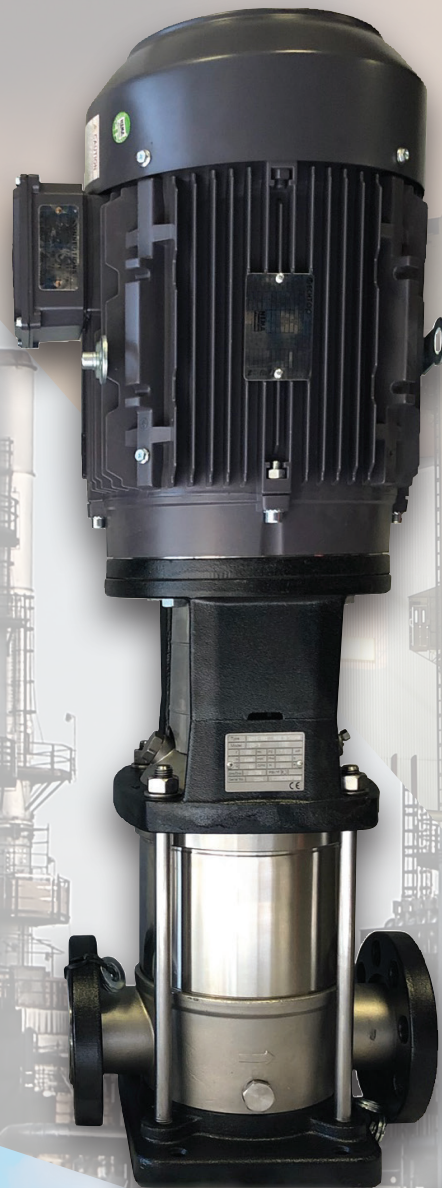




*Aqua Pro Pump Systems*  
a Tomiko Inc. Company

Vertical Multistage Pumps (VMI Series) | 60 Hz



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## Description of Operation and Applications

Aqua Pro Pump Systems VMI series pumps are a non-self-priming vertical multistage pump of an in-line design, flanged with equally sized suction and discharge ports. Multistage construction with stainless steel impellers, diffusers, and casing. All pumps are equipped with a cartridge type mechanical seal for easy maintenance. All models come equipped with ANSI flanges and various stages to meet the flow and pressure required for industry applications.

### Applications:

- **Water Supply and Pressure Boosting**

Pressure boosting in buildings, hotels, residential complexes, industrial water supply, and pressure booster stations for supply of water networks

- **Irrigation and Agriculture**

Greenhouses, sprinkler irrigation, and field irrigation (flooding)

- **Light Industry**

Washing and cleaning systems, car washing facilities, fire systems, process water systems, and machine (cooling lubricants)

- **Water Treatment**

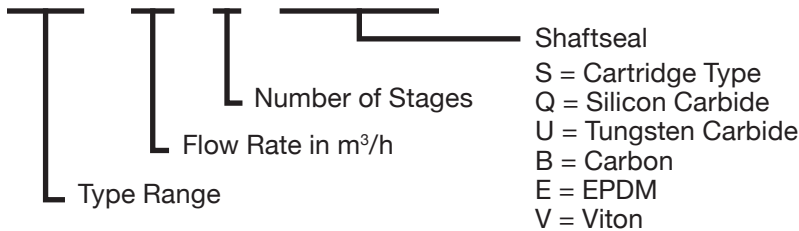
Water softeners and demineralization, reverse osmosis systems, distillation systems, filtration, and ultra-filtration systems

- **Heating, Ventilation, and Air-Conditioning**

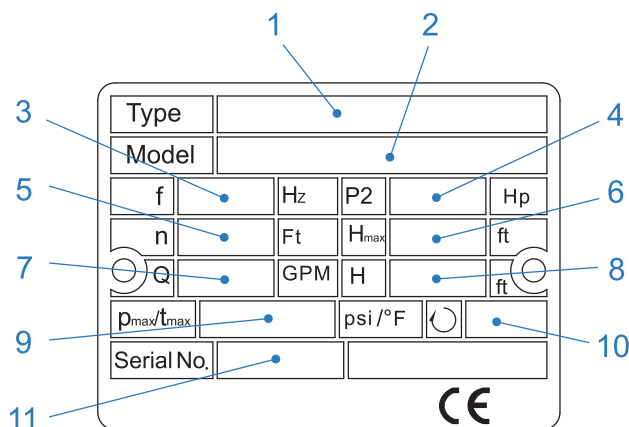
Boilers, induction heating, heat exchangers, refrigerators, cooling tower systems, and temperature control systems

## Identification Code (Model) and Nameplate

**VMI - 10 - 5 - S Q Q E**

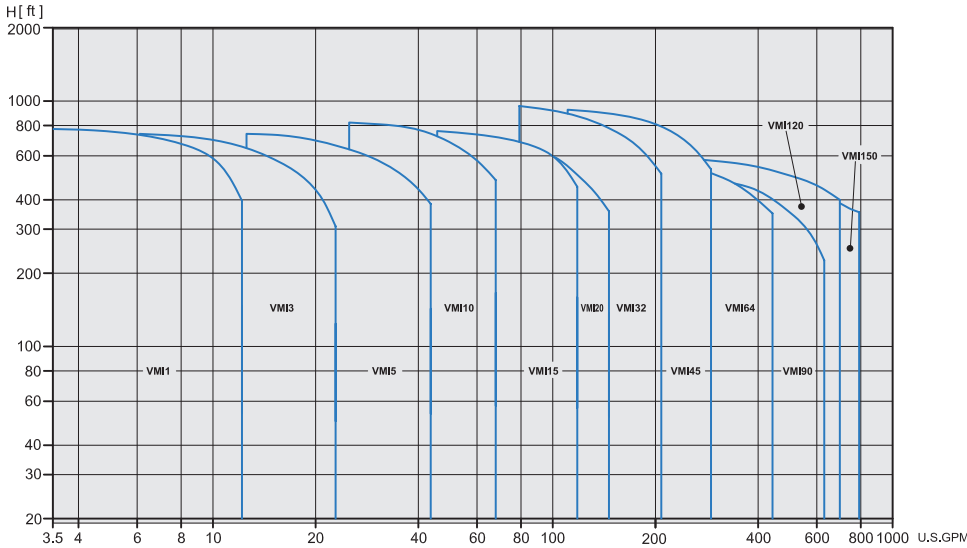


1. Pump Type - Seal Type
2. Pump Model
3. Frequency
4. Rated Power
5. Speed
6. Maximum Head
7. Capacity
8. Head Range
9. Maximum Operating Pressure
10. Rotating Direction
11. Serial Number





**PERFORMANCE RANGE 60 Hz (VMI)**



**Product Data | VMI Series 1 - 20**

Range		VMI Pump Type					
		1	3	5	10	15	20
<b>60Hz</b>							
Nominal Flow	m <sup>3</sup> /h	1.2	3.6	6	12	18	24
	GPM	5.2	15.8	26.4	52.8	79.2	105.6
Flow Range	m <sup>3</sup> /h	0.8-2.9	1.5-5.4	3-10	6-15.5	10.5-28	12.5-35
	GPM	4.2-13	8.4-25.8	13.2-44	26.4-70	47.9-123	56.7-154
Maximum Pressure	bar	23.5	23.3	23	24.5	23.5	20.5
	PSI	340	337	333	355	340	297
Fluid Temperature	°C	-15°C to +120°C					
	°F	7°F to 248°F					
<b>Version</b>							
Stainless Steel EN 1.4301/AISI 304		•	•	•	•	•	•
<b>Pipe Connection</b>							
Flange (ANSI)		DN 25 DN 32	DN 25 DN 32	DN 25 DN 32	DN 40	DN 50	DN 50
Victaulic-Connections		R 1¼ DN 32	R 1¼ DN 32	R 1¼ DN 32	R 2 DN 50	R 2 DN 50	R 2 DN 50
<b>Mechanical Seals</b>							
SiC/SiC		Standard					
<b>Seals</b>							
EPDM		Standard					
Viton							
<b>Note: Refer to dimensional drawings for flange standards.</b>							



**Product Data | VMI Series 32 - 150**

Range		VMI Pump Type					
		32	45	64	90	120	150
<b>60Hz</b>							
Nominal Flow	m <sup>3</sup> /h	28	54	77	108	140	180
	GPM	167	237	339	475	616	792
Flow Range	m <sup>3</sup> /h	18-48	26-70	36-102	54-146	60-160	75-180
	GPM	79-211	114-308	158-449	237-642	264-704	330-946
Maximum Pressure	bar	27	26	17.8	15.9	18.5	15.3
	PSI	391	377	258	230	268	221
Fluid Temperature	°C	-15°C to +120°C					
	°F	7°F to 248°F					
<b>Version</b>							
Stainless Steel EN 1.4301/AISI 304		•	•	•	•	•	•
<b>Pipe Connection</b>							
Flange (ANSI)		DN 65	DN 80	DN 100	DN 100	DN 125	DN 125
Victaulic-Connections		N/A	N/A	N/A	N/A	N/A	N/A
<b>Mechanical Seals</b>							
SiC/SiC		Standard					
<b>Seals</b>							
EPDM		Standard					
Viton							
Note: Refer to dimensional drawings for flange standards.							



## Mechanical Seal and List of Materials

Our cartridge type mechanical seal can be replaced in minutes without specialty tools, shims, or feeler gauges, and replacement can be done without dismantling the pump. Standard Cartridge type mechanical seal constructed of Silicon Carbide/ Silicon Carbide/EPDM or Viton. Based on the application, alternative seal and elastomer materials are available.

Q: Silicon Carbide                      E: EPDM  
U: Tungsten Carbide                  V: Viton  
B: Carbon



Seal Type	VMI Pump Type		
	1/3/5/10/15/20 32/45/64/90	120/150	
		0.5-60HP	75-100HP
<b>Mechanical Seals</b>			
S: O-Ring Seal Cartridge Type	•	•	
B: Rubber Bellows Seal Cartridge Type			•
QQ	•	•	•
UU	Optional	Optional	
QB	Optional	Optional	
UB	Optional	Optional	
<b>Seals</b>			
E	•	•	•
V	Optional	Optional	Optional

## Motor Data - 60Hz

Pole	Motor Type			Frame	
	HP	kW	PH	TEFC Motors (C-face)	ODP Motors (C-face)
2	1/3	0.25	1 / 3	56C	---
	1/2	0.37	1 / 3	56C	---
	3/4	0.55	1 / 3	56C	---
	1	0.75	1 / 3	56C	---
	1 1/2	1.1	1 / 3	56C	---
	2	1.5	1 / 3	56C	---
	3	2.2	1 / 3	182TC	---
	5	3.7	1 / 3	213TC (1PH) / 182TC (3PH)	---
	7 1/2	5.5	1 / 3	213TC	---
	10	7.5	1 / 3	213TC	---
	15	11	3	254TC	254TC
	20	15	3	254TC	254TC
	25	18.5	3	284TSC	284TSC
	30	22	3	286TSC	284TSC
	40	30	3	286TSC	286TSC
	50	37	3	326TSC	324TSC
	60	45	3	364TSC	324TSC
	75	55	3	365TSC	364TSC
100	75	3	405TSC	365TSC	



## Minimum Inlet Pressure - NPSHA

Inlet pressure Calculation, "H", is recommended in the following situations:

- Medium (liquid) temperatures above 90°F
- Flow requirement is significantly higher than the rated flow
- A suction lift is required
- A suction draw is required over a long distance
- Suction/inlet pressure conditions are poor

To avoid cavitation, make sure that there is a minimum pressure on the suction side of the pump. The maximum suction lift "H" in feet can be calculated as follows:  $H = P_b - NPSHR - H_f - H_v - H_s$

$P_b$  = Barometric pressure in feet absolute (Barometric pressure can be set to 33.9 feet. At sea level. In closed systems,  $p_b$  indicates system pressure in feet).

NPSHR = Net Positive Suction Head Required in feet (To be read from the NPSHR curve at the highest flow the pump will be delivering).

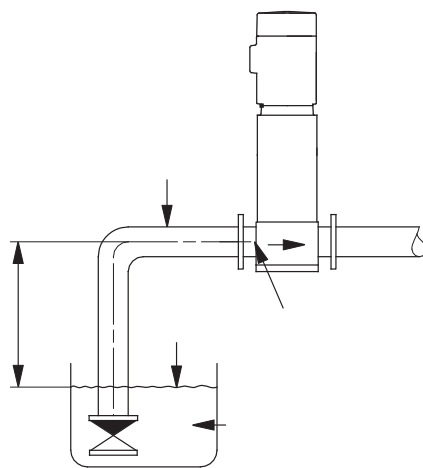
$H_f$  = Friction loss in suction pipe in feet (At the highest flow the pump will be delivering).

$H_v$  = Vapor pressure in feet (To be read from the vapor pressure scale. " $H_v$ " depends on the liquid temperature " $T_m$ ").

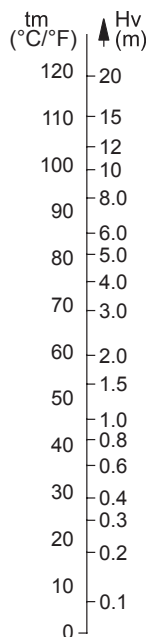
$H_s$  = Safety margin = minimum 2.0 feet.

If the "H" calculated is positive, the pump can operate at a suction lift of maximum "H" feet. If the "H" calculated is negative, an inlet pressure of minimum "H" feet is required.

**Note:** In order to avoid cavitation, NEVER select a pump whose duty point lies too far to the right on the NPSHR curve. Always check the NPSHR value of the pump at the highest possible flow.



Minimum Inlet Pressure - NPSHR



See our NPSHA calculator here





### Maximum Inlet Pressure (60 Hz)

The following table shows the maximum inlet pressure. However, the current inlet pressure, plus the pressure against a closed valve, must always be lower than the maximum operating pressure.

If the maximum operating pressure is exceeded, the bearing in the motor may be damaged and the life of the shaft seal reduced. Rule to follow: ***Inlet Pressure + Pressure Against Closed Valve < Maximum Operating Pressure***

Pump Type	Stages	Max. Operating Pressure	Stages	Max. Inlet Pressure
VMI 1	2 - 27	25 bar (363 psi)	2 - 25	10 bar
			27	15 bar
VMI 3	2 - 25	25 bar (363 psi)	2 - 15	10 bar
			17 - 25	15 bar
VMI 5	2 - 24	25 bar (363 psi)	2 - 9	10 bar
			10 - 24	15 bar
VMI 10	1 - 10	16 bar (232 psi)	1 - 5	8 bar
	12 - 17	25 bar (363 psi)	6 - 17	10 bar
VMI 15	1 - 8	16 bar (232 psi)	1 - 2	8 bar
	9 - 12	25 bar (363 psi)	3 - 12	10 bar
VMI 20	1 - 7	16 bar (232 psi)	1	8 bar
	8 - 10	25 bar (363 psi)	2 - 10	10 bar
VMI 32	(1-1) - 5	16 bar (232 psi)	(1-1) - 2	4 bar
	(6-2) - (10-2)	30 bar (435 psi)	(3-2) - 6 (7-2) - (10-2)	10 bar 15 bar
VMI 45	(1-1) - 4	16 bar (232 psi)	(1-1) - 1	4 bar
	(5-2) - 7	30 bar (435 psi)	(2-2) - 3 (4-2) - 7	10 bar 15 bar
VMI 64	(1-1) - 3	16 bar (232 psi)	(1-1)	4 bar
	(4-2) - (5-2)	30 bar (435 psi)	1 - (2-1) 2 - (5-2)	10 bar 15 bar
VMI 90	(1-1) - 3	16 bar (232 psi)	(1-1) - (2-2)	10 bar
	(4-2)	30 bar (435 psi)	(2-1) - (4-2)	15 bar
VMI 120	1 - (5-2)	30 bar (435 psi)	1	10 bar
			(2-2) - (3-1)	15 bar
			3 - (5-2)	20 bar
VMI 150	(1-1) - (4-2)	30 bar (435 psi)	(1-1)	10 bar
			1 - 2 (3-2) - (4-2)	15 bar 20 bar

**Example:** The values for operating and inlet pressures shown in the tables must not be considered individually but must always be compared, see the following examples:

Example Pump Type Selected: VM64-4  
 Maximum Operating Pressure: 30 bar (435 psi)  
 Maximum Inlet Pressure: 15 bar (218 psi)  
 Discharge Pressure Against Closed Valve: 16.7 bar (242 psi)

This pump should not start at an inlet pressure of 15 bar (218 psi), but at an inlet pressure of 30 bar (435 psi) - 16.7 bar (242 psi) = 13.3 bar (193 psi).





## Pumped Liquids (VMI) | Recommended (●)

VMI pumps can handle a wide variety of liquids, each with its own characteristic. Used with non-corrosive liquids for fluid transfer, circulation, and pressure boosting of cold or hot clean water.

The fluids covered on this list are not complete. Data on the application limits of different pump materials when handling any of the listed fluids are considered to be the best choices. However, the table is intended as a general guide only, and cannot replace actual testing of the pumped fluids and pump materials under specific working conditions.

When choosing the pump version, sufficient attention should be given to the flow medium, such as density, solidification point, viscosity, as well as safety factor requirement. The limits of applicability of the pumps, based on pressure and temperature must also be considered.

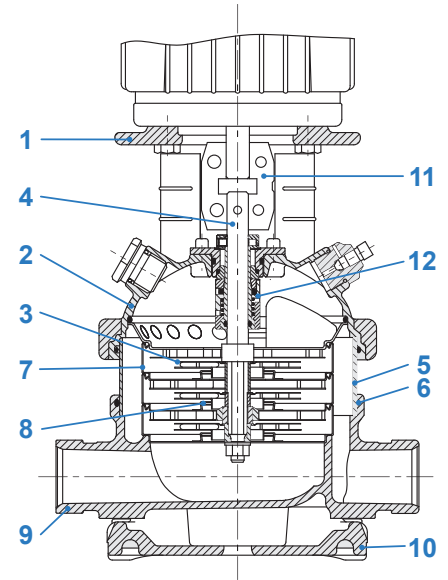
Pumped Fluid	Concentration/Temp	EPDM	Viton	Pumped Fluid	Concentration/Temp	EPDM	Viton
Acetic acid anhydride	25°C (77°F)			Motor oil	100%, 80°C (176°F)	●	
Alkaline cleaner		●		Oil/Water mixture	100°C (212°F)		●
Aluminium sulphate	10%, 25°C (77°F)			Oxalic acid	1%, 20°C (68°F)		
Ammonia water (A. hydroxide)	20%, 40°C (104°F)	●		Peanut oil	100%, 80°C (176°F)		●
Ammonia hydrogen carbonate	10%, 40°C (104°F)	●		Phosphoric acid	20%, 20°C (68°F)		
Benzoic acid	10%, 90°C (194°F)			Polyglycols	90°C (194°F)		●
Boric acid	*60°C (140°F)			Polyethylene glycols	40%, 70°C (158°F)	●	
Butanol	60°C (140°F)	●		Potassium carbonate	10%, 60°C (140°F)	●	
Calcium acetate	30%, 50°C (122°F)	●		Potassium hydrogen carbonate	10%, 60°C (140°F)	●	
Calcium hydroxide	**50°C (122°F)	●		Potassium permanganate	5%, 20°C (68°F)		
Chromic acid	1%, 20°C (68°F)			Potassium sulphate	*80°C (176°F)		
Condensate	90°C (194°F)	●		Rapeseed oil	100%, 80°C (176°F)		●
Copper sulphate	*60°C (140°F)			Silicone oil	100%		●
Deionic (fully desalinated water)	50°C (122°F)			Sodium carbonate	10%, 60°C (140°F)		
Ethanol	100%, 20°C (68°F)	●		Sodium hydroxide	25%, 50°C (122°F)		
Ethylene glycol/Diethylene glycol	40%, 70°C (158°F)	●	●	Sodium nitrate	*80°C (176°F)		
Fixer	25°C (77°F)			Sodium phosphate	5%, 100°C (212°F)		
Formic acid	5%, 20°C (68°F)			Sodium sulphate	10%, 60°C (140°F)		
Fruit Juice	50°C (122°F)			Sulphuric acid	5%, 25°C (77°F)		
Glycerine	50%, 50°C (122°F)	●		Water			
Heating oil (Light)		●		Swimming pool water	35°C (95°F)	●	
Hydraulic oil	100%, 100°C (212°F)		●	Deionic	50°C (122°F)		
Isopropanol		●		Distilled water	50°C (122°F)		
Lactic acid	10%, 20°C (68°F)			Decarbonated water			
Linoleic acid	100%, 20°C (68°F)	●		Soft water			
Linseed oil	60°C (140°F)		●	Heating water			
Liqueur	60°C (140°F)			Boiler water			
Maize oil	80°C (176°F)		●	Pure water			
Maleic acid	50%, 50°C (122°F)			Rinsing water		●	
Methanol	100%, 20°C (68°F)	●					

(\*) Unsaturated Solution  
(\*\*) Saturated Solution

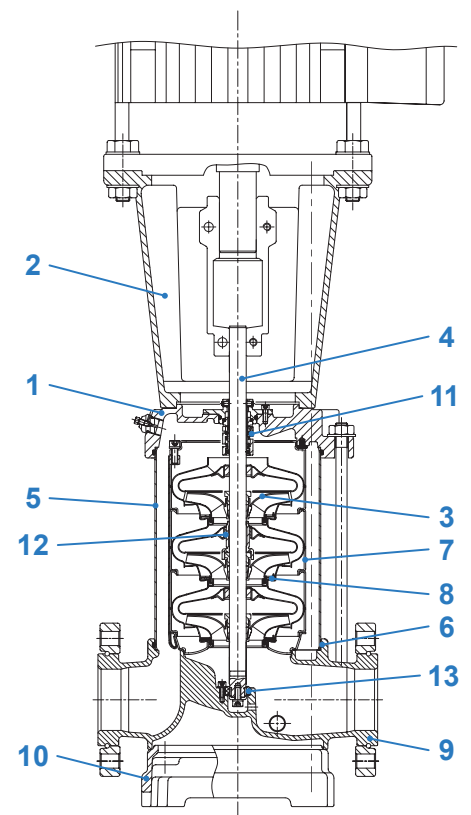


## Pump Construction and Material Data

VMI 1, 3, 5, 10, 15, and 20			
Pos.	Name	Material	USA Standard
1	Pump Head	Stainless Steel	AISI 304
2	Pump Head Cover	Stainless Steel	AISI 304
3	Impeller	Stainless Steel	AISI 304
4	Shaft	Stainless Steel	AISI 431
5	Outer Sleeve	Stainless Steel	AISI 304
6	O-ring for Outer Sleeve	EPDM	
7	Chamber	Stainless Steel	AISI 304
8	Neck Ring	PTFE	
9	Base	Stainless Steel	AISI 304
10	Base Plate	Cast Iron	ASTM 25B
11	Coupling	Fe-Cu-C	MPIF FC0525
12	Mechanical Seal	Cartridge Type	



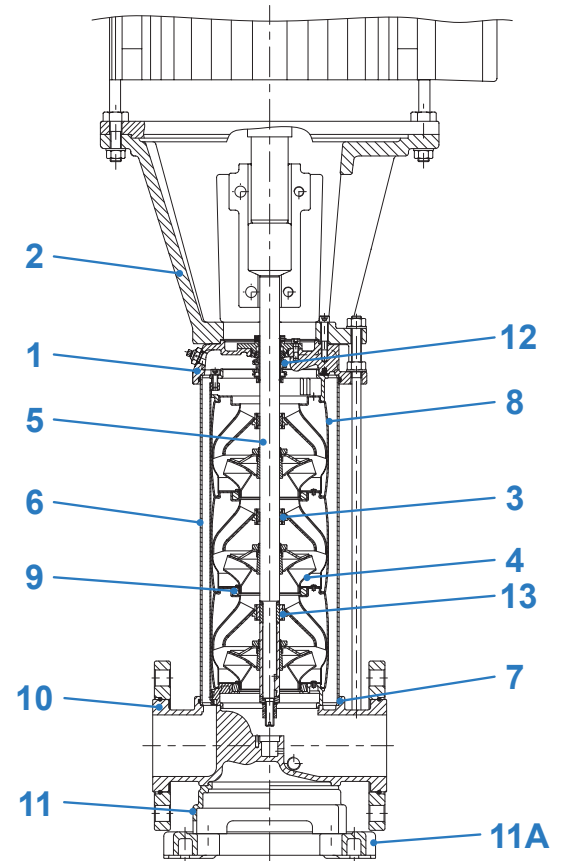
VMI 32, 45, 64, and 90			
Pos.	Name	Material	USA Standard
1	Pump Head	Stainless Steel	AISI 304
2	Motor Bracket	Cast Iron	ASTM 35B
3	Impeller	Stainless Steel	AISI 304
4	Shaft	Stainless Steel	AISI 431
5	Outer Sleeve	Stainless Steel	AISI 304
6	O-ring for Outer Sleeve	EPDM	
7	Chamber	Stainless Steel	AISI 304
8	Neck Ring	Carbon Fiber+ POB+PTFE	
9	Base	Stainless Steel	AISI 304
10	Base Plate	Cast Iron	ASTM 35B
11	Mechanical Seal	Cartridge Type	
12	Bearing Ring	Bronze	
13	Bottom Bearing Ring	Tungsten Carbide/ Tungsten Carbide	





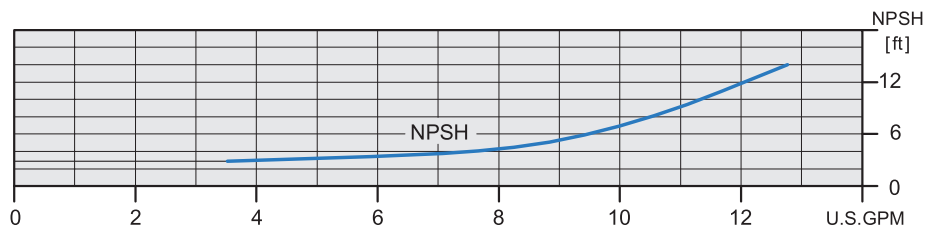
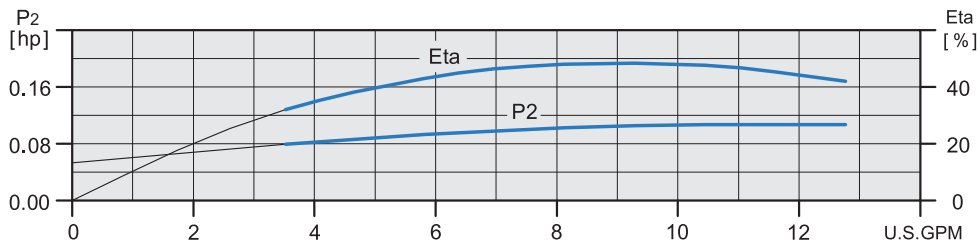
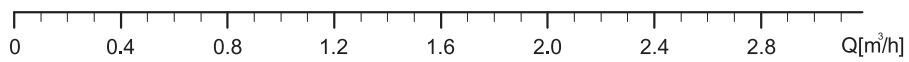
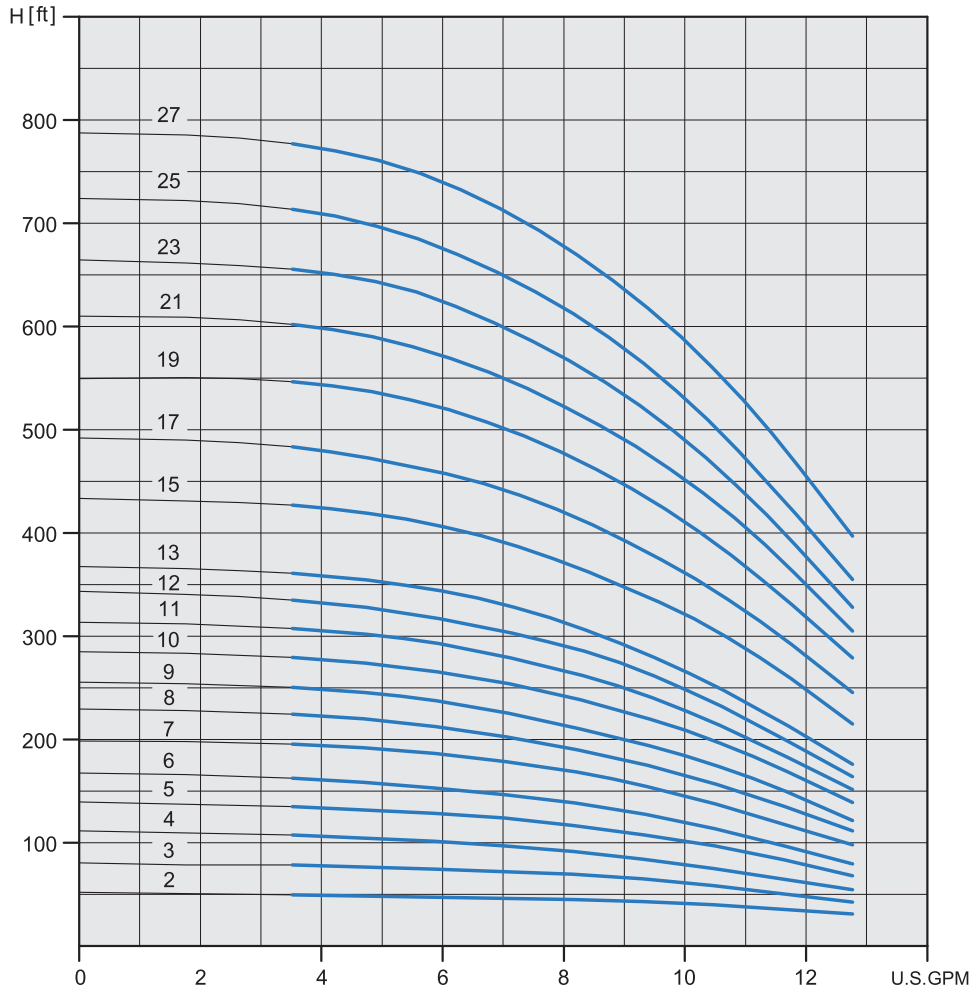
**Pump Construction and Material Data**

VMI 120 and 150			
Pos.	Name	Material	USA Standard
1	Pump Head	Stainless Steel	AISI 304
2	Motor Bracket, 15HP~60HP	Cast Iron	ASTM 35B
	Motor Bracket, 75HP~100HP	Cast Iron	ASTM 65-45-12
3	Bearing Ring	PTFE	
4	Impeller	Stainless Steel	AISI 304
5	Shaft	Stainless Steel	AISI 431
6	Outer Sleeve	Stainless Steel	AISI 304
7	O-ring for Outer Sleeve	EPDM	
8	Chamber	Stainless Steel	AISI 304
9	Neck Ring	PTFE	
10	Base	Stainless Steel	AISI 304
11	Base Plate	Cast Iron	ASTM 65-45-12
11A	Base Plate	Cast Iron	ASTM 65-45-12
12	Mechanical Seal	Cartridge Type	
13	Bottom Bearing Ring	SiC/SiC	



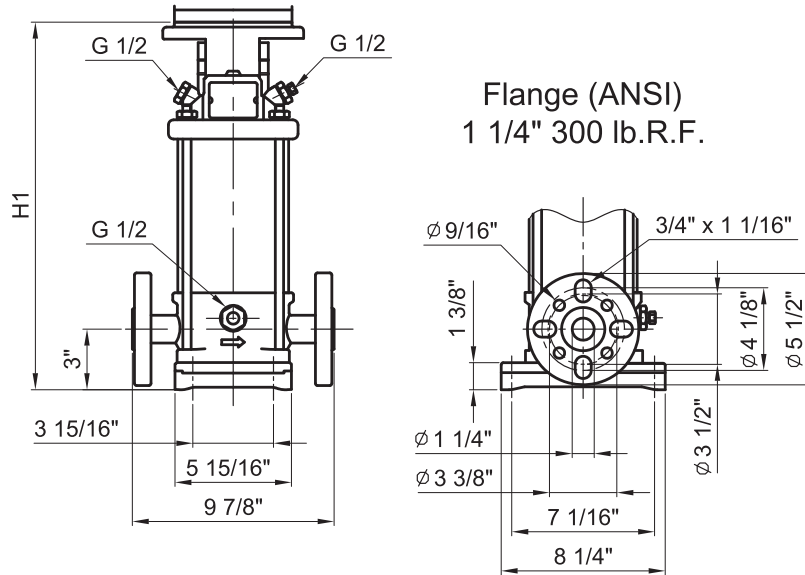


VMI 1 | Pumping Curves, 60 Hz





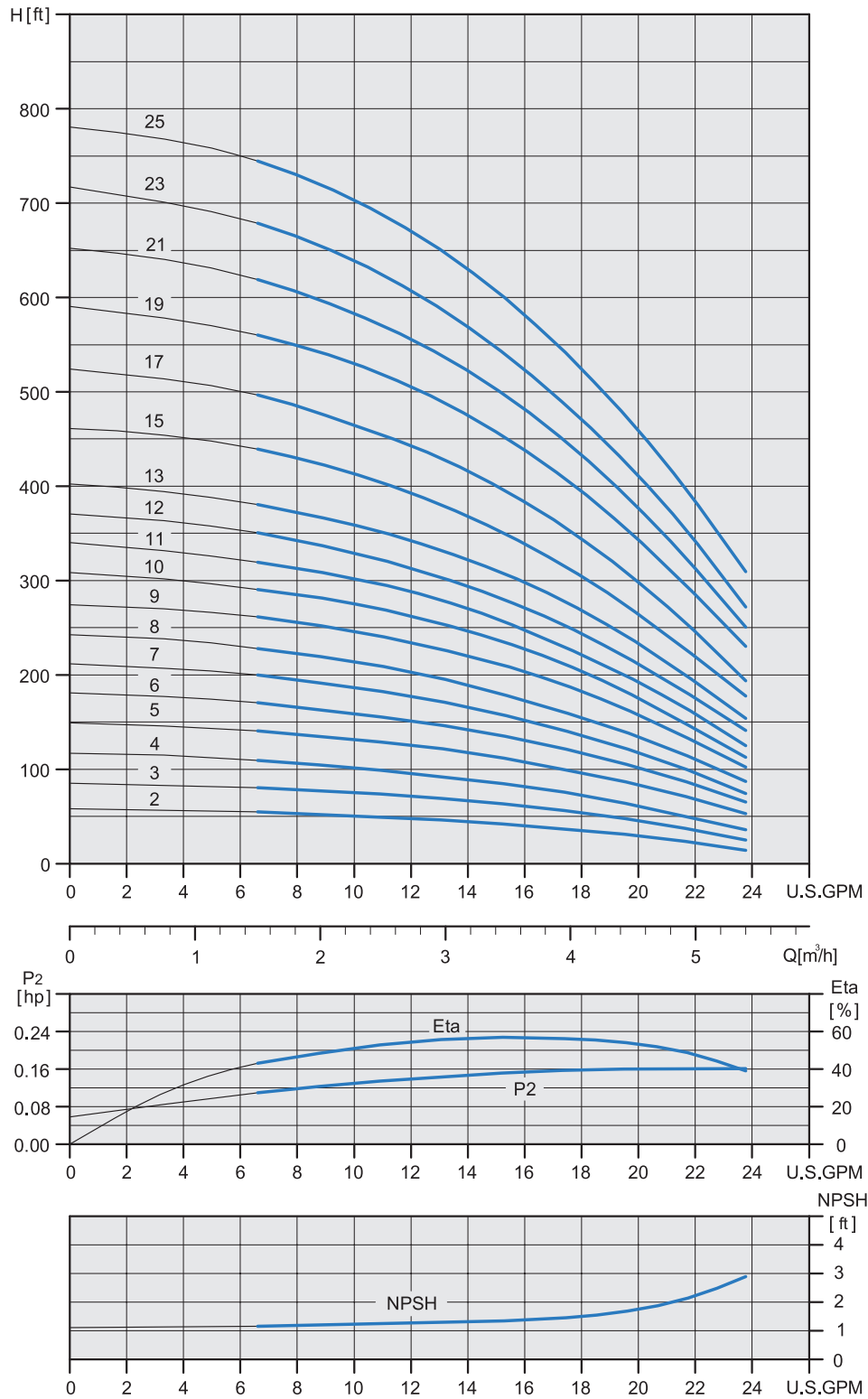
**VMI 1 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	Dimension (inch)		Weight (lb)
	P <sub>2</sub>				ANSI Flange	ANSI Flange	ANSI Flange
	HP	kW	PH				
VMI 1-2	1/3	0.25	1 / 3	56C	12.05	34	
VMI 1-3	1/3	0.25	1 / 3	56C	12.05	34	
VMI 1-4	1/2	0.37	1 / 3	56C	12.76	35	
VMI 1-5	1/2	0.37	1 / 3	56C	13.46	35	
VMI 1-6	3/4	0.55	1 / 3	56C	14.17	36	
VMI 1-7	3/4	0.55	1 / 3	56C	14.84	37	
VMI 1-8	1	0.75	1 / 3	56C	15.55	38	
VMI 1-9	1	0.75	1 / 3	56C	16.26	38	
VMI 1-10	1	0.75	1 / 3	56C	16.97	39	
VMI 1-11	1-1/2	1.1	1 / 3	56C	17.68	40	
VMI 1-12	1-1/2	1.1	1 / 3	56C	18.39	41	
VMI 1-13	1-1/2	1.1	1 / 3	56C	19.09	42	
VMI 1-15	2	1.5	1 / 3	56C	20.55	43	
VMI 1-17	2	1.5	1 / 3	56C	21.97	45	
VMI 1-19	2	1.5	1 / 3	56C	23.39	46	
VMI 1-21	3	2.2	1 / 3	182TC	25.73	54	
VMI 1-23	3	2.2	1 / 3	182TC	27.15	56	
VMI 1-25	3	2.2	1 / 3	182TC	28.56	57	
VMI 1-27	3	2.2	1 / 3	182TC	29.98	59	

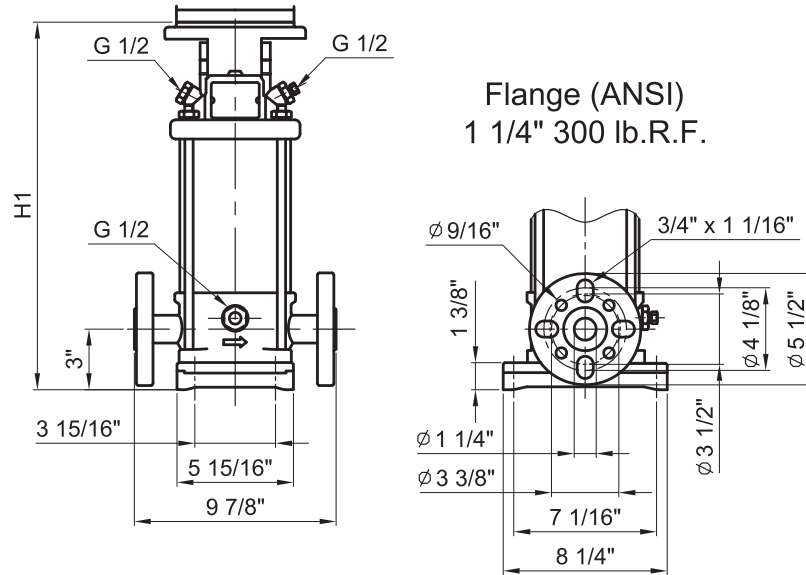


VMI 3 | Pumping Curves, 60 Hz





**VMI 3 | Dimensions and Weights**

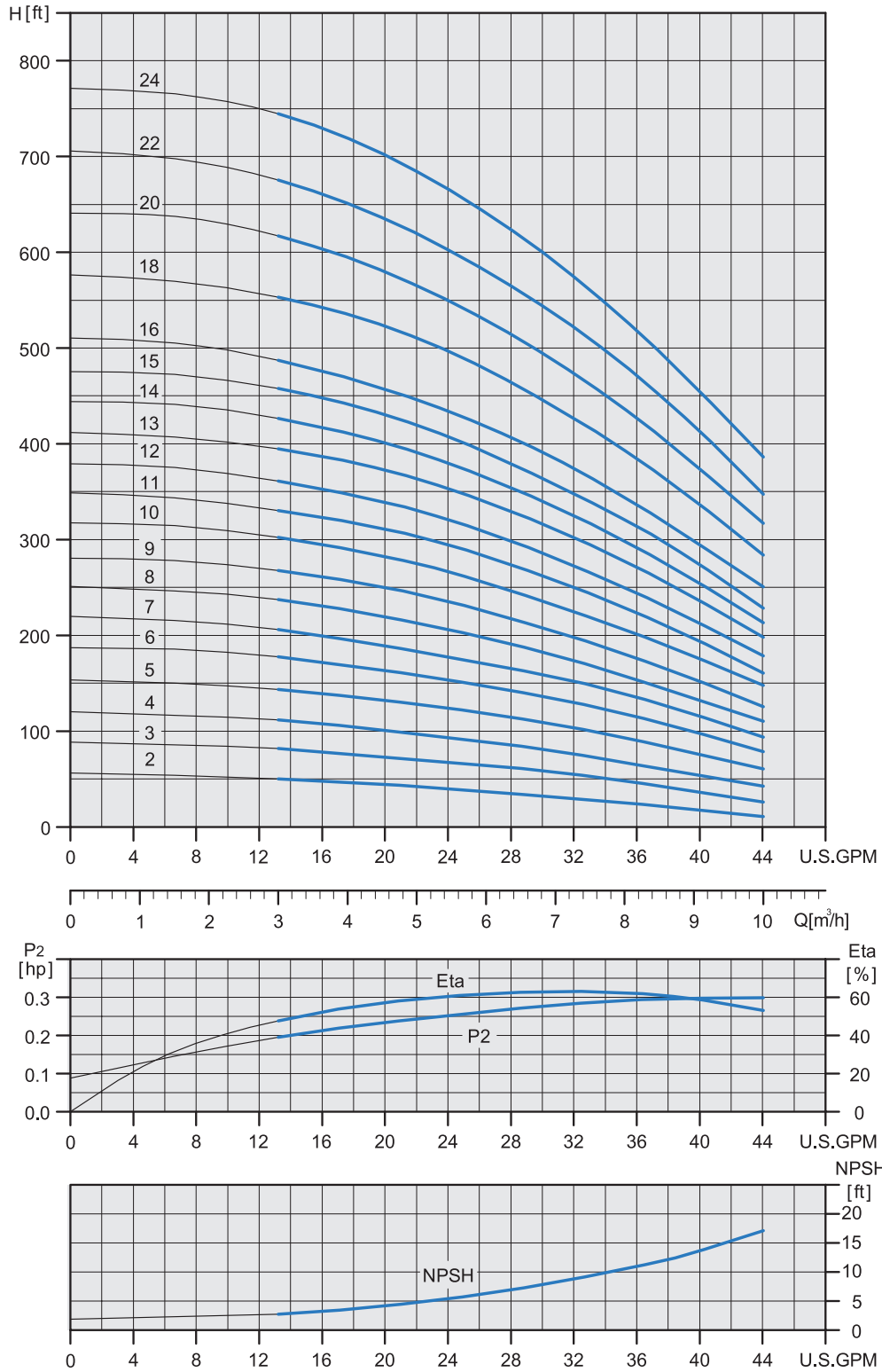


Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>				ANSI Flange	ANSI Flange
	HP	kW	PH		H1	
VMI 3-2	1/3	0.25	1 / 3	56C	12.05	34
VMI 3-3	1/2	0.37	1 / 3	56C	12.05	34
VMI 3-4	3/4	0.55	1 / 3	56C	12.76	35
VMI 3-5	3/4	0.55	1 / 3	56C	13.43	35
VMI 3-6	1	0.75	1 / 3	56C	14.13	36
VMI 3-7	1-1/2	1.1	1 / 3	56C	14.84	37
VMI 3-8	1-1/2	1.1	1 / 3	56C	15.55	38
VMI 3-9	1-1/2	1.1	1 / 3	56C	16.30	38
VMI 3-10	2	1.5	1 / 3	56C	17.01	39
VMI 3-11	2	1.5	1 / 3	56C	17.72	40
VMI 3-12	2	1.5	1 / 3	56C	18.43	41
VMI 3-13	3	2.2	1 / 3	182TC	20.06	48
VMI 3-15	3	2.2	1 / 3	182TC	21.48	49
VMI 3-17	3	2.2	1 / 3	182TC	22.89	51
VMI 3-19	3	2.2	1 / 3	182TC	24.50	52
VMI 3-21	5	3.7	1 / 3	182TC	25.73	54
VMI 3-23	5	3.7	1 / 3	182TC	27.15	56
VMI 3-25	5	3.7	1 / 3	182TC	28.56	57

**NOTE:** The 5HP single phase TEFC motors are provided in a 213TC frame



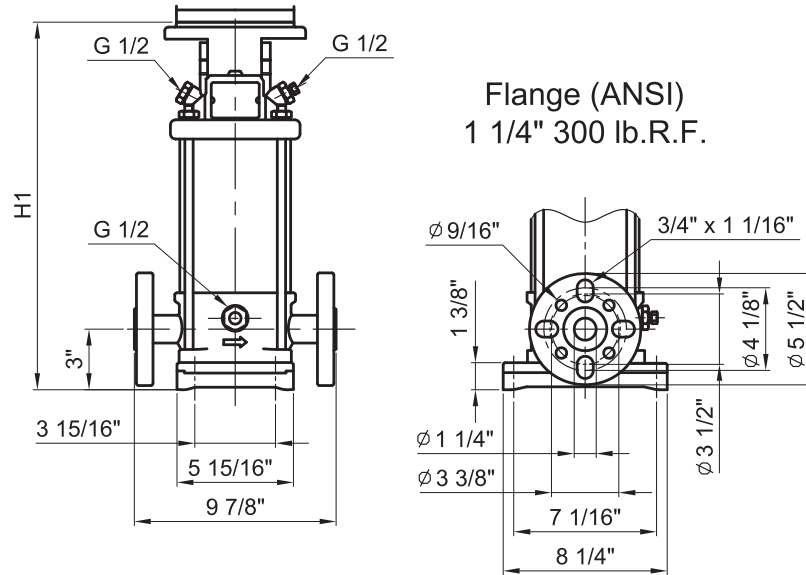
VMI 5 | Pumping Curves, 60 Hz







**VMI 5 | Dimensions and Weights**

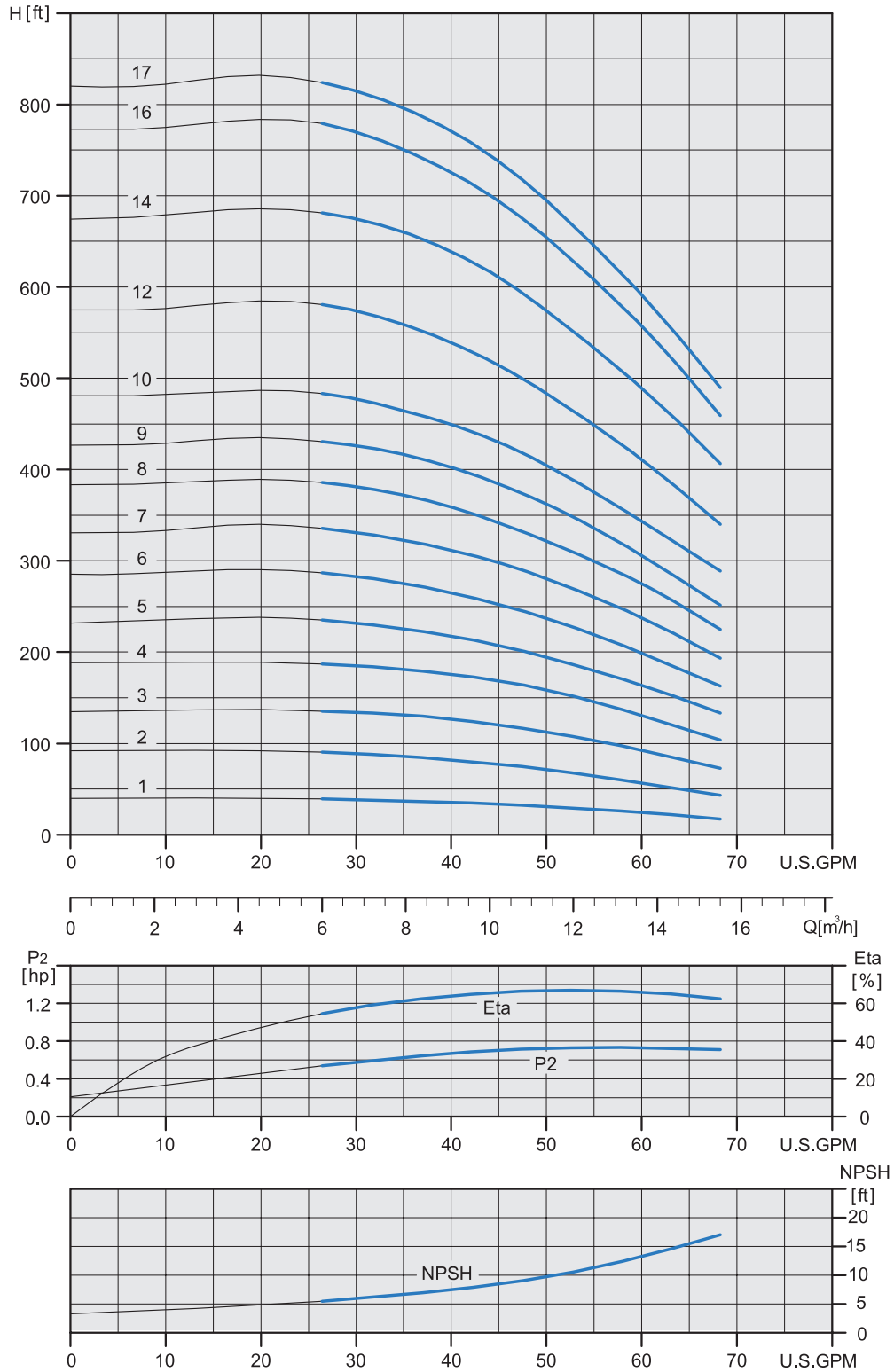


Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>				ANSI Flange	ANSI Flange
	HP	kW	PH		H1	
VMI 5-2	3/4	0.55	1 / 3	56C	12.00	33
VMI 5-3	1	0.75	1 / 3	56C	13.10	35
VMI 5-4	1-1/2	1.1	1 / 3	56C	14.10	36
VMI 5-5	1-1/2	1.1	1 / 3	56C	15.20	37
VMI 5-6	2	1.5	1 / 3	56C	16.30	38
VMI 5-7	2	1.5	1 / 3	56C	17.40	39
VMI 5-8	3	2.2	1 / 3	182TC	19.40	46
VMI 5-9	3	2.2	1 / 3	182TC	20.40	48
VMI 5-10	3	2.2	1 / 3	182TC	21.50	49
VMI 5-11	5	3.7	1 / 3	182TC	22.50	50
VMI 5-12	5	3.7	1 / 3	182TC	23.60	51
VMI 5-13	5	3.7	1 / 3	182TC	24.70	52
VMI 5-14	5	3.7	1 / 3	182TC	25.70	53
VMI 5-15	5	3.7	1 / 3	182TC	26.80	55
VMI 5-16	5	3.7	1 / 3	182TC	27.90	56
VMI 5-18	7-1/2	5.5	1 / 3	213TC	30.60	63
VMI 5-20	7-1/2	5.5	1 / 3	213TC	32.70	66
VMI 5-22	7-1/2	5.5	1 / 3	213TC	34.80	68
VMI 5-24	7-1/2	5.5	1 / 3	213TC	36.90	70

**NOTE: The 5HP single phase TEFC motors are provided in a 213TC frame**

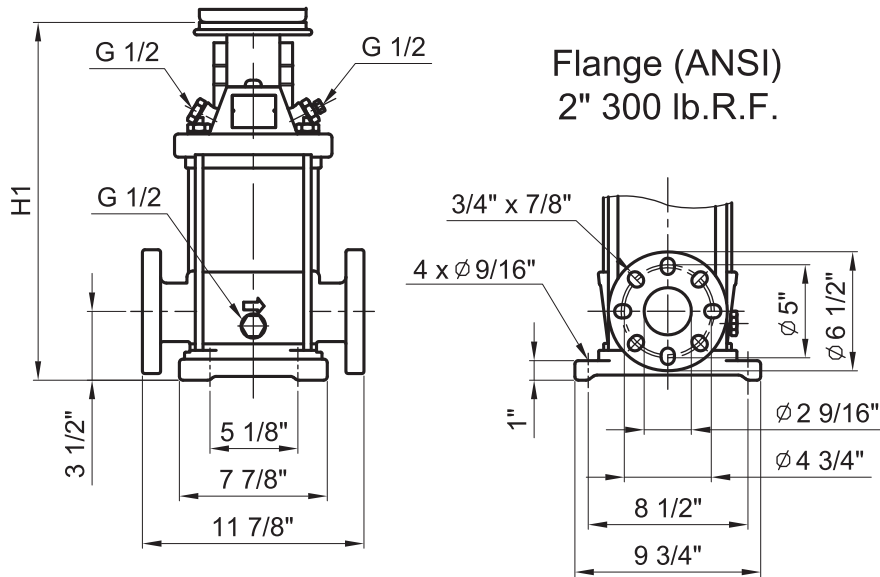


VMI 10 | Pumping Curves, 60 Hz





**VMI 10 | Dimensions and Weights**

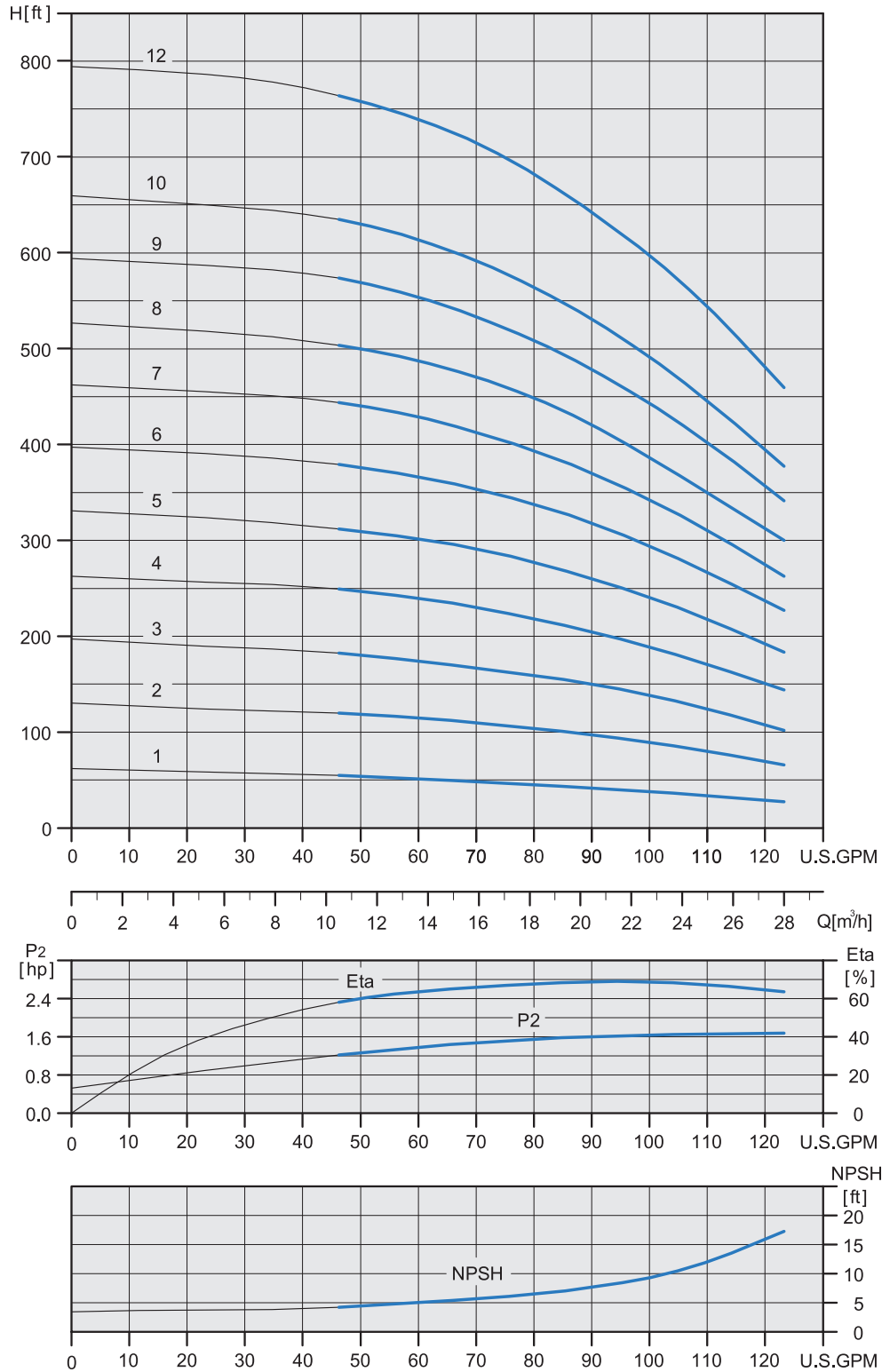


Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 10-1	3/4	0.55	1 / 3	56C	-	14.96	60
VMI 10-2	1-1/2	1.1	1 / 3	56C	-	14.96	60
VMI 10-3	3	2.2	1 / 3	182TC	-	17.15	84
VMI 10-4	3	2.2	1 / 3	182TC	-	18.35	87
VMI 10-5	5	3.7	1 / 3	182TC	-	19.53	89
VMI 10-6	5	3.7	1 / 3	182TC	-	20.71	91
VMI 10-7	5	3.7	1 / 3	182TC	-	21.25	93
VMI 10-8	7-1/2	5.5	1 / 3	213TC	-	23.62	103
VMI 10-9	7-1/2	5.5	1 / 3	213TC	-	24.80	105
VMI 10-10	7-1/2	5.5	1 / 3	213TC	-	25.98	107
VMI 10-12	10	7.5	1 / 3	213TC	-	28.34	111
VMI 10-14	10	7.5	1 / 3	213TC	-	30.01	116
VMI 10-16	15	11	3	254TC	254TC	35.69	130
VMI 10-17	15	11	3	254TC	254TC	36.89	133

**NOTE:** The 5HP single phase TEFC motors are provided in a 213TC frame

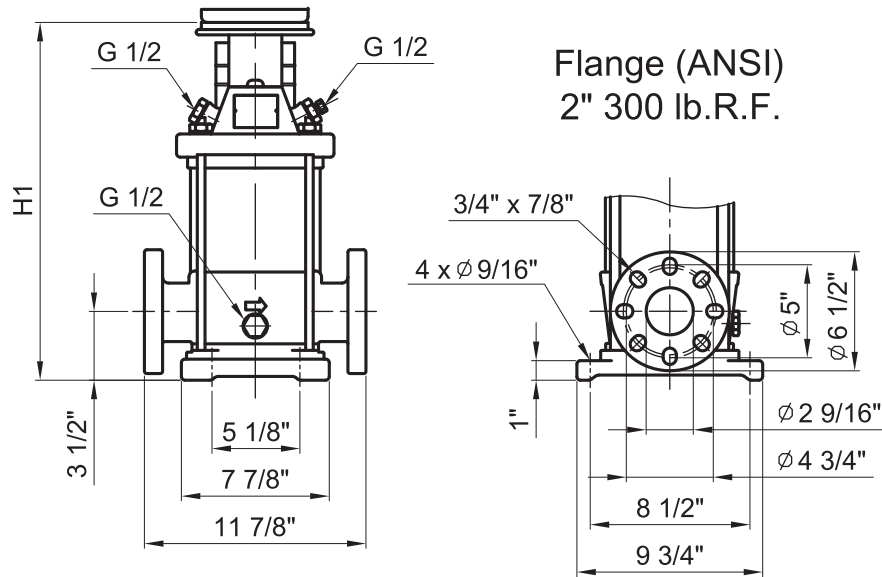


VMI 15 | Pumping Curves, 60 Hz





**VMI 15 | Dimensions and Weights**



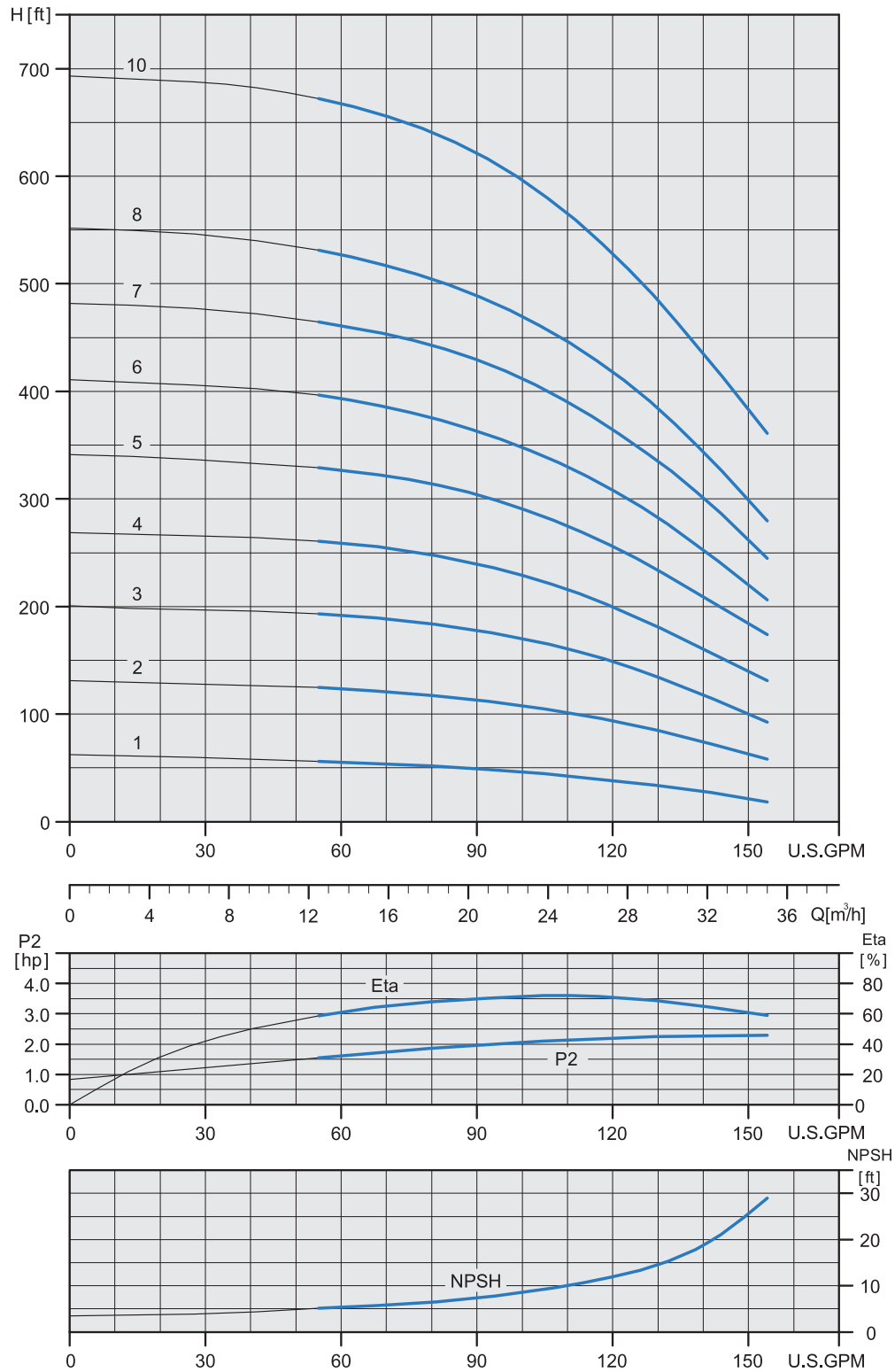
Flange (ANSI)  
2" 300 lb.R.F.

Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 15-1	2	1.5	1 / 3	56C	-	16.10	61
VMI 15-2	5	3.7	1 / 3	182TC	-	17.13	84
VMI 15-3	5	3.7	1 / 3	182TC	-	18.30	87
VMI 15-4	7-1/2	5.5	1 / 3	213TC	-	21.22	97
VMI 15-5	10	7.5	1 / 3	213TC	-	22.99	100
VMI 15-6	10	7.5	1 / 3	213TC	-	24.07	103
VMI 15-7	15	11	3	254TC	254TC	29.16	116
VMI 15-8	15	11	3	254TC	254TC	30.93	119
VMI 15-9	15	11	3	254TC	254TC	32.70	123
VMI 15-10	20	15	3	254TC	254TC	34.47	126
VMI 15-12	25	18.5	3	284TSC	284TSC	37.26	126

NOTE: The 5HP single phase TEFC motors are provided in a 213TC frame

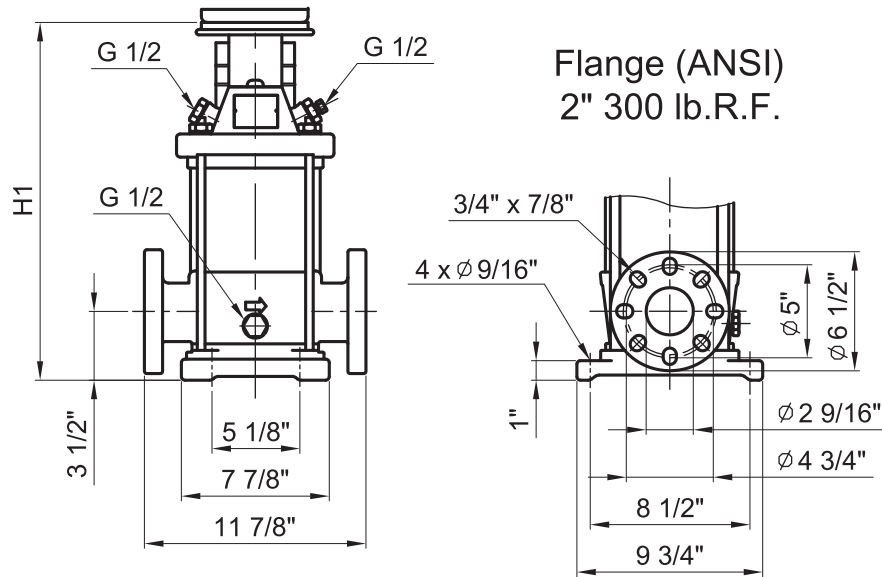


**VMI 20 | Pumping Curves, 60 Hz**





**VMI 20 | Dimensions and Weights**

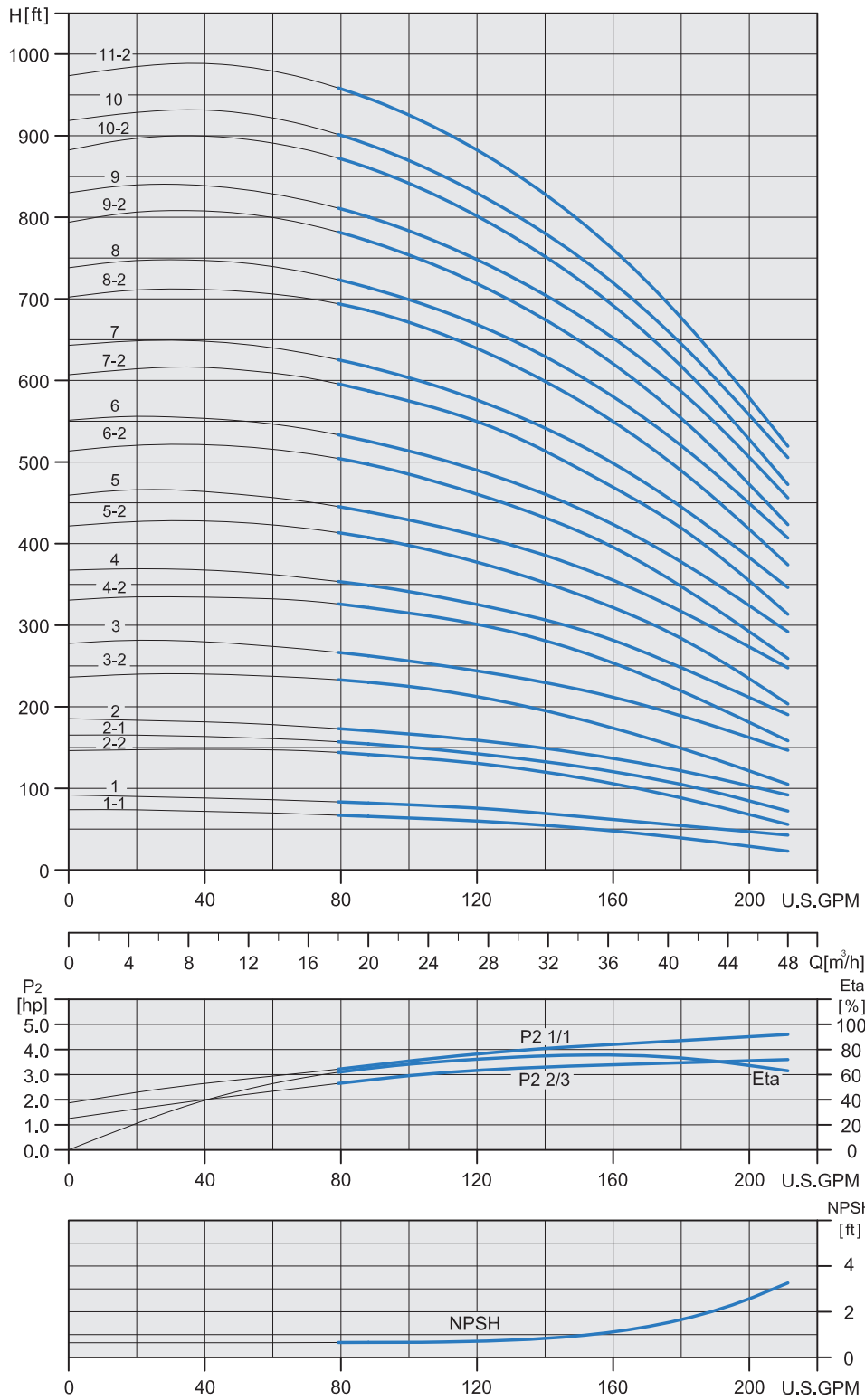


Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 20-1	3	2.2	1 / 3	182TC	-	17.19	83
VMI 20-2	5	3.7	1 / 3	182TC	-	17.20	84
VMI 20-3	7-1/2	5.5	1 / 3	213TC	-	19.52	94
VMI 20-4	10	7.5	1 / 3	213TC	-	21.30	97
VMI 20-5	15	11	3	254TC	254TC	25.69	110
VMI 20-6	15	11	3	254TC	254TC	27.46	113
VMI 20-7	20	15	3	254TC	254TC	29.24	116
VMI 20-8	20	15	3	254TC	254TC	31.01	119
VMI 20-10	25	18.5	3	284TSC	284TSC	33.80	120

NOTE: The 5HP single phase TEFC motors are provided in a 213TC frame



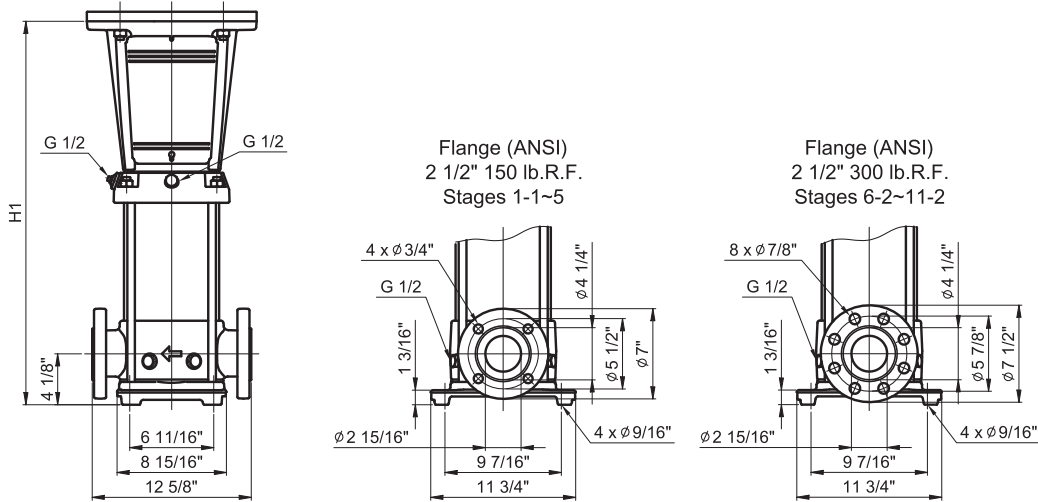
**VMI 32 | Pumping Curves, 60 Hz**







**VMI 32 | Dimensions and Weights**

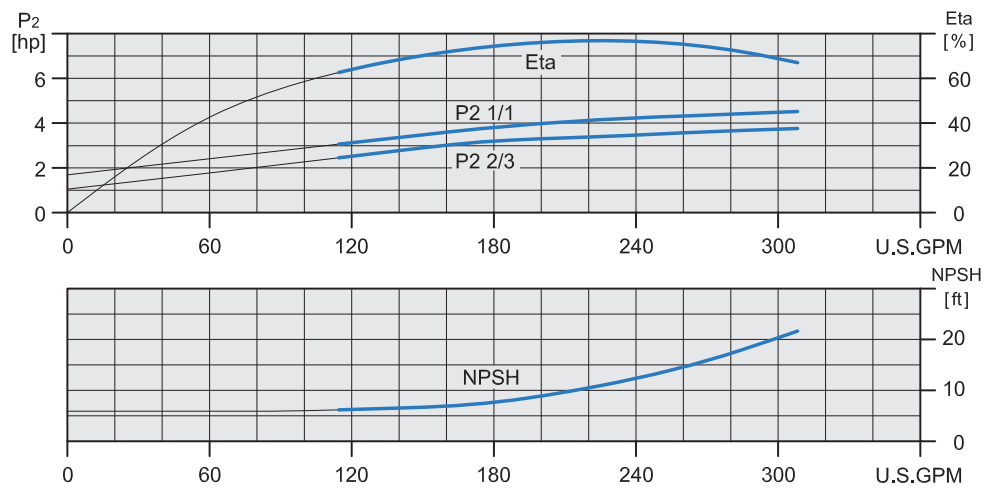
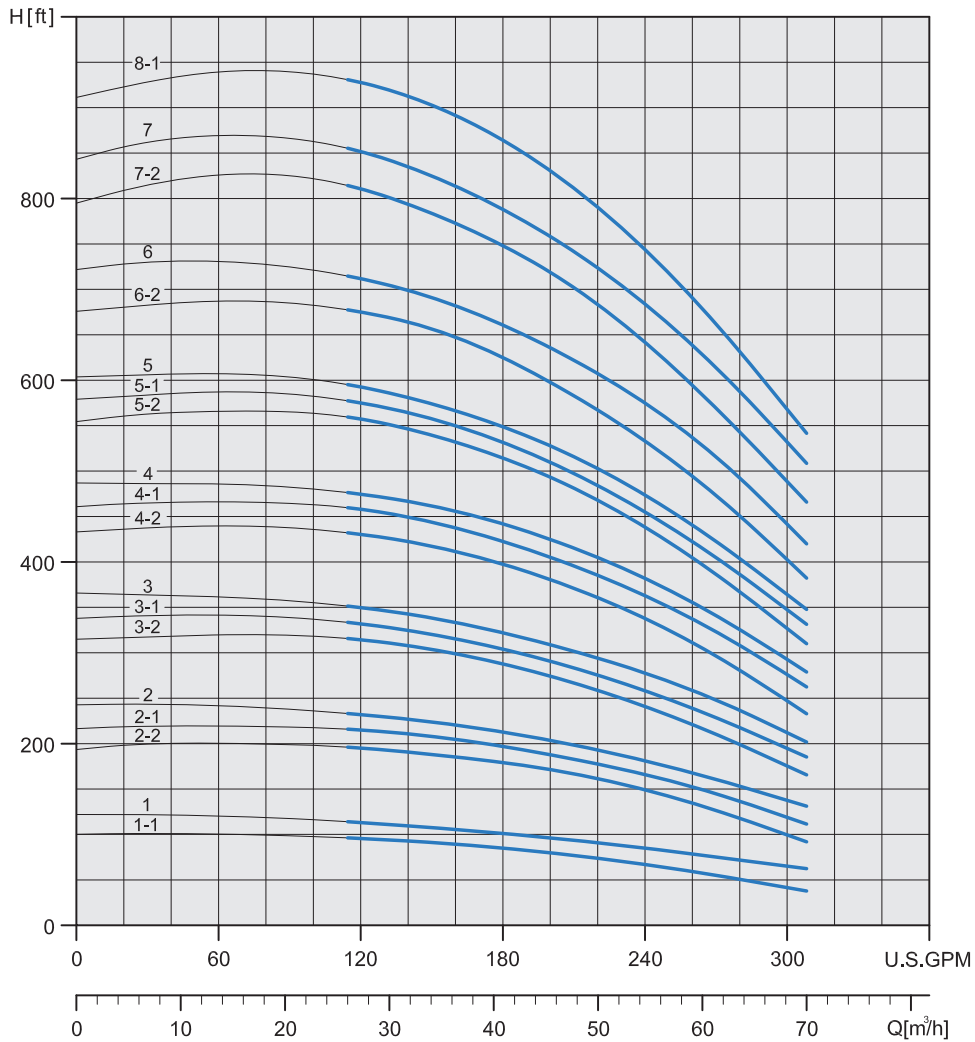


Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 32-1-1	3	2.2	1 / 3	182TC	-	20.02	109.96
VMI 32-1	5	3.7	1 / 3	182TC	-	20.02	109.96
VMI 32-2-2	7-1/2	5.5	1 / 3	213TC	-	22.78	116.61
VMI 32-2-1	7-1/2	5.5	1 / 3	213TC	-	22.78	116.61
VMI 32-2	7-1/2	5.5	1 / 3	213TC	-	22.78	116.61
VMI 32-3-2	10	7.5	1 / 3	213TC	-	25.53	123.26
VMI 32-3	15	11	3	254TC	254TC	29.67	144.38
VMI 32-4-2	15	11	3	254TC	254TC	32.42	150.99
VMI 32-4	15	11	3	254TC	254TC	32.42	150.99
VMI 32-5-2	20	15	3	254TC	254TC	35.18	157.60
VMI 32-5	20	15	3	254TC	254TC	35.18	157.82
VMI 32-6-2	25	18.5	3	284TSC	284TSC	37.93	166.38
VMI 32-6	25	18.5	3	284TSC	284TSC	37.93	166.60
VMI 32-7-2	30	22	3	286TSC	284TSC	40.69	173.07
VMI 32-7	30	22	3	286TSC	284TSC	40.69	173.29
VMI 32-8-2	30	22	3	286TSC	284TSC	43.44	180.25
VMI 32-8	40	30	3	286TSC	286TSC	43.44	180.25
VMI 32-9-2	40	30	3	286TSC	286TSC	46.20	185.98
VMI 32-9	40	30	3	286TSC	286TSC	46.20	186.20
VMI 32-10-2	40	30	3	286TSC	286TSC	48.96	191.71
VMI 32-10	40	30	3	286TSC	286TSC	48.96	191.71
VMI 32-11-2	40	30	3	286TSC	286TSC	51.71	197.65

**NOTE:** The 5HP single phase TEFC motors are provided in a 213TC frame

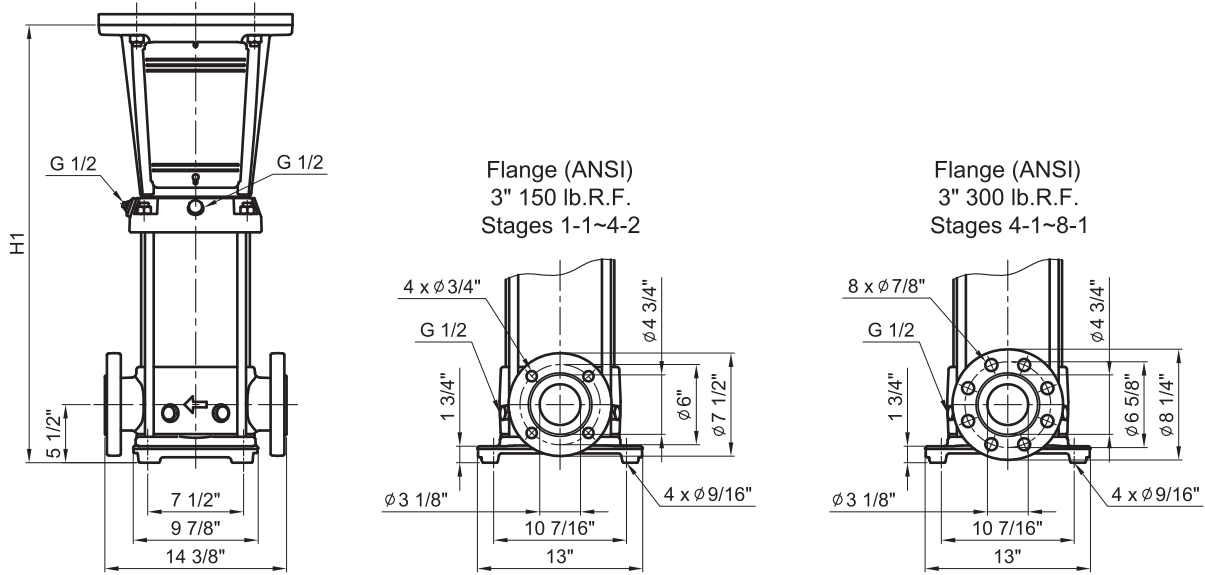


**VMI 45 | Pumping Curves, 60 Hz**





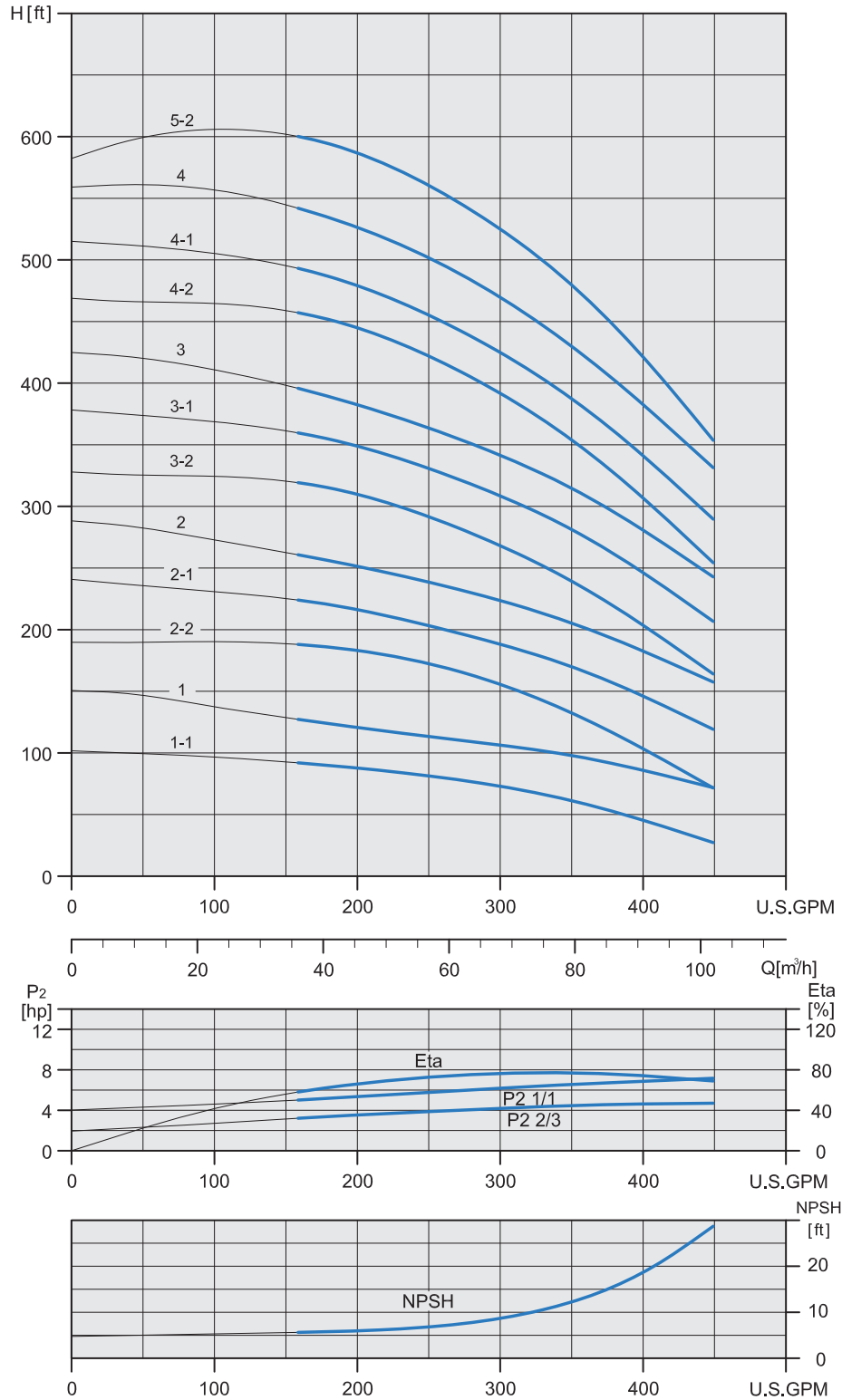
**VMI 45 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 45-1-1	7-1/2	5.5	1 / 3	213TC	-	22.20	124.60
VMI 45-1	7-1/2	5.5	1 / 3	213TC	-	22.20	124.63
VMI 45-2-2	15	11	3	254TC	254TC	29.49	153.79
VMI 45-2-1	15	11	3	254TC	254TC	29.49	153.81
VMI 45-2	15	11	3	254TC	254TC	29.49	153.83
VMI 45-3-2	20	15	3	254TC	254TC	32.64	161.87
VMI 45-3-1	25	18.5	3	284TSC	284TSC	32.64	164.06
VMI 45-3	25	18.5	3	284TSC	284TSC	32.64	164.09
VMI 45-4-2	30	22	3	286TSC	284TSC	35.79	172.13
VMI 45-4-1	30	22	3	286TSC	284TSC	35.79	172.15
VMI 45-4	30	22	3	286TSC	284TSC	35.79	172.17
VMI 45-5-2	40	30	3	286TSC	286TSC	38.94	180.21
VMI 45-5-1	40	30	3	286TSC	286TSC	38.94	180.23
VMI 45-5	40	30	3	286TSC	286TSC	38.94	180.25
VMI 45-6-2	50	37	3	326TSC	324TSC	42.09	205.74
VMI 45-6	50	37	3	326TSC	324TSC	42.09	205.78
VMI 45-7-2	50	37	3	326TSC	324TSC	45.24	213.82
VMI 45-7	60	45	3	364TSC	324TSC	45.24	213.86
VMI 45-8-1	60	45	3	364TSC	324TSC	48.39	220.98

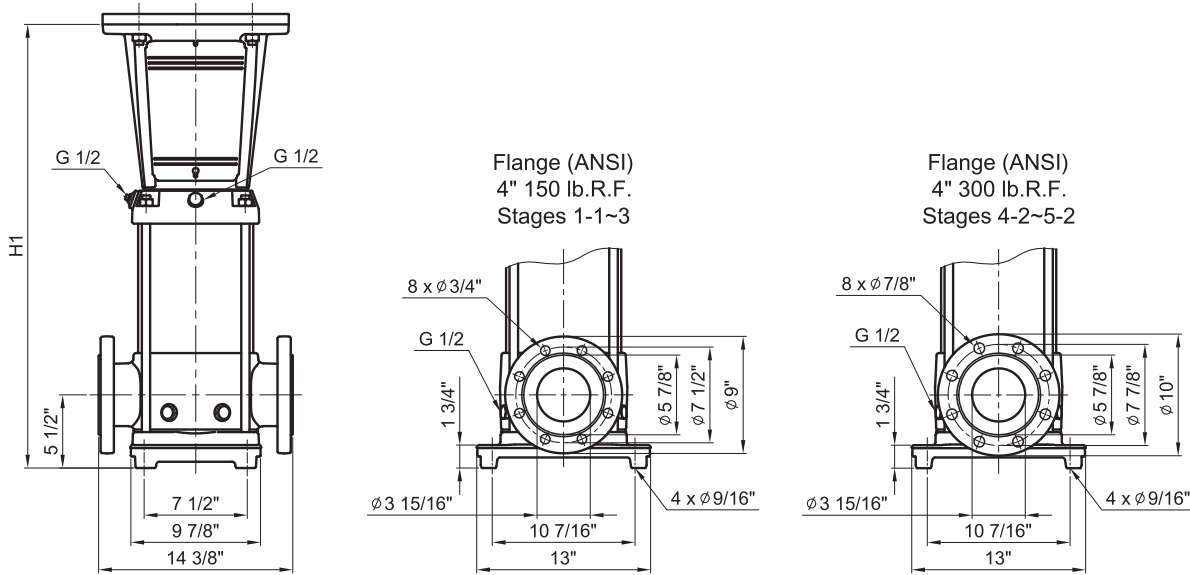


**VMI 64 | Pumping Curves, 60 Hz**





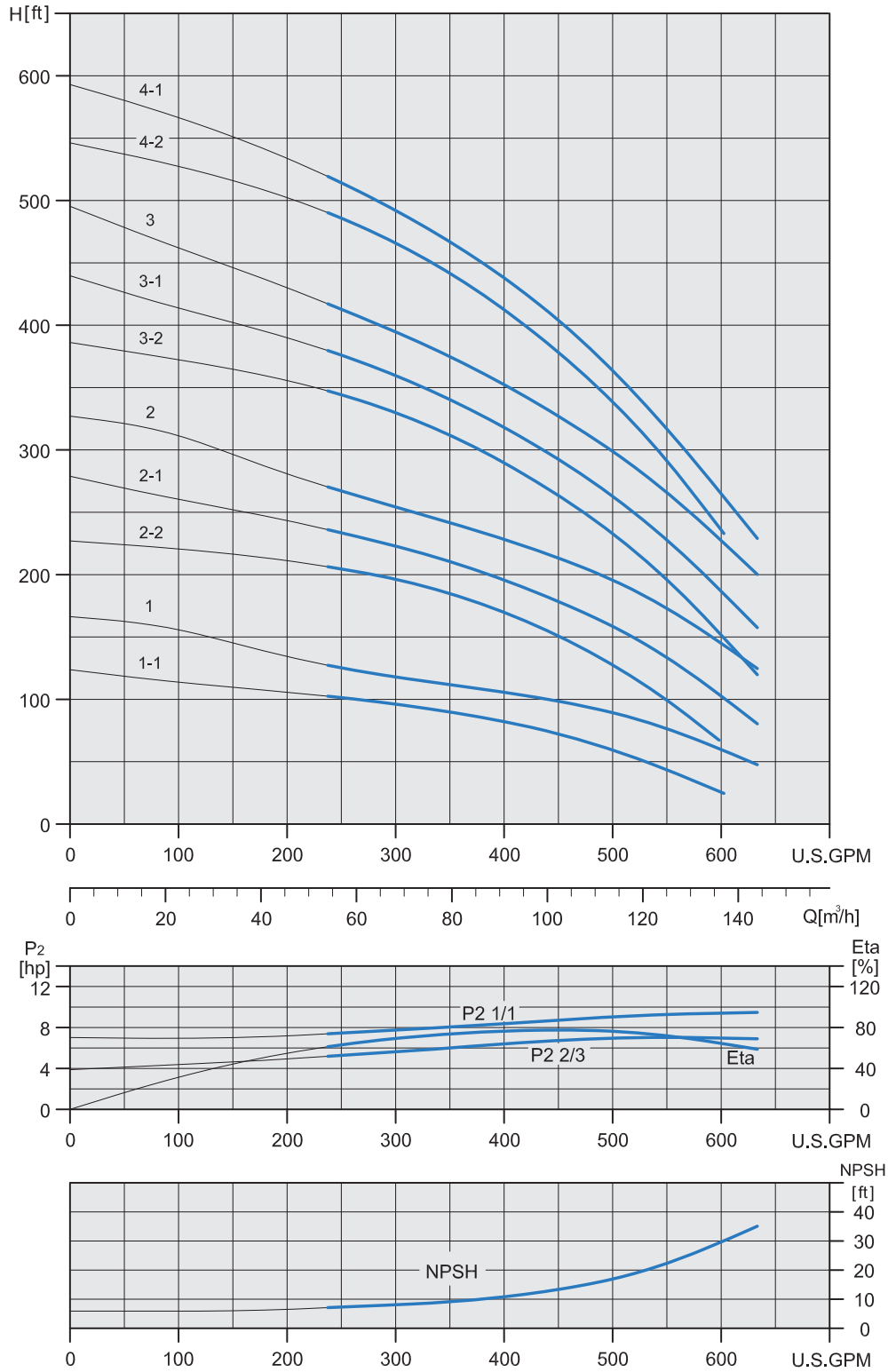
**VMI 64 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 64-1-1	7-1/2	5.5	1 / 3	213TC	-	22.36	115.11
VMI 64-1	15	11	3	254TC	254TC	26.50	136.23
VMI 64-2-2	15	11	3	254TC	254TC	29.74	144.89
VMI 64-2-1	20	15	3	254TC	254TC	29.74	144.89
VMI 64-2	25	18.5	3	284TSC	284TSC	29.74	147.06
VMI 64-3-2	30	22	3	286TSC	284TSC	32.99	155.89
VMI 64-3-1	40	30	3	286TSC	286TSC	32.99	155.89
VMI 64-3	40	30	3	286TSC	286TSC	32.99	155.89
VMI 64-4-2	40	30	3	286TSC	286TSC	36.24	164.42
VMI 64-4-1	50	37	3	326TSC	324TSC	36.24	181.86
VMI 64-4	50	37	3	326TSC	324TSC	36.24	181.86
VMI 64-5-2	60	45	3	364TSC	324TSC	39.49	181.59

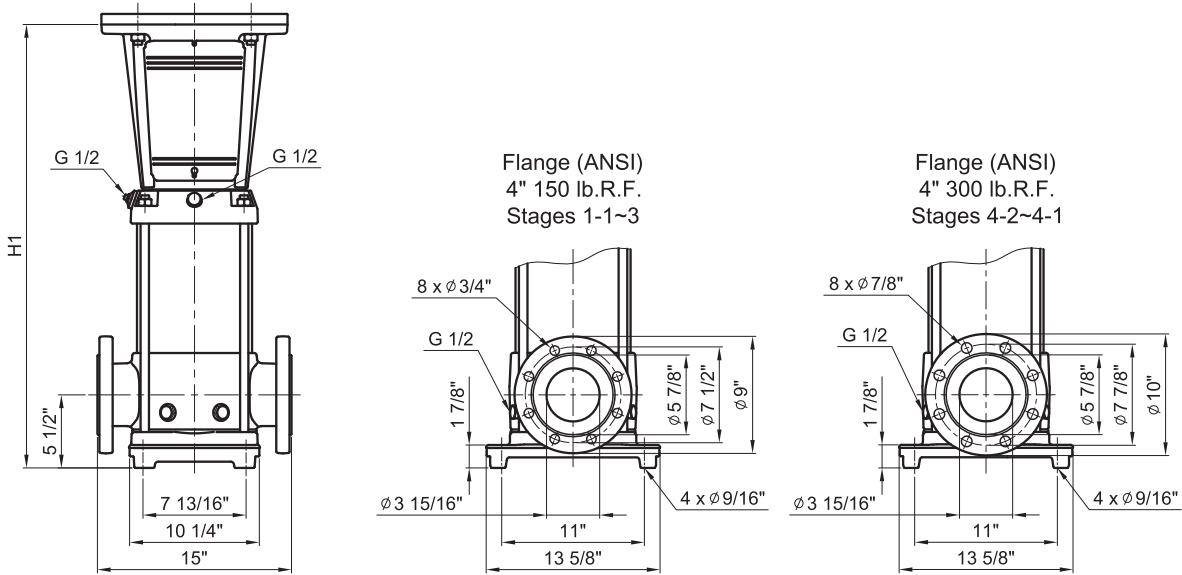


VMI 90 | Pumping Curves, 60 Hz





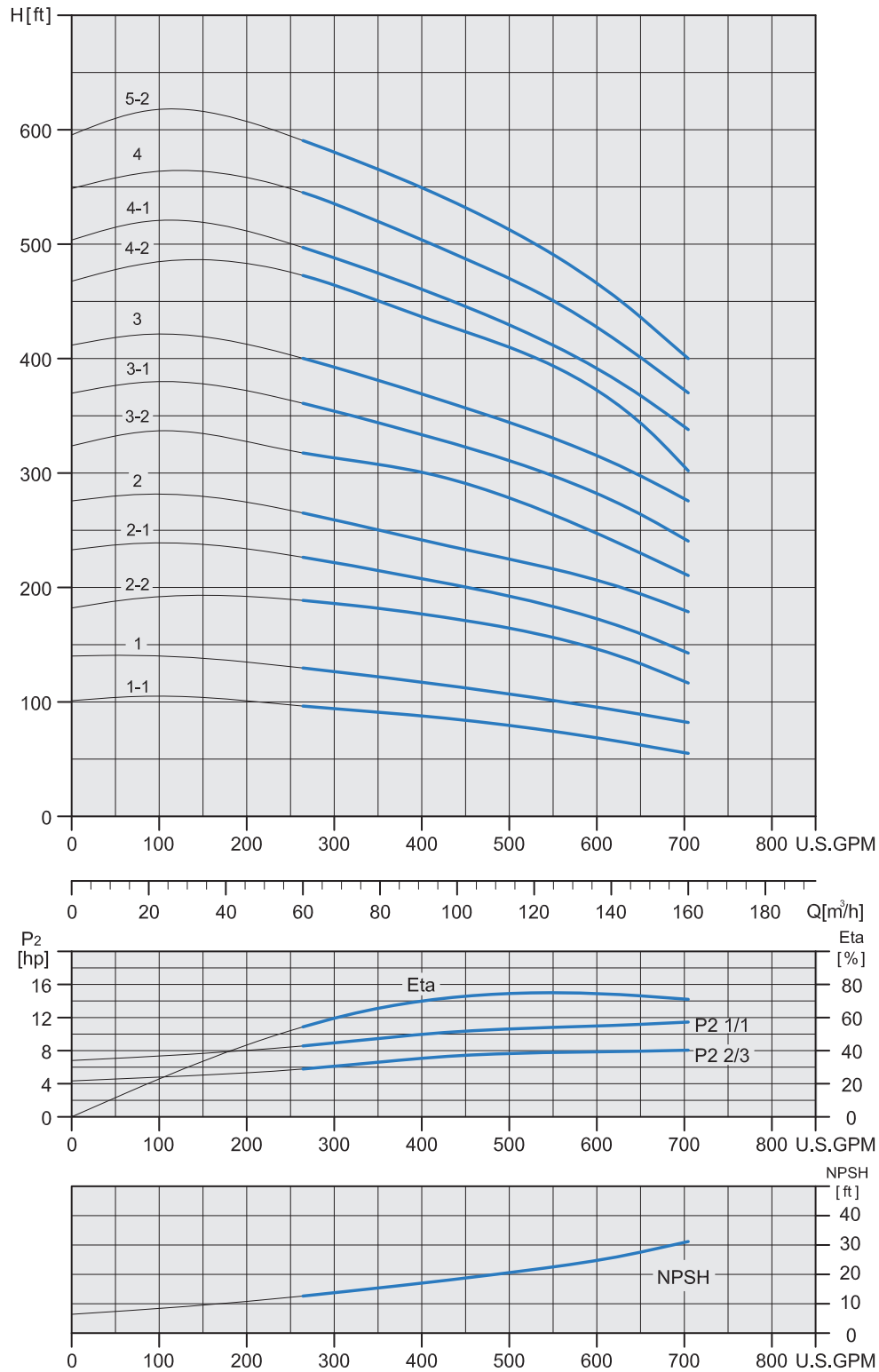
**VMI 90 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 90-1-1	15	11	3	254TC	254TC	26.75	159.32
VMI 90-1	15	11	3	254TC	254TC	26.75	159.36
VMI 90-2-2	25	18.5	3	284TSC	284TSC	30.34	172.59
VMI 90-2-1	30	22	3	286TSC	284TSC	30.34	172.63
VMI 90-2	40	30	3	286TSC	286TSC	30.34	172.68
VMI 90-3-2	40	30	3	286TSC	286TSC	33.93	183.78
VMI 90-3-1	50	37	3	326TSC	324TSC	33.93	201.26
VMI 90-3	50	37	3	326TSC	324TSC	33.93	201.31
VMI 90-4-2	60	45	3	364TSC	324TSC	37.36	216.24
VMI 90-4-1	60	45	3	364TSC	324TSC	37.36	216.62



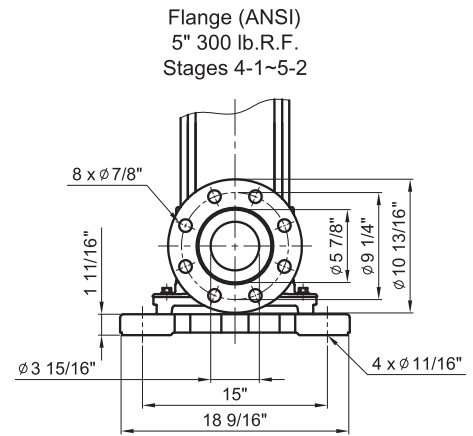
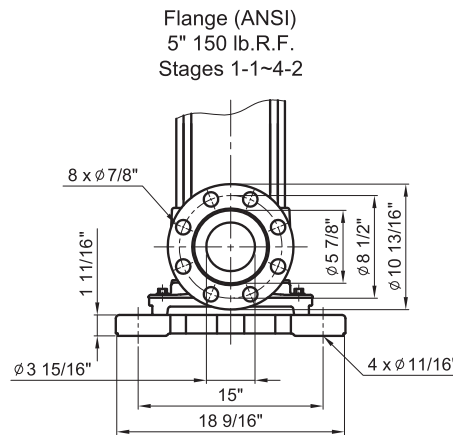
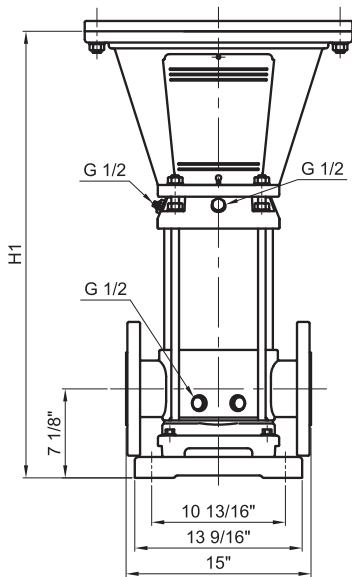
**VMI 120 | Pumping Curves, 60 Hz**







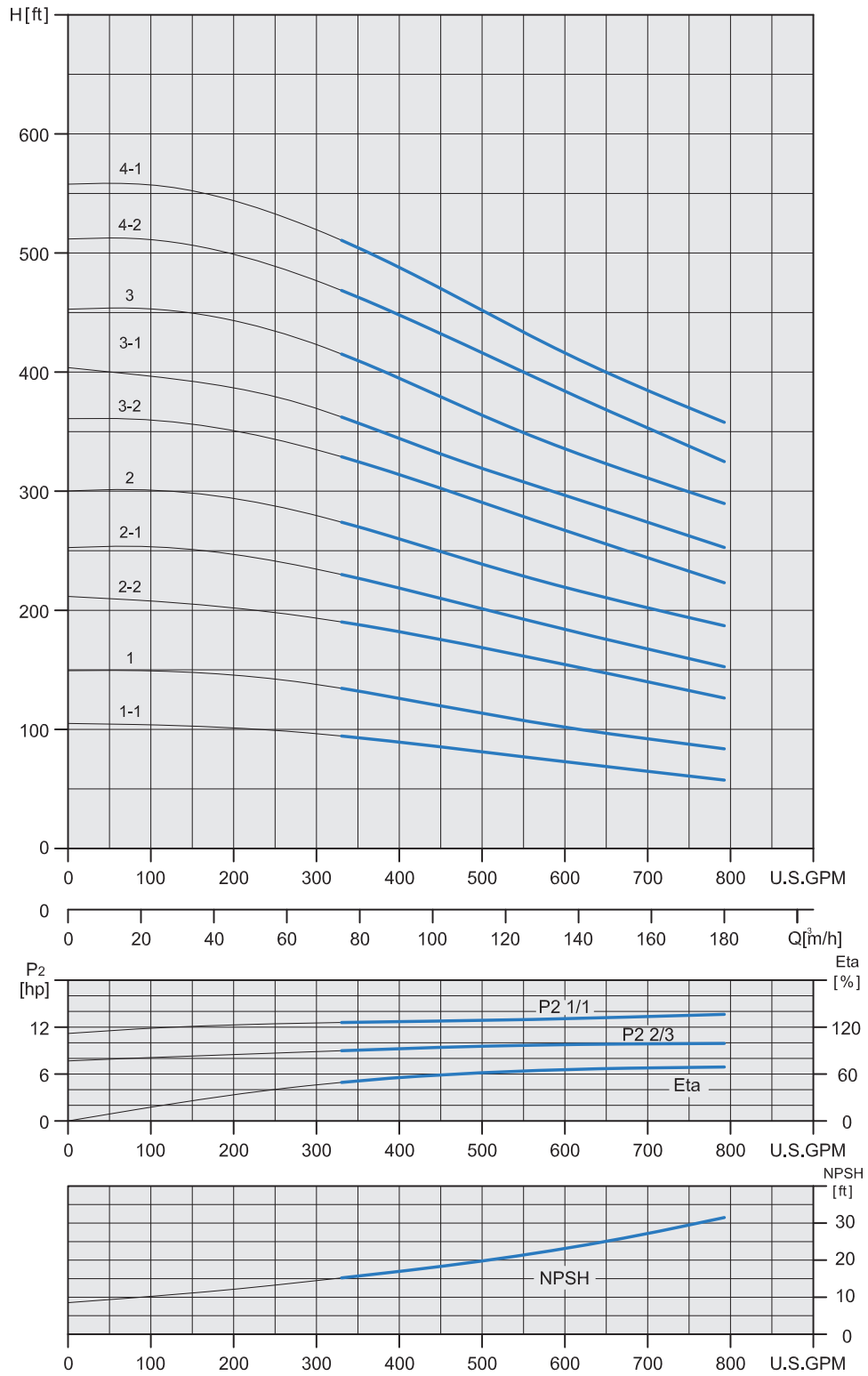
**VMI 120 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 120-1-1	20	15	3	254TC	254TC	32.95	204.36
VMI 120-1	25	18.5	3	284TSC	284TSC	32.95	206.71
VMI 120-2-2	40	30	3	286TSC	286TSC	39.07	237.10
VMI 120-2-1	40	30	3	286TSC	286TSC	39.07	237.32
VMI 120-2	50	37	3	326TSC	324TSC	39.07	254.99
VMI 120-3-2	60	45	3	364TSC	324TSC	45.20	276.18
VMI 120-3-1	60	45	3	364TSC	324TSC	45.20	276.35
VMI 120-3	75	55	3	365TSC	364TSC	45.67	331.35
VMI 120-4-2	75	55	3	365TSC	364TSC	51.79	352.87
VMI 120-4-1	100	75	3	405TSC	365TSC	51.79	353.05
VMI 120-4	100	75	3	405TSC	365TSC	51.79	353.22
VMI 120-5-2	100	75	3	405TSC	365TSC	57.91	374.48

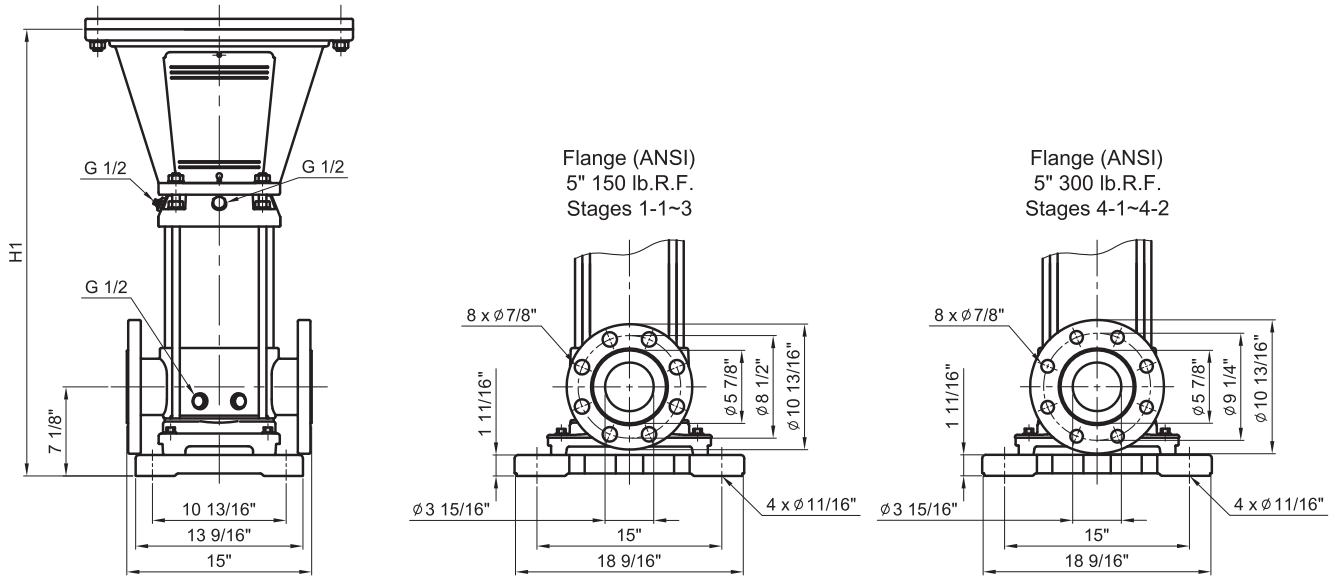


**VMI 150 | Pumping Curves, 60 Hz**





**VMI 150 | Dimensions and Weights**



Pump Type	Recommended Motor of HP			NEMA Frame TEFC Motors	NEMA Frame ODP Motors	Dimension (inch)	Weight (lb)
	P <sub>2</sub>					ANSI Flange	ANSI Flange
	HP	kW	PH			H1	
VMI 150-1-1	25	18.5	3	284TSC	284TSC	32.95	214.22
VMI 150-1	30	22	3	286TSC	284TSC	32.95	214.75
VMI 150-2-2	40	30	3	286TSC	286TSC	39.07	235.85
VMI 150-2-1	50	37	3	326TSC	324TSC	39.07	253.36
VMI 150-2	60	45	3	364TSC	324TSC	39.07	253.47
VMI 150-3-2	75	55	3	365TSC	364TSC	45.67	329.61
VMI 150-3-1	75	55	3	365TSC	364TSC	45.67	329.74
VMI 150-3	100	75	3	405TSC	365TSC	45.67	329.83
VMI 150-4-2	100	75	3	405TSC	365TSC	51.79	349.33
VMI 150-4-1	100	75	3	405TSC	365TSC	51.79	349.41



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