

# ***Industrial Pumps***

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# MP PUMPS

## Committed To Excellence.



### OUR HISTORY

MP Pumps, a subsidiary of Tecumseh Products Company since 1975, was organized in Detroit in 1942, shortly after America's entry into World War II. Our first pumps were used in landing craft and other amphibious vehicles where quality and reliability were absolutely essential.

After the war, we continued to grow along with our reputation for superior design, engineering and manufacturing of centrifugal pumps for a wide variety of applications. In 1984, MP Pumps built and occupied a 100,000-square-foot facility in Fraser, Michigan. The facility houses all of our manufacturing and engineering operations as well as our administrative and marketing staffs.

Nearly 20,000 square feet of our Fraser headquarters is devoted to parts warehousing. We stock over 10,000 different parts to ensure prompt delivery of replacement parts to MP Pumps' customers worldwide.

### OUR FUTURE

MP Pumps remains committed to designing and developing innovative products to meet the fluid handling requirements of both current and emerging markets. To maintain our role as a leader in the design and manufacture of centrifugal pumps, we will continue to invest in the best equipment and people.



### RESEARCH & DEVELOPMENT

A strong research and development program is fundamental to innovation. A highly trained and experienced research staff is backed by a fully equipped laboratory for conducting rigorous performance and endurance testing.

Development projects range from endurance testing of new seal materials to performance testing of custom housing geometries. Prototypes are frequently subjected to elevated



Test Lab Dynamometers With AC And DC Controllers

*Exceeding customer expectations ... that's what we're all about at MP Pumps. Whether you use one of our many standard centrifugal pumps or have us design a new one to meet your specific requirements, our only goal is your complete satisfaction.*

**Greg Peabody, President**

ambient conditions to simulate actual operating environments and gain more reliable data.

Laboratory facilities include dynamometers ranging from 3 to 125 horsepower, two test cells for measuring impeller radial and thrust loads and provision for testing self-priming pumps up to 25 feet of static lift.

## **ENGINEERING**

Solid modeling design software for manufacturing techniques and fast prototype capability gives MP Pumps' Engineering Department the ability to move rapidly from initial concept to first production.



Typical CAD Workstation With Solid Modeling

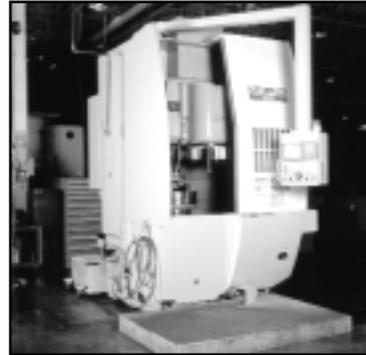
Our application design expertise encompasses a broad range of markets, among them:

- **Industrial**
- **Transportation**
- **Agriculture**
- **Marine**

Similarly, our engineers are accustomed to working with a wide range of materials. Commonly used materials include bronze, ductile iron, aluminum, cast iron and stainless steel.

## **MANUFACTURING**

Speed, uniformity and consistent high quality translates into customer satisfaction.



Vertical CNC Machining Center

Computer numerical control (CNC) machining centers on the factory floor are linked to a central server for rapid loading of machine programs.

This direct interface speeds set-up, which, in turn, boosts productivity.

Automated machining also improves precision in milling, boring, facing, drilling and other critical operations. Greater accuracy and repeatability means consistent high quality — your next MP pump will perform as well as your last.

## **QUALITY CONTROL**

At MP Pumps, quality is designed into every component and every pump we build. From concept, through development and on into production, our focus is to provide durable and reliable products that satisfy every customer requirement.

- **American Bureau of Shipping (ABS) Certification for select models.**
- **ISO 9001 certification assures our customers that all products are manufactured with an uncompromised commitment to quality, and that's something every employee at MP Pumps, Inc. takes personally.**



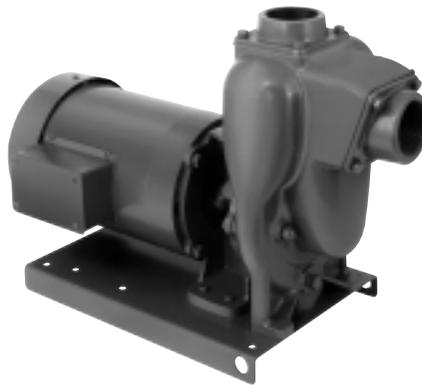
Computer Controlled Coordinate Measuring System (CMM)

# ... Driven To Innovate

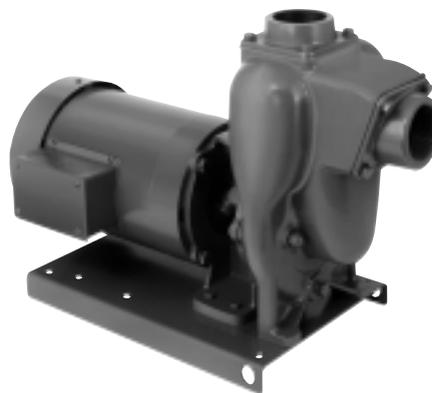
# FLOMAX 5 8 10

## 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

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

# 15 30 40

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**FLOMAX 5 & 8  
DOUBLE SEAL**



**FLOMAX 30  
SHORT COUPLED**



**FLOMAX 10**

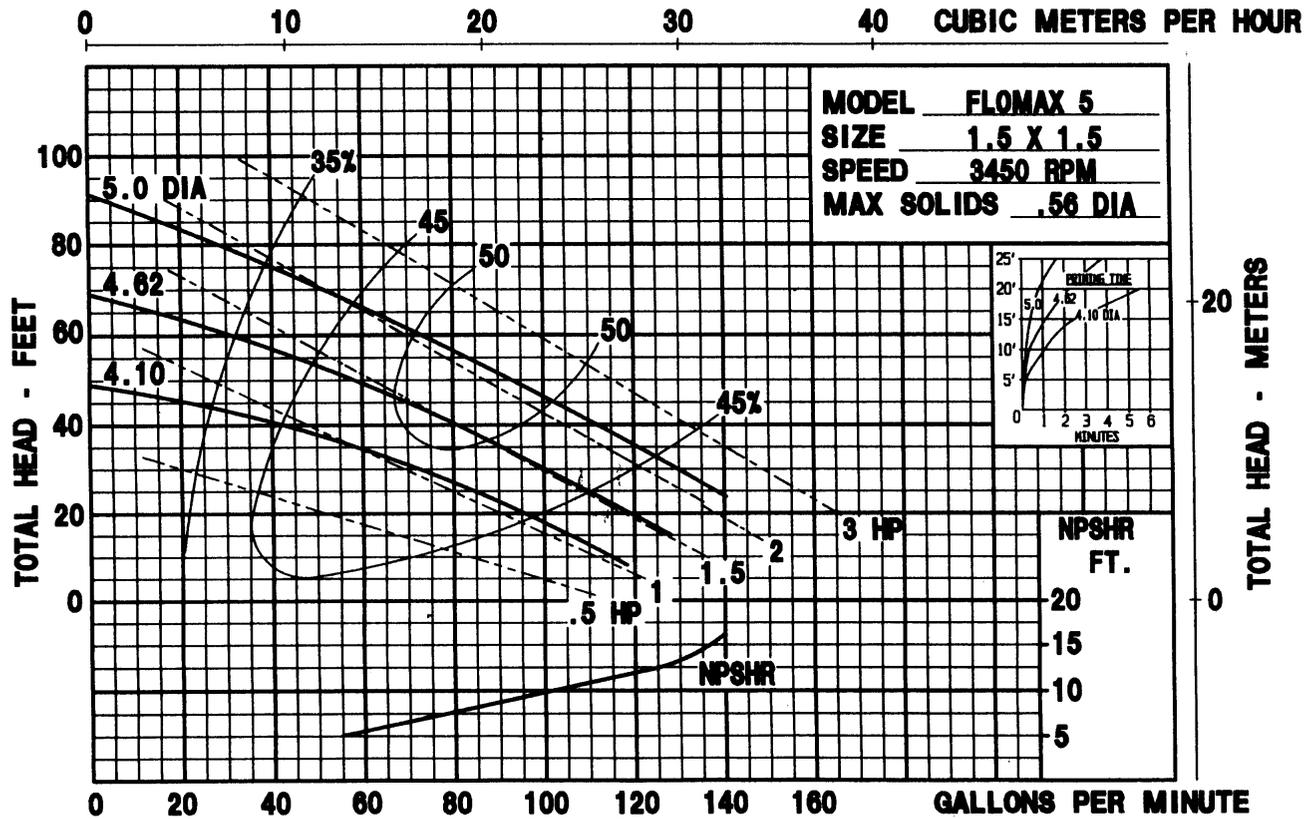
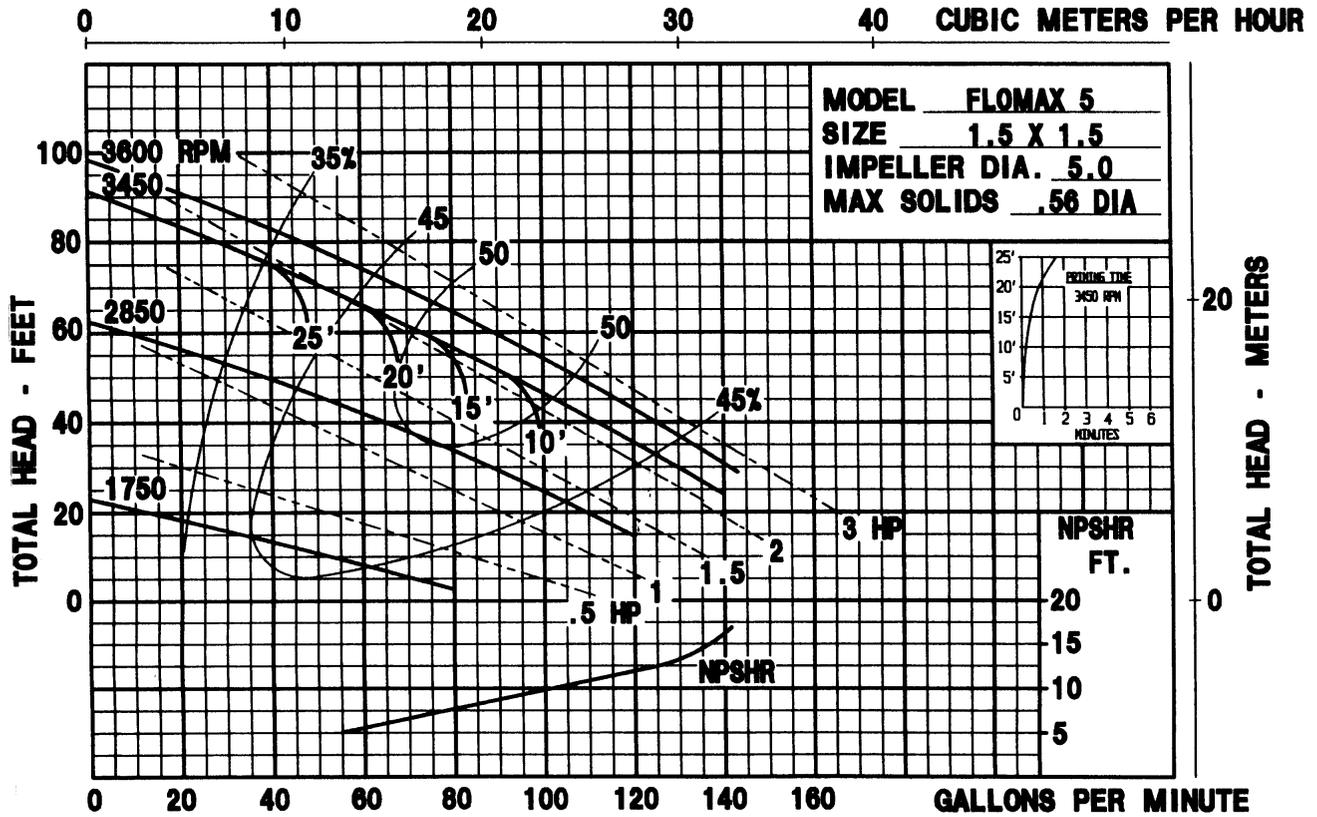


**FLOMAX 40**

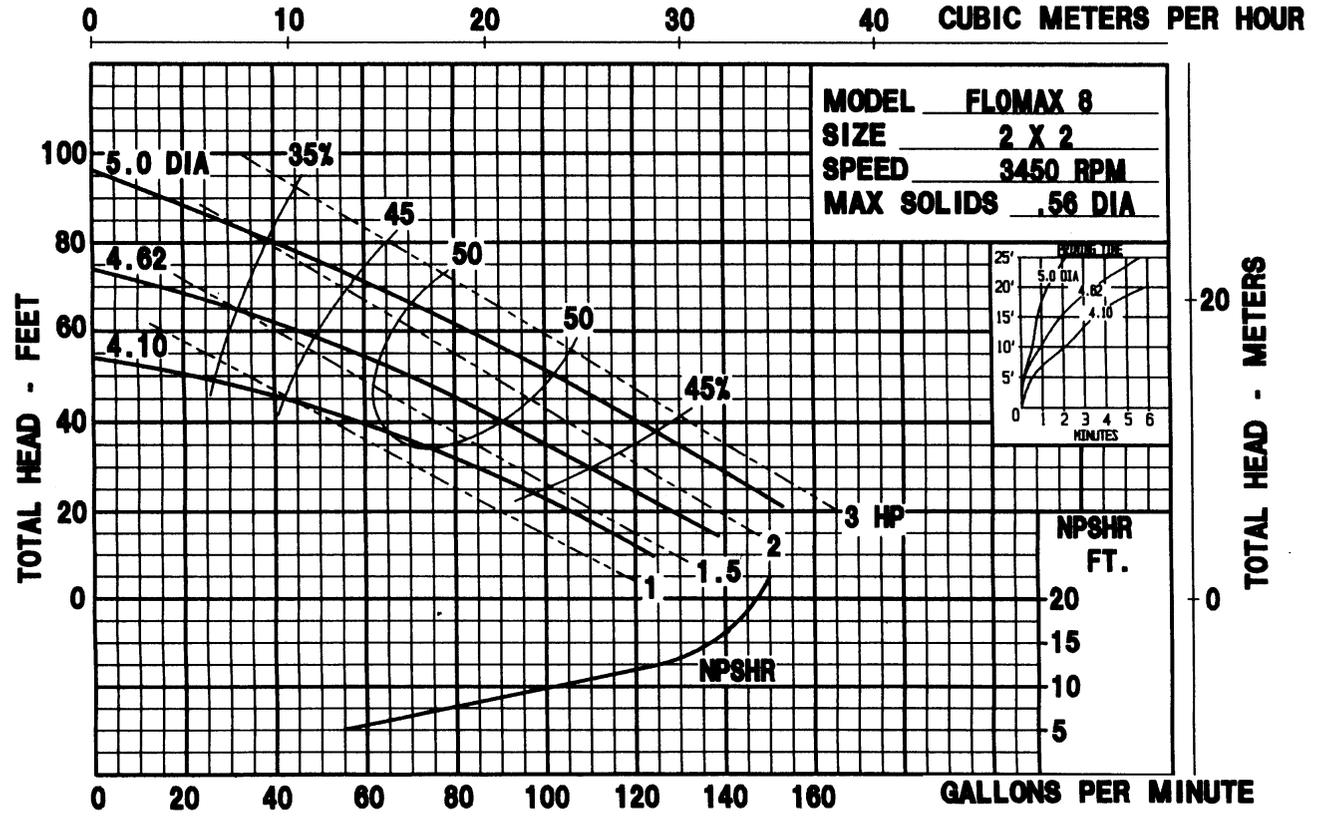
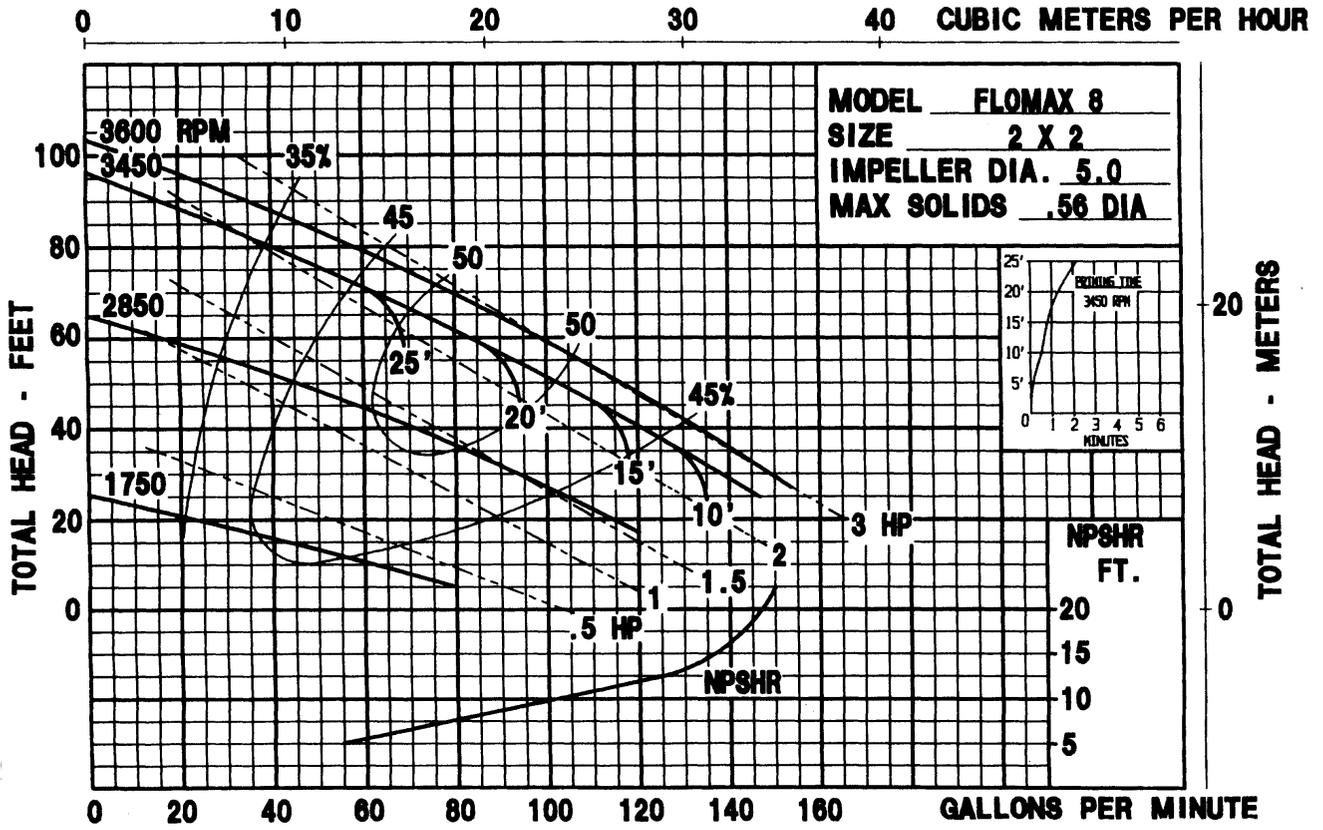


**FLOMAX 15**

**Flomax 5 Pump Performance Curves**

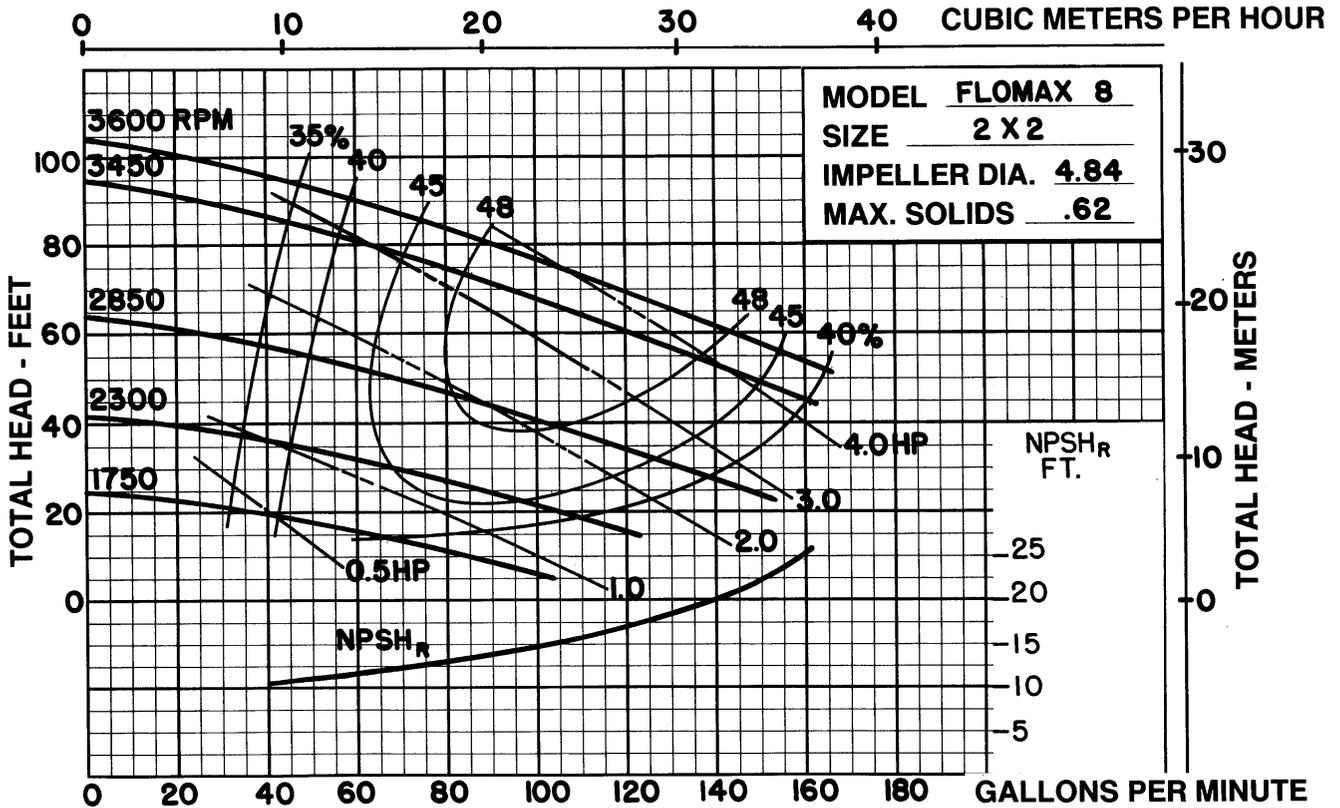
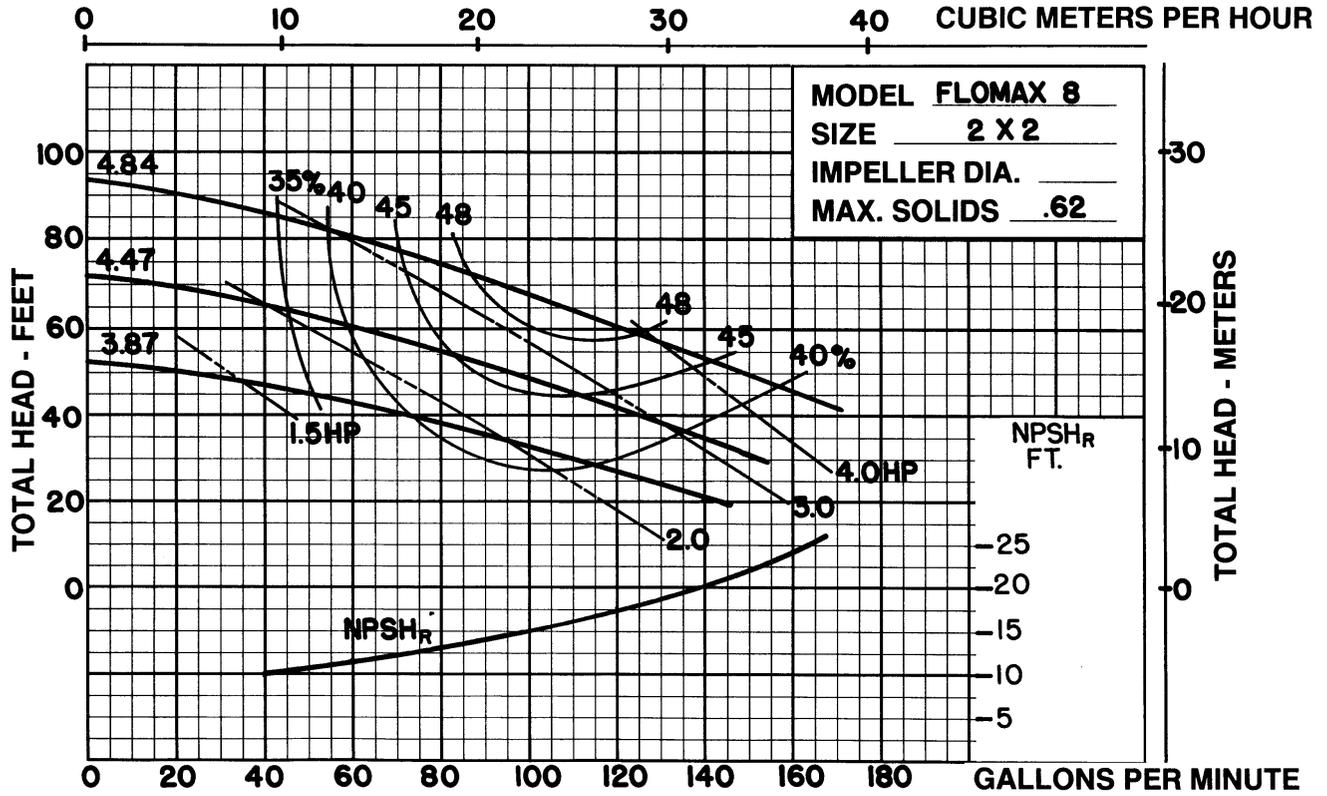


**Flomax 8 Pump Performance Curves**

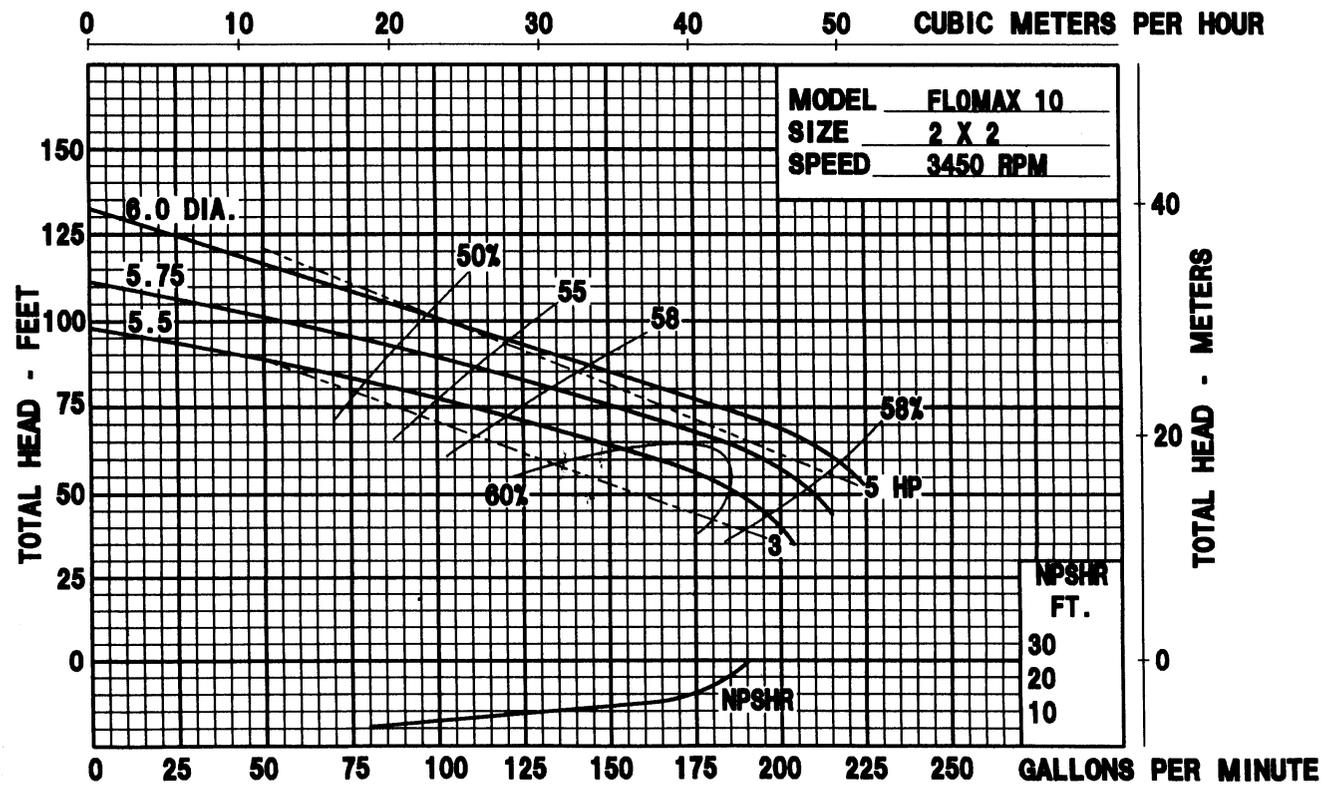
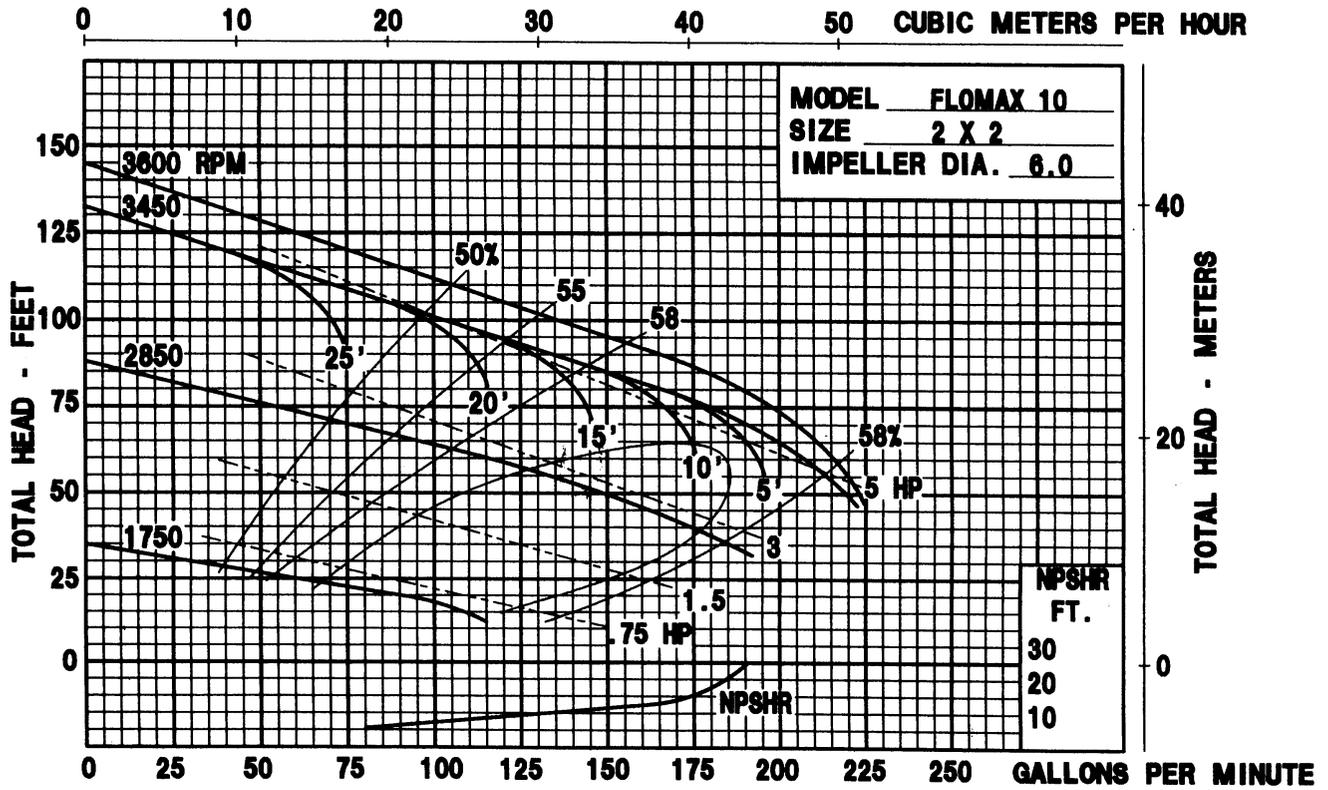


Other Performance Curves Available Upon Request

**FLOMAX 5 & 8 Pump Double Seal Performance Curves**

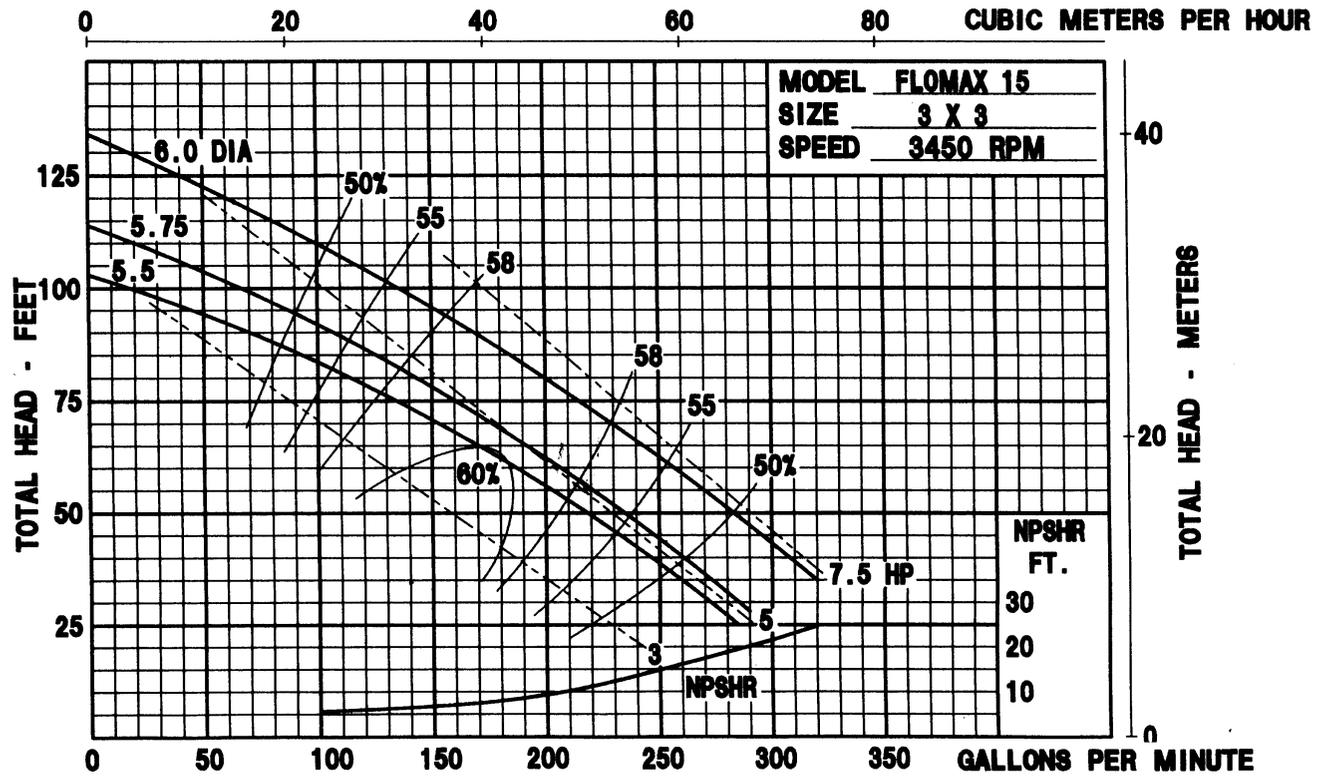
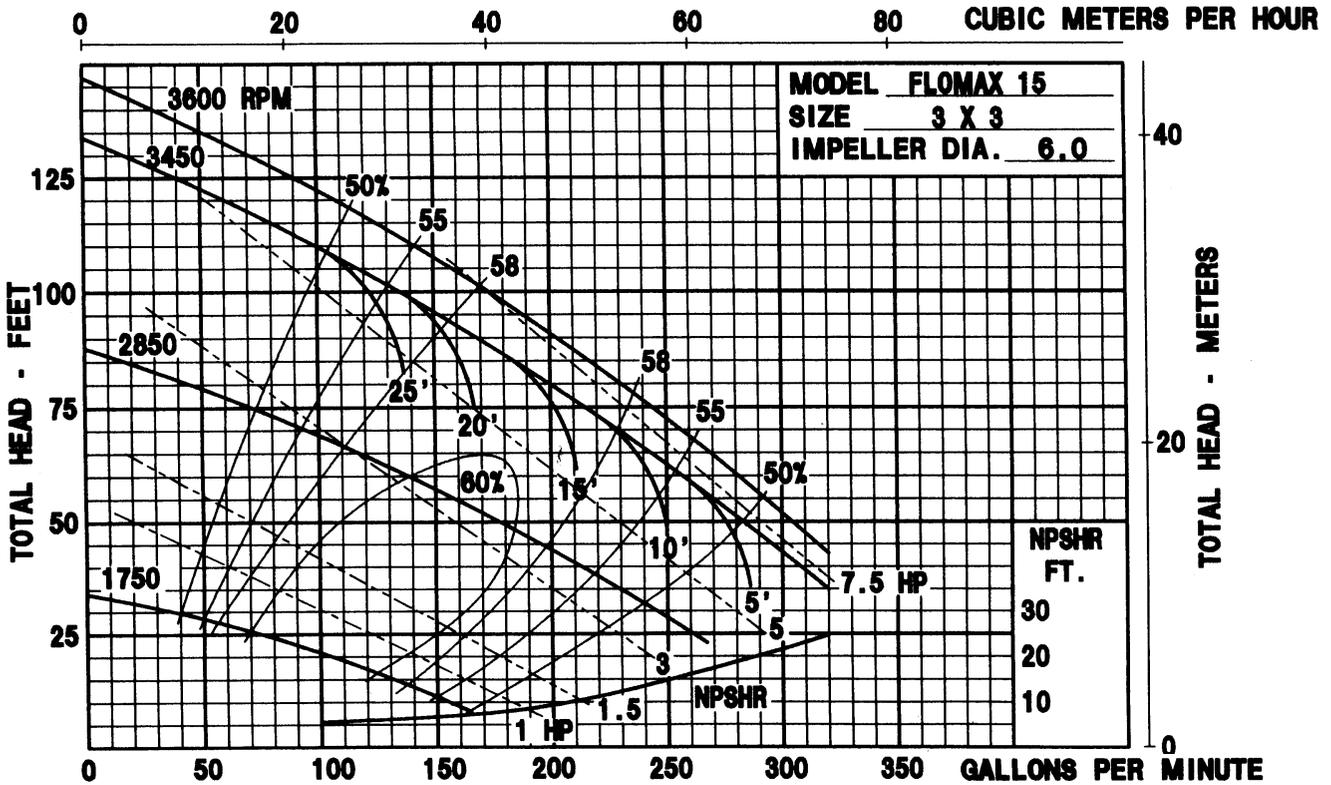


**Flomax 10 Pump Performance Curves**

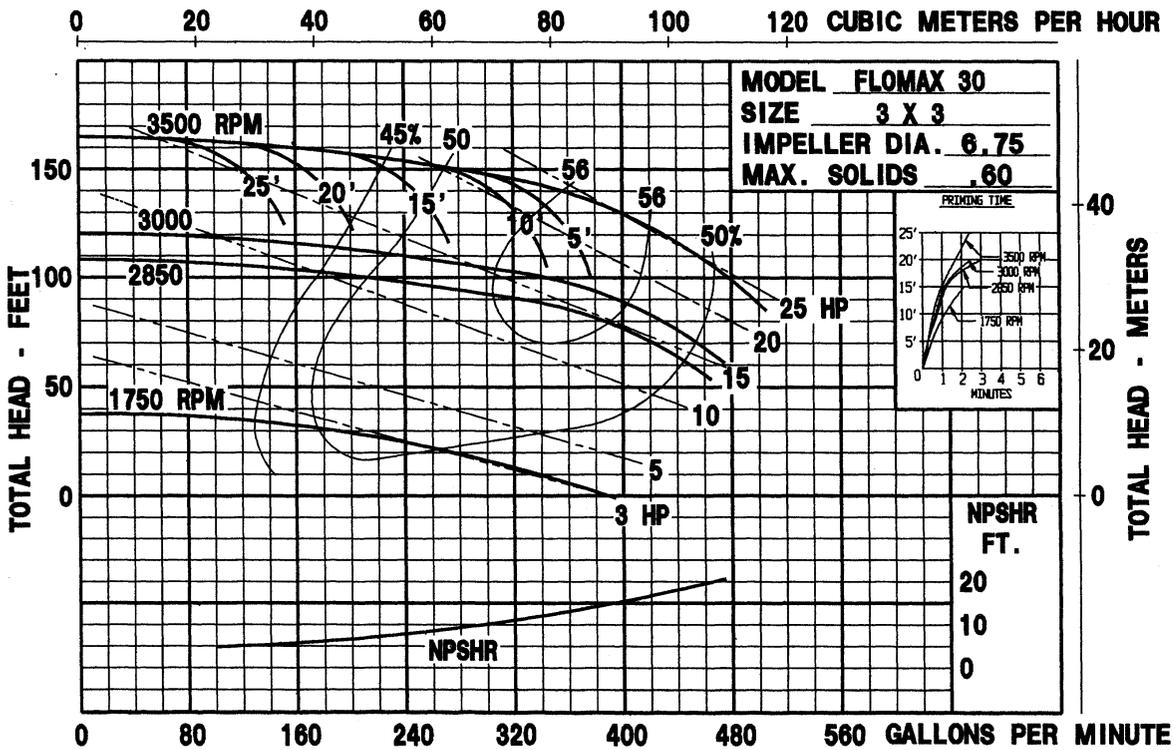
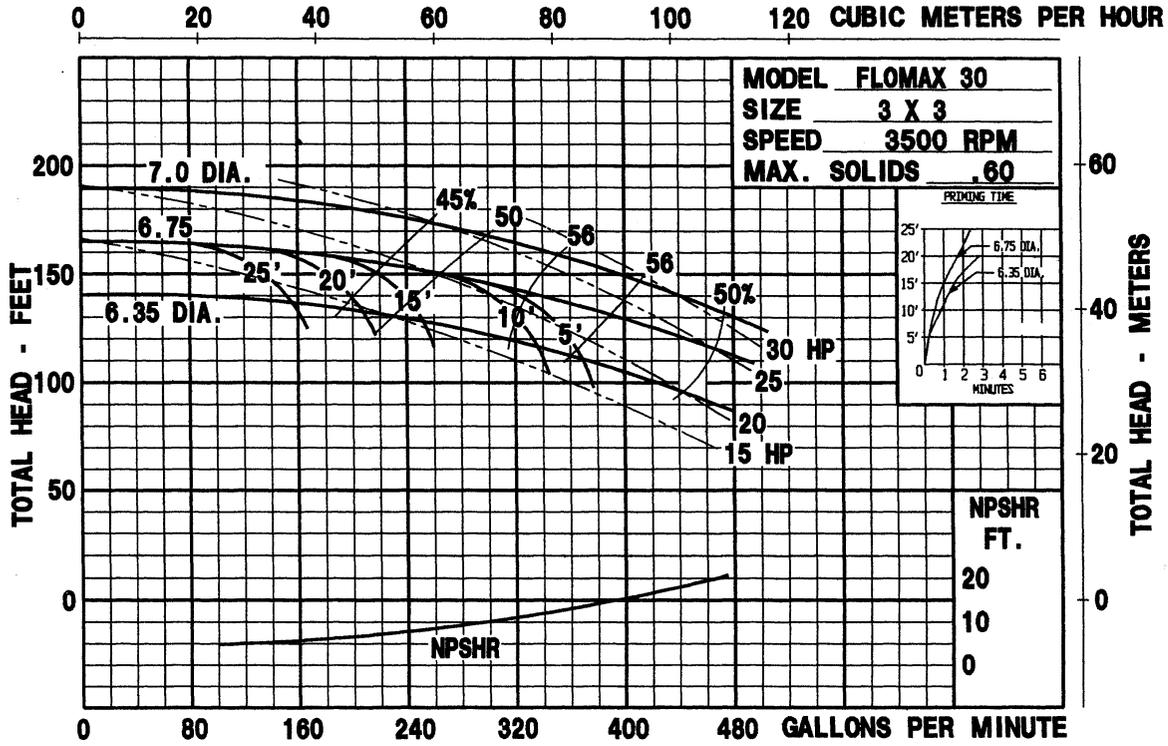


Other Performance Curves Available Upon Request

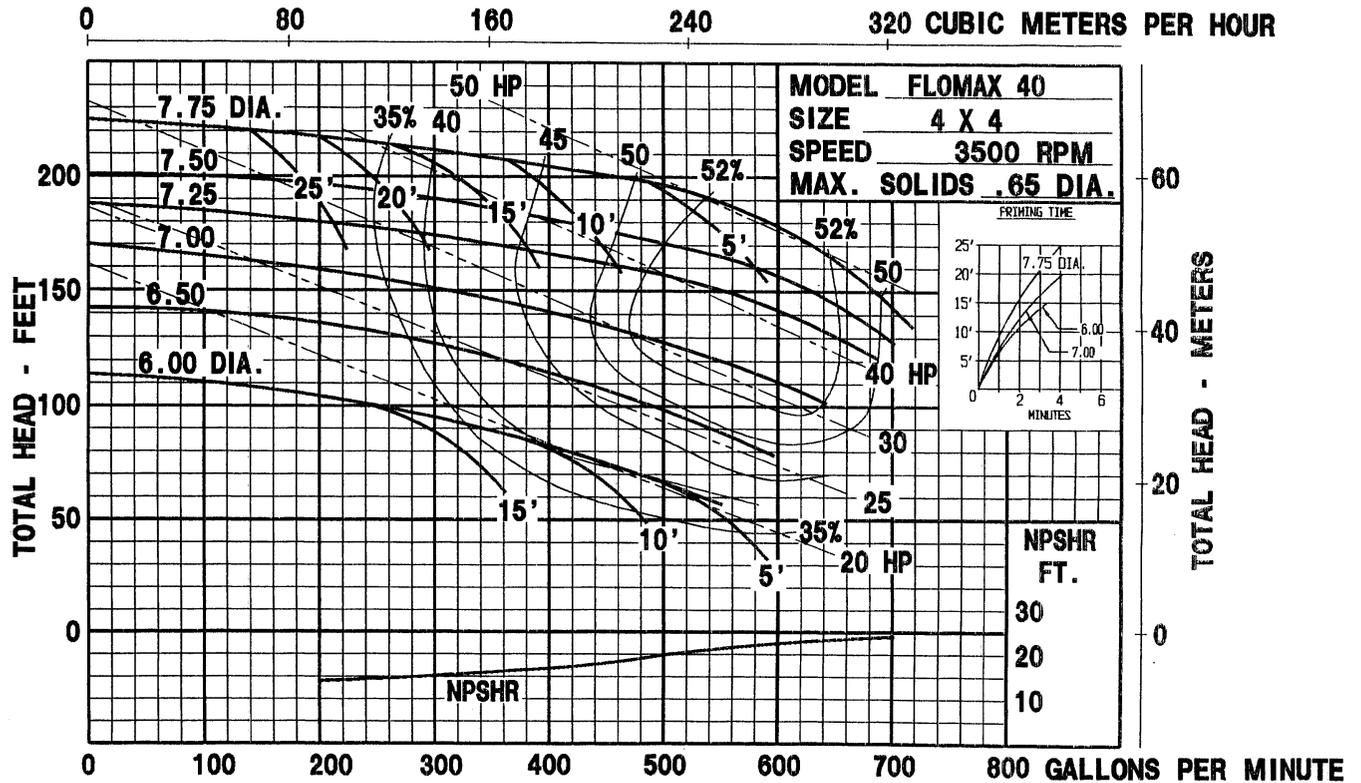
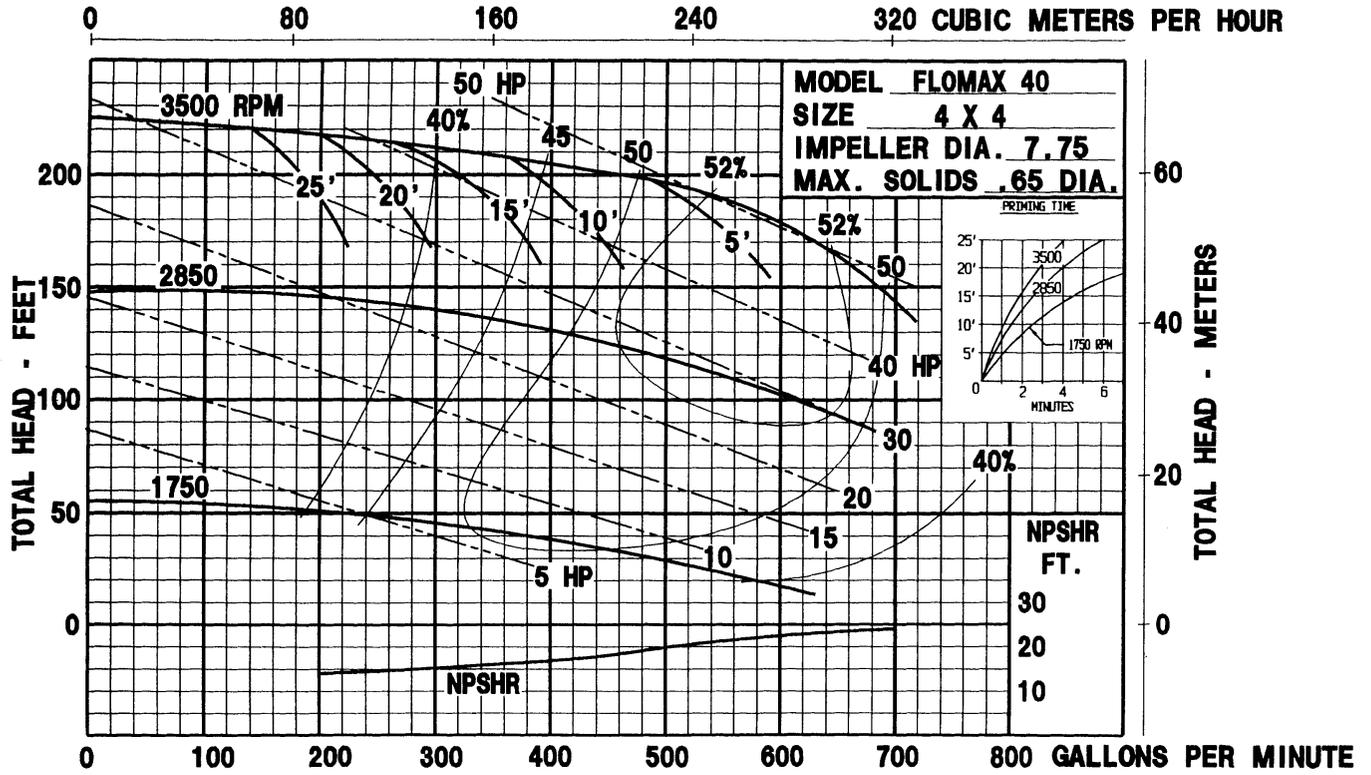
**Flomax 15 Pump Performance Curves**



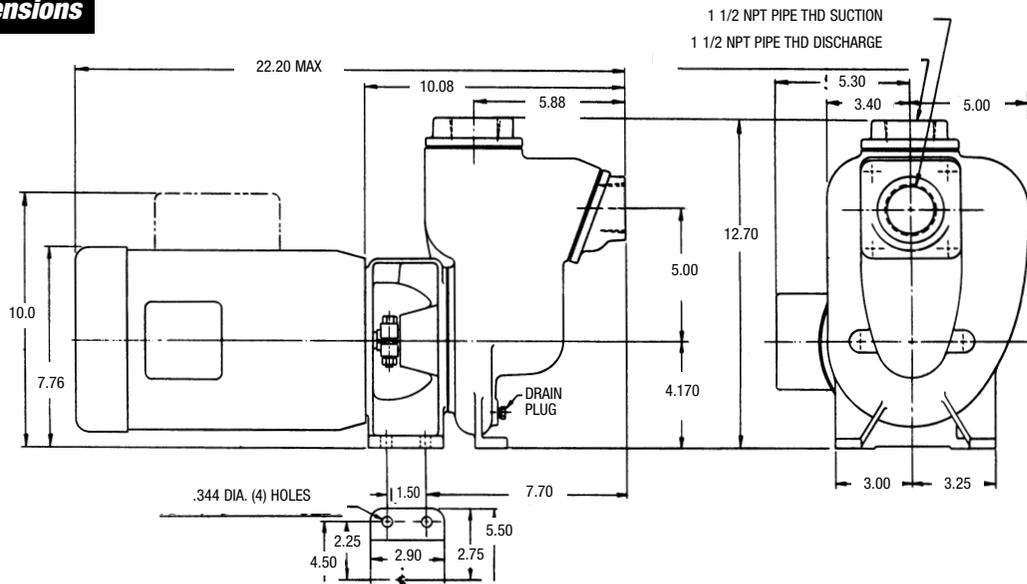
**Flomax 30 Pump Performance Curves**



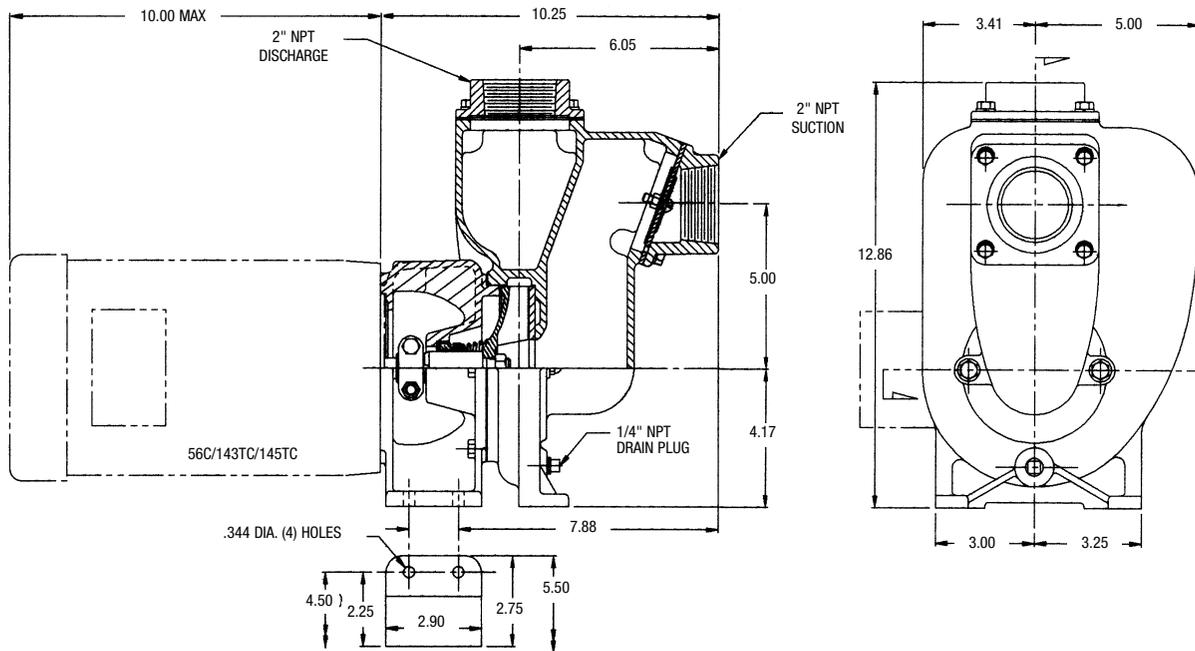
**Flomax 40 Pump Performance Curves**



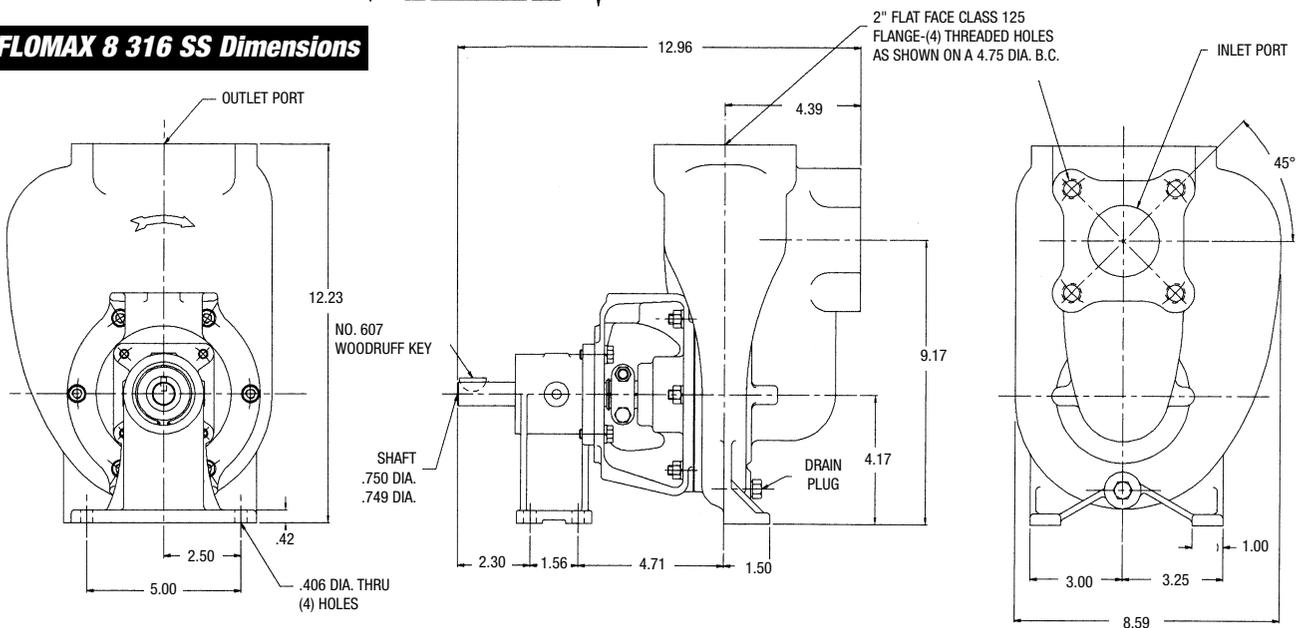
## Flomax 5 Dimensions



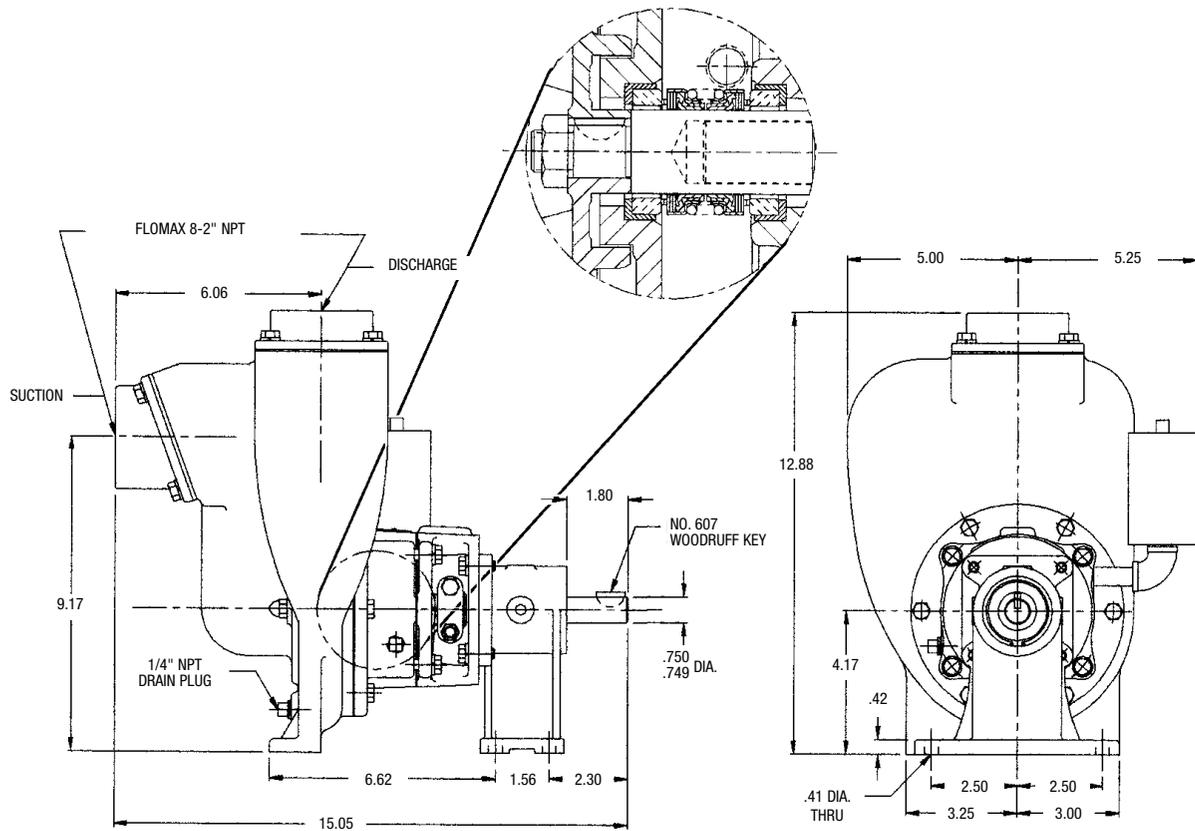
## Flomax 8 Dimensions



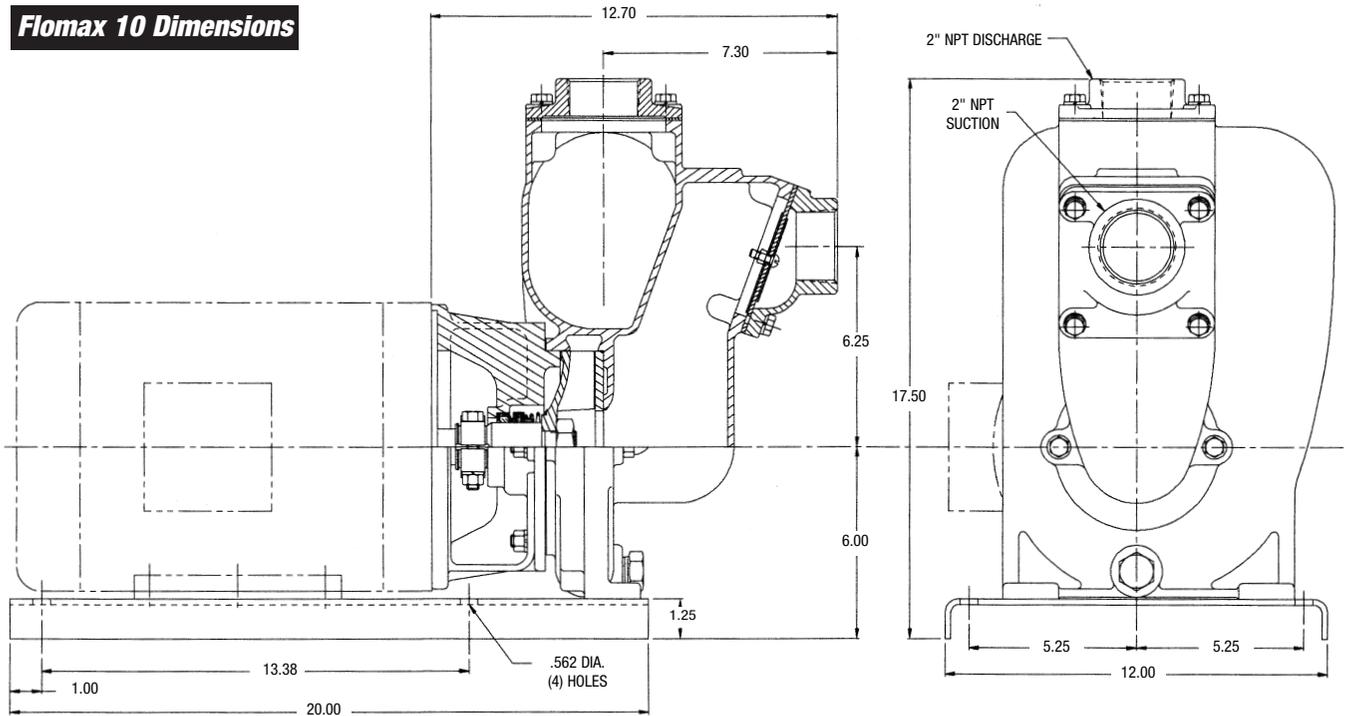
## FLOMAX 8 316 SS Dimensions



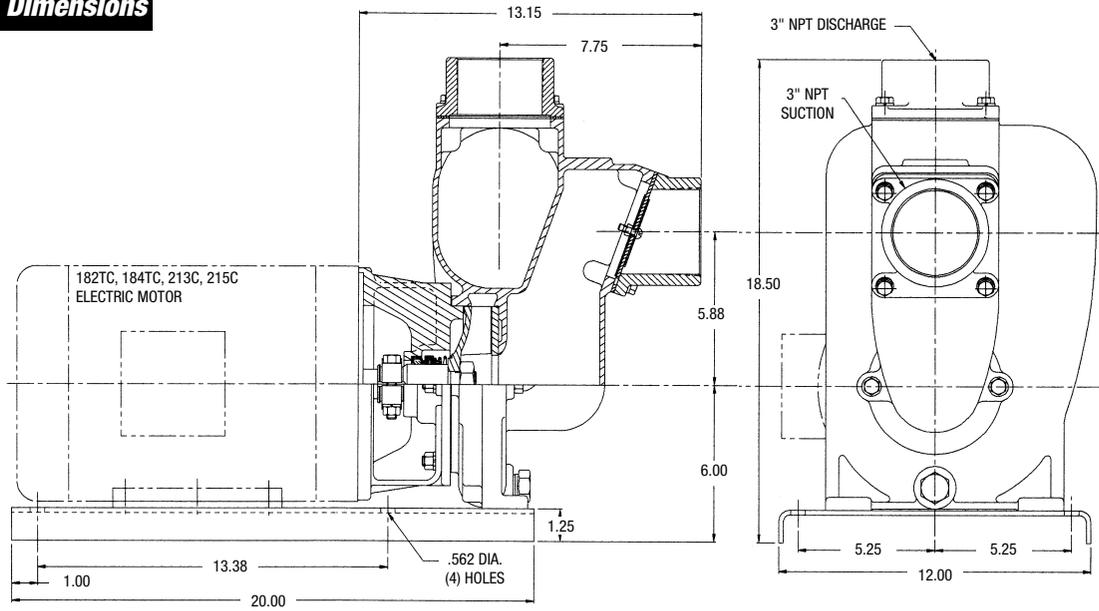
## FLOMAX 5 & 8 Dimensions



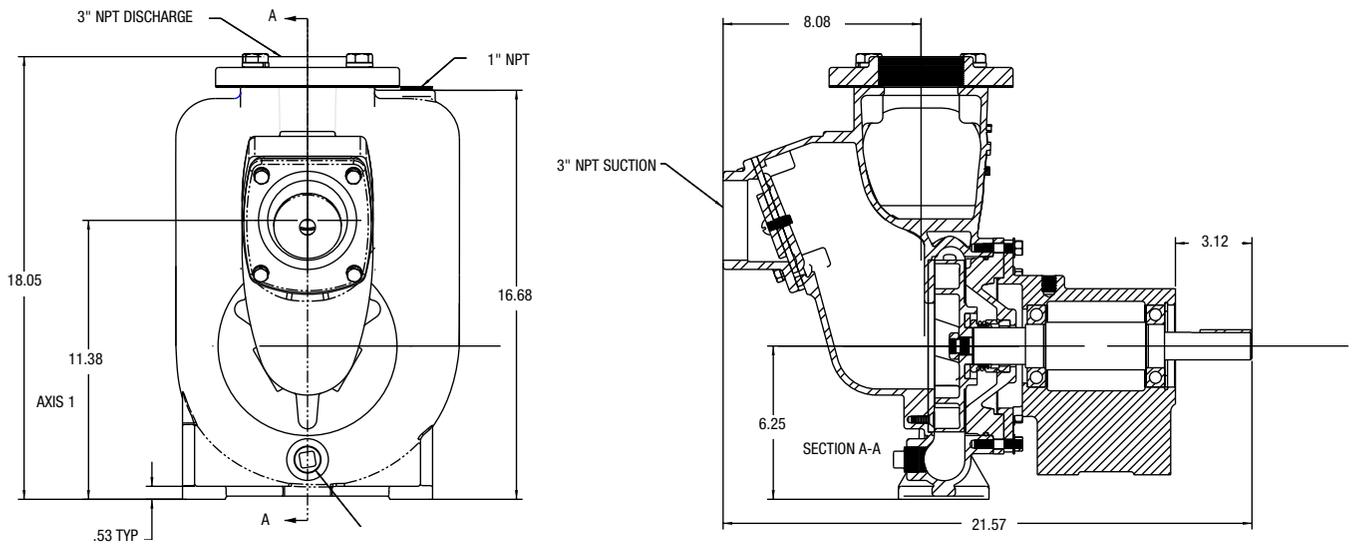
## Flomax 10 Dimensions



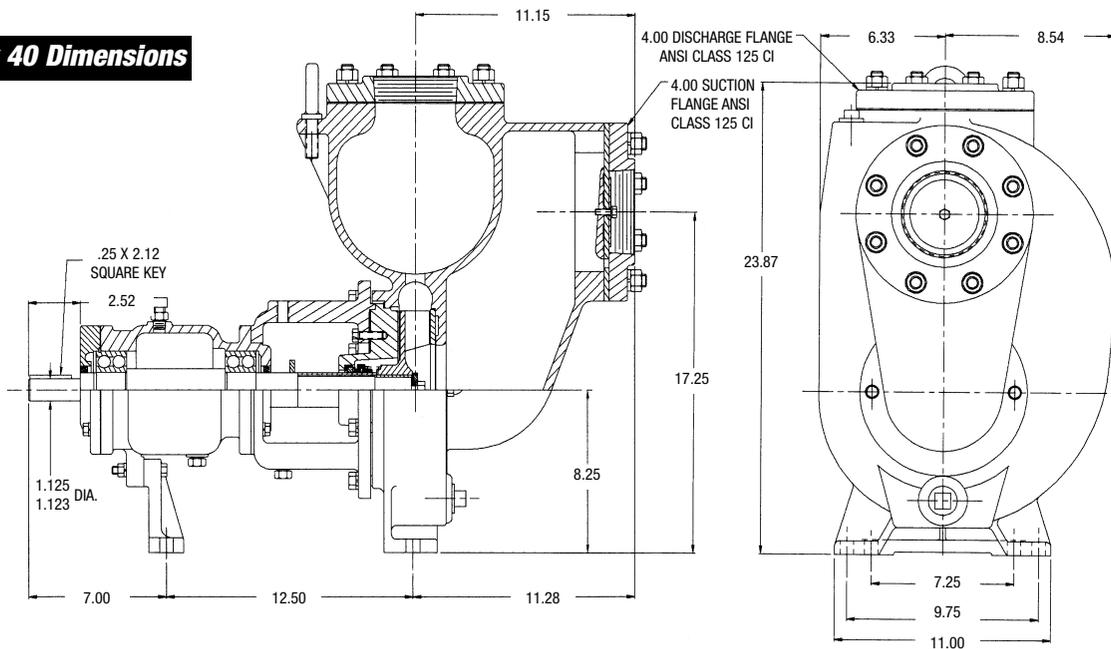
## Flomax 15 Dimensions



## Flomax 30 Pedestal Mount Dimensions



## Flomax 40 Dimensions



## 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



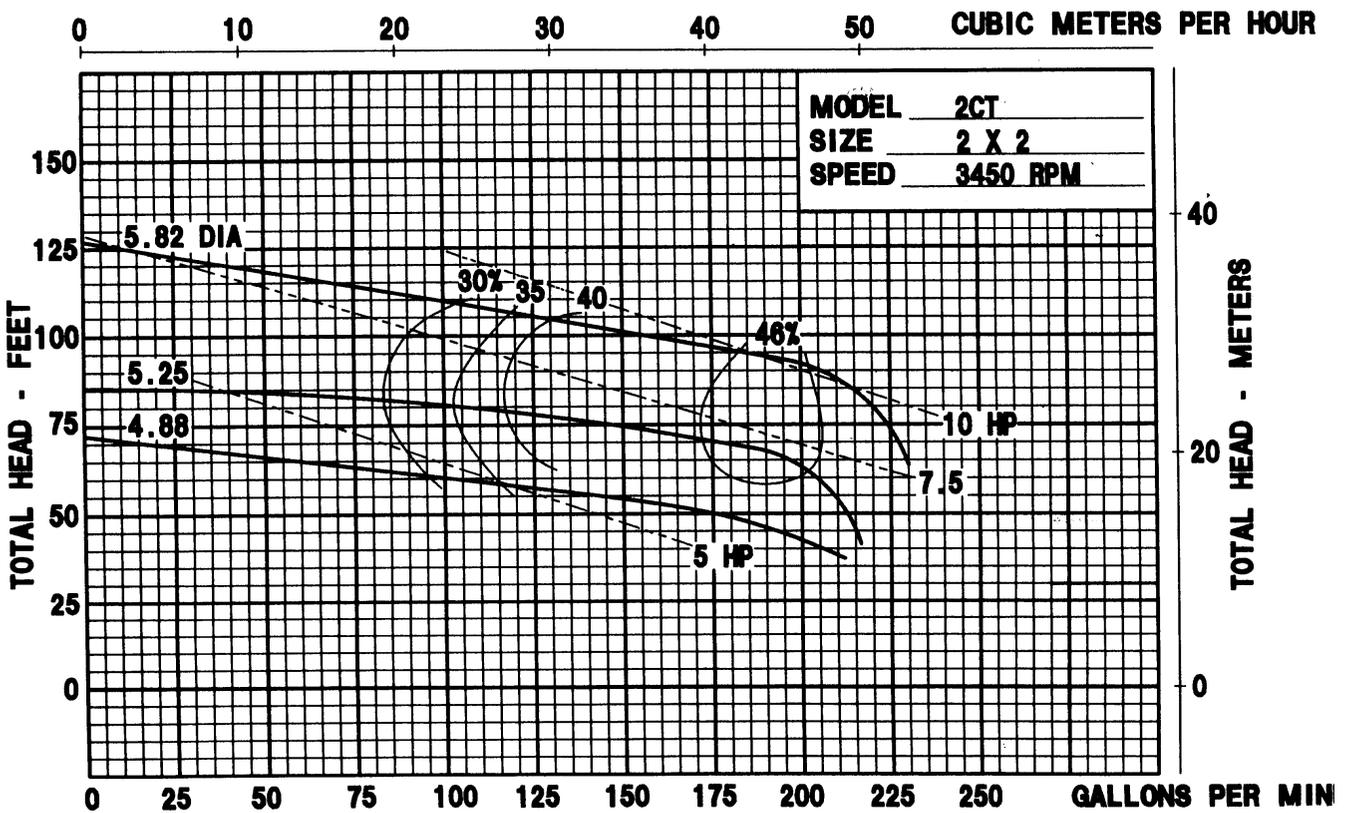
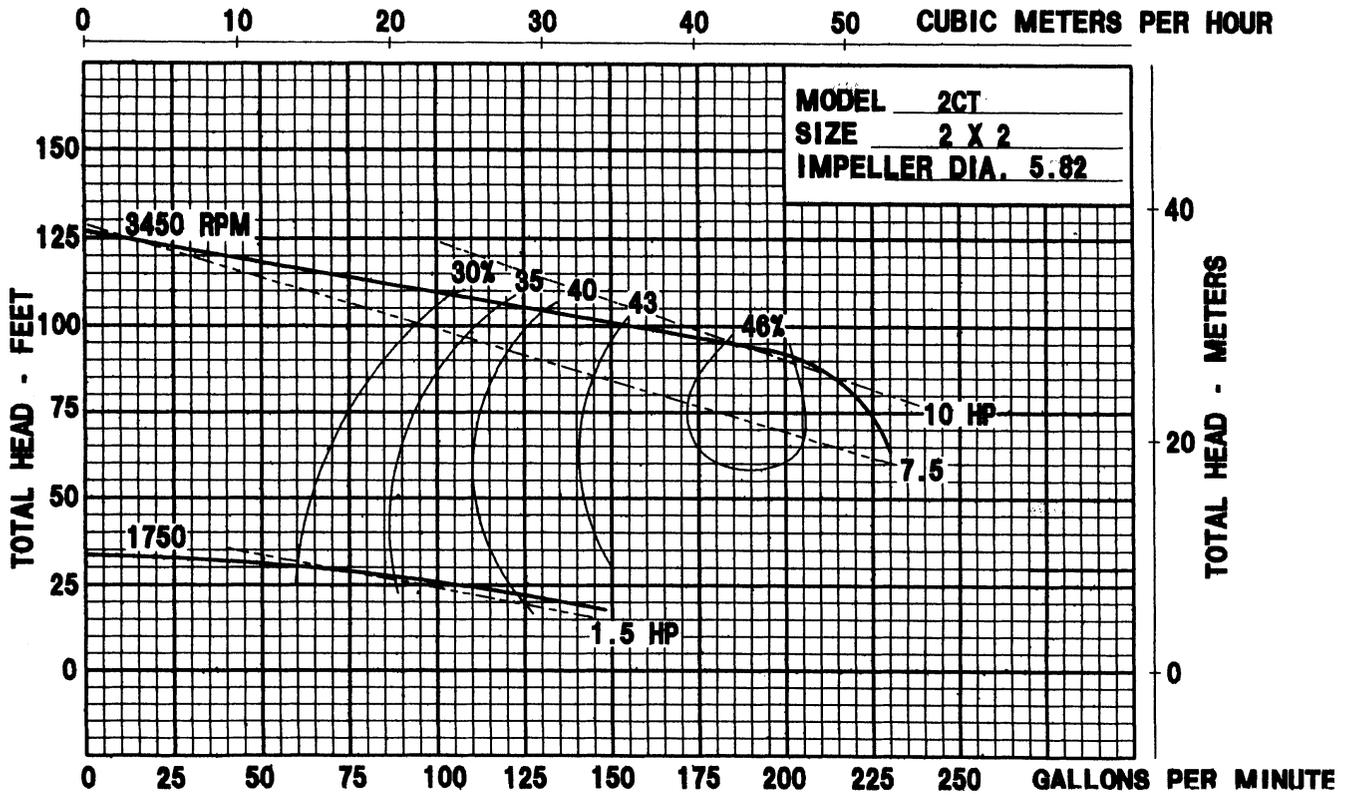
2CT

MODEL	Suction	Discharge
2CT	2" NPT	2" NPT



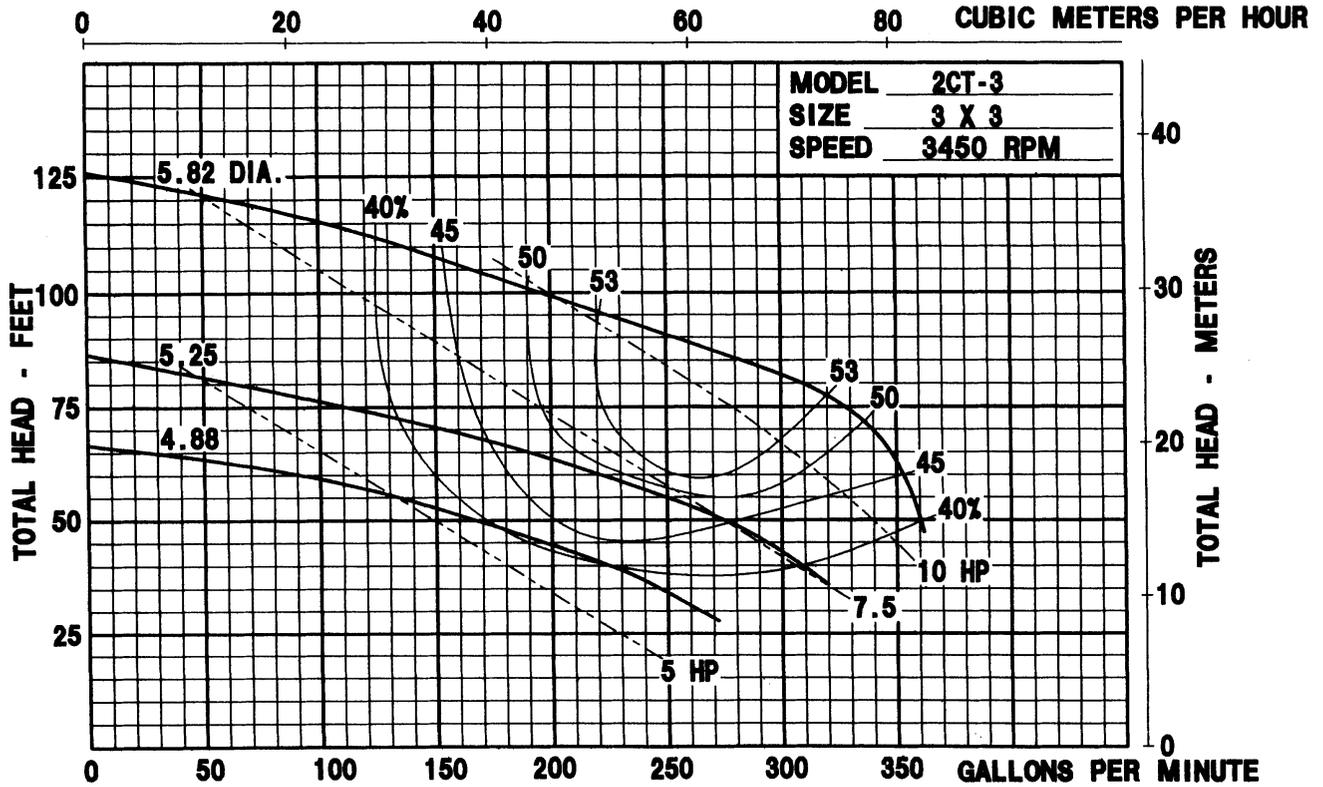
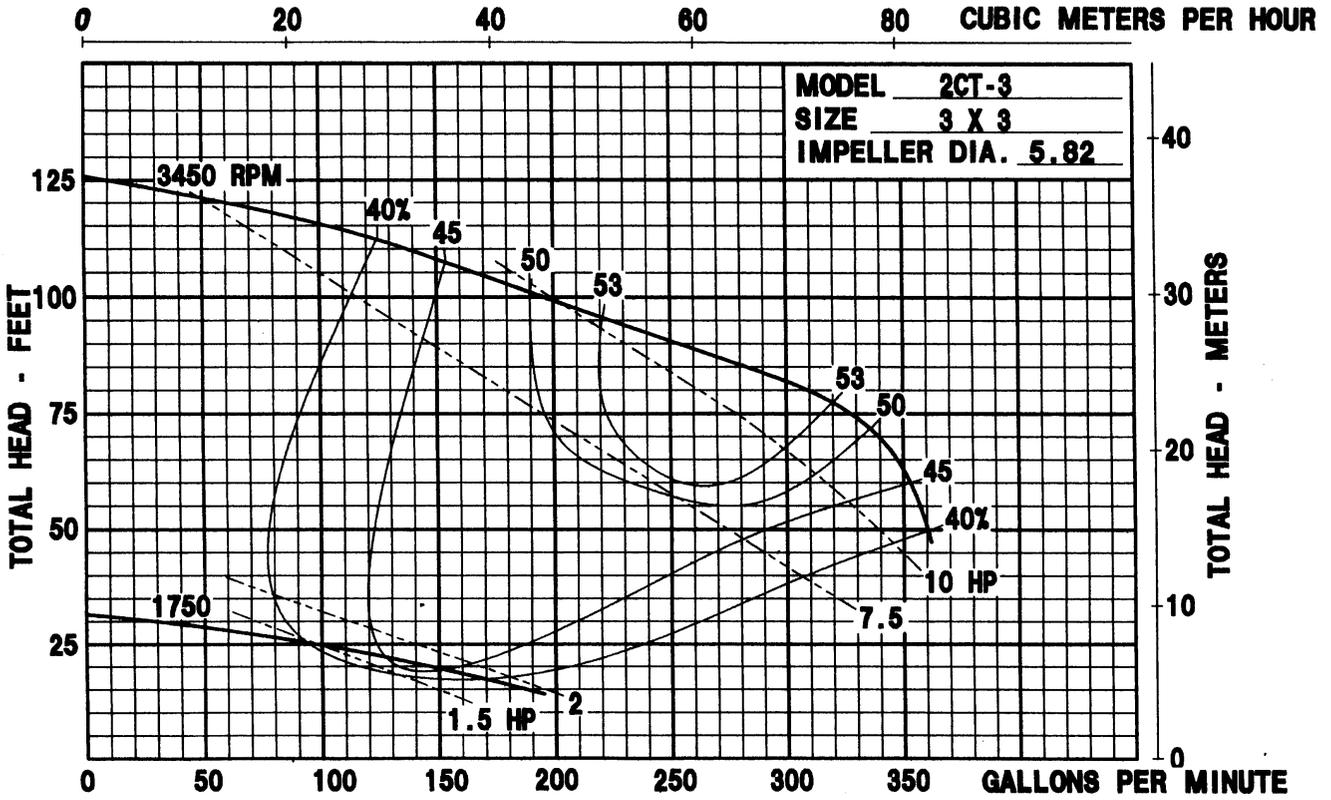
2CT-3

**2CT Pump Performance Curves**

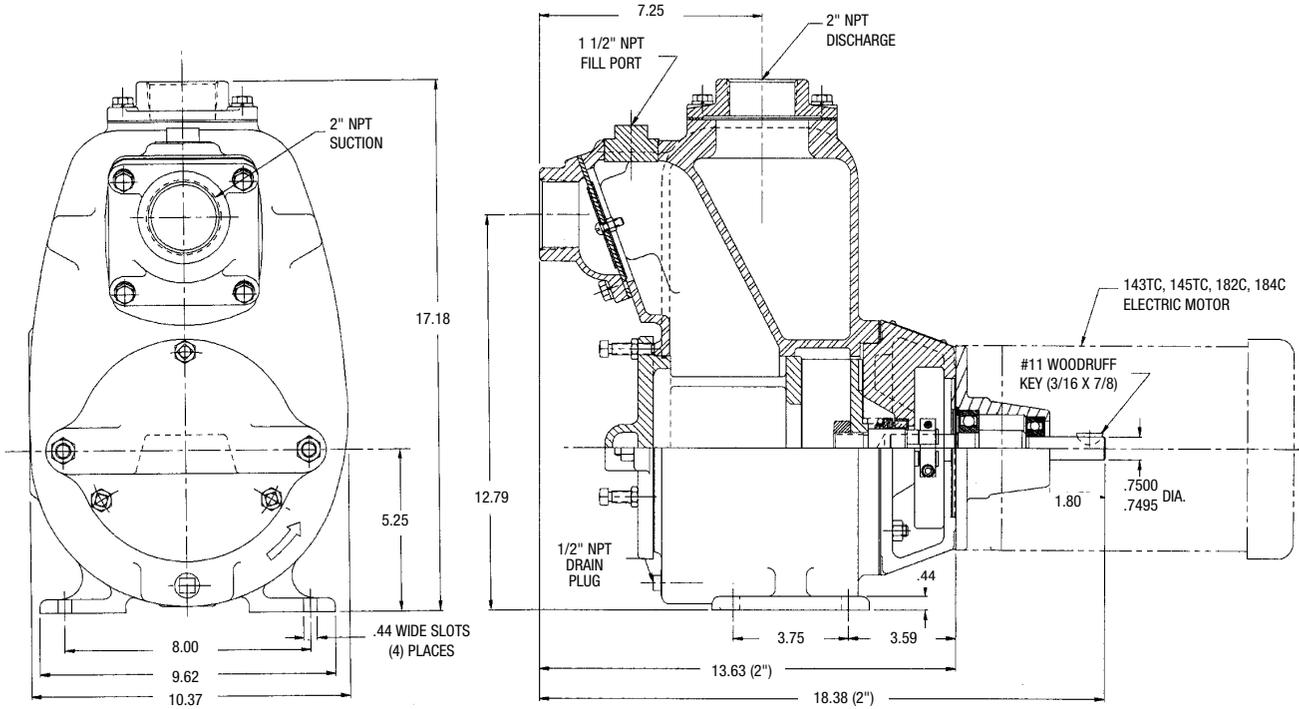


Other Performance Curves Available Upon Request

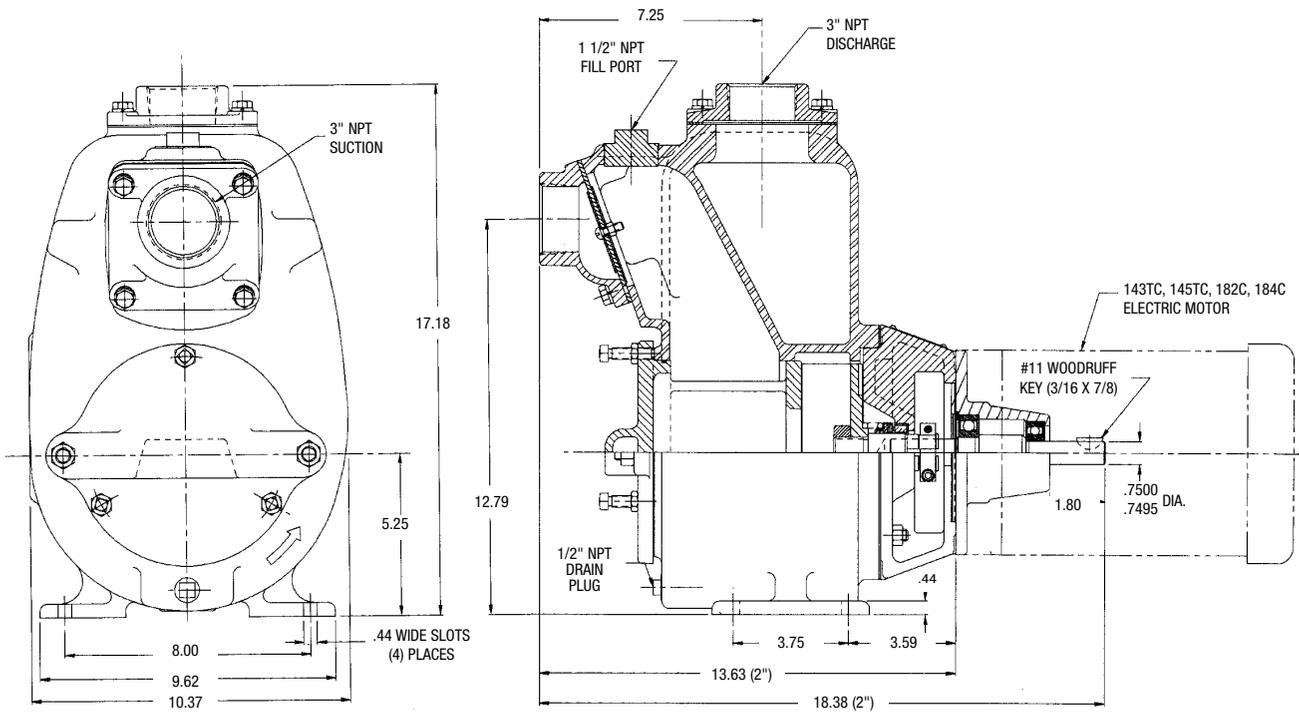
**2CT-3 Pump Performance Curves**



## 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



SERIES 60



SERIES 80



SERIES 110

# 120 130 200 300 700



**SERIES 120**



**SERIES 300**



**SERIES 130**



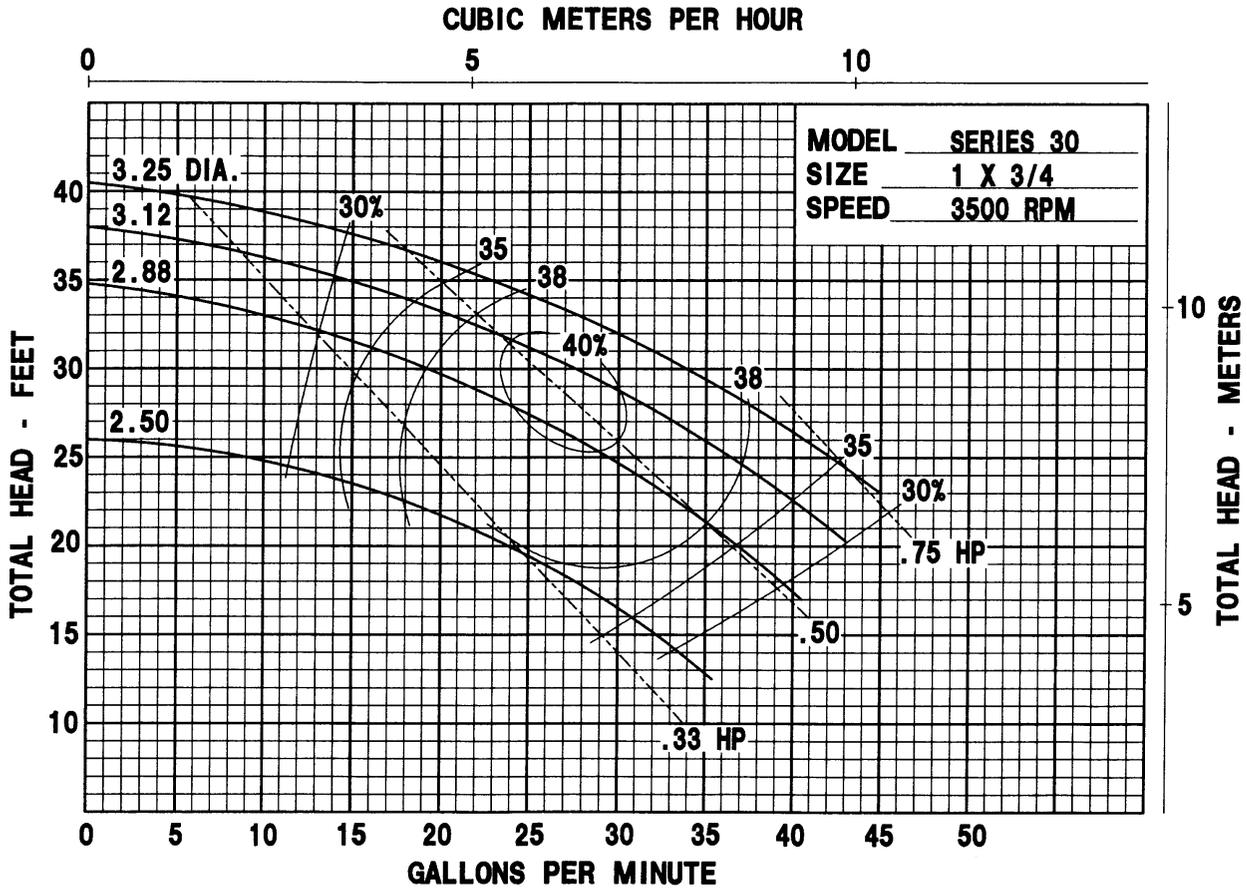
**SERIES 700**



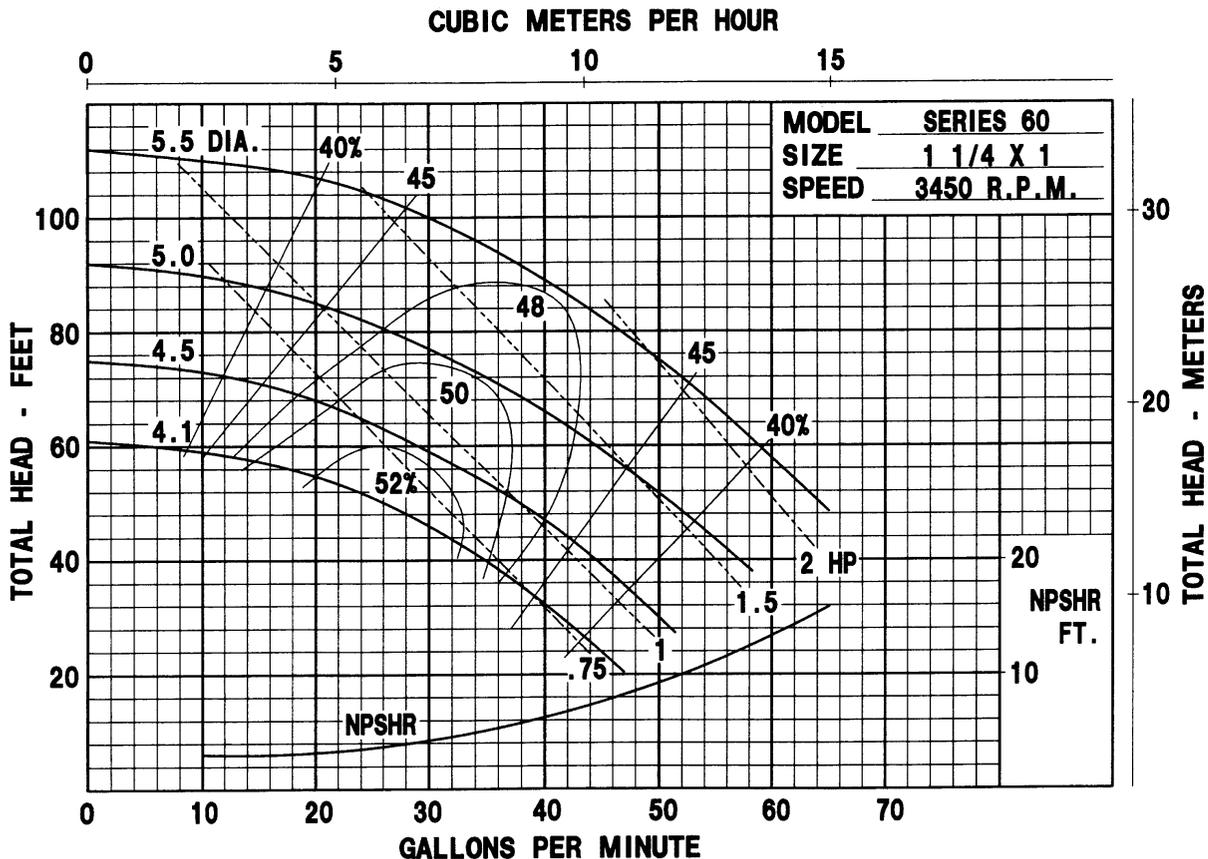
**SERIES 200**

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

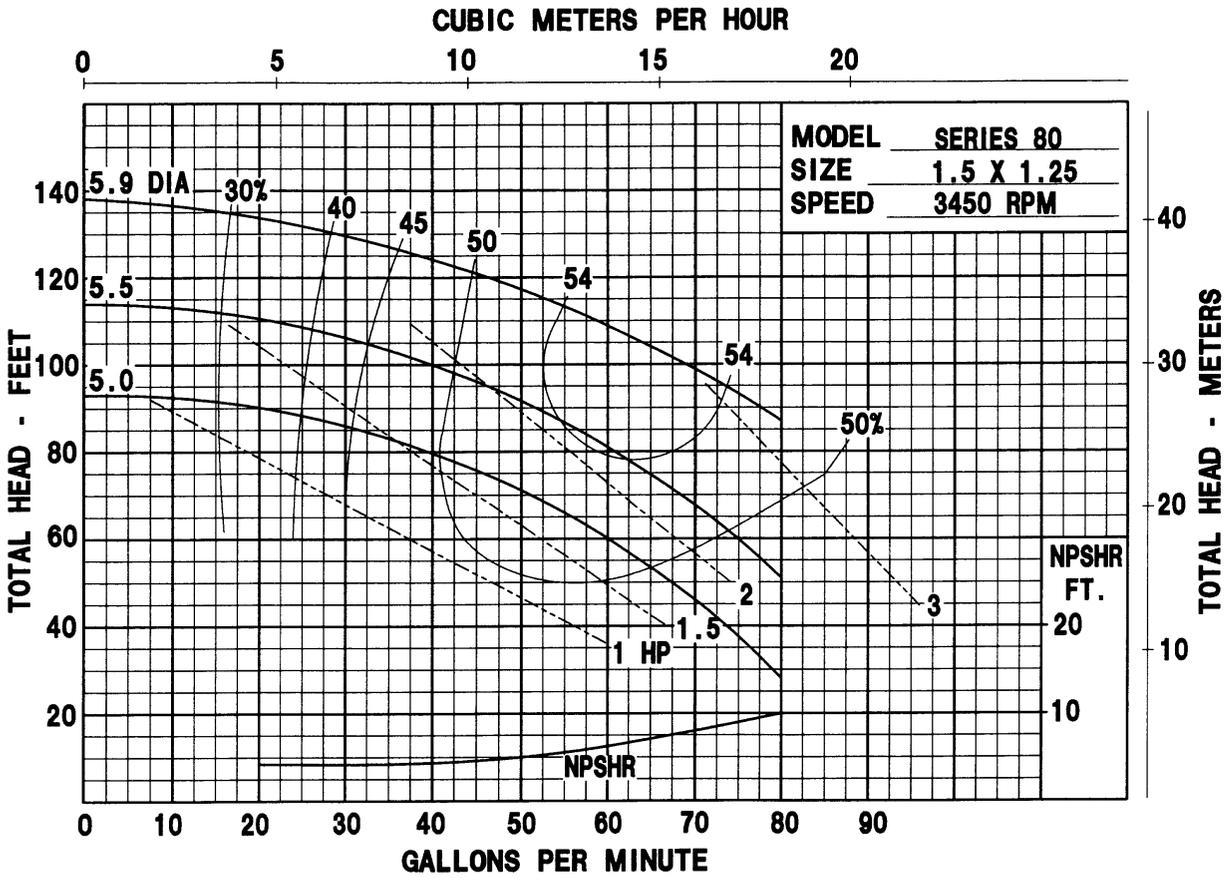
**Series 30 Pump Performance Curves**



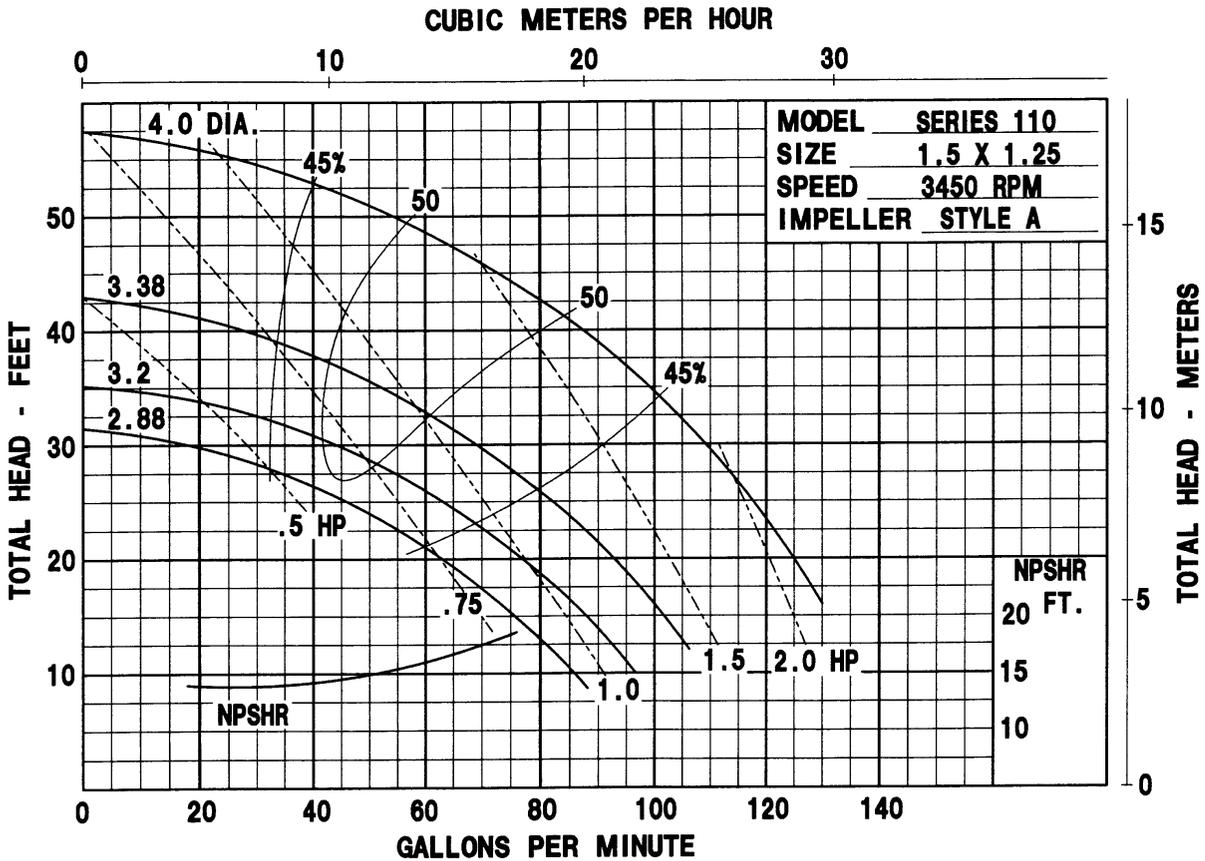
**Series 60 Pump Performance Curves**



**Series 80 Pump Performance Curves**

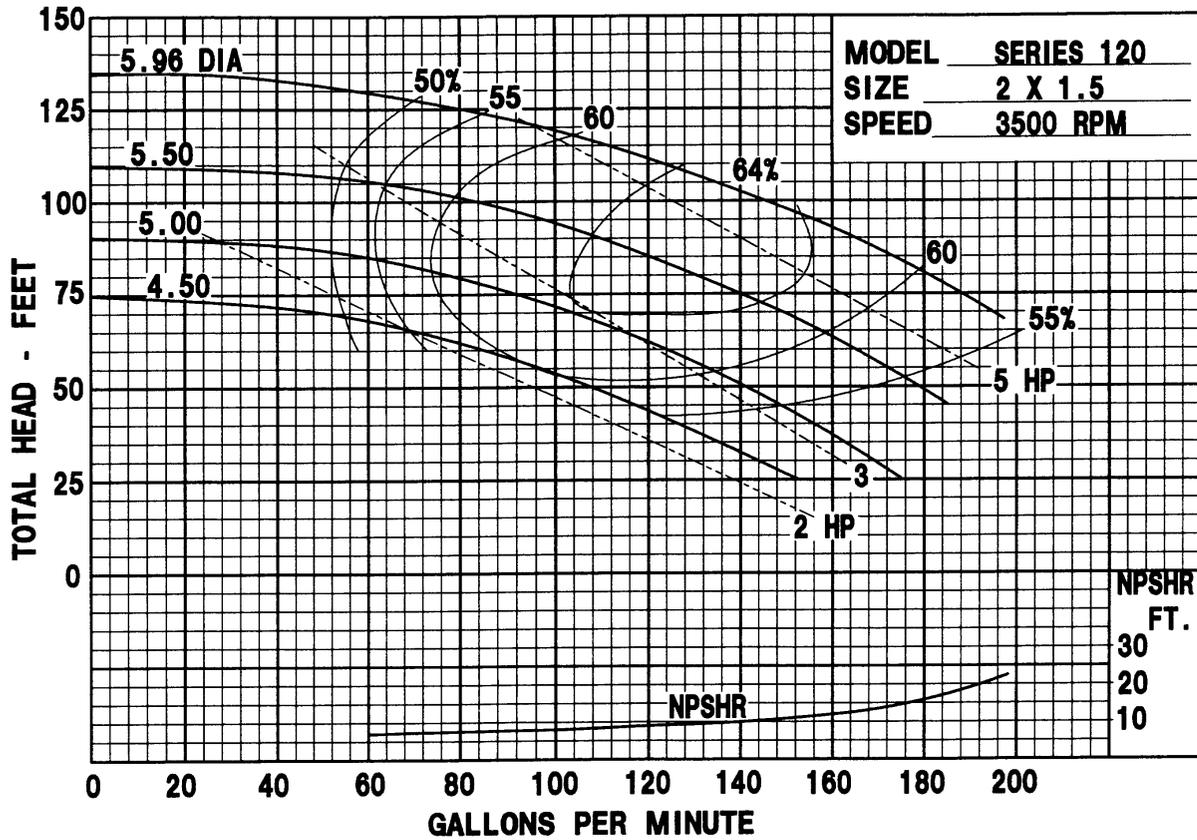


**Series 110 Pump Performance Curves**

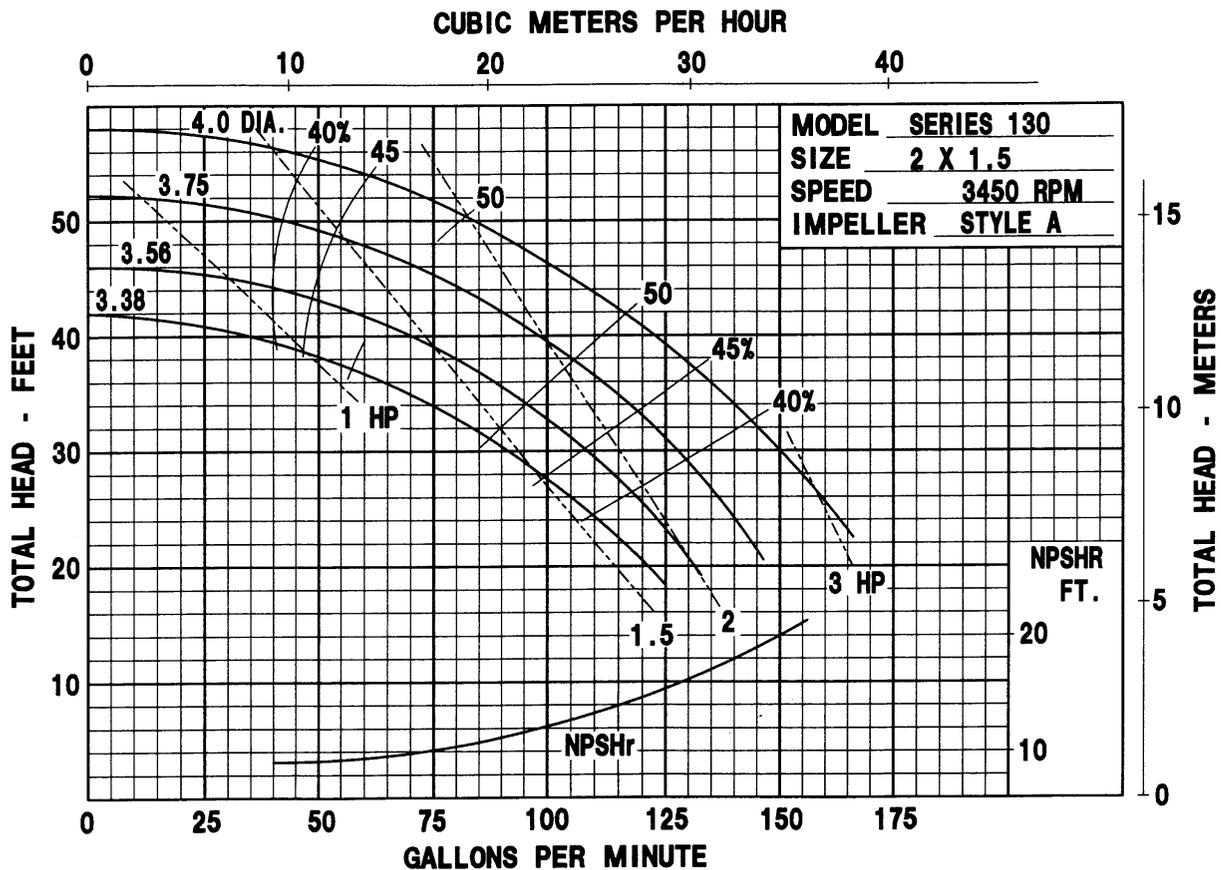


Other Performance Curves Available Upon Request

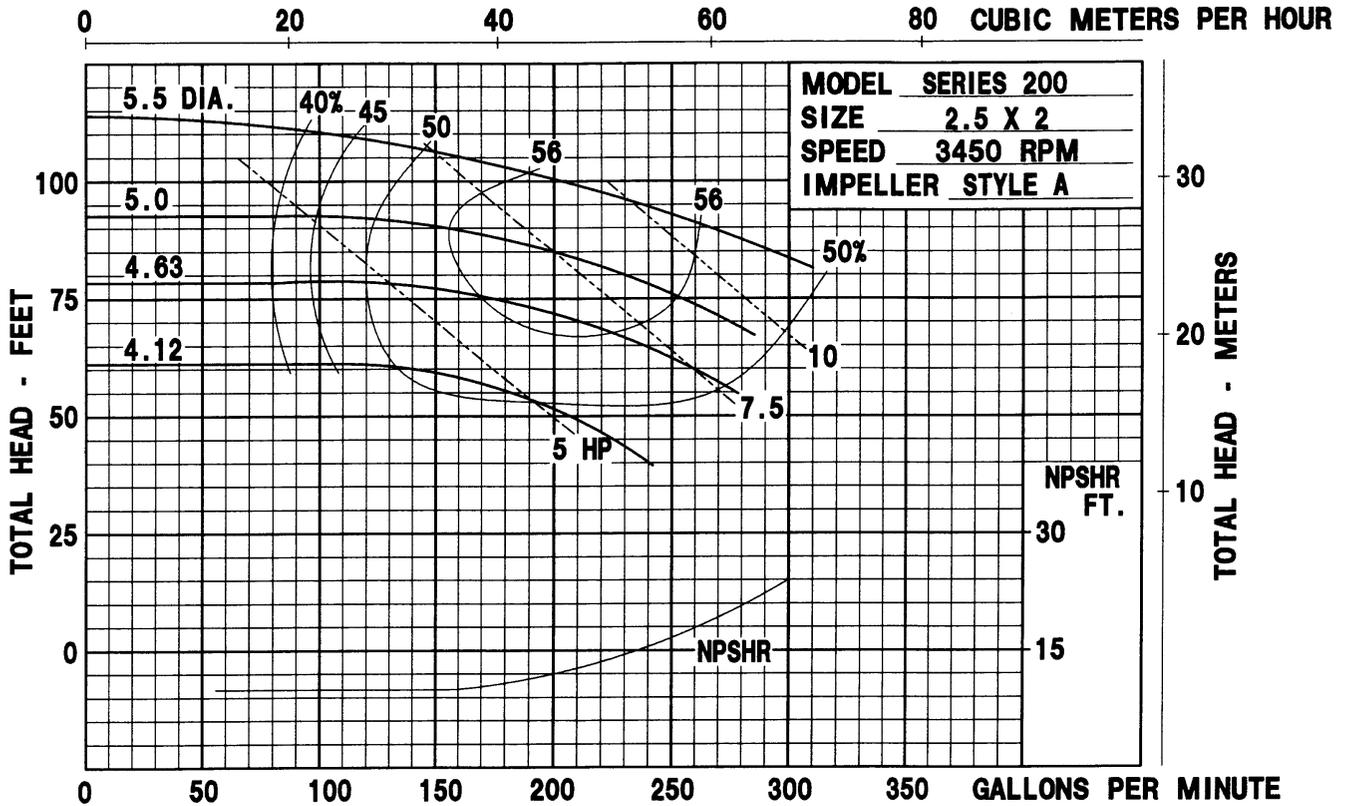
**Series 120 Pump Performance Curves**



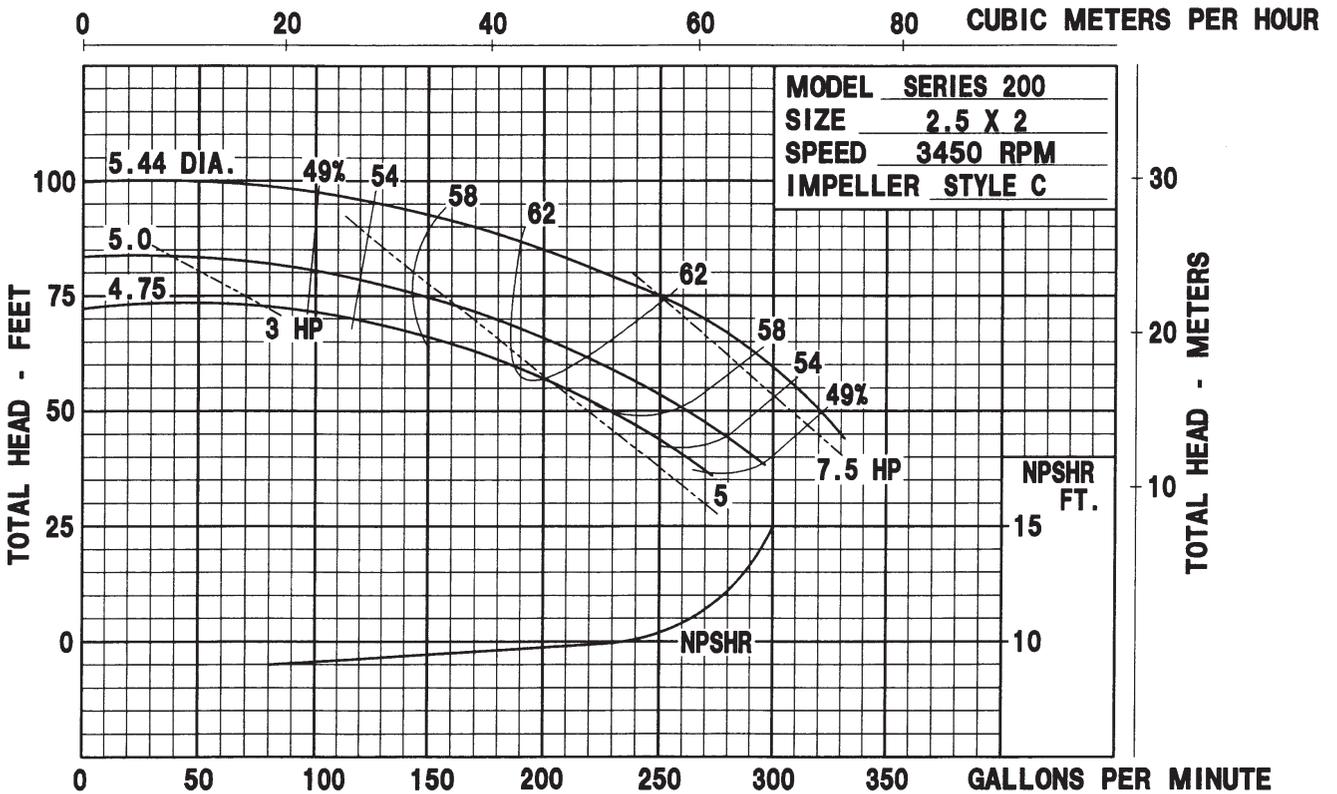
**Series 130 Pump Performance Curves**



**Series 200 Style A Pump Performance Curves**

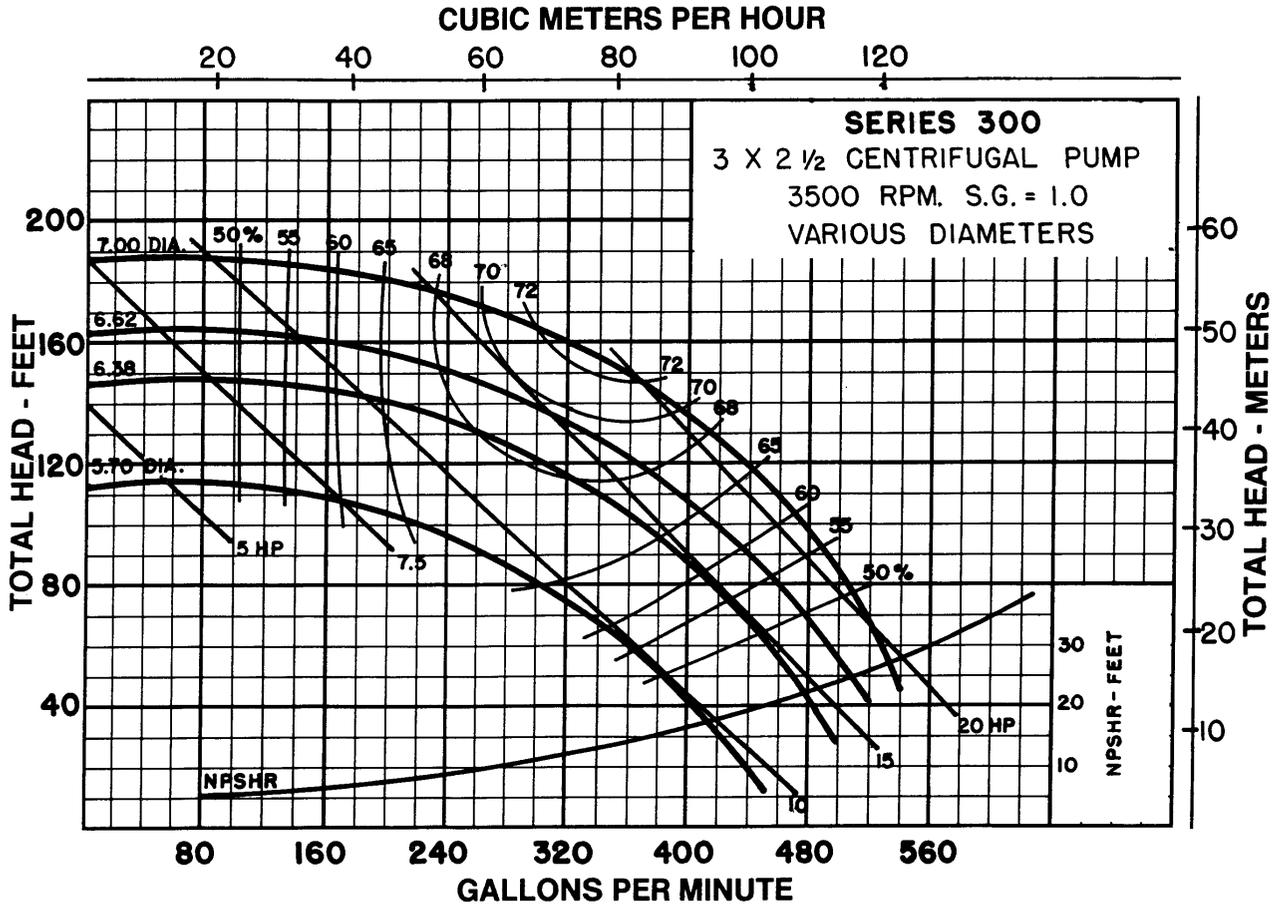


**Series 200 Style C Pump Performance Curves**

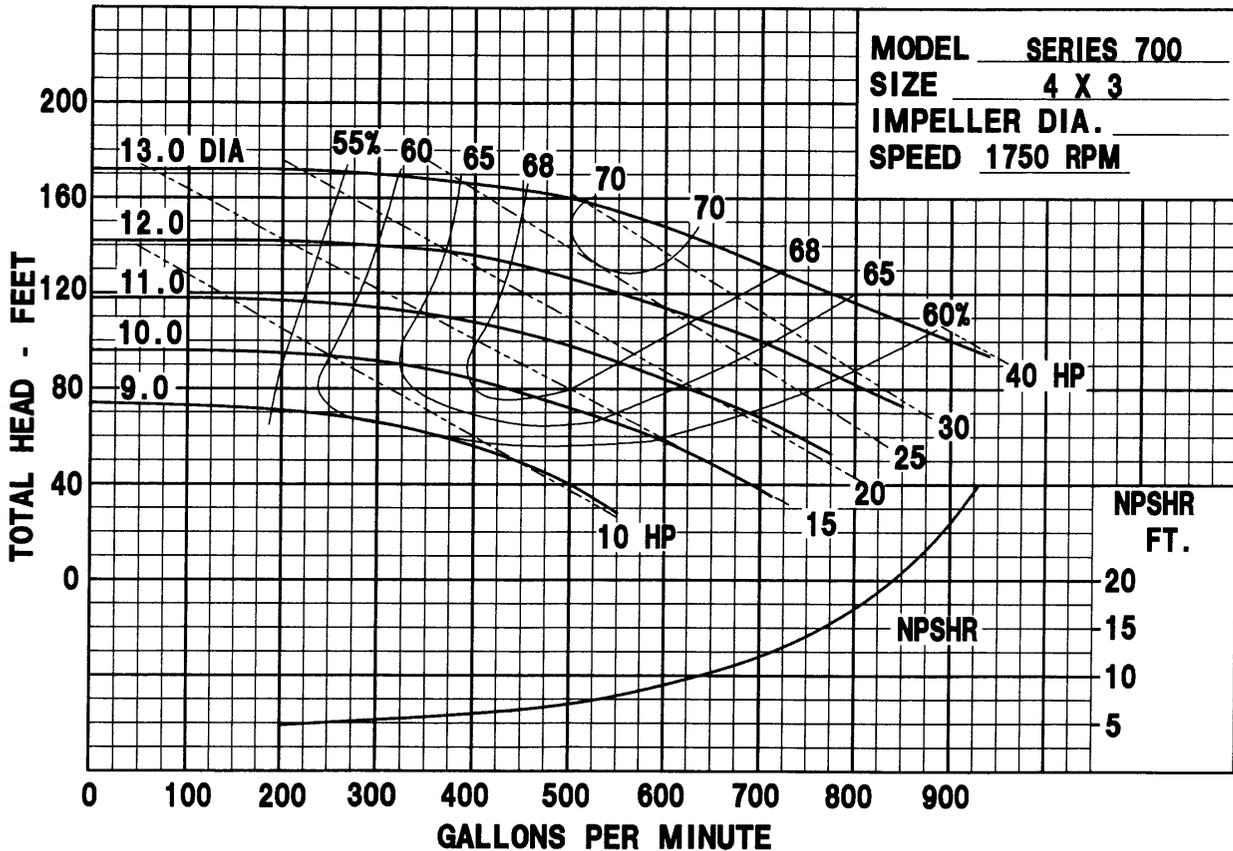


Other Performance Curves Available Upon Request

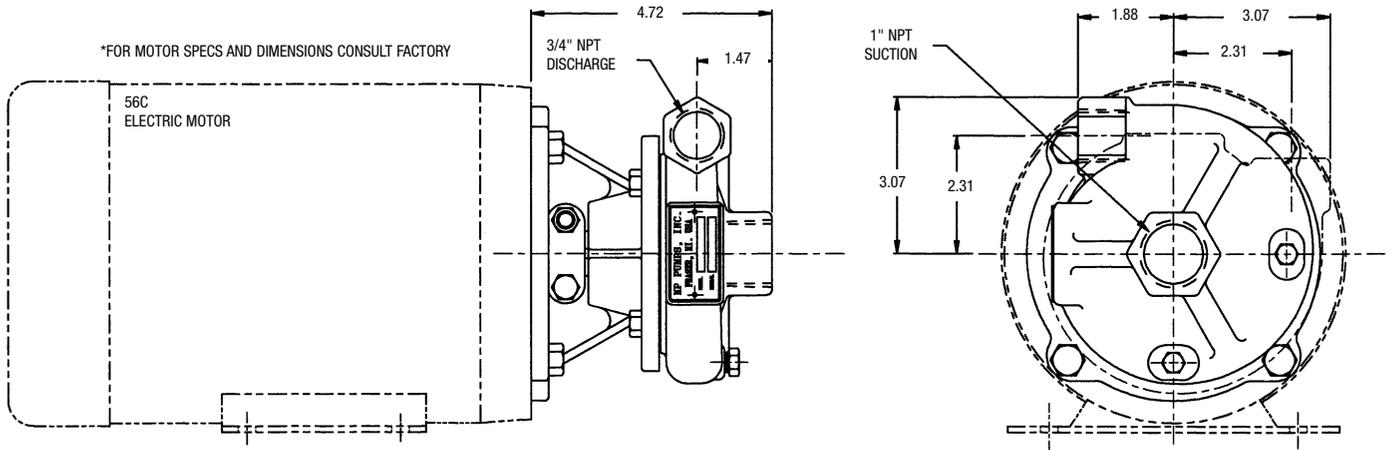
**Series 300 Pump Performance Curves**



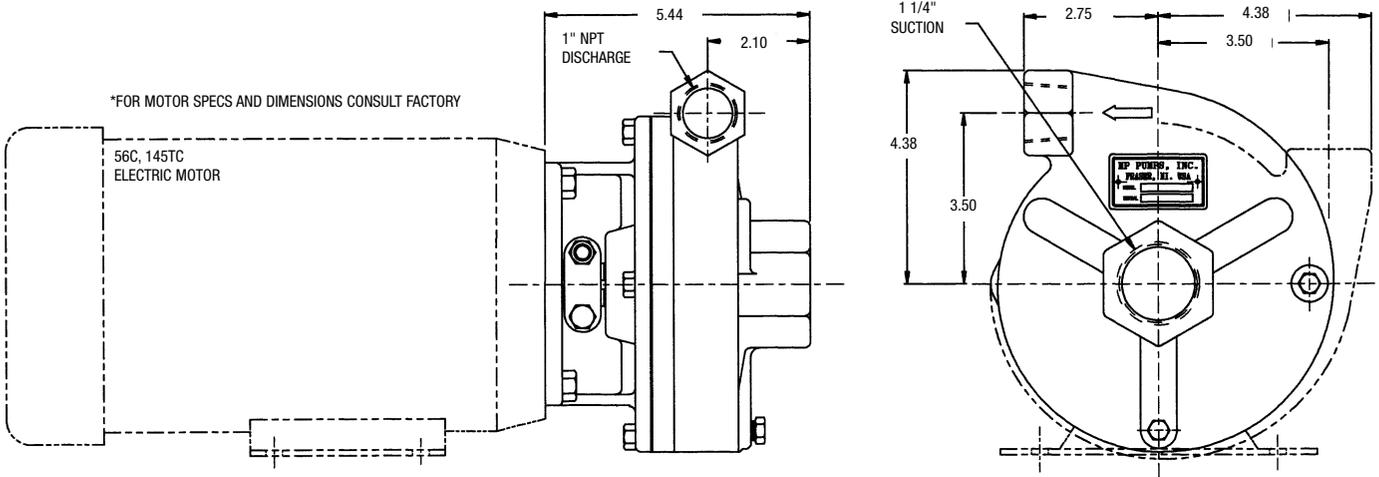
**Series 700 Pump Performance Curves**



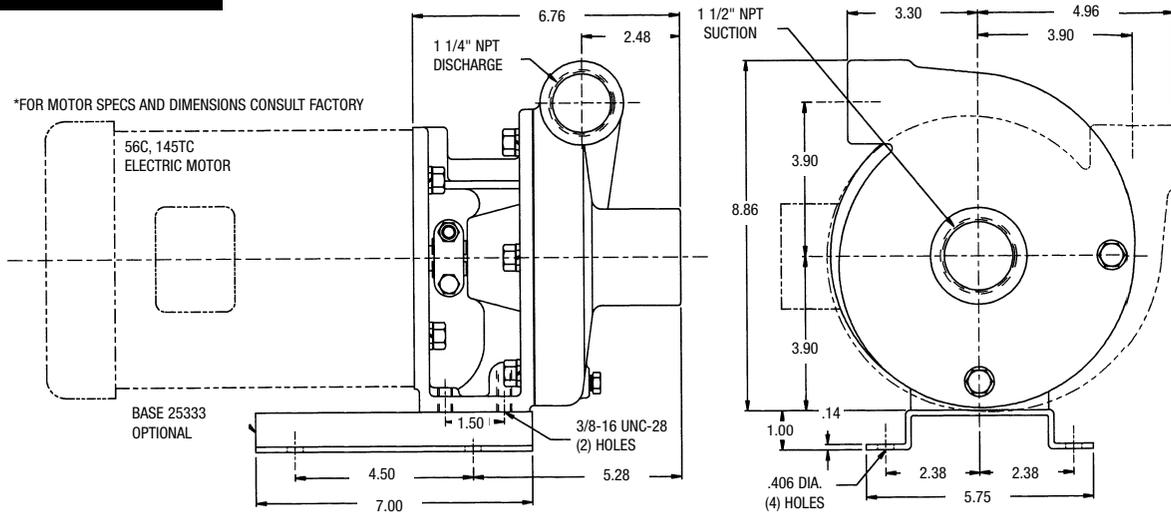
## Series 30 Dimensions



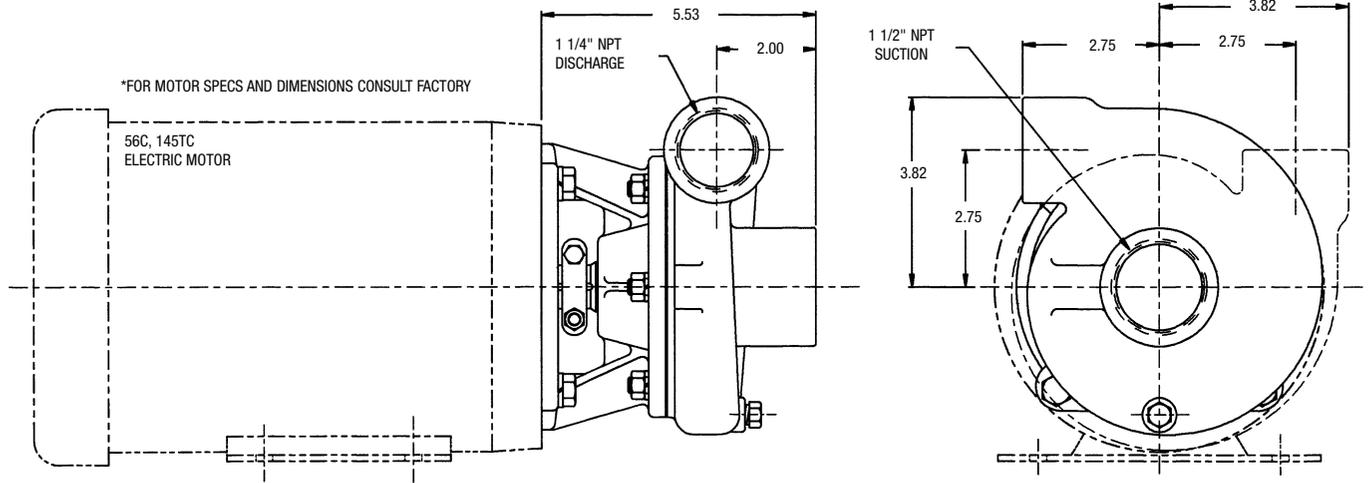
## Series 60 Dimensions



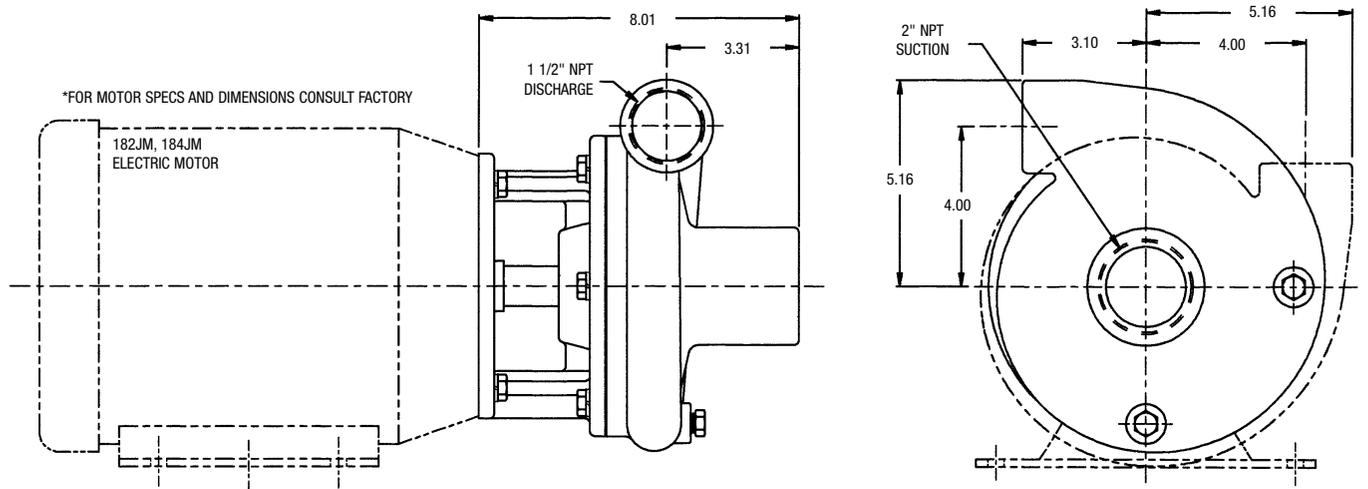
## Series 80 Dimensions



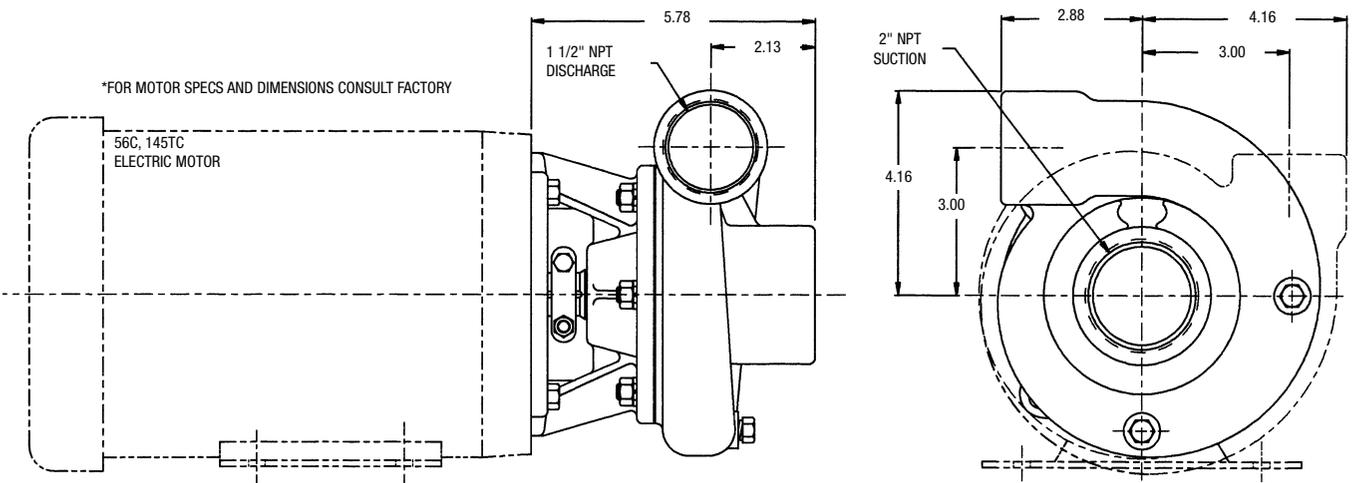
**Series 110 Dimensions**



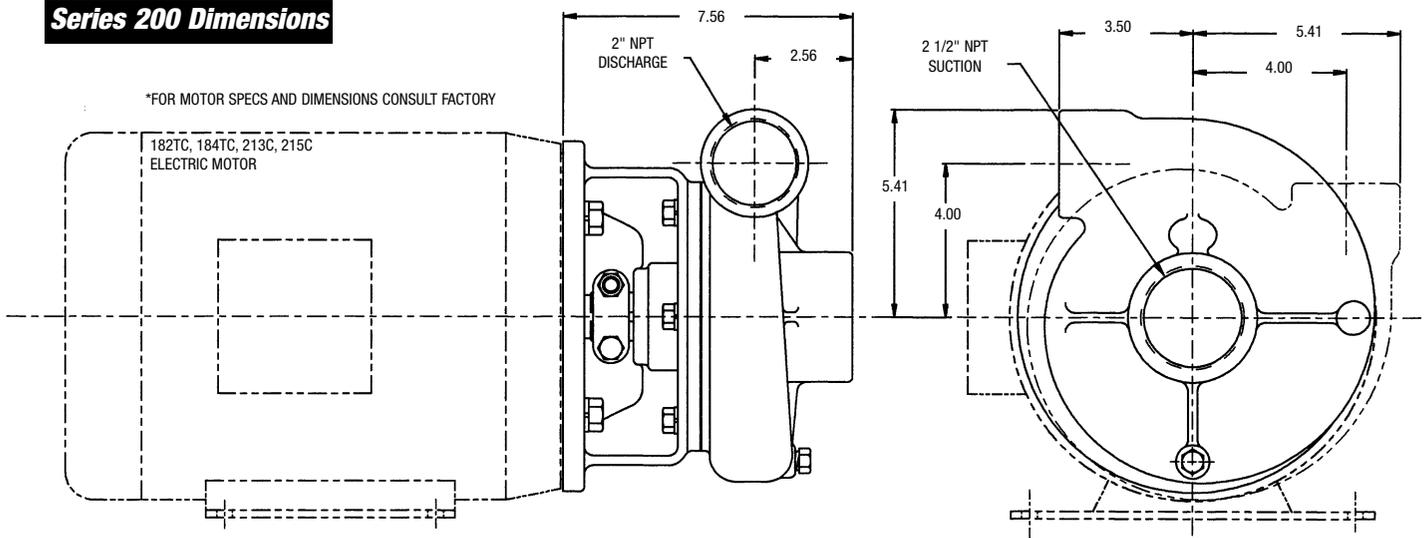
**Series 120 Dimensions**



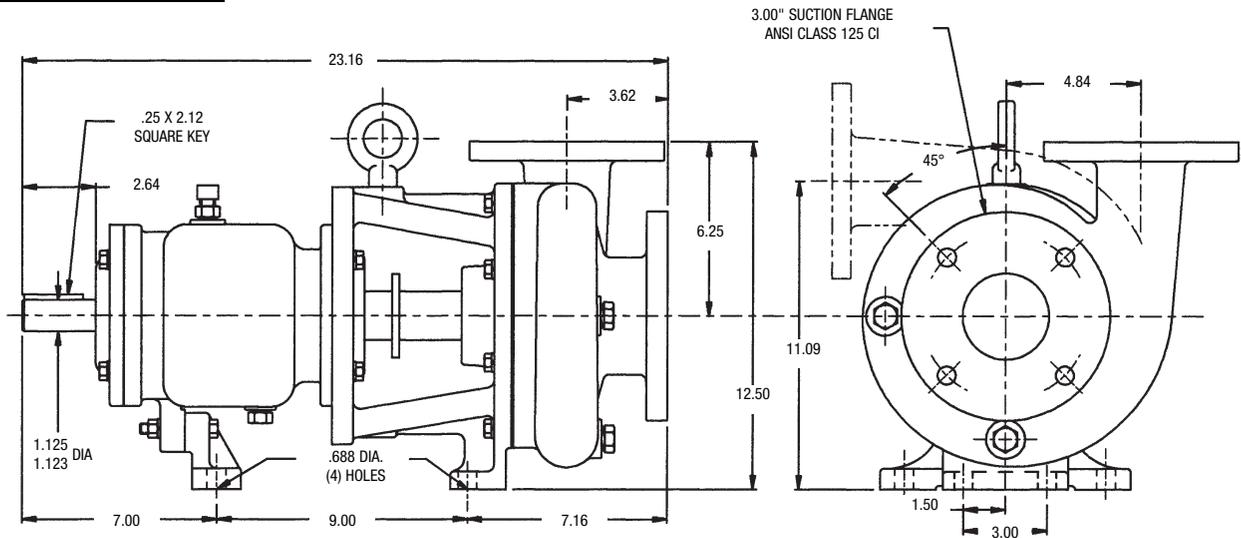
**Series 130 Dimensions**



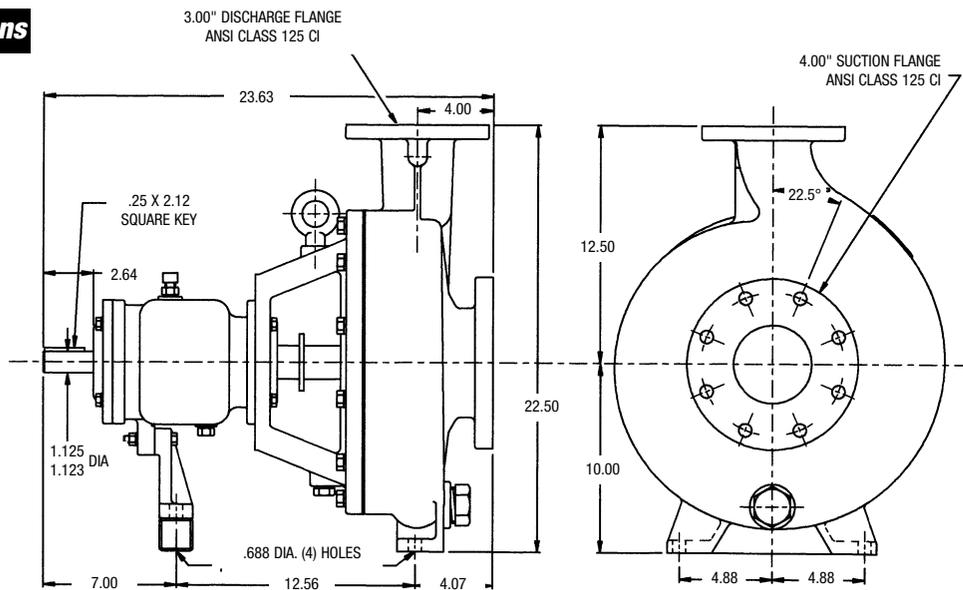
### Series 200 Dimensions



### 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

# 5 6 7 8

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**CHEMFLO 5**



**CHEMFLO 7**

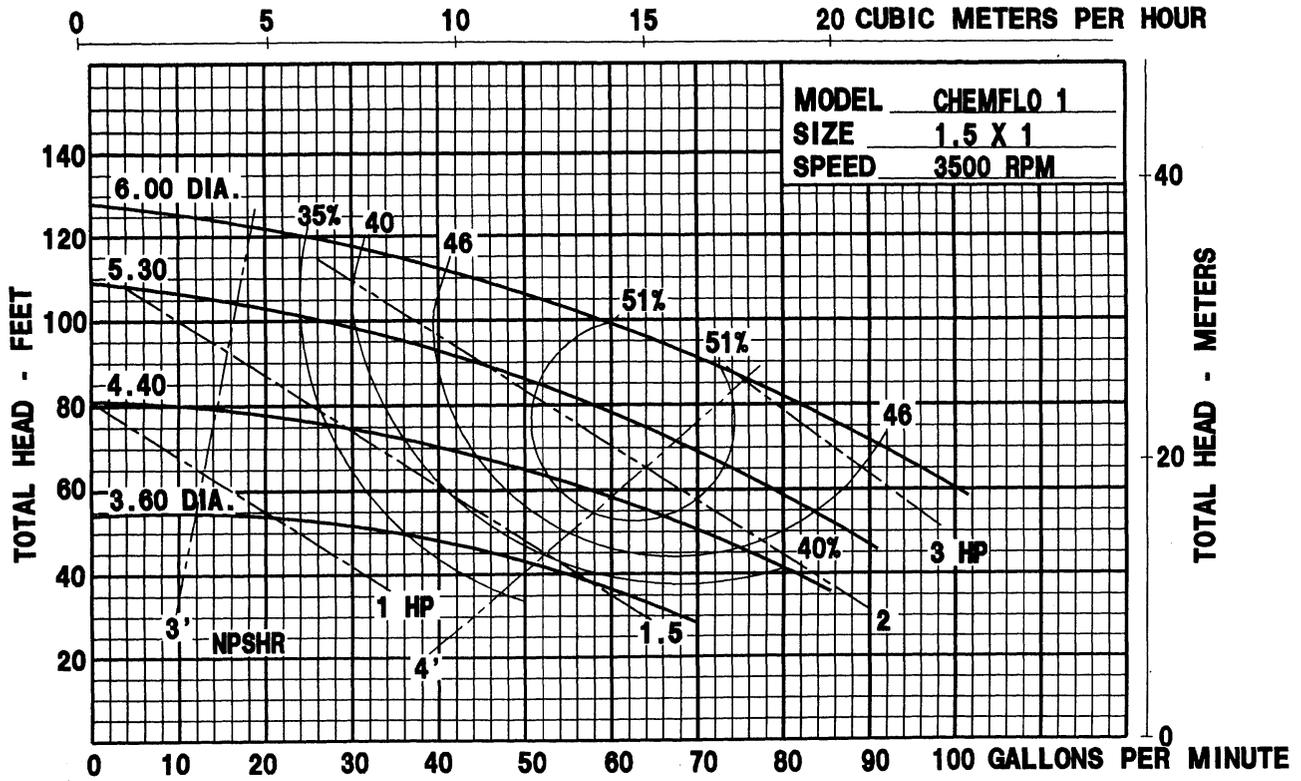


**CHEMFLO 6**

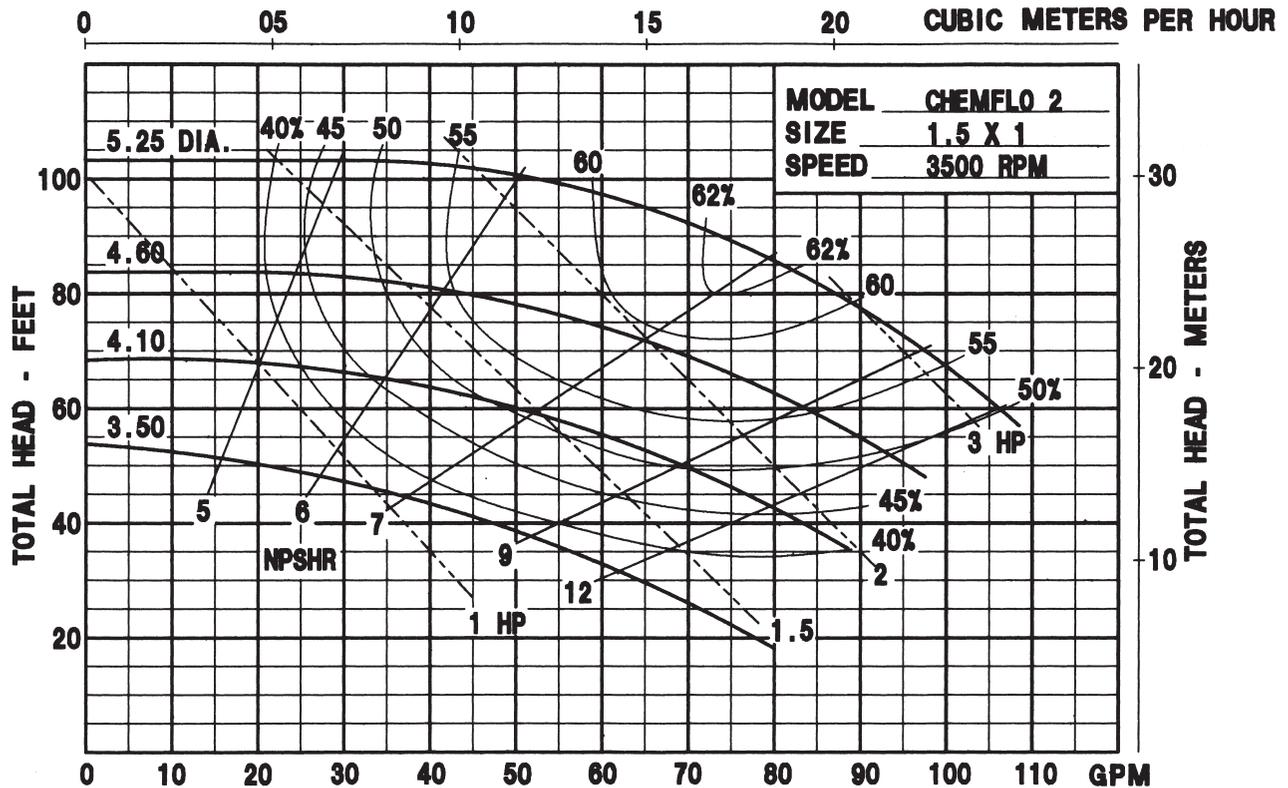


**CHEMFLO 8**

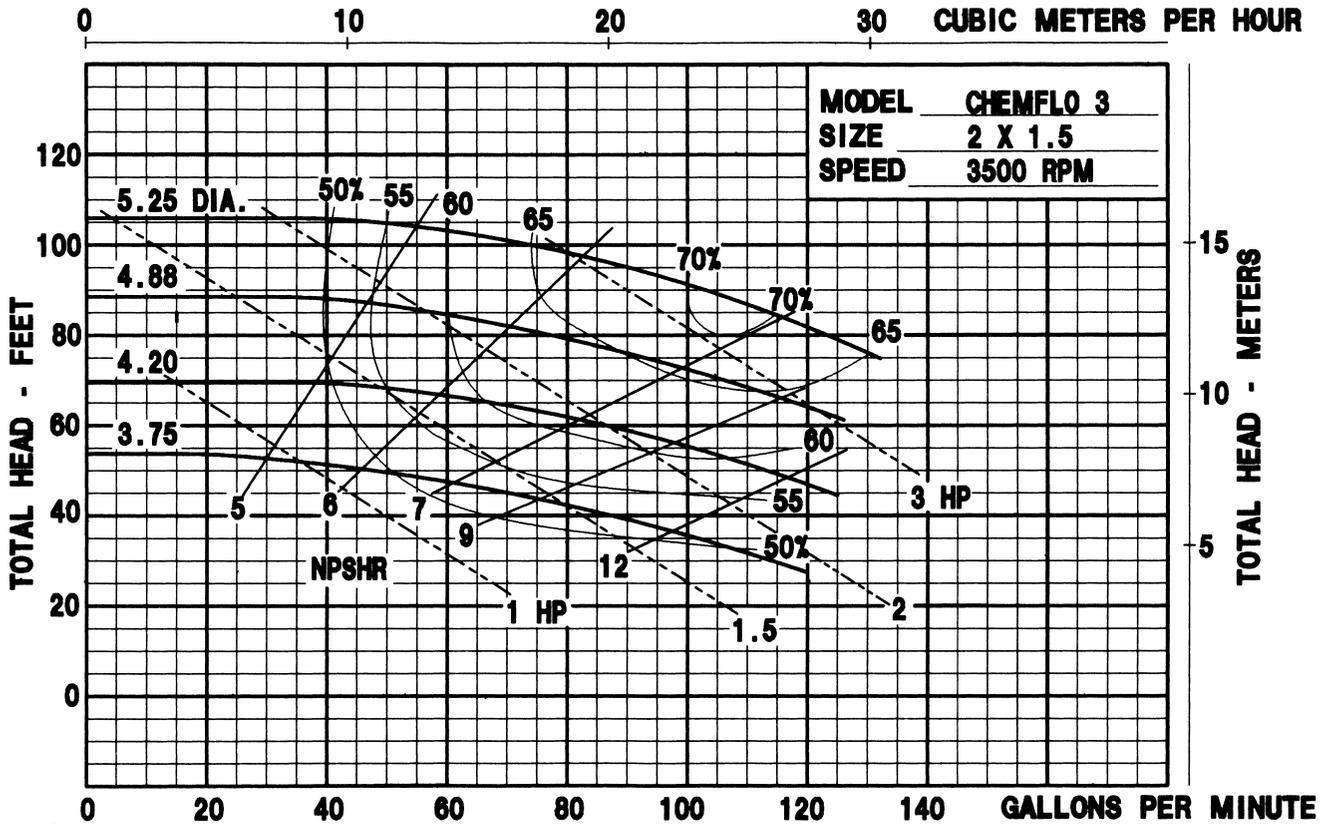
### CHEMFLO 1 Pump Performance Curves



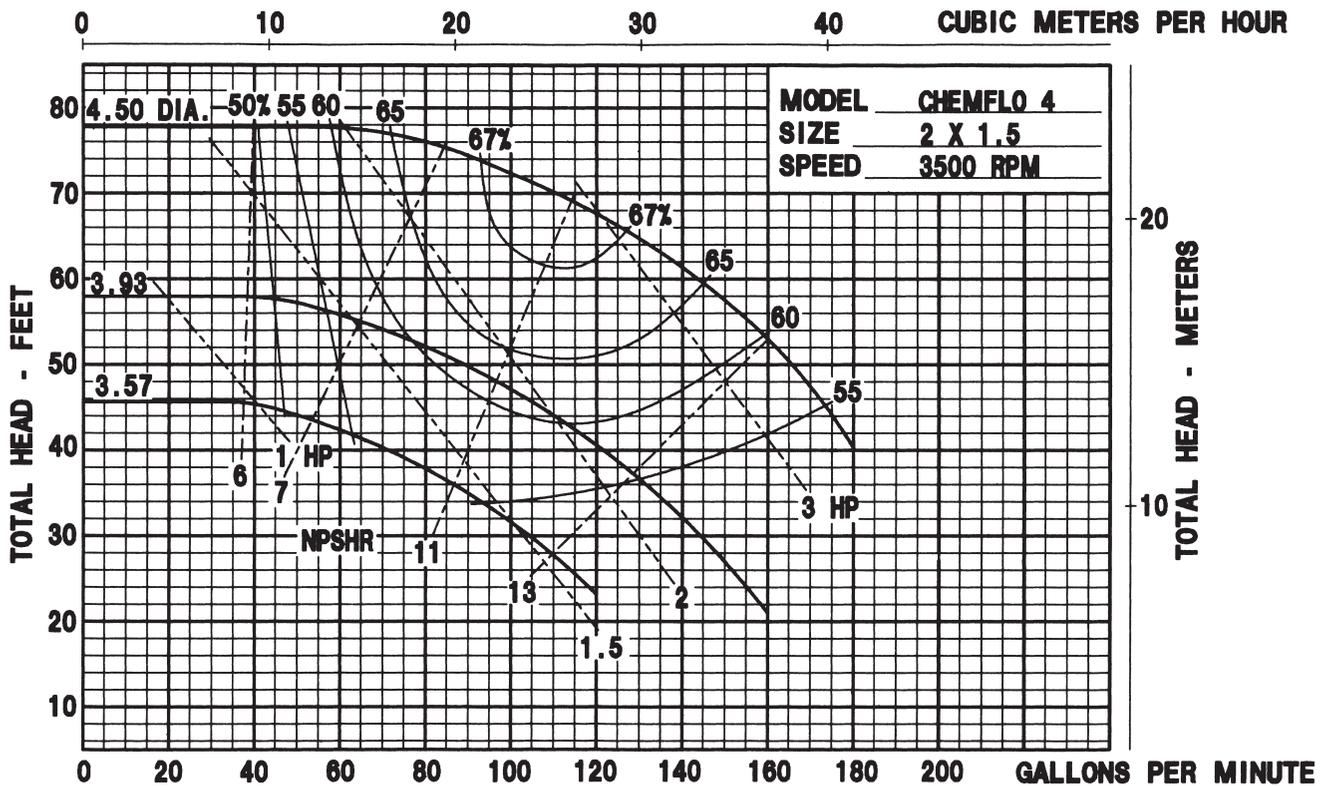
### CHEMFLO 2 Pump Performance Curves



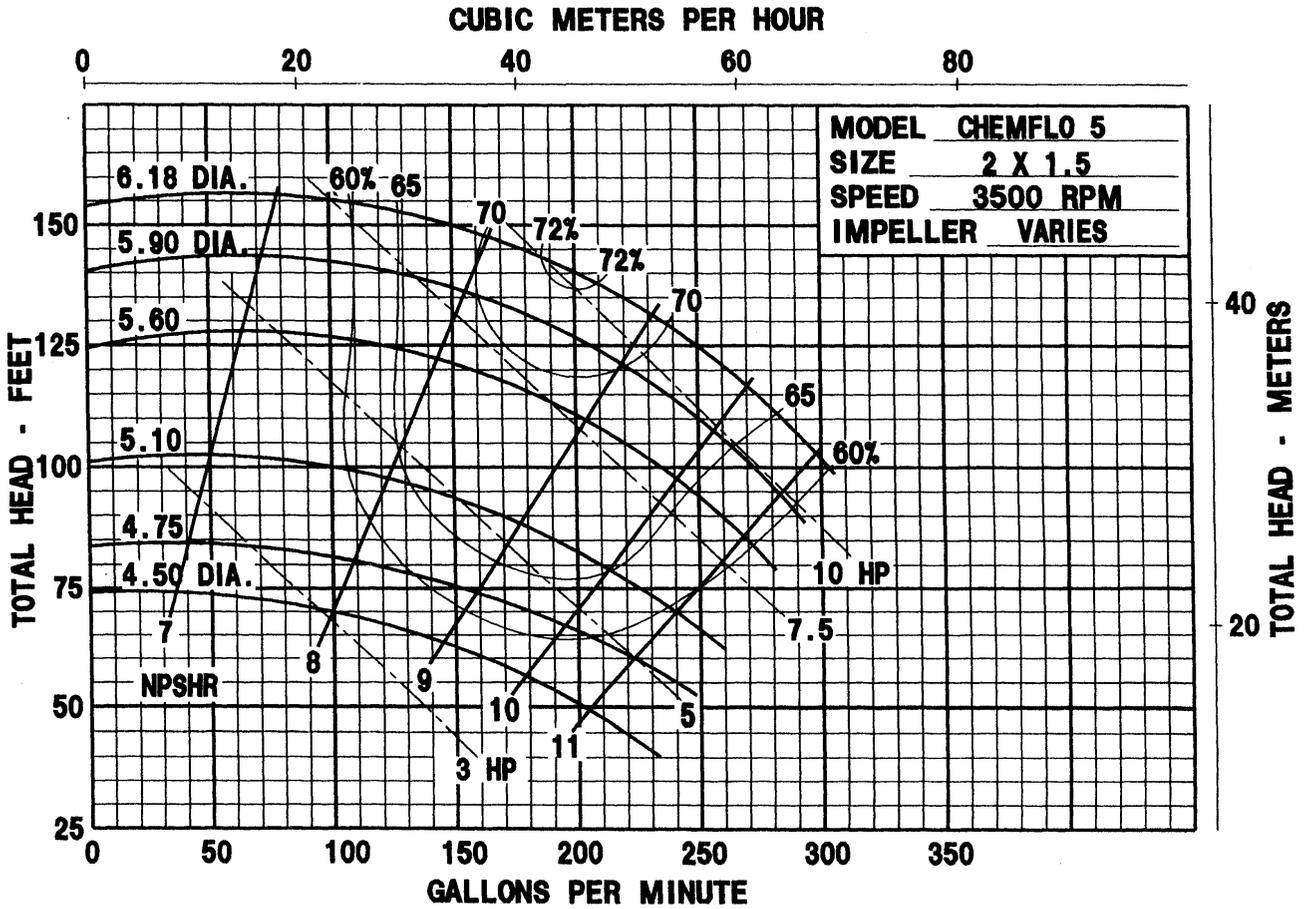
### CHEMFLO 3 Pump Performance Curves



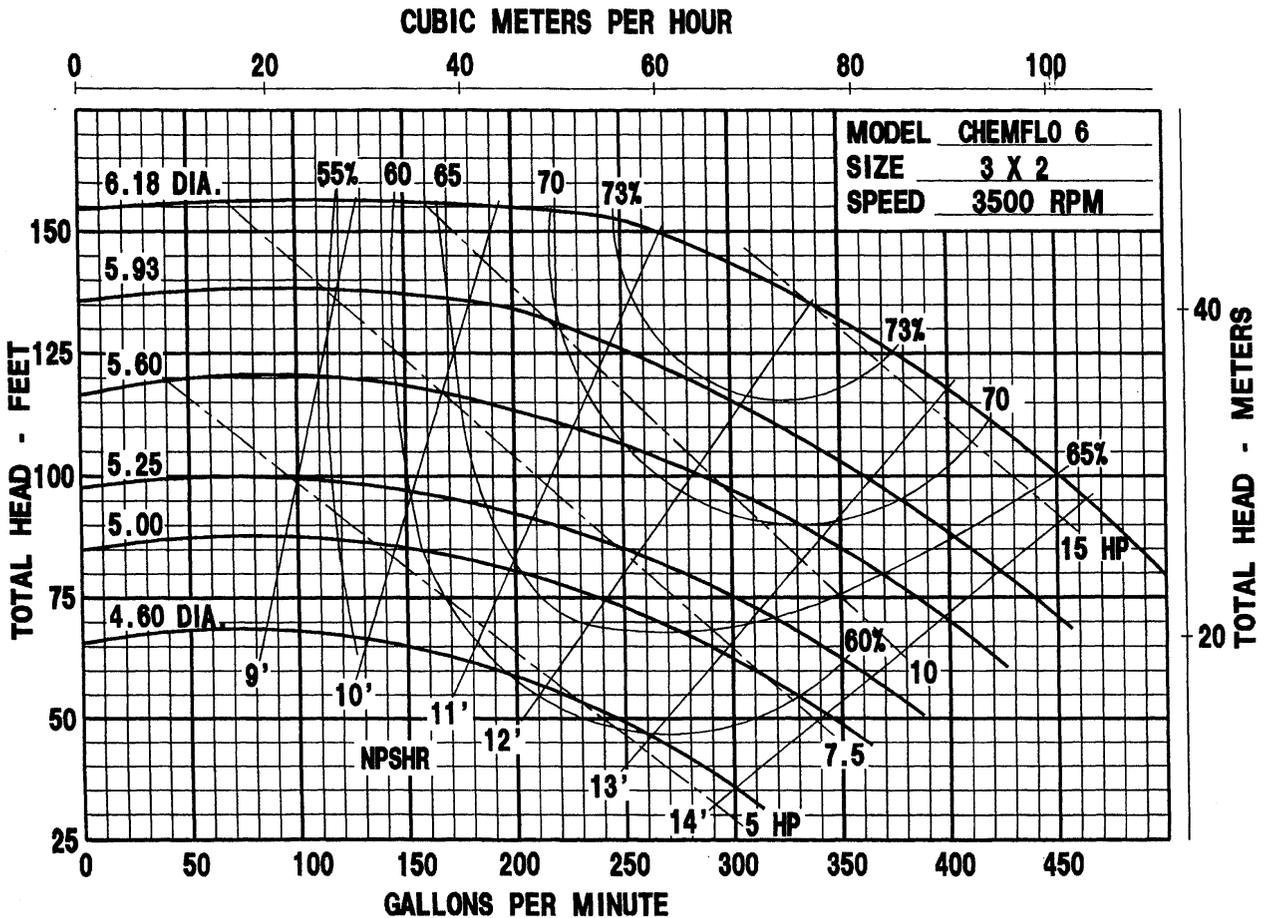
### CHEMFLO 4 Pump Performance Curves



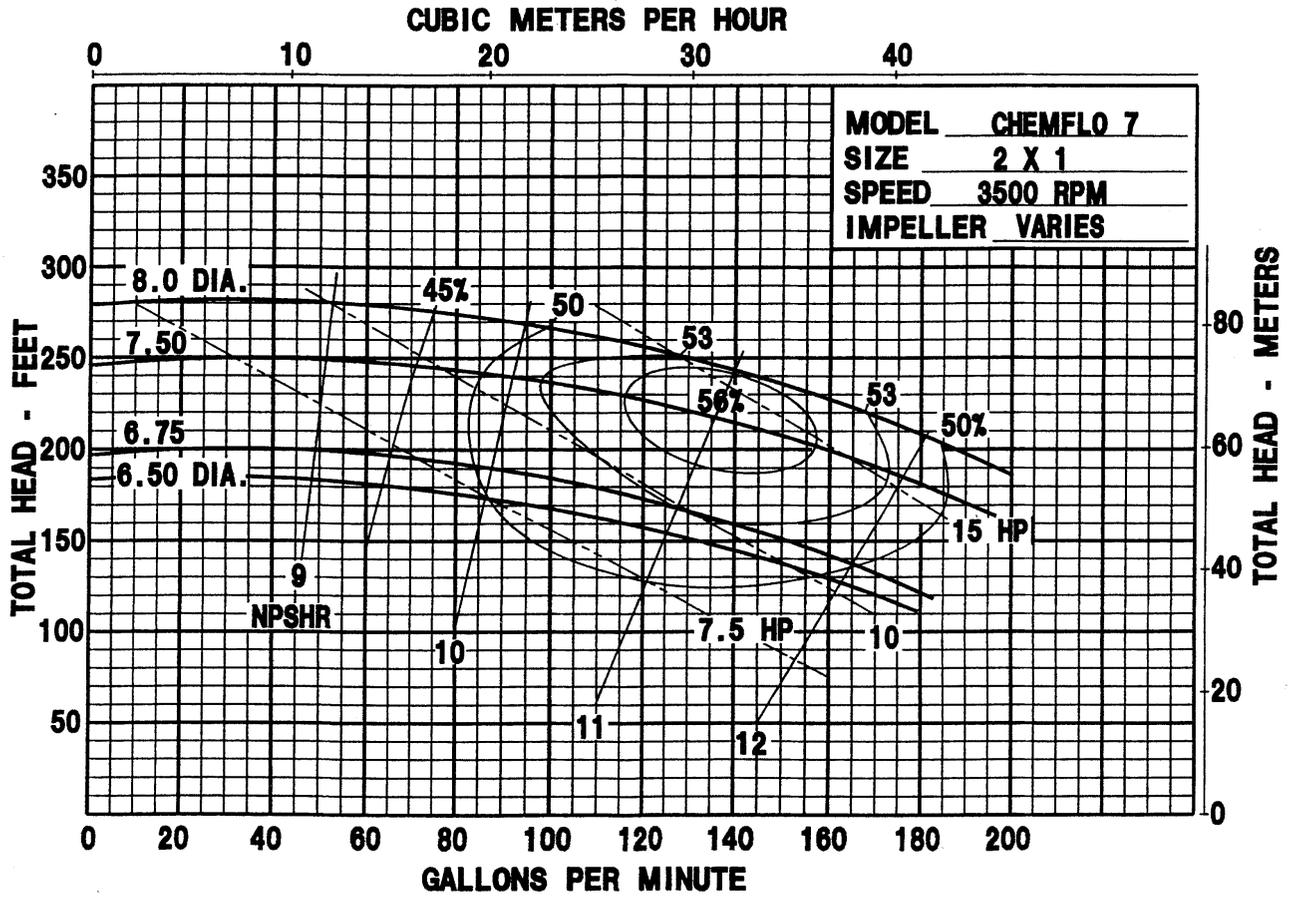
**CHEMFLO 5 Pump Performance Curves**



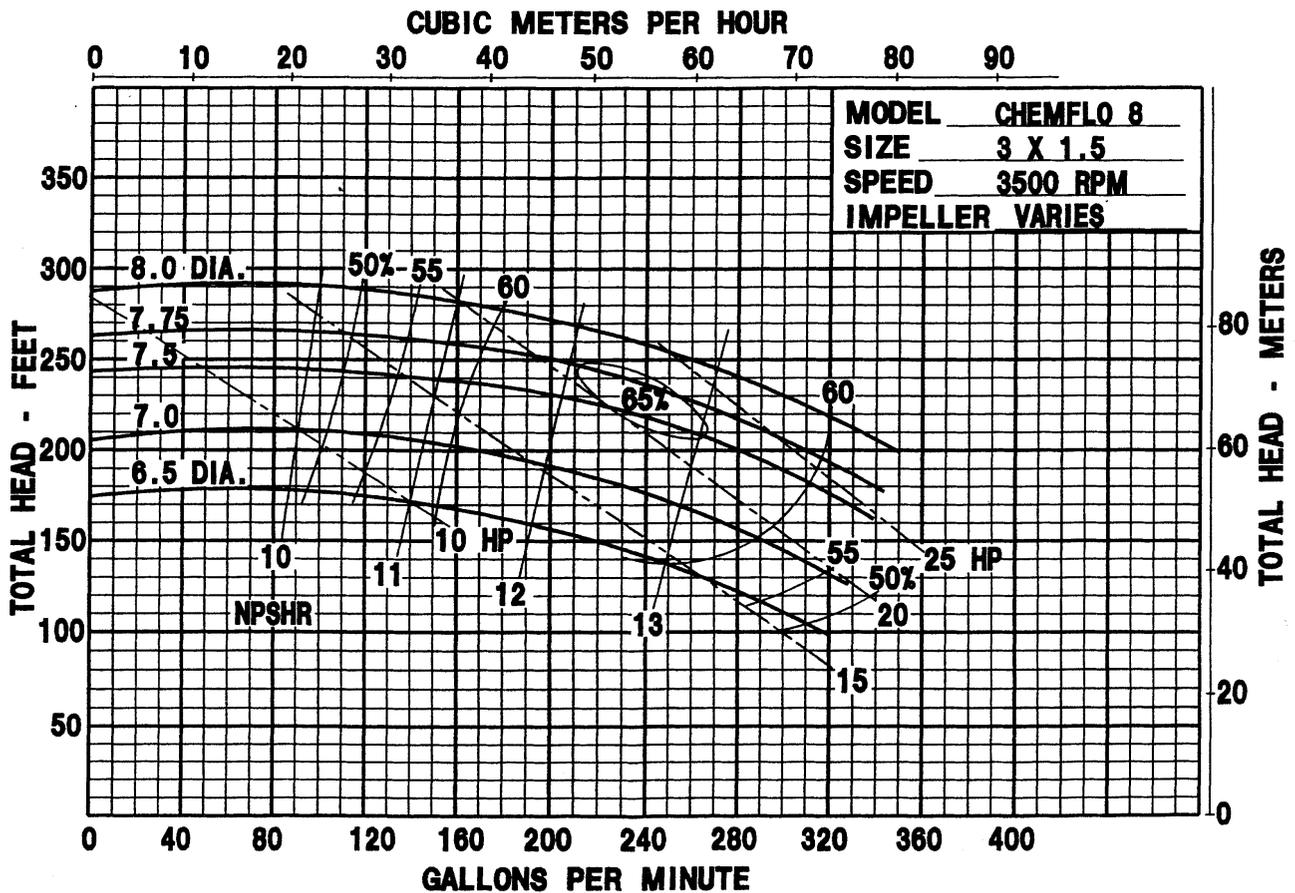
**CHEMFLO 6 Pump Performance Curves**



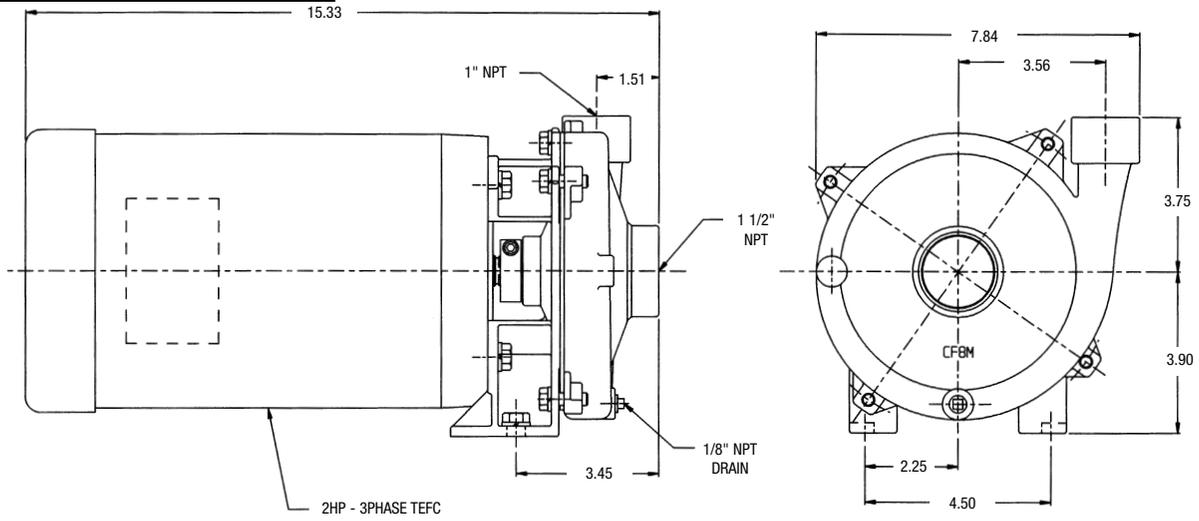
**CHEMFLO 7 Pump Performance Curves**



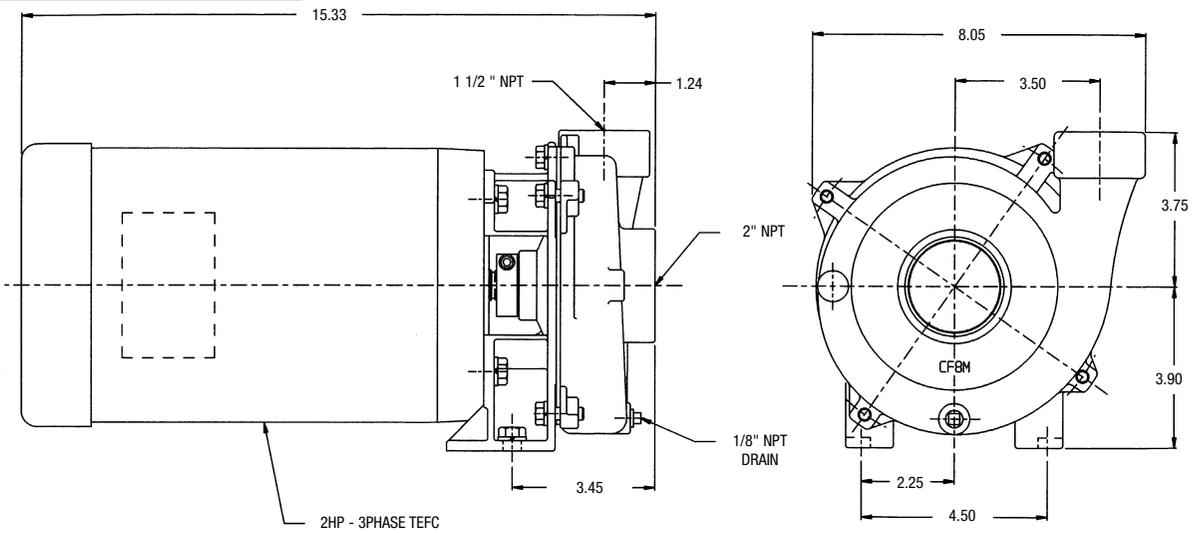
**CHEMFLO 8 Pump Performance Curves**



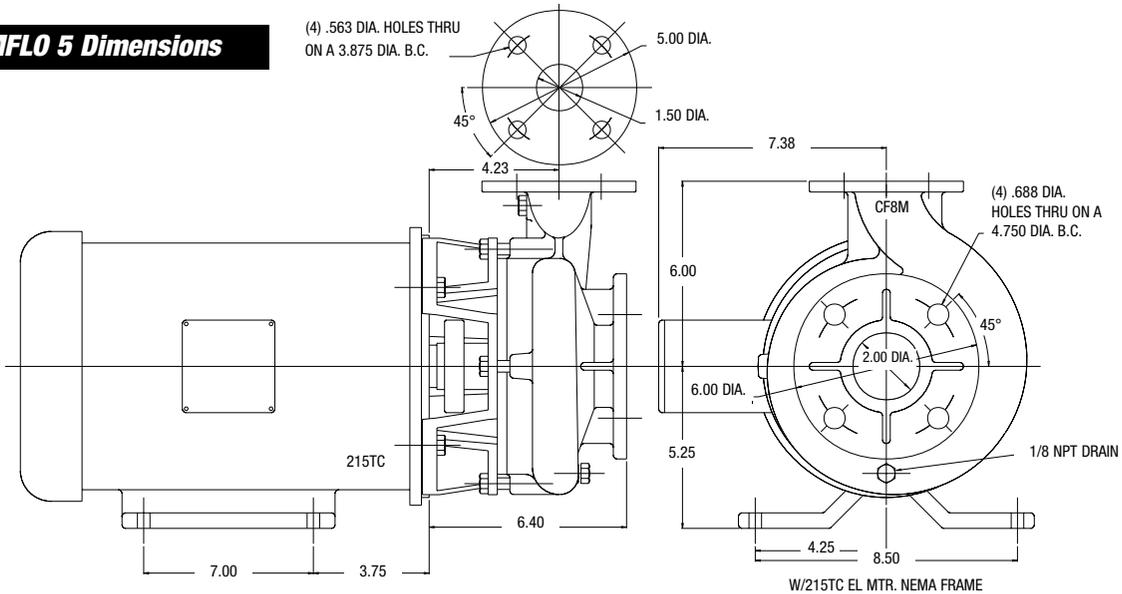
### CHEMFLO 1&2 Dimensions



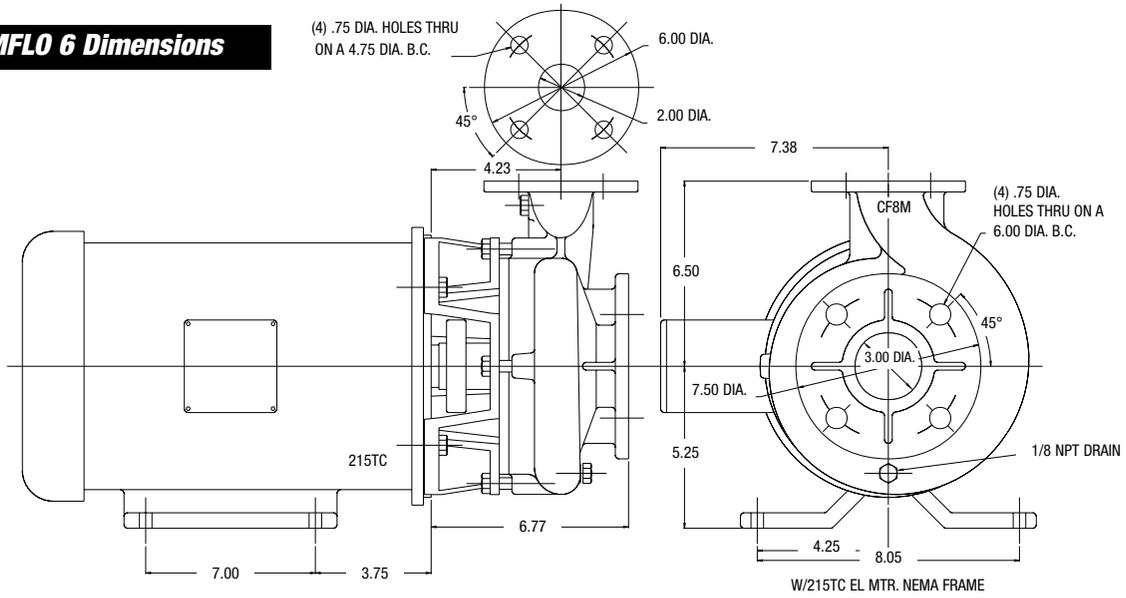
### CHEMFLO 3&4 Dimensions



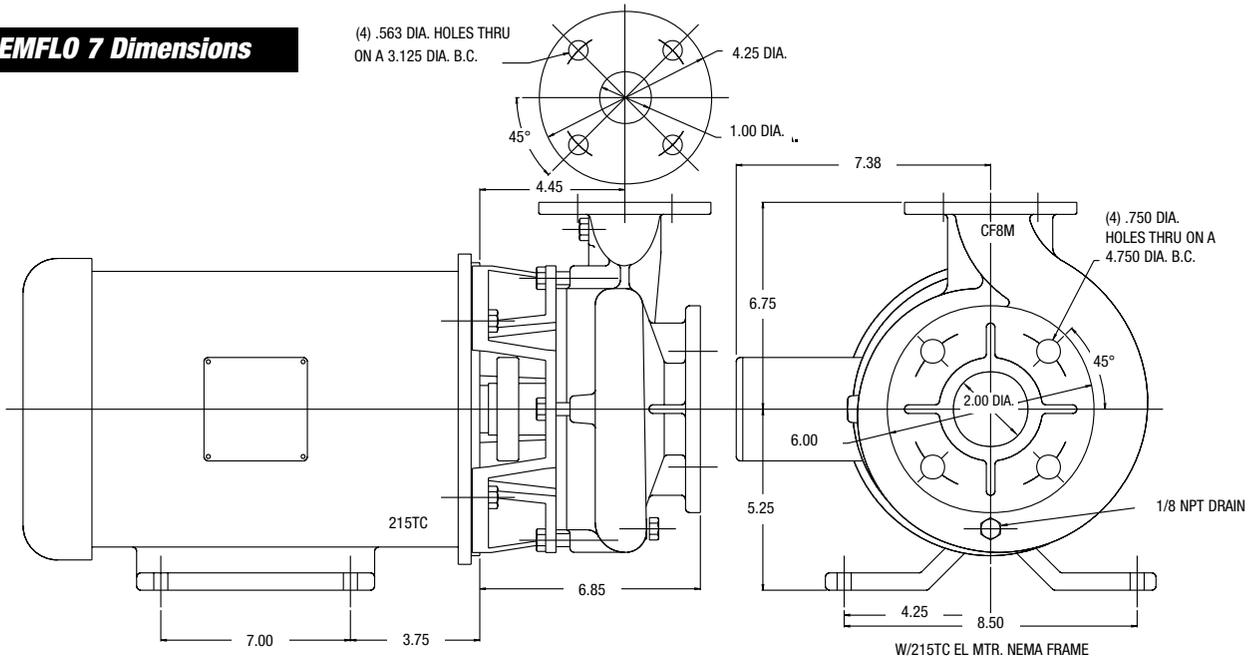
### CHEMFLO 5 Dimensions



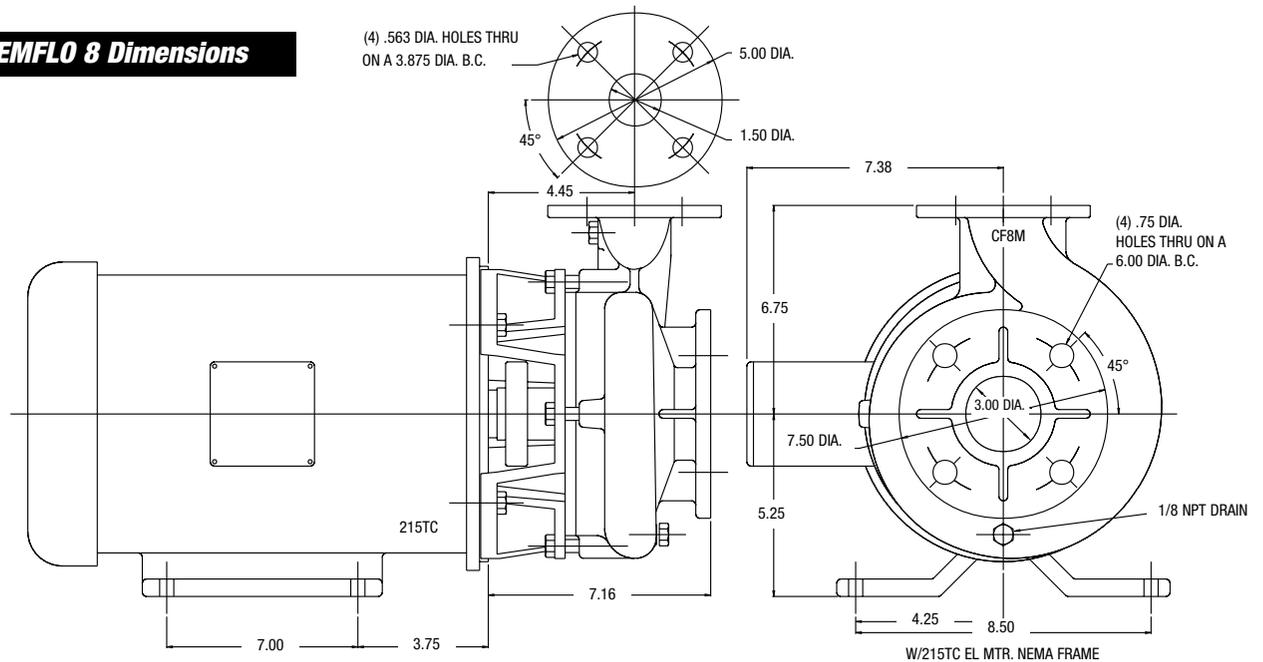
### CHEMFLO 6 Dimensions



### CHEMFLO 7 Dimensions



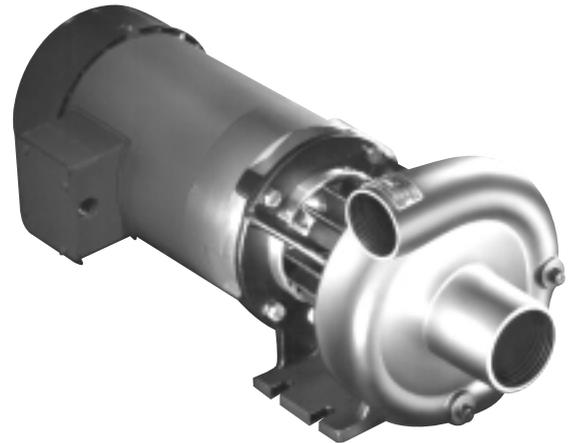
### CHEMFLO 8 Dimensions



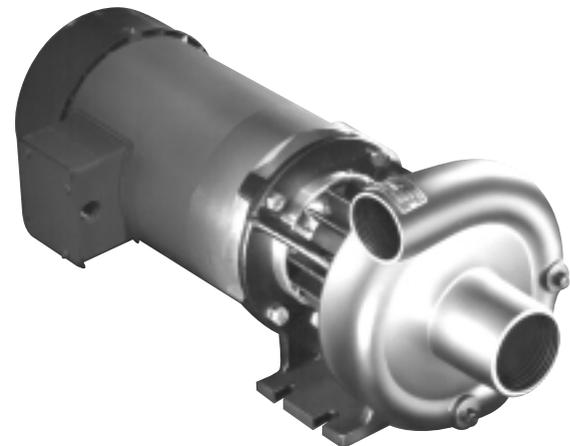
# HTO 80 120 300

## 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



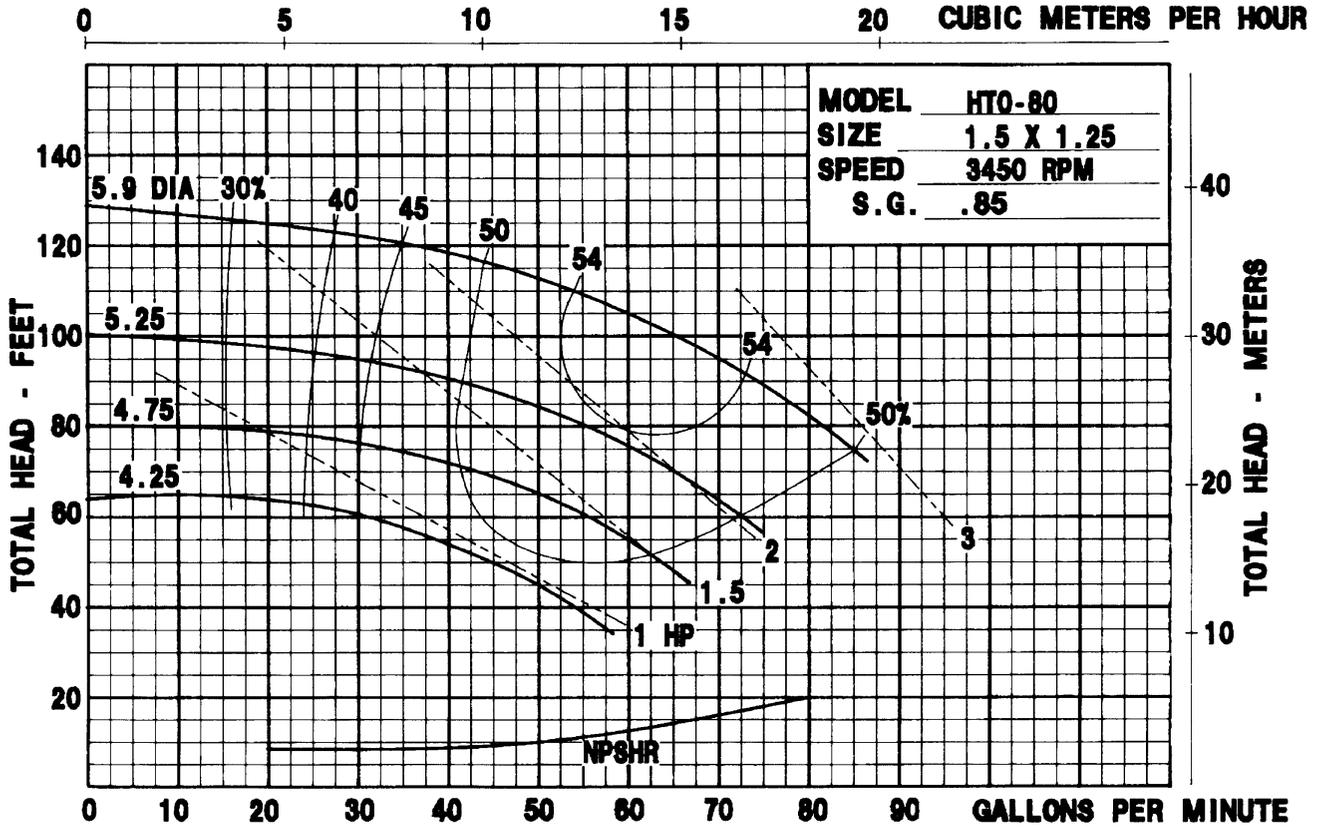
HTO 120



HTO 300

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

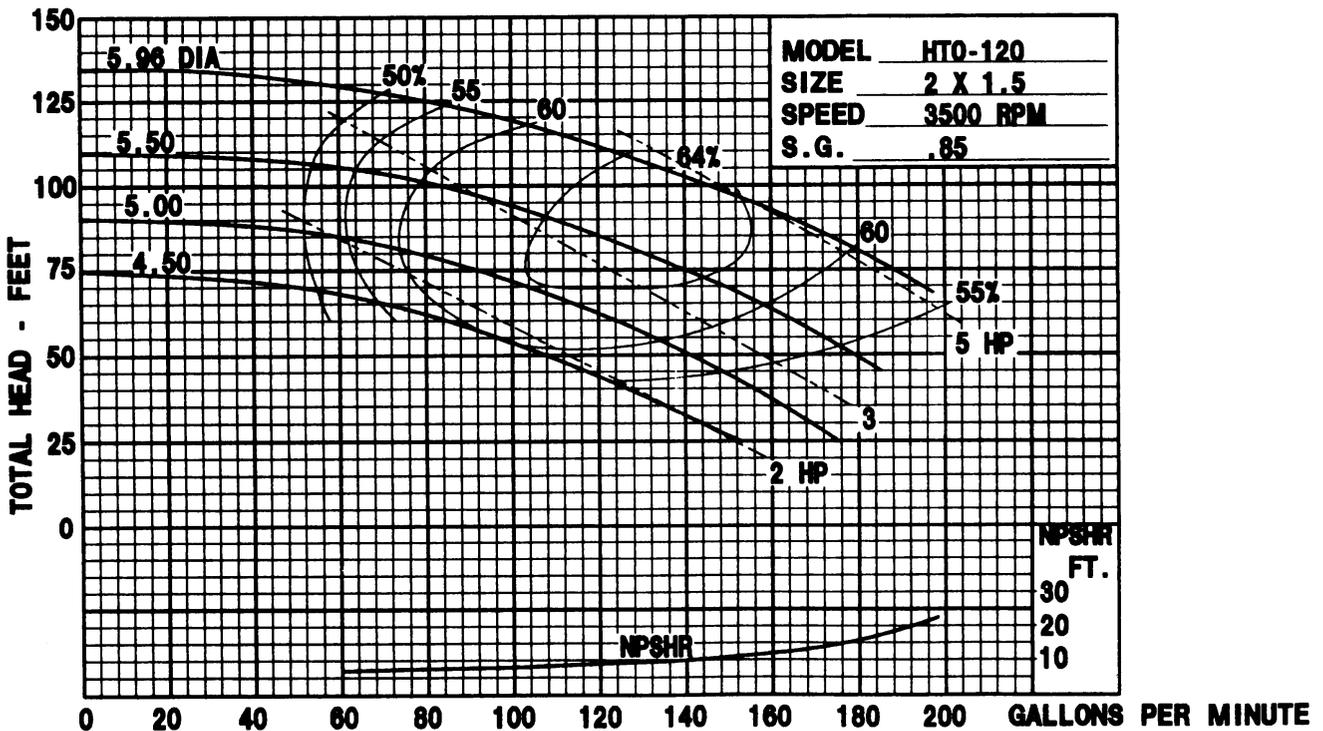
### HTO 80 Pump Performance Curves



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.

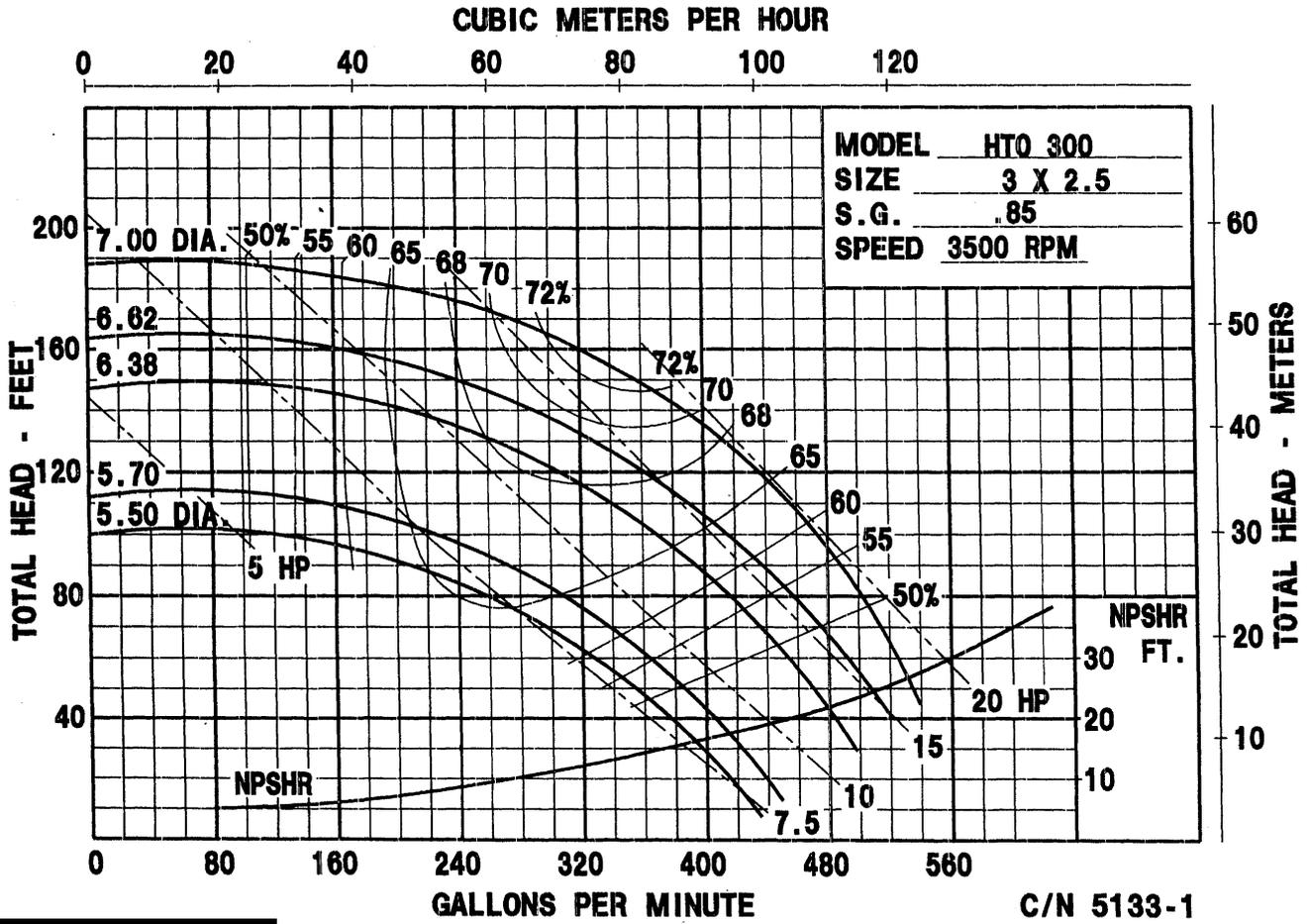
### HTO 120 Pump Performance Curves



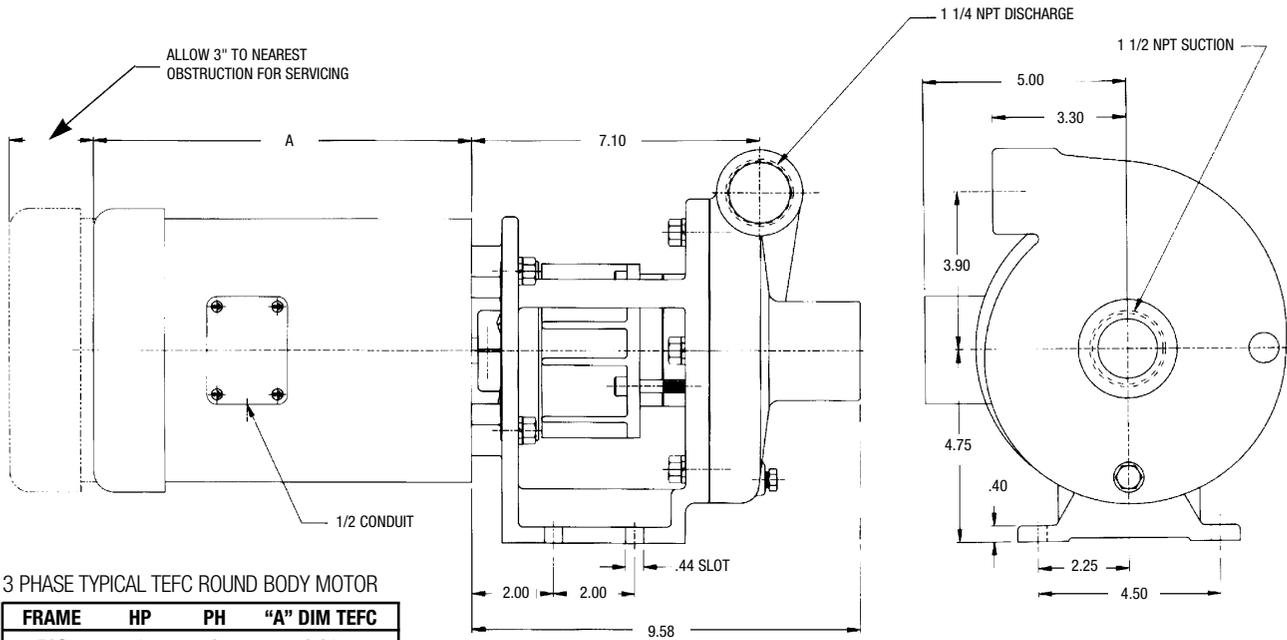
Horsepower requirements based upon 0.85 specific gravity. Calculations can be applied for fluids of other specific gravities.

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

# HTO 300 Pump Performance Curves

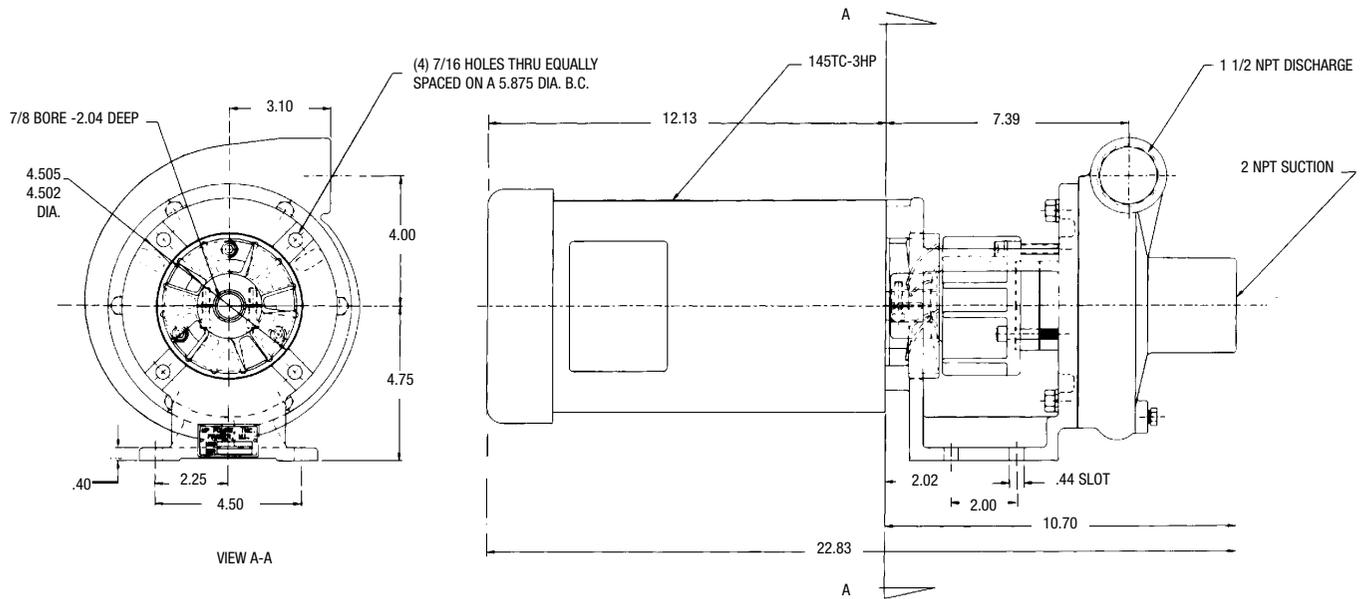


## HTO 80 Dimensions



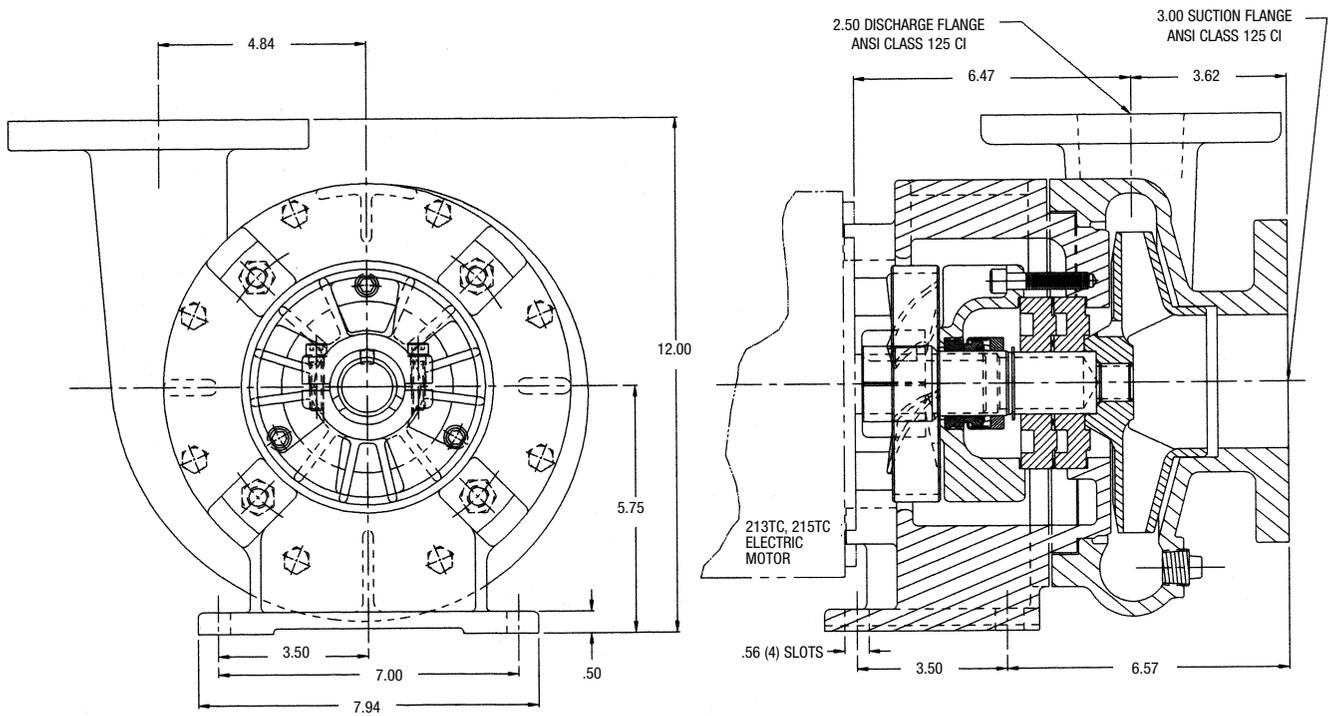
Pump dimensions certifiable for construction purposes.  
Motor dimensions dependent upon motor manufacturer.

## HTO 120 Dimensions



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

## HTO 300 Dimensions



## HIGH HEAD CENTRIFUGAL PUMP FEATURES

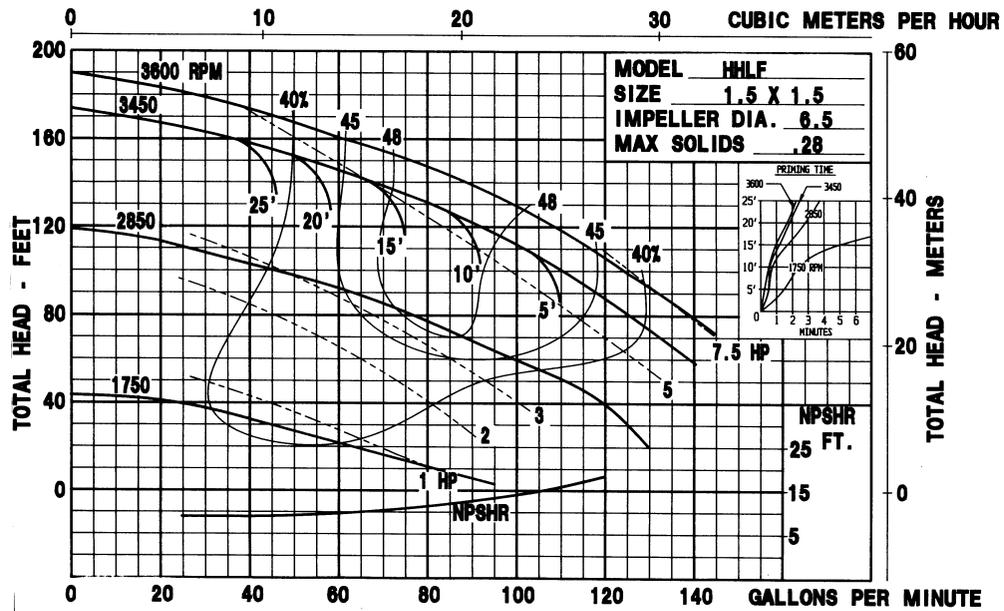
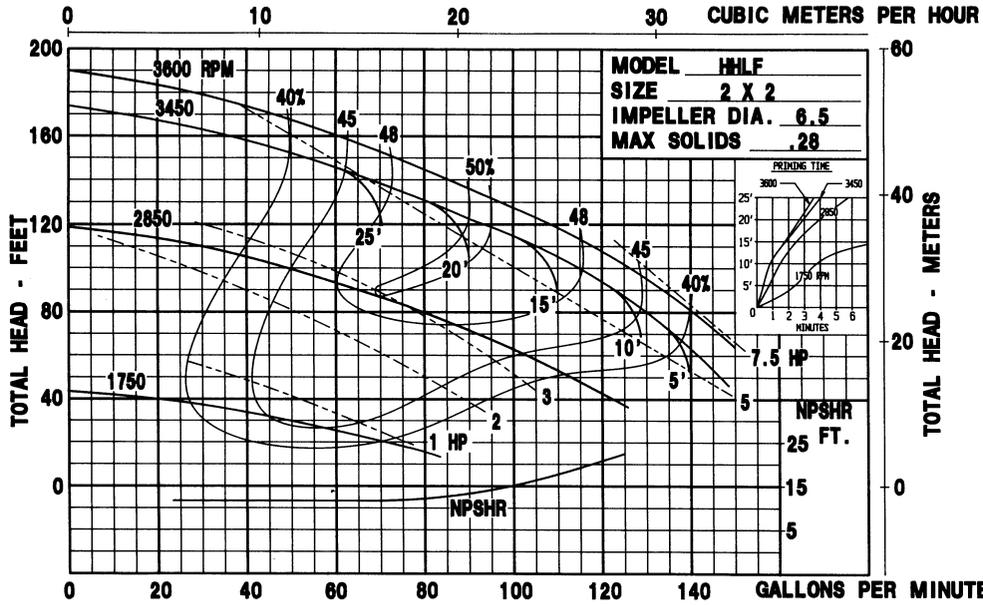
- 1 1/2 x 1 1/2  
2 X 2 HIGH HEAD PUMPAK
- "C" FACE ELECTRIC MOTOR DRIVE 5-7.5 HP
- PEDESTAL DRIVE
- FLOWS - TO 140 GPM
- PRESSURES - TO 190 TDH
- CAST IRON OR BRONZE CONSTRUCTION
- DRIVE SLEEVE - 304 STAINLESS STEEL
- FASTENERS - STAINLESS STEEL
- SEALS - STANDARD CARBON, CERAMIC, STAINLESS STEEL AND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



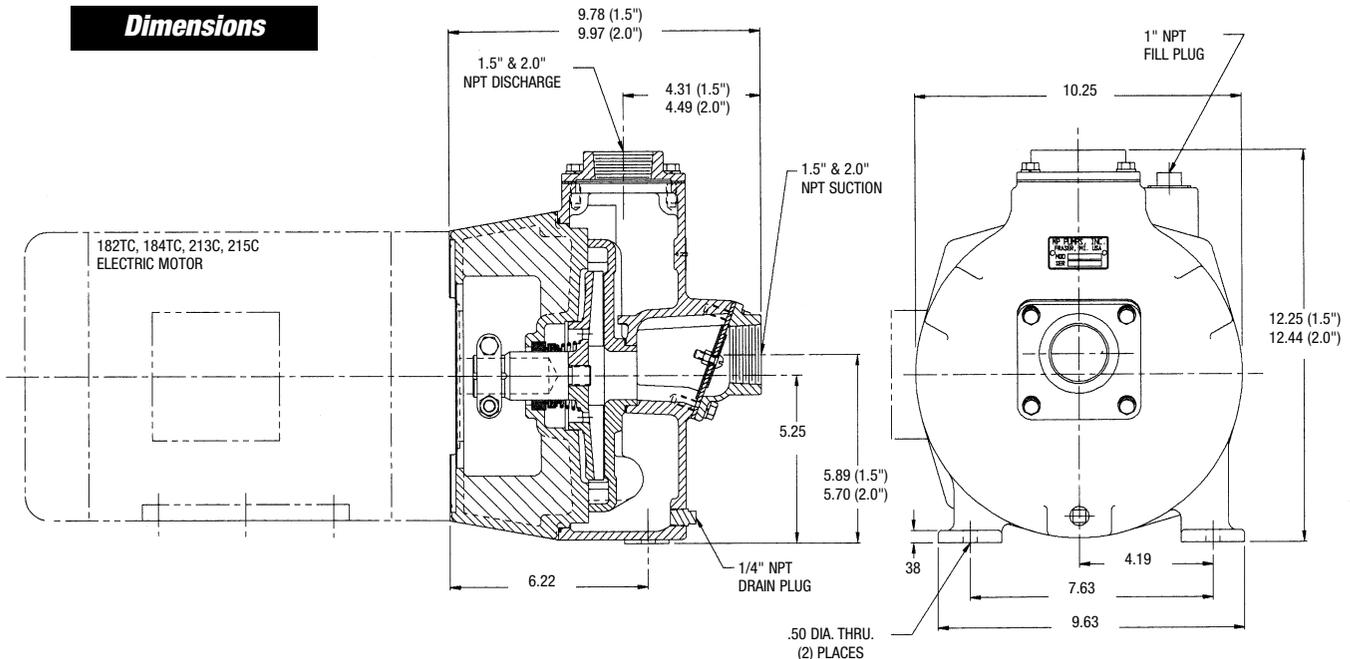
HHLF

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

# Pump Performance Curves



## Dimensions



Other Performance Curves Available Upon Request

# Customer Support Worldwide

IT'S SIMPLE TO CONTACT MP PUMPS FOR INFORMATION



## ***MP Pumps Operates In A Global Marketplace.***

We are keenly aware of the need to provide prompt delivery of our products to customers worldwide and have in place an international network of distributors to meet this need.

***"It is the policy of MP Pumps to supply our customers with products that consistently exceed their expectations." —***

## **Mission Statement**

Our computerized inventory control system tracks the more than 10,000 parts we stock in our 20,000-square-foot parts warehouse. We also maintain E-mail capability and a site on the worldwide web to speed communication between us, our distributor network and our customers.



# 800-563-8006

(Outside the U.S., 586-293-8240)

FAX: 586-293-8469

**www.mppumps.com**



## ***MP Pumps*** Pump Locator

To utilize the service, you must first download the interactive program Shockwave. It's as simple as choosing the option to download and following the prompts until the process is complete. Once loaded, you can search the entire MP Pumps standard product line by pump model. You can even enter various operating performance requirements and be presented with one or more pump models for your consideration.

***CLICK*** Virtual Tour For A Look At ***MP Pumps, Inc.***

# **MP PUMPS, INC. LIMITED WARRANTY FOR NEW PUMPS MANUFACTURED BY MP PUMPS**

## **A. PRODUCTS WARRANTED**

MP PUMPS, Inc., a Michigan Company ("MP PUMPS") subject to the limitations contained below, will at its option, repair or replace, without charge for parts or labor only, any part of a new pump manufactured by MP PUMPS (an "MP Pump") which is found, upon examination by MP PUMPS' factory in Fraser, Michigan, to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP if received by such factory for such examination within six months from the date of sale to the original consumer purchaser.

## **B. PRODUCTS AND ITEMS NOT WARRANTED**

1. Alterations or Modifications of MP Pump  
All obligations under this warranty shall be terminated if the new MP Pump is altered or modified in any way.
2. Accidents, Normal Maintenance, Failure To Follow MP PUMPS' Instruction Bulletin.
3. Any MP Pump which is not completely and properly decontaminated prior to return to MP PUMPS.
4. Any MP Pump returned without an identification of the material pumped by your MP Pump on the "Return Goods Authorization Form."

This warranty covers only parts of a new MP Pump which are found upon examination to be defective in material or workmanship as delivered to the original consumer purchaser. This warranty does not cover defects caused by depreciation or damage caused by normal wear, accidents, improper maintenance, improper use or abuse of the product, failure to follow the instructions contained in an Instruction Bulletin for the operation of the pump and parts. The cost of normal maintenance and replacement of service items which are not defective, shall be paid for by the original consumer purchaser. This warranty is VOID if an MP Pump is not decontaminated prior to return to MP PUMPS or if the material pumped is not identified as provided below.

## **C. SECURING WARRANTY SERVICE**

Warranty service can be arranged by contacting MP PUMPS, Inc., c/o Service Manager, 34800 Bennett Drive, Fraser, Michigan 48026. Warranty service can only be performed by MP PUMPS at its factory in Fraser, Michigan. At the time of requesting warranty service, evidence must be presented of the date of sale to the original consumer purchaser. MP PUMPS, at its option, will supply you with a "Return Goods Authorization Form" ("RGA") or will prepare an RGA on your behalf and provide you with an RGA reference number. The product pumped must be identified on the RGA. All parts returned to MP PUMPS for any reason must be completely and properly decontaminated prior to delivery to MP PUMPS. If the product pumped requires a Material Safety Data Sheet ("MSDS"), reference to this fact must be indicated under "Application Information" on the RGA form which must be returned with the part(s) or if an RGA was completed on your behalf you must provide your RGA reference number. A copy of the MSDS must also be included with the returned RGA forms or with your RGA reference number. New or unused parts need not be decontaminated. This fact must be indicated under "Application Information" on the RGA form which must be returned with the part(s). The original consumer purchaser shall pay any charges for making service calls and/or for transporting the product to and from the place where the inspection and/or warranty work is performed. The part submitted for inspection and/or warranty work will be returned to the sender at the sender's expense or scrapped at MP PUMPS. No credits will be issued. The original consumer purchaser shall be responsible for any damage or loss incurred in connection with the transportation of the MP Pump and/or of part or parts of the MP Pump submitted for inspection and/or warranty work.

## **D. NO ADDITIONAL WARRANTIES OR REPRESENTATIONS**

The foregoing EXPRESS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. Neither MP PUMPS nor any of its affiliates make any warranties, representations or promises, written or verbal, as to the quality of the MP PUMP or its parts other than those set forth herein.

ANY IMPLIED WARRANTIES (INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) TO THE EXTENT EITHER APPLIES TO A PART OF AN MP PUMP SHALL BE LIMITED IN DURATION TO THE PERIODS OF THE EXPRESS WARRANTIES AS DEFINED IN PARAGRAPH A. Some States do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

## **E. LIMITATION OF DAMAGES**

IN NO EVENT WILL MP PUMPS BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES AND/OR EXPENSES. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may have other legal rights which vary from State to State.

## **F. NO DISTRIBUTOR/DEALER WARRANTY**

MP PUMPS neither assumes nor authorizes any other person, natural or corporate, to assume for MP PUMPS any other obligations or liabilities in connection with or with respect to any part or parts of an MP Pump. The seller, dealer or distributor of a part or parts of an MP Pump has no authority to make any representations or promises on behalf of MP PUMPS or to modify the terms or limitations of this warranty in any way. The seller, dealer or distributor makes no warranty of his own on any item warranted by MP PUMPS and makes no warranty on other items, unless such seller or dealer delivers to the purchaser a separate written warranty document in which the seller or the dealer individually and specifically on its own behalf, warrants the terms of items.

# MP PUMPS, INC.

## DICTIONARY AND CONVERSION TABLE

**Flooded Suction** The liquid source is higher than the pump and flows to the pump by gravity. Flooded suction is preferred for centrifugal pump installations.

**Flow** The liquid volume capacity of a pump measured in gallons-per-minute (gpm) or gallons-per-hour (gph).

**Head** A measure of pressure expressed in feet. This indicates the height of a column of water being lifted by the pump (neglecting friction losses in the piping). To convert head to pressure in pounds-per-square-inch (psi), divide head by 2.31.

**Lift (Suction lift)** Occurs when the liquid source is lower than the pump. The pumping action creates a partial vacuum and atmospheric pressure forces liquid up to the pump. The theoretical limit of suction lift is 34 feet for water, but in practical applications it is 25 feet, or less, depending on the pump style and elevation above sea level.

**Pressure** The force exerted on the system (pipe, tank, etc.) by the liquid within, measured in pounds-per-square-inch (psi). To convert pressure to head, in feet, multiply by 2.31 then divide by Specific Gravity.

**Prime** The liquid required to begin pumping action.

**Seal** A device mounted in the pump housing and/or on the pump shaft to prevent liquid leakage from the pump.

### SEAL TYPES

• **Lip** A flexible ring (usually rubber or similar material) with the inner edge held closely against the rotating shaft by a spring.

• **Mechanical** A two-part seal with one rotating part and one stationary. Touching surfaces on the parts are highly polished and provide excellent sealing capability and life. The surfaces can be damaged by dirt or grit in the liquid.

• **Packing** Rings of flexible material (foil, graphite or kevlar) held in the pump body gland or stuffing box by a packing nut. Permits adjustable sealing with minimal maintenance.

• **Specific Gravity** The ratio of the weight of a given volume of liquid to the same volume of pure water (unless stated otherwise). Power requirements increase for liquids with specific gravities greater than 1.0.

• **Sump** A well or pit that collects liquid below floor level. Sometimes refers to the waste sump or oil reservoir.

• **Total Head** The sum of discharge head, suction lift and friction losses.

• **Viscosity** The thickness of a liquid affecting its ability to flow. The more viscous the liquid, the slower the pump speed.

Here is a conversion guide you may want to keep handy.

### Conversion Factors

#### Flow

Lbs of water/hr x .002	= gal min
Gal/min x 500	= lbs of water/hr
Lbs of fluid/hr x .002	= gal min
Specific gravity x .002	= gal min
Liters/min x .264	= gal/min (US)
Gpm x 3.785	= liters/min
Cu meters/hr x 4.4	= gal/min (US)
Gal/min x .227	= cu meters/hr
Kg of water/min x .264	= gal/min (US)
Gal/min x 3.8	= Kg of water/min

#### Pressure

Ft of water x .433	= psi
Psi x 2.31	= ft of water
Inches Hg x .491	= psi
Inches Hg x 1.133	= ft of water
ATM x 14.7	= mm Hg
ATM x 33.9	= ft of water
Kg/sq cm x 14.22	= psi
Meters of water x 1.42	= psi
ATM x 760	= mm Hg
mm Hg x .039	= inches Hg
Bar x 14.5	= psi
Newton/meter <sup>2</sup> x 1	= Pascal
Psi x 6.9	= kPa (Kilopascal)
kPa x .145	= psi

#### Volume

Lbs of water x .119	= gal
Gal (Brit) x 1.2	= gal (US)
Gal x 128	= fluid ounces
Cubic ft x 7.48	= gal
Cubic in x .00433	= gal
Gal x 3.785	= liters
Liters x .264	= gal
Cubic meters x 264.2	= gal
Cubic meters x 1,000	= liters
Liters x 1,000	= cubic centimeters
Cubic centimeters x .0338	= fluid ounces
Fluid ounces x 29.57	= cubic centimeters

#### Length

Mils x .001	= inches
Meters x 3.281	= feet
Centimeters x .394	= inches
Millimeters x .0394	= inches
Microns x .000394	= inches

#### Mass

Gal of water x 8.336	= lbs
Cubic foot of water x 62.4	= lbs
Ounces x .0625	= lbs
Kilograms x 2.2	= lbs
Lbs x .454	= Kilo
Metric ton x 2205	= lbs

#### Metric prefixes

Mega	= 1,000,000
Kilo	= 1,000
Hecto	= 100
Deca	= 10
Deci	= .1
Centi	= .01
Milli	= .001
Micro	= .000001