

Jet and Submersible Product Catalog

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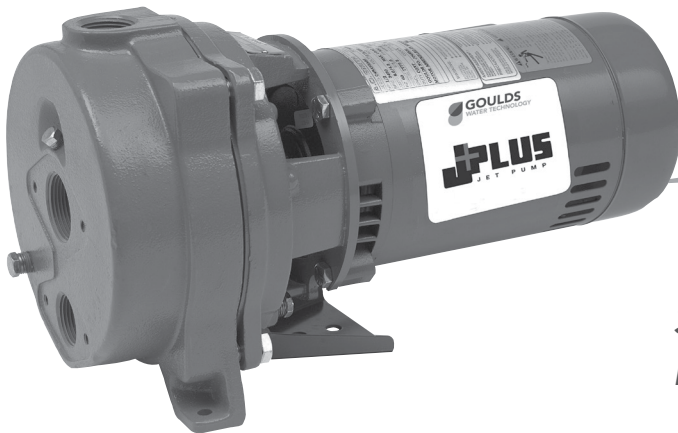
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NOW NSF LISTED!!

*Still Built
in the USA...*



DRINKING WATER
NSF/ANSI 61 & 372

J+ J5, J7, J10 AND J15

CONVERTIBLE JET PUMPS ½, ¾, 1 AND 1½ HP - 60 HZ

FEATURES

Convertible: May be used on shallow or deep well applications using appropriate Goulds Water Technology fittings.

Serviceable:

- Back pullout design for service without disturbing piping.
- Two compartment motor for access to wiring and replaceable components.
- Nozzle clean out plug in shallow well adapter.
- Corrosion resistant, plastic tubing and fittings are easily removed for cleaning. Premium O-ring design fittings need only be hand tight to seal.

Impeller: F.D.A. compliant, glass filled engineered composite. Corrosion and abrasion resistant.

Diffuser (Guidevane): Bolt down glass filled engineered composite diffuser has stainless wear ring for extended performance in abrasive conditions.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

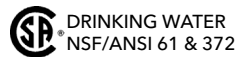
Corrosion Resistant: Electro-coat paint is baked on.

Protected Mechanical Seal: Diaphragm retains water in the casing to ensure the mechanical seal can never run dry.

Excellent Air Handling Ability: After initial priming the pump has the ability to re-prime itself.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

AGENCY LISTINGS



MODEL INFORMATION

CSA Listed Order No.	HP
J5	½
J7	¾
J10	1
J15	1½

APPLICATIONS

Specifically designed for:

- Homes • Farms • Cottages • Booster service

SPECIFICATIONS

Pump:

- Pipe connections: 1¼" NPT suction, 1" NPT discharge, 1" NPT drive (pressure)
- Pressure switch: AS4 preset at 30-50 PSI

Motor:

- NEMA standard
- 60 Hz, 3500 RPM, single phase
- ½ - 1½ HP, 115/230 V capacitor start
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end
- UL778 listed

Maximum temperature: 140°F

SYSTEM COMPONENTS

- Basic Pump Unit: Includes pump and motor, pressure gauge and bushing, pressure switch with tubing and fittings.

NOTE: THE TUBING COMES CONNECTED FOR SHALLOW WELL USE. A DEEP WELL SET UP REQUIRES A JDW FITTINGS PACKAGE OR AN AV22 KIT.

Both include additional fittings and a 24" tubing to connect to a pressure control valve.

ADDITIONAL COMPONENTS REQUIRED

- Shallow Well Package: Includes shallow well adapter, nozzle, venturi (diffuser), gasket, bolts and pipe plugs OR
- Deep Well Package: Choose either a twin pipe or packer style.
 - Twin pipe includes jet body, nozzle, venturi (diffuser) and foot valve.
 - Packer includes packer body, nozzle, venturi (diffuser), and built-in check valve.

NOTE: Packer systems also require a packer adapter on the wellhead.

Deep well systems require a pressure control valve.

NOTE: YOU MUST HAVE A JDW OR AV22 KIT TO MAKE THE PRESSURE SWITCH CONNECTION.

Pressure tank required on all systems.

SHALLOW WELL PERFORMANCE RATINGS

HP/Model	½ HP - J5					½ HP - J5					¾ HP - J7					1 HP - J10					1½ HP - J15					
Shallow Well Package	FH5					FH5H (High Pressure Model)					FH7					FH10					FH15					
Adapter	4K62																									
Nozzle	AN017					AN019					AN018					AN018					AN022					
Venturi	AD3731					AD3528					AD3536					AD3538					AD3542					
Total Suction Lift (feet)	Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					
	20	30	40	50	Max. Shut off (PSI)	20	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)
	Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute					
5	17.5	16.5	10.2	5.0	63	11.5	11.3	11.0	7.7	4.8	83	21.3	18.3	12.5	6.6	70	24.8	24.4	16.6	9.9	74	26.6	26.3	25.0	15.6	80
10	15.7	14.4	9.2	4.3	61	10.3	10.0	9.6	7.0	4.2	81	18.8	17.3	11.3	5.0	68	22.9	22.2	15.8	8.6	72	24.7	24.3	22.6	13.9	77
15	13.7	12.5	8.0	3.6	59	8.8	8.6	8.3	6.3	3.7	79	16.4	15.5	9.6	3.7	66	19.8	19.5	13.8	6.9	70	21.6	21.5	20.4	12.9	75
20	11.5	10.4	7.1	2.3	57	7.0	7.0	6.8	5.8	3.2	76	13.6	13.2	8.3	2.0	63	16.6	16.6	12.2	5.6	67	18.1	18.0	17.6	12.0	73
25	8.7	8.6	6.2	1.3	54	5.3	5.2	5.2	5.0	2.8	73	10.0	9.9	6.4	1.0	59	12.5	12.4	10.4	3.6	65	14.0	14.0	14.0	10.1	71

TWIN PIPE PERFORMANCE RATINGS

HP/Model	½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15				
Well Casing min. I.D.	4		4½		4		4½		4		4½		4½				
Pressure	1		1½		1		1½		1		1½		1½				
Suction Pipe Size (in.)	1¼		1½		1¼		1½		1¼		1½		1½				
Jet Assembly Package ①	FT4B-13	FT4B-31	FT4B-08	FT5B-14	FT4B-14	FT4B-34	FT4B-18	FT5B-47	FT5B-48	FT4B-44	FT4B-43	FT4B-18	FT5B-49	FT5B-11	FT5B-12	FT5B-11	
Jet Body (only)	AT4B			AT5B	AT4B			AT5B	AT4B			AT5B	AT5B				
Nozzle	AN017	AN016	AN015	AN018	AN017	AN016	AN016	AN018	AN017	AN017	AN017	AN016	AN019	AN018	AN019	AN018	
Venturi	AD726	AD723	AD720	AD724	AD729	AD725	AD722	AD730	AD725	AD730	AD727	AD722	AD732	AD727	AD734	AD727	
Control Valve Setting (PSI) ②	30	30	30	30	28	29	30	28	30	31	33	35	30	32	35	40	
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting															
Depth to Jet Assembly (based on submergence of 5 feet)	30	13.0	11.0			15.8			16.6		17.0			19.3		21.2	
	40	11.8	9.0			15.7			16.0		16.6			18.0		20.0	
	50		7.6		6.9	13.2			15.0		14.4			16.0		16.1	
	60		7.0	5.2	6.4	10.2			13.0		11.5	11.2		14.3		15.0	
	70			4.7	5.6			8.2	11.0	10.0		9.3		12.6		14.0	11.2
	80			3.8	4.8			6.5		8.6		7.3	6.2	10.0	10.0		10.6
	90			3.1	4.1			5.0	5.0	7.3			6.1		8.7		9.0
	100								4.4	6.0			5.4		7.0		7.6
	110								3.5	5.0			4.5		5.7		6.2
	120														4.5		5.2
	130																4.0
	140																2.8
	150																1.5
	160																
170																	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

PACKER SYSTEM PERFORMANCE RATINGS

HP/Model	½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15					
Well Casing	2		3		2		3		2		3		3					
Suction Pipe Size (in.)	1¼		1½		1¼		1½		1¼		1½		1½					
Jet Assembly Package ①	FP2-13	FP2-31	FP2-08	FP3-36	FP3-24	FP2-40	FP2-47	FP3-53	FP3-54	FP2-48	FP2-43	FP3-55	FP3-14	FP3-16	FP3-18	FP3-21	FP3-24	
Jet Body (only)	AP2			AP3		AP2		AP3		AP2		AP3		AP3				
Nozzle	AN017	AN016	AN015	AN021	AN018	AN015	AN015	AN018	AN017	AN016	AN016	AN019	AN018	AN019	AN021	AN023	AN018	
Venturi	AD726	AD723	AD720	AD730	AD724	AD727	AD723	AD730	AD725	AD729	AD725	AD732	AD727	AD735	AD723	AD731	AD724	
Control Valve Setting (PSI) ②	30	30	30	30	30	30	32	27	30	35	36	28	32	34	34	34	39	
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting																
Depth to Jet Assembly (based on submergence of 5 feet)	30	11.9	9.5		13.1		13.8		16.8		16.7		19.3		24.4			
	40	10.6	7.9		12.6		13.5		16.8		14.6		19.3		23.1			
	50		7.6		10.7	6.9	11.5		15.3		13.5		18.0		20.2			
	60		6.7	4.8	8.8	6.5	9.0	7.8	13.5		11.0	9.2	15.3		16.9	15.0		
	70			4.3	7.3	5.6		7.1	11.5	9.8		9.0	12.7			14.4		
	80			3.5		4.8		5.1		8.6		7.3	10.2	10.3		12.9		
	90							4.3		7.3		5.6		8.8		10.9	10.3	
	100									6.2		4.2		7.2			9.6	7.3
	110									5.0				5.8			8.2	6.5
	120													4.5			6.9	5.8
	130																5.8	5.0
	140																4.7	4.5
	150																3.4	4.0
	160																	3.3
170																	2.8	

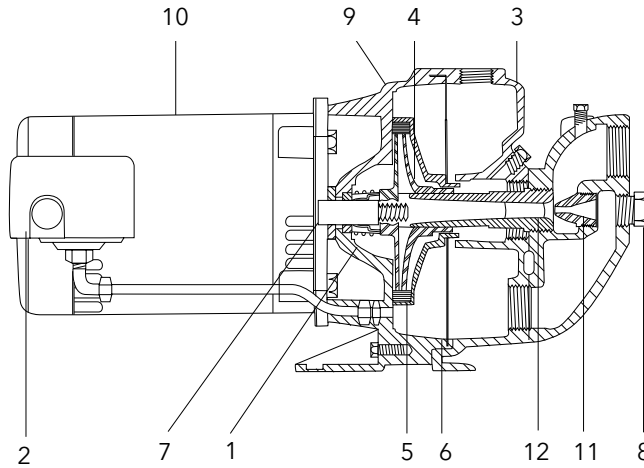
NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.

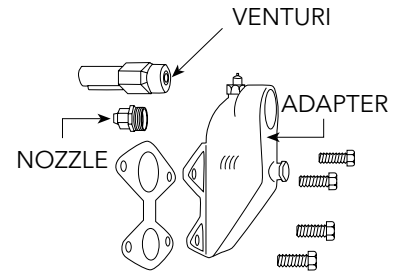
② Same as above

COMPONENTS

Item No.	Description
1	Mechanical seal
2	Pressure switch
3	Casing
4	Impeller
5	Diffuser (Guidevane)
6	Diaphragm
7	Stainless steel shaft
8	Nozzle clean-out plug
9	Motor adapter
10	Motor
11	Nozzle
12	Venturi

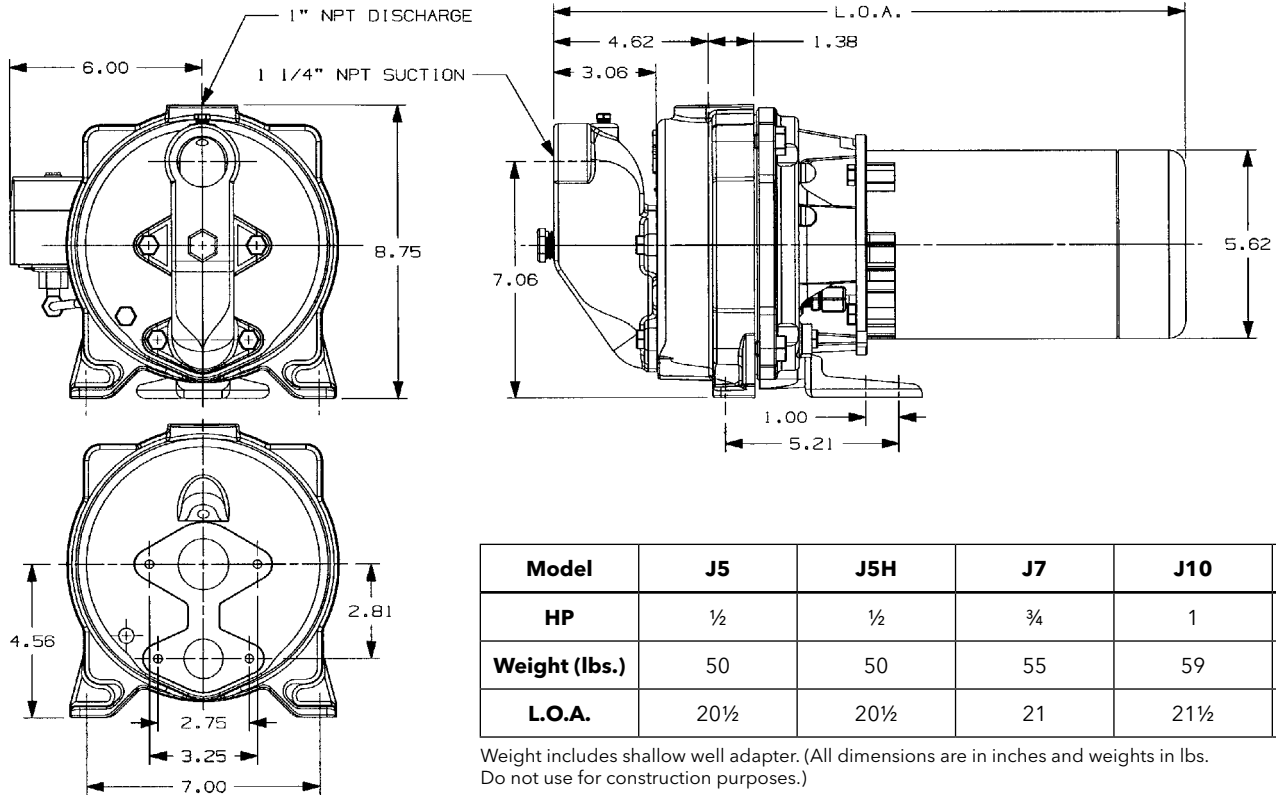


Shallow Well Model



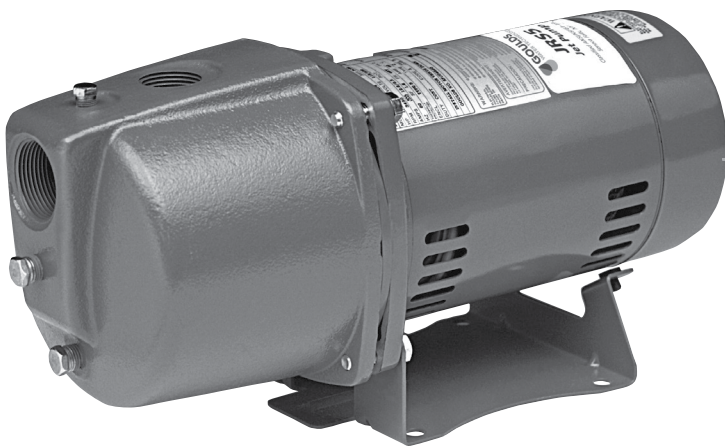
Shallow Well Package

DIMENSIONS AND WEIGHTS



Model	J5	J5H	J7	J10	J15
HP	1/2	1/2	3/4	1	1 1/2
Weight (lbs.)	50	50	55	59	68
L.O.A.	20 1/2	20 1/2	21	21 1/2	24

Weight includes shallow well adapter. (All dimensions are in inches and weights in lbs. Do not use for construction purposes.)



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DRINKING WATER
NSF/ANSI 61 & 372

JRS JRS5, JRS5H, JRS7 and JRS10

SHALLOW WELL JET PUMPS - 1/2, 3/4 AND 1 HP (60 HZ)

FEATURES

Compact: Design has an integral shallow well jet built into the casing, which eliminates the need for a separate shallow well adapter.

Serviceable:

- Back pullout design allows disassembly of pump for service without disturbing piping.
- Two compartment motor for easy access to motor wiring and replaceable components.
- Nozzle clean out plug in pump case.
- Corrosion resistant, engineered plastic tubing and fittings are easily removed for cleaning. Premium O-ring design fittings need only be hand tight to seal.
- O-ring casing seal

Drain Plug: For ease of winterizing and maintenance.

Seal Housing: Engineered composite. Corrosion and abrasion resistant.

Impeller: F.D.A. compliant, glass filled engineered composite. Corrosion and abrasion resistant.

Diffuser (Guidevane): F.D.A. compliant, injection molded, food grade, glass filled engineered composite for durability and abrasion resistance.

Tubing and Fittings: F.D.A. compliant engineered plastic is corrosion and U.V. resistant.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Corrosion Resistant: Electro-coat paint process is applied inside and out, then baked on.

Excellent Air Handling Ability: After initial priming the pump has the ability to reprime itself even when air gets into the system. Pumping resumes once the water level rises above the foot valve.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Cottages
- Booster service

SPECIFICATIONS

Pump:

- Pipe connections: 1¼" suction and 1" discharge
- Pressure switch: AS4 preset (30-50 PSI)
- EPDM elastomers NSF approved

Motor:

- NEMA service factors
- 60 Hz
- ½ - 1 HP, 115/230 V capacitor start
- Single phase
- 3500 RPM
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end

Maximum temperature: 140°F.

SYSTEM COMPONENTS

- **Basic Pump Unit:** Includes pump with integral shallow well jet (nozzle and venturi), motor, pressure switch and tubing.

AGENCY LISTINGS



Canadian Standards Association
LR38549



DRINKING WATER
NSF/ANSI 61 & 372

PERFORMANCE RATINGS - SHALLOW WELL

HP/Order No.	½ HP - JRS5					¾ HP - JRS7				1 HP - JRS10				
Nozzle	AN018					AN018				AN018				
Venturi	AD3330					AD3336				AD3339				
Total Suction Lift (feet)	Discharge Pressure - PSI					Discharge Pressure - PSI				Discharge Pressure - PSI				
	20	30	40	50	Max. Shut-off (PSI)	30	40	50	Max. Shut-off (PSI)	30	40	50	60	Max. Shut-off (PSI)
	Gallons per minute					Gallons per minute				Gallons per minute				
5	14.1	13.3	10.5	5.8	64	22.5	17.9	12.4	69	27.0	22.4	15.7	9.6	72
10	12.4	12.0	9.2	4.2	59	20.3	16.3	11.5	65	24.5	20.5	14.8	7.5	69
15	10.5	10.0	8.0	2.4	56	17.8	15.3	9.0	63	21.2	19.2	12.6	5.1	66
20	8.6	8.5	6.6	1.2	53	14.8	13.6	7.3	61	17.6	16.8	11.1	3.3	63
25	6.7	6.5	5.0	0.6	51	11.5	10.8	5.2	58	13.4	13.0	8.7	-	61

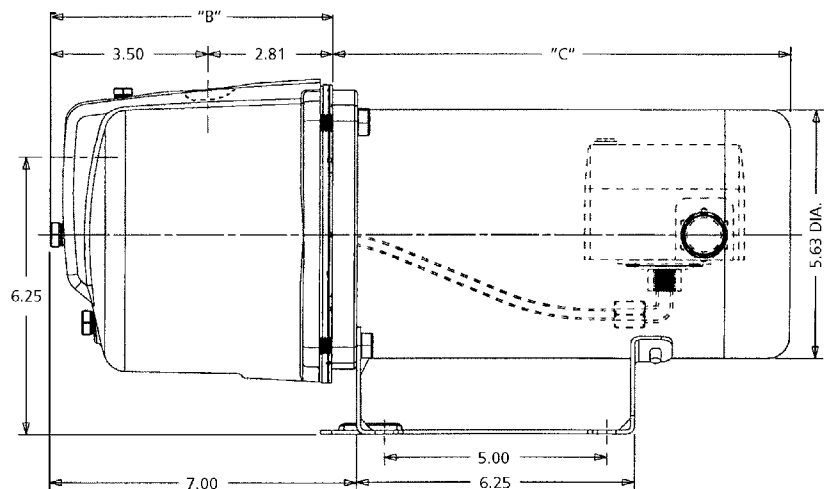
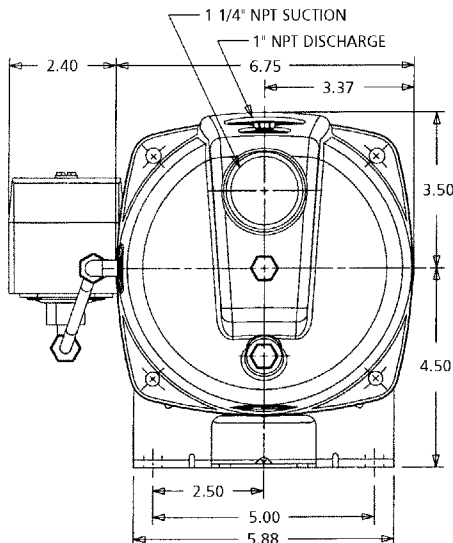
PERFORMANCE RATINGS - SHALLOW WELL, HIGH PRESSURE

HP/Order No.	½ HP - JRS5H							
Nozzle	AN020							
Venturi	AD3325							
Total Suction Lift (feet)	Discharge Pressure - PSI							
	20	30	40	50	60	70	80	Max. Shut-off (PSI)
	Gallons per minute							
5	6.7	6.4	6.2	5.8	4.2	2.5	0.8	84
10	5.8	5.6	5.3	5.1	3.7	2.0	NA	82
15	4.8	4.7	4.6	4.5	3.3	1.5	NA	79
20	4.0	3.8	3.7	3.6	3.1	1.3	NA	75
25	3.0	2.9	2.9	2.8	2.3	0.8	NA	74

DIMENSIONS AND WEIGHTS

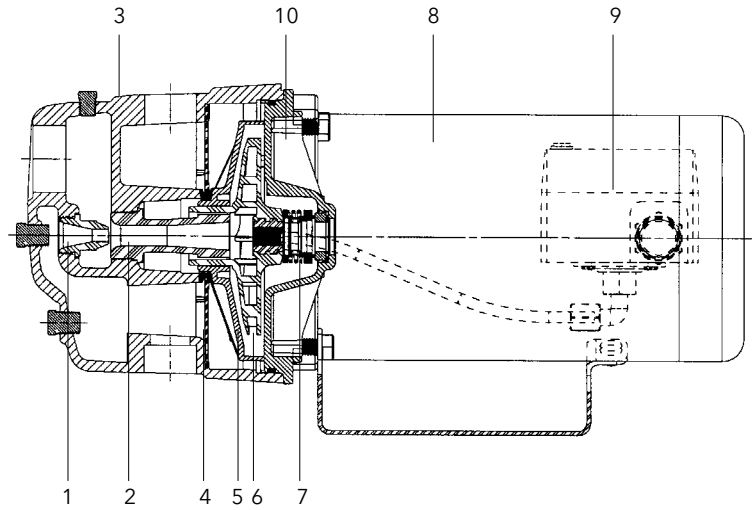
Order No.	HP	(Inches)				Wt. (lbs.)
		"C" Max.	"B" Max.	Width	Height	
JRS5(H)	½	10.81	6.31	9.15	8.0	37
JRS7	¾	11.56				42
JRS10	1	11.81				47

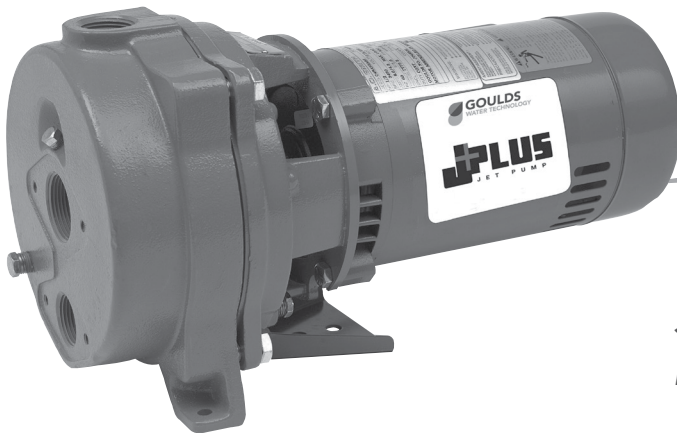
Do not use for construction purposes.



COMPONENTS

Item No.	Description
1	Nozzle
2	Venturi
3	Cast Iron Casing
4	Separator plate
5	Diffuser (Guidevane)
6	Impeller
7	Mechanical seal
8	Motor
9	Pressure switch
10	Seal housing





NOW NSF LISTED!!

*Still Built
in the USA...*



DRINKING WATER
NSF/ANSI 61 & 372

J+ J5, J7, J10 AND J15

CONVERTIBLE JET PUMPS ½, ¾, 1 AND 1½ HP - 60 HZ

FEATURES

Convertible: May be used on shallow or deep well applications using appropriate Goulds Water Technology fittings.

Serviceable:

- Back pullout design for service without disturbing piping.
- Two compartment motor for access to wiring and replaceable components.
- Nozzle clean out plug in shallow well adapter.
- Corrosion resistant, plastic tubing and fittings are easily removed for cleaning. Premium O-ring design fittings need only be hand tight to seal.

Impeller: F.D.A. compliant, glass filled engineered composite. Corrosion and abrasion resistant.

Diffuser (Guidevane): Bolt down glass filled engineered composite diffuser has stainless wear ring for extended performance in abrasive conditions.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Corrosion Resistant: Electro-coat paint is baked on.

Protected Mechanical Seal: Diaphragm retains water in the casing to ensure the mechanical seal can never run dry.

Excellent Air Handling Ability: After initial priming the pump has the ability to re-prime itself.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

AGENCY LISTINGS



MODEL INFORMATION

CSA Listed Order No.	HP
J5	½
J7	¾
J10	1
J15	1½

APPLICATIONS

Specifically designed for:

- Homes • Farms • Cottages • Booster service

SPECIFICATIONS

Pump:

- Pipe connections: 1¼" NPT suction, 1" NPT discharge, 1" NPT drive (pressure)
- Pressure switch: AS4 preset at 30-50 PSI

Motor:

- NEMA standard
- 60 Hz, 3500 RPM, single phase
- ½ - 1½ HP, 115/230 V capacitor start
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end
- UL778 listed

Maximum temperature: 140°F

SYSTEM COMPONENTS

- Basic Pump Unit: Includes pump and motor, pressure gauge and bushing, pressure switch with tubing and fittings.

NOTE: THE TUBING COMES CONNECTED FOR SHALLOW WELL USE. A DEEP WELL SET UP REQUIRES A JDW FITTINGS PACKAGE OR AN AV22 KIT.

Both include additional fittings and a 24" tubing to connect to a pressure control valve.

ADDITIONAL COMPONENTS REQUIRED

- Shallow Well Package: Includes shallow well adapter, nozzle, venturi (diffuser), gasket, bolts and pipe plugs OR
- Deep Well Package: Choose either a twin pipe or packer style.
 - Twin pipe includes jet body, nozzle, venturi (diffuser) and foot valve.
 - Packer includes packer body, nozzle, venturi (diffuser), and built-in check valve.

NOTE: Packer systems also require a packer adapter on the wellhead.

Deep well systems require a pressure control valve.

NOTE: YOU MUST HAVE A JDW OR AV22 KIT TO MAKE THE PRESSURE SWITCH CONNECTION.

Pressure tank required on all systems.

SHALLOW WELL PERFORMANCE RATINGS

HP/Model	½ HP - J5					½ HP - J5					¾ HP - J7					1 HP - J10					1½ HP - J15					
Shallow Well Package	FH5					FH5H (High Pressure Model)					FH7					FH10					FH15					
Adapter	4K62																									
Nozzle	AN017					AN019					AN018					AN018					AN022					
Venturi	AD3731					AD3528					AD3536					AD3538					AD3542					
Total Suction Lift (feet)	Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					
	20	30	40	50	Max. Shut off (PSI)	20	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)
	Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute					
5	17.5	16.5	10.2	5.0	63	11.5	11.3	11.0	7.7	4.8	83	21.3	18.3	12.5	6.6	70	24.8	24.4	16.6	9.9	74	26.6	26.3	25.0	15.6	80
10	15.7	14.4	9.2	4.3	61	10.3	10.0	9.6	7.0	4.2	81	18.8	17.3	11.3	5.0	68	22.9	22.2	15.8	8.6	72	24.7	24.3	22.6	13.9	77
15	13.7	12.5	8.0	3.6	59	8.8	8.6	8.3	6.3	3.7	79	16.4	15.5	9.6	3.7	66	19.8	19.5	13.8	6.9	70	21.6	21.5	20.4	12.9	75
20	11.5	10.4	7.1	2.3	57	7.0	7.0	6.8	5.8	3.2	76	13.6	13.2	8.3	2.0	63	16.6	16.6	12.2	5.6	67	18.1	18.0	17.6	12.0	73
25	8.7	8.6	6.2	1.3	54	5.3	5.2	5.2	5.0	2.8	73	10.0	9.9	6.4	1.0	59	12.5	12.4	10.4	3.6	65	14.0	14.0	14.0	10.1	71

TWIN PIPE PERFORMANCE RATINGS

HP/Model		½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15				
Well Casing min. I.D.		4		4½		4		4½		4		4½		4½				
Pressure	Pipe Size (in.)	1		1¼		1		1¼		1		1¼		1¼				
Suction		1¼		1½		1¼		1½		1¼		1½		1½				
Jet Assembly Package ①		FT4B-13	FT4B-31	FT4B-08	FT5B-14	FT4B-14	FT4B-34	FT4B-18	FT5B-47	FT5B-48	FT4B-44	FT4B-43	FT4B-18	FT5B-49	FT5B-11	FT5B-12	FT5B-11	
Jet Body (only)		AT4B			AT5B		AT4B			AT5B			AT4B		AT5B		AT5B	
Nozzle		AN017	AN016	AN015	AN018	AN017	AN016	AN016	AN018	AN017	AN017	AN016	AN019	AN018	AN019	AN018		
Venturi		AD726	AD723	AD720	AD724	AD729	AD725	AD722	AD730	AD725	AD730	AD727	AD722	AD732	AD727	AD734	AD727	
Control Valve Setting (PSI) ②		30	30	30	30	28	29	30	28	30	31	33	35	30	32	35	40	
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting																
Depth to Jet Assembly (based on submergence of 5 feet)	30	13.0	11.0			15.8			16.6			17.0			19.3		21.2	
	40	11.8	9.0			15.7			16.0			16.6			18.0		20.0	
	50		7.6		6.9	13.2			15.0			14.4			16.0		16.1	
	60		7.0	5.2	6.4	10.2			13.0			11.5	11.2		14.3		15.0	
	70			4.7	5.6		8.2		11.0	10.0		9.3			12.6		14.0	11.2
	80			3.8	4.8		6.5			8.6		7.3	6.2	10.0	10.0		10.6	
	90			3.1	4.1		5.0	5.0		7.3			6.1		8.7		9.0	
	100							4.4		6.0			5.4		7.0		7.6	
	110							3.5		5.0			4.5		5.7		6.2	
	120														4.5		5.2	
	130																4.0	
	140																2.8	
	150																1.5	
	160																	
170																		

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

PACKER SYSTEM PERFORMANCE RATINGS

HP/Model		½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15				
Well Casing		2		3		2		3		2		3		3				
Suction Pipe Size (in.)		1¼		1½		1¼		1½		1¼		1½		1½				
Jet Assembly Package ①		FP2-13	FP2-31	FP2-08	FP3-36	FP3-24	FP2-40	FP2-47	FP3-53	FP3-54	FP2-48	FP2-43	FP3-55	FP3-14	FP3-16	FP3-18	FP3-21	FP3-24
Jet Body (only)		AP2			AP3		AP2		AP3		AP2		AP3		AP3			
Nozzle		AN017	AN016	AN015	AN021	AN018	AN015	AN015	AN018	AN017	AN016	AN016	AN019	AN018	AN019	AN021	AN023	AN018
Venturi		AD726	AD723	AD720	AD730	AD724	AD727	AD723	AD730	AD725	AD729	AD732	AD727	AD735	AD723	AD731	AD724	
Control Valve Setting (PSI) ②		30	30	30	30	30	30	32	27	30	35	36	28	32	34	34	34	39
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting																
Depth to Jet Assembly (based on submergence of 5 feet)	30	11.9	9.5		13.1			13.8		16.8			16.7		19.3		24.4	
	40	10.6	7.9		12.6			13.5		16.8			14.6		19.3		23.1	
	50		7.6		10.7	6.9	11.5		15.3			13.5		18.0		20.2		
	60		6.7	4.8	8.8	6.5	9.0	7.8	13.5		11.0	9.2	15.3		16.9	15.0		
	70			4.3	7.3	5.6		7.1	11.5	9.8		9.0	12.7			14.4		
	80			3.5		4.8		5.1		8.6		7.3	10.2	10.3		12.9		
	90							4.3		7.3		5.6		8.8		10.9	10.3	
	100									6.2		4.2		7.2			9.6	7.3
	110									5.0							8.2	6.5
	120													4.5			6.9	5.8
	130																5.8	5.0
	140																4.7	4.5
	150																3.4	4.0
	160																	3.3
170																	2.8	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

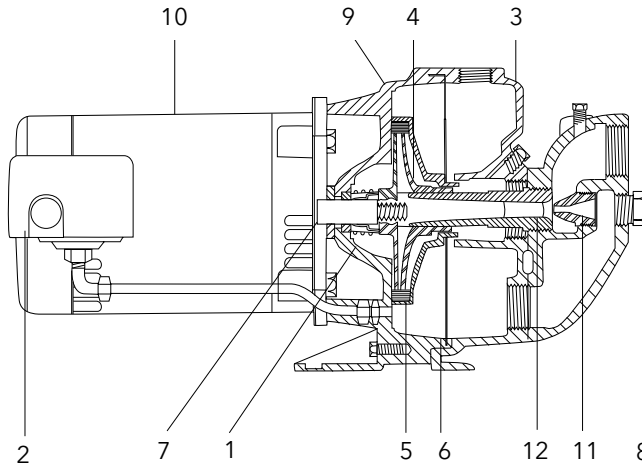
① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.

② Same as above

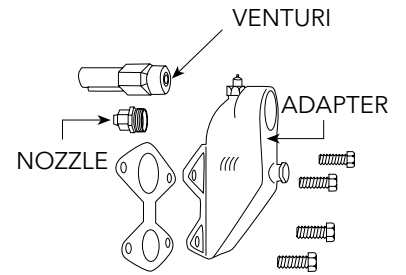
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COMPONENTS

Item No.	Description
1	Mechanical seal
2	Pressure switch
3	Casing
4	Impeller
5	Diffuser (Guidevane)
6	Diaphragm
7	Stainless steel shaft
8	Nozzle clean-out plug
9	Motor adapter
10	Motor
11	Nozzle
12	Venturi

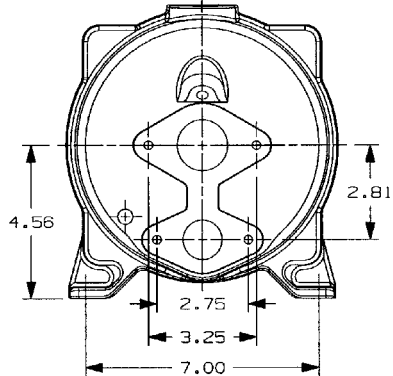
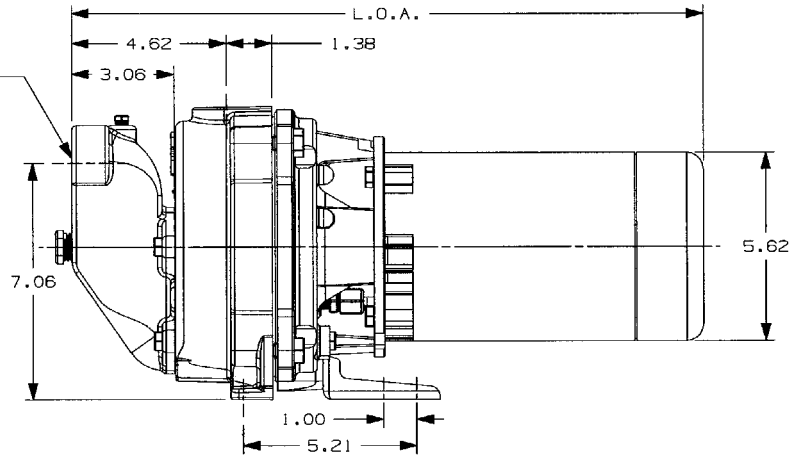
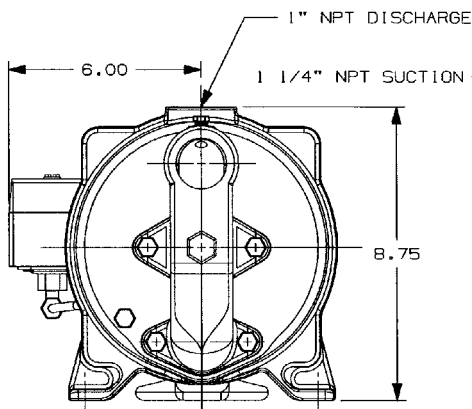


Shallow Well Model



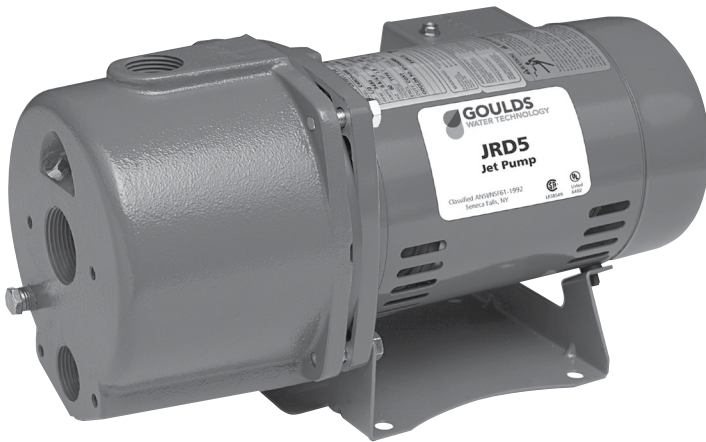
Shallow Well Package

DIMENSIONS AND WEIGHTS



Model	J5	J5H	J7	J10	J15
HP	½	½	¾	1	1½
Weight (lbs.)	50	50	55	59	68
L.O.A.	20½	20½	21	21½	24

Weight includes shallow well adapter. (All dimensions are in inches and weights in lbs. Do not use for construction purposes.)



DRINKING WATER
NSF/ANSI 61 & 372

JRD JRD5, JRD7 AND JRD10

CONVERTIBLE JET PUMPS 1/2, 3/4 AND 1 HP - 60 HZ

FEATURES

Convertible: May be used on shallow or deep well applications using appropriate Goulds Water Technology fittings.

Serviceable:

- Back pullout design allows disassembly of pump for service without disturbing piping.
- Corrosion resistant, engineered plastic tubing and fittings are easily removed for cleaning. Premium O-ring design, fittings need only be hand tight to seal.

Impeller: F.D.A. compliant, glass filled engineered composite. Corrosion and abrasion resistant.

Diffuser (Guidevane): F.D.A. compliant, injection molded, food grade, glass filled engineered composite for durability and abrasion resistance.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Corrosion Resistant: Electro-coat paint is baked on.

Excellent Air Handling Ability: After initial priming the pump has the ability to re-prime itself even when air enters the system. Pumping resumes once the water level rises above the foot valve.

Basic Pump Unit: Includes pump and motor, pressure switch with tubing and fittings.

Water system tank required on all systems.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

APPLICATIONS

Specifically designed for:

- Homes • Farms • Cottages • Booster service

SPECIFICATIONS

Pump:

- Pipe connections: 1" NPT discharge, 1¼" NPT suction, 1" NPT pressure
- Pressure switch: AS4 preset at 30-50 PSI

Motor:

- Standard NEMA service factors
- 60 Hz, 3500 RPM, single phase
- ½ - 1 HP 115/230 V capacitor start
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end

Maximum temperature: 140°F

ADDITIONAL COMPONENTS REQUIRED

- **Deep Well Package:** Choose either a twin pipe or packer style.

- Twin pipe includes jet body, nozzle, venturi and foot valve.

- Packer includes packer body, nozzle, venturi and built-in check valve.

NOTE: Packer systems also require an AWJ2 packer adapter on the wellhead.

- Deep well systems require a pressure control valve.

NOTE: You must have JDW or AV22KIT to make the pressure switch connection.

AGENCY LISTINGS



Canadian Standards Association
File #LR38549



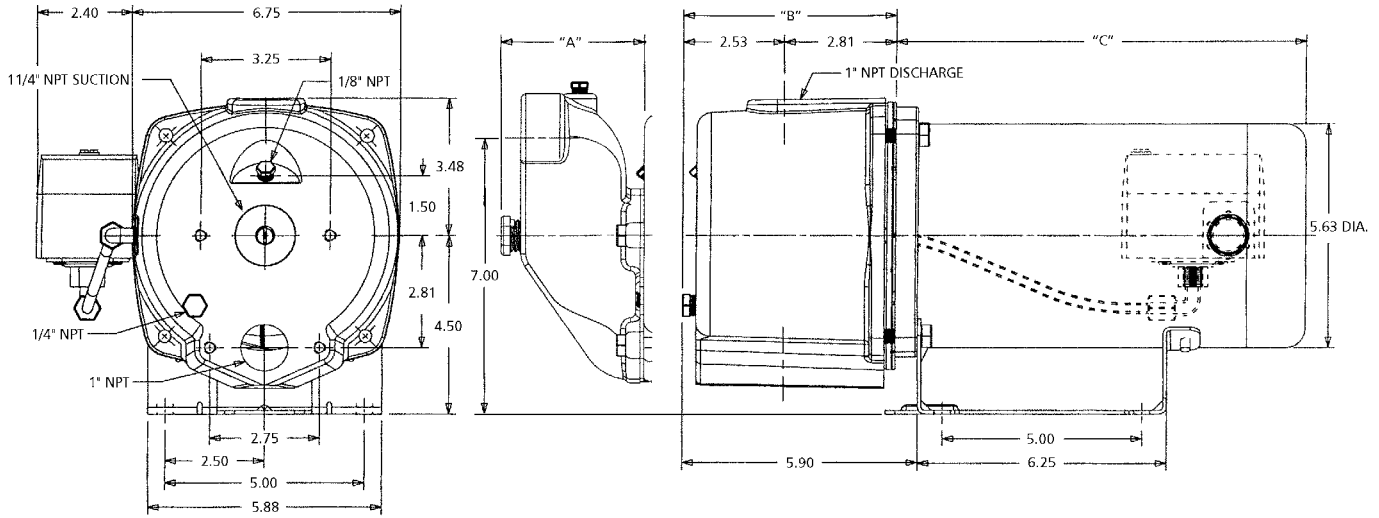
DRINKING WATER
NSF/ANSI 61 & 372

PERFORMANCE RATINGS - SHALLOW WELL

Require pump and shallow well package shown below.

HP/Order No.	½ HP - JRD5					¾ HP - JRD7				1 HP - JRD10				
Shallow Well Package (includes the components below)	FH5JRD					FH7				FH10				
Adapter	4K62					4K62				4K62				
Nozzle	AN018					AN018				AN018				
Venturi	AD3731					AD3536				AD3538				
Total Suction Lift (feet)	Discharge Pressure - PSI					Discharge Pressure - PSI				Discharge Pressure - PSI				
	20	30	40	50	Max. Shut-off (PSI)	30	40	50	Max. Shut-off (PSI)	30	40	50	60	Max. Shut-off (PSI)
	Gallons per minute					Gallons per minute				Gallons per minute				
5	12.3	12.0	9.0	4.0	63	19.0	16.5	10.5	69	22.0	21.0	15.0	8.0	72
10	11.0	10.8	7.6	3.0	62	16.0	14.5	9.0	67	18.5	18.0	12.5	6.5	70
15	9.2	9.0	6.5	2.5	60	13.5	13.0	7.0	65	16.0	15.5	11.0	5.0	68
20	7.6	7.5	5.5	1.5	57	12.0	11.5	5.5	63	13.3	13.0	9.0	3.0	65
25	5.7	5.5	4.0	0.6	55	9.0	8.7	4.0	60	9.6	9.0	7.0	1.5	63

Residential Water



DIMENSIONS AND WEIGHTS - PUMP, MOTOR AND SHALLOW WELL ADAPTER

Order No.	HP	(Inches)				Height (Inches)		Wt. (lbs.)
		Opt. SW Adapter "A"	"B"	"C" Max.	Width	Shallow Well	Deep Well	
JRD5	1/2	3.31	5.34	10.81	9.15	8.41	8.0	37
JRD7	3/4			11.56				42
JRD10	1			11.81				47

Do not use for construction purposes.

TWIN PIPE PERFORMANCE RATINGS

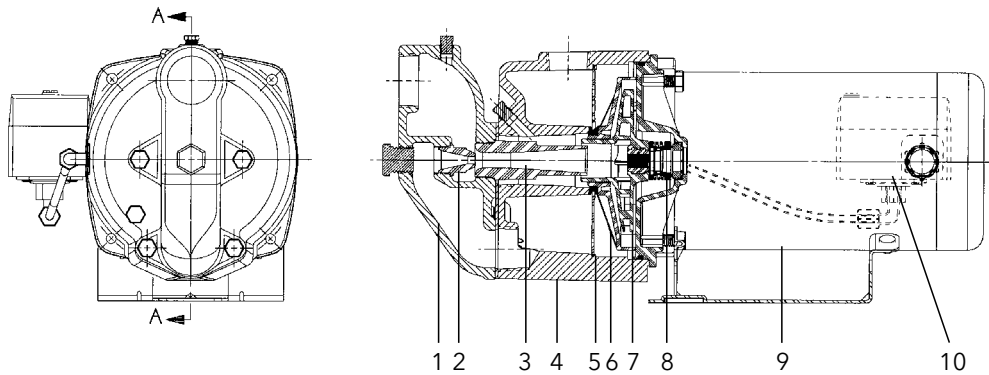
HP/Order No.	1/2 HP - JRD5				3/4 HP - JRD7				1 HP - JRD10						
Well Casing Min. I.D. (in.)	3	4	4 1/2	4	4 1/2	4	4 1/2	4	4 1/2	4	4 1/2	4	4 1/2		
Pressure Suction Pipe Size (in.)	3/4	1	1 1/4	1	1 1/4	1	1 1/4	1	1 1/4	1	1 1/4	1	1 1/4		
	1	1 1/4	1 1/2	1 1/4	1 1/2	1 1/4	1 1/2	1 1/4	1 1/2	1 1/4	1 1/2	1 1/4	1 1/2		
Jet Assembly Package	FT3B-09	FT4B-13	FT4B-31	FT4B-08	FT5B-14	FT4B-14	FT4B-34	FT4B-18	FT5B-47	FT5B-48	FT4B-44	FT4B-43	FT4B-18	FT5B-49	FT5B-11
Jet Body (Only)	AT3B	AT4B		AT5B	AT4B		AT5B	AT4B		AT5B	AT4B		AT5B		
Nozzle	AN015	AN017	AN016	AN015	AN018	AN017	AN016	AN018	AN017		AN016	AN019	AN018		
Venturi	AD722	AD726	AD723	AD720	AD724	AD729	AD725	AD722	AD730	AD725	AD730	AD727	AD722	AD732	AD727
Control Valve Setting (PSI)	30								31	33	35	30	32		
Feet	Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting														
Depth to Jet Assembly (Based on Submergence of 5 Feet)	30	6.4	11.7	10.0			13.3			14.3		14.5		16.3	
	40	5.7	10.7	8.0			13.2			14.2		14.3		16.3	
	50	4.3	9.3	6.8			11.3			13.0		12.3		15.3	
	60			6.2	4.7		8.8	8.0		11.5		9.8	9.5	13.0	
	70			5.0	4.2	5.0		7.0		9.8	8.3	8.0		10.8	
	80				3.3	4.3		5.7		7.3		6.3	5.3	8.7	8.8
	90				2.8	3.7		4.2	4.5		6.3		5.2		7.5
	100								3.7		5.3		4.7		6.2
	110								3.0		4.3		3.8		4.8
	120														3.8

② Jet Assembly Package includes: Jet Body, Venturi, Nozzle, Foot Valve.
 Important: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

PACKER SYSTEM PERFORMANCE RATINGS

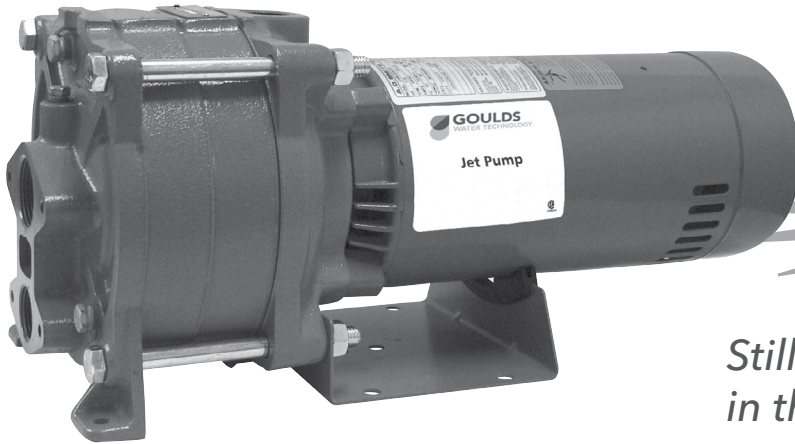
HP/Order No.	½ HP - JRD5			¾ HP - JRD7		1 HP - JRD10	
Well Casing	2						
Suction Pipe Size (in.)	1¼						
① Jet Assembly Package	FP2-13	FP2-31	FP2-08	FP2-40	FP2-47	FP2-48	FP2-43
Jet Body (Only)	AP2			AP2		AP2	
Nozzle	AN017	AN016	AN015	AN015		AN016	
Venturi	AD726	AD723	AD720	AD727	AD723	AD729	AD725
Control Valve Setting (PSI)	30			30	32	35	36
Feet	Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting						
Depth to Jet Assembly (Based on Submergence of 5 Feet)	30	10.7	8.5		11.8		14.2
	40	9.5	7.3		11.5		12.5
	50	8.3	6.7		9.8		11.5
	60		5.8	4.3	7.7	6.7	9.3
	70			3.8		6.0	7.7
	80			3.2		4.3	6.3
	90					3.7	4.8
	100						3.7
	110						
	120						

① Jet Assembly Package includes: Jet Body, Venturi, Nozzle, Built-in Check Valve, Leather Crimps, Spacer and Fitting.
 Important: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.



COMPONENTS

Item No.	Description
1	Shallow well adapter
2	Nozzle
3	Venturi
4	Cast iron casing
5	Separator plate
6	Diffuser (Guidevane)
7	Impeller
8	Mechanical seal
9	Motor
10	Pressure switch



Basic Convertible Pump

NOW NSF LISTED!!

*Still Built
in the USA...*



**DRINKING WATER
NSF/ANSI 61 & 372**

HSJ

MULTI-STAGE CONVERTIBLE JET PUMPS - 60 HZ



FEATURES

High Capacity and Pressure: Specifically designed to deliver high capacities at greater pressures.

Stainless Steel Pump Shaft: Hex design provides positive drive for impellers and eliminates clearance adjustments.

Easy to Service: Can be taken apart for service by removing four bolts.

Corrosion Resistant: Glass filled thermoplastic impellers. Stainless steel wear rings and coverplates. Electrocoat paint process applied inside and out and then baked on.

Powered for Continuous Operation: Pump is designed for continuous operation. All ratings are within the motor manufacturer's recommended working limits.

Convertible: Designed for use on shallow or deep well applications using appropriate Goulds Water Technology fittings. See the performance charts on the following pages for fitting order numbers.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

AGENCY LISTINGS



Canadian Standards Association



Underwriters Laboratories[®]



DRINKING WATER
NSF/ANSI 61 & 372

APPLICATIONS

Specifically designed for:

- Homes, Farms, Cottages, Booster service

SPECIFICATIONS

Pump

- Pipe connections:
1 ¼" NPT suction, 1" NPT discharge,
1" NPT drive (pressure).
- Pressure switch:
¾ - 1 ½ HP, AS4; 2 HP, AS10,
both preset (30-50 PSI).

Motor

- NEMA standard
- ¾-1 ½ HP - 115/230 V
- 2 HP - 230 V only
- 60 Hz, capacitor start
- Single phase, 3500 RPM
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end

Maximum temperature: 140°F

SYSTEM COMPONENTS

- Basic Pump Unit: Includes pump, motor, pressure switch, tubing, fittings, pressure gauge and bushing.
- Shallow Well Package: Includes adapter, nozzle, venturi, bolts, gasket and pipe plugs.
- Deep Well Jet Assembly Package: Twin Pipe includes: jet body, nozzle, venturi and foot valve. Packer includes: jet body with built-in check valve, nozzle and venturi.

Additional Accessories Required:

- Packer System - well casing adapter AWJ2 (2") and turned coupling 64655.
- For Deep Well Systems - a pressure control valve such as an AV22KIT or AV22 plus a JDW tubing kit.



AV22

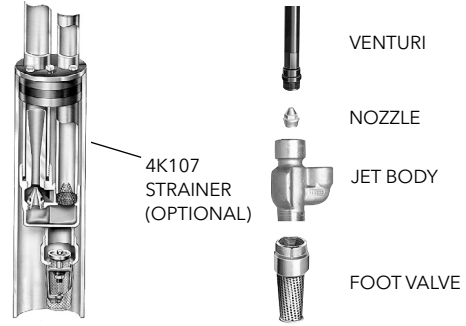
MODEL INFORMATION

CSA Listed Order No.	U.L. Listed (Indoor use) ① Order No.	HP	Stages
HSJ07N	HSJ07NUL	¾	2
HSJ10N	HSJ10NUL	1	2
HSJ15N	HSJ15NUL	1 ½	3
HSJ20N	HSJ20NUL	2	3

PERFORMANCE RATINGS - SHALLOW WELL SYSTEM

HP/Model	¾ HP - HSJ07N					1 HP - HSJ10N					1½ HP - HSJ15N						2 HP - HSJ20N							
Shallow Well Package	FHSJ07					FHSJ10					FHSJ15						FHSJ20							
Adapter	4K62										4K62													
Nozzle	ANO12					ANO12					ANO12						ANO12							
Venturi	AD3432					AD3437					AD3439						AD3448							
Total Suction Lift (feet)	Discharge Pressure - PSI										Discharge Pressure - PSI													
	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	70	80	Max. Shut off (PSI)	30	40	50	60	70	80	Max. Shut off (PSI)
	Gallons per minute					Gallons per minute					Gallons per minute						Gallons per minute							
5'	18.5	18.3	14.6	8.0	76	22.8	22.7	19.8	12.2	79	22.8	22.8	22.8	21.7	17.0	11.2	104	28.2	28.0	25.8	22.7	21.2	16.2	105
10'	15.9	15.8	12.7	6.7	74	20.7	20.3	17.5	10.3	77	20.7	20.7	20.7	20.0	16.3	9.0	102	24.8	24.7	24.2	23.3	18.7	13.7	103
15'	13.8	13.8	11.0	5.6	71	18.0	17.8	15.2	9.2	74	18.0	18.0	18.0	17.7	14.2	-	99	21.3	21.3	20.8	20.7	18.7	13.7	101
20'	13.8	11.3	9.2	-	68	14.5	14.3	12.8	-	71	15.0	15.0	15.0	15.0	12.0	-	97	18.0	17.7	17.5	17.0	16.2	10.8	98
25'	8.6	8.6	5.7	-	65	11.5	11.4	8.3	-	68	11.2	11.2	11.2	11.0	-	-	95	12.3	12.0	11.9	11.7	10.5	-	95

Deep Well Twin Pipe System



PERFORMANCE RATINGS – TWIN PIPE SYSTEMS - 4" WELL

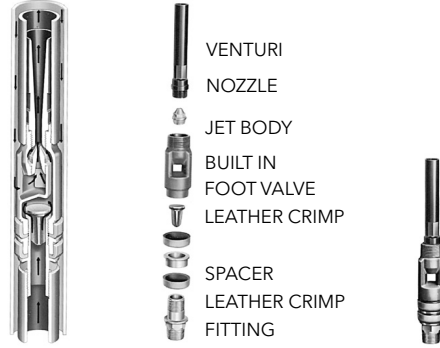
HP/Model		¾ HP - HSJ07N			1 HP - HSJ10N			1½ HP - HSJ15N			2 HP - HSJ20N		
Jet Assembly Package ①		FT4B-48	FT4B-47	FT4B-06	FT4B-47	FT4B-24	FT4B-08	FT4B-45	FT4B-30	FT4B-29	FT4B-45	FT4B-30	FT4B-29
Pressure Suction	Pipe Size (in.)	1"											
		1¼"											
Nozzle		AN012	AN013	AN014	AN013	AN015		AN013					
Venturi		AD727	AD724	AD720	AD724		AD720	AD726	AD722	AD719	AD726	AD722	AD719
Pressure Control Valve Setting (PSI) ②		37	40		43		62	65	67	76	78	80	
Depth to Jet Assembly (based on submergence of 5 feet)	Feet	Gallons Per Minute (GPM) 30-50 Pressure Switch Setting											
	30	15.1			16.0			13.0			13.0		
	40	13.5			15.2			13.0			13.0		
	50	11.8			14.7			13.0			13.0		
	60	10.7			13.7			12.8			12.8		
	70	8.5	9.0		11.7	11.7		12.2			12.8		
	80		7.5			10.5		10.6			12.0		
	90		6.2	6.2		9.0		9.2	9.3		11.3		
	100			5.8		7.5			9.0		9.5	9.5	
	110			5.0		6.3	6.0		8.0			9.4	
	120			4.6			5.0		7.0			8.5	
	130			4.0			4.3		6.2	5.8		7.7	
	140						4.0			5.6		6.8	
	150						3.5			5.2		6.0	5.7
	160									4.7			5.5
	170									4.2			5.3
	180									3.7			5.0
190									3.2			4.5	
200												3.8	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

Deep Well Packer System

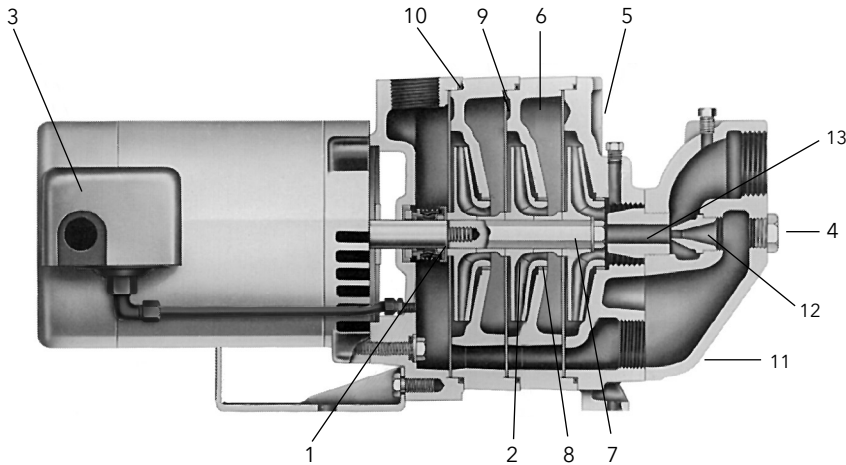


PERFORMANCE RATINGS – PACKER SYSTEM

HP/Model	¾ HP - HSJ07N					1 HP - HSJ10N					1½ HP - HSJ15N					2 HP - HSJ20N						
Well Casing (in.)	2		3			2		3			2		3			2		3				
Suction Pipe Size (in.)	1¼		1½			1¼		1½			1¼		1½			1¼		1½				
Jet Assembly Package ①	FP2-51	FP2-50	FP2-06	FP3-40	FP3-42	FP2-50	FP2-07	FP2-08	FP3-40	FP3-49	FP2-49	FP2-30	FP2-29	FP3-47	FP3-46	FP3-34	FP2-49	FP2-30	FP2-29	FP3-47	FP3-46	FP3-34
Jet Body (Only)	AP2		AP3			AP2		AP3			AP2		AP3			AP2		AP3				
Nozzle	AN012	AN013	AN014	AN013	AN014	AN013	AN014	AN015	AN013	AN015	AN013											
Venturi	AD727	AD724	AD720	AD724	AD722	AD724	AD720	AD724	AD723	AD726	AD722	AD719	AD727	AD722	AD719	AD726	AD722	AD719	AD727	AD722	AD719	
Pressure ② Control Valve Setting (PSI)	40		36	40	45	40	43	62	65	67	62	64	66	76	78	80	75	78	80			
Depth to Jet Assembly (based on submergence of 5 feet)	Feet	Gallons Per Minute (GPM) 30-50 Pressure Switch Setting																				
	30	14.9			15.3		15.8			16.3		13.0			14.7			13.0			14.7	
	40	13.1			13.5		14.0			16.0		13.0			14.5			13.0			14.7	
	50	11.6			12.5		12.5			15.5		12.9			14.3			13.0			14.7	
	60	10.5			12.2		11.2	11.3		14.2		12.7			14.3			13.0			14.5	
	70	8.4	8.8		11.8			10.0		12.5		11.8			14.2			12.8			14.5	
	80		7.6		10.2	8.5		8.7		10.0		10.2			12.2			11.8			13.5	
	90		6.0	6.2		7.8		7.3		8.3	9.0	8.3	9.1		10.0			10.5			12.7	
	100			5.7		6.9		5.5			8.2		8.3		7.8	9.1		8.5	9.1		10.5	
	110			4.3		6.0		4.2	4.8		7.3		7.3			8.8			8.9		8.3	9.1
	120			3.8		5.3			4.0		6.7		6.2			7.6			7.9			9.1
	130			2.2		4.5			3.5		5.8		5.4	5.6		6.9			6.9			8.8
	140								3.0		4.8			5.3		6.2			6.0			8.2
	150								2.4		4.1			4.8		5.4	5.6		5.2	5.6		7.3
	160													4.3			5.5			5.4		6.5
	170													3.6			5.0			4.9		5.7
	180													3.0			4.7			4.3		5.6
	190																4.3			3.8		5.5
	200																3.8			3.3		5.3
	210																3.3					4.8
220																					4.5	
230																					4.0	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

- ① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.
- ② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.



Shallow Well Model

COMPONENTS

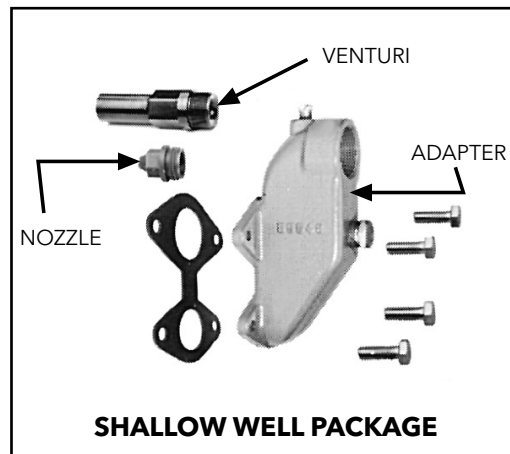
Item #	Description	Material
1	Mechanical Seal	Carbon/Ceramic/ Buna/SS
2	Impeller	Glass Filled Engineered Composite
3	Pressure Switch	Various
4	Plug	Carbon Steel
5	Casing	Cast Iron
6	Intermediate Stage	Cast Iron
7	Hex Shaft Extension	Stainless Steel
8	Wear Ring	Stainless Steel
9	Cover Plate	Stainless Steel
10	O-Rings	Buna-N
11	Shallow Well Adapter	Cast Iron
12	Nozzle	Delrin
13	Venturi	Polypropylene
14	Motor Adapter	Cast Iron

DIMENSIONS AND WEIGHTS

HP/Model	¾-HSJ07N	1-HSJ10N	1½-HSJ15N	2-HSJ20N
Weight	53	58	72	75
Length ^①	15	16	17	19
Width	8	8	8	8
Height	9	9	9	9

(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

① Add 4" for shallow well adapter.





NOW NSF LISTED!!

*Still Built
in the USA...*



DRINKING WATER
NSF/ANSI 61 & 372

J05X, J05K, J05L

CONVERTIBLE PUMP / TANK PACKAGES

PUMP FEATURES

- **Serviceable:**
 - Back pullout design allows disassembly of pump for service without disturbing piping.
 - Two compartment motor for easy access to motor wiring and replaceable components.
 - Corrosion resistant, engineered plastic tubing and fittings.
- **Powered for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.
- **Excellent Air Handling Ability:** After initial priming the pump has the ability to re-prime itself even when air gets into the system. Pumping resumes once the water level rises above the foot valve.
- **NSF Listed:** The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

APPLICATIONS

Home, farm and cottage water systems and booster service.

SPECIFICATIONS

Pump:

- Pipe connections:
 - 1" NPT pressure
 - 1¼" NPT suction
 - 1" NPT discharge
- Pressure switch:
 - AS4 preset 30-50 PSI

Motor:

- NEMA service factor
- 60 Hz, 3500 RPM
- ½ HP, 115/230 V capacitor start
- Built-in overload with automatic reset
- Stainless steel shaft

TANK FEATURES

- **Maximum Working Pressure:** 100 PSI
- **Temperature Rating:** Maximum 120° F
- **Exterior Finish:** High durability exterior finish of tough, powder coat over a zinc phosphate surface treatment.
- Tanks are designed for installation indoors or where they are protected from rain, irrigation overspray, salt air and other corrosive environments. Always protect tanks from freezing.
- **Deep Drawn Steel Shells:** Provide maximum material strength.
- **Inner Shell:** Prevents diaphragm from over-expanding.
- **Heavy Duty Diaphragm:** Made of finest quality butyl rubber. Separates air and water, maintains air charge.
- **Interior Tank Lining:** Fusion bonded polymeric lining (durable polypropylene liner used on V15P). Both meet FDA requirements.
- **Maximum Working Pressure:** 100 PSI for V45MP and V60MP, 125 PSI for V15P.
- **Temperature Rating:** Maximum 120° F
- **Appliance Appearance Exterior Finish:** Two coat high performance protection system.
- **Heavy Duty Base:** Eliminates corrosion due to condensation and exposure to the elements. Made of high density polypropylene.

ADDITIONAL COMPONENTS REQUIRED

- **Shallow Well Package:** Includes shallow well adapter, nozzle, venturi (diffuser), gasket, bolts and pipe plugs
or
 - **Deep Well Package:** Choose either a twin pipe or packer style.
 - Twin pipe includes jet body, nozzle, venturi (diffuser) and foot valve.
 - Packer includes packer body, nozzle, venturi (diffuser), and built-in check valve.
- NOTE:** Packer systems also require a packer adapter on the wellhead.

AGENCY LISTINGS



DRINKING WATER
NSF/ANSI 61 & 372

ORDER INFORMATION

Model No.	HP	Replacement Pump Model No.	Tank Model	Drawdown at	
				20/40 PSI	30/50 PSI
J05X	½	J5	V15P	1.7	1.4
J05K	½	J05LT	V45MP	5.1	4.3
J05L	½	J05LT	V60MP	7.3	6.1

SHALLOW WELL PERFORMANCE RATINGS

HP/Model	½ HP - J05LT					½ HP - J05LT					
Shallow Well Package	FH5					FH5H (High Pressure Model)					
Adapter	4K62										
Nozzle	AN017					AN019					
Venturi	AD3731					AD3528					
Discharge Pressure - PSI						Discharge Pressure - PSI					
Total Suction Lift (feet)	20	30	40	50	Max. Shut off (PSI)	20	30	40	50	60	Max. Shut off (PSI)
	Gallons per minute					Gallons per minute					
5	17.5	16.5	10.2	5.0	63	11.5	11.3	11.0	7.7	4.8	83
10	15.7	14.4	9.2	4.3	61	10.3	10.0	9.6	7.0	4.2	81
15	13.7	12.5	8.0	3.6	59	8.8	8.6	8.3	6.3	3.7	79
20	11.5	10.4	7.1	2.3	57	7.0	7.0	6.8	5.8	3.2	76
25	8.7	8.6	6.2	1.3	54	5.3	5.2	5.2	5.0	2.8	73

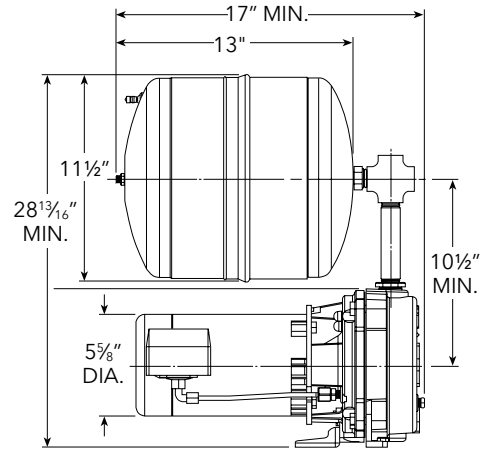
TWIN PIPE PERFORMANCE RATINGS

HP/Model	½ HP - J05LT			
Well Casing min. I.D.	4		4½	
Pressure Suction	Pipe Size (in.)		1	
	1¼		1½	
① Jet Assembly Package	FT4B-13	FT4B-31	FT4B-08	FT5B-14
Jet Body (only)	AT4B		AT5B	
Nozzle	AN017	AN016	AN015	AN018
Venturi	AD726	AD723	AD720	AD724
Control Valve Setting (PSI)	30	30	30	30
Depth to Jet Assembly (based on submergence of 5 feet)	Feet			
	30-50 PSI			
	30	13.0	11.0	
	40	11.8	9.0	
	50		7.6	6.9
	60		7.0	5.2
	70			4.7
	80			3.8
90			3.1	
100			4.1	

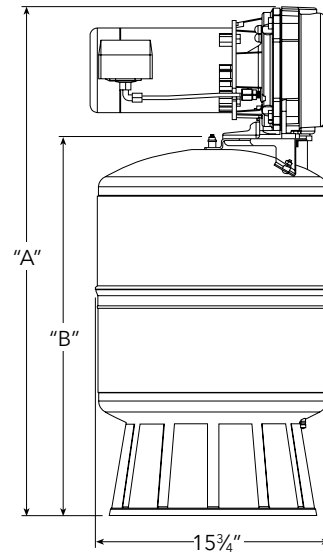
① Jet assembly package includes:
jet body, nozzle, Venturi and foot valve.

SYSTEM DIMENSIONS

Model	Tank	Tank Wt. (lb.)	Total Wt. (lb.)
J05X	V15P	11.9	63



Model	A (in.)	B (in.)	Tank	Tank Wt. (lb.)	Total Wt. (lb.)
J05K	34.2	25.5	V45MP	27.8	71.0
J05L	41.7	33.0	V60MP	40.0	83.0





DRINKING WATER
NSF/ANSI 61 & 372

JRS5X, JRS5K, JRS5L, JRD5X, JRD5K, JRD5L

PUMP AND TANK PACKAGES

TANK FEATURES

Deep Drawn Steel Shells: Provide maximum material strength.

Inner Shell: Prevents diaphragm from over-expanding.

Heavy Duty Diaphragm: Made of finest quality butyl rubber. Separates air and water, maintains air charge.

Interior Tank Lining: Fusion bonded polymeric lining (durable polypropylene liner used on V15P). Both meet FDA requirements.

Maximum Working Pressure: 100 PSI for V45PST and V60PST, 125 PSI for V15P.

Tank Temperature Rating: Maximum 120° F.

Appliance Appearance Exterior Finish: High durability exterior finish of tough, powder coat over a zinc phosphate surface treatment.

Heavy Duty Base: Eliminates corrosion due to condensation and exposure to the elements. Made of high density polypropylene.

Tanks are designed for installation indoors or where they are protected from rain, irrigation overspray, salt air and other corrosive environments. Always protect tanks from freezing.

ORDER INFORMATION

Model No.	HP	Replacement Pump Model No.	Tank Model	Drawdown at	
				20/40 PSI	30/50 PSI
JRD5X	½	JRD5	V15P	1.7	1.4
JRD5K	½	JRD5LT	V45PST	5.1	4.3
JRD5L	½	JRD5LT	V60PST	7.3	6.1
JRS5X	½	JRS5	V15P	1.7	1.4
JRS5K	½	JRS5LT	V45PST	5.1	4.3
JRS5L	½	JRS5LT	V60PST	7.3	6.1

AGENCY LISTINGS



DRINKING WATER
NSF/ANSI 61 & 372

APPLICATIONS

Home, farm and cottage water systems and booster service.

PUMP SPECIFICATIONS

Pump:

- Pipe connections: 1" NPT pressure, 1¼" NPT suction, 1" NPT discharge
- Pressure switch: AS4 preset 30-50 PSI

Motor:

- NEMA service factor
- 60 Hz, 3500 RPM
- ½ HP, 115/230 V capacitor start
- Built-in overload with automatic reset
- Stainless steel shaft

PUMP FEATURES

JRS models have an integral shallow well jet built into the casing, which eliminates the need for a separate shallow well adapter.

JRD models require a deepwell jet assembly package that must be ordered SEPARATELY.

See twin pipe performance rating chart for jet assembly package order number.

Serviceable:

- Back pullout design allows disassembly of pump for service without disturbing piping.
- Two compartment motor for easy access to motor wiring and replaceable components.
- Corrosion resistant, engineered plastic tubing and fittings are easily removed for cleaning. Premium o-ring design fittings need only be hand tight to seal.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Corrosion Resistant: Electro-coat paint is applied inside and out, then baked on.

Excellent Air Handling Ability: After initial priming the pump has the ability to re-prime itself even when air gets into the system.

Drain Plug: For ease of winterizing and maintenance.

Seal Housing: Engineered composite. Corrosion and abrasion resistant.

Impeller: F.D.A. compliant, glass filled engineered composite.

Diffuser (Guidevane): F.D.A. compliant, injection molded, food grade, glass filled engineered composite.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

PERFORMANCE RATINGS

Shallow Well Systems

HP/Order No.	½ HP-JRS5				
Nozzle	AN018				
Venturi	AD3330				
Total Suction Lift (Feet)	Discharge Pressure - PSI				
	20	30	40	50	Maximum Shut-off (PSI)
	Gallons Per Minute				
5	14.1	13.3	10.5	5.8	64
10	12.4	12.0	9.2	4.2	59
15	10.5	10.0	8.0	2.4	56
20	8.6	8.5	6.6	1.0	53
25	6.7	6.5	5.0	0.6	51

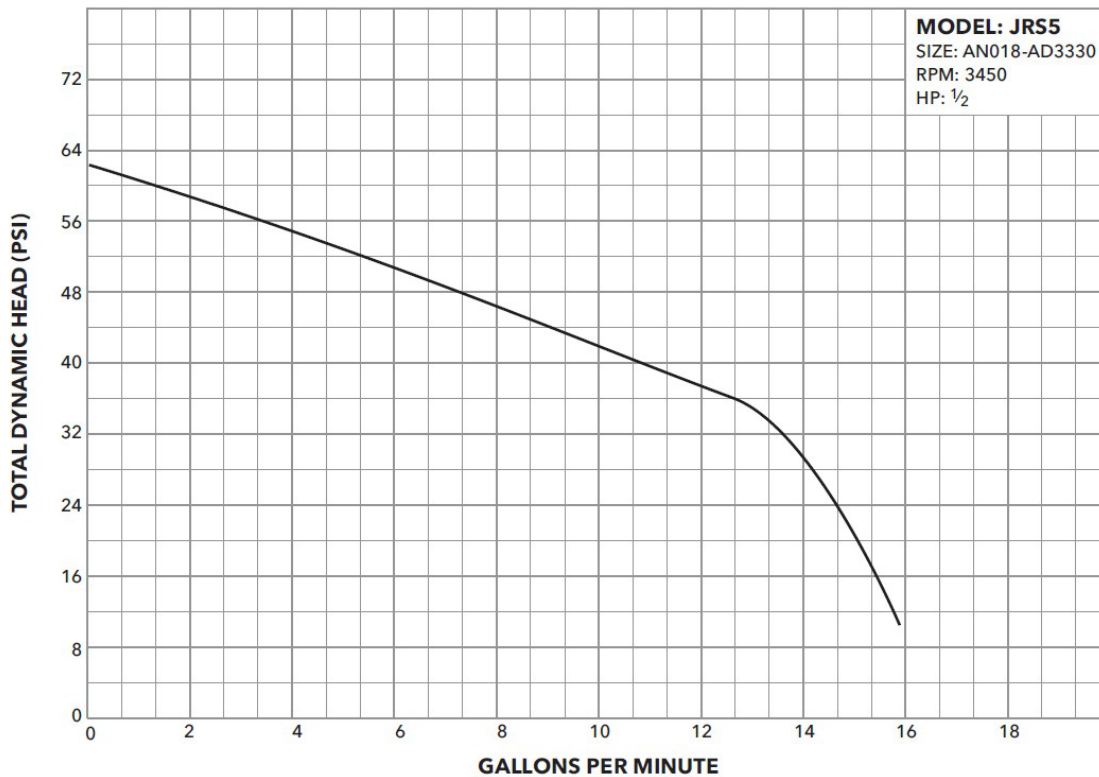
Twin Pipe Systems

HP/Model	½ HP - JRD5				
Jet Assembly Package (1)	FT3B-09	FT4B-13	FT4B-31	FT4B-08	FT5B-14
Well Casing Min. I.D. (in.)	3	4			4½
Pressure	¾	1			1¼
Suction	1	1¼			1½
Jet Body (only)	AT3B	AT4B			AT5B
Nozzle	AN015	AN017	AN016	AN015	AN018
Venturi	AD722	AD726	AD723	AD720	AD724
Control Valve Setting (PSI)	30				
Depth to Jet Assembly (Based on Submergence of 5')	Feet	Gallons Per Minute (GPM)	30-50 PSI Pressure Switch Setting		
	30	6.4	11.7	10.0	
	40	5.7	10.7	8.0	
	50	4.3	9.3	6.8	
	60			6.2	4.7
	70			5.0	4.2
	80				3.3
	90				2.8

(1) Jet Assembly Package includes: Jet Body, Venturi, Nozzle, Foot Valve

Important Note: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

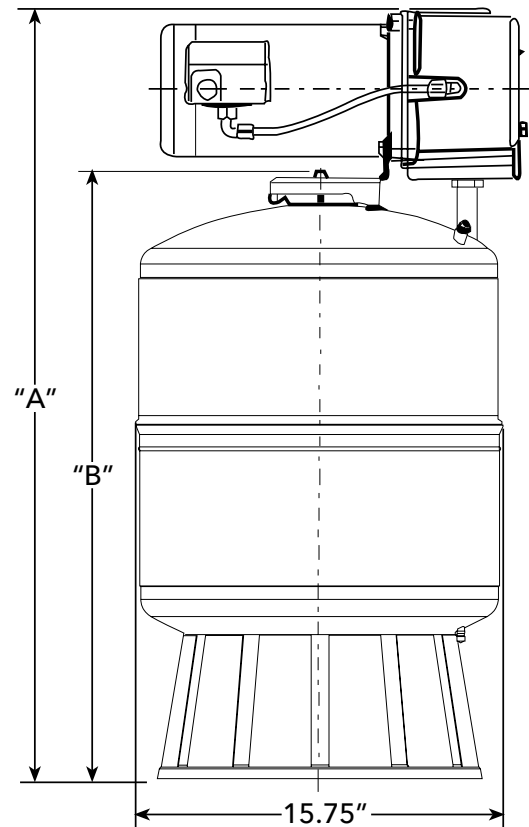
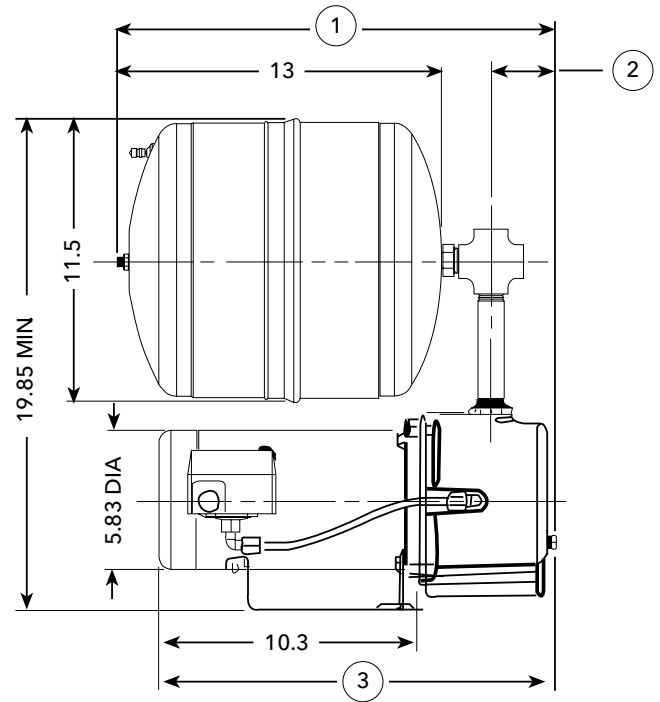
JRS5 PERFORMANCE CURVE (At 0' Suction Lift)



SYSTEM DIMENSIONS

Model	Tank	Tank Wt. (lb.)	Total Wt. (lb.)	①	②	③
JRD5X	V15P	12	43	17.5	2.5	15.6
JRS5X	V15P	12	43	18.5	3.5	16.7

Model	A (in.)	B (in.)	Tank	Tank Wt. (lb.)	Total Wt. (lb.)
JRD5K	32.5	25.5	V45PST	28	58
JRD5L	40.0	33.0	V60PST	40	70
JRS5K	33.0	24.5	V45PST	28	58
JRS5L	40.5	32.0	V60PST	40	70





FEATURES

High Capacity and Pressure: Specifically designed to deliver high capacities at deeper settings.

Stainless Steel Pump Shaft: Hex design provides positive drive for impellers and eliminates clearance adjustments.

Easy to Service: Can be taken apart for service by removing four bolts.

Corrosion Resistant: Glass filled thermoplastic impellers. Stainless steel wear rings and coverplates. Electrocoat paint process applied inside and out and then baked on.

Powered for Continuous Operation: Pump is designed for continuous operation. All ratings are within the motor manufacturer's recommended working limits.

Easy to Prime: Top mounted vent plug allows air to escape from seal cavity during initial priming.

Adjustable Automatic Pressure Control Valve: Guarantees maximum capacity at all times. By-pass check valve equalizes pressure in entire system and helps prevent loss of prime.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

NOW NSF LISTED!!

SJ

60 HZ VERTICAL JET PUMPS DEEP WELL

Still...



DRINKING WATER
NSF/ANSI 61 & 372

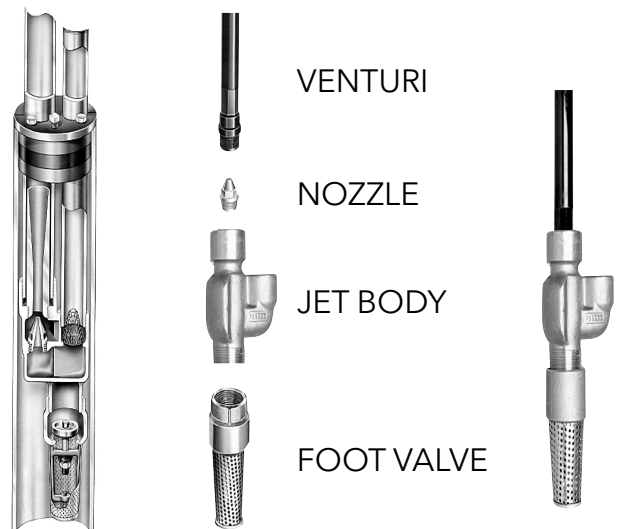
PERFORMANCE RATINGS – TWIN PIPE SYSTEMS

HP/Model	¾ HP - SJ07			1 HP - SJ10			1½ HP - SJ15			2 HP - SJ20			
Well Casing Min. I.D. in.	4												
Pressure	1												
Suction Pipe Size (in.)	1¼												
Jet Assembly Package ①	FT4B-48	FT4B-47	FT4B-06	FT4B-47	FT4B-24	FT4B-08	FT4B-45	FT4B-30	FT4B-29	FT4B-45	FT4B-30	FT4B-29	
Jet Body (Only)	AT4B												
Nozzle	AN012	AN013	AN014	AN013	AN015			AN013					
Venturi	AD727	AD724	AD720	AD724		AD720	AD726	AD722	AD719	AD726	AD722	AD719	
Control Valve Setting (PSI) ②	37	40			43		62	65	67	76	78	80	
Depth to Jet Assembly (based on submergence of 5 feet)	Feet	Gallons Per Minute (GPM) 30-50 Pressure Switch Setting											
	30	15.2			16.0			13.0			13.0		
	40	13.5			15.2			13.0			13.0		
	50	11.8			14.7			13.0			13.0		
	60	10.7			13.7			12.8			12.8		
	70	8.5	9.0		11.7	11.7		12.2			12.8		
	80		7.5			10.5		10.6			12.0		
	90		6.2	6.2		9.0		9.2	9.3		11.3		
	100			5.8		7.5			9.0		9.5	9.5	
	110			5.0		6.3	6.0			8.0			9.4
	120			4.6			5.0			7.0			8.5
	130			4.0			4.3			6.2	5.8		7.7
	140						4.0				5.6		6.8
	150						3.5			5.2		6.0	5.7
	160									4.7			5.5
	170									4.2			5.3
	180									3.7			5.0
190									3.2			4.7	
200												3.8	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

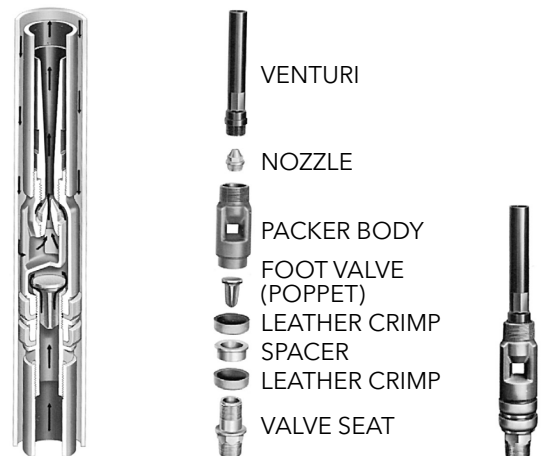


PERFORMANCE RATINGS – PACKER SYSTEM

HP/Model	¾ HP SJ07						1 HP SJ10						1½ HP SJ15						2 HP SJ20						
Well Casing In.	2			3			2			3			2			3			2			3			
Suction Pipe Size (in.)	1¼			1½			1¼			1½			1¼			1½			1¼			1½			
Jet Assembly Package ①	FP2-51	FP2-50	FP2-06	FP3-40	FP3-42	FP2-50	FP2-07	FP2-08	FP3-40	FP3-49	FP2-49	FP2-30	FP2-29	FP3-47	FP3-46	FP3-34	FP2-49	FP2-30	FP2-29	FP3-47	FP3-46	FP3-34			
Jet Body (Only)	AP2			AP3			AP2			AP3			AP2			AP3			AP2			AP3			
Nozzle	AN012	AN013	AN014	AN013	AN014	AN013	AN014	AN015	AN013	AN015	AN013														
Venturi	AD727	AD724	AD720	AD724	AD722	AD724	AD720	AD724	AD723	AD726	AD722	AD719	AD727	AD722	AD719	AD726	AD722	AD719	AD727	AD722	AD719				
Pressure ② Control Valve Setting (PSI)	40			36	40		45		40	43	62	65	67	62	64	66	76	78	80	75	78	80			
Depth to Jet Assembly (based on submergence of 5 feet)	Gallons Per Minute 30-50 Pressure Switch Setting																								
	Feet																								
	30	14.9			15.3		15.8			16.3		13.0			14.7			13.0			14.7				
	40	13.1			13.5		14.0			16.0		13.0			14.5			13.0			14.7				
	50	11.6			12.5		12.5			15.5		12.9			14.3			13.0			14.7				
	60	10.5			12.2		11.2	11.3		14.2		12.7			14.3			13.0			14.5				
	70	8.4	8.8		11.8			10.0		12.5		11.8			14.2			12.8			14.5				
	80		7.6		10.2	8.5		8.7		10.0		10.2			12.2			11.8			13.5				
	90		6.1	6.2		7.8		7.3		8.3	9.0	8.3	9.1		10.0			10.5			12.7				
	100			5.7		6.9		5.5			8.2		8.3		7.8	9.1		8.5	9.1		10.5				
	110			4.3		6.0		4.2	4.8		7.3		7.3			8.8			8.9		8.3	9.1			
	120			3.8		5.3			4.0		6.7		6.2			7.6			7.9			9.1			
	130			2.2		4.5			3.5		5.8		5.4	5.6		6.9			6.9			8.8			
	140								3.0		4.8			5.3		6.2			6.0			8.2			
	150								2.4		4.1			4.8		5.4	5.6		5.2	5.6		7.3			
	160													4.3			5.5			5.4		6.5			
	170																5.0			4.9		5.7			
	180																4.7			4.3		5.6			
	190																4.3			3.8		5.5			
	200																3.8			3.3		5.3			
210																3.3					4.8				
220																					4.5				
230																					4.0				

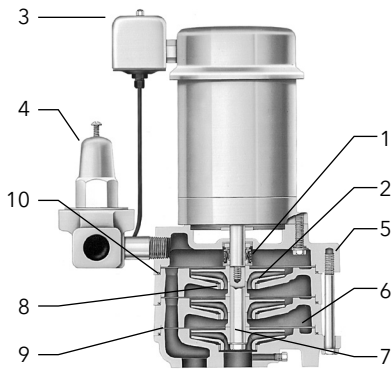
NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

- ① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.
- ② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.



COMPONENTS

Item No.	Description
1	Mechanical seal
2	Corrosion resistant impellers
3	Pressure switch
4	Pressure control valve
5	Rugged cast iron construction
6	Electro-coat paint
7	Stainless steel hex shaft
8	Stainless steel wear rings
9	Stainless steel cover plates
10	O-ring seals



DIMENSIONS AND WEIGHTS

HP/Model	¾-SJ07	1-SJ10	1½-SJ15	2-SJ20
Stages	2	2	3	3
Weight	58	63	77	88
Length	14	14	14	14
Width	8	8	8	8
Height	15½	16	20	20½

Pressure Control Valve included in dimensions.
(All dimensions are in inches and weight in lbs. Do not use for construction purposes.)

APPLICATIONS

Specifically designed for:

- Homes
- Farms
- Cottages

SPECIFICATIONS

Pipe connection –
1" NPT drive (pressure)
1¼" NPT suction
1" NPT discharge

Pressure switch –
¾-1½ HP, AS4
2 HP, AS10
both preset (30-50 PSI)

- NEMA standard
- ¾-1½ HP, 115/230 V, 60 Hz, capacitor start
- 2 HP, 230 V only, 60 Hz
- Single phase
- 3500 RPM
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end.

140° F

REQUIRED SYSTEM COMPONENTS

- **Basic Pump Unit:** Includes pump, motor, pressure switch, tubing, fittings, pressure gauge, bushing and AV21 pressure control valve.
- **Deep Well Jet Assembly Package:** Twin Pipe includes: Jet body, nozzle, venturi and foot valve. Packer includes: Jet body with built-in check valve, nozzle and venturi.
- **Additional Accessories Required:** For Packer: well casing adapter AWD2 (2") or AWD3 (3").

MODEL SJ

For twin pipe or packer systems.



AGENCY LISTINGS



Canadian Standards Association



Underwriters Laboratories[®]



DRINKING WATER
NSF/ANSI 61 & 372

MODEL INFORMATION

CSA Listed Order No.	U.L. Listed (Indoor use) ^① Order No.	HP	Stages
SJ07	SJ07UL	¾	2
SJ10	SJ10UL	1	2
SJ15	SJ15UL	1½	3
SJ20	SJ20UL	2	3



*Still Built
in the USA...*



DRINKING WATER
NSF/ANSI 61 & 372

VJ

60 HZ VERTICAL JET PUMPS DEEP WELL



FEATURES

High Capacity: Specifically designed to deliver water at high capacities.

Easy to Service: Can be taken apart for service by removal of four bolts. Pipes do not have to be disturbed when service is required.

Powered for Continuous Operation: Pump is designed for continuous operation. All ratings are within the motor manufacturer's recommended working limits.

Corrosion-Resistant: Electrocoat paint process is applied inside and out and then baked on.

Adjustable Automatic Pressure Control Valve:

Guarantees maximum capacity at all times. By-pass check valve equalizes pressure in entire system and helps prevent loss of prime.

Easy to Prime: The VJ series incorporates a vent at the highest point of the casing, including the mechanical seal chamber, for a more thorough air purging, and fast, efficient priming.

NSF Listed: The first NSF listed jet pumps in the industry. All jet pumps and shallow well components only, deep well components are not listed.

APPLICATIONS

Specifically designed for:

- Homes
- Farms
- Cottages

SPECIFICATIONS

Pump

Pipe connection:

1" NPT drive (pressure)

1¼" NPT suction

1" NPT discharge.

Pressure switch: AS4, preset (30-50 PSI).

Motor

- NEMA standard.
- ½-1 HP, 115/230 V, 60 Hz, capacitor start.
- Single phase, 3500 RPM.
- Built-in overload with automatic reset.
- Stainless steel shaft.
- Rotation: clockwise when viewed from motor end.

Maximum temperature: 140° F

REQUIRED SYSTEM COMPONENTS

- **Basic Pump Unit:** Includes pump, motor, pressure switch, tubing, fittings, pressure gauge, bushing and pressure control valve (AV21).
- **Deep Well Jet Assembly Package:** Twin Pipe includes: Jet body, nozzle, venturi and foot valve. Packer includes: Jet body with built-in check valve, nozzle and venturi. See Performance Charts on following pages for Jet Assembly package order numbers.

ADDITIONAL ACCESSORIES REQUIRED

For Packer: well casing adapter AWD2 (2") or AWD3 (3"). Must be ordered separately.

AGENCY LISTINGS



Canadian Standards Association



Underwriters Laboratories®

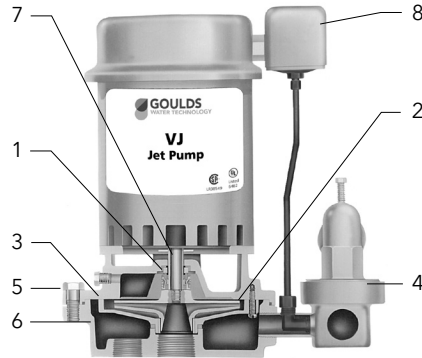


DRINKING WATER
NSF/ANSI 61 & 372

Residential Water

COMPONENTS

Item No.	Description
1	Mechanical seal
2	Impeller
3	Diffuser (Guidevane)
4	Pressure control valve
5	Motor adapter
6	Casing
7	Stainless steel shaft
8	Pressure switch



DIMENSIONS AND WEIGHTS

HP/Model	½-VJ05	¾-VJ07	1-VJ10
Weight	50	53	56
Length	12¾		
Width	12¾		
Height	13½	14¼	14¾

Pressure control valve not included in dimensions. (All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

MODEL INFORMATION

CSA Listed Order No.	U.L. Listed (Indoor use) ^① Order No.	HP
VJ05	VJ05UL	½
VJ07	VJ07UL	¾
VJ10	VJ10UL	1

PERFORMANCE RATINGS - TWIN PIPE SYSTEMS

HP/Model	½ HP-VJ05			¾ HP-VJ07		1HP-VJ10		
Well Casing Min. I.D. (In.)	4							
Pressure Suction	1							
Pipe Size In.	1¼							
Jet Assembly Package ^①	FT4B-46	FT4B-08	FT4B-47	FT4B-46	FT4B-06	FT4B-14	FT4B-09	
Jet Body (only)	AT4B							
Nozzle	AN014	AN015	AN013	AN014		AN017	AN015	
Venturi	AD722	AD720	AD724	AD722	AD720	AD729	AD721	
Control Valve Setting (PSI) ^②	23		34		40	34	36	
Feet	Gallons per Minute 30-50 Pressure Switch Setting							
Depth to Jet Assembly (based on submergence of 5 feet)	30	12.2		15.2			18.8	
	40	11.7		13.2			16.7	
	50	10.0		11.7			15.0	
	60	8.2	8.3	9.7	10.0		12.7	
	70		5.8		8.3		10.0	
	80		5.0		7.1		7.9	
	90		3.8		5.8	5.8	5.3	5.8
	100					5.0		5.0
	110					3.8		4.6
	120							3.3

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

^① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

^② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. The AV21 measures the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

PERFORMANCE RATINGS - PACKER SYSTEM

HP/Model		½ HP-VJ05				¾ HP-VJ07				1HP-VJ10					
Well Casing (In.)		2		3		2		3		2		3			
Suction	Pipe Size In.	1¼		1½		1¼		1½		1¼		1½			
Jet Assembly Package ①		FP2-38	FP2-08	FP3-42	FP3-09	FP2-50	FP2-47	FP2-09	FP3-40	FP3-43	FP2-48	FP2-43	FP2-08	FP3-40	FP3-49
Jet Body (only)		AP2		AP3		AP2		AP3		AP2		AP3			
Nozzle		AN014	AN015	AN014	AN016	AN013	AN015		AN013	AN014	AN016		AN015		
Venturi		AD722	AD720	AD722	AD721	AD724	AD723	AD721	AD724	AD721	AD729	AD725	AD720	AD724	AD723
Control Valve ② Setting (PSI)		23				34				36			34	36	
Feet		Gallons per Minute 30-50 Pressure Switch Setting													
Depth to Jet Assembly (based on submergence of 5 feet)	30	12.2		12.5		15.2			15.8		18.8			18.8	
	40	10.8		11.3		13.2			13.7		16.7			16.7	
	50	9.0		10.0		11.3			11.7		14.2			15.0	
	60	7.5	7.7	8.2	8.3	9.3	10.3		10.0	10.3	11.7	11.0		12.5	
	70		5.5		6.8		8.7			9.6		9.3		10.0	
	80		4.6		5.8		6.8			8.2		7.7		8.3	
	90		3.4		4.3		5.3			6.7		5.7		6.3	6.5
	100				3.5		4.0	4.2		5.4		4.6	4.6		5.8
	110							3.3		4.3			3.3		5.0
	120							2.3		3.3			2.9		4.2
	130									2.9					3.3
140														2.9	

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. The AV21 measures the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.



GT IRRI-GATOR®

SELF-PRIMING CENTRIFUGAL PUMPS - 60 HZ

FEATURES

Self-Priming Design: Once pump is initially primed, filled with water, it will reprime when the water level rises above the end of the suction pipe.

Easy Servicability:

- Back pullout design allows disassembly of pump for service without disturbing piping.
- Two compartment motor for easy access to motor wiring and replaceable components.

Diffuser (Guidevane): Bolt down diffuser provides positive alignment with impeller. FDA compliant, injection molded, glass-filled engineered composite for durability and abrasion resistance.

Corrosion Resistant: Electrocoat paint process is applied inside and out, then baked on.

APPLICATIONS

Specifically designed for the following uses:

- Lawn sprinkling
- Irrigation
- Air conditioning systems
- Heat pumps
- Water transfer
- Dewatering

SPECIFICATIONS

Pump:

- Pipe connections: 1½" NPT suction • 1½" NPT discharge
- Capacities: to 110 gpm at 5 foot suction lift
- Heads: to 128 feet
- Reprime capabilities: to 25 feet suction lift
- Maximum water temperature: 140° F (60° C)
- Maximum working pressure: 125 psi
- Rotation: clockwise when viewed from motor end.

Motor:

- NEMA standard open drip proof
- 60 Hz, 3500 rpm
- Stainless steel shaft
- Single phase: ¾-1½ hp, 115/230 V; 2 and 3 hp, 230 V only. Built-in overload with automatic reset.
- Three phase: 230/460 V. Overload protection must be provided in starter unit. Starter and heaters (3) must be ordered separately.
- Optional TEFC motors are available. See price book for order numbers.

Options:

- Add a "B" suffix for a silicon brass impeller, ex. GT07B
- Add an "S" suffix for an extended (higher) base.

Impeller: Standard - glass-filled, abrasion resistant engineered composite

Optional - Silicon brass is available (lead content is < .05%)

Casing: Cast iron, 4-bolt, back pullout design. Openings for vacuum gauge and casing drain.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Mechanical Seal: Carbon/ceramic faces, Buna elastomers. 300 series stainless steel metal parts. Diaphragm prevents the seal from running dry.

AGENCY LISTINGS



Canadian Standards Association



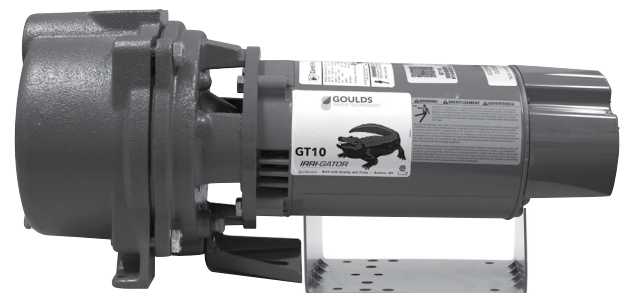
Class 6853 01 - Low Lead Content Certification

Suitable for outdoor use

STANDARD ODP MODELS

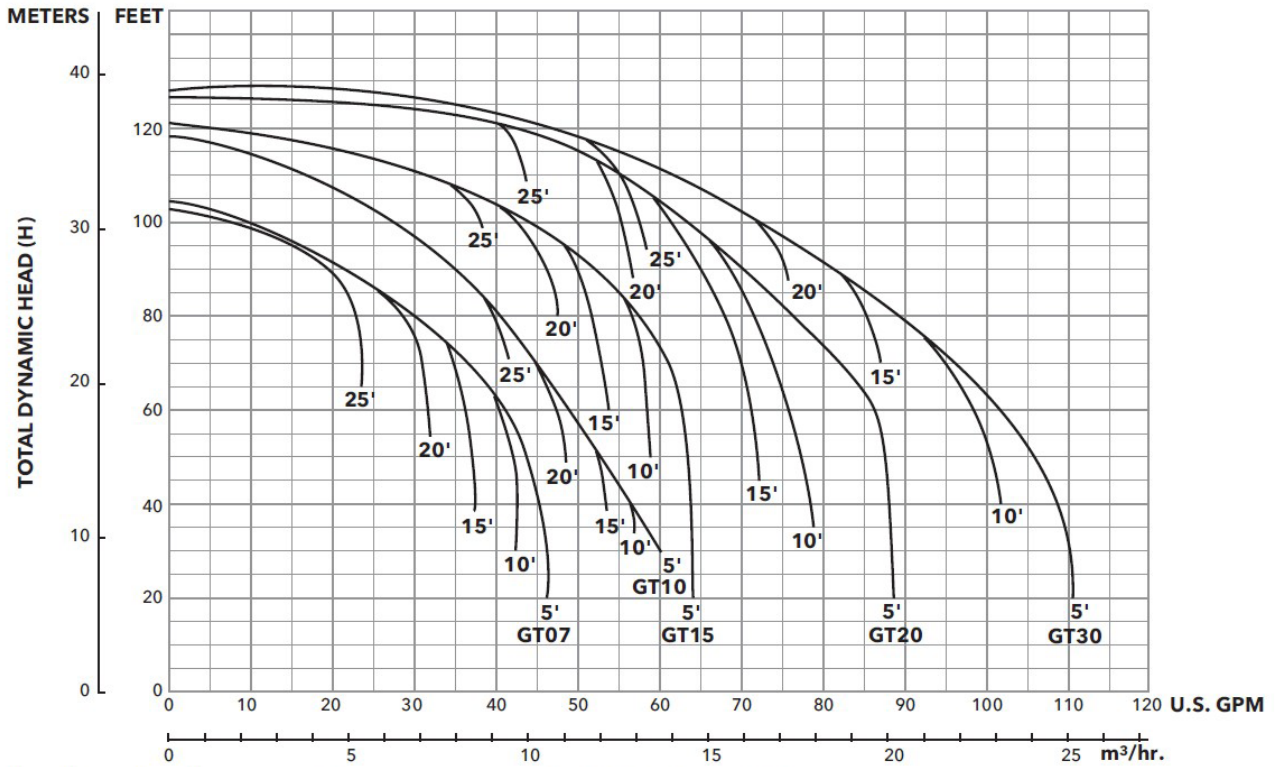
Model	HP	Phase
GT07	¾	1
GT10	1	
GT15	1½	
GT20	2	
GT30	3	
GT073	¾	3
GT103	1	
GT153	1½	
GT203	2	
GT303	3	

Add on "S" suffix for extended base. See back page.



GT __ S with optional tall base

PERFORMANCE CURVE



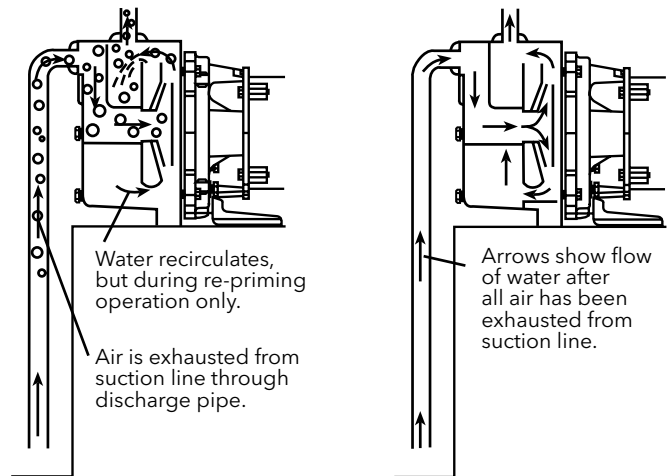
Single and three phase have same performance.

PERFORMANCE RATINGS

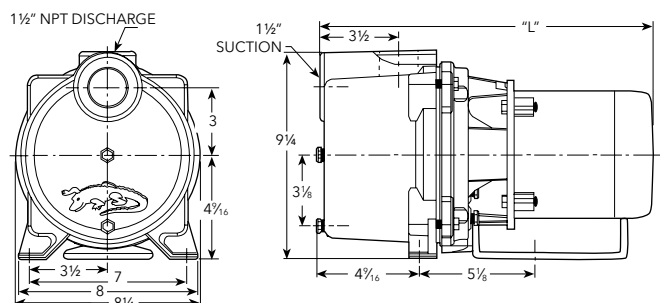
Model	PSI Discharge Pressure	Suction Lift in Feet				
		5	10	15	20	25
GT07/ GT073	20	44	41	36	31	24
	30	34	31	26	22	14
	40	10	4	0	0	0
GT10/ GT103	20	53	51	49	46	41
	30	43	41	38	36	32
	40	29	22	16	8	0
GT15/ GT153	20	63	59	54	49	39
	30	60	55	51	46	37
	40	45	38	33	20	14
GT20/ GT203	20	86	77	70	59	46
	30	80	72	67	57	44
	40	65	60	57	50	43
GT30/ GT303	20	105	100	88	76	60
	30	92	90	84	75	57
	40	73	67	62	55	50

Performance ratings are in GPM.

SELF-PRIMING (AFTER INITIAL PRIME)[®]



DIMENSIONS

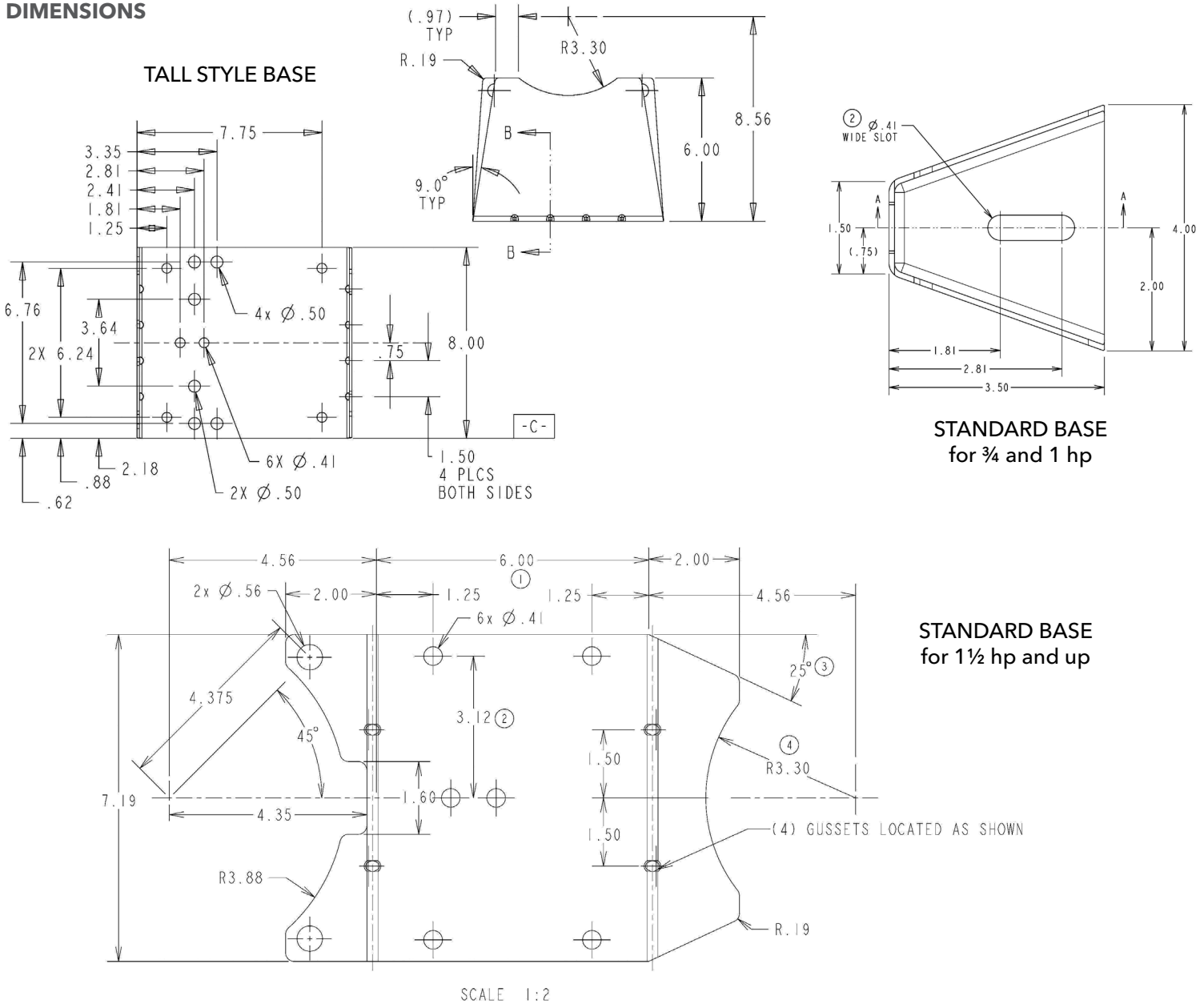


BASE DIMENSIONS AND WEIGHTS

Model	GT07	GT10	GT15	GT20	GT30	GT073	GT103	GT153	GT203	GT303
HP	¾	1	1½	2	3	¾	1	1½	2	3
Length "L"	19 ³ / ₁₆	19 ⁷ / ₈	21 ³ / ₁₆	20 ³ / ₃₂	21 ¹ / ₃₂	19	19 ³ / ₄	20 ¹ / ₁₆	20 ¹ / ₁₆	21 ³ / ₁₆
Width	8 ¹ / ₄									
Height	9 ¹ / ₄ (13 ¹ / ₄ with "S" Base)									
Weight (lbs.)	48	52	60	65	76	49	52	55	69	71
Phase	Single					Three				

(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

DIMENSIONS





G Slimline

STAINLESS STEEL SUBMERSIBLE PUMP FOR 4" AND LARGER WELLS
5, 7 & 10 GPM - UP TO 1½ HP - VFD COMPATIBLE



FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Field Serviceable: Units are field serviceable with common tools and readily available repair parts.

Sand Handling Design: The face clearance, floating impeller stack has proven itself for over 40 years as a superior sand handling, durable pump design.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass-filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head: Stainless steel, corrosion resistant is strong and durable. Safety loop provided for installer convenience.

Check Valve: Integral spring loaded check valve

Motor Adapter: Stainless steel, corrosion resistant provides a strong, accurate alignment of liquid end to motor. The plastic wrap around strainer keeps debris out of pump.

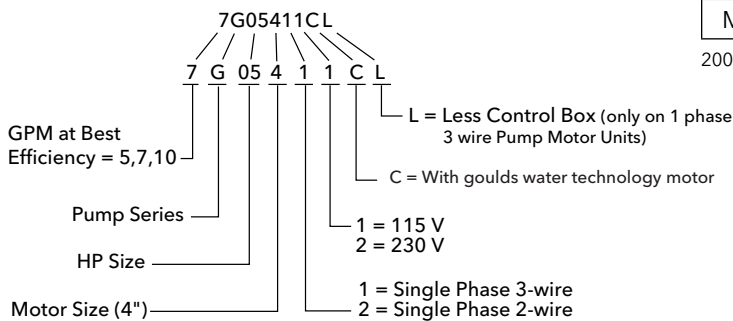
Stainless Steel Casing: Polished stainless steel is strong and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

5G, 7G & 10G PUMPS

Series	Model	Required HP	Stages	Water End	
				Length (in)	Wt. (lbs)
5G	5G05	.5	15	15.1	9
	5G07	.75	20	18.2	11
	5G10	1	25	22.5	14
	5G15	1.5	34	28.2	17
	7G05	.5	11	12.5	7
7G	7G07	.75	15	15.1	9
	7G10	1	20	18.2	11
	7G15	1.5	25	22.5	14
	10G05	.5	12	14.7	8
	10G	10G07	.75	15	16.8
10G10		1	20	20.3	10
10G15		1.5	27	26.3	16

NUMBER CODE



GOULDS WATER TECHNOLOGY 4" SINGLE-PHASE MOTORS

Order No.	Type	HP	Volts	Length (in)	Weight (lb)
M05421	2-wire PSC	.5	115	11.0	19.2
M05422		.5	230	11.0	19.2
M07422		.75	230	12.4	22.7
M10422		1	230	13.3	24.5
M15422		1.5	230	14.9	28.9
M05411	3-wire	.5	115	10.0	18.9
M05412		.5	230	9.7	18.1
M07412		.75	230	10.8	21.4
M10412		1	230	11.7	23.1
M15412		1.5	230	13.6	27.4

GOULDS WATER TECHNOLOGY 4" THREE-PHASE MOTORS

Order No.	HP	Volts	Length (in)	Weight (lb)
M05432	.5	230	10.0	19.0
M07432	.75		10.8	22.0
M10432	1		11.7	23.1
M15432	1.5			

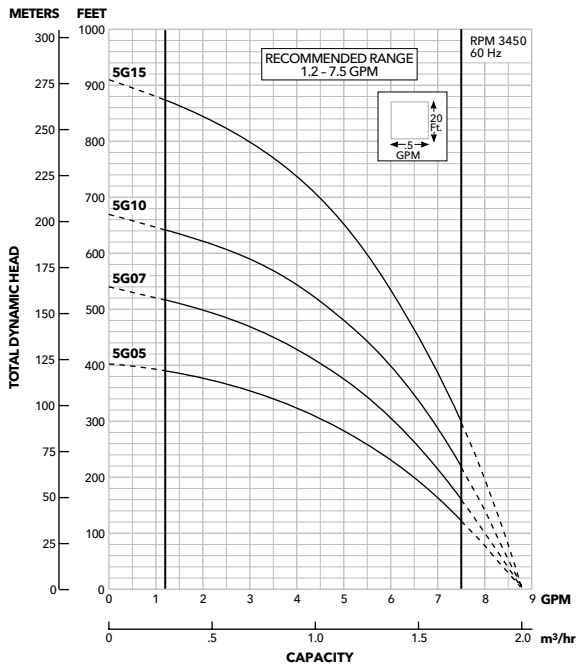
200, 460, and 575V options also available for 3 phase motors.

SPECIFICATIONS

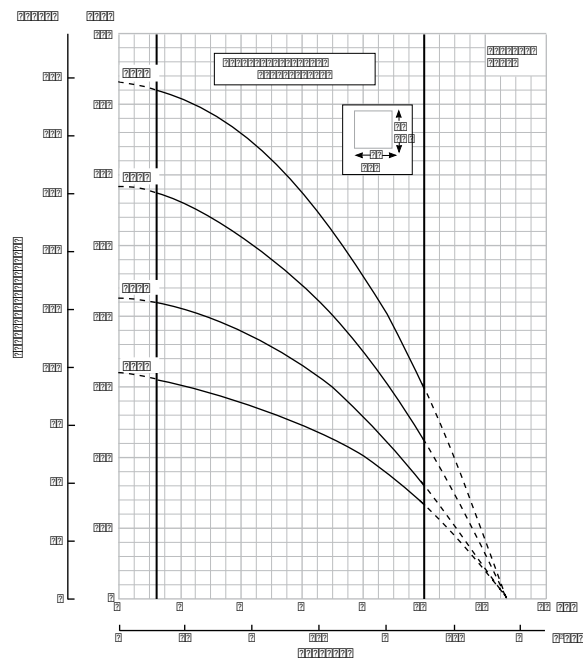
Model	Flow Range GPM	Horsepower Range	Best Efficiency GPM	Discharge Connection	Minimum Well Size	Rotation ^①	Effective Diameter
5G	1.2 - 7.5	½-1½	5	1.25"	4"	CCW	3.75"
7G	1.5 - 10		7				
10G	2 - 12		10				

① Rotation is counterclockwise when observed from pump discharge end.

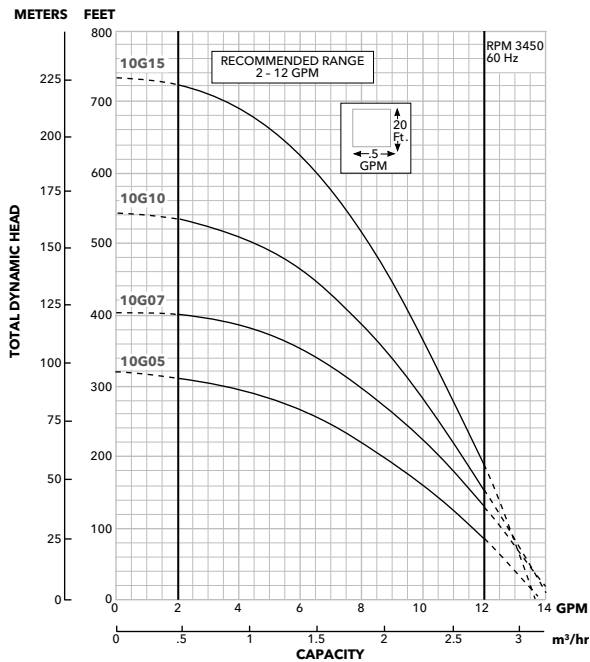
MODEL 5G



MODEL 7G

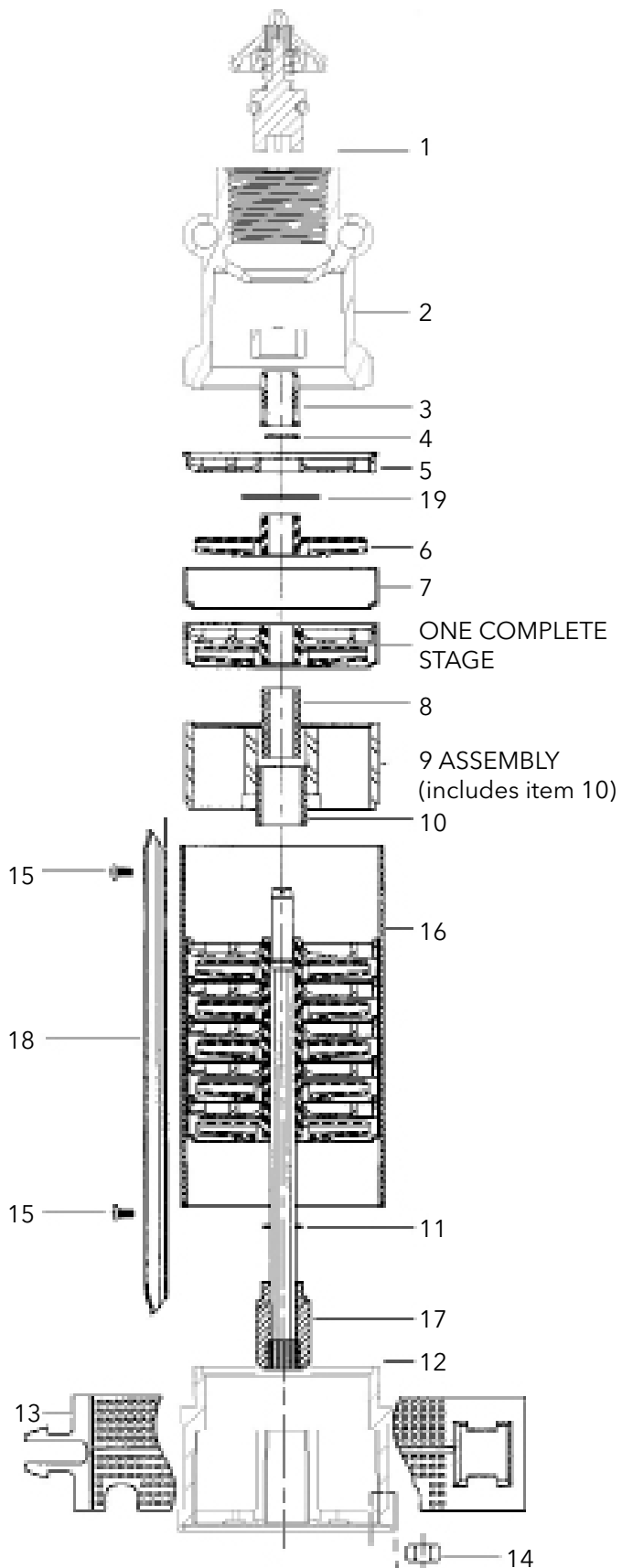


MODEL 10G



Item No.	Part Description	Current Model			
		HP	5G	7G	10G
	Number of Stages	½	15	11	12
		¾	20	15	
		1	25▲	20	20
		1½	34▲	25▲	27▲
1	Check valve	7K2227			
2	Discharge head	7K60			
3	Bearing	7K2739			
4	Retaining ring	7K817			
5	Diffuser	7K9	7K12	7K3462	
6	Impeller	7K8	7K11	7K3461	
7	Bowl	7K7			
8	Center sleeve▲	7K209			
9	Intermediate bearing spider assembly▲	7K13			
10	Intermediate bearing▲	7K156			
11	Shim	7K155			
12	Motor adapter	7K3450			
13	Inlet strainer	7K3356			
14	Motor nut	13K114			
15	Cable guard screw	13K91			
16	Casing	½	7K484	7K483	7K3474
		¾	7K485	7K484	7K3475
		1	7K861	7K485	7K3476
		1½	7K1178	7K861	7K3477
17	Shaft and coupling	½	7K1524	7K1375	7K3257
		¾	7K3466	7K1524	7K3208
		1	7K1388	7K3466	7K1458
		1½	7K3467	7K1388	7K3978
18	Cable guard	½	7K1092	7K1091	7K3470
		¾	7K1093	7K1092	7K3471
		1	7K1094	7K1093	7K3472
		1½	7K2147	7K1094	7K3473
19	Upthrust washer	7K15			

Note: ▲ Indicates models with intermediate bearing spider.



MODEL 5G

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																								
			40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840	880			
5G05	1/2	0	10.1	8.0	7.4	7.1	6.5	5.8	4.9	4.1	2.9	0.3															
		20	7.8	7.4	7.0	6.4	5.6	4.8	4.0	2.6																	
		30	7.5	7.2	6.7	6.0	5.1	4.3	3.3	1.2																	
		40	7.3	7.0	6.3	5.5	4.7	3.8	2.3																		
		50	7.1	6.6	5.9	5.0	4.2	3.1	0.7																		
		60	6.9	6.2	5.4	4.6	3.6	2.0																			
Shut-off PSI			156	139	121	104	87	69	52	35	17																
5G07	3/4	0	9.2	8.3	7.8	7.5	7.1	6.8	6.3	5.8	5.3	4.6	3.8	2.7	1.1												
		20	8.2	7.7	7.4	7.1	6.7	6.2	5.7	5.2	4.5	3.7	2.5	0.7													
		30	7.9	7.5	7.2	6.9	6.4	6.0	5.4	4.8	4.0	3.0	1.6														
		40	7.7	7.4	7.0	6.6	6.2	5.6	5.1	4.4	3.5	2.2	0.4														
		50	7.5	7.2	6.8	6.4	5.9	5.3	4.7	3.9	2.8	1.3															
		60	7.3	7.0	6.6	6.1	5.6	5.0	4.3	3.3	2.0	0.1															
Shut-off PSI			216	199	182	165	147	130	113	95	78	61	43	26	9												
5G10	1	0	8.6	8.4	8.1	7.9	7.6	7.3	7.0	6.7	6.4	6.0	5.6	5.0	4.4	3.6	2.6	1.3									
		20	8.3	8.1	7.8	7.6	7.3	7.0	6.7	6.3	5.9	5.5	5.0	4.3	3.5	2.4	1.0										
		30	8.2	7.9	7.7	7.4	7.1	6.8	6.5	6.1	5.7	5.2	4.6	3.9	2.9	1.7											
		40	8.0	7.8	7.5	7.2	6.9	6.6	6.3	5.9	5.4	4.9	4.2	3.3	2.2	0.8											
		50	7.9	7.6	7.4	7.1	6.7	6.4	6.0	5.6	5.1	4.5	3.7	2.7	1.4												
		60	7.8	7.5	7.2	6.9	6.6	6.2	5.8	5.3	4.8	4.1	3.2	2.0	0.5												
Shut-off PSI			273	255	238	221	203	186	169	152	134	117	100	82	65	48	30	13									
5G15	1 1/2	0	8.6	8.5	8.3	8.2	8.0	7.8	7.6	7.4	7.1	6.9	6.6	6.3	6.1	5.8	5.5	5.1	4.7	4.2	3.7	3.0	2.1	0.9			
		20	8.5	8.3	8.2	8.0	7.8	7.6	7.3	7.1	6.8	6.6	6.3	6.0	5.7	5.4	5.1	4.6	4.2	3.6	2.9	1.9	0.7				
		30	8.4	8.2	8.1	7.9	7.6	7.4	7.2	6.9	6.7	6.4	6.1	5.9	5.5	5.2	4.8	4.4	3.8	3.2	2.3	1.3					
		40	8.3	8.1	7.9	7.7	7.5	7.3	7.0	6.8	6.5	6.3	6.0	5.7	5.4	5.0	4.6	4.1	3.5	2.7	1.8	0.5					
		50	8.2	8.0	7.8	7.6	7.4	7.2	6.9	6.6	6.4	6.1	5.8	5.5	5.1	4.8	4.3	3.8	3.1	2.2	1.1						
		60	8.1	7.9	7.7	7.5	7.3	7.0	6.8	6.5	6.2	5.9	5.6	5.3	4.9	4.5	4.0	3.4	2.6	1.6	0.3						
Shut-off PSI			377	359	342	325	307	290	273	255	238	221	203	186	169	152	134	117	100	82	65	48	30	13			

MODEL 7G

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																								
			30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600	630	660	690	720	
7G05	1/2	0	12.1	11.6	11.0	10.3	9.5	8.6	7.6	6.3	4.6	2.2															
		20	11.3	10.6	9.9	9.0	8.1	7.0	5.5	3.4	0.6																
		30	10.8	10.0	9.2	8.3	7.3	5.8	3.9	1.3																	
		40	10.2	9.4	8.6	7.5	6.2	4.4	2.0																		
		50	9.6	8.8	7.8	6.5	4.9	2.6																			
		60	9.0	8.0	6.9	5.3	3.2	0.3																			
Shut-off PSI			126	113	100	87	74	61	48	35	22	9															
7G07	3/4	0	12.4	11.5	11.0	10.7	10.3	9.7	9.1	8.3	7.6	6.8	6.0	4.9	3.3	0.7											
		20	11.2	10.9	10.5	10.0	9.4	8.7	7.9	7.1	6.4	5.4	4.2	2.1													
		30	10.9	10.6	10.1	9.5	8.8	8.1	7.3	6.5	5.7	4.5	2.7														
		40	10.7	10.2	9.7	9.0	8.3	7.5	6.7	5.9	4.8	3.2	0.5														
		50	10.4	9.8	9.2	8.4	7.7	6.9	6.1	5.1	3.6	1.2															
		60	10.0	9.3	8.6	7.8	7.1	6.3	5.4	4.0	1.9																
Shut-off PSI			171	158	145	132	119	106	93	80	67	54	41	28	15	2											
7G10	1	0	12.4	12.0	11.6	11.3	10.9	10.5	10.1	9.7	9.3	8.8	8.3	7.8	7.2	6.5	5.8	4.9	4.0	2.9	1.6	0.1					
		20	11.8	11.4	11.1	10.7	10.3	9.9	9.5	9.1	8.6	8.1	7.5	6.9	6.1	5.3	4.4	3.4	2.2	0.8							
		30	11.5	11.1	10.8	10.4	10.0	9.6	9.2	8.7	8.2	7.6	7.0	6.3	5.5	4.6	3.6	2.5	1.1								
		40	11.2	10.9	10.5	10.1	9.7	9.3	8.8	8.3	7.8	7.2	6.5	5.7	4.9	3.9	2.8	1.5	0.0								
		50	10.9	10.6	10.2	9.8	9.4	8.9	8.4	7.9	7.3	6.6	5.9	5.1	4.1	3.0	1.8	0.3									
		60	10.7	10.3	9.9	9.5	9.0	8.5	8.0	7.4	6.8	6.1	5.3	4.4	3.3	2.1	0.7										
Shut-off PSI			238	225	212	199	186	173	160	147	134	121	108	95	82	69	56	43	30	17	4						
7G15	1 1/2	0	13.3	12.4	11.8	11.5	11.2	11.0	10.8	10.6	10.3	10.0	9.6	9.2	8.8	8.4	8.0	7.6	7.2	6.7	6.3	5.7	5.0	4.0	2.7	0.9	
		20	12.1	11.6	11.3	11.1	10.9	10.7	10.4	10.1	9.8	9.4	9.0	8.6	8.2	7.8	7.4	6.9	6.5	6.0	5.3	4.5	3.3	1.8			
		30	11.7	11.4	11.2	11.0	10.7	10.5	10.2	9.9	9.5	9.1	8.7	8.3	7.9	7.5	7.0	6.6	6.1	5.5	4.7	3.6	2.2	0.2			
		40	11.5	11.2	11.0	10.8	10.6	10.3	10.0	9.6	9.2	8.8	8.4	8.0	7.6	7.1	6.7	6.2	5.6	4.9	3.9	2.5	0.7				
		50	11.3	11.0	10.8	10.6	10.3	10.0	9.7	9.3	8.9	8.5	8.1	7.7	7.2	6.8	6.3	5.8	5.1	4.2	2.9	1.2					
		60	11.1	10.9	10.7	10.4	10.1	9.8	9.4	9.0	8.6	8.2	7.7	7.3	6.9	6.5	5.9	5.3	4.4	3.2	1.6						
Shut-off PSI			303	290	277	264	251	238	225	212	199	186	173	160	147	134	121	108	95	82	69	56	43	30	17	4	



FEATURES

- Powered for Continuous Operation:** All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.
- Field Serviceable:** Units have left hand threads and are field serviceable with common tools and readily available repair parts.
- Sand Handling Design:** Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.
- FDA Compliant Non-Metallic Parts:** Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.
- Discharge Head/Check Valve:** Cast 303 stainless steel for strength and durability. Two cast-in safety line loops for installer convenience. The built-in check valve is constructed of stainless steel and FDA compliant BUNA rubber for abrasion resistance and quiet operation.
- Motor Adapter:** Cast 303 stainless steel for rigid, accurate alignment of pump and motor. Easy access to motor mounting nuts using standard open end wrench.
- Stainless Steel Casing:** Polished stainless steel is strong and corrosion resistant.
- Hex Shaft Design:** Six sided shafts for positive impeller drive.
- Engineered Polymer Bearings:** The proprietary, engineered polymer bearing material is strong and resistant to abrasion and wear. The enclosed upper bearing is mounted in a durable Noryl® bearing spider for excellent abrasion resistance.

**5GS, 7GS, 10GS,
13GS, 18GS & 25GS**

5-25 GPM, ½ - 5 HP, 60 HZ, SUBMERSIBLE PUMPS



WATER END DATA

Series	Model	Required HP	Stages	Length (in)	Weight (lbs)
5GS	5GS05R	.5	9	12.9	8
	5GS05	.5	12	15.0	9
	5GS07	.75	15	17.0	11
	5GS10	1	20	21.7	13
	5GS15	1.5	26	25.8	15
	5GS20	2	33	31.6	19
7GS	7GS05R	.5	7	11.7	6
	7GS05	.5	10	13.8	7
	7GS07	.75	13	16.0	8
	7GS10	1	17	18.8	9
	7GS15	1.5	22	23.6	12
	7GS20	2	27	27.2	13
10GS	10GS05R*	0.5	8	12.2	7
	10GS05*	0.5	10	13.6	8
	10GS07*	0.75	14	16.4	9
	10GS10*	1	16	17.7	11
	10GS15	1.5	17	18.4	12
	10GS20	2	20	21.7	13
	10GS30	3	27	27.5	18
	10GS50R	5	35	33	21
	10GS50	5	42	40.2	24
13GS	13GS05	.5	5	10.1	6
	13GS07	.75	7	11.5	7
	13GS10	1	10	13.6	8
	13GS15	1.5	12	15.0	9
	13GS20	2	17	18.4	12
	13GS30	3	21	22.3	15
18GS	18GS07	.75	6	11.8	7
	18GS10	1	8	13.5	8
	18GS15	1.5	11	16.1	10
	18GS20	2	14	18.6	11
	18GS30	3	19	24.1	15
	18GS50R	5	24	28.3	17
25GS	25GS10	1	7	13.4	8
	25GS15	1.5	9	15.3	9
	25GS20	2	11	17.2	10
	25GS30	3	15	20.9	14
	25GS50R	5	22	28.7	17
	25GS50	5	26	33.4	21

*New High Head Hydraulic Design for models manufactured starting 8/2017

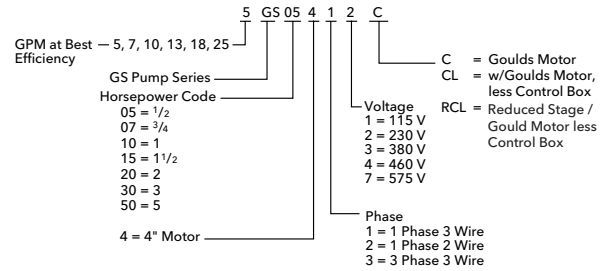
SPECIFICATIONS

Model	Flow Range GPM	Horsepower Range	Best Efficiency GPM	Discharge Connection	Minimum Well Size	Rotation ^①
5GS	1.2 - 7.5	½ - 2	5	1¼"	4"	CCW
7GS	1.5 - 10	½ - 3	7	1¼"	4"	CCW
10GS	3 - 16	½ - 5	10	1¼"	4"	CCW
13GS	4 - 20	½ - 3	13	1¼"	4"	CCW
18GS	6 - 28	¾ - 5	18	1¼"	4"	CCW
25GS	8 - 33	1 - 5	25	1¼"	4"	CCW

① Rotation is counterclockwise when observed from pump discharge end.

NOMENCLATURE See price book for complete order numbers.

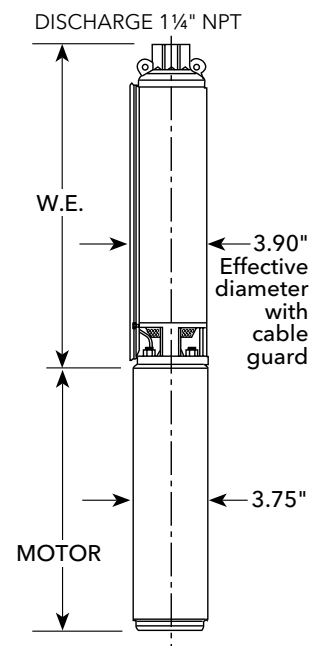
NOMENCLATURE See price book for complete order numbers.



"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Check Valve Poppet	AISI 304 SS
Check Valve Seal	BUNA, FDA compliant
Check Valve Seat	AISI 304 SS
Check Valve Retaining Ring	AISI 302 SS
Bearing Spider - Upper	Noryl® GFN2
Bearing	Proprietary Engineered Polymer
Klipring	AISI 301 SS
Diffuser	Lexan®
Impeller	Noryl®
Bowl	AISI 304 SS
Intermediate Sleeve *	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling *	AISI 304 SS, Powder Metal
Intermediate Bearing Spider *	Glass Filled Engineered Composite
Intermediate Bearing Spider *	AISI 303 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft	AISI 304 SS
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

*See repair parts for where used.



GOULDS WATER TECHNOLOGY 4" SINGLE-PHASE MOTORS

Order No.	Type	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M05421	2-wire PSC	½	230	10.5 (267)	18 (8.2)
M05422		½		10.5 (267)	18 (8.2)
M07422		¾		11.9 (302)	22 (9.7)
M10422		1		12.5 (318)	24 (10.5)
M15422		1.5		14.2 (361)	28 (12.4)
M05411	3-wire	½	230	9.6 (244)	17.9 (8.1)
M05412		½		9.2 (234)	16.7 (7.6)
M07412		¾		10.3 (262)	19.8 (9.0)
M10412		1		11.2 (284)	22.0 (10.0)
M15412		1.5		12.8 (325)	26.0 (11.8)
M20412		2		15.1 (383)	31 (14.1)
M30412		3		18.3 (466)	40 (18.1)
M50412	5	27.7 (703)	70 (31.8)		

NEMA MOTOR

- Corrosion resistant stainless steel construction.
- Built-in surge arrestor is provided on single phase motors through 5 HP.
- Stainless steel splined shaft.
- Hermetically sealed windings.
- Replaceable motor lead assembly.
- NEMA mounting dimensions.
- Control box is required with 3 wire single phase units.
- Three phase units require a magnetic starter with three leg Class 10 overload protection.

GOULDS WATER TECHNOLOGY 4" THREE-PHASE MOTORS

Order No. by Voltage			HP	Length in. (mm)	Weight lb. (kg.)
200V	230V	460V			
M05430	M05432	M05434	½	10.0 (254)	19 (8.7)
M07430	M07432	M07434	¾	10.8 (275)	22 (9.7)
M10430	M10432	M10434	1	11.7 (297)	23 (10.4)
M15430	M15432	M15434	1.5	11.7 (297)	23 (10.4)
M20430	M20432	M20434	2	13.8 (351)	28 (12.7)
M30430	M30432	M30434	3	15.3 (389)	32 (14.5)
M50430	M50432	M50434	5	21.7 (550)	55 (24.9)
M75430	M75432	M75434	7.5	27.7 (703)	70 (1.8)

Order No.	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M15437	1.5	575	11.7 (297)	23 (10.4)
M20437	2		15.3 (389)	32 (14.5)
M30437	3		15.3 (389)	32 (14.5)
M50437	5		27.7 (703)	70 (31.8)
M75437	7.5		27.7 (703)	70 (31.8)

AGENCY LISTINGS



Pump/Water End and Goolds water technology Motor - tested to UL778 and CAN 22.2 by CSA International (Canadian Standards Association)



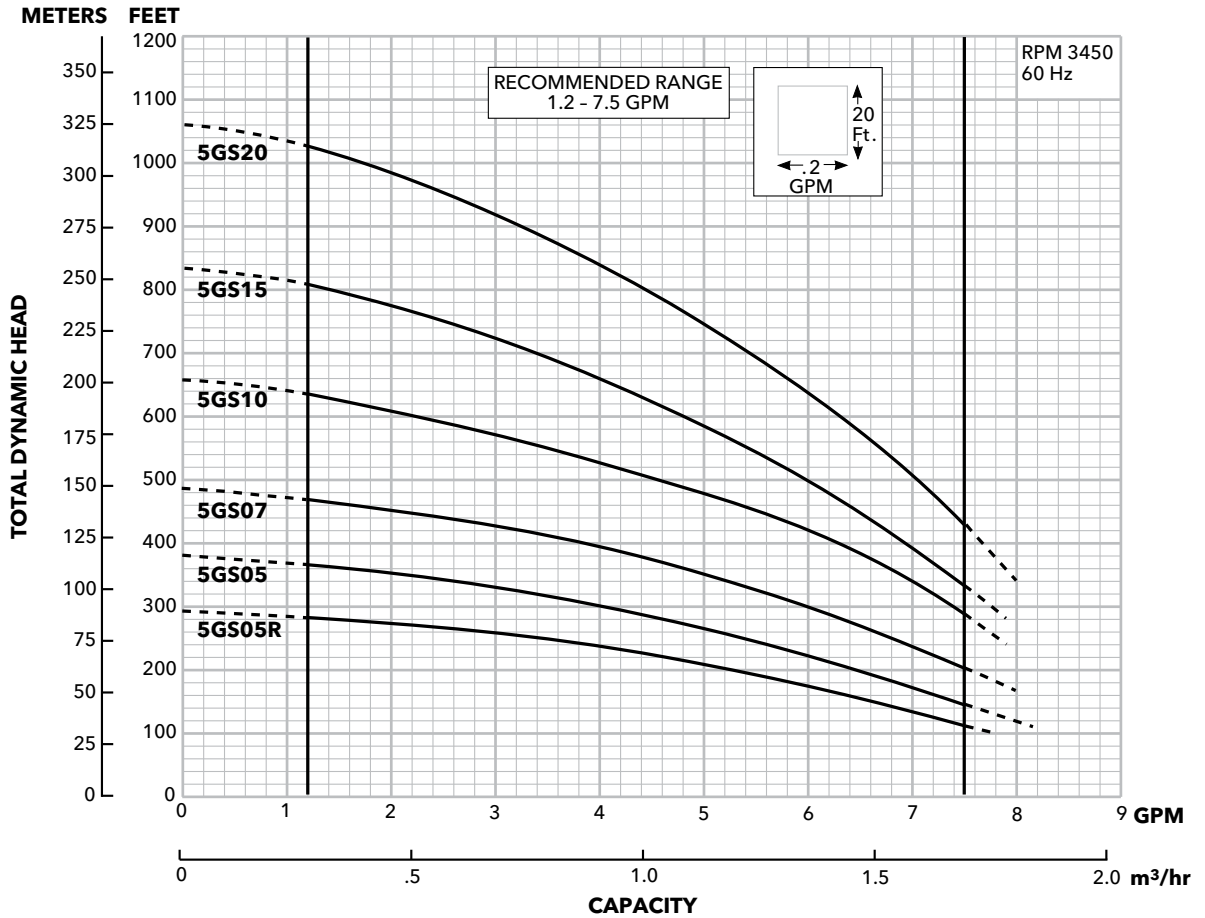
Goolds water technology Motor - Certified to NSF/ANSI 61, Annex G, Drinking Water System Components 4P49



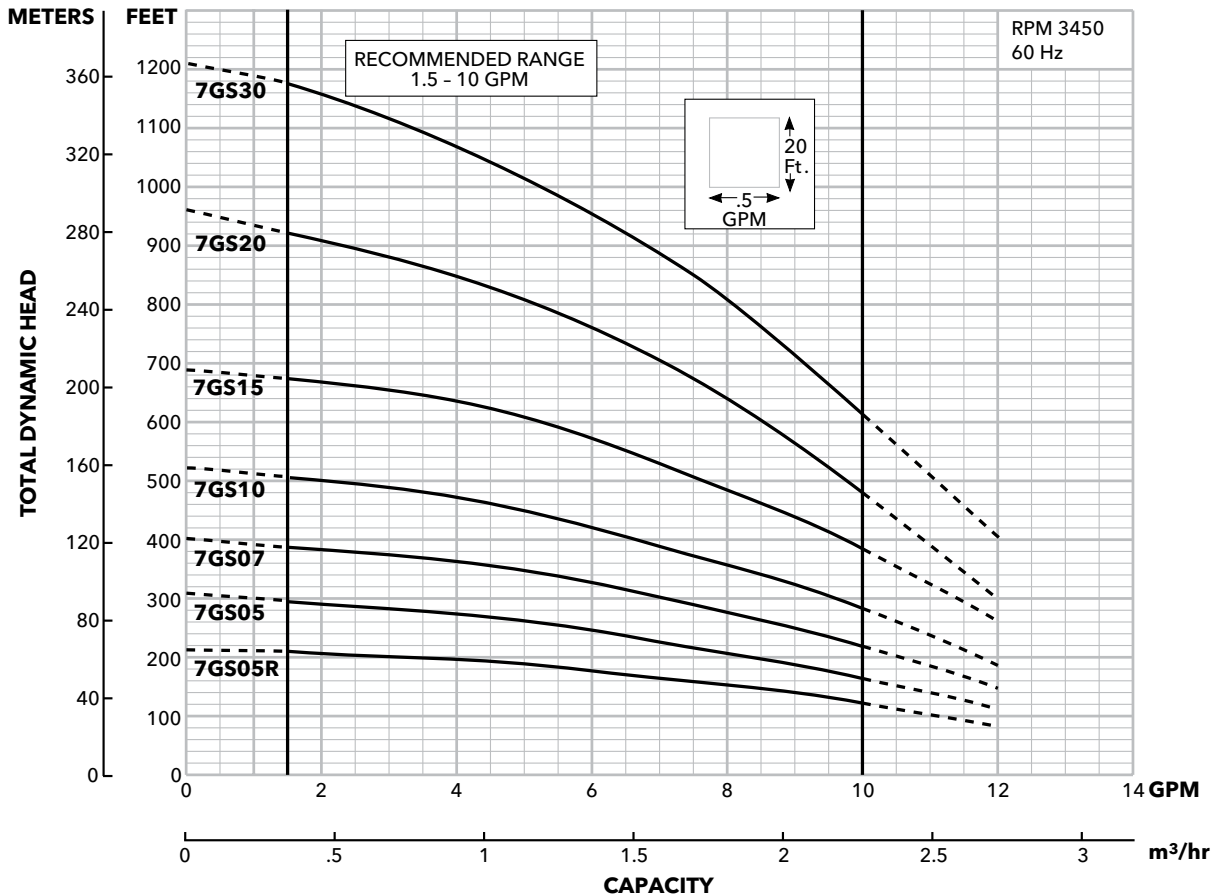
NSF/ANSI 372 - Drinking Water System Components - Lead Content

CLASS 6853 01 - Low Lead Content Certification Program - Plumbing Products

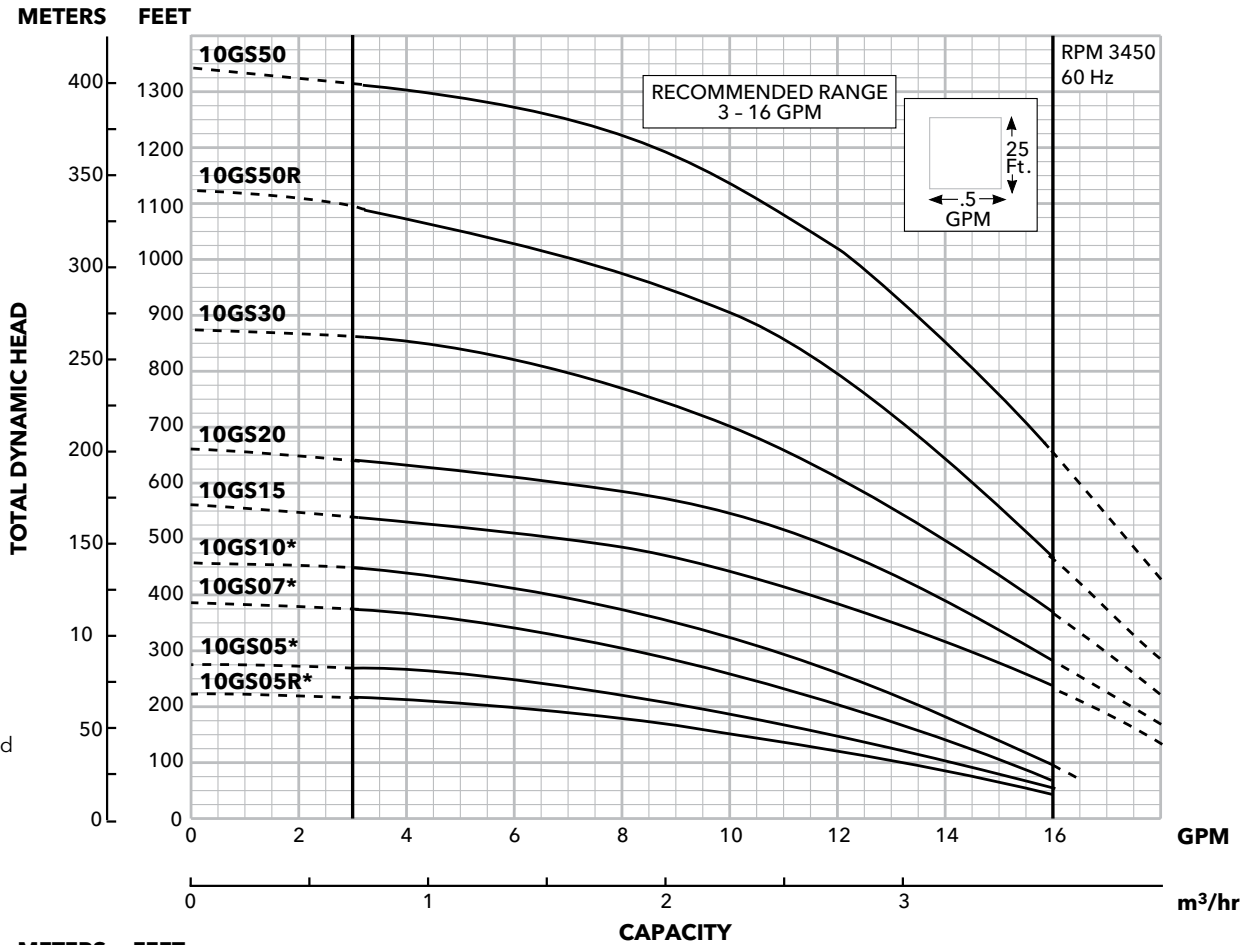
Model 5GS



Model 7GS

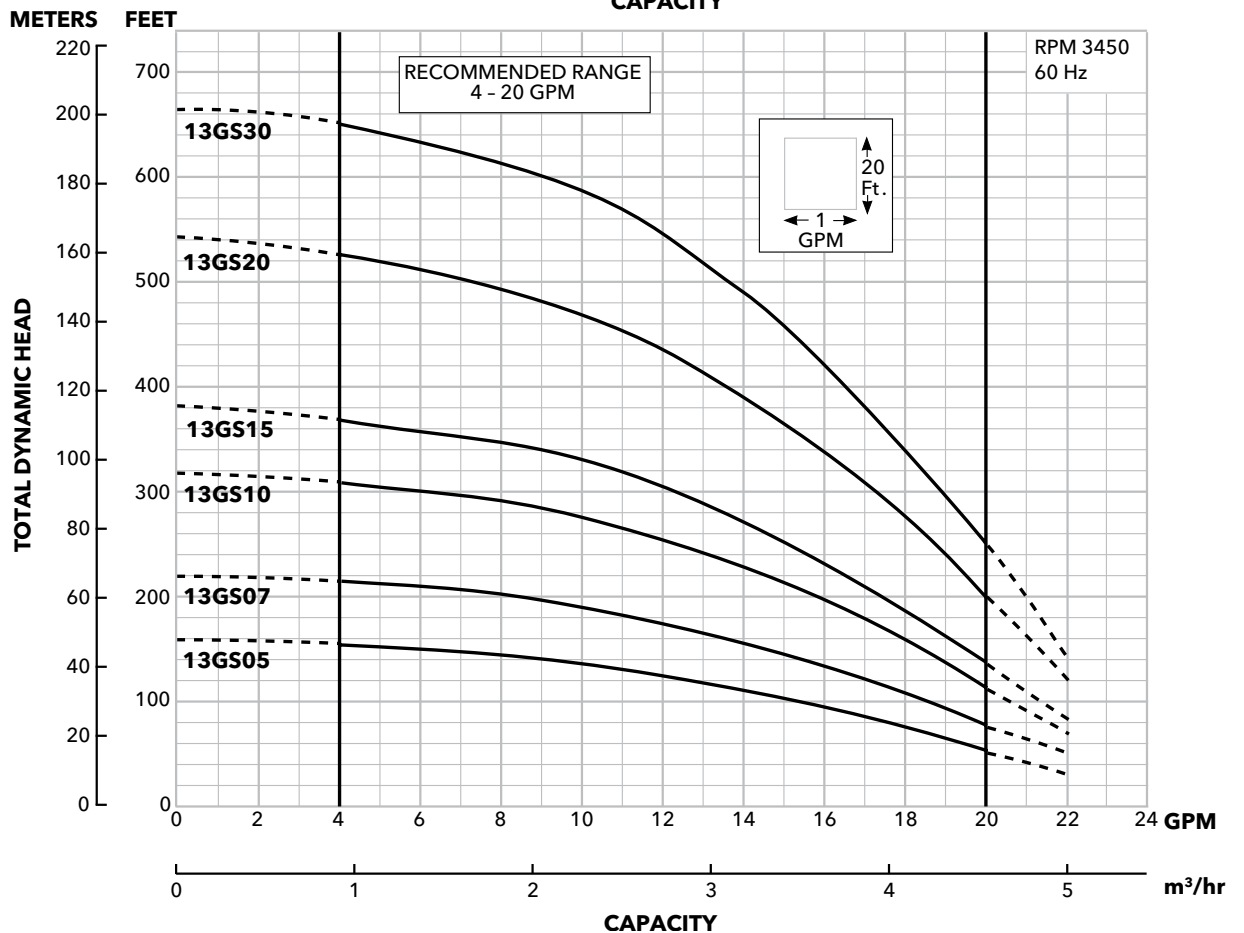


Model 10GS

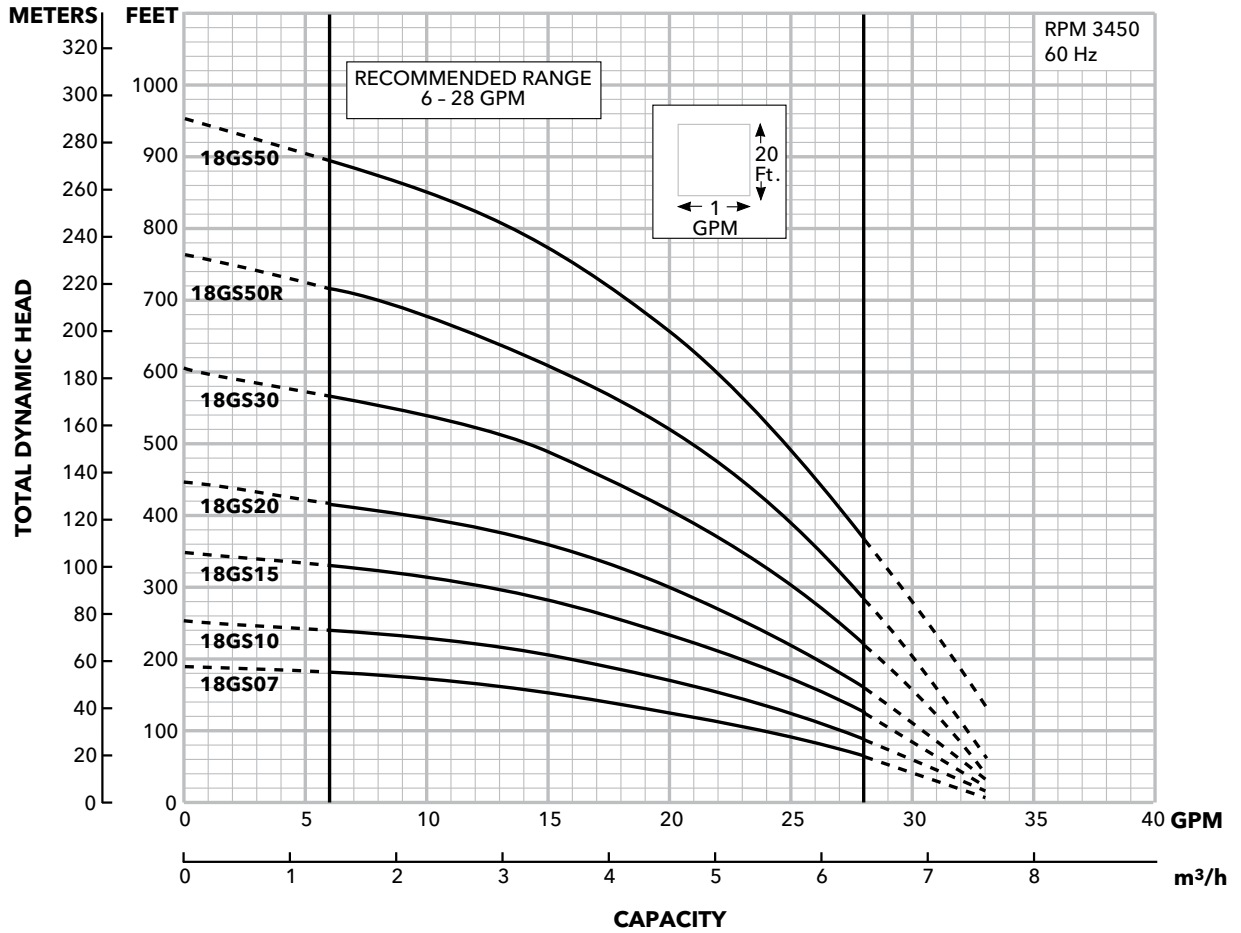


New High Head Hydraulic Design for models manufactured starting 8/2017
* HH Versions

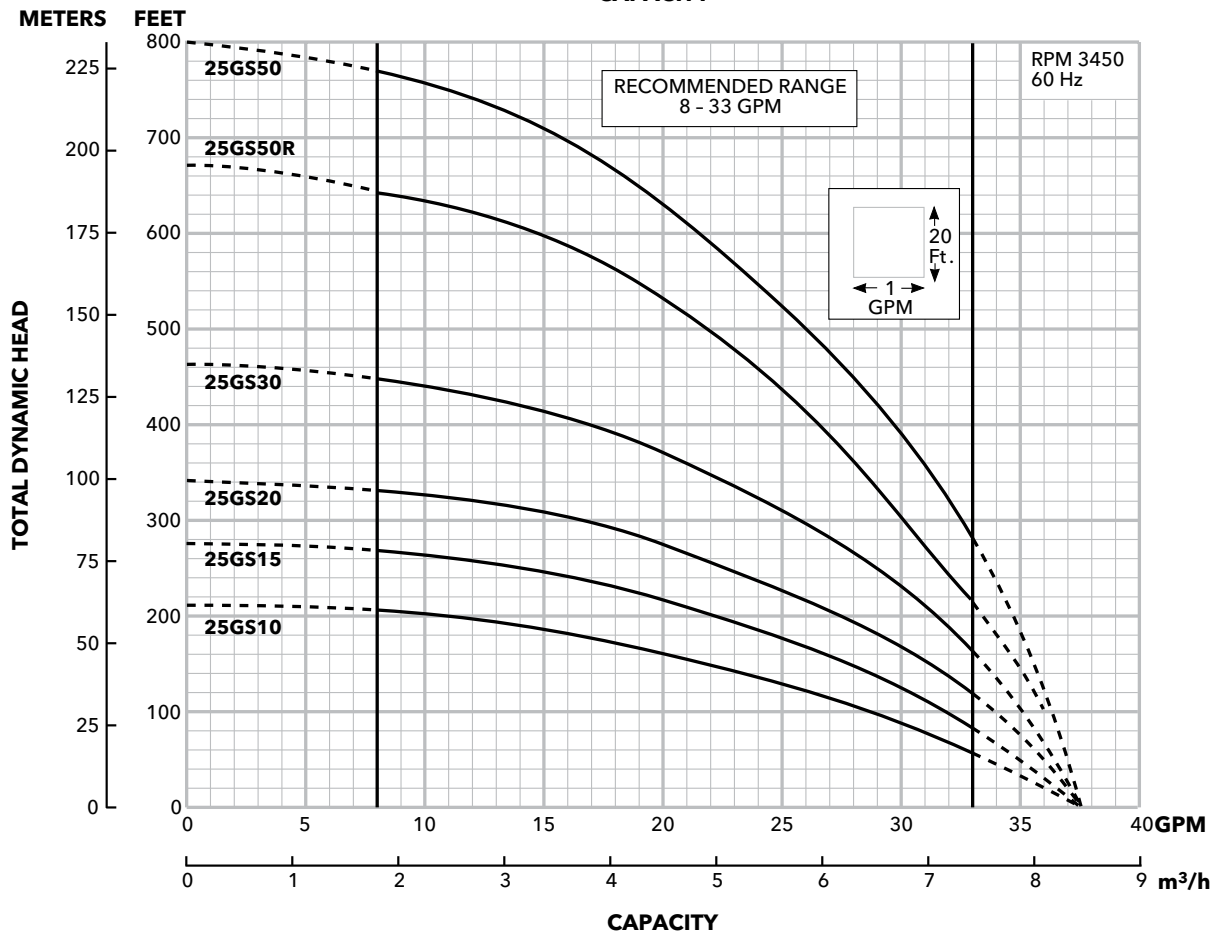
Model 13GS



Model 18GS



Model 25GS



Residential Water

MODEL 7GS

SELECTION CHART

Horsepower Range 1/2 - 1, Recommended Range 1.5 - 10 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																												
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	540	580	620	
7GS05R	1/2	0						10.2	8.9	7.5	5.9	3.6																			
		20				9.8	8.5	7.0	5.3	2.5																					
		30			9.6	8.3	6.8	4.9	1.9																						
		40		9.4	8.1	6.5	4.6	1.2																							
		50	9.2	7.8	6.3	4.2	0.5																								
		60	7.6	6.0	3.8																										
Shut-off PSI			85	77	68	59	51	42	33	25	16	7																			
7GS05	1/2	0								10.1	9.2	8.3	7.4	6.3	5.0	3.4															
		20						9.8	9.0	8.1	7.1	6.0	4.6	2.7																	
		30						9.7	8.8	7.9	6.9	5.8	4.3	2.4																	
		40			10.4	9.6	8.7	7.8	6.7	5.6	4.1	2.0																			
		50		10.3	9.4	8.5	7.6	6.6	5.4	3.8	1.7																				
		60	10.2	9.3	8.4	7.5	6.4	5.1	3.5																						
Shut-off PSI			125	116	107	99	90	81	73	64	55	47	38	29	21	12															
7GS07	3/4	0										10.0	9.3	8.6	7.9	7.1	6.2	5.2	4.0	2.4											
		20								10.4	9.8	9.1	8.4	7.7	6.9	6.0	4.9	3.5	1.8												
		30							10.3	9.7	9.0	8.3	7.5	6.7	5.8	4.7	3.3	1.5													
		40						10.2	9.5	8.9	8.2	7.4	6.6	5.6	4.5	3.1															
		50					10.1	9.4	8.8	8.1	7.3	6.5	5.5	4.3	2.8																
		60				10.0	9.3	8.7	7.9	7.2	6.3	5.3	4.1	2.5																	
Shut-off PSI					140	131	122	114	105	96	88	79	70	62	53	44	36	27	18	10											
7GS10	1	0											10.1	9.6	9.0	8.5	7.9	7.3	6.7	6.0	5.3	4.4	3.4	2.1							
		20										10.4	9.9	9.4	8.9	8.3	7.7	7.1	6.5	5.8	5.0	4.1	3.0	1.6							
		30										10.3	9.9	9.3	8.8	8.2	7.6	7.0	6.4	5.7	4.9	4.0	2.8								
		40										10.3	9.8	9.2	8.7	8.1	7.5	6.9	6.3	5.6	4.8	3.8	2.6								
		50									10.2	9.7	9.2	8.6	8.0	7.4	6.8	6.2	5.4	4.6	3.7	2.4									
		60								10.1	9.6	9.1	8.5	7.9	7.3	6.7	6.0	5.3	4.5	3.5	2.2										
Shut-off PSI								166	158	149	140	132	123	114	106	97	88	80	71	62	54	45	36	28	19	10					

Horsepower Range 1 1/2 - 3, Recommended Range 1.5 - 10 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																													
			200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940	980	1020	1060	1100	1140			
7GS15	1 1/2	0								10.2	9.3	8.5	7.6	6.8	5.9	4.7	2.6															
		20							10.1	9.2	8.3	7.5	6.7	5.8	4.5	2.1																
		30						10.4	9.6	8.7	7.8	7.0	6.2	5.1	3.3																	
		40					10.3	9.9	9.1	8.2	7.4	6.6	5.6	4.2	1.6																	
		50				10.3	9.9	9.4	8.6	7.7	6.9	6.0	4.9	2.9																		
		60			10.2	9.8	9.4	8.9	8.1	7.2	6.4	5.4	3.9																			
Shut-off PSI				194	186	177	168	151	134	116	99	82	64	47	30	12																
7GS20	2	0										9.8	9.3	8.7	8.4	7.8	7.1	6.3	5.4	4.5	3.5	2.2										
		20										9.8	9.3	8.7	8.4	7.7	6.9	6.2	5.3	4.3	3.2	2.8										
		30										9.9	9.5	9.0	8.5	7.9	7.2	6.4	5.7	4.4	3.7											
		40									10.0	9.7	9.2	8.7	8.3	7.5	6.7	6.0	5.2	4.1	3.0											
		50									9.9	9.4	8.9	8.5	7.8	7.2	6.3	5.5	4.7	3.5												
		60								10.0	9.6	9.1	8.7	8.2	7.4	6.6	5.8	5.0	4.0													
Shut-off PSI								268	251	234	216	199	182	165	147	130	113	95	80	61	43	26										
7GS30	3	0														9.8	9.5	9.2	8.7	8.3	7.9	7.4	6.8	6.2	5.4	4.7	3.9	3.0	2.0			
		20														9.8	9.4	9.2	8.7	8.3	7.8	7.2	6.7	6.2	5.3	4.5	3.7	3.3	1.7			
		30														10.0	9.6	9.2	8.8	8.5	8.0	7.5	6.9	6.3	5.7	4.8	4.1	3.2	2.3			
		40														10.0	9.7	9.4	9.0	8.6	8.2	7.7	7.2	6.6	5.9	5.2	4.4	3.6	2.7	1.7		
		50														9.9	9.5	9.2	8.7	8.4	7.9	7.4	6.8	6.3	5.5	4.8	3.9	3.1	2.2			
		60														10.0	9.7	9.3	9.0	8.6	8.1	7.6	7.0	6.5	5.8	5.1	4.2	3.4	2.5	1.5		
Shut-off PSI															320	303	286	268	251	234	216	199	182	165	147	130	113	95	78	61	43	27

MODEL 10GS

SELECTION CHART Horsepower Range 1/2 - 3, Recommended Range 3 - 16 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																							
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	
10GS05R*	1/2	0			15.3	14.2	13.1	12.0	10.9	9.8	8.4	6.1	2.1													
		20	15.0	13.9	12.8	11.6	10.6	9.4	7.8	5.1	0.3															
		30	13.7	12.6	11.5	10.4	9.2	7.5	4.6																	
		40	12.4	11.3	10.2	9.0	7.2	3.9																		
		50	11.1	10.1	8.8	6.8	3.2																			
		60	9.9	8.5	6.4	2.5																				
Shut-off PSI			89	80	72	63	54	46	37	28	20	11	2													
10GS05*	1/2	0			15.7	14.9	14.1	13.3	12.4	11.4	10.4	9.3	8.0	6.3	3.9											
		20	15.4	14.7	13.9	13.0	12.1	11.1	10.1	8.9	7.5	5.7	2.9													
		30	14.6	13.8	12.9	12.0	11.0	9.9	8.7	7.3	5.3	2.3														
		40	13.6	12.8	11.8	10.8	9.7	8.5	7.0	4.9	1.7															
		50	12.6	11.7	10.6	9.5	8.3	6.8	4.5	1.0																
		60	11.5	10.5	9.3	8.1	6.5	4.1	0.2																	
Shut-off PSI			113	105	96	87	79	70	61	53	44	35	27	18	9	1										
10GS07*	3/4	0			15.7	15.2	14.6	14.0	13.4	12.7	12.0	11.4	10.8	10.1	9.5	8.7	7.7	6.4	4.6	2.1						
		20	16.0	15.5	15.0	14.5	13.8	13.2	12.5	11.8	11.2	10.6	9.9	9.2	8.4	7.3	5.9	3.9	1.2							
		30	15.5	15.0	14.4	13.7	13.1	12.4	11.7	11.1	10.5	9.8	9.1	8.3	7.1	5.6	3.5	0.7								
		40	14.9	14.3	13.6	12.9	12.3	11.6	11.0	10.4	9.7	9.0	8.1	6.9	5.3	3.1	0.2									
		50	14.2	13.5	12.8	12.2	11.5	10.9	10.3	9.6	8.9	8.0	6.7	5.0	2.7											
		60	13.4	12.7	12.1	11.4	10.8	10.2	9.5	8.7	7.8	6.5	4.7	2.3												
Shut-off PSI			161	152	143	135	126	118	109	100	92	83	74	66	57	48	40	31	22	14	5					
10GS10*	1	0				15.7	15.2	14.8	14.4	14.0	13.6	13.2	12.7	12.1	11.4	10.7	10.0	9.3	8.6	7.9	7.0	5.7	3.8	0.6		
		20		16.0	15.5	15.0	14.6	14.3	13.9	13.5	13.0	12.5	11.9	11.2	10.5	9.8	9.1	8.4	7.6	6.7	5.2	2.9				
		30	16.0	15.4	15.0	14.6	14.2	13.9	13.4	13.0	12.4	11.8	11.1	10.4	9.7	9.0	8.3	7.5	6.5	4.9	2.5					
		40	15.3	14.9	14.5	14.2	13.8	13.4	12.9	12.3	11.6	11.0	10.3	9.6	8.9	8.2	7.4	6.3	4.6	2.0						
		50	14.8	14.5	14.1	13.7	13.3	12.8	12.2	11.5	10.9	10.1	9.5	8.8	8.1	7.2	6.1	4.3	1.5							
		60	14.4	14.1	13.7	13.2	12.7	12.1	11.4	10.7	10.0	9.4	8.7	7.9	7.1	5.8	3.9	0.9								
Shut-off PSI			192	184	175	166	158	149	140	132	123	114	106	97	88	80	71	62	54	45	36	28	19	10		

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																													
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820		
10GS15	1 1/2	0												15.7	15.3	14.8	14.4	13.3	12.2	10.9	9.3	7.1	3.0									
		20											16.0	15.6	15.2	14.7	14.3	13.7	13.2	11.9	10.6	9.0	6.5									
		30										15.9	15.5	15.2	14.6	14.2	13.5	13.1	12.6	11.3	9.7	7.6	4.0									
		40								15.8	15.5	15.1	14.6	14.2	13.5	13.0	12.5	11.8	10.3	8.8	6.0											
		50						15.7	15.4	14.9	14.5	14.0	13.4	12.8	12.3	11.7	11.0	9.4	7.4	3.4												
		60					15.7	15.3	14.8	14.4	13.9	13.3	12.8	12.2	11.6	10.9	10.1	8.1	5.6													
Shut-off PSI						197	188	180	171	162	154	144	136	128	119	110	93	76	58	41	24	6										
10GS20	2	0														16.0	15.7	14.9	14.2	13.4	12.4	11.4	10.0	8.2	5.8							
		20													15.9	15.5	15.3	14.8	14.1	13.2	12.2	11.0	9.9	8.0	5.2							
		30												15.8	15.4	15.1	14.7	14.4	13.5	12.7	11.7	10.3	8.8	6.5								
		40										15.8	15.4	15.1	14.7	14.4	14.0	12.9	12.2	10.9	9.5	7.8	3.9									
		50								16.1	15.7	15.3	15.0	14.6	14.2	14.0	13.4	12.5	11.5	10.1	8.5	6.0										
		60						16.0	15.7	15.3	14.9	14.5	14.2	13.8	13.4	12.8	11.8	10.7	9.1	7.2	3.4											
Shut-off PSI						225	216	208	199	190	182	173	164	156	139	121	104	87	69	52	35	17										
10GS30	3	0																15.8	15.2	14.6	14.0	13.3	12.6	11.9	11.0	10.0	9.0	7.5	5.8			
		20																15.7	15.1	14.5	13.9	13.2	12.5	11.8	10.9	9.9	8.8	7.2	5.4			
		30															15.9	15.4	14.8	14.2	13.4	12.8	12.0	11.3	10.3	9.3	8.1	6.2	3.8			
		40																15.9	15.6	15.0	14.4	13.8	13.1	12.4	11.5	10.8	9.7	8.6	7.1	4.7		
		50												16.0	15.8	15.3	14.7	14.1	13.3	12.7	11.9	11.0	10.2	9.1	7.8	6.0	3.0					
		60											16.0	15.8	15.5	15.2	14.8	14.3	13.7	12.9	12.3	11.4	10.6	9.6	8.3	6.8	4.5					
Shut-off PSI											284	275	267	258	249	232	215	197	180	163	145	128	111	94	76	59	42	24				

Horsepower Range 5, Recommended Range 3 - 16 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																		
			340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940	980	1020	1060
10GS50R	5	0					15.6	15.1	14.6	14.2	13.7	13.3	12.8	12.3	11.7	11.0	10.2	9.2	7.9	6.3	4.3
		20			16.0	15.5	15.0	14.6	14.1	13.6	13.2	12.7	12.2	11.6	10.9	10.1	9.0	7.6	6.0	3.9	
		30			15.7	15.3	14.8	14.3	13.8	13.4	12.9	12.4	11.9	11.2	10.4	9.5	8.2	6.7	4.9		
		40		16.0	15.5	15.0	14.5	14.0	13.6	13.1	12.6	12.1	11.5	10.8	9.9	8.8	7.4	5.7	3.6		
		50		15.7	15.2	14.7	14.2	13.8	13.3	12.9	12.4	11.8	11.1	10.3	9.3	8.0	6.5	4.5			
		60	15.9	15.4	14.9	14.4	14.0	13.5	13.0	12.6	12.0	11.4	10.7	9.7	8.6	7.2	5.4	3.2			
Shut-off PSI			341	324	306	289	272	255	237	220	203	185	168	151	133	116	99	81	64	47	29

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																				
			440	480	520	560	600	640	680	720	760	800	840	880	920	960	1000	1040	1080	1120	1160	1200	1240
10GS50	5	0					16	15.5	15.2	14.9	14.5	14	13.5	13	12.5	12	11.5	10.8	10.2	9.5	8.5	7	5.2
		20					15.6	15.2	14.9	14.6	14.5	13.9	13.4	12.9	12.4	11.9	11.3	10.7	10.1	9.4	8.2	6.8	4.3
		30					15.6	15.2	14.9	14.6	14.2	13.7	13.1	12.6	12.1	11.6	11.0	10.4	9.8	8.8	7.5	6.0	3.0
		40				15.8	15.3	15.1	14.7	14.4	13.8	13.3	12.8	12.3	11.8	11.2	10.6	10.0	9.2	7.9	6.6	4.1	
		50				15.5	15.2	14.9	14.6	14.1	13.6	13.0	12.5	12.1	11.5	10.9	10.3	9.7	8.6	7.3	5.6		
		60				15.7	15.3	15.0	14.7	14.3	13.7	13.2	12.7	12.2	11.7	11.1	10.5	9.9	9.0				

Residential Water

MODEL 13GS

SELECTION CHART

Horsepower Range ½ - 3, Recommended Range 4 - 20 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																												
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	
13GS05	½	0			19.0	17.5	15.3	12.5	8.2																						
		20	18.8	16.5	14.5	12.0	8.0																								
		30	16.0	13.4	11.0	4.1																									
		40	13.3	10.6	4.0																										
		50	9.8																												
		60																													
Shut-off PSI			60	52	43	35	26	17	9																						
13GS07	¾	0				19.7	18.5	17.0	15.0	13.2	11.5	8.5																			
		20		19.4	18.0	16.4	14.8	12.9	10.5	6.0																					
		30	18.9	17.5	16.0	14.6	12.5	10.0	5.0																						
		40	17.4	15.9	14.4	12.4	9.7	4.0																							
		50	15.4	13.8	12.0	9.5																									
		60	13.2	11.5	8.5																										
Shut-off PSI			86	78	69	61	52	43	35	26	17	8																			
13GS10	1	0					19.6	18.4	17.6	16.6	15.4	14.1	12.8	11.4	9.5	6.0															
		20			20.0	19.4	18.5	17.2	16.3	15.0	13.8	12.5	11.0	8.5	4.0																
		30		20.0	19.2	18.2	17.1	15.8	14.7	13.6	12.2	10.5	7.5																		
		40	19.9	19.0	18.0	17.0	15.7	14.6	13.5	12.0	10.1	7.3																			
		50	18.8	17.8	16.8	15.5	14.5	13.0	11.6	9.9	7.0																				
		60	17.6	16.6	15.4	14.1	12.8	11.4	9.5	6.0																					
Shut-off PSI			128	119	110	102	93	84	76	67	58	50	41	32	24	15	6														
13GS15	1½	0						19.7	18.9	18.2	17.3	16.3	15.2	14.2	13.2	12.1	8.7														
		20					19.5	18.4	17.9	17.0	16.0	15.1	14.1	12.9	11.8	10.2	8.8														
		30			20.2	19.4	18.6	17.6	16.8	15.8	14.9	14.0	12.6	11.5	9.9	7.9	4.0														
		40		20.0	19.3	18.5	17.5	16.6	15.7	14.8	13.9	12.5	11.4	9.5	7.3	4.0															
		50	20.0	19.1	18.3	17.4	16.4	15.5	14.5	13.6	12.3	11.0	9.2	6.3																	
		60	18.9	18.2	17.3	16.3	15.2	14.2	13.3	12.1	11.0	8.7	5.6																		
Shut-off PSI			156	147	139	130	121	113	104	95	87	78	69	61	52	43	35	17													
13GS20	2	0								20.0	19.5	19.0	18.3	17.9	17.2	15.8	14.4	12.6	10.5	7.7											
		20								19.8	19.4	18.8	18.2	17.6	17.0	16.3	15.6	14.1	12.4	10.2	6.8										
		30								19.7	19.3	18.7	18.2	17.4	16.8	16.2	15.5	14.8	13.1	11.1	8.8										
		40							19.6	19.2	18.6	18.1	17.3	16.7	16.1	15.4	14.7	13.8	12.0	9.8	6.0										
		50				20.1	19.5	19.1	18.4	18.0	17.2	16.6	16.0	15.2	14.6	13.7	12.9	10.8	8.5												
		60			20.0	19.5	19.0	18.3	17.9	17.2	16.5	15.8	15.1	14.4	13.6	12.6	11.5	9.2	5.0												
Shut-off PSI					206	198	189	180	172	163	155	146	137	129	120	111	103	85	68	51	33	16									
13GS30	3	0												19.8	19.4	18.9	18.0	17.1	16.0	14.6	13.5	11.9	10.0	7.3							
		20												19.6	19.2	18.9	18.3	17.9	17.0	15.9	14.7	13.3	11.8	9.7	6.9						
		30												20.0	19.5	19.1	18.8	18.2	17.8	17.4	16.4	15.2	13.9	12.3	10.5	8.3	4.0				
		40												20.0	19.4	19.1	18.7	18.2	17.8	17.3	16.8	15.6	14.5	13.0	11.4	9.5	6.0				
		50												19.9	19.5	19.0	18.6	18.1	17.7	17.2	16.7	16.1	14.9	13.7	12.0	10.1	7.9				
		60												19.8	19.4	18.9	18.5	18.0	17.5	17.1	16.6	16.0	15.4	14.2	12.9	11.0	9.0	5.0			
Shut-off PSI									235	226	217	209	200	191	183	174	165	157	139	122	104	87	70	53	35	18					

Residential Water

MODEL 18GS

SELECTION CHART

Horsepower Range ¾ - 5, Recommended Range 6 - 28 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																													
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	
18GS07	¾	0			28.2	26.5	24.0	21.0	17.9	13.5																						
		20	27.7	25.9	23.0	20.0	16.5	10.8																								
		30	25.0	22.0	18.8	15.7	9.5																									
		40	22.2	18.9	15.1	9.0																										
		50	18.4	15.0	7.5																											
		60	13.5	5.0																												
Shut-off PSI			74	66	58	49	40	32	23	14																						
18GS10	1	0					27.0	25.5	23.6	21.2	18.8	15.9	12.0																			
		20		28.0	26.6	25.1	22.7	20.0	17.6	14.0	10.0																					
		30	27.9	26.1	24.3	22.2	19.8	17.1	13.8	8.3																						
		40	26.0	24.1	22.0	19.7	17.0	13.1	8.0																							
		50	24.0	22.0	19.1	16.5	13.0	7.1																								
		60	21.0	18.6	15.8	12.0																										
Shut-off PSI			103	94	86	77	68	60	51	42	34	25	16																			
18GS15	1½	0						28.4	27.2	26.0	24.8	23.0	21.4	19.6	17.5	15.0	12.1															
		20					27.8	26.8	25.4	24.0	22.2	20.6	18.8	16.7	14.0	10.0																
		30				27.7	26.5	25.3	23.8	22.0	20.2	18.5	16.1	13.5	10.0																	
		40		27.5	26.3	25.0	23.6	22.0	20.1	18.1	16.0	13.1	9.5																			
		50	27.6	26.4	25.0	23.4	21.8	20.0	18.0	15.5	13.0	9.2																				
		60	26.0	24.6	23.0	21.2	19.5	17.5	15.0	12.0	7.9																					
Shut-off PSI			143	134	126	117	108	100	91	82	74	65	56	48	39	30	22															
18GS20	2	0								28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	16.8	12.8													
		20						27.8	26.8	25.8	24.6	23.7	22.6	21.0	19.5	18.0	16.0	11.6														
		30						27.5	26.5	25.5	24.5	23.3	22.1	20.6	19.0	17.5	15.8	13.6	6.5													
		40				28.5	27.4	26.4	25.4	24.4	23.2	22.0	20.5	18.9	17.4	15.7	13.5	11.0														
		50		28.0	27.2	26.2	25.3	24.3	23.0	21.8	20.3	18.7	17.0	15.3	13.1	10.5	6.0															
		60	28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	18.3	16.8	14.8	12.8	9.5																	
Shut-off PSI			183	174	165	157	148	139	131	122	113	105	96	87	79	70	61	44	27													
18GS30	3	0												28.0	27.4	26.7	26.0	25.0	23.5	21.5	19.2	16.9	14.2	10.5								
		20												27.7	27.0	26.3	25.8	24.9	24.0	23.0	21.0	18.9	16.5	13.5	9.0							
		30												27.6	26.9	26.2	25.5	24.8	23.9	22.9	21.9	19.8	17.5	14.9	11.2							
		40												27.5	26.9	26.2	25.4	24.6	23.8	22.8	21.8	20.9	18.5	16.0	13.3	8.0						
		50												27.4	26.8	26.0	25.2	24.5	23.6	22.6	21.7	20.6	19.5	17.3	14.5	11.0						
		60												28.0	27.4	26.7	26.0	25.0	24.3	23.5	22.5	21.5	20.5	19.2	18.0	15.7	12.8	7.0				
Shut-off PSI																																
18GS50R	5	0																														
		20																														
		30																														
		40																														
		50																														
		60																														
Shut-off PSI																																
18GS50	5	0																														
		20																														
		30																														
		40																														
		50																														
		60																														
Shut-off PSI																																

MODEL 25GS

SELECTION CHART

Horsepower Range 1 - 5, Recommended Range 8 - 33 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																													
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740				
25GS10	1	0			32.8	30.8	28.6	26.2	23.5	20.0	16.2	11.0																				
		20	31.8	30.0	27.5	25.2	22.0	19.0	15.0	8.0																						
		30	29.6	27.2	25.0	21.6	18.0	14.0																								
		40	27.1	24.9	21.5	17.9	13.9																									
		50	24.3	21.0	17.5	13.0																										
		60	20.0	16.2	11.0																											
Shut-off PSI			82	74	65	56	48	39	30	22	13	4																				
25GS15	1½	0					33.0	31.8	30.3	28.8	26.9	24.8	22.0	19.8	16.5	11.0																
		20		32.6	31.2	29.6	28.0	26.0	23.8	21.0	18.1	14.8	8.0																			
		30	32.5	31.0	29.5	27.6	25.6	23.2	20.9	17.9	14.0																					
		40	30.9	29.4	27.5	25.5	23.1	20.8	17.7	13.6																						
		50	29.0	27.2	25.1	22.9	20.4	17.2	13.0																							
		60	26.9	24.8	22.0	19.8	16.5	11.0																								
Shut-off PSI			111	103	94	85	77	68	59	51	42	33	25	16	7																	
25GS20	2	0						33.0	31.8	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4															
		20					32.7	31.3	30.0	28.6	26.8	25.0	22.9	20.9	18.3	14.3	9.0															
		30			32.3	31.0	29.6	28.5	26.4	24.5	22.6	20.5	18.0	14.0	8.0																	
		40			30.9	29.5	28.2	26.3	24.3	22.4	20.4	17.8	13.6	8.0																		
		50		30.5	29.4	28.0	26.0	24.1	22.1	20.0	17.2	13.2																				
		60	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4	12.2																					
Shut-off PSI			139	130	121	113	104	95	87	78	69	61	52	43	35	26	17															
25GS30	3	0								33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	22.6	19.0	14.0												
		20								32.8	32.0	31.0	30.0	29.0	27.9	26.6	25.0	23.8	21.9	20.0	12.6											
		30						32.6	31.8	30.9	30.0	28.8	27.6	26.5	24.9	23.4	21.6	19.9	15.2	8.0												
		40				32.5	31.7	30.9	29.9	28.8	27.5	26.2	24.7	23.3	21.5	19.9	17.8	11.9														
		50			32.3	31.6	30.8	29.8	28.5	27.3	26.0	24.5	23.0	21.2	19.5	17.4	11.5															
		60	33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	24.1	22.6	20.9	19.0	16.9	14.0	10.0															
Shut-off PSI			191	183	174	165	157	148	139	131	122	113	105	96	87	79	70	53	35	18												
25GS50R	5	0												32.7	32.2	31.7	31.2	30.5	29.1	27.3	25.3	23.3	21.4	19.3	16.5	11.7						
		20												33.0	32.5	32.1	31.5	31.0	30.3	29.6	28.8	27.0	25.0	23.0	21.1	18.9	15.9	10.6				
		30												32.9	32.5	32.0	31.5	30.9	30.2	29.5	28.7	27.8	25.9	23.9	21.9	19.9	17.4	13.3				
		40												32.9	32.4	31.9	31.4	30.8	30.1	29.4	28.5	27.6	26.7	24.7	22.7	20.8	18.6	15.3				
		50												32.8	32.3	31.8	31.3	30.7	30.0	29.2	28.4	27.5	26.5	25.6	23.6	21.6	19.6	16.9				
		60												32.7	32.2	31.7	31.2	30.6	29.9	29.1	28.3	27.4	26.4	25.4	24.4	22.4	20.4	18.2	14.6			
Shut-off PSI						252	243	234	226	217	208	200	191	182	174	165	156	139	122	104	87	70	52	35	18							
25GS50	5	0																33.0	32.5	31.5	30.2	29.0	27.6	26.0	24.2	22.4	20.5	18.3	15.8	12.0		
		20																32.9	32.3	31.8	31.3	30.0	28.8	27.2	25.8	23.9	22.0	20.0	17.8	15.0	11.0	
		30																32.8	32.2	31.8	31.2	30.5	29.3	27.9	26.4	24.8	22.9	21.0	18.9	16.2	13.0	8.0
		40																32.7	32.1	31.7	31.1	30.4	29.9	28.5	27.1	25.4	23.7	21.9	19.9	17.5	14.5	10.5
		50																32.6	32.1	31.6	31.0	30.3	29.9	29.2	27.8	26.3	24.5	22.6	21.8	18.7	16.0	12.7
		60																33.0	32.5	32.0	31.5	30.8	30.2	29.8	29.0	28.3	26.9	25.1	23.3	21.5	19.5	17.0
Shut-off PSI										286	277	268	260	251	242	234	225	216	199	182	165	147	130	113	95	78	61	43	26			



HS

60 HZ STANDARD CAPACITY 4" SUBMERSIBLE PUMPS



Residential Water

FEATURES

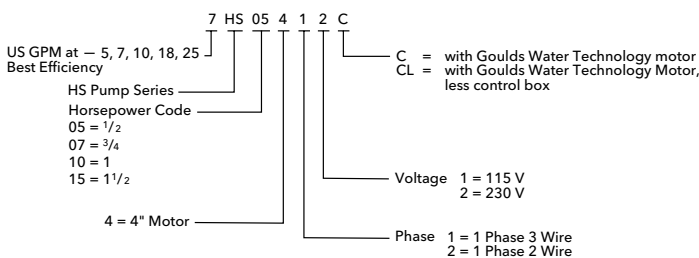
- Powered by Goulds Water Technology 4" motors for dependable operation and long service life.
- Built-in check valve screws into discharge head from the top, easily removed for drain-back systems or replacement without disassembling the pump. Spring loaded, o-ring poppet design for positive seal in all conditions.
- Nylon motor adapter for strength and corrosion resistance.
- Stainless steel hex design shafts, shaft couplings, casings and stage bowls inhibit corrosion.
- Glass filled engineered composite impellers for abrasion resistance and durability.
- Glass filled engineered composite diffusers are abrasion resistant.

- All engineered composite components are non-toxic, non-leaching, FDA compliant materials.
- Goulds Water Technology field proven floating impeller stack design for superior sand and abrasive handling and durability.
- **Quad Lock Technology:** 4 Roll Formed grooves provide durability and strength, tested to exceed strength of poly and PVC pipes.
- Complete pump/motor assemblies are CSA listed, CSA/CUS approved motors are available in 2-wire and 3-wire single phase designs.



- Maximum allowable pressure - 300 psi

NOMENCLATURE



WATER END DATA

Model	Order No.	Req. HP	Stages	Weight (lbs)	Length (in)
5HS	5HS05	1/2	12	5.5	15.7
	5HS07	3/4	15	6.5	17.8
	5HS10	1	20	8.1	21.2
7HS	7HS05	1/2	10	4.9	14.6
	7HS07	3/4	13	5.9	16.7
	7HS10	1	17	7.2	19.6
10HS	10HS05*	1/2	10	13.6	12.3
	10HS07*	3/4	14	16.4	14.4
	10HS10*	1	16	17.7	15.7
	10HS15	1 1/2	17	18.4	19.2
18HS	18HS07	3/4	6	3.8	12.6
	18HS10	1	8	4.5	14.3
	18HS15	1 1/2	11	5.6	16.8
25HS	25HS10	1	7	4.3	14.0
	25HS15	1 1/2	9	5.1	15.9

* New High Head Hydraulic Design for models manufactured starting 8/2017

MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	Glass Filled Engineered Composite
Check Valve Poppet	Delrin®
Check Valve Seal	BUNA, FDA compliant
Check Valve Retaining Ring	AISI 302 SS
Bearing	Proprietary Engineered Polymer
Shaft Retaining Ring	AISI 301 SS
Diffuser	Glass Filled Engineered Composite
Impeller	Glass Filled Engineered Composite
Bowl	AISI 304 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	Glass Filled Engineered Composite
Casing	AISI 304 SS
Shaft	AISI 304 SS
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS

Optional wrap around suction strainer

Order 7K3356 (quantity 1) • Order 7K3361 (quantity 50)

2-WIRE MODELS WITH GOULDS WATER TECHNOLOGY MOTOR

Model	Order No.	HP	Stages	Volts	2-Wire CP
5HS	5HS05421C	½	12	115	M05421
	5HS05422C	½	12	230	M05422
	5HS07422C	¾	15	230	M07422
	5HS10422C	1	20	230	M10422
7HS	7HS05421C	½	10	115	M05421
	7HS05422C	½	10	230	M05422
	7HS07422C	¾	13	230	M07422
	7HS10422C	1	17	230	M10422
10HS	10HS05421C*	½	10	115	M05421
	10HS05422C*	½	10	230	M05422
	10HS07422C*	¾	14	230	M07422
	10HS10422C*	1	16	230	M10422
	10HS15422C	1½	17	230	M15422
18HS	18HS07422C	¾	6	230	M07422
	18HS10422C	1	8	230	M10422
	18HS15422C	1½	11	230	M15422
25HS	25HS10422C	1	7	230	M10422
	25HS15422C	1½	9	230	M15422

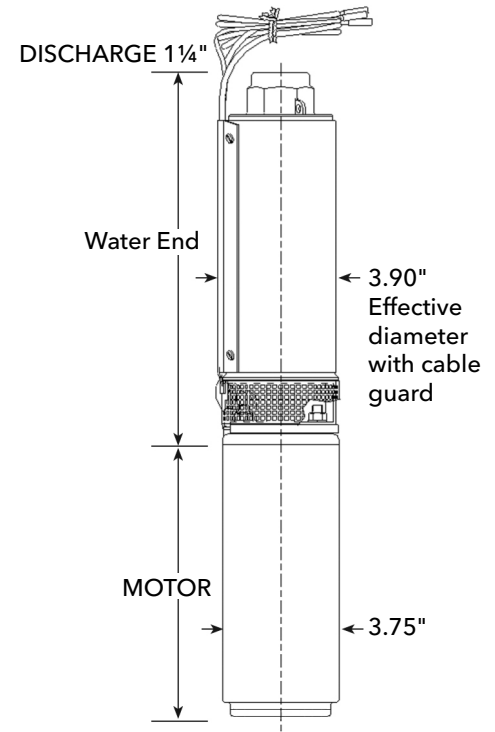
* New High Head Hydraulic Design for models manufactured starting 8/2017

3-WIRE MODELS WITH GOULDS WATER TECHNOLOGY MOTOR

Model	Order No.	HP	Stages	Volts	3-Wire CP
5HS	5HS05411C	½	12	115	M05411
	5HS05412C	½	12	230	M05412
	5HS07412C	¾	15	230	M07412
	5HS10412C	1	20	230	M10412
7HS	7HS05411C	½	10	115	M05411
	7HS05412C	½	10	230	M05412
	7HS07412C	¾	13	230	M07412
	7HS10412C	1	17	230	M10412
10HS	10HS05411C*	½	10	115	M05411
	10HS05412C*	½	10	230	M05412
	10HS07412C*	¾	14	230	M07412
	10HS10412C*	1	16	230	M10412
	10HS15412C	1½	17	230	M15412
18HS	18HS07412C	¾	6	230	M07412
	18HS10412C	1	8	230	M10412
	18HS15412C	1½	11	230	M15412
25HS	25HS10412C	1	7	230	M10412
	25HS15412C	1½	9	230	M15412

GENERATION II – 2-WIRE & 3-WIRE WEIGHTS AND DIMENSIONS

Type	Goulds Order No.	HP	Volts	Length (L) In.	Weight (lbs)
2-Wire	M05421	.5	115	10.5	18
	M05422	.5	230	10.5	18
	M07422	.75		11.9	22
	M10422	1		12.5	24
	M15422	1.5		14.2	28
3-wire	M05411	.5		115	9.6
	M05412	.5	230	9.2	17
	M07412	.75		10.3	20
	M10412	1		11.2	22
	M15412	1.5		12.8	26
	M20412	2		15.1	31
	M30412	3		18.3	40
	M50412	5		27.7	70



MODEL 5HS

SELECTION CHART

Horsepower Range ½ - 1½, Recommended Range 1.2 - 7.5 gpm, 60 Hz, 3450 rpm

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																														
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860		
5HS05	½	0							7.7	7.3	6.9	6.4	6.0	5.6	5.1	4.7	4.1	2.6															
		20					7.5	7.1	6.7	6.3	5.9	5.4	5.0	4.5	3.9	3.2	2.3																
		30				7.5	7.1	6.7	6.2	5.8	5.4	4.9	4.4	3.8	3.1	2.1																	
		40			7.4	7.0	6.6	6.2	5.7	5.3	4.9	4.3	3.7	2.9	1.9																		
		50	7.7	7.4	6.9	6.5	6.1	5.7	5.2	4.8	4.2	3.6	2.8	1.8																			
		60	7.3	6.9	6.5	6.0	5.6	5.2	4.7	4.2	3.5	2.6	1.6																				
Shut-off PSI			156	147	138	130	121	112	104	95	86	78	69	60	52	43	34	17															
5HS07	¾	0										7.6	7.3	7.0	6.6	6.3	5.9	5.2	4.4	3.3	1.6												
		20									7.5	7.2	6.9	6.5	6.2	5.8	5.5	5.1	4.2	3.1	1.3												
		30								7.5	7.2	6.8	6.5	6.1	5.8	5.4	5.0	4.6	3.6	2.1													
		40							7.4	7.1	6.8	6.4	6.1	5.7	5.4	5.0	4.6	4.1	2.8														
		50					7.4	7.1	6.7	6.4	6.0	5.7	5.3	4.9	4.5	4.0	3.4	1.8															
		60			7.6	7.3	7.0	6.7	6.3	6.0	5.6	5.3	4.9	4.4	3.9	3.3	2.6																
Shut-off PSI					184	175	167	158	149	141	132	123	115	106	97	89	80	63	45	28	11												
5HS10	1	0															7.5	7.0	6.5	5.9	5.3	4.6	3.8	2.8	1.6								
		20														7.6	7.4	7.2	7.0	6.4	5.9	5.2	4.5	3.7	2.6								
		30														7.6	7.4	7.2	6.9	6.7	6.1	5.5	4.8	4.0	3.1	1.9							
		40														7.6	7.4	7.1	6.9	6.6	6.3	5.8	5.1	4.4	3.5	2.5							
		50														7.5	7.3	7.1	6.8	6.6	6.3	6.0	5.4	4.7	3.9	2.9	1.7						
		60														7.5	7.3	7.1	6.8	6.5	6.3	6.0	5.7	5.0	4.3	3.4	2.3						
Shut-off PSI											214	206	197	188	180	171	162	154	136	119	102	84	67	50	32	15							

MODEL 10HS

SELECTION CHART

Horsepower Range ½ - 1½, Recommended Range 3 - 16 gpm, 60 Hz, 3450 rpm

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																							
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	
10HS05*	½	0			15.7	14.9	14.1	13.3	12.4	11.4	10.4	9.3	8.0	6.3	3.9											
		20	15.4	14.7	13.9	13.0	12.1	11.1	10.1	8.9	7.5	5.7	2.9													
		30	14.6	13.8	12.9	12.0	11.0	9.9	8.7	7.3	5.3	2.3														
		40	13.6	12.8	11.8	10.8	9.7	8.5	7.0	4.9	1.7															
		50	12.6	11.7	10.6	9.5	8.3	6.8	4.5	1.0																
		60	11.5	10.5	9.3	8.1	6.5	4.1	0.2																	
Shut-off PSI			113	105	96	87	79	70	61	53	44	35	27	18	9	1										
10HS07*	¾	0				15.7	15.2	14.6	14.0	13.4	12.7	12.0	11.4	10.8	10.1	9.5	8.7	7.7	6.4	4.6	2.1					
		20	16.0	15.5	15.0	14.5	13.8	13.2	12.5	11.8	11.2	10.6	9.9	9.2	8.4	7.3	5.9	3.9	1.2							
		30	15.5	15.0	14.4	13.7	13.1	12.4	11.7	11.1	10.5	9.8	9.1	8.3	7.1	5.6	3.5	0.7								
		40	14.9	14.3	13.6	12.9	12.3	11.6	11.0	10.4	9.7	9.0	8.1	6.9	5.3	3.1	0.2									
		50	14.2	13.5	12.8	12.2	11.5	10.9	10.3	9.6	8.9	8.0	6.7	5.0	2.7											
		60	13.4	12.7	12.1	11.4	10.8	10.2	9.5	8.7	7.8	6.5	4.7	2.3												
Shut-off PSI			161	152	143	135	126	118	109	100	92	83	74	66	57	48	40	31	22	14	5					
10HS10*	1	0					15.7	15.2	14.8	14.4	14.0	13.6	13.2	12.7	12.1	11.4	10.7	10.0	9.3	8.6	7.9	7.0	5.7	3.8	0.6	
		20		16.0	15.5	15.0	14.6	14.3	13.9	13.5	13.0	12.5	11.9	11.2	10.5	9.8	9.1	8.4	7.6	6.7	5.2	2.9				
		30	16.0	15.4	15.0	14.6	14.2	13.9	13.4	13.0	12.4	11.8	11.1	10.4	9.7	9.0	8.3	7.5	6.5	4.9	2.5					
		40	15.3	14.9	14.5	14.2	13.8	13.4	12.9	12.3	11.6	11.0	10.3	9.6	8.9	8.2	7.4	6.3	4.6	2.0						
		50	14.8	14.5	14.1	13.7	13.3	12.8	12.2	11.5	10.9	10.1	9.5	8.8	8.1	7.2	6.1	4.3	1.5							
		60	14.4	14.1	13.7	13.2	12.7	12.1	11.4	10.7	10.0	9.4	8.7	7.9	7.1	5.8	3.9	0.9								
Shut-off PSI			192	184	175	166	158	149	140	132	123	114	106	97	88	80	71	62	54	45	36	28	19	10	2	

* New High Head Hydraulic Design for models manufactured starting 8/2017

MODEL 18HS

SELECTION CHART

Horsepower Range $\frac{3}{4}$ - $1\frac{1}{2}$, Recommended Range 6 - 28 gpm, 60 Hz, 3450 rpm

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in US GPM (Gallons per Minute)															
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	
18HS07	$\frac{3}{4}$	0			28.2	26.5	24.0	21.0	17.9	13.5								
		20	27.7	25.9	23.0	20.0	16.5	10.8										
		30	25.0	22.0	18.8	15.7	9.5											
		40	22.2	18.9	15.1	9.0												
		50	18.4	15.0	7.5													
		60	13.5	5.0														
Shut-off PSI			74	66	58	49	40	32	23	14								
18HS10	1	0					27.0	25.5	23.6	21.2	18.8	15.9	12.0					
		20		28.0	26.6	25.1	22.7	20.0	17.6	14.0	10.0							
		30	27.9	26.1	24.3	22.2	19.8	17.1	13.8	8.3								
		40	26.0	24.1	22.0	19.7	17.0	13.1	8.0									
		50	24.0	22.0	19.1	16.5	13.0	7.1										
		60	21.0	18.6	15.8	12.0												
Shut-off PSI			103	94	86	77	68	60	51	42	34	25	16					
18HS15	$1\frac{1}{2}$	0						28.4	27.2	26.0	24.8	23.0	21.4	19.6	17.5	15.0	12.1	
		20				27.8	26.8	25.4	24.0	22.2	20.6	18.8	16.7	14.0	10.0			
		30			27.7	26.5	25.3	23.8	22.0	20.2	18.5	16.1	13.5	10.0				
		40		27.5	26.3	25.0	23.6	22.0	20.1	18.1	16.0	13.1	9.5					
		50	27.6	26.4	25.0	23.4	21.8	20.0	18.0	15.5	13.0	9.2						
		60	26.0	24.6	23.0	21.2	19.5	17.5	15.0	12.0	7.9							
Shut-off PSI			143	134	126	117	108	100	91	82	74	65	56	48	39	30	22	

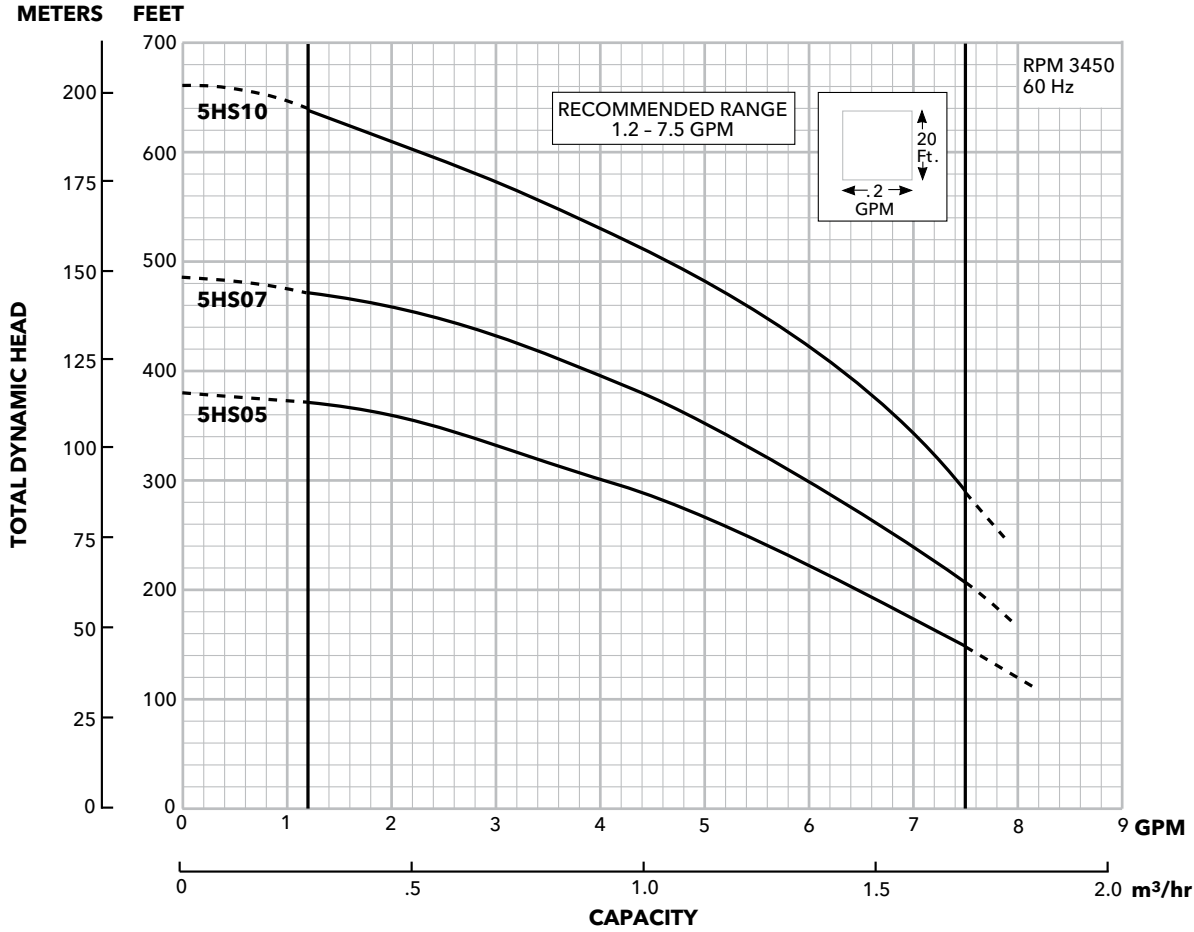
MODEL 25HS

SELECTION CHART

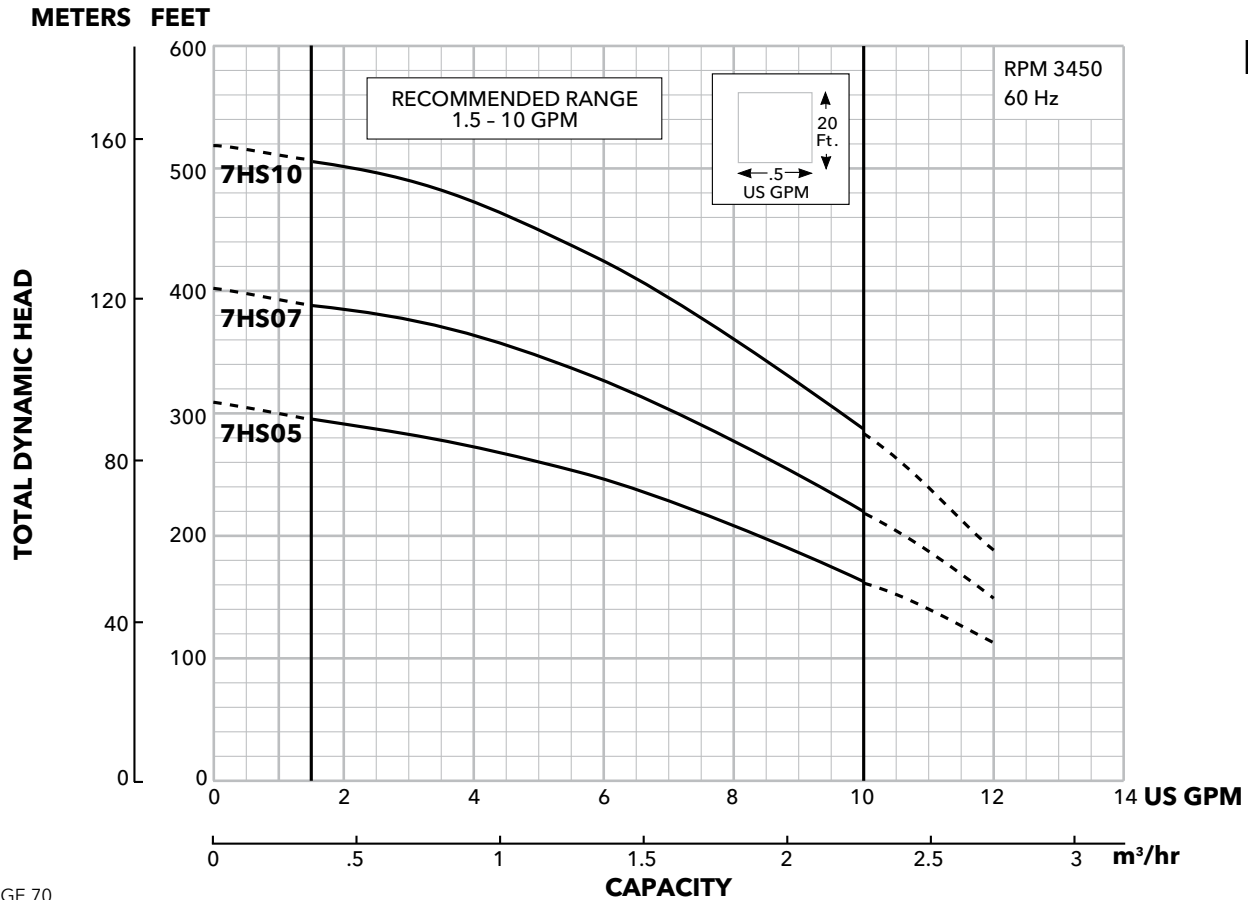
Horsepower Range 1, Recommended Range 8 - 33 gpm, 60 Hz, 3450 rpm

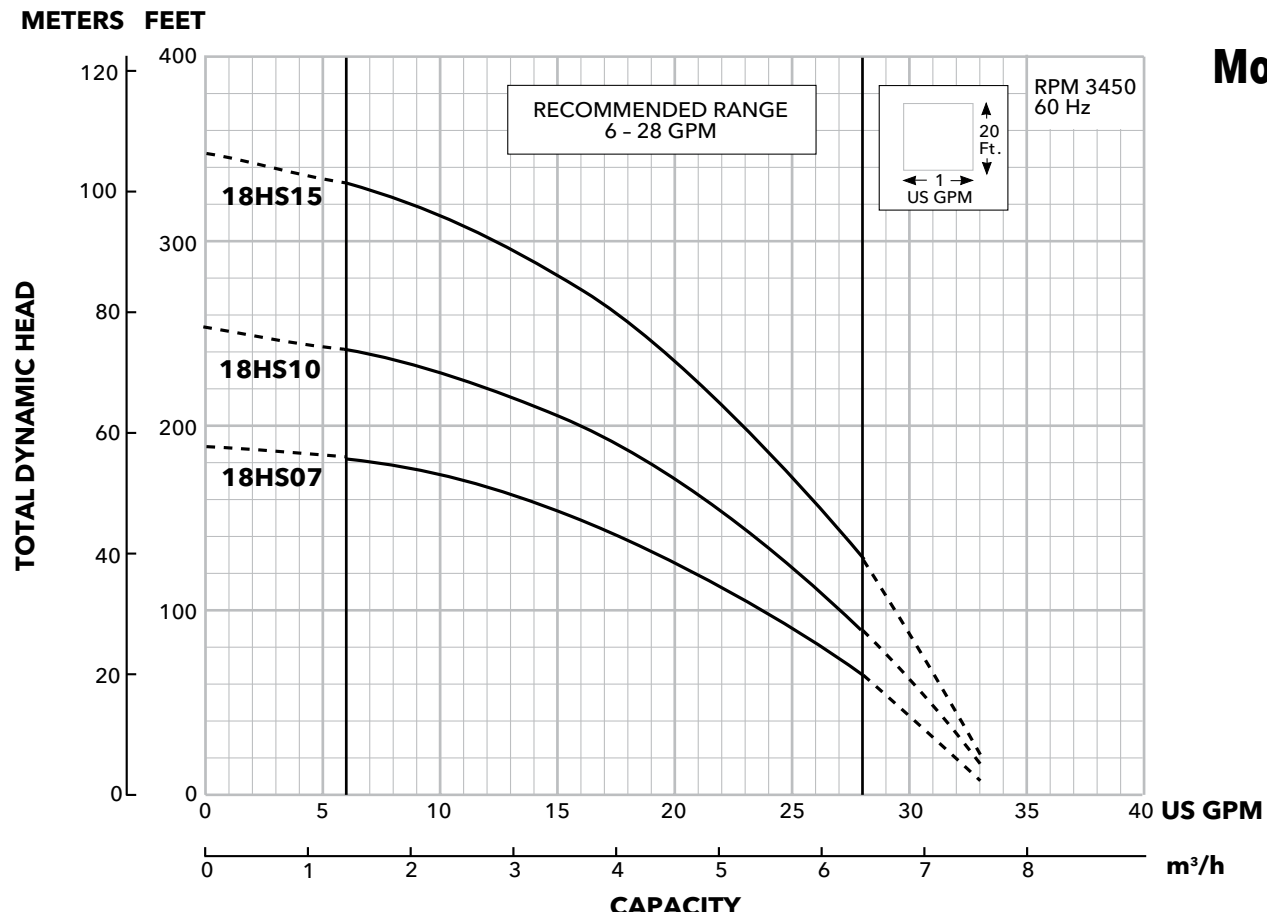
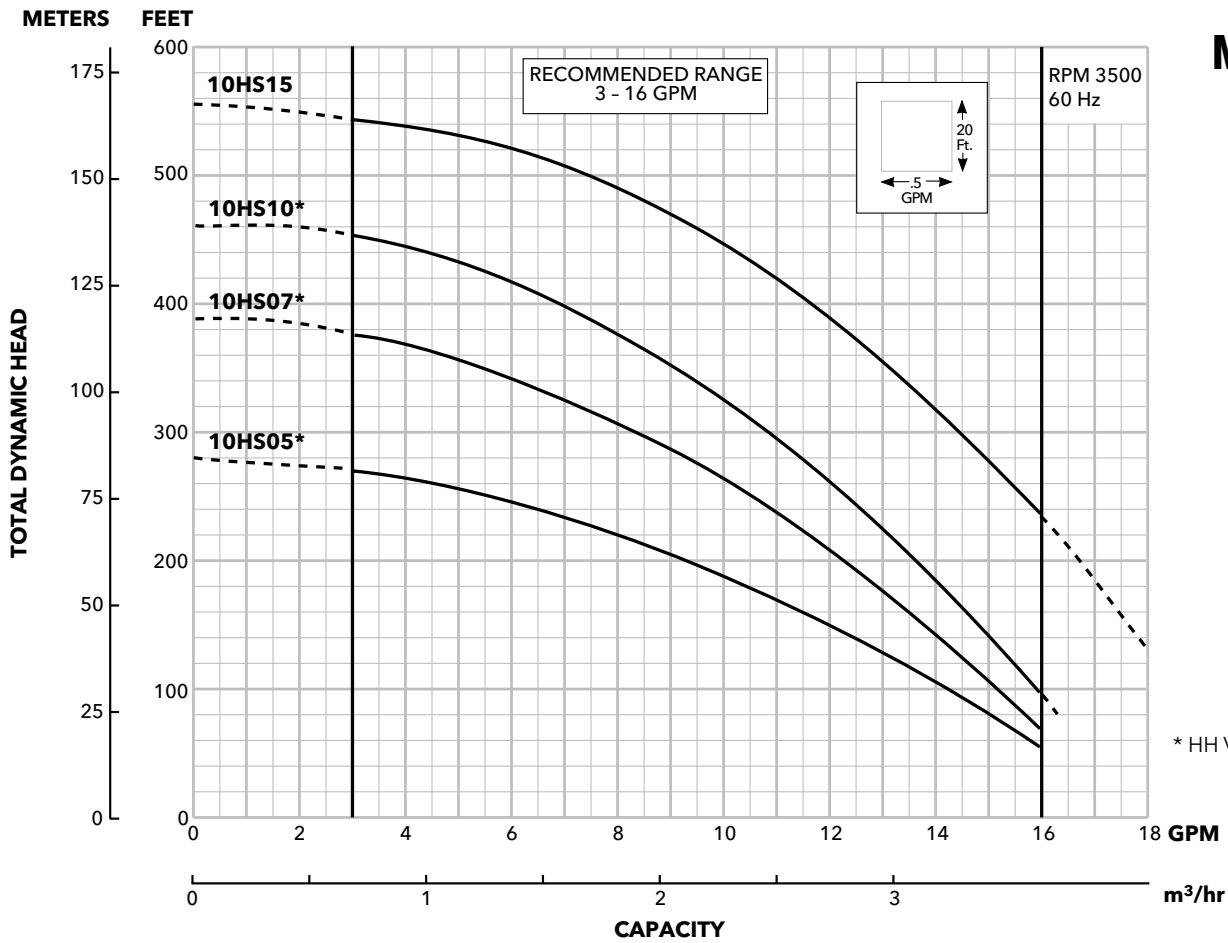
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)													
			20	40	60	80	100	120	140	160	180	200	220	240	260	
25HS10	1	0			31.5	29.3	27.2	24.7	22.8	18.9	15.0	10.7				
		20	30.8	29.1	26.7	24.4	21.3	18.4	14.6	7.8						
		30	28.7	26.4	24.3	21.0	17.5	13.6								
		40	26.3	24.2	20.9	17.4	13.5									
		50	23.6	20.4	17.0	12.6										
		60	19.4	15.7	10.7											
Shut-off PSI			80	72	63	54	47	38	29	21	13	4				
25HS15	1½	0				32.0	30.8	29.4	27.9	26.1	24.1	21.3	19.2	16.5	11.0	
		20		31.6	30.3	28.7	27.2	25.2	23.1	20.4	17.6	14.4	7.8			
		30	31.5	30.1	28.6	26.8	24.8	22.5	20.3	17.4	13.6					
		40	30.0	28.5	26.7	24.7	22.4	20.2	17.2	13.2						
		50	28.1	26.4	24.3	22.2	19.8	16.7	12.6							
		60	26.1	24.1	21.3	19.2	16.0	10.7								
Shut-off PSI			108	100	91	82	75	66	57	49	41	32	24	16	7	

Model 5HS

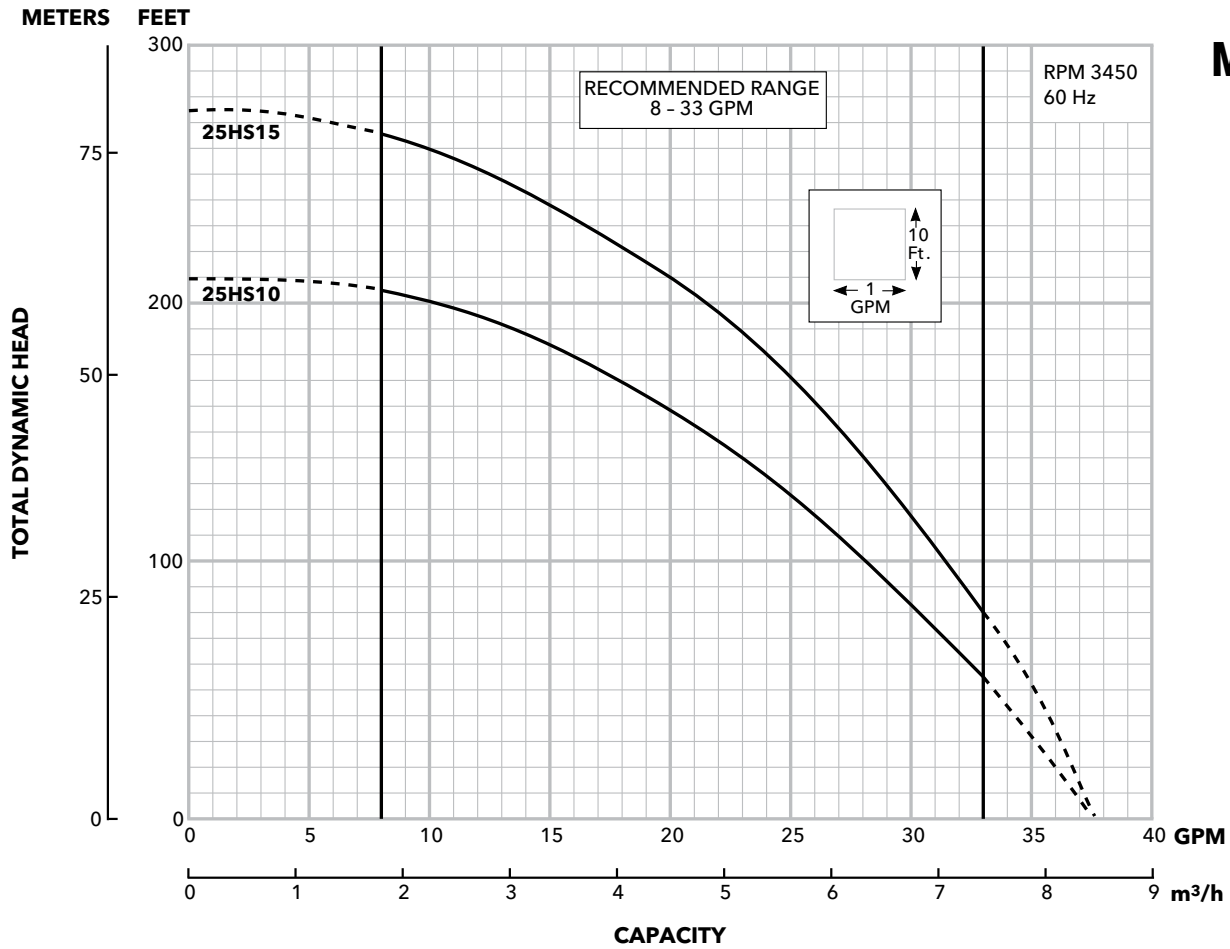


Model 7HS





Model 25HS





e-GS Xtreme™ CBM

60 HZ, 4" SUBMERSIBLE PUMPS



FEATURES

Field Proven Design: The GS Xtreme features super strong construction due to the welded casing joints at both ends. The proprietary engineered polymer bearings have been field proven with great success in some of the toughest submersible pump applications on the planet - coalbed methane extraction. They are the deepest set pumps we build, available up to 10 HP in many models. Capable of pumping over 1600' TDH.

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Sand Handling Design: Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.

Stainless Steel Metal Parts: AISI types 302, 303 and 304 are corrosion resistant, non-toxic and non-leaching.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head: Cast stainless steel discharge head features built-in safety loops and an upthrust limiting stud which is factory set to prevent the rotating assembly from upthrusting. These pumps require a separate field installed external check valve to prevent backflow.

"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Bearing Spider - Upper	Glass Filled Engineered Composite
Bearing	Proprietary Engineered Composite
Klipring	AISI 301 SS
Diffuser	Glass Filled Engineered Composite*
Impeller	Glass Filled Engineered Composite
Bowl	AISI 304 SS
Intermediate Sleeve*	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling*	AISI 304 SS, Powder Metal
Intermediate Bearing Spider*	Glass Filled Engineered Composite
Intermediate Bearing Spider*	AISI 303 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft (up to 3 HP)	
Shaft (5 HP and larger)	17/4 PH
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

* Used on models 35GS, 45GS, 65GS and 85GS

Bowls: Stainless steel for strength and abrasive resistance.

Check Valve: Not supplied, order separately, pumps have 2" NPT discharge threads.

Stainless Steel Casing: Polished stainless steel is strong, attractive and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

Shaft Coupling: Exposed for ease of field alignment to motor shaft and to check pump rotation.

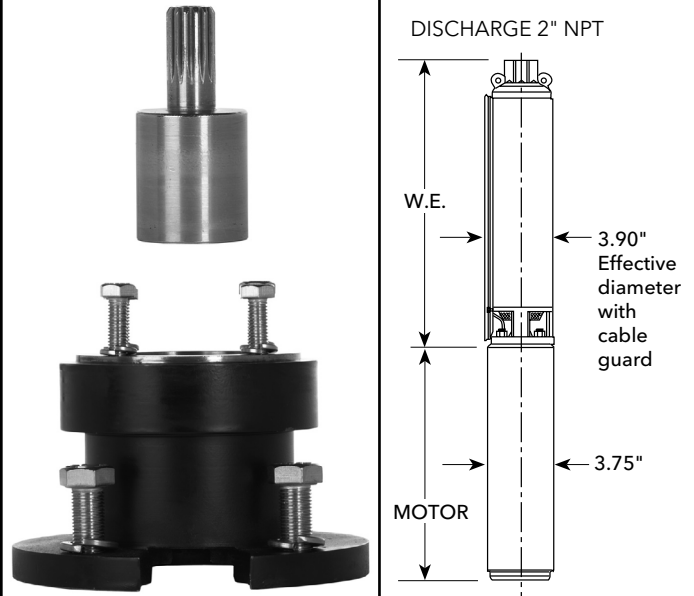
Bearings: Proprietary engineered polymer bearing material is a super strong, abrasion and heat resistant design.

MODELS AND SPECIFICATIONS

Model	Flow Range GPM	HP Range	Best Eff. GPM	Discharge Connection	Minimum Well Size
5GS	1.2 - 7.5	½ - 3	5	2"	4"
7GS	1.5 - 10	½ - 5	7	2"	4"
10GS	3 - 16	1 - 5	10	2"	4"
18GS	6 - 28	1 - 10	18	2"	4"
25GS	8 - 33	1 - 10	25	2"	4"
35GS	10 - 50	1 - 10	35	2"	4"
45GS	20 - 65	1½ - 10	45	2"	4"
65GS	20 - 80	1½ - 10	65	2"	4"
85GS	40 - 100	3 - 10	85	2"	4"

Rotation on all units is counterclockwise when viewed from pump discharge end.

An optional 4" x 6" Adapter - Part No. **ADAPT46** is available for installations where a 6" motor is desired. The kit contains a 4" x 6" adapter, a 4" to 6" splined shaft extension and required bolts.



Residential Water

DIMENSIONS AND WEIGHTS

Model	HP	Stages	Length (W.E.)	W.E. Weight (lbs.)
5GS05CBM	½	12	14.8	9
5GS07CBM	¾	15	16.8	10
5GS10CBM	1	20	20.0	12
5GS15CBM	1½	26	25.3	15
5GS20CBM	2	33	30.1	19
5GS30CBM	3	46	42.7	25
7GS05CBM	½	10	13.3	8
7GS07CBM	¾	13	15.4	10
7GS10CBM	1	17	18.3	11
7GS15CBM	1½	22	21.9	13
7GS20CBM	2	27	26.6	16
7GS30CBM	3	34	31.6	20
7GS50CBM	5	54	49.6	28
10GS10CBM	1	16	14.4	10
10GS15CBM	1½	17	17.9	12
10GS20CBM	2	20	20.0	13
10GS30CBM	3	27	26.0	17
10GS50RCBM	5	35	32.5	21
10GS50CBM	5	42	36.3	22
18GS10CBM	1	8	13.0	8
18GS15CBM	1½	11	15.5	10
18GS20CBM	2	14	18.1	11
18GS30CBM	3	19	22.4	13
18GS50RCBM	5	24	27.8	16
18GS50CBM	5	30	33.9	19
18GS75CBM	7½	45	46.7	30
18GS100CBM	10	60	61.7	39
25GS10CBM	1	7	12.8	7
25GS15CBM	1½	9	14.6	9

Model	HP	Stages	Length (W.E.)	W.E. Weight (lbs.)
25GS20CBM	2	11	16.5	10
25GS30CBM	3	15	20.2	12
25GS50RCBM	5	22	28	16
25GS50CBM	5	26	30.9	19
25GS75CBM	7½	34	40.5	24
25GS100CBM	10	50	58.0	31
35GS10CBM	1	6	14.2	8
35GS15CBM	1.5	8	16.6	9
35GS20CBM	2	10	19.1	10
35GS30CBM	3	14	24.0	13
35GS50CBM	5	23	36.4	20
35GS75CBM	7.5	36	53.0	28
35GS100CBM	10	46	65.2	34
45GS15CBM	1.5	5	12.9	8
45GS20CBM	2	7	15.4	9
45GS30CBM	3	10	19.0	10
45GS50CBM	5	17	27.7	15
45GS75CBM	7.5	25	38.9	21
45GS100CBM	10	34	50.6	27
65GS15CBM	1.5	6	19.1	10
65GS20CBM	2	7	21.2	11
65GS30CBM	3	10	27.4	12
65GS50CBM	5	16	41.2	18
65GS75CBM	7.5	26	62.3	35
65GS100CBM	10	33	76.8	42
85GS30CBM	3	8	29.4	13
85GS50CBM	5	14	42.8	18
85GS75CBM	7.5	21	63.8	35
85GS100CBM	10	27	79.9	41

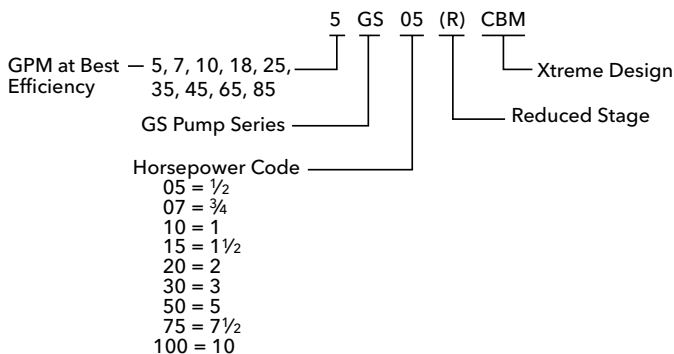
GOULDS 4" SINGLE PHASE MOTORS

Order No.	Type	HP	Volts	Length		Weight	
				In.	MM	Lb.	Kg.
M05421	2-wire PSC	½	115	11.0	279	19.2	8.7
M05422		½		11.0	279	19.2	8.7
M07422		¾		12.4	314	22.7	10.3
M10422		1		13.3	337	24.5	11.1
M15422		1½		14.9	378	28.9	13.1
M05411	3-wire	½	115	10.0	253	18.9	8.6
M05412		½		9.7	246	18.1	8.2
M07412		¾		10.8	275	21.4	9.7
M10412		1		11.7	297	23.1	10.5
M15412		1½		13.6	345	27.4	12.4
M20412		2		15.1	383	31.0	14.1
M30412		3		18.3	466	40.0	18.1
M50412		5		27.7	703	70.0	31.8

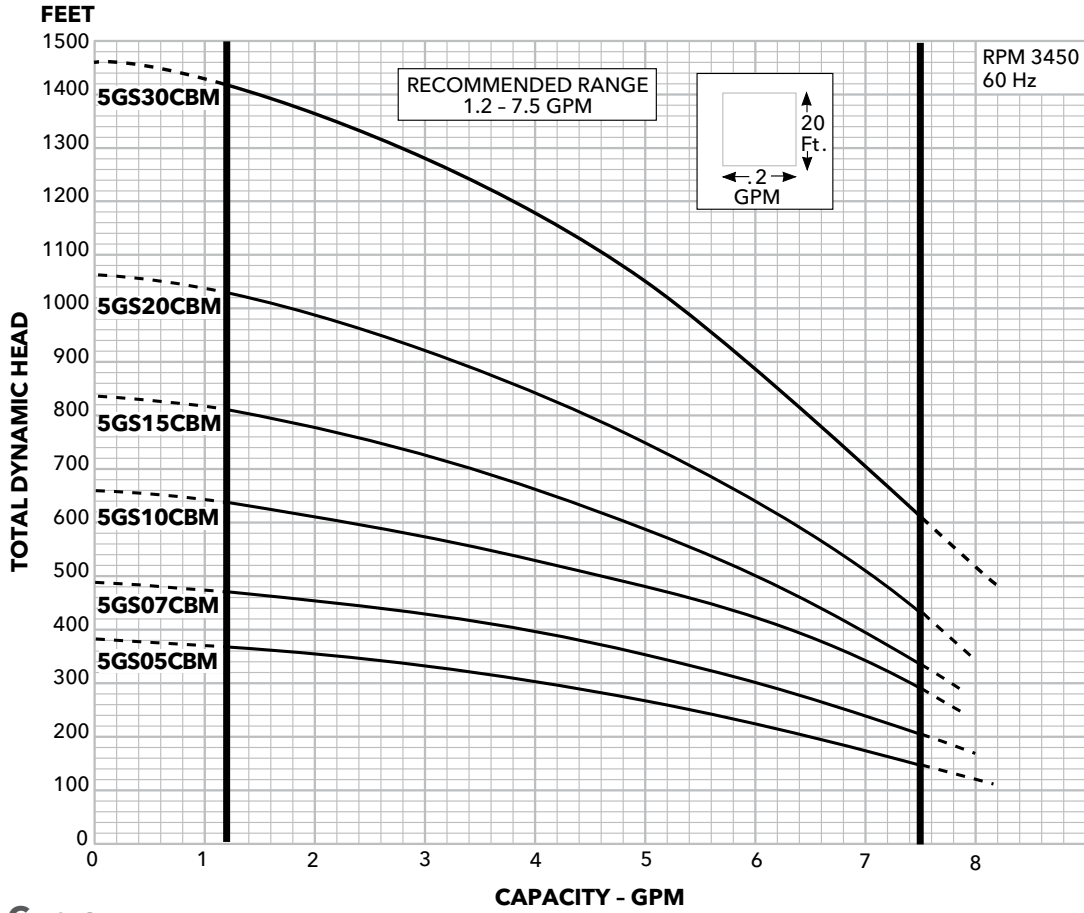
GOULDS 4" THREE PHASE MOTORS

Order No.	HP	Volts	Length		Weight		
			In.	MM	Lb.	Kg.	
M05430	½	200	10.8	275	22	9.7	
M07430	¾		10.8	275	22	9.7	
M10430	1		11.7	297	23.1	10.5	
M15430	1½		11.7	297	23.1	10.5	
M20430	2		13.8	351	27.4	12.4	
M30430	3		15.3	389	32	14.5	
M50430	5		21.7	550	55	24.9	
M75430	7½		27.7	703	70	31.8	
M05432	½		230	10.8	275	22	9.7
M07432	¾			10.8	275	22	9.7
M10432	1	11.7		297	23.1	10.5	
M15432	1½	11.7		297	23.1	10.5	
M20432	2	13.8		351	27.4	12.4	
M30432	3	15.3		389	32	14.5	
M50432	5	21.7		550	55	24.9	
M75432	7½	27.7		703	70	31.8	
M05434	½	460		10.8	275	22	9.7
M07434	¾			10.8	275	22	9.7
M10434	1		11.7	297	23.1	10.5	
M15434	1½		11.7	297	23.1	10.5	
M20434	2		13.8	351	27.4	12.4	
M30434	3		15.3	389	32	14.5	
M50434	5		21.7	550	55	24.9	
M75434	7½		27.7	703	70	31.8	
M100434	10		30.7	780	78	35.4	

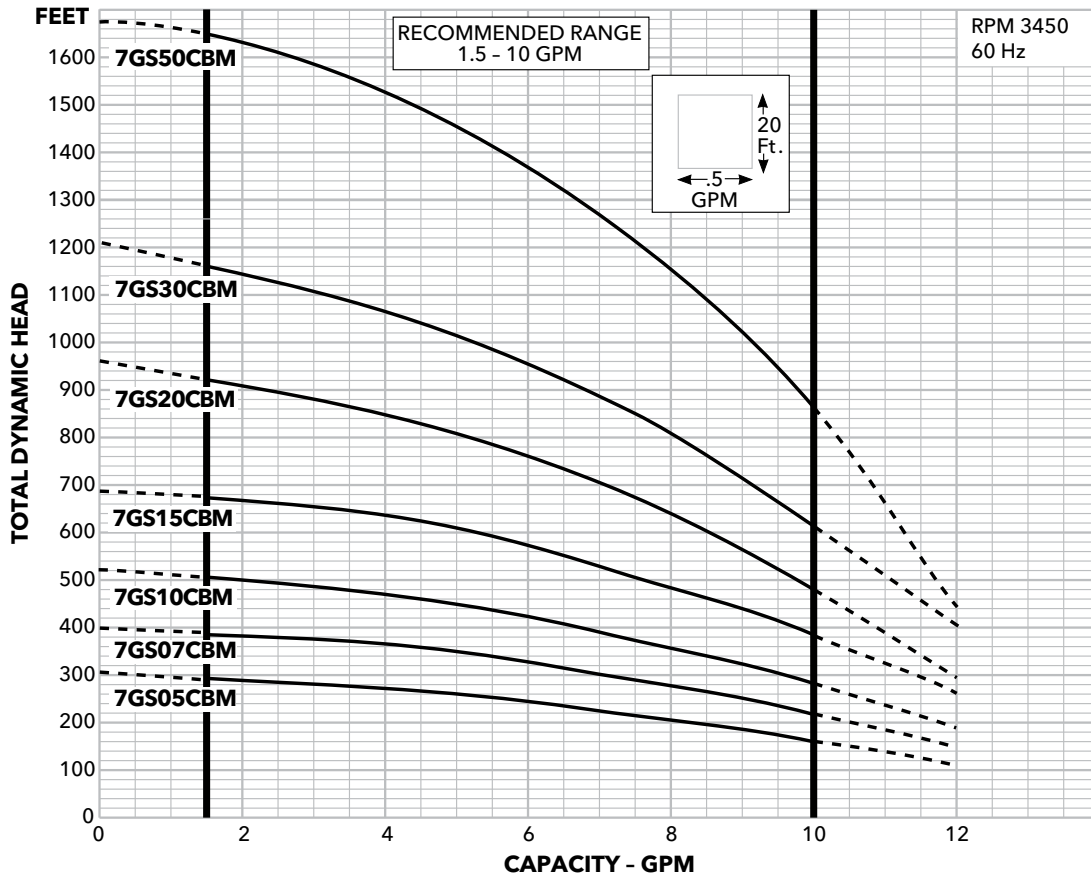
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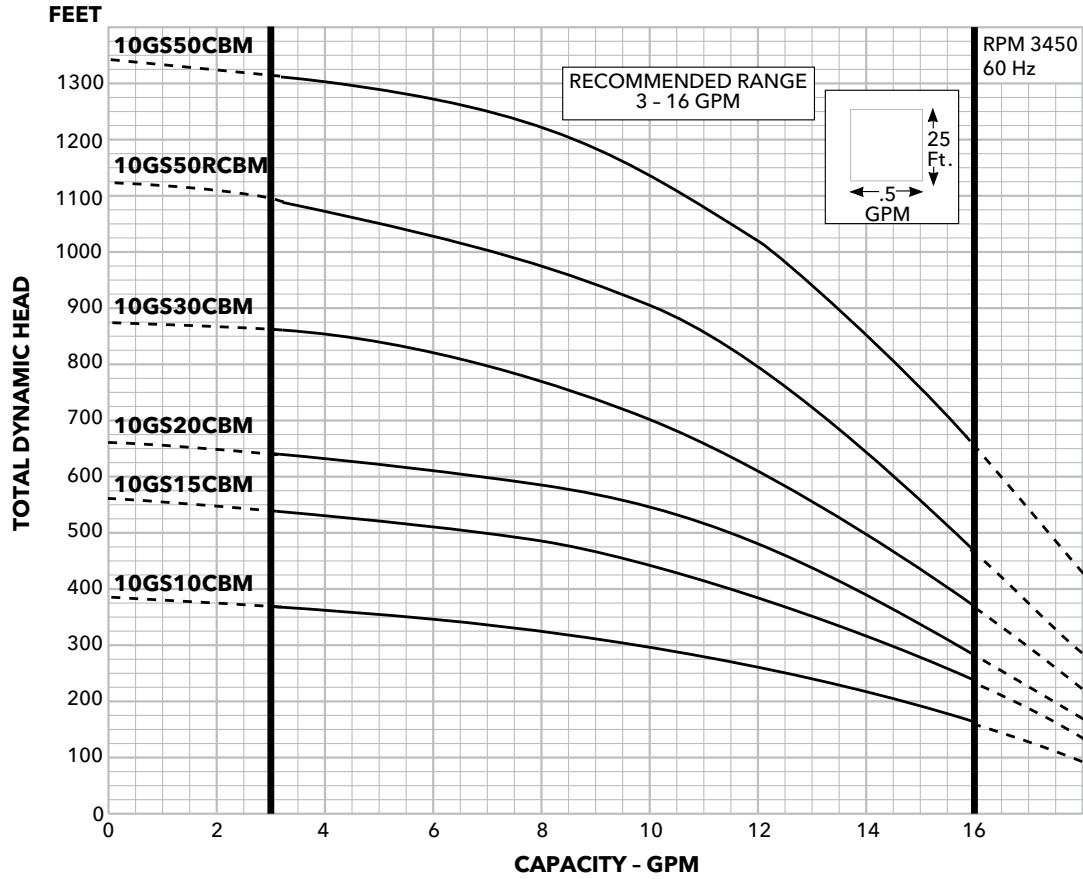
5GSCBM Curve



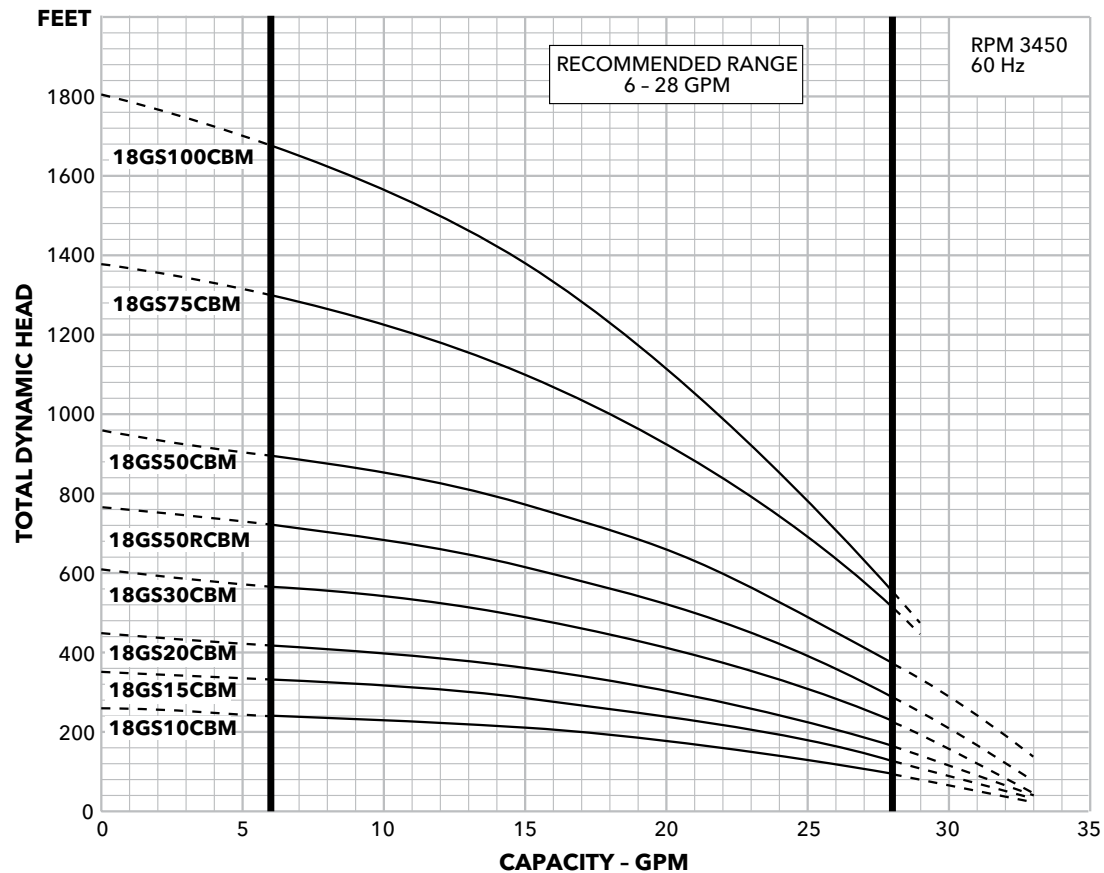
7GSCBM Curve



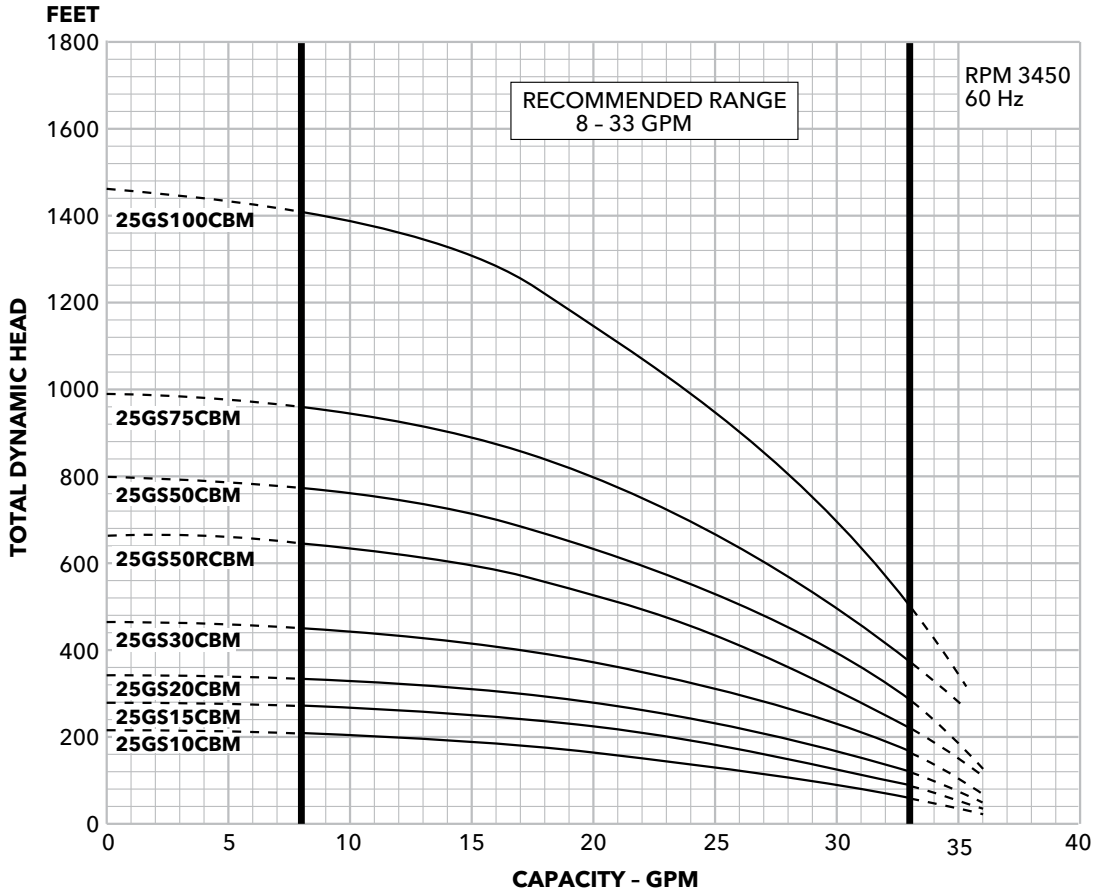
10GSCBM Curve



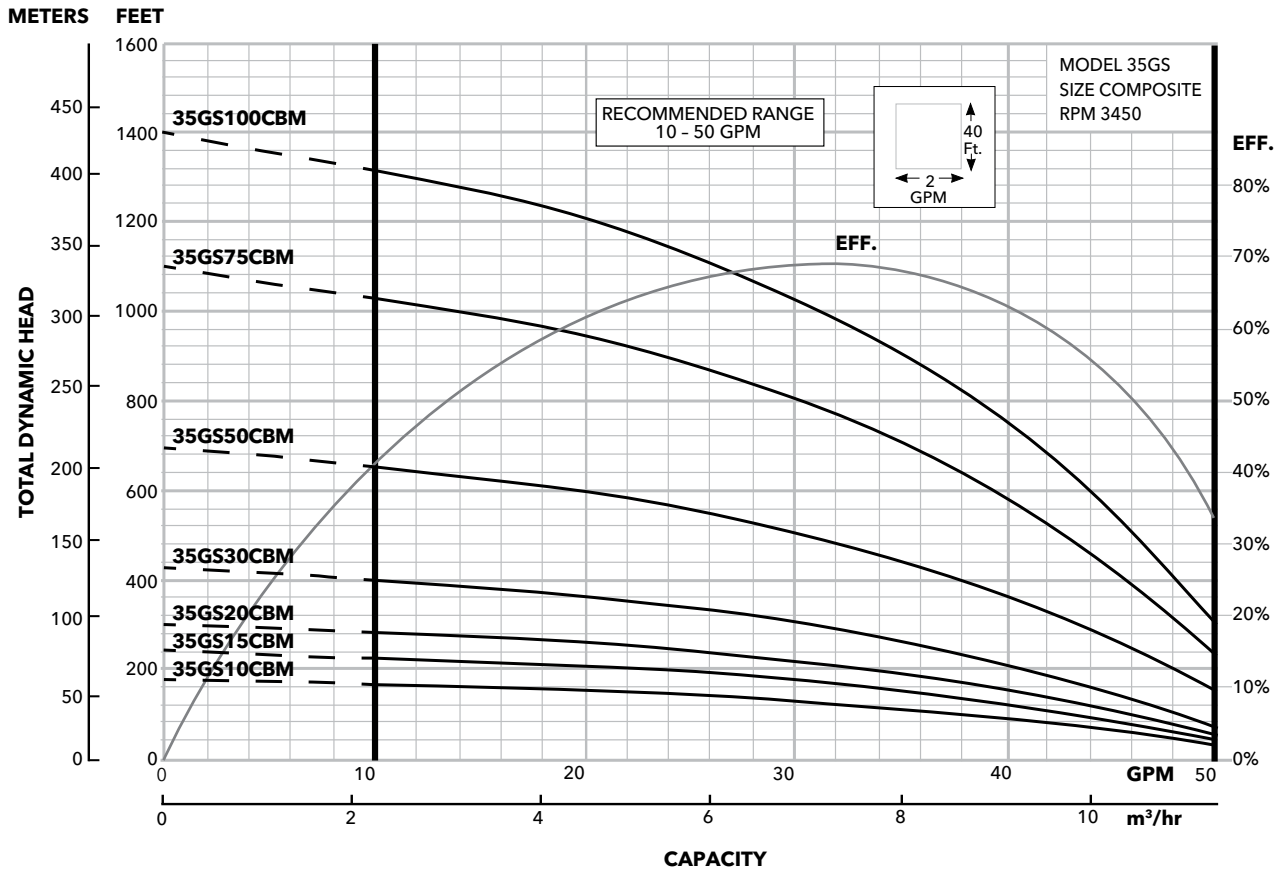
18GSCBM Curve



25GSCBM Curve

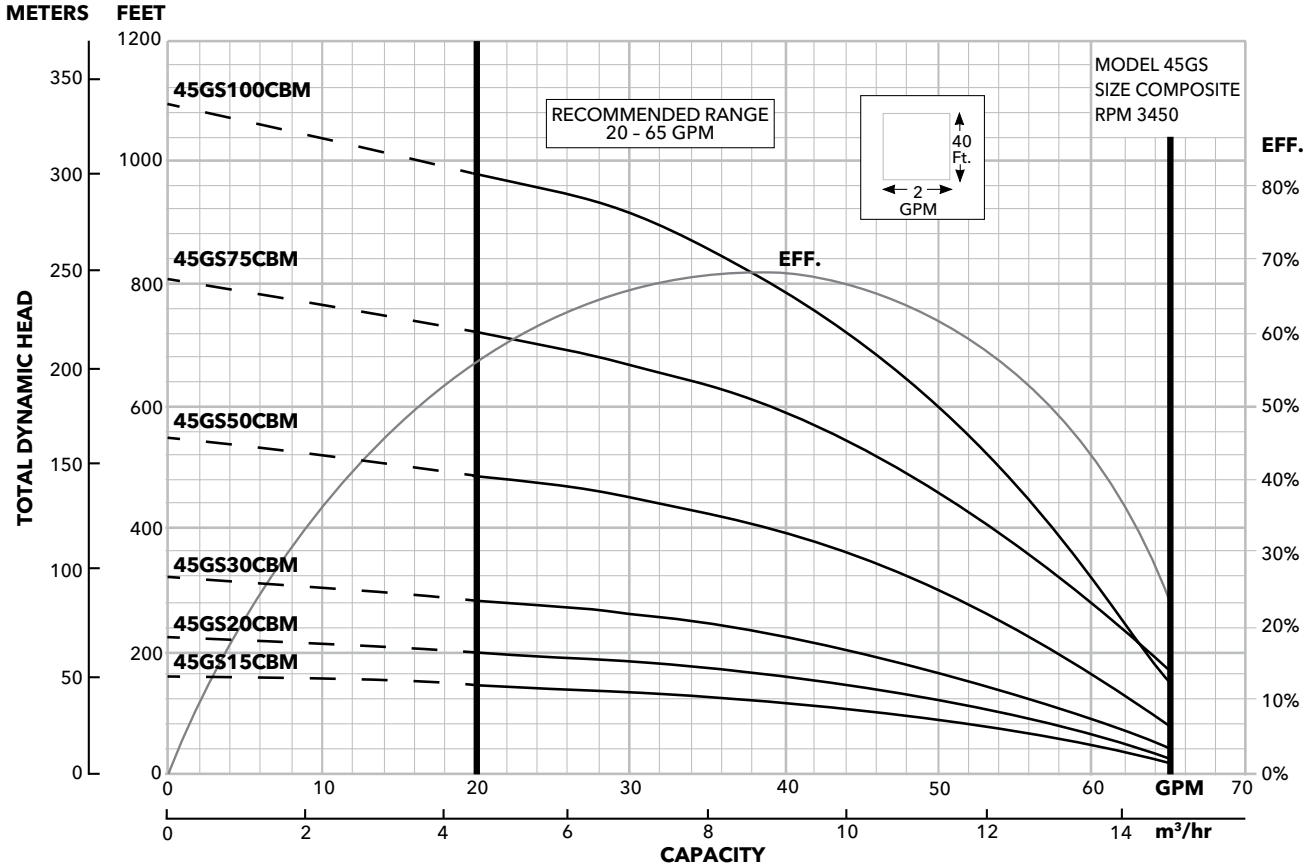


35GSCBM Curve

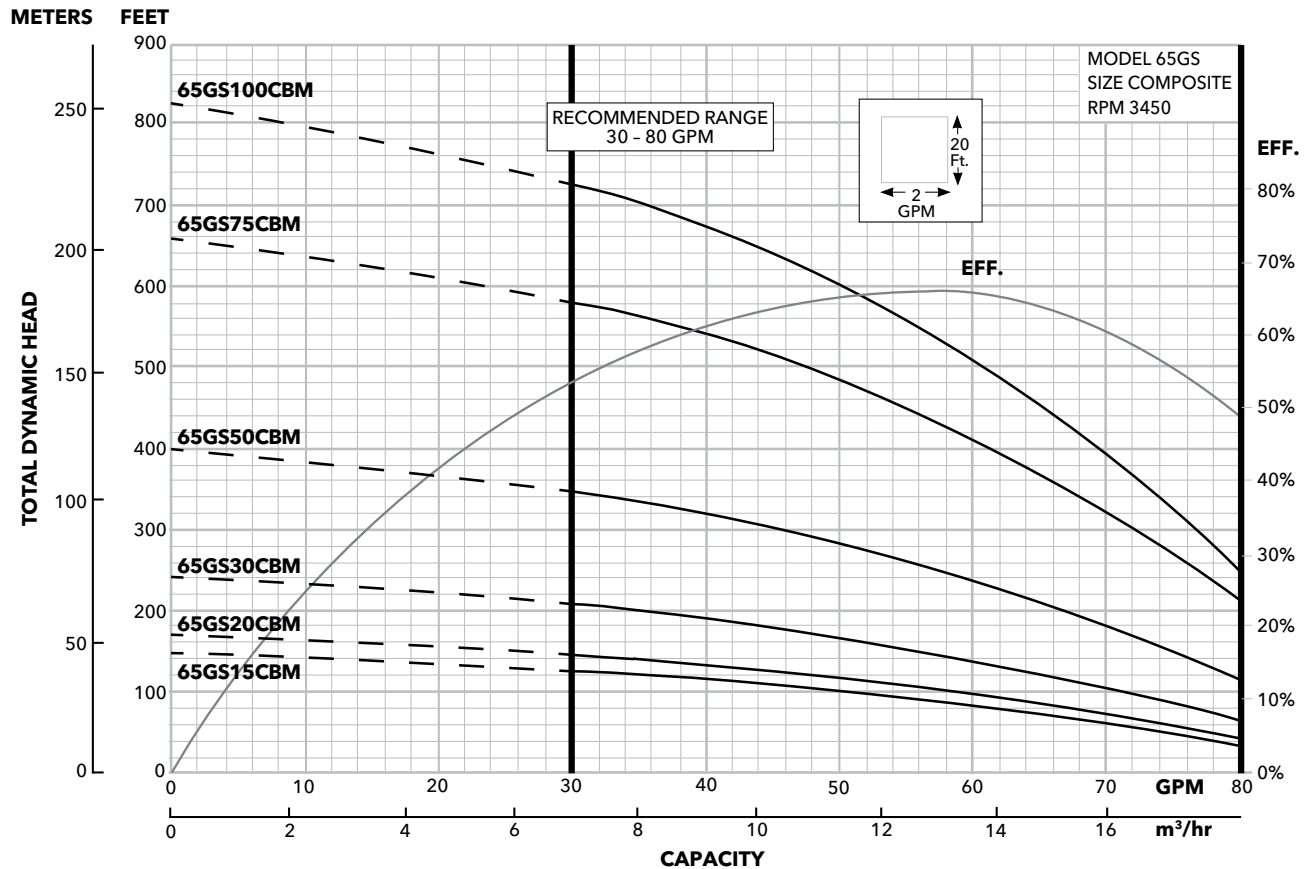


Residential Water

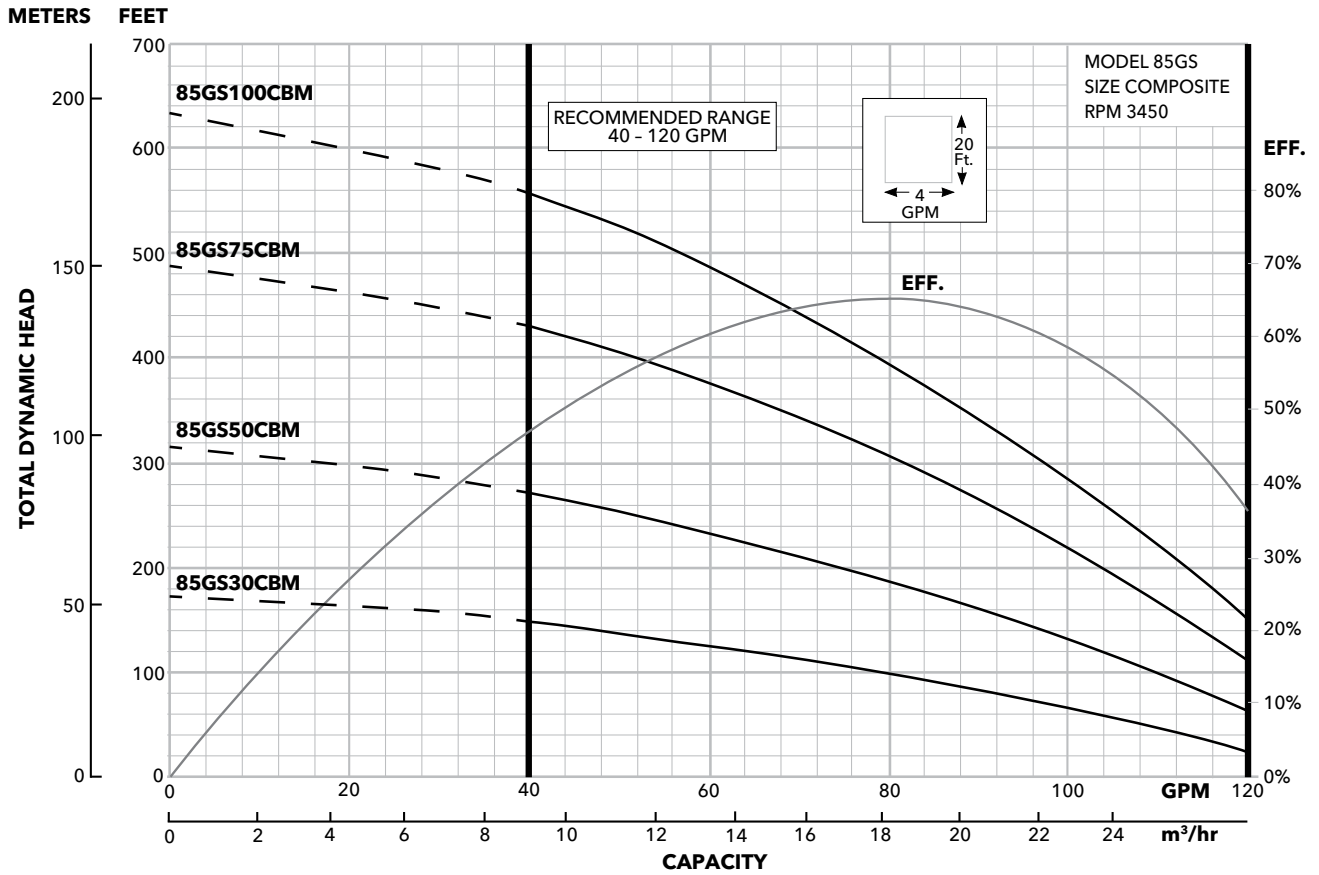
45GSCBM Curve



65GSCBM Curve



85GSCBM Curve





e-GS

35GS, 45GS, 65GS & 85GS

35-85 GPM 1-10HP, 60 HZ, SUBMERSIBLE PUMPS



FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Field Serviceable: Units have left hand threads and are field serviceable with common tools and readily available repair parts.

Sand Handling Design: Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head/Check Valve: Cast 303 stainless steel for strength and durability. Two cast-in safety line loops for installer convenience. The built-in check valve is constructed of stainless steel and FDA compliant BUNA rubber for abrasion resistance and quiet operation.

Motor Adapter: Cast 303 stainless steel for rigid, accurate alignment of pump and motor. Easy access to motor mounting nuts using standard open end wrench.

Stainless Steel Casing: Polished stainless steel is strong and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

Engineered Polymer Bearings: The proprietary, engineered polymer bearing material is strong and resistant to abrasion and wear. The enclosed upper bearing is mounted in a durable glass filled engineered composite bearing spider for excellent abrasion resistance.

WATER END DATA

Series	Model	Required HP	Stages	Water End	
				Length (in)	Weight (lbs)
35GS	35GS10	1	6	14.2	8
	35GS15	1.5	8	16.6	9
	35GS20	2	10	19.1	10
	35GS30	3	14	24.0	13
	35GS50	5	23	36.4	20
	35GS75	7.5	36	53.0	28
	35GS100	10	46	65.2	34
45GS	45GS15	1.5	5	12.9	8
	45GS20	2	7	15.4	9
	45GS30	3	10	19.0	10
	45GS50	5	17	27.7	15
	45GS75	7.5	25	38.9	21
	45GS100	10	34	50.6	27
65GS	65GS15	1.5	6	19.1	10
	65GS20	2	7	21.2	11
	65GS30	3	10	27.4	12
	65GS50	5	16	41.2	18
	65GS75	7.5	26	62.3	35
	65GS100	10	33	76.8	42
85GS	85GS30	3	8	29.4	13
	85GS50	5	14	42.8	18
	85GS75	7.5	21	63.8	35
	85GS100	10	27	79.9	41

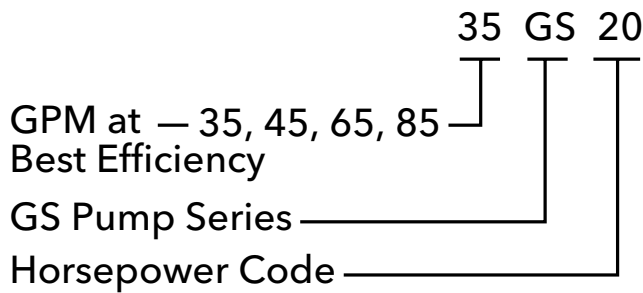
SPECIFICATIONS

Model	Flow Range GPM	Horse-Power Range	Best Efficiency GPM	Discharge Connection	Minimum Well Size	Rotation
35GS	10-50	1.0 - 10	35	2"	4"	CCW
45GS	20 - 65	1.5 - 10	45	2"	4"	CCW
65GS	30 - 80	1.5 - 10	65	2"	4"	CCW
85GS	40 - 120	3.0 - 10	85	2"	4"	CCW

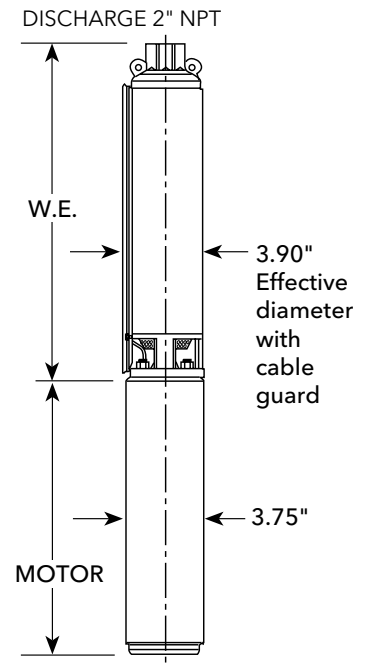
"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Check Valve Poppet	AISI 303 SS
Check Valve Seal	BUNA, FDA Compliant
Check Valve Seat	AISI 304 SS
Check Valve Retaining Ring	AISI 302 SS
Bearing Spider - Upper	Glass filled engineered composite
Bearing	Proprietary Engineered Polymer
Klipring	AISI 301 SS
Diffuser	Glass filled engineered composite
Impeller	Glass filled engineered composite
Bowl	AISI 304 SS
Intermediate Sleeve*	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling*	AISI 304 SS, Powder Metal
Intermediate Bearing Spider*	Glass filled engineered composite
Intermediate Bearing Spider*	AISI 303 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft	17-4 PH Stainless Steel
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

NOMENCLATURE - SOLD AS WATER ENDS ONLY



10 = 1	50 = 5
15 = 1 1/2	75 = 7 1/2
20 = 2	100 = 10
30 = 3	



GOULDS WATER TECHNOLOGY 4" SINGLE-PHASE MOTORS

Order No.	Type	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M10422	2-wire	1	230	13.3 (337)	24.5 (11.1)
M15422		PSC		1.5	14.9 (378)
M10412	3-wire	1		11.7 (297)	23.1 (10.5)
M15412		1.5		13.6 (345)	27.4 (12.4)
M20412		2		15.1 (383)	31.0 (14.1)
M30412		3		18.3 (466)	40.0 (18.1)
M50412		5	27.7 (703)	70.0 (31.8)	

GOULDS WATER TECHNOLOGY 4" THREE-PHASE MOTORS

Order No.	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M10430	1	200	11.7 (297)	22 (10.4)
M15430	1.5		11.7 (297)	22 (10.4)
M20430	2		13.8 (351)	28 (12.7)
M30430	3		15.3 (389)	32 (14.5)
M50430	5		21.7 (550)	55 (24.9)
M75430	7.5		27.7 (703)	70 (31.8)
M10432	1	230	11.7 (297)	23 (10.4)
M15432	1.5		11.7 (297)	23 (10.4)
M20432	2		13.8 (351)	28 (12.7)
M30432	3		15.3 (389)	32 (14.5)
M50432	5		21.7 (550)	55 (24.9)
M75432	7.5		27.7 (703)	70 (31.8)
M10434	1	460	11.7 (297)	23 (10.4)
M15434	1.5		11.7 (297)	23 (10.4)
M20434	2		13.8 (351)	28 (12.7)
M30434	3		15.3 (389)	32 (14.5)
M50434	5		21.7 (550)	55 (24.9)
M75434	7.5		27.7 (703)	70 (31.8)
M100434	10		-	-
M15437	1.5	575	11.7 (297)	23 (10.4)
M20437	2		15.3 (389)	32 (14.5)
M30437	3		15.3 (389)	32 (14.5)
M50437	5		27.7 (703)	70 (31.8)
M75437	7.5		27.7 (703)	70 (31.8)

NEMA MOTOR

- Corrosion resistant stainless steel construction.
- Built-in surge arrestor is provided on single phase motors through 5 HP.
- Stainless steel splined shaft.
- Hermetically sealed windings.
- Replaceable motor lead assembly.
- NEMA mounting dimensions.
- Control box is required with 3 wire single phase units.
- Three phase units require a magnetic starter with three leg Class 10 overload protection.

AGENCY LISTINGS



Goolds water technology Motor - tested to UL778 and CAN 22.2 by CSA International (Canadian Standards Association)



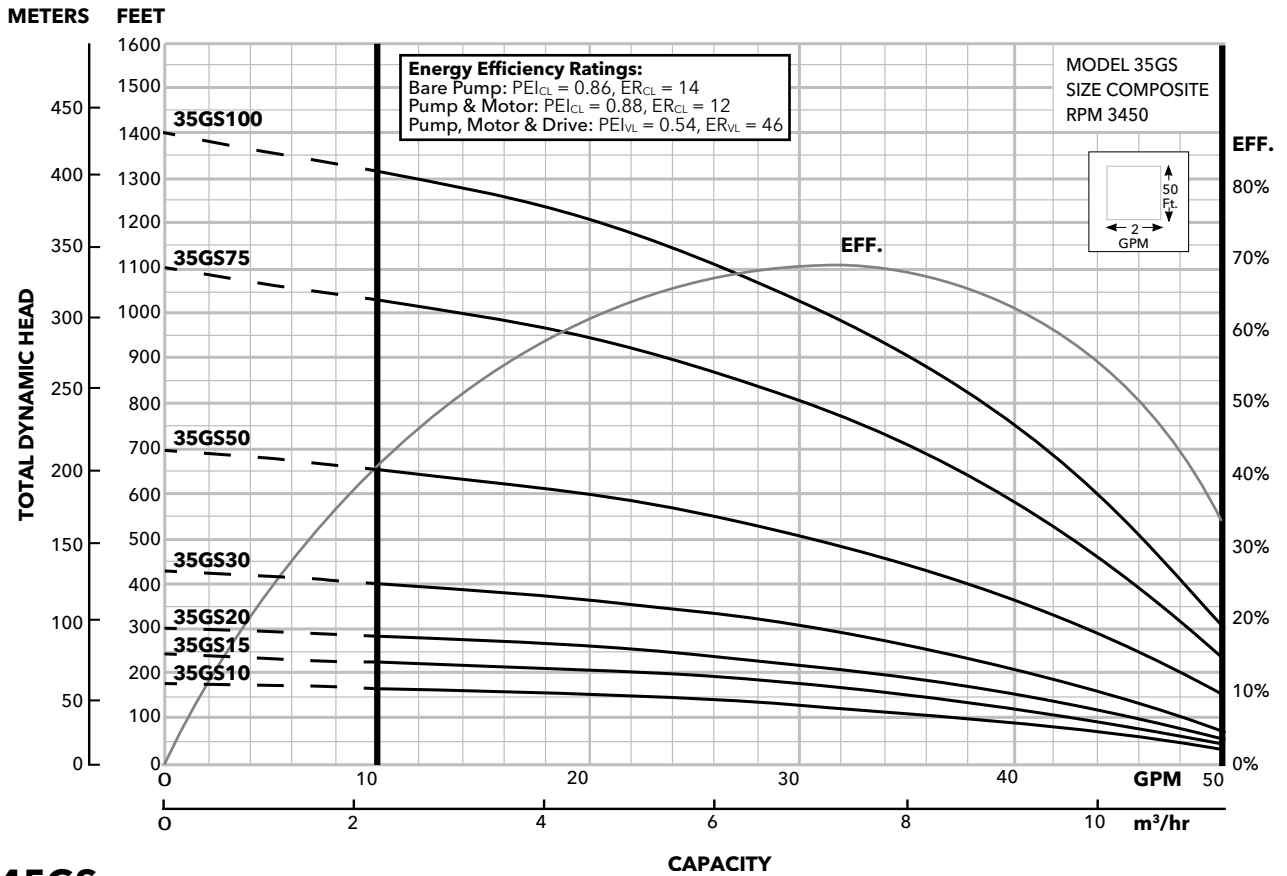
Goolds water technology Motor - Certified to NSF/ANSI 61, Annex G, Drinking Water System Components 4P49



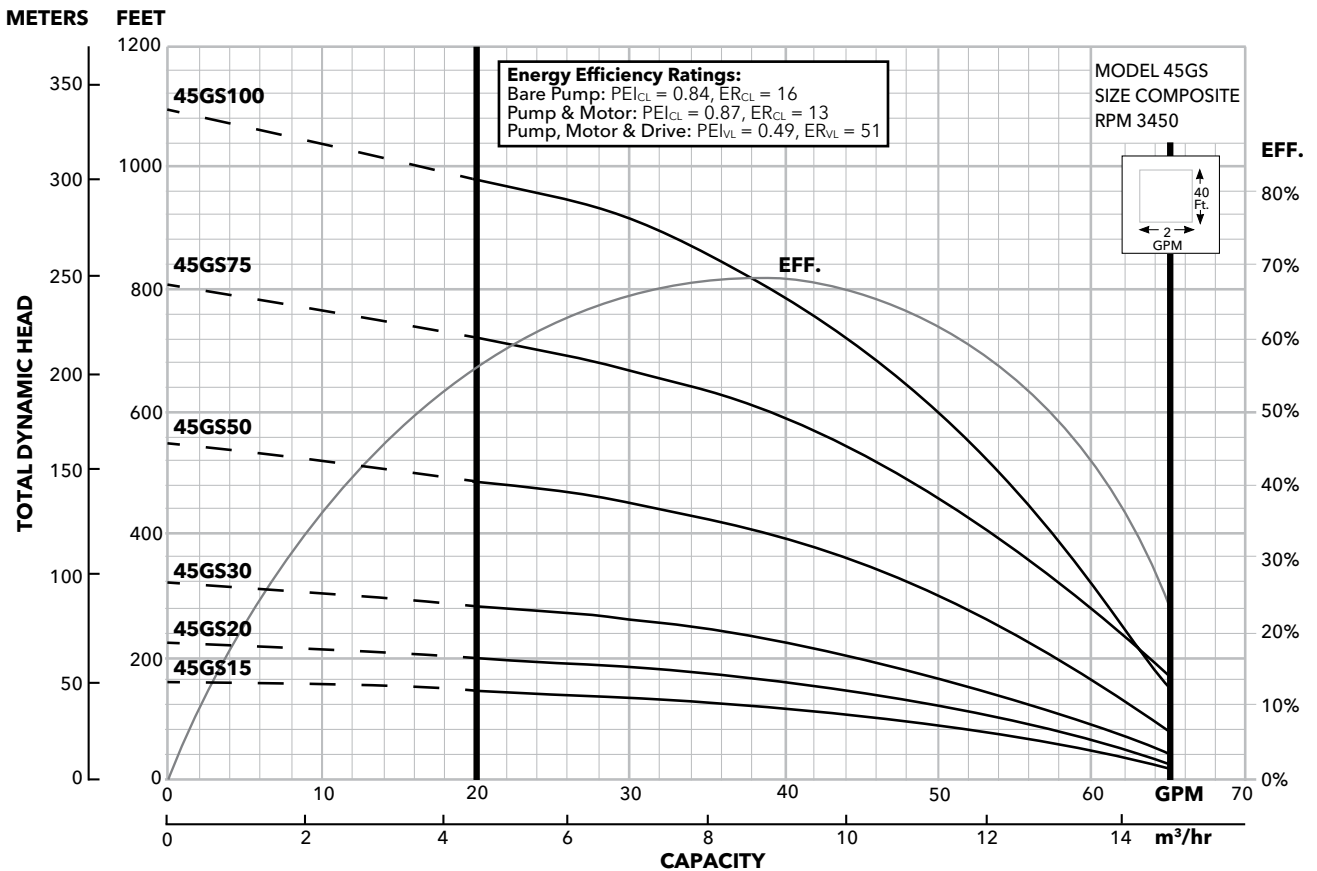
NSF/ANSI 372 - Drinking Water System Components - Lead Content

CLASS 6853 01 - Low Lead Content Certification Program - - Plumbing Products

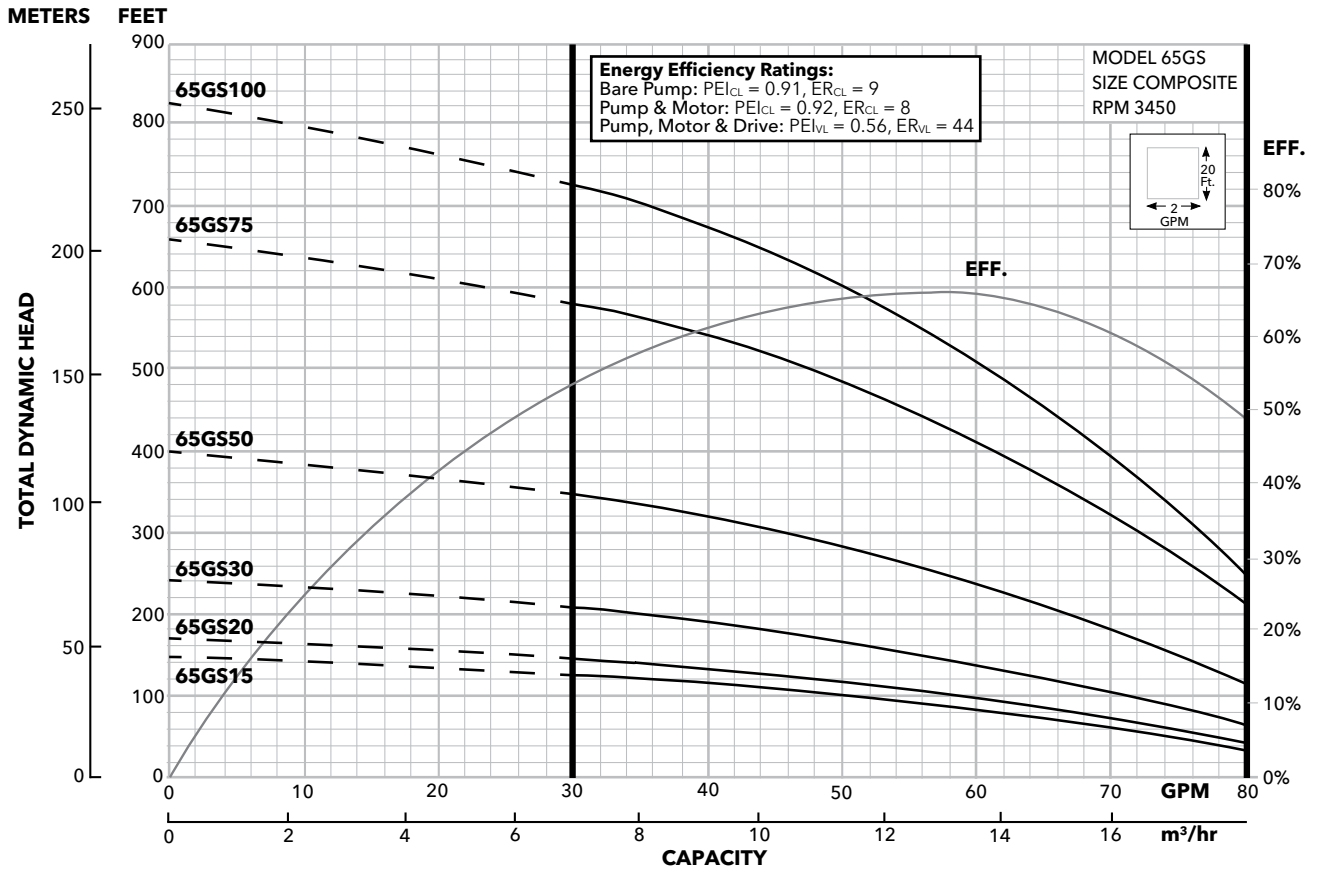
Model 35GS



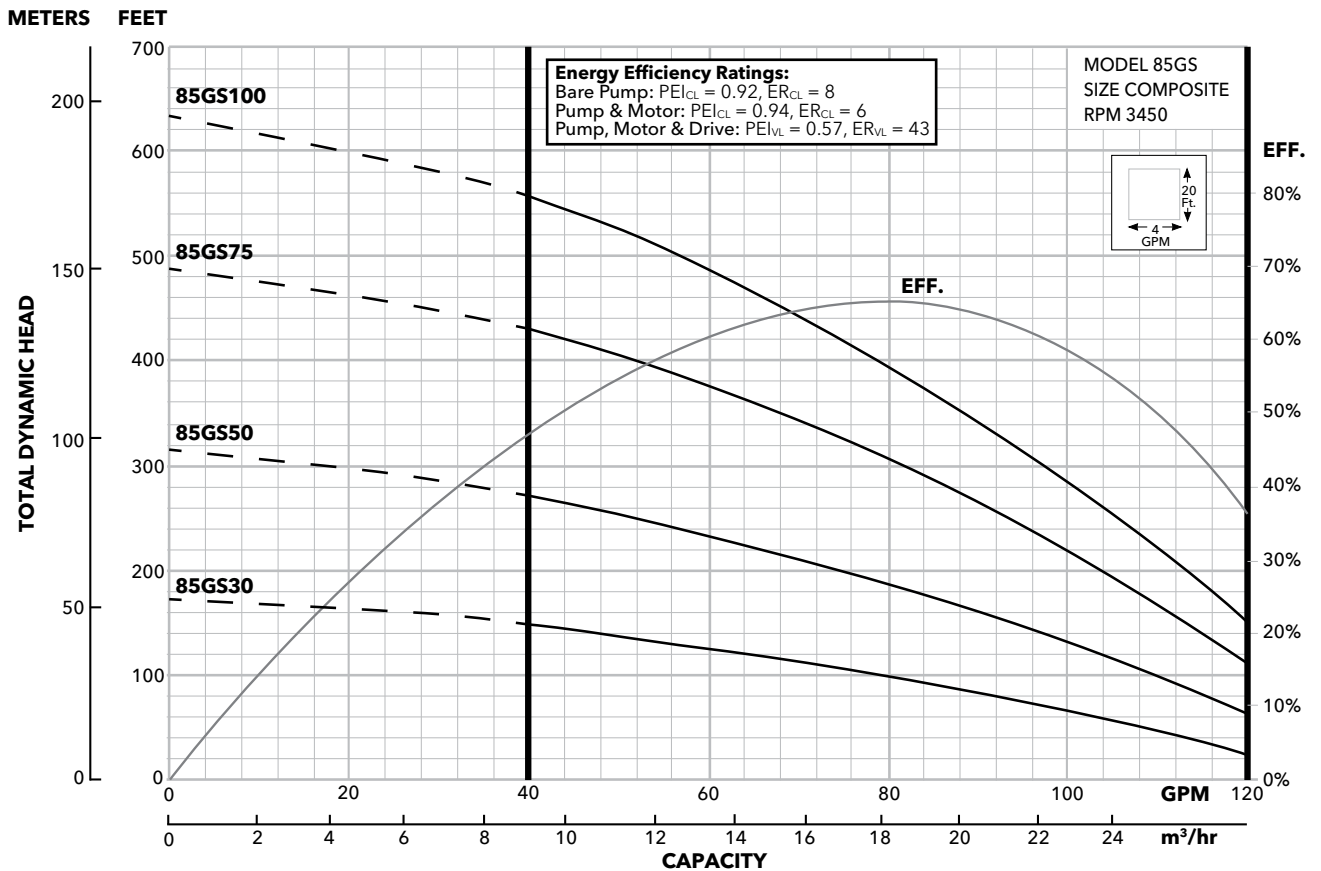
Model 45GS



Model 65GS



Model 85GS



Residential Water

MODEL 35GS

SELECTION CHART

Horsepower Range 1 - 3, Recommended Range 10 - 50 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	520	560	600	
35GS10	1	0		49	46	42	38	33	26	15																				
		20	44	40	36	31	23	11																						
		30	40	36	30	22																								
		40	35	29	20																									
		50	28	18																										
		60	16																											
Shut-off PSI			69	60	52	43	34	26	17	8																				
35GS15	1½	0			48	46	43	40	37	33	29	23	14																	
		20	47	45	43	39	36	32	28	21	10																			
		30	45	42	39	35	32	27	19																					
		40	42	38	35	31	26	18																						
		50	38	34	30	25	16																							
		60	34	29	24	15																								
Shut-off PSI			97	88	79	71	62	53	45	36	27	19	10																	
35GS20	2	0			50	48	46	44	42	39	37	34	30	26	20	12														
		20	49	47	45	43	41	38	36	33	29	24	17																	
		30	47	45	43	40	38	35	32	28	23	16																		
		40	44	42	40	38	35	32	27	22	15																			
		50	42	40	37	34	31	27	21	14																				
		60	39	37	34	30	26	20	12																					
Shut-off PSI			123	114	105	97	88	79	71	62	53	45	36	27	19	10														
35GS30	3	0				50	48	47	45	44	42	41	39	38	36	34	31	28	25	21	16	10								
		20		49	48	46	45	43	42	40	39	37	35	33	30	27	24	19	14											
		30	49	47	46	45	43	42	40	39	37	35	33	30	27	23	18	13												
		40	47	46	44	43	41	40	38	37	35	32	30	26	22	18	12													
		50	46	44	43	41	40	38	36	34	32	29	26	22	17	11														
		60	44	42	41	39	38	36	34	31	29	25	21	16	10															
Shut-off PSI			176	168	159	150	142	133	124	116	107	98	90	81	72	64	55	46	38	29	20	12								

Horsepower Range 5-10, Recommended Range 10 - 50 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																										
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
35GS50	5	0				50	48	46	43	41	38	35	31	26	19	11													
		20		50	48	46	44	41	38	35	31	26	20	12															
		30		49	47	45	42	40	37	33	29	24	16																
		40	50	48	46	44	41	38	35	31	27	20	12																
		50	49	47	45	43	40	37	34	29	24	17																	
			48	46	44	41	39	35	32	27	21	13																	
Shut-off PSI			280	259	237	215	194	172	150	129	107	85	64	42															
35GS75	7½	0				50	48	47	46	44	43	41	39	37	35	33	30	27	24	19	14								
		20				50	49	47	46	44	43	41	39	37	35	33	31	28	24	20	14								
		30			50	49	48	47	45	44	42	40	38	37	34	32	29	26	22	17	12								
		40			50	49	47	46	44	43	41	39	38	36	33	31	28	24	20	15									
		50		50	49	48	47	45	44	42	40	39	37	35	32	30	26	22	18	12									
				50	49	47	46	45	43	41	40	38	36	34	31	28	25	20	15										
Shut-off PSI			453	431	410	388	366	345	323	301	280	258	236	215	193	171	150	128	106	85	63	42							
35GS100	10	0						49	48	47	46	45	44	42	41	40	38	37	35	33	31	29	26	24	20	16	11		
		20						49	48	47	46	45	44	42	41	40	38	37	35	33	31	29	27	24	20	16	12		
		30						49	48	47	45	44	43	42	40	39	38	36	34	32	30	28	25	22	19	14			
		40						49	48	47	46	45	44	43	41	40	38	37	35	34	32	29	27	24	21	17	12		
		50						49	48	47	46	44	43	42	41	39	38	36	34	33	31	28	26	23	19	15	10		
								49	48	47	46	45	44	43	41	40	39	37	35	34	32	30	27	24	21	17	13		
Shut-off PSI			583	561	540	518	496	475	453	431	410	388	366	345	323	302	280	258	237	215	193	172	150	128	107	85	63	42	

MODEL 45GS

SELECTION CHART

Horsepower Range 1½ - 5, Recommended Range 20 - 65 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	440	480	520	560	600	640		
45GS15	1½	0	64	61	57	52	46	37	23																					
		20	55	50	44	34																								
		30	49	43	32																									
		40	41	30																										
		50	27																											
		60																												
Shut-off PSI			61	52	44	35	26	18	9																					
45GS20	2	0		62	60	57	53	49	45	40	32																			
		20	59	56	52	48	43	38	28																					
		30	55	51	47	43	36	26																						
		40	51	47	42	35	25																							
		50	46	41	34	22																								
		60	40	37	29																									
Shut-off PSI			88	80	71	63	54	45	37	28	19																			
45GS30	3	0		65	62	60	59	56	53	50	47	45	41	37	30	21														
		20	62	60	58	55	52	49	47	44	40	35	28																	
		30	60	58	55	52	49	46	43	39	34	26																		
		40	57	54	51	49	46	42	38	33	25																			
		50	54	51	48	45	42	38	32	23																				
		60	51	48	45	41	37	31	22																					
Shut-off PSI			130	121	113	104	95	87	78	69	61	52	43	35	26	17														
45GS50	5	0				65	63	62	61	60	59	58	56	55	53	51	50	48	46	44	42	39	32	22						
		20		64	63	61	60	59	58	57	56	54	53	51	49	47	46	43	41	38	35	31	20							
		30	64	62	61	60	59	58	57	55	54	52	51	49	47	45	43	41	38	34	30	25								
		40	62	61	60	59	58	57	55	54	52	50	49	47	45	43	40	37	33	29	24									
		50	61	60	59	58	56	55	53	52	50	48	47	45	42	40	37	33	28	23										
		60	60	59	58	56	55	53	52	50	48	46	44	42	39	36	32	28	22											
Shut-off PSI			228	220	211	202	194	185	176	168	159	150	142	133	124	116	107	98	90	81	72	64	46	29						

Horsepower Range 7½ - 10, Recommended Range 20-65 GPM, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840	880	920	960	1000	1040		
45GS75	7½	0					63	62	60	58	56	53	51	48	46	43	39	34	28	21										
		20				63	61	60	57	55	53	50	48	45	42	38	33	27	19											
		30			64	62	60	58	56	54	51	49	46	43	40	35	30	23												
		40		65	63	61	59	57	55	52	50	47	45	41	37	32	26													
		50		64	62	60	58	56	54	51	49	46	43	39	35	29	21													
		60	65	63	61	59	57	55	52	50	47	44	41	37	31	25														
Shut-off PSI			332	315	298	280	263	246	228	211	194	177	159	142	125	107	90	73	55	38										
45GS100	10	0				65	64	63	61	60	58	57	55	54	53	51	50	48	46	44	42	39	36	32	28	23				
		20			65	64	63	61	60	58	57	55	54	52	51	49	48	46	44	42	39	36	32	27	22					
		30		65	64	63	62	60	59	57	56	54	53	52	50	49	47	45	43	40	37	33	29	24						
		40		65	64	62	61	60	58	56	55	54	52	51	49	48	46	44	41	38	35	31	26	21						
		50	65	64	63	62	60	59	57	56	54	53	51	50	48	47	45	42	40	36	33	28	23							
		60	65	64	62	61	59	58	56	55	53	52	50	49	47	45	43	41	38	34	30	26	20							
Shut-off PSI			456	439	422	404	387	370	353	335	318	301	283	266	249	231	214	197	179	162	145	127	110	93	75	58				

MODEL 65GS

SELECTION CHART

Horsepower Range 1½ - 5, Recommended Range 30 - 80 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																					
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	440	480
65GS15	1½	0		78	70	61	51	36																
		20	68	58	47	30																		
		30	57	45																				
		40	42																					
		50																						
		60																						
Shut-off PSI			55	46	38	29	20	12																
65GS20	2	0		81	74	67	59	48	35															
		20	72	64	56	45	30																	
		30	63	54	43																			
		40	53	41																				
		50	39																					
		60																						
Shut-off PSI			65	56	48	39	30	22	13															
65GS30	3	0			81	76	71	66	59	53	45	35												
		20	80	75	69	64	57	51	42	32														
		30	74	69	63	56	49	41	30															
		40	68	62	55	48	39																	
		50	61	54	47	38																		
		60	53	46	36																			
Shut-off PSI			96	87	79	70	61	53	44	35	27	18												
65GS50	5	0					79	76	72	69	66	62	58	54	49	44	37	30						
		20					78	75	72	69	65	61	57	53	48	43	36							
		30					78	75	71	68	64	61	57	52	47	42	35							
		40					77	74	71	67	64	60	56	52	47	41	34							
		50					74	70	67	63	59	55	51	46	40	33								
		60					74	70	67	63	59	55	51	46	40	33								
Shut-off PSI			164	155	147	138	129	121	112	103	95	86	77	69	60	51	43	34	26					

Horsepower Range 7½ - 10, Recommended Range 30 - 80 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																					
			40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840	880
65GS75	7½	0						78	74	70	66	61	56	50	44	35								
		20					80	77	73	69	65	60	55	50	42	33								
		30					79	75	71	67	62	57	52	46	38									
		40					80	77	73	69	64	60	54	49	41	32								
		50					78	75	70	66	62	57	51	45	36									
		60					79	76	72	68	64	59	54	48	40	30								
Shut-off PSI			268	251	233	216	199	181	164	147	129	112	95	77	60	43								
65GS100	10	0						80	78	75	72	69	66	62	58	54	50	45	39	31				
		20					80	78	75	72	69	65	62	58	54	49	44	37	30					
		30					79	76	73	70	67	63	59	55	51	46	40	33						
		40					80	77	74	71	68	65	61	57	53	48	43	36						
		50					78	76	73	69	66	63	59	55	50	45	39	32						
		60					79	77	74	71	68	64	60	57	52	48	42	35						
Shut-off PSI			339	322	305	288	270	253	236	218	201	184	166	149	132	114	97	80	62	45				

MODEL 85GS

SELECTION CHART

Horsepower Range 3 - 10, Recommended Range 40 - 120 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																								
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	440	480	520		
85GS30	3	0		112	103	92	79	64	48																		
		20	100	88	74	59	42																				
		30	86	72	57	39																					
		40	70	54																							
		50	52																								
		60																									
Shut-off PSI			66	58	49	40	32																				
85GS50	5	0				114	109	103	97	90	83	74	66	57	47												
		20	119	113	107	101	95	88	80	72	63	54	43														
		30	112	106	101	94	87	79	70	62	52	41															
		40	105	100	93	85	77	69	60	51	40																
		50	99	92	84	76	68	59	49																		
		60	91	83	75	66	58	48																			
Shut-off PSI			128	119	111	102	93	85	76	67	59	50	41	33	24												
85GS75	7½	0						119	115	111	108	104	100	95	91	86	81	76	71	65	59	52					
		20				118	114	110	106	102	98	94	89	84	80	74	69	63	57	50	41						
		30				117	113	110	106	102	98	93	88	84	79	74	68	62	56	48	40						
		40	120	116	113	109	105	101	97	92	88	83	78	73	67	61	55	47									
		50	116	112	109	105	101	96	92	87	82	77	72	66	60	54	46										
		60	112	108	104	100	95	91	86	81	76	71	66	59	53	45											
Shut-off PSI			203	194	185	177	168	159	151	142	133	125	116	107	99	90	81	73	64	55	47	38					
85GS100	10	0								119	116	114	111	108	104	101	97	94	90	87	83	79	71	62	52		
		20						118	116	113	110	107	103	100	96	93	89	85	82	78	74	70	61	50			
		30				120	118	115	112	109	106	103	99	96	92	89	85	81	77	73	69	65	55	42			
		40			120	117	115	112	109	106	102	99	95	92	88	84	81	77	73	68	64	59	48				
		50		120	117	114	111	108	105	102	98	95	91	87	84	80	76	72	68	63	58	53	40				
		60	119	117	114	111	108	105	101	98	94	91	87	83	79	75	71	67	63	58	52	46					
Shut-off PSI			265	257	248	239	231	222	213	205	196	188	179	170	162	153	144	136	127	118	110	101	84	66	49		



**50L, 65L, 95L, 120L,
160L, 250L, 320L**

6" Stainless Steel Submersible Pumps

60 HZ HIGH CAPACITY - FOR 6" AND LARGER WELLS

FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor. Pump can be operated continuously.

New Design Features: Cast 304 SS discharge head and motor adapter.

Field Serviceable: Easy to install and service. All parts easily dismantled if field service is ever necessary.

Diverse Application: Designed for commercial, municipal and agricultural water needs.

Stainless Steel Construction: Durable in most waters.

Bearings: Replaceable, silicon carbide bearings allow excellent abrasives handling and wear resistance.

Built-in Check Valve: Positive sealing, stainless steel check valve assembly incorporated into discharge head.

Impellers: New stainless steel impeller design provides improved efficiency.

Maximum Temperature: 140°F (60°C) for pump.

Four-Fluted Shaft Design: Four sided stainless steel shaft eliminates impeller keys and provides positive drive.

Coupling: Removable heavy duty stainless steel, splined coupling for maximum load-carrying capability.

Suction Strainer: Stainless steel strainer restricts gravel and other debris from entering the pump.

Cable Guard: Stainless steel cable guard surrounds and protects motor leads.

Fasteners: All fasteners are stainless steel.

Goulds Motors: Designed to NEMA standards. Stainless steel casing resists corrosion. Water filled design provides a constant supply of lubrication. Hermetically sealed stator assures moisture free windings. Durable Kingsbury type thrust bearing absorbs all thrust. Replaceable motor lead assembly.

Certified to NSF/ANSI 61, Annex G.

SPECIFICATIONS

Model	Horsepower Range	Discharge Connection	Recommended GPM Operating Range	GPM at Best Efficiency	Minimum* Well Size	Rotation at Discharge End
50L	3 - 20	3" NPT	17 - 70	50	6" / 8" *	CCW
65L	3 - 40		20 - 90	65		
95L	5 - 40		25 - 130	90		
120L	5 - 50		40 - 170	120		
160L	3 - 60		50 - 240	160	6"	
250L	7.5 - 60		70 - 300	250		
320L	7.5 - 60	4" NPT	100 - 400	320		

* Minimum well size refers only to dimensional fit in a well, the specifier or installer must determine the minimum required well diameter that will insure an adequate supply of water to the pump and also properly cool the motor. See Water End Data Chart for specific diameter by model number.

AGENCY LISTINGS



NSF/ANSI 372 - Drinking Water System Components - Lead Content

CLASS 6853 01 - Low Lead Content Certification Program -- Plumbing Products



Pump/Water End - Drinking Water System Components - Certified to NSF/ANSI 61, Annex G

"L" SERIES MATERIALS OF CONSTRUCTION

Ref. No.	Part Name	Material	Material Code
1	Discharge Head	Stainless steel	ASTM CF-8 (AISI 304 cast)
2	Check Valve Support	Stainless steel	ASTM CF-8 (AISI 304 cast)
3	Check Valve	Stainless steel	AISI 304 SS
4	Elastomers	Ethylene propylene	EPDM
5	Bolts and Screws	Stainless steel	AISI 304 SS
6	Shaft Sleeve and Bushing	Tungsten carbide	-
7	Thrust Bearing	PTFE+Graphite	-
8	Impeller	Stainless steel	AISI 304 SS
9	Diffuser	Stainless steel	AISI 304 SS
10	Spacer	Stainless steel	AISI 431 SS
11	Tie Rod	Stainless steel	AISI 304 SS
12	Cable Guard	Stainless steel	AISI 304 SS
13	Wear Rings	Technopolymer PPO	Engineered polymer
14	Strainer	Stainless steel	AISI 304 SS
15	Shaft	Stainless steel	AISI 431 SS
16	Shaft Coupling	Stainless steel	AISI 431 SS
17	Motor Adapter	Stainless steel	ASTM CF-8 (AISI 304 cast)

SYSTEM COMPONENTS

□ Pump/Water End:

- 50L-250L with 3" NPT discharge.
- 320L with 4" NPT discharge.
- 3 HP Water Ends Have 4" Motor Adapters
- 5 & 7.5 HP Water Ends Have Either a 4" or 6" Motor Adapter (see Water End Data chart)
- 10 HP and Larger Water Ends Have 6" Motor Adapters

□ Motor:

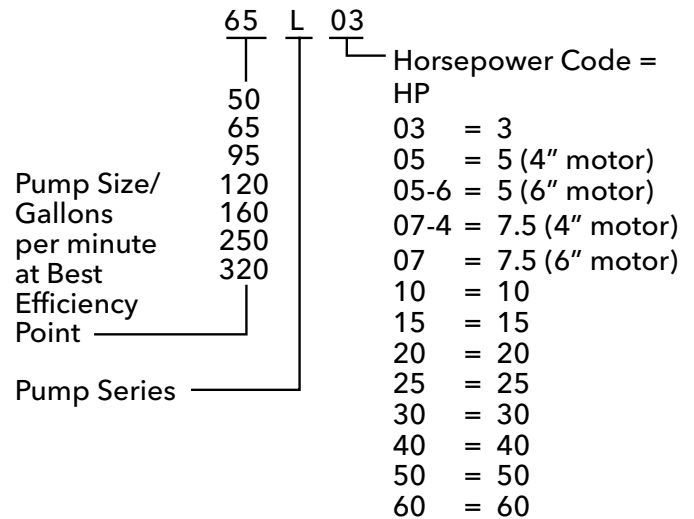
- 4" motor required for 3 HP and 5 HP pumps.
- 4" or 6" motors can be used for 7.5 HP pumps.
- 6" motor required for 10 HP and larger pumps.

□ **Control Box:** Required for all single phase motors.

□ **Magnetic Starter:** A magnetic starter with Class 10 overloads is required for all three phase units.

WATER ENDS AND MOTORS MUST BE ORDERED SEPARATELY AND ARE PACKAGED SEPARATELY.

ORDER NUMBER CODE



WATER END (PUMP) DATA

Model	Order No.	No. Stages	Min. HP Required	Required Motor Dia.	Dimensions & Weights							
					Length		Diameter		Weight			
					in.	mm	in.	mm	lbs.	kg.		
50L	50L03	4	3	4	20.6	522	5.59	142	25	11		
	50L05R**	7	5	4/6	25.8	656	5.67	144	35	16		
	50L05**	8	5		27.8	706			40	18		
	50L07**	11	7.5		33.3	844			49	22		
	50L10	15	10	6	40.2	1020			57	26		
	50L15	23	15		56.9	1446			82	37		
	50L20	28	20		65.8	1670			94	43		
65L03	3	3	4		18.6	472			5.59	142	26	12
65L	65L05**	5	5	4/6	22.2	564	5.67	144	31	14		
	65L07**	7	7.5		25.8	656			35	16		
	65L10	10	10		31.3	794			44	20		
	65L15	16	15	6	42.1	1070			60	27		
	65L20	21	20		53.0	1346			75	34		
	65L25	27	25		63.9	1622			90	41		
	65L30*	32	30		98.7	2508			6.97*	177	220	100
	65L40*	41	40		115.0	2922					253	115
95L	95L05**	3	5	4/6	18.6	472	5.59	142	26	12		
	95L07**	5	7.5		22.2	564	5.67	144	31	14		
	95L10	7	10		25.8	656			35	16		
	95L15	10	15	6	31.3	794			44	20		
	95L20	14	20		38.5	978			53	24		
	95L25	17	25		43.9	1116			62	28		
	95L30	21	30		53.0	1346			75	34		
	95L40*	28	40		67.3	1710			6.97*	177	156	71
120L	120L05**	2	5	4/6	16.8	426			5.59	142	22	10
	120L07**	3	7.5		19.5	495	5.67	144	26	12		
	120L10	5	10		24.9	633			33	15		
	120L15	7	15	30.4	771	40			18			
	120L20	10	20	38.5	978	51			23			
	120L25	12	25	43.9	1116	57			26			
	120L30	15	30	52.1	1323	68			31			
	120L40	20	40	65.7	1668	86			39			
	120L50*	24	50	80.9	2055	6.97*			177	179	81	
160L	160L03	1	3	4	14.5	367			5.59	142	18	8
	160L05**	2	5	4/6	17.2	436	5.67	144	22	10		
	160L07**	3	7.5		19.9	505			26	12		
	160L10	4	10		22.6	574			31	14		
	160L15	6	15	6	28.0	712			37	17		
	160L20	8	20		33.5	850			44	20		
	160L25	9	25		36.2	919			46	21		
	160L30	11	30		41.6	1057			53	24		
	160L40	15	40		52.5	1333			68	31		
	160L50	18	50		60.6	1540			77	35		
160L60	20	60	65.7		1668	86			39			
250L	250L07**	2	7.5		4/6	20.8	528	5.67	144	26	12	
	250L10	3	10	6	25.3	643	33			15		
	250L15	5	15		34.4	873	44			20		
	250L20	7	20		43.4	1103	55			25		
	250L25	8	25		48.0	1218	60			27		
	250L30	9	30		52.5	1333	66			30		
	250L40	13	40		70.6	1793	88			40		
	250L50	16	50		84.2	2138	104			47		
250L60	19	60	97.8		2484	128	58					
320L	320L07**	2	7.5	4/6	21.8	553	5.67	144	27	12		
	320L15	4	15	6	30.8	783			38	17		
	320L20	5	20		35.4	898			45	20		
	320L25	6	25		39.9	1013			50	22		
	320L30	8	30		49.0	1243			61	27		
	320L40	11	40		62.5	1588			78	35		
	320L50	13	50		71.6	1818			89	40		
	320L60	16	60		84.2	2138			104	47		

* Note pump diameter - high pressure models have an exterior casing and larger diameters, verify they will fit your well.

** Pumps can be configured to accommodate a 4" or 6" motor. See product order code.

Residential Water

MOTOR DATA

NOTE: 4" diameter motors are required for 3 and 5 HP "L" Series pumps.
 4" or 6" diameter motors can be used for 7.5 HP "L" Series pumps. See Water End Data Chart.
 6" diameter motors are required for 10 HP and larger "L" Series pumps.

GOULDS 4" MOTORS

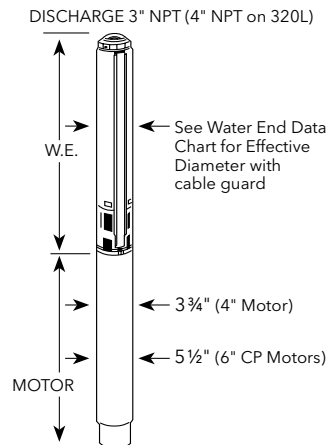
Single Phase Motors - Dimensions and Weights					
Motor Order No.	HP	Motor Dia.	Volts	Length in. (mm)	Weight lbs. (Kg)
M30412	3	4"	230	18.3 (466)	40 (18.1)
M50412	5			27.7 (703)	70 (31.8)
Three Phase Motors - Dimensions and Weights					
M30430	3	4"	200	15.3 (389)	32 (14.5)
M30432			230		
M30434			460		
M50430	5	4"	200	21.7 (550)	55 (24.9)
M50432			230		
M50434			460		
M75430	7.5	4"	200	27.7 (703)	70 (31.8)
M75432			230		
M75434			460		

GOULDS 6" MOTORS

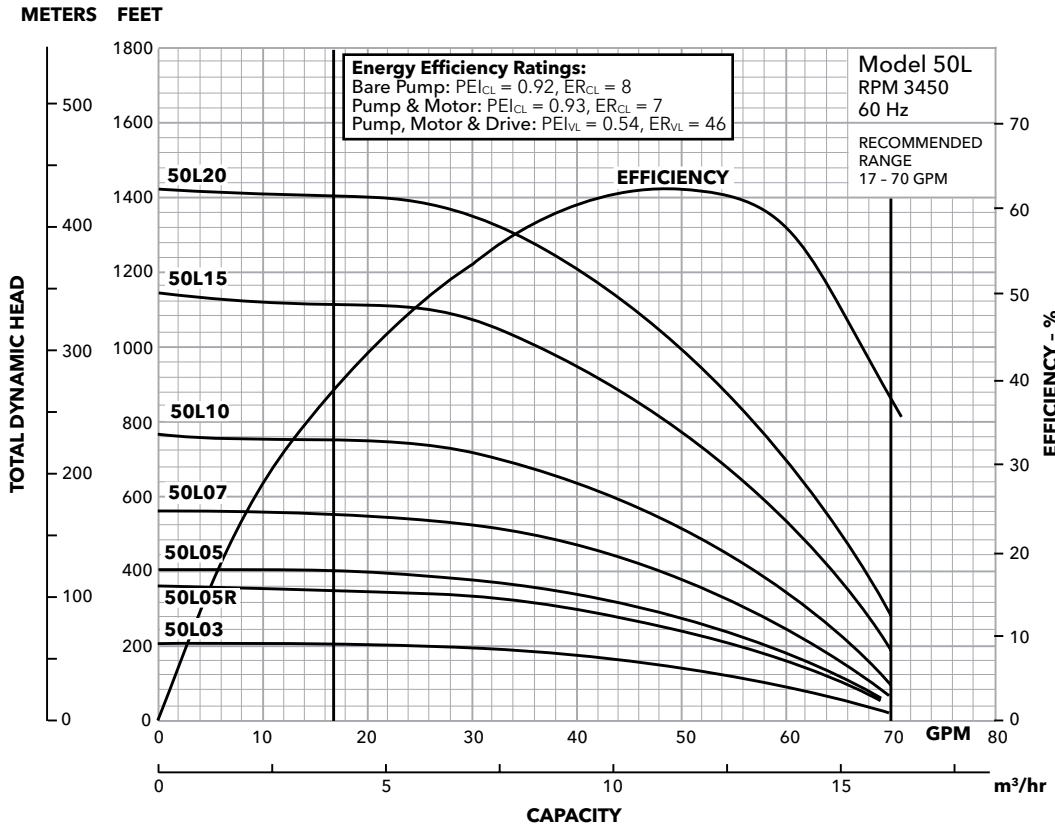
Single Phase Motors - Dimensions and Weights					
Motor Order No.	HP	Motor Dia.	Volts	Length (inches)	Weight (lbs)
6M071	7.5	6"	230	29.9	128
6M101	10	6"	230		
6M151	15	6"	230	33.5	148
Three Phase Motors - Dimensions and Weights					
6M078	7.5	6"	200	24.8	99
6M072			230		
6M074			460		
6M108	10	6"	200	27.0	110
6M102			230		
6M104			460		
6M158	15	6"	200	29.9	128
6M152			230		
6M154			460		
6M208	20	6"	200	31.5	137
6M202			230		
6M204			460		
6M258	25	6"	200	36.2	161
6M252			230		
6M254			460		
6M308	30	6"	200	38.2	176
6M302			230		
6M304			460		
6M404	40	6"	460	40.6	187
66M504	50			41.7	198
86M504	50			6" x 8"	46.4

GOULDS FM-SERIES 6" MOTORS

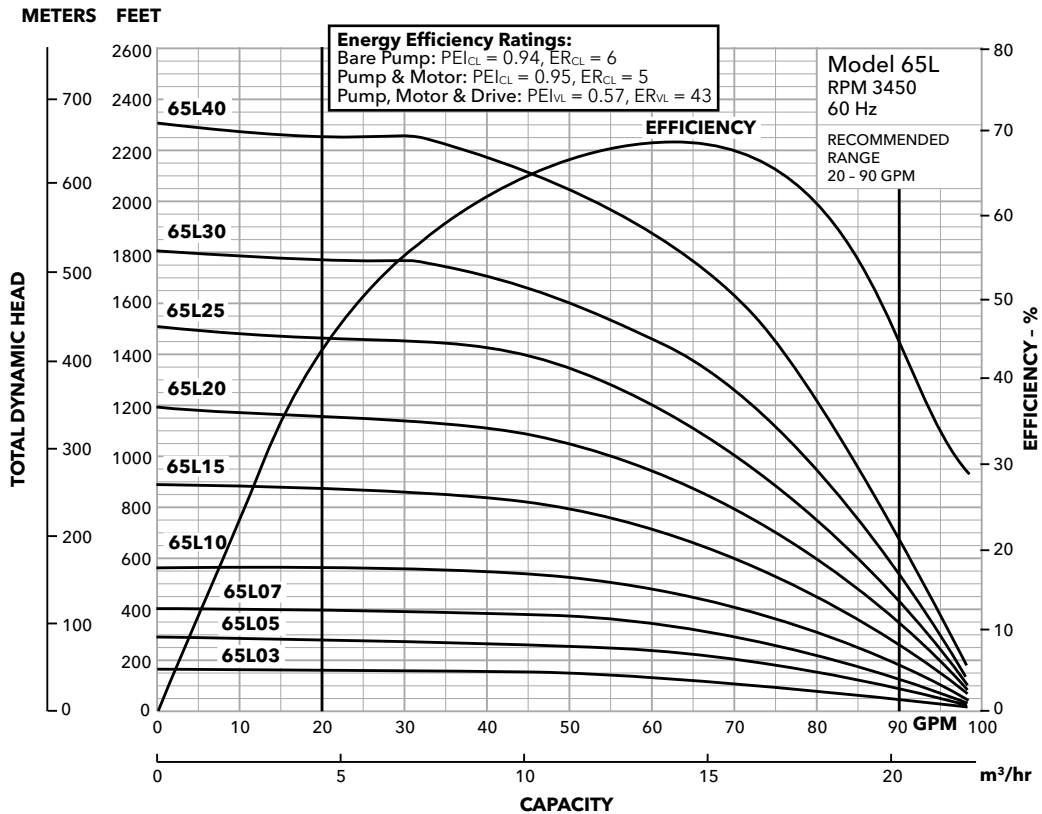
Single Phase Motors Dimensions and Weights					
Motor Order No.	HP	Motor Dia.	Volts	Length (inches)	Weight (lbs)
6F051	5	6"	230	25.6	143
6F071	7.5			28.1	161
6F101	10			30.3	161
6F151	15			32.8	181
Three Phase Motors Dimensions and Weights					
Motor Order No.	HP	Motor Dia.	Volts	Length (inches)	Weight (lbs)
6F058	5	6"	200-208	23.0	107.0
6F052			230		
6F054			460		
6F078	7.5	6"	200-208	24.3	117.0
6F072			230		
6F074			460		
6F108	10	6"	200-208	25.6	124.0
6F102			230		
6F104			460		
6F158	15	6"	200-208	28.1	127.0
6F152			230		
6F154			460		
6F208	20	6"	200-208	30.3	152.0
6F202			230		
6F204			460		
6F258	25	6"	200-208	32.8	164.0
6F252			230		
6F254			460		
6F308	30	6"	200-208	35.6	185.0
6F302			230		
6F304			460		
6F404	40	6"	460	39.3	207.0
6F504	50			54.1	285.0



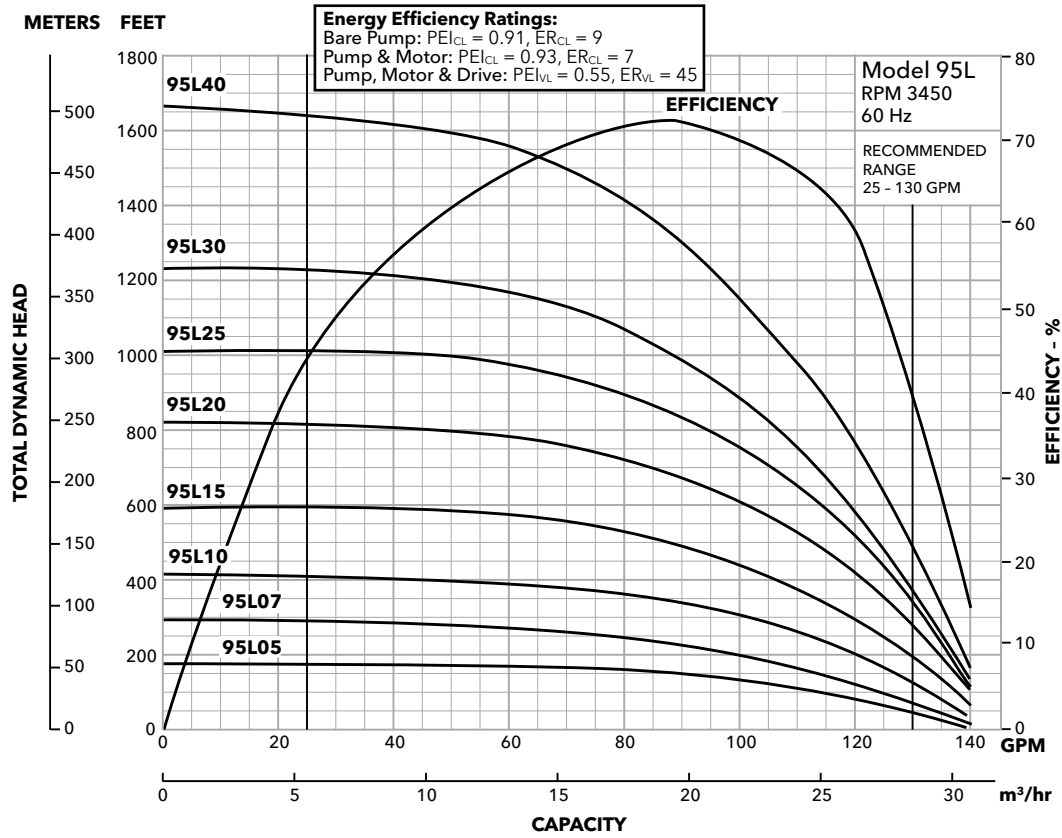
MODEL 50L



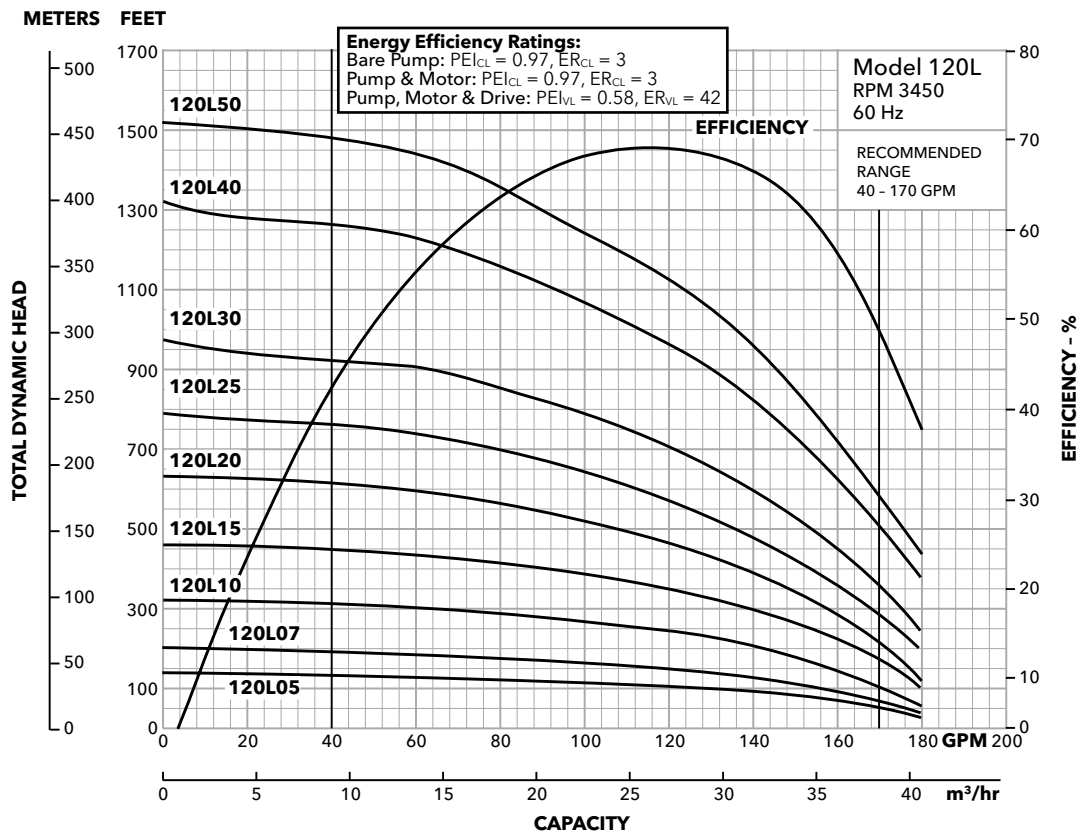
MODEL 65L



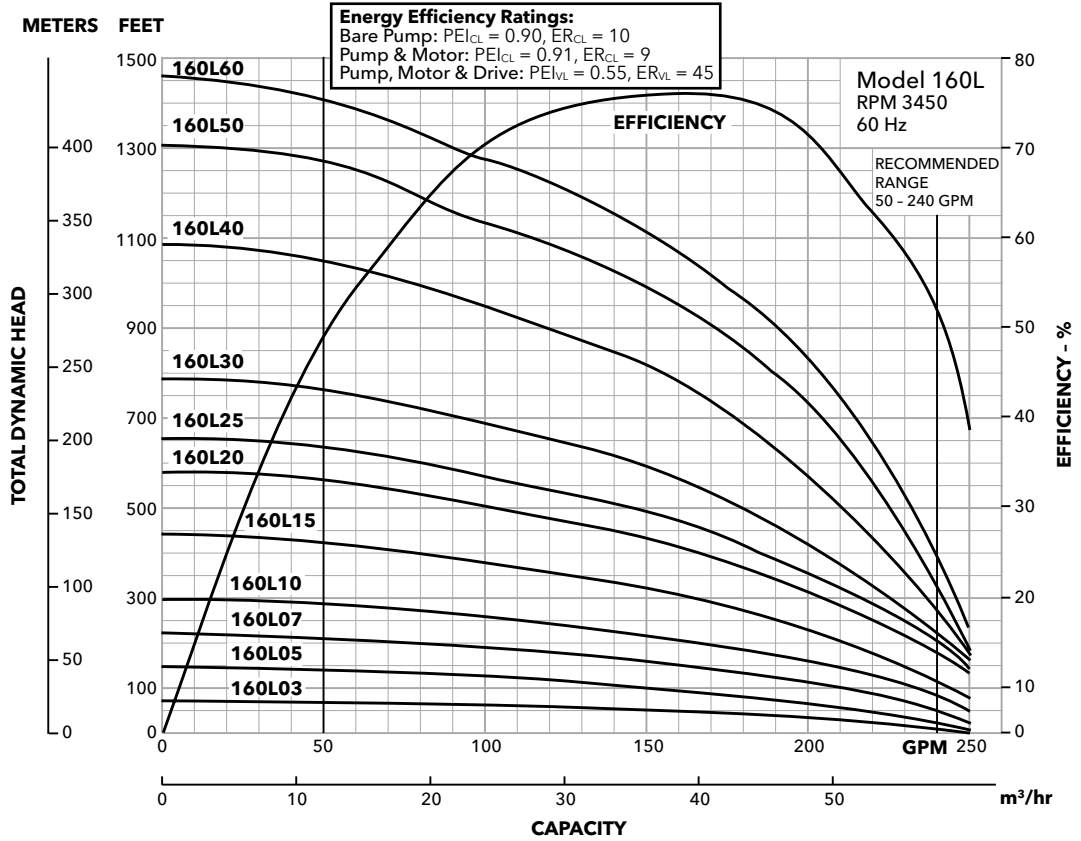
MODEL 95L



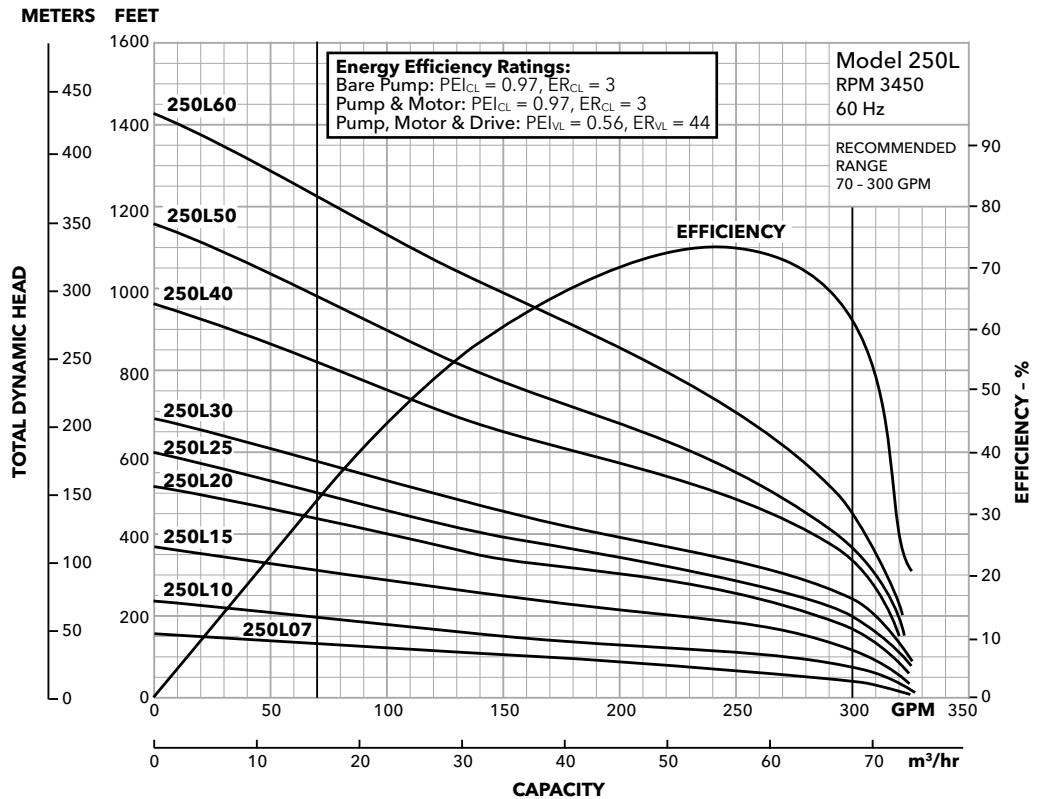
MODEL 120L



MODEL 160L

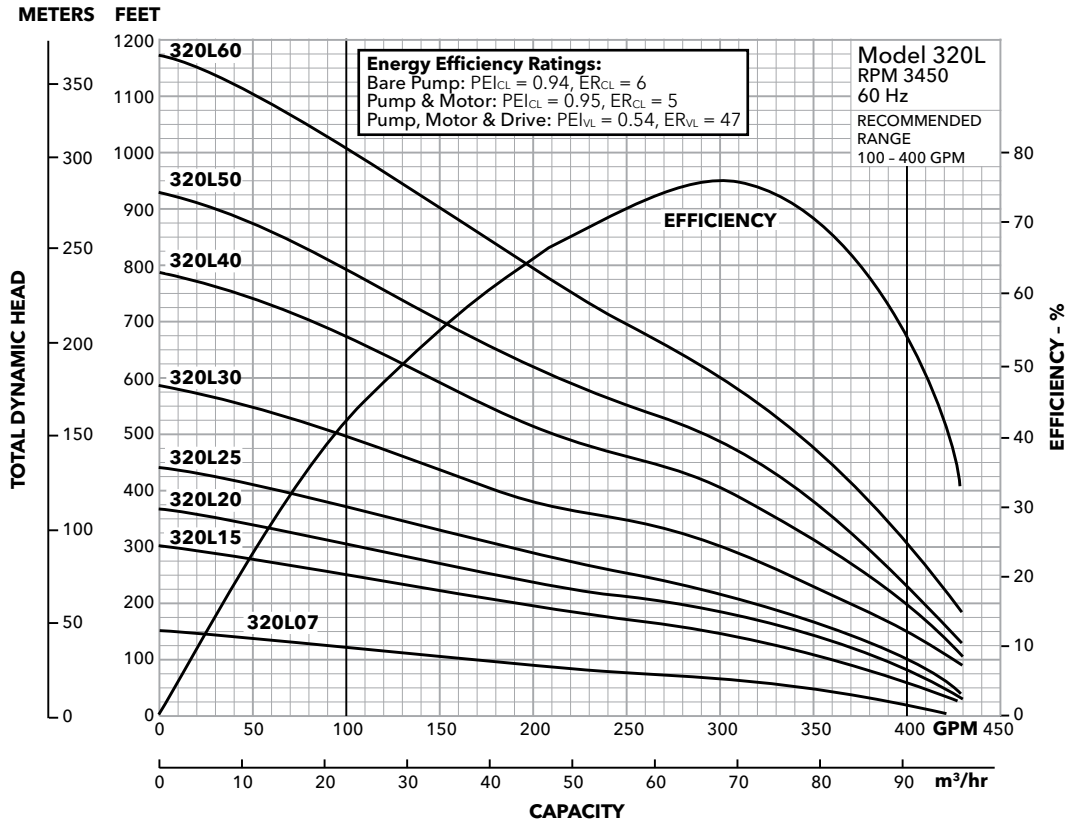


MODEL 250L



NOTE: On 250L, operation below minimum recommended flow will increase motor amp. draw and trip overloads.

MODEL 320L



NOTE: On 320L, operation below minimum recommended flow will increase motor amp. draw and trip overloads.

MODEL 320L

SELECTION CHART

Horsepower Range 7.5 - 60, Recommended Range 100 - 400 GPM, 60 Hz, 3450 RPM

Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																															
	HP	PSI	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650				
320L07 2 Stages	7.5	0			343	262	172																									
		20	275	186																												
		30	193	100																												
		40	107																													
		50																														
		60																														
320L15 4 Stages	15	0			392	393	370	332	286	237	189	143																				
		20	394	374	338	293	245	196	150	105																						
		30	376	341	297	248	200	153	108																							
		40	344	300	252	204	157	112																								
		50	304	256	207	160	115																									
		60	260	211	164	119																										
320L20 5 Stages	20	0					391	365	336	303	267	228	188	147	105																	
		20			394	370	341	308	273	234	194	153	112																			
		30	396	372	343	311	275	237	197	156	115																					
		40	374	345	313	278	240	200	159	118																						
		50	348	316	281	243	203	162	121																							
		60	319	284	246	207	166	124																								
320L25 6 Stages	25	0						387	366	343	316	288	257	225	191	157	123															
		20			390	370	346	320	292	262	230	196	162	128																		
		30			392	371	348	322	294	264	232	199	165	130																		
		40	393	373	350	324	296	266	235	201	167	133																				
		50	375	352	326	299	269	237	204	170	136	101																				
		60	354	328	301	271	239	206	173	138	104																					
320L30 8 Stages	30	0								391	375	357	336	314	291	267	242	217	192	166	141	116										
		20						393	378	360	340	318	295	271	246	221	196	170	145	120												
		30						395	379	361	341	319	296	273	248	223	197	172	147	122												
		40						396	380	363	343	321	298	274	250	225	199	174	149	124												
		50						397	382	364	344	323	300	276	252	227	201	176	151	125	100											
		60	398	383	365	346	324	302	278	254	229	203	178	153	127	102																
320L40 11 Stages	40	0										399	388	375	361	346	331	314	297	280	262	244	225	207	188	169	150	131	113			
		20										390	377	363	349	333	317	300	282	265	246	228	209	191	172	153	134	115				
		30										390	378	365	350	334	318	301	284	266	248	229	211	192	173	155	136	117				
		40										391	379	366	351	336	319	302	285	267	249	231	212	194	175	156	137	118				
		50										392	380	367	352	337	321	304	286	269	251	232	214	195	176	158	139	120	101			
		60										393	381	368	353	338	322	305	288	270	252	234	215	196	178	159	140	121	102			

Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
	HP	PSI	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700	725	750	775		
320L50 13 Stages	50	0						395	387	378	367	355	343	330	316	301	286	270	254	238	222	205	188	172	155	138	122	106
		20			396	388	379	369	357	345	332	318	303	288	273	257	241	224	208	191	174	158	141	124	108	146	135	
		30	397	389	380	369	358	346	333	319	304	289	274	258	242	225	209	192	176	159	142	126	109	147	136	125		
		40	390	381	370	359	347	334	320	306	291	275	259	243	227	210	193	177	160	143	127	111						
		50	381	371	360	348	335	321	307	292	276	260	244	228	211	195	178	161	145	128	112							
		60	372	361	349	336	322	308	293	277	262	246	229	213	196	179	163	146	129	113								

Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																																				
	HP	PSI	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700	725	750	775	800	825	850	875	900	925	950	975	1000		
320L60 16 Stages	60	0								395	389	383	376	368	360	351	341	331	320	308	295	281	268	253	239	224	209	195	181	167	154	142	130	120	109	100	
		20								396	390	384	377	369	361	352	343	332	321	309	297	284	270	255	241	226	212	197	183	169	156	144	132	121	111	101	
		30								397	391	384	377	370	362	353	344	333	322	310	298	285	271	257	242	227	213	198	184	170	157	145	133	122	112	102	
		40								397	391	385	378	370	362	354	344	334	323	311	299	286	272	258	243	228	214	199	185	171	158	146	134	123	112	103	
		50								398	391	385	378	371	363	354	345	335	324	312	300	287	273	259	244	230	215	200	186	172	159	146	135	124	113	103	
		60	398	392	386	379	372	364	355	346	336	325	313	301	288	274	260	245	231	216	201	187	173	160	147	136	124	114	104								



H Series

60 HZ HIGH CAPACITY 6" SUBMERSIBLE PUMPS
FOR 6" AND LARGER WELLS



FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor manufacturer. Pump can be operated continuously without fear of damage to the motor.

Completely Field Serviceable: Easy to install and service. All parts easily dismantled if field service is ever necessary. No special tools needed. No shipping back to factory.

Diverse Application: Designed for commercial, municipal and agricultural water needs.

Bearings: Replaceable fluted bearings allow excellent abrasives handling and wear resistance.

Shaft Sleeves: Replaceable stainless steel, hex-driven, sleeves help protect shaft from abrasives.

Pump Shaft: Precision straightened hex shaft.

Coupling: Heavy duty stainless steel, splined coupling for maximum load-carrying capability.

Bowls: Cast iron turbine bowl design.

Impellers: Silicon brass impellers dynamically balanced for smooth operation.

Suction Strainer: Stainless steel strainer restricts gravel and other debris from entering the pump.

Cable Guard: Stainless steel cable guard surrounds and protects motor leads.

Fasteners: All fasteners are stainless steel.

NEMA Design Motors: Stainless steel and epoxy coated end bells resist corrosion. Water filled design provides a constant supply of lubrication. Hermetically sealed stator assures moisture free windings. Durable Kingsbury type thrust bearing absorbs all thrust. Replaceable motor lead assembly.

AGENCY LISTINGS



NSF/ANSI 372 - Drinking Water System Components - Lead Content

CLASS 6853 01 - Low Lead Content Certification Program - Plumbing Products

SYSTEM COMPONENTS

Pump/Water End:

- 6" Pump.
- 4" Motor Adapter on 5 HP models.
- 6" Motor Adapter on 7.5 HP and larger models.

Motor:

- 4" Motor required for 5 HP pumps.
- 6" Motor required for 7.5 HP and larger pumps.

Control Box: Required for all single phase motors.

Magnetic Starter: A magnetic starter with overloads is required for all three phase units.

PUMPS, MOTORS AND CONTROLS MUST BE ORDERED SEPARATELY AND ARE PACKAGED SEPARATELY.

"H" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Motor Adapter	Cast Iron ASTM A48 Class 30
Discharge Head	
Bowl	
Shaft 2-6 Stage	ASTM A276 AISI T304 SS
Shaft 7-13 Stage	Monel ASTM B164
Coupling	ASTM A582 AISI T303 SS
Spline Protector	Neoprene
Suction Screen	ASTM A582 AISI T303 SS
Shaft Sleeve	AISI T316 SS Powder Metal
Bearing	Viton®
Impeller	ASTM B584 C87610
Cotter Pin	ASTM A276 AISI T304 SS
Wear Ring	ASTM C95400
Hex Head Bolts	ASTM F593 AISI T303 SS
Cable Guard	ASTM A582 AISI T303 SS
Lock Washers	ASTM A582 AISI T303 SS

WATER END (PUMP) DATA

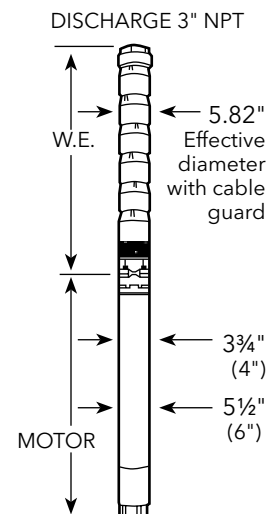
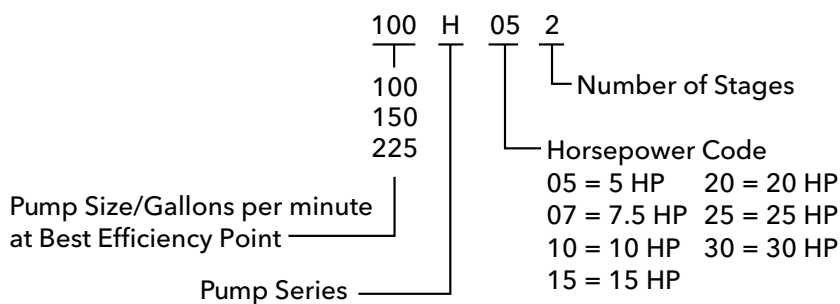
Series	Order No.	Stages	Required Motor		Water End	
			HP	Diameter	Length (in)	Weight (lbs)
100H	100H05 2	2	5	4"	18.0	51
	100H07 4	4	7.5	6"	29.3	84
	100H10 5	5	10	6"	34.3	105
	100H15 8	8	15	6"	49.3	154
	100H20 10	10	20	6"	59.3	185
	100H25 13	13	25	6"	74.3	258
150H	150H05 2	2	5	4"	18.0	51
	150H07 3	3	7.5	6"	24.3	73
	150H10 4	4	10	6"	29.3	84
	150H15 6	6	15	6"	39.3	136
	150H20 8	8	20	6"	49.3	154
	150H25 10	10	25	6"	59.3	185
225H	225H05 2	2	5	4"	18.0	51
	225H07 2	2	7.5	6"	18.0	51
	225H10 3	3	10	6"	24.3	73
	225H15 4	4	15	6"	29.3	84
	225H20 6	6	20	6"	39.3	136
	225H25 7	7	25	6"	44.3	139
	225H30 8	8	30	6"	49.3	154
	225H30 9	9	30	6"	54.3	172

SPECIFICATIONS

Model	Horsepower Range	Discharge Connection	Recommended GPM Operating Range	GPM at Best Efficiency	Minimum Well Size	Rotation ^①
100H	5 - 25	3" NPT	45 - 160	100	6"	CCW
150H	5 - 25	3" NPT	50 - 240	150	6"	CCW
225H	5 - 30	3" NPT	80 - 360	225	6"	CCW

① Rotation when viewed from pump discharge end.

ORDER NUMBER CODE



MOTOR SELECTION

FM Series Motors

Single Phase Motors - Dimensions and Weights					
Motor Part No.	HP	Diameter	Voltage	Length (in.)	Weight (lbs)
M50412	5	4"	230	27.7	70
6F071	7.5	6"		28.1	117
6F101	10			30.3	132
6F151	15			32.8	144
Three Phase Motors - Dimensions and Weights					
M50432	5	4"	230	21.7	55
M50434			460		
6F0724	7.5	6"	230/460	24.3	97
6F1024	10			25.6	104
6F1524	15			28.1	117
6F2024	20			30.3	132
6F2524	25			32.8	144
6F3024	30			35.6	165

Three phase FM motors are supplied with a voltage change device to change voltage from 230 to 460 volts.

Goulds Water Technology Motors

Single Phase Motors - Dimensions and Weights					
Motor Order No.	HP	Motor Diameter	Volts	Length (inches)	Weight (lbs)
6M071	7.5	6"	230	29.9	128
6M101	10				
6M151	15			33.5	148
Three Phase Motors - Dimensions and Weights					
6M072	7.5	6"	230	24.8	99
6M074			460		
6M102	10		230	27.0	110
6M104			460		
6M152	15		230	29.9	128
6M154			460		
6M202	20		230	31.5	137
6M204			460		
6M252	25		230	36.2	161
6M254			460		
6M302	30		230	38.2	176
6M304			460		

200V, 6" motors are now offered, call for availability

NOTE: 4" Diameter motors are required for 5 HP "H" Series pumps
6" Diameter motors are required for 7.5 HP and larger "H" Series pumps.

Model 100H

SELECTION CHART

Horsepower Range 5 - 25, Recommended Range 45 - 160 GPM, 60 Hz, 3450 RPM

Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																					
	HP	PSI	25	50	75	100	125	150	175	200	250	300	350	400	450	500	600	700	800			
100H05 2 Stages	5	0		165	140	115	83															
		20	145	119	90																	
		30	120	90																		
		40	95																			
		50																				
		60																				
100H07 4 Stages	7.5	0				160	150	140	127	112	65											
		20			153	140	130	113	97	68												
		30		153	140	130	113	99	70													
		40	155	143	132	118	103	72														
		50	145	132	118	103	72															
		60	133	118	104	78																
100H10 5 Stages	10	0				171	164	156	147	138	116	92										
		20		172	165	157	149	140	129	119	95	50										
		30	172	166	158	150	140	130	119	108	76											
		40	166	158	150	141	131	120	109	96	52											
		50	159	151	141	132	121	110	97	80												
		60	151	143	132	122	110	99	81	60												
100H15 8 Stages	15	0									152	139	127	112	93	68						
		20							158	152	140	128	113	95	72							
		30						158	152	147	134	120	105	85								
		40					158	153	148	142	128	113	97	73								
		50				158	153	148	143	135	122	107	88									
		60		158	153	148	143	136	129	115	98	73										
100H20 10 Stages	20	0							174	171	163	156	147	137	127	117	90					
		20					175	171	168	164	156	148	138	128	117	105	75					
		30				175	172	168	165	160	152	143	133	123	112	99	65					
		40			175	172	169	165	161	157	148	139	129	118	106	92	51					
		50		175	172	169	165	161	157	153	144	135	124	113	100	85						
		60	175	172	169	165	161	157	153	149	140	130	119	107	93	78						
100H25 13 Stages	25	0									172	167	161	155	148	140	125	107	86			
		20							175	172	167	161	155	148	141	133	117	99	73			
		30						175	172	170	164	158	152	145	137	130	113	94	63			
		40					175	173	170	168	162	156	149	142	134	126	109	88	52			
		50				175	173	170	168	165	159	153	146	138	130	122	105	82				
		60			175	173	170	168	165	162	156	150	142	135	126	118	100	75				

Model 150H

SELECTION CHART

Horsepower Range 5 - 25, Recommended Range 50 - 240 GPM, 60 Hz, 3450 RPM

Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																	
	HP	PSI	25	50	75	100	125	150	175	200	250	300	350	400	450	500	600	
150H05 2 Stages	5	0	254	230	200	164	102											
		20	206	172	120													
		30	174	122														
		40	126															
		50																
		60																
150H07 3 Stages	7.5	0		250	234	215	192	164	126									
		20	237	220	194	170	130	78										
		30	220	197	174	134	78											
		40	200	174	140	84												
		50	176	142	90													
		60	144	100														
150H10 4 Stages	10	0			251	238	223	205	186	163	92							
		20	253	240	225	210	190	168	140	104								
		30	240	226	210	190	170	140	104									
		40	228	212	193	172	146	108										
		50	213	193	172	147	111											
		60	194	176	148	116												
150H15 6 Stages	15	0				255	246	236	226	216	192	164	122					
		20		257	248	238	228	218	206	194	167	128						
		30	258	248	238	228	218	206	194	181	150	100						
		40	248	240	230	220	208	196	184	168	130							
		50	240	230	220	209	196	184	170	154	107							
		60	234	220	210	198	185	172	154	136	78							
150H20 8 Stages	20	0					259	252	244	237	221	204	183	163	134	95		
		20			260	253	246	238	230	223	206	187	166	138	100			
		30		260	253	246	239	231	223	214	197	177	154	120				
		40		254	247	240	232	224	216	208	188	168	140	102				
		50	255	247	240	232	224	216	208	199	180	156	125	80				
		60	247	240	232	225	216	209	199	190	170	142	106					
150H25 10 Stages	25	0							258	252	240	226	212	198	182	165	113	
		20						259	253	247	240	227	213	199	183	166	144	78
		30				260	253	247	240	234	220	207	192	175	156	132	100	
		40			260	254	247	241	234	228	214	200	184	168	146	118		
		50		260	254	248	242	235	229	222	208	193	177	158	134	104		
		60	260	254	248	242	235	230	222	216	201	186	169	148	120	84		

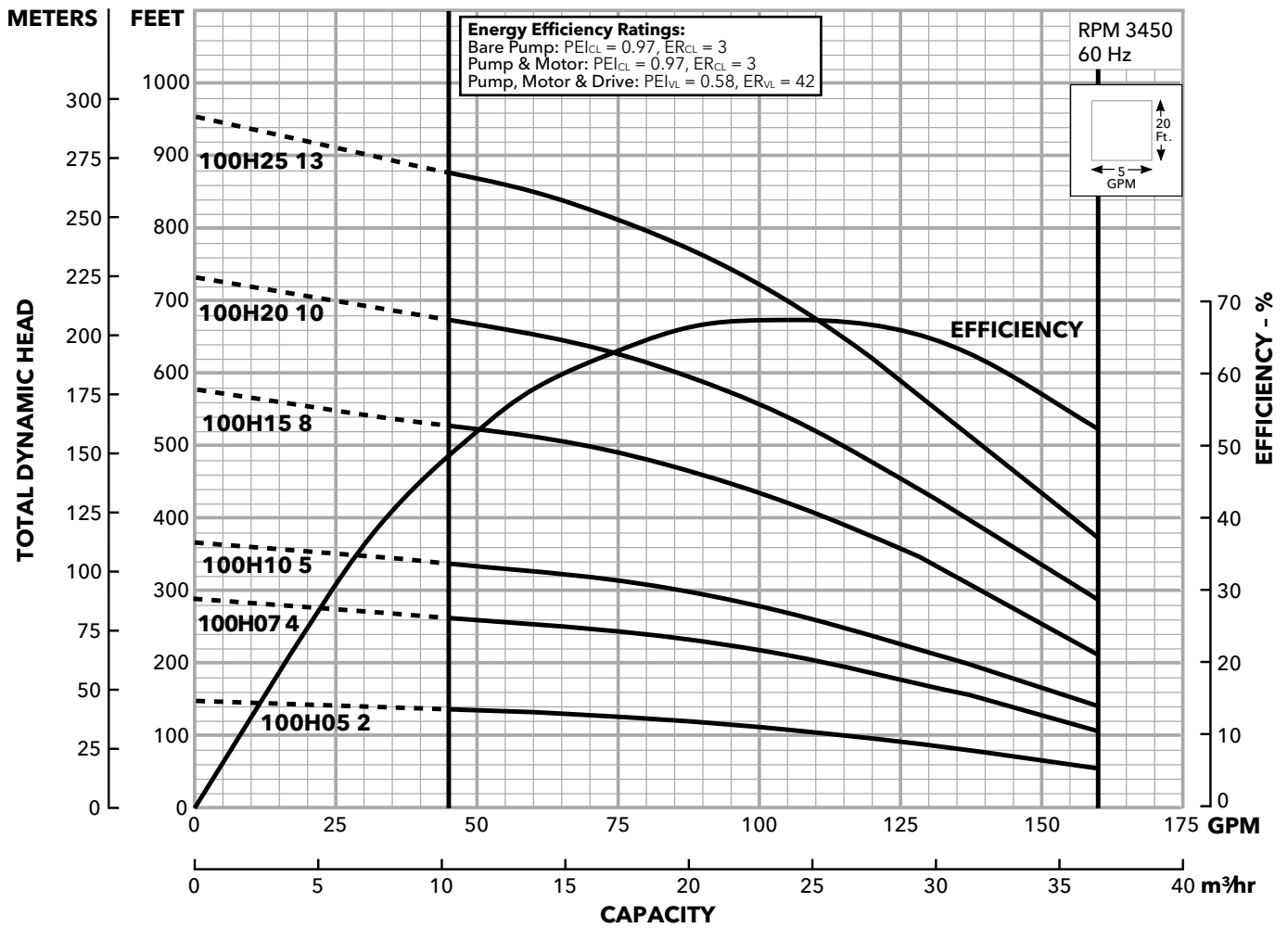
Model 225H

SELECTION CHART

Horsepower Range 5 - 30, Recommended Range 80 - 360 GPM, 60 Hz, 3450 RPM

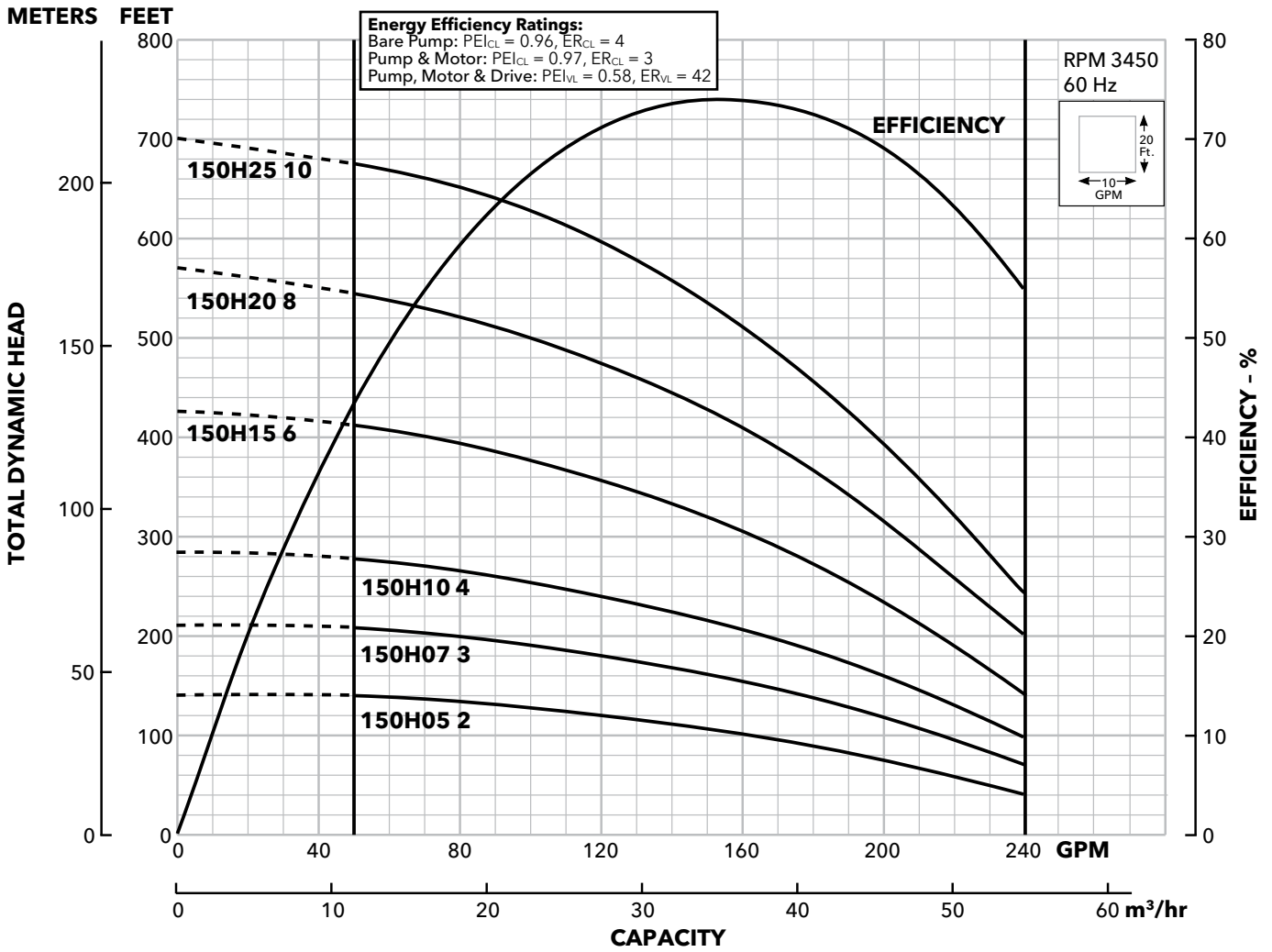
Pump Model	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																
	HP	PSI	25	50	75	100	125	150	175	200	250	300	350	400	450	500	
225H05 2 Stages	5	0	230	282	220	100											
		20	236	136													
		30	140														
		40															
		50															
		60															
225H07 2 Stages	7.5	0		320	270	210											
		20	280	222	120												
		30	226	116													
		40	136														
		50															
		60															
225H10 3 Stages	10	0		350	320	285	250	210	140								
		20	324	292	258	216	154										
		30	294	260	220	160											
		40	262	230	166												
		50	226	174													
		60	178														
225H15 4 Stages	15	0			334	320	296	272	242	210							
		20	350	326	302	276	250	216	276								
		30	326	302	277	251	220	180									
		40	304	280	252	222	182										
		50	282	258	224	186											
		60	258	226	192												
225H20 6 Stages	20	0				352	336	320	304	287	251	207	130				
		20		354	340	324	307	290	273	254	212	140					
		30	355	340	325	308	292	274	254	236	184						
		40	341	326	309	293	275	257	236	215	148						
		50	326	310	294	276	258	238	216	190							
		60	312	295	278	260	240	220	194	156							
225H25 7 Stages	25	0				360	348	334	320	306	277	245	208	150			
		20			350	336	322	308	294	280	248	212	158				
		30		351	327	324	310	296	281	264	232	190	110				
		40	350	340	324	311	296	282	266	250	212	164	116				
		50	340	324	312	296	282	266	252	234	196	120					
		60	327	312	298	284	269	252	236	218	168						
225H30 8 Stages	30	0					356	344	332	320	296	270	242	208	162		
		20			358	346	334	322	310	300	272	244	212	168			
		30		358	347	335	323	311	300	286	260	230	194	131			
		40	360	348	336	324	312	300	287	274	246	214	172				
		50	349	337	326	313	301	288	275	262	232	197	140				
		60	338	326	314	302	290	276	262	248	218	176					
225H30 9 Stages	30	0					352	342	332	311	289	265	240	209	167		
		20				354	344	334	324	313	291	268	242	212	172	92	
		30			354	344	334	324	313	302	280	256	228	194	144		
		40		356	346	336	325	314	303	292	269	244	214	176	102		
		50	356	346	336	326	315	304	294	282	258	230	198	150			
		60	347	337	326	316	306	294	282	270	244	216	178	110			

Model 100H



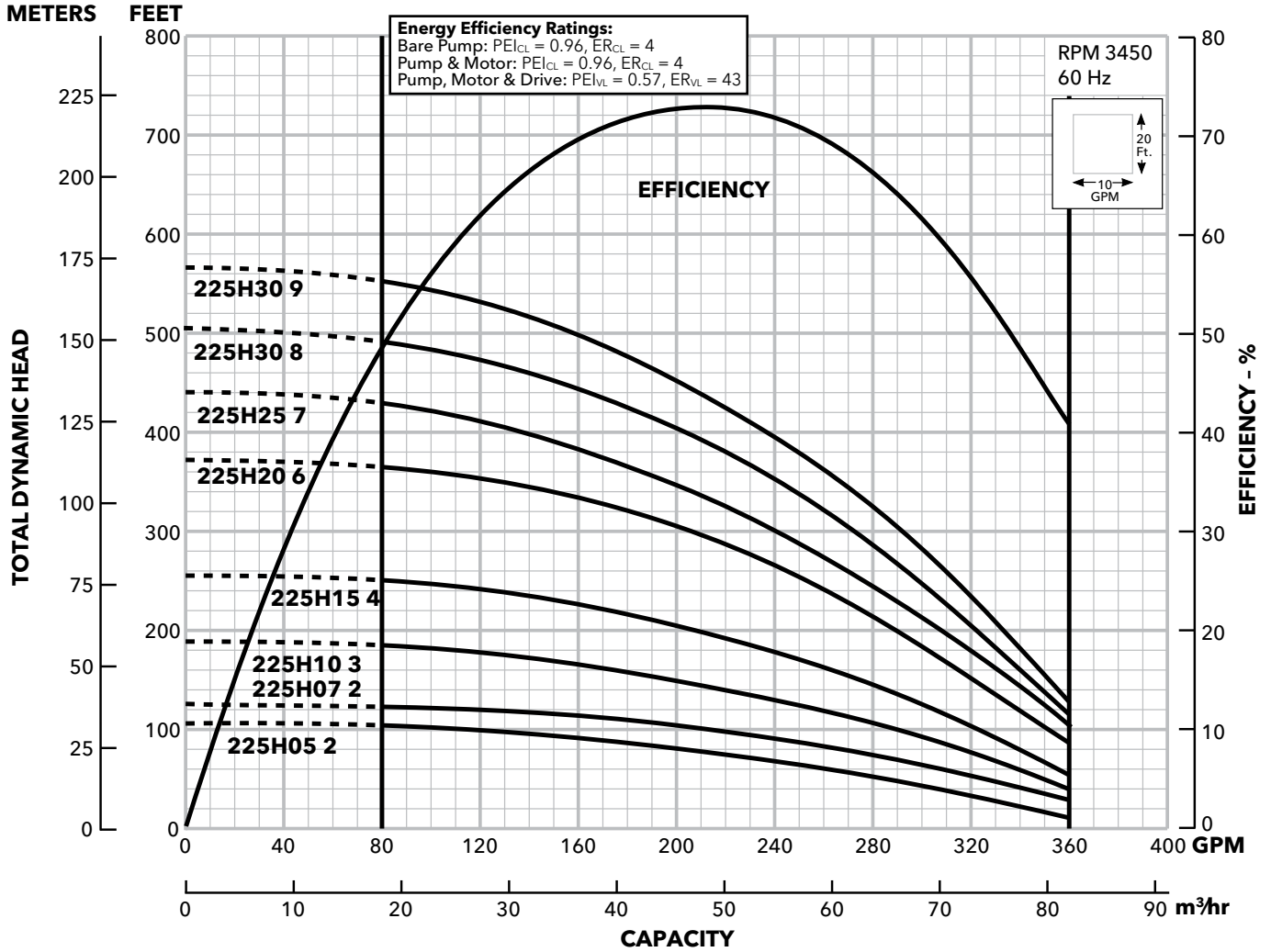
Curve Reference SU 0021RO

Model 150H

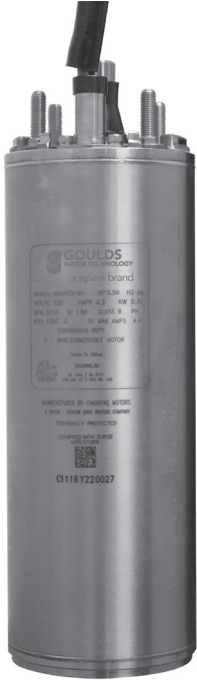


Curve Reference SU 507

Model 225H



Curve Reference SU 508



FEATURES

- 304 SS casing and end bells for corrosion resistance
- Kingsbury type, 3 shoe, 700 lb. thrust bearing
- Stainless steel, 17-4 PH splined shaft
- PSC design for quiet, efficient operation
- Built-in, hermetically sealed, environmentally safe capacitor
- Automatic reset, on-winding thermal overload protection on 2-wire up to 1½ HP
- Removable, replaceable 48" motor lead on ½ - 1½ HP
- Water lubricated with filter/check valve to maintain fluid fill
- Surge arrestors built-in
- NEMA Mounting Dimensions
- Annex G, NSF / ANSI 61 -2008

AGENCY LISTINGS



Tested by CSA to CSA
and UL Standards

Single Phase 2-Wire, 1/2-1 1/2 HP PSC Motors

60 HZ, 3450 RPM

APPLICATIONS

- These 4" motors are designed and sized for installation in 4" diameter or larger water wells.
- PSC, permanent split capacitor, 2 wire motors are efficient and quiet.
- Built-in, hermetically sealed, environmentally safe capacitor eliminates the noise causing pulsations common to many split-phase 2 wire motors.

SPECIFICATIONS

- **Temperature Rating:** Rated for continuous duty in water of 86° F (30° C) maximum.

- **Cooling:** Proper motor cooling requires a water velocity past the motor of .25'/sec which translates into 1.2 gpm in a 4" casing, 7 gpm in a 5" casing and 13 gpm in a 6" casing.
- **Power Lead (14 AWG):** Removable and replaceable motor leads are held in place by two (2) stainless steel screws for positive compression and sealing. Leads are furnished with motors and are also available as replacement parts.
- **Rotation:** CCW, counterclockwise as you face the top or shaft end of the motor.

Generation II - April 2011

2-WIRE MOTORS Identified by a - 01 Nameplate Order No. Suffix

As part of Faradyne Motors' continual improvement process, 2-Wire Generation II motors were introduced in April 2011. Pump model numbers and motor order numbers remained unchanged. The Motor Nameplate will have a new Faradyne part number and the Goulds Water Technology part number on the Motor Nameplate will have a - 01 suffix, example M05422 will be M05422 - 01, only on the Motor Nameplate not in our catalog or price book.

The self-stick, Mylar motor data stickers we pack with 2 wire motors and complete pumps will be updated with the new electrical data so that installers will know which motor is installed in the well should service work ever be necessary. Note that the motor data is only needed to troubleshoot a motor in the well, i.e. resistance and amperage ratings or when installing a variable speed drive system to set the overloads.

MATERIALS OF CONSTRUCTION

Part	Material
Motor (Stator) Shell	304L SS
Shaft - 1 piece	All 17-4 PH hardened SS
Motor End Bells	304 SS Castings
Upper and Lower Radial Bearings	Carbon Sleeve
½ - 1½ HP Thrust Bearing	700 lb. Kingsbury Type
Overload Protection	Built-in, Auto Reset

Part	Material
Lead Wire	XLPE (14 AWG)
Lead Potting	Epoxy
Lead Connector	18-8 SS
Fasteners	18-8 SS
Sand Slinger / Slinger Seat	NBR / Delrin

GENERATION II 2011 - 2-WIRE, 4" SINGLE PHASE ELECTRICAL DATA, 60 HERTZ, 3450 RPM

Type	Motor Order No.		HP	KW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Winding Resistance	KVA Code
	GWT	Red Jacket					Amps	Watts	Amps	Watts			
2-Wire (PSC)	M05421	50C201	0.5	0.37	115	1.6	7.9	910	9.8	1120	28	1.4-2.0	H
	M05422	50C211	0.5	0.37	230	1.6	4.0	845	4.7	1050	16	6.1-7.2	J
	M07422	75C211	0.75	0.55	230	1.5	5.0	1130	6.2	1400	18	5.9-6.9	F
	M10422	100C211	1.0	0.75	230	1.4	6.7	1500	8.1	1800	24	4.2-5.2	F
	M15422	150C211	1.5	1.1	230	1.3	9.0	2000	10.4	2350	43	1.8-2.4	H

GENERATION II 2011 - EFFICIENCY AND POWER FACTOR DATA

Type	Motor Order No.		HP	KW	Volts	Efficiency %		Power Factor %		Length		Weight		Thrust Rating
	GWT	Red Jacket				F.L.	S.F.	F.L.	S.F.	Inches	mm	lb.	kg.	
2-Wire (PSC)	M05421	50C201	0.5	0.37	115	42%	54%	99%	99%	10.5	267	18	8.2	700 #
	M05422	50C211	0.5	0.37	230	45%	59%	92%	97%	10.5	267	18	8.2	
	M07422	75C211	0.75	0.55	230	51%	61%	98%	98%	11.9	302	22	9.7	
	M10422	100C211	1.0	0.75	230	50%	59%	98%	98%	12.5	318	24	10.5	
	M15422	150C211	1.5	1.1	230	57%	63%	98%	99%	14.2	361	28	12.4	

Generation II - April 2011

GENERATION II 2011 - FUSE OR CIRCUIT BREAKER AMPS

Type	Motor Order No.		HP	Fuse or Circuit Breaker Amps		
	GWT	Red Jacket		Standard Fuse	Dual Element Time Delay	Circuit Breaker
	2-Wire (PSC)	M05421				
M05422		50C211	0.5	15	10	10
M07422		75C211	0.75	15	10	15
M10422		100C211	1.0	20	15	20
M15422		150C211	1.5	30	15	25

GENERATION II 2011 - 2-WIRE MOTORS, RECOMMENDED LEAD LENGTHS

Released for Sale in November/December 2011

Goulds Water Technology Motor Lead Lengths - 2 Wire Motors, 1Ø, 4" Motors Based on Service Factor Amps, 30° C Ambient and 5% Voltage Drop															
Motor Rating					60° C and 75° C Insulation - AWG Copper Wire Size										
Volts	HP	kW	FLA	SFA	14	12	10	8	6	4	2	1/0	2/0	3/0	4/0
115	1/2	0.37	7.9	9.8	112	178	284	449	699	1114	1769	2814	3550	4481	5646
230	1/2	0.37	4.0	4.7	466	742	1183	1874	2915	4648	7379	11733			
230	3/4	0.55	5.0	6.2	353	562	897	1420	2210	3523	5594	8895	11222		
230	1	0.75	6.7	8.1	271	430	686	1087	1692	2697	4281	6808	8590	10843	
230	1 1/2	1.1	9.0	10.4	211	335	535	847	1318	2100	3335	5303	6690	8445	

Generation II Single Phase (November 2015)

As part of Faradyne Motors' continual improvement process, further improvements have been made to Generation II motors in November 2015. Our pump model numbers and motor order number will not change. The Motor Nameplate for the improved Generation II will have a - 01 suffix, example M05422 will be M05422 - 01, only on the Motor Nameplate not in our catalog or price book. To decipher the November 2015 Generation II motors from the April 2011 Generation II motors, please use the date code located on the motor. Goulds Water Technology motor date codes are 12 characters long, the first character represents the month and the fourth and fifth character represent the year. The self-stick, Mylar motor data stickers we pack with our motors and complete pumps will be updated with the new electrical data so that installers will know which motor is installed in the well should service work ever be necessary.

GENERATION II 2015 - 2 WIRE PSC, SINGLE PHASE 4" MOTORS - ELECTRICAL DATA, 60 HZ, 3450 RPM

Type	Model	RJ Ref. #	Rating				Full Load		Service Factor		Locked Rotor Amps	Winding Resistance	
			HP	KW	Volts	SF	Amps (B or Y/B/R)	Watts	Amps (B or Y/B/R)	Watts		Main (B-Y or B-B)	Start (R-Y)
2-Wire (PSC)	M05421	50C201	0.5	0.37	115	1.6	8.1	890	10.2	1110	28	1.4 - 2.0	-
	M05422	50C211	0.5	0.37	230	1.6	4.3	845	4.8	1035	16	6.1 - 7.2	-
	M07422	75C211	0.75	0.55	230	1.5	5.0	1100	6.4	1375	18	5.9 - 6.9	-
	M05422	100C211	1.0	0.75	230	1.4	6.7	1450	8.2	1770	23.5	4.2 - 5.2	-
	M15422	150C211	1.5	1.1	230	1.3	9.1	1950	10.5	2300	43	1.8 - 2.4	-

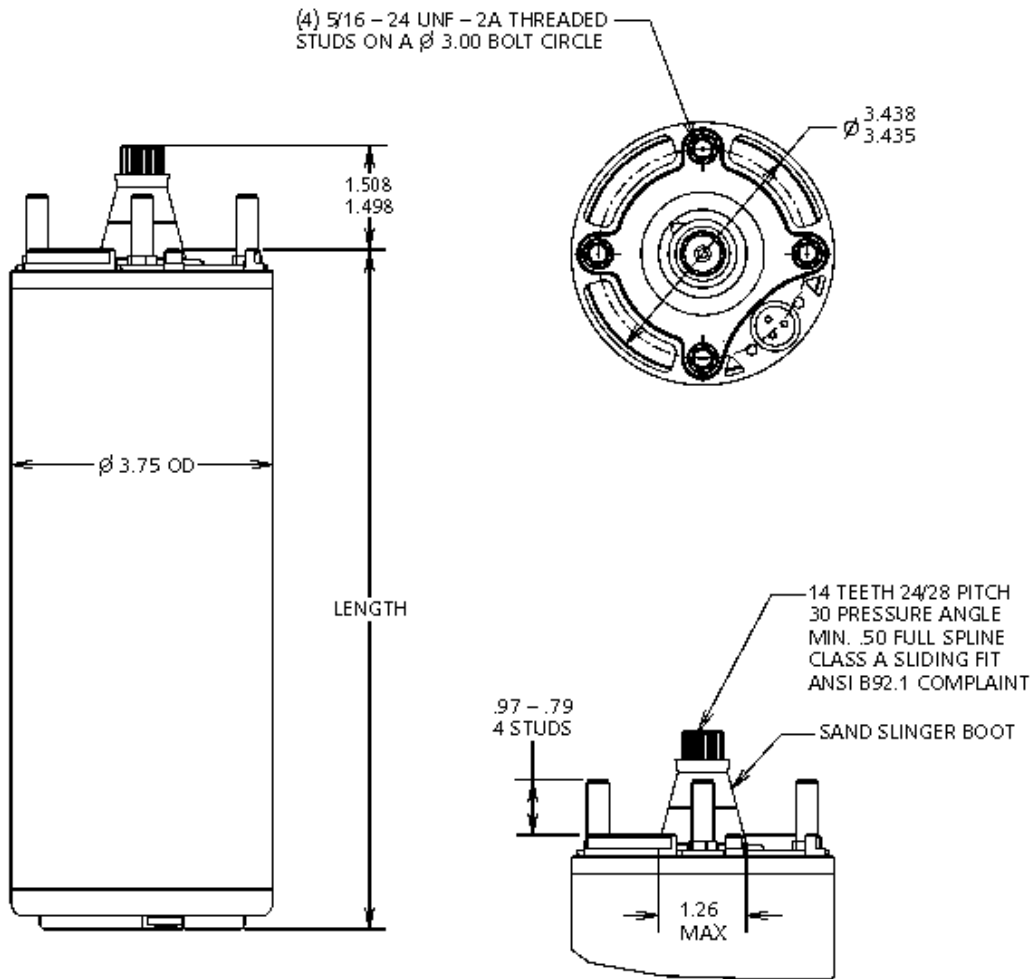
GENERATION II 2015 - 2-WIRE, SINGLE PHASE 4" MOTORS - ENGINEERING DATA

Type	Model	HP	Volts	Efficiency %		Power Factor %		Thrust Rating	KVA Code	Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
				F.L.	S.F.	F.L.	S.F.					
2-Wire (PSC)	M05421	0.5	115	42	54	99	99	700 #	H	25	15	20
	M05422	0.5	230	44	58	90	97		J	15	10	10
	M07422	0.75	230	51	61	99	99		F	15	10	15
	M05422	1.0	230	52	59	99	99		F	20	15	20
	M15422	1.5	230	58	63	98	99		H	30	20	25

The MAID Manual has both Generation I and II data for reference.

WEIGHTS AND DIMENSIONS

Type	Motor Order No.		HP	Volts	Length		Motor Weight	
	GWT	Red Jacket			Inches	mm	lb.	kg.
2-Wire (PSC)	M05421	50C201	0.5	115	10.5	267	18	8.2
	M05422	50C211	0.5		10.5	267	18	8.2
	M07422	75C211	0.75		11.9	302	22	9.7
	M10422	100C211	1.0		12.5	318	24	10.5
	M15422	150C211	1.5		14.2	361	28	12.4





Single Phase 3-Wire, 1/2-5 HP Motors

60 HZ, 3450 RPM – 1ST GENERATION

FEATURES

- 304 SS casing and end bells for corrosion resistance
- Kingsbury type, 3 shoe, thrust bearing, see chart for ratings.
- Stainless steel, 17-4 PH splined shaft
- Removable, replaceable 48" motor lead on ½ - 2 HP, 100" on 3 and 5 HP
- Water lubricated with filter/check valve to maintain fluid fill
- Lightning and surge protection built-in
- Automatic reset, on-winding thermal overload protection on 3-wire up to 1 HP, 1½ - 5 HP have overloads in control box.

APPLICATIONS

- These 4" motors are designed and sized for installation in 4" diameter or larger water wells.
- Three wire motors are a capacitor start induction run design and require a control box with a starting relay and capacitor.
- Use the CSCR capacitor start/capacitor run control boxes on ½ - 1 HP motors to increase efficiency and motor life and reduce energy consumption.
- The 1½ HP and larger control boxes are all CSCR type.

MATERIALS OF CONSTRUCTION

Part	Material
Motor (Stator) Shell	304 SS
Shaft Extension	17-4 PH hardened SS
Motor End Bells	304 SS Castings
Upper and Lower Bearings	Carbon Sleeve
Thrust Bearing	Kingsbury Type
Overload Protection	Built-in, Auto Reset
Lead Wire	XLPE (14 AWG)
Lead Potting	Epoxy
Lead Connector	18-8 SS
Fasteners	18-8 SS
Sand Slinger / Slinger Seat	NBR / Delrin

- CSA Certified
- NEMA Mounting Dimensions
- Tested to ANSI/NSF 61
- Quick disconnect control boxes with voltage relays for motors up to 1 HP.
- CSCR control boxes available for ½ - 5 HP motors.
- MC (magnetic contactor) control boxes available for 1Ø, 4" motors from 1½ - 5 HP.

AGENCY LISTINGS



Tested by CSA to CSA and UL Standards

SPECIFICATIONS

- **Temperature Rating:** Rated for continuous duty in water of 86° F (30° C) maximum.
- **Cooling:** Proper motor cooling requires a water velocity past the motor of .25'/sec which translates into 1.2 gpm in a 4" casing, 7 gpm in a 5" casing and 13 gpm in a 6" casing.
- **Power Lead (14 AWG):** Removable and replaceable motor leads are held in place by two (2) stainless steel screws for positive compression and sealing. Leads are furnished with motors and are also available as replacement parts.
- **Rotation:** CCW, counterclockwise as you face the top or shaft end of the motor.
- **Control Box:** Required on single phase 3 wire models, available in quick disconnect or more efficient CSCR designs.

FUSE OR CIRCUIT BREAKER AMPS

Type	HP	Volts	Fuse or Circuit Breaker Amps		
			Standard Fuse	Dual Element Time Delay	Circuit Breaker
3-Wire QD (CSIR)	0.5	115	30	20	30
	0.5		15	10	15
	0.75		20	10	20
	1.0		25	15	25
3-Wire CSCR	0.5	230	15	10	10
	0.75		20	10	15
	1.0		20	10	15
	1.5		30	15	25
	2.0		30	20	25
	3.0		45	25	40
	5.0		80	45	60

THREE WIRE, SINGLE PHASE 4" MOTORS - ENGINEERING DATA

Type	Motor Order Number		HP	Volts	Efficiency %		Power Factor %		Thrust Rating	KVA Code
	Goulds	Red Jacket			F.L.	S.F.	F.L.	S.F.		
3-Wire	M05411	50C301	0.5	115	51	59	54	69	700 #	N
	M05412	50C311	0.5		50	58	58	71		M
	M07412	75C311	0.75		55	61	61	72		L
	M10412	100C311	1.0		59	62	66	75		L
	M15412	150C311	1.5		66	67	80	86	900 #	J
	M20412	200C311	2		68	69	96	95		G
	M30412	300C311	3		72	72	96	97		G
	M50412	500C311	5		71	71	97	98		1500 #

3-WIRE 1Ø MOTOR WIRE SIZING CHART

Goulds Motor Lead Lengths - 3 Wire Motors, 1Ø, 4" Motors Based on Service Factor Amps, 30° C Ambient and 5% Voltage Drop																	
Motor Rating					60° C and 75° C Insulation - AWG Copper Wire Size												
HP	Volts	kW	FLA	SFA	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0
½	115	0.37	11	12.6	87	138	221	349	544	867	1090	1376	1734	2188	2761	3485	4391
½	230	0.37	5.5	6.3	348	553	883	1398	2175	3467	4359	5505	6935	8753	11044	13942	17564
¾		0.55	7.2	8.3	264	420	670	1061	1651	2632	3309	4178	5264	6644	8383	10582	13332
1		0.75	8.4	9.7	226	359	573	908	1413	2252	2831	3575	4504	5685	7173	9055	11408
1½		1.1	9.7	11.1	197	314	501	793	1234	1968	2474	3124	3936	4968	6268	7913	9969
2		1.5	9.9	12.2	180	286	456	722	1123	1790	2251	2843	3581	4520	5703	7199	9070
3		2.2	14.3	16.5	133	211	337	534	830	1324	1664	2102	2648	3342	4217	5323	6706
5		3.7	24	27			206	326	507	809	1017	1284	1618	2042	2577	3253	

Tables based on values from NEC, Tables 310.16 and 310.17 and NEC, Chapter 9, Table 8 Conductor Properties.

NOTE: Motors and control boxes are designed to operate on 230V systems. Systems with low line voltage, between 200 - 207 volts require the next larger cable size than shown in the 230V charts. If using a 3-wire motor with control box on a low voltage application switch to a 208V start relay. The 208V start relay order numbers are found on control box repair part charts in this manual.

Another option is to use a boost transformer to increase voltage.

The 2-wire sizing chart above is only for use with PSC type, 2-wire motors.

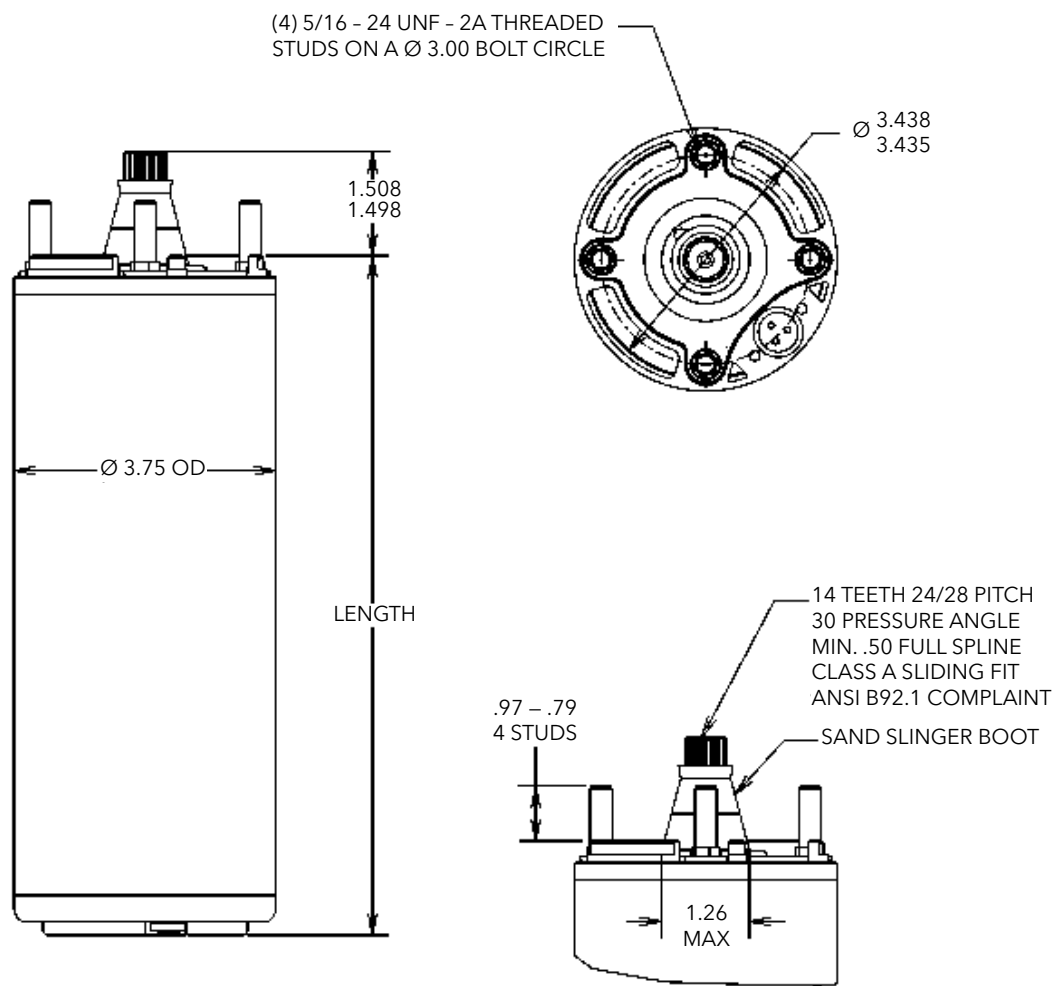
Temperature Conversions: 20° C = 68° F, 30° C = 86° F, 60° C = 140° F, 75° C = 167° F, 90° C = 194° F

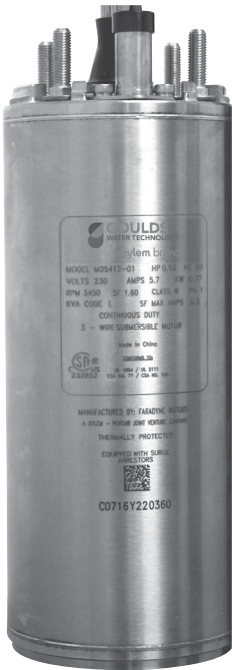
THREE WIRE, SINGLE PHASE 4" MOTORS - ELECTRICAL DATA, 60 HERTZ, 3450 RPM

Type	Motor Order No.		HP	kW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Winding Resistance		Required Control Box
	Goulds	Red Jacket					Amps	Watts	Amps	Watts		Main (B-Y)	Start (R-Y)	
3-Wire with Q.D. Cap. Start Box	M05411	50C301	0.5	0.37	115	1.6	Y-11.0 B-11.0 R-0	733	Y-12.6 B-12.6 R-0	1021	49.6	.9-1.6	5.7-7.0	CB05411
	M05412	50C311	0.5	0.37			Y-5.5 B-5.5 R-0	745	Y-6.3 B-6.3 R-0	1033	22.3	4.2-4.9	17.4-18.7	CB05412
	M07412	75C311	0.75	0.55			Y-7.2 B-7.2 R-0	1014	Y-8.3 B-8.3 R-0	1381	32.0	2.6-3.6	11.8-13.0	CB07412
	M10412	100C311	1.0	0.75			Y-8.4 B-8.4 R-0	1267	Y-9.7 B-9.7 R-0	1672	41.2	2.2-3.2	11.3-12.3	CB10412
3-Wire with CSCR (CR) or Magnetic Contactor (MC) Control Box	M05412	50C311	0.5	0.37	230	1.6	Y-4.1 B-4.1 R-2.2	720	Y-4.9 B-4.4 R-2.1	955	22.3	4.2-4.9	17.4-18.7	CB05412CR
	M07412	75C311	0.75	0.55			Y-5.1 B-5.0 R-3.2	1000	Y-6.3 B-5.6 R-3.1	1300	32.0	2.6-3.6	11.8-13.0	CB07412CR
	M10412	100C311	1.0	0.75			Y-6.1 B-5.7 R-3.3	1205	Y-7.2 B-6.3 R-3.3	1530	41.2	2.2-3.2	11.3-12.3	CB10412CR
	M15412	150C311	1.5	1.1			Y-9.7 B-9.5 R-1.4	1693	Y-11.1 B-11.0 R-1.3	2187	47.8	1.6-2.3	7.9-8.7	CB15412CR or CB15412MC
	M20412	200C311	2	1.5			Y-9.9 B-9.1 R-2.6	2170	Y-12.2 B-11.7 R-2.6	2660	49.4	1.6-2.2	10.8-12.0	CB20412CR or CB20412MC
	M30412	300C311	3	2.2			Y-14.3 B-12.0 R-5.7	3170	Y-16.5 B-13.9 R-5.6	3620	76.4	1.1-1.4	2.0-2.5	CB30412CR or CB30412MC
	M50412	500C311	5	3.7			Y-24.0 B-19.1 R-10.2	5300	Y-27.0 B-22.0 R-10.0	6030	101.0	.62-.76	1.36-1.66	CB50412CR or CB50412MC

WEIGHTS AND DIMENSIONS

Type	Motor Order No.		HP	Volts	Length		Motor Weight	
	Goulds	Red Jacket			Inches	mm	lb.	kg.
3-wire	M05411	50C301	.5	115	10.0	253	18.9	8.6
	M05412	50C311	.5		9.7	246	18.1	8.2
	M07412	75C311	.75		10.8	275	21.4	9.7
	M10412	100C311	1		11.7	297	23.1	10.5
	M15412	150C311	1.5		13.6	345	27.4	12.4
	M20412	200C311	2		15.1	383	31.0	14.1
	M30412	300C311	3		18.3	466	40.0	18.1
	M50412	500C311	5		27.7	703	70.0	31.8





Single Phase 3-Wire, 1/2-5 HP Motors

60 HZ, 3450 RPM – GENERATION II - 2011 AND 2015

FEATURES

- 304 SS casing and end bells for corrosion resistance
- Kingsbury type, 3 shoe, thrust bearing, see chart for ratings.
- Stainless steel, 17-4 PH splined shaft
- Removable, replaceable 48" motor lead on ½ - 2 HP, 100" on 3 and 5 HP
- Water lubricated with filter/check valve to maintain fluid fill
- Surge arrestors built-in
- Automatic reset, on-winding thermal overload protection on 3-wire up to 1 HP, 1½ - 5 HP have overloads in control box.
- CSA Certified
- NEMA Mounting Dimensions
- Tested to ANSI/NSF 61
- Quick disconnect control boxes with voltage relays for motors up to 1 HP.
- CSCR control boxes available for ½ - 5 HP motors.
- MC (magnetic contactor) control boxes available for 1Ø, 4" motors from 1½ - 5 HP.

AGENCY LISTINGS



Tested by CSA to CSA and UL Standards

APPLICATIONS

- These 4" motors are designed and sized for installation in 4" diameter or larger water wells.
- Three wire motors are a capacitor start induction run design and require a control box with a starting relay and capacitor.
- Use the CSCR capacitor start/capacitor run control boxes on ½ - 1 HP motors to increase efficiency and motor life and reduce energy consumption.
- The 1½ HP and larger control boxes are all CSCR type.

SPECIFICATIONS

- **Temperature Rating:** Rated for continuous duty in water of 86° F (30° C) maximum.
- **Cooling:** Proper motor cooling requires a water velocity past the motor of .25'/sec which translates into 1.2 gpm in a 4" casing, 7 gpm in a 5" casing and 13 gpm in a 6" casing.
- **Power Lead (14 AWG):** Removable and replaceable motor leads are held in place by two (2) stainless steel screws for positive compression and sealing. Leads are furnished with motors and are also available as replacement parts.
- **Rotation:** CCW, counterclockwise as you face the top or shaft end of the motor.
- **Control Box:** Required on single phase 3 wire models, available in quick disconnect or more efficient CSCR designs.

MATERIALS OF CONSTRUCTION

Part	Material
Motor (Stator) Shell	304 SS
Shaft Extension	17-4 PH hardened SS
Motor End Bells	304 SS Castings
Upper and Lower Radial Bearings	Carbon Sleeve
Thrust Bearing	Kingsbury Type
Overload Protection	Built-in, Auto Reset
Lead Wire	XLPE (14 AWG)
Lead Potting	Epoxy
Lead Connector	18-8 SS
Fasteners	18-8 SS
Sand Slinger / Slinger Seat	NBR / Delrin

Generation II - April 2011

3-WIRE MOTORS Identified by a - 01 Nameplate Order No. Suffix

As part of Faradyne Motors' continual improvement process, 3-Wire Generation II motors were introduced in April 2011. Pump model numbers and motor order numbers remained unchanged. The Motor Nameplate will have a new Faradyne part number and the Goulds Water Technology part number on the Motor Nameplate will have a - 01 suffix, example M05412 will be M05412 - 01, only on the Motor Nameplate not in our catalog or price book.

GENERATION II 2011 - FUSE OR CIRCUIT BREAKER AMPS

Type	Motor Order Number		HP	Fuse or Circuit Breaker Amps		
	Goulds Water Technology	Red Jacket		Standard Fuse	Dual Element Time Delay	Circuit Breaker
	3-Wire CSIR (QD)	M05411				
	M05412	50C311	0.5	20	10	15
	M07412	75C311	0.75	20	15	20
	M10412	100C311	1.0	25	15	25
3-Wire CSCR	M05412	50C311	0.5	15	10	10
	M07412	75C311	0.75	15	10	15
	M10412	100C311	1.0	20	15	15
	M15412	150C311	1.5	30	20	25
	M20412	200C311	2.0	30	20	25
	M30412	300C311	3.0	45	25	40
	M50412	500C311	5.0	80	45	60

Generation II - April 2011

GENERATION II 2011 - 3-WIRE, SINGLE PHASE 4" MOTORS - ELECTRICAL DATA, 60 HERTZ, 3450 RPM

Type	Motor Order No.				Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Winding Resistance		Required Control Box ¹
	Goulds	Red Jacket	HP	KW			Amps	Watts	Amps	Watts		Main (B-Y)	Start (R-Y)	
3-Wire with Q.D. Cap. Start Box	M05411	50C301	0.5	0.37	230	1.6	Y-8.8 B-8.8 R-0	675	Y-10.9 B-10.9 R-0	980	44	1.0-1.4	2.5-3.1	CB05411
	M05412	50C311	0.5	0.37		1.6	Y-5.3 B-5.3 R-0	740	Y-6.1 B-6.1 R-0	1050	21	5.1-6.1	12.4-13.7	CB05412
	M07412	75C311	0.75	0.55		1.5	Y-6.6 B-6.6 R-0	970	Y-7.8 B-7.8 R-0	1350	32	2.6-3.3	10.4-11.7	CB07412
	M10412	100C311	1.0	0.75		1.4	Y-8.1 B-8.1 R-0	1215	Y-9.4 B-9.4 R-0	1620	41	2.0-2.6	9.3-10.4	CB10412
3-Wire with CSCR (CR) or Magnetic Contactor (MC) Control Box	M05412	50C311	0.5	0.37		1.6	Y-4.2 B-4.1 R-1.8	715	Y-4.8 B-4.3 R-1.8	960	21	5.1-6.1	12.4-13.7	CB05412CR
	M07412	75C311	0.75	0.55		1.5	Y-4.8 B-4.4 R-2.5	940	Y-6.0 B-4.9 R-2.3	1270	32	2.6-3.3	10.4-11.7	CB07412CR
	M10412	100C311	1.0	0.75		1.4	Y-6.1 B-5.2 R-2.7	1165	Y-7.3 B-5.8 R-2.6	1540	41	2.0-2.6	9.3-10.4	CB10412CR
	M15412	150C311	1.5	1.1		1.3	Y-9.1 B-8.2 R-1.2	1660	Y-10.9 B-9.4 R-1.1	2130	49	2.1-2.5	10.0-10.8	CB15412CR or CB15412MC
	M20412	200C311	2	1.5		1.25	Y-9.9 B-9.1 R-2.6	2170	Y-12.2 B-11.7 R-2.6	2660	49	1.6-2.2	10.8-12.0	CB20412CR or CB20412MC
	M30412	300C311	3	2.2		1.15	Y-14.3 B-12.0 R-5.7	3170	Y-16.5 B-13.9 R-5.6	3620	76	1.1-1.4	2.0-2.5	CB30412CR or CB30412MC
	M50412	500C311	5	3.7	1.15	Y-24.0 B-19.1 R-10.2	5300	Y-27.0 B-22.0 R-10.0	6030	101	.62-.76	1.36-1.66	CB50412CR or CB50412MC	

¹ A CSCR control box with a CR suffix can be replaced by a Magnetic Contactor model ending in MC.

GENERATION II 2011 - 3-WIRE, SINGLE PHASE 4" MOTORS - ENGINEERING DATA

Type	Motor Order Number		HP	Volts	Efficiency %		Power Factor %		Thrust Rating	KVA Code
	Goulds	Red Jacket			F.L.	S.F.	F.L.	S.F.		
3-Wire CSIR (QD)	M05411	50C211	0.5	230	57	62	65	78	700 #	M
	M05412	75C211	0.5		52	58.5	61	75		L
	M07412	100C211	0.75		60	64.5	64	76		L
	M10412	150C211	1		63	66	66	76		L
3-Wire CSCR	M05412	50C311	0.5		54.5	61.5	77	87		L
	M07412	75C311	0.75		62	69	86	91		L
	M10412	100C311	1.0		66	71	86	91		L
	M15412	150C311	1.5		68	69	81	87		J
	M20412	200C311	2		70	70	89	91	900 #	G
	M30412	300C311	3		72	72	96	97		G
	M50412	500C311	5	70.5	71	97	97.5	1500 #	E	

GENERATION II 2011 - 3-WIRE, 4" SINGLE PHASE RECOMMENDED WIRE LENGTHS

Generation II - Goulds Water Technology 3-Wire Motors - Recommended Motor Lead Lengths Based on Service Factor Amps, 30°C Ambient and 5% Voltage Drop															
Motor Rating					60° C and 75° C Insulation - AWG Copper Wire Size										
Volts	HP	kW	FLA	SFA	14	12	10	8	6	4	2	1/0	2/0	3/0	4/0
115	0.5	0.37	8.8	10.9	101	160	255	404	629	1002	1591	2530	3192	4029	5076
230	0.5	0.37	5.3	6.1	359	571	912	1444	2246	3581	5685	9040	-	-	-
	0.75	0.55	6.6	7.8	281	447	713	1129	1757	2800	4446	7070	8920	-	-
	1.0	0.75	8.1	9.4	233	371	592	937	1458	2324	3689	5867	7402	-	-
	1.5	1.1	9.1	10.9	201	320	510	808	1257	2004	3182	5059	6383	-	-
	2.0	1.5	9.9	12.2	180	286	456	722	1123	1790	2843	4520	5703	-	-
	3.0	2.2	14.3	16.5	133	211	337	534	830	1324	2102	3342	4217	5323	-
	5.0	3.7	24	27	-	-	206	326	507	809	1284	2042	2577	3253	-

Generation II Single Phase (November 2015)

As part of Faradyne Motors' continual improvement process, further improvements have been made to Generation II motors in November 2015. Our pump model numbers and motor order number will not change. The Motor Nameplate for the improved Generation II will have a - 01 suffix, example M05422 will be M05422 - 01, only on the Motor Nameplate not in our catalog or price book. To decipher the November 2015 Generation II motors from the April 2011 Generation II motors, please use the date code located on the motor. Goulds Water Technology motor date codes are 12 characters long, the first character represents the month and the fourth and fifth character represent the year. The self-stick, Mylar motor data stickers we pack with our motors and complete pumps will be updated with the new electrical data so that installers will know which motor is installed in the well should service work ever be necessary.

GENERATION II 2015 - 3-WIRE, SINGLE PHASE 4" MOTORS - ELECTRICAL DATA, 60 HZ, 3450 RPM

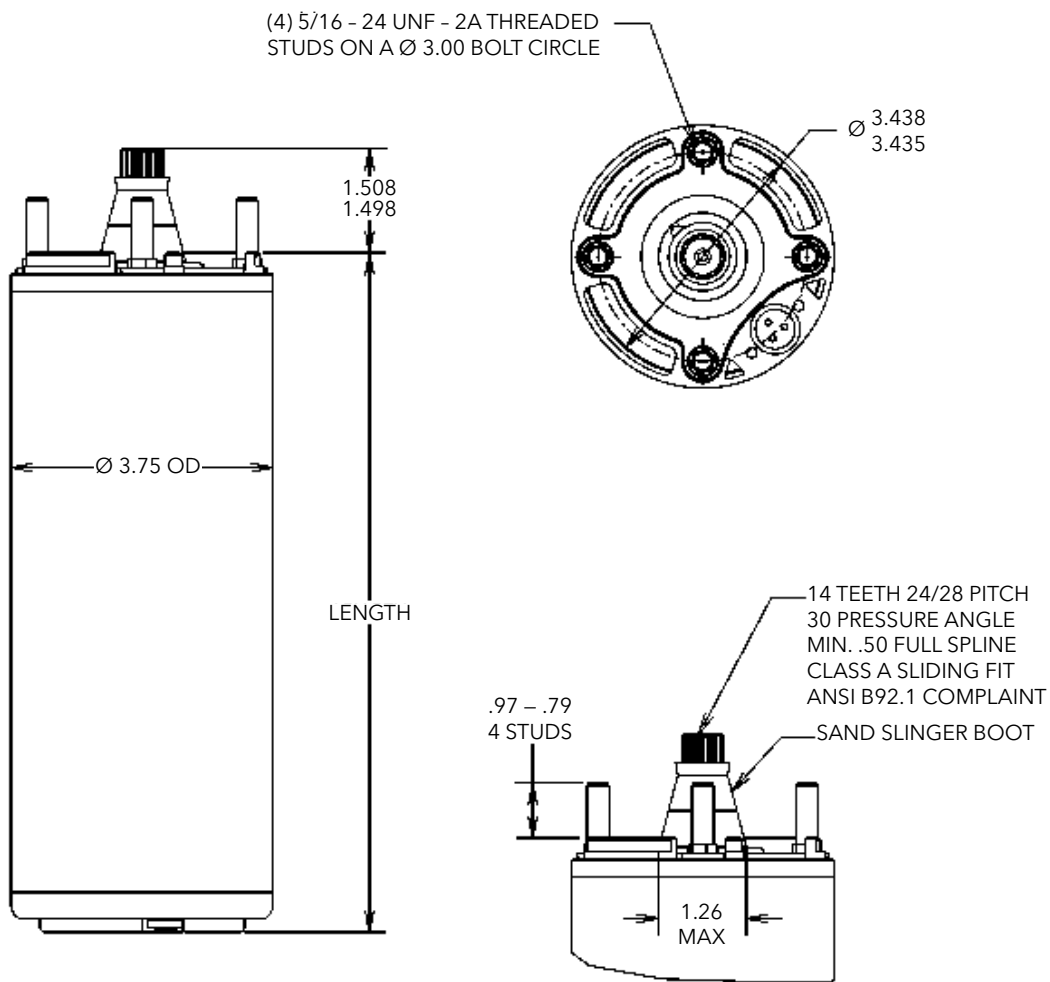
Type	Model	RJ Ref. #	Rating				Full Load		Service Factor		Locked Rotor Amps	Winding Resistance		Standard Control Box	Deluxe Control Box (Mag Contactor)
			HP	KW	Volts	SF	Amps (B or Y/B/R)	Watts	Amps (B or Y/B/R)	Watts		Main (B-Y or B-B)	Start (R-Y)		
3-Wire (CSIR) PREMIUM	M05411	50C301	0.5	0.37	115	1.6	9.8/9.8/0	670	11.6/11.6/0	980	44	1.0 - 1.4	2.5 - 3.1	CB05411	-
	M05412	50C311	0.5	0.37	230	1.6	5.7/5.7/0	735	6.3/6.3/0	1035	20.5	5.1 - 6.1	12.4 - 13.7	CB05412	-
	M07412	75C311	0.75	0.55	230	1.5	6.7/6.7/0	940	7.9/7.9/0	1335	32	2.6 - 3.3	10.4 - 11.7	CB07412	-
	M10412	100C311	1	0.75	230	1.4	8.5/8.5/0	1175	9.5/9.5/0	1590	41	2.0 - 2.6	9.3 - 10.4	CB10412	-
3-Wire (CSCR) PREMIUM	M05412	50C311	0.5	0.37	230	1.6	4.4/4.3/1.9	715	5.0/4.5/1.9	950	21	5.1 - 6.1	12.4 - 13.7	CB05412CR	-
	M07412	75C311	0.75	0.55	230	1.5	4.6/4.6/2.6	920	6.1/5.1/2.6	1235	32	2.6 - 3.3	10.4 - 11.7	CB07412CR	-
	M10412	100C311	1.0	0.75	230	1.4	6.2/6.0/3.6	1165	7.4/6.3/3.3	1490	41	2.0 - 2.6	9.3 - 10.4	CB10412CR	-
	M15412	150C311	1.5	1.1	230	1.3	9.2/8.7/1.2	1660	11.0/9.9/1.2	2110	49	2.1 - 2.5	10.0 - 10.8	CB15412CR	CB15412MC
	M20412	200C311	2.0	1.5	230	1.25	9.9/9.1/2.6	2170	12.2/11.7/2.6	2660	49	1.6 - 2.2	4.8 - 5.9	CB20412CR	CB20412MC
	M30412	300C311	3.0	2.2	230	1.15	14.3/12.0/5.7	3170	16.5/13.9/5.6	3620	76	1.0 - 1.4	2.0 - 2.5	CB30412CR	CB30412MC
	M50412	500C311	5.0	3.7	230	1.15	24/19.1/10.2	5300	27.0/22.0/10.0	6030	101	.6 - .8	1.3 - 1.7	CB50412CR	CB50412MC

GENERATION II 2015 - 3-WIRE, SINGLE PHASE 4" MOTORS - ENGINEERING DATA

Type	Model	RJ REF #	HP	Volts	Efficiency %		Power Factor %		Thrust Rating	KVA Code
					F.L.	S.F.	F.L.	S.F.		
3-Wire (CSIR) PREMIUM	M05411	50C301	0.5	115	55.5	61	63	77	700 #	M
	M05412	50C311	0.5	230	51	58	60	75		L
	M07412	75C311	0.75	230	60	63	64	78		L
	M10412	100C311	1	230	63.5	66	63	76		L
3-Wire (CSCR) PREMIUM	M05412	50C311	0.5	230	52	63	75	86		L
	M07412	75C311	0.75	230	61	68	86	93		L
	M10412	100C311	1.0	230	64	70	85	91		L
	M15412	150C311	1.5	230	68	69	82	87	J	
	M20412	200C311	2.0	230	68	69	96	95	900 #	G
	M30412	300C311	3.0	230	72	72	96	97		G
	M50412	500C311	5.0	230	70.5	71	97	97.5		1500 #

WEIGHTS AND DIMENSIONS

Type	Motor Order No.		HP	Volts	Length		Motor Weight	
	Goulds Water Technology	Red Jacket			Inches	mm	lb.	kg.
3-wire	M05411	50C301	.5	115	9.6	244	17.9	8.1
	M05412	50C311	.5	230	9.2	234	16.7	7.6
	M07412	75C311	.75		10.3	262	19.8	9.0
	M10412	100C311	1		11.2	284	22.0	10.0
	M15412	150C311	1.5		12.8	325	26.0	11.8
	M20412	200C311	2		15.1	383	31.0	14.1
	M30412	300C311	3		18.3	466	40.0	18.1
	M50412	500C311	5		27.7	703	70.0	31.8





Three Phase 4" Motors, 1/2-10 HP

60 HERTZ, 3450 RPM

FEATURES

304 SS casing and end bells for corrosion resistance
Kingsbury type, 3 shoe, thrust bearing, see chart for ratings

Stainless steel, 17-4 PH splined shaft

Removable, replaceable motor leads, 48" (1/2 - 2 HP) or 100" (3 - 10 HP)

Water lubricated with filter/check valve to maintain fluid fill

Surge arrestors built-in

Magnetic starter with Class 10, quick-trip overload protection required.

NEMA Mounting Dimensions

MATERIALS OF CONSTRUCTION

Part	Material
Motor (Stator) Shell	304 SS
Shaft Extension	17-4 PH hardened SS
Motor End Bells	304 SS Castings
Upper and Lower Radial Bearings	Carbon Sleeve
Thrust Bearing	Kingsbury Type
Lead Wire	XLPE (14 AWG)
Lead Potting	Epoxy
Lead Connector	18-8 SS
Fasteners	18-8 SS
Sand Slinger / Slinger Seat	NBR / Delrin

APPLICATIONS

- 4" motors are designed and sized for installation in 4" diameter or larger water wells.

SPECIFICATIONS

- **Temperature Rating:** Rated for continuous duty in water of 86° F (30° C) maximum.
- **Cooling:** Proper motor cooling requires a water velocity past the motor of .25'/sec which translates into 1.2 GPM in a 4" casing, 7 GPM in a 5" casing and 13 GPM in a 6" casing.
- Surge arrestors built-in
- **Power Lead (14 AWG):** Removable and replaceable motor leads are held in place by two (2) stainless steel screws for positive compression and sealing. Leads are furnished with motors and are also available as replacement parts.
- **Rotation:** CCW, counterclockwise as you face the top or shaft end of the motor.
- **Starter:** Three phase units require a magnetic starter with three leg, Class 10, quick trip overload protection. Starters are ordered separately.

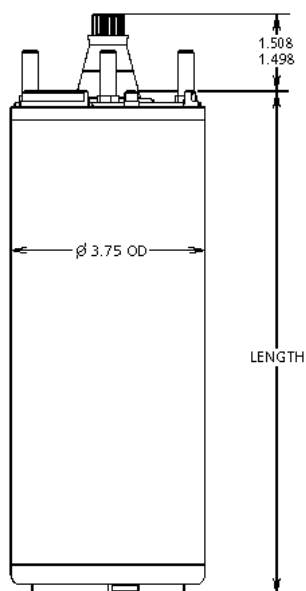
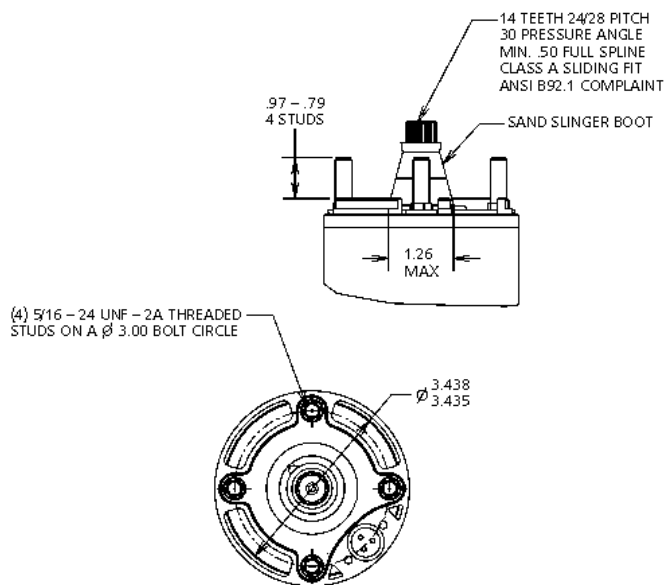
AGENCY LISTINGS



Goulds Water Technology Motor - tested to UL778 and CAN 22.2 by CSA International (Canadian Standards Association)



Goulds Water Technology Motor - Certified to NSF/ANSI 61, Annex G, Drinking Water System Components 4P49



THREE PHASE, 4" MOTOR - ELECTRICAL DATA, 60 HERTZ, 3450 RPM

GWT #	Red Jacket #	HP	kW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Line - Line Resistance
						Amps	Watts	Amps	Watts		
M05430	50C323	0.5	0.37	200	1.6	2.9	600	3.4	870	22	4.1 - 5.2
M07430	75C323	0.75	0.55		1.5	3.8	812	4.5	1140	32	2.6 - 3.0
M10430	100C323	1	0.75		1.4	4.6	1150	5.5	1500	29	3.4 - 3.9
M15430	150C323	1.5	1.1		1.3	6.3	1560	7.2	1950	40	1.9 - 2.5
M20430	200C323	2	1.5		1.25	7.5	2015	8.8	2490	51	1.4 - 2.0
M30430	300C323	3	2.2		1.15	10.9	2890	12.0	3290	71	0.9 - 1.3
M50430	500C323	5	3.7		1.15	18.3	4850	20.2	5515	113	0.4 - 0.8
M75430	750C323	7.5	5.5		1.15	27.0	7600	30.0	8800	165	0.5 - 0.6
M05432	50C313	0.5	0.37	230	1.6	2.4	610	2.9	880	17.3	5.7 - 7.2
M07432	75C313	0.75	0.55		1.5	3.3	850	3.9	1185	27	3.3 - 4.3
M10432	100C313	1	0.75		1.4	4.0	1090	4.7	1450	26.1	4.1 - 5.1
M15432	150C313	1.5	1.1		1.3	5.2	1490	6.1	1930	32.4	2.8 - 3.4
M20432	200C313	2	1.5		1.25	6.5	1990	7.6	2450	44	1.8 - 2.4
M30432	300C313	3	2.2		1.15	9.2	2880	10.1	3280	58.9	1.3 - 1.7
M50432	500C313	5	3.7		1.15	15.7	4925	17.5	5650	93	.85 - 1.25
M75432	750C313	7.5	5.5		1.15	24	7480	26.4	8570	140	.55 - .85
M05434	50C353	0.5	0.37	460	1.6	1.3	610	1.5	875	9	23.6 - 26.1
M07434	75C353	0.75	0.55		1.5	1.7	820	2.0	1140	14	14.4 - 16.2
M10434	100C353	1	0.75		1.4	2.2	1145	2.5	1505	13	17.8 - 18.8
M15434	150C353	1.5	1.1		1.3	2.8	1560	3.2	1980	16.3	12.3 - 13.1
M20434	200C353	2	1.5		1.25	3.3	2018	3.8	2470	23	8.0 - 8.67
M30434	300C353	3	2.2		1.15	4.8	2920	5.3	3320	30	5.9 - 6.5
M50434	500C353	5	3.7		1.15	7.6	4810	8.5	5530	48	3.58 - 4.00
M75434	750C353	7.5	5.5		1.15	12.2	7400	13.5	8560	87	1.9 - 2.3
M100434	1000C353	10	7.5	1.15	15.6	9600	17.2	11000	110	1.8 - 2.2	
M15437	150C363	1.5	1.1	575	1.3	2.0	1520	2.4	1950	11.5	19.8 - 20.6
M20437	200C363	2	1.5		1.25	2.7	1610	3.3	2400	21	9.4 - 9.7
M30437	300C363	3	2.2		1.15	3.7	2850	4.1	3240	21.1	9.4 - 9.7
M50437	500C363	5	3.7		1.15	7.0	5080	7.6	5750	55	3.6 - 4.2
M75437	750C363	7.5	5.5		1.15	9.1	7260	10.0	8310	55	3.6 - 4.2

DIMENSIONS AND WEIGHTS

HP	Volts	Length		Weight		
		In.	MM	Lb.	Kg.	
.5	200	10.0	254	19	8.7	
.75		10.8	275	22	9.7	
1		11.7	297	23	10.4	
1.5		11.7	297	23	10.4	
2		460	13.8	351	28	12.7
3			15.3	389	32	14.5
5			21.7	550	55	24.9
7.5			27.7	703	70	31.8
10			460	30.7	780	78
1.5		575	11.7	297	23	10.4
2	15.3		389	32	14.5	
3	15.3		389	32	14.5	
5	27.7		703	70	31.8	
7.5	27.7		703	70	31.8	

EFFICIENCY, THRUST RATING, FUSE/CIRCUIT BREAKER, KVA CODES

Motor Order No.		HP	Volts	Efficiency %		Thrust Rating	KVA Code	Standard Fuse		DE-TD Fuse		Circuit Breaker	
GWT	Red Jacket			F.L.	S.F.			Meets NEC based FLA	Max. Value based SFA	Meets NEC based FLA	Max. Value based SFA	Meets NEC based FLA	Max. Value based SFA
M05430	50C323	0.5	200	62	68.5	700 #	R	10	15	6	10	10	15
M07430	75C323	0.75		69	74		R	15	20	10	15	10	20
M10430	100C323	1		66	70		M	15	20	10	10	10	15
M15430	150C323	1.5		72	74		L	20	25	10	15	15	20
M20430	200C323	2		74	75	900 #	K	25	30	15	20	20	25
M30430	300C323	3		77	77		K	35	40	20	25	30	35
M50430	500C323	5		76	76	1500 #	J	60	70	35	40	50	60
M75430	750C323	7.5		74	74		J	80	90	50	60	70	80
M05432	50C313	0.5	230	61	68	700 #	R	6	10	6	6	6	10
M07432	75C313	0.75		66	71		R	6	15	6	10	6	10
M10432	100C313	1		69	72		M	10	15	6	10	10	15
M15432	150C313	1.5		75	76		K	15	20	10	15	15	15
M20432	200C313	2		75	75	900 #	K	15	25	15	15	20	20
M30432	300C313	3		77	77		J	25	35	15	20	25	30
M50432	500C313	5		76	76	1500 #	J	45	60	30	35	40	45
M75432	750C313	7.5		75	75		J	70	80	45	50	60	70
M05434	50C353	0.5	460	61	68	700 #	R	3	6	3	3	3	6
M07434	75C353	0.75		69	73.5		R	3	10	6	6	3	6
M10434	100C353	1		65	69		M	6	10	3	6	6	10
M15434	150C353	1.5		72	73		K	10	10	6	6	6	10
M20434	200C353	2		74	75	900 #	L	15	15	6	10	10	10
M30434	300C353	3		76	77		J	15	20	10	10	15	15
M50434	500C353	5		77	77	1500 #	J	25	30	15	20	20	20
M75434	750C353	7.5		76	76		L	40	50	25	30	35	40
M100434	1000C353	10		79	80		K	45	60	25	35	35	45
M15437	150C363	1.5		73	74		700 #	J	6	10	3	6	6
M20437	200C363	2	78	78	900 #	M	10	10	6	6	10	10	
M30437	300C363	3	78	78		J	10	15	10	10	10	15	
M50437	500C363	5	74	75	1500 #	M	20	25	15	15	20	20	
M75437	750C363	7.5	77	77		J	25	35	20	20	25	30	

THREE PHASE (November 2015)

As part of Faradyne Motors' continual improvement process, further improvements have been made to Goulds Water Technology Three Phase motors in November 2015. Our pump model numbers and motor order number will not change. To decipher the November 2015 motors from the previous three phase motors, please use the date code located on the motor. Goulds Water Technology motor date codes are 12 characters long, the first character represents the month and the fourth and fifth character represent the year. The self-stick, Mylar motor data stickers we pack with our motors and complete pumps will be updated with the new electrical data so that installers will know which motor is installed in the well should service work ever be necessary.

ELECTRICAL DATA, 60 HZ, 3450 RPM, 4" MOTORS (2015)

Type	GWT #	RJ Ref. #	HP	KW	Volts	SF	Full Load		Service Factor		Locked	Winding Resistance
							Amps	Watts	Amps	Watts	Rotor Amps	PH-PH
4" 3-Phase (PREMIUM)	M05430	50C323	0.5	0.37	200	1.6	2.9	600	3.4	870	22	4.1 - 5.2
	M07430	75C323	0.75	0.55		1.5	3.8	812	4.5	1140	32	2.6 - 3.0
	M10430	100C323	1	0.75		1.4	4.6	1150	5.5	1500	29	3.4 - 3.9
	M15430	150C323	1.5	1.1		1.3	6.3	1560	7.2	1950	40	1.9 - 2.5
	M20430	200C323	2	1.5		1.25	7.5	2015	8.8	2490	51	1.4 - 2.0
	M30430	300C323	3	2.2		1.15	10.9	2890	12.0	3290	71	1.2 - 1.5
	M50430	500C323	5	3.7		1.15	18.3	4850	20.2	5515	113	0.7 - 0.9
	M75430	750C323	7.5	5.5	1.15	27.0	7600	30.0	8800	165	0.4 - 0.6	
	M05432	50C313	0.5	0.37	230	1.6	2.4	610	2.9	880	17.3	5.7 - 7.2
	M07432	75C313	0.75	0.55		1.5	3.3	850	3.9	1185	27	3.3 - 4.3
	M10432	100C313	1	0.75		1.4	4.0	1090	4.7	1450	26.1	4.1 - 5.1
	M15432	150C313	1.5	1.1		1.3	5.2	1490	6.1	1930	32.4	2.8 - 3.4
	M20432	200C313	2	1.5		1.25	6.5	1990	7.6	2450	44	2.2 - 2.8
	M30432	300C313	3	2.2		1.15	9.2	2880	10.1	3280	58.9	1.6 - 2.0
	M50432	500C313	5	3.7		1.15	15.7	4925	17.5	5650	93	.9 - 1.3
	M75432	750C313	7.5	5.5	1.15	24	7480	26.4	8570	140	.5 - .9	
	M05434	50C353	0.5	0.37	460	1.6	1.3	610	1.5	875	9	23.6 - 26.1
	M07434	75C353	0.75	0.55		1.5	1.7	820	2.0	1140	14	14.4 - 16.2
	M10434	100C353	1	0.75		1.4	2.2	1145	2.5	1505	13	17.8 - 18.8
	M15434	150C353	1.5	1.1		1.3	2.8	1560	3.2	1980	16.3	12.3 - 13.1
	M20434	200C353	2	1.5		1.25	3.3	2018	3.8	2470	23	7.5 - 9.3
	M30434	300C353	3	2.2		1.15	4.8	2920	5.3	3320	30	6.3 - 7.7
	M50434	500C353	5	3.7		1.15	7.6	4810	8.5	5530	48	3.9 - 4.9
	M75434	750C353	7.5	5.5	1.15	12.2	7400	13.5	8560	87	2.1 - 2.7	
	M100434	1000C353	10	7.5	1.15	15.6	9600	17.2	11000	110	1.8 - 2.2	
	M15437	150C363	1.5	1.1	575	1.3	2.0	1520	2.4	1950	11.5	19.8 - 20.6
	M20437	200C363	2	1.5		1.25	2.7	1610	3.3	2400	21	10.2 - 12.5
	M30437	300C363	3	2.2		1.15	3.7	2850	4.1	3240	21.1	10.2 - 12.5
	M50437	500C363	5	3.7		1.15	7.0	5080	7.6	5750	55	3.6 - 4.2
	M75437	750C363	7.5	5.5		1.15	9.1	7260	10.0	8310	55	3.6 - 4.2

4" MOTORS - ENGINEERING DATA (2015)

Type	GWT #	HP	Volts	Efficiency %		Thrust Rating	KVA Code	Standard Fuse		Dual Element Time Delay		Circuit Breaker	
				F.L.	S.F.			Meets NEC Based on FL	Max Value Based on SFA	Meets NEC Based on FL	Max Value Based on SFA	Meets NEC Based on FL	Max Value Based on SFA
4" 3-Phase (PREMIUM)	M05430	0.5	200	62	68	700 #	R	10	15	6	10	10	10
	M07430	0.75		69	74		R	15	15	10	15	10	15
	M10430	1		66	70		M	15	20	10	10	10	15
	M15430	1.5		72	74	900 #	L	20	25	10	15	15	20
	M20430	2		74	75		K	25	30	15	20	20	25
	M30430	3		77	77	1500 #	K	35	40	20	25	30	35
	M50430	5		76	76		J	60	70	35	40	50	60
	M75430	7.5		74	74	J	80	90	50	60	70	80	
	M05432	0.5	230	61	68	700 #	R	6	10	6	6	6	10
	M07432	0.75		66	71		R	6	15	6	10	6	10
	M10432	1		69	72		M	10	15	6	10	10	15
	M15432	1.5		75	76	900 #	K	15	20	10	15	15	20
	M20432	2		75	75		K	15	25	15	15	20	20
	M30432	3		77	77	1500 #	J	25	35	15	20	25	30
	M50432	5		76	76		J	45	60	30	35	40	45
	M75432	7.5		75	75	J	70	80	45	50	60	70	
	M05434	0.5	460	61	68	700 #	R	3	6	3	3	3	6
	M07434	0.75		69	73		R	3	10	6	6	3	6
	M10434	1		65	69		M	6	10	3	6	6	10
	M15434	1.5		72	73	900 #	K	10	10	6	6	6	10
	M20434	2		74	75		L	15	15	6	10	10	10
	M30434	3		76	77	1500 #	J	15	20	10	10	15	15
	M50434	5		77	77		J	25	30	15	20	15	25
	M75434	7.5		76	76	1500 #	L	40	50	25	30	30	35
	M100434	10		79	80		K	45	60	25	35	35	45
	M15437	1.5	575	73	74	700 #	J	6	10	3	6	6	10
	M20437	2		78	78	900 #	M	10	10	6	6	10	10
	M30437	3		78	78		J	10	15	10	10	10	15
	M50437	5		74	75	1500 #	M	20	25	15	15	20	20
	M75437	7.5		77	77		J	25	35	20	20	25	30



FEATURES

SINGLE PHASE:

Single Phase, 6" motors available in 5 - 15 HP, 230 volt models.

Require Goulds Water Technology Control Boxes as shown on Order Number chart.

THREE PHASE:

Three Phase, 6", 5 - 30 HP, 230 and 460 volt models have an exclusive voltage change plug feature. Stock one model and a different voltage plug to reduce inventory cost.

Change Plug Order Numbers are:

- PLUG-230V • PLUG-460V

6 - 10" Three Phase available from 5 - 200 HP, see charts for available voltages.



NSF/ANSI STANDARD 61

Drinking Water System Components - Health Effects

6" Single Phase Motors 6-10" Three Phase Motors

6" SINGLE PHASE MOTORS AND REQUIRED CONTROL BOXES

Motor Order No.	HP	kW	Volts	Phase	Motor Dia. vs Flange Dia.	S.F.	Rated Input		Service Factor		L.R. Amps	Control Box Order No. [®]
							Amps	Watts	Amps	Watts		
6M051	5	3.7	230	1	6" x 6"	1.15	24	4987	27.5	5735	124	CB05MC3R
6M071	7.5	5.5					36	7675	41	8950	167	CB07MC3R
6M101	10	7.5					50	10135	58	11830	202	CB10MC3R
6M151	15	11					72	15180	85	18050	275	CB15MC3R

① NEMA 3R control boxes will be replacing the current models.

6-10" THREE PHASE MOTORS

Motor Order No.	HP	kW	Volts	Phase	Motor Dia. vs Flange Dia.	S.F.	Rated Input		Service Factor		L.R. Amps
							Amps	Watts	Amps	Watts	
6M058	5	3.7	200	3	6" x 6"	1.15	17.5	4910	19.5	5610	124
6M052	5	3.7	230				15.0	4857	17.0	5520	110
6M054	5	3.7	460				7.5	4857	8.5	5520	55
6M078	7.5	5.5	200				25.4	7180	28.5	8230	158
6M072	7.5	5.5	230				22.0	7127	26.0	8140	144
6M074	7.5	5.5	460				11.0	7127	13.0	8140	72
6M108	10	7.5	200				33.3	9360	37.2	10700	236
6M102	10	7.5	230				29.0	9407	33.0	10730	208
6M104	10	7.5	460				14.5	9407	16.5	10730	104
6M158	15	11	200				47.4	13700	53.5	15710	347
6M152	15	11	230				42.0	13700	46.0	15800	320
6M154	15	11	460				21.0	13700	23.0	15800	160
6M208	20	15	200				61.2	18040	69.5	20820	431
6M202	20	15	230				54.0	17930	60.0	20650	392
6M204	20	15	460				27.0	17930	30.0	20650	196
6M258	25	18.5	200				77.3	22740	87.5	26190	578
6M252	25	18.5	230				68.0	22470	76.0	25800	530
6M254	25	18.5	460				34.0	22470	37.0	25800	265
6M308	30	22	200				91.8	27000	104.0	31120	674
6M302	30	22	230				82.0	27130	94.0	31160	610
6M304	30	22	460				41.0	27130	47.0	31160	305
6M404	40	30	460				53.0	35530	60.0	41100	340
66M504	50	37	460				70.0	45210	79.0	52380	465
86M504	50	37	460				66.1	44501	74.1	50891	518
86M604	60	45	460				76.8	51866	86.8	59576	562
8M754	75	55	460				96.0	65900	109.0	76100	650
8M1004	100	75	460				127.0	87600	145.0	101300	795
8M1254	125	90	460				160.0	110800	180.0	126000	980
8M1504	150	110	460	195.0	130700	220.0	152000	1060			
10M2004	200	150	460	235.0	171100	270.0	198600	1260			

5-30 HP, 3 Phase 230 and 460 Motors have adjustable voltage feature, change voltage plugs to convert from 230V to 460V operation. Spare Change Plug Order No's are: PLUG-230V or PLUG-460V.

6" SINGLE PHASE MOTORS

Motor Order No.	HP	kW	Volts	Phase	F.L. Efficiency %	KVA Code	Resistance - Ohms		
							R - Y	B - Y	R - B
6M051	5	3.7	230	1	74.8	G	2.172	0.512	2.627
6M071	7.5	5.5			72.9	F	1.401	0.400	1.774
6M101	10	7.5			73.6	E	1.052	0.316	1.310
6M151	15	11			73.7	D	0.678	0.230	0.850

6-10" THREE PHASE MOTORS

Motor Order No.	HP	kW	Volts	Phase	F.L. Efficiency %	KVA Code	Line - Line Resistance	Time Delay Fuse	
								Standard	Dual Element
6M058	5	3.7	200	3	75.9	K	0.618	50	25
6M052	5	3.7	230		76.8	K	0.806	45	20
6M054	5	3.7	460		76.8	K	3.050	25	10
6M078	7.5	5.5	200		77.9	J	0.504	80	40
6M072	7.5	5.5	230		78.5	J	0.651	70	30
6M074	7.5	5.5	460		78.5	J	2.430	35	15
6M108	10	7.5	200		79.7	K	0.315	100	50
6M102	10	7.5	230		79.3	K	0.448	90	40
6M104	10	7.5	460		79.3	K	1.619	45	20
6M158	15	11	200		81.7	K	0.213	175	70
6M152	15	11	230		81.7	K	0.312	150	60
6M154	15	11	460		81.7	K	1.074	70	30
6M208	20	15	200		82.7	J	0.189	200	90
6M202	20	15	230		83.2	J	0.258	175	70
6M204	20	15	460		83.2	J	0.861	90	35
6M258	25	18.5	200		82.0	K	0.146	250	110
6M252	25	18.5	230		83.0	K	0.210	225	90
6M254	25	18.5	460		83.0	K	0.666	110	45
6M308	30	22	200		82.9	J	0.119	300	125
6M302	30	22	230		82.5	K	0.166	250	100
6M304	30	22	460		82.5	K	0.554	125	50
6M404	40	30	460		84.0	H	0.446	175	70
66M504	50	37	460		82.5	J	0.388	225	90
86M504	50	37	460		83.8	K	0.331	225	125
86M604	60	45	460		86.3	J	0.278	250	150
8M754	75	55	460		84.9	H	0.218	300	125
8M1004	100	75	460		85.2	H	0.164	400	175
8M1254	125	90	460		84.2	G	0.132	500	225
8M1504	150	110	460		85.6	G	0.115	600	250
10M2004	200	150	460		87.2	F	0.0929	800	350

GENERAL FEATURES OF CANNED AND REWINDABLE WATER-TIGHT MOTORS

6" AND 8"X6" CANNED DESIGN MOTOR FEATURES

- Replaceable Plug-in Motor Lead - All 6" motor leads are stranded copper for flexibility and strength. Leads are 150" long and field replaceable.
- Insulation - The canned motor's stator coil is mounted in a stainless steel frame and is completely sealed in a stainless steel cylinder. The coil wire features moisture resistant insulation which is completely water-proofed for long life.
- Heat Resistant - The space between the stator's stainless steel protective can and its frame is filled with a specially formulated patented resin that protects the motor against thermal fluctuation and internal stress.

8-10" REWINDABLE WATER-TIGHT MOTOR FEATURES

- Insulation Wire - The coil conductor insulation material is a specially developed denatured polypropylene, which offers excellent leak-resistant characteristics. Three barriers are applied to the copper conductors to provide complete insulation against the motor's cooling fluid. This design is the result of extensive research and is of superior quality. It insures that Goulds Water Technology motors will have an extremely long service life.

MOTOR FEATURES - BOTH DESIGNS

Maximum Water Temperature 6, 8 & 10" Motors

Size	HP	Temperature Range	Minimum Flow Rate	Ph Range
6"	5 - 40	95° F (35° C)	.5 Ft/sec.	6.5 - 8.0
8x6"	50 - 60	77° F (25° C)	.5 Ft/sec.	6.5 - 8.0
8"	75 - 150	77° F (25° C)	.5 Ft/sec.	6.5 - 8.0
10"	200	77° F (25° C)	.5 Ft/sec.	6.5 - 8.0

- Sand Resistant Slinger and Lip Seals - Goulds Water Technology submersible motors feature double-row, grease packed, lip seals to prevent sand from entering the motor. A carbon steel slinger with a baked on epoxy coating prevents sand from entering the lip seal area.

Additional protection against sand intrusion is provided by the close tolerance slinger guide with a .02" fit. This design is field-proven in West Texas wells which are considered to be some of the worst sandy well applications. Best of all, these features are standard for a Goulds Water Technology motor, so there is no need to stock one motor for clean wells and another more expensive motor for the more abrasive, sandy jobs.

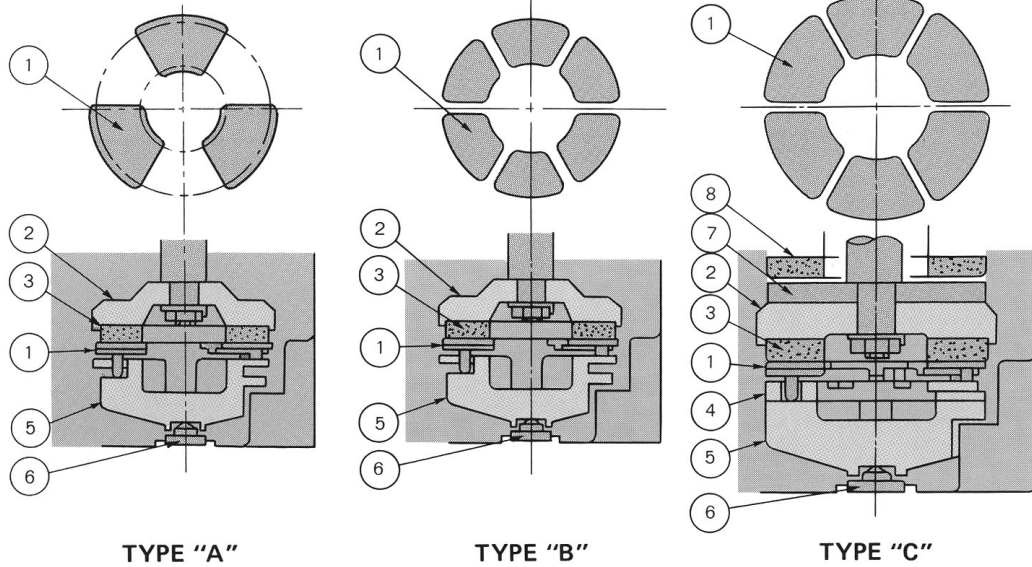
- High Torque Characteristics - The stator laminations are constructed of high quality, electrical grade, silicon steel which provide high torque even when the motor is subjected to nominal voltage variations.
- Balancing - The rotor balance rings (one on each end of the rotor) allow for excellent dynamic balance for the rotating element of the motor.
- Carbon Sleeve Bearings - Two carbon, water-lubricated, guide bearings are used to properly align the shaft. The bearings have a large surface area to better support the shaft, reducing whipping, while acting as a steady bushing.
- Water-Filled Design - The internal cooling water is mixed with antifreeze and antirust liquid to allow the motor to be stored at -22° F (-30° C). Two water plugs are provided for filling or draining the anti-freeze fluid during maintenance. These plugs are also used to top off and to check the water level.
- Complete Corrosion and Water-Tight Protection - All main motor components are made of stainless steel: including the can housing (water tight type motors have baked epoxy coated carbon steel housings), shaft and bolts. All other motor parts are finished with the baked epoxy coating.
- Baked Epoxy Coating - All external and internal cast iron parts are coated with a baked epoxy resin that provides excellent resistance to water and corrosion.
- Quality Control - All Goulds Water Technology submersible motors are manufactured and tested under the most stringent quality control procedures, providing long service life and trouble-free operation.

CONSTRUCTION AND INSULATION DETAILS

TYPE	6" and 8"x6" CANNED DESIGN	8-10" REWINDABLE WATER-TIGHT DESIGN
Construction	<p>Labels: Stainless steel frame, Coil, Epoxy resin mold, Stainless steel cylinder</p>	<p>Labels: Baked epoxy coated carbon steel frame, Water tight insulated wire</p>
Slot Insulation	<p>Labels: Coil heat-resistant enamel wire, Slot insulation, Wedge, Stainless steel cylinder</p> <p>CLASS E, B, F</p>	<p>Labels: Water tight insulated wire, Slot insulation, Wedge</p> <p>CLASS Y</p>

SPECIAL TECHNOLOGY

HIGH PERFORMANCE THRUST BEARING



Number	Part Name
1	Pivot Shoe
2	Bearing Frame
3	Carbon Disc
4	Metal Support
5	Metal Frame
6	Thrust Plate
7	Slide Plate
8	Up Thrust Bearing

APPLICATION

Motor Size	Output		Bearing Type	Number of Shoes
	HP	kW		
6"	5 - 30	3.7 - 22	A	3
6"	40 - 50	30 - 45	B	6
8 - 10"	40 - 150	30 - 110	C	6
10"	200	150	C	8

The field proven KINGSBURY design thrust bearing creates a wedge of water between the pivot shoe and carbon disc. Our innovative design permits high thrust loads to be placed on the bearings while showing no measurable wear after several years of severe duty operation. This allows for long pumping life, virtual trouble free operation and low maintenance. For all 6" motors, the 300 lbs. maximum continuous up thrust is absorbed between the upper carbon sleeve bearing and the rotor balance ring. For all 8" - 10" motors, the 1000 lbs. maximum continuous up thrust is carried between the upper slide plate and the separate up thrust carbon bearing.

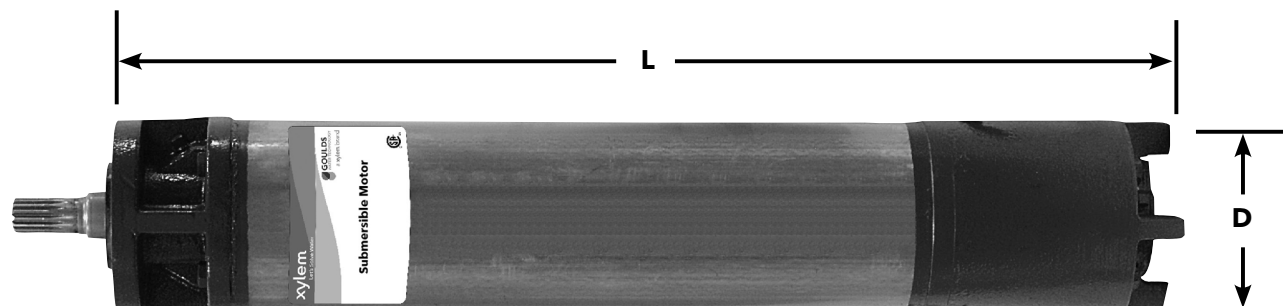
Motor Size	2P			
	Down Thrust		Up Thrust	
	lbs.	kg	lbs.	kg
6" 5-30 HP	3,500	1,590	300 *(450)	136 *(200)
6" 40-50 HP	5,000	2,270	300 *(450)	136 *(200)
8x6" 50-60 HP	6,000	2,721	300 *(450)	136 *(200)
8"	10,000 ** (5,000)	4,540 ** (2,270)	1,000 ** (1,500)	450 ** (680)
10"	10,000	4,540	1,000	450

Note:

1. Thrust ratings showed are continuous except for values marked *.
2. * Momentary rating (3 minutes maximum).
3. ** 8" motor - 6" Flange when using standard stainless steel bolts (B&M), has a thrust value of 5,000 lbs. A thrust value of 10,000 lbs. can be obtained by using high tensile stainless steel bolts (ASTM F593G).

6" and 8"x6" CANNED DESIGN MOTORS

SIZE AND WEIGHT - 2 POLE 3600 RPM 60 Hz – 3000 RPM 50 Hz



Motor Size	Phase	Output		D inch (mm)	L		Net Weight	
		HP	kW		inch	mm	lbs.	kg
6"	1Ø	5	3.7	5.5 (140)	26.97	685	110	50
		7.5	5.5		29.92	760	128	58
		10	7.5		29.92	760	128	58
		15	11		33.46	850	148	67
	3Ø	5	3.7		22.95	583	95	43
		7.5	5.5		24.80	630	99	45
		10	7.5		26.97	685	110	50
		15	11		29.92	760	128	58
		20	15		31.50	800	137	62
		25	18.5		36.22	920	161	73
		30	22		38.19	970	176	80
		40	30		40.55	1030	187	85
		50	37		41.73	1060	198	90
		8"x6"	50		37	6.89 (175)	41.61	1057
60	45		364	165				

*Gross Weight: See page 12.

Motor Size	Phase	Output		460V, 415V, 400V, 380V			230V, 208V		
		HP	kW	Lead Wire Size		A x B inch (mm)	Lead Wire Size		A x B inch (mm)
				mm ²	AWG		mm ²	AWG	
6"	1Ø	5-15	3.7-11	–	–	–	3.5	#12	0.82x0.33 (20.8x8.2)
	3Ø	5-25	3.7-18.5	3.5	#12	0.82x0.33 (20.8x8.2)	3.5	#12	0.82x0.33 (20.8x8.2)
		30	22	5.5	#10	0.99x0.38 (25.1x9.6)	5.5	#10	0.99x0.38 (25.1x9.6)
		40	30	3.5	#12	0.82x0.33 (20.8x8.2)	–	–	–
8"x6"	50	37	8.0	#8	1.09x0.41 (27.7x10.4)	–	–	–	
	60	45				–	–	–	

6" CANNED DESIGN MOTORS (continued)

TYPE OF LEAD WIRE - 600V CLASS

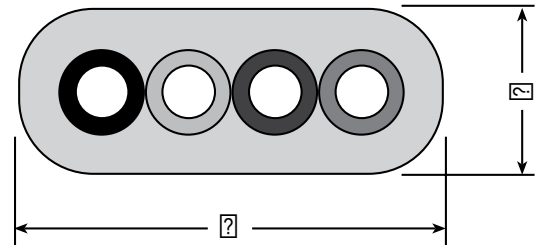
Ethylene-Propylene Rubber Insulated Chloroprene

Cabtyre Cable

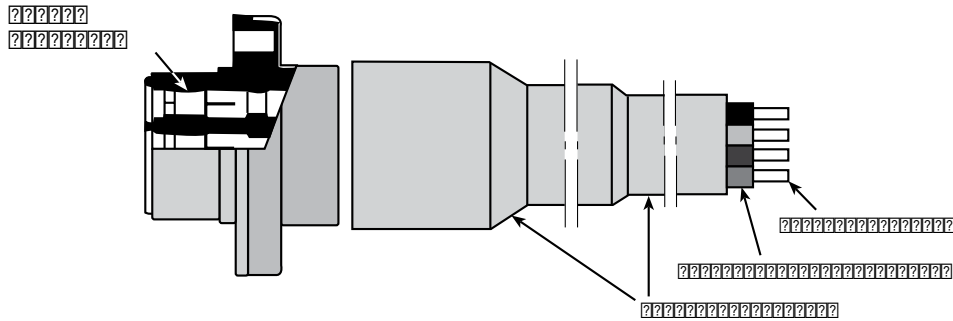
Plug-In (Field replaceable.)

Color Coded

USA Standard
(Black, Yellow, Red, Green)



CHLOROPRENE CABTYRE CABLE

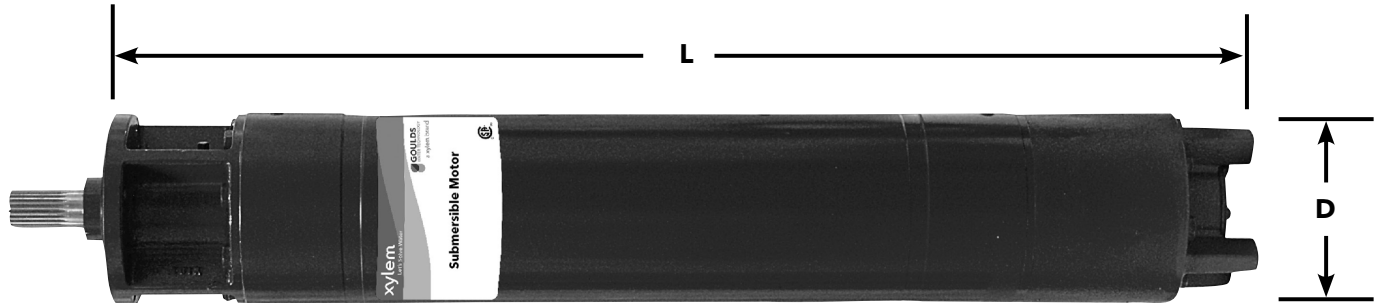


6" GOULDS WATER TECHNOLOGY REPLACEMENT MOTOR LEADS

Order No.	Description	Used On
CPML-12	150", 12 / 4	5-15 HP 1Ø; 5 - 25 and 40 HP, 460V, 3Ø
CPML-10	150", 10 / 4	30 HP, 230/460V and 50 HP, 3Ø
CPML-8	150", 8 / 4	Optional for 30-50 HP, 3Ø, any voltage

REWINDABLE WATER-TIGHT DESIGN MOTORS

SIZE AND WEIGHT - 2 POLE 3600 RPM 60 Hz – 3000 RPM 50 Hz



Motor Size	Output		D inch (mm)	L		Net Weight	
	HP	kW		inch	mm	lbs.	kg
8"	75	55	7.52 (191)	53.15	1350	463	210
	100	75		58.27	1480	518	235
	125	90		66.14	1680	595	270
	150	110		70.08	1780	661	300
10"	200	150	8.52 (216.5)	69.68	1770	816	370

(*) 6 inch flange. **Gross Weight: See page 12.

CABLE SIZE AND TYPE - 2 POLE 3600 RPM 60 Hz – 3000 RPM 50 Hz

200 inch (5 m) - Lead Wire Standard Length (Round 1 Stranded Conductor)

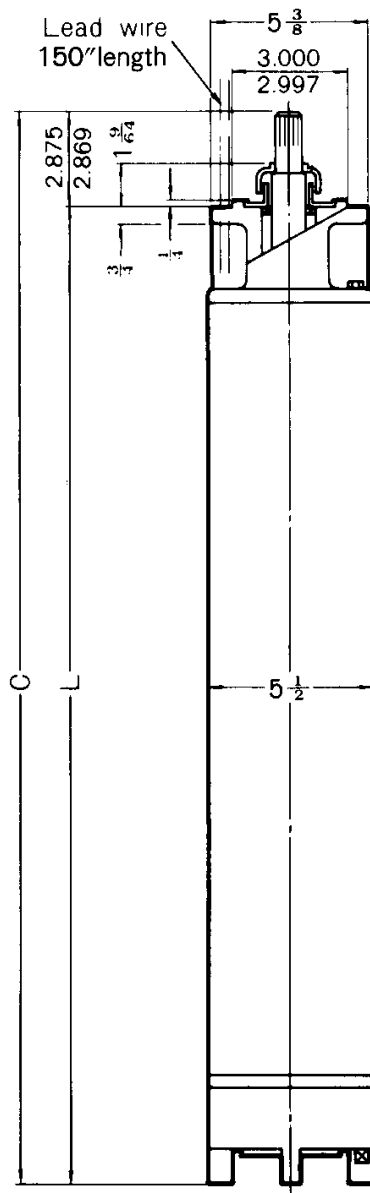
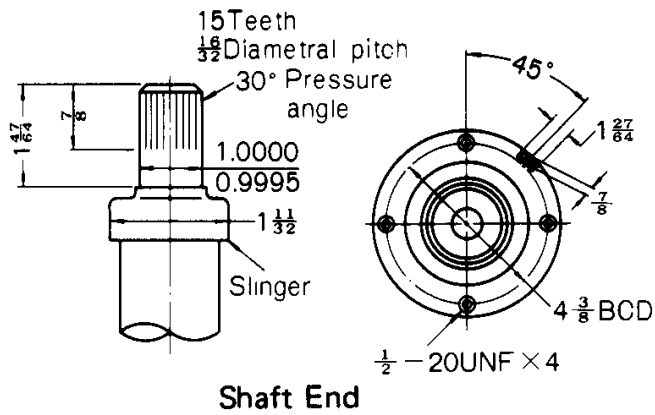
Motor Size	Output		460V, 415V, 400V, 380V			
	HP	kW	Lead Wire Size		Cable Diameter	
			mm ²	AWG	inch	mm
8"	75	30-55	8	#8	0.362	9.2
	100-125	75-90	14	#6	0.433	11.0
	150	110	22	#4	0.531	13.5
10"	200	150	30	#2	0.591	15.0

Type of Lead Wire - 600V Class

Ethylene Propylene rubber insulated chloroprene cabtyre cable.

DIMENSIONAL DATA

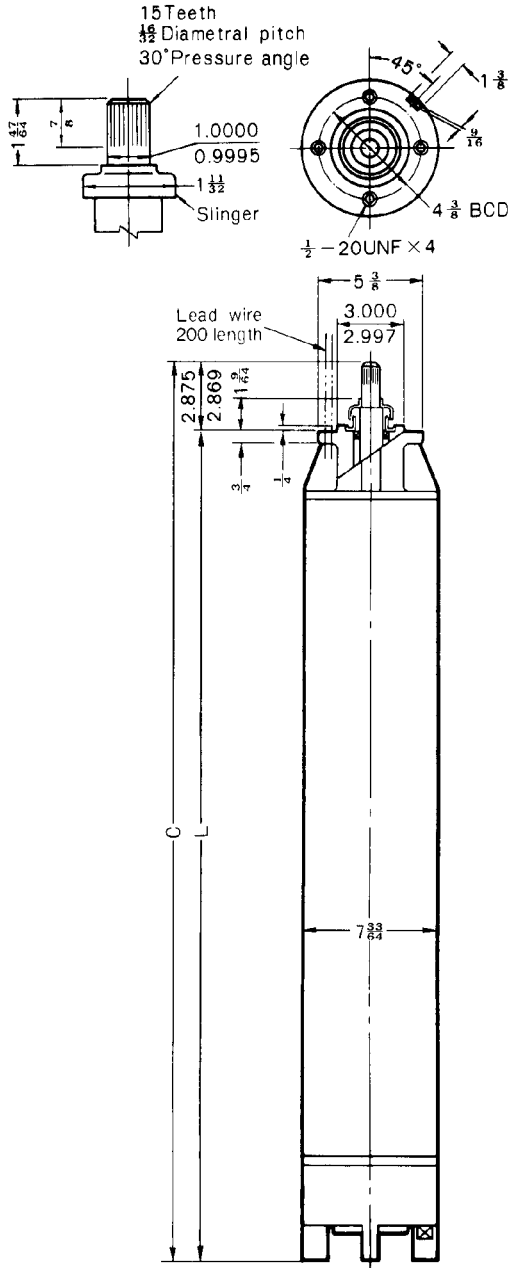
6", 3600 RPM, 2 POLE



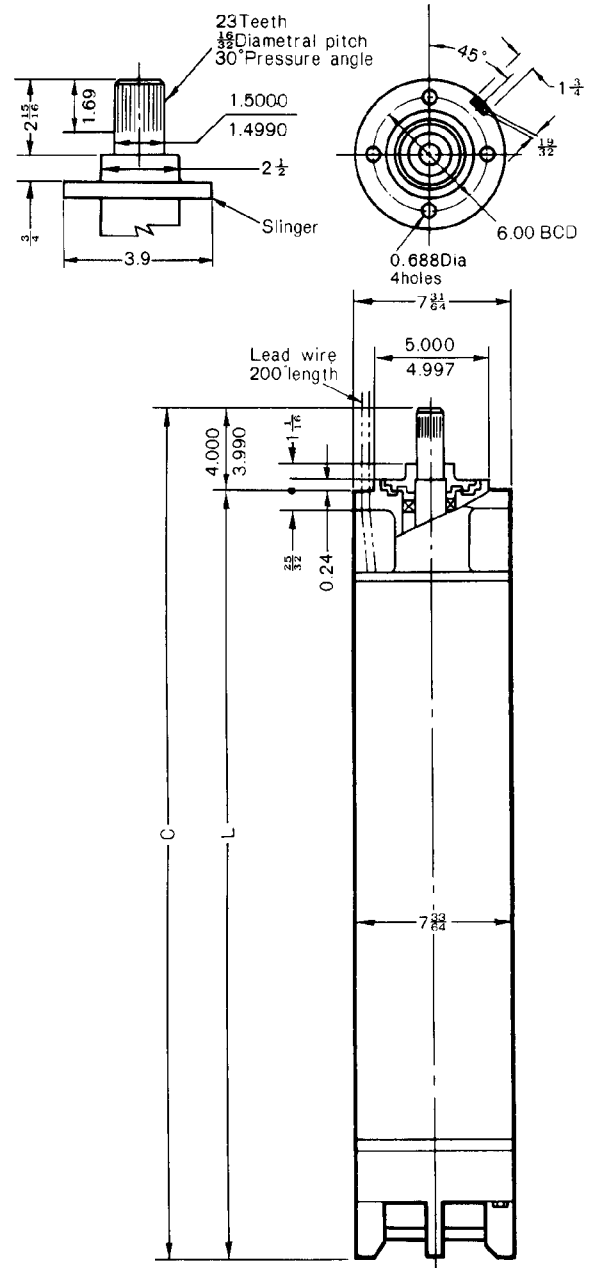
Output		Phase	C		L	
HP	kW		inch	mm	inch	mm
5	3.7	1	29.84	758	26.97	685
7.5	5.5		32.79	833	29.92	760
10	7.5		32.79	833	29.92	760
15	11		36.33	923	33.46	850
5	3.7	3	25.82	656	22.95	583
7.5	5.5		27.67	703	24.80	630
10	7.5		29.84	758	26.97	685
15	11		32.79	833	29.92	760
20	15		34.37	873	31.50	800
25	18.5		39.09	993	36.22	920
30	22		41.06	1043	38.19	970
40	30		43.42	1103	40.55	1030
50	37		44.60	1133	41.73	1060

DIMENSIONAL DATA

8", 3600 RPM, 2 POLE (6" FLANGE)



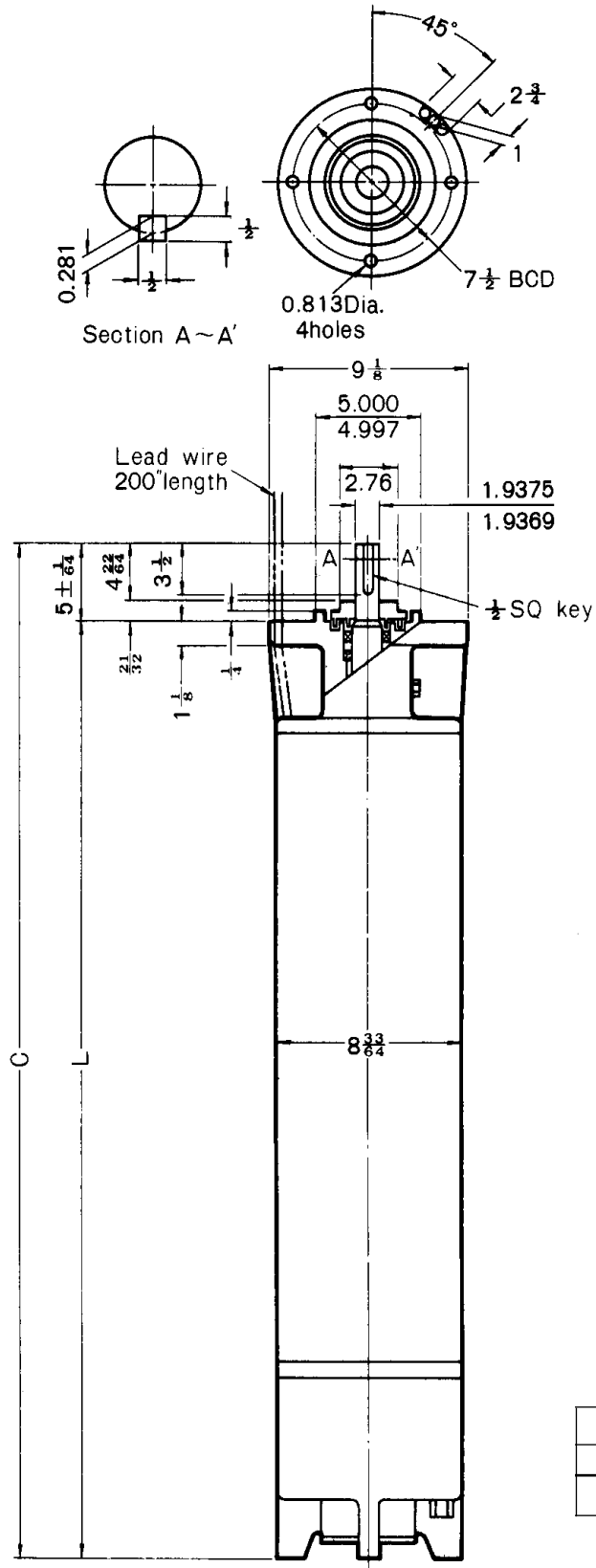
8", 3600 RPM, 2 POLE (8" FLANGE)



Size	Output		Phase	C		L	
	HP	kW		inch	mm	inch	mm
8"x8"	50	37	3	48.15	1223	45.28	1150
	60	45		50.91	1293	48.03	1220
	75	55		57.13	1451	53.15	1350
	100	75		62.24	1581	58.27	1480
	125	90		70.12	1781	66.14	1680
	150	110		74.06	1881	70.08	1780
8"x6"	50	37	3	44.48	1130	41.61	1057
	60	45					

DIMENSIONAL DATA

10", 3600 RPM, 2 POLE (10"-B FLANGE)



Output		Phase	C		L	
HP	kW		inch	mm	inch	mm
200	150	3	74.70	1897	69.68	1770



FEATURES

- Encapsulated, water-filled design
- Engineered, assembled and tested in the USA
- Leading motor efficiencies yield lower cost of ownership
- NSF/ANSI 61 certified for potable water
- Variable frequency drive capable*
- Horizontal and vertical installation*
- Class F rated insulation
- Stainless steel bolting and fasteners

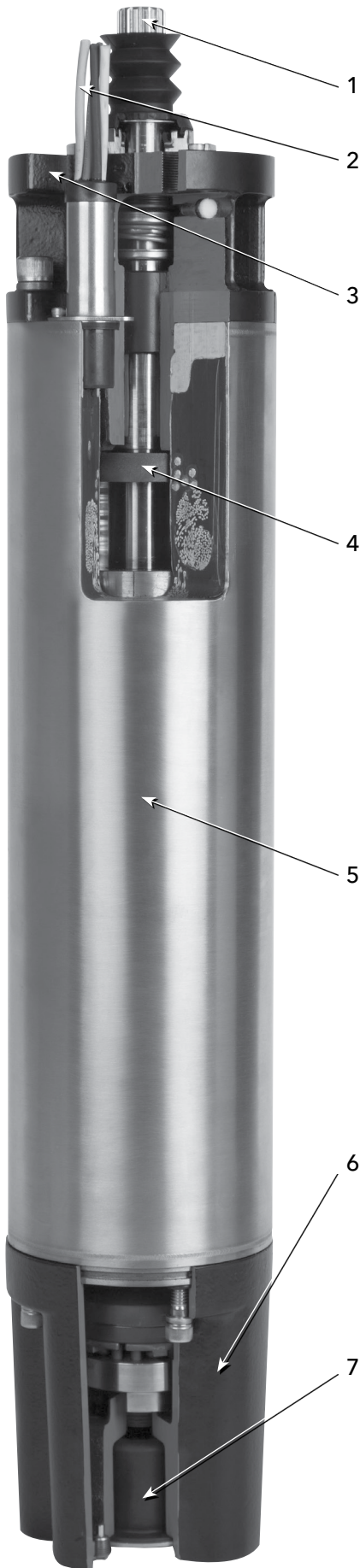
* See detail reported in the instruction manual



FM Series Motors

6" - 8" MOTORS





Industry Leading Designs

Thrust Handling

The FM Series Kingsbury-type bi-directional thrust bearing can handle down-thrust values greater than other 6" submersible motors.

Up to 30 hp - 3600 lbs

40 hp to 50 hp - 6750 lbs

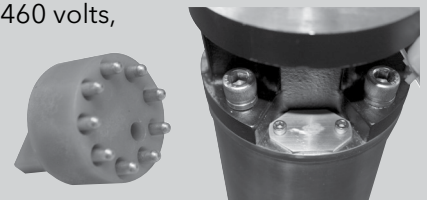
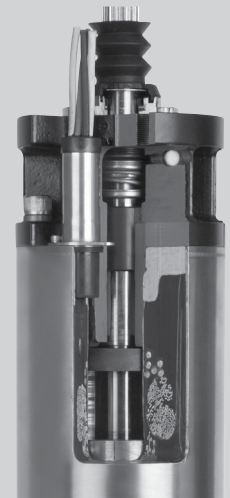
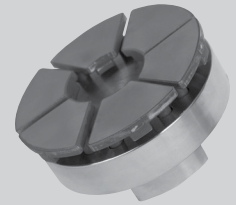
50 hp to 150 hp - 10000 lbs

Sealing System

The most robust sealing system available on the market provides protection against sediment intrusion in the most difficult of applications. Sealing system includes specially designed rubber slinger, upgraded mechanical seal as standard with Silicon Carbide / Silicon Carbide material, and a lip seal.

Voltage Change Device

All three-phase units, 5-30 hp, 230/460 volts, are supplied with a voltage change device to reduce volume of part numbers for stock.



1. 17-4 PH stainless steel shaft.
Shaft extension and coupling dimensions per NEMA standards.
2. Fully replaceable XLPE lead wire
17 ft (5.18 m) lead length.
3. Dual-flange style upper bracket provides easier handling and faster assembly to the pump.
4. Upthrust ring prevents upthrust damage during start-up.
5. 300 series stainless steel casing.
6. Epoxy-coated upper and lower bracket, TNEMEC 140 standard, provides excellent resistance to water and corrosion.
7. Pressure equalizing diaphragm regulates internal pressure with static pressure and ensures motor is full of fluid.

MATERIALS OF CONSTRUCTION

Component	Material
Castings	Gray Iron
Shell and Liner	300 Series Stainless Steel
Shaft Extension	17-4 Ph Stainless Steel
Fasteners	300 Series Stainless Steel
Seal	300 Series Stainless Steel
Mechanical Seal	SiC/SiC Faces
Elastomers	Nitrile Rubber
Diaphragm Cover	300 Series Stainless Steel
Lead Wire	XLPE
Lead Potting	Epoxy
Filter	Polyester
Paint	Epoxy
Rotor	Copper Bar
Insulation	Class F

MOTOR DATA

Part No.	HP	kW	Phase	Volts	Motor Dia. vs Flange Dia	Service Factor	Rated Input		Maximum Load (SF Load)		L. R. Amps		
							Amps	Watts	Amps	Watts			
6F051	5	3.7	1	230	6" x 6"	1.15	22.8	4975	26.0	5625	104		
6F071	7.5	5.5					35.2	7300	40.0	8300	162		
6F101	10	7.5					45.7	9700	52.4	11175	202		
6F151	15	11					62.4	13725	72.5	15825	296		
6F058	5	3.7	3	200-208	6" x 6"	1.15	16.1	4830	18.0	5490	96		
6F078	7.5	5.5					23.3	7000	26.8	8070	140		
6F108	10	7.5					31.5	9090	35.0	10400	187		
6F158	15	11					44.9	13440	50.8	15460	268		
6F208	20	15					59.0	17850	67.1	20630	354		
6F258	25	19					76.8	22110	86.5	25520	445		
6F308	30	22					91.7	26420	103.3	30450	530		
6F0524*	5	3.7					230/460	6" x 6"	14.4	4830	16.1	5490	87
6F0724*	7.5	5.5							21.5	7000	24.1	8070	127
6F1024*	10	7.5							28.0	9090	31.5	10400	164
6F1524*	15	11		40.9					13440	46.3	15460	237	
6F2024*	20	15		53.2					17850	60.8	20630	312	
6F2524*	25	19		66.7					22110	76.0	25520	387	
6F3024*	30	22		79.3					26420	90.2	30450	458	
6F0524*	5	3.7		7.0					4830	8.0	5490	44	
6F0724*	7.5	5.5		10.0					7000	11.3	8070	62	
6F1024*	10	7.5		13.1					9090	14.8	10400	82	
6F1524*	15	11		20.4			13440	23.0	15460	117			
6F2024*	20	15		25.8			17850	29.4	20630	151			
6F2524*	25	19		32.8			22110	36.8	25520	187			
6F3024*	30	22	39.3	26420	44.6	30450	226						
6F404	40	30	460	6" x 6"	51.3	35030	58.6	40500	302				
6F504	50	37			65.8	44350	75.1	51200	385				
6F055	5	3.7	575	6" x 6"	5.8	4830	6.5	5490	35				
6F075	7.5	5.5			8.2	7000	9.3	8070	51				
6F105	10	7.5			10.5	9090	11.8	10400	61				
6F155	15	11			15.0	13440	17.1	15460	88				
6F205	20	15			20.9	17850	23.7	20630	122				
6F255	25	19			26.2	22110	29.7	25520	153				
6F305	30	22			31.0	26420	35.0	30450	179				
6F405	40	30			41.5	35030	47.3	40500	247				
6F505	50	37			53.0	44350	61.0	51200	323				
86F504	50	37			460	8" x 6"	1.15	65	43675	74	49950	540	
86F604	60	45	78	52225				89	59825	645			
8F504	50	37	65	43675				74	49950	540			
8F604	60	45	78	52225				89	59825	645			
8F754	75	56	95	64850				109	74650	803			
8F1004	100	75	8" x 8"	128		85075		146	98350	1080			
8F1254	125	93		165		110125		188	126825	1410			
8F1504	150	112		203		133025		228	151100	1643			
86F505	50	37		8" x 6"		52		43675	60	49950	439		
86F605	60	45				61		52225	70	59825	518		
8F505	50	37	52		43675	60	49950	439					
8F605	60	45	61		52225	70	59825	518					
8F755	75	56	8" x 8"		76	64850	88	74650	645				
8F1005	100	75		100	85075	115	98350	855					
8F1255	125	93		129	110125	148	126825	1133					
8F1505	150	112	159	133025	178	151100	1320						

* Same motors with voltage change device

MOTOR DATA

Part No.	Rating		Phase	Volts	% Efficiency		KVA Code	Line-Line Resistance (Ohms)	Fuse Sizing Based on NEC		
	HP	kW			FL	SF			Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
6F058	5	3.7	3	200-208	77.5	78.5	H	.86 - 1.1	60	35	50
6F078	7.5	5.5			80.0	80.0		.66 - .81	90	50	70
6F108	10	7.5			82.5	82.5		.37 - .46	110	70	100
6F158	15	11			83.5	83.5		.26 - .32	175	100	125
6F208	20	15			83.0	83.0		.19 - .24	225	125	175
6F258	25	19			84.0	84.0		.13 - .17	300	150	200
6F308	30	22			84.5	84.5		.10 - .13	350	200	250
6F0524*	5	3.7		230	77.5	78.5	G	1.1 - 1.4	60	35	45
6F0724*	7.5	5.5			80.0	80.0		.73 - .90	80	45	70
6F1024*	10	7.5			82.5	82.5		.50 - .62	100	60	90
6F1524*	15	11			83.5	83.5		.33 - .41	150	90	125
6F2024*	20	15			83.0	83.0		.25 - .31	200	110	175
6F2524*	25	19			84.0	84.0		.18 - .22	225	150	200
6F3024*	30	22			84.5	84.5		.15 - .19	300	175	225
6F0524*	5	3.7		460	77.5	78.5	H	4.4 - 5.4	30	15	25
6F0724*	7.5	5.5			80.0	80.0		2.9 - 3.6	40	25	35
6F1024*	10	7.5			82.5	82.5		1.9 - 2.4	50	30	40
6F1524*	15	11			83.5	83.5	G	1.1 - 1.4	70	45	60
6F2024*	20	15			83.0	83.0		.9 - 1.1	90	50	80
6F2524*	25	19			84.0	84.0		.69 - .85	110	70	100
6F3024*	30	22			84.5	84.5		.58 - .72	150	80	110
6F404	40	30			85.0	85.0	.45 - .56	175	100	150	
6F504	50	37			84.0	84.0	.35 - .43	225	150	175	
6F055	5	3.7			575	77.5	78.5	H	5.8 - 7.2	25	15
6F075	7.5	5.5		80.0		80.0	3.6 - 4.4		30	20	25
6F105	10	7.5		82.5		82.5	G	2.8 - 3.5	40	25	30
6F155	15	11		83.5		83.5		1.9 - 2.4	60	30	45
6F205	20	15		83.0		83.0		1.4 - 1.7	80	45	60
6F255	25	19		84.0		84.0		1.0 - 1.3	90	60	80
6F305	30	22		84.5		84.5		.83 - 1.0	110	70	90
6F405	40	30	85.0	85.0		.64 - .79	150	90	125		
6F505	50	37	84.0	84.0		H	.53 - .71	175	100	150	

* Same motors with voltage change device

MOTOR DATA

Part No.	Rating		Phase	Volts	% Efficiency		KVA Code	Winding		Fuse Sizing Based on NEC		
	HP	kW			FL	SF		Main Resistance (BL-Y)	Start Resistance (R-Y)	Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker Size
6F051	5	3.7	1	230	74.5	75.5	E	.54-.67	1.7-2.1	80	50	70
6F071	7.5	5.5			77.0	77.5	F	.36-.44	.76-.94	125	80	110
6F101	10	7.5			76.5	76.5	E	.25 - .31	.69 - .85	175	90	125
6F151	15	11			81.5	81.5	E	.22 - .28	.61 - .75	225	150	200

Part No.	Rating		Volts	% Efficiency		KVA Code	Line-Line Resistance (Ohms)	Fuse Sizing Based on NEC		
	HP	kW		FL	SF			Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
86F504	50	37	460	85.5	86.0	K	.19 - .24	250	175	225
86F604	60	45		85.5	86.0		.17 - .21	350	200	250
8F504	50	37		85.5	86.0		.19 - .24	250	175	225
8F604	60	45		85.5	86.0		.17 - .21	350	200	250
8F754	75	56		86.5	86.5		.12 - .15	400	225	350
8F1004	100	75		87.5	87.5		.08 - .11	500	300	450
8F1254	125	93		84.5	85.0		.06 - .08	700	400	600
8F1504	150	112		84.5	85.0		.04 - .06	800	450	700
86F505	50	37	575	85.5	86.0	K	.32 - .39	225	125	175
86F605	60	45		85.5	86.0		.26 - .32	250	150	200
8F505	50	37		85.5	86.0		.32 - .39	225	125	175
8F605	60	45		85.5	86.0		.26 - .32	250	150	200
8F755	75	56		86.5	86.5		.20 - .25	350	200	250
8F1005	100	75		87.5	87.5		.16 - .20	400	250	350
8F1255	125	93		84.5	85.0		.10 - .13	600	350	450
8F1505	150	112		84.5	85.0		.08 - .10	700	400	500

* Maximum water temperature 35°C / 95°F

MOTOR LEAD LENGTH

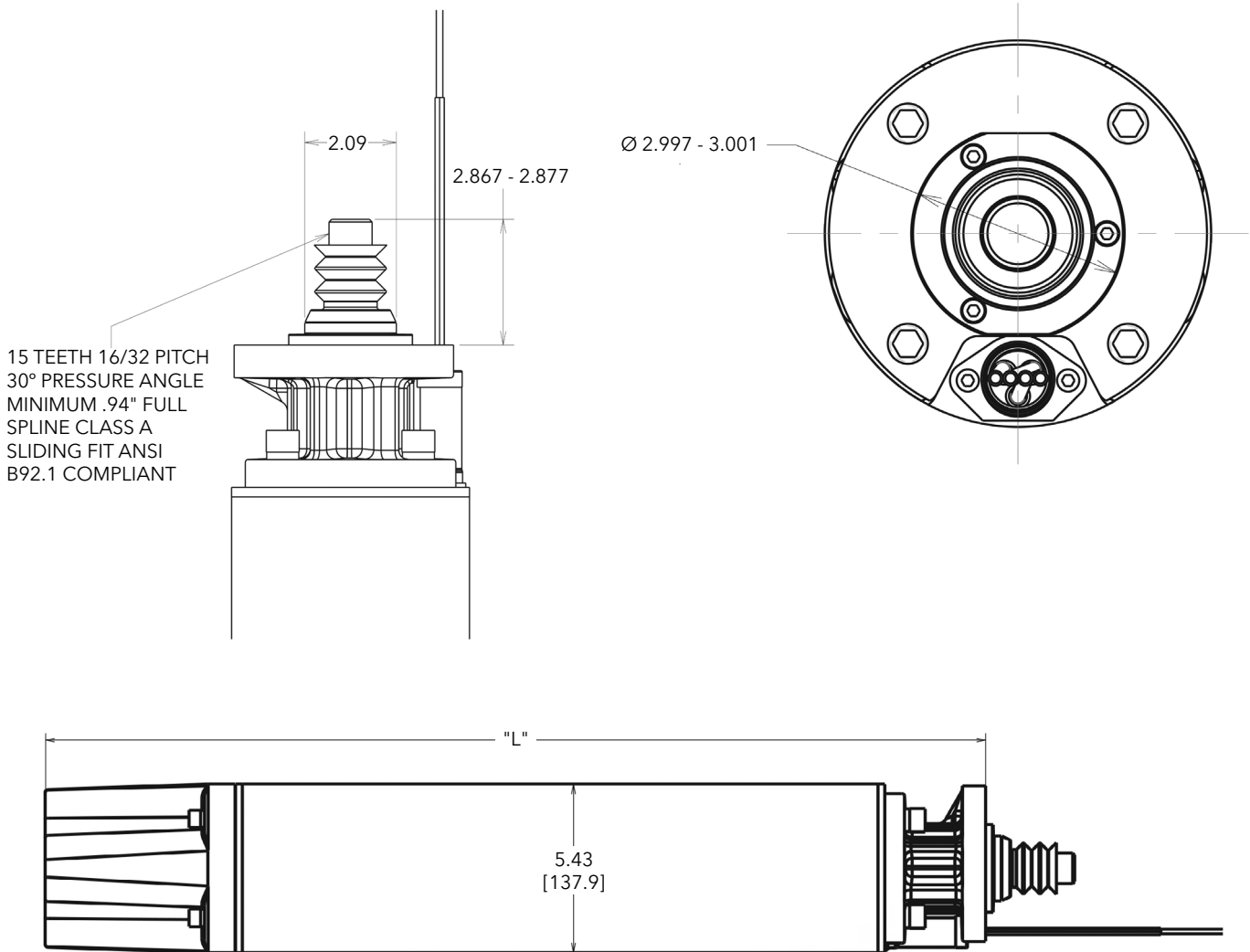
6" Motor Leads

HP	Phase	Gage	Length
5-15	1	10	17'
5-25	3	10	
30-50	3	8	

8" Motor Leads

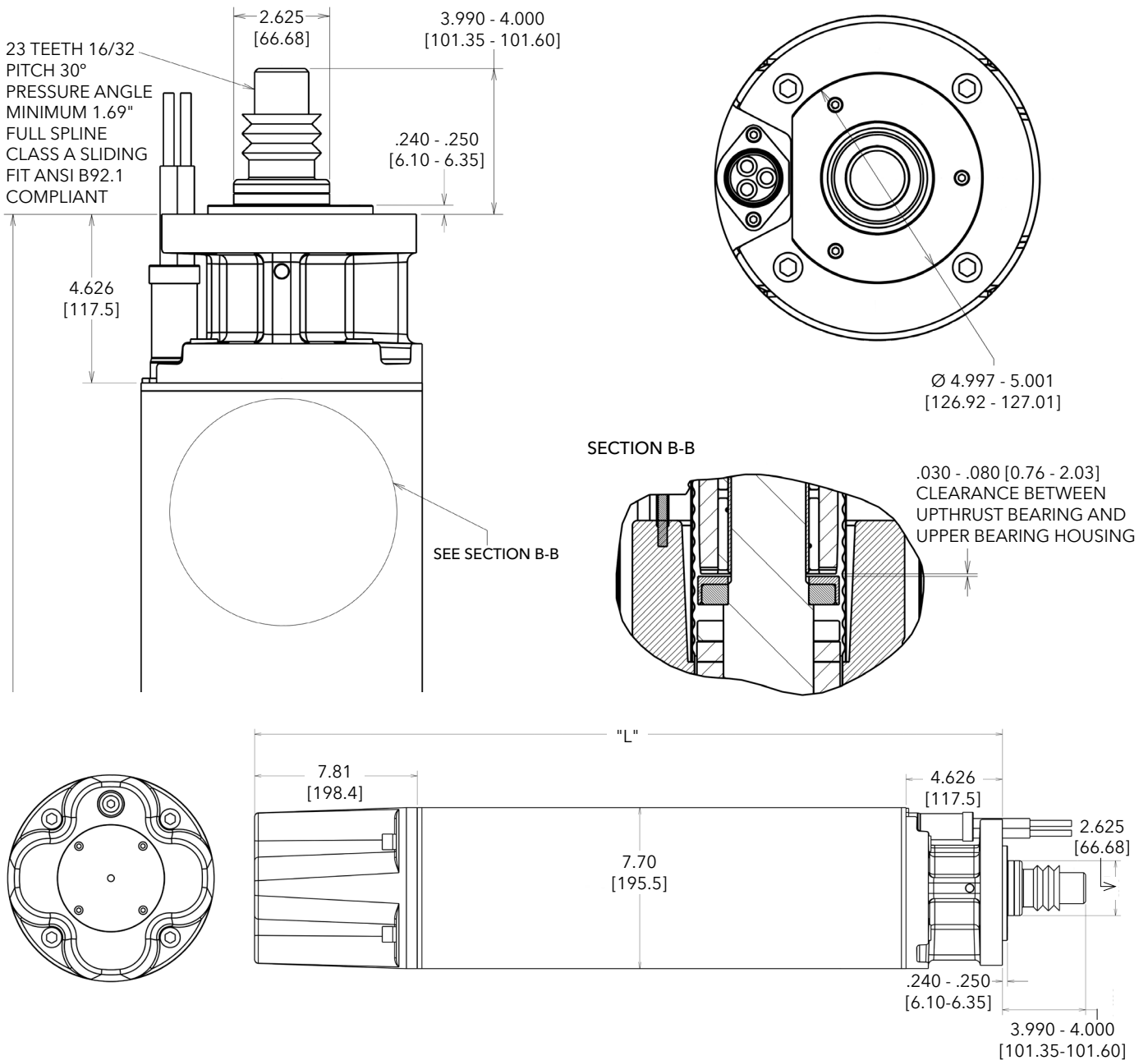
HP	Phase	Gage	Length
50	3	8	17'
60			
75		6	
100			
125		4	
150		2	

6" MOTOR DIMENSIONS AND WEIGHTS



HP	Phase	Length		Motor Weight		Ship Weight	
		Inches	mm	Lb	Kg	Lb	Kg
5	1	25.6	650	104	47.2	134	61
7.5		28.1	714	117	53.1	151	68
10		30.3	770	132	59.9	166	75
15		32.8	833	144	65.3	180	82
5	3	23	584	87	39	115	52
7.5		24.3	617	97	44	127	58
10		25.6	650	104	47	134	61
15		28.1	714	117	53	151	68
20		30.3	770	132	60	166	75
25		32.8	833	144	65	180	82
30		35.6	904	165	75	207	94
40		39.3	998	187	85	229	104
50		54.1	1374	265	120	319	145

8" MOTOR DIMENSIONS AND WEIGHTS



Motor Dia. vs Flange Dia.	HP	Length		Motor Weight		Ship Weight	
		Inches	mm	Lb	Kg	Lb	Kg
8" X 6"	50	38.9	987	330	150	407	185
	60	41.6	1057	371	168	448	203
8" X 8"	50	38.9	987	344	156	421	191
	60	41.6	1057	385	175	462	210
	75	46.6	1184	444	201	521	236
	100	58.6	1488	525	238	602	273
	125	66.9	1699	819	371	917	416
	150	75.1	1908	932	423	1030	467

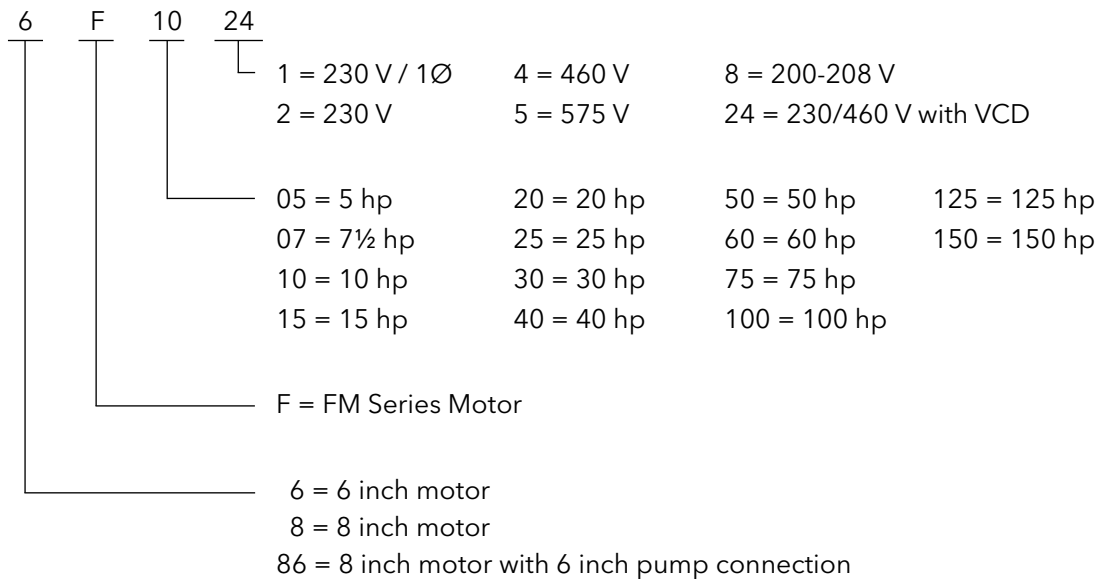
MINIMUM FLOW RATES FOR PROPER MOTOR COOLING

Well or Sleeve Diameter (inches)	FM = 5.43" Dia. 6" FM Motor	FM = 7.70" Dia. 8" FM Motor
	GPM Required	
6	9	–
7	25	–
8	45	10
10	90	55
12	140	110
14	200	170
16	280	245

Multiply gpm by .2271 for m³/Hr.

Multiply gpm by 3.785 for l/min.

MOTOR NOMENCLATURE





ResiBoost

COMPLETE PACKAGED RESIDENTIAL CONSTANT PRESSURE
BOOSTING SYSTEM, FOR THE WAY YOU LIVE

FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

VFD: Built-in protection against various system and electrical faults. Comes with internal transducer with digital indicator, additional parts not necessary. Pre-wired to e-HM pump.

Energy Savings: Precise speed control to operate pump for best energy efficiency.

Ease of installation: Complete system with pump, motor and controller assembled. Tank included separate from assembly for shipping. Plug and Play compact system.

Built-in Check Valve: Completely assembled ResiBoost includes a uniquely designed fitting including a spring loaded check valve.

Built-in Memory: Stored data - operating hours, number of starts, connection to the power supply, faults.

Electrical Protection: Protects against over-current, incorrect power supply, and short circuit.

Display: Control with LCD display and simple push button settings.

Stainless Steel Pump: e-HM series stainless steel pump with small footprint designed for longer life.

Offerings: Six SKU's to cover all residential boosting applications up to 35 GPM.

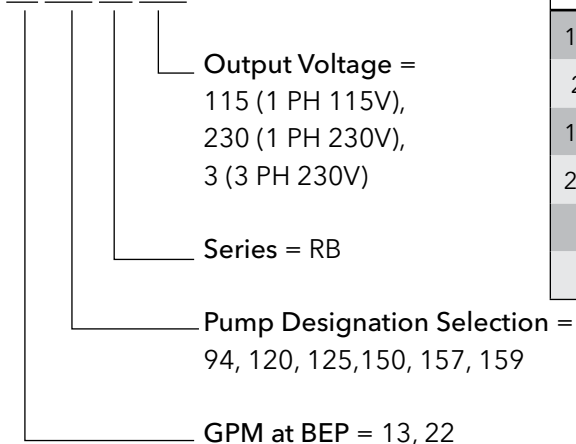
Model	Pump Designation	Max GPM	Stages	Output Phase	Output Voltage	Weight
13159RB115	13 GPM AT 60 PSI	22	5	1	115	30
2294RB115	22 GPM AT 38 PSI	40	3			
13120RB230	13 GPM AT 48 PSI	22	4			
22125RB230	22 GPM AT 50 PSI	40	4			
13150RB3	13 GPM AT 65 PSI	22	5	3	230	
22157RB3	22 GPM AT 68 PSI	40	5			

INCLUDED IN KIT

Kit	Pump	Controller	Union with Check Valve	Tank
13159RB115	3HM05N07M6BQQE	RB111512	15K112	V2L
2294RB115	5HM03N07M6BQQE			
13120RB230	3HM04N05M6FQQE	RB12309		
22125RB230	5HM04N11M6FQQE			
13150RB3	3HM05N07T6PQQE	RB32309		
22157RB3	5HM05N15T6PQQE			

NUMBER CODE

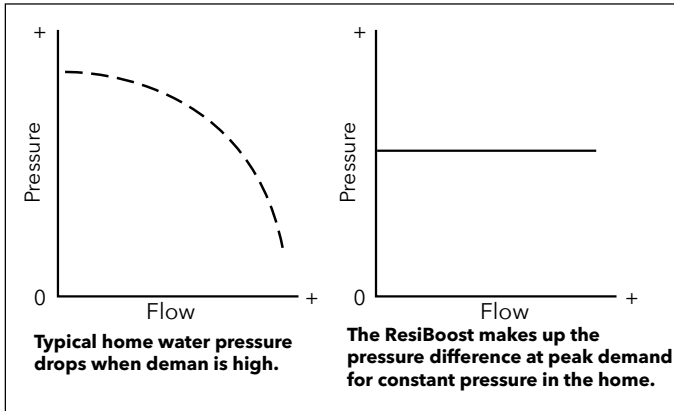
13 159 RB 115



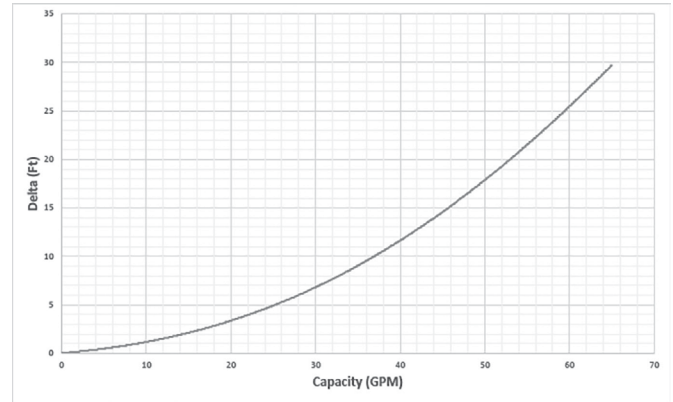
Residential Water

THE RESIBOOST ADVANTAGE

The ResiBoost constant pressure system provides an economical solution for municipal water users that suffer from low pressure. In addition the ResiBoost constant pressure system can also be used for applications requiring repressurizing water from a storage tank. As your household water needs change, our drive will change the speed of the motor to accommodate the need.



LOSS CURVE



Note: Above curve reflects friction loss of the controller as water passes through the controller.

RESIBOOST CONTROLLER



FEATURES

Input Power: Single Phase 115 and 230 V

Output Power: Single Phase 115 and 230 V,
3 phase 230 V

Programming: Pre-programmed

Input Controls: HMI with push button control

Signal Lights: Red LED

Protection Against: No Water, Motor Over Current,
Open Lead, Low System Pressure, Over Heating,
Short Circuit, Over Voltage, Under Voltage

Temperature Rating: 32° - 122°F

Approvals: cCSA_{US}, NSF

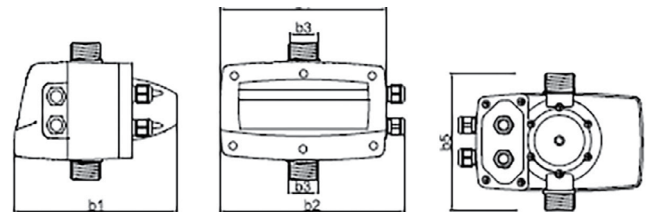
Enclosure: Type 3

Power Lead: 230V plug (NEMA 6-20) on 230 V, 115 V
plug (NEMA 5-15) on 115 V selections

ResiBoost Controller Part #	Input Voltage	Output Voltage	Max Amps	Weight lbs
RB111512	1/115	1/115	12	6.4
RB12309	1/230	1/230	9	
RB32309	1/230	3/230	9	

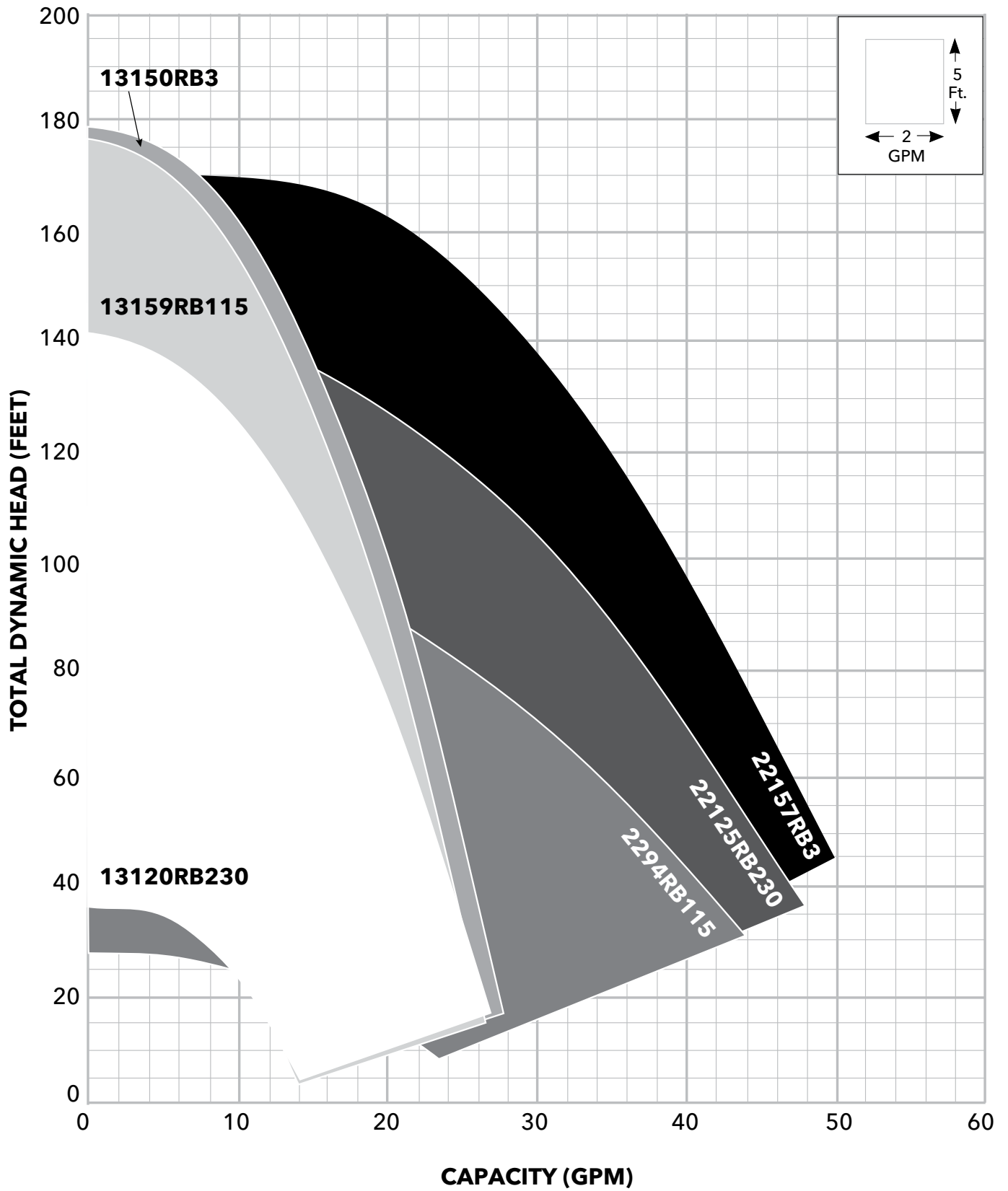
* ResiBoost controller cannot be used on all surface motors. Check IOM for correct applications.

DIMENSIONS

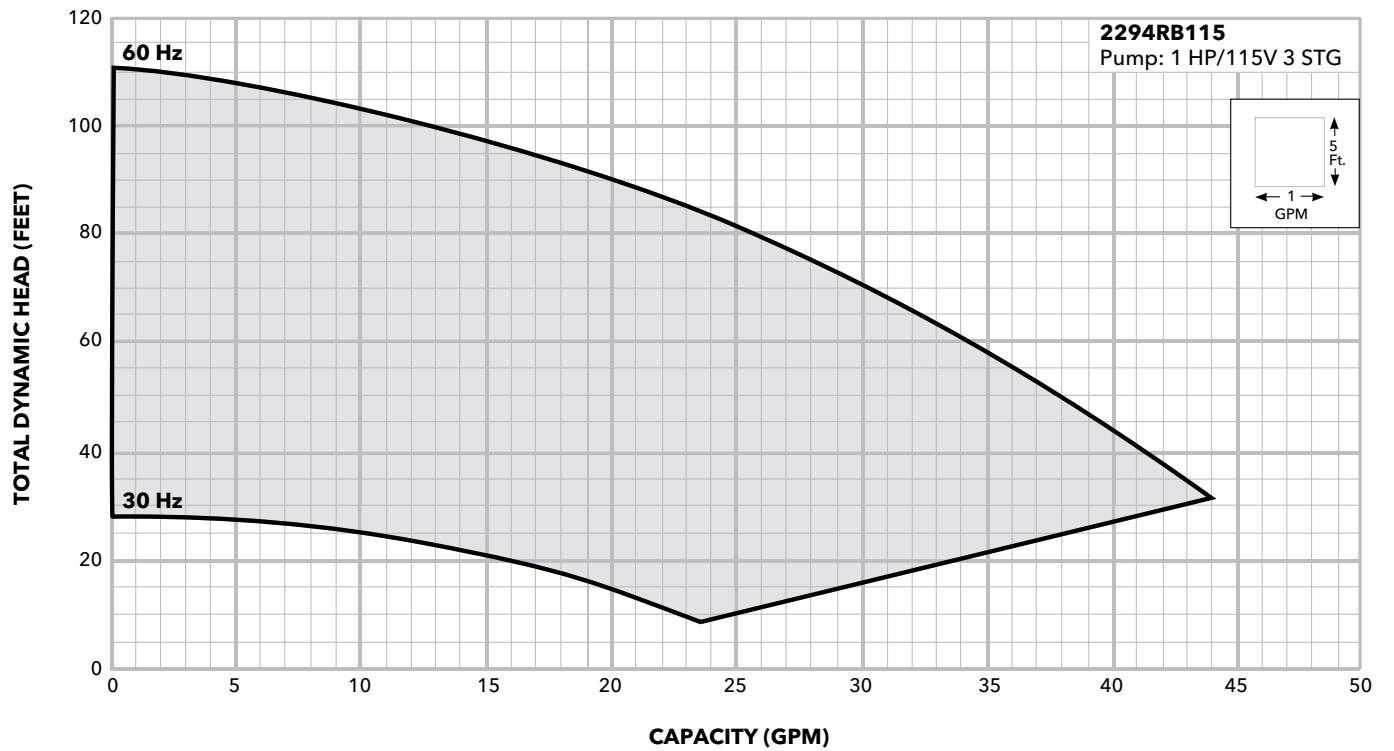
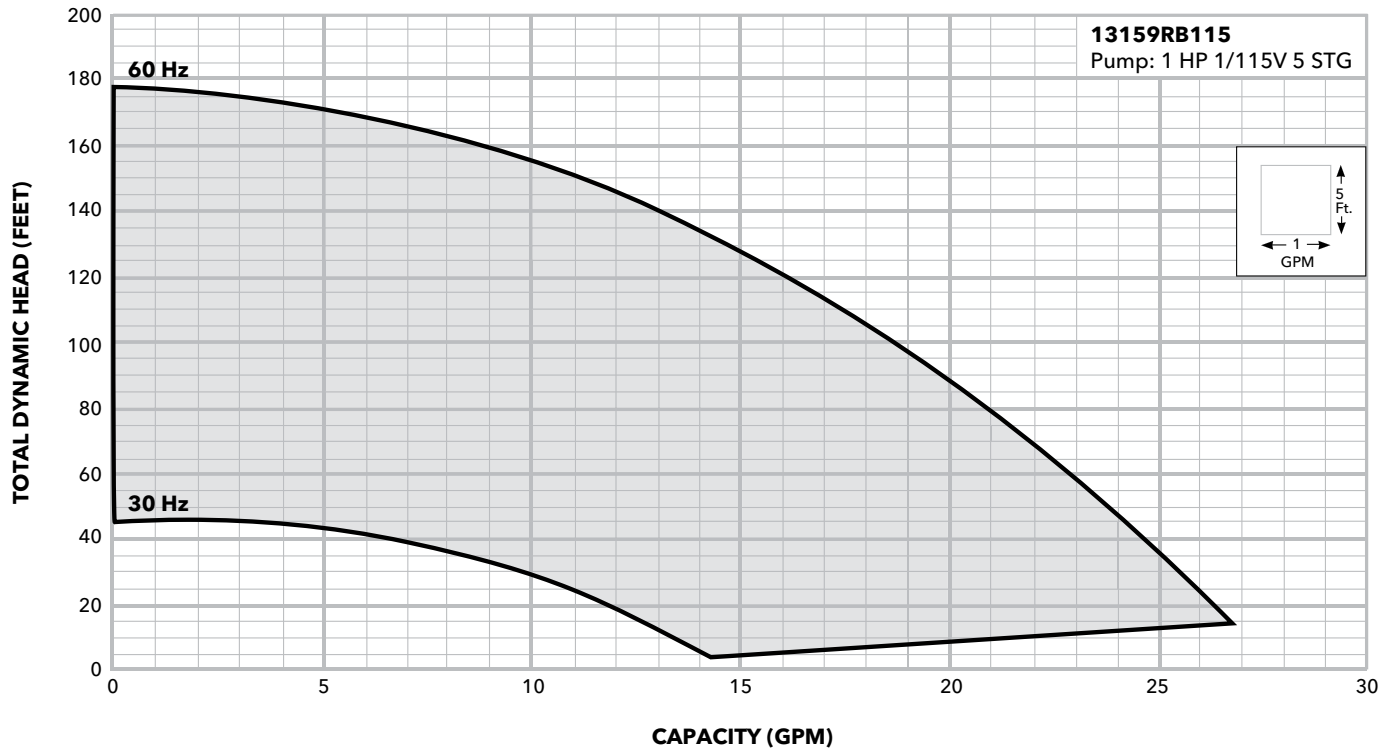


Model	lbs	b1 [in]	b2 [in]	b3 [in]	b4 [in]	b5 [in]
1Ø	6.4	9.1	10.4	1¼" MNPT	9.4	7.7
3Ø						

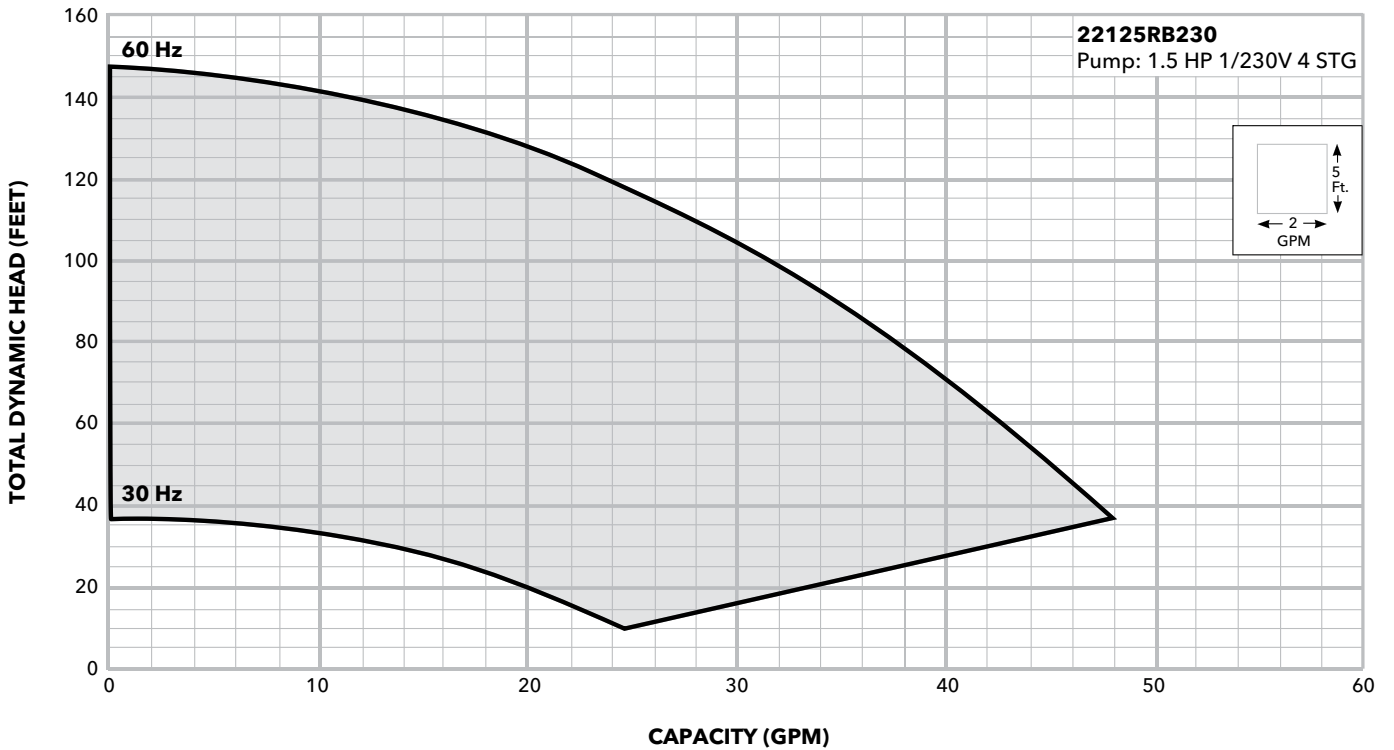
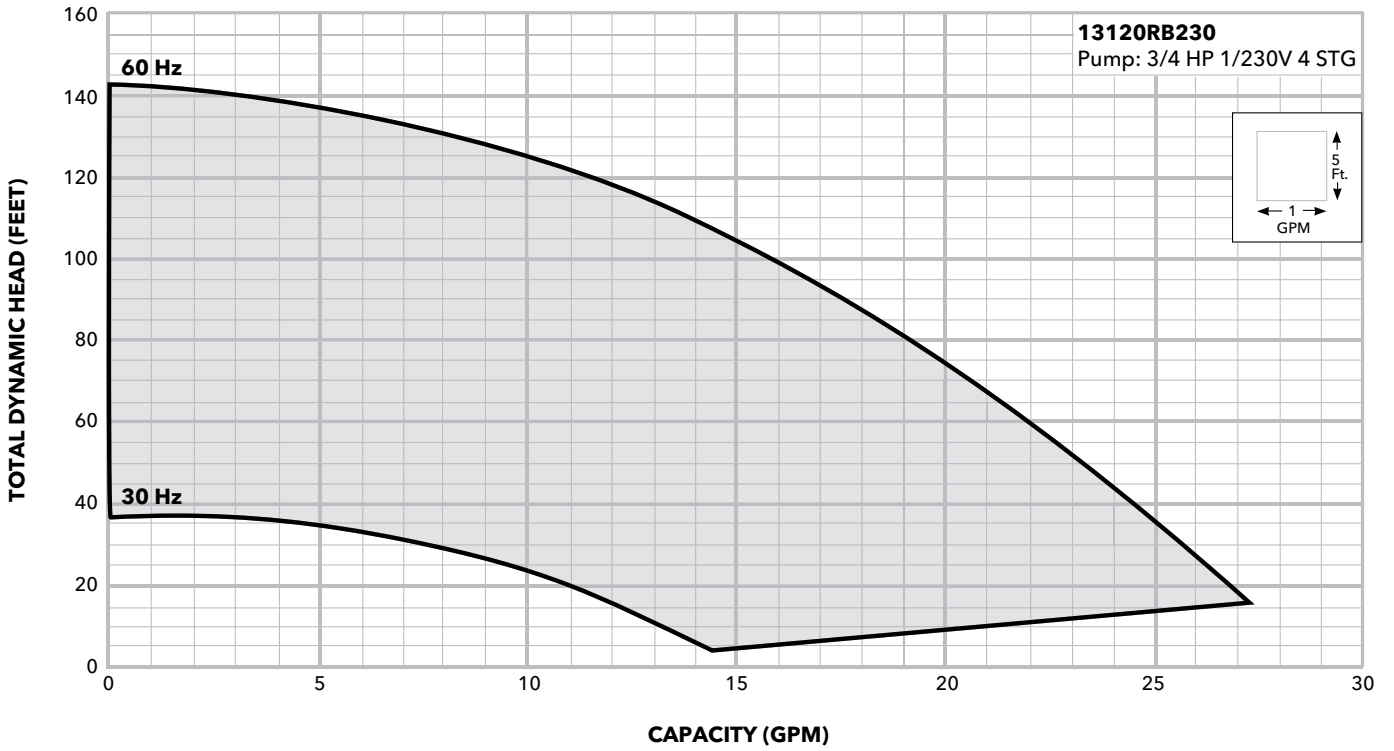
FAMILY CURVE



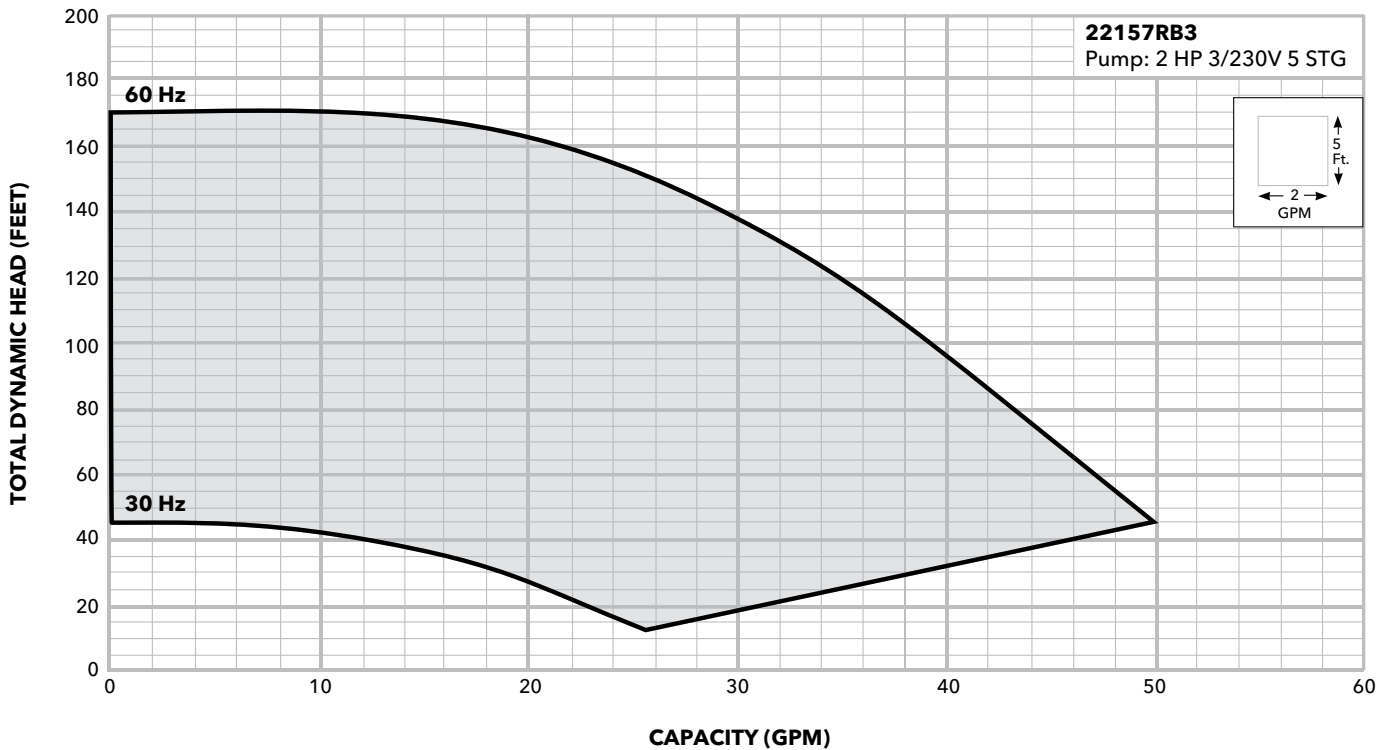
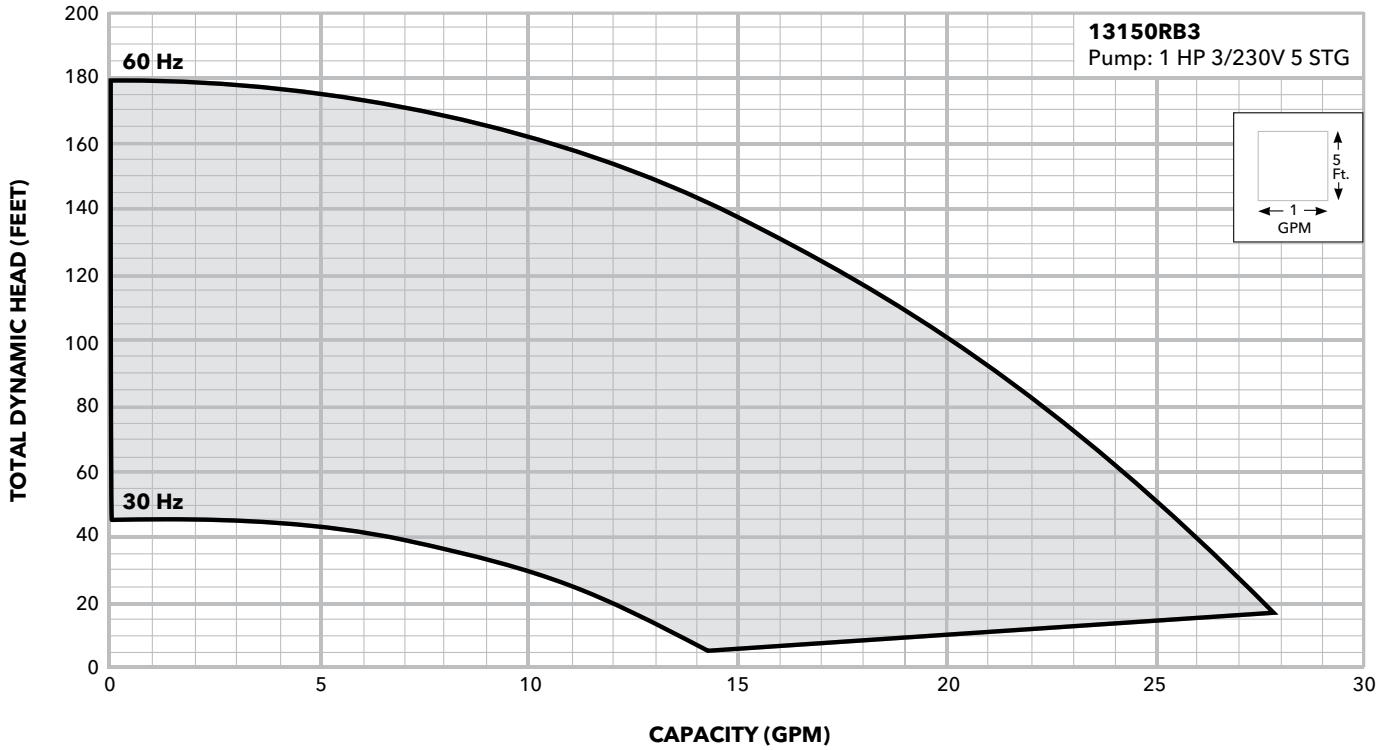
PERFORMANCE CURVES



PERFORMANCE CURVES



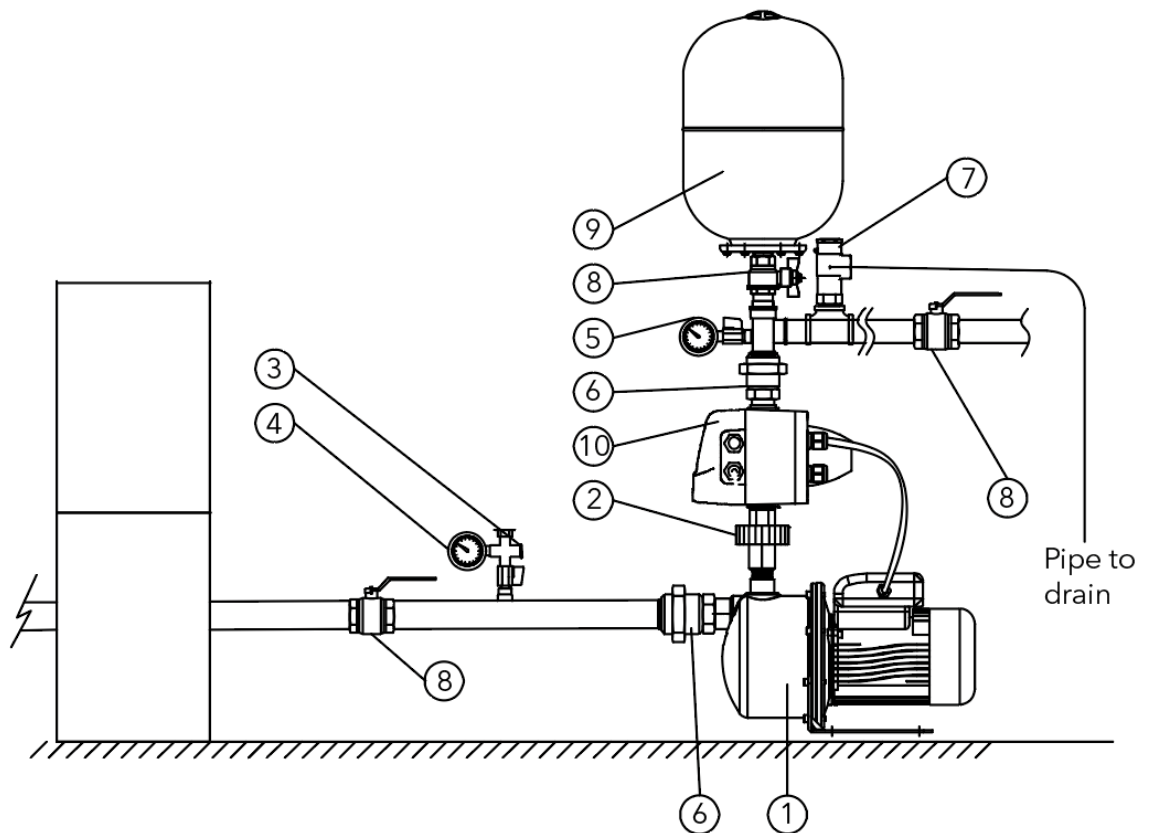
PERFORMANCE CURVES



NOTE: For complete pump information, please reference the BeHM R11 on www.goulds.com.

TYPICAL MUNICIPAL WATER INSTALLATION

No.	Component	Included in the kit
1	Electric pump	√
2	Union with check valve	√
3	Priming port	
4	Vacuum pressure gauge	
5	Discharge pressure gauge	
6	Union	
7	Pressure relief valve	
8	Gate valve	
9	Diaphragm tank	√
10	ResiBoost controller	√





** Available up to 100 GPM systems*

AQUAVAR[®] e-AB2

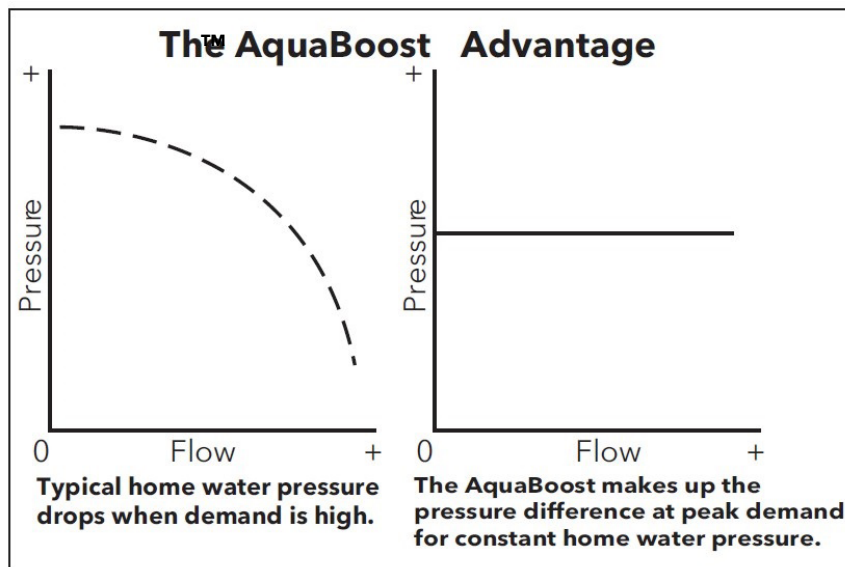
VARIABLE SPEED CONSTANT PRESSURE SYSTEMS

- 3 HP and 5HP Pressure Booster Packages

FEATURES

The e-AB2 variable speed pump controller and complete booster package kits, provide an economical answer for municipal water district customers with low water pressure. Both domestic and light commercial applications can benefit. As water use increases, the controller changes pump speed to maintain pressure. Large supply tanks are eliminated and less wear and tear on your pump and motor.

Think of it as "Cruise Control" for your pump! The e-AB2 is available with a range of flow rates to handle homes with up to four baths, irrigation, filtration and fire suppression systems. Light commercial applications up to 100 GPM at 55 PSI boost. The e-AB2 is available as either a separate controller or as part of a complete pump package with everything you need to plumb it to a domestic water line.



3 HP and 5 HP Controller

AQUAVAR IPC CONTROLLER PROVIDES CONSTANT PRESSURE CONTROL PLUS MORE FOR THE 3 HP AND 5 HP MOTOR SIZES (REPLACES 3AB2 AND 5AB2 CONTROLLER)

FEATURES

- Programmed to motor electrical characteristics; just select set pressure.
- Application specific "Start-Up Genie" guides you through quick and easy commissioning
- Removable, graphical control panel with display
- Alarm Log records the last 5 alarms
- Hand on, Auto on, and Off buttons for easy pump operation at the keypad - No toggling between local and remote operation!
- Capable of controlling up to 2 fixed speed pumps, with one standard drive
- Duplex variable speed pumping control with auto lead/lag and alternate

e-AB2 HYDRAULIC SELECTION (e-HM and MCS)

FEET	PSI BOOST	GPM								
		20	30	40	50	60	70	80	90	100
46	20								5	5
58	25							5	5	5
69	30					5	5	5	5	5
81	35					5	5	5	5	5
92	40			2	2	5	5	5	5	5
104	45			2	2	5	5	5	5	5
116	50			2	2	5	5	5	5	6
127	55			2	2	5	5	6	6	6
139	60			3	3	6	6	6	6	
150	65			3	3	6	6	6		
162	70			3	3	6	6	6		
173	75	1	1	3	3	4				
185	80	1	1	3	4	4				

e-AB2 CONFIGURATIONS (e-HM and MCS)

Selection	Part Number	Description
1	3AVN35HM07	230V 3HP 1" disch, 1.25" suct IPC-N3R
	3AVN15HM07	230V 3HP 1" disch, 1.25" suct IPC-N1
2	3AVN310HM03	230V 3HP 1.25" disch, 1.5" suct IPC-N3R
	3AVN110HM03	230V 3HP 1.25" disch, 1.5" suct IPC-N1
3	5AVN310HM04	230V 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN110HM04	230V 5HP 1.25" disch, 1.5" suct IPC-N1
4	5AVN310HM05	230V 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN110HM05	230V 5HP 1.25" disch, 1.5" suct IPC-N1
5	5AVN3125MS1J2B2	230V 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN1125MS1J2B2	230v 5HP 1.25" disch, 1.5" suct IPC-N1
6	5AVN315HM03	230V 5HP 1.5" disch, 2" suct IPC-N3R
	5AVN115HM03	230V 5HP 1.5" disch, 2" suct IPC-N1

* Selections do not include tank. Recommend bladder tank, sized to 20% of pump flow (gpm). Pressure Transducer supplied with all configurations.

NOTE: PSI is boosting pressure, NOT total system pressure.

ADDENDUM: e-AB2 WITH HSC SELECTION

PSI	FEET	GPM				
		10	20	30	40	50
60	139				1	
70	162			1		
80	185		1			
90	208					
95	219	1				

	Part Number	Description
1	3AVN1HSC30B	230V 3HP 1" disch, 1.25" suct IPC-N1
	3AVN3HSC30B	230V 3HP 1" disch, 1.25" suct IPC-N3R

NOTES:

- MAWP is 125 PSI; performance per chart accounts for zero lift conditions
- Motors are 230V three-phase, ODP design
- Tank not included and wiring by others; supplied with AQUAVAR IPC drive
- Pressure transducer supplied with all configurations.

INPUT AND OUTPUT POWER (VOLTAGE AND PHASE)

- All require single-phase input power
 - All will work on 1Ø, 208-230V input power

- All controllers output three-phase, 230 Volt power
- All pumps are equipped with three-phase motors

3AVN35HM07

- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (e-HM 7 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

3AVN15HM07

- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (e-HM 7 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

3AVN310HM03

- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

3AVN110HM03

- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN310HM04

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (e-HM 4 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN110HM04

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (e-HM 4 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN310HM05

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (e-HM 5 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN110HM05

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (e-HM 5 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN3125MS1J2B2

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (MCS) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN1125MS1J2B2

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (MCS) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN315HM03

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN115HM03

- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

CONTROLLERS ONLY

AVA10030COFOX0X1

- 10.6 Amp, 230v 3HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

AVA10030AOF0X0X1

- 10.6 Amp, 230v 3HP Nema 1, transducer & cable
- Single phase Input; Three phase Output

AVA10050COFOX0X1

- 16.7 Amp, 230v 3HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

AVA10050AOF0X0X1

- 16.7 Amp, 230v 3HP Nema 1, transducer & cable
- Single phase Input; Three phase Output

INPUT AND OUTPUT POWER (VOLTAGE AND PHASE) WITH HSC

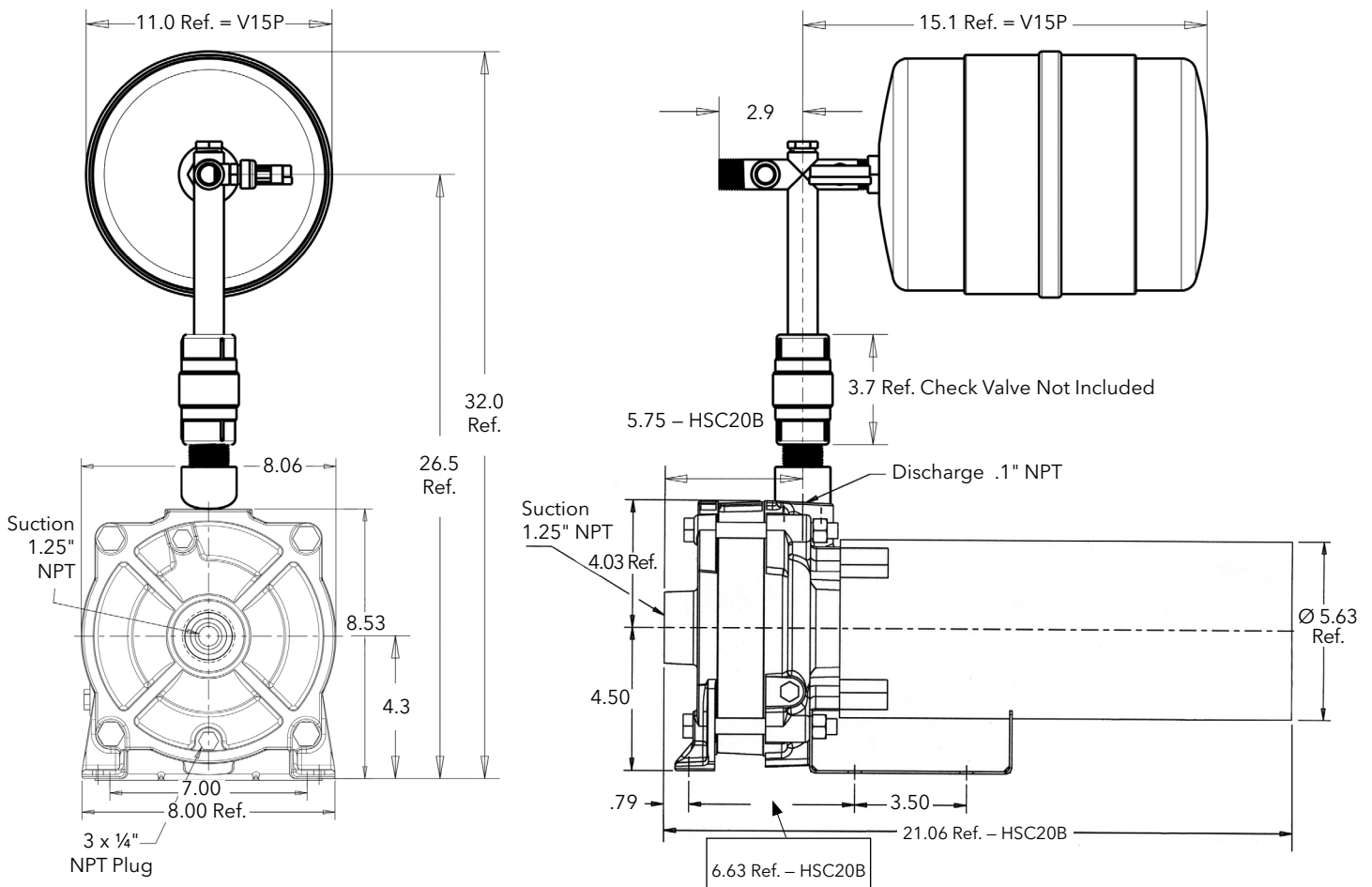
- All require single-phase input power
 - All will work on 1Ø, 208-230V input power
- All controllers output three-phase, 230 Volt power
- All pumps are equipped with three-phase motors

3AVN1HSC20B

- 230V SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 1
- Pump (HSC20B) and Transducer included
- Tank (not included) and wiring (by other)

3AVN3HSC20B

- 230V SINGLE PHASE INPUT
- 3 HP variable speed controller (AQUAVAR IPC); Nema 3R
- Pump (HSC20B) and Transducer included
- Tank (not included) and wiring (by other)



SUGGESTED AB2 INSTALLATION FOR MUNICIPAL WATER SYSTEM

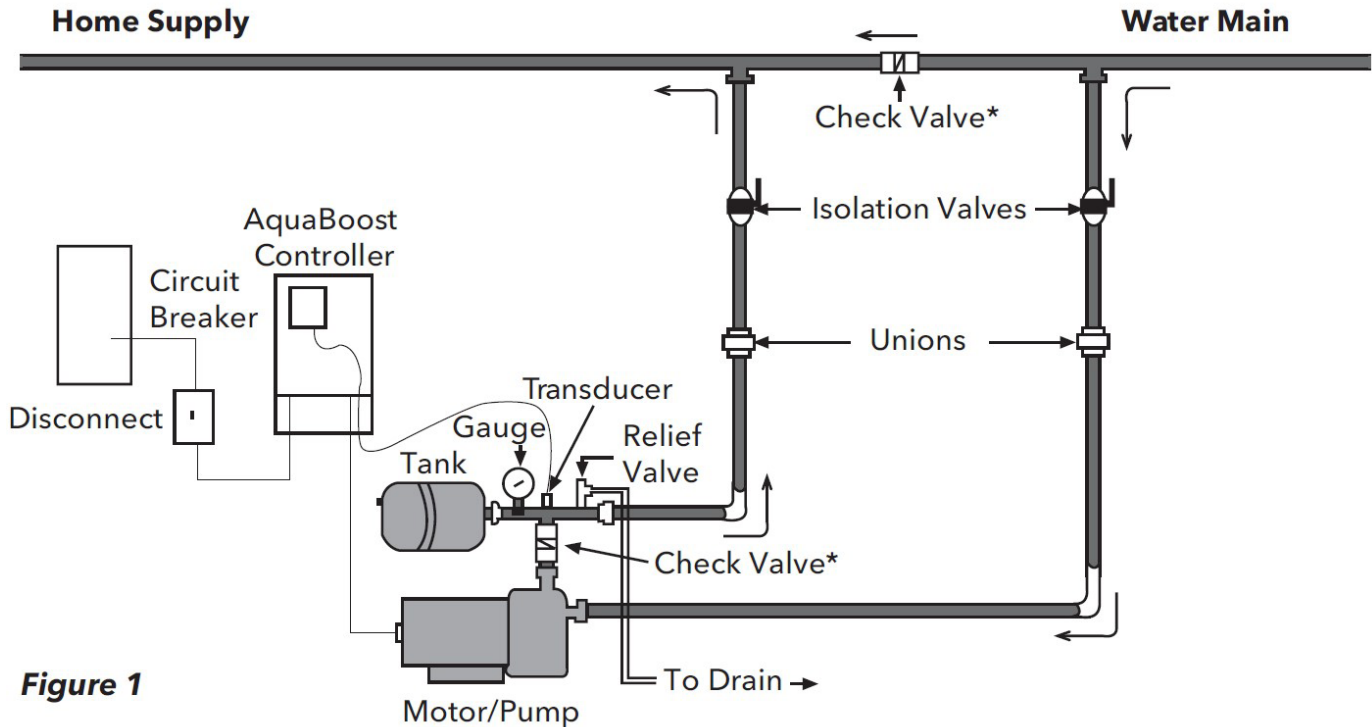


Figure 1

*Spring check valve - provided by installer

SUGGESTED AQUABOOST INSTALLATION FOR WELL PUMP SYSTEM

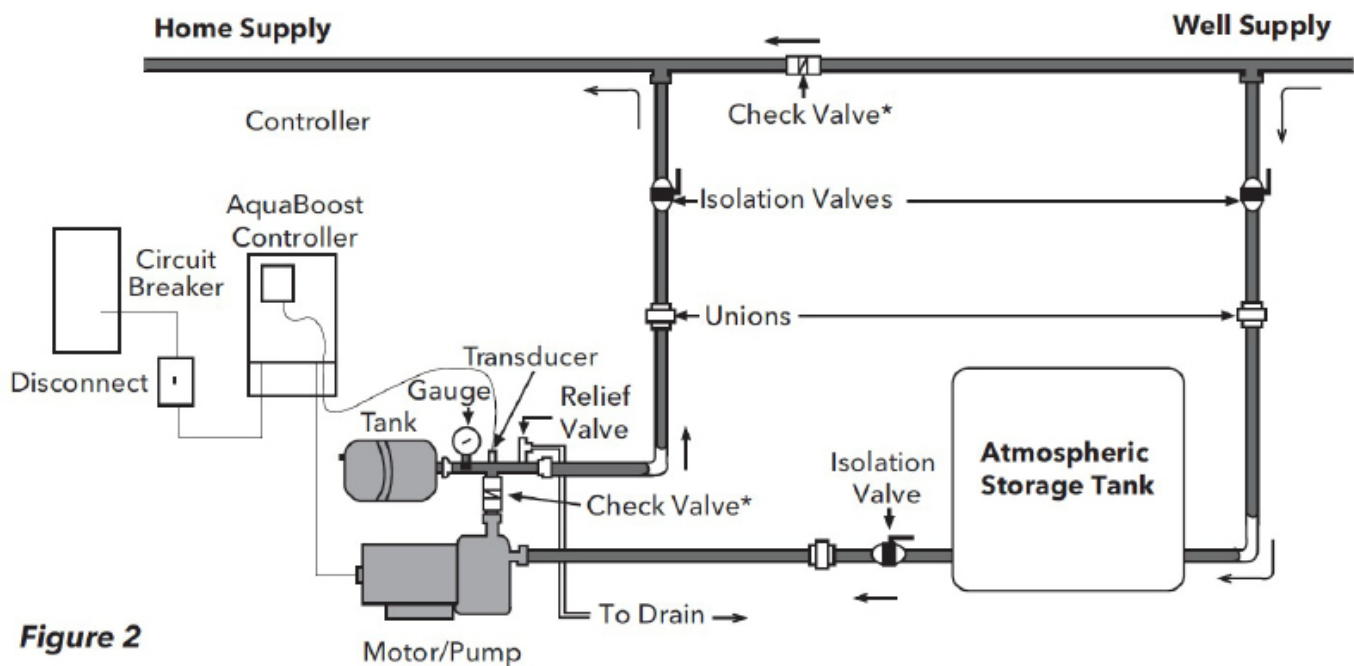
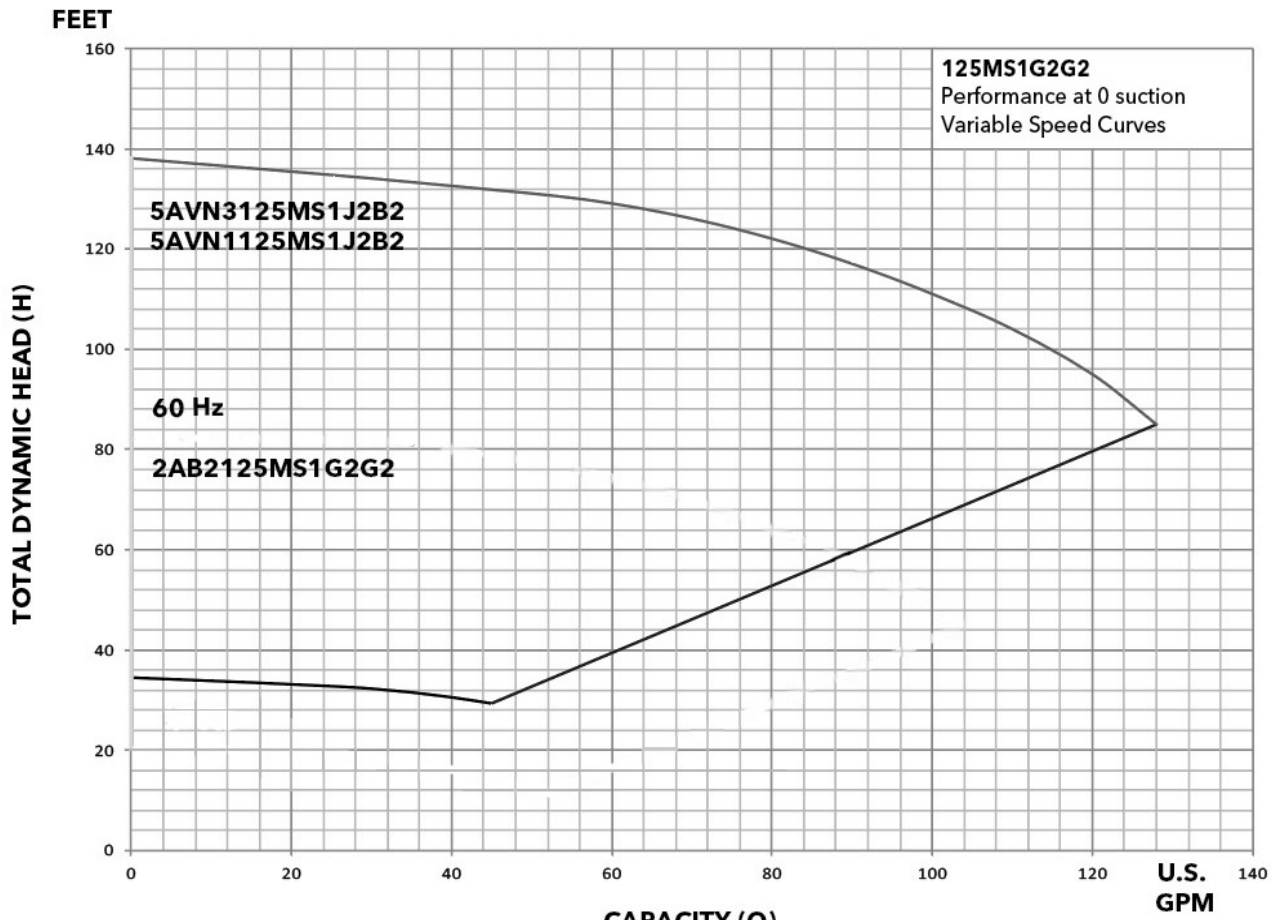
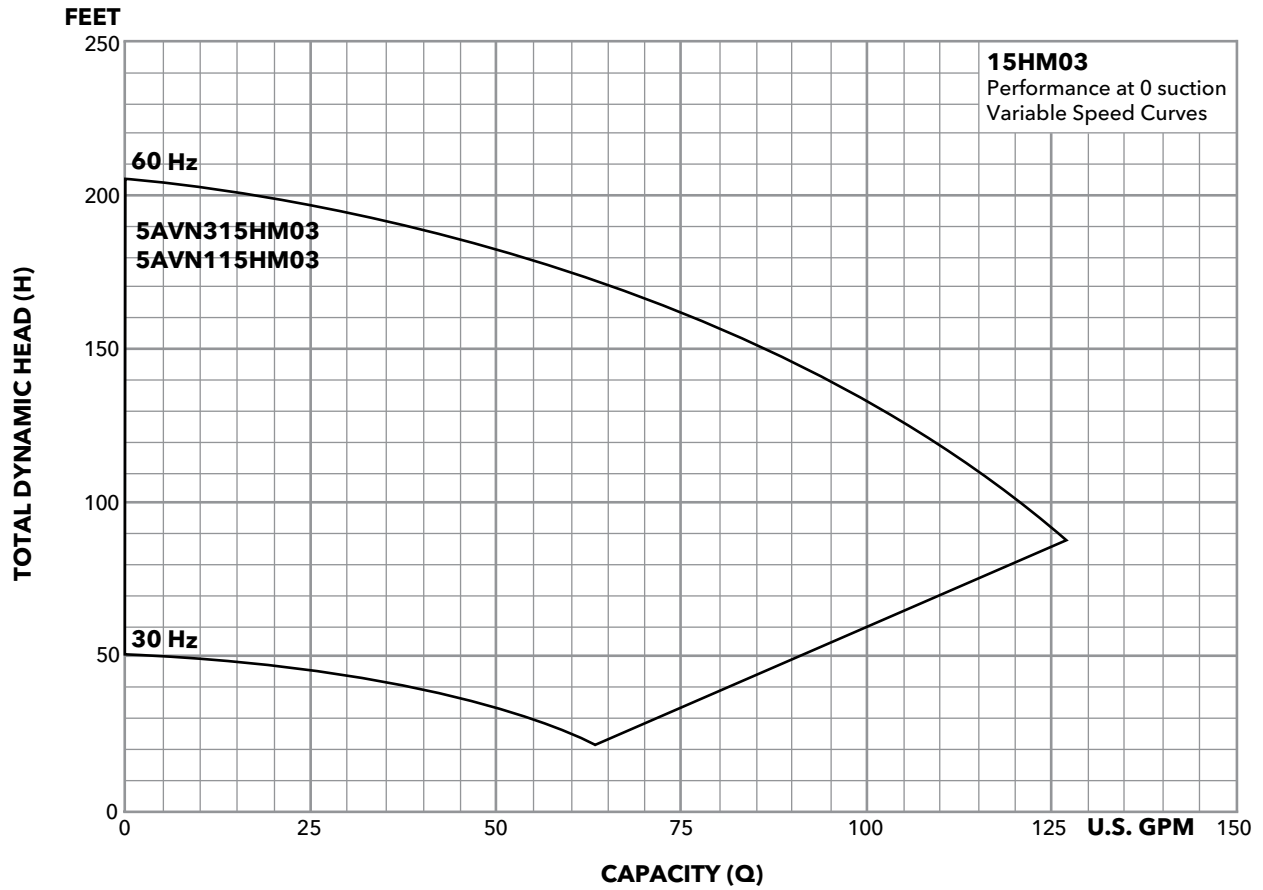
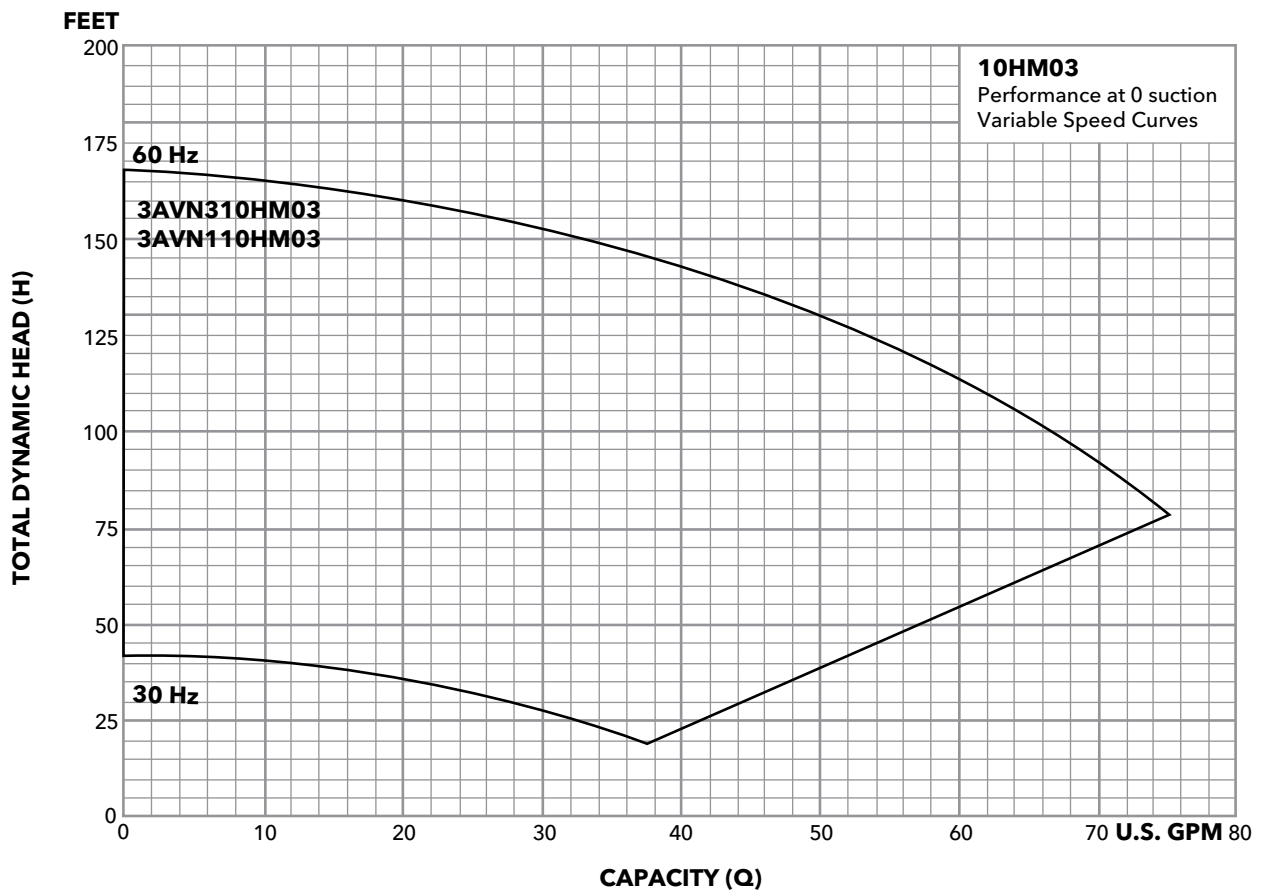
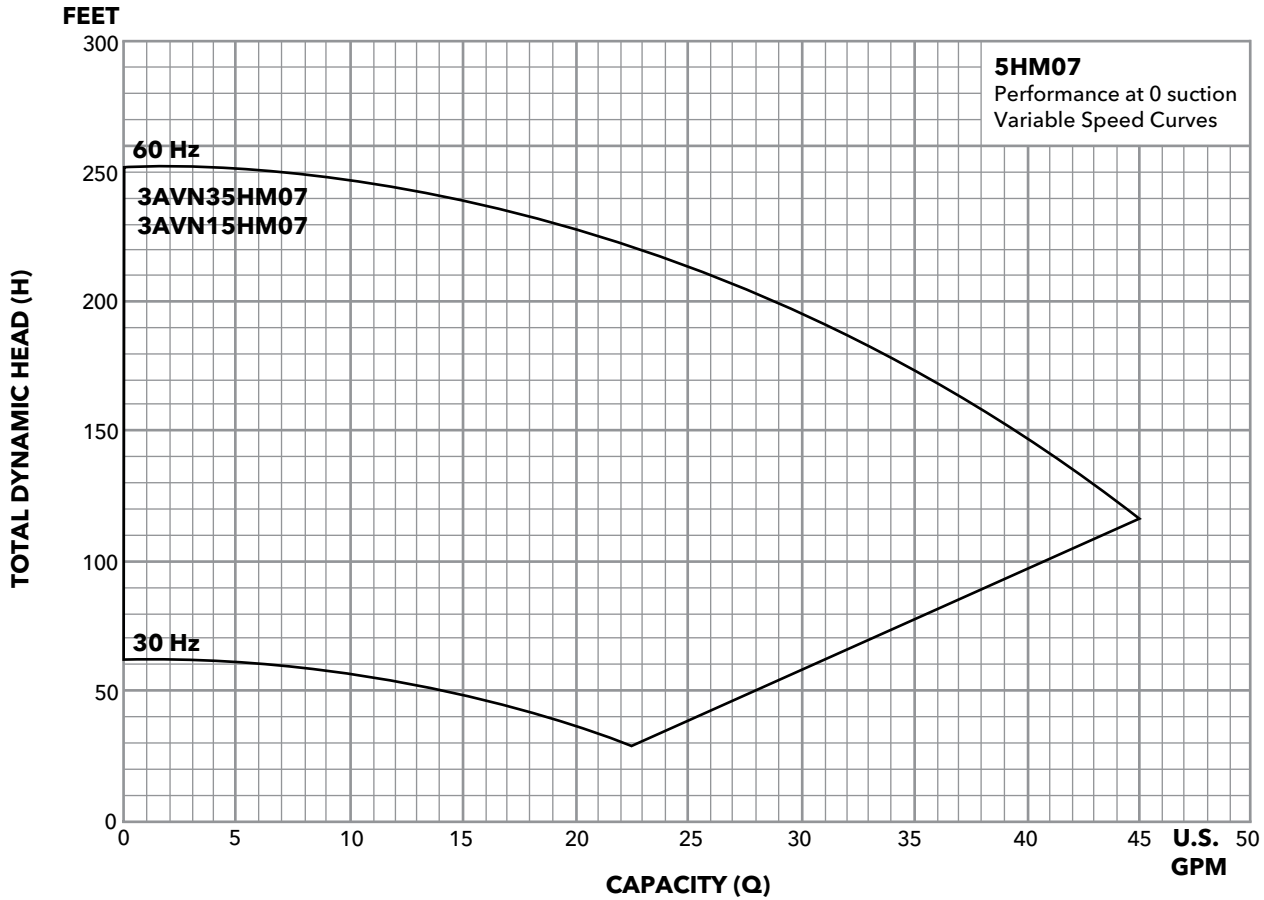
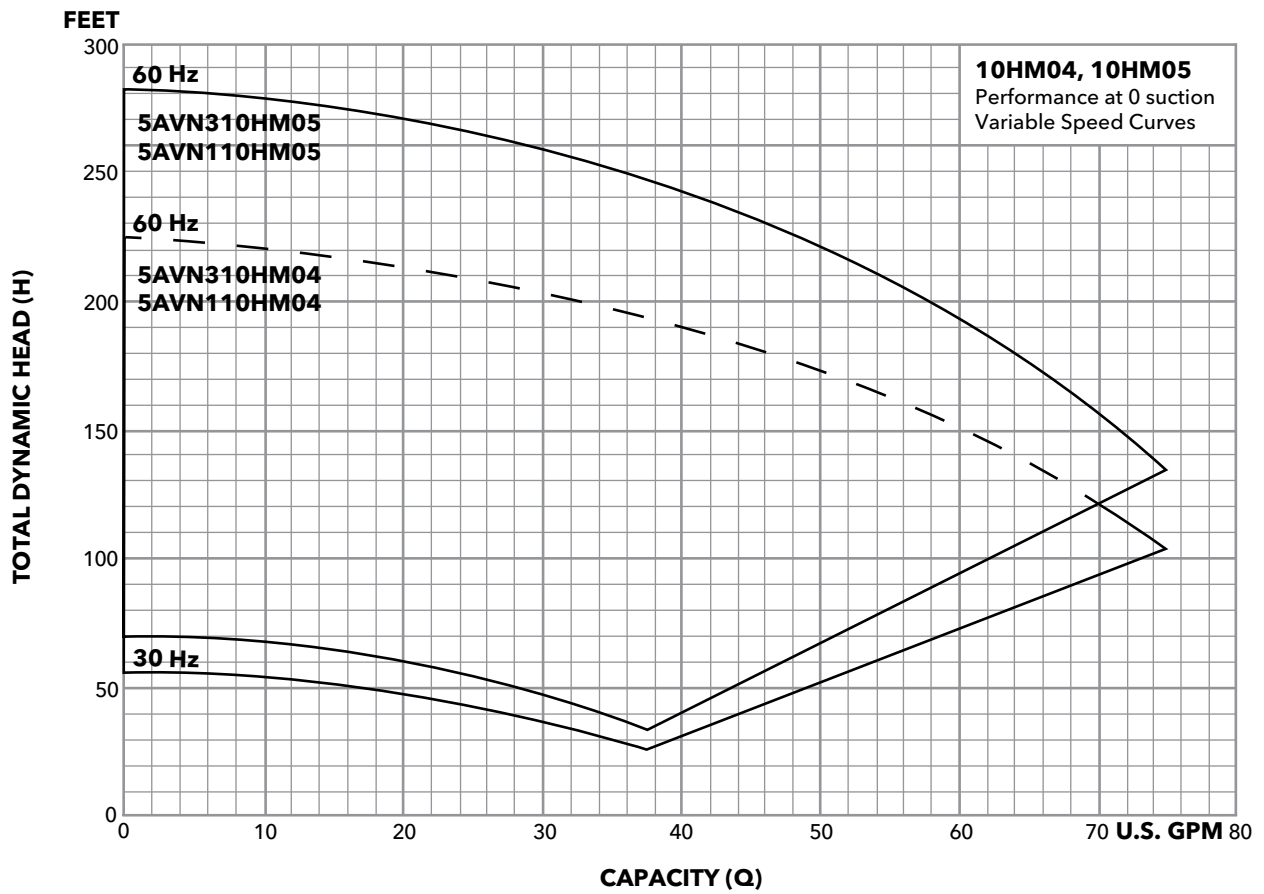


Figure 2

*Spring check valve - provided by installer







AQUAVAR IPC FEATURES

Input Power* – 200V to 240V ±10%, single phase (controller only)

Output Power – Up to 230V three phase (based on input voltage).

Maximum Output Current – 10.6 amps (3 HP)
– 16.7 amps (5 HP)

Input Controls – Keypad; LCD graphical display

Signal Lights – Power on, inverter stopped, standby, warning/alarms; auto ON.



Electrical Efficiency – Over 95% at full load

Protection Against – MOTOR: Ground Fault, Motor Stall, Motor Over Temperature, Motor Condensation, Motor Overload. PUMP: Pump No-Flow, Under Pressure, No Water / Loss of Prime, Short-Cycle.

Ambient Temperature – 34° F to 114° F

Maximum Humidity – 93% at 114° F, non-condensing

Air Pollution – Avoid mounting in areas with excessive dust, acids, corrosives and salts.

Approvals –   (Listing on Controller Only)

Controller Enclosure – Outdoor, NEMA 3R, IP 43 (Rain-tight); Indoor, NEMA 1, IP 21

Mounting – Wall mount

Cooling – Convection with cast aluminum heat sink.
– With temperature fan

Transducer – 4-20 mA power supply, 300 psi range, 16-foot shielded cable.

Input Wire – Supplied by installer, refer to instruction manual

Output Wire – Supplied by installer, refer to instruction manual

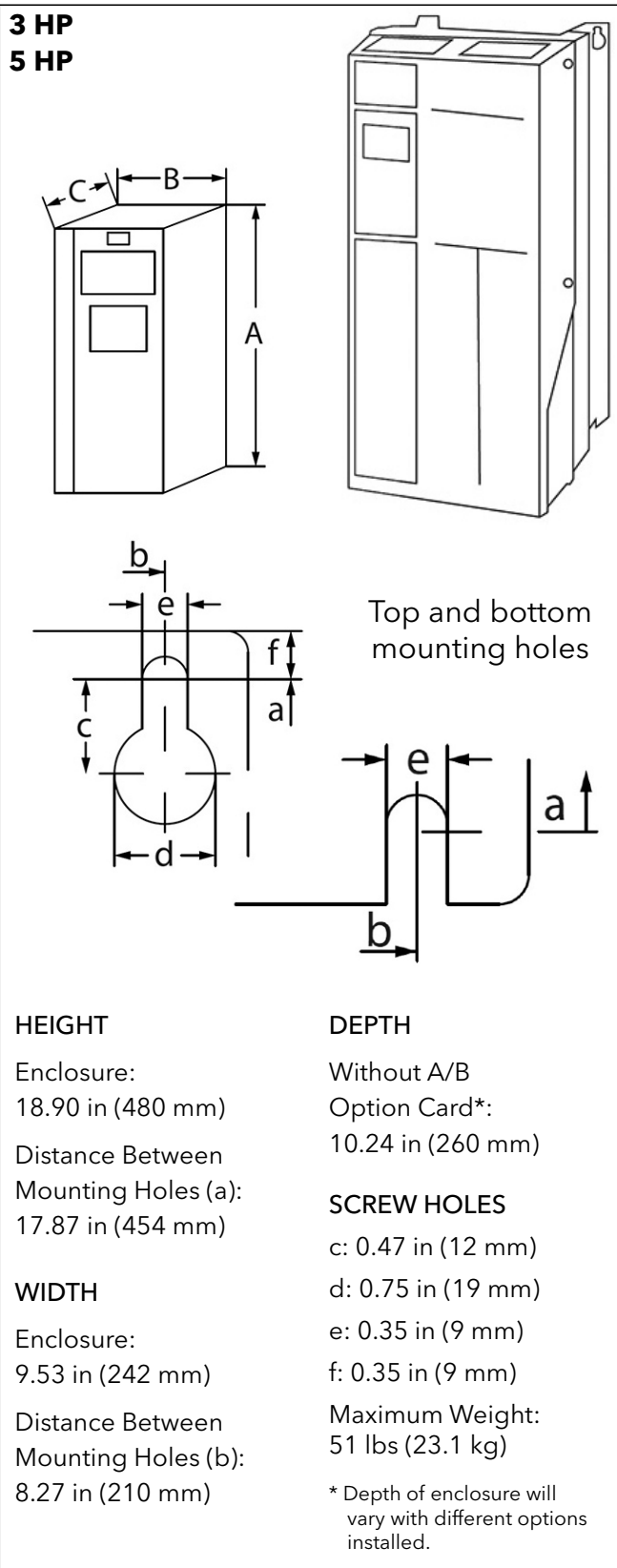
*Low input voltage may affect motor operation.

PRESSURE RANGE

Nominal Range – Field adjustable through 300 psi, total system pressure.



DO NOT SET REQUIRED SYSTEM PRESSURE ABOVE 85 PSI. SEVERE DAMAGE TO PLUMBING COULD RESULT. PLUMB RELIEF VALVE OUTSIDE OR TO A DRAIN.



DIMENSIONS (For Reference Only - Do not use for construction purposes)

MCS PUMP WITH TANK AND TEE

Capacities – to 120 GPM

Rotation – Right hand clockwise,
viewed from motor end

Materials – 316L stainless steel casing
316L impeller

Motor – 5 HP, ODP, Three Phase,
208-230/460V

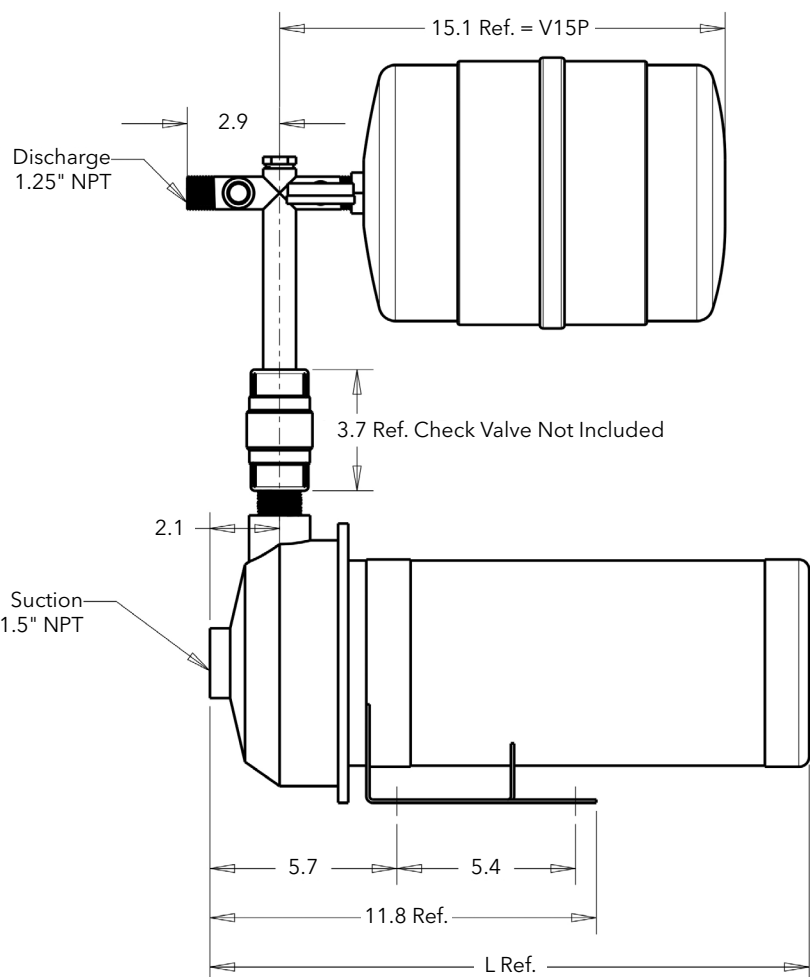
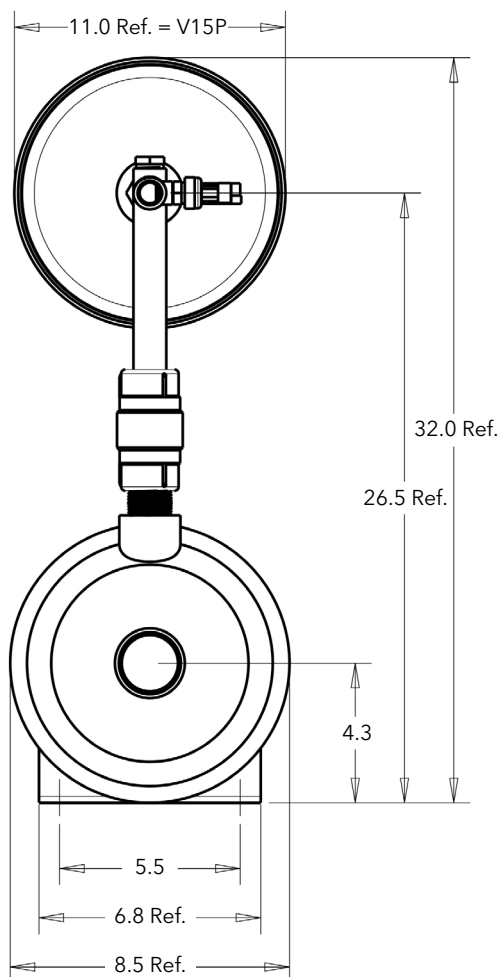
Pump Connections – 1¼ x 1½ NPT

Maximum Temperature of Water – 120° F
NOTE: Tank Liquid Temperature Limit is 120° F
Pump Liquid Temperature Limit is 140° F

Maximum System Working Pressure – 125 psi

Seal – Carbon / Silicon Carbide / EPR

*Overload protection, starters, heaters not required.
Dimensions are in inches.*



Tank and tee not included

DIMENSIONS (For Reference Only - Do not use for construction purposes)

e-HM PUMPS

Capacities – to 45 GPM (5HM)
to 75 GPM (10HM)
to 127 GPM (15HM)

Rotation – Right hand clockwise,
viewed from motor end

Materials – 316L stainless steel for all liquid
handling components

Motor – 3 HP, TEFC, Three Phase, 208-230/460V
(5HM)
– 3 HP, TEFC, Three Phase, 208-230/460V (10HM)
– 4 HP, TEFC, Three Phase, 208-230/460V (10HM)
– 5.5 HP, TEFC, Three Phase, 208-230/460V
(10HM/15HM)

Pipe Connections – 1 x 1¼ NPT (5HM)
– 1¼ x 1½ NPT (10HM)
– 1½ x 2 NPT (15HM)

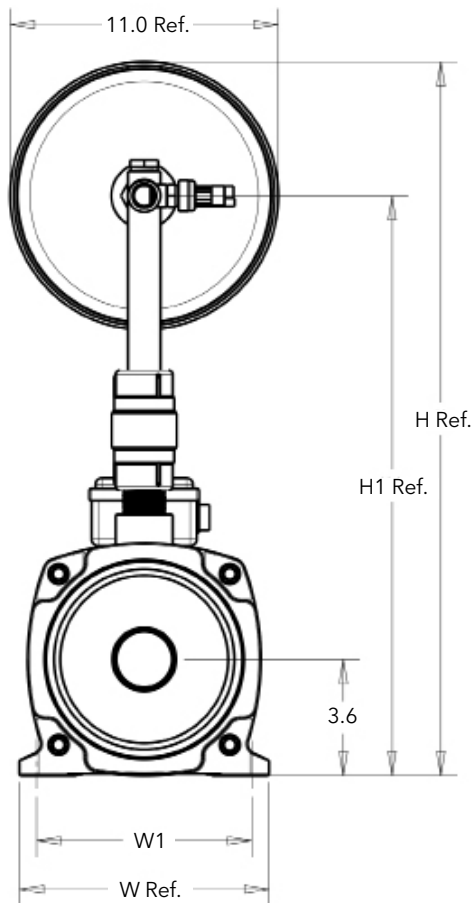
Maximum Temperature of Water – 120° F

NOTE: Tank Liquid Temperature Limit is 120° F
Pump Liquid Temperature Limit is 212° F

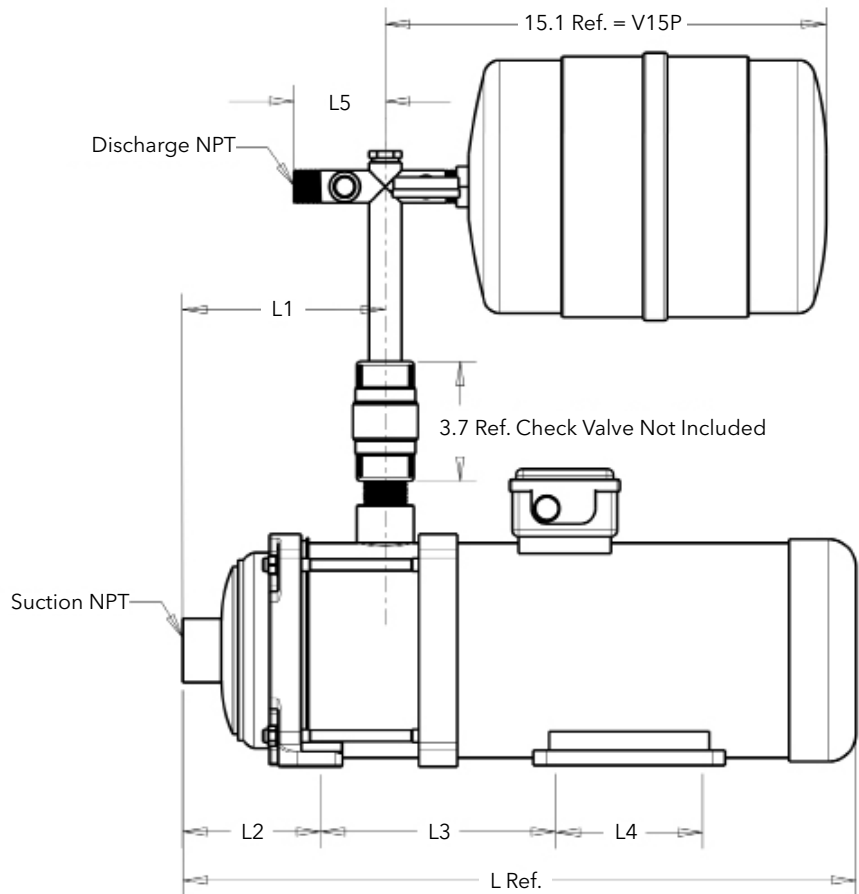
Maximum System Working Pressure – 85 psi

Seal – Carbon / Silicon Carbide / EPR

Overload protection, starters, heaters not required. Dimensions are in inches.



Tank and tee not included



ELEVATION DIMENSIONS - REFERENCES PAGES 14 - 16

	Tank and Tee assembly incl.	L	L1	L2	L3	L4	L5	D	H				Suction	Discharge	Page
													NPT	NPT	
125MS1J2B2BP	No	18.3													12
		L	L1	L2	L3	L4	L5	H	H1	W	W1	Suction NPT	Discharge NPT	Page	
5HM07N22T6PBQEBP	No	25.1	7.2	4.2	14.7	4.9	2.8	23.4	17.9	6.5	5.5	1.25"	1"	13	
10HM03N22T6PBQEBP	No	19.5	4.9	4.3	5.7	4.9	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	13	
10HM04N30T6PBQEBP	No	20.8	6.2	4.3	6.9	4.9	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	13	
10HM05N40T6PBQEBP	No	23.3	7.5	4.3	9.0	5.5	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	13	
15HM03N40T6PBQEBP	No	22.2	5.8	4.3	6.9	5.5	2.9	30.7	25.2	7.7	6.6	2"	1.5"	13	

SUBMERSIBLE PUMPS: Use AQUAVAR SOLO² or S-Drive controllers for submersible applications, they have filters built-in and are programmed for submersibles; alternatively AQUAVAR IPC with use with DV/DT filter can be used for submersible applications.

PACKAGED HARDWARE WITHOUT PUMP AND MOTOR (SEE PRICING PAGE)

Part Number 15K40

KIT INCLUDES:

- 1) Tank - V6P (2 gallons)
- 2) 1" Bronze Discharge Tee - AV20-6
- 3) Pipe Plug - 1/2", 6K68
- 4) Pressure Gauge

Part Number 15K108

KIT INCLUDES:

- 1) Tank - V15P
- 2) 1 1/4" Bronze Discharge Tee - AV20-12
- 3) Pipe Plug - 1/2", 6K68
- 4) Pressure Gauge



FEATURES

- Voltage Relays for installer convenience
- 115 and 230 volt models
- 208 volt relay available for low voltage applications
- Start Capacitors with resistors
- NEMA 3R enclosure for indoor or outdoor mounting
- Quick disconnect cover design will retrofit with other Q-D control boxes
- Multiple knockouts
- Two grounding lugs

AGENCY LISTINGS



TESTED TO UL AND CSA STANDARDS BY UL.

Quick Disconnect Control Boxes

FOR 4", 1Ø, 3-WIRE SUBMERSIBLE MOTORS

GOULDS ORDER NUMBERS ORDER NUMBERS

Control Box Order Number	HP	KW	Volts	Replaces old #	May Replace FE #	Standard Circuit Breaker	Standard Fuse	Dual Element Time Delay Fuse	Enclosure Dimensions W x D x H (in)	Shipping Wt. (lbs)
CB05411	.5	.37	115	00043	280 104 49	30 A	35 A	20 A	4.8 x 2.9 x 8.4	4
CB05412	.5	.37	230	00044	280 105 49	15 A	20 A	10 A	4.8 x 2.9 x 8.4	4
CB07412	.75	.55	230	00054	280 107 49	20 A	25 A	15 A	4.8 x 2.9 x 8.4	4
CB10412	1	.75	230	00064	280 108 49	25 A	30 A	20 A	4.8 x 2.9 x 8.4	4

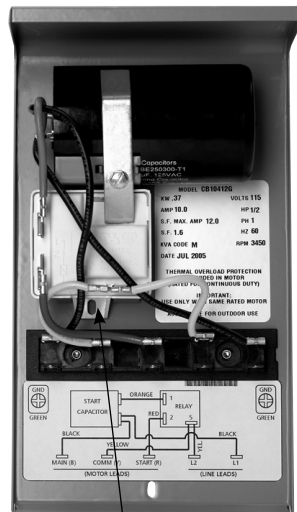
"K" REPAIR PARTS FOR QUICK DISCONNECT STYLE CONTROL BOXES*

Goulds Control Box Order Number	HP	Volts	Capacitor Repair Part Order Number	Start Capacitor Mfd.	Capacitor Voltage	Capacitor Quantity	Start Relay Order Number
CB05411	.5	115	9K450	250-300	125	1	① 9K457 ② 9K566
CB05412			9K448	59-71			① 9K462 ② 9K567
CB07412	.75	230	9K449	86-103			
CB10412	1		9K447	105-126			

* Repair parts above will work in new voltage relay control boxes as well as in control boxes shown in "Replaces Column" above.

- ① First Design - Up to June 2009 - Relay tab on bottom, capacitor held by bracket and screw. See pictures below. 208 V use 9K461 relay.
- ② Current Design - Starting June 2009 - Relay tab on top and capacitors, all held by one screw. See pictures below. The relays are designed for operation in a specific orientation, therefore there are two different numbers now. 208 V use 9K568 relay.

First Design



Tab Down ①

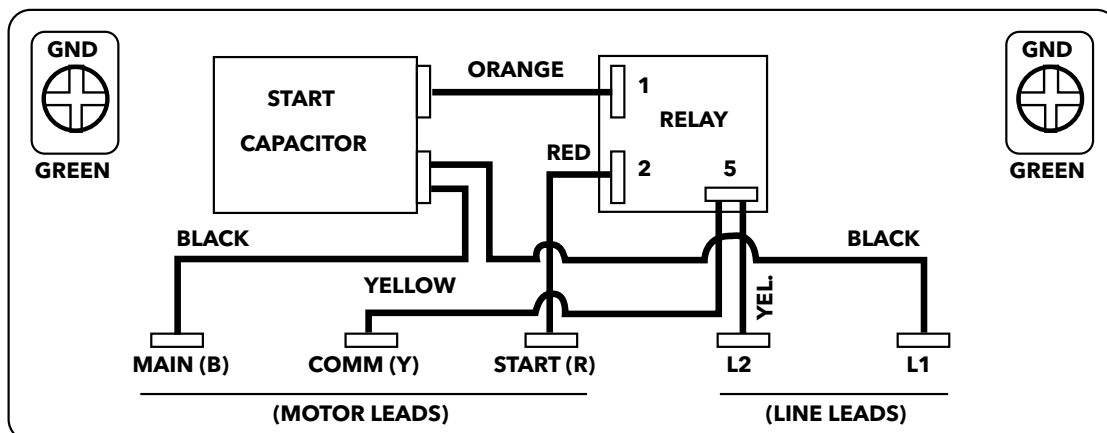
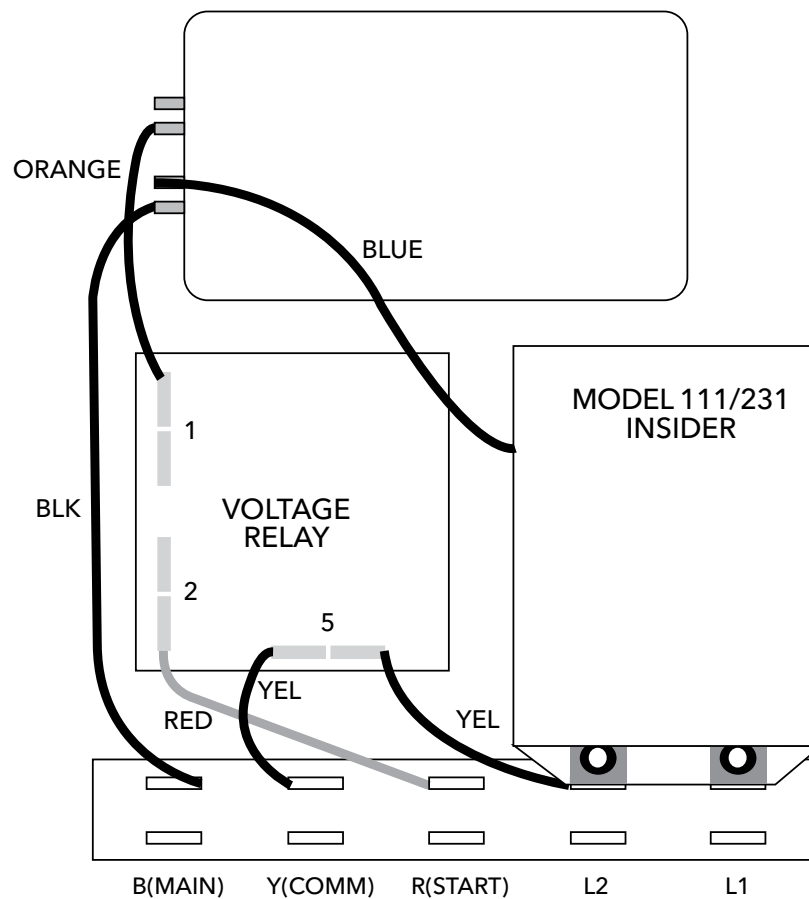
Current Design



Tab Up ②

INSTALLING A PumpSaver® INSIDER

1. Remove the cover from the front of the 3-wire Goulds control box.
2. Remove the yellow wire from the terminal strip at L2.
3. Remove the black wire from L1 to the capacitor.
4. Press the PumpSaver onto the L1 and L2 terminals.
5. Reconnect the yellow wire to L2 on the PumpSaver.
6. Connect the blue wire attached to the PumpSaver to the dual-lug terminal (with the black wire) of the capacitor.





FEATURES

Voltage Relay for installer convenience

230 volt models - 208 volt relay, 9K479, available for low voltage applications

Start Capacitors for starting torque

Run Capacitors for efficiency and quiet operation

Type 3R enclosure for indoor or outdoor mounting

Accepts up to #2 AWG wire

Multiple knockouts and two ground terminals

Higher HP models require heavy duty pressure switches - See Magnetic Contactor version to use standard pressure switches

Manual reset overloads on 1½ - 5 HP models

AGENCY LISTINGS



TESTED TO UL AND CSA STANDARDS BY UL.

CSCR 1Ø Control Boxes

CAPACITOR START - CAPACITOR RUN FOR 3-WIRE, ½ - 5 HP SUBMERSIBLE MOTORS

FOR USE WITH 3 WIRE, 1Ø, 4" GOULDS MOTORS

Control Box Order Number	HP	KW	Volts	May Replace GP #	May Replace RJ #	Standard Circuit Breaker	Standard Fuse	Dual Element Time Delay Fuse	Enclosure Dimensions W x D x H (in)	Shipping Wt. (lbs)
CB05412CR	0.5	.37	230	-	50F311CB S50N1CB, A50N1CB	10	15	10	8.1 x 5.9 x 9.3	7
CB07412CR	.75	.55		-	75F311CB S75N1CB, A75N1CB	15	20			
CB10412CR	1	.75		-	S100F311CB S100N1CB, A100N1CB					
CB15412CR	1.5	1.1		00074	150F311CB S150N1CB, A150N1CB	25	30	15		
CB20412CR	2	1.5		00084	200F311CB S200N1CB, AS200T1CB			20		
CB30412CR	3	2.2		00094	300F311CB S300N1CB	40	45	25		
CB50412CR	5	3.7		00104	500F311CB S500N1CB	60	80	45		8

"K" REPAIR PARTS

Control Box Order Number	HP	Volts	Old Control Box Order Number	Capacitor Repair Part Number	Capacitor Mfd.	Capacitor Type	Capacitor Voltage	Capacitor Quantity	Overload Order Number ②	Start Relay Order Number ①
CB05412CR	.5	230	-	9K465	43-53	Start	250	1	N/A	9K458
				9K466	15	Run	370			
CB07412CR	.75		-	9K448	59-71	Start	250		N/A	9K458
				9K467	23	Run	370			
CB10412CR	1		-	9K449	86-103	Start	250		N/A	9K458
				9K467	23	Run	370			
CB15412CR	1.5		00074	9K447	105-126	Start	250		9K471	9K458
		9K466		15	Run	370				
CB20412CR	2	00084	9K447	105-126	Start	250	9K481		9K458	
			9K451	20	Run	370				
			9K453	208-250	Start	250				
CB30412CR	3	00094	9K454	45	Run	370	9K482	9K459		
			9K455	270-324	Start	330				
CB50412CR	5	00104	9K456	40	Run	370	2		9K483	

① If supply voltage is between 200V-210V a 208V start relay, order no. 9K479, is required.

② Overload for 2, 3, and 5 HP CSCR boxes are sold prewired and soldered as an assembly. No field soldering or wiring required.



1½ - 3 HP

5 HP is in larger enclosure

FEATURES

Built-in Magnetic Contactors allow the use of standard pressure switches, prolong switch life and eliminate the need to source and install separate contactors, saving installation time and reducing total system component costs.

Voltage Relay for installer convenience

230 volt standard models - 208 volt relay, 9K479 available for low voltage applications

Start Capacitors for starting torque

Run Capacitors for efficiency and quiet operation

Type 3R enclosure for indoor or outdoor mounting

Accepts up to #2 AWG wire

Multiple knockouts and two ground terminals

Manual reset overloads on 1½ - 5 HP models

AGENCY LISTINGS



TESTED TO UL AND CSA STANDARDS BY UL.

Magnetic Contactor 1Ø Control Boxes

FOR 3-WIRE, 1½ - 5 HP SUBMERSIBLE MOTORS

MAGNETIC CONTACTOR (MC) CONTROL BOXES FOR 3 WIRE, 1Ø, 4" GOULDS WATER TECHNOLOGY MOTORS AND 4" (6", 5 HP) FRANKLIN ELECTRIC MOTORS

Control Box Order Number	HP	KW	Volts	Replaces GWT #	Replaces RJ #	May Replace FE #	Standard Circuit Breaker	Standard Fuse	Dual Element Time Delay Fuse	Enclosure Dimensions W x D x H (in)	Shipping Wt. (lbs)
CB15412MC	1.5	1.1	230	No Equal	No Equal	No Equal	30	35	20	8.1 x 5.9 x 9.3	8
CB20412MC	2	1.5	230	00084MC	No Equal	2823018310	25	30	20		
CB30412MC	3	2.2	230	00094MC	S300N1CBC	2823028310	40	45	30		
CB50412MC	5	3.7	230	00104MC	S500N1CBC	2821139310	60	80	45	11 x 6.7 x 12.5	15

"K" REPAIR PARTS FOR MAGNETIC CONTACTOR "MC" CONTROL BOXES

Control Box Order Number	HP	KW	Volts	Capacitor Repair Part Number	Capacitor Type	Capacitor Mfd.	Capacitor Voltage	Capacitor Quantity	Contactor Order Number	Overload Order Number	Start Relay Order Number ①
CB15412MC	1.5	1.1	230	9K447	Start	105-126	250	1	9K485	9K493	9K458
				9K466	Run	15	370			9K480 (S)	
CB20412MC	2	1.5		9K447	Start	105-126	250			9K472 (M)	
				9K451	Run	20	370			9K473 (S)	
CB30412MC	3	2.2		9K453	Start	208-250	250			9K474 (M)	9K459
				9K454	Run	45	370			9K475 (S)	
CB50412MC	5	3.7		9K455	Start	270-324	330	1	9K486	9K476 (M)	
				9K456	Run	40	370	2			

Repair parts above are compatible with and replace parts in Goulds Water Technology or Franklin Electric control boxes.

① If supply voltage is between 200 V - 210 V a 208 V start relay, order no. 9K479, is required.

FEATURES

Built-in magnetic contactors allow the use of standard pressure switches, prolong switch life and eliminate the need to source and install separate contactors. This will save installation time and reduce total system component costs.

Voltage Relay for installer convenience

230 volt standard models

Start capacitors for starting torque

Run capacitors for efficiency and quiet operation

Type N3R enclosure for indoor or outdoor mounting

Multiple knockouts and two ground terminals

Manual reset overload circuit breakers

AGENCY LISTINGS



TESTED TO UL AND CSA STANDARDS BY UL.

Magnetic Contactor 1Ø Control Boxes

FOR 6", 5 - 15 HP GOULDS WATER TECHNOLOGY SUBMERSIBLE MOTORS

CONTROL BOXES FOR 6" GOULDS WATER TECHNOLOGY (HITACHI) SINGLE-PHASE MOTORS*

Control Box Order Number	Use On Motor No.	HP	Volts	Capacitor Ratings (Mfd)		Contactor Rating	Overload Circuit Breaker	Enclosure Dimensions	Shipping Weight (lbs.)
				Start Caps	Run Caps				
CB05MC3R	6M051	5	230	189-227 / 330V	30 / 440V	30A	30A	12.5" H x 11" W x 6.7" D	15
CB07MC3R	6M071	7.5		243 - 292 / 330V	40 / 440V	50A	50A		
CB10MC3R	6M101	10		161 - 193 / 330V (Qty 2)	(2) 25 / 440V	75A	60A	17.5" H x 11" W x 6.7" D	27
CB15MC3R	6M151	15		216 - 260 / 330V (Qty 2)	(2) 35 / 440V	90A	90A		
CB15MC3R100 ①							100A		

① Overload circuit breaker is rated at 100 amps versus 90 amp standard in CB15MC. Use in areas with high ambient temperatures to reduce nuisance tripping.

CONTROL BOXES FOR 6" FM SERIES SINGLE-PHASE MOTORS

Control Box Order Number	Use On Motor No.	HP	Volts	Capacitor Ratings (Mfd)		Contactor Rating	Overload Circuit Breaker	Enclosure Dimensions	Shipping Weight (lbs.)
				Start Caps	Run Caps				
CB05MC3RF	6F051	5	230	216-260	(2) 30	30A	30A	12.5"H x 11"W x 6.7"D	15
CB07MC3RF	6F071	7.5		(2) 189-227	(1) 60	50A	50A		
CB10MC3RF	6F101	10		216-260	(2) 50	70A	60A	17.5"H x 11"W x 6.7"D	27
CB15MC3RF	6F151	15				90A	80A		

Note: FM Series control boxes are designed for use with FM Series 6" motors only. Use with motor part numbers "6F...".

Motor overload circuit breaker size based on FLA of motor. FM Series motor can only use 80 A.O.L. breaker.

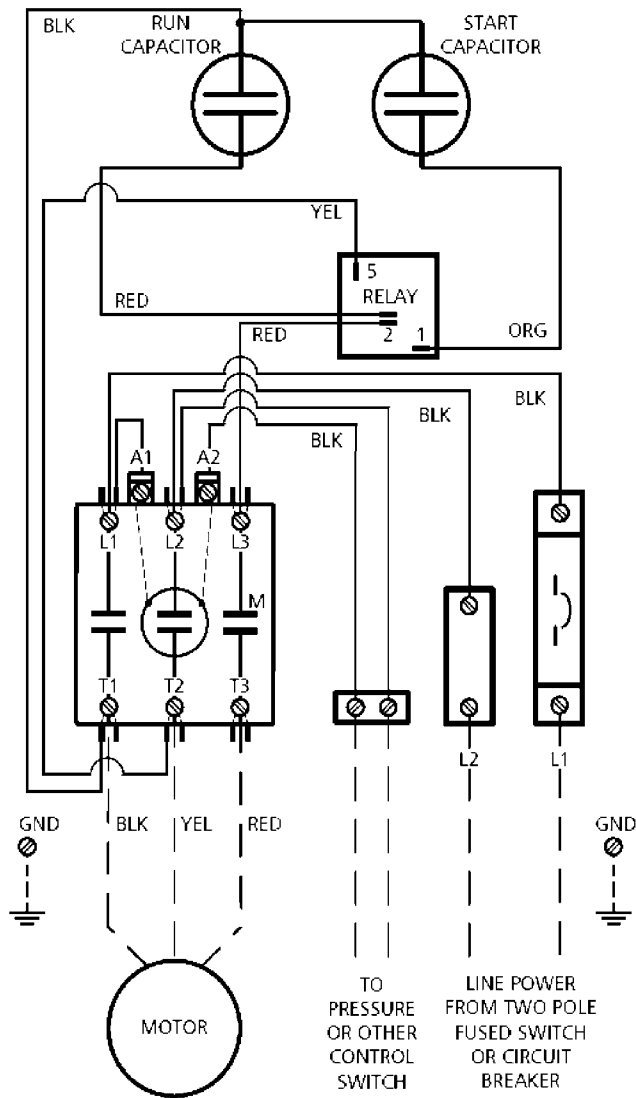
Do not use these control boxes on Franklin Electric 6" motors as the overloads and capacitors are not the same as used by Franklin Electric. Using these will void Franklin Electric's warranty.

6" MOTOR CONTROL BOX PART LIST

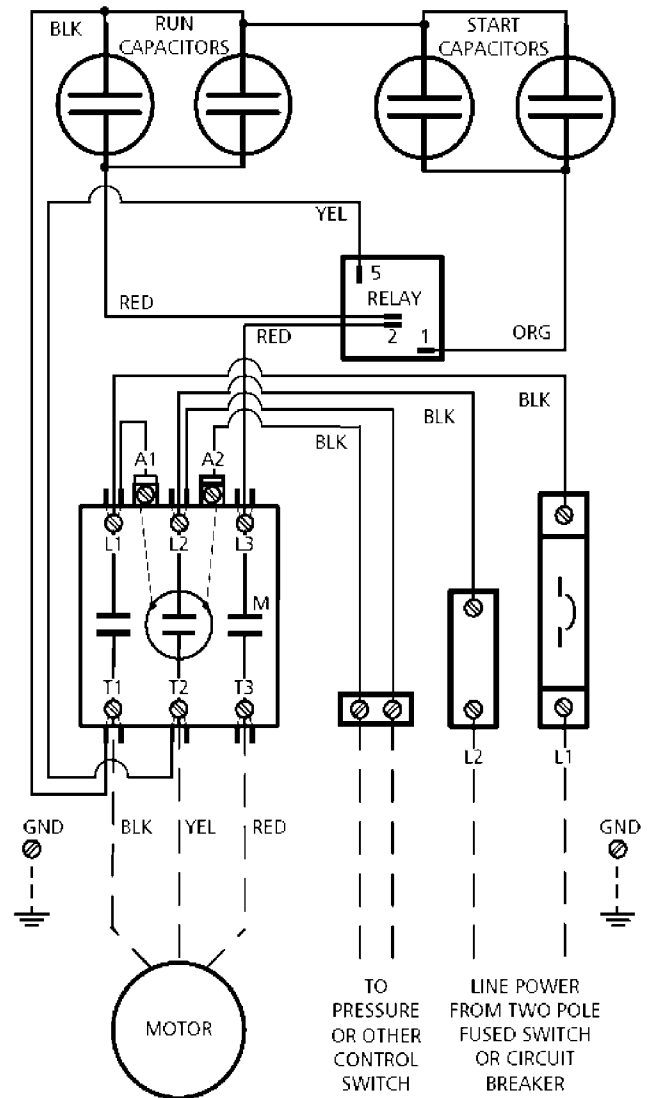
Order No.	Part Description	Where Used
9K580	Relay	ALL
9K581	Run Capacitor 35uF at 450V	CB15MC3R & CB15MC3R100
9K582	Start Capacitor 216-260uF at 330V	CB05MC3RF, CB10MC3RF, CB15MC3R, CB15MC3RF & CB15MC3R100
9K608	Start Capacitor 161-193uf at 330VAC	CB10MC3R
9K609	Start Capacitor 243-292uf at 330VAC	CB07MC3R
9K610	Start Capacitor 189-227uf at 330VAC	CB05MC3R
9K611	Run Capacitor 25uf at 450VAC	CB10MC3R
9K612	Run Capacitor 40uf at 450VAC	CB07MC3R
9K613	Run Capacitor 30uf at 450VAC	CB05MC3R
9K614	DP Mag Contactor 90 FLA, 3 pole	CB10MC3R, CB10MC3RF, CB15MC3R, CB15MC3R100 & CB15MC3RF
9K616	DP Mag Contactor 50 FLA, 3 pole	CB05MC3R, CB05MC3RF, CB07MC3R & CB07MC3RF
9K618	Circuit Breaker 100A	CB15MC3R100
9K619	Circuit Breaker 90A	CB15MC3R
9K620	Circuit Breaker 60A	CB10MC3R & CB10MC3RF
9K621	Circuit Breaker 50A / 45A	CB07MC3R & CB07MC3RF
9K622	Circuit Breaker 30A	CB05MC3R & CB05MC3RF
9K826	Circuit Breaker 80A	CB15MC3RF
9K827	DP Mag Contactor 40 FLA, 2 pole	CB10MC3RF & CB15MC3RF
9K828	Run Capacitor 70uf at 440VAC	CB15MC3RF
9K829	Run Capacitor 60uf at 440VAC	CB07MC3RF
9K830	Run Capacitor 50uf at 440VAC	CB10MC3RF
9K831	Start Capacitor, 189-227uf, 330uf	CB07MC3RF
9K832	Run Capacitor 30uf at 440VAC	CB05MC3RF

GOULDS WATER TECHNOLOGY MOTOR DIAGRAMS

5 AND 7.5 HP WIRING DIAGRAM

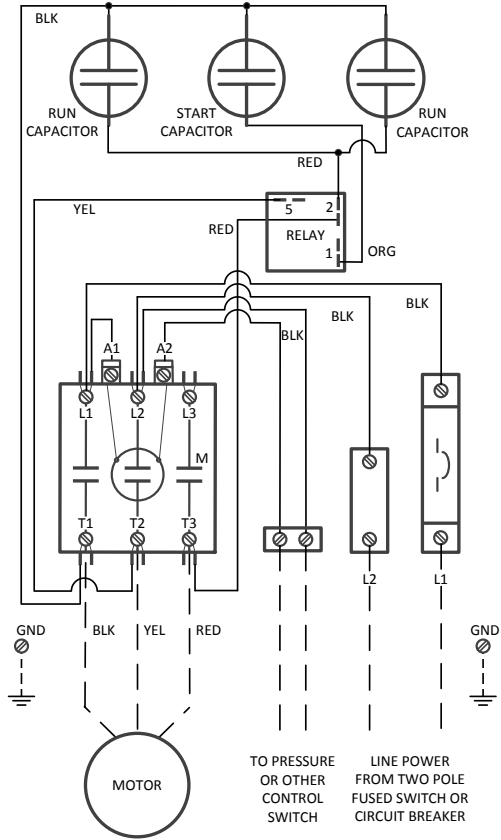


10 AND 15 HP WIRING DIAGRAM

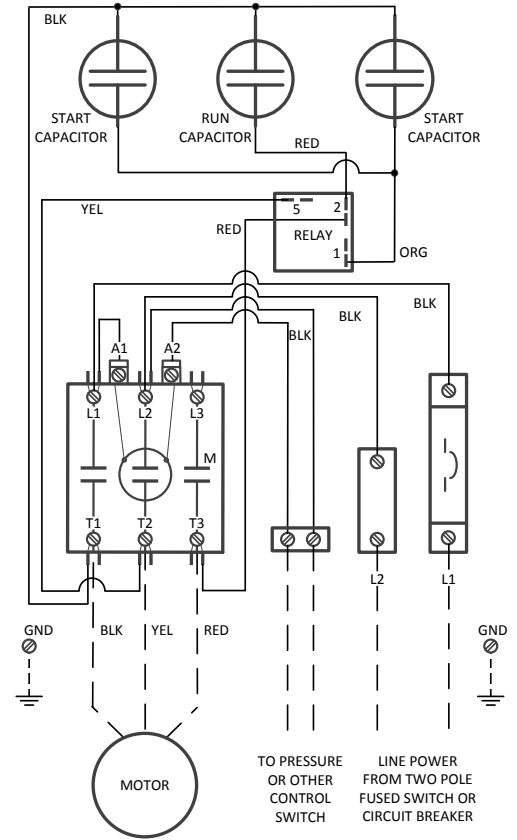


FM SERIES MOTOR DIAGRAMS

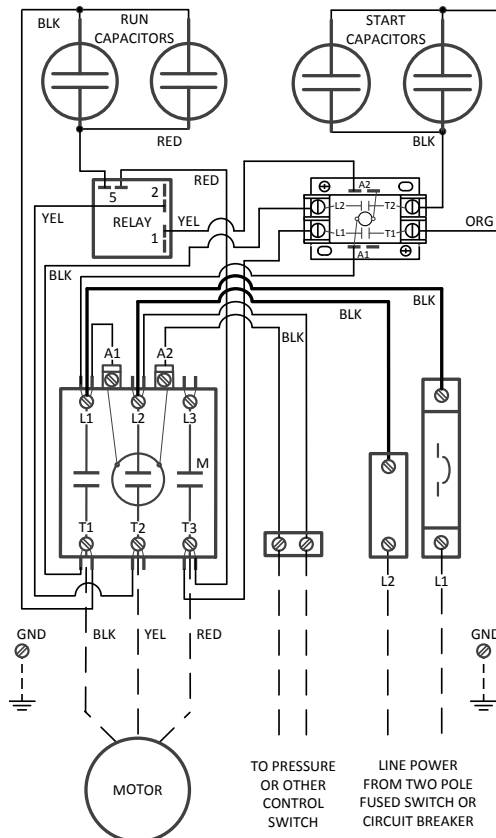
5 HP WIRING DIAGRAM



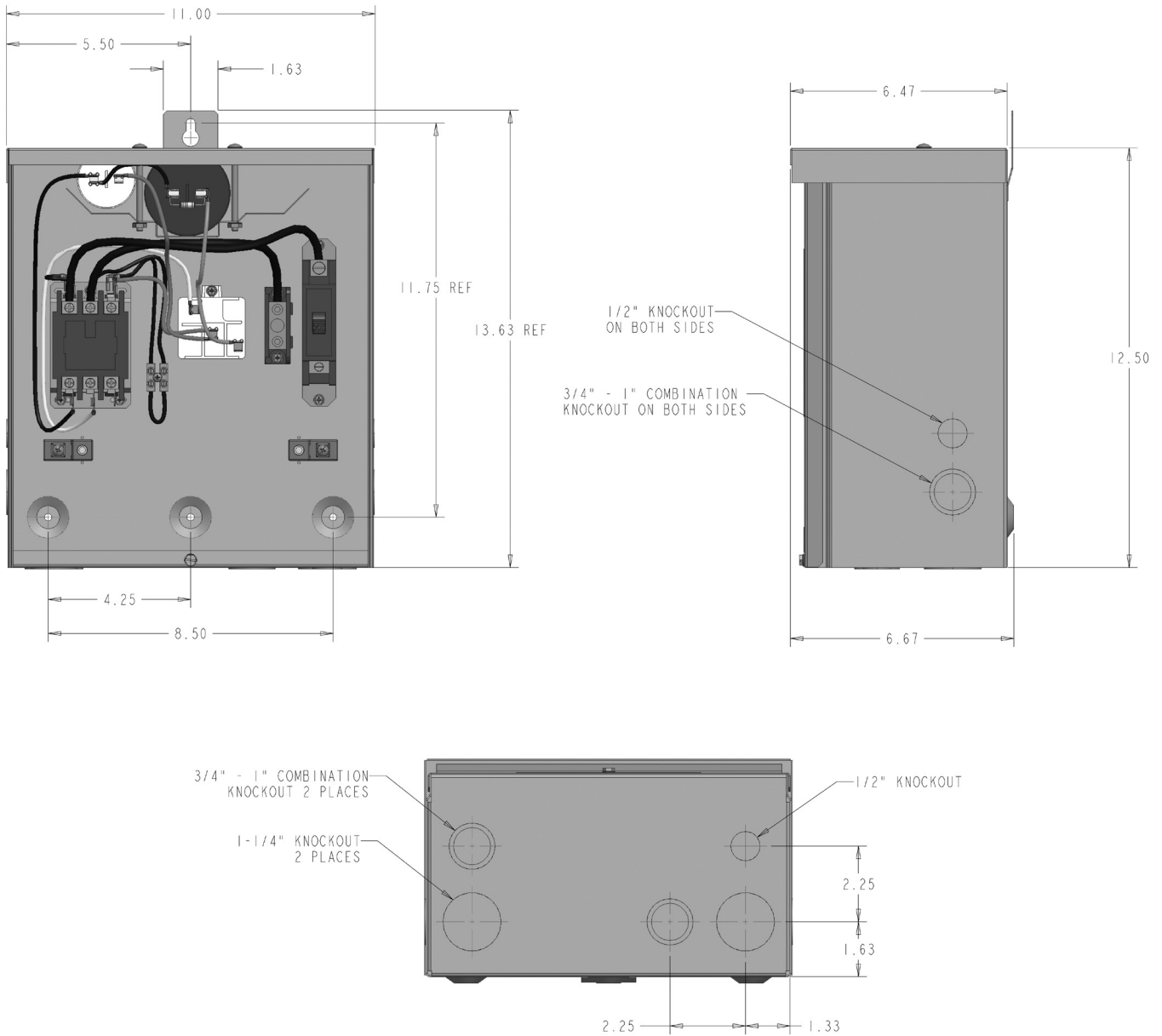
7.5 HP WIRING DIAGRAM



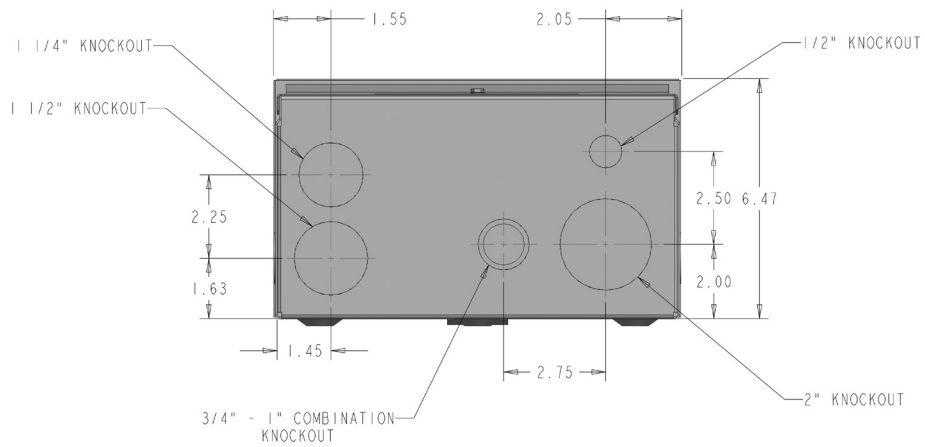
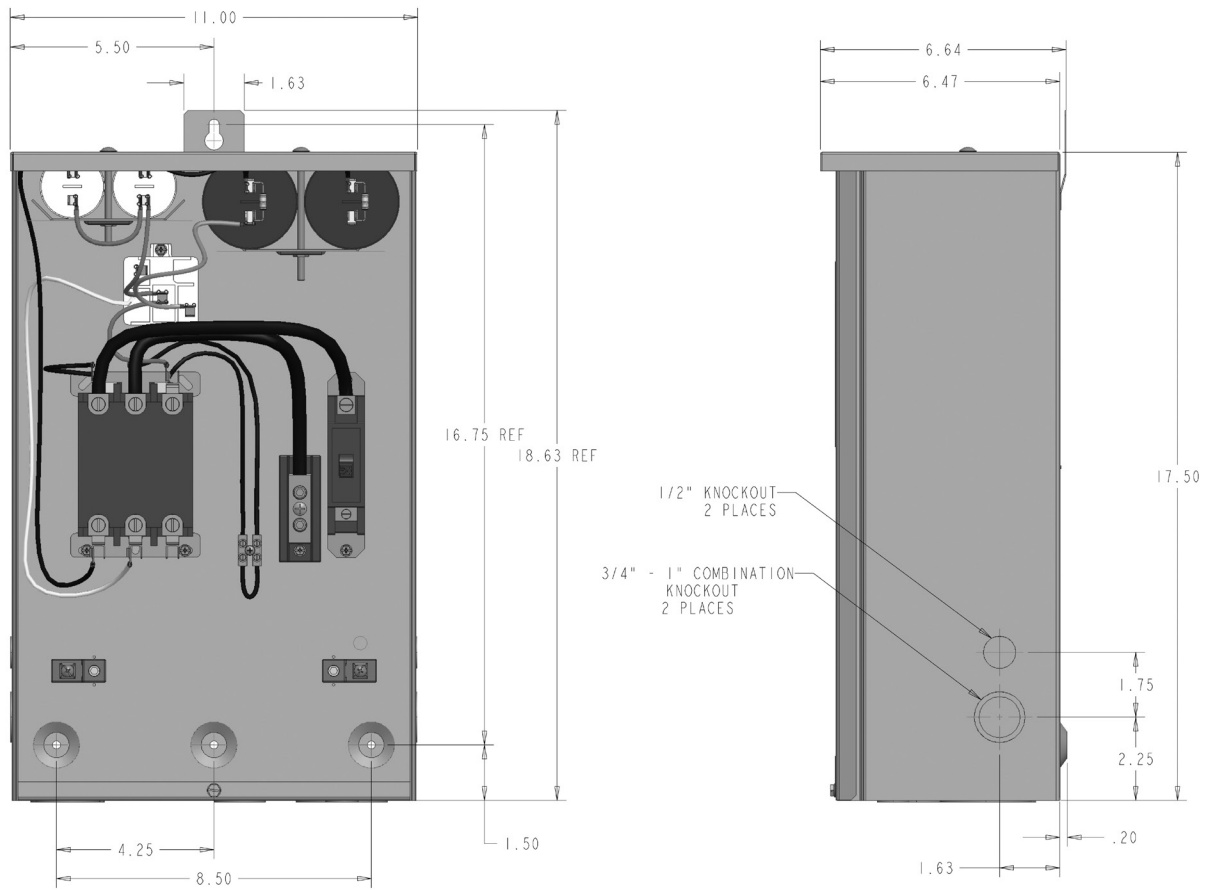
10 AND 15 HP WIRING DIAGRAM



5 AND 7.5 HP DIMENSIONS



10 AND 15 HP DIMENSIONS





AQUAVAR SOLO²™

CONSTANT PRESSURE CONTROLLERS FOR: 1Ø - 3-WIRE MOTORS,
1Ø - 2-WIRE GOULDS WATER TECHNOLOGY MOTORS, 3Ø MOTORS



FEATURES

LED display clearly indicates actual system pressure, output frequency, current draw and error log.

Dual system set points for advanced system application.

Programmable output relay can be configured to run optional accessories such as a chlorinator, or link to a home monitoring system.

NEMA 3R Enclosure: Rainproof, outdoor/indoor rated enclosure.

Current Limit Selector Switch: Rotary switch to set current limit to match motor Service Factor Amps (SFA).

Dry Well Sensitivity Switch: Choice of low or high sensitivity.

Pressure Drop: Choose a 5 or 20 PSI pressure drop for restarts.

Low Pressure Cut-Off: Set on or off depending on application.

Constant Pressure: Provides consistent pressure even as flow requirements vary.

Controller acts as a pump protection and troubleshooting device. Flashing lights indicate system faults.

Standard pressure sensor cable is 10' long. Optional lengths of 25', 50', 100', 150' and 200' are available.

Integrated output motor filter protects the motor from voltage spikes and limits electrical interference with devices such as portable telephones, radios, televisions and garage door openers.

Cooling Fan: Allows operation in ambient temperatures up to 122°F.

AGENCY LISTINGS



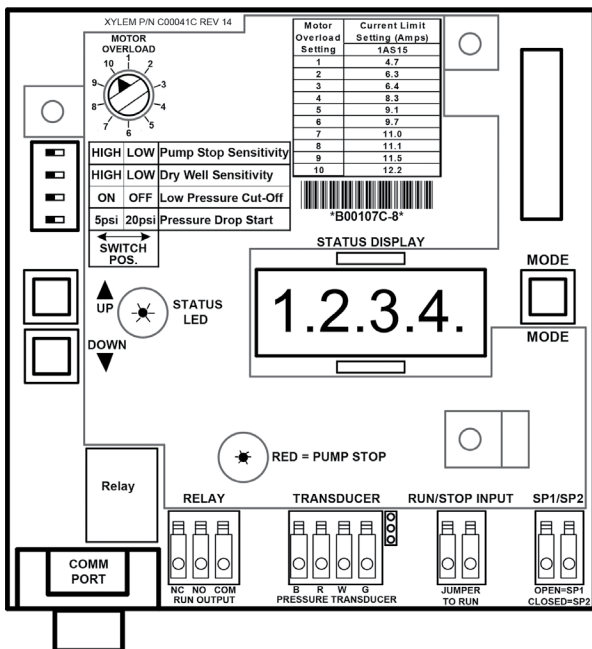
Tested to UL 508C and CSA 22.2 0-M91, 14-95 and 0.4-M1982 Standards By Canadian Standards Association File #LR38549



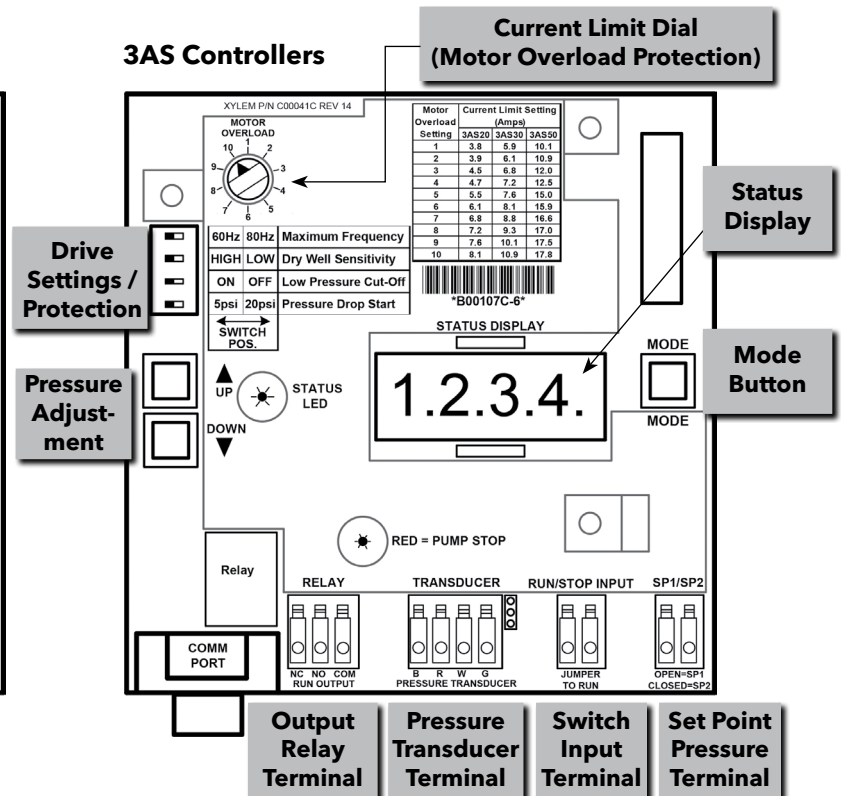
Drinking Water System Components - Health Effects & Optional Annex G - Class 6861 18 - Mechanical Devices - NSF/ANSI 61 - Certified to NSF/ANSI 61 Sect. 8 (including optional Annex G)

USER INTERFACE BOARD

1AS Controllers



3AS Controllers



Residential Water

SPECIFICATIONS - 3Ø MODELS / 1Ø INPUT AND 3Ø OUTPUT

Controller Temperature Range:

- Minimum Ambient Temperature: -4°F (-20°C)
- Maximum Ambient Temperature: +122°F (+50°C)

Input Voltage: single-phase, 230 Volt, two (2) wire grounded system.

Output Voltage: variable frequency, variable voltage, three-phase power to the motor.

Speed Selector Switch: Selects Output Frequency of either -

- 30 - 60 Hz - Use matched HP Water End and Motor
- 30 - 80 Hz - Use mis-matched Water End and Motor

Enclosure Dimensions:

- Height: 18.6"
- Width: 9.9"
- Depth: 5.3"

Packaged Dimensions:

- Height: 21"
- Width: 13"
- Depth: 8"

Motor Compatibility with 3AS_ _ Models

HP	Three Phase	
	Goulds & Pentek XE	Franklin & Grundfos
¾	Yes	Yes
1	Yes	Yes
1½	Yes	Yes
2	Yes	Yes
3	Yes	Yes
5	Yes	①

① Amps may be higher than controller overload range - use of these motors will current limit and provide reduced performance.

3AS20 SPECIFICATIONS

- HP Range: ¾ to 2
- Unit Weight: 19 lbs.
- Packaged Weight: 23 lbs.
- Pressure Set point adjustable from 20 - 85 psi using the standard 100 psi sensor. ①

3AS30 SPECIFICATIONS

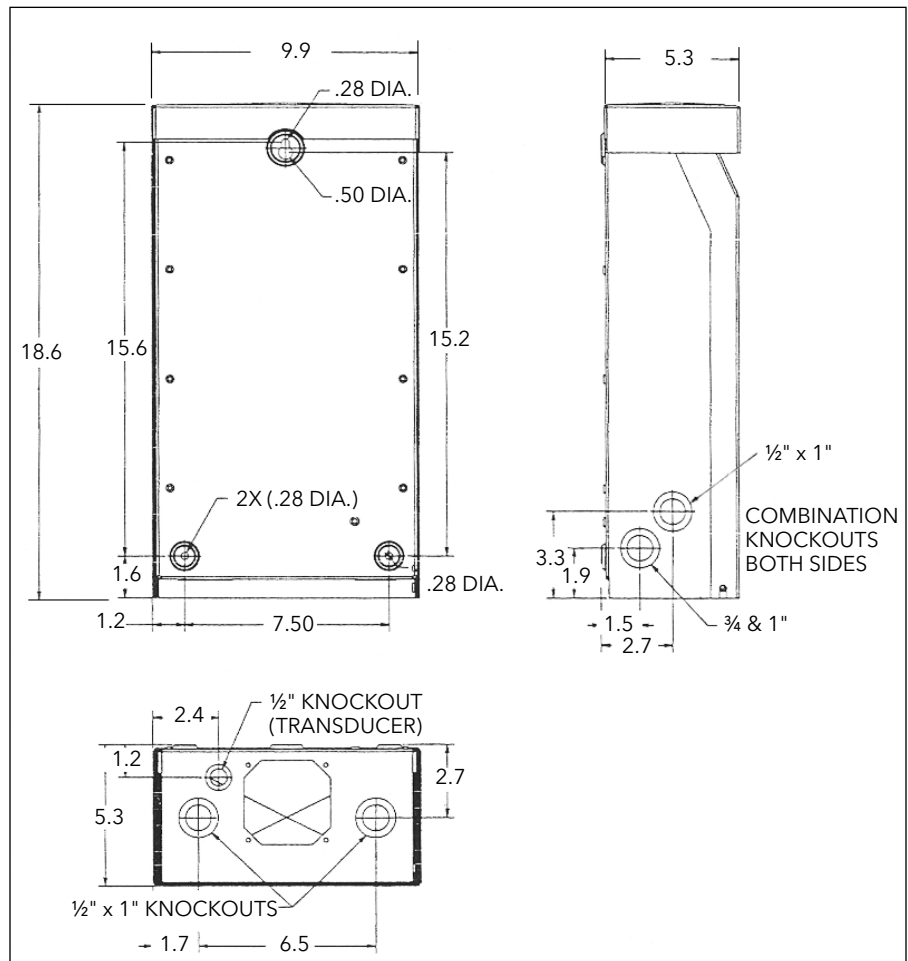
- HP Range: 1½ to 3
- Unit Weight: 20 lbs.
- Packaged Weight: 24 lbs.
- Pressure Set point adjustable from 20 - 85 psi using the standard 100 psi sensor. ①

3AS50 SPECIFICATIONS

- HP Range: 3 to 5
- Unit Weight: 25 lbs.
- Packaged Weight: 29 lbs.
- Pressure Set point adjustable from 20 - 100 psi using the standard 200 psi sensor. ①

① Higher pressures are available using a higher pressure sensor. See page 4.

DIMENSIONS (inches) - ALL MODELS



SPECIFICATIONS - 1AS15 - 1Ø MODEL - 1Ø INPUT AND 1Ø OUTPUT

Controller Temperature Range:

- Minimum Ambient Temperature: 14°F (-10°C)
- Maximum Ambient Temperature: 122°F (50°C)

Input Voltage: single-phase, 230 Volt, two (2) wire grounded system.

Output Voltage: 1Ø, variable voltage, variable frequency, single phase power to the 2-wire or 3-wire motor

Speed/Frequency: 30-60 only

Enclosure Dimensions:

- Height: 18.6"
- Width: 9.9"
- Depth: 5.3"

Packaged Dimensions:

- Height: 21"
- Width: 13"
- Depth: 8"

1AS15 SPECIFICATIONS

- Unit Weight: 19 lbs.
- Packaged Weight: 23 lbs.
- Pressure Set point adjustable from 20 - 85 psi using the standard 100 psi transducer.
- HP Range:

Motor Compatibility with AQUAVAR SOLO 1AS15

HP	Single Phase 2-Wire		Single Phase 3-Wire	
	Goulds & Pentek XE	Franklin, Grundfos and Flint & Walling	Goulds & Pentek XE	Franklin, Grundfos and Flint & Walling
½	Yes	Yes	Yes	Yes
¾	Yes	Yes	Yes	Yes
1	Yes	Yes	Yes	Yes
1½	Yes	Yes	Yes	Yes
2	No	No	Yes	①

① Amps are higher than controller overload range - use of these motors will current limit and provide reduced performance.

TANK SIZING

Diaphragm Tank Sizing and Pre-Set Pressure Recommendations:

Diaphragm type (captive air) tanks are required on these systems.

Table 1: Tank Sizing Selection

Maximum Pump GPM	Recommended Tanks	
	Total Volume	Order Number
10	1.9	V6P
24	4.9	V15P
36	7.3	V25P
70	13.9	V45
100	19.9	V60

Use Total Tank Volume, not drawdown volume, to select the proper tank size. The total tank volume should be approximately 20% of the pump's maximum flow. For example, when using a 10 gpm pump the system requires a minimum 2 gallon (total volume) tank.

The tank sizing recommendations are field proven to prevent objectionable pressure drops on start-up and provide smooth operation for the majority of variable speed pump systems.

When using the default, 5 PSI pressure drop, setting: Set the tank pressure, while tank is empty of water, to 20 psi below the desired system pressure setting. Ex. for a 50 psi system pressure, charge the tank to 30 psi.

See IOM for other settings or if using a large tank.

Table 2: Controller, Breaker, Generator Sizing

Motor		Controller Model ^②				Circuit Breaker ^③	Generator ^④ (VA)
HP	Voltage ^①	1AS15	3AS20	3AS30	3AS50		
½	230					15	2200
	200						
¾	230						2900
	200						
1	230						3500
	200						
1½	230					20	4400
	200						
2	230					30	6100
	200						
3	230					40	8100
	200						
5	230					50	13300
	200						

① Supply voltage must be 196 VAC - 265 VAC.

② Shaded areas indicate which controller models can be used with which motors. Lighter shading indicates combinations where controller will limit peak performance to 85% of catalog value for pump/motor.

③ Circuit Breaker or Dual Element Time Delay Fuse Size (Amps) protecting branch circuit supplying controller.

④ Minimum size of single phase 240 V generator required.

Table 3: Service Factor Amps All Motors

HP	230 Volt						200 Volt				
	1Ø 2-Wire			1Ø 3-Wire			3Ø			3Ø	
	Goulds	Franklin	Grundfos	Goulds	Franklin	Grundfos	Goulds	Franklin	Grundfos	Goulds	Franklin
½	4.8	6	6	5	6	6	N/A	N/A	N/A	N/A	N/A
¾	6.4	8	8.4	6.1	8	8.4	4	3.8	N/A	4.7	4.4
1	8.2	9.8	9.8	7.4	9.8	9.8	4.9	4.7	N/A	5.7	5.4
1½	10.5	13.1*	13.1*	11	11.5	11.6	6.6	5.9	7.3	7.6	6.8
2	N/A	N/A	N/A	12.2	13.2*	13.2*	8	8.1	8.7	9.3	9.3
3	N/A	N/A	N/A	N/A	N/A	N/A	10.1	10.9	12.2	12	12.5
5	N/A	N/A	N/A	N/A	N/A	N/A	17.5	17.8	19.8*	20.2*	20.5*

* Amps are higher than controller overload range - use of these motors will current limit and provide reduced performance.

PRESSURE RANGES FOR ALL AVAILABLE TRANSDUCERS

Transducer	Minimum PSI	Maximum PSI
100 PSI ①	20	85
200 PSI ②	20	170
300 PSI	20	255

① Standard on 1AS15/3AS20, 3AS30

② Standard on 3AS50

Warning! Exploding tank can injure or kill, some combinations of Transducer and Controller allow system pressure adjustment to exceed the maximum working pressure of the tank and piping.

Ensure system pressure is set below the maximum working pressure of the tank and system piping.

Protect tank and piping against overpressure, install a properly sized pressure relief valve (PRV) able to pass full pump flow at the maximum working pressure of the tank. In finished basements or where PRV blow-off can cause property damage, pipe the PRV to a suitable drain.

Table 4: Wire Sizing
Maximum Cable Lengths in Feet to Limit Voltage Drop to 5% for 230 V Systems ①

1AS15 Controller to Motor - Controllers with 2-Wire 1Ø Motors

Motor Lead Lengths - Goulds water technology 2-Wire Motors - Based on Service Factor Amps, 30° C Ambient and 5% Voltage Drop														
Motor Rating				60° C & 75° C Insulation - AWG Copper Wire Size										
Volts	HP	kW	SFA	14	12	10	8	6	4	2	1/0	2/0	3/0	4/0
230	½	0.37	4.8	457	726	1158	1835	2855	4551	7225	11489	14803	18688	23544
	¾	0.55	6.4	342	545	869	1376	2141	3413	5419	8617	10871	13724	17290
	1	0.75	8.2	267	425	678	1074	1671	2664	3349	6725	8485	10711	12160
	1½	1.1	10.5	209	332	530	839	1305	2080	3303	4161	6626	8365	10060

1AS15 Controller to Motor - Controllers with 3-Wire 1Ø Motors

Motor Lead Lengths - Goulds water technology 3-Wire Motors (CSIR) - Based on Service Factor Amps, 30° C Ambient and 5% Voltage Drop														
Motor Rating				60° C & 75° C Insulation - AWG Copper Wire Size										
Volts	HP	kW	SFA	14	12	10	8	6	4	2	1/0	2/0	3/0	4/0
230	½	0.37	5	438	697	1112	1761	2740	4369	6936	11029	11044	13942	17564
	¾	0.55	6.1	359	571	912	1444	2246	3581	5685	9040	11406	10582	13332
	1	0.75	7.4	296	471	751	1190	1852	2952	4686	7452	9402	9055	11408
	1½	1.1	11.1	199	317	505	801	1246	1986	3153	5013	6325	7913	9969
	2	1.5	12.2	180	286	456	722	1123	1790	2843	4520	5703	7199	9070

All Models - Service Entrance to Controller

Controller Input	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ②																	
		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	350	400	500
230V 1 PH	¾	279	445	706	1020	1608	2552	3186	4019	5065	6383	8055							
	1	226	360	571	824	1300	2064	2576	3250	4095	5161	6513	8201						
	1½	*	286	455	657	1036	1644	2052	2589	3262	4111	5188	6533	8236	9710				
	2	*	*	331	478	754	1197	1495	1886	2376	2995	3779	4759	5999	7073	8455	9852		
	3	*	*	246	355	561	890	1111	1401	1766	2225	2808	3536	4458	5256	6283	7321	8343	
	5	*	*	*	218	343	545	680	858	1081	1363	1720	2165	2730	3219	3847	4483	5109	6348

3AS20, 30, 50 Controller to Motor - Controllers with 3Ø Motors

Controller Output	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ②																	
		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	350	400	500
230V 3 PH	0.75	633	1006	1605	2542	3956	6306	7927	10011										
	1	516	821	1310	2075	3229	5148	6471	8172										
	1.5	383	610	973	1541	2397	3822	4804	6067	7643	9648								
	2	316	503	803	1271	1978	3153	3964	5006	6306	7960	10042							
	3	251	399	636	1007	1567	2497	3140	3965	4995	6305	7954	10042	12651					
	5	145	230	367	581	904	1441	1812	2288	2883	3639	4591	5795	7301	7964	9520			

① Reduce lengths by 13% for 200 V systems. * Wire does not meet the N.E.C. ampacity requirement.

② Lengths in bold require 90° C wire. ■ Shading indicates 40° C maximum ambient.

The lengths in each of the Wire Sizing tables represent 100% of the allowable voltage drop when motor is running at full load. When sizing wire, the voltage drop of each wire segment must be included. The total must not exceed 100% of the allowable drop. Take for example a 1.5 HP motor with a distance from Service Entrance to Controller of 100' and 500' between the Controller and Motor.

- Service Entrance to Controller = 100' of 10 AWG (100/455) = 22 % (455' is from the S.E. to Controller chart)
 - Controller to Motor = 500' of 12 AWG (500/709) = 71 % (709' is from the Controller to Motor chart)
- Total Drop (must be ≤ 100%) 93 %

If the distance from the Controller to Motor was 600' (600/709) = 85% + 22% = 107%, we would need to use #10 wire for that segment, ex. 600/1126 = 53% + 22% (for 100' of #10) = 75% which is acceptable. It is also acceptable to use different wire sizes for the Buried and Well sections of wire.

3Ø, 4" MOTORS - ELECTRICAL DATA, 60 HERTZ 3450 RPM

Goulds water technology #	Red Jacket #	HP	kW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Line - Line Resistance
						Amps	Watts	Amps	Watts		
M07430	75C323	0.75	0.55	200	1.5	3.8	812	4.5	1140	32	2.6-3.0
M10430	100C323	1	0.75		1.4	4.6	1150	5.5	1500	29	3.4-3.9
M15430	150C323	1.5	1.1		1.3	6.3	1560	7.2	1950	40	1.9-2.5
M20430	200C323	2	1.5		1.25	7.5	2015	8.8	2490	51	1.4-2.0
M30430	300C323	3	2.2		1.15	10.9	2890	12.0	3290	71	0.9-1.3
M50430	500C323	5	3.7		1.15	18.3	4850	20.2	5515	113	0.4-0.8
M75430	750C323	7.5	5.5		1.15	27.0	7600	30.0	8800	165	0.5-0.6
M07432	75C313	0.75	0.55	230	1.5	3.3	850	3.9	1185	27	3.3-4.3
M10432	100C313	1	0.75		1.4	4.0	1090	4.7	1450	26.1	4.1-5.1
M15432	150C313	1.5	1.1		1.3	5.2	1490	6.1	1930	32.4	2.8-3.4
M20432	200C313	2	1.5		1.25	6.5	1990	7.6	2450	44	1.8-2.4
M30432	300C313	3	2.2		1.15	9.2	2880	10.1	3280	58.9	1.3-1.7
M50432	500C313	5	3.7		1.15	15.7	4925	17.5	4925	93	.83-1.25
M75432	750C313	7.5	5.5		1.15	24	7480	26.4	8570	140	.55-.85

1Ø, 4" MOTORS - ELECTRICAL DATA, 60 HERTZ 3450 RPM

Type	Motor Order Number		HP	KW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Winding Resistance	
	Goulds	Red Jacket					Amps	Watts	Amps	Watts		Main	Start
2 Wire PSC	M05422	50C211	0.5	0.37	230	1.6	4.3	845	4.8	1035	16	6.1-7.2	-
	M07422	75C211	0.75	0.55		1.5	5.0	1100	6.4	1375	18	5.9-6.9	-
	M05422	100C211	1.0	0.75		1.4	6.7	1450	8.2	1770	23.5	4.2-5.2	-
	M15422	150C211	1.5	1.1		1.3	9.1	1950	10.5	2300	43	1.8-2.4	-
3 Wire	M05412	50C311	0.5	0.37		1.6	4.4	715	6.3	950	21	5.1-6.1	12.4-13.7
	M07412	75C311	0.75	0.55		1.5	4.6	920	8.3	1235	32	2.6-3.3	10.4-11.7
	M10412	100C311	1	0.75		1.4	6.2	1165	9.7	1490	41	2.0-2.6	9.3-10.4
	M15412	150C311	1.5	1.1	1.3	9.2	1660	11.1	2110	49	2.1-2.5	10.0-10.8	
	M20412	200C311	2	1.5	1.25	9.9	2170	68	2660	49	1.6-2.2	4.8-5.9	

The AQUAVAR SOLO²™ 1AS15 model 30-60 hertz speeds only.

The AQUAVAR SOLO²™ 3AS models provide the option of operating the system at either 30-60 or 30-80 hertz speeds.

Controller	30 - 60 Hertz (Standard Speed) Setting		30 - 80 Hertz (High Speed) Setting	
	Water End	Motor HP	Water End	Motor HP
3AS20	1	1	½	1
3AS20	1½	1½	¾	1½
3AS20	2	2	1	2
3AS30	1½	1½	¾	1½
3AS30	2	2	1	2
3AS30	3	3	1½	3
3AS50	5	5	3	5

When using the "80 hertz" setting with mis-matched water ends and motors, use the larger pump curve as the top curve. The bottom, or 30 hertz, curve is calculated using the smaller wet end curve and the Affinity Laws. The ProPak Bulletins define performance curves. See BGPROPAK60 or BGPROPAK80 for curves.



AWAVFD

Variable Frequency Drive Alternator



The AWAVFD alternator provides increased functionality by pairing two drives for alternation. Compatible with a SOLO² and SPD, the AWAVFD also allows for lead/lag operation when one drive does not satisfy the set pressure.

FEATURES & BENEFITS

- **Variable time setting:** Equipped with five time setting options for alternations ranging from 1 to 48 hours to accommodate all application needs
- **Outdoor rated:** A NEMA 3 enclosure allows for a range of installation locations
- **Ease of Use:** Easy terminal strip connections and LED display allow for effortless installation and operation



BUILT TO PERFORM

SPECIFICATIONS

- NEMA 3 rating enclosure for outdoor use
- LED display for timer and lead/lag
- Easy terminal strip connections
- Timer function with 5 selections
- Fully independent operation
- Fail-safe design keeps water running even if the alternator is powered off
- Wide voltage single phase 115/230V input (120 VAC and 240 VAC)
- Power protection is not required
- Dimensions:
8.60" L x 6.30" W x 3.94" D



COMPATIBILITY

- Aquavar SOLO²
- Aquavar SPD

PART NUMBERS (SINGLE PHASE)

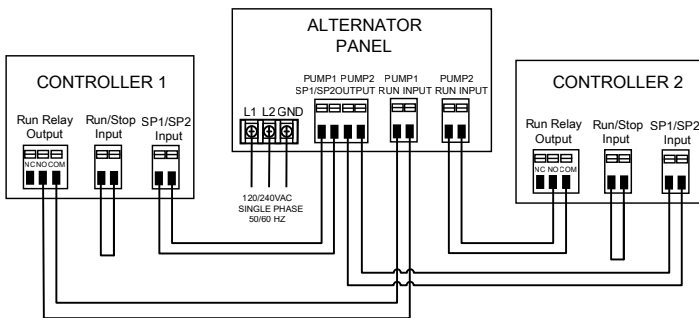
Part #	HP	Drive Voltage
AWAVFD	ALL	ALL

AGENCY LISTINGS

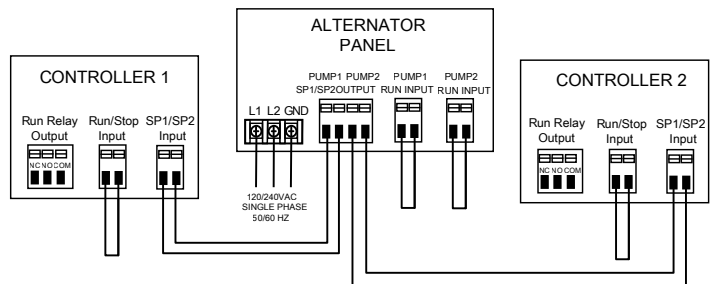


Tested to UL508 and CSA 22.2 14 Standards
By Canadian Standards Association

RUN TIME WIRING FOR SOLO²



REAL TIME WIRING FOR SOLO²



For wiring on other drives, consult IOM.



- Outdoor enclosure
- Wi-Fi communication to Solo²
- Compatible with smart devices made by Apple and Android
- Cloud data storage
- Add multiple customers to dealer accounts for monitoring
- Range to 250 ft. line of sight

AqWiFi

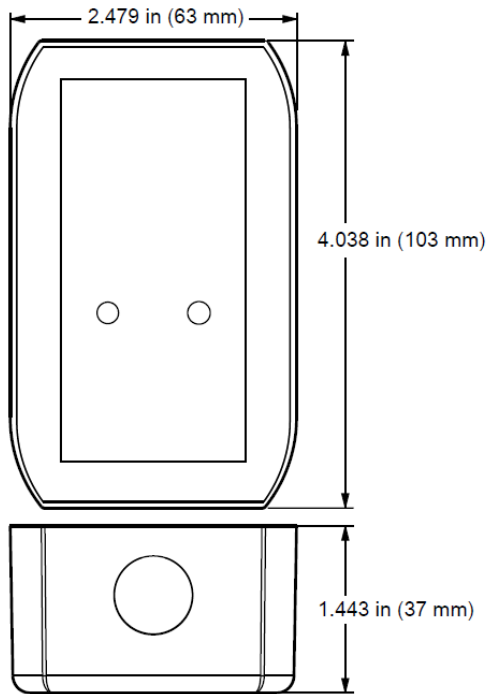
REMOTE MONITORING SYSTEM

AqWiFi is a monitoring device for Aquavar Solo enabling remote monitoring of the system performance

MONITORS

- AqWiFi allows dealers/installers to monitor a customer's drive remotely as well as customers/end users to monitor their own equipment
- Stores drive parameters, changes, system events, faults and system trend data
- Date/time for all faults on drive
- Instant email and/or text message alert for all faults
- View all drive settings remotely

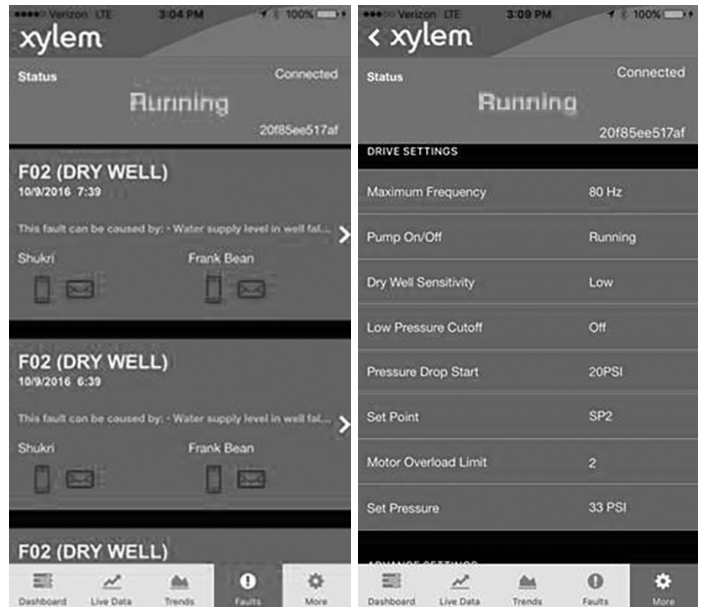
Provided with 5' cable



ORDER NUMBER: AqWiFi

MONITORING FUNCTIONS

- Pressure
- Speed
- Output current
- Input voltage
- Pump motor run time
- Historical trends saved up to a year



TECHNICAL BROCHURE
BCPVFDACC R5



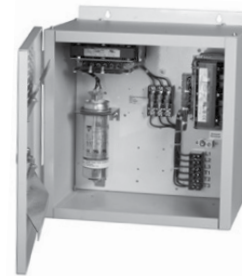
Float Switches -
tested for use with
Aquavar SOLO
Controllers



6K210 Gauge Guard



9K585 Moisture
Sensor with Relay



Filters



9K589 Over-Pressure
Switch for use with
Aquavar SOLO or
"S-Drive" Controllers



**Line / Load
Reactors**



**Sine Wave
Filters**

VFD Accessories

9K585 MOISTURE SENSOR WITH RELAY

- 5 VDC power supply is provided by VFD
- Will detect any conductive non-flammable liquid
- Ideal anywhere water damage could occur
- Automatic reset



Undetected water damage, such as that caused by leaking pipes or corroded water heaters, cost homeowners tens of thousands of dollars each year. Such repairs are time consuming and costly to correct. Applications could include computer room sub-floor areas, telephone equipment rooms, bathrooms, laundry rooms, any areas adjacent to a water storage tank or piping. Also evaporative air conditioners, drip pans, overflows and /or drains.

Using no mechanical parts, the GRI Water Sensors are triggered by a moisture bridge across the sensor contacts. The GRI Water Sensors can be installed to detect a layer of water as minute as 1/16 of an inch in depth.

The 9K585 Closed Loop Sensors use an external power source to energize a built-in relay contact so battery power is not recommended. Used in a closed loop configuration, an alarm condition will occur when moisture is detected, or if power to the sensor is lost, and if the sensor should fail. The relay output can be wired directly to any alarm panel or can be used to actuate an external device, i.e. transmitter, annunciator, etc.

See IM234 for wiring instructions.

9K589 OVER-PRESSURE SWITCH FOR USE WITH AQUAVAR SOLO OR "S-DRIVE" CONTROLLERS

Features

- Range scale from 60 - 120 PSI
- Factory set at 80 PSI
- Lead-free brass construction
- Gold plated contacts for long life
- Use as over-pressure protection on Aquavar SOLO or S-Drive Controller
- Normally Closed contacts - connect leads to Secondary (dry) Contact Switch
- Wire length - 72 inches
- Use a 5/32" Allen wrench to unlock barrel to change pressure setting
- Snap action, opens and closes on $\pm 1 - 2$ PSI range, not a differential pressure switch.
- Installation instructions and applications are detailed in the Aquavar SOLO IOM, IM229.
- NEMA 4, 13 (outdoor use)



This is the only pressure switch we have tested and approved for use with our variable speed drives. Standard pressure switch contacts tend to corrode and malfunction when used with dry contacts.

FLOAT SWITCHES - Tested For Use with Aquavar SOLO Controllers

The A2X Series of Float Switches have been tested and approved for use with CentriPro Variable Speed Controllers. The Float Switches come in various lengths and in Normally Open (N.O.) type for pumping down or emptying a tank as well as Normally Closed (N.C.) type, identified by a U Suffix, for pumping up, filling a tank or pond. Instructions for using these switches are in the SOLO IOM, IM229. The Float Switch bulletin is in the SES catalog and the wastewater section of our website, literature code is BCPFS.

Float Switch Order Numbers

Normally Open

A2X13 10'

A2X33 20'

A2X53 30'

Normally Closed

A2X23U 15'

A2X33U 20'

A2X53U 30'

Features

- Gold plated contacts for low current applications
- Operates on a 45° differential, above or below horizontal
- Includes a mounting clamp for attaching to pipe (as shown)
- Not sensitive to rotation
- 18 gauge, 2 conductor wire
- Maximum submergence is 30'
- Maximum water temperature 140° F
- Polypropylene float housing is impact and corrosion resistant
- Installation and application information is in the Aquavar SOLO IOM.



6K210 GAUGE GUARD

Features

- Low unit cost - makes it feasible to protect even moderate priced instruments.
- Compact size makes these isolators ideal for limited-space installations.
- + 4% accuracy, will handle most applications.
- Hermetically-sealed, molded uni-body construction - avoids possibility of leaks.
- Glass-filled Polypro bodies for chemical compatibility and maximum temperatures to 100° F
- Housing is glass filled Polypropylene.
- Each Gauge Guard features a durable and flexible Buna-N diaphragm which serves as a protective barrier between the process fluid and instrument.
- Simple to fill and install. Completely fill the internal space on the instrument side of the diaphragm with mineral or vegetable oil in order to transmit the process pressure to the instrument.



Maximum Pressure Ratings

<u>Liquids</u>	<u>Gases</u>
200 PSI (13.8 bars)	100 PSI (6.9 bars)

Maximum Temperature: 100°F (38°C)

TCI MODEL KDR OPTIMIZED LINE REACTOR

KDR line reactors reduce harmonic current and help prevent nuisance tripping.

FEATURES

- High Z (Application where 5% reactor would be applied)
- 208/240V
- NEMA 3R Enclosure
- Ambient Temperature 40° C
- Fundamental Frequency: 50/ 60Hz
- Agency Approvals: UL, cUL; UL Recognized, CE Marked
- Short term overload rating - 200% rated current for minimum of 3 minutes
- Inductance Characteristics
 - Min 95% L at 110% Load
 - Min 80% L at 150% Load
- Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)



BENEFITS

- Cost effective
- Improve power factor of supply
- Increase life of drive
- Reduce nuisance tripping
- Protect drives and other sensitive equipment
- Reduce transient voltages
- Dampen overshoot peak voltage
- Balance drive input currents
- Reduce motor heating
- Reduce motor noise

CentriPro Drive Model Number	Part Number	Current Rating (Amps)
1AS15	KDRULD21HE3R	30.8
3AS20	KDRULD21HE3R	30.8
3AS30	KDRULD21HE3R	30.8
3AS50	KDRULD22HE3R	46.2
1151AB2	KDRULB25HE3R	16.7
1AB2	KDRULB25HE3R	16.7
2AB2	KDRULB26HE3R	24.2
3AB2	KDRULD21HE3R	30.8
5AB2	KDRULD22HE3R	46.2

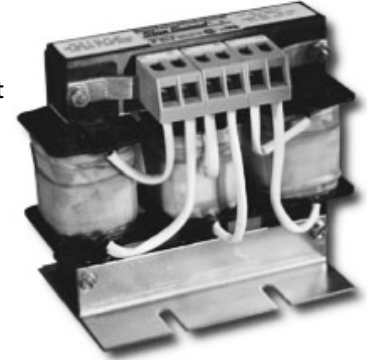
KDR Reactor is designed for three phase use. For single phase use, connect input to Terminals A and C.

TCI MODEL KLR HEAVY DUTY LINE / LOAD REACTOR

TCI KLR™ series three phase AC reactors are intended for use as input or output filters for AC-PWM variable frequency drives.

FEATURES

- 3 Phase 240 - 600V
- NEMA 3R Enclosure
- 6% Reactor
- Ambient Temperature 40° C
- Gapped Iron Core Inductor - All Copper Windings
- K-Rated, UL/ULC Recognized; CSA Certified; RoHS Compliant
- Short term overload rating - 200% rated current for min. of 3 minutes
- Inductance Characteristics
 - Min 95% L at 110% Load
 - Min 80% L at 150% Load
- *Maximum Altitude: 3,000 feet (Derate for applications above 3,000 feet)



BENEFITS

- Reduce voltage notching
- Limit magnitude of inrush current
- Prevent drive shutdown / overcurrent tripping
- Reduce harmonic distortion
- Improve phase to phase voltage imbalance
- Improve true power factor
- Protect VFD from damage

Controller Model Number	Part Number	Current Rating (Amps)
1AS15	KLRUL25ATBE3R	25
3AS20	KLRUL25ATBE3R	25
3AS30	KLRUL35ATBE3R	35
3AS50	KLRUL45ATBE3R	45
1151AB2	KLRUL18ATBE3R	18
1AB2	KLRUL18ATBE3R	18
2AB2	KLRUL18ATBE3R	18
3AB2	KLRUL35ATBE3R	35
5AB2	KLRUL45ATBE3R	45

KLR Reactor is designed for three phase use. For single phase use, connect input to Terminals A and C.

TCI MODEL HG7 HARMONIC FILTER

HG7 harmonic filter provides a low impedance path for the major harmonic currents demanded by the drive.

FEATURES

- Meets IEEE-519 1992
- 3 Phase 240 - 600V
- NEMA 3R Enclosure
- Ambient Temperature 40° C
- Typical Efficiency: 98 - 99%
- Internal fusing protection
- Fundamental Frequency: 60Hz (50Hz for 400V)
- Agency Approvals: UL, cUL
- Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)
- Performance guarantee

BENEFITS

- Harmonic Reduction: < 7%
- High quality capacitors
 - Designed, built and tested specifically for use in harmonically rich environments
- Easy Installation
 - Fits easily into motor control centers and ships ready to install
- Uninterrupted operation
 - Drive continues to operate in the event of an HG7 shutdown
- Protect drives and other sensitive equipment
- Eliminates nuisance tripping
- Increase drive uptime dramatically
- Improves power factor
- Improves system efficiency and reliability
- Extends equipment life



TCI Part Number	Current Rating (Amps)
HG8BW03ST	22
HG10BW03ST	28
HG15BW03ST	42
HG20BW03ST	54

TCI MODEL HSP SINGLE PHASE HARMONIC FILTER

The TCI HSP Single-Phase Line to Line Harmonic Filter is an optimal solution for mitigating harmonics in single-phase applications.

FEATURES

- 60Hz, 1 Phase, 240 & 480 Volt
- NEMA 3R Enclosure
- Ambient Temperature: -40° C to 50° C
- *Agency Approvals: UL, cUL
- Maximum Altitude: 3,300 feet (Derate for applications above 3,300 feet)

BENEFITS

- Harmonic Reduction to 12% THID
- High quality capacitors
 - Designed, built and tested specifically for use in harmonically rich environments
- Small footprint and rugged outdoor enclosure
- Large range of amp ratings to meet varying demands
- Easy Installation
- Protects inverter against voltage spikes caused by capacitor switching and other rapidly changing loads
- Protects upstream components (circuit breakers, fuses, conductors, transformers) from damage caused by harmonics



Controller Model Number	Part Number	Current Rating (Amps)
1AS15	HSP028BG3SC	28
3AS20	HSP028BG3SC	28
3AS30	HSP042BG3SC	42
3AS50	HSP052BG3SC	52
1151AB2	HSP028BG3SC	28
1AB2	HSP028BG3SC	28
2AB2	HSP028BG3SC	28
3AB2	HSP042BG3SC	42
5AB2	HSP052BG3SC	52

TCI MODEL V1K DV/DT MOTOR PROTECTION OUTPUT FILTERS

V1K provides motor protection by limiting voltage spikes below 1,000 volts for long lead applications. For lead lengths above 1500 feet, consult factory.

FEATURES

- 2 - 130 amps; 240V - 600V; 2 - 125HP
- NEMA 3R Enclosure
- Carrier Frequency: 1 - 12 kHz
- Fundamental Frequency: 0 - 60Hz
- Efficiency: > 98%
- Insulation Rating 600V Class
- Agency Approvals: UL, cUL
- Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)



Order Number	Rated AMPS	Nominal HP* (240V)	Nominal HP* (480V)	Nominal HP* (600V)	Recommended ABII Number	Recommended SPD Number 1 Phase In	Recommended SPD Number 3 Phase In
V1K8A03	8	2	5	5	1AB2, 2AB2	SPD20050	
V1K12A03	12	3	7.5	10	3AB2	SPD20075	SPD40050
V1K16A03	16	5	10				SPD40075
V1K18A03	18			15	5AB2	SPD20100	SPD20050
V1K21A03	21		15				SPD40100
V1K25A03	25	7.5		20			SPD40150
V1K27A03	27		20	25		SPD20150	SPD20075
V1K35A03	35	10	25	30		SPD20200	SPD40200
V1K45A03	45	15	30	40		SPD20250	SPD20100 SPD40250
V1K55A03	55	20	40	50		SPD20300	SPD20150 SPD40300
V1K80A03	80	25 - 30	50 - 60	75		SPD20400 SPD20500	SPD20200 SPD20250 SPD40400 SPD40500
V1K110A03	110	40	75	100		SPD20600	SPD20300 SPD40600
V1K130A03	130	50	100	125			SPD20400 SPD40750

* Horsepower values are for reference purposes only.

Size filter by full load amperage draw.

SINEWAVE OUPUT FILTERS



Sinewave Filters improves system performance by protecting the motor from the harmful effects of reflected waves and preventing motor failure associated with insulation failure, overheating, and noise. These filters are designed to extend motor life in variable torque applications such as fans

and pumps with lead lengths up to 15,000 feet.

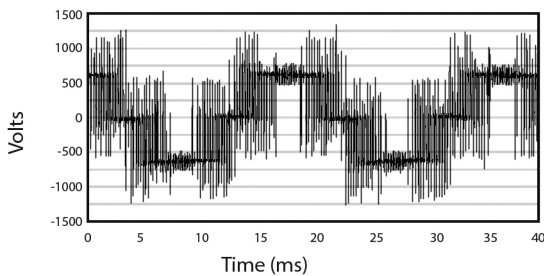
TYPICAL APPLICATIONS

- Mining
- Power Plants
- Material Handling
- Oil & Gas
- Data Centers
- HVAC Systems
- Pulp & Paper
- Renewable Energy
- Chemical Processing

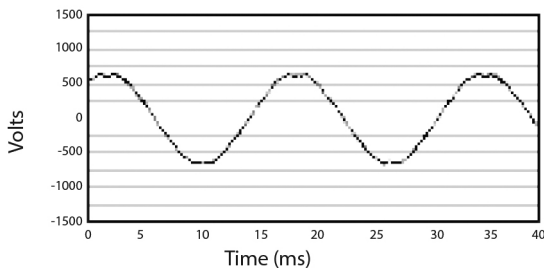
OTHER FEATURES

- Nema 3R Enclosure
- Output Frequency to 80 Hz
- UL & cUL Listed
- Carrier Frequency 2 kHz to 16 kHz

Motor Input Waveform Without MotorShield



Motor Input Waveform With MotorShield



460 Volt

Part Numbers	Description	Enclosure
MSD0009A300	5 HP 9AMP 460V Sine Wave Filter	NEMA 3R
MSD0012A300	7.5 HP 12AMP 460V Sine Wave Filter	
MSD0016A300	10 HP 16AMP 460V Sine Wave Filter	
MSD0023A300	15 HP 23AMP 460V Sine Wave Filter	
MSD0030A300	20 HP 30AMP 460V Sine Wave Filter	
MSD0035A300	25 HP 35AMP 460V Sine Wave Filter	
MSD0045A300	30 HP 45AMP 460V Sine Wave Filter	
MSD0055A300	40 HP 55AMP 460V Sine Wave Filter	
MSD0065A300	50 HP 65AMP 460V Sine Wave Filter	
MSD0080A300	60 HP 80AMP 460V Sine Wave Filter	
MSD0110A300	75 HP 110AMP 460V Sine Wave Filter	
MSD0130A300	100 HP 130AMP 460V Sine Wave Filter	
MSD0160A300	125 HP 160AMP 460V Sine Wave Filter	
MSD0200A300	150 HP 200AMP 460V Sine Wave Filter	
MSD0250A300	200 HP 250AMP 460V Sine Wave Filter	
MSD0305A300	250 HP 305AMP 460V Sine Wave Filter	
MSD0362A300	300 HP 362AMP 460V Sine Wave Filter	
MSD0420A300	350 HP 420AMP 460V Sine Wave Filter	
MSD0480A300	400 HP 480AMP 460V Sine Wave Filter	

575 Volt

Part Numbers	Description	Enclosure
MSD0008C300	5 HP 8AMP 575V SINEWAVE FILTER	NEMA 3R
MSD0010C300	10 HP 10AMP 575V SINEWAVE FILTER	
MSD0012C300	15 HP 12 AMP 575V SINEWAVE FILTER	
MSD0020C300	15 HP 20 AMP 575V SINEWAVE FILTER	
MSD0025C300	20 HP 25 AMP 575V SINEWAVE FILTER	
MSD0028C300	25 HP 28 AMP 575V SINEWAVE FILTER	
MSD0035C300	30 HP 35 AMP 575V SINEWAVE FILTER	
MSD0045C300	40 HP 45 AMP 575V SINEWAVE FILTER	
MSD0055C300	50 HP 55 AMP 575V SINEWAVE FILTER	
MSD0065C300	60 HP 65 AMP 575V SINEWAVE FILTER	
MSD0080C300	75 HP 80 AMP 575V SINEWAVE FILTER	
MSD0110C300	100 HP 110 AMP 575V SINEWAVE FILTER	
MSD0130C300	125 HP 130 AMP 575V SINEWAVE FILTER	
MSD0160C300	150 HP 160 AMP 575V SINEWAVE FILTER	
MSD0200C300	200 HP 200 AMP 575V SINEWAVE FILTER	
MSD0250C300	250 HP 250 AMP 575V SINEWAVE FILTER	
MSD0305C300	300 HP 305 AMP 575V SINEWAVE FILTER	
MSD0362C300	350 HP 362 AMP 575V SINEWAVE FILTER	
MSD0420C300	400 HP 420 AMP 575V SINEWAVE FILTER	
MSD0450C300	450 HP 450 AMP 575V SINEWAVE FILTER	



AQUAVAR[®] ProPak

30-60 HZ KITS

FEATURES

Simple, fast sizing and installation.

Range curves and selection charts generated from actual R&D tests.

Kits configured for 30 hz minimum and 60 hz maximum operation.

Controller must be set for 60 hz operation.

Kits use matched water end and motor (see component chart).

Wiring is as easy as standard three-wire control box:

- L1, L2 and Ground in from power supply
- Red, Yellow, Black and Ground out to motor

60 PSI Factory Preset Pressure - easily adjusted to higher pressures.

AQUAVAR® SOLO² CONTROLLER FEATURES

More versatile user interface board

- Provides switch connection for optional pressure or level switch
- Current limit settings for Goulds Water Technology and F.E. motors
- Dry well sensitivity switch
- Low pressure cut-off protection
- 5 or 20 PSI pressure drop restart switch
- Transducer better protected from transient power surges

Pressure factory preset at 60 PSI - simple, fast, field adjustability for higher pressures.

Three phase output to motor reduces wire cost.

Goulds Water Technology model GS features the Guardian bearing system and field proven sand and abrasive handling floating stack design.

Switch Input for connecting a pressure switch or float switch.

Grounding provisions for transducer and transducer cable.

KITS INCLUDE:

- Three Phase Motor 1.5 - 5 HP, 230 V
- Aquavar SOLO² Controller with Transducer
- GS Water End (pump)

Order pressure tank separately, not included in kit.

PROPAK PERFORMANCE RANGE AND COMPONENTS

MODEL	HP	Shut-Off Head (ft)	at Best Efficiency		at Maximum Runout		WE	Motor	Controller
			Flow (GPM)	TDH (ft)	Flow (GPM)	TDH (ft)			
7GP1515	1.5	688	7	538	10	386	7GS15	M15432	3AS20
10GP1515	1.5	555	10	440	16	239	10GS15		
18GP1515	1.5	348	18	255	28	126	18GS15		
5GP2020	2	1060	5	740	7.5	440	5GS20	M20432	
7GP2020	2	959	7	701	10	480	7GS20		
10GP2020	2	660	10	546	16	287	10GS20		
18GP2020	2	444	18	324	28	160	18GS20		
25GP2020	2	340	25	227	33	120	25GS20		
7GP3030	3	1200	7	890	10	615	7GS30	M30432	
10GP3030	3	876	10	700	16	368	10GS30		
13GP3030	3	662	13	519	20	250	13GS30		
18GP3030	3	605	18	422	28	215	18GS30		
25GP3030	3	464	25	310	33	165	25GS30		
35GP3030	3	405	35	260	50	75	35GS30		
18GP5050	5	960	18	712	28	365	18GS50	M50432	3AS50
25GP5050	5	800	25	525	33	280	25GS50		
35GP5050	5	659	35	428	50	100	35GS50		

PROPAK KIT DIMENSIONS AND WEIGHTS

Controller	Sh. Weight (lb)	Dimensions - All
3AS20	23	Height: 21"
3AS30	24	Width: 13"
3AS50	29	Depth: 8"

Pump	Sh. Weight (lb)	W. E. Length (in)
7GS15	12	23.6
10GS15	12	18.4
18GS15	10	16.1
5GS20	19	31.6
7GS20	13	27.2
10GS20	13	21.7
18GS20	11	18.6
25GS20	10	17.2
7GS30	18	33.2
10GS30	18	27.5
13GS30	15	22.3
18GS30	15	24.1
25GS30	14	20.9
35GS30	13	24.0
18GS50	21	34.4
25GS50	21	33.4
35GS50	19	35.2

Motors	Sh. Weight (lb)	Motor Length (in)	L x W x H (in)
M15432	23	11.7	19 x 4.1 x 4.1
M20432	28	13.8	20.5 x 6.5 x 6.5
M30432	32	15.3	20.5 x 6.5 x 6.5
M50432	55	21.7	27.5 x 6.5 x 6.5

ProPak Carton Dimensions and Weights

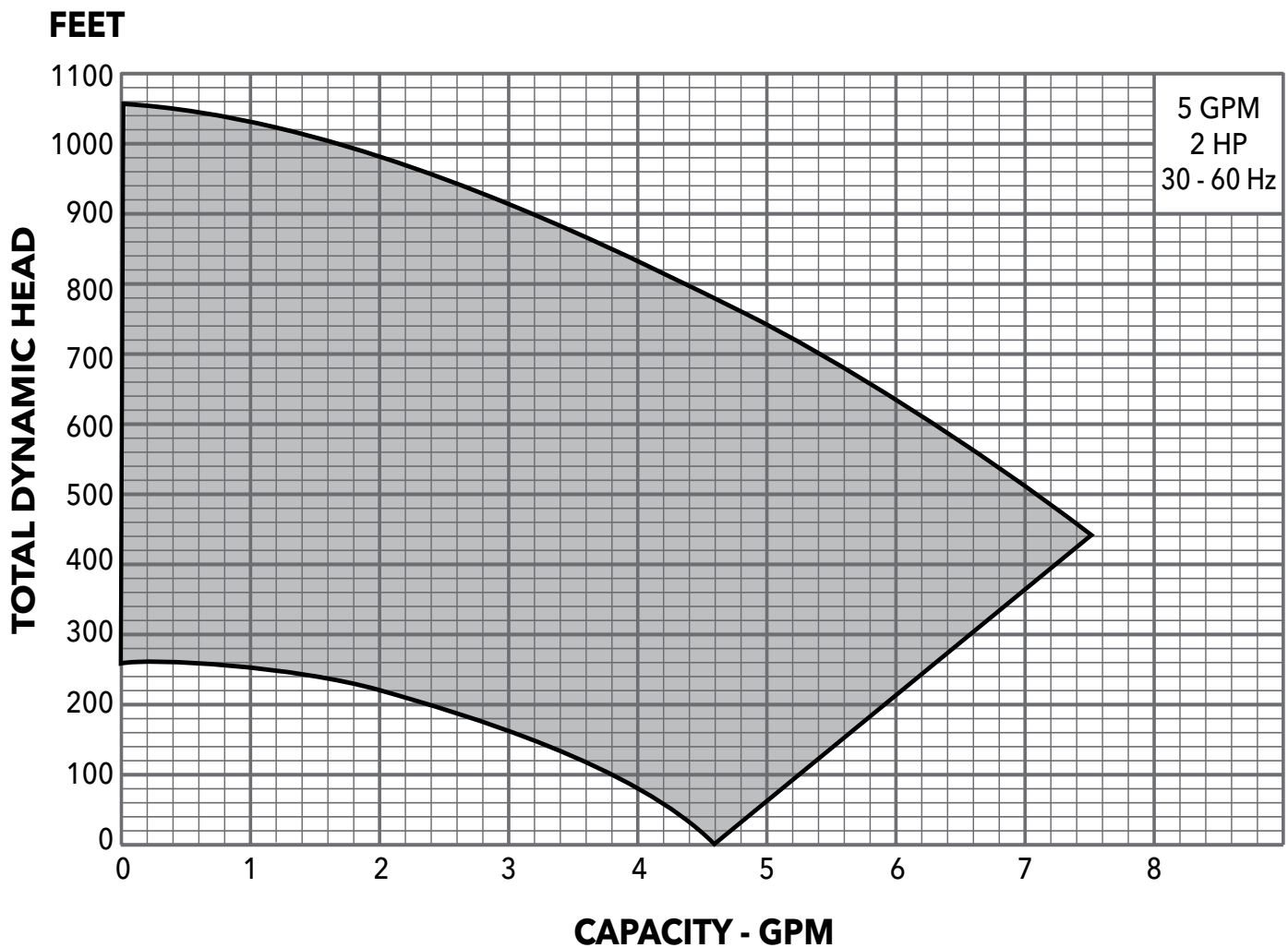
Kit No.	Sh. Weight (lb)	No. cartons	L x W x H (in)
7GP1515	60	1	34.2" x 15.1" x 17.9"
10GP1515	60		
18GP1515	58		
5GP2020	72	1	40.7" x 15.1" x 17.9"
7GP2020	66	1	34.2" x 15.1" x 17.9"
10GP2020	66		
18GP2020	64		
25GP2020	63		
7GP3030	76	1	40.7" x 15.1" x 17.9"
10GP3030	76	1	34.2" x 15.1" x 17.9"
13GP3030	73		
18GP3030	73		
25GP3030	72		
35GP3030	71	1	34.2" x 15.1" x 17.9"
18GP5050	107	2 ^①	40.7" x 15.1" x 17.9"
25GP5050	107		
35GP5050	105		

① The 5 HP units have the controller and pump in one carton and the motor is shipped separately due to weight. See M50432 for motor weight and dimensions.

MODEL 5GS20 30-60 Hz with 2 HP Motor and 3AS20

SELECTION CHART

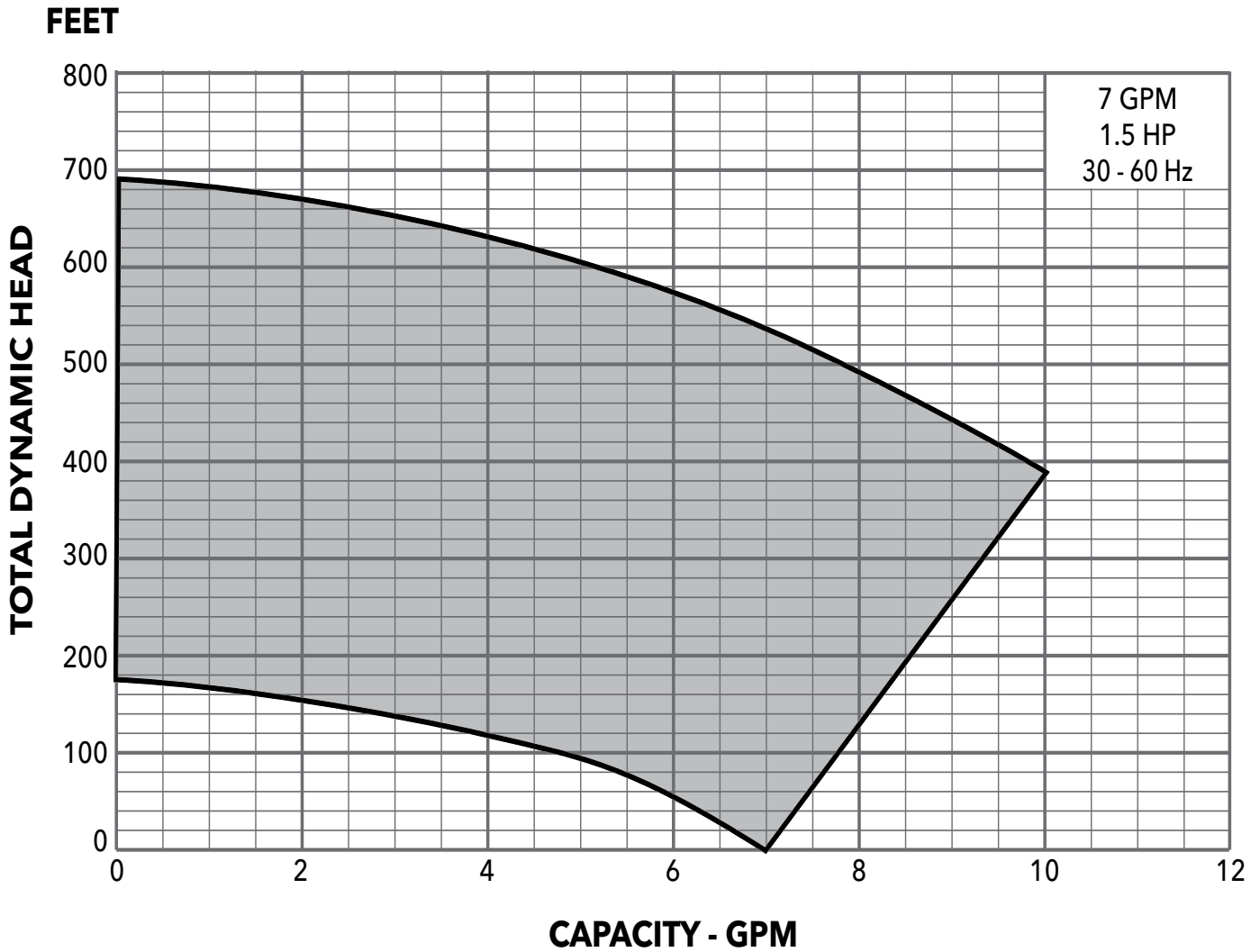
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
			300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940
5GS20	2	0					7.4	7.1	6.8	6.4	6.1	5.7	5.4	5.0	4.7	4.3	3.9	3.3	2.7
		50		7.5	7.2	6.8	6.5	6.1	5.8	5.4	5.1	4.7	4.3	3.9	3.4	2.8	2.1		
		60	7.6	7.3	7.0	6.6	6.3	5.9	5.6	5.2	4.9	4.5	4.1	3.6	3.1	2.4	1.6		
Shut-off PSI			328	311	293	276	259	242	224	207	190	172	155	138	120	103	86	68	51



MODEL 7GS15 30-60 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

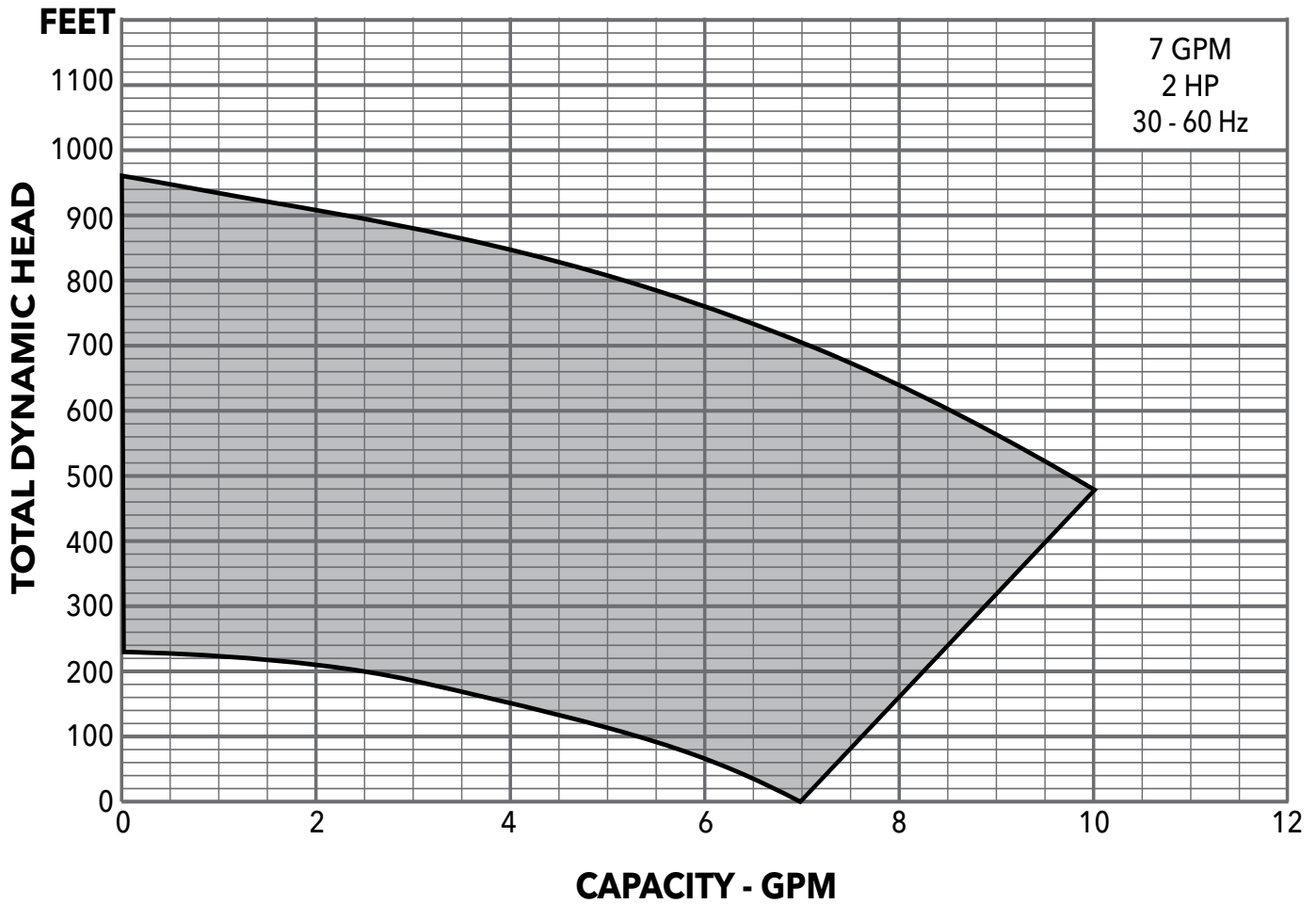
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)												
			240	260	280	300	340	380	420	460	500	540	580	620	660
7GS15	1½	0						10.2	9.3	8.5	7.6	6.8	5.9	4.7	2.6
		50		10.3	9.9	9.4	8.6	7.7	6.9	6.0	4.9	2.9			
		60	10.2	9.8	9.4	8.9	8.1	7.2	6.4	5.4	3.9				
Shut-off PSI			194	186	177	168	151	134	116	99	82	64	47	30	12



MODEL 7GS20 30-60 Hz with 2 HP Motor and 3AS20

SELECTION CHART

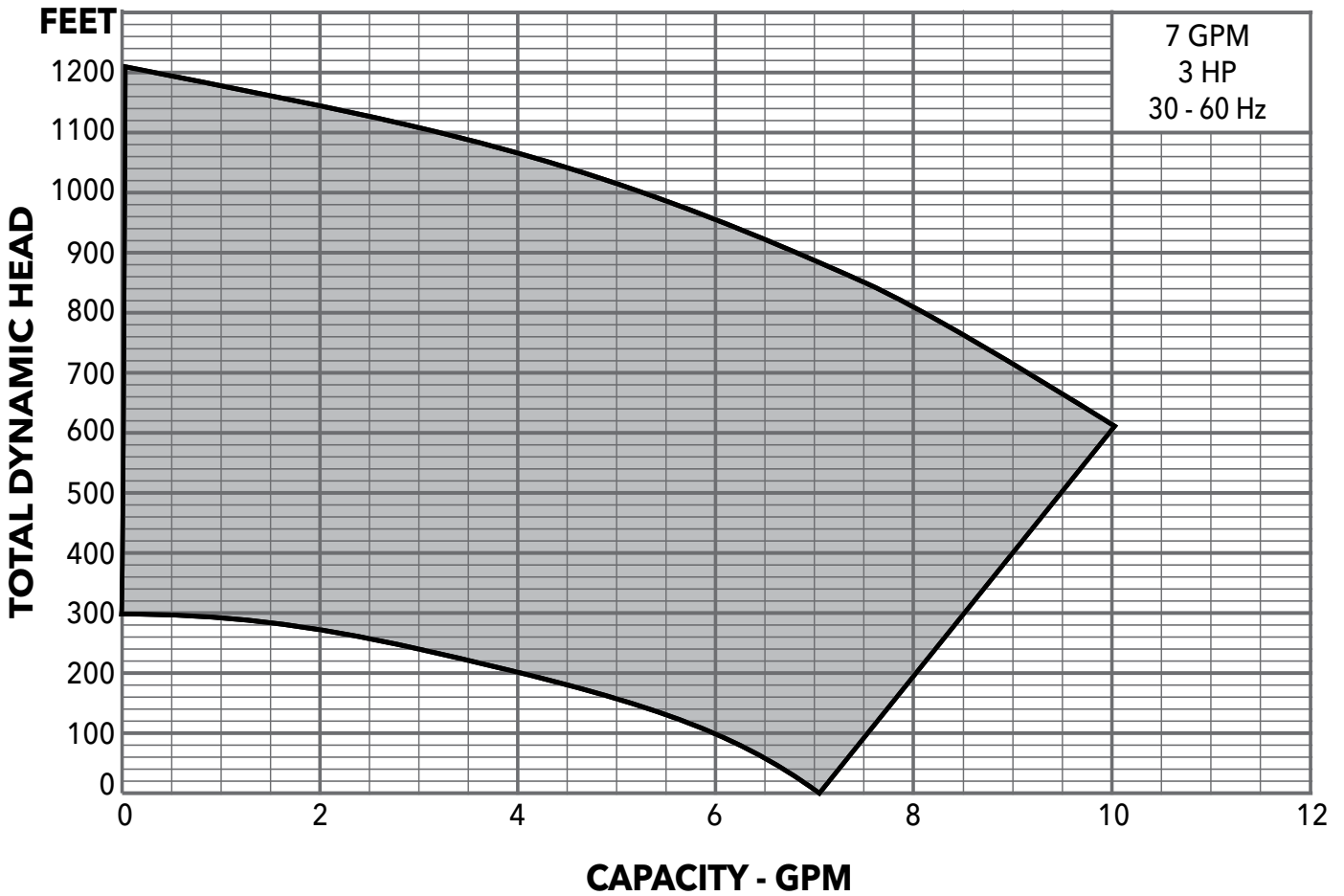
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)														
			340	380	420	460	500	540	580	620	660	700	740	780	820	860	900
7GS20	2	0					9.8	9.3	8.7	8.4	7.8	7.1	6.3	5.4	4.5	3.5	2.2
		50		9.9	9.4	8.9	8.5	7.8	7.2	6.3	5.5	4.7	3.5				
		60	10.0	9.6	9.1	8.7	8.2	7.4	6.6	5.8	5.0	4.0					
Shut-off PSI			268	251	234	216	199	182	165	147	130	113	95	80	61	43	26



MODEL 7GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

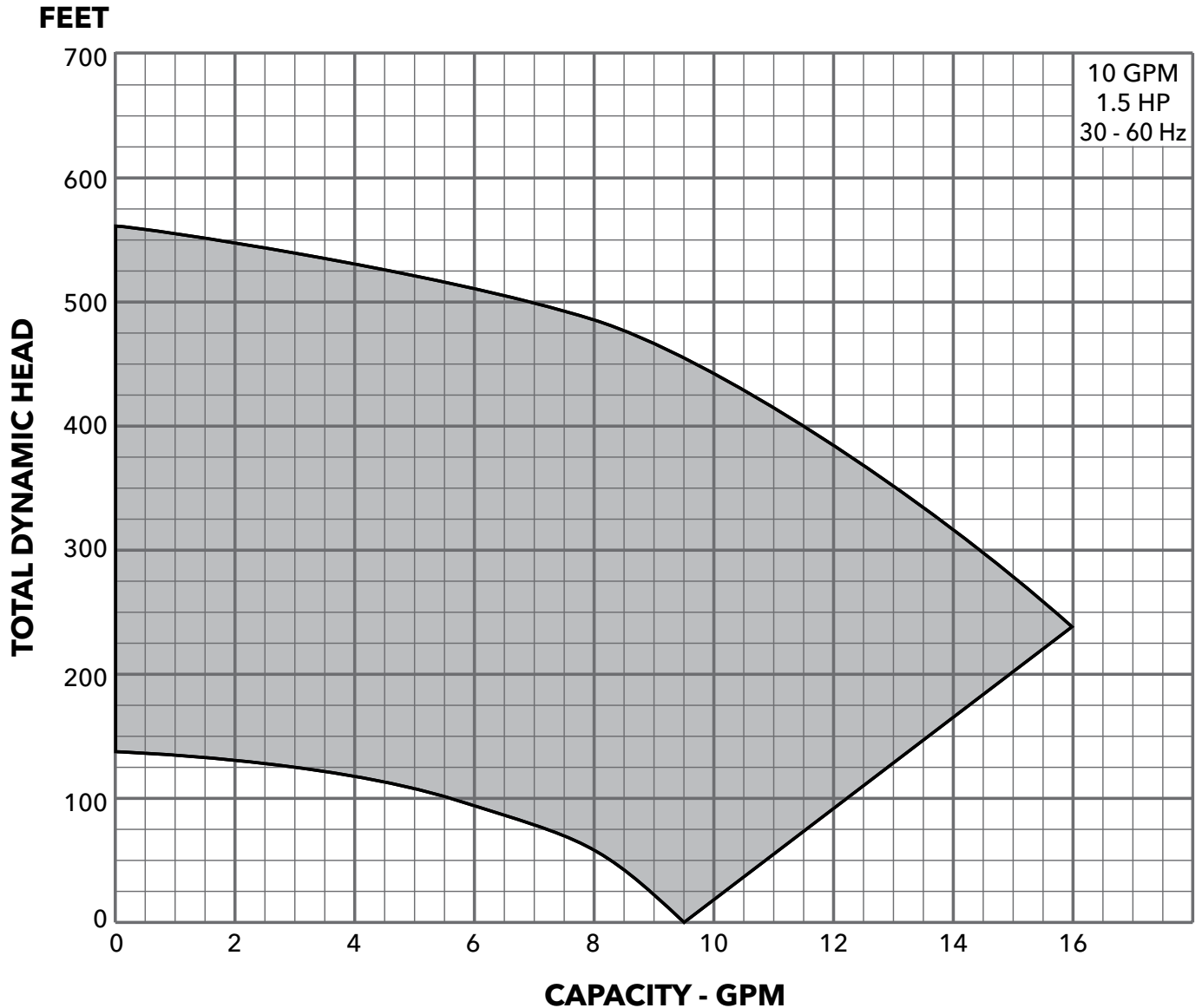
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																	
			460	500	540	580	620	660	700	740	780	820	860	900	940	980	1020	1060	1100	1140
7GS30	3	0					9.8	9.5	9.2	8.7	8.3	7.9	7.4	6.8	6.2	5.4	4.7	3.9	3.0	2.0
		50		9.9	9.5	9.2	8.7	8.4	7.9	7.4	6.8	6.3	5.5	4.8	3.9	3.1	2.2			
		60	10.0	9.7	9.3	9.0	8.6	8.1	7.6	7.0	6.5	5.8	5.1	4.2	3.4	2.5	1.5			
Shut-off PSI			320	303	286	268	251	234	216	199	182	165	147	130	113	95	78	61	43	27



MODEL 10GS15 30-60 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

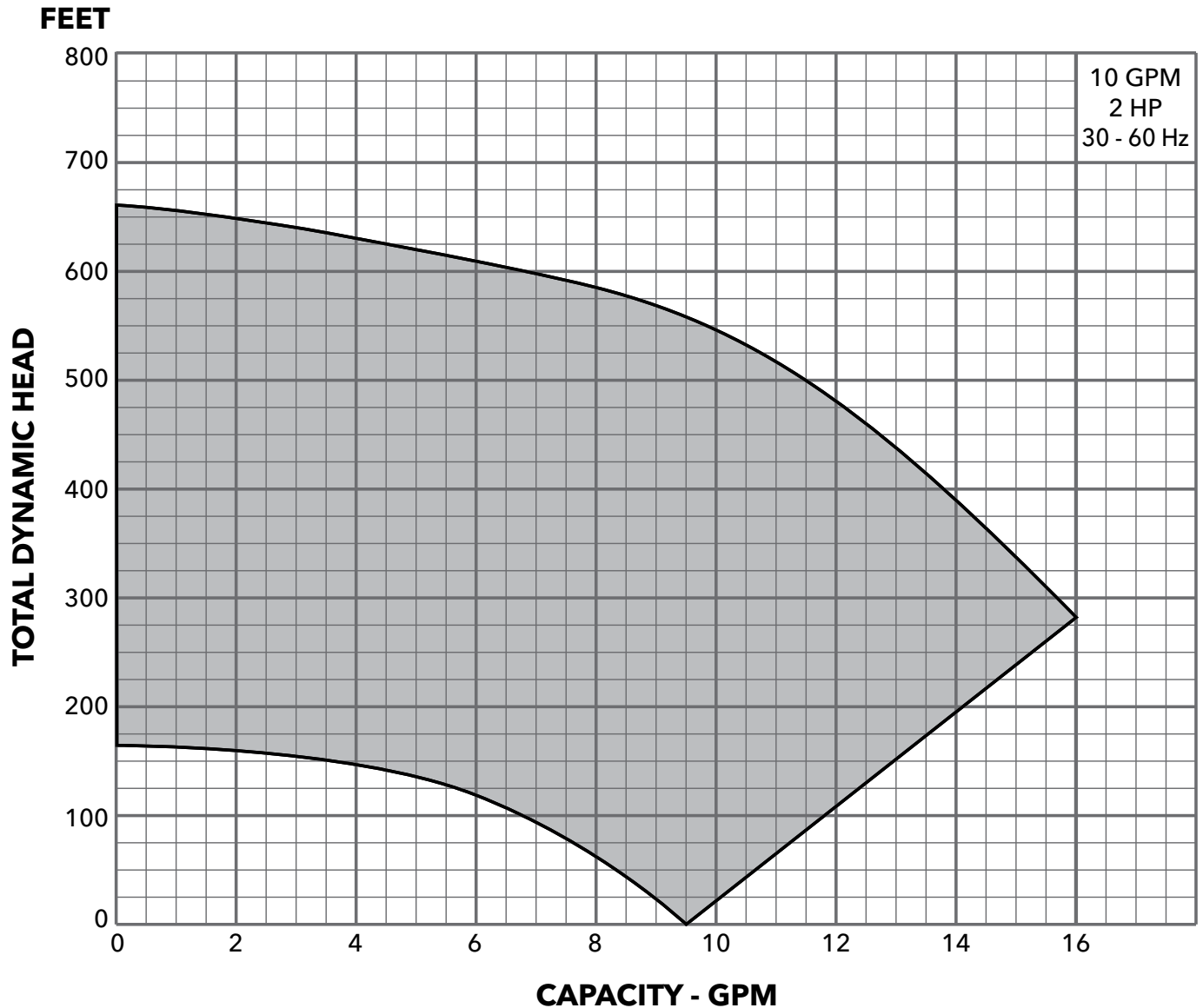
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
			100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540
10GS15	1½	0								15.7	15.3	14.8	14.4	13.3	12.2	10.9	9.3	7.1	3.0
		50		15.7	15.4	14.9	14.5	14.0	13.4	12.8	12.3	11.7	11.0	9.4	7.4	3.4			
		60	15.7	15.3	14.8	14.4	13.9	13.3	12.8	12.2	11.6	10.9	10.1	8.1	5.6				
Shut-off PSI			197	188	180	171	162	154	144	136	128	119	110	93	76	58	41	24	6



MODEL 10GS20 30-60 Hz with 2 HP Motor and 3AS20

SELECTION CHART

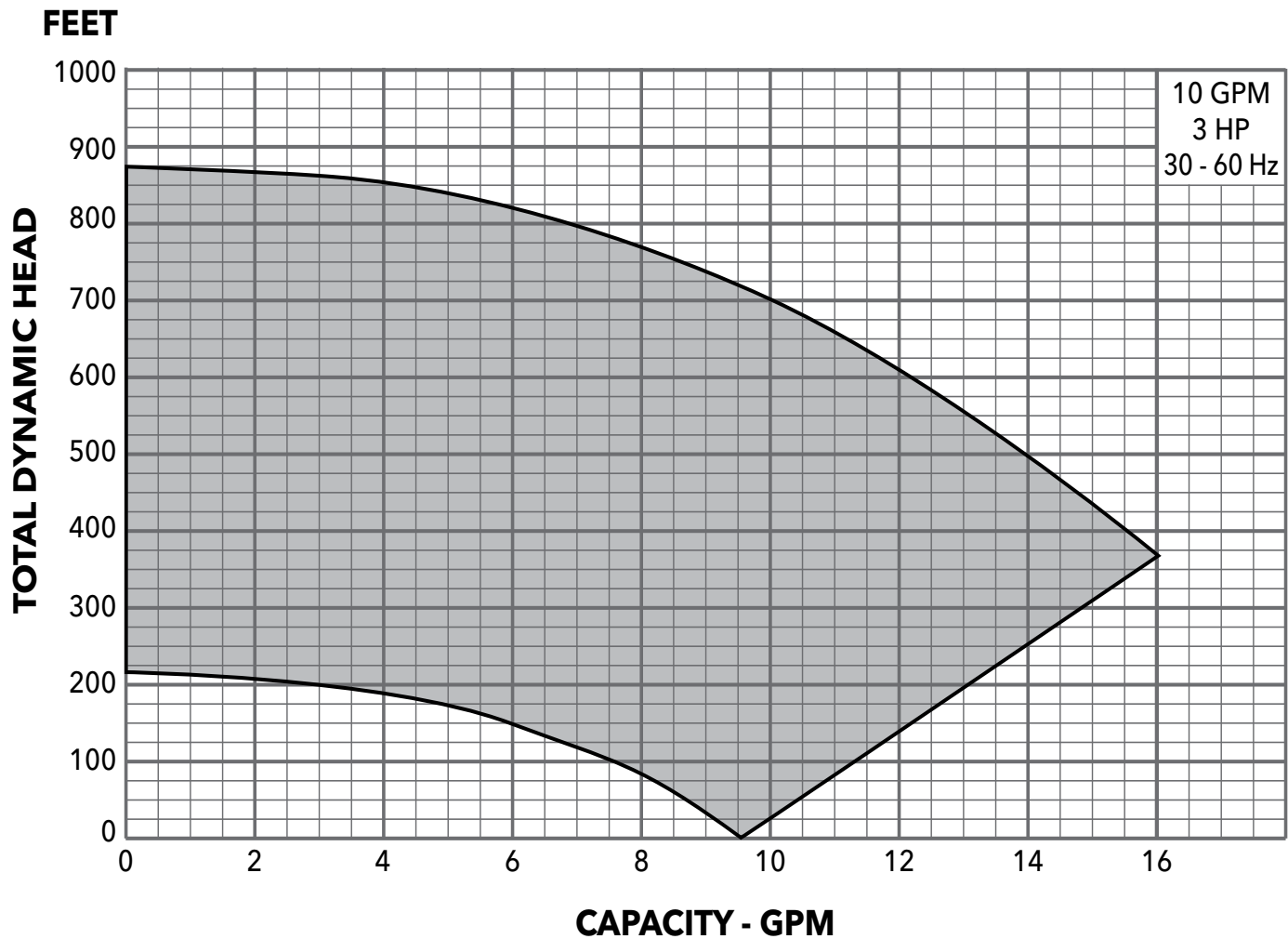
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
			140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620
10GS20	2	0								16.0	15.7	14.9	14.2	13.4	12.4	11.4	10.0	8.2	5.8
		50		16.1	15.7	15.3	15.0	14.6	14.2	14.0	13.4	12.5	11.5	10.1	8.5	6.0			
		60	16.0	15.7	15.3	14.9	14.5	14.2	13.8	13.4	12.8	11.8	10.7	9.1	7.2	3.4			
Shut-off PSI			225	216	208	199	190	182	173	164	156	139	121	104	87	69	52	35	17



MODEL 10GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

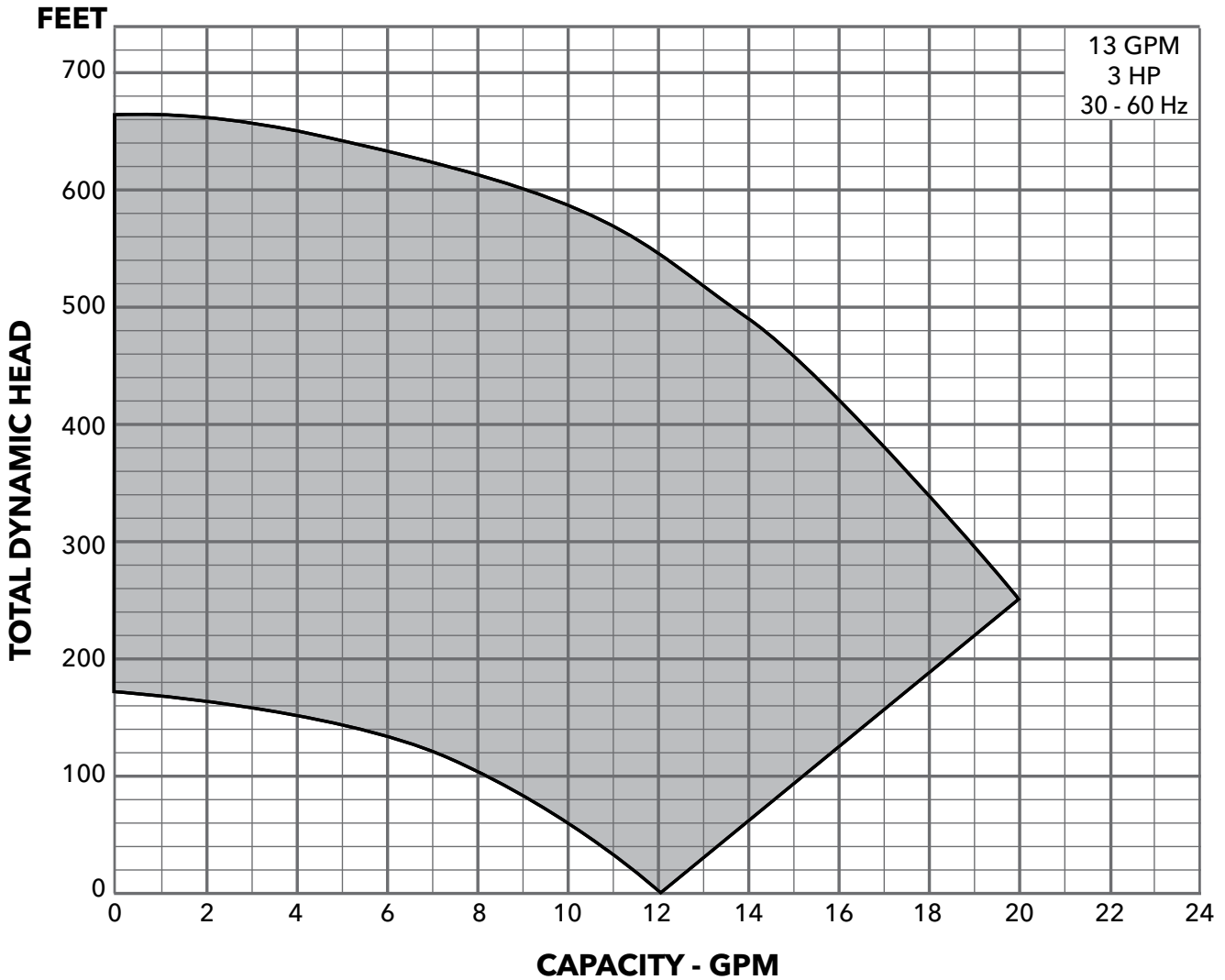
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																	
			220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820
10GS30	3	0							15.8	15.2	14.6	14.0	13.3	12.6	11.9	11.0	10.0	9.0	7.5	5.8
		50		16.0	15.8	15.6	15.3	14.7	14.1	13.3	12.7	11.9	11.0	10.2	9.1	7.8	6.0	3.0		
		60	16.0	15.8	15.5	15.2	14.8	14.3	13.7	12.9	12.3	11.4	10.6	9.6	8.3	6.8	4.5			
Shut-off PSI			284	275	267	258	249	232	215	197	180	163	145	128	111	94	76	59	42	24



MODEL 13GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

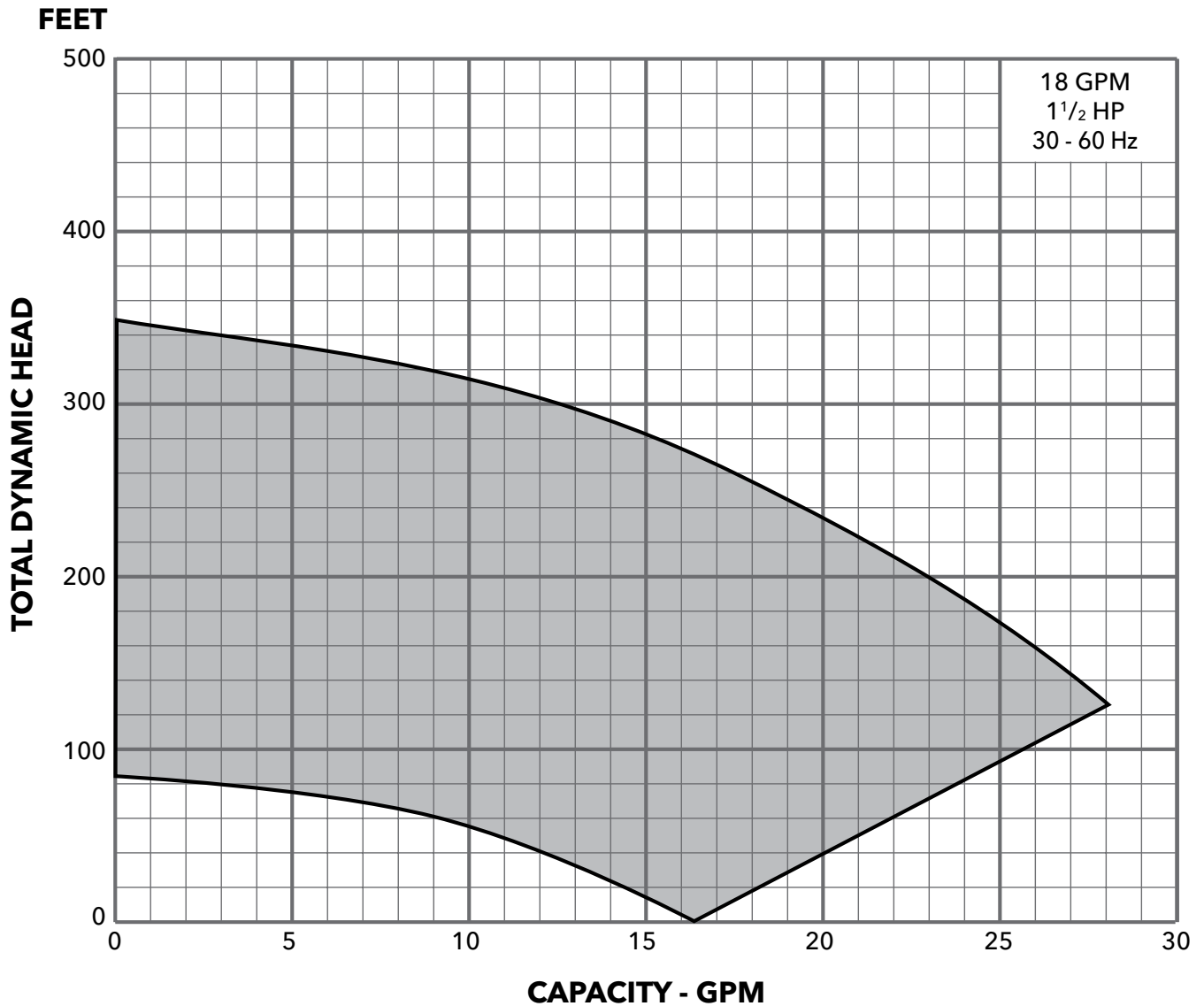
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																	
			120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620
13GS30	3	0								19.8	19.4	18.9	18.0	17.1	16.0	14.6	13.5	11.9	10.0	7.3
		50		19.9	19.5	19.0	18.6	18.1	17.7	17.2	16.7	16.1	14.9	13.7	12.0	10.1	7.9			
		60	19.8	19.4	18.9	18.5	18.0	17.5	17.1	16.6	16.0	15.4	14.2	12.9	11.0	9.0	5.0			
Shut-off PSI			235	226	217	209	200	191	183	174	165	157	139	122	104	87	70	53	35	18



MODEL 18GS15 30-60 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

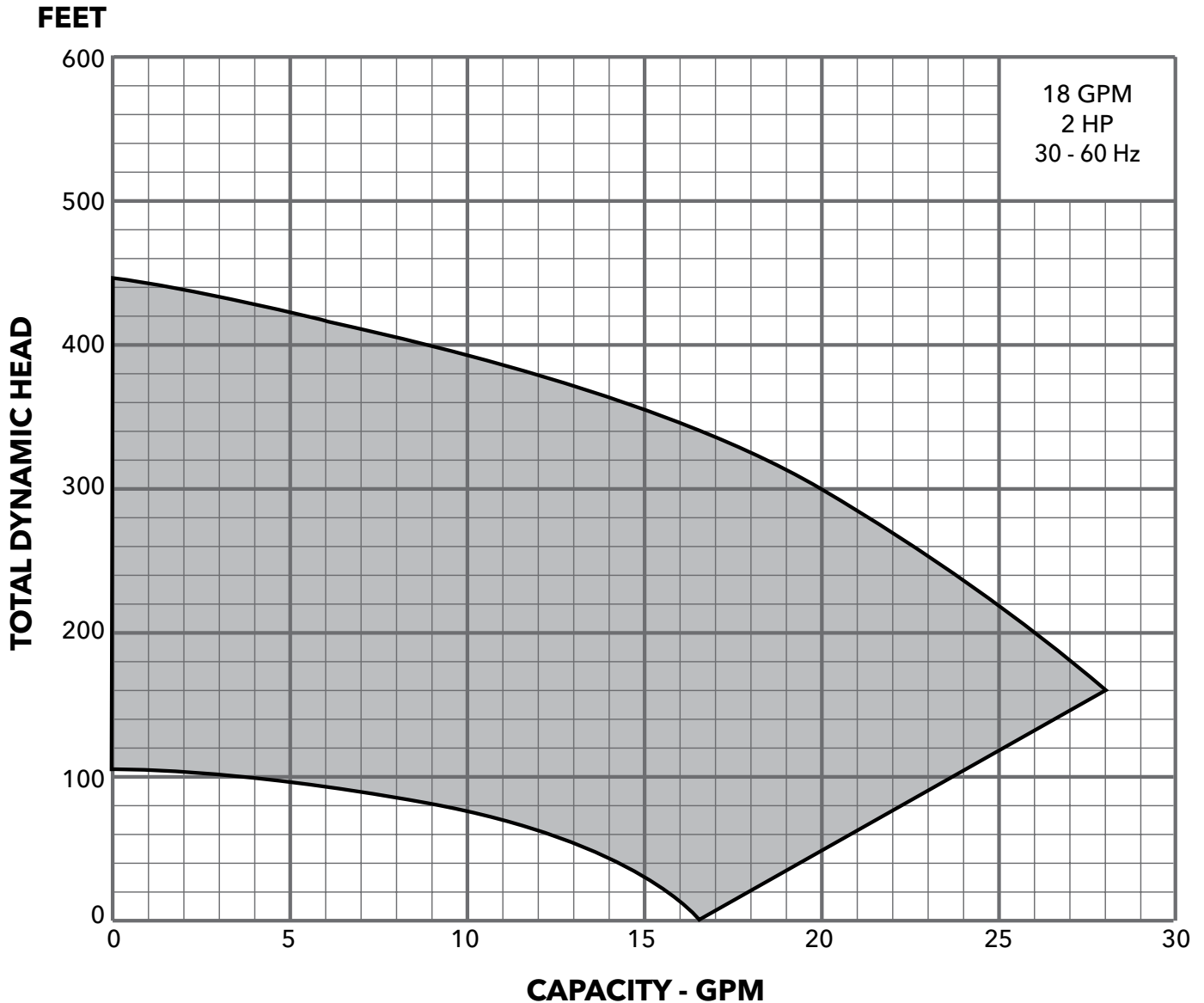
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)														
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
18GS15	1½	0						28.4	27.2	26.0	24.8	23.0	21.4	19.6	17.5	15.0	12.1
		50	27.6	26.4	25.0	23.4	21.8	20.0	18.0	15.5	13.0	9.2					
		60	26.0	24.6	23.0	21.2	19.5	17.5	15.0	12.0	7.9						
Shut-off PSI			143	134	126	117	108	100	91	82	74	65	56	48	39	30	22



MODEL 18GS20 30-60 Hz with 2 HP Motor and 3AS20

SELECTION CHART

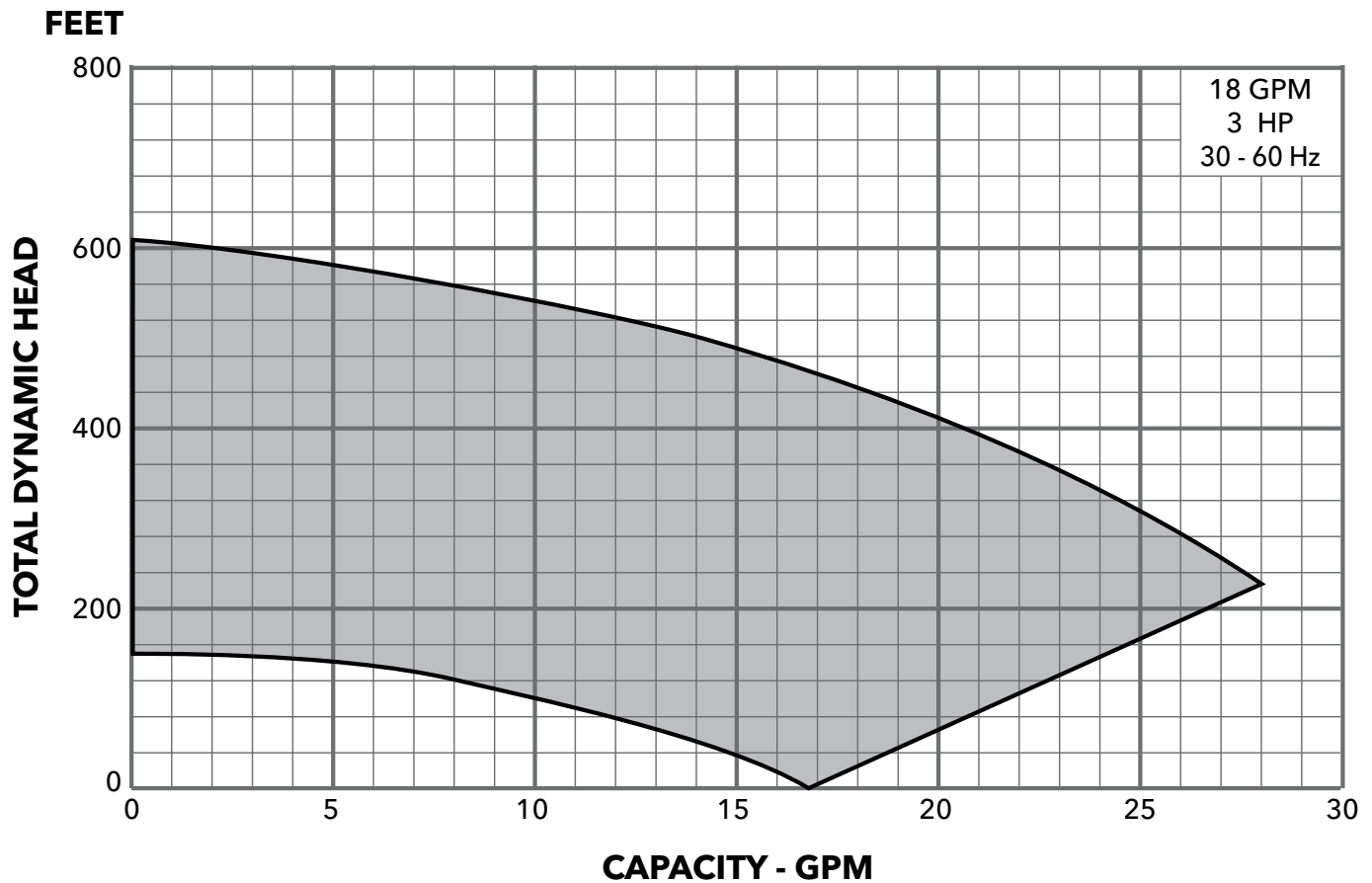
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380
18GS20	2	0								28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	16.8	12.8
		50		28.0	27.2	26.2	25.3	24.3	23.0	21.8	20.3	18.7	17.0	15.3	13.1	10.5	6.0		
		60	28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	18.3	16.8	14.8	12.8	9.5				
Shut-off PSI			183	174	165	157	148	139	131	122	113	105	96	87	79	70	61	44	27



MODEL 18GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

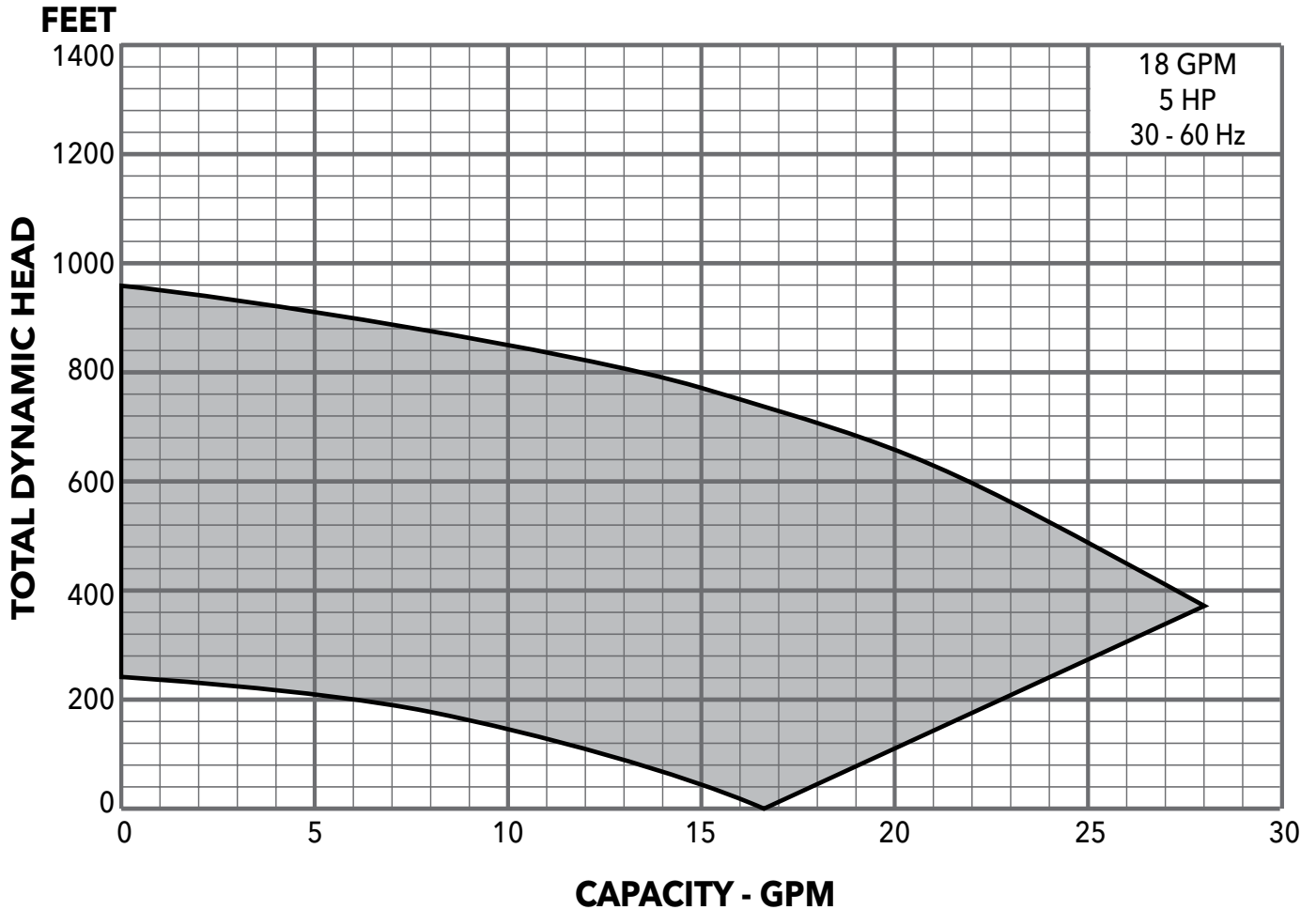
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																	
			80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540
18GS30	3	0								28.0	27.4	26.7	26.0	25.0	23.5	21.5	19.2	16.9	14.2	10.5
		50			27.4	26.8	26.0	25.2	24.5	23.6	22.6	21.7	20.6	19.5	17.3	14.5	11.0			
		60	28.0	27.4	26.7	26.0	25.0	24.3	23.5	22.5	21.5	20.5	19.2	18.0	15.7	12.8	7.0			
Shut-off PSI			225	216	208	199	190	182	173	164	156	147	139	130	113	95	78	61	43	26



MODEL 18GS50 30-60 Hz with 5 HP Motor and 3A550

SELECTION CHART

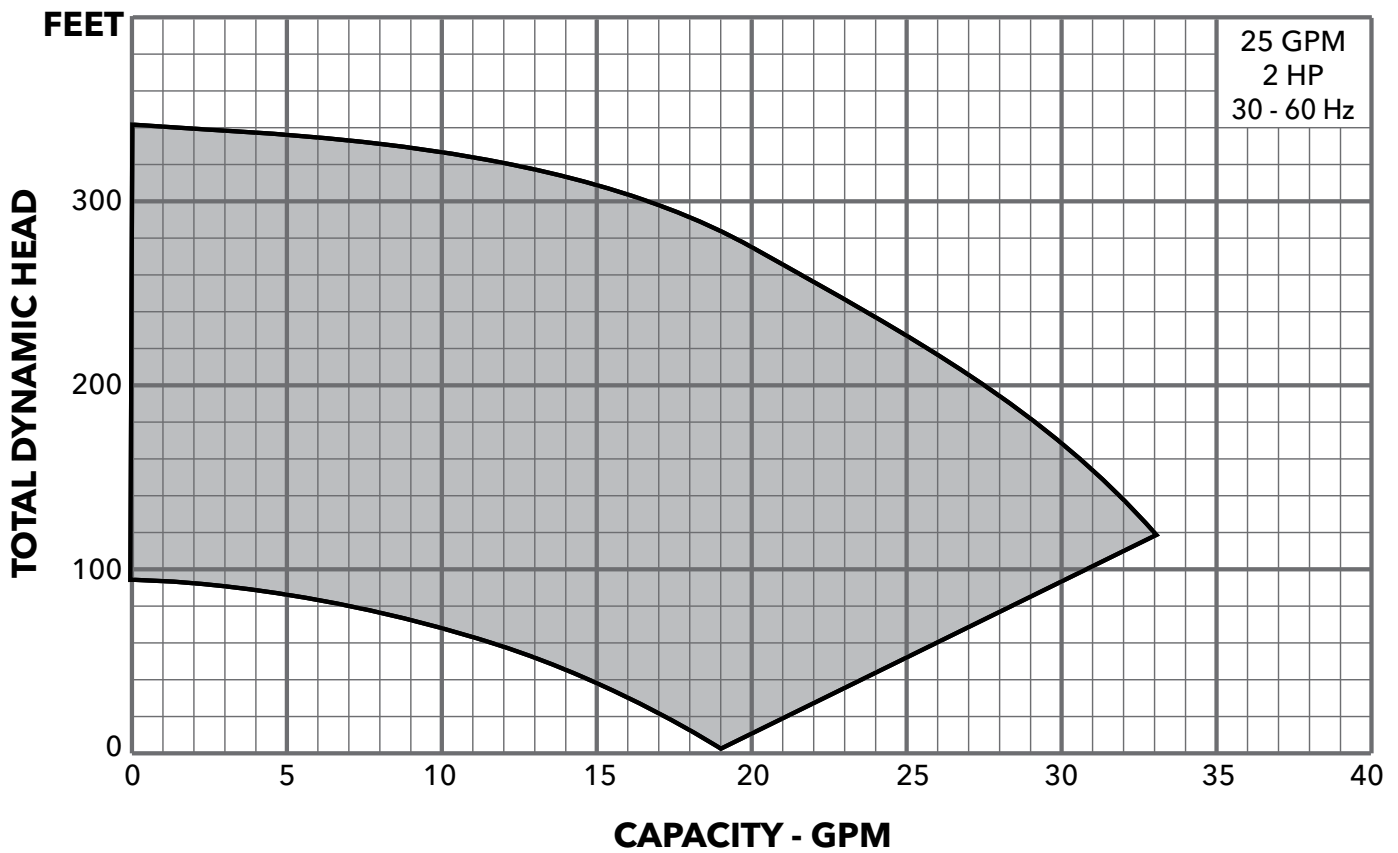
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																	
			240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860
18GS50	5	0						27.9	26.8	25.8	24.8	23.7	22.6	21.2	19.9	18.4	16.8	14.8	12.4	9.7
		50		27.9	27.3	26.8	25.9	24.9	23.8	22.7	21.3	20.1	18.5	16.9	14.9	12.8	10.0	6.0		
		60	27.9	27.2	26.8	26.2	25.2	24.1	23.0	21.9	20.7	19.2	17.5	15.8	13.6	11.0	7.8			
Shut-off PSI			307	298	290	281	264	246	229	212	195	177	160	143	125	108	91	73	56	39



MODEL 25GS20 30-60 Hz with 2 HP Motor and 3AS20

SELECTION CHART

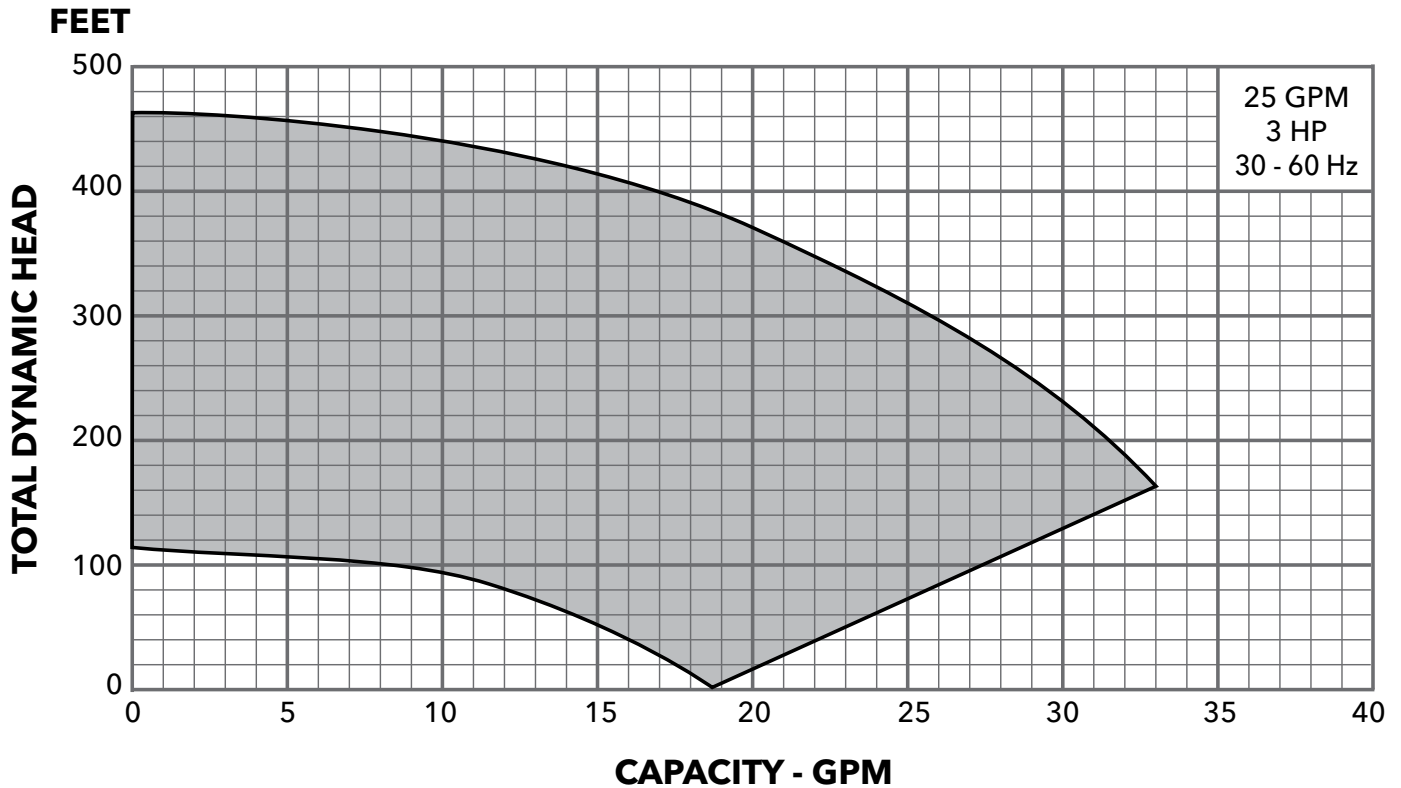
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)															
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	
25GS20	2	0						33.0	31.8	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4	
		50		30.5	29.4	28.0	26.0	24.1	22.1	20.0	17.2	13.2						
		60	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4	12.2							
Shut-off PSI			139	130	121	113	104	95	87	78	69	61	52	43	35	26	17	



MODEL 25GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

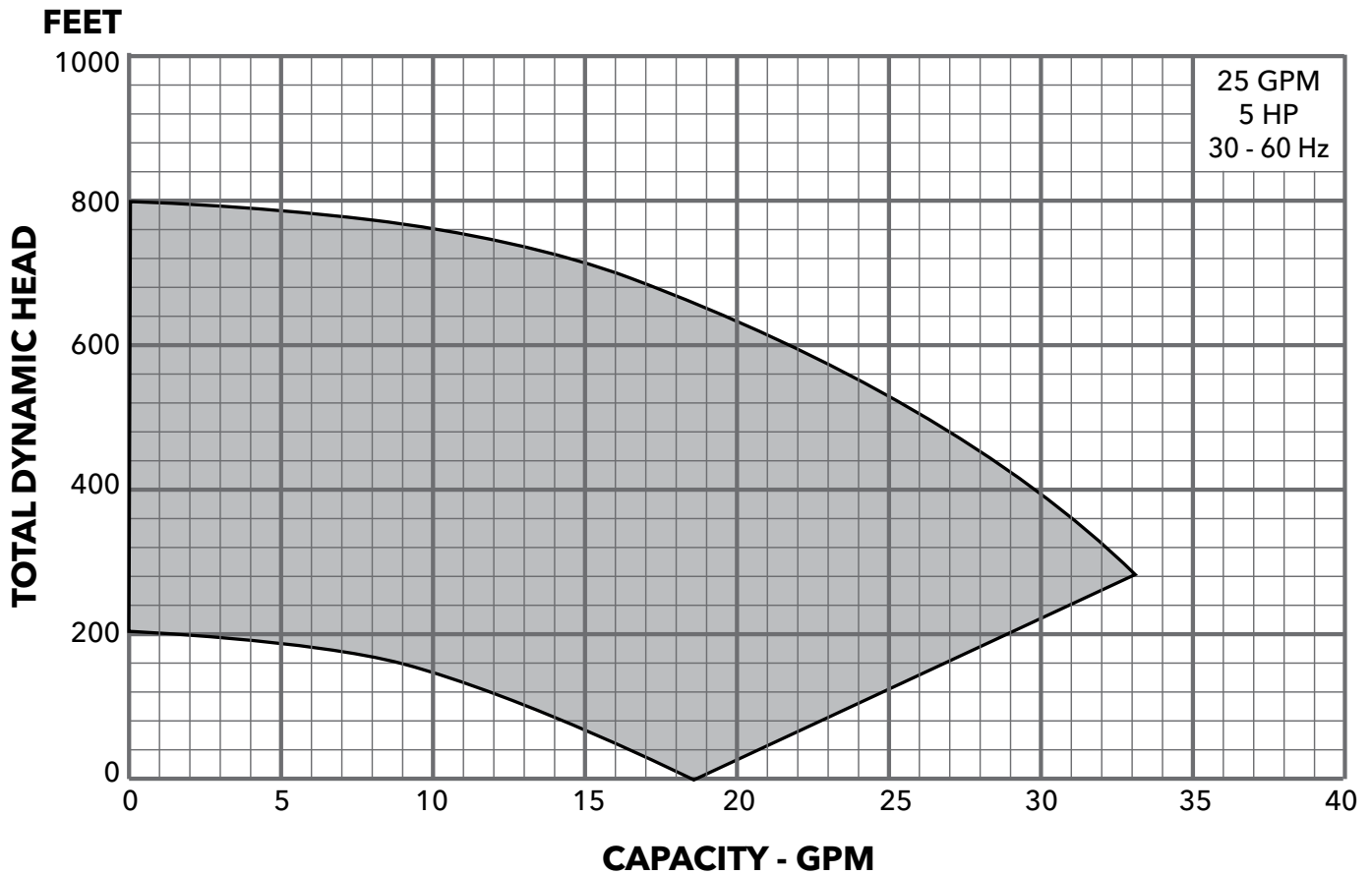
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																			
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420		
25GS30	3	0									33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	22.6	19.0	14.0	
		50			32.3	31.6	30.8	29.8	28.5	27.3	26.0	24.5	23.0	21.2	19.5	17.4	11.5					
		60	33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	24.1	22.6	20.9	19.0	16.9	14.0	10.0					
Shut-off PSI			191	183	174	165	157	148	139	131	122	113	105	96	87	79	70	53	35	18		



MODEL 25GS50 30-60 Hz with 5 HP Motor and 3AS50

SELECTION CHART

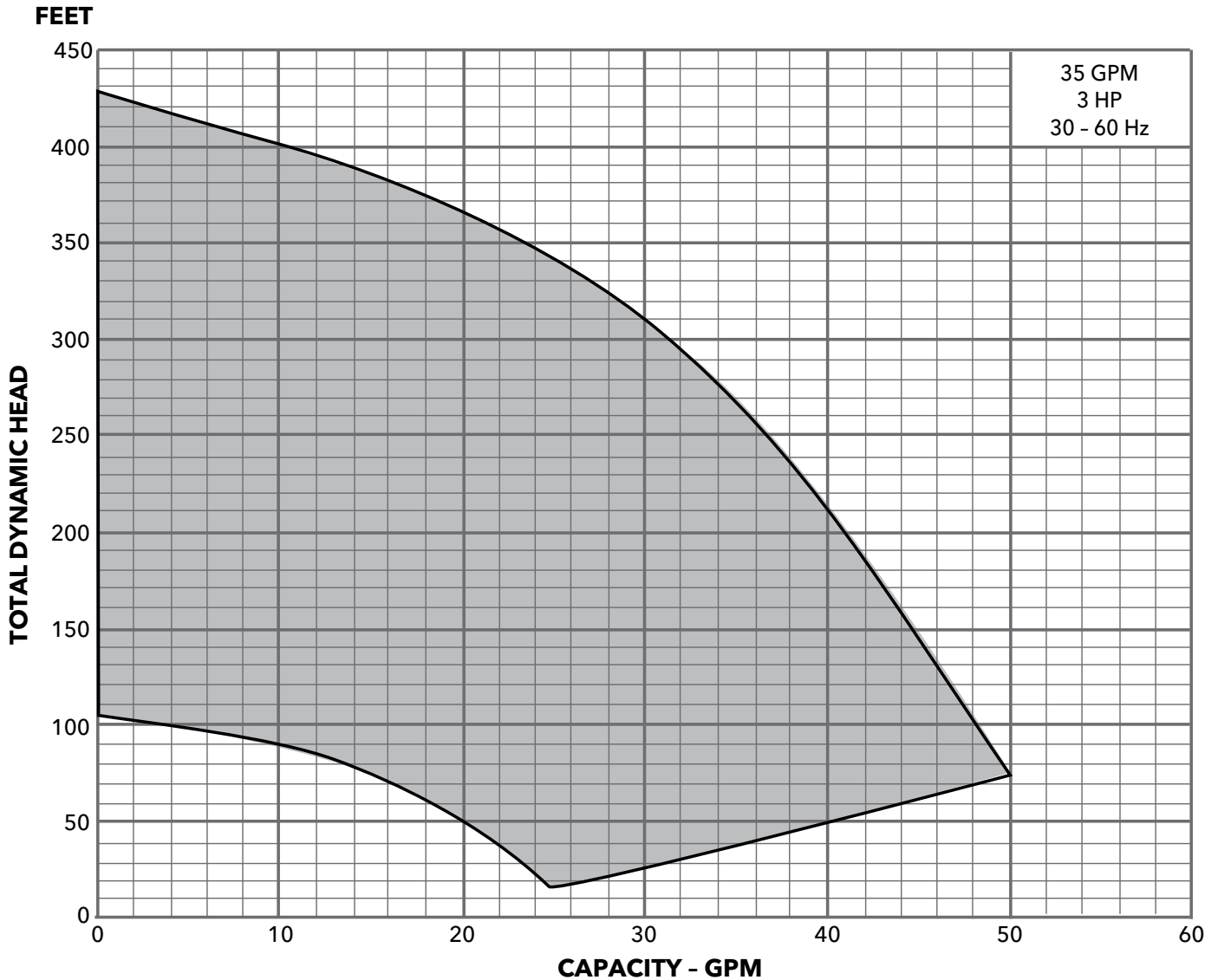
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																			
			140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740
25GS50	5	0								33.0	32.5	31.5	30.2	29.0	27.6	26.0	24.2	22.4	20.5	18.3	15.8	12.0
		50			32.6	32.1	31.6	31.0	30.3	29.9	29.2	27.8	26.3	24.5	22.6	21.8	18.7	16.0	12.7			
		60	33.0	32.5	32.0	31.5	30.8	30.2	29.8	29.0	28.3	26.9	25.1	23.3	21.5	19.5	17.0	14.0	9.5			
Shut-off PSI			286	277	268	260	251	242	234	225	216	199	182	165	147	130	113	95	78	61	43	26



MODEL 35GS30 30-60 Hz with 3 HP Motor and 3AS30

SELECTION CHART

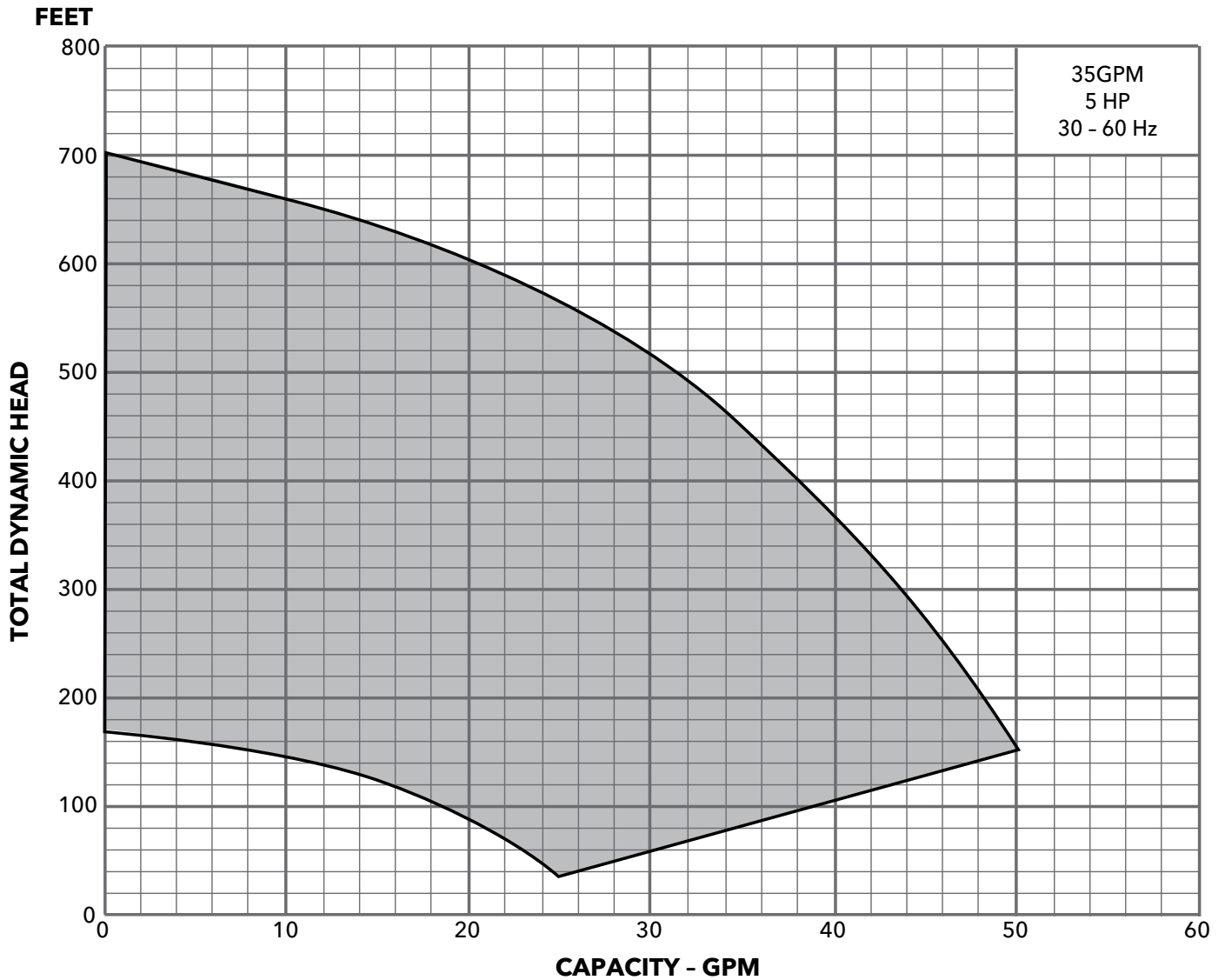
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																				
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	
35GS30	3	0				50	48	47	45	44	42	41	39	38	36	34	31	28	25	21	16	10	
		20		49	48	46	45	43	42	40	39	37	35	33	30	27	24	19	14				
		30	49	47	46	45	43	42	40	39	37	35	33	30	27	23	18	13					
		40	47	46	44	43	41	40	38	37	35	32	30	26	22	18	12						
		50	46	44	43	41	40	38	36	34	32	29	26	22	17	11							
		60	44	42	41	39	38	36	34	31	29	25	21	16	10								
Shut-off PSI			176	168	159	150	142	133	124	116	107	98	90	81	72	64	55	46	38	29	20	12	



MODEL 35GS50 30-60 Hz with 5 HP Motor and 3AS50

SELECTION CHART

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	
35GS50	5	0			50	48	46	43	41	38	35	31	26	19	11															
		20		50	48	46	44	41	38	35	31	26	20	12																
		30		49	47	45	42	40	37	33	29	24	16																	
		40	50	48	46	44	41	38	35	31	27	20	12																	
		50	49	47	45	43	40	37	34	29	24	17																		
			48	46	44	41	39	35	32	27	21	13																		
Shut-off PSI			280	259	237	215	194	172	150	129	107	85	64	42																



WIRE SIZING - MAXIMUM CABLE LENGTHS IN FEET TO LIMIT VOLTAGE DROP TO 5% FOR 230 V SYSTEMS ^⑤

Service Entrance to Controller

Controller Input	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ^⑥															
		14	12	10	8	6	4	2	1/0	2/0	3/0	4/0	250	300	350	400	500
230V 1 PH	¾	279	445	706	1020	1608	2552	4019	6383	8055							
	1	226	360	571	824	1300	2064	3250	5161	6513	8201						
	1½	*	286	455	657	1036	1644	2589	4111	5188	6533	8236	9710				
	2	*	*	331	478	754	1197	1886	2995	3779	4759	5999	7073	8455	9852		
	3	*	*	246	355	561	890	1401	2225	2808	3536	4458	5256	6283	7321	8343	
	5	*	*	*	218	343	545	858	1363	1720	2165	2730	3219	3847	4483	5109	6348

Controller to Motor

Controller Output	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ^⑥												
		14	12	10	8	6	4	2	1/0	2/0	3/0	4/0	250	300
230V 3 PH	¾	690	1100	1748	2523	3978	6316	9945						
	1	558	890	1413	2040	3216	5106	8041						
	1½	445	709	1126	1625	2562	4068	6406						
	2	324	516	820	1184	1866	2963	4666	7410	9351				
	3	241	384	609	880	1387	2202	3467	5506	6949	8750			
	5	*	235	373	539	849	1348	2123	3372	4255	5358	6755	7964	9520

^⑤ Reduce lengths by 13% for 200 V systems. ^⑥ Lengths in bold require 90°C wire. Shading indicates 40° C maximum ambient.

* Wire does not meet the N.E.C. ampacity requirement.

The lengths in each of the Wire Sizing tables represent 100% of the allowable voltage drop when motor is running at full load. When sizing wire, the voltage drop of each wire segment must be included. The total must not exceed 100% of the allowable drop. Take for example a 1.5 HP motor with a distance from Service Entrance to Controller of 100' and 500' between the Controller and Motor.

- Service Entrance to Controller = 100' of 10 AWG (100/455) = 22 % (455' is from the S.E. to Controller chart)
 - Controller to Motor = 500' of 12 AWG (500/709) = 71 % (709' is from the Controller to Motor chart)
- Total Drop (must be ≤ 100%) 93 %

If the distance from the Controller to Motor was 600' (600/709) = 85% + 22% = 107%, we would need to use #10 wire for that segment, ex. 600/1126 = 53% + 22% (for 100' of #10) = 75% which is acceptable. It is also acceptable to use different wire sizes for the Buried and Well sections of wire.

Controller, Breaker, Generator Sizing

Motor HP	Motor Voltage ^①	Controller Model ^②				Circuit Breaker ^③	Generator (VA) ^④		
		1AS15	3AS20	3AS30	3AS50				
½	230					15	2200		
	200								
¾	230						20	2900	
	200								
1	230							30	3500
	200								
1½	230					40			4400
	200								
2	230						50		6100
	200								
3	230							50	8100
	200								
5	230					50			13300
	200								

^① Supply voltage must be 196 VAC - 265 VAC.

^② Shaded areas indicate which controller models can be used with which motors. Lighter shading indicates combinations where controller will limit peak performance to 85% of catalog value for pump/motor.

^③ Circuit Breaker or Dual Element Time Delay Fuse Size (Amps) protecting branch circuit supplying controller.

^④ Minimum size of single phase 240 V generator required.

THREE PHASE, 4", MOTOR DATA

Electrical Data, 60 Hertz, 3450 RPM, 4" Motors

GWT #	Red Jacket #	HP	kW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Line - Line Resistance
						Amps	Watts	Amps	Watts		
M07430	75C323	0.75	0.55	200	1.5	3.8	812	4.5	1140	32	2.6-3.0
M10430	100C323	1	0.75		1.4	4.6	1150	5.5	1500	29	3.4-3.9
M15430	150C323	1.5	1.1		1.3	6.3	1560	7.2	1950	40	1.9-2.5
M20430	200C323	2	1.5		1.25	7.5	2015	8.8	2490	51	1.4-2.0
M30430	300C323	3	2.2		1.15	10.9	2890	12.0	3290	71	0.9-1.3
M50430	500C323	5	3.7		1.15	18.3	4850	20.2	5515	113	0.4-0.8
M07432	75C313	0.75	0.55	230	1.5	3.3	850	3.9	1185	27	3.3 - 4.3
M10432	100C313	1	0.75		1.4	4.0	1090	4.7	1450	26.1	4.1-5.1
M15432	150C313	1.5	1.1		1.3	5.2	1490	6.1	1930	32.4	2.8-3.4
M20432	200C313	2	1.5		1.25	6.5	1990	7.6	2450	44	1.8-2.4
M30432	300C313	3	2.2		1.15	9.2	2880	10.1	3280	58.9	1.3-1.7
M50432	500C313	5	3.7		1.15	15.7	4925	17.5	5650	93	.85-1.25

Diaphragm Tank Sizing and Pre-Set Pressure Recommendations:

Diaphragm type (captive air) tanks are required on these systems.

Table 1: Tank Sizing Selection

Maximum Pump GPM	Recommended Tanks		
	Total Volume	Order No.	or Order No.
10	2	V6P	TP6P
23	4.5	V15P	TP15P
41	8.2	V25P	TP25P
70	13.9	V45	TP45
100	19.9	V60	TP60

Use Total Tank Volume, not drawdown volume, to select the proper tank size. The total tank volume should be approximately 20% of the pump's maximum flow. For example, when using a 10 gpm pump the system requires a minimum 2 gallon (total volume) tank.

The tank sizing recommendations are field proven to prevent objectionable pressure drops on start-up and provide smooth operation for the majority of variable speed pump systems.

Set the tank pressure, while tank is empty of water, to 20 psi below the desired system pressure setting. Ex. for a 50 psi system pressure, charge the tank to 30 psi.

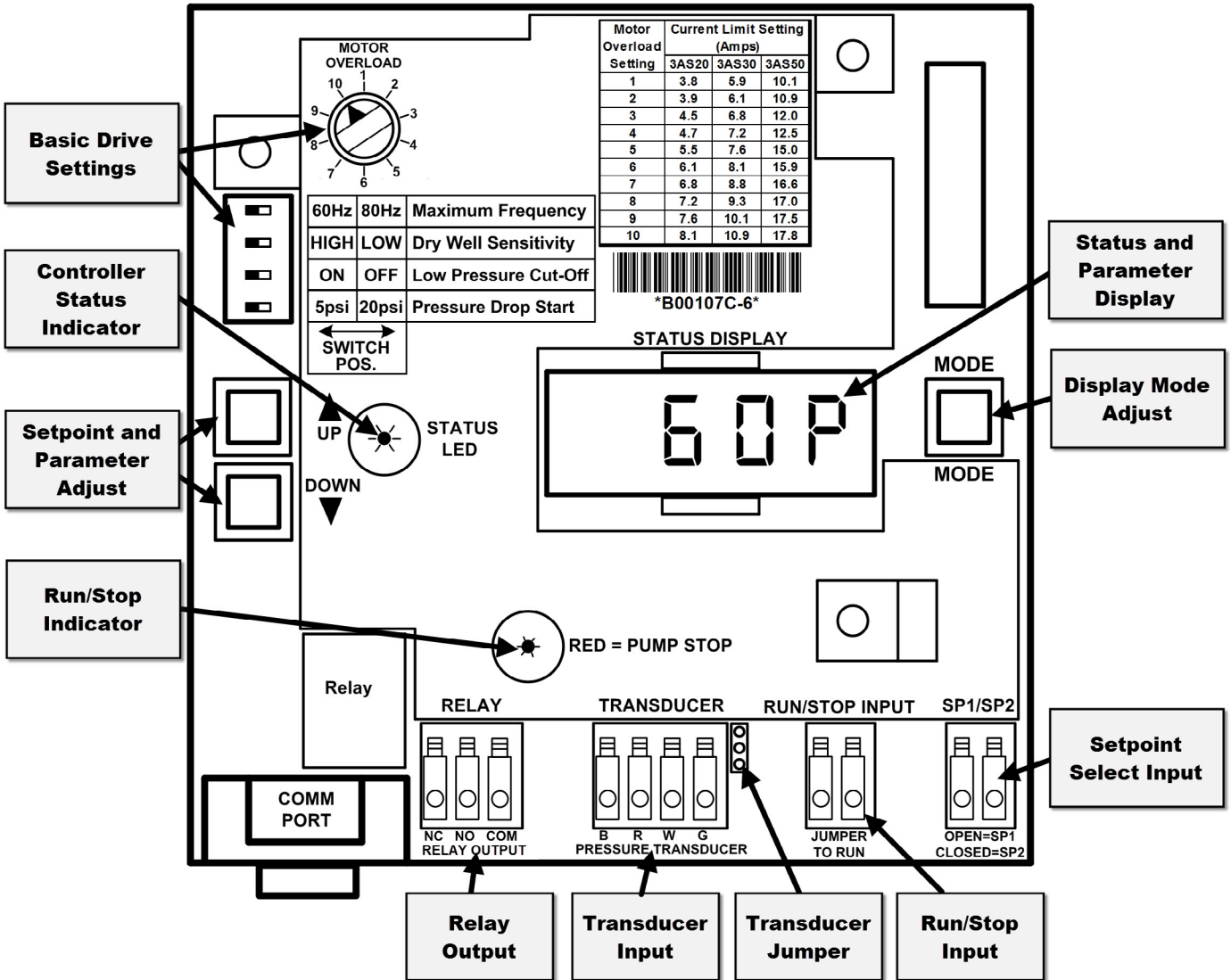
Service Factor Amps All Motors

HP	230 Volt									200 Volt	
	1Ø 2-Wire			1Ø 3-Wire			3Ø			3Ø	
	GWT ¹	Franklin	Grundfos	GWT	Franklin	Grundfos	GWT	Franklin	Grundfos	GWT	Franklin
½	4.7/4.7	6	6	6.3	6	6	N/A	N/A	N/A	N/A	N/A
¾	6.4/6.2	8	8.4	8.3	8	8.4	3.9	3.8	N/A	4.5	4.4
1	9.1/8.1	9.8	9.8	9.7	9.8	9.8	4.7	4.7	N/A	5.5	5.4
1½	11.0/10.4	13.1	13.1	11.1	11.5	11.6	6.1	5.9	7.3	7.2	6.8
2	N/A	N/A	N/A	12.2	13.2 ²	13.2 ²	7.6	8.1	8.7	8.8	9.3
3	N/A	N/A	N/A	N/A	N/A	N/A	10.1	10.9	12.2	12	12.5
5	N/A	N/A	N/A	N/A	N/A	N/A	17.5	17.8	19.8	20.2	20.5

1. Goolds Water Technology 2-Wire motors have Generation 1 and Generation 2 amp ratings, see motor nameplate or motor data sticker that was supplied with motor.

2. Amps are higher than controller overload range - use of these motors will current limit and provide reduced performance.

3AS_ _ UIB CONTROLLERS



PRESSURE RANGES FOR ALL AVAILABLE TRANSDUCERS

Transducer	1AS15 / 3AS20		3AS30		3AS50	
	Minimum PSI	Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI	Maximum PSI
100 PSI ①	20	85	20	85	10	50
200 PSI ②	40	170	40	170	20	100
300 PSI	60	255	60	255	30	150

① Standard on 1AS15/3AS20, 3AS30

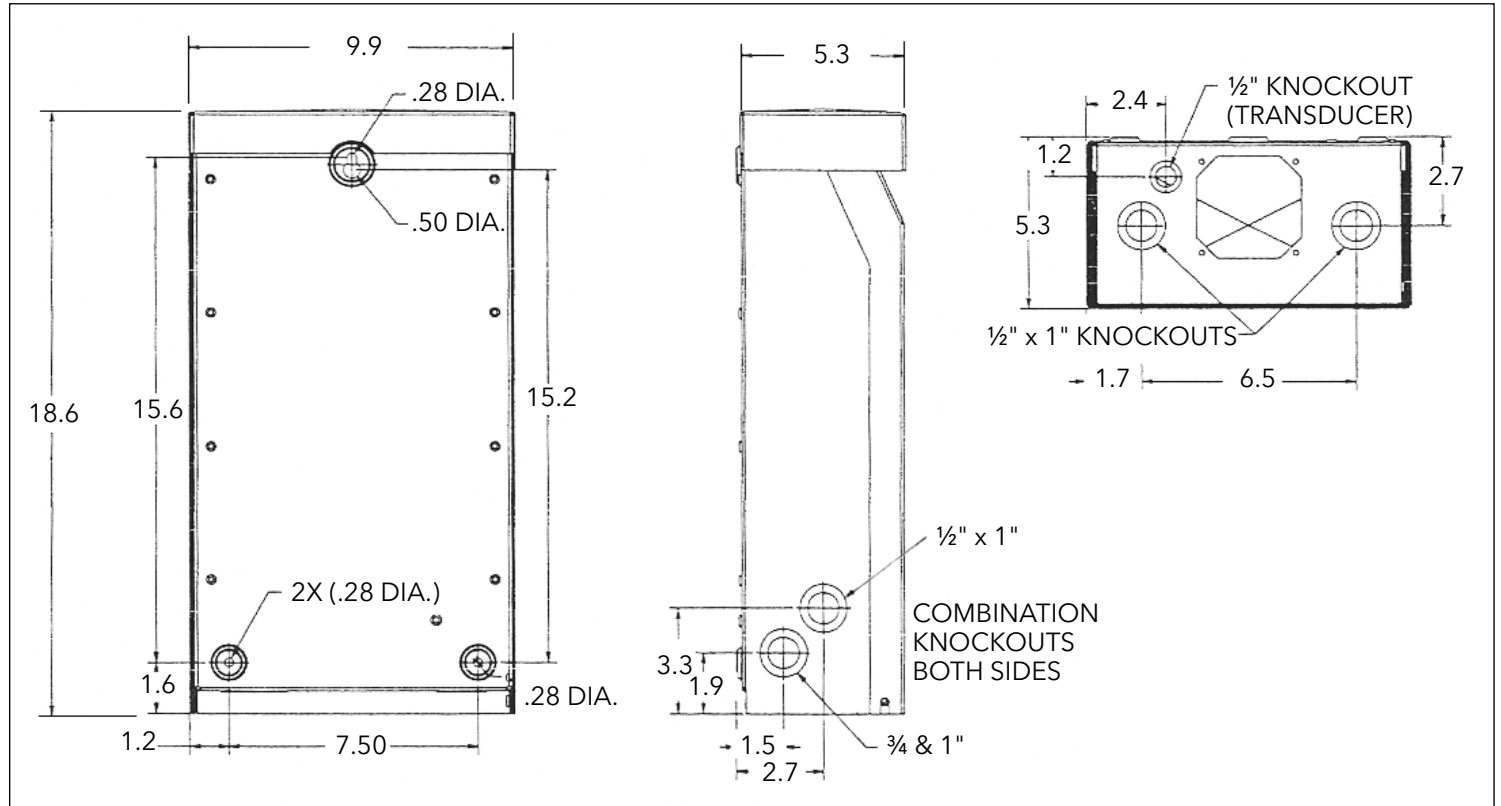
② Standard on 3AS50

Warning! Exploding tank can injure or kill, some combinations of Transducer and Controller allow system pressure adjustment to exceed the maximum working pressure of the tank and piping.

Ensure system pressure is set below the maximum working pressure of the tank and system piping.

Protect tank and piping against overpressure, install a properly sized pressure relief valve (PRV) able to pass full pump flow at the maximum working pressure of the tank. In finished basements or where PRV blow-off can cause property damage, pipe the PRV to a suitable drain.

DIMENSIONS (inches) - ALL MODELS





AQUAVAR ProPak

30-80 HZ KITS

FEATURES

Simple, fast sizing and installation.

Range curves and selection charts generated from actual R&D tests.

Kits configured for 30 Hz minimum and 80 Hz maximum operation.

Kits use matched water end and motor (see component chart).

Wiring is as easy as standard three-wire control box:

- L1, L2 and Ground in from power supply
- Red, Yellow, Black and Ground out to motor

Pressure is factory preset at 60 psi with simple, fast, field adjustability for higher pressures.

Three phase output to motor reduces wire cost.

Goulds Water Technology model GS features the Guardian bearing system and field proven sand and abrasive handling floating stack design.

Switch Input for connecting a pressure switch or float switch.

Grounding provisions for transducer and transducer cable.

KITS INCLUDE:

- Three Phase Motor 1.5 - 5 HP, 230 V
- Aquavar SOLO² Controller with Transducer
- GS Water End (pump)

ProPak kits do not include pressure tanks, order tanks separately.

PROPAK PERFORMANCE RANGE AND COMPONENTS

MODEL	HP	Shut-Off Head (ft)	at Best Efficiency		at Maximum Runout		WE	Motor	Controller	
			Flow (GPM)	TDH (ft)	Flow (GPM)	TDH (ft)				
7GP0715	1.5	665	7	480	16	110	7GS07	M15432	3AS20	
10GP0715	1.5	540	10	438	20	117	10GS07			
18GP0715	1.5	315	18	237	37	55	18GS07			
7GP1020	2	880	7	640	16	146	7GS10	M20432		
10GP1020	2	660	10	488	20	160	10GS10			
18GP1020	2	428	18	306	37	70	18GS10			
25GP1020	2	358	25	238	40	69	25GS10			
7GP1530	3	1140	7	820	16	175	7GS15	M30432		3AS30
10GP1530	3	923	10	650	20	205	10GS15			
18GP1530	3	582	18	420	37	87	18GS15			
25GP1530	3	466	25	317	40	100	25GS15			
35GP1530	3	390	35	230	60	70	35GS15			
18GP3050	5	990	18	680	37	140	18GS30	M50432	3AS50	
25GP3050	5	770	25	528	40	158	25GS30			
35GP3050	5	681	35	390	60	120	35GS30			

Order pressure tank separately, not included in kit

AQUAVAR® SOLO² CONTROLLER

New, more versatile user interface board

- Provides switch connection for optional pressure or level switch
- Current limit settings for all Goulds Water Technology motors
- Dry well sensitivity switch
- Low pressure cut-off protection
- 5 or 20 PSI pressure drop restart switch
- Transducer better protected from transient power surges

PROPAK KIT DIMENSIONS AND WEIGHTS

Controller	Sh. Weight (lb)	Dimensions - All
3AS20	23	Height: 21"
3AS30	24	Width: 13"
3AS50	29	Depth: 8"

Pump	Sh. Weight (lb)	W. E. Length (in)
7GS07	8	16.0
10GS07	8	16.4
18GS07	7	11.8
7GS10	9	18.8
10GS10	9	17.7
18GS10	8	13.5
25GS10	8	13.4
7GS15	12	23.6
10GS15	12	18.4
18GS15	10	16.1
25GS15	9	15.3
35GS15	9	16.6
18GS30	15	24.1
25GS30	14	20.9
35GS30	13	24.0

Motors	Sh. Weight (lb)	Motor Length (in)	L x W x H (in)
M15432	23	11.7	19 x 4.1 x 4.1
M20432	28	13.8	20.5 x 6.5 x 6.5
M30432	32	15.3	20.5 x 6.5 x 6.5
M50432	55	21.7	27.5 x 6.5 x 6.5

ProPak Carton Dimensions and Weights

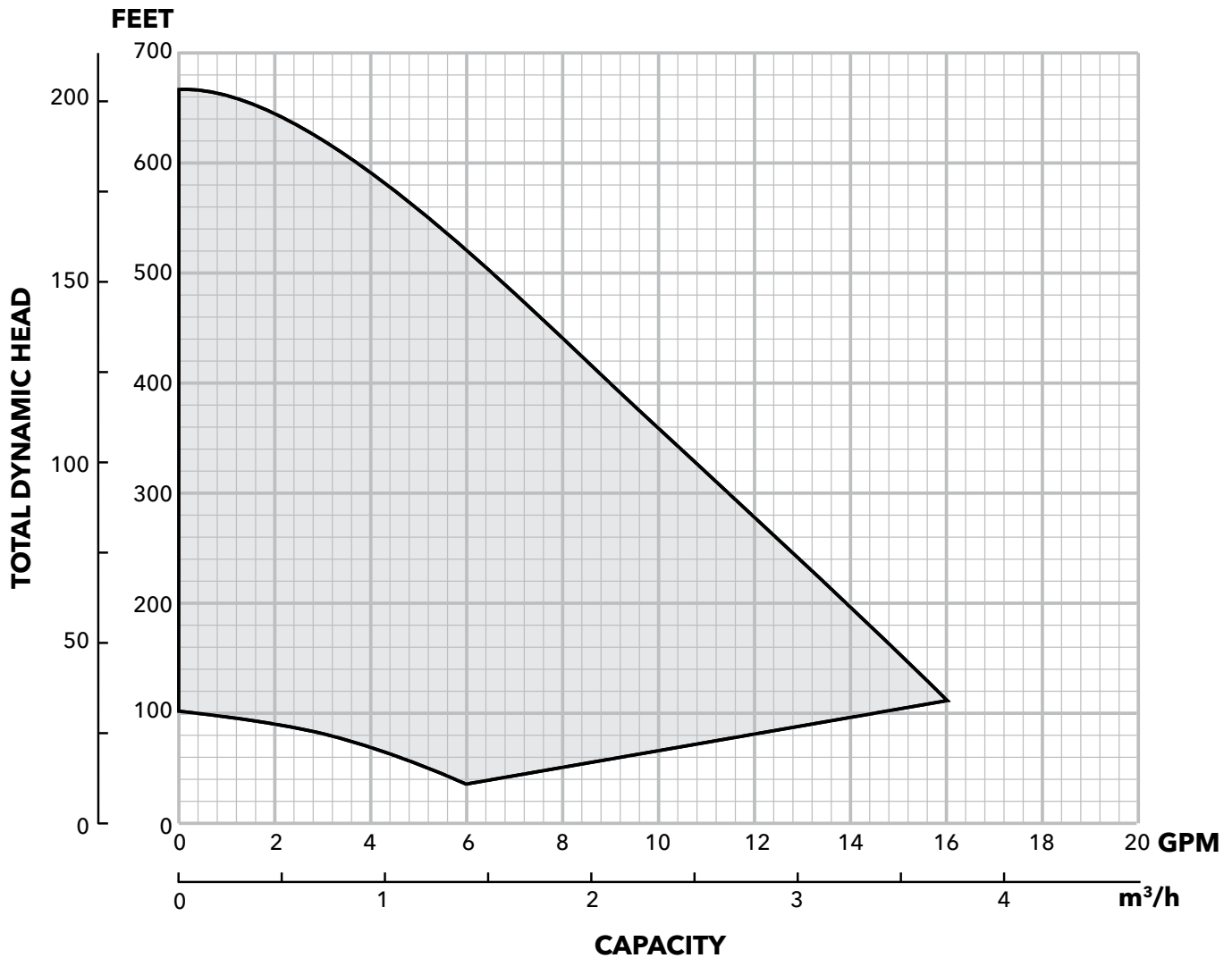
Kit No.	Sh. Weight (lb)	No. cartons	L x W x H (in)
7GP0715	56	1	33.9 x 21.4 x 11.5
10GP0715	56	1	
18GP0715	55	1	
7GP1020	62	1	
10GP1020	62	1	
18GP1020	61	1	
25GP1020	61	1	
7GP1530	70	1	
10GP1530	70	1	
18GP1530	68	1	
25GP1530	67	1	
35GP1530	67	1	
18GP3050	101	2 ①	
25GP3050	100	2 ①	
35GP3050	99	2 ①	

① The 5 HP units have the controller and pump in one carton and the motor is shipped separately due to weight. See M50432 for motor weight and dimensions.

MODEL 7GS07 30-80 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

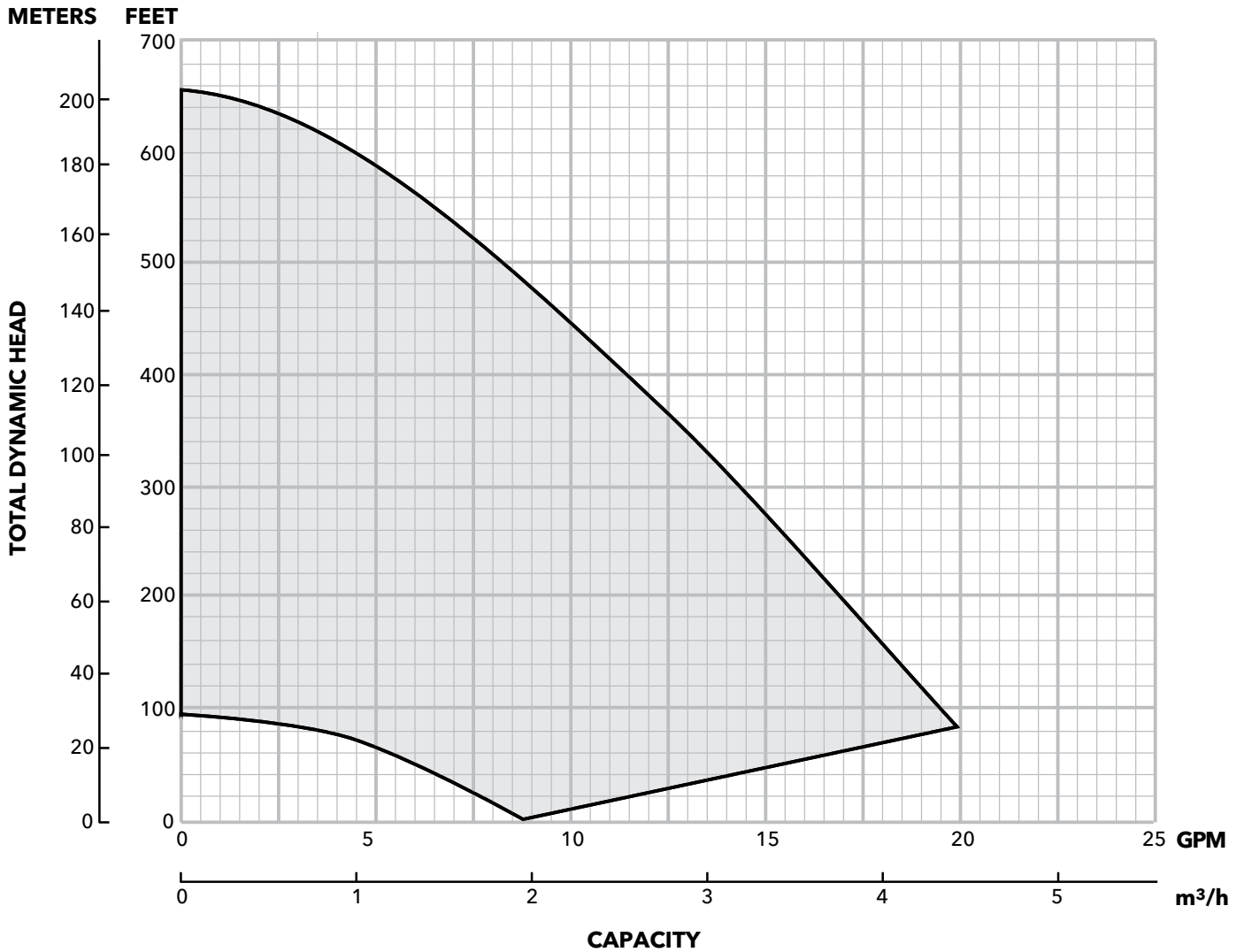
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																						
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620
7GS07	0						16.1	15.6	15.0	14.5	13.9	13.4	12.9	12.3	11.8	11.3	10.3	9.4	8.5	7.6	6.7	5.6	4.4	2.8
	50	15.7	15.2	14.6	14.1	13.5	13.0	12.4	11.9	11.4	10.9	10.4	10.0	9.5	9.1	8.6	7.7	6.8	5.8	4.5	3.0			
	60	15.1	14.5	14.0	13.4	12.9	12.4	11.8	11.3	10.8	10.4	9.9	9.4	9.0	8.5	8.1	7.2	6.2	5.1	3.7				
	70	14.4	13.9	13.4	12.8	12.3	11.8	11.2	10.8	10.3	9.8	9.4	8.9	8.5	8.0	7.6	6.6	5.6	4.3	2.7				
Shut-off PSI		281	272	264	255	247	238	229	221	212	203	195	186	177	169	160	143	125	108	91	73	56	39	21



MODEL 10GS07 30-80 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

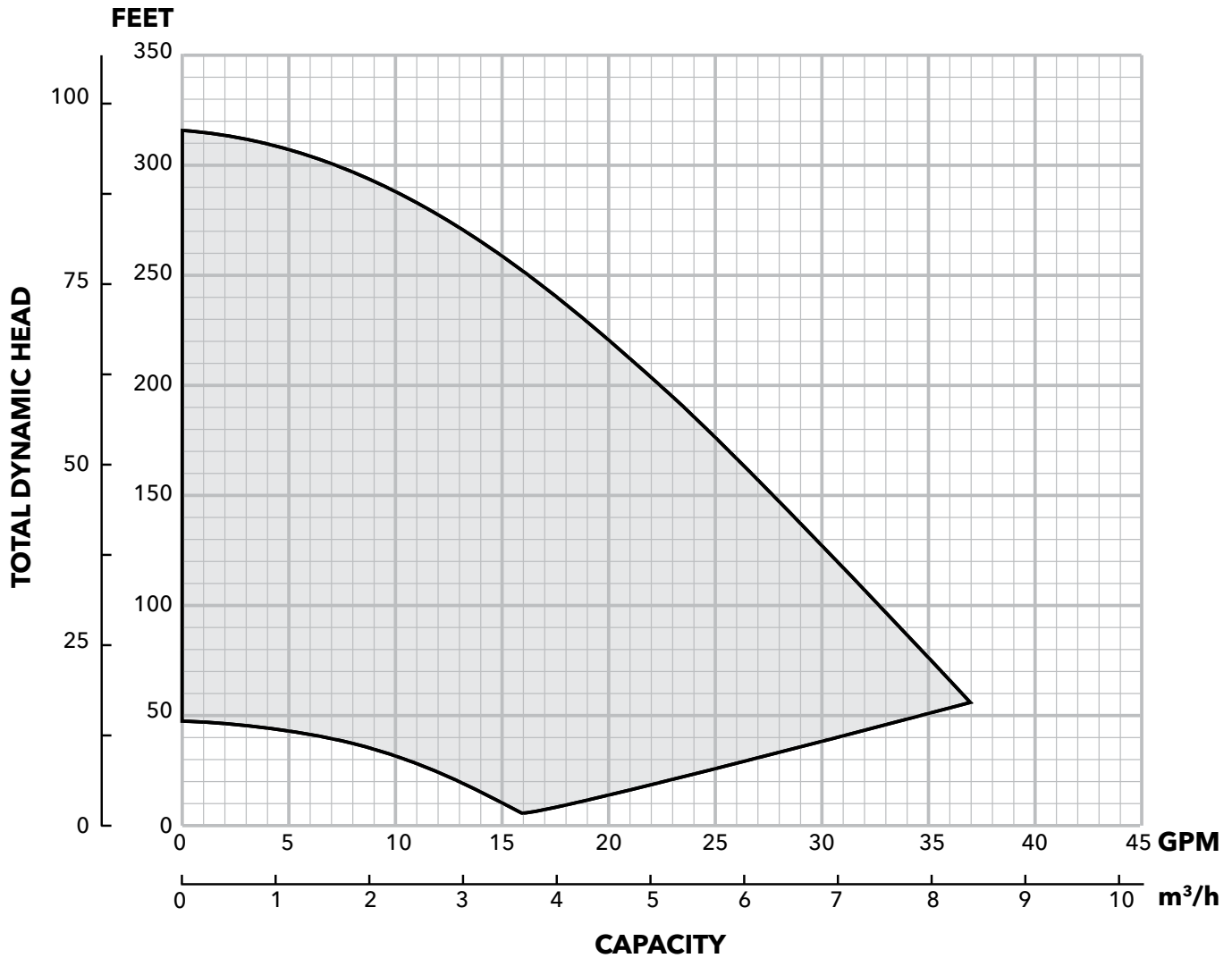
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																			
		20	40	60	80	100	120	140	160	180	200	240	280	320	360	400	440	480	520	560	600
10GS07	0			20.0	19.7	19.3	19.0	18.6	18.2	17.7	17.3	16.3	15.2	14.1	12.8	11.5	10.1	8.6	7.0	5.3	3.5
	50	18.7	18.3	17.8	17.4	16.9	16.4	15.9	15.3	14.8	14.2	13.0	11.6	10.2	8.7	7.2	5.5	3.7			
	60	18.2	17.8	17.3	16.8	16.3	15.8	15.3	14.7	14.1	13.5	12.2	10.8	9.4	7.8	6.2	4.5	2.7			
	70	17.7	17.2	16.7	16.2	15.7	15.2	14.6	14.0	13.4	12.8	11.4	10.0	8.5	6.9	5.2	3.4	1.6			
Shut-off PSI		275	267	258	249	241	232	223	215	206	197	180	163	145	128	111	93	76	59	42	24



MODEL 18GS07 30-80 Hz with 1.5 HP Motor and 3AS20

SELECTION CHART

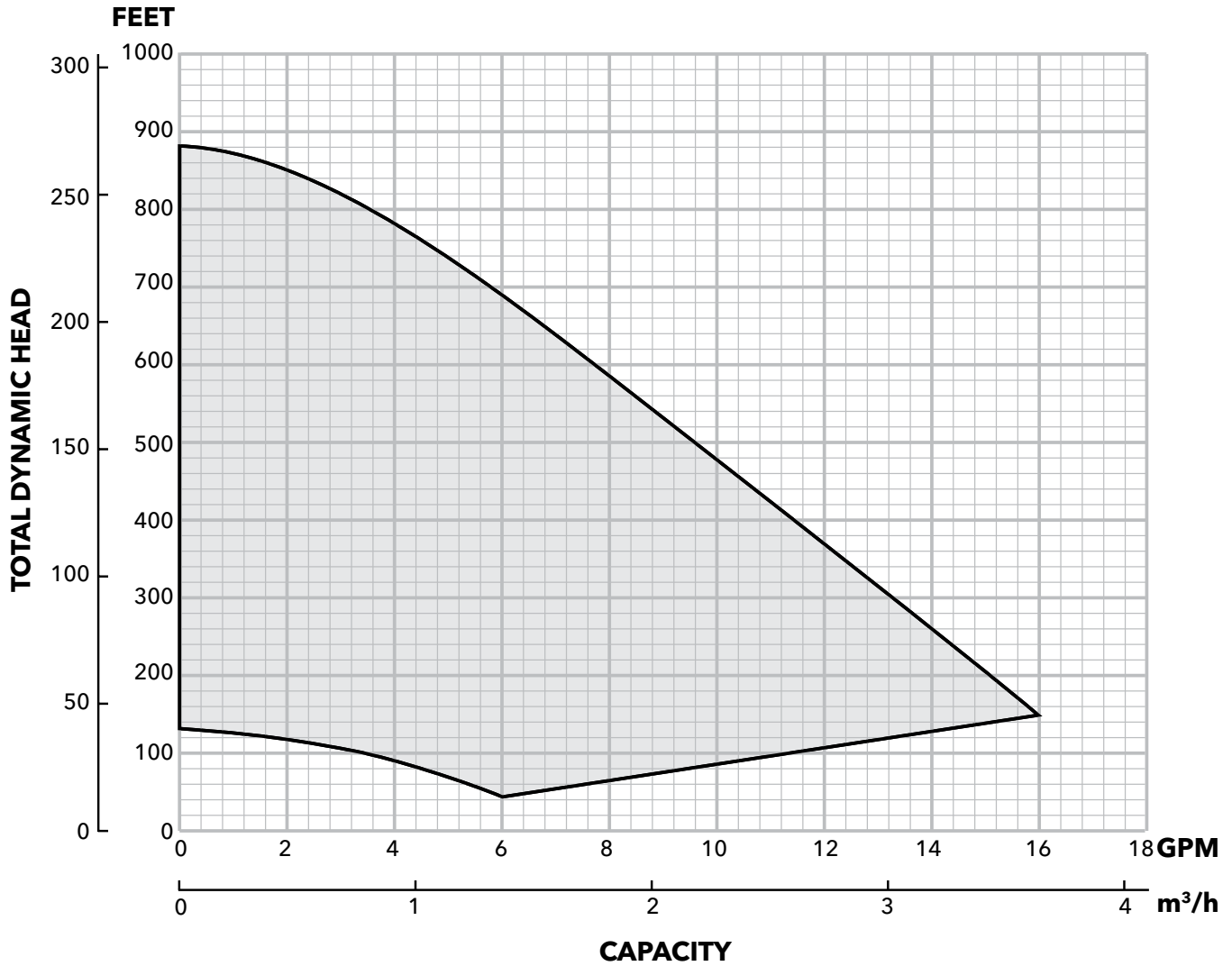
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)														
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
18GS07	0				35.1	32.8	30.5	28.3	26.2	24.2	22.4	20.4	18.1	15.2	11.5	6.3
	50	28.7	26.6	24.7	22.8	20.8	18.7	16.0	12.4	7.6						
	60	26.3	24.4	22.5	20.5	18.3	15.5	11.8	6.8							
	70	24.1	22.2	20.2	17.9	15.0	11.1	5.8								
Shut-off PSI			129	120	111	103	94	85	77	68	59	51	42	34	25	168



MODEL 7GS10 30-80 Hz with 2 HP Motor and 3AS20

SELECTION CHART

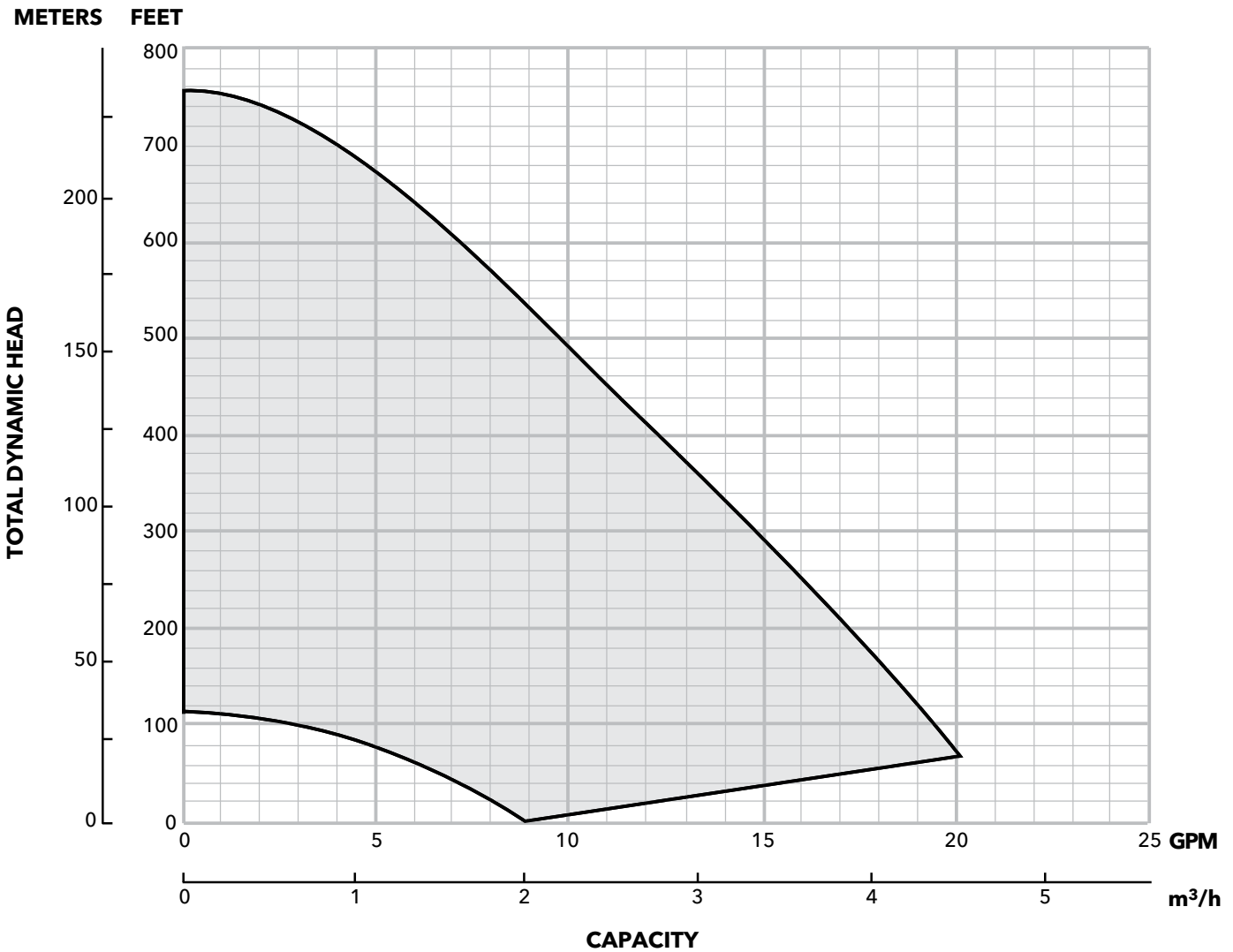
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																							
		80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780
7GS10	0				16.0	15.8	15.6	15.3	14.9	14.6	14.2	13.8	13.4	12.5	11.7	10.9	10.1	9.4	8.7	8.1	7.4	6.7	6.0	5.1	4.1
	50			14.7	14.3	13.9	13.5	13.1	12.6	12.2	11.8	11.4	11.0	10.2	9.5	8.8	8.1	7.5	6.8	6.1	5.2	4.2	3.0		
	60		14.6	14.2	13.8	13.4	13.0	12.6	12.2	11.7	11.3	10.9	10.5	9.8	9.1	8.4	7.8	7.1	6.4	5.6	4.7	3.5	2.1		
	70	14.6	14.2	13.8	13.4	12.9	12.5	12.1	11.7	11.3	10.9	10.5	10.1	9.4	8.7	8.0	7.4	6.7	6.0	5.1	4.0	2.7			
Shut-off PSI		348	339	330	322	313	304	296	287	278	270	261	252	235	218	200	183	166	148	131	114	96	79	62	45



MODEL 10GS10 30-80 Hz with 2 HP Motor and 3AS20

SELECTION CHART

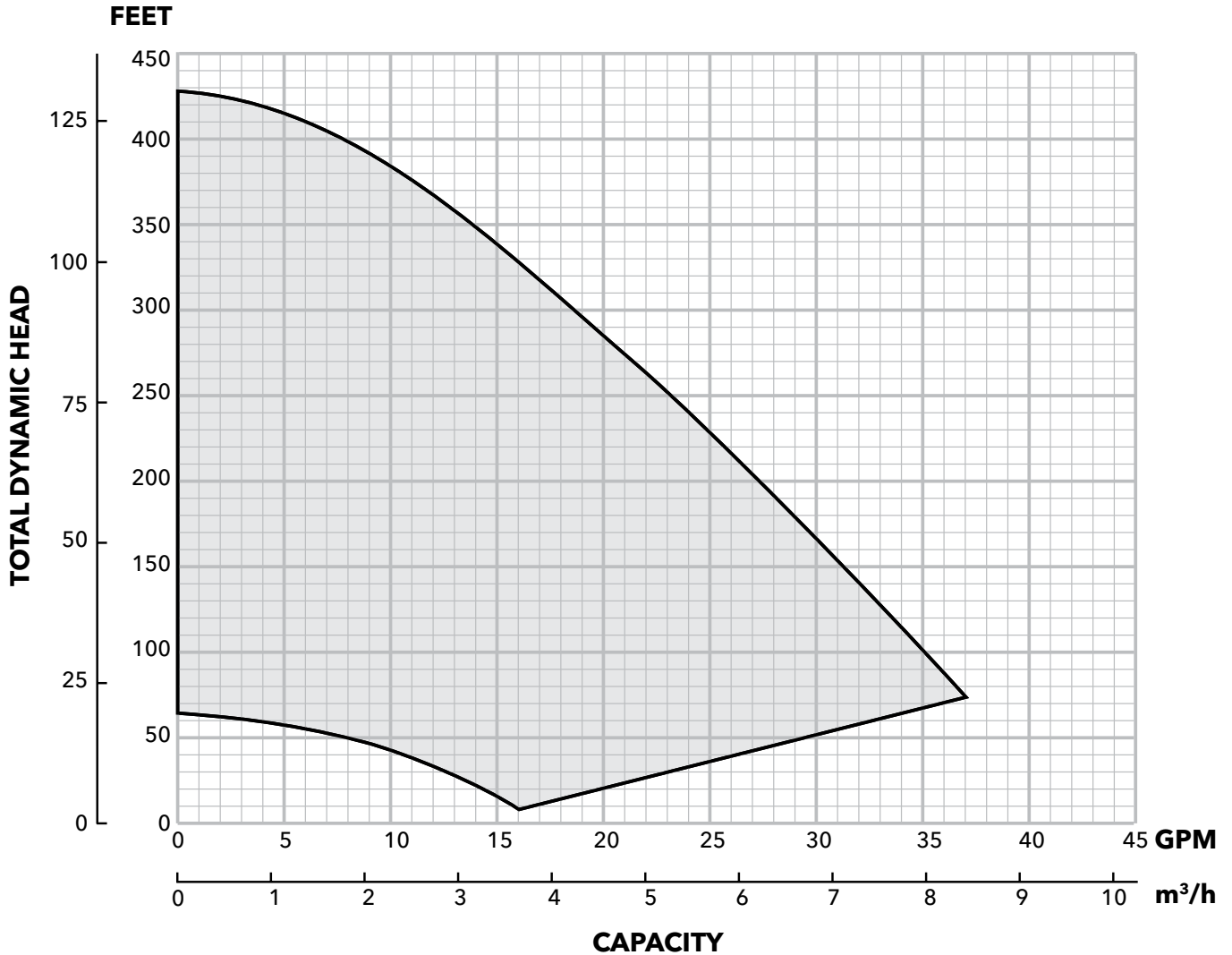
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																			
		20	40	60	80	100	120	140	160	200	240	280	320	360	400	440	480	520	560	600	640
10GS10	0			20.0	19.6	19.3	18.9	18.6	18.2	17.4	16.5	15.6	14.6	13.6	12.6	11.5	10.3	9.1	7.8	6.5	5.1
	50	18.6	18.3	17.9	17.5	17.0	16.6	16.2	15.7	14.7	13.7	12.7	11.6	10.4	9.2	8.0	6.7	5.3	3.9		
	60	18.2	17.8	17.4	17.0	16.5	16.1	15.6	15.2	14.2	13.1	12.1	10.9	9.7	8.5	7.2	5.9	4.5			
	70	17.7	17.3	16.9	16.5	16.0	15.6	15.1	14.6	13.6	12.5	11.4	10.2	9.0	7.8	6.5	5.1	3.7			
Shut-off PSI		318	310	301	292	284	275	266	258	240	223	206	189	171	154	137	119	102	85	67	50



MODEL 18GS10 30-80 Hz with 2 HP Motor and 3AS20

SELECTION CHART

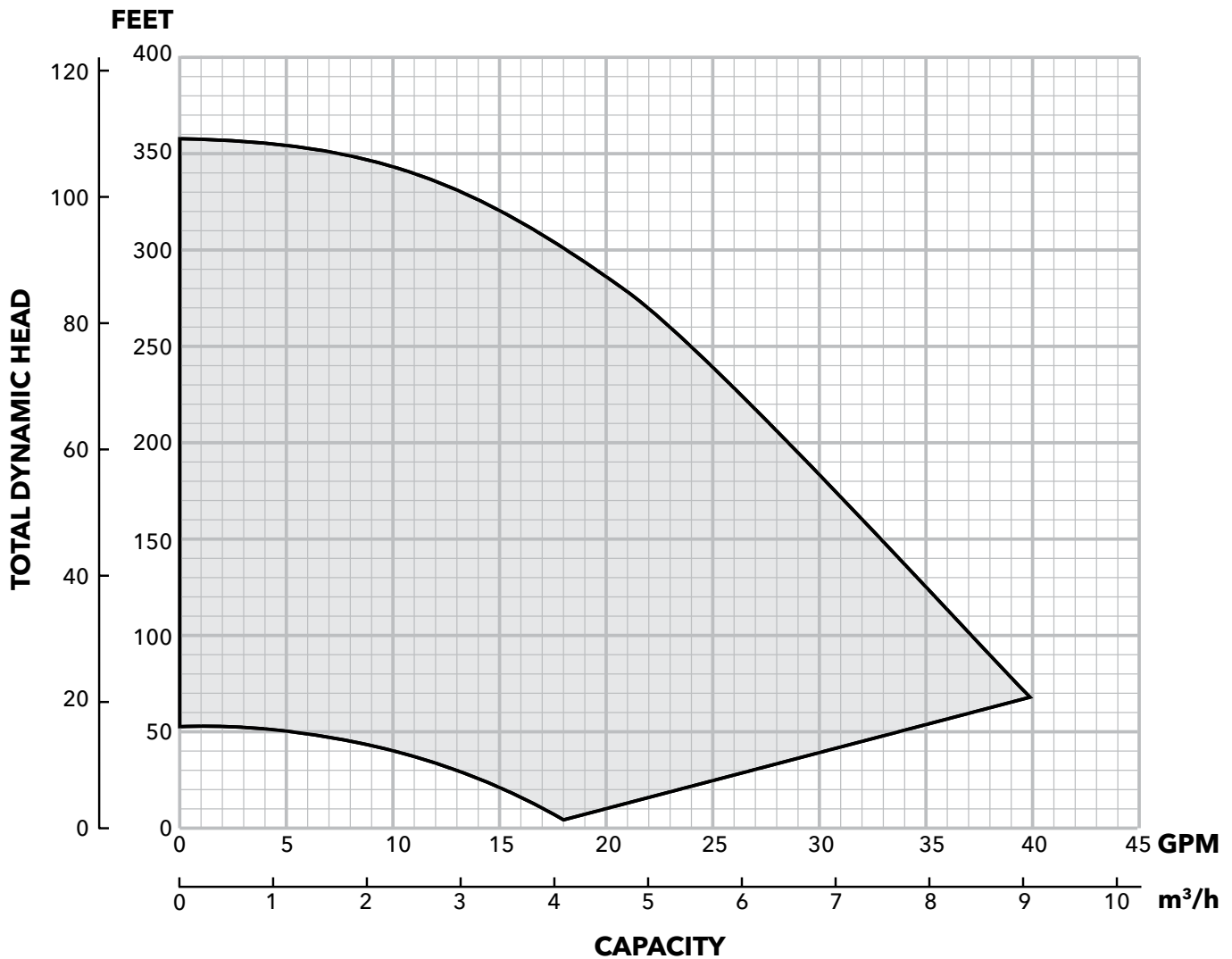
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380
18GS10	0				37.0	35.4	33.7	31.9	30.1	28.4	26.7	25.1	23.5	22.0	20.5	19.0	15.3	10.2
	50	32.3	30.5	28.7	27.1	25.4	23.9	22.4	20.9	19.3	17.6	15.8	13.5	10.9	7.6			
	60	30.2	28.5	26.8	25.2	23.7	22.2	20.6	19.1	17.4	15.4	13.2	10.4	7.1				
	70	28.2	26.5	25.0	23.4	21.9	20.4	18.8	17.1	15.1	12.8	9.9	6.5					
Shut-off PSI		177	168	159	151	142	133	125	116	107	99	90	82	73	64	56	38	21



MODEL 25GS10 30-80 Hz with 2 HP Motor and 3AS20

SELECTION CHART

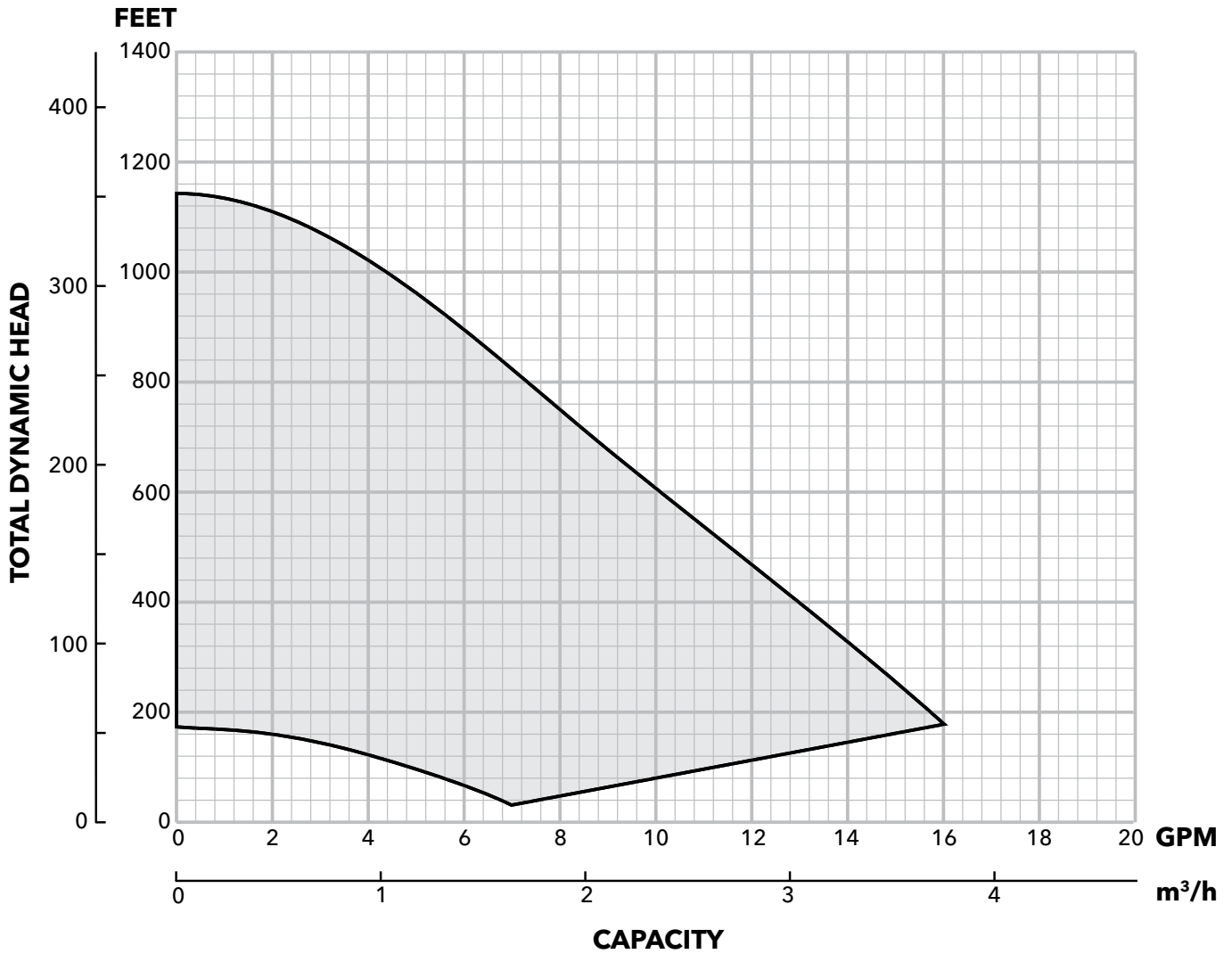
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)															
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340
25GS10	0			39.7	39.7	38.4	36.5	34.2	31.9	29.8	28.0	26.4	25.0	23.5	21.7	19.1	9.4
	50	34.7	32.4	30.3	28.4	26.8	25.3	23.9	22.2	19.8	16.2	10.9					
	60	32.1	30.0	28.1	26.5	25.1	23.6	21.8	19.3	15.5	9.9						
	70	29.7	27.9	26.3	24.9	23.4	21.5	18.8	14.8	8.8							
Shut-off PSI		146	137	129	120	112	103	94	86	77	68	60	51	42	34	25	8



MODEL 7GS15 30-80 Hz with 3 HP Motor and 3AS30

SELECTION CHART

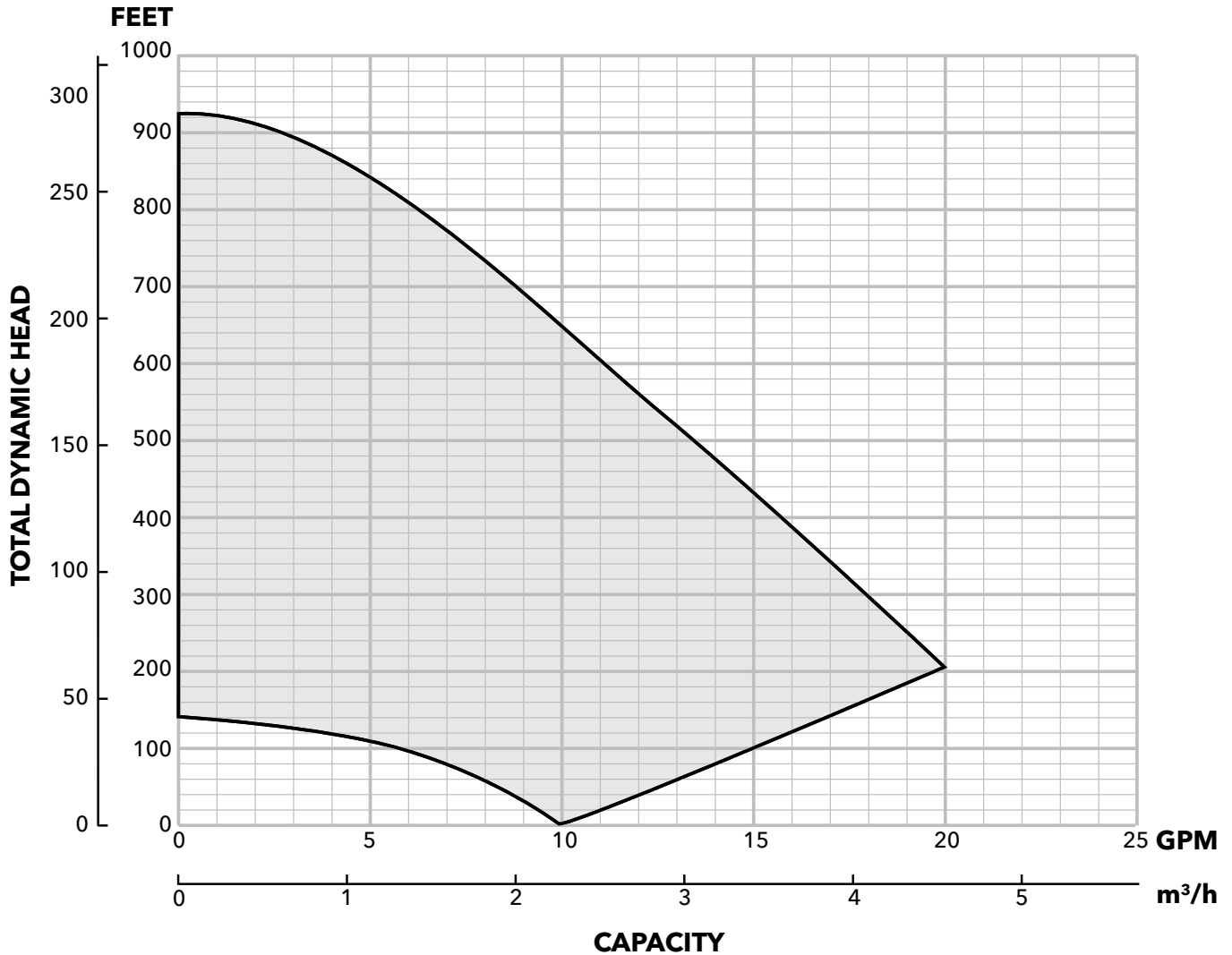
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																														
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	980
7GS15	0						15.8	15.9	15.9	15.9	15.8	15.6	15.5	15.3	15.0	14.7	14.2	13.5	12.8	12.1	11.5	10.8	10.2	9.6	9.0	8.5	8.1	7.6	7.1	6.7	6.1	4.9
	50	15.9	15.9	15.9	15.8	15.7	15.5	15.3	15.1	14.8	14.5	14.2	13.9	13.6	13.2	12.9	12.2	11.5	10.9	10.2	9.7	9.1	8.6	8.1	7.6	7.2	6.7	6.2	5.6	5.0	4.2	2.0
	60	15.9	15.9	15.8	15.6	15.5	15.3	15.0	14.8	14.5	14.2	13.9	13.5	13.2	12.8	12.5	11.8	11.1	10.5	9.9	9.3	8.8	8.3	7.8	7.4	6.9	6.4	5.9	5.3	4.5	3.6	
	70	15.9	15.8	15.6	15.4	15.2	15.0	14.7	14.4	14.1	13.8	13.5	13.1	12.8	12.5	12.1	11.4	10.8	10.2	9.6	9.0	8.5	8.0	7.6	7.1	6.6	6.1	5.5	4.9	4.0	3.0	
Shut-off PSI		486	477	469	460	452	443	434	426	417	408	400	391	382	374	365	348	330	313	296	278	261	244	226	209	192	174	157	140	123	105	71



MODEL 10GS15 30-80 Hz with 3 HP Motor and 3AS30

SELECTION CHART

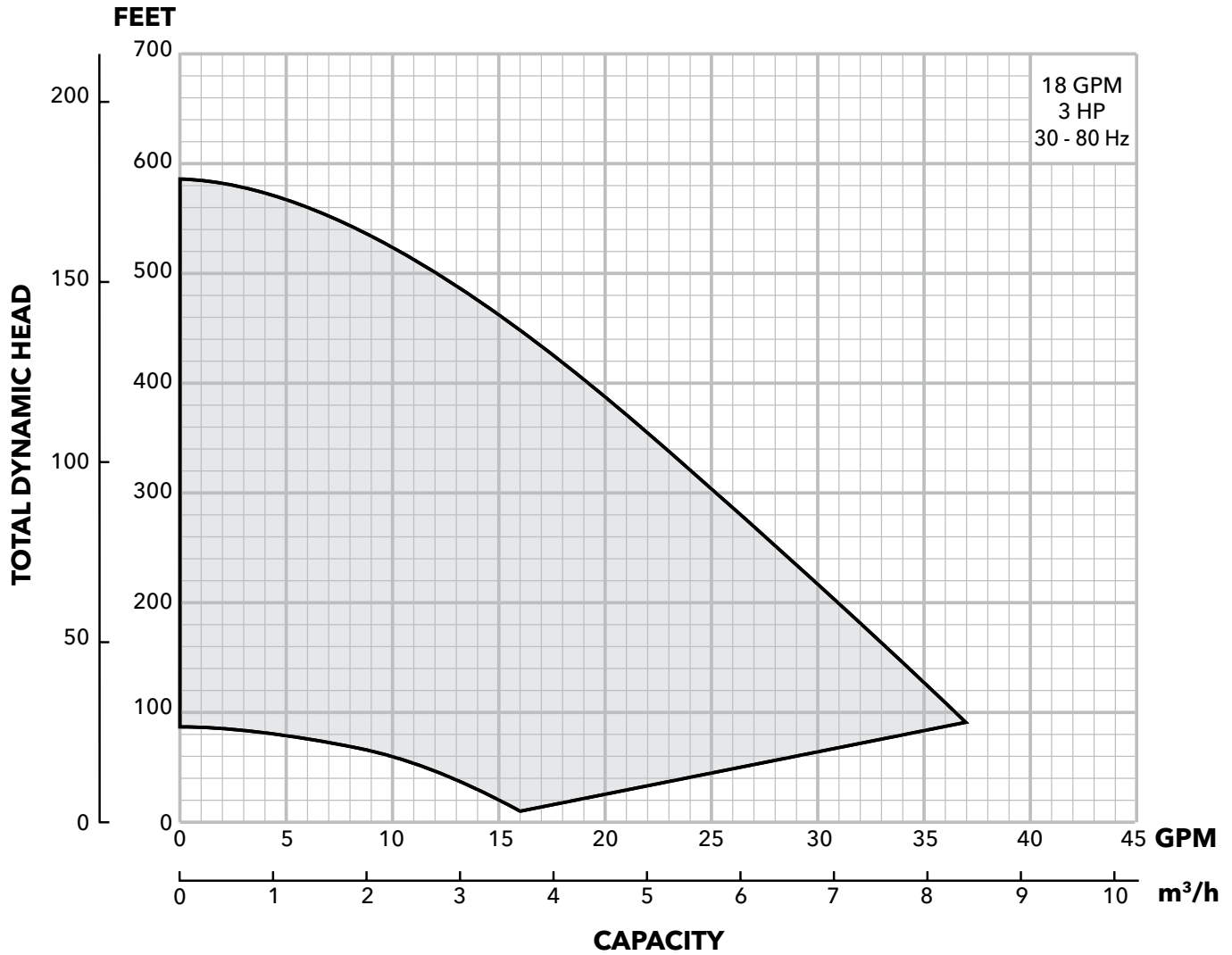
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																									
		80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	
10GS15	0								19.9	19.5	19.0	18.5	18.0	17.0	16.0	15.0	14.1	13.2	12.4	11.6	10.8	10.0	9.2	8.2	7.1	5.8	
	20						19.8	19.3	18.9	18.4	17.8	17.3	16.8	15.8	14.8	13.9	13.0	12.2	11.4	10.7	9.9	9.0	8.1	6.9	5.6	3.9	
	30					19.7	19.3	18.8	18.3	17.8	17.2	16.7	16.2	15.2	14.3	13.4	12.6	11.8	11.0	10.2	9.4	8.5	7.4	6.2	4.6		
	40			20.1	19.7	19.2	18.7	18.2	17.7	17.2	16.7	16.2	15.7	14.7	13.8	12.9	12.1	11.3	10.6	9.8	8.9	7.9	6.7	5.3	3.6		
	50		20.0	19.6	19.1	18.6	18.1	17.6	17.1	16.6	16.1	15.6	15.1	14.2	13.3	12.4	11.7	10.9	10.1	9.3	8.3	7.3	6.0	4.4			
	60	20.0	19.5	19.0	18.5	18.0	17.5	17.0	16.5	16.0	15.5	15.0	14.5	13.6	12.8	12.0	11.2	10.4	9.6	8.7	7.7	6.5	5.1	3.3			
	70	19.4	19.0	18.5	18.0	17.4	16.9	16.4	15.9	15.4	14.9	14.5	14.0	13.1	12.3	11.5	10.8	10.0	9.1	8.2	7.1	5.7	4.1				
Shut-off PSI		368	359	350	342	333	324	316	307	298	290	281	272	255	238	220	203	186	169	151	134	117	99	82	65	47	



MODEL 18GS15 30-80 Hz with 3 HP Motor and 3AS30

SELECTION CHART

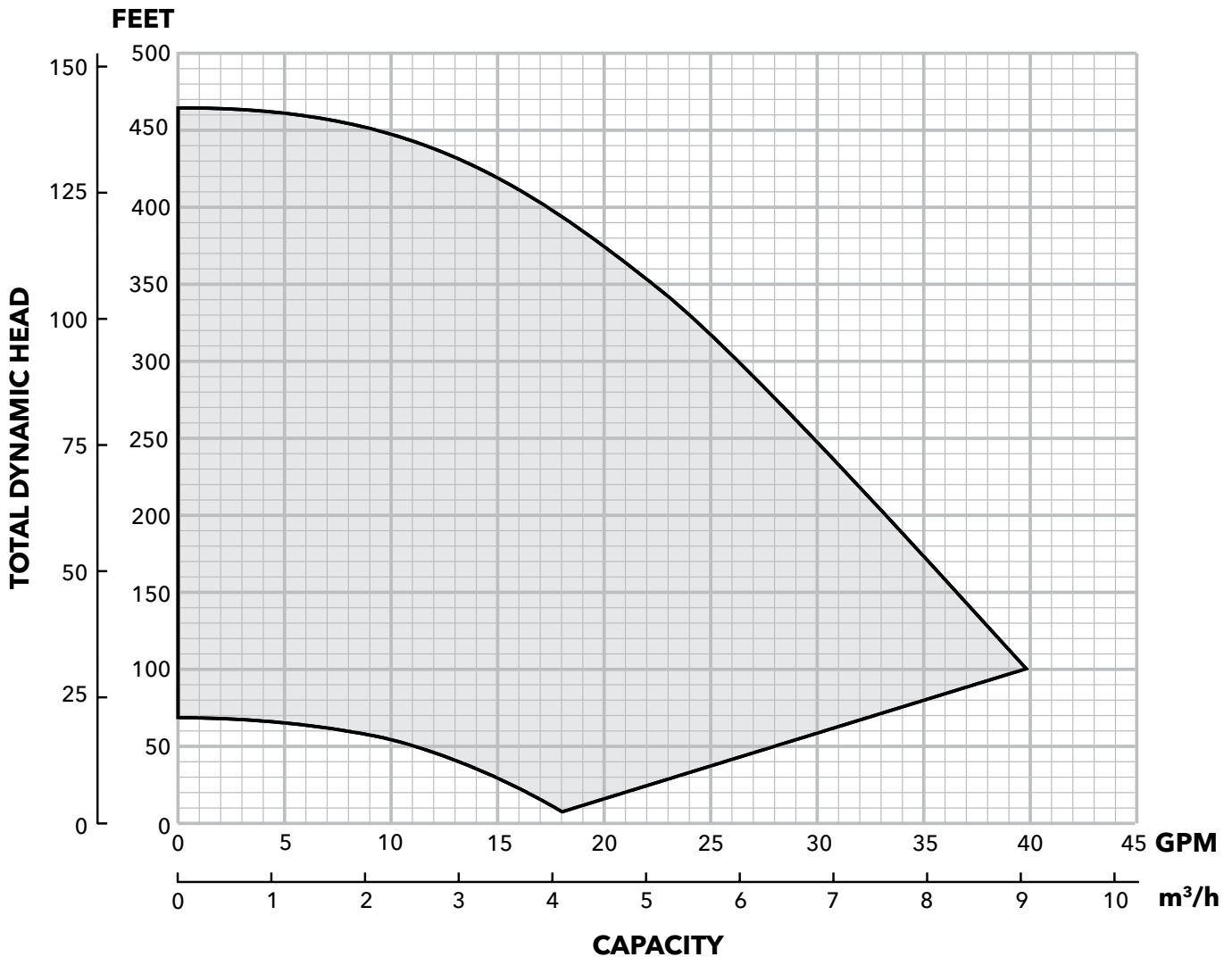
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																				
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540
18GS15	0					37.1	35.9	34.6	33.3	32.0	30.7	29.4	28.2	27.0	25.8	24.7	22.6	20.5	18.3	15.7	12.4	7.9
	50	34.9	33.6	32.3	31.0	29.7	28.4	27.2	26.1	24.9	23.8	22.8	21.8	20.7	19.7	18.5	16.0	12.8	8.5			
	60	33.4	32.1	30.8	29.5	28.2	27.0	25.9	24.8	23.7	22.6	21.6	20.6	19.5	18.4	17.1	14.3	10.5	5.3			
	70	31.9	30.6	29.3	28.1	26.9	25.7	24.6	23.5	22.5	21.4	20.4	19.3	18.2	16.9	15.6	12.2	7.7				
Shut-off PSI		246	237	229	220	211	203	194	185	177	168	159	151	142	133	125	107	90	73	55	38	21



MODEL 25GS15 30-80 Hz with 3 HP Motor and 3AS30

SELECTION CHART

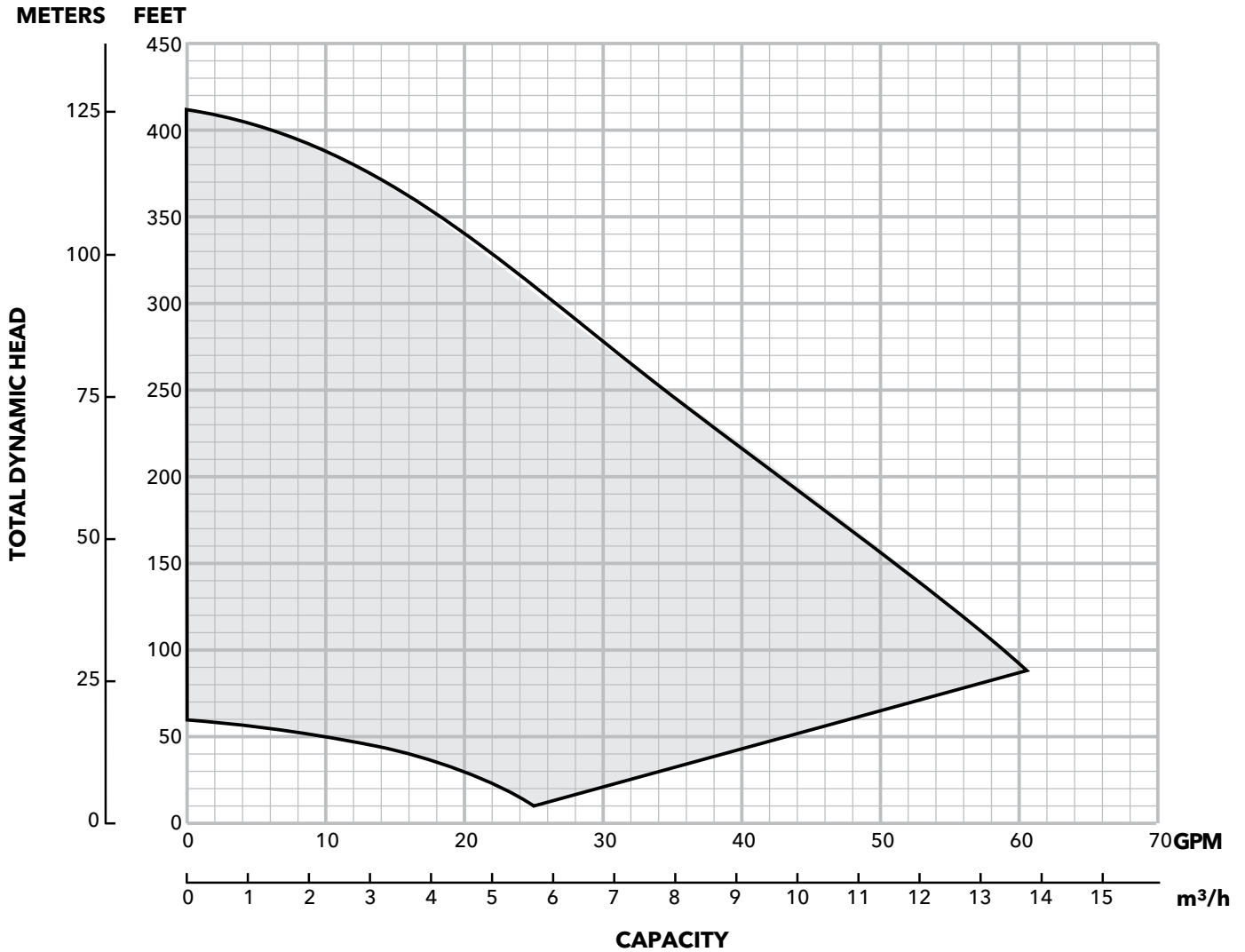
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																
		40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420
25GS15	0							37.0	35.2	33.2	31.3	29.6	28.1	26.8	25.7	23.7	20.9	15.2
	50			33.7	31.7	30.0	28.4	27.0	25.9	24.9	24.0	22.8	21.3	19.2	16.1			
	60		33.4	31.5	29.7	28.2	26.9	25.8	24.8	23.8	22.6	21.1	18.8	15.5	10.8			
	70	33.1	31.2	29.4	27.9	26.7	25.6	24.6	23.6	22.4	20.8	18.3	14.9	10.0				
Shut-off PSI		184	175	166	158	149	140	132	123	114	106	97	88	80	71	54	36	19



MODEL 35GS15 30-80 Hz with 3 HP Motor and 3AS30

SELECTION CHART

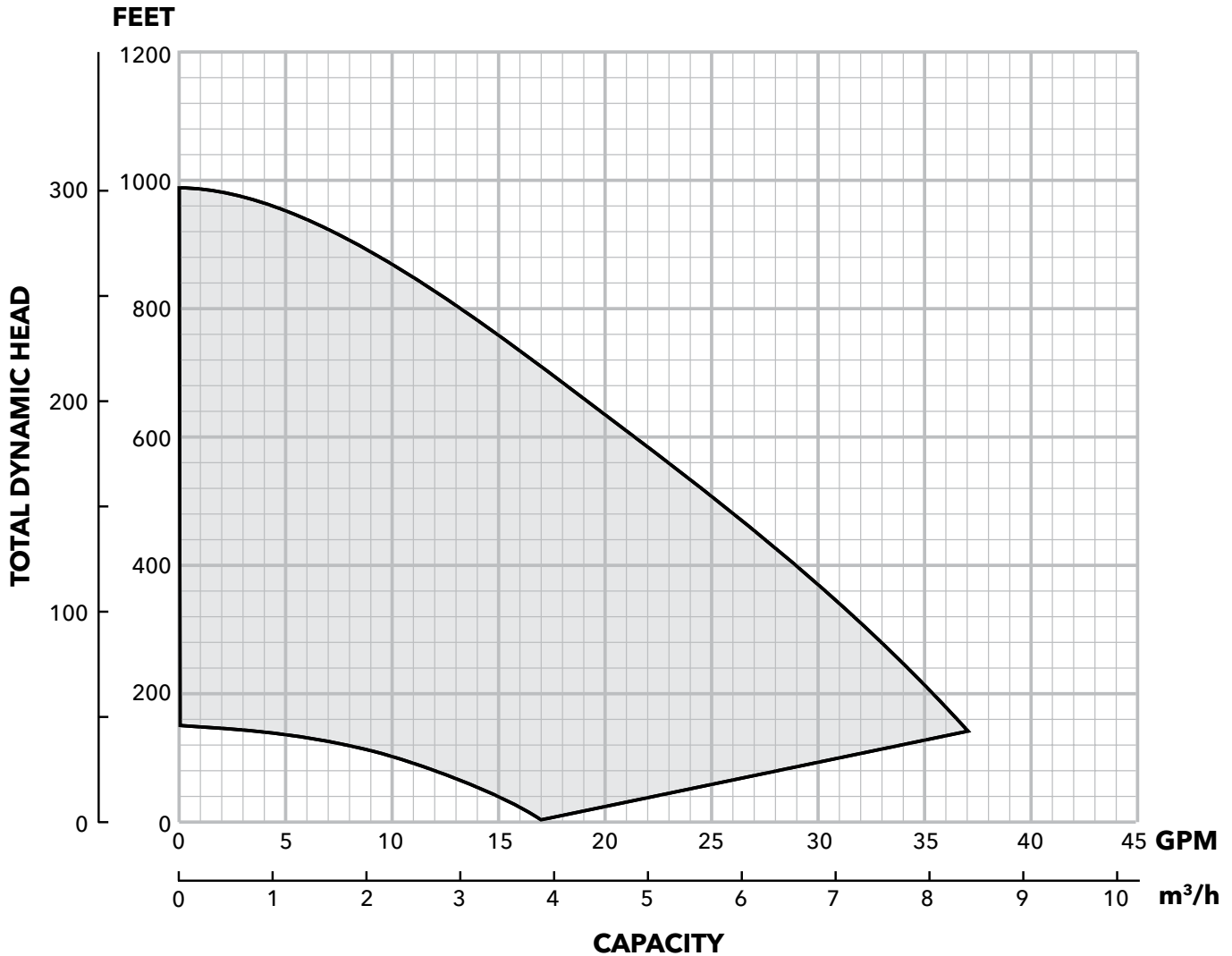
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																			
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
35GS15	0				61	58	56	53	50	47	44	40	37	33	30	26	22	18	14	10	5
	50	54	51	48	44	41	38	34	31	27	23	19	15	11	6	2					
	60	50	47	44	41	37	34	30	26	22	18	14	10	6	1						
	70	47	43	40	37	33	29	26	22	18	13	9	5								
Shut-off PSI		170	161	153	144	135	127	118	109	101	92	83	75	66	57	49	40	31	23	14	5



MODEL 18GS30 30-80 Hz with 5 HP Motor and 3AS50

SELECTION CHART

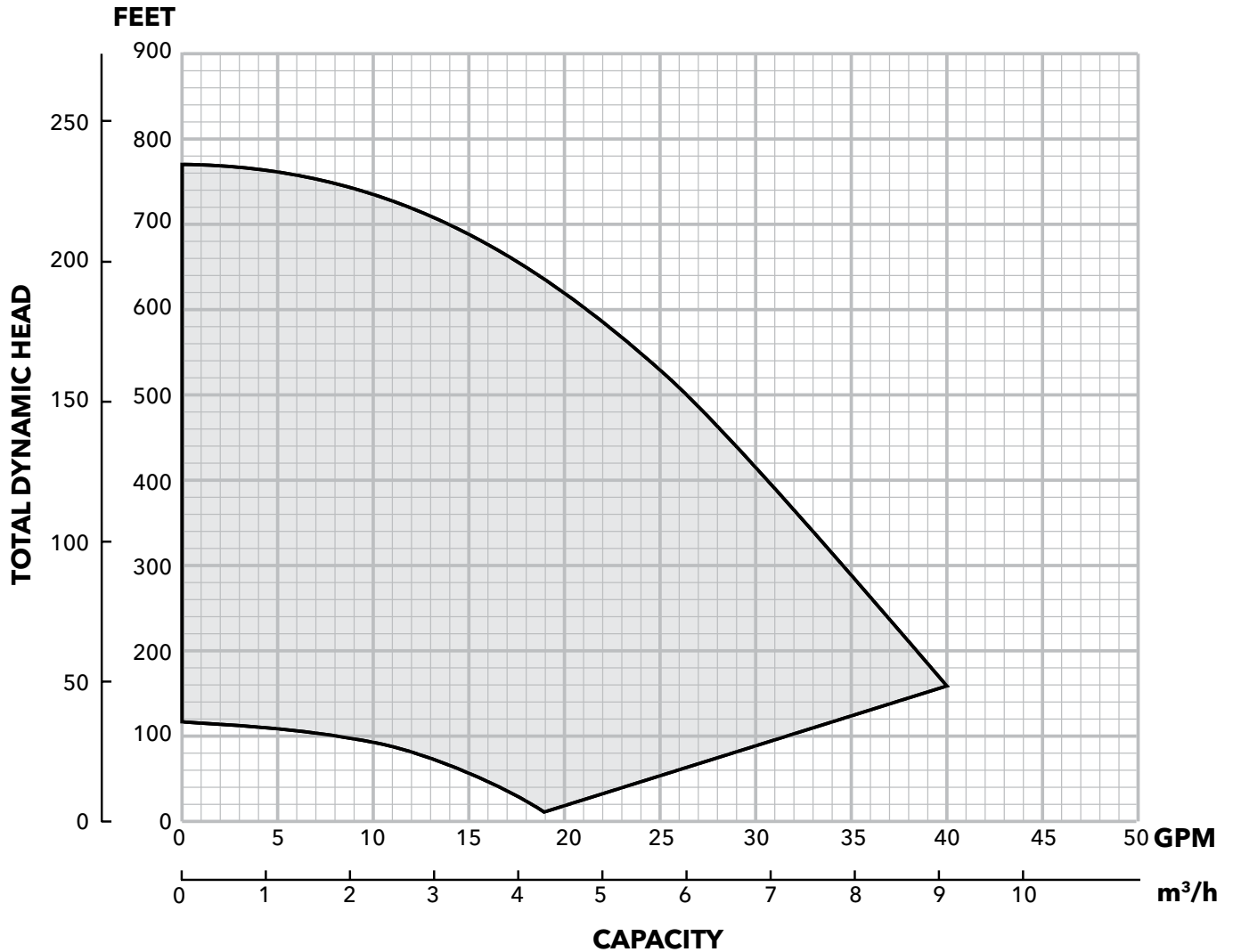
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																										
		60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860
18GS30	0							36.6	35.9	35.2	34.5	33.8	33.0	32.3	30.7	29.2	27.7	26.2	24.7	23.3	21.9	20.6	19.2	17.7	16.2	14.5	12.6	10.4
	50			35.4	34.7	33.9	33.2	32.4	31.7	30.9	30.1	29.4	28.6	27.8	26.3	24.9	23.5	22.1	20.7	19.3	17.9	16.4	14.7	12.8	10.6	8.2	5.3	
	60		35.3	34.6	33.8	33.1	32.3	31.5	30.8	30.0	29.2	28.5	27.7	27.0	25.5	24.1	22.7	21.3	19.9	18.5	17.0	15.4	13.6	11.6	9.3	6.5		
	70	35.2	34.5	33.7	33.0	32.2	31.4	30.7	29.9	29.1	28.4	27.6	26.9	26.1	24.7	23.3	21.9	20.5	19.1	17.7	16.1	14.4	12.5	10.3	7.7			
Shut-off PSI		403	394	385	377	368	359	351	342	333	325	316	307	299	281	264	247	229	212	195	177	160	143	125	108	91	74	56



MODEL 25GS30 30-80 Hz with 5 HP Motor and 3A550

SELECTION CHART

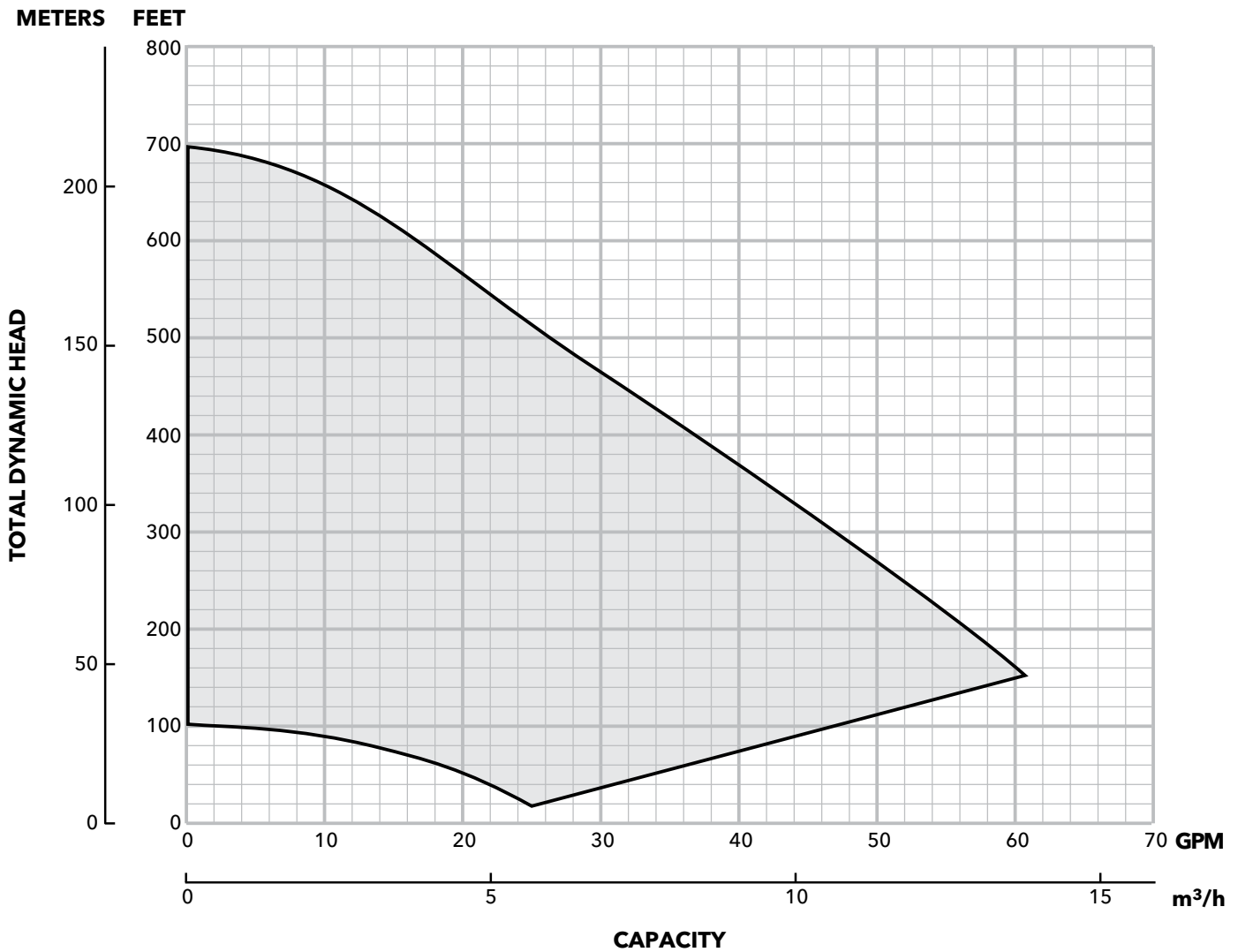
Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																		
		140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700
25GS30	0		39.5	39.0	38.4	37.8	36.9	36.1	34.9	33.9	32.2	30.7	29.3	28.0	26.8	25.4	23.6	21.2	18.0	13.5
	50			34.2	33.2	32.4	31.6	30.8	30.1	29.4	28.2	26.9	25.5	23.8	21.5	18.4	14.1	8.3		
	60		34.0	33.1	32.3	31.5	30.7	30.0	29.3	28.7	27.5	26.1	24.6	22.6	19.8	16.1	11.0			
	70	33.9	33.0	32.1	31.3	30.6	29.9	29.2	28.6	28.0	26.7	25.3	23.5	21.1	17.8	13.3				
Shut-off PSI		273	264	256	247	238	230	221	212	204	186	169	152	134	117	100	83	65	48	31



MODEL 35GS30 30-80 Hz with 5 HP Motor and 3A550

SELECTION CHART

Pump Model	PSI	Depth to Water in Feet/Ratings in GPM (Gallons Per Minute)																						
		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620
35GS30	0							61	60	58	56	55	53	51	49	47	43	39	35	31	26	22	17	12
	50		60	58	57	55	53	51	49	48	46	44	42	40	38	35	31	27	22	17	13	8	3	
	60	60	58	56	55	53	51	49	47	45	43	41	39	37	35	33	29	24	19	15	10	5		
	70	58	56	54	53	51	49	47	45	43	41	39	37	35	33	30	26	21	17	12	7	2		
Shut-off PSI		293	284	275	267	258	249	241	232	223	215	206	197	189	180	171	154	137	120	102	85	68	50	33



WIRE SIZING - MAXIMUM CABLE LENGTHS IN FEET TO LIMIT VOLTAGE DROP TO 5% FOR 230 V SYSTEMS ^⑤

Service Entrance to Controller

Controller Input	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ^⑥															
		14	12	10	8	6	4	2	1/0	2/0	3/0	4/0	250	300	350	400	500
230V 1 PH	½	366	583	925	1336	2107	3345	5267	8364								
	¾	279	445	706	1020	1608	2552	4019	6383	8055							
	1	226	360	571	824	1300	2064	3250	5161	6513	8201						
	1½	*	286	455	657	1036	1644	2589	4111	5188	6533	8236	9710				
	2	*	*	331	478	754	1197	1886	2995	3779	4759	5999	7073	8455	9852		
	3	*	*	246	355	561	890	1401	2225	2808	3536	4458	5256	6283	7321	8343	
	5	*	*	*	218	343	545	858	1363	1720	2165	2730	3219	3847	4483	5109	6348

Controller to Motor

Controller Output	Motor HP	Copper Wire Size 75°C Insulation Exposed to a Maximum of 50°C (122°F) Ambient Temperature ^⑥													
		14	12	10	8	6	4	2	1/0	2/0	3/0	4/0	250	300	
230V 3 PH	½	905	1442	2290	3306	5213	8276								
	¾	690	1100	1748	2523	3978	6316	9945							
	1	558	890	1413	2040	3216	5106	8041							
	1½	445	709	1126	1625	2562	4068	6406							
	2	324	516	820	1184	1866	2963	4666	7410	9351					
	3	241	384	609	880	1387	2202	3467	5506	6949	8750				
	5	*	235	373	539	849	1348	2123	3372	4255	5358	6755	7964	9520	

^⑤ Reduce lengths by 13% for 200 V systems. ^⑥ Lengths in bold require 90°C wire. Shading indicates 40°C maximum ambient. * Wire does not meet the N.E.C. ampacity requirement.

The lengths in each of the Wire Sizing tables represent 100% of the allowable voltage drop when motor is running at full load. When sizing wire, the voltage drop of each wire segment must be included. The total must not exceed 100% of the allowable drop. Take for example a 1.5 HP motor with a distance from Service Entrance to Controller of 100' and 500' between the Controller and Motor.

- Service Entrance to Controller = 100' of 10 AWG (100/455) = 22% (455' is from the S.E. to Controller chart)
 - Controller to Motor = 500' of 12 AWG (500/709) = 71% (709' is from the Controller to Motor chart)
- Total Drop (must be ≤ 100%) 93%

If the distance from the Controller to Motor was 600' (600/709) = 85% + 22% = 107%, we would need to use #10 wire for that segment, ex. 600/1126 = 53% + 22% (for 100' of #10) = 75% which is acceptable. It is also acceptable to use different wire sizes for the Buried and Well sections of wire.

AQUAVAR SOLO² DATA

Controller, Breaker, Generator Sizing

3 Phase Motor HP	Voltage ^①	Controller Model ^②			Circuit Breaker ^③	Generator (VA) ^④
		3AS20	3AS30	3AS50		
¾	230				15	2900
	200					
1	230				20	4400
	200					
1½	230				30	6100
	200					
2	230				40	8100
	200					
3	230				50	13300
	200					

Service Factor Amps 3 Phase Motors

HP	230 Volt, 3Ø		200 Volt, 3Ø	
	GWT SFA	Franklin SFA	GWT SFA	Franklin SFA
¾	3.9	3.8	4.5	4.4
1	4.7	4.7	5.5	5.4
1½	6.1	5.9	7.2	6.8
2	7.6	8.1	8.8	9.3
3	10.1	10.9	12	12.5
5	17.5	17.8	20.2	20.5

NOTES:

- ① Motor Nameplate must be the same as supply voltage.
- ② Shaded areas indicate which controller models can be used with which motors. Lighter shading indicates combinations where controller will limit peak performance to 85% of catalog value for pump/motor.
- ③ Circuit Breaker or Dual Element Time Delay Fuse Size (Amps) protecting branch circuit supplying controller.
- ④ Minimum size of single phase 240 V generator required.

THREE PHASE, 4", MOTOR DATA

Electrical Data, 60 Hertz, 3450 RPM, 4" Motors

Goulds Water Technology #	Red Jacket #	HP	kW	Volts	SF	Full Load		Service Factor		Locked Rotor Amps	Line - Line Resistance
						Amps	Watts	Amps	Watts		
M07430	75C323	0.75	0.55	200	1.5	3.8	812	4.5	1140	32	2.6-3.0
M10430	100C323	1	0.75		1.4	4.6	1150	5.5	1500	29	3.4-3.9
M15430	150C323	1.5	1.1		1.3	6.3	1560	7.2	1950	40	1.9-2.5
M20430	200C323	2	1.5		1.25	7.5	2015	8.8	2490	51	1.4-2.0
M30430	300C323	3	2.2		1.15	10.9	2890	12.0	3290	71	0.9-1.3
M50430	500C323	5	3.7		1.15	18.3	4850	20.2	5515	113	0.4-0.8
M07432	75C313	0.75	0.55	230	1.5	3.3	850	3.9	1185	27	3.3 - 4.3
M10432	100C313	1	0.75		1.4	4.0	1090	4.7	1450	26.1	4.1-5.1
M15432	150C313	1.5	1.1		1.3	5.2	1490	6.1	1930	32.4	2.8-3.4
M20432	200C313	2	1.5		1.25	6.5	1990	7.6	2450	44	1.8-2.4
M30432	300C313	3	2.2		1.15	9.2	2880	10.1	3280	58.9	1.3-1.7
M50432	500C313	5	3.7		1.15	15.7	4925	17.5	5650	93	.85-1.25

Diaphragm Tank Sizing and Pre-Set Pressure Recommendations:

Diaphragm type (captive air) tanks are required on these systems.

Table 1: Tank Sizing Selection

Maximum Pump GPM	Recommended Tanks		
	Total Volume	Order No.	or Order No.
10	2	V6P	TP6P
23	4.5	V15P	TP15P
41	8.2	V25P	TP25P
70	13.9	V45	TP45
100	19.9	V60	TP60

Use Total Tank Volume, not drawdown volume, to select the proper tank size. The total tank volume should be approximately 20% of the pump's maximum flow. For example, when using a 10 gpm pump the system requires a minimum 2 gallon (total volume) tank.

The tank sizing recommendations are field proven to prevent objectionable pressure drops on start-up and provide smooth operation for the majority of variable speed pump systems.

Set the tank pressure, while tank is empty of water, to 20 psi below the desired system pressure setting. Ex. for a 50 psi system pressure, charge the tank to 30 psi.



Aquavar SPD (Single Pump Drive)

SIMPLEX VARIABLE SPEED PUMP CONTROLLER
FOR SUBMERSIBLE AND CENTRIFUGAL PUMPS



KEY FEATURES AND BENEFITS

- **Energy Saving** → The SPD is a true variable frequency controller which adjusts motor speed to match the hydraulic needs of the system to maintain pressure. Unlike valve controlled systems, the energy draw is substantially reduced during lower flow while keeping the pump close to its best efficiency. Up to 70% energy savings over fixed speed pumps are common.
- **Easy Set-up** → Install wiring, set DIP switches and go! Total set up time including wiring is less than 30 minutes.
- **NEMA 3R** → Outdoor rated enclosure with operating temperatures from -22° F to 122° F!
- **Dual Phase Input** → UL listed for both **three phase** and **single phase** input (de-rated available).
- **Filter** → Includes output filter rated to 1000 feet of motor lead, standard on models with "F" suffix for submersible installations.
- **True Motor Match** → The SPD is designed for the higher amp requirements typical of submersible pumps on start-up. A 10 HP SPD will run a 10 HP submersible pump!
- **Transducer** → As with all CentriPro drives, the pressure transducer is included.
- **Full Diagnostics** → Electrical protection and diagnostics, plus a full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down.
- **Lockout/Tagout** → Cover can be locked to prevent unauthorized entry.
- **Remote on/off** → Permits external control by timers (irrigation), float or pressure switches (tank draining) or manual control. Dry contact closure required.
- **Hand/Auto Option** → Allows the drive to be run at full speed without a pressure transducer for longer periods of time as in the case of new well development or system start up. Turning the control back to auto resumes the automatic pressure tracking and control.
- **Remote Monitoring** → External monitors may be connected to the drive for monitoring pump running speed (4-20 mA output based on speed), pump on, and system fault. The fault indicator can also be connected to devices like an auto-dialer. This enables control of pumps and drives in un-manned locations. The 4-20 mA output can be utilized for functions such as an external dosing system, or chlorine injection.
- **Pressure Drop** → The drive restart value can be adjusted from 5 PSI drop to 20 PSI. This allows for fewer starts and for small leaks that can be common in irrigation systems.
- **Dual Set Point** → Two pressure set points are available, controlled with an external switch, such as a timer.
- **No Water Restart** → Adjust the time delay after a "dry well" fault, from 10 minutes to 2 hours between each restart. Ideal for low yielding wells.



Single Phase Power Supply

The SPD can be used with single phase input power for 208 V or 230 V power supplies. The maximum output of the drive and horsepower must be derated to 50% current.

The chart below shows the full load output current ratings of the controller when single phase or 3 phase power is used. If single phase input power is used the Motor Overload switches must be set to 50% or 40%.

208/230	1	SPD20050	5.0	2.0	17.8	8.1	
		SPD20050F					
	2	SPD20075	7.5	3.0	26.4	10.9	
		SPD20075F					
		SPD20100	10.0	5.0	37.0	17.8	
		SPD20100F					
	3	SPD20150	15.0	7.5	47.4	26.4	
		SPD20150F					
		SPD20200	20.0	10.0	60.6	33.0	
		SPD20200F					
	4	SPD20250	25.0	12.0	76.0	40.2	
		SPD20250F					
		SPD20300	30.0	15.0	94.0	47.4	
		SPD20300F					
	460	1	SPD40050	5.0		8.9	
			SPD40050F				
SPD40075			7.5		13.2		
SPD40075F							
2		SPD40100	10.0		18.5		
		SPD40100F					
		SPD40150	15.0		23.7		
		SPD40150F					
		SPD40200	20.0		30.3		
		SPD40200F					
3		SPD40250	25.0		37.5		
		SPD40250F					
		SPD40300	30.0		47.0		
		SPD40300F					

INPUT AND OUTPUT FUNCTIONS

CONTROL TERMINALS		
POSITION	FUNCTION	DESCRIPTION
1	COM	SIGNAL COMMON
2	RUN/STOP	CLOSED = RUN OPEN = STOP
3	COM	SIGNAL COMMON
4	HAND/AUTO	CLOSED = HAND OPEN = AUTO
5	COM	SIGNAL COMMON
6	INPUT	TRANSDUCER INPUT
7	+24V	24VDC SUPPLY
8	+5V	5VDC SUPPLY
9	COM	SIGNAL COMMON
10	ANALOG OUTPUT	4-20mA OUTPUT
11	SP2/SP1	CLOSED = SETPOINT2 OPEN = SETPOINT1
12	PRESSURE DROP	CLOSED = 20PSI OPEN = 5PSI
13	RELAY1 - NO	MOTOR RUN
14	RELAY1 - NC	STOP: NC = COM
15	RELAY1 - COM	RUN: NO = COM
16	RELAY2 - NO	SYSTEM FAULT
17	RELAY2 - NC	OK: NC = COM
18	RELAY2 - COM	FAULT: NO = COM

The control terminal strips allow for a variety of input and output functions.

Warning: Turn off all power to the controller before wiring devices to the control terminals.

Warning: Inputs RUN/STOP, HAND/AUTO, SP2/SP1 and PRESSURE DROP are switch inputs. Do not connect power to these inputs or damage to the controller will result. Only connect non-powered switch contacts to these inputs.

RUN/STOP: This input allows the pump/motor to be turned on and off by an external switch. Connect the contacts of a non-powered external switch to terminals 1 (COM) and 2 (RUN/STOP). When the switch is closed the controller is in RUN mode (output to motor is enabled). When the switch is open the controller is in STOP mode (output to motor is disabled).

HAND/AUTO: This input allows the controller to run the motor at full speed without the use of a pressure transducer. This input can be controlled by an external non-powered switch. Connect the contacts of a non-powered external switch to terminals 3 (COM) and 4 (HAND/AUTO).

When the switch is closed the controller is in HAND mode. While in HAND mode the RUN/STOP input is used to start and stop the motor and the pressure transducer input is ignored. When the switch is open the controller is in AUTO mode. While in AUTO mode the controller uses the pressure transducer feedback to control the speed of the motor.

INPUT and +24V: These terminals are the transducer feedback and transducer power supply. Connect the white lead from the transducer cable to terminal 6 (INPUT). Connect the brown lead from the transducer cable to terminal 7 (+24V). Connecting the drain (bare) wire to the chassis allows grounding of the case of the pressure transducer. The controller is configured with a 300 PSI 4-20mA output pressure transducer.

ANALOG OUTPUT: This output is a 4-20mA signal based on motor speed (4mA = 0Hz, 20mA = 60Hz) and can be connected to external monitoring or external control devices. Connect terminal 10 (ANALOG OUTPUT) to the 4-20mA input of the external device. Connect terminal 9 (COM) to the negative side of the current loop on the external device. The external device must have an input resistance (impedance) in the range of 45Ω to 250Ω. The maximum output voltage is 24V.

SP2/SP1: This input allows the system to operate at one of 2 pressure settings. This input can be controlled by an external non-powered switch. Connect the contacts of a non-powered external switch to terminals 5 (COM) and 11 (SP2/SP1). When the switch is closed pressure set point 2 is enabled (preset to 75 PSI when used with a 300 PSI transducer). When the switch is open pressure set point 1 is enabled (preset to 50 PSI when used with a 300 PSI transducer).

PRESSURE DROP: This input allows the user to select the amount of pressure drop in the system before the pump starts. This input can be controlled by an external non-powered switch. Connect the contacts of a non-powered external switch to terminals 5 or 9 (COM) and 12 (PRESSURE DROP). When the switch is closed the system pressure will drop 20 PSI (when used with a 300 PSI transducer) before restarting the pump. When the switch is open the system pressure will drop 5 PSI (when used with a 300 PSI transducer) before restarting the pump.

RUN RELAY: This output indicates when the pump/motor is running. This output can be used to control power to a light, an alarm or other external device. When the pump/motor is off terminal 13 (RELAY1 - NO) will be open and terminal 14 (RELAY 1 - NC) will be connected to terminal 15 (RELAY1 - COM). When the pump/motor is on terminal 13 (RELAY1 - NO) will be connected to terminal 15 (RELAY1 - COM) and terminal 14 (RELAY 1 - NC) will be open. The relay rating is 250Vac, 5 amps maximum.

FAULT RELAY: This output indicates when the system is faulted. This output can be used to control power to a light, an alarm or other external device. When the system is not faulted terminal 16 (RELAY2 - NO) will be open and terminal 17 (RELAY 2 - NC) will be connected to terminal 18 (RELAY2 - COM). When the system is faulted terminal 16 (RELAY2 - NO) will be connected to terminal 18 (RELAY2 - COM) and terminal 17 (RELAY 2 - NC) will be open. The relay rating is 250Vac, 5 amps maximum.

Carrier (IGBT switching) frequency: 2 KHz to 8 KHz

Outputs

Analog output: 4-20mA output based on drive frequency. 0-60 Hz.

Pump run status: Relay to indicate pump run status.

Drive fault status: Relay to indicate pump, motor or controller fault. May be connected to outside warning device or auto-dialer.

LED Lights: **Green** - standby or pump running

Orange - Under voltage

Red - Number of blinks determine: replace controller, no water/loss of prime, sensor fault, pump or motor bound, short circuit/ground fault, input phase loss, temperature, over-voltage, or motor overload.

Electrical Efficiency Over 95% at Full Load

No water restart time Adjustable restart time for "dry well" function from 10 min. to 2 hours.

Protection Against Short circuit, under voltage, motor overload, temperature, dead heading, run out, suction loss, sensor fault, bound pump, overvoltage, static discharge, dry well.

Max. Elevation 2000 m (6600 ft.)

Ambient Temp. -22° F to 122° F

Max. Humidity 95% at 104F non-condensing

Air Pollution Avoid mounting in areas with excessive dust, acids, corrosives and salts.

Approvals UL, cUL, CE

Enclosure Painted Steel enclosure, NEMA 3R, IP43, (rain tight)

Mounting Wall mount

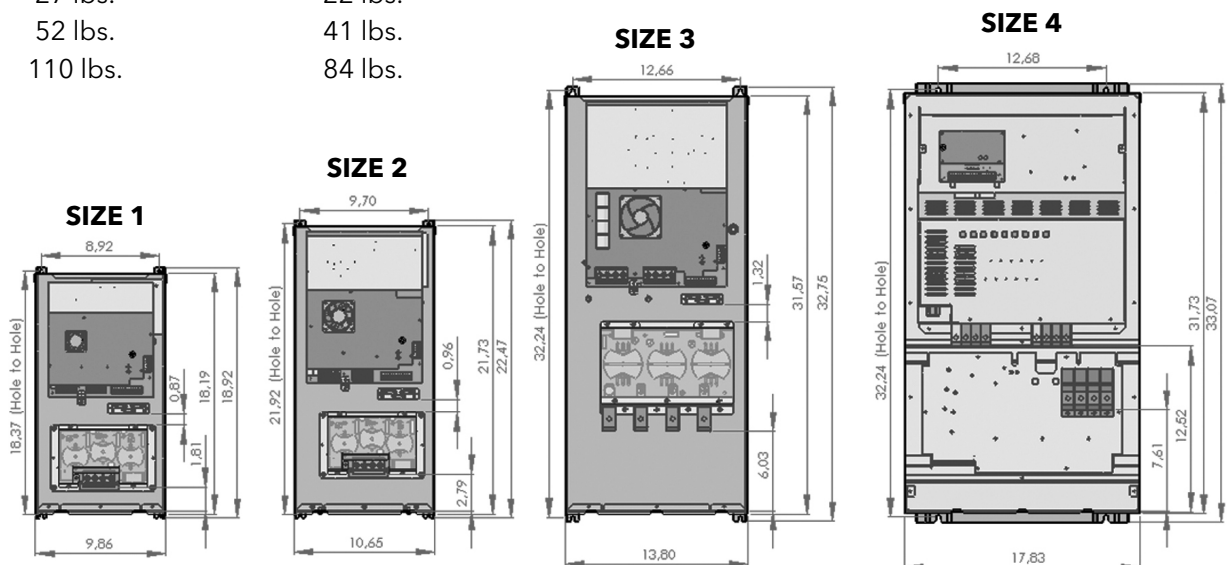
Cooling Attached heat sink and fan.

Transducer 4-20 mA rated to 300 PSI with 180-inch, 3 core shielded cable, with internal case ground.

Output Filter (Optional) Integrated filters protect the motor from voltage spikes even with up to 1,000 feet of wire between controller and motor.

WEIGHTS AND DIMENSIONS

	Filtered Product	Non-Filtered Product
Size 1	21 lbs.	17 lbs.
Size 2	27 lbs.	22 lbs.
Size 3	52 lbs.	41 lbs.
Size 4	110 lbs.	84 lbs.



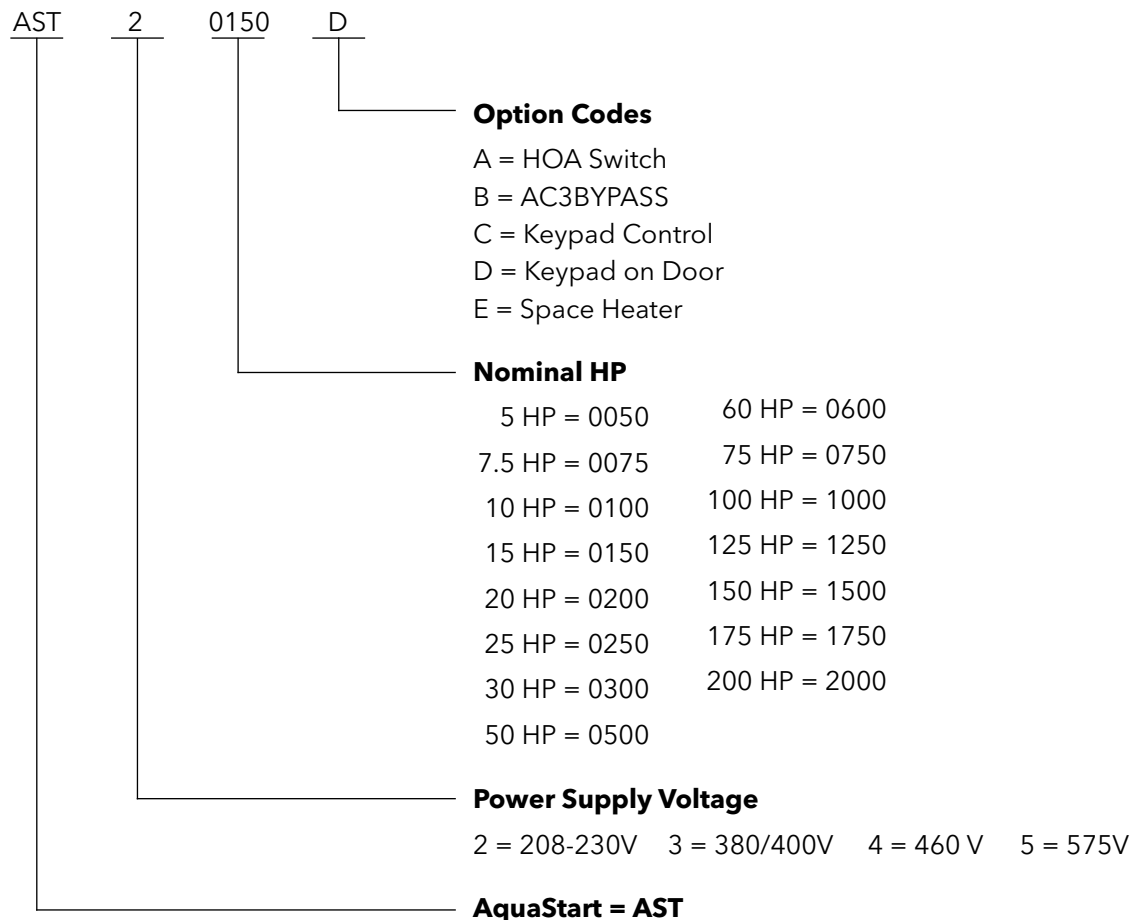
VFD INPUT WIRE SIZING CHARTS

Controller Input	Maximum Allowable Conductor Length (40°C Ambient, 5% Voltage Drop)																							
	Conductor Size (75°C Rated Wire)																							
	Motor HP	Motor SFA	Input Current	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	350	400	500	600	750	1000
230V, Single Phase Input	1/2	2.9	7.2	400	618	1020	1532	2348	3530	4242	5335	6358	7562	8633	10297	11821	13013	14156	15361	16333	17959	19017	20579	22421
	3/4	3.8	9.4	301	467	775	1167	1790	2693	3236	4071	4851	5770	6587	7858	9021	9931	10803	11722	12465	13705	14513	15705	17111
	1	4.7	11.6	239	374	623	941	1445	2175	2615	3290	3921	4664	5325	6352	7293	8029	8734	9477	10078	11081	11734	12698	13834
	1 1/2	6.1	15.1	178	282	475	721	1110	1673	2012	2533	3019	3592	4102	4894	5618	6186	6729	7302	7764	8537	9041	9784	10659
	2	7.6	18.8		219	375	574	887	1340	1612	2030	2421	2882	3291	3927	4509	4964	5400	5860	6232	6852	7256	7852	8555
	3	10.1	25.0			273	426	662	1003	1209	1524	1819	2165	2474	2953	3391	3734	4063	4409	4689	5156	5460	5909	6437
	5	17.0	42.1					378	583	708	896	1072	1279	1464	1749	2011	2216	2411	2617	2784	3062	3242	3510	3824
	7 1/2	26.0	64.3						366	449	573	690	826	950	1137	1309	1444	1573	1708	1818	2000	2118	2294	2499
	10	33.0	81.7								441	534	643	742	890	1027	1135	1236	1343	1430	1574	1668	1806	1968
	15	47.4	117.3									432	504	609	706	832	918	1019	1123	1215	1365	1477	1626	1814
	1/2	2.9	3.4	818	1263	2087	3160	4908	7511	9123	11653	14168	17119	19844	24266	28469	32000	35524	39133	42344	47573	51360	56659	63177
	3/4	3.8	4.5	623	962	1591	2410	3745	5731	6962	8893	10812	13064	15144	18519	21727	24421	27111	29865	32315	36306	39196	43240	48214
	1	4.7	5.5	501	776	1285	1948	3027	4633	5628	7189	8741	10562	12244	14972	17566	19744	21919	24146	26127	29354	31690	34960	38981
	1 1/2	6.1	7.2	383	595	988	1499	2331	3568	4335	5538	6734	8137	9433	11536	13534	15213	16888	18604	20131	22617	24417	26936	30035
	2	7.6	8.9	304	474	790	1201	1869	2863	3478	4444	5404	6530	7571	9258	10862	12210	13555	14932	16157	18153	19598	21620	24107
3	10.1	11.9	224	351	590	900	1403	2152	2615	3342	4065	4912	5696	6966	8173	9187	10199	11235	12158	13659	14747	16268	18140	
5	17.0	20.0		196	339	527	826	1272	1548	1981	2410	2915	3381	4136	4853	5456	6058	6674	7222	8114	8760	9665	10777	
7 1/2	26.0	30.6				333	530	823	1005	1288	1570	1900	2206	2700	3170	3565	3959	4362	4720	5304	5727	6319	7045	
10	33.0	38.8					254	409	641	785	1009	1231	1492	1734	2124	2495	2806	3117	3435	3718	4178	4511	4978	
15	46.0	54.1						280	447	553	713	874	1062	1237	1517	1784	2009	2232	2461	2664	2995	3234	3570	
20	60.0	70.6							412	536	660	805	941	1156	1362	1536	1707	1883	2040	2294	2477	2735	3050	
25	76.0	89.4								410	509	624	734	905	1069	1207	1343	1482	1607	1808	1953	2158	2406	
30	94.0	110.6									493	584	722	856	969	1080	1193	1295	1459	1576	1742	1943		
5	8.5	10.0	539	843	1409	2145	3339	5117	6219	7945	9662	11677	13537	16555	19424	21834	24239	26701	28893	32461	35045	38661	43109	
7 1/2	13.0	15.3	335	534	906	1391	2174	3337	4059	5189	6312	7630	8847	10821	12697	14274	15846	17457	18890	21224	22913	25278	28186	
10	16.5	19.4		406	701	1087	1704	2622	3192	4082	4968	6006	6967	8522	10001	11244	12483	13752	14882	16721	18052	19916	22206	
15	23.0	27.1			482	763	1207	1868	2279	2918	3554	4301	4991	6108	7170	8062	8952	9863	10674	11994	12949	14286	15930	
20	30.0	35.3				568	909	1418	1734	2225	2715	3288	3819	4676	5491	6176	6859	7558	8180	9193	9925	10951	12211	
25	37.0	43.5					721	1135	1394	1792	2190	2656	3089	3784	4446	5003	5557	6124	6630	7452	8045	8878	9900	
30	47.0	55.3						874	1080	1395	1709	2077	2421	2969	3492	3932	4389	4816	5215	5863	6330	6987	7791	
40	60	70.6							824	1072	1320	1610	1882	2313	2725	3071	3414	3766	4079	4588	4954	5470	6100	
50	79	92.9								785	976	1198	1409	1738	2054	2320	2581	2850	3090	3479	3757	4151	4629	
60	90	105.9									841	1036	1225	1514	1793	2028	2259	2495	2707	3049	3293	3641	4061	
75	109	128.2									990	1230	1464	1660	1852	2049	2226	2511	2712	3001	3348	3712	4102	
100	145	170.6												1072	1224	1371	1521	1658	1875	2027	2248	2509		
125	180	211.8															1083	1207	1320	1499	1621	1803	2013	
150	220	258.8																				1063	1212	1312
200	270	317.6																					1052	1182

Lengths in BOLD require 90°C wire Input connections for models SPD20300 and SPD20300F require 90°C wire
 For output cable sizing and maximum length, consult MAID Manual (BMAID).

FEATURES

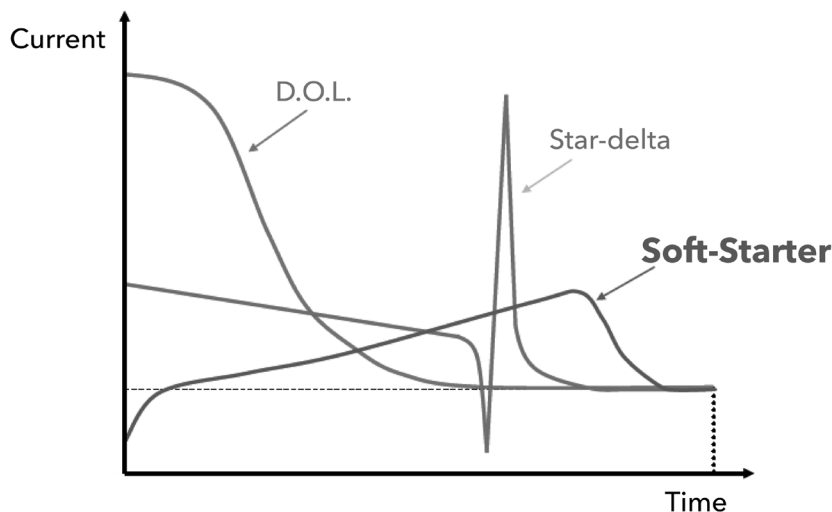
- SSW-07 Combination Soft Starter
- Adjustable current, ramp time and voltage overloads
- Standard NEMA 4 outdoor rated enclosures
- cULus Certified, CE available as option.
- 5-175 HP at 230V, 10-200 HP at 460V, 15-200 HP at 575V
- Built-in fusible disconnect
- Optional keypad control available
- Standard, built-in AC1 Run Rated Bypass, between start and stop (automatically bypass SSW-07 between start and stop).
- AC3 Bypass Contactor and DOL selector switch as option (allows user to bypass SSW-07 for DOL start and stop).
- Wall-mounted enclosure - Frames A-D
- Floor mount kit for Frame Size E
- Temperatures to 55°C without current derate
- 3 programmable inputs (120V)
- 2 relay outputs with NO contacts
- 240V, 11A programmable output
- Protection from:
 - Excess starting time
 - Locked rotor
 - Current imbalance
 - Phase loss
 - Over / under current
 - Under voltage



The chart below shows the motor overload setting for standard models (Setting based upon Service Factor Amps).

Supply Voltage	Model Number	Rated Amps	MOTOR CURRENT SETTING					
			100%	90%	80%	70%	60%	50%
200V - 240V	AST20050	17	17	15.3	13.6	11.9	10.2	8.5
	AST20075	24	24	21.6	19.2	16.8	14.4	12.0
	AST20100	30	30	27.0	24.0	21.0	18.0	15.0
	AST20150	45	45	40.5	36.0	31.5	27.0	22.5
	AST20250	61	61	54.9	48.8	42.7	36.6	30.5
	AST20300	85	85	76.5	68.0	59.5	51.0	42.5
	AST20500	130	130	117.0	104.0	91.0	78.0	65.0
	AST20600	171	171	153.9	136.8	119.7	102.6	85.5
	AST20750	200	200	180.0	160.0	140.0	120.0	100.0
	AST21000	255	255	229.5	204.0	178.5	153.0	127.5
	AST21250	312	312	280.8	249.6	218.4	187.2	156.0
	AST21500	365	365	328.5	292.0	255.5	219.0	182.5
	AST21750	412	412	370.8	329.6	288.4	247.2	206.0
460V - 480V	AST40100	17	17	15.3	13.6	11.9	10.2	8.5
	AST40150	24	24	21.6	19.2	16.8	14.4	12.0
	AST40200	30	30	27.0	24.0	21.0	18.0	15.0
	AST40300	45	45	40.5	36.0	31.5	27.0	22.5
	AST40500	61	61	54.9	48.8	42.7	36.6	30.5
	AST40750	85	85	76.5	68.0	59.5	51.0	42.5
	AST41000	130	130	117.0	104.0	91.0	78.0	65.0
	AST41250	171	171	153.9	136.8	119.7	102.6	85.5
	AST41500	200	200	180.0	160.0	140.0	120.0	100.0
	AST42000	255	255	229.5	204.0	178.5	153.0	127.5

AMP DRAW COMPARISON



D.O.L.

- High starting current
- High mechanical stresses

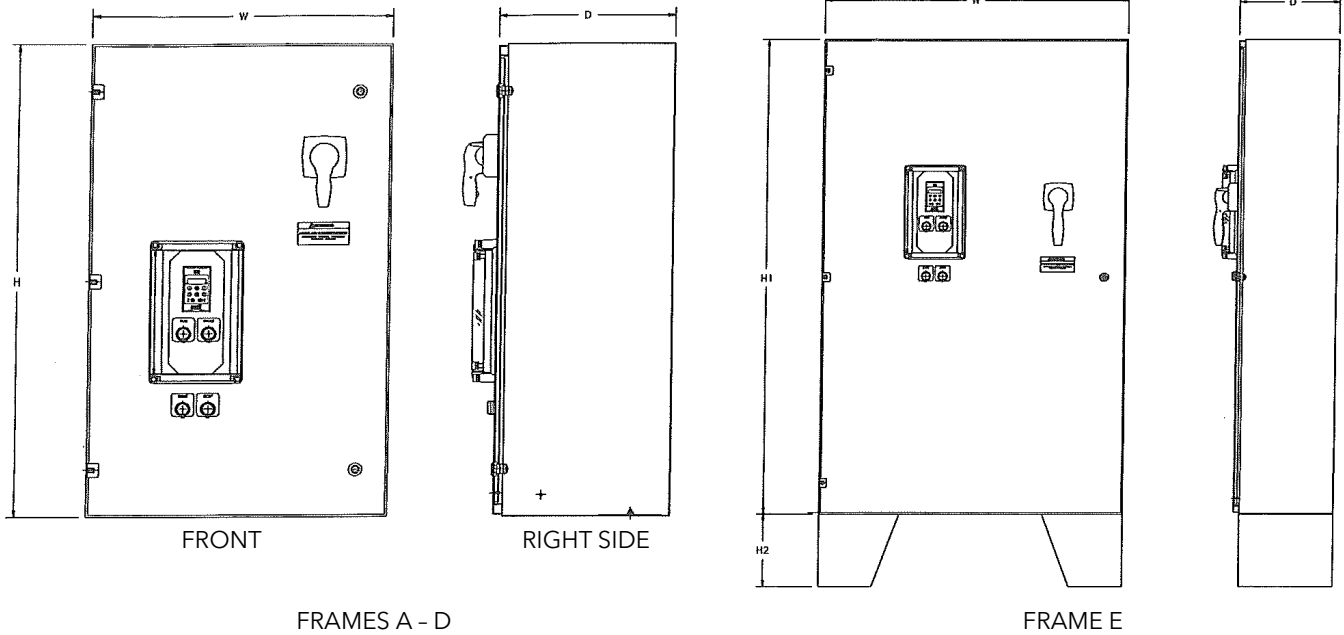
STAR-DELTA

- $\frac{1}{3}$ D.O.L. start current
- Current spikes at transition

AQUASTART™ SOFT STARTER

- Start and stop motor over time
- Prevents mechanical shocks on load
- Prevents current spikes in supply line

AQUASTART DIMENSIONS



FRAME	MOUNT	W	D	H1	H2
A	Wall	16	8	24	N/A
B		24	12	32	N/A
C		24	14	40	N/A
D		32	12	48	N/A
E	Floor	36	12	60	12

For all of your pump and control needs, contact your Goulds Water Technology Pump Professional.



CentriPro "Aquavar SPD" variable speed, constant pressure pump controller is designed for the professional pump installer.

With application specific features and CentriPro designed software, the SPD was developed specifically for use with submersible and centrifugal pumps.

This variable speed controller goes beyond a "standard" drive, giving the pump professional a rugged design that is built for demanding conditions.

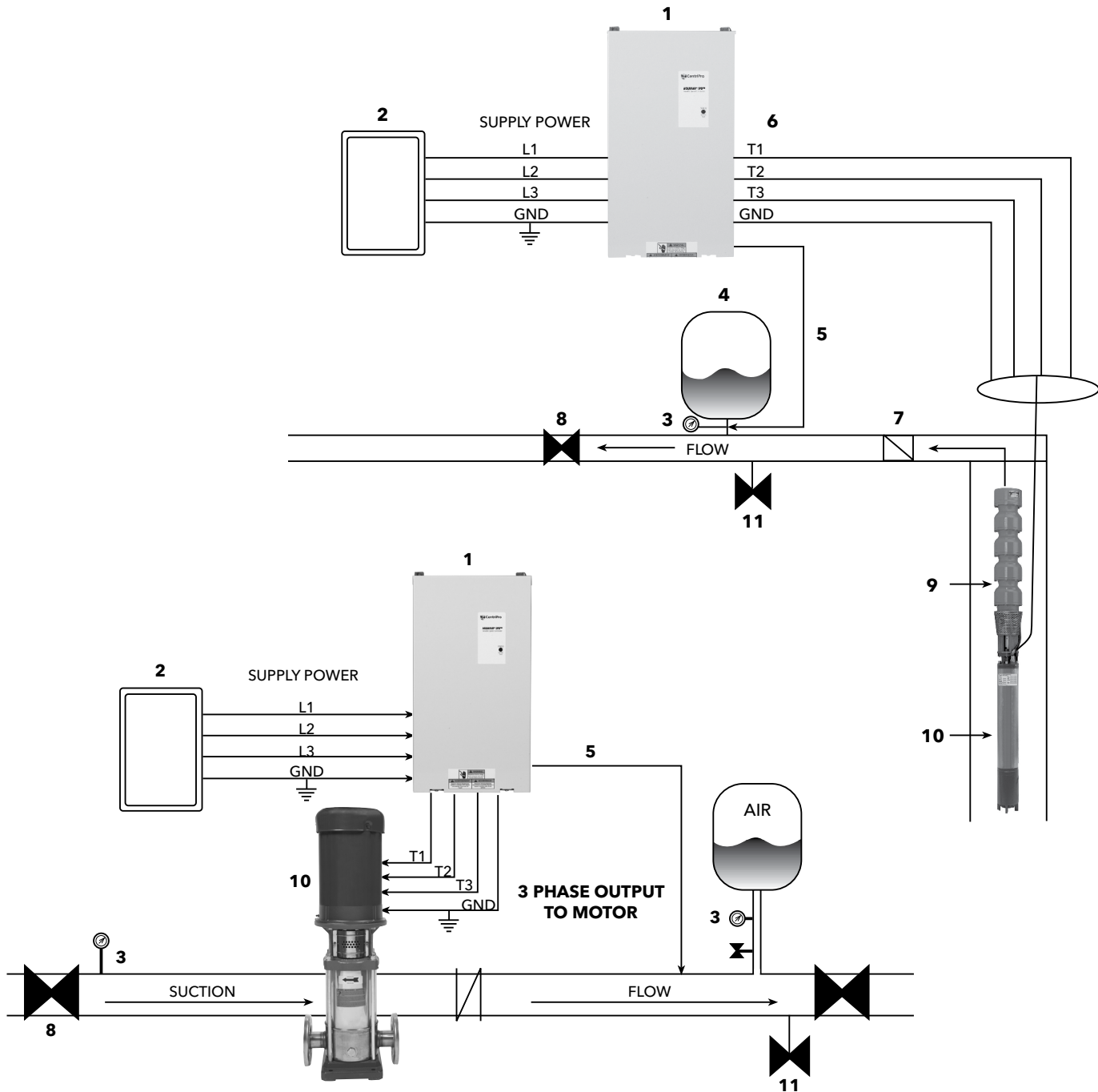
TYPICAL APPLICATIONS

- **Irrigation** → Irrigation applications use both submersible and surface pumps. Choose an SPD for control standard 4" and 6" submersible motors as well as turbine pumps and surface centrifugal pumps up to 30 HP.
- **Rural Water**
- **Pressure Boosting**
- **Agriculture**
- **Retrofit** → Existing constant speed control systems
- **Phase Conversion** → 1 phase to 3 phase power
- **Two Versions for Submersible and Above Ground Installations**

SPD ____F (example: SPD20050F) Models have filters to reduce electrical noise created by drives with long wire runs, typical of submersible installations.

SPD ____0 (example: SPD20050) Models are for above ground installation with short wire runs.





Aquavar SPD Controller

Fusible Disconnect

Pressure Gauge

Air Diaphragm Tank

Pressure Transducer

3-Phase Output (Always)

Discharge Check Valve

Gate Valve (Highly Recommended)

Pump End

Submersible Motor (3-Phase)

Pressure Relief Valve

NOTE: For single phase input, connect L1 and L3 terminals, and adjust motor overload switches to 50% of controller rating or lower.

STARTING THE SYSTEM

Setting the Motor Overload Switches

The Motor Overload Setting Switches adjust the level of motor overload current protection necessary to protect the motor in case of an over current condition.

Bank 1 switches 1, 2 and 3 allow adjustment of the motor overload setting. These switches adjust the motor overload protection as a percentage of the full load output current rating of the controller. Choose a motor overload setting that meets or is less than the motor's SFA rating. For example, if the full load output current rating of the controller is 37A and the motor SFA rating is 33A, the motor overload setting should be set to 85% ($33A/37A = 89\%$, next lowest setting is 85%).

In applications where the pump and motor are not used to the full capacity the system may not draw current close to the motor's SFA rating. In this case choose a motor overload setting that is close to the actual full load running current.

NOTE: If single phase input power is used the motor overload switches must be set to 50% or lower or nuisance input phase loss errors can result.

The chart below shows the motor overload setting for each model.

SWITCH SETTINGS									
BANK1			BANK2			BANK3			
1	2	3	1	2	3	1	2		
U = Up			D = Down						
MOTOR OVERLOAD SETTINGS					ACCEL/DECEL RAMP SETTINGS				
BANK1	1	2	3	% OF RATING	BANK1&2	4	1	2	RAMP SETTING
U	U	U		100%	U	U	U		0.5 SEC
U	U	D		95%	U	U	D		1 SEC
U	D	U		90%	U	D	U		2 SEC
U	D	D		85%	U	D	D		3 SEC
D	U	U		80%	D	U	U		4 SEC
D	U	D		70%	D	U	D		5 SEC
D	D	U		50%	D	D	U		6 SEC
D	D	D		40%	D	D	D		7 SEC
NO WATER RESTART TIME					BANK3		MIN FREQ		
BANK2	3	4	RESTART TIME		1	U		30Hz	
U	U		10 MIN		D	D		15Hz	
U	D		30 MIN		BANK3		2		CARRIER FREQ
D	U		1 HOUR		U		U		2KHz
D	D		2 HOURS		D		D		8KHz

Supply Voltage	Frame Size	Model Number	Motor Overload Setting							
			100%	95%	90%	85%	80%	70%	50%	40%
208/230	1	SPD20050	17.8	16.9	16.0	15.1	14.2	12.5	8.9	7.1
		SPD20050F								
	2	SPD20075	26.4	25.1	23.8	22.4	21.1	18.5	13.2	10.6
		SPD20075F								
		SPD20100								
		SPD20100F								
	3	SPD20150	47.4	45.0	42.7	40.3	37.9	33.2	23.7	19.0
		SPD20150F								
		SPD20200								
		SPD20200F								
	4	SPD20250	76.0	72.2	68.4	64.6	60.8	53.2	38.0	30.4
		SPD20250F								
SPD20300										
SPD20300F										
460	1	SPD40050	8.9	8.5	8.0	7.6	7.1	6.2	4.5	3.6
		SPD40050F								
		SPD40075								
		SPD40075F								
	2	SPD40100	18.5	17.6	16.7	15.7	14.8	13.0	9.3	7.4
		SPD40100F								
		SPD40150								
		SPD40150F								
	3	SPD40200	30.3	28.8	27.3	25.8	24.2	21.2	15.2	12.1
		SPD40200F								
		SPD40250								
		SPD40250F								
3	SPD40300	47.0	44.7	42.3	40.0	37.6	32.9	23.5	18.8	
	SPD40300F									
	SPD40300									
	SPD40300F									

SWITCH SETTINGS									
BANK1		BANK2		BANK3					
1	2	3	4	1	2	3	4	1	2
U = Up				D = Down					
MOTOR OVERLOAD SETTINGS			ACCEL/DECEL RAMP SETTINGS						
BANK1	% OF RATING		BANK1&2	RAMP SETTING					
1 2 3			4 1 2						
U U U	100%		U U U	0.5 SEC					
U U D	95%		U U D	1 SEC					
U D U	90%		U D U	2 SEC					
U D D	85%		U D D	3 SEC					
D U U	80%		D U U	4 SEC					
D U D	70%		D U D	5 SEC					
D D U	50%		D D U	6 SEC					
D D D	40%		D D D	7 SEC					
NO WATER RESTART TIME			BANK3	MIN FREQ					
BANK2	RESTART TIME		1						
3 4			U	30Hz					
U U	10 MIN		D	15Hz					
U D	30 MIN		BANK3	CARRIER FREQ					
D U	1 HOUR		2						
D D	2 HOURS		U	2KHz					
			D	8KHz					

Motor Overload/Ramp Switches

CONTROL TERMINALS		
POSITION	FUNCTION	DESCRIPTION
1	COM	SIGNAL COMMON
2	RUN/STOP	CLOSED = RUN OPEN = STOP
3	COM	SIGNAL COMMON
4	HAND/AUTO	CLOSED = HAND OPEN = AUTO
5	COM	SIGNAL COMMON
6	INPUT	TRANSDUCER INPUT
7	+24V	24VDC SUPPLY
8	+5V	5VDC SUPPLY
9	COM	SIGNAL COMMON
10	ANALOG OUTPUT	4-20mA OUTPUT
11	SP2/SP1	CLOSED = SETPOINT2 OPEN = SETPOINT1
12	PRESSURE DROP	CLOSED = 20PSI OPEN = 5PSI
13	RELAY1 - NO	MOTOR RUN
14	RELAY1 - NC	STOP: NC = COM
15	RELAY1 - COM	RUN: NO = COM
16	RELAY2 - NO	SYSTEM FAULT
17	RELAY2 - NC	OK: NC = COM
18	RELAY2 - COM	FAULT: NO = COM

Motor Overload Setting:

May be set from 40-100%

Minimum Speed:

15 Hz and 30 Hz minimum frequency settings. (Permanently set to 30 Hz on filtered product.)

Carrier Frequency:

2 KHz to 8 KHz (Permanently set to 2 KHz on filtered product.)

Ramp Setting:

Adjust acceleration and deceleration ramps from .5 to 7 seconds

No Water Restart Time:

Restart delay after ddry well or loss of prime fault adjustable from 10 minutes to 2 hours.

The Aquavar SPD drives are self-diagnosing controllers. If a problem occurs, observe the Status Code Indicator Light on the front of the unit. No Status Code Indicator Light means either no or low input voltage (less than 140Vac).

Refer to the status code label on the side of the controller access cover to diagnose system errors.

See the following diagram.

STATUS CODES	
GREEN LIGHT CODES	
CONSTANT	STANDBY
BLINKING	PUMP RUNNING
ORANGE LIGHT CODES	
CONSTANT	UNDER VOLTAGE
RED LIGHT CODES	
CONSTANT	REPLACE CONTROLLER
2 BLINKS	NO WATER/LOSS OF PRIME
3 BLINKS	SENSOR FAULT
4 BLINKS	PUMP OR MOTOR BOUND
5 BLINKS	SHORT CIRCUIT/GROUND FAULT
6 BLINKS	INPUT PHASE LOSS
7 BLINKS	TEMPERATURE
8 BLINKS	OVER VOLTAGE
9 BLINKS	MOTOR OVERLOAD

Red Flashes	Fault Code	Restart Action
Constant	Replace Controller	Controller will not restart. Power must be reset to clear the fault.
2 Blinks	No Water/Loss of Prime	Controller will restart automatically according to the No Water Restart Time switches (switches 3 & 4 of bank 2).
3 Blinks	Sensor Fault	Controller will restart automatically when the sensor signal is within the valid operating range.
4 Blinks	Pump or Motor Bound	Controller will restart automatically 5 times. After 5 faults the power must be reset to clear the fault.
5 Blinks	Short Circuit/Ground Fault	Controller will not restart. Power must be reset to clear the fault.
6 Blinks	Input Phase Loss	Controller will restart automatically 5 times. After 5 faults the power must be reset to clear the fault.
7 Blinks	Temperature	Controller will restart automatically when temperature is within the operating range of the controller.
8 Blinks	Over Voltage	Controller will restart automatically when the input voltage is within the operating range of the controller.
9 Blinks	Motor Overload	Controller will restart automatically.



FEATURES

- Gauges
- Pressure Control Valves
- Well Seals
- Air Volume Controls
- Valves and Fittings
- Motor Adapter
- Gauge Guard
- Air Relief Valve

ACCESSORIES - FITTINGS

GAUGES



AG5 Pressure Gauge:
Quality 100 lb. pressure gauge for pneumatic tank service. Threaded 1/4" male pipe.

AG2 Pressure Gauge:
Quality 200 lb. pressure gauge for pneumatic tank service. Threaded 1/4" male pipe.

TURNED COUPLING



64655 Turned Coupling:
1 1/4" for use with Packer System P-2 Packages, where well diameter does not permit use of standard coupling.

PRESSURE CONTROL VALVES



AV1: For use with Goulds Water Technology Series GH Deep Well Water System.



AV21: For use with Series SJ, VJ and VS.



AV22KIT: For use with Series JRD, J+, HSJ Deep Well Jet Systems.

Part No. **ADAPT46** is available for installations where a 6" motor is desired. The kit contains a 4" x 6" adapter, a 4" to 6" splined shaft extension and required bolts. Connects a 4" water end to a 6" motor.

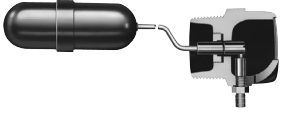


COTTAGE PRIMING KIT

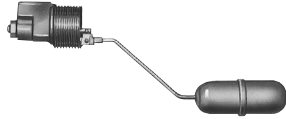
Part No. **CTGKIT** is available for quick priming of jet pumps. Included: street tee and funnel.



AIR VOLUME CONTROLS



AA1I Air Volume Control for Series BF Pumps: The AA1 air volume control admits air when needed and automatically maintains the proper volume. Control body threaded 1 1/4" pipe size. Weight 1 lb. Tubing not included.



AA4 Air Escape Control for Submersible Pumps: Excess air is vented from the tank through the body of the air volume control. Control body threaded 1 1/4" pipe size for mounting in hole on side of the tank. Has 1/4" pipe tapping on the top side of the body for gauge or pressure switch installation. Control good for 150 lbs. maximum working pressure. Weight 1 1/4 lbs.



AA8-7 Air Volume Control for Jet Pumps: Diaphragm type air volume control for mounting on side of tank. Plastic spring insert protects against scratching. Threaded 3/8" male for tank connection. 1/8" x 1/4" connector for 1/4" copper tubing. No tubing or fittings included.



AA7 Air Valve: For use in connection with air volume control AA1 or AA2. Also used with floating disc style tanks.



4K170 Snifter Valve: Installed in check valve AV9 used on submersible installations with drain and "Y" fitting.

Note: replaces AA10.

6K210 GAUGE GUARD

Features:

- Protects transducers and pressure switches from dirt, corrosion and vacuum conditions.
- Hermetically-sealed, molded unibody construction - avoids possibility of leaks.
- Glass-filled Polypro® bodies for chemical compatibility and maximum temperatures to 100° F.
- Housing is glass-filled Polypropylene.
- Each gauge guard features a durable and flexible Buna-N diaphragm which serves as a protective barrier between the process fluid and instrument.

Maximum Pressure Ratings:

Liquids
200 PSI (13.8 bars)

Maximum Temperature
100° F (38° C)



VALVES AND FITTINGS



AV5 Foot Valves: Lead-free silicon bronze body with stainless steel strainer.

Order No.	Pipe Size	Outside Diameter
AV5-07	¾"	1 1/16"
AV5-10	1"	1 5/16"
AV5-12	1 1/4"	2 1/4"
AV5-15	1 1/2"	2 7/8"
AV5-20	2"	3 1/2"



AV6 Check Valves:

Lead-free silicon bronze construction.

Order No.	Pipe Size
AV6-10	1"
AV6-12	1 1/4"
AV6-15	1 1/2"
AV6-20	2"
AV6-30I (iron)	3"
AV6-40I (ductile iron body)	4"



AV11 Drain and "Y" Fittings:

The drain fitting set at a 45° angle in the "Y" fitting to insure positive action in the air charging cycle. Its simple construction is designed to provide trouble-free service. Includes AV11-21 ball valve.

Order No.	Pipe Size
AV11-10	1"

AV11-21 Ball Valve

Assembly: For all AV-11 drain and "Y" fittings.



AV12 Relief Valves:

It is desirable to use this lead-free silicon bronze relief valve with any pump capable of producing more than 75 psi at the tank. Relief valve must be sized for pump capacity in GPH.

Order No.	Size	Pressure Setting	Capacity GPM
AV12-05	1/2"	75±10 PSI	up to 12
AV12-07	3/4"	75±10 PSI	13-17
AV12-10	1"	75±10 PSI	17-28
AV12-12	1 1/4"	65±10 PSI	28-38



AV19 Check Valve Control Center:

Has two 1/4" pipe tappings and two 1/8" pipe tappings. Lead-free silicon bronze construction.

Order No.	Pipe Size
AV19-10	1"



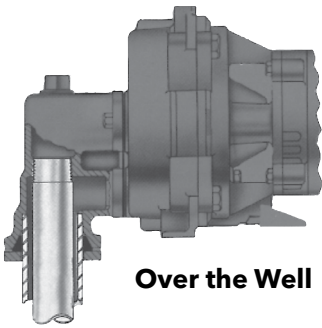
Tank Cross Tees

Order No.	Description
AV20-10	1" x 10" with (2) 1/4" and (1) 1/2" holes
AV20-11	1" x 10" with (2) 1/4" and (2) 1/2" holes
AV20-12	1 1/4" x 13" with (2) 1/4" and (1) 3/4" holes

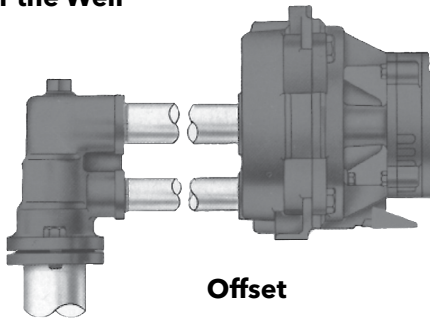
TYPICAL INSTALLATIONS

Horizontal Jet Pumps

Vertical Jet Pumps

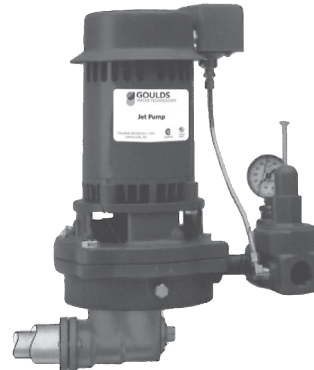


Over the Well



Offset

With AWD Adapter



AW42 - Adapter is used to comply with State of Michigan requirements for enclosed suction line. It can be used as an offset adapter for 2" wells instead of using a well casing tee.

Deep Well Packer Adapter

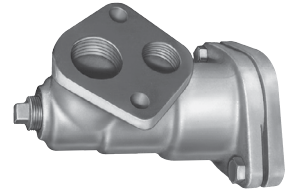
FOR USE WITH JET PUMPS

WELL HEAD FITTINGS



AWJ2 - 2" Packer Adapter:
Well casing adapter for series J+, JRD and HSJ jet pumps.

AW42:** Well casing adapter for series SJ and VJ jet pumps.



AW40*: Well casing adapter for series J+, JRD and HSJ jet pumps.

SRPA: Converts Goulds Pumps SJ to Sta-Rite® 2" packer.



AWD2 or AWD3: Well casing adapter for series SJ and VJ jet pumps.

*AW40 is used to comply with State of Michigan requirements for offset installations from 2" or 3" diameter wells.

**AW42 can be used to comply with State of Michigan requirements for offset installations from 2" or 3" diameter wells.

AW42 cannot be used as well casing adapter for 3" diameter wells.

PRESSURE SWITCHES

TECHNICAL BROCHURE / BCPSWITCH R4



FEATURES

- AS3 Blue - 20/40
 - AS4 Blue - 30/50
 - AS5 Blue - 40/60
 - AS14 Gray - 30/50
 - AS16 Black - 20/40
- Individually cartoned switches designed for aftermarket sales
 - All Models feature adjustable cut-in and cut-out settings
 - Differential is pre-set at 20 psi with some adjustment capability
 - Plumbing connection - ¼" NPT female threads



PRESSURE SWITCH OFFERING 2008

Order No. Individually Cartoned	Brand	Cover Color	PSI Setting / Maximum Pressure	Maximum HP Rating			
				1Ø		3Ø	
				115V	230V	230V	460V/575V
AS3	Goulds	Blue	20-40 / 100	1.5	2	3	-
AS4			30-50 / 100				
AS5			40-60 / 100				
AS14	Square "D"	Gray	30-50 / 200	2	5	5	5
AS16 ¹		Black	20-40 / 65	1.5	2	3	-

¹ Low pressure cut-out switch, turns off (cuts-out) on 10 PSI drop in pressure

IMPORTANT: When used with motors which exceed ratings given, switch must be wired to the pilot circuit of a magnetic starter or contactor.



Definite Purpose Three-Phase Starters

BY EATON

FEATURES

- A27 Definite Purpose Three-Phase Starters by EATON
- Adjustable overloads are standard - XT Series, class 10, bi-metallic, ambient compensated overload relays - no need to order or purchase separate heaters or overloads
- NEMA 1 indoor rated enclosures are Standard, N3R enclosure available as an option
- UL recognized, CSA certified and CE listings
- 25, 30 and 40 Amp sizes
- "Common Control" - matched power supply and coil voltages are standard
- 208-230, 460 or 575 Volt coil and power voltages are standard
- Optional 115V and 24VAC coils requiring separate power feeds are available as options
- Run pilot light available as an option
- Overload trip pilot light available as an option
- H-O-A, Hand-Off-Automatic Switch, available as an option
- Normally open auxiliary contact is standard

NOMENCLATURE

Characters	Code	Description
1 & 2	DP	Definite Purpose Starter
3 & 4	Starter FLA	25, 30, 40 Amps
5	Overload Relay	A - R
6	Power Supply Voltage	2 = 208-230V, 4 = 460 V, 5 = 575V
Option Suffixes	Option Codes	
	¹ V	115V Coil
	H	H-O-A Switch
	P	Run Pilot Light
	R	N3R Enclosure
	T	Overload Trip Light
	¹ 24A	24 VAC Coil

¹ Use one of these coil option suffixes to order a 115V or 24VAC coil on a standard 230, 460 or 575V starter.

² Standard starters have "Common Control" meaning that the coil voltage matches the power supply voltage.

Example - a DP25E2 requires a 208-230V power supply and has a matched 208-230V coil

- a DP25E2V requires a 208-230V power supply and a separate 115V coil power supply

NOTE - All options except the N3R enclosure may also be ordered as separate, field installable options.

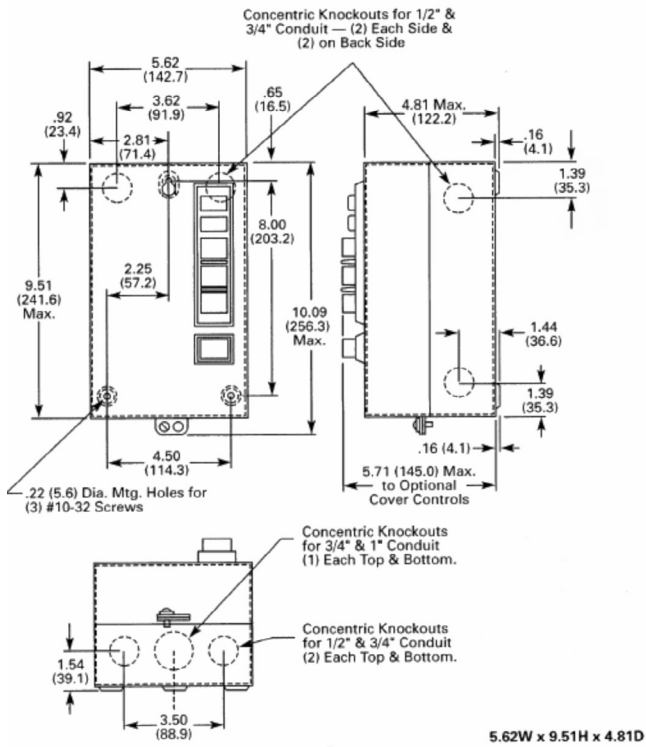
DEFINITE PURPOSE THREE PHASE STARTERS WITH ADJUSTABLE OVERLOADS

Goulds Water Technology Order Number	Xylem Style Number	Maximum Amps	Supply Voltage	Overload Relay	Overload Range	Maximum LRA	Typical HP Range	
DP25D2	D1A27CGY15	25	208-230	D	1.6-2.4	150	.5 - 5	
DP25E2	D1A27CGY10			E	2.4-4			
DP25F2	D1A27CGY11			F	4-6			
DP25G2	D1A27CGY12			G	6-10			
DP25H2	D1A27CGY13			H	10-16			
DP25J2	D1A27CGY14			J	16-24			
DP25C4	D1A27CGY21		460	460	C	1-1.6	125	.5 - 10
DP25D4	D1A27CGY22				D	1.6-2.4		
DP25E4	D1A27CGY16				E	2.4-4		
DP25F4	D1A27CGY17				F	4-6		
DP25G4	D1A27CGY18				G	6-10		
DP25H4	D1A27CGY19				H	10-16		
DP25J4	D1A27CGY20		575	575	J	16-24	100	1.5 - 10
DP25E5	D1A27CGY23				E	2.4-4		
DP25F5	D1A27CGY24				F	4-6		
DP25G5	D1A27CGY25				G	6-10		
DP25H5	D1A27CGY26		H	10-16				
DP30L2	D1A27CGY27		30	208-230	L	6-10	180	1.5 - 7.5
DP30M2	D1A27CGY28	M			10-16			
DP30N2	D1A27CGY29	N			16-24			
DP30P2	D1A27CGY30	P			24-40			
DP30L4	D1A27CGY31	460		460	L	6-10	150	5 - 20
DP30M4	D1A27CGY32				M	10-16		
DP30N4	D1A27CGY33				N	16-24		
DP30P4	D1A27CGY34				P	24-40		
DP30L5	D1A27CGY35	575		575	L	6-10	120	5 - 15
DP30M5	D1A27CGY36				M	10-16		
DP30N5	D1A27CGY37				N	16-24		
DP40L2	D1A27CGY38	40	208-230	L	6-10	240	1.5 - 10	
DP40M2	D1A27CGY39			M	10-16			
DP40N2	D1A27CGY40			N	16-24			
DP40P2	D1A27CGY41			P	24-40			
DP40L4	D1A27CGY42		460	460	L	6-10	200	5 - 20
DP40M4	D1A27CGY43				M	10-16		
DP40N4	D1A27CGY44				N	16-24		
DP40P4	D1A27CGY45				P	24-40		
DP40L5	D1A27CGY46		575	575	L	6-10	160	5 - 20
DP40M5	D1A27CGY47				M	10-16		
DP40N5	D1A27CGY48				N	16-24		
DP40P5	D1A27CGY49				P	24-40		

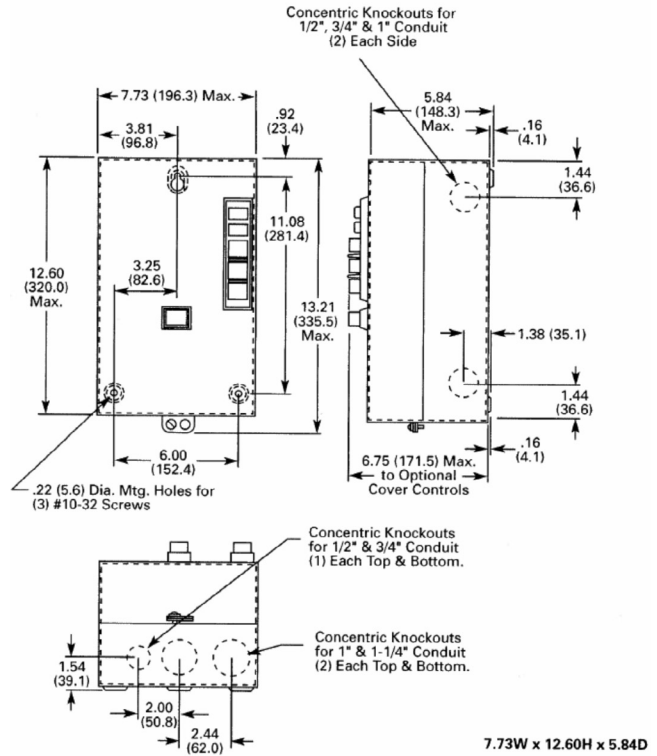
Residential Water

DIMENSION DRAWINGS

25 & 30 Amp Models



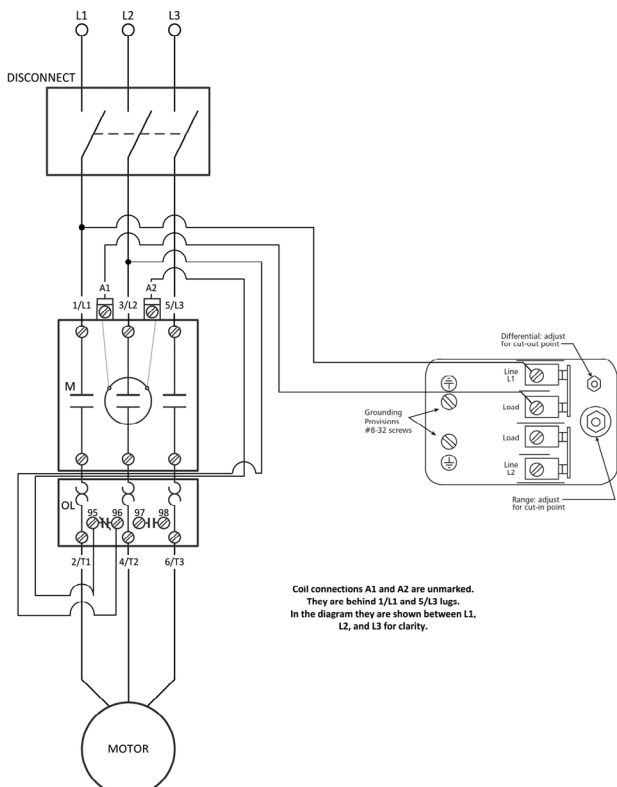
40 Amp Models



WIRING DIAGRAMS

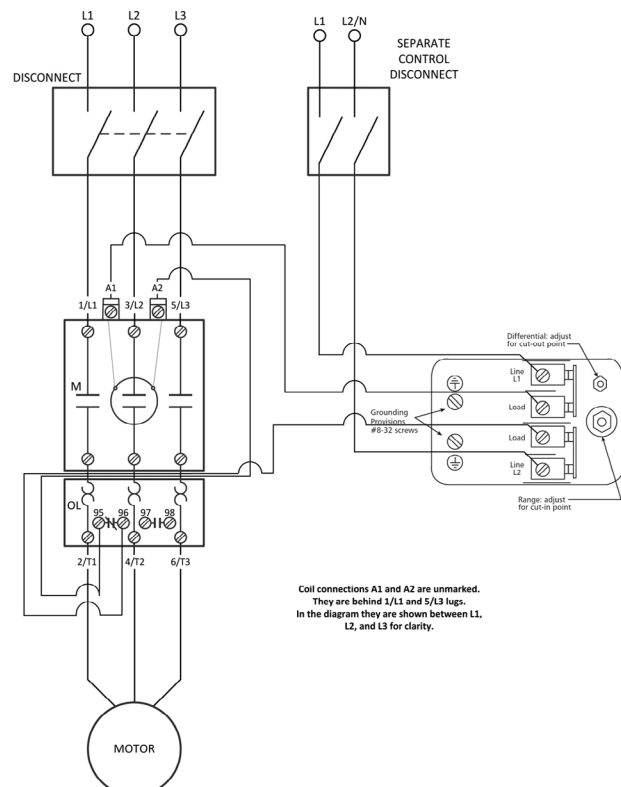
Wiring for Starter with Common Control Voltage

Ex. 230V power and 230V coil



Wiring for Starter with Different Power and Control Voltages

Ex. 460V power and 115V coil



OVERLOAD RELAYS FOR DEFINITE PURPOSE, ENCLOSED STARTERS

Goulds Water Technology Overload Relay Code	Motor Amp Range	Starter FLA	Frame Size *	Eaton Code
A	0.4 - 0.6	25	C	P60
B	0.6 - 1.0	25	C	001
C	1.0 - 1.6	25	C	1P6
D	1.6 - 2.4	25	C	2P4
E	2.4 - 4.0	25	C	004
F	4.0 - 6.0	25	C	006
G	6.0 - 10.0	25	C	010
H	10.0 - 16.0	25	C	016
J	16.0 - 24.0	25	C	024
K	24.0 - 32.0	25	C	032
L	6.0 - 10.0	30-45	D	010
M	10.0 - 16.0	30-45	D	016
N	16.0 - 24.0	30-45	D	024
P	24.0 - 40.0	30-45	D	040
R	40.0 - 57.0	30-45	D	057

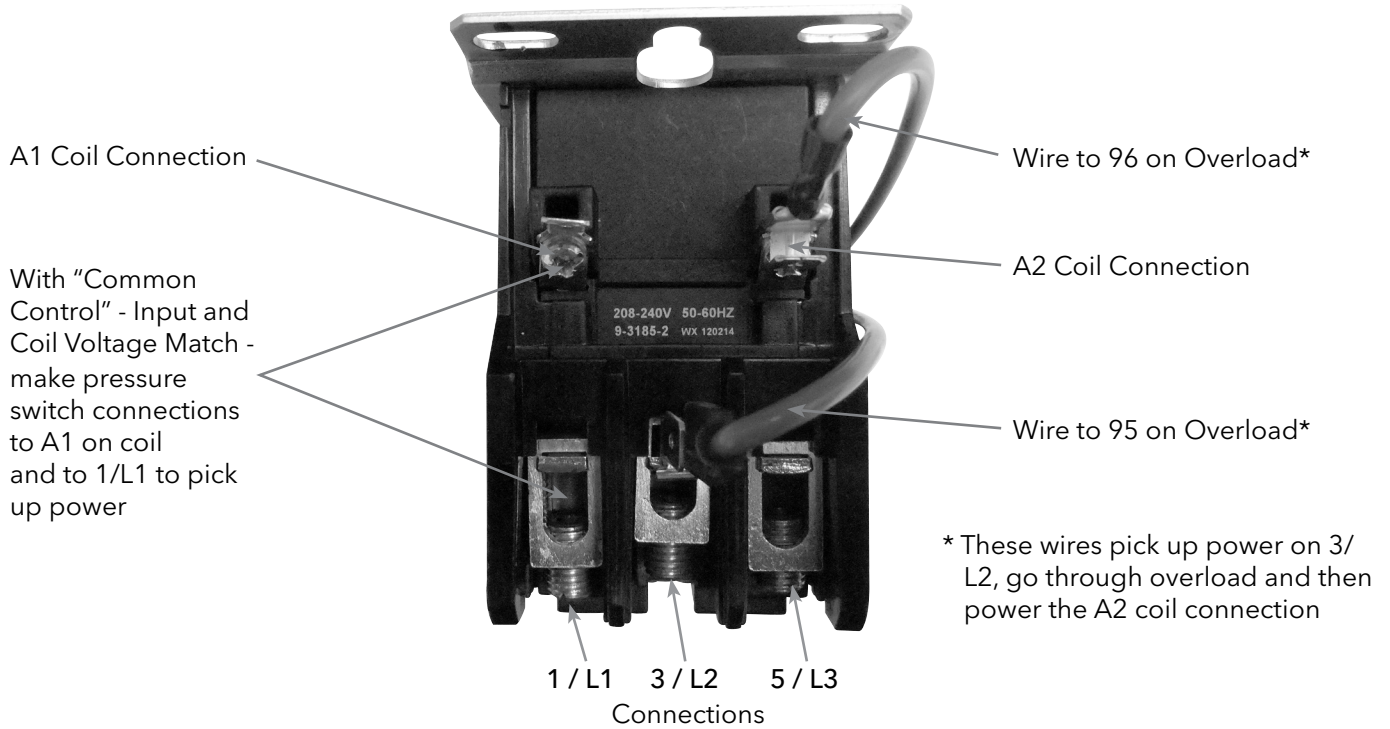
* Frame C = 25 Amp Models

* Frame D = 30 & 40 Amp Models

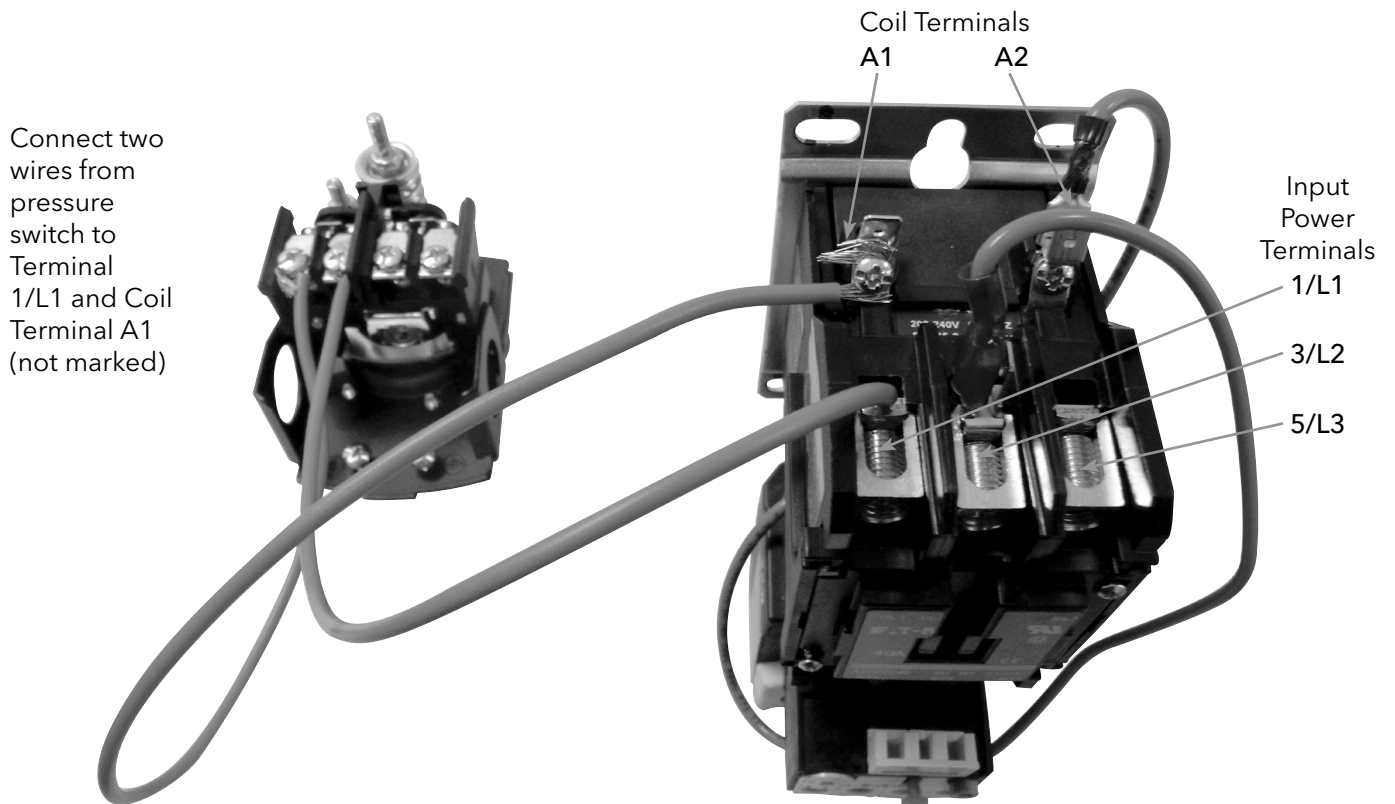
FIELD INSTALLABLE OPTIONS AND REPLACEMENT COILS FOR DP STARTERS

9K625	Hand/Off/Auto Switch Kit
9K626	Red RUN pilot light, 115V 60Hz
9K627	Red RUN pilot light, 230V 60Hz
9K628	Red RUN pilot light, 460V 60Hz
9K629	Red RUN pilot light, 575V 60HZ
9K630	Red RUN pilot light, 208V 60HZ
9K631	Green OFF pilot light, 115V 60HZ
9K632	Green OFF pilot light, 230V 60HZ
9K633	Green OFF pilot light, 460V 60HZ
9K634	Green OFF pilot light, 575V 60HZ
9K635	Green OFF pilot light, 208V 60HZ
9K636	115V Coil
9K637	208/230V Coil
9K638	460V Coil
9K639	575V Coil
9K640	24VAC Coil

DP STARTER TOP VIEW OF COIL AND 1/L1, 3/L2, 5/L3 TERMINALS



PRESSURE SWITCH CONNECTIONS FOR 230, 460 OR 575V COIL MODELS





FEATURES

Quickly and easily calibrates any submersible or centrifugal pump to jobsite conditions (voltage and current).

Available installed in new QD style, NEMA 3R Rainproof (outside) enclosures or shipped loose for installation in existing control panels.

Single phase units work with the hand held Informer for simple, fast troubleshooting and system diagnostics.

Available in single and three phase models.

Insider Plus models fit in Goulds Water Technology, Pentair and Franklin Electric Quick Disconnect type control boxes from 1/2 - 1 HP. Insider Plus units include a Fiber Optic Kit as standard. It is used to signal the optional Informer.

Protect against dry wells, low and high voltage, over and under current, rapid cycling, jammed pump, dead heading (flow restriction).

Automatic reset selectable, 2-225 minutes or can be set on manual reset.

Adjustable underload sensitivity on Plus models.

PumpSaver® Plus Insiders

PumpSaver Plus 111, 233 and 235

777KWHP - 3 Phase

PUMPSAVER PLUS 111 / 233, 23315 AND 235



APPLICATIONS - SINGLE PHASE ONLY

- All submersible pumps, regardless of motor manufacturer
- Centrifugal pumps
- Circulating pumps
- Cooling pumps
- Environmental pumps
- Residential water wells
- Commercial water wells
- Irrigation wells
- Golf course systems

Protects From:

- Dry well (run dry condition)
- Flow restrictions (dead head)
- Over current (jammed impeller)
- Over voltage
- Under voltage
- Rapid cycling

PLUS MODEL FEATURES

- Can be calibrated to specific pump / motor combinations and various conditions
- Will work with destaged pump models ending in 05R
- Infrared LED communication with the INFORMER makes diagnostics simple
- "Run Light" indicates the unit is functioning
- "Run Light" and "Cal. Light" used as diagnostic indicators
- Restart delay can be set up to 225 minutes or placed in manual reset mode
- Micro-controller provides better accuracy and higher reliability than analog designs
- Plus units feature more data storage memory which is viewable using an Informer
- Sensitivity adjustment for dry well trip point
- Installing PumpSaver Plus equipment on all your installations allows fast, simple troubleshooting with an Informer, eliminate guesswork, get all the data within minutes of arriving at a jobsite.
- 5-year warranty

ORDER NUMBERS AND SPECIFICATIONS

Order No.	SymCom New Part Numbers **	Phase	Notes	HP Range	Voltage	Enclosure Provided	
						Yes / No	Type
111Insider	111-Insider-P	1	1	1/3 - 1	115	N/A	N/A
231Insider	231-Insider-P		1		230	N/A	N/A
111	111P		-		115	No	-
1113RL	111P-ENCL		2	2	115	Yes	QD - ENCL
23315	233P-1.5		-	1/3 - 1 1/2	230	No	-
233153RL	233P-1.5-ENCL		2		230	Yes	QD - ENCL
233	233P		-	1/3 - 3	230	No	-
2333RL	233P-ENCL		2		230	Yes	QD - ENCL
2353RL50	235P-ENCL + CT0050D10		2, 3	2, 3	230	Yes	QD - ENCL
2353RL75	235P-ENCL + CT0075D10		2, 3	2, 3	230	Yes	QD - ENCL
2353RL100	235P-ENCL + CT0100D10		2, 3	2, 3	230	Yes	QD - ENCL
235	235P		4	4	230	No	-
777KWHP			3	-	1/3 - 150	200-480	No

** - P signifies the Plus version which has enhanced electronic features and memory.

** - ENCL denotes the new, N3R QD Enclosure effective July/August 2009.

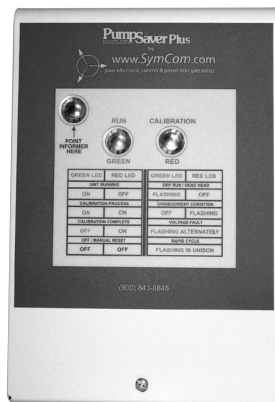
NOTES:

- 1 - The Insiders install in submersible single phase quick disconnect control boxes and require no enclosure.
- 2 - Models with a ...3RL suffix are installed in a NEMA 3R enclosure which has both Run and Calibrate lights.
- 3 - Models contain a current transformer.
- 4 - The 235 always requires a Current Transformer, use this model for repairs. Order the 2353RL- -- units which contain current transformers for new applications.

ACCESSORY ORDER NUMBERS

CT0050D10	Model 235, 5 - 7.5 HP, 50 Amp Current Transformer
CT0075D10	Model 235, 10 HP, 75 Amp Current Transformer
CT0100D10	Model 235, 15 HP, 100 Amp Current Transformer
INFORMER	Hand Held Diagnostic Tool

OUTSIDE OF NEW N3R - ENCL



INSIDE OF NEW N3R- ENCL WITH A 233P INSTALLED



Dimensions: 3.5" deep, 5.4" wide, 8" high
 Knockouts: 1/2" (1 each side, 2 bottom)
 3/4" (1 each side, 1 bottom)

PUMPSAVER 111INSIDER (115V) AND 231INSIDER (230V)



APPLICATION

- Submersible pump with a quick disconnect style control box

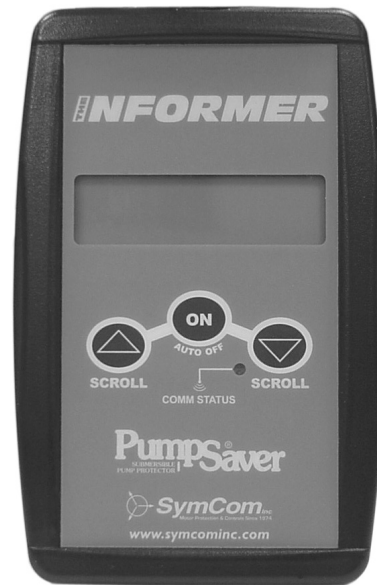
Protects From:

- Dry well (run dry condition)
- Flow restrictions (dead head)
- Over current (jammed impeller)
- Over voltage
- Under voltage

FEATURES

- Fits inside a 3 wire quick disconnect style control box
- Can be calibrated to specific pump / motor combinations and various conditions
- Will work with destaged pump models ending in 05R
- Infrared LED communication with the INFORMER makes diagnostics simple
- Quick and easy installation - less than 30 seconds
- "Run Light" indicates the unit is functioning
- "Run Light" and "Cal. Light" used as diagnostic indicators
- Restart delay can be set up to 225 minutes or placed in manual reset mode
- 5-year warranty

INFORMER



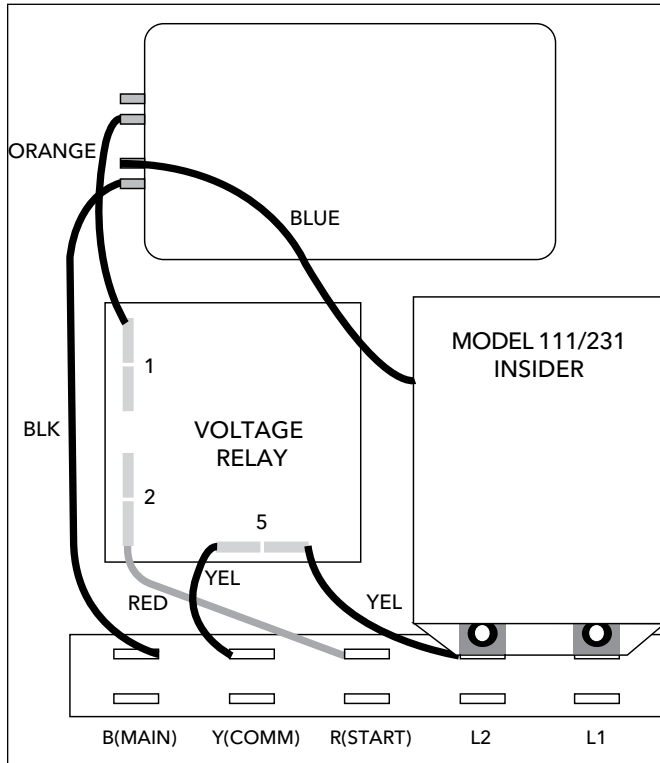
FEATURES

- The Informer is a handheld diagnostic tool designed for use with single-phase PumpSaver models.
- The Informer uses an infrared receiver to access data sent from the PumpSaver, which can be helpful for troubleshooting the system.

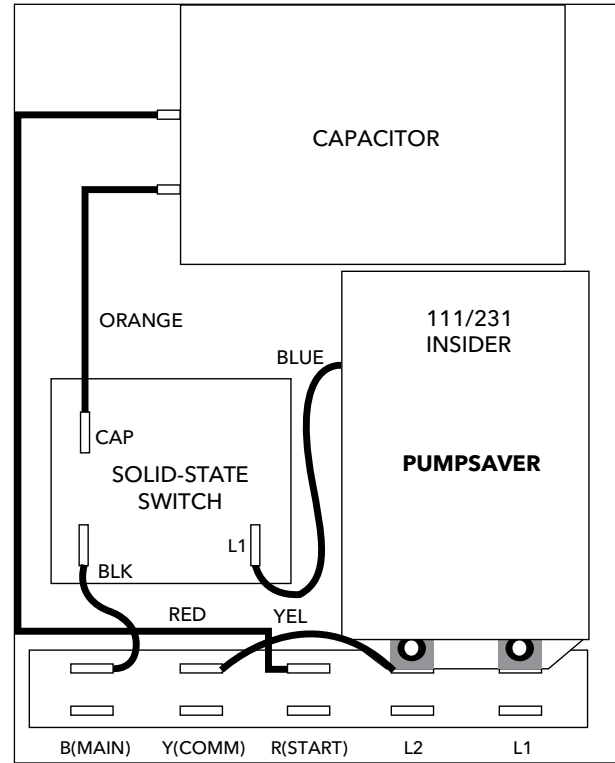
The Informer displays parameters including:

- Real-time voltage, current and power
- Dry-well and overload trip points
- Calibration voltage
- Last 20 fault conditions
- Voltage, current and power at last fault condition
- Highest/lowest voltage and current since last calibration
- Line power and dry well trip point
- Total pump run time
- Number of pump starts
- Restart delay setting and time maining (if tripped)
- Pump amperage

GOULDS WATER TECHNOLOGY CONTROL BOX WITH INSIDER INSTALLED



INSIDER MOUNTED IN FE, Q-D SUBMERSIBLE CONTROL BOX



To install in CP, QD control box:

- Remove the cover from the front of the 3-wire Goulds Water Technology control box.
- Remove the yellow wire from the terminal strip at L2.
- Remove the black wire between L1 and the capacitor.
- Press the PumpSaver onto the L1 and L2 terminals.
- Reconnect the yellow wire to L2 on the PumpSaver.
- Connect the blue wire attached to the PumpSaver to the dual-lug terminal (with the black wire) of the capacitor.

To install in FE, QD control box:

- Remove blue wire from terminal strip and solid state switch (blue relay) and set aside.
- Remove yellow jumper wire from terminal L2.
- Install Insider by aligning tabs with upper L2 and L1 tabs and pushing onto tabs.
- Connect yellow wire onto L2 terminal on Insider.
- Connect blue wire attached to Insider to L1 on solid state switch (blue relay).

PUMPSAVER 777KWHP



APPLICATIONS

The Model 777-KW/HP can be used on ANY 3-phase motor. Some examples include: Can Pumps, Mag Drive Pumps, Fractional Horsepower Pumps and Motors, Submersible Pumps and Coal Bed Methane Wells.

DESCRIPTION

The Model 777-KW/HP is a fully-programmable motor and pump protection relay with power-monitoring capability. Voltage, current and power measurements are displayed on the three-digit display, as well as fault information and setpoints. The display simplifies troubleshooting and allows the user to easily and precisely configure setpoints. The Model 777-KW/HP has the following adjustable protection features:

STANDARD FEATURES OF 777KWHP

- UL Listed as an overload device
- Digitally programmable for precise customization
- 15 parameters can be programmed for maximum protection
- Alphanumeric LED diagnostic display
- Last fault memory provides instant troubleshooting diagnostics
- Recordable voltage, current, last four faults, kWh usage, and power factor with communications package.
- Compact design saves panel space
- Agency Listings: UL, cUL, CSA, CE
- RS485 communication port
- Tamper guard
- Remote reset
- Surface and DIN rail mount
- 5-year warranty
- Made in U.S.A.

ADJUSTABLE PROTECTION FEATURES OF 777KWHP:

- Low voltage
- High voltage
- Voltage unbalance
- UL Listed/CSA approved overload
- Trip class (5, 10, 15, 20, 30)
- Current unbalance
- Ground fault
- Low power
- High power (via network only)
- Rapid-cycle timer
- Fault/overload restart delay
- Underload restart delay
- Underpower/overpower trip delay

Other user adjustable features include:

- CT/loop multiplier so overcurrent and power setpoints can be made in actual amps, kW or HP.
- Number of restarts after faults - manual, automatic and semiautomatic options.
- Number of restarts after underload - manual, automatic and semiautomatic options
- Network address

Adding the optional RS485MS-2W communications module activates the built-in Modbus RTU bus capabilities.



AWA Alternator Panels

FOR SUBMERSIBLE AND CENTRIFUGAL PUMPS

Residential Water

FEATURES

NEMA 1 steel enclosure

One or two pressure switch operation

Auxiliary contacts - may be used for chemical feed pumps

Includes: Two hand-off-auto switches, two pump run lights, alternator circuit and terminal blocks for external wiring connections

Single Phase Features:

Two motor contactors

1/3 - 5 HP, 115/230, 230V

Three Phase Features:

NEMA rated, class 14 starters

Adjustable overloads - no heaters needed

Phase loss protection - the starter protects against single-phasing

Expanded horsepower range coverage

SINGLE PHASE

Model No.	HP	Volts
AWA501	1/3 - 3	115/230
AWA502	5	230

OPTIONS

A = NEMA 3R enclosure ①	Please request a quote for a panel with any of these options
B = NEMA 4X enclosure ①	
D = Elapsed time meters (2)	

① Enclosures listed above are dead-front type. All switches and indicator lights would be mounted inside of panel on permanent mounting bracket.

THREE PHASE

Model No.	Amp Range	Maximum HP	Voltage
AWA22510	2.5 - 10	2	200-230
AWA20918	9 - 18	3	200-230
AWA21327	13 - 27	7.5	200-230
AWA42510	2.5 - 10	5	460/575
AWA40918	9 - 18	10	460/575

APPLICATIONS

Duplex alternator panel may be used to alternate two submersible or centrifugal pumps.

1. Use one switch for a simple alternating system
2. Use two switches when the system is required to:
Alternate two pumps and start the second pump in the event the first pump cannot meet the system demand.

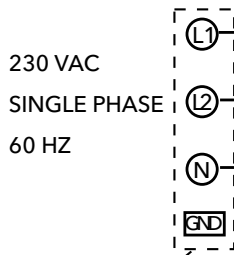
Auxiliary contacts allow the operation of one or two chemical feed pumps, such as chlorine or ozone injectors.

Custom panels are available for larger motors.

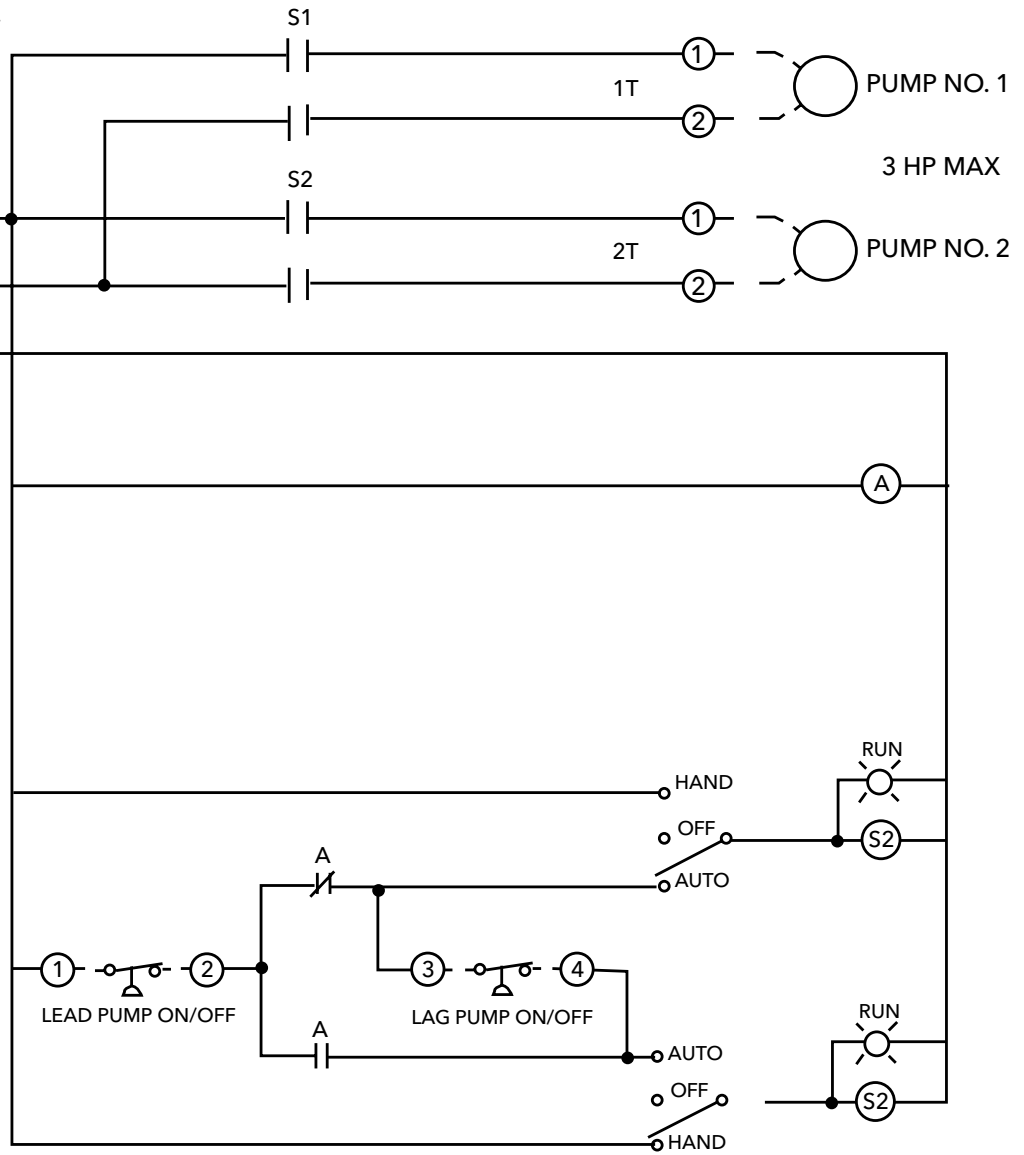
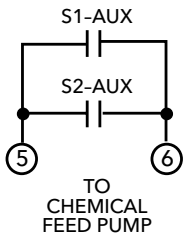
Please fax requests with required enclosure ratings, HP, voltage, phase and any special requirements to Technical Support at (315) 568-7644.

WIRING DIAGRAMS AWA501 / AWA502

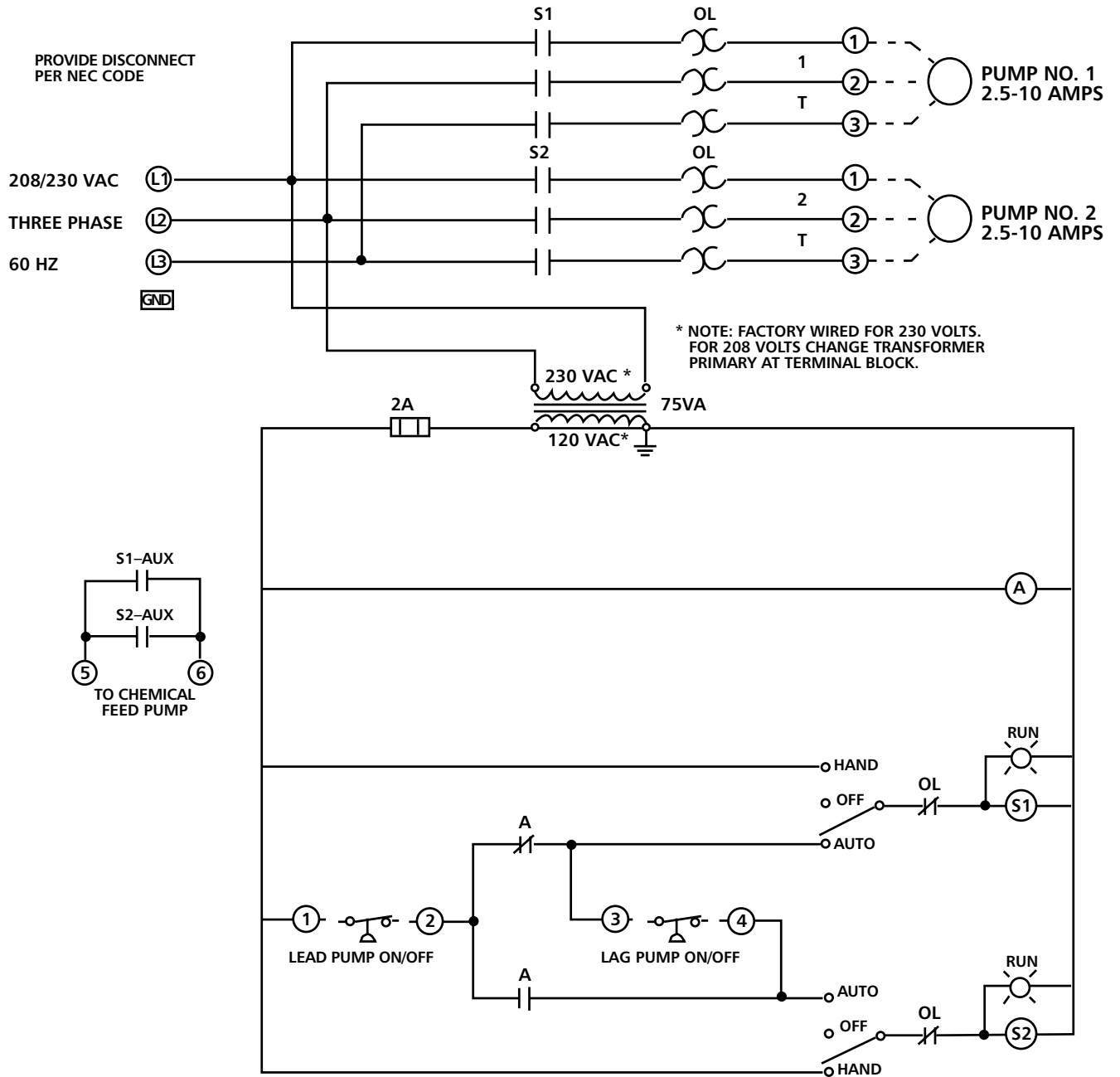
FACTORY WIRED FOR 230 VAC.
FOR 115 VAC POWER SUPPLY,
WIRE HOT LEG TO (L1) AND
NEUTRAL TO (L2), JUMP
(L2) TO (N).



A 230 VOLT SYSTEM
REQUIRES A 4 WIRE
POWER SUPPLY LINE
L1, L2, N AND GND.
WITHOUT A NEUTRAL THE
CONTROL CIRCUIT
WILL NOT WORK.



WIRING DIAGRAMS AWA 3 Phase



Electrical Accessories

- REPLACEMENT MOTOR LEADS • CABLE ACCESSORIES
- LIGHTNING PROTECTION DEVICES • BULK CABLE • PACKAGED CABLE

Residential Water

FEATURES

Motor Leads: 4" and 6" Goulds Water Technology Motor Leads

Cable Accessories: Heat Shrink Kits

Bulk cable with ground:

- Twisted design, solid copper conductor
- PVC insulated
- AWG 8-14

Packaged Cable for 4" Goulds Water Technology Motors

- No splice required, connector threads into motor
- 2- and 3-wire with ground
- Lengths from 50' to 300'
- Twisted design stranded wire

4" GOULDS WATER TECHNOLOGY MOTOR LEADS

Order No.	Description
AW348C	3-wire 48" with ground and (2) screws
AW3100C	3-wire 100" with ground and (2) screws
AW248C	2-wire 48" with ground and (2) screws
AW2100C	2-wire 100" with ground and (2) screws

6" GOULDS WATER TECHNOLOGY MOTOR LEADS

Order No.	Description	Used On
CPML-12	150", 12 / 4	5-15 HP 1Ø; 5 - 25 and 40 HP, 3Ø
CPML-10	150", 10 / 4	30 and 50 HP, 3Ø
CPML-8	150", 8 / 4	Optional for 30-50 HP, 3Ø

Packaged Cable for 4" Submersible Motors

FOR GOULDS WATER TECHNOLOGY 4" MOTORS

Length in Feet	3-wire Order No.	2-wire Order No.
50	ACPC3050	ACPC2050
100	ACPC3100	ACPC2100
150	ACPC3150	ACPC2150
200	ACPC3200	ACPC2200
250	ACPC3250	ACPC2250
300	ACPC3300	ACPC2300

- AWG 12, stranded copper, twisted design with ground
- XLPE - suitable for potable water
- No underwater splice required
- Goulds Water Technology motor connector attached



HEAT SHRINK TYPE WIRE SPLICE KITS

Order No.	Shrink Tubes	Butt Connectors	Use on
AW25-3	4	(4) # 8	#8 - #12 Wire
AW25-4	4	(4) # 10 - #12	#10 - #14 Wire
AW25-5	3	(3) #10 - #12	#10 - #14 Wire
AW25-6	3 Large & 3 Small	None	#6 - #14

Use for making waterproof connections on submersible cable. Mandatory for use on underwater splices where variable speed drives are used.

Bulk Cable with Ground

AWP15

- Reel lengths 500' or 1000', 2 or 3 wire with ground
- UL listed, NEC standard
- PVC insulated, 600 V, 60°C
- Twisted design
- Solid copper conductor sizes: 14, 12, 10, 8

BULK CABLE

PVC insulation with ground

B

Order No.	Size No.	Length
AWP15 145	14 3-wire	500 ft.
AWP15 141		1000 ft.
AWP152 145	14 2-wire	500 ft.
AWP152 141		1000 ft.
AWP15 125	12 3-wire	500 ft.
AWP15 121		1000 ft.
AWP152 125	12 2-wire	500 ft.
AWP152 121		1000 ft.
AWP15 105	10 3-wire	500 ft.
AWP15 101		1000 ft.
AWP152 105	10 2-wire	500 ft.
AWP152 101		1000 ft.
AWP15 85	8 3-wire	500 ft.
AWP15 81		1000 ft.

Sold only in reels

Single Phase Surge Protector

PART NO. AW25-1

- Type 1 rated device
- Flexibility to be used with or without an Overcurrent Protection Device
- Surge suppression for equipment from severe transient activity
- NEMA Type 4X rating suitable for installing indoors, outdoors, or in other harsh environments
- US and Canadian UL Listed
- Complies with requirements of CSA 233.1-8 and CSA C22.2
- LED indicates operational status
- Short circuit current rating: 25 kA





B/W TYPE L.H. RELAY - AW21

Submersible Pump Monitoring Controls

FEATURES

Complete installation requires two electrodes and suspension wire in addition to relay.

Electrodes AW22 - Type E-1S Brass, with plastic insulating shield $\frac{5}{8}$ diameter (2 required).

Suspension Wire - No.18 stranded wire with $\frac{1}{16}$ " vinyl insulation. Sold only in 500' or 1000' rolls.

ORDER NUMBERS

Relay Order No.	Volts	Rating
AW21-1	115V 1Ø	up to 1 HP*
AW21-2	230V 1Ø 230V 3Ø	
AW21-3	460V 3Ø	

* When used with motors which exceed their ratings, controls must be wired to pilot circuit of a magnetic starter or contactor.

Order No.	Description
AW23R5	500' #18 Red Wire
AW23B5	500' #18 Black Wire
AW23R10	1000' #18 Red Wire
AW23B10	1000' #18 Black Wire
AW22	(2) Type E-1S Electrodes



DIAPHRAGM TANKS

HYDROPRO® WATER SYSTEM TANK

FEATURES

Horizontal Models: Feature a universal jet pump bracket and two (2) bolt-on, corrosion-resistant, high density polypropylene feet for installations with limited headspace, such as under mobile homes.

Deep Drawn Steel Shells: Provide maximum material strength.

Inner Shell: Prevents diaphragm from over-expanding.

Heavy Duty Parabolic Diaphragm: this new diaphragm design has improved diaphragm life by reducing abrasive wear. The diaphragm separates air and water to maintain the tank's air charge. The Butyl rubber diaphragm is an FDA approved material and also meets NSF / ANSI 61 - G standards.

Interior Tank Lining:

- Stand models and V45P feature durable polypropylene liner. Meets FDA requirements.
- Mounted pump models and V6P, V15P, V25P, V25H, and V100S feature fusion bonded polymeric lining. Meets FDA requirements.

Maximum Working Pressure: 125 psi (except mounted pump models, 100 psi).

Temperature Rating: Maximum 120° F

Stainless Steel System Connection: On all Stand, In-Line, Buried and Horizontal models. Excludes the V6P, V15P and V25P, which are powder coated.

Appliance Appearance Exterior Finish: Blue color, high durability exterior finish of tough, powder coat over a zinc phosphate surface treatment.

Tanks are designed for installation indoors or where they are protected from rain, irrigation overspray, salt air and other corrosive environments. Always protect tanks from freezing.

Heavy Duty Base: Made of high density polypropylene on stand models only.

Pre-charge: All tanks charged to 38 PSI.



Certified to NSF/ANSI 61-G



Stand Models
 V45 V140
 V60 V200
 V80 V250
 V100 V260
 V100S V350



Horizontal Models with Pump Mounting
 V25H V45H V60H



In-Line Models
 V6P V15P
 V25P V45P



Mounted Pump Models
 V60MP V60PST
 V45MP V45PST



Stand Model with Base Extension
 V80EX

Models	Model No.	Total Volume (Gals.)	Drawdown in Gallons at System Operating Pressure Range of			Maximum Drawdown Vol. (Gals.)	Pre-Charge PSI	System Connection	Dimensions		Shipping Weight	Height From Floor to Center of Base Opening
			20/40 PSIG	30/50 PSIG	40/60 PSIG				Diameter	Height		
Stand Models	V45	13.9	5.1	4.3	3.7	8.4	38	1" NPTF	15 3/8"	24 15/16"	23	3 1/8"
	V60	19.9	7.3	6.1	5.3	12.1	38	1" NPTF	15 3/8"	32 3/8"	34	
	V80	25.9	8.9	7.7	6.7	13.9	38	1" NPTF	15 3/8"	39 9/16"	43	
	V80EX	25.9	8.9	7.7	6.7	13.9	38	1" NPTF	15 3/8"	42 3/8"	43	7 1/4"
	V100	31.8	11.8	9.9	8.6	13.8	38	1" NPTF	15 3/8"	47 1/4"	52	3 1/8"
	V100S ①	36	13.3	11.2	9.7	15.3	38	1" NPTF	20"	32"	54	3 3/8"
	V140	45.2	16.5	13.9	12.1	27.3	38	1 1/4" NPTF	22"	36 3/8"	64	
	V200	65.1	23.9	20.0	17.4	39.3	38	1 1/4" NPTF	22"	48 3/8"	89	
	V250	83.5	30.9	25.9	22.5	50.8	38	1 1/4" NPTF	26"	46"	116	3 1/2"
	V260	84.9	31.2	26.2	22.8	44.7	38	1 1/4" NPTF	22"	60 11/16"	113	3 3/8"
	V350	115.9	42.9	35.9	31.3	70.5	38	1 1/4" NPTF	26"	61 5/16"	161	3 1/2"
Mounted Pump Models*	V45MP	13.9	5.1	4.3	3.7	8.4	38	3/4" Pipe	15 3/8"	25 11/16"	28	
	V60MP	19.9	7.3	6.1	5.3	12.1	38	3/4" Pipe	15 3/8"	33 1/8"	40	
	V45PST	13.9	5.1	4.3	3.7	8.4	38	3/4" Pipe	15 3/8"	25 11/16"	28	
	V60PST	19.9	7.3	6.1	5.3	12.1	38	3/4" Pipe	15 3/8"	33 1/8"	40	
Buried Models ②	V60B	19.9	7.3	6.1	5.3	12.1	38	1" NPTM	15 3/8"	28 1/2"	33	
	V140B	45.2	16.5	13.9	12.1	27.3	38	1 1/4" NPTM	22"	32 3/8"	63	
In-Line ① Models	V6P	1.9	0.7	0.6	0.5	1.3	38	3/4" NPTM	8 1/4"	10 3/8"	7	
	V15P	4.9	1.8	1.5	1.4	3.1	38	3/4" NPTM	11"	14 3/4"	11	
	V25P	7.3	2.7	2.3	2.1	3.1	38	3/4" NPTM	11"	21 1/8"	16	
	V45P	13.9	5.1	4.3	3.7	8.4	38	1" NPTM	15 3/8"	21 1/8"	24	
Horizontal Models w/Bracket	V25H ①	7.3	2.7	2.3	2.1	3.1	38	3/4" NPTM	11"	21 1/8"	20	
	V45H	13.9	5.1	4.3	3.7	8.4	38	1" NPTM	15 3/8"	22 3/8"	26	
	V60H	19.9	7.3	6.1	5.3	12.1	38	1" NPTF	15 3/8"	33 3/8"	36	

NOTES:

* Compatible with only certain Goulds jet pumps.

P = Pipe mounted EX = With base extension B = Buried
 MP = Mounted pump PST = Pump system tank H = Horizontal with bracket

(All dimensions are in inches and weight in lbs. Do not use for construction purposes.)

① V6P, V15P, V25P, V25H and V100S are produced at Charlotte, NC plant after January 2013, resulting in minor dimensional changes.

② Buried Models are not approved for the state of Michigan, USA.

ACCESSORIES



AW39 Bracket:
 Universal pump mounting bracket for use on all stand model tanks.



AWT1 Base Extension:
 For use on 15 3/8" models. Provides 4 1/8" base elevation. Supplied in quantities of six (6) per carton.

Order No.	Description	Wt. (lbs.)
AW39	Universal Jet Pump Bracket	2
AWT1	Tank Base Extension (Qty. 6)	5



Stand Model
(Vertical)



In-Line Pipe
Mounted Model

T Series

EPOXY COATED DIAPHRAGM TANKS

Residential Water

FEATURES

Deep Drawn Steel Shells: provide maximum material strength.

Inner Shell: Prevents diaphragm from over-expanding.

Heavy Duty Parabolic Diaphragm: this new diaphragm design has improved diaphragm life by reducing abrasive wear. The diaphragm separates air and water to maintain the tank's air charge. The Butyl rubber diaphragm is an FDA approved material and also meets NSF / ANSI 61 - G standards.

Interior Tank Lining: Tank features a durable fusion bonded polymeric lining. Meets FDA requirements.

Maximum Working Pressure: 100 PSI.

Temperature Rating: Maximum 120° F.

Epoxy Coated System Connection: On all stand and in-line models.

Appliance Appearance Exterior Finish: Tan color, high durability exterior finish of tough, powder coat over a zinc phosphate surface treatment.

Tanks are designed for installation indoors or where they are protected from rain, irrigation overspray, salt air and other corrosive environments. Always protect tanks from freezing.

Heavy Duty High Density Polypropylene Base: Eliminates corrosion due to condensation and exposure to the elements.

Tanks have a 5-year limited warranty. See instruction manual for complete warranty details.

	Model No.	Total Volume (Gals.)	Drawdown in Gallons at System Operating Pressure Range of			Maximum Drawdown Vol. (Gals.)	Pre-Charge PSI	System Connection	Dimensions		Shipping Weight	Height From Floor to Center of Base Opening
			20/40 PSIG	30/50 PSIG	40/60 PSIG				Diameter	Height		
Stand Models	T45	13.9	5.1	4.3	3.7	8.4	38	1" NPTF	15 $\frac{3}{8}$ "	24 $\frac{5}{16}$ "	24	3 $\frac{1}{8}$ "
	T60	19.9	7.3	6.1	5.3	12.1	38	1" NPTF	15 $\frac{3}{8}$ "	32 $\frac{3}{8}$ "	34	
	T80	25.9	8.9	7.7	6.7	13.9	38	1" NPTF	15 $\frac{3}{8}$ "	39 $\frac{1}{16}$ "	43	
	T100	31.8	11.8	9.9	8.6	13.8	38	1" NPTF	15 $\frac{3}{8}$ "	47 $\frac{1}{4}$ "	52	
	T140	45.2	16.5	13.9	12.1	27.3	38	1 $\frac{1}{4}$ " NPTF	22	36 $\frac{3}{16}$ "	64	3 $\frac{3}{8}$ "
	T200	65.1	23.9	20.0	17.4	39.3	38	1 $\frac{1}{4}$ " NPTF	22	48 $\frac{3}{8}$ "	89	
	T250	83.5	30.9	25.9	22.5	50.8	38	1 $\frac{1}{4}$ " NPTF	26	46	116	
	T260	84.9	31.2	26.2	22.8	44.7	38	1 $\frac{1}{4}$ " NPTF	22	60 $\frac{1}{16}$ "	113	
	T350	115.9	42.9	35.9	31.3	70.5	38	1 $\frac{1}{4}$ " NPTF	26	61 $\frac{1}{16}$ "	161	3 $\frac{1}{2}$ "
In-Line ① Models	T15P	4.9	1.8	1.5	1.4	3.1	38	$\frac{3}{4}$ " NPTM	11	14 $\frac{3}{4}$ "	11	
	T25P	7.3	2.7	2.3	2.1	3.1	38	$\frac{3}{4}$ " NPTM	11	21 $\frac{1}{16}$ "	16	
	T45P	13.9	5.1	4.3	3.7	8.4	38	1" NPTM	15 $\frac{3}{8}$ "	21 $\frac{1}{16}$ "	24	

NOTES:

P = Pipe Connection (All dimensions are in inches and weight in lbs. Do not use for construction purposes.)

① T15P and T25P are produced at Charlotte, NC plant after January 2013, resulting in minor dimensional changes.

ACCESSORIES



AW39T Bracket:

Universal pump mounting bracket for use on all tan stand model tanks.

Order No.	Description	Wt. (lbs.)
AW39T	Universal Jet Pump Bracket - Tan	2

Friction Loss Tables

SCH 40 - PLASTIC PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

GPM	GPH	¾"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"	10"
		ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
1	60	4.25	1.38	.356	.11									
2	120	15.13	4.83	1.21	.38	.10								
3	180	31.97	9.96	2.51	.77	.21	.10							
4	240	54.97	17.07	4.21	1.30	.35	.16							
5	300	84.41	25.76	6.33	1.92	.51	.24							
6	360		36.34	8.83	2.69	.71	.33	.10						
8	480		63.71	15.18	4.58	1.19	.55	.17						
10	600		97.52	25.98	6.88	1.78	.83	.25	.11					
15	900			49.68	14.63	3.75	1.74	.52	.22					
20	1,200			86.94	25.07	6.39	2.94	.86	.36	.13				
25	1,500				38.41	9.71	4.44	1.29	.54	.19				
30	1,800					13.62	6.26	1.81	.75	.26				
35	2,100					18.17	8.37	2.42	1.00	.35	.09			
40	2,400					23.55	10.70	3.11	1.28	.44	.12			
45	2,700					29.44	13.46	3.84	1.54	.55	.15			
50	3,000						16.45	4.67	1.93	.66	.17			
60	3,600						23.48	6.60	2.71	.93	.25			
70	4,200							8.83	3.66	1.24	.33			
80	4,800							11.43	4.67	1.58	.41			
90	5,400							14.26	5.82	1.98	.52			
100	6,000								7.11	2.42	.63	.08		
125	7,500								10.83	3.80	.95	.13		
150	9,000									5.15	1.33	.18		
175	10,500									6.90	1.78	.23		
200	12,000									8.90	2.27	.30		
250	15,000										3.36	.45	.12	
300	18,000										4.85	.63	.17	
350	21,000										6.53	.84	.22	
400	24,000											1.08	.28	
500	30,000											1.66	.42	.14
550	33,000											1.98	.50	.16
600	36,000											2.35	.59	.19
700	42,000												.79	.26
800	48,000												1.02	.33
900	54,000												1.27	.41
950	57,000													.46
1000	60,000													.50

FRICTION LOSS

STEEL PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

GPM	GPH	¾"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	
		ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
1	60	4.30	1.86	.26												
2	120	15.00	4.78	1.21	.38											
3	180	31.80	10.00	2.50	.77											
4	240	54.90	17.10	4.21	1.30	.34										
5	300	83.50	25.80	6.32	1.93	.51	.24									
6	360		36.50	8.87	2.68	.70	.33	.10								
7	420		48.70	11.80	3.56	.93	.44	.13								
8	480		62.70	15.00	4.54	1.18	.56	.17								
9	540			18.80	5.65	1.46	.69	.21								
10	600			23.00	6.86	1.77	.83	.25	.11	.04						
12	720			32.60	9.62	2.48	1.16	.34	.15	.05						
15	900			49.70	14.70	3.74	1.75	.52	.22	.08						
20	1,200			86.10	25.10	6.34	2.94	.87	.36	.13						
25	1,500				38.60	9.65	4.48	1.30	.54	.19						
30	1,800				54.60	13.60	6.26	1.82	.75	.26						
35	2,100				73.40	18.20	8.37	2.42	1.00	.35						
40	2,400				95.00	23.50	10.79	3.10	1.28	.44						
45	2,700					30.70	13.45	3.85	1.60	.55						
70	4,200					68.80	31.30	8.86	3.63	1.22	.35					
100	6,000						62.20	17.40	7.11	2.39	.63					
150	9,000							38.00	15.40	5.14	1.32					
200	12,000							66.30	26.70	8.90	2.27	.736	.30	.08		
250	15,000							90.70	42.80	14.10	3.60	1.20	.49	.13		
300	18,000								58.50	19.20	4.89	1.58	.64	.16	.0542	
350	21,000								79.20	26.90	6.72	2.18	.88	.23	.0719	
400	24,000								103.00	33.90	8.47	2.72	1.09	.279	.0917	
450	27,000								130.00	42.75	10.65	3.47	1.36	.348	.114	
500	30,000								160.00	52.50	13.00	4.16	1.66	.424	.138	
550	33,000								193.00	63.20	15.70	4.98	1.99	.507	.164	
600	36,000								230.00	74.80	18.60	5.88	2.34	.597	.192	
650	39,000									87.50	21.70	6.87	2.73	.694	.224	
700	42,000									101.00	25.00	7.93	3.13	.797	.256	
750	45,000									116.00	28.60	9.05	3.57	.907	.291	
800	48,000									131.00	32.40	10.22	4.03	1.02	.328	
850	51,000									148.00	36.50	11.50	4.53	1.147	.368	
900	54,000									165.00	40.80	12.90	5.05	1.27	.410	
950	57,000									184.00	45.30	14.30	5.60	1.41	.455	
1000	60,000									204.00	50.20	15.80	6.17	1.56	.500	

FRICITION LOSS

COPPER PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

1	60	6.2	1.8	.39							
2	120	19.6	6.0	1.2							
5	300		30.0	5.8	1.6						
7	420		53.0	11.0	3.2	2.2					
10	600			19.6	5.3	3.9					
15	900			37.0	9.9	6.2	2.1				
18	1,080			55.4	16.1	6.9	3.2				
20	1,200				18.5	10.4	3.9				
25	1,500				27.7	14.3	5.3	1.5			
30	1,800				39.3	18.7	7.6	2.1			
35	2,100				48.5	25.4	10.2	2.8			
40	2,400					30.0	13.2	3.5	1.2		
45	2,700					39.3	16.2	4.2	1.6		
50	3,000						19.4	5.1	1.8		
60	3,600						27.7	6.9	2.5	1.1	
70	4,200						40.0	9.2	3.5	1.4	
75	4,500						41.6	9.9	3.7	1.6	
80	4,800						45.0	11.6	4.2	1.8	
90	5,400						50.8	13.9	4.8	2.2	
100	6,000							16.9	6.2	2.8	
125	7,500							25.4	8.6	3.7	
150	9,000							32.3	11.6	4.8	1.2
175	10,500							41.6	16.2	6.9	1.7
200	12,000							57.8	20.8	9.0	2.2
250	15,000								32.3	13.9	3.5
300	18,000								41.6	18.5	4.6
350	21,000									32.3	5.8
400	24,000									39.3	7.2
450	27,000									44.0	9.2
500	30,000										11.1
750	45,000										23.1
1000	60,000										37.0

RUBBER HOSE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

15	70	23	5.8	2.5	.9	.2			
20	122	32	10	4.2	1.6	.5			
25	182	51	15	6.7	2.3	.7			
30	259	72	21.2	9.3	3.2	.9	.2		
40		122	35	15.5	5.5	1.4	.7		
50		185	55	23	8.3	2.3	1.2		
60		233	81	32	11.8	3.2	1.4		
70			104	44	15.2	4.2	1.8		
80			134	55	19.8	5.3	2.5		
90			164	70	25	7	3.5	.7	
100			203	85	29	8.1	4	.9	
125			305	127	46	12.2	5.8	1.4	
150			422	180	62	17.3	8.1	1.6	
175				230	85	23.1	10.6	2.5	
200				308	106	30	13.6	3.2	

GPM	Actual Inside Diameter in Inches							
	¾"	1"	1¼"	1½"	2"	2½"	3"	4"
250					162	44	21	4.9
300					219	62	28	6.7
350					292	83	39	9.3
400						106	49	11.8
500						163	74	17.1
600						242	106	23
700						344	143	30
800						440	182	40
900							224	51
1000							270	63
1250							394	100
1500							525	141
1750								185
2000								230

FRICITION LOSS

EQUIVALENT NUMBER OF FEET STRAIGHT PIPE FOR DIFFERENT FITTINGS

Size of fittings, Inches	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"
90° Ell	1.5	2.0	2.7	3.5	4.3	5.5	6.5	8.0	10.0	14.0	15	20	25
45° Ell	0.8	1.0	1.3	1.7	2.0	2.5	3.0	3.8	5.0	6.3	7.1	9.4	12
Long Sweep Ell	1.0	1.4	1.7	2.3	2.7	3.5	4.2	5.2	7.0	9.0	11.0	14.0	
Close Return Bend	3.6	5.0	6.0	8.3	10.0	13.0	15.0	18.0	24.0	31.0	37.0	39.0	
Tee-Straight Run	1	2	2	3	3	4	5						
Tee-Side Inlet or Outlet or Pitless Adapter	3.3	4.5	5.7	7.6	9.0	12.0	14.0	17.0	22.0	27.0	31.0	40.0	
ⓐ Ball or Globe Valve Open	17.0	22.0	27.0	36.0	43.0	55.0	67.0	82.0	110.0	140.0	160.0	220.0	
ⓐ Angle Valve Open	8.4	12.0	15.0	18.0	22.0	28.0	33.0	42.0	58.0	70.0	83.0	110.0	
Gate Valve-Fully Open	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.7	2.3	2.9	3.5	4.5	
Check Valve (Swing)	4	5	7	9	11	13	16	20	26	33	39	52	65
In Line Check Valve (Spring) or Foot Valve	4	6	8	12	14	19	23	32	43	58			

ⓐ There are many new, full port valve designs available today which are more efficient and create much less friction loss, consult with valve suppliers for new data.

Example:

(A) 100 ft. of 2" plastic pipe with one (1) 90° elbow and one (1) swing check valve.

90° elbow - equivalent to 5.5 ft. of straight pipe
 Swing check - equivalent to 13.0 ft. of straight pipe
 100 ft. of pipe - equivalent to 100 ft. of straight pipe
 118.5 ft. = Total equivalent pipe

(B) Assume flow to be 80 GPM through 2" plastic pipe.

- Friction loss table shows 11.43 ft. loss per 100 ft. of pipe.
- In step (A) above we have determined total ft. of pipe to be 118.5 ft.
- Convert 118.5 ft. to percentage $118.5 \div 100 = 1.185$
- Multiply $11.43 \times 1.185 = 13.54455$ or 13.5 ft. = Total friction loss in this system.

Figure friction loss for 118.5 ft. of pipe.

Where the jet pump is offset horizontally from the well site, add the additional friction loss from the chart below to the vertical lift to approximate what capacity the pump will produce.

PIPE FRICTION FOR OFFSET JET PUMPS

Additional Friction Loss in Feet Per 100 Feet Offset

JET SIZE HP	SUCTION AND PRESSURE PIPE SIZES (in inches)									
	1¼ x 1	1¼ x 1¼	1½ x 1¼	1½ x 1½	2 x 1½	2 x 2	2½ x 2	2½ x 2½	3 x 2½	3 x 3
⅓	12	8	6	4						
½	18	12	8	6	3	2				
¾		22	16	11	6	4				
1			25	16	9	6				
1½					13	8	5	3		
2					20	13	7	5		
3							13	9	6	4

NOTE: The amount of additional Friction Loss from the Table above is added to the Total Suction Lift on a Shallow Well System or the Depth to Jet Assembly on a Deep Well System.

Example: If using a 1 HP jet pump with a 150' offset from a deep well. Using 1 ½" and 1 ½" pipes will be the same as having an extra 16' of lift per 100' of pipe, so with a 150' offset ($150'/100' = 1.5$), you will have $1.5 \times 16' = 24'$ of additional lift. Add the 24' to the Depth to Jet Assembly to see what the performance will be. If you upsize to 2" & 2" pipe the additional friction loss will only be $1.5 \times 6' = 9'$.

Pipe and Plastic Well Casing Manufacturer's websites:

www.shur-align.com or www.modernproducts.net

- Drop pipe - many types

www.certainteed.com

- Kwik-set® threaded drop pipe in Sch 80 and 120
- Solvent weld pressure pipe in Sch 40 and 80, class 160 (SDR26), class 200 (SDR 21) and class 315 (SDR 13.5)
- PVC sewer and drain pipe

www.pweaglepipe.com

- PW Eagle PVC Pipe - many types

Check Valve Manufacturer's websites:

www.flomatic.com

- Danfoss Flomatic Valves

www.simmonsmsg.com

- Simmons Mfg.

Xylem Inc.:

www.gouldswatertechnology.com

- Goulds Water Technology Water and Wastewater Products

www.centripro.com

- CentriPro Accessories, Boxes and Wastewater Panels

3/8	0.500	0.0413
1/2	0.625	0.0535
3/4	0.875	0.1023
1	1.125	0.1689

FRICITION LOSSES

Insert fitting friction losses are shown in table below. Consult manufacturer for other fitting friction losses.

METAL INSERT FITTING FRICTION LOSS

Type of Fitting	Equivalent Length of Tubing (ft.)			
	3/8" size	1/2" size	3/4" size	1" size
Coupling	2.9	2.0	0.6	1.3
Elbow 90°	9.2	9.4	9.4	10.0
Tee-branch	9.4	10.4	8.9	11.0
Tee-run	2.9	2.4	1.9	2.3

* 1" fittings have an increased total length

FRICITION LOSS AND VELOCITY VS. FLOW RATE PEX PLUMBING TUBING (CTS) (ASTM F-876/877)

Tubing water flow rate, velocity and frictional losses are given in the following table. Long-radius tubing bends have the same head loss as straight tubing.

Nominal Size Average ID	3/8" 0.350		1/2" 0.475		3/4" 0.671		1" 0.863		
	GPM	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity
1	7.0		3.33	1.6	1.81	0.3	0.96	0.1	0.55
2	25.4		6.67	5.8	3.62	1.1	1.81	0.3	1.10
3	53.9		10.00	12.2	5.43	2.3	2.72	0.7	1.65
4	91.8		13.34	20.8	7.24	3.9	3.63	1.1	2.19
5				31.4	9.05	5.9	4.54	1.7	2.74
6				44.0	10.86	8.2	5.44	2.4	3.29
7				58.6	12.67	10.9	6.35	3.2	3.84
8						14.0	7.26	4.1	4.39
9						17.4	8.17	5.1	4.94
10						21.1	9.07	6.2	5.48
11						25.2	9.98	7.4	6.03
12						29.6	10.89	8.7	6.58
13						34.3	11.79	10.1	7.13
14						39.4	12.70	11.6	7.68
15								13.2	8.23
16								14.8	8.78

NOTE: Friction Loss based on Hazen-Williams Formula (C=150). CTS Tubing manufactured per ASTM F-876/877. Friction Loss - psi per 100 ft. of tubing. Velocity (VEL) feet per second.

PRIVATE RESIDENCES

Outlets	Flow Rate GPM	Total Usage Gallons	Bathrooms in Home			
			1	1½	2-2½	3-4
Shower or Bathtub	5	35	35	35	53	70
Lavatory	4	2	2	4	6	8
Toilet	4	5	5	10	15	20
Kitchen Sink	5	3	3	3	3	3
Automatic Washer	5	35	-	18	18	18
Dishwasher	2	14	-	-	3	3
Normal seven minute* peak demand (gallons)			45	70	98	122
Minimum sized pump required to meet peak demand without supplemental supply			7 GPM (420 GPH)	10 GPM (600 GPH)	14 GPM (840 GPH)	17 GPM (1020 GPH)

Notes:

Values given are average and do not include higher or lower extremes.

* Peak demand can occur several times during morning and evening hours.

** Count the number of fixtures in a home including outside hose bibs. Supply one gallon per minute each.

YARD FIXTURES

Garden Hose - ½"	3 GPM
Garden Hose - ¾"	6 GPM
Sprinkler - Lawn	3-7 GPM

FARM USE

Horse, Steer	12 Gallons per day
Dry Cow	15 Gallons per day
Milking Cow	35 Gallons per day
Hog	4 Gallons per day
Sheep	2 Gallons per day
Chickens/100	6 Gallons per day
Turkeys/100	20 Gallons per day
Fire	20-60 GPM

Pump Capacity Required in U.S. Gallons per Minute per fixture for Public Buildings							
Type of Building	Total Number of Fixtures						
	25 or Less	26-50	51-100	101-200	201-400	401-600	Over 600
Hospitals	1.00	1.00	.80	.60	.50	.45	.40
Mercantile Buildings	1.30	1.00	.80	.71	.60	.54	.48
Office Buildings	1.20	.90	.72	.65	.50	.40	.35
Schools	1.20	.85	.65	.60	.55	.45	
Hotels, Motels	.80	.60	.55	.45	.40	.35	.33
Apartment Buildings	.60	.50	.37	.30	.28	.25	.24

- For less than 25 fixtures, pump capacity should not be less than 75% of capacity required for 25 fixtures.
- Where additional water is required for some special process, this should be added to pump capacity.
- Where laundries or swimming pools are to be supplied, add approximately 10% to pump capacity for either.
- Where additional occupancy is greater than normal, add approximately 20% to pump capacity.

Boiler HP GPM		Boiler HP GPM		Boiler HP GPM		Boiler HP GPM		Boiler HP GPM	
20	1.38	55	3.80	90	6.21	160	11.1	275	19.0
25	1.73	60	4.14	100	6.90	170	11.7	300	20.7
30	2.07	65	4.49	110	7.59	180	12.4	325	22.5
35	2.42	70	4.83	120	8.29	190	13.1	350	24.2
40	2.76	75	5.18	130	8.97	200	13.8	400	27.6
45	3.11	80	5.52	140	9.66	225	15.5	450	31.1
50	3.45	85	5.87	150	10.4	250	17.3	500	34.5

- Boiler Horsepower equals 34.5 lb. water evaporated at and from 212°F, and requires feed water at a rate of 0.069 gpm.
Select the boiler feed pump with a capacity of 2 to 3 times greater than the figures given above at a pressure 20 to 25% above that of boiler, because the table gives equivalents of boiler horsepower without reference to fluctuating demands.

HYDROPRO TANK SELECTION

- See your Full Line Catalog Tank Bulletins for a listing of all available models.

Model No.	Total Volume (Gals.)	① Drawdown in Gals. at System Operating Pressure Range of			Maximum Drawdown Vol. (Gals.)
		18/40 PSIG	28/50 PSIG	38/60 PSIG	
V6P	2.0	0.8	0.7	0.6	1.2
V15P	4.5	1.8	1.5	1.3	2.7
V25P	8.2	3.3	2.8	2.4	4.5
V45P	13.9	5.6	4.7	4.1	8.4
V45B	13.9	5.6	4.7	4.1	8.4
V45	13.9	5.6	4.7	4.1	8.4
V60B	19.9	8.0	6.8	5.8	12.1
V60	19.9	8.0	6.8	5.8	12.1
V80	25.9	10.4	8.8	7.6	13.9
V80EX	25.9	10.4	8.8	7.6	13.9
V100	31.8	12.8	10.8	9.4	13.8
V100S	31.8	12.8	10.8	9.4	13.8
V140B	45.2	18.2	15.4	13.3	27.3
V140	45.2	18.2	15.4	13.3	27.3
V200B	65.1	26.2	22.1	19.2	39.3
V200	65.1	26.2	22.1	19.2	39.3
V250	83.5	33.6	28.4	25.6	50.8
V260	84.9	34.1	28.9	25.0	44.7
V350	115.9	46.6	39.4	34.1	70.5

Tank Drawdown Pressure Factors Using an "Extra" 2 PSI of Drawdown

Pressure Differential	Factor with extra 2 psi*
18 - 40	.402
28 - 50	.340
38 - 60	.295
48 - 70	.260

To Calculate drawdown capacity multiply: Factor x Tank Volume.

① Drawdown based on a 22 psi differential and Boyle's Law. Temperature, elevation and pressure can all affect drawdown volume.

TABLE 2 - PRESSURE FACTORS

Pump Cut-Out Pressure - PSIG	Pump Cut-In Pressure - PSIG																			
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115
30	.22																			
35	.30	.20																		
40	.37	.27	.18																	
45	.42	.34	.25	.17																
50	.46	.39	.31	.23	.15															
55	.50	.43	.36	.29	.22	.14														
60	.54	.47	.40	.33	.27	.20	.13													
65		.50	.44	.38	.31	.25	.19	.13												
70		.53	.47	.41	.35	.30	.24	.18	.12											
75			.50	.45	.39	.33	.28	.22	.17	.11										
80			.53	.48	.42	.37	.32	.26	.21	.16	.11									
85				.50	.45	.40	.35	.30	.25	.20	.15	.10								
90				.53	.48	.43	.38	.33	.29	.24	.19	.14	.10							
95					.50	.46	.41	.36	.32	.27	.23	.18	.14	.09						
100					.52	.48	.44	.39	.35	.31	.26	.22	.17	.13	.09					
105						.50	.46	.42	.38	.33	.29	.25	.21	.17	.13	.08				
110						.52	.46	.44	.40	.36	.32	.28	.24	.20	.16	.12				
115							.50	.46	.42	.39	.35	.31	.27	.23	.19	.15	.12	.06		
120							.52	.48	.45	.41	.37	.33	.30	.26	.22	.19	.15	.11		
125								.50	.47	.43	.39	.36	.32	.29	.25	.21	.16	.14	.11	.07

To determine tank drawdown of operating pressure ranges other than those listed in table, use following procedure:
Multiply total tank volume (table 1) by pressure factor (table 4).

Example: Operating range: 35/55
Tank being used: V-200

65.1 = Total volume of tank (table 1)
x .29 = Pressure factor (table 4)
18.9 = Drawdown in gallons at 35/55 PSI operating range.

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[6" SINGLE PHASE MOTORS \(BCP6-10MTR\)](#)

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[RESIBOOST](#)

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[CSCR CONTROL BOXES \(BCCR\)](#)

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- 2) a leading global water technology company.

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