



# SUBMERSIBLE PUMPS

## RESIDENTIAL & LIGHT COMMERCIAL







## SUBMERSIBLE PUMPS

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For the most up-to-date product information, visit [franklinwater.com](http://franklinwater.com).

## MODEL NUMBER NOMENCLATURE

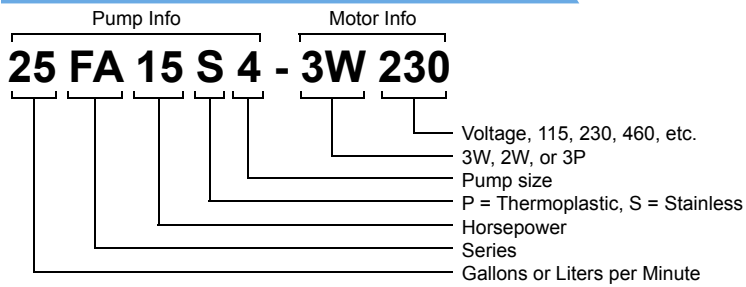
### PUMP AND MOTOR BRAND/SERIES CODES

- FR = FPS 3200 Series
- FA = FPS Tri-Seal
- FV = FPS Series V
- FE = FPS Environmental

### HORSEPOWER CODES

HP	1/3	1/2	3/4	1	1.5	2	3	5	7.5	10	15	20	25	30	35	40	50	60	75	100	125	150	175	200
Code	03	05	07	1	15	2	3	5	7	10	15	20	25	30	35	40	50	60	75	100	125	150	175	200

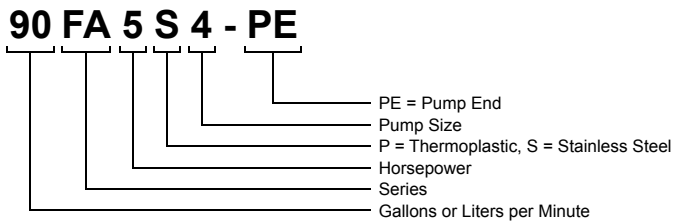
### 4" 5-25 GPM SUBMERSIBLE PUMPS/MOTORS



#### Examples:

- 15FA1S4-2W115 = 15 gpm, FPS 4400 Tri-Seal, Stainless Steel, 1 hp, 115 V, 2-wire Motor
- 10FA15SA-3W230 = 10 gpm, FPS 4400 Tri-Seal, Stainless Steel, 1.5 hp, 230 V, 3-wire Motor

### PUMP END



#### Examples:

- 45FA3S4-PE = 45 gpm, FPS 4400, 3 hp, Stainless Steel, Pump End
- 25FE1P4-PE = 25 lpm, FPS E Series, 1 hp, Thermoplastic, Pump End

## YOUR SUBMERSIBLE PUMP TEAM

Franklin's technical service hotline is made up of real people, offering real answers, in real time. Serving professional water systems distributors and contractors, our hotline boasts decades of collective industry experience. For answers to your water systems questions, contact our hotline by phone or email.

### CUSTOMER RELATIONS

Please contact us at:

Toll free: 800-269-0063

Fax: 260-827-5800

Email: [cleanwater@fele.com](mailto:cleanwater@fele.com)

Franklin Electric Website: [www.franklinwater.com](http://www.franklinwater.com)

E-Link: <http://elink.franklin-electric.com>

Distributor Self-Service: <http://customer.franklin-electric.com>

Facebook, Twitter, and YouTube: Search for "Franklin Electric"

### TECHNICAL SERVICE HOTLINE

Please contact us at:

Toll free: 800-348-2420

Email: [hotline@fele.com](mailto:hotline@fele.com)

Franklin Electric Website: [www.franklinwater.com](http://www.franklinwater.com)

E-Link: <http://elink.franklin-electric.com>

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**EXPERIENCE  
SERVICE**


## 4" 3200 SERIES PUMPS

The 3200 Series submersible pumps are designed so that all parts of the pump end, including the cable guard, fall within the diameter of Franklin Electric's industry leading submersible 4" motor. This reduced diameter pump end makes it ideal for installations where the well is considered encrusted or tight in comparison to a standard 4" well. The 3200 Series also offers a hydraulic stage design optimized for greater water and pressure output when installed at deeper well depths. For details on how to become a registered dealer and receive a 5-year warranty, contact your local distributor.

### FEATURES

- Pump diameter is smaller than a standard 4" submersible for easier installation in reduced diameter 4" wells
- Hex rubber bearing and ceramic shaft sleeve allows sand and abrasives to pass through, virtually eliminating shaft wear and upper bearing failures
- Improved hydraulic performance for deeper set depths at all horsepower and flow ratings
  - Floating stage design allows for maximum efficiency while minimizing the downthrust load that is transferred to the motor
  - Advanced thermoplastic diffuser and disc with 300 Series stainless steel thrust and eye seal protection for durability and abrasion resistance
  - Scalloped impellers provide high performance to increase pressure output while reducing system losses from friction
- Removable spring-loaded check valve
- Stainless steel pump intake screen and stainless steel cable guard
- Maximum water temperature: 120 °F/49 °C
- Powered by corrosion-resistant Franklin Electric submersible 4" motor with lightning protection




 UL 778  
 CSA 108  
 NSF/ANSI 372  
 NSF/ANSI 61 (Pump end only)

## 4" 3200 SERIES PUMPS - ORDERING INFORMATION

### THERMOPLASTIC ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire		3-Wire		
				Model	Order No.	Model	Order No.	Control Box
5	1/2	13	115	5FR05P4-2W115	96210505	5FR05P4-3W115	96210530	2801044915
	1/2	13	230	5FR05P4-2W230	96210510	5FR05P4-3W230	96210535	2801054915
	3/4	18	230	5FR07P4-2W230	96210515	5FR07P4-3W230	96210540	2801074915
	1	22	230	5FR1P4-2W230	96210520	5FR1P4-3W230	96210545	2801084915
7	1/2	10	115	7FR05P4-2W115	96210705	7FR05P4-3W115	96210730	2801044915
	1/2	10	230	7FR05P4-2W230	96210710	7FR05P4-3W230	96210735	2801054915
	3/4	13	230	7FR07P4-2W230	96210715	7FR07P4-3W230	96210740	2801074915
	1	18	230	7FR1P4-2W230	96210720	7FR1P4-3W230	96210745	2801084915
10	1/2	11	115	10FRD05P4-2W115	96211005	10FRD05P4-3W115	96211030	2801044915
	1/2	11	230	10FRD05P4-2W230	96211010	10FRD05P4-3W230	96211035	2801054915
	3/4	14	230	10FRD07P4-2W230	96211015	10FRD07P4-3W230	96211040	2801074915
	1	19	230	10FRD1P4-2W230	96211020	10FRD1P4-3W230	96211045	2801084915

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard on all models is 3.75".

### STAINLESS STEEL ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire		3-Wire		
				Model	Order No.	Model	Order No.	Control Box
5	1/2	13	115	5FR05S4-2W115	96310505	5FR05S4-3W115	96310530	2801044915
	1/2	13	230	5FR05S4-2W230	96310510	5FR05S4-3W230	96310535	2801054915
	3/4	18	230	5FR07S4-2W230	96310515	5FR07S4-3W230	96310540	2801074915
	1	22	230	5FR1S4-2W230	96310520	5FR1S4-3W230	96310545	2801084915
	1.5	30	230	5FR15S4-2W230	96310525	5FR15S4-3W230	96310550	2823008610
7	1/2	10	115	7FR05S4-2W115	96310705	7FR05S4-3W115	96310730	2801044915
	1/2	10	230	7FR05S4-2W230	96310710	7FR05S4-3W230	96310735	2801054915
	3/4	13	230	7FR07S4-2W230	96310715	7FR07S4-3W230	96310740	2801074915
	1	18	230	7FR1S4-2W230	96310720	7FR1S4-3W230	96310745	2801084915
	1.5	23	230	7FR15S4-2W230	96310725	7FR15S4-3W230	96310750	2823008610
10	1/2	11	115	10FRD05S4-2W115	96311005	10FRD05S4-3W115	96311030	2801044915
	1/2	11	230	10FRD05S4-2W230	96311010	10FRD05S4-3W230	96311035	2801054915
	3/4	14	230	10FRD07S4-2W230	96311015	10FRD07S4-3W230	96311040	2801074915
	1	19	230	10FRD1S4-2W230	96311020	10FRD1S4-3W230	96311045	2801084915
	1.5	24	230	10FRD15S4-2W230	96311025	10FRD15S4-3W230	96311050	2823008610

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard on all models is 3.75".

### THERMOPLASTIC PUMP ENDS

GPM	HP	Stages	Model	Order No.
5	1/2	13	5FR05P4-PE	96220500
	3/4	18	5FR07P4-PE	96220501
	1	22	5FR1P4-PE	96220502
7	1/2	10	7FR05P4-PE	96220700
	3/4	13	7FR07P4-PE	96220701
	1	18	7FR1P4-PE	96220702
10	1/2	11	10FRD05P4-PE	96221000
	3/4	14	10FRD07P4-PE	96221001
	1	19	10FRD1P4-PE	96221002

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard on all models is 3.75".

### STAINLESS STEEL PUMP ENDS

GPM	HP	Stages	Model	Order No.
5	1/2	13	5FR05S4-PE	96320500
	3/4	18	5FR07S4-PE	96320501
	1	22	5FR1S4-PE	96320502
	1.5	30	5FR15S4-PE	96320503
	2	38	5FR25S4-PE	96320504
7	1/2	10	7FR05S4-PE	96320700
	3/4	13	7FR07S4-PE	96320701
	1	18	7FR1S4-PE	96320702
	1.5	23	7FR15S4-PE	96320703
	2	30	7FR25S4-PE	96320704
10	3	38	7FR35S4-PE	96320705
	1/2	11	10FRD05S4-PE	96321000
	3/4	14	10FRD07S4-PE	96321001
	1	19	10FRD1S4-PE	96321002
	1.5	24	10FRD15S4-PE	96321003

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard on all models is 3.75".

# 4" 3200 SERIES PUMPS - 5 GPM

## PERFORMANCE

The graph displays the performance characteristics of 4-inch 3200 series pumps at a constant flow rate of 5 GPM. The vertical axis represents head in meters and feet, while the horizontal axis represents flow rate in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed area indicates the overall pump operating range.

Head (Feet)	Head (Meters)	2 HP (GPM)	1.5 HP (GPM)	1 HP (GPM)	3/4 HP (GPM)	1/2 HP (GPM)
1100	350	~0.5	~0.8	~1.2	~1.5	~2.0
1000	300	~1.0	~1.5	~2.2	~2.8	~3.8
900	250	~1.5	~2.2	~3.0	~3.8	~5.0
800	200	~2.0	~2.8	~3.8	~4.8	~6.5
700	150	~2.5	~3.5	~4.5	~5.5	~7.5
600	100	~3.0	~4.0	~5.0	~6.0	~8.0
500	50	~3.5	~4.5	~5.5	~6.5	~8.5
400	0	~4.0	~5.0	~6.0	~7.0	~9.0

**PUMP OPERATING RANGE:** Approximately 1.5 GPM to 7.5 GPM.  
**BEST EFFICIENCY RANGE:** Approximately 3.0 GPM to 7.0 GPM.

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## 4" 3200 SERIES PUMPS - 5 GPM

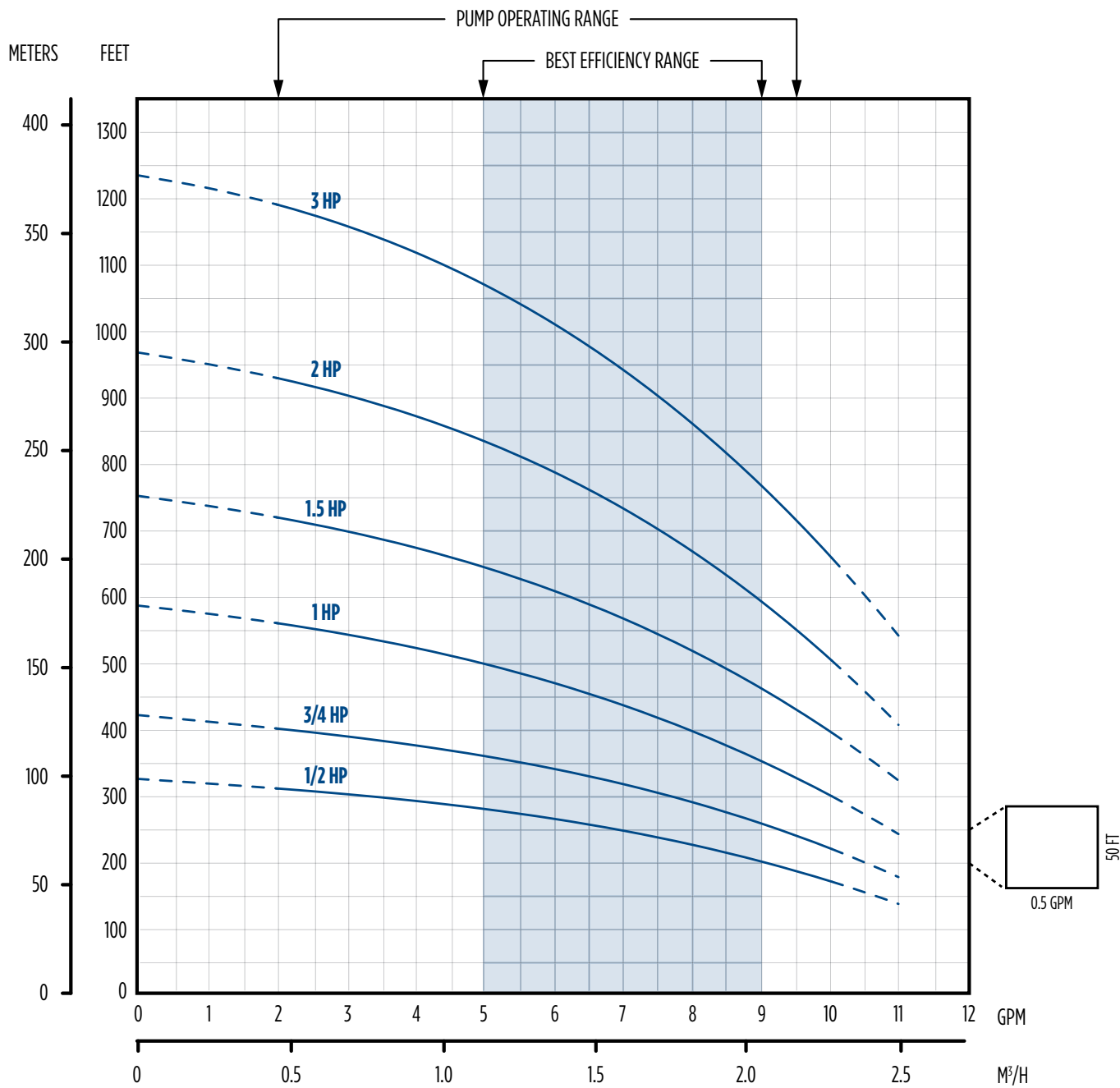
### PERFORMANCE

HP	PSI	Depth To Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900		1000	
1/2	0				8	8	8	7	7	7	6	5	4	3									390	
	20		8	8	8	7	7	7	6	6	6	4	3											
	30	8	8	7	7	7	7	6	6	6	5	4	1											
	40	8	7	7	7	7	6	6	6	5	5	3												
	50	7	7	7	7	6	6	5	5	4	4	2												
	60	7	7	6	6	6	5	5	4	4	3													
80	6	6	6	5	5	4	4	3	2															
Shut-off PSI		161	152	143	135	126	117	109	100	91	83	61	39	18										
3/4	0					8	8	8	8	7	7	6	6	5	4	2							541	
	20				8	8	8	7	7	7	7	6	6	5	4	2								
	30			8	8	8	7	7	7	7	7	6	5	4	3	1								
	40		8	8	8	7	7	7	7	7	6	6	5	4	3									
	50	8	8	8	7	7	7	7	7	6	6	5	4	3	2									
	60	8	8	7	7	7	7	6	6	6	6	5	4	3										
80	7	7	7	7	6	6	6	6	5	5	4	3	1											
Shut-off PSI		226	217	209	200	191	183	174	165	157	148	126	105	83	61	39	18							
1	0						8	8	8	8	7	7	6	6	5	5	2						666	
	20					8	8	8	8	7	7	7	6	6	5	4	1							
	30				8	8	8	8	7	7	7	7	6	6	5	4	3							
	40			8	8	8	8	7	7	7	7	6	6	5	5	4	3							
	50		8	8	8	8	8	7	7	7	7	6	6	5	4	3	2							
	60	8	8	8	7	7	7	7	7	7	6	6	5	5	4	3	1							
80	8	7	7	7	7	7	7	6	6	6	5	5	4	3	1									
Shut-off PSI		280	271	263	254	245	237	228	219	211	202	180	159	137	115	94	72	29						
1.5	0									8	8	8	7	7	7	6	6	5	4	3			899	
	20									8	8	8	7	7	7	6	6	5	4	2				
	30									8	8	8	7	7	7	6	6	6	5	3	1			
	40								8	8	8	8	7	7	7	6	6	5	4	3				
	50						8	8	8	8	7	7	7	6	6	6	5	4	3					
	60				8	8	8	8	8	7	7	7	7	6	6	5	5	4	2					
80		8	8	8	8	8	7	7	7	7	7	6	6	5	5	4	3	1						
Shut-off PSI		381	372	364	355	346	338	329	320	312	303	281	260	238	216	195	173	130	86	43				
2	0											8	8	8	7	7	7	6	6	5	4	3	1152	
	20											8	8	8	7	7	7	6	5	5	4	2		
	30										8	8	8	8	7	7	7	6	5	4	3	2		
	40									8	8	8	8	7	7	7	7	6	6	5	4	3		1
	50								8	8	8	8	8	7	7	7	7	6	6	5	4	3		1
	60						8	8	8	8	8	8	7	7	7	7	6	6	5	5	4	2		
80				8	8	8	8	8	8	8	7	7	7	7	6	6	6	5	4	3	2			
Shut-off PSI		491	482	473	465	456	447	439	430	421	413	391	369	348	326	304	282	239	195	152	109	66		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# 4" 3200 SERIES PUMPS - 7 GPM

## PERFORMANCE



### 4" 3200 SERIES PUMPS - 7 GPM

#### PERFORMANCE

HP	PSI	Depth To Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			Shut-Off (ft)				
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800		900	1000		
1/2	0				12	12	11	11	10	10	9	7	3											324	
	20		12	12	11	11	10	9	9	8	7	4													
	30	12	12	11	11	10	9	9	8	7	6	1													
	40	12	11	11	10	10	9	9	8	7	5	4													
	50	11	10	10	9	8	8	7	5	4	1														
	60	10	10	9	8	7	6	5	3	1															
80	9	8	7	6	5	3																			
Shut-off PSI		132	123	115	106	97	89	80	71	63	54	32	10												
3/4	0					12	12	11	11	10	9	8	5	2										421	
	20				12	12	11	11	10	10	9	8	6	2											
	30			12	12	11	11	10	10	9	9	7	4												
	40		12	11	11	11	10	10	9	9	8	6	3												
	50	12	11	11	11	10	10	9	8	8	7	5	1												
	60	11	11	10	10	10	9	8	8	7	6	3													
80	10	10	9	9	8	7	7	6	5	3															
Shut-off PSI		174	165	156	148	139	130	122	113	104	96	74	52	31	9										
1	0						12	12	11	11	11	10	9	8	7	5								586	
	20						12	12	11	11	11	10	9	8	7	5	3								
	30					12	12	11	11	11	11	10	9	7	6	4	1								
	40				12	12	11	11	11	10	10	9	8	7	5	3									
	50			12	12	11	11	11	10	10	10	9	8	6	5	2									
	60		12	12	11	11	11	10	10	10	9	8	7	5	3										
80	12	11	11	11	10	10	10	9	9	8	7	6	3												
Shut-off PSI		245	237	228	219	211	202	193	185	176	167	146	124	102	81	59	37								
1.5	0									12	12	11	11	10	9	8	6	3						752	
	20									12	12	11	11	10	9	8	7	5							
	30									12	12	12	11	10	10	9	8	7	4						
	40									12	12	12	11	11	10	9	8	8	6	3					
	50						12	12	11	11	11	10	10	9	8	7	6	2							
	60					12	12	11	11	11	11	10	9	9	8	7	5	1							
80		12	12	12	11	11	11	11	10	10	9	9	8	7	5	4									
Shut-off PSI		317	309	300	291	283	274	265	257	248	139	218	196	174	153	131	109	66	23						
2	0												12	11	11	10	9	8	6	3				969	
	20												12	12	11	11	10	10	8	7	5	1			
	30												12	12	11	11	10	10	9	8	6	4			
	40										12	12	12	11	11	10	10	9	8	6	3				
	50										12	12	12	11	11	10	10	9	9	7	5	3			
	60										12	12	12	11	11	10	10	9	8	7	5	2			
80						12	12	12	12	11	11	11	10	10	9	8	8	6	4						
Shut-off PSI		411	403	394	385	376	368	359	350	342	333	312	290	268	247	225	203	160	117	73	30				

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

HP	PSI	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	Shut-Off (ft)
3	0				12	11	11	10	9	8	6	4	2			1237
	20				12	11	10	9	8	7	5	3				
	30			12	12	11	10	9	8	7	5	3				
	40			12	11	11	10	9	8	6	5	2				
	50			12	11	10	10	9	7	6	4	1				
	60			12	11	10	9	8	7	6	4					
80		12	11	11	10	9	8	6	5	2						
Shut-off PSI		493	450	406	363	319	276	233	189	146	103	59	16			

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# 4" 3200 SERIES PUMPS - 10 GPM

## PERFORMANCE

The graph displays the performance characteristics of four different pump models. The vertical axis represents head in meters and feet, while the horizontal axis represents flow rate in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed area shows the overall pump operating range.

Flow Rate (GPM)	Flow Rate (M <sup>3</sup> /H)	1.5 HP Head (FT)	1.5 HP Head (M)	1 HP Head (FT)	1 HP Head (M)	3/4 HP Head (FT)	3/4 HP Head (M)	1/2 HP Head (FT)	1/2 HP Head (M)
0	0	750	228	610	186	430	131	330	101
2	0.75	730	223	590	180	420	128	320	98
4	1.5	680	207	550	168	390	120	290	89
6	2.25	600	183	480	146	340	104	250	76
8	3.0	500	152	400	122	280	86	200	61
10	3.75	380	116	300	91	210	64	140	43
12	4.5	250	76	180	55	120	37	80	24
13	4.875	180	55	120	37	80	24	50	15

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## 4" 3200 SERIES PUMPS - 10 GPM

### PERFORMANCE

HP	PSI	Depth To Pumping Water Level, Lift, in Feet. Shaded Areas Indicate Most Efficient Performance																								Shut-Off (ft)		
		0	20	40	60	80	100	120	140	160	180	200	240	280	320	360	400	440	480	500	550	600	650	700	750		800	
1/2	0					12	12	11	11	10	10	9	8	6	4	0												
	10				12	12	11	11	10	9	9	8	7	5	1	0												
	20		12	12	12	11	10	10	10	9	9	8	7	6	3	0												
	30	12	12	11	11	10	10	10	9	9	8	7	6	4	0													
	40	12	11	11	10	10	9	9	8	7	6	5	3	0														
	50	11	11	10	10	9	8	8	7	6	5	4	0															
	60	11	10	10	9	8	8	7	6	5	4	2	0															
	70	10	10	9	8	8	7	6	5	4	2	0																
80	9	9	8	7	7	6	5	3	1	0																		
Shut-off PSI		153	144	135	127	118	110	101	92	84	75	66	49	32	14	0												
3/4	0					13	12	12	12	11	11	10	9	9	7	6	5	2	0									
	10				13	12	12	11	11	10	10	9	8	7	5	3	0											
	20		13	12	12	12	11	11	11	10	10	9	8	7	6	4	1	0										
	30	13	12	12	12	11	11	11	10	10	9	9	8	7	5	3	0											
	40	12	12	12	11	11	10	10	10	9	9	8	7	6	4	0												
	50	12	12	11	11	10	10	10	9	9	8	8	6	5	3	0												
	60	12	11	11	10	10	10	9	9	8	8	7	6	4	0													
	70	11	11	10	10	9	9	8	8	7	7	6	5	2	0													
80	11	10	10	9	9	8	8	7	7	6	5	3	0															
Shut-off PSI		197	188	180	171	162	154	145	136	128	119	110	93	76	58	41	24	6	0									
1	0					13	12	12	12	12	11	11	10	10	9	9	8	7	6	6	4	2	0					
	10					13	12	12	12	12	11	11	10	10	9	8	8	7	6	5	3	0						
	20				13	12	12	12	12	11	11	11	10	9	9	8	7	6	5	4	2	0						
	30		13	13	12	12	12	11	11	11	11	10	10	9	8	7	7	6	4	4	0							
	40	13	12	12	12	12	11	11	11	11	10	10	9	9	8	7	6	5	3	2	0							
	50	12	12	12	12	11	11	11	11	10	10	10	9	8	7	6	5	4	2	0								
	60	12	12	12	11	11	11	10	10	10	10	9	8	8	7	6	5	3	0									
	70	12	12	11	11	11	10	10	10	9	9	8	7	6	5	4	2	0										
80	12	11	11	11	10	10	10	9	9	8	8	7	6	4	3	0												
Shut-off PSI		268	259	250	242	233	224	216	207	198	190	181	164	146	129	112	94	77	60	51	29	8	0					
1.5	0									13	12	12	11	11	11	10	9	9	9	8	7	6	4	2	0			
	10								13	13	12	12	12	11	11	10	10	9	9	8	7	6	5	4	0			
	20								13	12	12	12	12	11	11	10	10	9	9	8	8	7	6	5	3	0		
	30						13	12	12	12	12	12	11	11	10	10	10	9	8	8	7	7	5	4	0			
	40					13	12	12	12	12	12	11	11	11	10	10	9	9	8	7	7	6	5	3	0			
	50				13	12	12	12	12	12	11	11	11	10	10	10	9	8	8	7	7	5	4	0				
	60			13	12	12	12	12	12	11	11	11	11	10	10	9	9	8	7	7	6	5	3	0				
	70	13	13	12	12	12	12	11	11	11	11	11	10	9	9	8	8	7	6	6	4	0						
80	12	12	12	12	12	11	11	11	11	10	10	10	9	9	8	7	6	5	5	3	0							
Shut-off PSI		331	323	314	305	297	288	279	271	262	253	245	227	210	193	175	158	141	123	115	93	71	50	28	6	0		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

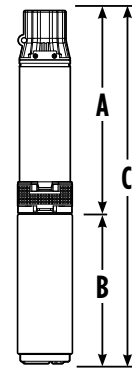
## 4" 3200 SERIES PUMPS - DIMENSIONS

### THERMOPLASTIC

GPM	HP	Stages	2-Wire						3-Wire					
			Dimensions (in)			Wt. (lbs)			Dimensions (in)			Wt. (lbs)		
			A	B	C	PE	PMA	A	B	C	PE	PMA		
5	1/2	13	18.4	9.5	27.9	8	27	18.4	9.5	27.9	8	27		
	3/4	18	22.6	10.6	33.3	10	31	22.6	10.6	33.3	10	31		
	1	22	26.0	11.7	37.7	11	35	26.0	11.7	37.7	11	35		
7	1/2	10	15.9	9.5	25.4	7	26	15.9	9.5	25.4	7	26		
	3/4	13	18.4	10.6	29.0	9	30	18.4	10.6	29.0	9	30		
	1	18	22.6	11.7	34.3	11	35	22.6	11.7	34.3	11	35		
10	1/2	11	16.7	9.5	26.2	8	27	16.7	9.5	26.2	8	27		
	1/2	11	16.7	9.5	26.2	8	27	16.7	9.5	26.2	8	27		
	3/4	14	19.2	10.6	29.8	10	31	19.2	10.6	29.8	10	31		
		1	19	23.5	11.7	35.2	12	36	23.5	11.7	35.2	12	36	

NOTES: PE = Pump end only; PMA = Pump and motor assembly; Diameter with cable guard is 3.75"

### Thermoplastic

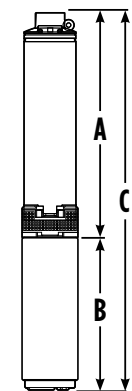


### STAINLESS STEEL

GPM	HP	Stages	2-Wire						3-Wire					
			Dimensions (in)			Wt. (lbs)			Dimensions (in)			Wt. (lbs)		
			A	B	C	PE	PMA	A	B	C	PE	PMA		
5	1/2	13	18.4	9.5	27.9	10	29	18.4	9.5	27.9	10	29		
	3/4	18	22.6	10.6	33.3	12	33	22.6	10.6	33.3	12	33		
	1	22	26.0	11.7	37.7	13	27	26.0	11.7	37.7	13	27		
	1.5	30	34.1	15.1	49.2	19	50	34.1	13.6	47.7	19	50		
	2	38	-	-	-	-	-	40.9	15.1	56.0	23	N/A		
7	1/2	10	15.9	9.5	25.4	9	28	15.9	9.5	25.4	9	28		
	3/4	13	18.4	10.6	29.0	11	32	18.4	10.6	29.0	11	32		
	1	18	22.6	11.7	34.3	13	37	22.6	11.7	34.3	13	37		
	1.5	23	26.8	15.1	41.9	17	48	26.8	13.6	40.4	17	48		
	2	30	-	-	-	-	-	34.1	15.1	49.2	20	N/A		
	3	38	-	-	-	-	-	40.9	19.04	59.9	23	N/A		
10	1/2	11	16.7	9.5	26.2	10	29	16.7	9.5	26.2	10	29		
	1/2	11	16.7	9.5	26.2	10	29	16.7	9.5	26.2	10	29		
	3/4	14	19.2	10.6	29.8	12	33	19.2	10.6	29.8	12	33		
	1	19	23.5	11.7	35.2	14	38	23.5	11.7	35.2	14	38		
	1.5	24	27.7	15.1	42.8	18	49	27.7	13.6	41.3	18	49		

NOTES: PE = Pump end only; PMA = Pump and motor assembly; Diameter with cable guard is 3.75"

### Stainless Steel



## 4" TRI-SEAL PUMPS

The Tri-Seal 4" submersible pump features the Tri-Seal floating stage system. This stage system further improves efficiency and protects against wear when pumping abrasives. For details on how to become a registered dealer and receive a 5-year warranty, contact your local distributor.

### FEATURES

- 300 Series stainless steel hub floats with the impeller maintaining a positive seal
- Phenolic washer provides downthrust protection
- Scalloped impellers provide high efficiency performance and abrasion resistance
- Advanced thermoplastic diffuser and disc - proven abrasion-resistant material
- Floating stage design allows impeller to float independently
- Removable, spring-loaded check valve
- Maximum water temperature: 120 °F/49 °C
- Ceramic shaft sleeve and rubber discharge bearing protect shaft and eliminate sand wear
- Powered by Franklin Electric corrosion-resistant super stainless 4" submersible motors with lightning protection
- Patented impeller hub seal system seals radially and axially to prevent fluid recirculation, providing high performance in the harshest conditions

### Tri-Seal™ Floating Stage System

U.S. Patent No. 7,290,984



UL 778  
CSA 108  
NSF/ANSI 372  
NSF/ANSI 61 (Pump end only)

## 4" TRI-SEAL PUMPS - ORDERING INFORMATION

### THERMOPLASTIC ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire			3-Wire			
				Model	Order No.	Motor	Model	Order No.	Motor	Control Box
5	1/2	8	115	5FA05P4-2W115	93780505	2445049004S	5FA05P4-3W115	93780530	2145049004S	2801044915
	1/2	8	230	5FA05P4-2W230	93780510	2445059004S	5FA05P4-3W230	93780535	2145059004S	2801054915
	3/4	12	230	5FA07P4-2W230	93780515	2445079004S	5FA07P4-3W230	93780540	2145079004S	2801074915
	1	15	230	5FA1P4-2W230	93780520	2445089003S	5FA1P4-3W230	93780545	2145089003S	2801084915
7	1.5	21	230	5FA15P4-2W230	93780525	2443099004S	5FA15P4-3W230	93780550	2243009203S	2823008110
	1/2	7	115	7FA05P4-2W115	93780705	2445049004S	7FA05P4-3W115	93780730	2145049004S	2801044915
	1/2	7	230	7FA05P4-2W230	93780710	2445059004S	7FA05P4-3W230	93780735	2145059004S	2801054915
	3/4	10	230	7FA07P4-2W230	93780715	2445079004S	7FA07P4-3W230	93780740	2145079004S	2801074915
10	1	13	230	7FA1P4-2W230	93780720	2445089003S	7FA1P4-3W230	93780745	2145089003S	2801084915
	1.5	18	230	7FA15P4-2W230	93780725	2443099004S	7FA15P4-3W230	93780750	2243009203S	2823008110
	1/2	6	115	10FA05P4-2W115	93781005	2445049004S	10FA05P4-3W115	93781030	2145049004S	2801044915
	1/2	6	230	10FA05P4-2W230	93780710	2445059004S	10FA05P4-3W230	93781035	2145059004S	2801054915
15	3/4	8	230	10FA07P4-2W230	93781015	2445079004S	10FA07P4-3W230	93781040	2145079004S	2801074915
	1	11	230	10FA1P4-2W230	93781020	2445089003S	10FA1P4-3W230	93781045	2145089003S	2801084915
	1.5	15	230	10FA15P4-2W230	93781025	2443099004S	10FA15P4-3W230	93781050	2243009203S	2823008110
	1/2	4	115	15FA05P4-2W115	93781505	2445049004S	15FA05P4-3W115	93781530	2145049004S	2801044915
20	1/2	4	230	15FA05P4-2W230	93781510	2445059004S	15FA05P4-3W230	93781535	2145059004S	2801054915
	3/4	6	230	15FA07P4-2W230	93781515	2445079004S	15FA07P4-3W230	93781540	2145079004S	2801074915
	1	9	230	15FA1P4-2W230	93781520	2445089003S	15FA1P4-3W230	93781545	2145089003S	2801084915
	1.5	11	230	15FA15P4-2W230	93781525	2443099004S	15FA15P4-3W230	93781550	2243009203S	2823008110
25	3/4	5	230	20FA07P4-2W230	93782015	2445079004S	20FA07P4-3W230	93782040	2145079004S	2801074915
	1	7	230	20FA1P4-2W230	93782020	2445089003S	20FA1P4-3W230	93782045	2145089003S	2801084915
	1.5	10	230	20FA15P4-2W230	93782025	2443099004S	20FA15P4-3W230	93782050	2243009203S	2823008110
25	1	6	230	25FA1P4-2W230	93782520	2445089003S	25FA1P4-3W230	93782545	2145089003S	2801084915
	1.5	8	230	25FA15P4-2W230	93782525	2443099004S	25FA15P4-3W230	93782550	2243009203S	2823008110

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard is 3.90" on all models.

### STAINLESS STEEL ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire			3-Wire			
				Model	Order No.	Motor	Model	Order No.	Motor	Control Box
5	1/2	8	115	5FA05S4-2W115	93810505	2445049004S	5FA05S4-3W115	93810530	2145049004S	2801044915
	1/2	8	230	5FA05S4-2W230	93810510	2445059004S	5FA05S4-3W230	93810535	2145059004S	2801054915
	3/4	12	230	5FA07S4-2W230	93810515	2445079004S	5FA07S4-3W230	93810540	2145079004S	2801074915
	1	15	230	5FA1S4-2W230	93810520	2445089003S	5FA1S4-3W230	93810545	2145089003S	2801084915
7	1.5	21	230	5FA15S4-2W230	93810525	2443099004S	5FA15S4-3W230	93810550	2243009203S	2823008110
	1/2	7	115	7FA05S4-2W115	93810705	2445049004S	7FA05S4-3W115	93810730	2145049004S	2801044915
	1/2	7	230	7FA05S4-2W230	93810710	2445059004S	7FA05S4-3W230	93810735	2145059004S	2801054915
	3/4	10	230	7FA07S4-2W230	93810715	2445079004S	7FA07S4-3W230	93810740	2145079004S	2801074915
10	1	13	230	7FA1S4-2W230	93810720	2445089003S	7FA1S4-3W230	93810745	2145089003S	2801084915
	1.5	18	230	7FA15S4-2W230	93810725	2443099004S	7FA15S4-3W230	93810750	2243009203S	2823008110
	1/2	6	115	10FA05S4-2W115	93811005	2445049004S	10FA05S4-3W115	93811030	2145049004S	2801044915
	1/2	6	230	10FA05S4-2W230	93811010	2445059004S	10FA05S4-3W230	93811035	2145059004S	2801054915
15	3/4	8	230	10FA07S4-2W230	93811015	2445079004S	10FA07S4-3W230	93811040	2145079004S	2801074915
	1	11	230	10FA1S4-2W230	93811020	2445089003S	10FA1S4-3W230	93811045	2145089003S	2801084915
	1.5	15	230	10FA15S4-2W230	93811025	2443099004S	10FA15S4-3W230	93811050	2243009203S	2823008110
	1/2	4	115	15FA05S4-2W115	93811505	2445049004S	15FA05S4-3W115	93811530	2145049004S	2801044915
20	1/2	4	230	15FA05S4-2W230	93811510	2445059004S	15FA05S4-3W230	93811535	2145059004S	2801054915
	3/4	6	230	15FA07S4-2W230	93811515	2445079004S	15FA07S4-3W230	93811540	2145079004S	2801074915
	1	9	230	15FA1S4-2W230	93811520	2445089003S	15FA1S4-3W230	93811545	2145089003S	2801084915
	1.5	11	230	15FA15S4-2W230	93811525	2443099004S	15FA15S4-3W230	93811550	2243009203S	2823008110
25	3/4	5	230	20FA07S4-2W230	93812015	2445079004S	20FA07S4-3W230	93812040	2145079004S	2801074915
	1	7	230	20FA1S4-2W230	93812020	2445089003S	20FA1S4-3W230	93812045	2145089003S	2801084915
	1.5	10	230	20FA15S4-2W230	93812025	2443099004S	20FA15S4-3W230	93812050	2243009203S	2823008110
25	1	6	230	25FA1S4-2W230	93812520	2445089003S	25FA1S4-3W230	93812545	2145089003S	2801084915
	1.5	8	230	25FA15S4-2W230	93812525	2443099004S	25FA15S4-3W230	93812550	2243009203S	2823008110

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard is 3.90" on all models.



## 4" TRI-SEAL PUMPS - ORDERING INFORMATION

### THERMOPLASTIC PUMP ENDS

GPM	HP	Stages	Model	Order No.
5	1/2	8	5FA05P4-PE	93790505
	3/4	12	5FA07P4-PE	93790510
	1	15	5FA1P4-PE	93790515
	1.5	21	5FA15P4-PE	93790520
7	1/2	7	7FA05P4-PE	93790705
	3/4	10	7FA07P4-PE	93790710
	1	13	7FA1P4-PE	93790715
	1.5	18	7FA15P4-PE	93790720
10	1/2	6	10FA05P4-PE	93791005
	3/4	8	10FA07P4-PE	93791010
	1	11	10FA1P4-PE	93791015
	1.5	15	10FA15P4-PE	93791020
15	1/2	4	15FA05P4-PE	93791505
	3/4	6	15FA07P4-PE	93791510
	1	9	15FA1P4-PE	93791515
	1.5	11	15FA15P4-PE	93791520
20	3/4	5	20FA07P4-PE	93792010
	1	7	20FA1P4-PE	93792015
	1.5	10	20FA15P4-PE	93792020
25	1	6	25FA1P4-PE	93792515
	1.5	8	25FA15P4-PE	93792520

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard is 3.90" on all models.

### STAINLESS STEEL PUMP ENDS

GPM	HP	Stages	Model	Order No.
5	1/2	8	5FA05S4-PE	93820505
	3/4	12	5FA07S4-PE	93820510
	1	15	5FA1S4-PE	93820515
	1.5	21	5FA15S4-PE	93820520
7	2	26	5FA2S4-PE	93820525
	1/2	7	7FA05S4-PE	93820705
	3/4	10	7FA07S4-PE	93820710
	1	13	7FA1S4-PE	93820715
7	1.5	18	7FA15S4-PE	93820720
	2	24	7FA2S4-PE	93820725
	3	32	7FA3S4-PE	93820730
	1/2	6	10FA05S4-PE	93821005
10	3/4	8	10FA07S4-PE	93821010
	1	11	10FA1S4-PE	93821015
	1.5	15	10FA15S4-PE	93821020
	2	18	10FA2S4-PE	93821025
	3	24	10FA3S4-PE	93821030
	5	39	10FA5S4-PE	93821035
	1/2	4	15FA05S4-PE	93821505
	3/4	6	15FA07S4-PE	93821510
	1	9	15FA1S4-PE	93821515
	1.5	11	15FA15S4-PE	93821520
15	2	14	15FA2S4-PE	93821525
	3	19	15FA3S4-PE	93821530
	5	31	15FA5S4-PE	93821535
	3/4	5	20FA07S4-PE	93822010
	1	7	20FA1S4-PE	93822015
	1.5	10	20FA15S4-PE	93822020
	2	12	20FA2S4-PE	93822025
	3	16	20FA3S4-PE	93822030
	5	26	20FA5S4-PE	93822035
	7.5	39	20FA7S4-PE	93822040
20	10	52	20FA10S4-PE	93822045
	1	6	25FA1S4-PE	93822515
	1.5	8	25FA15S4-PE	93822520
	2	10	25FA2S4-PE	93822525
	3	14	25FA3S4-PE	93822530
	5	23	25FA5S4-PE	93822535
	7.5	35	25FA7S4-PE	93822540
	10	44	25FA10S4-PE	93822545

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard is 3.90" on all models.

# 4" TRI-SEAL PUMPS - 5 GPM

## PERFORMANCE

The chart displays the performance of five different pump models. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed region indicates the pump operating range.

Model	Flow (GPM)	Head (Feet)	Head (Meters)
2 HP	0	1050	320
	1	1000	305
	2	900	275
	3	750	228
	4	600	183
1.5 HP	0	850	258
	1	800	243
	2	700	213
	3	550	168
	4	400	123
1 HP	0	650	198
	1	600	183
	2	500	153
	3	350	108
	4	200	63
3/4 HP	0	450	138
	1	400	123
	2	300	93
	3	150	48
	4	100	33
1/2 HP	0	350	108
	1	300	93
	2	250	78
	3	150	48
	4	100	33

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### 4" TRI-SEAL PUMPS - 5 GPM

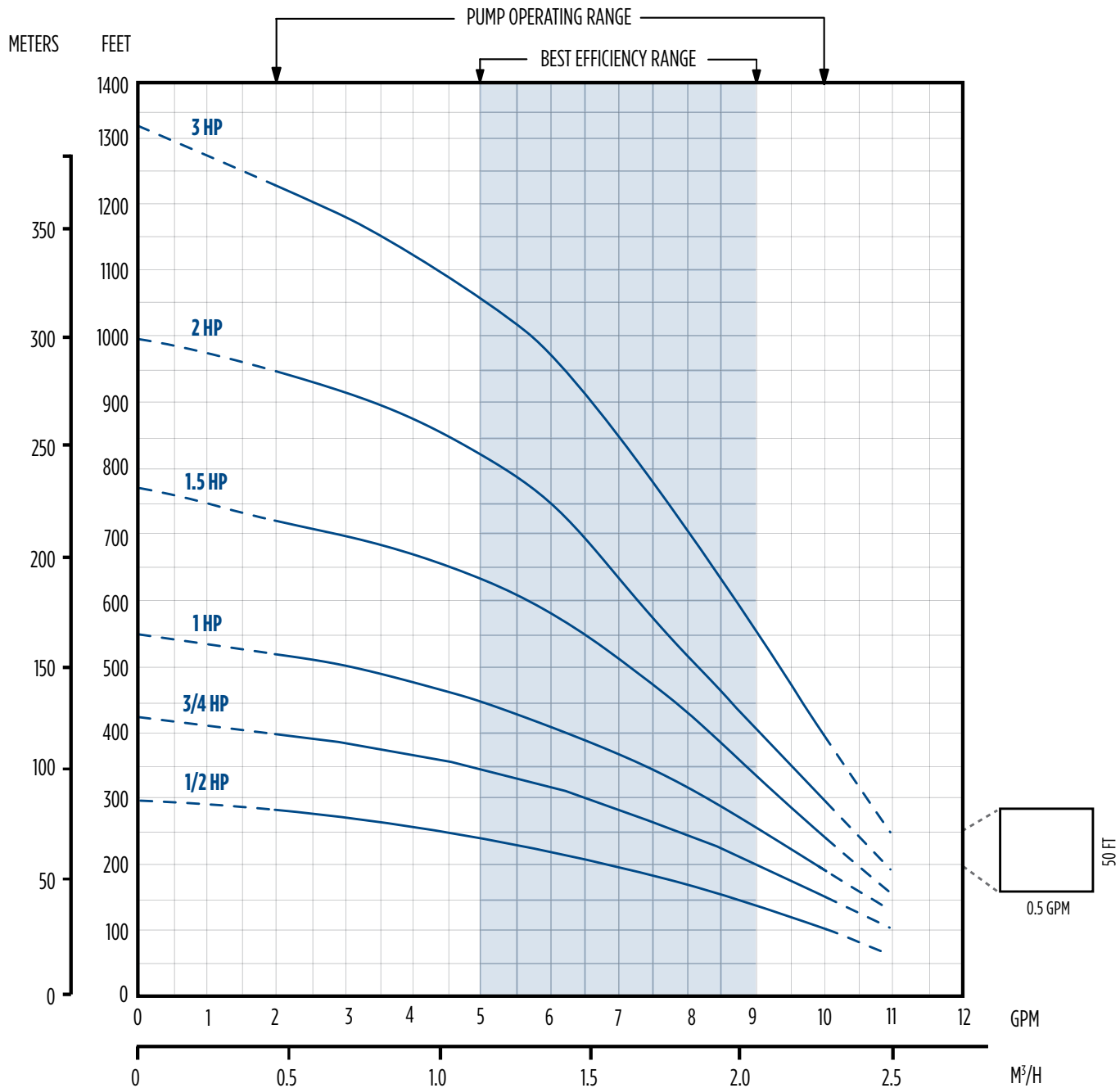
#### PERFORMANCE

HP	PSI	Depth To Pumping Water Level (LI) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)			
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000
1/2	0							7	7	6	6	5	4												
	20					8	7	6	6	5	5	3	2												
	30				7	7	6	6	5	5	4	2													
	40			7	7	6	6	5	5	4	3														
	50		7	6	6	6	5	5	4	2															
	60	7	7	6	6	5	4	4	2																
	80	6	6	5	4	3																			
Shut-off PSI		127	119	110	101	93	84	75	67	58	49	32	23												
3/4	0									7	7	7	6	5	4	3									
	20								7	7	7	6	6	5	4	3									
	30							7	7	7	6	6	6	5	3										
	40						7	7	7	6	6	6	5	4	2										
	50					7	7	7	6	6	6	5	5	4											
	60				7	7	7	6	6	6	5	5	4	3											
	80		7	7	7	6	6	6	5	5	4	3	3												
Shut-off PSI		205	196	188	179	171	162	153	145	136	127	110	101	84	58	41	23								
1	0												8	7	6	6	5	4	4						
	20											7	7	7	6	5	4	3							
	30										7	7	7	6	5	5	3	2							
	40									7	7	7	7	6	5	4	3								
	50								7	7	7	7	6	6	4	3									
	60							7	7	7	7	6	6	5	4										
	80						7	7	7	6	6	5	5	4											
Shut-off PSI		257	248	240	231	222	214	205	197	188	179	162	153	136	110	93	75	58	49						
1.5	0														7	7	7	6	5	4	2				
	20														7	7	7	6	6	5	3				
	30														7	7	7	6	6	6	4	3			
	40														7	7	7	6	6	6	5	4	2		
	50												7	7	7	7	6	6	5	5	3				
	60												7	7	7	6	6	5	5	5	3				
	80												7	7	7	6	6	5	5	4	4	2			
Shut-off PSI		352	344	335	326	318	309	300	292	283	274	257	249	231	205	188	171	153	145	101	58	15			
2	0															7	7	7	6	5	4	3			
	20															7	7	7	7	6	5	4	2		
	30															7	7	7	7	6	6	5	3		
	40															7	7	7	6	6	6	5	3		
	50															7	7	7	7	6	6	5	4	3	
	60															7	7	7	6	6	6	5	4	3	
	80															7	7	7	6	6	6	5	3		
Shut-off PSI		441	432	424	415	406	398	389	381	372	363	346	337	320	294	277	259	242	233	190	147	104	60		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# 4" TRI-SEAL PUMPS - 7 GPM

## PERFORMANCE



### 4" TRI-SEAL PUMPS - 7 GPM

#### PERFORMANCE

HP	PSI	Depth to Pumping Water Level, or Lift, in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)						
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000			
1/2	0				10	10	9	9	8	7	6	5	4													300		
	20		10	9	9	8	8	7	6	5	4																	
	30	10	9	9	8	7	7	6	5	4	3																	
	40	9	9	8	8	7	6	5	4	3																		
	50	9	8	7	7	6	5	4	3																			
	60	8	7	6	6	5	4	3																				
	80	6	5	4	3																							
Shut-off PSI		121	112	103	95	86	77	69	60	52	43	26	17															
3/4	0						10	10	9	9	9	8	7	6	4											422		
	20			10	10	10	9	9	8	8	7	6	6	4														
	30		10	10	10	9	9	8	8	7	7	6	5	3														
	40	10	10	10	9	9	8	8	7	7	6	5	4															
	50	10	9	9	9	8	8	7	7	6	6	4	3															
	60	9	9	9	8	8	7	7	6	6	5	3																
	80	8	8	8	7	6	6	5	4	3																		
Shut-off PSI		174	165	156	148	139	130	122	113	104	96	78	70	52	26													
1	0							10	10	10	9	9	8	8	7	6	5	3	3							544		
	20					10	10	10	9	9	9	8	8	7	6	5	3											
	30			10	10	10	10	9	9	9	8	8	7	6	5	4												
	40		10	10	10	10	9	9	9	8	8	7	7	6	4	3												
	50	10	10	10	10	9	9	9	8	8	8	7	6	5	3													
	60	10	10	9	9	9	9	8	8	8	7	6	6	5	3													
	80	9	9	9	8	8	8	7	7	7	6	5	5	3														
Shut-off PSI		226	218	209	200	192	183	174	166	157	148	131	123	105	79	62	45	27	18									
1.5	0								10	10	10	10	9	9	8	8	7	7	7	5	2					765		
	20						10	10	10	10	9	9	9	8	8	7	7	6	6	4								
	30				10	10	10	10	10	9	9	9	9	8	8	7	7	6	6	3								
	40			10	10	10	10	9	9	9	9	9	8	8	7	7	6	6	5	3								
	50		10	10	10	10	9	9	9	9	9	8	8	8	7	6	6	5	5									
	60	10	10	10	10	9	9	9	9	9	8	8	8	7	7	6	6	5	4									
	80	10	10	9	9	9	9	9	8	8	8	8	7	7	6	5	5	4	3									
Shut-off PSI		322	313	305	296	287	279	270	261	253	244	227	218	201	175	158	140	123	114	71	28							
2	0									10	10	10	10	10	9	9	8	8	8	7	5	3			995			
	20							10	10	10	10	10	10	9	9	8	8	7	7	6	6	4						
	30						10	10	10	10	10	9	9	9	9	8	8	8	7	7	6	5	4					
	40					10	10	10	10	10	9	9	9	9	8	8	7	7	7	6	5	3						
	50				10	10	10	10	10	10	9	9	9	9	8	8	8	7	7	7	6	5	3					
	60			10	10	10	10	10	10	9	9	9	9	8	8	7	7	7	7	6	4							
	80	10	10	10	10	10	9	9	9	9	9	9	8	8	7	7	7	6	6	5	3							
Shut-off PSI		421	412	404	395	386	378	369	360	352	343	326	317	300	274	257	239	222	213	170	127	84	40					

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

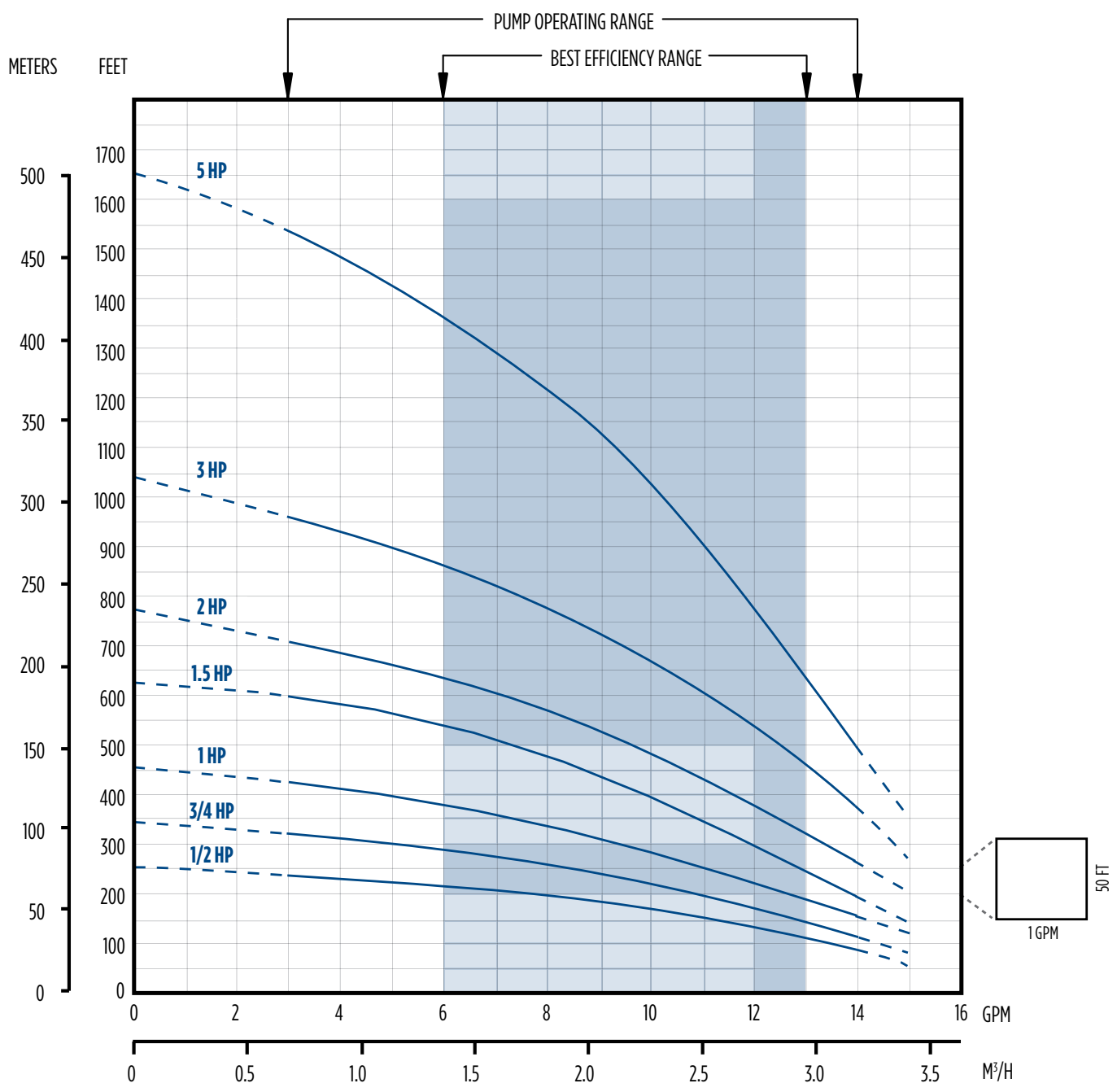
HP	PSI	Depth to Pumping Water Level, or Lift, in Feet. Shaded Areas Indicate Most Efficient Performance														Shut-Off (ft)										
		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400											
3	0				10	9	9	8	7	7	6	5	4	2											1310	
	20			10	9	9	8	8	7	6	6	5	3													
	30			10	9	9	8	8	7	6	6	4	3													
	40			10	9	9	8	7	7	6	5	4														
	50	10	10	9	8	8	7	7	6	5	4															
	60	10	10	9	8	8	7	7	6	5	3															
	80	10	9	8	8	7	7	6	5	4	2															
Shut-off PSI		523	480	437	394	350	307	264	221	177	134	91	48													

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.



# 4" TRI-SEAL PUMPS - 10 GPM

## PERFORMANCE



## 4" TRI-SEAL PUMPS - 10 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)						
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000			
1/2	0				14	13	12	11	10	9	7															244		
	20	14	13	13	12	11	10	8	6	3																		
	30	13	13	12	11	10	8	6	3																			
	40	13	12	11	10	8	6	3																				
	50	12	11	9	8	5	3																					
	60	11	10	7	4																							
80	8	6	4																									
Shut-off PSI		97	88	80	71	62	54	45	36	28	19																	
3/4	0					14	13	13	12	11	10	7	8	4												338		
	20		14	14	13	12	12	11	10	9	8	6	4															
	30	14	14	13	12	12	11	10	9	8	7	3																
	40	14	13	12	12	11	10	9	8	7	6																	
	50	13	12	11	11	10	9	8	7	5	3																	
	60	12	11	11	10	9	8	6	5																			
80	11	10	9	8	6	5																						
Shut-off PSI		137	129	120	111	103	94	85	77	68	59	42	34	16														
1	0							14	13	13	12	11	10	9	7	4										444		
	20					14	13	13	12	11	11	9	9	7	3													
	30					14	13	13	12	11	11	10	9	8	6													
	40					14	13	13	12	11	11	10	9	8	7	5												
	50			14	13	12	12	11	11	10	9	8	7	6														
	60		13	12	12	11	11	10	10	9	8	8	5	4														
80		12	12	11	10	10	9	8	7	6	5																	
Shut-off PSI		183	174	157	148	140	131	123	114	105	97	79	71	53	27	10												
1.5	0										14	13	13	12	12	11	11	9	8	7	6	5			615			
	20										14	13	13	12	12	11	11	10	8	7	6	5	4					
	30								14	13	13	12	12	11	11	10	10	8	8	6	5	4						
	40						14	13	13	12	12	12	11	11	10	10	10	8	7	6	4							
	50					14	13	13	12	12	12	11	11	10	10	10	9	8	6	5	3							
	60		14	13	13	13	12	12	11	11	11	10	10	9	9	7	6	4										
80		13	13	13	12	12	11	11	11	10	10	9	9	8	6	3												
Shut-off PSI		257	248	240	231	222	214	205	197	188	179	162	153	136	110	93	75	41	32									
2	0													14	13	13	12	12	11	10	10	9	6		770			
	20													14	13	13	12	12	11	10	9	9	8	5				
	30													14	13	13	12	12	10	10	9	8	8	4				
	40													14	13	13	12	12	11	10	9	8	7	3				
	50									14	13	13	12	12	11	11	10	9	8	7	6							
	60						14	13	13	12	12	12	11	11	10	9	8	7	6	5								
80			14	13	13	13	12	12	12	11	11	10	9	8	8	6	4	4										
Shut-off PSI		324	316	307	298	290	281	272	264	255	246	229	220	203	177	160	143	125	117	73								
3	0															14	13	13	12	12	11	9	7	5	1034			
	20															14	13	13	12	12	12	10	8	6		3		
	30															14	14	13	13	12	12	11	10	8		5		
	40														14	14	13	13	12	12	11	11	9	7		4		
	50													14	14	14	13	12	12	11	11	11	9	7		4		
	60												14	14	14	13	12	12	11	11	10	9	6	3				
80										14	14	13	13	13	12	12	11	11	10	10	8	5						
Shut-off PSI		438	430	421	413	404	395	387	378	369	361	343	335	317	291	274	257	240	231	188	144	101	58					

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

HP	PSI	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1310	
5	0				14	13	13	12	11	11	10	9	8	6	5		
	20				14	13	12	12	11	10	9	8	7	6	4		
	30				14	13	12	12	11	10	9	8	7	5	4		
	40				14	13	12	11	11	10	9	8	7	5	3		
	50				14	13	13	12	11	10	9	9	7	6	5		3
	60				14	13	13	12	11	10	9	8	7	6	4		
80		14	14	13	12	11	11	10	10	9	8	7	5	3			
Shut-off PSI		670	626	583	540	497	453	410	367	324	280	237	194	151	107		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

MENU

# 4" TRI-SEAL PUMPS - 15 GPM

## PERFORMANCE

The chart displays performance curves for 4" tri-seal pumps with a 15 GPM flow rate. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger region indicates the pump operating range.

HP	Flow (GPM)	Head (Feet)	Head (Meters)
5 HP	1	1300	390
	3	1250	380
	5	1150	350
	7	1000	300
	9	850	255
3 HP	1	800	240
	3	750	225
	5	650	195
	7	500	150
	9	350	105
2 HP	1	600	180
	3	550	165
	5	450	135
	7	300	90
	9	150	45
1.5 HP	1	450	135
	3	400	120
	5	300	90
	7	150	45
	9	100	30
1 HP	1	350	105
	3	300	90
	5	200	60
	7	100	30
	9	50	15
3/4 HP	1	250	75
	3	200	60
	5	150	45
	7	100	30
	9	50	15
1/2 HP	1	150	45
	3	120	36
	5	100	30
	7	80	24
	9	60	18

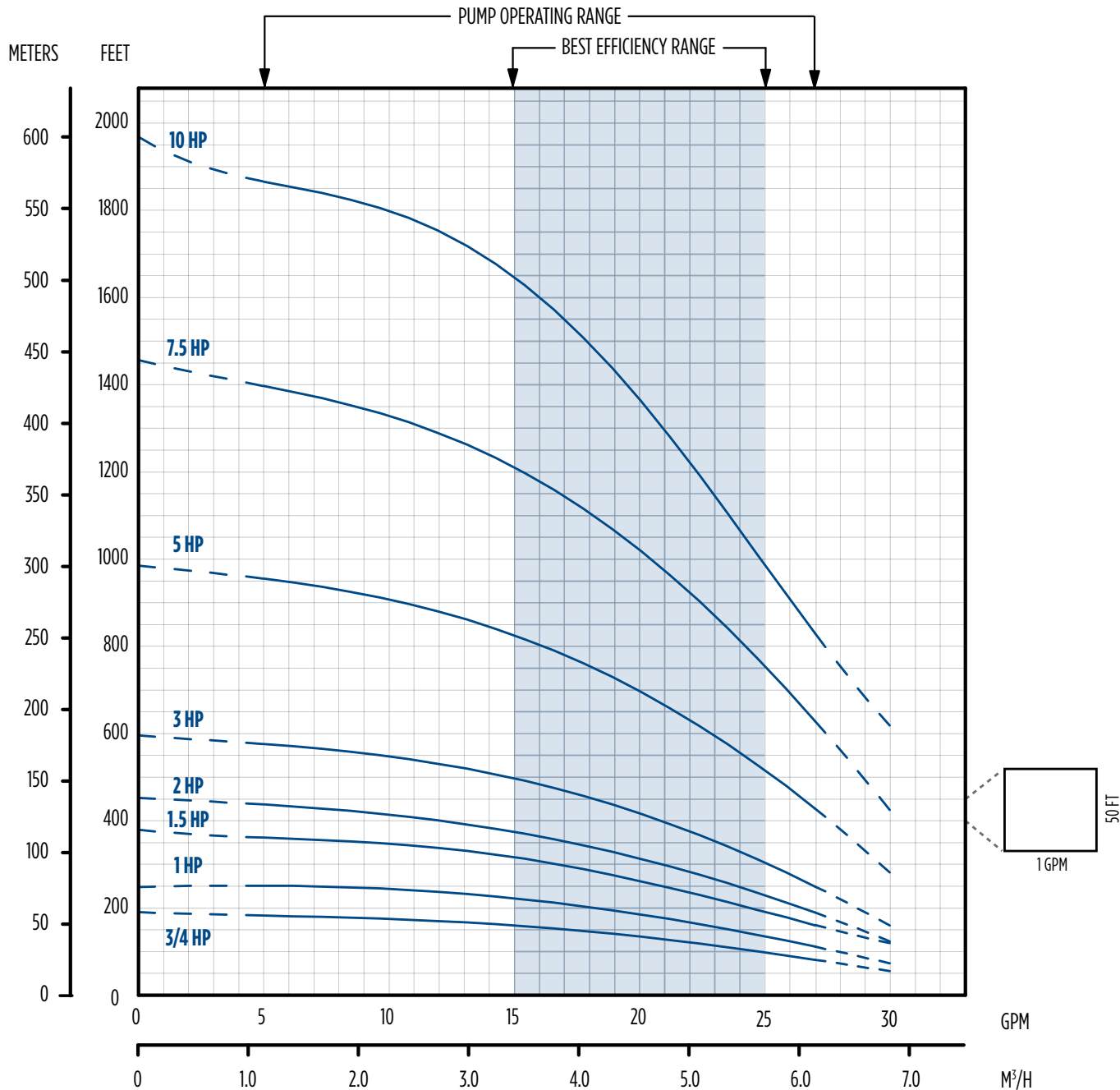
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# 4" TRI-SEAL PUMPS - 20 GPM

## PERFORMANCE



# 4" TRI-SEAL PUMPS - 20 GPM

## PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)			
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000
3/4	0				24	22	21	18	14																
	20		23	21	19	17	12																		
	30	23	21	19	17	11																			
	40	21	19	17	10																				
	50	19	16	10																					
	60	14																							
Shut-off PSI		74	65	56	48	39	30	22	13																
1	0						26	25	23	20	18	11													
	20				27	26	24	22	20	18	15	8													
	30		27	26	24	22	19	17	14	7															
	40	27	25	23	21	19	17	13																	
	50	25	23	21	19	16	12																		
	60	23	21	18	16	11																			
70	20	18	15	10																					
80	18	15	9																						
Shut-off PSI		100	91	83	74	66	57	48	40	31	22	5													
1.5	0								27	26	24	22	20	17	6										
	20						27	25	24	23	21	18	16	10											
	30					26	25	24	22	21	20	16	13												
	40				26	25	23	22	21	19	18	13	8												
	50		27	26	25	23	22	21	19	17	15	7													
	60	27	26	24	23	22	20	19	17	15	11														
70	26	24	23	21	20	19	17	14	11	5															
80	24	23	21	20	18	16	14	10																	
Shut-off PSI		156	147	138	130	121	112	104	95	86	78	60	52	34	8										
2	0											24	23	20	16	12									
	20											24	21	20	17	12									
	30								24	23	22	20	19	16											
	40					24	23	22	20	19	17	14													
	50					24	23	22	20	19	16	14	10												
	60					24	23	22	20	19	18	14	12												
70			24	23	21	20	19	18	16	14															
80			24	23	21	20	19	18	16	14															
Shut-off PSI		187	179	170	161	153	144	135	127	118	110	92	84	66	40	23									
3	0														24	22	20	18	16	14					
	20														24	23	20	17	15	12	10				
	30														24	23	21	18	16	13	10				
	40												24	23	22	20	17	14	11						
	50												24	24	22	21	19	16	13						
	60												24	24	23	21	20	18	14	10					
70												24	23	22	20	18	17	15	10						
80												24	23	22	20	18	17	15	10						
Shut-off PSI		251	242	234	225	216	208	199	190	182	173	156	147	130	104	87	69	52	43						
5	0																				24	23	20	16	
	20																					24	21	18	13
	30																					24	23	20	17
	40																						24	23	20
	50																					24	22	22	17
	60																						24	22	21
70																						24	23	22	
80																						24	23	22	
Shut-off PSI		416	408	399	390	382	373	364	356	347	339	321	313	295	269	252	235	217	209	165	122	79			

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

HP	PSI	440	480	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	Shut-Off (ft)	
7.5	0				27	26	24	22	20	18	15	11	5							
	20				27	25	23	22	19	17	14	9								
	30				26	25	23	21	19	16	13	7								
	40				26	24	23	21	18	16	12	6								
	50				27	26	24	22	20	18	15	11								
	60		27	27	25	24	22	20	17	14	9									
80	27	26	26	24	23	21	19	16	12	6										
Shut-off PSI		440	423	414	371	327	284	241	197	154	111	68	24							
10	0							26	25	23	22	21	20	18	16	13	9			
	20							27	25	24	23	22	20	19	17	15	12	7		
	30							27	25	24	23	21	20	19	17	14	11	6		
	40							26	25	23	22	21	20	18	16	14	10			
	50						27	26	24	23	22	21	20	18	16	13	8			
	60						27	26	24	23	22	21	19	18	15	12	7			
80						26	25	24	22	21	20	19	17	14	10	5				
Shut-off PSI		662	644	636	592	549	506	462	419	376	333	289	246	203	159	116	73			

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# 4" TRI-SEAL PUMPS - 25 GPM

## PERFORMANCE

The chart displays the performance of 4" Tri-Seal pumps with a 25 GPM flow rate. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed region indicates the pump operating range.

HP	Flow (GPM)	Head (Feet)	Head (Meters)
10 HP	0	1600	500
	10	1500	450
	20	1200	350
	35	400	100
7.5 HP	0	1200	350
	10	1100	300
	20	800	200
	35	200	50
5 HP	0	800	200
	10	750	180
	20	550	130
	35	150	40
3 HP	0	450	100
	10	400	80
	20	300	60
	35	100	25
2 HP	0	350	70
	10	300	60
	20	250	50
	35	80	20
1.5 HP	0	250	50
	10	220	45
	20	180	35
	35	50	10
1 HP	0	200	40
	10	180	35
	20	150	30
	35	40	10

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## 4" TRI-SEAL PUMPS - 25 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)					
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000		
1	0			35	33	31	28	26	24	21	17														222		
	20		32	30	28	25	22	18	15																		
	30	32	29	27	25	22	19																				
	40	29	27	25	22	19																					
	50	26	24	21	16																						
	60	24	21	17																							
Shut-off PSI		87	79	70	61	53	44	35	27	18	10																
1.5	0						33	31	29	27	25	21	19												297		
	20				32	30	28	26	24	22	19																
	30			32	30	28	26	24	22	19	16																
	40	33	32	29	27	25	23	21	19	15																	
	50	32	29	27	25	23	21	18																			
	60	29	27	25	23	20	18																				
80	24	22	20	17																							
Shut-off PSI		120	111	103	94	85	77	68	59	51	42	25	16														
2	0						33	32	30	28	25	24	20												375		
	20				34	33	31	29	28	26	25	21	20														
	30			34	33	31	29	28	26	24	23	19	17														
	40		34	33	31	29	28	26	24	23	21	17															
	50	33	32	30	29	27	26	24	22	20	18																
	60	32	30	28	27	26	24	22	20	18																	
80	28	26	25	23	21	20	17																				
Shut-off PSI		154	145	136	128	119	110	102	93	84	76	58	50	32													
3	0						33	32	31	30	29	28	25	22	19	15									519		
	20					33	32	31	30	29	28	27	25	22	19												
	30				33	32	31	30	29	28	26	25	22	18													
	40			33	32	31	31	30	29	28	27	24	23	21	15												
	50		33	32	31	31	30	29	28	26	25	23	22	19													
	60		33	32	31	31	30	29	28	26	25	23	22	19													
80	32	31	30	29	28	27	26	25	24	23	20	19	15														
Shut-off PSI		216	207	199	190	181	173	164	155	147	138	121	112	95	69	52	34	17									
5	0											33	32	31	30	28	28	24	20						833		
	20											33	32	30	30	28	27	26	22	17							
	30											33	33	31	30	28	27	26	25	21	15						
	40										33	32	32	31	29	28	27	25	24	20							
	50										33	33	32	31	31	30	28	27	25	24	23	19					
	60										33	33	32	31	31	30	28	26	25	23	22	18					
80						33	33	32	31	31	30	29	28	28	26	25	23	21	20								
Shut-off PSI		352	343	326	317	309	300	291	283	274	257	248	231	205	187	170	153	144	101	58							

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

HP	PSI	300	360	400	440	480	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	Shut-Off (ft)							
7.5	0					33	33	31	29	26	23	20	17	12							1281						
	20				33	32	32	31	28	25	22	19	15														
	30			33	33	32	32	30	27	24	21	18	14														
	40			33	32	32	31	29	27	24	21	17	12														
	50		33	33	32	31	31	29	26	23	20	17															
	60		33	32	32	31	31	28	25	22	19	16															
80	33	32	32	31	30	30	27	24	21	18	13																
Shut-off PSI		425	399	382	364	347	338	295	252	208	165	122	78	35													
10	0							33	32	30	29	27	25	23	21	19	15	10						1642			
	20							33	31	30	28	26	24	22	20	17	13										
	30								32	31	29	27	26	24	22	19	17	12									
	40								33	32	30	29	27	25	23	21	19	16	10								
	50						33	33	32	30	28	27	25	23	21	18	15										
	60						33	33	31	30	28	26	24	22	20	18	14										
80					33	32	32	31	29	27	25	23	21	19	16	11											
Shut-off PSI		581	555	538	520	503	494	451	408	365	321	278	235	191	148	105	61	18									

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

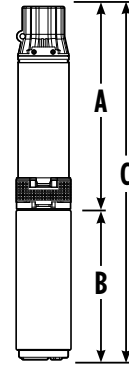
## 4" TRI-SEAL PUMPS - DIMENSIONS

### THERMOPLASTIC

GPM	HP	Stages	2-Wire					3-Wire				
			Dimensions (in)			Wt. (lbs)		Dimensions (in)			Wt. (lbs)	
			A	B	C	PE	PMA	A	B	C	PE	PMA
5	1/2	8	14.12	9.51	23.63	8	26	14.12	9.51	23.63	8	26
	3/4	12	17.41	10.64	28.05	9	30	17.41	10.64	28.05	9	30
	1	15	19.87	11.73	31.60	10	34	19.87	11.73	31.60	10	34
	1.5	21	24.81	15.10	39.91	12	43	24.81	13.60	38.41	12	40
7	1/2	7	13.30	9.51	22.81	7	25	13.30	9.51	22.81	7	26
	3/4	10	15.76	10.64	26.40	8	29	15.76	10.64	26.40	8	29
	1	13	18.23	11.73	29.96	10	34	18.23	11.73	29.96	10	34
	1.5	18	22.34	15.10	37.44	11	42	22.34	13.60	35.94	11	39
10	1/2	6	12.97	9.51	22.48	7	25	12.97	9.51	22.48	7	26
	3/4	8	14.69	10.64	25.33	8	29	14.69	10.64	25.33	8	29
	1	11	17.44	11.73	29.17	9	33	17.44	11.73	29.17	9	33
	1.5	15	21.06	15.10	36.16	10	41	21.06	13.60	34.66	10	38
15	1/2	4	11.45	9.51	20.96	6	24	11.45	9.51	20.96	6	25
	3/4	6	12.97	10.64	23.61	7	28	12.97	10.64	23.61	7	28
	1	8	14.69	11.73	26.42	8	32	14.69	11.73	26.42	8	32
	1.5	11	17.44	15.10	32.54	9	40	17.44	13.60	31.04	9	37
20	3/4	5	13.65	10.64	24.29	6	28	13.65	10.64	24.29	6	28
	1	7	16.10	11.73	26.42	8	32	16.10	11.73	27.83	7	31
	1.5	10	19.77	15.10	34.87	8	39	19.77	13.60	33.37	8	36
25	1	6	14.88	11.73	26.61	7	31	14.88	11.73	26.61	7	31
	1.5	8	17.32	15.10	32.42	8	39	17.32	15.10	30.92	8	36

NOTES: PE = Pump end only; PMA = Pump and motor assembly; Maximum diameter with cable guard is 3.90"

### Thermoplastic

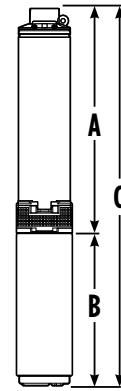


## 4" TRI-SEAL PUMPS - DIMENSIONS

### STAINLESS STEEL

GPM	HP	Stages	2-Wire						3-Wire					
			Dimensions (in)			Wt. (lbs)			Dimensions (in)			Wt. (lbs)		
			A	B	C	PE	PMA	A	B	C	PE	PMA		
5	1/2	8	13.57	9.51	23.08	10	28	13.57	9.51	23.08	10	29		
	3/4	12	16.86	10.64	27.50	12	33	16.86	10.64	27.50	12	33		
	1	15	19.33	11.73	31.06	14	38	19.33	11.73	31.06	14	38		
	1.5	21	24.26	15.10	39.36	17	48	24.26	13.60	37.86	17	45		
	2	26	-	-	-	-	-	30.46	15.10	45.56	20	-		
7	1/2	7	12.75	9.51	22.26	9	27	12.75	9.51	22.26	9	28		
	3/4	10	15.22	10.64	25.86	11	32	15.22	10.64	25.86	11	32		
	1	13	17.68	11.73	29.41	13	37	17.68	11.73	29.41	13	37		
	1.5	18	21.80	15.10	36.90	15	46	21.80	13.60	35.40	15	43		
	2	24	-	-	-	-	-	26.73	15.10	41.83	19	-		
	3	32	-	-	-	-	-	35.39	19.04	54.43	23	-		
10	1/2	6	12.39	9.51	21.90	7	25	12.39	9.51	21.90	9	28		
	3/4	8	14.14	10.64	24.78	10	31	14.14	10.64	24.78	10	31		
	1	11	16.85	11.73	28.58	11	35	16.85	11.73	28.58	11	35		
	1.5	15	20.48	15.10	35.58	14	45	20.48	13.60	34.08	14	42		
	2	18	-	-	-	-	-	25.26	15.10	40.36	15	-		
	3	19	-	-	-	-	-	26.17	19.04	45.21	16	-		
	5	31	-	-	-	-	-	37.00	29.19	66.19	23	-		
15	1/2	4	10.64	9.51	20.15	7	25	10.64	9.51	20.15	7	26		
	3/4	6	12.39	10.64	23.03	9	30	12.39	10.64	23.03	9	30		
	1	8	14.14	11.73	25.87	10	34	14.14	11.73	25.87	10	34		
	1.5	11	16.85	15.10	31.95	11	42	16.85	13.60	30.45	11	39		
	2	14	-	-	-	-	-	19.57	15.10	34.67	13	-		
	3	19	-	-	-	-	-	26.17	19.04	45.21	16	-		
	5	31	-	-	-	-	-	37.00	29.19	66.19	23	-		
20	3/4	5	13.10	10.64	23.74	8	29	13.10	10.64	23.74	8	29		
	1	7	15.55	11.73	27.28	9	33	15.55	11.73	27.28	9	33		
	1.5	10	19.22	15.10	34.32	11	42	19.22	13.60	32.82	11	39		
	2	12	-	-	-	-	-	21.66	15.10	36.76	12	-		
	3	16	-	-	-	-	-	26.55	19.04	45.59	14	-		
	5	26	-	-	-	-	-	40.86	29.19	70.05	20	-		
	7.5	39	-	-	-	-	-	60.77	29.60	90.37	27	-		
	10	52	-	-	-	-	-	76.66	32.60	109.26	35	-		
25	1	6	14.33	11.73	26.06	9	33	14.33	11.73	26.06	9	33		
	1.5	8	16.77	15.10	31.87	10	41	16.77	13.60	30.37	10	38		
	2	10	-	-	-	-	-	19.22	15.10	34.32	11	-		
	3	14	-	-	-	-	-	24.11	19.04	43.15	13	-		
	5	23	-	-	-	-	-	37.19	28.19	66.38	18	-		
	7.5	35	-	-	-	-	-	55.88	29.60	85.48	25	-		
	10	44	-	-	-	-	-	66.88	32.60	99.48	30	-		

Stainless Steel



NOTES: PE = Pump end only; PMA = Pump and motor assembly; Maximum diameter with cable guard is 3.90"

## 4" SERIES V PUMPS

The standard Series Five submersible pump features unique hydraulics that improve efficiency and minimize wear even when pumping abrasives. Discharge and motor brackets are available in thermoplastic or stainless steel with a removable check valve system. Available in 5, 7, 10, 15, 20, and 25 gpm, 1/2 - 5 horsepower. For details on how to become a registered dealer and receive a 5-year warranty, contact your local distributor.

### FEATURES

- 6 performance ranges: 5, 7, 10, 15, 20, and 25 gpm
- Horsepower ranges: 1/2 - 5
- Discharge head and motor bracket produced with industry-proven, engineered materials. Available in 300 Series stainless steel or high quality thermoplastic resins.
- Large wrench flat area on the discharge head for ease of installation
- Dry-run designed top bearing positively supports the 300 Series stainless steel 7/16" hex shaft
- Removable internal check valve
- Powered by Franklin Electric corrosion-resistant super stainless 4" submersible motors with lightning protection
- Maximum water temperature with proper flow is 120 °F/49 °C. Consult factory for details



UL 778  
 CSA 108  
 NSF/ANSI 372  
 NSF/ANSI 61 (Pump end only)



## 4" SERIES V PUMPS - ORDERING INFORMATION

### THERMOPLASTIC ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire			3-Wire			
				Model	Order No.	Motor	Model	Order No.	Motor	Control Box
5	1/2	8	115	5FV05P4-2W115	95400505	2445049004S	5FV05P4-3W115	95400530	2145049004S	2801044915
	1/2	8	230	5FV05P4-2W230	95400510	2445059004S	5FV05P4-3W230	95400535	2145059004S	2801054915
	3/4	12	230	5FV07P4-2W230	95400515	2445079004S	5FV07P4-3W230	95400540	2145079004S	2801074915
	1	15	230	5FV1P4-2W230	95400520	2445089003S	5FV1P4-3W230	95400545	2145089003S	2801084915
7	1.5	21	230	5FV15P4-2W230	95400525	2443099004S	5FV15P4-3W230	95400550	2243009203S	2823008110
	1/2	7	115	7FV05P4-2W115	95400705	2445049004S	7FV05P4-3W115	95400730	2145049004S	2801044915
	1/2	7	230	7FV05P4-2W230	95400710	2445059004S	7FV05P4-3W230	95400735	2145059004S	2801054915
	3/4	10	230	7FV07P4-2W230	95400715	2445079004S	7FV07P4-3W230	95400740	2145079004S	2801074915
10	1	13	230	7FV1P4-2W230	95400720	2445089003S	7FV1P4-3W230	95400745	2145089003S	2801084915
	1.5	18	230	7FV15P4-2W230	95400725	2443099004S	7FV15P4-3W230	95400750	2243009203S	2823008110
	1/2	6	115	10FV05P4-2W115	95401005	2445049004S	10FV05P4-3W115	95401030	2145049004S	2801044915
	1/2	6	230	10FV05P4-2W230	95401010	2445059004S	10FV05P4-3W230	95401035	2145059004S	2801054915
15	3/4	8	230	10FV07P4-2W230	95401015	2445079004S	10FV07P4-3W230	95401040	2145079004S	2801074915
	1	11	230	10FV1P4-2W230	95401020	2445089003S	10FV1P4-3W230	95401045	2145089003S	2801084915
	1.5	15	230	10FV15P4-2W230	95401025	2443099004S	10FV15P4-3W230	95401050	2243009203S	2823008110
	1/2	4	115	15FV05P4-2W115	95401505	2445049004S	15FV05P4-3W115	95401530	2145049004S	2801044915
20	1/2	4	230	15FV05P4-2W230	95401510	2445059004S	15FV05P4-3W230	95401535	2145059004S	2801054915
	3/4	6	230	15FV07P4-2W230	95401515	2445079004S	15FV07P4-3W230	95401540	2145079004S	2801074915
	1	8	230	15FV1P4-2W230	95401520	2445089003S	15FV1P4-3W230	95401545	2145089003S	2801084915
	1.5	11	230	15FV15P4-2W230	95401525	2443099004S	15FV15P4-3W230	95401550	2243009203S	2823008110
25	3/4	5	230	20FV07P4-2W230	95402015	2445079004S	20FV07P4-3W230	95402040	2145079004S	2801074915
	1	7	230	20FV1P4-2W230	95402020	2445089003S	20FV1P4-3W230	95402045	2145089003S	2801084915
	1.5	10	230	20FV15P4-2W230	95402025	2443099004S	20FV15P4-3W230	95402050	2243009203S	2823008110
25	1	6	230	25FV1P4-2W230	95402520	2445089003S	25FV1P4-3W230	95402545	2145089003S	2801084915
	1.5	8	230	25FV15P4-2W230	95402525	2443099004S	25FV15P4-3W230	95402550	2243009203S	2823008110

### STAINLESS STEEL ORDERING INFORMATION

GPM	HP	Stages	Volts	2-Wire			3-Wire			
				Model	Order No.	Motor	Model	Order No.	Motor	Control Box
5	1/2	8	115	5FV05S4-2W115	95420505	2445049004S	5FV05S4-3W115	95420530	2145049004S	2801044915
	1/2	8	230	5FV05S4-2W230	95420510	2445059004S	5FV05S4-3W230	95420535	2145059004S	2801054915
	3/4	12	230	5FV07S4-2W230	95420515	2445079004S	5FV07S4-3W230	95420540	2145079004S	2801074915
	1	15	230	5FV1S4-2W230	95420520	2445089003S	5FV1S4-3W230	95420545	2145089003S	2801084915
7	1.5	21	230	5FV15S4-2W230	95420525	2443099004S	5FV15S4-3W230	95420550	2243009203S	2823008110
	1/2	7	115	7FV05S4-2W115	95420705	2445049004S	7FV05S4-3W115	95420730	2145049004S	2801044915
	1/2	7	230	7FV05S4-2W230	95420710	2445059004S	7FV05S4-3W230	95420735	2145059004S	2801054915
	3/4	10	230	7FV07S4-2W230	95420715	2445079004S	7FV07S4-3W230	95420740	2145079004S	2801074915
10	1	13	230	7FV1S4-2W230	95420720	2445089003S	7FV1S4-3W230	95420745	2145089003S	2801084915
	1.5	18	230	7FV15S4-2W230	95420725	2443099004S	7FV15S4-3W230	95420750	2243009203S	2823008110
	1/2	6	115	10FV05S4-2W115	95421005	2445049004S	10FV05S4-3W115	95421030	2145049004S	2801044915
	1/2	6	230	10FV05S4-2W230	95421010	2445059004S	10FV05S4-3W230	95421035	2145059004S	2801054915
15	3/4	8	230	10FV07S4-2W230	95421015	2445079004S	10FV07S4-3W230	95421040	2145079004S	2801074915
	1	11	230	10FV1S4-2W230	95421020	2445089003S	10FV1S4-3W230	95421045	2145089003S	2801084915
	1.5	15	230	10FV15S4-2W230	95421025	2443099004S	10FV15S4-3W230	95421050	2243009203S	2823008110
	1/2	4	115	15FV05S4-2W115	95421505	2445049004S	15FV05S4-3W115	95421530	2145049004S	2801044915
20	1/2	4	230	15FV05S4-2W230	95421510	2445059004S	15FV05S4-3W230	95421535	2145059004S	2801054915
	3/4	6	230	15FV07S4-2W230	95421515	2445079004S	15FV07S4-3W230	95421540	2145079004S	2801074915
	1	8	230	15FV1S4-2W230	95421520	2445089003S	15FV1S4-3W230	95421545	2145089003S	2801084915
	1.5	11	230	15FV15S4-2W230	95421525	2443099004S	15FV15S4-3W230	95421550	2243009203S	2823008110
25	3/4	5	230	20FV07S4-2W230	95422015	2445079004S	20FV07S4-3W230	95422040	2145079004S	2801074915
	1	7	230	20FV1S4-2W230	95422020	2445089003S	20FV1S4-3W230	95422045	2145089003S	2801084915
	1.5	10	230	20FV15S4-2W230	95422025	2443099004S	20FV15S4-3W230	95422050	2243009203S	2823008110
25	1	6	230	25FV1S4-2W230	95422520	2445089003S	25FV1S4-3W230	95422545	2145089003S	2801084915
	1.5	8	230	25FV15S4-2W230	95422525	2443099004S	25FV15S4-3W230	95422550	2243009203S	2823008110

## 4" SERIES V PUMPS - ORDERING INFORMATION

### THERMOPLASTIC PUMP ENDS

GPM	HP	Stages	Model	Order No.
5	1/2	8	5FV05P4-PE	95410500
	3/4	12	5FV07P4-PE	95410501
	1	15	5FV1P4-PE	95410502
	1.5	21	5FV15P4-PE	95410503
7	1/2	7	7FV05P4-PE	95410700
	3/4	10	7FV07P4-PE	95410701
	1	13	7FV1P4-PE	95410702
	1.5	18	7FV15P4-PE	95410703
10	1/2	6	10FV05P4-PE	95411000
	3/4	8	10FV07P4-PE	95411001
	1	11	10FV1P4-PE	95411002
	1.5	15	10FV15P4-PE	95411003
15	1/2	4	15FV05P4-PE	95411500
	3/4	6	15FV07P4-PE	95411501
	1	9	15FV1P4-PE	95411502
	1.5	11	15FV15P4-PE	95411503
20	3/4	5	20FV07P4-PE	95412001
	1	7	20FV1P4-PE	95412002
	1.5	10	20FV15P4-PE	95412003
25	1	6	25FV1P4-PE	95412501
	1.5	8	25FV15P4-PE	95412502

NOTES: Discharge is 1-1/4" NPT; Maximum diameter across cable guard is 3.90" on all models.

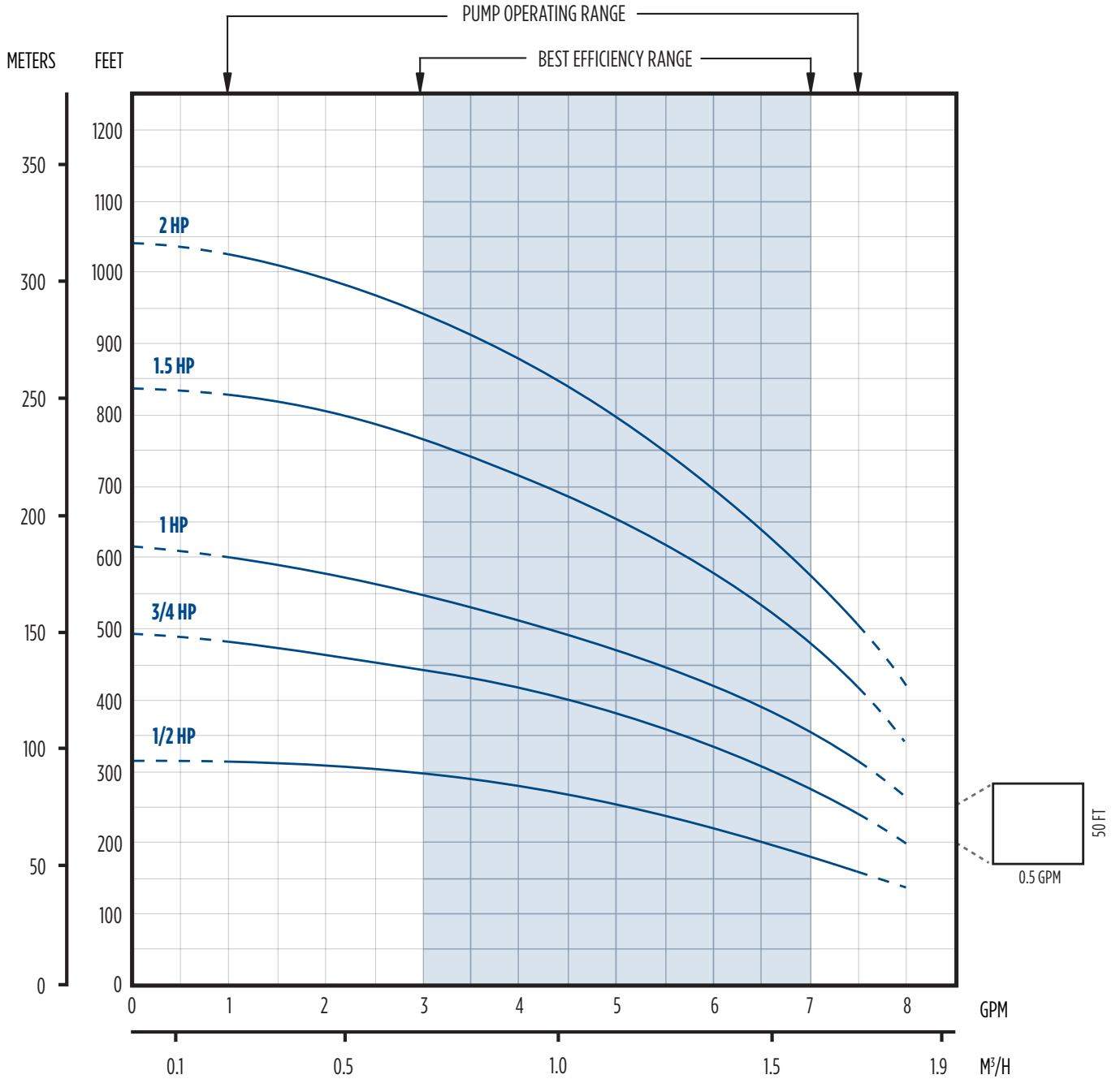
### STAINLESS STEEL PUMP ENDS

GPM	HP	Stg.	Model	Order No.
5	1/2	8	5FV05S4-PE	95430500
	3/4	12	5FV07S4-PE	95430501
	1	15	5FV1S4-PE	95430502
	1.5	21	5FV15S4-PE	95430503
	2	26	5FV2S4-PE	95430504
7	1/2	7	7FV05S4-PE	95430700
	3/4	10	7FV07S4-PE	95430701
	1	13	7FV1S4-PE	95430702
	1.5	18	7FV15S4-PE	95430703
	2	24	7FV2S4-PE	95430704
	3	32	7FV3S4-PE	95430705
	10	6	10FV05S4-PE	95431000
10	3/4	8	10FV07S4-PE	95431001
	1	11	10FV1S4-PE	95431002
	1.5	15	10FV15S4-PE	95431003
	2	18	10FV2S4-PE	95431004
	3	24	10FV3S4-PE	95431005
	5	39	10FV5S4-PE	95431006
	15	4	15FV05S4-PE	95431500
	3/4	6	15FV07S4-PE	95431501
	1	9	15FV1S4-PE	95431502
	1.5	11	15FV15S4-PE	95431503
15	2	14	15FV2S4-PE	95431504
	3	19	15FV3S4-PE	95431505
	5	31	15FV5S4-PE	95431506
	3/4	5	20FV07S4-PE	95432001
	1	7	20FV1S4-PE	95432002
	1.5	10	20FV15S4-PE	95432003
	2	12	20FV2S4-PE	95432004
20	3	16	20FV3S4-PE	95432005
	5	26	20FV5S4-PE	95432006
	1	6	25FV1S4-PE	95432501
	1.5	8	25FV15S4-PE	95432502
	2	10	25FV2S4-PE	95432503
25	3	14	25FV3S4-PE	95432504
	5	23	25FV5S4-PE	95432505

NOTES: Discharge is 1-1/4" NPT; Maximum diameter across cable guard is 3.90" on all models.

### 4" SERIES V PUMPS - 5 GPM

#### PERFORMANCE



# 4" SERIES V PUMPS - 5 GPM

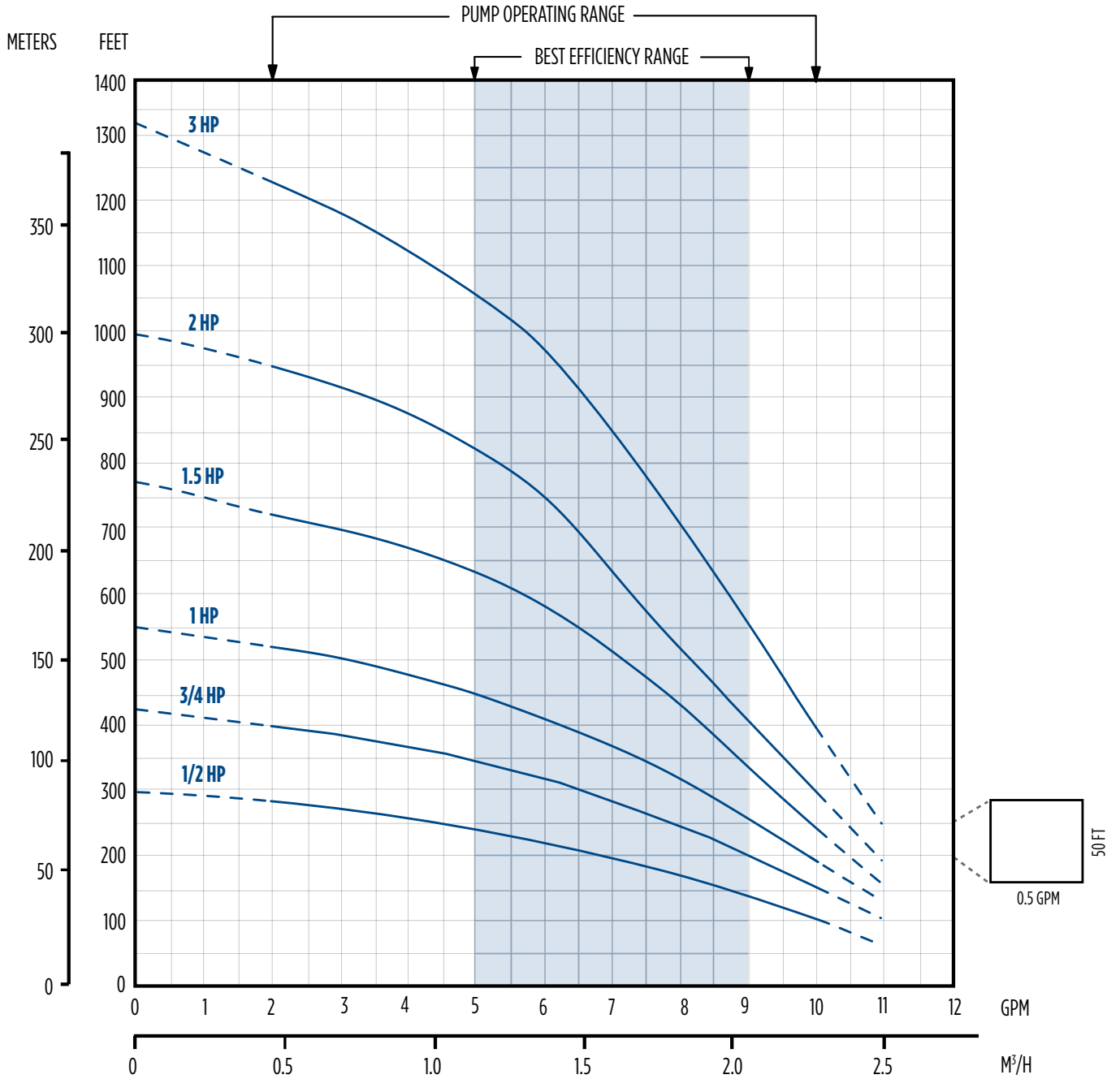
## PERFORMANCE

HP	PSI	Depth To Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)										
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000							
1/2	0							7	7	6	6	5	4												315							
	20					8	7	6	6	5	5	3	2													315						
	30					7	7	6	6	5	5	4	2														315					
	40				7	7	6	6	5	5	4	3																315				
	50			7	6	6	6	5	5	4	2																		315			
	60	7	7	6	6	5	4	4	2																					315		
	80	6	6	5	4	3																									315	
Shut-off PSI		127	119	110	101	93	84	75	67	58	49	32	23																			
3/4	0										7	7	7	6	5	4	3								5495							
	20									7	7	7	6	6	5	4	3									5495						
	30								7	7	7	6	6	6	5	3											5495					
	40							7	7	7	6	6	6	5	4	2												5495				
	50						7	7	7	6	6	6	5	5	4														5495			
	60					7	7	7	6	6	6	5	5	4	3															5495		
	80			7	7	7	6	6	6	5	5	4	3	3																	5495	
Shut-off PSI		205	196	188	179	171	162	153	145	136	127	110	101	84	58	41	23															
1	0													8	7	6	6	5	4	4					615							
	20												7	7	7	6	5	4	3					615								
	30											7	7	7	6	5	5	3	2							615						
	40										7	7	7	7	6	5	4	3									615					
	50										7	7	7	7	6	6	4	3										615				
	60										7	7	7	7	6	6	5	4											615			
	80										7	7	7	6	6	5	4													615		
Shut-off PSI		257	248	240	231	222	214	205	197	188	179	162	153	136	110	93	75	58	49													
1.5	0																7	7	7	6	5	4	2		835							
	20																7	7	7	6	6	5	3			835						
	30																7	7	7	6	6	6	4	3			835					
	40																7	7	7	6	6	6	5	4				2			835	
	50																7	7	7	6	6	5	5	3				835				
	60																7	7	7	6	6	5	5	3					835			
	80																7	7	7	6	6	5	4	2						835		
Shut-off PSI		352	344	335	326	318	309	300	292	283	274	257	249	231	205	188	171	153	145	101	58	15										
2	0																	7	7	7	6	5	4	3	1040							
	20																	7	7	7	7	6	5	4		2	1040					
	30																	7	7	7	7	6	6	5		3					1040	
	40																	7	7	7	6	6	6	5		3		1040				
	50																	7	7	7	7	6	6	5		4			3			1040
	60																	7	7	7	6	6	6	5		4			3	1040		
	80																	7	7	7	6	6	6	5		3			1040			
Shut-off PSI		441	432	424	415	406	398	389	381	372	363	346	337	320	294	277	259	242	233	190	147	104	60									

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# 4" SERIES V PUMPS - 7 GPM

## PERFORMANCE



## 4" SERIES V PUMPS - 7 GPM

### PERFORMANCE

HP	PSI	Depth To Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)				
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000	
1/2	0				10	10	9	9	8	7	6	5	4												300	
	20		10	9	9	8	8	7	6	5	4															
	30	10	9	9	8	7	7	6	5	4	3															
	40	9	9	8	8	7	6	5	4	3																
	50	9	8	7	7	6	5	4	3																	
	60	8	7	6	6	5	4	3																		
80	6	5	4	3																						
Shut-off PSI		121	112	103	95	86	77	69	60	52	43	26	17													
3/4	0						10	10	9	9	9	8	7	6	4									422		
	20			10	10	10	9	9	8	8	7	6	6	4												
	30		10	10	10	9	9	8	8	7	7	6	5	3												
	40	10	10	10	9	9	8	8	7	7	6	5	4													
	50	10	9	9	9	8	8	7	7	6	6	4	3													
	60	9	9	9	8	8	7	7	6	6	5	3														
80	8	8	8	7	6	6	5	5	4	3																
Shut-off PSI		421	412	404	395	386	378	369	360	352	343	326	317	300	274	257	239	222	213	170	127	84	40			
1	0							10	10	9	9	9	8	8	7	6	5	3	3					544 ft		
	20					10	10	10	9	9	9	8	8	7	6	5	3									
	30			10	10	10	10	9	9	9	8	8	7	6	5	4										
	40		10	10	10	10	9	9	9	8	8	7	7	6	4	3										
	50	10	10	10	10	9	9	9	8	8	8	7	6	5	3											
	60	10	10	9	9	9	8	8	8	7	6	6	5	3												
80	9	9	9	8	8	8	7	7	6	5	5	3														
Shut-off PSI		226	218	209	200	192	183	174	166	157	148	131	123	105	79	62	45	27	18							
1.5	0								10	10	10	9	9	9	8	8	7	7	7	5	2			765		
	20						10	10	10	10	9	9	9	8	8	7	7	6	6	4						
	30				10	10	10	10	10	9	9	9	9	8	8	7	7	6	6	3						
	40			10	10	10	10	9	9	9	9	9	8	8	7	7	6	6	5	3						
	50		10	10	10	10	9	9	9	9	9	8	8	8	7	6	6	5	5							
	60	10	10	10	10	9	9	9	9	9	8	8	8	7	7	6	6	5	4							
80	10	10	9	9	9	9	9	8	8	8	8	7	7	6	5	5	4	3								
Shut-off PSI		322	313	305	296	287	279	270	261	253	244	227	218	201	175	158	140	123	114	71	28					
2	0									10	10	10	10	10	9	9	9	8	8	8	7	6	5	3	995	
	20							10	10	10	10	10	9	9	9	8	8	7	7	6	6	4				
	30						10	10	10	10	10	9	9	9	8	8	8	7	7	6	5	4				
	40					10	10	10	10	10	9	9	9	9	8	8	7	7	7	6	5	3				
	50				10	10	10	10	10	10	9	9	9	9	8	8	7	7	7	6	5	3				
	60			10	10	10	10	10	10	9	9	9	9	8	8	7	7	7	7	6	4					
80	10	10	10	10	10	9	9	9	9	9	9	8	8	7	7	7	6	6	5	3						
Shut-off PSI		421	412	404	395	386	378	369	360	352	343	326	317	300	274	257	239	222	213	170	127	84	40			

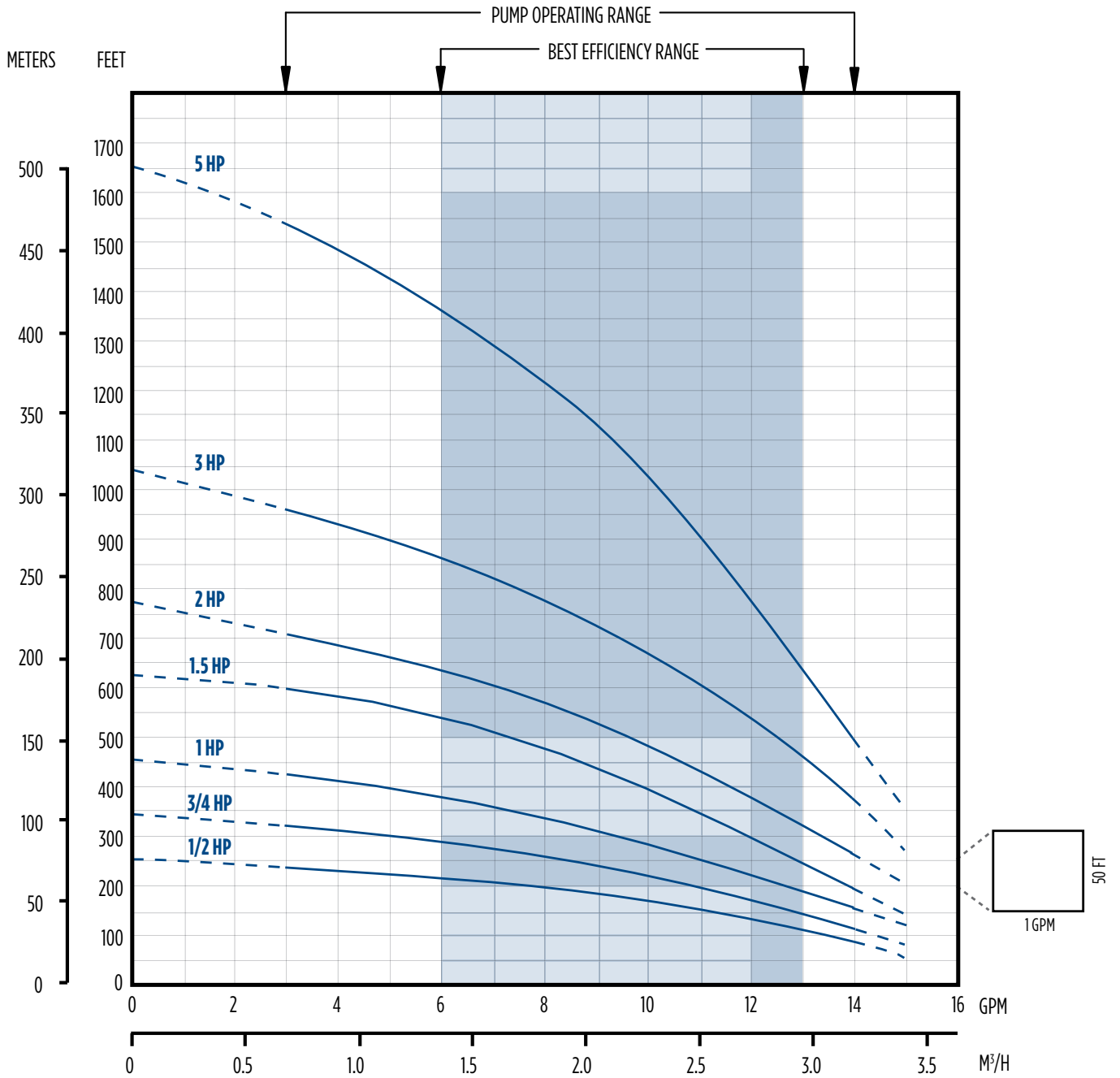
NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

HP	PSI	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	Shut-Off (ft)
3	0			10	9	9	8	7	7	6	5	4	2			1310
	20		10	9	9	8	8	7	6	6	5	3				
	30		10	9	9	8	8	7	6	6	4	3				
	40		10	9	9	8	7	7	6	5	4					
	50	10	10	9	8	8	7	7	6	5	4					
	60	10	10	9	8	8	7	7	6	5	3					
80	10	9	8	8	7	7	6	5	4	2						
Shut-off PSI		523	480	437	394	350	307	264	221	177	134	91	48			

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

### 4" SERIES V PUMPS - 10 GPM

#### PERFORMANCE



# 4" SERIES V PUMPS - 10 GPM

## PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																								
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700	800	900	1000		
1/2	0				14	13	12	11	10	9	7															
	20	14	13	13	12	11	10	8	6	3																
	30	13	13	12	11	10	8	6	3																	
	40	13	12	11	10	8	6	3																		
	50	12	11	9	8	5	3																			
	60	11	10	7	4																					
80	8	6	4																							
Shut-off PSI		97	88	80	71	62	54	45	36	28	19															
3/4	0					14	13	13	12	11	10	7	8	4												
	20		14	14	13	12	12	11	10	9	8	6	4													
	30	14	14	13	12	12	11	10	9	8	7	3														
	40	14	13	12	12	11	10	9	8	7	6															
	50	13	12	11	11	10	9	8	7	5	3															
	60	12	11	11	10	9	8	6	5																	
80	11	10	9	8	6	5																				
Shut-off PSI		137	129	120	111	103	94	85	77	68	59	42	34	16												
1	0							14	13	13	12	11	10	9	7	4										
	20					14	13	13	12	11	11	9	9	7	3											
	30					14	13	13	12	11	11	10	9	8	6											
	40					14	13	13	12	11	11	10	9	8	7	5										
	50					14	13	12	12	11	11	10	9	8	7	6										
	60	13	12	12	11	11	10	10	9	8	8	5	4													
80	12	12	11	10	10	9	8	7	6	5																
Shut-off PSI		183	174	157	148	140	131	123	114	105	97	79	71	53	27	10										
1.5	0									14	13	13	12	12	11	11	10	9	9	8	7					
	20									14	13	13	12	12	11	11	10	9	8	7	6	5				
	30									14	13	13	12	12	11	11	10	8	8	6	5	4				
	40									14	13	13	12	12	11	10	10	8	7	6	4					
	50									14	13	12	12	12	11	10	10	9	8	6	5	3				
	60		14	13	13	13	12	12	11	11	11	10	9	9	7	6	4									
80	13	13	13	12	12	11	11	11	10	10	9	9	8	6	3											
Shut-off PSI		257	248	240	231	222	214	205	197	188	179	162	153	136	110	93	75	41	32							
2	0												14	13	13	12	11	10	10	9	6					
	20											14	13	13	12	11	10	9	9	8	5					
	30											14	13	13	12	12	10	10	9	8	8	4				
	40											14	13	13	12	12	11	10	9	9	8	7	3			
	50											14	13	13	12	12	11	11	10	9	8	7	6			
	60											14	13	13	12	12	11	11	10	9	8	7	6			
80											14	13	13	12	12	11	11	10	9	8	8	6				
Shut-off PSI		324	316	307	298	290	281	272	264	255	246	229	220	203	177	160	143	125	117	73						
3	0															14	13	13	12	12	11	9	7	5		
	20															14	13	13	12	12	12	10	8	6	3	
	30															14	14	13	13	12	12	11	10	8	5	
	40															14	14	13	13	12	12	11	11	9	7	4
	50															14	14	14	13	12	12	11	11	10	7	4
	60															14	14	14	13	12	12	11	11	10	9	6
80															14	14	13	13	12	12	11	11	10	8	5	
Shut-off PSI		438	430	421	413	404	395	387	378	369	361	343	335	317	291	274	257	240	231	188	144	101	58			

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

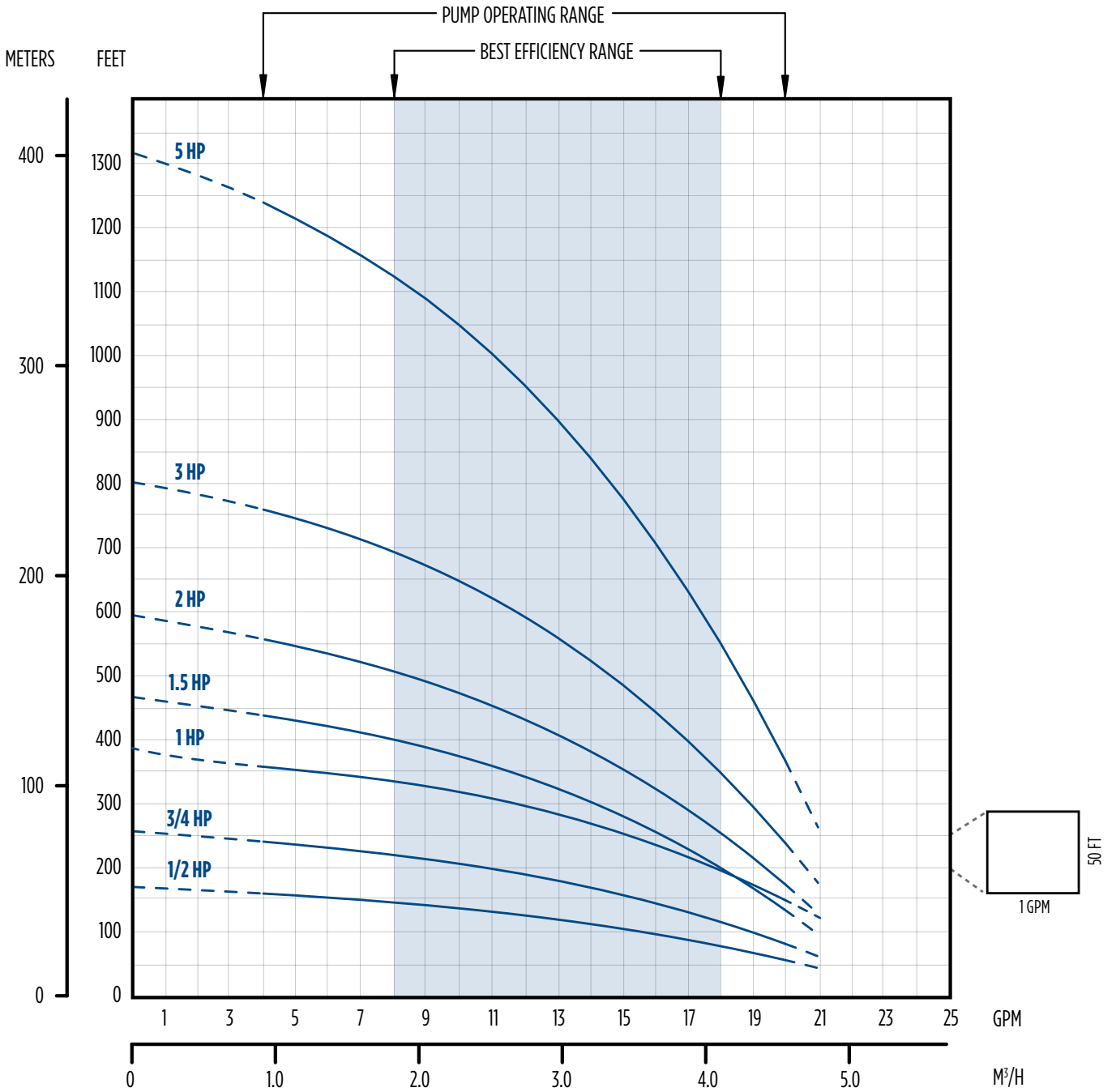
HP	PSI	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	Shut-Off (ft)	
5	0					14	13	13	12	11	11	10	9	8	6	5	
	20					14	13	12	12	11	10	9	8	7	6	4	
	30					14	13	12	12	11	10	9	8	7	5	4	
	40					14	13	12	11	11	10	9	8	7	5	3	
	50					14	13	13	12	11	10	9	9	7	6	5	3
	60					14	13	13	12	11	10	9	8	7	6	4	
80					14	13	12	11	11	10	9	8	7	5	3		
Shut-off PSI		670	626	583	540	497	453	410	367	324	280	237	194	151	107		

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage



# 4" SERIES V PUMPS - 15 GPM

## PERFORMANCE



### 4" SERIES V PUMPS - 15 GPM

#### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																								Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700	800	900	1000	1100		1200	
1/2	0			20	18	16	13	9	4																			170
	20	19	17	15	12	8																						
	30	17	14	11	7																							
	40	14	11	6																								
	50	10	5																									
	80	4																										
Shut-off PSI		65	56	48	39	30	22	13	4																			
3/4	0				20	19	18	16	15	13	11																	257
	20		20	19	17	16	14	12	10	7																		
	30		20	18	17	16	14	12	10	6																		
	40		18	17	15	14	12	9	6																			
	50		17	15	13	11	9	5																				
	80		10	7																								
Shut-off PSI		103	94	85	77	68	59	51	42	33	25																	

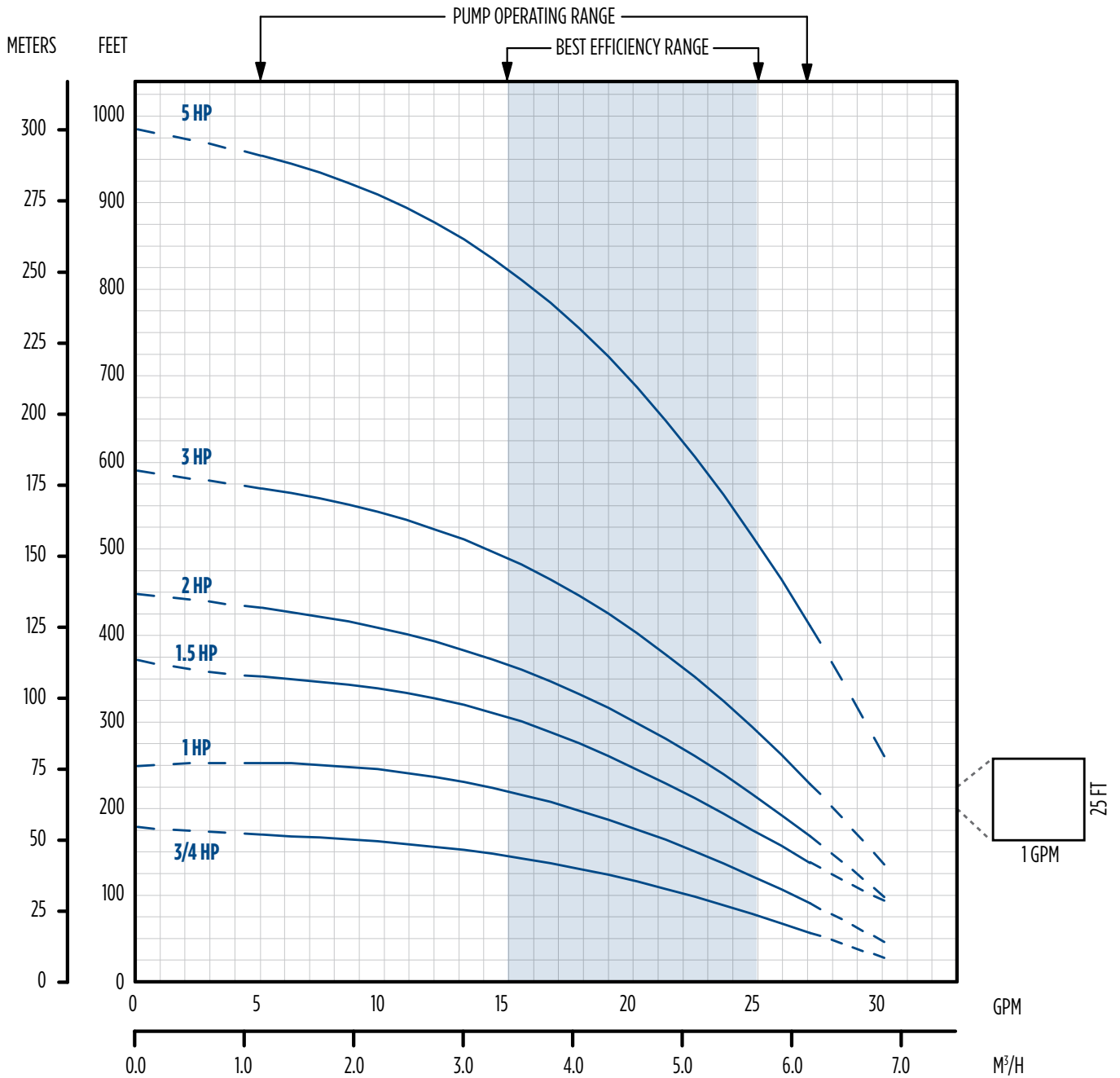
HP	PSI	Depth to Pumping Water Level, or Lift, in Feet Shaded Areas Indicate Most Efficient Performance																								Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200				
1	0													19	19	18	16	12	6									392
	10													19	18	17	14	9	2									
	20					20	19	18	18	17	16	12	6															
	30				20	19	18	18	17	16	14	10	3															
	40				20	19	18	17	17	15	14	12	7															
	50			20	19	18	17	16	15	14	12	10	3															
	60		20	19	18	17	16	15	14	12	10	7																
	70		19	18	17	16	15	13	11	9	7	4																
	80		18	17	16	15	13	11	9	6	4	1																
	90		17	16	14	13	11	9	6	3																		
	100		15	14	13	11	8	6	3																			
	110		14	12	10	8	5	2																				
	120		12	10	7	5	2																					
	130		9	7	4	1																						
	140		7	4	1																							
150		3																										
Shut-off psi			153	144	135	127	118	109	101	92	83	62	40	18														

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																								Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700	800	900	1000	1100		1200	
1.5	0						20	20	19	18	17	16	14	11	8	4												467
	20				20	20	19	18	18	17	16	15	14	12	7													
	30				20	20	19	18	18	17	16	15	14	13	10	5												
	40			20	19	19	18	18	17	16	15	13	11	9														
	50		20	19	19	18	17	17	16	15	14	13	11	10	7													
	80		18	17	16	16	15	14	13	12	11	9	6															
Shut-off PSI		193	185	176	167	159	150	141	133	124	115	98	89	72	46	29	11											
2	0												14	13	13	12	11	10	10	9	6						770	
	20												14	13	13	12	12	11	10	9	8	5						
	30												14	13	13	12	12	11	10	9	8	7	3					
	40												14	13	13	12	12	11	10	9	8	7	3					
	50												14	13	13	12	12	11	10	9	8	7	6					
	80					14	13	13	13	12	12	11	11	10	9	8	7	6	5									
Shut-off PSI		324	316	307	298	290	281	272	264	255	246	229	220	203	177	160	143	125	117	73								
3	0												20	20	19	18	17	16	15	15	12	8					170	
	20												20	20	19	19	18	17	16	15	14	13	10					
	30												20	20	20	19	18	18	16	15	14	13	13	9				
	40												20	20	20	19	19	18	17	16	15	14	13	12	8			
	50												20	20	20	19	19	18	17	15	14	13	12	11	7			
	80					20	20	20	19	19	18	17	17	16	15	14	12	11	10	5								
Shut-off PSI		339	330	321	313	304	295	287	278	269	261	243	235	217	191	174	157	139	131	87	44							
5	0														20	20	19	19	19	17	16	15	13	11	9	6	257	
	20														20	20	19	19	18	18	17	15	14	12	10	7		
	30														20	20	19	19	18	18	17	15	14	12	9	7		
	40														20	20	19	19	18	18	18	16	15	13	11	9		
	50														20	20	19	19	18	18	17	17	16	14	13	11		
	80														20	20	20	19	19	18	18	17	17	16	14	12		
Shut-off PSI		561	553	544	535	527	518	509	501	492	483	466	457	440	414	397	379	362	353	310	267	224	180	137	94			

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

### 4" SERIES V PUMPS - 20 GPM

#### PERFORMANCE



## 4" SERIES V PUMPS - 20 GPM

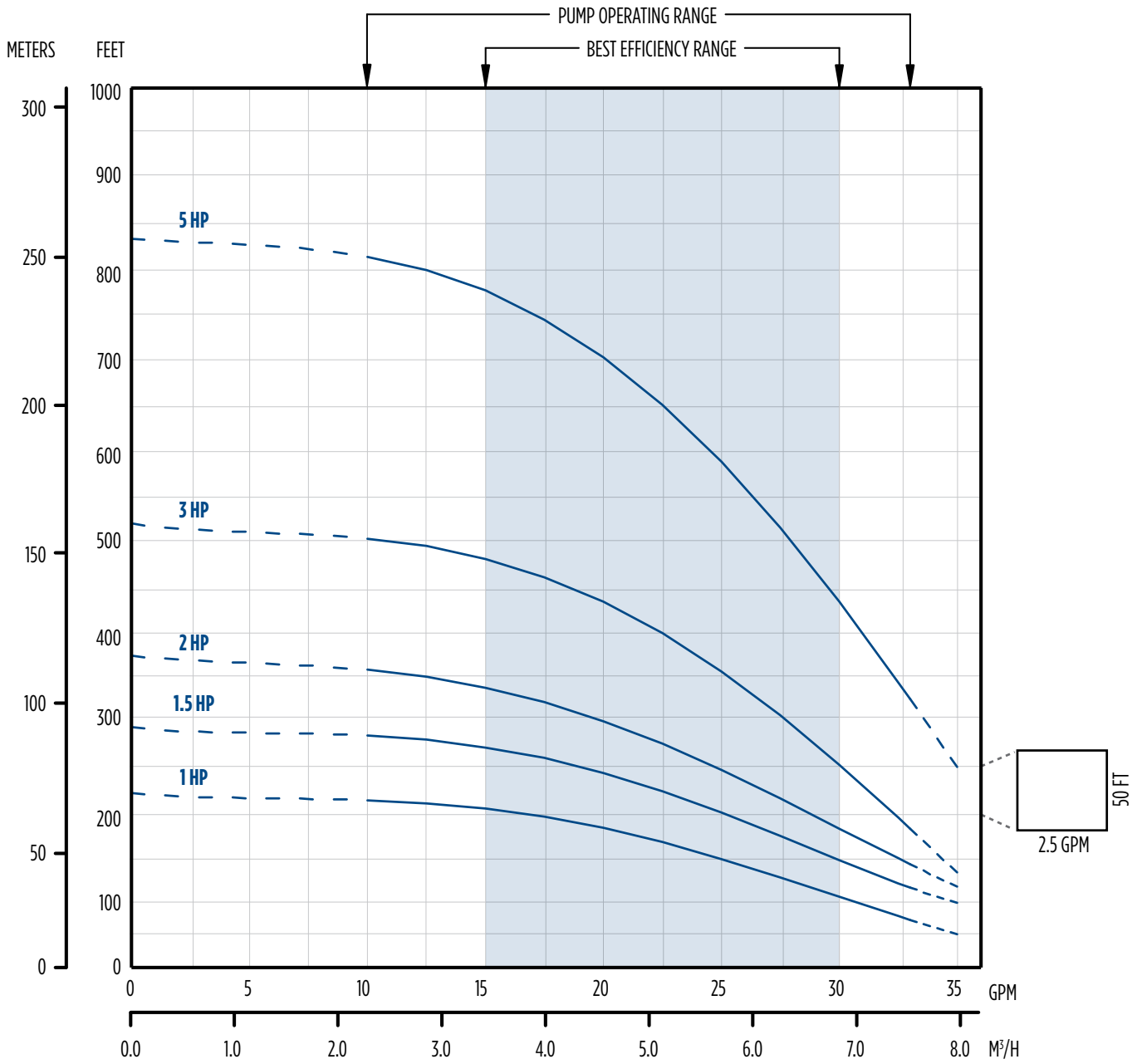
### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)			
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000
3/4	0				24	22	21	18	14																
	20		23	21	19	17	12																		
	30	23	21	19	17	11																			
	40	21	19	17	10																				
	50	19	16	10																					
	60	14																							
Shut-off PSI		74	65	56	48	39	30	22	13																
1	0						26	25	23	20	18	11													
	20			27	26	24	22	20	18	15	8														
	30		27	26	24	22	19	17	14	7															
	40	27	25	23	21	19	17	13																	
	50	25	23	21	19	16	12																		
	60	23	21	18	16	11																			
70	20	18	15	10																					
80	18	15	9																						
Shut-off PSI		100	91	83	74	66	57	48	40	31	22	5													
1.5	0								27	26	24	22	20	17	6										
	20						27	25	24	23	21	18	16	10											
	30					26	25	24	22	21	20	16	13												
	40				26	25	23	22	21	19	18	13	8												
	50		27	26	25	23	22	21	19	17	15	7													
	60	27	26	24	23	22	20	19	17	15	11														
70	26	24	23	21	20	19	17	14	11	5															
80	24	23	21	20	18	16	14	10																	
Shut-off PSI		156	147	138	130	121	112	104	95	86	78	60	52	34	8										
2	0										24	23	20	16	12										
	20									24	21	20	17	12											
	30								24	23	22	20	19	16											
	40						24	23	22	21	19	17	14												
	50					24	23	22	20	19	16	14	10												
	60					24	23	22	20	19	18	14	12												
80			24	23	21	20	19	18	16	14															
Shut-off PSI		187	179	170	161	153	144	135	127	118	110	92	84	66	40	23									
3	0												24	22	20	18	16	14							
	20												24	23	20	17	15	12	10						
	30											24	23	21	18	16	13	10							
	40											24	23	22	20	17	14	11							
	50										24	24	22	21	19	16	13								
	60								24	24	23	21	20	18	14	10									
80							24	23	22	20	18	17	15	10											
Shut-off PSI		251	242	234	225	216	208	199	190	182	173	156	147	130	104	87	69	52	43						
5	0																24	23	20	16					
	20																24	21	18	13					
	30																24	23	20	17	11				
	40																24	23	23	20	16	10			
	50																24	22	22	17	15				
	60																24	23	22	21	18	14			
80																24	23	22	21	20	16	10			
Shut-off PSI		416	408	399	390	382	373	364	356	347	339	321	313	295	269	252	235	217	209	165	122	79			

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

### 4" SERIES V PUMPS - 25 GPM

#### PERFORMANCE



## 4" SERIES V PUMPS - 25 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																				Shut-Off (ft)				
		20	40	60	80	100	120	140	160	180	200	240	260	300	360	400	440	480	500	600	700		800	900	1000	
1	0			35	33	31	28	26	24	21	17														222	
	20		32	30	28	25	22	18	15																	
	30	32	29	27	25	22	19																			
	40	29	27	25	22	19																				
	50	26	24	21	16																					
	60	24	21	17																						
Shut-off PSI		87	79	70	61	53	44	35	27	18	10															
1.5	0				32	30	28	26	24	22	19														297	
	20				32	30	28	26	24	22	19															
	30			32	30	28	26	24	22	19	16															
	40	33	32	29	27	25	23	21	19	15																
	50	32	29	27	25	23	21	18																		
	60	29	27	25	23	20	18																			
80	24	22	20	17																						
Shut-off PSI		120	111	103	94	85	77	68	59	51	42	25	16													
2	0				34	33	31	29	28	26	25	24	20												375	
	20				34	33	31	29	28	26	25	21	20													
	30			34	33	31	29	28	26	24	23	19	17													
	40		34	33	31	29	28	26	24	23	21	17														
	50	33	32	30	29	27	26	24	22	20	18															
	60	32	30	28	27	26	24	22	20	18																
80	28	26	25	23	21	20	17																			
Shut-off PSI		154	145	136	128	119	110	102	93	84	76	58	50	32												
3	0						33	32	32	31	30	28	27	25	22	19	15								519	
	20						33	32	32	31	30	28	27	25	22	19										
	30					33	32	32	31	30	29	27	26	24	20											
	40				33	32	32	31	30	29	28	26	25	22	18											
	50			33	32	31	31	30	29	28	27	24	23	21	15											
	60		33	32	31	31	30	29	28	26	25	23	22	19												
80	32	31	30	29	28	27	26	25	24	23	20	19	15													
Shut-off PSI		216	207	199	190	181	173	164	155	147	138	121	112	95	69	52	34	17								
5	0												33	32	31	30	28	28	24	20					833	
	20												33	32	30	30	28	27	26	22	17					
	30												33	33	31	30	28	27	26	25	21	15				
	40											33	32	32	31	29	28	27	25	24	20					
	50											33	33	32	31	30	28	27	25	24	23	19				
	60											33	33	32	31	31	30	28	26	25	23	22	18			
80					33	33	32	31	31	30	29	28	26	25	23	21	20									
Shut-off PSI		352	343	326	317	309	300	291	283	274	257	248	231	205	187	170	153	144	101	58						

NOTES: Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

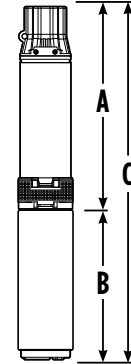
## 4" SERIES V PUMPS - DIMENSIONS

### THERMOPLASTIC

GPM	HP	Stages	2-Wire					3-Wire				
			Dimensions (in)			Wt. (lbs)		Dimensions (in)			Wt. (lbs)	
			A	B	C	PE	PMA	A	B	C	PE	PMA
5	1/2	8	14.12	9.51	23.63	8	26	14.12	9.51	23.63	8	26
	3/4	12	17.41	10.64	28.05	9	30	17.41	10.64	28.05	9	30
	1	15	19.87	11.73	31.60	10	34	19.87	11.73	31.60	10	34
	1.5	21	24.81	15.10	39.91	12	43	24.81	13.60	38.41	12	40
7	1/2	7	13.30	9.51	22.81	7	25	13.30	9.51	22.81	7	26
	3/4	10	15.76	10.64	26.40	8	29	15.76	10.64	26.40	8	29
	1	13	18.23	11.73	29.96	10	34	18.23	11.73	29.96	10	34
	1.5	18	22.34	15.10	37.44	11	42	22.34	13.60	35.94	11	39
10	1/2	6	12.97	9.51	22.48	7	25	12.97	9.51	22.48	7	26
	3/4	8	14.69	10.64	25.33	8	29	14.69	10.64	25.33	8	29
	1	11	17.44	11.73	29.17	9	33	17.44	11.73	29.17	9	33
	1.5	15	21.06	15.10	36.16	10	41	21.06	13.60	34.66	10	38
15	1/2	4	11.45	9.51	20.96	6	24	11.45	9.51	20.96	6	25
	3/4	6	12.97	10.64	23.61	7	28	12.97	10.64	23.61	7	28
	1	8	14.69	11.73	26.42	8	32	14.69	11.73	26.42	8	32
	1.5	11	17.44	15.10	32.54	9	40	17.44	13.60	31.04	9	37
20	3/4	5	13.65	10.64	24.29	6	28	13.65	10.64	24.29	6	28
	1	7	16.10	11.73	26.42	8	32	16.10	11.73	27.83	7	31
	1.5	10	19.77	15.10	34.87	8	39	19.77	13.60	33.37	8	36
25	1	6	14.88	11.73	26.61	7	31	14.88	11.73	26.61	7	31
	1.5	8	17.32	15.10	32.42	8	39	17.32	15.10	30.92	8	36

NOTES: PE = Pump end only; PMA = Pump and motor assembly; Maximum diameter with cable guard is 3.90"

Thermoplastic

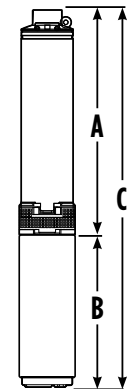


### STAINLESS STEEL

GPM	HP	Stages	2-Wire					3-Wire				
			Dimensions (in)			Wt. (lbs)		Dimensions (in)			Wt. (lbs)	
			A	B	C	PE	PMA	A	B	C	PE	PMA
5	1/2	8	13.57	9.51	23.08	10	28	13.57	9.51	23.08	10	29
	3/4	12	16.86	10.64	27.50	12	33	16.86	10.64	27.50	12	33
	1	15	19.33	11.73	31.06	14	38	19.33	11.73	31.06	14	38
	1.5	21	24.26	15.10	39.36	17	48	24.26	13.60	37.86	17	45
	2	26	-	-	-	-	-	30.46	15.10	45.56	20	-
7	1/2	7	12.75	9.51	22.26	9	27	12.75	9.51	22.26	9	28
	3/4	10	15.22	10.64	25.86	11	32	15.22	10.64	25.86	11	32
	1	13	17.68	11.73	29.41	13	37	17.68	11.73	29.41	13	37
	1.5	18	21.80	15.10	36.90	15	46	21.80	13.60	35.40	15	43
	2	24	-	-	-	-	-	26.73	15.10	41.83	19	-
10	3/4	6	12.39	9.51	21.90	7	25	12.39	9.51	21.90	7	26
	1	8	14.14	10.64	24.78	10	31	14.14	10.64	24.78	10	31
	1.5	11	16.85	11.73	28.58	11	35	16.85	11.73	28.58	11	35
	2	15	20.48	15.10	35.58	14	45	20.48	13.60	34.08	14	42
	3	18	-	-	-	-	-	25.26	15.10	40.36	15	-
	5	19	-	-	-	-	-	26.17	19.04	45.21	16	-
	5	31	-	-	-	-	-	37.00	29.19	66.19	23	-
15	1/2	4	10.64	9.51	20.15	7	25	10.64	9.51	20.15	7	26
	3/4	6	12.39	10.64	23.03	9	30	12.39	10.64	23.03	9	30
	1	8	14.14	11.73	25.87	10	34	14.14	11.73	25.87	10	34
	1.5	11	16.85	15.10	31.95	11	42	16.85	13.60	30.45	11	39
	2	14	-	-	-	-	-	19.57	15.10	34.67	13	-
20	3/4	5	13.10	10.64	23.74	8	29	13.10	10.64	23.74	8	29
	1	7	15.55	11.73	27.28	9	33	15.55	11.73	27.28	9	33
	1.5	10	19.22	15.10	34.32	11	42	19.22	13.60	32.82	11	39
	2	12	-	-	-	-	-	21.66	15.10	36.76	12	-
	3	16	-	-	-	-	-	26.55	19.04	45.59	14	-
	5	26	-	-	-	-	-	40.86	29.19	70.05	20	-
	7.5	39	-	-	-	-	-	60.77	29.60	90.37	27	-
25	1	6	14.33	11.73	26.06	9	33	14.33	11.73	26.06	9	33
	1.5	8	16.77	15.10	31.87	10	41	16.77	13.60	30.37	10	38
	2	10	-	-	-	-	-	19.22	15.10	34.32	11	-
	3	14	-	-	-	-	-	24.11	19.04	43.15	13	-
	5	23	-	-	-	-	-	37.19	28.19	66.38	18	-

NOTES: PE = Pump end only; PMA = Pump and motor assembly; Maximum diameter with cable guard is 3.90"

Stainless Steel



## 4" HIGH CAPACITY PUMPS

### FEATURES

- 4 performance ranges: 35, 45, 60, and 90 gpm
- Stainless steel discharge head and motor bracket
- High flow impellers and stages are glass-filled modified PPO for maximum efficiency
- Ceramic shaft sleeve and rubber discharge bearing eliminates sand wear
- Intermediate bearing for increased shaft stability
- Floating eye and hub seals for improved performance and efficiency
- Stainless steel hex pump shaft, shell, and shaft coupling
- High capacity upthrust assembly for protection during start-up and operation (45, 60, and 90 gpm models)
- Powered by Franklin's corrosion-resistant 4" submersible motors
- 2" NPT discharge



UL 778  
 CSA 108  
 NSF/ANSI 372  
 NSF/ANSI 61 (Pump end only)



## 4" HIGH CAPACITY PUMPS - ORDERING INFORMATION

### ORDERING INFORMATION

1 - 10 HP 4" Pump Ends							
GPM	HP	Stages	Model	Order No.		Dimensions (in) Pump End Only	Wt. (lbs)
				With Check Valve	Without Check Valve		
35	1	6	35FA1S4-PE	90653506	93613506	15.00	9
	1.5	8	35FA1S4-PE	90653508	93613508	17.50	10
	2	10	35FA2S4-PE	90653510	93613510	20.00	11
	3	14	35FA3S4-PE	90653514	93613514	25.00	13
	5	22	35FA5S4-PE	90653522	93613522	35.00	17
	7.5	34	35FA7S4-PE	90653534	93613534	52.17	25
45	10	42	35FA10S4-PE	90653542	93613542	62.23	31
	1.5	6	45FA1S4-PE	90654506	93614506	21.00	15
	2	8	45FA2S4-PE	90654508	93614508	25.50	16
	3	11	45FA3S4-PE	90654511	93614511	32.25	19
	5	18	45FA5S4-PE	90654518	93614518	47.75	25
	7.5	26	45FA7S4-PE	90654526	93614526	65.25	33
60	10	31	45FA10S4-PE	90654531	93614531	78.30	38
	2	6	60FA2S4-PE	90656006	93616006	21.00	15
	3	8	60FA3S4-PE	90656008	93616008	25.50	17
	5	13	60FA5S4-PE	90656013	93616013	36.75	21
	7.5	17	60FA7S4-PE	90656017	93616017	45.25	25
90	10	24	60FA10S4-PE	90656024	93616024	61.00	31
	2	5	90FA2S4-PE	90659005	93619005	22.56	15
	3	7	90FA3S4-PE	90659007	93619007	28.56	17
	5	12	90FA5S4-PE	90659012	93619012	43.56	21
	7.5	19	90FA7S4-PE	90659019	93619019	64.50	27
	10	24	90FA10S4-PE	90659020	93619020	79.25	31

NOTES: Discharge is 2" NPT. Maximum diameter across cable guard is 3.90" on all models.

1 - 1.5 HP Single-Phase Units (2-Wire)							
GPM	HP	Stages	Volts	Model	Order No.		Wt. (lbs)
					With Check Valve	Without Check Valve	
35	1	6	230	35FA1S4-2W230	90653606	93613606	33
	1.5	8		35FA1S4-2W230	90653608	93613608	41
45	1.5	6		45FA1S4-2W230	90654606	93614606	46

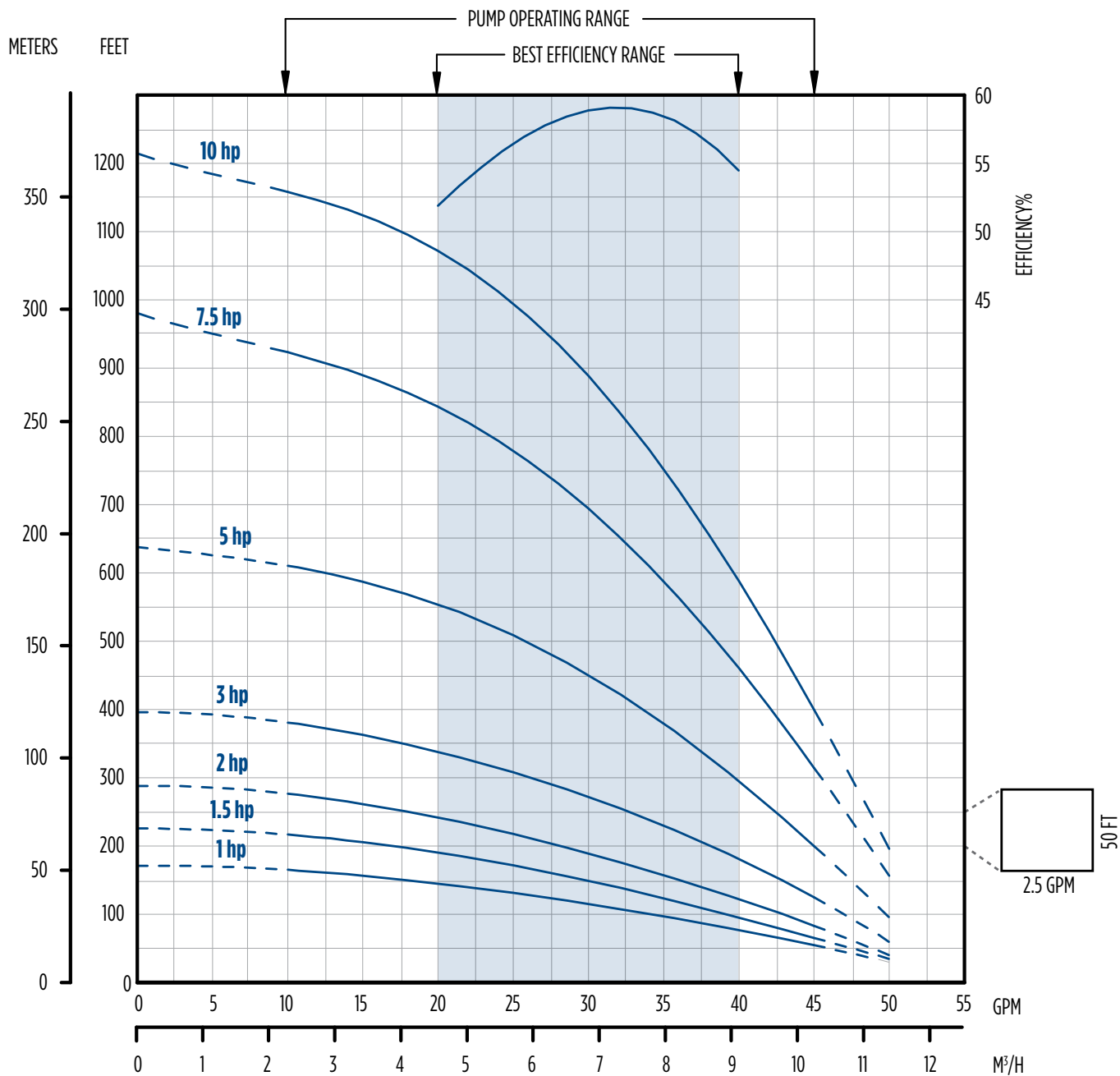
NOTES: All listed above have 2" NPT discharge. Order check valve separately. Pump and motor will be individually cartoned and require assembly.

1 - 1.5 HP Single-Phase Units (3-Wire)							
GPM	HP	Stages	Volts	Model	Order No.		Wt. (lbs)
					With Check Valve	Without Check Valve	
35	1	6	230	35FA1S4-3W230	90653706	93613706	33
	1.5	8		35FA1S4-3W230	90653608	93613708	39
45	1.5	6		45FA1S4-3W230	90654706	93614706	44

NOTES: All listed above have 2" NPT discharge. Order check valve separately. Pump and motor will be individually cartoned and require assembly.

# 4" HIGH CAPACITY PUMPS - 35 GPM

## PERFORMANCE



### 4" HIGH CAPACITY PUMPS - 35 GPM

#### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																		
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	Shut-Off (ft)
1	0			44	40	34	28	22	13											171
	10		43	39	33	27	21	11												
	20	43	38	32	26	20														
	30	37	31	26	19															
	40	30	25	18																
	50	24	16																	
	60	14																		
	80																			
Shut-off PSI	65	57	48	39	31	22	13	5												
1.5	0			45	43	40	36	31	27	23	18								226	
	10		45	42	39	35	31	27	23	16										
	20	45	42	38	34	30	26	22	15											
	30	41	38	34	30	26	21	14												
	40	37	33	29	25	20	12													
	50	32	29	24	19	10														
	60	28	24	18																
	80	23	17																	
Shut-off PSI	89	81	72	63	55	46	37	29	20	11										
2	0			45	43	40	37	34	31	28	19							288		
	10			45	43	40	37	34	31	27	24	11								
	20		45	43	40	37	33	30	27	24	20									
	30	44	42	39	36	33	30	26	23	19	12									
	40	42	39	36	32	29	26	22	18	11										
	50	39	35	32	29	25	22	17	10											
	60	35	31	28	25	21	16													
	80	31	28	24	21	15														
Shut-off PSI	116	107	99	90	81	73	64	55	47	38	16									
3	0					45	44	42	40	38	32	28	18					396		
	10					45	44	42	40	38	36	29	23	12						
	20					45	43	42	40	37	35	32	30	24	13					
	30			45	43	42	40	37	35	32	30	24	13							
	40		44	43	41	39	37	34	32	29	27	20								
	50	44	43	41	39	37	34	32	29	27	24	14								
	60	43	41	39	36	34	31	29	26	24	21									
	80	40	38	36	33	31	28	26	23	20	15									
Shut-off PSI	163	154	145	137	128	120	111	102	94	85	63	42	20							
5	0									45	43	40	37	33	30	26	21	12	638	
	10									45	44	42	39	35	32	28	24	18		
	20									45	45	44	43	40	37	34	30	26		13
	30							45	45	44	43	42	39	35	32	28	24	18		
	40					45	44	44	43	42	41	37	34	30	27	22	14			
	50					45	44	44	43	42	40	39	36	32	29	25	19			
	60				45	44	43	42	41	40	39	38	34	31	27	22	15			
	80		45	44	43	42	41	40	39	37	36	32	29	25	19					
Shut-off PSI	45	44	43	42	41	40	38	37	36	34	31	27	23	15						
Shut-off PSI	268	259	250	242	233	224	216	207	198	190	168	146	125	103	81	60	38	16		

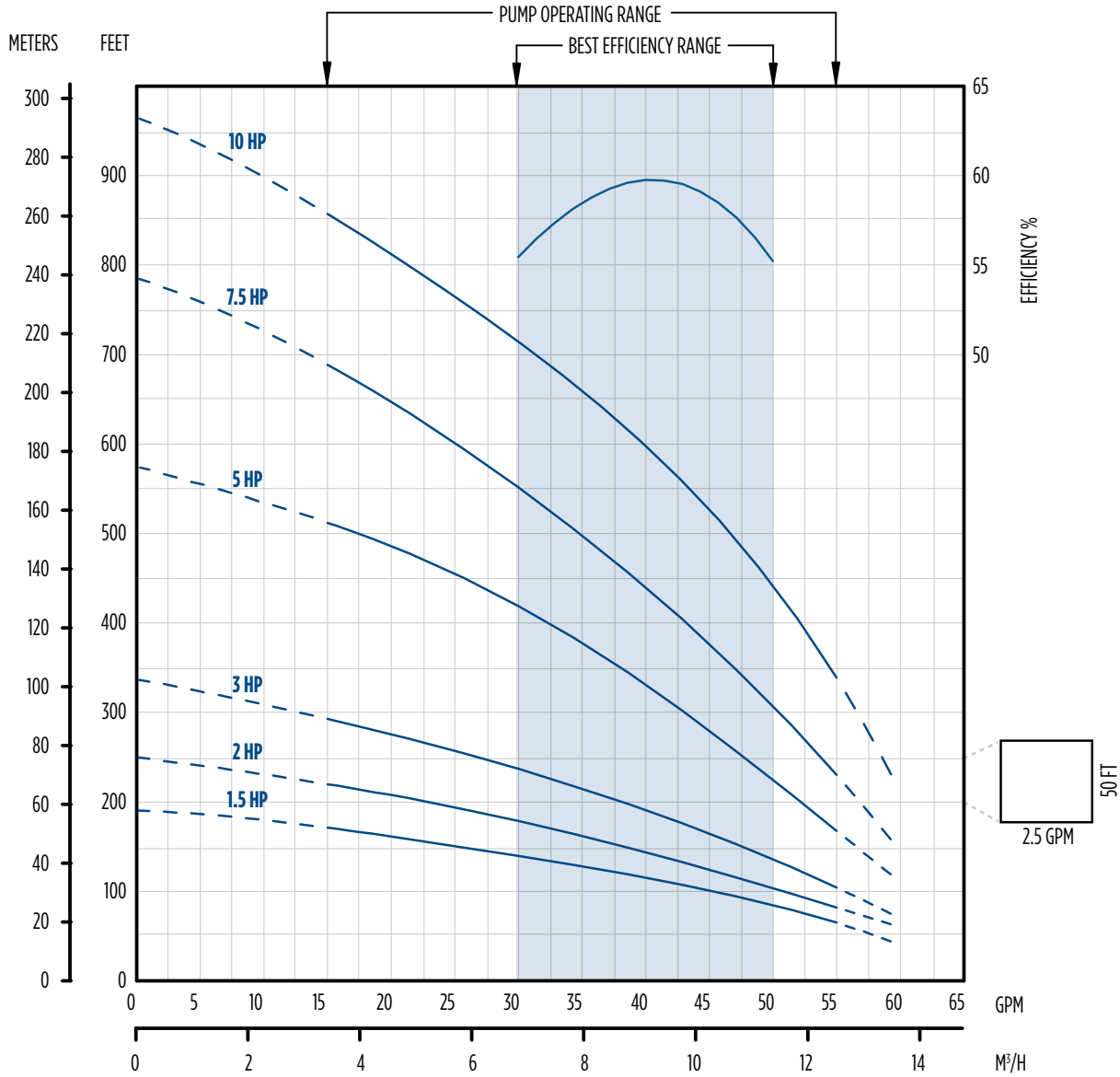
HP	PSI	120	140	160	180	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	Shut-Off (ft)	
7.5	0								44	42	40	38	36	34	32	30	27	24	19	13	980	
	10								45	43	41	39	38	36	33	31	29	26	22	17		10
	20								44	42	40	39	37	35	32	30	27	24	20	14		
	30						45	43	41	40	38	36	34	31	29	26	22	17	11			
	40						44	42	41	39	37	35	33	30	27	24	20	14				
	50					45	43	42	40	38	36	34	32	29	25	22	18	11				
	60				45	44	43	41	39	37	35	33	30	28	24	20	15					
	80	45	45	44	43	43	42	41	39	37	35	33	31	28	25	21	15					
Shut-off PSI	373	364	355	347	338	316	295	274	251	230	208	186	165	143	121	100	78	56	35			

HP	PSI	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	Shut-Off (ft)
10	0					45	44	43	41	40	38	36	35	33	31	30	28	25	22	17	11	1215
	10					45	43	42	41	39	37	36	34	32	31	29	26	24	20	15		
	20				45	44	43	41	40	38	37	35	33	32	30	28	25	22	18	12		
	30				45	43	42	41	39	38	36	34	32	31	29	27	24	20	15			
	40			45	44	43	41	40	38	37	35	33	32	30	28	25	22	18	12			
	50			45	44	42	41	39	38	36	34	33	31	29	27	24	20	16				
	60		45	44	43	42	40	39	37	35	34	32	30	28	26	23	18	13				
	80	45	44	43	42	41	39	38	36	34	33	31	29	27	24	21	16					
Shut-off PSI	439	418	396	374	353	331	309	288	266	245	223	201	180	158	136	115	93	71	50	28		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage. Performance shown is based on a pump without check valve.

# 4" HIGH CAPACITY PUMPS - 45 GPM

## PERFORMANCE



HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650	Shut-Off (ft)
1.5	0				52	46	38	30	21												
	10		55	51	45	37	26	20													
	20	54	50	43	35	27	18														
	30	49	42	34	26	16															
	40	41	33	24	15																
	50	32	23																		
	60	22																			
Shut-off PSI		74	65	56	48	39	30	22	13												
2	0				55	51	46	41	36	30	23										
	10			55	50	45	40	35	29	22											
	20		54	49	44	39	34	28	21												
	30	53	49	44	38	33	27	19													
	40	48	43	38	32	26	18														
	50	42	37	31	24	17															
	60	36	30	23	16																
Shut-off PSI		99	91	82	74	65	56	48	39	30	22										

### 4" HIGH CAPACITY PUMPS - 45 GPM

#### PERFORMANCE

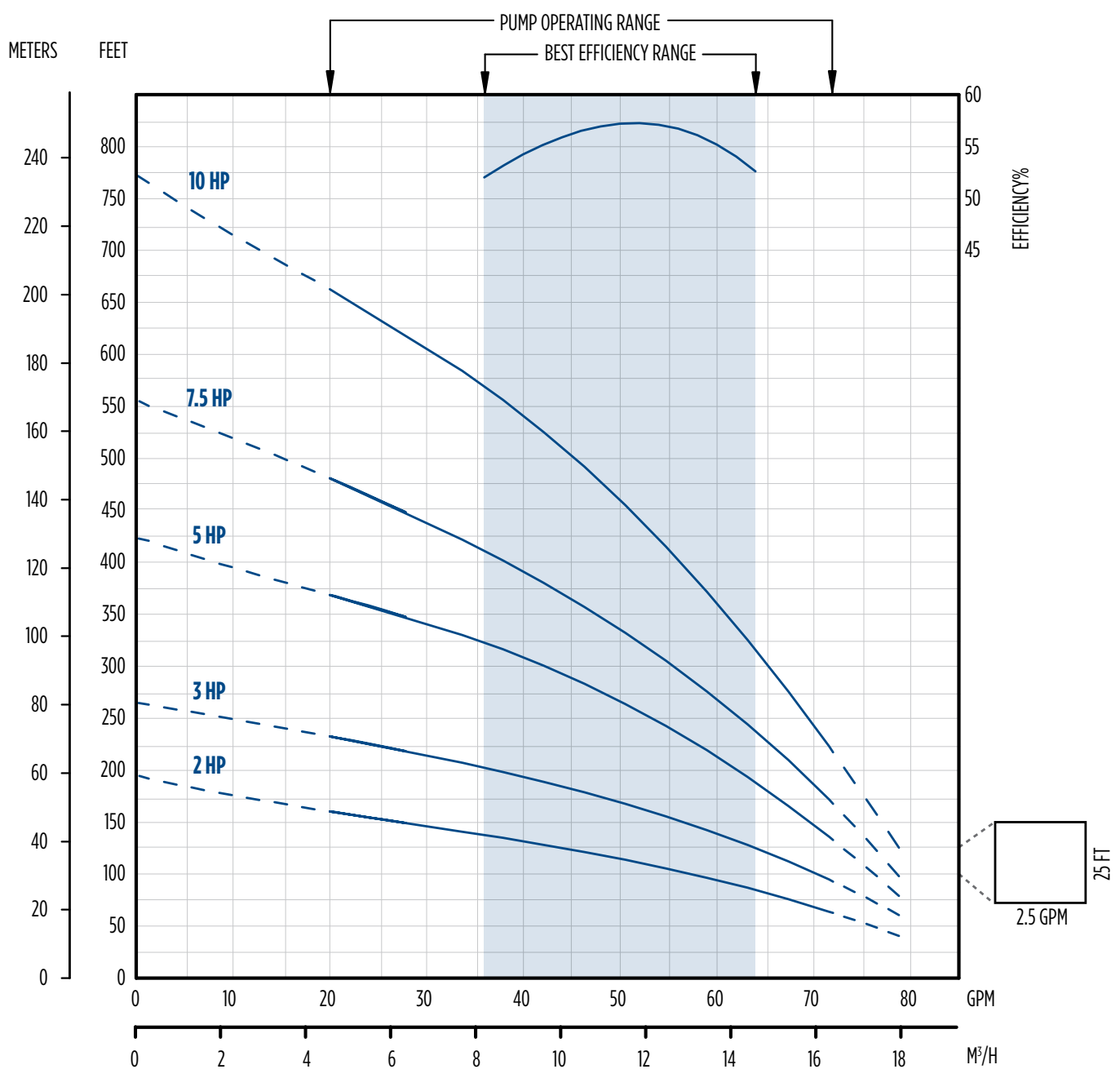
HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			Shut-Off (ft)					
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650						
3	0							53	49	46	42	38	27													
	10						55	52	49	45	41	37	33	21												
	20							55	52	48	45	41	37	32	26											
	30								55	51	48	44	40	36	32	27	22									
	40									54	51	47	44	40	35	31	26	21	15							
	50										50	47	43	39	35	30	25	20								
	60											46	42	38	34	30	25	19								
	70												42	38	33	29	24	18								
	80													37	33	28	23	17								
	90														32	27	22	16								
	100															27	21	16								
Shut-off PSI																										
5	0																									
	10																									
	20																									
	30																									
	40																									
	50																									
	60																									
	70																									
	80																									
	90																									
	100																									
	110																									
	120																									
	130																									
	140																									
	150																									
	160																									
Shut-off PSI																										
7.5	0																									
	10																									
	20																									
	30																									
	40																									
	50																									
	60																									
	70																									
	80																									
	90																									
	100																									
	110																									
	120																									
	130																									
	140																									
	150																									
	160																									
Shut-off PSI																										

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			Shut-Off (ft)				
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650		700	750	800	850
10	0																								
	10																								
	20																								
	30																								
	40																								
	50																								
	60																								
	70																								
	80																								
	90																								
	100																								
	110																								
	120																								
	130																								
	140																								
	150																								
	160																								
Shut-off PSI																									

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage. Performances for former XP models are the same as 45 gpm models. Performance shown is based on a pump without check valve.

# 4" HIGH CAPACITY PUMPS - 60 GPM

## PERFORMANCE



## 4" HIGH CAPACITY PUMPS - 60 GPM

### PERFORMANCE

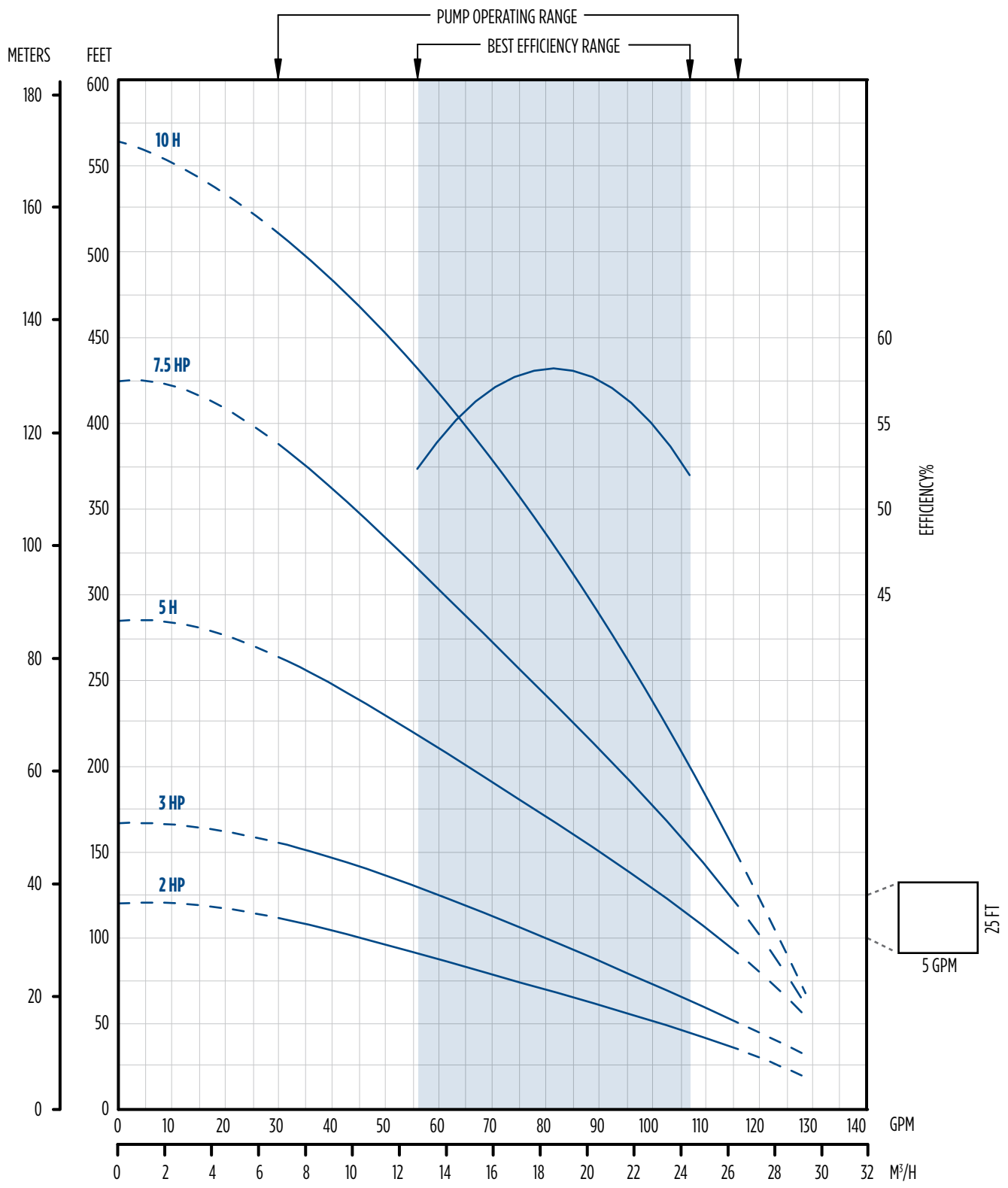
HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	
2	0				66	57	47	35	21										
	10			65	56	45	33	18											
	20	71	63	54	43	30													
	30	62	52	41	28														
	40	51	40	26															
	50	38	24																
	60	22																	
Shut-off PSI		76	67	58	50	41	32	24	15										
3	0				69	65	59	62	44	35	25								
	10			73	69	64	56	51	43	34	24								
	20	72	68	63	57	50	42	32	22										
	30	67	62	56	49	40	31	20											
	40	61	55	48	39	29													
	50	54	46	37	28														
	60	46	37	28															
Shut-off PSI		106	97	89	80	71	63	54	45	37	28								
5	0						70	68	65	62	54	42	27						
	10						70	68	65	62	59	49	36						
	20					70	67	64	61	58	54	43	28						
	30			72	69	67	64	61	57	54	50	37	20						
	40		72	69	68	63	60	57	53	49	44	29							
	50	71	69	66	63	60	56	53	48	43	38	21							
	60	68	65	62	59	56	52	48	43	37	31								
	70	65	62	59	55	51	47	42	36	30	23								
	80	61	58	55	51	46	41	35	28	21									
	90	58	54	50	45	40	34	27	20										
	100	54	49	45	39	33	26												
Shut-off PSI		175	167	158	149	141	132	123	115	106	97	76	54	32					

HP	PSI	20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650	Shut-Off (ft)	
7.5	0									71	68	63	56	48	38	27						
	10							72	70	68	66	59	52	43	33	22						
	20						72	70	67	65	63	60	53	44	34	23						
	30																					
	40				71	69	67	65	62	60	57	49	40	29								
	50			71	69	67	64	62	59	56	53	45	35	24								
	60		71	69	66	64	61	59	56	53	49	40	30									
	70	70	68	66	64	61	58	55	52	48	45	36	25									
	80	68	66	63	61	58	55	52	48	45	41	31										
	90	65	63	60	57	54	51	48	44	41	37	26										
	100	62	60	57	54	51	47	44	40	36	32	20										
	110	59	57	53	50	47	43	39	35	31	26											
	120	56	53	50	46	43	39	35	30	26	21											
	130	52	49	46	42	38	34	30	25	20												
	140	49	45	41	37	33	29	24	19													
	150	45	41	37	33	28	24															
160	31	26	21																			
Shut-off PSI		232	223	214	206	197	188	180	171	162	154	132	110	89	67	45						
10	0											69	65	61	57	51	45	39	31	22		
	10											71	67	63	59	54	49	42	35	27		
	20											72	71	69	66	61	57	52	46	39	31	23
	30								72	71	69	68	64	59	55	49	43	36	28			
	40						72	70	69	67	66	62	57	52	46	40	32	24				
	50					72	70	69	67	66	64	60	55	50	43	36	28					
	60				72	70	68	67	65	64	62	58	53	47	40	33	24					
	70			71	70	68	67	65	64	62	60	55	50	44	37	29	20					
	80		71	70	68	66	65	63	62	60	58	53	47	41	33	25						
	90	71	69	68	66	65	63	61	60	58	56	51	44	37	29	21						
	100	69	68	66	64	63	61	59	57	56	53	48	41	34	26							
	110	67	66	64	62	61	59	57	55	53	51	45	38	30	22							
	120	65	64	62	61	59	57	55	53	51	48	42	34	26								
	130	64	62	60	58	57	55	52	51	48	45	39	31	22								
	140	62	60	58	56	54	52	50	48	45	42	35	27									
	150	60	58	56	54	52	50	47	45	42	39	31	23									
160	53	51	48	46	43	41	38	35	31	28												
Shut-off PSI		326	317	308	300	291	282	274	265	256	248	226	204	183	161	139	118	96	74	53		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage. Performances for former XP models are the same as 45 gpm models. Performance shown is based on a pump without check valve.

# 4" HIGH CAPACITY PUMPS - 90 GPM

## PERFORMANCE





### 4" HIGH CAPACITY PUMPS - 90 GPM

#### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	Shut-Off (ft)
2	0		113	92	67	48													
	10	110	88	64	45														
	20	84	61	40															
	30	58	35																
	40																		
	50																		
60																			
Shut-off PSI		43	35	26	17	9													
3	0			110	96	79	64	49											
	10		108	93	76	61	46												
	20	106	90	74	59	43													
	30	88	71	57	39														
	40	69	55	35															
	50	53	30																
60																			
Shut-off PSI		64	55	46	38	29	20	12											
5	0				113	106	96	85	74	64	41								
	10				112	104	94	83	72	63	55								
	20				111	103	92	81	71	62	53	44							
	30		110	101	91	80	69	60	52	42									
	40	100	100	89	78	68	59	51	40										
	50	98	87	76	66	58	49	38											
	60	85	75	65	56	48	35												
	70	73	63	55	46	33													
	80	62	54	45	30														
	90	53	43																
100	41																		
Shut-off PSI		115	106	97	89	80	71	63	54	45	37	15							
7.5	0					116	112	107	101	94	76	60	46						
	10					115	111	108	100	93	86	68	54	38					
	20				115	110	105	99	92	85	77	61	47						
	30			114	109	104	98	91	83	76	70	55	40						
	40		113	109	103	96	90	82	75	69	62	49							
	50	113	108	102	95	88	81	74	68	61	56	41							
	60	107	101	94	87	80	73	67	61	55	50	31							
	70	100	93	86	79	72	66	60	54	49	42								
	80	92	85	78	71	65	59	53	48	41	33								
	90	84	77	70	64	58	53	47	40	31									
	100	76	69	63	57	52	46	39											
	110	68	62	56	51	45	38												
	120	61	55	50	44	36													
	130	55	49	43	35														
	140	48	42	33															
	150	41	32																
160																			
Shut-off PSI		175	167	158	149	141	132	123	115	106	97	76	54	32					

HP	PSI	20	40	60	80	100	120	140	160	180	200	240	280	320	360	400	440	480	500	550	600	Shut-Off (ft)
10	0					122	119	116	113	109	106	99	91	83	75	65	54	42	35	11		
	10				122	119	116	112	109	106	102	95	87	78	69	59	48	34	25			
	20			121	118	115	111	108	105	101	98	90	82	73	64	53	40	24	13			
	30		121	118	115	111	108	104	101	97	94	86	77	68	57	46	31	11				
	40	120	117	114	111	107	104	100	97	93	89	81	72	62	51	38	21					
	50	117	114	110	107	103	100	96	92	88	84	76	66	56	44	29	7					
	60	113	110	106	103	99	96	92	88	84	79	70	60	49	35	18						
	70	109	106	102	99	95	91	87	83	79	74	65	54	41	26	2						
80	105	102	98	94	91	87	82	78	74	69	59	47	33	14								
Shut-off PSI		236	227	219	210	201	193	184	175	167	158	141	123	106	89	71	54	37	28	6		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage. Performance shown is based on a pump without check valve.

## 6" HIGH CAPACITY PUMPS

Ideal for farm, home, irrigation, industry, municipal, and commercial applications, equipped with the power, performance, and reliability you expect from Franklin Electric.

### FEATURES

- Heavy-duty stainless steel discharge head and motor bracket
- Stainless steel shaft, shell, intake screen, and cable guard provides corrosion resistance and longer pump life
- Glass-filled modified PPO impeller stage assemblies provide exceptional strength and durability
- Ceramic shaft sleeve and rubber discharge bearing minimizes bearing wear and shaft misalignment
- 3" NPT heavy-duty stainless steel discharge head
- Modular motor bracket enabling 4" or 6" motor mount for 5-10 hp units
- Flow ratings of 50, 75, 100, and 125 gpm with TDH up to 1200 ft
- Horsepower ranges from 1-1/2 to 40 hp



## 6" HIGH CAPACITY PUMPS - ORDERING INFORMATION

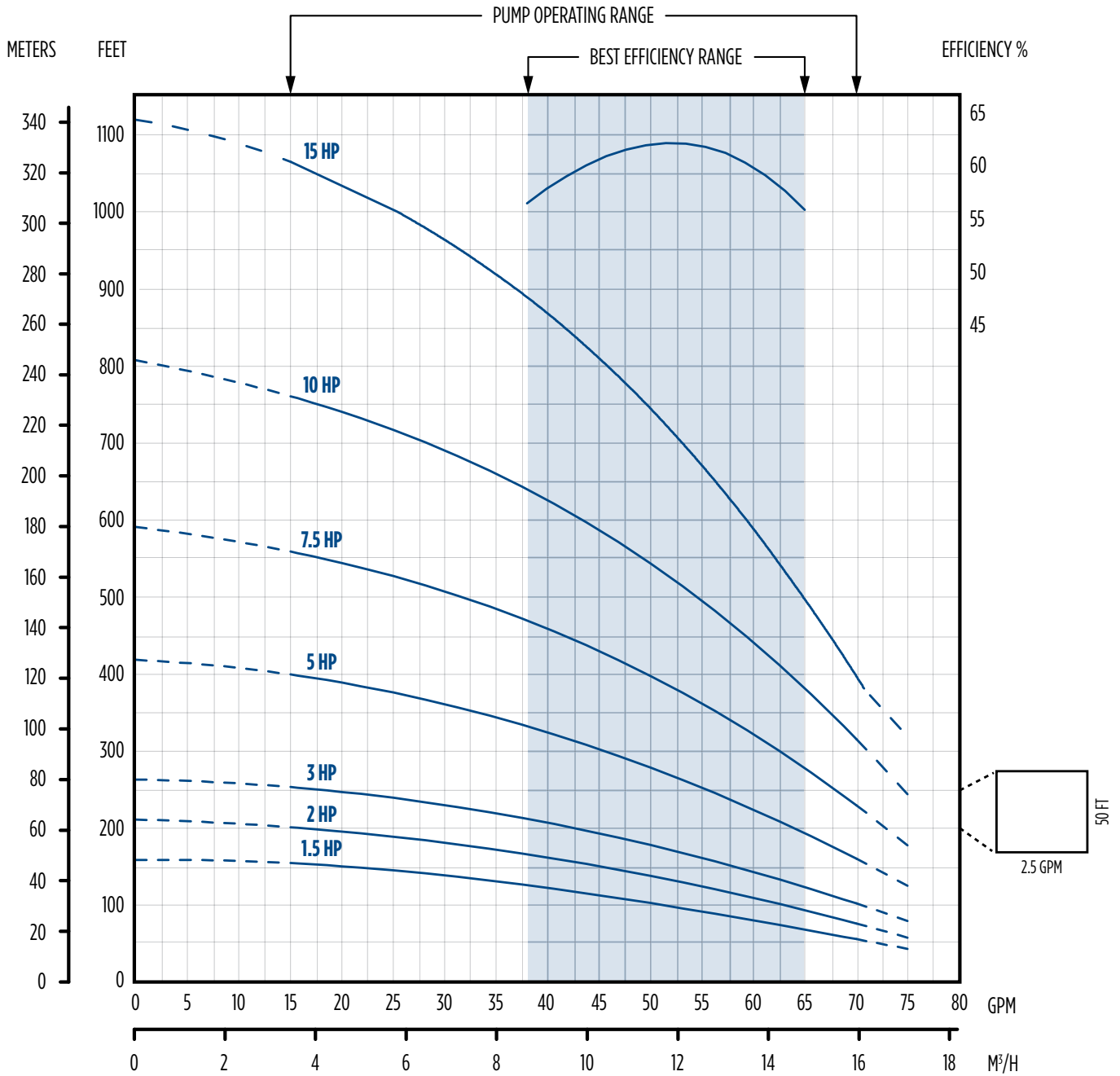
### ORDERING INFORMATION

6" Pump Ends							
GPM	HP	Stages	Motor Fit	Model	Order No.	Dimensions (in) Pump End Only	Wt. (lbs)
50	1.5	3	4"	50FA1S6-PE	94825003	13.51	30
	2	4	4"	50FA2S6-PE	94825004	15.13	31
	3	5	4"	50FA3S6-PE	94825005	16.76	32
	5	8	4" & 6"	50FA5S6-PE	94825008	21.63	36
	7.5	11	4" & 6"	50FA7S6-PE	94825011	26.51	40
	10	15	4" & 6"	50FA10S6-PE	94825015	32.94	46
	15	22	4" & 6"	50FA15S6-PE	94825022	47.64	54
75	3	3	4"	75FA3S6-PE	94827503	13.51	30
	5	5	4" & 6"	75FA5S6-PE	94827505	16.76	32
	7.5	7	4" & 6"	75FA7S6-PE	94827507	20.01	35
	10	9	4" & 6"	75FA10S6-PE	94827509	23.26	38
	15	13	6"	75FA15S6-PE	94827513	29.76	43
	20	17	6"	75FA20S6-PE	94827517	36.19	48
	25	23	6"	75FA25S6-PE	94827523	46.00	54
100	5	3	4" & 6"	100FA5S6-PE	94820003	14.62	30
	7.5	5	4" & 6"	100FA7S6-PE	94820005	18.51	32
	10	6	4" & 6"	100FA10S6-PE	94820006	20.49	34
	15	9	6"	100FA15S6-PE	94820009	26.31	38
	20	13	6"	100FA20S6-PE	94820013	34.07	43
	25	16	6"	100FA25S6-PE	94820016	39.94	47
125	5	2	4" & 6"	125FA5S6-PE	94822502	12.94	29
	7.5	3	4" & 6"	125FA7S6-PE	94822503	15.05	30
	10	4	4" & 6"	125FA10S6-PE	94822504	17.13	31
	15	7	6"	125FA15S6-PE	94822507	23.37	35
	20	9	6"	125FA20S6-PE	94822509	27.54	38
	25	11	6"	125FA25S6-PE	94822511	31.70	40
	30	13	6"	125FA30S6-PE	94822513	35.87	43
	40	18	6"	125FA40S6-PE	94822518	46.27	48

NOTES: Discharge is 3" NPT. Maximum diameter across cable guard is 5.50" on all models.

# 6" HIGH CAPACITY PUMPS - 50 GPM

## PERFORMANCE



## 6" HIGH CAPACITY PUMPS - 50 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																		Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550				
1.5	0			68	61	51	41	30														
	20	66	58	47	38	25																
	30	56	46	37	21																	
	40	44	35	16																		
	50	33																				
Shut-off PSI		60	51	43	34	25	17	8														
2	0				69	63	57	49	41	31	16											
	20		67	62	54	46	38	27														
	30	67	60	53	45	37	25															
	40	59	52	44	35	23																
	50	51	42	34	20																	
Shut-off PSI		83	74	65	57	48	39	31	22	13	5											
3	0					70	66	61	55	49	42	17										
	20				69	65	60	53	47	40	33	21										
	30		68	64	59	52	46	39	31	18												
	40	68	63	58	51	45	38	30	15													
	50	63	57	50	44	37	28															
Shut-off PSI		105	97	88	79	71	62	53	45	36	27	6										
5	0								70	67	64	55	45	34								
	20						69	66	63	60	56	46	35	16								
	30					69	66	63	59	56	51	41	28									
	40				68	66	62	59	55	51	47	36	18									
	50		70	68	65	62	58	54	50	46	42	29										
Shut-off PSI		173	164	155	147	138	129	121	112	103	95	73	51	30								
7.5	0											68	63	57	49	42	32	18				
	20										70	68	63	57	50	42	33	19				
	30									70	68	66	60	54	47	38	27					
	40								70	68	66	64	58	51	43	34	21					
	50						69	67	65	63	61	54	47	39	28							
Shut-off PSI		247	239	230	221	213	204	195	187	178	169	148	126	104	83	61	39	18				
10	0											68	64	59	54	49	43	37	28	18		
	20										68	64	60	55	50	44	37	29	19			
	30								70	66	62	57	52	47	41	34	25					
	40								68	64	60	55	50	44	38	30	20					
	50						70	66	62	58	53	47	41	34	26							
Shut-off PSI		306	298	289	281	272	263	242	220	198	177	155	133	112	90	68	47	25				
15	0								80	78	76	74	72	70	68	65	62	59	56	53	49	46
	20						79	78	77	76	74	72	70	68	65	62	59	56	53	50	46	42
	40			80	79	78	77	76	75	74	72	70	68	65	63	60	57	53	50	46	43	38
	60	80	78	77	76	76	75	74	73	72	70	68	66	63	60	57	54	50	47	43	39	34
	80	77	76	75	75	74	73	72	71	71	68	66	63	60	57	54	50	47	43	39	34	29
	100	75	74	73	73	72	71	70	69	68	66	63	60	57	54	51	47	43	39	35	29	22
	120	73	72	72	71	70	69	68	67	66	64	61	58	54	51	47	44	40	35	30	23	14
	140	71	71	70	69	68	67	66	65	64	61	58	55	51	48	44	40	36	30	23	14	3
Shut-off PSI		67	66	65	64	62	62	61	59	58	55	52	48	45	41	36	31	24	16	5		
									411	402	380	359	337	315	294	272	250	229	207	186	164	142

NOTES: Discharge 3" NPT; Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

# 6" HIGH CAPACITY PUMPS - 75 GPM

## PERFORMANCE

The graph displays the performance of six different pump models. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the 'BEST EFFICIENCY RANGE' between approximately 45 and 90 GPM. A larger shaded region indicates the 'PUMP OPERATING RANGE' from approximately 20 to 115 GPM. A callout box shows a 50 FT head at 5 GPM flow.

Flow (GPM)	Flow (M <sup>3</sup> /H)	3 HP Head (FT)	5 HP Head (FT)	7.5 HP Head (FT)	10 HP Head (FT)	15 HP Head (FT)	20 HP Head (FT)	25 HP Head (FT)
0	0	100	150	250	350	450	550	650
10	4	100	150	250	350	450	550	650
20	8	100	150	250	350	450	550	650
30	12	100	150	250	350	450	550	650
40	16	100	150	250	350	450	550	650
50	20	100	150	250	350	450	550	650
60	24	100	150	250	350	450	550	650
70	28	100	150	250	350	450	550	650
80	32	100	150	250	350	450	550	650
90	36	100	150	250	350	450	550	650
100	40	100	150	250	350	450	550	650
110	44	100	150	250	350	450	550	650
120	48	100	150	250	350	450	550	650

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## 6" HIGH CAPACITY PUMPS - 75 GPM

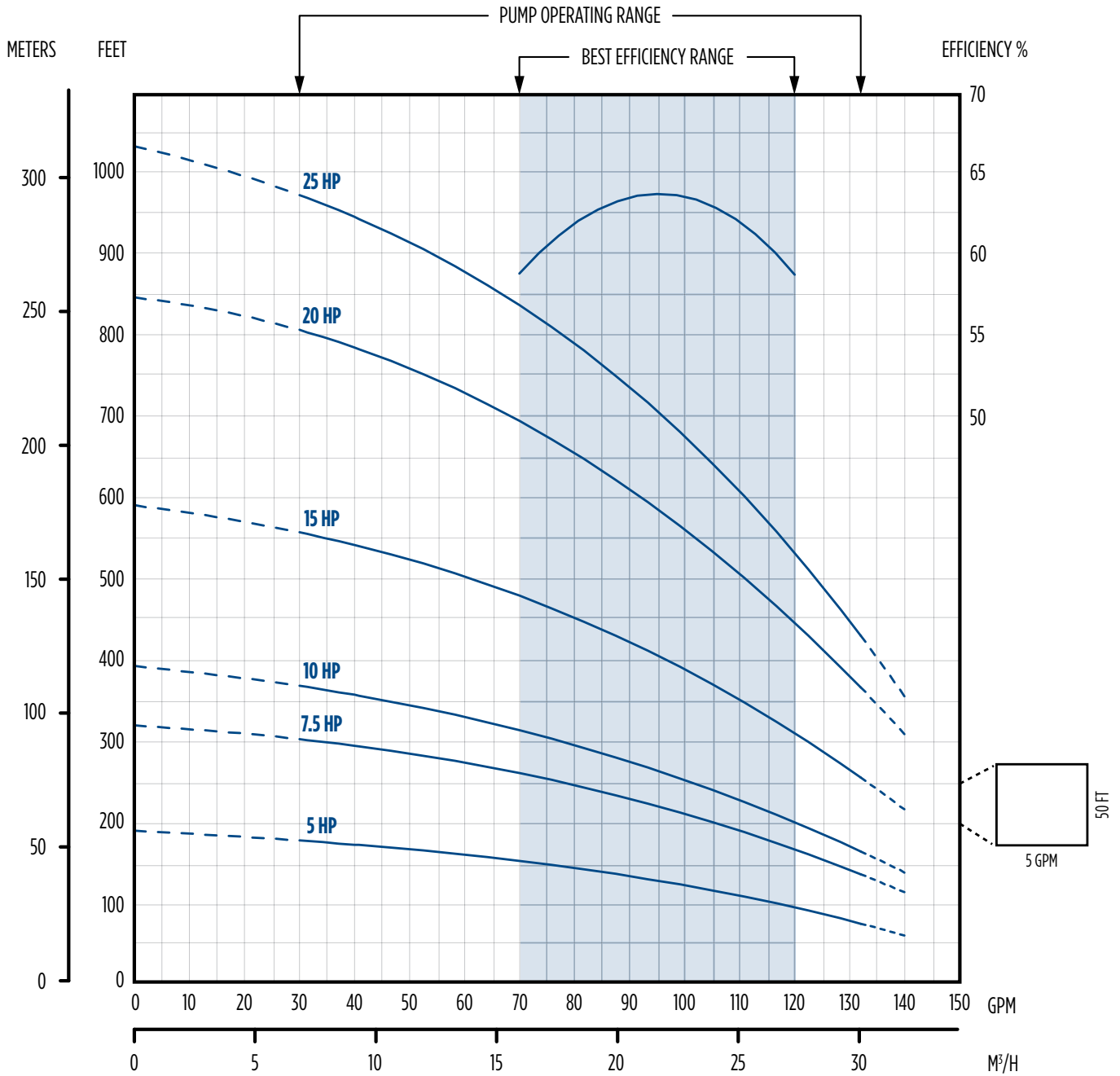
### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																		Shut-Off (ft)	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550			
3	0			108	101	89	77	64	26												
	20	106	98	85	73	57															
	30	96	83	72	53																
	40	81	70	47																	
	50	68	40																		
Shut-off PSI		61	53	44	35	27	18	9	1												
5	0				116	106	102	96	88	79	73	41									
	20		112		105	100	93	85	77	71	64	47									
	30	110	104	99	92	84	76	70	63	43											
	40	103	98	91	82	75	69	61	37												
	50	97	89	81	74	68	58	31													
Shut-off PSI		103	95	86	77	69	60	51	43	34	25	4									
7.5	0						116	109	105	101	97	83	70	54							
	20				114	108	104	100	96	90	85	71	56								
	30			112	107	103	99	95	89	84	78	65	40								
	40		111	106	103	99	94	88	83	77	72	57									
	50	111	106	102	98	93	88	82	76	71	66	43									
Shut-off PSI		159	150	142	133	124	116	107	98	90	81	59	38	16							
10	0								112	109	106	98	88	77	66	50					
	20					116	111	108	105	102	99	89	78	67	52						
	30				115	111	107	104	101	98	94	84	73	61	39						
	40			114	110	107	104	101	98	94	89	78	68	54	18						
	50		114	109	106	104	100	97	93	89	84	74	63	42							
Shut-off PSI		205	196	187	179	170	161	153	144	135	127	105	84	62	40	19					
15	0							114	107	102	97	89	81	74	68	60	41				
	20					115	107	103	97	90	82	75	69	61	43						
	30				114	110	105	100	94	86	78	72	66	55	28						
	40			113	110	107	103	98	90	82	75	69	62	45							
	50		113	109	107	105	101	95	87	79	73	66	56	31							
Shut-off PSI		263	254	245	237	228	206	185	163	142	120	98	77	55	33	12					
20	0								113	107	103	100	94	88	82	76	71	66	58	43	
	20								113	107	104	100	95	89	82	76	72	67	59	44	
	30								110	106	102	98	92	86	79	74	69	64	54	33	
	40								114	108	104	100	95	89	83	77	72	67	60	46	
	50								110	106	102	98	93	86	80	74	70	64	55	35	
Shut-off PSI		353	345	336	327	319	297	275	254	232	210	189	167	145	124	102	80	59	37	15	
25	0			116	112	109	107	104	101	97	93	89	84	79	75	70	65	59	50	38	19
	20			116	112	109	107	104	101	98	93	89	84	80	75	70	65	59	51	39	21
	30		114	111	108	106	103	100	96	91	87	82	78	73	68	63	56	46	31		
	40		112	109	107	104	101	98	94	89	85	80	75	71	66	60	51	40	23		
	50	114	111	108	106	103	100	96	92	87	83	78	73	69	63	56	47	33			
Shut-off PSI		412	391	369	347	326	304	283	261	239	218	196	171	153	131	109	88	66	44	23	1

NOTES: Discharge 3" NPT; Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

# 6" HIGH CAPACITY PUMPS - 100 GPM

## PERFORMANCE





## 6" HIGH CAPACITY PUMPS - 100 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	
5	0				130	119	104	85	62										191
	20		127	115	98	78	54												
	30	125	112	95	75	49													
	40	110	92	71	44														
	50	89	68	38															
	60	64	32																
Shut-off PSI		74	65	57	48	39	31	22	13										
7.5	0							131	123	115	107	79	32					320	
	20					129	121	113	104	93	82	37							
	30				127	120	111	102	92	79	64								
	40			126	118	110	101	90	77	62	42								
	50		125	117	109	99	88	75	59	38									
	60	124	116	107	97	86	73	56	34										
Shut-off PSI		130	121	113	104	95	87	78	69	61	52	30	9						
10	0									127	121	102	79	45				1393	
	20						132	125	118	111	104	81	48						
	30					131	124	117	110	102	94	67	28						
	40				130	123	116	109	101	92	83	51							
	50			129	122	115	108	100	91	81	70	31							
	60		128	121	114	107	99	90	79	68	54								
Shut-off PSI		161	153	144	135	127	118	110	101	92	84	62	40	19					
15	0												123	111	98	82	61	32	590
	20												123	112	99	83	62	34	
	30											129	118	107	93	74	51		
	40								132	128	124	119	108	94	76	53			
	50						131	127	123	119	114	102	86	66	39				
	60					130	126	122	118	113	109	95	78	55					
Shut-off PSI		247	238	229	221	212	204	195	186	178	169	147	126	104	82	61	39	17	

HP	PSI	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	Shut-Off (ft)
		20	0					127	119	111	103	94	82	69	52				
20	20				127	120	112	104	94	83	70	53	31						
20	30			131	124	116	108	99	89	78	63	44							
20	40			128	120	112	104	95	84	71	55	33							
20	50		132	124	117	109	100	90	79	64	45								
20	60		128	121	113	105	96	85	72	56	35								
Shut-off PSI		280	258	236	215	193	172	150	128	107	85	63	42						
25	0						130	124	118	111	104	96	87	78	67	53	37		1030
	20					130	124	118	112	105	97	88	79	68	55	39			
	25					128	122	116	109	101	93	84	74	62	48	30			
	25	40				130	125	119	112	105	97	89	79	68	56	40			
	25	50				128	122	116	109	102	94	85	75	63	49	31			
	25	60			131	125	119	113	106	98	90	80	69	57	41				
Shut-off PSI		359	338	316	294	273	251	229	208	186	164	143	121	99					

NOTES: Discharge 3" NPT; Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

# 6" HIGH CAPACITY PUMPS - 125 GPM

## PERFORMANCE

The chart displays the performance of six different pump models. The y-axis represents head in meters and feet, and the x-axis represents flow rate in GPM and M<sup>3</sup>/H. A shaded region indicates the 'BEST EFFICIENCY RANGE' between approximately 85 GPM and 140 GPM. A larger shaded region indicates the 'PUMP OPERATING RANGE' from approximately 85 GPM to 160 GPM. A callout box shows a 50 FT head and 5 GPM flow rate.

Model	Head (Feet)	Head (Meters)	Flow (GPM)	Flow (M <sup>3</sup> /H)
40 HP	1200	350	0	0
30 HP	900	250	0	0
25 HP	700	200	0	0
20 HP	600	170	0	0
15 HP	450	130	0	0
10 HP	250	70	0	0
7.5 HP	200	60	0	0
5 HP	100	30	0	0

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## 6" HIGH CAPACITY PUMPS - 125 GPM

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			Shut-Off (ft)
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650	
5	0				140	106	62														130
	20		131	94																	
	30	126	88																		
	40	82																			
Shut-off PSI		48	39	30	22	13	4														
7.5	0							141	122	99	64										198
	20				135	116	90	48													
	30		150	133	112	85															
	40	147	130	109	79																
	50	127	105	73																	
	60	101	67																		
	70	60																			
Shut-off PSI		77	69	60	51	43	34	25	17	8											
10	0								143	129	114	45									263
	20							139	125	109	88	54									
	30				149	137	122	106	84	47											
	40			148	135	120	103	79													
	50		146	132	118	100	74														
	60	144	130	115	97	69															
	70	128	112	93	63																
Shut-off PSI		105	97	88	79	71	62	53	45	36	27	6									
15	0												134	112	81						467
	20												135	114	84						
	30												145	126	101	65					
	40									144	137	116	87								
	50							149	143	136	128	104	68								
	60						148	142	134	126	117	89	44								
	70					147	141	133	125	116	106	72									
Shut-off PSI			185	176	168	159	150	142	133	124	116	94	72	51	29						
20	0												143	129	113	91	59				601
	20												144	130	114	93	62				
	30												138	123	105	81	41				
	40											145	131	115	95	65					
	50												139	124	107	83	45				
	60										146	132	117	97	68						
	70								150	145	140	125	108	85	49						
Shut-off PSI		252	243	234	226	217	208	200	191	182	174	152	130	109	87	65	44	22			
25	0														143	133	119	99	71		734
	20														144	134	120	101	74		
	30														149	140	128	112	90	57	
	40														145	135	121	103	76		
	50													150	140	129	114	92	60		
	60													146	135	123	104	78	42		
	70													141	130	115	94	63			
Shut-off PSI				292	283	275	266	257	249	240	231	210	188	166	145	123	101	80	58	37	

HP	PSI	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	Shut-Off (ft)	
30	0						143	134	125	113	99	79	54							873
	20					144	135	126	114	100	81	56								
	30				149	140	131	121	108	92	70	43								
	40				145	136	126	115	101	83	58									
	50			149	141	132	122	109	93	72	45									
	60			145	136	127	116	102	84	60										
70		150	141	132	122	110	95	74	47											
Shut-off PSI		270	248	226	205	183	161	140	118	96	75	53	31							
40	0									150	144	138	132	125	117	107	95	80		1194
	20								150	145	139	132	126	118	1108	96	82	62		
	30									148	142	136	129	122	114	103	90	73	52	
	40									145	139	133	126	118	109	97	83	64	40	
	50								148	142	136	130	123	114	104	91	75	53		
	60								145	139	133	127	119	110	98	84	66	42		
70							149	143	137	130	123	115	105	92	76	55				
Shut-off PSI		409	387	365	344	322	300	279	257	235	214	192	170							

NOTES: Discharge 3" NPT; Performance shown does not include friction loss in the drop pipe; All performance data is based on rated motor nameplate voltage

## E SERIES ENVIRONMENTAL PUMPS

### FEATURES

- Ideal for effluent pumping applications
- Stainless steel or thermoplastic discharge and motor bracket are tough and non-corrosive. Both materials are highly resistant to damage by minerals, metals, and other substances typically found in water
- Heavy-duty, 300 V, 10' SJ00W motor leads
- Ceramic bearing sleeve has time-proven durability for years of reliable service
- Hex rubber bearing has extra large surface assuring shaft stability and multiple flow channels keeping particles away from bearing surfaces
- Proven hydraulic staging allows close tolerances and increased performance
- Carbon phenolic upthrust washer prevents excessive wear in severe applications
- Removable built-in check valve on 10-20 gpm pumps. No built-in check valves on high capacity pumps
- Powered by a Franklin Electric submersible motor

### APPLICATIONS

- Filtered effluent service
- Aeration
- Ornamental fountains/waterfalls



## E SERIES ENVIRONMENTAL PUMPS - ORDERING INFORMATION

### THERMOPLASTIC ORDERING INFORMATION

1/2 - 1.5 HP Single-Phase Units						
GPM	HP	Volt	Wire	Order No.	Model	Wt. (lbs)
10	1/2	115	2	94741005	10FE05P4-2W115	25
	1/2	230	2	94741010	10FE05P4-2W230	25
	3/4	230	2	94741015	10FE07P4-2W230	29
	1	230	2	94741020	10FE1P4-2W230	33
	1.5	230	2	94741025	10FE15P4-2W230	41
20	1/2	115	2	94742005	20FE05P4-2W115	24
	1/2	230	2	94742010	20FE05P4-2W230	24
	3/4	230	2	94742015	20FE07P4-2W230	28
	1	230	2	94742020	20FE1P4-2W230	31
	1.5	230	2	94742025	20FE15P4-2W230	39

1/2 - 2 HP Pump Ends						
GPM	HP	Volt	Wire	Order No.	Model	Wt. (lbs)
10	1/2	N/A	2	94751005	10FE05P4-PE	7
	3/4	N/A	N/A	94751010	10FE07P4-PE	8
	1	N/A	N/A	94751015	10FE1P4-PE	9
	1.5	N/A	N/A	94751020	10FE15P4-PE	10
20	1/2	N/A	N/A	94752005	20FE05P4-PE	6
	3/4	N/A	N/A	94752010	20FE07P4-PE	6
	1	N/A	N/A	94752015	20FE1P4-PE	7
	1.5	N/A	N/A	94752020	20FE15P4-PE	8
	2	N/A	N/A	94752025	20FE2P4-PE	9

NOTES: Discharge is 1-1/4" NPT. Maximum diameter across cable guard is 3.90" on all models.

### STAINLESS STEEL ORDERING INFORMATION

1/2 - 1.5 HP Single-Phase Units						
GPM	HP	Volt	Wire	Order No.	Model	Wt. (lbs)
35	1/2	115	2	94743505	35FE05S4-2W115	25
	1/2	230	2	94743510	35FE05S4-2W230	25
	3/4	230	2	94743515	35FE07S4-2W230	29
	1	230	2	94743520	35FE1S4-2W230	33
	1.5	230	2	94743525	35FE15S4-2W230	39
45	1/2	115	2	94744505	45FE05S4-2W115	28
	1/2	230	2	94744510	45FE05S4-2W230	28
	3/4	230	2	94744515	45FE07S4-2W230	33
	1	230	2	94744520	45FE1S4-2W230	36
	1.5	230	2	94744525	45FE15S4-2W230	44
60	1/2	115	2	94746005	60FE05S4-2W115	29
	1/2	230	2	94746010	60FE05S4-2W230	29
	3/4	230	2	94746015	60FE07S4-2W230	33
	1	230	2	94746020	60FE1S4-2W230	37
	1.5	230	2	94746025	60FE15S4-2W230	45
90	1.5	230	2	94749025	90FE15S4-2W230	44

### PUMP ENDS ORDERING INFORMATION

1/2 - 3 HP Pump Ends					
GPM	HP	Order No.	Model	Wt. (lbs)	
35	1/2	94753505	35FE05S4-PE	7	
	3/4	94753510	35FE07S4-PE	8	
	1	94753515	35FE1S4-PE	9	
	1.5	94753520	35FE15S4-PE	10	
	2	94753525	35FE2S4-PE	11	
	3	94753530	35FE3S4-PE	12	
45	1/2	94754505	45FE05S4-PE	10	
	3/4	94754510	45FE07S4-PE	11	
	1	94754515	45FE1S4-PE	12	
	1.5	94754520	45FE15S4-PE	15	
	2	94754525	45FE2S4-PE	16	
	3	94754530	45FE3S4-PE	19	
60	1/2	94756005	60FE05S4-PE	11	
	3/4	94756010	60FE07S4-PE	12	
	1	94756015	60FE1S4-PE	13	
	1.5	94756020	60FE15S4-PE	14	
	2	94756025	60FE2S4-PE	15	
	3	94756030	60FE3S4-PE	17	
90	1.5	94759020	90FE15S4-PE	15	
	2	94759025	90FE2S4-PE	15	
	3	94759030	90FE3S4-PE	17	

NOTES: Discharge is 2" NPT with no built in check valve. Maximum diameter across cable guard is 3.90" on all models.

# E SERIES ENVIRONMENTAL PUMPS - 10 GPM THERMOPLASTIC

## PERFORMANCE

The graph displays the performance characteristics of four different pump models. The vertical axis represents head in meters and feet, while the horizontal axis represents flow rate in GPM and M<sup>3</sup>/H. A shaded region indicates the 'BEST EFFICIENCY RANGE' between approximately 6 and 13 GPM. A larger bracketed area above the graph indicates the 'PUMP OPERATING RANGE' from 0 to 16 GPM.

Flow Rate (GPM)	Flow Rate (M <sup>3</sup> /H)	1.5 HP Head (FT)	1.5 HP Head (M)	1 HP Head (FT)	1 HP Head (M)	3/4 HP Head (FT)	3/4 HP Head (M)	1/2 HP Head (FT)	1/2 HP Head (M)
0	0	620	183	430	131	320	97	230	70
2	0.5	580	176	410	125	300	91	220	67
4	1.0	520	157	370	113	270	82	200	61
6	1.5	450	137	320	97	240	73	180	55
8	2.0	370	113	260	79	200	61	150	46
10	2.5	280	85	190	58	150	46	110	34
12	3.0	190	58	120	37	100	30	70	21
14	3.5	100	30	50	15	50	15	30	9
16	4.0	50	15	25	8	25	8	15	5

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## E SERIES ENVIRONMENTAL PUMPS - 10 GPM THERMOPLASTIC

### PERFORMANCE

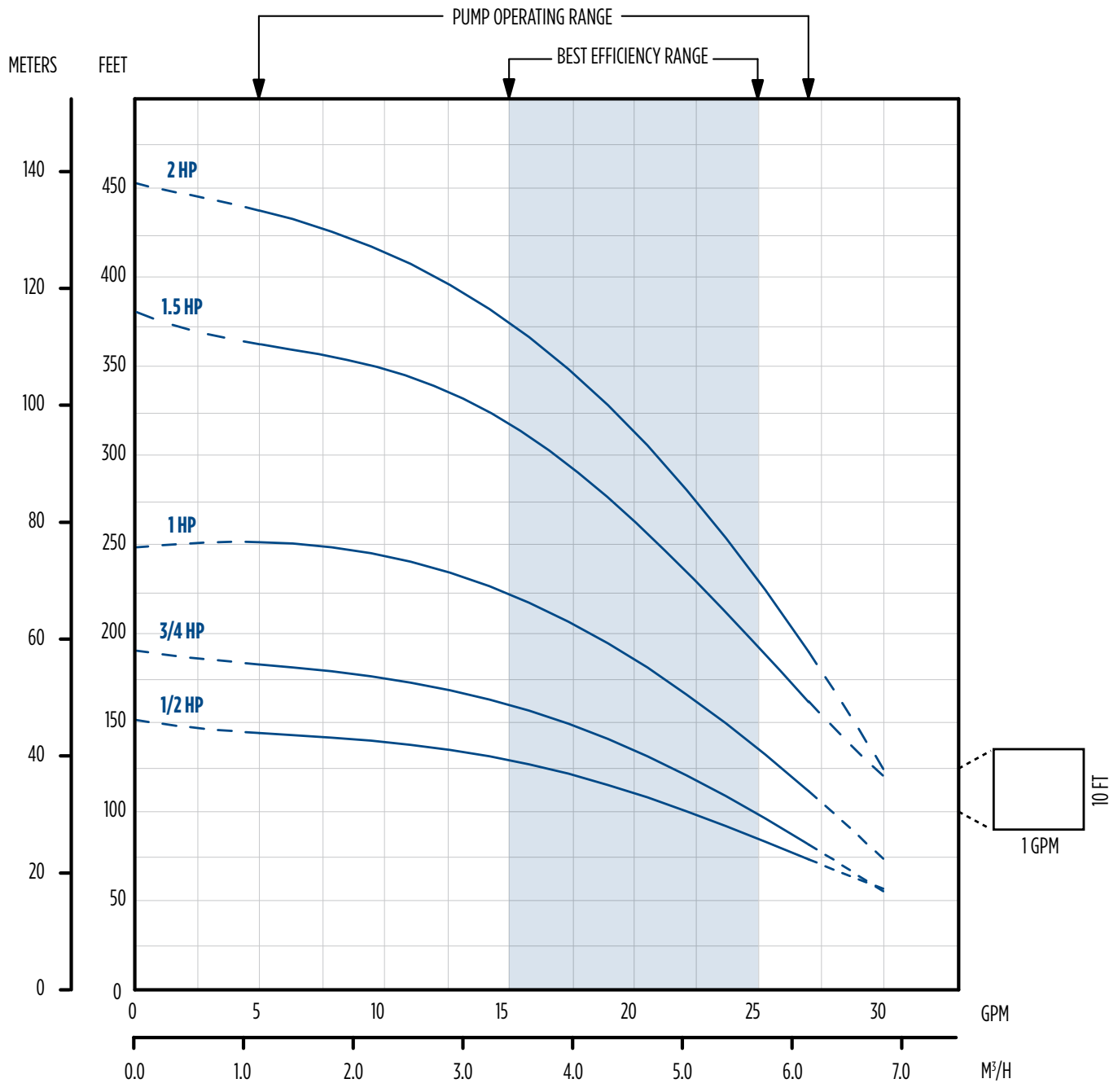
HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																			Shut-Off (ft)
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600		
1/2	0			14	14	13	12	11	10	8	6										242
	20	14	13	13	12	11	9	8	5												
	30	13	12	12	11	9	7	5													
	40	12	11	10	9	7	4														
	50	11	10	9	6	4															
	60	10	8	6	3																
	70	8	6	3																	
	80	5																			
Shut-off PSI		96	87	79	70	61	53	44	35	27	18										
3/4	0					14	14	13	12	12	11	8	5								337
	20			14	14	13	12	11	11	10	9	5									
	30		14	13	13	12	11	10	10	9	7	3									
	40	14	13	13	12	11	10	9	8	7	6										
	50	13	13	12	11	10	9	8	7	5	3										
	60	13	12	11	10	9	8	7	5	3											
	70	12	11	10	9	8	6	5													
	80	11	10	9	8	6	4														
Shut-off PSI		137	129	120	111	103	94	85	77	68	59	38	16								
1	0							14	14	13	13	11	9	7	5						441
	20					14	14	13	13	12	11	9	8	5							
	30				14	14	13	13	12	11	10	9	7	3							
	40			14	13	13	12	12	11	10	10	8	5								
	50	14	14	13	13	12	12	11	10	9	9	7	4								
	60	14	13	13	12	12	11	10	9	9	8	6									
	70	13	13	12	11	11	10	9	8	8	7	4									
	80	13	12	11	11	10	9	8	8	7	6										
Shut-off PSI		182	174	165	156	148	139	130	122	113	105	83	61	40	18						
1.5	0								14	14	13	12	11	9	8	7	5				619
	20					14	14	14	13	13	12	11	10	8	7	5					
	30					14	14	14	13	13	13	12	10	9	8	6	4				
	40				14	14	14	13	13	13	12	11	10	8	7	5					
	50			14	14	14	13	13	12	12	12	10	9	8	6	4					
	60		14	14	14	13	13	12	12	12	11	10	8	7	5	3					
	70	14	14	13	13	13	12	12	11	11	10	9	8	6	4						
	80	14	13	13	13	12	12	11	11	10	10	9	7	5	3						
Shut-off PSI		259	251	242	233	225	216	207	199	190	181	160	138	117	95	73	52	30	8		

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.



## E SERIES ENVIRONMENTAL PUMPS - 20 GPM THERMOPLASTIC

### PERFORMANCE





## E SERIES ENVIRONMENTAL PUMPS - 20 GPM THERMOPLASTIC

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	
1/2	0				26	22	18	9											152
	20		24	21	16														
	30	24	21	15															
	40	20	13																
	50	12																	
	60																		
	70																		
	80																		
Shut-off PSI		57	48	40	31	22	14	5											
3/4	0				27	25	22	19	15	7									191
	20		26	24	21	18	13												
	30	26	24	21	18	12													
	40	23	20	17	11														
	50	20	16	9															
	60	15	8																
	70	6																	
	80																		
Shut-off PSI		74	65	57	48	39	31	22	13	5									
1	0						26	25	23	20	18	6							251
	20				27	26	24	22	20	18	15	8							
	30		27	26	24	22	19	17	14	7									
	40	27	25	23	21	19	17	13											
	50	25	23	21	19	16	12												
	60	23	21	18	16	11													
	70	20	18	15	10														
	80	18	15	9															
Shut-off PSI		100	91	83	74	65	57	48	40	31	22	1							
1.5	0							27	26	24	21	17	9						379
	20						27	25	24	23	21	17	10						
	30					26	25	24	22	21	20	15							
	40				26	25	23	22	21	19	18	11							
	50		27	26	25	23	22	21	19	17	15								
	60	27	26	24	23	22	20	19	17	15	11								
	70	26	24	23	21	20	19	17	14	11	5								
	80	24	23	21	20	18	16	14	10										
Shut-off PSI		156	147	138	130	121	112	104	95	86	78	56	34	13					
2	0								27	27	24	21	17	12					452
	20							27	26	25	24	21	18	13					
	30							27	26	25	24	23	19	16	9				
	40					27	26	25	24	23	21	18	13						
	50				27	26	25	24	22	21	20	16	10						
	60		27	27	26	25	23	22	21	19	18	14	5						
	70	27	27	26	24	23	22	21	19	18	16	10							
	80	26	25	24	23	22	20	19	18	16	14	6							
Shut-off PSI		187	178	170	161	153	144	135	127	118	109	88	66	44	23				

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# E SERIES ENVIRONMENTAL PUMPS - 35 GPM STAINLESS STEEL

## PERFORMANCE

The chart displays the performance of six different horsepower models: 3 HP, 2 HP, 1.5 HP, 1 HP, 3/4 HP, and 1/2 HP. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed region indicates the pump operating range. A callout box shows a 2.5 GPM flow rate with a 25 FT head.

Flow (GPM)	Flow (M <sup>3</sup> /H)	3 HP Head (FT)	2 HP Head (FT)	1.5 HP Head (FT)	1 HP Head (FT)	3/4 HP Head (FT)	1/2 HP Head (FT)
0	0	400	290	220	160	110	80
10	2	380	270	210	150	100	75
20	4	340	240	190	130	90	70
30	6	280	190	150	100	70	60
40	8	190	120	100	70	50	50
45	10	130	80	70	50	40	40
50	12	50	30	30	20	20	20

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## E SERIES ENVIRONMENTAL PUMPS - 35 GPM STAINLESS STEEL

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550		
1/2	0		40	30	15															88
	10	38	29	11																
	20	27																		
	30																			
	40																			
	50																			
Shut-off PSI		29	21	12	3															
3/4	0		42	36	28	17														113
	10	42	35	27	14															
	20	33	25	11																
	30	24																		
	40																			
	50																			
Shut-off PSI		40	32	23	14	6														
1	0			44	40	34	28	22	13											171
	10		43	39	33	27	21	11												
	20	43	38	32	26	20														
	30	37	31	26	19															
	40	30	25	17																
	50	24	16																	
	60	14																		
Shut-off PSI		65	57	48	39	31	22	13	5											
1.5	0				43	40	36	31	27	23	18									226
	10		45	42	39	35	31	27	23	16										
	20	45	42	38	34	30	26	22	15											
	30	41	38	34	30	26	21	13												
	40	37	33	29	25	20	12													
	50	32	28	24	19	10														
	60	28	24	18																
	70	23	17																	
	80	16																		
Shut-off PSI		89	81	72	63	55	46	37	29	20	11									
2	0				45	43	40	38	34	31	28	19								288
	10			45	43	40	37	34	31	27	24	11								
	20		45	42	40	37	33	30	27	24	20									
	30	44	42	39	36	33	30	26	23	19	12									
	40	42	39	36	32	29	26	22	18	11										
	50	38	35	32	29	25	22	17	10											
	60	35	31	28	25	21	16													
	70	31	28	24	21	15														
	80	27	24	20	14															
Shut-off PSI		116	107	99	90	81	73	64	55	47	38	16								
3	0					45	44	42	40	38	32	26	18							396
	10					45	44	42	40	38	36	29	23	12						
	20				45	44	42	40	38	35	33	27	19							
	30			45	43	42	39	37	35	32	30	24	13							
	40		45	43	41	39	37	34	32	30	27	20								
	50	44	43	41	39	36	34	32	29	27	24	14								
	60	43	41	38	36	34	31	29	26	24	21									
	70	40	38	36	33	31	28	26	23	20	15									
	80	38	35	33	30	28	26	23	19	15										
Shut-off PSI		163	154	145	137	128	119	111	102	94	85	63	42	20						

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# E SERIES ENVIRONMENTAL PUMPS - 45 GPM STAINLESS STEEL

## PERFORMANCE

The chart displays the performance of six different horsepower models: 3 HP, 2 HP, 1.5 HP, 1 HP, 3/4 HP, and 1/2 HP. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed region indicates the pump operating range.

Model	Flow (GPM)	Flow (M <sup>3</sup> /H)	Head (Feet)	Head (Meters)
3 HP	0	0	350	100
	10	3.8	300	88
	20	7.6	250	76
	30	11.4	200	64
	40	15.2	150	52
	50	19.0	100	40
2 HP	0	0	250	76
	10	3.8	200	64
	20	7.6	150	52
	30	11.4	100	40
	40	15.2	75	30
	50	19.0	50	20
1.5 HP	0	0	180	52
	10	3.8	150	44
	20	7.6	120	36
	30	11.4	90	28
	40	15.2	70	22
	50	19.0	50	16
1 HP	0	0	150	44
	10	3.8	120	36
	20	7.6	90	28
	30	11.4	70	22
	40	15.2	50	16
	50	19.0	35	11
3/4 HP	0	0	120	36
	10	3.8	100	30
	20	7.6	80	24
	30	11.4	60	18
	40	15.2	45	13
	50	19.0	30	9
1/2 HP	0	0	75	22
	10	3.8	65	19
	20	7.6	55	16
	30	11.4	45	13
	40	15.2	35	10
	50	19.0	25	7

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## E SERIES ENVIRONMENTAL PUMPS - 45 GPM STAINLESS STEEL

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550		
1/2	0		40																	61
	10	36																		
	20																			
	30																			
	40																			
	50																			
Shut-off PSI		18	9																	
3/4	0		52	43	33	21														122
	10	51	42	32	18															
	20	40	30	16																
	30	28																		
	40																			
	50																			
Shut-off PSI		44	36	27	18	10														
1	0		51	43	35	25	27													158
	10			43	35	25														
	20	49	42	34	23															
	30	41	32	21																
	40	31	20																	
	50	17																		
Shut-off PSI		60	51	43	34	25	17													
1.5	0		55	51	44	37	28	19												190
	10			51	44	37	28	19												
	20	55	50	43	35	27	18													
	30	49	42	34	26	16														
	40	41	33	24																
	50	32	23																	
60	22																			
Shut-off PSI		74	65	56	48	39	30	22	13											
2	0		55	50	45	40	35	29	22											250
	10			50	45	40	35	29	22											
	20		54	49	44	39	34	28	21											
	30	53	49	44	38	33	27	19												
	40	48	43	38	32	26	18													
	50	42	37	31	24	17														
60	36	30	23	16																
Shut-off PSI		99	91	82	73	65	56	48	39	30	22									
3	0		56	53	49	46	42	38	27											337
	10			55	52	49	45	41	37	33	21									
	20			55	52	48	45	41	37	32	28									
	30		54	51	48	44	40	36	32	27	22									
	40	54	51	47	44	40	35	31	26	21	15									
	50	50	47	43	39	35	30	25	20											
	60	46	42	38	34	30	25	19												
	70	42	38	33	29	24	18													
	80	37	33	28	23	17														
	90	32	27	22	16															
100	27	21	16																	
Shut-off PSI		137	129	120	111	103	94	85	77	68	59	38								

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# E SERIES ENVIRONMENTAL PUMPS - 60 GPM STAINLESS STEEL

## PERFORMANCE

The chart displays the performance of six different horsepower models: 1/2 HP, 3/4 HP, 1 HP, 1.5 HP, 2 HP, and 3 HP. The y-axis represents head in meters and feet, and the x-axis represents flow in GPM and M<sup>3</sup>/H. A shaded region indicates the best efficiency range, and a larger bracketed region indicates the pump operating range.

Model	Flow (GPM)	Flow (M <sup>3</sup> /H)	Head (Feet)	Head (Meters)
1/2 HP	0	0	55	16
	10	2.8	52	15
	20	5.7	48	14
	30	8.6	42	12.5
	40	11.4	35	10.5
	50	14.3	25	7.5
3/4 HP	0	0	85	25.5
	10	2.8	80	24
	20	5.7	75	22.5
	30	8.6	65	19.5
	40	11.4	55	16.5
	50	14.3	40	12
1 HP	0	0	105	31.5
	10	2.8	100	30
	20	5.7	95	28.5
	30	8.6	85	25.5
	40	11.4	75	22.5
	50	14.3	60	18
1.5 HP	0	0	145	43.5
	10	2.8	140	42
	20	5.7	135	40.5
	30	8.6	125	37.5
	40	11.4	115	34.5
	50	14.3	100	30
2 HP	0	0	185	55.5
	10	2.8	180	54
	20	5.7	175	52.5
	30	8.6	165	49.5
	40	11.4	155	46.5
	50	14.3	140	42
3 HP	0	0	225	67.5
	10	2.8	220	66
	20	5.7	215	64.5
	30	8.6	205	61.5
	40	11.4	195	58.5
	50	14.3	180	54

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## E SERIES ENVIRONMENTAL PUMPS - 60 GPM STAINLESS STEEL

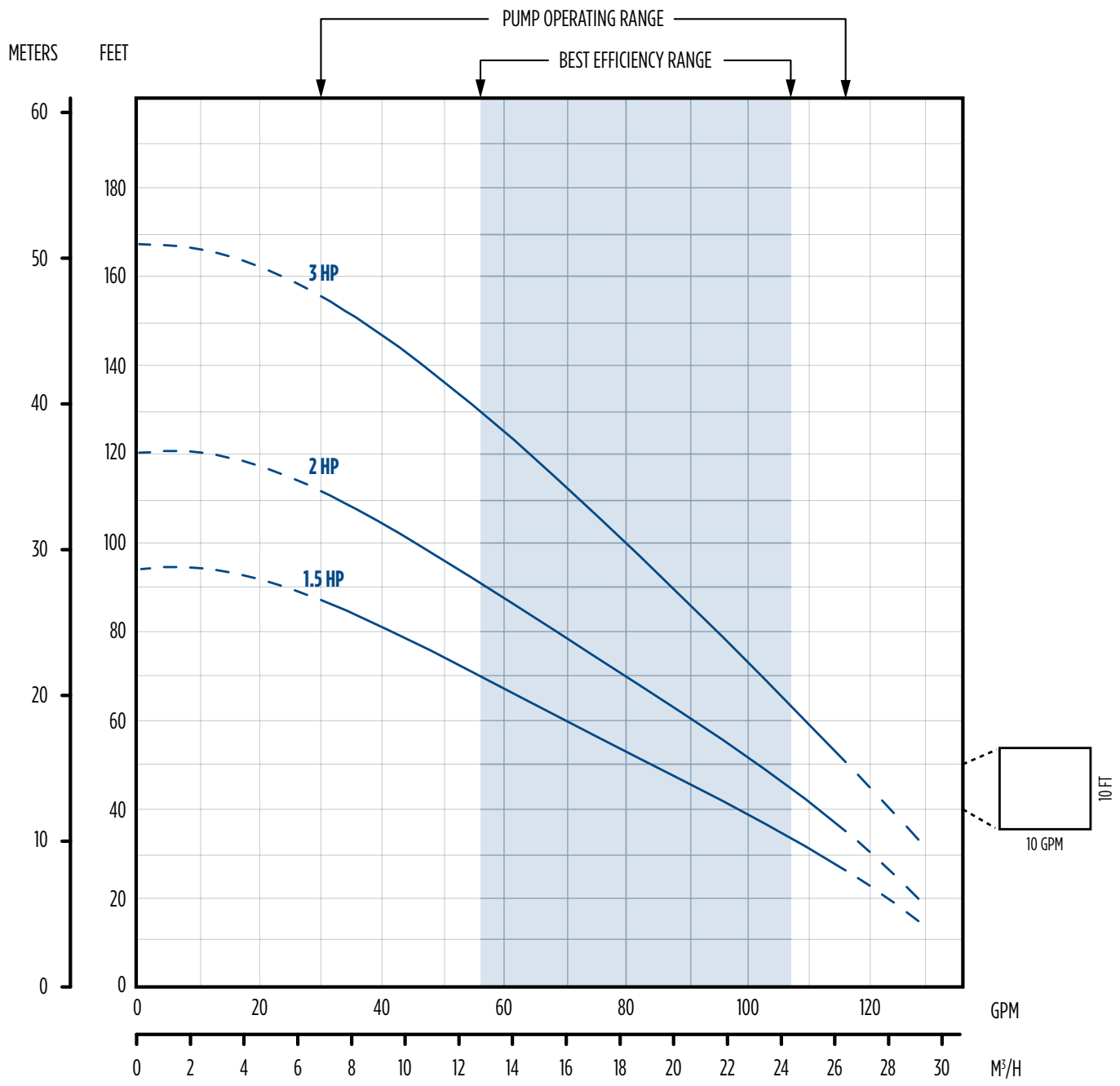
### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550		
1/2	0	68	44																59	
	10	39																		
	20																			
	30																			
	40																			
	50																			
Shut-off PSI		17	8																	
3/4	0		64	47															92	
	10	62	43																	
	20	40																		
	30																			
	40																			
	50																			
Shut-off PSI		31	22	14																
1	0		70	58	42														114	
	10	68	56	39																
	20	54	35																	
	30	31																		
	40																			
	50																			
Shut-off PSI		41	32	23	15															
1.5	0			69	61	51	34												149	
	10		67	59	49	31														
	20	66	58	47	27															
	30	57	44	24																
	40	42	20																	
	50																			
Shut-off PSI		56	47	39	30	21	13													
2	0				66	57	47	34	21										195	
	10		72	65	56	45	32													
	20	71	64	54	43	30														
	30	62	53	41	28															
	40	51	39	26																
	50	37	24																	
60	22																			
Shut-off PSI		76	67	58	50	41	32	24	15											
3	0					70	65	60	53	46	37							265		
	10					70	64	59	52	45	36	25								
	20				69	64	58	51	43	34	24									
	30		68	63	57	50	42	33	22											
	40	67	62	56	49	41	31	20												
	50	61	55	48	39	29														
60	54	46	38	28																
Shut-off PSI		106	98	89	80	72	63	54	46	37	28									

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

# E SERIES ENVIRONMENTAL PUMPS - 90 GPM STAINLESS STEEL

## PERFORMANCE





## E SERIES ENVIRONMENTAL PUMPS - 90 GPM STAINLESS STEEL

### PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	Shut-Off (ft)		
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550			
1.5	0		99	69	43															95	
	10	94	65	38																	
	20	61	32																		
	30																				
	40																				
	50																				
Shut-off PSI		32	24	15	6																
2	0		112	91	68	47														121	
	10	109	88	65	43																
	20	84	61	39																	
	30	58	34																		
	40																				
	50																				
Shut-off PSI		44	35	26	18	9															
3	0			110	96	79	64	48												167	
	10		108	93	77	61	45														
	20	106	91	74	59	42															
	30	88	72	57	38																
	40	69	54	34																	
	50	52	30																		
Shut-off PSI		64	55	46	38	29	20	12													

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage.

## C1 SERIES CISTERN PUMPS

Designed for use in gray water/filtered effluent service applications, the C1 Series cistern pump provides high performance and long life in less than ideal water conditions. The C1 Series pump is able to pass solids up to 1/8" without having a negative effect on the internal hydraulic components.

The pump's unique bottom suction design allows for maximum fluid drawdown without compromising durability or overall life, and it does not require the use of a flow induction sleeve. Intended specifically for use in a cistern or tank, C1 Series pumps are suitable for use in agricultural, residential, and commercial installations.

### FEATURES

- Supplied with a removable 5" base for secure and reliable mounting
- Bottom suction design
- Robust thermoplastic discharge head design resists breakage during installation and operation
- Single-shell housing design provides a compact unit while ensuring cool and quiet operation
- Hydraulic components molded from high quality engineered thermoplastics
- Optimized hydraulic design allows for increased performance and decreased power usage
- All metal components are made of high grade stainless steel for corrosion resistance
- Available with a high quality 115 V or 230 V, 1/2 hp motor
- Fluid flows of 10, 20, and 30 gpm, with a maximum shut-off pressure of 100 psi
- Heavy-duty 600 V 10 foot SJ00W jacketed lead

### APPLICATIONS

- Gray water pumping
- Filtered effluent service water pumping
- Water reclamation projects such as pumping from rain catchment basins
- Aeration and other fountain or pond applications
- Agriculture and livestock water pumping



## C1 SERIES CISTERN PUMPS - ORDERING INFORMATION

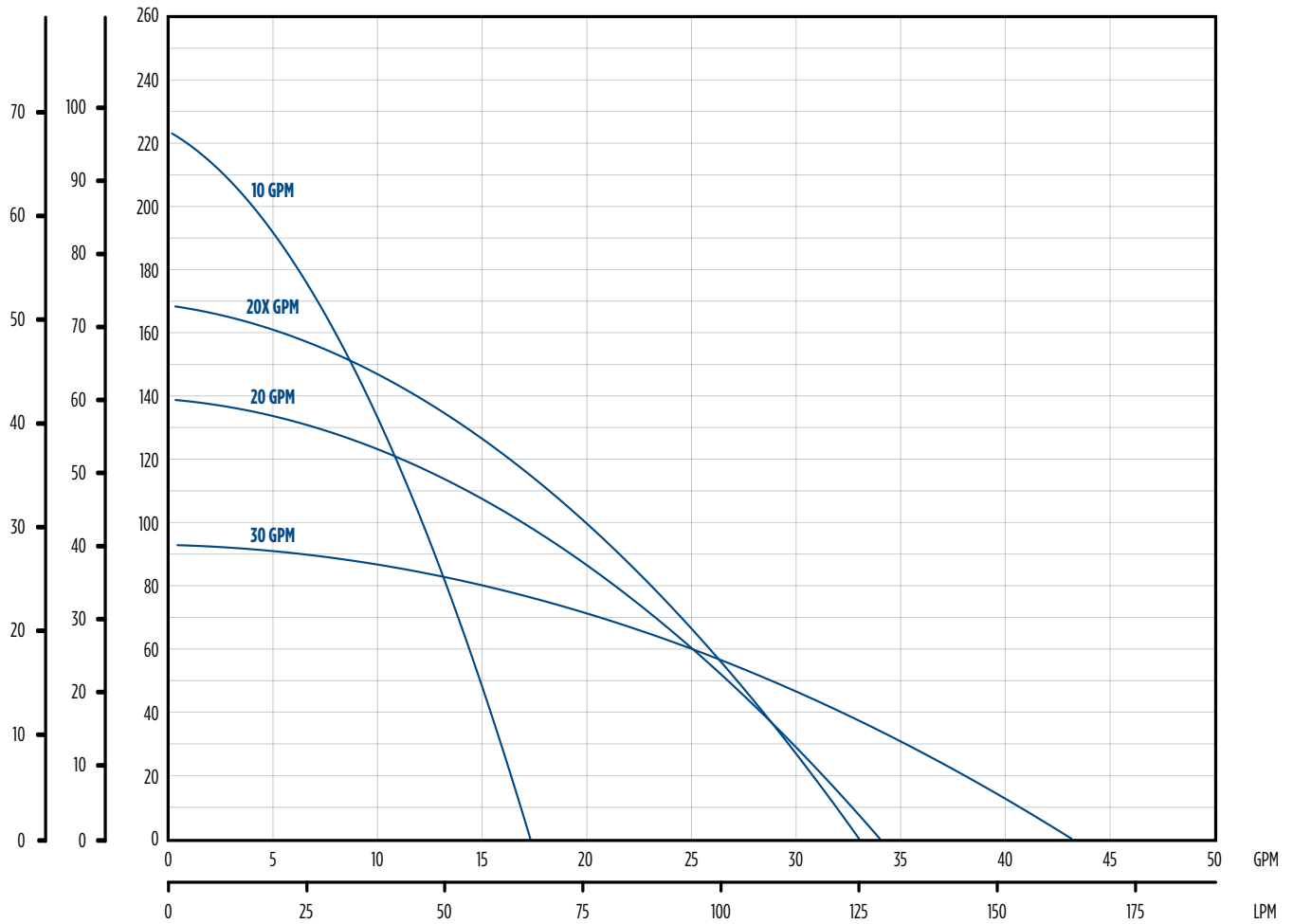
### ORDERING INFORMATION

FPS C1 Series Pumps							
GPM	HP	Volts	Stages	Model	Order No.	Length (in)	Weight (lbs)
10	1/2	115	7	10C1-05P4-2W115	90301005	26	17
		230	7	10C1-05P4-2W230	90301010	26	17
20		115	5	20C1-05P4-2W115	90302005	25	16
		230	5	20C1-05P4-2W230	90302010	25	16
20X		115	6	20XC1-05P4-2W115	90302015	26	17
		230	6	20XC1-05P4-2W230	90302020	26	17
30		115	4	30C1-05P4-2W115	90303005	25	16
		230	4	30C1-05P4-2W230	90303010	25	16

NOTES: All units have 10 foot long SJ00W leads.

### PERFORMANCE

METERS    PSI    FEET



# SUBMERSIBLE PUMP ACCESSORIES

## ORDERING INFORMATION

### Check Valves - Silicone Bronze

Description	Inlet	Outlet	Case Qty.	Order No.	Wt. (lbs)
Flomatic™ 4221LEB	1-1/4" MNPT	1" FNPT	36	91980631	1.25
Flomatic™ 4242LEB	1-1/4" MNPT	1-1/4" FNPT	36	91980649	1.75

### Check Valves - Stainless Steel

Description	Inlet	Outlet	Case Qty.	Order No.	Wt. (lbs)
Flomatic™ 4221LSS2	1-1/4" MNPT	1" FNPT	49	91985317	1.4
Flomatic™ 4242SS2	1-1/4" MNPT	1-1/4" FNPT	49	91985309	1.5

### Check Valves - Ductile Iron

Description	Inlet	Outlet	Carton Qty.	Order No.	Wt. (lbs)
Simmons #658SB	2" MNPT	2" FNPT	1	91982157	3.5
Simmons #660SB	3" MNPT	3" FNPT	1	91981266	10
Simmons #661SB	4" MNPT	4" FNPT	1	91980334	21

### Flomatic™ Poppet with Removable Ring (Patent Pending)

Description	Order No.	Wt. (lbs)
Flomatic™ Poppet with Removable Ring	91985259R	0.1
T-Handle Poppet Wrench	106964101	1

### Flomatic™ VFD Check Valve with Removable Ring (Patent Pending)

Description	Order No.	Wt. (lbs)
Flomatic™ VFD Check Valve with Removable Ring	106981101	0.03
T-Handle Wrench for VFD Check Valve	101218901	1

### Reducer Bushing

Description	Inlet	Outlet	PSI Rating	Order No.	Wt.
White PVC Bushing	1-1/4" MNPT	1" FNPT	200 PSI	31031008R	0.2

NOTES: Flomatic™ is a trademark of the Danfoss Corporation.



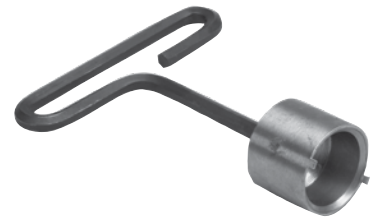
Check Valves



Poppet



Reducer Bushing



T-Handle Poppet Wrench

# REFERENCES - FRICTION LOSS

## PVC SCHEDULE 80 IPS PLASTIC IN 100' OF PIPE

Pipe Size	1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
GPM	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)	Head Loss	Vel (ft/s)
1	1.87	1.37	0.42	0.74	0.12	0.45	0.03	0.25	0.01	0.18								
2	6.74	2.74	1.52	1.48	0.44	0.89	0.11	0.50	0.05	0.36	0.01	0.22						
3	14.29	4.11	3.21	2.23	0.93	1.34	0.23	0.75	0.10	0.54	0.03	0.33	0.01	0.23				
4	24.34	5.48	5.47	2.97	1.59	1.78	0.39	1.00	0.18	0.73	0.05	0.43	0.02	0.30				
5	36.79	6.85	8.27	3.71	2.40	2.23	0.59	1.25	0.27	0.91	0.08	0.54	0.03	0.38	0.01	0.24		
6	51.57	8.22	11.59	4.45	3.36	2.68	0.82	1.50	0.38	1.09	0.11	0.65	0.04	0.45	0.02	0.29		
7	68.61	9.59	15.43	5.19	4.47	3.12	1.09	1.75	0.50	1.27	0.14	0.76	0.06	0.53	0.02	0.34		
8	87.86	10.96	19.75	5.94	5.73	3.57	1.40	2.00	0.64	1.45	0.18	0.87	0.08	0.61	0.03	0.39		
9	109.27	12.33	24.57	6.68	7.12	4.01	1.74	2.25	0.80	1.63	0.23	0.98	0.01	0.68	0.03	0.44		
10	132.82	13.70	29.86	7.42	8.66	4.46	2.12	2.50	0.97	1.82	0.28	1.09	0.12	0.76	0.04	0.49		
11			35.63	8.16	10.33	4.91	2.53	2.75	1.16	2.00	0.33	1.20	0.14	0.83	0.05	0.53		
12			41.86	8.90	12.14	5.35	2.97	3.00	1.36	2.18	0.39	1.30	0.16	0.91	0.06	0.58		
14			55.69	10.39	16.15	6.24	3.95	3.50	1.81	2.54	0.52	1.52	0.22	1.06	0.07	0.68		
16			71.31	11.87	20.68	7.14	5.06	4.00	2.32	2.90	0.67	1.74	0.28	1.21	0.09	0.78		
18			88.69	13.36	25.72	8.03	6.30	4.50	2.89	3.27	0.83	1.96	0.34	1.36	0.12	0.87		
20			107.80	14.84	31.26	8.92	7.65	5.00	3.51	3.63	1.01	2.17	0.42	1.51	0.14	0.97	0.04	0.56
22					37.29	9.81	9.13	5.50	4.19	3.99	1.20	2.39	0.50	1.67	0.17	1.07	0.04	0.61
24					43.81	10.70	10.72	6.00	4.92	4.36	1.41	2.61	0.59	1.82	0.20	1.17	0.05	0.67
26					50.81	11.60	12.44	6.50	5.71	4.72	1.64	2.83	0.68	1.97	0.23	1.26	0.06	0.73
28					58.29	12.49	14.27	7.00	6.55	5.08	1.88	3.04	0.78	2.12	0.26	1.36	0.07	0.78
30					66.23	13.38	16.21	7.50	7.44	5.45	2.13	3.26	0.89	2.27	0.30	1.46	0.08	0.84
35							21.57	8.75	9.89	6.35	2.84	3.80	1.18	2.65	0.40	1.70	0.10	0.98
40							27.62	10.00	12.67	7.26	3.63	4.35	1.51	3.03	0.51	1.94	0.13	1.12
45							34.36	11.25	15.76	8.17	4.52	4.89	1.88	3.41	0.64	2.19	0.17	1.26
50	0.03	0.62					41.76	12.51	19.16	9.08	5.49	5.44	2.28	3.78	0.77	2.43	0.20	1.40
55	0.03	0.68					49.82	13.76	22.85	9.99	6.55	5.98	2.72	4.16	0.92	2.67	0.24	1.53
60	0.04	0.74					58.53	15.01	26.85	10.89	7.70	6.52	3.20	4.54	1.09	2.91	0.28	1.67
65	0.04	0.80							31.14	11.80	8.93	7.07	3.71	4.92	1.26	3.16	0.33	1.81
70	0.05	0.86							35.72	12.71	10.24	7.61	4.25	5.30	1.45	3.40	0.38	1.95
75	0.06	0.92							40.59	13.62	11.64	8.15	4.83	5.68	1.64	3.64	0.43	2.09
80	0.07	0.98							45.74	14.52	13.12	8.70	5.45	6.06	1.85	3.89	0.48	2.23
85	0.07	1.05							51.18	15.43	14.68	9.24	6.09	6.43	2.07	4.13	0.54	2.37
90	0.08	1.11							56.89	16.34	16.32	9.78	6.77	6.81	2.30	4.37	0.60	2.51
95	0.09	1.17							62.88	17.25	18.03	10.33	7.49	7.19	2.54	4.61	0.66	2.65
100	0.01	1.23							69.15	18.16	19.83	10.87	8.23	7.57	2.80	4.86	0.73	2.79
125	0.15	1.54									29.98	13.59	12.45	9.46	4.23	6.07	1.01	3.49
150	0.21	1.85									42.02	16.31	17.45	11.35	5.93	7.29	1.54	4.19
175	0.28	2.15											23.21	13.25	7.89	8.50	2.05	4.88

NOTES: Suction Velocities should not exceed 8 feet per second. Calculated using Williams and Hazen formula using C = 150.

## REFERENCES - FRICTION LOSS

### WATER IN 100' OF STEEL PIPE

GPM	Pipe Size 1/2" - Actual Size 0.622			Pipe Size 3/4" - Actual Size 0.824			Pipe Size 1" - Actual Size 1.049			Pipe Size 1-1/4" - Actual Size 1.38			Pipe Size 1-1/2" - Actual Size 1.61		
	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)
1	2.099	1.056	0.017	0.534	0.602	0.006	0.165	0.371	0.002	0.043	0.215	0.001	0.021	0.158	0.000
2	7.577	2.112	0.069	1.929	1.203	0.023	0.596	0.742	0.009	0.157	0.429	0.003	0.074	0.315	0.002
3	16.056	3.168	0.156	4.087	1.805	0.051	1.263	1.114	0.019	0.332	0.644	0.006	0.157	0.473	0.003
4	27.354	4.223	0.277	6.962	2.407	0.090	2.151	1.485	0.034	0.566	0.858	0.011	0.268	0.630	0.006
5	41.352	5.279	0.433	10.525	3.008	0.141	3.252	1.856	0.054	0.856	1.073	0.018	0.404	0.788	0.001
6	57.961	6.335	0.624	14.753	3.610	0.203	4.558	2.227	0.077	1.200	1.287	0.026	0.567	0.946	0.014
7	77.112	7.391	0.849	19.628	4.211	0.276	6.064	2.599	0.105	1.597	1.502	0.035	0.754	1.103	0.019
8	98.747	8.447	1.109	25.134	4.813	0.360	7.765	2.970	0.137	2.045	1.716	0.046	0.966	1.261	0.025
9	122.817	9.503	1.404	31.261	5.415	0.456	9.657	3.341	0.173	2.543	1.931	0.058	1.201	1.418	0.031
10	149.280	10.559	1.733	37.997	6.016	0.563	11.738	3.712	0.214	3.091	2.145	0.072	1.460	1.576	0.039
11	178.099	11.615	2.097	45.332	6.618	0.681	14.004	4.083	0.259	3.688	2.360	0.087	1.742	1.734	0.047
12	209.241	12.670	2.495	53.259	7.220	0.810	16.453	4.455	0.308	4.333	2.574	0.103	2.047	1.891	0.056
13	242.675	13.726	2.928	61.769	7.821	0.951	19.082	4.826	0.362	5.025	2.789	0.121	2.374	2.049	0.065
14	278.376	14.782	3.396	70.856	8.423	1.103	21.889	5.197	0.420	5.764	3.003	0.140	2.723	2.206	0.076
15	316.317	15.838	3.899	80.513	9.025	1.266	24.873	5.568	0.482	6.550	3.218	0.161	3.094	2.364	0.087
16				90.735	9.626	1.440	28.031	5.940	0.548	7.381	3.432	0.183	3.487	2.521	0.099
17				101.517	10.228	1.626	31.362	6.311	0.619	8.258	3.647	0.207	3.901	2.679	0.112
18				112.852	10.829	1.823	34.863	6.682	0.694	9.181	3.861	0.232	4.337	2.837	0.125
19				124.738	11.431	2.031	38.535	7.053	0.773	10.148	4.076	0.258	4.793	2.994	0.139
20				137.168	12.033	2.250	42.375	7.425	0.857	11.159	4.290	0.286	5.271	3.152	0.154
21				150.140	12.634	2.481	46.383	7.796	0.945	12.214	4.505	0.315	5.769	3.309	0.170
22				163.649	13.236	2.723	50.556	8.167	1.037	13.313	4.719	0.346	6.288	3.467	0.187
23				177.691	13.838	2.976	54.894	8.538	1.133	14.455	4.934	0.378	6.828	3.625	0.204
24				192.263	14.439	3.241	59.396	8.909	1.234	15.641	5.148	0.412	7.388	3.782	0.222
25				207.363	15.041	3.516	64.061	9.281	1.339	16.869	5.363	0.447	7.968	3.940	0.241
26				222.985	15.643	3.803	68.887	9.652	1.448	18.140	5.577	0.483	8.569	4.097	0.261
27				239.128	16.244	4.101	73.874	10.023	1.561	19.453	5.792	0.521	9.189	4.255	0.281
28				255.789	16.846	4.411	79.021	10.394	1.679	20.809	6.006	0.561	9.829	4.413	0.303
29				272.965	17.448	4.731	84.327	10.766	1.801	22.206	6.221	0.601	10.489	4.570	0.325
30				290.652	18.049	5.063	89.791	11.137	1.928	23.645	6.435	0.644	11.169	4.728	0.347
32							101.191	11.879	2.193	26.647	6.864	0.732	12.587	5.043	0.395
34							113.215	12.622	2.476	29.813	7.293	0.827	14.082	5.358	0.446
36							125.857	13.364	2.776	33.142	7.722	0.927	15.655	5.673	0.500
38							139.112	14.107	3.093	36.633	8.151	1.033	17.304	5.989	0.557
40							152.975	14.849	3.427	40.283	8.580	1.144	19.028	6.304	0.618
42							167.442	15.592	3.778	44.093	9.009	1.261	20.827	6.619	0.681
44							182.507	16.334	4.147	48.060	9.438	1.384	22.701	6.934	0.747
46							198.168	17.076	4.532	52.184	9.867	1.513	24.649	7.249	0.817
48							214.420	17.819	4.935	56.463	10.296	1.648	26.671	7.564	0.889
50							231.259	18.561	5.355	60.898	10.725	1.788	28.765	7.880	0.965
55							275.904	20.417	6.479	72.654	11.798	2.163	34.319	8.668	1.168
60							324.147	22.274	7.711	85.358	12.870	2.574	40.319	9.456	1.390
65							375.943	24.130	9.049	98.997	13.943	3.021	46.762	10.244	1.631
70							431.249	25.986	10.495	113.561	15.015	3.504	53.641	11.032	1.891
75							490.027	27.842	12.048	129.039	16.088	4.023	60.952	11.820	2.171
80							552.241	29.698	13.708	145.422	17.160	4.577	68.691	12.607	2.470
85							617.860	31.554	15.475	162.701	18.233	5.167	76.853	13.395	2.789
90							686.852	33.410	17.349	180.869	19.305	5.793	85.435	14.183	3.127
95							759.190	35.267	19.331	199.918	20.378	6.454	94.433	14.971	3.484
100							834.846	37.123	21.419	219.840	21.450	7.151	103.843	15.759	3.860
110										262.281	23.595	8.653	123.890	17.335	4.671
120										308.142	25.740	10.298	145.553	18.911	5.559
130										357.380	27.885	12.086	168.811	20.487	6.524
140										409.955	30.030	14.016	193.645	22.063	7.566
150										465.831	32.175	16.090	220.039	23.639	8.685

NOTES: Suction Velocities should not exceed 8 feet per second.

## REFERENCES - FRICTION LOSS

### WATER IN 100' OF STEEL PIPE

GPM	Pipe Size 2" - Actual Size 2.067			Pipe Size 2-1/2" - Actual Size 2.469			Pipe Size 3" - Actual Size 3.068			Pipe Size 3-1/2" - Actual Size 3.548		
	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)	Friction	Vel. (ft/sec)	Vel. Head (ft)
2	0.022	0.191	0.001									
3	0.047	0.287	0.001	0.020	0.201	0.001						
4	0.079	0.383	0.002	0.033	0.268	0.001						
5	0.120	0.478	0.004	0.051	0.335	0.002	0.018	0.217	0.001	0.009	0.162	0.000
6	0.168	0.574	0.005	0.071	0.402	0.003	0.025	0.260	0.001	0.012	0.195	0.001
7	0.224	0.670	0.007	0.094	0.469	0.003	0.033	0.304	0.001	0.016	0.227	0.001
8	0.286	0.765	0.009	0.121	0.536	0.004	0.042	0.347	0.002	0.021	0.260	0.001
9	0.356	0.861	0.012	0.150	0.603	0.006	0.052	0.391	0.002	0.026	0.292	0.001
10	0.433	0.957	0.014	0.182	0.670	0.007	0.063	0.434	0.003	0.031	0.325	0.002
11	0.516	1.052	0.017	0.218	0.737	0.008	0.076	0.477	0.004	0.037	0.357	0.002
12	0.607	1.148	0.020	0.256	0.804	0.010	0.089	0.521	0.004	0.044	0.389	0.002
13	0.704	1.244	0.024	0.296	0.871	0.012	0.103	0.564	0.005	0.051	0.422	0.003
14	0.807	1.339	0.028	0.340	0.938	0.014	0.118	0.608	0.006	0.058	0.454	0.003
15	0.917	1.435	0.032	0.386	1.005	0.016	0.134	0.651	0.007	0.066	0.487	0.004
16	1.034	1.531	0.036	0.435	1.072	0.018	0.151	0.694	0.007	0.075	0.519	0.004
17	1.157	1.626	0.041	0.487	1.139	0.020	0.169	0.738	0.008	0.083	0.552	0.005
18	1.286	1.722	0.046	0.542	1.206	0.023	0.188	0.781	0.009	0.093	0.584	0.005
19	1.421	1.818	0.051	0.599	1.273	0.025	0.208	0.825	0.011	0.103	0.617	0.006
20	1.563	1.913	0.057	0.658	1.340	0.028	0.229	0.868	0.012	0.113	0.649	0.007
21	1.711	2.009	0.063	0.720	1.407	0.031	0.250	0.911	0.013	0.123	0.681	0.007
22	1.865	2.105	0.069	0.785	1.474	0.034	0.273	0.955	0.014	0.135	0.714	0.008
23	2.025	2.200	0.075	0.853	1.541	0.037	0.296	0.998	0.015	0.146	0.746	0.009
24	2.191	2.296	0.082	0.923	1.608	0.040	0.321	1.042	0.017	0.158	0.779	0.009
25	2.363	2.391	0.089	0.995	1.675	0.044	0.346	1.085	0.018	0.171	0.811	0.010
26	2.541	2.487	0.096	1.070	1.742	0.047	0.372	1.128	0.020	0.183	0.844	0.011
27	2.724	2.583	0.104	1.148	1.809	0.051	0.399	1.172	0.021	0.197	0.876	0.012
28	2.914	2.678	0.112	1.227	1.876	0.055	0.427	1.215	0.023	0.210	0.909	0.013
29	3.110	2.774	0.120	1.310	1.943	0.059	0.455	1.259	0.025	0.224	0.941	0.014
30	3.312	2.870	0.128	1.395	2.010	0.063	0.485	1.302	0.026	0.239	0.974	0.015
32	3.732	3.061	0.146	1.572	2.144	0.071	0.546	1.389	0.030	0.269	1.038	0.017
34	4.175	3.252	0.164	1.759	2.278	0.081	0.611	1.476	0.034	0.301	1.103	0.019
36	4.642	3.444	0.184	1.955	2.412	0.090	0.679	1.562	0.038	0.335	1.168	0.021
38	5.130	3.635	0.205	2.161	2.546	0.101	0.751	1.649	0.042	0.370	1.233	0.024
40	5.642	3.826	0.228	2.376	2.680	0.112	0.826	1.736	0.047	0.407	1.298	0.026
42	6.175	4.018	0.251	2.601	2.814	0.123	0.904	1.823	0.052	0.446	1.363	0.029
44	6.731	4.209	0.275	2.835	2.948	0.135	0.985	1.910	0.057	0.486	1.428	0.032
46	7.308	4.400	0.301	3.078	3.083	0.148	1.070	1.996	0.062	0.527	1.493	0.035
48	7.908	4.592	0.328	3.331	3.217	0.161	1.158	2.083	0.067	0.571	1.558	0.038
50	8.529	4.783	0.356	3.592	3.351	0.174	1.248	2.170	0.073	0.616	1.623	0.041
55	10.175	5.261	0.430	4.286	3.686	0.211	1.490	2.387	0.089	0.734	1.785	0.050
60	11.955	5.740	0.512	5.035	4.021	0.251	1.750	2.604	0.105	0.863	1.947	0.059
65	13.865	6.218	0.601	5.840	4.356	0.295	2.030	2.821	0.124	1.001	2.109	0.069
70	15.905	6.696	0.697	6.699	4.691	0.342	2.328	3.038	0.143	1.148	2.272	0.080
75	18.072	7.174	0.800	7.612	5.026	0.393	2.646	3.255	0.165	1.304	2.434	0.092
80	20.367	7.653	0.910	8.578	5.361	0.447	2.981	3.472	0.187	1.470	2.596	0.105
85	22.787	8.131	1.028	9.598	5.696	0.504	3.336	3.689	0.212	1.644	2.758	0.118
90	25.331	8.609	1.152	10.669	6.031	0.565	3.708	3.906	0.237	1.828	2.921	0.133
95	27.999	9.088	1.284	11.793	6.366	0.630	4.099	4.123	0.264	2.021	3.083	0.148
100	30.789	9.566	1.422	12.968	6.701	0.698	4.507	4.340	0.293	2.222	3.245	0.164
110	36.733	10.523	1.721	15.472	7.371	0.845	5.377	4.774	0.354	2.651	3.570	0.198
120	43.156	11.479	2.048	18.177	8.041	1.005	6.317	5.208	0.422	3.114	3.894	0.236
130	50.052	12.436	2.404	21.081	8.711	1.180	7.327	5.642	0.495	3.612	4.219	0.277
140	57.416	13.392	2.788	24.183	9.382	1.368	8.405	6.076	0.574	4.144	4.543	0.321
150	65.241	14.349	3.200	27.479	10.052	1.570	9.550	6.510	0.659	4.708	4.868	0.368

NOTES: Suction Velocities should not exceed 8 feet per second.

## REFERENCES - PIPE FITTINGS

### CONNECTIONS

Friction losses in terms of equivalent lengths of standard pipe					
Pipe Size	Standard 90° Elbow	Long Radius Elbow	45° Elbow	Tee	Return Bend
1/2"	1.5	1.1	0.77	3.4	3.8
3/4"	2.2	1.4	1	4.5	5
1"	2.7	1.7	1.3	5.8	6.1
1-1/4"	3.7	2.4	1.6	7.8	8.5
1-1/2"	4.3	2.8	2	9	10
2"	5.5	3.5	2.5	11	13
2-1/2"	6.5	4.2	3	14	15
3"	8.1	5.1	3.8	17	18
3-1/2"	9.5	6	4.4	19	21
4"	11	7	5	22	24
4-1/2"	12	7.9	5.6	24	27
5"	14	8.9	6.1	27	31
6"	16	11	7.7	33	37

### VALVES

Friction losses in terms of equivalent lengths of standard pipe				
Pipe Size	Gate Valve Open	Globe Valve Open	Angle Valve Open	Swing Check Valve
1/2"	0.35	16	8.4	4
3/4"	0.47	22	12	5
1"	0.6	27	15	7
1-1/4"	0.8	37	18	9
1-1/2"	0.95	44	22	11
2"	1.2	57	28	13
2-1/2"	1.4	66	33	16
3"	1.7	85	42	20
3-1/2"	2	99	50	24
4"	2.3	110	58	26
4-1/2"	2.6	130	61	31
5"	2.9	140	70	33
6"	3.5	160	83	39



## REFERENCES - PRESSURE LOSS

### SWING CHECK VALVES

Flow GPM	Pressure Loss (PSI)/Valve Size							
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
2	0.2							
3	.05							
6	1.0	0.3						
8	1.7	0.5						
10	2.6	0.8	0.3					
12	3.6	1.1	0.5					
14	4.8	1.5	0.6					
16		2.0	0.9					
18		2.4	1.0					
20		3.0	1.2	0.4				
22		3.5	1.4	0.5				
24		4.1	1.7	0.6				
26		4.8	2.0	0.7	0.4			
28			2.2	0.8	0.5			
30			2.5	0.9	0.5			
32			2.9	1.1	0.6			
34			3.2	1.2	0.6			
36			3.6	1.3	0.7			
38			3.9	1.5	0.8			
40			4.3	1.6	0.8	0.3		
42			4.7	1.7	0.9	0.3		
44				1.9	1.0	0.4		
46				2.1	1.1	0.4		
48				2.2	1.2	0.5		
50				2.4	1.3	0.5		
55				2.9	1.5	0.6		
60				3.4	1.8	0.7		
65				3.9	2.0	0.8		
70				4.5	2.4	0.9	0.4	
75					2.7	1.0	0.5	
80					3.0	1.2	0.6	
90					3.7	1.5	0.7	
100					4.6	1.8	0.9	0.4
120						2.5	1.2	0.5
140						3.3	1.6	0.7

### BRONZE GATE VALVES

Flow GPM	Pressure Loss (PSI)/Valve Size								
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1									
2	.01								
5	.06	.02							
8	.16	.05	.02						
10	.24	.08	.03	.01					
15		.17	.06	.02	.01				
20		.31	.11	.03	.02				
30			.24	.07	.04	.01			
40			.43	.13	.07	.02	.01		
50			.67	.21	.11	.04	.02		
60				.30	.15	.05	.03	.01	
80				.54	.28	.10	.05	.02	
100					.43	.15	.07	.03	
120					.62	.22	.10	.04	.02
140					.85	.30	.14	.06	
160						.40	.18	.07	.03

## REFERENCES - PRESSURE LOSS

### WATER METERS AWWA STANDARD

Flow GPM	Pressure Loss (Normal Size)						
	5/8"	3/4"	1"	1-1/2"	2"	3"	4"
1	0.2	0.1					
2	0.3	0.2					
3	0.4	0.3					
4	0.6	0.5	0.1				
5	0.9	0.6	0.2				
6	1.3	0.7	0.3				
7	1.8	0.8	0.4				
8	2.3	1.0	0.5				
9	3.0	1.3	0.6				
10	3.7	1.6	0.7				
11	4.4	1.9	0.8				
12	5.1	2.2	0.9				
13	6.1	2.6	1.0				
14	7.2	3.1	1.1				
15	8.3	3.6	1.2				
16	9.4	4.1	1.4	0.4			
17	10.7	4.6	1.6	0.5			
18	12.0	5.2	1.8	0.6			
19	13.4	5.8	2.0	0.7			
20	15.0	6.5	2.2	0.8			
22		7.9	2.8	1.0			
24		9.5	3.4	1.2			
26		11.2	4.0	1.4			
28		13.0	4.6	1.6			
30		15.0	5.3	1.8	0.7		
32			6.0	2.1	0.8		
34			6.9	2.4	0.9		
36			7.8	2.7	1.0		
38			8.7	3.0	1.2		
40			9.6	3.3	1.3		
42			10.6	3.6	1.4		
44			11.7	3.9	1.5		
46			12.8	4.2	1.6		
48			13.9	4.5	1.7		
50			15.0	4.9	1.9		
52				5.3	2.1		
54				5.7	2.2		
56				6.2	2.3		
58				6.7	2.5		
60				7.2	2.7	1.0	
65				8.3	3.2	1.1	
70				9.8	3.7	1.3	
75				11.3	4.3	1.5	
80				12.8	4.9	1.6	0.7
90				16.1	6.2	2.0	0.8
100				20.0	7.8	2.5	0.9
110					9.5	2.9	1.0
120					11.3	3.4	1.2
130					13.0	3.9	1.4
140					15.1	4.5	1.6
150					17.3	5.1	1.8

## REFERENCES - PRESSURE TANK SIZING

### PROPER SYSTEM LIFE MINIMUM TANK VOLUMES

Pump Capacity		Minimum Drawdown Gallons	Total Tank Volume (Gallons)								
			Switch Setting (PSI)								
			20-40			30-50			40-60		
GPH	GPM		A	B	C	A	B	C	A	B	C
240	4	4	10	15	25	15	15	40	15	15	55
300	5	5	15	15	30	15	20	50	20	20	70
360	6	6	15	20	40	20	20	60	20	25	85
420	7	7	20	20	45	35	25	70	25	30	100
480	8	8	20	25	50	35	25	80	30	30	110
540	9	9	25	25	60	30	30	90	35	35	125
600	10	10	30	30	65	30	35	100	40	40	140
660	11	12	35	35	80	40	40	120	45	45	165
720	12	13	35	40	85	40	45	130	50	50	180
780	13	15	40	45	100	50	50	150	55	60	210
840	14	17	45	50	110	55	55	170	65	65	235
900	15	19	50	55	125	60	65	190	70	75	265
960	16	20	55	55	160	65	65	200	75	75	280
1020	17	23	6	65	150	75	75	230	85	90	320
1080	18	25	70	70	160	80	85	250	95	95	350
1140	19	27	75	75	175	85	90	270	100	105	375
1200	20	30	80	85	195	95	100	300	110	115	415
1260	21	33	90	90	215	105	110	330	125	125	460
1320	22	36	100	100	235	115	120	360	135	135	500
1380	23	38	105	105	345	125	125	380	140	145	530
1440	24	41	110	115	365	135	135	410	155	155	570
1500	25	44	120	120	385	140	145	440	165	165	610
1560	26	47	130	130	305	150	155	470	175	180	655
1620	27	50	135	140	325	160	165	500	185	190	700
1680	28	53	145	145	345	170	175	530	200	200	735
1740	29	57	155	160	370	185	185	570	215	215	790
1800	30	60	165	165	390	195	195	600	225	225	835

NOTES: A = Bladder or Diaphragm Tank Design; B = Floating Wafer Tank Design; C = Plain Steel Tank Design

## REFERENCES - REFERENCE TABLES

### EQUIVALENT VALUES OF PRESSURE

Inches of Mercury	Feet of Water	PSI
1	1.13	0.49
2	2.26	0.98
3	3.39	1.47
4	4.52	1.95
5	5.65	2.44
6	6.78	2.93
7	7.91	3.42
8	9.04	3.91
9	10.17	4.4
10	11.3	4.89
11	12.45	5.39
12	13.57	5.87
13	14.7	6.37
14	15.82	6.86
15	16.96	7.35
16	18.09	7.84
17	19.22	8.33
18	20.35	8.82
19	21.75	9.31
20	22.6	9.8
21	23.78	10.3
22	24.88	10.8
23	26	11.28
24	27.15	11.75
25	26.26	12.25
26	29.4	12.73
27	30.52	13.23
28	31.65	13.73
29	32.8	14.22
29.929	33.947	14.697

### PROPERTIES OF WATER

Water Temperature (°F)	Water Pressure (ft)
60	0.59
70	0.84
80	1.17
90	1.61
100	2.19
110	2.94
120	3.91
130	5.14
140	6.67
150	8.58
160	10.9
170	13.8
180	17.3
190	21.6
200	26.6
210	32.6
212	34

### ATMOSPHERIC PRESSURE AT VARIOUS ELEVATIONS

Altitude Feet Above Sea Level	Atmospheric Pressure		
	Pounds per Square Inch (PSI)	Feet of Water	Inches of Mercury
Sea Level	14.7	33.8	29.9
500	14.4	33.3	29.4
1000	14.2	32.6	28.8
2000	13.7	31.4	27.8
3000	13.2	30.3	26.8
4000	12.7	29.2	25.8
5000	12.2	28.2	24.9
6000	11.8	27.1	24
7000	11.3	26.1	23.1
8000	10.9	25.1	22.2
9000	10.5	24.2	21.4
10000	10.1	23.2	20.6

## REFERENCES - CONVERSIONS

### HEAD

To Convert From	To	Multiply By
PSI	Feet	2.31
PSI	Inches of Mercury	2.04
Feet	PSI	0.433
Feet	Meters	0.305
Feet	Inches of Mercury	0.885
Inches of Mercury	Feet of Water	1.132
Meters	Feet	3.28
Kilograms per sq. in	PSI	14.22
ATM	PSI	14.7
ATM	Feet of Water	34
ATM	Meters of Water	10.35

### VOLUME

To Convert From	To	Multiply By
Gallons	Liters	3.785
Gallons	Cubic Inches	231
Gallons	Cubic Feet	0.137
Gallons	Cubic Meters	0.004
Liters	Gallons	0.264
Barrel (Oil)	Gallons	42
Cubic Feet	Gallons	7.48
Cubic Feet	Cubic Meters	0.028
Acre Foot	Cubic Feet	43560
Acre Foot	Gallons	325829
Acre Inch	Cubic Feet	3630
Acre Inch	Gallons	27100

### CAPACITY

To Convert From	To	Multiply By
Gallons Per Minute	Liters/Sec.	0.063
Gallons Per Minute	Liters/Hr.	227.1
Gallons Per Minute	Cubic Meters/Hr.	0.227
Gallons Per Minute	Cubic Feet/Sec.	0.002
Gallons Per Minute	Pounds Per Hour	500
Cubic Meters/Hr.	Gallons Per Minute	4.402
Cubic Meters/Hr.	Liters/Sec.	0.278
Cubic Feet/Sec.	Gallons Per Minute	448.831
Acre Foot	Gallons	325.85
Acre Foot per Day	Gallons Per Minute	227
Acre Inch per Hour	Gallons Per Minute	454
Liter per Second	Gallons Per Minute	15.85
Miner's Inch (ID,KS,NE, NM,ND,SD,UT,WA)	Gallons Per Minute	9
Miner's Inch (AZ, CA, MT, NV, OR)	Gallons Per Minute	11.22

NOTES: 1,000,000 US gal./day = 695 US gal./minute

### HORSEPOWER

To Convert From	To	Multiply By
hp	Kilowatts	0.746
hp	Ft lbs per minute	33000
hp	Ft lbs per second	550
Kilowatts	hp	1.341

### LENGTH

To Convert From	To	Multiply By
Inches	Centimeters	2.54
Meters	Feet	3.28
Miles	Feet	5280
Rods	Feet	16.5

### WEIGHT

To Convert From	To	Multiply By
Gallons	Pounds	8.33
Cubic Feet of Water	Pounds	62.35
Kilograms	Pounds	2.2

### TEMPERATURE

To Convert From	To	Multiply By
Fahrenheit	Celsius	$5/9 \times (^{\circ}\text{F} - 32)$
Celsius	Fahrenheit	$9/5 \times (^{\circ}\text{C} + 32)$

## REFERENCES - 2- OR 3-WIRE CABLE, 60 HZ

### SERVICE ENTRANCE TO MOTOR MAXIMUM LENGTH

Motor Rating			60 °C Insulation - AWG Copper Wire Size (ft)													
Volts	HP	kW	14	12	10	8	6	4	3	2	1	0	00	000	0000	
115	1/2	.37	100	160	250	390	620	960	1190	1460	1780	2160	2630	3140	3770	
	1/2	.37	400	650	1020	1610	2510	3880	4810	5880	7170	8720				
230	3/4	.55	300	480	760	1200	1870	2890	3580	4370	5330	6470	7870			
	1	.75	250	400	630	990	1540	2380	2960	3610	4410	5360	6520			
	1.5	1.1	190	310	480	770	1200	1870	2320	2850	3500	4280	5240			
	2	1.5	150	250	390	620	970	1530	1910	2360	2930	3620	4480			
	3	2.2	120	190	300	470	750	1190	1490	1850	2320	2890	3610			
	5	3.7	0	0	180	280	450	710	890	1110	1390	1740	2170	2680		
	7.5	5.5	0	0	0	200	310	490	610	750	930	1140	1410	1720		
	10	7.5	0	0	0	0	250	390	490	600	750	930	1160	1430	1760	
	15	11	0	0	0	0	170	270	340	430	530	660	820	1020	1260	

Motor Rating			75 °C Insulation - AWG Copper Wire Size (ft)												
Volts	HP	kW	14	12	10	8	6	4	3	2	1	0	00	000	0000
115	1/2	.37	100	160	250	390	620	960	1190	1460	1780	2160	2630	3140	3770
	1/2	.37	400	650	1020	1610	2510	3880	4810	5880	7170	8720			
230	3/4	.55	300	480	760	1200	1870	2890	3580	4370	5330	6470	7870	9380	
	1	.75	250	400	630	990	1540	2380	2960	3610	4410	5360	6520	7780	9350
	1.5	1.1	190	310	480	770	1200	1870	2320	2850	3500	4280	5240	6300	7620
	2	1.5	150	250	390	620	970	1530	1910	2360	2930	3620	4480	5470	6700
	3	2.2	120	190	300	470	750	1190	1490	1850	2320	2890	3610	4470	5550
	5	3.7	0	110	180	280	450	710	890	1110	1390	1740	2170	2680	3330
	7.5	5.5	0	0	120	200	310	490	610	750	930	1140	1410	1720	2100
	10	7.5	0	0	0	160	250	390	490	600	750	930	1160	1430	1760
	15	11	0	0	0	0	170	270	340	430	530	660	820	1020	1260

1 Foot = .3048 Meter

Lengths in **BOLD** only meet the US National Electrical Code ampacity requirements for individual conductors 60 °C or 75 °C in free air or water, not in magnetic enclosures, conduit or direct buried. Lengths NOT in bold meet the NEC ampacity requirements for either individual conductors or jacketed 60 °C or 75 °C cable and can be in conduit or direct-buried. Flat molded and web/ribbon cable are considered jacketed cable. If any other cable is used, the NEC and local codes should be observed.

Cable lengths allow for a 5% voltage drop running at maximum nameplate amperes. If 3% voltage drop is desired, multiply lengths by 0.6 to get maximum cable length. The portion of the total cable length, which is between the supply and single-phase control box with a line contactor, should not exceed 25% of total maximum allowable to ensure reliable contactor operation. Single-phase control boxes without line contactors may be connected at any point in the total cable length.

Values are based on copper wire. If aluminum wire is used, it must be two sizes larger than copper wire and oxidation inhibitors must be used on connections.

**EXAMPLE:** #12 copper wire = #10 aluminum wire. Contact Franklin Electric for 90 °C cable lengths.

## WARRANTY INFORMATION

### LIMITED WARRANTY\*

Except as set forth in an Extended Warranty, for twelve (12) months from the date of installation, but in no event more than twenty-four (24) months from the date of manufacture, Franklin hereby warrants to the purchaser (“Purchaser”) of Franklin’s products that, for the applicable warranty period, the products purchased will (i) be free from defects in workmanship and material at the time of shipment, (ii) perform consistently with samples previously supplied and (iii) conform to the specifications published or agreed to in writing between the purchaser and Franklin. This limited warranty extends only to products purchased directly from Franklin. If a product is purchased other than from a distributor or directly from Franklin, such product must be installed by a Franklin Certified Installer for this limited warranty to apply. This limited warranty is not assignable or transferable to any subsequent purchaser or user.

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- e. Unless otherwise specified in an Extended Warranty authorized by Franklin for a specific product or product line, this limited warranty does not apply to performance caused by abrasive materials, corrosion due to aggressive conditions or improper voltage supply.
- f. With respect to motors and pumps, the following conditions automatically void this limited warranty:
  1. Mud or sand deposits which indicate that the motor has been submerged in mud or sand.
  2. Physical damage as evidenced by bent shaft, broken or chipped castings, or broken or bent thrust parts.
  3. Sand damage as indicated by abrasive wear of motor seals or splines.
  4. Lightning damage (often referred to as high voltage surge damage).
  5. Electrical failures due to the use of non-approved overload protection.
  6. Unauthorized disassembly.

## WARRANTY INFORMATION

### LOST OR DAMAGED GOODS

Every carrier used by Franklin Electric, Inc. is required to verify and sign for the condition of and the number of pieces that are released to them for delivery. Our control and responsibility for any shipment ceases when the carrier signs the Bill of Lading. When you sign the Bill of Lading, you legally assume responsibility of the shipment being delivered. Please, thoroughly inspect each shipment immediately upon arrival.

If cartons, packages, or crates are received in short or damaged condition, it is important that you notify the driver and insist on a notation of the loss or damage across the face of the freight bill. Failure to do this could negate any opportunity you have to file a claim. Claims for short or damaged material must be filed in writing with the carrier immediately after delivery.

If concealed loss or damage is discovered, notify the carrier at once and request an inspection. It is also important that you do not discard the shipping carton or container. A concealed damage report should be made within ten (10) days of delivery of the shipment. The carrier's agent will make an inspection, and usually will grant a concealed damage notation. If you give the carrier a clear receipt for the goods that have been damaged in transit, you do so at your own risk and expense.

Due to frequent damage of heavy UPS shipments, Franklin Electric, Inc. does not ship orders over 75 lbs by UPS unless customer agrees to take full responsibility.









