

CURVES
CAC150050 R1



Series A-C 1500 50 Hz

IN-LINE MOUNTED CENTRIFUGAL PUMP PERFORMANCE CURVES

 **GOULDS**
WATER TECHNOLOGY
a xylem brand

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USEFUL PUMP FORMULAS

$$\text{Pressure (PSI)} = \frac{\text{Head (feet)} \times \text{Specific Gravity}}{2.31}$$

$$\text{Horsepower (water)} = \frac{\text{GPM} \times \text{Head (feet)} \times \text{Specific Gravity}}{3960}$$

$$\text{Head (feet)} = \frac{\text{Pressure (PSI)} \times 2.31}{\text{Specific Gravity}}$$

$$\text{Efficiency (pump)} = \frac{\text{Horsepower (water)}}{\text{Horsepower (brake)}} \times 100 \text{ per cent}$$

$$\text{Vacuum (in. of mercury)} = \frac{\text{Dynamic Suction Lift (feet)} \times .883}{\text{Specific Gravity}}$$

$$\text{NPSH (available)} = \text{Positive Factors} - \text{Negative Factors}$$

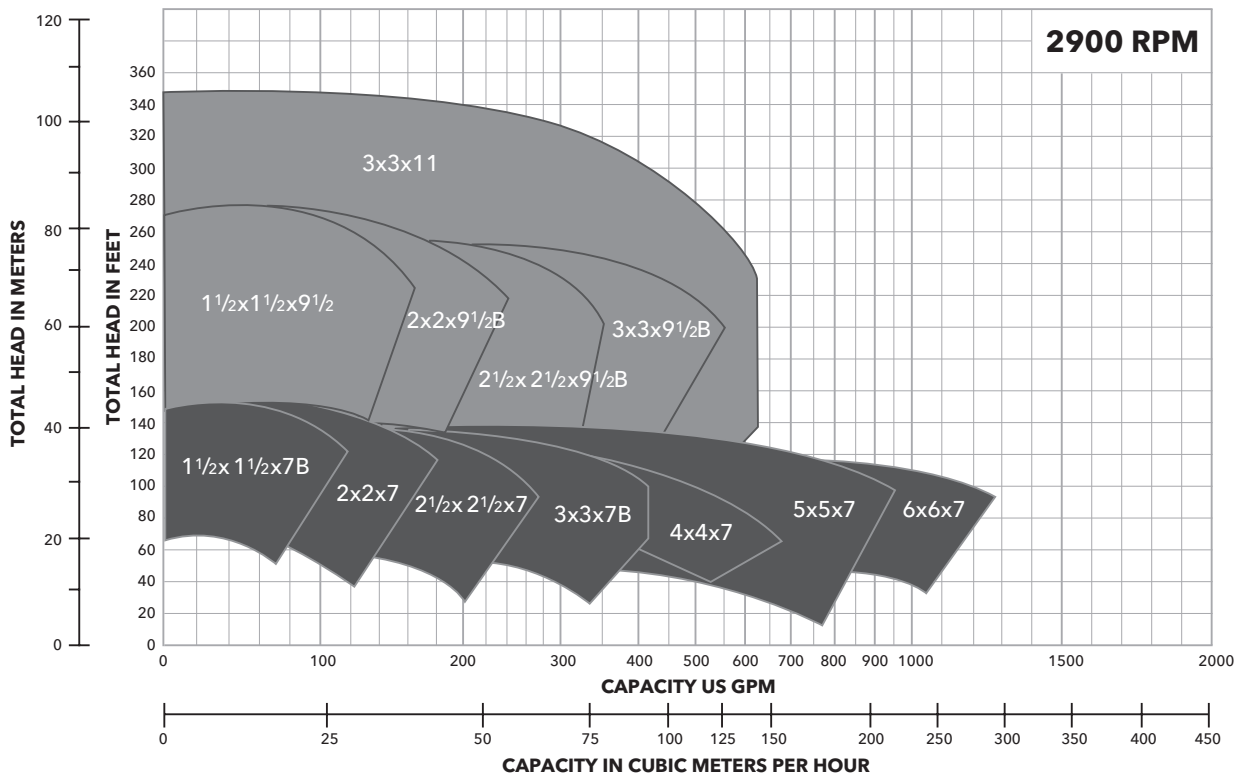
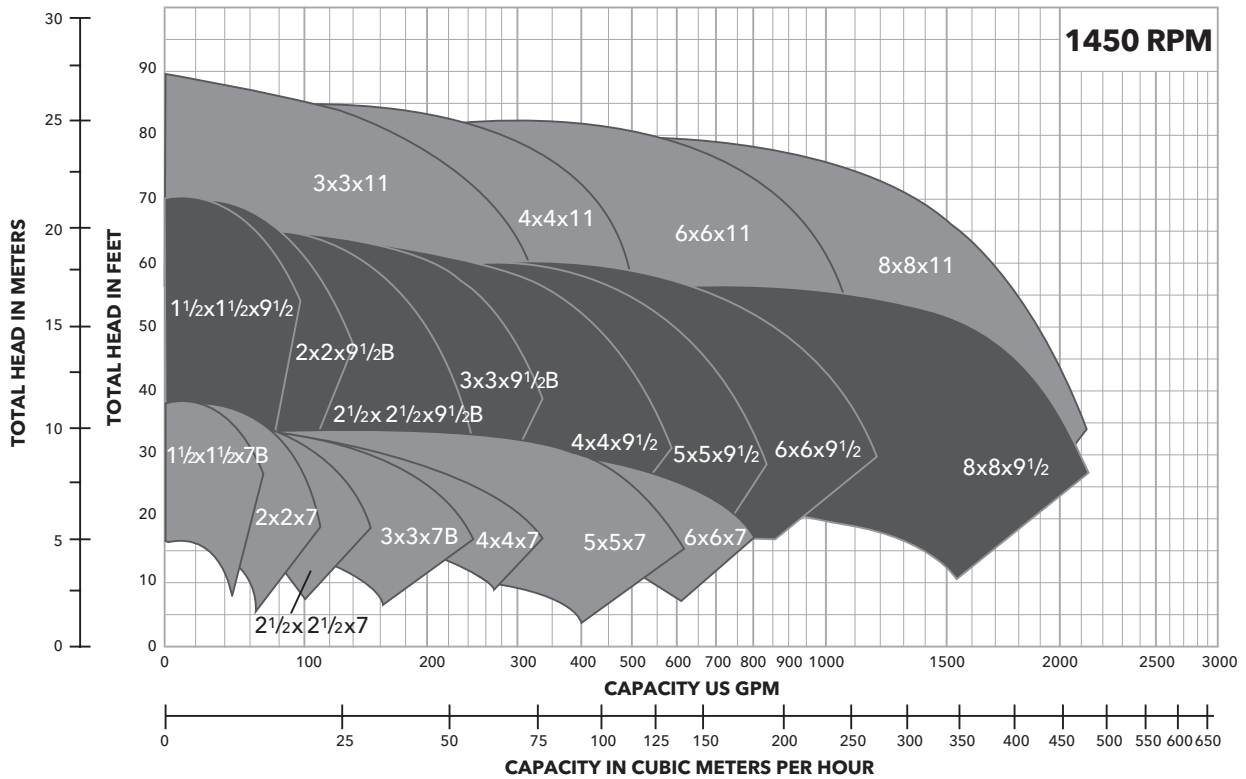
$$\text{Horsepower (brake)} = \frac{\text{GPM} \times \text{Head (feet)} \times \text{Specific Gravity}}{3960 \times \text{Pump Efficiency}}$$

AFFINITY LAWS: Effect of change of speed or impeller diameter on centrifugal pumps

	GPM Capacity	Feet Head	BHP
Impeller Diameter Change	$Q_2 = \frac{D_2}{D_1} Q_1$	$H_2 = \left(\frac{D_2}{D_1}\right)^2 H_1$	$P_2 = \left(\frac{D_2}{D_1}\right)^3 P_1$
Speed Change	$Q_2 = \frac{\text{RPM}_2}{\text{RPM}_1} Q_1$	$H_2 = \left(\frac{\text{RPM}_2}{\text{RPM}_1}\right)^2 H_1$	$P_2 = \left(\frac{\text{RPM}_2}{\text{RPM}_1}\right)^3 P_1$

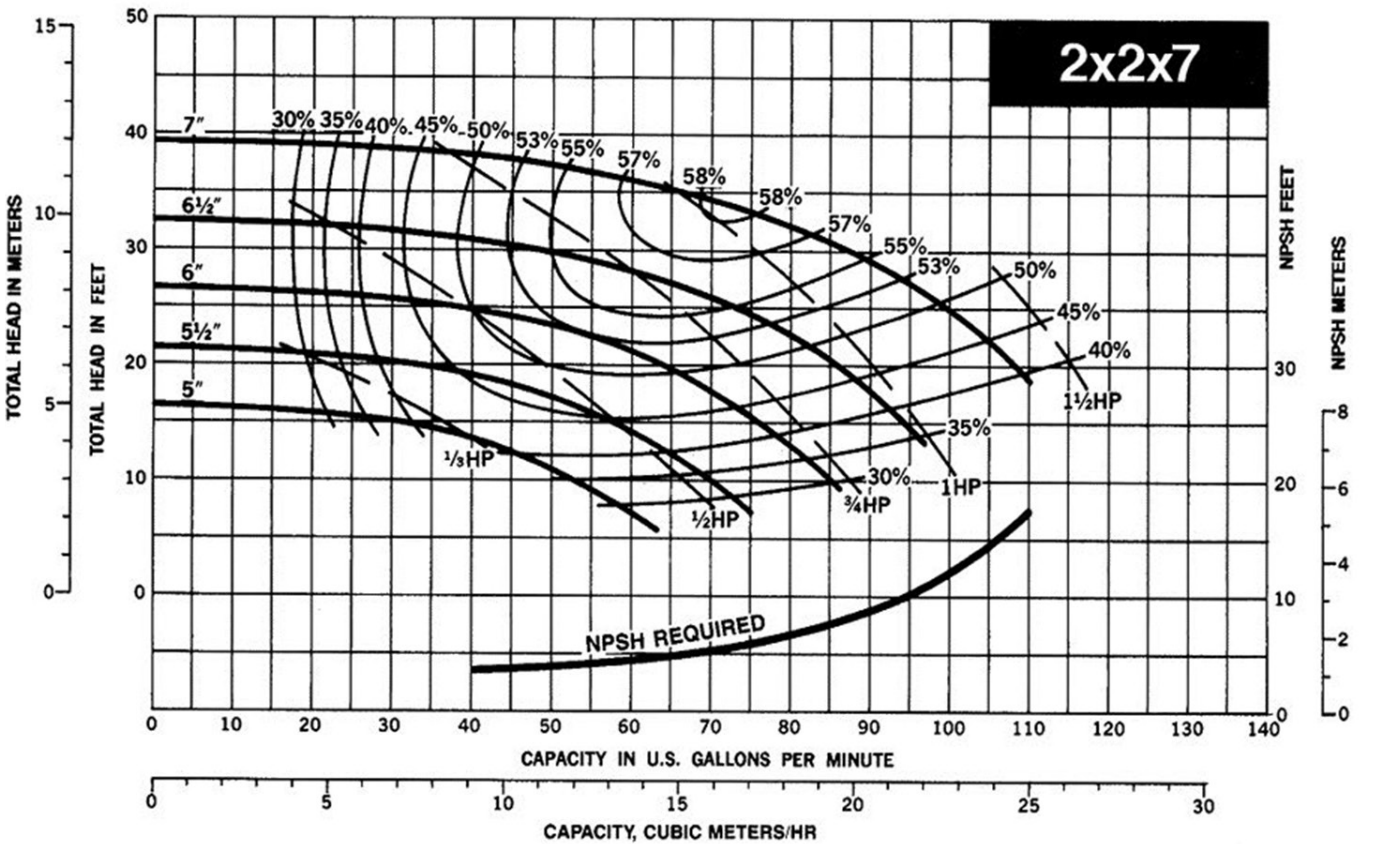
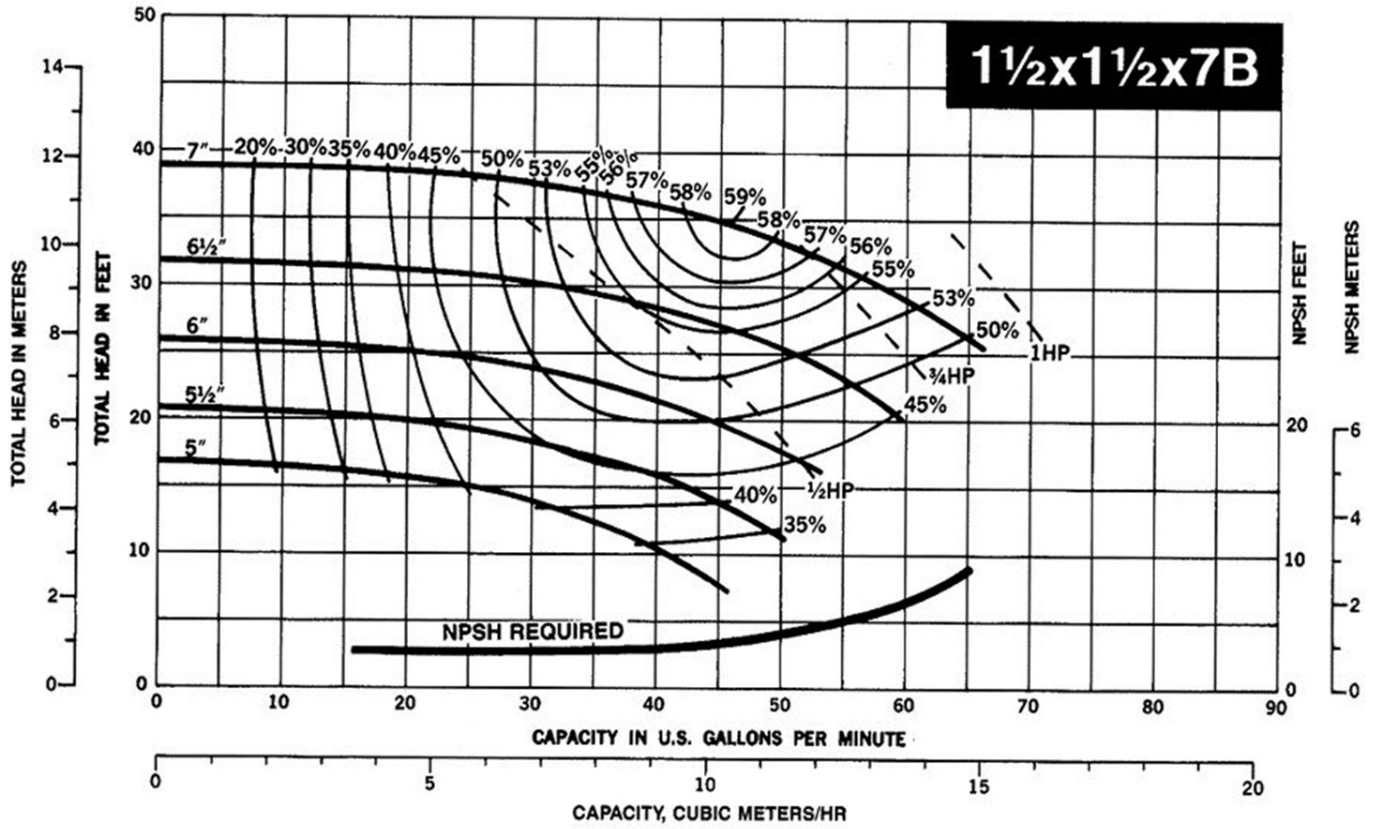
Where Q = GPM, H = Head, P = BHP, D = Impeller Diameter, RPM = Pump Speed

50 HZ FULL HYDRAULIC RANGE CURVES



SERIES A-C 1500 - 50 Hz

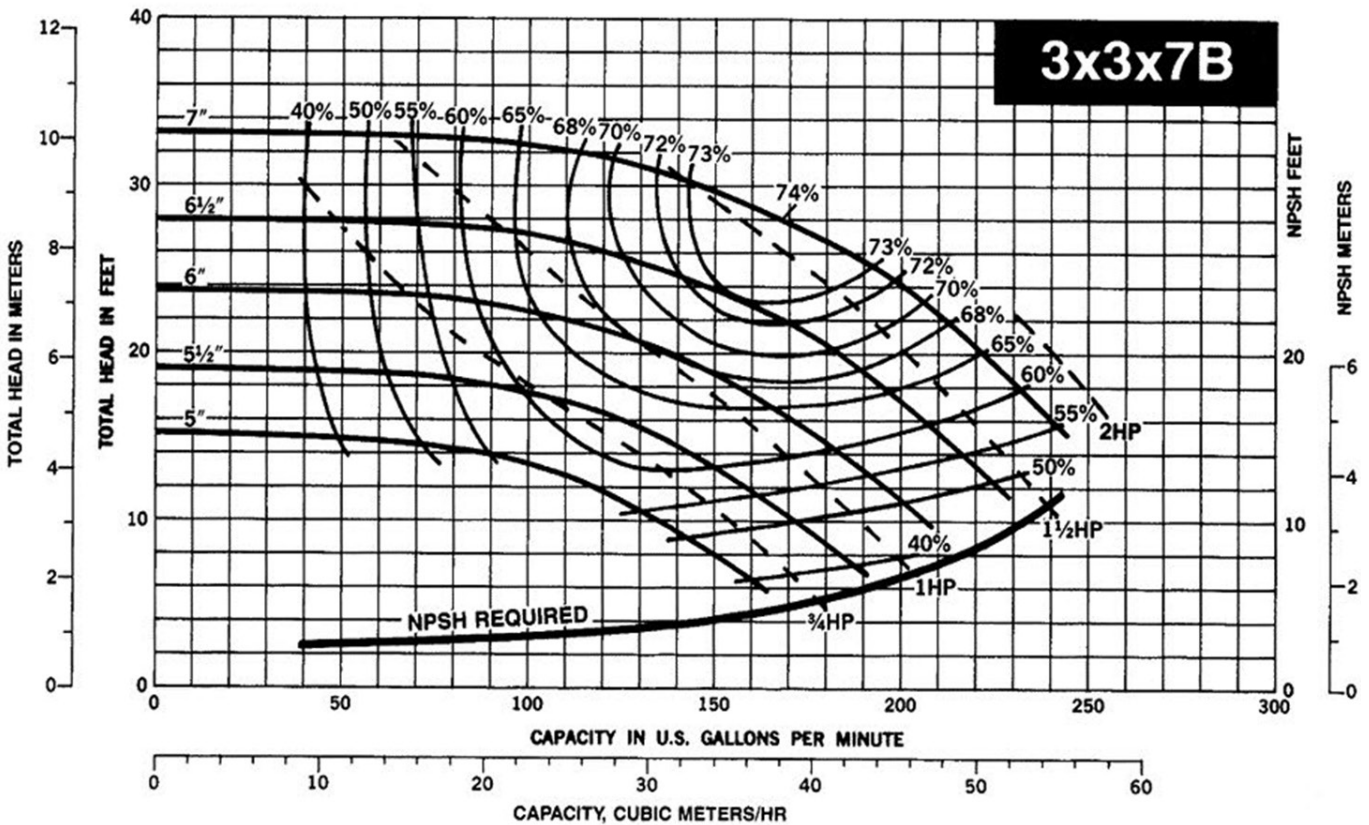
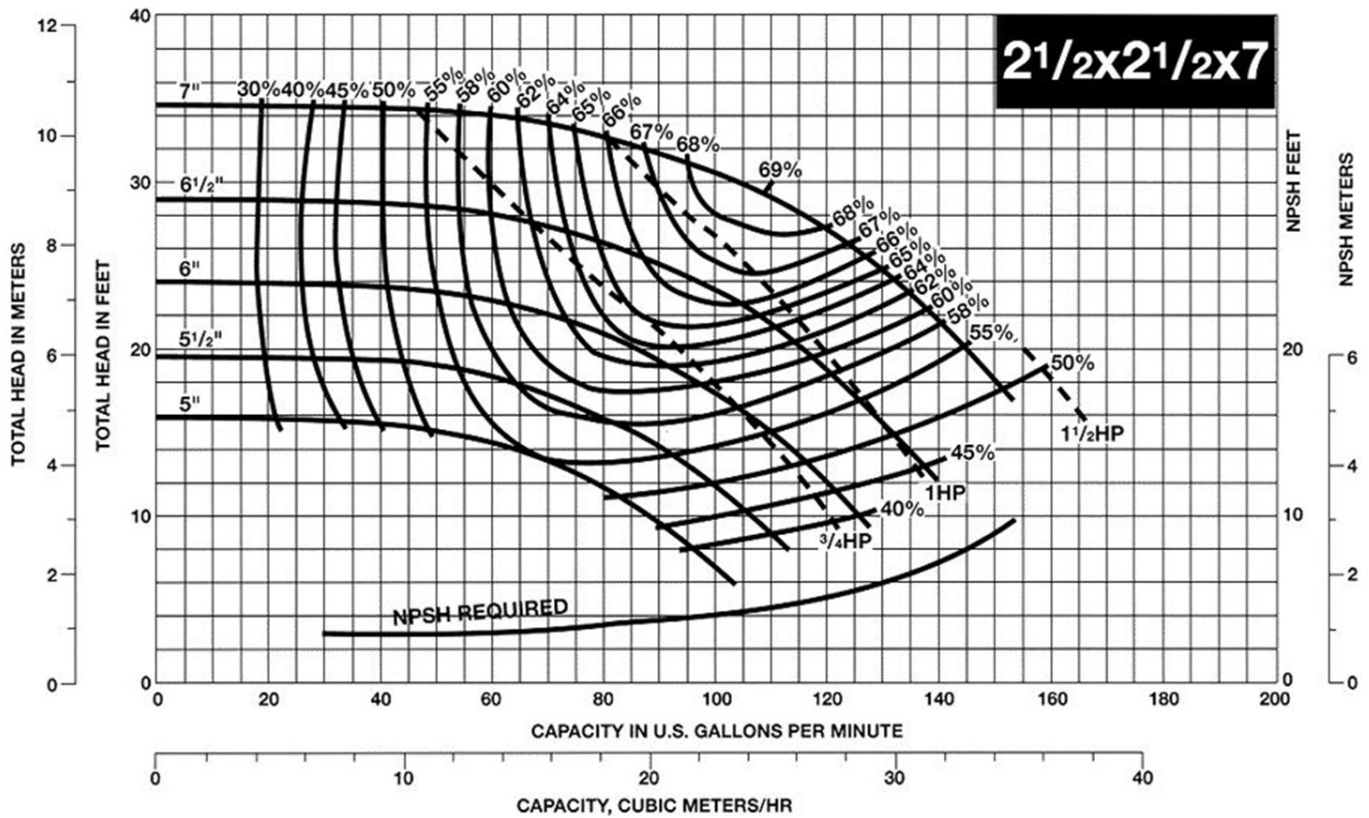
1450 RPM PUMP CURVES



Curves based upon shop test using clear cold water at a temperature not over 85°F.

SERIES A-C 1500 - 50 Hz

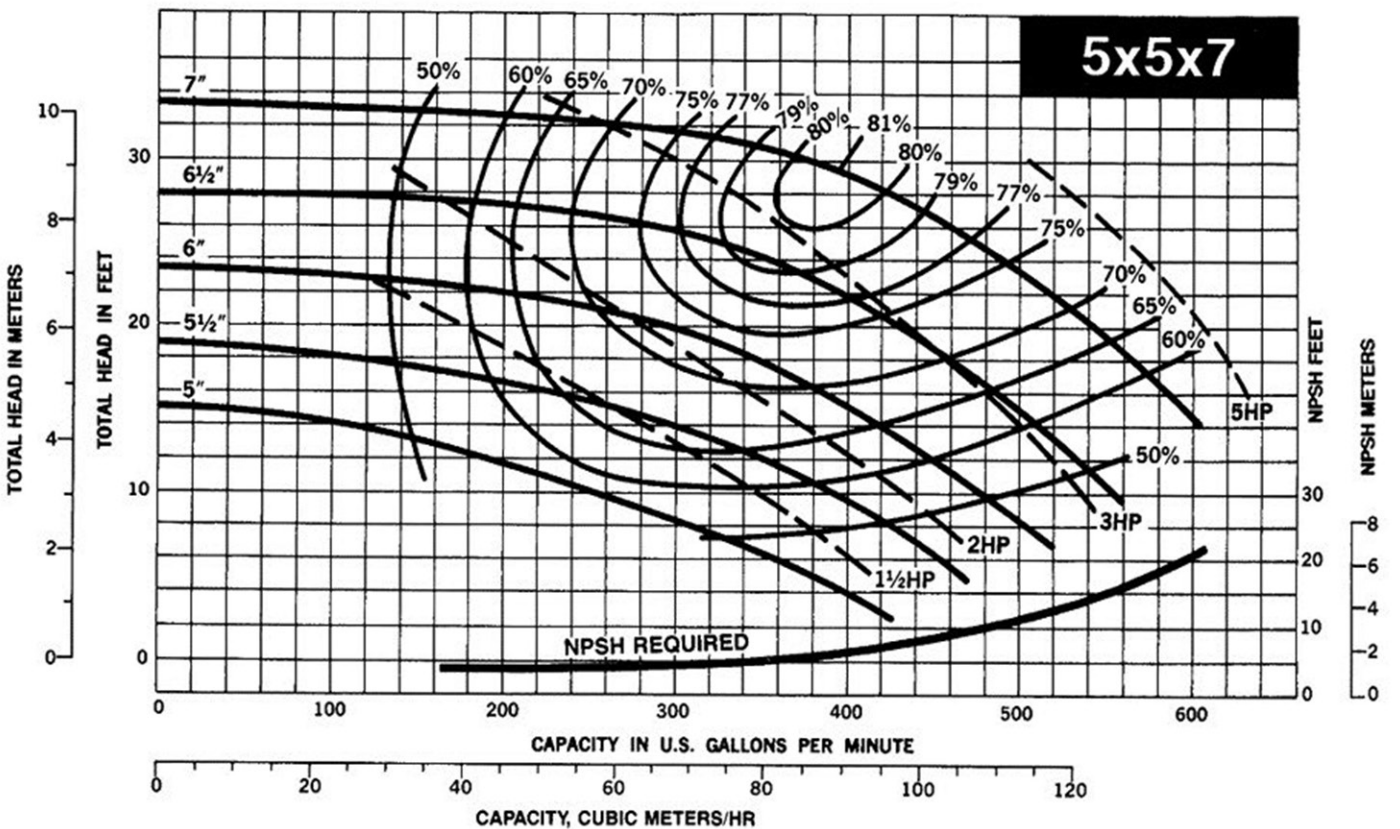
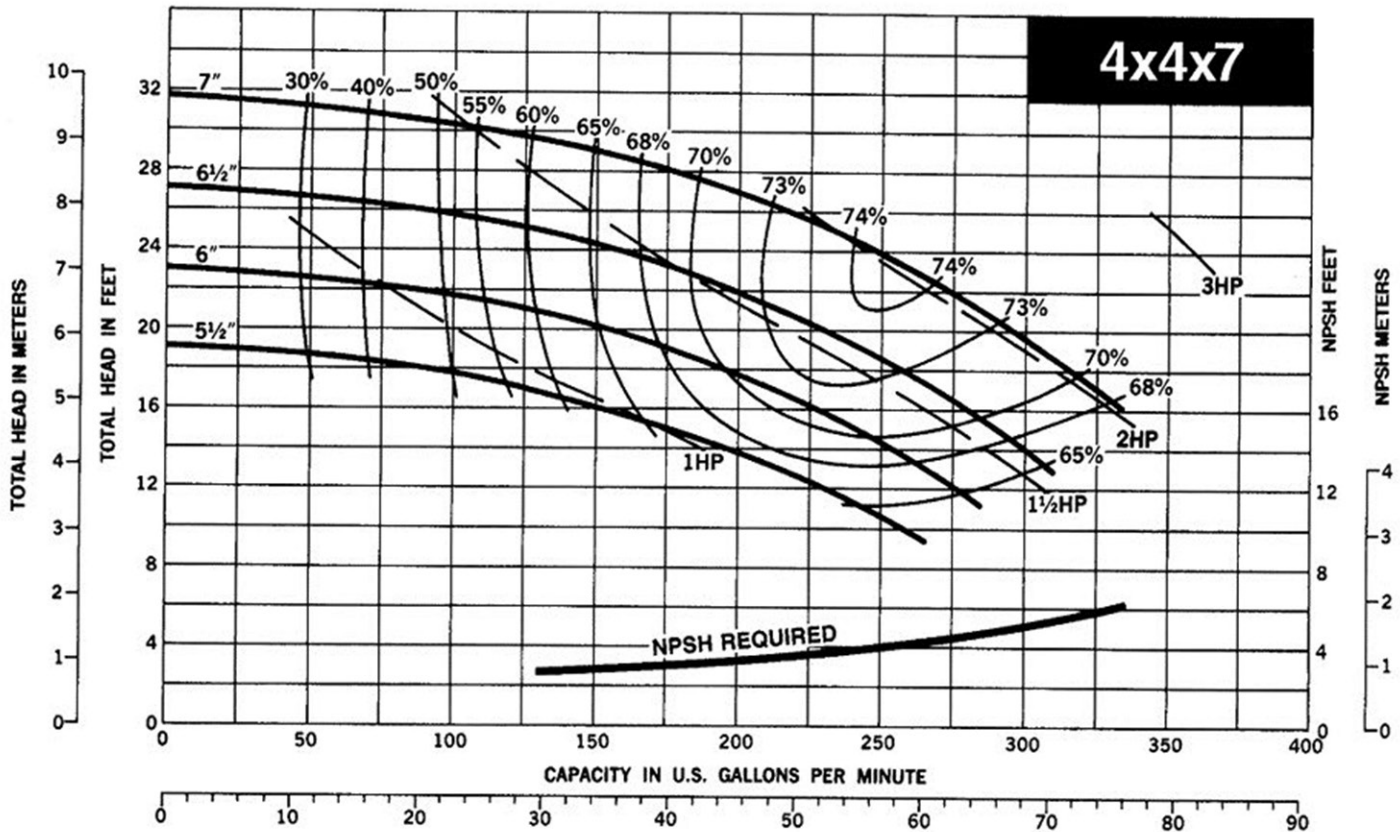
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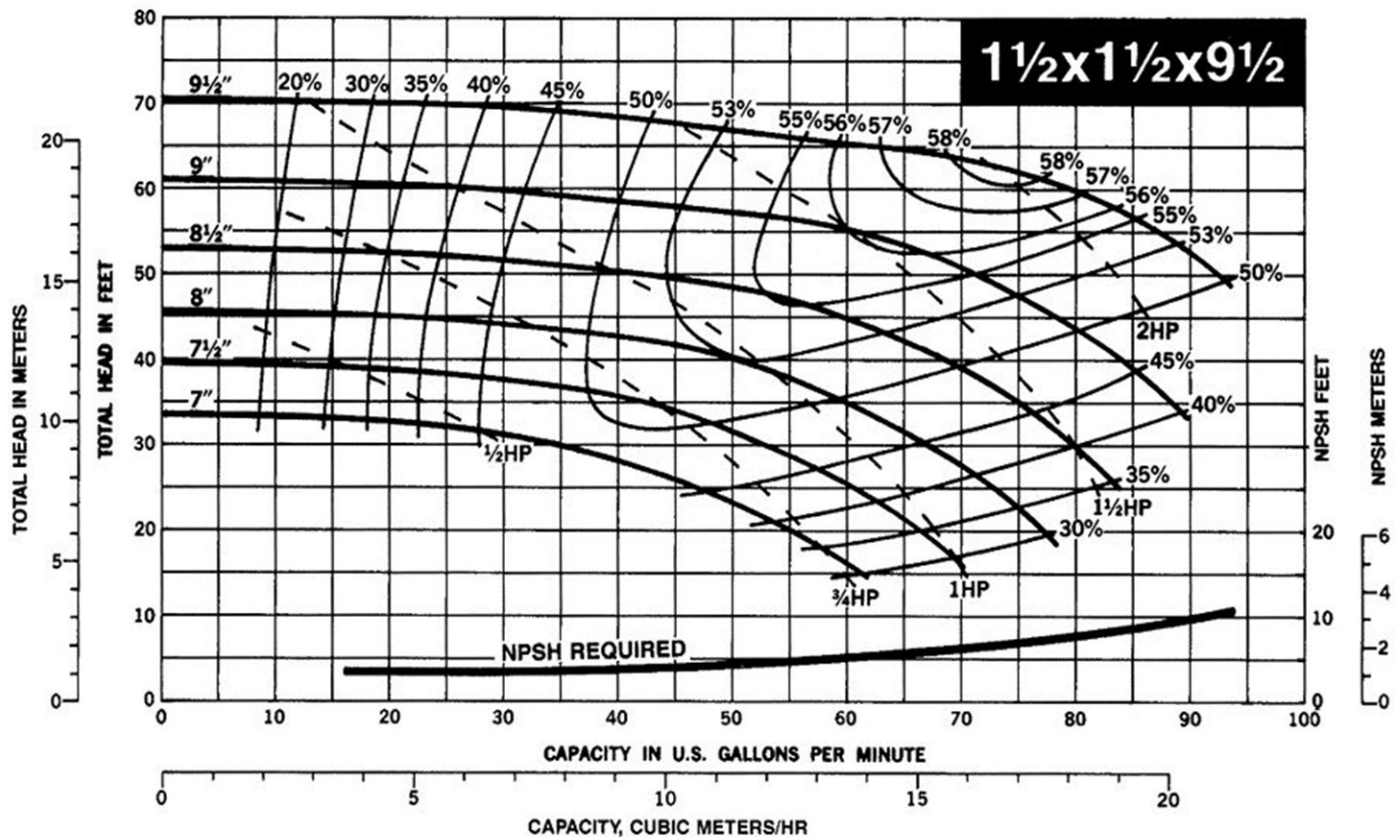
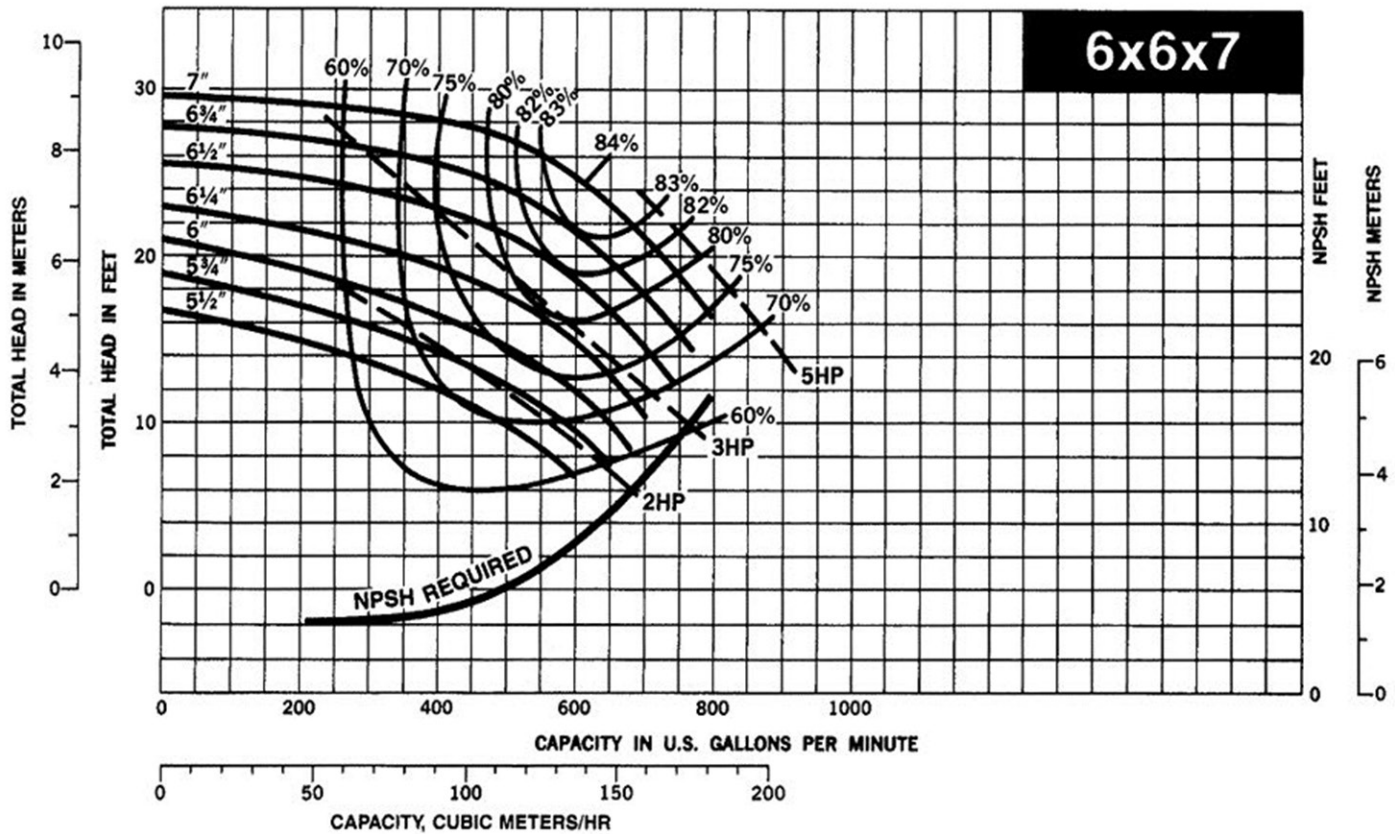
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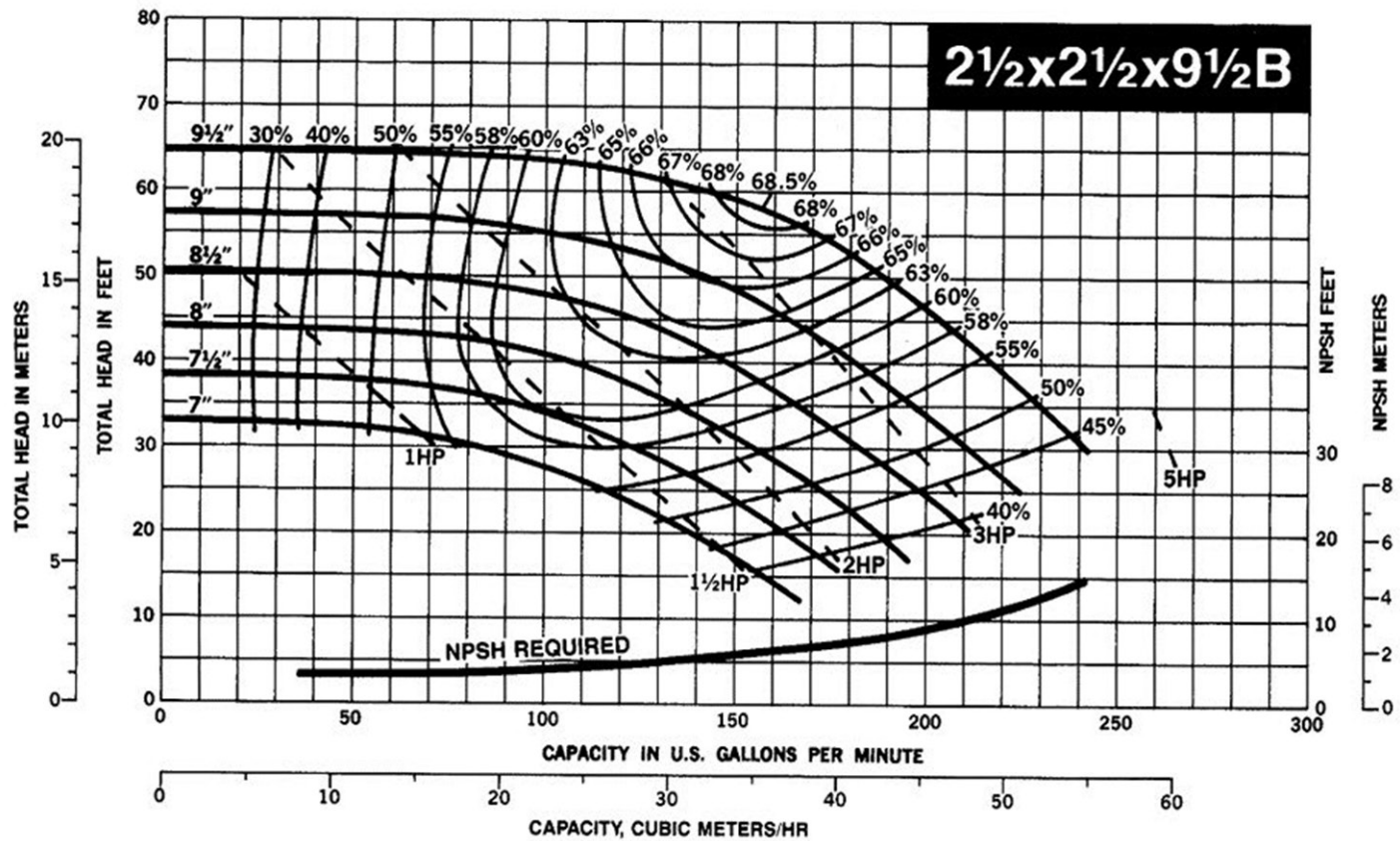
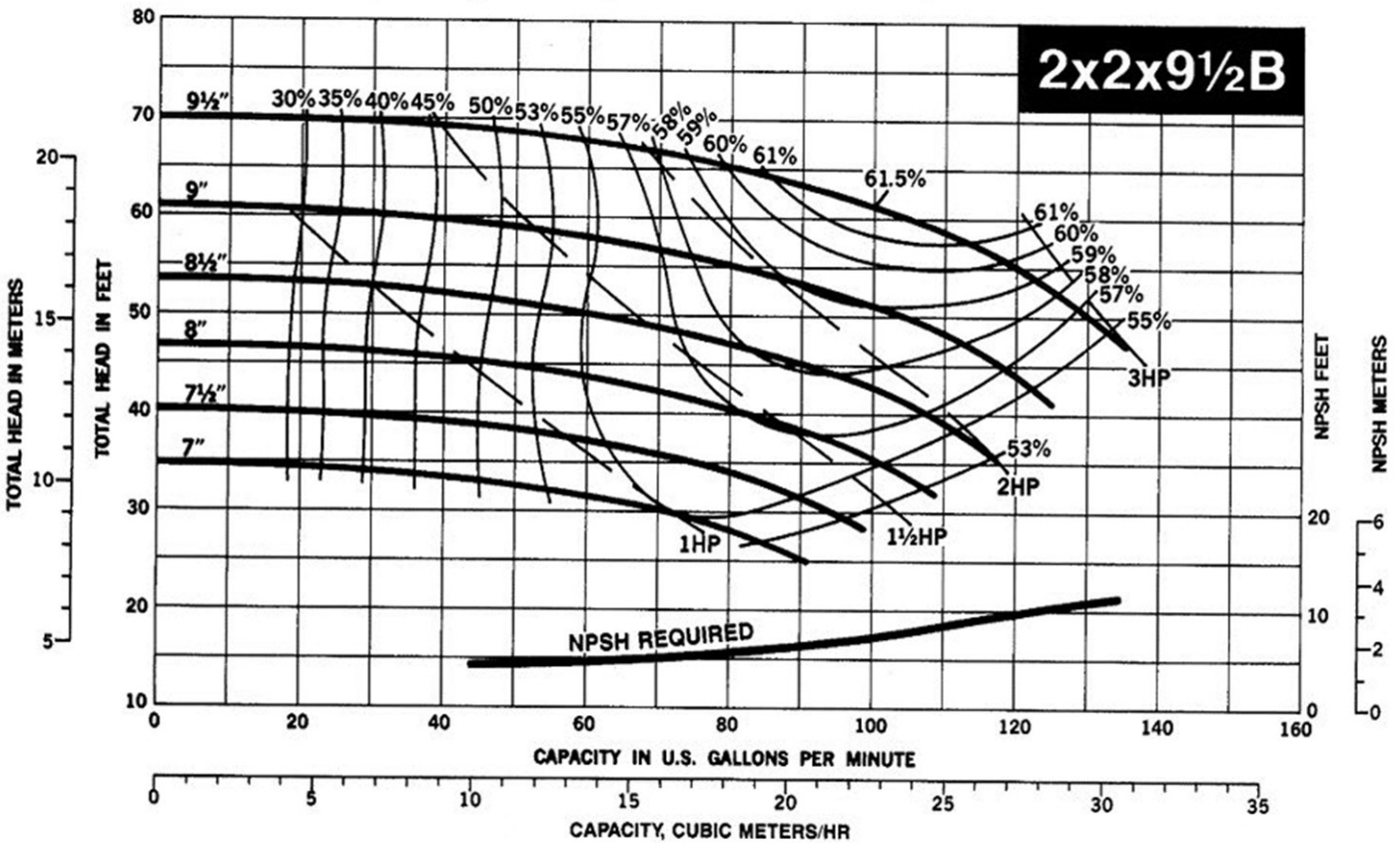
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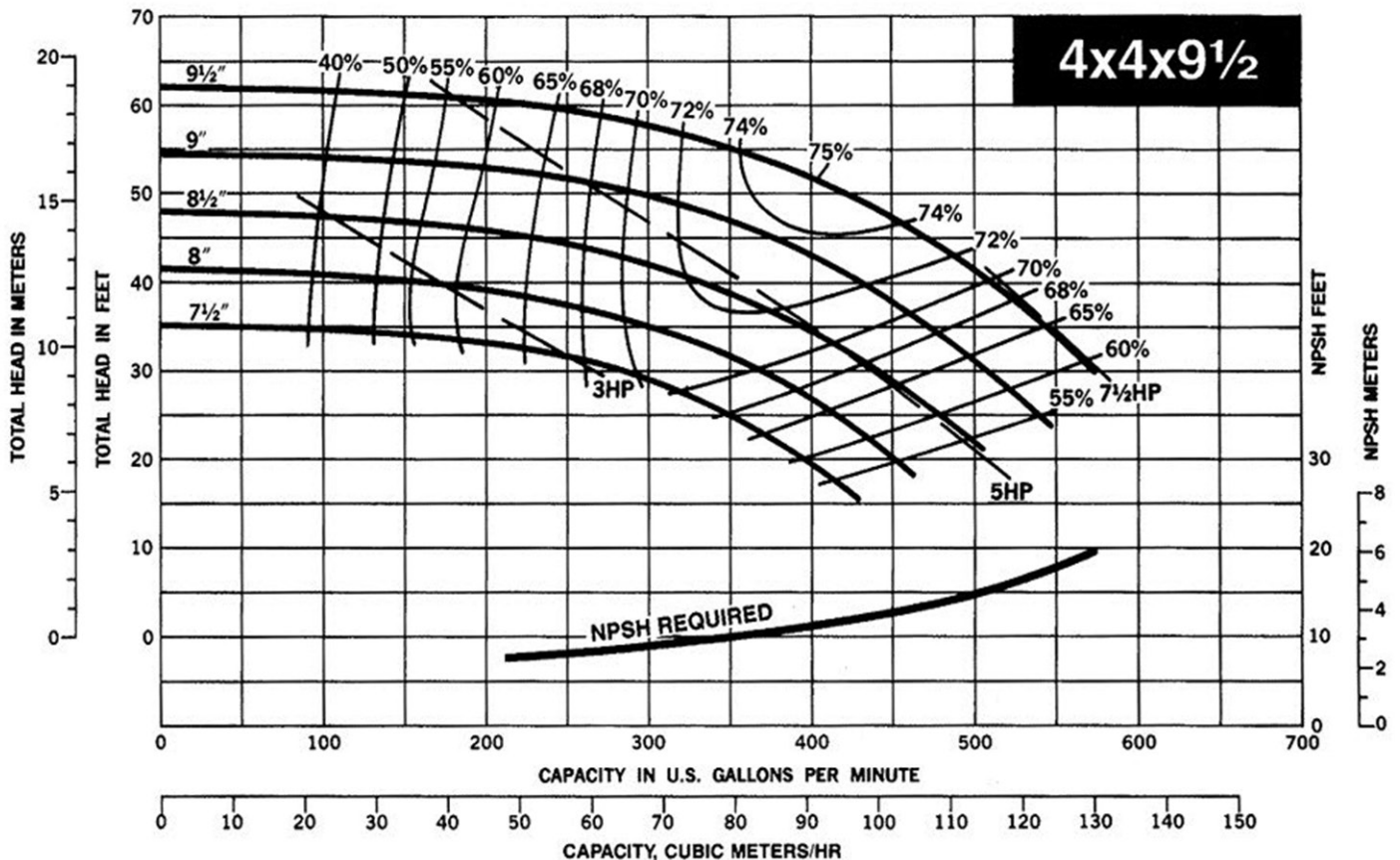
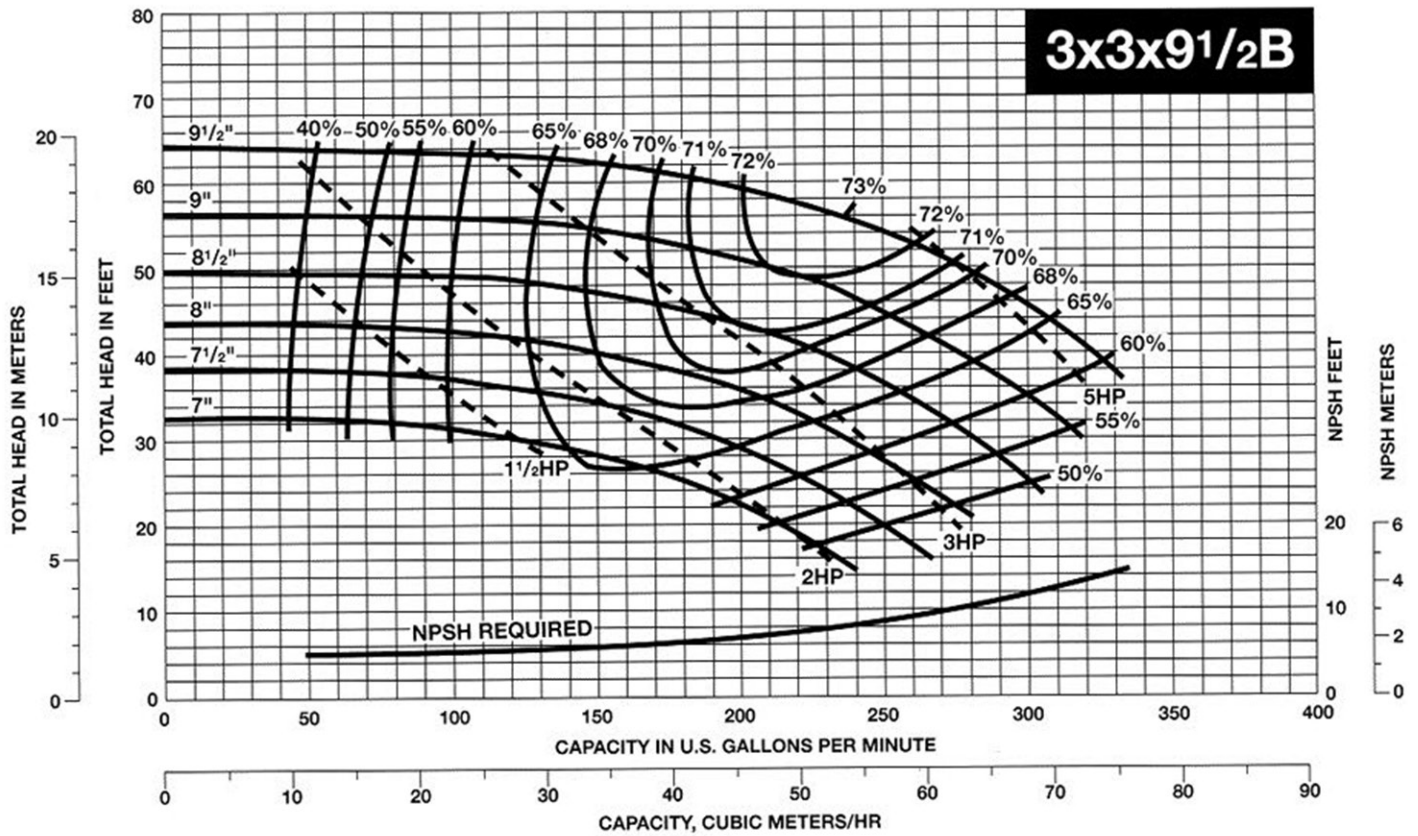
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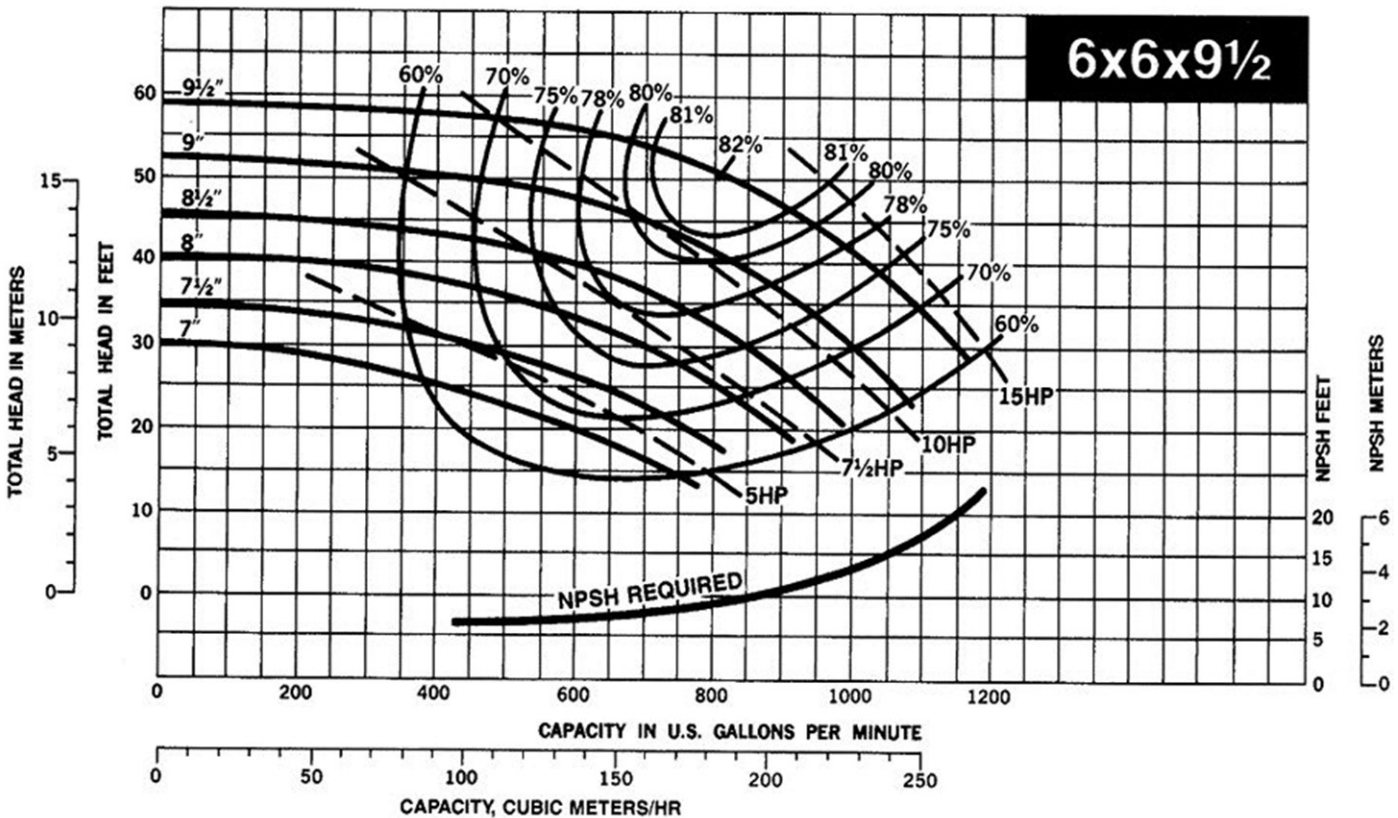
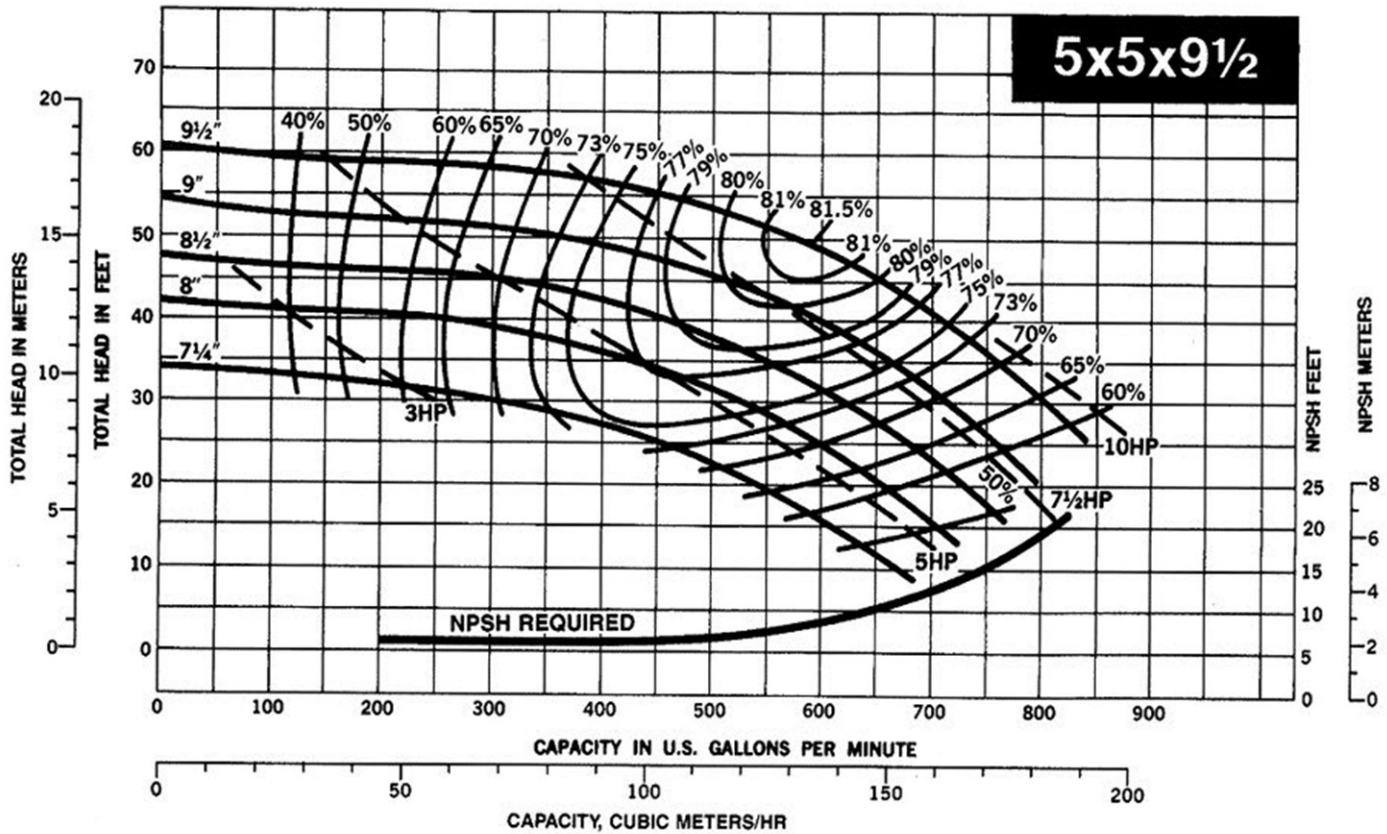
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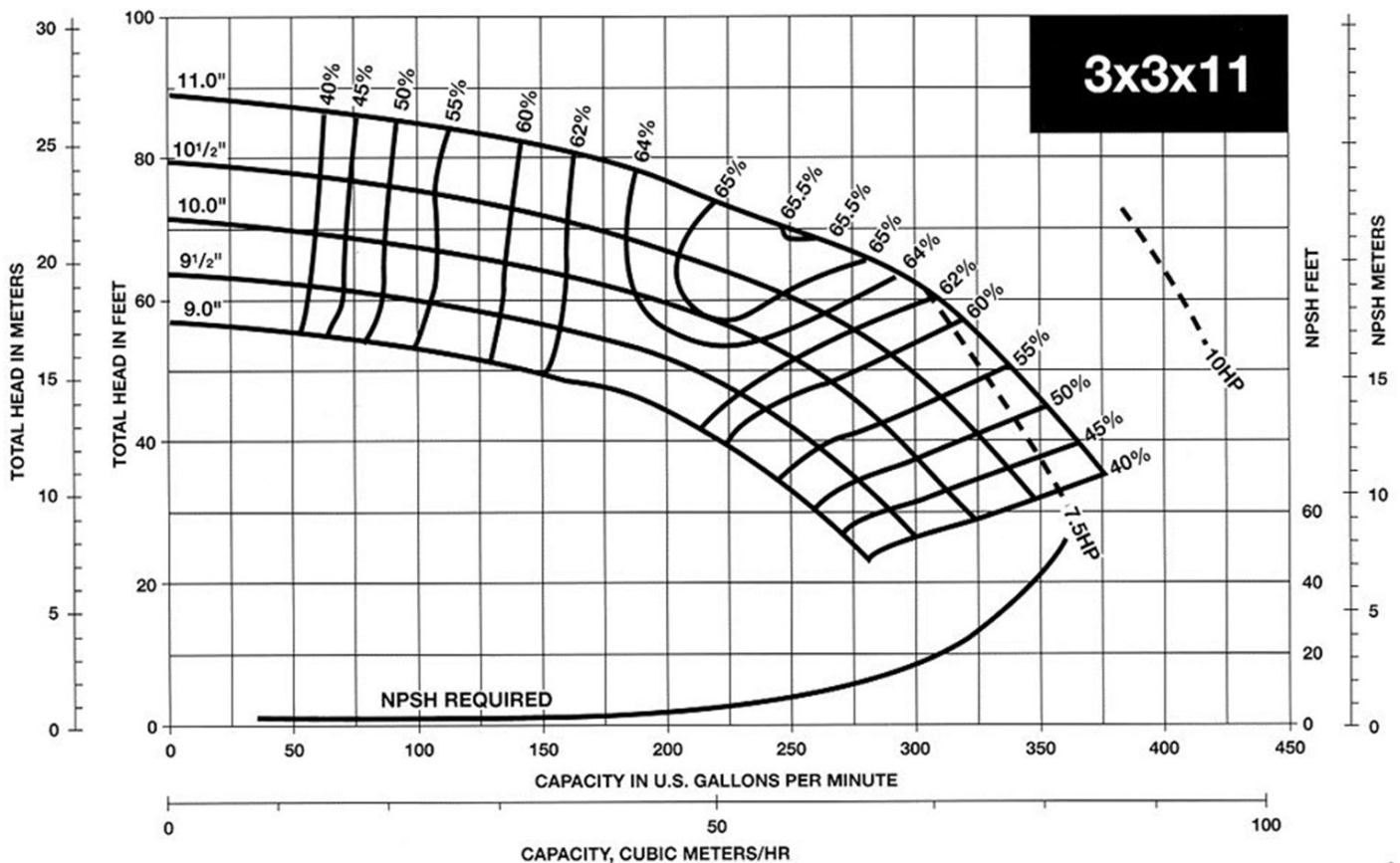
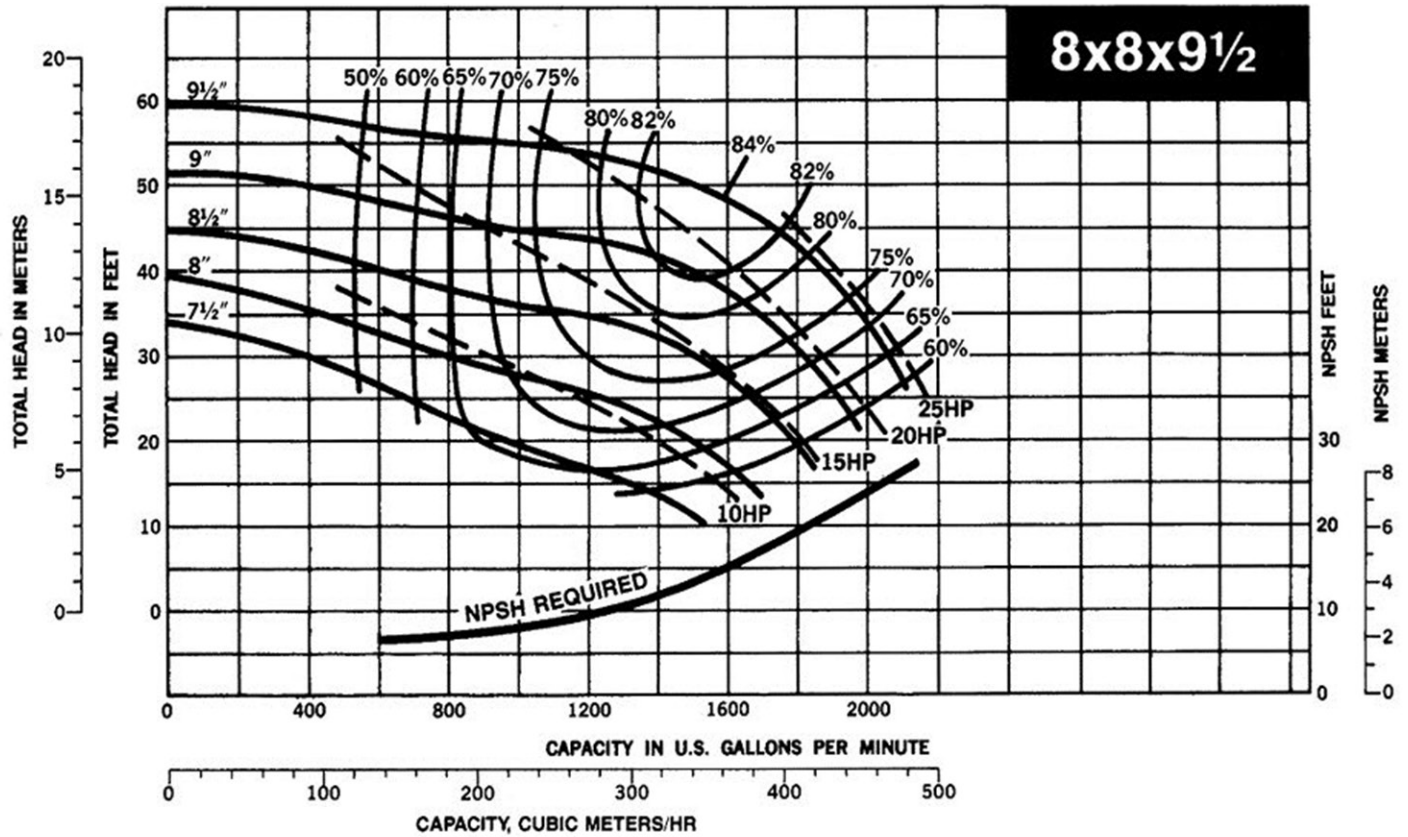
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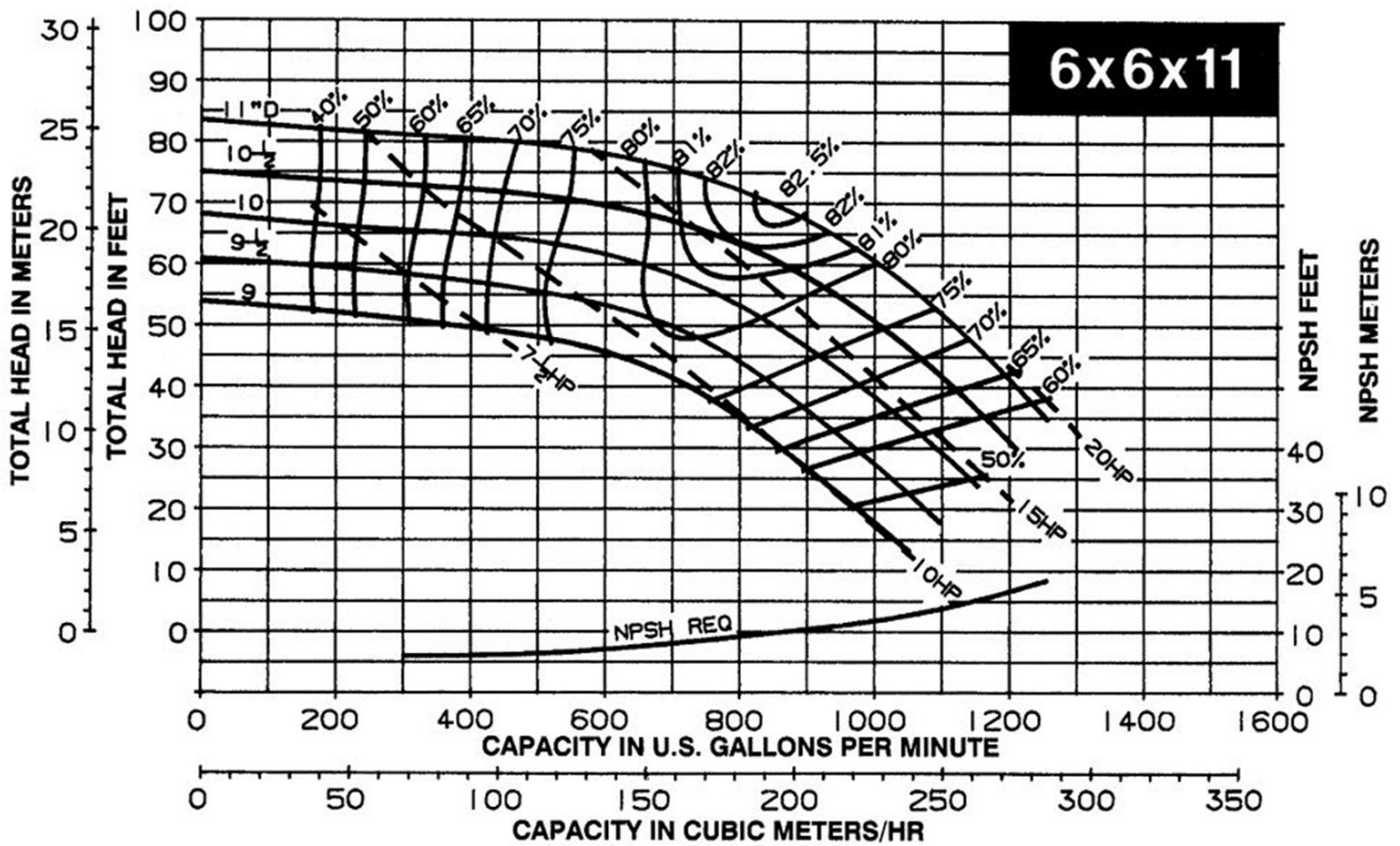
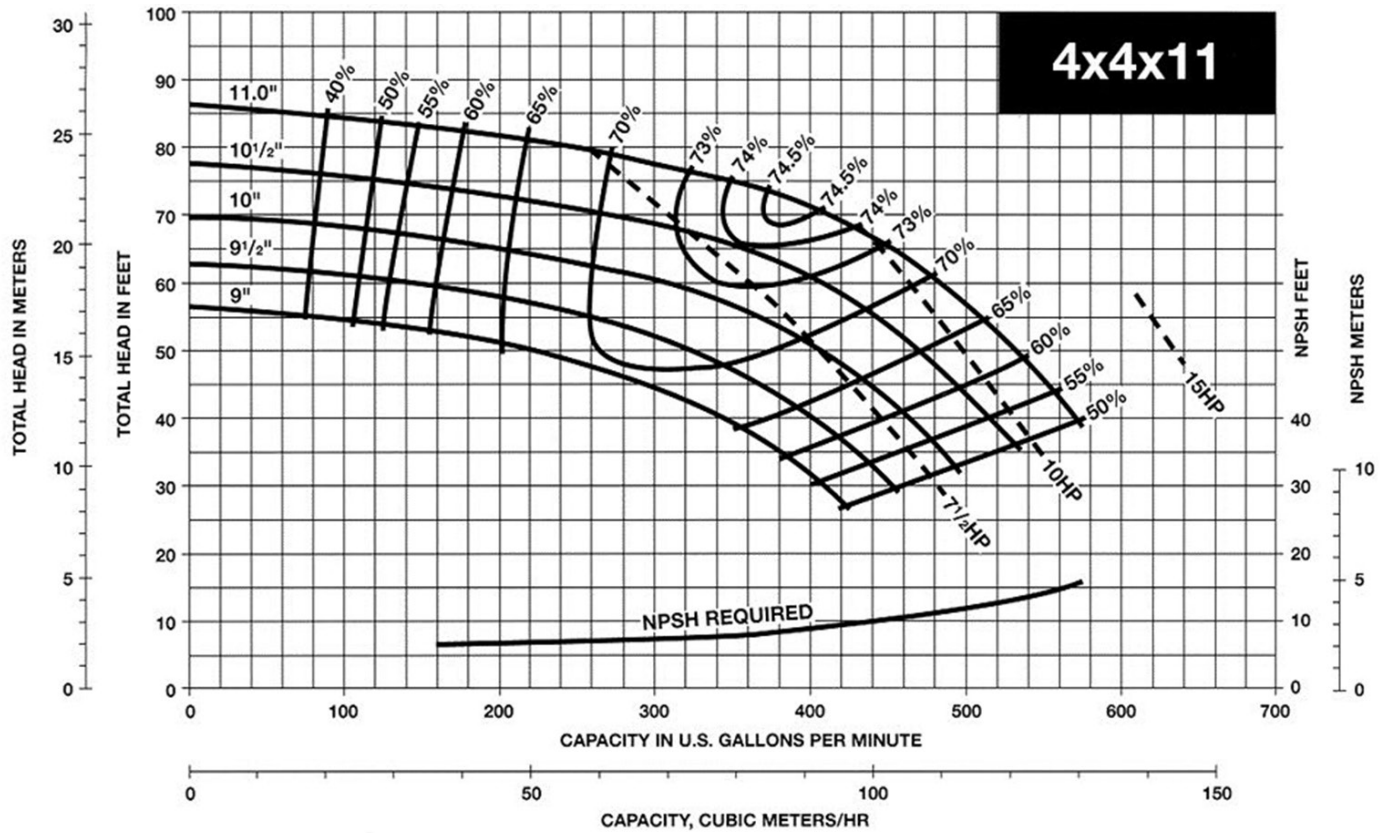
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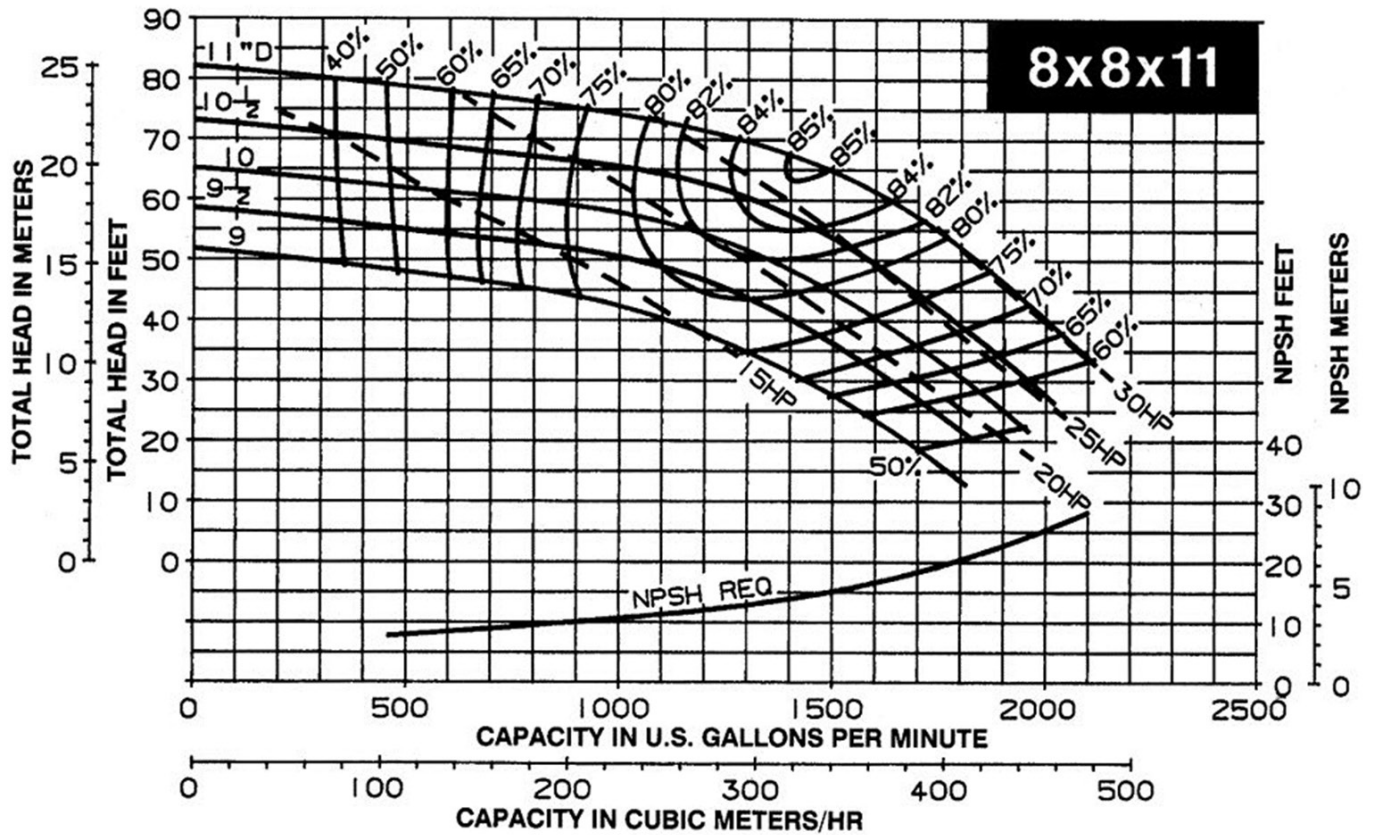
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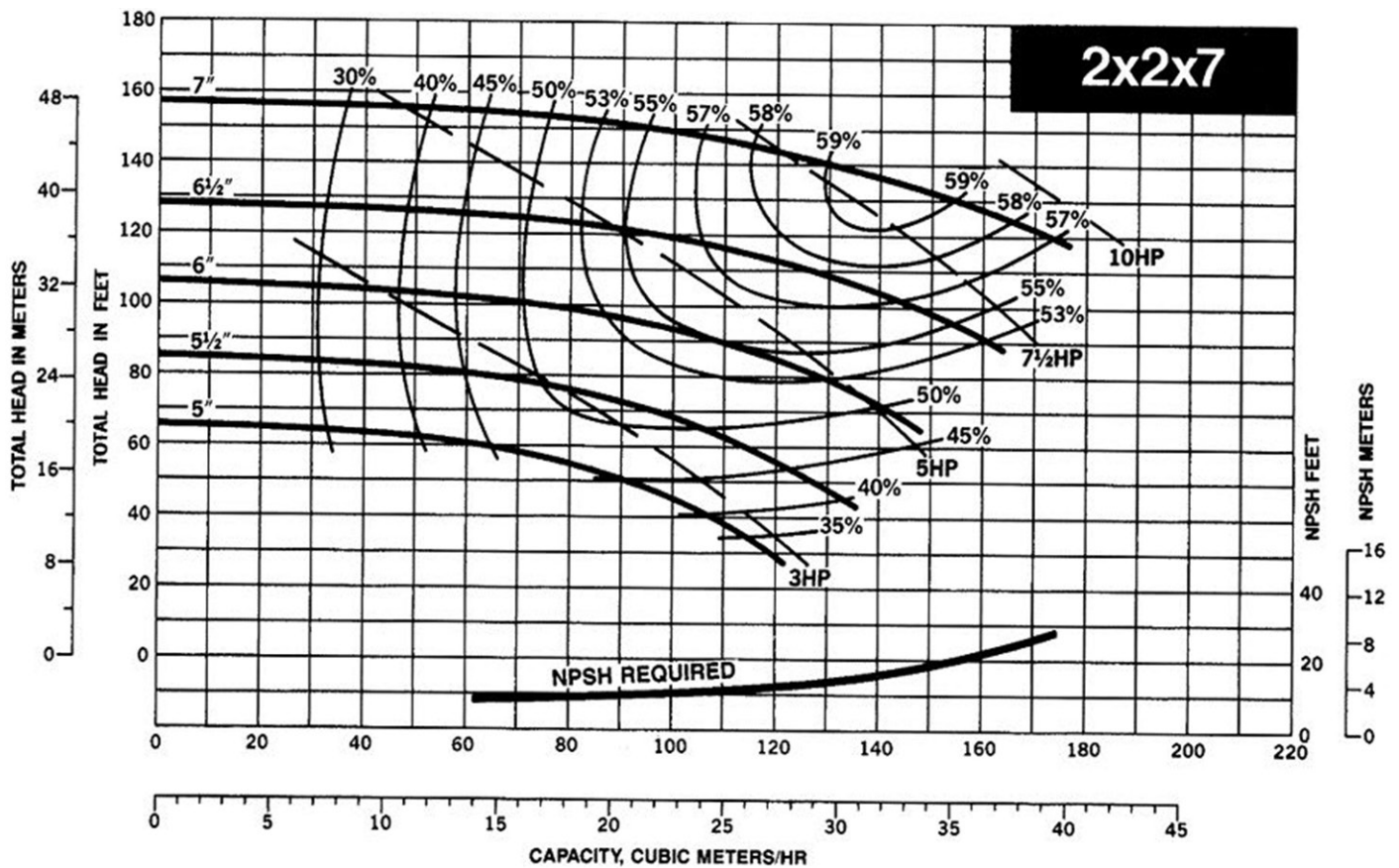
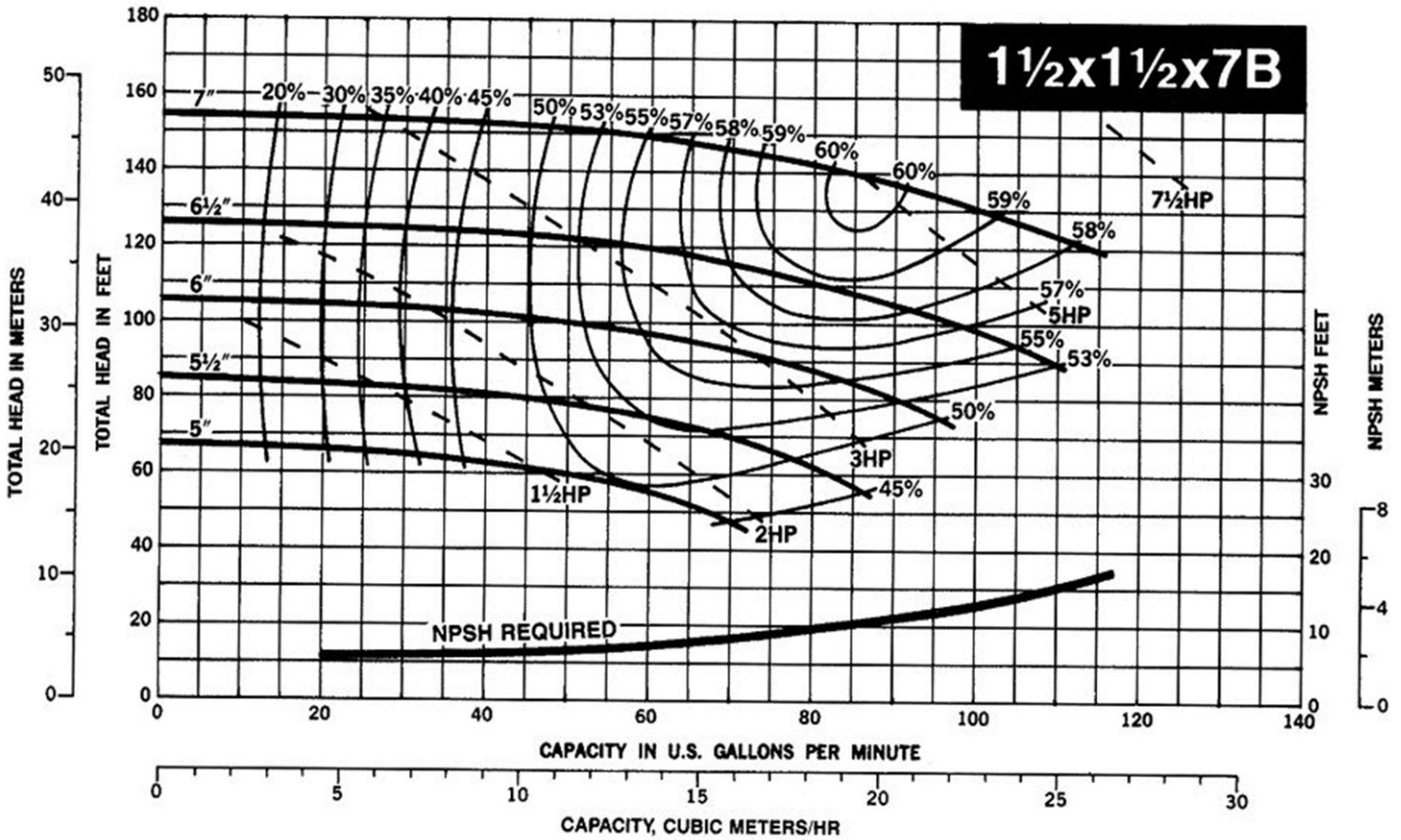
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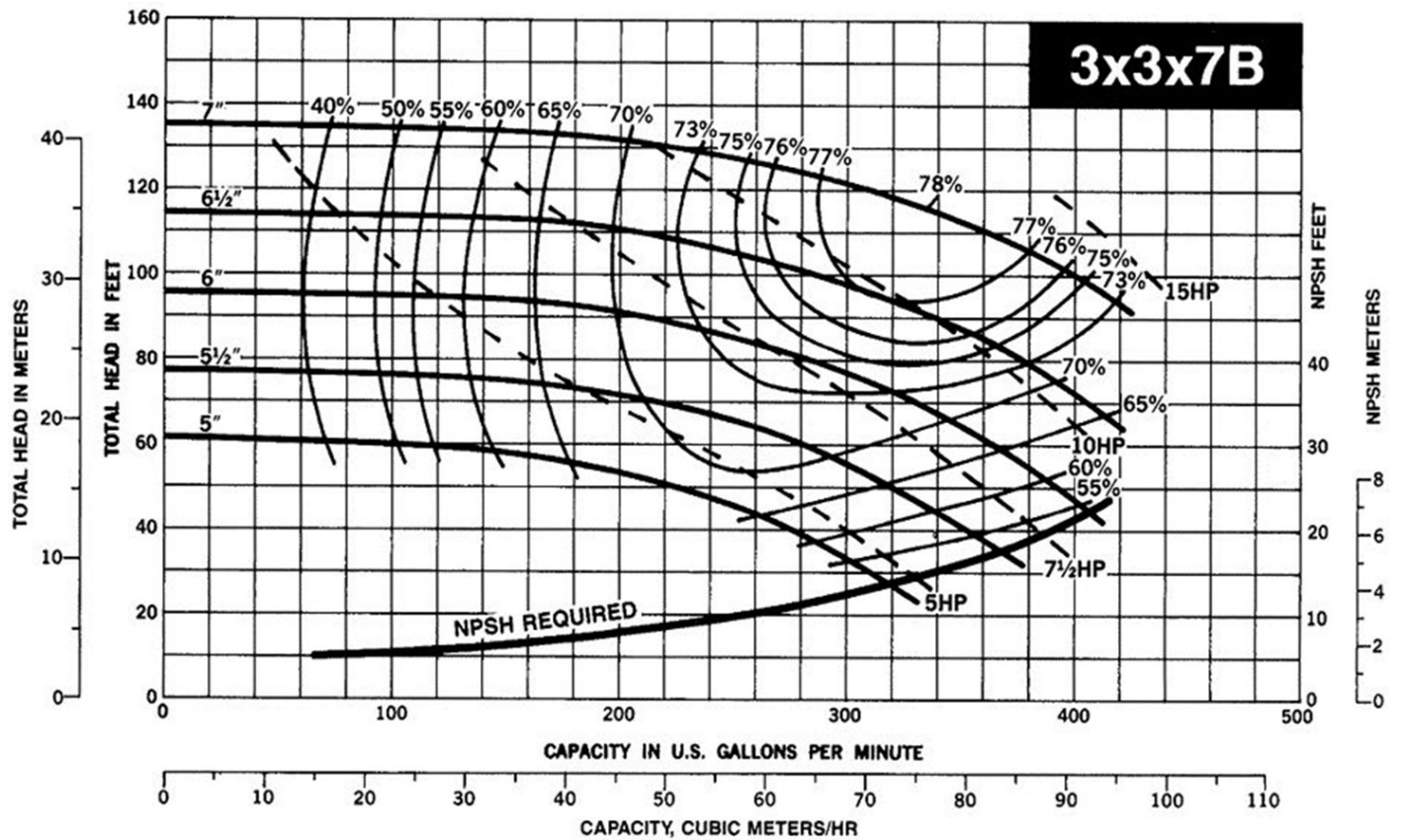
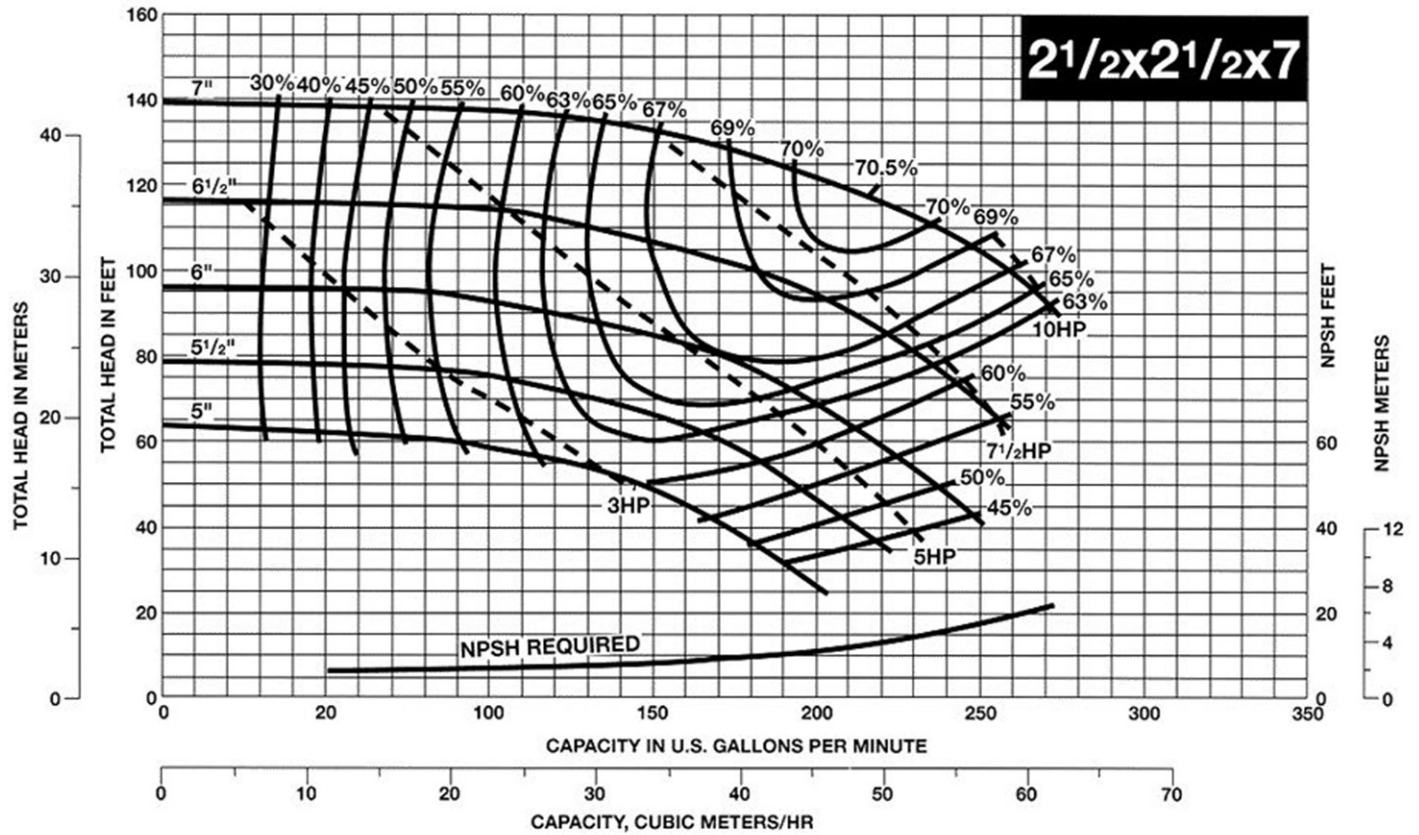
2900 RPM PUMP CURVES



Curves based upon shop test using clear cold water at a temperature not over 85°F.

SERIES A-C 1500 - 50 Hz

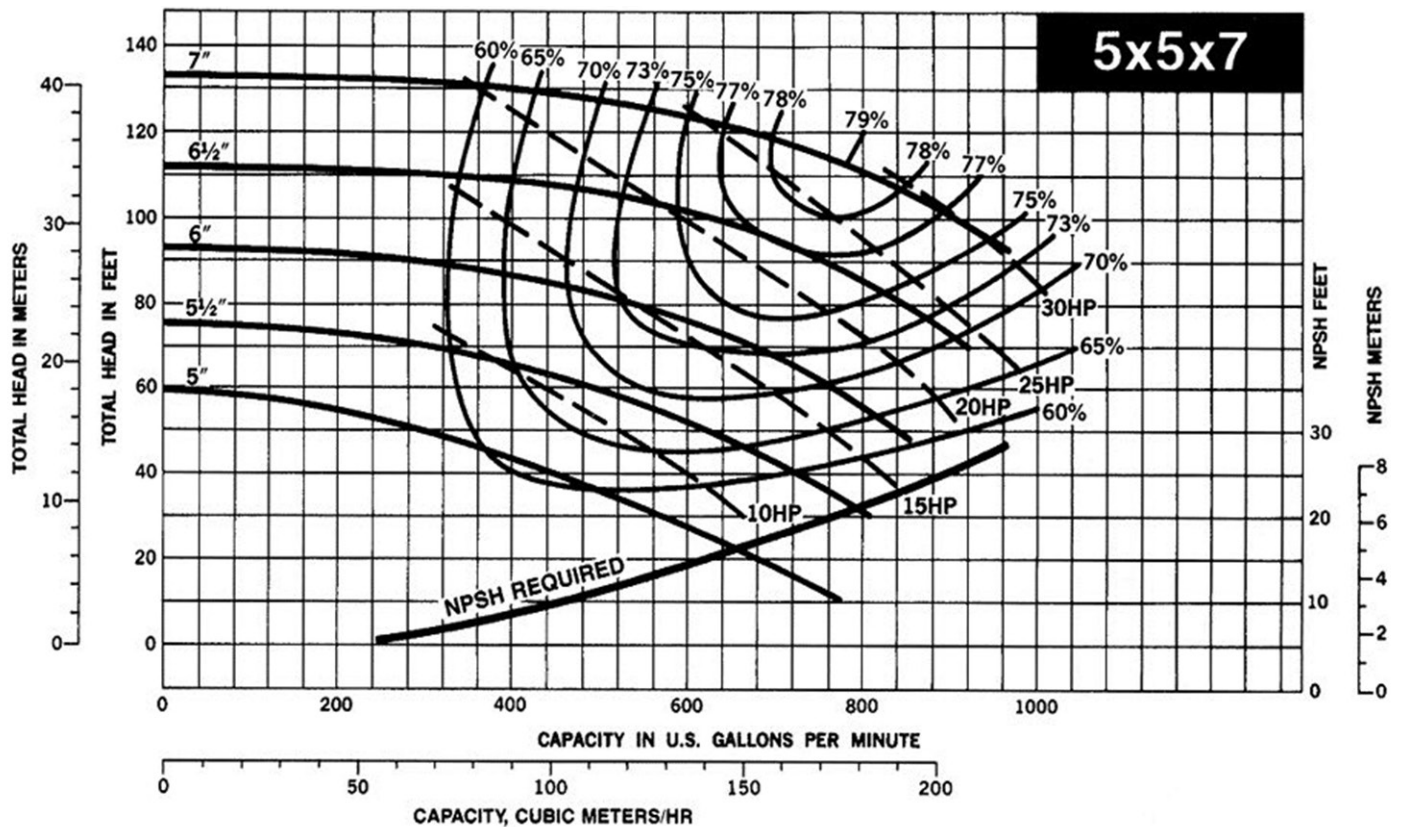
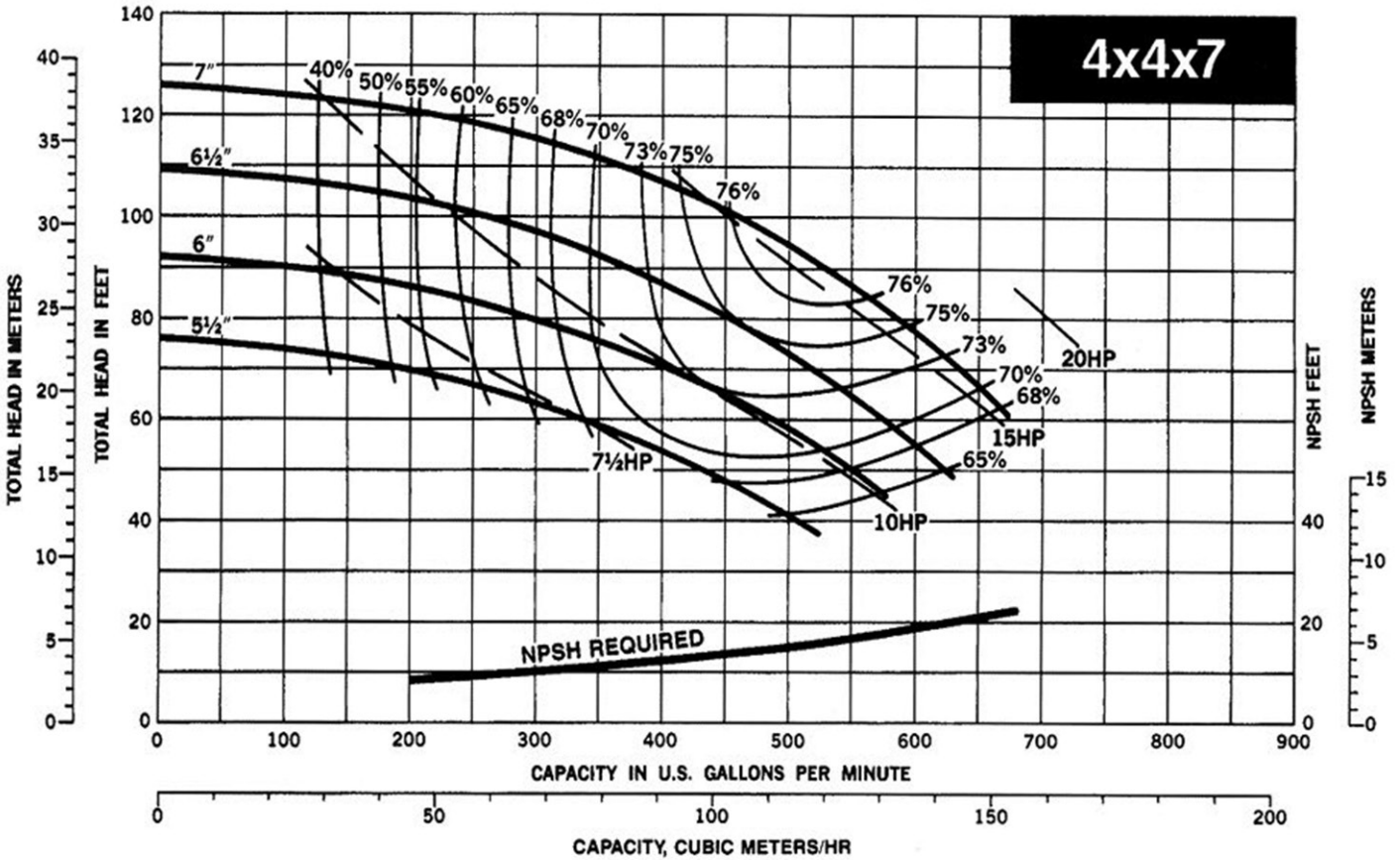
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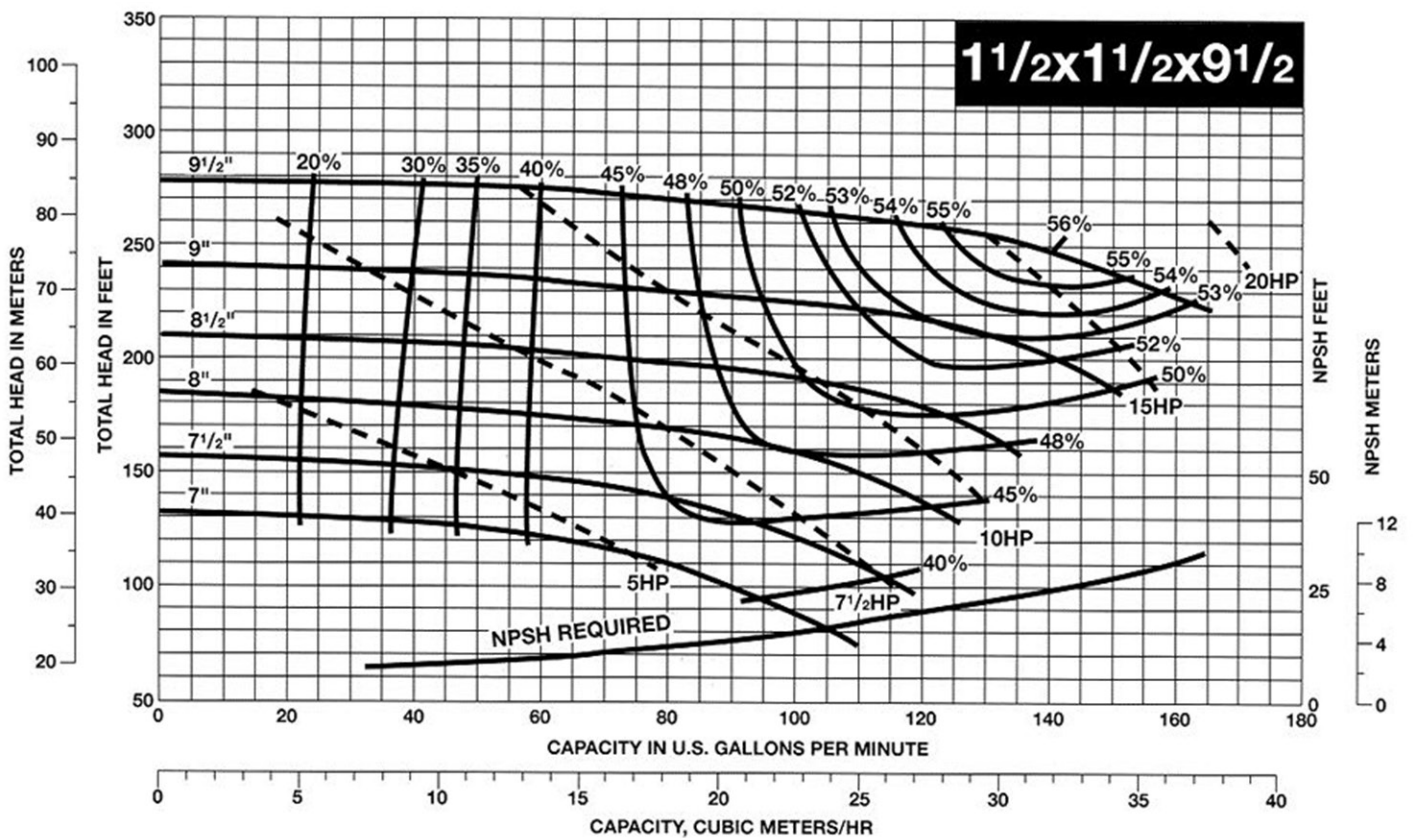
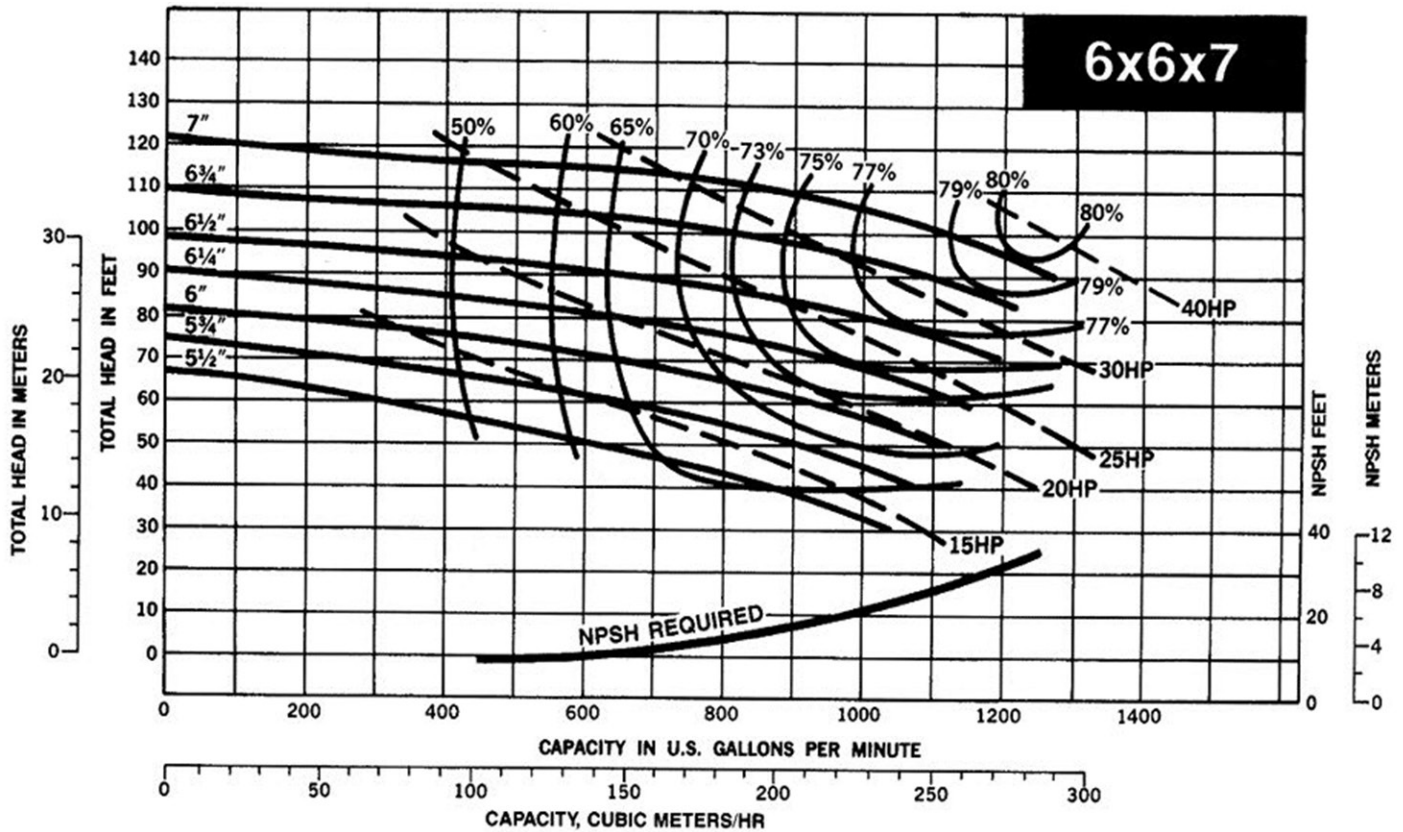
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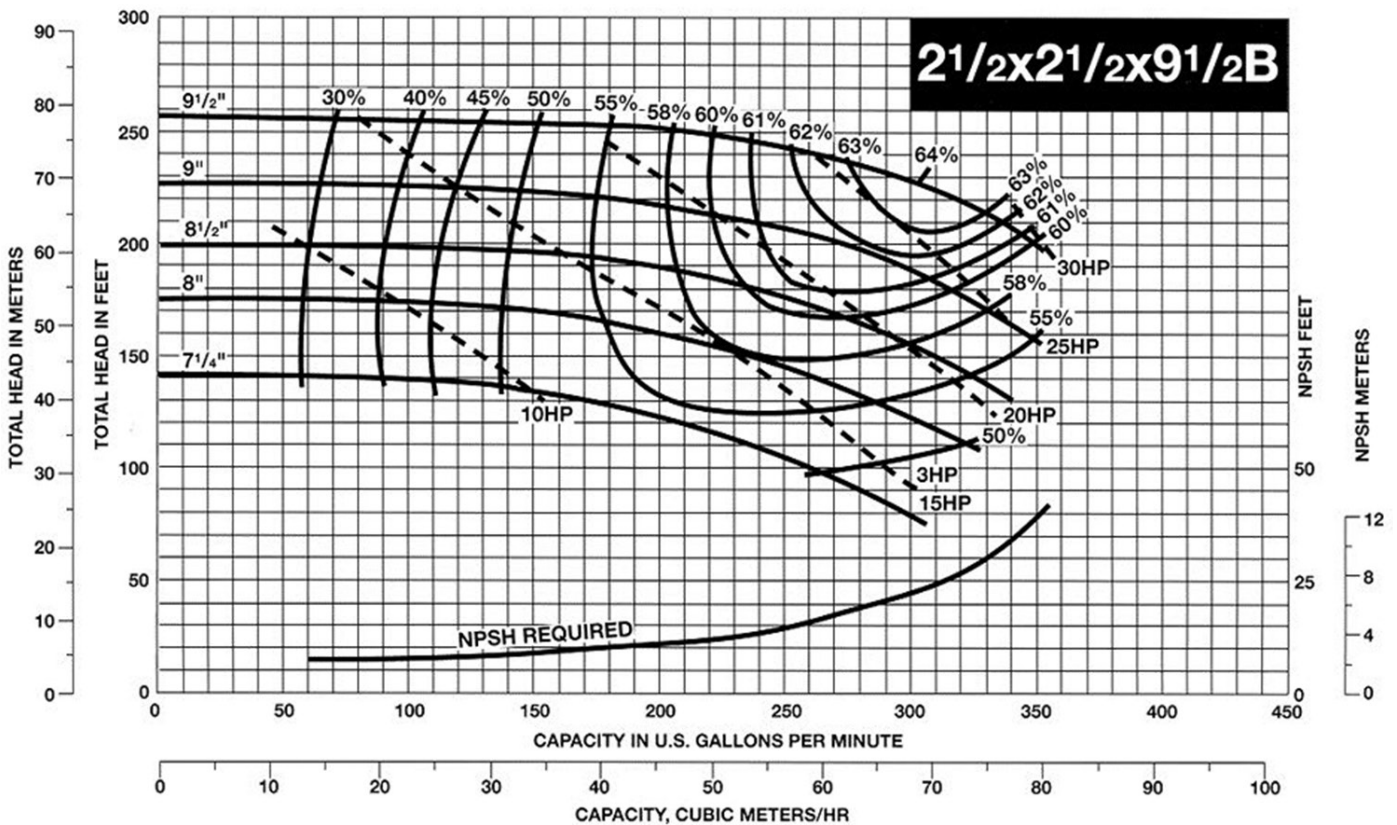
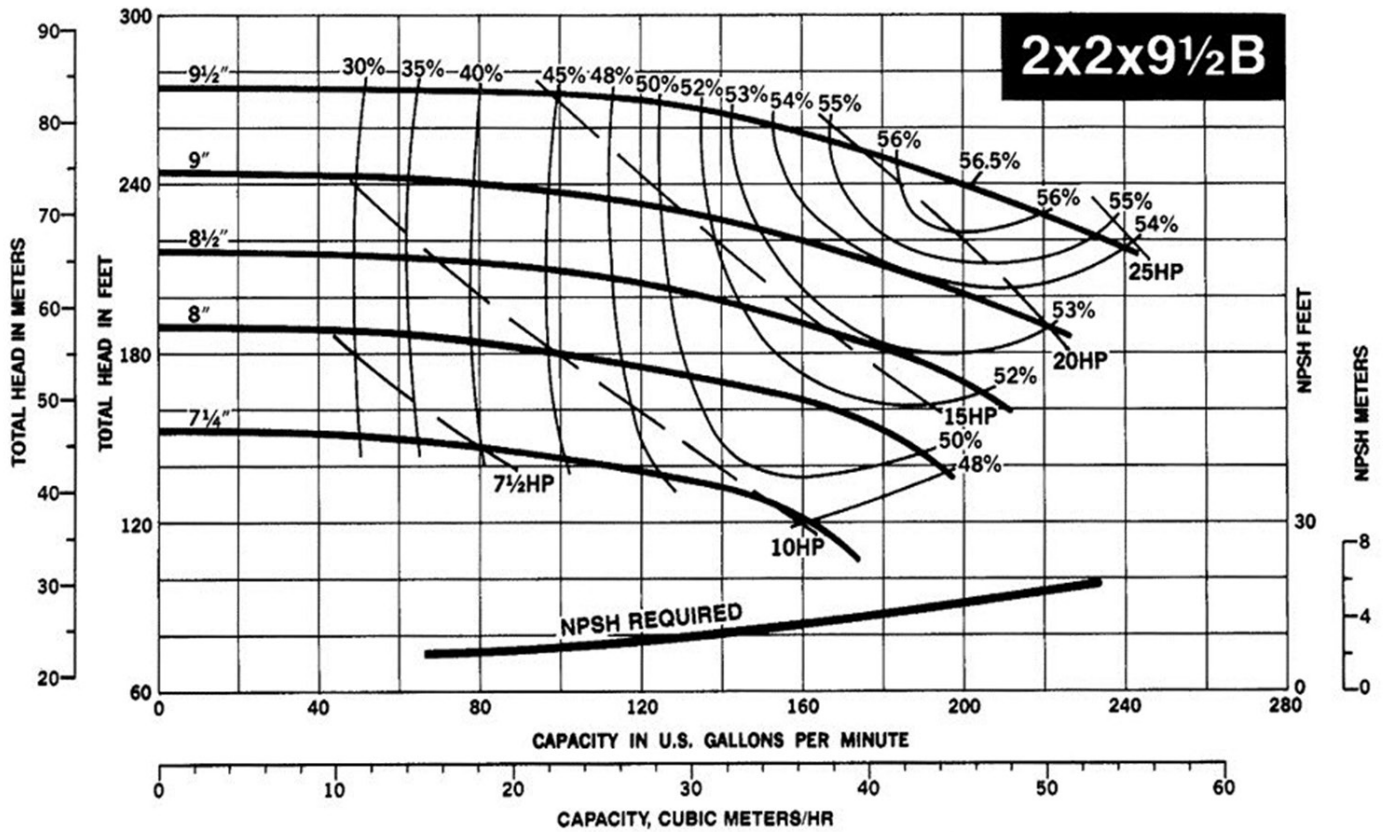
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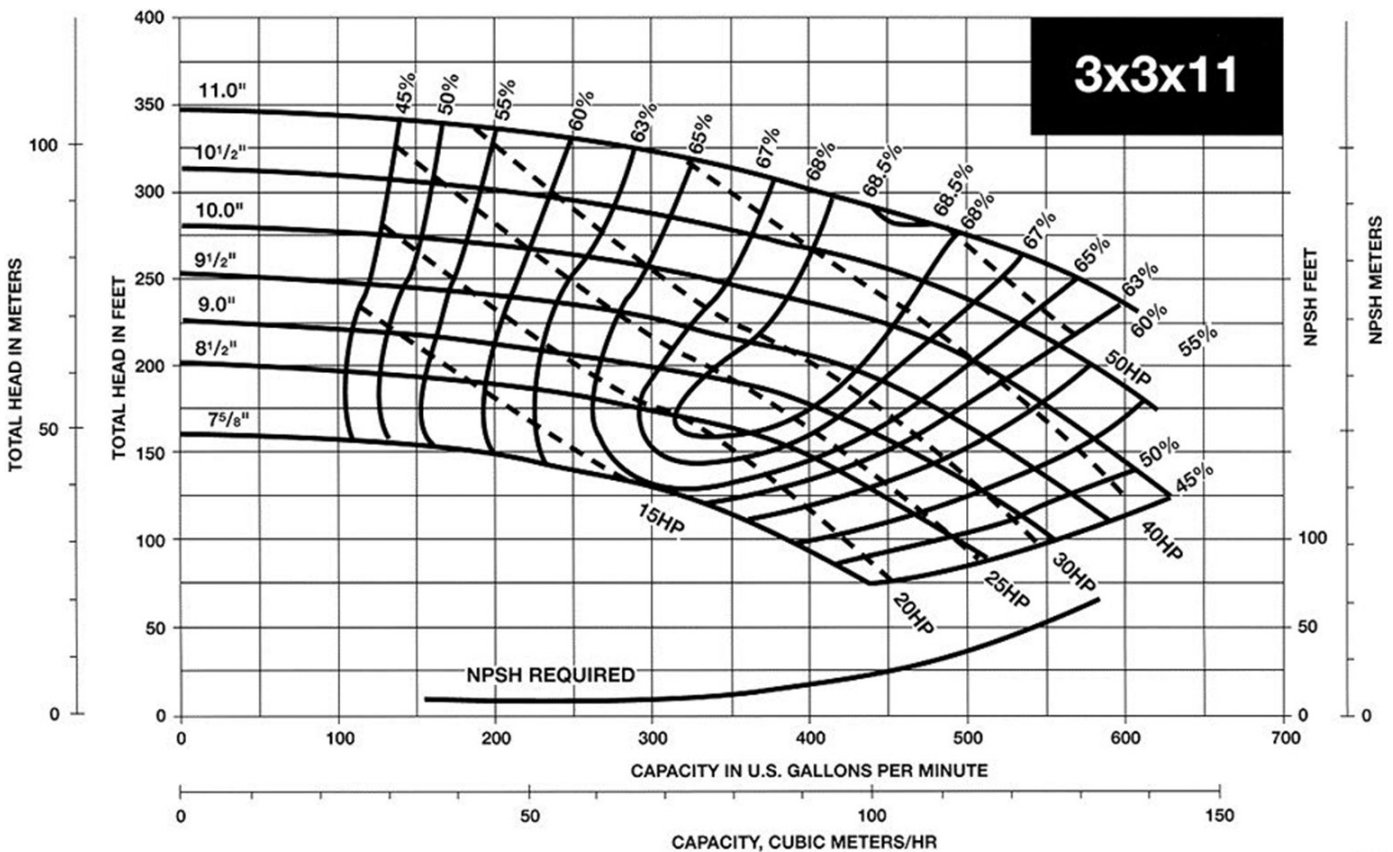
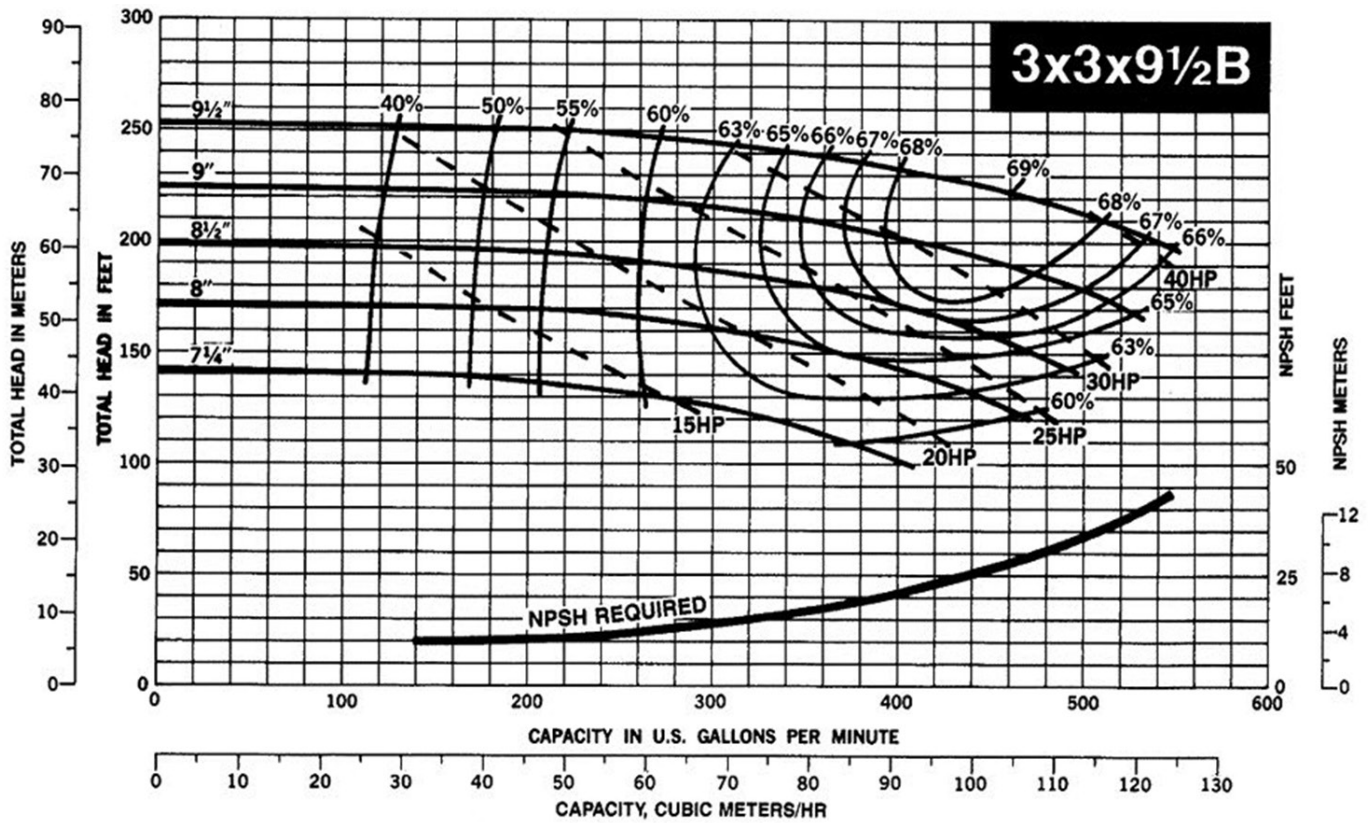
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2900 RPM PUMP CURVES



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DESCRIPTION

A-C Series 1500 Pumps are in-line mounted for vertical or horizontal mounting. Built to exacting specifications and carefully inspected. Accurate uniformity of parts provides ease in servicing. Seal options tailor pumps to a wide variety of applications in hydronic heating and cooling systems, general service and industrial process.

SEAL OPTIONS: Standard mechanical, single or double flush or packing.

OPERATING DATA

Maximum Working Pressure..... 175 PSI (250 and 300 PSI are optionally available)

Maximum Operating Temperature

Standard Seal 225°F (107°C)

Spec. High Temp. Seal..... 250°F (121°C)

Motor RPM 1450 RPM
2900 RPM

SEALING SELECTION GUIDE

STANDARD SEALS: Closed or open systems where the system is relatively free of dirt and/or other abrasive particles.

FLUSHED SINGLE SEALS: Closed or open systems where the temperature or pressure is above the limitations of standard seals.

DOUBLE SEALS: Closed or open low pressure systems where the system contains a high concentration of abrasive solids.

PACKING: Closed or open systems where a large amount of make-up water is required and/or systems which are subjected to widely varying chemical conditions and solids buildup.

NOTE: For specific sealing recommendation consult your Goulds Water Technology representative.

CONSTRUCTION MATERIALS (for parts in contact with fluid pumped)

DESCRIPTION	BRONZE FITTED PUMP	ALL IRON PUMP
Impeller	Bronze	Cast Iron
Impeller Key	Stainless Steel	Stainless Steel
Impeller Washer	Brass	Stainless Steel
Impeller Lock Washer	Stainless Steel	Stainless Steel
Impeller Screw	Stainless Steel	Stainless Steel
Packing	Impregnated Asbestos	Impregnated Asbestos
Lantern Ring	Glass Filled TFE	Glass Filled TFE
Gland	Bronze	Cast Iron
Gland Nuts and Bolts	Stainless Steel	Stainless Steel
Shaft	Steel	Steel
Shaft Sleeve		
Standard Seal	Aluminum Bronze	Stainless Steel
Stuffing Box	Stainless Steel	Stainless Steel
Slinger	Neoprene	Neoprene
Volute	Cast Iron	Cast Iron
Volute Gasket	Impregnated Paper	Impregnated Paper
Shaft Seal/Seat	Tungsten Carbide/Carbon	Tungsten Carbide/Carbon
(Single)	Ceramic/Carbon	Ceramic/Carbon
(Double)	Carbon/Ceramic	Carbon/Ceramic
Standard Seal/Seat		

TYPICAL SPECIFICATIONS

The contractor shall furnish and install, as shown on the plans _____ pumps each capable of delivering _____ GPM when operating at a total developed head of _____ ft.

Pumps shall be In-line type, close-coupled, single-stage design, for installation in vertical or horizontal position, and capable of being serviced without disturbing piping connections.

Pump volute shall be of Class 30 cast iron and impeller shall be of cast bronze, enclosed type, balanced, keyed to the shaft and secured by a locking capscrew.

The liquid cavity shall be sealed off at the motor shaft by an internally-flushed mechanical seal with ceramic seal seat of at least 98% alumina oxide content, and carbon seal ring, suitable for continuous operation at 225°F. A bronze shaft sleeve shall completely cover the wetted area under the seal.

Pumps shall be rated for minimum of 175 PSI working pressure. Casings shall have gauge ports at nozzles, and vent and drain ports in casing.

Motor shall meet NEMA specifications and shall be the size, voltage and enclosure called for on the plans. It shall have heavy-duty grease lubricated ball bearings, completely adequate for the maximum load for which the motor is designed.

Each pump shall be factory tested. It shall then be thoroughly cleaned and painted with at least one coat of high-grade machinery enamel prior to shipment.

Each pump shall be checked by the installing contractor and regulated for proper differential pressure, voltage and amperage draw. This data shall be noted on a permanent tag or label and fastened to the pump for owner's reference.

Pumps shall be A-C Series as manufactured by Goolds Water Technology.

IMPORTANT SELECTION NOTES

High speed pumps 2900 RPM are often used for industrial or special high pressure applications where velocity and system noise are of little or no consequence.

Standard motors are open dripproof NEMA Class B insulation 40°C ambient and at 50 cycle operation provide no service factor above rated HP. Motor overload will take place at point where HP curve crosses impeller curve. Always select adequate HP, should actual flow rate of pump increase beyond selection point.

CONVERSION TABLE - FOR WATER

When other pumping conditions are given - convert to feet of head and capacity in U.S. GPM. Multiply by appropriate correction factor. All factors are based on water.

Multiple	By	To Obtain
Centimeters	0.0328	Feet of head
Meters	3.281	Feet of head
PSI	2.31	Feet of head
Kilo Pascal	0.3346	Feet of head
Kilo Newton/Meters ²	.335	Feet of head
Kilogram per square		
Centimeter	32.85	Feet of head

Multiple	By	To Obtain
Imperial Gals./Min.	1.2	US Gals. per Min.
Liters/Min.	0.264	US Gals. per Min.
Liters/Sec.	15.85	US Gals. per Min.
Liters/Hr.	0.0044	US Gals. per Min.
Cubic Meters/Min.	264.2	US Gals. per Min.
Lbs/Min.	0.12	US Gals. per Min.
Cubic Meters/Hr.	4.4	US Gals. per Min.

NOTES

NOTES

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xyleminc.com



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