



Always the Right Solution™

Section:  
Vertical Pumps  
Date: January 31, 2000  
Curve 6.00

### Performance Data

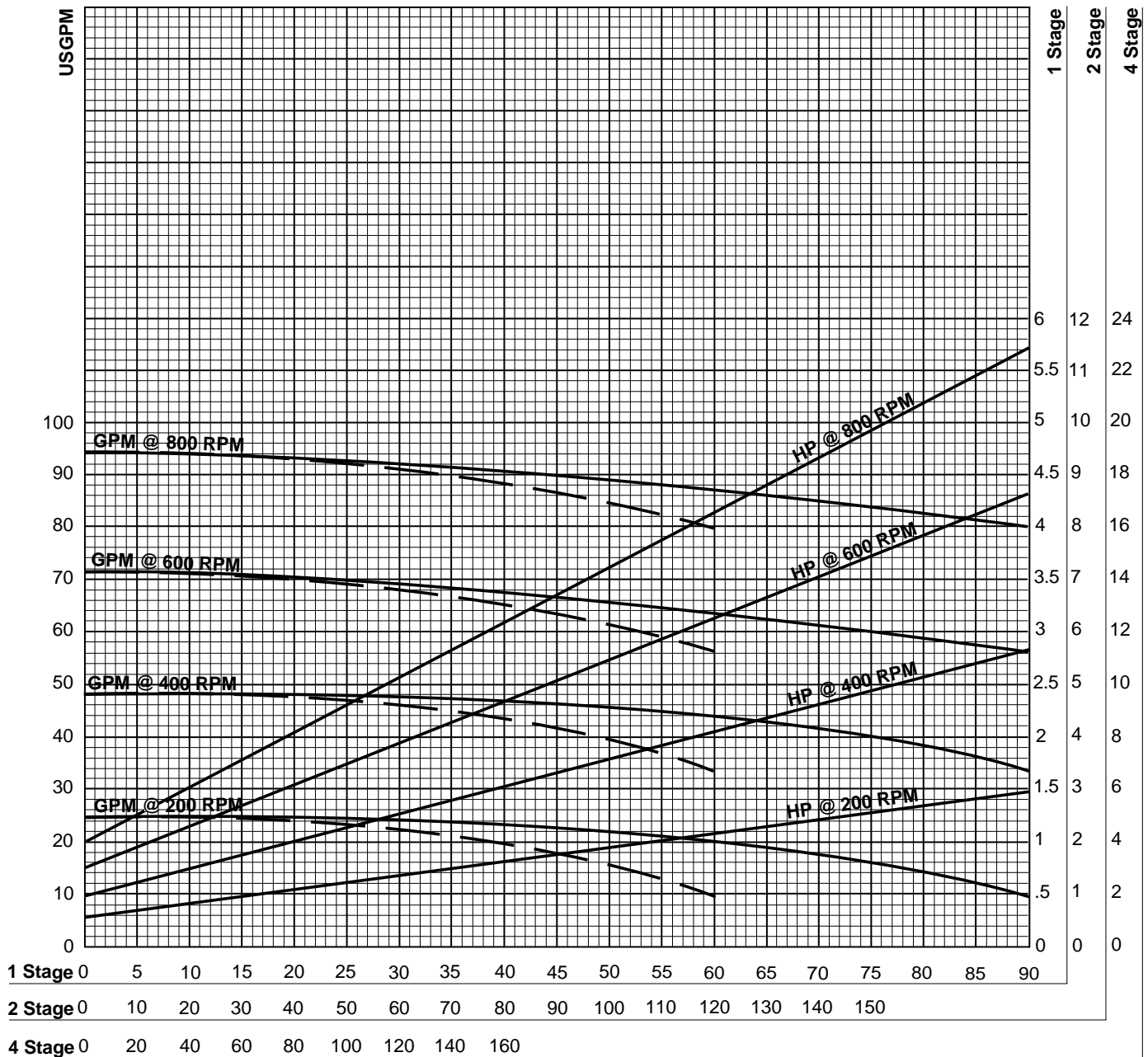
**Models:** V1F, V2F, V4F

Use appropriate HP and pressure scales for the number of stages required.

**NOTE:** Maximum pressure for a single stage pump is 87 psig and for the 2 and 4 stage pumps it is 150 psig (70 Duro).

		RPM	200	400	600	800
NPSH Required - (Ft.)			1.47	2.98	5.00	8.70
STARTING TORQUE, Minimum Recommended Motor HP*	325 IN/LB	1 STG	0.75	1.50	2.00	3.00
	565 IN/LB	2 STG	1.50	3.00	5.00	5.00
	1026 IN/LB	4 STG	2.00	5.00	7.50	10.00

**Capacity** — 70 Durometer Hardness — — 55 Durometer Hardness\*\* **Data Based on Water @ 68°F** **Horsepower**



\*\* Std. Nitrile, EPDM and Fluoroelastomer = 70 Duro.  
Std. Natural Rubber = 55 Duro.

**Differential Pressure (PSI)**

(BAR x 1.0197 = kgf/cm<sup>2</sup>) (BAR x 14.504 = PSI) (USGPM = .2271 M<sup>3</sup>/HR) (1 kW = 1.3410 HP)

**Models: V1F, V2F, V4F**

**HORSEPOWER MULTIPLIERS:**

Pump horsepower from the reverse side can be broken into three components: drive end, rotor/stator, and hydraulic.

Temperature affects the rotor/stator HP component only. For applications involving temperatures above 70°F, it is necessary to adjust the rotor/stator HP component of the horsepower obtained from the reverse side (i.e., the greater of the water HP or Minimum Recommended HP). This new horsepower is referred to as the **Temperature Corrected Horsepower**.

Rotor/stator horsepower can be found from the curve on the previous page. It is the HP at zero pressure for the corresponding RPM and number of stages.

To calculate the Temperature Corrected Horsepower, subtract the rotor/stator HP from the greater of the water or minimum recommended HP. This gives you the drive end/hydraulic HP. Multiply the rotor/stator HP by the appropriate temperature multiplier listed below. Add this adjusted value to the drive end/hydraulic HP to get the total Temperature Corrected Horsepower.

(Degrees F =  $\frac{5}{9}C + 32$ )

FLUID TEMPERATURE	70°F	100°F	125°F	150°F	175°F	200°F
<b>HORSEPOWER MULTIPLIERS</b>						
- Standard Size Rotor	1.00	1.10	1.30	1.60	2.00	2.50
- Undersize Rotor	0.75	0.80	0.85	0.95	1.10	1.60

For applications involving temperatures greater than 200°F, consult the factory.

**HORSEPOWER ADDITIVES:**

Shown below are HP additives for both water base slurries and for viscous materials. To use these tables, first determine which table applies to your product and enter that table with the appropriate fluid characteristics. Determine the HP additive per 100 RPM and multiply it by the speed of your pump divided by 100. Add the resulting figure to the HP for water from the curve on the preceding page or to the minimum HP for starting from the table at the top of the preceding page, whichever is larger.

If your product is a combination of a slurry and viscous material, determine the appropriate HP additive from both tables below and use whichever is greater.

**TABLE I—WATER BASE SLURRIES:**

**HP ADDER/100 RPM/STAGE**

% Solids	Fine 16 Mesh (1.0 mm) (.039")			Medium 16 to 9 Mesh (1.0-2.0 mm) (.039-.078")			Coarse 9 to 4 Mesh (2.0-5.0 mm) (.078-.185")		
	Number of Stages								
	1	2	4	1	2	4	1	2	4
10	.10	.13	.22	.13	.17	.28	.21	.29	.48
30	.32	.42	.71	.40	.50	.85	.68	.88	1.44
50	.54	.71	1.18	.67	.87	1.43	1.12	1.47	2.41

**TABLE II—VISCOSITY (NEWTONIAN FLUIDS):**

**HP ADDER/100 RPM/STAGE**

Viscosity (Centipoise)						
1	2,500	5,000	10,000	50,000	100,000	150,000
0	.36	.52	.72	1.50	2.10	2.50