Index Section D
Pumps

OUR PUMP UNIVERSE

Byrne, Rice & Turner has wide ranging capabilities in the design and construction of pump packages. There are many different types of pumps, materials of construction, configurations, motors and performances available. There literally are thousands of pumps available from us and you will find many of the more popular models represented here. If you don't see what you are looking for in the catalog that doesn't mean that we don't have it or can't get it. Of course, we can help you find the most economical, efficient and reliable solution for your pump needs. Performance characteristics are wide ranging from very small flow rates of less than 10 gpm up to 6000 gpm over a wide variety of discharge pressures for different fluids being pumped. Give us a call and you won't be disappointed at what we can do for you. Here is just one example:

One factory alone of the pump manufacturers we represent offers a full line of water pumping systems to serve a wide variety of water applications.
Applications include:
Residential water wells; Irrigation systems; Commercial; Construction; Municipal; Mining; Water Circulation; Jockey Pumps; Booster Systems; Liquid Transfer; Marine; Engine Driven pumps; Wastewater and more.
They produce over 1000 different pump models which cover a wide range of applications and conditions.

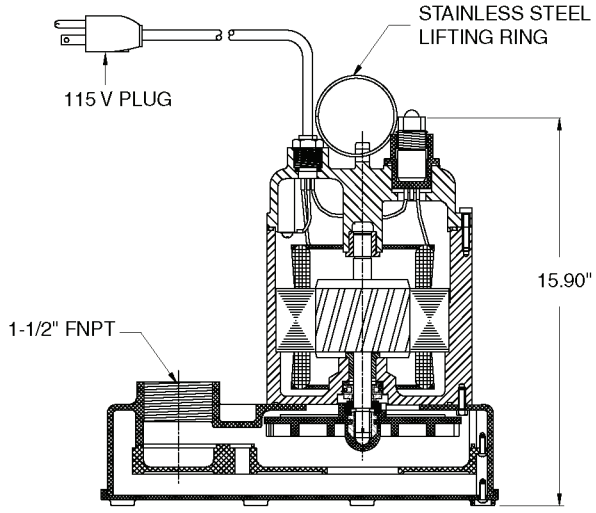
They manufacture submersible pumps ranging from ½ hp thru 200 hp, and capacities from 5 to 1100 gpm, with total head capacity up to 1200ft.
Their centrifugal line ranges from ½ hp thru 200 hp with a wide range of discharge / suction configurations, and up to 6000 gpm with total head capacities up to 490ft. We offer close-coupled, frame mount and SAE type.
This is just one of our manufacturers but now you get a sense for the pump universe available from the manufacturers we represent.

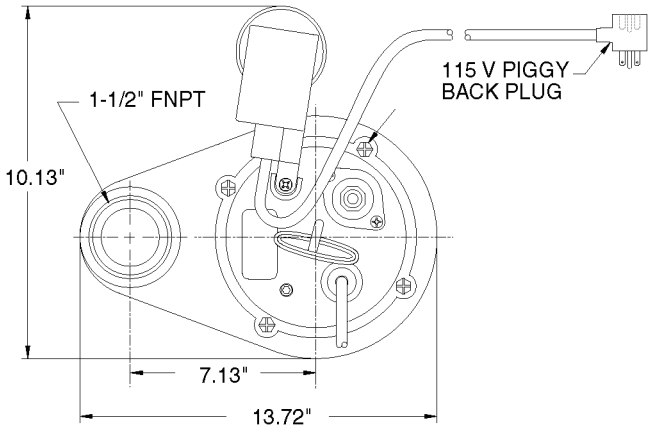
PE Series
Submersible Effluent Pump

Features

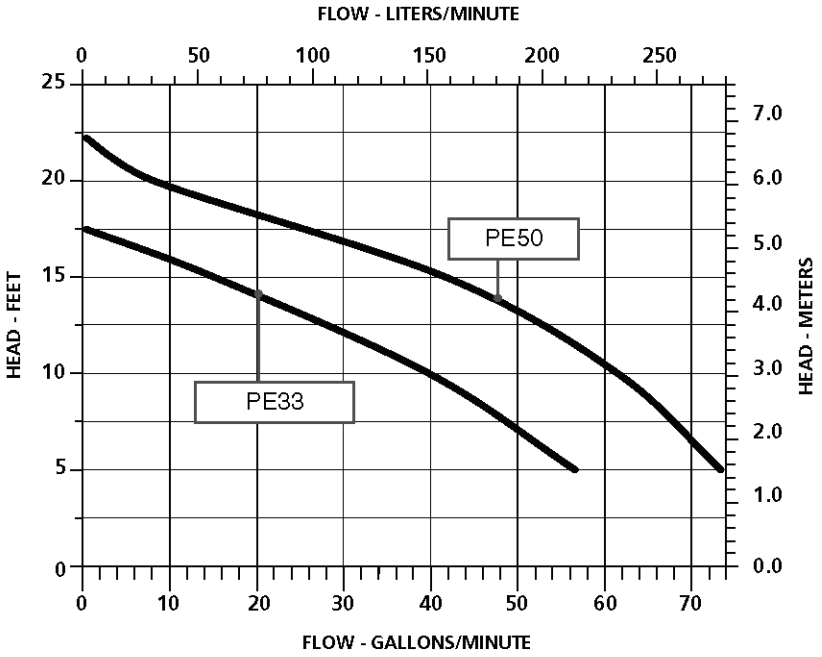
- Heavy-duty high quality cast iron motor housing.
- Non-corrosive thermoplastic case and vortex impeller.
- Efficient oil-filled 115 V motor with thermal overload protection and automatic reset which prevents motor overheating and burnout.
- 20-foot power cord.
- 1.5" NPT side discharge.
- Available with an automatic On-Off mechanical float switch (-A models).
- Will handle up to ½" solids.
- All fasteners 300 series stainless steel.

c UL us





PE Series
Submersible Effluent Pump



Construction

Cover	Polycarbonate
Motor Housing	Epoxy Coated Cast Iron
Impeller Material	Nylon
Impeller Type	Vortex
Power Cord	SJTW-A
Mechanical Shaft Seal	Nitrile Parts, Carbon and Ceramic Faces
Fasteners	Stainless Steel
Shaft	Cold Rolled Steel
Bearings	Sintered Sleeve Bearings

Specifications

MODEL NO.	ITEM NO.	HP	VOLTS	DISCHARGE SIZE	RUNNING AMPS/WATTS	PERFORMANCE (GPM)				SHUT-OFF		CORD LENGTH	WEIGHT (LBS)	RPM
						5'	10'	15'	20'	FEET	PSI			
PE33V-1	506310	1/3	115	1.5" FNPT	9.0/720	57.0	40.0	15.0	-	17.5	7.6	20'	30	1,750
PE33V-1	506311	1/3	115	1.5" FNPT	9.0/720	57.0	40.0	15.0	-	17.5	7.6	30'	31	1,750
PE50V-1	510310	½	115	1.5" FNPT	11.5/1005	74.0	62.0	42.0	8.0	22.0	9.5	20'	30	1,750
PE50V-1	510311	½	115	1.5" FNPT	11.5/1005	74.0	62.0	42.0	8.0	22.0	9.5	30'	31	1,750

Darwin Award Winner

February 1998, Male, Mammoth, California Matthew and his friends were sliding down a Mammoth Mountain ski run on a foam pad at 3 AM, when he crashed into a lift tower and died. His makeshift sled of yellow foam had been stolen from the legs of a lift tower on Stump Alley. The cushion is meant to protect skiers who hit the tower, and the tower Matthew ran into was the one from which he had created his sled. There is a moral in there somewhere.

CRANE PUMPS & SYSTEMS

BARNES®

Solids Handling Submersibles

Engineered submersible solids handling wastewater pumps for municipal, industrial, residential & commercial applications. A dependable answer for sewage and waste handling needs.

SOLIDS Handling SUBMERSIBLE PUMPS

Proven Performance

Barnes® offers a broad line of engineered submersible solids handling pumps for a wide variety of light to heavy duty wastewater services. Designed specifically for unscreened raw sewage or industrial waste applications, these Barnes® brand pumps are available in 3" through 8" discharge sizes and can handle spherical solids up to 4" in diameter.

With heads to 258' and capacities to 5,400gpm at 104˚F continuous media temperature, Barnes® submersible pumps deliver efficient hydraulic coverage. The motors are completely sealed against contaminants, and bearings are lubricated for the life of the pump, significantly reducing maintenance and operating costs.

Applications

When wastewater collection is in a below-grade sump or wet well.

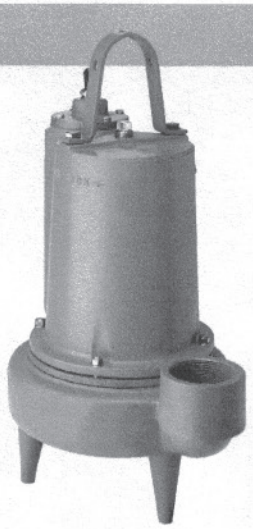
Where construction of a building for above-ground pumping equipment is not practical.

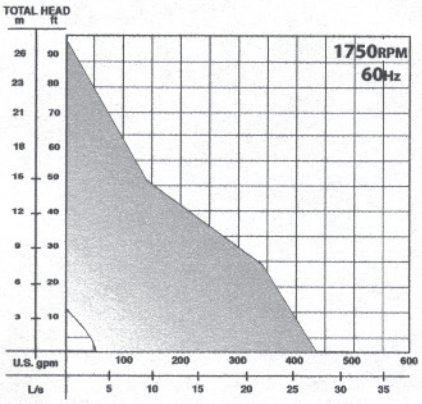
For use in an existing pump station that is subject to frequent flooding due to power failures or leakage.

Where there is limited vertical clearance in an existing station.

3SE, 3XSE

Size	3" horizontal/vertical
Motor	.75hp - 3hp oil or air filled
Head	to 95'
Flow	to 440gpm
Volutes	concentric
Impeller	open & enclosed
Solids	1.5" • 2" • 2.5"

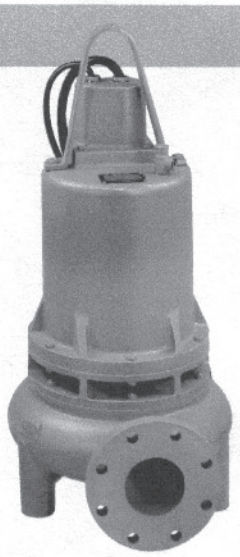


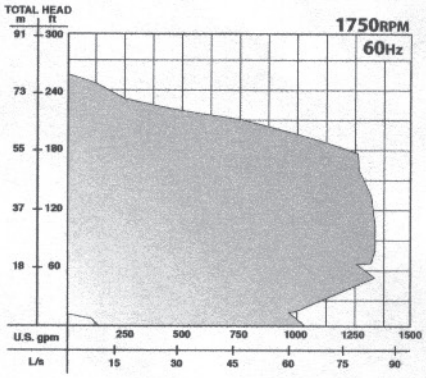


Models with air filled explosion proof motors available.

4SE, 4XSE

Size	4" horizontal
Motor	.9hp - 100hp oil filled or air filled
Head	to 258'
Flow	to 1,265gpm
Volutes	standard concentric high efficiency scroll
Impeller	open & enclosed
Solids	1.5" • 2" • 3"





Models with air filled explosion proof motors available.

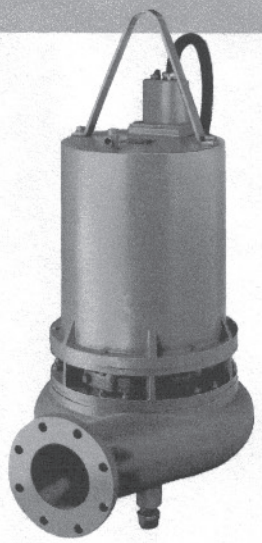
SE SERIES

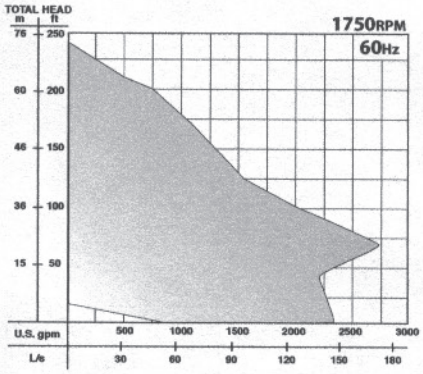
BARNES®

Solids Handling Submersibles

6SE, 6XSE

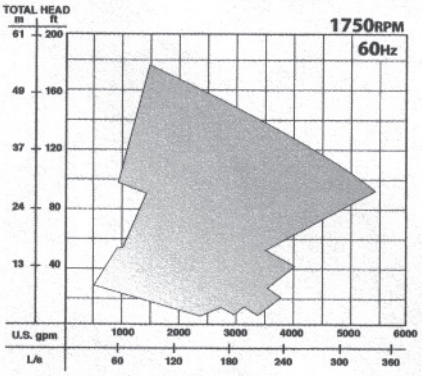
Size	6" horizontal
Motor	7.5hp - 75hp oil filled or air filled
Head	to 240'
Flow	to 2,650gpm
Volutes	concentric
Impeller	enclosed
Solids	3" • 4"



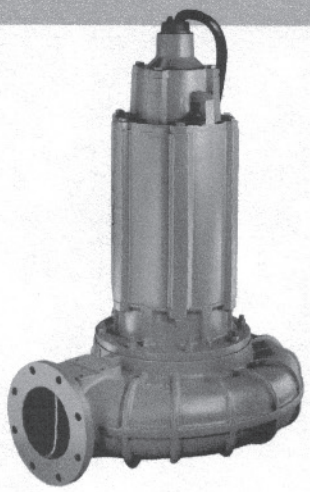


Models with air filled explosion proof motors available.

8SE, 8XSE

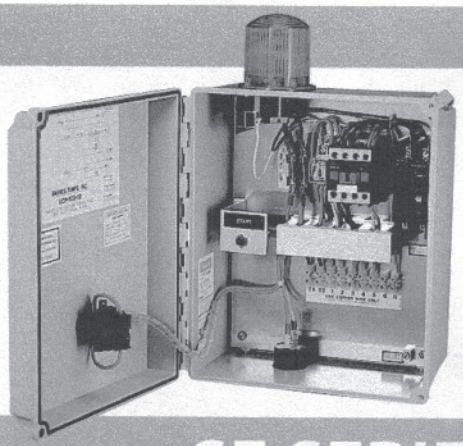


Models with air filled explosion proof motors available.



Size	8" horizontal
Motor	24hp - 200hp oil filled or air filled
Head	to 180'
Flow	to 5,400gpm
Volutes	concentric
Impeller	enclosed
Solids	3"

Control panels are available in NEMA 3R, 4X, and other enclosures for Simplex and Duplex pumping systems. Standard panels include: 120v control transformers, alternators (in Duplex panels), circuit breakers, motor overload protection, Hand-Off-Automatic selector switch, run lights, alarm circuit, magnetic starters, seal fail light, motor high temperature light. Custom panels available.

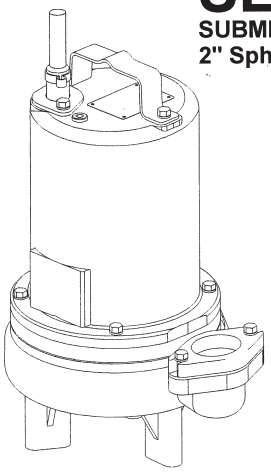


SE SERIES

BARNES®

SE

SUBMERSIBLE NON-CLOG PUMPS
2" Spherical Solids Handling



Series SE 0.5, 0.75 & 1HP
1750 RPM
(SE51 & SE52)

Manual & Automatic

CSA 108 - File No. LR16567
UL 778

NRTL\C

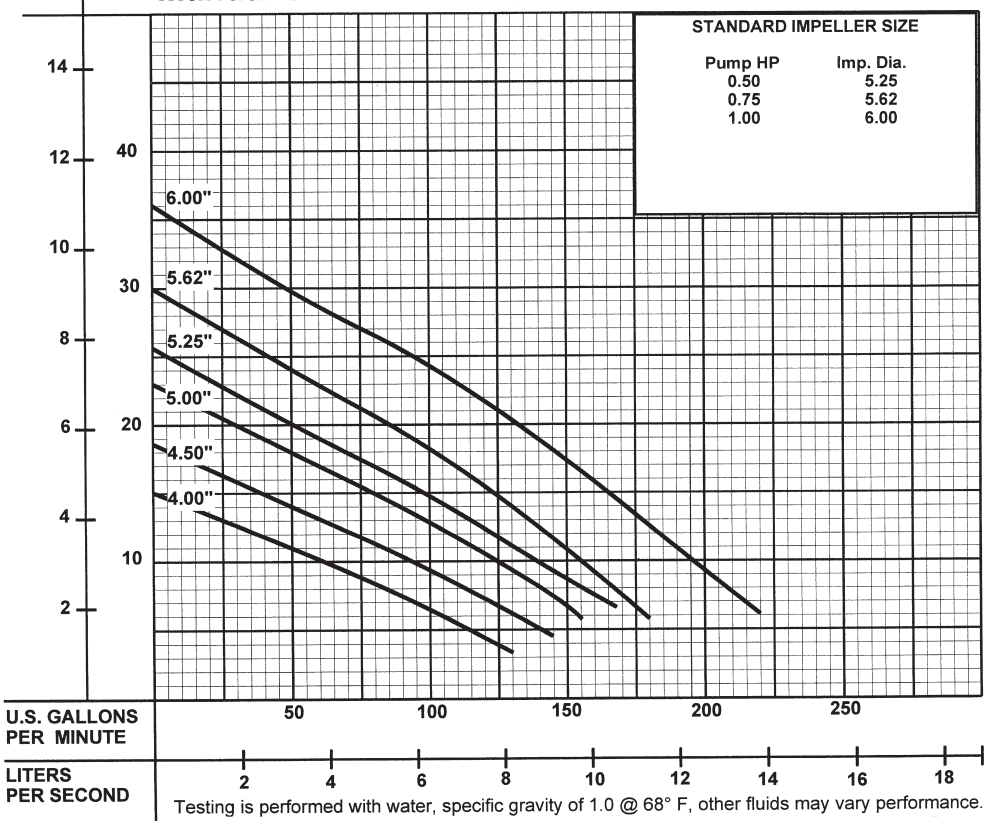
Description:

SUBMERSIBLE NON-CLOG SEWAGE PUMP DESIGNED FOR TYPICAL RAW SEWAGE APPLICATIONS.

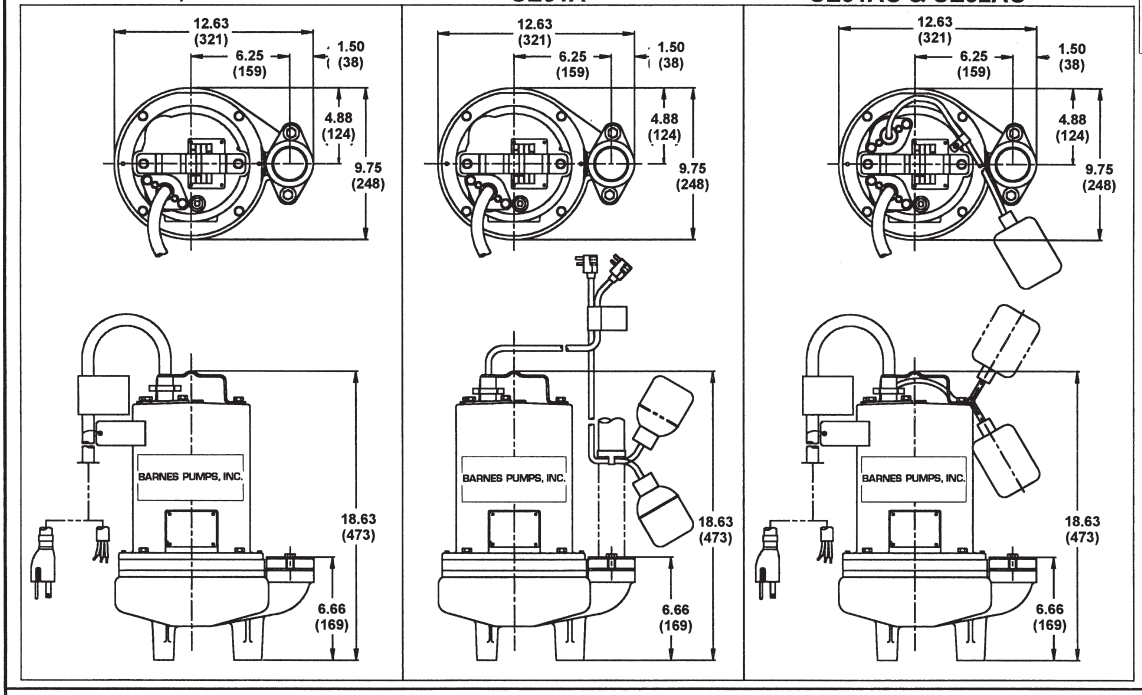
Specifications:

DISCHARGE:		2" NPT, Vertical.
LIQUID TEMPERATURE:		104°F (40°C) Continuous.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
MOTOR HOUSING:		Cast Iron ASTM A-48, Class 30.
SEAL PLATE:		Cast Iron ASTM A-48, Class 30.
IMPELLER:	*Design:*	2 Vane, Open, With Pump Out Vanes On Back Side. Dynamically Balanced, ISO G6.3.
	Material:	Cast Iron ASTM A-48 Class 30.
SHAFT:		416 Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		300 Series Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical.
	Material:	Rotating Faces - Carbon Stationary Faces - Ceramic Elastomer - Buna-N Hardware -300 Series Stainless
CABLE ENTRY:		15 ft. (4.5M) Cord. Plug on 120 Volt & 240 Volt 1 Phase. Quick Connect, Custom Molded for Sealing and Strain Relief.
SPEED:		1750 RPM (Nominal).
UPPER BEARING:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial
LOWER BEARING:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
MOTOR:	*Design:*	NEMA L Torque Curve. Completely Oil-Filled, Squirrel Cage Induction.
	Insulation:	Class B
SINGLE PHASE:		Permanent Split Capacitor (PSC). Includes Overload Protection In Motor.
THREE PHASE:		200-240/480 Tri Voltage motor. 600V. Requires Overload Protection to be Included in Control Panel.
FLOAT, AUTOMATIC MODELS:		**A** - Wide Angle, PVC Mechanical, 15ft (5M) Cable on with Piggy-Back Plug. **AU** - Wide Angle, Polypropylene, Mechanical, N/O, Integral to Pump. ON and OFF Points are Adjustable.
OPTIONAL EQUIPMENT:		Seal Material, Impeller Trims, Additional Cable, N/C Temperature Sensor with cable for 3 phase pumps (Requires Relay in Control Panel).

PERFORMANCE CURVE
Series: SE ,0.5, 0.75 & 1 HP, 1750RPM
Manual & Automatic



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	HP	VOLT	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	CORD SIZE	CORD TYPE	CORD O.D.
SE51	104871	0.5	120	1	1750	F	11.6	21.3	14/3	SJTOW	0.375
SE51A	104872	0.5	120	1	1750	F	11.6	21.3	14/3	SJTOW	0.375
SE51AU	104873	0.5	120	1	1750	F	11.6	21.3	14/3	SJTOW	0.375
SE52	104874	0.5	240	1	1750	J	5.9	14.9	14/3	SOW	0.530
SE52AU	104875	0.5	240	1	1750	J	5.9	14.9	14/3	SOW	0.530
SE594L	104881	0.5	200/240	3	1750	H/L	3.2/3.0	9.8/11.0	14/4	SOW	0.570
SE544L	104882	0.5	480	3	1750	K	1.5	5.3	14/4	SOW	0.570
SE554L	104883	0.5	600	3	1750	H	1.0	3.4	14/4	SOW	0.570
SE774L	104884	0.75	200/240	1	1750	G/K	7.4/7.0	21.5/25.8	14/3	SOW	0.530
SE794L	104885	0.75	200/240	3	1750	H/K	4.8/4.5	13.7/15.4	14/4	SOW	0.570
SE744L	104886	0.75	480	3	1750	K	2.2	7.7	14/4	SOW	0.570
SE754L	104887	0.75	600	3	1750	L	1.5	7.2	14/4	SOW	0.570
SE1074L	104888	1.0	200/240	1	1750	D/G	8.8/8.3	21.5/25.8	14/3	SOW	0.530
SE1094L	104889	1.0	200/240	3	1750	E/H	5.1/4.9	13.7/15.4	14/4	SOW	0.570
SE1044L	104890	1.0	480	3	1750	H	2.4	7.7	14/4	SOW	0.570
SE1054L	104891	1.0	600	3	1750	J	1.9	7.2	14/4	SOW	0.570

Mechanical Switch on SE51A, Cable 16/2, SJOW, 0.320 O.D. Piggy-Back Plug.
Mechanical Switch on SE51AU & SE52AU, Cable 14/2, SJOW, 0.345 O.D.

IMPORTANT !

1.) PUMP MAY BE OPERATED **"DRY"** FOR EXTENDED PERIODS WITHOUT DAMAGE TO MOTOR AND/OR SEALS.
2.) THIS PUMP **IS** APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION II HAZARDOUS LOCATIONS.
3.) THIS PUMP IS **NOT** APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION I HAZARDOUS LOCATIONS.
4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

TAX BITES

After a year of hard work, the average man or woman is entitled to a little vacation with the family. They may have scrimped and saved all year to be able to spend two weeks at their favorite vacation spot. Of course, their savings are heavily taxed all year. But when they finally go to buy airline tickets, what they probably don't realize is how much they are paying in taxes again.

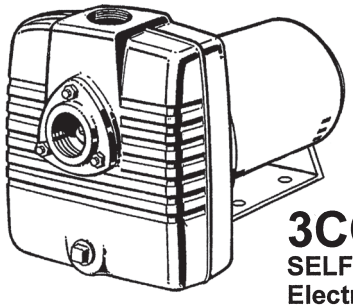
All airline tickets are subject to a federal excise tax of 7.5 percent. In addition, there is a $2.50 surcharge to pay for air traffic control services. If you are flying overseas, you are subject to a $12.40 Arrival Tax, a $12.40 Departure Tax, and a $5.00 Customs User Fee. Many airports are also subject to a $3 Passenger Facilities Charge, which is another tax. (Note: Pending legislation would raise the PFC tax to $4.50.)

Air travelers are also subject to a $6.00 Immigration User Fee and a $2.00 Agricultural Inspection Fee. Consequently, over 10 percent of what you pay for

flying is actually going to these taxes.

But that's only the start. Additional taxes paid by the airlines account for about 30 percent of the price of an airline ticket.

BARNES®



3CCE, 4CCE, 5CCE
SELF-PRIMING PUMPS
Electric Drive

Series: 3CCE 1-1/2HP
RPM: 3450
Series: 4CCE 2HP
RPM: 3450
Series: 5CCE 3HP

Canadian Standards Association
File No. LR16567

American Bureau of Shipping
Certificate No.
01-HS238523C/1PDA

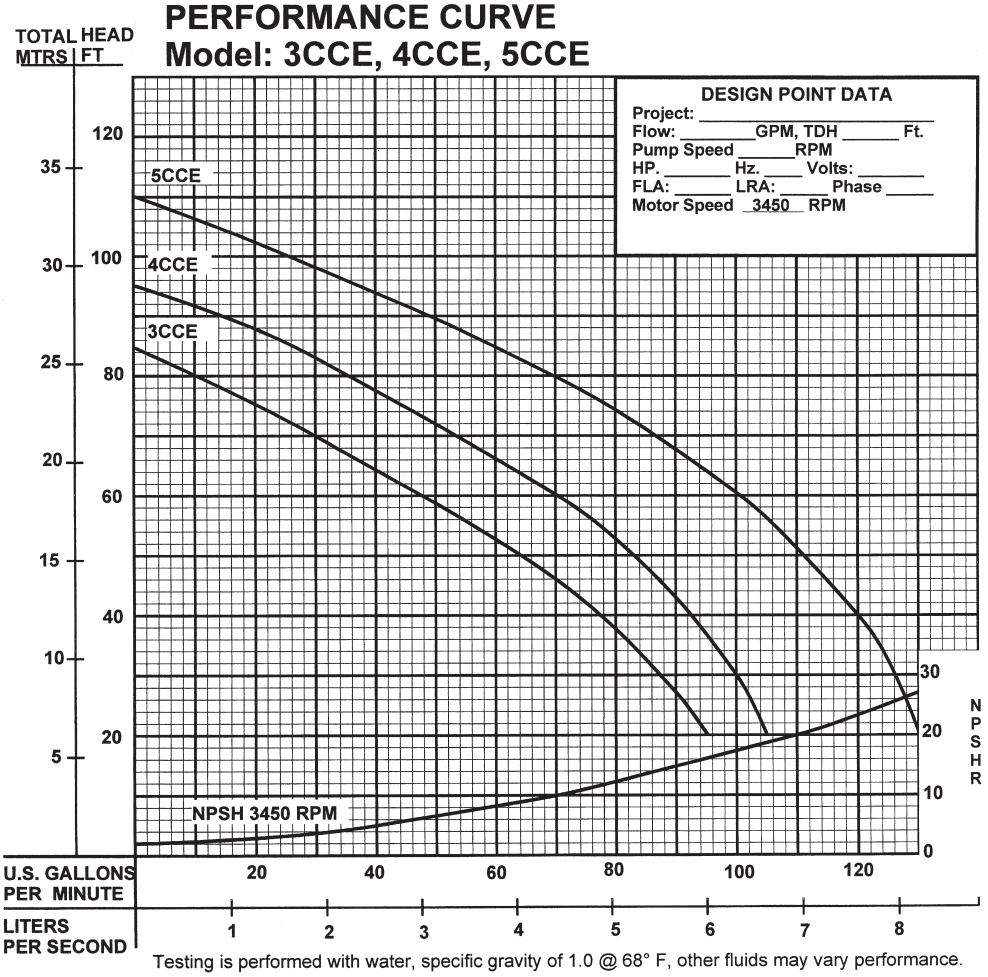
Specifications:

SUCTION/DISCHARGE:		1-1/2" (38mm) x 1-1/2" (38mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
MOTOR:	*Design:*	ODP, NEMA L-Single Phase, NEMA B-Three Phase Torque Curve C-Face, Footed, Squirrel Cage Induction.
	Insulation:	Class B.
SINGLE PHASE:		Dual Voltage 115/230, Capacitor Start.
THREE PHASE:		Tri-Voltage, 200-230/460.
OPTIONAL EQUIPMENT:		Seal Material, TEFC Motors.

Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

PERFORMANCE CURVE
Model: 3CCE, 4CCE, 5CCE



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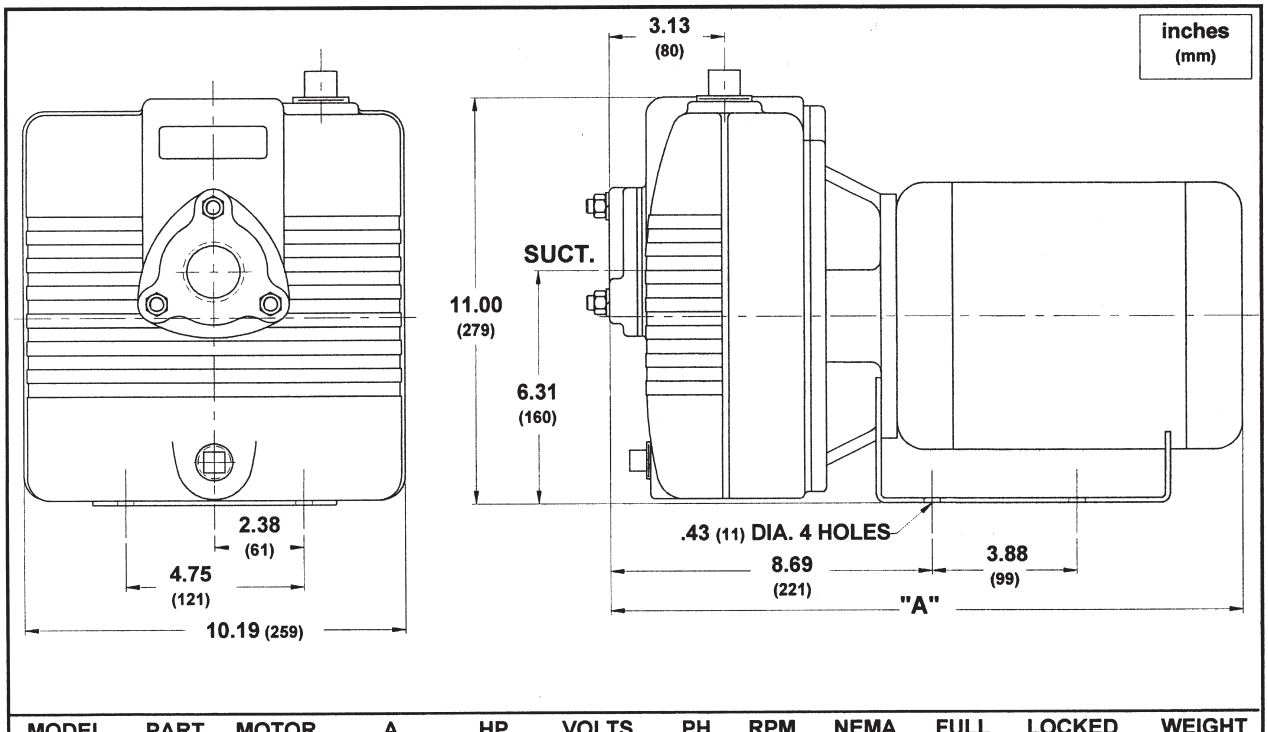


MODEL NO.	PART NO.	MOTOR DESIGN	A DIM	HP	VOLTS	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	WEIGHT NET LBS.
3CCE	027458	ODP	17.88 (454)	1.5	200-230/460	3	3450	J	4.8/2.4	30.0/15.0	84
3CCE-1	027460	ODP	18.44 (468)	1.5	115/230	1	3450	K	15.8/7.9	107.4/53.7	84
4CCE	027464	ODP	18.44 (468)	2.0	200-230/460	3	3450	H	5.6/2.8	34.0/17.0	92
4CCE-1	027466	ODP	18.44 (468)	2.0	115/230	1	3450	J	19.2/9.6	127.6/63.8	92
5CCE	027470	ODP	18.44 (468)	3.0	200-230/460	3	3450	J	8.2/4.1	54.0/27.0	94
5CCE-1	027472	ODP	19.69 (500)	3.0	115/230	1	3450	H	28.8/14.4	88.0/44.0	94

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

BREAD

In the process of production from farm to the store, the government imposes about 30 taxes on a loaf of bread.

These include federal income taxes, state income taxes, state and local property taxes, federal payroll taxes, sales taxes, capital gains taxes, unemployment compensation taxes, workmen's compensation taxes, retailers' excise taxes, business license taxes and fees, utility taxes, and state wheat farmer checkoff taxes.

A recent study by Price Waterhouse found that these taxes accounted for 27.2 percent of the price of a loaf of bread, not counting sales taxes paid by the customer.

So out of the average price of a loaf of bread of $1.09 in 1995, about 30 cents goes for taxes, plus another 5 cents on average for sales taxes.

GAS

When you cruise on over to the gas station to fill up your car's gas tank, you naturally assume that you are paying for gas. What you don't realize is that over half of what you pay goes to the government in taxes rather than for the gas.

The federal government adds an excise tax of 18.3 cents on every gallon of gas. Each state then adds an additional excise tax now averaging 19.4 cents per gallon. This adds up to a total of 37.7 cents per gallon.

Based on recent price data from the Energy Information Administration of the U.S. Department of Energy, these taxes account for about 28 percent of what you pay for a gallon of gas at the pump.

For a car with a standard 15 gallon gas tank, a tax of 37.7 cents per gallon adds up to $5.66 per fill-up. The Tax Foundation estimates that the average American household will spend $422 this year on these taxes alone.

But that is not all. The government imposes 43 different direct and indirect taxes on the production and distribution of gas. The total tax burden amounts to 54 percent of the price of a gallon of gas.

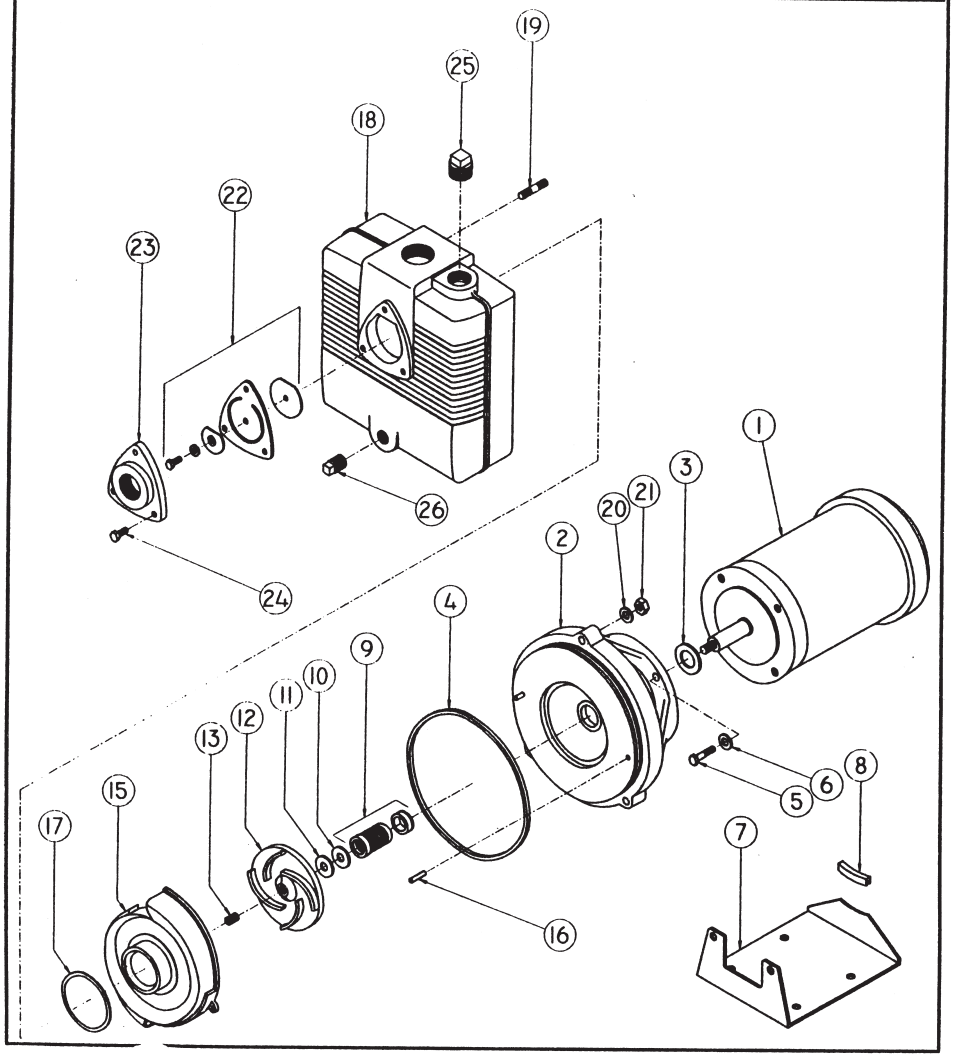
BARNES®

3CCE, 4CCE, 5CCE

SELF-PRIMING PUMPS
Electric Drive

MODEL:	PART No.
3CCE	027458
3CCE-1	027460
4CCE	027464
4CCE-1	027466

MODEL:	PART No.
5CCE	027470
5CCE-1	027472



PARTS KIT

Seal Kit ..... P/N: 021814 (†) 3,4,9,10,11,16,17,22c

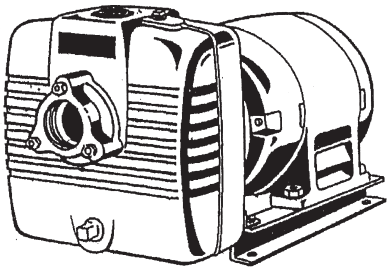
PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Motor - 3CCE	200-230/460	012536
			Motor - 3CCE-1	115/230	012256
			Motor - 4CCE	200-230/460	022433
			Motor - 4CCE-1	115/230	022432
			Motor - 5CCE	200-230/460	027455
			Motor - 5CCE-1	115/230	027456
2	1		Intermediate Coupling		025469
3	1	†	Slinger		012752
4	1	†	O-Ring		017713
5	4		Cap Screw, 3CCE, 4CCE, 5CCE	3/8-16 x 1.25" Lg, Steel	002235
	4		Cap Screw, 4CCE-1	3/8-16 x 1.00" Lg, Stainless	002234
6	4		Lock Washer	3/8" Steel	028408
7	1		Base		017432
8	1		Pad		017362
9	1	†	Shaft Seal	TP/CE/B	012703
10	A/R	†	Shim, .010		026707
11	A/R	†	Shim, .005		026706
12	1		Impeller	3CCE	026153
				4CCE	026213
				5CCE	026154
13	1		Set Screw, 3CCE	7/16-20	026155
	1		Hex Nut, 4CCE, 5CCE	7/16-20, Stainless	028153
15	1		Volute		018095
16	2	†	Pin, Volute		017715
17	1	†	Gasket, Volute		017714
18	1		Body		018097
19	3		Stud	3/8-16 x 1.75" Lg, Steel	016569
20	3		Lock Washer	3/8", Steel	028408
21	3		Hex Nut	3/8-16, Zp	15-23-6
22	1		Check Valve Assy.		017718
22a	1		Weight	2.25" O.D., CI	001338
22b	1		Weight	1.56" O.D., CI	001339
22c	1	†	Gasket	Neoprene	017712
22d	1		Lock Washer	1/4", Stainless	022333
22e	1		Round Hd Screw	1/4-20 x 625" Lg, Stainless	023469
23	1		Suction Flange		018099
24	3		Cap Screw	5/16-18 x .875" Lg, Steel	002218
25	1		Pipe Plug	1.25 NPT	003206
26	1		Pipe Plug	.75 NPT	003204

BARNES®

10CCE & 10CCE-1

SELF-PRIMING PUMPS
Electric Drive



Model: 10CCE & 10CCE-1, 5HP
RPM: 3450

American Bureau of Shipping
Certificate No.
01-HS238523C/1PDA

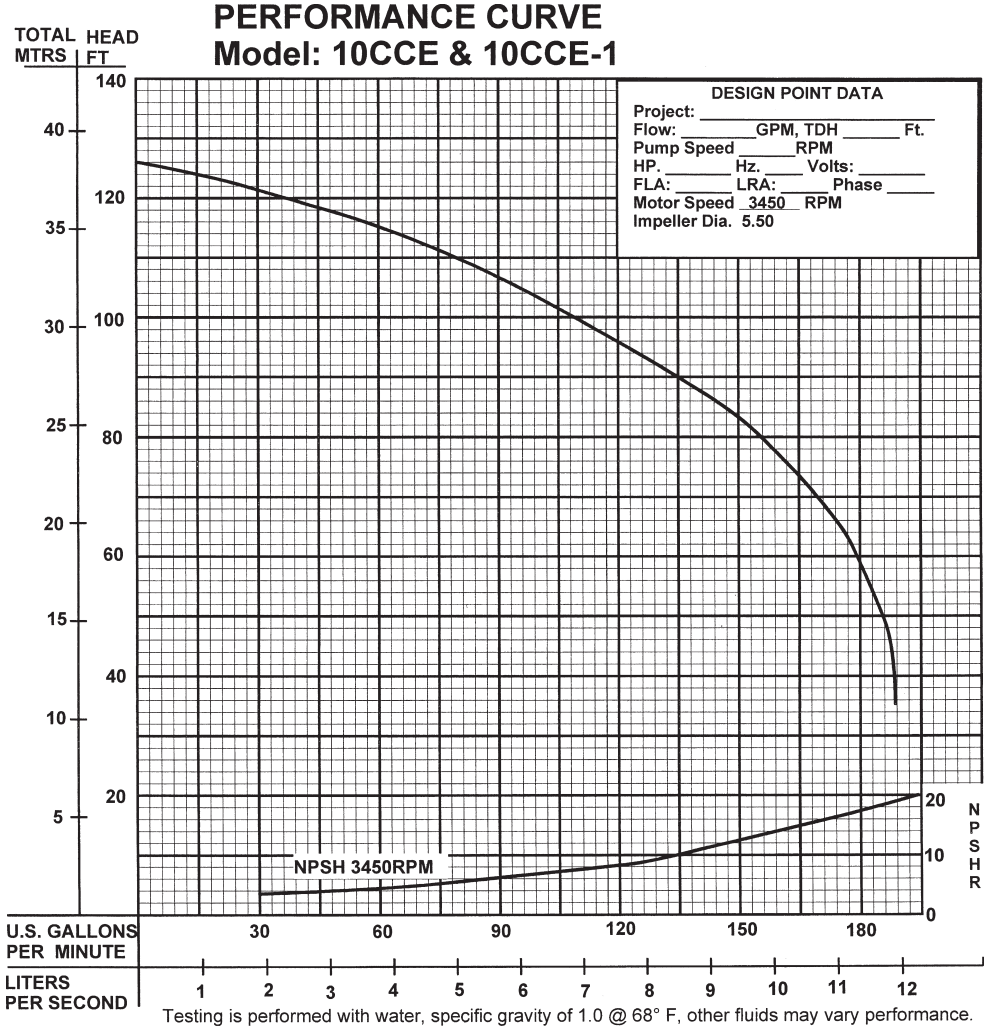
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

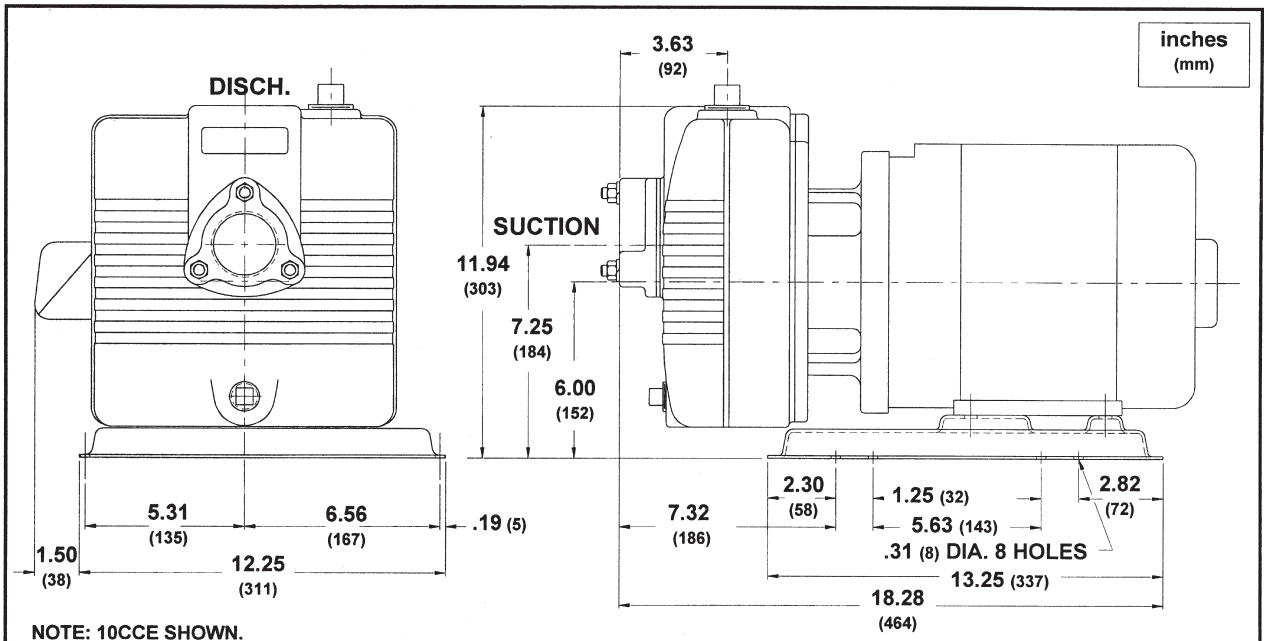
Specifications:

SUCTION/DISCHARGE:		2" (51mm) x 2" (51mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SHAFT SLEEVE:		Bronze
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - 300 Series Stainless
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
MOTOR:	*Design:*	ODP, NEMA L-Single Phase NEMA B - Three Phase Torque Curve, C-Face, Footed, Squirrel Cage Induction. Marine Duty Per USCG259 And AIEEE-45, 50°C Ambient
	Insulation:	Class B.
SINGLE PHASE:		Single Voltage, 230.
THREE PHASE:		Tri-Voltage, 200-230/460.
OPTIONAL EQUIPMENT:		Seal Material., TEFC Motors.

PERFORMANCE CURVE
Model: 10CCE & 10CCE-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	MOTOR DESIGN	HP	VOLTS	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	WEIGHT NET LBS.
10CCE	028506	ODP	5.0	200-230/460	3	3450	F	11.4/5.7	97/48.5	164
10CCE-1	028504	ODP	5.0	230	1	3450	J	23.0	121.0	164

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

SODA

Although most states require soda consumers to pay sales taxes averaging 6 percent nationally, a number of states impose even higher taxes specifically targeted only at soda. One such state, Arkansas, imposes a2 cents per 12 ounce soft drink can.

Several states also have “bottle bills” that impose an extra charge on beverage containers to punish people for littering. Sure, you might get your fee back if you turn in your soda cans, but the costs of maintaining the programs is still heaped onto your cost. California’s program, for example, costs taxpayers over $30 million each year just for oversight.

Beyond the costs of the excise taxes and bottle bills, the true cost of taxation includes the producer’s federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen’s compensation taxes, local property taxes and any local income taxes.

Depending on where you buy your Diet Coke, the government’s share of the cost could runs as high as 37.6 percent, or $.28 for a 75 cent can of soda.

MEALS

Eating out isn’t cheap, but the government doesn’t make it any easier to enjoy a meal at your favorite restaurant by imposing extra taxes on it. Because states and municipalities like the idea of taxing tourists, imposing taxes on restaurant meals has most big spenders salivating. In major cities like Chicago, the state and local meals taxes can heap on up to 10.25 percent of your bill

That is just the first course of taxation. Out of what the consumer pays for the meal, the restaurant must pay federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen’s compensation taxes, state franchise taxes, local property taxes and any local income taxes. Altogether, these taxes can add another $11.18 onto an average restaurant bill of $32.32.

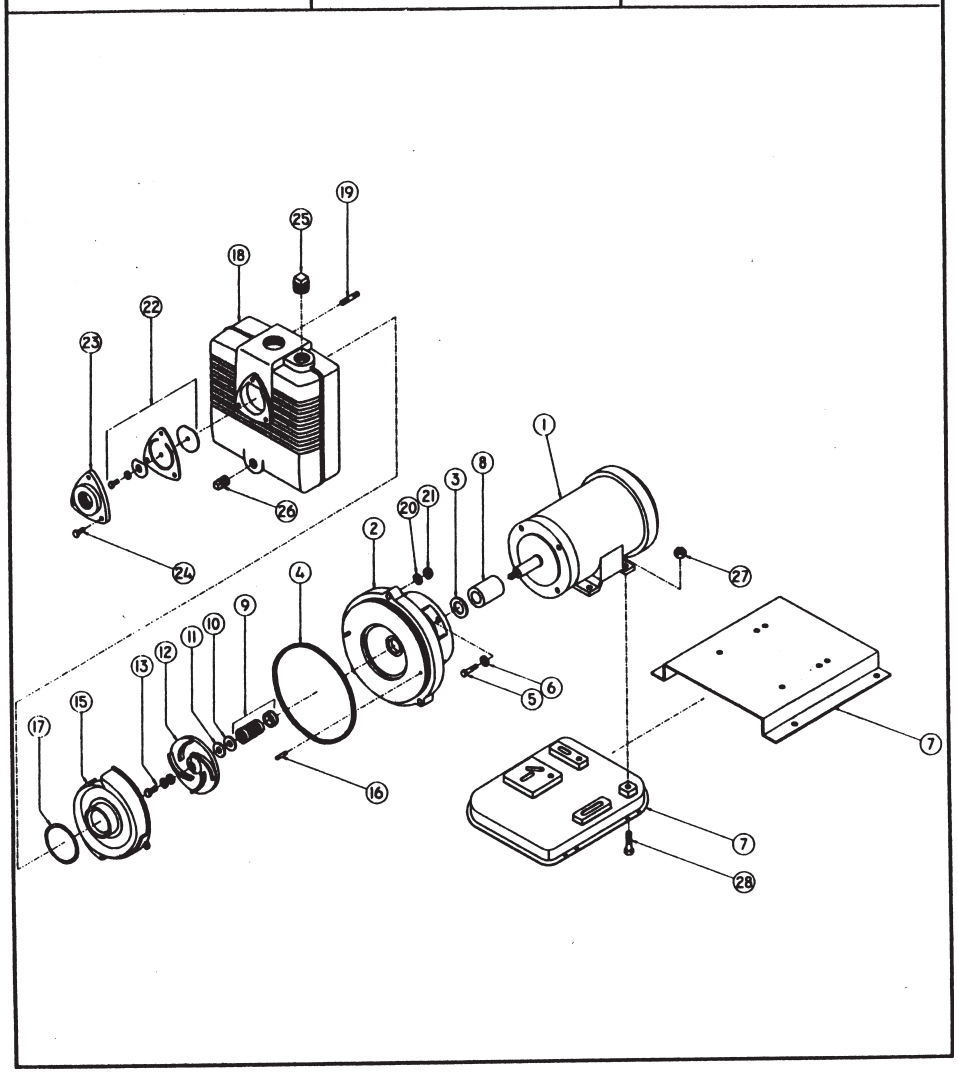
This means that in total, a restaurant diner can expect to pay as much as 44.8 percent of the cost of a meal, or $14.48 to the government.

BARNES®

10CCE & 10CCE-1

SELF-PRIMING PUMPS
Electric Drive

MODEL:	PART No.
10CCE	028506
10CCE-1	028504



PARTS KIT

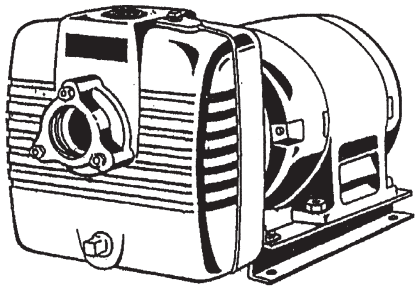
Seal Kit .....P/N: 072920 (†) 3,4,8,9,10,11,16,17,22c

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Motor - 10CCE	200-230/460	028495
			Motor - 10CCE-1	230	028494
2	1		Intermediate Coupling		019537
3	1	†	Slinger		005163
4	1	†	O-Ring		017713
5	4		Cap Screw	1/2-13 x 1.50" Lg, Steel	002266
6	4		Lock Washer	1/2" Steel	002608
7	1		Base, 10CCE		073191
			Base, 10CCE-1		027174
8	1	†	Shaft Sleeve		018071
9	1	†	Shaft Seal	C/NR/B	019146
10	A/R	†	Shim, .010		001349
11	A/R	†	Shim, .031		001348
12	1		Impeller		019775
13	1		Hex Hd Screw	1/2-20 x 1.00" Lg, Stainless	019802
14	2		Washer, Shakerproof	1/2, Stainless	019803
15	1		Volute		019069
16	2	†	Pin, Volute		017715
17	1	†	Gasket, Volute		019245
18	1		Body		019135
19	3		Stud	3/8-16 x 1.75" Lg, Steel	016569
20	7		Lock Washer	3/8", Steel	028408
21	3		Hex Nut	3/8-16, Zp	15-23-6
22	1		Check Valve Assy.		017718
22a	1		Weight	2.25" O.D., CI	001338
22b	1		Weight	1.56" O.D., CI	001339
22c	1	†	Gasket	Neoprene	017712
22d	1		Lock Washer	1/4", Stainless	022333
22e	1		Round Hd Screw	1/4-20 x 625" Lg, Stainless	023469
23	1		Suction Flange		018100
24	3		Cap Screw	5/16-18 x 1.75" Lg, Steel	002222
25	1		Pipe Plug	1.25 NPT	003206
26	1		Pipe Plug	.75 NPT	003204
27	4		Hex Nut	3/8-16 Zp	15-23-6
28	4		Hex Hd Screw	3/8-16 x 1.00"Lg, Stainless	002234

BARNES®

15CCE
SELF-PRIMING PUMPS
Electric Drive



Model: 15CCE

American Bureau of Shipping
Certificate No.
01-HS238523C/1PDA

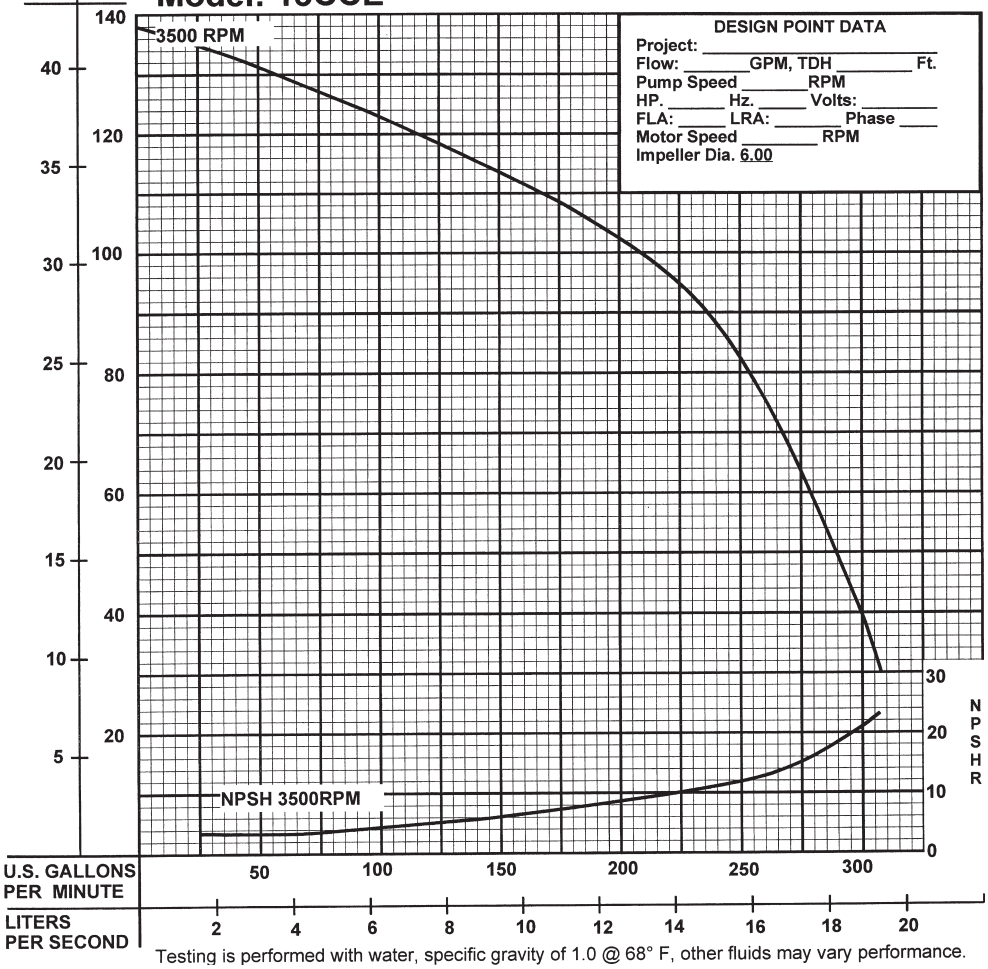
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

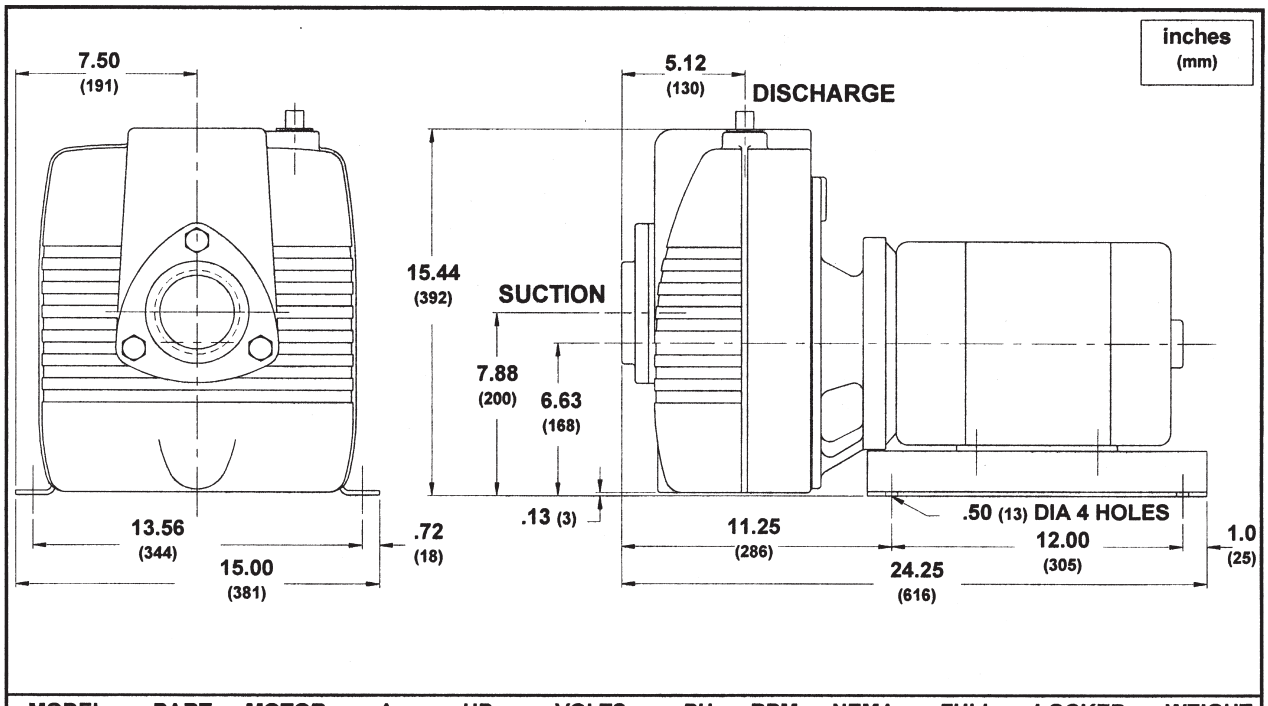
Specifications:

SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SHAFT SLEEVE:		Bronze
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - 300 Series Stainless
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
MOTOR:	*Design:*	ODP, NEMA B-Three Phase Torque Curve, C-Face, Footed, Squirrel Cage Induction. Marine Duty Per USCG259 And AIEEE-45, 50°C Ambient
	Insulation:	Class B.
THREE PHASE:		Tri-Voltage, 200-230/460.
OPTIONAL EQUIPMENT:		Seal Material., TEFC Motors.

PERFORMANCE CURVE
Model: 15CCE



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	MOTOR DESIGN	A DIM	HP	VOLTS	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	WEIGHT NET LBS.
15CCE	028508	ODP		7.5	200-230/460	3	3450	K	18.0/9.0	153/76.5	248

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

TIRES

To pay your taxes, you need to work. To get to work, you need to keep your clunker working. To keep it working, you have to buy some new tires every once in a while. What you don't realize is how much you are paying in taxes when you buy those tires.

Consumers, of course, must pay sales tax on the tires, averaging about 5 percent. They must also pay an additional tax averaging about 1 percent to pay for tire disposal.

Out of what the consumer pays for tires, the producer must pay federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen's compensation taxes, local property taxes and any local income taxes.

Altogether, these taxes consume about 30 percent of what the consumer pays for a tire. Counting the taxes paid directly by the consumer, this means about 36 percent of the final sales price of a tire goes to the government in taxes.

CARS

Incredibly, the average family pays more in taxes today than for food, clothing and shelter combined. Indeed, you probably don't realize how much you are paying in hidden taxes when you buy such necessities.

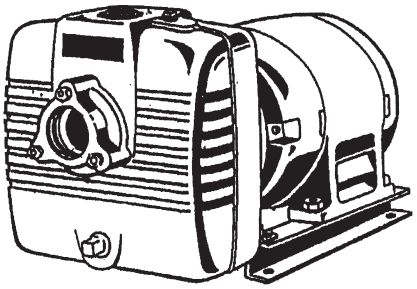
Take the average family car, for example. Cars, of course, are subject to state and local sales tax, averaging 5 percent. Moreover, consumers must also pay a so-called luxury tax of 9 percent on car sales prices over $34,000.

In addition, after the purchase of a car, in most states the consumer must pay each year a personal property or excise tax, averaging about 3 percent of the annual value of the car. If you keep the car for 5 years, these taxes can amount to 10 percent of what you paid for the car.

Combined with taxes on income, payroll, unemployment insurance, inventory, dealer personal property and other items, total taxes on cars reach 45 percent of the sales price.

BARNES®

20CCE
SELF-PRIMING PUMPS
Electric Drive



Model: 20CCE

American Bureau of Shipping
Certificate No.
01-HS238523C/1PDA

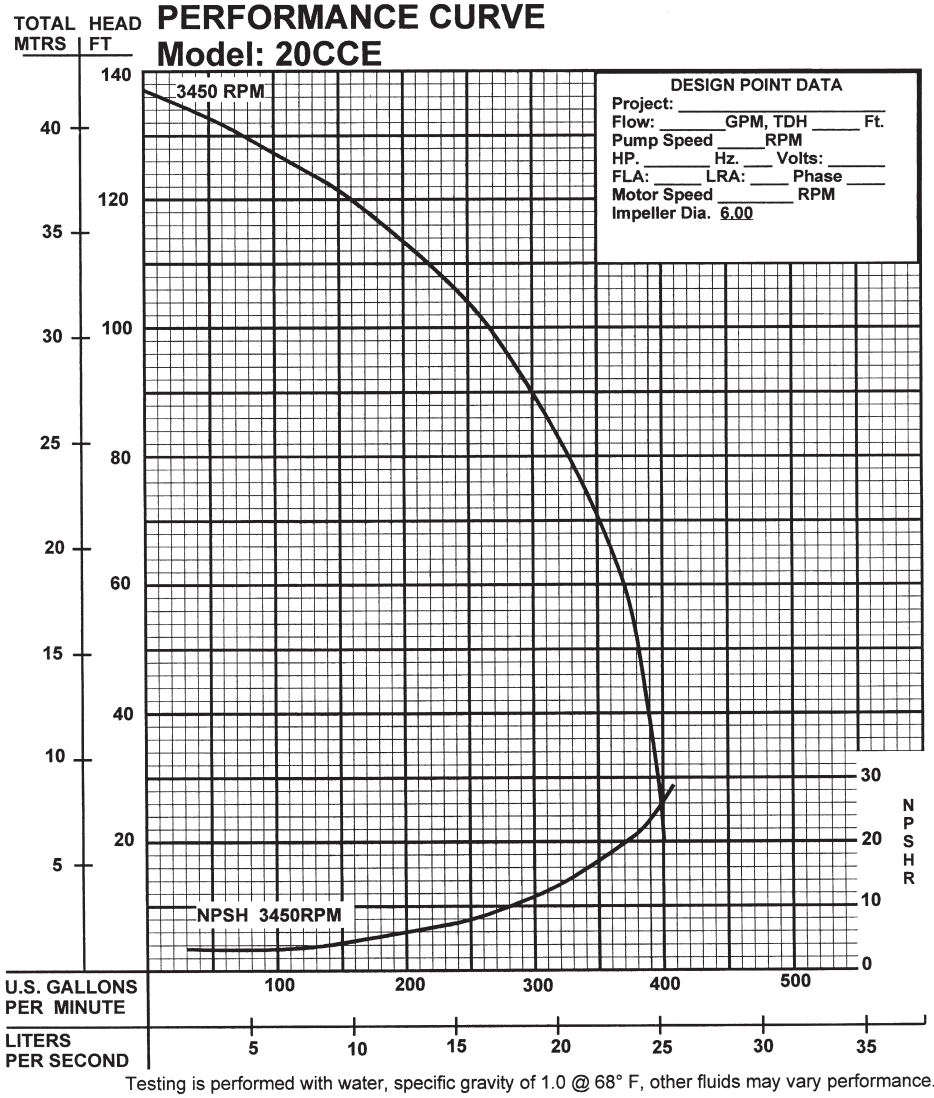
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

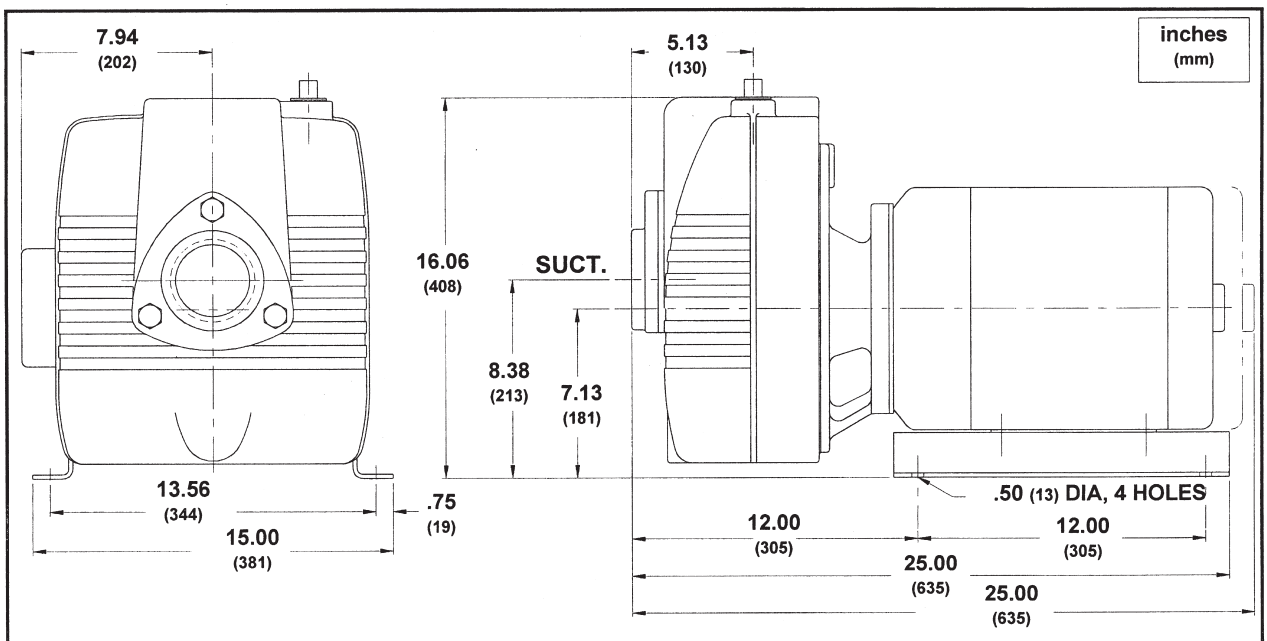
Specifications:

SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SHAFT SLEEVE:		Bronze
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - 300 Series Stainless
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weights-Cast Iron ASTM A-48, Class 30
MOTOR:	*Design:*	ODP, NEMA B-Three Phase Torque Curve, C-Face, Footed, Squirrel Cage Induction. Marine Duty Per USCG259 And AIEEE-45, 50°C Ambient
	Insulation:	Class B.
THREE PHASE:		Tri-Voltage, 200-230/460.
OPTIONAL EQUIPMENT:		Seal Material, TEFC Motors.

PERFORMANCE CURVE
Model: 20CCE



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	MOTOR DESIGN	A DIM	HP	VOLTS	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	WEIGHT NET LBS.
20CCE	028510	ODP		10	200-230/460	3	3450	G	25.0/12.5	150/75	294

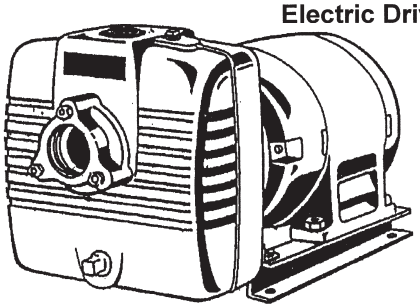
IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

BARNES®

25CCE

SELF-PRIMING PUMPS
Electric Drive



Model: 25CCE

American Bureau of Shipping Certificate No.
01-HS238523C/1PDA

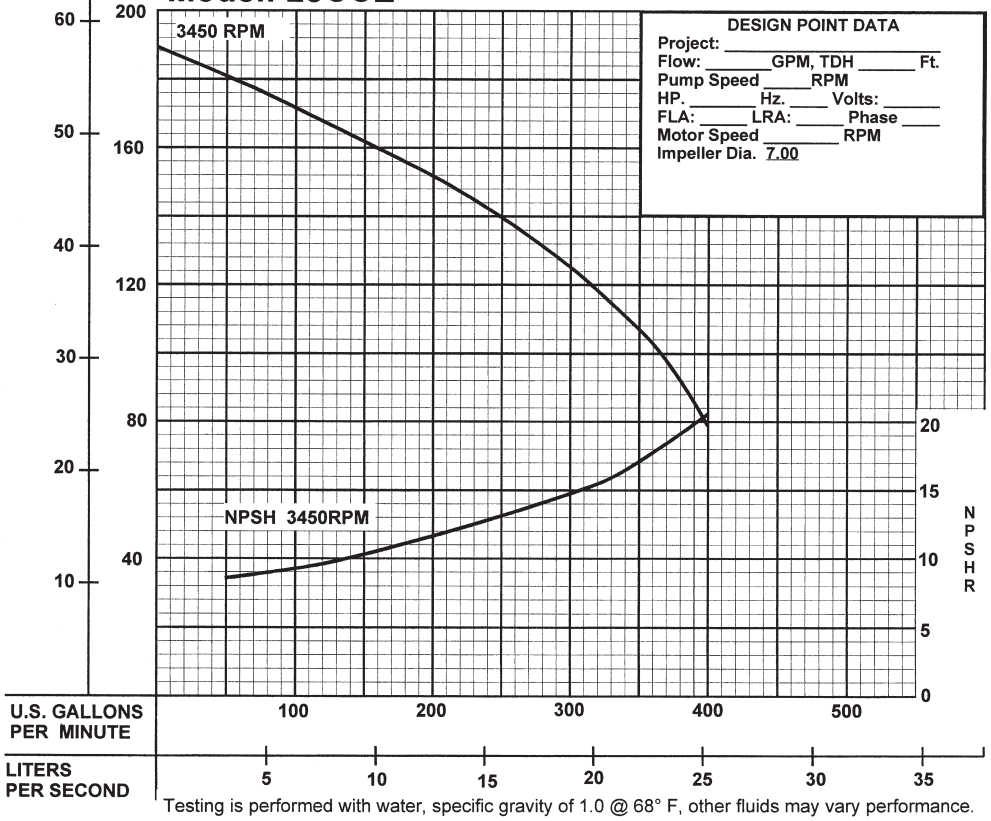
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

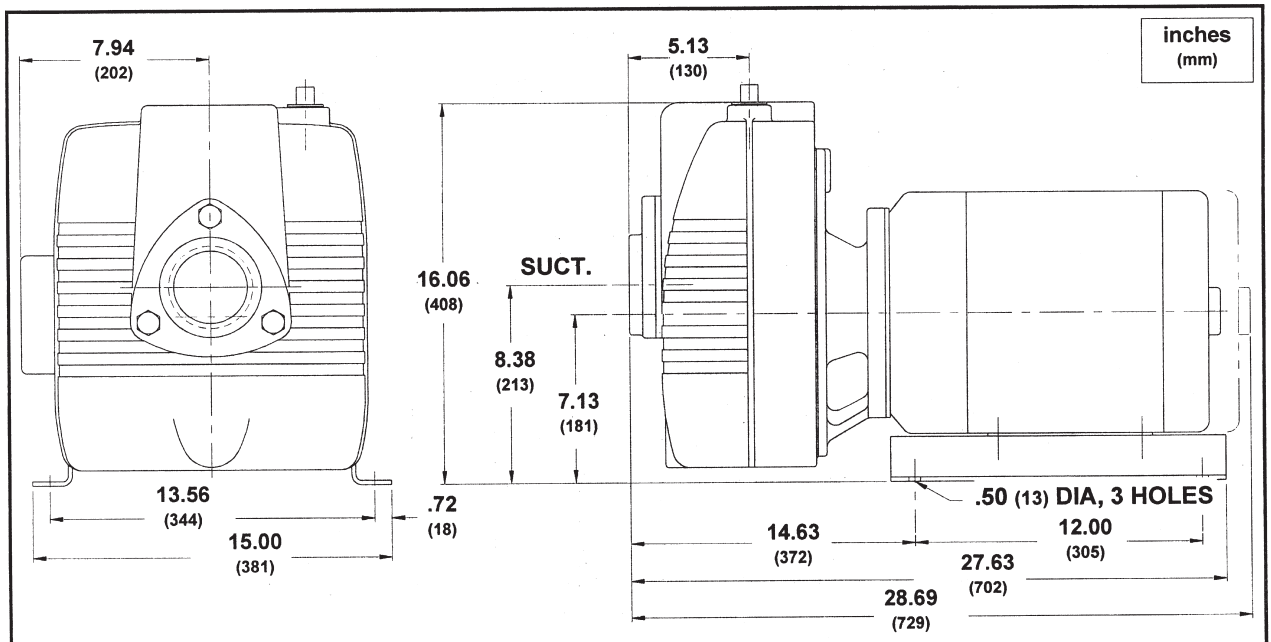
Specifications:

SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SHAFT SLEEVE:		Bronze
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - 300 Series Stainless
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weights-Cast Iron ASTM A-48, Class 30
MOTOR:	*Design:*	ODP, NEMA B-Three Phase Torque Curve, C-Face, Footed, Squirrel Cage Induction. Marine Duty Per USCG259 And AIEEE-45, 50°C Ambient
	Insulation:	Class B.
THREE PHASE:		Tri-Voltage, 200-230/460.
OPTIONAL EQUIPMENT:		Seal Material, TEFC Motors.

PERFORMANCE CURVE
Model: 25CCE



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	MOTOR DESIGN	A DIM	HP	VOLTS	PH	RPM (NOM)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	WEIGHT NET LBS.
25CCE	028512	ODP		15	200-230/460	3	3450	M	40/20	398/199	322

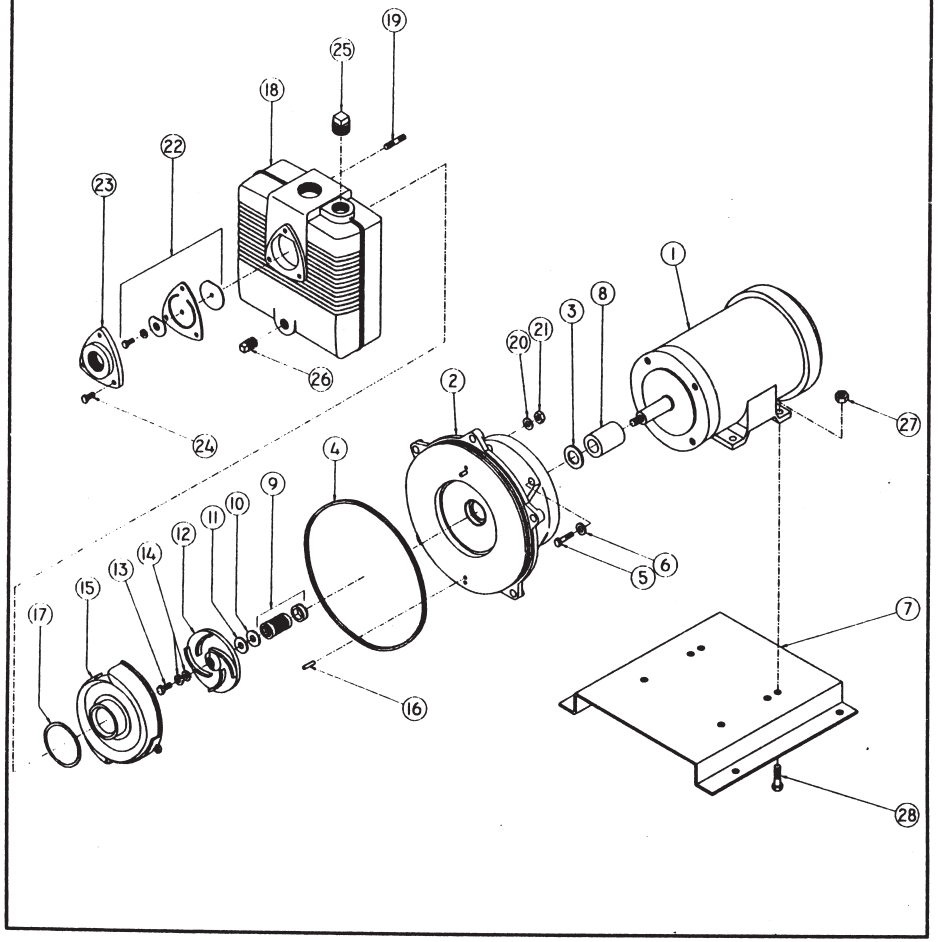
IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

BARNES®

SERIES; 15CCE, 20CCE, 25CCE

MODEL:	PART No.
15CCE	028508
20CCE	028510
25CCE	028512



PARTS KIT

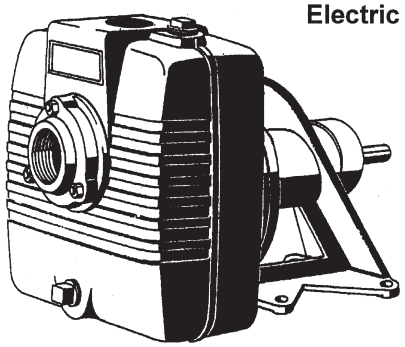
Seal Kit ..... P/N: 072918 (†) 3,4,8,9,10,11,16,17,22b

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Motor - 15CCE	200-230/460	028496
	1		Motor - 20CCE	200-230/460	028497
	1		Motor - 25CCE	200-230/460	028498
2	1		Intermediate Coupling		019553
3	1	†	Slinger		005163
4	1	†	O-Ring		018386
5	4		Cap Screw	1/2-13 x 1.50" Lg, Steel	002266
6	4		Lock Washer	1/2" Steel	002608
7	1		Base, 15CCE		027174
			Base, 20CCE, 25CCE		027352
8	1	†	Shaft Sleeve		018071
9	1	†	Shaft Seal	C/NR/B	019146
10	A/R	†	Shim, .010		001349
11	A/R	†	Shim, .031		001348
12	1		Impeller, 15CCE		090053TB
	1		Impeller, 20CCE		090050TB
	1		Impeller, 25CCE		051102
13	1		Hex Hd Screw	1/2-20 x 1.00" Lg, Stainless	019802
14	2		Washer, Shakerproof	1/2, Stainless	019803
	1		Washer, 25CCE Only		070089
15	1		Volute, 15CCE, 20CCE		018883
	1		Volute, 25CCE		019102
16	2	†	Pin, Volute		017715
17	1	†	Gasket, Volute		018388
18	1		Body		019042
19	3		Stud	1/2-13 x 2" Lg, Steel	016409
20	7		Lock Washer	1/2", Steel	002608
21	3		Hex Nut	1/2-13, Steel	028173
22	1		Check Valve Assy.		018387
22a	1		Weight	2.75" O.D., Steel	001588
22b	1	†	Gasket	Neoprene	018008
22c	1		Lock Washer	1/4", Stainless	022333
22d	1		Hex Hd Screw	1/4-20 x 1.00" Lg, Stainless	1-7-1
22e	1		Hex Nut	1/4-20, Stainless	15-5-1
22f	1		Weight	4" O.D., Steel	067500
23	1		Suction Flange, 15CCE		018884
24	3		Cap Screw	1/2-13 x 1.25" Lg, Steel	Q15-1-E26
25	1		Pipe Plug	1.00 NPT	003205
26	1		Pipe Plug	1.00 NPT	003205
27	4		Hex Nut	3/8-16 Zp	15-23-6
28	4		Hex Hd Screw	3/8-16 x 1.00"Lg, Stainless	002234

BARNES®

5CU-1
SELF-PRIMING PUMPS
Electric Drive



Model: 5CU-1

American Bureau of Shipping
Certificate No.
01-HS238523E/1-PDA

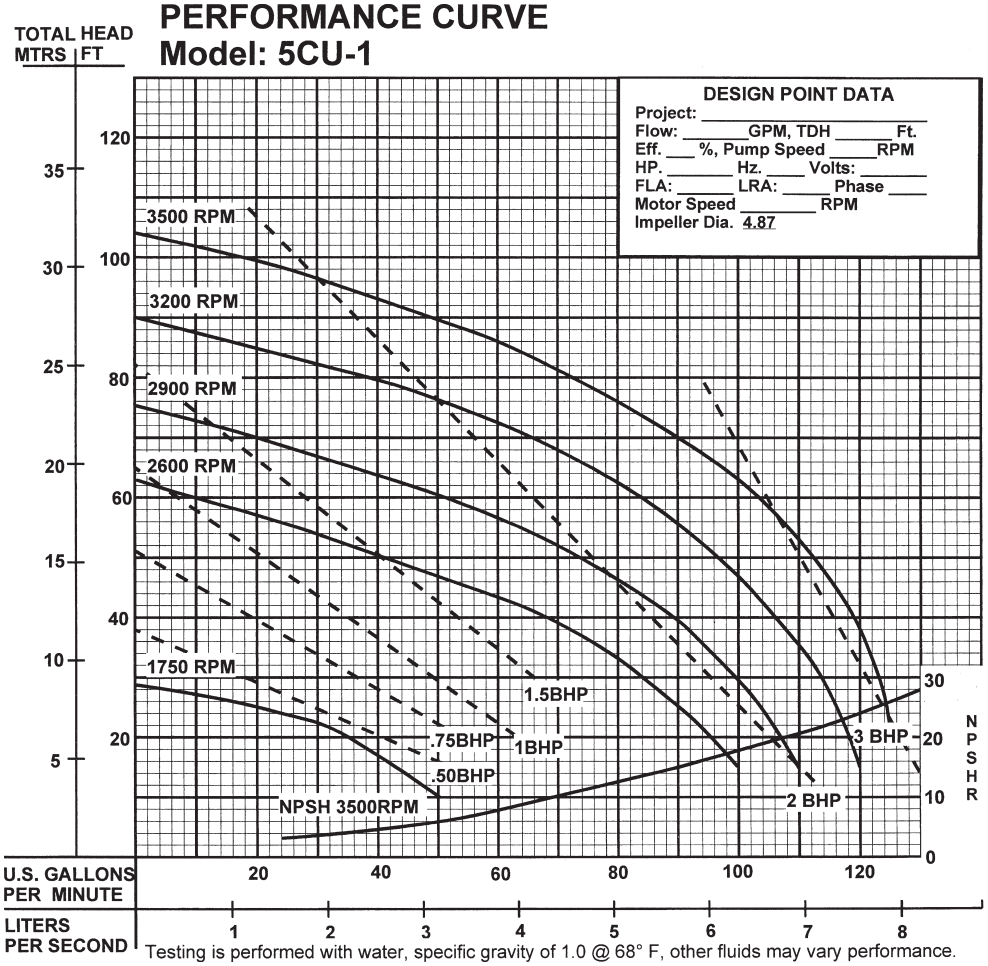
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

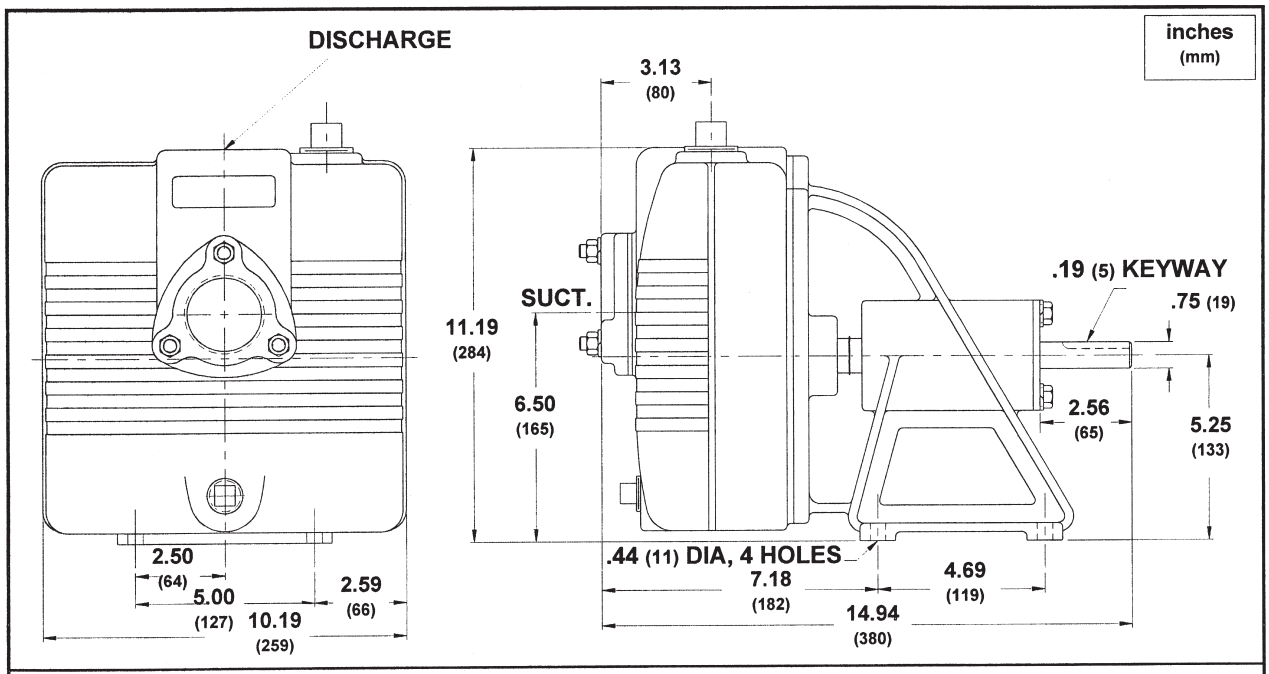
Specifications:

SUCTION/DISCHARGE:		1-1/2" (38mm) x 1-1/2" (38mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30. Removable.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Mechanical
	Lubrication:	Self-Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
OPTIONAL EQUIPMENT:		Seal Material; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: 5CU-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	WEIGHT NET LBS.
5CU-1	019130	78

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

HOTEL STAYS

Because Uncle Sam seems to be able to follow you everywhere, it shouldn't surprise you that after paying taxes on the airline ticket that got you to your favorite vacation destination, you'll have to pay more taxes for a room at a hotel.

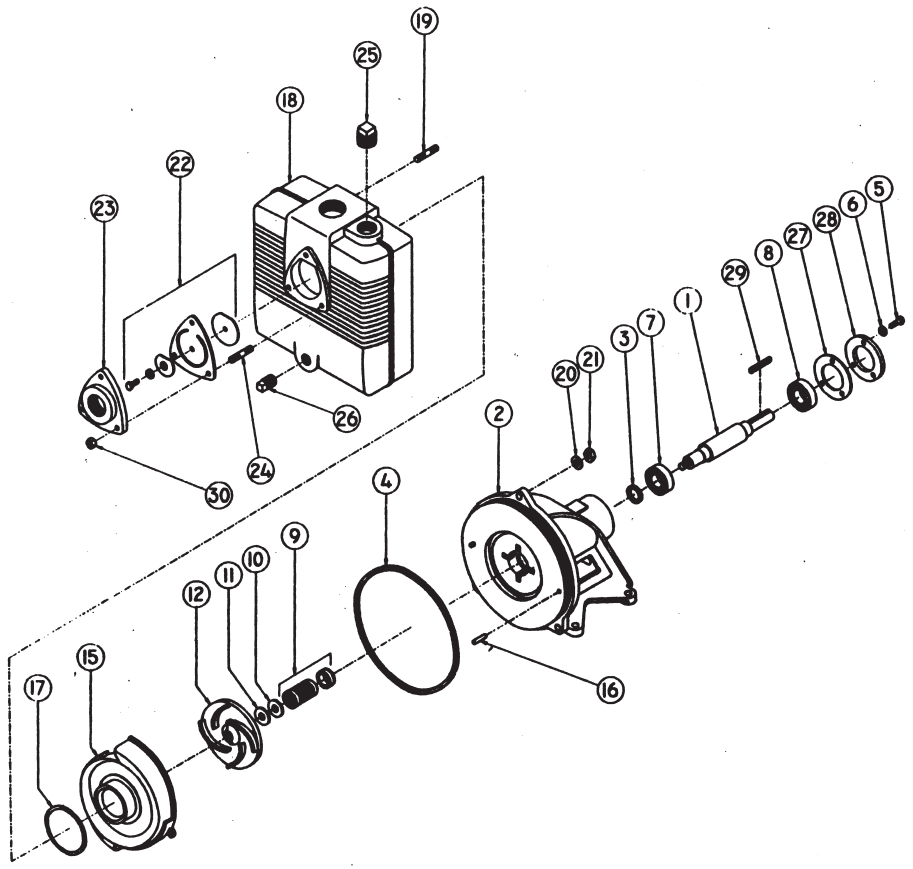
Your bill when you check out includes not only sales taxes, but also local occupancy taxes that could tack on up to 15.4 percent if you're staying in Chicago. That's about $15 of an average hotel bill of $97.06.

But don't forget—hotels pay taxes too. Out of what the consumer pays to the hotel, the hotel must cover costs for federal and state income taxes, federal payroll taxes, sales taxes, capital gains taxes, unemployment insurance taxes, workmen's compensation taxes, business license taxes and fees, utility taxes, local property taxes, and any local income taxes. The hotel must also pay federal and state excise taxes on its telephones. These taxes add another $33.58 to the average cost of a hotel room.

Nearly half of the cost of a hotel room, or as much as 50 percent, pays for taxes. For an average one night stay costing $97.06, this means that up to $48.53 goes straight to the government.

BARNES®

MODEL:	PART No.
5CU-1	019130
7CU-1	018902



5CU-1

SELF-PRIMING PUMPS
Electric Drive

PARTS KIT

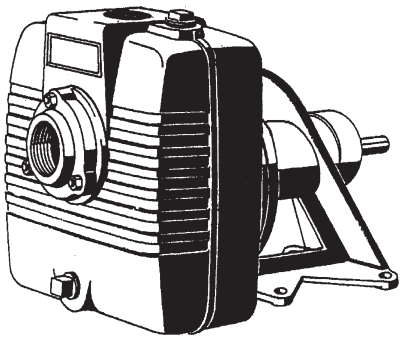
Seal Kit ..... P/N: 021814 (†) 3,4,9,10,11,16,17,22B.

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Shaft	Stainless	018874
2	1		Pedestal		017805
3	1	†	Slinger	Buna-N	018878
4	1	†	O-Ring		017713
5	3		Hex Hd Screw	1/4-20 x .625" Lg, Steel	002201
6	3		Lockwasher	1/4" Steel	002601
7	1		Bearing		017807
8	1		Bearing		017807
9	1	†	Shaft Seal	C/C/N	018873
10	1	†	Shim, .010		017064
11	1	†	Shim, .005		017109
12	1		Impeller	4.87" Dia	018094
15	1		Volute		018095
16	2	†	Volute Pin		017715
17	1	†	Volute Gasket		017714
18	1		Body	5CU-1	018097
				7CU-1	023723
19	3		Stud	3/8-16 x 1.50" Lg, Stainless	018924
20	3		Lock washer	3/8", Stainless	018926
21	3		Hex Nut	3/8-16, Stainless	15-23-1
22	1		Check Valve Assy		017718
22A	1		Weight	2.50" O.D.	001338
22B	1	†	Gasket	Neoprene	017712
22C	1		Lock Washer	1/4" Stainless	022333
22D	1		Round Hd Screw	1/4-20 x .625" Lg, Stainless	023469
22E	1		Weight	1.56" O.D.	001339
23	1		Suction Flange	5CU-1	018099
				7CU-1	018100
24	3		Stud, 5CU-1	5/16-18 x 1.25" Lg, Stainless	018931
			Stud, 7CU-1	5/16-18 x 2.25" Lg, Stainless	018925
25	1		Pipe Plug	1.75" NPT	018951
26	1		Pipe Plug	1.25" NPT	003206
27	3		Shim	3" O.D., Bronze	018435
28	1		Bearing Cap		018434
29	1		Key	3/16 Sq. x 1.63" Lg	005017
30	3		Hex Nut	5/16-18, Stainless	15-19-1

BARNES®

10ICU-1
SELF-PRIMING PUMPS
Electric Drive



Model: 10ICU-1

American Bureau of Shipping Certificate No.
01-HS238523E/1-PDA

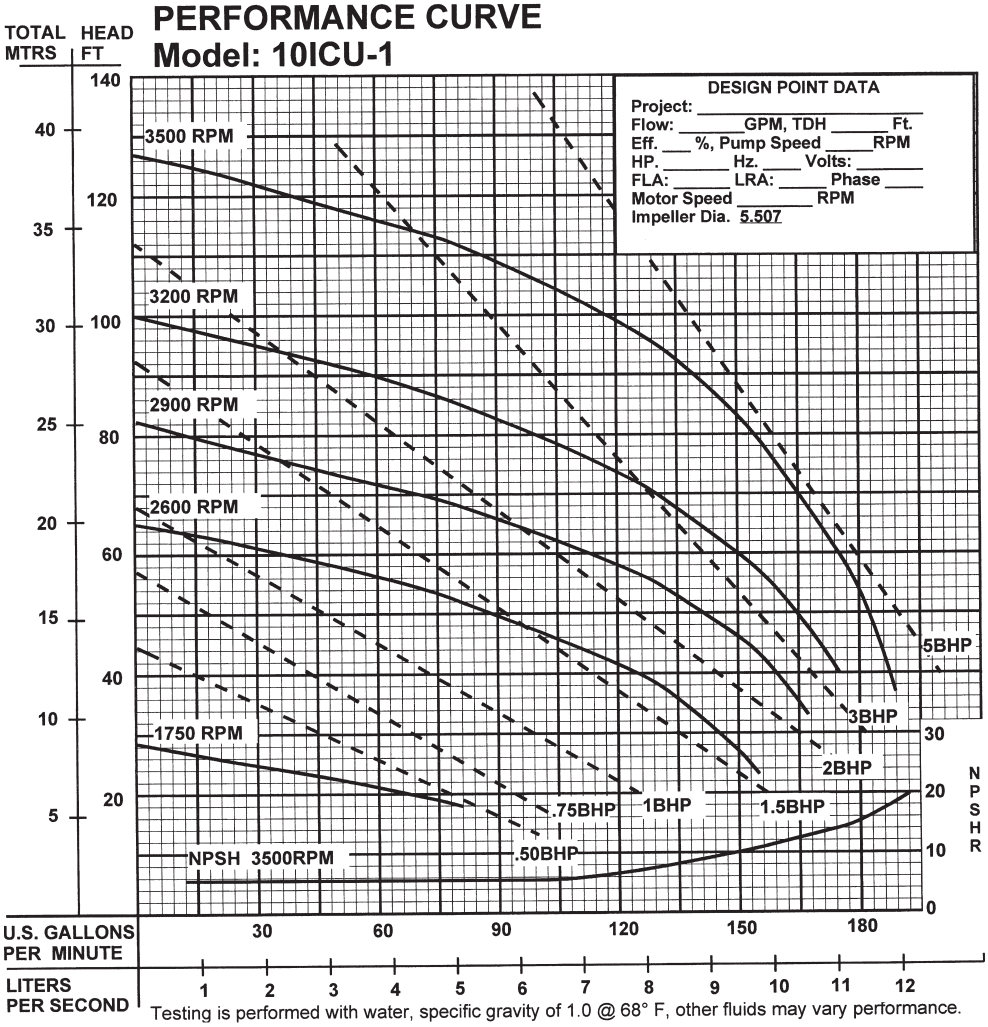
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

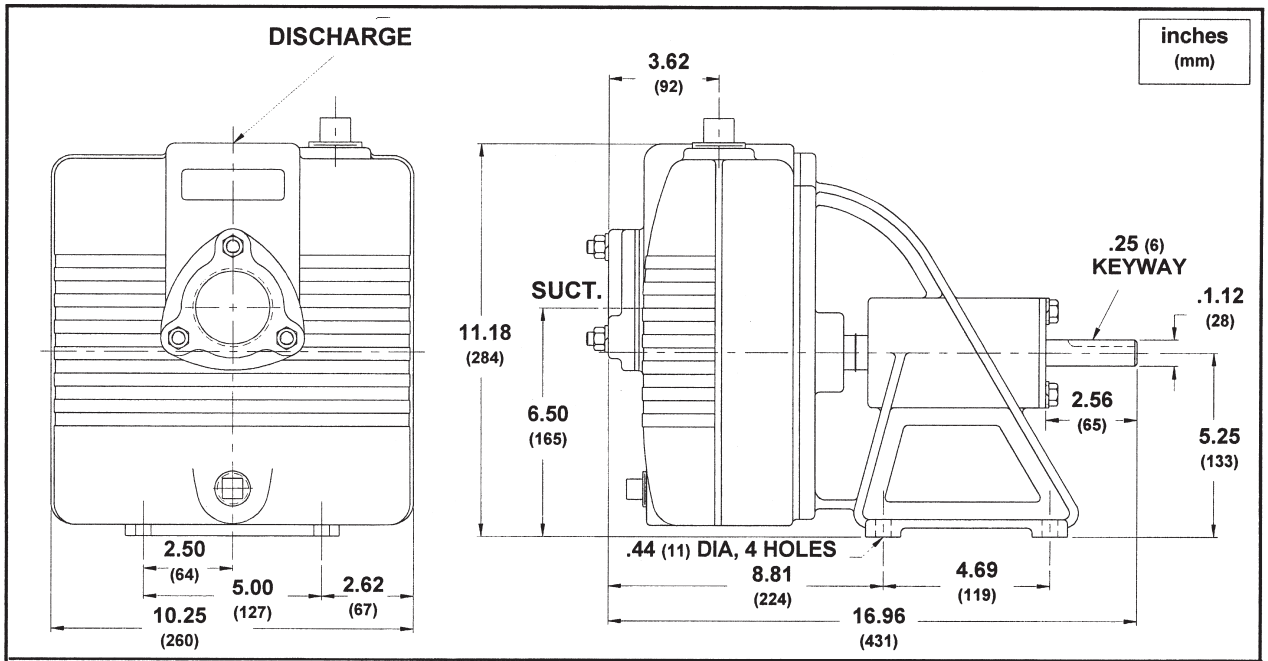
Specifications:

SUCTION/DISCHARGE:		2" (51mm) x 2" (51mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30. Removable.
BODY:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SHAFT SLEEVE:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical with Lip Seal
	Lubrication:	Grease
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
OPTIONAL EQUIPMENT:		Seal Material, Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: 10ICU-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	WEIGHT NET LBS.
10ICU-1	033762	88

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

ELECTRICITY

Government sees your electric power bill as something you cannot avoid, and they're right, of course. They love to impose taxes on it. In addition to sales taxes, states impose gas import taxes or other surcharges on your bill. As a result, on average 11.2 percent of what you pay for your electric power bill goes to state governments for these taxes alone.

For the average customer, this adds up to about $206 per year. But that's only the beginning. Of the remaining funds you pay for the utility, roughly another $266 per year on average goes for taxes as well.

Consequently, about one-fourth of what you pay for your electric bill goes to the government in taxes rather than for the electricity.

For the average customer, this amounts to about $472 per year. Overall, the government collects almost $50 billion per year on taxes paid through your electric bill alone.

(Note: If the Senate were to ratify the proposed Global Warming Treaty advocated by former Vice President Al Gore, many experts believe that the above numbers would be more than doubled.)

LANDLINE PHONES

In today's high-tech world, consumers have a wide range of choices for their voice services. Where there used to only be a landline phone, there are now cell phones, Voice over Internet Protocol (VoIP) services, and cable digital voice services. Recently the Beacon Hill Institute of Massachusetts surveyed 59 US cities and came up with average taxes paid for a wide variety of telecommunications services.

According to their study, consumers pay 17.23 percent of their average monthly landline (traditional) phone bill in taxes and fees . With monthly bills estimated at $49.33, you pay $8.50 for a landline phone.

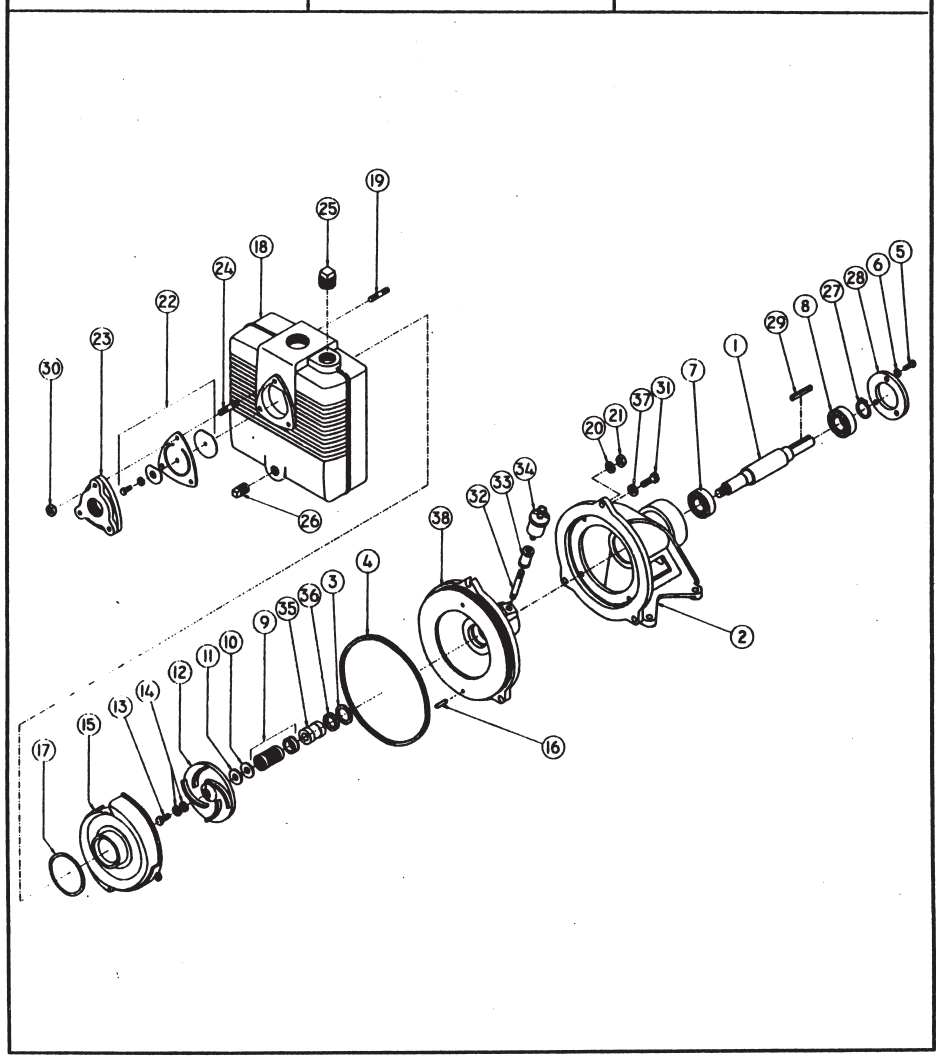
These numbers take into account phone-specific taxes like the federal Universal Service Fund, the 911 tax, the city telecom taxes, TDD (deaf tax), and state universal service.

However, what the Beacon Hill study does not take into account are costs for federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen's compensation taxes, local property taxes and any local income taxes. Altogether, these taxes dial up the actual "bite" to $25.55 for a landline phone.

When added to the taxes and fees paid directly by the consumer, a total of 51.8 percent of a traditional phone bill actually pays for government taxes and fees.

BARNES®

MODEL:	PART No.
10ICU-1	033762



10ICU-1

SELF-PRIMING PUMPS
Electric Drive

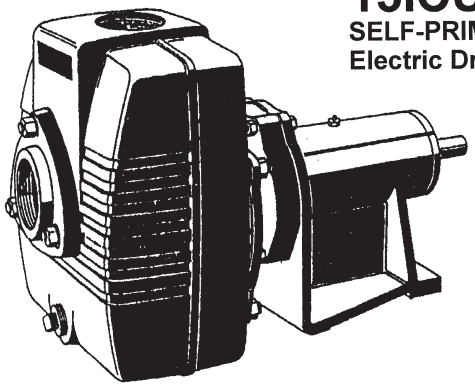
PARTS LIST

ITEM	QTY.	DESCRIPTION		PART No.
1	1	Shaft	Stainless	033756
2	1	Pedestal		019643
3	1	Slinger	Buna-N	005163
4	1	O-Ring		017713
5	3	Hex Hd Screw	10-32 x .50" Lg, Zp	019842
6	3	Lockwasher	#10 Steel	002618
7	1	Bearing		019846
8	1	Bearing		019847
9	1	Shaft Seal	C/CE/N	022197
10	1	Shim, .010		001349
11	1	Shim, .031		001348
12	1	Impeller	4.87" Dia	033759
13	1	Hex Hd Screw	1/2-20 x 1.00" Lg. Stainless	019802
14	2	Shakeproof Washer	1/2" Stainless	019803
15	1	Volute		019069
16	2	Volute Pin		017715
17	1	Volute Gasket		019245
18	1	Body		019135
19	3	Stud	3/8-16 x 2.00" Lg, Stainless	033824
20	3	Lock washer	3/8", Stainless	018926
21	3	Hex Nut	3/8-16, Stainless	15-23-1
22	1	Check Valve Assy		017718
22A	1	Weight	2.50" O.D.	001338
22B	1	Gasket	Neoprene	017712
22C	1	Lock Washer	1/4" Stainless	022333
22D	1	Round Hd Screw	1/4-20 x .625" Lg, Stainless	023469
22E	1	Weight	1.56" O.D.	001339
23	1	Suction Flange		018100
24	3	Stud	5/16-18 x 2.25" Lg, Stainless	018925
25	1	Pipe Plug	1.25" NPT	003206
26	1	Pipe Plug	1.75" NPT	018951
27	1	Snap Ring		019851
28	1	Bearing Cap		019845
29	1	Key	1/4 Sq. x 1.25" Lg	021092
30	3	Hex Nut	5/16-18, Stainless	15-19-1
31	4	Hex Hd Screw	5/16-18 x 1.00", Stainless	1-156-1
32	1	Pipe Nipple	.25" NPT	003283
33	1	Coupling	.25" NPT	003226
34	1	Grease Cup		001684
35	1	Shaft Sleeve	Stainless	033757
36	1	Lip Seal		026308
37	4	Lock Washer	5/16 Stainless	026322
38	1	Seal Plate		033727

BARNES®

15ICU-1

SELF-PRIMING PUMPS
Electric Drive



Models: 15 ICU-1

American Bureau of Shipping
Certificate No.
01-HS238523E/1-PDA

Description:

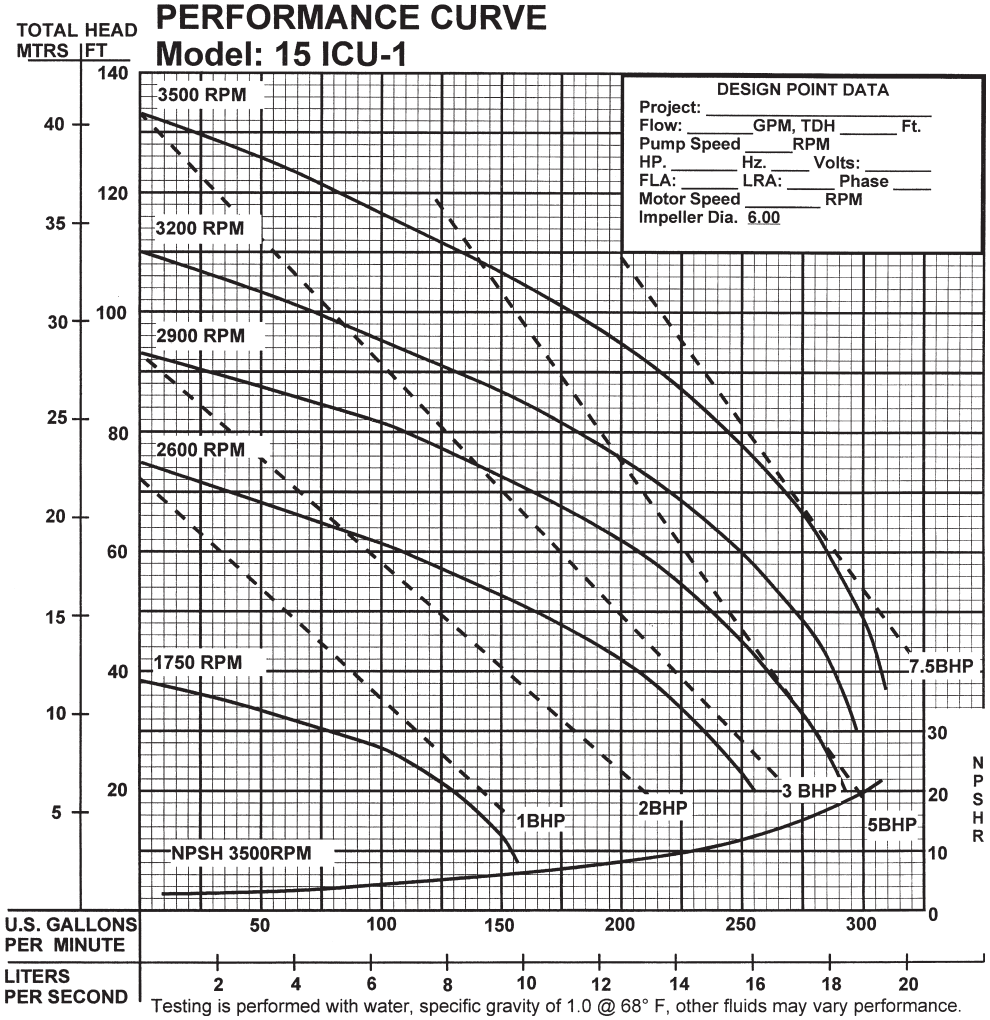
SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

Specifications:

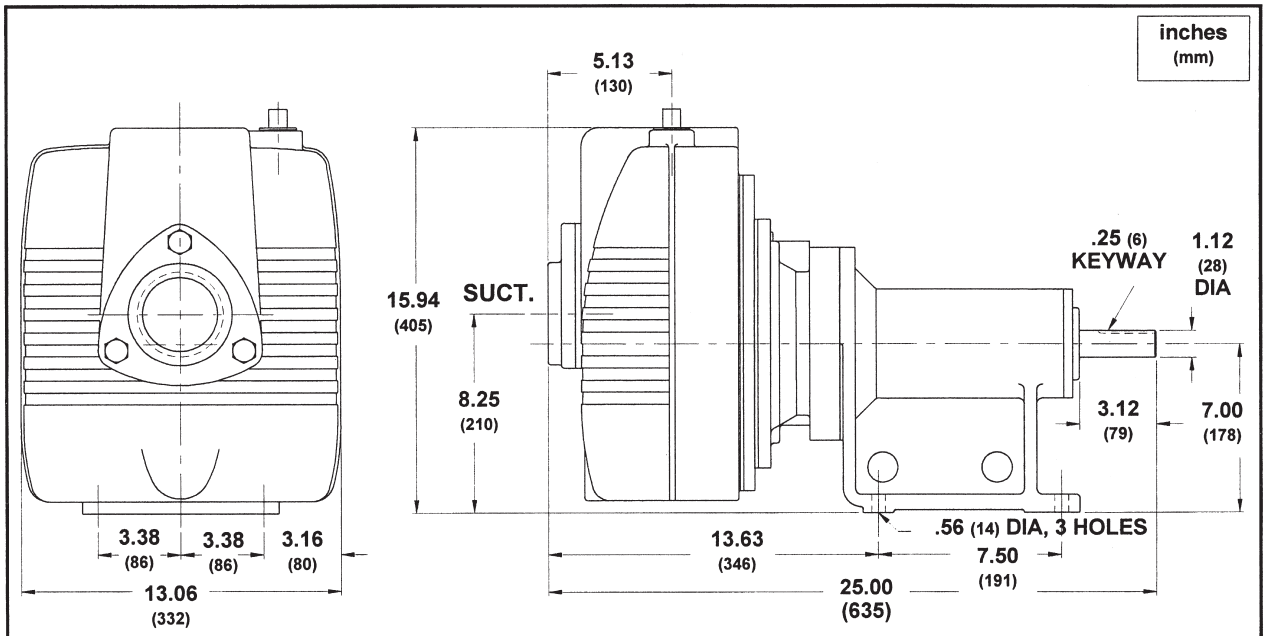
SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30. Removable.
BODY:		Cast Iron ASTM A-48, Class 30.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel
SEAL:	*Design:*	Single Mechanical with Lip Seal
	Lubrication:	Oil
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30

OPTIONAL EQUIPMENT: Seal Material, Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: 15 ICU-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



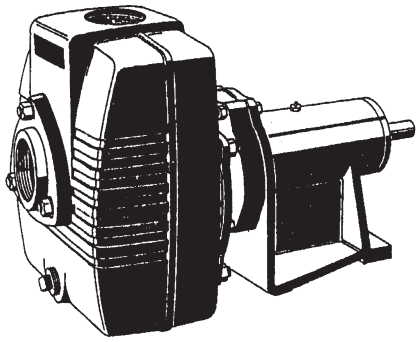
MODEL NO.	PART NO.	WEIGHT NET LBS.
15ICU-1	052596	224

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

20 ICU-1

SELF-PRIMING PUMPS
Universal Drive



Models: 20 ICU-1

American Bureau of Shipping Certificate No.
01-HS238523E/1-PDA

Description:

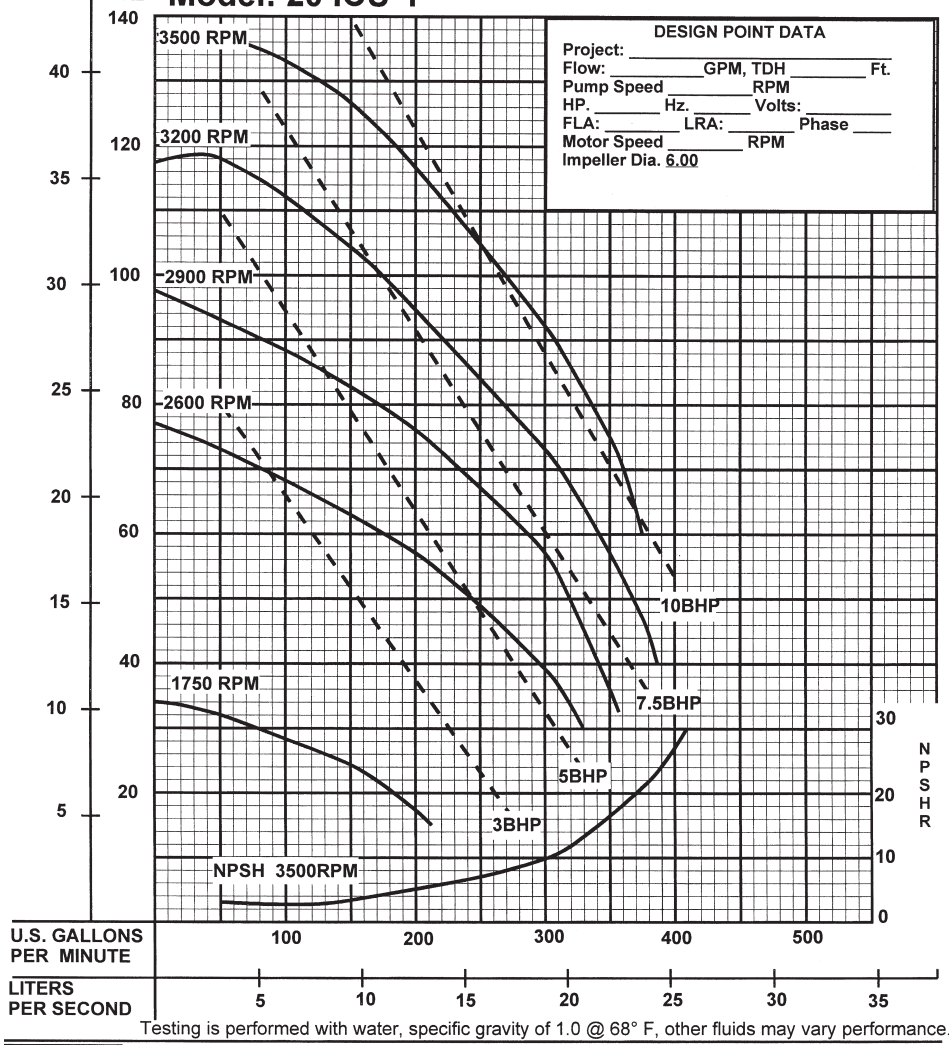
SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

Specifications:

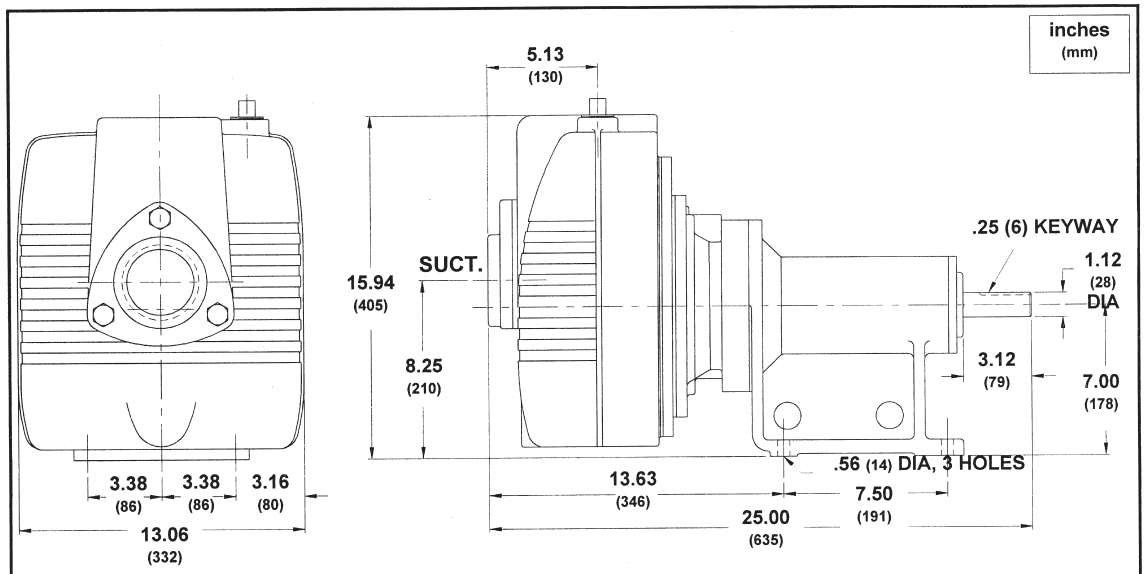
SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30. Removable.
BODY:		Cast Iron ASTM A-48, Class 30.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical with Lip Seal
	Lubrication:	Oil
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30

OPTIONAL EQUIPMENT: Seal Material, Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: 20 ICU-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



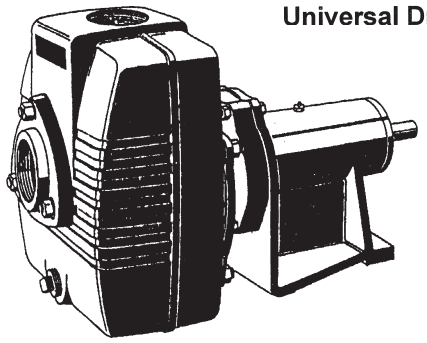
MODEL NO.	PART NO.	WEIGHT NET LBS.
20ICU-1	052624	223

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

BARNES®

25 ICU-1
SELF-PRIMING PUMPS
Universal Drive



Model: 25 ICU-1

American Bureau of Shipping
Certificate No.
01-HS238523E/1-PDA

Description:

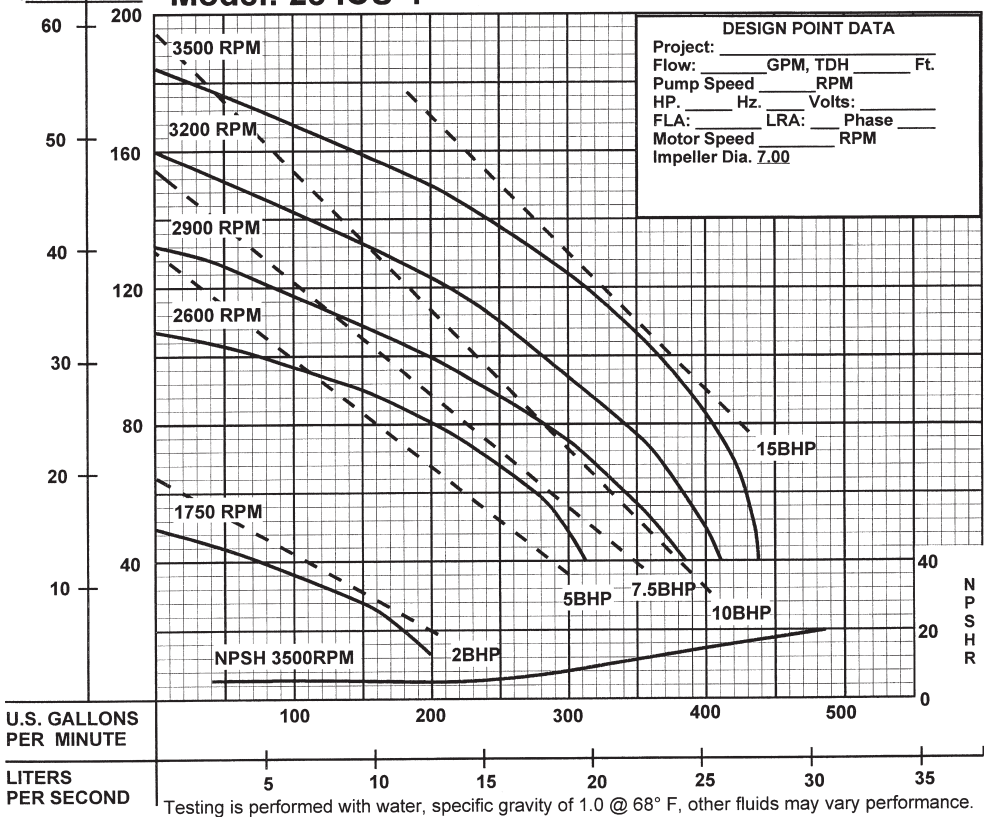
SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MARINE, MUNICIPAL AND INDUSTRIAL APPLICATIONS.

Specifications:

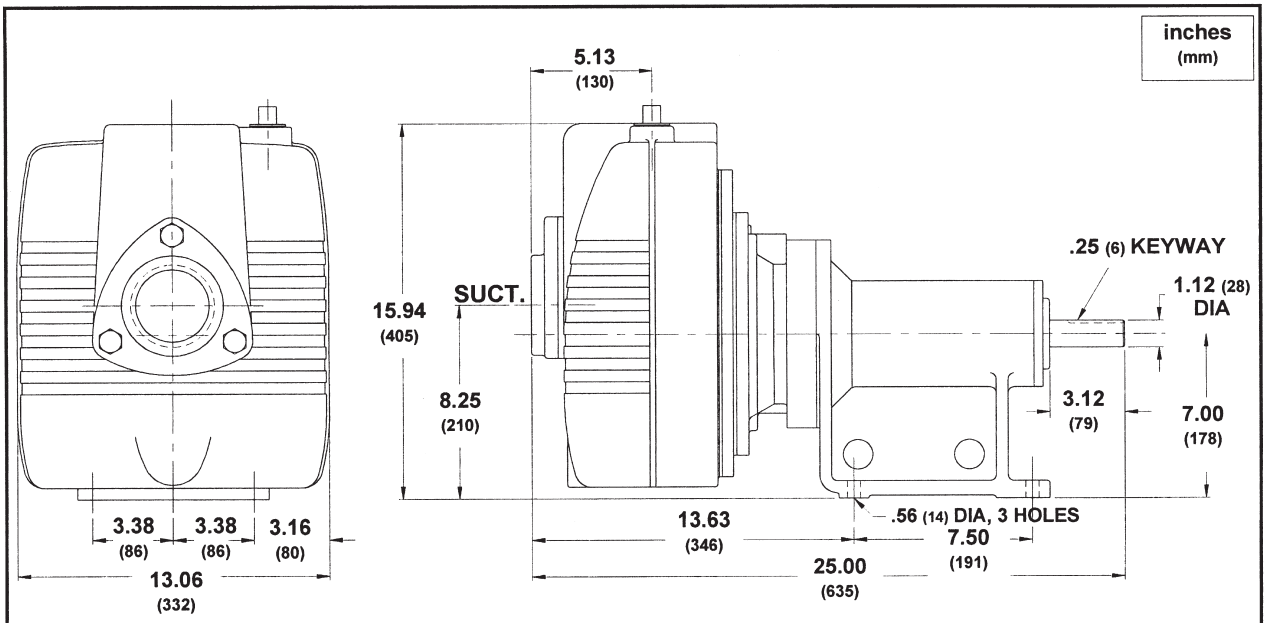
SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
VOLUTE:		Cast Iron ASTM A-48, Class 30. Removable.
BODY:		Cast Iron ASTM A-48, Class 30.
INTERMEDIATE:		Cast Iron ASTM A-48, Class 30.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Open, Trash Type.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Stainless Steel
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical with Lip Seal
	Lubrication:	Oil
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease
	Load:	Radial
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30

OPTIONAL EQUIPMENT: Seal Material, Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: 25 ICU-1



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	WEIGHT NET LBS.
25ICU-1	052626	236

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

TAX BITES

Firearms

Whether for sport or self-protection, many citizens jump through bureaucratic hoops to legally purchase a firearm. Before they can pull the trigger, the government targets their purchases for taxes.

All gun sales are subject to a federal excise tax of up to 11 percent paid directly by the consumer in addition to the state and local sales tax rates. But because other taxes are imposed on the manufacturer, the true amount of the price of a gun that pays for taxes must account for federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen's compensation taxes, local property taxes and any local income taxes, which are paid by the producer. These taxes add another $173 onto the final sale of a $500 firearm.

For a $500 firearm, the government loads on 45.6 percent of the cost in taxes – collecting $228 per gun.

TAXES IMPOSED ON GAS PRODUCTION & SALES: On the average cost of a gallon of gas, 51% is taxes

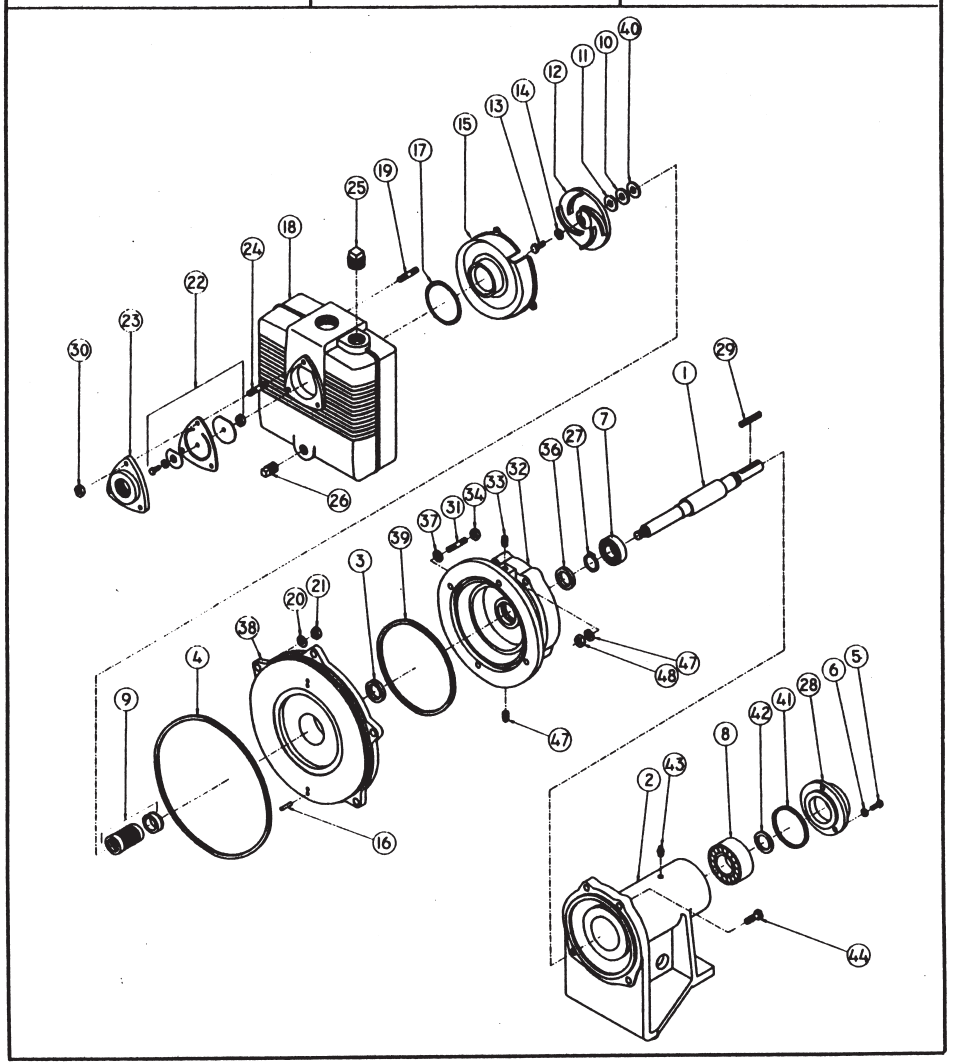
FEDERAL TAXES: Corporate Income Tax Individual Income Tax Capital Gains Tax Corporate Environmental Tax FICA Tax FUTA Tax Duties on Imported Crude and Product Customs Ad Valorem User Fee Airport and Airway Trust Fund Tax Harbor Maintenance Trust Fund Tax Superfund Crude Oil Tax Oil Spill Liability Trust Fund Tax Highway Trust Fund Tax Aquatic Resources Trust Fund Tax Deficit Reduction Excise Tax Inland Waterways Trust Fund Tax Heavy Truck and Trailer Tax Excise Tax on Tires Federal Telephone Excise Taxes

STATE TAXES: Corporate Income Taxes Individual Income Taxes Franchise Taxes Unemployment Taxes Sales and Use Taxes Motor Fuel Excise Taxes Sales Taxes on Motor Fuels Fuel Use Taxes Superfund Taxes Used Oil Disposal Taxes Waste Disposal Taxes Business Property Taxes Real Property Taxes Pipeline Throughput Taxes Severance Taxes Production Taxes Refinery Throughput Taxes Conservation Taxes Telephone Excise Taxes Environmental Impact Taxes Public Highway Use Taxes Heavy Truck Highway Use Taxes

BARNES®

SERIES: 15ICU-1, 20ICU-1, 25ICU-1

MODEL:	PART No.
15ICU-1	052596
20ICU-1	052624
25ICU-1	052626



PARTS KIT

Seal Kit ..... P/N: 085241 (+) 4,9,10,11,13,14,17,20,21,22B,36,39.

Overhaul Kit . P/N: 085240 (♦) 4,5,6,7,8,9,10,11,13,14,17,20,22B,27,29,30,34,36,37,39,41,42,45,46,49

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Shaft	Stainless	077904
2	1		Pedestal		039982
3	1		Slinger	Buna-N	005163
4	1	♦+	O-Ring		018386
5	4	♦	Hex Hd Screw	5/16-18 x .875" Lg, Stainless	027113
6	4	♦	Lockwasher	5/16 Stainless	026322
7	1	♦	Bearing		033491
8	1	♦	Bearing		039332
9	1	♦+	Shaft Seal	C/CE/N	052601
10	1	♦+	Shim, .010		001349
11	1	♦+	Shim, .031		001348
12	1		Impeller, 15ICU-1	5.9" Dia	090053TB
			Impeller, 20ICU-1	5.9" Dia	090050TB
			Impeller, 25ICU-1	7.00" Dia	051102
13	1	♦+	Hex Hd Screw	1/2-20 x 1.00" Lg. Stainless	019802
14	2	♦+	Shakeproof Washer, 15 & 20ICU-1	1/2" Stainless	019803
			Washer, 25ICU-1	Stainless	070089
15	1		Volute, 15 & 20ICU-1		018883
			Volute, 25ICU-1		019102
16	2		Volute Pin		039992
17	1	♦+	Volute Gasket		018388
18	1		Body		019042
19	5		Stud	1/2-13 x 2.00" Lg, Stainless	021078
20	5	♦+	Lock washer	1/2", Stainless	021077
21	5	+	Hex Nut	1/2-13, Stainless	15-6-1
22	1		Check Valve Assy		018387
22A	1		Weight	2.75" O.D.	001588
22B	1	♦+	Gasket	Neoprene	018008
22C	1		Lock Washer	1/4" Stainless	022333
22D	1		Hex Hd Screw	1/4-20 x 1.00" Lg, Stainless	1-7-1
22E	1		Hex Nut	1/4-20, Stainless	15-5-1
22F	1		Weight	4" O.D.	067500
23	1		Suction Flange		018884
24	3		Stud	1/2-13 x 2.00" Lg, Stainless	021078
25	1		Pipe Plug	1.00" NPT	003205
26	1		Pipe Plug	1.00" NPT	003205
27	1	♦	Snap Ring		019851
28	1		Bearing Cap		039958
29	1	♦	Key	1/4 Sq. x 2.25" Lg	033771
30	3	♦	Hex Nut	1/2-13, Stainless	15-6-1
31	4		Stud	3/8-16 x 1.75", Stainless	019034
32	1		Coupling Head		051188
33	1		Pipe Plug	3/8 NPT	015000
34	4	♦	Hex Nut	3/8-16, Stainless	15-23-1
36	1	♦+	Lip Seal		039465
37	4	♦	Lock Washer	3/8 Stainless	018926
38	1		Seal Plate		039984
39	1	♦+	O-Ring		059665
40	1		Shim Seal		026990
41	1	♦	O-Ring		026997
42	1	♦	Lip Seal		026309
43	1	♦	Relief Fitting	.125 NPT	026307
44	4	♦	Hex Hd Screw	7/16-14 x 2.50" Lg, Stainless	027114
47	4		Lock Washer	7/16, Stainless	027115
48	4		Hex Nut	7/16-14, Stainless	027116

BARNES®

2020HCU

END SUCTION PUMPS
Universal Drive

Model: 2020HCU

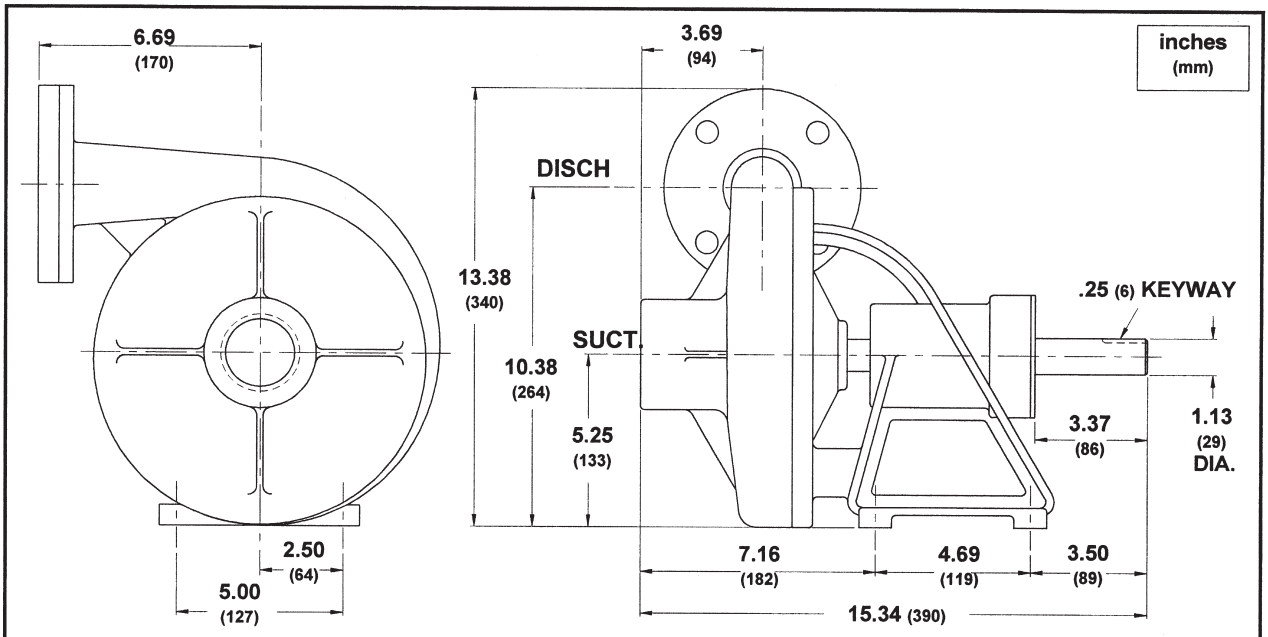
American Bureau of Shipping Certificate No.
01-HS238523D/1-PDA

Description:

THESE PUMPS ARE SUITABLE FOR GENERAL INDUSTRIAL USE SUCH AS, LIQUID TRANSFER OR AS BOOSTER PUMPS.

Specifications:

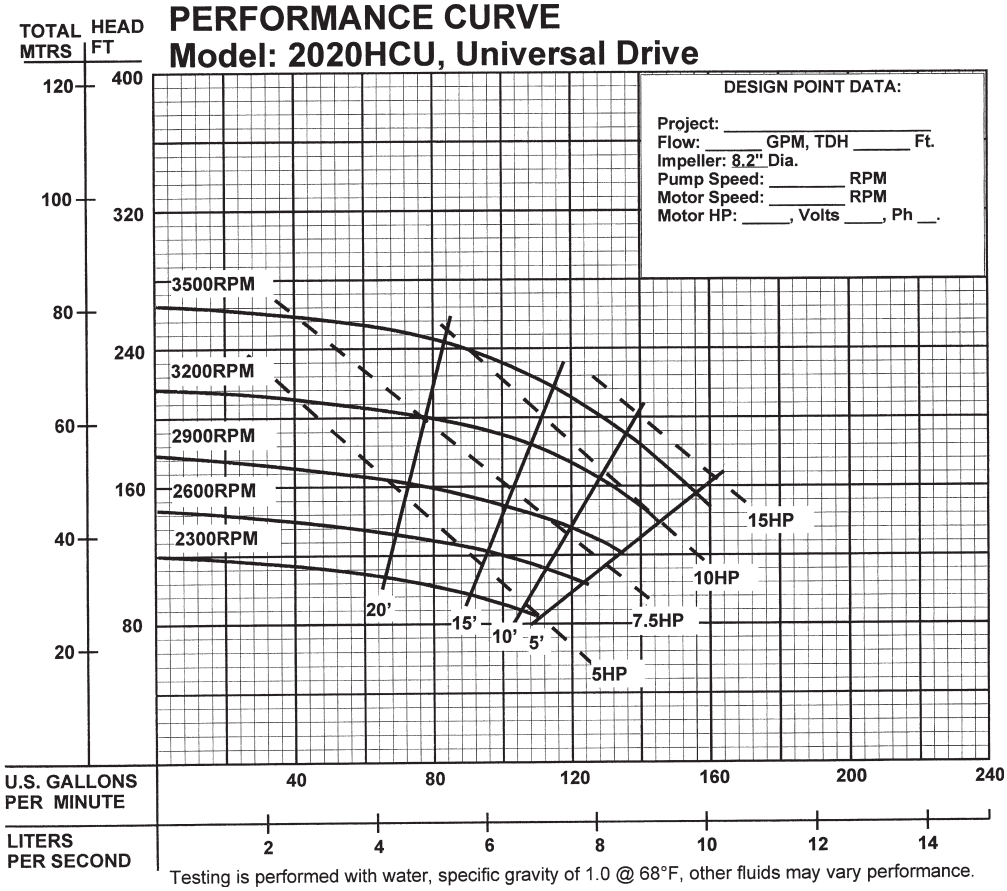
SUCTION/DISCHARGE:		2" (51mm) NPT Suction, 2"(51mm)125lb Flange Discharge. Discharge can be placed in 8 different locations depending on piping requirements.
LIQUID TEMPERATURE:		180°F (82°C) Continuous.
BODY:		Cast Iron, ASTM Class 30, with Air Vent, Vacuum Pressure and Drain Plugs.
PEDESTAL:		Cast Iron, ASTM Class 30.
IMPELLER:		
	Design:	Enclosed Type,
	Material:	81-3-7-9 Bronze. Dynamically Balanced, ISO G6.3.
WEAR RING:		Teflon "U" Cup
SHAFT:		Steel
SHAFT SLEEVE:		Bronze
HARDWARE:		Steel
PAINT:		Air Dry Enamel.
SEAL:		
	Design:	Single Mechanical
	Lubrication:	Self Lubricating
	Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - Stainless Steel
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Grease, Factory Lubrication.
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Grease, Factory Lubrication.
	Load:	Radial & Thrust
OPTIONAL EQUIPMENT:		Discharge Check Valve, Hand Primer, Base &OSHA Coupling Guard, Flex Coupling, Strainer.



MODEL NO.	PART NO.	WEIGHT LBS.
2020HCU	029676	74

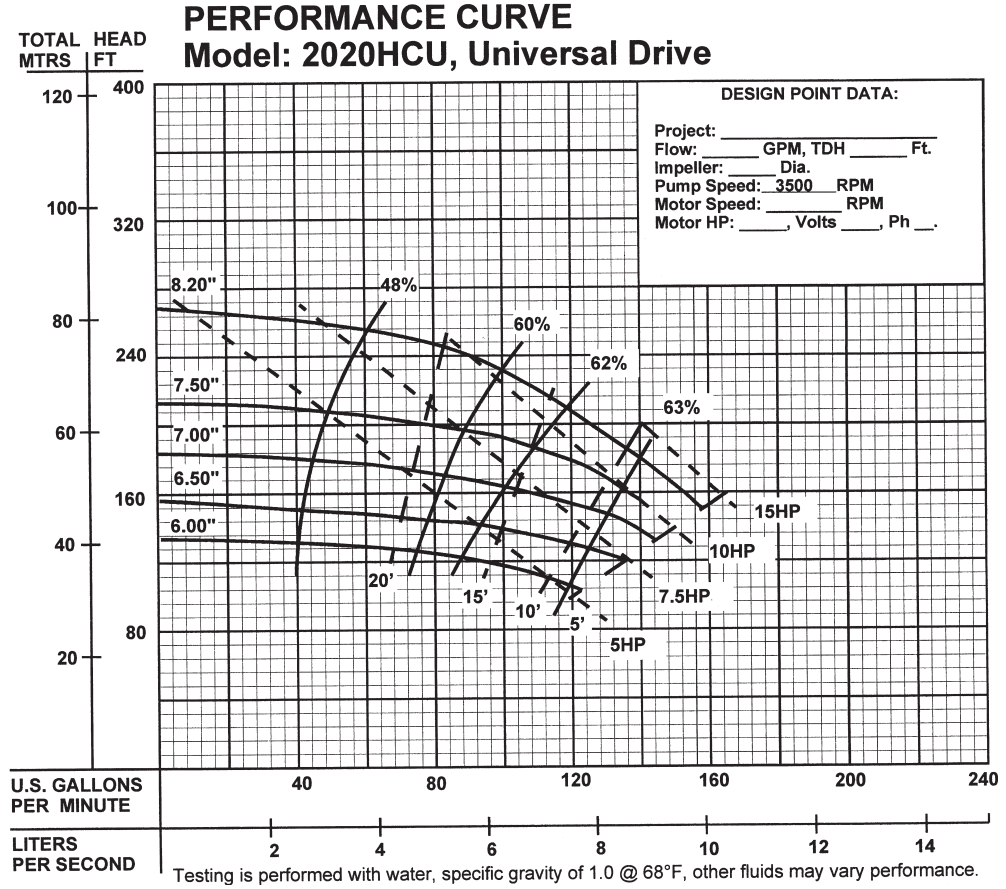
IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: 2020HCU, Universal Drive



Testing is performed with water, specific gravity of 1.0 @ 68°F, other fluids may vary performance.

PERFORMANCE CURVE
Model: 2020HCU, Universal Drive



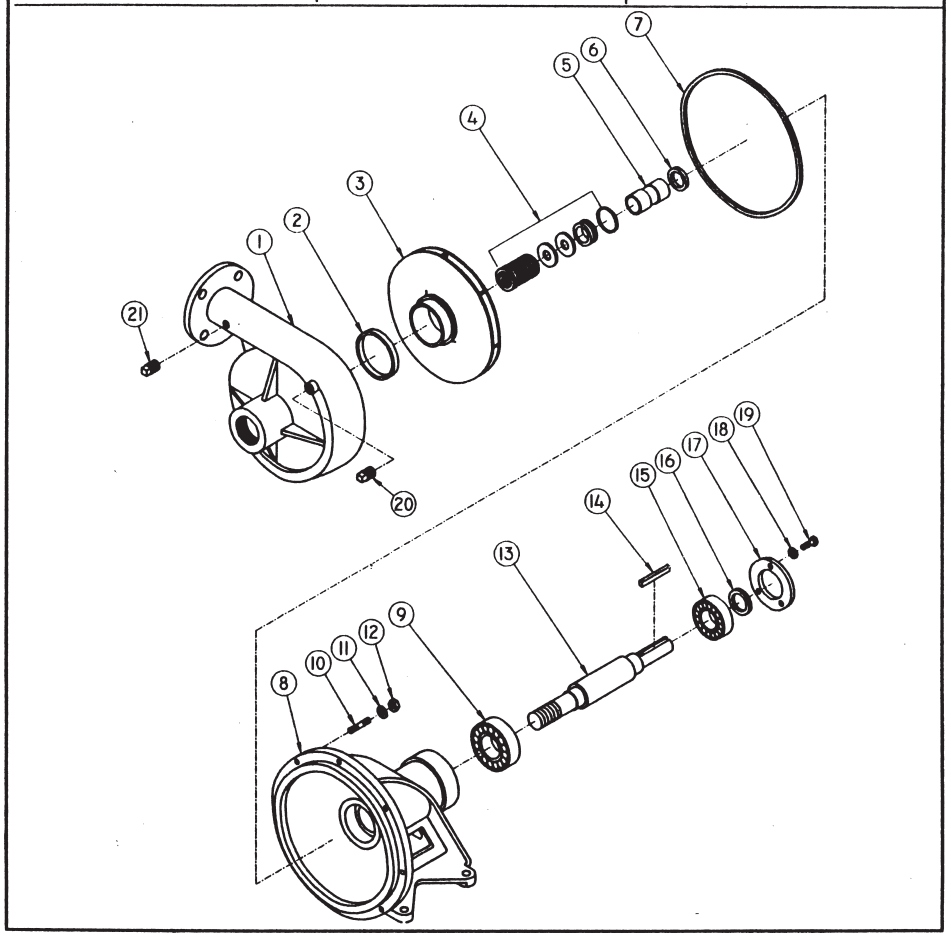
Testing is performed with water, specific gravity of 1.0 @ 68°F, other fluids may vary performance.

BARNES®

2020HCU

END SUCTION PUMPS
Universal Drive

MODEL:	PART No.
2020HCU	029676



PARTS KIT

Seal Kit.....P/N: 083560 (†) 2,4,5,6,7.

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Body		022026
2	1	†	U-Cup		021858
3	1		Impeller		021294
4	1	†	Shaft Seal	C/NR/B	019146
5	1	†	Shaft Sleeve	Bronze	018071
6	1	†	Slinger		005163
7	1	†	Square Ring		021297
8	1		Pedestal		029084
9	1		Bearing		019846
10	8		Stud	5/16-18 x 1.75" Lg	002410
11	8		Lock Washer	5/16	002603
12	8		Hex Nut	5/16-18	002501
13	1		Shaft		021038
14	1		Shaft Key		021092
15	1		Bearing		019847
16	1		Snap Ring		019851
17	1		Bearing Cap		019845
18	3		Lock Washer	#10	002618
19	3		Machine Screw	#10-32 x .50" Lg, ZP	019842
20	3		Pipe Plug	.375" NPT	015000
21	2		Pipe Plug	.25" NPT	003217

TAX BITES
Distilled Spirits

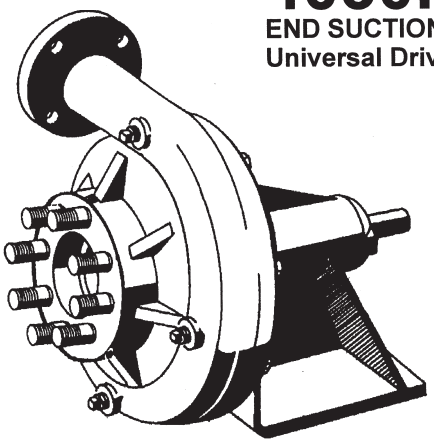
Another target of the "sin tax"- loving legislators is distilled spirits. Taxes on distilled spirits are among the highest taxes imposed on any product. Nearly 80 percent of what you pay for a bottle goes to the government in taxes rather than for the liquor. At an average price of $13.10 for a 750mL bottle of 80 proof spirits, this amounts to the government stirring in $10.43 to your total at the register.

The federal excise tax pours $2.14 into the average cost of a 750 ml bottle, or about 16 percent of the $13.10. Then the median state excise taxes add another $3.75 to the same bottle. And because distilled spirits producers must pay federal and state income taxes, federal payroll taxes, property taxes and other taxes, these costs are passed on to consumers. These taxes tack on another $4.53 to the total price of a bottle of distilled spirits.

BARNES®

4030HCU

END SUCTION PUMPS
Universal Drive



Model: 4030HCU

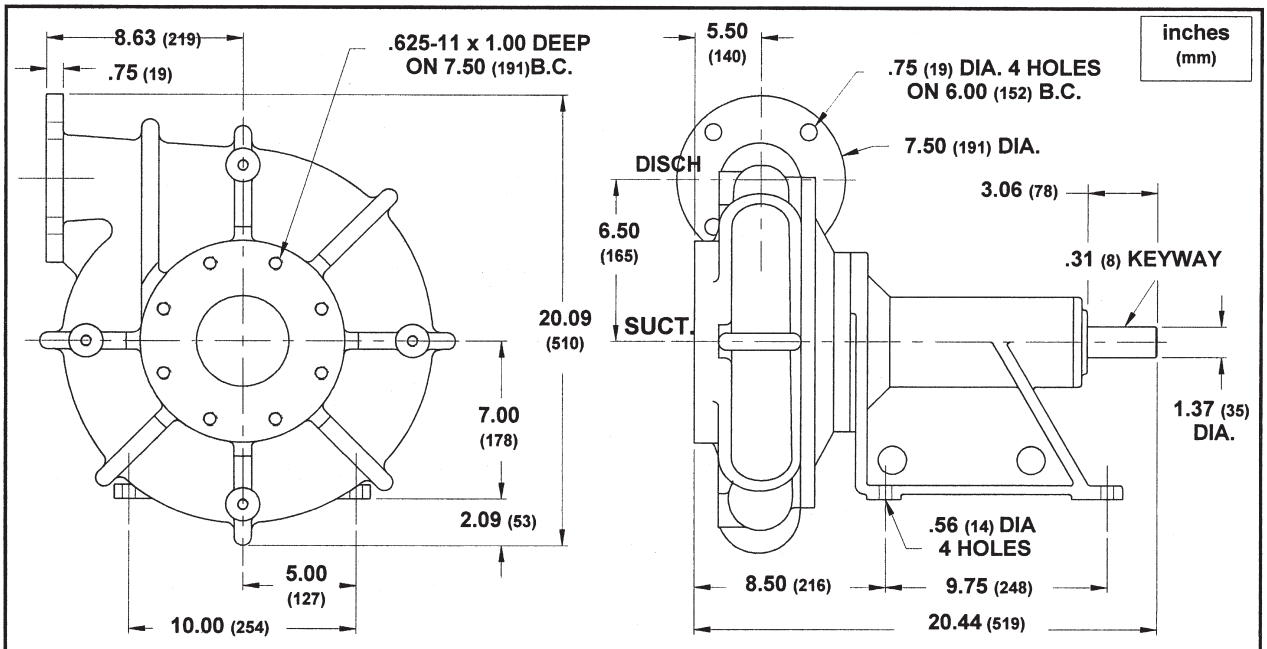
American Bureau of Shipping
Certificate No.
01-HS238523D/1-PDA

Description:

THESE PUMPS ARE SUITABLE FOR GENERAL INDUSTRIAL USE SUCH AS, LIQUID TRANSFER OR AS BOOSTER PUMPS.

Specifications:

SUCTION/DISCHARGE:	4" (102mm) Suction, 3" (76mm) Discharge, 125lb Flange. Discharge can be placed in 8 different locations depending on piping requirements.
LIQUID TEMPERATURE:	180°F (82°C) Continuous.
BODY:	Cast Iron, ASTM Class 30, with Air Vent, Vacuum Pressure and Drain Plugs.
PEDESTAL:	Cast Iron, ASTM Class 30.
IMPELLER:	
Design:	Enclosed Type,
Material:	Cast Iron, ASTM Class 30. Dynamically Balanced, ISO G6.3.
WEAR RING:	Bronze
SHAFT:	Steel
SHAFT SLEEVE:	Bronze
HARDWARE:	Steel
PAINT:	Air Dry Enamel.
SEAL:	
Design:	Single Mechanical
Lubrication:	Self Lubricating
Material:	Rotating Face - Carbon Stationary Face - Ni-Resist Elastomer - Buna-N Hardware - Stainless Steel
BEARING-PUMP END:	
Design:	Single Row, Ball
Lubrication:	Grease, Factory Lubrication.
Load:	Radial & Thrust
BEARING-DRIVE END:	
Design:	Single Row, Ball
Lubrication:	Grease, Factory Lubrication.
Load:	Radial & Thrust
OPTIONAL EQUIPMENT:	Discharge Check Valve, Hand Primer, Base &OSHA Coupling Guard, Flex Coupling, Strainer, Bronze Impeller, Companion Flange, Flange Gasket.

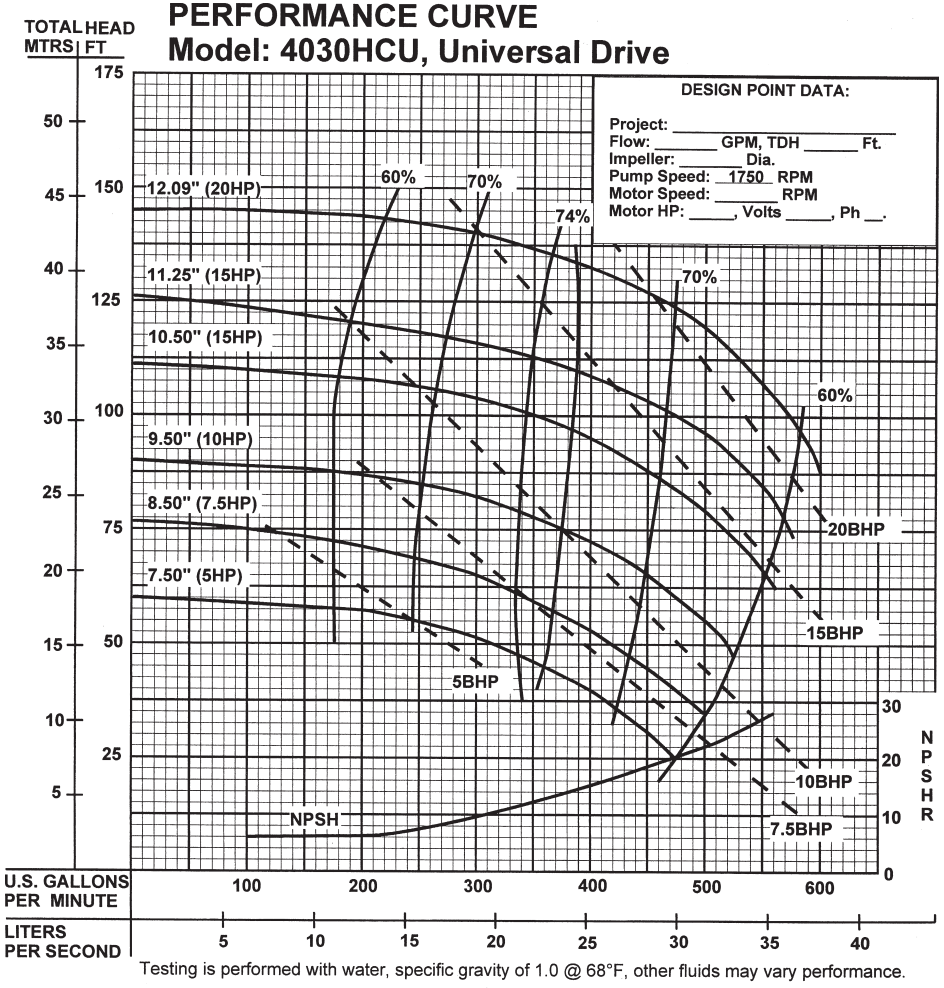


MODEL NO.	PART NO.	WEIGHT LBS.
4030HCU	059459	254

IMPORTANT !

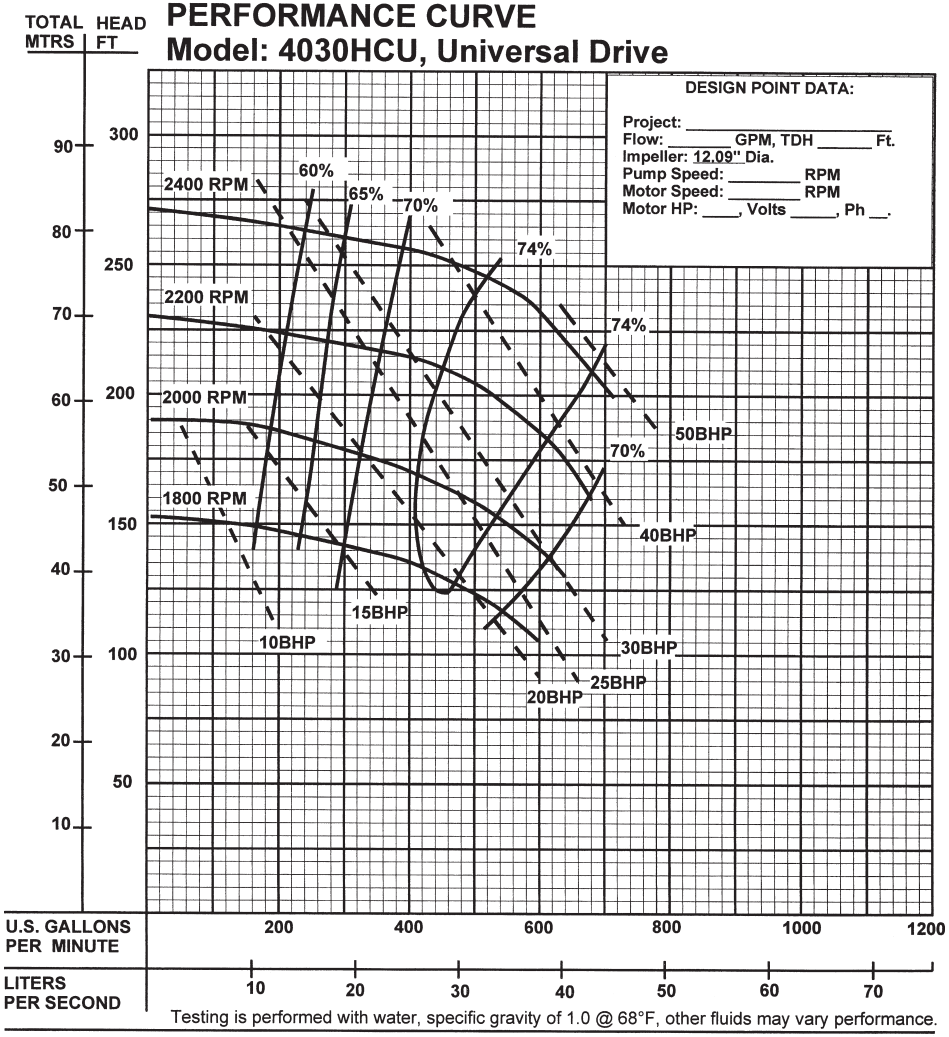
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: 4030HCU, Universal Drive



Testing is performed with water, specific gravity of 1.0 @ 68°F, other fluids may vary performance.

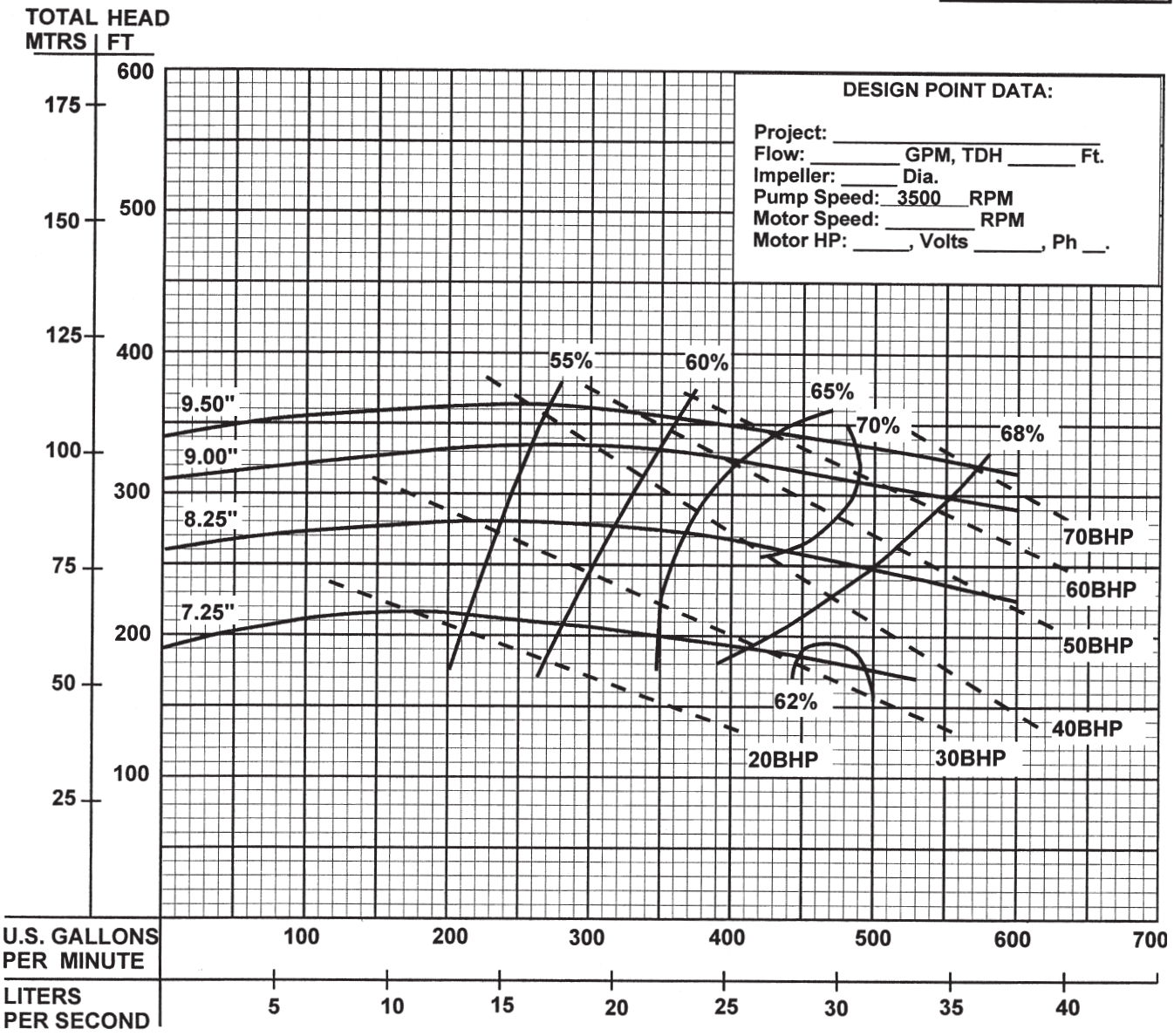
PERFORMANCE CURVE
Model: 4030HCU, Universal Drive



Testing is performed with water, specific gravity of 1.0 @ 68°F, other fluids may vary performance.

PERFORMANCE CURVE
Model: 4030HCU, Universal Drive

SECTION	5B
PAGE	11
DATE	2/97
REPLACES	1/96



TAX BITES
CELLULAR PHONES

In today's high-tech world, consumers have a wide range of choices for their voice services. Where there used to only be a landline phone, there are now cell phones, Voice over Internet Protocol (VoIP) services, and cable digital voice services. Recently the Beacon Hill Institute of Massachusetts surveyed 59 US cities and came up with average taxes paid for a wide variety of telecommunications services.

According to their study, consumers pay 11.78 percent of their average monthly wireless bill to the government. With monthly bills estimated at $49.98, you pay $5.89 for a wireless.

These numbers take into account phone-specific taxes like the federal Universal Service Fund, the 911 tax, the city telecom taxes, TDD (deaf tax), and state universal service.

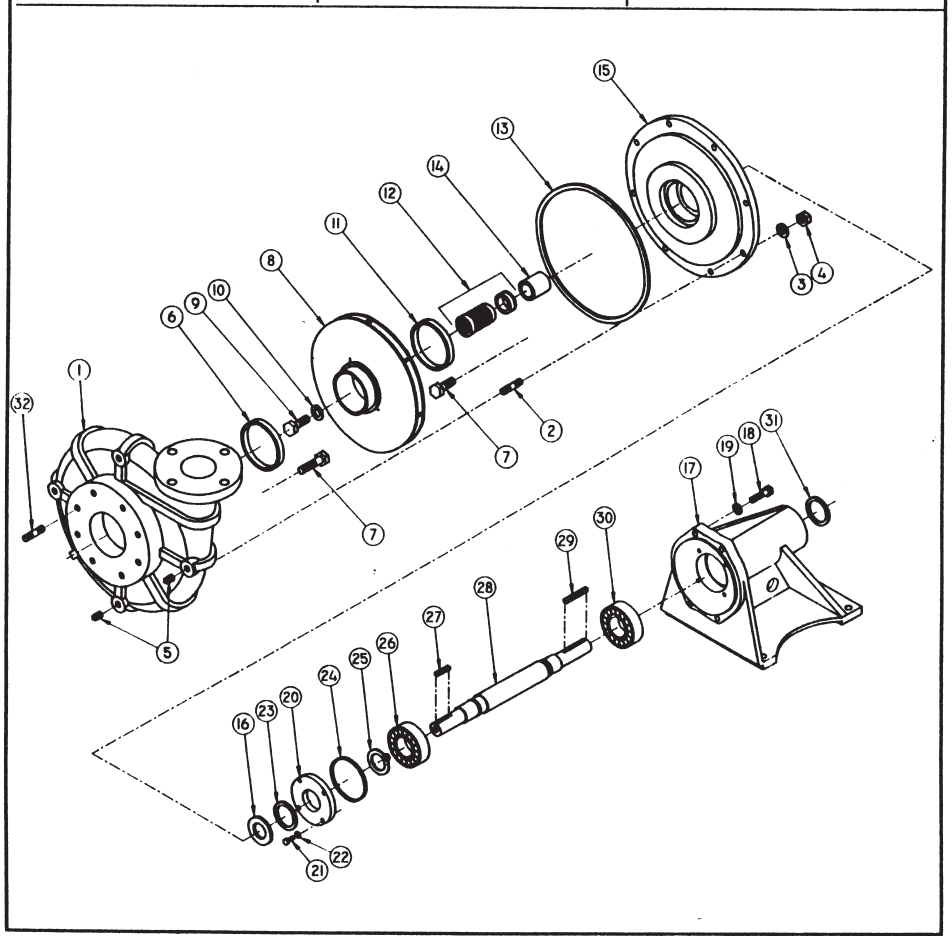
However, what the Beacon Hill study does not take into account are costs for federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen's compensation taxes, local property taxes and any local income taxes. Altogether, these taxes dial up the actual "bite" to $23.19 for a wireless phone. When added to the taxes and fees paid directly by the consumer, a total of 46.4 percent of a wireless bill actually pays for government taxes and fees.

BARNES®

4030HCU

END SUCTION PUMPS
Universal Drive

MODEL:	PART No.
4030HCU	059459



PARTS KIT

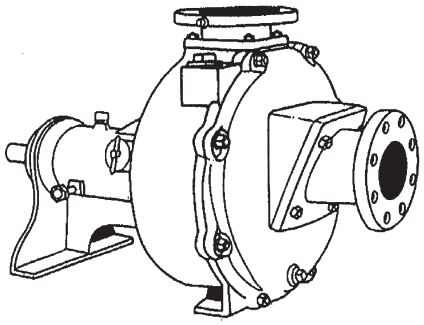
Seal Kit.....P/N: 083562 (†) 6,12,13,14,16.

PARTS LIST

ITEM	QTY.		DESCRIPTION		PART No.
1	1		Volute		059452
2	8		Stud	1/2-13 x 2.00" Lg	016409
3	8		Lock Washer	1/2"	002608
4	8		Hex Nut	1/2-13	028173
5	8		Pipe Plug	.25" NPT	003217
6	1	†	Wear Ring		030645
7	2		Hex Hd Cap Screw	5/16-18 x .50" Lg	032129
8	1		Impeller		052096
9	1		Cap Screw	1/2-13 x 1.25" Lg, Stainless	1-68-1
10	1		Washer		030657
11	1		Wear Ring		030645
12	1	†	Shaft Seal	C/NR/B	031000
13	1	†	O-Ring		059321
14	1	†	Shaft Sleeve		030652
15	1		Seal Plate		052094
16	1	†	Slinger		029915
17	1		Pedestal		052279
18	4		Hex Hd Cap Screw	7/16-14 x 1.25" Lg	002250
19	4		Lock Washer	7/16	002606
20	1		Bearing Cap		030651
21	4		Hex Hd Cap Screw	5/16-18 x .875" Lg	002218
22	4		Lock Washer	5/16	002602
23	1		Grease Seal		024997
24	1		O-Ring		026997
25	1		Snap Ring		030650
26	1		Bearing		052098
27	1		Key	1/4" Sq x 1.00" Lg	031388
28	1		Shaft		052277
29	1		Key	5/16" Sq x 2.50" Lg	052317
30	1		Bearing		028998
31	1		Grease Seal		052097
32	8		Stud	5/8-11 x 2.75" Lg	002454

BARNES®

B30
SELF-PRIMING PUMPS
Universal Drive



Model: B30

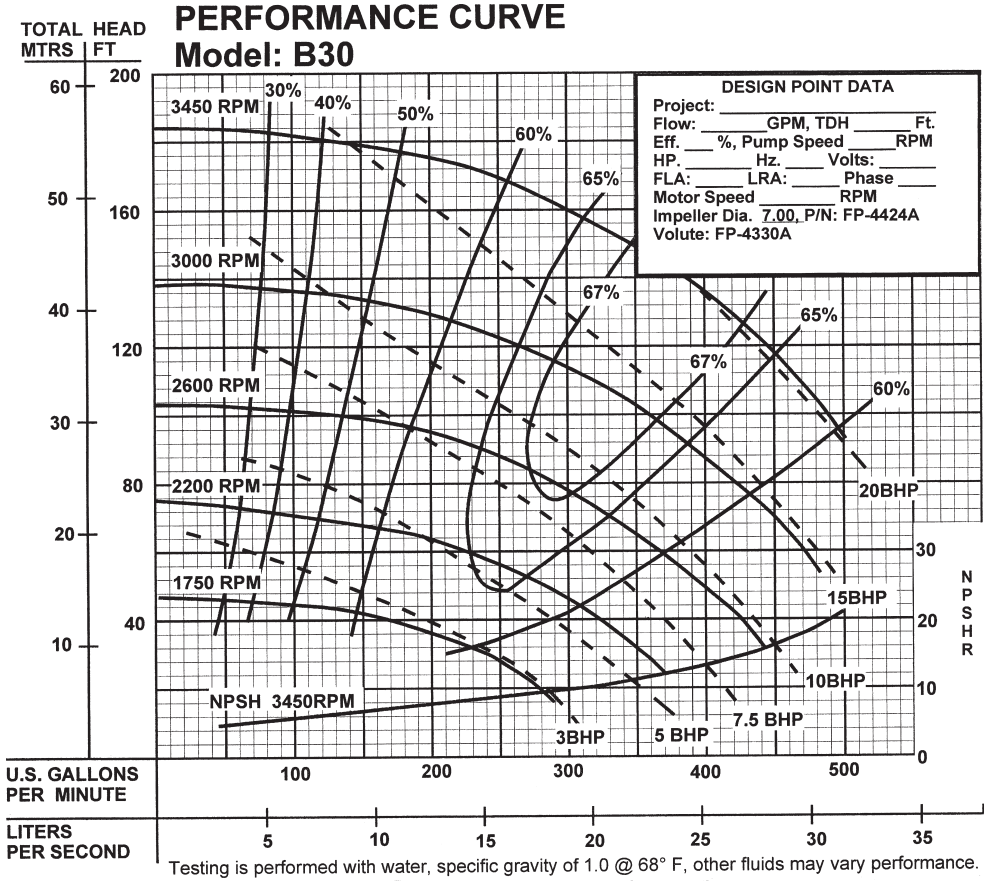
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

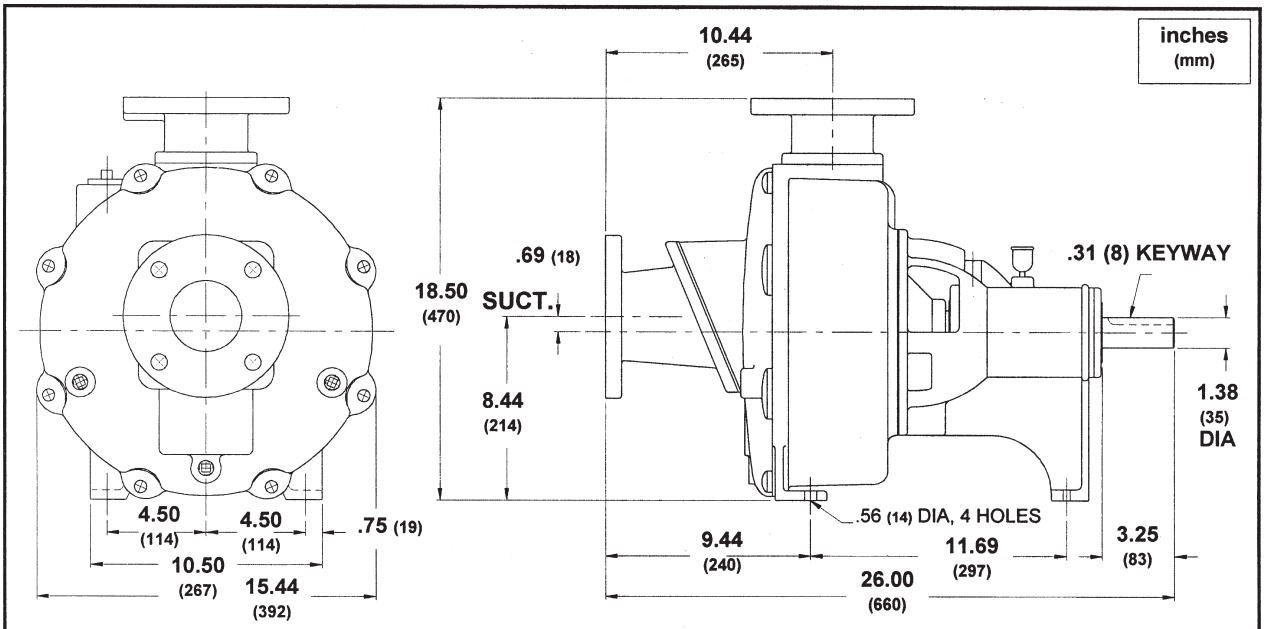
Specifications:

SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) 125lb. Flange.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
VOLUTE/WEARPLATE:		Cast Iron ASTM A-48, Class 30, Replaceable, External Clearance Adjustment.
CASE:		Cast Iron ASTM A-48, Class 30.
END COVER:		Cast Iron ASTM A-48, Class 30.
SEAL PLATE:		Alloy Steel, Replaceable.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Semi-Open Type. Passes 3/4" Solids.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
IMPELLER SHAFT:		Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Corrosion Resistant Steel.
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical
	Lubrication:	Grease, with Self-Feeding Lubricator.
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
CHECK VALVE:		
	Material:	Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30
OPTIONAL EQUIPMENT:		Seal Materials, Case Heater; Stainless Hardware; High Temperature Control; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.

PERFORMANCE CURVE
Model: B30



Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.



MODEL NO.	PART NO.	WEIGHT NET LBS.
B30	3COXD-0007X-001	220

IMPORTANT !

1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

POLI-TALKS

"The more we remove penalties for being a bum, the more bumism is going to blossom."
-Sen. Jesse Helms (R-NC), on welfare

"We didn't send you to Washington to make intelligent decisions. We sent you to represent us."
-Kent York, a Texas pastor, to Rep. Bill Sarpalius (D-TX)

"President Clinton had a bill, e-i-e-i-o. And in that bill was lots of pork, e-i-e-i-o."
-Sen. Alfonse D'Amato (R-NY)

"I have orders to be awakened at any time in the case of a national emergency, even if I'm in a cabinet meeting."
-Ronald Reagan

"The present system may be flawed, but that's not to say that we in Congress can't make it worse."
-Rep. E. Clay Shaw, Jr. (R-FL)

"Is the country still here?" **-Calvin Coolidge, waking from a nap**

"We've killed health care; now we've got to make sure our fingerprints aren't on it."
-Sen. Bob Packwood (R-OR), in 1994, on the GOP blocking Clinton's health-care reforms

"Ambiguously definitive-or is it definitively ambiguous?"
-Sen. Bill Bradley, on being unclear about his presidential ambitions

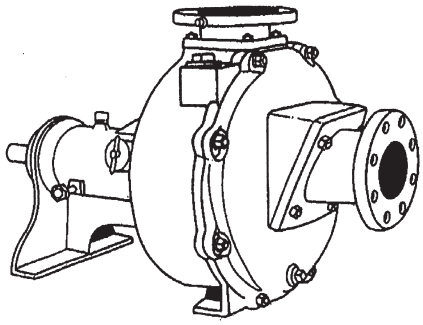
"It's no exaggeration to say that the undecideds could go one way or another." **-George H. W. Bush**

"We didn't get the pay raise-why work?"
-Bob Dole, in 1989, on the slow pace of Senate activity

"Welcome to President Clinton, Mrs. Clinton, and my fellow astronauts."
-**Al Gore, 1998**

BARNES®

B40
SELF-PRIMING PUMPS
Universal Drive



Model: **B40-10X**
B40-9H
B40-9D
B40-8F

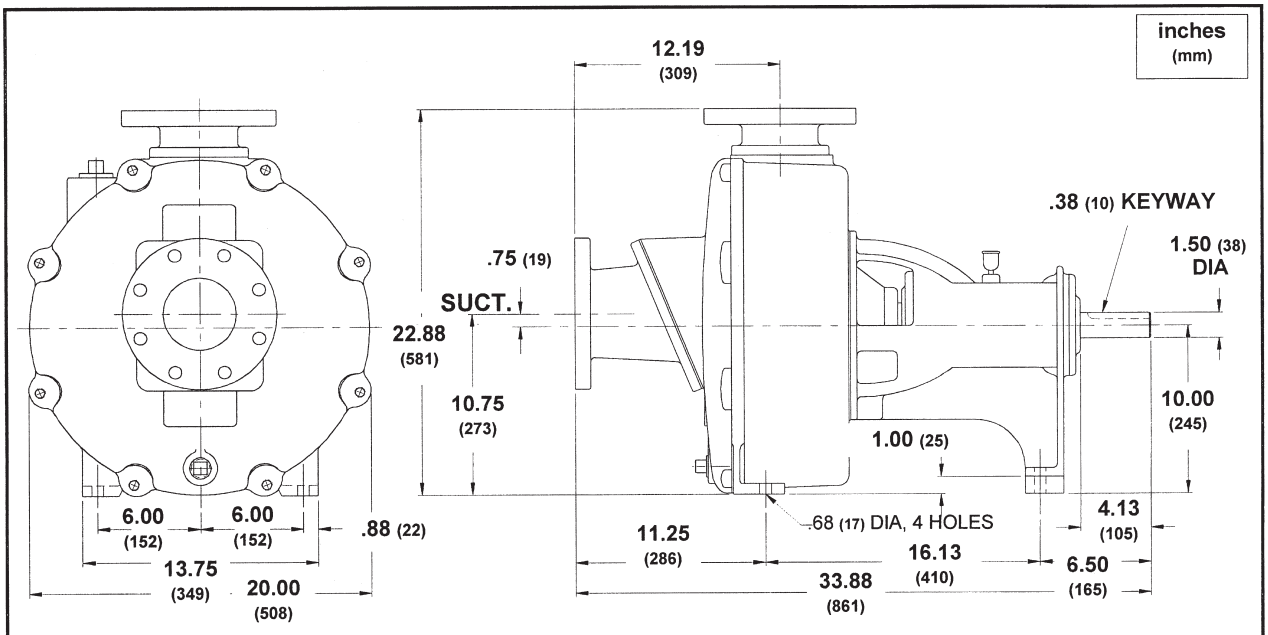
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

Specifications:

SUCTION/DISCHARGE:		4" (102mm) x 4" (102mm) 125lb. Flange.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
VOLUTE/WEARPLATE:		Cast Iron ASTM A-48, Class 30, Replaceable, External Clearance Adjustment.
CASE:		Cast Iron ASTM A-48, Class 30.
END COVER:		Cast Iron ASTM A-48, Class 30.
SEAL PLATE:		Alloy Steel, Replaceable.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Semi-Open Type, Passes 1" Solids
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
IMPELLER SHAFT:		Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Corrosion Resistant Steel.
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical
	Lubrication:	Grease, with Self-Feeding Lubricator.
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Double Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
CHECK VALVE:		
	Material:	Elbow-Cast Iron ASTM A-48, Class 30 Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48, Class 30

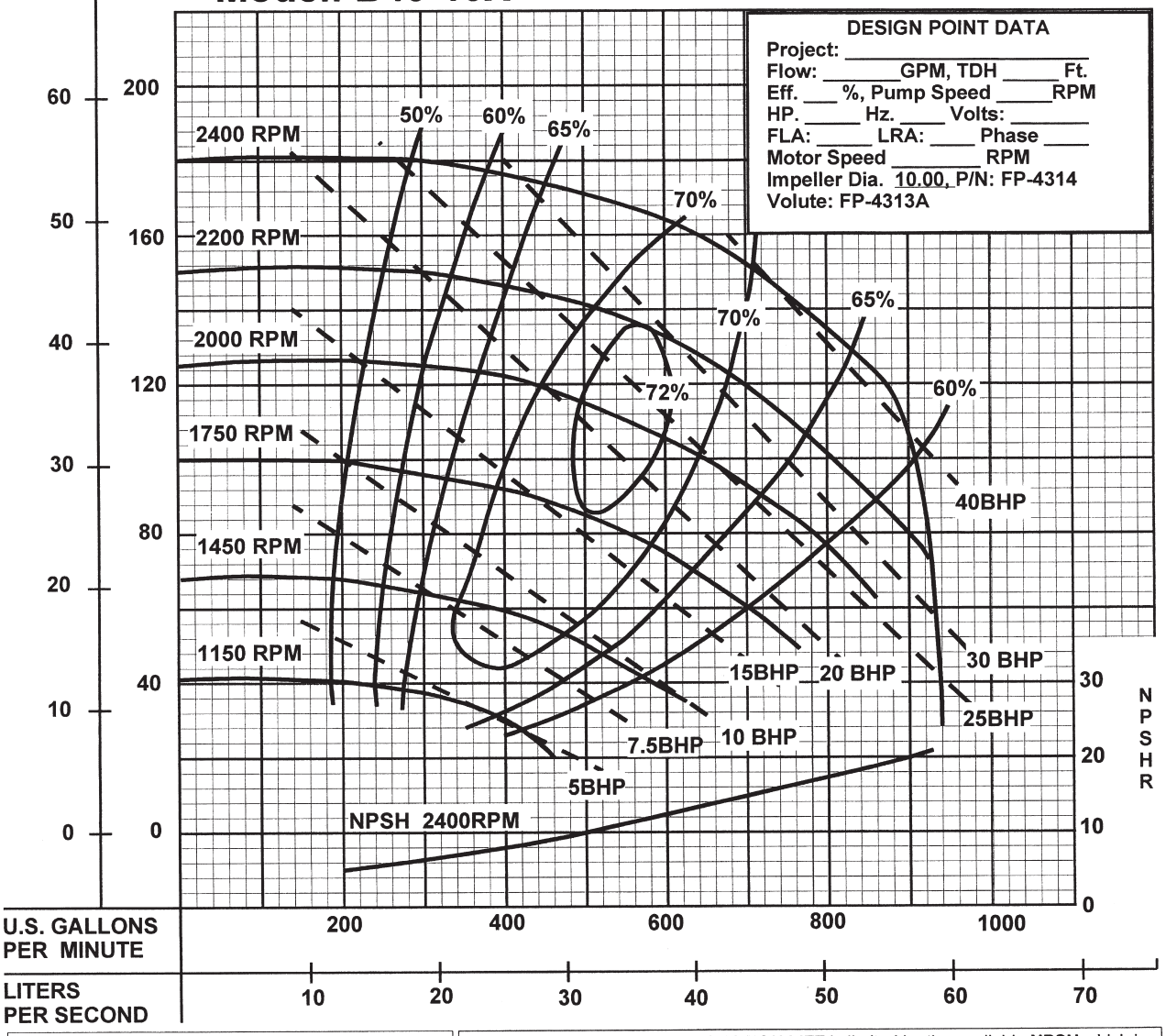
OPTIONAL EQUIPMENT: Seal Materials, Case Heater, Stainless Hardware; High Temperature Control; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.



MODEL NO.	PART NO.	WEIGHT NET LBS.
B40-10X	4COYD-0010X-001	340
B40-9H	4COYD-0009H-001	340
B40-9D	4COYD-0009D-001	340
B40-8F	4COYD-0008F-001	340

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: B40-10X



MAXIMUM DRY PRIMING LIFT	
PUMP SPEED	10 MIN.
1150RPM	10 Ft.
1450RPM	15 Ft.
1750RPM	25 Ft.
2000RPM	25 Ft.
2200RPM	25 Ft.
2400RPM	25 Ft.

When pump is operating, the **SUCTION LIFT** is limited by the available **NPSH** which is the corrected atmospheric pressure minus the dynamic suction lift, vapor pressure loss and 2 foot safety factor. This net available **NPSH** must exceed the required **NPSH** of the pump or a reduction of capacity, loss of efficiency, noise, vibration and cavitation will result. Calculate the dynamic suction lift from the low liquid level to the centerline of the impeller. When pump is priming, it is limited by the dry **PRIMING LIFT** which is the vertical distance from the high liquid level to the centerline of the impeller.

Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.

It's a Weird, Weird World!

TERRORIST VOGUE

"Carlos the Jackal was one of the world's most notorious and elusive terrorists, accused of 83 deaths worldwide and more than *a* dozen other charges stemming from a 20-year killing spree.

"After two decades of evading the law, he was arrested in a Sudanese hospital while undergoing liposuction and a tummy tuck." ***—San Francisco Chronicle***

NOSING AROUND

"Ruth Clarke, 23, of London, England, underwent surgery to correct a lifelong breathing problem in 1981. She was presented with a tiddlywink, which doctors had removed from her nose.

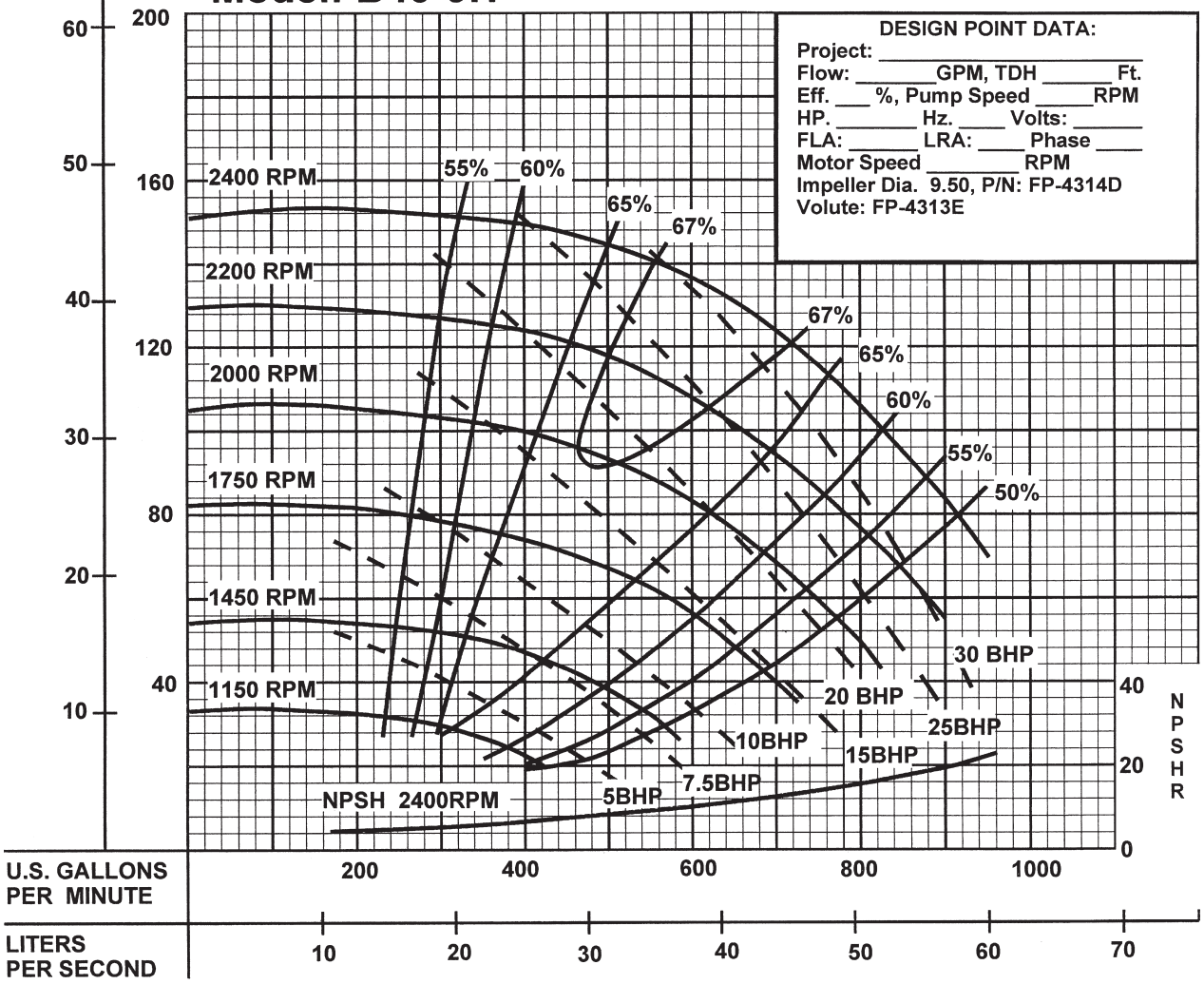
"Clarke vaguely recalled losing the disk as a tot, but she didn't dream it was right under her nose all the time."

-Encyclopedia Brown's Book of Strange Facts

THE POSTMAN RINGS MORE THAN TWICE

"From 1974 to 1976, a young man in Taiwan wrote 700 love letters to his girlfriend, trying to talk her into marriage. He succeeded-she married the mailman who delivered the letters to her." ***Weird News and Strange Stories***

PERFORMANCE CURVE
Model: B40-9H



DESIGN POINT DATA:

Project: _____
Flow: _____GPM, TDH _____ Ft.
Eff. ___ %, Pump Speed _____RPM
HP. _____ Hz. ____ Volts: _____
FLA: _____ LRA: ____ Phase ____
Motor Speed _____ RPM
Impeller Dia. 9.50, P/N: FP-4314D
Volute: FP-4313E

MAXIMUM DRY PRIMING LIFT	
PUMP SPEED	**10 MIN.**
1150RPM	10 Ft.
1450RPM	15 Ft.
1750RPM	20 Ft.
2000RPM	25 Ft.
2200RPM	25 Ft.
2400RPM	25 Ft.

When pump is operating, the **SUCTION LIFT** is limited by the available **NPSH** which is the corrected atmospheric pressure minus the dynamic suction lift, vapor pressure loss and 2 foot safety factor. This net available **NPSH** must exceed the required **NPSH** of the pump or a reduction of capacity, loss of efficiency, noise, vibration and cavitation will result. Calculate the dynamic suction lift from the low liquid level to the centerline of the impeller. When pump is priming, it is limited by the dry **PRIMING LIFT** which is the vertical distance from the high liquid level to the centerline of the impeller.

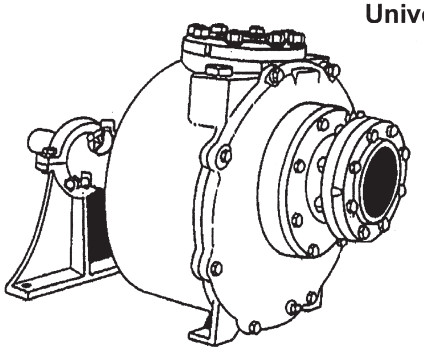
Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.

WORD ORIGINS

EAVESDROP
Meaning: Secretly listen to someone else's conversation
Origin: "In Anglo-Saxon England, a house had very wide overhanging eaves ... to allow rain to drip safely away from the house's foundation. So the eavesdrip, later the *eavesdrop,* provided a place where one could hide to listen clandestinely to conversation within the house." (From Morris Dictionary *of Word* and Phrase Origins, by William and Mary Morris)

BARNES®

B60
SELF-PRIMING PUMPS
Universal Drive



Model: B60-12X
B60-11H
B60-11X
B60-10L

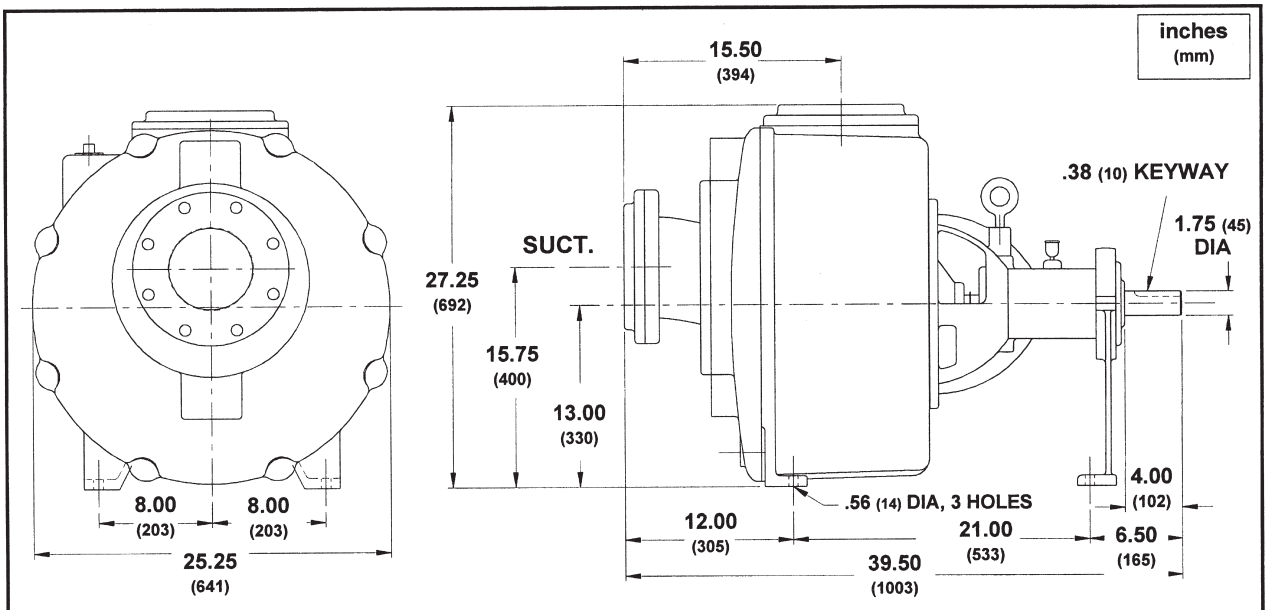
Description:

SELF-PRIMING CENTRIFUGAL PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.

Specifications:

SUCTION/DISCHARGE:		6" (152mm) x 6" (152mm) 125lb. Flange.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
VOLUTE/WEARPLATE:		Cast Iron ASTM A-48, Class 30, Replaceable, External Clearance Adjustment.
CASE:		Cast Iron ASTM A-48, Class 30.
END COVER:		Cast Iron ASTM A-48, Class 30.
SEAL PLATE:		Alloy Steel, Replaceable.
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Semi-Open Type, Passes 1-1/2" Solids.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
IMPELLER SHAFT:		Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Corrosion Resistant Steel.
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical
	Lubrication:	Grease, with Self-Feeding Lubricator.
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
CHECK VALVE:		
	Material:	Elbow-Cast Iron ASTM A-48, Class 30 Valve Flap-Neoprene. Weights-Cast Iron ASTM A-48, Class 30

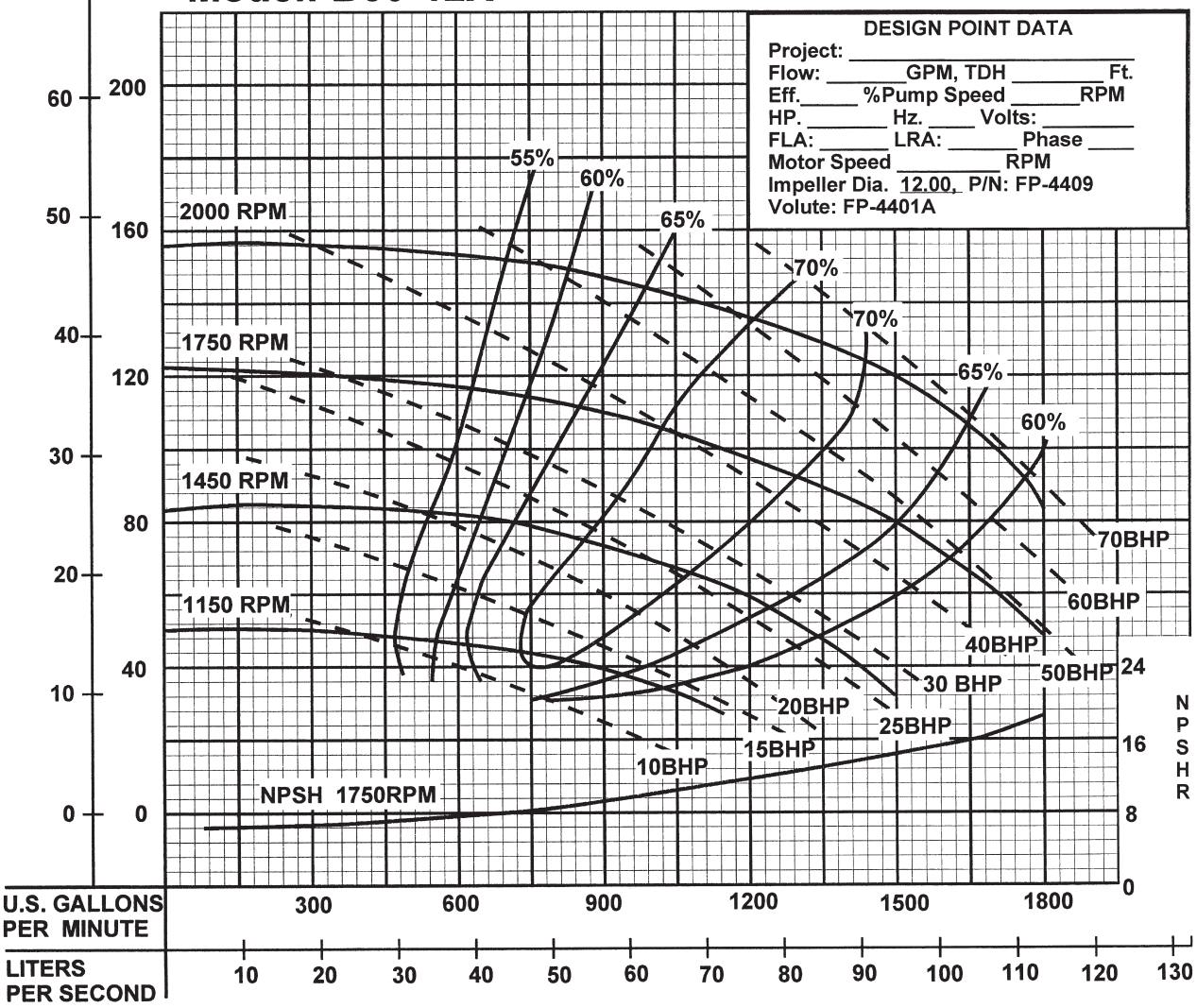
OPTIONAL EQUIPMENT: Seal Materials, Case Heater, Stainless Hardware; High Temperature Control; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.



MODEL NO.	PART NO.	WEIGHT NET LBS.
B60-12X	6COZD-0012X-001	585
B60-11H	6COZD-0011H-001	585
B60-11X	6COZD-0011X-001	585
B60-10L	6COZD-0010L-001	585

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: B60-12X



MAXIMUM DRY PRIMING LIFT	
PUMP SPEED	10 MIN.
1150RPM	20 Ft.
1450RPM	25 Ft.
1750RPM	25 Ft.
2000RPM	25 Ft.
2250RPM	25 Ft.

When pump is operating, the **SUCTION LIFT** is limited by the available **NPSH** which is the corrected atmospheric pressure minus the dynamic suction lift, vapor pressure loss and 2 foot safety factor. This net available **NPSH** must exceed the required **NPSH** of the pump or a reduction of capacity, loss of efficiency, noise, vibration and cavitation will result. Calculate the dynamic suction lift from the low liquid level to the centerline of the impeller. When pump is priming, it is limited by the dry **PRIMING LIFT** which is the vertical distance from the high liquid level to the centerline of the impeller.

Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.

TAX BITES

Car Rentals

As part of the trend toward exporting a state or local tax burden, car rental taxes are increasingly popular with lawmakers concerned about taxing their voting constituents. Although studies have shown that more than half of cars are rented by local consumers, the notion that taxing rental cars is taxing tourists is pervasive on the state and local level. In fact, the number of car rental excise taxes has nearly doubled in the last decade with taxes in 110 localities in 43 states and Washington, D.C.

Local excise taxes and other charges imposed by states and municipalities have added 26 percent, or $13.70 to the average $52.71 rental car bill. However, this doesn't include the full tax burden included in the cost of renting a car. When taking into account taxes including federal and state income taxes, federal payroll taxes, sales taxes, unemployment insurance taxes, workmen's compensation taxes, business license taxes and fees, utility taxes, local property taxes, and any local income taxes, the total cost rises to 60.6 percent of the bill.

All told, whether you are a tourist or a resident, renting that car for $52.71, will cost you $31.94 in taxes and fees.

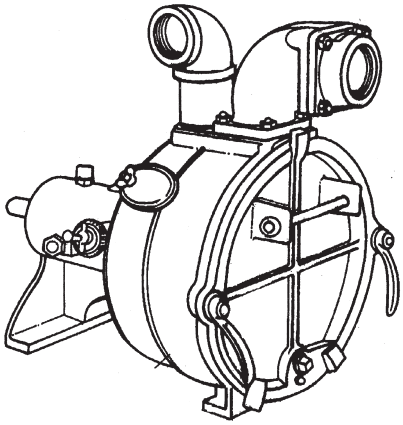
BARNES®

PO2LA

SELF-PRIMING PUMPS
Solids Handling Universal Drive
1-1/4" Spherical Solids Handling

Specifications:

SUCTION/DISCHARGE:		2" (51mm) x 2" (51mm) NPT, Female.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
VOLUTE/WEARPLATE:		Cast Iron ASTM A-48, Class 30, Replaceable, External Clearance Adjustment.
CASE:		Cast Iron ASTM A-48, Class 30.
END COVER:		Cast Iron ASTM A-48, Class 30. Full Diameter, Removable.
SEAL PLATE:		Alloy Steel; Replaceable
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Two Vane, Open.
	Material:	Cast Iron ASTM A-48, Class 30. Dynamically Balanced, ISO G6.3.
SHAFT:		High Carbon Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Corrosion Resistant Steel.
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical
	Lubrication:	Grease, with Self-Feeding Lubricator.
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
CHECK VALVE:		
	Material:	Elbow-Cast Iron ASTM A-48,Class 30 Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48,Class 30
OPTIONAL EQUIPMENT:		Seal Materials, Case Heater, Stainless Hardware; High Temperature Control; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy. and Left Hand V-Belt Drive Assy. with Unit Base, Motor Adjusting Base & OSHA Guard.

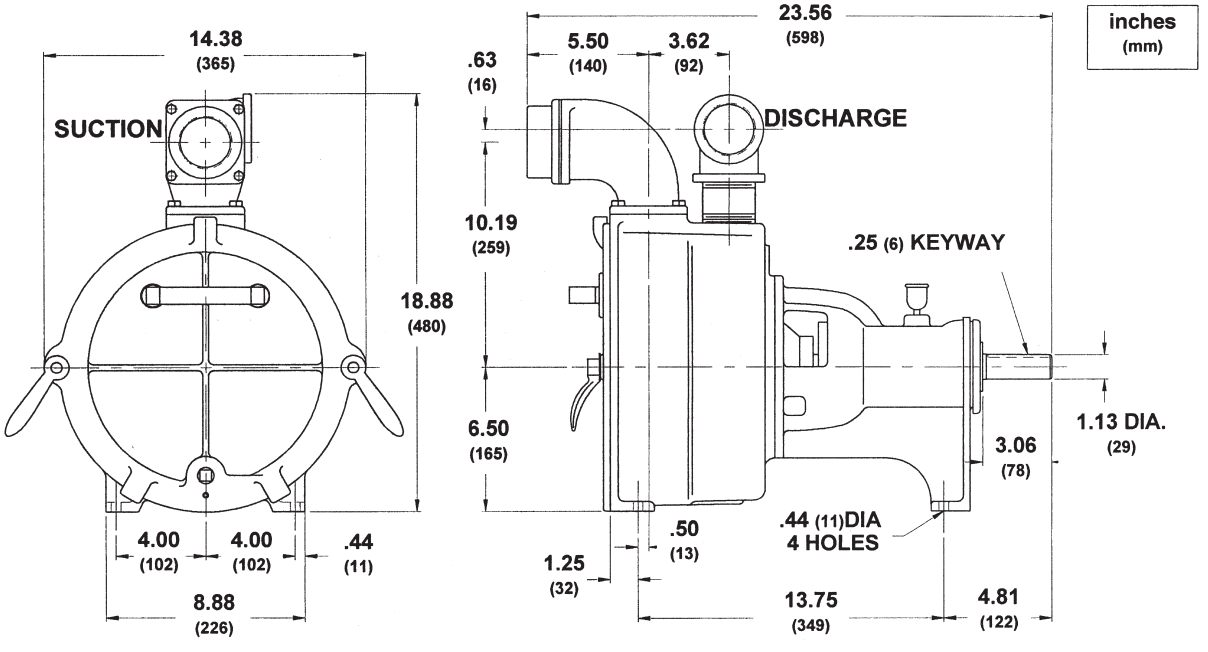


Model: PO2LA-6C

American Bureau of Shipping Certificate No.
01-HS238523B/1-PDA

Description:

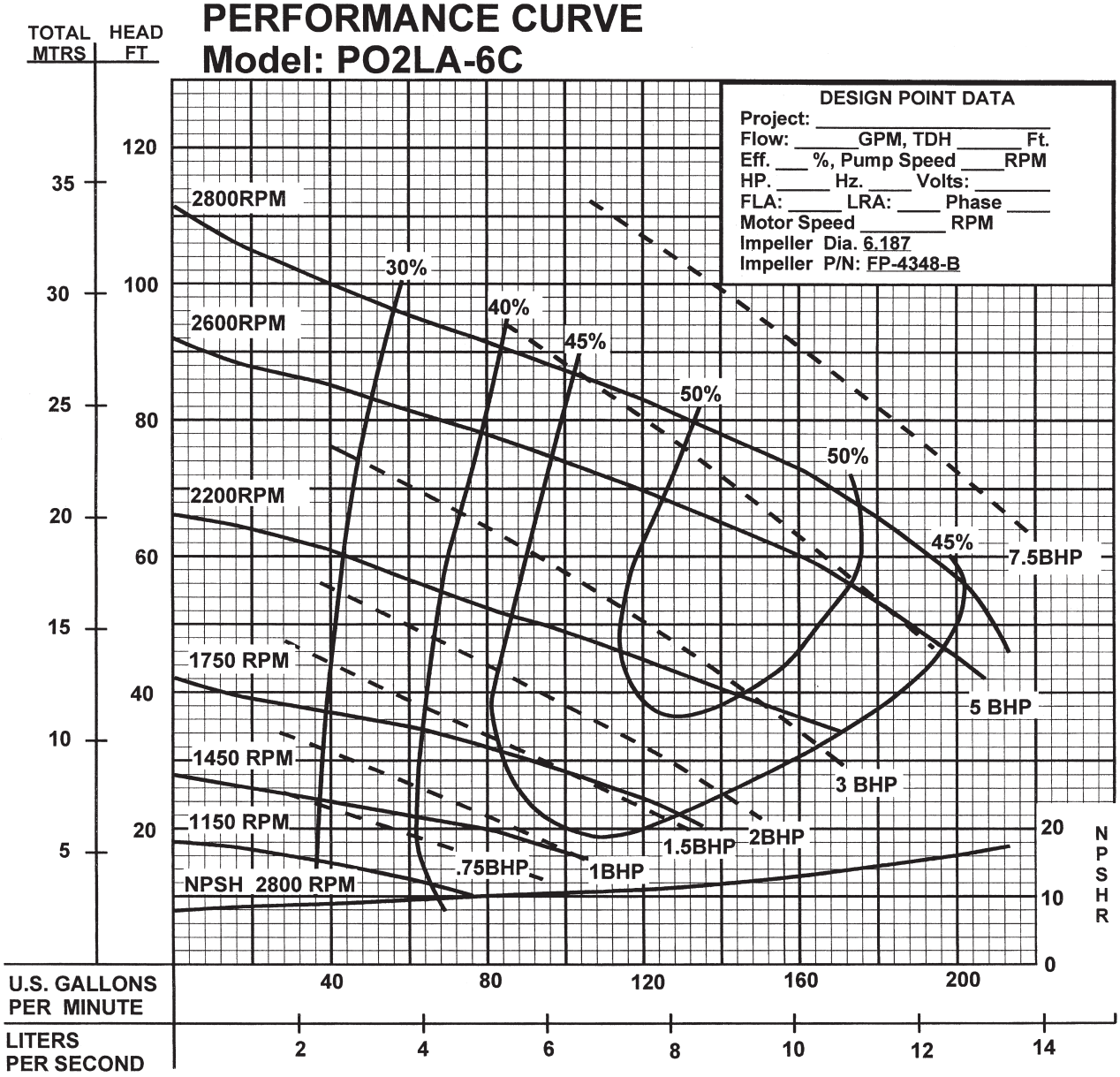
SELF-PRIMING CENTRIFUGAL SOLIDS HANDLING PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.



MODEL NO.	PART NO.	WEIGHT LBS.
PO2LA-6C	2COOD-0006C-001	160 (73kg)

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: PO2LA-6C



MAXIMUM DRY PRIMING LIFT					
PUMP SPEED	2 Min.	4 Min.	6 Min.	8 Min.	10 Min.
1150RPM	3 Ft	6 Ft	8 Ft	9 Ft	10 Ft
1450RPM	5 Ft	8 Ft	12 Ft	14 Ft	16 Ft
1750RPM	9 Ft	17 Ft	22 Ft	23 Ft	25 Ft
2200RPM	17 Ft	25 Ft	25 Ft	25 Ft	25 Ft
2600RPM	25 Ft	25 Ft	25 Ft	25 Ft	25 Ft
2800RPM	25 Ft	25 Ft	25 Ft	25 Ft	25 Ft

When pump is operating, the **SUCTION LIFT** is limited by the available **NPSH** which is the corrected atmospheric pressure minus the dynamic suction lift, vapor pressure loss and 2 foot safety factor. This net available **NPSH** must exceed the required **NPSH** of the pump or a reduction of capacity, loss of efficiency, noise, vibration and cavitation will result. Calculate the dynamic suction lift from the low liquid level to the centerline of the impeller. When pump is priming, it is limited by the dry **PRIMING LIFT** which is the vertical distance from the high liquid level to the centerline of the impeller.

Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.

WORD ORIGINS

SNOB
Meaning: A snooty person; someone who puts on airs
Origin: "It seems that Oxford freshmen were required to register 'according to rank.' Those not of noble birth added after their names the phrase sine *nobilitate* which was then abbreviated to `s. nob.,' thus creating ... a perfect definition for the commoner who wishes to mingle with the nobles." (From *Dictionary of Word and Phrase Origins*, *V0l. III* by William and Mary Morris)

BARNES®

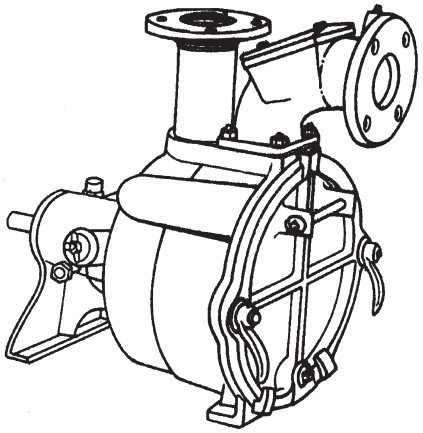
PO3LA, PO3LB

SELF-PRIMING PUMPS
Solids Handling Universal Drive
1.5"- 2.5" Spherical Solids Handling

Larger sizes available

Specifications:

SUCTION/DISCHARGE:		3" (76mm) x 3" (76mm) 125lb. Flange.
LIQUID TEMPERATURE:		160°F (71°C) Continuous.
SOLIDS HANDLING:		
	PO3LA:	1.50" Sperical
	PO3LB:	2.50" Sperical
VOLUTE/WEARPLATE:		Cast Iron ASTM A-48, Class 30, Replaceable, External Clearance Adjustment.
CASE:		Cast Iron ASTM A-48, Class 30.
END COVER:		Cast Iron ASTM A-48, Class 30. Full Diameter, Removable.
SEAL PLATE:		Alloy Steel; Replaceable
PEDESTAL:		Cast Iron ASTM A-48, Class 30.
IMPELLER:		
	Design:	Two Vane, Open.
	Material:	Ductile Iron ASTM A-395. Dynamically Balanced, ISO G6.3.
SHAFT:		High Carbon Steel
SHAFT SLEEVE:		316 Stainless Steel
SQUARE RINGS:		Buna-N
HARDWARE:		Corrosion Resistant Steel.
PAINT:		Air Dry Enamel.
SEAL:	*Design:*	Single Mechanical
	Lubrication:	Grease, with Self-Feeding Lubricator.
	Material:	Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless
BEARING-PUMP END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
BEARING-DRIVE END:		
	Design:	Single Row, Ball
	Lubrication:	Oil
	Load:	Radial & Thrust
CHECK VALVE:		
	Material:	Elbow-Cast Iron ASTM A-48, Class 30 Valve Flap-Neoprene. Weight-Cast Iron ASTM A-48,Class 30
OPTIONAL EQUIPMENT:		Seal Materials, Case Heater, Stainless Hardware; High Temperature Control; Flex Coupled Assy. with Base & OSHA Guard; Right Hand V-Belt Drive Assy., Left Hand V-Belt Drive Assy. and In-Line Vertical V-Belt Drive Assy. with Base, Motor Adjusting Base & OSHA Guard.	

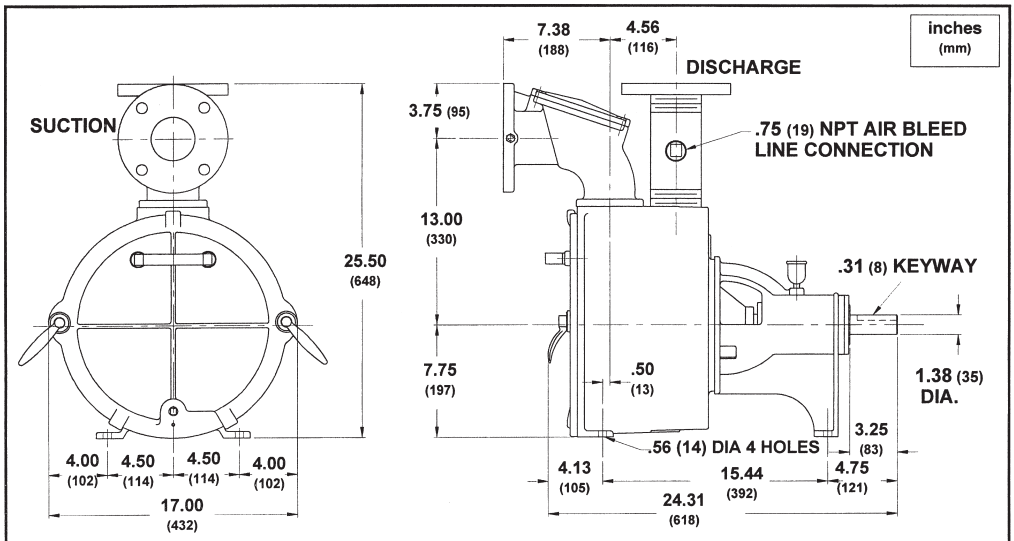


Models: PO3LA-8D
PO3LA-7B
PO3LB-7B*

American Bureau of Shipping Certificate No.
01-HS238523B/1-PDA

Description:

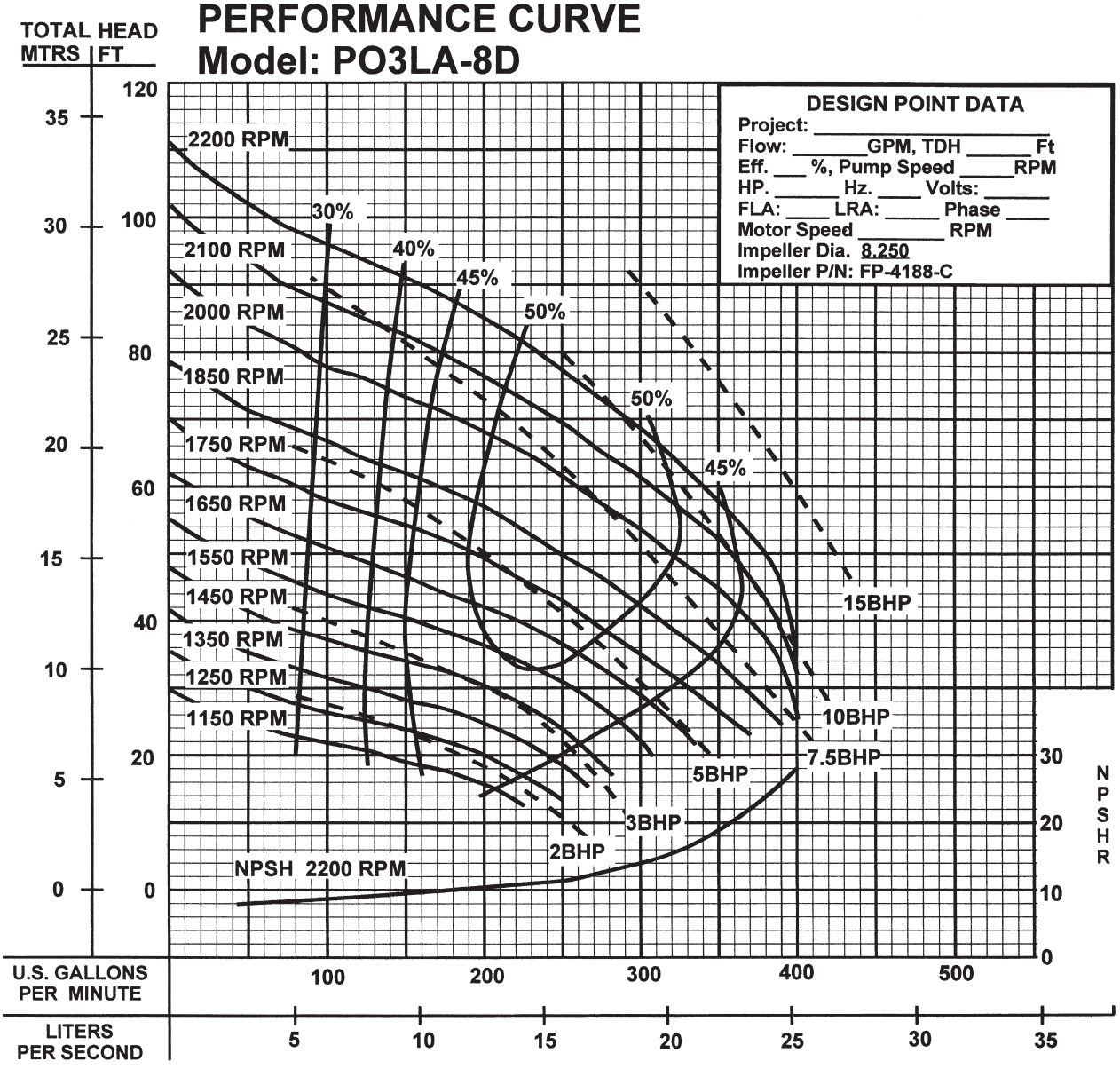
SELF-PRIMING CENTRIFUGAL SOLIDS HANDLING PUMPS DESIGNED FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS.



MODEL NO.	PART NO.	WEIGHT LBS.
PO3LA-8D	3CO1D-0008D-031	275 (125kg)
PO3LA-7B	3CO1D-0007B-031	275 (125kg)
PO3LB-7B	3CO3D-0007B-031	305 (138kg)

IMPORTANT !
1.) DO NOT USE FOR PUMPING FLUIDS WITH A FLASH POINT OF LESS THAN 100°F.
2.) MAKE CERTAIN THAT PUMP AND/OR MOTOR ASSEMBLY AND CONTROLS HAVE THE APPROPRIATE RATINGS FOR THE GIVEN APPLICATION AREA CLASSIFICATION. (ie DIVISION I, AGENCY LISTING ETC.)

PERFORMANCE CURVE
Model: PO3LA-8D



MAXIMUM DRY PRIMING LIFT					
PUMP SPEED	2 Min.	4 Min.	6 Min.	8 Min.	10 Min.
1150RPM	8 Ft	14 Ft	17 Ft	18 Ft	19 Ft
1450RPM	14 Ft	20 Ft	22 Ft	23 Ft	25 Ft
1750RPM	22 Ft	25 Ft	25 Ft	25 Ft	25 Ft
2050RPM	24 Ft	25 Ft	25 Ft	25 Ft	25 Ft
2200RPM	25 Ft	25 Ft	25 Ft	25 Ft	25 Ft

When pump is operating, the **SUCTION LIFT** is limited by the available **NPSH** which is the corrected atmospheric pressure minus the dynamic suction lift, vapor pressure loss and 2 foot safety factor. This net available **NPSH** must exceed the required **NPSH** of the pump or a reduction of capacity, loss of efficiency, noise, vibration and cavitation will result. Calculate the dynamic suction lift from the low liquid level to the centerline of the impeller. When pump is priming, it is limited by the dry **PRIMING LIFT** which is the vertical distance from the high liquid level to the centerline of the impeller.

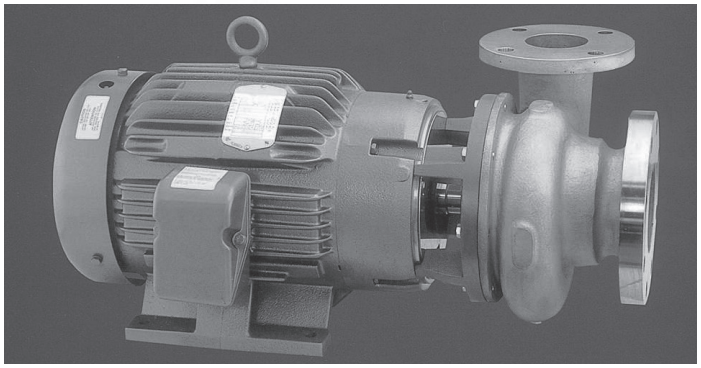
Testing is performed with water, specific gravity of 1.0 @ 68° F, other fluids may vary performance.

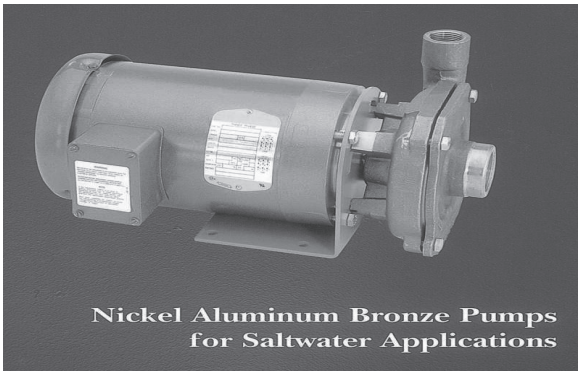
FAMILIAR PHRASES

WIN HANDS DOWN
Meaning: To win by an enormous margin.
Origin: If a racehorse jockey is so far ahead of the competition that there is no danger he will be passed again, he can drop the reins—and his hands-and let the horse finish the race without spurring it on.

BAKER'S DOZEN
Meaning: Thirteen—one more than a dozen.
Origin: In the Middle Ages, bakers who sold loaves of bread that were lighter than the legal weight were subjected to harsh penalties. To prevent being accused of cheating on the weight, bakers would often give away an extra loaf with every dozen.

Ampco Pumps Company





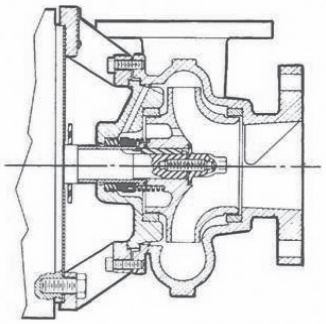
Nickel Aluminum Bronze Pumps For Saltwater Applications

The Ampco line of nickel aluminum bronze centrifugal pumps are ideally suited for saltwater, as well as brackish water, waste water and pollution control applications. The wetted end parts of Ampco pumps are constructed of ASTM-B-148 C958, commonly referred to as CDA958. The overall corrosion/erosion resistance of this alloy to saltwater is superior to stainless steel — and costs less. All of Ampco's nickel aluminum bronze pumps, E, K and Z Series, have ABS (American Bureau of Shipping) type approval.

In addition to exceptional corrosion resistance, nickel aluminum bronze offers these important features:

- Resists erosive wear due to the high velocities developed by the rotating impeller.
- Resists the immense stress incurred during a cavitating condition.
- Resists fouling which can reduce efficiency and promote a severe crevice corrosion attack.
- Even in a "down" state, CDA958 provides better protection against saltwater pitting that is so prevalent in stainless steel pumps.

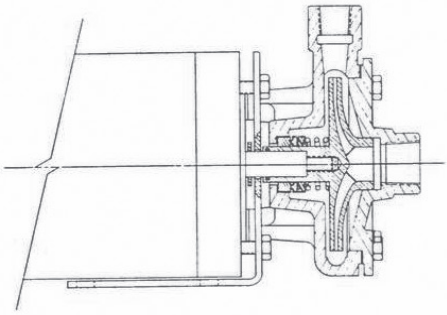
Z Series



The non-comprising design of Ampco pumps results in higher efficiencies, longer life and lower energy and maintenance costs. Each series of pumps is available in either close-coupled or frame mounted versions. The Z Series offers multiple sealing options to meet the most demanding applications.

The United States Navy has been using CDA958 (MIL24480) for more than forty years. Commercial saltwater applications include booster pumps and supply pumps on water treatment systems (including reverse osmosis, distillation and desalinization) and multiple uses on board vessels, such as bilge, ballast, engine cooling, condenser cooling, refrigeration, washdown, salt water supply, circulation and fire pumps.

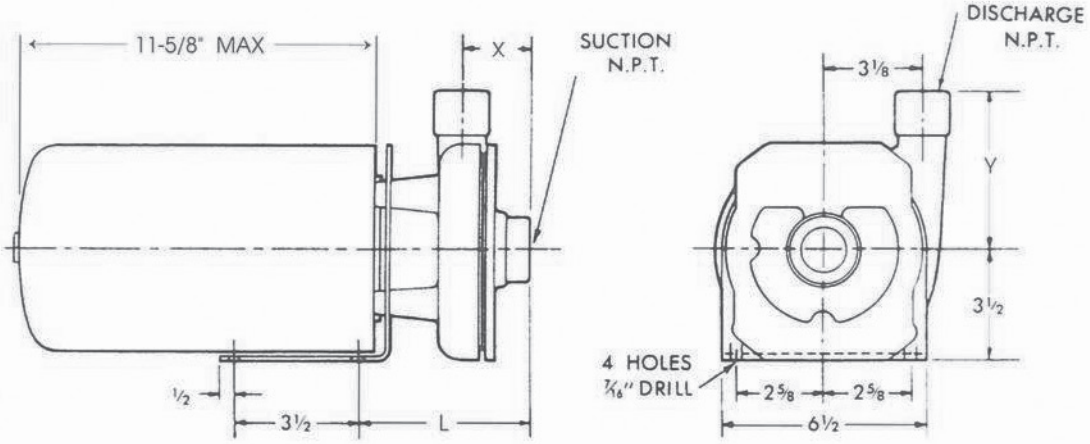
K Series



In addition to the K and Z Series, Ampco offers a wide range of centrifugal pumps in both nickel aluminum bronze and stainless steel. Lead time for standard close coupled pumps is one week or less.

Ampco Pumps Company

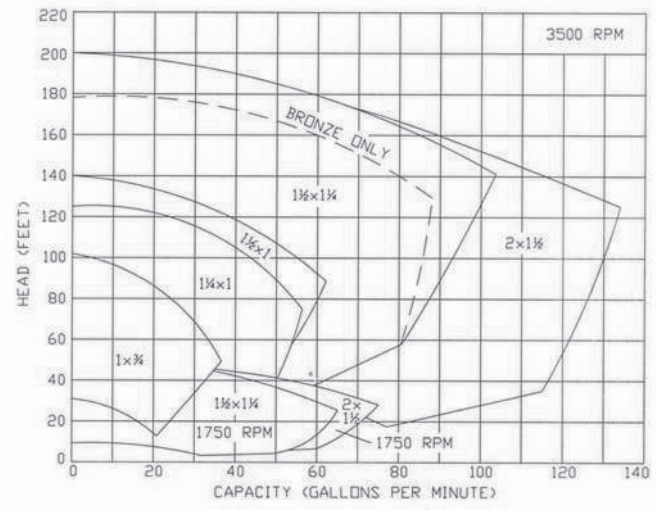
AMPCO K SERIES



Dimensions are approximate, for reference only.

PUMP		MOTOR-TEFC			DIMENSIONS IN INCHES				
TYPE	SIZE	FRAME	H.P.*	RPM	SUCTION	DISCHARGE	L	X	Y
KC2	1 X ¾	56J	1	3500	1	¾	6	2⅜	4 9/16
KC2	1¼ X 1	56J	2	3500	1¼	1	5⅞	2 7/32	5
KC2	1½ X 1	56J	3	3500	1½	1	6	2 13/32	5
KC2	1½ X 1¼	213JM	7½	3500	1½	1¼	12 13/32	2 13/16	6½
KC2	2 X 1½	213JM	7½	3500	2	1½	12 11/32	3¾	6¾

*The Horsepower listed is typically for a full diameter impeller. Other 56J Frame Motors include 1/2 and 3/4 HP.

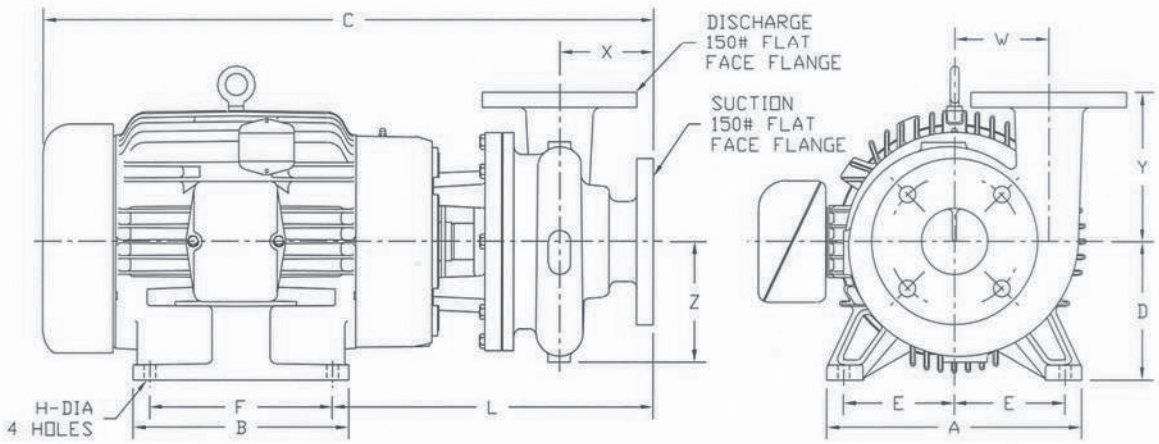


CHARACTERISTICS INCLUDE:

- Allowable Working Pressure — up to 150 psi
- Temperatures to 225°F
- Multiple Sealing Options
- Enclosed Impellers
- Close coupled to Nema Standard Jet Pump Motor, Std. MG1-18.340

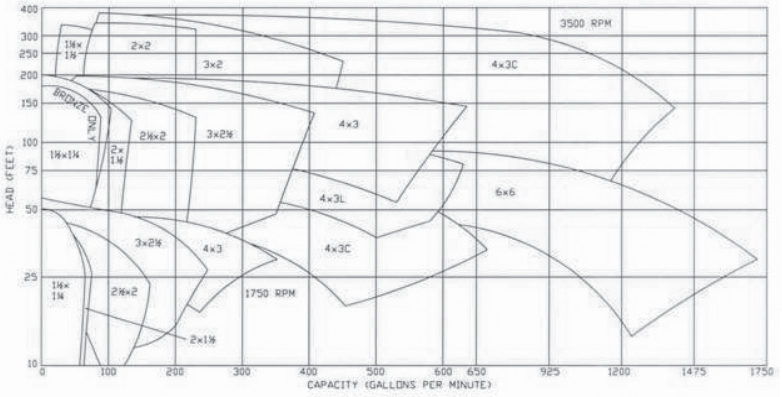
Ampco Pumps Company

AMPCO Z Series



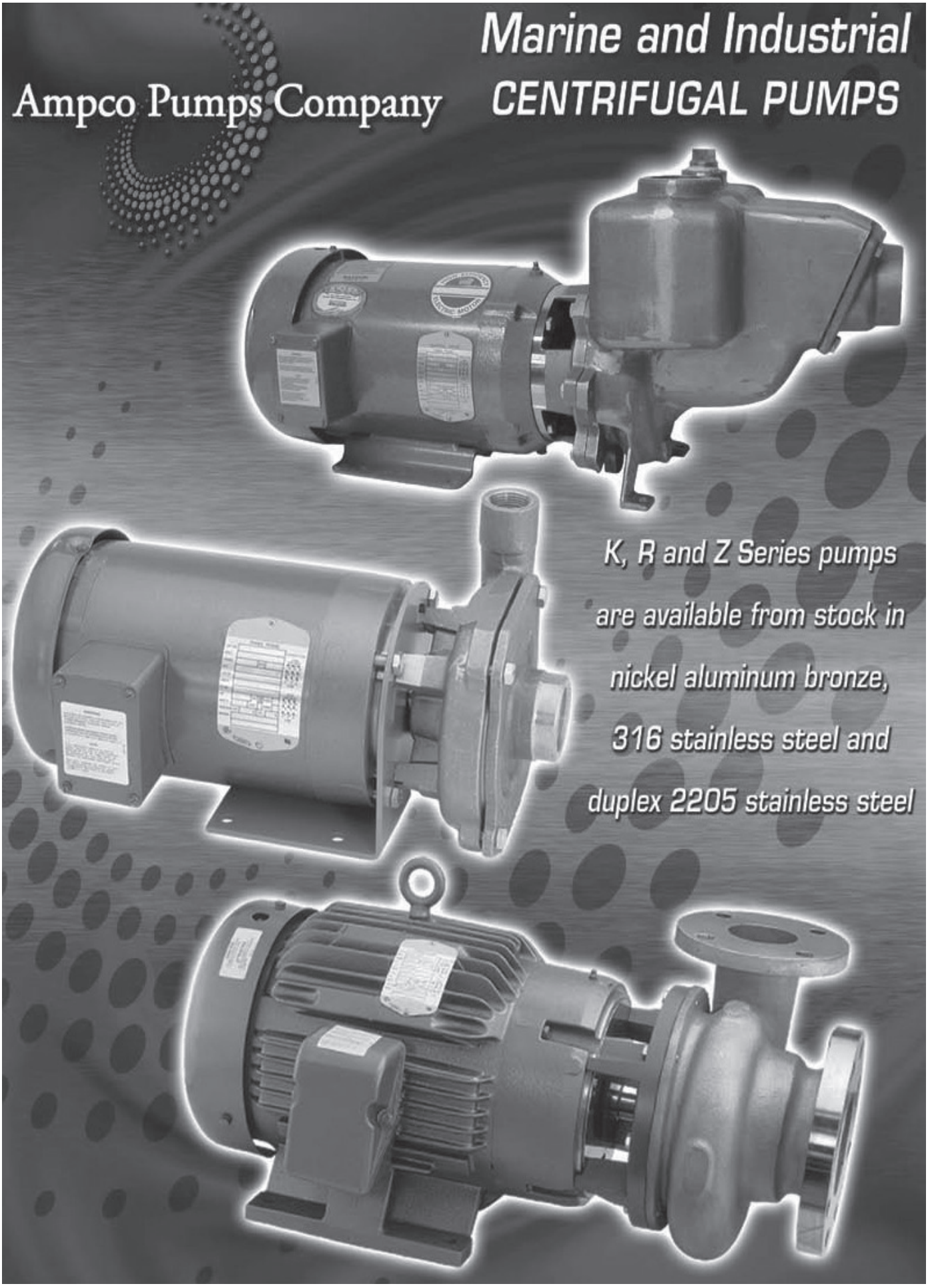
Dimensions are approximate, for reference only.

PUMP		MOTOR-TEFC			DIMENSIONS IN INCHES													
TYPE	SIZE	FRAME	H.P.	RPM	SUCT.	DISCH.	A	B	C	D	E	F	H	L	W	X	Y	Z
ZC2	1½ X 1¼	143JM	1	1750	1½	1¼	7	6	17¾	3½	2¾	4	11/32	10¾	3 9/16	3 13/16	6½	4 3/16
ZC2	1½ X 1¼	213JM	7½	3500	1½	1¼	10½	7½	21 13/32	5¼	4¼	5½	13/32	12 13/32	3 9/16	3 13/16	6½	4 3/16
ZC2	1½ X 1½	182JM	3	1750	1½	1½	8⅝	6½	21⅛	4½	3¾	4½	13/32	12	5⅛	4 3/16	6½	6 1/16
ZCH2	1½ X 1½	256JM	20	3500	1½	1½	11½	11½	29⅛	6¼	5	10	17/32	14½	5⅛	4 3/16	6½	6 1/16
ZC2	2 X 1½	213JM	7½	3500	2	1½	10½	7½	21½	5¼	4¼	5½	13/32	12 11/32	3¾	3¾	6¾	4 9/16
ZC2	2½ X 2	215JM	10	3500	2½	2	10½	9	23¾	5¼	4¼	7	13/32	13 1/16	4	4 7/16	7 5/16	4 13/16
ZC2	3 X 2½	183JM	3	1750	3	2½	9	6½	19¾	5½	3¾	4½	13/32	12 7/32	4¼	4¼	6¾	5 7/16
ZC2	3 X 2½	215JM	10	3500	3	2½	10½	9	24	5¼	4¼	7	13/32	13 7/32	4¼	4¼	6¾	5 7/16
ZCH2	3 X 2½	256JM	20	3500	3	2½	12½	12½	31 11/32	6¼	5	10	17/32	14¾	4¼	4¼	6¾	5 7/16
ZC2	4 X 3	213JM	5	1750	4	3	10½	7½	24 7/16	5¼	4¼	5½	13/32	13 1/16	4½	5 1/16	6½	6
ZC2	4 X 3	215JM	10	3500	4	3	10½	9	25 15/16	5¼	4¼	7	13/32	13 1/16	4½	5 1/16	6½	6
ZCH2	4 X 3	286JM	30	3500	4	3	14	14	32 1/16	7	5½	11	17/32	15 3/16	4½	5 1/16	6½	6
ZC2	4 X 3C	215JM	10	1750	4	3	9½	8	24⅝	5¼	4½	7	13/32	12 15/32	—	3 5/16	9 27/32	7
ZCH2	4 X 3C	326JM	50	3500	4	3	14½	14	34¼	8	6¼	12	21/32	14 15/32	—	3 5/16	9 27/32	7
ZCH2	4 X 3L	256JM	20	1750	4	3	11½	11½	30½	6¼	5	10	17/32	15⅜	6	5⅜	8	7⅜
ZC2	6 X 6	256JP	20	1750	6	6	11½	11½	30¼	6¼	5	10	17/32	17 7/16	8	2 5/16	9	10
ZCH2	2 X 2	286JM	30	3500	2	2	12¾	12¾	32¼	7	5½	11	17/32	14 1/32	5½	3¾	7¾	6½
ZCH2	3 X 2	256JM	20	3500	3	2	11½	11½	29 5/32	6¼	5	10	17/32	14 21/32	5 13/16	4½	7¾	6½

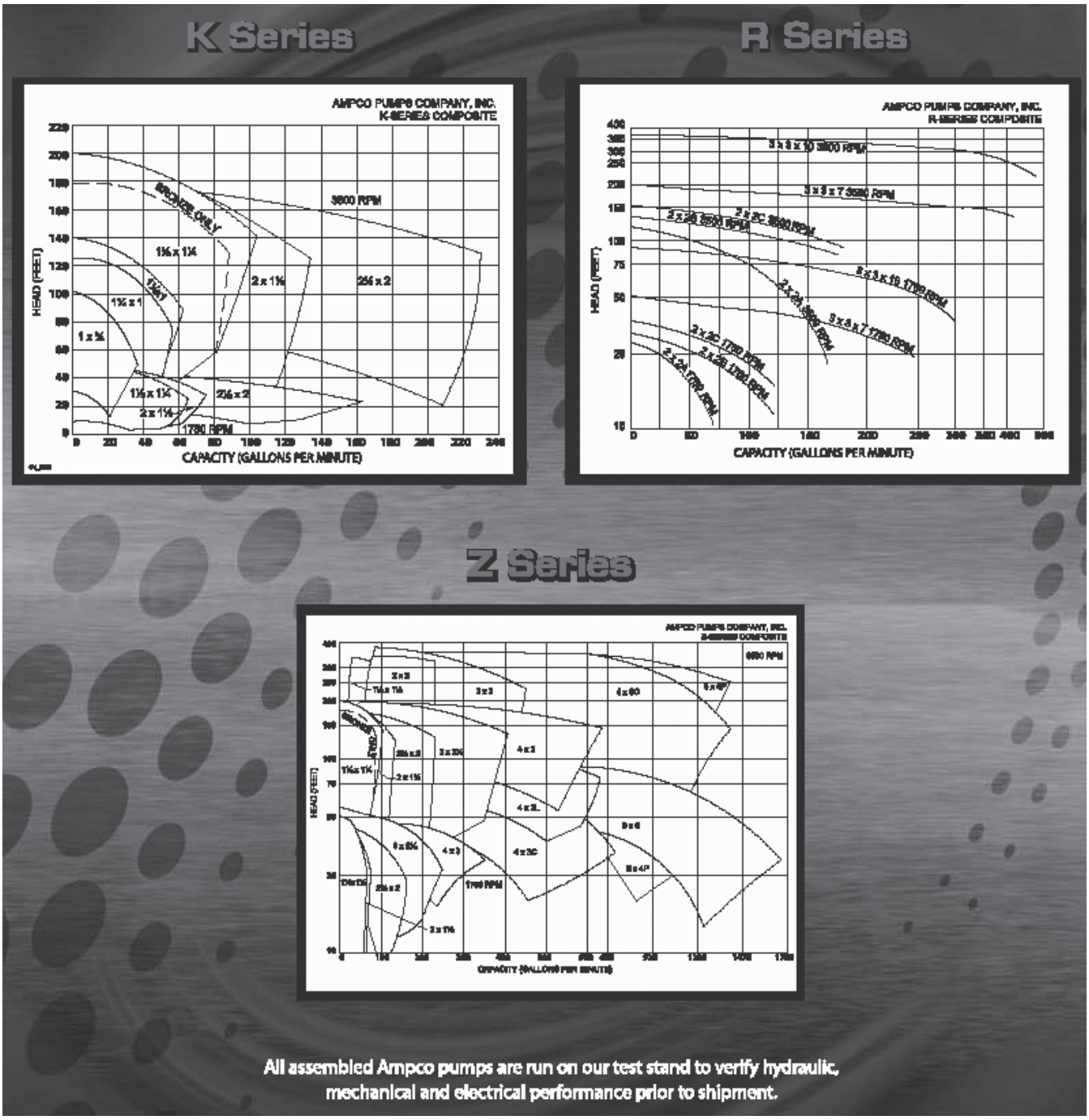


Characteristics Include:

- Allowable Working Pressure — up to 175 psi
- Temperatures to 250°F
- Multiple Sealing Options
- Internal Seal Flush
- Replaceable Wear Rings
- Close coupled to Nema Standard "JM" motors


Ampco Pumps Company
Marine and Industrial
CENTRIFUGAL PUMPS
K, R and Z Series pumps
are available from stock in
nickel aluminum bronze,
316 stainless steel and
duplex 2205 stainless steel

Ampco Pumps Company



TAX BITES **Cable Television**

After a hard day of working to pay your taxes and make ends meet, you may sit on your couch and turn on the TV. What you don't realize is the government is there too, driving up the cost of your cable bill with taxes and fees.

The Beacon Hill Institute's study of telecommunications taxes also included a handy section on how much the government is padding your cable bill. According to their estimates, which include franchise fees, access fees and FCC user fees, taxpayers shell out 11.69 percent, or $6.12 on an average monthly bill of $52.36.

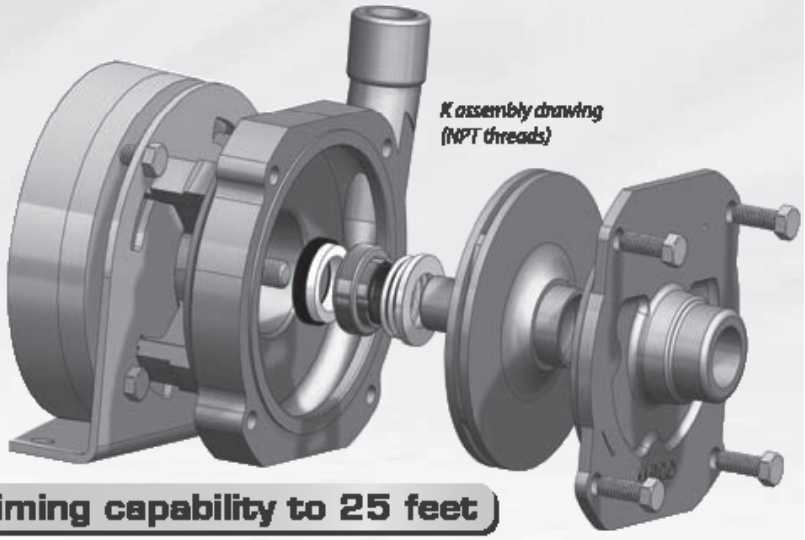
But the government bite is actually over 18 bucks bigger. Including the costs for federal income taxes, state income taxes, federal payroll taxes, unemployment insurance taxes, workmen's compensation taxes, local property taxes and any local income taxes, the cost added by the government is actually 46.3 percent of the monthly bill, costing you $24.24 for cable video services.

Ampco Pumps Company

Marine & Industrial PUMPS

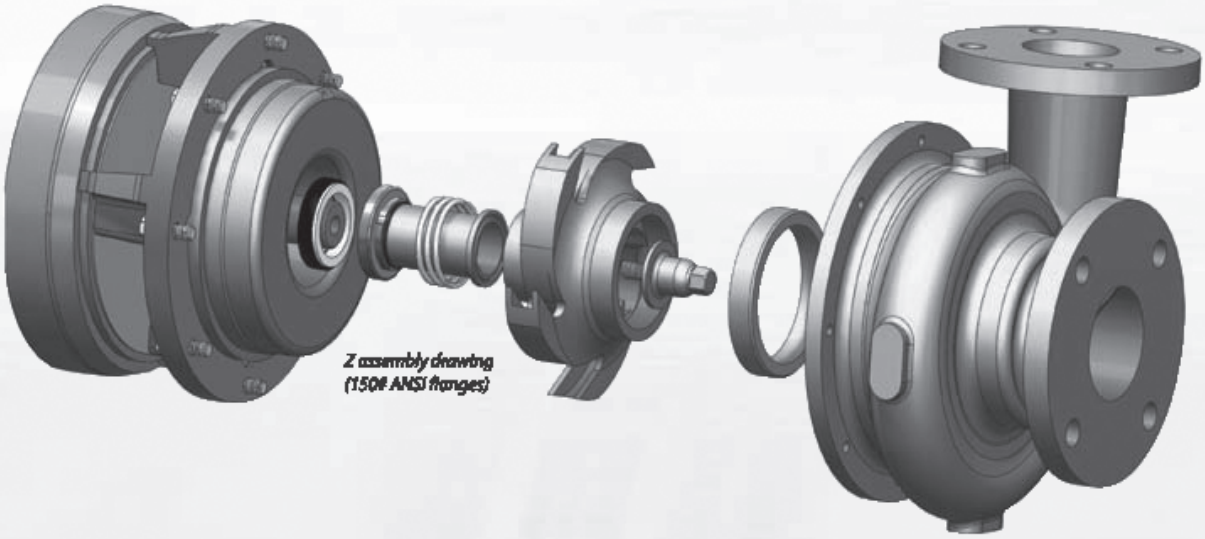
All K, R and Z Series pumps share the following characteristics:

- Heavy-wall cast construction with tight manufacturing tolerances
- High efficiency design with fully shrouded impellers
- Dynamically balanced impellers
- Close coupled on JM or 56J frame motors
- ABS (American Bureau of Shipping) type approval
- Every assembled unit is run on our test stand to verify hydraulic, mechanical and electrical performance



K assembly drawing (NPT threads)

R Series pumps have self-priming capability to 25 feet

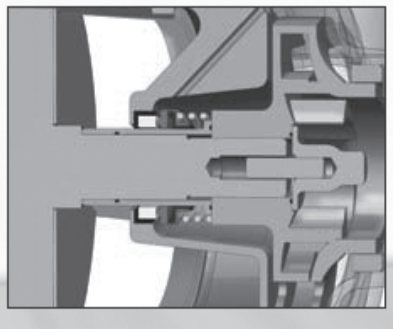


Z assembly drawing (150# ANSI flanges)

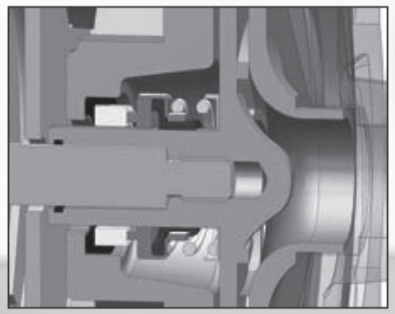
The standard mechanical seal for marine and industrial pumps is a Type 21 with ceramic versus carbon seal faces, buna elastomers and 316 SS metallics. Various material options are available, including silicon carbide, tungsten carbide, ni-resist, viton, EPDM, teflon, monel and others. Optional seal choices include Type 1, Type 9, double mechanical seals, packing and cartridge seals.

Type 21 Seals

RC2/ZC2



KC2

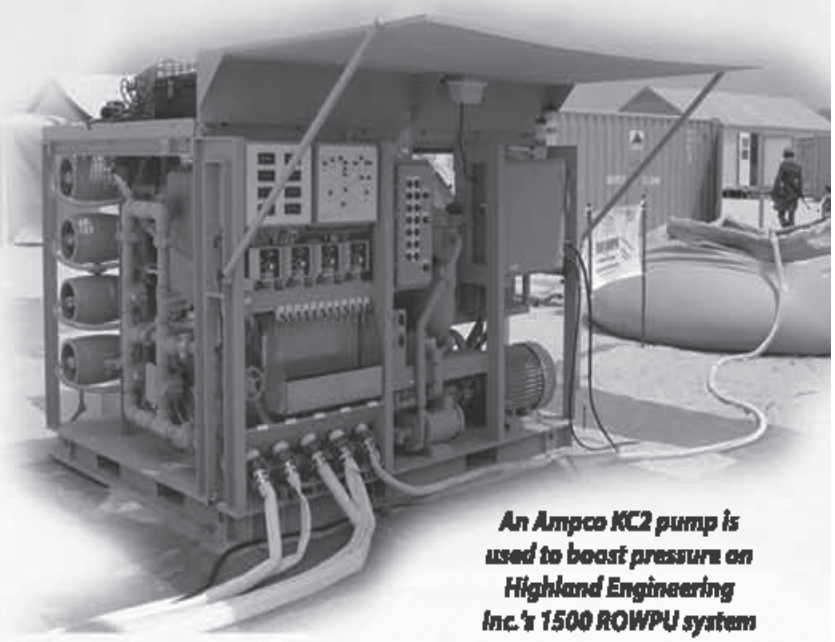


Alloy Selection

Ampco offers the K, R and Z Series pumps in nickel aluminum bronze (CDA958), 316 stainless steel and duplex 2205 stainless steel construction. All three alloys are in stock and normally available for delivery in one week or less. Our application engineers will help select the right alloy for your application.

Nickel aluminum bronze

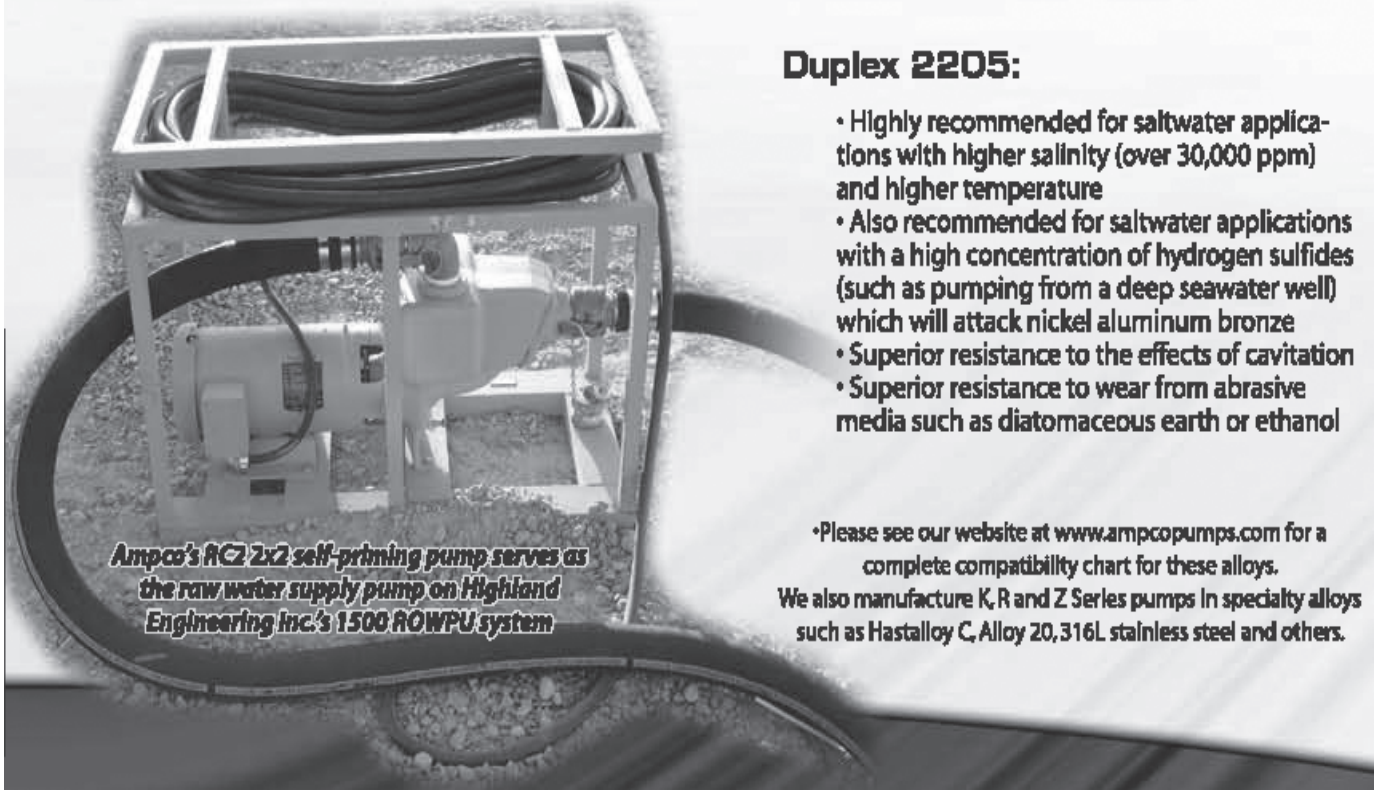
- A very cost effective material for saltwater, as well as brackish water and waste water
- The overall corrosion / erosion resistance of this alloy to saltwater is far superior to stainless steel or standard bronzes
- The U.S. Navy has been using CDA958 in saltwater applications for over 40 years
- Ampco's K, R and Z Series pumps have been used on most of the U.S. Army's reverse osmosis systems since the 1980's



An Ampco KC2 pump is used to boost pressure on Highland Engineering Inc.'s 1500 ROWPU system

316 stainless steel:

- High resistance to corrosion from many chemical solutions
- The material of choice in food and beverage processing applications



Ampco's RC2 2x2 self-priming pump serves as the raw water supply pump on Highland Engineering Inc.'s 1500 ROWPU system

Duplex 2205:

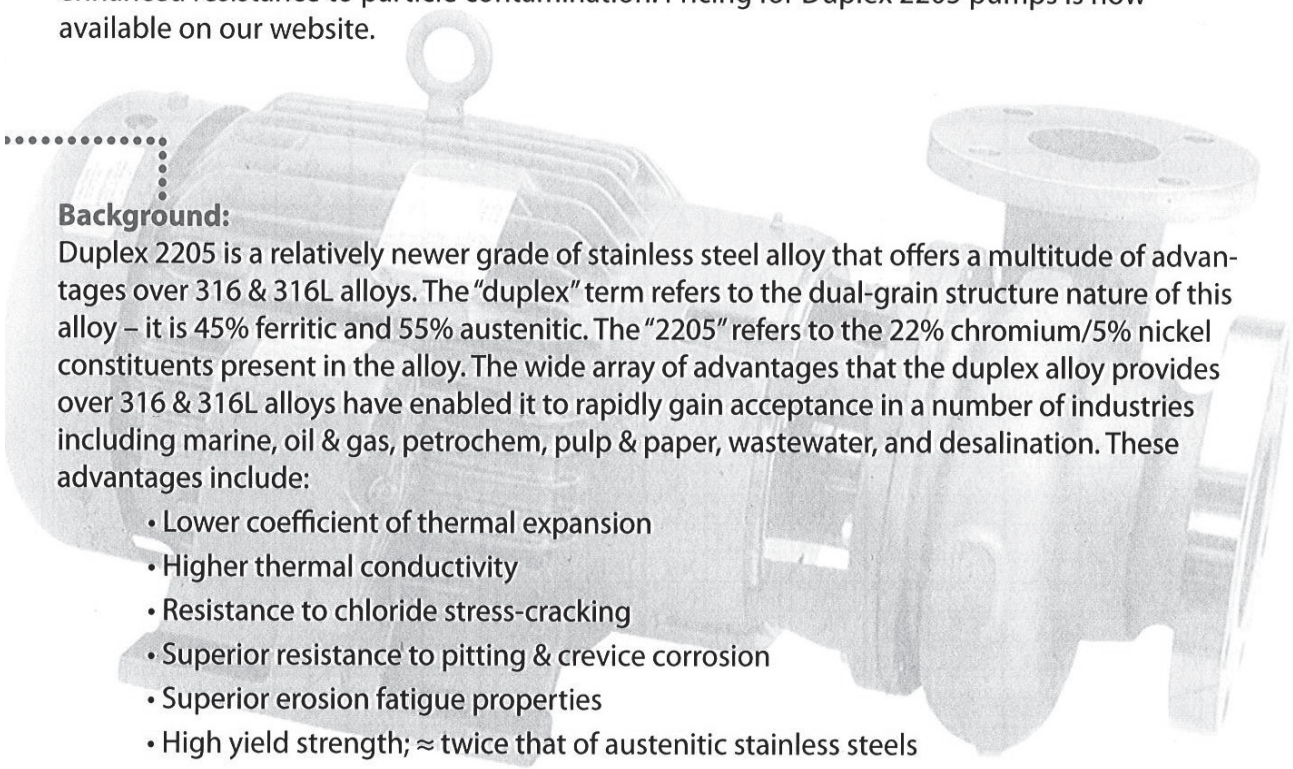
- Highly recommended for saltwater applications with higher salinity (over 30,000 ppm) and higher temperature
- Also recommended for saltwater applications with a high concentration of hydrogen sulfides (such as pumping from a deep seawater well) which will attack nickel aluminum bronze
- Superior resistance to the effects of cavitation
- Superior resistance to wear from abrasive media such as diatomaceous earth or ethanol

•Please see our website at www.ampcopumps.com for a complete compatibility chart for these alloys. We also manufacture K, R and Z Series pumps in specialty alloys such as Hastalloy C, Alloy 20, 316L stainless steel and others.

Ampco Pumps Company

Ampco Introduces Duplex 2205 Alloy Pumps

Ampco's standard K,R, and Z Series pumps are now available from stock in Duplex 2205, in addition to 316 SS and nickel-aluminum bronze. Duplex 2205 is highly recommended for seawater reverse osmosis and desalination applications, in addition to other applications that require superior corrosion resistance, superior resistance to the effects of cavitation, or enhanced resistance to particle contamination. Pricing for Duplex 2205 pumps is now available on our website.



Background:

Duplex 2205 is a relatively newer grade of stainless steel alloy that offers a multitude of advantages over 316 & 316L alloys. The "duplex" term refers to the dual-grain structure nature of this alloy – it is 45% ferritic and 55% austenitic. The "2205" refers to the 22% chromium/5% nickel constituents present in the alloy. The wide array of advantages that the duplex alloy provides over 316 & 316L alloys have enabled it to rapidly gain acceptance in a number of industries including marine, oil & gas, petrochem, pulp & paper, wastewater, and desalination. These advantages include:

- Lower coefficient of thermal expansion
- Higher thermal conductivity
- Resistance to chloride stress-cracking
- Superior resistance to pitting & crevice corrosion
- Superior erosion fatigue properties
- High yield strength; ≈ twice that of austenitic stainless steels

Additional key points:

- Duplex 2205 is 45% ferritic – as such, it will be far more magnetic than any 304 or 316 alloy that you will encounter
- The term "Super Duplex" refers to duplex alloys such as UR52N+ that incorporate copper into their chemistry. The addition of copper provides dramatically improved corrosion resistance to hot chlorides and strong reducing acids, such as H_2SO_4. The duplex 2205 alloy used by Ampco may contain a small amount of copper, but can ***not*** be referred to as a "Super" Duplex.

Compatibilities Rating

A – Excellent B- Good C – Fair/Component life will be limited
NR – Not Recommended

Fluid Media	Metals			Elastomers				Seal Faces			
	Duplex 2205	Cast CF8M S.S.	Bronze CDA958	Buna-N	Viton	EPDM	Teflon	Carbon	Ceramic	Silicon Carbide	Tungsten Carbide
Acetic Acid, <30%	A	A	A	NR	B	A	A	A	A	A	A
Acetic Acid, > 30%, to 70 °F	NR	A	A	NR	B	B	A	A	A	A	NR
Acetone	A	A	A	NR	A	A	A	A	A	A	A
Aluminum Sulphate, <10%	A	B	A	A	A	A	A	A	A	A	NR
Aluminum Sulphate, >10%	B	NR	A	A	A	A	A	A	A	A	NR
Ammonia, Liquid	NR	NR	-	NR	NR	A	A	A	A	A	A
Ammonium Chloride, <10%	B	B	NR	A	A	A	A	A	A	A	NR
Ammonium Hydroxide, <30%	A	A	NR	A	C	A	A	A	A	B	NR
Amyl Acetate	A	A	-	A	NR	C	A	A	NR	A	A
Amyl Alcohol, to 200 °F	A	A	-	B	B	A	A	A	A	A	A
Amyl Chloride, to 150 °F	A	A	A	-	A	NR	A	A		A	A
Anti-Freeze, to 140 °F	A	A	A	C	C	A	A	A	A	A	A
Barium Chloride, <5%	AB	B	A	A	A	A	A	A	A	A	NR
Barium Hydroxide, to 160 °F	A	AB	AB	A	A	A	A	A	A	A	A
Beer	A	AB	A	A	A	A	A	A	A	A	A
Beet Sugar Liquors	A	A	A	A	A	A	A	A	A	A	A
Benzene	A	A	A	A	A	A	A	A	A	A	A
Bisphenol-A	A	A	-	B	A	NR	A	A	A	A	NR
Bleach-Sodium Hypochlorite, <20%	B	B	B	NR	A	A	A	NR	A	B	NR
Bromine	NR	NR	-	NR	A	NR	NR	NR	A	B	NR
Bunker C Fuel Oil	A	A	-	A	A	-	A	A	NR	A	A
Butane, Liquid	A	A	A	A	A	NR	A	A	A	A	A
Calcium Bisulfate	B	B	-	B	B	A	A	A	A	B	NR
Calcium Chlorate	B	B	-	C	C	A	A	A	A	A	NR
Chlorine Water	B	B	NR	NR	A	NR	A	A	A	A	A
Citric Acid	A	AB	NR	A	A	A	A	A	A	A	NR
Corn Oil	A	A	-	A	A	C	A	A	A	A	A
Cutting Oil	A	A	A	A	A	NR	A	A	A	A	A
De-ionized Water	A	A	-	B	B	A	A	A	A	A	NR
Diesel Fuel	A	A	A	A	A	NR	A	A	A	A	A
Dimethyl Ether, <50%	B	B	-	A	B	B	A	A	A	A	A
Dimethyl Formahyde	A	A	-	B	NR	A	A	A	A	A	A
Esters	A	A	A	NR	A	A	A	A	A	A	A
Ethers, to 70 °F	A	A	A	NR	A	C	A	A	-	A	A
Ethyl Alcohol	A	A	-	C	C	A	A	A	A	A	A
Ethyl Chloride, to 140 °F	A		-	A	A	C	A	A	A	A	NR
Ethyl Mercaptin, to 70 °F	A	B	-	NR	A	-	A	A	A	A	NR
Ethylene Chlorohydrin	AB	AB	-	NR	A	B	NR	-	-	-	-
Ethylene Dichloride	AB	-	-	NR	A	C	A	A	A	A	NR
Ethylene Glycol, to 140 °F	A	A	A	A	A	A	A	A	A	A	A
Ferric Chloride	NR	NR	NR	A	A	A	A	A	A	B	NR
Formic Acid	A	NR	AB – 70°F	-	NR	A	A	A	A	B	A
Fruit Juice	A	A	-	A	A	A	A	A		A	A
Furfural	A	A*	A	NR	NR	A	A	A	C	A	NR
Gasoline	A	A	A	A	A	NR	A	A	A	A	NR

The above chart is a guide to the materials used to fabricate the internal "wetted" components in the centrifugal pumps manufactured by Ampco Pumps. The information in this chart is based upon careful examination of available published information and is believed to be accurate. However, since the resistance of metals, polymers, and elastomers can be affected by concentration, temperature, and other factors, this information should be considered as a general guide rather than an unqualified guarantee. The end user of the pump must ultimately decide the suitability of the pump materials with their own system.

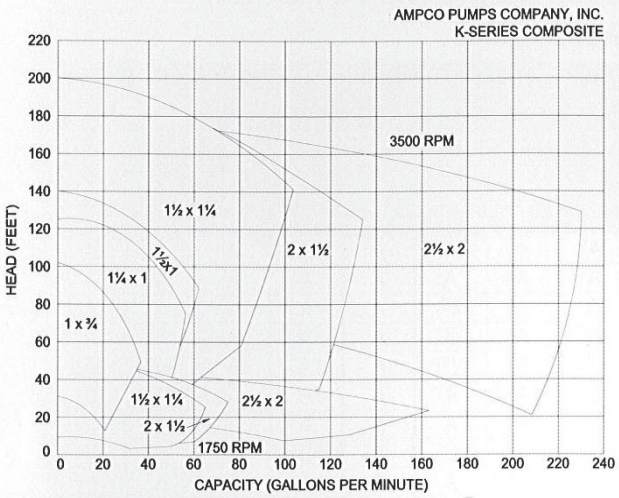
Compatibilities Rating

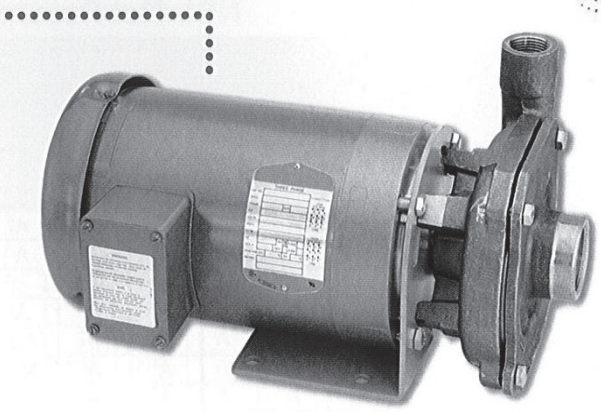
A – Excellent B- Good C – Fair/Component life will be limited
NR – Not Recommended

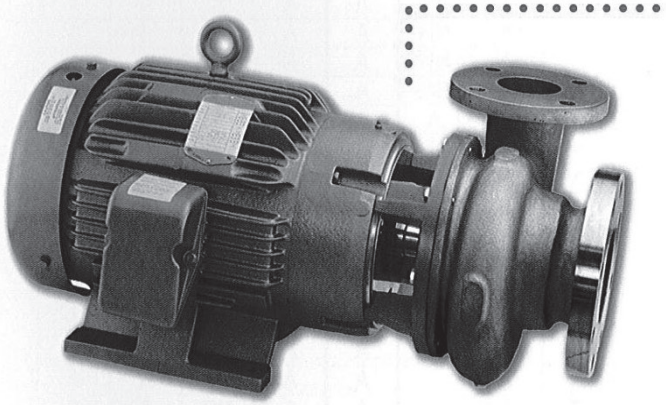
Fluid Media	Metals			Elastomers				Seal Faces			
	Duplex 2205	Cast CF8M S.S.	Bronze CDA958	Buna-N	Viton	EPDM	Teflon	Carbon	Ceramic	Silicon Carbide	Tungsten Carbide
Glucose	A	A	A	A	A	A	A	A	A	A	A
Glycerine	A	A	A	A	A	A	A	A	A	A	A
Hexane	A	A	-	A	A	NR	A	A	A	A	A
Hydraulic Oil	A	A	A	A	A	NR	A	A	A	A	A
Hydrochloric Acid, <15%	NR	NR	AB	NR	A	NR	A	A	A	NR	NR
Hydrocyanic Acid, <15%	A	A	NR	B	A	A	A	A	A	B	NR
Hydrogen Peroxide, <30%	A	A	NR	B	A	A	A	A	A	A	NR
Hydrogen Peroxide, <85%	A	AB	NR	NR	A	C	A	NR	A	A	NR
Iodine	B	B	NR	B	B	A	A	A	A	A	NR
Isobutane	A	A	A*	A	A	NR	A	A	A	A	A
Isobutyl Alcohol	A	A	-	B	A	A	A	A	A	A	A
Isopropyl Acetate	A	A	-	NR	NR	B	A	A	A	A	A
Isopropyl Ether	A	A	-	B	NR	NR	A	A	A	A	A
Jet Fuel	A	A	-	B	A	NR	A	A	A	A	A
Kerosene	A	A	-	A	A	NR	A	A	A	A	A
Ketones	A	A	B	NR	NR	A	A	A	A	A	A
Lacquer Thinner	A	A	A	NR	NR	NR	A	A		A	A
Linseed Oil	A	A	-	A	A	C	A	A	A	A	A
Liquid Petroleum Gas	A	A	A	A	A	NR	A	A	A	A	A
Magnesium Chloride, <33% to 70 °F	A	A	A	A	A	A	A	A	A	A	A
Magnesium Hydroxide, <10%	AB	AB	A	B	A	A	A	A	A	A	A
Magnesium Sulfate, <40%	A	B	A	A	A	A	A	A	A	A	A
Methanol	A	A	-	NR	NR	A	A	A	A	A	A
Methyl Ethyl Ketone (MEK)	A	A	-	NR	NR	A	A	A	A	A	A
Molasses	A	A	A	A	A	-	A	A	A	A	A
Naptha, Petroleum	A	A	A	B	A	NR	A	A	NR	A	A
Nitric Acid, <50%	A	A	NR	NR	A	B		A	A	NR	A
Nitric Acid, >50%	-	B	NR	NR	C	NR	A	NR	NR	A	NR
Oleic Acid	A	A	A*	C	B	NR	A	A	A	A	NR
Ozone, <12%	A	A	-	NR	A	A	A	NR	NR	A	NR
Palm Oil	A	A	-	A	A	NR	A	A	A	A	A
Palmitic Acid	A	B	B	A	A	B	A	A	A	A	A
Potassium Chloride	A	B	A	A	A	A	A	A	A	B	NR
Potassium Hydroxide	A	B	AB	C	C	A	A	NR	A	B	A
Potassium Nitrate	A	-	B	A	A	A	A	A	A	A	A
Propane	A	A	A	A	A	NR	A	A	A	A	A
Propylene Glycol	A	A	-	C	C	A	A	A	A	A	A
Rapeseed Oil	A	A	-	B	A	A	A	A	A	A	A
Sea Water	A	B	A	A	A	A	A	A	A	A	A
Sodium Chloride	A	AB	A	A	A	A	A	NR	A	A	NR
Sodium Hydroxide, <50%	A	AB	A	B	B	A	A	A	-	NR	NR
Sulphuric Acid, <2%	A	B	A	C	C	A	A	A	A	NR	NR
Toluene	A	A	A	NR	A	NR	A	A	A	A	A
Xylene	A	B	A	NR	A	NR	A	A	A	A	A
Zinc Chloride	A	B	NR	A	A	A	A	A	A	B	NR

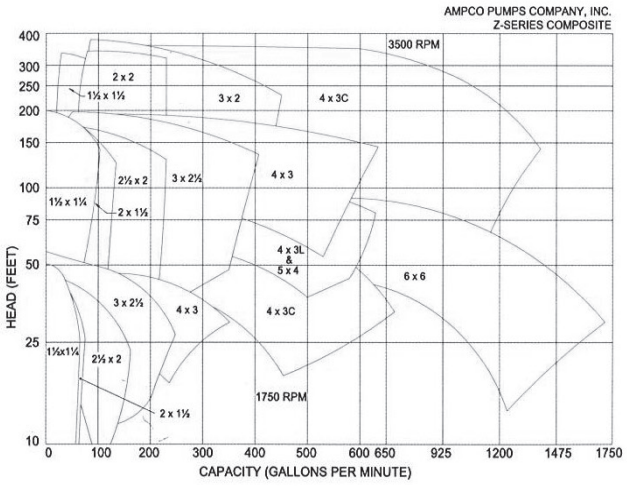
The above chart is a guide to the materials used to fabricate the internal "wetted" components in the centrifugal pumps manufactured by Ampco Pumps. The information in this chart is based upon careful examination of available published information and is believed to be accurate. However, since the resistance of metals, polymers, and elastomers can be affected by concentration, temperature, and other factors, this information should be considered as a general guide rather than an unqualified guarantee. The end user of the pump must ultimately decide the suitability of the pump materials with their own system.

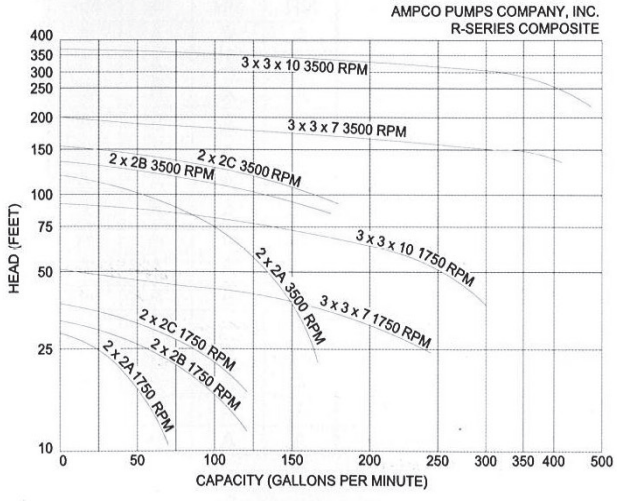
Universal Curves

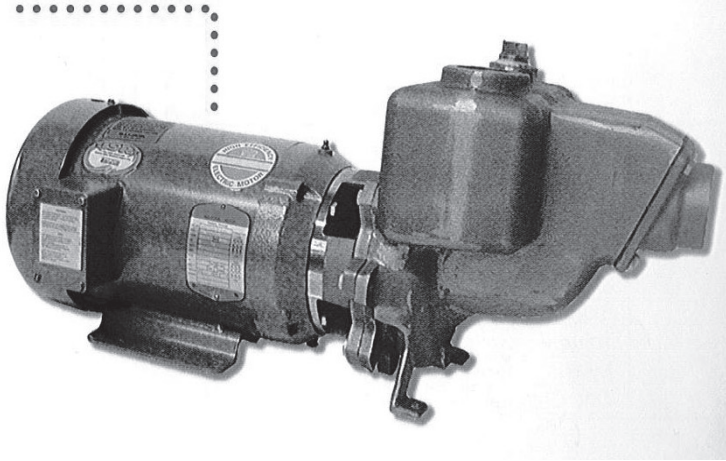






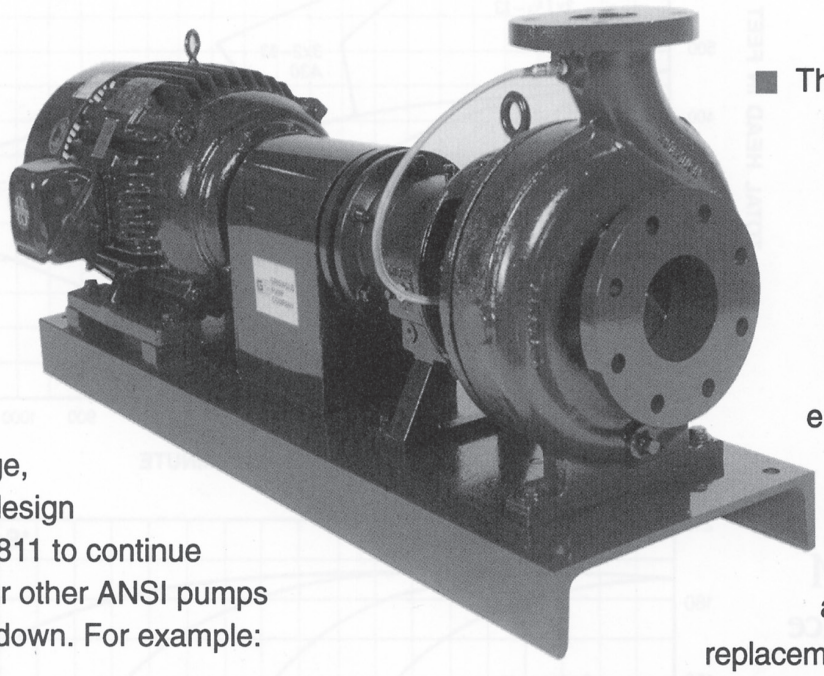






John Wooden
Success is peace of mind which is a direct result of self-satisfaction in knowing you made the effort to become the best of which you are capable.

GRISWOLD 811 ANSI Centrifugal Pumps ...



GRISWOLD's Model 811 meets or exceeds all ANSI standards for the chemical processing industry. The fully open impeller, centerline discharge, and other unique design features allow the 811 to continue operating long after other ANSI pumps wear out or break down. For example:

- A choice of extra-heavy-duty, **stocked, Ductile Iron, Stainless Steel, Alloy 20 and CD4M** pump materials coupled with multiple seal design options allows you to tailor the 811 to virtually any process flow application.

- The fully-open impeller design features large wear areas and back pump-out vanes, making the 811 far superior in handling corrosive and erosive fluids. Open impellers balance hydraulic axial thrust loads, lengthen bearing life, and reduce stuffing box pressure too.

- The self-tightening impeller with O-ring seal eliminates part corrosion, gasket leakage, and all chance of loosening in high temperature environments.

- Replaceable shaft sleeve and adapters allow easy replacement of sealing surface without shaft and bearing disassembly, without bearing contamination.

- Any external clearance adjustments due to wear can easily be made on-site with an ordinary open-end wrench. No shimming is required.

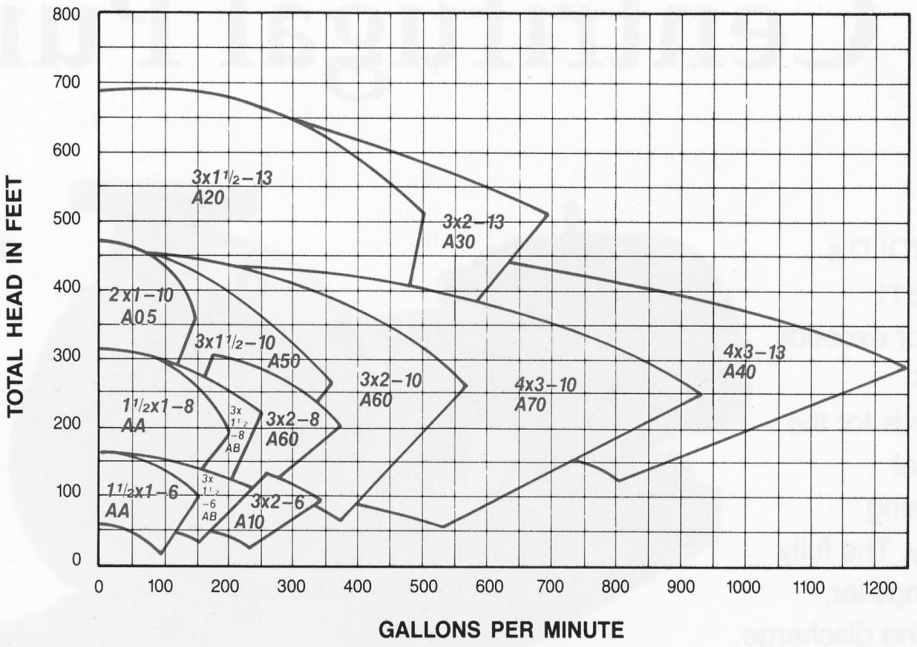
- **Interchangeable components** simplify installation and on-site replacement, reduce the need for spare parts stocking.

- And best of all, the Model 811 is available in a wide range of sizes and capacities to fit virtually any process fluid application.

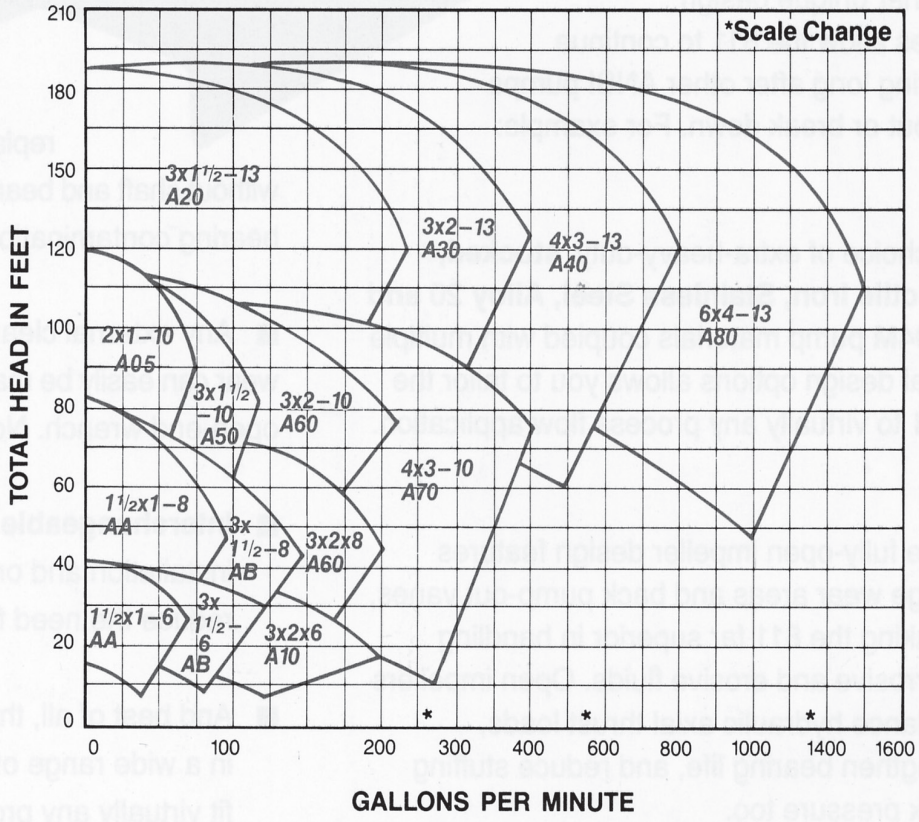
. . . Standard 811's can be **shipped within 36 hours** . . . that's our "36-Hour Commitment" to you!

GRISWOLD PUMP COMPANY

3550 RPM Performance Curve



1750 RPM Performance Curve



FAMILIAR PHRASES

BET YOUR BOTTOM DOLLAR

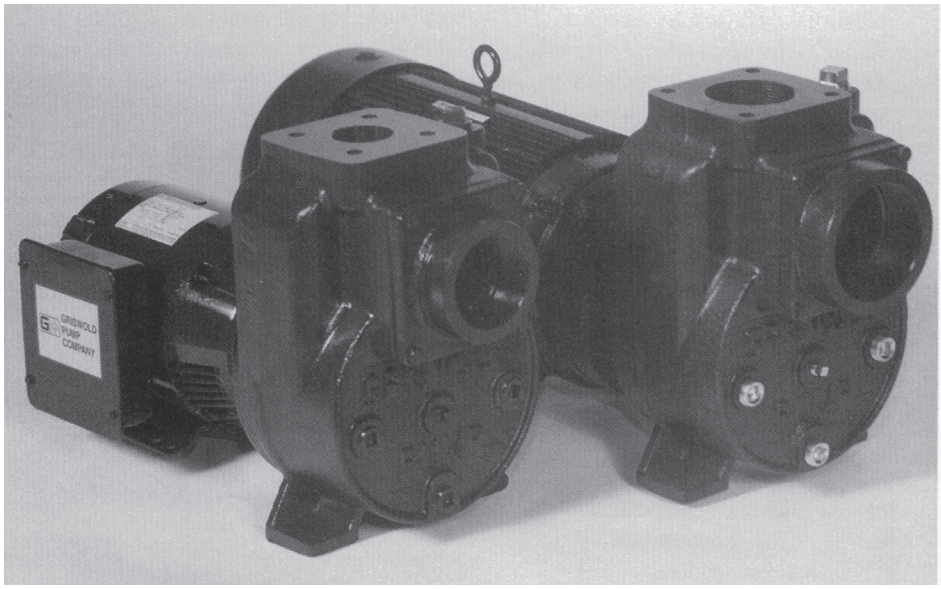
Meaning: It's a sure thing; to bet everything you have.

Origin: just as they do today, 19th-century poker players would keep their betting chips-or "dollars"-in high stacks at the table, taking from the top when betting. When a hand was so good that a player wanted to wager the entire stack, they would pick up or push the stack by the bottom chip-literally betting with their bottom dollar.

Griswold H Series, High Head, Self-Priming Pump

Griswold's High Pressure H Series pumps offer performances previously unavailable.

Ideally suited for applications where relatively clean water is needed at higher pressures.



Pressures up to 110 PSI (260 Feet) and flows to 325 GPM... fire protection, marine, forestry, irrigation, industrial and commercial applications.

The H Series pumps are designed specifically to lift water (up to a maximum of 25 feet). Unlike standard end suction centrifugal pumps the Griswold H Series is a true self-priming pump. Able to maintain it's prime even when check valves or foot valves have failed. The suction line being located higher on the pump housing than conventional centrifugal pumps keeps the impeller and mechanical seal covered with water at all times eliminating the need to re-prime the pump and protects the seal from running dry and costly replacements.

The H Series pumps are available in two versions. The HL pumps are designed for higher pressures at lower flows with lower horsepowers. The HH pumps are designed for higher flows at higher pressures requiring higher horsepowers.

Both the HL and the HH pumps are available in your choice of drivers. Close-coupled electric motors, long-coupled frame mounted, or close-coupled engine driven with your choice of gas, diesel or LP fueled air cooled engines. Close-coupled, electric driven pumps are available with ODP or TEFC, JM frame motors.

Pressures up to 110 PSI (260 Feet) and flows to 325 GPM...

Griswold H Series, High Head, Self-Priming Pump

PUMP FEATURES

Casing - Heavy duty cast iron ASTM A48 class 30 case with built-in drain and priming plugs and bolt-on suction flange. The HL and HH also have (3) 3/4" NPT plugged connections on the case for accessories to be installed or auxiliary water outlets. Extra-large priming chamber for fast, trouble-free priming. The HL and HH series offers dual connections. Both pumps can be connected by either NPT threads or ANSI flanges on the discharge and NPT threads or Victaulic® groove connections on the suction.

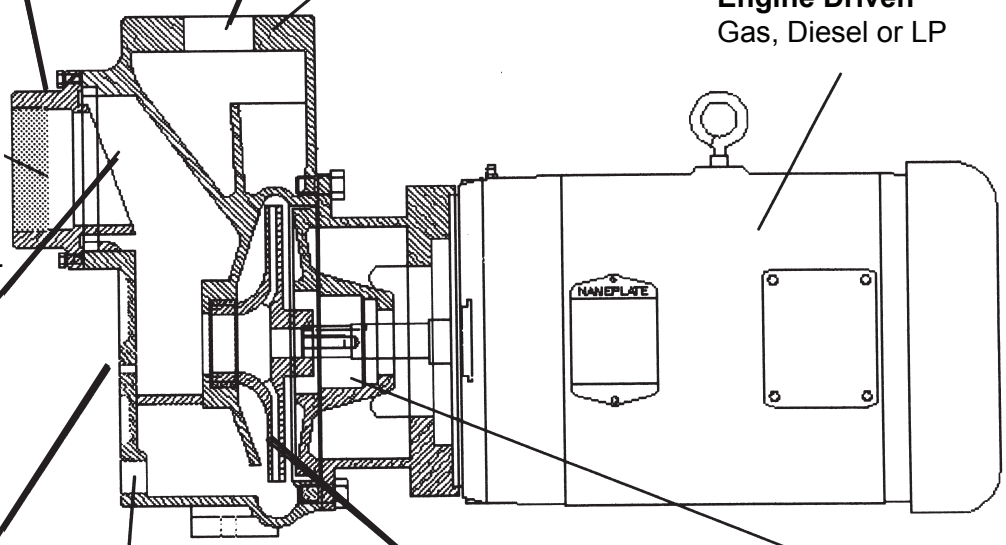
Suction Flanges - Boll-on suction flange available in a variety of sizes to accommodate your specific flow and horsepower requirements. The 3" flange is machined for both 3" NPTF threads and 3" Victaulic groove connection. The 4" flange is machined for 4" NPTF threads.

Discharge -dual connections. Both pumps can be connected by *either* NPT threads or ANSI flanges.

1" NPT Priming Plug (Not Shown)

JM Frame Motors
All Brands, All Phases & Voltages
60 or 50 Cycle ODP,
TEFC Explosion Proof Chew Duty
IEEE45 Marine Duty
Inverter Duty
OR
Frame Mounted
OR
Engine Driven
Gas, Diesel or LP

The suction line being located higher on the pump housing than conventional centrifugal pumps keeps the impeller and mechanical seal covered with water at all times eliminating the need to reprime the pump and protects the seal from running dry and costly replacements.



Built-In Check Valve - Prevents siphoning and need for repriming. No external check valve is required. Designed for easy replacement.

(3) 3/4" NPT Accessory Tappings (Pressure)

Choice of Seals -Carbon and ceramic faces, plus stainless steel components eliminate maintenance problems.Other seal options are available.

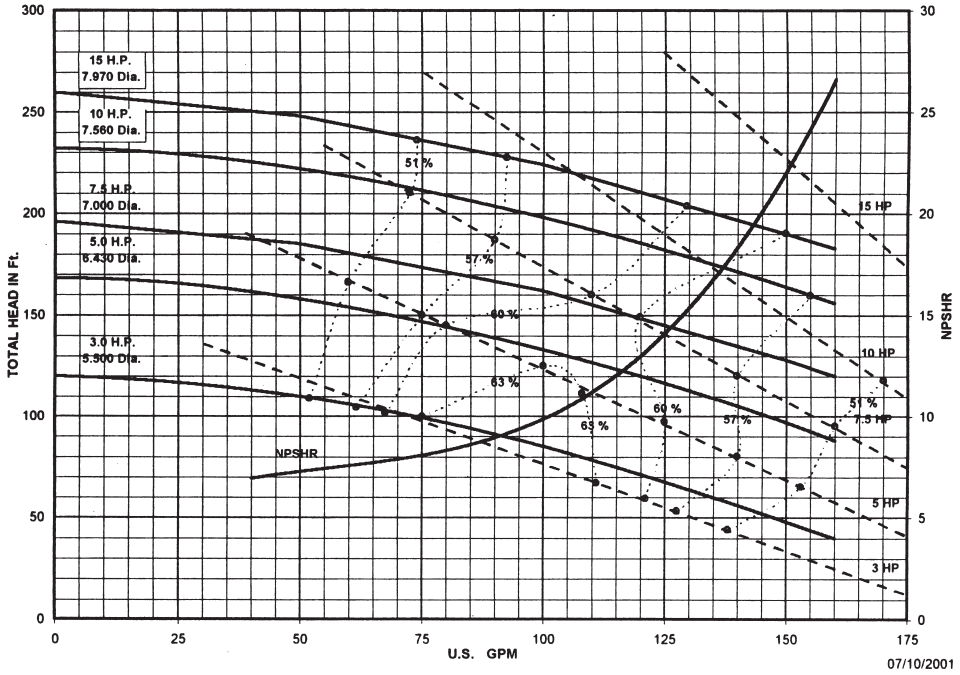
Enclosed Impeller - Bronze. single piece design, balanced and trimmed for a specific operating range.

1/4" NPT Tapping (Vacuum)

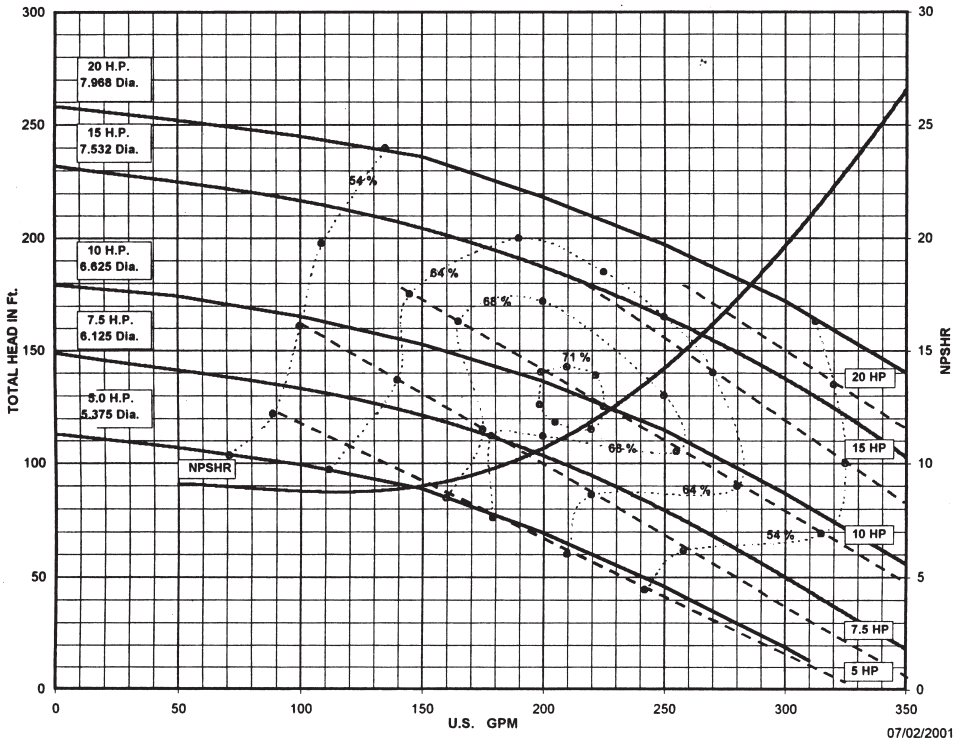
Griswold H Series, High Head, Self-Priming Pump

Performance

HL SERIES 3470 RPM

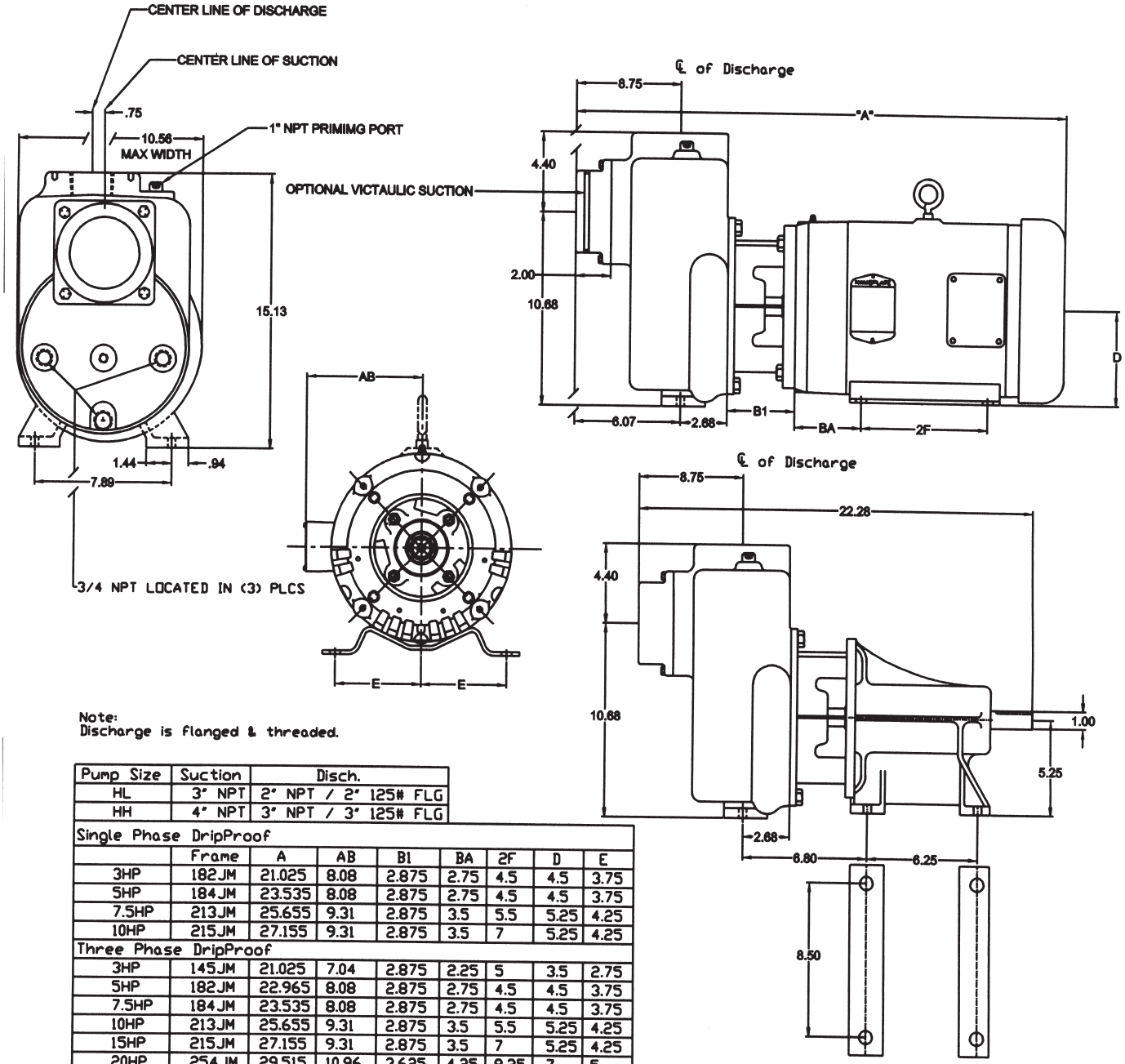


HH SERIES 3470 RPM



Griswold H Series, High Head, Self-Priming Pump

Dimensions



Note:
Discharge is flanged & threaded.

Pump Size	Suction	Disch.
HL	3" NPT	2" NPT / 2" 125# FLG
HH	4" NPT	3" NPT / 3" 125# FLG

	Frame	A	AB	B1	BA	2F	D	E
Single Phase DripProof								
3HP	182JM	21.025	8.08	2.875	2.75	4.5	4.5	3.75
5HP	184JM	23.535	8.08	2.875	2.75	4.5	4.5	3.75
7.5HP	213JM	25.655	9.31	2.875	3.5	5.5	5.25	4.25
10HP	215JM	27.155	9.31	2.875	3.5	7	5.25	4.25
Three Phase DripProof								
3HP	145JM	21.025	7.04	2.875	2.25	5	3.5	2.75
5HP	182JM	22.965	8.08	2.875	2.75	4.5	4.5	3.75
7.5HP	184JM	23.535	8.08	2.875	2.75	4.5	4.5	3.75
10HP	213JM	25.655	9.31	2.875	3.5	5.5	5.25	4.25
15HP	215JM	27.155	9.31	2.875	3.5	7	5.25	4.25
20HP	254JM	29.515	10.96	3.625	4.25	8.25	7	5
Three Phase TEFC								
5HP	184JM	30.80	8.08	2.875	2.75	5.5	4.5	3.75
7.5HP	184JM	30.80	8.08	2.875	2.75	4.5	4.5	3.75
10HP	215JM	35.21	9.31	2.875	3.5	7	5.25	4.25
15HP	215JM	35.21	9.31	2.875	3.5	7	5.25	4.25
20HP	256JM	41.93	10.96	3.625	4.25	10	7	5

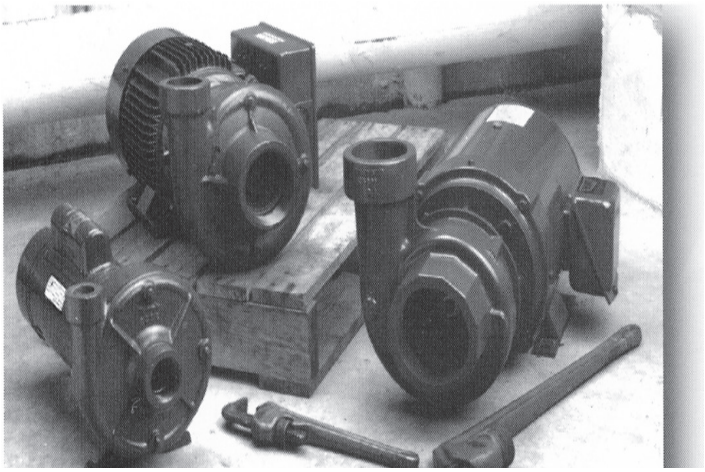
FAMILIAR PHRASES

TO FIGHT FIRE WITH FIRE

Meaning: To respond in like manner; a desperate measure. Origin: In order to extinguish huge prairie and forest fires in the early West, desperate American settlers would sometimes set fire to a strip of land in the path of the advancing fire and then extinguish it, leaving a barren strip with nothing for the approaching fire to feed on. Although effective, this tactic was-and still isextremely dangerous, as the backfire itself can get out of control.

D Series

End Suction Centrifugal Pumps



NRTL/C

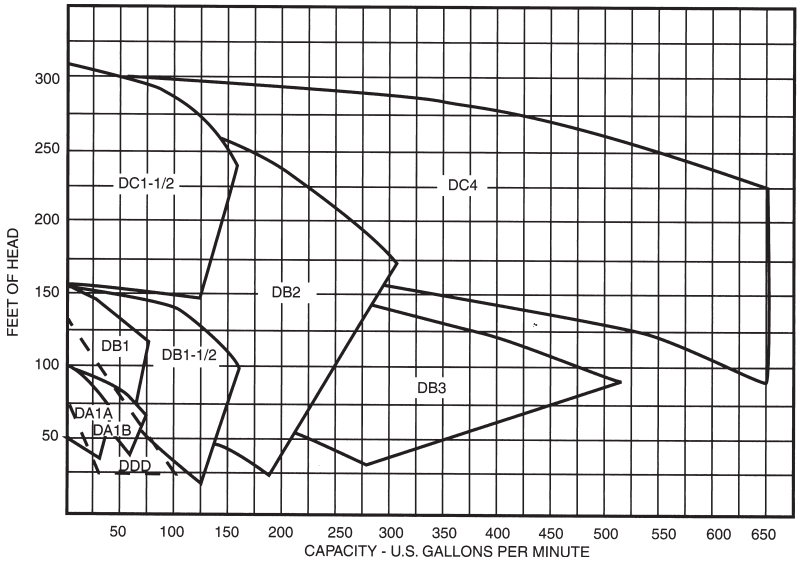
End Suction Centrifugal Pumps.
For general industrial use, transfer, circulation or booster service. Available in ratings from 1/3HP to 50HP with capacities through 650GPM and heads to 300 feet.

Features:

- ❏ **Heavy-duty cast iron construction** for increased durability.
- ❏ **DDD has glass-filled thermoplastic impeller** for increased efficiency & dependable high temperature operation.
- ❏ **DA1A through DC2 bronze fitted, DB3 and DC4 cast iron fitted.**
- ❏ **Shaft coupling** design on 56C frame units 1/3-3HP for easy removal of pump motor.
- ❏ **Shaft sleeve** with O-ring design in JM frame units 3-50HP give added protection against shaft damage.
- ❏ **Maximum operating temperature** of 212½F on all models except DDD series which handles up to 190½F.
- ❏ **Sealed motor bearings** on all motors to carry radial and thrust loads of pump end.
- ❏ **All units are equipped with open drip-proof motors.**
- ❏ **Max operating pressures 150 PSI.**

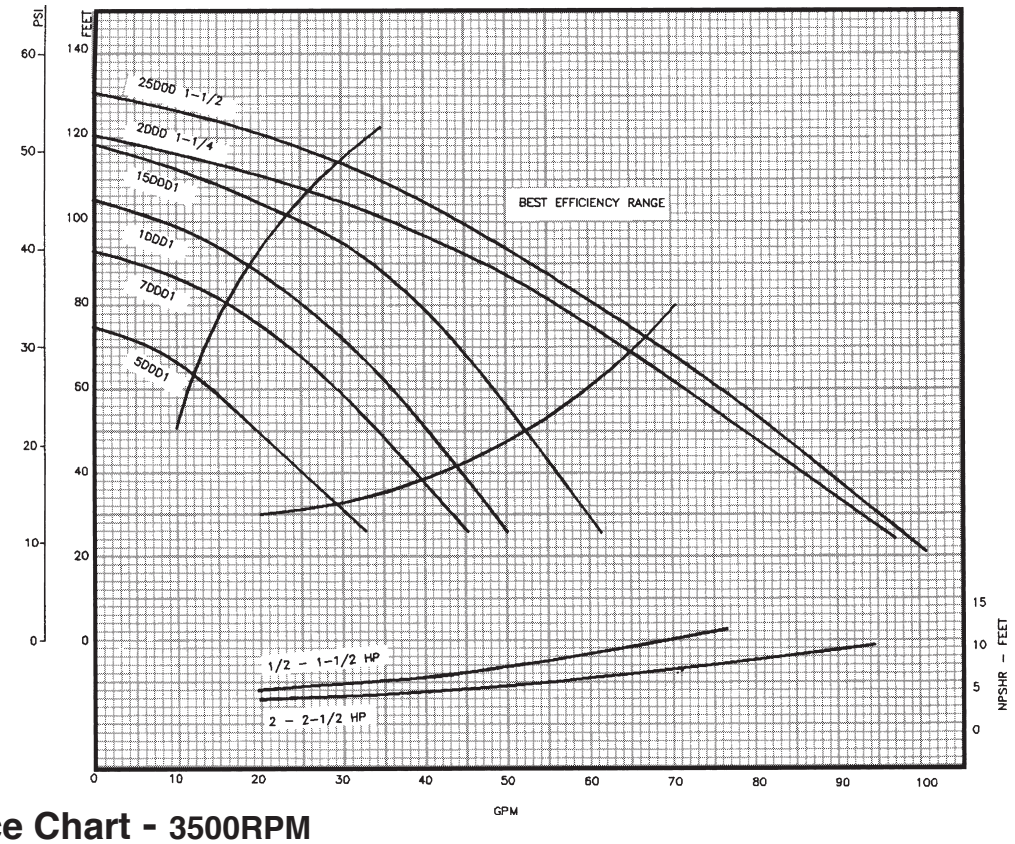
D Series
End Suction Centrifugal Pumps Performance

Consult individual curves for complete pump performance.



DDD Series

End Suction Centrifugal Pump Performance



Performance Chart - 3500RPM

DDD		Discharge x Suction	CAPACITIES GPM Total Head in Feet											Shut Off Head (Feet)
Model	HP		30	35	40	45	50	60	70	80	90	100	110	
5DDD1	1/2	1" x 1-1/4"	30	27	25	22	19	14	-	-	-	-	-	74
7DDD1	3/4	1" x 1-1/4"		41	38	36	34	29	23	16	-	-	-	93
1DDD1	1	1" x 1-1/4"				42	40	36	31	25	18	-	-	105
15DDD1	1-1/2	1 x 1-1/4"					52	47	44	39	34	25	-	118
2DDD1-1/4	2	1-1/4" x							64	56	47	36	23	121
25DDD1-1/2	2-1/2	1-1/2"							68	61	53	45	35	131
		1-1/2" x 2"												

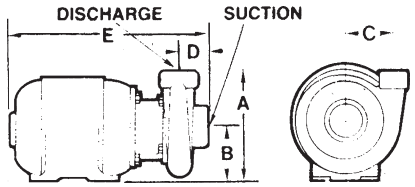
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION

Order No.	Model No.	HP	Mtr. Phase	Voltage	Svc. Fact.	Amps	Weight
9312-6928	5DDD1-S	1/2	1	115/230	1.6	12.0/6.0	27
9312-6936	7DDD1-S	3/4	1	115/230	1.27	14.2/7.1	31
9312-6944	1DDD1-S	1	1	115/230	1.25	14.8/7.4	33
9312-6951	15DDD1-S	1-1/2	1	115/230	1.10	16.4/8.2	38
9312-6969	2DDD1-1/4-S	2	1	115/230	1.10	23.0/11.5	48
9312-6977	25DDD1-1/2-S	2-1/2	1	115/230	1.0	26.0/13.0	46
9312-7991	5DDD1-T	1/2	3	208/230/460	1.9	3.1-3.0/1.5	27
9312-8007	7DDD1-T	3/4	3	208/230/460	1.65	3.7-3.6/1.8	31
9312-8015	1DDD1-T	1	3	208/230/460	1.65	5.0-4.6/2.3	33
9312-8023	15DDD1-T	1-1/2	3	208/230/460	1.50	6.5-6.0/3.0	38
9312-8031	2DDD1- 1/4-T	2-1/2	3	208/230/460	1.30	7.3-7.8/3.9	48

D Series

End Suction Centrifugal Pump Dimensions



56Z Frame Motors

Pump Model	HP	Disc. (NPT)	Suct. (NPT)	A	B	C	D	E	F	G	H	K
5DDD1-S	1/2	1	1 -1/4	14-11/16"	2-3/8"	5-5/16"	4-7/16"	3-1/2"	4-5/8"	8 -3/4"	5-1/2"	11-7/16"
7DDD1-S	3/4	1	1-1/4	14-11/16"	2-3/8"	5 -5/16"	4-7/16"	3-1/2"	4-5/8"	8-3/4"	5-1/2"	12-7/16"
1DDD1-S	1	1	1-1/4	14-11/16"	2-3/8"	5-5/16"	4-7/16"	3-1/2"	4-5/8"	8-3/4"	5-1/2"	12-7/16"
15DDD1-S	1-1/2	1	1-1/4	15-13/16"	2-3/8"	5-5/16"	4-7/16"	3-1/2"	4-5/8"	8-3/4"	5-1/2"	12-3/16"
2DDD1-1/4-S	2	1 -1/4	1-1/2	16-11/16"	2-13/16"	6-1/8"	5"	3-9/16"	5"	9-1/8"	6-5/16"	13-11/16"
25DDD1-1/2-S	2-1/2	1 -1/2	2	16-11/16"	2-13/16"	6-1/8"	5"	3-9/16"	5"	9-1/8"	6-5/16"	13-11/16"

56C Frame Motors

Pump Model	Disch. (NPT)	Suction (NPT)	A	B	C	D	56 Frame Motor Horsepower						
							1/3	1/2	3/4	1	1 1/2	2	3
DA1A	1	1 -1/4	7 -1/4	3-3/4	3-1/2	1 -3/4	13-1/2	14 -1/2	14 -1/2	15	--	--	--
DA1B	1	1-1/4	7 -1/4	3-3/4	3-1/2	1-3/4	--	14-1/2	14-1/2	15	15	16	--
DB1	1	1-1/2	9	5	3-3/4	2 -1/4	--	--	15-1/4	15 -3/4	15 -3/4	16-1/2	17
DB1 -1/2	1 -1/2	2	9-1/2	5	4	2-1/2	--	--	--	15-3/4	15 -3/4	16-1/2	17
DB2	2	3	9-3/4	5	4-1/4	3-3/4	--	--	--	--	17 -1/4	18	18 -1/2

JM Frame Motors

Pump Model	Disch. (NPT)	Suction (NPT)	A	B	C	D	JM Frame Motor Horsepower					
							3	5	7 1/2	10	15	20
DB1	1	1 -1/2	9	5	3 -3/4	2-1/4	--	18	--	--	--	--
DB1 -1/2	1 -1/2	2	9-1/2	5	4	2-1/2	--	18-1/4	19-1/2	--	--	--
DB2	2	3	9-3/4	5	4 -1/4	3-3/4	--	19-3/4	21	21	--	--
DB3	3	4	11-5/8 -13-3/8	4-1/2-6-1/4	4-1/8	3-1/2	--	20-1/4	21-1/2	21-1/2	23	26-1/2
DC1-1/2	1-1/2	2	9 - 11	3-1/2-5-1/4	5-3/4	2-1/2	17 -1/4	18-1/4	19-1/2	19-1/2	21	--
DC2	2	3	9-3/4 - 12-1/2	3-1/2-6-1/4	4 -3/4	3-3/4	18-3/4	19-3/4	21	21	22-1/2	26

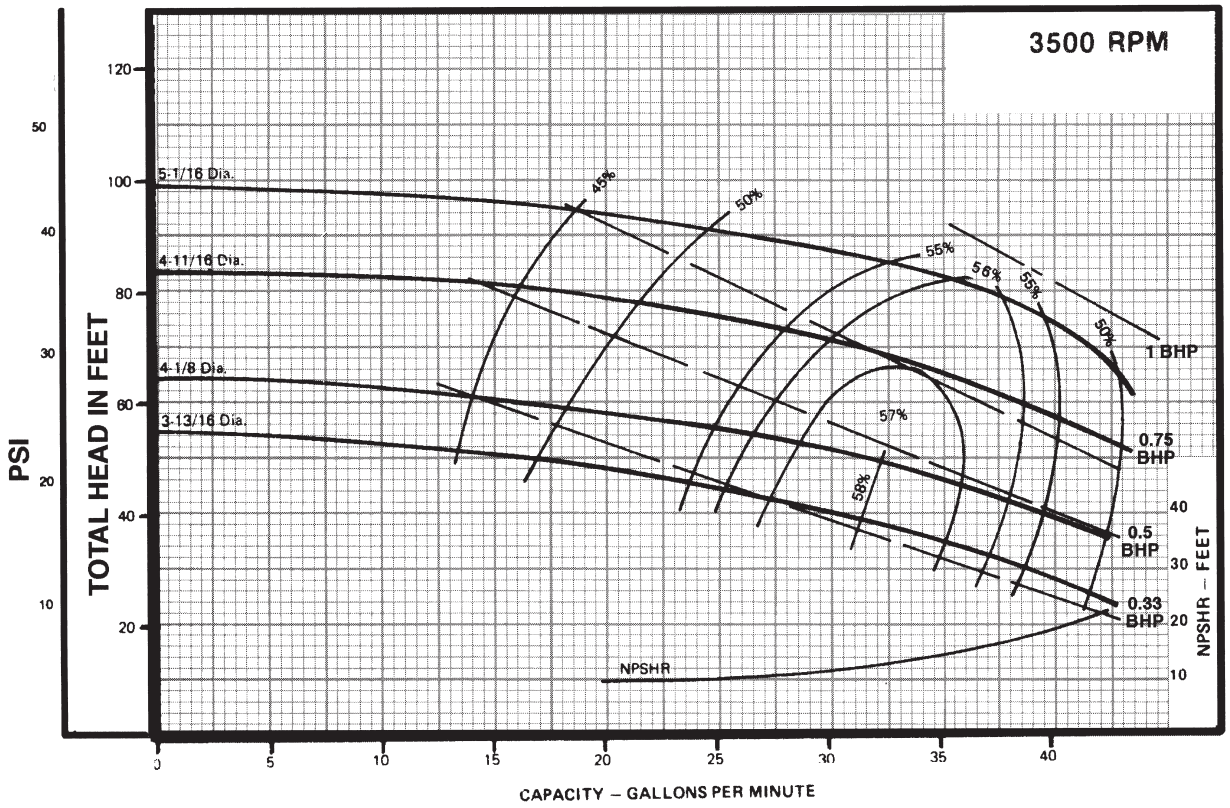
JM Frame Motors

Pump Model	Disch. (NPT)	Suction (NPT)	A	B	C	D	JM Frame Motor Horsepower				
							20	25	30	40	50
DC4 - FNPT	4	4	16-1/2	7-5/8	6-29/64	4-23/32	28-21/32	28-21/32	29-17/32	30	30
DC4 - flanged	4	5	16-1/2	7-5/8	6-29/64	3-13/16	28-21/32	28-21/32	29-17/32	30	30

Notes: 1) Total pump length will vary with motor manufacturer.

Model DA1A Performance

1" Discharge x 1-1/4" Suction



Performance Chart - 3500RPM

DA1A 1" Discharge x 1-1/4" Suction			CAPACITIES GPM Total Head in Feet									Shut Off Head (Feet)
Model	HP	Imp. Dia.	30	35	40	45	50	60	70	80	90	
3DA1A	1/3	3-13/16	38	35	30	24	18					55
5DA1A	1/2	4 -1/8			40	36	32	17				65
7DA1A	3/4	4 -11/16					44	38	32	18		84
1DA1A	1	5 -1/16							43	37	26	100

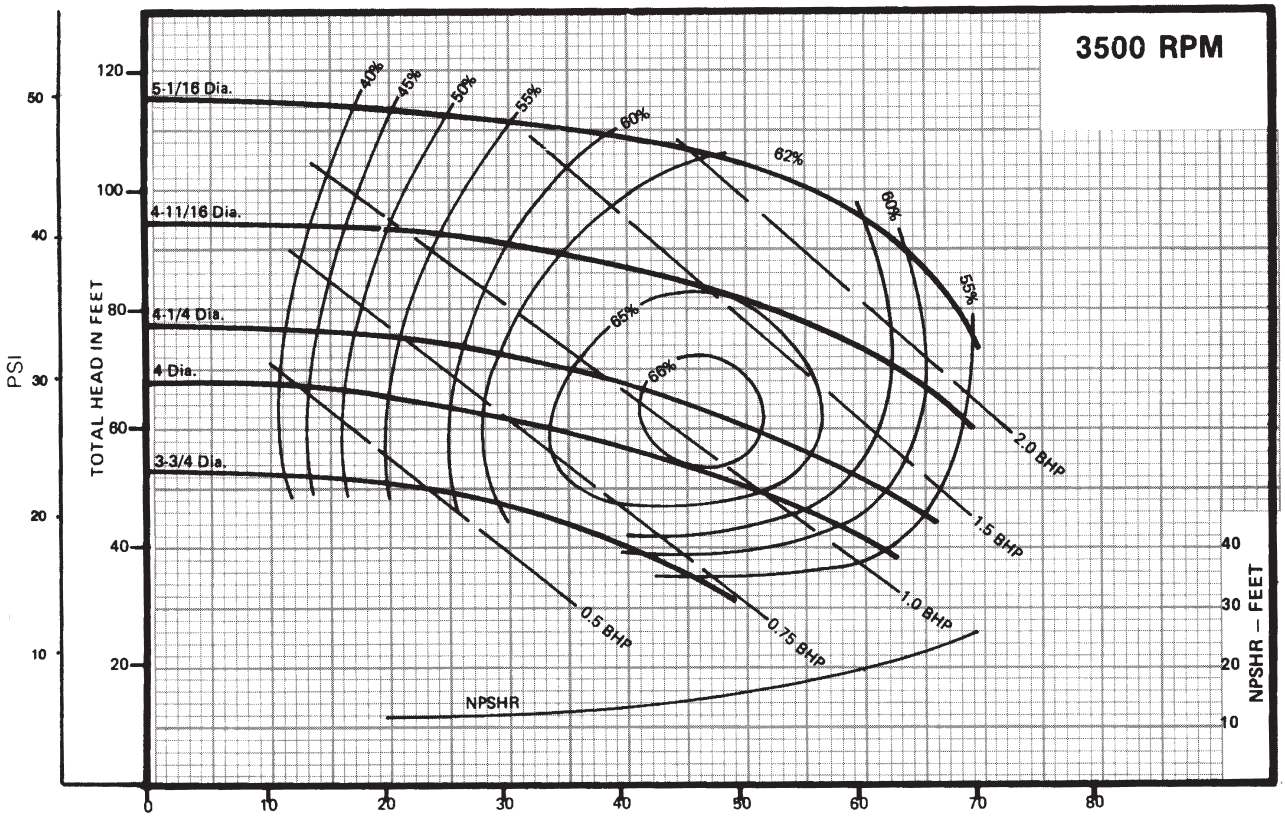
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DA1A

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0012	3DA1A-S	1/3	1	115/230	9.0/4.5	1.75	32
9312-0020	5DA1A-S	1/2	1	115/230	10.6/5.3	1.60	35
9312-0038	7DA1A-S	3/4	1	115/230	14.8/7.4	1.50	36
9312-0046	1DA1A-S	1	1	115/230	17.0/8.5	1.50	37
9312-0053	3DA1A-T	1/3	3	208-230/460	2.2-2.2/1.1	1.75	31
9312-0061	5DA1A-T	1/2	3	208-230/460	2.9-2.7/1.35	1.60	34
9312-0079	7DA1A-T	3/4	3	208-230/460	3.7-3.4/1.7	1.50	37
9312-0087	1DA1A-T	1	3	208-230/460	4.7-4.4/2.2	1.40	38

Model DA1B

1" Discharge x 1-1/4" Suction



Performance Chart - 3500RPM

DA1B 1" Discharge x 1-1/4" Suction			CAPACITIES GPM Total Head in Feet										Shut Off Head (Feet)
Model	HP	Imp. Dia.	30	35	40	45	50	60	70	80	90	100	110	
5DA1B	1/2	3-3/4"	50	46	40	34	23							53
7DA1B	3/4	4"			62	57	51	35						68
1DA1B	1	4-1/4"					62	51	35					78
15DA1B	1-1/2	4-11/16"						70	63	53	33			95
2DA1B	2	5-1/16"								69	64	56	38	116

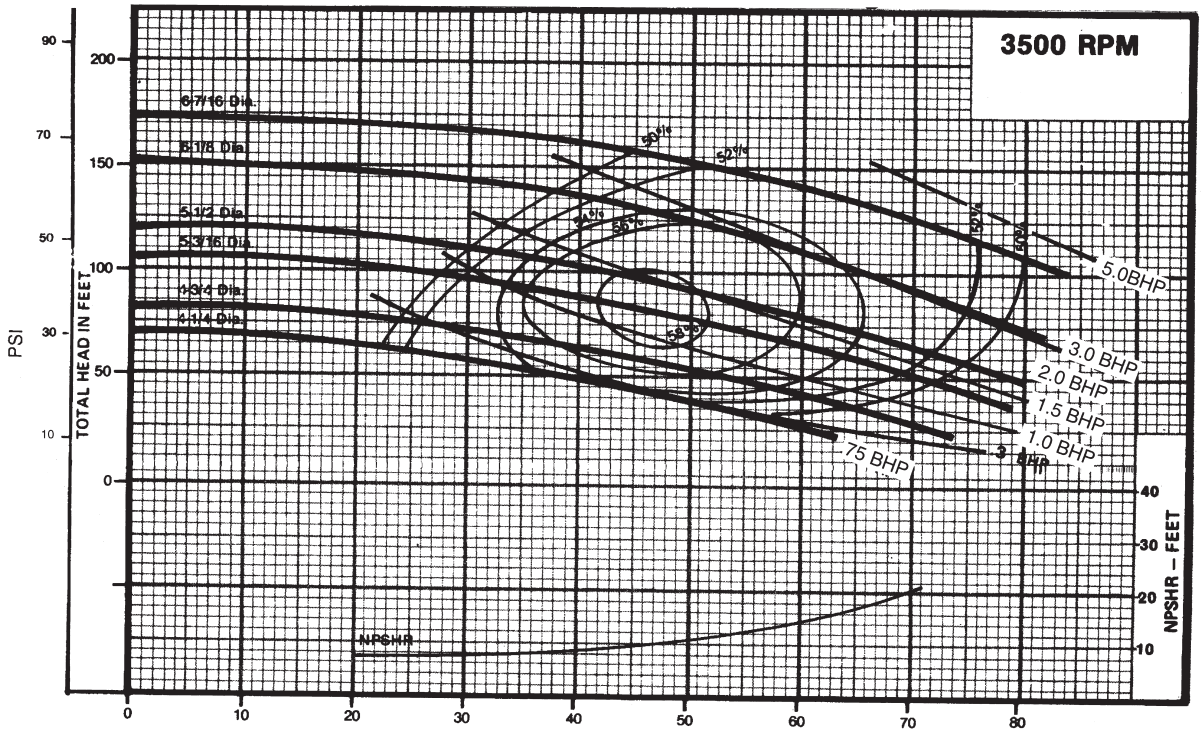
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DA1B

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0152	1DA1B-S	1	1	115/230	17.0/8.5	1.50	40
9312-0160	15DA1B-S	1-1/2	1	115/230	19.8/9.9	1.33	46
9312-0178	2DA1B-S	2	1	115/230	22.6/11.3	1.25	49
9312-0202	1DA1B-T	1	3	208/230/460	4.7/4.4/2.2	1.50	35
9312-0210	15DA1B-T	1-1/2	3	208/230/460	6.5/5.7/2.9	1.30	45
9312-0228	2DA1B-T	2	3	208/230/460	7.2/6.5/3.2	1.20	48

Model DB1

1" Discharge x 1-1/2" Suction



Performance Chart - 3500RPM

DB1 1" Discharge x 1-1/2" Suction			CAPACITIES GPM Total Head in Feet																Shut Off Head (Feet)
Model	HP	Imp. Dia.	25	30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	160	
7DB1	3/4	4-1/4"	61	58	54	49	46	41	29											72
1DB1	1	4-3/4"			67	63	59	56	46	36	20									84
15DB1	1-1/2	5-3/16"						72	65	58	50	39	28							109
2DB1	2	5-1/2"							74	68	61	53	45	33						122
3DB1	3	6-1/8"									78	73	67	61	54	46	37			151
5DB1	5	6-7/16"												80	74	68	62	53	42	174

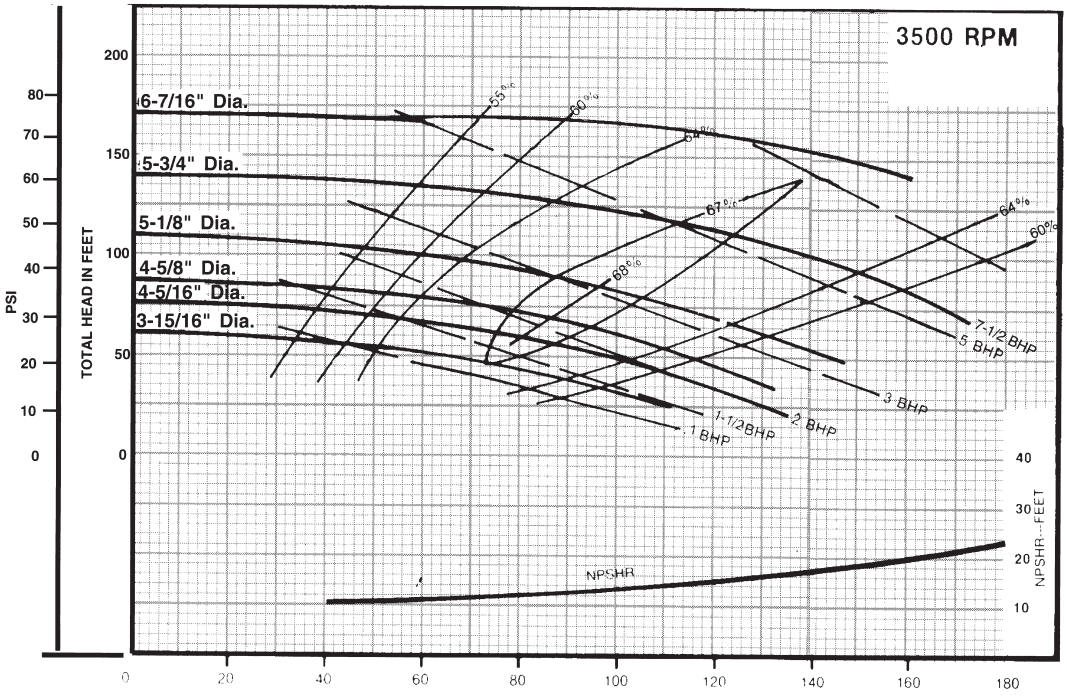
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DB1

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0285	7DB1-S	3/4	1	115/230	14.8/7.4	1.50	42
9312-0293	1DB1-S	1	1	115/230	17.0/8.5	1.50	45
9312-0301	15DB1-S	1-1/2	1	115/230	19.8/9.9	1.33	55
9312-0319	2DB1-S	2	1	115/230	22.6/11.3	1.25	53
9312-0327	3DB1-S	3	1	230	14.4	1.15	74
9312-0335	5DB1-S	5	1	230	26	1.15	122
9312-0376	2DB1-T	2	3	208/230/460	7.2/6.5/3.2	1.25	54
9312-0384	3DB1-T	3	3	230/460	5.0/2.5	1.15	64
9312-0392	5DB1-T	5	3	230/460	13.4/5.7	1.15	82

Model DB1-1/2

1-1/2" Discharge x 2" Suction



Performance Chart - 3500RPM

DB1-1/2 1-1/2" Discharge x 2" Suction			CAPACITIES GPM Total Head in Feet																Shut Off Head (Feet)
Model	HP	Imp. Dia.	25	30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	160	
1DB1-1/2	1	3-15/16"	125	105	95	86	75	63												60
15DB1-1/2	1-1/2	4-5/16"		123	118	112	106	95	78	50										75
2DB1-1/2	2	4-5/8"			130	126	120	115	100	82	52									87
3DB1-1/2	3	5-1/8"						144	132	118	103	88	62							110
5DB1-1/2	5	5-3/4"									163	153	141	126	107	78				140
75DB1-1/2	7-1/2	6-7/16"														170	165	135	130	170

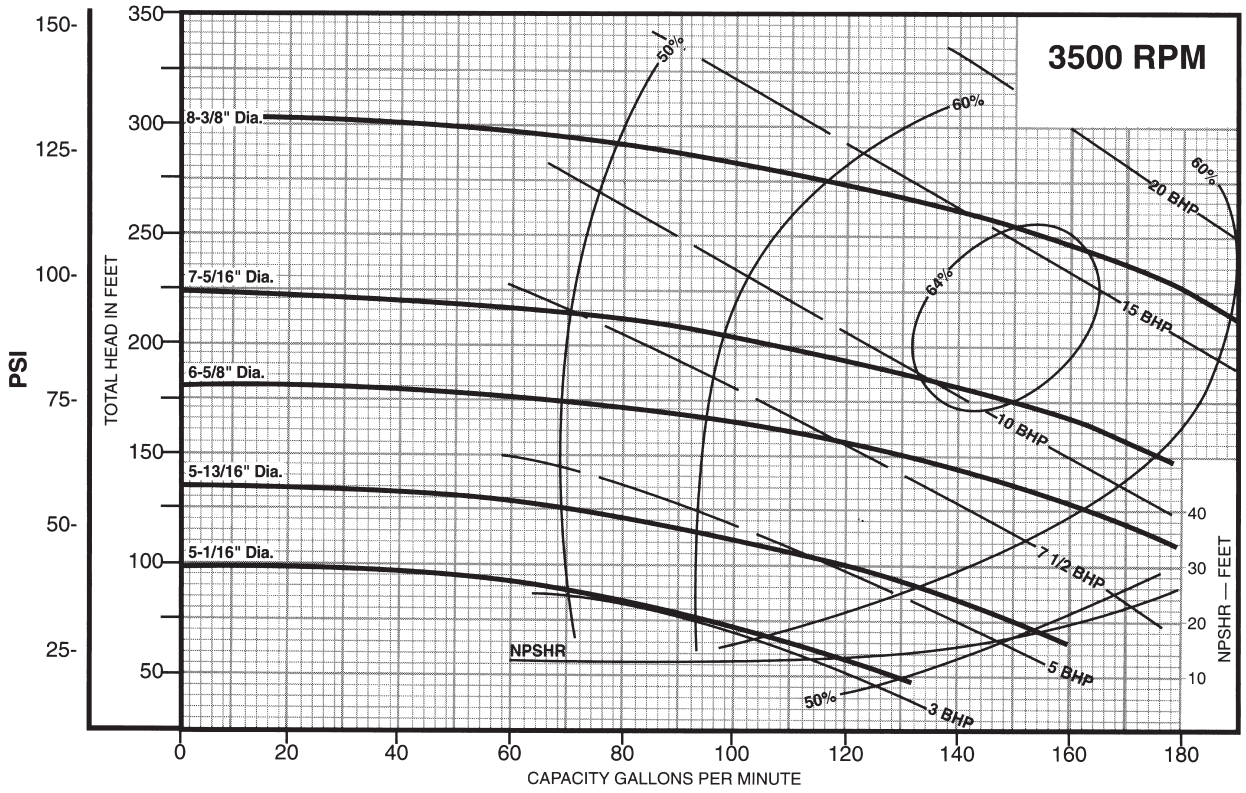
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DB1-1/2

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0467	1DB1-1/2-S	1	1	115/230	17.0/8.5	1.50	50
9312-0475	15DB1-1/2-S	1-1/2	1	115/230	19.8/9.9	1.33	54
9312-0483	2DB1-1/2-S	2	1	115/230	22.6/11.3	1.25	58
9312-0491	3DB1-1/2-S	3	1	230	14.4	1.15	74
9312-0509	5DB1-1/2S	5	1	230	26	1.15	122
9312-0517	75DB1-1/2-S	7-1/2	1	230	39	1.15	184
9312-0525	1DB1-1/2-T	1	3	208/230/460	4.7/4.4/2.2	1.50	47
9312-0533	15DB1-1/2-T	1-1/2	3	208/230/460	6.2/5.7/2.9	1.33	52
9312-0541	2DB1-1/2-T	2	3	208/230/460	7.2/6.5/3.2	1.25	55
9312-0558	3DB1-1/2-T	3	3	230/460	5.0/2.5	1.15	63
9312-0566	5DB1-1/2-T	5	3	230/460	13.4/5.7	1.15	102
9312-0574	75DB1-1/2-T	7-1/2	3	230/460	19.6/9.8	1.15	110

Model DC1-1/2

1-1/2" Discharge x 2" Suction



Performance Chart - 3500RPM

DC1 1/2 1 1/2" Discharge x 2" Suction			CAPACITIES GPM Total Head in Feet																			Shut Off Head (FEET)
Model	HP	Imp. Dia.	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	
3DC1-1/2	3	5-1/16"	130	120	108	92	70																100
5DC1-1/2	5	5-13/16"			155	144	132	118	100	84	56												135
75DC1-1/2	7-1/2	6-5/8"							180	170	160	150	130	110	80								180
10DC1-1/2	10	7-5/16"											176	167	156	143	126	106					220
15DC1-1/2	15	8-3/8"																	184	167	140	100	300

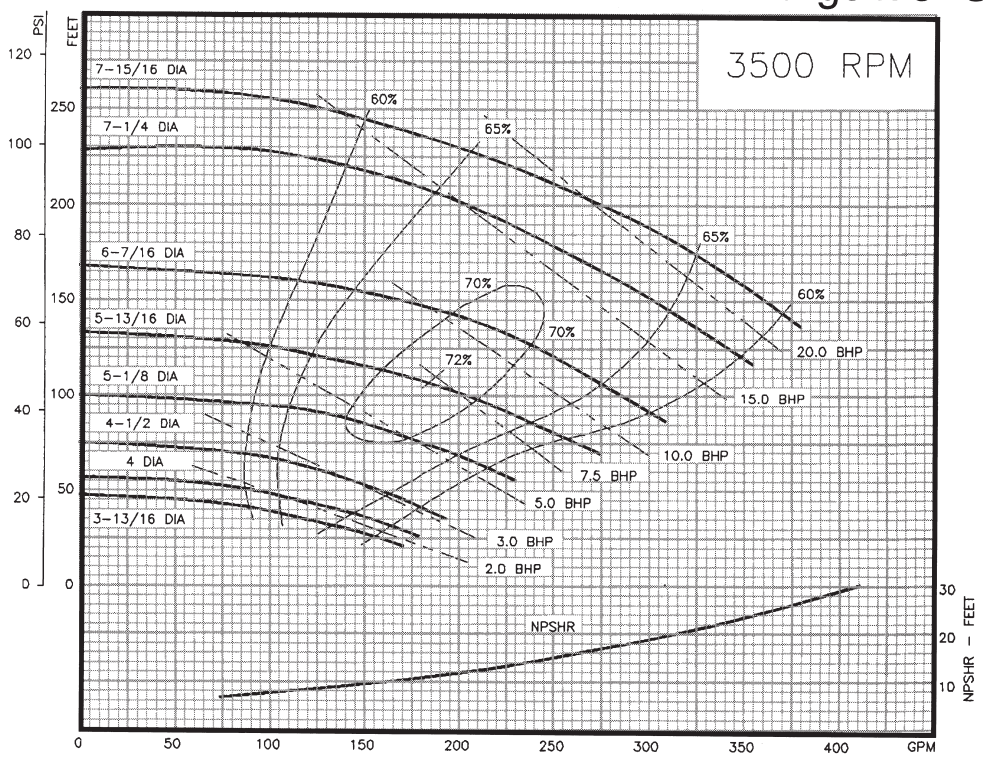
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DC1-1/2

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0848	5DC1-1/2-S	5	1	230	26	1.15	142
9312-0855	75DC1-1/2-S	7-1/2	1	230	39	1.15	162
9312-1168	10DC1-1/2-S	10	1	230	42.8	1.15	190
9312-0871	5DC1-1/2-T	5	3	230/460	13.4/5.7	1.15	98
9312-0889	75DC1-1/2-T	7-1/2	3	230/460	19.6/9.8	1.15	132
9312-0897	10DC1-1/2-T	10	3	230/460	25/12.5	1.15	171
9312-0905	15DC1-1/2-T	15	3	230/460	40/20	1.15	175

Model DB2

2" Discharge x 3" Suction



Performance Chart - 3500RPM

DB2 2" Discharge x 3" Suction			CAPACITIES GPM Total Head in Feet																Shut Off Head (FEET)
Model	HP	Imp. Dia.	20	25	30	35	40	45	50	60	70	80	90	100	110	120	150	200	250	
15DB2	1-1/2	3-3/16"	175	160	145	125	100	65												50
2DB2	2	4"		185	170	160	145	125	100											58
3DB2	3	4-1/2"						175	165	140	90									75
5DB2	5	5-1/8"								235	210	190	160							100
75DB2	7-1/2	5-13/16"										260	240	225	200	160				135
10DB2	10	6-7/16"											310	290	275	260	185			170
15DB2	15	7-1/4"														350	305	205		230
20DB2	20	7-15/16"															365	275	130	260

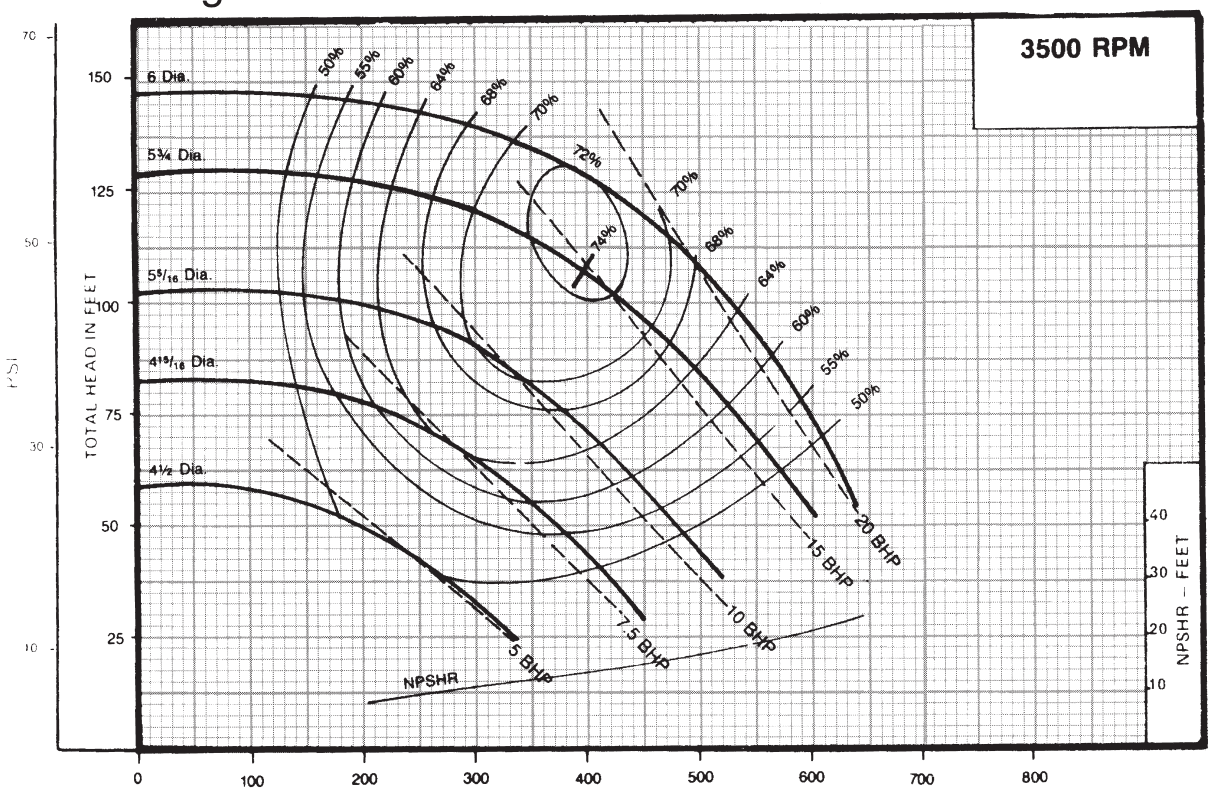
Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DB2

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-0665	2DB2-S	2	1	115/230	22.6/11.3	1.25	60
9312-0673	3DB2-S	3	1	230	14.4	1.15	80
9312-0681	5DB2-S	5	1	230	26	1.15	119
9312-0699	75DB2-S	7-1/2	1	230	39	1.15	150
9312-1150	10DB2-S	10	1	230	42.8	1.15	171
9312-0715	2DB2-T	2	3	208/230/460	7.2/6.5/3.2	1.25	60
9312-0723	3DB2T	3	3	230/460	5.0/2.5	1.15	72
9312-0731	5DB2-T	5	3	230/460	13.4/5.7	1.15	110
9312-0749	75DB2-T	7-1/2	3	230/460	19.6/9.8	1.15	116
9312-0756	10DB2T	10	3	230/460	25/12.5	1.15	146
9312-1051	15DB2-T	15	3	230/460	40/20	1.15	210
9312-1069	20DB2-T	20	3	230/460	50/25	1.15	243

Model DB3

3" Discharge x 4" Suction



Performance Chart - 3500RPM

DB3 3" Discharge x 4" Suction			CAPACITIES GPM Total Head in Feet															Shut Off Head (FEET)
Model	HP	Imp. Dia.	25	30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	
5DB3	5	4-1/2"	335	305	280	250	220	200											60
75DB3	7-1/2	4-15/16"		440	425	405	385	365	320	260									81
10DB3	10	5-5/16"				505	490	470	440	400	360	250							101
15DB3	15	5 -3/4"						600	580	550	510	460	430	380	300				128
20DB3	20	6"							630	610	590	550	530	510	450	380			146

Note: All performance data based on rated nameplate voltage.

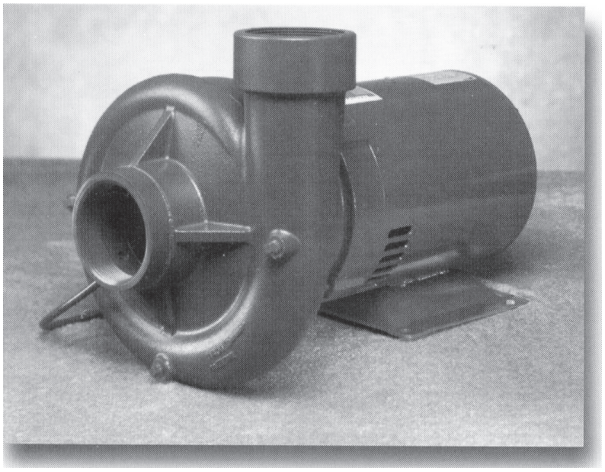
ORDERING INFORMATION - DB3

Order No.	Model No.	HP	Mtr. Phase	Volt.	Amps	Svc. Fact.	Weight
9312-7330	5DB3-S	5	1	230	26	1.15	132
9312-7348	75DB3-S	7-1/2	1	230	39	1.15	160
9312-7355	10DB3-S	10	1	230	42.8	1.15	174
9312-7363	5DB3-T	5	3	230/460	13.4/5.7	1.15	95
9312-7371	75DB3-T	7-1/2	3	230/460	19.6/9.8	1.15	120
9312-7389	10DB3-T	10	3	230/460	25/12.5	1.15	180
9312-7397	15DB3-T	15	3	230/460	40/20	1.15	183
9312-7405	20DB3-T	20	3	230/460	50/25	1.15	232

JACUZZI®

"The Most Trusted Name In Water"®

Model DC4



Features:

- ☐ **Epoxy-coated cast iron impeller** for maximum efficiency.
- ☐ Mechanical shaft seal for water temperatures up to 212˚F.
- ☐ 4" NPT suction/discharge on 20-30HP units. **Flanged 5" suction/4" discharge** on 40-50HP units.
- ☐ 20-50HP **pump end kits** are available with either NPT suction/discharge or flanged suction/discharge connections. Maximum operating pressure of 150 PSI.

Performance Chart - 3500 RPM

DC4			CAPACITIES GPM Total Head in Feet																Shut Off Head (FEET)
Model	HP	Imp. Dia.	90	100	120	140	150	160	170	180	190	200	210	220	240	260	280	290	
20DC4	20	7-1/32"	650	620	545	430	350	200											165
25DC4	25	7-15/32"			650	595	550	500	450	350									190
30DC4	30	7-7/8"					650	620	590	545	500	430	320						215
40DC4	40	8-7/16"									640	605	560	515	375				260
50DC4	50	9-1/32"												660	600	515	400	280	300

Note: All performance data based on rated nameplate voltage.

ORDERING INFORMATION - DC4

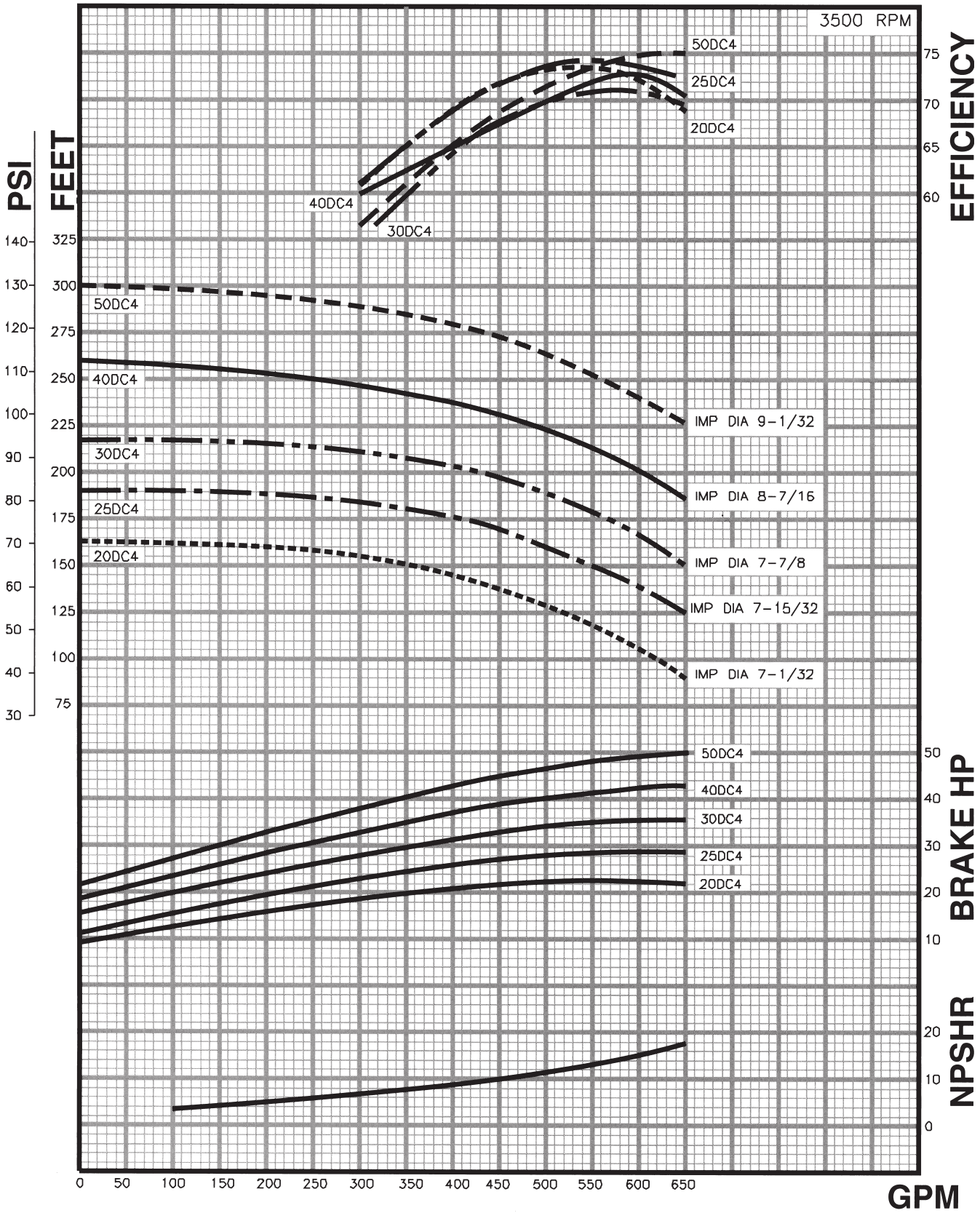
Order No.	Model No.	HP	Connection	Mtr. Phase	Voltage	Amps	Svc. Fact.	Weight
9312-7710	20DC4-T	20	Threaded	3	230/460	57.5/28.8	1.15	312
9312-7728	25DC4-T	25	Threaded	3	200-230/460	81-72/36	1.25	325
9312-7736	30DC4-T	30	Threaded	3	200-230/460	88.5-86/43	1.25	389
9312-7744	40DC4-T	40	Flanged	3	200-230/460	122-112/56	1.25	433
9312-7785	50DC4-T	50	Flanged	3	230/460	133.4/66.7	1.15	593

Note: Service factor at 200V on 25, 30, & 40 HP units is 1.15.

FAMILIAR PHRASES

TO GET ONE'S GOAT
Meaning: To aggravate.
Origin: Hyperactive racehorses were often given goats as stablemates because their presence tended to have a calming effect on the horses. After the horse became attached to the goat, it got very upset when its companion disappeared-making it run poorly on the track. In the 19th century, when a devious gambler wanted a horse to lose, he would get the horse's goat and take it away the night before the race, thus agitating the horse.

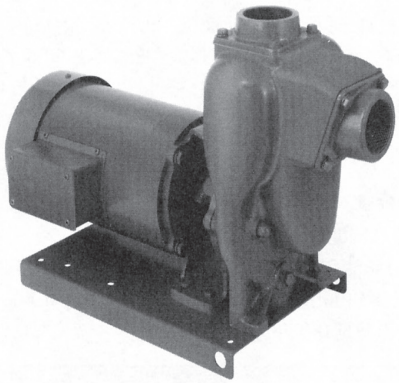
Model DC4


3500 RPM
50DC4
25DC4
20DC4
40DC4
30DC4
EFFICIENCY
75
70
65
60
PSI
FEET
140
130
120
110
100
90
80
70
60
50
40
30
325
300
275
250
225
200
175
150
125
100
75
50DC4
40DC4
30DC4
25DC4
20DC4
IMP DIA 9-1/32
IMP DIA 8-7/16
IMP DIA 7-7/8
IMP DIA 7-15/32
IMP DIA 7-1/32
50DC4
40DC4
30DC4
25DC4
20DC4
BRAKE HP
50
40
30
20
10
NPSHR
20
10
0
0
50
100
150
200
250
300
350
400
450
500
550
600
650
GPM

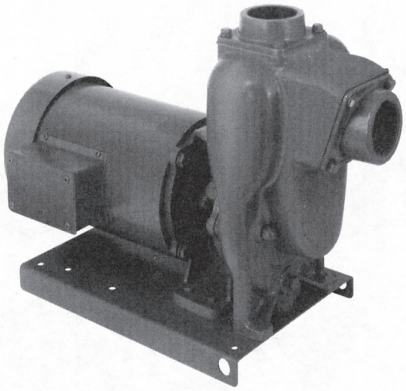
FLOMAX 5 8 10

SELF PRIMING CENTRIFUGAL PUMP FEATURES

- **CLOSED COUPLED TO ELECTRIC MOTOR**
- **PUMPAK ONLY TO MOUNT TO STANDARD NEMA "C" FACE MOTOR**
  FLOMAX 40 BELT OR DIRECT DRIVE
- **FLOWS** - 100-750 GPM
- **PRESSURES** - 100-230 FEET HEAD
- **AVAILABLE IN:** CAST IRON, BRONZE AND ALUMINUM
  FLOMAX 8 STAINLESS STEEL **316 SS**
  FLOMAX 40 CAST IRON
- **WITH OR WITHOUT ELECTRIC MOTOR**
- **IMPELLER** - CAST IRON, BRONZE, ALUMINUM & STAINLESS STEEL
  FLOMAX 40 CAST IRON & STAINLESS STEEL
- **SHAFT SLEEVE** - STAINLESS STEEL
- **FASTENERS** - STAINLESS STEEL
- **SEALS** - STANDARD VITON, OPTIONAL SEALS AVAILABLE
- **OPTIONS:**
  - ENGINE DRIVES
  - PEDESTAL MODELS
  - HYDRAULIC DRIVES AND CLUTCHPAKS



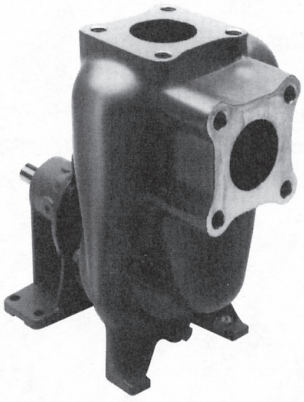
FLOMAX 5



FLOMAX 8

FLOMAX 8: NOW ABS APPROVED

MODEL	Suction	Discharge
FLOMAX 5	1 1/2" NPT	1 1/2" NPT
FLOMAX 8	2" NPT	2" NPT
FLOMAX 10	2" NPT	2" NPT
FLOMAX 15	3" NPT	3" NPT
FLOMAX 30	3" NPT	3" NPT
FLOMAX 40	4" NPT	4" NPT



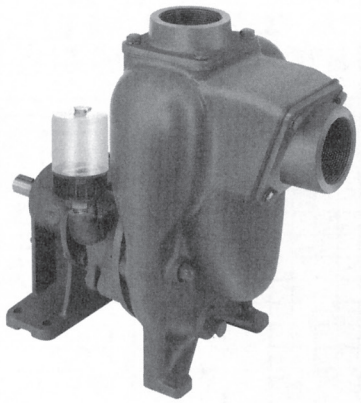
316 SS FLOMAX 8

PROVEN WRONG BY HISTORY:
*A collection of ill-conceived comments on the march of technology by people who watched from the sidelines*and should have known better

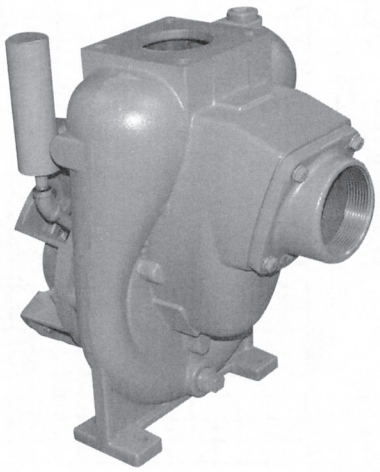
"I think there is a world market for maybe five computers." -Thomas Watson, chairman of IBM, 1943

15 30 40

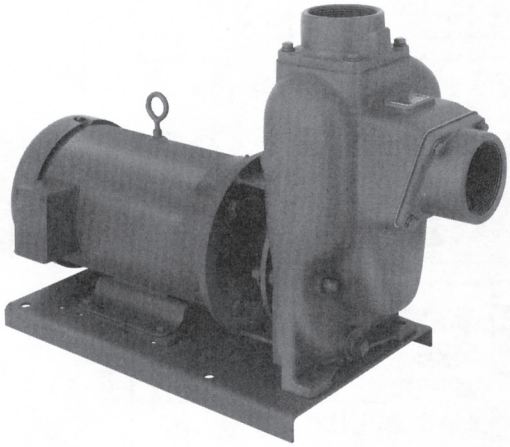
FLOMAX 15 & 40: NOW ABS APPROVED



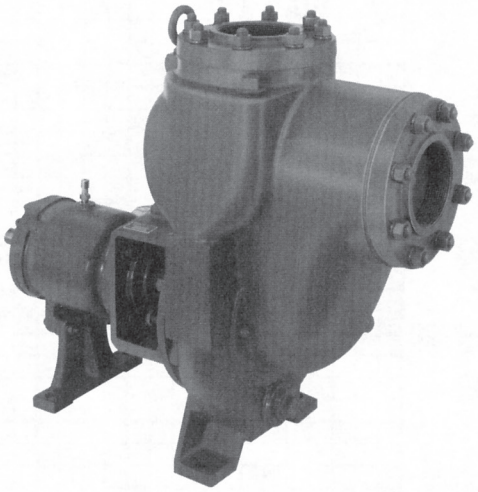
FLOMAX 5 & 8
DOUBLE SEAL



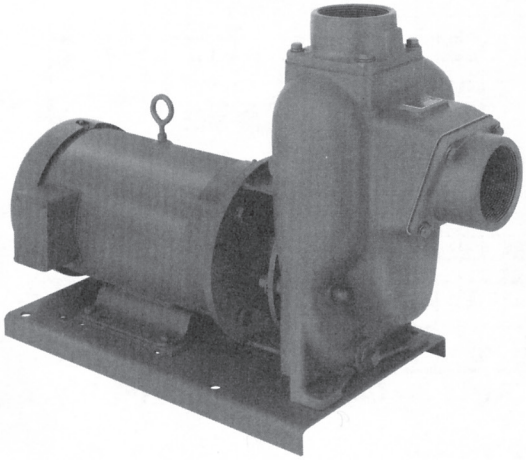
FLOMAX 30
SHORT COUPLED



FLOMAX 10



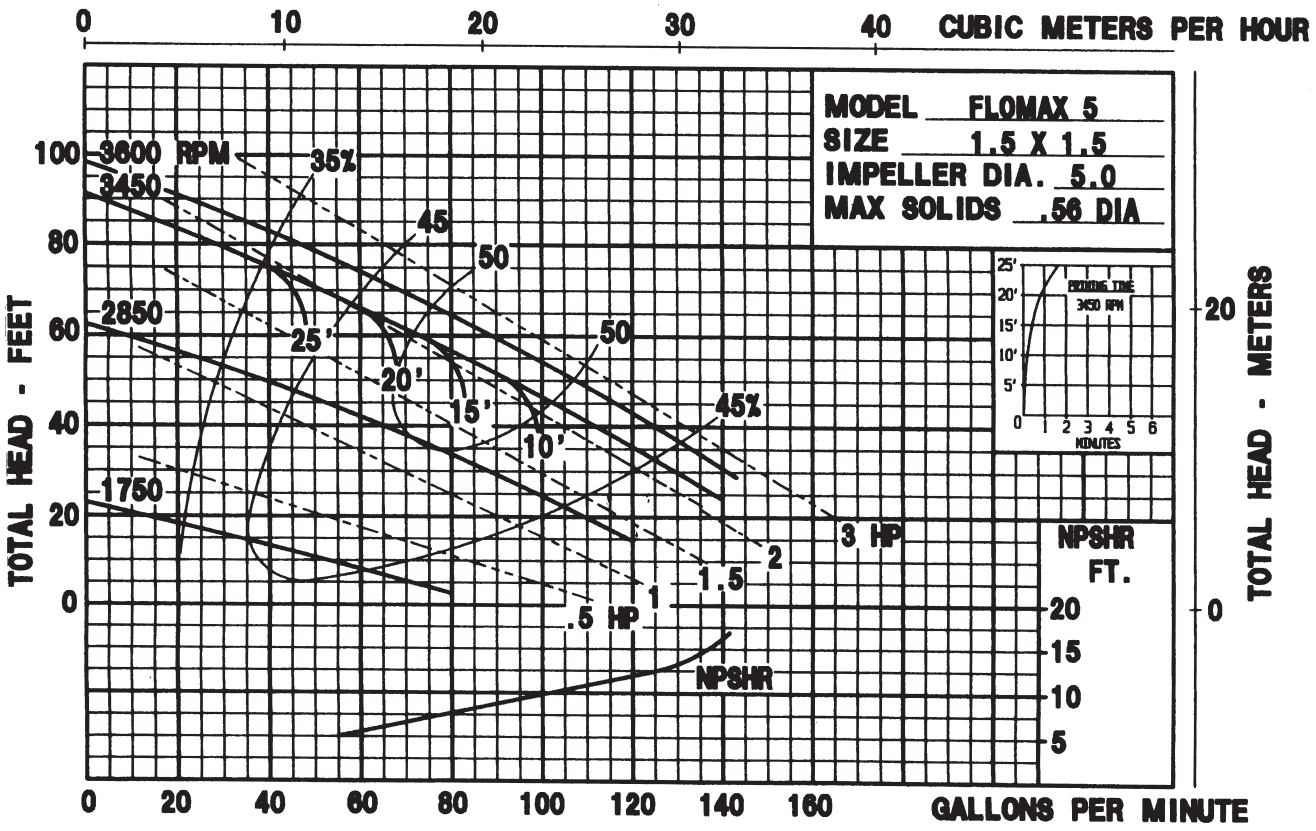
FLOMAX 40

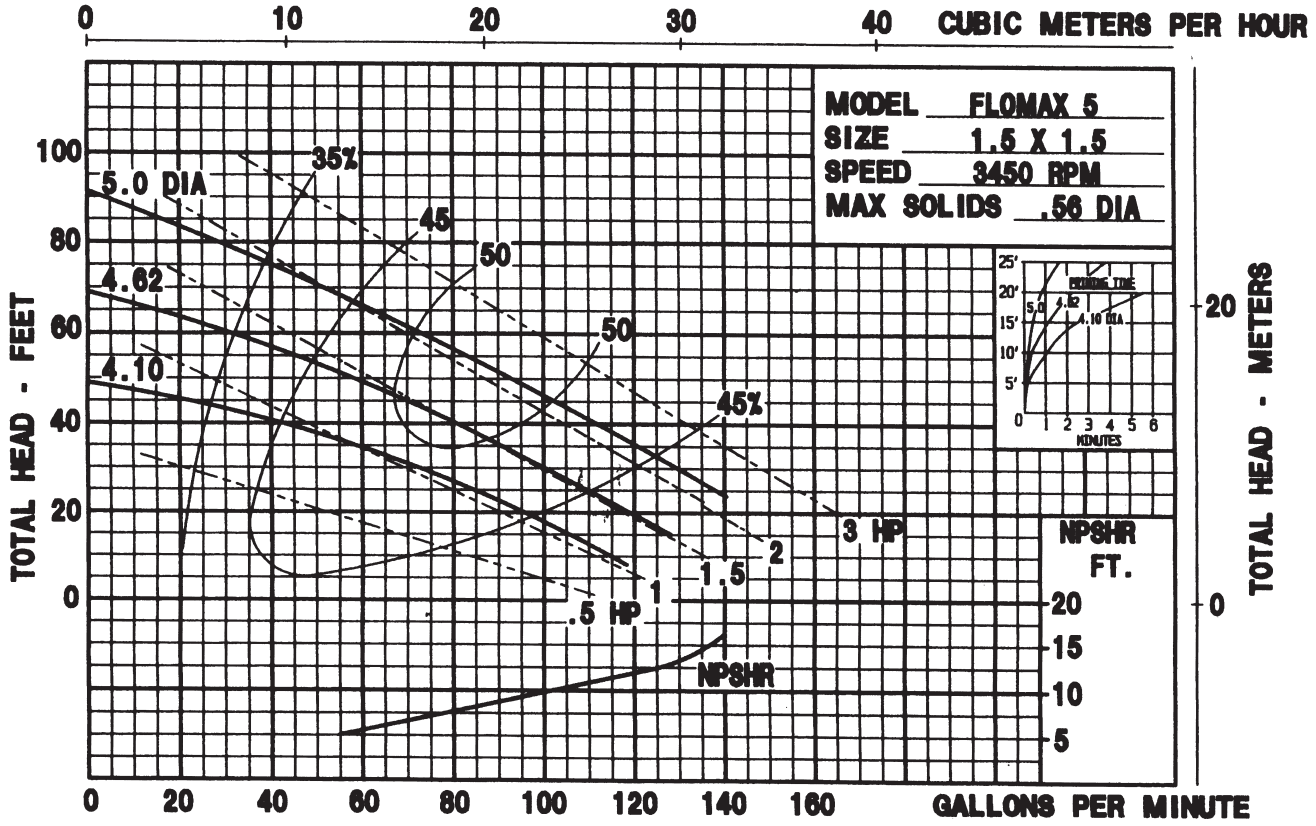


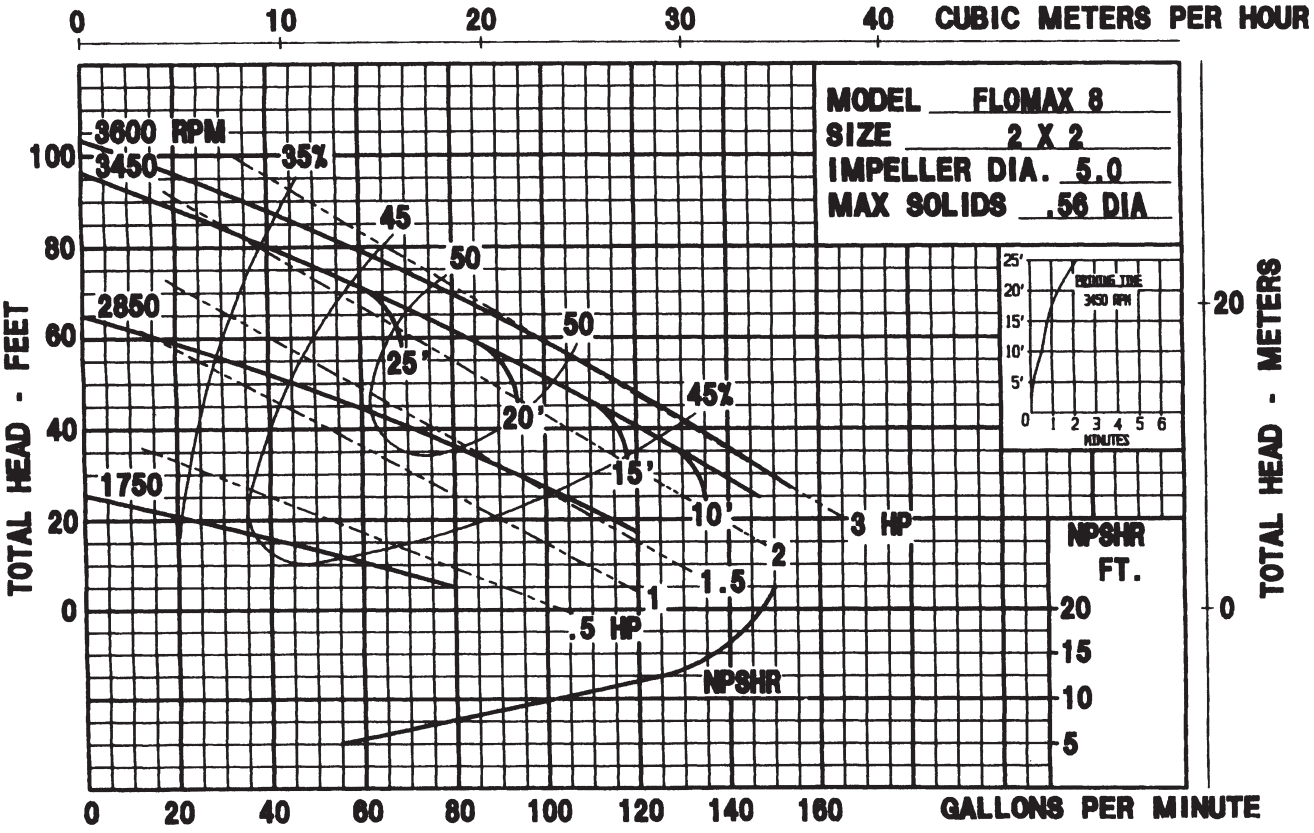
FLOMAX 15

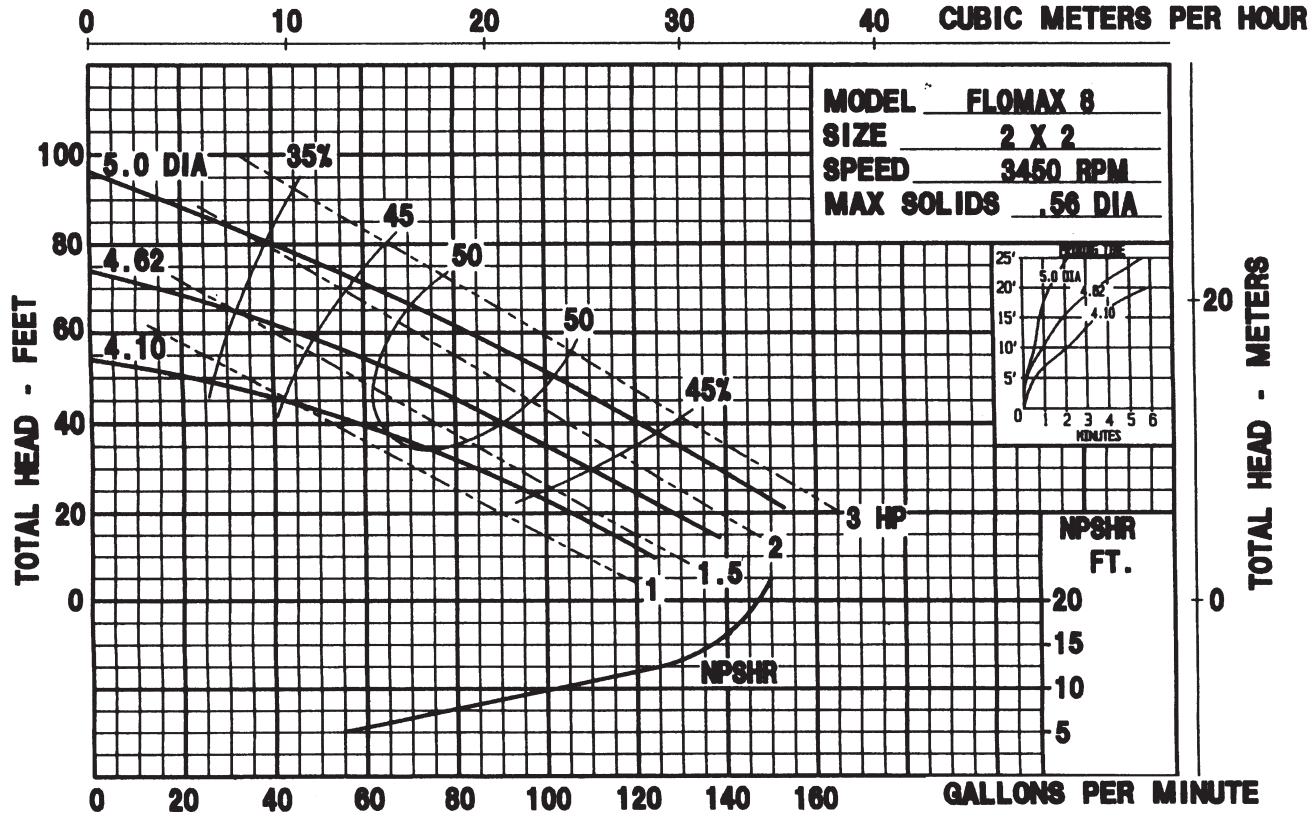
PROVEN WRONG BY HISTORY: (continued)

"Computers in the future may weigh no more than 1.5 tons." -*Popular Mechanics,* 1949


0 10 20 30 40 CUBIC METERS PER HOUR
MODEL FLOMAX 5
SIZE 1.5 X 1.5
IMPELLER DIA. 5.0
MAX SOLIDS .56 DIA
3600 RPM
3450
2850
1750
35%
45
50
25'
20'
15'
10'
45%
3 HP
2
1.5
1
.5 HP
NPSHR
NPSHR FT.
PRIMING TIME 3450 RPM
MINUTES
TOTAL HEAD - FEET
TOTAL HEAD - METERS
0 20 40 60 80 100 120 140 160 GALLONS PER MINUTE

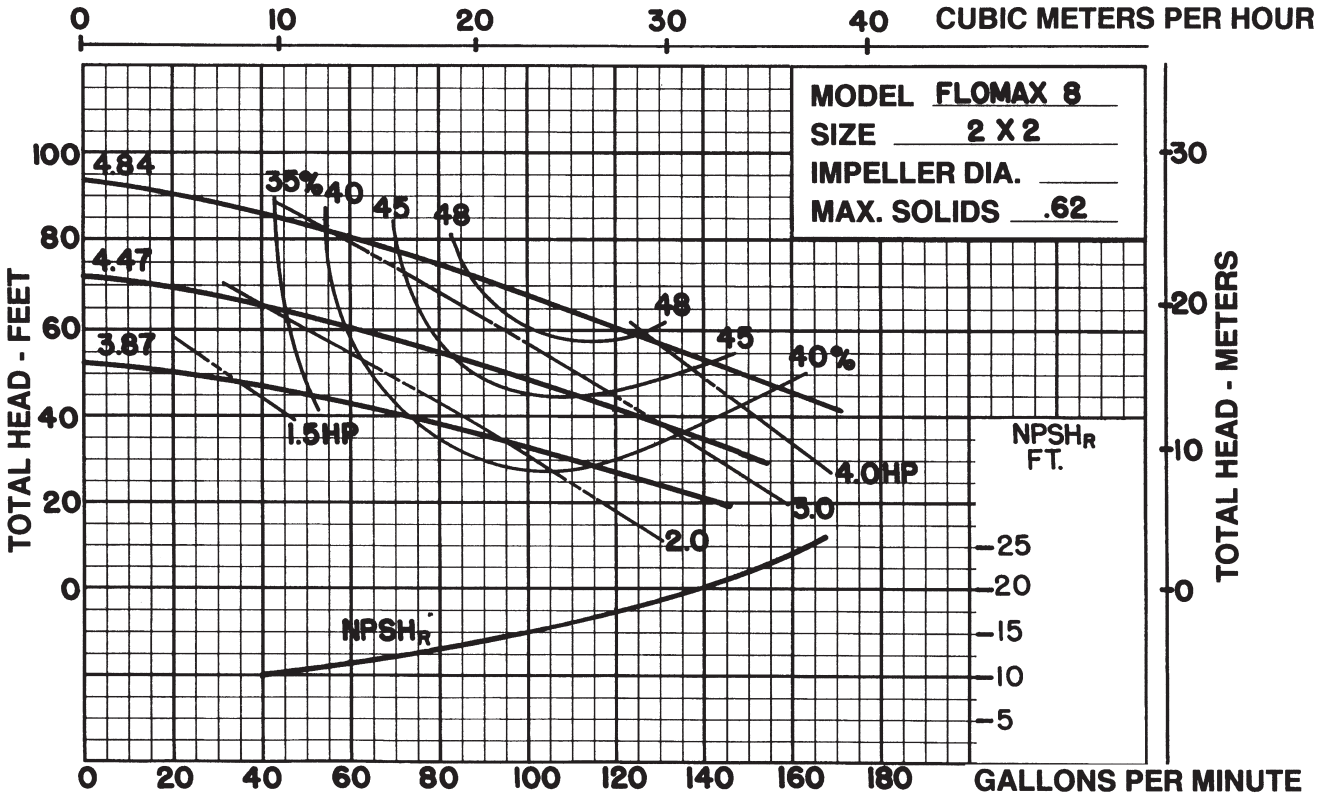

0 10 20 30 40 CUBIC METERS PER HOUR
MODEL FLOMAX 5
SIZE 1.5 X 1.5
SPEED 3450 RPM
MAX SOLIDS .56 DIA
5.0 DIA
4.62
4.10
35%
45
50
45%
3 HP
2
1.5
1
.5 HP
NPSHR
NPSHR FT.
PRIMING TIME
MINUTES
TOTAL HEAD - FEET
TOTAL HEAD - METERS
0 20 40 60 80 100 120 140 160 GALLONS PER MINUTE

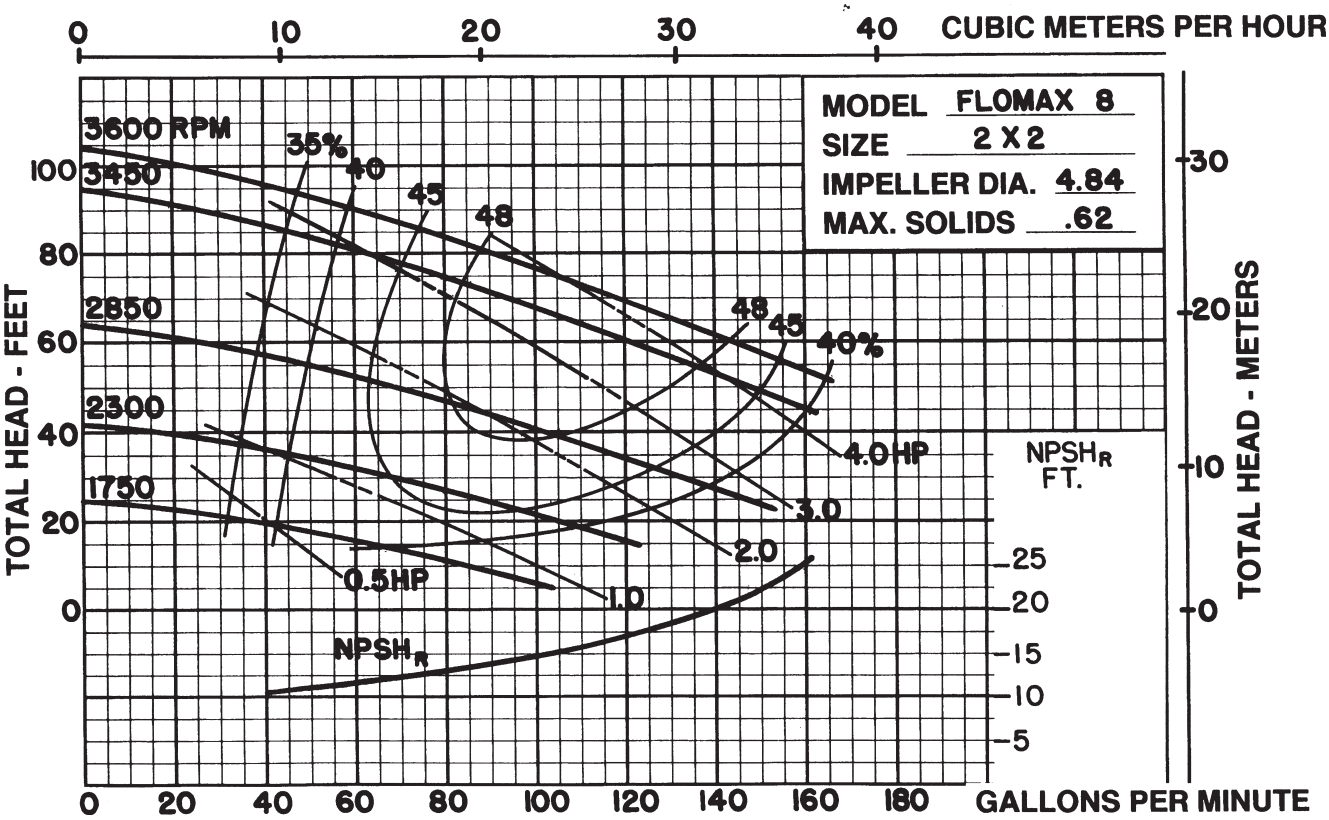


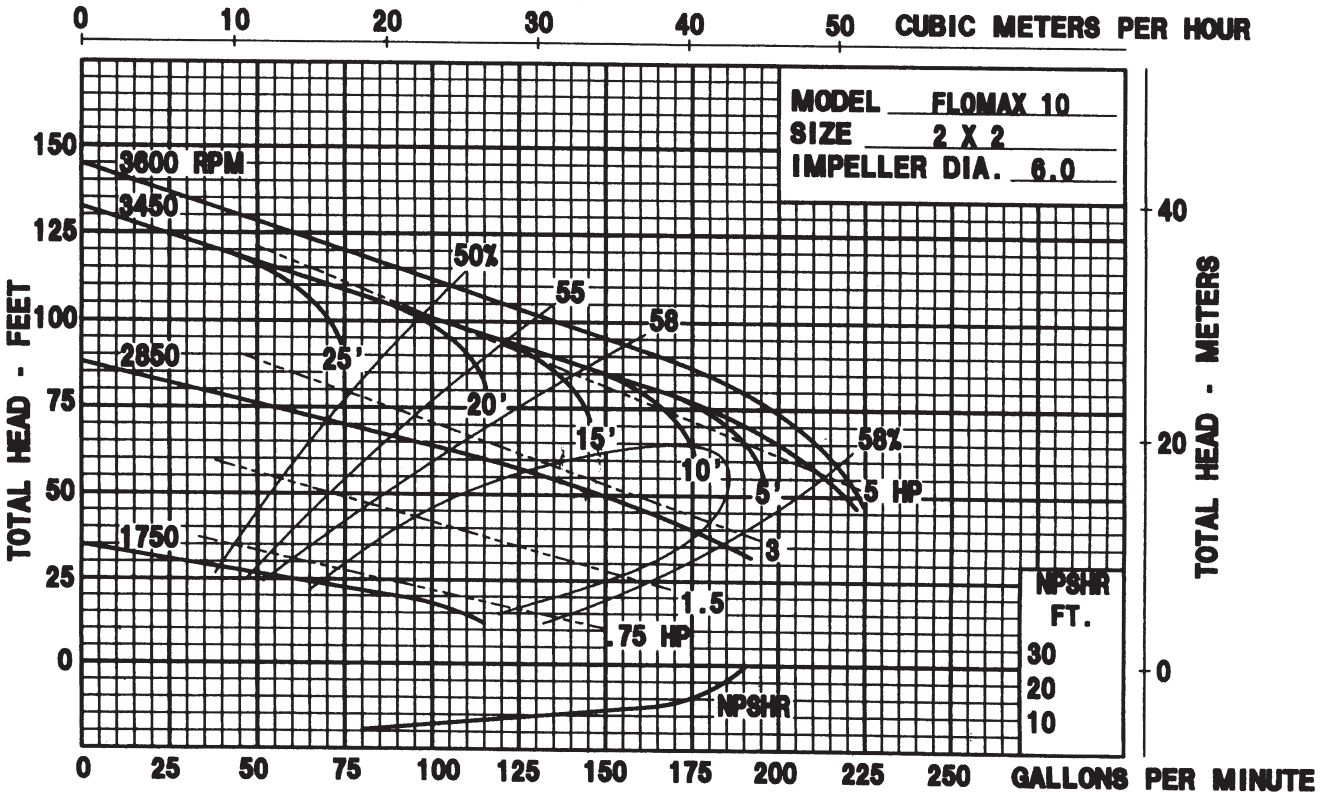


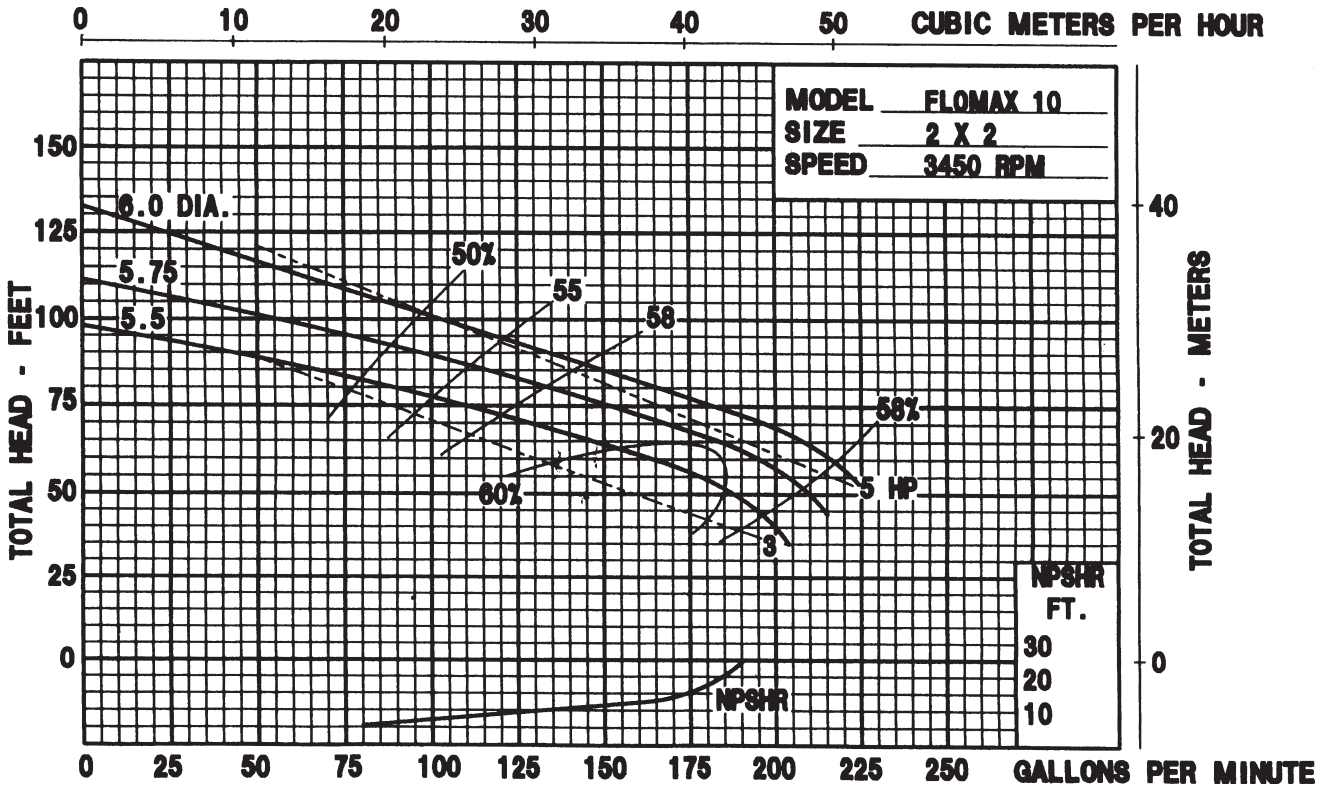
PROVEN WRONG BY HISTORY: (continued)

"But what ... is it good for?" -Engineer at the Advanced Computing Systems Division of IBM, 1968, commenting on the microchip


0 10 20 30 40 CUBIC METERS PER HOUR
MODEL FLOMAX 8
SIZE 2 X 2
IMPELLER DIA.
MAX. SOLIDS .62
TOTAL HEAD - FEET
TOTAL HEAD - METERS
100 80 60 40 20 0
30 20 10 0
4.84
4.47
3.87
35%
40
45
48
1.5HP
2.0
3.0
4.0HP
40%
NPSHR
NPSHR FT.
25 20 15 10 5
0 20 40 60 80 100 120 140 160 180 GALLONS PER MINUTE


0 10 20 30 40 CUBIC METERS PER HOUR
MODEL FLOMAX 8
SIZE 2 X 2
IMPELLER DIA. 4.84
MAX. SOLIDS .62
TOTAL HEAD - FEET
TOTAL HEAD - METERS
3600 RPM
3450
2850
2300
1750
100 80 60 40 20 0
30 20 10 0
35%
40
45
48
0.5HP
1.0
2.0
3.0
4.0HP
40%
NPSHR
NPSHR FT.
25 20 15 10 5
0 20 40 60 80 100 120 140 160 180 GALLONS PER MINUTE

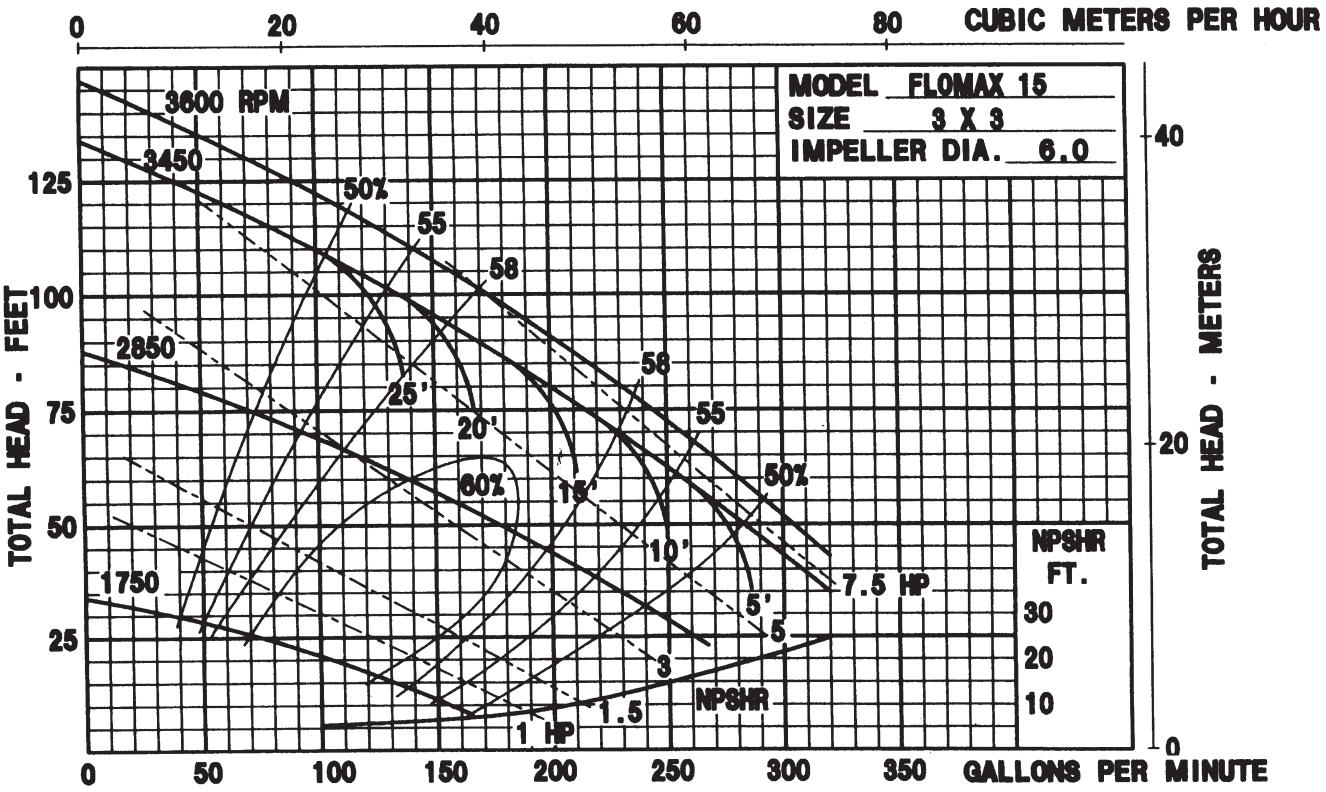


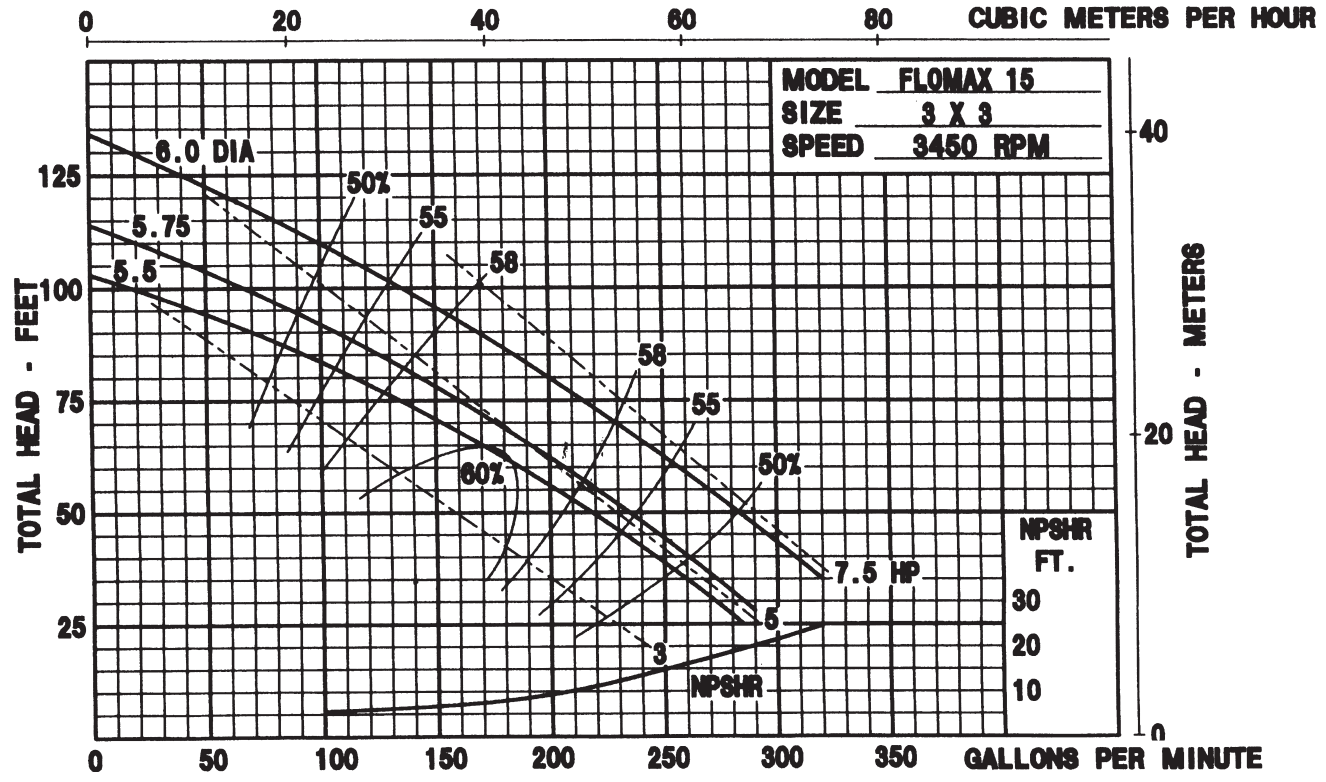


PROVEN WRONG BY HISTORY: (continued)

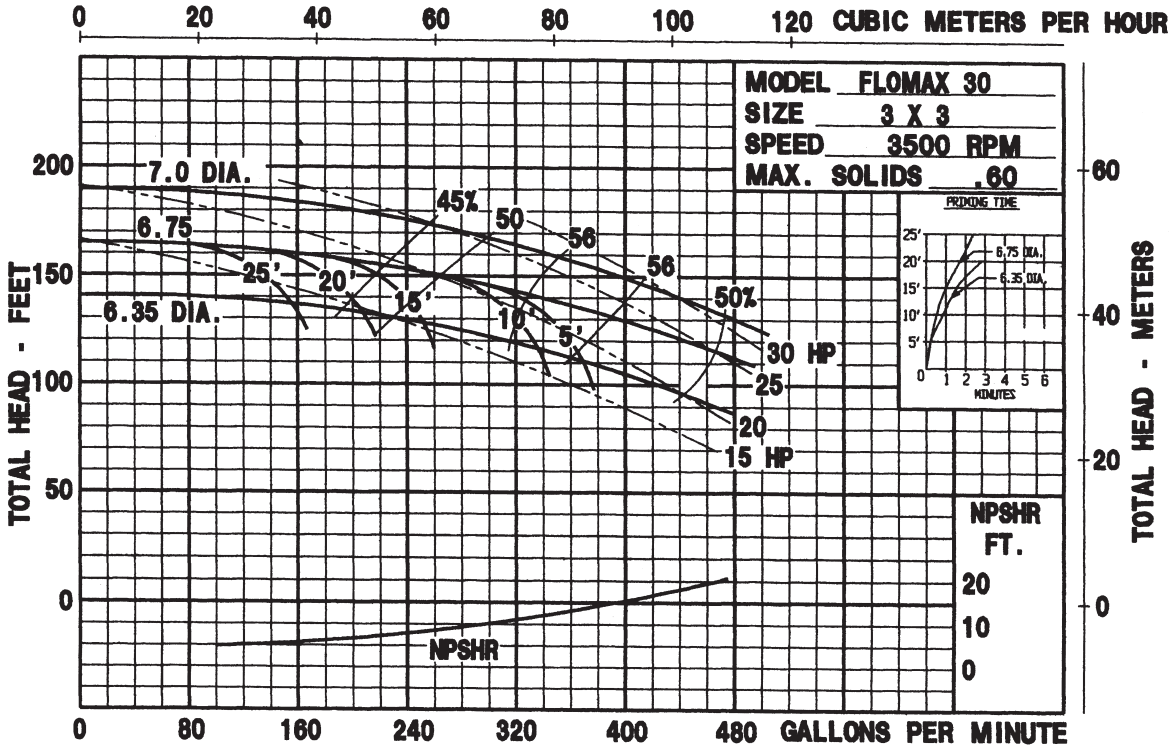
"There is no reason anyone would want a computer in their home."
-Ken Olson, president, chairman, and founder of Digital Equipment Corporation, 1977

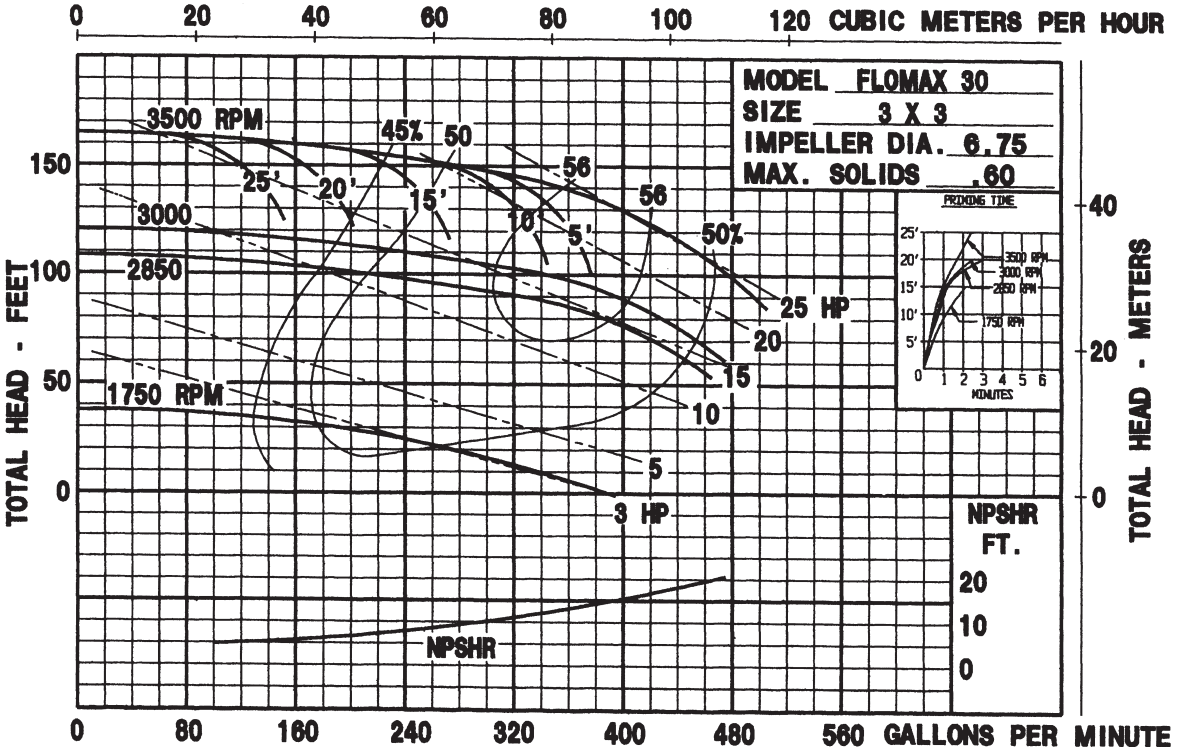
Flomax 15 Pump Performance Curves

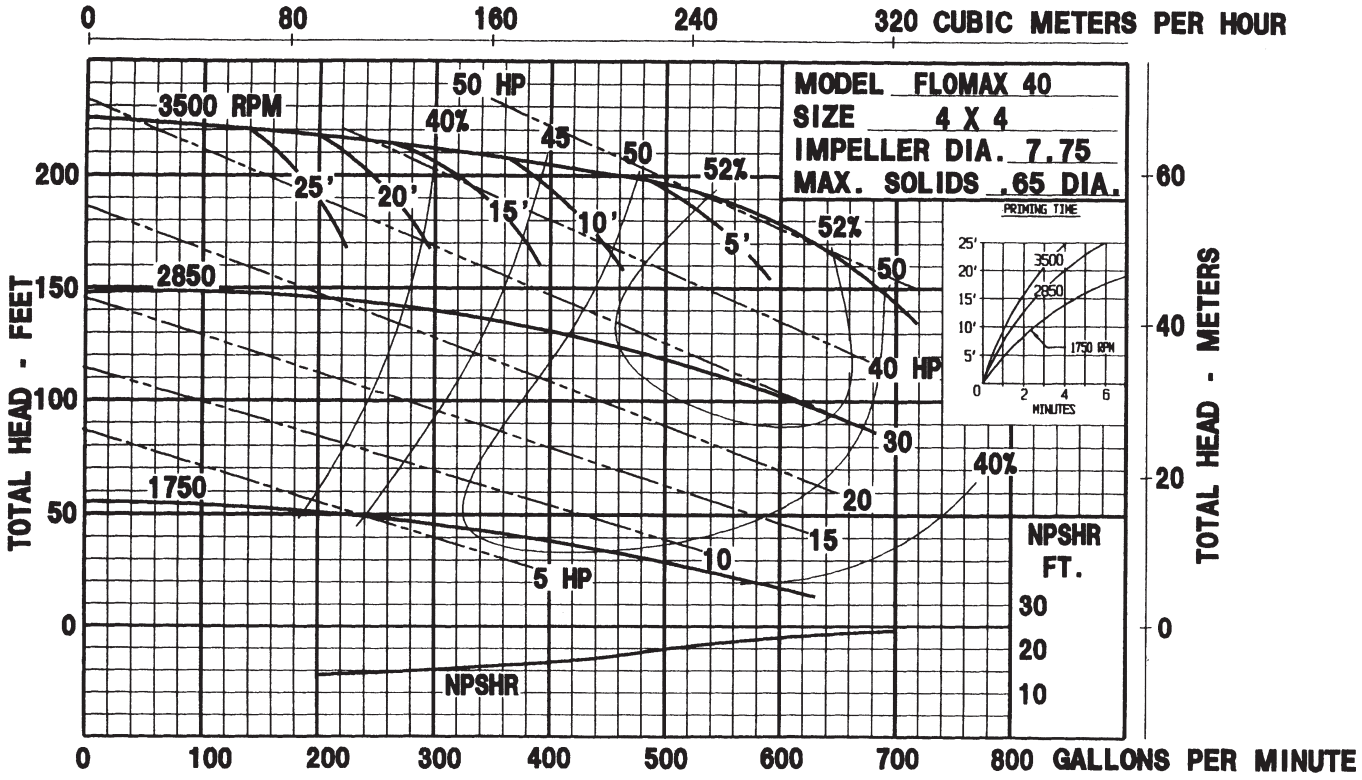


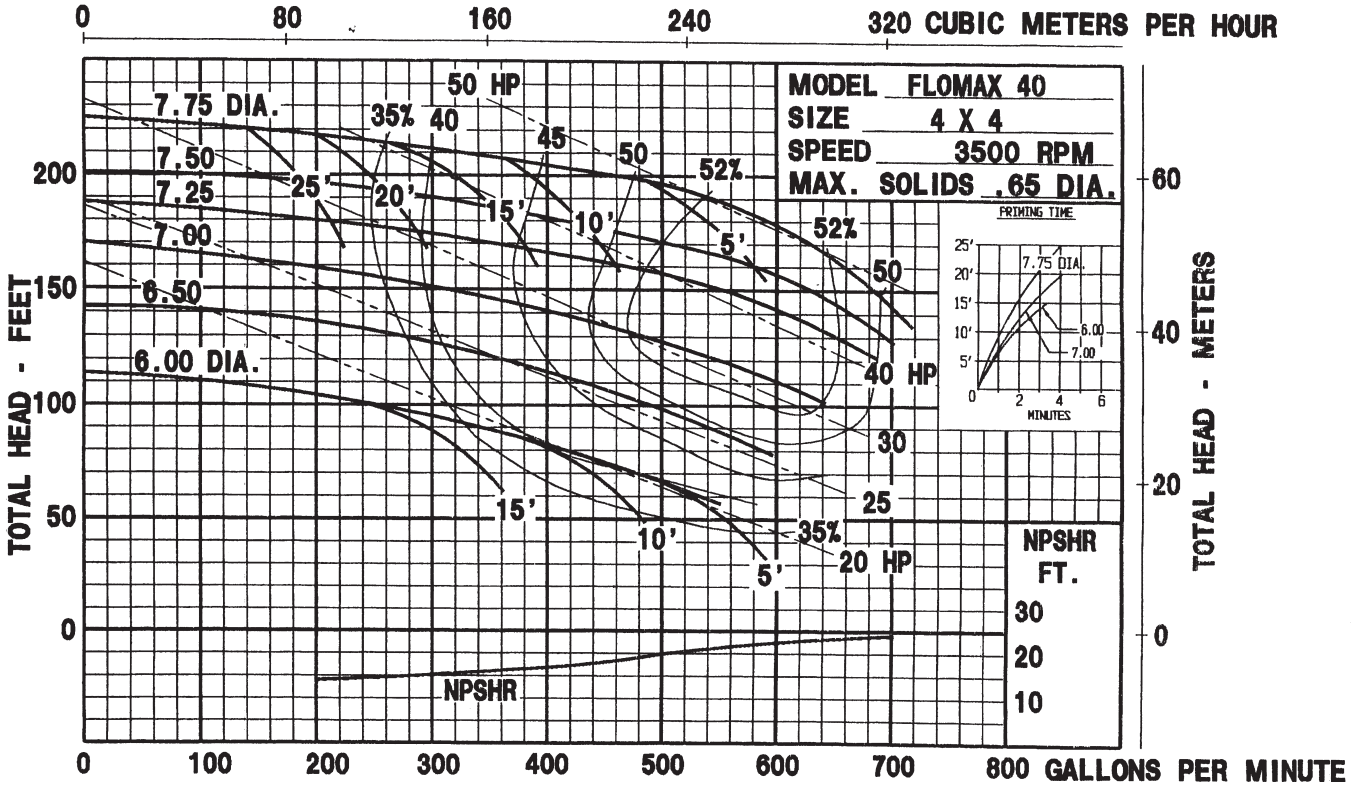


Flomax 30 Pump Performance Curves





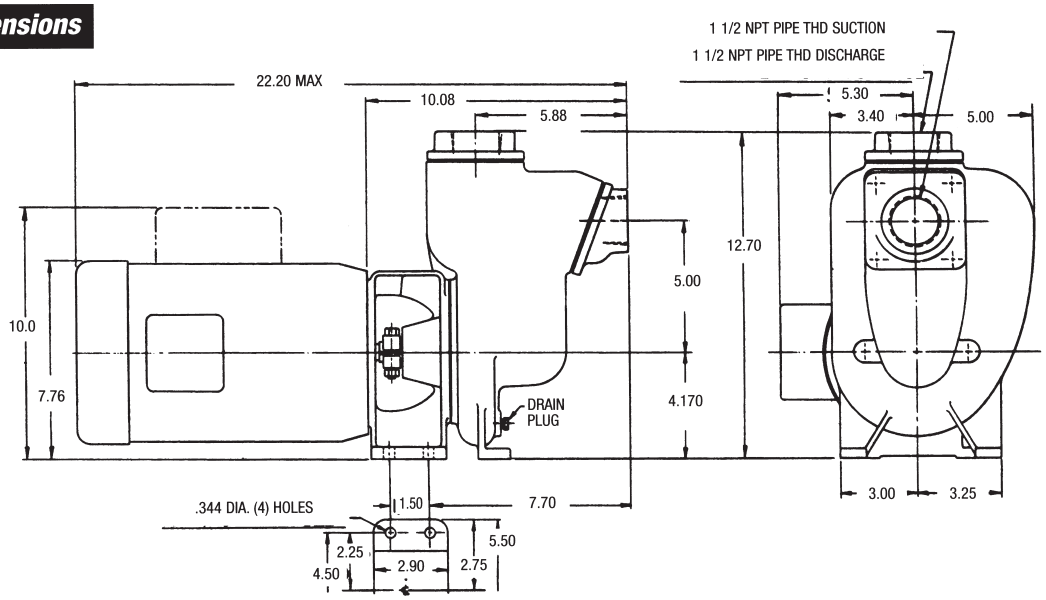




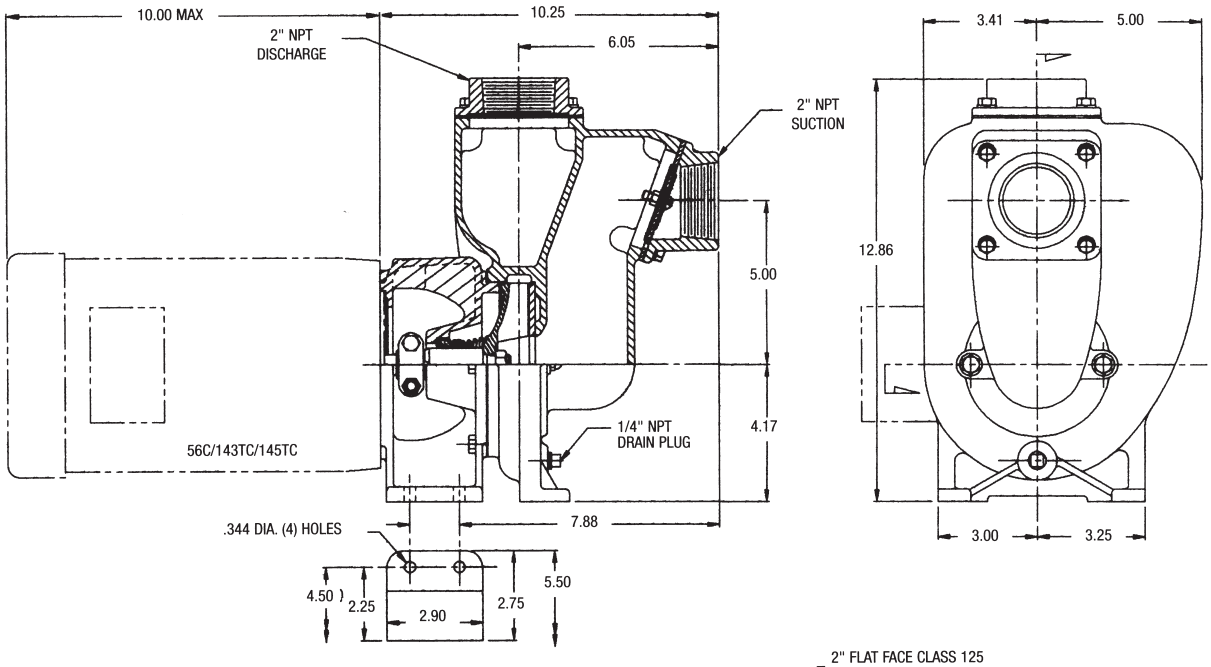
PROVEN WRONG BY HISTORY: (continued)

"640K ought to be enough for anybody."
-Bill Gates, 1981

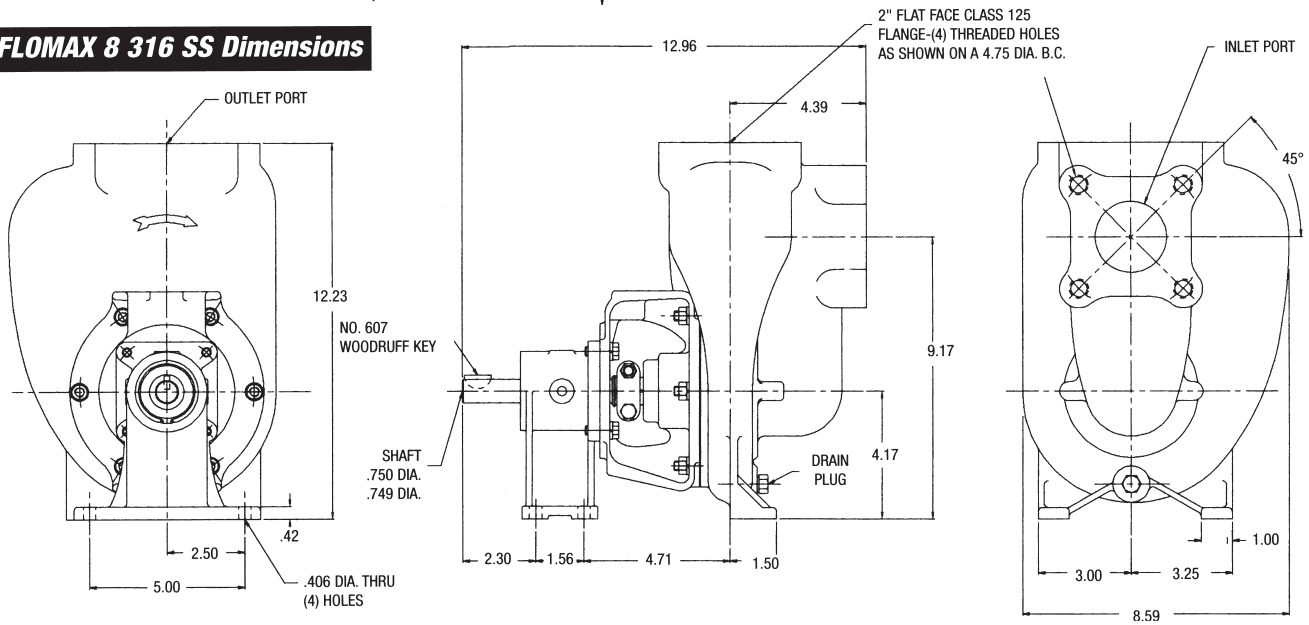
Flomax 5 Dimensions



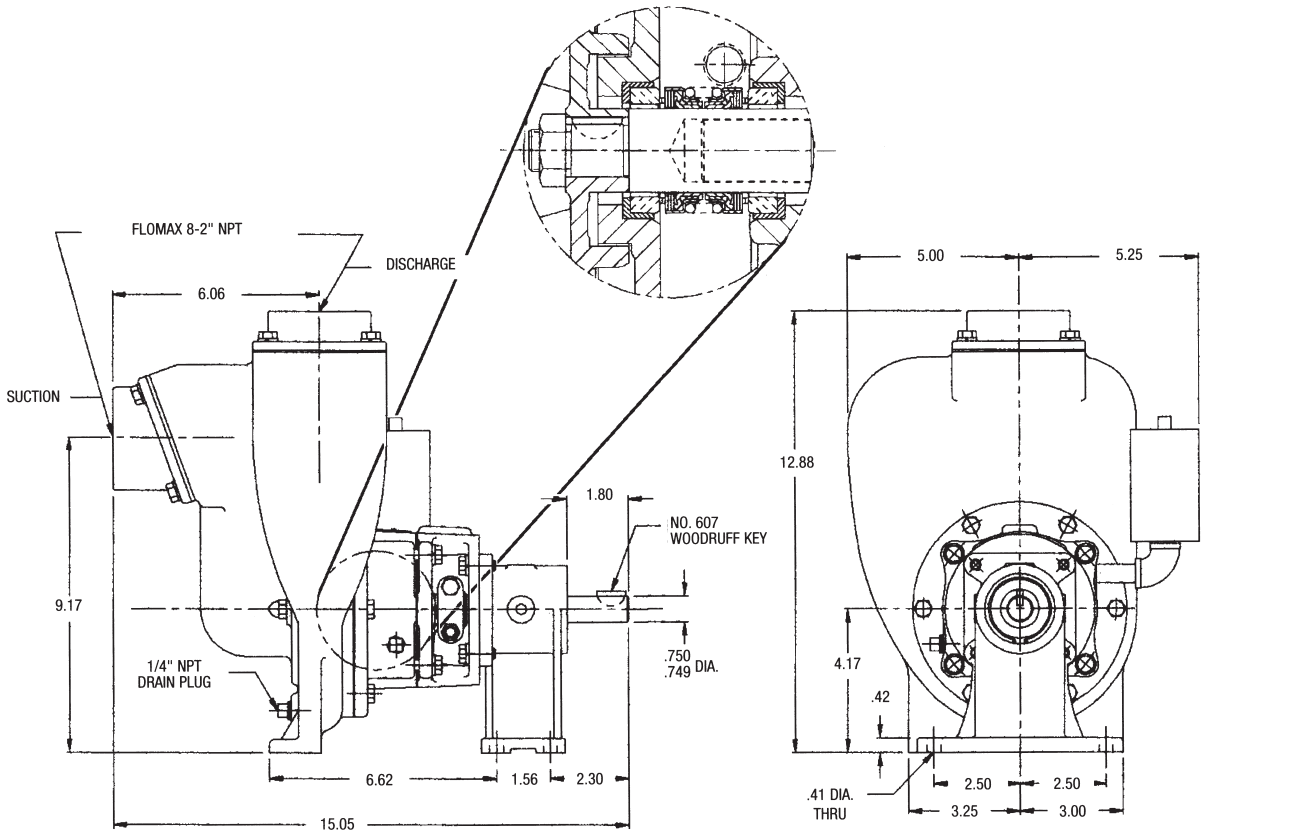
Flomax 8 Dimensions



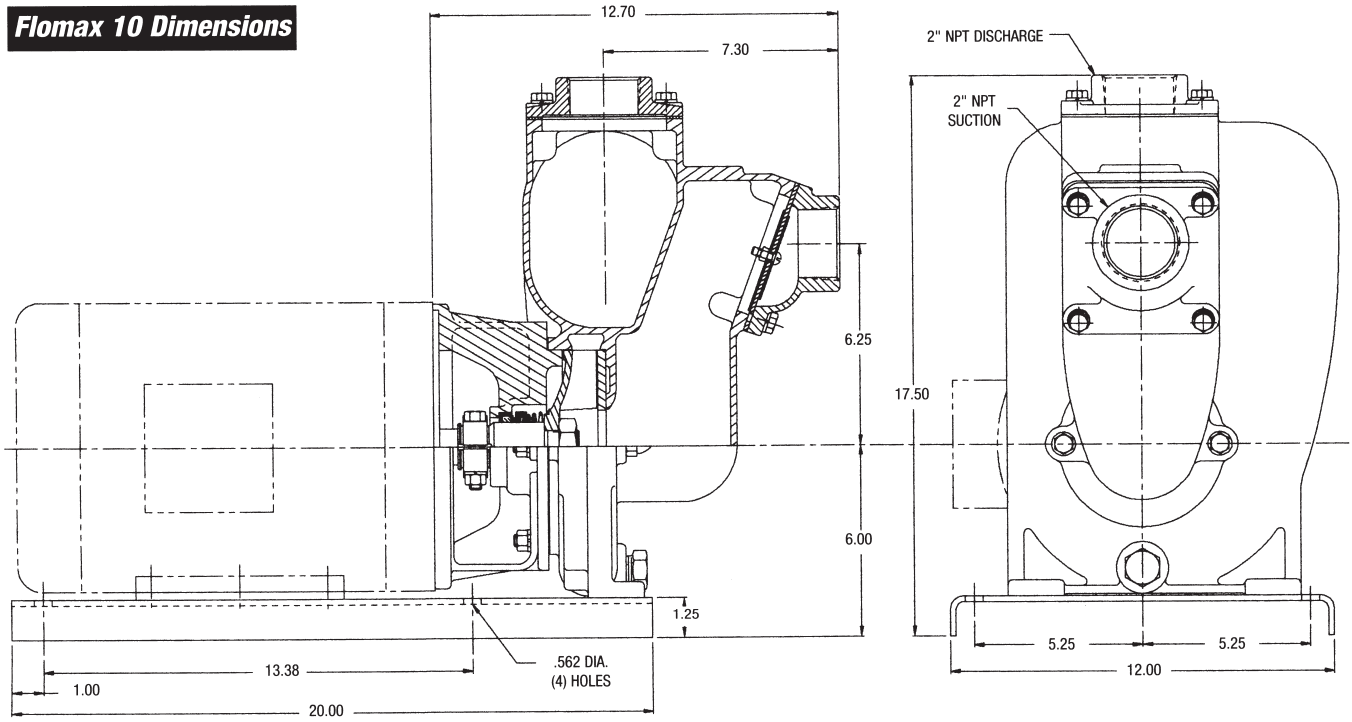
FLOMAX 8 316 SS Dimensions



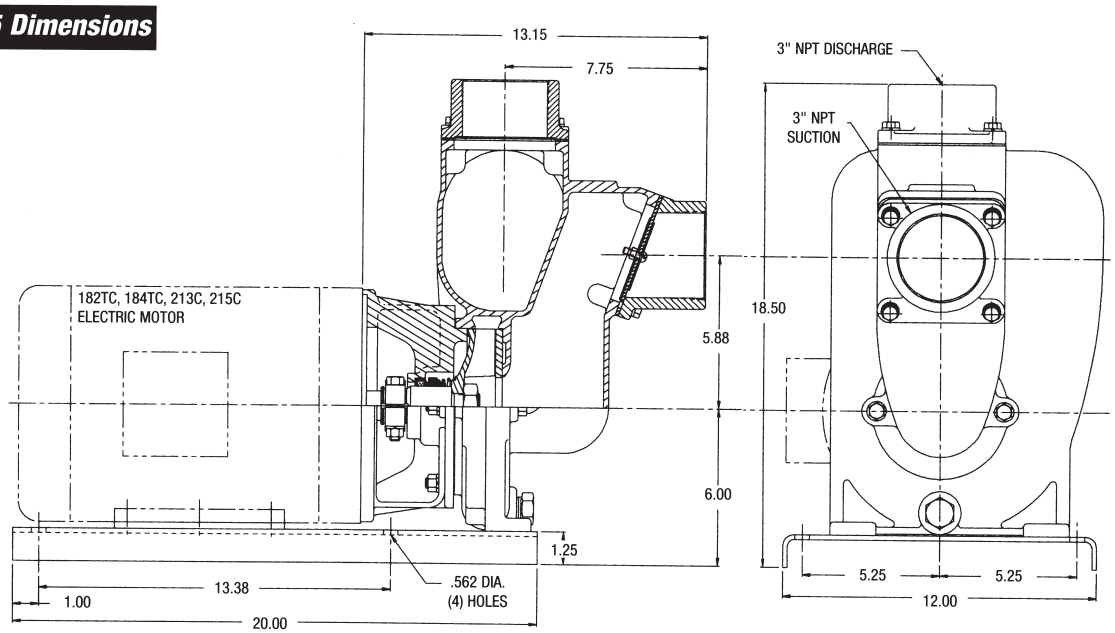
FLOMAX 5 & 8 Dimensions



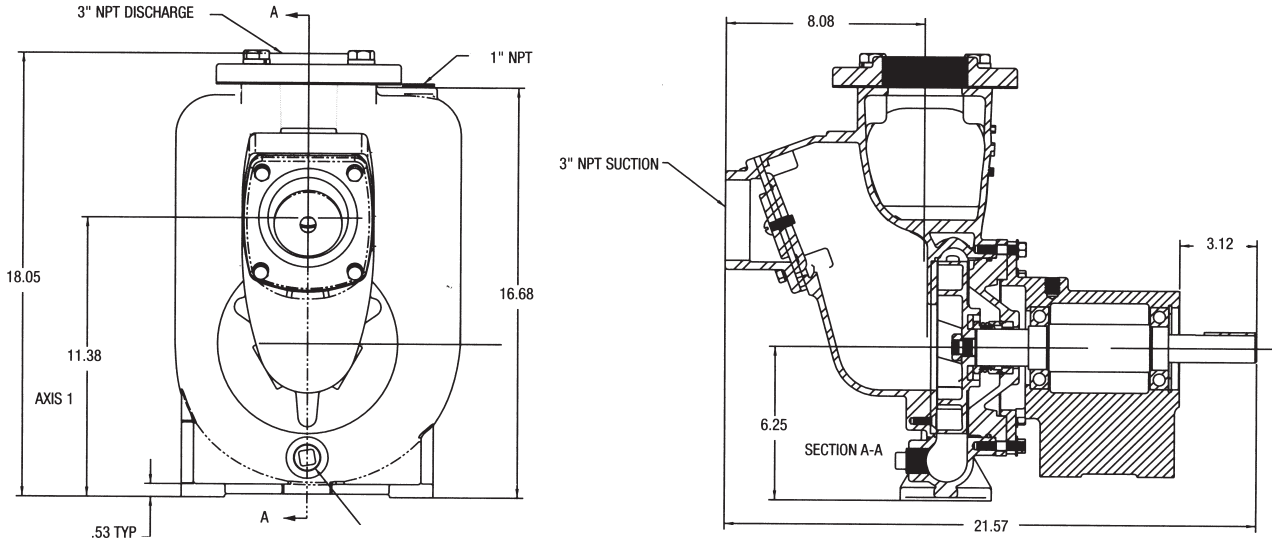
Flomax 10 Dimensions



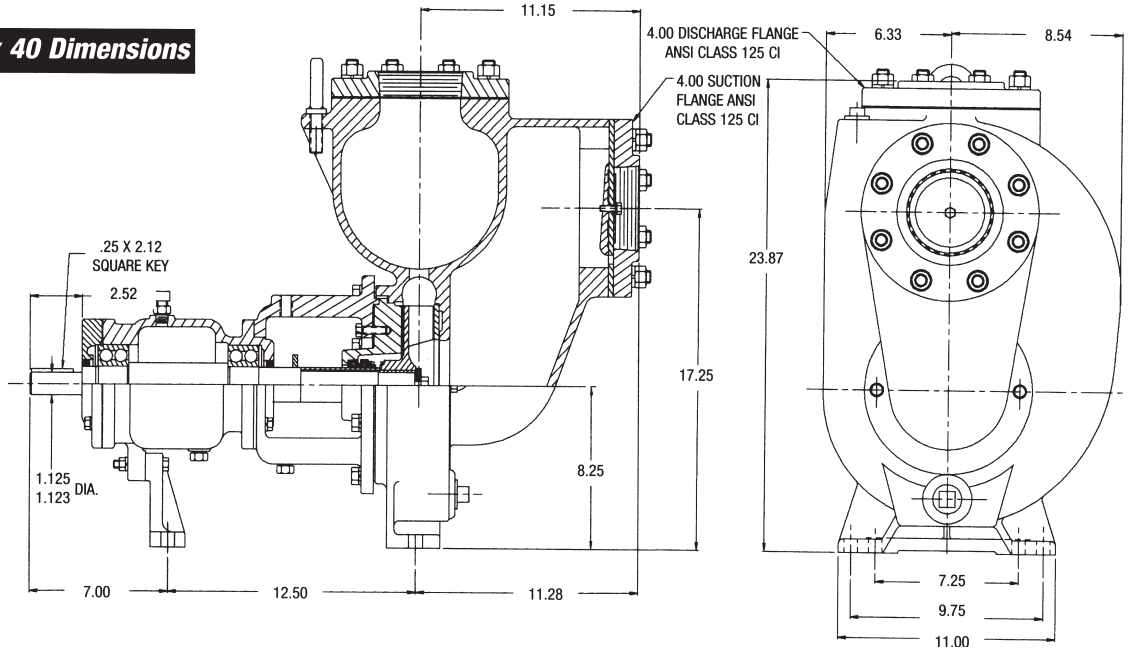
Flomax 15 Dimensions



Flomax 30 Pedestal Mount Dimensions

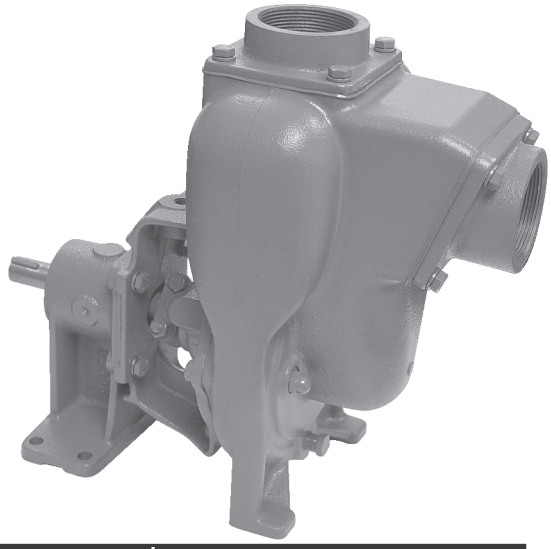


Flomax 40 Dimensions



Model PG Pumps Compatible For Gasoline, Kerosene, Avgas & Jet Fuel

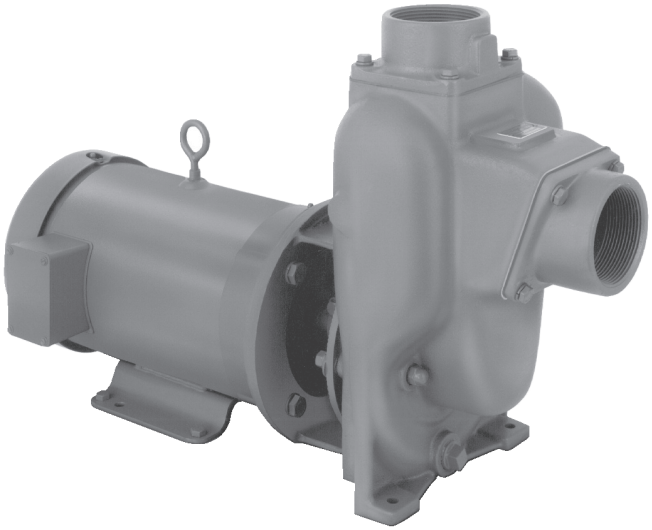
The "PG" model is available in Pedestal mount for flexible coupling or Close Coupled mount to C Face Class I Group D Explosion Proof electric motors. Ductile Iron is the standard construction for the volute and adapter. The open impeller is standard in cast iron construction with aluminum as an optional material. Standard material for the wear plate is aluminum. The standard self-lubricated Type 2 mechanical seal is equipped with a carbon rotating face, viton elastomer and stainless steel spring. The stationary face is silicon carbide.



MODEL	SIZE	MOUNTING	STANDARD MATERIALS OF CONSTRUCTION					OPTIONAL MATERIALS		
			VOLUTE	IMPELLER	WEAR PLATE	GASKET	SEAL	VOLUTE	IMPELLER	WEAR PLATE
PG 8	2" X 2"	Explosion Proof	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS	SEE BRT SALES REP	Aluminum	SEE BRT SALES REP
PG 8	2" X 2"	Pedestal	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	
PG 10	2" X 2"	Explosion Proof	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	
PG 15	3" X 3"	Explosion Proof	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	
PG 15	3" X 3"	Pedestal	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	
PG 30	3" X 3"	Pedestal	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	
PG 40	4" X 4"	Pedestal	Ductile Iron	Cast Iron	Aluminum	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		Aluminum	

Model PO Pumps Compatible For **BioDiesel, Fuel Oil & Diesel**

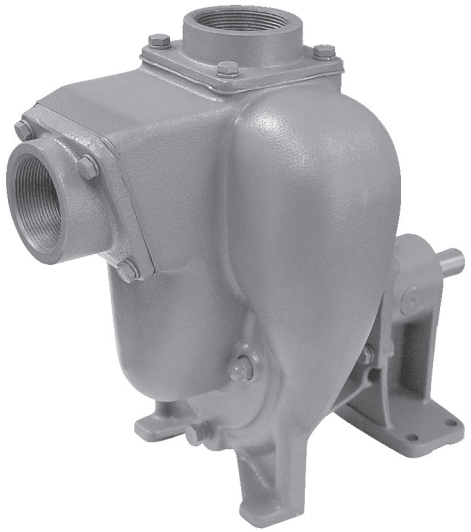
The "PO" model mounting offerings for fuel oil and diesel fuel applications include both Pedestal mount for flexible coupling and Close Coupled mount to C Face, TEFC electric motors. Cast Iron is the standard construction for the volute, adapter and open impeller. Standard material for the wear plate is steel. The volute is also available in ductile iron. The standard self-lubricated Type 21 mechanical seal is equipped with a carbon rotating face, viton elastomer and stainless steel spring. The stationary face is Ni-Resist.



MODEL	SIZE	MOUNTING	STANDARD MATERIALS OF CONSTRUCTION					OPTIONAL MATERIALS		
			VOLUTE	IMPELLER	WEAR PLATE	GASKET	SEAL	VOLUTE	IMPELLER	WEAR PLATE
PO 8	2" X 2"	TEFC	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron	SEE BRT SALES REP	SEE BRT SALES REP
PO 8	2" X 2"	Pedestal	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		
PO 10	2" X 2"	TEFC	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		
PO 15	3" X 3"	TEFC	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		
PO 15	3" X 3"	Pedestal	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		
PO 30	3" X 3"	Pedestal	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		
PO 40	4" X 4"	Pedestal	Cast Iron	Cast Iron	Steel	Cork/Nitrile	Type 21 Viton/Carbon/ NiResist/SS	Ductile Iron		

Model PE Pumps Compatible For **Ethanol & E 85**

The "PE" model is available in Pedestal mount for flexible coupling or Close Coupled mount to C Face Class I Group D Explosion Proof electric motors. Ductile Iron is the standard construction for the volute and adapter. The open impeller is standard in cast iron construction with 316 SS as an optional material. Standard material for the wear plate is steel. The standard self-lubricated Type 2 mechanical seal is equipped with a carbon rotating face, viton elastomer and stainless steel spring. The stationary face is silicon carbide.



MODEL	SIZE	MOUNTING	STANDARD MATERIALS OF CONSTRUCTION					OPTIONAL MATERIALS		
			VOLUTE	IMPELLER	WEAR PLATE	GASKET	SEAL	VOLUTE	IMPELLER	WEAR PLATE
PE 8	2" X 2"	Explosion Proof	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS	SEE BRT SALES REP	316 SS	SEE BRT SALES REP
PE 8	2" X 2"	Pedestal	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	
PE 10	2" X 2"	Explosion Proof	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	
PE 15	3" X 3"	Explosion Proof	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	
PE 15	3" X 3"	Pedestal	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	
PE 30	3" X 3"	Pedestal	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	
PE 40	4" X 4"	Pedesta	Ductile Iron	Cast Iron	Steel	Cork/Nitrile	Type 2 Viton/Carbon/ Sil.Car./SS		316 SS	

MP Pumps
Self Priming Petroleum Pumps

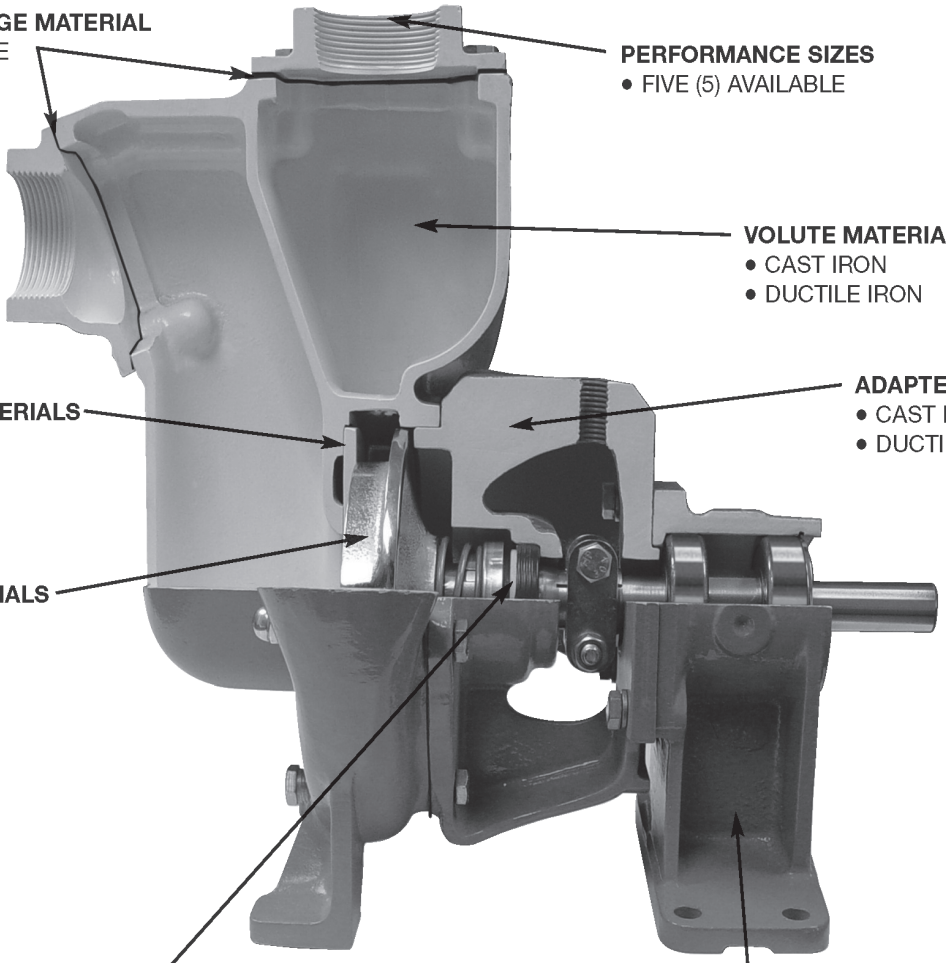
MP Pumps has specifically reengineered its popular Flomax® Self-Priming Series for compatibility with clean, non-abrasive petroleum products.

Transfer and delivery of various fuels such as gasoline, ethanol, biodiesel, and fuel oils are just a few of the petroleum based products the Flomax® Series is suitable for handling.

Long recognized as the leader in self-priming applications, the Flomax® Series addresses today's fuel market by offering:

- **Five (5) performance models.**
- **Various drive options.**
- **Specific mechanical seal offerings.**
- **Materials of construction compatible for three (3) distinct fuel classifications.**

By classifying various fuels into three (3) distinct segments, MP Pumps can recommend that its design is capable of handling the specific fuel groups without incurring the additional cost associated with “one pump for all fuels”.



GASKET, FLANGE MATERIAL
- CORK/NITRILE

PERFORMANCE SIZES
- FIVE (5) AVAILABLE

VOLUTE MATERIALS
- CAST IRON
- DUCTILE IRON

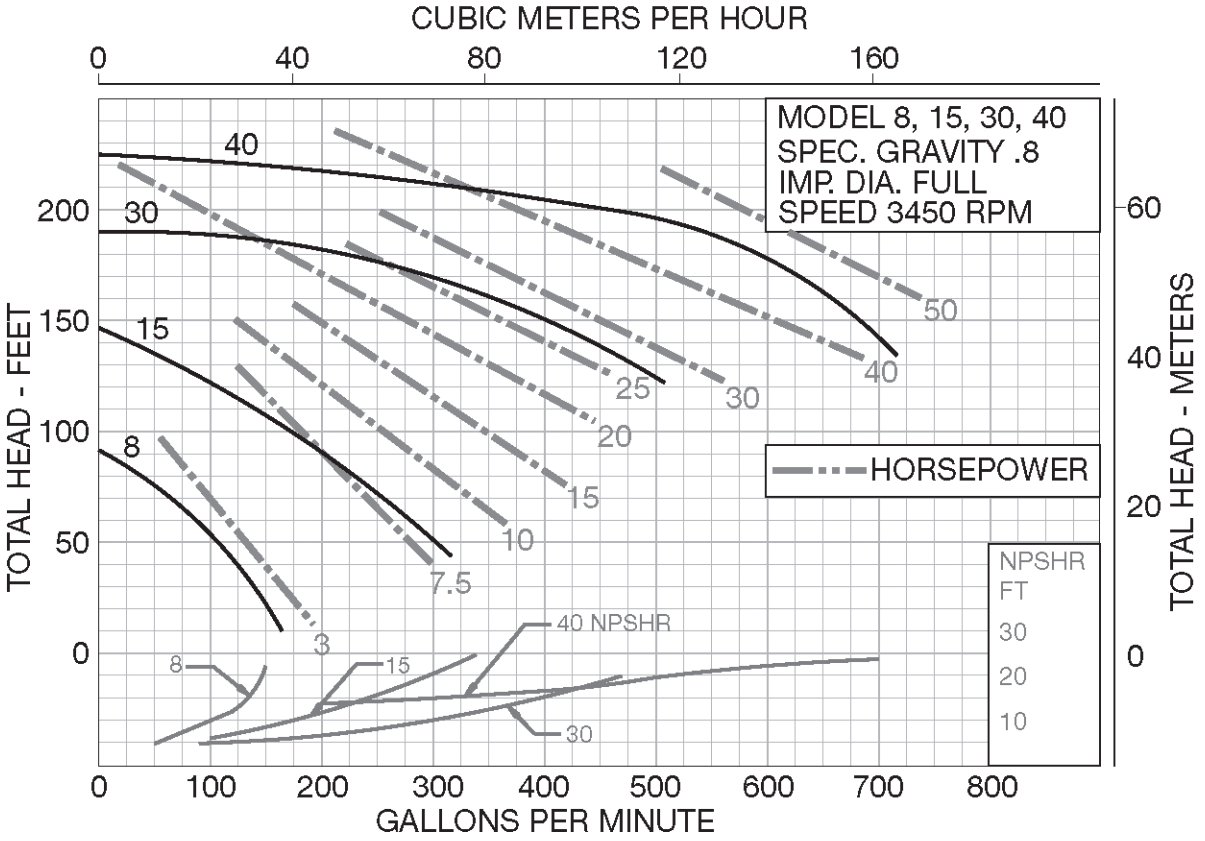
ADAPTER MATERIALS
- CAST IRON
- DUCTILE IRON

WEAR PLATE MATERIALS
- STEEL
- ALUMINUM

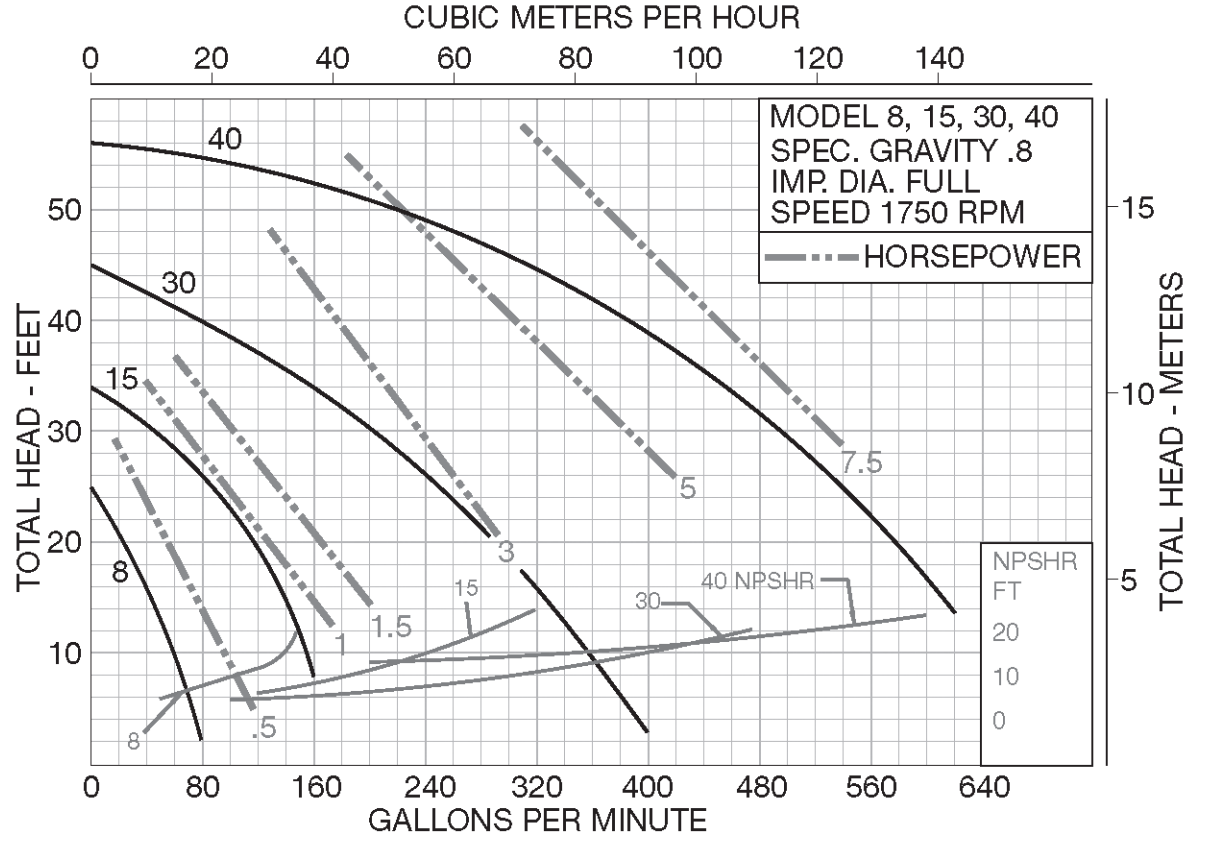
IMPELLER MATERIALS
- CAST IRON
- ALUMINUM
- 316 SS

MECHANICAL SEAL MATERIALS
- TYPE 21 VITON/CARBON/NIRESIST/SS
- TYPE 2 VITON/CARBON/SILICON CARBIDE/SS

MOUNTING OPTIONS
- PEDESTAL (SHOWN)
- CLOSE CPLD. ELECTRIC MOTORS
  - TEFC
  - EXPLOSION PROOF CLASS I GROUP D



CONSULT FACTORY FOR PERFORMANCE VARIATIONS.

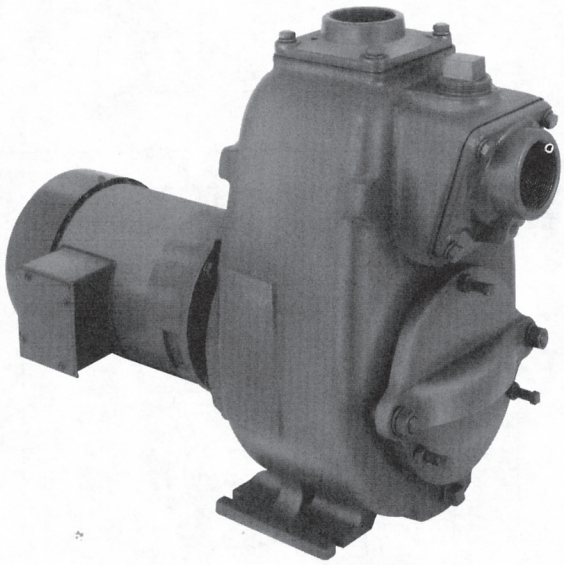


CONSULT FACTORY FOR PERFORMANCE VARIATIONS.

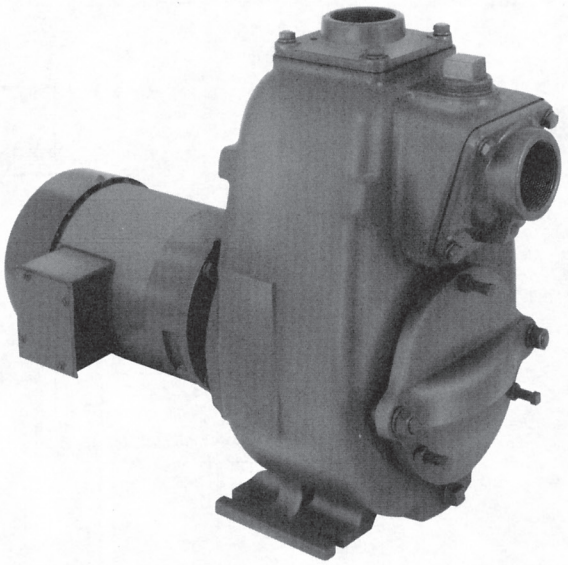
2CT

SELF PRIMING TRASH PUMP FEATURES

- **CLOSED COUPLED TO ELECTRIC MOTOR OR PEDESTAL FOR STANDARD MOTOR**
- **FLOW** - TO 210 GPM
- **PRESSURES** - TO 125 FEET HEAD
- **CAST IRON CONSTRUCTION**
- **ELECTRIC MOTOR DRIVE**
- **IMPELLER** - DUCTILE IRON
- **SHAFT SLEEVE** - 304 STAINLESS STEEL
- **SEALS** - CARBON/CERAMIC VITON MECHANICAL SEAL
- **OPTIONS:**
  - ENGINE DRIVES
  - HYDRAULIC DRIVES



2CT



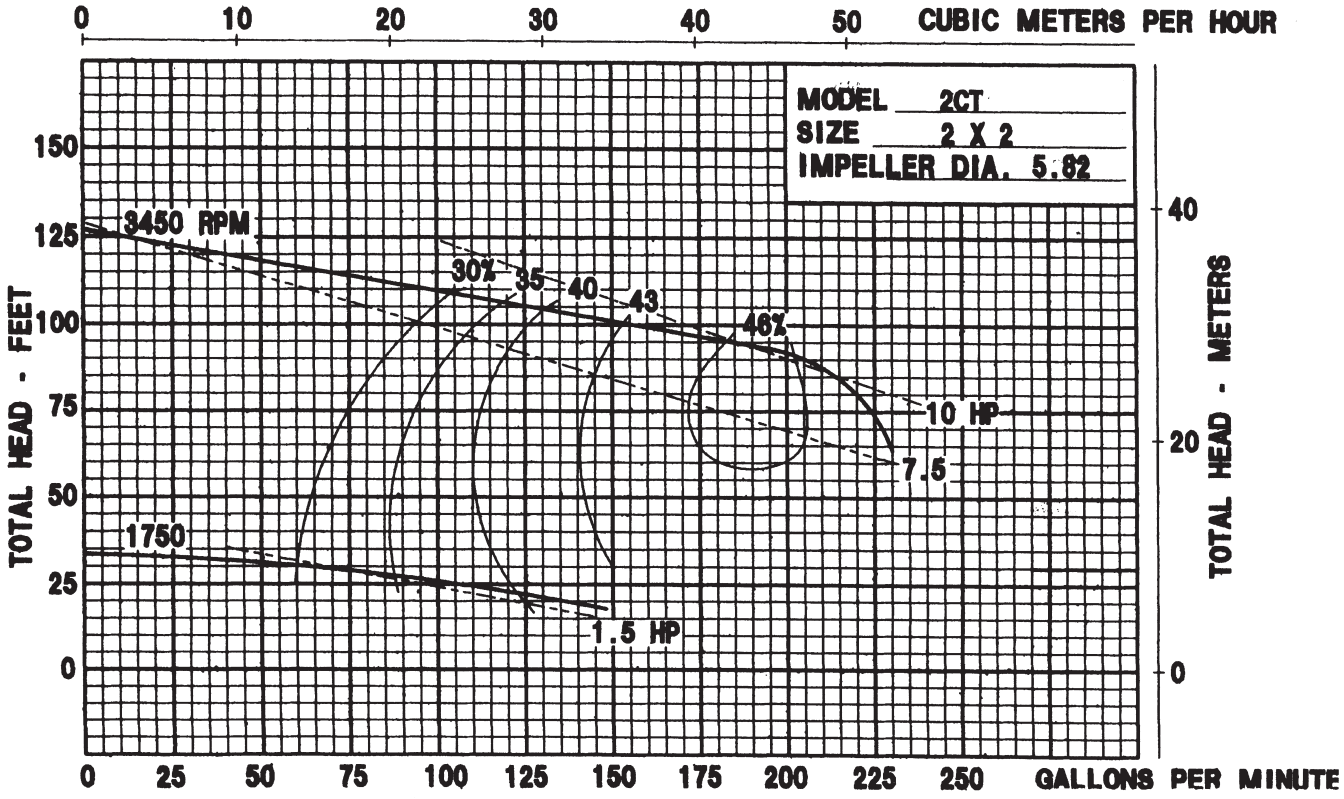
2CT-3

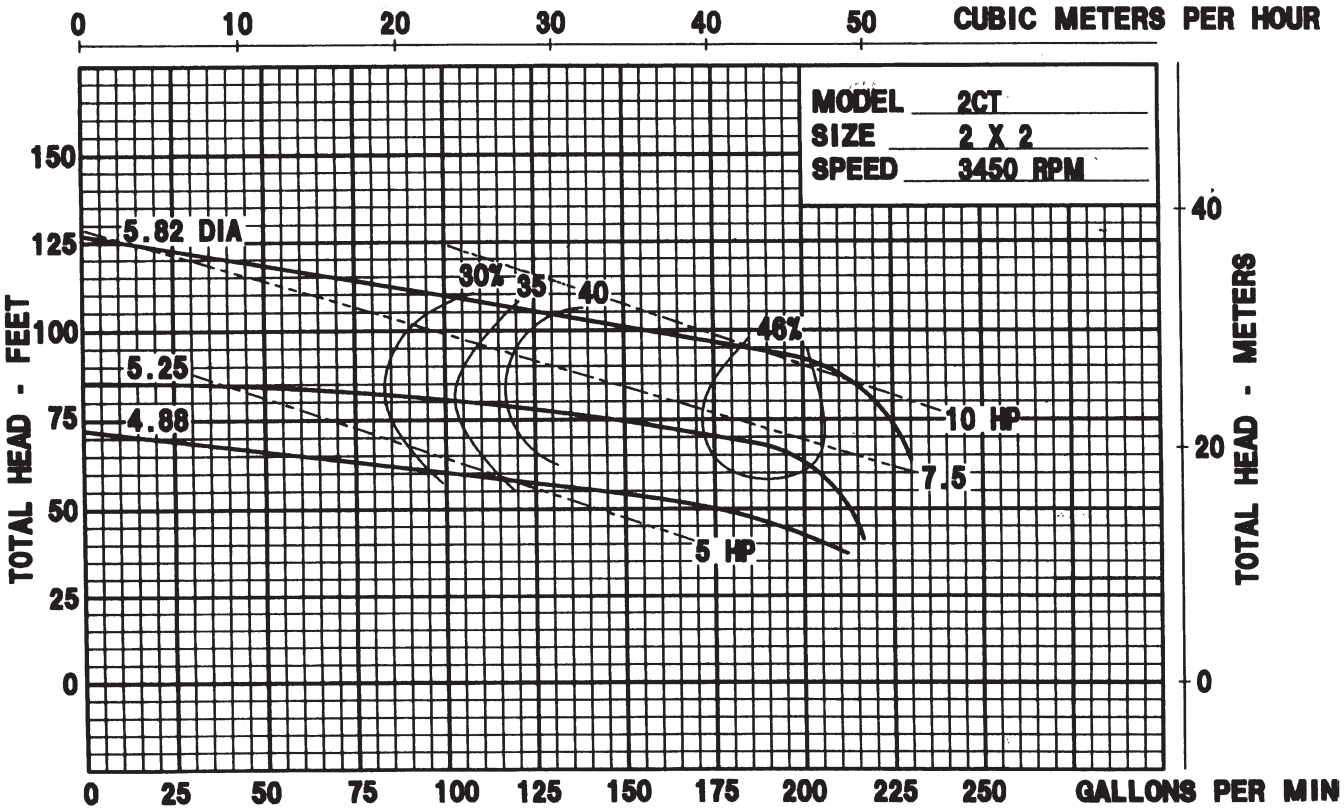
MODEL	Suction	Discharge
2CT	2" NPT	2" NPT

PROVEN WRONG BY HISTORY: (continued)

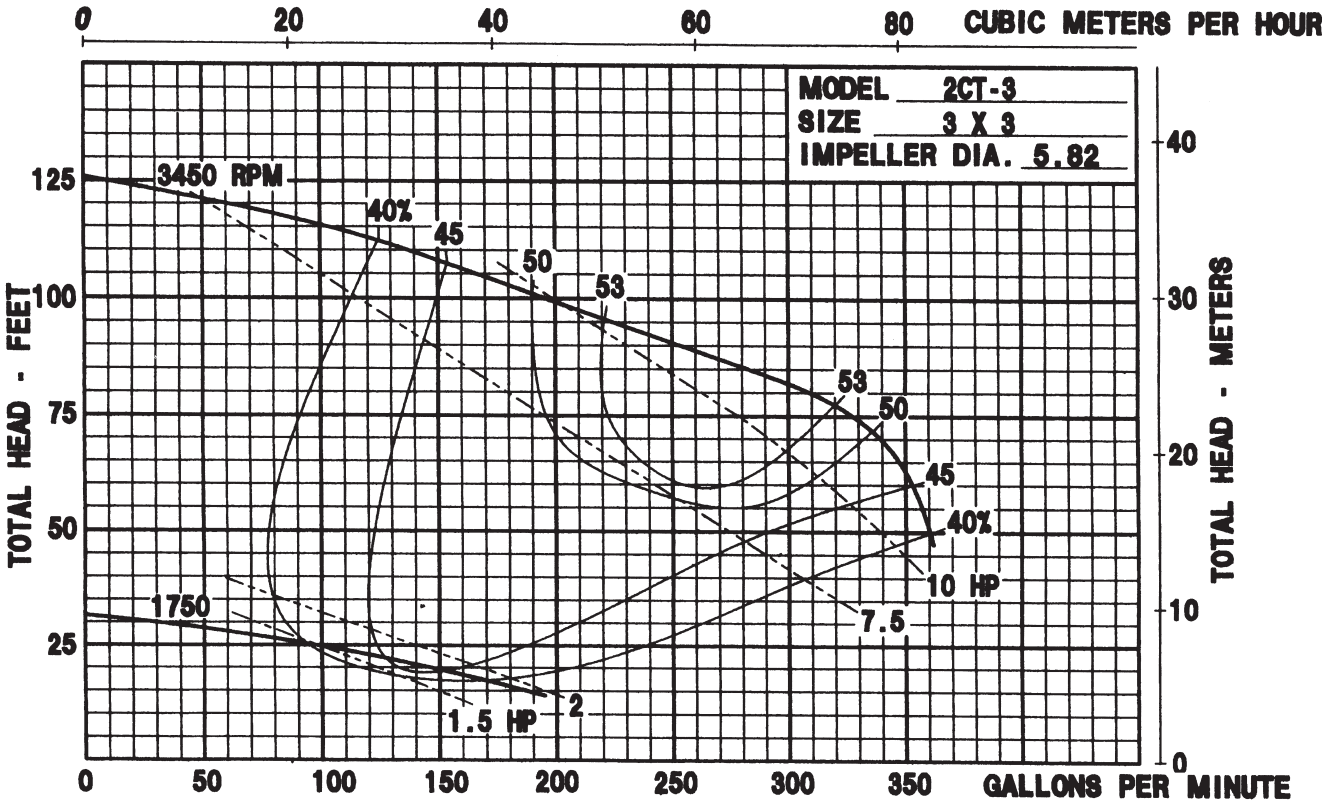
"So we went to Atari and said, 'Hey, we've got this amazing thing, even built with some of your parts, and what do you think about funding us? Or we'll give it to you. We just want to do it. Pay our salary, we'll come work for you.' And they said, 'No.' So then we went to Hewlett-Packard, and they said, 'Hey, we don't need you. You haven't got through college yet."'
-Apple Computer, Inc., founder Steve Jobs on attempts to get Atari and Hewlett-Packard
interested in the personal computer that he and Steve Wozniak created

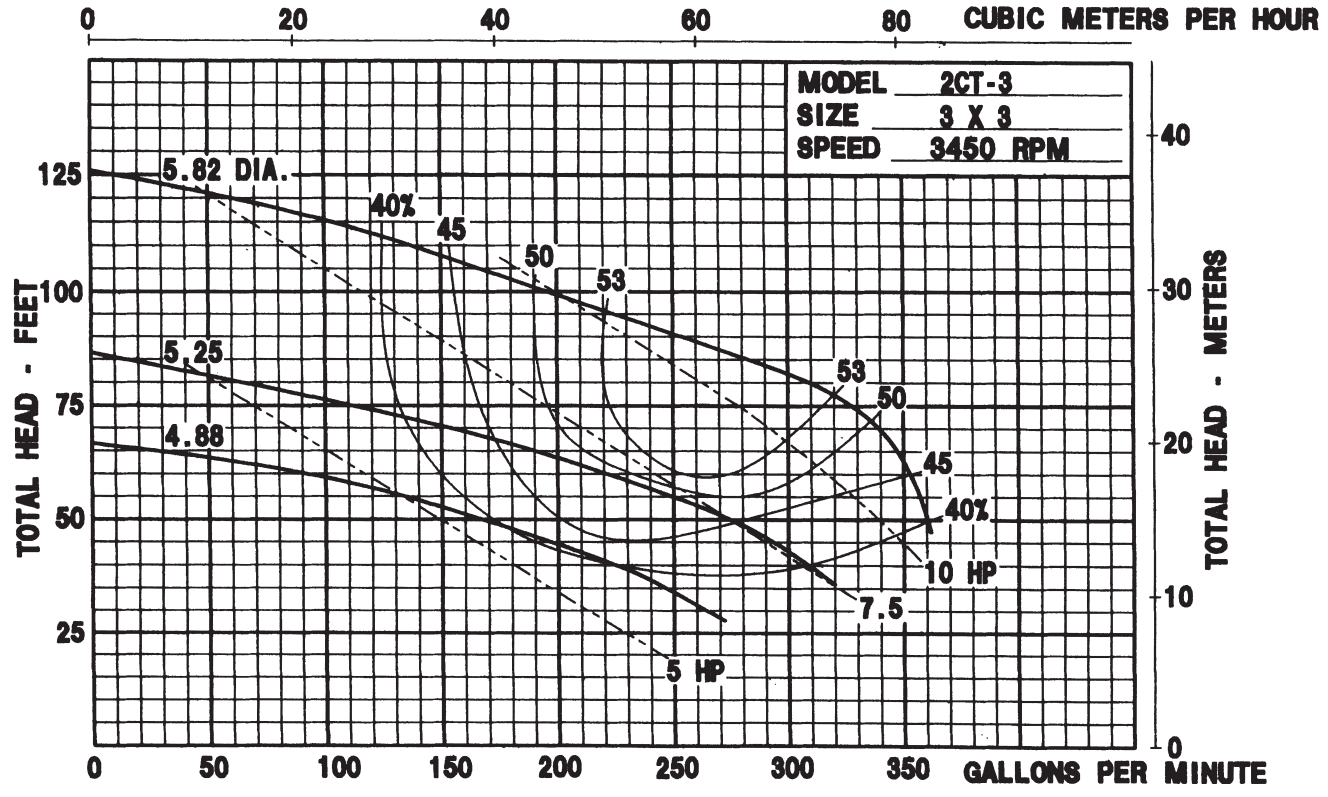
2CT Pump Performance Curves



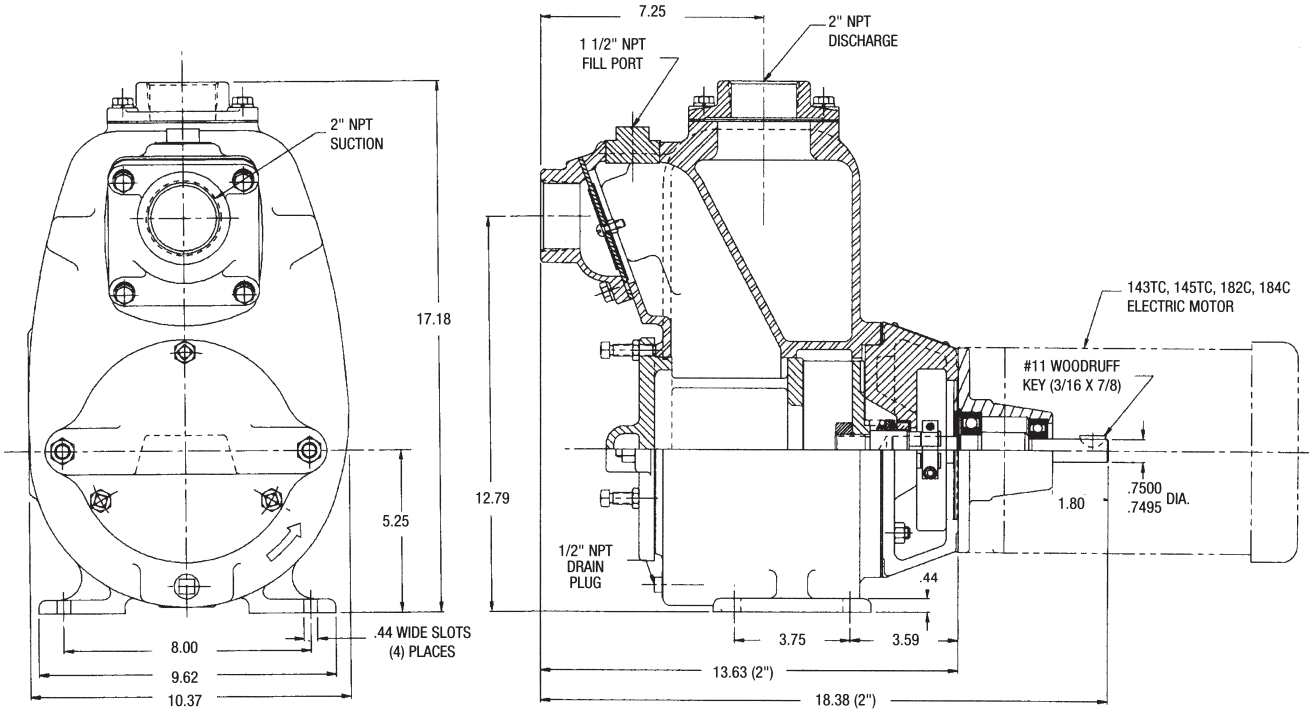


2CT-3 Pump Performance Curves

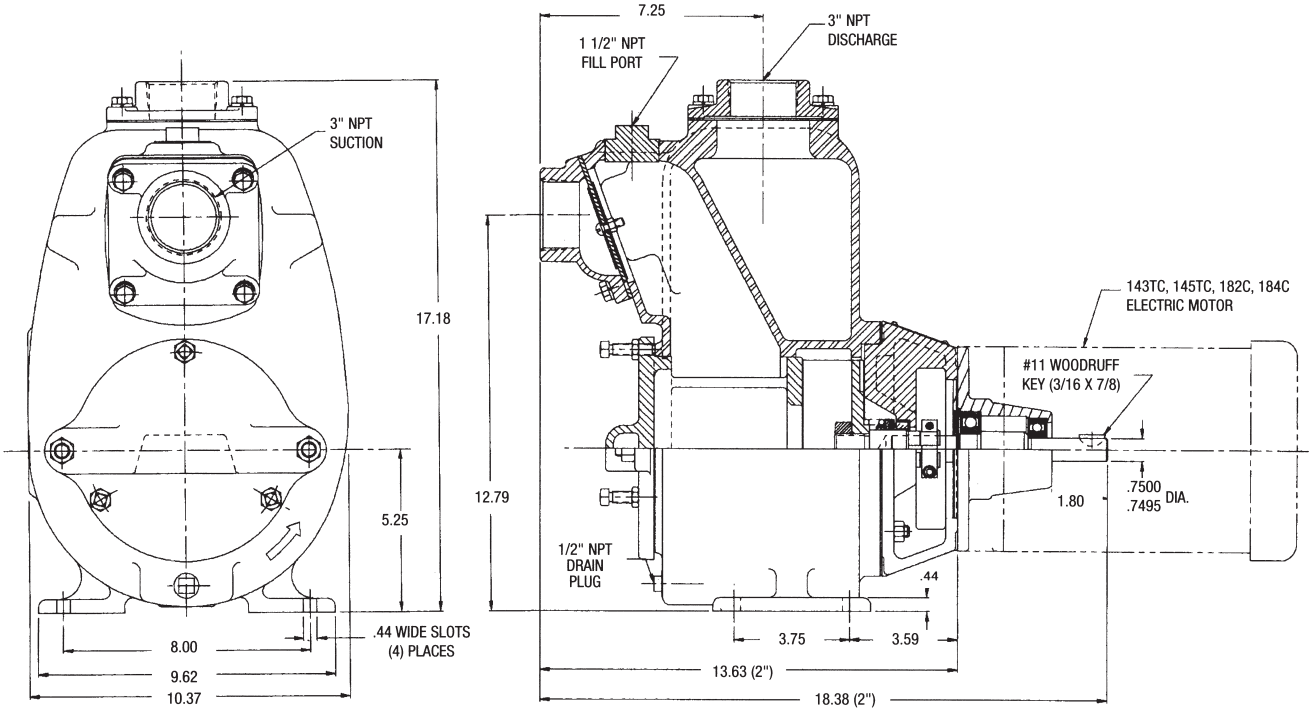




2CT Dimensions



2CT-3 Dimensions



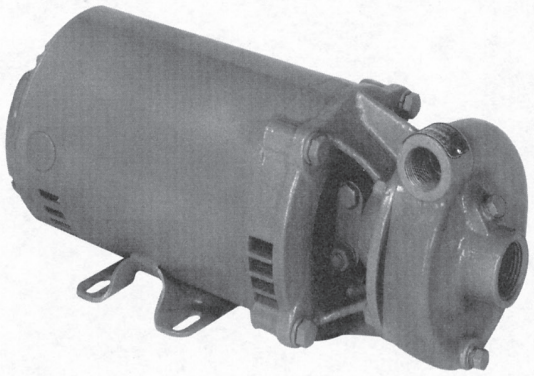
SERIES 30 60 80 110

END SUCTION CENTRIFUGAL PUMP FEATURES

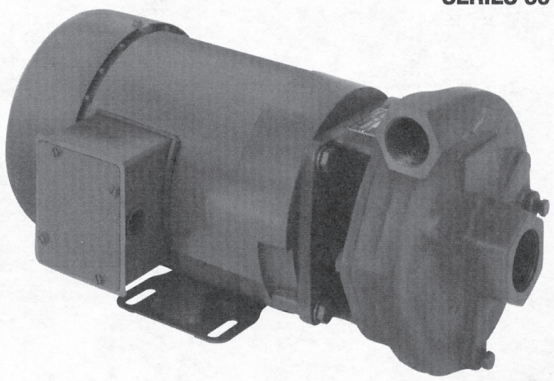
- **SERIES 30, 60, 80, 110, 120, 130, 200, 300 & 700** CLOSED COUPLED TO ELECTRIC MOTOR
  SERIES 300 PEDESTAL PUMP, OR FOOT MOUNTED FOR BELT OR DIRECT DRIVE
  SERIES 700 PEDESTAL ANSI A-40 PUMP FOR BELT OR DIRECT DRIVE
- **PUMPAK ONLY TO MOUNT TO STANDARD NEMA "C" FACE MOTOR .3-40 HP**
- **NEMA JP PUMP MOTOR UP TO 25HP**
- **FLOWS -** 40-800 GPM
- **PRESSURES -** 40-190 FEET HEAD

AVAILABLE IN:

- **SERIES 30** CAST IRON, BRONZE & ALUMINUM CONSTRUCTION
- **SERIES 60** CAST IRON
- **SERIES 80, 110, 120, 130 & 200** CAST IRON & BRONZE
- **SERIES 300** CAST IRON AND CAST IRON STAINLESS STEEL FITTED
- **SERIES 700** DUCTILE IRON CONSTRUCTION
- **VERTICAL OR HORIZONTAL DISCHARGE**
- **IMPELLER:**
  SERIES 30 AVAILABLE IN CAST IRON, BRONZE, ALUMINUM
  SERIES 60, 110, 130 AND 200 AVAILABLE IN CAST IRON & BRONZE
  SERIES 80 & 120 AVAILABLE IN BRONZE (CAST IRON OPTIONAL)
  SERIES 300 & 700 AVAILABLE IN DUCTILE IRON-ENCLOSED
- **SHAFT SLEEVE:**
  SERIES 30, 60, 80, 110, 130 & 200 STAINLESS STEEL
  SERIES 300 STEEL
  SERIES 700 STEEL OR STAINLESS STEEL
- **FASTENERS** - STAINLESS STEEL
- **SEALS** - STANDARD VITON, OPTIONAL SEALS AVAILABLE (CONSULT FACTORY)
- **OPTIONS:**
  - ENGINE DRIVES
  - PEDESTAL MODELS
  - HYDRAULIC DRIVES
  - CLUTCHPAKS
  - MOTOR DRIVES



SERIES 30



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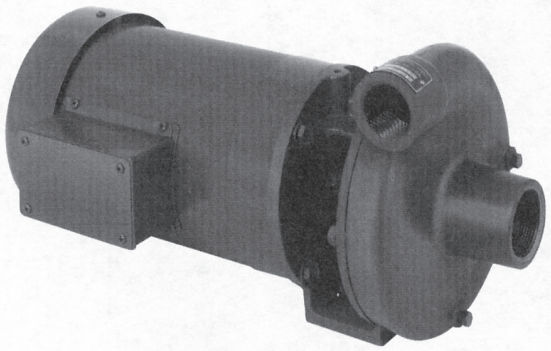

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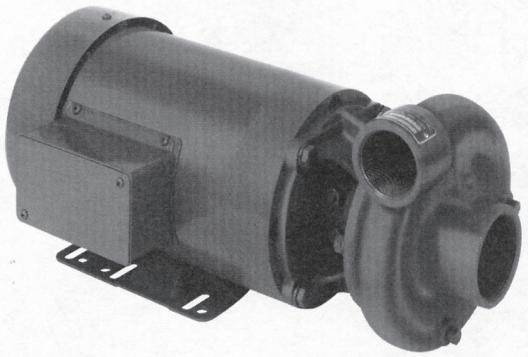
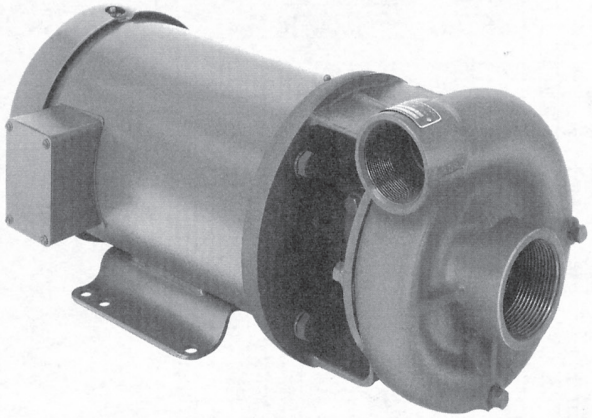
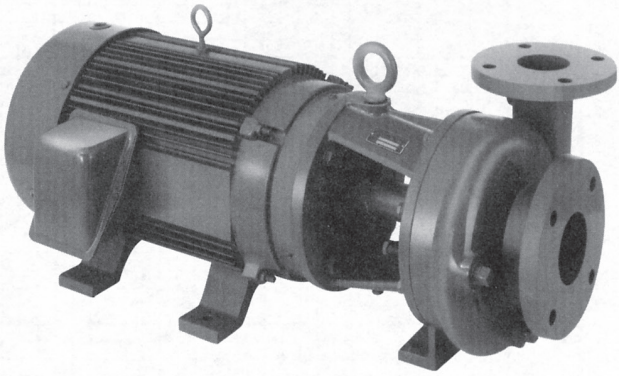


SERIES 110

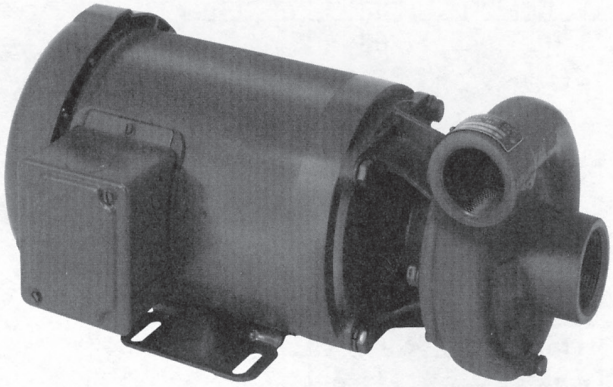
120 130 200 300 700



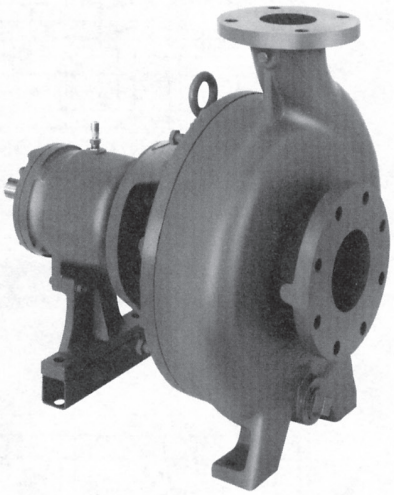
SERIES 120



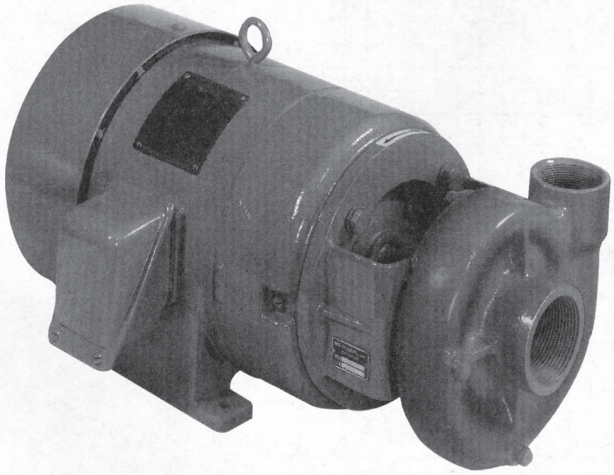
SERIES 300



SERIES 130



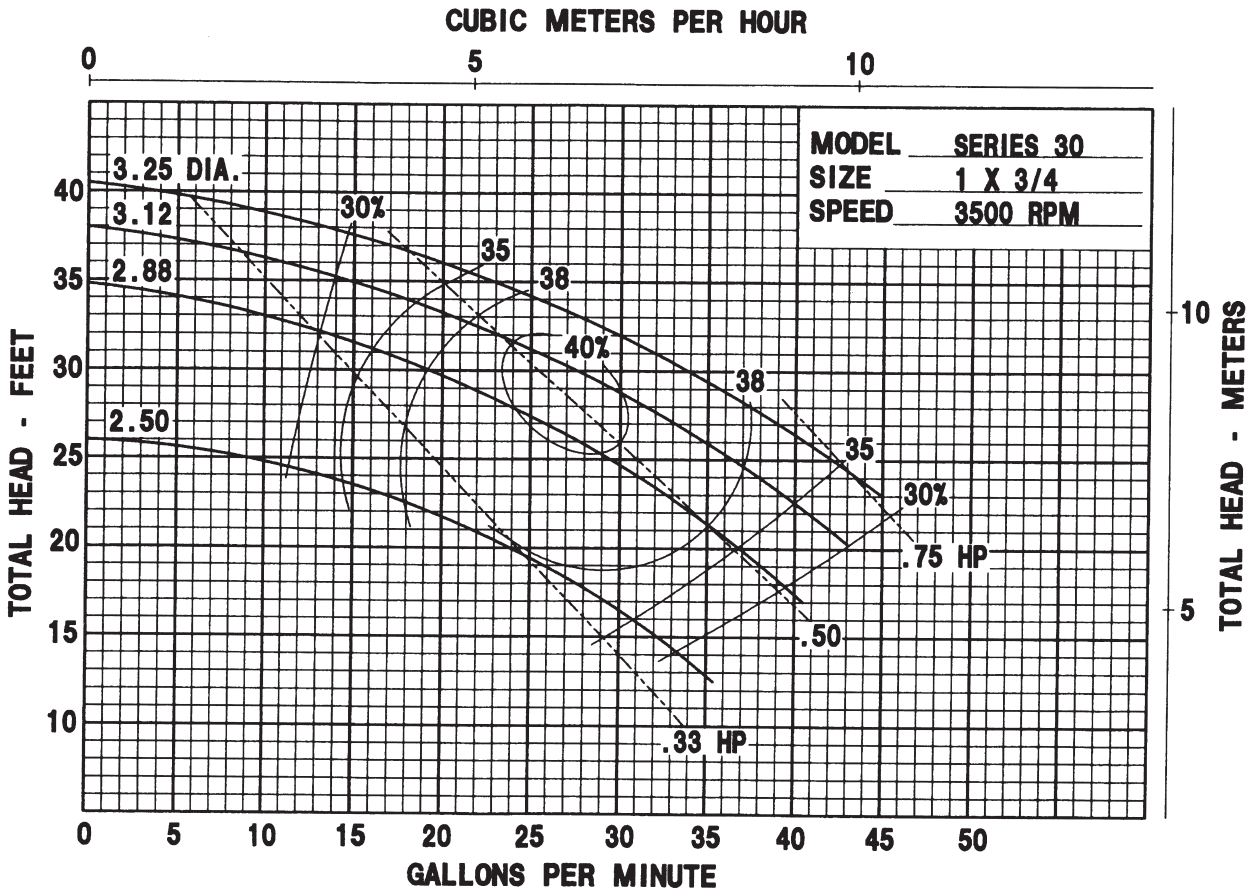
SERIES 700



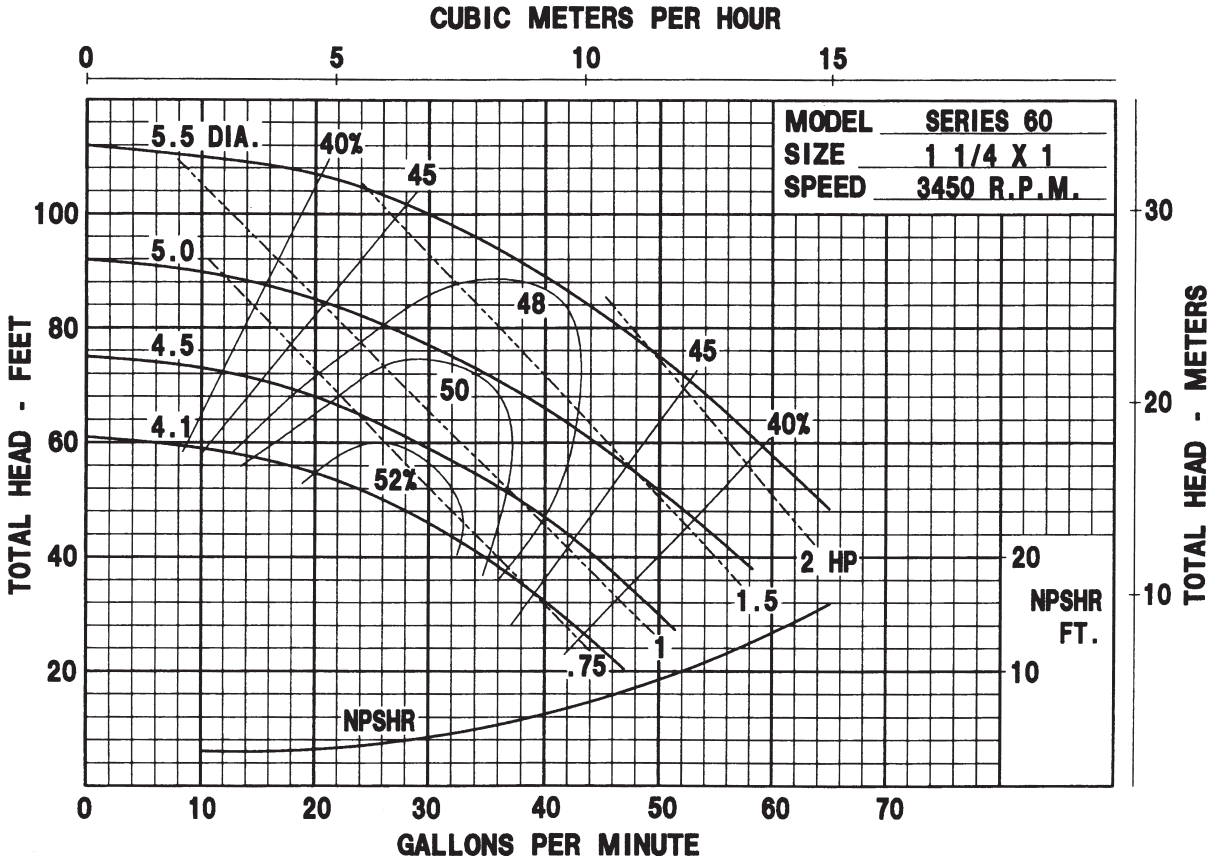
SERIES 200

MODEL	Suction	Discharge
SERIES 30	1" NPT	3/4" NPT
SERIES 60	1 1/4" NPT	1" NPT
SERIES 80	1 1/2" NPT	1 1/4" NPT
SERIES 110	1 1/2" NPT	1 1/4" NPT
SERIES 120	2" NPT	1 1/2" NPT
SERIES 130	2" NPT	1 1/2" NPT
SERIES 200	2 1/2" NPT	2" NPT
SERIES 300	3" NPT	2 1/2" NPT
SERIES 700	4" NPT	3" NPT

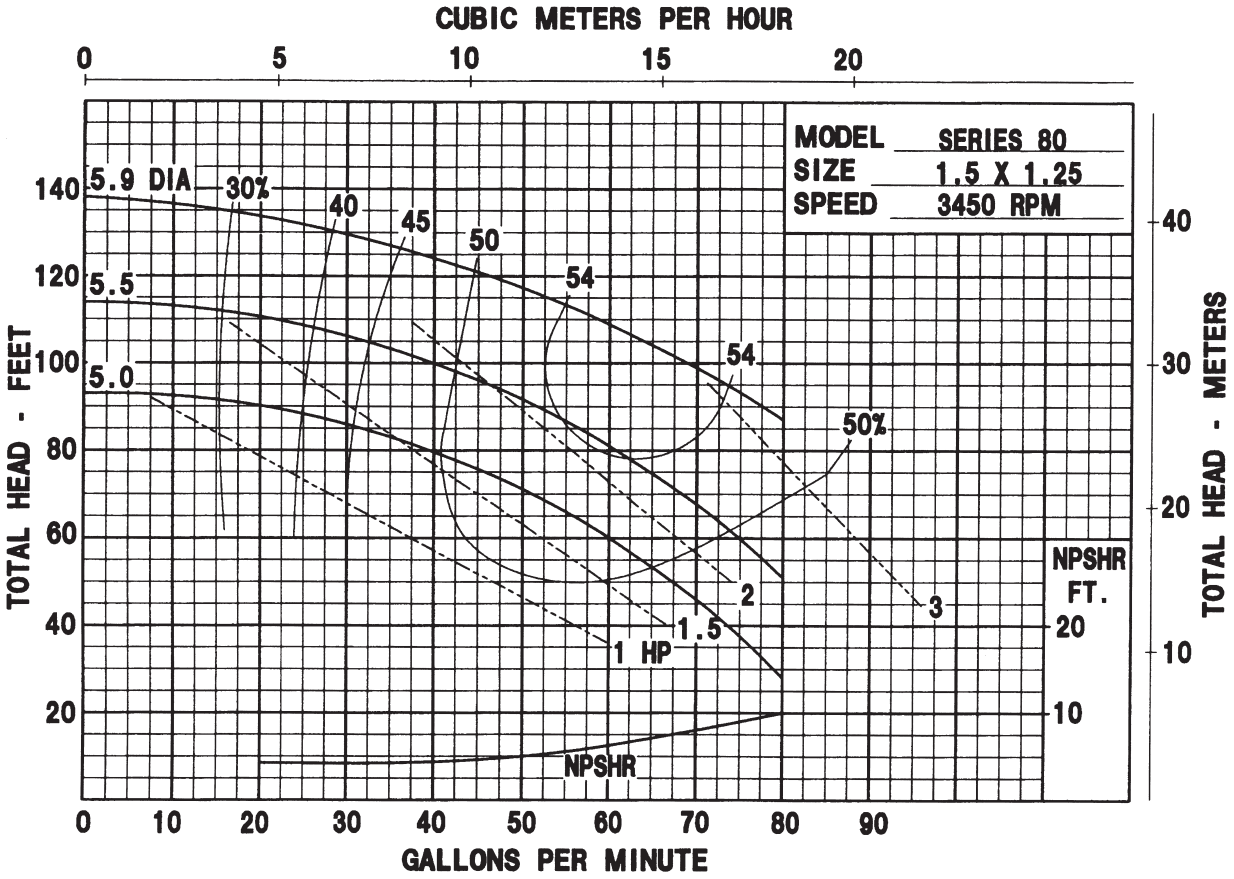
Series 30 Pump Performance Curves



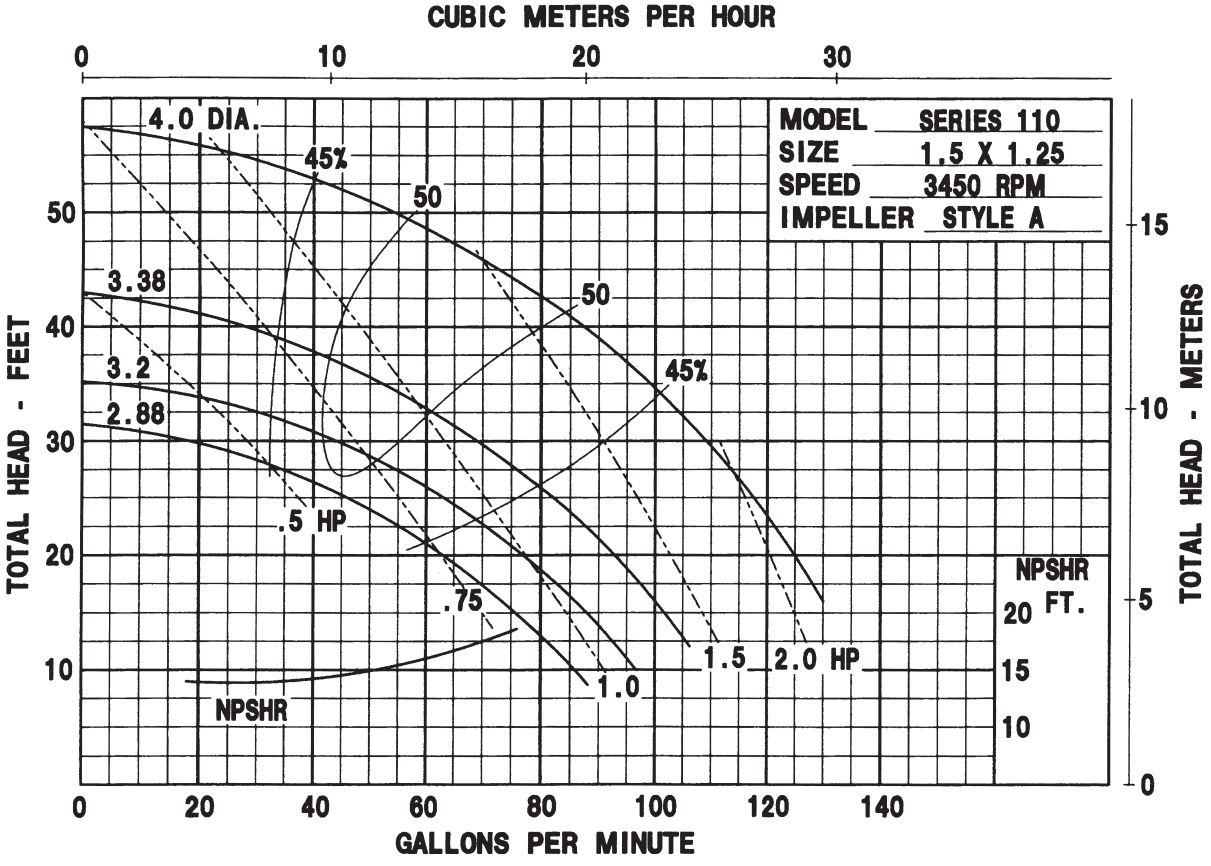
Series 60 Pump Performance Curves



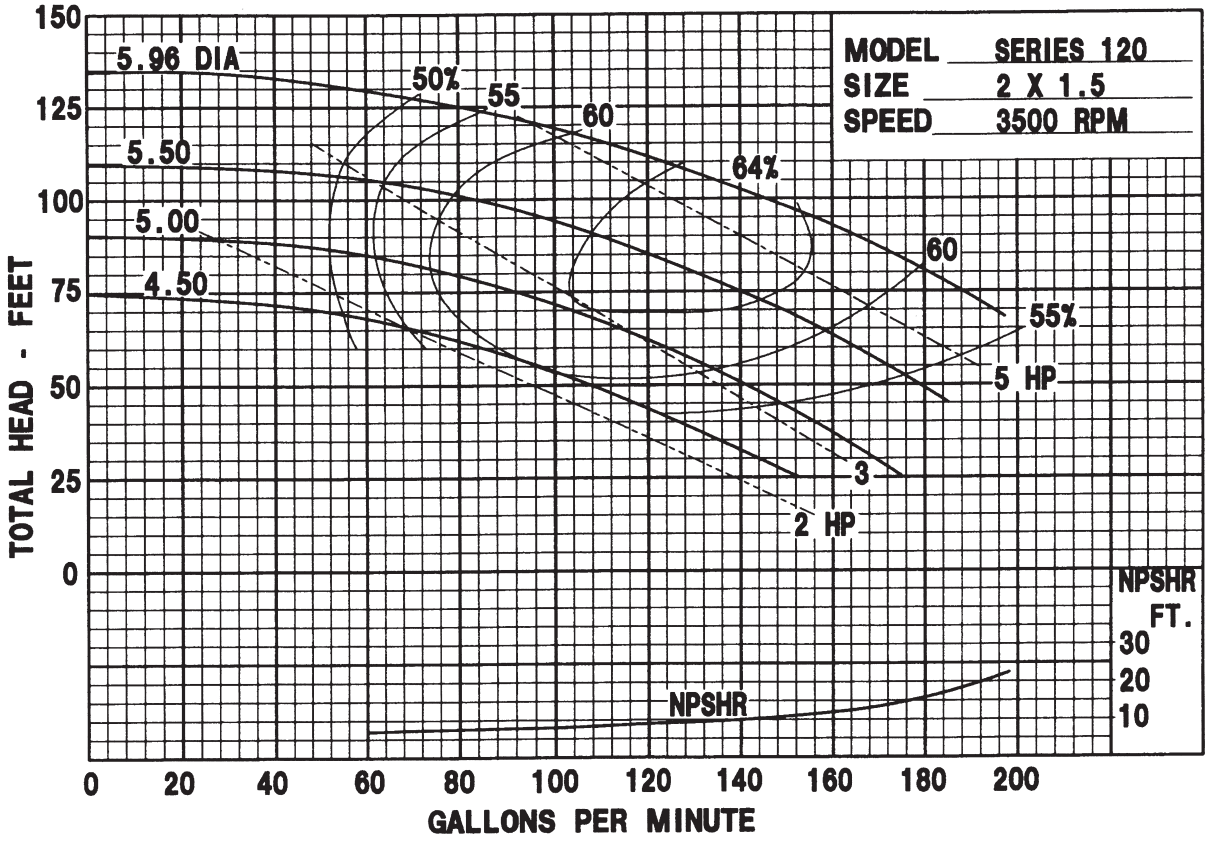
Series 80 Pump Performance Curves



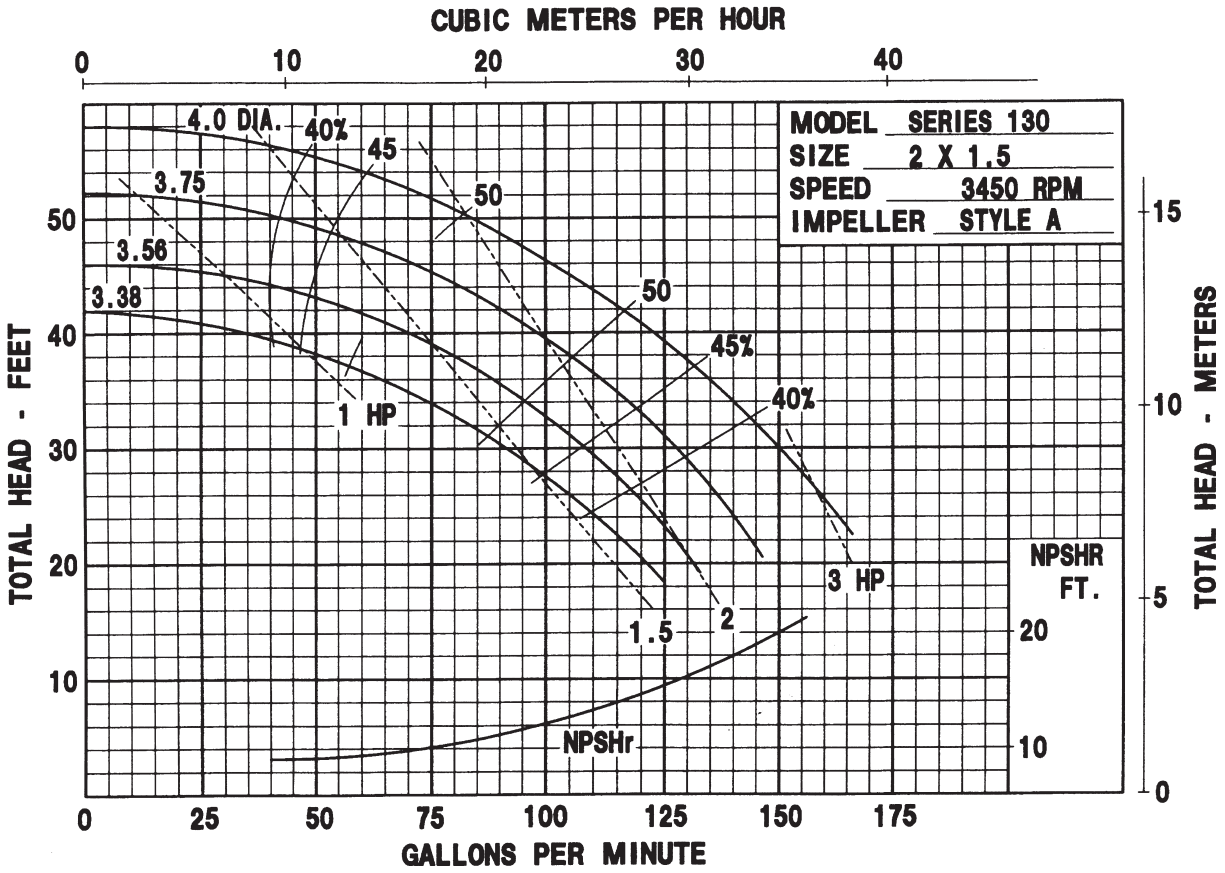
Series 110 Pump Performance Curves



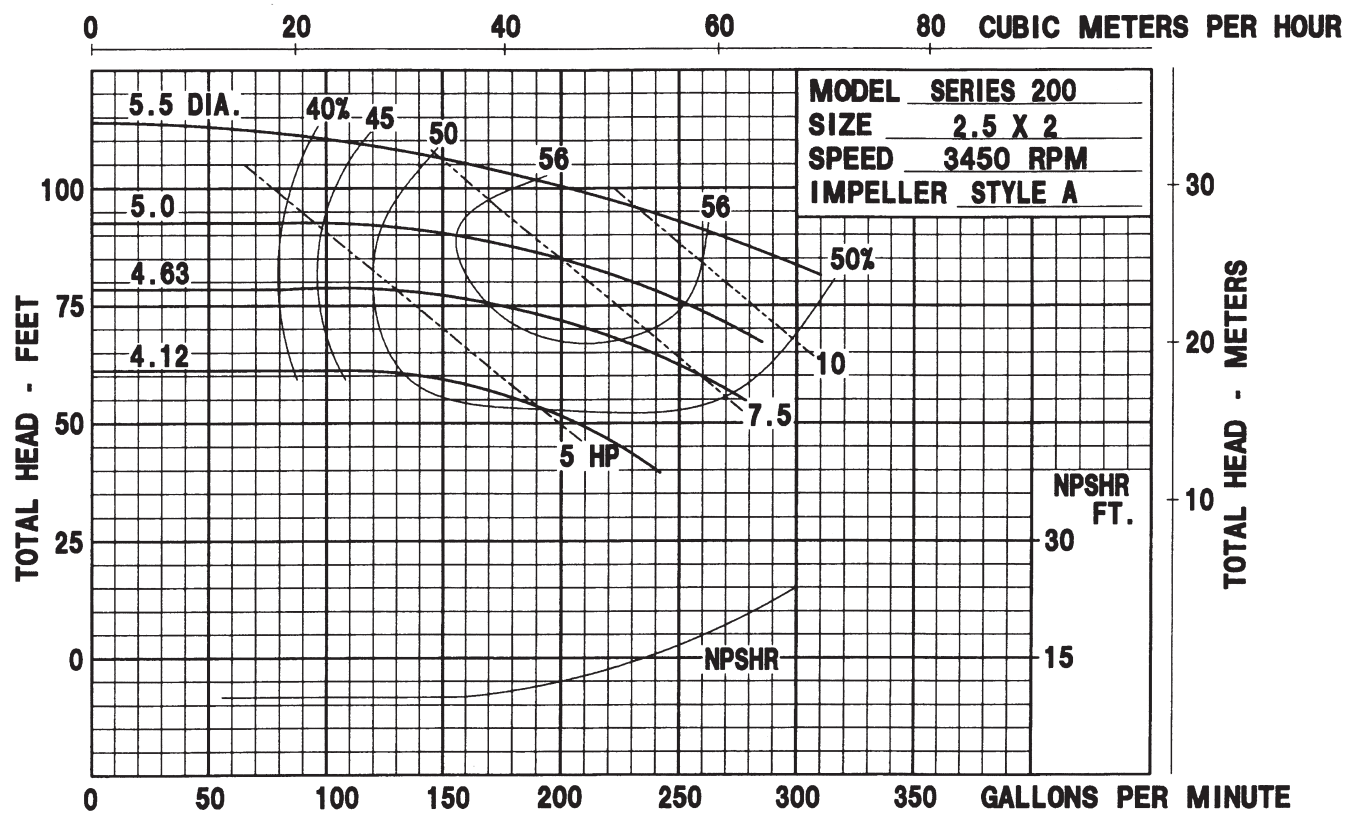
Series 120 Pump Performance Curves



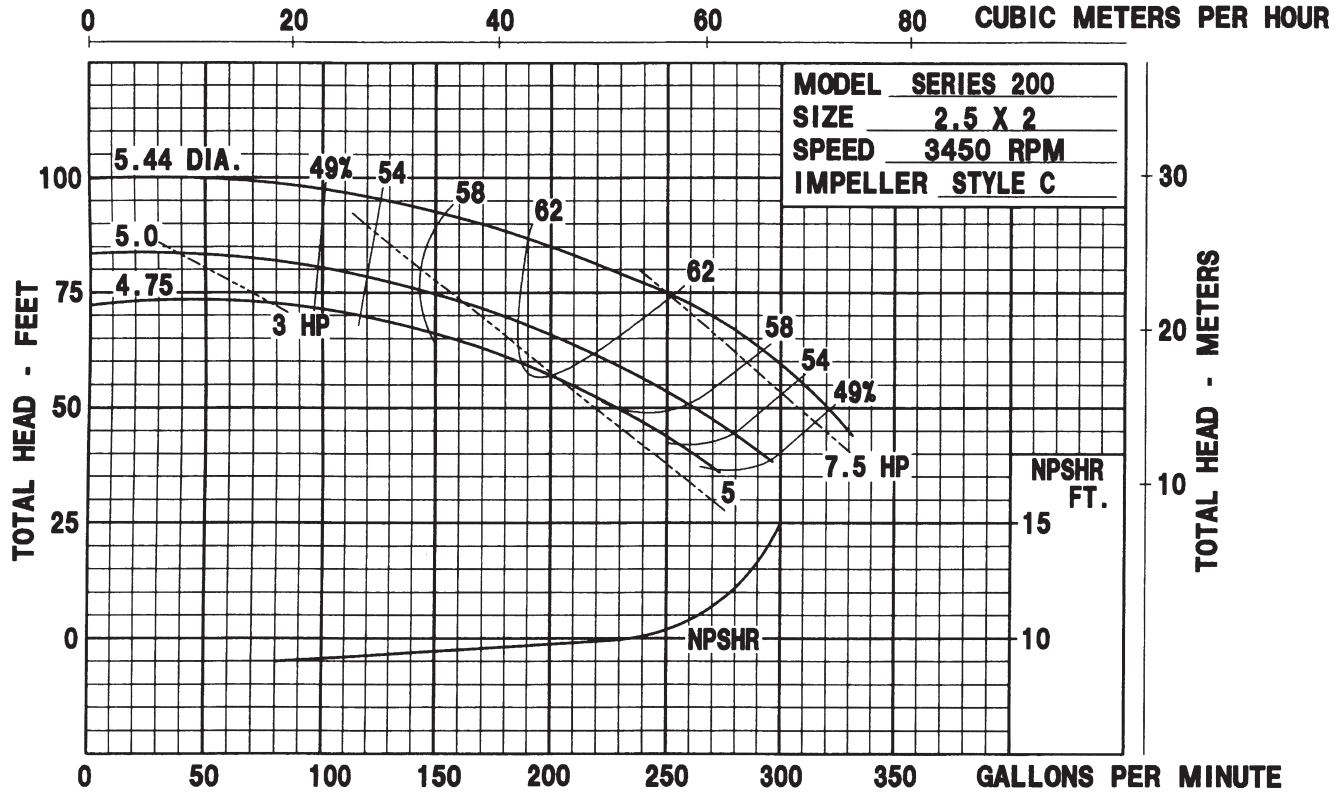
Series 130 Pump Performance Curves



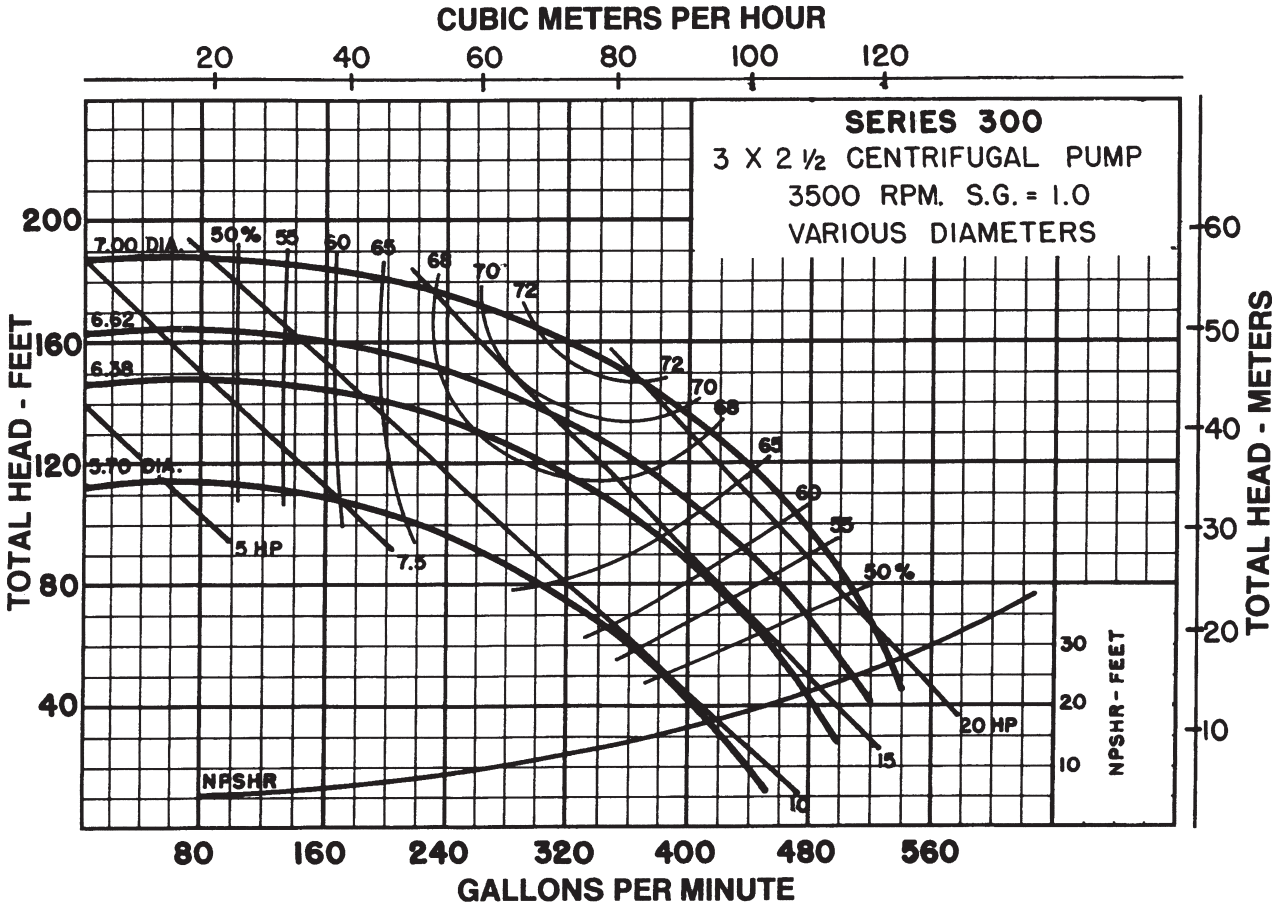
Series 200 Style A Pump Performance Curves



Series 200 Style C Pump Performance Curves



Series 300 Pump Performance Curves



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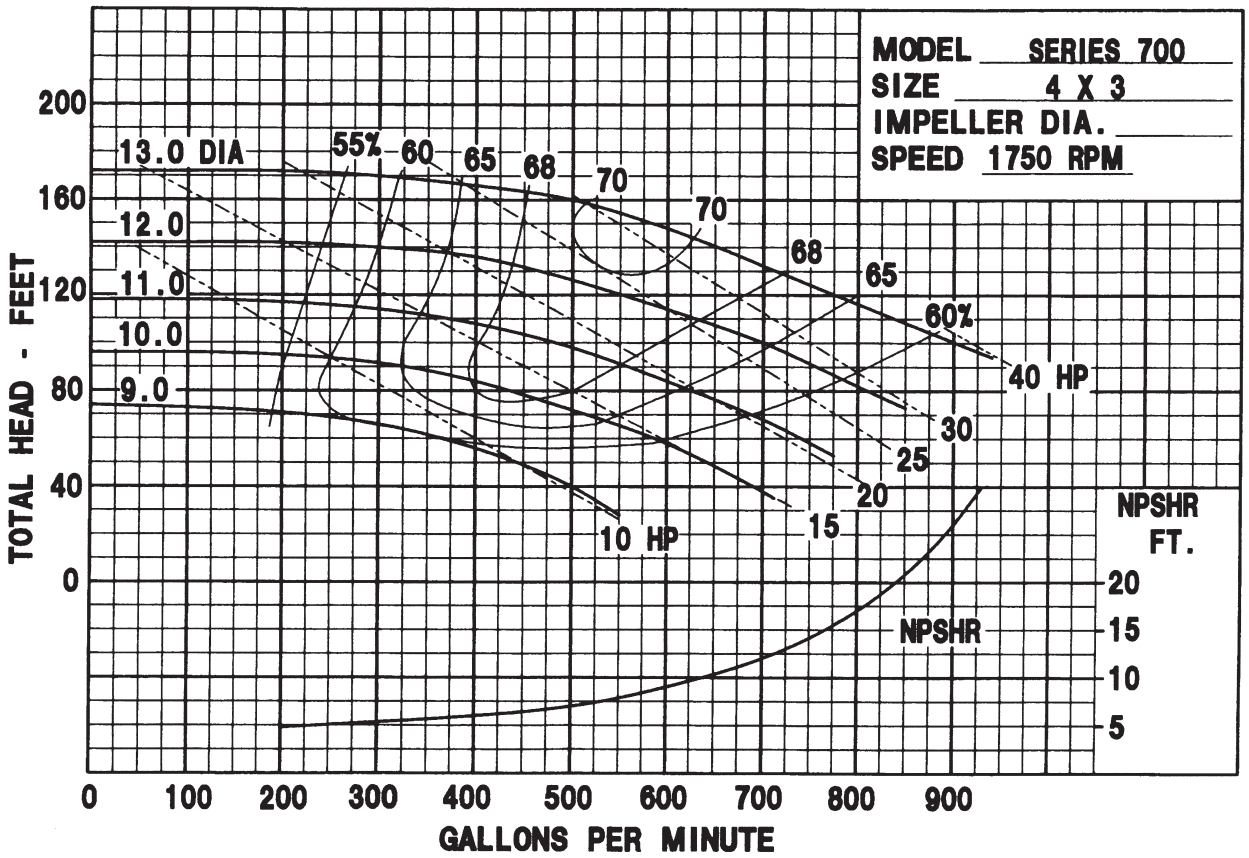
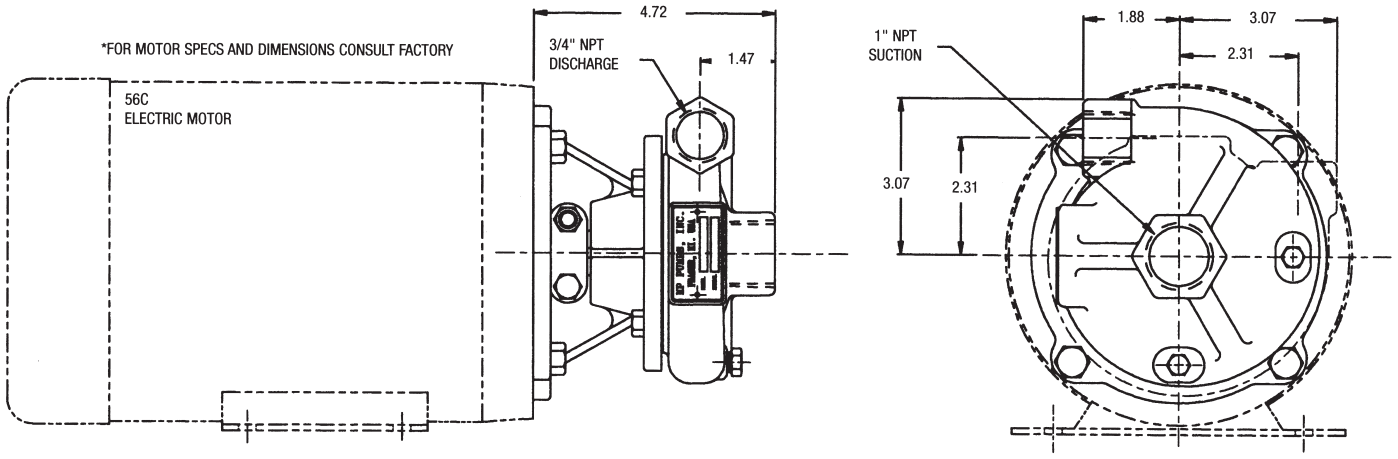
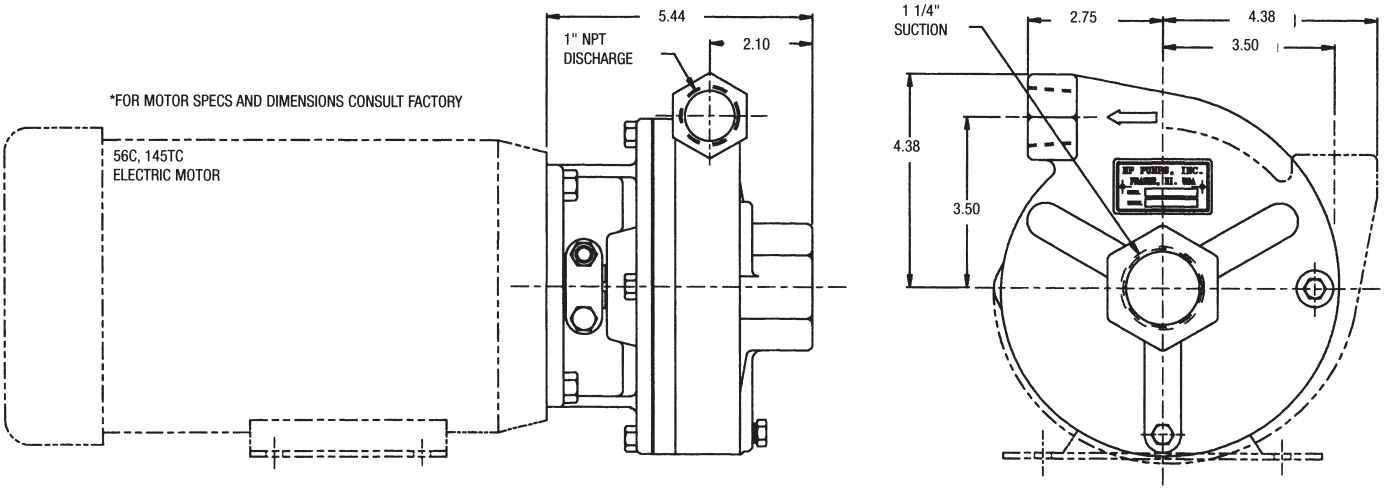


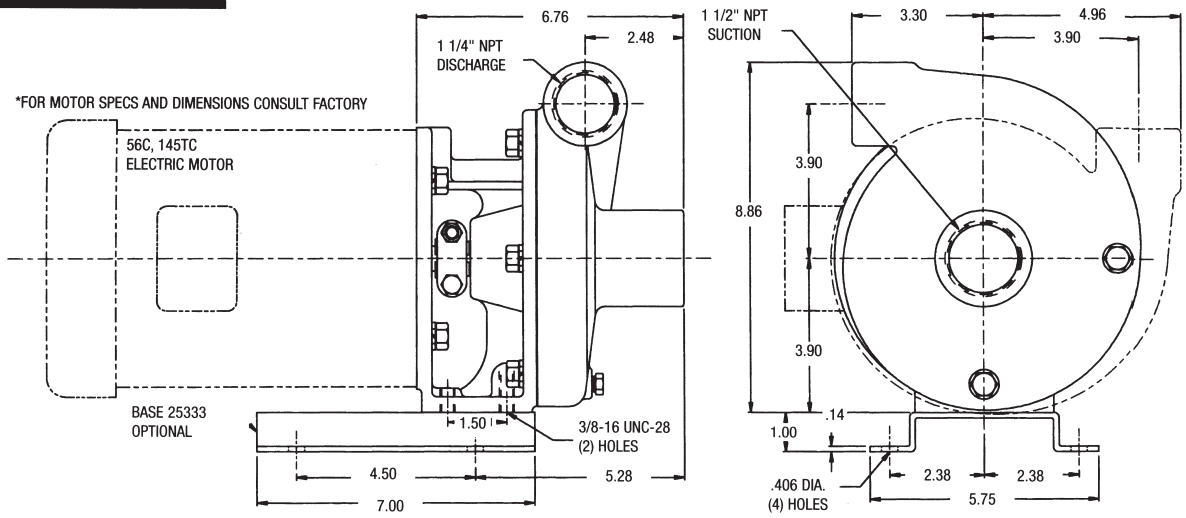
Series 30 Dimensions



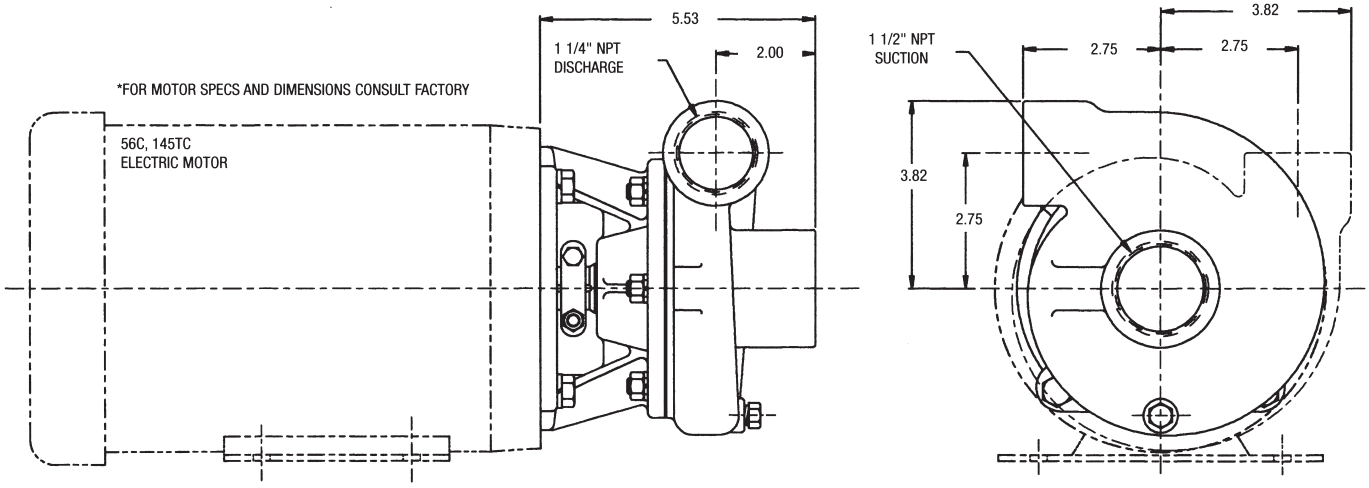
Series 60 Dimensions



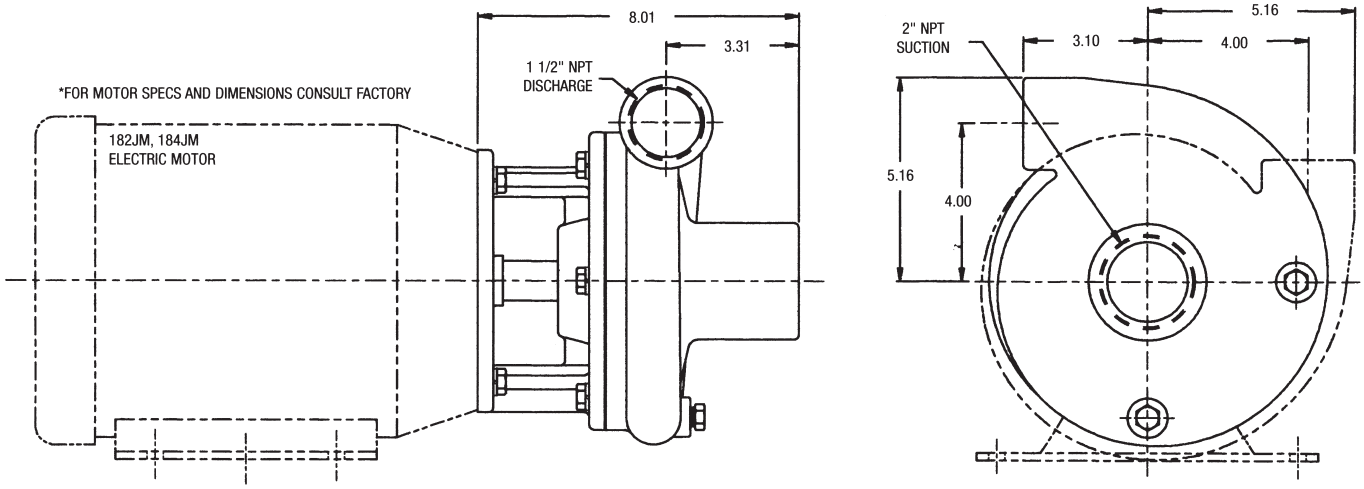
Series 80 Dimensions



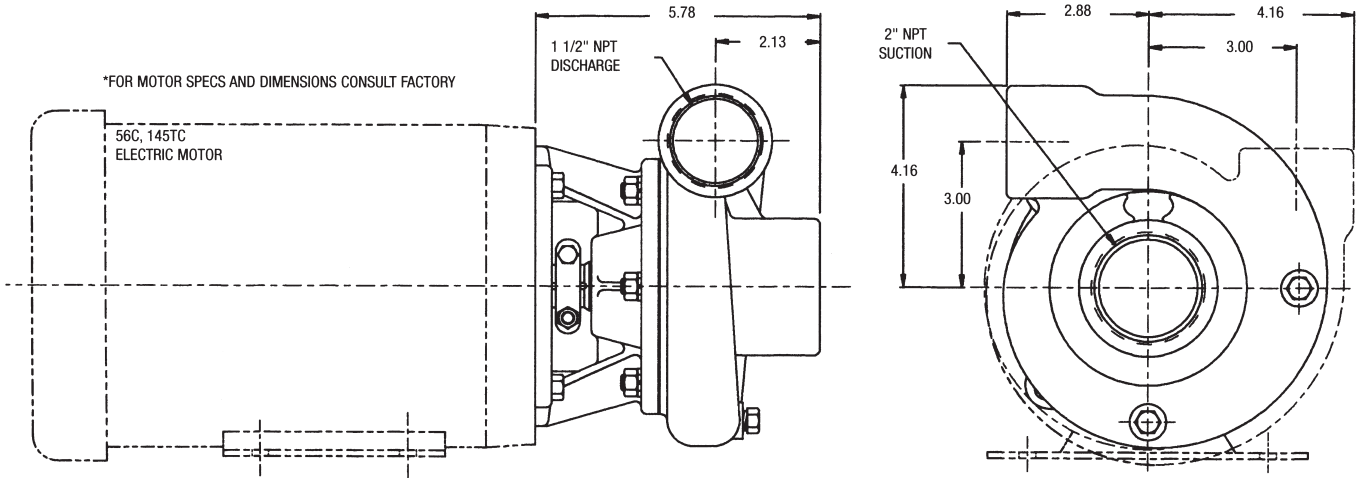
Series 110 Dimensions



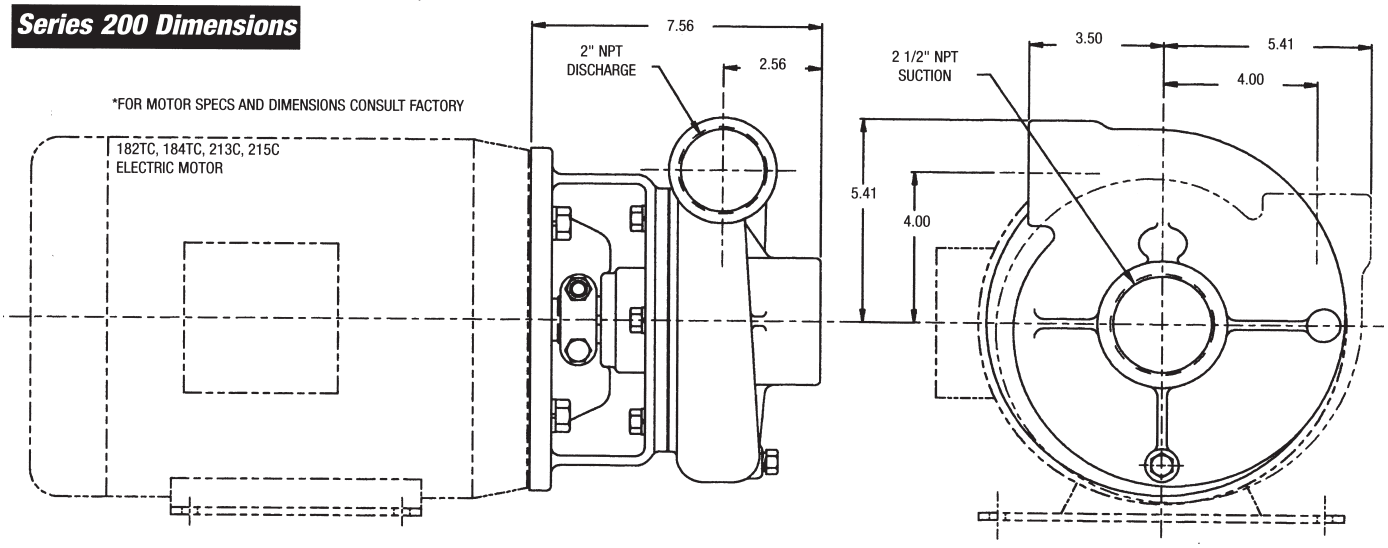
Series 120 Dimensions



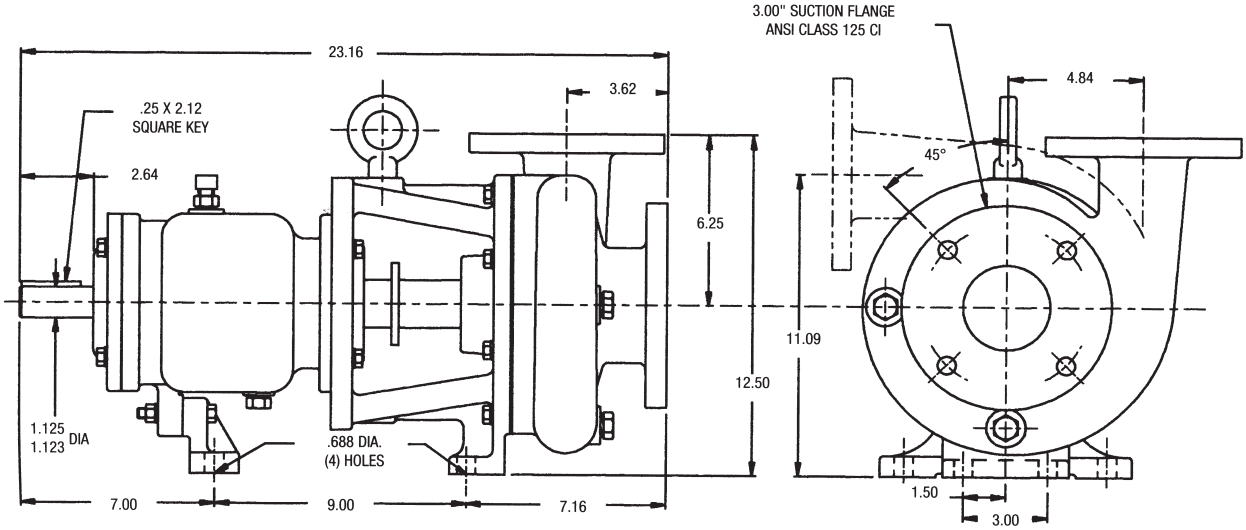
Series 130 Dimensions



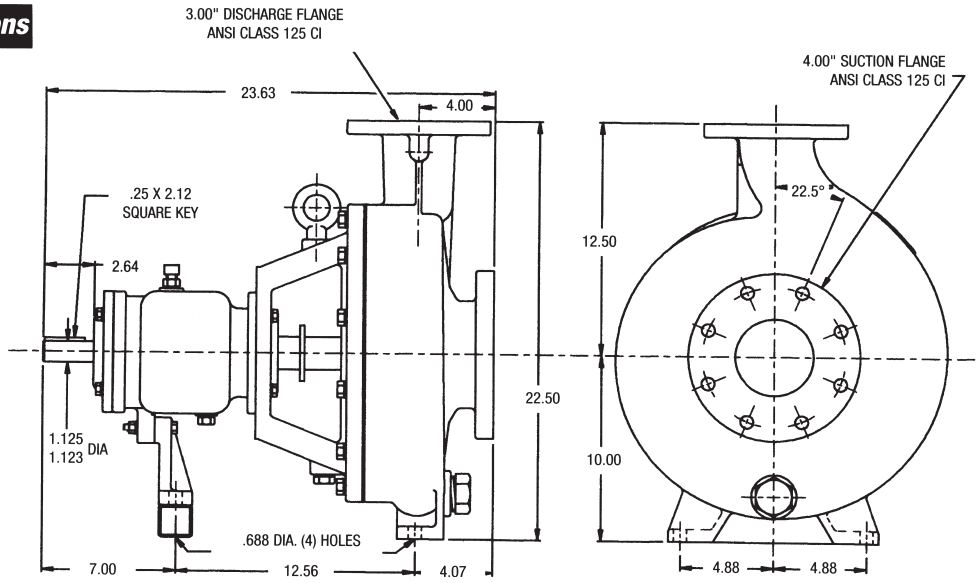
Series 200 Dimensions



Series 300 Dimensions



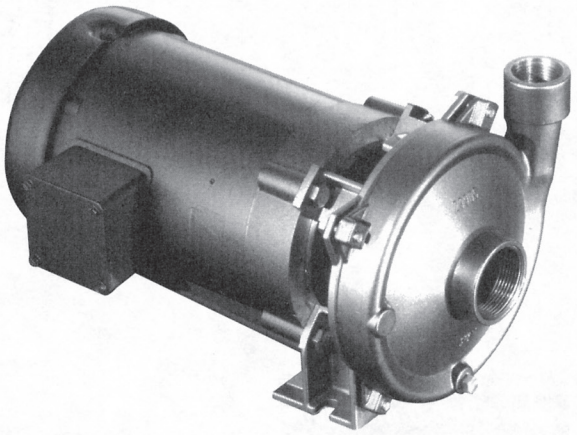
Series 700 Dimensions



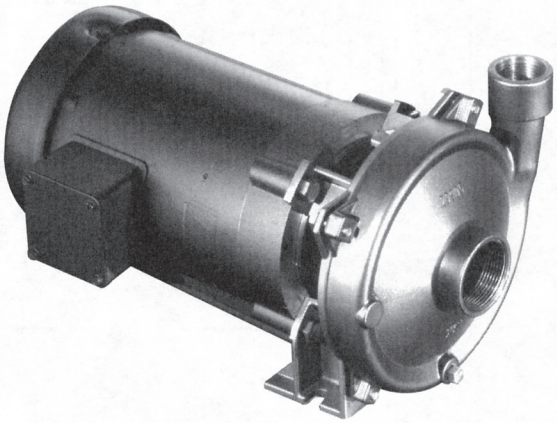
CHEMFLO 1 2 3 4

END SUCTION CENTRIFUGAL PUMP FEATURES

- **CHEMFLO 1,2,3 & 4** - INVESTMENT-CAST, 316 STAINLESS STEEL IS STRONGER THAN STAMPED/FORMED 304
  CHEMFLO 5,6,7 & 8 - 316 CF8M STAINLESS STEEL HOUSING, SEAL HOUSING & IMPELLER
- **PRESSURES** - 105-225 FEET HEAD
- **FLOWS** - 100-450 GPM
- **CHEMFLO 1,2,3,4** PUMPAKS FOR 56C FACE ELECTRIC MOTORS
  CHEMFLO 6,7 & 8 PUMPAKS FOR
  145TC,182TC,184TC,213C,213TC,215C, 215TC ELECTRIC MOTORS
- **HORSEPOWER** - 1-25 HP
- **EXOTIC ELASTOMERS AVAILABLE**



CHEMFLO 1 & 2



CHEMFLO 3 & 4

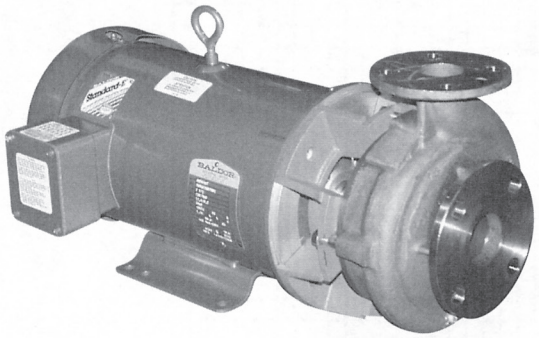
MODEL	Suction	Discharge
CHEMFLO 1 & 2	1 1/2" NPT	1" NPT
CHEMFLO 3 & 4	2" NPT	1 1/2" NPT
CHEMFLO 5	2" ANSI 125 Flange	1 1/2" ANSI 125 Flange
CHEMFLO 6	3" ANSI 125 Flange	2" ANSI 125 Flange
CHEMFLO 7	2" ANSI 125 Flange	1" ANSI 125 Flange
CHEMFLO 8	3" ANSI 125 Flange	1 1/2" ANSI 125 Flange

Ford's Words

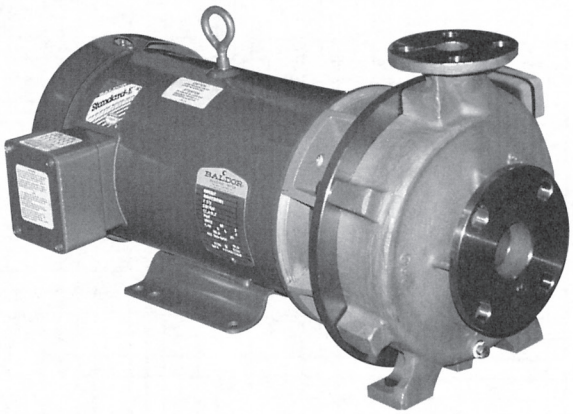
Thoughts and Observations from American Entreprenuer Henry Ford

- "Thinking is the hardest work there is, which is the probable reason so few engage in it."
- "Money is like an arm or a leg--use it or lose it."
- "Failure is the opportunity to begin again, more intelligently."
- "The man who is too set to change is dead already. The funeral is a mere detail."
- "There are two fools in this world. One is the millionaire who thinks that by hoarding money he can accumulate real power, and the other is the penniless reformer who thinks that by taking the money from one class and giving it to another, all the world's ills will be cured."

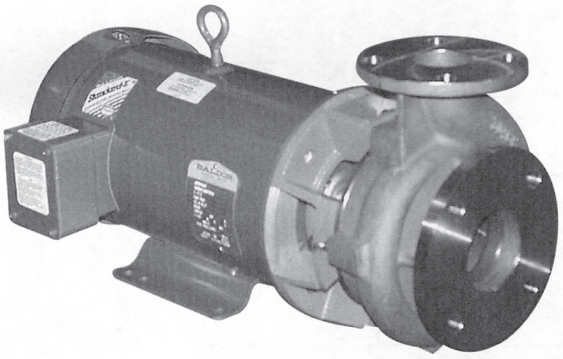
5 6 7 8



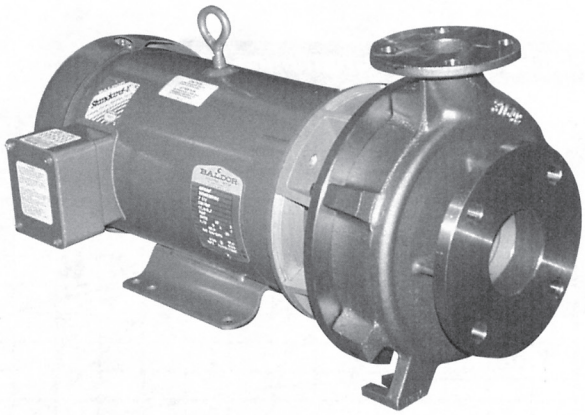
CHEMFLO 5



CHEMFLO 7



CHEMFLO 6

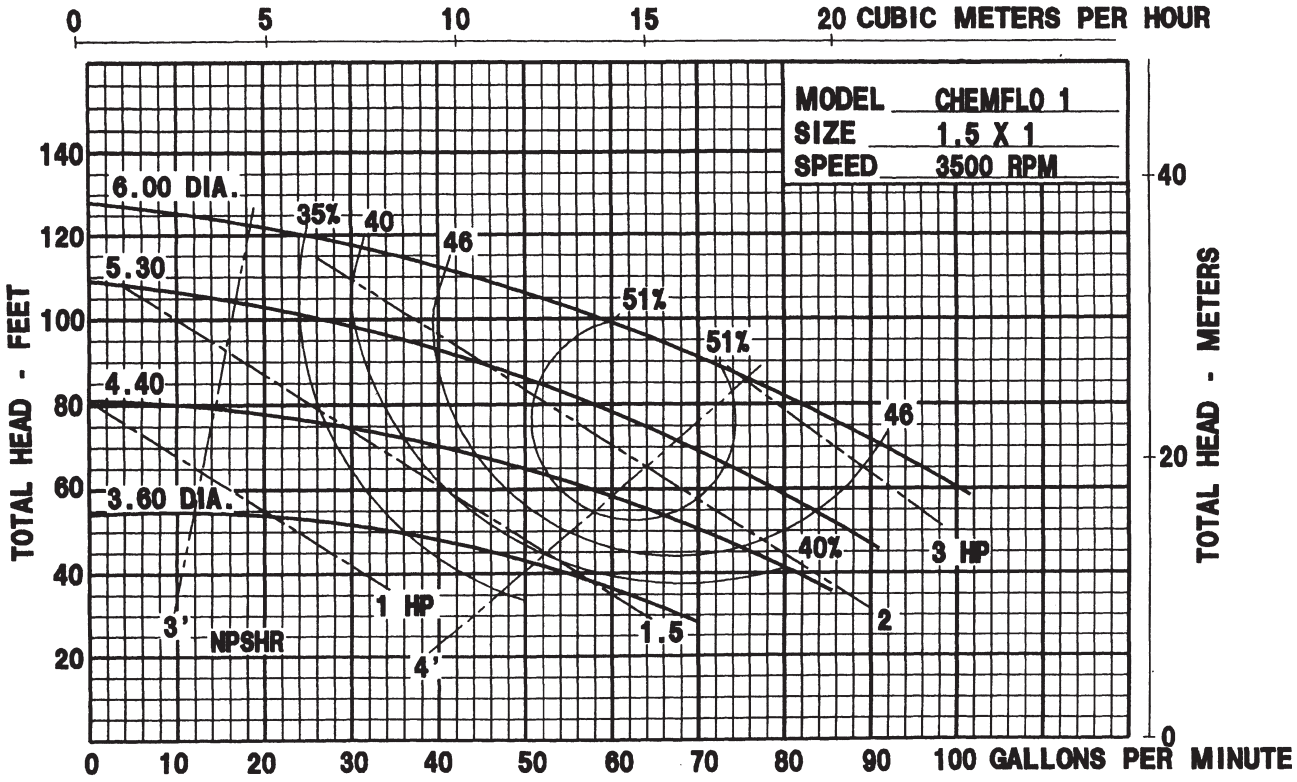


CHEMFLO 8

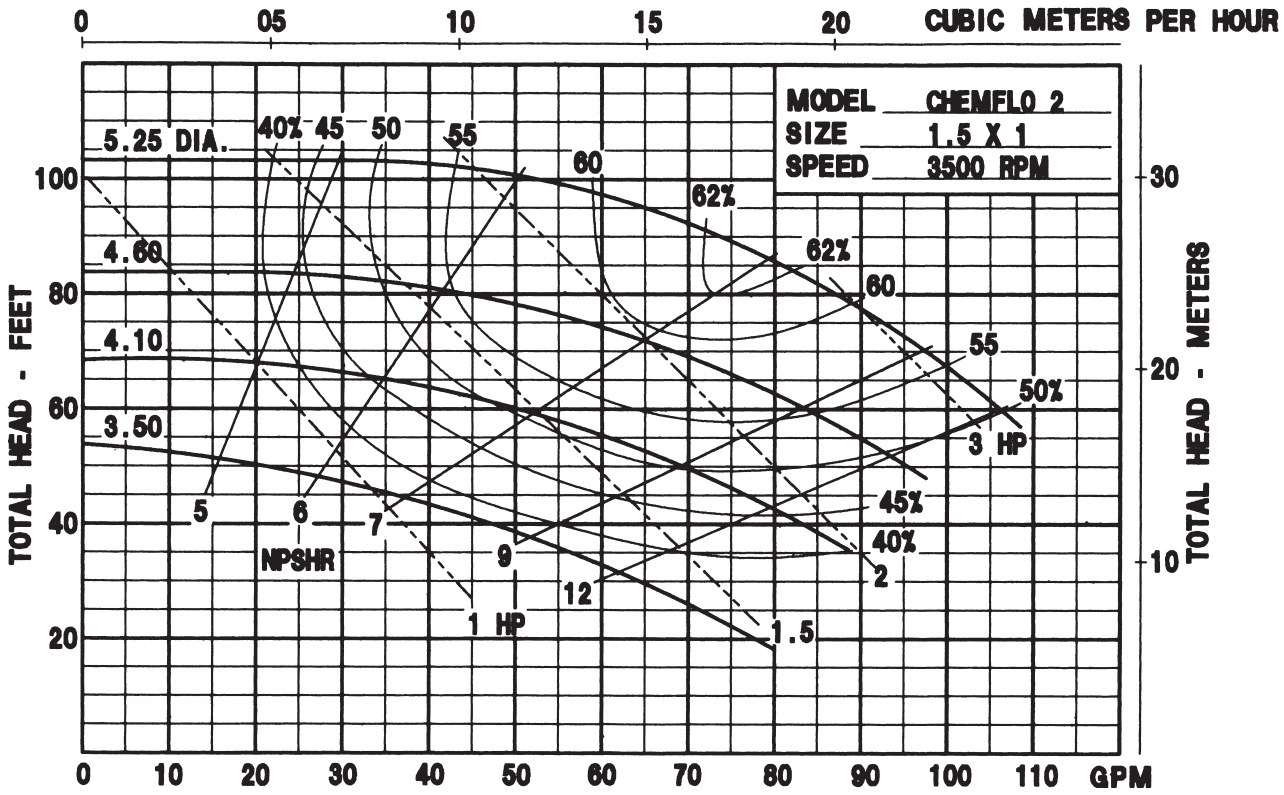
FORD'S WORDS (CONT'D)

- "If you have an idea, that's good. If you also have an idea as to how to work it out, that's better."
- "Before everything else, getting ready is the secret of success."
- "If you take all the experience and judgment of men over 50 out of the world, there wouldn't be enough left to run it."
- "Whether you think you can or whether you think you can't, you're right!"
- "Every piece of work in the shops moves. Save 10 steps a day for each of the 12,000 employees, and you will have saved 50 miles of wasted motion and misspent energy." -On the theory of the assembly line
- "Even a mistake may turn out to be the one thing necessary to a worthwhile achievement."
- "New York is a different country. Maybe it ought to have a separate government. Everybody thinks differently, acts differently. They just don't know what the hell the rest of the United States is."
- "Paying attention to little things that most men neglect makes a few men rich."

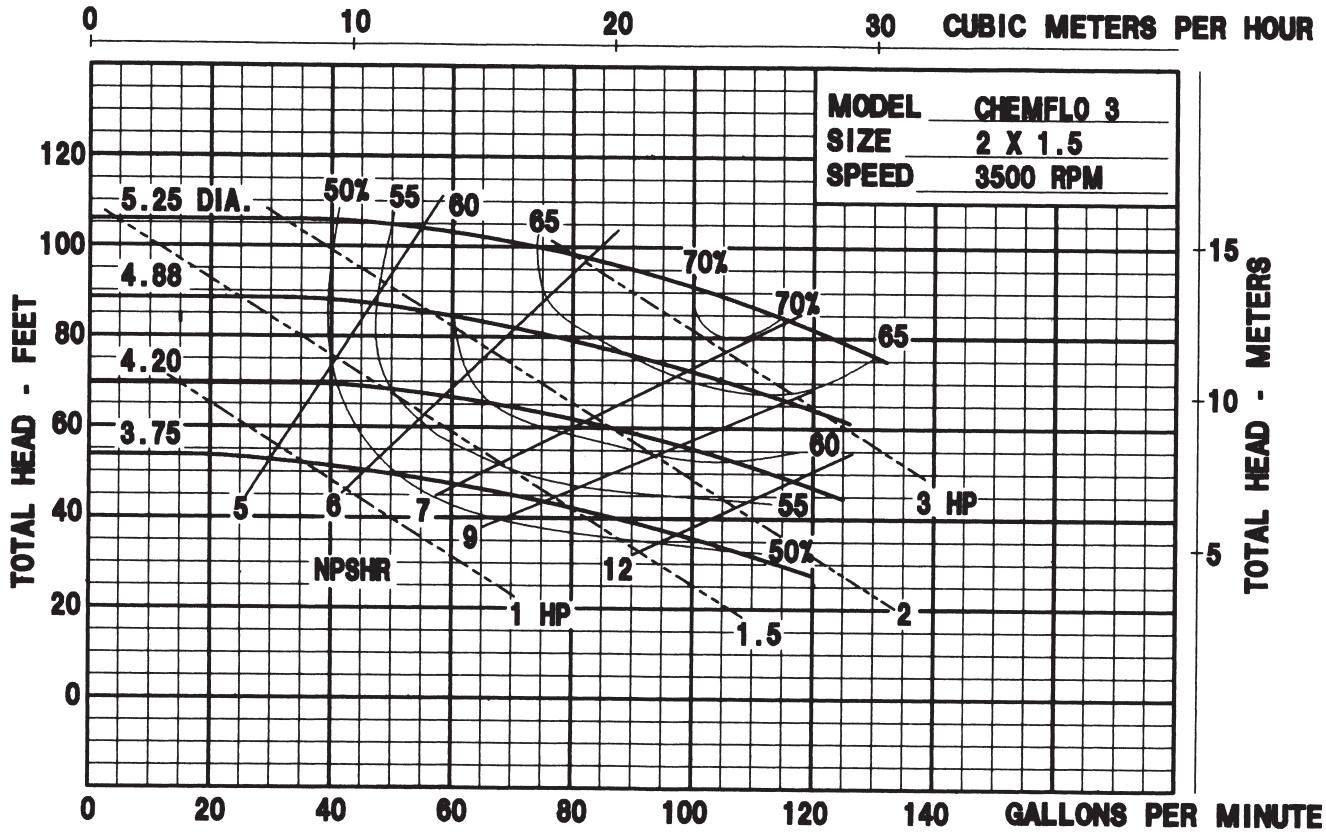
CHEMFLO 1 Pump Performance Curves



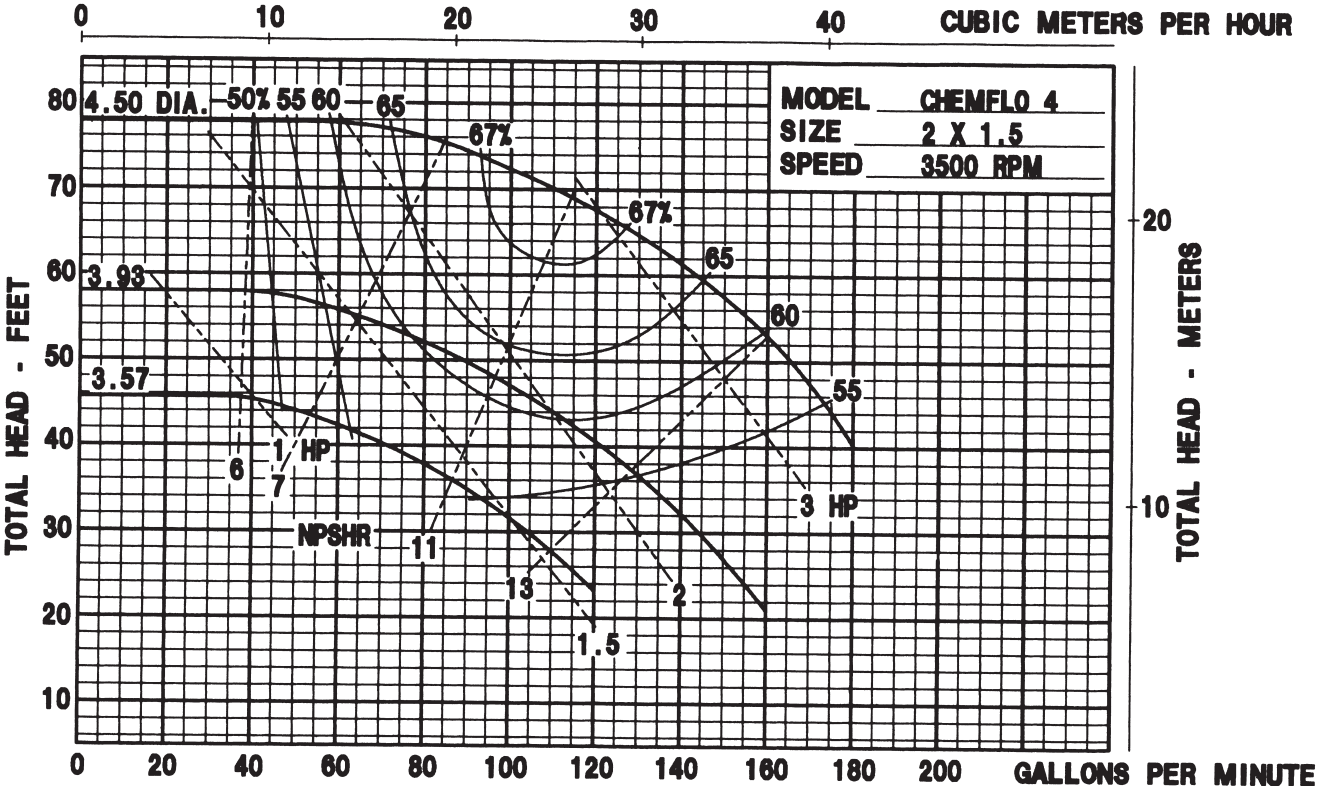
CHEMFLO 2 Pump Performance Curves



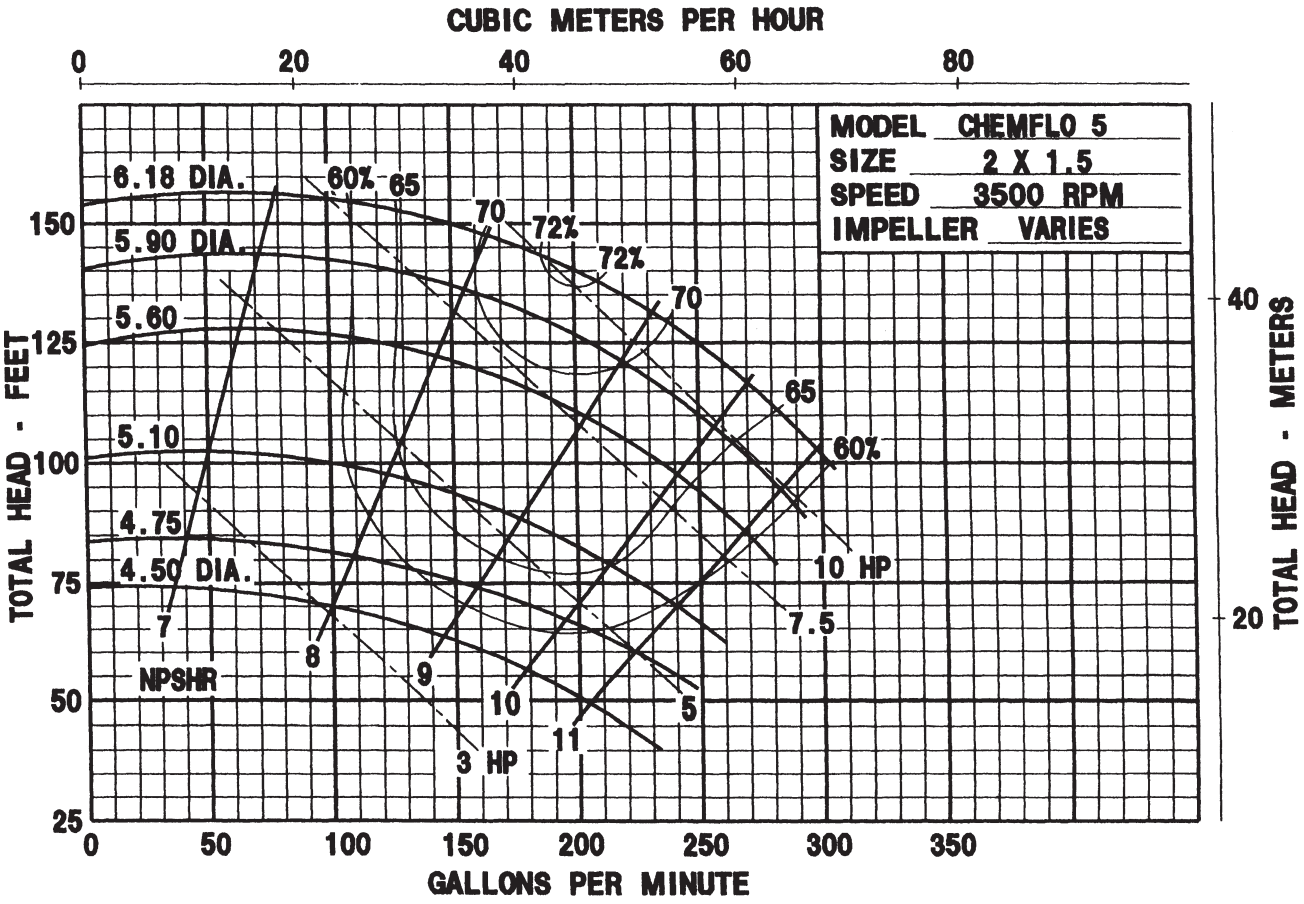
CHEMFLO 3 Pump Performance Curves



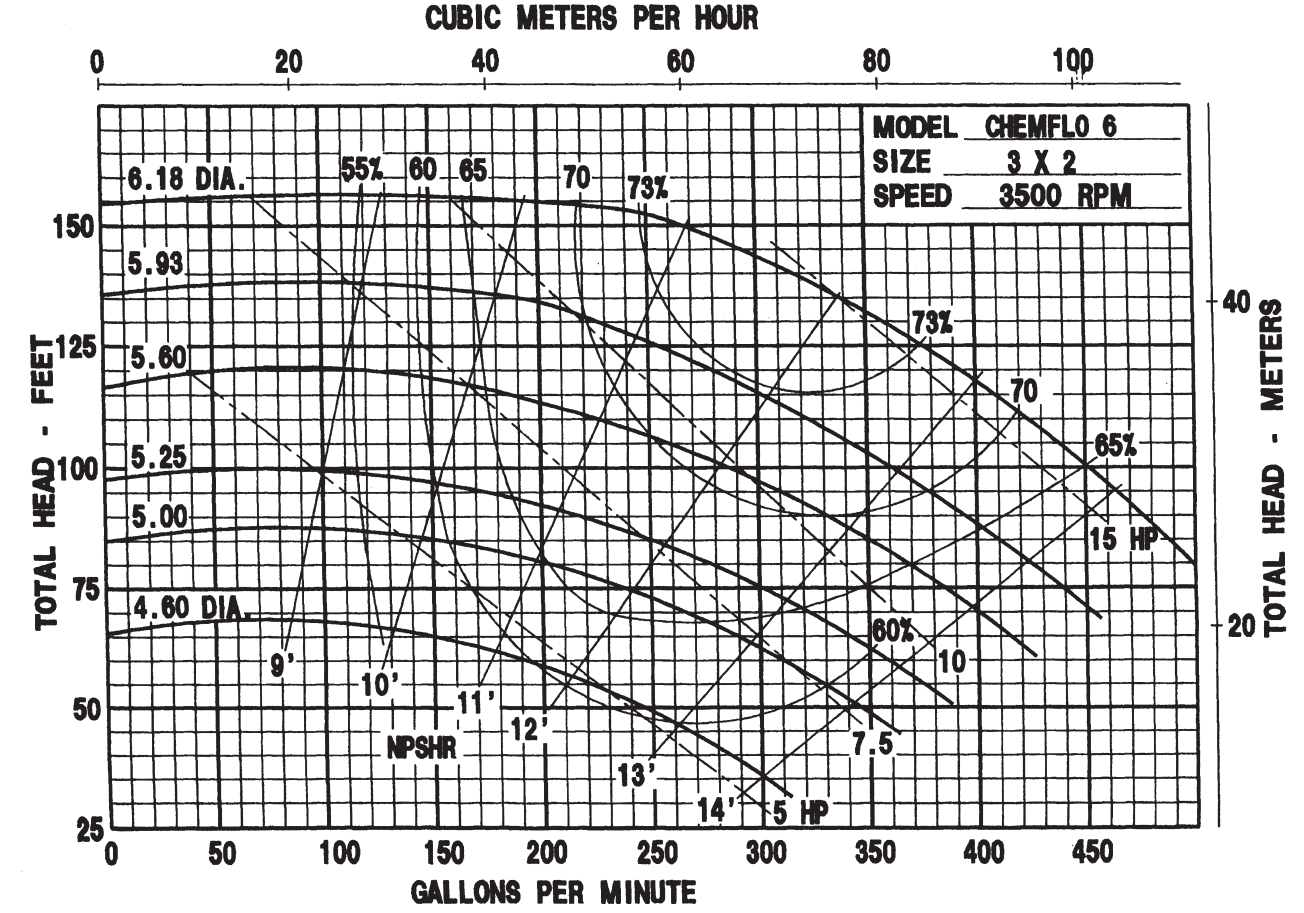
CHEMFLO 4 Pump Performance Curves



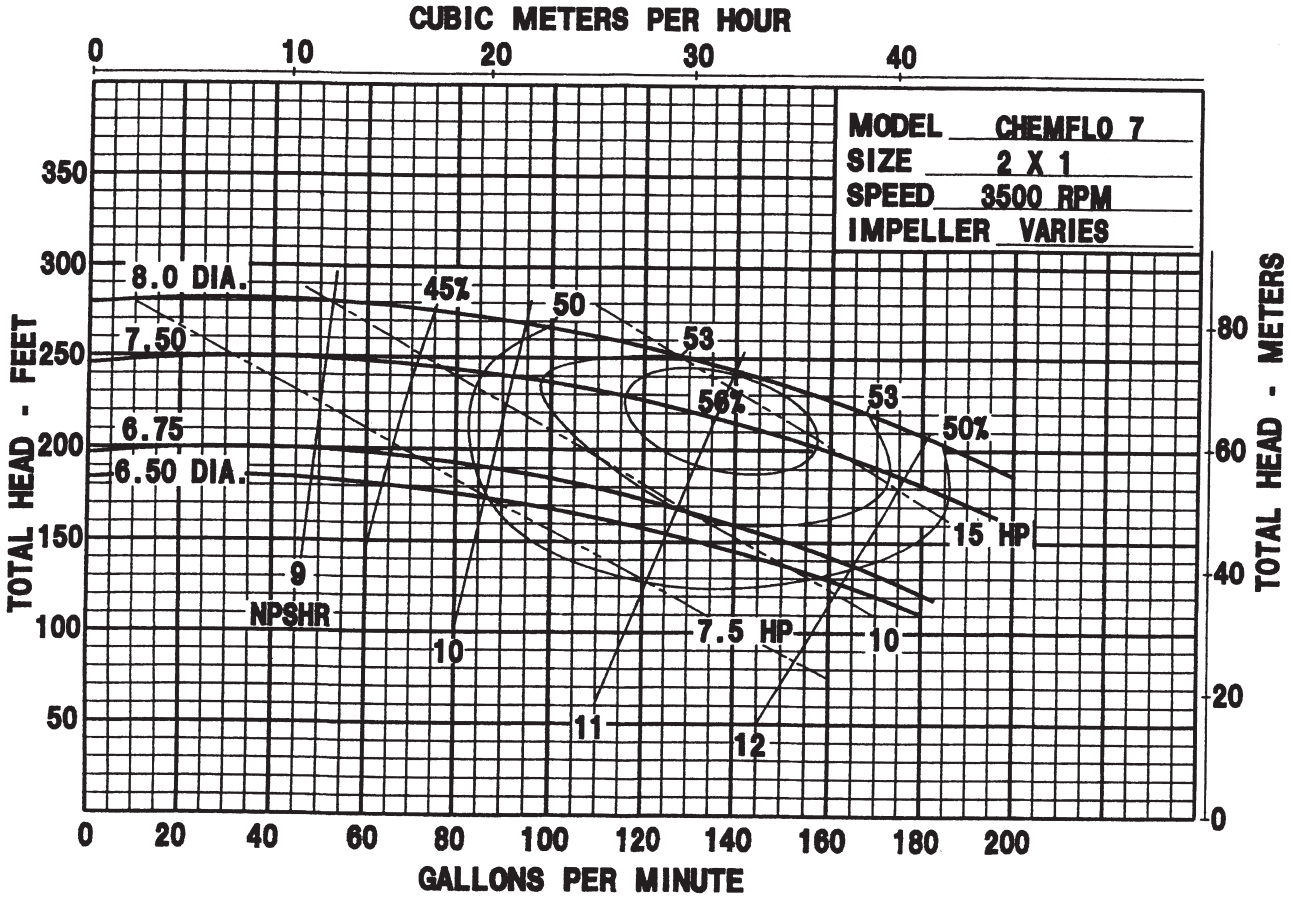
CHEMFLO 5 Pump Performance Curves



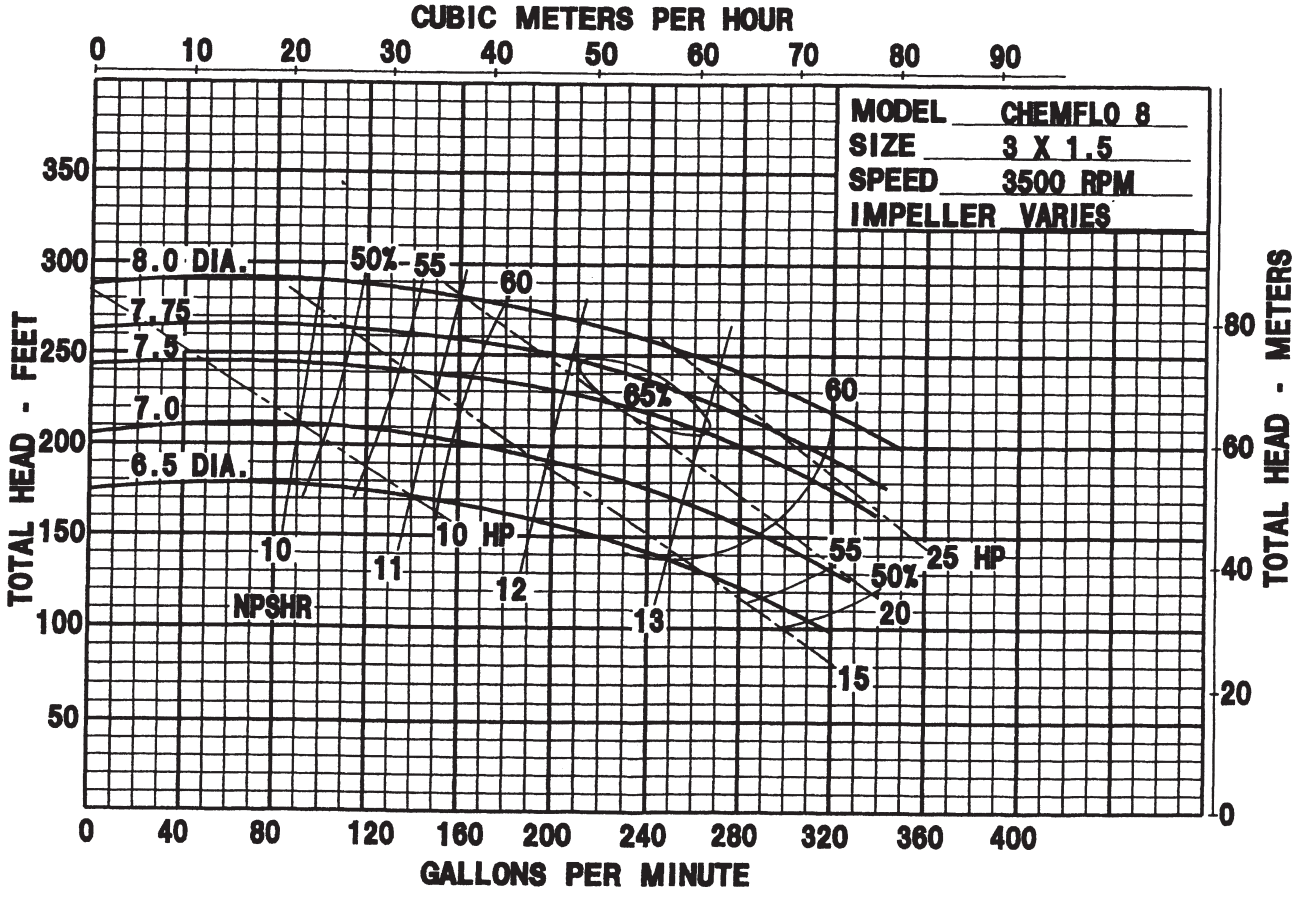
CHEMFLO 6 Pump Performance Curves



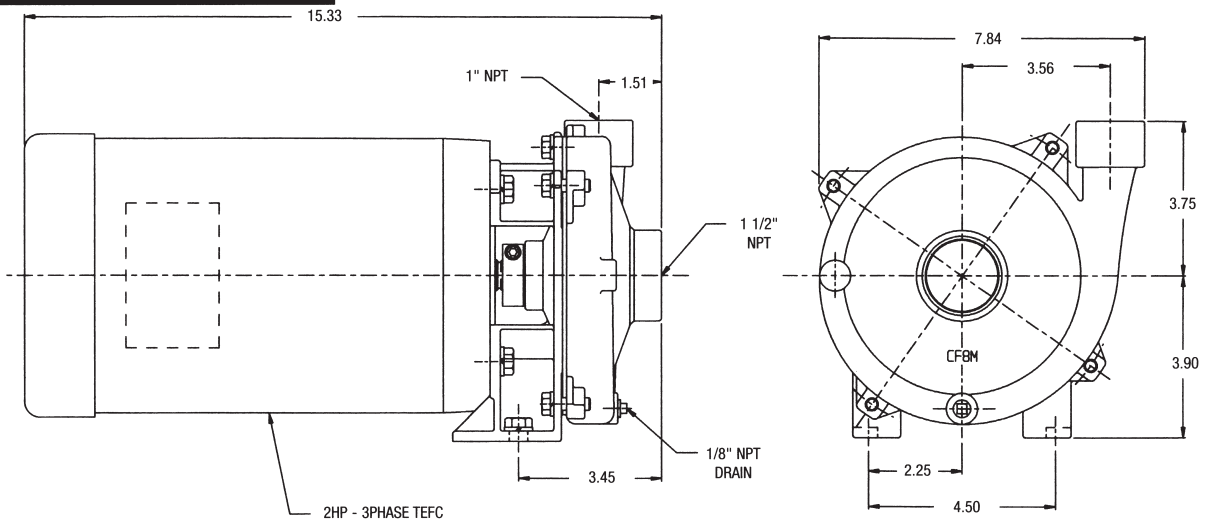
CHEMFLO 7 Pump Performance Curves



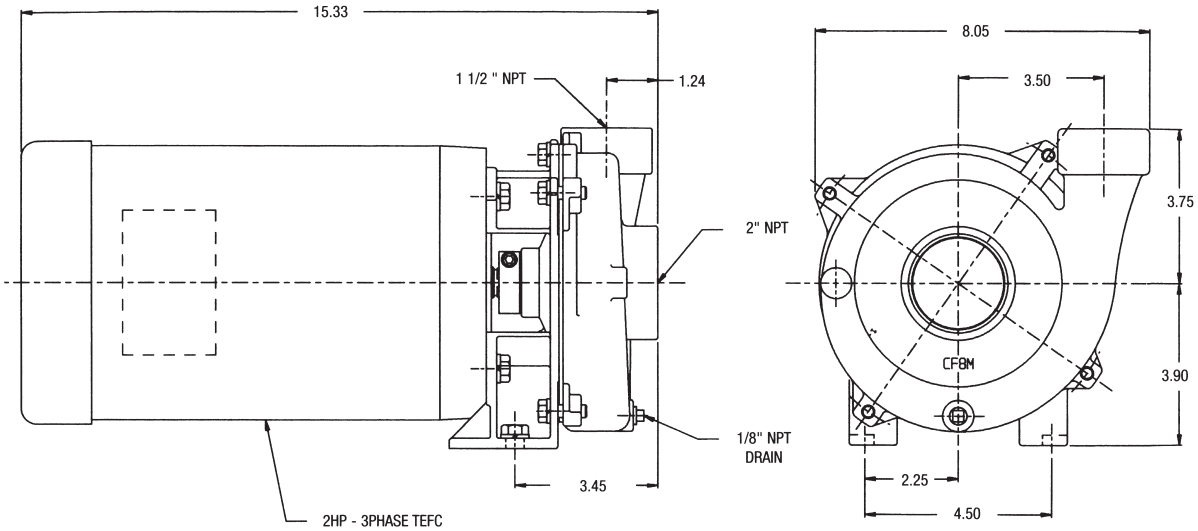
CHEMFLO 8 Pump Performance Curves



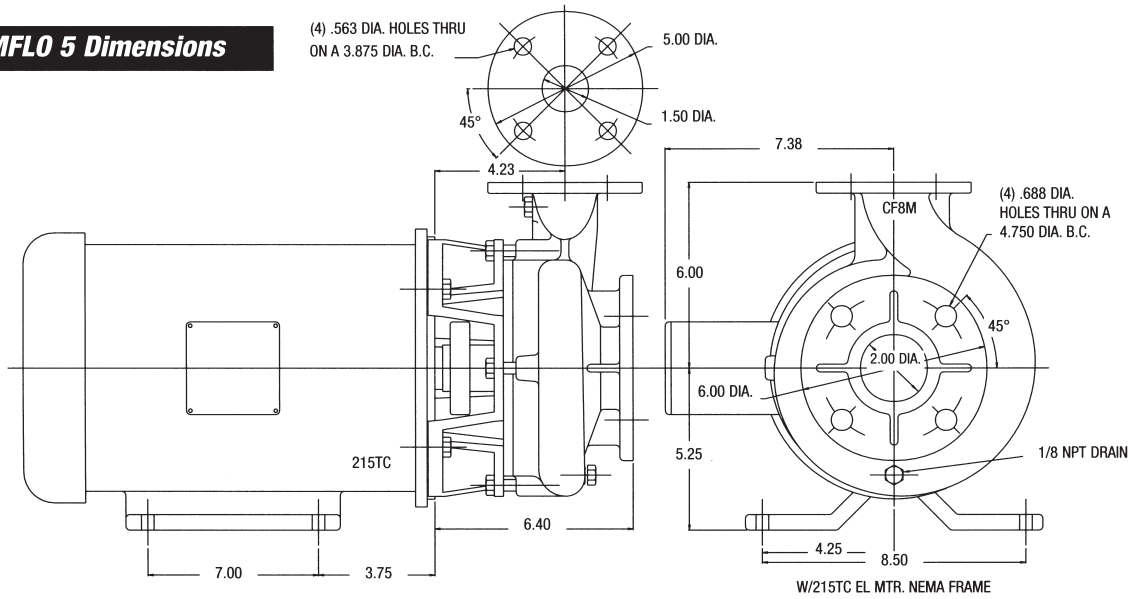
CHEMFLO 1&2 Dimensions



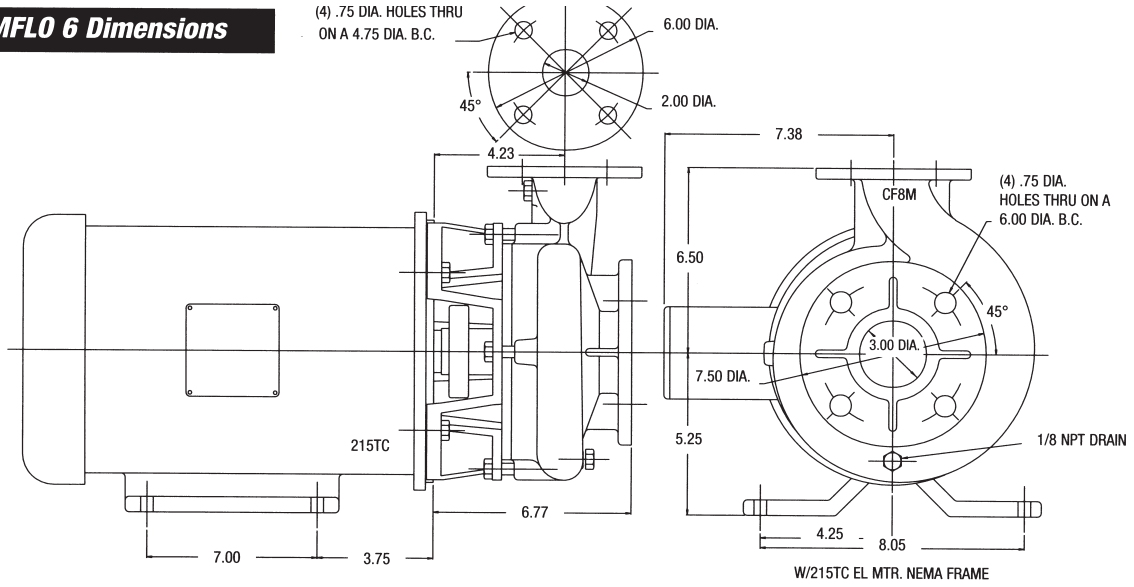
CHEMFLO 3&4 Dimensions



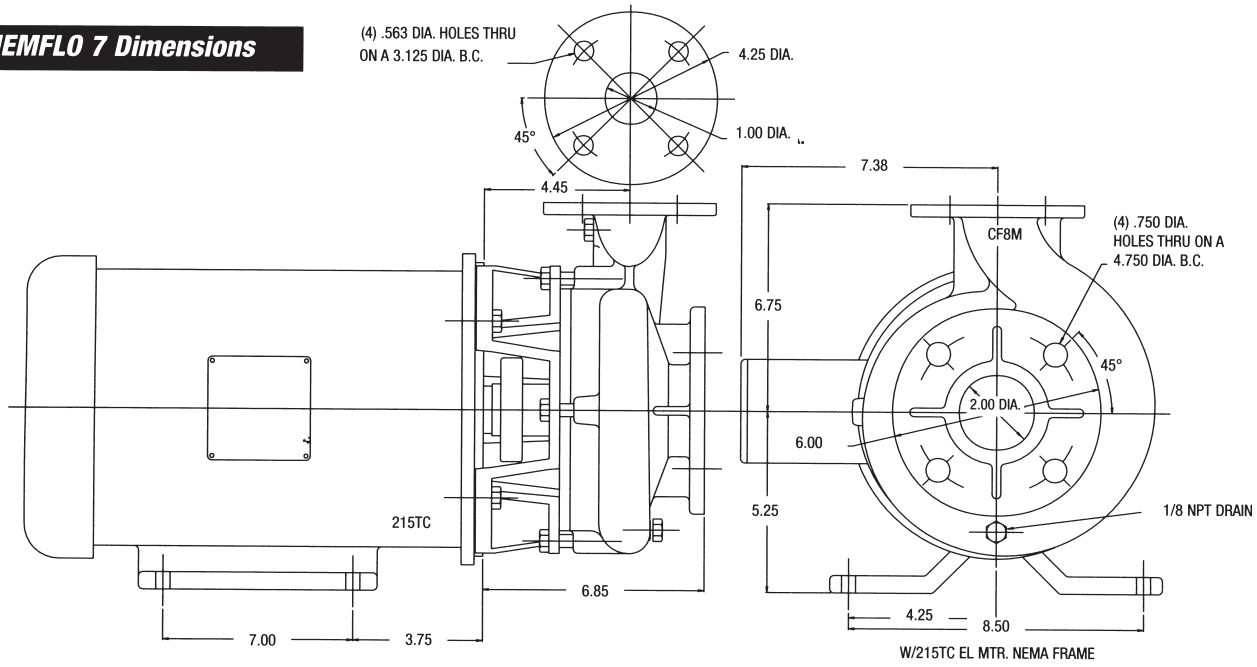
CHEMFLO 5 Dimensions



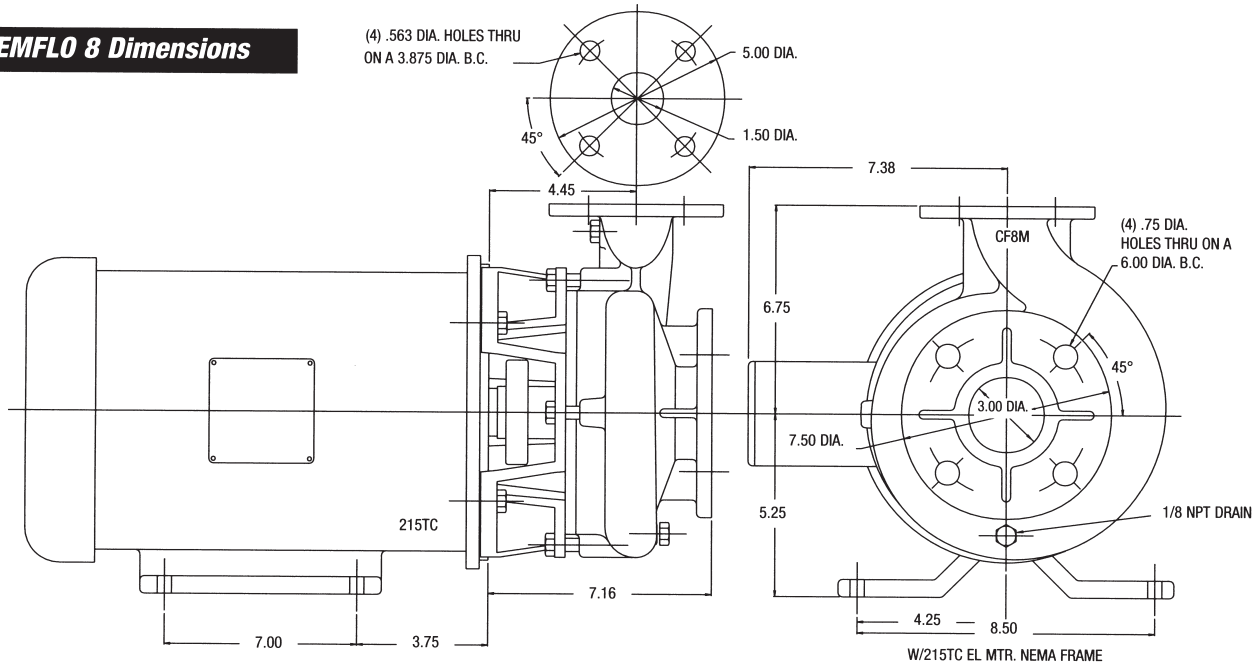
CHEMFLO 6 Dimensions



CHEMFLO 7 Dimensions



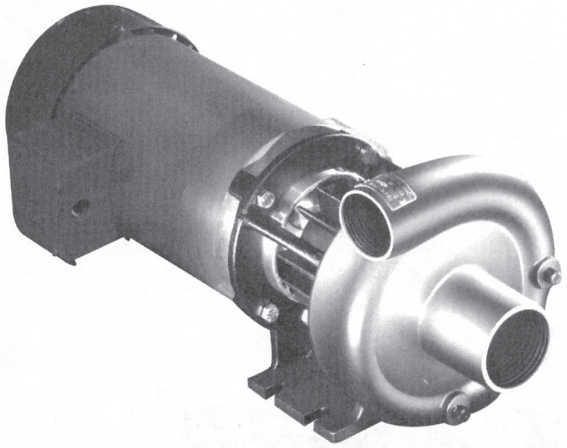
CHEMFLO 8 Dimensions



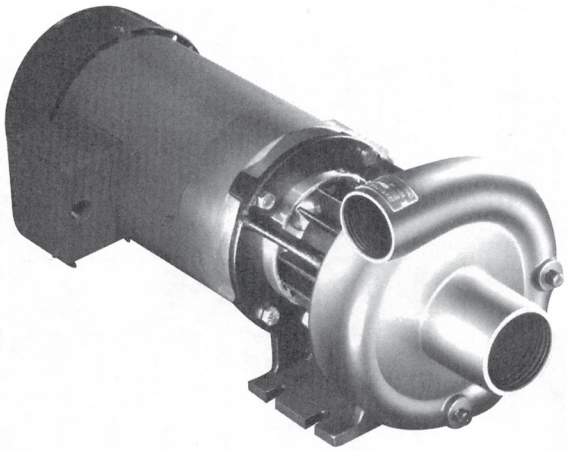
HTO 80 120 300

CENTRIFUGAL HOT OIL PUMP FEATURES

- **APPLICATIONS:** PLASTICS, CHEMICAL, FOOD, AND PROCESSING INDUSTRIES WHICH REQUIRE PUMPING OF HIGH TEMPERATURE FLUIDS
- **UTILIZES AN ISOLATED SEAL CHAMBER, EFFECTIVELY COOLED BY A FAN CLAMP, WHICH COUPLES THE UNIT TO THE SHAFT OF A C-FRAME MOTOR**
- **STANDARD CARBON/CERAMIC MECHANICAL SEAL WITH VITON ELASTOMERS, STAINLESS STEEL FITTED**
- **CARBON GRAPHITE ISOLATOR BUSHING SEPARATES MECHANICAL SEAL FROM HIGH TEMPERATURE FLUIDS**
- **STAINLESS STEEL DRIVE SLEEVE AND ALUMINUM DRIVE CLAMP COUPLES PUMP UNIT TO MOTOR**
- **VERTICAL & HORIZONTAL DISCHARGE**
- **WITH OR WITHOUT ELECTRIC MOTOR**
- **A UNIQUE CENTRIFUGAL PUMP (PATENTED) DESIGNED FOR HIGH TEMPERATURE APPLICATIONS WITHOUT REQUIRING EXTERNAL FLUSHES OR JACKET COOLING**
- **CAPACITIES** - 85-200 GPM
- **HEADS** - 135-140 FT. TDH.
- **TEMPERATURES** - TO 650°F



HTO 80

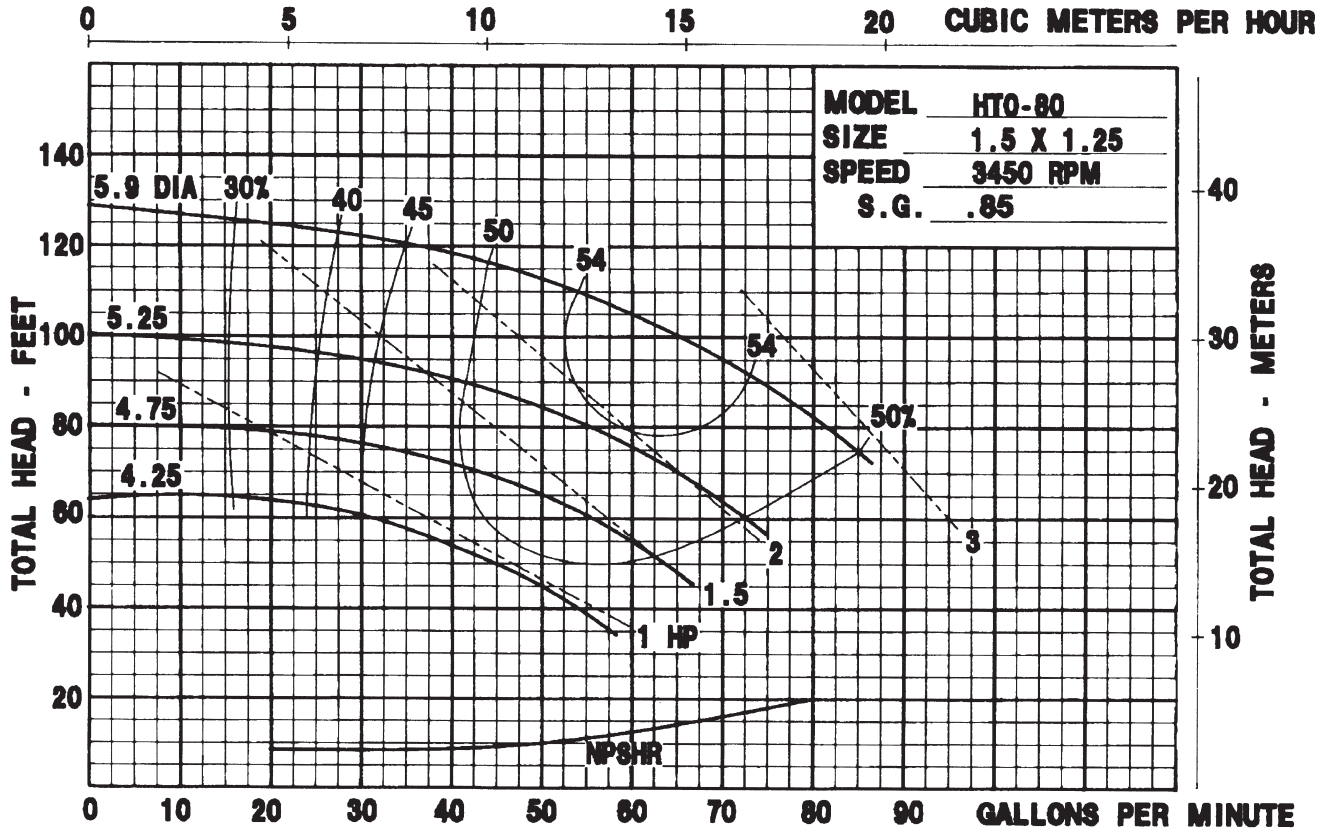


HTO 120

MODEL	Suction	Discharge
HTO 80	1 1/2" NPT (Flange Option)	1 1/4" NPT (Flange Option)
HTO 120	2" NPT (Flange Option)	1 1/2" NPT (Flange Option)
HTO 300	3" ANSI 125 Flange	2 1/2" ANSI 125 Flange

HTO 300

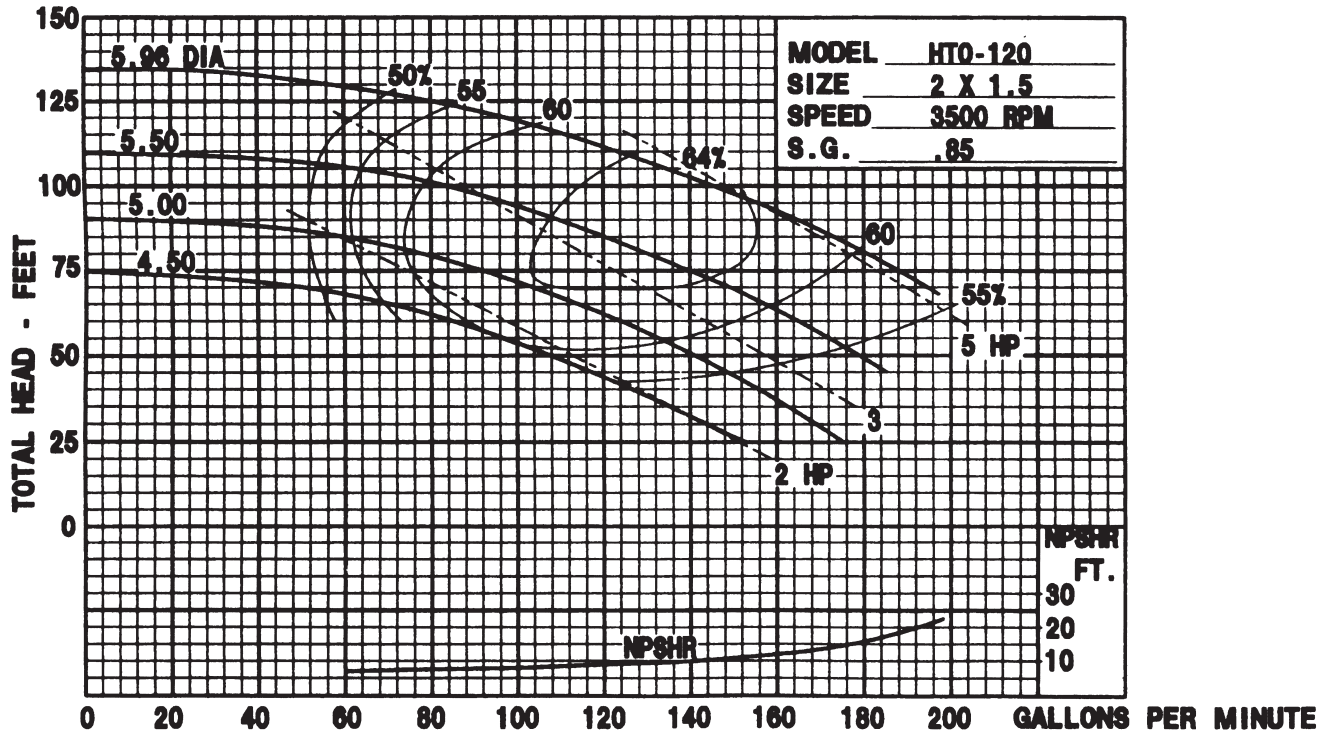
HTO 80 Pump Performance Curves



Horsepower requirements based upon 0.85 specific gravity. Calculations can be applied for fluids of other specific gravities.

Maximum operating temperature is 650°F. Maximum working pressure is 150 PSI.

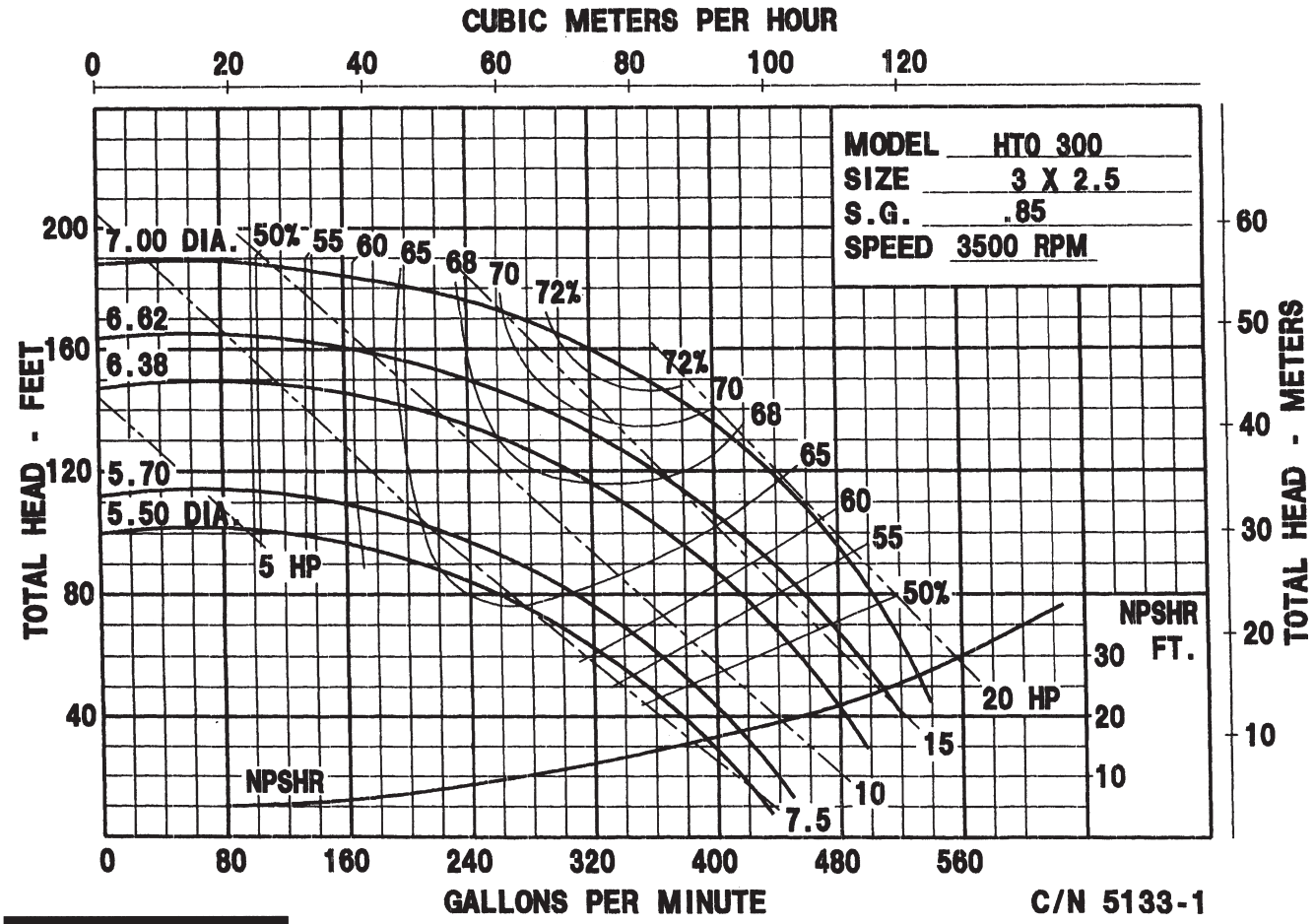
HTO 120 Pump Performance Curves



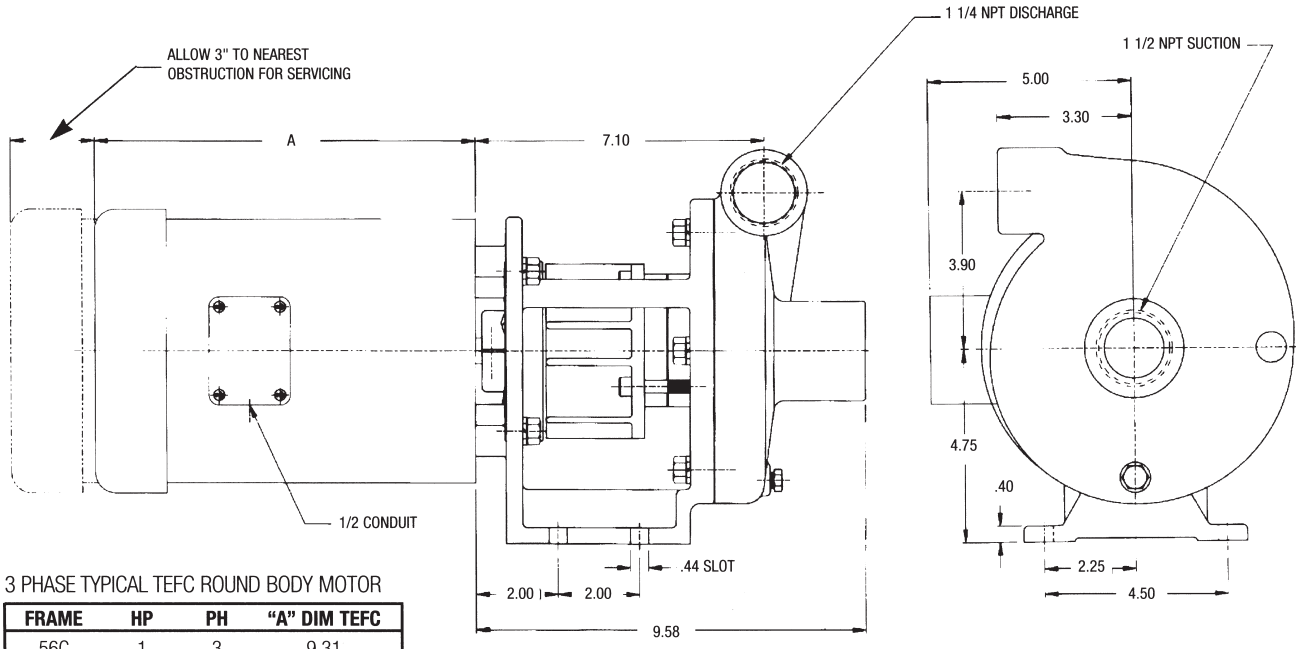
Horsepower requirements based upon 0.85 specific gravity. Calculations can be applied for fluids of other specific gravities.

Maximum operating temperature is 650°F. Maximum working pressure is 150 PSI.

HTO 300 Pump Performance Curves



HTO 80 Dimensions

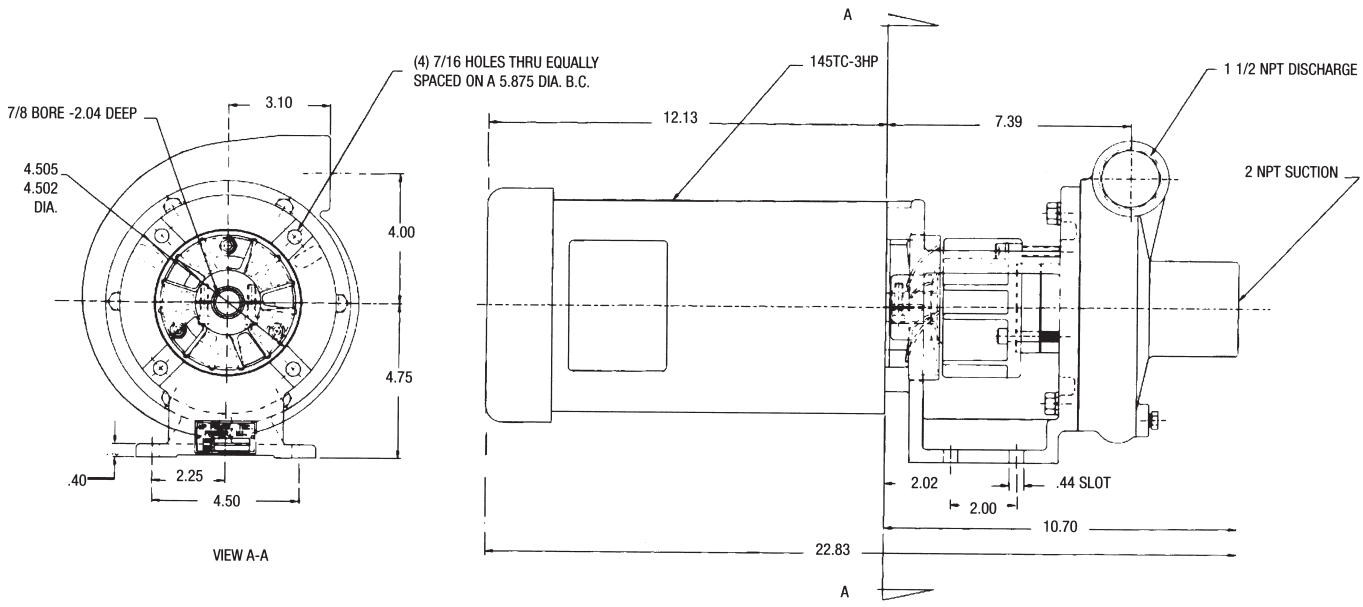


3 PHASE TYPICAL TEFC ROUND BODY MOTOR

FRAME	HP	PH	"A" DIM TEFC
56C	1	3	9.31
56C	1.5	3	9.94
56C	2	3	11.25
56C	3	3	12.12

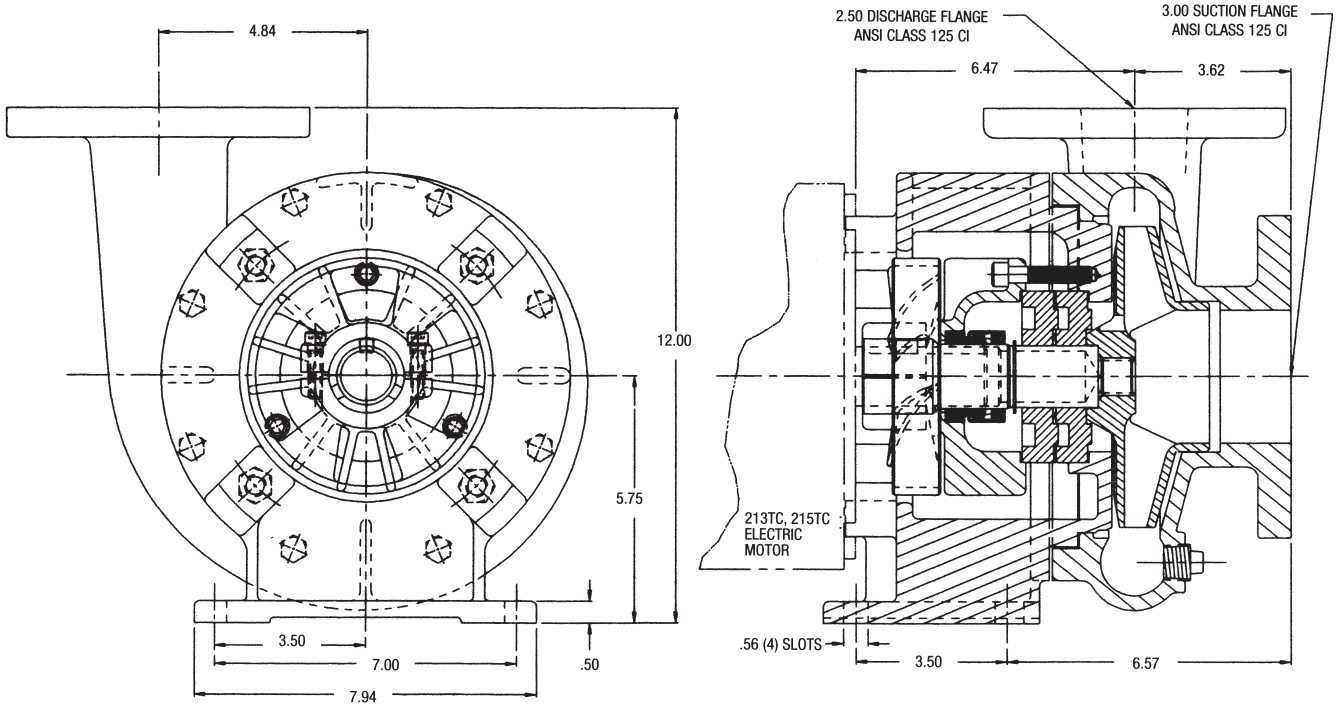
Pump dimensions certifiable for construction purposes.
Motor dimensions dependent upon motor manufacturer.

HTO 120 Dimensions



Pump dimensions certifiable for construction purposes.
Motor dimensions dependent upon motor manufacturer.

HTO 300 Dimensions

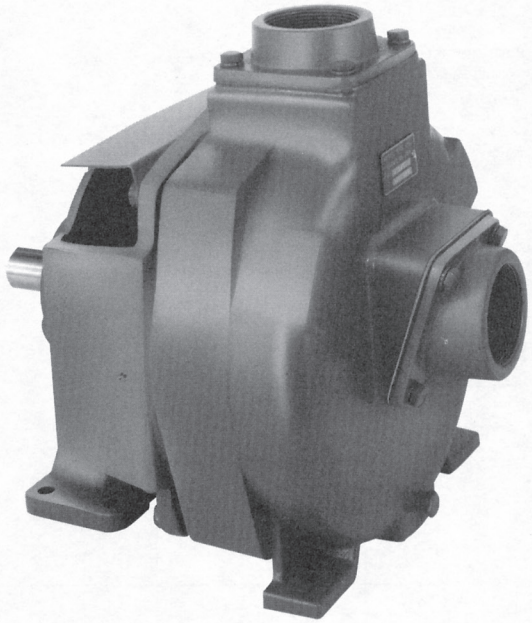


HHLF

NOW ABS APPROVED

HIGH HEAD CENTRIFUGAL PUMP FEATURES

- 1 1/2 x 1 1/2
  2 X 2 HIGH HEAD PUMPAK
- "C" FACE ELECTRIC MOTOR DRIVE 5-7.5 HP
- PEDESTAL DRIVE
- **FLOWS** - TO 140 GPM
- **PRESSURES** - TO 190 TDH
- CAST IRON OR BRONZE CONSTRUCTION
- **DRIVE SLEEVE** - 304 STAINLESS STEEL
- **FASTENERS** - STAINLESS STEEL
- **SEALS** - STANDARD CARBON, CERAMIC, STAINLESS STEEL AND VITON WITH OTHER OPTIONS AVAILABLE (CONSULT FACTORY)

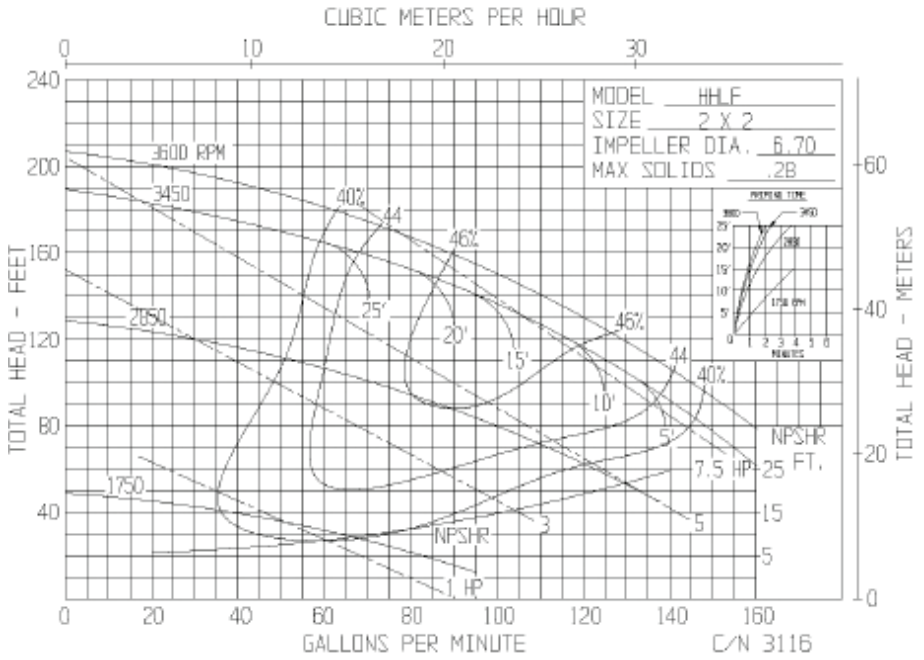


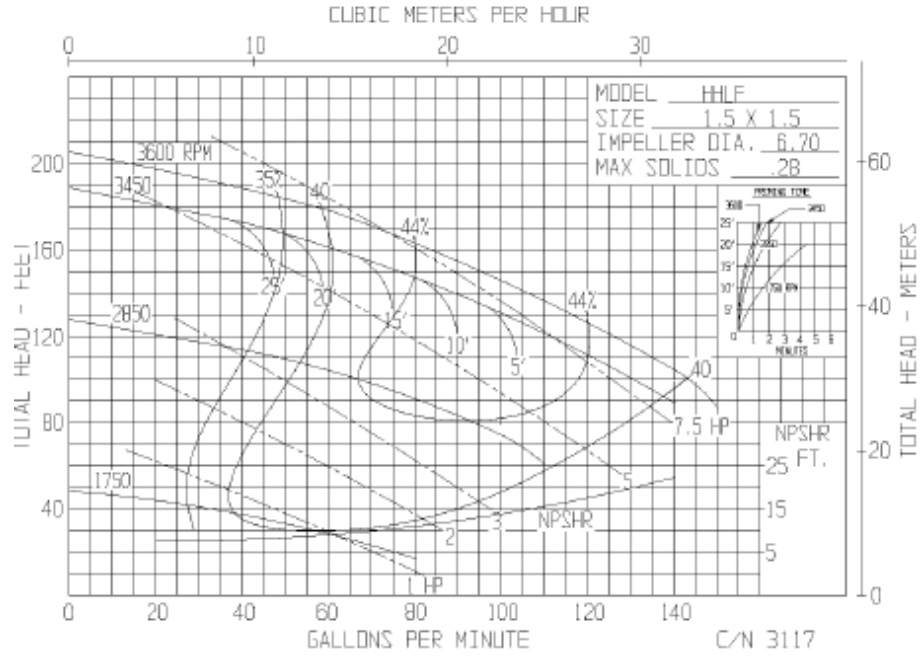
HHLF

NOW ABS APPROVED

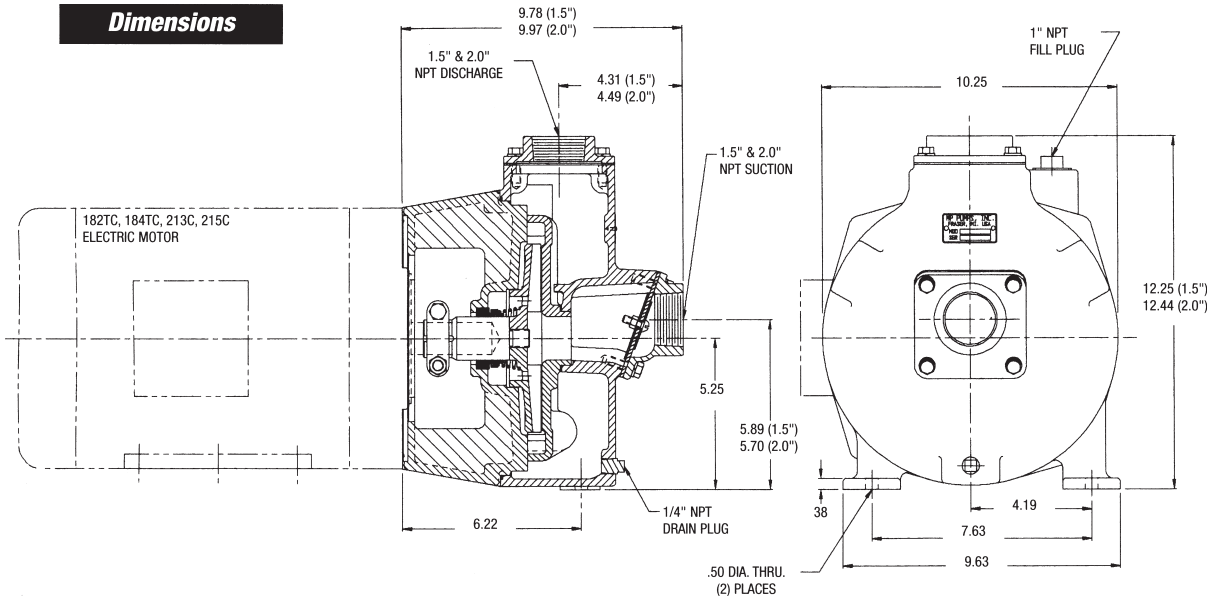
MODEL	Suction	Discharge
HHLF	1 1/2"-2" NPT	1 1/2"-2" NPT

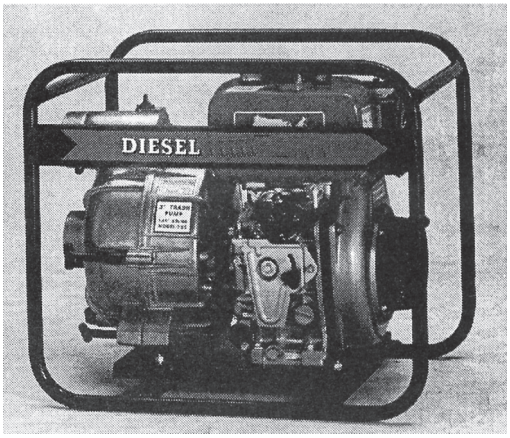
HITLER, A HYPOCRITE?
Despite his own merciless actions, Hitler chose to be a vegetarian. As hypocritical as this sounds, he believed that killing and eating animals was inhumane and cruel. He believed that by respecting the animals' rights and abstaining from eating meat, he was saving innocent lives. Too bad he didn't feel that way about human.


CUBIC METERS PER HOUR
0
10
20
30
MODEL HHLF
SIZE 2 X 2
IMPELLER DIA. 6.70
MAX SOLIDS .2B
3600 RPM
3450
2850
1750
40%
44
46%
25'
20'
15'
10'
5'
7.5 HP
NPSHR
3
5
1 HP
NPSHR FT.
TOTAL HEAD - FEET
TOTAL HEAD - METERS
GALLONS PER MINUTE
C/N 3116


CUBIC METERS PER HOUR
0
10
20
30
MODEL HHLF
SIZE 1.5 X 1.5
IMPELLER DIA. 6.70
MAX SOLIDS .2B
3600 RPM
3450
2850
1750
35%
40
44%
25'
20'
15'
10'
5'
7.5 HP
NPSHR
2
3
HP
NPSHR FT.
TOTAL HEAD - METERS
GALLONS PER MINUTE
C/N 3117

Dimensions


9.78 (1.5")
9.97 (2.0")
1.5" & 2.0"
NPT DISCHARGE
4.31 (1.5")
4.49 (2.0")
1.5" & 2.0"
NPT SUCTION
182TC, 184TC, 213C, 215C
ELECTRIC MOTOR
5.25
5.89 (1.5")
5.70 (2.0")
6.22
1/4" NPT
DRAIN PLUG
1" NPT
FILL PLUG
10.25
12.25 (1.5")
12.44 (2.0")
38
4.19
7.63
9.63
.50 DIA. THRU.
(2) PLACES



These pumps are designed for use with water containing solids, which would normally clog a standard centrifugal pump. The trash pumps are designed with clean-out wing bolts and are mounted in a rugged stainless steel roll cage. The pump housings are constructed of die-cast aluminum with cast iron impellers and volutes.

L48E-2SD5E
2" Centrifugal Trash Pump

L48E-3SD5E
3" Centrifugal Trash Pump

Model	**L48E-2SD5E**	**L48E-3SD5E**
TYPE	Trash	Trash
SOLIDS HANDLING?	1"	1 1/4"
SIZE: (suction)	2"	3"
SIZE: (Discharge)	2"	3"
CAPACITY: (GPM)	180	300
TOTAL HEAD (UP TO)	110'	103'
PRIMING LIFT:	26'	26'
MAXIMUM PRESSURE:	48 psi	44 psi
SEALS:	Viton	Viton
IMPELLER:	Cast Iron	Cast Iron
PUMP HOUSING:	Die-cast Alum.	Die-cast Alum.
ENGINE:	Yanmar® L48EE	Yanmar® L48EE
HORSEPOWER:	4.7 HP	4.7 HP
FUEL TANK CAPACITY:	3.5 Liter	3.5 Liter
RUNNING TIME:	4-5 Hrs.	4-5 Hrs.
WEIGHT (lb)	110 lb	118 lb
DIMENSIONS (LxWxH)	24"x18"x20"	24"x18"x20"
STARTING	Recoil	Recoil

Specifications subject to change without notice

CENTRIFUGAL PUMP

DOUBLE LIFE

250 SERIES MODEL PUMP offers longer service life, more power and easier maintenance than conventional pumps on the market today. Compared to conventional pumps, this pump provides increased capacity and higher head with no increase in piping size or base mounting size. The 250 Series pump has proved to provide greater savings on the toughest jobs through extended life and enhanced performance.

FEATURES:

THE 250 SERIES CONCENTRIC PUMP HOUSINGS are heavier and stronger to outlast conventional pumps. The housings are thicker for extra strength and extended service life. The concentric design allows the distance between the impeller and the housing to be the same at lall points. The pump provides streamlined flow, even at shutoff. The concentric housing eliminates turbulence and cavitation within the pump. It also reduces the radial load on the bearings. The required suction pressure is lower due to the full pipe diameter of the pump entrance. The housing gasket is recessed to protect it from fluid leaving the impeller.

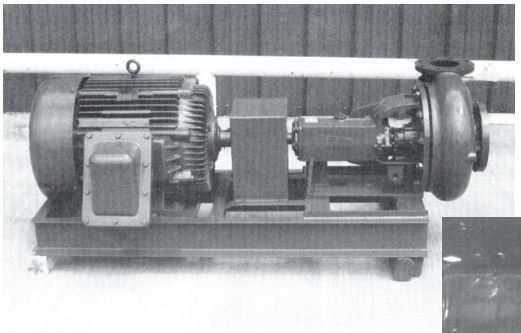
THE 250 SERIES OPEN-VANE IMPELLER eliminates recirculation that occurs in closed impellers. The impeller is designed to reduce turbulence, lower radial and thrust loads, and provides a smooth flow of fluid through the pump. Housing wear is reduced by eliminating the high scrubbing action that occurs on conventional pumps. The 250 series impeller is designed to allow fluid leaving the impeller to blend with recirculating fluid to reduce abrasive wear of the casing. The open-vane impeller has no exposed impeller nuts or shaft threads. The impeller is screwed on and the threads are protected by an o-ring. The 250 series pump and impeller are designed to increase service life many times over that of conventional pumps.

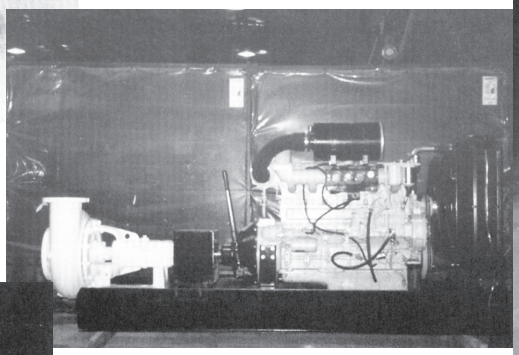
THE 250 SERIES SHAFT has a greater diameter to provide heavy-duty performance with minimal shaft deflection. This design extends the packing life. The replaceable shaft sleeve allows the wear from the packing to be renewed without replacing the entire shaft. The shaft sleeve and mechanical seal can be replaced without removing the shaft from the pump.

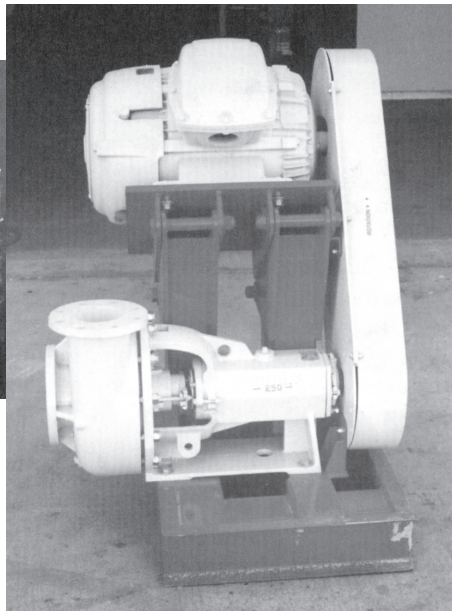
THE 250 SERIES BEARINGS are designed for easy maintenance. The outboard bearing assembly is comprised of two angular contact bearings with high thrust load ratings and zero end play. The inboard bearing is a heavy-duty, double row ball bearing with a high radial load capacity to compensate for the larger impeller sizes and heavy- duty applications. DL only uses the best bearings available.

THE 250 SERIES STUFFING BOX COVER combine the functions of wear plate and stuffing box into a one-piece replacement unit. One bolt holds the slip fitted stuffing box in place. The 250 series stuffing box is available for packing or mechanical seal operation. The slip fit design allows easy access to the shaft sleeve.

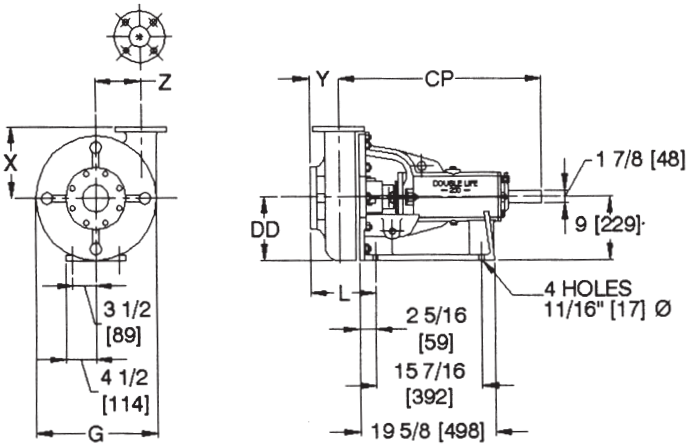
THE DOUBLE LIFE 250 MECHANICAL SEAL This top quality seal is manufactured from the finest materials available today. This seal delivers superior performance due to superior design. Our seal distributes drive torque over 10 drive tabs, which are 25-50% thicker than others on the market, therefore reducing stress on the outer retainer. All metal parts are manufactured of 316 stainless steel. Elastomers are manufactured from viton. Both rotating and stationary seal faces are tungsten carbide.





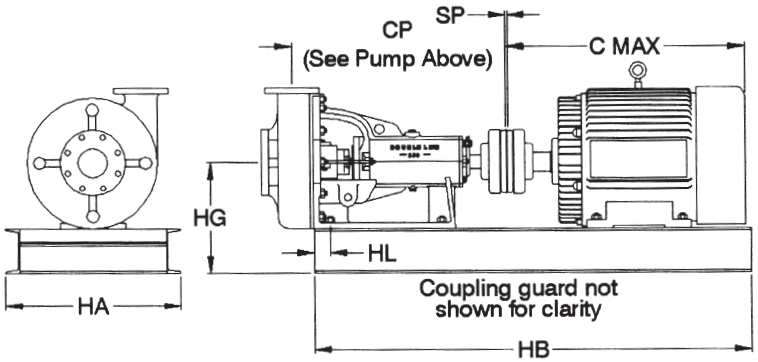


250 “DL-DELUX” FLUID END. Now offering “DL’ extended life fluid ends that include the stuffing box, impeller, and housing assembly. These parts are poured from the highest grade of ductile iron, then finished to exacting specifications. After machining and inspection, these parts are processed through a quench and temper heat treating process to fully harden the parts throughout. During this process the parts are hardened to 40-44 ROCKWELL -C scale, this gives the “DL” parts the hardness to withstand the harshest pumping conditions.



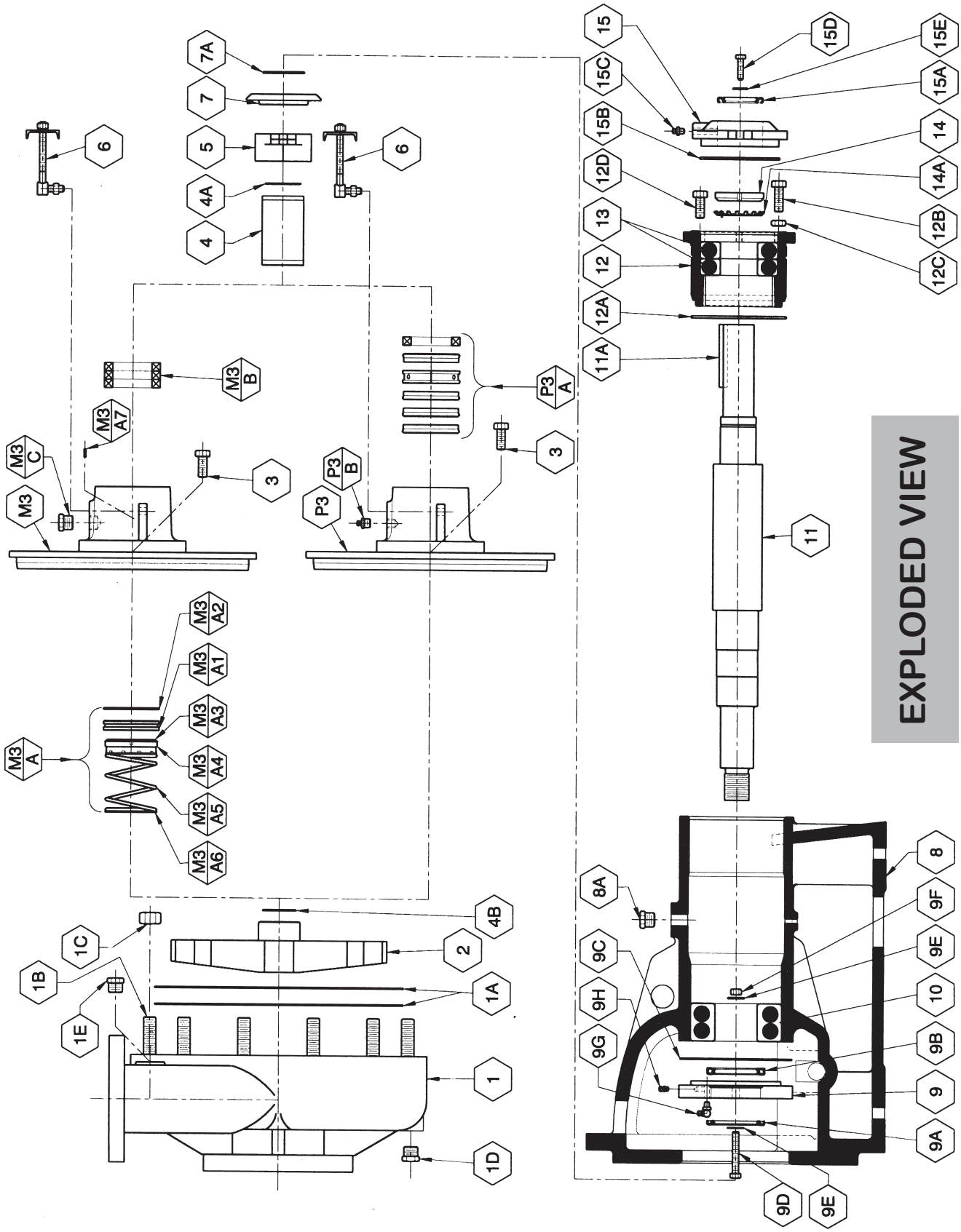
FLANGE DIMENSIONS										
SIZE	ID		OD		BC		THICK.		NO. OF	HOLE SIZE	
	In	mm	In.	mm	In.	mm	In.	m	HOLES	In.	mm.
2	2	51	6	152	4 3/4	121	5/8	16	4	3/4	19
3	3	76	7 1/2	191	6	152	3/4	19	4	3/4	19
4	4	102	9	229	7 1/2	191	15/16	24	8	3/4	19
5	5	127	10	254	8 1/2	216	15/16	24	8	7/8	22
6	6	152	11	279	9 1/2	241	1	25	8	7/8	22
8	8	203	13 1/2	343	11 3/4	298	1 1/8	29	8	7/8	22

PUMP SIZE	G		L		X		Y		Z		CP		DD		WEIGHT	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	Lbs.	kg.
3 x 2 x 13	17 7/8	454	8 3/4	222	10 1/4	260	3 3/4	95	7	178	29 1/4	743	8 15/16	227	440	200
4 x 3 x 13	17 7/8	454	9 3/8	238	10 1/4	260	4 1/4	108	6 3/4	171	29 3/8	746	8 15/16	227	436	198
5 x 4 x 14	19	483	10 3/4	273	11	279	5	127	6 1/8	156	30	762	9 1/2	241	485	220
6 x 5 x 11	17 7/8	454	12 1/16	306	11	279	5 3/4	146	6	152	30 5/8	778	8 15/16	227	507	230
6 x 5 x 14	21	533	12 1/16	306	11	279	5 3/4	146	6	152	30 5/8	778	10 1/2	267	550	250
8 x 6 x 14	23 9/16	598	13 1/4	337	14	356	6 1/4	159	8 3/8	213	31 1/4	794	11 13/16	300	616	280



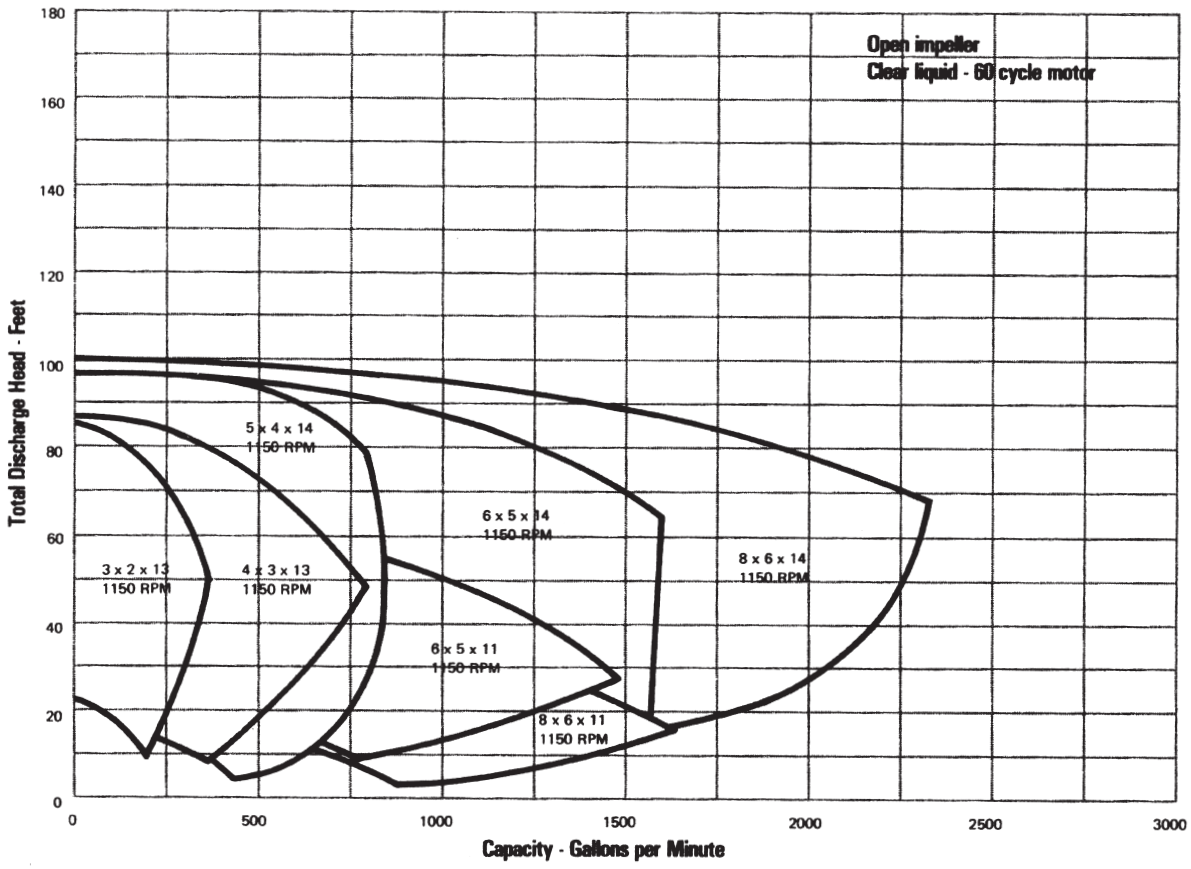
MOTOR FRAME	C MAX		HA		HB		HG		HL		SP		ASSEMBLY WEIGHT (less pump)			
													1750 rpm Motor		1150 rpm Motor	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	Lbs.	kg.	Lbs.	kg.
182T	15 1/4	387	24	610	42	1067	15	381	2 1/4	57	1/4	6	267	121	263	120
184T	16 1/4	413	24	610	43	1092	15	381	2 1/4	57	1/4	6	283	129	263	120
213T	18 1/4	464	24	610	45	1143	15	381	2 1/4	57	1/4	6	356	162	339	154
215T	19 3/4	502	24	610	47	1194	15	381	2 1/4	57	1/4	6	397	180	385	175
254T	23	584	24	610	51	1295	15	381	2 1/4	57	1/4	6	495	225	477	217
256T	24 1/2	622	24	610	53	1346	15	381	2 1/4	57	1/4	6	542	246	507	230
284T	26 1/4	667	24	610	54	1372	15	381	2 1/4	57	1/4	6	716	325	677	308
286T	27 3/4	705	24	610	55	1397	15	381	2 1/4	57	1/4	6	748	340	758	345
324T	28 3/4	730	24	610	56	1422	15	381	2 1/4	57	1/4	6	972	442	954	434
326T	30 1/4	768	24	610	58	1473	15	381	2 1/4	57	3/8	10	1014	461	964	438
364T	31 1/2	800	24	610	60	1524	15	381	2 1/4	57	3/8	10	1337	608	1176	534
365T	32 1/2	826	24	610	60	1524	15	381	2 1/4	57	1/4	6	1331	605	1283	583
405T	37	940	24	610	64	1626	16	406	2 1/4	57	1/4	6	1513	688	1493	679

DOUBLE LIFE

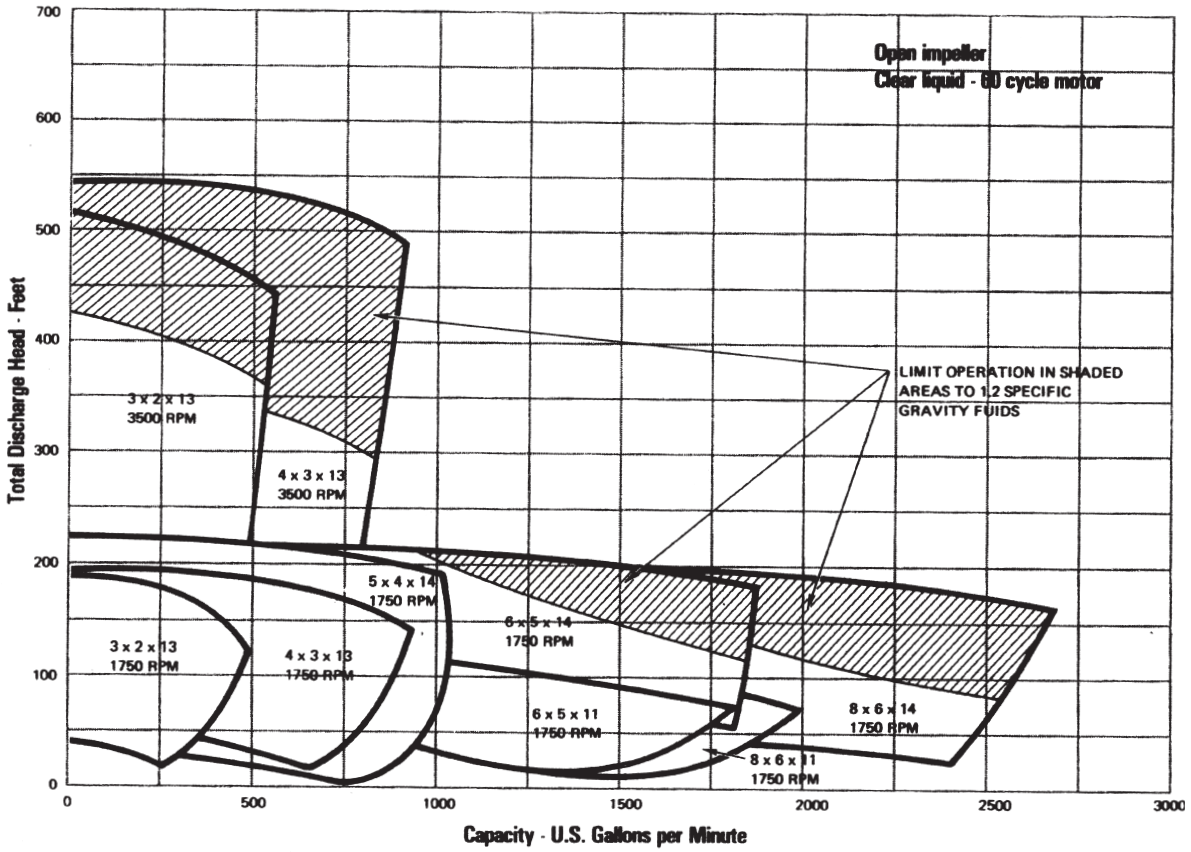

EXPLODED VIEW
7A
7
5
4A
4
6
6
15
15C
15B
12D
13
12
12A
11A
15D
15E
15A
14
14A
12B
12C
M3 B
M3 A7
M3 C
M3
3
P3 A
P3 B
P3
3
11
M3 A2
M3 A1
M3 A3
M3 A4
M3 A5
M3 A6
M3 A
4B
2
1A
1C
1B
1E
1
1D
8A
9C
9H
9G
8
9F
9E
10
9B
9
9A
9D
9E

	ITEM	QUAN.	DESCRIPTION	PART NUMBER
Housing	1	1	Housing	
	1A	2	Gasket, Housing	720700
	1B	12	Stud, Housing	B16092121000048
	1C	12	Nut, Housing	N19052121000000
	1D	1	Plug, Drain .	721651
	1E	1	Plug, Neck (3 x 2 x 13 & 4 x 3 x 13 Only)	721651
	2	1	Impeller	
	3	1	Bolt, Stuffing Box	B03F52081300020
Mechanical Seal Arrangement	M3	1	Stuffing Box - Mechanical Seal	721350
	M3-A	1	Mechanical Seal Assembly	721540
	M3-A-1		Stationary Seat	Information Only
	M3-A-2		O-Ring, Stationary Seat	
	M3-A-3		Rotating Seal Ring	
	M3-A-4		Cage Assembly	
	M3-A-5		Spring	
	M3-A-6		Spring Retainer	
	M3-A-7		Spring Pin	
	M3-B	1 Set	Back-Up Packing	720441
	M3-C	1	Plug, Clean-Out	721651
Packed Arrangement	P3	1	Stuffing Box - Packed	721340
	P3A	1	Packing - King	720470
			Packing - Graphite	720440
			Packing - Teflon	720500
	P3B	1	Grease Fiting - Packing	0399D
Shaft Sleeve Ass'y.	4	1	Shaft Sleeve, 416SSC	721580
	4A	1	Seal, Shaft Sleeve	721490
	4B	1	Seal, Impeller	721480
	5	1	Packing Gland	720590
	6	2	Gland Bolt Assembly	720600
	7	1	Deflector	721040
	7A	1	O-Ring, Deflector	721500
	8	1	Pedestal	720175
	8A	1	Plug, Pedestal	721651
Inboard Bearing Cover Assembly	9	1	Cover, Inboard Bearing	720780
	9A	1	Seal, Inboard Bearing Exclusion	720370
	9B	1	Seal, Inboard Bearing Cover	720380
	9C	1	Gasket, Inboard Bearing Cover	720670
	9D	2	Bolt, Inboard Bearing Cover	B03F52061600044
	9E	4	Flatwasher, Inboard Bearing Cover	W01052140605000
	9F	2	Nut, Inboard Bearing Cover	N19052061600000
	9G	1	Grease Fitting, Inboard Bearing	720781
	9H	1	Grease Fitting, Seal	720782
	10	1	Bearing, Inboard	720300
	11	1	Shaft	721227
	11A	1	Key, Shaft	721270
Outboard Bearing Housing Assembly	12	1	Housing, Outboard Bearing	720800
	12A	1	Seal, Outboard Bearing Housing	721510
	12B	2	Bolt, Adjustment, Outboard Brng. Hsg.	B03F52081300024
	12C	2	Jam Nut	N12052081300000
	12D	2	Bolt, Attachment, Outboard Brng. Hsg.	B03F52081300020
	13	2	Bearing, Outboard	720320
	14	1	Nut, Bearing	721560
	14A	1	Lockwasher, Bearing Nut	721550
Outboard Bearing Cover Assembly	15	1	Cover, Outboard Bearing	720790
	15A	1	Seal, Shaft, Outboard Bearing Cover	720390
	15B	1	Seal, Outboard Bearing Cover	721520
	15C	1	Grease Fitting, Outboard Bearing	721671
	15D	2	Bolt, Attachment, Outboard Brng. Cover	B03F52081300020

Composite 1150 rpm

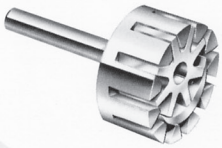


Composite 1750 and 3500 rpm



Viking Pump provides an unmatched combination of application expertise and positive-displacement pumping products to meet your pumping needs. We specialize in the design, manufacture, and application of standard and custom pumping products to some of the most challenging pumping applications in the world. We offer one of the industry's broadest selection of pumping technologies and product designs and are dedicated to helping our customers achieve the best performance of their systems.

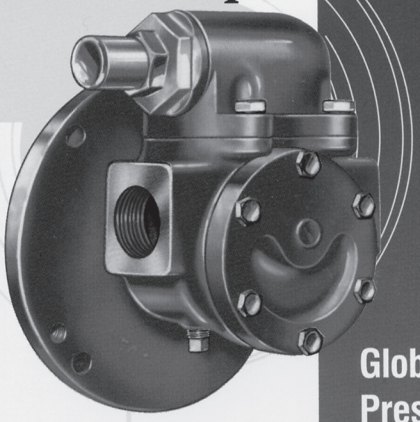
Internal Gear



General-Purpose Flange-Mounted Pumps

Compact, general-purpose pumps for **medium-duty applications.** Mounts on NEMA or IEC motors. No speed reducer required.

- 8 sizes
- Cast iron construction
- Lip seals or mechanical seals



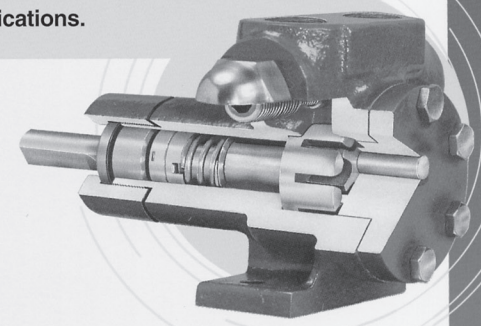
Capacities:
To 6.8 m^3/h
To 30 gpm

Differential Pressures:	Viscosity Range:	Temperature Range:
To 7 bar To 100 psi	1 to 550 cSt 28 to 2,500 ssu	-30°C to +175°C -20°F to +350°F

General-Purpose Foot-Mounted Pumps

General-purpose pumps for **medium-duty** applications.

- 14 sizes
- Cast iron construction
- Packing or mechanical seals (C-HL sizes)
- Jacketing option available



Capacities:
To 103 m^3/h
To 450 gpm

Differential Pressures:	Viscosity Range:	Temperature Range:
To 7 bar To 100 psi	1 to 55,000 cSt 28 to 250,000 ssu	-50°C to +230°C -60°F to +450°F

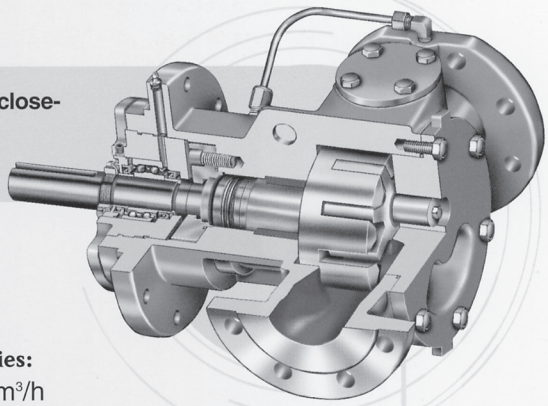
Global Presence, Local Service–

Viking Pump provides local service through a highly trained network of more than 200 stocking distributors spanning the globe. They are backed by regional manufacturing facilities and sales offices throughout the world.

John Wooden Quote

Define success for those under your leadership as total commitment and effort to the team's welfare. Then show it yourself with your own effort and performance. Most of those you lead will do the same. Those who don't should be encouraged to look for a new team.

Motor Speed Pumps



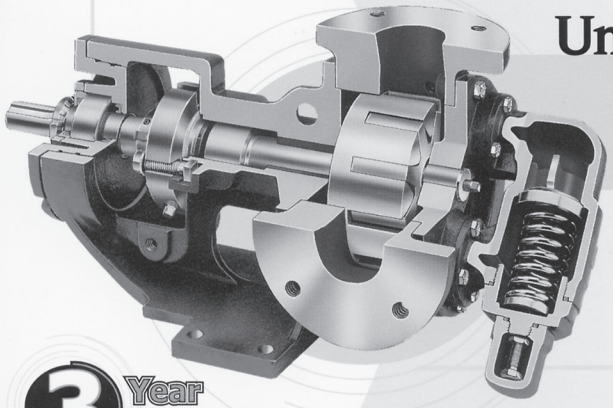
This metric-designed pump may be foot-mounted or close-coupled to IEC frame motors for a compact footprint in a high-capacity pump.

- 6 sizes
- Ductile iron construction
- Mechanical seals
- Large-diameter shaft, oversize bearings and bushings
- Pressure relief valve standard
- New idler gear and root-feed-groove design for quiet operation

Capacities:
To 45 m^3/h
To 200 gpm

Differential Pressures:	Viscosity Range:	Temperature Range:
To 12 bar To 175 psi	1 to 22,000 cSt 28 to 100,000 ssu	-30°C to +150°C -20°F to +300°F

Universal Seal Pumps



Heavy-duty, foot-mounted pumps with enlarged bearing housing lets user replace seals or change seal technologies without removing pump.

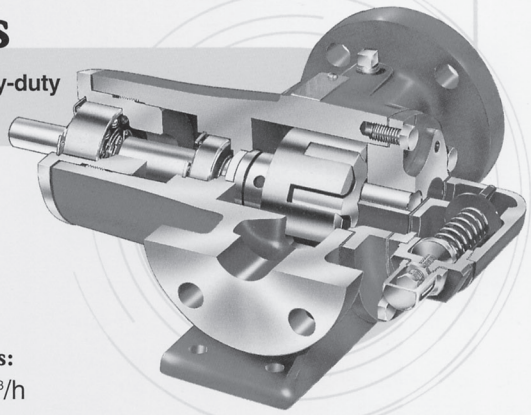
- 12 sizes
- Stainless steel, steel external, ductile iron, or cast iron construction
- Packing, component seals, or cartridge seals
- Behind-the-rotor seal option
- Flanged or NPT ports
- Multiple port locations
- Thrust bearing adjustment sets end clearance
- Pressure relief valve standard
- Jacketing option available

3 Year Warranty

Capacities:
To 345 m^3/h
To 1,500 gpm

Differential Pressures:	Viscosity Range:	Temperature Range:
To 14 bar To 200 psi	1 to 440,000 cSt 28 to 2,000,000 ssu	-85°C to +425°C -120°F to +800°F

High-Speed Compact Pumps



Compact, motor-speed pumps for medium- to heavy-duty applications. No speed reducer required.

- 6 sizes
- Stainless steel, steel, or cast iron construction
- Mechanical seals standard
- Ball bearing construction
- Flanged or NPT ports
- Available in foot or flange mount
- Pressure relief valve standard

Capacities:
To 17 m^3/h
To 75 gpm

Differential Pressures:	Viscosity Range:	Temperature Range:
To 17 bar To 250 psi	1 to 3,300 cSt 28 to 15,000 ssu	-30°C to +175°C -20°F to +350°F

John Wooden Quote

When you punish your people for making a mistake or falling short of a goal, you create an environment of extreme caution, even fearfulness. In sports it's similar to playing "not to lose" - a formula that often brings on defeat.

SPECIFICATIONS

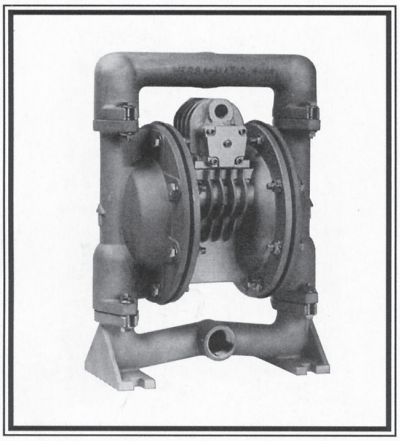
FLOW RATE
adjustable to.....0-35 gpm (132 lpm)

PORT SIZE
Inlet.....1.0" Female NPT (BSP)
Discharge.....1.0" Female NPT (BSP)

AIR INLET.....0.375" NPT
AIR EXHAUST.....0.50" NPT
SUCTION LIFT.....15' Dry/25' Wet (4.57m/7.62m)
Teflon®.....10' Dry/20' Wet (3.05m/6.10m)

MAX. PARTICLE SIZE (Diameter) ...0.125"(3.17mm)

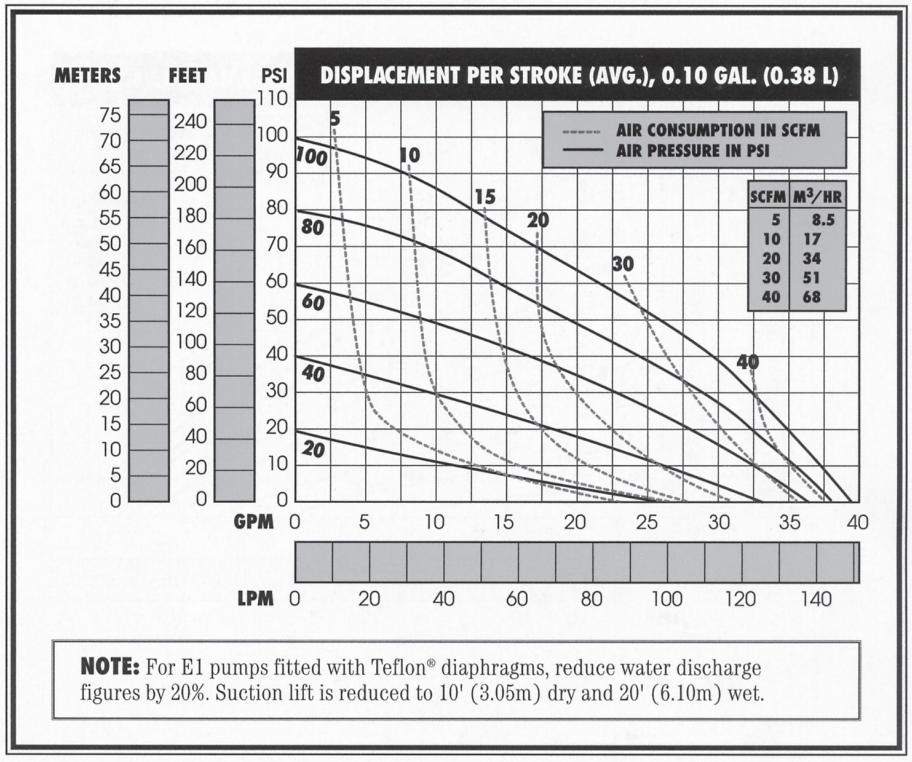
SHIPPING WEIGHTS
Aluminum.....31 lbs (14.07 kg)
Stainless.....42 lbs (19.05 kg)
Hastelloy C.....42 lbs (19.05 kg)



UL Listed Models Available.

PERFORMANCE

Volumes indicated on the chart below were determined by actual flow meter tests.

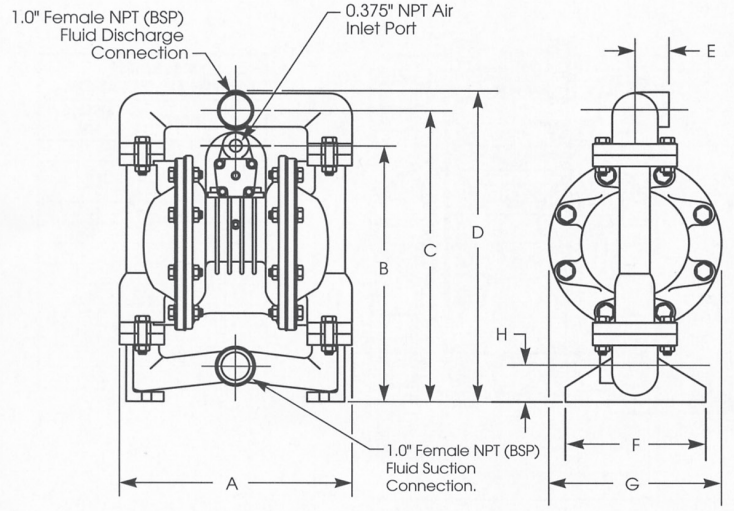


NOTE: For E1 pumps fitted with Teflon® diaphragms, reduce water discharge figures by 20%. Suction lift is reduced to 10' (3.05m) dry and 20' (6.10m) wet.

CAUTION: Do not exceed 125 psig (8.5 bars) air supply or liquid pressure.

DIMENSIONS

Consult factory for certified drawings.



DIMENSIONS MODEL E1		
ITEM	INCHES	METRIC MM
A	12 10.62*	305 270*
B	11.87 11.81*	301 300*
C	13.5 13.59*	343 345
D	14.5 14.28*	368 363*
E	1.62 1.58*	41 40*
F	4.75 4.81*	121 122*
G	8.0 8.12*	203 206
H	1.5 1.56*	38 40*
I	8.25	209
J	0.5	12.70
K	4.0 4.25*	102 108*

* Desiginates Stainless Steel Pumps.

LARGER SIZES AVAILABLE

BRONZE FLEXIBLE IMPELLER

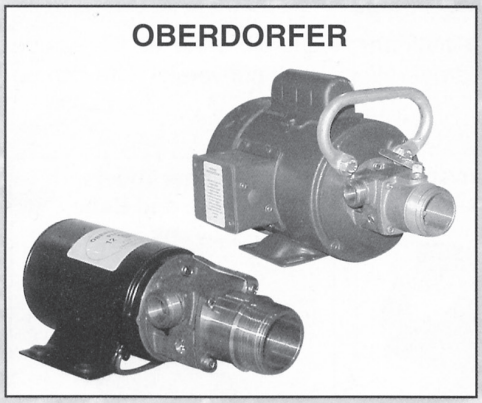
305M (3/4") & 405M (1") Series

8 – 25 GPM, 1/3 - 1 HP, IN AC & DC VOLTAGES

The Oberdorfer 305M & 405M series bronze rubber impeller pumps are self-priming and have a choice of Neoprene or Nitrile (Buna-N) impellers. They are available in single and three phase, 50 & 60 Hz, 12 & 24 vdc, ODP, TEFC, & explosion proof. Below are a few of the pump & motor combinations available. (See page 123 for parts.)

Model Number	Volts	Phase	HP	Motor Enclosure	Port Sizes	GPM @ Feet of Head 0	20	40	60	80
OB 305M-C75	12 vdc		1/4	TENV	3/4" FPT	8	6.4	3	–	–
OB 305M-8-10F18BCT	115/230 vac	1	1/3	TEFC	3/4" FPT	12	10.5	9.2	6.7	3.0
OB 305M-8-30F18BCT	230/460 vac	3	1/3	TEFC	3/4" FPT	12	10.5	9.2	6.7	3.0
OB 305M-8-xxF18BCT	12 vdc or 24 vdc		1/3	TEFC	3/4" FPT	12	10.5	9.2	6.7	3.0
OB 405M-4-M26	115/230 vac	1	3/4	ODP	1" FPT*	25	24	22	–	–
OB 405M-4-N26	115/230 vac	1	1	ODP	1" FPT*	25	24	22	17	11
OB 405M-4-10N18BCT	115/230 vac	1	1	TEFC	1" FPT*	25	24	22	17	11
OB 405M-4-30N18BCT	230/460 vac	3	1	TEFC	1" FPT*	25	24	22	17	11
OB 405M-4-xxN18BCT	12 vdc or 24 vdc		1	TEFC	1" FPT*	25	24	22	17	11

FLEXIBLE IMPELLER MACERATORS



BRONZE MACERATORS IN 12 & 32 VDC, 115 VAC

Oberdorfer's bronze macerator pumps come in AC and DC voltages for onboard sewage or fish box pump-out. Their oversized motors provide ample horsepower for these demanding applications. Service kits: OB 10938 (214M) and OB 10829 (209M). (See page 123 for service parts.)

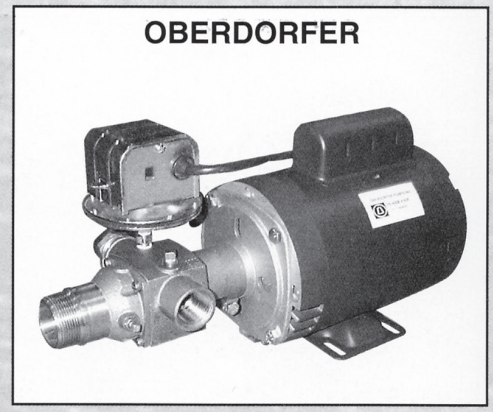
Model Number	Volts	Amps	Max. GPM	Inlet Port	Outlet Port	Dimensions (H x W x L)
OB 209M-A92	12 vdc	18	9	1 1/2" MPT	3/4" GHT	3 13/32" x 4" x 8 1/8"
OB 209M-A94	32 vdc	8	9	1 1/2" MPT	3/4" GHT	3 13/32" x 4" x 8 1/8"
OB 214M-F35	115 vac	–	12.5	1 1/2" MPT	3/4" GHT	8" x 7 1/4" x 12 7/16"

MACERATOR PUMPS

1HP, 25 GPM DOCKSIDE OR ON-BOARD MACERATOR PUMP

Oberdorfer's 406M is the largest series marine macerator pump available and comes in single and three phase, 12 and 24 vdc, 50 and 60 hz, and in custom configurations including models that meet IEEE-45, MCA, Lloyds, ABS and USCG specifications. The optional 406MK series comes equipped with a vacuum switch which shuts down the pump once the holding tank is empty. The suction port is 1 1/2" MPT or 2" slip-on and the discharge port is 1" FPT or 1 1/2" slip-on. Service kit = OB 10956. (See page 123 for service parts.)

Model Number	Volts	HP	Max. GPM	Inlet Port	Outlet Port
OB 406M-4-N26	115/230 vac	1	25	1 1/2" MPT & 2" Slip-on	1" FPT & 1 1/2" Slip-on
OB 406MK-4-N26	115/230 vac	1	25	1 1/2" MPT & 2" Slip-on	1" FPT & 1 1/2" Slip-on
OB 406M-4-30N18BCT	115/230 vac	1	25	1 1/2" MPT & 2" Slip-on	1" FPT & 1 1/2" Slip-on
OB 406M-4-12N18BCT	12 vdc	1	25	1 1/2" MPT & 2" Slip-on	1" FPT & 1 1/2" Slip-on
OB 406M-4-24N18BCT	24 vdc	1	25	1 1/2" MPT & 2" Slip-on	1" FPT & 1 1/2" Slip-on



Politics

What counts is not neccessarily the size of the dog in the fight - it's the size of the fight in the dog. Dwight D. Eisenhower

Reason

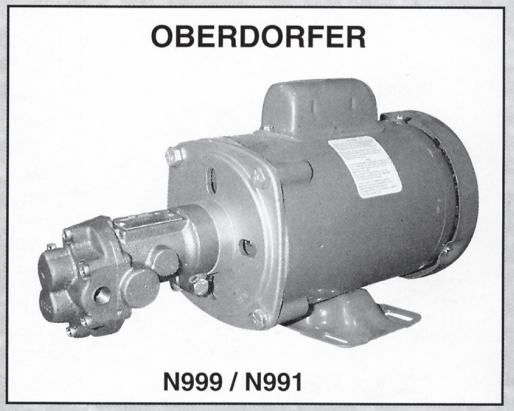
When a man has not a good reason for doing a thing, he has one good reason for letting it alone. Sir Walter Scott

OBERDORFER DIESEL TRANSFER GEAR PUMPS

1 - 2 GPM IN AC & DC VOLTAGES

The low flow bronze Oberdorfer gear pumps are ideal for diesel transfer in the marine environment. They are available with or without relief valve in single or three phase, 50 or 60 hz, 12 or 24 vdc, IEEE-45 enclosure and custom configurations that meet MCA, Lloyds, ABS and USCG specifications. Below are some examples of the sizes available. Call us for information on a model to meet your specifications.

GPM at 20 PSI	HP	Port Size	115/230 vac, 1 Phase 60hz, TEFC Model	230/460 vac, 3 Phase 60hz, TEFC Model	12 vdc TEFC Model	24 vdc TEFC Model
.84	1/4	1/4" FPT	OB N999Q-10C18BCT	OB N999Q-30C18BCT	OB N999Q-12C18BCT	OB N999Q-24C18BCT
1.35	1/4	1/4" FPT	OB N991Q-10C12BCT	OB N991Q-30C12BCT	0B N991Q-12C12B	
1.98	1/3	1/4" FPT	OB N991Q-10F18BCT	OB N991Q-30F18BCT	OB N991Q-12F18BCT	OB N991Q-24F18BCT

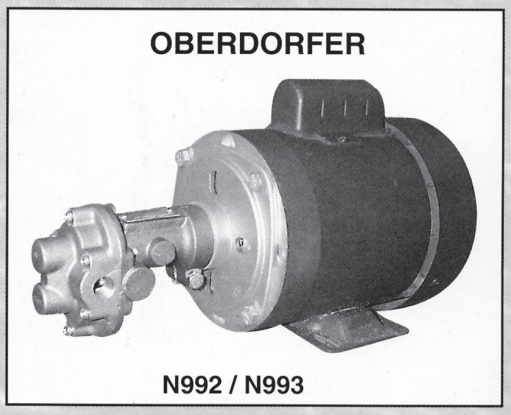


N999 / N991

3 - 7 GPM IN AC & DC VOLTAGES

The low flow bronze Oberdorfer gear pumps are ideal for diesel transfer in the marine environment. They are available with or without relief valve in single or three phase, 50 or 60 hz, 12 or 24 vdc, IEEE-45 enclosure and custom configurations that meet MCA, Lloyds, ABS and USCG specifications. Below are some examples of the sizes available. Call us for information on a model to meet your specifications.

GPM at 20 PSI	HP	Port Size	115/230 vac, 1 Phase 60hz, TEFC Model	230/460 vac, 3 Phase 60hz, TEFC Model	12 vdc TEFC Model	24 vdc TEFC Model
2.72	1/4	3/8" FPT	OB N992Q-10C12BCT	OB N992Q-30C12BCT	OB N992Q-12C12B	
3.86	1/3	3/8" FPT	OB N992Q-10F18BCT	OB N992Q-30F18BCT	OB N992Q-12F18BCT	OB N992Q-24F18BCT
4.6	1/2	1/2" FPT	OB N993Q-10J12BCT	OB N993Q-30J12BCT		
7.00	3/4	1/2" FPT	OB N993Q-10M18BCT	OB N993Q-30M18BCT	OB N993Q-12M18BCT	OB N993Q-24M18BCT

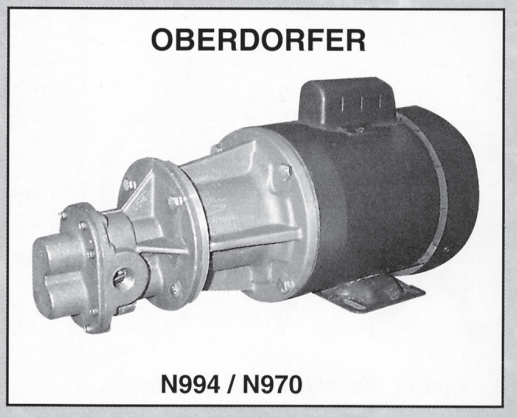


N992 / N993

6 - 20 GPM IN AC & DC VOLTAGES

These medium flow bronze Oberdorfer gear pumps are ideal for diesel transfer in the marine environment. They are available with or without relief valve in single or three phase, 50 or 60 hz, 12 or 24 vdc, IEEE-45 enclosure and custom configurations that meet MCA, Lloyds, ABS and USCG specifications. Below are some examples of the sizes available. Call us for information on a model to meet your specifications.

GPM at 20 PSI	HP	Port Size	115/230 vac, 1 Phase 60hz, TEFC Model	230/460 vac, 3 Phase 60hz, TEFC Model	12 vdc TEFC Model	24 vdc TEFC Model
6.6	1/2	1/2" FPT	OB N994H-10J12BCT	OB N994H-30J12BCT		
10.3	1	1/2" FPT	OB N994H-10N18BCT	OB N994H-30N18BCT	OB N994H-12N18BCT	OB N994H-24N18BCT
13	1	3/4" FPT	OB N970H-10N12BCT	OB N970H-30N12BCT		
15	1 1/2	1" FPT		OB N990H-30T12BCT		
19.2	1 1/2	3/4" FPT	OB N970H-10T18BCT	OB N970H-30T18BCT	OB N970H-12T18BC (ODP) motor	

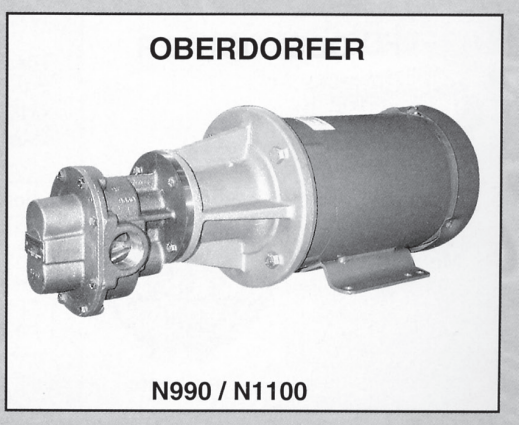


N994 / N970

20 - 40 GPM IN AC & DC VOLTAGES

These high flow bronze Oberdorfer gear pumps are ideal for diesel transfer in the marine environment. The N990 series is available with or without relief valve. Both series are available in single or three phase, 50 or 60 hz, IEEE-45 enclosure and custom configurations that meet MCA, Lloyds, ABS and USCG specifications. Below are some examples of the sizes available. Call us for information on a model to meet your specifications.

GPM at 20 PSI	HP	Port Size	115/230 vac, 1 Phase 60hz, TEFC Model	230/460 vac, 3 Phase 60hz, TEFC Model
22.9	2	1" FPT	OB N990H-10W18BCT	OB N990H-30W18BCT
38	3	1 1/2" FPT	OB N1100Y-10Y12BCT	OB N1100Z-30Y12BCT



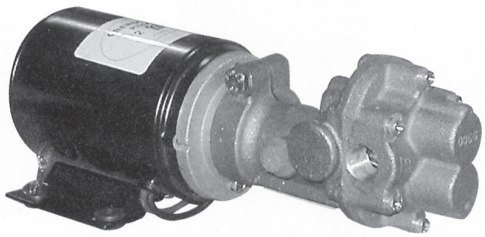
N990 / N1100

Rebellion

By gnawing through a dyke, even a rat may drown a nation. Edmund Burke

OBERDORFER OIL CHANGE GEAR PUMPS

OBERDORFER



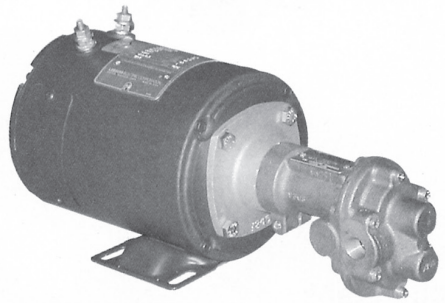
N991-32-A96

COMPACT DC BRONZE GEAR PUMP

This compact oil change/diesel transfer pump by Oberdorfer utilizes the rugged bronze gear pump design that will give years of dependable service. They are available in 12 and 32 vdc, will deliver up to 25 psi discharge pressure and will self-prime to 20 feet when wet. Even though these pumps do not come with a reversible switch, one can be mounted inline to achieve reversible operation.

Model Number	Volts DC	Max Amps	Max GPM	Max PSI	Port Size	Dimensions (H x W x L)
OB N991-32-A96	12	13	3.7	25	3/8"	4" x 4" x 10 5/8"
OB N991-32-A97	32	11	4.0	25	3/8"	4" x 4" x 10 5/8"

OBERDORFER



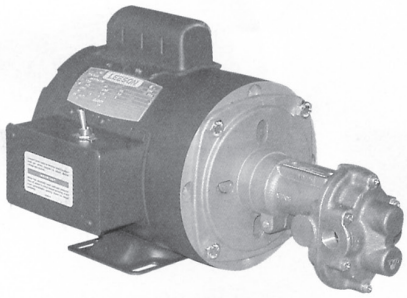
N992-C81 / N993-12C12B

HEAVY DUTY DC GEAR PUMP

These Oberdorfer gear pumps come with a continuous duty 1/4 horsepower DC motor. They will operate as an oil change or diesel transfer pump in single or reversible operation (an inline switch is required for reversible operation). They are available in 12 and 24 vdc, will deliver up to 60 psi discharge pressure and will self-prime to 20 feet when wet.

Model Number	Volts DC	Max Amps	Max GPM	Max PSI	Port Size	Dimensions (H x W x L)
OB N991-32-C81	12	17.2	1.5	50	3/8"	6 11/16" x 5 3/4" x 14 1/4"
OB N991-32-C82	24	17.0	3.0	60	3/8"	6 11/16" x 5 3/4" x 14 1/4"
OB N992-C81	12	16.4	3.0	35	3/8"	6 11/16" x 5 3/4" x 14 1/4"
OB N992-C82	24	18.9	6.5	35	3/8"	6 11/16" x 5 3/4" x 14 1/4"
OB N993-12C12B	12	17.0	5.1	35	1/2"	6 11/16" x 5 3/4" x 15"

OBERDORFER



N992-37 F30

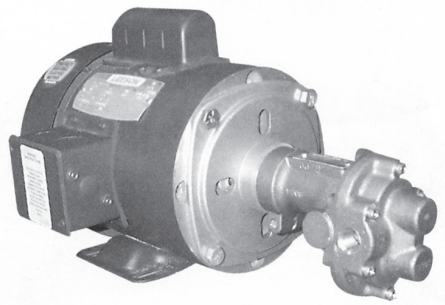
115 VAC REVERSIBLE GEAR PUMP

Oberdorfer's 115 vac reversible gear pump comes standard with a heavy-duty TEFC 1/3 horsepower motor with integral reversing switch making oil change or diesel transfer a snap. The new N993Q-F30 model is specifically designed for diesel transfer (not for oil change) delivering up to seven gallons per minute in forward or reserve operation.

Model Number	Volts AC	Max GPM	Max PSI	Port Size	Dimensions (H x W x L)
OB N991Q-32-F30	115	2.0	100	3/8"	8.4" x 6.5" x 11"
OB N992-37-F30	115	4.0	60	3/8"	8.4" x 6.5" x 11"
*OB N993Q-F30	115	7.0	5	1/2"	8.4" x 6.5" x 15.25"

** Only use N993 for Diesel*

OBERDORFER



N992M-F36

115 VAC "LOW RPM" GEAR PUMP

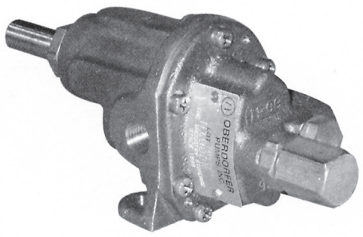
These low rpm gear pumps are designed specifically for thick or cold oil operation. The lower revolutions per minute (1140 rpm) allow more viscous oils to move through the pump with less opportunity for cavitation (the leading cause of oil change pump failure).

Model Number	Volts AC	Max GPM	Max PSI	Port Size	Dimensions (H x W x L)
OB N991M-32-F36	115/230	1.5	100	3/8"	9 .125" x 8.5" x 9.1"
OB N992M-F36	115/230	3.0	100	3/8"	9 .125" x 8.5" x 9.1"
OB N993M-F36	115/230	4.8	40	1/2"	9 .125" x 8.5" x 9.3"

John Wooden Quote

A strong leader accepts blame and gives the credit. A weak leader gives blame and accepts the credit.

OBERDORFER



N1000 (1/4" Ports)

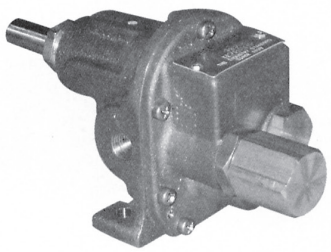
R.P.M.	FT. HD	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	G.P.M.	0.50	0.30	0.10	---	---	---	---	---
	H.P.	0.01	0.03	0.04	---	---	---	---	---
600	G.P.M.	0.80	0.62	0.44	0.27	0.10	---	---	---
	H.P.	0.02	0.04	0.06	0.08	0.10	---	---	---
800	G.P.M.	1.03	0.87	0.72	0.56	0.40	0.24	0.10	---
	H.P.	0.02	0.04	0.07	0.10	0.12	0.15	0.18	---
1000	G.P.M.	1.26	1.11	0.96	0.81	0.66	0.51	0.33	0.10
	H.P.	0.02	0.05	0.09	0.12	0.15	0.19	0.24	0.28
1200	G.P.M.	1.50	1.35	1.20	1.05	0.90	0.75	0.60	0.45
	H.P.	0.03	0.05	0.12	0.14	0.17	0.21	0.26	0.29
1600	G.P.M.	1.95	1.83	1.70	1.57	1.45	1.32	1.15	0.95
	H.P.	0.04	0.08	0.13	0.18	0.22	0.27	0.33	0.38
1725	G.P.M.	2.10	1.98	1.86	1.74	1.62	1.50	1.35	1.20
	H.P.	0.05	0.09	0.14	0.19	0.23	0.28	0.34	0.39

UP TO 2 GPM, 100 PSI

(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze housing
- Seal Options: standard or Teflon Packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 76, N991 Series, for motor mount version

OBERDORFER



N2000 (1/4" Ports)

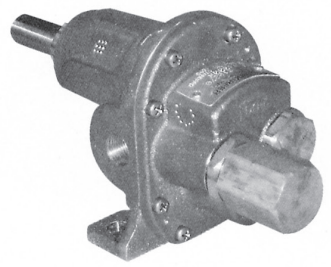
R.P.M.	FT.HD.	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	GPM	0.97	0.69	0.40	0.10	---	---	---	---
	HP	0.02	0.04	0.08	0.10	---	---	---	---
600	GPM	1.50	1.30	1.09	0.88	0.68	0.47	0.21	---
	HP	0.03	0.05	0.09	0.13	0.18	0.24	0.26	---
800	GPM	2.03	1.82	1.62	1.41	1.21	1.00	0.65	0.30
	HP	0.04	0.07	0.11	0.15	0.22	0.29	0.36	0.45
1000	GPM	2.50	2.30	2.10	1.90	1.70	1.50	1.00	0.50
	HP	0.04	0.08	0.13	0.18	0.24	0.32	0.45	0.55
1200	GPM	2.92	2.72	2.52	2.31	2.10	1.90	1.50	1.00
	HP	0.05	0.09	0.16	0.22	0.28	0.36	0.48	0.58
1600	GPM	3.75	3.55	3.35	3.15	2.95	2.75	2.45	2.20
	HP	0.06	0.11	0.18	0.25	0.33	0.41	0.53	0.65
1725	GPM	4.07	3.86	3.65	3.44	3.23	3.03	2.80	2.50
	HP	0.10	0.14	0.20	0.29	0.37	0.43	0.56	0.68

UP TO 4 GPM, 100 PSI

(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze housing
- Seal Options: standard or Teflon Packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 76, N992 Series, for motor mount version

OBERDORFER



N3000 (3/8" Ports)

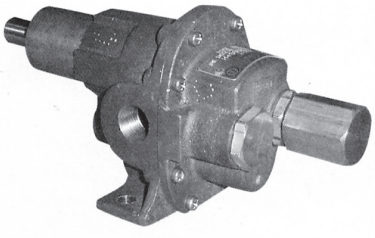
R.P.M.	FT.HD.	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	GPM	1.50	1.05	0.70	0.40	0.20	0.10	---	---
	HP	0.05	0.08	0.13	0.15	0.20	0.24	---	---
600	GPM	2.38	2.14	1.89	1.64	1.39	1.15	0.70	0.32
	HP	0.06	0.10	0.17	0.20	0.28	0.35	0.44	0.53
800	GPM	3.17	2.90	2.64	2.37	2.11	1.85	1.70	1.30
	HP	0.08	0.17	0.23	0.20	0.40	0.48	0.54	0.65
1000	GPM	4.00	3.74	3.48	3.22	2.96	2.71	2.40	2.15
	HP	0.10	0.18	0.27	0.38	0.43	0.55	0.67	0.80
1200	GPM	4.85	4.60	4.35	4.10	3.84	3.58	3.50	3.20
	HP	0.15	0.25	0.33	0.45	0.55	0.68	0.85	1.00
1600	GPM	6.67	6.42	6.16	5.90	5.64	5.38	5.25	5.00
	HP	0.20	0.30	0.45	0.58	0.60	0.85	1.05	1.25
1725	GPM	7.25	7.00	6.75	6.50	6.25	6.00	5.75	5.50
	HP	0.38	0.50	0.65	0.80	0.95	1.10	1.25	1.40

UP TO 7 GPM, 100 PSI

(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze housing
- Seal Options: standard or Teflon packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 76, N993 Series, for motor mount version

OBERDORFER



N4000 (1/2" Ports)

R.P.M.	FT.HD.	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	GPM	2.30	2.00	1.75	1.55	1.30	1.10	0.85	0.65
	HP	0.10	0.15	0.20	0.25	0.32	0.40	0.53	0.70
600	GPM	3.45	3.20	2.95	2.75	2.50	2.30	2.07	2.17
	HP	0.15	0.20	0.25	0.35	0.40	0.60	0.75	0.94
800	GPM	4.65	4.18	4.10	3.90	3.70	3.50	3.25	3.05
	HP	0.20	0.22	0.29	0.45	0.64	0.86	1.20	1.60
1000	GPM	5.86	5.65	5.40	5.18	4.95	4.76	4.50	4.30
	HP	0.22	0.25	0.30	0.45	0.65	0.75	1.20	1.50
1200	GPM	7.10	6.85	6.60	6.35	6.12	5.90	5.68	5.45
	HP	0.25	0.30	0.40	0.60	0.75	0.97	1.30	1.70
1600	GPM	9.70	9.45	9.20	8.95	8.72	8.50	8.30	8.10
	HP	0.30	0.39	0.60	0.80	1.05	1.30	1.64	2.05
1725	GPM	10.56	10.33	10.10	9.85	9.63	9.42	9.20	9.00
	HP	0.50	0.75	0.90	1.20	1.50	1.75	2.00	2.32

UP TO 10.5 GPM, 100 PSI

(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze housing
- Seal Options: standard or Teflon Packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 77, N994 Series, for motor mount version

John Wooden

No one overachieves. We're all underachievers to one degree or another.

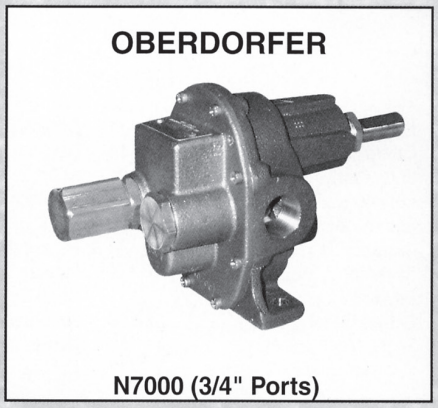
I believe effective leaders are, first and foremost, good teachers.

BRONZE PEDESTAL GEAR

UP TO 20 GPM, 100 PSI
(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze Housing
- Seal Options: standard or Teflon packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 77, N970 Series, for motor mount version

R.P.M.	FT.HD.	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	GPM	4.00	3.45	2.90	2.35	1.50	1.30	1.20	1.00
	HP	0.20	0.23	0.30	0.39	0.55	0.65	0.70	0.90
600	GPM	6.30	5.78	5.26	4.74	4.22	3.95	3.50	3.10
	HP	0.25	0.30	0.40	0.65	0.75	0.95	1.15	1.40
800	GPM	8.58	8.18	7.78	7.38	6.98	6.57	6.40	6.20
	HP	0.30	0.40	0.58	0.85	0.93	1.15	1.40	1.70
1000	GPM	10.90	10.51	10.12	9.72	9.33	8.93	8.00	7.90
	HP	0.40	0.60	0.70	0.90	1.10	1.38	1.60	1.92
1200	GPM	13.33	12.94	12.55	12.16	11.76	11.37	11.20	11.10
	HP	0.50	0.70	0.85	1.08	1.35	1.65	1.90	2.20
1600	GPM	18.17	17.79	17.41	17.03	16.65	16.28	16.10	16.00
	HP	0.70	0.91	1.20	1.50	1.80	2.14	2.50	2.90
1725	GPM	19.85	19.48	19.11	18.74	18.37	18.00	17.70	17.40
	HP	0.80	1.10	1.42	1.85	2.18	2.65	3.00	3.60

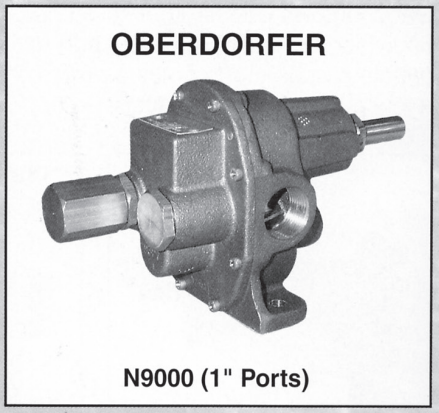


N7000 (3/4" Ports)

UP TO 23 GPM, 100 PSI
(150 PSI Intermittent)

- Temperatures to 400° F
- Bronze Housing
- Seal Options: standard or Teflon packing, Buna or Viton lip seal, Buna, Viton or Teflon mechanical seal
- Optional relief valve
- See page 77, N990 Series, for motor mount version

R.P.M.	FT.HD.	0	46	92	138	184	231	290	346
	P.S.I.	0	20	40	60	80	100	125*	150*
400	GPM	5.00	4.49	3.99	3.48	2.98	2.48	2.05	1.60
	HP	0.25	0.33	0.40	0.50	0.65	0.75	1.00	1.25
600	GPM	7.50	7.08	6.65	6.23	5.80	5.38	4.90	4.05
	HP	0.35	0.40	0.55	0.75	0.90	1.10	1.32	1.60
800	GPM	10.17	9.82	9.47	9.12	8.77	8.41	7.80	7.30
	HP	0.40	0.60	0.70	1.00	1.15	1.40	1.75	2.05
1000	GPM	13.00	12.65	12.30	11.94	11.58	11.22	10.40	9.90
	HP	0.50	0.70	0.90	1.20	1.45	1.72	2.10	2.50
1200	GPM	16.00	15.67	15.34	15.00	14.67	14.33	13.60	13.00
	HP	0.60	0.80	1.14	1.45	1.85	2.20	2.70	3.20
1600	GPM	21.50	21.12	20.74	20.35	19.97	19.58	18.70	18.00
	HP	0.80	1.70	1.38	1.70	2.03	2.41	2.90	3.40
1725	GPM	23.33	22.93	22.52	22.11	21.71	21.30	20.50	20.10
	HP	0.90	1.19	1.53	1.92	2.25	2.70	3.15	3.70



N9000 (1" Ports)

CIVIL SERVANT

"One of the lesser-known figures of American history is Wilmer McLean, a Virginia farmer who took little interest in politics.

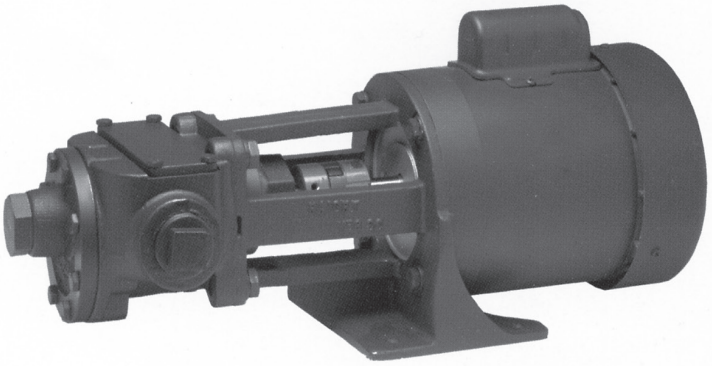
"In 1861, most of the Rebel army marched onto McLean's land. The Union forces attempted to bar their way, and the first full-scale battle of the Civil War (Battle of Bull Run), got underway-right on his farm. Thirteen months later, it happened again. The second battle at Bull Run destroyed McLean's land. McLean had had enough. He packed his wagons and moved two hundred miles away from the war.

"Three years later, in a weird twist of fate, two men confronted each other in Wilmer McLean's parlor. These two men talked and signed a document on McLean's best table; for he had moved to a little village called Appomattox Court House-where Robert E. Lee and Ulysses S. Grant negotiated the end of the Civil War." **-Ripley's Believe It or Not**

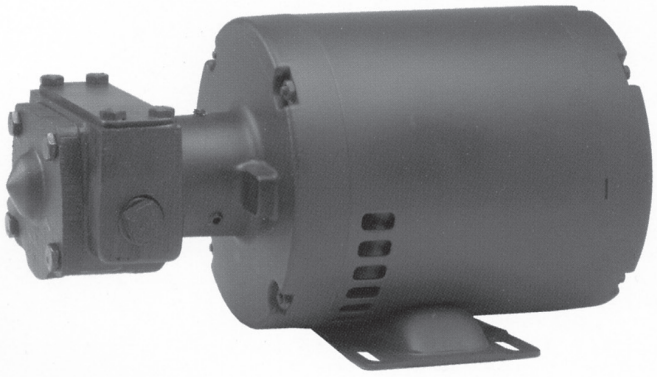
Haight Pumps

WHY HAIGHT?

Close-Coupled, Footed Motor



Close Coupled, Footed Bracket



Hub Mount

Haight Pump is proud to introduce our newest generation of *Pumps that Perform*, continuing our 70 year old tradition, of supplying our customers with Rugged, Reliable, and Innovative Pumps. We have coupled the best features of our proven Series D and DR pump models with a new robust, and flexible housing design. The Series U pumps incorporate our innovative UniverSeal shaft seal design, and a bolt-on Relief Valve into a single housing. Combining these two design concepts establishes a modular pump design, which offers pump users the ability to easily and effectively adapt their pumping equipment to meet the changing requirements of their process system.

Both rotating parts are hydraulically balanced along the shaft axes, eliminating the need to adjust end plates. The gear within a gear design doesn't subject the rotating members to overhung load problems, allows for fluid feed on both sides of the gears, and functions as an internal gear reducer slowing down the larger rotating gear. These features result in reduced wear, less maintenance, compact size and lower noise.

PUMPS THAT PERFORM.
PUMPS THAT FIT.

Today's complex processing environment demands greater integration of equipment and application. Haight is recognized as a leading manufacturer of high quality rotary gear, positive displacement pumps for use in a broad variety applications. As a member of the Baker Manufacturing family, our customers benefit from our:

- metallurgical expertise
- high tech foundry
- premier research and development capabilities
- our extensive technical knowledge of pump applications.

Now, more than ever, we can offer you a customized response to both:

- your operational needs
- cost requirements.

Haight's heavy-duty, positive displacement rotary gear pumps are truly "pumps that perform." All of our engineering, manufacturing, and application skills are focused on the development, production, and sales of dependable, versatile, and quiet products designed to meet the needs of our customers. The most reliable of today's rotary gear pumps are built on the "gear within the gear" principle that Haight pioneered.

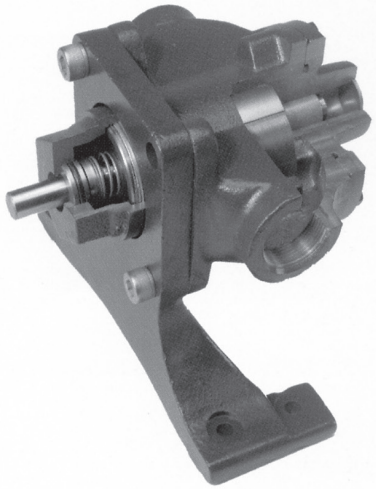
Series U - Universal Pumps

The Universal Pump Design combines the innovation of our UniverSeal shaft seal, the rugged simplicity of Haight's proven "gear within a gear" internal gear configuration, with the flexibility of a bolt-on, integral Relief Valve assembly. This combination of pump features offers pump users unsurpassed flexibility to adapt their pumps to changing system requirements.

Universal Relief Valve - the relief valve assembly can be added at any time, in the field, with no special tools. The valve can function in either the return to suction mode, or return to tank mode. Available with three different tension springs, the relief valve operates smoothly and effectively over a broad range of setting values.

"Gear within a gear" Internal gear design - For nearly seventy years, this design has demonstrated it's effectiveness in handling a broad range of applications while operating at standard motor speeds, and reducing wear. Both of these operating characteristics play an important role in minimizing overall capital investment, and operating expenses.

Our UniverSeal shaft seal configuration represents a significant advance in gear pump design. The UniverSeal incorporates standard, easily available seal components with a readily adaptable pump geometry. The pump can be easily converted in the field from Lip to Mechanical to Packed Gland shaft seal type without even disconnecting the piping. Flow direction in the pump can also be changed without disrupting the attached piping, or special tools.



UniverSeal Pump with H182S bracket

All UniverSeal Shaft Seal Pumps features:

- reduce maintenance expenses - simple, quick seal changes
- less production disruption and downtime - perform maintenance in place rather than in the shop
- reduce maintenance inventory - one pump can be adapted to meet many application requirements
- provide future adaptability - easily change the pump as your needs change
- reduce replacement parts costs, no special custom design parts
- interchangeable with existing Haight pumps without modification
- pumps specified with an integral relief valve can be quickly and easily changed to perform in either suction return, or tank return mode. The relief valve can be readily changed to operate in either clockwise or counterclockwise flow direction.

Simple ideas . . .
. . . Great results

NEW STANDARD MATERIAL OF CONSTRUCTION IS NOW DUCTILE IRON

Haight Pumps

HAIGHT FITS THESE APPLICATIONS TO COMPLETE SOLUTIONS

	Industries & Applications	Liquids Pumped (2)	Features
Standard Iron	Petroleum Products • Machine Manufacturing • Machine Tools • Crane • Speed Reducers • Hydraulic Equipment • Lubrication Systems • Diesel Engines • Food Processing • Restaurant Equipment • Misc. Chemical, Glue & Ink • Soap and Detergent Products • Drug • Building & Highway Contractors • Paper Products • Automotive • Shipbuilding • Beverage • Aircraft • Mining • Misc. Manufacturers • Primary Metal • Electrical Equipment & Supplies.	Fuel oils*, hydrocarbons, lube oils, syrups, diesel fuel, coolants, cooking oils*, wire drawing compounds, hydraulic fluids, quench oils, heat transfer oils*, tar*, ethylene glycol, varnish*, wax*, vegetable oils, detergents, lacquer*, soaps, calibration fluids, glycerin, adhesives*, molasses, transformer oil, ammonia, anhydrous ammonia.	Normal use: Cast iron casing and cover components: steel shaft and pinion gear; high tensile iron rotor; self-lubricating iron bearings; Buna-N lip seals.
Hardened Iron	Building & Highway Contractors • Textile Mill Products • Misc. Converted Paper Products • Printing and Publishing • Chemical • Plastics and Synthetics • Drug–Pharmaceuticals • Paint & Allied Products (Mfg. of paints, varnishes, lacquers & enamels) • Misc. Chemical, Glue & Ink • Soaps & Cleaners • Machine Manufacturing • Beverage.	Acetone*, turpentine*, alcohols (most grades), paints*, asphalt*, jet fuels, asphalt emulsions*, EDM oils, brines*, kerosene, caustics (sodium hydroxide)*, methyl ethyl ketone*, benzene*, latex*, methanol, gasoline, mineral spirits (naphthas), heptane, solvents*, hexane, styrene*, printer's ink*, xylene*, isopropyl acetate*, ethylene acetate*, paper coatings*, toluene*.	Wear resistant: (1) All metal parts in contact with the liquid are hardened by a superior new nitriding process that makes metals tougher. Seals and bearings are the same as standard iron construction.
Corrosion Resistant	Food processing • Chemical • Pharmaceutical • Textile • Plastic • Paint • Tanning • Soap • Rubber • Photographic • Synthetic fibre • Plating.	Acids–concentrated sulfuric, nitric, diluted phosphoric, chromic aqueous, citric aqueous, acetic. Essential oils, syrups, chemicals, vegetable oils, ammonium sulphate, corrosive wax, brines, sodium bicarbonate, sodium hydroxide, plating solutions.	Note: Please see HP500 - FF Pump brochure for information on stainless steel design.

*Although standard or Hatrided iron construction is used for these liquids, we normally recommend alternate seals or bearings due to temperature extremes or liquid compatibility. See listing of alternative seals and bearings on page three.

(1) Normally recommended for abrasive applications or for liquid with little or no lubricity.

(2) Liquids listed above do not include all of those that Haight pumps have been used for, rather, it is a selection of liquids taken from various applications where such pumps are normally used.

John Wooden Quote

Peaks and valleys belong in the Alps, not in the temperament - the emotions - of a leader.

APPLICATION SOLUTIONS BY TYPES OF SYSTEMS

Application Category	Typical Applications	Application Specific Adaptations
Refrigeration Systems	• High pressure compressor lubrication • Liquefied refrigerant circulation	• Custom mounting • Contaminated lubricants • High inlet pressures • High pressure/thin fluid conditions • Custom seal configurations
Lubrication Systems	• Shipboard systems • Power transmission systems • Conveyor systems • Generator systems • Compressors • CNC machinery • Forming machinery • Lubricant cooling systems	• Corrosion resistant designs • Custom mounting • Special direct drive designs • Double pump designs
Filtration Systems	• Electric transformers • Cooking oil • Fuels • Hydraulic fluids • Lubrication products • Machine tool coolants • Process stream by-products	• High inlet vacuum designs • Special seals • Hardened and corrosion resistant construction • High temperature designs • Special pump designs
Fueling	• Aircraft refueling systems • Portable refueling systems • Engine or remote mounted fuel systems	• Direct drive • DC drive • Pneumatic drive • Hydraulic drive • Custom mounting • Special sealing designs
Injection Systems	• Expandable foams • Resins • Adhesives • Hot tar • Thin film lubrication for metal forming • Agricultural chemicals • Animal feed supplements	• Custom mounting designs • Hardened and corrosion resistant designs • High temperature conditions • Tractor and truck mounted PTO drives
Marine	• Main engine and drive train lubrication • Loading and unloading fuel & lubrication products • Salt water wash-down systems • Winch lubrication • Fish processing waste • Bilge scavenging pumps • Aircraft/helicopter refueling systems	• Custom mounting and drive designs • Corrosion resistant materials • Spark resistant construction
Power Transmissions	• Gear box bearing and gear lubrication • Transmission lubrication • Drive shaft bearing lubrication • Lubricant cooling systems • Lubricant filtration	• Custom mounting and drive designs
Thermal Processing	• High temperature circulation • High temperature filtration	• Special construction features for elevated temperature operations
API Type Application	• Tank battery circulation • Sampling systems • LAC systems • Intermediate pressure pipeline transfer	

Distinguishing Pump Characteristics

Standard Pump Attributes

Haight pumps are self-priming and will develop up to 27" of vacuum. NOTE: depending upon actual application conditions, it is sound engineering practice to keep vacuum to a minimum.

Although suction conditions are a factor in determining pump speed, normally for liquids with viscosity's over 2000 SSU, reduced speeds and larger line sizes are recommended to avoid cavitation and diminished pump capacity.

Capacity Range	1 GPM to 80 GPM
Viscosity Range	32 SSU to 500,000 SSU
Pressure Range:	
Non Lubricating	100 PSI
Lubricating	650 PSI*
Temperature Range	–80°F to 620°F*

HAIGHT PUMP - STANDARD OPTIONS

Bearings: Grammix iron bearings are standard. **Following are optional:**

DU - Used mainly for higher pressures (above 100 psi.) or where little lubrication is available.

Carbon Graphite - Standard bearings in corrosion resistant pumps. Used in standard construction for higher temperatures, solvents, or acid pumping when standard bearings aren't compatible.

Bronze - Cost effective self-lubricating material for pressures below 150 PSI.

Seals: Buna-N lip seal is standard. **Following are optional:**

Viton Lip Seal - Suitable for temperatures to 400°F and some solvents and acids.

Teflon Packing - Used for higher temperatures and liquids which are not compatible with either Viton or Buna N.

Grafoil Packing - Suitable for use with heat transfer fluids to 585°F.

Mechanical Seals - John Crane type 21 with Buna-N, Viton, EPR, or neoprene elastomers. John Crane type 9 available with Teflon or Kalraz sealing elements for high temperature. Type 2 or Type 2B available for pressures exceeding 250 PSI.*

Mounting Configurations: bedplate, close-coupled, and hub mount are standard configurations. Special designs available upon request.

Outboard Ball Bearing - Used to provide extra stability for beltdrive or PTO assemblies.

Rotor Gears: Cast iron rotor is standard. **Following is optional:**

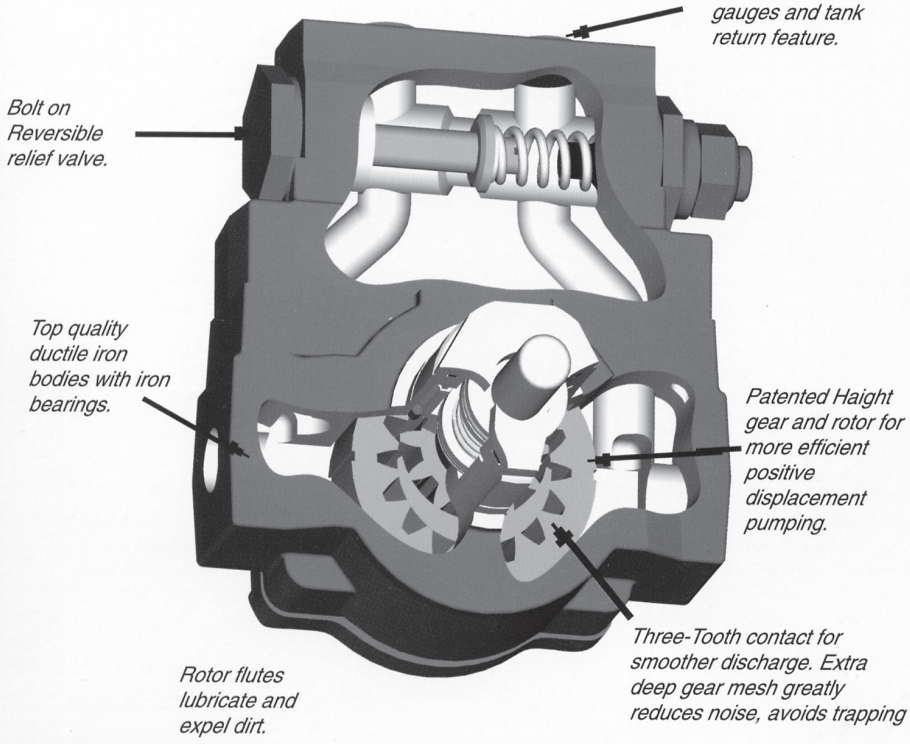
Delrin - Used with non-lubricating liquids, where noise reduction is desirable, or with abrasive fluids as a sacrificial member.

Teflon - Alternative material for highly corrosive liquids which are not compatible with Delrin.

Ni-Resist #2 - Used in standard construction with mildly corrosive liquids.

*High temperature/high pressure applications - require substantially more documentation than normal applications (400°F and/or 150psi). Haight has a number of possible solutions available to meet your specific requirements, which can be easily added to our Universal pump design.

HAIGHT "GEAR-WITHIN-A-GEAR" FEATURES:



Series U - Round Hub

Sizes 1, 3 & 5 gpm Models

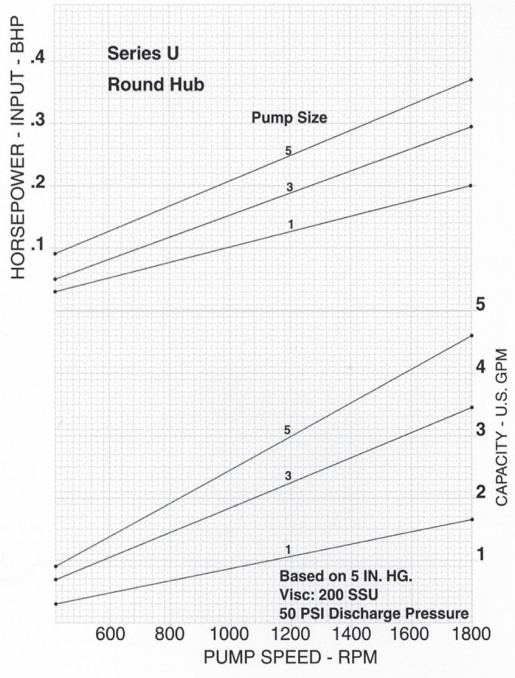
Haight offers three sizes of pumps in the round hub U-Series. All sizes are available with an optional bolt-on relief valve which can function in either the return to suction, or return to tank mode.

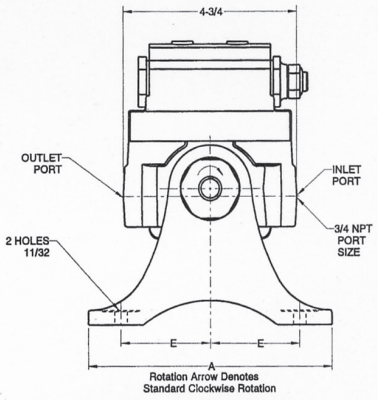
Compact rugged, and easy to maintain, these pumps are ideally suited to close-coupled mounting, or direct mounting to the motor (See pages 13 and 14 for complete dimensional information).

All Series U Round Hub Pumps feature:

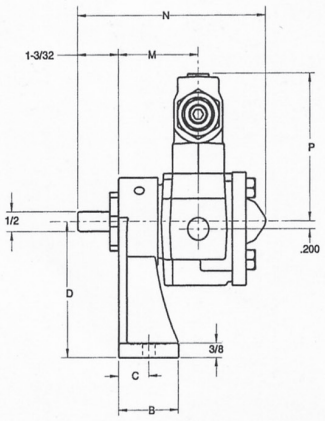
- operate at standard motor speeds, eliminating the need for pulleys/gear reducers
- involute gear design offers excellent suction characteristics, minimizes noise and reduces internal bypassing
- self-lubricating gramix iron bearings
- easy to maintain Buna-N lip seals. Installed in the UniverSeal design for simple and quick replacement, or change to alternate seal style.
- optional mounting brackets which are designed for in-line mounting with standard NEMA frame size motors or bedplate mounting.
- optional bearing, rotor and seal materials which allow effective operation up to 620°F and 600 psi.

5U pump with motor





SHAFT END VIEW



RIGHT SIDE

		A	B	C	D	E	M	N	P
Brackets	W48	3 1/8	1 7/16	23/32	3	1			
	E56	6 1/2	1 5/8	13/16	3 1/2	2 7/16			
Pumps w/relief valve	1-3U						2 1/4	5 1/8	3 3/4
	5U						2 1/4	5 1/8	3 3/4
	6U						2 3/16	5 3/4	4 1/16
	8U						2 3/16	5 15/16	4 1/16

Series U - Round Hub

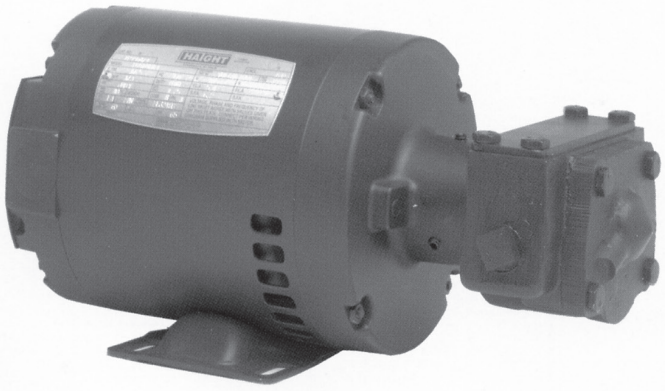
Sizes 6 & 8 gpm Models

Haight offers two additional sizes in our round hub U Series. Both models are available with a bolt-on Relief Valve which can function in either a return to suction, or return to tank mode. Both of these new sizes are interchangeable with the round hub U Series and earlier D & DR Series pumps.

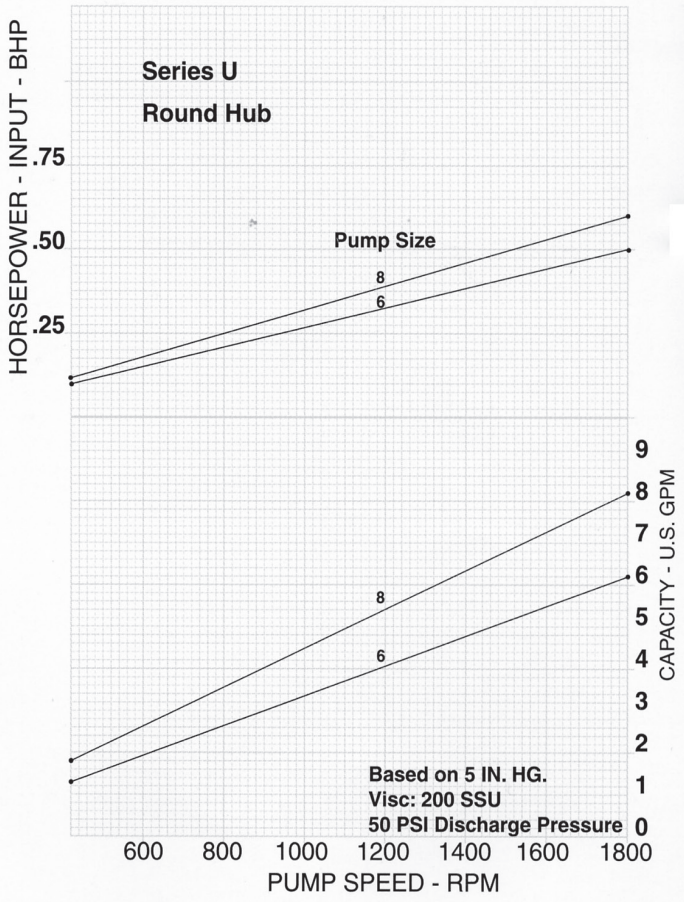
Compact rugged, and easy to maintain, these pumps are ideally suited for close-coupled mounting, or direct mounting to the motor (See pages 13 and 14 for complete dimensional information).

All Series U Round Hub Pumps feature:

- operate at standard motor speeds, eliminating the need for pulleys/gear reducers
- gerotor gear design which offers excellent suction characteristics, and minimizes internal bypassing
- self-lubricating grammix iron bearings
- easy to maintain, buna lip seal installed in the UniverSeal design for simple and quick replacements, or change to an alternate shaft seal type
- optional mounting brackets designed for inline mounting with NEMA frame motors, no shimming or alignment required
- optional bearings, and seal types/materials which allow effective operation up to 620°F and 600 PSI.



6 GPM Pump with round hub mount and motor.
See Page 7 for bracket dimensions.



John Wooden Quote

Adversity is the state in which man mostly easily becomes acquainted with himself, being especially free of admirers then.

Series U - Square Flange

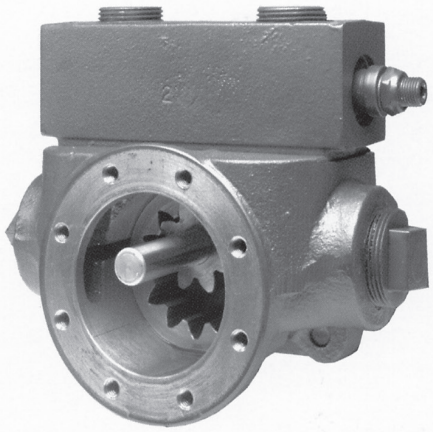
Size 10, 15, 20, 24, 30, & 40 gpm Models

Haight offers six sizes of pumps in the square flange U-Series. All sizes are available with a bolt-on Relief Valve which can function in either a return to suction, or return to tank mode. All U-Series pumps are interchangeable with earlier D & DR Series pumps

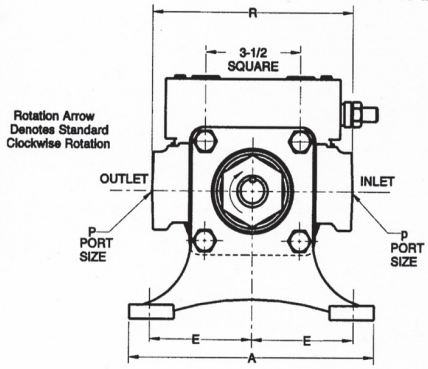
Compact, rugged, and easy to maintain, these pumps are ideally suited to close-coupled mounting to the motor or footed mounting. Haight Pumps bolt-on footed brackets match standard NEMA motor height eliminating pump or motor shim-ming. Each bracket size is designed to align the pump and motor shaft heights without shim blocks. (See pages 8 and 9 for complete dimensional information).

All Series D Square Flange Pumps feature

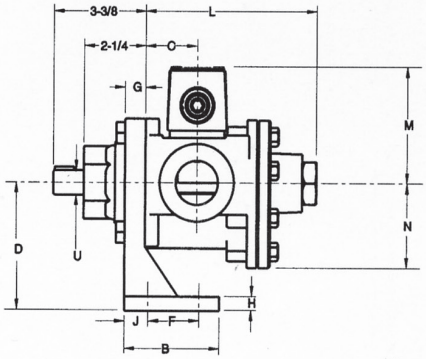
- standard motor speeds, eliminating the need for pulleys or gear reducers.
- involute gear design to minimize noise.
- self-lubricating gramix iron bearings.
- easy to maintain Buna-N lip seals, installed in the UniverSeal design for simple and quick replacements or change to an alternate shaft seal type.
- optional mounting brackets which are designed for in-line mounting with standard NEMA frame size motors.
- optional bearing and seal materials which allow effective operation up to 625^0 F and 600 psi.
- simple field conversion on relief valve models to tank return mode.
- field reversible seal vent.



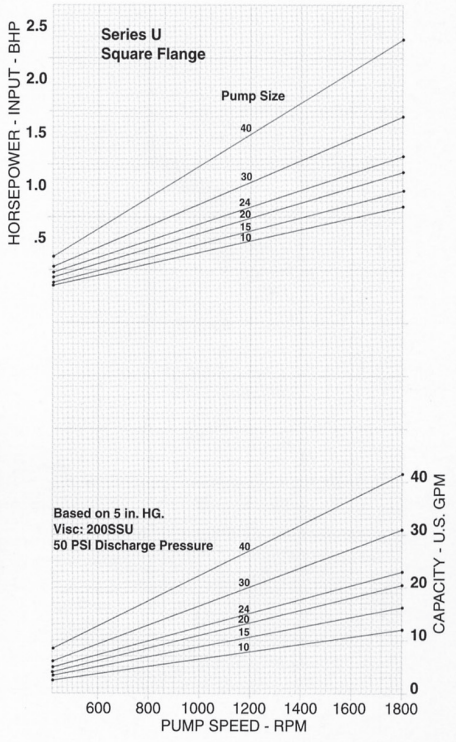
24U pump shown with relief valve



SHAFT END VIEW



RIGHT SIDE VIEW



Pump

With R.V.	W/O R.V.	P NPT	R	U	C	L	M with R.V.	M w/o R.V.	N
10U	10U	1	7	5/8	1 15/16	6 3/16	4 1/16	2 1/4	2 3/4
15U	15U	1 1/4	7	5/8	1 15/16	6 3/16	4 1/16	2 1/4	2 3/4
20U	20U	1 1/4	7	5/8	1 15/16	6 3/16	4 1/16	2 1/4	2 3/4
24U	24U	1 1/2	7 3/8	7/8	1 29/32	6 5/16	4 1/16	2 1/4	3
30U	30U	1 1/2	7 3/8	7/8	1 29/32	6 5/16	4 1/16	2 1/4	3
40U	40U	1 1/2	7 3/8	7/8	1 29/32	6 5/16	4 1/16	2 1/4	3

Bracket

Size	D	A	B	E	F	H	G	J
H140	3 1/2	7	2 1/8	2 3/4	0	1/2	5/8	1 1/2
H182	4 1/2	9	3 1/2	3 3/4	1 7/8	1/2	3/4	7/8
H213	5 1/4	10	3 1/2	4 1/4	1 7/8	1/2	3/4	7/8
H254	6 1/4	12 1/8	4 5/8	5	1 1/2	11/16	3/4	11/16

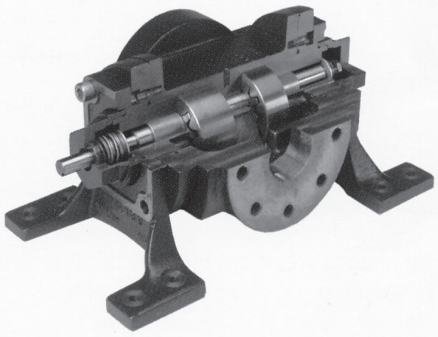
Series D - Double Pumps

Size 44, 54, 60, 70 & 80 gpm Models

Haight offers five sizes of pumps in the Double pump series. Available with a variety of optional seal, bearing and rotor materials. The Double Series offers exceptionally compact design, plus low shear and noise characteristics. Compact, rugged and simple, these pumps are ideally suited for close-coupled mounting, which eliminates the need for expensive gear boxes, and prevents coupling alignment problems.

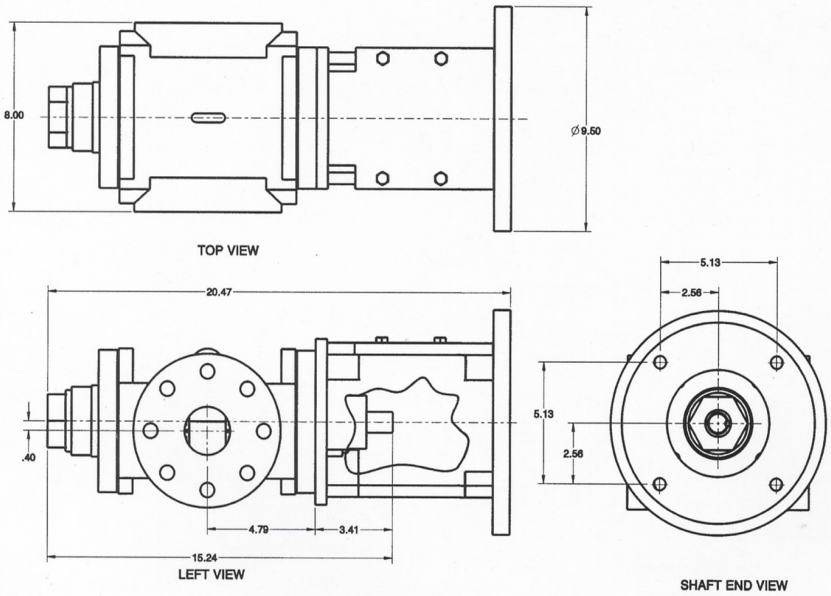
All Series D, Double Pumps feature

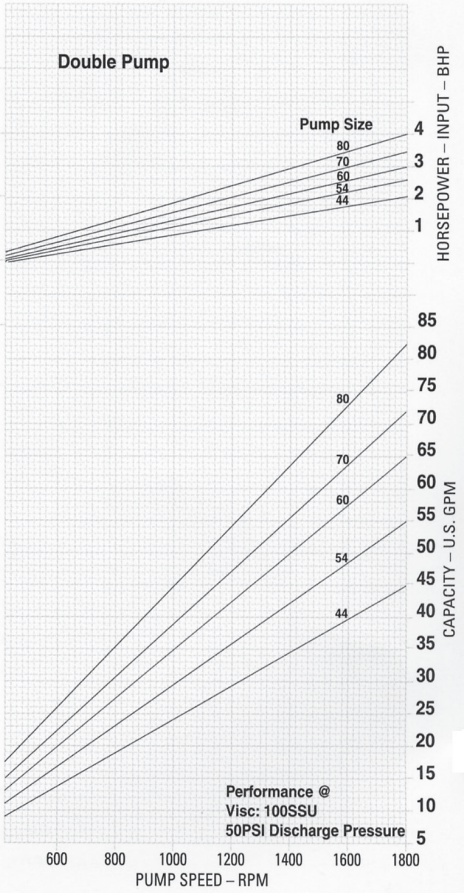
- standard motor speeds, eliminating the need for pulleys and gear reducers.
- involute gear design to reduce noise.
- standard UniverSeal shaft design for excellent flexibility.
- close-coupled mounting to eliminate motor and pump difficulty.
- 300# ANSI flange and NPT inlet/ outlet connection.
- reversible flow, plus field convertible seal venting.



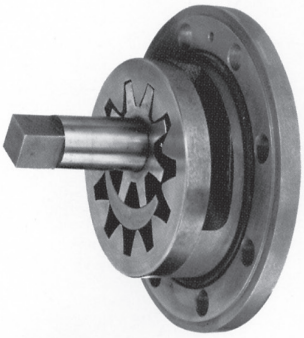
54D Double Pump with a H182 bracket

Haight Double Pump with Z213D Bracket



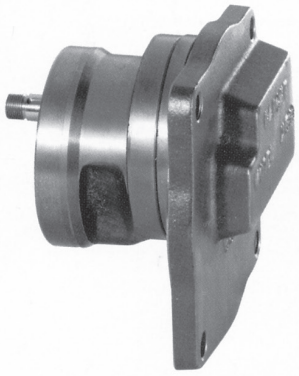


Unique Pump Configurations Developed for OEM Customer Applications



• Series X Skeleton Pumps:
These custom-designed pumps are ideal for built-in lubrication applications on air compressors, gear boxes, engines, and other rotating equipment. Series X pumps feature compactness, positive displacement, through drive and no casing is required.

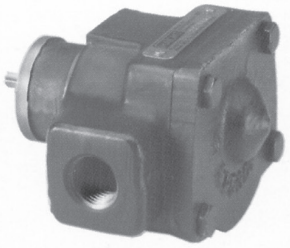
The Series X Skeleton pump shown is an example of the Haight Pump Division's ability to meet a customer's job specifications and production requirements. Haight engineers will meet with you to determine your specific needs for a non-standard design. They will then translate your needs into a positive displacement pump to meet your requirements.



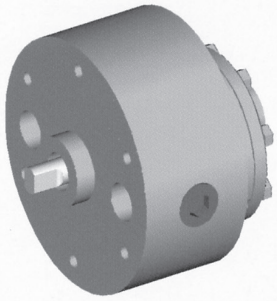
• Flange Mounted Pumps:
Ideal for use on diesel engines, fuel oil boosters, gear reducers, or for lubricating oil pumps on engines and compressors. Flange mounted pumps are compact, light-weight and designed to mount directly on your equipment.

The flange mounted pump shown was developed for us with a gear reducer. Haight engineers later applied this design principle to fit other customer requirements. When your project plans call for a custom-built positive displacement pump, Haight can analyze your needs and design a pump to meet them.

• G - Series:
The G - Series pumps are an affordable, high performance design series which utilizes the dynamic crescent, Gerotor gear configuration. This internal gear configuration offers exceptional suction capability, and compact size at a competitive price. Currently available in two sizes, with limited options, these pumps are physically interchangeable with existing D and E series pumps.

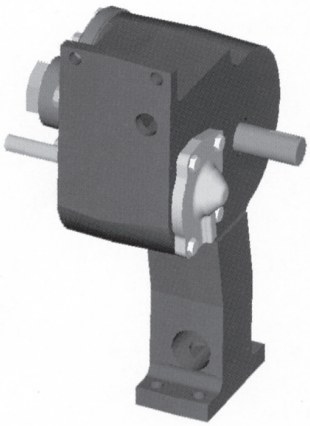


• E - Series:
The E - Series pumps are an economical, high performance modification of our proven D-Series model. These pumps are particularly well suited for use in direct drive, hub mounted configurations where size, weight, and cost are crucial performance criteria in an application. The rugged simplicity of the E - Series is proven thousands of times every year in high temperature applications throughout the world. Available with limited option selection, contact your local Distributor for additional information.



3D CAD rendered drawing

•Dual Pumps:
Dual Pumps on a common shaft are available in 15 possible flow combinations, up to 8gpm flow capacity, for each pump. Dual pump designs save valuable space and cost for system designers.



•Dual Drive, Dual Flow Pumps:
Designed to be an integral part of the system it supports, this lubrication pump combines both the pre-lube, and primary lube pump in a single housing. Dual drive shafts, and dual gear sets function on a common inlet and discharge channel, reducing space requirements, simplifying the system piping arrangement, and eliminating alignment problems.

• Encased, Flange Mounted, Reversible Pumps:
These custom pumps provide an enclosed gear set coupled with flange mounted, direct drive design features. System designers save space, weight, and cost by incorporating the pump into their system. The durable and simple internal gear design has been proven to be a reliable system component for nearly 70 years.

3D CAD rendered drawing

Haight Pumps

Working Together To Create Solutions That Exceed Expectations

HOT OIL PUMPS

Are these difficult operating standards for your pump?

- High temperatures
- possible solidification of the fluid at ambient temperatures
- exceptional reliability
- economical price.

They're not difficult standards for Haight Pumps!

We have decades of experience developing and evolving pump and motor combinations that not only survive, but thrive in these difficult applications.

Haight Pumps:

- Reduce time required for either manufacturing or maintenance with simplified pump/piping alignment feature
- Speed up routine inspection procedures with easy cover removal design
- Improve reliability with 100% factory inspection and testing at operating temperature
- Use less valuable equipment space with the compact hub mount design
- Increase employee comfort by reducing ambient noise levels during pump operation
- Improve operating reliability with motors especially designed for this demanding application
- Extend service life and eliminate external piping for continuous operation with an optional internal seal flush design.

PUMPS FOR FILTRATION SYSTEMS

Are contaminated fluids, poor suction conditions, intermittent remote operation, severe usage, and difficult operating environments a problem? Haight Pumps personnel have worked "hand-in-hand" with customers for decades to design, and build pumps that thrive in these challenging conditions.

Haight Pumps:

- Increase pump service life in abrasive applications with optional "Hatrided" or "extra hard" design
- Reduce assembly problems associated with mounting and alignment with our close-coupled mounting design
- Reduce time required for either manufacturing or maintenance with simplified pump/piping feature
- Improve flexibility and versatility with the optional, externally adjustable, internal relief valve.
- Extend service life and eliminate external piping for continuous operation with an optional internal seal flush design
- Reduce maintenance time for seal adjustment and replacement with a screw-on seal casing

Testimonials

"Haight Pump provides us the design flexibility and features we need to meet our customers application demands. They consistently meet our demanding lead-time and delivery requirements."

Harvey R. Schade, President
Como Industrial Equipment, Inc.

"We have been able to develop a product partnership with Haight Pump that truly enhances our ability to compete in the market."

Ted Bethke, Purchasing Manager
Prince Castle, Inc.

"When we needed a completely new pump design Haight Pump delivered! They were able to move from concept development to first prototype in just four weeks. Haight Pump really delivers on their service promise."

Peter Wiegers, Project Engineer
Vilter Manufacturing Corporation

"Haight Pump has been our strategic partner since we started business. They really deliver quality products and superior service."

Mike Pierson, Vice President
General Sales Manager
Beckwith & Kuffel, Inc.

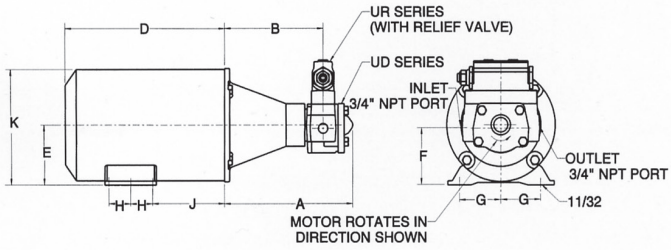
"We rely on the staff at Haight Pump to work closely with our engineering group to develop successful pumping solutions for the extreme applications we regularly encounter."

George McMahon, Director of Engineering
Pitco Frialator, Inc.

Close Coupled Mounting Dimensions

Description: Designed for compactness, these Closed Coupled pumps require less space and have lower overall height. This permits their use in designs where space is at a premium. All Haight Series D Round Hub pumps (described on Pages 7 & 8) and Square Flange Pumps (described on Page 9) are available for close coupling.

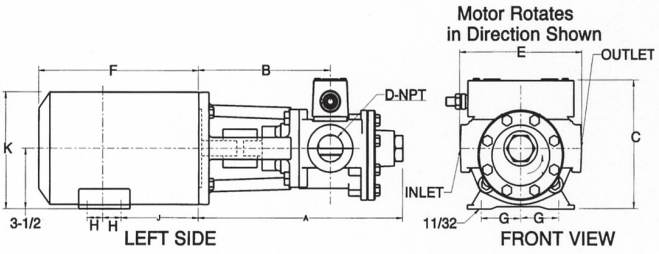
Haight Close Coupled pumps may be used with all NEMA "C" faced motors as shown in the drawings and charts below, "Z" brackets utilize footed motors, "Y" brackets utilize footless motors. Pump, bracket, coupling and electric motor can be furnished. Drip-proof, totally enclosed, wash down duty and explosion-proof motor enclosures are available.



Z56RO Bracket For 1 - 8 gpm Pumps - 56-145 frame footed motor

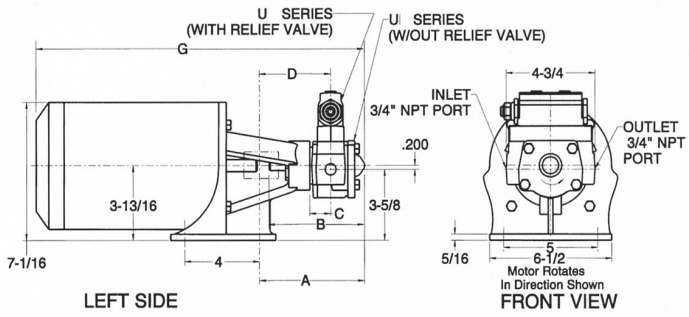
		A	B	D	E	F	G	H	J	K
Model	1U	$7^{13}/_{16}$	$5^{15}/_{16}$							
	3U	$7^{13}/_{16}$	$5^{15}/_{16}$							
	5U	8	$5^{15}/_{16}$							
	6U	$8^{5}/_{16}$	6							
	8U	$8^{7}/_{16}$	6							
Frame	48			$9^{3}/_{8}$	3	$2^{13}/_{16}$	$2^{1}/_{8}$	$1^{3}/_{8}$	$2^{5}/_{16}$	$5^{13}/_{16}$
	56			$9^{3}/_{4}$	$3^{1}/_{2}$	$3^{5}/_{16}$	$2^{7}/_{16}$	$1^{1}/_{2}$	$2^{9}/_{16}$	$6^{3}/_{4}$

"D" Dimension will vary with motor enclosure



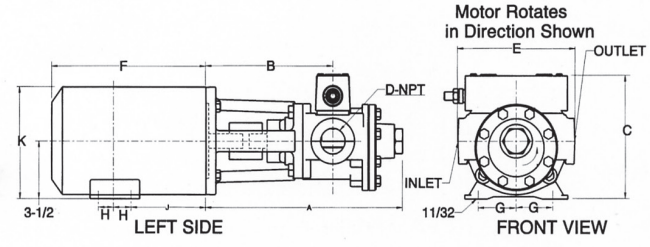
Z56SO Bracket For 10 - 40 gpm Pumps - footed motor

		A	B	C	D	E	F	G	H	J	K
Model	10U	$12^{5}/_{16}$	$8^{1}/_{6}$	$7^{13}/_{32}$	1	7					
	15U	$12^{5}/_{16}$	$8^{1}/_{6}$	$7^{13}/_{32}$	$1^{1}/_{4}$	7					
	20U	$12^{5}/_{16}$	$8^{1}/_{6}$	$7^{13}/_{32}$	$1^{1}/_{4}$	7					
	24U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
	30U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
	40U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
Frame	56						$9^{3}/_{4}$	$2^{7}/_{16}$	$1^{1}/_{2}$	$2^{9}/_{16}$	$6^{3}/_{4}$
	143						10	$2^{3}/_{4}$	2	$2^{3}/_{4}$	$6^{13}/_{16}$
	145						10	$2^{3}/_{4}$	$2^{1}/_{2}$	$2^{3}/_{4}$	$6^{13}/_{16}$



Y56R Bracket For 1 - 8 gpm Pumps - 56-145 frame unfooted motor

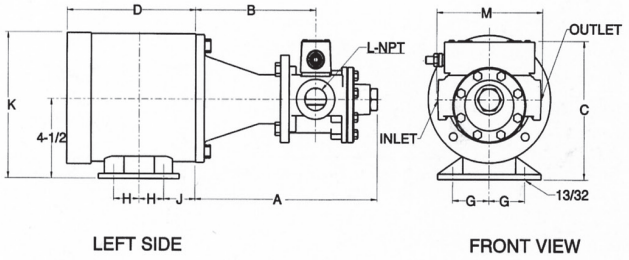
Model	A	B	C	D	G	
					Motor Frame	
					48	56
1U	$5^{5}/_{8}$	$5^{1}/_{8}$	$1^{3}/_{16}$	$3^{7}/_{8}$	$17^{3}/_{16}$	$17^{9}/_{16}$
3U	$5^{5}/_{8}$	$5^{1}/_{8}$	$1^{3}/_{16}$	$3^{7}/_{8}$	$17^{3}/_{16}$	$17^{9}/_{16}$
5U	$5^{13}/_{16}$	$5^{5}/_{16}$	$1^{3}/_{16}$	$3^{7}/_{8}$	$17^{3}/_{8}$	$17^{7}/_{16}$
6U	$6^{1}/_{4}$	$5^{3}/_{4}$	$1^{1}/_{8}$	$3^{13}/_{16}$	$18^{3}/_{16}$	$18^{3}/_{16}$
8U	$6^{7}/_{16}$	$5^{15}/_{16}$	$1^{1}/_{8}$	$3^{13}/_{16}$	18	$18^{3}/_{8}$



Y56S Bracket For 10 - 40 gpm Pumps - 56-143 frame unfooted motor

Model	A	B	C	D	E	F	G	H	J	K
10U	$12^{5}/_{16}$	$8^{1}/_{16}$	$7^{13}/_{32}$	1	7					
15U	$12^{5}/_{16}$	$8^{1}/_{16}$	$7^{13}/_{32}$	$1^{1}/_{4}$	7					
20U	$12^{5}/_{16}$	$8^{1}/_{16}$	$7^{13}/_{32}$	$1^{1}/_{4}$	7					
24U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
30U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
40U	$12^{7}/_{16}$	$8^{1}/_{32}$	$7^{13}/_{32}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
Frame										
56						$9^{3}/_{4}$	$2^{7}/_{16}$	$1^{1}/_{2}$	$2^{9}/_{16}$	$6^{3}/_{4}$
143						10	$2^{3}/_{4}$	2	$2^{3}/_{4}$	$6^{13}/_{16}$
145						10	$2^{3}/_{4}$	$2^{1}/_{2}$	$2^{3}/_{4}$	$6^{13}/_{16}$

Close Coupled Mounting Dimensions (continued)



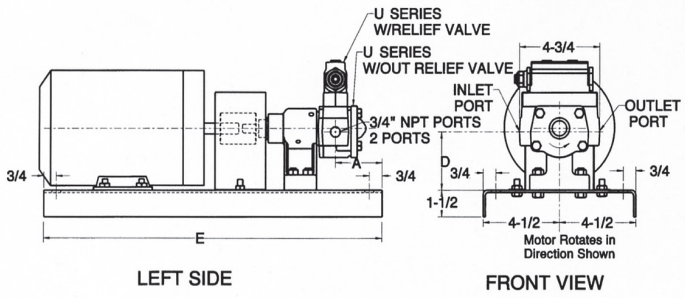
Z182S Bracket - 10-40 gpm Pumps for 182/184 frame footed motors

		A	B	C	L	M	D	G	H	J	K
Model	10U	$12^{7}/_{8}$	$8^{19}/_{32}$	$8^{7}/_{16}$	1	7					
	15U	$12^{7}/_{8}$	$8^{19}/_{32}$	$8^{7}/_{16}$	$1^{1}/_{4}$	7					
	20U	$12^{7}/_{8}$	$8^{19}/_{32}$	$8^{7}/_{16}$	$1^{1}/_{4}$	7					
	24U	13	$8^{9}/_{16}$	$8^{7}/_{16}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
	30U	13	$8^{9}/_{16}$	$8^{7}/_{16}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
	40U	13	$8^{9}/_{16}$	$8^{7}/_{16}$	$1^{1}/_{2}$	$7^{3}/_{8}$					
Frame*	182						*	$3^{3}/_{4}$	$2^{1}/_{4}$	$3^{1}/_{2}$	$8^{3}/_{4}$
	184						*	$3^{3}/_{4}$	$2^{3}/_{4}$	$3^{1}/_{2}$	$8^{3}/_{4}$

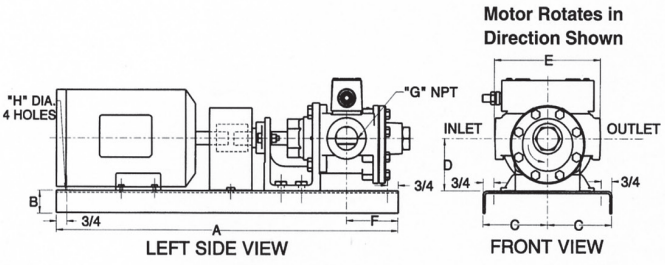
*D Varies with Frame Used

Bed Plate Asemblies

Designed specifically for mounting on bedplate or machinery plate. Motor height brackets eliminate the need for mounting blocks. These pumps are coupled to the motor with flexible couplings. In addition to the flexible coupling, bedplate assemblies include mounting bracket, coupling guard, and rigid steel bedplate. These mountings are available to meet a wide variety of requirements utilizing the Haight pumps described on pages 7, 8, and 9.



Model	Bedplate	Frame	A	D	E
1-5U			$2^{13}/_{16}$		
6 & 8U			$2^{3}/_{4}$		
	S56B	48		3	20
		56, 143 145		$3^{1}/_{2}$	
	S140B	182 184		$3^{1}/_{2}$	24



Model 10U

Bedplate	Frame	A	B	C	D	E	F	G	H
S140B	56, 143 145	24	$1^{1}/_{2}$	$4^{1}/_{2}$	$3^{1}/_{2}$	7	$3^{7}/_{8}$	1	$^{17}/_{32}$
S180B	182, 184	26	$1^{5}/_{8}$	$5^{1}/_{2}$	$4^{1}/_{2}$	7	$3^{7}/_{8}$	1	$^{21}/_{32}$
S213B	213, 215	30	$1^{5}/_{8}$	$5^{1}/_{2}$	$5^{1}/_{4}$	7	$3^{7}/_{8}$	1	$^{21}/_{32}$

Model 15U - 20U

S140B	56, 143 145	24	$1^{1}/_{2}$	$4^{1}/_{2}$	$3^{1}/_{2}$	7	$3^{7}/_{8}$	$1^{1}/_{4}$	$^{17}/_{32}$
S180B	182, 184	26	$1^{5}/_{8}$	$5^{1}/_{2}$	$4^{1}/_{2}$	7	$3^{7}/_{8}$	$1^{1}/_{4}$	$^{21}/_{32}$
S213B	213, 215	30	$1^{5}/_{8}$	$5^{1}/_{2}$	$5^{1}/_{4}$	7	$3^{7}/_{8}$	$1^{1}/_{4}$	$^{21}/_{32}$

Model 24U - 40U

S140B	56, 143 145	24	$1^{1}/_{2}$	$4^{1}/_{2}$	$3^{1}/_{2}$	$7^{3}/_{8}$	$3^{5}/_{8}$	$1^{1}/_{2}$	$^{17}/_{32}$
S180B	182, 184	26	$1^{5}/_{8}$	$5^{1}/_{2}$	$4^{1}/_{2}$	$7^{3}/_{8}$	$3^{5}/_{8}$	$1^{1}/_{2}$	$^{21}/_{32}$
S213B	213, 215	30	$1^{5}/_{8}$	$5^{1}/_{2}$	$5^{1}/_{4}$	$7^{3}/_{8}$	$3^{5}/_{8}$	$1^{1}/_{2}$	$^{21}/_{32}$

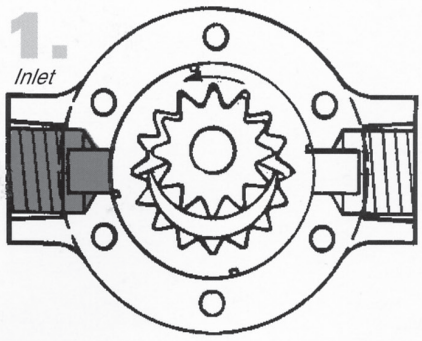
HAIGHT'S UNIQUE "GEAR WITHIN A GEAR" PUMPING PRINCIPLE

The most reliable of today's internal gear pumps are based on the "gear within a gear" principle pioneered Haight Pumps, nearly seventy years ago. While the differences may seem insignificant at first glance, the benefits for the end user are substantial.

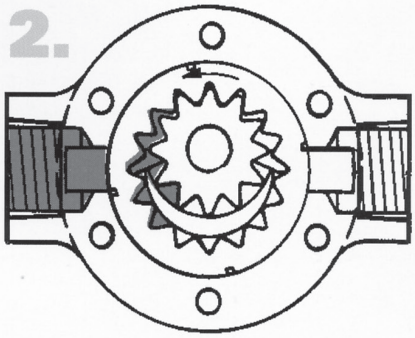
The smaller, inner drive gear (pinion), and shaft assembly are supported by bearings on *both* sides of the pinion to resist movement, unlike other designs. The larger gear (rotor) is hydraulically balanced within the pump housing, finding its optimal position, naturally. The user benefits in several important ways:

- Lower initial investment, Haight pumps operate at standard motor speeds, thus eliminating the need for expensive gear boxes, even for heavier fluids
- Fewer parts and adjustments means less maintenance time, no thrust bearings and end plates to maintain
- Close-coupled motor mounting eliminates pump and motor alignment problems, bedplate installation costs, and they use less space than conventional gear pumps designs
- Because the rotor is rotating at a fraction of the motor speed, wear and noise are reduced, and fluid flow into the gears is more effective. This keeps the pump head size and resulting cost, to a minimum while simultaneously extending the service life of the pump.
- True, three tooth engagement between the rotor and pinion provides superior flow characteristics
- Greater freedom to select the best rotor, pinion, and shaft materials for the individual customer application, without extravagant cost.

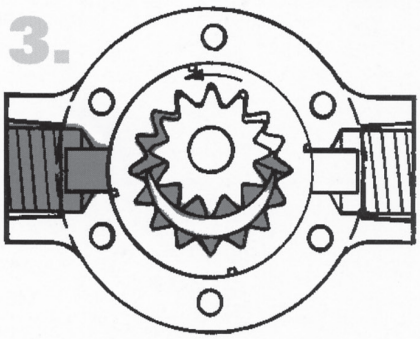
Simple idea, great results!



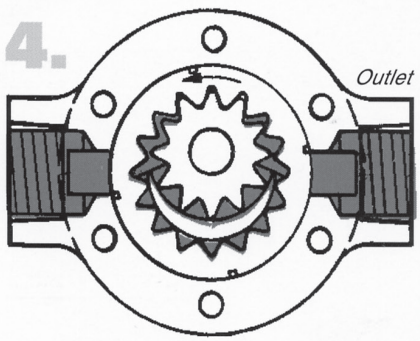
The liquid being pumped (dark blue) enters the pump through the inlet (suction) port.
In this example, the inlet (suction) port is on the left.



As the inner (pinion) and outer (rotor) gears rotate, the liquid flows around both sides of the rotor into the gears. The crescent divides this flow and serves as a positive seal between the inlet (suction) and outlet (discharge) ports.



In this illustration, the pump is almost completely filled with the liquid which is about to be discharged through the outlet (discharge) port on the right.
Note that the exclusive Haight three-tooth gear contact assures smooth discharge flow.



The pump is now completely filled. The liquid being pumped flows in through the inlet (suction) port, moves through the pump, and leaves through the outlet (discharge) port in a continuous flow.

Super Flow From Superior Pumps

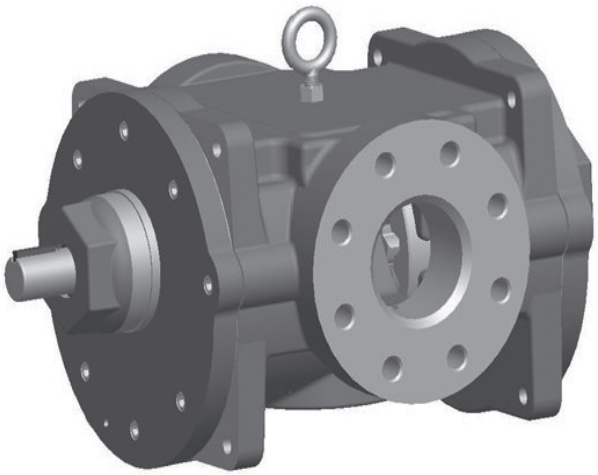
Haight Pump is proud to indroduce our newest addition. The "Universeal" design has been extended to handle flow rates from 120 gpm to 400 gpm! Flexible, quick, and incredibly reliable- Haight's Ductile Iron Unniversal Series Pumps are superior to the rest!

10 sizes ranging from 120gpm to 400 gpm

UniverSeal built in shaft seal fexibility

Broad range of field changeable seals

Close coupled design eliminates shaft misalignment related failures



3 inch NPT ports in 120-240 gpm

4 inch NPT ports in 250-400 gpm

Only two moving parts reduces wear

"Gear within a Gear" design for quiet operation

Standard construction features a ductile iron housing, steel shaft and pinion gears, iron rotor and bearings, with a Buna N lip seal and elastomers. Alternate shaft seal and elastomer options include Neoprene, Silicone, and Teflon.

Application possibilities include: Petroleum products, Lubrication systems, Food processing, Soap and detergent products, Paper products, Shipbuilding, and Mining, among many others.

HAIGHT® PUMPS
DIVISION OF: BAKER MANUFACTURING CO., LLC

Large Pumps that Perform

"The Great Depression, like most other periods of severe unemployment, was produced by government mismanagement rather than by any inherent instability of the private economy."

"I am favor of cutting taxes under any circumstances and for any excuse, for any reason, whenever it's possible."

"Most of the energy of political work is devoted to correcting the effects of mismanagement of government."
— Milton Friedman

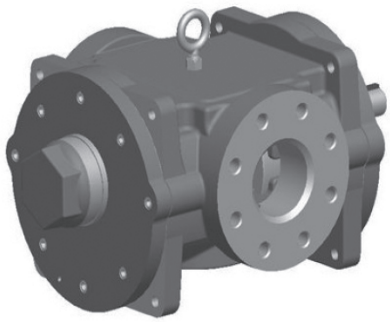
HAIGHT® PUMPS
DIVISION OF: BAKER MANUFACTURING CO., LLC

SUPER FLOW FROM SUPERIOR PUMPS

DIU SERIES 120-240 GPM ROTARTY GEAR PUMPS

The First Release of the New Large Flow DIU Series Pumps

Haight Pump is proud to announce the new large flow DIU series pumps. The "Universal" design has been extended to handle flow rates from 120-240 gpm! Flexible, quick, and incredibly reliable; everything you have come to expect from Haight Pump.



Key Features:

- ❑ 3 sizes ranging from 120 gpm to 240 gpm
- ❑ Built in Shaft Seal Flexibility
- ❑ Less moving Parts reduces Maintenance and Wear
- ❑ Close Coupled design eliminates shaft mis-allignment and related failures
- ❑ 250 PSI Discharge Pressure Capability
- ❑ 300# ANSI Flange; Inlet & Outlet Ports
- ❑ "Gear within a Gear" design for quiet operation
- ❑ Direct Drive - speeds to 1800 RPM

Standard Construction Features:

- Ductile Iron Housing
- Steel Shaft and Pinion Gears
- Iron Rotor and Bearings
- Buna N Lip Seals and Elastomers

Options:

- Alternate Shaft Seal and O-ring Elastomer Materials – Neoprene, Silicone, Teflon or Viton
- Lip seals
- Type 21, 2B, and 2 mechanical seals
- Venting options include: clockwise, counter-clockwise, and bi-rotational
- Optional Relief Valve

Applications:

• Petroleum Products (fuel transfer/bulk transfer)
• Lubrication Systems • Food Processing • Soap
• Detergent Products • Paper Products • Ship building
• Mining

NEW Sizes Now Available
120 GPM
180 GPM
240 GPM

Other Sizes Available		
1 GPM	10 GPM	44 GPM
3 GPM	15 GPM	54 GPM
5 GPM	20 GPM	60 GPM
7 GPM	24 GPM	70 GPM
8 GPM	30 GPM	80 GPM
9 GPM	40 GPM	

APPLICATION SOLUTIONS BY TYPES OF SYSTEMS

Application Category	Typical Applications	Application Specific Adaptations
Refrigeration Systems	• High pressure compressor lubrication • Liquefied refrigerant circulation	• Custom mounting • Contaminated lubricants • High inlet pressures • High pressure/thin fluid conditions • Custom seal configurations
Lubrication Systems	• Shipboard systems • Power transmission systems • Conveyor systems • Generator systems • Compressors • CNC machinery • Forming machinery • Lubricant cooling systems	• Corrosion resistant designs • Custom mounting • Special direct drive designs • Double pump designs
Filtration Systems	• Electric transformers • Cooking oil • Fuels • Hydraulic fluids • Lubrication products • Machine tool coolants • Process stream by-products	• High inlet vacuum designs • Special seals • Hardened and corrosion resistant construction • High temperature designs • Special pump designs
Fueling	• Aircraft refueling systems • Portable refueling systems • Engine or remote mounted fuel systems	• Direct drive • DC drive • Pneumatic drive • Hydraulic drive • Custom mounting • Special sealing designs
Injection Systems	• Expandable foams • Resins • Adhesives • Hot tar • Thin film lubrication for metal forming • Agricultural chemicals • Animal feed supplements	• Custom mounting designs • Hardened and corrosion resistant designs • High temperature conditions • Tractor and truck mounted PTO drives
Marine	• Main engine and drive train lubrication • Loading and unloading fuel & lubrication products • Salt water wash-down systems • Winch lubrication • Fish processing waste • Bilge scavenging pumps • Aircraft/helicopter refueling systems	• Custom mounting and drive designs • Corrosion resistant materials • Spark resistant construction
Power Transmissions	• Gear box bearing and gear lubrication • Transmission lubrication • Drive shaft bearing lubrication • Lubricant cooling systems • Lubricant filtration	• Custom mounting and drive designs
Thermal Processing	• High temperature circulation • High temperature filtration	• Special construction features for elevated temperature operations
API Type Application	• Tank battery circulation • Sampling systems • LAC systems • Intermediate pressure pipeline transfer	

AQ80

The Aqua Genie Constant Pressure Valve

The original residential well, constant pressure valve. When installed in conjunction with any pump & pressure tank, AquaGenie provides constant, steady pressure for your shower, sprinklers, and any other household fixture or appliance that uses water. **AquaGenie eliminates the pressure fluctuations** that are typically associated with pressure tank systems and makes your private well feel like "city water". It is easily retrofittable to existing pump/tank systems.

Features:

- ❏ **Constant pressure** at flow rates of **1/2 GPM or higher**, eliminating the annoying pressure fluctuations common with pump/tank systems.
- ❏ **Pump runs continuously** while service is needed, **eliminating short cycling**, the major cause of motor wear and failure.
- ❏ Handles **flow rates up to 20 gpm**. For flow rates above 20 gpm, AquaGenies may be connected in parallel to handle each 20 gpm increment.
- ❏ **Retrofittable** to any existing pump & pressure tank system.

AQ80

Works at any flow rate **above 1/2 GPM. Provides constant pressure** at each specific flow rate delivered by the pump. (Pressure will be slightly different for each flow rate.) A pressure tank is recommended for optimum performance. **Maximum operating pressure: 80 PSI.** (If installed with a submersible pump that develops more than 80 PSI at the inlet of the AQ80, use a pressure regulator to protect the AquaGenie from excessive pressure.)

Ordering Information

Ordering #	Model #	Weight
9198-7321	AQ80	2 lbs.

JACUZZI®

"The Most Trusted Name In Water"℠

AquaGenie 400

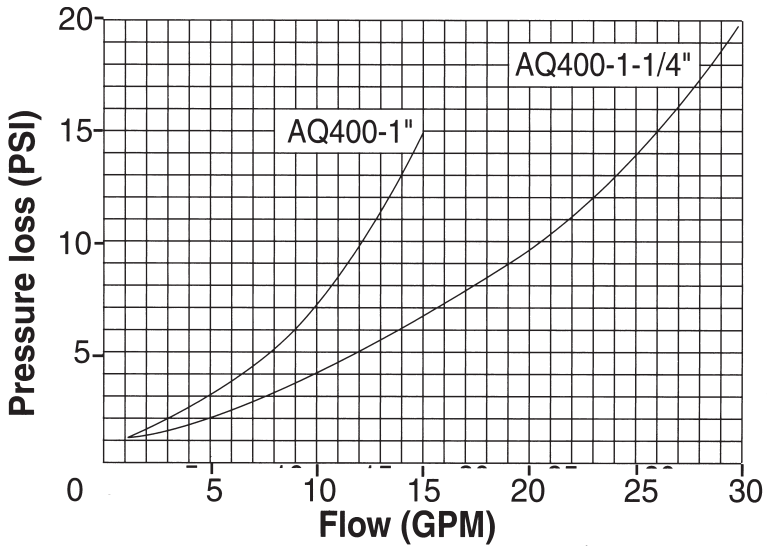
Constant Pressure Valve

Features:

- ❏ A 5 Year Warranty on the Aqua Genie 400 and newly installed Jacuzzi Water Systems equipment, including the Sandhandler submersible pump, the Sandcatcher sediment filter, and the Aqua-P.O.D.^{2} pressure tank.
- ❏ Constant "City-Like" Water Pressure.
- ❏ Eliminates pressure fluctuations.
- ❏ Easy installation into most new and existing pump/tank systems.
- ❏ Reduces pump cycling and extends motor life.

ORDERING INFORMATION

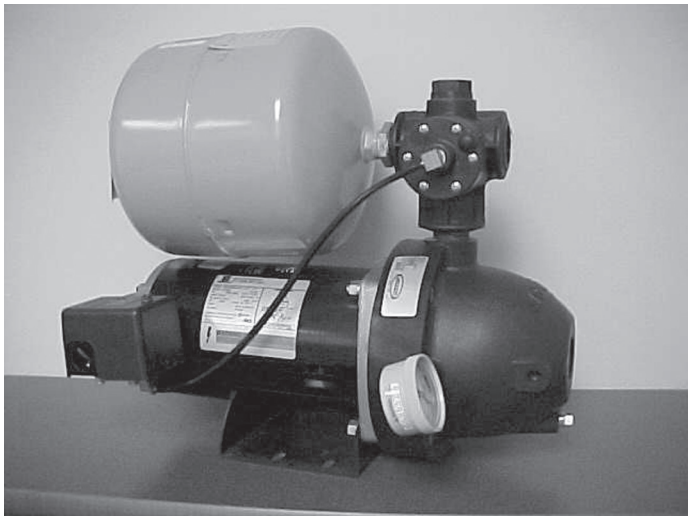
ORDER NO.	MODEL NO.	INLET	OUTLET	TANK CONN	Max. Inlet Press.	Preset Outlet Press.	Min./ Max. Press.	Min. Flow (GPM)	Max Flow (GPM)
9198-4007	AQ400-1	1" NPT	1" NPT	3/4" NPT	400psi	50psi	30-75psi	3/4	15
9198-4010	AQ400-1-1/4	1-1/4" NPT	1-1/4" NPT	1" NPT	400psi	50psi	30-75psi	3/4	30



JACUZZI®

"The Most Trusted Name In Water"®

The Aqua Genie, **Aqua Genie Kits, and Systems** AQ 80 & AQ 200



The original constant pressure home water system device. *The Aqua-Genie is an ideal system for providing fresh water reliably and under constant pressure. The AquaGenie operates on demand of 112 GPM or higher, making it economical while providing consistent service pressure that is comparable to municipal water supplies.*

FEATURES

- **Less costly** than typical tank system.
- **Constant pressure at flow rates** of 1/2 gpm or higher.
- **Starts pump on demand and runs continuously as long as service is needed**, eliminating short cycling which is the major cause of motor wear and failure.
- **Provides fresh water at all times**, eliminating flat, stale-tasting water that may occur with large tank systems.
- **Small size** allows for installation in tight areas.
- **Systems** include AquaGenie valve, tank, and jet pump.

AQ80

Provides constant pressure at any given flow rate above 1/2 GPM. As flow rate changes, the pressure changes with the pump curve and then holds constant at new flow rate. Maximum incoming pressure of 80 PSI. Small storage tank required. AQ80/AP-6i includes storage tank and pressure switch.
Important: AQ80 is recommended for jet pump applications.

Ordering No.	Model No.	Weight
9198-7032	AQ80/AP-6i	10
9198-7041	AQ200/AP-6i	13
9198-7321	AQ80	2
9198-1431	A0200	5
9102-5218	A080/5CY/AP-6i	
9102-5526	A0200/5RP2/AP-6i	

A0200

Provides constant pressure at all flow rates above 1/2 GPM. As flow rate changes, the pressure remains constant. Maximum incoming pressure of 200 PSI. Installed system must be capable of at least 75 PSI shut-off pressure. Small storage tank required. **AQ200** consists of constant pressure device AND a pressure regulator. AQ200 is factory set at 50 PSI service pressure and is adjustable between 30 and 60 PSI.
Important: AQ200 is recommended for submersible applications. AQ200/AP-6i kit includes storage tank.
NOTE: AquaGenles can be connected in parallel to handle flow rates above 20GPM.

FLEXCON QUALITY AND PERFORMANCE AT A COMPETITIVE PRICE.

[NOW AVAILABLE IN ALMOND AND TRADITIONAL BLUE]

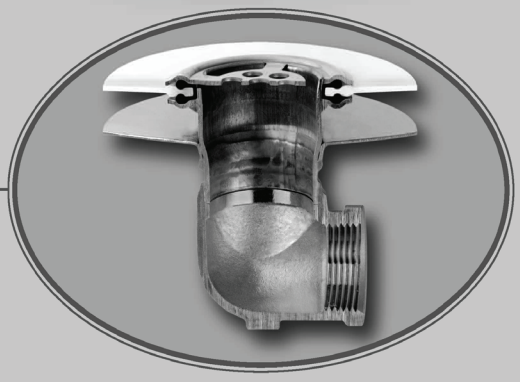
16 gauge solid steel tank, finished with highest quality urethane paint.

Water chamber is independent of tank walls, allowing diaphragms to be sized properly for each tank.

Steel clench ring regulates movement and prevents diaphragm from rubbing against tank wall.

Condensation reducing design virtually eliminates external corrosion.

Patented, welded, steel water connection has separate air and water seals.



Engineered with contractors' needs in mind, the Challenger water tank delivers CAD technology (Flexcon's famous controlled action diaphragm system) at a very affordable price. In short, you get superior air and water separation and unmatched performance.

Our patented manufacturing technique allows Flexcon to properly size the diaphragm in a full range of sizes from 14 to 119 gallons. Every Challenger tank undergoes a seam-weld test, high-pressure test, and is subjected to our famous helium test. Before leaving the factory, a final air charge check insures each tank arrives at the job site with the correct pre-charge.

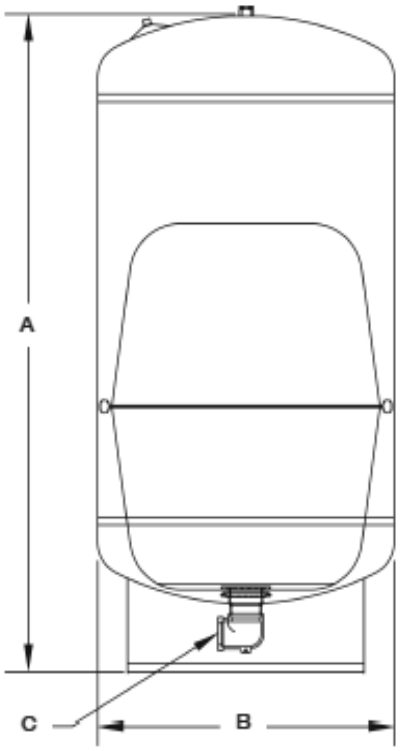
CONTROLLED ACTION DIAPHRAGM MAXIMIZES DRAWDOWN & ELIMINATES ABRASION

Flexcon stands behind every Challenger tank with a five-year warranty. Just what you would expect from Flexcon: quality and performance, guaranteed!

FLEXCON INDUSTRIES

The Reliable Source®

CHALLENGER PC/PCA/CAD-2



MATERIALS OF CONSTRUCTION

- *Tank:* 16 gauge cold rolled steel
- *Finish:* Appliance quality paint for indoor or outdoor installation
- *Water chambers:* Top chamber is 100% butyl rubber, lower water chamber is copolymer polypropylene
- *Connection:* Welded steel NPT thread
- *Testing:* High pressure, seam weld, helium, final precharge check
- *Air valve:* Brass valve with o-ring seal
- *Warranty:* Five year

DIMENSIONS & CAPACITIES

Model [PC-TRADITIONAL BLUE] [PCA-ALMOND]	Total Tank Volume		A Height		B Diameter		C Connection	Total Weight	
	gal	liters	in	cm	in	cm		lbs	kilos
PC/PCA 44	14	60	22	55.88	16	40.64	1" NPT	28.0	12.7
PC/PCA 66	20	80	29	73.66	16	40.64	1" NPT	36.0	16.3
PC/PCA 88	26	100	34.5	87.63	16	40.64	1" NPT	41.0	18.6
PC/PCA 111	32	120	27.75	70.48	21	53.34	1 1/4" NPT	54.0	24.5
PC/PCA 122	33.4	130	42.75	108.58	16	40.64	1 NPT	49.0	22.2
PC/PCA 144	44	170	36.25	92.07	21	53.34	1 1/4" NPT	67.0	30.4
PC/PCA 211	62	240	48	121.92	21	53.34	1 1/4" NPT	82.0	37.2
PC/PCA 244	81	310	62	157.48	21	53.34	1 1/4" NPT	99.0	44.9
PC/PCA 266	85	325	44.5	113.03	26	66.04	1 1/4" NPT	121.0	54.9
PC/PCA 366	119	450	59.75	150.49	26	66.04	1 1/4" NPT	153.0	69.5

Maximum working pressure 125 psig. Maximum working temperature, internal & external 140° F. Tank pre-charge 38 psig.

QUICK SIZING CHART

Model [PC-TRADITIONAL BLUE] [PCA-ALMOND]	Total Tank Volume		Total Drawdown* 20/40		30/50		40/60	
	gal	liters	gal	liters	gal	liters	gal	liters
PC/PCA 44	14	60	5.6	21.4	4.8	18.1	4.1	15.6
PC/PCA 66	20	80	8.1	30.5	6.8	25.8	5.9	22.3
PC/PCA 88	26	100	10.5	39.7	8.9	33.6	7.7	29.0
PC/PCA 111	32	120	12.9	48.8	10.9	41.3	9.4	35.7
PC/PCA 122	33.4	130	13.3	50.3	11.3	42.6	9.7	36.8
PC/PCA 144	44	170	17.7	67.1	15.0	56.8	13.0	49.1
PC/PCA 211	62	240	25.0	94.6	21.1	80.0	18.3	69.2
PC/PCA 244	81	310	32.6	123.6	27.6	104.5	23.9	90.4
PC/PCA 266	85	325	34.3	129.7	29.0	109.7	25.1	94.9
PC/PCA 366	119	450	48.0	181.5	40.6	153.6	35.1	132.9

*Total drawdown assumes tank pre-charge set at 2 psi below cut-in pressure. Drawdown can be affected by many factors, including temperature, pressure, and elevation.

FLEXCON INDUSTRIES
The Reliable Source®

Jet Rite 2 Series

Big Performance in a Small Package!

- Stainless Steel Water Connection
- Virgin Polypropylene Liner
- 100% Butyl Diaphragm
- Appliance Quality Paint Finish
- Brass Air Stem
- Comprehensive Testing

Jet Rite 2 tanks are ideally suited for irrigation applications, booster systems, shallow jet pumps and centrifigal pump configurations. The Jet Rite 2 series is constructed with a single butyl diaphragm and polypropylene liner assembly that completely contains drawdown water. The diaphragm is constructed with an FDA approved, high-grade butyl rubber compound.

Jet Rite 2 tanks are made with a stainless steel system connection, are available in vertical and horizontal models and are finished with an appliance quality paint especially suited for outdoor installations.

Jet Rite 2 tanks are quality tested at several stages on the production line to insure the structural integrity of every tank.

Jet-Rite 2 Series - Inline Models

Model #'s	Diameter		Dimensions Height/Length		System Connect.	Volume		Shipping (Box) Volume		Shipping (Box) Weight	
	in.	cm.	in.	cm.		gal.	liter	cu. ft.	cu. m.	lbs.	kilos
PJR-6	8.0	20	12.0	30	3/4"	2.1	8	0.50	0.02	5.0	2.3
PJR-15	11.0	28	14.5	37	3/4"	4.8	18	1.10	0.03	10.0	4.6
PJR-25	12.5	32	20.0	51	3/4"	8.5	32	2.50	0.07	13.0	6.9
PJR-44IL	15.3	39	19.75	50	1"	14.0	53	3.03	0.09	23.3	10.6

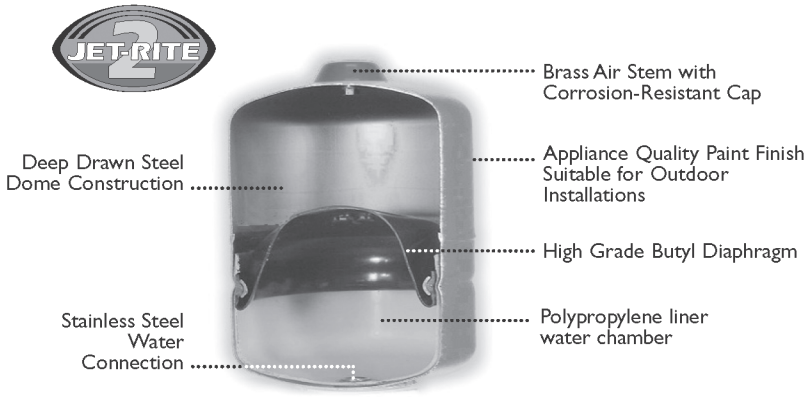
Jet-Rite 2 Series - Horizontal Models

Model #'s	Diameter		Dimensions Height/Length		System Connect.	Volume		Shipping (Box) Volume		Shipping (Box) Weight	
	in.	cm.	in.	cm.		gal.	liter	cu. ft.	cu. m.	lbs.	kilos
PJR-20S	11.4	28.9	17.5	44.4	3/4"	5.3	20	1.5	0.04	13.3	6.0
PJR-25S	12.5	31.7	17.0	43.2	3/4"	8.5	32	2.5	0.07	13.0	6.9
PJR-44S	16.3	41.4	20.8	52.8	1"	14.0	53	3.9	0.11	27.0	12.3
PJR-66S	16.3	41.4	28.5	72.4	1"	20.0	80	4.5	0.13	38.0	17.2

All Models: 28 psi/1.9 bar pre-charge
Maximum working pressure:: All models – 125psi/8.5 bar
Maximum working temperature: All models – 140°F/60°Celsius

Quick Sizing Chart

Model #'s	Total Tank Volume		Drawdown @20/40		@30/50		@40/60	
	gal.	liters	gal.	liters	gal.	liters	gal.	liters
PJR-6	2.1	8	0.8	2.9	0.7	2.5	0.6	2.1
PJR-15	4.8	18	1.7	6.6	1.5	5.6	1.3	4.8
PJR-20S	5.3	20	1.9	7.3	1.6	6.2	1.4	5.4
PJR-25 (S)	8.5	32	3.1	11.7	2.6	9.8	2.3	8.7
PJR-44 (S)	14.0	53	5.1	19.3	4.3	16.4	3.8	14.2
PJR-60S	20.0	80	7.6	28.8	6.5	24.8	5.5	20.8
PJR-44IL	14.0	53	5.1	19.3	4.3	16.4	3.8	14.2



Franklin Electric

Jet Pumps - Shallow Well

VersaJet

CSA ENC 3
COF CSA 3
C US
LR 80980

Revolutionary Patent Pending
"Quick-Change" Jet Nozzle

J-CLASS VersaJet

Features:

- Impeller with stainless steel insert, diffuser, jet nozzle and venturi are all molded with Noryl®. Noryl® thermoplastic is a proven dependable material known for its properties to increase efficiency and hydraulic performance.
- Heavy-duty cast iron case ensures optimum durability and long life
- Floating stainless steel eye seal for maximum performance and efficiency
- Powered by a high quality, industry proven, UL778 approved indoor/outdoor motor from A.O. Smith
- Revolutionary Patent Pending "Quick-Change" jet nozzle replacement system allows easy customization of the pump. Performance can be changed quickly from a high pressure to a high flow set-up without removing the plumbing or opening the case.
- Dual voltage motor can be set to run at either 115V or 230V
- Pressure switch is installed and set at 30/50 psi
- Built-in drain plug for easy winterizing and servicing
- Handles water temperatures up to 120 °F/49 °C and shut-off pressures up to 90 psi
- 1" NPT discharge, 1-1/4" NPT suction
- UL778 approved for indoor or outdoor use

Noryl® is a registered trademark of G.E.

Ordering Information:

MODEL	HP	SUCTION x DISCHARGE	VOLTAGE	PUMP UNIT	
				ORDER NO.	WT.
JVJ05CI	1/2	1-1/4" x 1"	115/230	91160005	31
JVJ07CI	3/4	1-1/4" x 1"	115/230	91160007	34
JVJ1CI	1	1-1/4" x 1"	115/230	91160010	51
JVJ15CI	1.5	1-1/4" x 1"	115/230	91160015	56

Note: All weights in pounds.

Jet Pumps - Shallow Well

VersaJet

Franklin Electric

Performance Chart:

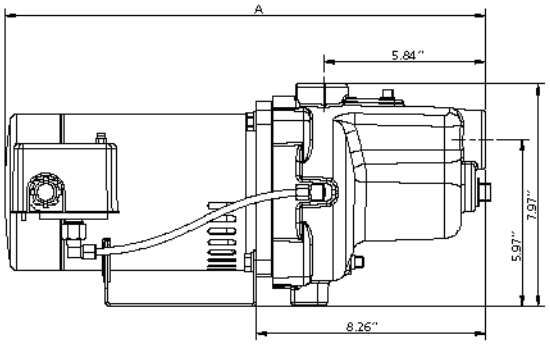
VJ 1.25" SUCTION 1" DISCHARGE			DISCHARGE PRESSURE - PSI						SHUT-OFF PRESSURE PSI
			10	20	30	40	50	60	
MODEL	NOZZLE	TOTAL SUCTION LIFT FT.	GALLONS PER MINUTE						
JVJ05CI	Nozzle B (Standard)	5	10.8	10.5	10.1	8.5	4.9	2.1	70
		10	9.4	9.1	8.7	7.5	4.1	1.6	
		15	8.0	7.7	7.4	6.5	3.4	1.1	
		20	6.2	6.0	5.7	5.3	2.6	0.5	
		25	4.4	4.3	4.1	4.0	1.8	-	
	Nozzle C (High Pressure)	5	9.8	8.9	8.3	7.6	6.3	4.0	86
		10	8.3	7.5	7.1	6.6	5.7	3.5	
		15	6.8	6.2	5.9	5.7	5.1	3.0	
		20	5.3	5.0	4.8	4.6	4.3	2.6	
		25	3.8	3.8	3.7	3.6	3.5	2.2	
	Nozzle A (High Flow)	5	12.8	12.5	12.1	5.2	-	-	47
		10	11.4	11.1	10.8	3.6	-	-	
		15	10.0	9.8	9.6	1.9	-	-	
		20	8.0	7.7	6.8	1.0	-	-	
		25	6.0	5.7	4.1	-	-	-	
JVJ07CI	Nozzle C (Standard)	5	16.3	15.6	15.1	14.1	9.0	3.8	70
		10	14.2	13.6	13.1	12.5	7.8	2.9	
		15	12.1	11.6	11.2	10.8	6.5	2.0	
		20	9.5	9.1	8.9	8.7	5.0	1.0	
		25	7.0	6.7	6.7	6.6	3.5	-	
	Nozzle D (High Pressure)	5	15.8	15.2	14.7	14.1	9.6	4.8	73
		10	13.9	13.2	12.8	12.4	8.5	3.9	
		15	11.9	11.1	10.8	10.6	7.5	3.0	
		20	9.2	8.8	8.6	8.5	6.2	1.8	
		25	6.5	6.5	6.4	6.4	4.8	0.6	
	Nozzle A (High Flow)	5	18.9	18.7	18.4	11.6	-	-	47
		10	16.8	16.6	16.3	8.0	-	-	
		15	14.8	14.5	14.2	4.4	-	-	
		20	11.8	11.6	11.2	2.2	-	-	
		25	8.8	8.7	8.1	-	-	-	
JVJ1CI	Nozzle B (Standard)	5	21.5	21.0	20.7	20.4	12.8	3.9	64
		10	19.2	18.8	18.5	18.2	11.3	2.0	
		15	16.9	16.6	16.3	16.0	9.7	-	
		20	13.6	13.4	13.2	13.0	7.4	-	
		25	10.4	10.3	10.1	10.0	5.0	-	
	Nozzle C (High Pressure)	5	20.4	19.8	19.4	19.1	14.6	7.7	71
		10	18.1	17.6	17.3	17.1	13.6	6.5	
		15	15.9	15.4	15.2	15.0	12.6	5.2	
		20	12.7	12.4	12.2	12.1	10.8	3.3	
		25	9.5	9.3	9.2	9.1	9.0	1.4	
	Nozzle A (High Flow)	5	23.3	23.0	22.7	20.2	7.6	-	54
		10	20.7	20.3	20.0	17.4	3.8	-	
		15	18.1	17.7	17.3	14.6	-	-	
		20	14.8	14.5	14.2	10.8	-	-	
		25	11.5	11.3	11.1	7.0	-	-	
JVJ15CI	Nozzle B (Standard)	5	29.0	28.6	28.2	27.8	24.0	11.6	66
		10	25.5	25.0	24.8	24.5	21.2	7.7	
		15	21.9	21.5	21.3	21.1	18.5	3.8	
		20	17.6	17.2	16.9	16.7	13.8	1.9	
		25	13.2	12.9	12.6	12.3	9.2	-	
	Nozzle C (High Pressure)	5	28.7	28.2	27.9	27.6	26.8	15.5	72
		10	25.3	24.8	24.4	24.0	23.4	13.3	
		15	21.9	21.4	20.9	20.5	20.1	11.2	
		20	17.4	17.1	16.8	16.6	16.3	7.0	
		25	13.0	12.9	12.7	12.6	12.5	2.8	
	Nozzle A (High Flow)	5	30.3	29.9	29.5	29.2	19.5	-	59
		10	26.9	26.6	26.2	25.9	15.9	-	
		15	23.6	23.3	22.9	22.6	12.4	-	
		20	19.0	18.8	18.5	17.9	6.2	-	
		25	14.5	14.3	14.1	13.2	-	-	

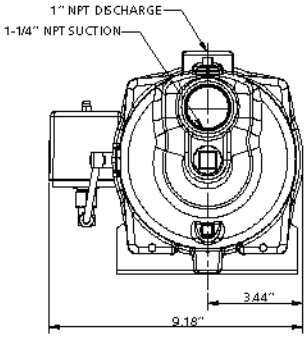
Franklin Electric

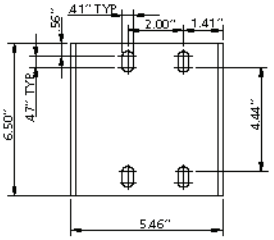
Jet Pumps - Shallow Well

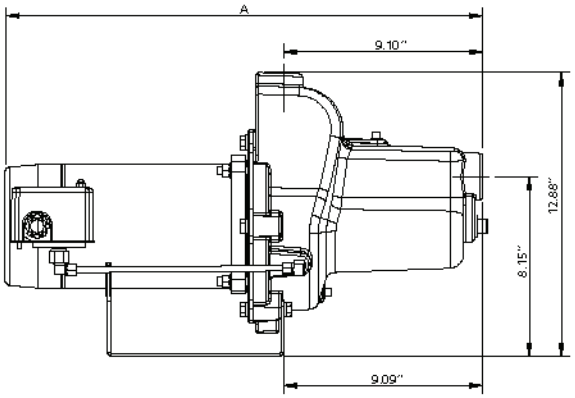
VersaJet

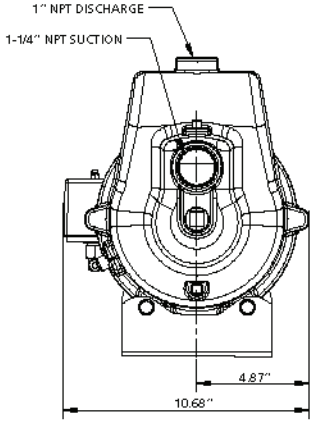
Dimensions:

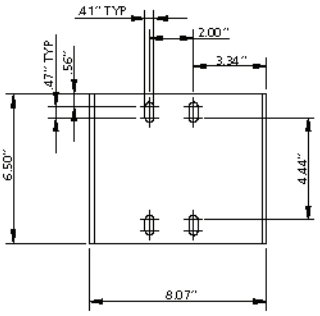












VERSAJET PRO DIMENSIONS	
HP	A
1/2	18.00"
3/4	21.78"
1	22.66"

VERSAJET DIMENSIONS	
HP	A
1/2	17.25"
3/4	18.00"
1	21.78"
1.5	22.66"

Note: Dimensions will vary according to motor manufacturer.

Quotes From Milton Friedman

"I think that nothing is so important for freedom as recognizing in the law each individual's natural right to property, and giving individuals a sense that they own something that they're responsible for, that they have control over, and that they can dispose of."

"The Great Depression, like most other periods of severe unemployment, was produced by government mismanagement rather than by any inherent instability of the private economy."

"Nothing is so permanent as a temporary government program."

Jet Pumps - Shallow Well
Cyclone Series

Franklin Electric

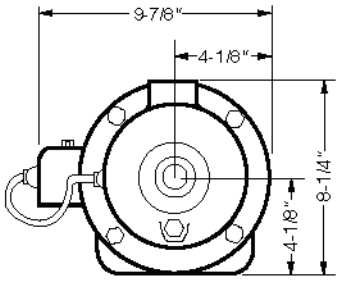
J-CLASS

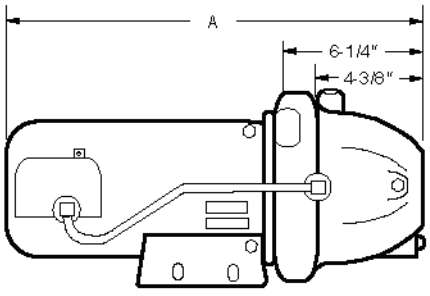
NRTL/C
CSA 108
UL 778

Cyclone Series

Features:

- Available in non-corrosive thermoplastic
- Replaceable in-line nozzle/venturi design for maximum hydraulic efficiency and ease of service
- Self cleaning, anti-clogging injector screen
- Thermoplastic impeller and diffuser ensure increased hydraulic performance
- Floating stainless steel eye seal for maximum performance and efficiency
- Square-flange mounting provides easy serviceability without disturbing the plumbing
- Built-in drain plug for easy winterizing and servicing
- Mechanical shaft seal allows positive protection against leaking
- Order pressure gauge separately
- Pressure switch is installed and set at 30/50 psi
- Handles water temperatures up to 120 °F/49 °C and working pressure up to 75 psi
- Connections:
  1" NPT discharge
  1-1/4" NPT suction





Dimensions:

MODEL NO.	HP	A
JCY05P	1/2	17-5/8"
JCY07P	3/4	18-1/4"

Note: Dimensions will vary according to motor manufacturer.

More Quotes From Milton Friedman

"Governments never learn. Only people learn."

Franklin Electric

Jet Pumps - Shallow Well
Cyclone Series

Ordering Information:

PLASTIC PUMP BODY					
MODEL NO.	HP	SUCTION X DISCHARGE	VOLTAGE	PUMP UNIT	
				ORDER NO.	WT.
JCY05P	1/2	1-1/4" x 1"	115/230	91020050	23
JCY07P	3/4	1-1/4" x 1"	115/230	91020075	31

Note: All weights in pounds.

Performance Chart:

HP	TOTAL SUCTION LIFT FT.	DISCHARGE PRESSURE - PSI								SHUT-OFF PRESSURE PSI
		30	35	40	45	50	55	60	65	
		GALLONS PER MINUTE								
1/2	5	12.0	10.7	9.1	7.2	4.9	2.8	0.9	-	62
	10	-	10.0	8.4	6.3	3.9	1.9	-	-	60
	15	-	-	7.7	5.3	3.0	0.9	-	-	57
	20	-	-	6.4	4.3	2.2	0.2	-	-	55
	25	-	-	5.0	3.3	1.4	-	-	-	53
3/4	5	-	16.0	14.4	12.6	10.6	8.3	5.0	1.8	68
	10	-	-	13.5	11.8	9.7	6.9	3.6	0.2	65
	15	-	-	-	11.0	8.8	5.4	2.2	-	63
	20	-	-	-	9.0	7.2	3.9	0.8	-	60
	25	-	-	-	-	5.6	2.3	-	-	58

More Quotes From Milton Friedman

"Most of the energy of political work is devoted to correcting the effects of mismanagement of government."

"Hell hath no fury like a bureaucrat scorned."

"There's no such thing as a free lunch."

"With some notable exceptions, businessmen favor free enterprise in general but are opposed to it when it comes to themselves."

"There's no such thing as a free lunch."

"If you put the federal government in charge of the Sahara Desert, in five years there'd be a shortage of sand."

Only government can take perfectly good paper, cover it with perfectly good ink and make the combination worthless.

Jet Pumps - Convertible
RM2 Series

Franklin Electric

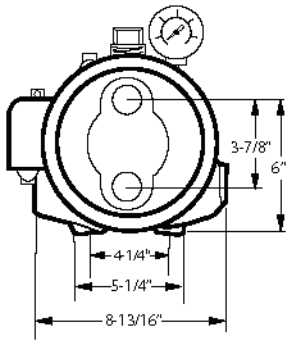
J-CLASS

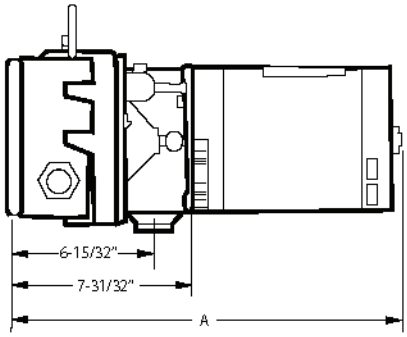
NRTL/C
CSA 108
UL 778

RM2 Series

Features:

- Heavy-duty cast iron case and bronze impeller ensure optimum durability
- Thermoplastic diffuser is molded for efficiency and dependability
- Screw-in injector for easy conversion from shallow to deep well installation
- Shaft coupling designed for easy removal of pump motor
- Mechanical shaft seal ensures leakproof fit and continuous water lubrication
- High service factor 56C-frame motor for maximum performance
- Hardware kit allows for versatility of installation and includes pressure gauge, plugs, shallow well injector and bypass plug
- Adjustable pressure switch is factory-installed at 30/50 psi
- Connections:
  1-1/4" NPT suction
  1" NPT discharge
  1" NPT drive line
- Maximum temperature of 140 °F/60 °C





Dimensions:

MODEL NO.	HP	A
JRM05CI-C	1/2	18.65"
JRM07CI-C	3/4	19.15"
JRM1CI-C	1	19.65"

Note: Dimensions will vary according to motor manufacturer.

Franklin Electric

Jet Pumps - Convertible
RM2 Series

Ordering Information:

MODEL NO.	HP	SUCTION X DISCHARGE	VOLTAGE	PUMP UNIT		DEEP WELL INJECTOR		
				ORDER NO.	WT.	SUCTION LIFT	ORDER NO.	WT.
JRM05CI-C	1/2	1-1/4" x 1"	115/230	91110874	48	30 - 60 ft	147E1120	7
						50 - 100 ft	147E0915	7
JRM07CI-C	3/4	1-1/4" x 1"	115/230	91110882	51	30 - 60 ft	147E1023	7
						50 - 100 ft	147E1118	7
JRM1CI-C	1	1-1/4" x 1"	115/230	91110890	53	30 - 60 ft	147E1125	7
						50 - 100 ft	147E1120	7

Note: 1. Order deep well injector separately.
2. Minimum inside well diameter requirement of 4" for deep well injectors.
3. All weights in pounds.

OPTIONAL INJECTOR FOR HIGH HEAD PERFORMANCE		
INJECTOR ORDERING NO.	MODEL NO.	HP
18-1278-03-R	JRM1CI-C	1

PRESSURE GAUGE	
ORDERING NO.	PRESSURE READING
9193-4018	0-100 psi

Required for Deep Well Installations:

Parallel Pipe Injectors

More Quotes From Milton Friedman
The government solution to a problem is usually as bad as the problem.

The most important single central fact about a free market is that no exchange takes place unless both parties benefit.

The most important ways in which I think the Internet will affect the big issue is that it will make it more difficult for government to collect taxes.

The Great Depression, like most other periods of severe unemployment, was produced by government mismanagement rather than by any inherent instability of the private economy.

Jet Pumps - Convertible
RM2 Series

Franklin Electric

Shallow Well Performance:

RM2 1-1/4" SUCTION 1" DISCHARGE			DISCHARGE PRESSURE - PSI									SHUT-OFF PRESSURE PSI
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	55	60	65	70	
			GALLONS PER MINUTE									
JRM05CI-C 1/2 hp	18-1278-03-R	5	15.5	13.5	11	8.5	6	4	2			65
		10	13.5	12.5	10	7.5	5	3	1			63
		15	11.5	10.5	8.5	6	4	2				60
		20	9.5	9	7.5	5	3	1				58
		25	7	7	6	4	2					55
JRM07CI-C 3/4 hp	18-1279-02-R	5	19	18.5	18	16	12.5	9.5	6.5	3.5		70
		10	16.5	16	15.5	14	10	8	4.5	1.5		68
		15	14.5	14	13.5	12.5	9.5	6.5	3.5			66
		20		11.5	11	10	8	5	2			63
		25			8.5	8	6.5	3.5	1			61
JRM1CI-C 1 hp	18-1280-09-R	5	23	22.5	22	21.5	20	17.5	14	10.5	7	81
		10		19.5	19	18.5	17.5	15.5	12.5	9	5.5	78
		15		16.5	16	15.5	15	13.5	11	7.5	4.5	76
		20			13.5	13	12.5	11.5	9.5	6	2.5	74
		25				10	10	9.5	7.5	4.5	1	71

MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	DISCHARGE PRESSURE - PSI									SHUT-OFF PRESSURE PSI
			50	55	60	65	70	75	80	85	90	
			GALLONS PER MINUTE									
JRM1CI-C High Head 1 hp	18-1278-03-R	5			11	10	7.5	5.5	3.5	1.5		90
		10			10	8.5	6.5	4.5	2.5			88
		15			9	7.5	5.5	3.5	1.5			84
		20			8	6	4	2				81
		25			7	5	3	1				78

Note: 1. Pressure switch pre-set 30-50 psi.
2. The appropriate injector is included with the units.
3. Maximum pump working pressure is 150 psi.
4. All the above discharge pressures were measured using 1.25" PVC suction pipe and 1.25" foot valve.

More Quotes From Milton Friedman

The greatest advances of civilization, whether in architecture or painting, in science and literature, in industry or agriculture, have never come from centralized government.
Milton Friedman

The most important single central fact about a free market is that no exchange takes place unless both parties benefit.

The most important ways in which I think the Internet will affect the big issue is that it will make it more difficult for government to collect taxes.

Franklin Electric

Jet Pumps - Convertible
RM2 Series

Deep Well Performance:

RM2 1-1/4" SUCTION 1" DISCHARGE 1" DRIVE PIPE			DISCHARGE PRESSURE - PSI									SHUT-OFF PRESSURE PSI	INJ. MIN. OPERATING PRESSURE
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT	30	35	40	45	50	55	60	65	70		
			GALLONS PER MINUTE										
JRM05CI-C 1/2 hp	147E-1120	30	9	7	5.5	4	2.5	1.5				65	18
		40	7.5	6	4	3	1.5					59	
		50	6	4.5	3	2	1					56	
		60	5	3.5	2	1						52	
	147E-0915	50	6	5	4	3	2.5	2	1			74	23
		60	5	4	3.5	2.5	2	1				70	
		70	4	3.5	2.5	2	1.5					65	
		80	3.5	3	2	1.5	1					61	
		90	3	2	1.5	1						57	
		100	2.5	1.5	1							52	
JRM07CI-C 3/4 hp	147E-1023	30	15.5	13.5	11	8.5	6.5	4	2			66	18
		40	13.5	11.5	9	7	4.5	2.4				61	
		50	11	9.5	7	5	3					57	
		60	9	7.5	5	3	1					53	
	147E-1118	50	9	8	7	6	4.5	3.5	3	2	1	80	23
		60	8	7	6	4.5	4	3	2	1.5		77	
		70	6.5	5.5	4.5	3.5	3	2	1			72	
		80	6	5	4	3	2	1.5				67	
		90	5	4	3	2	1.5					63	
		100	4	3	2.5	1.5	1					30	
JRM1CI-C 1 hp	147E-1125	30	19.5	17	14.5	12	9.5	7	5			72	30
		40	17.5	15	12.5	10	7.5	5	3			67	
		50	15.5	13	10.5	8	5.5	3.5	1			63	
		60	13	10.5	8.5	6	3.5	1.5				59	
	147E-1120	50		11	9.5	8	6.5	5	4	3	2	82	36
		60		10	8	7	5.5	4	3	2	1	78	
		70		8	7	6	4.5	3	2	1		73	
		80		7	6	4.5	3.5	2	1.5			70	
		90		6	5	3.5	2.5	1.5				65	
		100		5	4	3	1.5					61	

Note: 1. Pressure switch pre-set 30-50 psi.
2. Maximum pump working pressure is 150 psi.
3. All the above discharge pressures were measured using 1.25" PVC suction pipe and 1.25" foot valve and 1" drive pipe.

More Quotes From Milton Friedman

The only relevant test of the validity of a hypothesis is comparison of prediction with experience.

The only way that has ever been discovered to have a lot of people cooperate together voluntarily is through the free market. And that's why it's so essential to preserving individual freedom.

Jet Pumps - Convertible

RP2 Series

Franklin Electric

NRTL/C
CSA 108
UL 778

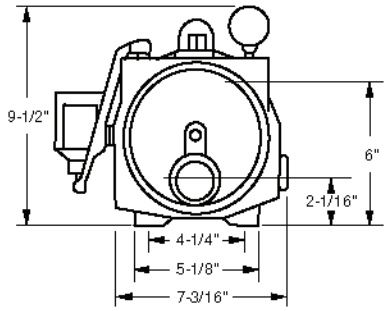
J-CLASS

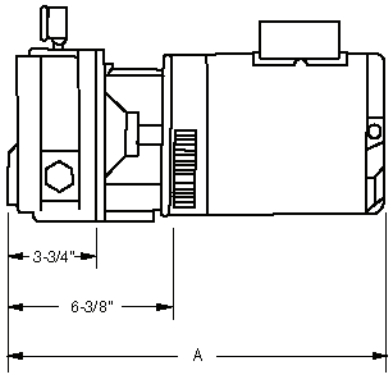
RP2 Series

Features:

- Heavy-duty cast iron construction for long life
- Thermoplastic impeller and diffuser for increased efficiency
- Cast-iron case will handle booster pump applications up to 150 psi
- Shaft coupling designed for easy removal of pump motor
- Mechanical shaft seal ensures leakproof fit
- High service factor 56C-frame motors for maximum performance
- "Convertible" hardware includes pressure gauge, plugs, bypass plug and shallow well injector (screw-in injector allows easy conversion from shallow to deep well installation.)
- Adjustable pressure switch is factory-installed at 20/40 psi
- Connections:
  1-1/4" NPT suction
  1" NPT discharge
  1" NPT drive line
- Maximum temperature of 140 °F/60 °C

For pressure gauges, see page 103.





Dimensions:

MODEL NO.	HP	A
JRP05CI-C	1/2	14-3/8"
JRP07CI-C	3/4	15-3/8"

Note: Dimensions will vary according to motor manufacturer.

Franklin Electric

Jet Pumps - Convertible

RP2 Series

Ordering Information:

MODEL NO.	HP	SUCTION X DISCHARGE	VOLTAGE	PUMP UNIT		DEEP WELL INJECTOR		
				ORDER NO.	WT.	SUCTION LIFT	ORDER NO.	WT.
JRP05CI-C	1/2	1-1/4" x 1"	115/230	91021626	40	30 - 60 ft	147E0919	7
						60 - 90 ft	147E1018	7
JRP07CI-C	3/4	1-1/4" x 1"	115/230	91021634	42	30 - 60 ft	147E1123	7
						60 - 90 ft	147E1118	7

Note: 1. Order deep well injector separately.
2. Minimum inside well diameter requirement of 4" for deep well injectors.
3. All weights in pounds.

OPTIONAL INJECTOR FOR HIGH HEAD PERFORMANCE		
INJECTOR ORDERING NO.	MODEL NO.	HP
18-1247-01-R	JRP07CI-C	3/4

PRESSURE GAUGE	
ORDERING NO.	PRESSURE READING
9193-4018	0-100 psi

Non-Submersible Pumps

Jet Pumps - Convertible

RP2 Series

Shallow Well Performance:

RP2 1-1/4" SUCTION 1" DISCHARGE			DISCHARGE PRESSURE - PSI									SHUT-OFF PRESSURE PSI
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	55	60	65	70	
			GALLONS PER MINUTE									
JRP05CI-C 1/2 hp	18-1247-01-R	5	13	12.5	11.5	10	7.5	5.5	3.5	1.5		69
		10	11.5	11	10	8.5	6.5	4.5	2.5			67
		15	10	9.5	9	7.5	5.5	3.5	1.5			64
		20	8	8	7.5	6.5	4.5	2.5				62
		25	6	6	5.5	5	3.5	1.5				59
JRP07CI-C 3/4 hp	18-1248-00-R	5	20	18.5	16	12.5	8	1.5				56
		10	17.5	16.5	14	10	4					52
		15	16	15	12	8						50
		20	13	12	10	4						47
		25		9.5	7							43
JRP07CI-C High Head 3/4 hp	18-1247-01-R	5		12	12	12	11	9	7	5	2.5	76
		10		11	10.5	10.5	10	8	6	4	1.5	74
		15		9.5	9	9	9	7	5	3		71
		20		8	8	7.5	7.5	6	4	2		69
		25		6.5	6.5	6	6	5	3	1		67

Note: 1. The appropriate injector is included with the units.
2. All the above discharge pressures were measured using 1.25" PVC suction pipe and 1.25" foot valve.

Deep Well Performance:

RP2 1-1/4" SUCTION 1" DISCHARGE 1" DRIVE PIPE			DISCHARGE PRESSURE - PSI								SHUT-OFF PRESSURE PSI	INJ. MIN. OPERATING PRESSURE
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	55	60	65		
			GALLONS PER MINUTE									
JRP05CI-C 1/2 hp	147E-0919	30	8.5	7	5.5	4.5	3	2	1		66	20
		40	7	6	4.5	3.5	2	1			62	
		50	6	5	3.5	2	1				57	
		60	5	3.5	2.5	1.5					53	
JRP05CI-C 1/2 hp	147E-1018	60	6	5	4	3	2	1			66	23
		70	5	4	3	2	1.5				62	
		80	4	3	2	1.5					56	
		90	3	2	1.5						51	
JRP07CI-C 3/4 hp	147E-1123	30	12	10	8.5	6.5	5	3			62	28
		40	10	8.5	7	5	3	1			58	
		50	8.5	7	5	3	1				54	
		60	6.5	5	3	1.5					49	
JRP07CI-C 3/4 hp	147E-1118	60	7.5	6.5	6	5	4	3	2.5	1.5	75	30
		70	7	6	5	4	3	2	1		69	
		80	5.5	4	3.5	2.5	2	1			64	
		90	4.5	3.5	2.5	2	1				57	

Note: 1. Deep well injectors must be ordered separately.
2. All the above discharge pressures were measured using 1.25" PVC suction pipe and 1.25" foot valve and 1" drive pipe.

The prize doesn't always go to the most deserving....

Irena Sendler

There recently was a death of a 98 year-old lady named Irena. During WWII, Irena, got permission to work in the Warsaw Ghetto, as a Plumbing/Sewer specialist. She had an 'ulterior motive' ... She KNEW what the Nazi's plans were for the Jews, (being German.) Irena smuggled infants out in the bottom of the tool box she carried and she carried in the back of her truck a burlap sack, (for larger kids..) She also had a dog in the back that she trained to bark when the Nazi soldiers let her in and out of the ghetto. The soldiers of course wanted nothing to do with the dog and the barking covered the kids/infants noises.. During her time of doing this, she managed to smuggle out and save 2500 kids/infants. She was caught, and the Nazi's broke both her legs, arms and beat her severely. Irena kept a record of the names of all the kids she smuggled out and kept them in a glass jar, buried under a tree in her back yard. After the war, she tried to locate any parents that may have survived it and reunited the family.
Most had been gassed. Those kids she helped got placed into foster family homes or adopted.

Recently, Irena was up for the Nobel Peace Prize ... She was not selected.

However, Al Gore won, for a slide show on Global Warming and Barack Obama won for a speech on peace.

Jet Pumps - Convertible

SRP3 Series

Franklin Electric

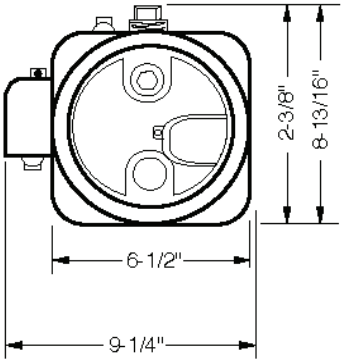
J-CLASS

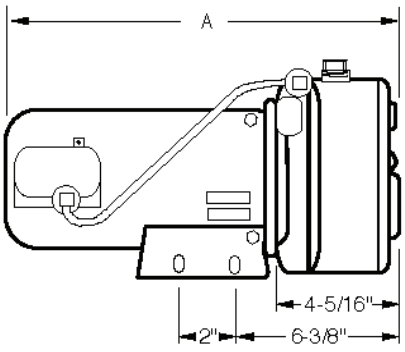
NRTL/C
CSA 108
UL 778

SRP3 Series

Features:

- Thermoplastic impeller assures increased hydraulic efficiency
- Thermoplastic diffuser is molded for efficiency and dependability
- Cast-iron case for maximum durability
- Square-flange motor with threaded shaft for direct mounting of impeller
- Mechanical shaft seal ensures leakproof fit
- Pressure switch is factory installed at 20/40 psi
- "Convertible" hardware includes plugs, bypass plug and shallow well injector. (Screw-in injector allows for easy conversion from shallow to deep well installation)
- Pressure gauge can be ordered separately
- Connections:
  1-1/4" NPT suction
  1" NPT discharge
  1" NPT drive line
- Maximum temperature of 140 °F/60 °C





Dimensions:

MODEL NO.	HP	A
JSRP05CI-C	1/2	15-3/16"
JSRP07CI-C	3/4	16-5/16"
JSRP1CI-C	1	16-3/16"

Note: Dimensions will vary according to motor manufacturer.

Franklin Electric

Jet Pumps - Convertible
SRP3 Series

Ordering Information:

MODEL NO.	HP	SUCTION X DISCHARGE	VOLTAGE	PUMP UNIT		DEEP WELL INJECTOR		
				ORDER NO.	WT.	SUCTION LIFT	ORDER NO.	WT.
JSRP05CI-C	1/2	1-1/4" x 1"	115/230	91021592	36	30 - 60 ft	147E1118	7
						60 - 90 ft	147E1115	7
JSRP07CI-C	3/4	1-1/4" x 1"	115/230	91021600	38	30 - 60 ft	147E1123	7
						60 - 90 ft	147E1118	7
JSRP1CI-C	1	1-1/4" x 1"	115/230	91021618	41	30 - 60 ft	147E1123	7
						60 - 90 ft	147E1118	7
JSRPH05CI-C	1/2	1-1/4" x 1"	115/230	91021758	36	High head configuration JSRPH pumps are for shallow well application only.		
JSRPH07CI-C	3/4	1-1/4" x 1"	115/230	91021766	38			
JSRPH1CI-C	1	1-1/4" x 1"	115/230	91021774	41			

Note: 1. Order deep well injector separately.
2. Minimum inside well diameter requirement of 4" for deep well injectors.
3. All weights in pounds.

OPTIONAL INJECTOR FOR HIGH HEAD PERFORMANCE		
INJECTOR ORDERING NO.	MODEL NO.	HP
18-1200-12-R	JSRPH05CI-C	1/2
18-1247-01-R	JSRPH07CI-C	3/4
18-1247-01-R	JSRPH1CI-C	1

PRESSURE GAUGE	
ORDERING NO.	PRESSURE READING
9193-4018	0-100 psi

Required for Deep Well Installations:

Parallel Pipe Injectors

More Quotes From Milton Friedman

The power to do good is also the power to do harm.

The problem of social organization is how to set up an arrangement under which greed will do the least harm, capitalism is that kind of a system.

Jet Pumps - Convertible

SRP3 Series

Franklin Electric

Shallow Well Performance:

MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	DISCHARGE PRESSURE - PSI									SHUT-OFF PRESSURE PSI
			30	35	40	45	50	55	60	65	70	
			GALLONS PER MINUTE									
JSRP05CI-C 1/2 hp	18-1247-01-R	5	12	10	7.5	5	2					55
		10	11	9	6	3.5						53
		15	10	8	5	2						51
		20	9.5	6.5	4	1						49
		25	8	5	2							47
JSRP07CI-C 3/4 hp	18-1248-00-R	5	21.5	19.5	15.5	10.5	5					53
		10	21	18	13.5	8						51
		15	20	16.5	11	6.5						49
		20	18	14	9	2						47
		25	16	12	6							45
JSRP1CI-C 1 hp	18-1701-00-R	5	19.8	18.8	16.6	14	10.3	5.5				60
		10	18.1	17.5	15.6	12.6	8.6	3.5				58
		15	15	14.5	14.2	10.8	6.6	1.3				56
		20	12.6	12.5	12.7	8.8	4.1					54
		25	10	9.8	9.3	6.8	1.6					52
JSRPH05CI-C High Head 1/2 hp	18-1200-12-R	5	6	5.6	5	4.3	3.5	2.6	1.6	0.6		68
		10	5.3	4.9	4.6	4	3	1.9	0.9			65
		15	4.9	4.6	4.2	3.5	2.5	1.5	0.6			63
		20	4.4	4.2	3.9	3	2.1	1.1	0.3			61
		25	3.4	3.2	3	2.3	1.4	0.6				58
JSRPH07CI-C High Head 3/4 hp	18-1247-01-R	5			11.5	10.8	10	8.6	7	4.5	2	69
		10				10.1	9	7	5	2.8	0.5	66
		15				9.2	8	6.2	4.2	2		64
		20				8.2	7	5.4	3	0.5		61
		25				5.9	5	3.5	1.5			58
JSRPH1CI-C High Head 1 hp	18-1247-01-R	5		12	12	12	11	9	7	5	2.5	76
		10		11	10.5	10.5	10	8	6	4	1.5	74
		15		9.5	9	9	9	7	5	3		71
		20		8	8	7.5	7.5	6	4	2		69
		25		6.5	6.5	6	6	5	3	1		67

Note: 1. The appropriate shallow well injector is included with the units.
2. All the above discharge pressures were measured using 1.25" PVC suction pipe and 1.25" foot valve.

STRANGE LAWSUITS

THE PLAINTIFF: Lorenzo Grier
THE DEFENDANT: The United States of America
THE LAWSUIT: In 1995, Grier sued the government for fraud, breach of contract, and discrimination. The basis for his suit? “Appellant alleged that former President Ronald Reagan did not respond when Appellant invented the multiplication tables and sent them to the White House, but instead stole Appellant’s invention and implemented it in the public schools.” Grier asked for $900 billion in damages.
THE VERDICT: Case dismissed

Franklin Electric

Jet Pumps - Convertible
SRP3 Series

Deep Well Performance:

SRP3 1-1/4" SUCTION 1" DISCHARGE 1" DRIVE PIPE			DISCHARGE PRESSURE - PSI								SHUT-OFF PRESSURE PSI
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	55	60	65	
			GALLONS PER MINUTE								
JSRP05CI-C 1/2 hp	Cast Iron 147E-1118	30	6.0	4.6	3.6	2.7	1.8	0.9	0.1		61
		40	4.8	3.6	2.7	1.8	1.0	0.2			57
		50	4.0	2.8	2.0	1.1	0.3				52
		60	3.0	1.9	1.1	0.3					47
	Cast Iron 147E-1115	60	2.6	2.0	1.5	0.9	0.4				54
		70	2.1	1.6	1.1	0.5					51
		80	1.6	1.1	0.6	0.1					46
		90	1.1	0.6	0.1						42
JSRP07CI-C 3/4 hp	Cast Iron 147E-1123	30	12.5	10.3	8.1	6.0	3.8	1.9	0.1		61
		40	10.8	8.5	6.4	4.2	2.2	0.4			56
		50	9.0	6.6	4.5	2.4	0.6				52
		60	7.0	4.8	2.9	1.0					48
	Cast Iron 147E-1118	60	6.9	5.7	4.5	3.5	2.5	1.6	0.8	0.1	66
		70	5.8	4.7	3.6	2.7	1.9	1.0	0.3		63
		80	4.8	3.7	2.7	2.0	1.1	0.3			58
		90	3.7	2.9	2.1	1.3	0.5				54
JSRP1CI-C 1 hp	Cast Iron 147E-1123	30	13.6	11.3	9.5	7.3	5.3	3.2	1.6		65
		40	11.3	9.5	7.3	5.3	3.5	1.6			60
		50	9.0	7.5	5.6	3.7	1.9	0.1			56
		60	7.0	6.0	4.2	2.3	0.5				52
	Cast Iron 147E-1118	60	7.4	6.1	5.1	4.1	3.3	2.4	1.6	0.8	70
		70	6.5	5.4	4.5	3.5	2.6	1.8	1.0	0.3	67
		80	5.4	4.4	3.5	2.6	1.8	1.0	0.3		62
		90	4.4	3.5	2.8	1.9	1.1	0.3			57

Note: 1. Deep well injectors must be ordered separately.
2. All the above discharge pressures were measured using 1.25" PVC suction pipe, 1.25" foot valve and 1" drive pipe.

More Quotes From Milton Friedman

There's no such thing as a free lunch.

Underlying most arguments against the free market is a lack of belief in freedom itself.

Universities exist to transmit knowledge and understanding of ideas and values to students not to provide entertainment for spectators or employment for athletes.

We have a system that increasingly taxes work and subsidizes nonwork.

Jet Pumps - Convertible

C Series

Franklin Electric

J-CLASS

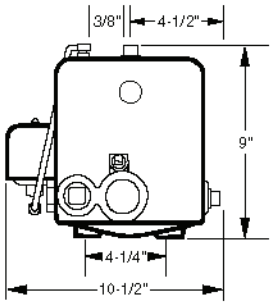
C Series

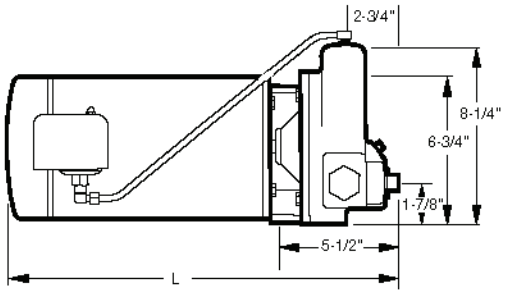
Single Stage Convertible Jet Pump:

Available in 1/3, 1/2 or 3/4 hp models. The C Series is equipped with a stainless steel impeller for high performance and longevity. The C Series delivers up to 16 gallons per minute from either shallow well or deep well installations.

Features:

- Heavy-duty iron construction for long life
- Stainless steel impeller for high performance
- Thermoplastic diffuser is molded for efficiency and dependability
- Screw-in injector for easy conversion from shallow to deep well installation
- Motor with stainless steel shaft for direct mounting on the impeller
- Mechanical shaft seal ensures leakproof fit and continuous lubrication
- Factory assembled as shallow well unit
- Hardware kit allows for versatility of installation. Includes pressure gauge and plugs
- Deep well injector must be ordered separately
- Connections:
  1-1/4" NPT suction
  3/4" NPT discharge
  1" NPT pressure (applies to deep well installations)





Dimensions:

MODEL	HP	L
JC03CI-C	1/3	16.88"
JC05CI-C	1/2	17.13"
JC07CI-C	3/4	17.75"

Note: Dimensions will vary according to motor manufacturer.

Franklin Electric

Jet Pumps - Convertible
C Series

Ordering Information:

MODEL NO.	HP	SUCTION X DISCHARGE	VOLTAGE	PUMP UNIT		DEEP WELL INJECTOR		
				ORDER NO.	WT.	SUCTION LIFT	ORDER NO.	WT.
JC03CI-C	1/3	1-1/4" x 1"	115/230	91060012	45	20 - 60 ft	147E0916	7
						60 - 90 ft	147E0914	7
JC05CI-C	1/2	1-1/4" x 1"	115/230	91060020	45	20 - 60 ft	147E1018	7
						60 - 90 ft	147E1117	7
						60 - 90 ft	147E1115	7
JC07CI-C	3/4	1-1/4" x 1"	115/230	91060053	50	20 - 60 ft	147E1124	7
						50 - 90 ft	147E1019	7
						80-120 ft	147E0914	7

Note: 1. Order deep well injector separately.
2. Minimum inside well diameter requirement of 4" for deep well injectors.
3. All weights in pounds.

PRESSURE GAUGE	
ORDERING NO.	PRESSURE READING
9193-4018	0-100 psi

Required for Deep Well Installations:

Parallel Pipe Injectors

MORE STRANGE LAWSUITS

THE PLAINTIFF: Edna Hobbs
THE DEFENDANT: The Joseph Company, makers of The Clapper (a device that activates appliances when someone claps)
THE LAWSUIT: Hobbs filed suit because she had to clap so hard, she injured her hands trying to get the appliances to go on. In fact, she was in so much pain, she said, “I couldn’t peel potatoes,” adding: “I never ate so many baked potatoes in my life.”
THE VERDICT: Case dismissed. The judge ruled that Hobbs “had merely failed to adjust the sensitivity controls.”

Jet Pumps - Convertible

C Series

Franklin Electric

C Series Performance - Shallow Well Self-Priming:

C SERIES			DISCHARGE PRESSURE - PSI						SHUT-OFF PRESSURE PSI
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	55	
			US GALLONS PER MINUTE						
JC03CI-C 1/3 hp	18-1705-06-R Code 1018	5	8.1	6.5	4.8	3.5	2.4	1.4	62
		10	7.4	5.8	4.2	3.0	2.0	1.0	60
		15	6.7	5.1	3.7	2.5	1.5	0.6	58
		20	6.0	4.4	3.2	2.1	1.2	-	56
		25	5.3	3.8	2.7	1.7	0.7	-	54
JC05CI-C 1/2 hp	18-1706-05-R Code 1021	5	10.2	8.9	6.6	4.8	3.3	1.8	61
		10	9.3	7.8	5.8	4.1	2.7	1.2	59
		15	8.4	6.9	5.0	3.5	2.0	0.6	57
		20	7.6	6.0	4.3	2.8	1.4	-	55
		25	6.6	5.3	3.6	2.2	0.8	-	53
JC07CI-C 3/4 hp	18-1707-04-R Code 1027	5	15.8	15.7	14.1	10.7	7.5	4.0	61
		10	15.0	14.9	12.8	9.2	6.0	2.5	59
		15	14.0	13.9	11.3	7.9	4.5	1.0	57
		20	12.5	12.4	9.6	6.4	3.0	-	54
		25	10.5	10.4	8.3	4.9	1.5	-	52

Note: 1. The appropriate shallow well injector is included with each model.
2. Pressure switch pre-set 30-50 psi.
3. Maximum pump working pressure is 150 psi.

How old is this Earth?

The rotation of the earth is gradually slowing due to the gravitational drag forces of the sun, moon and other factors. If we extrapolate backwards for several billion years the centrifugal force would have been so great that the overall shape of the earth would have resembled a flat pancake. Hmmm... now, how old is this earth?

Petroleum and natural gas are contained at high pressures in underground cap rock. In many cases the pressures are extremely high. Calculations based upon the measured permeability of the cap rock reveal that the oil and gas pressures could not be maintained much longer than 10,000 years in many instances. Hmmm... now, how old is this earth?

The strength of the earth's magnetic field has been continuously weakening. This magnetic field has been measured for over a century. Dr. Thomas G. Barnes has shown the earth's magnetic field has actually been decaying exponentially at a rate corresponding to a half-life of 1,400 years. If one extrapolates backwards as far as 10,000 years the earth would have had a magnetic field as strong as that of a magnetic star! Hmmm... now, how old is this earth?

(Continued Next Page)

Franklin Electric

Jet Pumps - Convertible
C Series

Deep Well Performance - with Parallel Pipe Injector (4" min. i.d. well):

C SERIES			DISCHARGE PRESSURE - PSI					SHUT-OFF PRESSURE PSI
MODEL NO.	INJECTOR ORDER NO.	TOTAL SUCTION LIFT FT.	30	35	40	45	50	
			US GALLONS PER MINUTE					
JC03CI-C 1/3 hp	147E-0916	20	6	5	4	3	2	62
		30	5	4	3	2.5	2	60
		40	4	3	2.5	2	1	58
		50	3.5	2.5	2	1	-	56
		60	2.5	2	1.5	-	-	54
	147E-0914	60	3	2.5	2	1.5	1.5	63
		70	2.5	2	1.5	1	1	61
		80	2	2	1	1	-	59
		90	1.5	1	1	-	-	57
JC05CI-C 1/2 hp	147E-1018	20	10.5	8.5	7	6	4.5	61
		30	8.5	7	5.5	4	3.5	59
		40	7	5.5	4.5	3.5	2.5	57
		50	5.5	4.5	4	3	2	55
		60	4.5	3.5	3	2	1	53
	147E-1117	60	5	4	3.5	3	2.5	70
		70	4	3.5	3	2.5	2	66
		80	3.5	3	2.5	2	1.5	61
		90	3	2.5	2	1.5	1	56
	147E-1115	90	3	2.5	2	1.5	1	64
		100	2.5	2	1.5	1	0.5	60
		110	2	1.5	1	0.5	-	56
		120	1.5	1	0.5	-	-	52
JC07CI-C 3/4 hp	147E-1124	20	16	14	12	10	8	69
		30	14	12	10	8	6	64
		40	11.5	10	7.5	6	4	59
		50	10	8	6	4	2	55
		60	7.5	6	4	2	-	50
	147E-1019	50	9.5	8.5	7.5	6.5	5.5	74
		60	8	7	6	5	4	70
		70	7	6	5	4	3	66
		80	6	5	4	3	2	61
		90	4.5	3.5	2.5	2	1	56
	147E-0914	80	6	4	3.5	3	3	87
		90	4	3.5	3.5	3	2.5	83
		100	3.5	3.5	3	2.5	2	80
		110	3.5	3	2.5	2	2	76
		120	2.5	2.5	2	2	1.5	72

(From Previous Page)

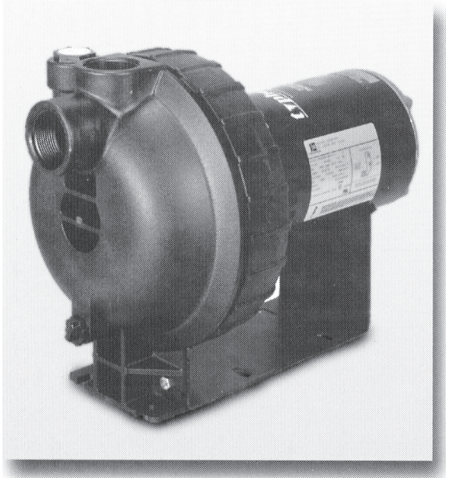
The small amount of helium in our atmosphere has been produced from the natural radioactive decay processes of uranium and thorium. However, there is no known mechanism for helium escaping the earth's atmosphere as hydrogen does. Recent data indicates that helium is actually entering the earth's atmosphere from the sun's corona. Realistic scientific calculations indicate that the amount of observed helium could have accumulated in approximately 10,000 years. Hmmm... now, how old is this earth?

JACUZZI®

he Most Trusted Name In Water™

typhoon - Thermoplastic

Self-priming Centrifugal/Lawn Sprinkler Pumps



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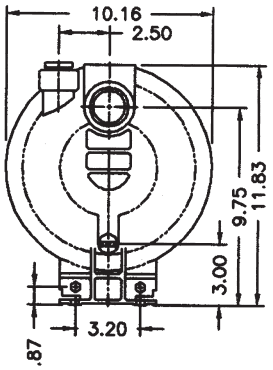
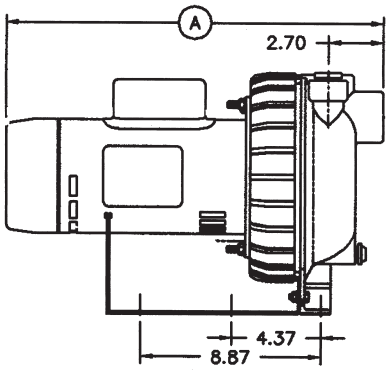
Dimensions

Model	Frame	A
7TY, S10TY	48	18-1/4"
10TY, S15TY	48	18-1/2"
15TY, S20TY	48	18-3/8"
20TY, S25TY	56	19-7/8"





*The **Typhoon** is the latest in high-tech pump design, featuring Jacuzzi RingLok access, the highly successful "tool-less" entry to all internal parts that Jacuzzi has proven for over 10 years with its non-corrosive Magnum pump. Service and cleaning with a simple twist. **Self-priming,** the typhoon is ideal as a lawn sprinkler pump, for general recirculation, or as a booster pump.*

Features:

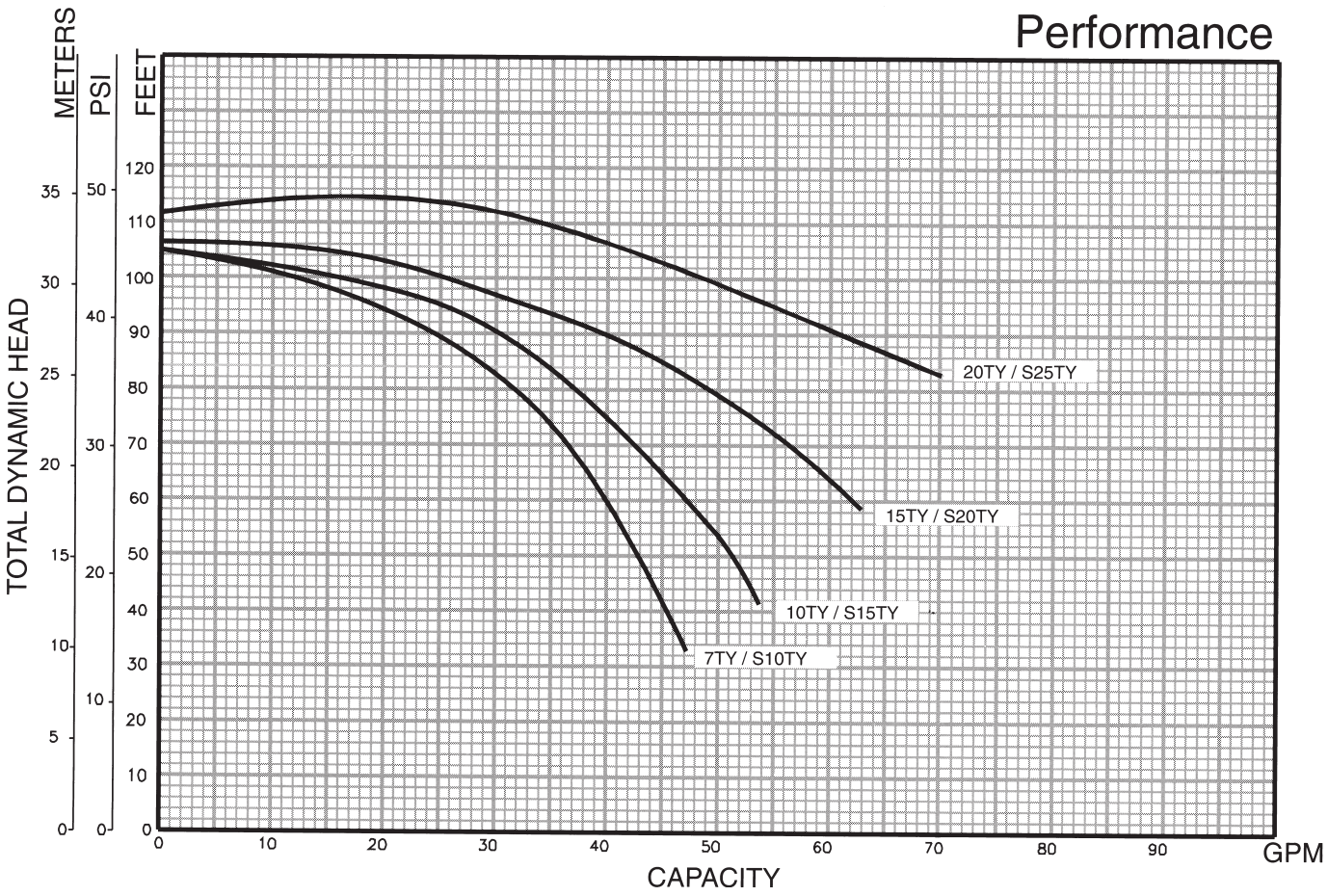
- Exclusive RingLok design allows quick "tool-less" access for easy service and cleaning.
- Self-priming with large 1" priming port. Non-corrosive thermoplastic case with engineered-flow, high-efficiency, low-noise design.
- All-new, high-performance, thermoplastic hydraulics, including floating eye seal and stainless steel impeller wear ring.
- 1-1/2" FNPT threaded suction and discharge. Built-in drain plug to facilitate servicing/ winterizing.
- Square-flange motor design.
- Easy toggle switch changes from 230V to 115V without rewiring. (Not available on 20TY S25TY)
- Available in 3/4,1,1-1/2, and 2 HP full rate and unity service factor models.
- Handles water temperatures up to 120°F and working pressure up to 75 PSI.

Also available in Cast Iron

ORDERING INFORMATION

Order No.	Model No.	HP	Voltage	S.F.	Wt.
FULL RATE SERVICE FACTOR					
9331-2007	7TY	3/4	115/230	1.27	37
9331-2010	10TY	1	115/230	1.25	38
9331-2015	15TY	1-1/2	115/230	1.10	40
9331-2020	20TY	2	115/230	1.10	43
UNITY SERVICE FACTOR					
9331-1010	S10TY	1	115/230	1.00	37
9331-1015	S15TY	1-1/2	115/230	1.00	38
9331-1020	S20TY	2	115/230	1.00	40
9331-1025	S25TY	2-1/2	115/230	1.00	43

Performance



Typhoon Performance Chart

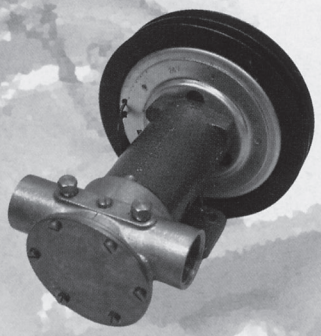
Pump Model	Total Suction Lift in feet	Discharge PSI 20	25	30	35	40	Shut off Pressure (PSI)
		Capacity in GPM					
7TY S10TY	5	43	39	35	28	16	42
	10	41	37	32	23	—	40
	15	39	35	29	18	—	38
	20	38	33	25	—	—	35
10TY S15TY	5	50	45	40	33	21	43
	10	49	44	37	29	7	41
	15	46	41	35	24	—	39
	20	44	39	31	12	—	36
15TY S20TY	5	65	60	54	44	30	44
	10	64	57	50	38	21	42
	15	61	54	46	31	7	40
	20	58	50	41	23	—	37
20TY S25TY	5	79	76	72	65	52	46
	10	78	74	69	59	45	44
	15	76	72	67	54	38	42
	20	74	70	63	47	20	39

Extra Heavy Duty Electro- Magnetic Clutch Pump

F7B-5000 – 1"

Pump body: Bronze
Connection for vacuum switch
Impeller: 09-1028B (neoprene)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: 1" NPT
Clutch: Electro-magnetic 12/24 V DC
Pulley: 2xA or 1xB-groove

Dimensions and Weight
Length: 8.90"
Width: 4.72" (excl. pulley)
Height: 3.66" (excl. pulley)
Pulley dia: ø7.00"
Weight: 15 lbs

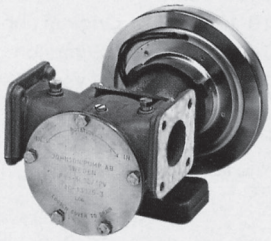


Order No.
10-24116-98 Neoprene impeller, full cam, without clutch

F8B-5000-VF – 1.1/2"

Pump body: Bronze
Connection for vacuum switch
Impeller: 09-819B (neoprene)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: Flange
Port adaptor kit 1.1/2" NPT available as accessory
Clutch: Electro-magnetic 12/24 V DC
Pulley: 2xA or 1xB-groove

Dimensions and Weight
Length: 10.43"
Width: 5.98" (excl. pulley)
Height: 6.00" (excl. pulley)
Pulley dia: ø7.00"
Weight: 26 lbs

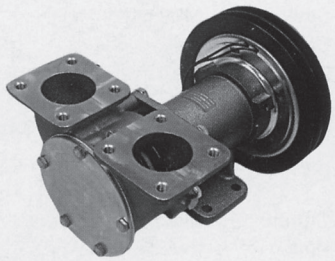


Order No.
10-13025-99 Neoprene impeller, full cam, without clutch

F8B-5000-TSS – 1.1/2"

Technical data: see F8B-5000 VF – 1.1/2"

Dimensions and Weight
Length: 10.43"
Width: 7.79" (excl. pulley)
Height: 5.94" (excl. pulley)
Pulley dia: ø7.00"
Weight: 26 lbs



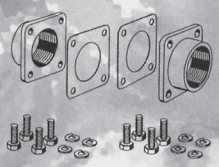
Order No.
10-13176-99 Neoprene impeller, full cam, without clutch

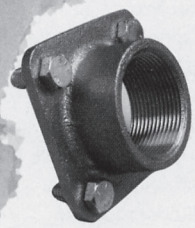
Choice of Clutch

05-32-1	**electro-magnetic clutch, 12 V 2xA pulley**
05-32-2	**electro-magnetic clutch, 24 V 2xA pulley**
05-32-3	**electro-magnetic clutch, 12 V 1xB pulley**
05-32-4	**electro-magnetic clutch, 24 V 1xB pulley**

Port adaptor kit

1.1/2" NPT

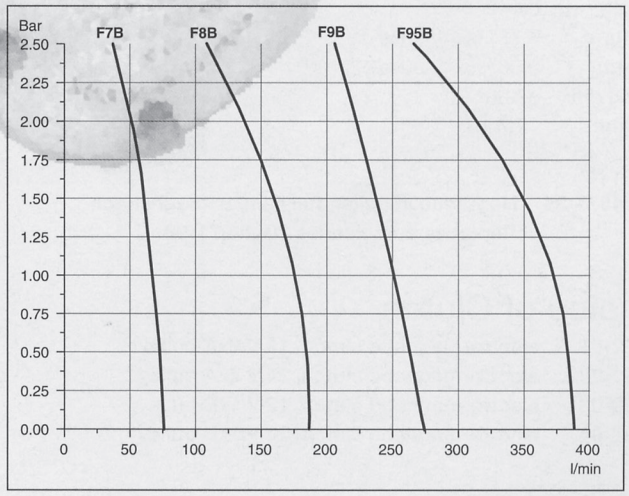




Order No. 09-45562 NPT

Capacity range

Neoprene impeller – 1400 rpm – Full cam – Water at 20°C



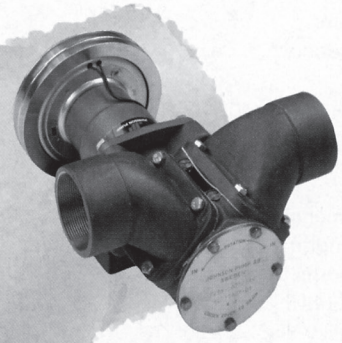
JOHNSON PUMP

Extra Heavy Duty, High Flow, Electro-Magnetic Clutch Pump

F95B-5000 – 2.1/2"

Pump body: Bronze
Impeller: 09-820B (neoprene)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: Flange with 2.1/2" NPT port adaptors
The port adaptors can be fitted either vertically or horizontally
Clutch: Electro-magnetic 12/24 V DC
Pulley: 2xA or 1xB-groove

Dimensions and Weight
Length: 14.09"
Width: 9.68", vertical ports (excl. pulley)
11.61", horizontal ports (excl. pulley)
Height: 8.89", vertical ports (excl. pulley)
7.91", horizontal ports (excl. pulley)
Pulley dia: ø7.00" mm
Weight: 46 lbs

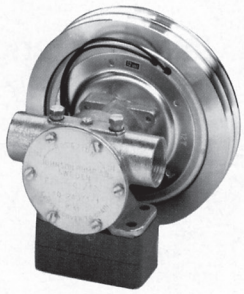


Order No.
10-13143-98 Neoprene impeller, full cam, without clutch

Heavy Duty Electro-Magnetic Clutch Pump

F7B-5001 – 1"

Pump body: Bronze
Connection for vacuum switch
Impeller: 09-1028B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal
Cam: Full or reduced
Connection: 1" NPT
Clutch: Electro-magnetic 12/24 V DC
Pulley: 2xA or 1xB-groove

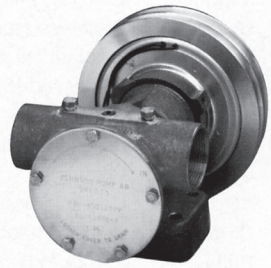


Dimensions and Weight
Length: 6.14"
Width: 4.72" (excl. pulley)
Height: 3.66" (excl. pulley)
Pulley dia: ø7.00"
Weight: 12.7 lbs

Order No.
10-24577-98 Neoprene impeller, full cam, without clutch
Replaces pump series 10-24071-98

F8B-5001 – 1.1/2"

Pump body: Bronze
Connection for vacuum switch
Impeller: 09-819B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal
Cam: Full or reduced
Connection: 1.1/2" NPT
Clutch: Electro-magnetic 12 /24 V DC
Pulley: 2xA or 1xB-groove



Dimensions and Weight
Length: 8.85"
Width: 6.29" (excl. pulley)
Height: 4.88" (excl. pulley)
Pulley dia: ø7.00" mm
Weight: 22 lbs

Order No.
10-13022-98 Original Johnson Pump style 1 1/2" ports
10-13022-95 US version 1 1/4" ports*
10-13022-96 US version 1 1/2" ports**

*replaces Jabsco series 11870
**replaces Jabsco series 50200

Choice of Clutch

05-32-01 electro-magnetic clutch, 12 V 2xA pulley
05-32-02 electro-magnetic clutch, 24 V 2xA pulley
05-32-03 electro-magnetic clutch, 12 V 1xB pulley
05-32-04 electro-magnetic clutch, 24 V 1xB pulley

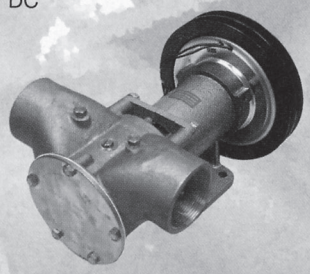
JOHNSON PUMP

Extra Heavy Duty Electro-Magnetic Clutch Pump

F9B-5600 – 2"

Pump body: Bronze. Connection for vacuum switch
Impeller: 09-814B (neoprene, high pressure), 09-802B (neoprene)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: 2" NPT
Clutch: Electro-magnetic 12/24 V DC
Pulley: 2xA or 1xB-groove

Dimensions and Weight
Length: 11.42"
Width: 7.56" (excl. pulley)
Height: 6.18" (excl. pulley)
Pulley dia: ø 7.00"
Weight: 29 lbs

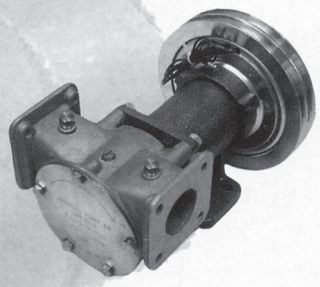


Order No.
10-13027-98 Neoprene impeller, full cam, without clutch

F9B-5600-VF– 2"

Technical data: see F9B-5600 – 2"

Dimensions and Weight
Length: 11.4" mm
Width: 5.98" (excl. pulley)
Height: 6.88" (excl. pulley)
Pulley dia: ø 7.00"
Weight: 27 lbs



Order No.
10-13226-99 Neoprene impeller, full cam, without clutch

Choice of Clutch

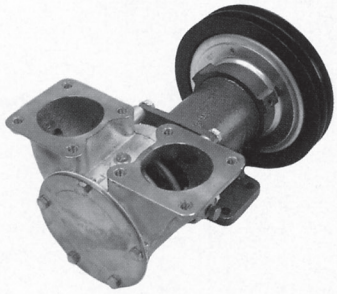
05-32-01 electro-magnetic clutch, 12 V 2xA pulley
05-32-02 electro-magnetic clutch, 24 V 2xA pulley
05-32-03 electro-magnetic clutch, 12 V 1xB pulley
05-32-04 electro-magnetic clutch, 24 V 1xB pulley

Extra Heavy Duty Electro-Magnetic Clutch Pump

F9B-5600-TSS – 2"

Technical data: see F9B-5600 – 2"

Dimensions and Weight
Length: 11.4"
Width: 7.87" (excl. pulley)
Height: 5.94" (excl. pulley)
Pulley dia: ø 7.00"
Weight: 27 lbs



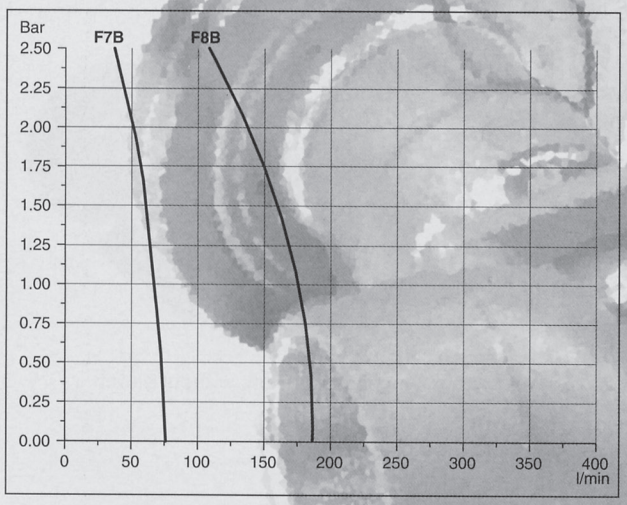
Order No.
10-13178-99 Neoprene impeller, full cam, without clutch

JOHNSON PUMP

Heavy Duty Manually Operated Clutch Pump

Capacity range for -5001 and 5001 MC

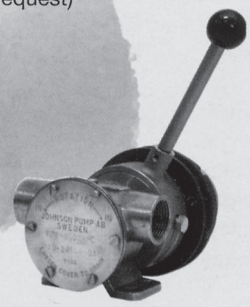
Neoprene impeller – 1400 rpm – Full cam – Water at 20°C



F7B-5001-MC – 1"

Pump body: Bronze
Impeller: 09-1028B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal
Cam: Full
Connection: 1" BSP (NPTF available on request)
Clutch: Manual
Pulley: 1xA-groove

Dimensions and Weight
Length: 8.07"
Width: 4.72" (excl. pulley)
Height: 4.33" (excl. pulley)
Pulley dia: ø 4.33"
Weight: 12 lbs

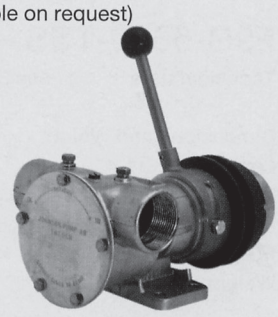


Order No.
10-24578-03 **Neoprene impeller, full cam, including clutch**

F8B-5001-MC – 1.1/2"

Pump body: Bronze
Impeller: 09-819B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal
Cam: Full
Connection: 1.½" BSP (NPTF available on request)
Clutch: Manual
Pulley: 1xA-groove

Dimensions and Weight
Length: 10.55"
Width: 6.26" (excl. pulley)
Height: 4.88" (excl. pulley)
Pulley dia: ø 4.33"
Weight: 21 lbs



Order No.
10-24559-01 **Neoprene impeller, full cam, including clutch**

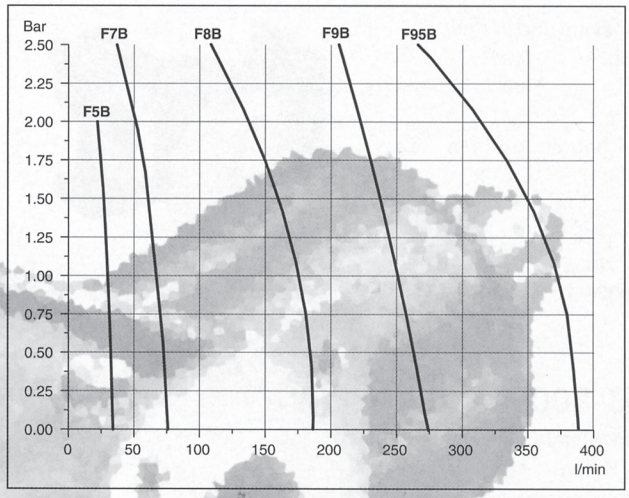
JOHNSON PUMP

SELF-PRIMING ALLROUND FLEXIBLE IMPELLER BRONZE PUMPS

Whenever you need greater strength or service from a pump, use a Johnson Pump extra heavy duty flexible impeller pump with separate bearing housing and mechanical seal for less wear and longer life.
These pumps cover the entire range of marine applications and may be used as cooling water pumps, bilge pumps, deckwash pumps, emergency and fire fighting pumps, etc.
Available in sizes from 3/4" to 2.1/2" (3.5GPM - 168GPM).
Wearing parts are easily replaceable and service kits are available for all standard models. (See our Spare part list JP207R.)
Vacuum switch as extra accessory

Capacity range

Neoprene impeller – 1400 rpm – Full cam – Water at 20°C

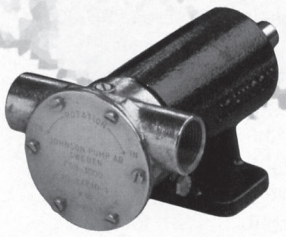


Extra Heavy Duty Impeller Pump

F5B-3000 – 3/4"

Pump body: Bronze
Impeller: 09-1027B (neoprene)
09-1027B-9 (nitrile)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: 3/4" NPT

Dimensions and Weight
Length: 7.68"
Width: 4.17"
Height: 3.46"
Drive shaft dia: ø17 mm
Weight: 6.5 lbs

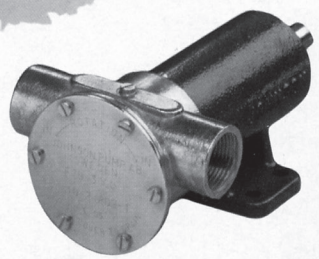


Order No.
10-24210-5 Neoprene impeller, full cam
On request: Nitrile impeller, reduced cam

F7B-3000 – 1"

Pump body: Bronze
Impeller: 09-1028B (neoprene)
09-1028B-9 (nitrile)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: 1" NPT

Dimensions and Weight
Length: 8.38"
Width: 4.72"
Height: 3.66"
Drive shaft dia: ø17 mm
Weight: 6.9 lbs



Order No.
10-24209-7 Neoprene impeller, full cam
On request: Nitrile impeller, reduced cam

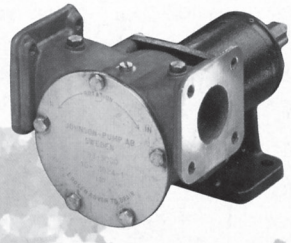
JOHNSON PUMP

Extra Heavy Duty Impeller Pump

F8B-3000-VF – 1.1/2"

Pump body: Bronze. Connection for vacuum switch
Impeller: 09-819B (neoprene)
09-819B-9 (nitrile)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: Flange. Port adaptor kit 1.1/2" NPT available as accessory.

Dimensions and Weight
Length: 10.04"
Width: 5.98"
Height: 6.06"
Drive shaft dia: ø24 mm
Weight: 16.5 lbs

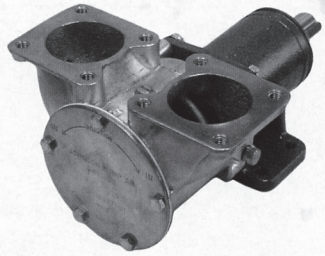


Order No.
10-13024-1 Neoprene impeller, full cam
On request: Nitrile impeller, reduced cam

F8B-3000-TSS – 1.1/2"

Technical data: see F8B-3000- VF – 1.1/2"

Dimensions and Weight
Length: 10.04"
Width: 7.79"
Height: 5.94"
Drive shaft dia: ø24 mm
Weight: 16.5 lbs

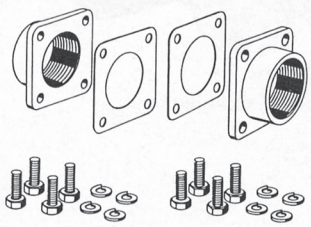


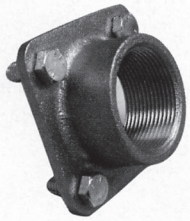
Order No.
10-13175-01 Neoprene impeller, full cam
On request: Nitrile impeller, reduced cam

Port adaptor kit

1.1/2" NPT
Order No. 09-45562

2" BSP for F9B-3000-VF and F9B-3000-TSS
(NPTF available on request)
Order No. 09-46557-01

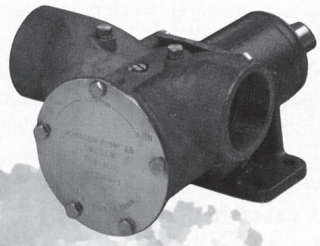




F9B-3000 – 2"

Pump body: Bronze. Connection for vacuum switch
Impeller: 09-802B (neoprene)
09-814B (neoprene, high pressure)
Shaft: Stainless steel
Seal: Mechanical seal
Cam: Full or reduced
Pedestal: Cast iron with permanently lubricated double ball bearings
Connection: 2" NPT

Dimensions and Weight
Length: 11.10"
Width: 7.56"
Height: 6.18"
Drive shaft dia: ø24 mm
Weight: 21 lbs

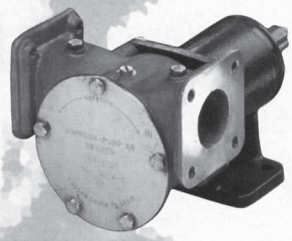


Order No.
10-13026-7 Neoprene impeller, full cam
On request: High pressure neoprene impeller, reduced cam

F9B-3000-VF – 2"

Technical data: see F9B-3000 – 2"

Dimensions and Weight
Length: 11.10"
Width: 5.98"
Height: 6.89"
Drive shaft dia: ø24 mm
Weight: 21 lbs

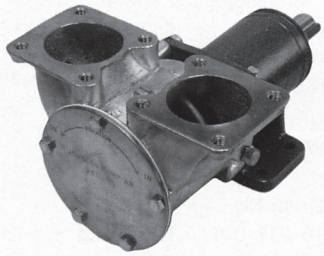


Order No.
10-13225-01 Neoprene impeller, full cam
On request: High pressure neoprene impeller, reduced cam

F9B-3000-TSS – 2"

Technical data: see F9B-3000 – 2"

Dimensions and Weight
Length: 11.10"
Width: 7.87"
Height: 5.94
Drive shaft dia: ø24 mm
Weight: 21. lbs

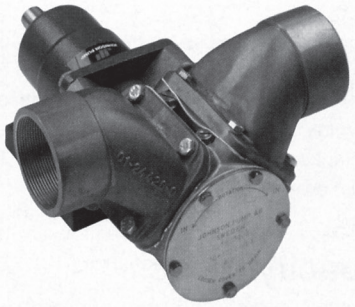


Order No.
10-13177-01 Neoprene impeller, full cam
On request: High pressure neoprene impeller, reduced cam

JOHNSON PUMP

Extra Heavy Duty, High Flow, Impeller Pump

F95B-3000 – 2.1/2"



Pump body:	Bronze
Impeller:	09-820B (neoprene)
Shaft:	Stainless steel
Seal:	Mechanical seal
Cam:	Full or reduced
Pedestal:	Cast iron with permanently lubricated double ball bearings
Connection:	Flange with 2.½" NPT port adaptors The port adaptors can be fitted either vertically or horizontally

Dimensions and Weight

Length:	13.93"	
Width:	9.68"	(vertical ports)
	11.61"	(horizontal ports)
Height:	8.89"	(vertical ports)
	7.91"	(horizontal ports)
Drive shaft dia:	ø24 mm	
Weight:	38 lbs	

Order No.

10-13121-04	Neoprene impeller, full cam
	On request: Reduced cam

HANDICAP? WHAT HANDICAP?

A listing of famous people in history who didn't let their handicaps stand in the way of accomplishment.

Ludwig von Beethoven, 1770-1827
Went completely deaf during his thirties, yet continued to write some of the world's greatest music.

Elizabeth Barrett Browning, 1806-1861
Incapacitated as a result of a childhood spinal injury and lung ailment. Became a renowned poet, political thinker, and feminist.

Thomas Edison, 1847-1931
Developed hearing problems early in life that became progressively worse as he grew older. Edison was one of the greatest and most productive inventors of his time.

Albert Einstein, 1879-1955
Unable to speak until the age of three, Einstein was thought to be "simple-minded" until it was realized that he learned by visualization rather than by the use of language.

Joan of Arc, 1412-1431
Though she suffered from narcolepsy-an uncontrollable urge to sleep-this visionary French peasant led the French armies to victory over the English at Orleans in 1429.

General Philip Kearney, 1814-1862
A famous American general who lost an arm during the war with Mexico and went on to distinguish himself in the Civil War.

Helen Keller, 1880-1968
Born blind, deaf, and mute, but graduated cum laude from Radcliffe in 1904. She mastered five languages and wrote six books.

Dorothea Lange, 1895-1965
Walked with a limp due to a bout with polio at the age of seven. Lange spent her life traveling the world photographing the disenfranchised. She is most famous for her documentary images of American rural life during the Great Depression.

Lord Horatio Nelson, 1758-1805
Lost an eye and one arm, but went on to become an admiral and the hero of the battle of Trafalgar, where he destroyed the combined French and Spanish fleets.

John Milton, 1608-1674
Became blind at age 43, but went on to create his most famous epic, Paradise Lost. Considered by many to be the greatest English poet after Shakespeare.

Alexander Pope, 1688-1744
A hunchback who was the first English poet to enjoy contemporary fame throughout the European continent and to see translations of his poems into modern as well as ancient languages.

Wiley Post, 1899-1935
Despite the loss of one eye, he became one of the most colorful figures of the early years of U.S. aviation and made the first solo flight around the world in 1933.

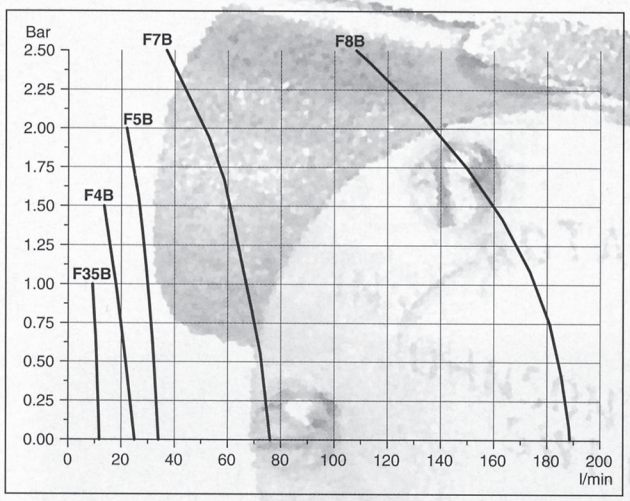
Charles Steinmetz, 1865-1923
A hunchback, this German-born American electrical engineer developed a practical method of making calculations of alternating current, thus revolutionizing electrical engineering.

Heavy Duty Impeller Pump

A range of multipurpose bronze pumps. Compact design, raw water resistant pumps at an attractive price – with the renowned Johnson Pump quality. These pumps are designed for a number of applications on board.
With excellent self-priming capability, these pumps are ideal as cooling water pumps for marine engines, bilge pumps, deckwash pumps, fresh water pumps, fuel transfer pumps and other applications. Also ideally suited on shore to empty septic tanks, to flush clean and to fill water tanks. Available in sizes from $^{3}/_{8}$" to 1.$^{1}/_{2}$" (1GPM - 75GPM).
Vacuum switch as extra accessory

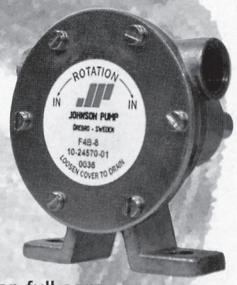
Capacity range

Neoprene impeller – 1400 rpm – Full cam – Water at 20°C



F4B-8 – 3/8"

Pump body: Bronze
Impeller: 09-810B (neoprene)
09-810B-9 (nitrile)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal alt. lip seal.
Cam: Full or reduced
Connection: $^{3}/_{8}$" NPT

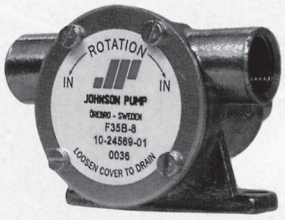


Dimensions and Weight
Length: 4.37”
Width: 3.15”
Height: 1.97”
Drive shaft dia: ø $^{3}/_{8}$ ”
Weight: 1.8 lbs

Order No.
10-24570-52 Lipseal, neoprene impeller, full cam
On request: Nitrile impeller, reduced cam
*10-24570-51 Mechanical seal, neoprene impeller, full cam

F35B-8 – 3/8"

Pump body: Bronze
Impeller: 09-808B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal alt. lip seal.
Cam: Full or reduced
Connection: $^{3}/_{8}$" NPT

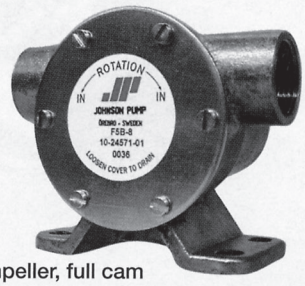


Dimensions and Weight
Length: 4.29”
Width: 3.14”
Height: 1.18”
Drive shaft dia: ø $^{3}/_{8}$ ”
Weight: 1.2 lbs

Order No.
10-24569-52 Lipseal, neoprene impeller, full cam
On request: Reduced cam
*10-24569-51 Mechanical seal, neoprene impeller, full cam

F5B-8 – 3/4"

Pump body: Bronze
Impeller: 09-1027B (neoprene)
09-1027B-9 (nitrile)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal alt. lip seal.
Cam: Full or reduced
Connection: $^{3}/_{4}$" NPT



Dimensions and Weight
Length: 5.95”
Width: 4.17”
Height: 1.97”
Drive shaft dia: ø $^{5}/_{8}$ ”
Weight: 3.5 lbs

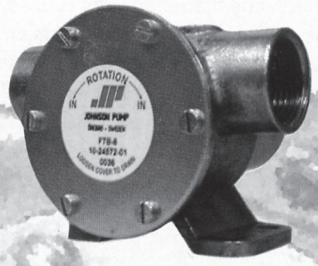
Order No.
10-24571-52 Lipseal, neoprene impeller, full cam
On request: Nitrile impeller, reduced cam
*10-24571-51 Mechanical seal, neoprene impeller, full cam

*Mechanical seal version available on request

JOHNSON PUMP

F7B-8 – 1"

Pump body: Bronze
Impeller: 09-1028B (neoprene)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal alt. lip seal.
Cam: Full or reduced
Connection: 1" NPT

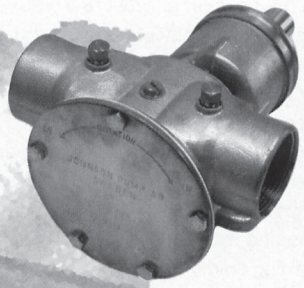


Dimensions and Weight
Length: 6.69"
Width: 4.72"
Height: 1.97"
Drive shaft dia: ø 5/8 "
Weight: 4.0 lbs

Order No.
10-24572-51 Mechanical seal, neoprene impeller, full cam
Replaces series 10-24070

F8B-8 – 1.1/2"

Pump body: Bronze
Impeller: 09-819B (neoprene)
09-819B-9 (nitrile)
Shaft: Stainless steel
The shaft is mounted with permanently lubricated double ball bearings
Seal: Mechanical seal
Cam: Full or reduced
Connection: 1.1/2" NPT



Dimensions and Weight
Length: 217 mm
Width: 160 mm
Height: 65 mm
Drive shaft dia: ø24h8 mm
Weight: 5.9 kg

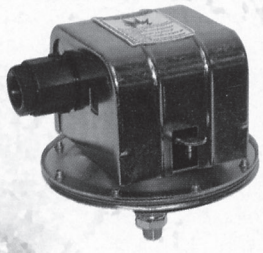
Order No.
10-13021-9 Original Johnson Pump Style
24 mm shaft
***10-13021-95** US version 1 1/4" ports, 1" shaft keyed
10-13021-96 US version 1 1/2" ports, 1" shaft keyed

*replaces Jabsco series 6400

Vacuum Switch

for automatic shut off operation
to prevent pump damage

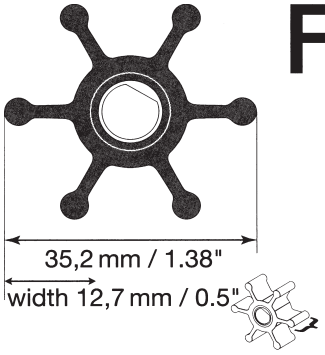
The vacuum switch works with all self-priming impeller pumps and should be used for e.g. bilge pumping/emptying of tanks to prevent the pump from dry running.
The vacuum switch automatically shuts the pump off when the bilge/tank is dry. With the switch fitted, you can start the pump by remote push button or manually by depressing lever on the switch.



Order No.
09-45053

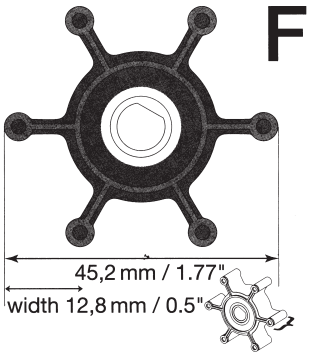
JOHNSON PUMP

F2

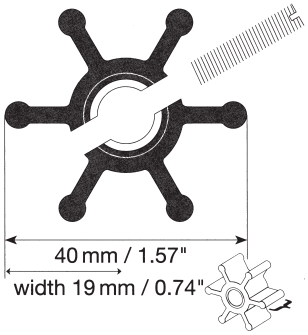


Impeller article number 09-1077B-9
Nitrile (oil resistant)

F3

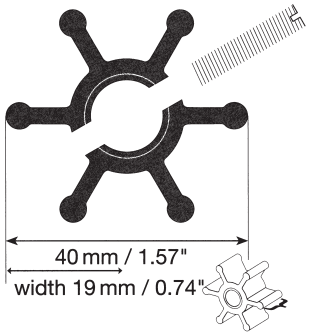


Impeller article number 09-1052S-9
Nitrile (oil resistant)



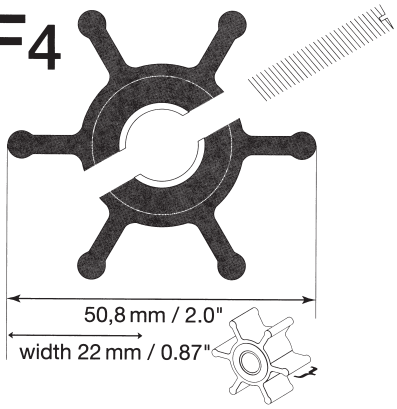
Impeller article number 09-806B
Neoprene (for cooling)
replaces Jabsco 4528-0001 Europe & USA
inner diameter 9,5 mm

F35

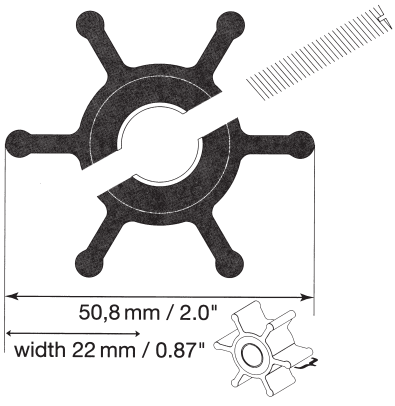


Impeller article number 09-808B
Neoprene (for cooling)
replaces Jabsco 22405-0001 Europe & USA
inner diameter 12 mm

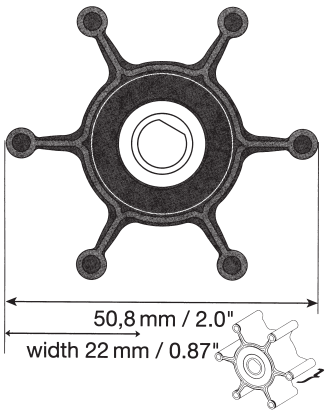
F4



Impeller article number 09-810B
Neoprene (for cooling)
replaces Jabsco 18653-0001 Europe & USA
Impeller article number 09-810B-9
Nitrile (oil resistant)
inner diameter 12 mm

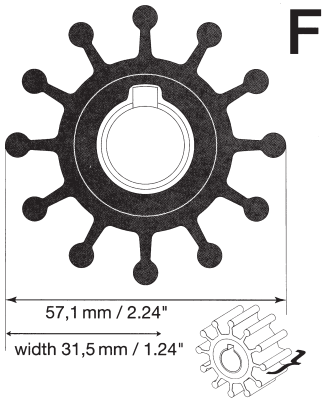


Impeller article number 09-1026B
Neoprene (for cooling)
replaces Jabsco 673-0001 Europe & USA
Impeller article number 09-1026B-9
Nitrile (oil resistant)
replaces Jabsco 673-0003 Europe & USA
inner diameter 12,7 mm

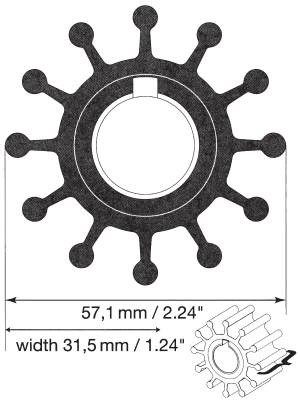


Impeller article number 09-824P-9
Nitrile (oil resistant)
replaces Jabsco 6303-0003 Europe & USA

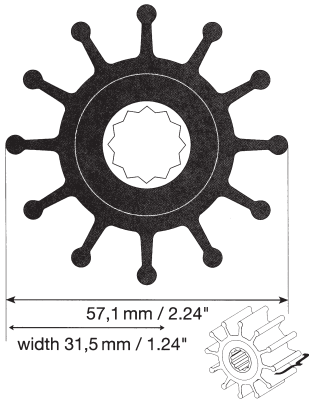
F5



Impeller article number 09-801B
Neoprene (for cooling)
replaces Jabsco 4568-0001 Europe & USA
inner diameter 15,9 mm/key

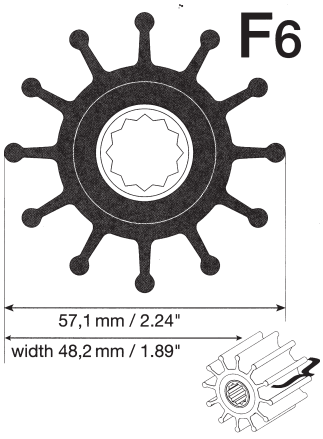


Impeller article number 09-804B-9
Nitrile (oil resistant)
inner diameter 20 mm/key



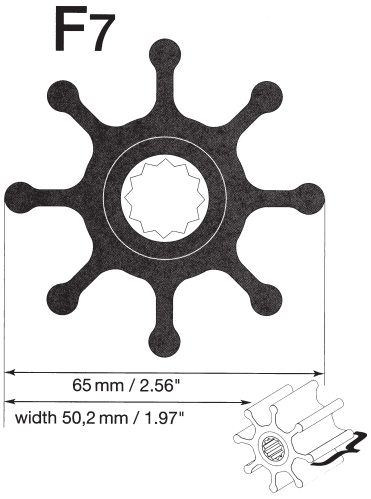
Impeller article number 09-1027B
Neoprene (for cooling)
replaces Jabsco 1210-0001 Europe & USA
Impeller article number 09-1027B-9
Nitrile (oil resistant)
replaces Jabsco 1210-0003 Europe & USA

F6



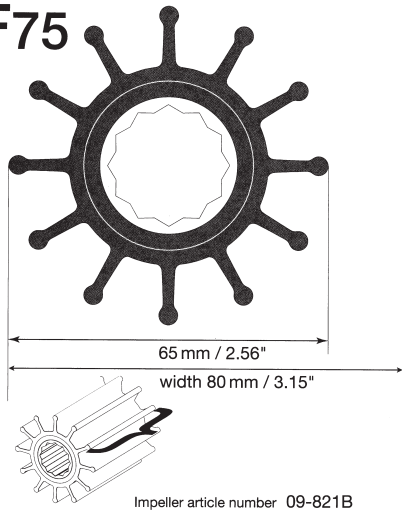
Impeller article number 09-812B
Neoprene (for cooling)
replaces Jabsco 13554-0001 USA

F7



Impeller article number 09-1028B
Neoprene (for cooling)
replaces Jabsco 17937-0001 Europe & USA
Impeller article number 09-1028B-9
Nitrile (oil resistant)
replaces Jabsco 17937-0003 Europe & USA

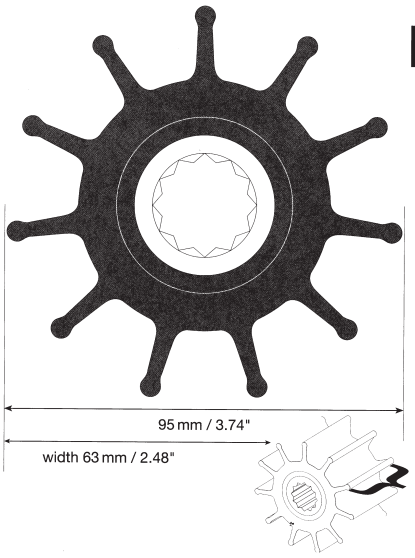
F75



Impeller article number 09-821B
Neoprene (for cooling)

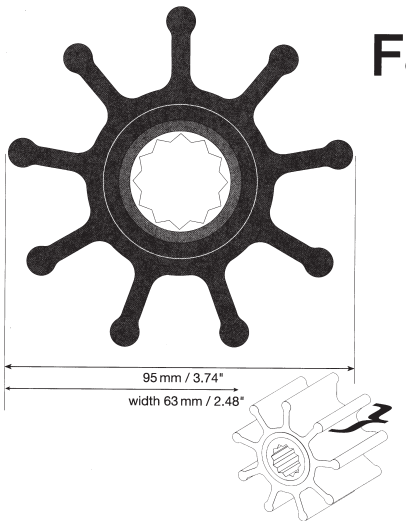
F8

Impeller article number 09-819B
Neoprene (for cooling)
replaces Jabsco 836-0001 Europe & 17935-0001 USA
Impeller article number 09-819B-9
Nitrile (oil resistant)
replaces Jabsco 836-0003 Europe & 17935-0003 USA

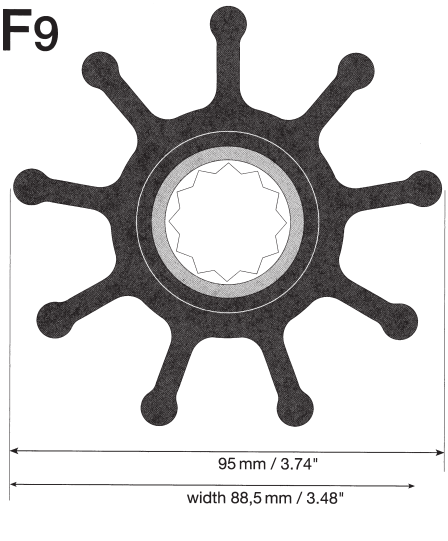


Impeller article number 09-1029B
Neoprene (for cooling)
replaces Jabsco 836-0001 Europe & 17935-001 USA
Impeller article number 09-1029B-9
Nitrile (oil resistant)
replaces Jabsco 836-0003 Europe & 17935-003 USA

F8

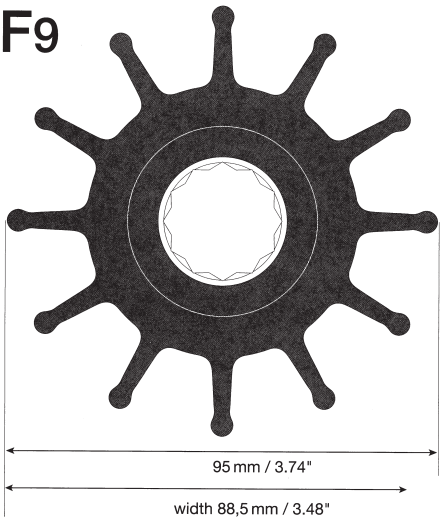


F9



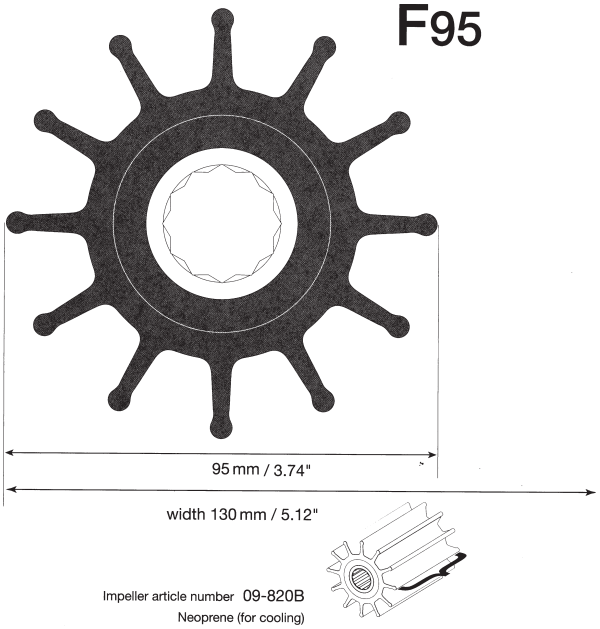
Impeller article number 09-802B
Neoprene (for cooling)
replaces Jabsco 6760-0001 Europe & USA

F9



Impeller article number 09-814B
Neoprene (for cooling)
replaces Jabsco 21676-0001 Europe & 17936-0001 USA

F95



Impeller article number 09-820B
Neoprene (for cooling)

NEG	FRI	FRI	THU	WED	TUE	MON
8	7	6	5	4	3	2
16	15	14	13	12	11	9
23	22	21	20	19	18	17
31	30	29	28	27	26	25
38	37	36	35	34	33	32

RUSH JOB CALENDAR

1. Every job is in a rush. Everyone wants his job yesterday. With this calendar, a customer can order his work on the **7th** and have it delivered on the **3rd**
2. All customers want their jobs on **Friday** so there are two **Fridays** in every week. ,
3. There are seven days at the end of the month for those end-of-the-month jobs
4. There will be no first-of-the-month bills to be paid, as there isn't any "first. " The "tenth"and "twenty-fifth"have also been omitted in case you have been asked to pay them one of those days
5. There are no bothersome non productive Saturdays and Sundays No time-and-a-half or doubletime to pay.
6. There's a new day each week called **Neg**otiation Day.

THE DRIVESAVER

GLOBE/BARCO IMPELLER DIMENSIONS

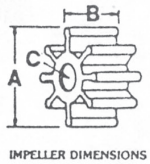
SILHOUETTE NUMBER	GLOBE/BARCO MODEL NUMBERS	IMPELLER DIMENSIONS "A"	"B"	SHAFT DIAMETER "C"*	BLADES
I	321	1 1/4	15/32	5/16SF	6
II	421	1 9/16	3/4	3/8PD	6
II	014	1 9/16	3/4	5/16 SF	6
II	1112	1 9/16	3/4	1/2PD	6
III	032SS	2	7/8	1/2SS	6
III	219	2	7/8	5/16PD	6
III	418	2	7/8	1/2K	6
III	815	2	7/8	1/2SF	6
III	912	2	7/8	5/16	6
III	6541	2	7/8	1/2PD	6
IV	025	2	7/8	5/16SF	6
V	050DF	2	7/8	5/8DF	10
V	419	2	7/8	1/2DF	10
V	223	2	7/8	5/8K	10
VI	1016	1 19/32	3/4	5/16SF	10
VII	050SS	2 1/4	1 1/4	1/2SS	12
VII	075	2 1/4	1 1/4	5/8	12
VII	100V	2 1/4	2	5/8	12
VII	1101	2 1/4	1 1/4	5/8K	12
VII	1130	2 1/4	25/32	1/2K	12
VII	6862	2 1/4	1 1/4	5/8DF	10
VIII	090	2 9/16	1 7/16	5/8	8
VIII	100	2 9/16	2	5/8	8
VIII	100DF	2 9/16	2	5/8DF	8
VIII	100SS	2 9/16	2	5/8SS	8
VIII	1111	2 9/16	3	5/8	8
VIII	1114	2 9/16	2	5/8K	8
VIII	1115	2 9/16	2	5/8K	8
VIII	2000	2 9/16	2	3/4K	8
IX	610	2 7/16	7/8	5/8K	12
IX	620	2 7/16	1 1/4	5/8K	12
X	625	2 9/16	1 5/8	5/8K	12
X	757	2 9/16	1 1/4	5/8K	12
XI	1015	2 1/4	3/4	3/8SF	6
XII	630	3 1/4	2 7/8	20MM	12
XIII	726	3 7/16	3/4	1 17/32	6
XIV	200DF	3 3/4	3 1/2	1DF	12
XIV	1019	3 3/4	2 1/2	1DF	12
XIV	1113	3 3/4	2 1/2	1	12
XIV	1213	3 3/4	3 1/2	1	12
XV	125	3 3/4	2 1/2	1	9
XV	200	3 3/4	3 1/2	1	9
XV	723	3 3/4	2 1/2	1K	9
XV	1127	3 3/4	2 1/2	1DF	10
XVI	318	2 1/4	1 1/4	5/8DF	12
XVI	616	2 1/4	1 1/4	5/8	10
XVII	110	2 9/16	2	5/8	10
XVII	110SS	2 9/16	2	5/8SS	10
XVII	845	2 9/16	2 21/32	5/8	10
XVIII	456	4 5/8	3 1/2	1DF	9
XIX	1000	2 11/64	1 19/64	7/8	6

OTHER PUMP REPLACEMENT PARTS

188	PUMP
188WP	WEAR PLATE
188EC	END COVER
188PH	PUMPHEAD
457	CAM
463	CAM
464	CAM
465	CAM

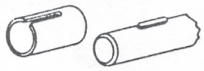
613	CAM
772	GASKET
773	GASKET
774	GASKET
775	GASKET
970	IMPELLER
6408	SEAL
92700	SEAL

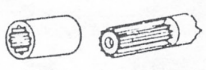
* All GLOBE/BARCO impellers have a 12 point spline drive unless otherwise noted under shaft diameter



IMPELLER DIMENSIONS

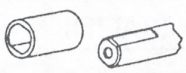

SS DING DRIVE (KEYWAY)


KEY DRIVE


BARCO BRASS SPLINE DRIVE


SF SINGLE FLAT DRIVE


THROUGH HOLE PIN DRIVE


DF DOUBLE FLAT DRIVE

GLOBE/BARCO PUMP REPLACEMENT PARTS

Cross Reference By Manufacturer Or Engine Company Part Number

MODEL NUMBERS		GLOBE/BARCO MODEL NUMBERS
JABSCO		
331-0001	thru 8	125
673-0001	thru 8	6541
702-0001	thru 8	100
790-0001	thru 8	125
807-0001	thru 8	125
816-0000		772
834-0001		464
836-0001	thru 8	125
890-0000		773
920-0001		100
934-0000		463
964-0001	thru 8	100
1111-0001	thru 8	100
1133-0001	thru 8	6541
1210-0001	thru 8	075
1414-0001	thru 8	321
1427-0001	thru 8	1101
2173-0001	thru 8	1114
2820-0001	thru 8	1114
2877-0001	thru 8	1101
3085-0001	thru 8	616
3255-0000		463
3605-0001	thru 8	6541
4527-0001	thru 8	219
4528-0001	thru 8	421
4568-0001	thru 8	1101
4598-0001	thru 8	1115
5243-0010		014
5616-0001	thru 8	032SS
5915-0001	thru 8	100
5929-0001	thru 8	050SS
6056-0001	thru 8	100SS
6056-NITRILE		110SS
6050 SERIES		188
6303-0001	thru 8	025
6407-0010		6408
6760-0001	thru 8	200
6988-0000		465
7273-0001	thru 8	912
7614-0001	thru 8	6862
8444-0001	thru 8	318
8566-0001	thru 8	6862
8840-0001	thru 8	100DF
8980-0001	thru 8	318
8981-0001	thru 8	100DF
8983-0001	thru 8	1127
8984-0001	thru15	456
9200-0001	thru 8	1016
11979-0001	thru 8	090
12222-0001	thru 8	125
12326-0001	thru 8	100SS
12516-0001	thru 8	912
12946-0001	thru 8	6862
12977-0001	thru 8	1014
14281-0001	thru 8	318
14282-0001	thru 8	100DF
14346-0001	thru 8	1019
14544-0001	thru 8	6862
14545-0001	thru 8	318
14549-0001	thru 8	100DF
14556-0001	thru 8	100DF
14600-0001	thru 8	6862
14601-0001	thru 8	318

MODEL NUMBERS		GLOBE/BARCO MODEL NUMBERS
14602-0001	thru 8	100DF
14603-0001	thru 8	100DF
14604-0001	thru 8	125
14605-0001	thru 8	1127
14750-0001	thru 8	321
14792-0001	thru 8	321
14806-0001	thru 8	318
14874-0001	thru 8	050DF
17018-0001	thru 8	1111
17222-0001	thru 8	1019
17370-0001	thru 8	200DF
17374-0001	thru 8	613
17935-0001	thru 8	1113
17936-0001	thru 8	1213
17937-0001	thru 8	110
17992-0001	thru 8	100
18018-0001	thru 8	125
18021-0001	thru 8	125
18785-0000	thru 8	457
18786-0001	thru 8	456
18838-0001	thru 8	620
18948-0001	thru 8	625
22120-0001	thru 8	100V
92700-0080		92700
114868-0001	thru 8	100
BEARCAT/HOMELITE		
90354-A		223
CATERPILLAR		
1L4774		125
3N1906		100
3N4859		200DF
3N4860		613
3N5895		1111
3N9009		100
4L8470		200
4N6582		1111
5N9360		1113
6L8792		6408
7E0321		630
PP1027		456
PP1028		457
CRUSADER		
20300		625
1003026		620
CUMMINS DIESEL		
B10615		625
21601R		125
136519		6408
166758		125
177543		773
556540		125
650607		100
3008503		200DF
3008505		613
3908220		620
3916852		630
DETROIT DIESEL		
5193553		125
5193562		773
5193602		100
5193603		772
5196168		200

Continued....

THE DRIVESAVER

Cross Reference By Manufacturer Or Engine Company Part Number

MODEL NUMBERS	GLOBE/BARCO MODEL NUMBERS
DETROIT DIESEL	**Continued**
5198419	6408
5198550	200
8924838	1113
8924839	1213
8927570	200DF
8927571	613
23502086	456
23502089	457
FORD LEHMAN	
920	100
1210	075
HINO/KASHIYAMA	
16131-1300	845
ISUZU	
N5-2623-60-06-0	845
JOHNSON PUMP	
01-42424F8/F9	773
01-42445F7	772
08-804B-9	050SS
08-810B	6541
08-812B	100V
08-1026S	025
08-1029B	125
09-801B	1101
09-802B	200
09-806B	421
09-808B	1112
09-814B	1213
09-1026B	6541
09-1027B	075
09-1028B	100
MERCRUISER	
47-59362	2000
47-89984	1000
NORTHERN LIGHTS	
23-11031	100V
25-12002	075
145116140	075
145116180	419
OBERDORFER	
B6593	815
B6603	1114
B6620	1101
B86617	025
C7054	125
C7441	100
ONAN	
131-0160	1014
131-0386	1015
131-02189 KIT	1014
132-0117	620
132-0162	075
132-0316	815
132-0317	620
132B59	421
PERKINS	
0460027	125
0460038	075
24880031	100
NA900010	620
NA900012	625

MODEL NUMBERS	GLOBE/BARCO MODEL NUMBERS
PLEASURE CRAFT	
RO 061003	075
RO 61003E	100
RO 61015	620
RO 61017	625
PROVEN	
T100-4	757
T100-8	100
T100-12	723
RARITAN	
CH13	025
CH119D1	726
G13	025
SHERWOOD	
9000	610
9959	620
10077	1130
10187	1114
10615	625
11843	625
12336	1130
12337	620
12338	1114
17000	630
TEEL	
1R215	1130
1R216	620
1R217	1114
UNIVERSAL	
287439	1130
295628	815
302571	075
302875	610
VOLVO	
825941	100
834794	100V
835512	620
835874	625
844683	1213
875575	1101
875583	1112
875593	100
875660	125
875697	1213
875807	421
875808	6541
875811	075
WESTERBEKE	
11418	620
11764	1130
11907	620
18184	032SS
32620	1112
33100	1130
344407	6541
YANMAR	
104211-42072	421
124223-42091	418
128170-42070	321
145410-46090	1101

INSTRUCTIONS FOR CHANGING GLOBE/BARCO IMPELLERS DISASSEMBLY

1. Remove screws that hold end cover.
2. Remove end cover.
3. Remove gasket. We recommend replacing gasket each time pump is disassembled.
4. Using a good pair of pliers, the impeller can be removed by placing a firm grip on the hub of the impeller and pulling outward.
5. The seal can now be removed if necessary. Observe which direction the seal is seated, so that it can be properly replaced.

ASSEMBLY

1. Reassemble seal in pump. Make sure it has a good tight seal.
2. Start new impeller on the shaft and into the pump with a rotating motion in intended direction until proper alignment is made (whether spline, flat, pin, key or ding drive).
3. Replace gasket and align with the holes on the pump housing.
4. Replace end cover and screws.

Start-up note: IT IS NOT NECESSARY TO LUBRICATE YOUR NEW GLOBE/BARCO IMPELLER.

THE DRIVESAVER

GLOBE/BARCO IMPELLERS

Engine and Generator Cross Reference

CATERPILLAR

Engine	Globe/Barco Impeller
3208T, TA w/ Sherwood	630
3208T w/ Jabsco	100
3208TA w/ Jabsco	1113
3406, 353	200DF
3412	456

CHRIS CRAFT

Engine	Globe/Barco Impeller
Series K (95-120HP)	075
Series M (131-158HP)	075
Series F (283-327HP)	625
A-16, M-10263G	620
M-10264G, 630-2	620
D-05, S-11095G, G-45-1	625
M10261G, M10095G	1130
M10200G, N10360G	1130
N10200G	1130

CHRYSLER MARINE

Engine	Globe/Barco Impeller
M-80 (CW), E5913M, M-80	620
(CCW) E5839M, Slant 6	620
M225X, M273X, LM318X (double)	620
LM340X, LM318X (Single)	625
M383X, M413E, M440X	620 & 625
360	625
P10560G, P10710G, P10610G	620
A03, Q10855G, D75, R10935G	620
D60, N10390G, D65	620
P10550G, D55 (9959)	620
P10550G, D55 (10615)	625
C03, G5, G51, F10, G50, G7	625

CRUSADER

Engine	Globe/Barco Impeller
270HP	620
300HP, 350HP (#454)	625
H10, M10270G, M10280G, Q10755G	620
10765G, M10210G, N10410G	620
P10700G, F15	620
S11040G, B04, E35	625
E20	1130

CUMMINS

Engine	Globe/Barco Impeller
504M	100
VT903, 555	125 or 1113
4B210, 250B	625
4BT250, 6BT300, 6BT400, 300B	630

DETROIT DIESEL

Engine	Globe/Barco Impeller
4-53, 8.2	100
6-71, 6V53	1113
6-92, 8V92	456
8V71, 12V71, J & T 6-71	1213

JABSCO

Engine	Globe/Barco Impeller
9900, 2620	6541
6400, 6590, 7420, 11870	125
2300, 5330, 11860, 12280	100
3270, 1673, 10190, 5850	075
3380, 3890, 14210, 11850	075
18830, 18840	075
12050, 10190	616
4530, 2760, 4540, 17120	421
5320	032SS
11810	050SS
6850, 6050	100SS
6360, 6370, 6380	025 Water Puppy
18690	025

JOHNSON & TOWERS

Engine	Globe/Barco Impeller
6-71 All	1213

JOHNSON PUMPS

Engine	Globe/Barco Impeller
F5B5007, F5B8007, F5B8907	075
F5B3007, F5B3907, F5B3927	075
F5B3927, F5B30007, F5B39007	075
F5B30207, F5B39207, F5B1907	075
F7B5007, F7B50017, F7B8007	100
F7B8907, F7B8037, F7B8937	100
F7B3007, F7B3907, F7B3037	100
F7B3937, F7B30007, F7B39007	100
F7B30307, F7B39307, F7B30207	100
F7B39207	100
F8B5000, F8B50017, F8B8007	125
F8B8907, F8B8037, F8B3000	125
F8B3900, F8B3030, F8B3930	125
F9B5007, F9B3007, F9B3037	200
F9B3027	200
F9B5607, F9B3607, F8B3637	1213
F9B3627	1213
F35B8027	1112
F4B8007, F4B8027, F4B8907	6541
F4B8927, F4B8037, F4B8937	6541
F3B1907	025
TA3P1019 Macerator 12/24/32V	025

LEHMAN

Engine	Globe/Barco Impeller
85-135HP	075
200HP and up	100

MACERATOR PUMPS

Engine	Globe/Barco Impeller
ALL	025

MERCRUISERS

Engine	Globe/Barco Impeller
Inboards 1981 to Present (Belt)	2000
Stern Drives, Outboards 80 HP+	1000
Alpha Drive	1000

OBERDORFER

Engine	Globe/Barco Impeller
201DA88, 201DA89, 201DA90	025
201M, 202M	815
211MF34, 214MF34	815
209MA92, 209MA94	025
301M, 305MC75, 305MF77	1101
401M2	100
405M4M26, 405M4N26, M405MK4M26	1114
405MK4N26, M405M475	1114
501M	125

OMC

Engine	Globe/Barco Impeller
G422, G46, H85, G45-2	625

ONAN

Engine	Globe/Barco Impeller
4.0kw	421
6.5kw	1014
8.0kw	815
10-12kw	075
20kw, RPGC, K75	620
L10	625

PATHFINDER

Engine	Globe/Barco Impeller
J90	625

Engine	Globe/Barco Impeller

PERKINS

RPBC	625
654	100
4107, 4108-Jabsco	075
4108-Sherwood	620
H5, B06G65	620

PLEASURE CRAFT

302 C.I. (225HP)	620
351 C.I. (#270)	620
454 CI	625

UNIVERSAL

G903	610

Engine	Globe/Barco Impeller

VOLVO

MD1, MD26, MD2B, MD10	421
MD6A	421
AQD21A, AQ200-225	075
AQ260-280	075
MD328, TAMD40, TND70	100
AQ200, 225, 250, 270, 290	100V
AQ220A, B, C, AQ225A, B, C	620
AQ255A	620
AQADA40A (TAMD40A)	125

WESTERBEKE

F85, R10870G	620
F95	625
A20, R30G1, H70	1130

YAMAHA

R991	620

POLI-TALKS
More quotes from (and about) our revered politicians.

• “I think it’s about time we voted for senators with breasts. After all, we’ve been voting for boobs long enough.” -Claire Sargent, Arizona senate candidate in 1992, on women candidates

• “They told me to go for the jugular-so I did. It was mine.” —Bob Dole, on the 1976 failure of the Ford-Dole ticket

• “Politics is show business for ugly people.”-Paul Begala, Clinton’s campaign adviser

• “Washington is Salem. If we’re not lynching somebody 24 hours a day in this wretched town, we’re not happy.” -Tom Korologos, Washington lobbyist

• “That’s a good question. Let me try to evade you.” -Paul Tsongas, presidential candidate, in 1992

• “Look, half the time when I see the evening news, I wouldn’t be for me, either.” -Bill Clinton, in 1995

• “Democracy is the process by which people choose the man who’ll get the blame.” -Bertrand Russell

• “Unlike the president, I inhaled. And then I threw up.” -Christine Todd Whitman, governor of New Jersey

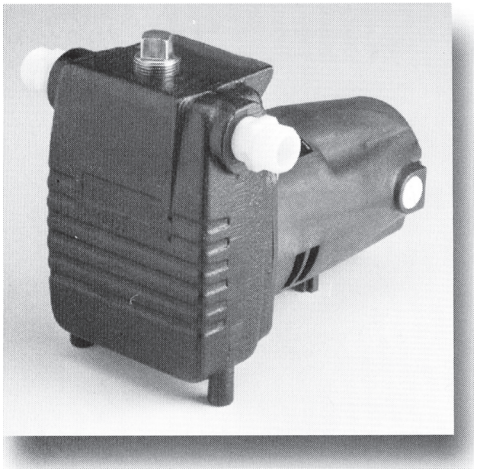
• “If hypocrisy were gold, the Capitol would be Fort Knox.” -Sen. John McCain

JACUZZI®

"The Most Trusted Name In Water"®

5PHP Series

Portable Hose Pump



Applications:

Home: Basement flood dewatering; liquid fertilizing of lawn, trees, shrubs; boosting pressure for car washing; emptying of pleasure boat bilges; use as a standby pump.

Farm: Filling stock tanks; spreading liquid fertilizer; dewatering low spots; draining pits; washing car, truck and farm machinery.

PHP Pump delivers up to 1200 GPH for fast drainage.

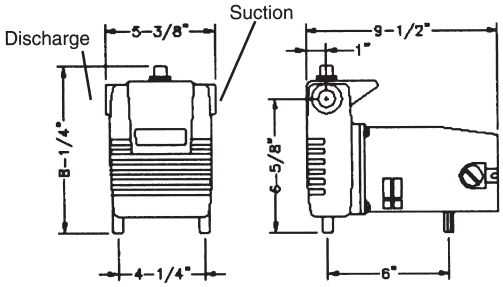
Industry: Pit draining; filling and draining tanks and drums; circulation of liquids; circulating soluble cutting fluids; boosting pressure for equipment cleaning.

c UL us LISTED

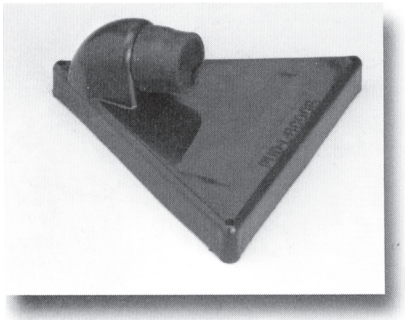
Features:

- ❏ **Rugged cast iron body** plus motor weighs just 15 pounds – easily moved from job to job.
- ❏ **High-powered motor –** 1/2 HP, 7500 RPM, 115 Volt, 9 Amp electric double ball bearing motor.
- ❏ **Compact – just 9-1/2" long**
- ❏ **High-efficiency, molded open-type impeller**
- ❏ **Equipped with 10 feet of 3-conductor electric cord** with molded plug on double insulated motor (grounding pin not required).
- ❏ 3/4" FNPT suction, 3/4" FNPT discharge
- ❏ **Maximum temperature 150½F.**
- ❏ **Up to 25' lift.**

Dimensions (In Inches)



Note: Pump must always be primed before operation. If run dry, damage will occur.



ORDERING INFORMATION

Order No.	Model No.	HP	Description
9172-0279	5PHP	1/2	Portable Centrifugal

Pud-L-Scoop
ORDERING INFORMATION

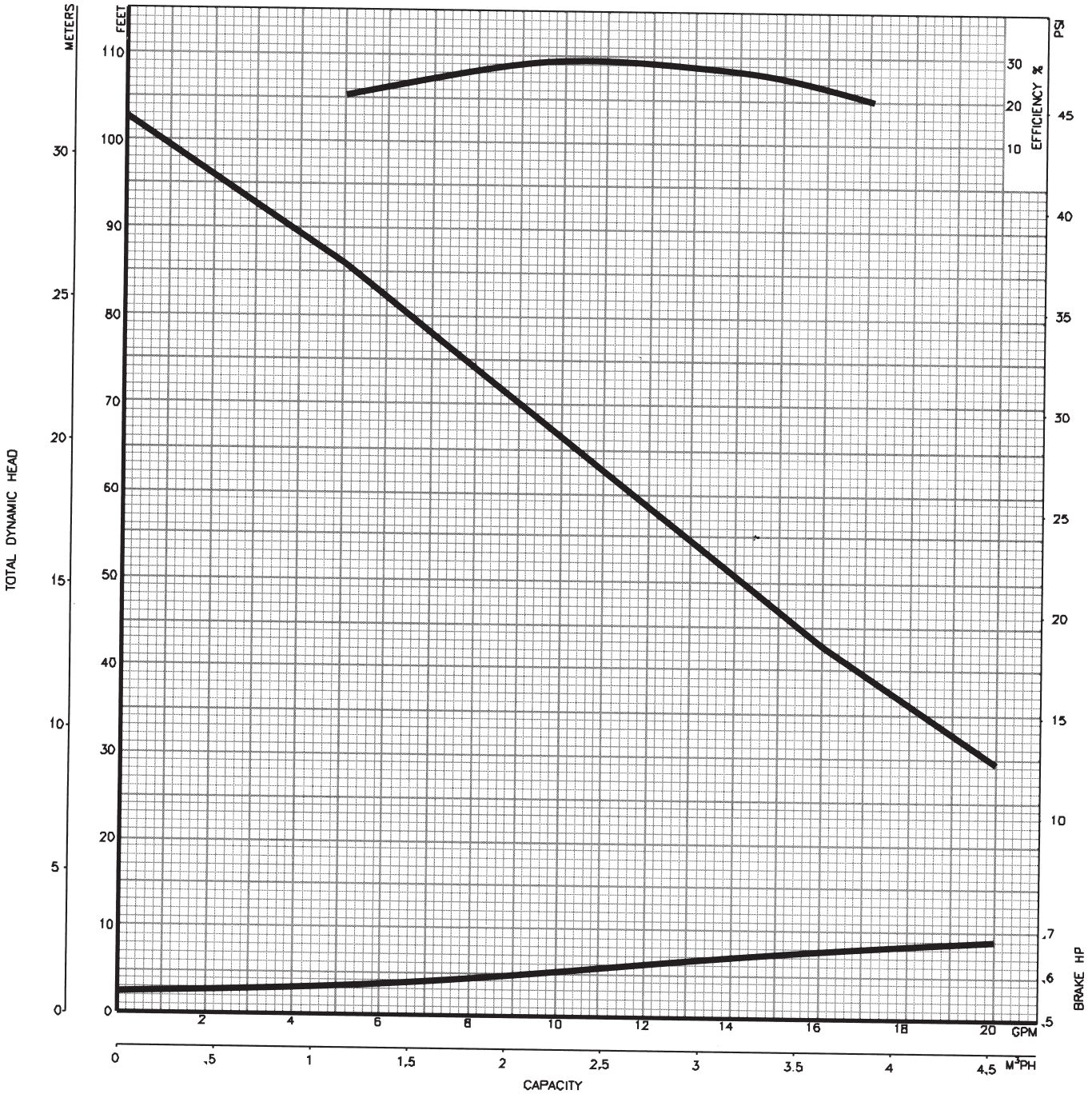
Order No.	Model No	Description	Weight
90151	PUD-L-SCOOP	Vacuum Head	1

JACUZZI®

"The Most Trusted Name In Water"®

5PHP Series

Performance



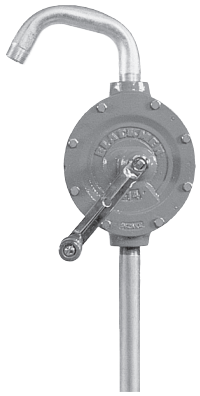
Performance Chart

Total PSI	44	41	39	35	32	29	25	22	19	15	13
Head Feet	103	96	89	82	74	66	58	50	43	36	29
GPM	0	2	4	6	8	10	12	14	16	18	20
GPH	0	120	240	360	480	600	720	840	960	1080	1200

WARNING: Use Non-Collapsible Suction Hose only.

blackmer

HAND OPERATED PUMPS



APPLICATIONS

Liquid dispensing: Pumping petroleum products, solvents, coolants or curing agents from barrels or drums into smaller containers for convenient handling, sales, or small quantity use.

Liquid transfer: Moving fuels, solvents, commercial and process liquids from drums to other large tanks with a hose and nozzle, as in refueling diesel or gasoline powered vehicles or equipment.

In-line systems applications: Transfer of fuels, solvents, and other liquids from one large container to another by means of a permanently piped, fixed system with the pump as an integral part of a transfer line. Often used to move liquids from central or nearby outside storage to in-plant drums or tanks.

Flammable liquids handling: FM Approved models meet OSHA safety guidelines and regulations for handling Class I and Class II flammable and combustible liquids like gasoline, naphtha, solvents and thinners.

OEM applications: With pumps mounted directly on agricultural or off-road equipment for standby fueling or pre-lubricating of bearing surfaces on large diesel engines before start-up.

SELECTION DATA

PUMP MODEL	LIQUID SERVICE	CAPACITY GAL @ 115 REV (LITS. @ 115 REV)	PORT SIZE NPT	MAXIMUM VISCOSITY SSU (Cs)	MAXIMUM PRESSURE PSI (kPa)	MAXIMUM TEMPERATURE °F (°C)
210A	General Transfer	10 (38)	3/4"	2000 (420)	10 (0.7)	300 (149)
F210A	Flammable/Combustible Fluids	10 (38)	3/4"	2000 (420)	10 (0.7)	300 (149)
414B	Heavy-Duty Transfer	14 (53)	1 1/4"	10,000 (2,200)	20 (1.4)	300 (149)
807B	Heavy-Duty Viscous Fluid Transfer	7 (26)	1 1/4"	30,000 (6,300)	40 (2.8)	300 (149)
828B	Heavy-Duty High Volume Transfer	28 (106)	1 1/4"	5,000 (1,050)	10 (0.7)	300 (149)

STANDARD MATERIALS OF CONSTRUCTION – AT MODELS

PUMP CASING	ROTOR	VANES	SPRINGS	SPOUT/ SUCTION PIPE	SUCTION PIPE O-RING
Cast Iron	Cast Iron	Carbon	Stainless Steel	Galvanized Steel	Buna-N

Invention

Great discoveries and improvements invariably involve the cooperation of many minds. I may be given credit for the subsequent developments I feel the credit is due to others rather than to myself. Alexander Graham Bell

Investment

The best investment is in the tools of one's own trade. Benjamin Franklin

continued from (end of Section A)

The three great philosphical questions that all philosophers concern themselves with are these:

Where did I come from (the question of origin)?
Why am I here (the question of purpose)?
Where am I going (the question of destiny)?

Origins

Swiss scientist Charles Guye calculated the possibility of even one protein (not 239) with an average amino-acid chain getting lined up in the proper sequence as 1 in 10 to the 321st power (10 with 321 zeros behind it). To give you an idea of how outrageous number that is, the total number of fundamental particles in the universe is 10 to the 134 power (10 with 134 zeros behind it). That means there aren't enough fundamental particles in the entire universe to illustrate the odds of even a single protein molecule.

Dr. Guye also claimed that the time required to run the optional combinations would be 10 to the 234 power billion years. Even if one assumes the earth is 4.5 billion years old, 4.5 billion years is only 10 to the 18 power in seconds. Putting both of these concepts together, there aren't enough particles in the universe to illustrate the impossible odds, nor is there enough time to even begin to run the potential options. And remember, we're talking about only one protein, not 239. If we take the same principles of probability and apply them to a single cell, the odds become 1 in 10 to the 137,915.28 power. No wonder biologist Edwin Conklin said, " The probability of life origination from accident is comparable to the probability of the unabridged dictionary resulting from an explosion in a printing shop." Sir Frederic Hoyle of Cambridge University said, "The chance that higher life forms might have emerged in this way is comparable with the chance that a tornado sweeping through a junkyard might assemble a Boeing 747 from the materials therein." Clearly, it didn't happen by chance.

>From Five Lies of the Century by David Moore