

TOP-FLO® Pump Sizing Application Data

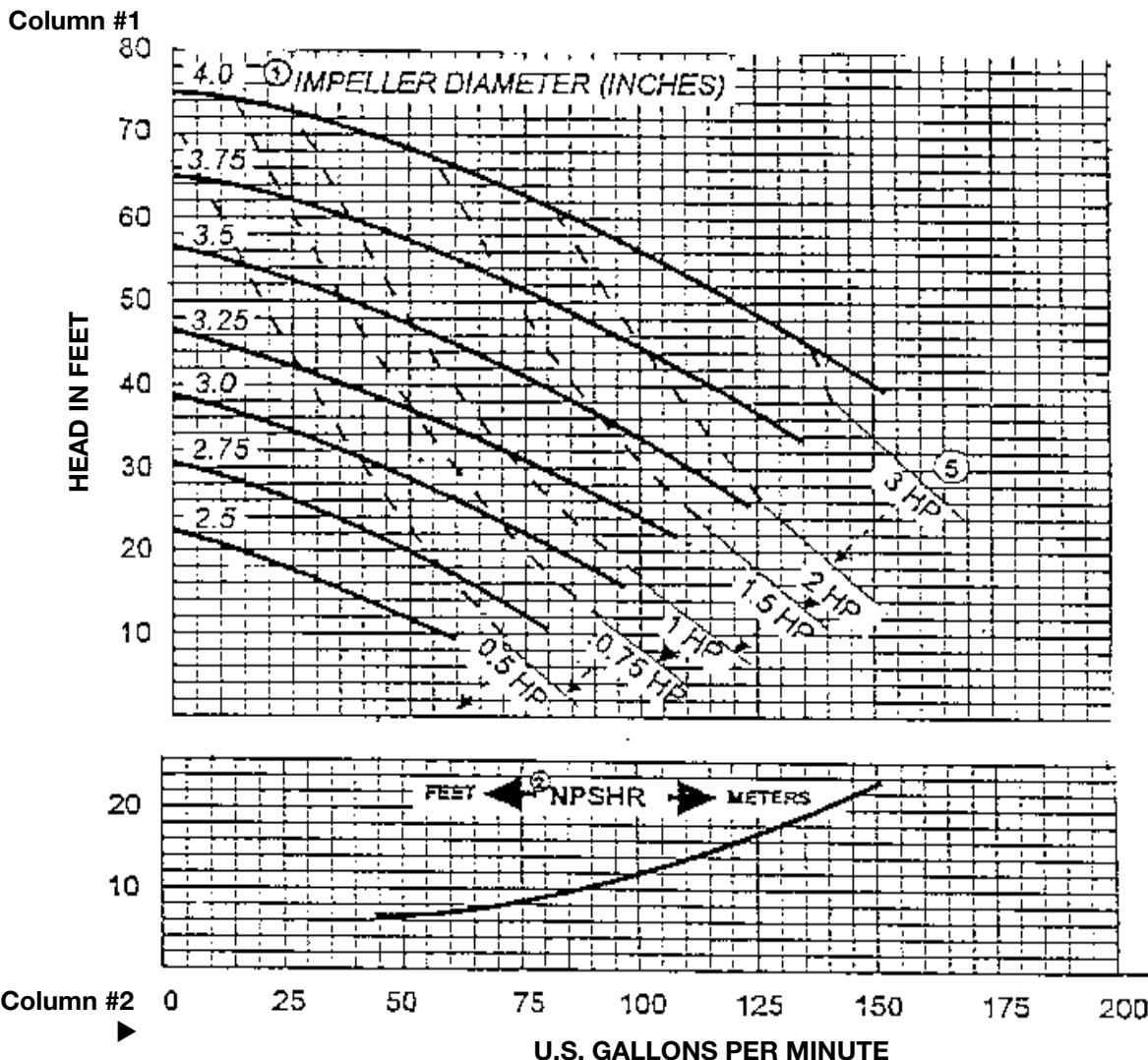
Use of a Pump Curve Chart

The curve chart is the best resource to use when selecting the proper impeller and motor for applications in the Food, Dairy, Beverage, Pharmaceutical and Cosmetic industries. The curve chart enables the user to determine how a pump will perform at different impeller sizes and motor speeds.

Operating at 1750 RPM and 3500 RPM, curves have been listed for the TOP-FLO® TF-C114, TF-C216, TF-C218 and TF-C328 centrifugal pumps on the following pages. An instructional chart is listed below.

Note: Column #1 on the left shows Head in Feet.
 Column #2 at the bottom shows Gallons Per Minute.
 Impeller sizes are listed on curve line
 Motor horsepower listed on diagonal serrated lines.
 NPSH required is #3 and listed at the bottom of chart

Example: On the curve listed below, find the impeller size and horsepower of motor for 75 GPM against total head pressure of 40 feet.



Answer to example:

- To determine duty point:
 Find first the 35 feet of head in column #1. Second, find the 75 gallon per minute in column #2. Then, trace the 35 feet of head mark to the right until it intersects the 75 GPM line.
- To determine impeller diameter. The duty point falls between the 3.25 and 3.5 impeller curve lines. Always choose the curve line above the duty point. In this case it would be 3.5 inches.
- To determine NPSHR (Net Positive Suction Head Required): Use the NPSHR graph and plot the intersection point of 75 GPM. Follow horizontally to the left. It reads 9 feet. (This will be Net Positive Suction Head Required.)
- You will see at this point a 3.25 impeller and a 1-1/2 horsepower motor is required.

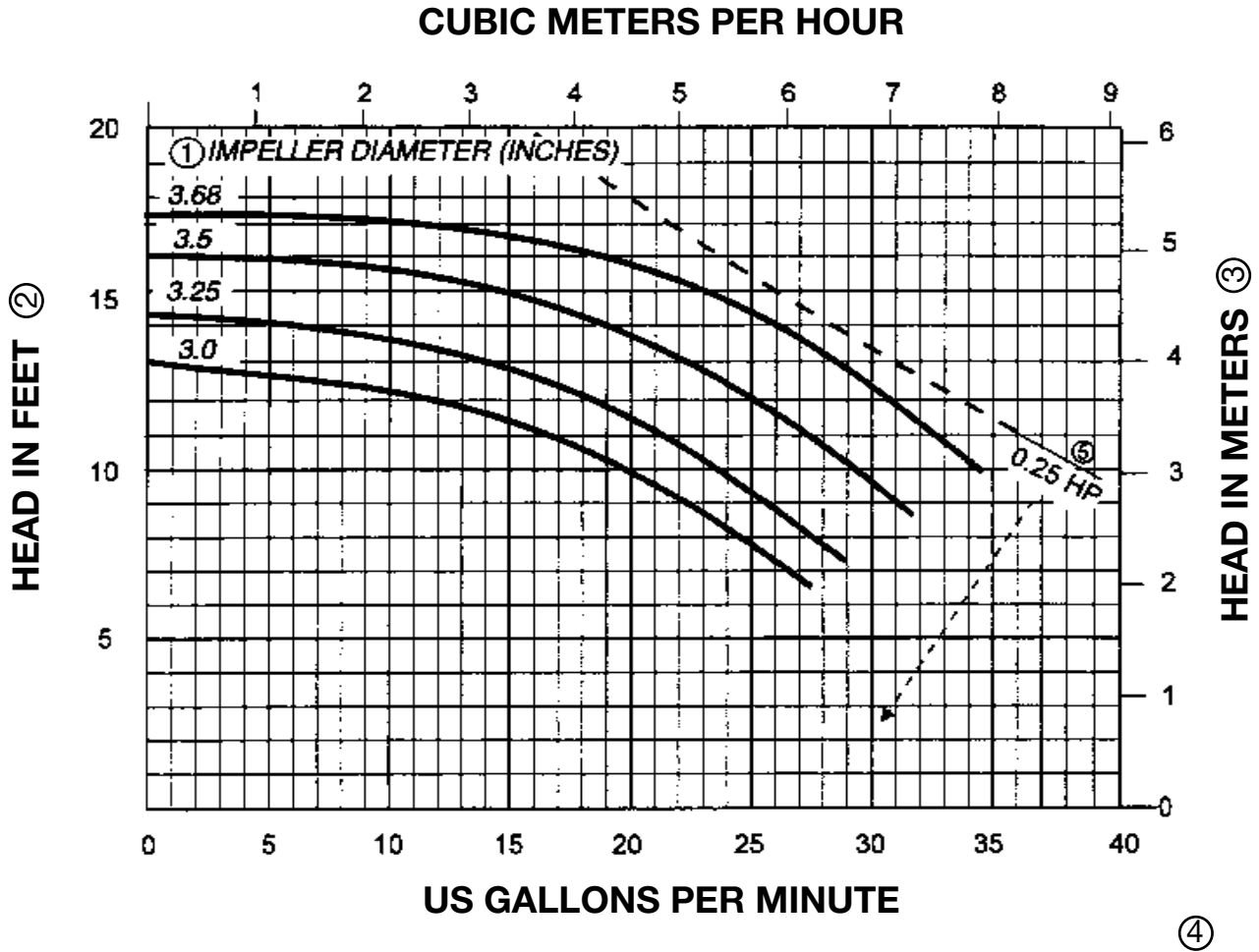
Note: NPSHA (Net Positive Suction Available) must be \geq NPSHR (Net Positive Suction Head Required).

TOP-FLO® TF-C Series Centrifugal

Capacity Curves

Based on water at 70°F (22°C)

Model: C100
60 Hz 1750 RPM
Size: 1-1/2 x 1 x 3-11/16



NOTES:

- ① Impeller diameters available in 1/16-inch increments
- ② $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

③ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$

④ $HP \times 0.746 = Kw$

Office: P.O. Box 264 • Bradford, PA 16701
Plant: 21 Valley Hunt Drive • Lewis Run, PA 16738
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TOP-FLO® TF-C Series Centrifugal

Capacity Curves

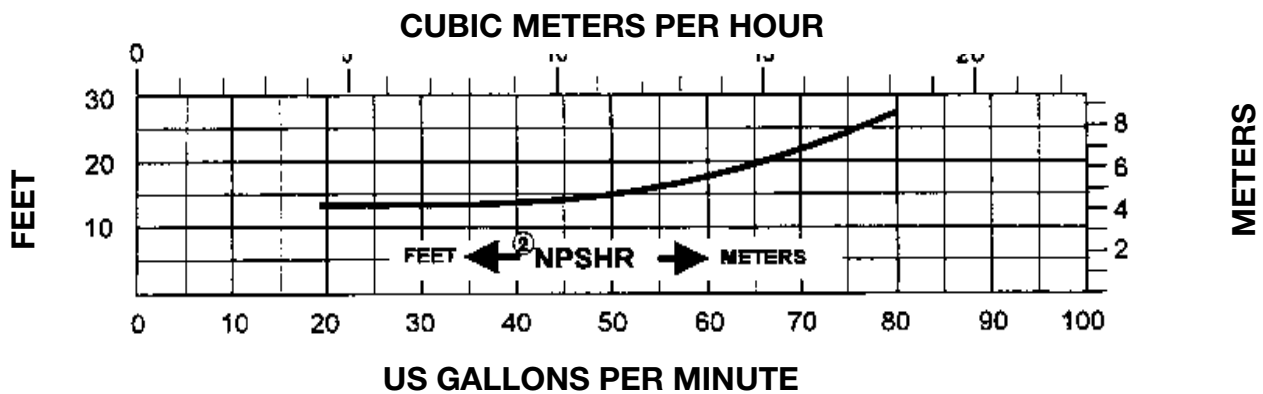
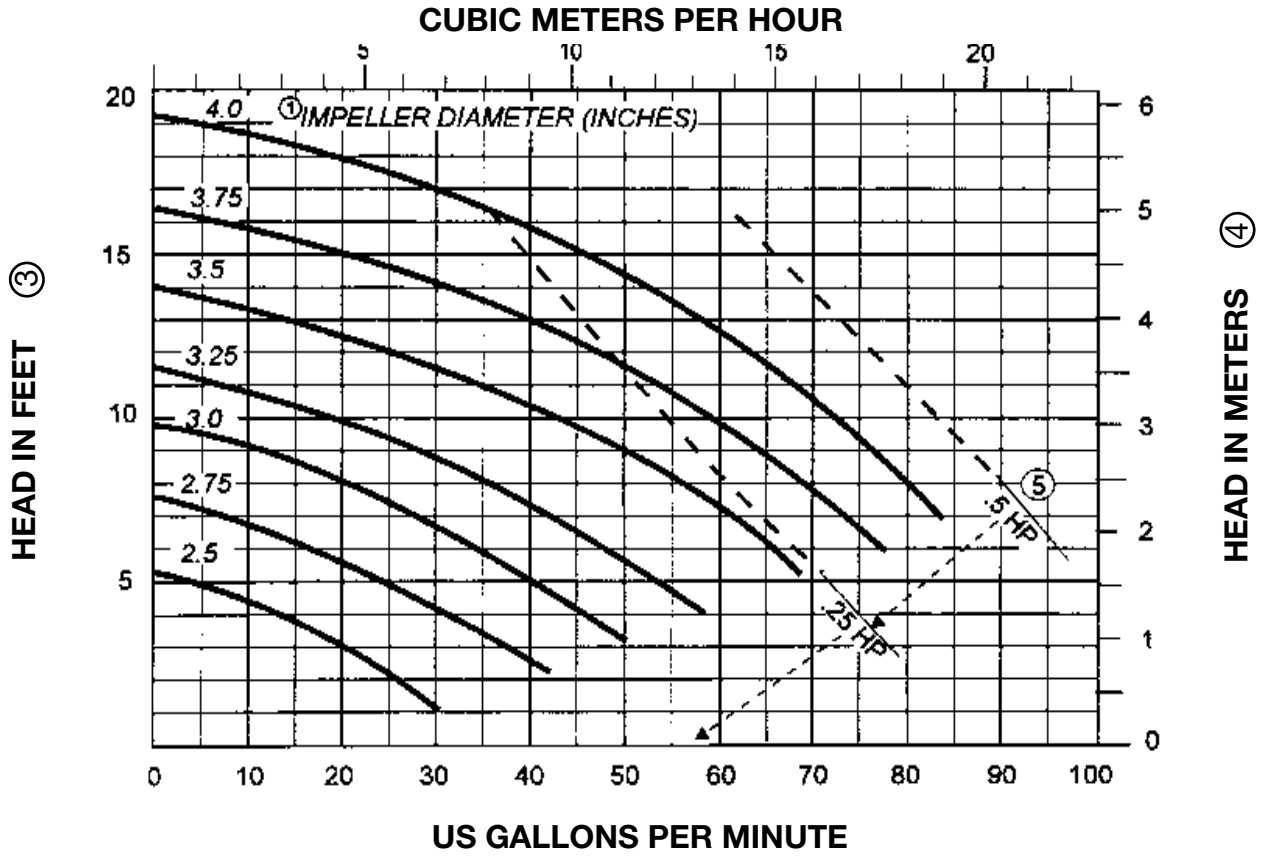
Based on water at 70°F (22°C)

Model: C114

60 Hz

1750 RPM

Size: 1-1/2 x 1-1/2 x 4



NOTES:

- ① Impeller diameters available in 1/4-inch increments
- ② NPSHR is shown for maximum impeller diameter
- ③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$
- ④ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$
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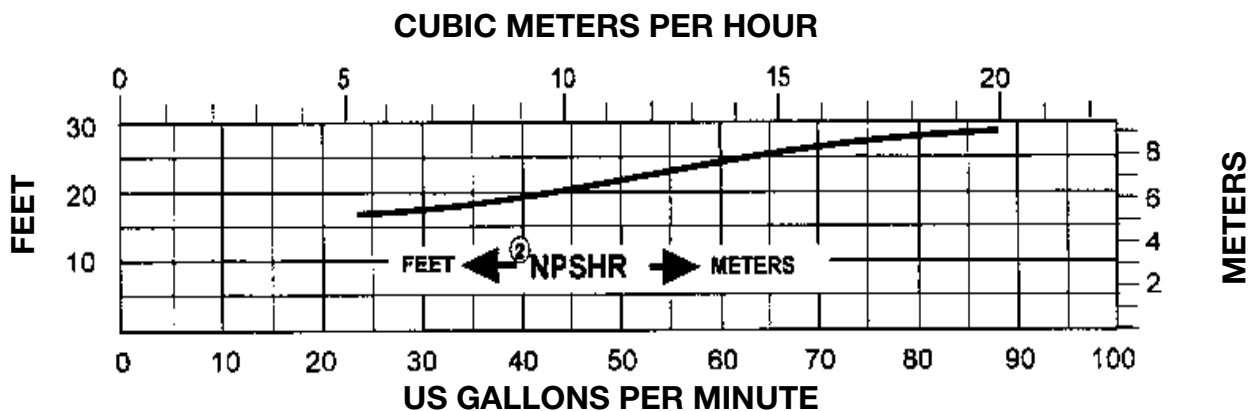
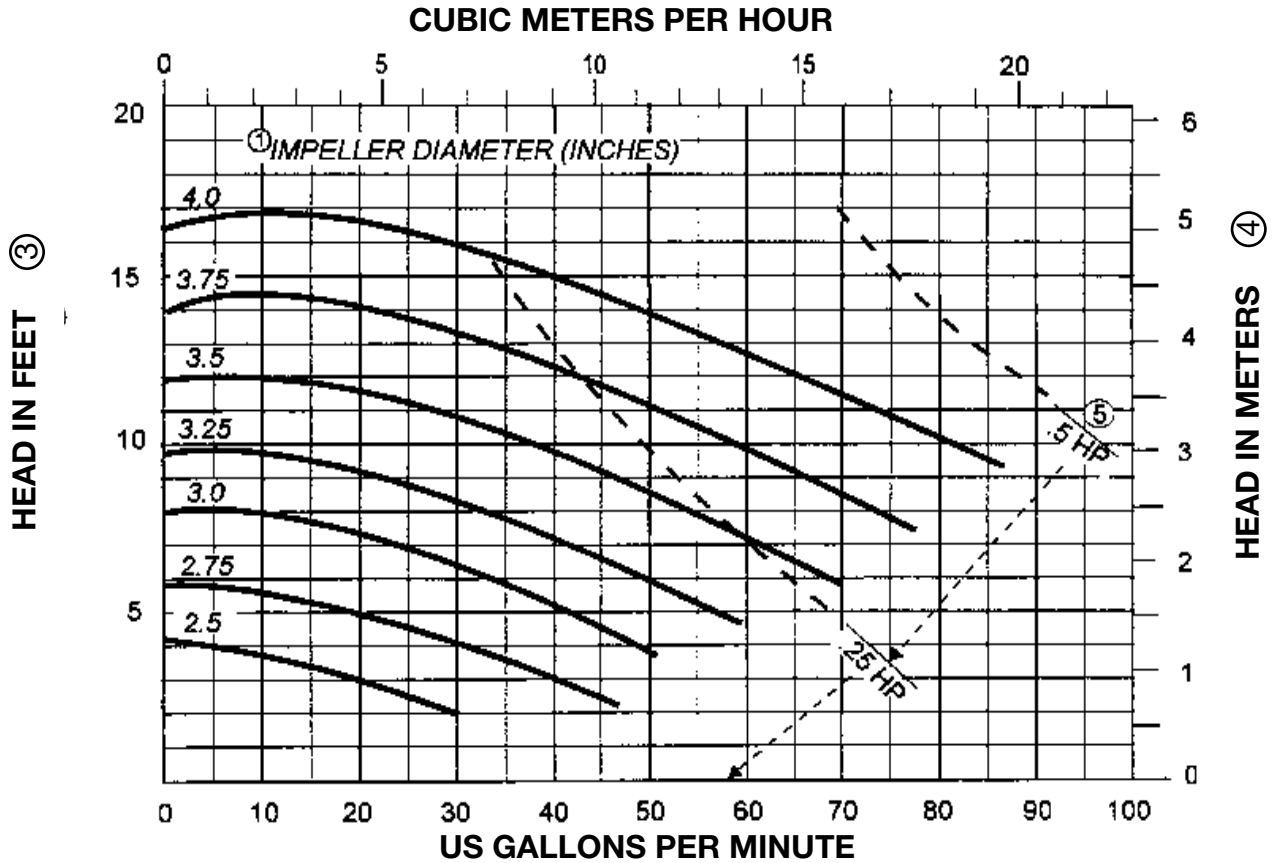
Based on water at 70°F (22°C)

Model: C114

60 Hz

1750 RPM

Size: 2 x 1-1/2 x 4



NOTES:

① Impeller diameters available in 1/16-inch increments

② NPSHR is shown for maximum impeller diameter

③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

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Capacity Curves

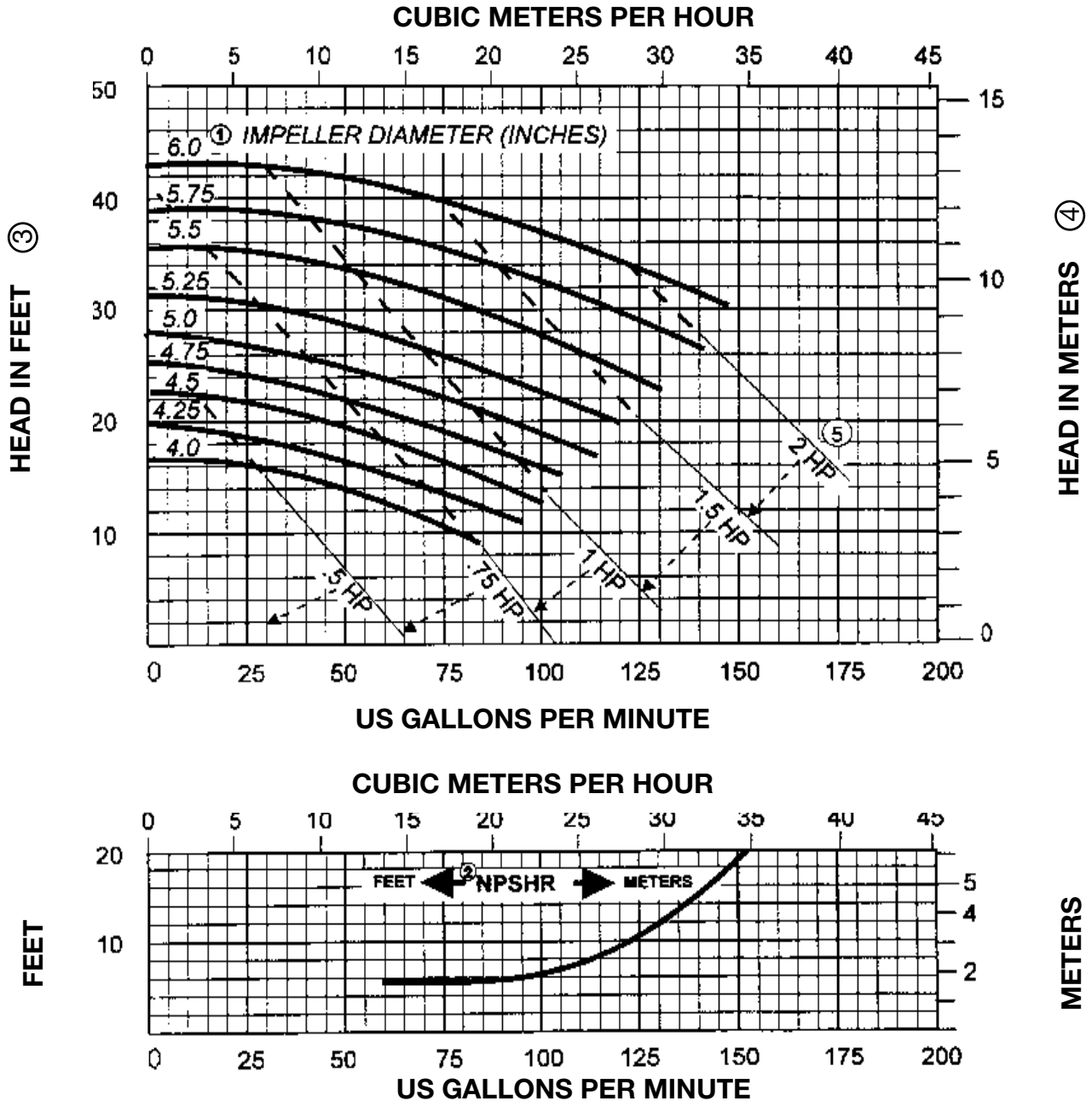
Based on water at 70°F (22°C)

Model: C216

60 Hz

1750 RPM

Size: 2 x 1-1/2 x 6



NOTES:

① Impeller diameters available in 1/4-inch increments

② NPSHR is shown for maximum impeller diameter

③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

④ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$

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Capacity Curves

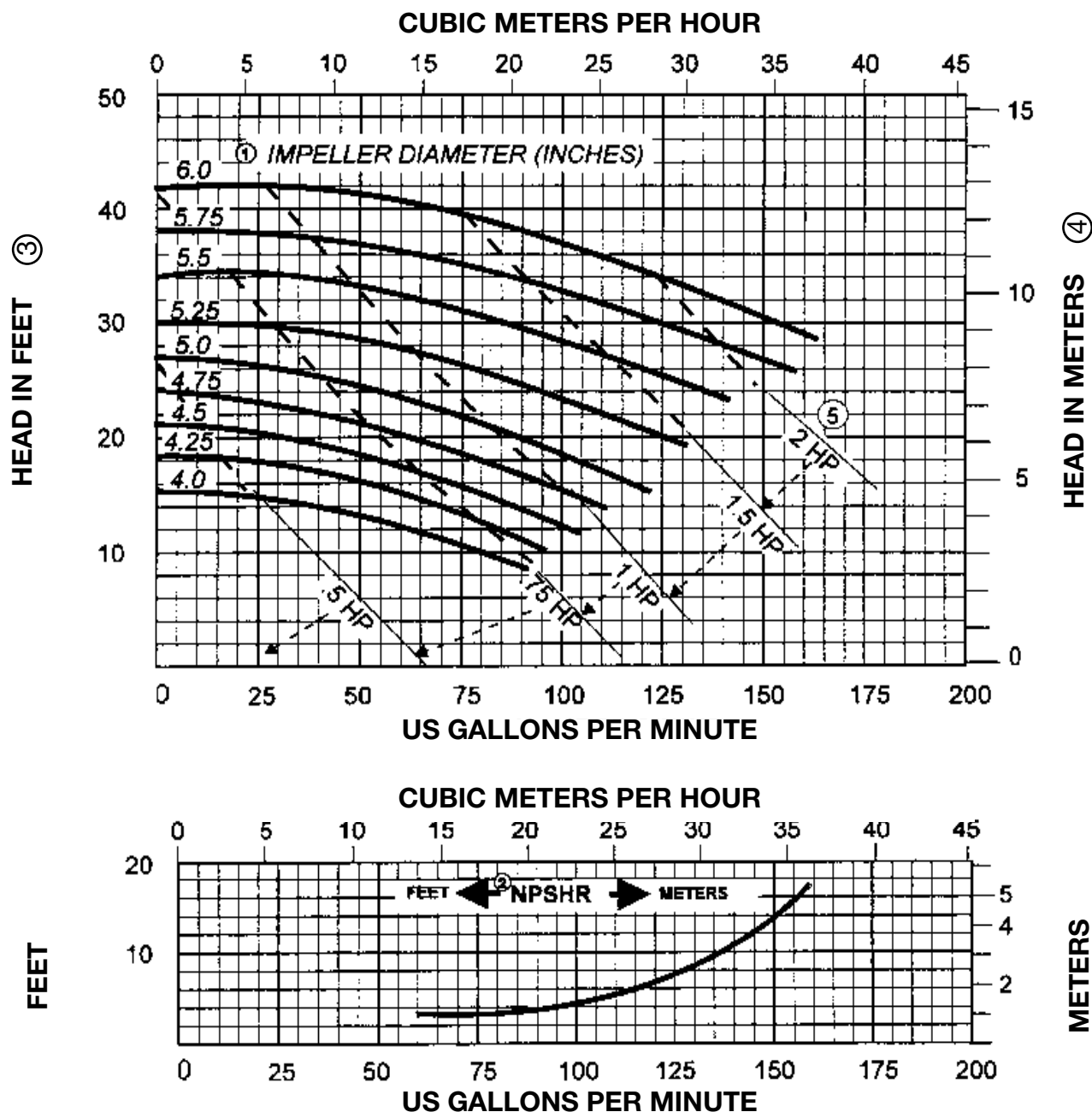
Based on water at 70°F (22°C)

Model: C216

60 Hz

1750 RPM

Size: 2-1/2 x 1-1/2 x 6



NOTES:

(1) Impeller diameters available in 1/4-inch increments

(2) NPSHR is shown for maximum impeller diameter

(3) $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

(4) $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$

(5) $HP \times 0.746 = Kw$

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Capacity Curves

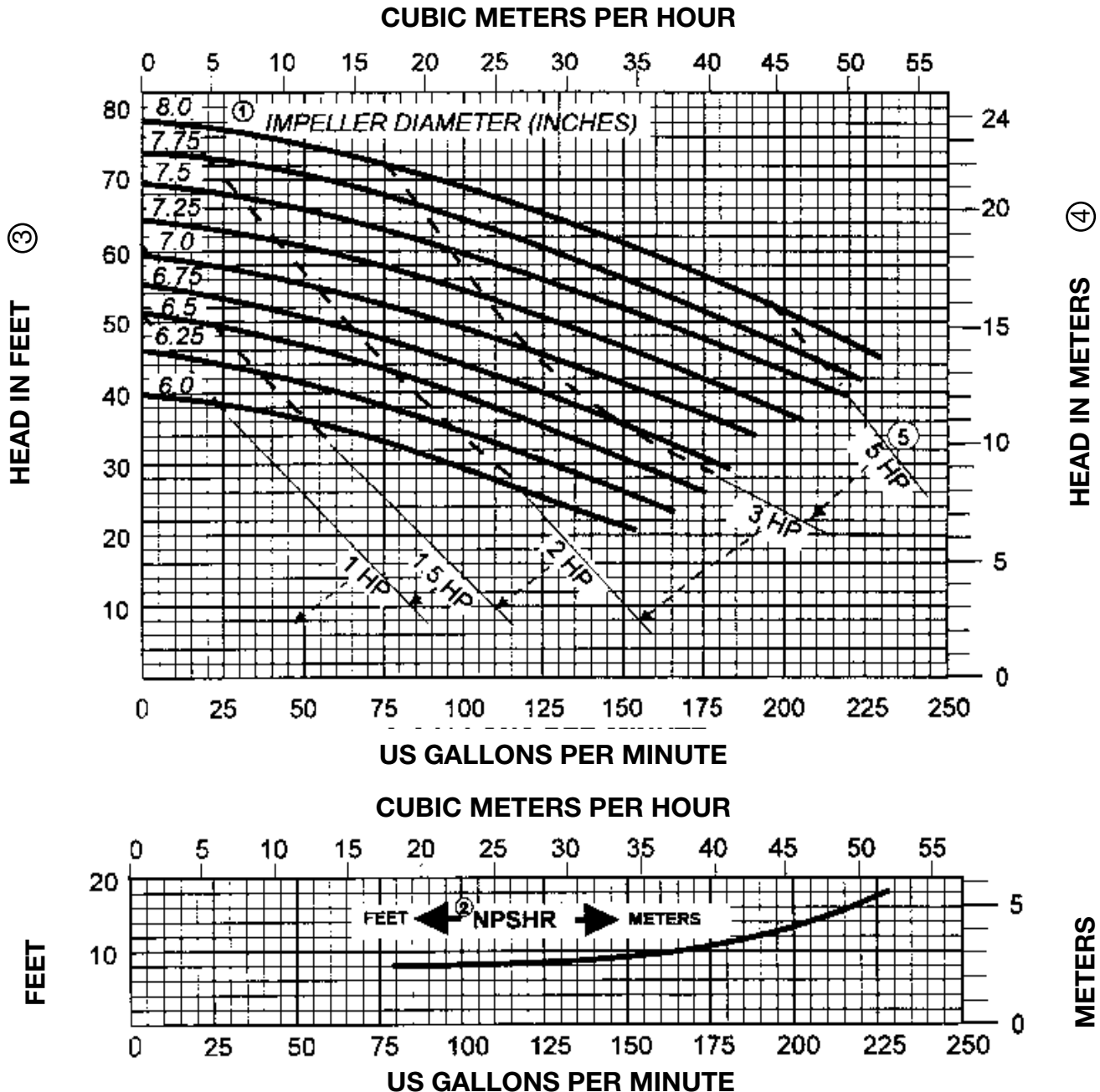
Based on water at 70°F (22°C)

Model: C218

60 Hz

1750 RPM

Size: 2 x 1-1/2 x 8



NOTES:

- ① Impeller diameters available in 1/4-inch increments
- ② NPSHR is shown for maximum impeller diameter
- ③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$
- ④ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$
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Capacity Curves

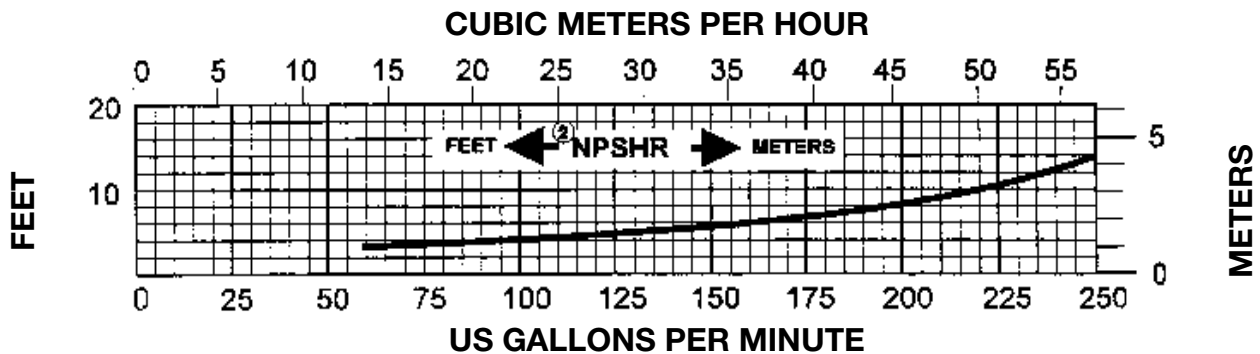
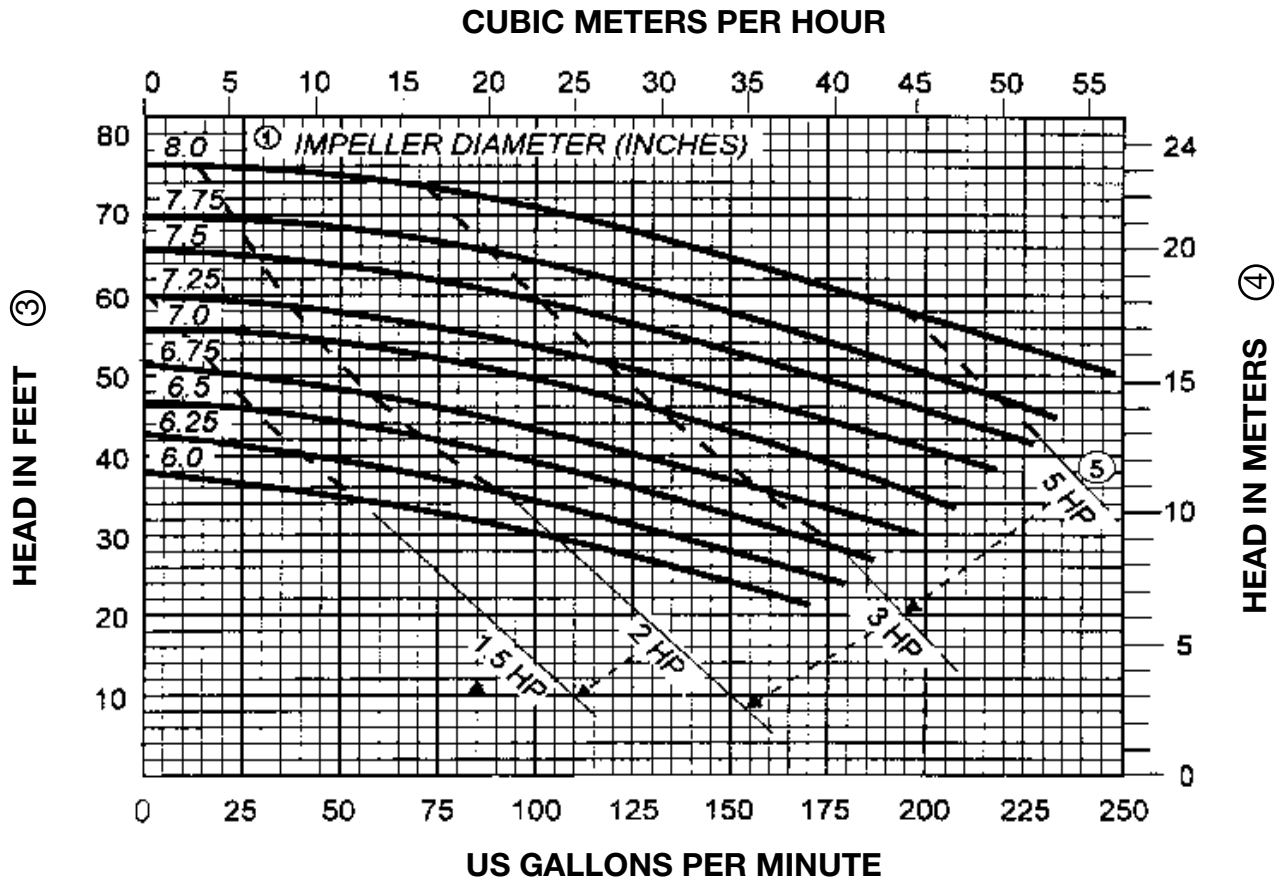
Based on water at 70°F (22°C)

Model: C218

60 Hz

1750 RPM

Size: 3 x 1-1/2 x 8



NOTES:

- ① Impeller diameters available in 1/16-inch increments
- ② NPSHR is shown for maximum impeller diameter
- ③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$
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Capacity Curves

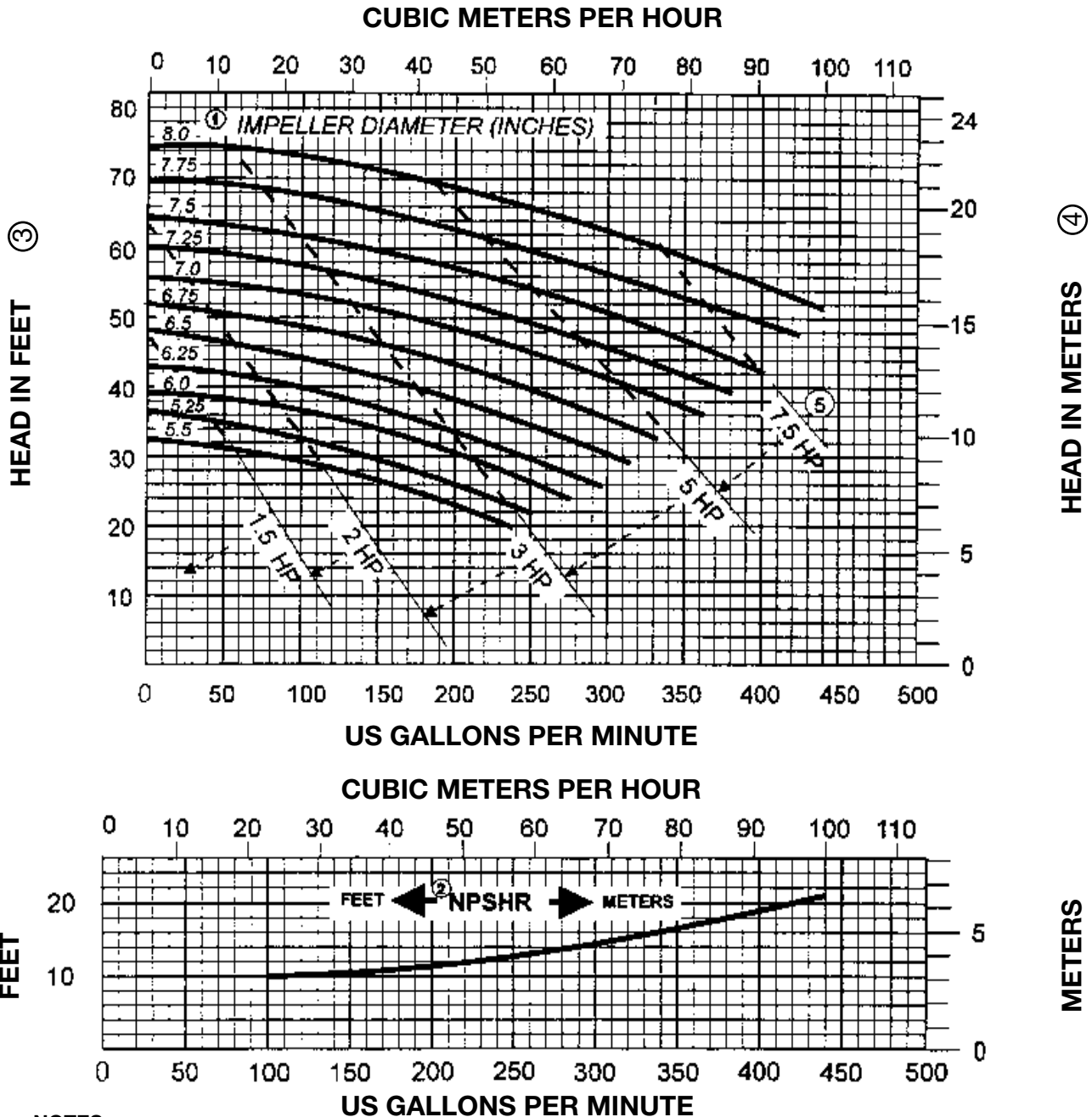
Based on water at 70°F (22°C)

Model: C328

60 Hz

1750 RPM

Size: 3 x 2 x 8



NOTES:

- ① Impeller diameters available in 1/4-inch increments
- ② NPSHR is shown for maximum impeller diameter
- ③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$
- ④ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$
- ⑤ $HP \times 0.746 = Kw$

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Capacity Curves

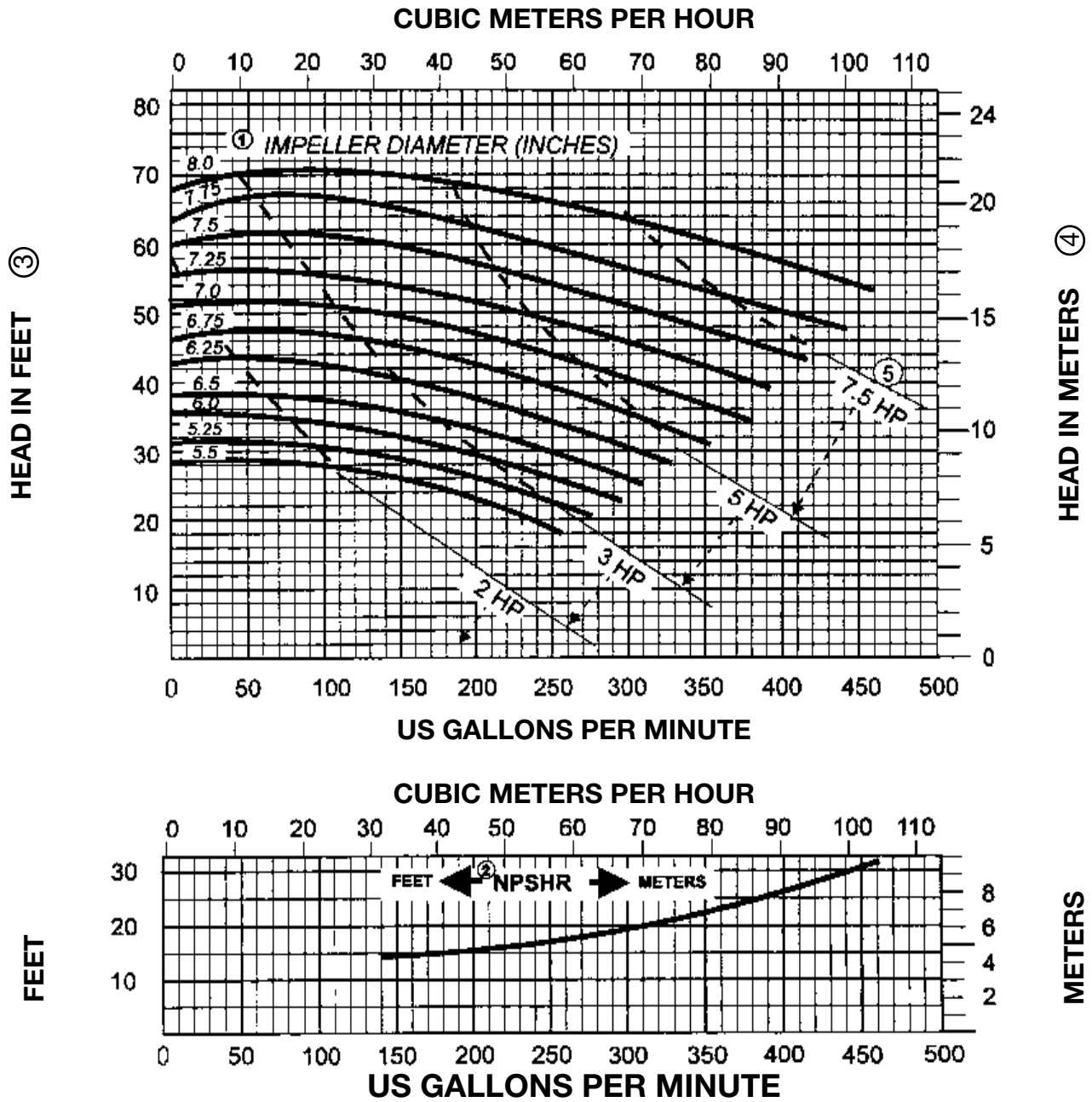
Based on water at 70°F (22°C)

Model: C328

60 Hz

1750 RPM

Size: 4 x 2 x 8



NOTES:

① Impeller diameters available in 1/4-inch increments

② NPSHR is shown for maximum impeller diameter

③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

④ $Kg/cm^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$

⑤ $HP \times 0.746 = Kw$

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Capacity Curves

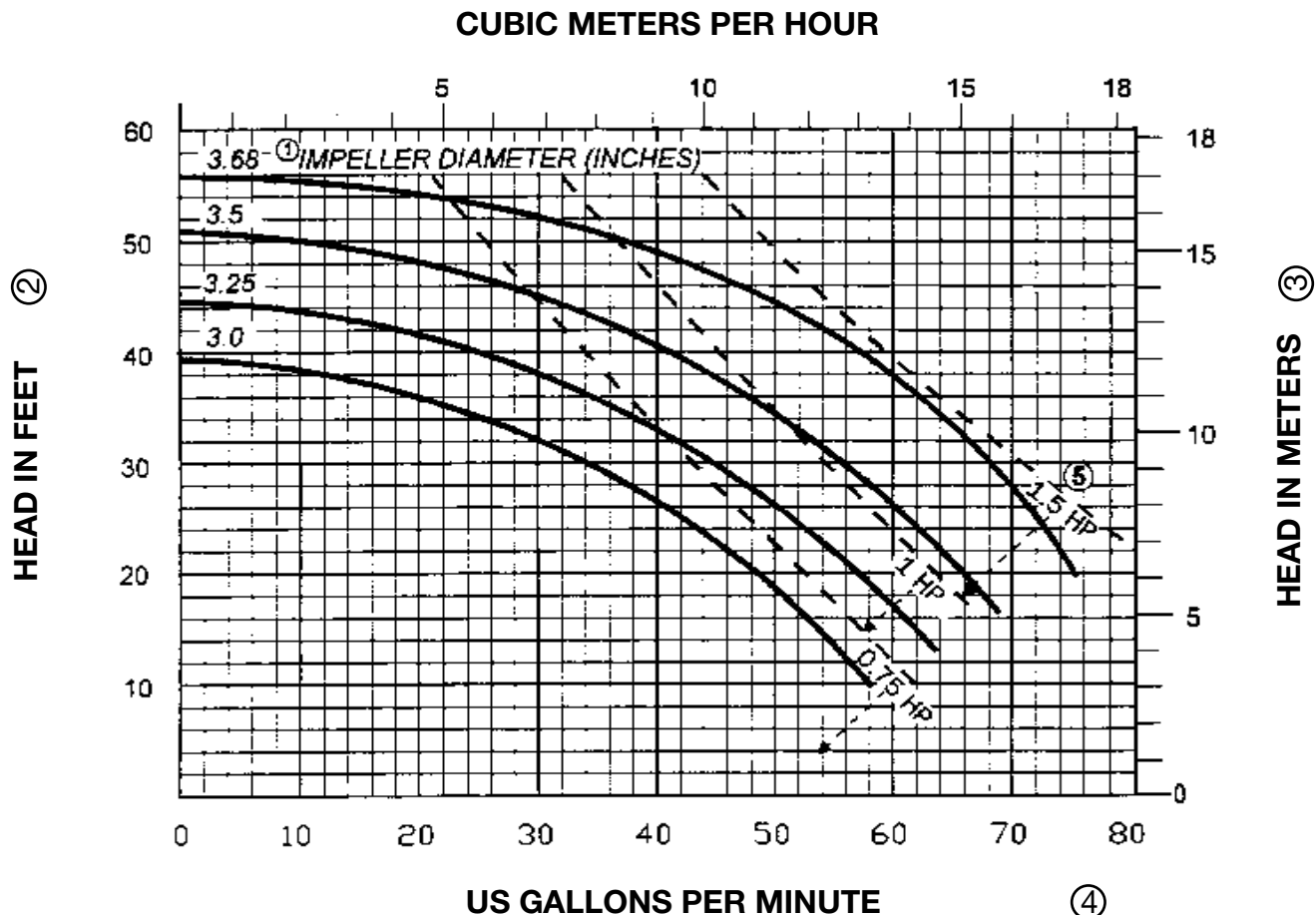
Based on water at 70°F (22°C)

Model: C100

60 Hz

3500 RPM

Size: 1-1/2 x 1 x 3-11/16



- NOTES:**
- ① Impeller diameters available in 1/16-inch increments
 - ② $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

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Capacity Curves

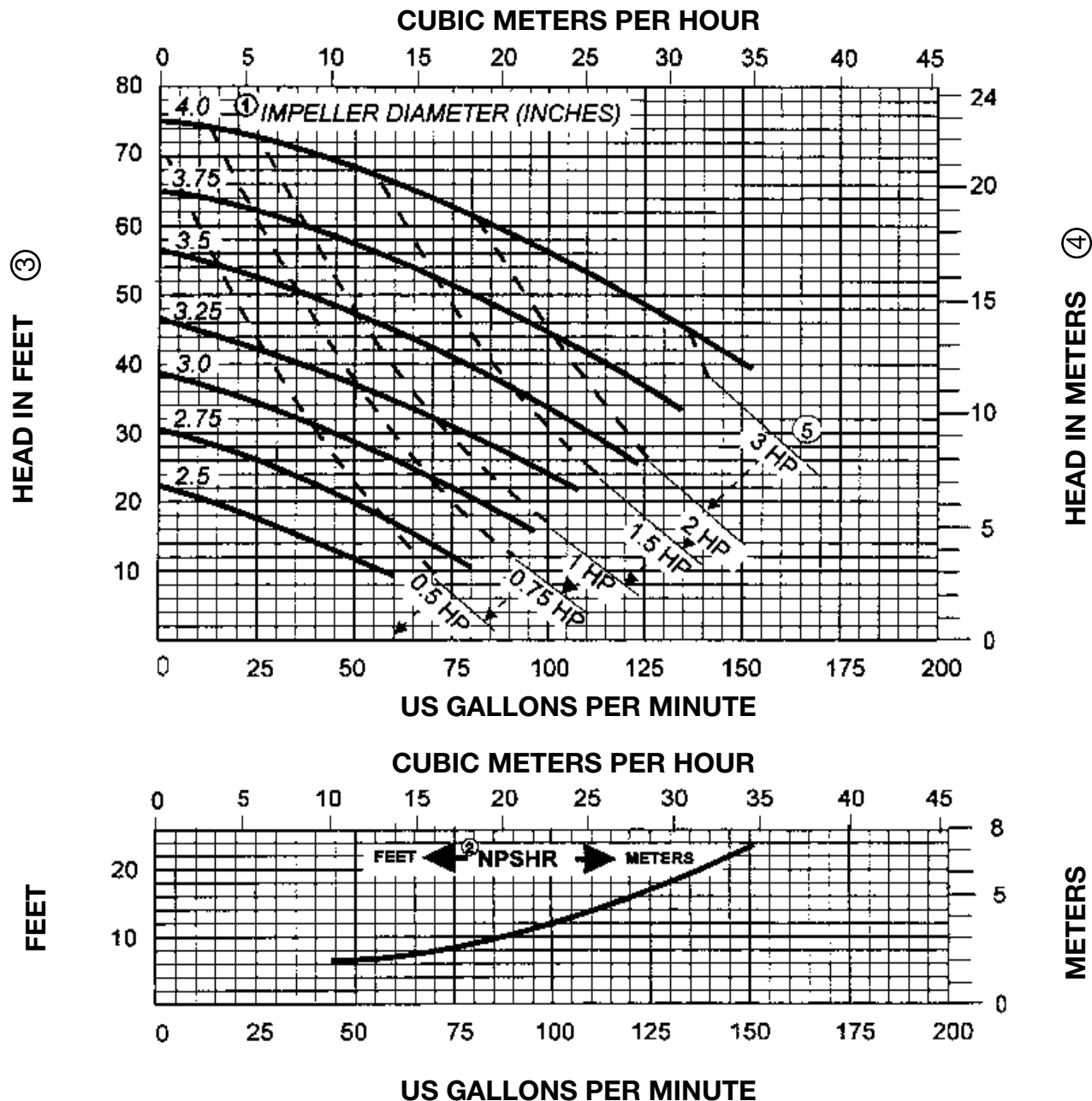
Based on water at 70°F (22°C)

Model: C114

60 Hz

3500 RPM

Size: 1-1/2 x 1-1/2 x 4



NOTES:

① Impeller diameters available in 1/4-inch increments

② NPSHR is shown for maximum impeller diameter

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Capacity Curves

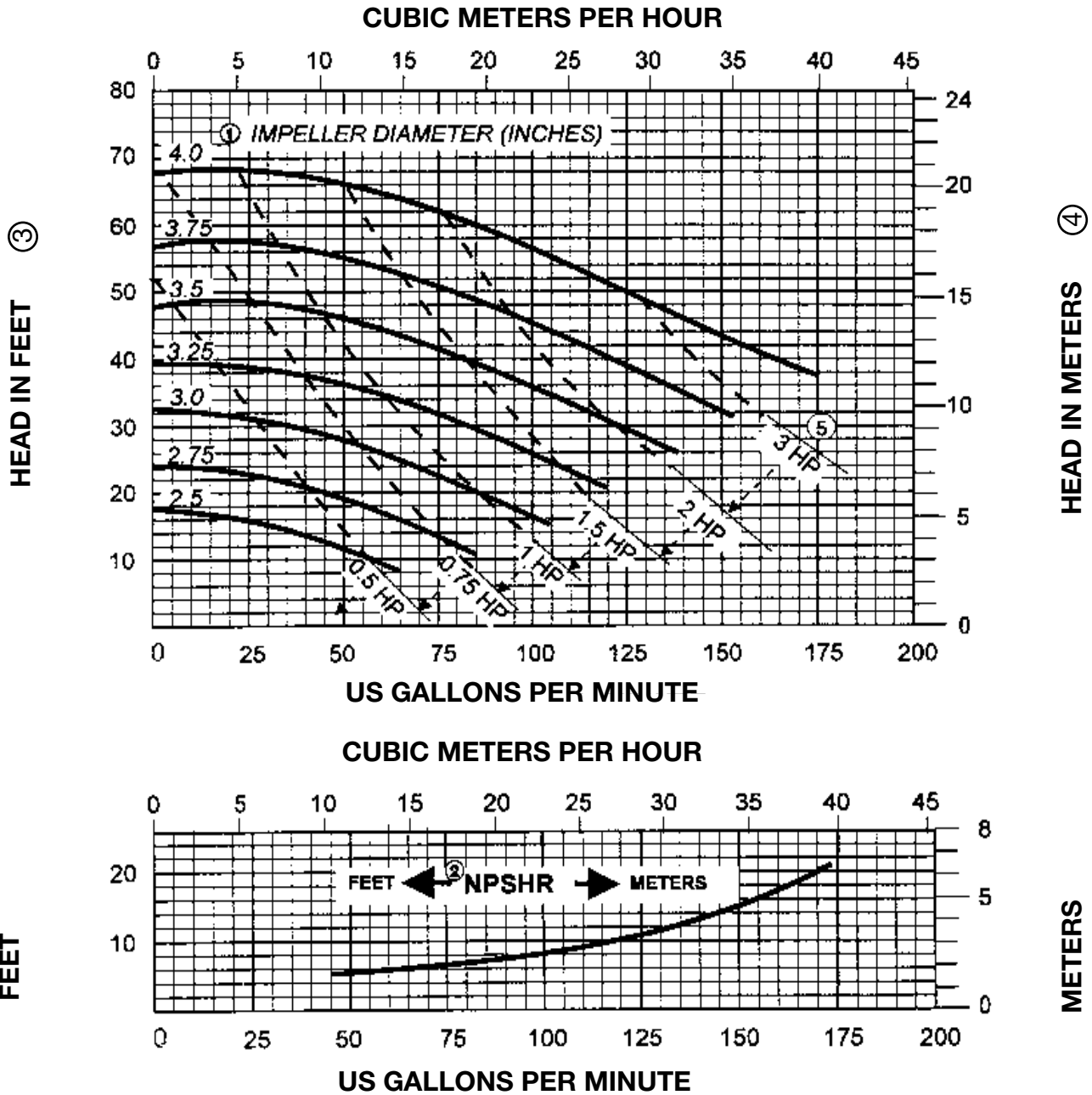
Based on water at 70°F (22°C)

Model: C114

60 Hz

3500 RPM

Size: 2 x 1-1/2 x 4



NOTES:

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② NPSHR is shown for maximum impeller diameter

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Capacity Curves

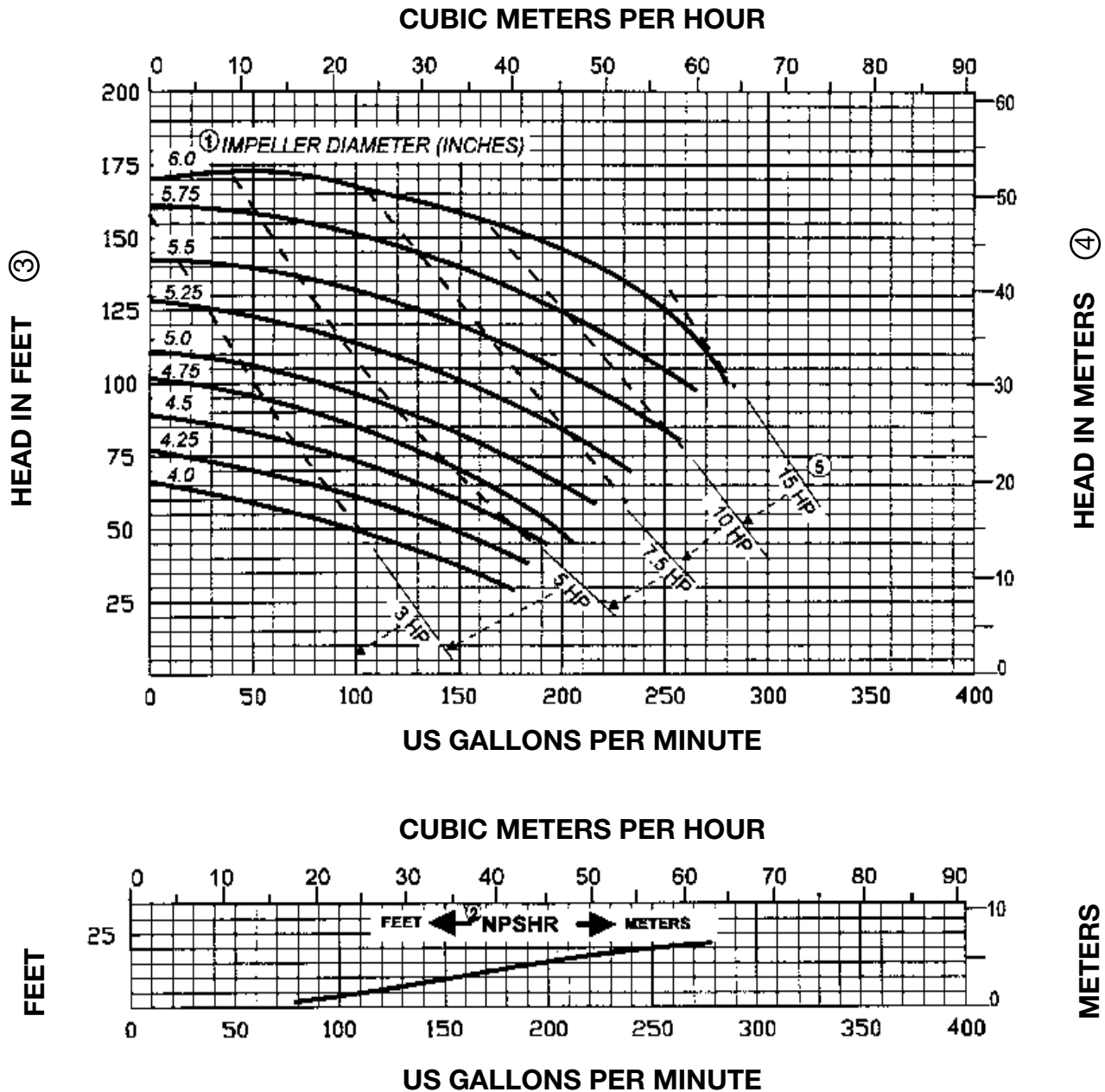
Based on water at 70°F (22°C)

Model: C216

60 Hz

3500 RPM

Size: 2 x 1-1/2 x 6



NOTES:

① Impeller diameters available in 1/4-inch increments

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③ $PSI = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

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TOP-FLO® TF-C Series Centrifugal

Capacity Curves

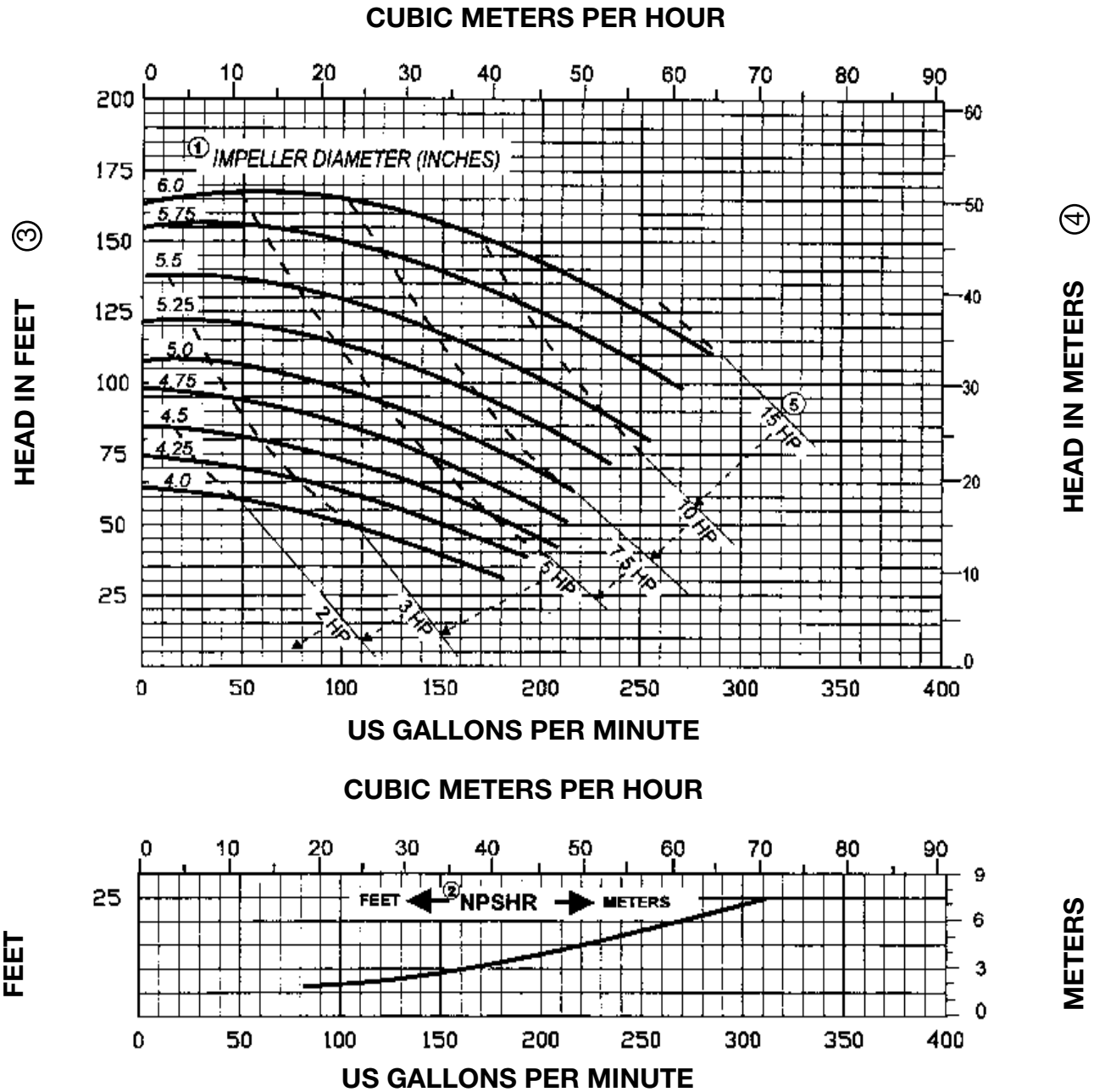
Based on water at 70°F (22°C)

Model: C114

60 Hz

3500 RPM

Size: 2-1/2 x 1-1/2 x 6



NOTES:

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Capacity Curves

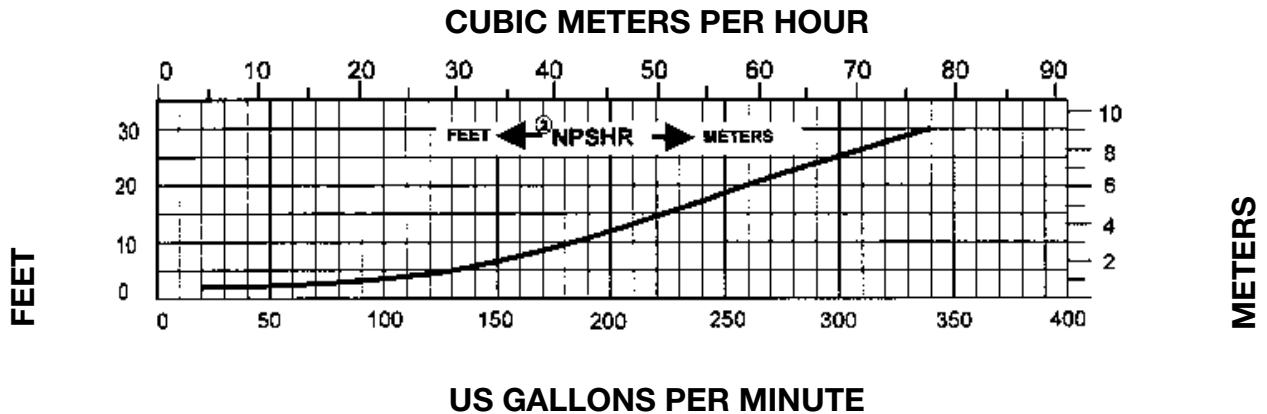
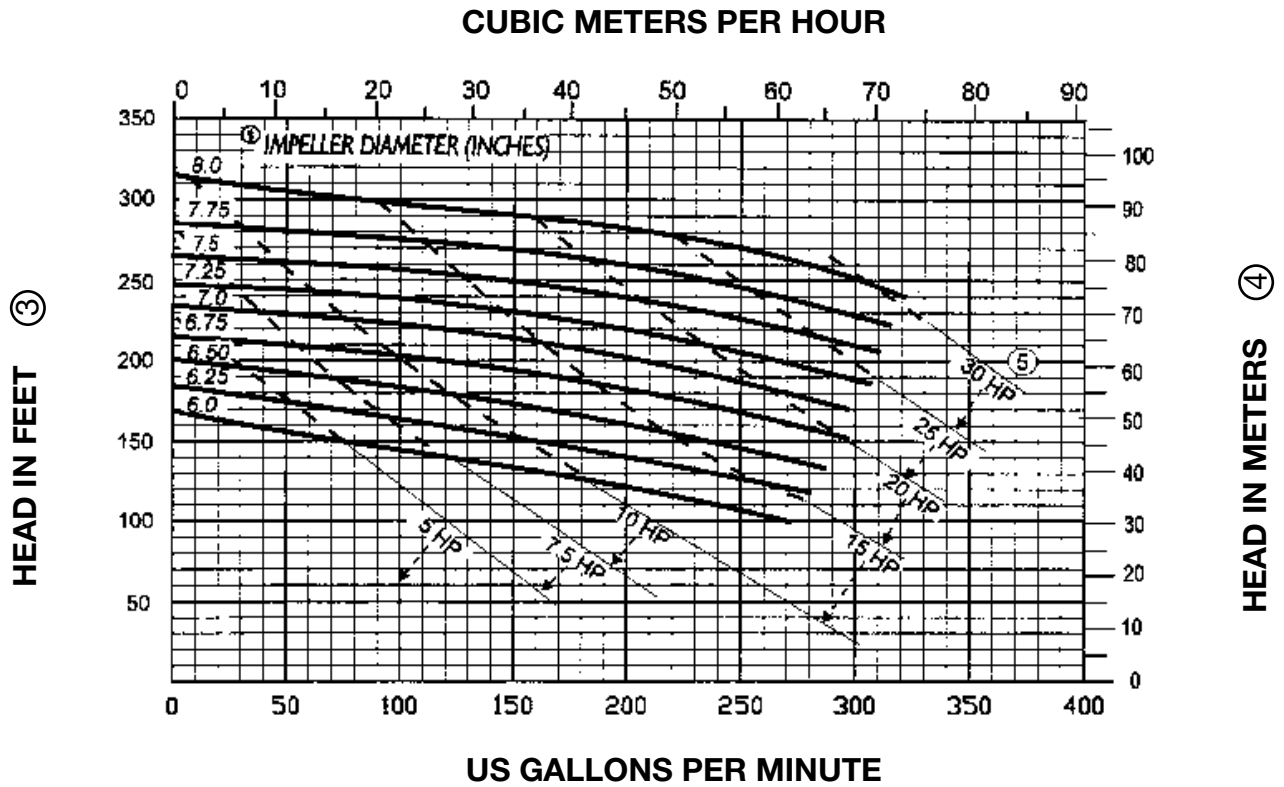
Based on water at 70°F (22°C)

Model: C218

60 Hz

3500 RPM

Size: 2 x 1-1/2 x 8



NOTES:

- ① Impeller diameters available in 1/4-inch increments
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Capacity Curves

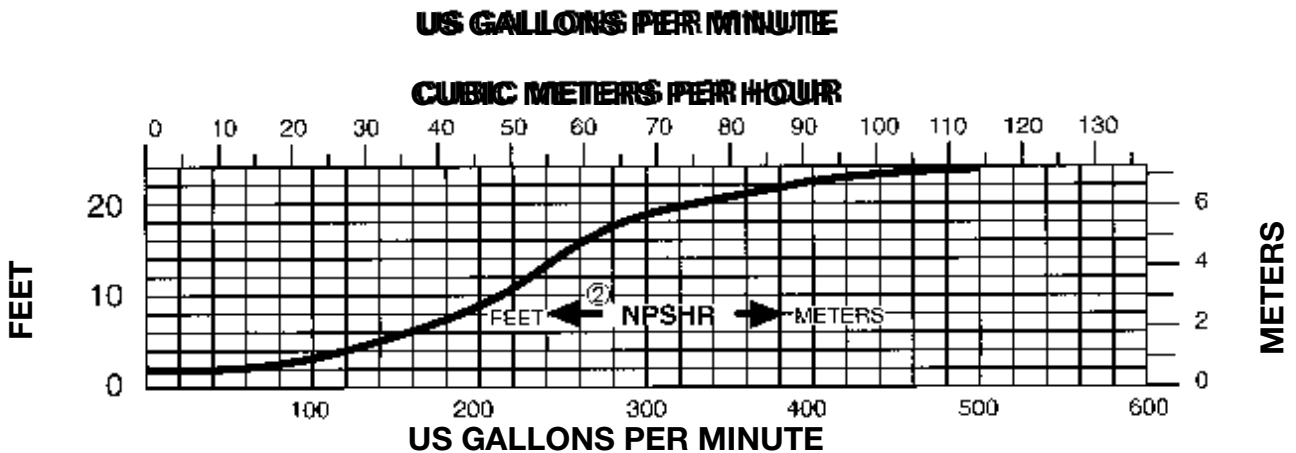
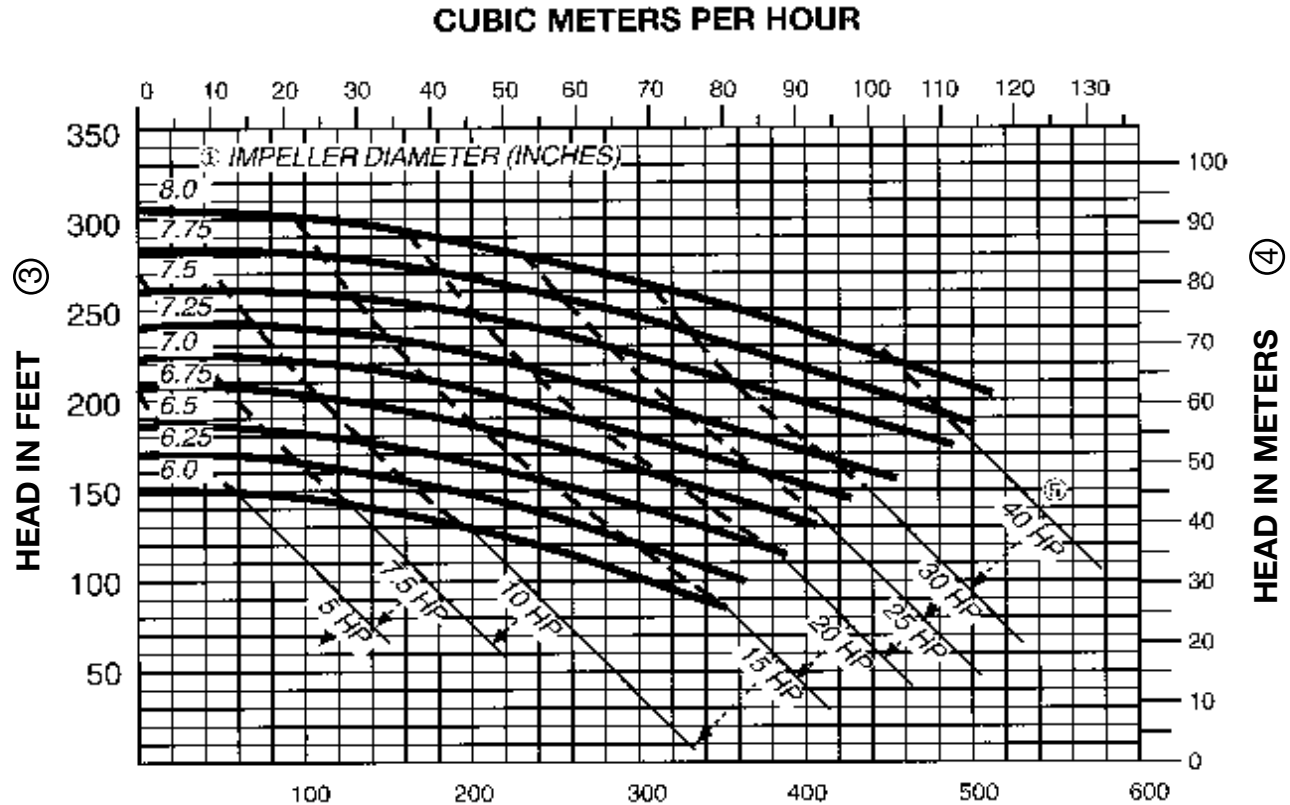
Based on water at 70°F (22°C)

Model: C218

60 Hz

3500 RPM

Size: 3 x 1-1/2 x 8



NOTES:

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Capacity Curves

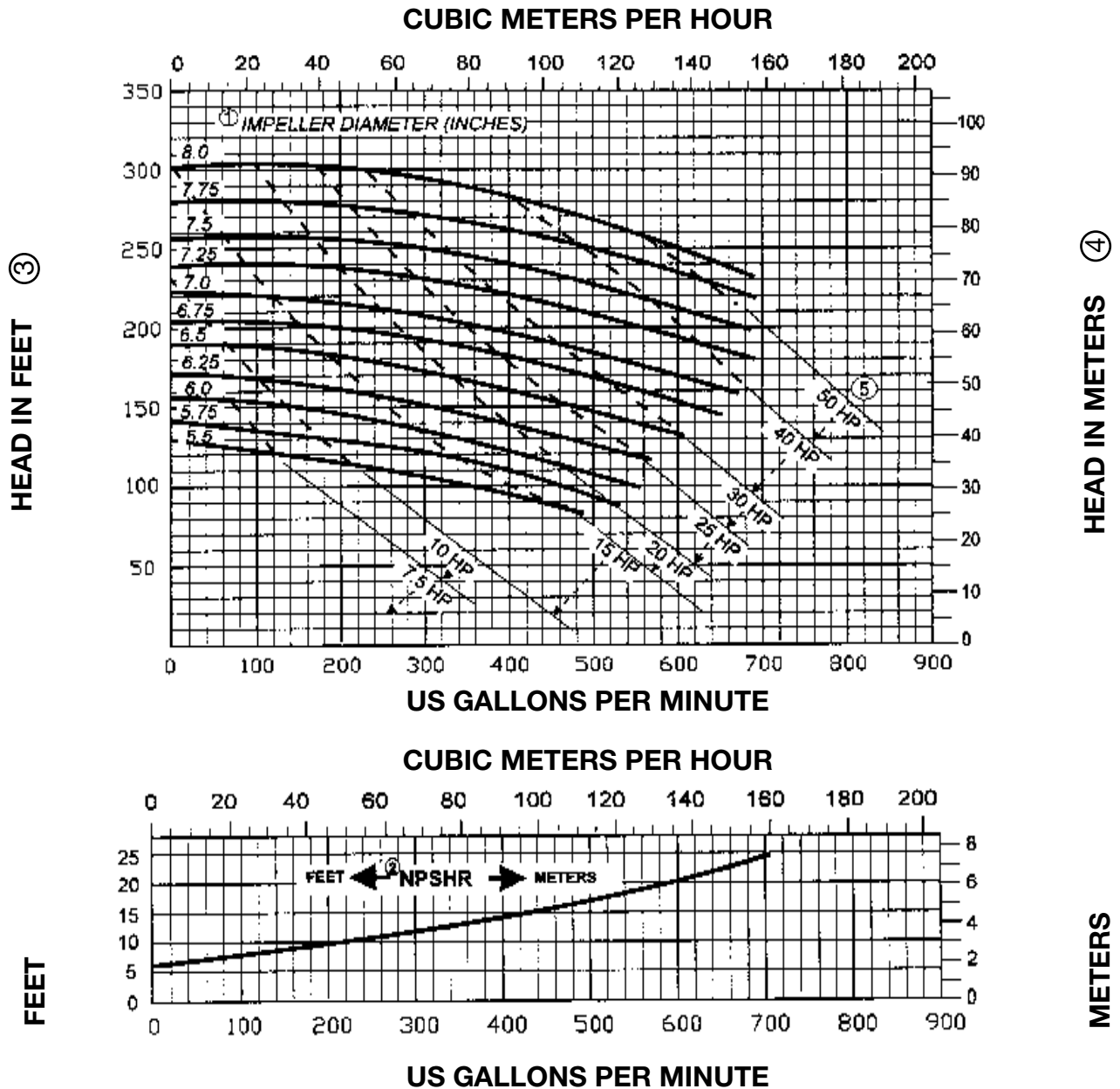
Based on water at 70°F (22°C)

Model: C328

60 Hz

3500 RPM

Size: 3 x 2 x 8



NOTES:

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TOP-FLO[®] TF-C Series Centrifugal

Capacity Curves

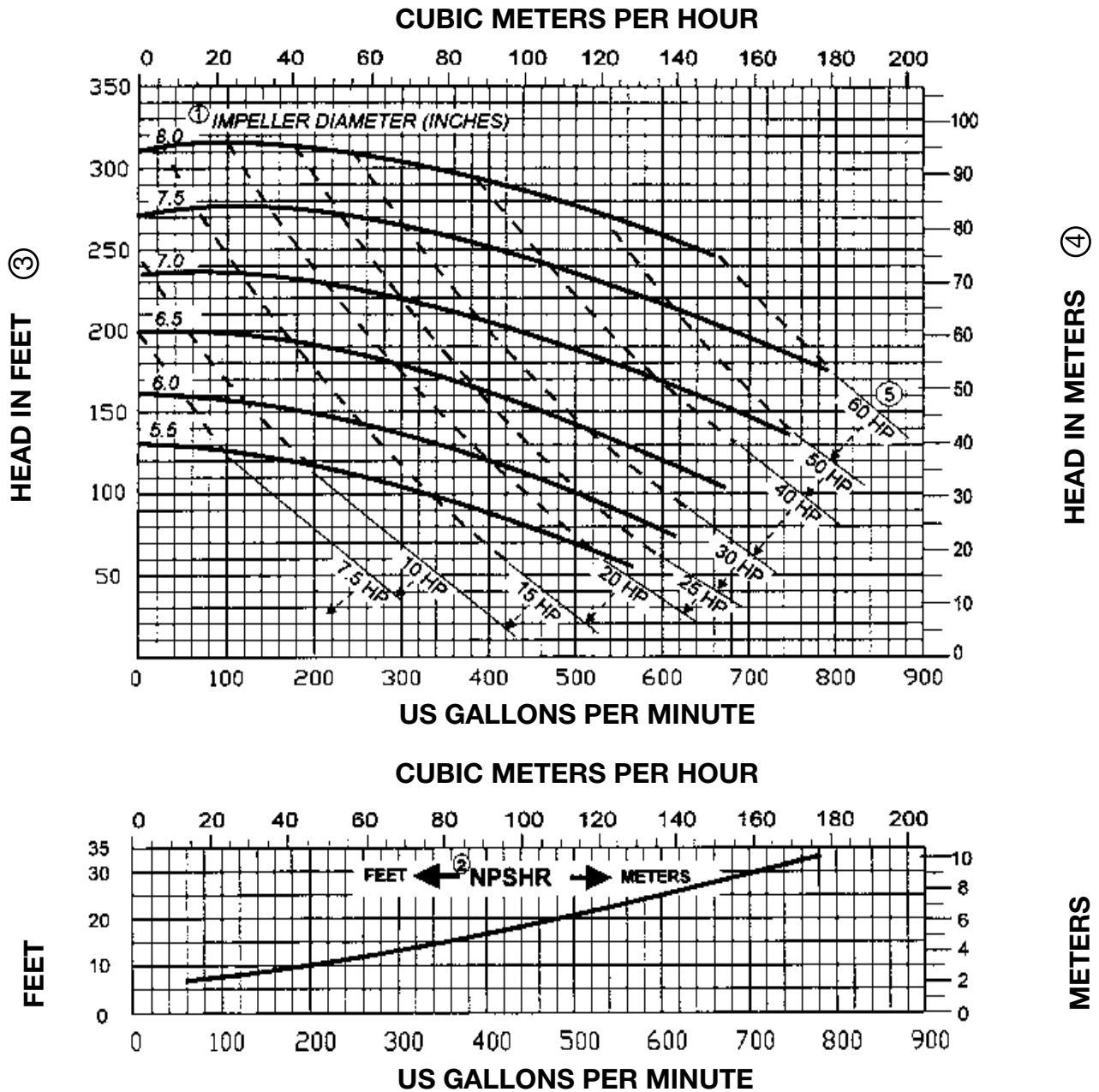
Based on water at 70°F (22°C)

Model: C328

60 Hz

3500 RPM

Size: 4 x 2 x 8



NOTES:

① Impeller diameters available in 1/4-inch increments

④ $\text{Kg/cm}^2 = \frac{\text{Head in Meters} \times \text{Specific Gravity}}{10}$

② NPSHR is shown for maximum impeller diameter

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③ $\text{PSI} = \frac{\text{Head in Feet} \times \text{Specific Gravity}}{2.3}$

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Customer _____ Contact _____ Date _____

I. Sizing Data Required

Product _____ Temperature: _____ Min. ° F _____ Max. ° F
Viscosity (Centipoise) _____ Product Weight _____ (pounds per gallon)
Gallons Per Minute _____ Total Head _____ ft. _____ psi
Pounds Per Hour _____
Corrosive Material: Yes No Type _____

Suction Line

Tubing Size _____ inches Total Elbows _____
Vertical Drop _____ feet Total Tees _____
Casing Drain: Yes No Total Valves _____
Corrosive Material: Yes No Type _____

Discharge Line

Tubing Size _____ Total Elbows _____
Vertical Run _____ Total Tees _____
Horizontal Run _____ Total Valves _____
Note: Clamp connections are standard. If other connection is required, specify. _____
Discharge Valve: Butterfly _____ Ball _____ Disc Check _____ Other _____

If Top Line supplies pump motor, the following data is required:

Voltage _____ Hertz _____ Phase _____

II. Fill out the following after pump and motor are sized

Pump:	Motor:
Model _____	Type _____
Casing Size _____	Horsepower _____
Impeller Size _____	RPM _____
Seal Type _____	Frame Size _____
Voltage _____ Hertz _____ Phase _____	