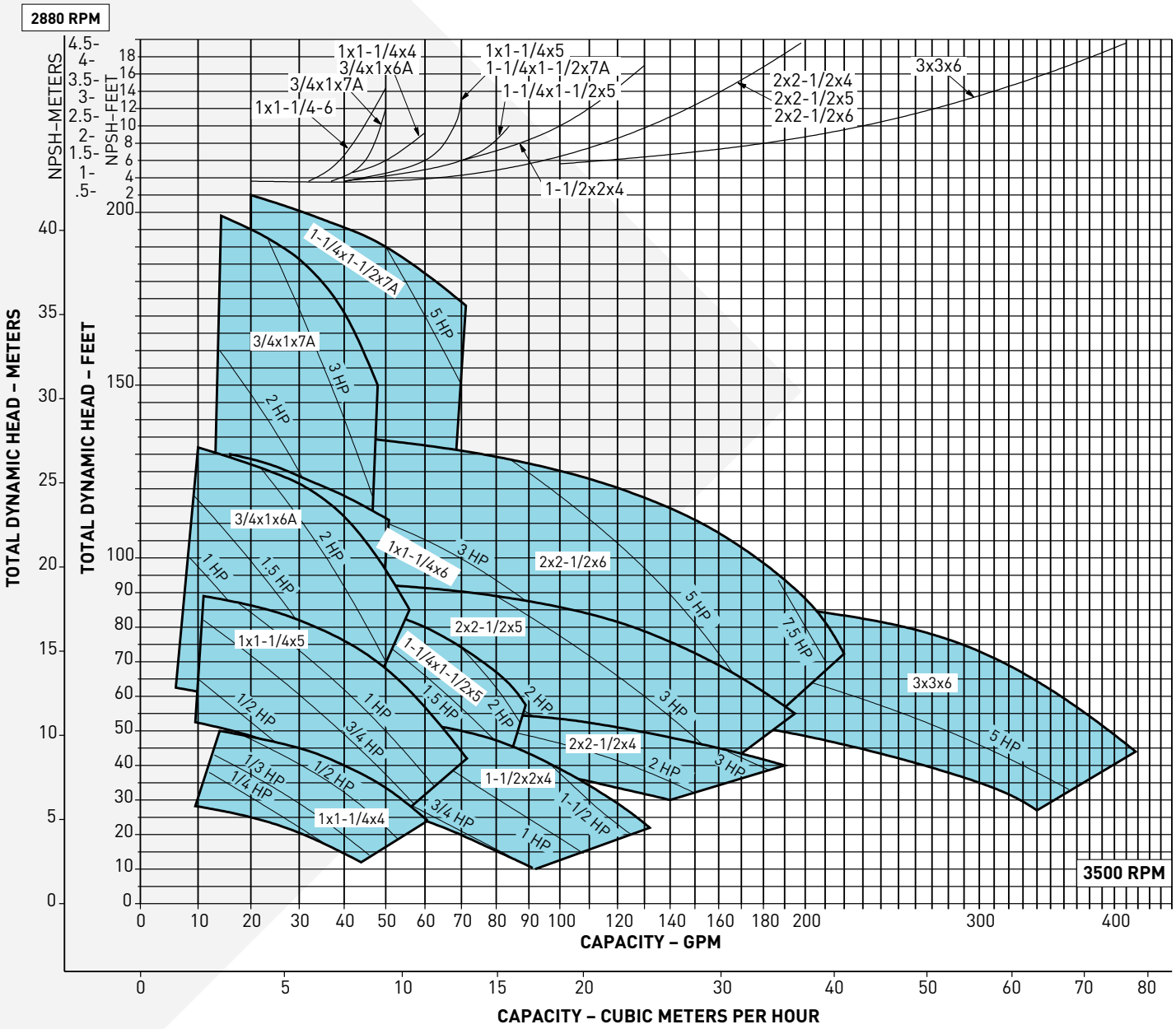
M. Vacuum Cast Impeller
quality controlled manufacturing process assures consistently high performance.

N. O-Ring Seal
no gaskets pierced by bolts or studs – assures maximum trouble-free sealing.

3500 RPM Range Chart

3500 RPM

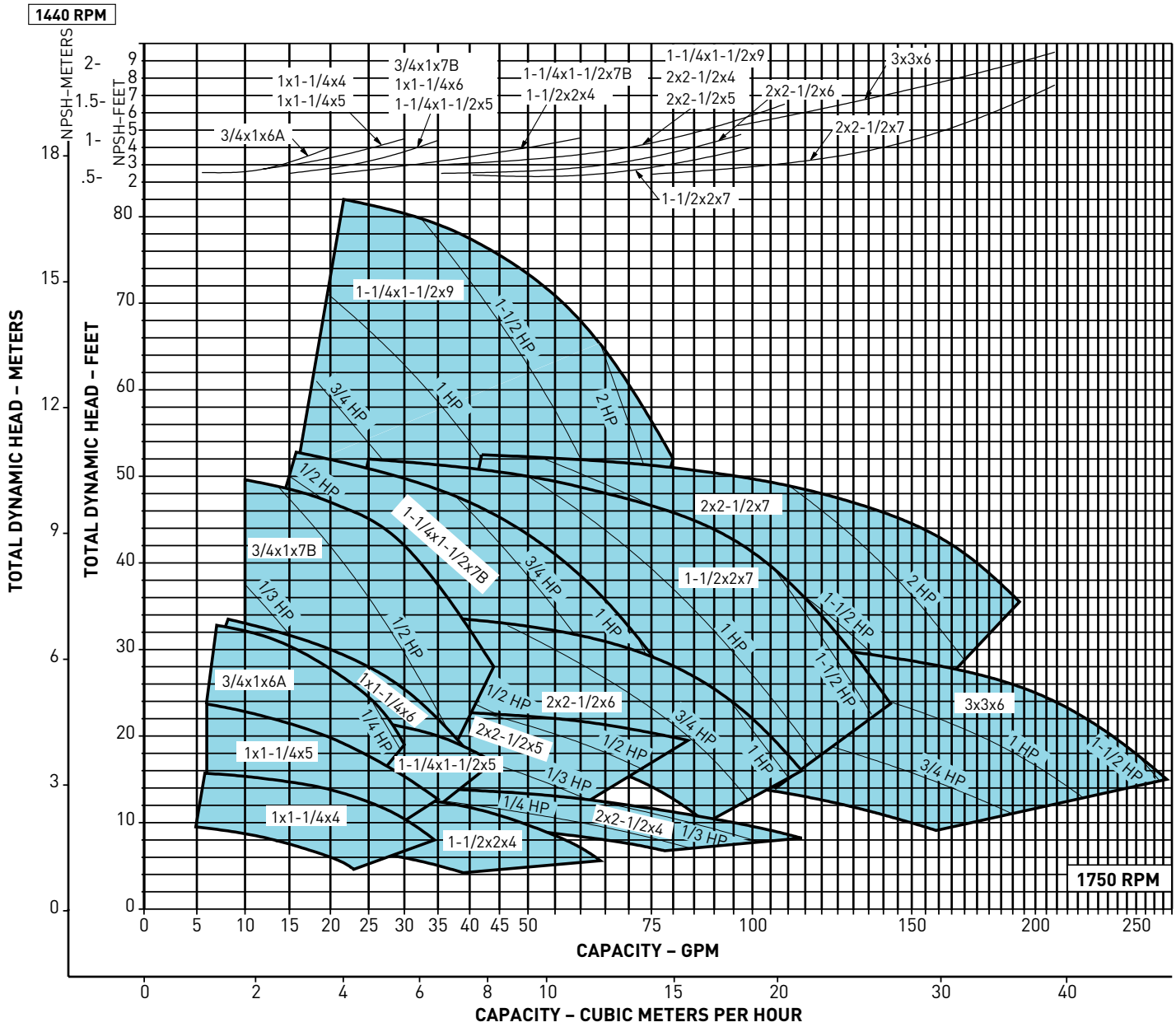
Individual performance curves should be checked for final selection.
For selections not shown on this chart, please refer to the factory.



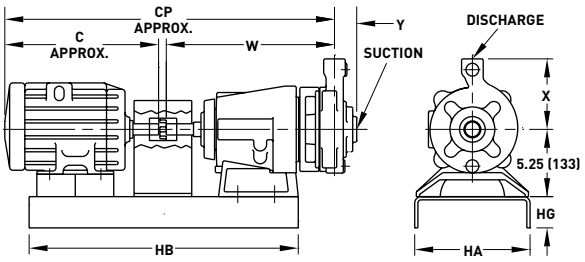
1750 RPM Range Chart

1750 RPM

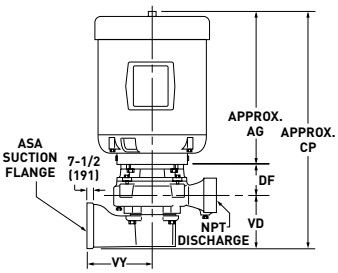
Individual performance curves should be checked for final selection.
For selections not shown on this chart, please refer to the factory.

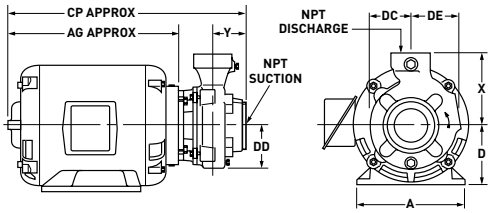


Dimension Details

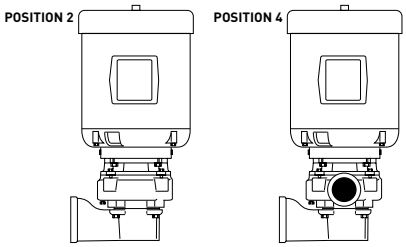


MODEL 324A





MODEL 321



PUMP DIMENSIONS – 323 (SEE NOTE 7)

Notes:

1. Dimensions and weights are approximate.
2. All dimensions are in inches (mm) and may vary ±1/4 (6).
3. Frame sizes, "C" and "AG", dimension and motor weight are for open drip-proof motors only.
4. Conduit box is shown in approximate position. Dimensions are not specified as they vary with each motor manufacturer.
5. Add pump, base and motor weight for unit weight.
6. Not for construction purposes unless certified.
7. Discharge position No. 3 is not available on Models 323 and 324A. Position No. 1 is furnished as standard unless otherwise specified.
8. Model 323 not available in all bronze construction.

* Single phase only. † Three phase only.

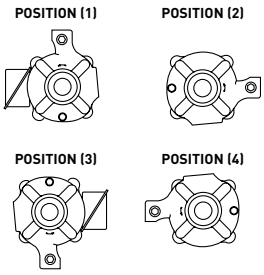
Models 321–323

Frame	Horsepower 3500 RPM	Horsepower 1750 RPM	Motor Weight (Lbs.)	A	D	AG	321	323
56	1/3	1/3	29	6-3/4 (171)	3-1/2 (89)	11 (279)	17-1/2 (445)	20 (508)
	1/2	1/2	46					
	3/4	3/4	56					
	1	1	56					
	1-1/2	1-1/2†	65					
	2	N/A	80					
145T		1-1/2*	42	7 (178)	3-1/2 (89)	11 (279)	17-1/2 (445)	20 (508)
	3†	2†	48					
182T	3*	2*	65	9 (229)	4-1/2 (114)	11 (279)	17-1/2 (445)	20 (508)
	5	3	69					
184T	7-1/2†	3	79	9 (229)	4-1/2 (114)	12 (305)	18-1/2 (470)	21 (533)
		5†	83					

Model 324A

Frame	Horsepower 3500 RPM	Horsepower 1750 RPM	Weight (Lbs.) Motor	Weight (Lbs.) Base	C	CP	HA	HB
48	1/3 - 1/2	1/3	30	100	10 (254)	27 (659)	9 (229)	21 (533)
56	3/4 - 1	1/2 - 3/4	50	100	12 (305)	29 (737)	9 (229)	21 (533)
143T	1-1/2	1	34	100	12 (305)	29 (737)	9 (229)	21 (533)
145T	2 - 3	1-1/2 - 2	42	100	13 (330)	30 (762)	9 (229)	21 (533)
182T	5	3	65	100	13 (330)	30 (762)	10 (254)	24 (610)
184T	7-1/2	5	79	100	14 (356)	31 (787)	10 (254)	24 (610)
213T	10	7-1/2	155	100	16 (406)	33 (838)	12 (305)	27 (686)

DISCHARGE POSITIONS



Pump Size Discharge	Pump Size Suction	Pump Size Case Bore	Pump Weight (Lbs.) 321	323	324	X	Y	DC	DD	DE	VD (323)	VE	VY (323)
3/4	1	6A	25	30	55	5-1/2 (30)	1-3/4 (3)	3-5/16 (11)	3-7/16 (12)	3-7/8 (15)	3-5/8 (13)	2-3/8 (6)	5 (25)
3/4	1	7	35	40	65	6-1/4 (39)	1-7/8 (3)	3-15/16 (16)	4 (16)	4-7/16 (20)	3-3/4 (14)	2-3/8 (6)	8-1/2 (72)
1	1-1/4	4	21	26	51	4-1/8 (17)	1-11/16 (3)	2-3/8 (6)	2-3/8 (6)	2-7/16 (6)	2-5/8 (7)	2-3/8 (6)	4 (16)
1	1-1/4	5	27	32	57	5 (25)	2 (4)	2-13/16 (8)	2-7/8 (8)	3 (9)	3-3/4 (14)	2-3/8 (6)	5 (25)
1	1-1/4	6	29	34	59	5-1/2 (30)	1-15/16 (4)	3-5/16 (10)	3-3/8 (11)	3-7/8 (15)	3-13/16 (15)	2-3/8 (6)	5 (25)
1-1/4	1-1/2	5	27	32	57	5 (25)	1-15/16 (4)	2-7/8 (8)	2-15/16 (9)	3-7/16 (12)	4 (16)	2-3/8 (6)	5 (25)
1-1/4	1-1/2	7A	37	42	67	6-1/4 (39)	2 (4)	4 (16)	4-1/16 (17)	4-1/2 (20)	3-7/8 (15)	2-3/8 (6)	8-1/2 (72)
1-1/4	1-1/2	7B	37	42	67	6-1/4 (39)	2-7/16 (6)	4 (16)	4-1/8 (17)	4-5/8 (21)	4-5/16 (19)	2-3/8 (6)	8-1/2 (72)
1-1/4	1-1/2	9	52	57	82	8 (64)	2-1/4 (5)	5-13/16 (34)	5-3/16 (27)	5-13/16 (34)	4-1/8 (17)	2-3/8 (6)	8-1/2 (72)
1-1/2	2	4	24	29	54	5 (25)	2-1/8 (5)	2-1/2 (6)	3 (9)	2-3/4 (8)	4-15/16 (24)	3-1/2 (12)	6 (36)
1-1/2	2	7	38	43	68	7 (49)	2-1/4 (5)	4-1/16 (17)	4-1/4 (18)	4-7/8 (24)	5 (25)	3-1/2 (12)	6 (36)
2	2-1/2	4	28	33	58	5 (25)	3-1/16 (9)	2-1/2 (6)	3 (9)	2-13/16 (8)	5-3/8 (29)	3-1/2 (12)	6 (36)
2	2-1/2	5	31	36	61	6 (36)	2-11/16 (7)	3 (9)	3-3/16 (10)	3-7/16 (12)	5-3/16 (27)	3-1/2 (12)	6 (36)
2	2-1/2	6	36	41	66	6 (36)	2-3/4 (8)	3-1/2 (12)	3-11/16 (14)	4-3/8 (19)	5-1/4 (28)	3-1/2 (12)	6 (36)
2	2-1/2	7	43	48	73	7 (49)	2-15/16 (9)	4-1/16 (17)	4-5/16 (19)	4-7/8 (24)	5-1/8 (26)	3-1/2 (12)	6 (36)
3	3	6	48	53	78	8 (64)	3-5/8 (13)	3-7/8 (15)	4-7/16 (20)	5-7/8 (35)	7-3/4 (60)	2-1/4 (5)	8-1/2 (72)

Engineering Specifications

Material of Construction

Pump Part	Bronze Fitted	All Iron	*All Bronze
Casing	Cast Iron ASTM A48	Cast Iron ASTM A48	Bronze ASTM B62
Case Wearing Ring	Bronze ASTM B62	Cast Iron ASTM A48	Bronze ASTM B62
Impeller	Bronze ASTM B584	Cast Iron ASTM A48	Bronze ASTM B584
Motor Bracket	Cast Iron ASTM A48	Cast Iron ASTM A48	Bronze ASTM B52
Shaft	Stainless Steel AISI 416	Stainless Steel AISI 416	Stainless Steel AISI 416
Power Frame (324A)	Cast Iron ASTM A48	Cast Iron ASTM A48	Cast Iron ASTM A48
Mechanical Seal	Stainless steel metal parts, Buna-N elastomer Mechanical Seal parts, Ceramic seat and carbon washer. *All bronze has Viton® elastomer parts and ceramic seat.		

Notes:

1. Model 323 not available in all bronze construction.

** Close coupled 321 all bronze pumps must have a motor with 316 stainless steel shaft extension.

Design Details

Area	Description	Dimensions
Liquid End	Pipe Connections – threaded N.P.S.F.	Varies
	Rotation – facing suction	CCW
Pump Shaft	Diameter at impeller	19/32
	Diameter at seal	3/4
	Diameter between bearings	1-3/8
	Diameter at coupling end	7/8
	Coupling keyway	1-3/8 long x 3/32 deep
	Maximum deflection at seal face	.002
Ball Bearings	Bearing (inboard radial)	206K
	Bearing (outboard thrust)	206 KG
	Bearing centers	5-11/16
	Bearing type	Ball
	Min B_{10} bearing life under maximum load	2 Years

Limitations

Maximum Based on Standard Materials and Water		
Speed–RPM	3500	
Horsepower	7-1/2	
Temperature –°F	Close Coupled	225
	Frame Mounted	225
Hydrostatic Test – PSI	220	
Case Working Press – PSI	175	
Suction Press – PSI	175	

Engineering Specifications

The contractor shall furnish (and install in location as shown on the plan) an Aurora® Type (321 horizontal) (323 flange mounted) (324A horizontal) centrifugal pump size _____ (bronze fitted) (all bronze) (all iron) construction. Each pump shall have a capacity of _____ GPM at _____ ft. total head and _____ specific gravity. The pump is to be furnished with case wearing ring and a mechanical seal, with all metal parts to be 316 stainless steel, Buna-N bellows, ceramic seat and carbon washer.

Flexible Coupled Pumps Model 324A

The pump shaft is to be stainless steel with (grease lubricated) (oil lubricated) (sealed) bearings. The pump is to be flexible coupled to a standard horizontal NEMA motor of _____ hp, _____ phase, _____ hertz, _____ voltage, _____ RPM (open drip-proof) (totally enclosed fan cooled) (hazardous location) enclosure. The pump shall be mounted on a (fabricated steel drip rim) (steel) baseplate. Pump and motor alignment shall be checked in accordance with the Standards of the Hydraulic Institute after the pump has been installed.

Close Coupled Models 321–323

The pump is to be close coupled to a NEMA motor of _____ hp, _____ phase, _____ hertz, _____ voltage, _____ RPM (open drip-proof) (totally enclosed fan cooled) enclosure, with stainless steel motor shaft. The motor shall be designed to Aurora Pump specifications as to vibration limits.

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