

SERIES 90 PUMP

SERIES 90

**In-Line Mounted
Centrifugal Pump
Performance Curves**



ITT Bell & Gossett
ITT Fluid Technology Corporation

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USEFUL PUMP FORMULAS

Pressure (PSI)	=	$\frac{\text{Head (Feet)} \times \text{Specific Gravity}}{2.31}$
Head (Feet)	=	$\frac{\text{Pressure (PSI)} \times 2.31}{\text{Specific Gravity}}$
Vacuum (Inches of Mercury)	=	$\text{Dynamic Suction Lift (Feet)} \times .833 \times \text{Specific Gravity}$
Horsepower (Brake)	=	$\frac{\text{GPM} \times \text{Head (Feet)} \times \text{Specific Gravity}}{3960 \times \text{Pump Efficiency}}$
Horsepower (Water)	=	$\frac{\text{GPM} \times \text{Head (Feet)} \times \text{Specific Gravity}}{3960}$
Efficiency (Pump)	=	$\frac{\text{Horsepower (Water)}}{\text{Horsepower (Brake)}} \times 100 \text{ Per Cent}$
NPSH (Available)	=	Positive Factors – Negative Factors

Affinity Laws: Effect of change of speed or impeller diameter on centrifugal pumps.

	GPM Capacity	Ft. 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	$Q_2 = \frac{RPM_2}{RPM_1} Q_1$	$H_2 = \left(\frac{RPM_2}{RPM_1}\right)^2 H_1$	$P_2 = \left(\frac{RPM_2}{RPM_1}\right)^3 P_1$

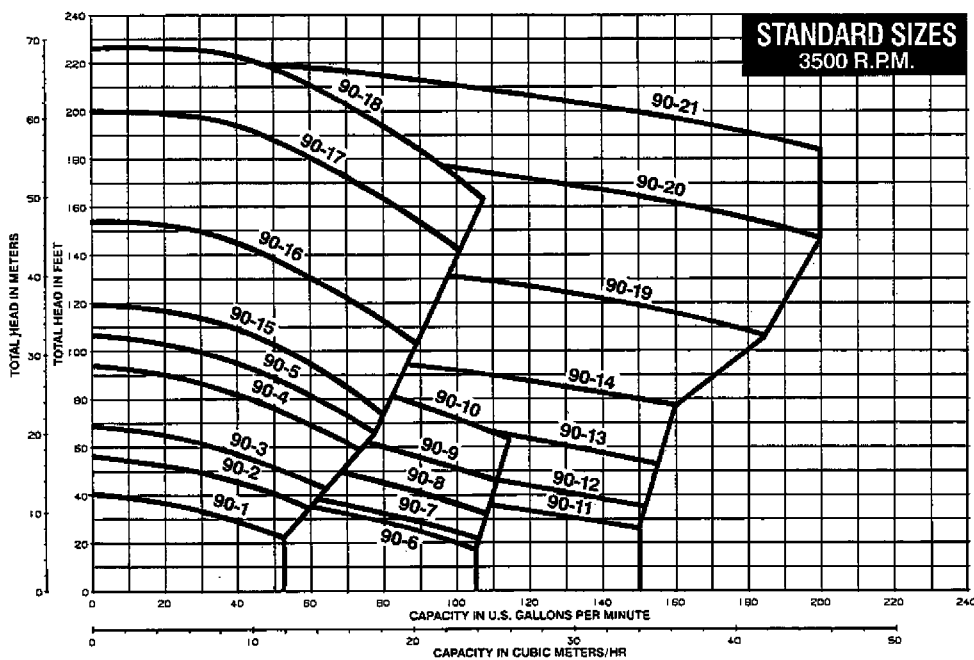
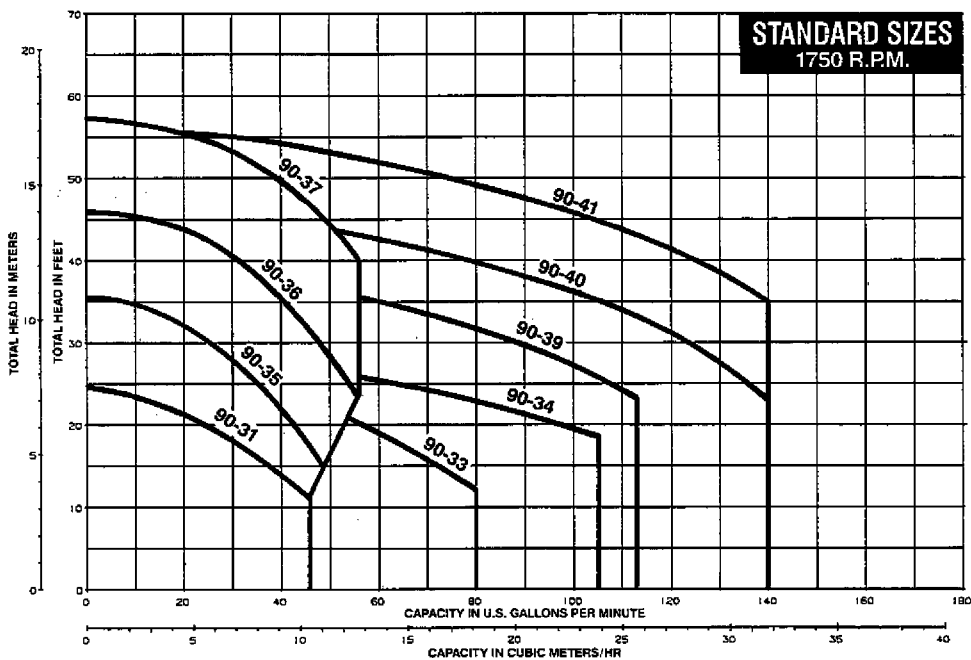
Where Q = GPM, H = Head, P = BHP, D = Impeller Dia., RPM = Pump Speed

SERIES 90 STANDARD PUMPS

Designed with preselected impeller diameters and motor horsepower sizes to offer better availability.

Pump Construction: Bronze Fitted
 Standard Mechanical Seal
 Maximum Working Pressure 175 psi

Motors: 115/230 Volt, Single Phase or
 208-230/460 Volt, Three Phase
 60 Hertz
 Open Dripproof



For more exact matches of required performance, consult the Built to Order Performance Curves

3500 RPM

MODEL NO.	PUMP SIZE	SUCTION & DISCHARGE SIZE INS. NPT	MOTOR H.P.
90-1S	1¼AA	1¼	½
90-1T			¾
90-2S			1
90-2T			1½
90-3S			2
90-3T			¾
90-4S			1
90-4T			1½
90-5T	1½AA	1½	2
90-6S			¾
90-6T			1
90-7S			1½
90-7T			2
90-8S			3
90-8T			1½
90-9T			2
90-10T	2AA	2	3
90-11S			1½
90-11T			2
90-12T			3
90-13T			5
90-14T	1½A	1½	3
90-15T			5
90-16T			7½
90-17T			10
90-18T			7½
90-19T	2A	2	10
90-20T			15
90-21T			

1750 RPM

MODEL NO.	PUMP SIZE	SUCTION & DISCHARGE SIZE INS. NPT	MOTOR H.P.		
90-31S	1¼AA	1¼	¼		
90-31T					
90-33S	1½AA	1½	½		
90-33T					
90-34S	2AA	2	¾		
90-34T					
90-35S	1½A	1½	½		
90-35T			¾		
90-36S			1		
90-36T					
90-37S			2A	2	1½
90-37T					
90-39S					
90-39T	2	2	2		
90-40S					
90-40T					
90-41T					

Single Phase — unit no. ending "S" 115/ 230 volt, single phase, 60 hertz, Open Dripproof
 Three Phase — unit no. in "T" 208-230/460 volt, three phase, 60 hertz, Open Dripproof

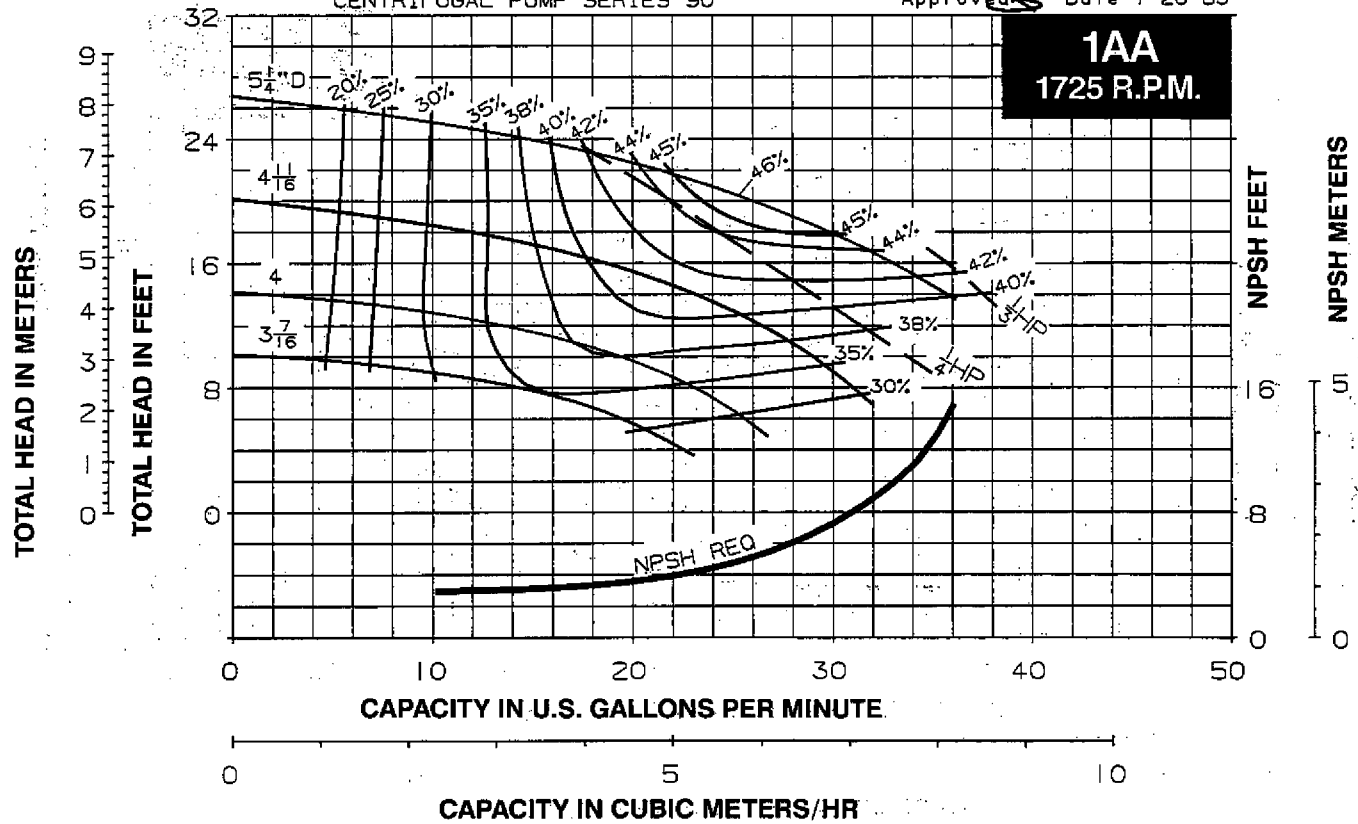
SERIES 90 PUMP PERFORMANCE CURVES

B-190A

PERFORMANCE CHARACTERISTIC CURVE

CENTRIFUGAL PUMP SERIES 90

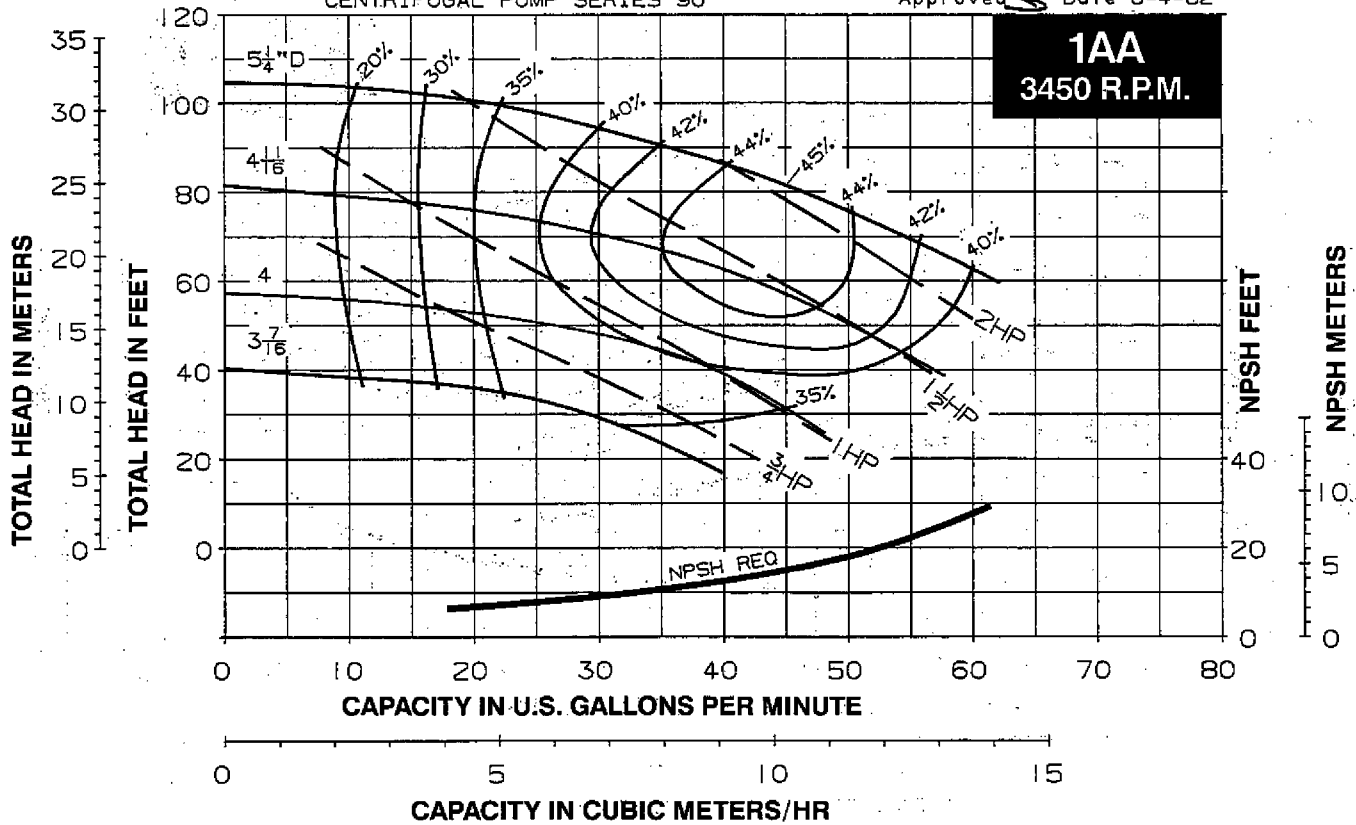
Approved  Date 1-26-83



PERFORMANCE CHARACTERISTIC CURVE

CENTRIFUGAL PUMP SERIES 90

Approved  Date 8-4-82

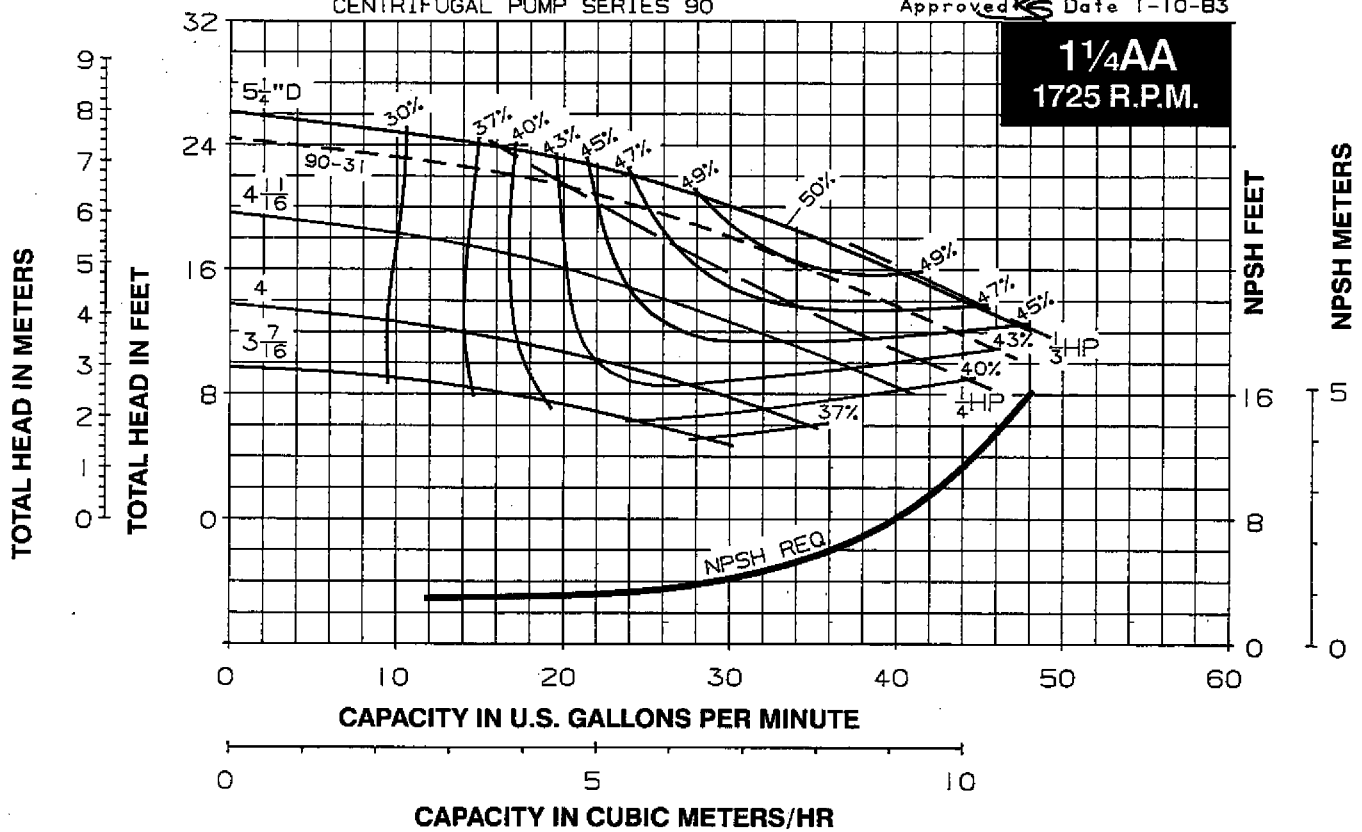


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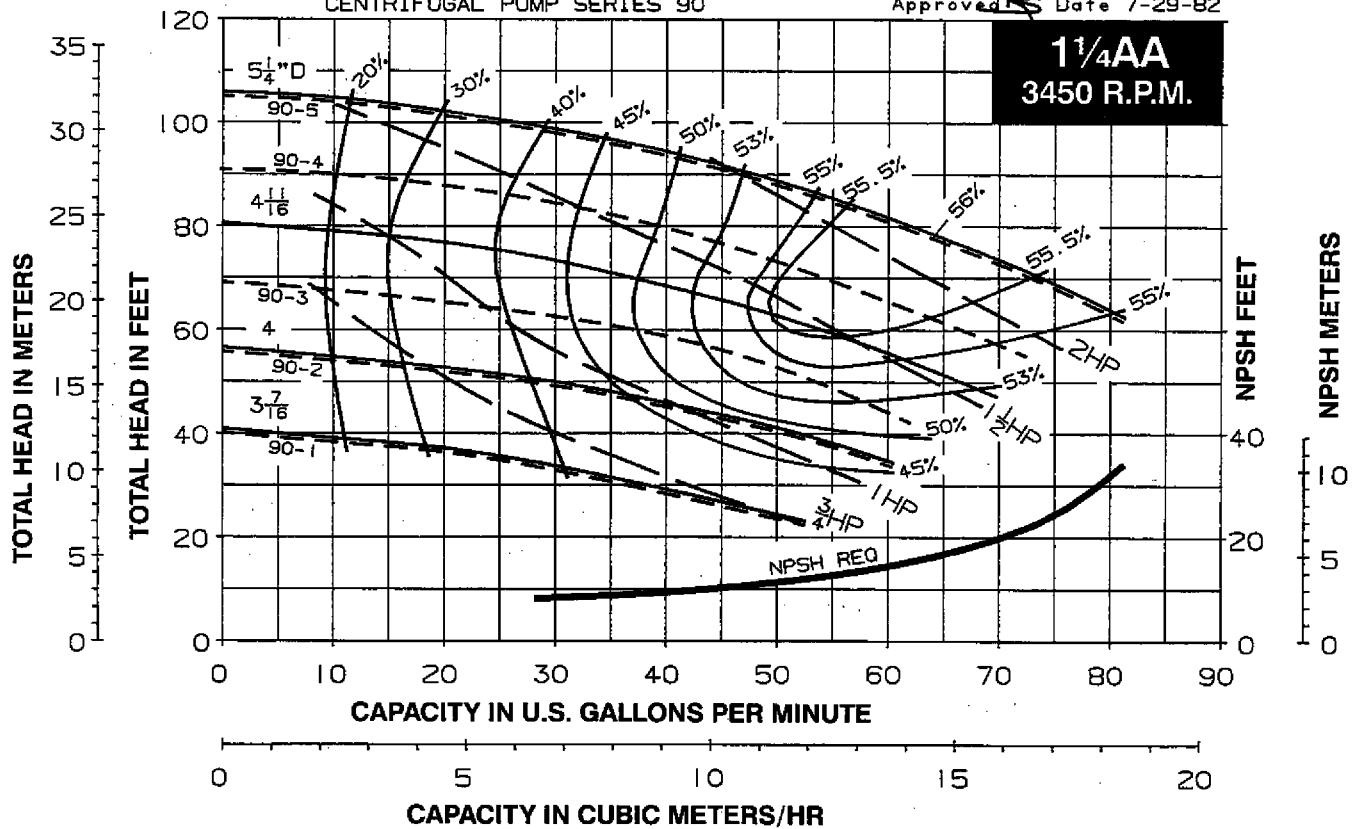
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PERFORMANCE CHARACTERISTIC CURVE

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Approved  Date 7-29-82



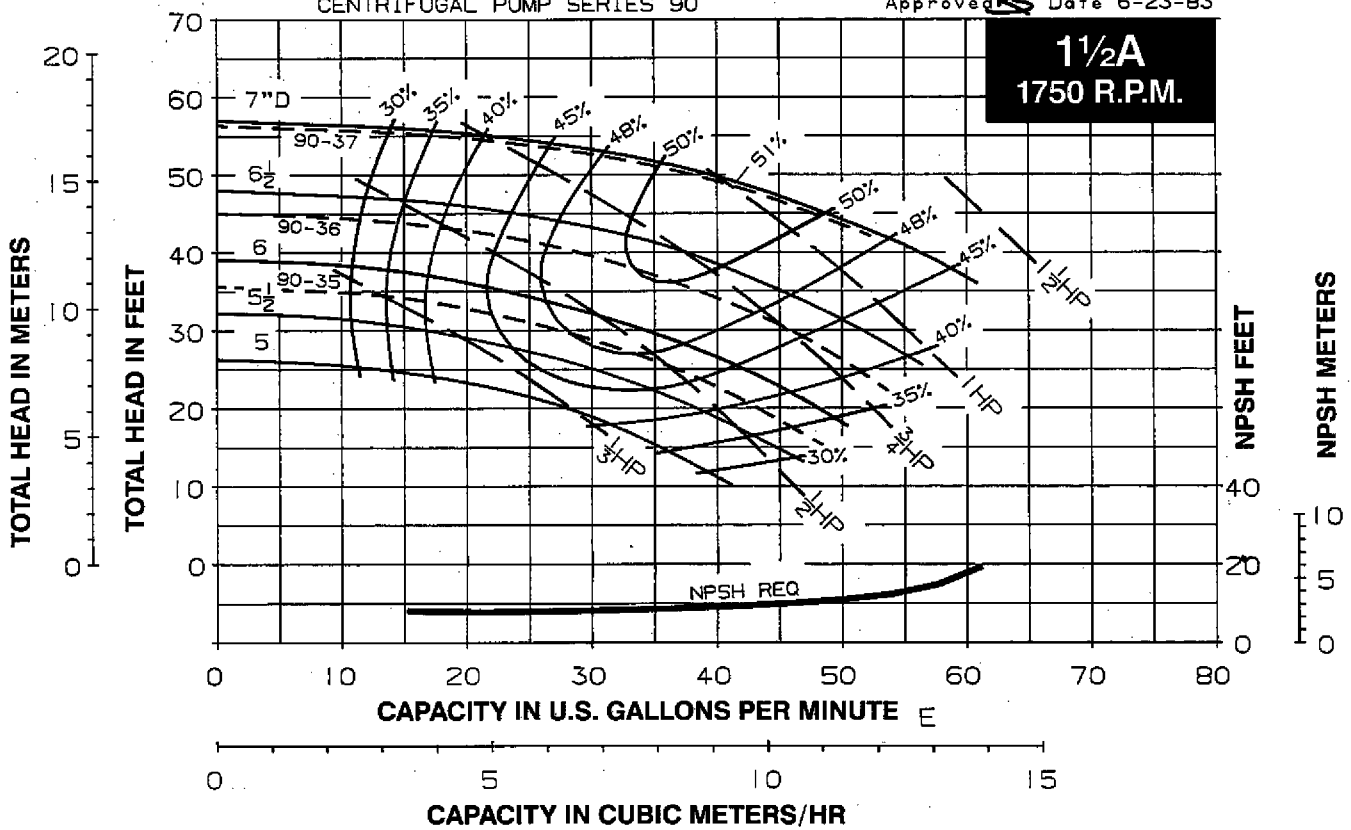
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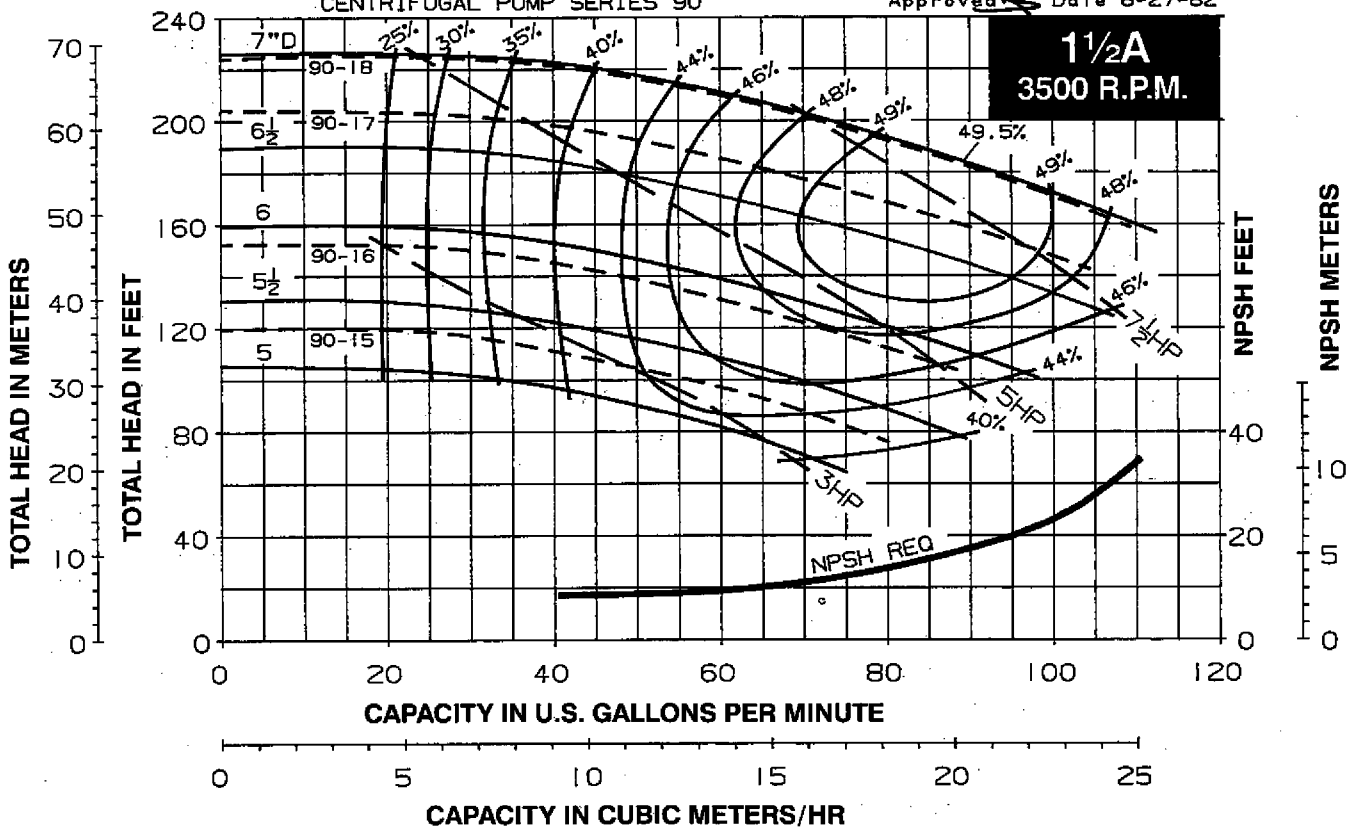
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PERFORMANCE CHARACTERISTIC CURVE

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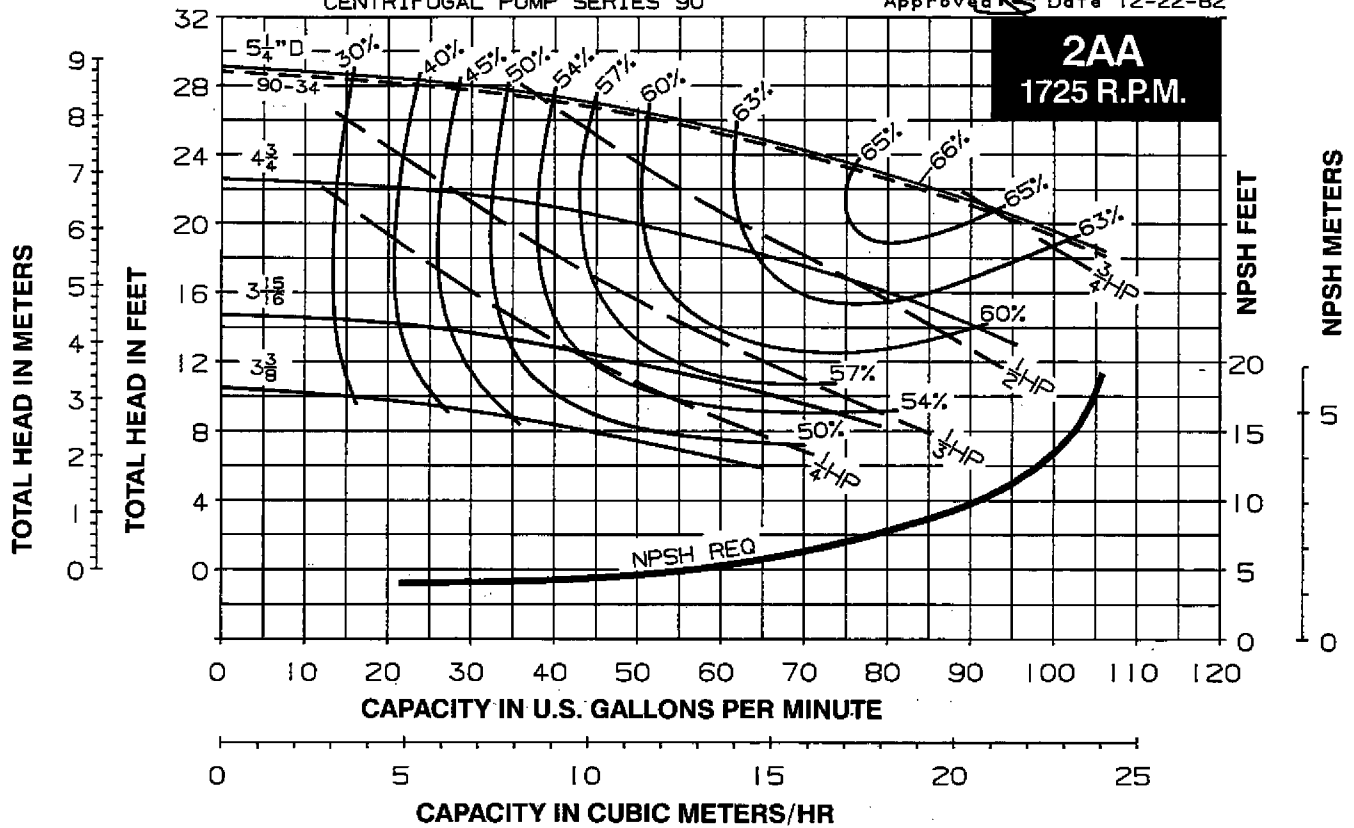


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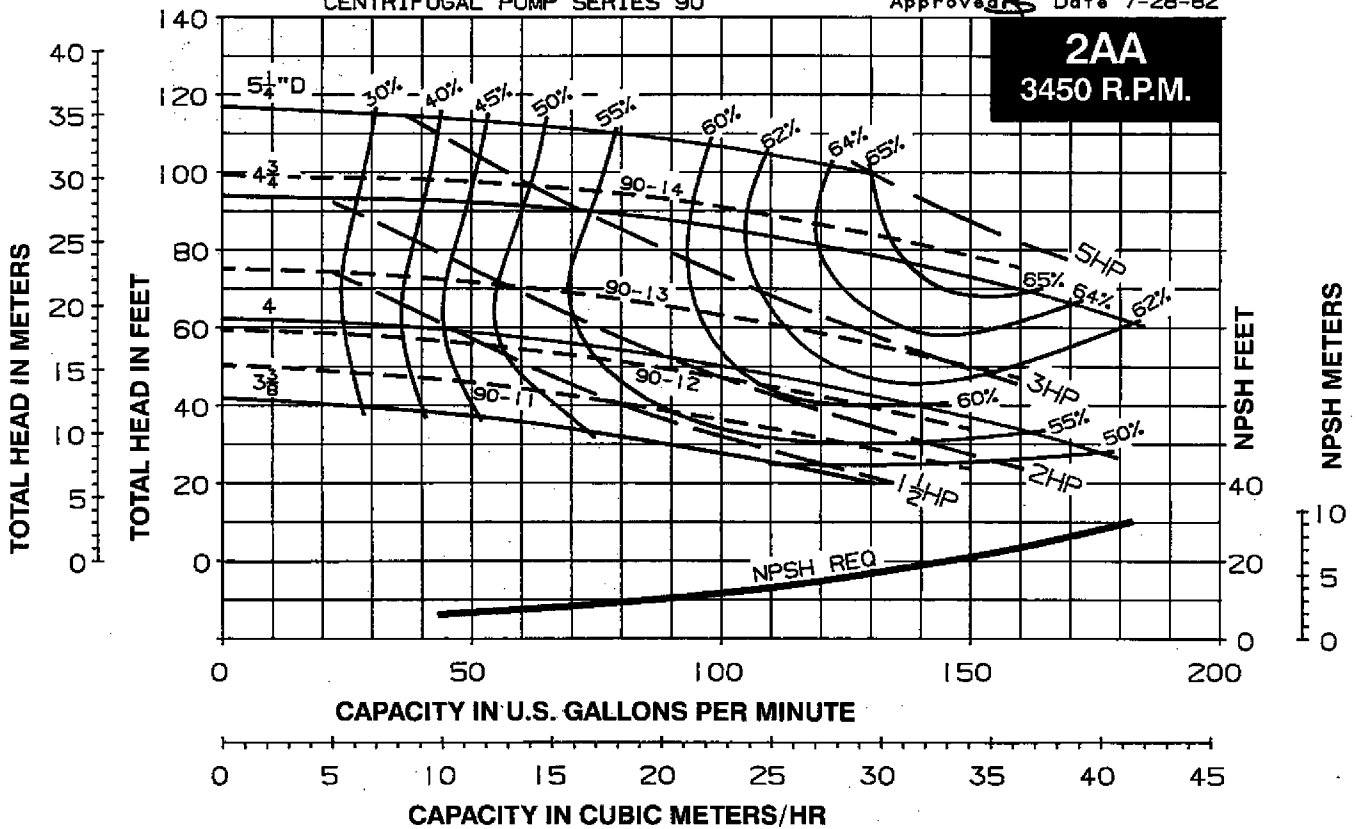
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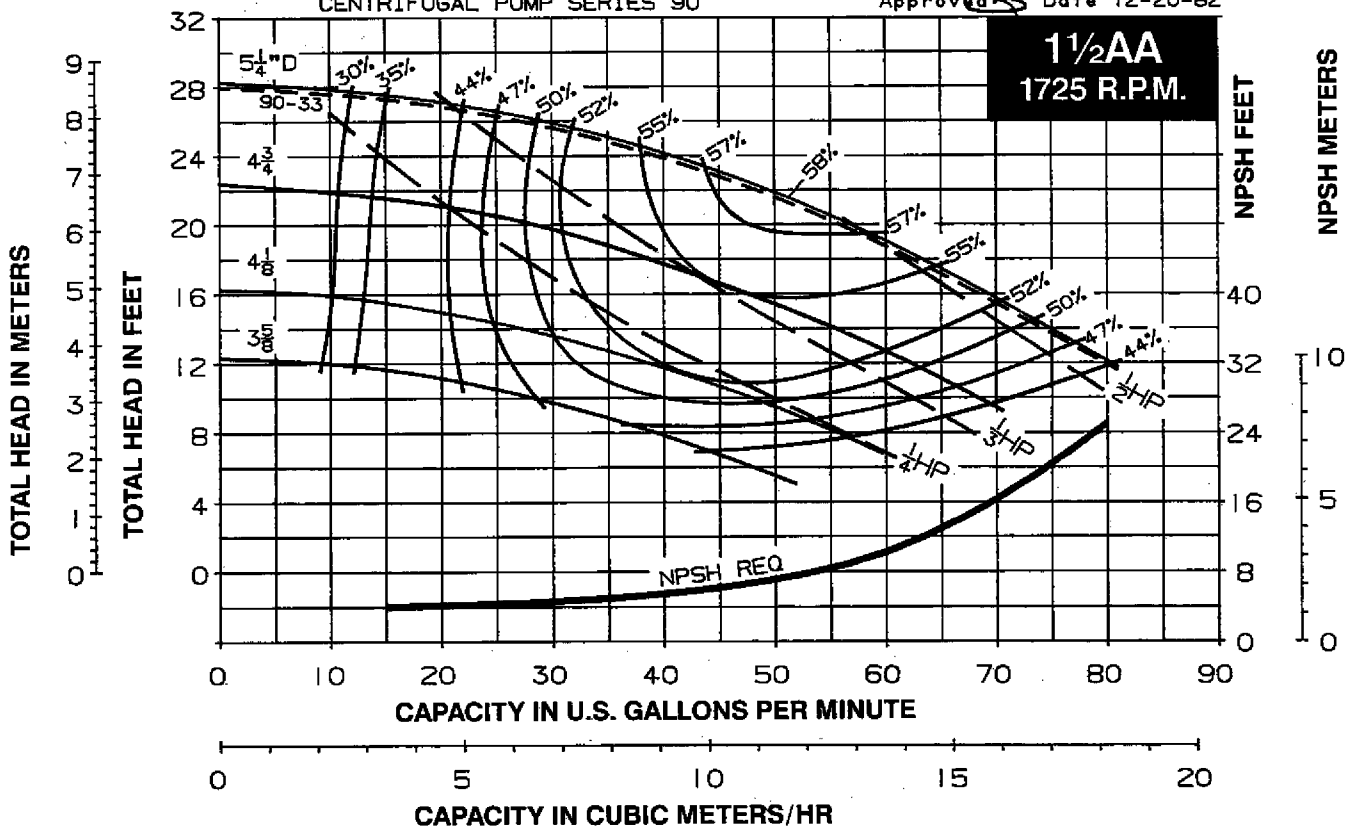
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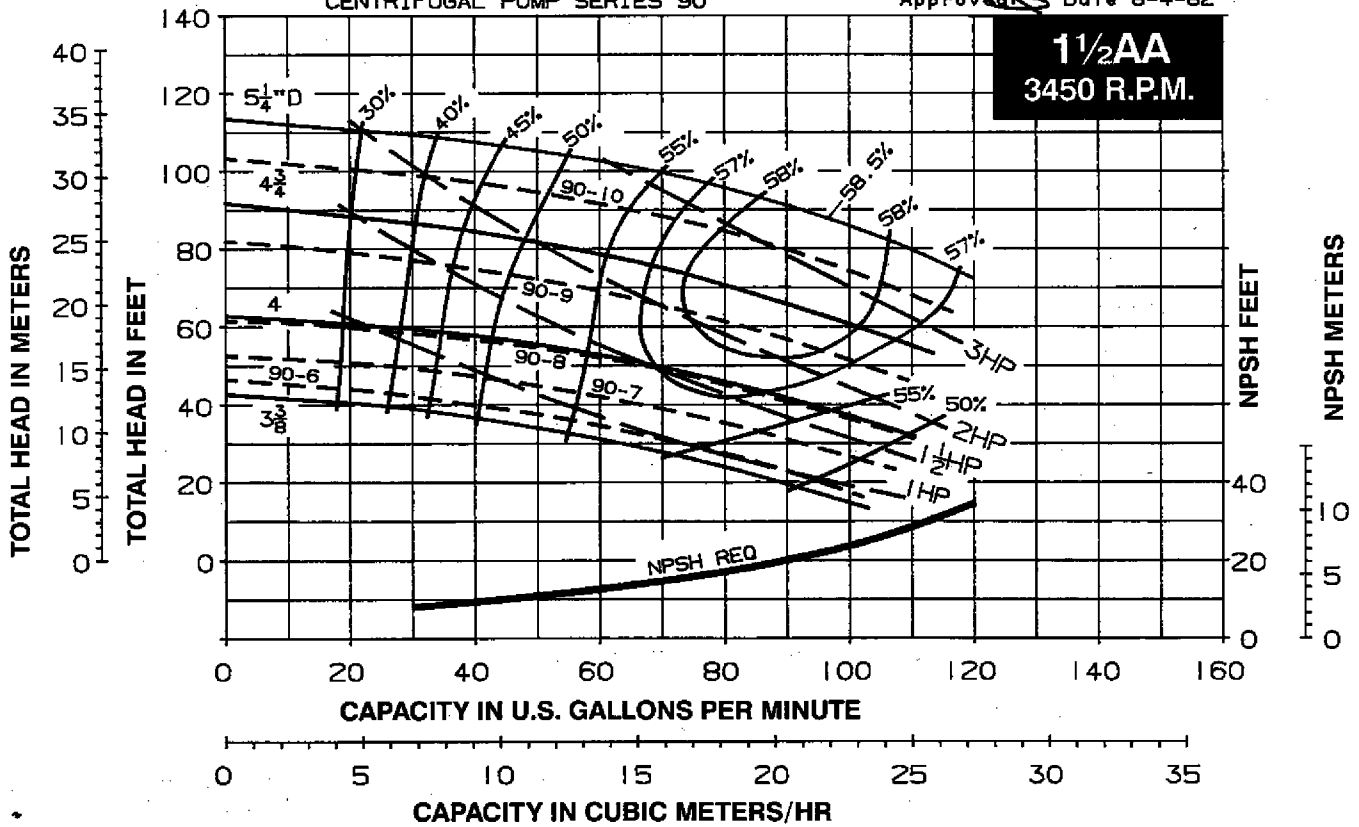
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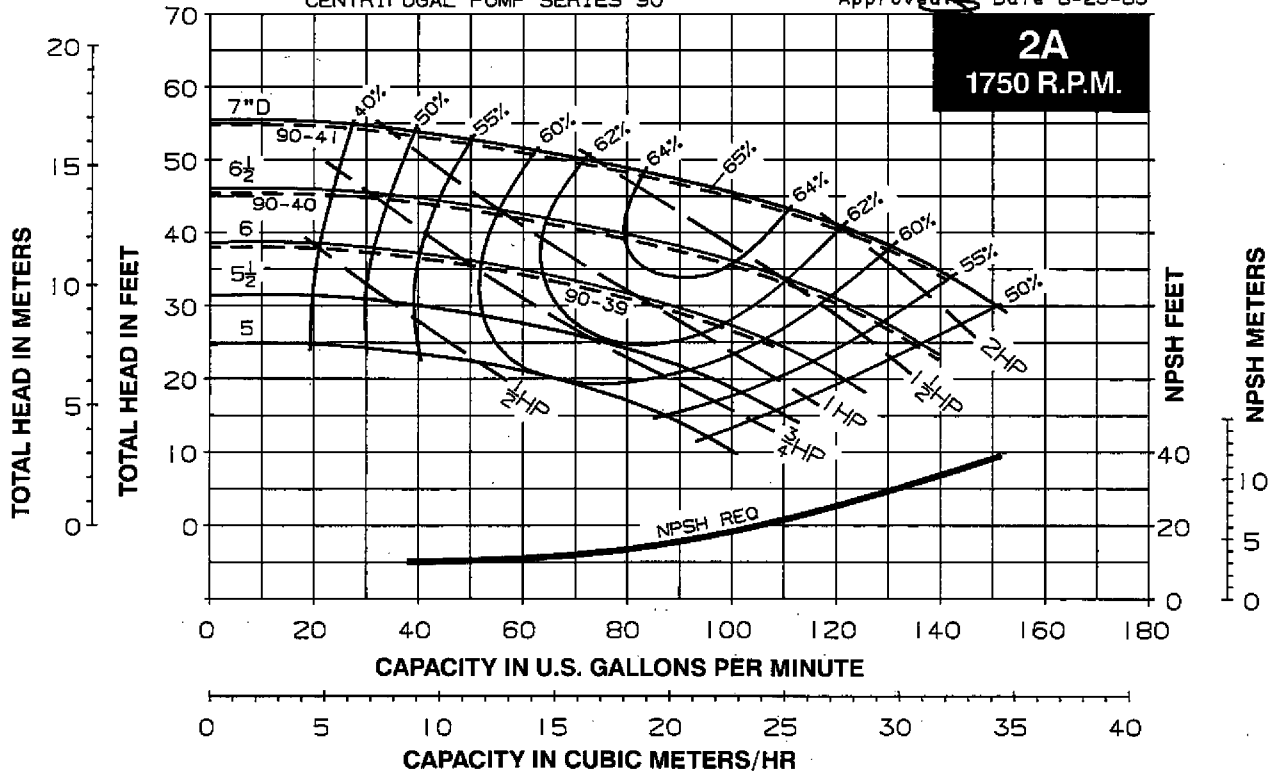


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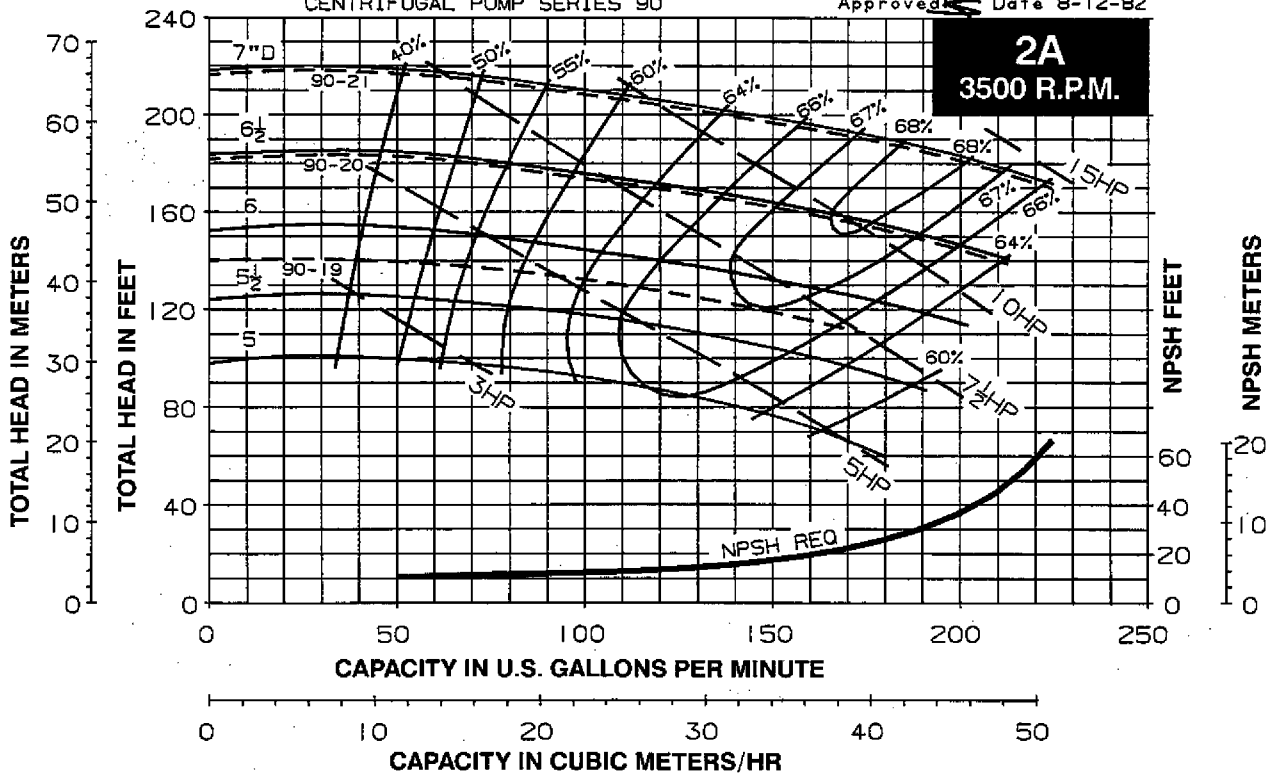
Approved  Date 8-23-83



PERFORMANCE CHARACTERISTIC CURVE

CENTRIFUGAL PUMP SERIES 90

Approved  Date 8-12-82



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