Product Index

TERMS AND CONDITIONS OF SALE

ACCEPTANCE OF ORDERS: All orders are subject to acceptance by Flint & Walling, Inc. in Kendallville, Indiana, and to conditions stated herein. Acceptance of F&W product order constitutes acceptance of the terms and conditions stated herein.

Flint & Walling, Inc. will not be bound by any term or condition on buyer's order which is different from or in addition to the terms and conditions of Flint & Walling.

SHIPPING POLICY: All prices are based upon product sold F.O.B. point of shipment. Flint & Walling will prepay and absorb transportation charges to common carrier points within the continental limitations of the United States, Alaska and Hawaii excluded, in accordance with the freight policy outlined in the Distributor Discount Schedule; and provided Flint & Walling is allowed to select point of origin of shipment, method of transportation and routing of the shipment. Flint & Walling, Inc. reserves the right to add a shipping surcharge due to heavy weight, oversize dimensions, non-pump product mix and/or large order quantities with an order that qualifies for prepaid freight outlined in the Distributor Discount Schedule.

SHIPPING CLAIMS: Customers must review shipment at time of receipt and inspect for damage and missing products. Failure to inspect and document this on the proof of delivery indicates that you have accepted the shipment as complete and damage free.

- Flint & Walling uses blue shrink wrap on all shipments. If product arrives with any other color of shrink wrap, inspect shipment for damage or missing product prior to signing for shipments.

In order to receive credit for freight claims, all damage (visible or concealed) or any shipping discrepancies must be submitted to Flint & Walling immediately and must be noted on the proof of delivery.
Notifications of damaged freight or shipping discrepancies are made by calling Flint & Walling at 800-345-9422 or by email to sales@flintandwalling.com. Please provide PO #, missing or damaged model #'s, quantities and photos.

Continued on next page.

Flint & Walling will consider all orders as being satisfactorily received and complete by your receiving department if no damage or shipping discrepancies are noted on the proof of delivery and reported to us within 5 days. Please note:

- Flint & Walling is not responsible for any damage or loss of any shipment once it has left the F&W warehouse.
- Return of damaged products requires prior consent of Flint & Walling and are subject to return freight charges and conditions specified above.
- No claims for shortage in weight or quantity will be honored by Flint & Walling unless presented within 5 working days after receipt of goods.
- Part of a shipment can be refused at time of delivery as long as it is noted on the proof of delivery by part number and quantity.

Any claim made outside the specified 5 days from receipt of delivery will not be honored. Payment in full will be required on all orders except those with proper notification.

PRICES: While every effort will be made to provide customers advance notice of price changes, all prices and discounts are subject to change without notice.

Flint & Walling reserves the right to refuse any order due to a price change or price discrepancy; and acceptance of such order by Flint & Walling is subject to customer acceptance of the revised current price.

CANCELLATION: Orders accepted by Flint & Walling in Kendallville, Indiana are not subject to cancellation; but, where cancellation for any cause is mutually agreed to, the purchaser will be billed for reasonable charges based on expenses already incurred and commitments made by Flint & Walling.

TERMS OF PAYMENT: 2% 30 days, Net 45 days. Accounts past due will be subject to a 1 1/2% monthly interest charge. Payments made with a credit card will have a 4% transaction fee applied with no cash discounts.

TERMS AND CONDITIONS OF SALE (continued)

SALES TAX EXEMPTION: F&W is required to have a current sales tax exemption certificate on file for your company. If you have multiple stores or branches that we ship to in other states, please provide a MTC (Multistate Tax Commission) exemption certificate. It is your responsibility to provide the correct form for your state. Failure to provide your sales tax exemption certificate will result in sales tax being charged on your order.

RETURNING PRODUCT: Authorization and shipping instructions must be obtained from Flint & Walling by the purchaser before returning any product. A 15% handling and restocking charge will be charged for new product returned to Flint & Walling for credit. Non-cataloged product is not returnable.

EXPORT COMPLIANCE POLICY: All Flint & Walling products sold outside of the Continental United States are subject to the standards and regulations set forth by the Bureau of Industry and Security. Please consult with the factory on any product that is intended to be exported outside of the United States. See FW1333 for additional information.

LIMITED WARRANTY: This product is warranted, unless otherwise stated, to the user to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. See product literature for specific warranty period.

Subject to the conditions hereinafter set forth, the manufacturer will repair or replace to the original consumer, any portion of the product which proves defective due to defective materials or workmanship. This warranty does not cover replacement parts for failure due to normal wear and tear. To obtain warranty service, contact the dealer from whom the product was purchased. The manufacturer retains the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage due to conditions beyond the control of the manufacturer is not covered by this warranty.

THIS WARRANTY WILL NOT APPLY:
(a) To defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident or negligence or use of inappropriate chemicals or additives in the water; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with normal applicable local codes, ordinances and good trade practices; and (e) if the unit is used for purposes other than for what it was designed and manufactured.

RETURN OF WARRANTED COMPONENTS:
Any item to be repaired or replaced under this warranty must be returned to the manufacturer at Kendallville, Indiana or such other place as the manufacturer may designate, freight prepaid.
THE WARRANTY PROVIDED HEREIN IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, AND MAY NOT BE EXTENDED OR MODIFIED BY ANYONE. ANY IMPLIED WARRANTIES SHALL BE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY AND THEREAFTER ALL SUCH IMPLIED WARRANTIES ARE DISCLAIMED AND EXCLUDED. THE MANUFACTURER SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO DAMAGE TO, OR LOSS OF, OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR NATURE. THE LIABILITY OF THE MANUFACTURER SHALL NOT EXCEED THE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow limitations on duration of implied warranties or exclusion of incidental or consequential damages, so the above limitations may not apply to you.

If you have any questions concerning this or any of our policies and procedures, please do not hesitate to contact your Sales Representative.

FLINT & WALLING

Four-Inch Submersible Pumps

FW1674
0624
Supersedes
0723

FOR HOME, FARM AND INDUSTRY

Series "4F"
Low, medium and high capacity submersible pumps for home, farm, industry and many other domestic and commercial applications

- Stainless steel or cast iron suction and discharge housings
- Stainless steel pump shell
- Stainless steel hex drive shaft and coupling
- Stainless steel screen
- Corrosion resistant cable guard
- NEMA standard motor mounting ring
- Field replaceable cartridge assembly, cable guard, motor and motor lead wire assembly
- Stainless steel motors with lightning protection - F&W available up to 2 HP

'S' Commander® Series — 304 SS Suction & Discharge

'A' Captain® Series — Cast Iron Suction & Discharge

S Series — 4" Deepset Pumps

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

S SERIES and A SERIES SUBMERSIBLES

5 thru 27 GPM - 'A' and 'S' Series

35 thru 85 GPM - Hi Cap 'A' and 'S' Series

5, 7, 10, 19 & 27 GPM - 'S' Series DEEPSET

For total head of 1500 ft. or less / 2, 3, 5, & 7-1/2 HP

US

Material Construction - S Series and A Series

Component Description	Commander® 'S' Series 5, 7, 10, 15, 19 & 27 GPM 1/2 thru 5 HP	Captain® 'A' Series 5, 7, 10, 19 & 27 GPM 1/2 thru 5 HP	Commander® Plus 'S' Series 35, 55 & 85 GPM 1 thru 7-1/2 HP	Captain® Plus 'A' Series 35, 55 & 85 GPM 1 thru 7-1/2 HP
Discharge Head	Stainless Steel, 1-1/4" NPT, safety rope eyelet included	Cast Iron, 1-1/4" NPT, safety rope eyelet included	Stainless Steel, 2" NPT, safety rope eyelets included	Cast Iron, 2" NPT
Check Valve Poppet	Internal removable, with elastomer sealing ring		Check valve not included	
Top Bearing	Closed sintered lead free sleeve bearing		Closed sintered lead free sleeve bearing	Closed sintered lead free sleeve bearing
Pump Shell	Heavy wall stainless steel			
Cable Guard	Stainless steel	Stainless steel or Crush-proof PVC	Stainless steel	Stainless steel or Crush-proof PVC
Staging*	Noryl® impellers and diffusers; stainless steel floating bearing inserts and acetal diffuser plates			
Pump Shaft*	Stainless steel hex shaft with one piece motor-to-shaft coupling			
Motor Bracket	NEMA standard, stainless steel with stainless steel suction screen	NEMA standard, cast iron with stainless steel suction screen	NEMA standard, stainless steel with stainless steel suction screen	NEMA standard, cast Iron with stainless steel suction screen
Motor	All pumps driven by a complete selection stainless steel two wire or three wire motors. (F&W available up to 2 HP).		All pumps driven by a complete selection of stainless steel two wire or three wire motors. (F&W available up to 2 HP). Order motors separately.	
Motor Controls	F&W control boxes required for three-wire single phase motors. Magnetic starters and heaters are required for three phase models. Purchase at your local electrical outlet.			

* Replacement cartridge assembly available for select models. Includes all necessary parts to restore pumps to like-new performance. No special tools required.
Noryl® is a registered trademark of General Electric.

Model Number and Date Code

Model Number Code

5 thru 85 GPM

4 F 10 A 05 - 30 1

- 4-inch minimum well diameter
- Series
- GPM
- Material Construction
  - S - SS Castings, SS Shell
  - A - Cast Iron Castings, SS Shell
  - P - Thermoplastic Housing, SS Shell
- Motor HP Size
- Lead Type
  - 1 – 3-wire
  - 5 – 2-wire
- Motor Voltage and Phase
  - 00 – 115 V 1 Ph
  - 30 – 230 V 1 Ph

1/2 - 2 HP Single phase pump and motor assembly includes pump/motor unit with motor leads.
Order control box for 3-wire units separately.
On 2 - 7-1/2 HP and all 3 phase units, order pump, motor and control box separately. Magnetic starters must be purchased locally. Lead wire assembly included with motor.
On 35, 55 & 85 GPM units order pump, motor and control box separately. Magnetic starters must be purchased locally. Lead wire assembly included with motor.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

F&W Date Code Explanation

21 A K - 01 - 001

- Calendar Year
- Month
  (A = Jan, etc.
  Letter "I" is not used)
- Manufacturing Facility
- Sequence of Motor
- Day of Month

DOE Compliance

PUMP MODEL	Impeller Dia.	P.E.I.CL
4F35	3.072"	0.89
4F55	3.075"	0.93
4F85	3.070"	0.99

4" 2 thru 34 GPM • 2 thru 7-1/2 HP Deepset Pumps

- 1-1/4" NPT stainless steel discharge and NEMA faced mounting ring
- Integral removable check valve with elastomer sealing ring
- Stainless steel pump shell, cable guard & suction screen
- Steel intermediate connector
- Thermoplastic impellers and diffusers
- Stainless steel hex drive shaft and coupling
- Selection of stainless steel motors - high thrust motors required on all deep set submersible pump ends

5, 7, 10, 19 & 27 GPM

For total head of 1500 ft. or less

2, 3, 5, & 7-1/2 HP

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

S SERIES 4" DEEPSET PUMPS

MODEL SPECIFICATIONS

Pump End Model Number	Motor Required		Number of Stages	Max. Head Ft.	Max. Head PSI	Flow Range GPM*	Overall Pump Length
	HP	Thrust Rating					
4F05S20	2	1500#	42	1108	480	2-9	43.7
4F05S30	3	900#	60	1593	690	2-9	57.8
4F07S30	3	900#	42	1293	560	2-13	43.7
4F10S50	5	1500#	52	1605	695	3-15	56.7
4F19S75	7-1/2	1500#	46	1420	615	6-26	55.4
4F27S75	7-1/2	1500#	42	1282	555	10-34	53.2

For motor lengths, call 1-800-742-5044.
*Refer to motor manufacturer's handbook for proper flow rates to cool motor based on well size.

Component Description	Deepset 'S' Series 5, 7, 10, 19 & 27 GPM 2 through 7-1/2 HP
Discharge Head	NEMA standard, stainless steel, 1-1/4 in NPT, safety rope eyelet included
Check Valve Poppet	Internal removable, with elastomer sealing ring
Top Bearing	Closed sintered lead free sleeve bearing
Intermediate Connector	Rigid Steel
Pump Shell	Heavy wall stainless steel
Cable Guard	Stainless Steel
Staging*	Noryl® impellers and diffusers; stainless steel floating bearing inserts and acetal diffuser plates
Pump Shaft*	304L Stainless steel hex shaft with one piece motor-to-shaft coupling
Motor Bracket	NEMA standard, stainless steel with stainless steel suction screen
Motor	Selection of stainless steel motors - high thrust motors required on all deep set submersible pump ends. Order motors separately.
Motor Controls	Control boxes required for three-wire single phase motors. Magnetic starters and heaters are required for three phase models. Purchase at your local electrical outlet.

* Replacement cartridge assembly available for select models. Includes all necessary parts to restore pumps to like-new performance. No special tools required.
Noryl® is a registered trademark of General Electric.

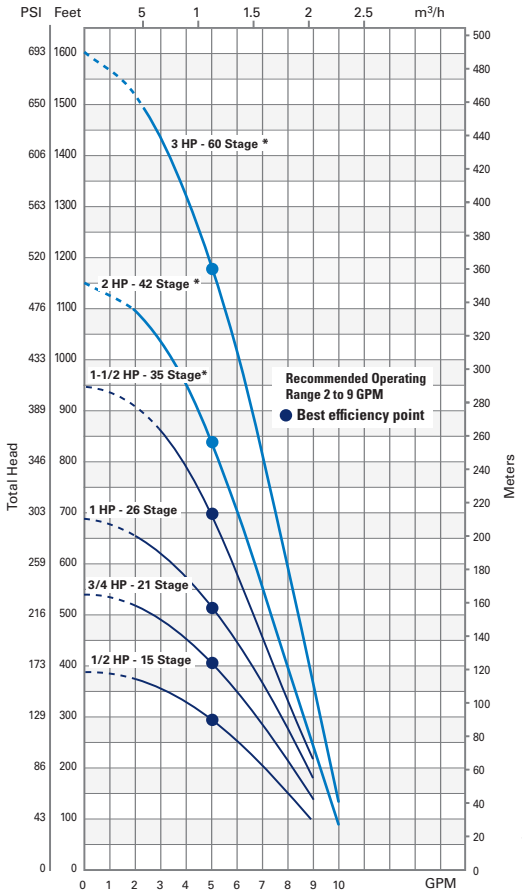
External line check valve (1-1/4" or larger) required every 100 feet of vertical drop pipe. 900# or 1500# thrust motors required on all deep set submersible pump ends.

4" 5 GPM • 1/2 thru 3 HP
3450 RPM • 60 Cycle

FLINT & WALLING

HP Size and Model No.	Stages	Weight		Disch. Pressure PSI	DEPTH TO WATER LEVEL IN FEET																									Max. Pressure	
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	325	350	400	450	500	550	600	650	700	800		Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																										
1/2 HP 4F05A05 4F05S05	15	1 PH 3 Wire 1 PH 2 Wire	29 29	0 20 40 60 80		8.3 7.5 6.5	8.8 7.9 7.1 6.7 6.1	8.4 7.5 6.7 5.6	8.9 8.1 7.1 6.2 5.1	8.5 7.7 6.7 5.8 4.6	8.2 7.3 6.3 5.3 4.0	7.8 6.9 5.9 4.8 3.4	7.4 6.5 5.4 4.2 2.6	7.0 6.0 4.9 3.6 1.2	6.5 5.5 4.2 2.7	5.9 4.8 3.5	5.3 4.1 2.4	4.7 3.3	4.0 2.3	3.2									390	168
3/4 HP 4F05A07 4F05S07	21	1 PH 3 Wire 1 PH 2 Wire	35 35	0 20 40 60 80			8.7 8.2 7.6	8.5 7.9 7.3	8.8 8.2 7.7 7.0	8.6 8.0 7.4 6.7	8.9 8.3 7.7 7.1 6.4	8.7 8.1 7.5 6.8 6.1	8.4 7.8 7.2 6.5 5.9	8.2 7.5 6.9 6.2 5.5	7.8 7.2 6.5 5.8 5.1	7.5 6.9 6.2 5.4 4.5	7.2 6.5 5.7 4.9 4.0	6.8 6.1 5.3 4.5 3.3	6.5 5.7 4.9 3.9 2.6	6.1 5.3 4.4 3.3 1.5	5.2 4.3 3.1 1.3	4.2 3.0	2.9						550	238
1 HP 4F05A10 4F05S10	26	1 PH 3 Wire 1 PH 2 Wire	43 43	0 20 40 60 80				8.5 8.0	8.7 8.3 7.8	9.0 8.5 8.1 7.6	8.8 8.3 7.9 7.4	8.6 8.1 7.7 7.2	8.9 8.4 7.9 7.5 7.0	8.7 8.2 7.7 7.2 6.7	8.4 7.9 7.5 7.0 6.5	8.2 7.7 7.2 6.7 6.1	7.9 7.4 6.9 6.4 5.8	7.7 7.2 6.7 6.1 5.5	7.4 6.9 6.3 5.8 5.1	7.1 6.6 6.0 5.5 4.7	6.5 6.0 5.4 4.7 3.9	5.9 5.3 4.6 3.8 2.7	5.3 4.6 3.7 2.7	4.5 3.7 2.5	3.6 2.4	2.3			695	300
1-1/2 HP 4F05A15 4F05S15	35	1 PH 3 Wire 1 PH 2 Wire 3 PH 3 Wire	55 55 52	0 20 40 60 80					8.8 8.5	9.0 8.6 8.1	8.8 8.5 8.2	9.0 8.7 8.4 8.2 8.0	8.9 8.5 8.2 7.8	8.7 8.4 8.0 7.7	8.9 8.6 8.2 7.9 7.5	8.7 8.4 8.0 7.7 7.3	8.5 8.2 7.8 7.5 7.1	8.3 8.0 7.6 7.3 6.8	8.2 7.8 7.4 7.0 6.6	8.0 7.6 7.2 6.8 6.4	7.5 7.2 6.8 6.4 6.0	7.1 6.8 6.3 6.0 5.6	6.7 6.3 5.9 5.0 5.1	6.3 5.9 5.5 5.1 4.7	5.9 5.5 5.1 4.6 4.1	5.4 5.0 4.6 4.1 3.5	5.0 4.6 4.1 3.5	4.0 3.4	950	411

HP Size and Model No.	Stages	Weight		Disch. Pressure PSI	DEEPSET - DEPTH TO WATER LEVEL IN FEET																						Max. Pressure	
		Motor Type	Ship Wt.		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500	1600	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																								
2 HP 4F05S20	42	1 PH 3 Wire 3 PH 3 Wire	30 30	0 20 40 60 80	9.0	9.0 8.7	9.0 8.7 8.4	9.0 8.7 8.4 8.1	8.9 8.6 8.3 8.0 7.8	8.6 8.3 8.0 7.7 7.4	8.3 8.0 7.7 7.4 7.1	8.0 7.7 7.4 7.1 6.8	7.7 7.4 7.1 6.8 6.5	7.3 7.0 6.7 6.4 6.1	7.0 6.7 6.4 6.1 5.8	6.7 6.4 6.1 5.7 5.4	6.4 6.0 5.7 5.4 5.0	6.0 5.7 5.3 5.0 4.6	5.7 5.3 4.9 4.5 4.1	5.3 4.9 4.5 4.1 3.6	4.4 4.0 3.5 2.9 2.2	3.4 2.8 2.1	1.9							
3 HP 4F05S30	60	1 PH 3 Wire 3 PH 3 Wire	38 38	0 20 40 60 80					8.9 8.7	8.9 8.7 8.5	8.9 8.7 8.5 8.3	8.9 8.7 8.5 8.3 8.1	8.6 8.4 8.2 8.0 7.8	8.4 8.2 8.0 7.8 7.6	8.2 8.0 7.8 7.6 7.4	8.0 7.8 7.6 7.4 7.1	7.8 7.6 7.3 7.1 6.9	7.5 7.3 7.1 6.9 6.7	7.3 7.1 6.9 6.6 6.4	7.1 6.8 6.6 6.4 6.1	6.6 6.3 6.1 5.8 5.6	6.1 5.8 5.5 5.3 5.0	5.5 5.2 4.9 4.6 4.3	4.9 4.6 4.2 3.9 3.5	4.2 3.8 3.4 2.9 2.4	3.3 2.8 2.3	2.2		1593	168



NOTE: Pipe friction loss in drop pipe is not included in chart above.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

Stainless Steel
1-1/4" NPT

Cast Iron
1-1/4" NPT

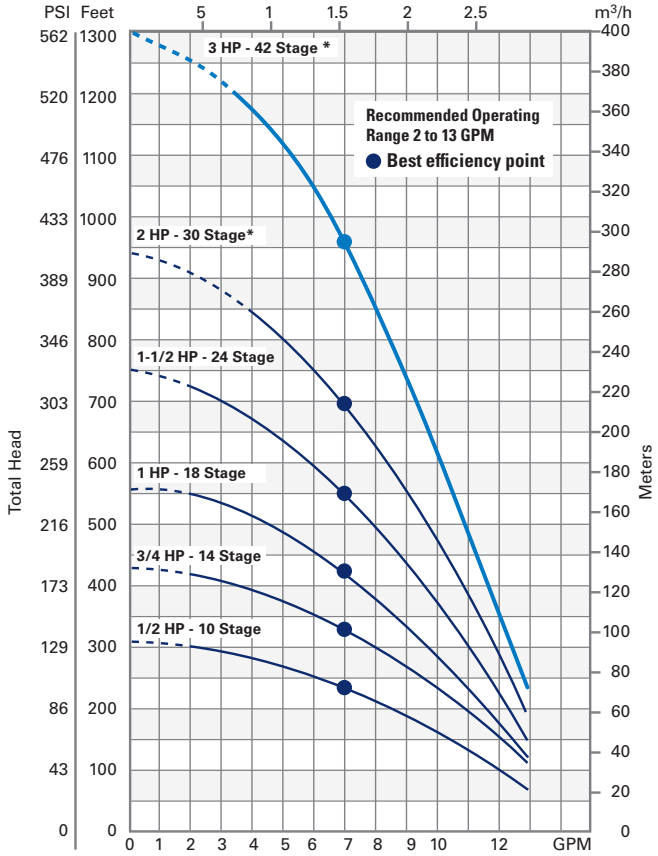
* Pumps marked with asterisks not to be operated at GPM flows indicated by dotted line.

FLINT & WALLING

4" 7 GPM • 1/2 thru 3 HP
3450 RPM • 60 Cycle

HP Size and Model No.	Stages	Weight		Disch. Press PSI	DEPTH TO WATER LEVEL IN FEET																								Max. Pressure	
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	325	350	400	450	500	550	600	650	700	800	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																									
1/2 HP 4F07A05 4F07S05	10	1 PH 3 Wire 1 PH 2 Wire	28 28	0 20 40 60 80	12.9 11.3 9.8 8.1	12.2 10.7 9.1 7.2	13.0 11.6 10.0 8.3 6.1	12.4 10.9 9.3 7.5 4.9	11.7 10.3 8.5 6.5 3.5	11.0 9.6 7.7 5.3	10.4 8.9 6.8 4.0	9.8 8.1 5.7 2.3	9.0 7.2 4.4	8.2 6.1 2.8	7.2 4.7	5.8 2.0	4.2	2.1											310	134
3/4 HP 4F07A07 4F07S07	14	1 PH 3 Wire 1 PH 2 Wire	33 33	0 20 40 60 80		12.2 11.2 10.0	12.7 11.8 10.7 9.5	12.4 11.3 10.2 8.9	12.9 11.9 10.9 9.6 8.2	12.5 11.5 10.3 9.1 7.7	12.0 11.0 9.8 8.5 6.9	11.6 10.5 9.2 7.9 6.3	11.1 10.0 8.6 7.2 5.4	10.7 9.4 8.0 6.5 4.4	10.0 8.7 7.2 5.5 2.7	9.3 7.9 6.3 4.2	8.5 7.1 5.3 2.3	7.8 6.2 3.9	6.9 5.2 1.8	6.0 3.7	3.4									430	186
1 HP 4F07A10 4F07S10	18	1 PH 3 Wire 1 PH 2 Wire	37 37	0 20 40 60 80			12.0 12.2 10.8 10.6	12.7 11.9 11.0 10.2	12.3 11.5 10.7 9.8	12.7 12.0 11.2 10.3 9.5	12.4 11.7 10.8 9.9 9.1	12.1 11.3 10.4 9.6 8.7	11.7 10.9 10.1 9.2 8.2	11.4 10.6 9.7 8.8 7.8	10.9 10.1 9.2 8.3 7.2	10.5 9.7 8.7 7.7 6.6	10.0 9.2 8.1 7.1 5.9	9.5 8.7 7.6 6.5 5.1	9.0 7.8 7.0 5.8 4.1	8.5 7.5 6.3 4.9 2.8	7.4 6.3 4.7 2.5	6.1 4.7 2.1	4.5 2.1	1.6					560	242
1-1/2 HP 4F07A15 4F07S15	24	1 PH 3 Wire 1 PH 2 Wire 3 PH 3 Wire	51 51 46	0 20 40 60 80					12.8 12.2 11.6 11.0	12.6 12.0 11.4 10.7	12.9 12.3 11.7 11.1 10.5	12.7 12.1 11.5 10.8 10.2	12.4 11.8 11.2 10.5 9.9	12.1 11.6 10.9 10.3 9.6	11.8 11.3 10.6 9.9 9.2	11.5 10.9 10.2 9.6 8.9	11.2 10.5 9.9 9.2 8.5	10.8 10.2 9.5 8.8 8.1	10.5 9.8 9.1 8.4 7.6	10.1 9.5 8.7 8.0 7.2	9.4 8.7 7.9 7.1 6.2	8.7 7.9 7.0 6.1 5.0	7.8 7.0 6.0 4.9 3.5	6.9 6.0 4.8 3.3	5.9 4.7 3.2	4.6 3.1	3.9		745	322
2 HP 4F07A20 4F07S20	30	1 PH 3 Wire 3 PH 3 Wire	61 51	0 20 40 60 80								12.7 12.3 11.8 11.3	13.0 12.5 12.1 11.6 11.1	12.8 12.3 11.9 11.4 10.9	12.5 12.1 11.6 11.1 10.6	12.3 11.9 11.3 10.9 10.3	12.0 11.6 11.1 10.6 10.1	11.8 11.3 10.8 10.3 9.8	11.5 11.1 10.5 10.0 9.5	11.3 10.8 10.2 9.7 9.2	10.7 10.2 9.7 9.1 8.5	10.2 9.6 9.1 8.5 7.9	9.6 9.1 8.4 7.8 7.2	9.0 8.4 7.7 7.1 6.4	8.3 7.7 7.0 6.3 5.5	7.7 7.0 6.3 5.5 4.4	6.9 6.2 5.3 4.4	5.2		945	409

HP Size and Model No.	Stages	Weight		Disch. Press PSI	DEEPSET - DEPTH TO WATER LEVEL IN FEET																						Max. Press.	
		Motor Type	Ship Wt.		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500	1600	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																								
3 HP 4F07S30	42	1 PH 3 Wire 3 PH 3 Wire	30 30	0 20 40 60 80	12.9	12.9 12.5	12.8 12.5 12.1	12.8 12.5 12.1 11.8	12.8 12.4 12.1 11.7 11.4	12.4 12.0 11.7 11.3 11.0	12.0 11.7 11.3 11.0 10.6	11.6 11.3 10.9 10.6 10.2	11.3 10.9 10.6 10.2 9.9	10.9 10.5 10.2 9.8 9.5	10.5 10.2 9.8 9.4 9.0	10.1 9.8 9.4 9.0 8.6	9.7 9.4 9.0 8.6 8.2	9.3 8.9 8.6 8.1 7.7	8.9 8.5 8.1 7.7 7.2	8.5 8.1 7.6 7.2 6.7	7.6 7.1 6.6 6.1 5.5	6.5 6.0 5.4 4.7 3.8	5.3 4.5 3.7 2.5	3.5 2.3					1293	560



NOTE: Pipe friction loss in drop pipe is not included in chart above. 1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

* Pumps marked with asterisks not to be operated at GPM flows indicated by dotted lines.

Stainless Steel
1-1/4" NPT

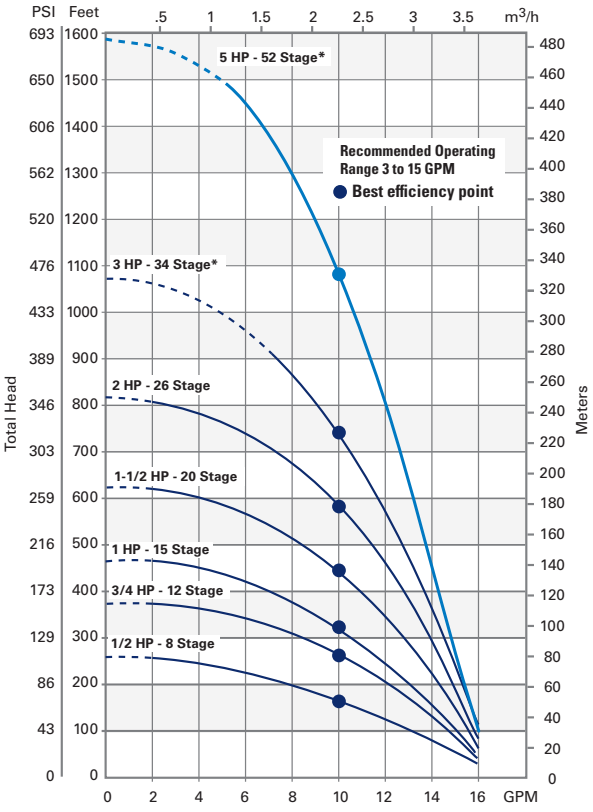
Cast Iron
1-1/4" NPT

4" 10 GPM • 1/2 thru 5 HP
3450 RPM • 60 Cycle

FLINT & WALLING

HP Size and Model No.	Stage	Weight		Discharge Pressure PSI	DEPTH TO WATER LEVEL IN FEET																							Max. Press.	
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	350	400	450	500	550	600	650	700	800	900	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																								
1/2 HP 4F10A05 4F10S05	8	1 PH 3 Wire 1 PH 2 Wire	27 27	0 20 40 60 80	14.6 12.8 10.9 7.8	14.1 12.0 9.9 4.9	14.7 13.3 11.0 8.6 3.6	14.2 12.5 10.0 6.7	13.4 11.6 8.7 4.5	12.6 10.5 6.9	11.7 9.5 4.8	10.8 7.8	9.7 6.0	8.3 3.4	6.3	2.1													250	108
3/4 HP 4F10A07 4F10S07	12	1 PH 3 Wire 1 PH 2 Wire	32 32	0 20 40 60 80	14.3 13.2 11.9	14.9 13.8 12.6 11.4	14.5 13.3 12.1 10.6	15.0 13.9 12.8 11.5 10.0	14.6 13.4 12.4 10.9 9.3	14.1 13.0 11.4 10.3 8.4	13.6 12.4 11.0 9.6 7.4	13.1 11.9 10.5 8.7 6.2	12.5 11.4 9.6 7.7 3.8	12.0 10.7 8.9 6.6	11.3 9.8 7.9 3.8	10.4 8.9 6.1	9.7 7.4 3.5	8.5 6.1	5.7									375	162
1 HP 4F10A10 4F10S10	15	1 PH 3 Wire 1 PH 2 Wire	36 36	0 20 40 60 80	14.9 13.9 13.1	14.5 13.5 12.6	15.0 14.1 12.7 12.1	14.7 13.7 12.7 11.7	14.3 13.3 12.3 11.2	14.7 13.8 12.9 11.8 10.7	14.3 13.4 12.4 11.2 10.1	13.9 13.0 11.9 10.9 9.7	13.6 12.6 11.4 10.3 9.0	13.1 12.1 10.9 9.7 8.2	12.6 11.6 10.3 8.9 6.8	12.0 10.9 9.5 7.8 5.3	11.4 10.2 8.6 6.6 2.6	10.8 9.6 7.9 5.0	9.3 7.6 4.5	7.4 4.6	3.8							470	203
1-1/2 HP 4F10A15 4F10S15	20	1 PH 3 Wire 1 PH 2 Wire 3 PH 3 Wire	47 47 41	0 20 40 60 80	14.7 14.1	15.0 14.5 13.8	14.8 14.1 13.5	14.5 13.9 13.2	14.9 14.2 13.6 12.9	14.6 13.9 13.2 12.6	15.0 14.3 13.6 12.9 12.2	14.7 14.1 13.4 12.7 11.8	14.4 13.8 13.0 12.3 11.4	14.1 13.4 12.7 12.0 11.0	13.8 13.0 12.4 11.5 10.5	13.4 12.6 11.9 11.1 10.1	12.9 12.2 11.5 10.6 9.6	12.6 11.8 11.0 10.1 9.0	11.8 10.9 10.0 8.8 7.4	10.8 9.9 8.6 7.3 4.9	9.8 8.6 7.1 4.8	8.5 7.0 4.4	4.8 4.1	3.9					630	272
2 HP 4F10A20 4F10S20	26	1 PH 3 Wire 3 PH 3 Wire	62 53	0 20 40 60 80	14.7	15.0 14.5	14.8 14.3	14.6 14.1	14.9 14.4 13.8	14.6 14.2 13.6	15.0 14.4 13.9 13.4	14.7 14.2 13.6 13.2	15.0 14.5 14.0 13.4 13.0	14.8 14.3 13.8 13.2 12.6	14.6 13.9 13.4 12.9 12.3	14.2 13.7 13.1 12.6 12.0	14.0 13.4 12.8 12.3 11.7	13.6 13.1 12.6 11.9 11.4	13.1 12.5 11.9 11.3 10.5	12.4 11.8 11.2 10.5 9.7	11.8 11.2 10.5 9.7	11.1 10.4 9.6	10.4 9.6	9.5	8.5	7.3	2.7		815	352
3 HP 4F10A30 4F10S30	34	1 PH 3 Wire 3 PH 3 Wire	79 70	0 20 40 60 80	15.3	15.4 15.0	15.2 14.8	15.4 15.0 14.6	15.2 14.8 14.4	15.5 15.0 14.6 14.2	15.3 14.8 14.4 14.1	15.5 15.0 14.6 14.3 14.0	15.3 14.8 14.4 14.2 13.9	15.1 14.6 14.2 14.1 13.7	14.8 14.4 14.1 13.9 13.6	14.6 14.2 14.0 13.7 13.4	14.3 14.0 13.8 13.4 13.1	14.1 13.8 13.6 13.1 12.8	13.9 13.4 13.2 12.5 12.2	13.5 13.0 12.6 12.1 11.9	13.1 12.7 12.2 11.8 11.4	12.6 12.3 11.7 11.3 10.8	12.1 11.8 11.3 10.6 10.2	11.7 11.3 10.7 10.2 9.5	11.1 10.5 10.1 9.5 8.6	10.6 10.0 9.6 8.7 7.5	9.3 8.5 7.6 6.8	7.5 6.8	1070	462

HP Size and Model No.	Stage	Weight		Discharge Pressure PSI	DEEPSET - DEPTH TO WATER LEVEL IN FEET																							Max. Press.	
		Motor Type	Ship Wt.		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500	1600	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																								
5 HP 4F10S50	52	1 PH 3 Wire 3 PH 3 Wire	36 36	0 20 40 60 80		15.0	15.2 14.9 14.7	15.2 14.9 14.6 14.4 14.4	15.2 14.9 14.6 14.4 14.1	14.9 14.6 14.4 14.1 13.8	14.6 14.3 14.1 13.8 13.6	14.3 14.1 13.8 13.5 13.3	14.0 13.8 13.5 13.2 13.0	13.8 13.5 13.2 12.9 12.7	13.5 13.2 12.9 12.6 12.4	13.2 12.9 12.6 12.3 12.1	12.9 12.6 12.3 12.0 11.7	12.6 12.3 12.0 11.7 11.4	12.3 12.0 11.7 11.4 11.1	12.0 11.7 11.4 11.1 10.7	11.3 11.0 10.7 10.3 10.0	10.6 10.3 9.9 9.5 9.2	9.9 9.5 9.1 8.7 8.2	9.0 8.6 8.1 7.6 7.0	8.0 7.5 6.9 6.2 5.3	6.8 6.1 5.1 3.7	4.9 3.4		1605	695



NOTE: Pipe friction loss in drop pipe is not included in chart above.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

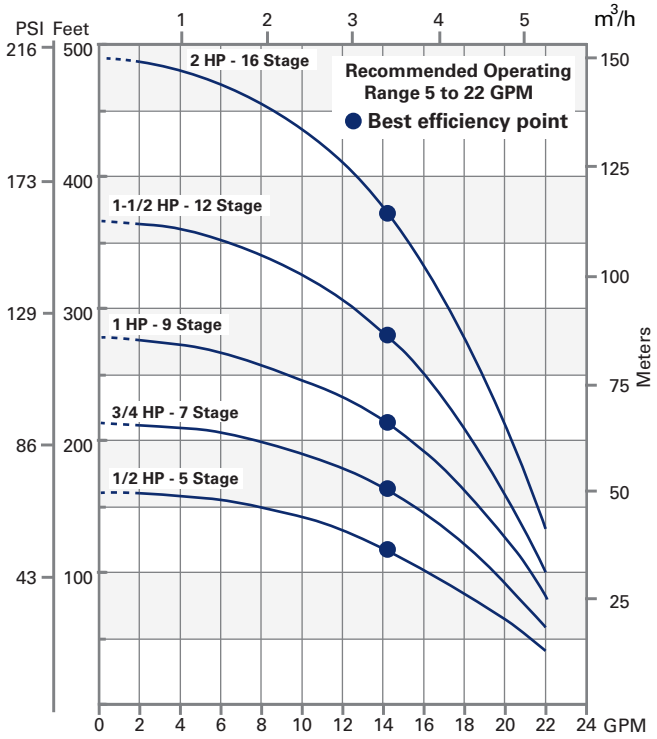
* Pumps marked with asterisks not to be operated at GPM flows indicated by dotted lines.

FLINT & WALLING

4" 15 GPM • 1/2 thru 2 HP
3450 RPM • 60 Cycle

HP Size and Model No.	Stage	Weight		Discharge Pressure PSI	DEPTH TO WATER LEVEL IN FEET																							Max. Press.	
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	350	400	450	500	550	600	650	700	800	900	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																								
1/2 HP 4F15S05	5	1 PH 3 Wire 1 PH 2 Wire	28 28	0 20 40	19.8 14.6	22.0 17.7 11.6	20.5 15.5 7.0	18.5 12.7	16.2 8.8	13.7	10.2																	159	69
3/4 HP 4F15S07	7	1 PH 3 Wire 1 PH 2 Wire	33 33	0 20 40 60 80	21.5 18.5 14.6 6.2	20.5 17.0 11.8	21.9 19.1 15.3 8.1	20.9 17.6 13.0	19.5 15.9 9.5	18.0 13.8 9.5	16.4 11.8	14.6 5.8	11.8	7.8														214	93
1 HP 4F15S10	9	1 PH 3 Wire 1 PH 2 Wire	36 36	0 20 40 60 80	21.4 18.6 15.0	20.4 17.2 12.6	21.6 19.2 15.5 10.0	20.7 17.7 13.6 6.3	21.9 19.6 15.1 10.9	21.1 17.2 14.3 7.7	20.0 16.6 11.9	18.6 14.9 8.8	17.2 12.7 4.2	15.4 9.8	12.7 4.6	9.2												279	121
1-1/2 HP 4F15S15	12	1 PH 3 Wire 1 PH 2 Wire	33 33	0 20 40 60 80	21.6 20.0 18.1	21.0 19.1 17.2	21.8 20.2 18.2 16.2	21.2 19.5 17.5 15.1	22.0 20.5 18.7 16.6 13.9	21.4 19.7 17.7 15.5 12.2	20.7 18.8 16.8 14.2 10.1	20.0 18.0 15.8 13.8 7.5	19.1 17.1 14.7 10.8	18.3 16.1 13.2 8.4	17.2 14.7 10.9	15.9 12.9 7.9	14.5 10.5	12.7 7.3	6.4									367	159
2 HP 4F15S20	16	1 PH 3 Wire 1 PH 2 Wire	36 36	0 20 40 60 80					21.7 20.6 19.2 17.6	21.2 20.0 18.5 17.0	21.8 20.7 19.3 17.9 16.2	21.4 20.2 18.8 17.2 15.5	20.9 19.5 18.1 16.5 14.6	20.4 18.9 17.4 15.8 13.6	19.6 18.1 16.5 14.8 11.9	18.8 17.2 15.6 13.2 9.9	18.0 16.3 14.5 11.7 7.5	17.2 15.4 13.1 9.7	15.3 13.8 9.2	12.7 8.9	8.5						489	212

NOTE: Pipe friction loss in drop pipe is not included in chart above. 1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.



* Pumps marked with asterisks not to be operated at GPM flows indicated by the dotted line.

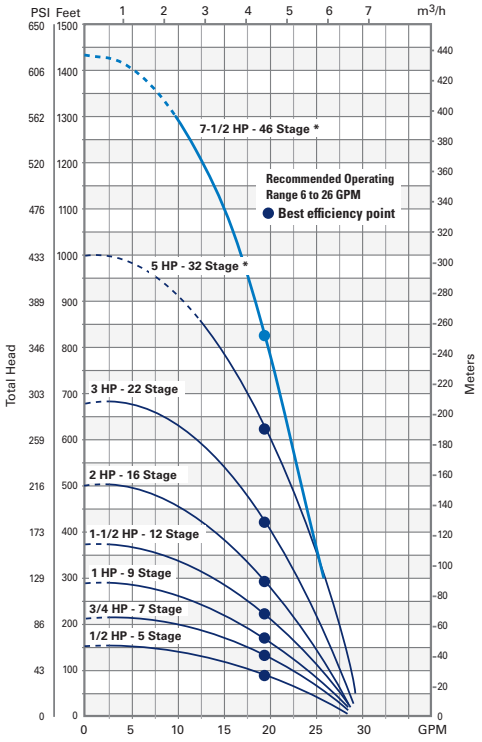
IL0702

4" 19 GPM • 1/2 thru 7-1/2 HP
3450 RPM • 60 Cycle

FLINT & WALLING

HP Size and Model No.	Stg.	Weight		Disch. Press. PSI	DEPTH TO WATER LEVEL IN FEET																								Max. Pressure	
		Motor Type	Ship Wt.		20	40	60	80	100	120	140	160	180	200	225	250	275	300	325	350	400	450	500	550	600	650	700	800	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																									
1/2 HP 4F19A05 4F19S05	5	1 PH 3 Wire 1 PH 2 Wire	28 28	0 20 40	22.0 16.0	24.6 19.8 12.2	22.7 17.1 3.5	20.5 14.0	17.9 5.9	15.0	10.4																		155	67
3/4 HP 4F19A07 4F19S07	7	1 PH 3 Wire 1 PH 2 Wire	33 33	0 20 40 60 80	24.4 20.6 16.2 8.0	22.9 18.7 13.6	24.6 21.4 16.6 10.2	23.3 19.5 14.3	21.7 17.5 11.0	20.0 15.3 5.5	18.2 12.4	16.0 8.6	13.3	9.6															215	93
1 HP 4F19A10 4F19S10	9	1 PH 3 Wire 1 PH 2 Wire	36 36	0 20 40 60 80	25.2 22.5 19.5 15.7	24.0 21.2 17.9 13.7	25.5 22.9 19.8 16.4 11.5	24.4 21.7 18.4 14.5 8.0	23.2 20.4 16.8 12.2	22.1 19.0 15.2 9.6	20.7 17.4 12.8 3.5	19.4 15.6 10.4	17.8 13.7 5.6	16.2 11.4	13.7 6.2	10.7	5.0												283	122
1-1/2 HP 4F19A15 4F19S15	12	1 PH 3 Wire 1 PH 2 Wire 3 PH 3 Wire	43 43 39	0 20 40 60 80	24.2 22.1 19.9	25.2 23.3 21.1 18.8	24.4 22.4 20.2 17.8	25.5 23.5 21.4 19.2 16.7	24.6 22.7 20.5 18.2 15.4	23.8 21.7 19.5 17.1 13.7	22.9 20.7 18.5 15.8 11.9	22.0 19.9 17.4 14.4 9.2	21.1 18.9 16.3 12.7 5.9	20.1 17.7 14.9 10.4	18.9 16.3 12.7 6.3	17.5 14.3 9.7	15.1 12.2 5.7	14.3 9.5	11.8 3.6	8.7									375	163
2 HP 4F19A20 4F19S20	16	1 PH 3 Wire 3 PH 3 Wire	59 49	0 20 40 60 80	25.3 23.9 22.4	24.6 23.3 21.8	25.5 24.1 22.7 21.1	24.9 23.5 22.0 20.3	25.7 24.3 22.8 21.3 19.6	25.1 23.7 22.2 20.6 18.9	24.5 23.0 21.5 19.8 18.1	23.8 22.4 20.8 19.1 17.2	23.2 21.8 20.1 18.3 16.2	22.5 21.0 19.3 17.4 15.1	21.8 20.2 18.3 16.3 13.5	20.9 19.2 17.2 14.8 11.6	20.0 18.2 15.9 13.2 9.5	19.0 17.0 14.6 11.3 6.7	18.0 15.9 12.9 9.2	16.8 14.4 11.0 6.2	14.2 10.8 5.3	10.5 5.0	3.3						500	217
3 HP 4F19A30 4F19S30	22	1 PH 3 Wire 3 PH 3 Wire	75 75	0 20 40 60 80	25.3 24.2	25.8 24.8 23.9	25.4 24.3 23.3	26.0 25.0 23.9 22.8	25.6 24.5 23.5 22.3	25.2 24.1 23.0 21.9	25.7 24.7 23.6 22.5 21.4	25.2 24.3 23.2 22.1 20.9	24.8 23.8 22.7 21.5 20.3	24.3 23.3 22.2 21.0 19.8	23.8 22.8 21.7 20.5 19.2	23.2 22.2 21.0 19.8 18.4	22.6 21.5 20.3 19.2 17.7	22.0 20.9 19.8 18.3 16.9	21.5 20.3 19.0 17.6 16.0	20.8 19.6 18.2 16.8 14.9	19.5 18.2 16.6 14.8 12.7	18.3 16.6 14.7 12.5 9.5	16.3 14.7 12.2 9.3 3.3	14.3 12.2 9.2	11.7 8.7	8.3			685	298
5 HP 4F19A50 4F19S50	32	1 PH 3 Wire 3 PH 3 Wire	117 80	0 20 40 60 80	25.7	26.0 25.3	25.8 25.1	25.5 24.8	25.9 25.2 24.5	25.6 24.8 24.2	25.9 25.3 24.5 23.8	25.7 25.0 24.2 23.5	25.4 24.7 23.9 23.2	25.8 25.2 24.4 23.7 22.8	25.4 24.8 24.1 23.3 22.5	25.0 24.3 23.7 22.8 22.2	24.6 24.0 23.2 22.4 21.7	24.3 23.5 22.8 22.0 21.3	23.8 23.2 22.4 21.6 20.8	23.5 22.8 21.9 21.2 20.4	22.7 21.9 21.2 20.3 19.4	21.8 21.1 20.3 19.3 18.4	21.0 20.2 19.3 18.3 17.3	20.2 19.3 18.3 17.2 16.2	19.2 18.3 17.2 15.9 14.7	18.2 17.2 15.8 14.5 12.9	17.0 15.8 14.5 12.8 11.2	14.2 12.7	1000	435

HP Size and Model No.	Stg.	Weight		Disch. Press. PSI	DEEPSET - DEPTH TO WATER LEVEL IN FEET																								Max. Pressure	
		Motor Type	Ship Wt.		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500	1600	Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																									
7-1/2 HP 4F19S75	46	3 PH 3 Wire	35	0 20 40 60 80		26.1	26.0 25.5	26.0 25.4 24.9	25.9 25.4 24.8 24.2	25.9 25.3 24.8 24.2 23.6	25.3 24.7 24.2 23.6 23.0	24.7 24.1 23.5 23.0 22.4	24.1 23.5 22.9 22.4 21.8	23.5 22.9 22.3 21.7 21.1	22.8 22.3 21.7 21.1 20.5	22.2 21.6 21.1 20.4 19.8	21.6 21.0 20.4 19.8 19.1	21.0 20.3 19.7 19.1 18.4	20.3 19.7 19.0 18.4 17.7	19.6 19.0 18.3 17.6 16.9	18.2 17.5 16.8 16.0 15.2	16.6 15.9 15.0 14.1 13.1	14.9 14.0 13.0 11.8 10.5	12.8 11.6 10.2 8.5 5.8	10.0 8.1				1420	615



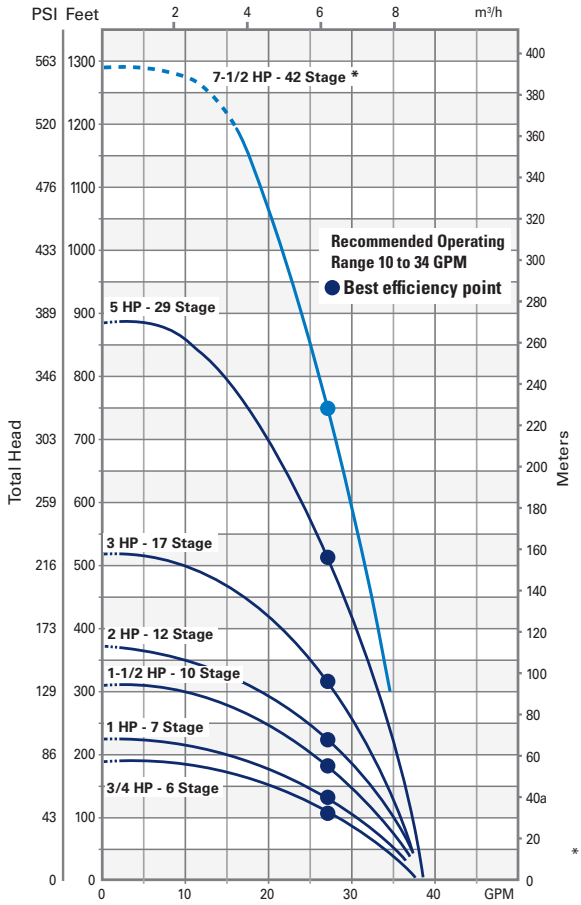
NOTE: Pipe friction loss in drop pipe is not included in chart above.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

* Pumps marked with asterisks not to be operated at GPM flows indicated by the dotted line.

4" 27 GPM • 3/4 thru 7-1/2 HP
3450 RPM • 60 Cycle

HP Size And Model No.	Stages	WEIGHT		Disch. Press. PSI	DEPTH TO WATER LEVEL IN FEET																										Max. Pressure	
		Motor Type	Shp. Weight		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	350	400	450	500	550	600	650	700	750	800		Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																											
3/4 HP 4F27A07 4F27S07	6	1 PH 3 Wire 1 PH 2 Wire	33 33	0 20 40 60	32 25 17	29 22 9	32 26 18	30 23 12	27 20	24 15	21	16	5																	180	78
1 HP 4F27A10 4F27S10	7	1 PH 3 Wire 1 PH 2 Wire	35 35	0 20 40 60	33 28 22	31 25 18	34 29 23 13	32 26 19	30 24 15	27 20 5	24 17	22 10	18	13																215	93
1-1/2 HP 4F27A15 4F27S15	10	1 PH 3 Wire 1 PH 2 Wire 3 PH 3 Wire	43 43 38	0 20 40 60	31 28	33 30 26	32 28 24	34 30 27 22	33 29 25 20	31 27 23 18	29 25 21 15	28 24 19 8	26 22 16	24 19 11	22 17	20 13	17	14	6											305	132
2 HP 4F27A20 4F27S20	12	1 PH 3 Wire 3 PH 3 Wire	44 46	0 20 40 60			34 31 28	33 30 26	34 32 29 25	33 30 27 23	32 29 25 21	31 27 24 19	30 26 22 16	28 24 19 12	27 22 17 5	25 20 13	23 18 8	21 15	18 10	9										360	156
3 HP* 4F27A30 4F27S30	17	1 PH 3 Wire 3 PH 3 Wire	73 73	0 20 40 60					34 32 30	33 31 29	34 33 30 28	33 32 30 27	33 31 29 26	32 30 28 25	31 29 27 24	30 28 25 22	29 27 24 21	28 26 23 19	27 25 21 17	24 21 17 12	21 17 11	16 10	9							515	223
5 HP* 4F27A50 4F27S50	29	1 PH 3 Wire 3 PH 3 Wire	116 80	0 20 40 60								34 32	34 33 32	34 33 33	34 33 32 31	34 33 32 30	33 32 31 30	33 32 31 29	32 31 30 29	31 30 29 28	30 29 27 26	29 27 26 24	27 26 24 22	26 24 22 21	24 22 20 18	22 20 18 16	20 18 16 12	18 15 12	15 12	880	380

HP Size And Model No.	Stages	WEIGHT		Disch. Press. PSI	DEEPSET - DEPTH TO WATER LEVEL IN FEET																										Max. Pressure	
		Motor Type	Shp. Weight		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500	1600	1700		Ft.	PSI
					CAPACITIES IN GALLONS PER MINUTE																											
7-1/2 HP 4F27S75	42	3 PH 3 Wire	34	0 20 40 60 80			34.1	34.0 33.2	33.9 33.2 32.4	33.9 33.1 32.4 31.6	33.8 33.1 32.3 31.5 30.8	33.0 32.2 31.5 30.7 29.9	32.2 31.4 30.7 29.9 29.1	31.4 30.6 29.8 29.0 28.2	30.5 29.7 29.0 28.1 27.3	29.7 28.9 28.1 27.2 26.4	28.8 28.0 27.2 26.3 25.4	27.9 27.1 26.2 25.3 24.4	27.0 26.2 25.3 24.3 23.3	26.1 25.2 24.2 23.2 22.2	24.1 23.1 22.0 20.8 19.5	21.8 20.6 19.3 17.8 16.0	19.1 17.6 15.7 13.2	15.4 12.7							1282	555



NOTE: Pipe friction loss in drop pipe is not included in chart above. 1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.
*For 3 HP and above, refer to motor manufacturer's handbook for proper flow rates to cool motor.

Stainless Steel
1-1/4" NPT

Cast Iron
1-1/4" NPT

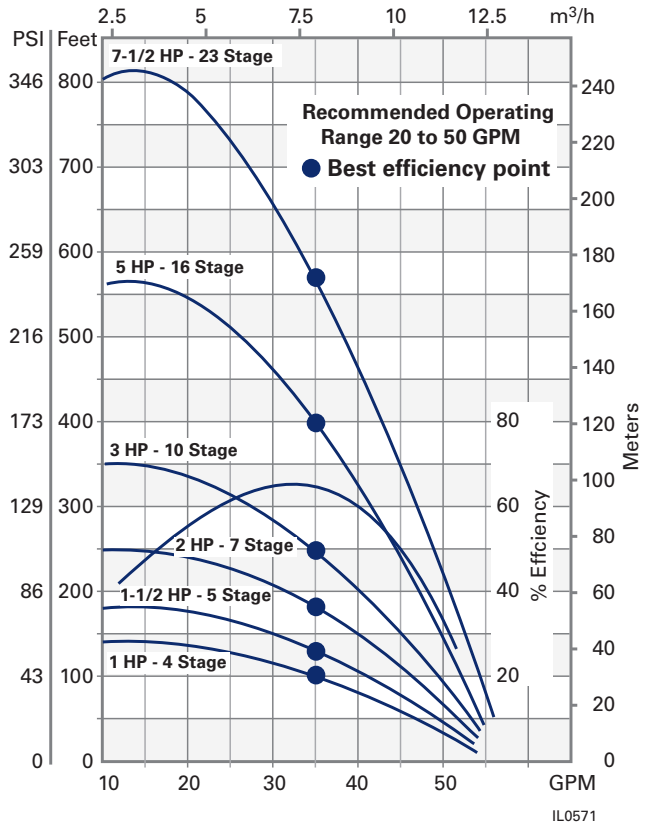
* Pumps marked with asterisks not to be operated at GPM flows indicated by the dotted line.

4" 35 GPM • 1 thru 7-1/2 HP
3450 RPM • 60 Cycle

FLINT & WALLING

HP Size And Model No.	Stages	Phase	WEIGHT		Disch. Press. PSI	DEPTH TO WATER LEVEL IN FEET																						Max. Pressure	
			Pump End	Motor End		20	40	60	80	100	120	140	160	180	200	220	240	260	300	350	400	450	500	550	600	650	700	Ft.	PSI
						CAPACITIES IN GALLONS PER MINUTE																							
1 HP 4F35A10 4F35S10	4	1	11	23	0 20 40 60	42 30	47 37 22	43 32	38 25	33	27																	140	67
1-1/2 HP 4F35A15 4F35S15	5	1 3	12 12	28 25	0 20 40 60	46 38 26	43 33 15	47 39 28	43 35	40 30	36 23	31	25	10														180	78
2 HP 4F35A20 4F35S20	7	1 3	14 14	30 28	0 20 40 60		47 41 34	50 45 38 31	48 42 35 26	45 39 32 19	43 36 28	40 33 22	37 29	34 24	30	26	19											245	106
3 HP* 4F35A30 4F35S30	10	1 3	17 17	52 43	0 20 40 60			48 45 40	47 43 38	49 45 41 36	47 43 39 34	45 41 37 31	44 39 35 28	42 37 32 25	40 35 29 20	38 33 26	36 30 22	33 27 17	28 18	17								355	154
5 HP* 4F35A50 4F35S50	16	1 3	23 23	69 53	0 20 40 60				49 47	50 48 46	49 47 44	48 46 43	49 47 45 42	48 46 44 41	47 45 42 40	46 44 41 38	45 43 40 37	44 41 39 35	42 39 36 32	39 36 32 28	35 32 27 22	31 27 21	26 21	20				560	245
7-1/2 HP* 4F35A75 4F35S75	23	3	31	69	0 20 40 60						49	49 48	50 49 47	49 48 46	49 47 45	50 48 46 44	49 47 45 43	48 46 45 42	47 45 43 41	45 43 41 39	43 41 39 36	40 38 36 34	38 36 34 31	36 33 31 28	33 31 28 25	31 28 24 20	28 24 19	810	350

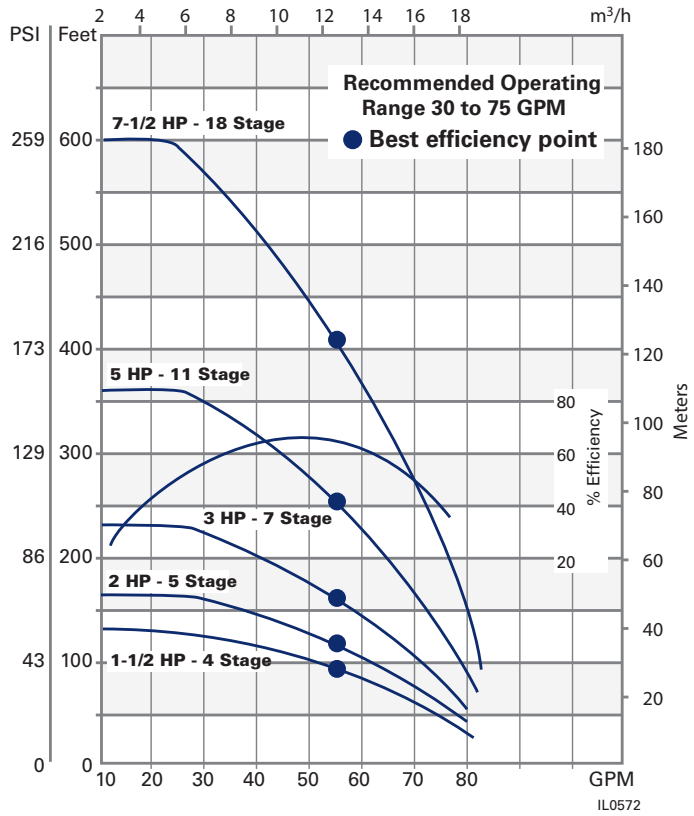
NOTE: Pipe friction loss in drop pipe is not included in chart above.
*For 3 HP and above, refer to motor manufacturer's handbook for proper flow rates to cool motor.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.



4" 55 GPM • 1-1/2 thru 7-1/2 HP 3450 RPM • 60 Cycle

HP Size and Model No.	Stages	Phase	Weight		Discharge Pressure PSI	DEPTH TO WATER LEVEL IN FEET																		Maximum Pressure	
			Pump End	Motor End		20	40	60	80	100	120	140	160	180	200	220	240	260	300	350	400	450	500	550	Ft.	PSI
						CAPACITIES IN GALLONS PER MINUTE																			
1-1/2 HP 4F55A15 4F55S15	4	1 3	12 12	28 25	0 20 40 60	70 42	60 23	71 47	62 33	50	36													135	58
2 HP 4F55A20 4F55S20	5	1 3	14 14	30 28	0 20 40 60	74 56 30	68 45	75 59 34	69 50	61 38	51 15	42	29											165	71
3 HP* 4F55A30 4F55S30	7	1 3	16 16	52 43	0 20 40 60		75 63 48	70 57 40	75 65 50 32	71 59 43	66 53 34	61 46 15	55 38	47 28	39	31								235	101
5 HP* 4F55A50 4F55S50	11	1 3	19 19	69 53	0 20 40 60			72 65	69 62	73 66 58	70 63 53	74 67 59 49	71 64 55 44	68 60 50 39	64 56 45 33	61 52 40 25	57 47 35	53 42 30	44 31	30				365	158
7-1/2 HP* 4F55A75 4F55S75	18	3	28	69	0 20 40 60					72	75 71	73 70	75 72 68	74 70 66	72 68 63	74 71 66 61	73 69 64 59	71 67 62 57	66 62 57 51	62 56 50 43	56 50 42 35	49 42 35 25	41 34 24	33 20	600	259

NOTE: Pipe friction loss in drop pipe is not included in chart above.
*For 3 HP and above, refer to motor manufacturer's handbook for proper flow rates to cool motor.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.

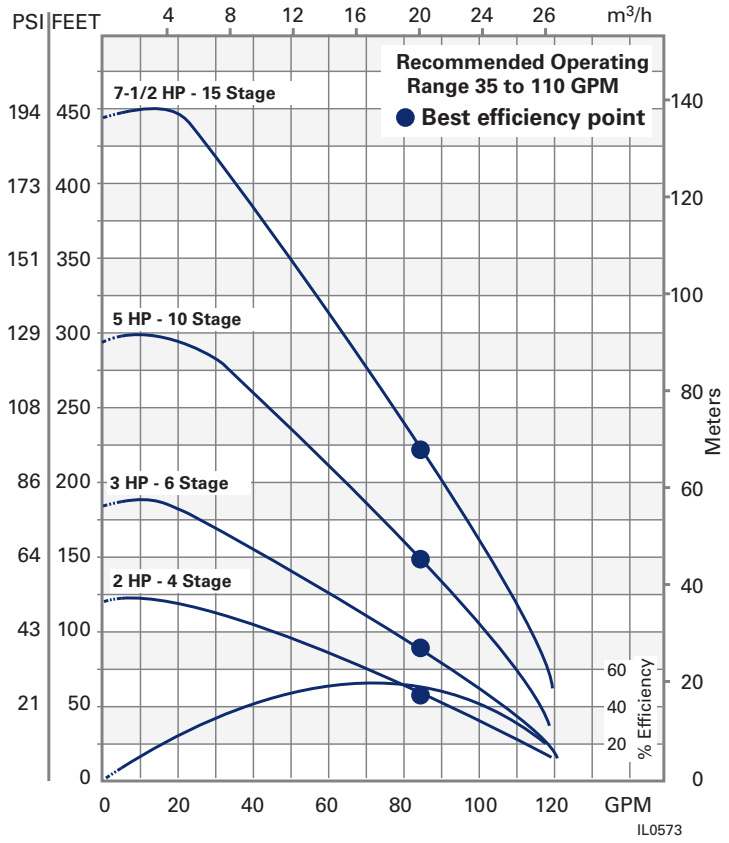


4" 85 GPM • 2 thru 7-1/2 HP
3450 RPM • 60 Cycle

FLINT & WALLING

HP Size and Model No.	Stages	Phase	Weight		Discharge Pressure PSI	DEPTH TO WATER LEVEL IN FEET																				Max. Pressure	
			Pump End	Motor End		20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	Ft.	PSI
						CAPACITIES IN GALLONS PER MINUTE																					
2 HP 4F85A20 4F85S20	4	1 3	13 13	30 28	0 20 40 60	80 35	105 60	85 40	64	45																120	52
3 HP* 4F85A30 4F85S30	6	1 3	15 15	52 43	0 20 40 60	101 70 40	88 56 25	103 75 43	91 61 30	77 48	63 34	51	38													185	80
5 HP* 4F85A50 4F85S50	10	1 3	20 20	69 53	0 20 40 60	100 81	108 91 73	102 83 65	110 94 75 57	103 86 67 49	95 78 59 41	87 70 51 33	79 62 43 20	71 54 36	63 46 25	55 38	48 30	40	32							300	130
7-1/2 HP* 4F85A75 4F85S75	15	3	27	69	0 20 40 60	103	109 97	104 92	110 99 87	106 94 81	101 88 76	106 95 83 70	102 90 77 65	97 85 72 59	91 79 66 54	85 74 61 49	80 68 56 43	74 63 50 38	69 57 45 32	64 52 40 25	59 47 34	53 41 27	48 36	43 30	38	450	195

NOTE: Pipe friction loss in drop pipe is not included in chart above.
*For 3 HP and above, refer to motor manufacturer's handbook for proper flow rates to cool motor.
1/2 thru 2 HP, 1 PH pumps feature Flint & Walling motors.



PATRIOT®
4" SUBMERSIBLE

FW1676
0824
Supersedes
1020

1/2, 3/4 and 1 HP

Proven hydraulics and precision engineering make the PATRIOT® an excellent choice for years of dependable service at an affordable price.

Features:

- Made in the USA with a majority of USA content.
- Tested to resist up to 3,500 lbs of pull force
- Glass-filled Noryl® discharge & mounting ring reinforce structural integrity
- Upgraded full staging for improved performance
- Floating impeller stack easily passes debris and prevents damage
- Integrated spider bearing for tighter pump shaft security
- Paired with Flint & Walling's 4" submersible motor

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

P Series Submersibles

2 wire and 3 wire

115 volt and 230 volt

5, 7, 11, 19 and 27 GPM

US

Proven Discharge & Mounting Ring

Glass-filled Noryl® material reinforces structural integrity, just like the previous Patriot®.

Foundation you can Trust

Flint & Walling motors are tested to the core – by people who speak your language.

Sealed Pump Shell

Capable of withstanding 3,500 lbs of pull force, this pump is meant to last.

Upgraded Full Staging

With highly optimized inner-components, expect improved pump performance from the Patriot®.

CONTROL BOX FOR 3-WIRE MODELS

Quick-disconnect control box features replaceable snapout cover that keeps all components above ground for easy access and repair.

Order control box separately.

Control box not required for 2-wire models.

FLINT & WALLING

Performance Charts
5 to 27 GPM • 1/2 to 1 HP

5 to 27 GPM • 1/2 to 1 HP

HP Size, GPM and Model No.	Stages	Motor Type	Ship Wt.	Disch. Press. PSI	DEPTH TO WATER LEVEL IN FEET — CAPACITIES IN GALLONS PER MINUTE																Maximum Pressure	
					20	40	60	80	100	120	140	160	180	200	225	250	275	300	350	400	450	Ft.	PSI
1/2 HP 5 GPM 4F05P05	15	1 PH 3 Wire	25	0					8.2	7.8	7.5	7.1	6.7	6.3	5.7	5.2	4.5	3.9	2.2				
				20			8.1	7.7	7.3	7.0	6.6	6.1	5.7	5.3	4.6	4.0	3.2	2.4					
				40	8.0	7.6	7.2	6.8	6.4	6.0	5.6	5.1	4.6	4.1	3.3	2.5	1.6					390	168
		1 PH 2 Wire	25	60	7.1	6.7	6.3	5.9	5.4	5.0	4.4	3.9	3.3	2.6	1.7								
				80	6.2	5.7	5.3	4.8	4.3	3.7	3.1	2.4	1.7										
1/2 HP 7 GPM 4F07P05	10	1 PH 3 Wire	22	0			13.4	12.6	11.8	11.0	10.2	9.3	8.5	7.6	6.4	5.0	3.3						
				20	13.2	12.3	11.5	10.7	9.9	9.1	8.2	7.3	6.3	5.2	3.5								
				40	11.3	10.5	9.6	8.8	8.0	7.0	6.0	4.8	3.4									310	134
		1 PH 2 Wire	22	60	9.4	8.6	7.7	6.7	5.7	4.4	3.0												
				80	7.4	6.4	5.3	4.0	2.5														
3/4 HP 7 GPM 4F07P07	14	1 PH 3 Wire	27	0				13.1	12.5	12.0	11.4	10.9	10.3	9.8	9.1	8.3	7.6	6.7	4.7	2.1			
				20	13.5	12.9	12.4	11.8	11.2	10.7	10.2	9.6	9.0	8.5	7.7	6.9	5.9	4.9	2.3				
				40	12.2	11.6	11.1	10.5	10.0	9.4	8.9	8.3	7.7	7.0	6.1	5.1	3.9	2.5				430	186
		1 PH 2 Wire	27	60	10.9	10.4	9.8	9.3	8.7	8.1	7.5	6.8	6.0	5.2	4.1	2.8							
				80	9.6	9.1	8.5	7.9	7.2	6.6	5.8	5.0	4.0	3.0									
1/2 HP 11 GPM 4F11P05	8	1 PH 3 Wire	22	0			14.9	13.9	13.0	12.1	11.2	10.3	9.1	7.6	4.6								
				20	14.6	13.6	12.7	11.8	11.0	10.0	8.7	7.0	4.4										
				40	12.4	11.6	10.7	9.6	8.2	6.3	3.5											277	120
		1 PH 2 Wire	22	60	10.4	9.2	7.7	5.5	2.4														
				80	7.1	4.7																	
3/4 HP 11 GPM 4F11P07	12	1 PH 3 Wire	26	0				15.2	14.5	13.9	13.2	12.6	11.9	11.3	10.4	9.4	8.3	7.0	3.5				
				20		15.0	14.3	13.7	13.0	12.4	11.7	11.1	10.4	9.6	8.5	7.2	5.7	3.8					
				40	14.1	13.5	12.8	12.2	11.5	10.9	10.1	9.3	8.5	7.5	6.0	4.1						401	173
		1 PH 2 Wire	26	60	12.6	12.0	11.3	10.6	9.9	9.1	8.2	7.1	5.9	4.4	2.2								
				80	11.1	10.4	9.7	8.8	7.9	6.8	5.5	3.9											
1 HP 11 GPM 4F11P10	15	1 PH 3 Wire	30	0							14.3	13.7	13.2	12.6	12.0	11.3	10.6	9.8	8.0	5.6			
				20					14.6	14.1	13.0	12.5	11.9	11.4	10.7	9.9	9.1	8.2	5.8	2.4			
				40		14.5	13.9	13.4	12.8	12.3	11.7	11.2	10.6	10.0	9.2	8.3	7.3	6.0	2.7			504	218
		1 PH 2 Wire	30	60	13.8	13.2	12.7	12.1	11.6	11.0	10.4	9.8	9.2	8.5	7.5	6.2	4.8	3.0					
				80	12.5	12.0	11.4	10.8	10.3	9.6	9.0	8.2	7.4	6.4	5.0	3.3							
3/4 HP 19 GPM 4F19P07	7	1 PH 3 Wire	26	0			23.4	21.9	20.3	18.8	17.0	14.7	11.6	6.9									
				20	23.0	21.4	19.9	18.3	16.4	13.9	10.3	5.1											
				40	19.4	17.7	15.7	12.9	8.9													215	93
		1 PH 2 Wire	26	60	14.9	11.8	7.3																
				80	5.5																		
1 HP 19 GPM 4F19P10	9	1 PH 3 Wire	27	0					23.7	22.3	20.9	19.7	18.5	17.3	15.9	13.4	9.5						
				20		23.3	21.8	20.5	19.3	18.2	16.9	15.3	13.2	10.2	4.5								
				40	21.4	20.1	19.0	17.8	16.5	14.8	12.4	9.0	4.2									283	122
		1 PH 2 Wire	27	60	18.6	17.4	16.0	14.1	11.5	7.7													
				80	15.5	13.4	10.4	6.2															
1 HP 27 GPM 4F27P10	7	1 PH 3 Wire	27	0			31.6	28.9	26.7	25.0	23.6	21.8	18.7	12.8									
				20	30.8	28.2	26.1	24.5	23.1	21.0	17.2	10.2											
				40	25.6	24.1	22.6	20.1	15.5	7.1												215	93
		1 PH 2 Wire	27	60	22.0	19.0	13.4																

NOTE: Pipe friction loss in drop pipe is not included in chart above.

Pump and motor assembly includes: Pump/motor unit and motor leads. Sta-Kon connectors and rubber electrical tape not included.

MODEL CODE NUMBER

4 F 11 P 05 - 30 1 S

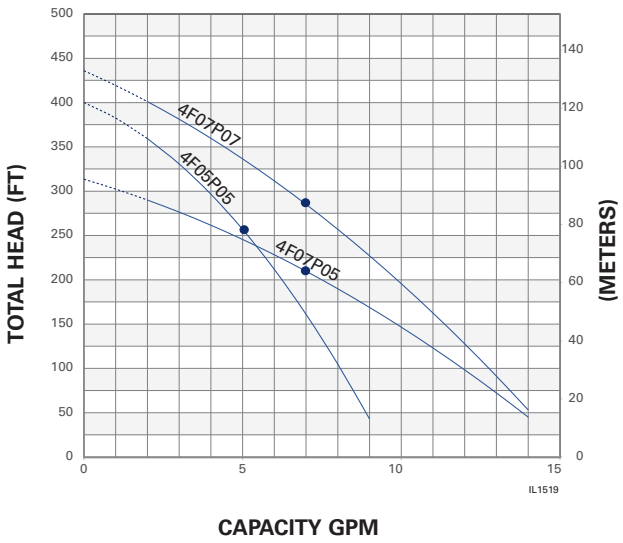
- 4 — 4" Min. Well Diameter
- F — Series
- 11 — GPM
- P — Material Construction
  - A—Cast Iron Castings, Stainless steel Shell
  - S—Stainless Steel Castings, Stainless steel. Shell
  - P—Thermoplastic Housings, Stainless steel. Shell
- 05 — Motor HP Size
- 30 — Motor Voltage and Phase
  - 00 — 115 V 1 Ph
  - 30 — 230 V 1 Ph
- 1 — Lead Type
  - 1 — 3-wire
  - 5 — 2-wire
- S

Composite Performance Curves
5 to 27 GPM • 1/2 to 1 HP

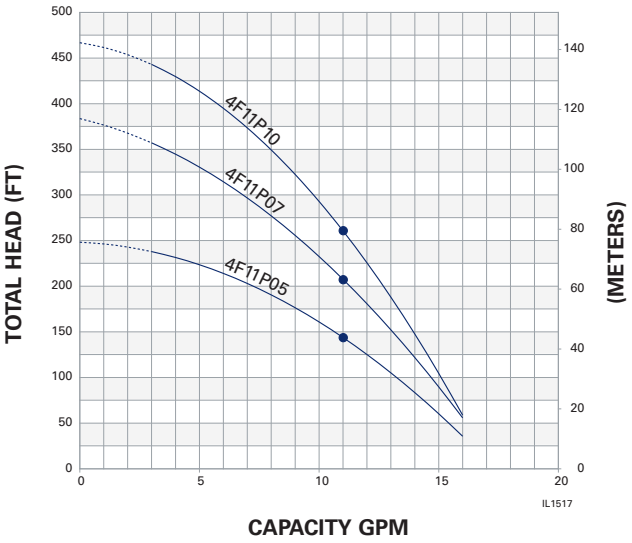
FLINT & WALLING

5 to 27 GPM • 1/2 to 1 HP

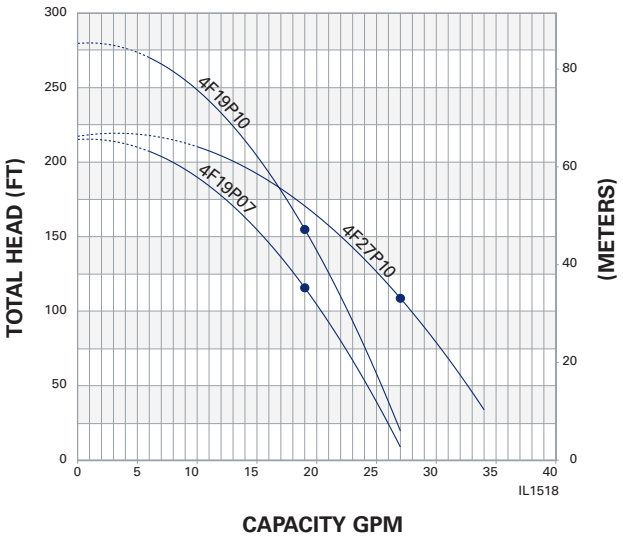
5 & 7 GPM



11 GPM



19 and 27 GPM



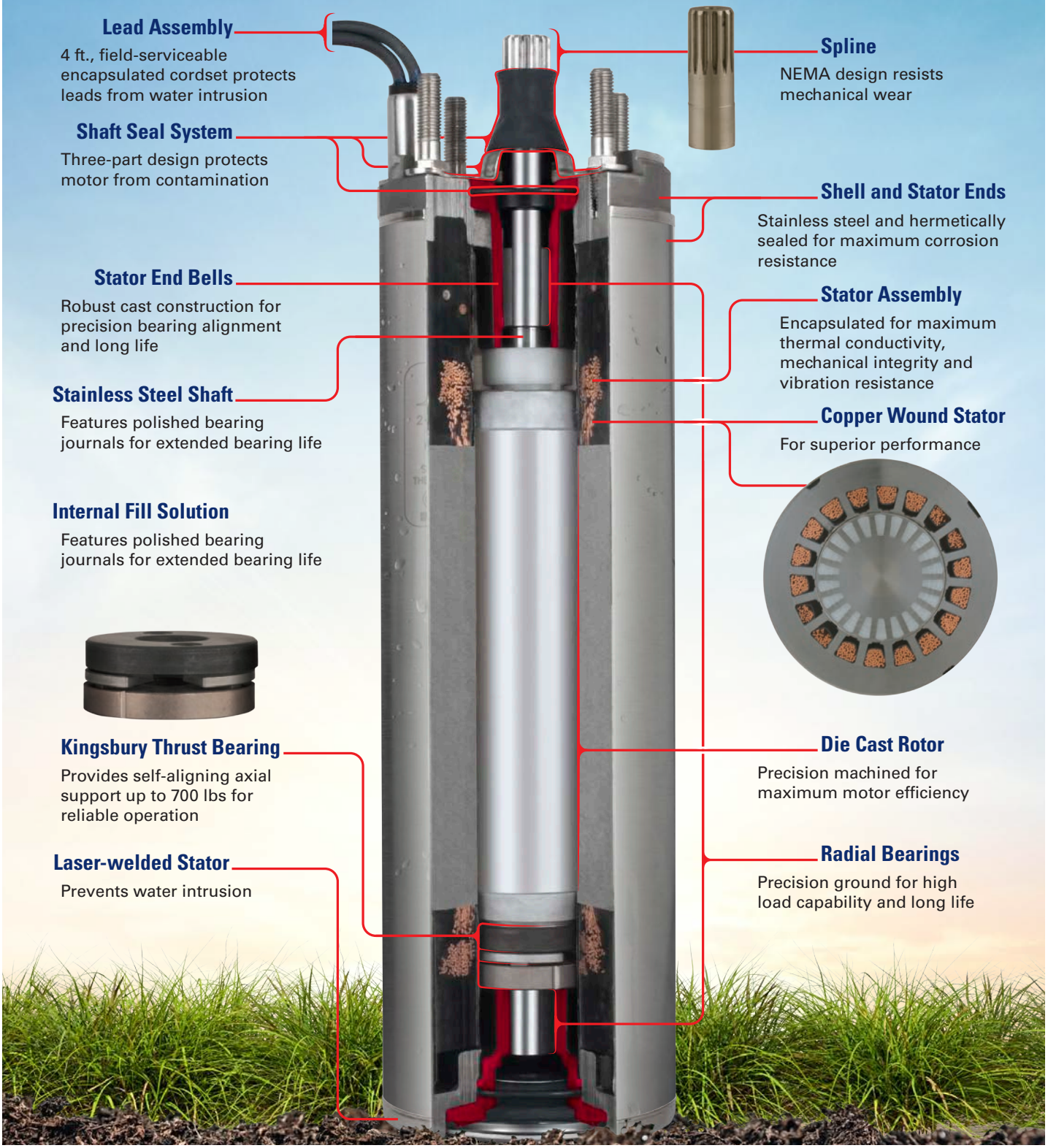
Model	HP	Wire	A - Pump length (in)	B - Motor length (in)
4F05P05	0.5	2 & 3	20.13	10.50
4F07P05	0.5	2 & 3	16.19	10.50
4F07P07	0.75	2 & 3	19.37	11.63
4F11P05	0.5	2 & 3	15.38	10.50
4F11P07	0.75	2 & 3	18.94	11.63
4F11P10	1	2 & 3	21.56	12.50
4F19P07	0.75	2 & 3	15.12	11.63
4F19P10	1	2 & 3	17.06	12.50
4F27P10	1	2 & 3	15.37	12.50

All dimensions are rounded to the nearest 100th of an inch.

FLINT & WALLING

F&W
4" Submersible Motors

STAINLESS STEEL MOTORS



Lead Assembly
4 ft., field-serviceable encapsulated cordset protects leads from water intrusion

Shaft Seal System
Three-part design protects motor from contamination

Stator End Bells
Robust cast construction for precision bearing alignment and long life

Stainless Steel Shaft
Features polished bearing journals for extended bearing life

Internal Fill Solution
Features polished bearing journals for extended bearing life

Kingsbury Thrust Bearing
Provides self-aligning axial support up to 700 lbs for reliable operation

Laser-welded Stator
Prevents water intrusion

Spline
NEMA design resists mechanical wear

Shell and Stator Ends
Stainless steel and hermetically sealed for maximum corrosion resistance

Stator Assembly
Encapsulated for maximum thermal conductivity, mechanical integrity and vibration resistance

Copper Wound Stator
For superior performance

Die Cast Rotor
Precision machined for maximum motor efficiency

Radial Bearings
Precision ground for high load capability and long life

Motor and Control Box Chart

HP	Voltage & Phase	Motor Type	F&W Motor Thrust Rating	F&W Motor Order No.	F&W Control Box Order No.
1/2	115V / 1PH	3-Wire	700#	137426	022875
	230V / 1PH	3-Wire	700#	137428	022876
	115V / 1PH	2-Wire	700#	137412	--
	230V / 1PH	2-Wire	700#	137414	--
	230V / 3PH	3-Wire	700#	137585	--
	460V / 3PH	3-Wire	700#	137591	--
3/4	230V / 1PH	3-Wire	700#	137430	022877
	230V / 1PH	2-Wire	700#	137416	--
	230V / 3PH	3-Wire	700#	137586	--
	460V / 3PH	3-Wire	700#	137592	--
1	230V / 1PH	3-Wire	700#	137432	022878
	230V / 1PH	2-Wire	700#	137418	--
	230V / 3PH	3-Wire	700#	137587	--
	460V / 3PH	3-Wire	700#	137593	--
1 1/2	230V / 1PH	3-Wire	700#	137434	022879
	230V / 1PH	2-Wire	700#	137420	--
	200V / 3PH	3-Wire	N/A	N/A	--
	230V / 3PH	3-Wire	700#	137588	--
	460V / 3PH	3-Wire	700#	137594	--
2	230V / 1PH	3-Wire	700#	137435	025242
	200V / 3PH	3-Wire	N/A	N/A	--
	230V / 3PH	3-Wire	700#	137589	--
	460V / 3PH	3-Wire	700#	137595	--
3	230V / 1PH	3-Wire	N/A	N/A	025243
	200V / 3PH	3-Wire	N/A	N/A	--
	230V / 3PH	3-Wire	900#	137590	--
	460V / 3PH	3-Wire	900#	137596	--

N/A: Not available

WELL PUMP CONTROL BOXES & VFDs

FW2312
1024
Supersedes
NEW

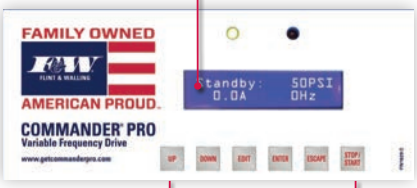
VFD Drives: 1/2 through 3 HP

Control Boxes: 1/2 through 5 HP

FLINT & WALLING

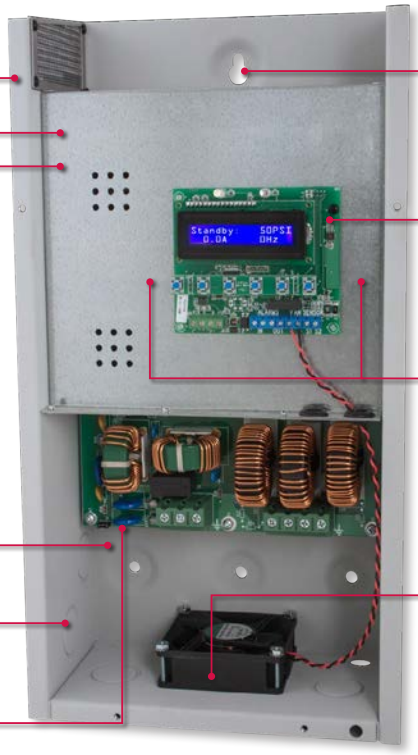
Commander® Pro Variable Frequency Drives

FEATURES



Status indication in easy-to-understand text (not codes)

Easy to use programming buttons



Shrouded venting for superior cooling

Metal shielding, in conjunction with filtering, facilitates meeting FCC Part 15 Class A requirement

Spacious wiring area for easy installation

Bottom and side knockouts support 3/4" and 1" conduit

Additional holes for easy mounting on studs, poles, etc. with easy-access hardware

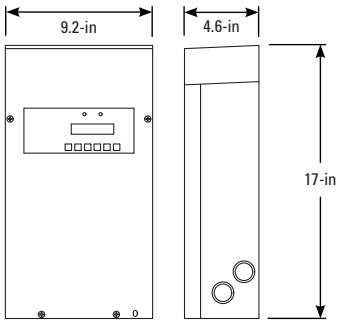
Key hole mount for fast, easy installation

Stored memory for effective troubleshooting analysis

Heat baffle design efficiently directs air flow to maximize cooling for longer electronic component life.

Temperature sensitive intelligent fan operates as necessary for quieter operation, energy conservation and reduced maintenance costs.

	TVS15	TVS20	TVS30
Horsepower	1/2 to 1-1/2 HP Three Phase	1/2 to 2 HP Three Phase	1/2 to 3 HP Three Phase
Input Voltage	200 – 250 V Single Phase		
Input Frequency	60/50 Hz		
Input Amps (RMS)	11 Amps	19 Amps	23 Amps
Input Power (Idle)	35 Watts	65 Watts	65 Watts
Output Phase	3-wire Single Phase: 1/2 to 1-1/2 HP	3-wire Single Phase: 1/2 to 2 HP	
	1/2 to 1-1/2 HP Three Phase	1/2 to 2 HP Three Phase	1/2 to 3 HP Three Phase
Output Frequency	Variable (30 – 80 Hz) Three Phase, (30 - 60 Hz) 3 Wire Single Phase		
Pressure Setting	25 – 80 PSI (preset to 50 PSI) all units		
Ambient Temp. Range	-20° C (-4° F) to 50° C (122° F)		



Commander® Variable Frequency Drives

FEATURES

Premium Enclosure

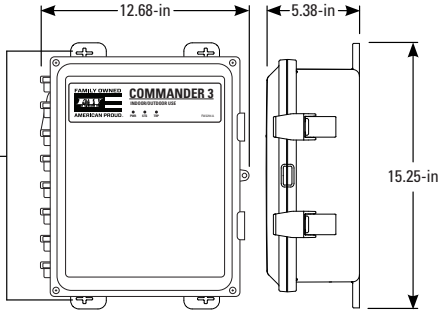
- Composite enclosure for quiet operation
- Hinged cover for easy access
- Side mounted ventilation
- Full size cooling fan for maximum air flow and temperature control
- NEMA 3R enclosure with premium heatsink

Easy to use components

- Drive status indicator lights
- Settings adjustment DIP switches with large easy to read diagram
- Convenient dial for precise underload sensitivity and pressure adjustment
- Compatible with both pressure transducer and switch
- Quality terminal blocks with spacious wiring area
- Models ending in “T” include a 0-100 PSI transducer with a 16.4ft cable

	COMMANDER 2	COMMANDER 3
MODEL #	CMDR2-T CMDR2-S Models ending with a “T” include a Transducer. Models ending with a “S” include a Switch.	CMDR3-T CMDR3-S
HORSEPOWER	1/2 to 1-1/2 HP	1/2 to 2 HP
MOTOR TYPE	2-wire 4” submersible motors PSC Above ground motors*	Two or Three Phase 3-wire 4” submersible motors Three Phase Above ground motors
OUTPUT PHASE	Single phase	Single / Three phase
MAX OUTPUT CURRENT	13.1	13.2 Single phase / 8.1 Three phase
INPUT VOLTAGE	230 +/- 10% VAC	
PRESSURE SETTING	25-80 PSI using pressure sensor 10-90% of range using 0-100 PSI transducer	
AMBIENT TEMPERATURE	-20° C (-4° F) to 50° C (122° F)	

* PSC: Permanent Split Capacitor



Mounting bracket pattern
Width - 7.63-in
Height - 14.03-in

FLINT & WALLING

Control Boxes

FEATURES

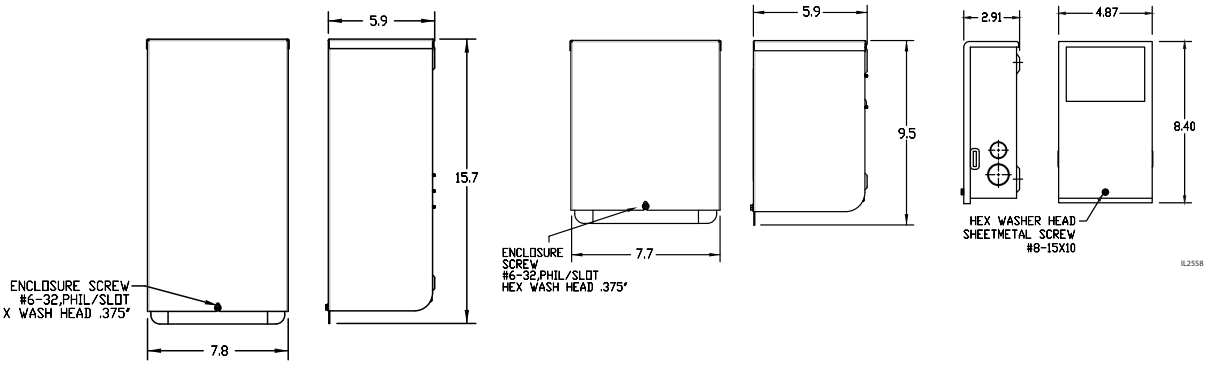
Model	HP	Volt	Amp	KW	Phase	Weight		Size in Inches
						Lbs.	KG	
022875	1/2	115	12	0.37	1	3	1.4	9 x 3.5 x 5.5
022876	1/2	230	6	0.37	1	3	1.4	9 x 3.5 x 5.5
022877	3/4	230	8	0.55	1	3	1.4	9 x 3.5 x 5.5
022878	1	230	10.4	0.75	1	3	1.4	9 x 3.5 x 5.5
022879	1-1/2	230	8.0/11.5	1.10	1	6.8	3.1	9.5 x 5.9 x 7.7
025242	2	230	13.2	1.50	1	7.1	3.2	9.5 x 5.9 x 7.7
025243	3	230	17	2.20	1	7.1	3.2	9.5 x 5.9 x 7.7
025244	5	230	27.5	3.70	1	10	4.5	15.7 x 5.9 x 7.8

All models

- Universal voltage/potential relay
- Designed for indoor/outdoor installations NEMA 3R
- Heavy-duty terminal block for secure connections
- Side and bottom knockouts for easy wire installation
- Interchangeable with industry control boxes

Deluxe 2, 3, & 5 HP Drive Features
025242, 025243, 025244

- **NEMA 3R Powder Coated Enclosure**
  Rated for indoor / outdoor applications
- **Wall or Center Mount**
  3-screw mounting pattern for wall or post mount applications
- **2-Pole Contactor in the 2HP and 3HP**
  3-Pole Contactor in the 5HP
  CSA / CE listed with quick-connect coil terminals
- **Premium Terminal Black**
  The terminal black is well labeled and accepts #6 cable. Additional "hand space" provided for ease of wiring
- **2 Pump Protection Overloads**
  Saves wear on the pump
- **Run & Start Capacitors**
  Heavy duty & Made in the USA
- **Multiple Size Knockouts**
- **Overload Reset Buttons**
- **Relay**
  Located front & center for easy access & removal. Reliable voltage relay. Made in the USA
- **Mechanical Ground**
  Deluxe copper mechanical ground



PUMP AND MOTOR PROTECTION

FW1680
0820
Supersedes
0518

SINGLE-PHASE PROTECTION SYSTEM

PumpSaver Plus 1/3 - 1-1/2 HP, 3 HP

- For single-phase motors 1/3 - 1-1/2 HP, 3 HP, 230V, 2 or 3-wire
- Protects against low-yield wells, drop in water level, low voltage and dead head
- Manual or auto reset (2 min. - 225 min.)
- Run and fault Indicator lights

PumpSaver Plus 5 - 7.5 HP

- For single-phase motors 5 - 7-1/2 HP, 230V, 2 or 3-wire
- Protects against low-yield wells, drop in water level and low voltage, rapid cycling, water logged tank, jammed impeller and dead head
- Manual or auto reset (2 min. - 225 min.)
- Run and Fault Indicator lights

PumpSaver Insider

- For 3-wire single-phase submersible motors 1/3 - 1 HP 230V
- Protects against low-yield wells, drop in water level, low voltage and dead head
- Auto or manual reset
- Surge resistant
- Moisture and insect resistant
- Solid state electronic circuitry
- Mounts in existing Flint & Walling control box

Control Type	HP	Volts	P/N	Wt.
PumpSaver Insider	1/3 - 1	230	023803	1.0
PumpSaver Plus	1/3 - 1-1/2	230	023804	3.5
	1/3 - 3	230	023805	3.5
	5 - 7-1/2	230	023806	4.0

FLINT & WALLING

COMMANDER® PRO VARIABLE FREQUENCY DRIVES

FW1677
1024
Supersedes
0624

DESIGNED FOR THE PROFESSIONAL PUMP INSTALLER

- Easy to read diagnostic display
- Increases flow as demand increases
- Available with pressure switch or pressure transducer
- Adjustable constant pressure
- Automatic pump and motor protection
- Superior cooling and dust protection
- Meets Part 15 Class A FCC electronic interference standards
- Programming lockout for secure operation
- Tamper proof cover
- Automatic fan designed to maximize cooling
- NEMA 3R for indoor/outdoor use

VS and TVS Series
Variable Frequency Drives and Systems

Intertek

FCC Part 15 Class A

1.5, 2 and 3 HP Constant Pressure Systems for Home, Irrigation & Deep Well Applications

The Commander Pro VS and TVS series of pre-packaged constant pressure water systems are designed specifically for demanding applications. These models are engineered to provide a constant pressure water supply from as deep as 950' or at flows from 2 to 325 GPM.

These systems feature Flint & Walling 4" submersible pump end, pressure transducer or pressure switch, single phase input and NEMA 3R enclosures

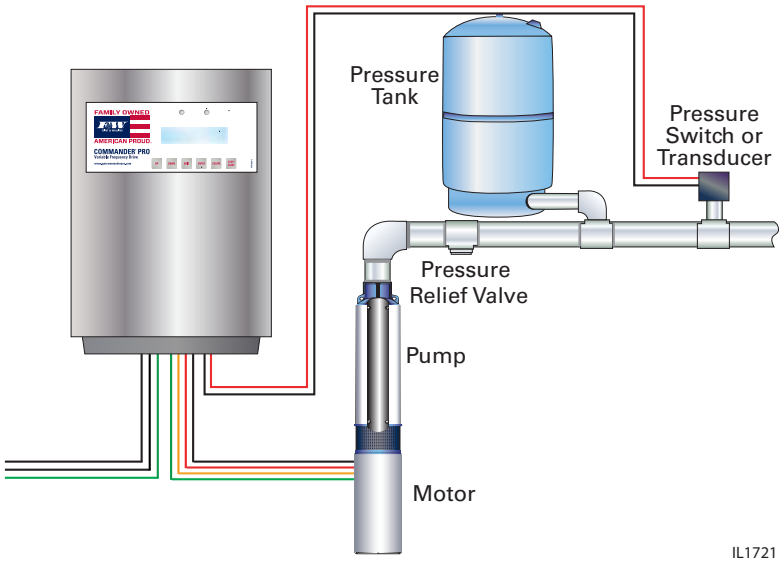
Applications include:

Residential Water Systems
- City-like water pressure
- Smaller tank saves space

Geothermal Systems
- No need for large buried tanks
- Eliminates pressure cycling

Lawn Irrigation Systems
- Even distribution of water in zones
- Eliminates need for separate system

Water Treatment Systems
- More efficient back flushing
- No need for multiple pumps



Wire Sizing

The maximum allowable wire lengths for connection of controller to the main circuit box are given in the following table.

Maximum Wire Lengths Connecting the Controller to The Main Circuit Box (Based On 3% Voltage Drop At 230V)

Motor HP	Copper Wire Size (AWG)	14	12	10	8	6	4	3	2	Circuit Breaker
1.5/2	Max. Length. (Ft.)		85*	140*	220	345	550	680	895	20 Amp
3				115*	180	285	455	560	740	25 Amp

* Wire with 90°C Insulation only

Commander® Pro
Variable Frequency Drive Systems

FLINT & WALLING

GENERAL SPECIFICATIONS

Commander Pro Series	Commander Pro 15 Series	Commander Pro 20 Series	Commander Pro 30 Series
Model Number	TVS15	TVS20	TVS30
Horsepower	Up to 1.5 HP Three Phase	Up to 2 HP Three Phase	Up to 3 HP Three Phase
Input Voltage	200 – 250 V Single Phase		
Input Frequency	60/50 Hz		
Input Amps (RMS)	11 Amps	19 Amps	23 Amps
Input Power (Idle)	35 Watts	65 Watts	65 Watts
Output Phase	3-wire Single Phase: up to 1-1/2 HP	3-wire Single Phase: up to 2 HP	
	Up to 1.5 HP Three Phase	Up to 2 HP Three Phase	Up to 3 HP Three Phase
Output Frequency	Variable (30 – 80 Hz) Three Phase, (30 - 60 Hz) 3 Wire Single Phase		
Pressure	25 – 80 PSI (preset to 50 PSI) all units		
Ambient Temp. Range	-20° C (-4° F) to 50° C (122° F)		

City-like water pressure for rural water systems in one complete package

Systems include:

Commander Pro Variable Frequency Drive with advanced electronics. NEMA 3R enclosure.

Factory specified pump end for optimal performance and efficiency.

The only 4-inch submersible motor made in the USA.

Flint & Walling builds our own premium 4" 1/2-2 HP, 60HZ submersible motors using a majority of U.S. content, in Kendallville USA.

Pressure switch[1]

[1]024545 - Pressure switch kit w/lead

[1]023049 - Pressure switch only

or

Pressure transducer[2]

[2]024586 - Pressure transducer kit (0-100PSI), factory installed

[2]024577 - Pressure transducer only (0 - 100 PSI)

[2]024587 - Pressure transducer kit (0-300 PSI)

[2]024585 - Pressure transducer only (0-300 PSI)

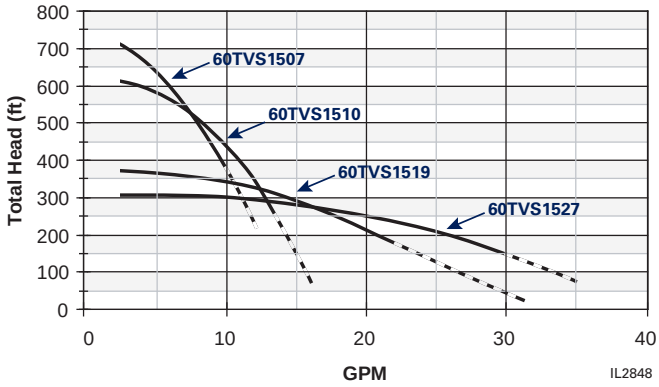
Commander® Pro 60HZ 1.5 HP

DIMENSIONS

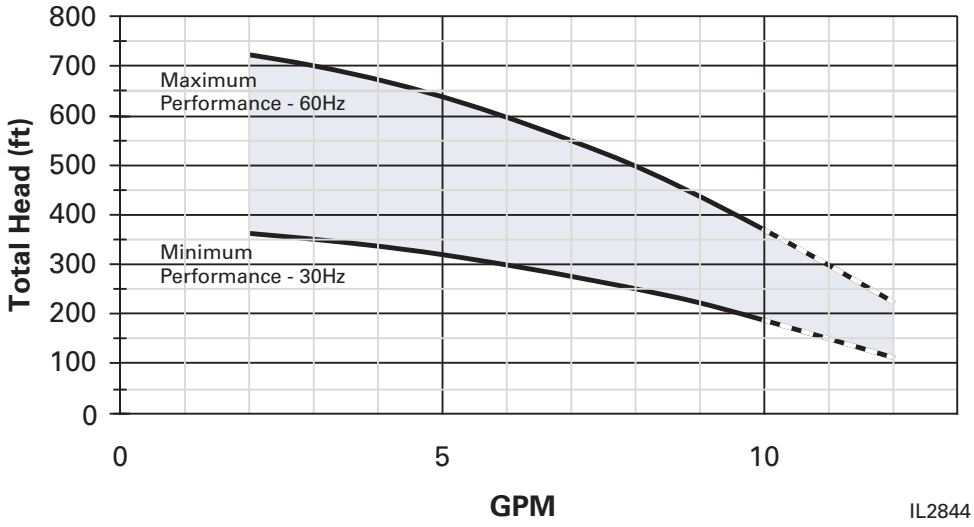
Model	Disch.	Pump Dia.	Pump Length	Motor Dia.	Motor Length	Total Length
60TVS1507	1.25	3.76	27.2	3.75	12.1	39.3
60TVS1510	1.25	3.76	25.9	3.75	12.1	38
60TVS1519	1.25	3.76	19.8	3.75	12.1	31.9
60TVS1527	1.25	3.76	18.3	3.75	12.1	30.4

Models include cable guard and pressure transducer.
NEMA 3R.

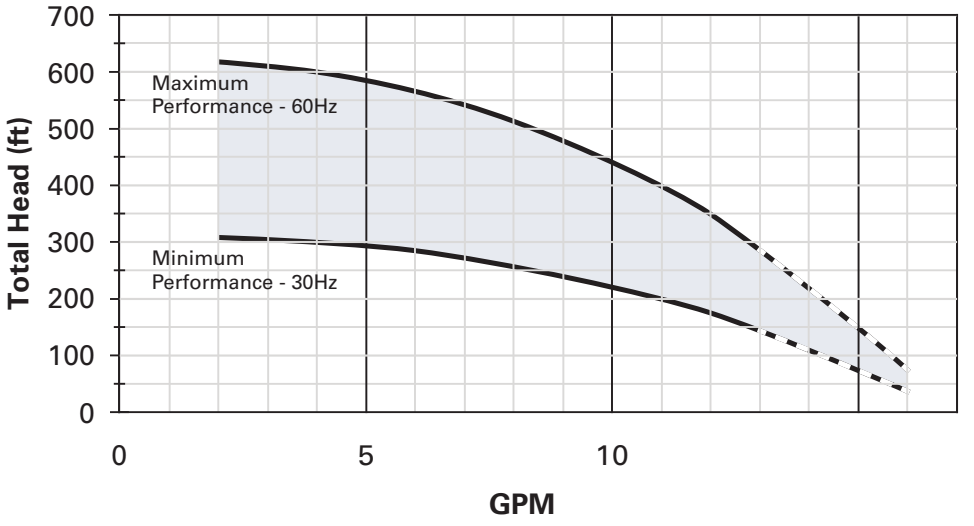
COMMANDER® PRO 60TVS15 60 HZ



Model 60TVS1507

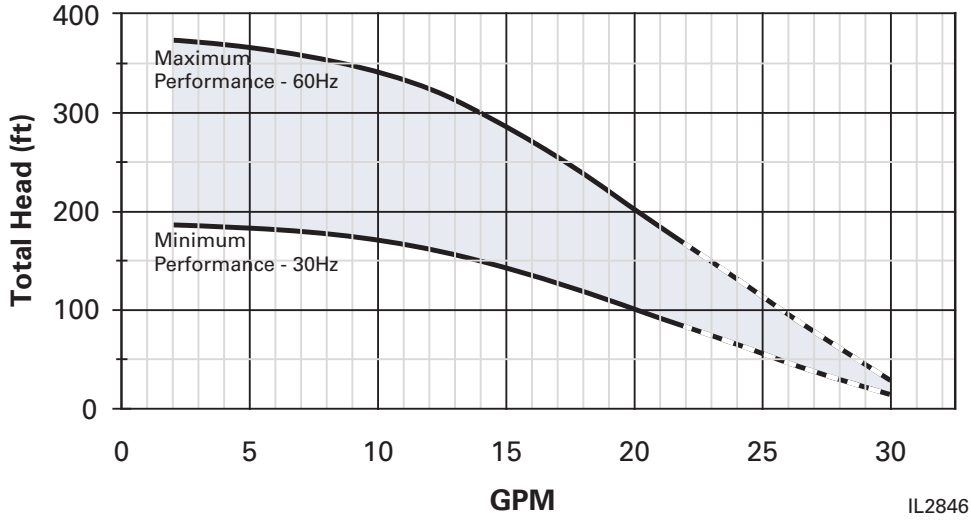


Model 60TVS1510

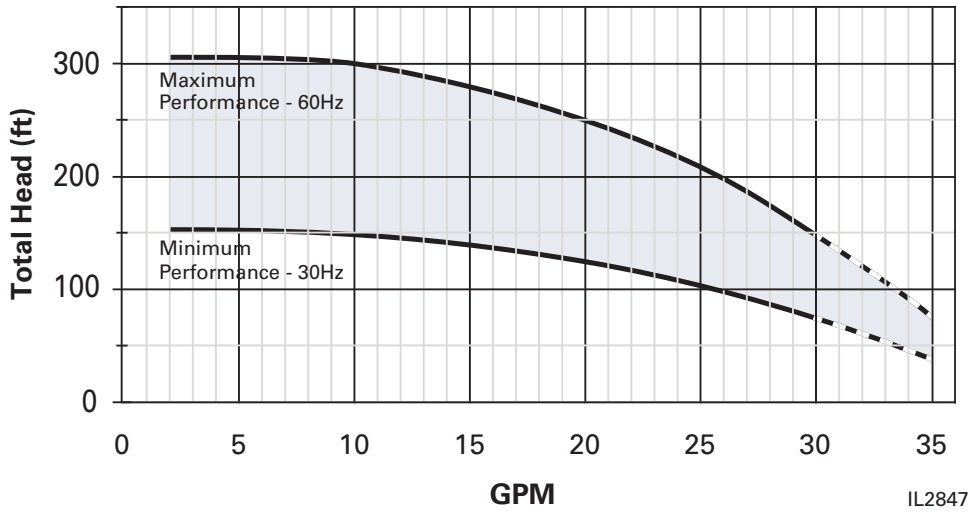


Commander® Pro 60HZ 1.5 HP

Model 60TVS1519



Model 60TVS1527



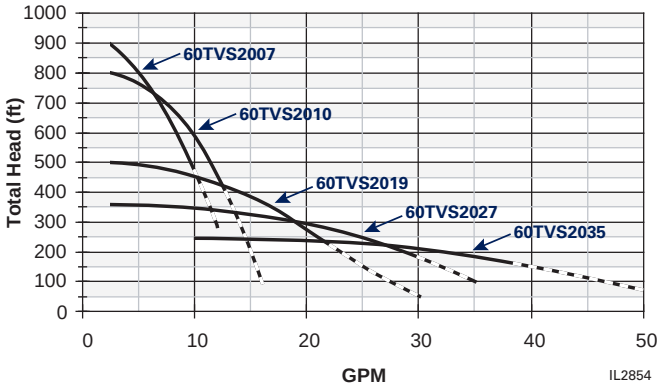
Commander® Pro 60HZ 2 HP

DIMENSIONS

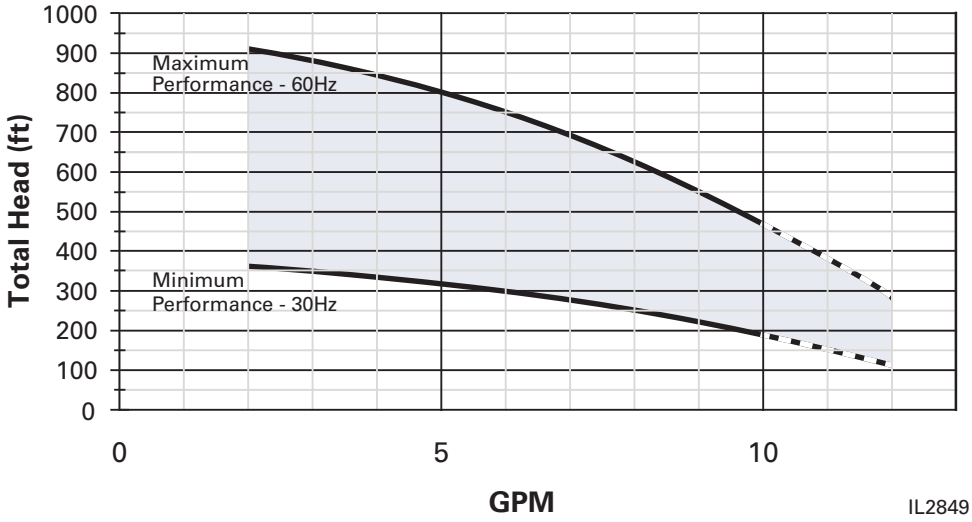
Model	Disch.	Pump Dia.	Pump Length	Motor Dia.	Motor Length	Total Length
60TVS2007	1.25	3.76	32	3.75	14.06	46.06
60TVS2010	1.25	3.76	31.3	3.75	14.06	45.36
60TVS2019	1.25	3.76	23.8	3.75	14.06	37.86
60TVS2027	1.25	3.76	20.3	3.75	14.06	34.36
60TVS2035	2	3.76	18.2	3.75	14.06	32.26

Models include cable guard and pressure transducer.
NEMA 3R.

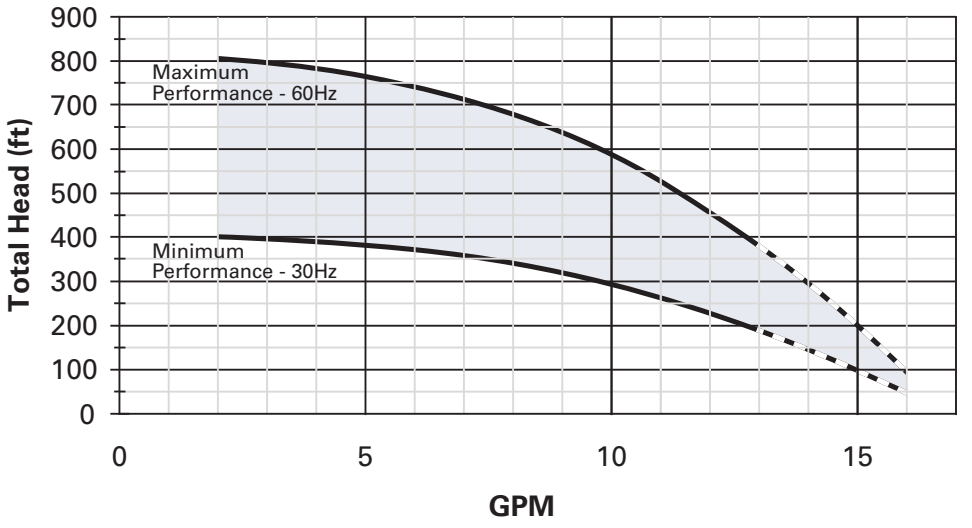
COMMANDER® PRO 60TVS20 60 HZ



Model 60TVS2007

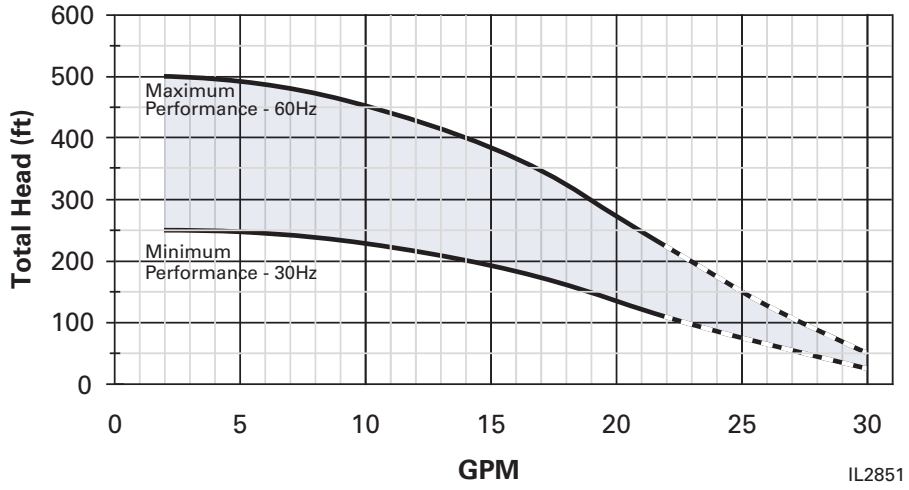


Model 60TVS2010



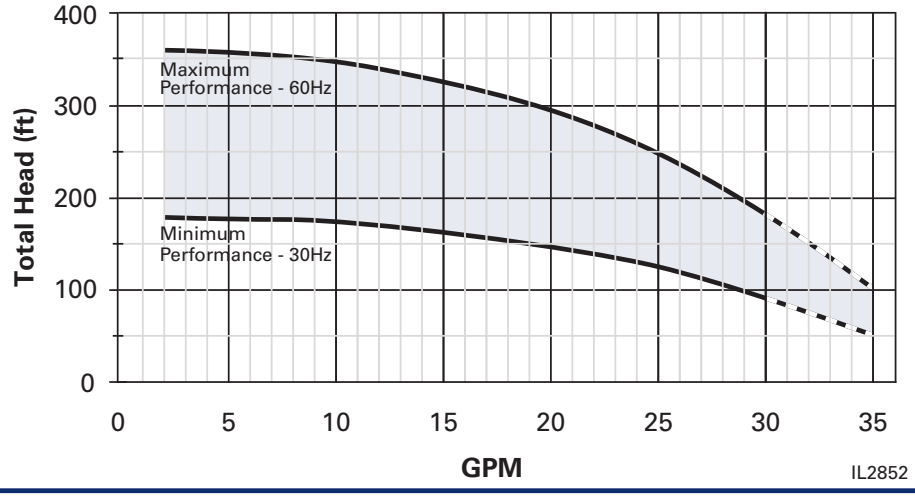
Commander® Pro 60HZ 2 HP

Model 60TVS2019



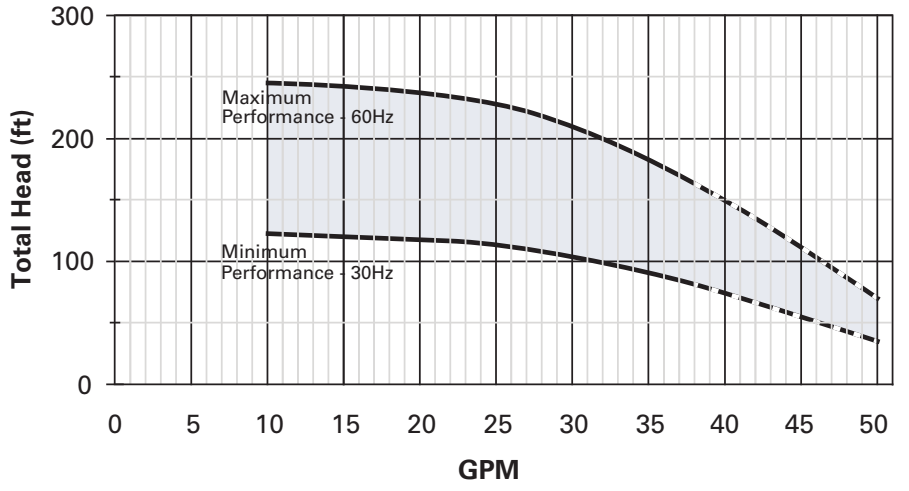
IL2851

Model 60TVS2027



IL2852

Model 60TVS2035



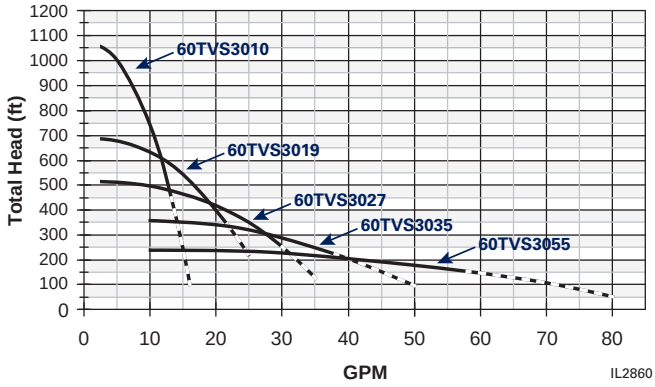
Commander® Pro 60HZ 3 HP

DIMENSIONS

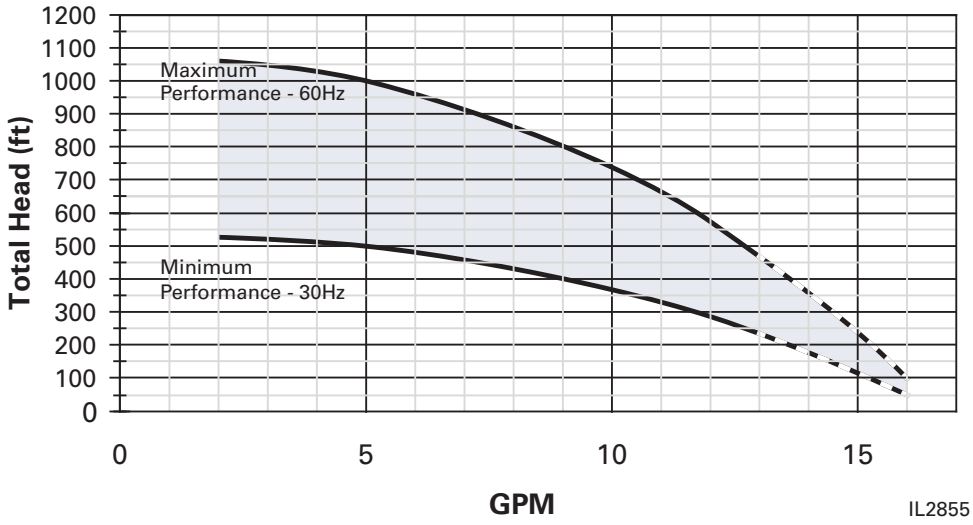
Model	Disch.	Pump Dia.	Pump Length	Motor Dia.	Motor Length	Total Length
60TVS3010	1.25	3.76	38.5	3.75	15.56	54.06
60TVS3019	1.25	3.76	29.7	3.75	15.56	45.26
60TVS3027	1.25	3.76	25.5	3.75	15.56	41.06
60TVS3035	2	3.76	23	3.75	15.56	38.56
60TVS3055	2	3.76	21.5	3.75	15.56	37.06

Models include cable guard and pressure transducer.
NEMA 3R.

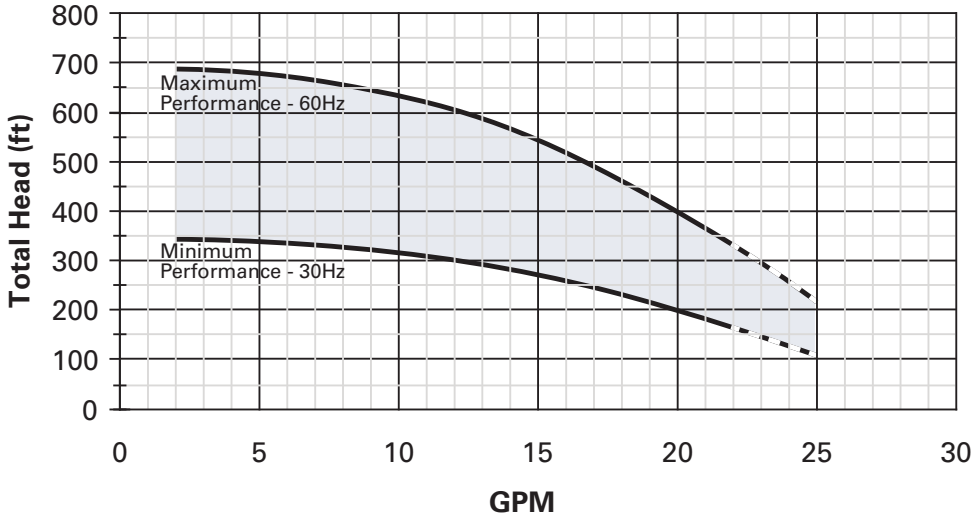
COMMANDER® PRO 60TVS30 60 HZ



Model 60TVS3010

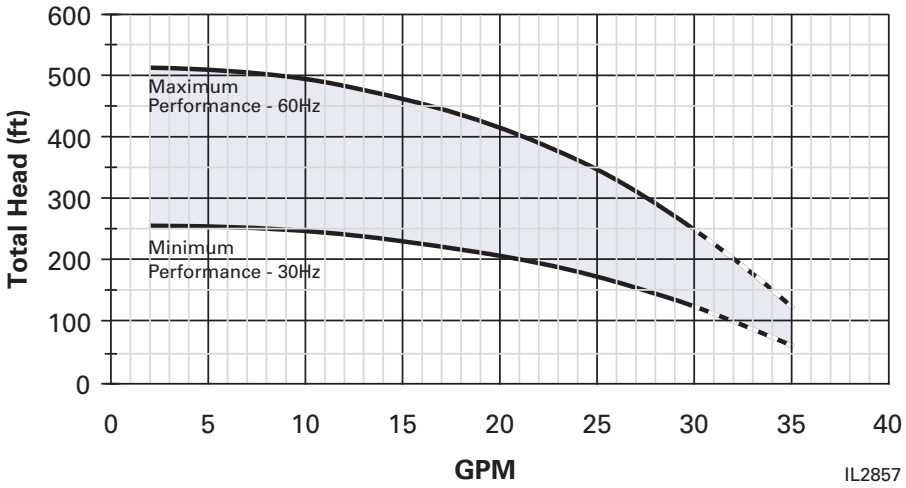


Model 60TVS3019

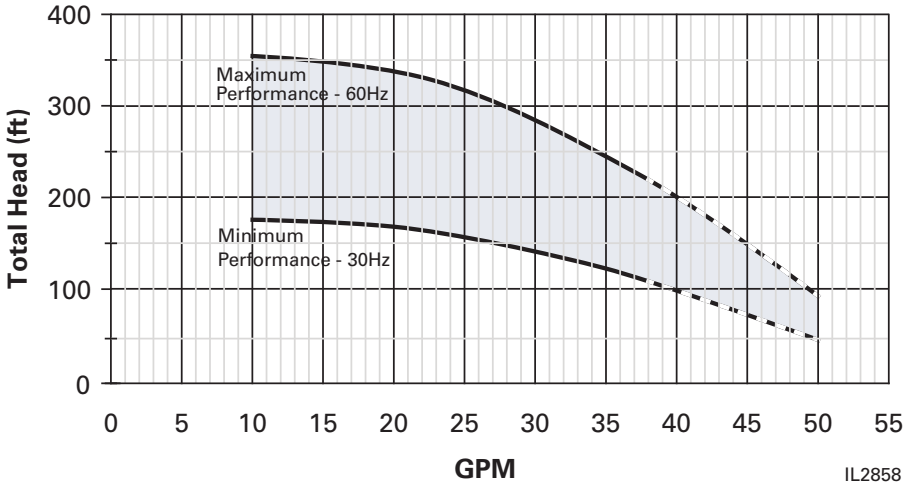


Commander® Pro 60HZ 3 HP

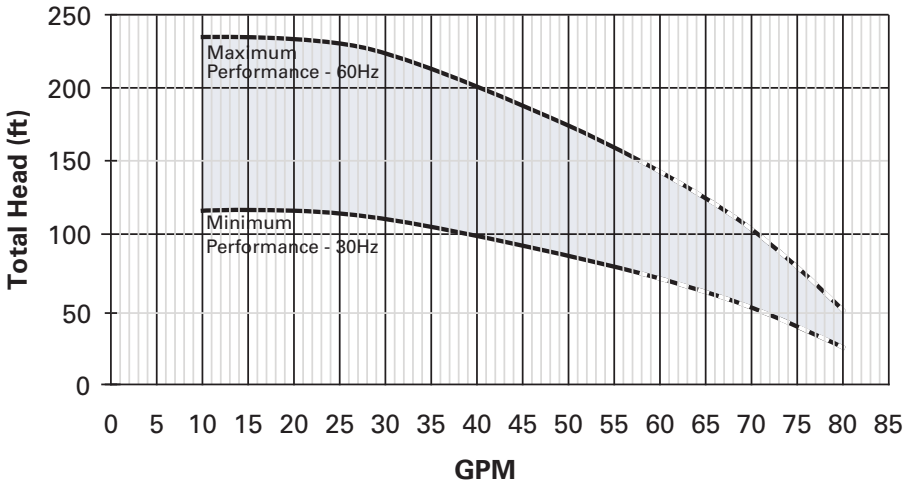
Model 60TVS3027



Model 60TVS3035



Model 60TVS3035



Commander® Pro 80hz 1.5 HP

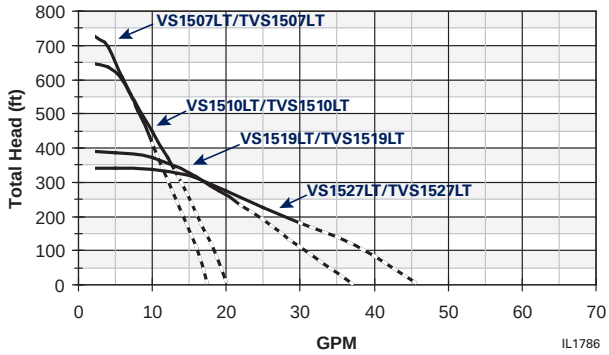
DIMENSIONS

Model	Disch.	Pump Dia.*	Pump Length	Motor Dia.	Motor Length	Total Length
VS1507LT TVS1507LT	1-1/4"	3.88"	19.4"	3.75"	11.8"	31.2"
VS1510LT TVS1510LT	1-1/4"	3.88"	18.9"	3.75"	11.8"	30.7"
VS1519LT TVS1519LT	1-1/4"	3.88"	17.0"	3.75"	11.8"	28.8"
VS1527LT TVS1527LT	1-1/4"	3.88"	15.3"	3.75"	11.8"	27.1"

* Including Cable Guard

For models with pressure transducer, add a "T" prefix to the model, i.e. TVS1507LT.

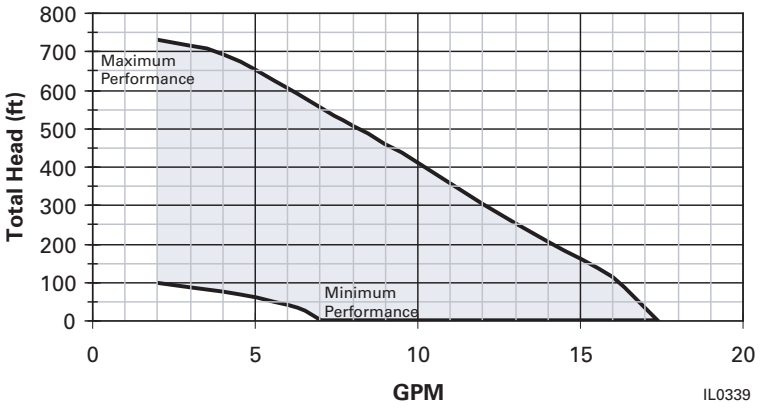
NEMA 3R.



Pumping Depth in Feet	GPM @ Pressure Sensor Setting					Max. Shut-Off (PSI)
	30	40	50*	60	70	
						324
20	16.3	16.0	15.6	15.1	14.6	
40	16.1	15.6	15.1	14.6	14.1	
60	15.7	15.2	14.7	14.2	13.7	
80	15.3	14.8	14.2	13.8	13.3	
100	14.8	14.3	13.8	13.3	12.9	
120	14.4	13.9	13.4	12.9	12.5	
140	14.0	13.5	13.0	12.5	12.1	
160	13.5	13.1	12.6	12.1	11.7	
180	13.1	12.7	12.2	11.8	11.3	
200	12.7	12.3	11.8	11.4	10.9	
220	12.3	11.9	11.5	11.0	10.6	
240	12.0	11.5	11.1	10.6	10.2	
260	11.6	11.1	10.7	10.3	9.8	
280	11.2	10.8	10.3	9.9	9.4	
300	10.8	10.4	9.9	9.5	9.0	
350	9.9	9.4	8.9	8.4	7.9	
400	8.9	8.3	7.9	7.4	6.9	
450	7.8	7.3	6.8	6.4	5.9	
500	6.7	6.3	5.8	5.4	5.0	
550	5.8	5.3	4.9	4.4	3.7	
600	4.8	4.3	3.5	1.5	-	
650	3.3	.8	-	-	-	

* Factory preset 50 PSI

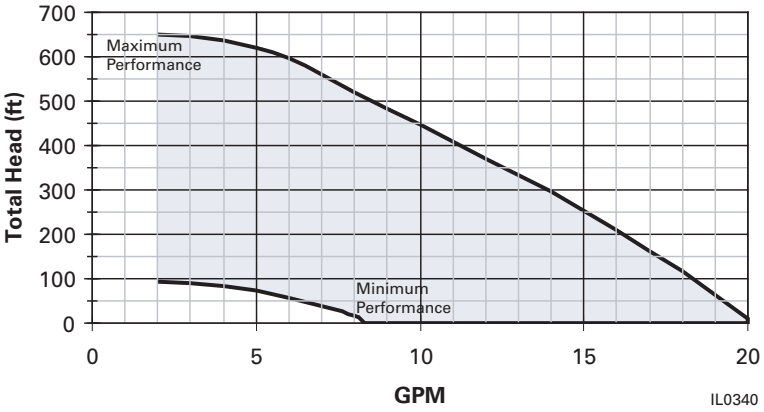
Model VS1507LT, TVS1507LT



Pumping Depth in Feet	GPM @ Pressure Sensor Setting					Max. Shut-Off (PSI)
	30	40	50*	60	70	
						280
20	18.6	18.1	17.8	17.2	16.8	
40	18.2	17.7	17.2	16.7	16.2	
60	17.8	17.2	16.8	16.2	15.8	
80	17.3	16.8	16.3	15.8	15.3	
100	16.9	16.4	15.8	15.3	14.8	
120	16.4	15.9	15.4	14.9	14.4	
140	16.0	15.5	14.9	14.4	13.8	
160	15.6	15.0	14.4	13.9	13.4	
180	15.1	14.6	14.0	13.4	12.8	
200	14.8	14.1	13.5	12.9	12.2	
220	14.1	13.8	12.9	12.3	11.8	
240	13.6	13.0	12.4	11.8	11.2	
260	13.1	12.5	11.9	11.3	10.7	
280	12.6	12.0	11.4	10.8	10.2	
300	12.0	11.4	10.8	10.3	9.6	
350	10.8	10.1	9.5	8.8	8.2	
400	9.4	8.8	8.1	7.5	7.0	
450	8.2	7.4	6.3	6.3	5.5	
500	6.8	6.2	4.0	3.9		
550	5.1	3.8				

* Factory preset 50 PSI

Model VS1510LT, TVS1510LT

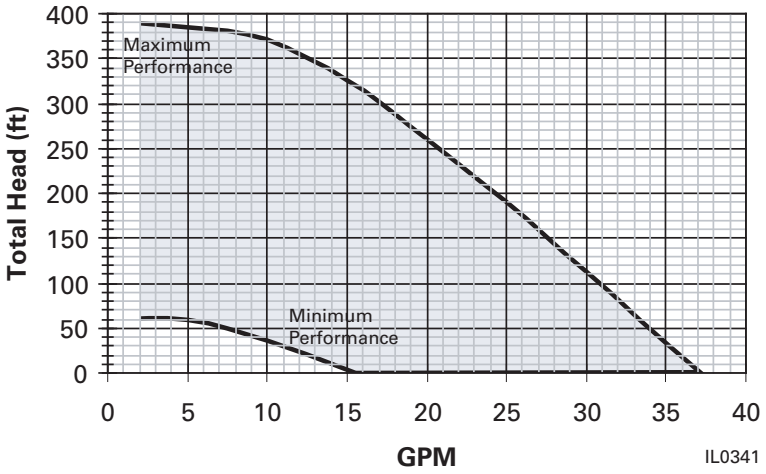


Commander® Pro 80hz 1.5 HP

Pumping Depth in Feet	GPM @ Pressure Sensor Setting					Max. Shut-Off (PSI)
	30	40	50*	60	70	
						169
20	31.8	30.0	28.5	27.2	26.3	
40	30.2	28.7	27.4	26.0	24.2	
60	29.0	27.5	26.0	24.5	22.7	
80	27.7	26.3	24.6	23.0	21.2	
100	26.5	25.0	23.1	21.5	19.5	
120	25.2	23.0	21.6	20.0	18.0	
140	23.7	22.0	20.0	18.5	16.8	
160	22.1	20.2	18.5	17.0	15.2	
180	20.6	18.7	17.2	15.2	13.5	
200	19.0	17.5	15.7	13.9	11.4	
220	17.7	16.0	14.0	11.9	7.0	
240	16.3	14.4	12.0	9.9		
260	14.6	12.5	9.0			
280	12.7	9.9				
300	10.3					

* Factory preset 50 PSI

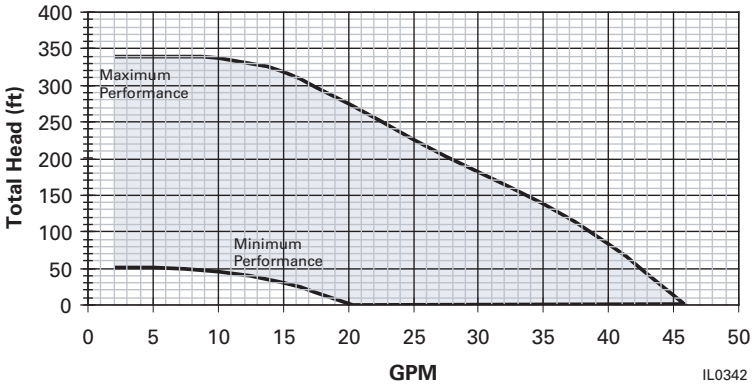
Model VS1519LT, TVS1519LT



Pumping Depth in Feet	GPM @ Pressure Sensor Setting					Max. Shut-Off (PSI)
	30	40	50*	60	70	
						146
20	39.5	37.5	35.4	33.0	30.0	
40	37.9	35.6	33.2	30.5	27.4	
60	36.0	33.5	30.9	28.0	25.0	
80	34.0	31.2	28.2	25.3	22.8	
100	31.5	28.6	25.6	23.1	20.6	
120	29.1	25.6	23.5	21.2	18.9	
140	26.4	23.8	21.4	19.2	16.9	
160	24.2	21.8	19.5	17.2	14.4	
180	22.1	19.8	17.5	15.1		
200	20.0	17.9	15.3	14.5		
220	18.2	15.9	10.3			
240	16.2	11.8				
260	13.0					

* Factory preset 50 PSI

Model VS1527LT, TVS1527LT

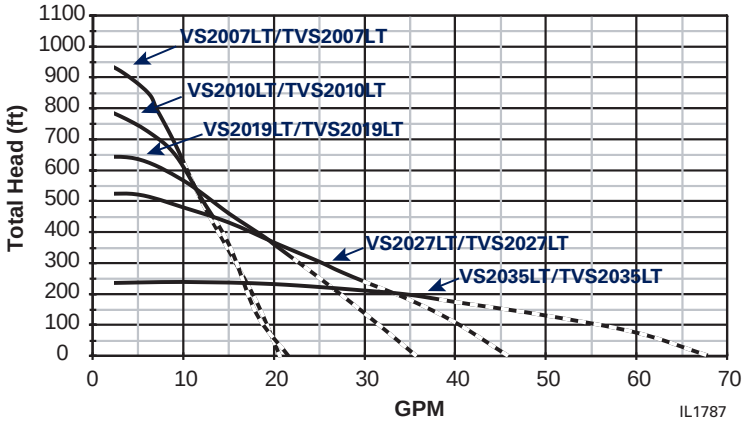


Commander® Pro 80hz 2 HP

DIMENSIONS

Model	Disch.	Pump Dia.*	Pump Length	Motor Dia.	Motor Length	Total Length
VS2007LT TVS2007LT	1-1/4"	3.88"	22.60"	3.75"	13.62"	36.22"
VS2010LT TVS2010LT	1-1/4"	3.88"	20.25"	3.75"	13.62"	33.87"
VS2019LT TVS2019LT	1-1/4"	3.88"	18.25"	3.75"	13.62"	31.87"
VS2027LT TVS2027LT	1-1/4"	3.88"	16.85"	3.75"	13.62"	30.47"
VS2035LT** TVS2035LT**	2"	3.88"	12.56"	3.75"	13.62"	26.18"

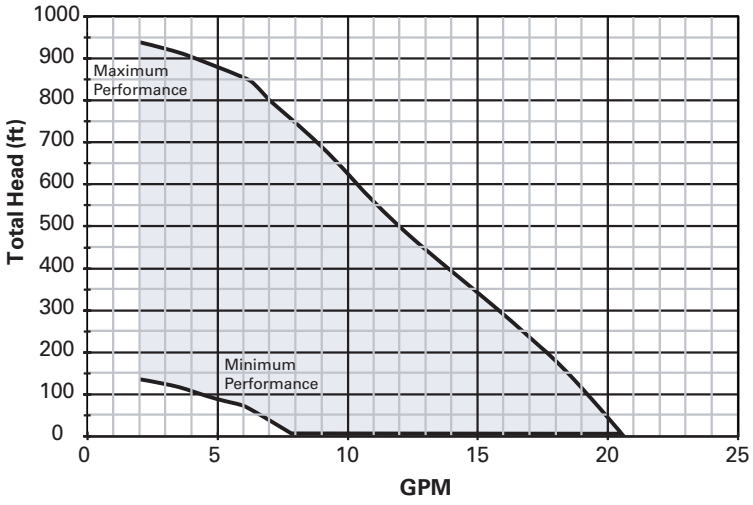
* Including cable guard
** VS2035LT/TVS2035LT does not include an internal check valve
For models with pressure transducer, add a "T" prefix to the model, i.e. TVS2007LT
NEMA 3R.



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Max. Shut-Off (PSI)
	40	50*	60	70	
					417
50	18.5	18.2	17.8	17.4	
100	17.7	17.3	16.9	16.4	
150	16.8	16.4	15.9	15.5	
200	15.9	15.4	15.0	14.5	
250	14.9	14.5	14.0	13.6	
300	13.93	13.5	13.0	12.6	
350	12.95	12.6	12.1	11.7	
400	12.05	11.7	11.3	11.0	
450	11.24	10.9	10.5	10.2	
500	10.46	10.1	9.7	9.4	
550	9.65	9.3	9.0	8.6	
600	8.87	8.5	8.1	7.7	
650	7.99	7.6	7.1	6.8	
700	7.05	6.7	6.4	5.7	
750	6.31	5.6	4.6	3.5	
800	4.44	3.3	1.9		
850	1.74				

*Factory preset to 50 PSI

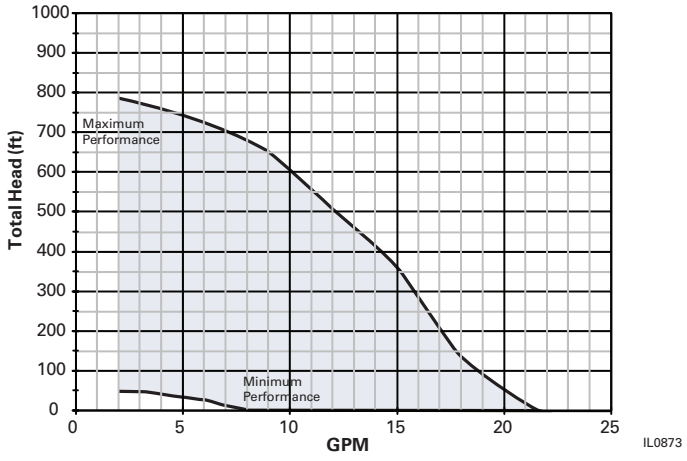
Model VS2007LT, TVS2007LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Max. Shut-Off (PSI)
	40	50*	60	70	
					351
50	17.9	17.5	17.2	16.9	
100	17.1	16.9	16.6	16.3	
150	16.5	16.3	15.9	15.7	
200	15.9	15.6	15.3	14.9	
250	15.3	14.9	14.5	14.0	
300	14.37	13.9	13.4	13.0	
350	13.43	12.9	12.4	11.9	
400	12.25	11.8	11.4	10.9	
450	11.31	10.8	10.4	9.9	
500	10.33	9.8	9.3	8.7	
550	9.17	8.6	7.7	6.7	
600	7.56	6.5	5.4		
650	5.01				

*Factory preset to 50 PSI

Model VS2010LT, TVS2010LT

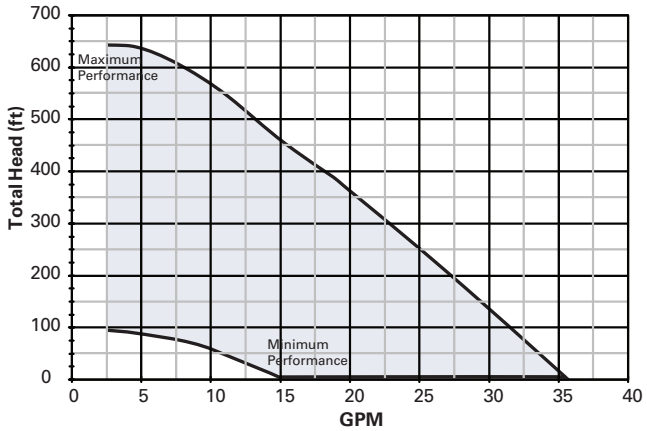


Commander® Pro 80hz 2 HP

Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Max. Shut-Off (PSI)
	40	50*	60	70	
					278
50	29.8	28.8	27.8	26.8	
100	27.6	26.5	25.6	24.5	
150	25.4	24.4	23.4	22.3	
200	23.2	22.1	21.0	19.9	
250	20.9	19.7	18.7	17.5	
300	18.5	17.3	16.1	15.0	
350	15.9	14.8	13.7	12.7	
400	13.6	12.5	11.5	10.3	
450	11.2	10.0	8.8	7.3	
500	8.5	7.0			

*Factory preset to 50 PSI

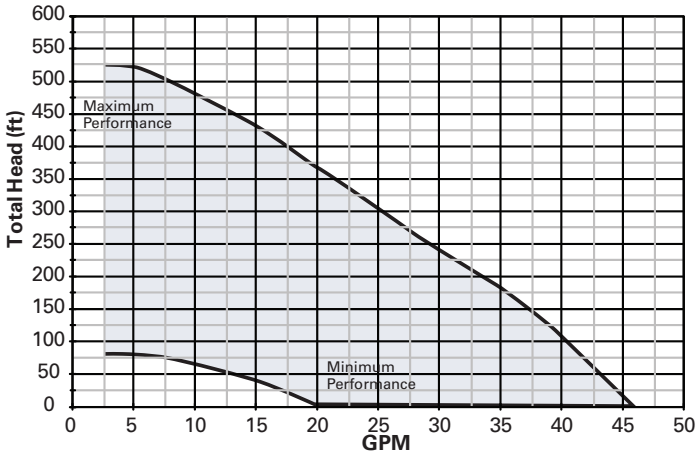
Model VS2019LT, TVS2019LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Max. Shut-Off (PSI)
	40	50*	60	70	
					226
50	37.9	36.3	34.6	32.4	
100	34.1	32.1	30.1	28.2	
150	29.8	28.0	26.1	24.6	
200	26.0	24.1	22.2	20.4	
250	21.9	20.0	18.5	16.7	
300	18.18	16.4	14.5	12.1	
350	14.15	11.8	9.2	6.7	
400	8.75	6.2			

*Factory preset to 50 PSI

Models VS2027LT, TVS2027LT

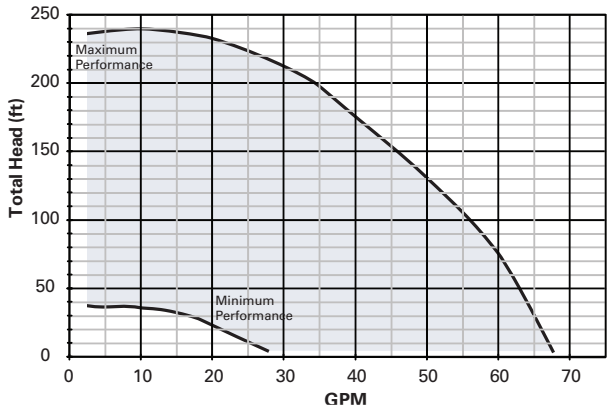


IL0875

Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Max. Shut-Off (PSI)
	40	50*	60	70	
					102
25	52.9	48.0	42.8	37.5	
50	47.8	42.2	37.1	30.2	
75	41.8	36.9	29.4	16.6	
100	36.4	28.6	14.3		
125	28.5	9.8			

*Factory preset to 50 PSI
**VS2035LT does not include an internal check valve

Models VS2035LT, TVS2035LT

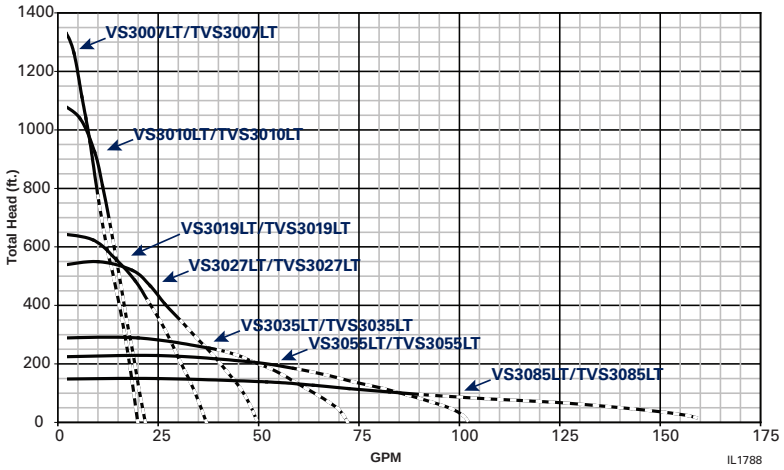


Commander® Pro 80hz 3 HP

DIMENSIONS

Model	Disch.	Pump Dia.*	Pump Length	Motor Dia.	Motor Length	Total Length
VS3007LT TVS3007LT	1-1/4"	3.88"	26.00"	3.75"	16.06"	42.1"
VS3010LT TVS3010LT	1-1/4"	3.88"	24.25"	3.75"	16.06"	40.3"
VS3019LT TVS3019LT	1-1/4"	3.88"	18.25"	3.75"	16.06"	34.3"
VS3027LT TVS3027LT	1-1/4"	3.88"	18.90"	3.75"	16.06"	35.0"
VS3035LT** TVS3035LT**	2"	3.88"	14.25"	3.75"	16.06"	30.3"
VS3055LT** TVS3055LT**	2"	3.88"	14.50"	3.75"	16.06"	30.6"
VS3085LT** TVS3085LT**	2"	3.88"	14.50"	3.75"	16.06"	30.6"

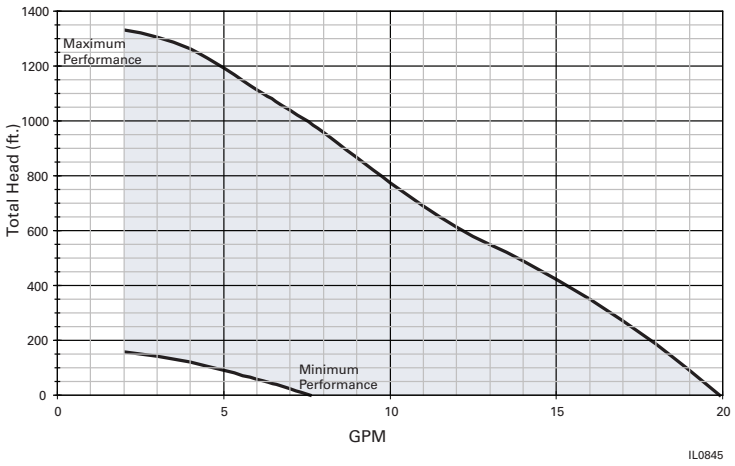
* Including Cable Guard
**VS3035LT, VS3055LT & VS3085LT do not include an internal check valve.
For models with pressure transducer, add a "T" prefix to the model, i.e. TVS3007LT
NEMA 3R.



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					585
100	18.0	17.7	17.4	17.2	
150	17.4	17.1	16.8	16.5	
200	16.8	16.5	16.2	15.8	
250	16.1	15.8	15.5	15.1	
300	15.4	15.1	14.7	14.4	
350	14.7	14.3	13.9	13.6	
400	13.9	13.5	13.2	12.8	
450	13.1	12.8	12.4	12.1	
500	12.4	12.1	11.7	11.4	
550	11.7	11.4	11.1	10.8	
600	11.0	10.7	10.4	10.2	
650	10.4	10.1	9.8	9.6	
700	9.8	9.5	9.2	9.0	
750	9.2	8.9	8.7	8.4	
800	8.6	8.4	8.1	7.9	
850	8.1	7.8	7.6	7.3	
900	7.5	7.3	7.0	6.7	
950	7.0	6.7	6.4	6.1	
1000	6.4	6.1	5.8	5.5	
1050	5.8	5.5	5.1	4.8	
1100	5.1	4.7	4.4	4.0	
1150	4.3	3.9	3.4	2.8	
1200	3.3	2.7	1.7		
1250	1.4				

*Factory preset to 50 PSI

Model VS3007LT, TVS3007LT

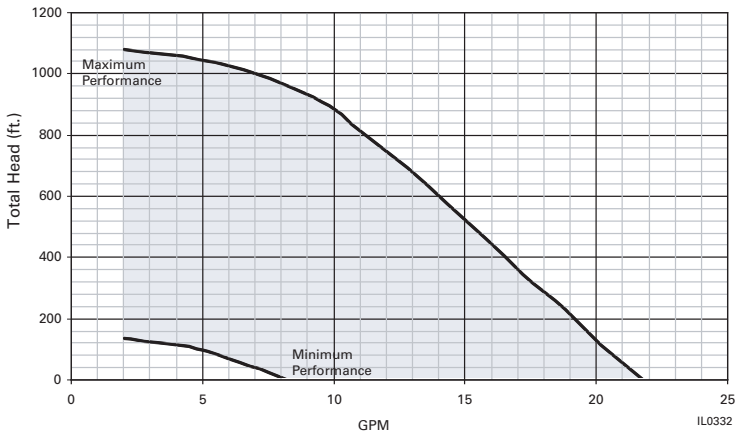


Commander® Pro 80hz 3 HP

Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					473
100	19.2	18.8	18.6	18.4	
150	18.4	18.2	17.8	17.7	
200	17.8	17.7	17.3	17.1	
250	17.3	16.9	17.2	16.3	
300	16.7	16.2	16.0	15.8	
350	16.1	15.8	15.3	15.2	
400	15.3	15.1	14.9	14.5	
450	14.8	14.4	14.1	13.9	
500	14.1	13.8	13.6	13.1	
550	13.5	13.1	12.8	12.6	
600	12.8	12.5	12.3	11.9	
650	12.2	11.8	11.5	11.2	
700	11.3	11.1	10.7	10.3	
750	10.6	10.2	10.0	9.5	
800	9.9	9.4	8.9	8.1	
850	8.7	8.1	7.5	6.5	
900	7.2	6.5	5.3		
950	5.3	4.5			

*Factory preset to 50 PSI

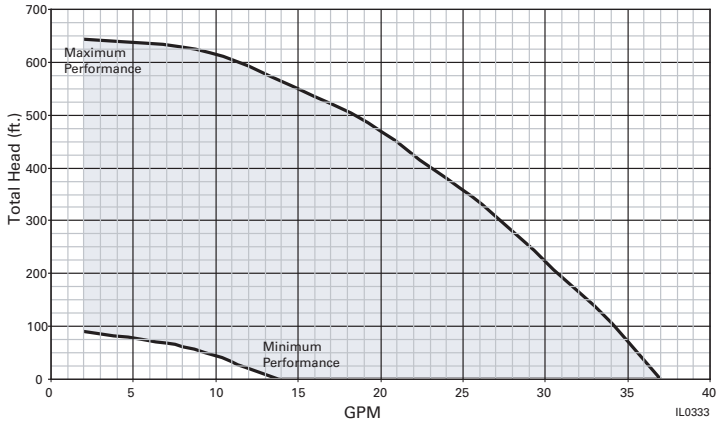
Model VS3010LT, TVS3010LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					280
25	33.8	32.7	32.2	31.3	
50	32.7	32.0	31.2	30.3	
75	32.3	31.2	30.5	29.1	
100	30.9	30.3	29.3	28.6	
150	29.2	28.4	27.7	26.8	
200	27.4	26.6	25.8	24.8	
250	25.7	24.6	23.8	22.5	
300	23.5	22.4	21.5	20.5	
350	21.3	20.2	19.2	17.6	
400	18.9	17.3	15.6	13.9	
450	15.6	13.8	12.4	10.0	
500	12.0	9.9			

*Factory preset to 50 PSI

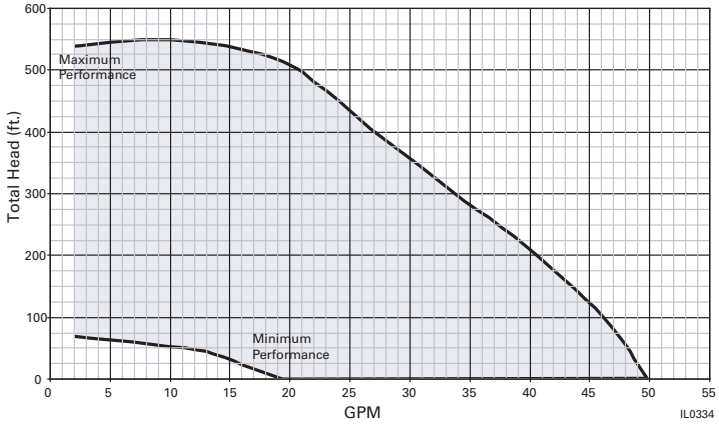
Model VS3019LT, TVS3019LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					233
25	45.3	43.9	42.6	41.3	
50	43.8	42.5	41.2	39.9	
75	42.4	41.1	39.8	37.3	
100	41.0	39.7	38.2	36.5	
150	37.9	36.1	34.6	33.0	
200	34.4	32.6	31.2	29.7	
250	31.0	29.5	27.7	26.2	
300	27.4	25.8	24.7	23.5	
350	24.4	23.2	21.5	19.7	
400	21.3	19.0			

*Factory preset to 50 PSI

Model VS3027LT, TVS3027LT

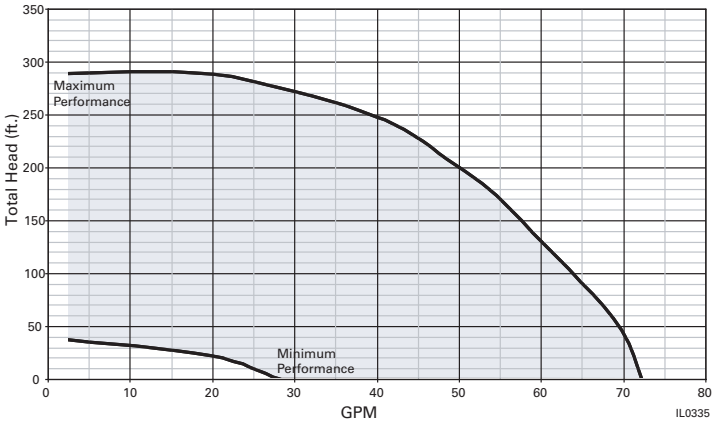


Commander® Pro 80hz 3 HP

Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					122
25	62.0	58.0	56.0	52.0	
50	58.0	56.0	52.0	47.0	
75	56.0	52.0	47.0	42.0	
100	52.0	47.0	42.0	33.0	
125	47.0	42.0	33.0	21.0	
150	42.0	32.0	19.0		
175	32.0	15.0			

*Factory preset to 50 PSI
**Does not include an internal check valve

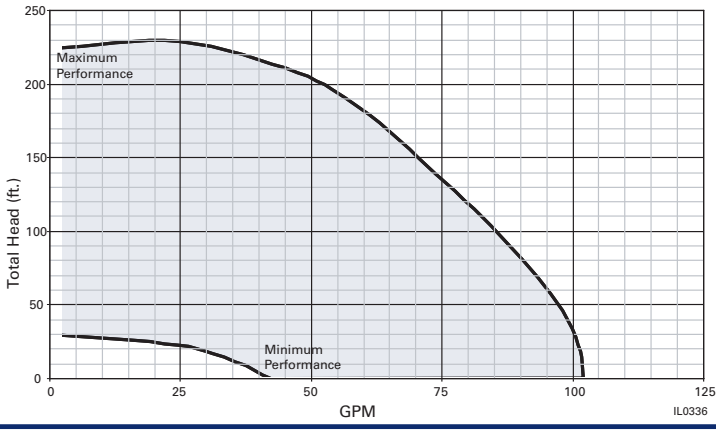
Model VS3035LT, TVS3035LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting				Maximum Shut Off (PSI)
	40	50*	60	70	
					98
25	81.0	73.0	66.0	57.7	
50	72.0	65.0	56.7	44.1	
75	64.3	56.0	43.0		
100	55.4	42.0			
125	40.9				

*Factory preset to 50 PSI
**Does not include an internal check valve

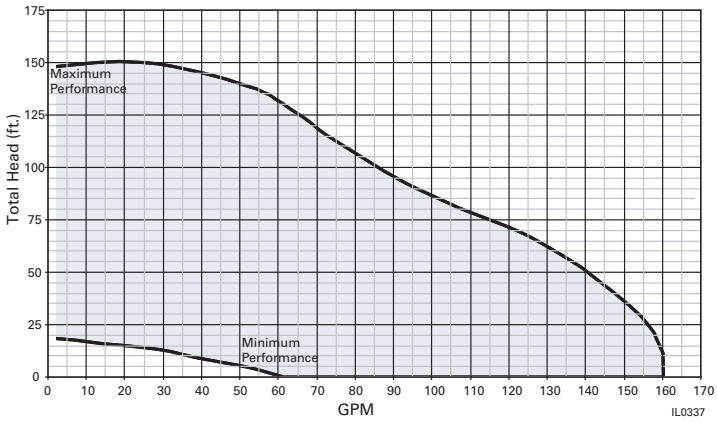
Model VS3055LT, TVS3055LT



Pumping Depth in Feet	Maximum GPM @ Pressure Sensor Setting			Maximum Shut Off (PSI)
	30	40	50*	
				64
0	122.0	95.0	73.0	
5	117.0	87.0	69.0	
10	108.0	83.0	64.0	
15	103.0	78.0	60.0	
20	97.0	75.0	54.0	
25	92.0	72.0	46.0	
30	86.0	68.0	38.0	
35	82.0	63.0		
40	78.0	55.0		
50	68.0	45.0		

*Factory Preset to 50 PSI
**Does not include an internal check valve

Model VS3085LT, TVS3085LT



Commander® Pro Variable Frequency Drives

Controls purchased separately. . .
One Year Limited Warranty

Package Systems. . .
Pump End and Motor: 5 Year Limited Warranty
Drive: 3 Year Limited Warranty

"LT" System less tank

VS PACKAGE		VS DRIVE	PUMP END				MOTOR		SWITCH/ TRANSDUCER
MODEL	GPM	MODEL	GPM	DESIGN	PART #	STAGES	PART #	HP	
VS1507LT TVS1507LT	7	VS15 TVS15	07	SS	4F07S07	14	137588	1.5	024545 024586*
VS1510LT TVS1510LT	10	VS15 TVS15	10	SS	4F10S07	12	137588	1.5	024545 024586*
VS1519LT TVS1519LT	19	VS15 TVS15	19	SS	4F19S10	9	137588	1.5	024545 024586*
VS1527LT TVS1527LT	27	VS15 TVS15	27	SS	4F27S10	7	137588	1.5	024545 024586*
VS2007LT TVS2007LT	7	VS20 TVS20	07	SS	4F07S10	18	137589	2	024545 024586*
VS2010LT TVS2010LT	10	VS20 TVS20	10	SS	4F10S10	15	137589	2	024545 024586*
VS2019LT TVS2019LT	19	VS20 TVS20	19	SS	4F19S15	12	137589	2	024545 024586*
VS2027LT TVS2027LT	27	VS20 TVS20	27	SS	4F27S15	10	137589	2	024545 024586*
VS2035LT TVS2035LT	35	VS20 TVS20	35	SS	4F35S10	4	137589	2	024545 024586*
VS3007LT TVS3007LT	7	VS30 TVS30	07	SS	4F07S15	24	137590	3	024545 024586*
VS3010LT TVS3010LT	10	VS30 TVS30	10	SS	4F10S15	20	137590	3	024545 024586*
VS3019LT TVS3019LT	19	VS30 TVS30	19	SS	4F19S20	16	137590	3	024545 024586*
VS3027LT TVS3027LT	27	VS30 TVS30	27	SS	4F27S20	12	137590	3	024545 024586*
VS3035LT TVS3035LT	35	VS30 TVS30	35	SS	4F35S15	5	137590	3	024545 024586*
VS3055LT TVS3055LT	55	VS30 TVS30	55	SS	4F55S15	4	137590	3	024545 024586*
VS3085LT TVS3085LT	85	VS30 TVS30	85	SS	CP15085RP	3	137590	3	024545 024586*

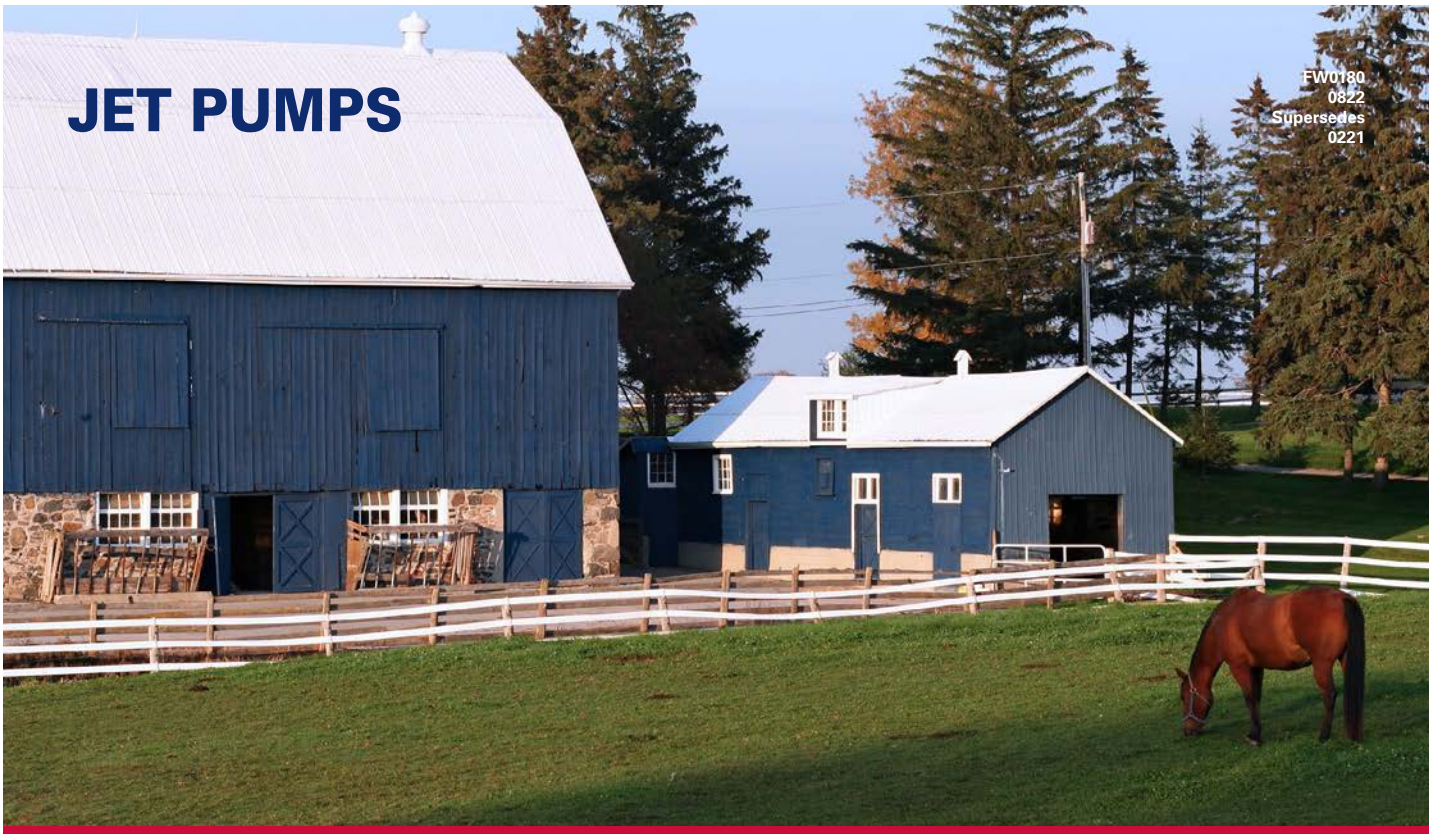
*024586 - Factory installed pressure transducer kit (0-100PSI).
Optional 0-300PSI pressure transducer kit available (P/N 024587)
All complete Commander® Pro Packages carry a 5 year limited warranty on pump & motor, and 3 year limited warranty on control.
For models with pressure transducer, add a "T" prefix to the model, i.e. TVS1507LT

Accessories

Part Number	Description
024532	Pest Control Kit to keep insects and pests from nesting in drive

DOE Compliance

PUMP MODEL	Impeller Dia.	$P.E.I._{VL}$
(T) VS2035	3.072"	0.59
(T) VS3035	3.072"	0.53
(T) VS3055	3.075"	0.56
(T) VS3085	3.070"	0.61



1/3 - 1-1/2 HP

Whether operating as a shallow well or deep well pump, count on F & W's versatile, powerful jet pumps to deliver more water at full city pressures.

These pumps provide higher single stage capacities and pressures; depths to 150 feet, capacities to 1800 GPH and as much as 90 pound pressure.

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

EK, CPH, CPJS, CPJ,
EK TANK SYSTEMS

- Higher single-stage capacities and pressures
- Depths to 150 ft.
- Up to 1800 GPH with up to 90 PSI

Service Plus F&W Motors

"Service Plus" means top reliability plus quick access to all electrical components.
Routine maintenance is simplified through the convenient mounting of electrical components. Removal of the rear access cover exposes components for fast replacement. Spade connectors enable quick hookup and voltage change.

Rear access cover
Directs ventilating air over the windings and bearings, and away from the switch mechanism. All electrical components are protected from dirt, dust and insects.

Quality-wound double insulated stator
Uses nylon over coated wire with an additional varnish dip to insure against moisture penetration. Class B wire insulation rated for 266°F.

Permanently lubricated ball bearings
Located on each end of the motor insuring alignment of the dynamically balanced rotor for smooth operation and extended motor life.

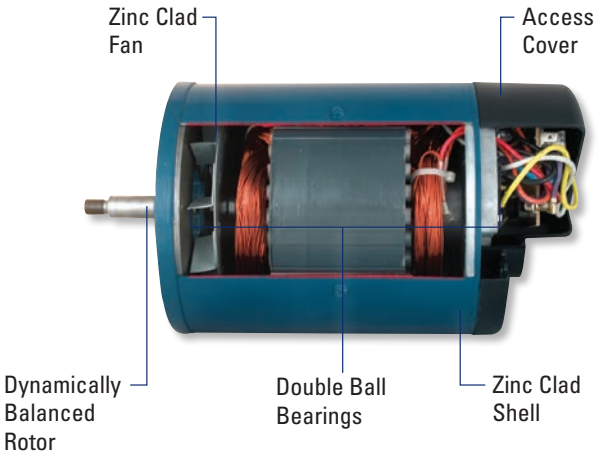
Fully enclosed transfer switch
Mounted on a UL recognized thermo-set plastic board utilizes spark quenching and extra large silver cadmium oxide contact points.

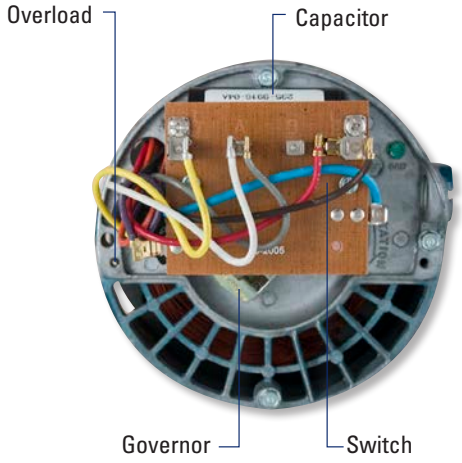
Patented governor
Features an advanced simplified design, using a stainless steel compression spring to insure proper motor RPM before switching from start to run windings.

Zinc clad steel shell and cooling fan
Resist corrosion and dissipate motor heat.

Automatic overload
Senses both start and run winding heat to ensure complete winding protection.

"Service Plus" motors
Manufactured by Flint & Walling, Inc. in Kendallville, IN, USA—An industry exclusive among jet pump manufacturers.





US

EK, CPJ, CPH Product Features

High tensile gray iron pump bodies
Large water cavities provide fast, easy priming. Separate priming ports enable quick water fill and the fast evacuation of air. Separate 1/4" tappings are provided for the convenient mounting of pressure/vacuum gauges and the pressure switch, and for pump draining.

Buna-n Square cut ring
Reusable — provides a positive seal between the pump case and motor bracket.

Molded diffusers
Corrosion and abrasion resistant, provide precision alignment with the impeller for maximum performance. The snap-in diffuser design uses no bolts and is held in place by compression.

Impellers —
Precision balanced, these impellers are ultra-smooth for high efficiency. 1/3 through 1 HP CPJ, CPH, and EK models feature molded thermoplastic impellers. 1-1/2 HP CPJ models feature brass impellers.

Pipe plugs and priming plugs
Coated with a non-hardening, non-toxic, non-corrosive material which allows for easy removal even after the pump has been in service for years.

Standard shaft seal
Silicon carbide face is self-adjusting throughout the seal life. One size fits all models.

CPH and EK Patented uni-frame motor bracket
Unique to the water systems industry — designed to accept any NEMA J motor if motor replacement is ever necessary.

Automatic overload
Senses both start and run winding heat to ensure complete winding protection.

CPJ models
Feature NEMA J motors. All motors are dual voltage, capacitor start with automatic thermal overload protection.

EK SHALLOW WELL JET PUMPS - 1/2, 3/4 and 1 HP

Includes: Pump, Motor, Pressure Switch and Ejector.

NOTE: EK05S and EK07S feature built-in ejector - no assembly required. EK10S ejector requires assembly.

Product may not be exactly as shown

US

EK SHALLOW WELL CAPACITIES

Model	HP	Suction Lift. Ft.	Discharge Pressures (PSI) 20	30	40	50	Shut Off Pressure @ 0 Lift (PSI)	Suction & Discharge	Pressure Switch Setting - PSI	Pump Shipping Weight
			CAPACITY - U.S. GALLONS PER MINUTE							
EK05S	1/2	5	10.5	9.5	5.8	4.0	60	1-1/4" x 1"	20-40	40
		15	7.6	7.3	4.5	2.5				
		25	4.5	4.2	3.5	2.0				
EK07S	3/4	5	15.5	15.0	10.0	5.8	65	1-1/4" x 1"	30-50	41
		15	11.9	11.7	9.1	3.8				
		25	6.0	5.8	5.2	2.0				
EK10S	1	5	20.0	20.0	19.5	18.3	65	1-1/4" x 1"	30-50	51
		15	15.8	15.5	15.0	14.5	60			
		25	10.0	9.7	9.5	9.0	55			

Maximum Pump Case Pressure = 150 PSI

CPHS SERIES - 1/2, 3/4 and 1 HP

Includes: pump, motor, pressure switch and shallow well ejector.

CPJS SERIES - 1/3, 1/2, 3/4, 1 and 1-1/2 HP

Includes: pump, motor, pressure switch and shallow well ejector.

Product may not be exactly as shown

CPJS AND CPHS SHALLOW WELL PERFORMANCE WITH SHALLOW WELL EJECTORS

SW Single Pipe Shallow Well Ejector

Model No.	HP	Ejector* Assembly	Suction Lift Ft.	Discharge Pressures (PSI) 20	30	40	50	60	Suction & Discharge	Pressure Switch Setting	Shut Off Pressure PSI	Pump Shipping Weight
				CAPACITY - U.S. GALLONS PER MINUTE								
CPJ03SB	1/3	SW03E-1626	5 15 25	11.3 8.7 5.3	10.7 8.5 5.3	9.5 7.8 5.2	6.7 5.3 4.2		1-1/4" X 3/4"	30-50	74 69 65	49
CPJ05SB CPH05S	1/2	SW05E-1630	5 15 25	17.2 12.8 7.7	16.8 12.7 7.5	14.8 12.2 7.2	10.0 7.7 5.3		1-1/4" X 3/4"	30-50	69 64 60	50 43
CPJ07SB CPH07S	3/4	SW07E-1432	5 15 25	19.8 15.5 9.8	19.5 15.2 9.5	19.2 14.8 9.3	18.0 14.2 8.8		1-1/4" X 1"	30-50	65 60 55	58
CPJ10SB CPH10S	1	SW10E-1334	5 15 25	23.7 18.3 11.7	23.5 18.3 11.7	23.3 18.2 11.5	23.0 18.0 11.3		1-1/4" X 1"	30-50	70 65 58	62 53
CPJ15S	1-1/2	SW15E-1238	5 15 25	30.0 24.0 15.0	29.8 23.8 15.0	29.8 23.7 15.0	29.8 23.5 14.8	23.3 18.7 8.0	1-1/4" X 1"	30-50	77 72 63	72

* Ejector assembly included
Maximum Pump Case Pressure = 150 PSI

CPH SERIES - 1/2, 3/4 and 1 HP

Includes: pump, motor and pressure switch. Order ejector, control package and pressure gauge separately.

*Add "R" to end of model number to include 134349 control package with pump.

134349 Control Package*

Order Separately for Deep Well Applications.

CPJ SERIES - 1/2, 3/4, 1 and 1-1/2 HP

Includes: pump, motor, pressure switch and pressure regulator. Order ejector and pressure gauge separately.

Product may not be exactly as shown

See pages 6 & 7 for performance charts on the following models:

CPJ05B	CPJ10B
CPH05	CPH10
CPH05R†	CPH10R†
CPJ07B	CPJ15
CPH07	
CPH07R†	

EK05, EK07 and EK10 Convertible Jet Pumps

FLINT & WALLING

For Shallow or Deep Well Applications

- Dual voltage 115/230, NEMA 56 frame motor
- Pressure switch included
- Purchase ejectors separately (see chart).
- Deepwell applications require 134349 flow control package. Purchase separately if needed.
- 1 year limited warranty

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

EK SERIES

Models EK05, EK07 and EK10

EK05, EK07, EK10 Performance

Pump Model No. and Motor HP	Ejector Model No.	Discharge Pressure*	Vertical Distance to Water in Feet												DW Minimum Operating Pressure PSI
			5	15	25	20	30	40	50	60	70	80	90	100	110	
			CAPACITY - U.S. GALLONS PER MINUTE													
			Shallow Well Ejector Attached to Pump			Deep Well Ejector in 4" ID well or Larger										
EK05 1/2 HP	SW03E-1626	20 40	11.3 9.5	8.7 7.8	5.3 5.2											--
	DW40E-1726 DP30C-1726†	20 40	10.0 8.3	7.5 7.2	4.7 4.3	10.8 6.0	8.3 4.7	7.0 3.8								20
	DW40E-1622 DP30C-1622†	20 40	6.5 6.0	5.7 5.2	4.2 3.8		7.0 4.3	6.2 3.5	5.5 3.0	4.7 2.3						24
EK07 3/4 HP	SW05E-1630	30 50	17.0 10.0	12.9 8.0	7.8 5.5											
	DW40E-1730 DP30C-1730†	30 50	14.5 10.0	11.3 8.3	7.2 6.5	12.5 5.5	10.8 3.7	8.7 2.0								
	DW40E-1828 DP30C-1828†	30 50	11.5 10.2	8.8 5.5	5.3 5.2	11.2 6.7	10.8 5.5	8.8 3.8	7.2 2.3	5.0 1.0						
	DW40E-1622 DP30C-1622†	30 50						6.7 4.3	6.0 3.8	5.3 3.3	4.3 2.5	3.3 1.7	2.5 1.0			
EK10 1 HP	SW07E-1432	30 50	19.5 18.0	15.2 14.2	9.5 8.8											--
	DW40E-1630 DP30C-1630†	30 50	15.7 15.0	12.3 12.2	8.3 8.0	16.7 12.5	14.2 8.3	12.2 5.0	8.3 2.5							35-37
	DW40E-1726 DP30C-1726†	30 50	10.0 9.5	7.5 7.3	4.7 4.3	11.7 9.2	11.7 9.2	11.5 8.2	10.3 7.0	9.0 5.7	7.7 4.3	6.2 3.2	4.8 1.7			37-39
	DW40E-1520 DP30C-1520†	30 50										5.0 3.7	4.8 3.3	4.3 3.0	3.7 2.7	39

DP30 Ejectors include foot valve
Maximum Pump Case Pressure = 150 PSI
* Suction & pressure pipe tapping 1-1/4" x 1" -- reduced pipe sizes will result in lower than published performance
†Not for sale in states following Proposition 65 or AB1953

CPJ and CPH Convertible Ejectors

CPJ AND CPH SHALLOW WELL CAPACITIES WITH CONVERTIBLE EJECTOR

DW40E Cast Iron Two Pipe Convertible Ejector

Model No.	HP	Ejector Assembly	Suct. Lift Ft.	Discharge Pressures (PSI) 20	30	40	50	60	70	80	90	Suction & Discharge	Pressure Switch Setting	Shut Off Pressure PSI	Pump Ship Weight
				CAPACITY - U.S. GALLONS PER MINUTE											
CPJ05B CPH05 CPH05R†	1/2	DW40E-1730	5	14.8	14.5	13.2	10.0	6.7				1-1/4" X 3/4"	30-50	76	46
			15	11.8	11.3	11.2	8.3	5.0						72	
			25	7.3	7.2	7.0	6.5	3.3						67	38
		DW40E-1828	5	12.0	11.5	11.3	10.2	7.8	5.0			1-1/4" X 3/4"	30-50	90	
			15	9.0	8.8	8.7	8.5	6.7	4.2					85	
			25	5.3	5.3	5.2	5.2	5.0	3.3					80	
CPJ07B CPH07 CPH07R†	3/4	DW40E-1630	5	16.0	15.7	15.5	15.0	10.3				1-1/4" X 1"	30-50	75	56
			15	12.5	12.3	12.3	12.2	7.0						72	
			25	8.3	8.3	8.2	8.0	4.2						66	
		DW40E-1726	5	10.2	10.0	9.7	9.5	9.3	9.2	7.5	5.7	1-1/4" X 1"	30-50	120	
			15	8.0	7.5	7.3	7.3	7.2	7.2	6.7	5.0			115	
			25	4.8	4.7	4.5	4.3	4.2	4.2	4.2	3.3			110	
CPJ10B CPH10 CPH10R†	1	DW40E-1634	5	20.8	20.8	20.5	20.3	15.8				1-1/4" X 1"	30-50	80	58
			15	16.7	16.7	16.3	16.2	13.0						75	
			25	11.7	11.5	11.3	11.2	9.3						70	49
		DW40E-1828	5	12.2	11.7	11.7	11.3	11.2	11.2	10.8	8.0	1-1/4' x 1"	30-50	125	
			15	9.5	9.2	9.0	8.8	8.8	8.8	8.7	6.7			120	
			25	5.7	5.5	5.3	5.2	5.0	5.0	5.0	5.0			115	
CPJ15	1-1/2	DW40E-1736	5	23.8	23.3	23.3	23.0	18.7	13.8	8.3		1-1/4" x 1"	30-50	93	66
			15	18.0	17.8	17.5	17.3	16.3	11.7	6.0				88	
			25	11.0	10.7	10.7	10.5	10.3	8.3	2.0				82	

†"R" models include pressure switch and 134349 control package. Order ejector separately.
Maximum Pump Case Pressure = 150 PSI

NOTE: The DW40E ejector can be bolted to the pump as a shallow well ejector or submerged in casing as a convertible deep well ejector.

CPJ AND CPH DEEP WELL CAPACITIES WITH TWO-PIPE CONVERTIBLE EJECTOR

DW40E Cast Iron Two Pipe Convertible Ejector

Model No.	HP	Ejector Assembly	Min. Oper. Press.	Disch. Press. PSI	Vertical Distance to Water in Feet 20	30	40	50	60	70	80	90	100	110	120	130	140	Press. Switch Setting	Pump Ship Wt.
					CAPACITY - U.S. GALLONS PER MINUTE														
CPJ05B CPH05	1/2	DW40E-1730	25	30	12.5	10.8	8.7											30-50	46
				50	5.5	3.7	2.0												
				Shut Off	67	63	57												38
		DW40E-1828	25-28	30	11.2	10.8	8.8	7.2	5.0									30-50	
				50	6.7	5.5	3.8	2.3	0.8										
				Shut Off	75	69	64	59	54										
		DW40E-1622	30	30			6.7	6.0	5.3	4.3	3.3	2.5						30-50	
				50			4.3	3.8	3.3	2.5	1.7	0.8							
				Shut Off			91	86	80	74	68	60							
CPJ07B CPH07	3/4	DW40E-1630	35-37	30	16.7	14.2	12.2	8.3										30-50	56
				50	12.5	8.3	5.0	2.5											
				Shut Off	75	70	65	59											
		DW40E-1726	37-39	30	11.7	11.7	11.5	10.3	9.0	7.7	6.2	4.8						30-50	
				50	9.2	9.2	8.21	7.0	5.7	4.3	3.2	1.7							
				Shut Off	98	91	86	80	74	69	65	58							
		DW40E-1520	39	30							5.0	4.8	4.3	3.7	3.2	2.7		30-50	
				50							3.7	3.3	3.0	2.7	2.0	1.8			
				Shut Off							105	95	90	85	80	75			
CPJ10B CPH10	1	DW40E-1634	46	30	19.2	15.0	11.7	8.3										30-50	58
				50	10.0	7.5	5.0	2.5											
				Shut Off	71	66	62	57											49
		DW40E-1828	46-47	30	13.0	13.0	12.8	12.5	10.5	9.0	7.5	5.8	4.0					30-50	
				50	12.0	12.0	10.8	9.5	7.8	6.2	5.0	3.5	2.0						
				Shut Off	110	105	99	93	87	81	76	70	64						
		DW40E-1520	46-47	30							5.5	5.5	5.0	4.5	3.8	3.5	2.7	30-50	
				50							5.2	4.7	4.2	3.7	3.2	2.7	2.2		
				Shut Off							130	123	117	110	104	98	92		
CPJ15	1-1/2	DW40E-1736	46-52	30	21.7	17.5	13.3	10.0	6.7									30-50	66
				50	15.0	11.7	8.3	5.0	2.7										
				Shut Off	80	76	71	65	60										
		DW40E-1728	50-53	30			12.8	12.5	10.7	9.0	7.7	6.2	5.0	3.5				30-50	
				50			11.7	11.3	9.7	7.8	6.7	5.0	3.3	2.5					
				Shut Off			105	98	92	87	82	77	72	65					
		DW40E-1520	52-54	30							5.3	5.3	5.2	5.0	4.3	3.8	3.3	30-50	
				50							5.2	5.0	4.7	4.2	3.8	3.3	2.8		
				Shut Off							135	128	123	118	112	105	100		

Maximum Pump Case Pressure = 150 PSI, * Suction & pressure pipe tapping 1-1/4" x 1"

CPJ and CPH Single Pipe Ejector

FLINT & WALLING

CPJ AND CPH DEEP WELL CAPACITIES WITH 2" SINGLE PIPE EJECTOR

Two Inch Single Pipe Ejector

Model No.	HP	Ejector Assembly	Min. Oper. Press.	Disch. Press. PSI	Vertical Distance to Water in Feet / CAPACITY - U.S. GALLONS PER MINUTE														Press. Switch Setting	Pump Ship Wt.
					20	30	40	50	60	70	80	90	100	110	120	130	140	150		
CPJ05B CPH05	1/2	SP20BL-1730†	27	30 50 Shut Off	10.8 5.0 65	9.2 3.3 60	7.5 1.7 55												30-50	46 38
		SP20BL-1828†	27-30	30 50 Shut Off	11.7 6.7 76	9.7 4.7 68	7.5 2.8 60	5.8 1.2 55	3.8 51										30-50	
		SP20BL-1622†	31	30 50 Shut Off			6.2 4.2 90	5.8 3.7 83	5.0 2.8 76	4.0 2.2 70	3.3 1.3 61	2.3 0.3 55							30-50	
CPJ07B CPH07	3/4	SP20BL-1630†	39	30 50 Shut Off	16.2 11.7 75	13.7 7.5 70	10.8 5.0 65	7.5 1.7 55											30-50	56
		SP20BL-1726†	39	30 50 Shut Off	11.0 8.3 91	11.0 7.5 87	9.7 6.7 82	9.5 5.3 78	7.2 4.2 72	5.8 2.8 66	3.3 1.8 62								30-50	
		SP20BL-1520†	40	30 50 Shut Off					5.3 4.2 108	5.0 3.8 100	4.5 3.3 92	3.8 2.7 84	3.3 2.2 77	2.8 1.7 70					30-50	
CPJ10B CPH10	1	SP20BL-1634†	44-47	30 50 Shut Off	16.7 10.0 71	15.0 7.5 66	11.7 4.7 61	8.3 2.0 55											30-50	49
		SP20BL-1828†	44-47	30 50 Shut Off	11.7 11.0 104	11.7 9.8 98	11.2 8.8 92	10.0 7.3 86	8.3 6.0 80	7.0 4.5 72	5.5 3.3 67	3.8 1.8 61	2.2 0.5 55						30-50	
		SP20BL-1520†	45-47	30 50 Shut Off						5.3 5.0 119	5.3 4.5 113	5.0 4.0 106	4.3 3.5 100	3.7 2.8 94	3.2 2.5 89	2.5 2.0 83	2.0 1.3 78		30-50	
CPJ15	1-1/2	SP20BL-1736†	46-52	30 50 Shut Off	20.0 13.3 80	15.8 10.0 75	12.5 7.5 70	9.7 5.0 65	6.7 2.7 60										30-50	66
		SP20BL-1728†	51-53	30 50 Shut Off			11.7 10.0 102	11.7 9.0 96	10.0 7.5 90	8.0 5.8 84	6.3 4.3 78	4.8 3.0 71	3.5 1.8 65						30-50	
		SP20BL-1520†	52-55	30 50 Shut Off							5.3 5.3 130	5.3 5.0 125	5.3 4.5 120	4.8 4.2 115	4.2 3.7 110	3.7 3.2 103	3.2 2.7 95	2.7 2.2 88	30-50	

Maximum Pump Case Pressure = 150 PSI †Not for sale in states following Proposition 65 or AB 1953

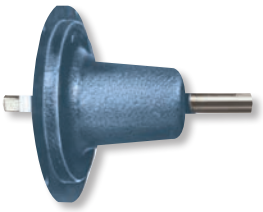
Jet Pump Accessories, Service Kits

"EK" SHALLOW WELL TANK MOUNTED SYSTEMS

Model	HP	Tank Type	Approximate Dimensions - Inches			Ship Wt.
			L	W	H	
EK05SAT25H	1/2	Horizontal	24.5	17.25	33.5	76 lbs.
EK07SAT44H	3/4	Horizontal	24.5	17.25	33.5	76 lbs.

For performance specifications, see EK pump page.
Includes: Pump, motor, pressure switch, ejector, pressure tank and connection fittings from pump to tank.

POWER CONVERSION UNIT FOR JET AND CENTRIFUGAL PUMPS



Order No.	Application
122649 NEMA C	Can be used with any jet or centrifugal pump equipped with NEMA C or NEMA J standard electric motors. Gasoline engine or electric motor can be directly coupled with shaft or can be used with belt and pulley. For electric motor used with belt drive, the motor HP should be doubled. The gasoline engine HP should be doubled that of standard motor in either case above.
135458 NEMA J	5/8" diameter steel shaft, mounted in two heavy duty ball bearings, carry all radial and thrust loads.

CONVERTIBLE JET PUMPS WITH POWER CONVERSION UNIT

Model No.	Description	Pressure Control Valve Required†
CPJ05 222	Threaded Shaft	124330
CPJ07 222	Threaded Shaft	132446
CPJ10 222	Threaded Shaft	132446
CPJ15 222	Threaded Shaft	133383

†Pressure control valve required for deep well applications - order separately. Order ejector separately.
CPJ Convertible Jet Pumps fitted with a power conversion unit offer the flexibility of electric motor or gasoline engine drive. Can be belt or direct driven. Power conversion unit features cast iron body and double, heavy duty ball bearings.

SERVICE KITS FOR JET PUMPS

Model No.	Service Kit For:	Kit Contents
148143	1/3 HP CPJ Jet Pumps 1/2 HP EK Jet Pump	Impeller, Diffuser, Rotary Seal, Square Cut Ring, Diffuser Rubber
148141	1/2 HP CPJ & CPH Jet Pumps 3/4 HP EK Jet Pump	
148140	3/4 HP CPJ & CPH Jet Pumps 1 HP EK Jet Pump	
023705	1 HP CPJ, CPH & VPH10 Jet Pumps	

"EK" Shallow Well Jet Pump Tank Mounted Systems

FLINT & WALLING

FW0380
1120
Supersedes
0319

EK

SHALLOW WELL JET PUMP

TANK MOUNTED SYSTEMS

COMPLETE SYSTEM INCLUDES:

- **Heavy cast iron CSA approved shallow well jet pump.**
- **Capacitor start motor with thermal overload protection. Dual voltage motor is factory connected for 115 volts. Spade connectors enable quick voltage change to 230 volt service.**
- **Horizontal Air-E-Tainer® pre-charged pressure tank with plumbing fitting between pump and tank**

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

EK05SAT25H, EK07SAT44H

Model	HP	Tank Type	Approximate Dimensions - Inches			Ship Weight
			Length	Width	Height	
EK05SAT25H	1/2	Horizontal	24.5	17.25	33.5	76 Lbs.
EK07SAT44H	3/4	Horizontal	24.5	17.25	33.5	76 Lbs.

Model	Suction Lift Ft.	Pressure Switch Setting PSI	Capacities GPM At Discharge Pressure PSIG				Suction & Discharge
			20	30	40	50	
EK05SAT25H 1/2 HP 115/230V	5 15 25	30-50	10.5 7.6 4.5	9.5 7.3 4.2	5.8 4.5 3.5	4.0 2.5 2.0	1-1/4" X 3/4"
EK07SAT44H 3/4 HP 115/230V	5 15 25	20-40	15.5 11.9 6.0	15.0 11.7 5.8	10.0 9.1 5.2	5.8 3.8 2.0	1-1/4" X 3/4"

DEEP WELL JET PUMPS

FW0185
0724
Supersedes
0920

VA SERIES - Exclusive vacuum operated pressure regulator that automatically adjusts to varying depths and discharge pressures. No manual adjustment necessary.

VS and VPH SERIES - Adjustable automatic pressure regulator provides maximum capacities and pressure at all times.

135276A Optional Pump Base For Horizontal Mounting of "VA" and "VS" Series Jet Pumps

3/4 - 2 HP Single & Multi-Stage

- Nema J single phase, 60 HZ, 3450 RPM dual voltage motor, features: quality windings, double ball bearings and overload protection with automatic restart.
- Precision molded impeller and diffuser insures perfect alignment and ultra-smooth passages for high performance and reliability.
- Large one-piece pump case design, pump can be disassembled without disturbing well or discharge pipes.
- Top located priming port and discharge prevents air lock and allows for easy priming.
- Convenient tappings for draining of pump and installation of pressure switch and pressure gauge.

VA Series with exclusive totally automatic pressure regulator

VS Series with adjustable diaphragm pressure regulator

VPH Series with adjustable diaphragm pressure regulator

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

VA, VS and VPH Series

- VA Series Two Stage, 3/4 - 1-1/2 HP
- VPH Series Single Stage, 1 HP
- VS Series Two Stage 3/4 - 1-1/2 HP

FLINT & WALLING

VA, VS & VPH Performance Specifications

V SERIES DEEP WELL PERFORMANCE SPECIFICATIONS

MODEL NO. HP STAGES	TWO PIPE EJECTORS	SINGLE PIPE EJECTORS		NOZZLE VENTURI SELECTION		VERTICAL DISTANCE TO WATER IN FEET CAPACITY IN GPM														LB. PUMP DISCH. PRESS
	CAST IRON	CAST IRON	BRASS																	
	4"	2"	2"	N	V	30	40	50	60	70	80	90	100	120	140	160	180	200	220	240	
VPH10 1 HP 1 STAGE	DW40E			16	34	15.0	11.7	8.3													30
				18	28	13.0	12.8	12.5	10.5	9.0	7.5	5.8	4.0								
				15	20						5.5	5.5	5.0	4.5	3.8	3.5	2.7				
		SP20CL† SP22CL†	SP20BL†	16	34	15.0	11.7	8.2													
				18	28	11.7	11.2	10.0	8.3	7.0	5.5	3.8	2.2								
				17	24		10.4	9.3	8.2	7.2	6.0	5.0	4.0	3.0							
				15	20					5.3	5.3	5.0	4.3	3.7	3.2	2.5	2.0				
VA207P VS207P 3/4 HP 2 STAGE	DW40E			13	26	13.5	12.2	10.5	9.2												40
				15	24			9.4	8.7	7.9	7.2	6.3	5.6								
				14	18								4.7	4.5	4.2	3.7	3.0	2.3			
		SP20CL† SP22CL†	SP20BL†	13	26	12.9	11.1	9.3	7.6												
				15	24			8.1	7.4	6.4	5.4	4.4	3.8								
				14	18								4.3	3.5	2.6						
VA210P VS210P 1 HP 2 STAGE	DW40E			13	28	16.5	14.7	12.5	10.1												50
				15	26			12.6	11.3	10.1	8.8	7.5	6.3								
				14	20								6.2	5.5	4.8	4.2	3.5	2.8			
		SP20CL† SP22CL†	SP20BL†	14	28	15.2	12.7	10.1	8.5												
				15	26			11.1	9.5	8.2	6.8	5.4	4.4								
				14	18								4.3	4.0	3.7						
VA215P VS215P 1-1/2 HP 2 STAGE	DW40E			12	28	17.4	15.6	13.8	11.9												60
				15	26			14.3	13.1	11.9	10.8	9.5	8.3								
				14	20								7.3	6.7	6.0	5.4	4.8	4.3	3.6	2.8	
		SP20CL† SP22CL†	SP20BL†	12	28	16.4	14.4	12.4	10.3												
				15	26			13.0	11.6	10.2	8.8	7.4	6.5								
				14	20								6.3	5.8	4.9	4.0	3.0	2.0			
				14	18												3.2	2.8	2.0		

To order complete ejector package, add nozzle and venturi suffix to ejector number (Example SP20BL-1726). For ejector package less nozzle and venturi, use suffix 0000 (Example SP20BL-0000). Complete ejector package includes ejector body, nozzle and venturi plus foot valve. For appropriate well adapter see chart below.
All 2" single pipe performance data is based on 1 1/4" drop pipe. If 1" drop pipe is used the performance will be less.
Pressure pipe and suction pipe tappings 1 1/4" x 1" discharge tapping 1". †Not for sale in states following Proposition 65 and AB1953

VA and VS SERIES SHALLOW WELL PERFORMANCE SPECIFICATIONS

MODEL NO.	HP	SHALLOW WELL EJECTOR ASSEMBLY	SUCTION LIFT FEET	CAPACITIES - GPM AT DISCHARGE PSI								SUCTION & DISCHARGE	PRESSURE SWITCH SETTING	SHUTOFF PRESSURE PSI	SHIPPING WT
				20	30	40	50	60	70	80	90				
VA207P VS207P	3/4	SW10V-1030	5 15 25	16.0 13.5 7.5	16.0 13.5 7.5	16.0 13.5 7.5	14.5 12.3 7.2	9.5 7.2 2.3	2.8			1-1/4" X 1"	30-50	75 68 64	67
VA210P VS210P	1	SW10V-1030	5 15 25	16.7 13.3 7.2	16.7 13.3 7.2	16.7 13.3 7.2	16.7 13.3 7.2	14.3 11.7 6.8	9.0 5.0			1-1/4" X 1"	30-50	80 75 70	72
VA215P VS215P	1-1/2	SW15V-1034	5 15 25	20.7 17.3 9.2	20.7 17.3 9.2	20.7 17.3 9.0	20.7 17.3 9.0	20.7 17.3 9.0	20.3 17.2 9.0	17.0 15.0 6.8	11.0 4.0	1-1/4" X 1"	30-50	96 91 84	76

Order shallow well ejector assembly separately.

EJECTOR SPECIFICATIONS AND WELL ADAPTER SELECTION CHART

EJECTOR ORDER NO.	EJECTOR DESCRIPTION	EJECTOR DROP PIPE TAPPING	WELL SIZE / DROP PIPE	WELL ADAPTER REQUIRED	
				PACKAGE NO.	TYPE
SP20BL†	2" Brass, Leather	1-1/4" M	2" x 1-1/4"*	129720 129723	Straight Rt. Angle
SP20CL†	2" Cast Iron, Leather	1" F	2" x 1"	129719 127025	Straight Rt. Angle
SP22CL†	2" Cast Iron, Leather	1-1/4" M	2" x 1-1/4"	129720 129723	Straight Rt. Angle

*129205 1-1/4" turned coupling required. Order separately.
†Not for sale in states following Proposition 65 and AB1953

SP20CL†
SP22CL†
SP20BL†

Right Angle Adapter

Straight Adapter

Part No.	Description
022961	Adapter to match Sta-Rite vertical jet pump footprint to F&W "VA", VS" and "VPH" jet pumps without disturbing existing well plumbing

022961

PRESSURE BOOSTER PUMPS

FW0125
1021
Supersedes
1020

PRESSURES TO 200 PSI

The pressure booster pump is designed to increase water pressure from city mains or private water systems.

Applications include pressure cleaning, spray or mist systems, jockey pumps, booster service, reverse osmosis, water circulation and general purpose pumping.

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

PB SERIES STAINLESS STEEL, POWDER COATED CAST IRON OR CAST IRON

1/3 - 3 HP

60Hz or 50Hz

5, 7, 10, 19, 27, 35, 55 & 85 GPM

CSA US ††

††NOTE: Models with TEFC motors are not CSA certified

FLINT & WALLING

MATERIAL CONSTRUCTION

Component Description	Stainless Steel Models 5, 7, 10, 19, 27 & 35 GPM 1/3 thru 3 HP	Powder-coated Models 5, 7, 10, 19, 27 & 35 GPM 1/3 thru 3 HP	Cast Iron Models 5, 7, 10, 19, 27 & 35 GPM 1/3 thru 3 HP
Suction and Discharge Casting	304 (CF-8) stainless steel	Powder coated cast iron	Cast Iron
Pump Shell	304 heavy wall stainless steel	304 heavy wall stainless steel	304 heavy wall stainless steel
Staging*	Noryl® impellers and diffusers; type 304 stainless steel floating bearing inserts and acetal diffuser plates	Noryl® impellers and diffusers; type 304 stainless steel floating bearing inserts and acetal diffuser plates	Noryl® impellers and diffusers; type 304 stainless steel floating bearing inserts and acetal diffuser plates
Pump Shaft and Motor Coupling Assembly	304L stainless steel hex shaft with 316 S.S. motor to shaft coupling	304L stainless steel hex shaft with 316 S.S. motor to shaft coupling	304L stainless steel hex shaft with 316 S.S. motor to shaft coupling
Shaft Seal	Carbon-silicon carbide, stainless steel spring, and Viton®	Carbon-silicon carbide, stainless steel spring, and Buna-N	Carbon-silicon carbide, stainless steel spring, and Buna-N
O-Rings	Viton®	Buna N	Buna-N
Motor (CSA US)	Open drip proof (ODP) and Totally enclosed fan cooled (TEFC) motors available with single or three phase options.		

* Replacement cartridge assembly available for all models. Includes all necessary parts to restore pumps to like-new performance. No special tools required.
Noryl® is a registered trademark of General Electric.
Viton® is a registered trademark of Dupont.

PERFORMANCE SPECIFICATIONS

PRESSURE ADDED - PSI†					10	20	40	60	80	100	120	140	160	180	200	220	Max. Press. PSI	Suction Pipe Tap NPT	Disch. Pipe Tap NPT
Stainless Steel Fitted	Powder-Coated Cast Iron Fitted	Cast Iron Fitted	HP	Stage	Output - Gallons per Minute														
60Hz Models																			
PB0508S031 Δ	PB0508C031	PB0508A031	1/3	8	10.2	9.6	8.3	6.5	4.3								96		
PB0512S051 Δ	PB0512C051	PB0512A051	1/2	12	10.0	9.5	8.3	7.1	6.0	4.0	2.3						132		
PB0516S071 Δ	PB0516C071	PB0516A071	3/4	16	10.2	9.7	9.1	8.3	7.5	6.6	5.8	4.6	3.3				189		
PB0712S071 Δ	PB0712C071	PB0712A071	3/4	12	14.0	13.4	12.2	10.9	9.5	8.9	7.0	4.6					158	3/4"	3/4"
PB1014S101 Δ	PB1014C101	PB1014A101	1	14	*	*	14.5	13.4	12.3	11.2	9.8	8.0	6.0	2.3			183		
PB1016S151 Δ	PB1016C151	PB1016A151	1-1/2	16	*	*	15.0	14.1	13.1	12.1	11.0	9.8	8.2	5.2	2.0		212		
PB1914S201	PB1914C201	PB1914A201	2	14	27.6	27.0	25.7	24.2	22.6	20.8	18.7	16.2	12.9	7.7			190		
PB3506S201	PB3506C201	PB3506A201	2	6	48.0	47.0	42.5	35.2	24.0								85		
PB2711S201	PB2711C201	PB2711A201	2	11	*	*	31.5	29.5	27.1	24.2	20.3	13.0					147		
PB3508S301	PB3508C301	PB3508A301	3	8	48.0	47.5	44.0	40.0	35.2	27.5							118	1"	1"
PB2714S301 ‡‡	PB2714C301 ‡‡	PB2714A301	3	14	*	*	33.0	31.5	29.8	27.9	25.6	22.8	18.9	11.1			187		
PB2717S303A**	-	-	3	17	*	*	*	34.1	32.3	30.5	28.3	25.8	23.1	20.0	16.6	11.4	225		
PB2717S303T**	-	-	3	17	*	*	*	34.1	32.3	30.5	28.3	25.8	23.1	20.0	16.6	11.4	225		
-	-	PB5504A201	2	4	77.6	71.5	52.5										55		
-	-	PB5506A301	3	6	77.8	74.4	65.0	51.1	31.9								83	2"	2"
-	-	PB8504A201	2	4	105.8	90.0	47.0										49		
-	-	PB8505A301	3	5	108.8	98.8	60.0	25.0									60		
50HZ Models																			
PB0508Y031 Δ	PB0508Z031	PB0508X031	1/3	8	7.5	6.8	5.0	2.0									66		
PB0514Y051 Δ	PB0514Z051	PB0514X051	1/2	14	*	7.3	6.4	5.3	4.0	2.1							113		
PB0714Y071 Δ	PB0714Z071	PB0714X071	3/4	14	*	10.9	9.7	8.5	7.0	5.2	2.8						132		
PB1020Y101	PB1020Z101	PB1020X101	1	20	*	13.0	12.2	11.4	10.5	9.5	8.2	6.8	5.0	2.0			183	3/4"	3/4"
PB1022Y101	PB1022Z101	PB1022X101	1	22	*	12.0	12.2	11.4	10.5	9.5	8.4	7.4	6.0	4.3	2.0		203		
PB1023Y101	PB1023Z101	PB1023X101	1	23	*	12.0	12.2	11.4	10.5	9.6	8.6	7.6	6.5	5.1	3.3		213		
PB1920Y151	PB1920Z151	PB1920X151	1-1/2	20	*	22.1	21.0	19.5	18.0	16.1	14.1	11.6	8.3	2.0			182		
PB2717Y201	PB2717Z201	PB2717X201	2	17	*	30.8	28.9	26.7	24.1	21.2	18.0	13.5					160		
PB3508Y151	PB3508Z151	PB3508X151	1-1/2	8	*	39.4	33.9	27.0	14.0								84	1"	1"
PB3514Y301T	PB3514Z301T	PB3514X301T	3	14	*	*	38.5	36.5	32.1	28.1	23.0	14.4					146		

† Example: If PB0508A031 pump is connected to supply line of sufficient capacity, carrying water at 40 PSI, and the output of the pump is held to 8.3 GPM by a gate valve, the pump will add 40 PSI to line pressure for a total output pressure of 80 PSI.
* Operation of pump in this range may result in reduced pump life and/or motor damage.
To keep pump and seal lubricated, a minimum flow of 1.5 GPM must always be maintained through the pump.
** Only available in 3 phase
‡‡ Models marked are also available in 575V, 3 Phase Only.

Motor voltage:

Open Drip Proof
Single Phase 1/3 - 2 HP - 115/230; 3 HP - 230V 60 Hz.
Three Phase 1/2 - 2 HP - 208-230/460, 50/60Hz.
Three Phase 3 HP - 208-230/460, 60 HZ
Three Phase 2 - 3 HP - 575V, 60Hz
For three phase models, use suffix "3" on the model no.
Example: PB0512A053

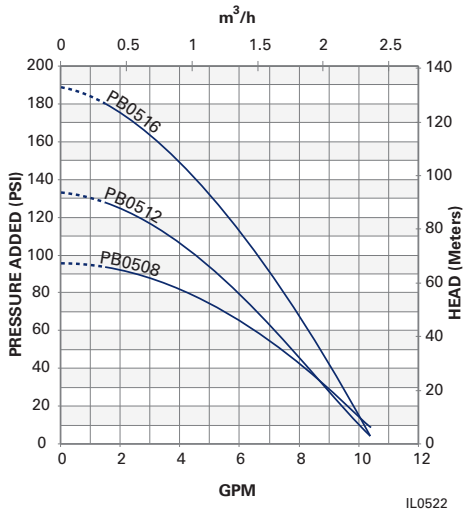
Totally Enclosed Fan Cooled
Single Phase: 1/2 thru 3 HP - 115/230V 60/50Hz
Three Phase: 1/2 thru 3 HP - 208/230/460V 60/50Hz

Δ Less than 50% US content

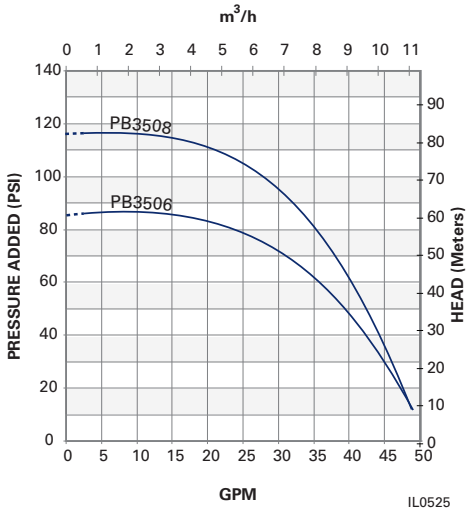
Pressure Booster Pump Performance Curves 3450 RPM 60 Hz

60 Hz PERFORMANCE CURVES

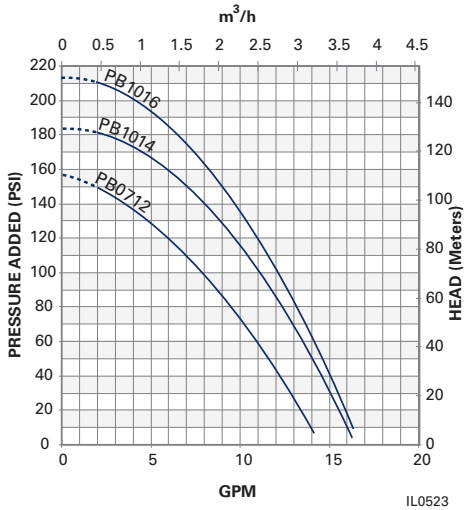
5 GPM



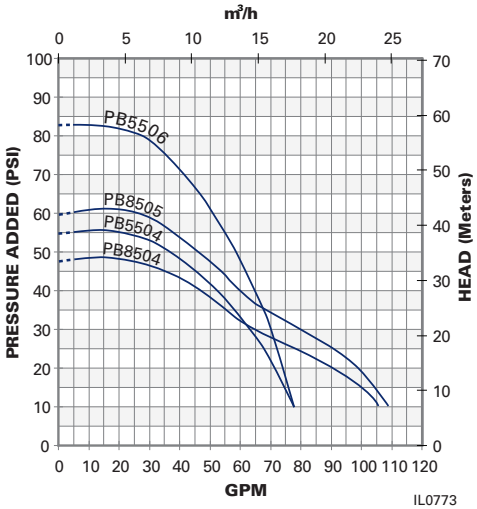
35 GPM



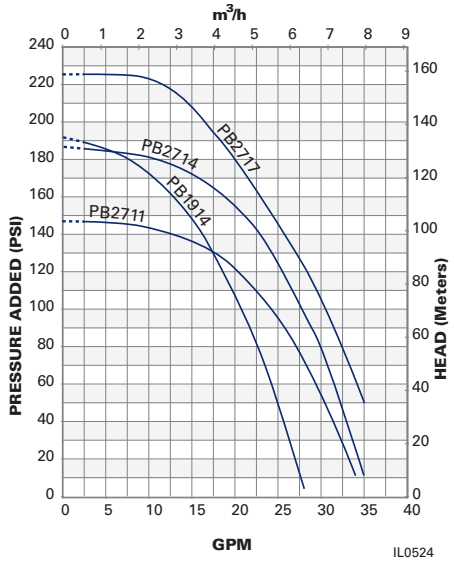
7 and 10 GPM



55 & 85 GPM



19 & 27 GPM



Do not operate pumps in flow range indicated by dotted line.

MODEL NUMBER CODE

PB 05 12 A 05 1 T* V**

- **Series**
- **GPM**
- **Stages**
- **Construction Code**
  - 60HZ
    - S = Stainless Steel
    - C = Powder Coated Cast Iron
    - A = Cast Iron
  - 50HZ
    - Y = Stainless Steel
    - Z = Powder Coated Cast Iron
    - X = Cast Iron
- **Horsepower**
  - 03 = 1/3 HP
  - 05 = 1/2 HP, etc.
- **Phase**
  - 1 = 1 Phase
  - 3 = 3 Phase
- **TEFC* (Add T Suffix for TEFC motor)**
- **575V** (Add V Suffix for 575V motor)**

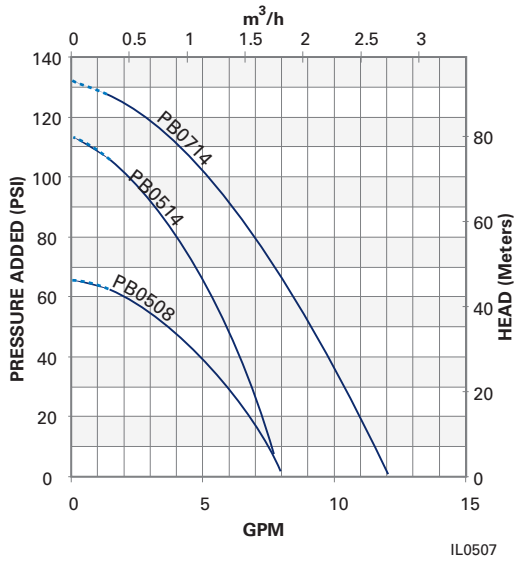
TEFC motors available on powder coated cast iron models and stainless steel models only

Pressure Booster Pump Performance Curves 2850 RPM 50 Hz

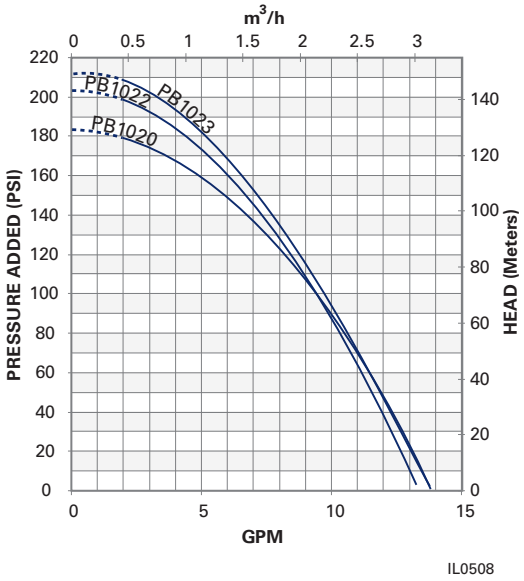
FLINT & WALLING

50 Hz PERFORMANCE CURVES

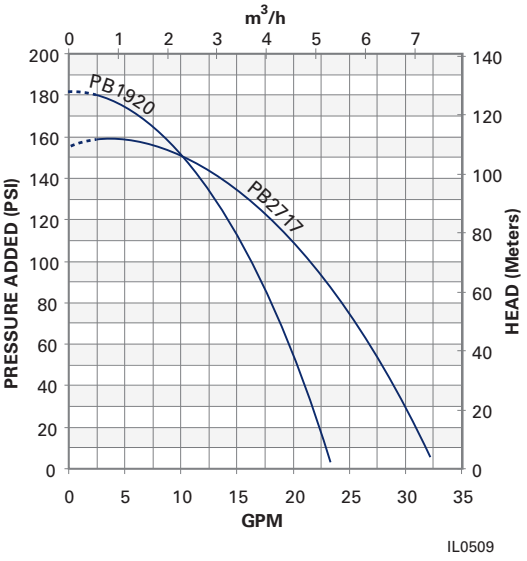
5 and 7 GPM



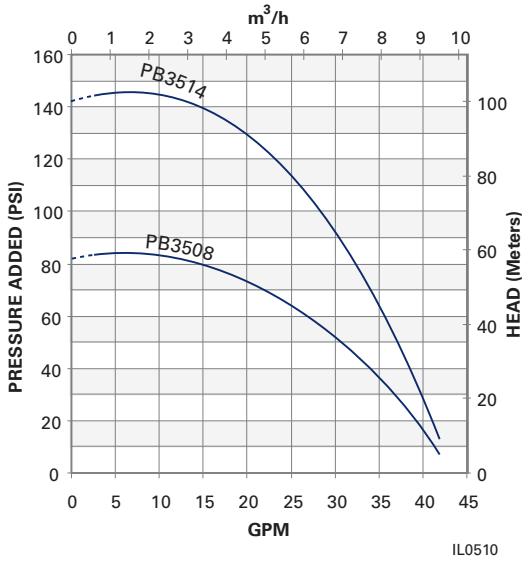
10 GPM



19 and 27 GPM



35 GPM



Do not operate pumps in flow range indicated by dotted line.

CENTRIFUGAL PUMPS

FW0074
0624
Supersedes
1021

FEATURING FLINT & WALLING'S SERVICE PLUS MOTORS

Model CJ103

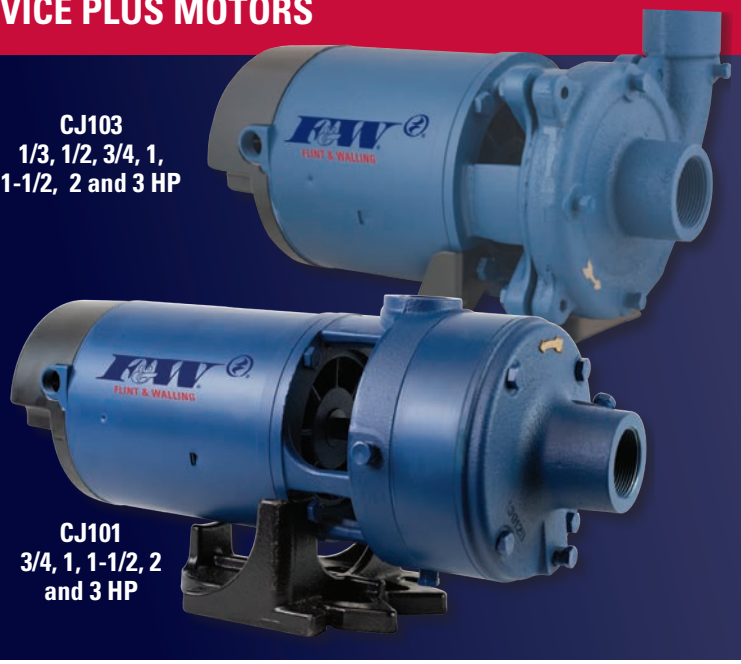
- Low lead brass or thermoplastic impellers
- Capacities to 113 GPM
- Pressures to 45 PSI
- Discharge can be rotated to any one of four positions for horizontal or vertical positioning

Model CJ101

- Low lead brass or thermoplastic impellers
- Capacities to 57 GPM
- Pressures to 95 PSI
- Multi-Stage for high head

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

CJ101, CJ103 SERIES



CJ103
1/3, 1/2, 3/4, 1,
1-1/2, 2 and 3 HP

CJ101
3/4, 1, 1-1/2, 2
and 3 HP

Single or three phase

Suction lifts to 25 feet

Pressures to 95 PSI

US

FLINT & WALLING

Flint & Walling single and multi stage CJ103 and CJ101 centrifugal pumps are non-self priming with suction lifts up to 25 feet. Applications include booster service, water circulation, liquid transfer, cooling systems, jockey pump service and general service in farm, commercial and industrial applications.

COMPONENT DESCRIPTION	CJ103 SERIES 1/3 THROUGH 3 HP SINGLE STAGE MODELS	CJ101 SERIES 3/4 THROUGH 3 HP TWO & THREE STAGE MODELS
Suction Body	Cast iron w/low lead brass clearance ring. Discharge port rotates in 90° increments. 1/4" vacuum tappings and drain plugs.	Cast iron w/low lead brass clearance ring and 1/4" vacuum tapping.
Impeller(s)	Closed low lead brass or closed thermoplastic	Closed low lead brass or closed thermoplastic
Gasket(s)	Buna-N square cut ring	Lexide gasket, Buna-N square cut ring
Intermediate Stage(s)	Not applicable	Cast iron w/brass suction and hub clearance rings
Shaft Seal	Silicon carbide, stainless steel spring, and Buna-N	Silicon carbide, stainless steel spring, and Buna-N
Mounting Ring	Cast iron body	Cast iron body, 1/4" tapping for applications requiring a pressure switch
Pump Shaft	Threaded 416 stainless steel	Threaded 416 stainless steel
Base	Rigid steel base assembly	Heavy cast iron base assembly
Motor (CSA US)	All CJ101 and CJ103 single phase (with ODP motors) pumps feature Flint & Walling's Service Plus 56 frame NEMA J, single or dual voltage ODP motors with permanently lubricated double ball bearing. NOTE: CJ103 pumps with TEFC motors feature purchased motors. Single or three phase options. TEFC motors available on selective models.	

Open Drip Proof (ODP) motor voltage

CJ101 Single Phase: 3/4 through 2 HP - 115/230V;
3 HP - 230V, 60HZ

CJ103 Single Phase: 1/3 through 3/4 HP - 115/230V, 60/50HZ;
1 through 3 HP, 230V, 60HZ

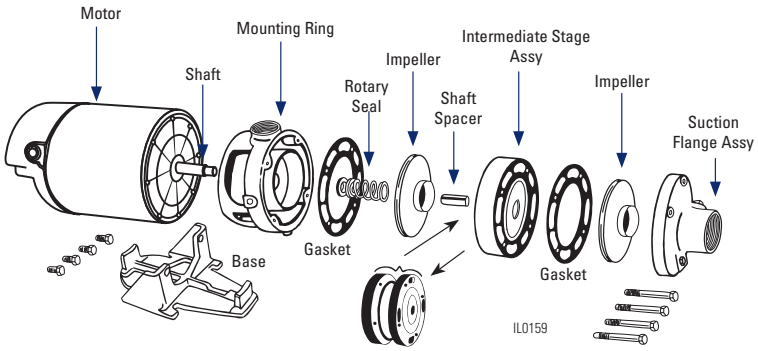
CJ101 Three Phase: 3/4 through 2 HP - 208-230V/460V, 50/60HZ
3 HP - 208-230/460V; 60HZ

CJ103 Three Phase: 1/2 through 3/4 HP - 208-230V/460V, 50/60HZ

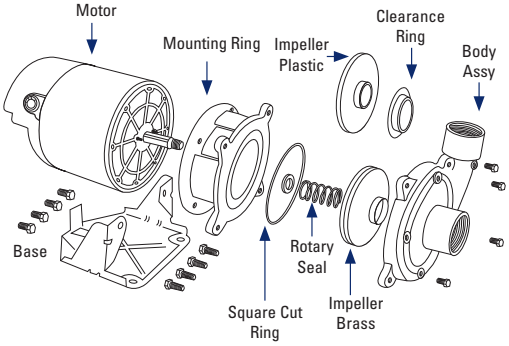
Totally Enclosed Fan Cooled (TEFC) motor voltage

Single Phase: 1/2 through 3 HP - 115/230V 60/50HZ

Three Phase: 1/2 through 3 HP - 208-230/460V 60/50HZ



CJ101 SERIES



CJ103 SERIES

Product may not be exactly as shown.

CJ103 1/2, 3/4 and 1 HP series also available with autophoretic coating on inside of castings.
Add suffix PC to Model No. Example: CJ103101PC.

**In order to follow DOE P.E.I. requirements, single phase CJ103201 pumps will ship with a 3 HP motor.

CJ103 DOE Compliance

PUMP MODEL	Impeller Dia.	P.E.I.CL
CJ103101	4.870"	0.98
CJ103151	5.090"	0.99
CJ103201	5.090"	0.98
CJ103P101	5.000"	0.98

PUMP MODEL	Impeller Dia.	P.E.I.CL
CJ103P151	5.090"	0.90
CJ103101T	4.870"	0.99
CJ103151T	5.090"	0.99
CJ103201T	5.090"	0.99

PUMP MODEL	Impeller Dia.	P.E.I.CL
CJ103103T	4.870"	0.91
CJ103153T	5.090"	0.93
CJ103203T	5.090"	0.91

CJ101 Performance

PUMP PERFORMANCE

CJ101 SERIES CENTRIFUGAL PUMPS, LOW LEAD BRASS IMPELLERS

MODEL NO. 1 PHASE	MODEL NO. 3 PHASE	MODEL NO. LESS MOTOR	HP	STAGES	LIFT FT.	Discharge Pressure PSI 10	20	30	40	50	60	70	80	90	MAX. PRESS. PSI	*MAX. CASE PRESS.	*MAX. LIQUID TEMP.
						CAPACITY U.S. GPM											
CJ101B071AB CJ101B071TAB	CJ101B073AB CJ101B073TAB	CJ101B0710AB	3/4	2	5 15 25	39 38 31	34 33 29	29 26 23	21 18 12	5					54	160psig	200° F
CJ101B101AB CJ101B101TAB	CJ101B103AB CJ101B103TAB	CJ101B1010AB	1	2	5 15 25	42 40 32	38 36 31	33 31 28	26 24 21	18 14					62	160psig	200° F
CJ101B151AB CJ101B151TAB	CJ101B153AB CJ101B153TAB	CJ101B1510AB	1 1/2	2	5 15 25	48 44 34	44 42 33	39 37 32	34 31 29	27 24 20	17 10				69	160psig	200° F
CJ101B201AB CJ101B201TAB	CJ101B203AB CJ101B203TAB	CJ101B2010AB	2	2	5 15 25	56 50 37	52 49 36	47 45 35	41 39 34	34 31 27	24 19				70	160psig	200° F
CJ101C201AB CJ101C201TAB	CJ101C203AB CJ101C203TAB		2	3	5 15 25	49 45 35	47 44 34	43 42 33	40 39 32	36 35 31	32 31 29	28 26 23	22 19 15	12	98	160psig	200° F
CJ101C301AB CJ101C301TAB	CJ101C303AB Δ CJ101C303TAB		3	3	5 15 25	56 50 37	54 49 36	51 48 36	48 46 35	44 42 34	39 37 33	33 31 29	27 24 20	18	95	160psig	200° F

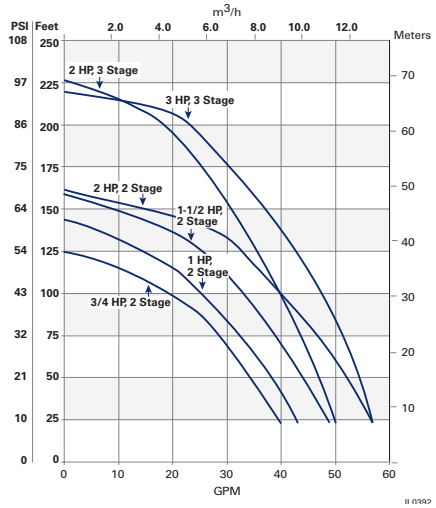
Δ Less than 50% US content

CJ101 SERIES CENTRIFUGAL PUMPS, PLASTIC IMPELLERS

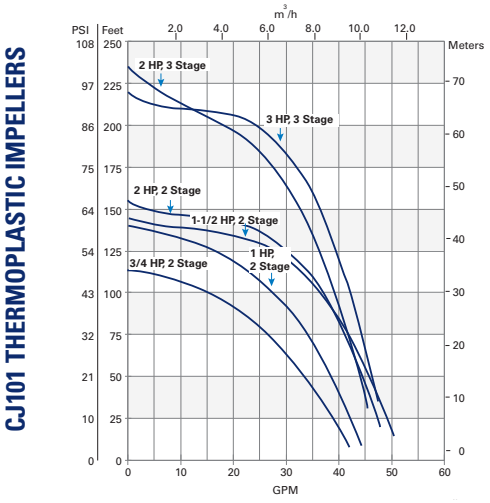
MODEL NO. 1 PHASE	MODEL NO. 3 PHASE	HP	STAGES	LIFT FT.	Discharge Pressure PSI 10	20	30	40	50	60	70	80	90	MAX. PRESS. PSI	*MAX. CASE PRESS.	*MAX. LIQUID TEMP.
					CAPACITY U.S. GPM											
CJ101P071	CJ101P073	3/4	2	5 15 25	41 38 32	35 32 29	28 26 22	20 13						49	160psig	160° F
CJ101P101	CJ101P103	1	2	5 15 25	45 42 35	40 39 33	35 33 30	28 26 22	20 15					60	160psig	160° F
CJ101P151	CJ101P153	1 1/2	2	5 15 25	54 48 37	50 46 35	44 42 33	38 35 28	28 23 17					61	160psig	160° F
CJ101P201	CJ101P203	2	2	5 15 25	55 49 37	52 47 36	47 45 33	41 39 32	34 30 26	23 17				67	160psig	160° F
CJ101D201	CJ101D203	2	3	5 15 25	44 36 26	44 36 26	44 36 24	41 36 24	37 35 24	32 30 22	28 25 20	22 20 15	16 11	101	160psig	160° F
	CJ101D303	3	3	5 15 25	54 48 36	52 47 36	50 46 36	47 45 35	44 42 33	39 37 31	33 30 27	25 22 19	15 11	95	160psig	160° F

*Do not exceed the maximum case pressure and maximum liquid temperature rating of the pump. Performance shown for 60Hz models. 50 Hz models also available.
Suction and Discharge Tappings 1-1/2" X 1-1/4"

CJ101 BRASS IMPELLERS



CJ101 THERMOPLASTIC IMPELLERS



CJ103 Performance

FLINT & WALLING

PUMP PERFORMANCE

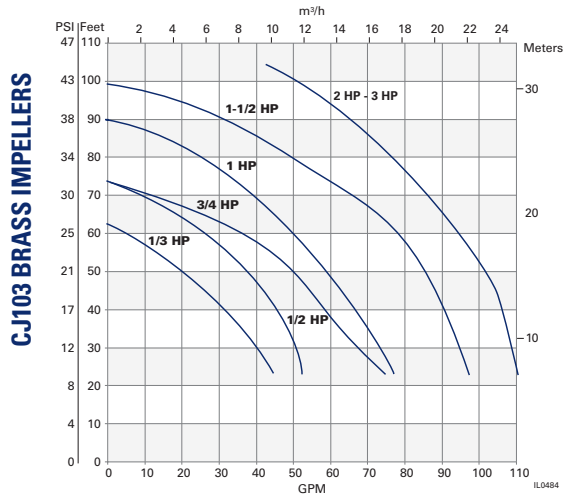
CJ103 SERIES CENTRIFUGAL PUMPS, LOW LEAD BRASS IMPELLERS

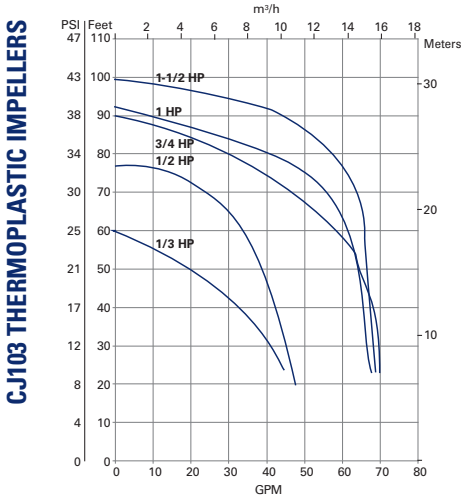
MODEL NO. 1 PHASE	MODEL NO. 3 PHASE	HP	STAGES	LIFT FT.	Discharge Pressure PSI / CAPACITY U.S. GPM 10	15	20	25	30	35	40	45	50	MAX. PRESS. PSI	*MAX. CASE PRESS.	*MAX. LIQUID TEMP.
CJ103031AB		1/3	1	5 15 25	42 36 28	34 26	21							27	100psig	200° F
CJ103051AB CJ103051TAB		1/2	1	5 15 25	50 43 33	47 40 30	37 29 15	25 9						32	100psig	200° F
CJ103071 CJ103071T	CJ103073 CJ103073T	3/4	1	5 15 25	71 66 57	62 54 43	51 40 25	36 19	11					32	100psig	200° F
CJ103101 CJ103101T	CJ103103T	1	1	5 15 25	76 73 66	69 65 57	61 54 45	50 41 29	36 24	16				39	100psig	200° F
CJ103151 CJ103151T	CJ103153T	1 1/2	1	5 15 25	94 92 74	88 85 72	80 75 66	70 63 52	59 49 34	44 27	18			43	100psig	200° F
CJ103201		3	1	5 15 25	109 109 90	103 103 89	96 94 85	86 82 71	75 67 51	61 45	39			44	100psig	200° F
CJ103201T	CJ103203T	2														

CJ103 SERIES CENTRIFUGAL PUMPS, PLASTIC IMPELLERS

MODEL NO. 1 PHASE	MODEL NO. 3 PHASE	HP	STAGES	LIFT FT.	Discharge Pressure PSI / CAPACITY U.S. GPM 10	15	20	25	30	35	40	45	50	MAX. PRESS. PSI	*MAX. CASE PRESS.	*MAX. LIQUID TEMP.
CJ103P031		1/3	1	5 15 25	43 35 26	35 24	21							26	100psig	160° F
CJ103P051	CJ103P053	1/2	1	5 15 25	45 41 31	45 41 29	44 38 27	36 24	19					32	100psig	160° F
CJ103P071	CJ103P073	3/4	1	5 15 25	69 64 49	68 62 48	64 57 45	57 46 31	42 28	20				38	100psig	160° F
CJ103P101		1	1	5 15 25	67 61 47	65 59 46	64 58 45	62 55 43	51 41 23	35				40	100psig	160° F
CJ103P151		1 1/2	1	5 15 25	68 62 48	67 61 47	66 60 46	65 59 45	63 55 41	52 39	31			44	100psig	160° F

*Do not exceed the maximum case pressure and maximum liquid temperature rating of the pump . Performance shown for 60Hz models. 50 Hz models also available. Models with suffix T denotes TEFC motor. All other models utilize ODP motors. Suction and Discharge Tappings 1-1/2" X 1-1/4"





CENTRIFUGAL PUMPS

FW0176
1020
Supersedes
1219

HIGH PERFORMANCE FOR INDUSTRIAL DEMANDS

- The C22000 Series is a rugged pump built for extra performance.
- Nationally known NEMA JM motors.
- Electronically balanced brass impellers.
- Capacities to 8,580 gallons per hour.
- Pressures to 85 PSI
- 3" Suction

MADE IN THE USA

C22000 SERIES

3 thru 7-1/2 HP

Single Phase or Three Phase

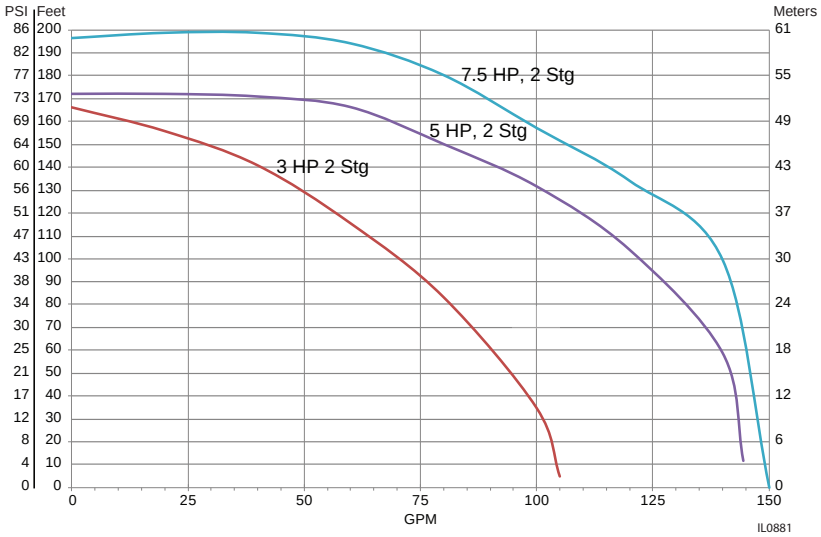
Two Stage

C22000 Performance

FLINT & WALLING

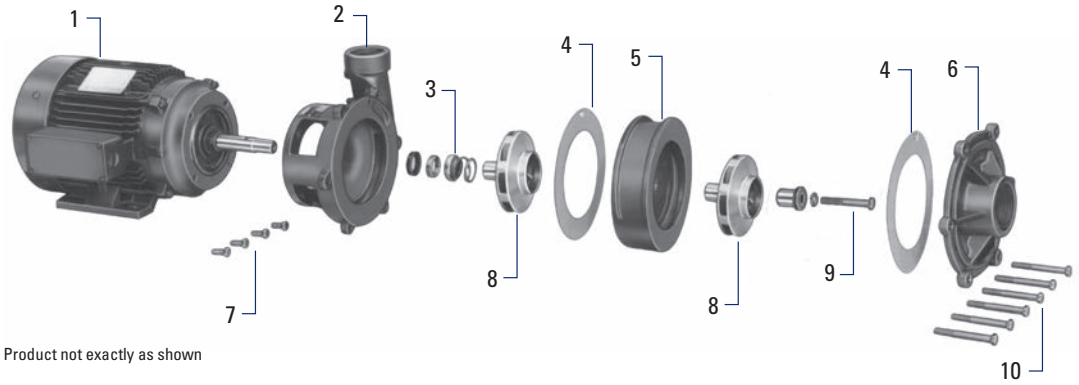
PERFORMANCE													
MODEL NUMBER		HP	STAGES	DISCHARGE PRESSURES (PSI)							MAX SUCTION LIFT (FT)	SUCT PIPE TAP (NPT)	DISCH PIPE TAP (NPT)
1 PHASE	3 PHASE			20	30	40	50	60	70	80			
				CAPACITY - U.S. GALLONS PER MINUTE (0 LIFT)									
C22231	C22233	3	2	95	86	75	60	40	12		20	3	2
C22251	C22253	5	2	143	137	124	111	91	65		20	3	2
--	C22273	7 1/2	2	145	140	138	135	121	95	75	20	3	2

MOTOR VOLTAGE: 3HP 1 Phase 208-230V 60 Hz, 5HP 1 Phase 208-230V 60Hz, 3, 5 & 7.5HP 3 Phase 208-230/460V 60Hz.
120 PSI Maximum Case Pressure



Ref No.	Description
1	Heavy-duty NEMA JM motor 3, 5, 7-1/2 HP
2	Heavy duty cast iron mounting ring
3	1-1/4" Rotary seal
4	Gasket
5	Heavy duty cast iron Intermediate stage

Ref No.	Description
6	Heavy duty cast iron body
7	Motor mounting bolts
8	Electronically balanced brass impellers
9	Brass impeller retainer and stainless steel lockscrew
10	Pump through bolts



Product not exactly as shown

LAWN SPRINKLER PUMPS

FW0075
0724
Supersedes
1020

FOR LAWN AND TURF SPRINKLING, IRRIGATION AND WATER TRANSFER

SPJ Self-Priming

- High capacity, high volume
- Cast iron pump body and mounting ring for long life
- Flint & Walling's Service Plus NEMA J, capacitor start, double ball bearing motors for continuous operation
- Easy access drain plug
- Rapid self-priming characteristics under maximum suction conditions

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

SPJ SERIES

Single or Three Phase

SPJ 3/4 - 3 HP

FLINT & WALLING

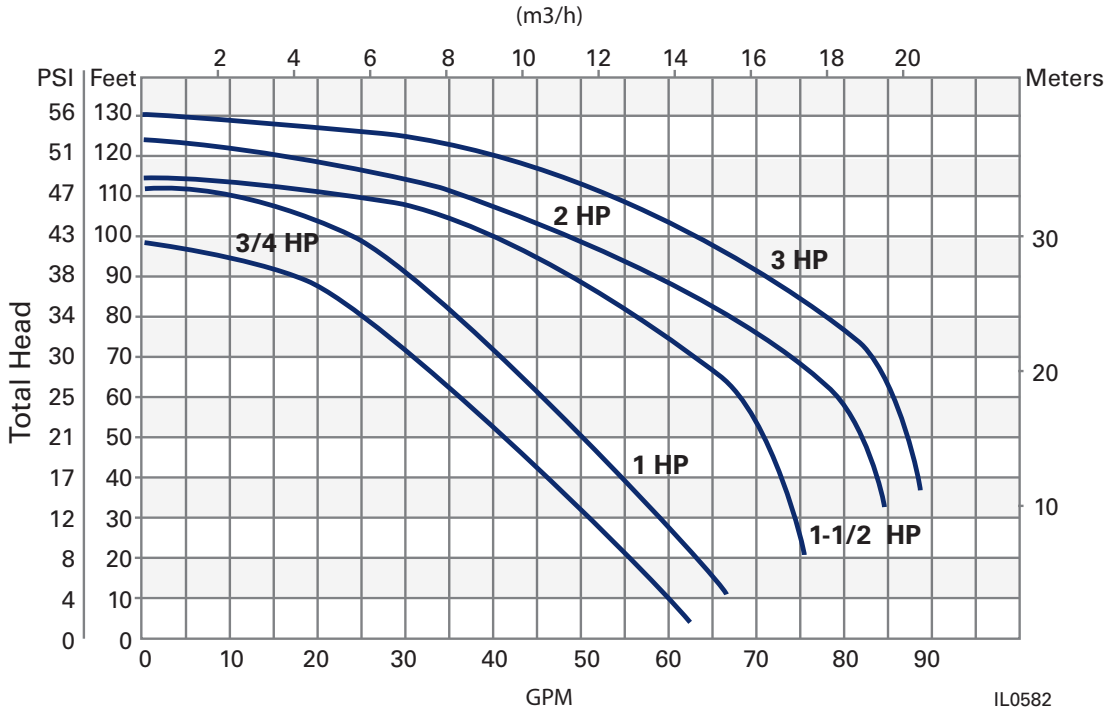
SPJ SELF-PRIMING 3/4 - 3 HP SINGLE OR THREE PHASE

PERFORMANCE CHART

Model Number		HP	Suction Lift Ft.	Discharge Pressure PSI								Shut-Off Pressure PSI	Suction Pipe Tap	Disch. Pipe Tap
				10	15	20	25	30	35	40	45			
1 Phase	3 Phase			Capacity - U.S. Gallons per Minute										
SPJ07P1	SPJ07P3	3/4	5 15 25	56 47 43	48 42 37	42 37 31	37 29 22	29 22 10	21 12			41 37 33	2″	1-1/2″
SPJ10P1	SPJ10P3	1	5 15 25	58 53 48	53 48 44	48 45 38	43 37 33	38 31 25	32 24 14	23 12	11	48 43 39	2″	1-1/2″
SPJ15P1 SPJ15B1	SPJ15B3	1-1/2	5 15 25	78 70 47	77 68 46	74 66 45	70 62 44	62 53 42	53 43 34	43 30	30	47 41 36	2″	1-1/2″
SPJ20B1	SPJ20B3	2	5 15 25	86 76 52	84 74 51	81 72 50	77 69 47	71 64 45	62 55 42	52 43 30	40 25	50 45 40	2″	1-1/2″
SPJ30B1	SPJ30B3**	3	5 15 25	88 77 54	86 76 53	85 75 52	84 74 51	80 72 50	73 65 49	64 55 45	53 43 10	54 50 45	2″	1-1/2″

Motor voltage: Single Phase 3/4 - 2 HP - 115/230V; 3 HP - 230V, 60Hz
Three Phase 3/4 - 2 HP - 208 - 230/460V, 50/60Hz; 3 HP - 208 - 230/460V; 60Hz
Maximum Case Pressure: 100 PSI
**Less than 50% US content

PERFORMANCE CURVES / SPECIFICATIONS

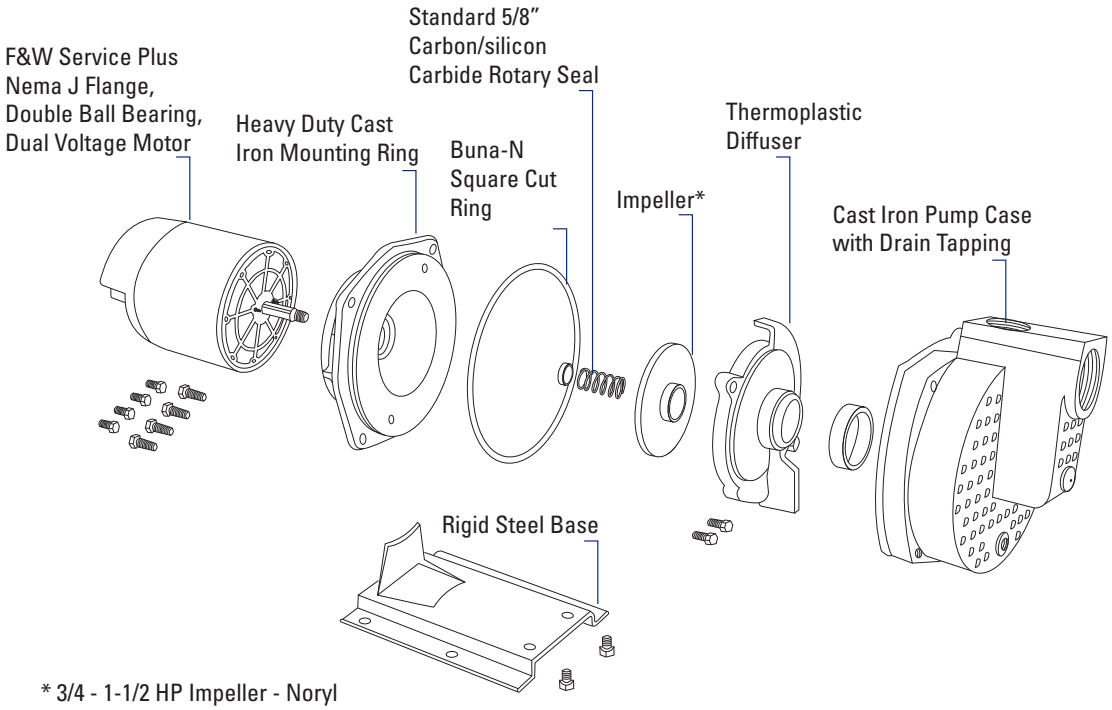


SPJ SELF-PRIMING 3/4 - 3 HP SINGLE OR THREE PHASE

SPECIFICATIONS

HP	Type	Volts	Hz	RPM	Motor Voltage (Factory) Connected	Service Factor Motor Amps				Max Liquid Temp	Max Suction Lift
						Single Phase		Three Phase			
						115V	230V	230V	460V		
3/4	Single Ph	115/230	60	3450	115V	14.0	7.0	-	-	180˚F	25 Ft.
1					230V	18.0	9.0				
1-1/2						21.0	10.5				
2						25.0	12.5				
3		230				-	13.5				
3/4	Three Ph	208-230/460	60/50	3450/2850	230V	-	-	3.5	1.75	180˚F	25 Ft.
1								4.5	2.25		
1-1/2								5.7	2.85		
2								7.4	3.70		
3								9.8	4.90		

Suction lift varies, depending upon elevation (altitude) and water temperatures.



* 3/4 - 1-1/2 HP Impeller - Noryl
1-1/2 - 3 HP Impeller - Brass

FLINT & WALLING

LAWN SPRINKLING PUMPS

FW1298
0920
Supersedes
0619

SP SELF PRIMING LAWN SPRINKLING / IRRIGATION PUMPS

- Quick self-priming operation for lawn irrigation
- Flint & Walling's Service Plus motor featuring capacitor start and sealed ball bearings for continuous operation.
- Heavy-duty cast-iron construction
- 115/230 Dual voltage motor
- Easy access drain plug
- 2 in. suction pipe / 1-1/2 in. discharge pipe

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

SP SERIES

1, 1-1/2 and 2 HP

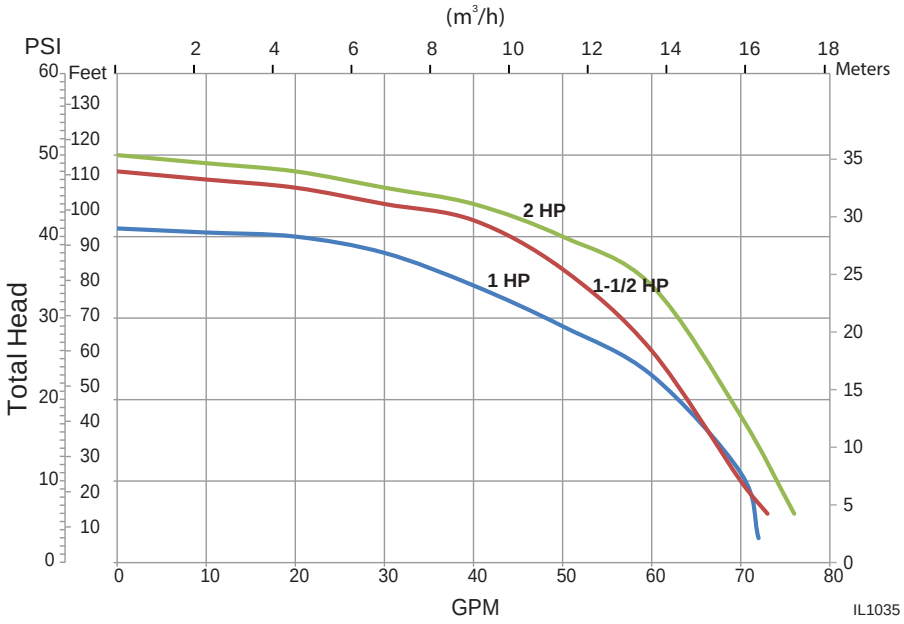
US

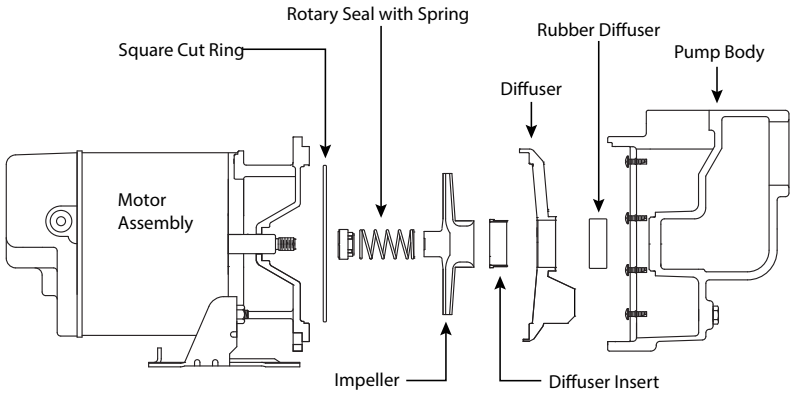
Lawn Sprinkling Pumps

PERFORMANCE CHART

Model #	HP	Suction Lift (Ft.)	Discharge Pressure (PSI) Capacity - U.S. Gallons per Minute 15	20	25	30	35	40	45	Shut Off Pressure @ 0 Lift (PSI)	Suction Pipe	Discharge Pipe
SP10P1	1	5	65	61	53	44	32			39	2 in.	1-1/2 in.
		10	64	58	49	39	24					
		15	62	55	45	34						
		20	59	51	41	28						
		25	56	46	36	2						
SP15P1	1-1/2	5	66	63	59	54	48	40	8	45	2 in.	1-1/2 in.
		10	64	61	57	52	45	28				
		15	63	60	55	49	41	15				
		20	62	58	53	46	32					
		25	60	56	50	42	21					
SP20P1	2	5	70	68	65	62	56	46	24	48	2 in.	1-1/2 in.
		10	69	66	63	60	52	39	6			
		15	68	65	62	57	47	27				
		20	67	64	60	53	41	13				
		25	65	62	58	48	30					

Max. Case Pressure: 100 PSI





FLINT & WALLING

HIGH POWER CENTRIFUGALS

FW1914
1020
Supersedes
0818

SPM SERIES SELF-PRIMING 3 & 5 HP

EASY REPLACEMENTS

- Replace current 3 & 5 HP centrifugals without disrupting plumbing. The SPM series is designed to be easily swapped without the difficulties of changing piping, flapper valves, or other tedious plumbing work.

TRIM YOUR PRIME TIME

- Achieve prime in less than one minute.

ENGINEERED BY FLINT & WALLING

- Powered by Baldor
- Available in single or three phase

MODEL SPM

Suction flange (sold separately)

Flows up to 150 GPM

TDH up to 160 feet

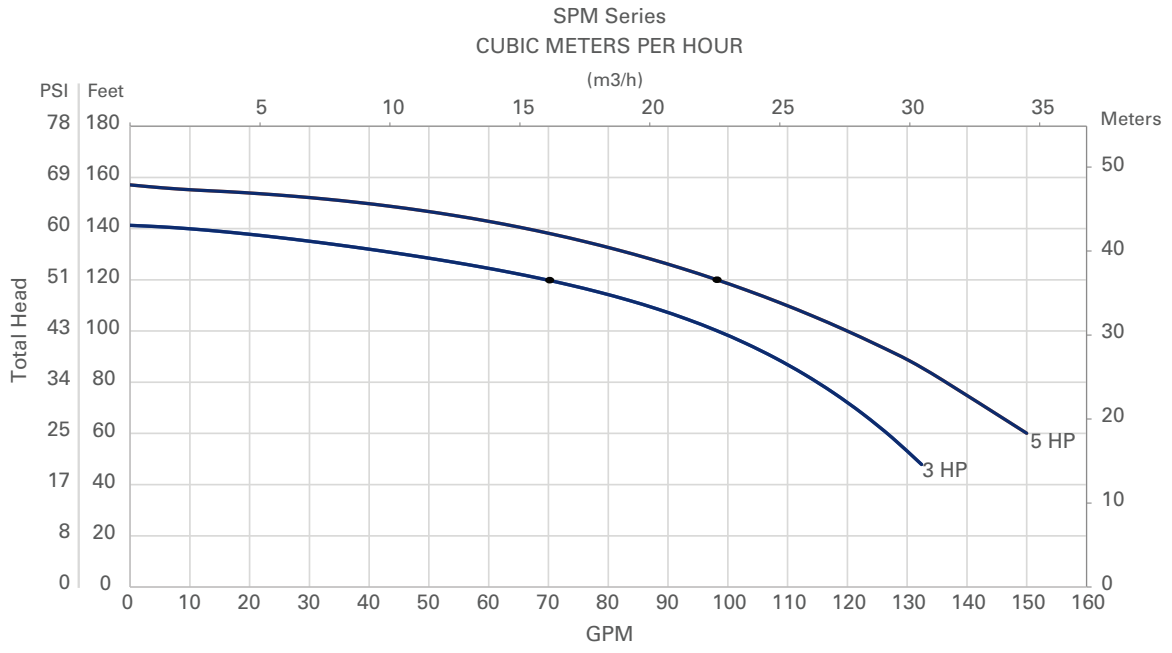
3 & 5 HP High Power Centrifugal Pumps

SPECIFICATIONS

MODEL NUMBER	SPM301/303	SPM501/503
HP	3	5
Voltage	208-230/460V	
Current	8.2-7.4/3.7 Amp	13.0-12.2/6.1 Amp
Phase	SPM301 - single, SPM303 - three	SPM501 - single, SPM503 - three
Motor Frame	145JM	182JM
Impeller	Low lead brass	
Diffuser	Cast iron	
Pipe Plug	Stainless steel 1/4" NPT	
Seal	John Crane type 2100 1-1/4"	
O-Rings	Buna N	
Suction Tapping	2"	2-1/2"
Suction Flange*	6" ANSI 125 bolt flange pattern	
Ambient Air Temp	40° - 104° F	
Water Temp	55° - 200° F	
Max Case Pressure	120 PSI	

*Suction flange sold separately
3 HP - 024912, 5 HP - 024913

PERFORMANCE CURVES



IL1932

FLINT & WALLING

HIGH CAPACITY CENTRIFUGAL & SPRINKLER PUMPS

FW0724
0920
Supersedes
0520

FOR HOME, FARM AND INDUSTRY

- Stainless steel or cast iron construction
- Stainless steel impellers
- Discharge rotates in 90° increments on some models
- Maximum temperatures to 200° F

MADE IN THE USA

C3, C4, C5, C6 SERIES

Single or three phase

Pressures to 150 PSI

US Electric Motors

"C3" Series Straight Centrifugal Pumps

- Investment cast 316 stainless steel
- Viton® mechanical seal and o-ring
- Discharge port rotates in 90° increments
- Max. working pressure 75 PSI
- Max. temperature 200° F
- Max. flow 90 GPM
- Max. head 65 ft. (28 PSI)
- Self-cleaning, semi-open stainless steel impellers with solids handling capacity of less than 1/8".
- Totally enclosed fan cooled (TEFC) 56J motors
- 1/2 HP to 2 HP single and three phase, 3450 RPM motors

C3 SERIES

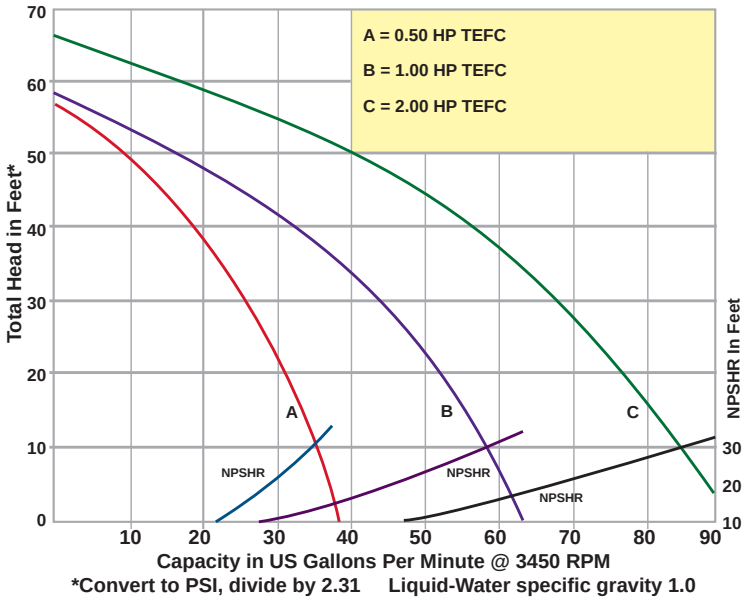
MADE IN THE USA

F&W straight centrifugal pumps are designed for continuous-duty low pressure OEM, industrial/commercial and general service applications including circulation, liquid transfer and cooling. Applications include, but are not limited to dry cleaning, transferring deionized water, candle manufacturing and parts washers.

These durable and compact pumps are available in a variety of construction and seal materials to meet your specification. The line also features a wide selection of single and three phase TEFC motors, up to 2 horsepower.

All models feature Type 6 mechanical seals and O-rings. Pull-from-the-rear design for easy service without disturbing any piping. Self-cleaning impellers to prevent clogging and minimize maintenance.

PERFORMANCE



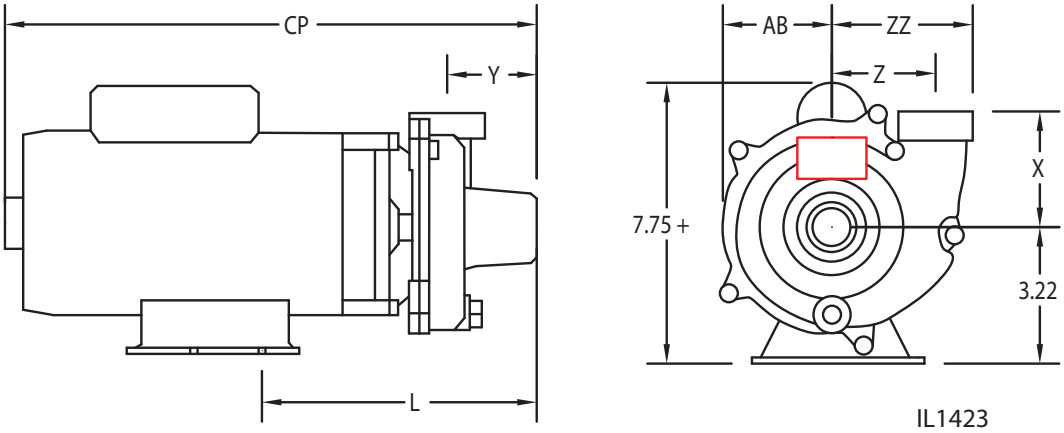
FLINT & WALLING

"C3" Series Straight Centrifugal Pumps

PUMP DIMENSIONAL & SPECIFICATION CHART

Model	HP	PH	Encl	Voltage @ 60 Hz ±10%	Full Load Amp	SUC*	DIS*	AB**	CP	L	X	Y	Z	ZZ	Ship Wt. Lbs.
C31S051T	1/2	1	TEFC	115/230	9/5	3/4"	1/2"	2.4	13.3	6.3	1.9	1.4	1.9	2.9	33
C31S053T	1/2	3	TEFC	230/460	3/2	3/4"	1/2"	2.4	13.1	6.3	1.9	1.4	1.9	2.9	31
C32S101T	1	1	TEFC	115/230	12/6	1"	3/4"	3.0	15.1	6.3	2.4	1.3	2.1	3.3	39
C32S103T	1	3	TEFC	230/460	4/2	1"	3/4"	3.0	14.2	6.3	2.4	1.3	2.1	3.3	36
C33S201T	2	1	TEFC	115/230	22/11	1-1/4"	1"	3.0	15.4	6.3	2.5	1.3	2.0	3.4	52
C33S203T	2	3	TEFC	230/460	6/3	1-1/4"	1"	3.0	14.3	6.3	2.5	1.3	2.0	3.4	50

(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications
(+) 3-Phase motors can also operate on 50 Hz. (This will change the Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ± 1/8"
NOTE: Electric supply for ALL motors must be within ± 10% of nameplate voltage rating (ex. 230V ± 10% = 207 to 253)
All 316 Stainless Steel Construction with Viton® Seals, Max. Temperature 200° F



STANDARD FEATURES

- 316 Investment cast stainless steel construction
- Viton® mechanical seal
- Stainless steel hardware
- NEMA 56J TEFC single and three phase motors
- Stainless steel motor shaft
- NEMA base mounted motors
- Self-cleaning stainless steel impeller
- Discharge rotates in 90° Increments
- Max. working pressure to 75 PSI
- Max. temperature 200° F Viton®
- Front drain plug

"C5" Series Heavy Duty Straight Centrifugal Pumps

- Investment cast 316 stainless steel construction with Viton seals or cast iron construction with Buna seals
- Stainless steel impellers with solids handling capacity of 1/8 - 3/16".
- 3 HP to 15 HP NEMA JM motors, three phase TEFC
- High flow and high head designs
- Max. temperature
  SS - Viton®: 200° F
  CI - Buna N: 180° F
- Front drain plugs located 90° apart
- Max head 194 Ft. (100 PSI)
- Max flow 425 GPM
- Max working pressure 150 PSI

MADE IN THE USA

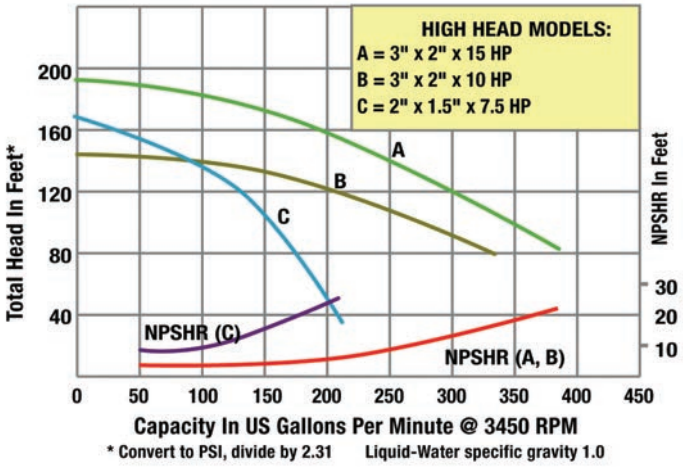
C5 SERIES

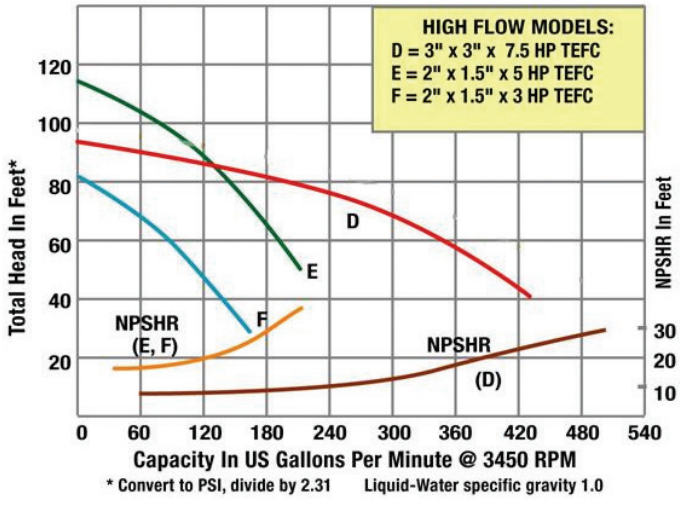
F&W Heavy Duty Straight Centrifugal pumps are suited for liquid transfer, heating and cooling, recirculation, booster service and other industrial applications. Applications include, but are not limited to cooling towers and car washes.

Stainless Steel units are especially effective in applications where rust and/or corrosion can develop in systems. Semi-open impeller features self-cleaning ability that makes the unit useful in applications involving muddy or dirty liquids as well as clean, clear fluids.

Discharge position can be adjusted in 90° increments with vent and drain plugs for all positions. Type 21 mechanical seal and O-ring casing seal. Pumps are close-coupled to totally enclosed fan cooled (TEFC) motors. Pumps are not self-priming and require flooded suction.

PERFORMANCE





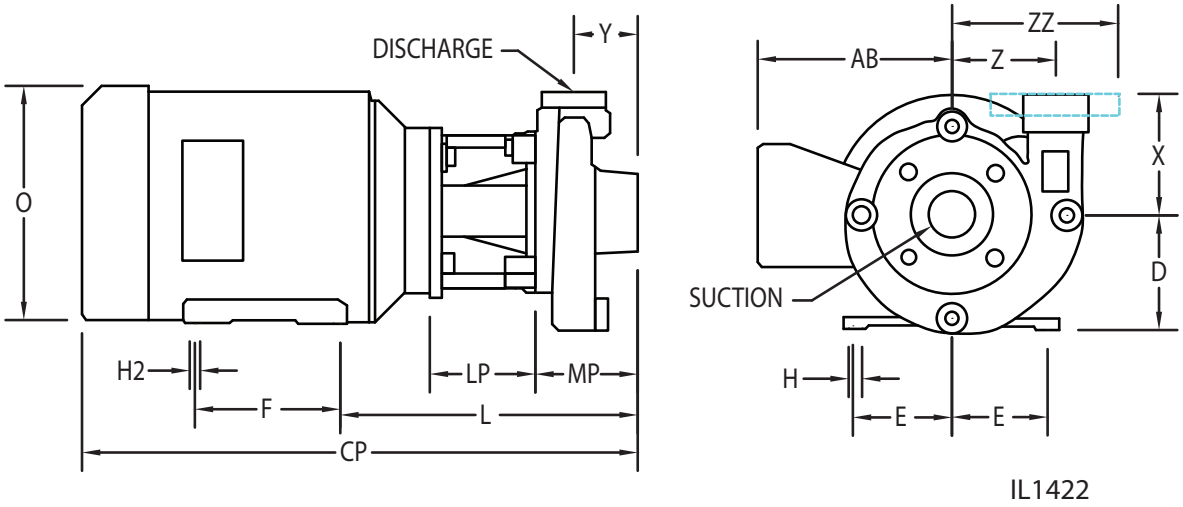
FLINT & WALLING

"C5" Series Heavy Duty Straight Centrifugal Pumps

PUMP DIMENSIONAL & SPECIFICATION CHART

Model No. CI	Model No. SS	Curve	HP	PH	Frame	Encl	Voltage @ 60 Hz ±10%	Full Load Amps	S.F. Amp	Connect Type	Suct*	Disch*	AB**	CP**	D	E	F	H1	H2	L	LP	MP	O	X	Y	Z	ZZ	Ship Wt (Lbs.) CI	Ship Wt (Lbs.) SS
C55A303T	C55S303T	F	3	3	182JM	TEFC	230/460	8/4	9/4.5	NPT	2"	1-1/2"	7.5	21.6	4.5	3.8	4.5	0.4	0.4	12.7	4.1	4.0	9.3	4.8	2.5	4.0	N/A	98	83
C55A503T	C55S503T	E	5		184JM			17/9	20/10		2"	1-1/2"	7.5	21.6	4.5	3.8	5.5	0.4	0.4	11.8	4.1	4.0	9.3	4.8	2.5	4.0		108	100
C57A753T	C57S753T	D	7.5		184JM			22/11	25/12.5		3"	3"	7.5	22.4	4.5	3.8	5.5	0.4	0.4	12.5	4.1	4.8	9.3	6.5	2.8	4.5		122	117
C55A753T	C55S753T	C	7.5		184JM			22/11	25/12.5		2"	1-1/2"	7.5	21.4	4.5	3.8	5.5	0.4	0.4	11.5	3.5	4.4	9.3	5.9	2.4	3.8		105	108
C56A1003T	C56S1003T	B	10		215JM			26/13	30/15		3"	2"	8.3	26.0	5.3	4.3	7.0	0.4	0.4	11.7	3.5	4.5	10.9	5.0	2.8	4.8		173	176
C56A1503T	C56S1503T	A	15		215JM			47/24	54/27		3"	2"	8.3	26.0	5.3	4.3	7.0	0.4	0.4	12.5	3.5	4.5	10.9	5.0	2.8	4.8		190	195

(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications
(+) 3-Phase motors can also operate on 50 Hz. (This will change the Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ± 1/8"
NOTE: Electric supply for ALL motors must be within ± 10% of nameplate voltage rating (ex. 230V ± 10% = 207 to 253)
CI = Cast Iron Construction with SS Impeller and Buna N Seals, Max. Temperature 180° F
SS = All 316 Stainless Steel Construction with Viton® Seals, Max. Temperature 200° F



STANDARD FEATURES

- Stainless steel and cast iron construction
- Buna N or Viton® mechanical seal and o-rings depending on model
- Stainless steel hardware
- NEMA TEFC three phase motors
- Self-cleaning stainless steel impeller
- Discharge rotates in 90° Increments
- Max. working pressure to 150 PSI
- Max. temperature:
  SS - 200° F Viton®
  CI - 180° F Buna N

"C4" Series High Head Straight Centrifugal Pumps

- Investment cast 316 stainless steel construction with Viton seals or cast iron construction with Buna seals
- Discharge port rotates in 90° Increments
- Four front drain plugs
- Max. working pressure 150 PSI
- Max. temperature 200° F
- Max. flow 42 GPM
- Max. head 76 Ft. (33 PSI)
- High efficiency stainless steel closed impeller
- Totally enclosed fan cooled (TEFC) 56J motors
- 3/4 HP single and three phase 3450 RPM motors

MADE IN THE USA

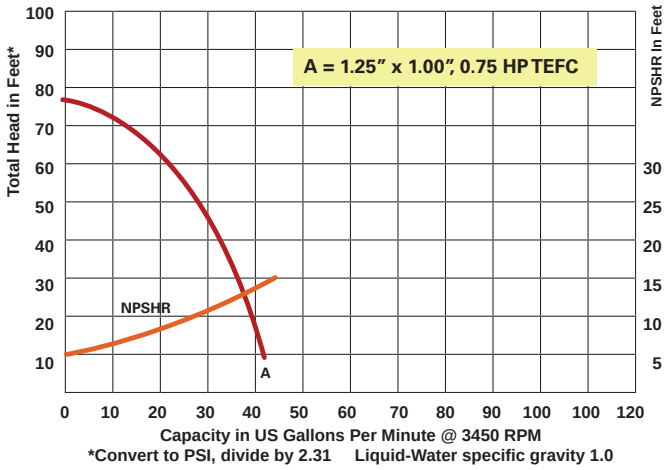
C4 SERIES

F&W High Head Straight Centrifugal pumps are designed for continuous-duty OEM, Industrial/Commercial and processing applications including circulation, liquid transfer, heating and cooling and pressure boosting. Applications include, but are not limited to cooling towers and chemical transfer.

These heavy duty high pressure pumps are available in a variety of construction and seal materials to meet your specification.

All models feature Type 21 mechanical seals and O-rings. Pull-from-the-rear design for easy servicing without disturbing any piping. High efficiency investment cast stainless steel impellers maximize performance.

PERFORMANCE



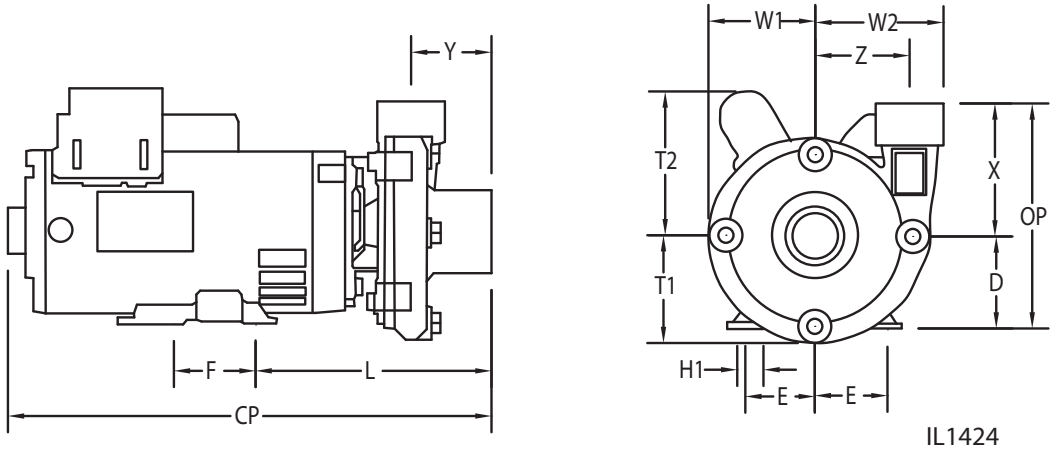
FLINT & WALLING

"C4" Series High Head Straight Centrifugal Pumps

PUMP DIMENSIONAL & SPECIFICATION CHART

CI No.	SS No.	HP	PH	Encl.	Voltage @ 60 Hz ±10%	Full Load Amps	SUC*	DIS*	CP**	D	E	F	H1	H2	L	OP	T1	T2	W1	W2	X	Y	Z	Ship Wt. Lbs.
C43A071T	C43S071T	3/4	1	TEFC	115/230	9/5	1-1/4"	1'	16.3	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	46
C43A073T	C43S073T	3/4	3	TEFC	230/460	3/2	1-1/4"	1"	14.2	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	44

(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications
(+) 3-Phase motors can also operate on 50 Hz. (This will change the Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ± 1/8"
NOTE: Electric supply for ALL motors must be within ± 10% of nameplate voltage rating (ex. 230V ± 10% = 207 to 253)
CI = Cast Iron Construction with SS Impeller and Buna N Seals, Max. Temperature 180° F
SS = All 316 Stainless Steel Construction with Viton® Seals, Max. Temperature 200° F



STANDARD FEATURES

- 316 investment cast stainless steel with Viton seal
- Cast iron construction with Buna seals
- Stainless steel hardware
- NEMA 56J TEFC single and three phase 3450 RPM motors
- Stainless steel motor shaft
- NEMA base mounted motors
- High efficiency stainless steel closed impeller
- Discharge rotates in 90° increments
- Max. working pressure to 150 PSI
- Max. temperature:
  SS - (Viton®) 200° F
  CI - (Buna N) 180° F

"C6" Series Stainless Steel Straight Centrifugal Pumps

- 304 stainless steel construction
- Viton® mechanical seal and o-ring
- Investment cast stainless steel impeller
- High head and high volume models
- Max. working pressure 150 PSI
- Max. temperature 200° F
- Max. flow 156 GPM
- Max. head 82 Ft. (35 PSI)
- Chemical resistant design
- Discharge port rotates in 90° increments
- 56J frame totally enclosed fan cooled (TEFC) motors

MADE IN THE USA

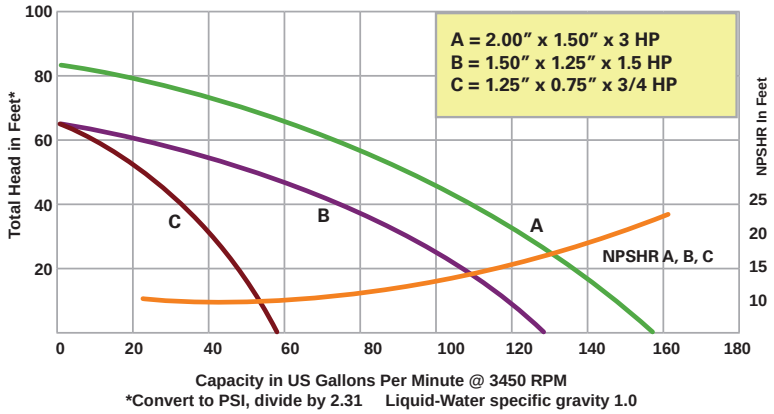
C6 SERIES

Flint & Walling Stainless Steel Straight Centrifugal pumps are designed for continuous duty high flow and high pressure applications including liquid transfer, cooling, pressure boosting, circulating and applications requiring contaminant free pumping.

Constructed of rugged deep drawn 304 stainless steel for durability and corrosion resistance. Investment cast stainless steel closed impellers for enhanced performance and high efficiencies.

All models include Viton® Type 21 mechanical seals and O-rings which offer a broad range of chemical compatibility and can be used for highly corrosive liquids. Cast iron motor adapter provides a positive and rigid mounting to motor.

PERFORMANCE



FLINT & WALLING

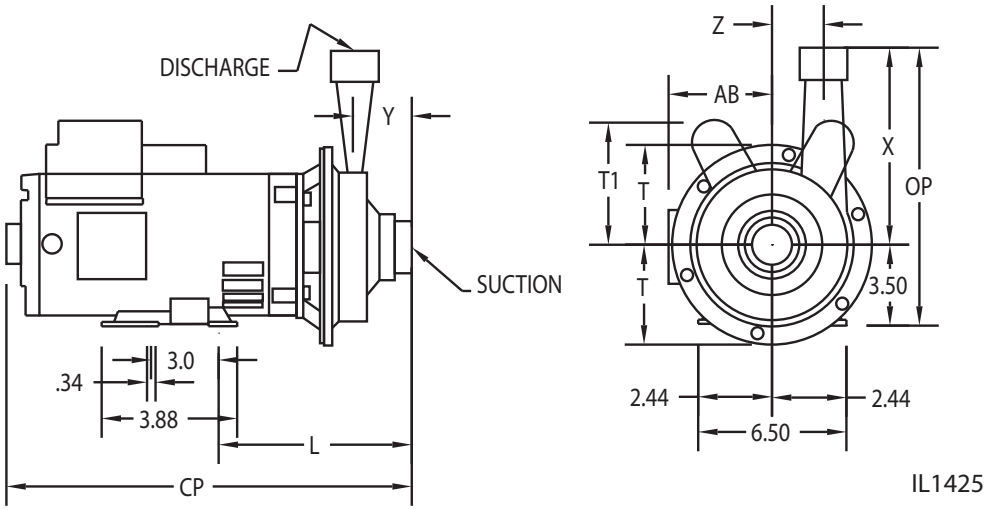
"C6" Series Stainless Steel Straight Centrifugal Pumps

PUMP DIMENSIONAL & SPECIFICATION CHART

High Volume Models Dimensional & Specification Chart

Model No.	Curve	HP	PH	Encl	Voltage @ 60 Hz ±10%	Full Load Amp	SUC*	DIS*	CP**	AB**	L	OP	T	T1**	X	Y	Z	Ship Wt. Lbs.
C63071T	C	3/4	1	TEFC	115/230	9/5	1-1/4	3/4	14.0	4.9	6.5	7.9	3.4	N/A	4.4	2.2	4.1	38
C63073T	C	3/4	3	TEFC	230/460	3/2	1-1/4	3/4	13.4	4.9	6.5	7.9	3.4	N/A	4.4	2.2	4.1	31
C64151T	B	1.5	1	TEFC	115/230	18/9	1-1/2	1-1/4	14.8	4.6	6.1	7.9	3.4	N/A	4.4	1.8	4.0	50
C64153T	B	1.5	3	TEFC	230/460	5/3	1-1/2	1-1/4	14.0	4.9	6.1	7.9	3.4	N/A	4.4	1.8	4.0	39
C65301T	A	3	1	TEFC	230	16	2	1-1/2	16.2	4.9	6.2	7.9	3.4	N/A	4.4	1.9	4.0	57
C65303T	A	3	3	TEFC	230/460	8/4	2	1-1/2	15.7	4.9	6.2	7.9	3.4	N/A	4.4	1.9	4.0	54

(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications.
(+) 3-Phase motors can also operate on 50 Hz. (This will change Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ± 1/8"
NOTE: Electric supply for ALL motors must be within ± 10% of nameplate voltage rating (ex. 230V ± 10% = 207 to 253)



STANDARD FEATURES

- 304 stainless steel construction
- Investment cast stainless steel impeller
- Viton® mechanical seal and o-ring
- Cast iron motor adapter provides rigid mounting
- NEMA 56J TEFC single & three phase motors
- Stainless steel hardware
- Stainless steel motor shaft
- Max. working pressure up to 150 PSI
- Max. temperature 200° F

"SPA" Series Sprinkler/Booster Pumps

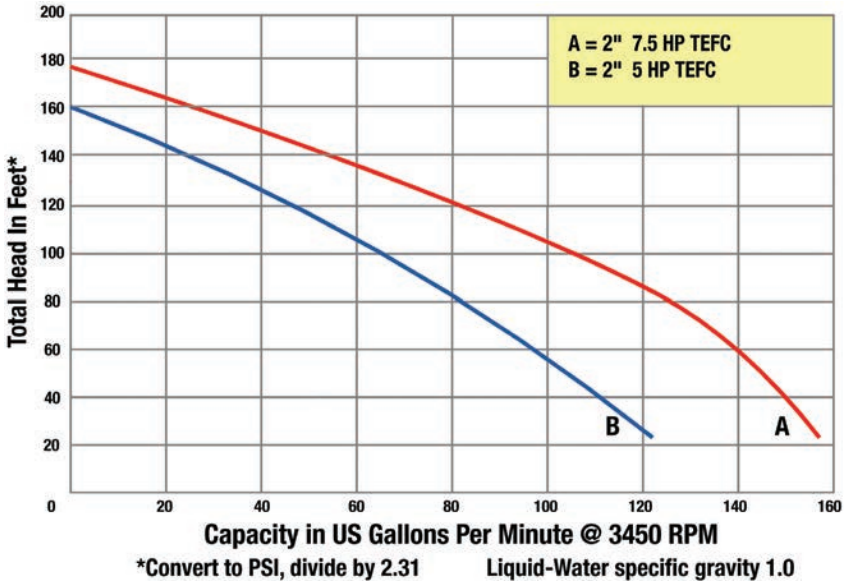
- Cast iron construction with investment cast 316 stainless steel impeller
- Buna-N mechanical seal and o-ring
- 2" NPT port sizes
- Maximum working pressure 150 PSI
- Maximum temperature 180° F
- Maximum flow 157 GPM
- Maximum head 180 Ft.
- Self-priming to 20 Ft.
- Removable dual volute design
- 5 and 7-1/2 HP single or three phase TEFC motors

F&W Sprinkler/Booster pumps feature Investment Cast 316 Stainless Steel closed impellers for high efficiency and resistance against erosion caused by abrasive particles. Applications include, but are not limited to amusement parks, golf courses, industrial, fountains and water parks.

All models self-prime to 20 ft. and feature dual volute design to reduce radial load on motor and a built-in check valve to insure fast priming after initial liquid is added to the pump. Cast iron construction provides durability and low maintenance. Easy cleanout design includes replaceable dual volute and casing o-ring for servicing. Type 21 mechanical seals handle maximum working pressure to 150 PSI.

Pumps are available in 5 and 7-1/2 HP with Totally Enclosed Fan Cooled (TEFC) motors.

PERFORMANCE



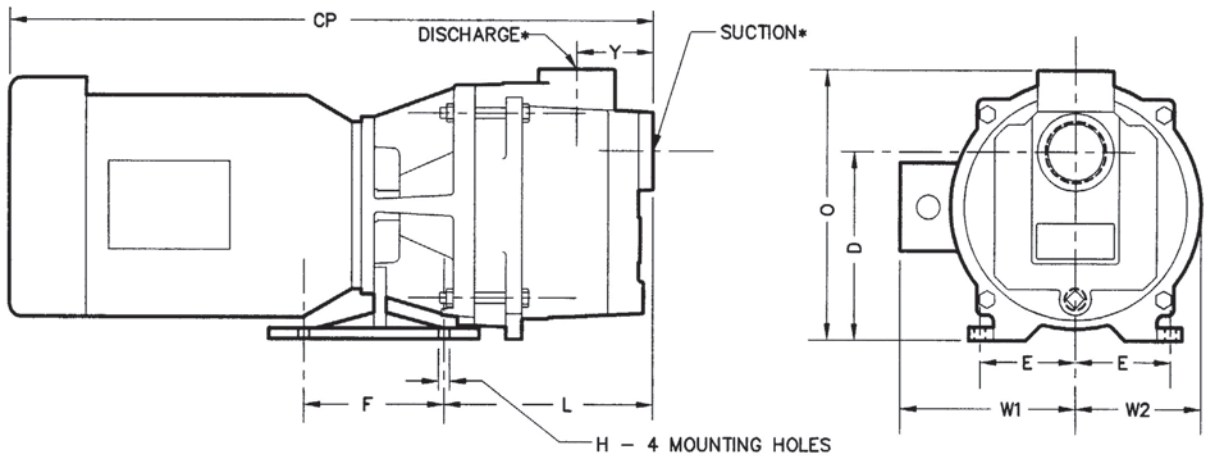
SPA Sprinkler/Booster Pumps

FLINT & WALLING

PUMP DIMENSIONAL & SPECIFICATION CHART

Model	Curve	HP	PH	ENC	Voltage @ 60 Hz	Full Load Amp	S.F. Amps	SUC*	DIS*	CP**	D	E	F	H	L	W1	W2	O	Y	Ship Wt. Lbs.
SPA50A1	B	5	1	TEFC	230	20	23	2	2	27.4	5.2	3.7	5.5	0.4	15.9	8.6	5.0	10	3.1	146
SPA50A3	B	5	3	TEFC	230/460	13/7	15/8	2	2	27.9	5.2	3.7	5.5	0.4	15.9	8.6	5.0	10	3.1	130
SPA75A3	A	7-1/2	3	TEFC	230/460	19/10	22/11	2	2	21.8	5.2	3.7	5.5	0.4	15.9	8.6	5.0	10	3.1	134

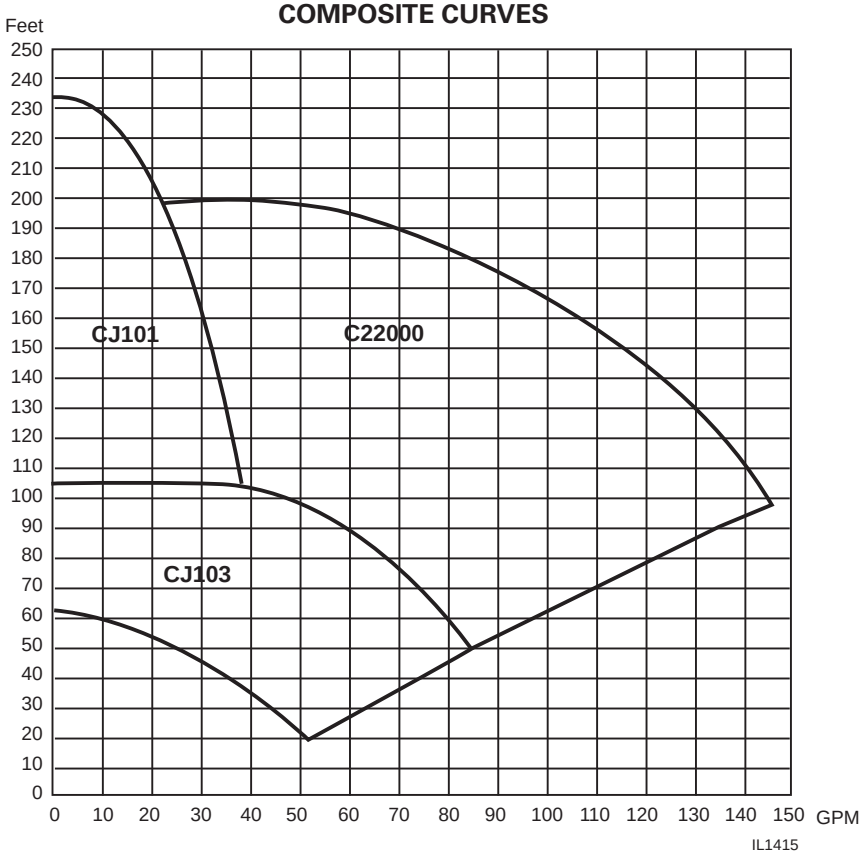
(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications
(+) 3-Phase motors can also operate on 50 Hz. (This will change the Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ± 1/8"
NOTE: Electric supply for ALL motor must be within ± 10% of nameplate voltage rating (ex. 230V ± 10% = 207 to 253)



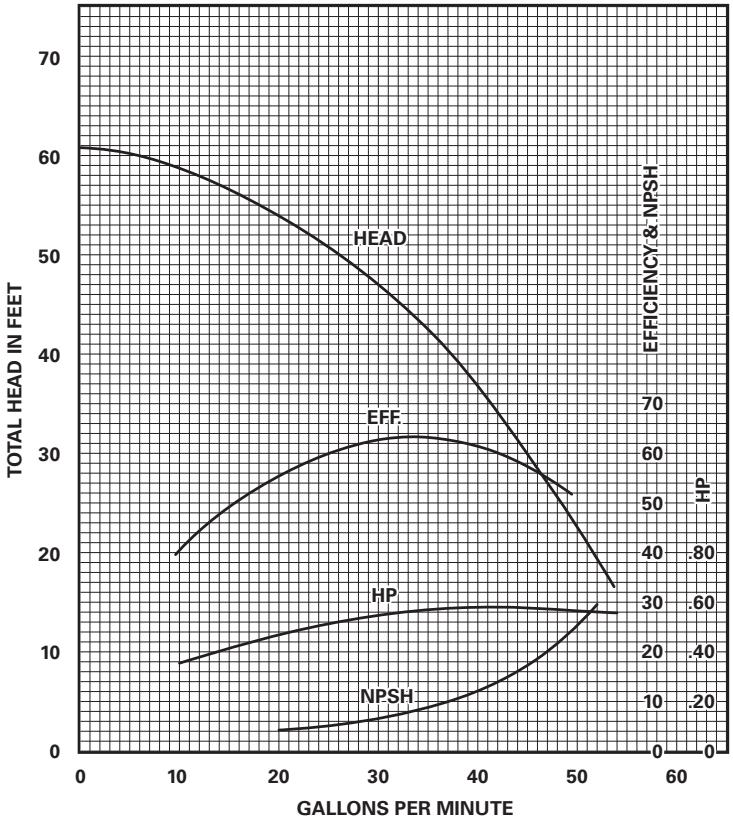
STANDARD FEATURES

- Cast iron construction
- Cast 316 stainless steel impellers
- Buna-N mechanical seal and o-ring
- TEFC JM frame motors
- Removable dual volute design
- Self-priming to 20 ft.
- Maximum working pressure to 150 PSI
- Maximum temperature 180° F

END SUCTION CENTRIFUGAL COMPOSITE CURVES



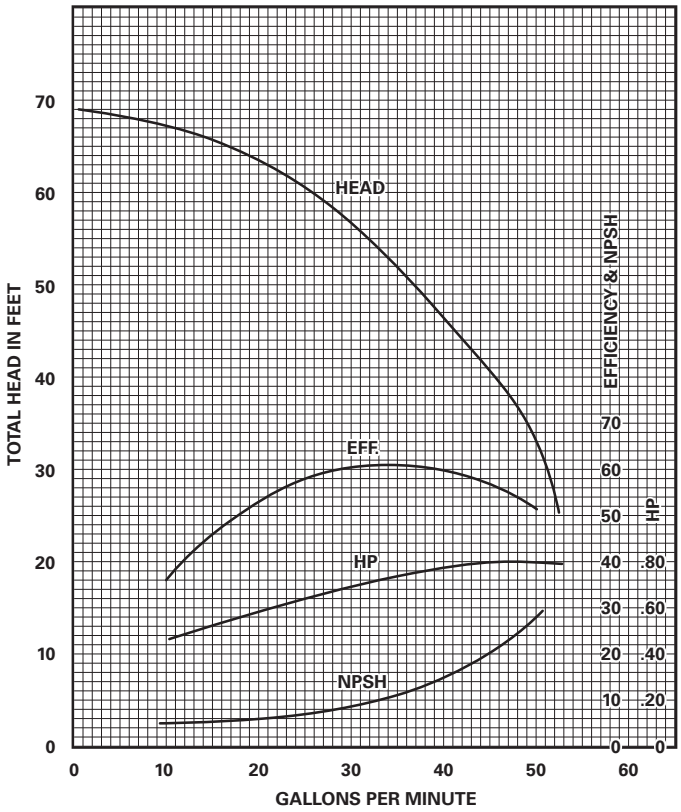
END SUCTION CENTRIFUGALS



CJ10303-1 1/3 HP Single Phase
3450 RPM 60 Hz
Impeller No. 130403 4.06 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

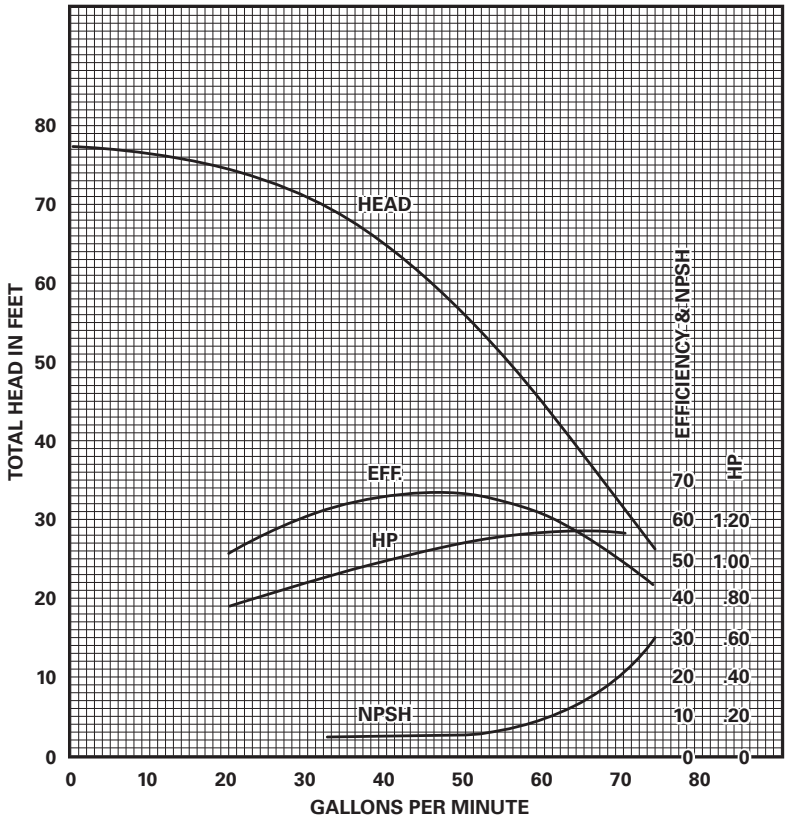
FLINT & WALLING

END SUCTION CENTRIFUGALS



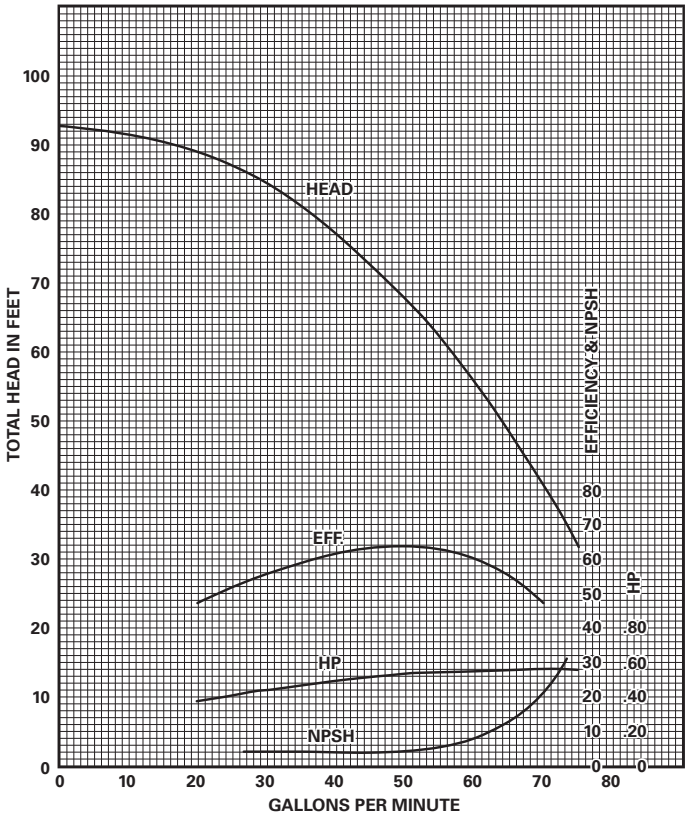
CJ10305-1 1/2 HP Single Phase
CJ10305-3 1/2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 126900 4.46 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



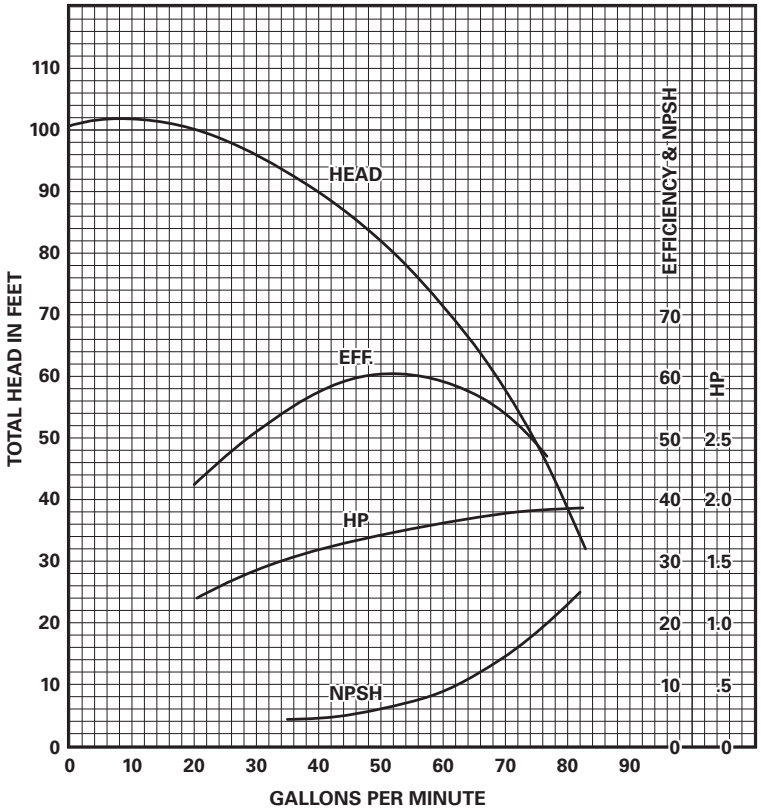
CJ10307-1 3/4 HP Single Phase
CJ10307-3 3/4 HP Three Phase
3450 RPM 60 Hz
Impeller No. 127805 4.44 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



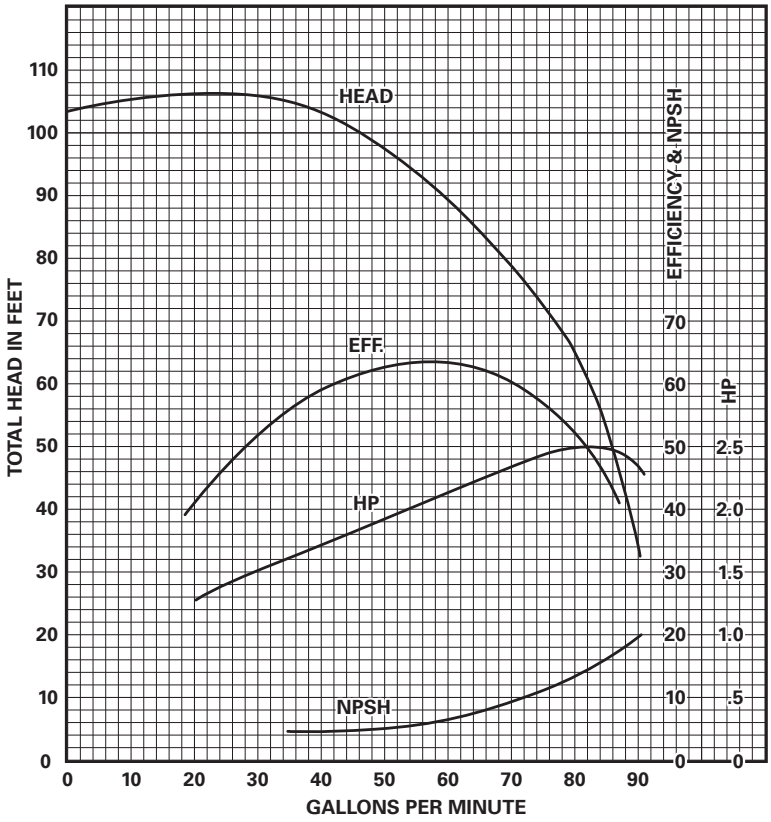
CJ10310-1 1 HP Single Phase
CJ10310-3 1 HP Three Phase
3450 RPM 60 Hz
Impeller No. 127804 4.87 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



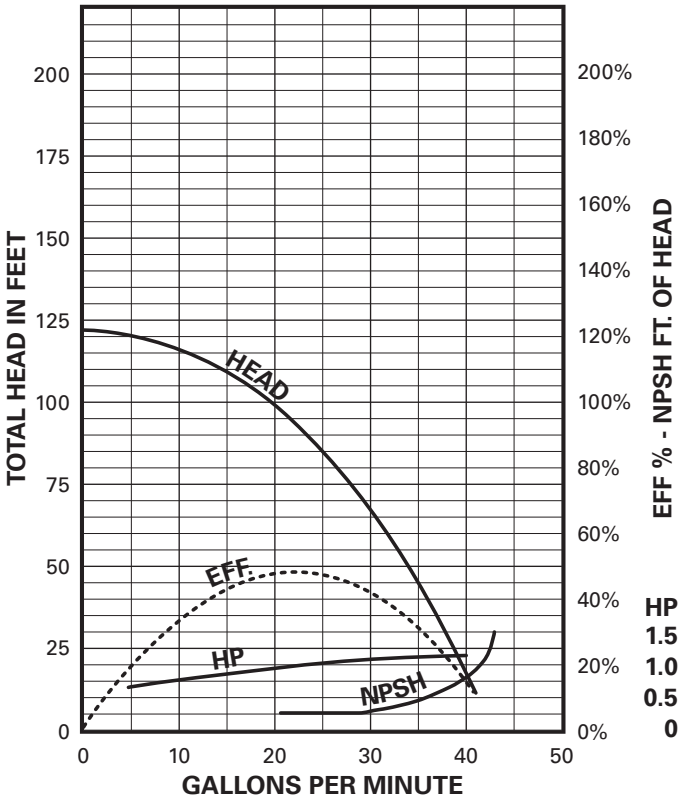
CJ10315-1 1-1/2 HP Single Phase
CJ10315-3 1-1/2 HP Three Phase
3450 RPM 60 HZ
Impeller No. 127806 5.09 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



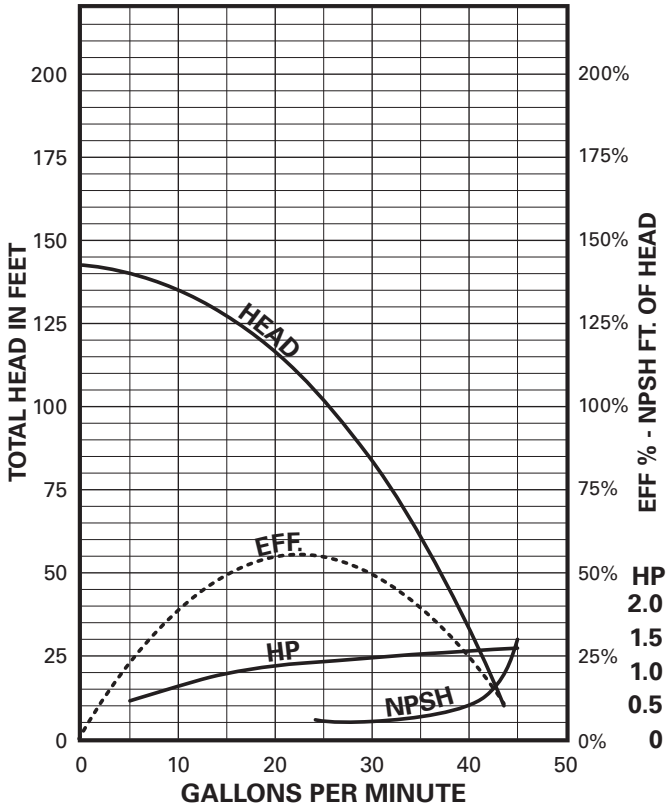
CJ10320-1 3 HP Single Phase
CJ10320-3 2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 127848 5.09 O.D.
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 100 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



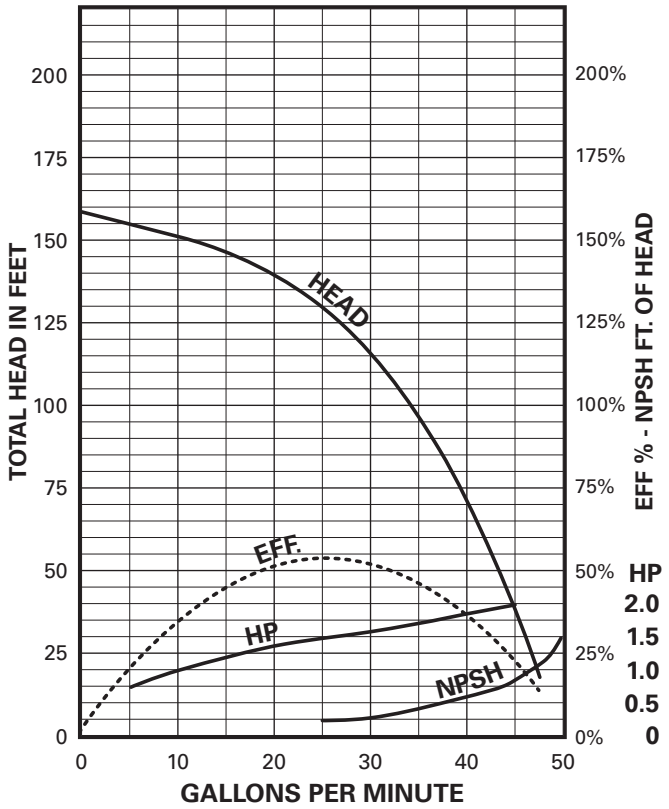
CJ101B07-1 3/4 HP Single Phase
CJ101B07-3 3/4 HP Three Phase
3450 RPM 60 Hz
Impeller No. 135280 4.000 O.D. Brass Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



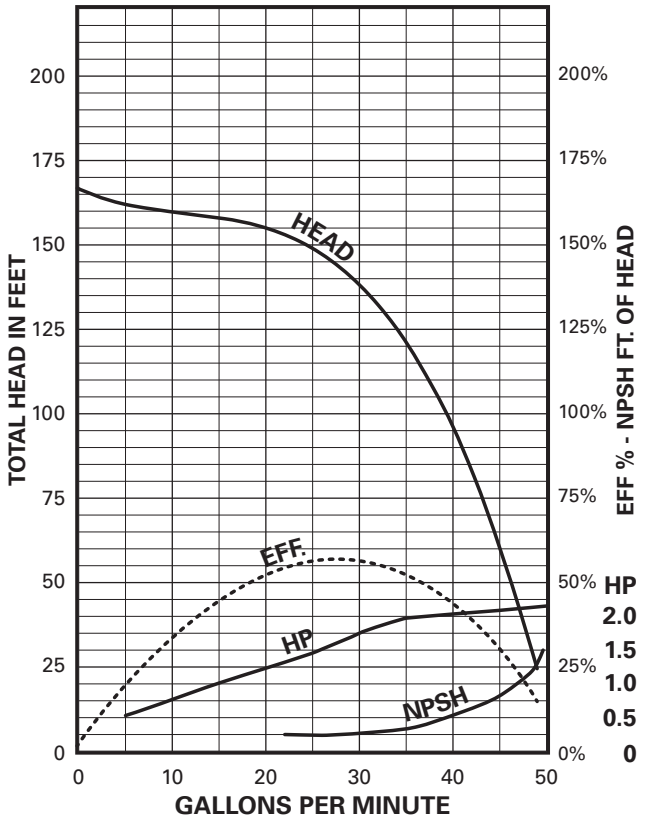
CJ101B10-1 1 HP Single Phase
CJ101B10-3 1 HP Three Phase
3450 RPM 60 Hz
Impeller No. 135281 4.25 O.D. Brass
Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



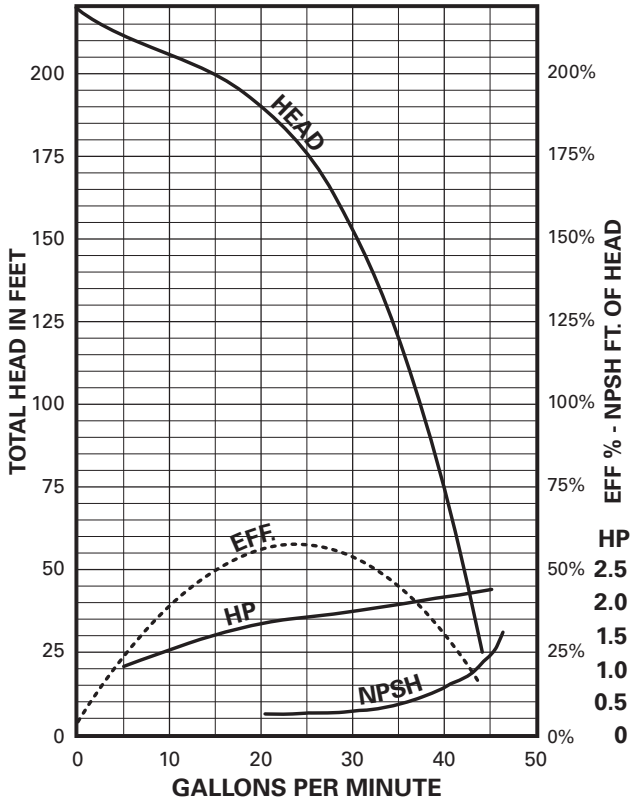
CJ101B15-1 1-1/2 HP Single Phase
CJ101B15-3 1-1/2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 126900 4.47 O.D. Brass
Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



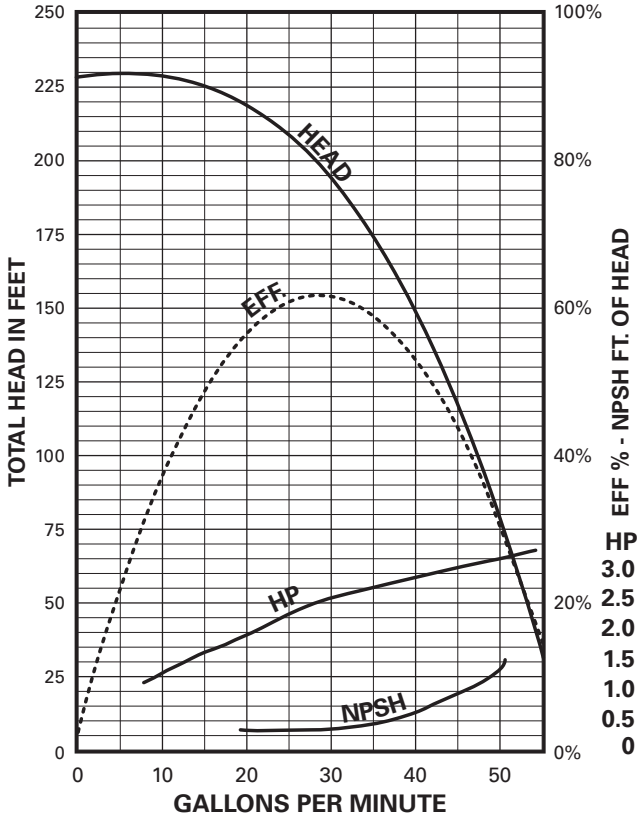
CJ101B20-1 2 HP Single Phase
CJ101B20-3 2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 126901 4.47 O.D. Brass
Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



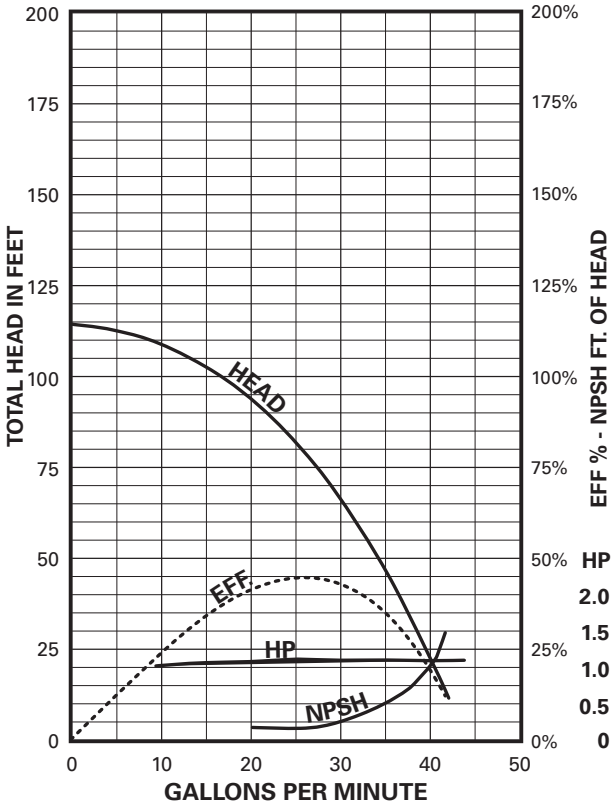
CJ101C20-1 2 HP Single Phase
CJ101C20-3 2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 139126 4.34 O.D. Brass
Three Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



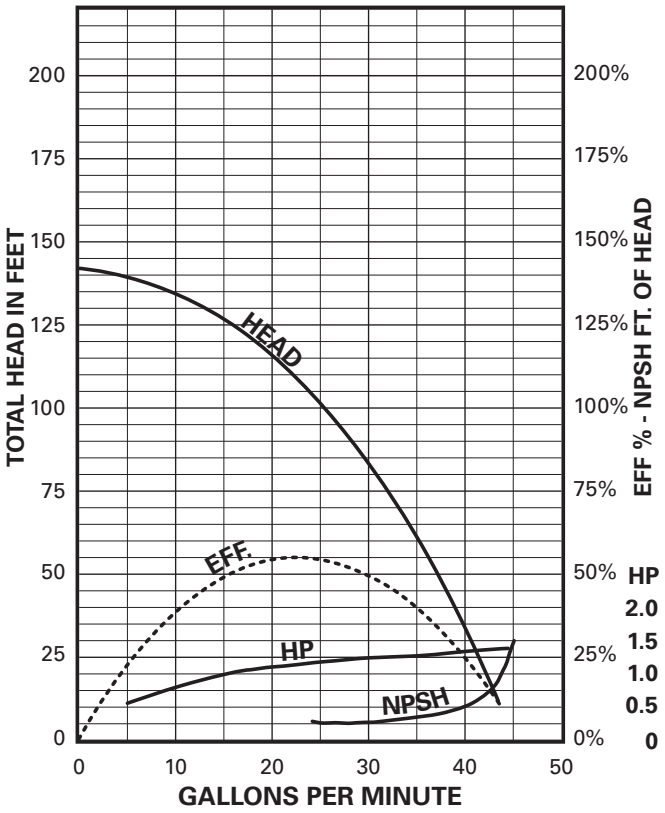
CJ101C30-1 3 HP Single Phase
CJ101C30-3 3 HP Three Phase
3450 RPM 60 Hz
Impeller No. 136951 4.25 O.D. Brass
Three Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



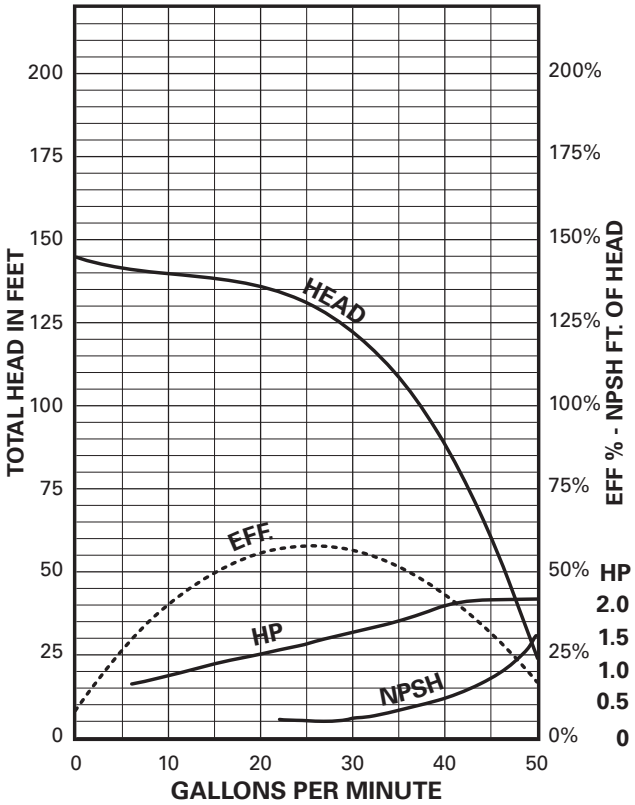
CJ101P07-1 3/4 HP Single Phase
CJ101P07-3 3/4 HP Three Phase
3450 RPM 60 Hz
Impeller No. 133425 3.87 O.D. Celcon
Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



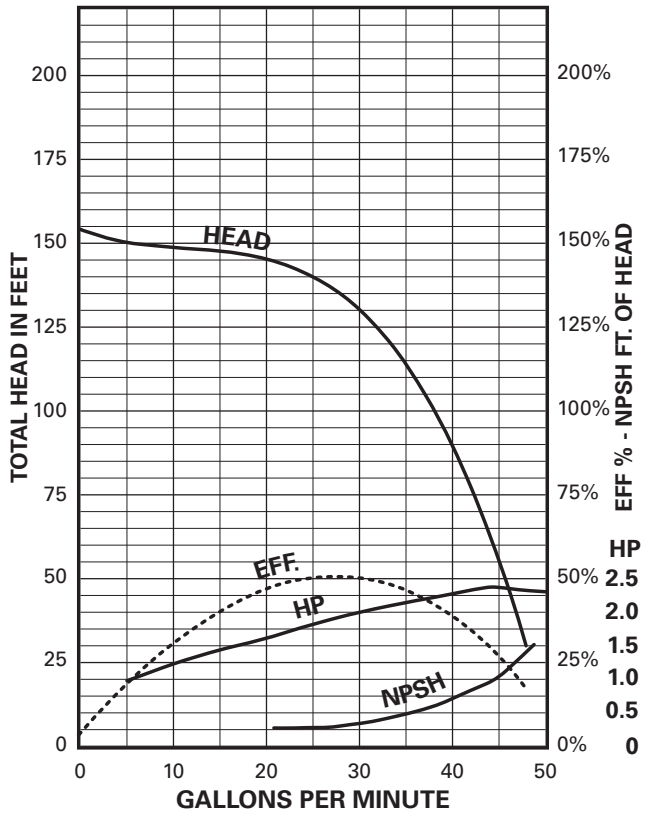
CJ101P10-1 1 HP Single Phase
CJ101P10-3 1 HP Three Phase
3450 RPM 60 Hz
Impeller No. 133427 4.28 O.D. Celcon Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



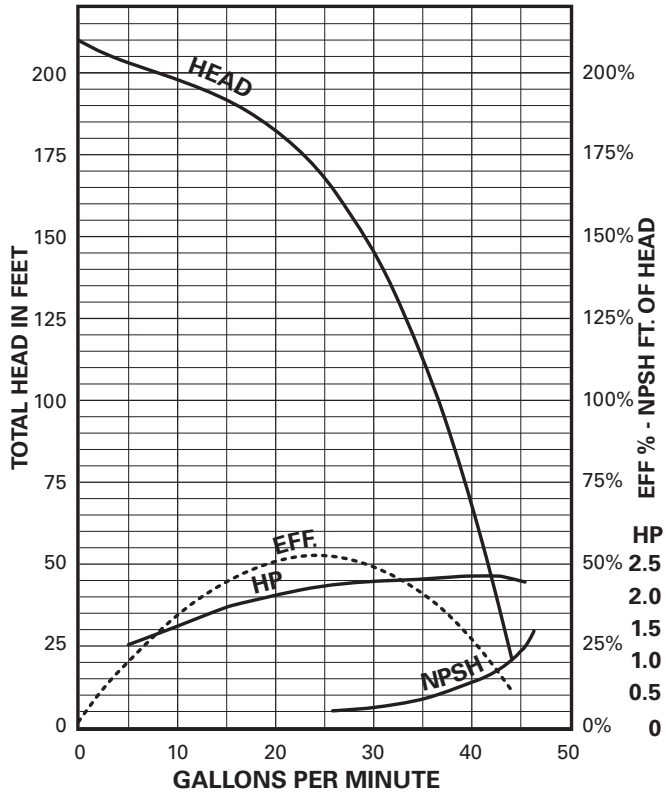
CJ101P15-1 1-1/2 HP Single Phase
CJ101P15-3 1-1/2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 139180 4.20 O.D. Celcon Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



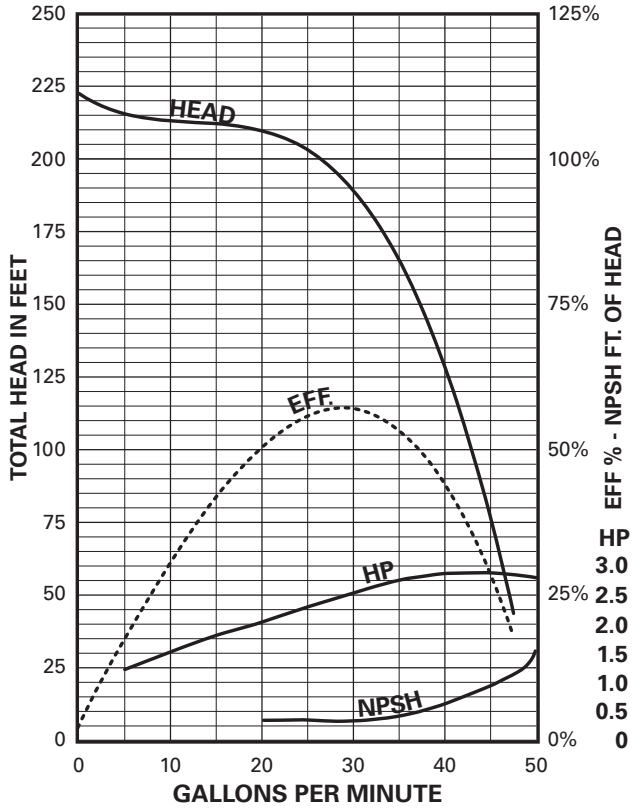
CJ101P20-1 2.0 HP Single Phase
CJ101P20-3 2.0 HP Three Phase
3450 RPM 60 Hz
Impeller No. 128472 4.44 O.D. Celcon
Two Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



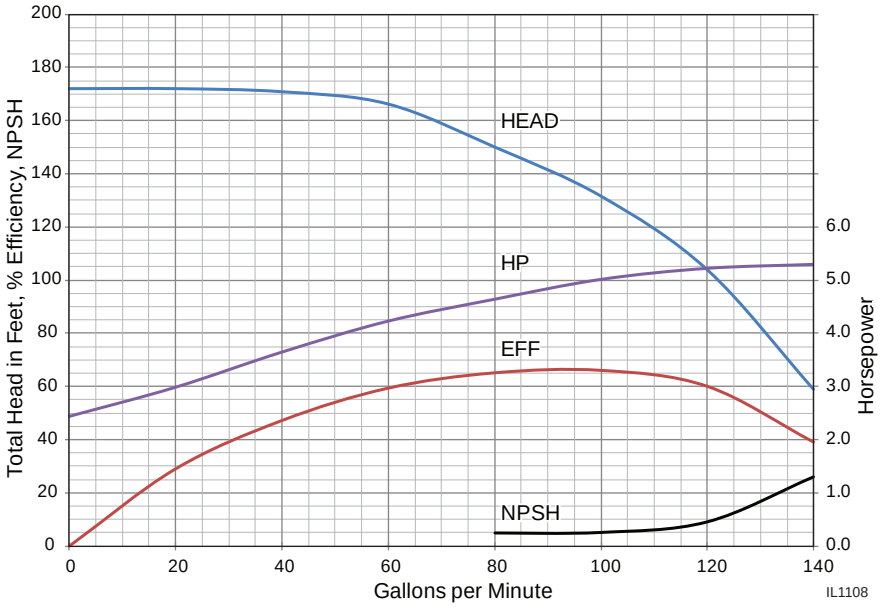
CJ101D20-1 2 HP Single Phase
CJ101D20-3 2 HP Three Phase
3450 RPM 60 Hz
Impeller No. 133427 4.28 O.D. Celcon
Three Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS



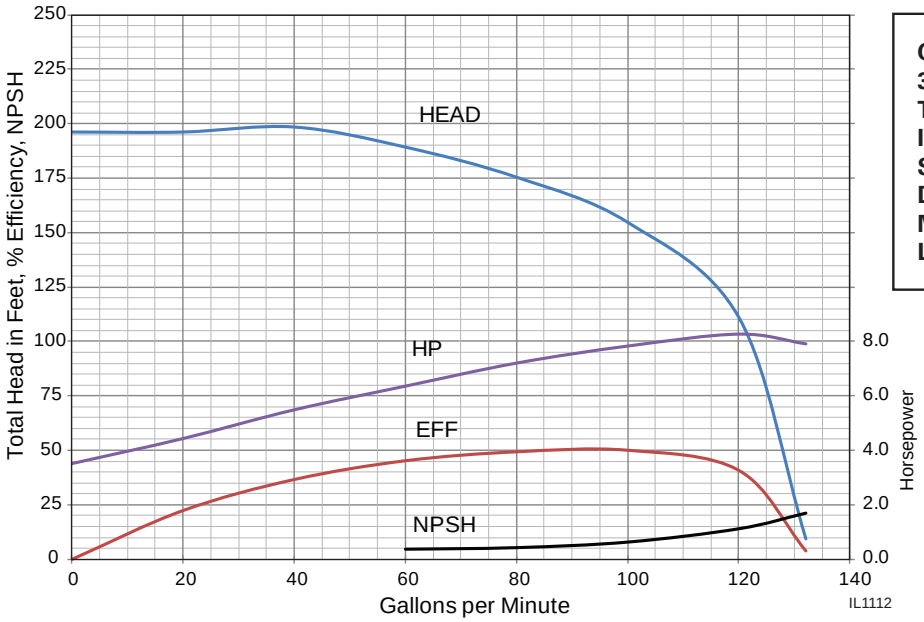
CJ101D30-1 3 HP Single Phase
CJ101D30-3 3 HP Three Phase
3450 RPM 60 Hz
Impeller No. 139104 4.25 O.D. Celcon
Three Stage
Suction 1-1/2" NPT
Discharge 1-1/4" NPT
Max. Case Pressure, 160 PSI
Liquid 1.- Sp. Gr.

END SUCTION CENTRIFUGALS



C22251 5 HP Single Phase
C22253 5 HP Three Phase
3450 RPM 60 Hz
Two Stage
Impeller No. 134974 & 134981 4.950 O.D.
Suction 3" NPT
Discharge 2" NPT
Max. Case Pressure, 120 PSI
Liquid 1.0 Sp. Gr.

END SUCTION CENTRIFUGALS

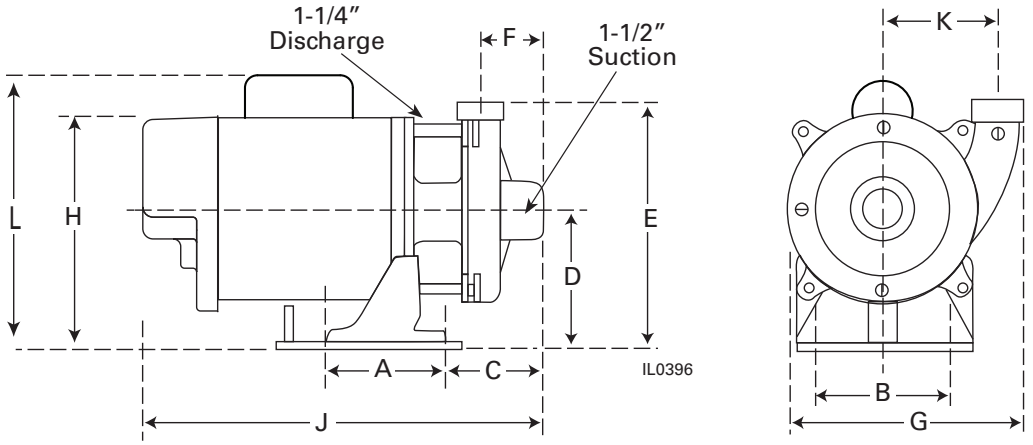


C22273 7-1/2 HP Three Phase
3450 RPM 60 Hz
Two Stage
Impeller No. 134982 & 134975 5.25 O.D.
Suction 3″ NPT
Discharge 2″ NPT
Max. Case Pressure 120 PSI
Liquid 1.0 Sp. Gr.

CJ103 CJ101 Dimensions

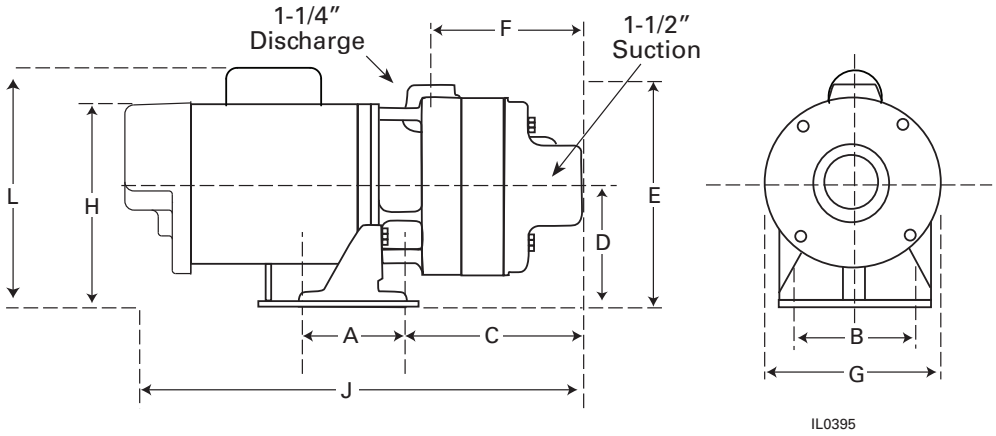
CJ103 SERIES

	HP	A	B	C	D	E	F	G	H	J	K	L
	1/3	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	13-1/4	3-7/8	-
	1/2	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	13-1/2	3-7/8	-
	3/4	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	14	3-7/8	-
	1	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	14-1/2	3-7/8	10-1/4
	1-1/2	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	15-1/8	3-7/8	10-1/4
1 Phase	3	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	15-5/8	3-7/8	10-1/4
3 Phase	2	4	4-5/8	3-11/16	5	9-1/2	2-1/8	8-1/4	8-1/8	15-5/8	3-7/8	-



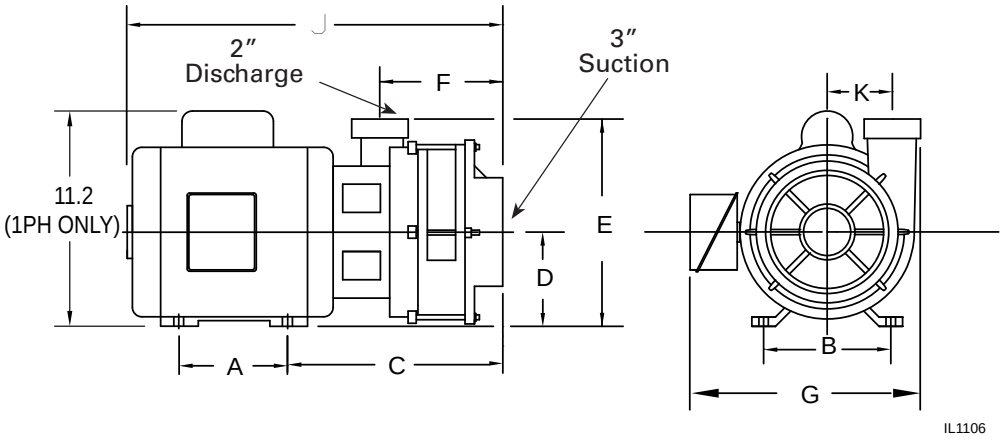
CJ101 SERIES

HP	STAGE	A	B	C	D	E	F	G	H	J	L
3/4	2	4	4-5/8	7-9/16	5-1/4	9-1/4	6-1/4	7	8-1/2	17-7/8	-
1	2	4	4-5/8	7-9/16	5-1/4	9-1/4	6-1/4	7	8-1/2	18-3/8	-
1-1/2	2	4	4-5/8	7-9/16	5-1/4	9-1/4	6-1/4	7	8-1/2	19	-
2	2	4	4-5/8	7-9/16	5-1/4	9-1/4	6-1/4	7	8-1/2	19-1/2	-
2	3	4	4-5/8	9-7/16	5-1/4	9-1/4	8-1/8	7	8-1/2	21-3/8	-
3	3	4	4-5/8	9-7/16	5-1/4	9-1/4	8-1/8	7	8-1/2	21-3/8	10-5/8

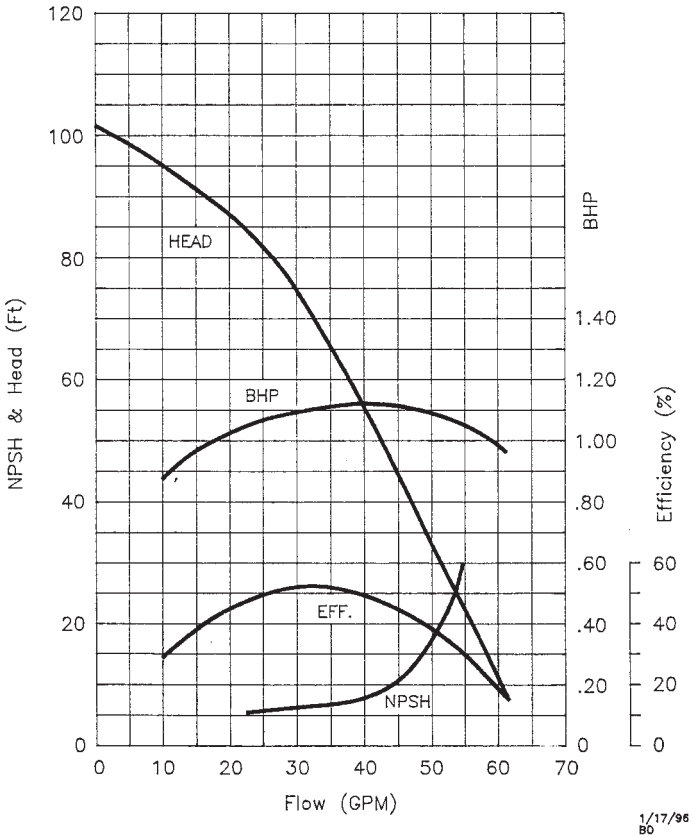


C22000 Dimensions

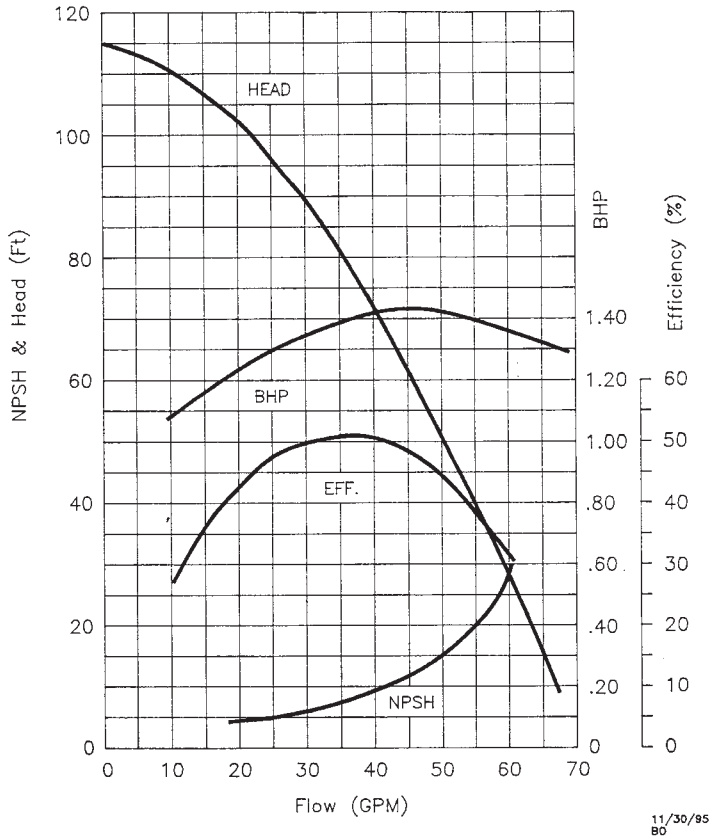
C22000												
HP	**STAGE**	**PH**	A	B	C	D	E	F	G	H	J	K
3	2	1	4-1/2	7-1/2	11-3/4	4-1/2	10-13/16	5-11/16	10-7/8	10-11/16	20-5/8	3-7/16
3	2	3	5	5-1/2	11-1/8	3-1/2	9-13/16	5-11/16	10-3/16	6-7/8	18-1/4	3-7/16
5	2	1	5-1/2	7-1/2	11-3/4	4-1/2	10-13/16	5-11/16	10-13/16	11-3/16	20-5/8	3-7/16
5	2	3	4-1/2	7-1/2	11-3/4	4-1/2	10-13/16	5-11/16	10-13/16	8-7/16	20-5/8	3-7/16
7-1/2	2	3	5-1/2	7-1/2	11-3/4	4-1/2	10-13/16	5-11/16	10-13/16	8-7/16	20-5/8	3-7/16



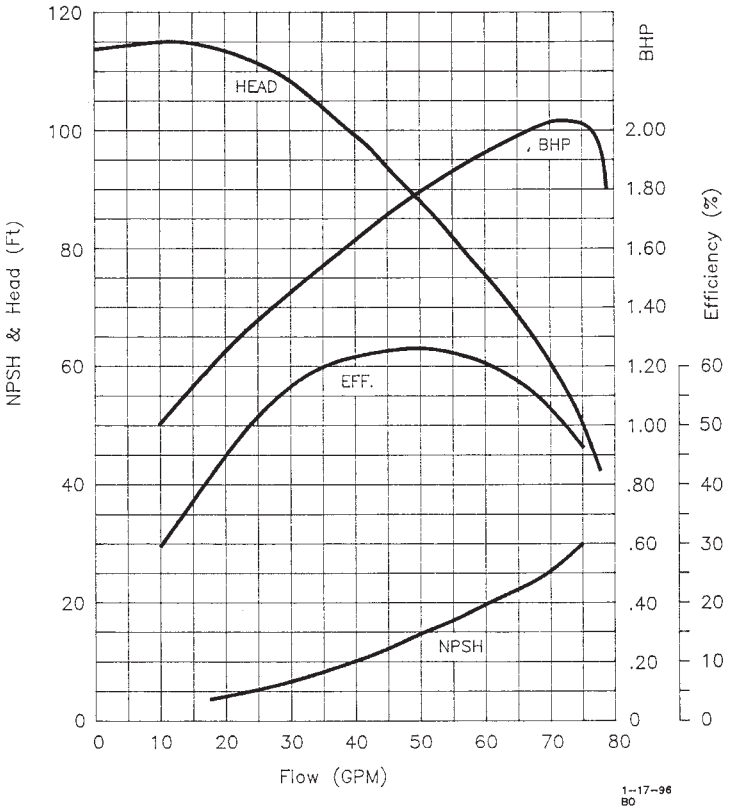
SPJ 07-1 Self-Priming Pump SPJ007P1



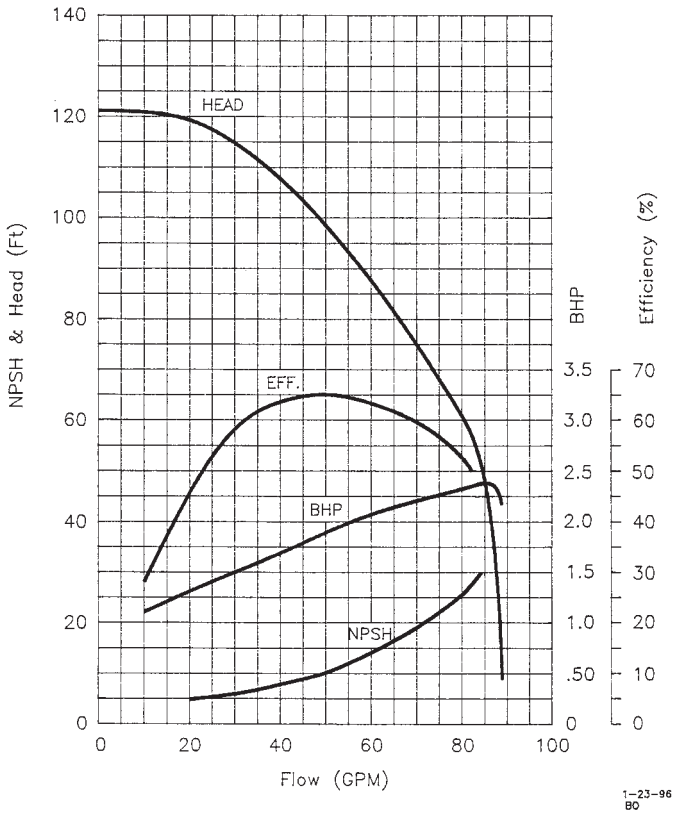
SPJ 10-1 Self-Priming Pump SPJ10P1



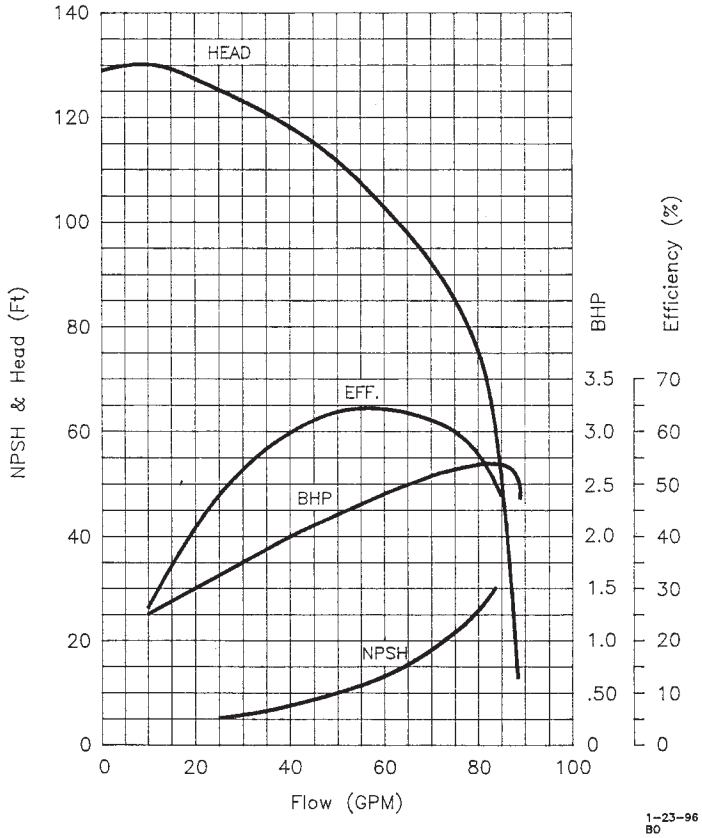
SPJ 15-1 Self-Priming Pump SPJ15B1



SPJ 20-1 Self-Priming Pump SPJ20B1



SPJ 30-1 Self-Priming Pump SPJ30B1



CONSTANT PRESSURE CONTROLS

FW1141
0620
Supersedes
NEW

Artesian Drive® For Centrifugal Pump Applications

Artesian Drive® is a line of custom programmed Variable Frequency Drives (VFD) that enhance the performance of standard centrifugal pumps. When applied correctly to three phase motor driven pumps, the Artesian Drive® eliminates pressure cycling associated with conventional pressure switch controlled water pumping systems and provides a constant output pressure by increasing or decreasing motor speed, based upon demand.

Artesian Drive® is factory programmed for F&W centrifugal pumps to provide optimum performance and motor protection. The Artesian® Drive can be used with other pump brands, provided the pump is powered by a three phase motor that does not exceed the maximum current output rating of the drive.

NEMA 4 Enclosures

INCLUDED ITEMS

- Factory programmed variable frequency drive
- NEMA 4 enclosure
- Pressure sensor, preset at 50 PSI
- Sensor adjustment tool
- Sensor cable (10 ft.)

FLINT & WALLING

Specifications

FEATURES

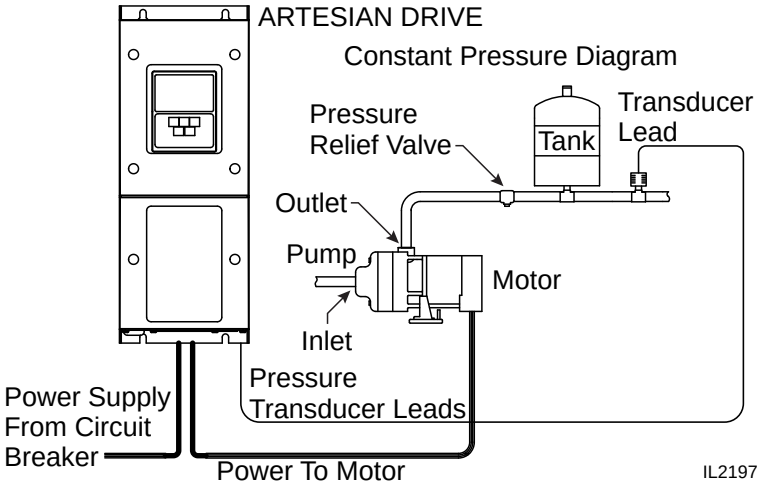
- Pre-programmed Drives: No need for field technician to program the drive at the site
- Drives are available for any 1 thru 15 HP centrifugal pump that is powered by a three phase motor
- Drives up to 3 HP permit the use of widely available 230 volt, single phase power source
- Constant water pressure with a wide range of settings (15 - 95 PSI)*
- Pressure is easily adjusted with a 7/32" allen wrench
- Works with a small pressure tank or a larger tank, already in place
- No in-rush current at startup
- Soft start reduces mechanical/electrical stress, prolonging pump and motor life
- Built-in protection and diagnostics
- Motor overload
- Locked or bound pump - with auto reversing torque
- Low line voltage
- Short circuit
- High voltage / lightning protection
- Dry run conditions, using intelligent load monitoring
- Overheated drive with automatic reset

*NOTE: The maximum obtainable system pressure is limited by the performance of the pump installed.

DRIVE SPECIFICATIONS AND DIMENSIONS

		AD070059	AD096074	AD096096	AD150145	AD420210	AD180145	AD220210	AD280280	AD420410
Input from power source	Voltage	180-264 VAC Single Phase					180-264 VAC Three Phase			
	Frequency	50/60 Hz								
	Current (Max)	13.9 A	19.5 A	19.5 A	36.4 A	55.8 A	18.8 A	29.1 A	36.4 A	55.8 A
"Output to Motor (Three Phase)"	Voltage	Voltage Automatically Adjusts with Frequency (0 thru 230 VAC)								
	Frequency Range	30-60 Hz								
	Current Programed	5.9 A	7.4 A	9.8 A	14.5 A	21.0 A	14.5 A	20.0 A	28.0 A	41.0 A
	Current Max	7.0 A	11.0 A	11.0 A	15.0 A	23.0 A	18.0 A	23.0 A	30.0 A	46.0 A
For Use With	Motor	Standard 60Hz Pump & 230 V 3-Phase Motor Combination								
	Reference HP Rating*	1.5	2	3	5	7.5	5	7.5	10	15
Pressure Setting	Factory preset	50 PSI								
	Range	15-95 PSI								
Operating Conditions	"Operating Temperature (at 230V Input)"	"-10°C to 40°C (-15°F to 104°F)"			"-10°C to 50°C (-15°F to 122°F)"		"-10°C to 40°C (-15°F to 104°F)"	"-10°C to 50°C (-15°F to 122°F)"		
	Relative Humidity	Max 95% non-condensing								
	Enclosure Rating	IP66	IP66	IP66	IP55	IP55	IP66	IP55	IP55	IP55
Physical Characteristics	Controller Size (inches)	7.4 x 10.2 x 9.5			6.8 x 17.8 x 9.5		8.3 x 12.2 x 10.5	6.8 x 17.8 x 9.5		
	Weight	10.6 lbs.	10.6 lbs.	10.6 lbs.	25.4 lbs.	25.4 lbs.	16.1 lbs.	25.4 lbs.	25.4 lbs.	25.4 lbs.

TYPICAL INSTALLATION



VARIABLE SPEED DRIVE PACKAGES

FW1253
0624
Supersedes
1219

Artesian Drive® Packages for Centrifugal Applications

- Energy efficient - conserves electricity
- Maintains consistent pressure for multiple sprinkler zone applications
- Saves water with fully adjustable pressure sensor — eliminates water fluctuation for consistent zone spray from 30 to 85 PSI
- Factory tested and preset to exact engineering specifications
- Soft start/stop technology extends pump life and reduces water hammer

NEMA 4 Enclosure

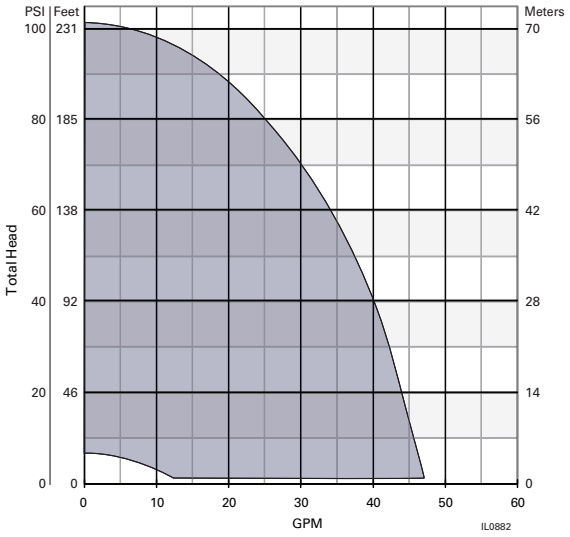
2 HP, 3 HP, 5 HP and 7-1/2 HP

Three phase w/single phase incoming

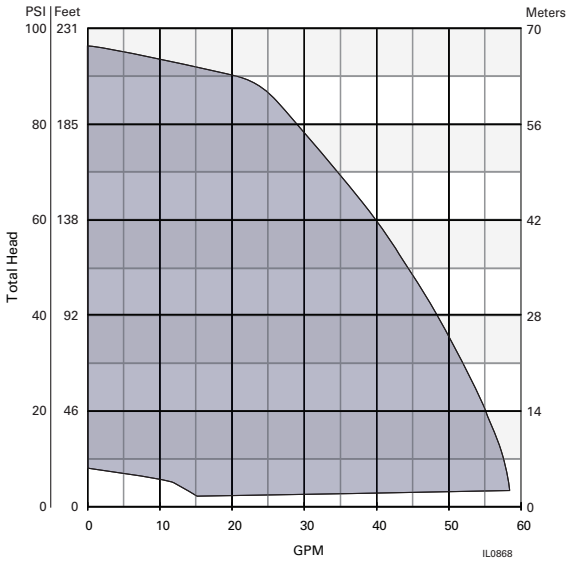
Artesian Drive® Package System Performance

Specifications

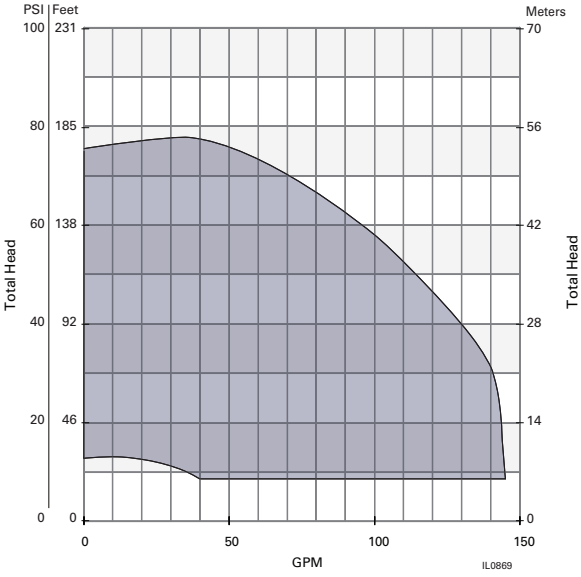
Model	Description	System Includes		
		Pump	Drive	Tank
ADS101C203	2 HP 3 Phase with 1 phase incoming	CJ101C203	AD096074	132661 AT44
ADS101C303	3 HP 3 Phase with 1 phase incoming	CJ101C303	AD096096	132661 AT44
ADS22253	5 HP 3 Phase with 1 phase incoming	C22253	AD150145	132661 AT44
ADS22273	7.5 HP 3 Phase with 3 phase incoming	C22273	AD220210	132661 AT44



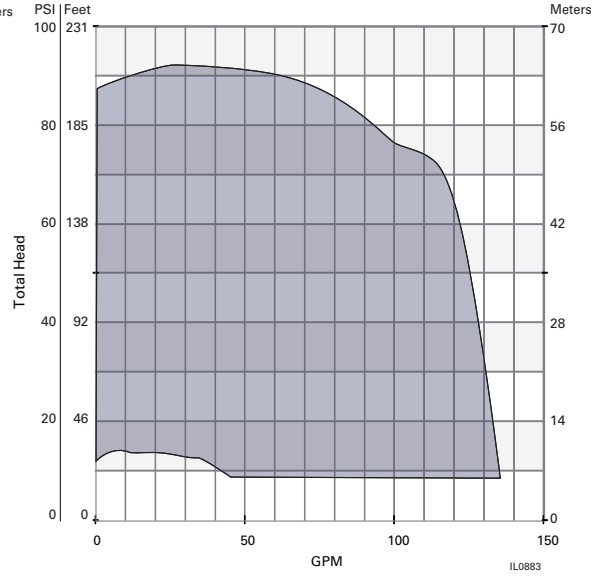
Model: ADS101C203 2 HP



Model: ADS101C303 3 HP



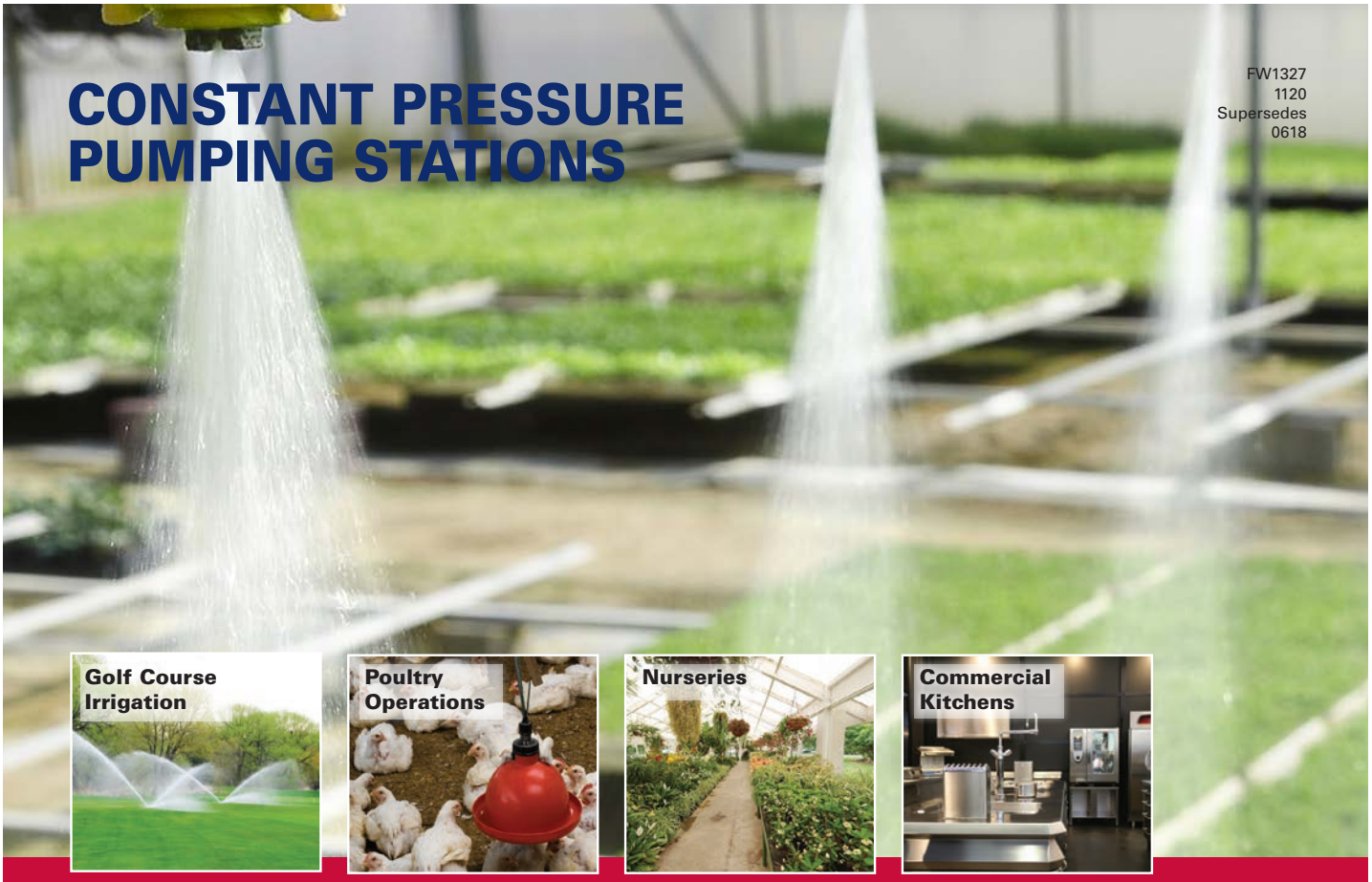
Model: ADS22253 5 HP



Model: ADS22273 7.5 HP

CONSTANT PRESSURE PUMPING STATIONS

FW1327
1120
Supersedes
0618



Artesian Drive® Deliver Flow and Pressure Where You Want It.

Artesian Drive® pumping stations adapt to your changing flow requirements, using a pump control system to deliver constant pressure at any flow required.

Significant energy savings from variable speed drives make constant speed pumps obsolete.

System dimensions 26″W x 37″L x 32″ H

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

ADW2W31 , ADW2W51, ADW2W71, ADW2W73 & ADW2W53

3 HP, 5 HP and 7-1/2 HP

Single or Three Phase

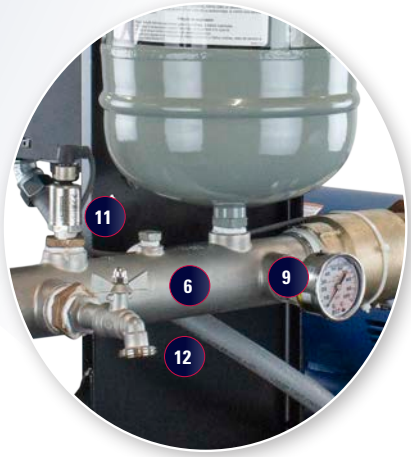
Constant Pressure Pumping Stations

FLINT & WALLING

Features and Benefits

SYSTEMS INCLUDE

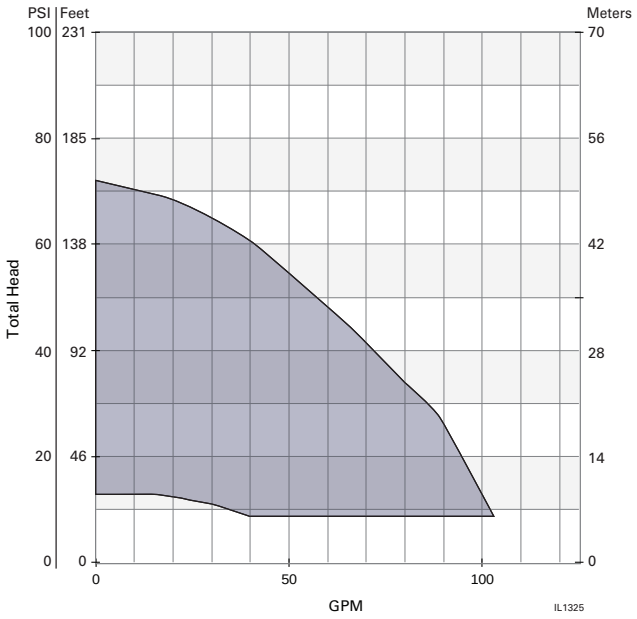
1. Artesian Drive® variable speed controller drive assembly can rotate 90º for flexibility
2. Centrifugal pump with brass impellers and 'Power Plus' motor
3. Air-E-Tainer® diaphragm tank
4. Thermal sensor (not shown)
5. Sealtight conduit
6. 2" Stainless steel manifold for gauge, transducer and hose bib
7. 3 Phase output to motor
8. 2" brass outlet check valve
9. Premium liquid filled gauge
10. 'Powder-coated tough' skid
11. Pressure transducer
12. Hose bib



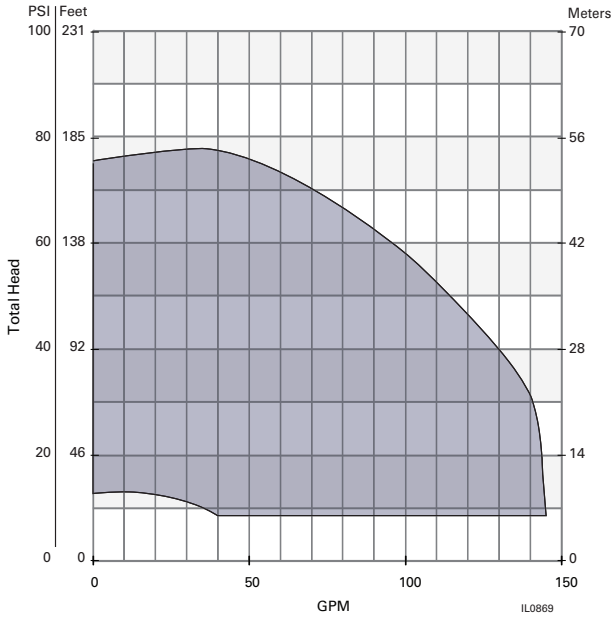
- Artesian Drive® constant pressure pumping stations provide constant water pressures
- Pre-plumbed, pre-wired, pre-programmed and pressure tested. Typical installation time takes less than 1 hour
- Models available up to 145 gallons per minute in 3 HP, 5 HP, and 7-1/2 HP
- Variable frequency drive operates on 230 volt single or three phase power – With three phase output to motor
- Advanced 'on board' diagnostics and pump protection
- Energy efficient – uses significantly less electricity than conventional centrifugal pump applications
- 3" suction with 2" discharge for easy installation
- Includes check valve, gauges and unions for easy serviceability
- 'Powder Coated Tough' skid, panel, and supports to resist rust and corrosion. Efficient in size - Fits through any 27" access door

Performance

PERFORMANCE SPECIFICATIONS

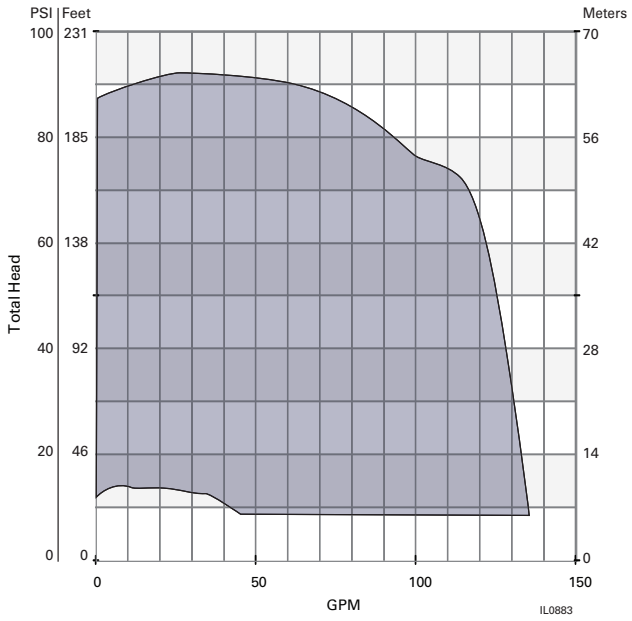


ADW2W31
3 HP Single Phase



ADW2W51
5 HP Single Phase

ADW2W53E
5 HP Three Phase



ADW2W71
7-1/2 HP Single Phase,

ADW2W73
7-1/2 HP Three Phase

FLINT & WALLING

FOUNTAIN SYSTEMS FOR BEAUTIFUL WATERSCAPES

FW1145
0624
Supersedes
0920

APPLICATIONS

- Private residential ponds
- Apartment complexes
- Industrial centers
- Golf courses
- Waterscapes
- City parks

THREE EASY CHANGE PATTERNS INCLUDED

- Easily interchangeable nozzles to achieve three different spray patterns
- Polyethylene, foam-filled flotation system: UV resistant, will not waterlog
- Stainless steel eye bolts anchor system to pond bottom or shore line with nylon rope
- Six inch diameter, slotted PVC screen provides large surface area to filter debris and draw water from below the pond surface area
- Four inch diameter pump fitted with stainless steel and thermal plastic components
- Water-cooled motor with stainless steel shell. Oil-free design.
- 100 ft. S00W waterproof cord with ground fault interruptor on 115V models. 100 ft. heavy duty 14 Ga. waterproof cord with heat shrink splice on 230V models. Optional cable available in 50 ft. increments up to 150 ft. additional. Maximum cable length 250 ft.
- 230V models include rain-proof, lockable control center. Includes internally mounted ground fault interrupter and 24 hour adjustable timers for pump and optional lights.

115V Model:
FPS0501

230V Models:
FPS05021, FPS07021, FPS10021
230V model shown

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

FPS0501, FPS05021, FPS07021, FPS10021

1/2 HP 115V or 230V; 3/4 and 1 HP 230V

Single phase

Operates in 5 ft. of water or deeper

Pond Fountain Pump Specifications

SYSTEM SPECIFICATIONS

MODEL NO.	HP	PHASE	VOLTS	RUNNING AMPS	SYSTEM CABLE LENGTH	MAX. CABLE LENGTH
FPS0501	1/2	1	115V	12	100 FT.	100 FT.
FPS05021	1/2	1	230V	6	100 FT. ‡	250 FT. †
FPS07021	3/4	1	230V	8	100 FT. ‡	250 FT. †
FPS10021	1	1	230V	10.4	100 FT. ‡	250 FT. †

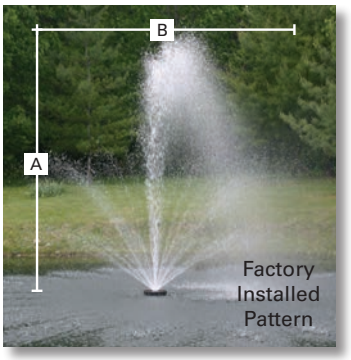
‡ Optional cable available in 50 ft. increments up to 150 ft additional.
† Maximum cable length from fountain to control. For wire specifications and size from the control panel to the fuse disconnect box, consult a licensed electrician. A licensed electrician should perform electrical installation in accordance with national and local electrical codes.

FOUNTAIN NOZZLE SPECIFICATIONS

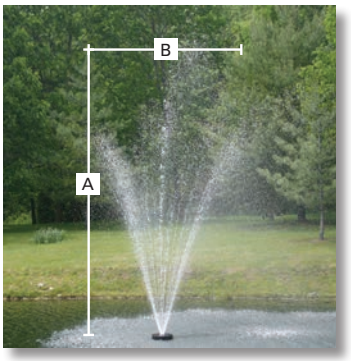
MODEL NO.	HP	WATER LILY			SKY CANNON		WATER TRUMPET		
		"A" HT.	"B" DIA.	Flow GPH*	"A" HT.	Flow GPH*	"A" HT.	"B" DIA.	Flow GPH*
FPS0501 / FPS05021	1/2	15	30	4900	15	3300	13	15	2700
FPS07021	3/4	22	32	5825	35	4100	20	25	3400
FPS10021	1	24	46	6150	41	4200	22	35	3600

*Water displacement gallons per hour.

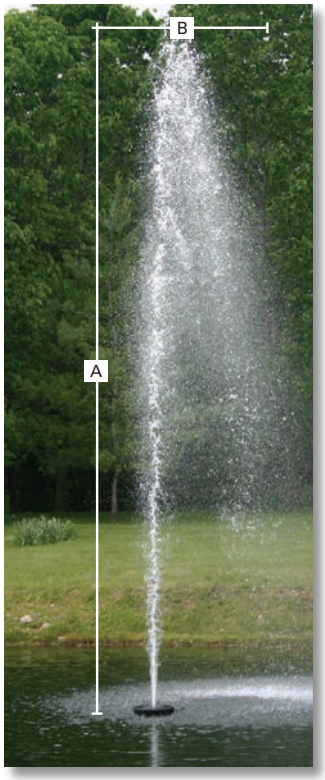
THREE EASILY INTERCHANGEABLE PATTERNS INCLUDED



Water Lily
An eye-catching combination spray



Water Trumpet
A symmetrical inverted bell shape



Sky Cannon
A dramatic single plume of water

Water Lily

Water Trumpet

Sky Cannon

LIGHT UP THE NIGHT WITH THE OPTIONAL "NightBright" SYSTEM

Now available for all models

Pond Fountain Pump Specifications

FLINT & WALLING

ADDITIONAL PUMP CABLE PACKAGES FOR 230V "FPS" FOUNTAIN SYSTEMS			
CABLE	CABLE LENGTH FT.		
	50'	100'	150'
	PART NO.		
14 GA. SOOW	022923	022924	022925
12 GA. SOOW	022920	022921	022922

Cable packages include 022919 heat shrink splice kit

OPTIONAL QUICK DISCONNECT

The optional Quick disconnect for the motor electrical connection enables disconnecting the unit for cleaning and winter storage. Part No. 022918

HEAT SHRINK SPLICE KITS

For use on 14 and 12 gauge pump cable. Part No. 022919

For use on 18 GA. light cable. Part No. 022933

OPTIONAL FOUNTAIN "NIGHT BRIGHT" LIGHTING SYSTEM

Flint & Walling floating fountains are even more dramatic at night with the addition of a "Night Bright" lighting system. The three light, 120V, 120 watt equivalent system includes stainless steel housings that can easily be installed onto the float. The fountain control center includes an adjustable 24 hour timer for controlling the "Night Bright" lighting system.

OPTIONAL 120V LIGHT KITS	
PART NO.	STANDARD LIGHT KIT PACKAGE COMPONENTS
023069	• Three white LED lamps † • 100 Ft. of 18 GA. AWG SOOW underwater cable ‡ • Stainless steel mounting brackets and hardware • Heat shrink splice kit
023369	Light kit with GFI connector for fountain systems without control box

† Optional colored lamps are available in red, green and blue sets of 3.
‡ Optional cable available in 50 ft. increments up to 150 ft additional.

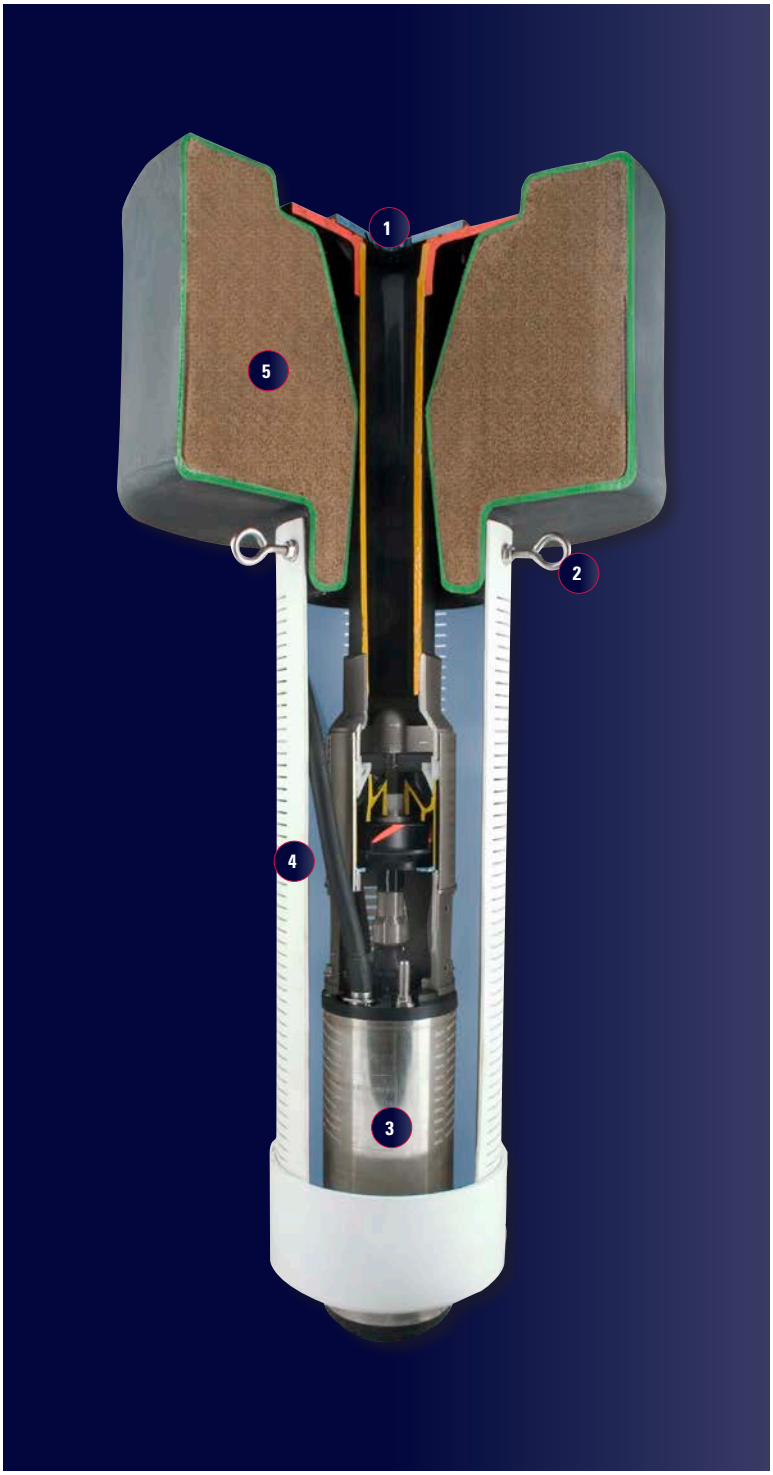
ADDITIONAL LIGHT CABLE PACKAGES FOR OPTIONAL LIGHTING SYSTEM			
CABLE	CABLE LENGTH FT.		
	50'	100'	150'
	PART NO.		
18 GA. SOOW	022930	022931	022932

Cable packages include 022933 heat shrink splice kit

COLORED LED LAMP SETS FOR OPTIONAL "NIGHT BRIGHT" LIGHTING SYSTEM

Part No.	Description
023059	Red
023058	Green
023057	Blue

Pond Fountain Pump Features



1. Interchangeable nozzle
2. Stainless steel eye bolts anchor system to pond bottom or shore with nylon rope
3. Four inch diameter pump and motor fitted with stainless steel and thermal plastic components for maximum corrosion resistance
4. Six inch diameter, slotted PVC screen provides large surface area to filter debris and draw water from below the pond surface area
5. Polyethylene, foam filled flotation system; UV resistant, will not waterlog

WARNING: Not tested or approved for use in swimming areas

FLINT & WALLING

CITY WATER BOOSTER PUMP

FW1492
0724
Supersedes
1020

More pressure where you want it . . . when you need it!

- All-in-one unit, consisting of pump, motor, stainless steel pressure tank and electronic controller
- Compact design and quiet operation make it suitable for many applications
- System has automatic built-in diagnostics to protect against:
  - Run Dry
  - Dead Head
  - Rapid Cycling
- Impeller constructed of stainless steel with stainless steel bearing and shaft sleeve
- 1 in. stainless steel inlet and outlet flanges

Model VP05
1/2 HP

Model VP10
1 HP

1/2 and 1 HP , 115V

Pressures to 112 PSI

Flow rates to 27 GPM

US
NSF/ANSI 372
255405

City Water Booster Pump

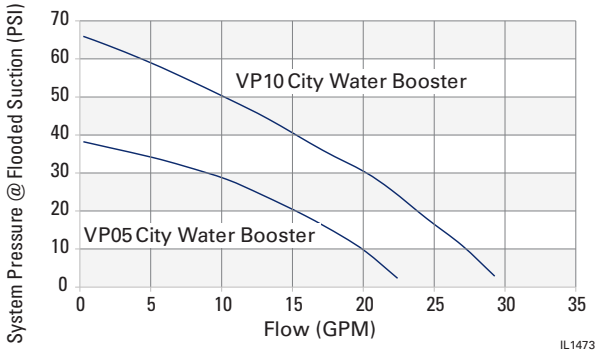
PERFORMANCE

DO NOT EXCEED 30 PSI incoming pressure

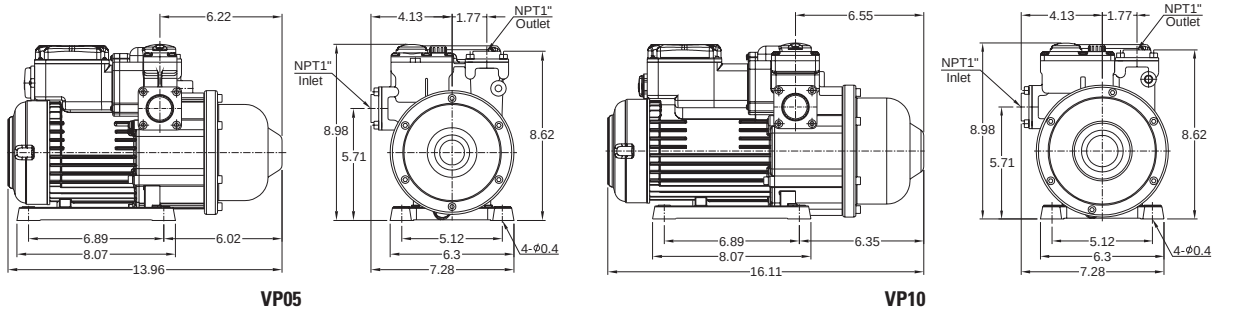
Inlet PSI	VP05 System Pressure (PSI) at Flow Rates (GPM)							HP
	3	6	9	12	15	18	21	
10	43	36	35	31	26	-	-	1/2
20	53	46	45	41	36	-	-	
30	63	56	55	51	46	-	-	

DO NOT EXCEED 50 PSI INCOMING PRESSURE

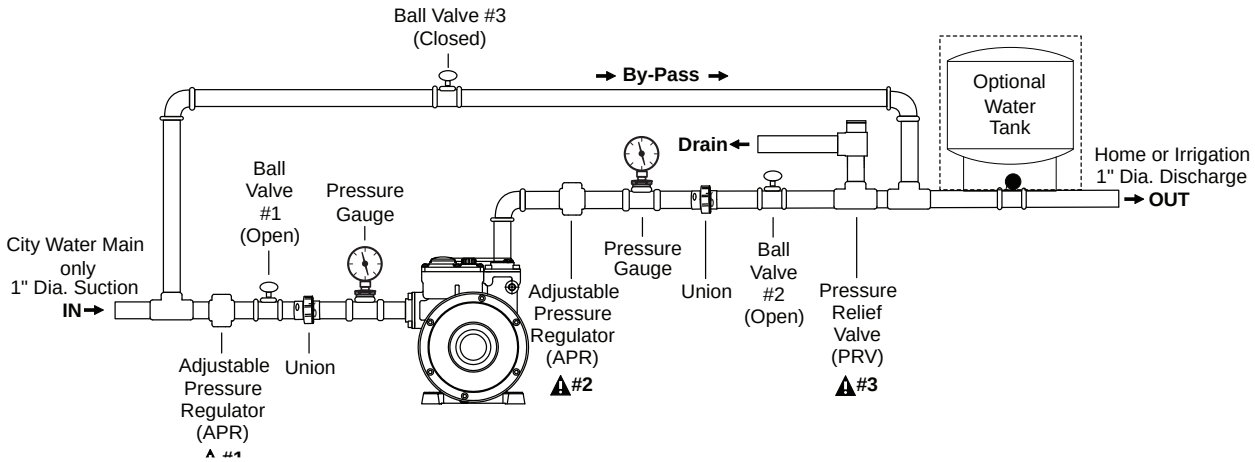
Inlet PSI	VP10 System Pressure (PSI) at Flow Rates (GPM)							HP
	3	6	9	12	15	18	21	
10	72	67	61	56	50	45	39	1
20	82	77	71	66	60	55	49	
30	92	87	81	76	70	65	59	
40	102	97	91	86	80	75	69	
50	112	107	101	96	90	85	79	



Outline / Dimensional Size



TYPICAL INSTALLATION



FLINT & WALLING

POULTRY MARKET CATALOG

FW0134
1020
Supersedes
0120

- Evaporative Cooling Pumps: 1-1/2 or 2 in. discharge
- Centrifugal Booster Pumps
- Pressure Booster Pumps
- Engineered Poultry Pumping Systems
- One year limited warranty

Capacities to 145 GPM

Pressures to 200 PSI

For Poultry Evaporative Cooling Applications - 2" Discharge

- Rugged oil filled motor
- Thermal overload protects against overheating
- Powder-coated, cast iron design dissipates motor heat to ensure long life
- 2" discharge for 2" solids pumping capacity
- 2" Bottom suction inlet with vortex impeller
- 9 ft. waterproof power cord with grounded plug
- Silicon carbide / carbon seal (designed for continuous runs), for long life
- Temperature rating: 104°F (40°C)
- One year limited warranty

US
Tested to UL Standard UL778 and Certified to CSA Standard CSA22.2 No. 108

SSPMA MEMBER

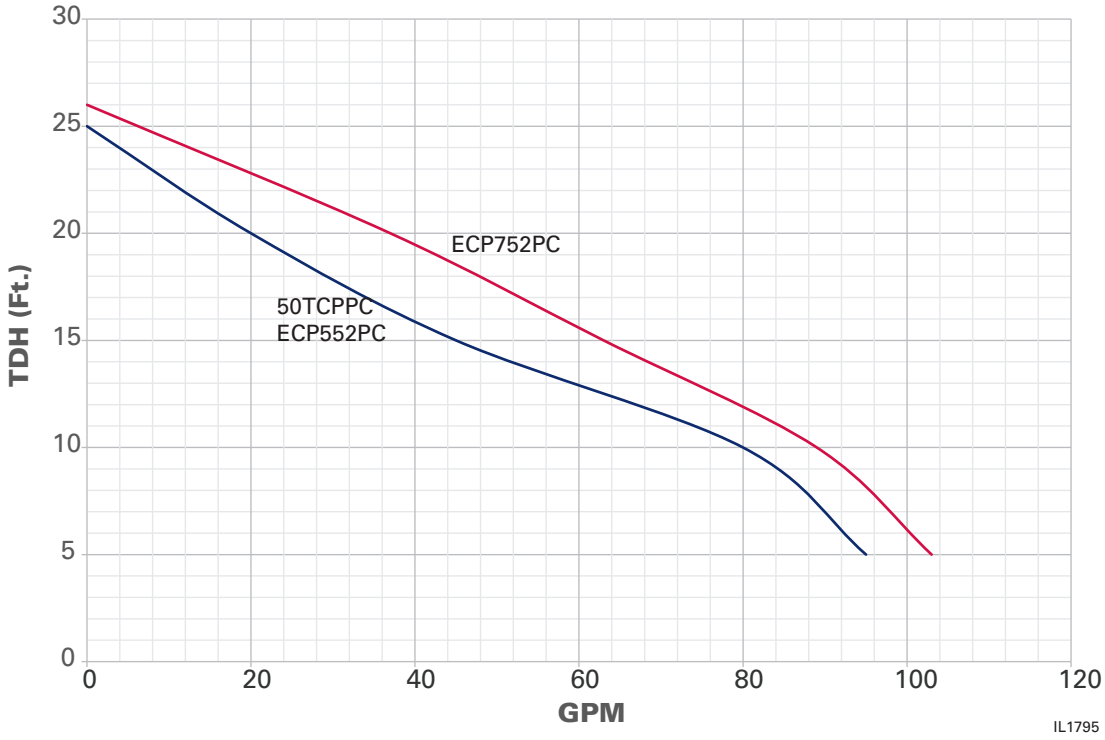
PERFORMANCE

Model	HP	Amps	Hz	Gallons Per Minute Lift Capacity			
				5 Ft.	10 Ft.	15 Ft.	20 Ft.
50TCPPC	1/2	9.5	60	95	80	45	20
ECP552PC	1/2	4.0	60	95	80	45	20
ECP752PC	3/4	4.0	60	103	89	63	37

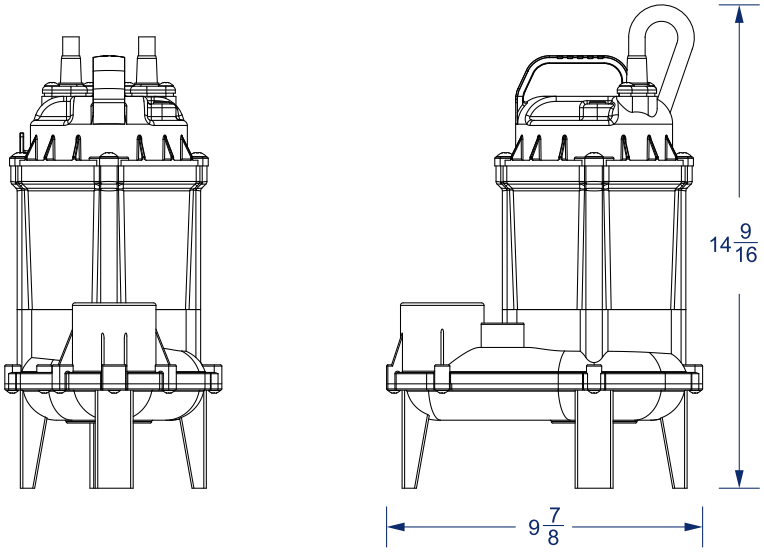
FLINT & WALLING

ECPPC / 50TCPPC Evaporative Cooling Pumps

PERFORMANCE



IL1795



IL1083

50TCPPC, ECP552PC, ECP752PC

Total Ht. (In.)	Total Width (in.)	Wt. (Lbs.)
15.875	9.5	21.0
15.875	9.5	21.0
15.875	9.5	21.0

ECP Series Pumps for Poultry Applications

For Poultry Evaporative Cooling Applications - 1-1/2" Discharge

- Durable, powder-coated epoxy cast iron construction
- Stainless steel lifting handle and bolts
- Non-clogging thermoplastic vortex impeller design
- ECP3 series passes 1/2" spherical solids. ECP4 and ECP5 series pass 3/4" spherical solids.
- Oil-filled, hermetically sealed, automatic reset thermal overload protected motor
- Silicon carbide / carbon seal (designed for continuous runs), for long life
- Upper sleeve bearing and lower ball bearing running in bath of oil
- 20 ft. UL listed power cord with molded 3-wire plug
- 1-1/2" NPT vertical discharge
- Operates at temperatures to 130˚ F (54 C˚)
- Glass-filled polypropylene base

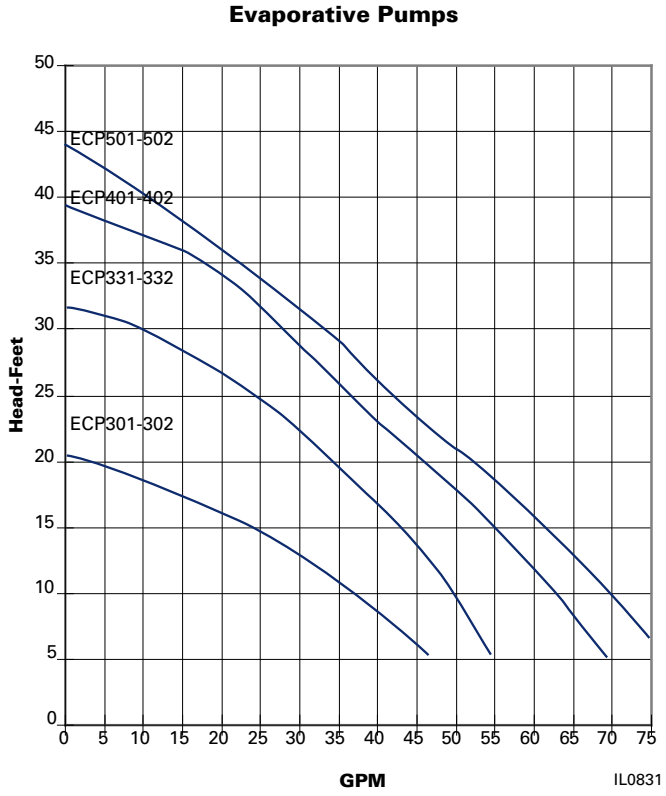
US
Tested to UL Standard UL778
and Certified to CSA Standard CSA22.2 No. 108

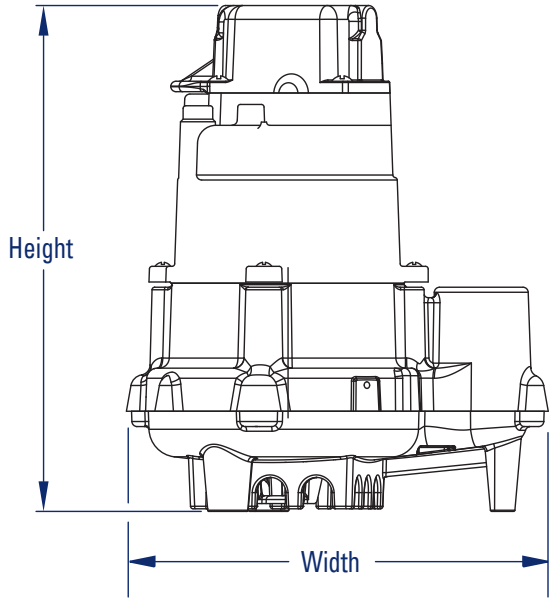
SSPMA MEMBER

PERFORMANCE

Model No.	HP	Volt	Amps	Hz	Gallons Per Minute Lift Capacity			Shut Off Ft.
					5 Ft.	10 Ft.	15 Ft.	
ECP301	.30	115	9.7	60	47	37	25	20.5
ECP302		230	4.8					
ECP331	.33	115	6.0		55	50	43	32
ECP332		230	3.2					
ECP401	.40	115	8.5		69	64	55	39
ECP402		230	4.3					
ECP501	.50	115	10.5		77	70	61	44
ECP502		230	5.3					

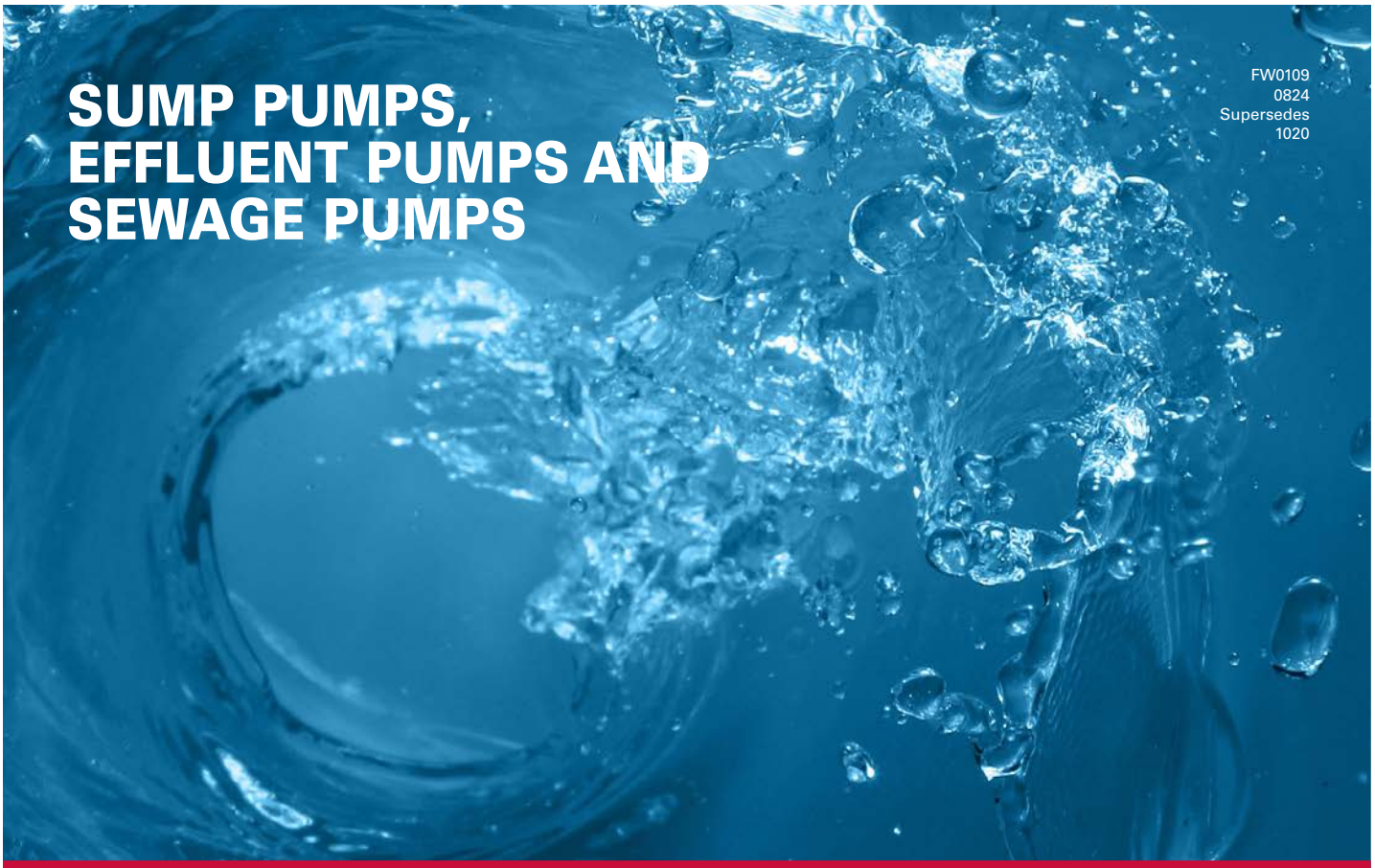
ECP Evaporative Cooling Pumps





ECP301, 302, 331, 332, 401, 402, 501, 502

Total Height	Total Width	Weight Lbs.	Discharge NPT
10.063″	10.006″	22.4	1-1/2″
11.688″	10.094″	32.0	
12.125″		37.0	
		39.0	



SUMP PUMPS, EFFLUENT PUMPS AND SEWAGE PUMPS

FW0109
0824
Supersedes
1020

FOR WATER, EFFLUENT AND SEWAGE REMOVAL

- Non-clogging vortex impeller on submersible models
- Premium vertical switch
- Thermal overload protected
- Cast iron or thermoplastic models available
- 100% factory tested for reliable operation

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

3SEL, F1098, 40ECF

.3 - 1/2 HP

Up to 90 GPM

Lifts to 25 ft.

SSPMA MEMBER

Cast Iron Contractor Sump/Effluent Pumps

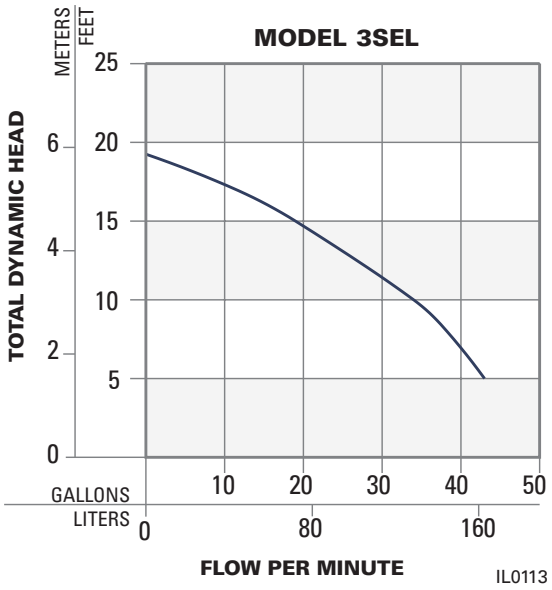
- Non-clogging vortex impeller passes 1/2" solids
- Corrosion-resistant, powder coated epoxy finish
- .3 HP, 115V, 9.7 amps
- Cast iron switch case, motor and pump housing for long life and quiet operation
- Solid, buoyant float material and stainless steel float switch arm ensure long term reliability
- 1-1/2" NPT discharge to meet commercial code requirements
- Thermal overload protection keeps motor from overheating
- 2-pole, float operated switch
- Maximum temperature for effluent or dewatering - 130°F (54°C)
- 1-year limited warranty.

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

3SEL

Model	HP	Discharge Pipe Size	Gallons Per Minute Lift Capacity		
			5 ft.	10 ft.	15 ft.
3SEL	.3	1-1/2" *	43	34	19

*Reduces to 1-1/4" with P/N 024784



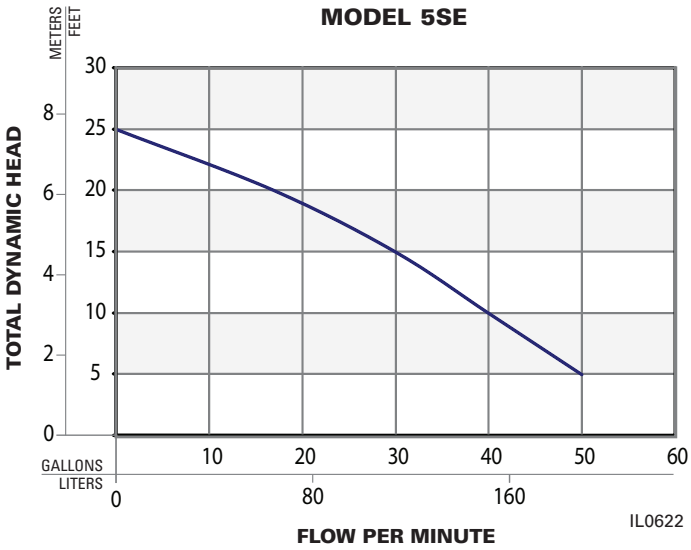
Cast Iron Contractor Sump/Effluent Pumps

5SE

- Premium vertical switch easily fits into pits as small as 10 inches in diameter
- Rugged cast iron motor housing for long life
- Highly efficient, overload protected, oil-filled motor
- Non-clogging vortex impeller effectively removes lint and debris
- All stainless steel hardware
- 1-1/2" NPT discharge - passes 3/8" solids
- 100% tested before shipment for reliable operation
- 1-year limited warranty

Model	HP	Discharge Pipe Size	Gallons Per Minute Lift Capacity		
			5 ft.	10 ft.	15 ft.
5SE	1/2	1-1/2"*	50	40	30

*Reduces to 1-1/4" with P/N 024784



HIGH CAPACITY CONTRACTOR SUMP/EFFLUENT PUMP

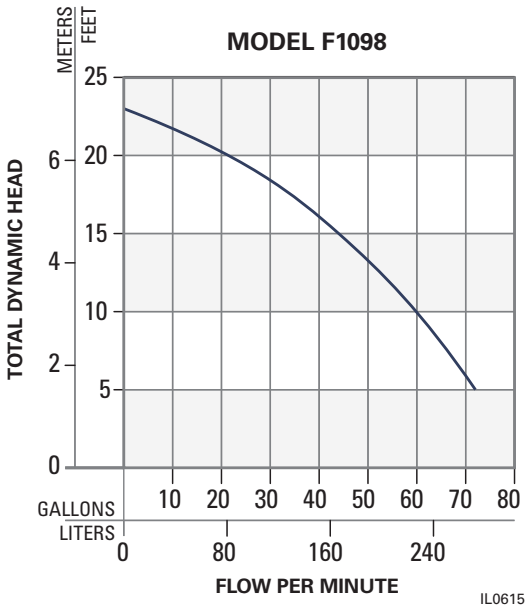
- 1/2 HP, 115V, 9.4 amps
- Epoxy coated cast iron construction for long life
- Stainless steel components will not rust or corrode
- Thermal overload protection keeps motor from overheating
- Oil-filled, hermetically sealed high efficiency motor for dependable service
- 1-1/2" NPT discharge - passes 1/2" spherical solids
- 100% water tested before shipment for reliable operation
- Temperature rating: 130ºF (54ºC)
- 1-year limited warranty

F1098

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

Model	HP	Discharge Pipe Size	Gallons Per Minute Lift Capacity			
			5 ft.	10 ft.	15 ft.	20 ft.
F1098	1/2	1-1/2"	72	61	45	21

*Reduces to 1-1/4" with P/N 024784



Submersible Sump / Dewatering Pump

Cast Iron and Thermoplastic Column Sump Pumps

3CE

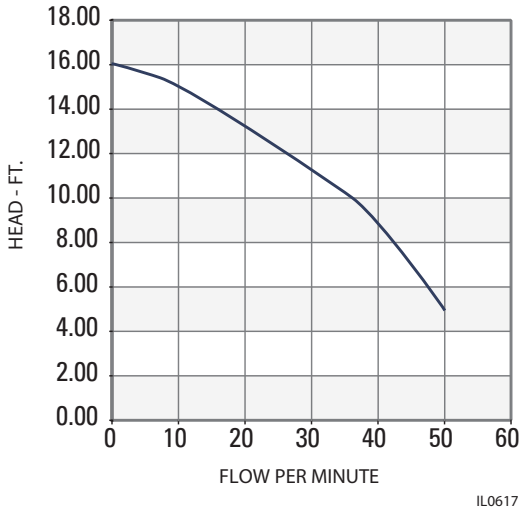
3CD

- Open type non-clogging multi-vane impeller
- Heavy duty motor - 115V, 60 cycle, single phase, 1725 RPM
- 3CE 1/3 HP, 4.0 Amps; 3CD 1/3 HP, 5.7 Amps
- Thermal overload protection keeps motor from overheating
- Waterproof cord with grounded plug
- Easily adjustable on/off float and rod type switch
- Top suction strainer filters out debris
- Durable shaft securely fits to impeller
- Operates in 130°F water continuously; 150°F intermittently
- Conveniently fits into 12" diameter pit
- 1-year limited warranty

Model	HP	Base	Discharge Pipe Size	Gallons Per Minute Lift Capacity		
				5 ft.	10 ft.	15 ft.
3CE	1/3	Thermoplastic	1-1/4"	50	36	10
3CD	1/3	Cast Iron	1-1/2" *	50	41	22

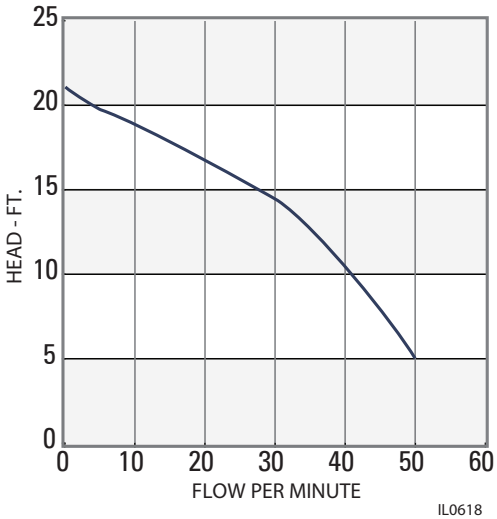
*Reduces to 1-1/4" with P/N 024784

MODEL 3CE



IL0617

MODEL 3CD



IL0618

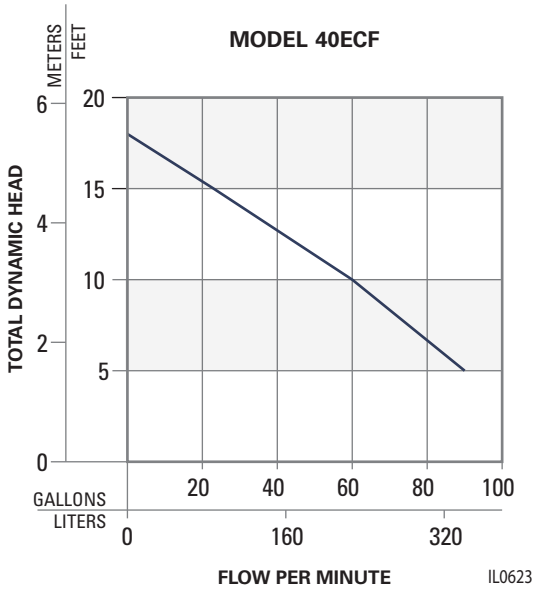
Cast Iron Submersible Sewage Ejector Pump

- Rugged oil filled .4 HP, 115V, 60 Hz. motor 9.4 amps
- Thermal overload protects against overheating
- Epoxy coated, cast iron design dissipates motor heat for long life
- 2" discharge with 2" solids pumping capacity
- Bottom suction inlet with vortex impeller
- 10' waterproof power cord with grounded plug
- Ceramic and carbon seal for reliable service and extended life
- Temperature Rating: 130°F. (54°C.)
- 1-year limited warranty

MADE IN THE USA
USING A MAJORITY OF U.S. CONTENT

40ECF

Model	HP	Gallons Per Minute Lift Capacity		
		5 ft.	10 ft.	15 ft.
40ECF	.4	90	60	23



MULTI-STAGE EFFLUENT 4 INCH SUBMERSIBLE PUMPS

FW0714
0221
Supersedes
0920

Multi-stage effluent submersible pumps are used in on-site applications that demand more head than a traditional single stage centrifugal pump. This need is met by offering a complete line of submersible effluent turbine pumps. These pumps have been proven in field applications and have many years of development behind them.

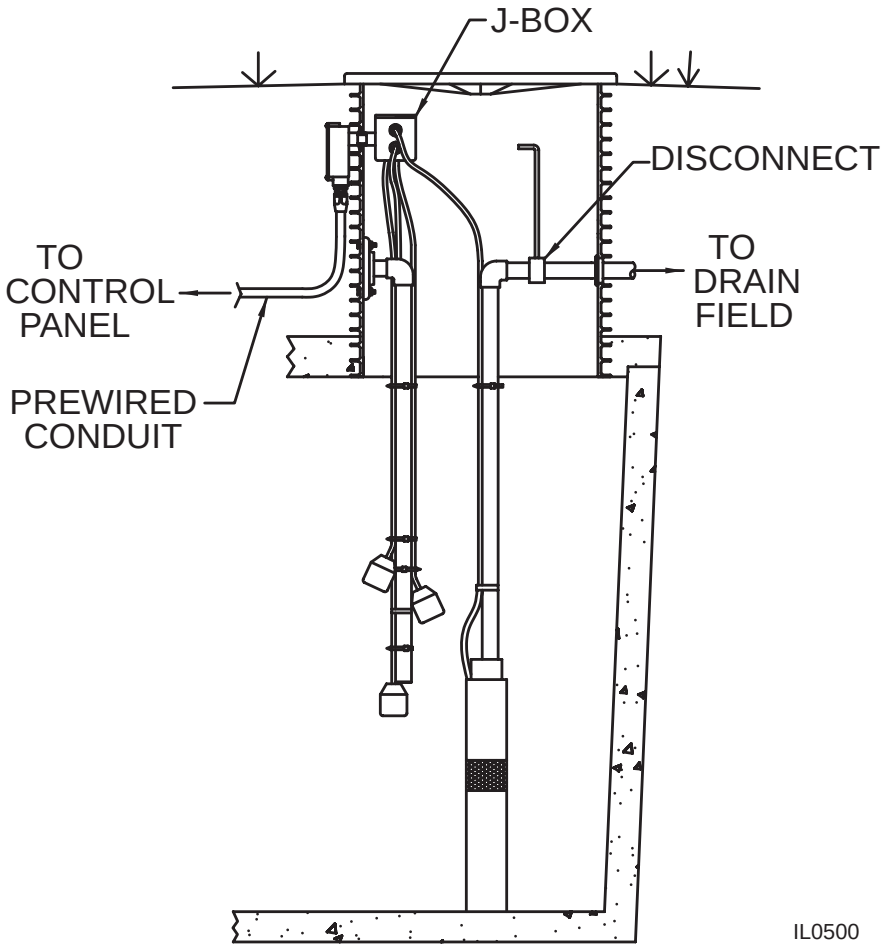
Typical applications include mound systems, drip systems, and recirculation media filters. All units include cool running submersible motors that do not require external water flow to prevent overheating. Therefore, an outer pump sleeve is not required for models less than 2 HP. Pumps can be installed directly in a dose tank as long as an effluent filter is used on the septic tank outlet. These pumps can also be used in conjunction with a filtered STEP system.

US

Multi-Stage Effluent 4 Inch Submersible Pumps

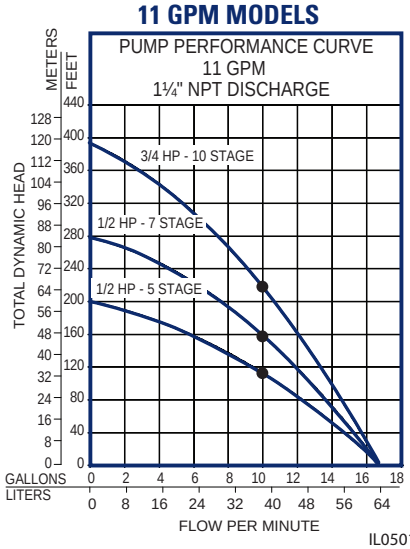
Features

- Corrosion resistant
- Models available: 11, 19, 27 35 and 55 GPM.
- 1/2 thru 1 HP units
- 115 and 230 volts
- 1-1/4" discharge (11, 19, 27 gpm) or 2" discharge (35 and 55 GPM)
- Heavy wall stainless steel pump shell
- NEMA standard submersible motors
- Stainless steel hex drive pump shaft
- High efficiency floating stack
- Glass-filled Noryl® discharge and mounting ring (1/2 thru 1 HP; 11, 19, and 27 gpm models)
- Stainless steel discharge and mounting ring (35 and 55 GPM models)
- No external capacitors or relays required for starting.
- Check valve not included
- Replaceable motor lead assembly



Multi-Stage Effluent 4 Inch Submersible Pumps

11 GPM MODELS

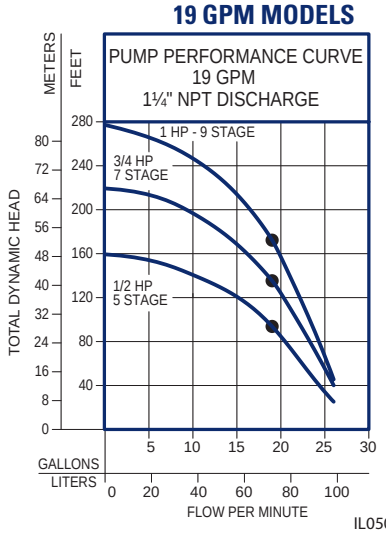


IL0501

Part Number	HP	Voltage	Phase	Amps	Stages	Height
F5030-0005‡	1/2	115	1	12.0	5	23"
F5030-0006‡	1/2	230	1	6.0	5	23"
F5030-0007‡	1/2	115	1	12.0	7	24-7/8"
F5030-0008‡	1/2	230	1	6.0	7	24-7/8"
F5030-0009‡	3/4	230	1	8.0	10	28-5/8"
F5030-0013 [3]	1/2	115	1	12.0	5	23"

‡ Includes 10 ft. of #16-2G SOOW-A power cord
[3] Includes check valve and weep hole

19 GPM MODELS

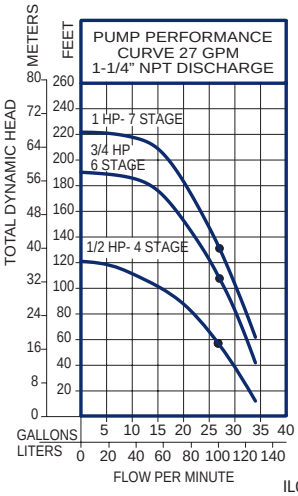


IL0502

Part Number	HP	Voltage	Phase	Amps	Stages	Height
F5031-0005‡	1/2	115	1	12.0	5	23-1/2"
F5031-0006‡	1/2	230	1	6.0	5	23-1/2"
F5031-0007‡	3/4	230	1	8.0	7	26-5/8"
F5031-0008 [1]	1	230	1	10.4	9	29-1/2"

‡ Includes 10 ft. of #16-2G SOOW-A power cord
[1] Includes 10 ft. of #14-2G SJOW-A power cord

27 GPM MODELS

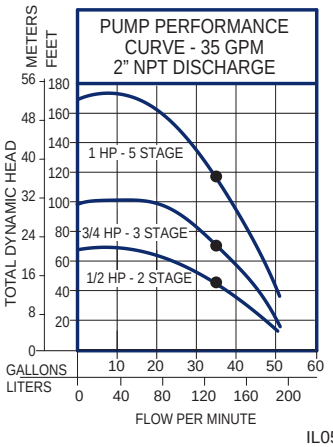


IL0503

Part Number	HP	Voltage	Phase	Amps	Stages	Height
F5032-0005‡	1/2	115	1	12.0	4	22-3/4"
F5032-0006‡	1/2	230	1	6.0	4	22-3/4"
F5032-0007‡	3/4	230	1	8.0	6	25-7/8"
F5032-0008 [1]	1	230	1	10.4	7	27-3/4"

‡ Includes 10 ft. of #16-2G SOOW-A power cord
[1] Includes 10 ft. of #14-2G SJOW-A power cord

35 GPM MODELS



IL0504

Part Number	HP	Voltage	Phase	Amps	Stages	Height
F5033-0005‡	1/2	115	1	12.0	2	21-1/2"
F5033-0006‡	1/2	230	1	6.0	2	21-1/2"
F5033-0007‡	3/4	230	1	8.0	3	24-1/4"
F5033-0011 [2]	1	230	1	10.4	5	31-7/8"

‡ Includes 10 ft. of #16-2G SOOW-A power cord
[2] Includes 50 ft. of #14-2G SJOW-A power cord

FLINT & WALLING

AIR-E-TAINER® WELL SYSTEM TANKS

FW0019
1120
Supersedes
0618

Vertical, Horizontal and Inline Well System Tanks

- Inline tanks pre-charged for 30-50 pressure switch - Vertical tanks pre-charged for either 30 – 50 or 40 – 60 Pressure switch
- 100 PSI maximum working pressure
- Powder-coated exterior and interior
- Butyl rubber parabolic diaphragm
- 5 year Limited Warranty

AIR-E-TAINER® PRE-PRESSURIZED WELL SYSTEM TANKS

Part No.	Total Tank Vol. Gallons	Drawdown - Gallons by PSI Settings***			Approx. Size In. Dia x Ht	Ship Wt Lbs	NPT Size/ MTL	Factory Precharge PSIG	Max Working Pressure (PSI)	Max Working Temp
		20/40	30/50	40/60						
131009	2	0.7	0.6		8-1/4 x 10-1/5	5	3/4" M	28	100	140
132477	4.6	1.6	1.4		11 x 14-3/4	9	3/4" M	28	100	140
132661	14	5.2	4.3	3.7	15-3/8 x 24-3/4	25.5	1" F	38	100	200
136878A*	14	5.2	4.3	3.8	15-1/3 x 16-7/10	28	3/4" M	28	100	200
132662	20	7.4	6.2	5.4	15-3/8 x 32-1/4	30	1" F	38	100	200
132663	36	13.3	11.1	9.7	20 x 38-5/8	45	1" F	38	100	200
133517	52	19.2	16.1	14	23-3/8 x 38-5/8	77	1-1/4" F	38	100	200
136875	65	23.9	20	17.5	23-3/8 x 46-3/5	87	1-1/4" F	38	100	200
135460	86	31.8	26.7	23.2	23-3/8 x 59	105	1-1/4" F	38	100	200
136876	119.5	44	37	32	26 x 61-1/4	165	1-1/4" F	38	100	200

*With pump stand.
***In keeping with current industry standards, drawdown factors are based on Boyle's law. Actual drawdowns will vary depending upon system variables, including the accuracy and operation of the pressure switch and gauage and operating temperature of the system.

Caution: install a pressure relief valve on any installation where the pump pressure can exceed the tank's maximum working pressure.
NOTE: Precharged tanks cannot ship via air freight.

Air-E-Tainer Features

1. AIR CHARGE VALVE
   - Conveniently located for easy pressure adjustment
   - Projection-welded for durability
2. DESIGNER FINISH
   - High gloss exterior powder coat
   - Provides positive protection against corrosion and UV rays
3. BUTYL RUBBER PARABOLIC DIAPHRAGM
   - Eliminates rubbing on the tank wall or rolling over on itself
4. STEEL SHELL
5. STEEL RETAINING RING
6. POWDER-COATED WATER CHAMBER
   - Proven protection against internal corrosion
7. CORROSION-RESISTANT BASE
   - High-impact polymer material
   - Strong and stable for long life
   - Base rotates for easy alignment to pipe connection
   - Slotted and noted for air flow, reduced condensation build-up

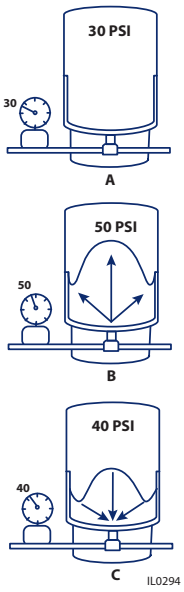
Standard 30/50 PSI System

These illustrations show the operation of the Air-E-Tainer® tank in a typical 30/50 pressure range.

A. Tank is pre-pressurized with air at the factory.

B. When pump starts, water enters the reservoir. At 60 psig, system is filled. Pump shuts off.

C. When water is demanded, pressure in the air chamber forces water into the system. Pump turns on.

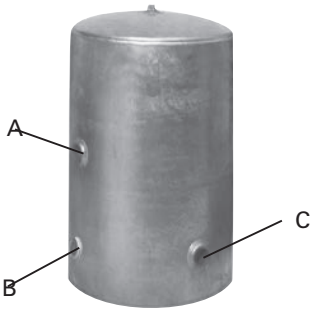


STANDARD VERTICAL GALVANIZED WELL SYSTEM TANKS

Order No.	Total Tank Vol. Gals.	Drawdown - Gallons			Approx. Size Inches	Approx. Ship. Wt. Lbs.	Tapping Size - Inches		
		.155 @ 20/40	.101 @ 30/50	.071 @ 40/60			A	B	C
124831	42S	6.5	4.2	3.0	20x34	71	1 1/4	1 1/4	1 1/4
125211	42T	6.5	4.2	3.0	16x51	71	1 1/4	1 1/4	1 1/4
124832	82	12.7	8.3	5.8	20x63	114	1 1/4	1 1/4	1 1/4
124833	120	18.6	12.1	8.5	24x65	154	1 1/4	1 1/2	1 1/2
124834*	220	34.1	22.2	15.6	30x78	303	1 1/4	2	2
124835*	315	48.8	31.8	22.4	36x80	416	1 1/4	2	2

*Non-Stock Item - Consult Factory for Delivery Schedule.

Galvanized Pressure Tanks ... 75 PSI Maximum Working Pressure. 150 PSI Test Pressure.



134273

AIR-E-TAINER® PRE-PRESSURIZED WELL SYSTEM TANKS

Part No.	Total Tank Vol. Gallons	Drawdown - Gallons by PSI Settings***			Approx. Size In. Dia x Ht	Ship Wt Lbs	NPT Size/ MTL	Factory Precharge PSIG	Max Working Pressure (PSI)	Max Working Temp
		20/40	30/50	40/60						
131009	2	0.7	0.6		8-1/4 x 10-1/5	5	3/4" M	28	100	140
132477	4.6	1.6	1.4		11 x 14-3/4	9	3/4" M	28	100	140
132661	14	5.2	4.3	3.7	15-3/8 x 24-3/4	25.5	1" F	38	100	200
136878A	14	5.2	4.3	3.8	15-1/3 x 16-7/10	28	3/4" M	28	100	200
132662	20	7.4	6.2	5.4	15-3/8 x 32-1/4	30	1" F	38	100	200
132663	36	13.3	11.1	9.7	20 x 38-5/8	45	1" F	38	100	200
133517	52	19.2	16.1	14	23-3/8 x 38-5/8	77	1-1/4" F	38	100	200
136875	65	23.9	20	17.5	23-3/8 x 46-3/5	87	1-1/4" F	38	100	200
135460	86	31.8	26.7	23.2	23-3/8 x 59	105	1-1/4" F	38	100	200
136876	119.5	44	37	32	26 x 61-1/4	165	1-1/4" F	38	100	200

***In keeping with current industry standards, drawdown factors are based on Boyle's law. Actual drawdowns will vary depending upon system variables, including the accuracy and operation of the pressure switch and gauage and operating temperature of the system.

Caution: install a pressure relief valve on any installation where the pump pressure can exceed the tank's maximum working pressure.
NOTE: Precharged tanks cannot ship via air freight.

In-line tanks
131009
132477

Vertical Tanks
132661
132662
132663
133517
136875
135460
136876

AIR-E-TAINER® PUMP STAND

Order No.	Application
134151	For Mounting Jet Pumps On Top Of 132661, 132662, 132663, 133517, 136875, 135460 and 136876 Air-E-Tainer Tanks

FITTING PKGS. FOR JET PUMP/PRESSURE TANK MOUNTED SYSTEMS

Fittings Pkg Order No.	For Use With		Package Contents
	Pumps	Well System Tanks	
135918	1/3 & 1/2 HP Shallow Well and Convertible Horizontal Jet Pumps	132661 Vertical Air-E-Tainer 132662 Vertical Air-E-Tainer	Nipples, Elbows, Discharge Tee, Hose, Clamps and Pump Stand (134151)

PRESSURE TANK ACCESSORIES

AIR VOLUME CONTROL - FLOAT TYPE

Maintains the correct relationship between the volume of air and quantity of water in the pressure tank.

ORDER NO.	NPT	TYPE
023916	1 1/4"	Deep Well Less Gauge
023926	1 1/4"	Shallow Well Less Gauge

PRESSURE RELIEF VALVE

Order No.	NPT	Release Pressure	Capacity Gallon Per Hour
024777	1/2"	75 PSI	1200 at 70 PSI

NOTE: Install a Pressure Relief Valve with any pump capable of producing more than 75 PSI at the tank.

AIR VALVES

Order No.	NPT	Description
023915	1/4"	Allows admittance of air to any pressure system

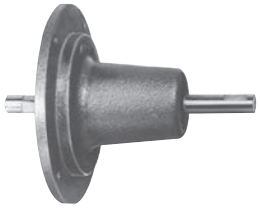
JET PUMPS/TANKS SYSTEM FITTINGS

Order No.	Description
134176	1" x 34" Hose

JET PUMP ACCESSORIES

POWER CONVERSION UNIT FOR JET AND CENTRIFUGAL PUMPS

Order No.	Application
122649 NEMA C	Can be used with any jet or centrifugal pump equipped with NEMA C or NEMA J standard electric motors. Gasoline engine or electric motor can be directly coupled with shaft or can be used with belt and pulley. For electric motor used with belt drive, the motor HP should be doubled. The gasoline engine HP should be doubled that of standard motor in either case above.
135458 NEMA J	5/8" Dia. steel shaft, mounted in two heavy duty ball bearings, carry all radial and thrust loads.



JET PUMP ACCESSORIES

TURNED COUPLING/GALV.

Order No.	Size
129205	1-1/4″ NPT

WELL POINT

Order No.	Size	Gauge	Screen Length
120857	1-1/4″ x 30″	60	24″
120881	1-1/4″ x 36″	60	30″

TOUCH-UP PAINT

Order No.	Description
133367	F&W Blue Spray Can

DRIVE COUPLINGS

Order No.	Description
127486	1-1/4″ Coupling for 1-1/4″ Drive Pipe

WELL ADAPTERS FOR JET PUMP INSTALLATIONS

Order No.	Description	Well Size	Drop Pipe	Suction Pipe	Pressure Pipe
127025	Right Angle	2″	1″	1-1/4″	1″
129723			1-1/4″	1-1/4″	1″
129719	Straight	2″	1″	1-1/4″	1″
129720			1-1/4″	1-1/4″	1″
022961	Adapter to match Sta-Rite vertical jet pump footprint to F&W "VA", VS" and "VPH" jet pumps without disturbing existing well plumbing				

Right Angle Adapter

Right Angle Adapter

Straight Adapter

WELL SEALS

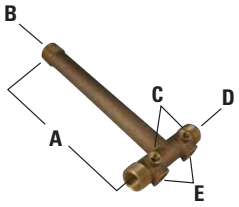
Order No.	Description	Well Size	Suction Pipe	Pressure Pipe
126077	Single Pipe Submersible Installation with Cable Seal	4″	1-1/4″	-
129331		4″	2″	-
126369		5″	1-1/4″	-
125760		6″	1-1/4″	-

Single Pipe Submersible

SUBMERSIBLE ACCESSORIES

SUBMERSIBLE PUMP FITTINGS FOR AIR-E-TAINER AND OTHER CONTAINED AIR TANKS

Brass Tank Cross, Pressure Switch 30/50 PSI, Pressure Gauge, 1/2" Pressure Relief Valve, 1" Check Valve, 1/2" Boiler Drain



Order No.		Dimensions Inches NPT				
		A	B	C	D	E
023281	Complete Package - Low Lead	10"	1"	1/4"	1" M x 3/4" F	1/2"
024795	Tank Cross Only	10"	1"	1/4"	1" M x 3/4" F	1/2"

SUBMERSIBLE TORQUE ARRESTOR

Eliminates damage to submersibles due to high starting torque.

Order No.	Description
024783	Adjustable to well casings from 4" to 8" I.D.

SUBMERSIBLE CABLE GUARD

Prevents power cable from abrading against side walls of well casing.

Order No.	Description
024770	Fits 6" well-cut tabs for use in 4" and 5" wells

POLYPROPYLENE SUBMERSIBLE SAFETY ROPE

Order No.	Description
134099	500 ft. reels (no cut lengths)

SUBMERSIBLE POWER CABLE WITH GROUND

500 Ft. random reels (no cut lengths)

Wire Size	T-PRENE Jacket†	Plastic Jacket‡	
	3-Wire Order No.	3-Wire Order No.	2-Wire Order No.
No. 12	262-123-53	262-123-54	261-122-54
No. 10	262-103-53	-	-

† TPR Insulation, Copper Conductor
‡ TW Insulation, Standard Copper Conductor

SPLICE KITS

Order No.	Wire Sizes
134100	#14, #12, #10
136755	#8, #6

ELECTRICAL ACCESSORIES

LIGHTNING ARRESTORS

Part No.	Description
127103	Franklin, spark gap 1-Phase 250 Volts (Max.)—1 Req'd.
020165	F&W metal oxide varistor, 1-phase, 240 volt max. - 1 req'd

BW WATER LEVEL CONTROL - Type 1500G

Provides automatic low level cutoff protection for submersible pumps and deep well turbines

Part No.	Description	Qty Req'd
020097	Control, 208-230V, 50/60 Hz, NEMA 1, pump up or pump down	1
125748	Type LH Relay Rated 1 HP, Single Phase, 208-240V, 50/60Hz	
127835	Electrode	2
267-001-40	Suspension Wire-500 Ft. Reels	*

*No cut length.

LEAD WIRES FOR FLINT & WALLING MOTORS

Order No.	Motor Diameter	Description
022797	4"	3 Wire, Plain One End, 48" 14 AWG
022788	4"	2 Wire, Plain One End, 48" 14 AWG

PUMPSAVER PLUS
SINGLE PHASE MOTOR PROTECTION

Control Type	HP	Volts	P/N	Wt.
PumpSaver Insider	1/3 - 1	230	023803	1.0
PumpSaver Plus	1/3 - 1-1/2	230	023804	3.5
	1/3 - 3	230	023805	3.5
	5 - 7-1/2	230	023806	4.0

SUBMERSIBLE ACCESSORIES

PRESSURE SWITCHES

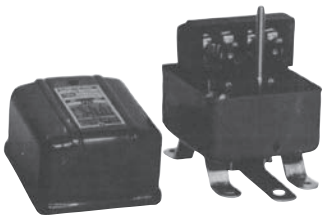
Order No.	Switch Setting	Bottom Connection NPT	Maximum Electrical Rating		
			Single Phase		Three Phase
			115V	230V	115V
020345	20-40	1/4M	1 HP	1-1/2 HP	2 HP
020346	30-50	1/4 M	1-1/2 HP	2 HP	3 HP
130723*	20-40	1/4 F	1 HP	1-1/2 HP	2 HP

NOTE: All switches are two pole.
*Indicates low pressure cut off.

OPEN TANK FLOAT SWITCH

Order No.	Description	Max. Switch Ratings	Qty. Req'd
125272	Switch only (heavy duty)	2 HP, 120V, 1 PH 3 HP, 240V, 1 PH 5 HP, 240V, 3 PH	1
125274	Float rod 60" long		1
135266	Stop, rod (rubber)		4

For complete switch, order all parts in quantity as listed above.



CHECK AND FOOT VALVES

CHECK VALVES
Spring controlled, general service for jet, submersible or centrifugal, for horizontal or vertical application

ORDER NO.	NPT	CAN BE USED IN PIPE SIZE INCHES
024769	1"	2"
023427	1" FPT x 1-1/4" MPT	2"

FOOT VALVES
Spring controlled,
Jet or centrifugal, for vertical application

ORDER NO.	NPT	WELL PIPE SIZE
136294	1"	2"
136295	1-1/4"	2-1/2"
023226	2"	3-1/2"

FLINT & WALLING

4" SUBMERSIBLE MOTORS AND CONTROL BOXES

FW1637
0724
Supersedes
0922

Motor Application Guide

Flint & Walling 4" Submersible Motors provide quality in the details:

- **Nitrile rubber shaft seal . . . three-part design protects motor from contamination**
- **Stainless steel shaft . . . features polished bearing journals for extended bearing life**
- **Copper-wound stator for superior performance**
- **Stainless steel carbon graphite Kingsbury thrust bearing . . . provides self-aligning axial support up to 700 lbs. for reliable operation**
- **Stainless steel shell . . . hermetically sealed for maximum corrosion resistance**
- **Precision-ground radial bearings . . . for high load capability and long life**

Motors: 1/2 through 2 HP

2-Wire and 3-Wire Single Phase and Three Phase

Control Boxes: 1/2 through 5 HP

US
LR90197
Drinking Water
NSF/ANSI 61

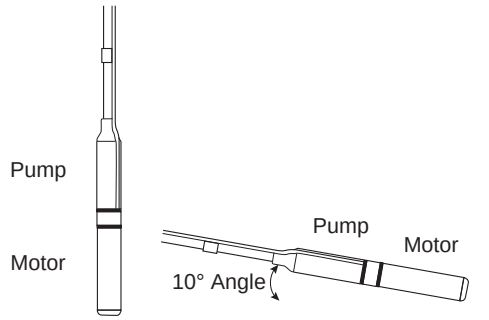
STORAGE AND HANDLING

Long and reliable motor life is supported by Flint & Walling proprietary NSF food safe internal motor fill solution, acting as a lubrication solution for the bearing system and shaft lip seal. The anti-corrosive additives prevent internal corrosion and promote long running life.

Long term storage should be limited to 115° F. During horizontal storage, fill solution may weep through the check valve, creating slight loss of liquid. This is not a concern for the running performance of the motor. Cold storage down to -30° F will not damage the motor due to the anti-freeze protection provided by the fill solution.

INSTALLATION – VERTICAL VS. HORIZONTAL POSITION

The pump is designed to be vertically positioned with the pump end up. The pump applies down thrust onto the motor, which seats the axial bearing firmly into the running position. If the application requires the pump to be placed horizontally, it is important to provide a minimum 10 degree angle (motor in the down position), decrease the starts per day, and avoid open flow pump applications to prevent motor bearing damage. Depending upon the specific application, this will minimize the impact to motor life.



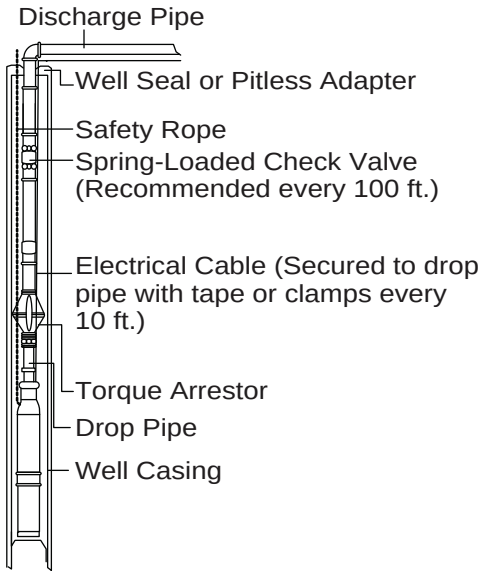
DROP PIPE INSTALLATION

Drop pipe threads and pump discharge must be tightened to 20 lb-ft to withstand loosening caused by rotational inertia generated from the starting torque of the pump.

To center the pump and protect the wire, a submersible cable guard is recommended. A torque arrestor is also suggested to minimize pump twisting caused by motor start torque. Plastic pipe installations should always use torque arrestors.

CHECK VALVE INSTALLATION

The F&W pump has a pre-assembled check valve within the discharge. Check valves effectively hold a column of water within the drop pipe which maintains water within the system. This prevents back spinning and water hammer. Additional check valves are required every 100 feet of vertical drop and one additional check valve within the horizontal run from the well site to the point of use.



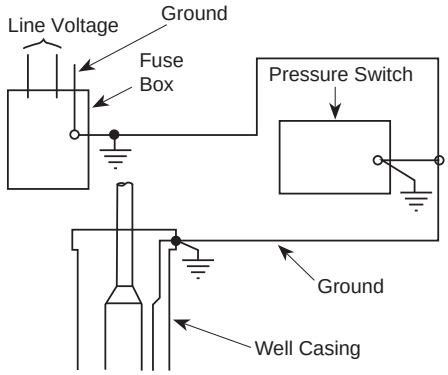
MAX WATER TEMPERATURE LIMITS

Submersible motors are designed to run within 86°F. water temperature without the need for a flow inducer sleeve.

If water temperature exceeds 86°F, installed in a large body of water, storage tank or large well casing, contact F&W Technical Service at 1-800-742-5044 for flow inducer sleeve application.

GROUNDING CONTROL BOXES AND PANELS

The National Electric Code requires that all control boxes and panel-grounding terminals be connected to the supply ground. A wire at least as large as the line conductor must be used to connect the grounding terminal to the electrical supply ground if the circuit has no grounding conductor and no metal conduit from the box to the supply panel.



Note: It is recommended that all electrical work is completed by a licensed and trained professional. Follow all local and national codes.

WARNING: Failure to ground the box frame can result in a fatal electrical shock hazard if a circuit fault occurs.

WARNING: Serious or fatal electrical shock may result from failure to connect all metal plumbing, and the motor if outside a drilled well, to the power supply grounding terminal with wire no smaller than motor cable wires.

WARNING: This motor has not been approved for use in swimming areas.

PROPER GROUNDING OF SUBMERSIBLE MOTORS

1. The purpose of grounding any electrical apparatus is to prevent an electrical shock hazard if exposed metal becomes connected to an electrical circuit. This can occur from physical damage, or a breakdown in the insulation. Grounding prevents shock hazard by keeping exposed metal from reaching a voltage level which could endanger anyone coming in contact with the electrical equipment. Fault current is "drained" by the ground conductor, and if the fault is severe enough, the circuit will be opened by the fuse or circuit breaker.
2. Section 250-43 item (K) of the U.S. National Electrical Code (NEC) requires that motor operated water pumps, including the submersible type, regardless of voltage, shall be grounded. Section 26-954 of the Canadian Electrical Code specifically discusses grounding requirements for submersible pumps. Additional codes may vary in different states and localities, but all applicable national, state, and local codes should always be followed. Code questions should be directed to your local electrical inspector.

NOTE: Always disconnect all power when making ohmmeter checks and while pulling or installing a pump.

3. The submersible motor is normally grounded as follows:
   a. Run an extra wire with the motor power conductors. This wire must be sized to meet Table 250-95 in the U.S. National Electrical Code.
   b. The ground wire may be insulated or bare. If insulated, it must be green with or without yellow stripe(s). The ground wire may be part of, or separate from, the supply cable. It may be continuous or spliced above the pump along with the supply cable.
   c. Connect the green or bare ground wire to the green ground wire of the submersible motor lead wire assembly.
   d. Connect the other end of ground wire to the power supply grounding terminal or to the control panel ground bar if it is connected to the power supply ground.
   e. All connections should be tight and corrosion resistant. Screws, lugs, or clamps should be made of corrosion resistant material.

In abnormally corrosive water, the ground wire connection could be compromised. In a corrosive water application, F&W advises the use of a GFCI with a 10m A trip point. Route the ground wire through the current sensing device with the motor supply leads to provide additional protection.

2-WIRE (PLUS GROUND) MOTOR OPERATION.

The 2 - wire motor has an internal switch designed to energize the start winding during motor start up. A control box should not be used.

The 2 - wire switch design requires a minimum time of 10 seconds between starts after power is removed from the motor. This is to insure that the internal switch resets, places the start winding into the circuit, and allows proper restart of the motor.

SINGLE PHASE - MAXIMUM COPPER CABLE LENGTHS IN FEET (SERVICE ENTRANCE TO MOTOR)

60°C Insulation

VOLTS	HP	WIRE SIZE (AWG)												
		14	12	10	8	6	4	3	2	1	0	00	000	0000
		LENGTH IN FEET												
115	1/2	105	160	265	400	625	950	1150	1470	1780	2140	2475	3010	3510
230	1/2	420	650	1070	1615	2500	3810	4620	5880	7115	8570			
	3/4	315	485	800	1210	1875	2855	3465	4410	5335	6425	7425		
	1	245	375	615	930	1440	2200	2665	3390	4105	4945	5710		
	1.5 (3W)	205	320	530	800	1240	1905	2320	2965	3615	4375	5085		
	1.5 (2W)	190	295	490	740	1145	1745	2115	2690	3260	3925	4535		
	2	160	250	415	635	1000	1550	1905	2465	3060	3750	4415		

75°C Insulation

VOLTS	HP	WIRE SIZE (AWG)												
		14	12	10	8	6	4	3	2	1	0	00	000	0000
		LENGTH IN FEET												
115	1/2	100	155	255	385	595	910	1105	1410	1710	2060	2384	2905	3400
230	1/2	400	620	1020	1540	2390	3645	4420	5635	6836	8245			
	3/4	300	465	765	1155	1790	2735	3315	4230	5130	6185	7155	8720	
	1	230	355	590	890	1380	2100	2250	3255	3945	4755	5500	6705	7845
	1.5 (3W)	200	305	505	765	1190	1825	2220	2840	3470	4205	4890	6010	7085
	1.5 (2W)	185	280	465	705	1095	1670	2025	2580	3130	3775	4368	5325	6230
	2	155	240	395	605	955	1480	1820	2360	2925	3590	4230	5315	6395

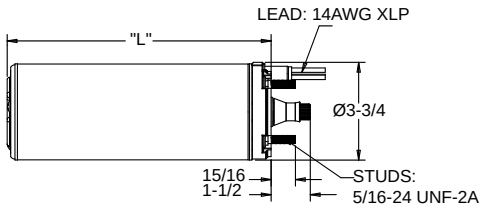
THREE PHASE - MAXIMUM COPPER CABLE LENGTHS IN FEET (SERVICE ENTRANCE TO MOTOR)

Three-Phase 60°C & 75°C Insulation

VOLTS	HP	WIRE SIZE (AWG)												
		14	12	10	8	6	4	3	2	1	0	00	000	0000
		LENGTH IN FEET												
230	1/2	930	1490	2350	3700	5760	8910							
	3/4	670	1080	1700	2580	4190	6490	8060	9860					
	1	560	910	1430	2260	3520	5460	6780	8290					
	1.5	420	670	1060	1671	2610	4050	5030	6160	7530	9170			
	2	320	510	810	1280	2010	3130	3890	4770	5860	7170	8780		
	3	240	390	620	990	1540	2400	2980	3660	4480	5470	6690	8020	9680
460	1/2	3770	6020	9460										
	3/4	2730	4350	6850										
	1	2300	3670	5770	9070									
	1.5	1700	2710	4270	6730									
	2	1300	2070	3270	5150	8050								
	3	1000	1600	2520	3970	6200								

Lengths listed meet the NEC ampacity requirements for either individual conductors or jackets 60°C or 75°C cable and can be in conduit or direct buried.
NEC and local codes should be followed and observed for any other cable being used.
Cable lengths listed are calculated to allow a 5% voltage drop per NEC for alternating current. If a 3% voltage drop is desired, the values listed should be multiplied by 0.6 to obtain the maximum cable length.

MOTOR DIMENSIONS



SINGLE PHASE		"L"	
HP	Wire	SS	E
1/2	2 and 3	10.10	10.47
3/4	2 and 3	11.23	11.60
1	2 and 3	12.10	12.47
1-1/2	2	15.43	N/A
1-1/2	3	14.06	14.35
2	3	15.43	N/A

THREE PHASE		"L"
HP	Wire	SS
1/2	3	10.10
3/4	3	11.23
1	3	11.23
1-1/2	3	12.10
2	3	14.06
3	3	15.56

F&W
4" Submersible Motors

FLINT & WALLING

60HZ SINGLE PHASE MOTOR TABLE

	HP	KW	Voltage	Full Load			S.F.	Service Factor Load (Maximum Values)			Winding Res.	LR Amps	KVA Code
				Amps	Watts	%Eff F.L.		S.F. Amps	S.F. Watts	%Eff S.F.	Ohms		
2 Wire	1/2	0.37	115	10	740	50	1.6	12	960	62	1.1-1.4	64	R
	1/2	0.37	230	5	740	50	1.6	6	960	62	4.1-5.3	32	R
	3/4	0.55	230	6.8	1050	52	1.5	8	1350	61	2.9-3.7	40	N
	1	0.75	230	8.2	1350	56	1.4	10.4	1800	58	2.2-2.8	48	N
	1-1/2	1.1	230	10.6	1880	59	1.3	13.1	2390	60	1.6-2.0	65.5	M
3 Wire	1/2	0.37	115	10	740	50	1.6	12	960	62	M 1.1-1.4 A 4.3-5.3	48	M
	1/2	0.37	230	5	740	50	1.6	6	960	62	M 4.1-5.3 A 18.0-21.9	23	M
	3/4	0.55	230	6.8	1050	52	1.5	8	1350	61	M 2.9-3.7 A11.0-13.5	39	M
	1	0.75	230	8.2	1350	56	1.4	10.4	1800	58	M 2.2-2.8 A 10.2-12.6	42	L
	1-1/2	1.1	230	10	1800	61	1.3	11.5	2280	63	M 1.7-2.2 A 7.8-9.6	52	J
	2	1.5	230	10	2380	63	1.25	13.2	2800	67	M 1.8-2.5 A 5.4-7.0	50	G

M = Main Res. (Yellow to Black)

A= Aux. Res. (Yellow to Red)

60HZ THREE PHASE MOTOR TABLE

	HP	KW	Voltage	Full Load			S.F.	Service Factor Load (Maximum Values)			Winding Res.	LR Amps	KVA Code
				Amps	Watts	%Eff F.L.		S.F. Amps	S.F. Watts	%Eff S.F.	Ohms		
3 Wire	1/2	0.37	230	2.4	585	64	1.6	2.9	860	70	9.5-10.9	15.2	N
	1/2	0.37	460	1.2	585	64	1.6	1.5	860	70	38.4-44.1	7.6	N
	3/4	0.55	230	3.1	810	69	1.5	3.8	1150	73	6.8-7.8	21.4	N
	3/4	0.55	460	1.6	810	69	1.5	1.9	1150	73	27.2-30.9	10.7	N
	1	0.8	230	3.9	1070	70	1.4	4.7	1440	72	4.9-5.6	26.9	M
	1	0.75	460	2	1070	70	1.4	2.4	1440	72	19.9-23.0	13.5	M
	1-1/2	1.10	230	5	1460	76	1.3	5.9	1890	76	3.2-4.0	33.2	K
	1-1/2	1.10	460	2.5	1460	76	1.3	3.1	1890	76	13.0-16.0	16.6	K
	2	1.50	230	6.7	1960	76	1.25	8.1	2430	76	2.3-3.0	45	K
	2	1.50	460	3.4	1960	76	1.25	4.1	2430	76	9.2-12.0	22.5	K
	3	2.2	230	9.5	2920	77	1.15	10.9	3360	77	1.8-2.2	60.3	K
	3	2.2	460	4.8	2920	77	1.15	5.5	3360	77	7.2-8.8	31	K

SINGLE PHASE MOTOR FUSE SIZING

			Fuse or Circuit Breakers Amp MAXIMUM PER NEC		
	HP	Voltage	Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
2 WIRE	1/2	115	35	20	30
	1/2	230	20	10	15
	3/4	230	25	15	20
	1	230	30	20	30
	1-1/2	230	35	20	30
3 WIRE	1/2	115	35	20	30
	1/2	230	20	10	15
	3/4	230	25	15	20
	1	230	30	20	25
	1-1/2	230	35	20	30
	2	230	40	20	30

THREE PHASE MOTOR FUSE SIZING

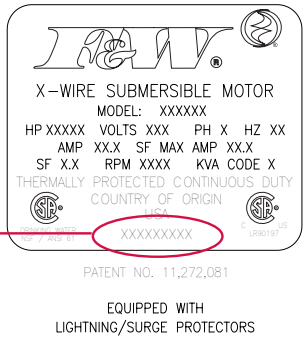
			Fuse or Circuit Breakers Amp MAXIMUM PER NEC		
	HP	Voltage	Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
3 WIRE	1/2	230	8	4.5	6
	1/2	460	4	2.25	3
	3/4	230	10	5.6	8
	3/4	460	5	2.8	4
	1	230	15	7	10
	1	460	6	3.5	5
	1-1/2	230	15	9	15
	1-1/2	460	8	4.5	8
	2	230	25	12	20
	2	460	15	6	10
	3	230	30	17.5	25
	3	460	15	9	15

MOTOR DATE CODES

F&W DATE CODE EXPLANATION

21 A K - 01 - 001

- **21** — Calendar year
- **A** — Month (A = Jan, etc. Letter "I" is not used)
- **K** — Manufacturing Facility
- **01** — Day of Month
- **001** — Sequence of Motor



PATENT NO. 11,272,081

EQUIPPED WITH
LIGHTNING/SURGE PROTECTORS

GENERATOR SIZING

Careful consideration needs to be made when sizing a engine driven generator for use with a well pump. Generators need to be sized to supply a minimum of 65% of the rated motor voltage during motor starting to ensure sufficient starting torque.

The type of the generator makes a difference when selecting a generator to power a well pump. Two types of generators are available: Internally regulated and externally regulated. Internally regulated generators have an additional winding within the generator. The additional winding automatically adjusts the output voltage by monitoring the output current. The majority of generators on the market today are externally regulated. These generators use an external voltage regulator that monitors the output voltage. When a motor starts up and the voltage drops, the regulator boosts the output voltage of the generator.

When operating a pump with a generator, the generator needs to be started in advance of starting the pump motor. In addition, to help prevent motor bearing damage, stop the pump before turning off the generator.

The table below only represents typical minimum generator requirements for starting and running a submersible motor. Contact the generator manufacturer for detailed sizing considerations.

⚠ **WARNING:** Transfer switches are required when a generator is used as a back-up on power lines. Consult your power provider for proper use and approval.

ENGINE DRIVEN GENERATORS

Motor HP Rating	Externally Regulated		Internally Regulated	
	KW	KVA	KW	KVA
1/2	2	2.5	1.5	1.9
3/4	3	3.8	2	2.5
1	4	5	2.5	3.2
1.5	5	6.3	3	3.8
2	7.5	9.4	4	5

Note: The table provided applies to 3-Wire motors.
If sizing for 2-Wire motors, multiply the value shown by 1.5.

BUCK-BOOST TRANSFORMERS

A buck-boost transformer is the ideal solution for changing line voltage by small amounts when the power available for a motor is not within the correct range. These transformers can be connected for a wide range of voltage combinations. The most common use is to buck (lower) or boost (raise) the supply voltage a small amount, usually 5 to 27%. When a buck-boost transformer has the primary and secondary windings connected as an autotransformer, only the secondary windings are transforming voltage and current. This is the reason buck-boost transformers can supply a load with a much larger KVA rating than the nameplate indicates. Tables published by transformer manufactures can provide a wide range of voltage change. The table provided is based on boosting voltage by 10% as recommended by F&W. It shows the minimum rating of KVA that the transformer needs as well as the common standard transformer KVA generally available.

Note: Contact transformer manufacturer for details and correct sizing when planning to raise or lower the voltage for a range other than the 10% boost listed.

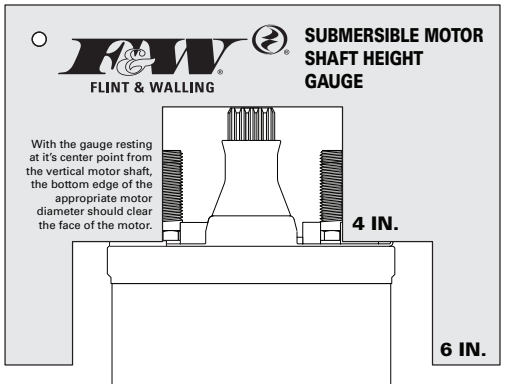
Buck-Boost transformer Sizing (10% Boost)

Motor HP	1/2	3/4	1	1.5	1.5 (2-wire)	2
Load KVA	1.38	1.84	2.40	2.65	3.01	3.04
Minimum Transformer KVA	0.14	0.19	0.24	0.27	0.31	0.31
Standard Transformer KVA	0.25	0.25	0.25	0.50	0.50	0.50

CYCLING ON / OFF

Motor life can be reduced with excessive cycling of the pump due to the current in-rush at start up. Frequent starts increase motor temperature, create bearing and seal wear, and shaft spline fatigue. While typical residential cycling is estimated at 25 to 50 starts per 24 hour period, recommended maximum starts for longer life should not exceed 1 start per 5 minutes.

SHAFT HEIGHT



With the 024456 gauge resting at it's center point from the vertical motor shaft, the bottom edge of the appropriate motor diameter should clear the face of the motor.

IDENTIFICATION OF CABLE COLOR

(Single Phase Only)

If the colors on the individual drop cables cannot be determined and the leads cannot be positively identified, proceed as follows:

1. Disconnect all three drop cables from the control box. For temporary identification, tie a numbered tag to each cable (1, 2, 3).
2. Using an ohmmeter, check the resistance between cables as follows:

Unknown Value	Known Value
Cable 1 to Cable 2	Lowest - Black to Yellow
Cable 1 to Cable 3	Intermed. - Red to Yellow
Cable 2 to Cable 3	Highest - Black to Red

NOTE: The "yellow" cable is giving the lowest and intermediate readings and the "red" cable gives highest and intermediate readings.

Example:

- 1 to 2 gives 7 ohms (highest reading)
- 1 to 3 gives 5 ohms (intermediate reading)
- 2 to 3 gives 2 ohms (lowest reading)
- Cable 3 gave both intermediate and lowest reading
- Cable 3 is the yellow cable
- Cable 1 gave both highest and intermediate readings
- Cable 1 is the red cable
- Cable 2 is the black cable

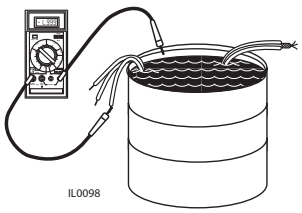
The actual ohm values are not important. The method works regardless of the actual ohm readings; what matters is which reading is highest, which intermediate, and which lowest.

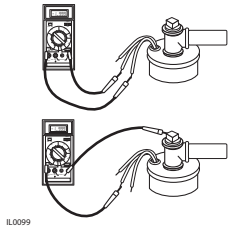
SINGLE PHASE CONTROL BOX CHECKING AND REPAIRING PROCEDURES	
CAUTION: Turn power off and discharge capacitors before using ohmmeter.	
TEST PROCEDURE	
General Procedures	Disconnect line. Inspect for damaged or burned parts, loose connections, etc. Check for mis-connections using diagram in control box. If problem has not been found, check motor per Motor Data Chart and control box as indicated below.
Use of Ohmmeter	Use a calibrated or certified digital multimeter.
Ground (Insulation Resistance) Test	Multimeter selected to highest OHM meter scale. Terminal connections: Multimeter lead to "ground" terminal on control box and touch other lead to each of the other terminals on terminal board. Multimeter reading should indicate (∞) or max open circuit limits.
Overload Protector	Multimeter selected to lowest OHM meter scale. Terminal connections: Connect one multimeter lead to Terminal Black and other lead to L1. Multimeter reading: Should be 0 to 0.5 ohms maximum.
Capacitor Tests	Start Capacitor Multimeter selected to 10k – 20k Ohm meter scale. Terminal Connections: One multimeter lead to relay terminal #1 and the other to black terminal on the terminal board. Ohm reading: The multimeter will briefly read a low resistance and climb back to infinity/max open circuit reading. If reading is not as above, the capacitor is likely shorted or open and needs to be replaced. Run Capacitor Multimeter selected to 10k – 20k Ohm meter scale. Disconnect the Red lead from the run capacitor terminal. Terminal Connections: One multimeter lead to the terminal on the capacitor that the red lead was connected to and the other to black terminal on the terminal board. Ohm reading: The multimeter will briefly read a low resistance and climb back to the infinity/max open circuit reading. If reading is not as above the capacitor is likely shorted or open and needs to be replaced. Caution: The tests in this guide for capacitors and relays should be considered indicative, but not irrefutable. A capacitor for example may not show as open or shorted, but may have lost some of its capacitance and may no longer be capable of performing its purpose.
Relay Coil Test (potential relays only)	Multimeter selected to 10k – 20k Ohm meter scale. Terminal Connections: Connect one multimeter lead to #2 and the other to #5 on the relay. For 230 Volt boxes, the meter should read 4.5-7.0 K Ohms. For 115 Volt boxes, the meter should read 2.9 4.9 K Ohms.
Relay Contact Test	Multimeter selected to lowest Ohm meter scale. Terminal Connections: Connect one multimeter lead to #1 and the other to #2 on the relay. The meter should read Zero ohms.

MULTIMETER TESTS

Insulation and Continuity Test

1. This test is recommended when the splicing is complete and pump is being test run in a tank of water. This test can be repeated after installation in well, but before the final electrical hook-up is made to the control box or pressure switch.
2. Confirm multimeter ohmmeter function by clipping the leads together and verifying resistance readings <0.2Ω
3. Clip one multimeter lead to bare cable end.
4. Clip the other lead to motor ground wire with pump and cable submerged.
5. A reading of less than 1,000,000 ohms indicates that cable or splice is grounded. Slowly raise cable from the water at the multimeter end. When trouble spot moves clear of the water, OHM reading will increase towards (∞) or max open reading of multimeter. In an old installation with the pump in the well, a reading of 20,000 ohms or less indicates a breakdown in the insulation; in this case pull the pump.





FLINT & WALLING

TROUBLESHOOTING CHART

Symptom	Possible Cause(s)	Corrective Action
Circuit breaker trips or fuses blow when motor starts.	1. Incorrect voltage	1. Contact power company if voltage is incorrect after first checking for correct wire size. See Wire Size Chart.
	2. Incorrect fuses or circuit breaker.	2. Replace with correctly sized components.
	3. Defective pressure switch	3. Replace pressure switch or clean contacts.
	4. Control box malfunction	4. Correct faulty wiring or tighten loose contacts.
	5. Bound pump	5. Sand bound pump can sometimes be corrected by temporarily reversing black and red leads in control box then returning to normal. If pump does not rotate freely, it must be pulled and cleaned or realigned and the well condition corrected.
	6. Defective cable or motor winding	6. The pump must be pulled and the cable disconnected and inspected. Damaged cable should be correctly spliced or replaced. If cable is good, the motor winding is grounded
	7. Shorted or open motor winding	7. The pump must be pulled and motor or drop cable repaired or replaced.
Motor runs but circuit breaker, fuses or motor overload trips.	1. Incorrect voltage	1. Contact power company.
	2. Overheated protectors	2. Shade box, provide ventilation or move box away from heat source.
	3. Improperly wired control box	3. Confirm motor and line connections.
	4. Defective motor or cable	4. If ground, short or open circuit is indicated pump must be pulled for repair.
	5. Defective pump	5. Pull pump, clean and repair to ensure pump staging is free of excess sand or debris.
Motor does not start and circuit breaker or fuses not tripped.	1. No power	1. Replace fuses or reset circuit breaker. Contact power company if no power is reaching box.
	2. Defective pressure switch	2. Clean contact points or replace switch.
	3. Defective wiring	3. Correct faulty wiring or connections/splices.
Pump runs, but delivers little or no water.	1. Air locked pump	1. Not enough water over pump. Raise and lower the pump at a fast rate to purge air from pump body.
	2. Low water level in well	2. Throttle pump delivery through restricting valve. Lower pump setting if depth of well is adequate.
	3. Check valve stuck or installed improperly	3. Replace or reinstall properly, ensure water check valve arrow oriented with flow.
	4. Leak in drop pipe	4. Raise pipe, check for leak and replace damaged section.
	5. Pump screen blocked	5. Clean screen and reset at less depth. It may be necessary to clean well.
	6. Worn pump	6. Pull pump and replace staging or pump end.
Pump keeps running	1. Pressure switch	1. Clean points or replace switch. Verify pressure switch setting and function.
	2. Low level well	2. Throttle pump output or reset pump to lower level. Do not lower if sand may clog pump.
	3. Leak in system	3. Replace damaged section. Replace all piping and joints to eliminate leaks.
	4. Misapplied pump	4. Verify pump depth/static water level vs. pump performance curve. For guidance, contact Tech Support at 1-800-742-5044.
Pump starts too often	1. Pressure switch	1. Reset limits or replace switch.
	2. Leak in system	2. Repair or replace tank or pipes.
	3. Check valve	3. Replace if column of water leaking by check valve.
	4. Water-logged tank	4. Replace tank.
	5. Pressure tank too small	5. Install larger tank.

FLINT & WALLING

F&W Motor Data
Single & Three Phase Jet/Centrifugals

SINGLE PHASE MOTOR DATA 60 HZ 3450 RPM([1]) — CHART A

Motor Model No.	HP	Motor Voltage	Service Factor	Service Factor Motor AMPS		Locked Rotor Motor AMPS		KVA Code Letter
				115V	230V	115V	230V	
98J103	1/3	115/230	1.75	8.6	4.3	26.0	13.0	K
98J105, 98S105	1/2	115/230	1.60	13.0	6.5	36.0	18.0	K
98J107, 98S107	3/4	115/230	1.50	14.0	7.0	52.0	26.0	K
98H107	3/4	115/230	1.86	18.0	9.0	78.0	39.0	P
98J110, 98S110	1	115/230	1.40	18.0	9.0	78.0	39.0	L
98H110	1	115/230	1.95	21.0	10.5	98.0	49.0	N
98J115, 98S115	1-1/2	115/230	1.30	21.0	10.5	98.0	49.0	J
98H115	1-1/2	115/230	1.66	25.0	12.5	116.0	58.0	K
98J120, 98S120	2	115/230	1.25	25.0	12.5	116.0	58.0	H
98J610	1	230	1.70	-	8.1	-	39.0	L
98J615	1-1/2	230	1.30	-	10.2	-	49.0	J
98J630, 98S630	3	230	1.00	-	13.5	-	53.0	D

([1]) Thermal Overload Protected - Automatic Reset

SINGLE PHASE MOTOR DATA 50 HZ 2875 RPM([1]) — CHART B

Motor Model No.	HP	Motor Voltage	Service Factor	Service Factor Motor AMPS		Locked Rotor Motor AMPS		KVA Code Letter
				110V	220V	110V	220V	
98J003	1/3	110/220	1.75	7.6	3.8	44.0	22.0	R
98J005, 98S005	1/2	110/220	1.60	10.0	5.0	48.0	24.0	M
98J007, 98S007	3/4	110/220	1.50	14.4	7.2	64.0	32.0	L
98J010, 98S010	1	110/220	1.40	16.4	8.2	72.0	36.0	K
98J015, 98S015	1-1/2	110/220	1.30	23.6	11.8	104.0	52.0	K
98J820, 98S820	2	220	1.00	-	13.2	-	55.0	H

([1]) Thermal Overload Protected - Automatic Reset

THREE PHASE MOTOR DATA 60/50([1 2]) HZ 3450/2875 RPM — CHART C

Motor Model No.	HP	Motor Voltage	Service Factor	Service Factor Motor AMPS		Locked Rotor Motor AMPS		KVA Code Letter
				230V	460V	230V	460V	
98J305, 98S305	1/2	208-230/460	1.60	3.5	1.75	19.0	9.5	K
98J307, 98S307	3/4	208-230/460	1.50	3.5	1.75	19.0	9.5	K
98J310, 98S310	1	208-230/460	1.40	4.5	2.25	26.9	13.5	K
98J315, 98S315	1-1/2	208-230/460	1.30	5.7	2.85	33.5	16.8	K
98J320, 98S320	2	208-230/460	1.25	7.4	3.70	44.0	22.0	K
98J330, 98S330	3	208-230/460	1.00	9.8	4.90	48.0	24.0	D

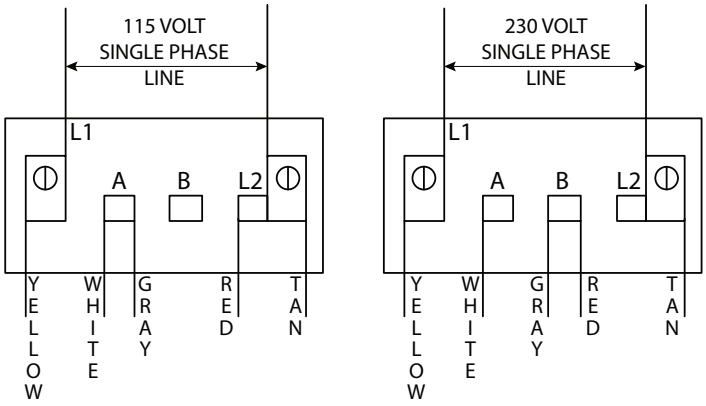
([1]) 3HP, 3 phase motors are operable on 60hz only unless connected to a properly sized VFD
([2]) Thermal Overload Protector - Not Supplied
Three Phase motors must be installed with properly sized magnetic or manual starters, VFD or other controller, that is properly sized heaters, overloads or starting features that protect the motor.

MINIMUM WIRE SIZE CHART (GAUGE) - COPPER WIRE — CHART D

Motor HP	Volts	Phase	Distance in Feet from Motor to Service Panel					Breaker Size (Amps)
			0-50	50-100	100-150	150-200	200-300	
0.33	115/230	1	14/14	14/14	12/14	10/14	8/14	15/15
0.5	115/230	1	14/14	12/14	10/14	8/14	6/12	15/15
0.75	115/230	1	14/14	10/14	8/14	8/14	6/12	15/15
1	115/230	1	12/14	10/14	8/14	6/12	4/10	20/15
1	230	1	14	14	14	12	10	15
1.5	115/230	1	10/14	8/14	6/14	6/12	4/10	30/15
1.5	230	1	14	14	14	12	10	15
2	115/230	1	10/14	8/14	6/12	4/10	4/10	30/15
3	230	1	12	12	10	10	8	20
0.75	230/460	3	14/14	14/14	14/14	14/14	14/14	15/15
1	230/460	3	14/14	14/14	14/14	14/14	14/14	15/15
1.5	230/460	3	14/14	14/14	14/14	14/14	12/14	15/15
2	230/460	3	14/14	14/14	14/14	12/14	12/14	15/15
3	230/460	3	14/14	14/14	12/14	12/14	10/14	15/15

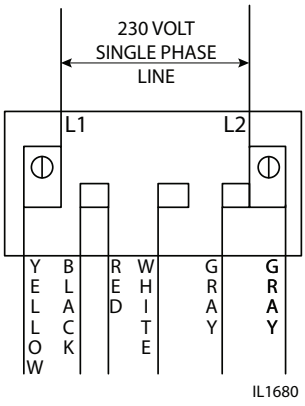
Maximum 5% voltage drop calculated by conductor resistance in NEC Table 8 and minimum ampacity rating as defined by NEC 430.22

WIRING DIAGRAMS
JET / CENTRIFUGAL MOTORS



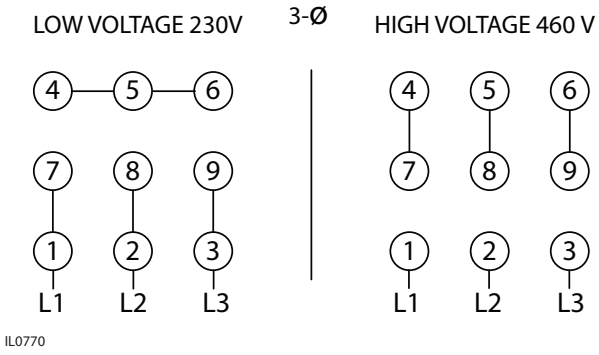
NOTE: Dual voltage motor, change the red and gray wire to voltage required.

Figure 2 - Wiring Diagram for Single Phase 1/3 - 2 HP Motors



NOTE: Single voltage (230V) motor, and cannot be connected to 115V.

Figure 3 - Wiring Diagram for Single Phase 230V only 1, 1-1/2 & 3 HP Motors



1 - Tan	4 - Yellow	7 - Purple
2 - Red	5 - Black	8 - Gray
3 - Orange	6 - Blue	9 - White

CONNECTION FOR 3 PHASE, 9 LEADS. IF YOUR 3 PHASE LEADS ARE COLOR CODED, MATCH NUMBER ABOVE TO THE CORRESPONDING COLOR.

NOTE: To reverse rotation, interchange any two incoming lines (Power) leads.

Figure 4 - Wiring Diagram for Three Phase Motors

SINGLE PHASE TWO OR THREE WIRE CABLE, 60 HZ (SERVICE ENTRANCE TO MOTOR)

Motor Rating		AWG Copper Wire Size												
Volts	HP	14	12	10	8	6	4	3	2	1	0	00	000	0000
115	1/3	130	210	340	540	840	1300	1610	1960	2390	2910	3540	4210	5060
	1/2	100	160	250	390	620	960	1190	1460	1780	2160	2630	3140	3770
230	1/3	550	880	1390	2190	3400	5250	6520	7960	9690	11770			
	1/2	400	650	1020	1610	2510	3880	4810	5880	7170	8720			
	3/4	300	480	760	1200	1870	2890	3580	4370	5330	6470	7870		
	1	250	400	630	990	1540	2380	2960	3610	4410	5360	6520		
	1-1/2	190	310	480	770	1200	1870	2320	2850	3500	4280	5240		
	2	150	250	390	620	970	1530	1910	2360	2930	3620	4480		
	3	120*	190	300	470	750	1190	1490	1850	2320	2890	3610		
	5	0	0	180*	280	450	710	890	1110	1390	1740	2170	2680	
	7-1/2	0	0	0	200*	310	490	610	750	930	1140	1410	1720	
	10	0	0	0	0	250*	390	490	600	750	930	1160	1430	1760
	15	0	0	0	0	170*	270*	340	430	530	660	820	1020	1260

1 Foot = .3048 Meter

THREE PHASE THREE WIRE CABLE, 60 HZ 200 AND 230 VOLTS (SERVICE ENTRANCE TO MOTOR)

Motor Rating		AWG Copper Wire Size													MCM Copper Wire Size				
Volts	HP	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500
200V 60HZ Three Phase Three Wire	1/2	710	1140	1800	2840	4420													
	3/4	510	810	1280	2030	3160													
	1	430	690	1080	1710	2670	4140	5140											
	1-1/2	310	500	790	1260	1960	3050	3780											
	2	240	390	610	970	1520	2360	2940	3610	4430	5420								
	3	180	290	470	740	1160	1810	2250	2760	3390	4130								
	5	110*	170	280	440	690	1080	1350	1660	2040	2490	3050	3670	4440	5030				
	7-1/2	0	0	200	310	490	770	960	1180	1450	1770	2170	2900	3150	3560				
	10	0	0	0	230*	370	570	720	880	1090	1330	1640	1970	2390	2720	3100	3480	3800	4420
	15	0	0	0	160*	250*	390	490	600	740	910	1110	1340	1630	1850	2100	2350	2570	2980
	20	0	0	0	0	190*	300*	380	460	570	700	860	1050	1270	1440	1650	1850	2020	2360
	25	0	0	0	0	0	240*	300*	370*	460	570	700	840	1030	1170	1330	1500	1640	1900
	30	0	0	0	0	0	0	250*	310*	380*	470	580	700	850	970	1110	1250	1360	1590
230V 60Hz Three Phase Three Wire	1/2	930	1490	2350	3700	5760	8910												
	3/4	670	1080	1700	2580	4190	6490	8060	9860										
	1	560	910	1430	2260	3520	5460	6780	8290										
	1-1/2	420	670	1060	1670	2610	4050	5030	6160	7530	9170								
	2	320	510	810	1280	2010	3130	3890	4770	5860	7170	8780							
	3	240	390	620	990	1540	2400	2980	3660	4480	5470	6690	8020	9680					
	5	140*	230	370	590	920	1430	1790	2190	2690	3290	4030	4850	5870	6650	7560	8460	9220	
	7-1/2	0	160*	260	420	650	1020	1270	1560	1920	2340	2870	3440	4160	4710	5340	5970	6500	7510
	10	0	0	190*	310	490	760	950	1170	1440	1760	2160	2610	3160	3590	4100	4600	5020	5840
	15	0	0	0	210*	330	520	650	800	980	1200	1470	1780	2150	2440	2780	3100	3400	3940
	20	0	0	0	0	250*	400	500	610	760	930	1140	1380	1680	1910	2180	2450	2680	3120
	25	0	0	0	0	0	320*	400	500	610	750	920	1120	1360	1540	1760	1980	2160	2520
	30	0	0	0	0	0	260*	330*	410*	510	620	760	930	1130	1280	1470	1650	1800	2110
460V 60HZ Three Phase Three Wire	1/2	3770	6020	9460															
	3/4	2730	4350	6850															
	1	2300	3670	5770	9070														
	1-1/2	1700	2710	4270	6730														
	2	1300	2070	3270	5150	8050													
	3	1000	1600	2520	3970	6200													
	5	590	950	1500	2360	3700	5750												
	7-1/2	420	680	1070	1690	2640	4100	5100	6260	7680									
	10	310	500	790	1250	1960	3050	3800	4680	5750	7050								
	15	0	340*	540	850	1340	2090	2600	3200	3930	4810	5900	7110						
	20	0	0	410*	650	1030	1610	2000	2470	3040	3730	4580	5530						
	25	0	0	0	530*	830	1300	1620	1990	2450	3010	3700	4470	5430					
	30	0	0	0	430*	680	1070	1330	1640	2030	2490	3060	3700	4500	5130	5860			
	40	0	0	0	0	500*	790	980	1210	1490	1830	2250	2710	3290	3730	4250			
	50	0	0	0	0	0	640*	800	980	1210	1480	1810	2190	2650	3010	3420	3830	4180	4850
	60	0	0	0	0	0	540*	670*	830*	1020	1250	1540	1850	2240	2540	2890	3240	3540	4100
	75	0	0	0	0	0	0	0	680*	840*	1030	1260	1520	1850	2100	2400	2700	2950	3440
	100	0	0	0	0	0	0	0	0	620*	760*	940*	1130	1380	1560	1790	2010	2190	2550
	125	0	0	0	0	0	0	0	0	0	0	740*	890*	1000*	1220	1390	1560	1700	1960
	150	0	0	0	0	0	0	0	0	0	0	0	760*	920	1050*	1190*	1340	1460	1690
	175	0	0	0	0	0	0	0	0	0	0	0	0	810	930*	1060*	1190*	1300	1510
	200	0	0	0	0	0	0	0	0	0	0	0	0	0	810*	920*	1030*	1130*	1310

⚠ CAUTION Use of wire size smaller than listed will void warranty.

FOOTNOTES:

(1) Lengths marked * meet the U.S. National Electrical Code ampacity only for individual conductor 60°C cable. Only the lengths without * meet the code for jacketed 60°C cable. Local code requirements may vary.

(2) Maximum lengths shown maintain motor voltage at 95% of service entrance voltage, running at maximum nameplate amperes. If service entrance voltage will be at least motor nameplate voltage under normal load conditions, 50% additional length is permissable for all sizes.

(3) This table is based on copper wire. If aluminum wire is used, it must be two sizes larger. Example: When the table calls for #12 copper wire, you would use #10 aluminum wire.

(4) Single phase control boxes may be connected at any point of the total cable length.

(5) Cable #14 to #0000 are AWG sizes.

FLINT & WALLING

OVERLOAD PROTECTION REQUIRED FOR 4", 6" & 8" SUBMERSIBLE MOTORS – 60 CYCLE – 3 PHASE

	MOTOR			
	HP	VOLTS	F&W PART NO.	SERVICE FACTOR AMPS
4" F&W SUBMERSIBLE MOTORS – 60 HZ – 3 PHASE	1/2	230	137585	2.9
		460	137591	1.5
	3/4	230	137586	3.8
		460	137592	1.9
	1	230	137587	4.7
		460	137593	2.4
	1 1/2	230	137588	5.9
		460	137594	3.1
	2	230	137589	8.1
		460	137595	4.1
	3	230	137590	10.9
		460	137596	5.5
4" FRANKLIN SUBMERSIBLE MOTORS – 60 HZ – 3 PHASE	1 1/2	200	M137457	6.8
		230	M137458	5.9
		460	M137460	3.1
	2	200	M137461	9.3
		230	M137462	8.1
		460	M137464	4.1
	3	200	M137465	12.5
		230	M137466	10.9
		460	M137468	5.5
	5	200	M137469	20.5
		230	M137470	17.8
		460	M137472	8.9
	7 1/2	200	M137473	30.5
		230	M137474	26.4
		460	M137476	13.2
6" & 8" FRANKLIN SUBMERSIBLE MOTORS – 60 HZ – 3 PHASE	5	200	133492	20.0
		230	133493	15.0
		460	133494	8.8
	7 1/2	200	130646	28.3
		230	126552	24.6
		460	128876	12.3
	10	200	130647	37.0
		230	126554	32.2
		460	128875	16.1
	15	200	130648	54.4
		230	126555	47.4
		460	128884	23.7
	20	200	130649	69.7
		230	128754	60.6
		460	128888	30.3
	25	200	130650	86.3
		230	128755	75.0
		460	128890	37.5
	30	230	128964	90.4
		460	128965	45.2
	40	460	021003	61.6
	50	460	021004	77.0

CAUTION: WARRANTY ON THREE PHASE SUBMERSIBLE MOTORS IS VOID UNLESS PROPER QUICK TRIP PROTECTORS ARE USED ON ALL 3 LEAD WIRES.

The characteristics of submersible motors are different from standard motors and special overload protection is required. If the motor is stalled, the overload protector must trip within approximately 10 seconds to protect the motor windings. In the three phase submersible motors, the installer must provide the SPECIAL EXTRA QUICK TRIP PORTECTORS. Per heater manufacturer's recommendations, heaters are for ambient compensated starter boxes; if they are not used, nuisance tripping (over protection) may be experienced at high temperatures and no protection will exist at low temperatures.

Overload protectors (heaters) for motors of "200-230 volt" ratings should be selected for each installation based on the line voltage measured at the control panel.

FLINT & WALLING

OVERLOAD PROTECTION REQUIRED FOR CENTRIFUGAL AND JET PUMP MOTORS

MOTOR			
MFGR.	HP	VOLTS	SERVICE FACTOR AMPS
SINGLE PHASE, 60 HZ MOTORS			
BALDOR	3	230	16.8
	5	230	21.5
THREE PHASE, 60 HZ MOTORS			
F&W	1/2, 3/4	208/230	3.5
		460	1.75
	1	208/230	4.5
		460	2.25
	1-1/2	208/230	5.7
		460	2.9
	2	208/230	7.4
		460	3.7
	3	208/230	9.8
		460	4.9
BALDOR	3	208/230	9.0
		460	4.5
	5	208/230	14.0
		460	7.0
	7-1/2	208/230	21.0
		460	10.5

CAUTION: WARRANTY ON THREE PHASE MOTORS IS VOID UNLESS PROPER QUICK TRIP PROTECTORS ARE USED ON ALL 3 LEAD WIRES.

FLINT & WALLING

UNITS OF FLOW

Units	U.S. Gallons Per Minute	Million U.S. Gallons Per Day	Cubic Feet Per Second	Cubic Meters Per Hour	Liters Per Second
1 U.S. Gallon Per Minute	1	.001440	.00223	.2270	.0631
1 Million U.S. Gallons Per Day	694.5	1	1.547	157.73	43.8
1 Cubic Foot Per Second	448.8	.646	1	101.9	28.32
1 Cubic Meter Per Hour	4.403	.00634	.00981	1	.2778
1 Liter Per Second	15.85	.0228	.0353	3.60	1

UNITS OF POWER

Units	Horsepower	Ft. – Lbs. Per Minute	Watts	Kilowatts	Metric Horsepower	B.T.U. Per Minute
1 Horsepower	1	33,000	746	.746	1.014	42.4
1 Ft. – Lb. Per Minute	.0000303	1	.0226	.0000226	.0000307	.001285
1 Watt	.001340	44.2	1	.001	.001360	.0568
1 Kilowatt	1.341	44.250	1000	1	1.360	56.8
1 Metric Horsepower	.986	32,550	736	.736	1	41.8
1 B.T.U. Per Minute	.0236	778.4	17.6	.0176	.0239	1

UNITS OF LENGTH

Units	1 Centimeter	1 Inch	1 Foot	1 Yard	1 Mile	1 Meter	1 Kilometer
1 Centimeter	1	.3937	.0328	.01094	.000006214	.01	.00001
1 Inch	2.54	1	.0833	.0278	.00001578	.0254	.0000254
1 Foot	30.48	12	1	.333	.0001894	.3048	.0003048
1 Yard	91.44	36	3	1	.0005682	.9144	.0009144
1 Mile	160,934.4	63,360	5,280	1,760	1	1,609	1.61
1 Meter	100	39.37	3.281	10.93613	.0006214	1	.001
1 Kilometer	100,000	39,370.08	3,280.84	1,093.613	.621371	1,000	1

UNITS OF PRESSURE AND HEAD

Units	Lbs. Per Square Inch	Feet of Water	Meters of Water	Inches of Mercury	Atmo-spheres	Kilograms Per Sq. C.M.
1 Lb. Per Square Inch	1	2.31	.704	2.04	.0681	.0703
1 Foot of Water	.433	1	.305	.882	.02947	.0305
1 Meter of Water	1.421	3.28	1	2.89	.0967	.1
1 Inch of Mercury	.491	1.134	.3456	1	.0334	.0345
1 Atmosphere (at Sea Level)	14.70	33.93	10.34	29.92	1	1.033
1 Kilogram Per Sq. C.M.	14.22	32.8	10	28.96	.968	1

Equivalent units are based on density of fresh water from 32° to 62° F.
Equivalent units are based on density of mercury from 32° to 62° F, sufficient accuracy.
Each 1,000 feet of ascent decreases pressure about ½ lb./square inch.

UNITS OF VOLUME AND WEIGHT

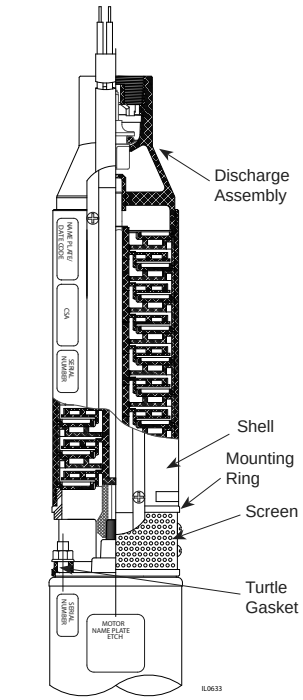
Units	U.S. Gallons	Imperial Gallons	Cubic Inches	Cubic Feet	Acre Feet	Pounds	Cubic Meters
1 U.S. Gallon	1	.833	231	.1337	.00000307	8.35	.003785
1 Imperial Gallon	1.201	1	277.4	.1605	.00000369	10.02	.004546
1 Cubic Inch	.00433	.00360	1	.000579	—	.0361	—
1 Cubic Foot	7.48	6.23	1728	1	.0000230	62.4	.02832
1 Acre-Foot	325.850	271,335	—	43,560	1	—	1233.5
1 Pound*	.120	.0998	27.7	.0160	—	1	—
1 Cubic Meter	264.2	220	61,023	35.314	.000811	2205	1
1 Liter	.2642	.220	61.023	.0353	—	2.205	—

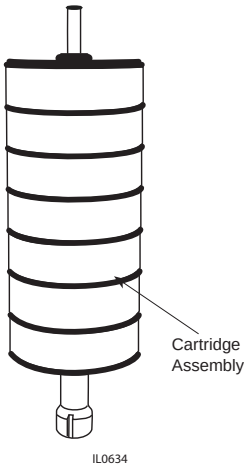
* Weights shown based on maximum density of fresh water at 39° F.

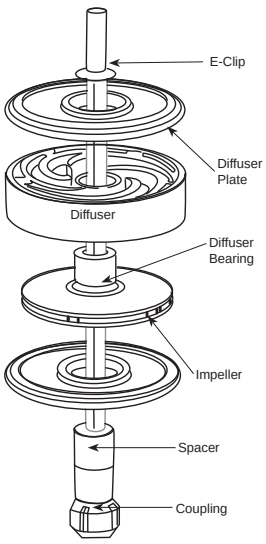
UNITS OF SURFACE AREA

Units	Square Inch	Square Feet	Square Yard	Acres	Square Miles	Square Centimeters	Square Meters	Hectares
1 Square Inch	1	.00694	.00077	—	—	6.452	—	—
1 Square Foot	144	1	.111	—	—	929	.0929	—
1 Square Yard	1296	9	1	.000207	—	8361	.0836	—
1 Acre	—	43.500	4840	1	.00156	—	4049	0.405
1 Square Mile	—	27.9×10^6	3,097,600	640	1	—	2.58×10^6	258
1 Square Centimeter	.155	.001076	—	—	—	1	.0001	1×10^8
1 Square Meter	1549	10.76	1.196	.000247	—	10.000	1	.0001
1 Hectare	—	107.639	11.960	2.471	.00386	1×10^8	10.000	1

FLINT & WALLING







4" SUBMERSIBLE PUMP REPAIR PARTS
(Nov. '06 & Later)
(For Pricing Refer To Repair Parts Price List)
5 - 7 - 10 - 19 & 27 GPM SERIES

DESCRIPTION	QTY.	STAINLESS STEEL	CAST IRON
		PART NUMBER	
Discharge Assembly	1	020517	020510
Seat	1	Not Required	020515
Bearing	1	020053	
Poppet w/Buna O-ring	1	024528	
Poppet Retainer	1	024414	
Mounting Ring	1	020519	020523
Screen	1	020526A	
Fastener Kit (Motor mounting nuts and screen screws)	1	022017	
Turtle Gasket	1	025481	

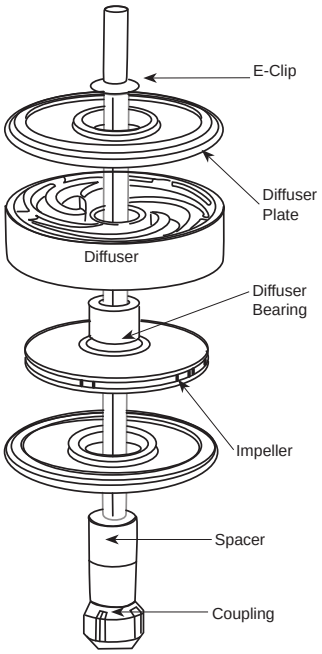
GPM			5	7	10	19	27
NUMBER OF STAGES	1/2 HP		15	10	8	5	-
	3/4 HP		21	14	12	7	6
	1 HP		26	18	15	9	7
	1-1/2 HP		35	24	20	12	10
	2 HP		-	30	26	16	12
	3 HP		-	-	34	22	17
	5 HP		-	-	-	32	29
DESCRIPTION	HP	QTY.	PART NUMBER				
Cartridge Assembly *	1/2	1	022227	022231	022236	-	-
	3/4		022228	022232	022237	022243	022249
	1		022229	022233	022238	022244	022250
	1-1/2		022230	022234	022239	022245	022251
	2		-	022235	022240	022246	022252
	3		-	-	022241	022247	022253
	5		-	-	-	022248	022254
Cable Guard Stainless Steel**	1/2	1	020894	139015	020868	020865	-
	3/4		020880	022285	020873	020867	020866
	1		020885	020877	020876	020871	020868
	1-1/2		020889	020883	020882	020893	020872
	2		-	020888	020887	020879	020874
	3		-	-	020891	020886	020881
	5		-	-	-	020892	020890
Cable Guard Thermoplastic***	1/2	1	020853	136386	020841	020837	-
	3/4		-	022212	020850	020840	-
	1		SS	020857	020856	020845	020841
	1-1/2		SS	SS	020862	020852	020849
	2		-	SS	SS	020858	137527
	3		-	-	SS	SS	020861
	5		-	-	-	SS	SS
Shell - Stainless Steel	1/2	1	020721	020710	020705	020698	-
	3/4		020733	022284	020718	020704	020701
	1		020738	020727	020726	020713	020705
	1-1/2		020744	020736	020735	020720	020717
	2		-	022210	020742	020730	020723
	3		-	-	020746	020739	020734
	5		-	-	-	020747	020745
Shell - Carbon Steel "G" Series Only	1/2	1	022203	-	021538	-	-
	3/4		-	022123	022122	-	021538
	1		-	-	022125	021540	022121

(*) Cartridge assembly includes: Impellers, diffusers, hex shaft w/coupling, bearing and slinger
(**) Part numbers for units fitted with SS cable guard
(***) Part numbers for units fitted with thermoplastic cable guard

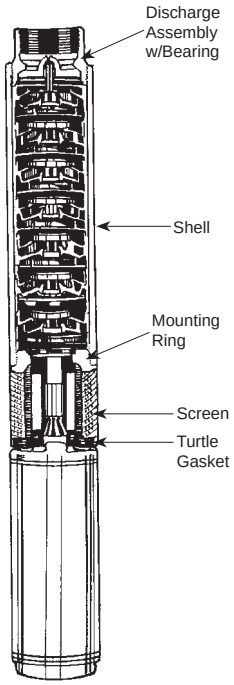
CARTRIDGE ASSEMBLY COMPONENTS (Nov '06 & Later)
(For Pricing Refer To Repair Parts Price List)
5 - 7 - 10 - 19 & 27 GPM SERIES

GPM			5	7	10	19	27
NUMBER OF STAGES		1/2 HP	15	10	8	5	-
		3/4 HP	21	14	12	7	6
		1 HP	26	18	15	9	7
		1-1/2HP	35	24	20	12	10
		2 HP	-	30	26	16	12
		3 HP	-	-	34	22	17
		5 HP	-	-	-	32	29
DESCRIPTION	HP	QTY	PART NUMBER				
Spacer		1	138724	138724	138724	138724	138764
Impeller		*	130861	133728	130855	131330	133423
Diffuser		*	130865	130865	130859	131333	133424
Diffuser Bearing		*	130854	130854	130854	130854	130854
Diffuser Plate		**	025531	025531	025531	131342	131342
E-Clip		1	139439	139439	139439	139439	139439
Shaft & Coupling Assembly	1/2	1	022207	020764	020762	020570	-
	3/4		022211	022208	020770	020761	020757
	1		020789	020778	020777	020767	020762
	1-1/2		020797	020787	020786	020803	022048
	2		-	020794	020793	020781	020775
	3		-	-	020799	020790	020785
	5		-	-	-	020800	020798

(*) For quantity required - See number of stages
(**) Qty. - One plus number of stages

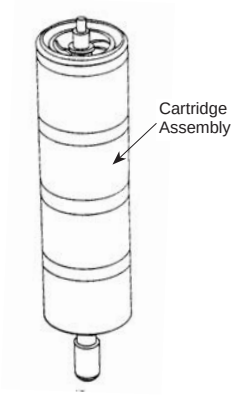


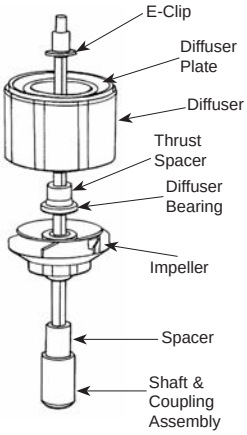
SUBMERSIBLE PUMP REPAIR PARTS
(For Pricing Refer to Repair Parts Price List)
35 - 55 & 85 GPM Series



DESCRIPTION	QTY	CAST IRON	SS Nov '05 & later
Discharge Assembly	1	020525	020528
Bearing	1	130867	130867
Mounting Ring	1	139417	020521
Screen	1	137733	137733
Fastener Kit *	1	138781	137746
Turtle Gasket	1	025481	025481

GPM			35	55	85
NUMBER OF STAGES		1 HP	4	N/A	N/A
		1-1/2 HP	5	4	N/A
		2 HP	7	5	4
		3 HP	10	7	6
		5 HP	16	11	10
		7-1/2 HP	23	18	15
DESCRIPTION	HP	QTY	PART NO.		
			All CI and SS Nov '05 and later		
Cartridge Assembly (Includes impellers, diffuser, hex shaft w/coupling, bearing and e-clip	1	1	133134	N/A	N/A
	1-1/2		133135	133141	N/A
	2		133136	133142	133619
	3		133137	133143	133626
	5		133587	133145	133630
	7-1/2		133140	133146	133637
Cable Guard	1	1	136385	N/A	N/A
	1-1/2		136386	138767	N/A
	2		020548	020550	136408
	3		020549	136388	136390
	5		137093	137090	137094
	7-1/2		137098	137099	137100
Shell	1	1	133035	N/A	N/A
	1-1/2		133036	020353	N/A
	2		020545	130909	133616
	3		139004	138055	133038
	5		139008	130913	131530
	7-1/2		139012	139027	139040
CARTRIDGE ASSEMBLY COMPONENTS only available for Nov. 17 and later					
Spacer		1	024887	024888	024891
>Diffuser Plate, Mtg. Ring		1	135735	135735	135736
Impeller		•	024884	024885	024886
Impeller Short Hub		•	N/A	N/A	N/A
Diffuser		•	132991	132992	133556
Diffuser Bearing		•	130854	130854	130854
Diffuser Plate		•	132995	132995	133557
Thrust Spacer		†	†	†	†
E-Clip		1	139439	139439	139439
Shaft & Coupling Assembly	1	1	133047	N/A	N/A
	1-1/2		133049	133747	N/A
	2		020772	020804	020771
	3		024892	020779	020784
	5		020795	020807	020796
	7-1/2		020806	020802	020836





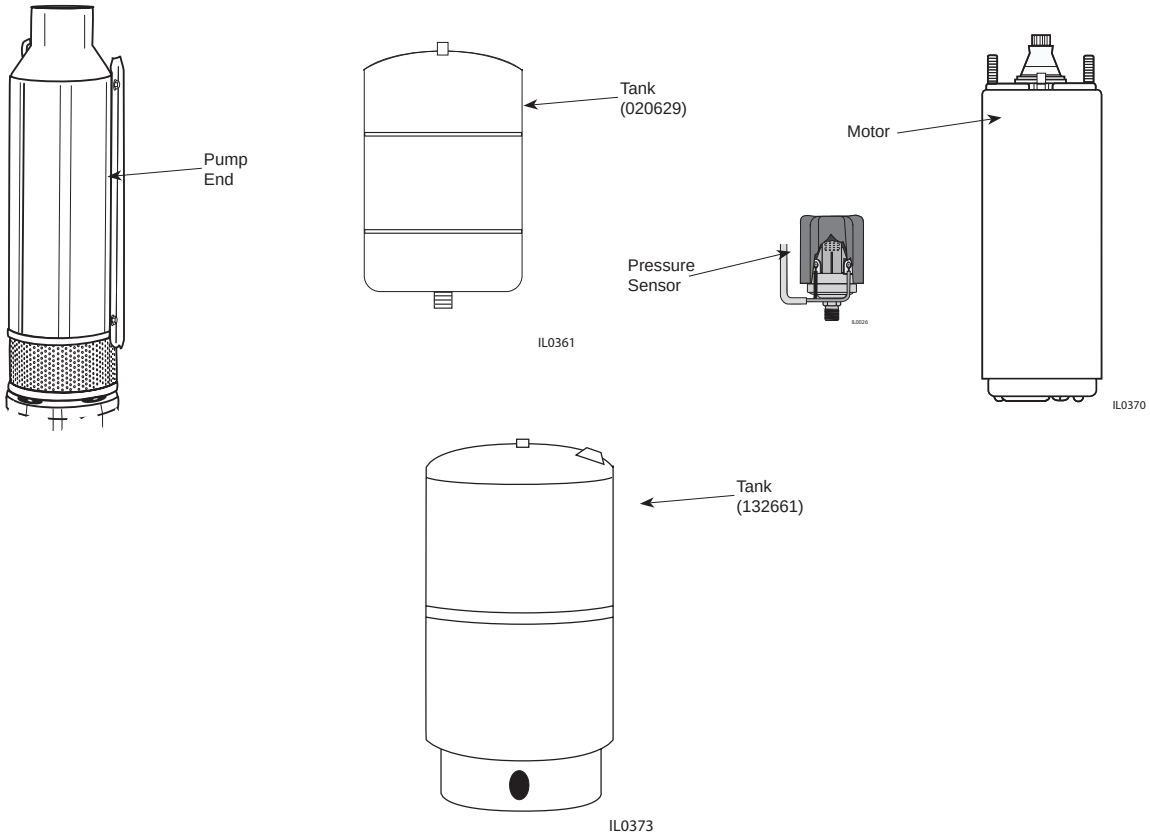
(•) For quantity required, see number of stages
(>) Not shown
(†) For quantity required, see below

GPM	THRUST SPACER	1 HP	1-1/2 HP	2 HP	3 HP	5 HP	7-1/2 HP
35	024883	4	5	7	10	15	22
	134867	N/A	N/A	N/A	N/A	1	1
55	024883	N/A	4	5	7	11	18
85	024883	N/A	N/A	4	6	10	15

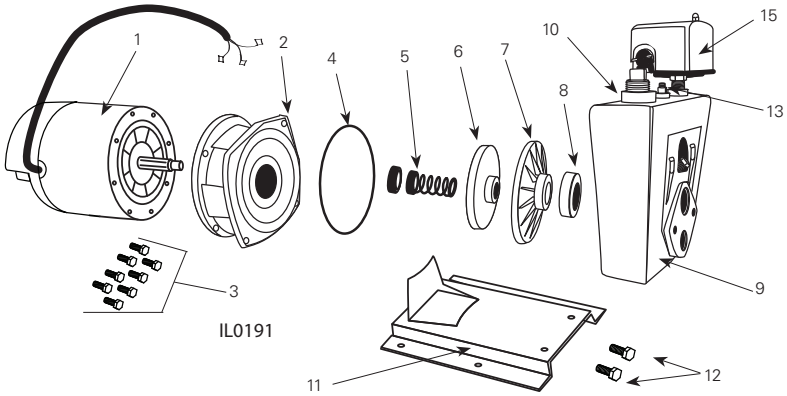
COMMANDER PRO® SUBMERSIBLE PUMP REPAIR PARTS
(For Pricing Refer To Repair Parts Price List)

Commander Pro® 75 Systems						
Description	**Qty**	**CP7507**	**CP7510**	**CP7519**	**CP7527**	**CP7535**
Pump End	1	CP7507RP	CP7510RP	CP7519RP	CP7527RP	CP7535RP
Motor	1	137458	137458	137458	137458	137458
Controller	1	020143	020143	020143	020143	020143
Tank	1	020629	020629	020629	020629	020629
Pressure Sensor Kit*	1	020627	020627	020627	020627	020627
100 Ft. Sensor Lead**	1	020628	020628	020628	020628	020628
* Kit includes pressure sensor, 10 Ft. sensor lead & screwdriver/allen wrench **Not shown						

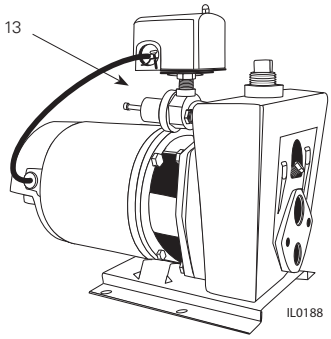
Commander Pro® 150 Systems							
Description	**Qty**	**CP15010**	**CP15019**	**CP15027**	**CP15035**	**CP15055**	**CP15085**
Pump End	1	CP15010RP	CP15019RP	CP15027RP	CP15035RP	CP15055RP	CP15085RP
Motor	1	139424	139424	139424	139424	139424	139424
Controller	1	020475	020475	020475	020475	020475	020475
Tank	1	132661	132661	132661	132661	132661	132661
Pressure Sensor Kit*	1	020627	020627	020627	020627	020627	020627
100 Ft. Sensor Lead**	1	020628	020628	020628	020628	020628	020628
* Kit includes pressure sensor, 10 Ft. sensor lead & screwdriver/allen wrench **Not shown							



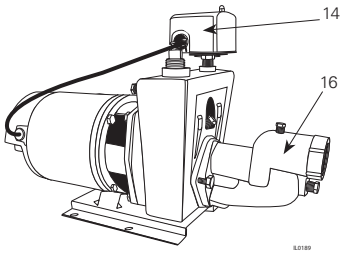
CONVERTIBLE and SHALLOW WELL JET PUMP REPAIR PARTS
"CPJ" and "CPJS" SERIES
(For Pricing Refer To Repair Parts Price List)



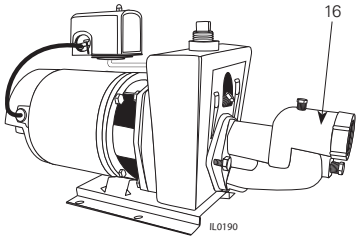
SERVICE KIT FOR JET PUMPS	
MODEL NO	**SERVICE KIT FOR:**
148143	1/3HP, CPJ Jet Pumps
148141	1/2HP, CPJ & CPH Jet Pumps
148140	3/4HP, CPJ & CPH Jet Pumps
023705	1HP, CPJ & CPH Jet Pumps and VPH10
KIT CONTAINS Impeller, Diffuser, Rotary Seal, Square Cut Ring, Diffuser Rubber	



"CPJ" Convertible
3/4 to 1-1/2 HP



"CPJS" Shallow Well
1/3 to 1/2 HP

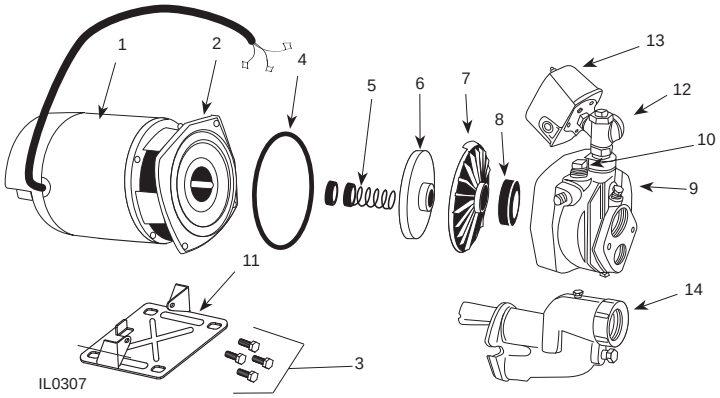


"CPJS" Shallow Well
3/4 to 1-1/2 HP

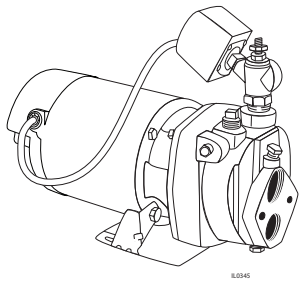
ITEM	HORSEPOWER		1/3	1/2	3/4	1	1-1/2
	MODEL NO.:"CPJ" Convertible "CPJS" Shallow Well	PART NO.	CPJ03	CPJ05 CPJ05B	CPJ07 CPJ07B	CPJ10 CPJ10B	CPJ15
			CPJ03S CPJ03SB	CPJ05S CPJ05SB	CPJ07S CPJ07SB	CPJ10S CPJ10SB	CPJ15S
	DESCRIPTION		QTY				
1	Motor, Nema J (Thd)		98J103	98J105	98J107	98J110	98J115
	Motor Cover w/Screws	021301R	1	1	1	1	1
	Screws, Cover	021302	2	2	2	2	2
†	Motor Lead Wire		136135A	136135A	136135A	136135A	136136A
2	Mounting Ring	*	135314	135314	136137	136137	136137
3	Hex Hd. Cap Screws 3/8 x 3/4"		8	8	8	8	8
4	Ring, Square Cut		132583	132583	132429	132429	132429
5	Seal, Rotary w/Spring	131100	1	1	1	1	1
6	Impeller		139348††	139349††	134137	134138	132417
7	Diffuser		132424	132424	132425‡	132425‡	132464
8	Rubber, Diffuser	132428	1	1	1	1	1
9	Pump Body		132582	132582	132418	132418	132418
10	Plug, Priming	*	3/4" NPT	3/4" NPT	1" NPT	1" NPT	1" NPT
11	Base	132430A	1	1	1	1	1
12	Hex Hd. Cap Screws 3/8 x 1/2"	*	2	2	2	2	2
13	Control Valve "CPJ"		124330	124330	132446	132446	133383
14	Plug w/Gasket "CPJS"		128794	128794	-	-	-
15	Pressure Switch		132527	132527	132527	132527	132527
16	Shallow Well Ejector Package		SW03E-1626	SW05E-1630	SW07E-1432	SW10E-1334	SW15E-1238
†	Ejector Gasket Pkg. w/Bolts	132404	1	1	1	1	1
†	Ejector Gasket	130969	1	1	1	1	1

(*) Standard Hardware Item
(†) Not Shown
(††) Impeller w/ 138138 Seal Ring
(‡) Diffuser w/ 134240 Insert

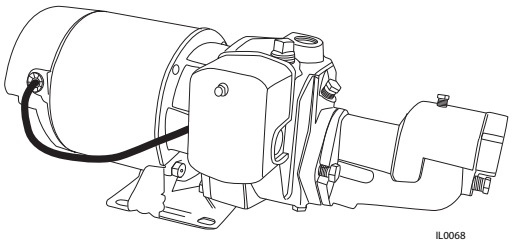
CONVERTIBLE and SHALLOW WELL JET PUMP REPAIR PARTS
"CPH" SERIES
(For Pricing Refer To Repair Parts Price List)



SERVICE KIT FOR JET PUMPS	
MODEL NO	**SERVICE KIT FOR:**
148143	1/3HP, CPJ & CPH Jet Pumps
148141	1/2HP, CPJ & CPH Jet Pumps
148140	3/4HP, CPJ & CPH Jet Pumps
023705	1HP, CPJ & CPH Jet Pumps and VPH10
KIT CONTAINS Impeller, Diffuser, Rotary Seal, Square Cut Ring, Diffuser Rubber	



"CPH" Convertible

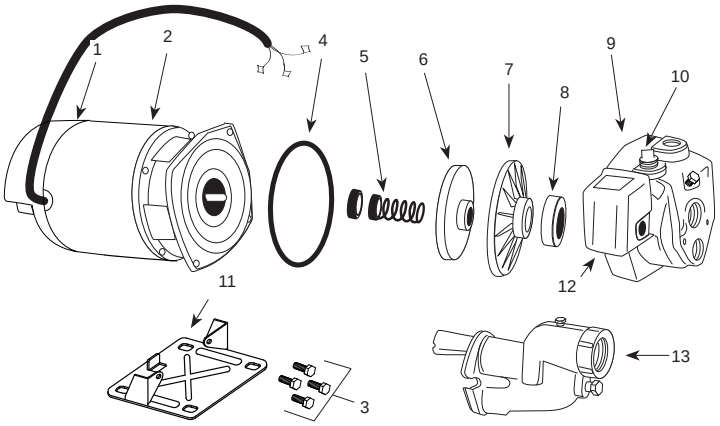


"CPHS" Shallow Well

ITEM	HORSEPOWER		1/3	1/2	3/4	1
	MODEL NO.: "CPH" Convertible "CPHS" Shallow Well	PART NO.	CPH03	CPH05	CPH07	CPH10
				CPH05R	CPH07R	CPH10R
			CPH03S	CPH05S	CPH07S	CPH10S
	DESCRIPTION		QTY.			
1	Motor, Nema J (Thd)		98J103	98J105	98J107	98J110
	Motor Cover w/screws	021301R	1	1	1	1
	Screws, Cover	021302	2	2	2	2
†	Motor Lead Wire	136135A	1	1	1	1
2	Mounting Ring		135314	135314	136137	136137
3	Hex Hd. Cap Screws 3/8 x 3/4"	*	4	4	4	4
4	Ring, Square Cut		132583	132583	132429	132429
5	Seal, Rotary w/Spring	131100	1	1	1	1
6	Impeller		139348††	139349††	134137	134138
7	Diffuser		132424	132424	132425❒	132425❒
8	Rubber, Diffuser	132428	1	1	1	1
9	Pump Body		134311	134311	134312	134312
10	Plug, Priming	*	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
11	Base	128034	1	1	1	1
12	Control Assembly "CPH" Convertible	134349	1	1	1	1
	Control Body	135019	1	1	1	1
	Flow Control Screw	124330	1	1	1	1
13	Pressure Switch "CPH" Convertible			132527	132527	132527
13	Pressure Switch "CPHS" Shallow Well	132527	1	1	1	1
14	Shallow Well Ejector Package-"CPHS"		SW03E-1626	SW05E-1630	SW07E-1432	SW10E-1334
†	Ejector Gasket Pkg w/Bolts	132404	1	1	1	1
†	Ejector Gasket	130969	1	1	1	1

(*) Standard hardware item
(†) Not shown
(††) Impeller w/ 138138 Seal Ring
(❒) Diffuser w/ 134240 Insert

SHALLOW WELL JET PUMP REPAIR PARTS
"E" SERIES
(For Pricing Refer To Repair Parts Price List)

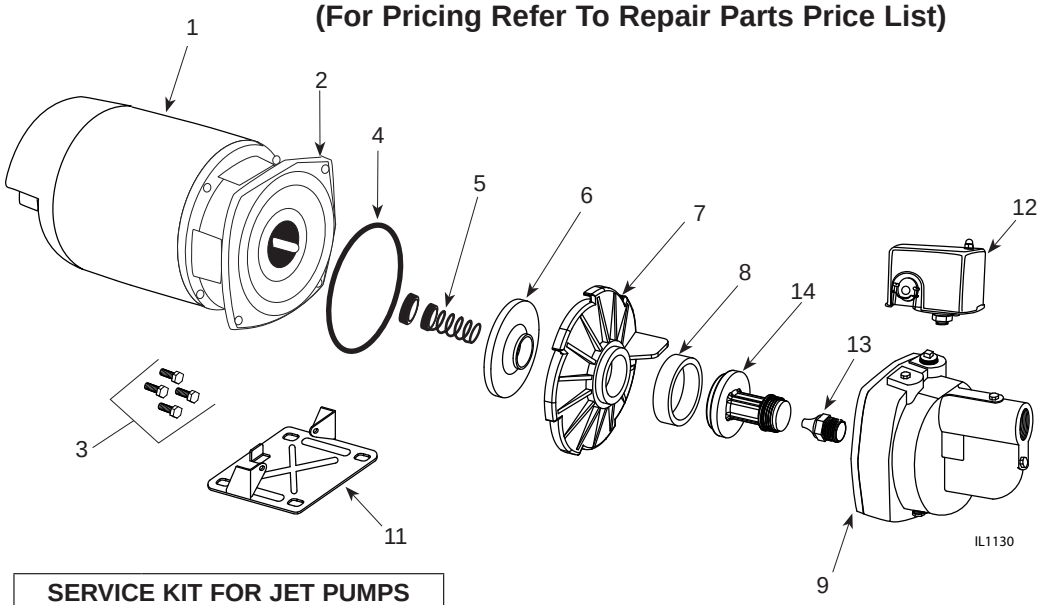


SERVICE KIT FOR JET PUMPS	
MODEL NO	**SERVICE KIT FOR:**
148143	1/2HP, "E" Series Jet Pumps*
148141	3/4HP, "E" Series Jet Pumps*
148140	1HP, "E" Series Jet Pumps*
KIT CONTAINS Impeller, Diffuser, Rotary Seal, Square Cut Ring, Diffuser Rubber	

ITEM	HORSEPOWER	PART NO.	1/2	3/4	1	1
	MODEL NO.:		EK05	EK07	EK10	EK10S
	DESCRIPTION		QTY.			
1	Motor, Nema J (Thd)		98J105	98J107	98J1071	98J110
	Motor Cover w/Screws	021301R	1	1	1	1
	Screws, Cover	021302	2	2	2	2
†	Motor Lead Wire	136135A	1	1	1	1
2	Mounting Ring		135314	135314	136137	135314
3	Hex Hd. Cap Screws 3/8 x 3/4"	*	4	4	4	4
4	Ring, Square Cut		132583	132583	132429	132583
5	Seal, Rotary w/Spring	131100	1	1	1	1
6	Impeller		139348††	139349††	134137	134137
7	Diffuser		132424	132424	132425❒	132425❒
8	Rubber, Diffuser	132428	1	1	1	1
9	Pump Body		134311	134311	134312	134123
10	Plug, Priming	*	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
11	Base	128034A	1	1	1	1
12	Pressure Switch		020345	020346	020346	020346
13	Ejector Body	135021	1	1	1	1
†	Ejector Gasket Pkg w/Bolts	132404	1	1	1	1
†	Nozzle		4C39-16	4C39-16	4C39-14	4C3914
†	Venturi		4C55-26	4C55-30	4C55-32	4C5532

(*) Standard hardware item
(†) Not shown
(††) Impeller w/ 138138 Seal Ring
(❒) Diffuser w/ 134240 Insert

SHALLOW WELL JET PUMP w/INTEGRAL JET REPAIR PARTS
"EK" SERIES
(For Pricing Refer To Repair Parts Price List)



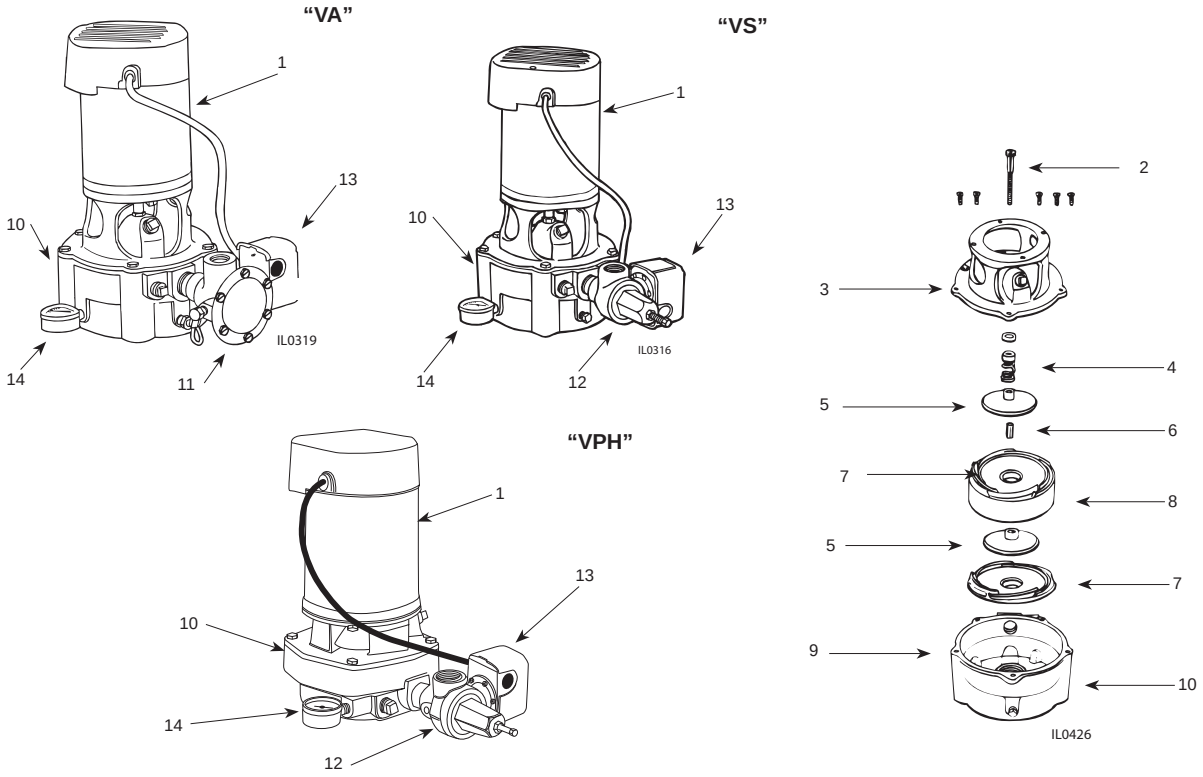
SERVICE KIT FOR JET PUMPS	
MODEL NO	**KIT CONTAINS**
KF04[A]	Rotary Seal, Quadraseal (2), Diffuser Rubber
KF05[B]	Impeller, Rotary Seal, Quadraseal and Diffuser Rubber
KF07[C]	
KF10[D]	

A. Applies to all Horizontal Cast Iron Jet Pumps
B. Applies to 1/2HP, "E" Series Jet Pumps*
C. Applies to 3/4HP, "E" Series Jet Pumps*
D. Applies to 1HP, "E" Series Jet Pumps*
*Order Diffuser Separately

ITEM	HORSEPOWER		1/2	3/4	3/4
	MODEL NO.:	PART NO.	EK05S ES05S REV C	EK07S REV C	ES07S5 REV A
	DESCRIPTION		QTY.		
1	Motor, Nema J (Thd)		98J105	98J107	98J107
	Motor Cover w/Screws	021301R	1	1	1
	Screws, Cover	021302	2	2	2
†	Motor Lead Wire	136135A	1	1	1
2	Mounting Ring	135314	1	1	1
3	Hex Hd. Cap Screws 3/8 x 3/4"	*	4	4	4
4	Ring, Square Cut	132583	1	1	1
5	Seal, Rotary w/Spring	131100	1	1	1
6	Impeller		023502††	139349††	139349††
7	Diffuser		132424	132424	132424
8	Rubber, Diffuser	132428	1	1	1
9	Pump Body		023381	023381	023381
11	Base	128034A	1	1	1
12	Pressure Switch - EK		020345	020346	020345
13	Nozzle		4C3915	4C3916	4C3918
14	Venturi		4C6026	4C6032	4C6032

(*) Standard hardware item
(†) Not shown
(††) Impeller w/ 138138 Seal Ring

DEEP WELL JET PUMP REPAIR PARTS
"VA", "VS" & "VPH" SERIES
(For Pricing Refer To Repair Parts Price List)



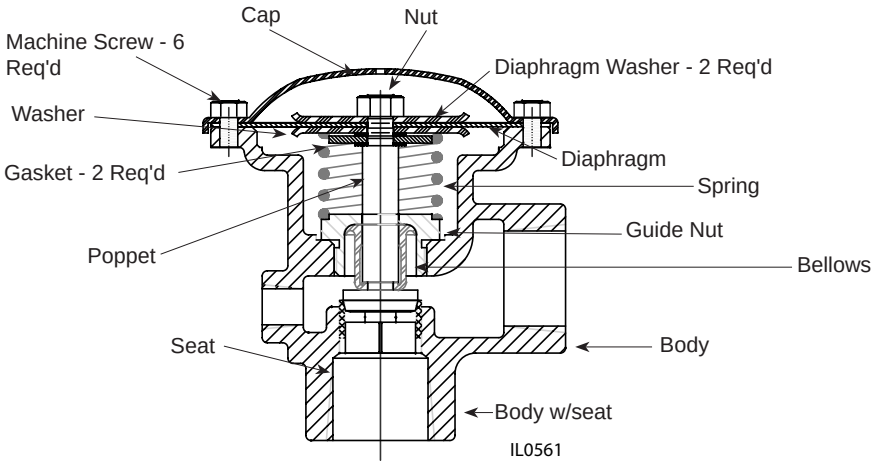
ITEM	DESCRIPTION	HORSEPOWER	1/2	3/4	1	1-1/2	1
		STAGE	1	2	2	2	1
		MODEL NO.	VA105P	VA207P	VA210P	VA215P	VPH10
			VS105P	VS207P	VS210P	VS215P	
		PART NO.	QTY.				
1	Motor, Nema J (Thd)		98H105	98H107	98H110	98H115	98J110
	Motor Cover w/screws	023212	1	1	1	1	1
‡	Screws Cover	021302	2	2	2	2	2
	Motor Lead Wire		136135A	136135A	136135A	136136A	136135A
2	Shaft		135238	135239	135239	135239	N/R
3	Mounting Ring	135235	1	1	1	1	136873
	Hex Hd. Cap Screws 3/8 x 3/4"	*	9	9	9	9	8
4	Seal, Rotary w/Spring	131100	1	1	1	1	1
5	Impeller †		135248	127960	132613	135248	134138
6	Spacer, Shaft	135245	—	1	1	1	—
‡	Spacer, Suction	135243	1	—	—	—	—
7	Diffuser †		135242	135241	135241	135242	132425
8	Intermediate Stage	135246	—	1	1	1	—
‡	Bearing, Intermediate Stage	135247	—	1	1	1	—
9	Ring, Square Cut	135240	1	1	1	1	132429
‡	Rubber, Diffuser	132428	—	—	—	—	1
10	Pump Body	135237	1	1	1	1	134312
11	Control Valve "VA"		C981D	C981G	C981G	C981G	—
12	Control Valve "VS" & "VPH"		132446	133383	133383	133383	132446
13	Pressure Switch	020346	1	1	1	1	1
14	Pressure Gauge	023294	1	1	1	1	1
‡	Plug, Priming 1/2" NPT	*	2	2	2	2	2
‡	Plug, Drain 1/4" NPT	*	1	1	1	1	1

(*) Standard hardware item
(†) For quantity required — See number of stages
(‡) Not shown
NOTE: For horizontal installations, use optional pump base 135276A

AUTOMATIC CONTROL VALVES FOR JET PUMP REPAIR PARTS

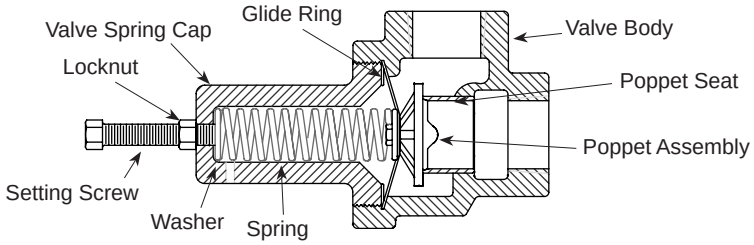
(For Pricing Refer To Repair Parts Price List)

FORM NO. FW0037
1105
SUPERSEDES 0201
PAGE 3-3A REPAIR PARTS



C971, C981 AND C982 SERIES					
MODEL NUMBER	**C971A+ C981A C982A+**	**C971D+ C981D C982D+**	**C971E+ C981E C982E+**	**C971F+ C981F C982F+**	**C971G+ C981G C982G+**
DESCRIPTION	**PART NUMBER**				
Body with Seat	N/A	N/A	N/A	N/A	N/A
Seat	131324	131324	131324	131324	125207
Spring	126457	131737	131740	131744	131740
Bellows	124581	124581	124581	124581	124581
Gasket 5/16 x 5/8"	131746	131746	131746	131746	131746
Diaphragm	131743	131743	131743	131743	131743
Diaphragm Washer	133680	133680	133680	133680	133680
Repair Kit*	126458	125183	126824	126825	126826
Cap	131741	131741	131741	131741	131741

* Each repair kit contains: Guide nut, Bellows, Poppet, Rubber Seal, Spring, Gasket, Diaphragm, Diaphragm Washer, 1/4" Machine Screws and 5/16" Hex Nut
\+ Discontinued



SEMI-AUTOMATIC CONTROL VALVE REPAIR PARTS		
MODEL NUMBER	**132446**	**133383**
DESCRIPTION	**PART NUMBER**	
Valve Body with Seat	N/A	N/A
Poppet Assembly	138175*	138175*
Glide Ring Washer	132442	132442
Spring	132445	133381
Washer for Spring	132444	132444
Setting Screw	132443	132443
Valve Cap	132439	132439

* For valves manufactured after December 1995. Poppet assembly not availalbe for valves manufactured prior to December 1995

FW0038
0914
SUPERSEDES
0910

EJECTOR, WELL ADAPTER & POWER HEAD REPAIR PARTS
SHALLOW WELL, CONVERTIBLE & DOUBLE PIPE EJECTORS

EJECTOR TYPE		SHALLOW WELL	CONVERTIBLE	DOUBLE PIPE DEEP WELL		
MODEL NUMBER		SW-E	DW-E	DP30B	DP35B†	DP40B†
DESCRIPTION	QTY	PART NUMBER				
Body (Only)	1	135021	132433	124771	N/A	N/A
Nozzle *		4C39	4C39	4C39	4C39	4C39
Venturi *		4C55	4C55	4C55	4C55	4C55
Ejector Gasket Package **		132404	132404	132404	132404	132404
Gasket (Only)		130969	130969	130969	130969	130969
Adapter Flange **		N/R	N/R	N/R	N/R	N/A

(*) For correct orifice size -- See jet pump selection charts in general catalog
(**) Includes gasket and cap screws
(N/R) Not Required
(N/A) Not Available
(†) Discontinued

SINGLE PIPE "PACKER" EJECTORS

EJECTOR TYPE		RUBBER PACKER	LEATHER PACKER				
MODEL NUMBER		SP20BR	SP20BL	SP20CL	SP22CL	SP25BL†	SP30BL†
DESCRIPTION	QTY	PART NUMBER					
Ejector Assembly *	1	N/A	132680	N/A	133374	N/A	N/A
Body with Screen	1	N/A	127408	N/A	133375	N/A	N/A
Nozzle **	1	4C39	4C39	4C39	4C39	4C39	4C39
Venturi **	1	4C55	4C55	4C55	4C55	4C55	4C55
Dog Spring Coupling	1	N/A	N/R	N/R	N/R	N/R	N/R
Spacer	1	N/R	124036	124036	124036	N/A	N/A
Packer (Rubber)	1	N/A	N/R	N/R	N/R	N/R	N/R
Packer (Leather)	2	N/R	124038	124038	124038	N/A	N/A
Washer (Brass Ring)	1	N/A	127944	127944	127944	N/A	N/A

(*) Less nozzle and venturi
(**) For correct orifice size -- See Jet Pump Selection charts in general catalog
(N/R) Not Required
(†) Discontinued models

WELL ADAPTERS - STRAIGHT AND RIGHT ANGLE

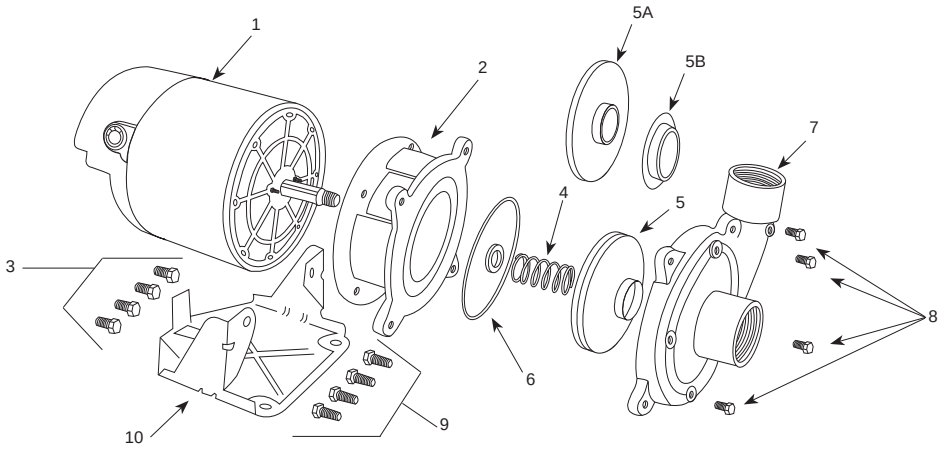
	WELL SIZE I.D.	2″	2″	2-1/2″	3″	3″
	DRIVE PIPE	1″	1″	1″	1″	1″
	SUCTION PIPE	1-1/4″	1-1/4″	1-1/4″	1-1/4″	1-1/4″
	DROP PIPE	1″	1-1/4″	1-1/4″	1-1/2″	1-1/4″
	STRAIGHT ADAPTER	129719*	129720*	129725†	129727†	129728†
	RIGHT ANGLE ADAPTER	127025*	129723*	N/A	127949†	N/A
DESCRIPTION	QTY	PART NUMBER				
Body	1	N/A	N/A	N/A	N/A	N/A
Lower Packer Rubber	1	131975	131975	N/A	N/A	N/A
Lower Gland Flange	1	131219	131219	N/A	N/A	N/A
Ejector Gasket Package	1	132404	132404	132404	132404	132404
Gasket (Only)	1	130969	130969	130969	130969	130969
Machine Bolt w/Nut‡	3	3/8 x 2-1/2″	3/8 x 2-1/2″	7/16 x 3-1/2″	7/16 x 3-1/2″	7/16 x 3-1/2″

(*) Includes all parts listed
(†) Discontinued Models
(‡) Standard hardware item
(N/A) Not available

POWER HEAD CONVERSION UNIT REPAIR PARTS

DESCRIPTION	122649	135458
	PART NUMBER	
Ball Bearing (1.57 O.D.)	022962	022962
Ball Bearing (1.85 O.D.)	121777	121777
Shaft	122530	135457
Bearing Retainer	121758	121758
Retaining Ring	122478	122478 (2)

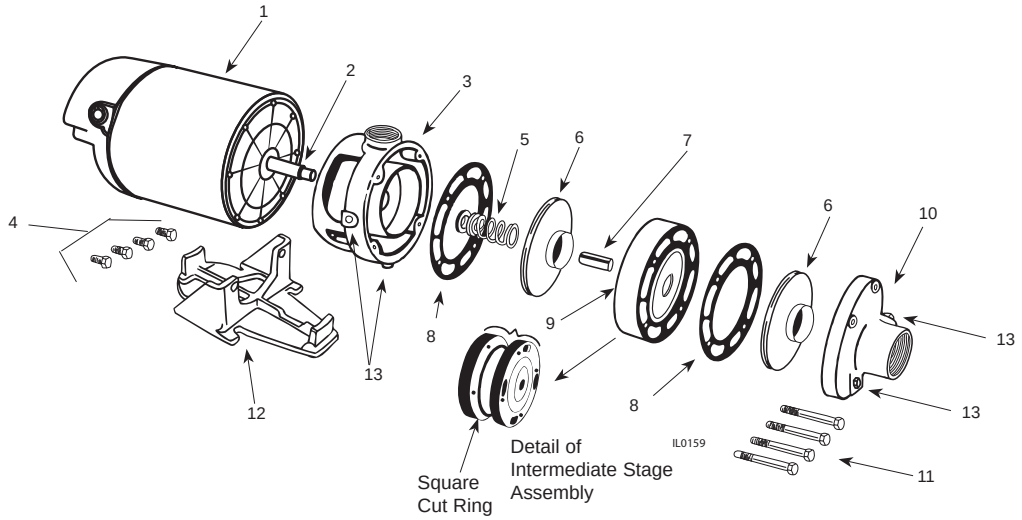
CENTRIFUGAL PUMP REPAIR PARTS
CJ103 SERIES
(For Pricing Refer To Repair Parts Price List)



		HP	1/3	1/2	3/4	1	1-1/2	3**
		STAGE	1	1	1	1	1	1
ITEM	SINGLE PHASE BRASS IMPELLER	MODEL NO.	CJ103031	CJ103051	CJ103071	CJ103101	CJ103151	CJ103201
	THREE PHASE BRASS IMPELLER			CJ103053	CJ103073			
	SINGLE PHASE PLASTIC IMPELLER		CJ103P031	CJ103P051	CJ103P071	CJ103P101	CJ103P151	CJ103P201
	THREE PHASE PLASTIC IMPELLER			CJ103P053	CJ103P073			
	DESCRIPTION	PART NO.	QTY.					
1	Motor, Nema J - 1PH Feb 1, 2020 and later		98J103	98J105	98J107	98J610***	98J615***	98J630***
1	Motor, Nema J - 1PH Jan 30, 2020 and earlier		98J103	98J105	98J107	98J110	98J115	98J120
1	Motor, Nema J - 3PH		—	98J305	98J307	98J310	98J315	98J320
	Motor Access Cover	021301R	1	1	1	1	1	1
	Screws, Access Cover	021302	2	2	2	2	2	2
‡	Slinger Washer	126905	1	1	1	1	1	1
2	Mounting Ring	134107	1	1	1	1	1	1
3	Hex Hd. Cap Screws 3/8 x 3/4”	*	4	4	4	4	4	4
4	Seal, Rotary w/Spring	131100	1	1	1	1	1	1
5	Impeller - Brass		130403	126900	127805	127804	127806	127848
5A	Impeller - Plastic		133426	139222	021280	135248	021279	N/A
5B	Clearance Ring		N/A	138138	134240	134240	134240	N/A
6	Ring, Square Cut †	132583	1	1	1	1	1	1
7	Body Assembly - Brass Impeller		127870	127870	127780	127780	127780	127780
	Body Assembly - Plastic Impeller	021439	1	1	1	1	1	N/A
‡	Suction Clearance Ring-Brass		127869A	127869A	N/A	N/A	N/A	N/A
8	Pipe Plugs, 1/8” NPT	*	4	4	4	4	4	4
9	Hex Hd. Cap Screws 3/8 x 1”	*	4	4	4	4	4	4
10	Base	125855	1	1	1	1	1	1

(*) Standard hardware item
(‡) Not shown
(†) For pumps with paper gasket, replace with part number 127782
(Δ) Kit Includes: Access Cover, Screws & Wiring Diagrams
(**) 2HP Jan 30, 2020 and earlier
(***) 230V only

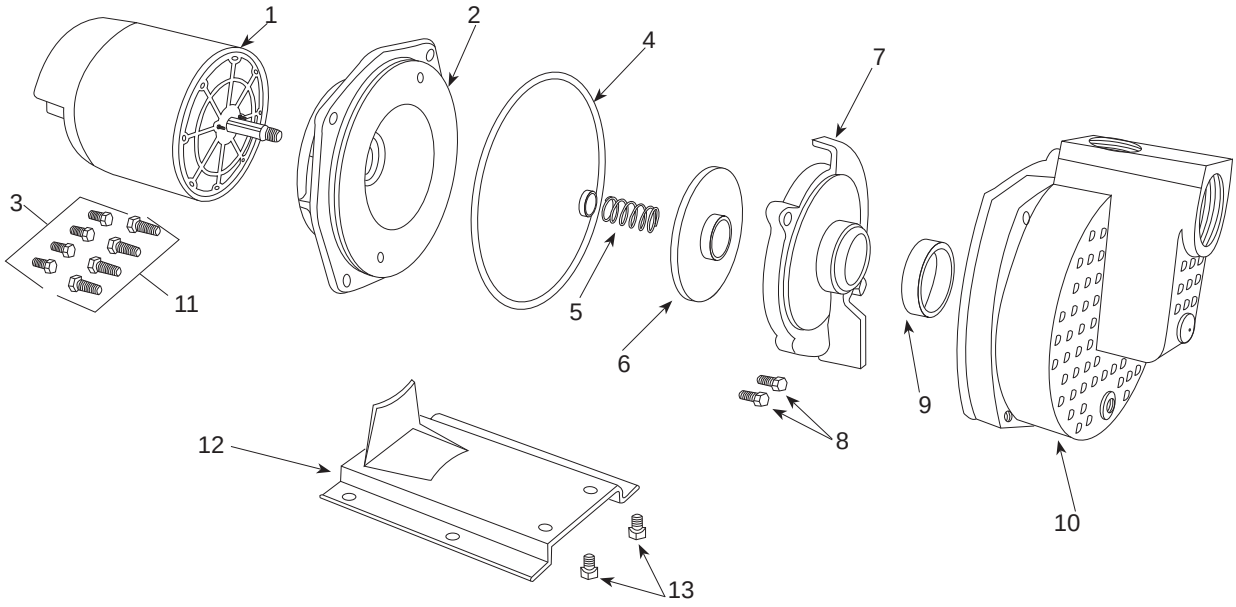
CENTRIFUGAL PUMP REPAIR PARTS
CJ101 SERIES
(For Pricing Refer To Repair Parts Price List)



		HP	3/4	1	1-1/2	2	2	3
		STAGE	2	2	2	2	3	3
ITEM	SINGLE PHASE - BRASS IMPELLER	MODEL NO.	CJ101B071	CJ101B101	CJ101B151	CJ101B201	CJ101C201	CJ101C301
	THREE PHASE - BRASS IMPELLER		CJ101B073	CJ101B103	CJ101B153	CJ101B203	CJ101C203	CJ101C303
	SINGLE PHASE - PLASTIC IMPELLER		CJ101P071	CJ101P101	CJ101P151	CJ101P201	CJ101D201	CJ101D301
	THREE PHASE - PLASTIC IMPELLER		CJ101P073	CJ101P103	CJ101P153	CJ101P203	CJ101D203	CJ101D303
	DESCRIPTION	PART NO.	QTY					
1	Motor, Nema J - 1 PH		98J107	98J110	98J115	98J120	98J120	98J630
1	Motor, Nema J - 3 PH		98J307	98J310	98J315	98J320	98J320	023251
	Motor Cover w/Screws	021301R	1	1	1	1	1	1
	Screws, Cover	021302	2	2	2	2	2	2
‡	Slinger Washer	126905	1	1	1	1	1	1
2	Shaft		135279A	135279A	135279A	135279A	136612A	136612A
3	Mounting Ring	125204	1	1	1	1	1	1
4	Hex Hd. Cap Screws 3/8 x 3/4”	*	2	2	2	2	2	2
5	Seal, Rotary w/Spring	131100	1	1	1	1	1	1
6	Impeller, Brass		†135280	†135281	†126900	†126901	†139126	†136951
6	Impeller, Thermoplastic		†133425	†133427	†139180	†128472	†139348***	†139104
7	Spacer, Shaft	133380	1	1	1	1	2	2
8	Gasket	130968	2	2	2	2	3	3
9	Intermediate Stage Assy	025574	1	1	1	1	2	2
‡	Suction Clearance Ring		1	1	1	1	2	2
‡	Hub Clearance Ring		1	1	1	1	2	2
10	Suction Flange Assembly	125227A	1	1	1	1	1	1
‡	Suction Clearance Ring		1	1	1	1	1	1
‡	Suction Bearing		1	1	1	1	1	1
11	Pump thru Bolts (Grade 5) 3/8” x 3-1/4”	*	4	4	4	4	--	--
11	Pump thru Bolts (Grade 5) 3/8” x 5”		--	--	--	--	4	4
12	Base w/ Bolts 3/8” x 1-1/4”	020054	1	1	1	1	1	1
13	1/4" NPT Plug	*	4	4	4	4	4	4

(*) Standard hardware item
(†) For quantity required — See number of stages
(‡) Not shown, included with casting
(**) Includes two castings, square cut ring, suction and hub clearance ring - See Detail Drawing
(***) Includes 138138 seal ring and 139221 impeller
(Δ) Kit Includes: Access Cover, Screws & Wiring Diagrams

SELF-PRIMER PUMP REPAIR PARTS
"SPJ/ELJ" SERIES
(For Pricing Refer To Repair Parts Price List)

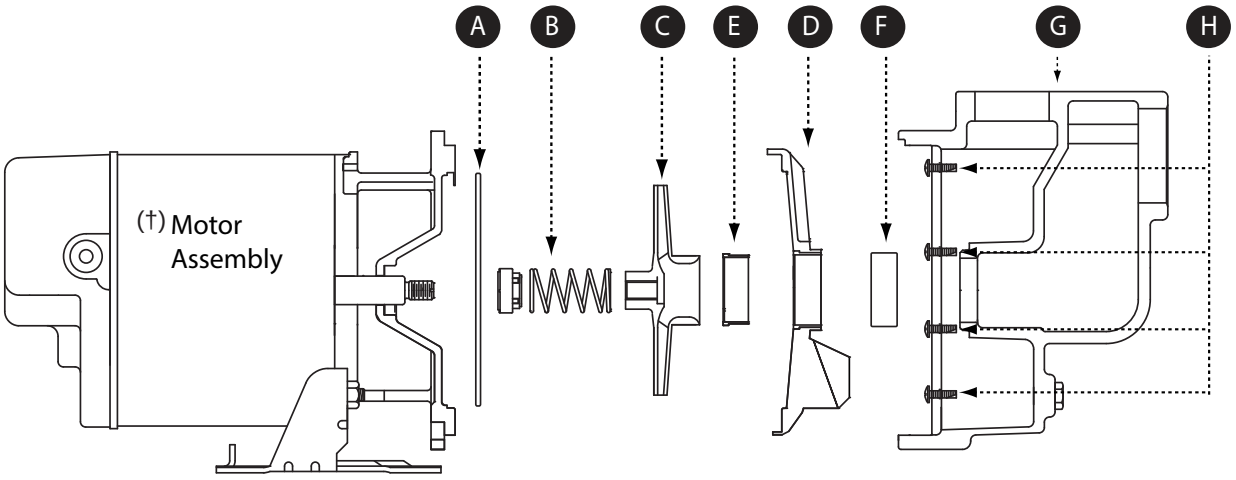


		HORSEPOWER	3/4	1	1-1/2	2	3
ITEM	SINGLE PHASE	MODEL NO.			SPJ15P1		
			SPJ07P1	SPJ10P1	SPJ15B1 ELJ15B1	SPJ20B1 ELJ20B1	SPJ30B1 ELJ30B1
	THREE PHASE		SPJ07P3	SPJ10P3	SPJ15B3	SPJ20B3	SPJ30B3
	DESCRIPTION	PART NO.	QTY				
1	Motor, Nema J - 1 PH		98J107	98J110	98J115	98J120	98J630
1	Motor, Nema J - 3 PH		98J307	98J310	98J315	98J320	023251
	Motor Cover w/Screws	021301R	1	1	1	1	1
‡	Screws, Cover	021302					
‡	Slinger, Washer	126905	1	1	1	1	1
2	Mounting Ring	133904	1	1	1	1	1
3	Hex Hd. Cap Screws 3/8 x 3/4"	*	4	4	4	4	4
4	Ring, Square Cut	133261	1	1	1	1	1
5	Seal, Rotary w/Spring	131100	1	1	1	1	1
6	Impeller, Plastic "P" Models		133646	135620	134138	—	—
6	Impeller, Brass "B" Models		—	—	133253	133255	138056
7	Diffuser w/ Insert	136469†	1	1	1	1	1
8	Hex Hd. Cap Screws 1/4 x 1"	*	2	2	2	2	2
9	Rubber Diffuser	133260	1	1	1	1	1
10	Pump Body	133362	1	1	1	1	1
11	Hex Hd. Cap Screws 7/16 x 1"	*	4	4	4	4	4
12	Base	134217A	1	1	1	1	1
13	Hex Hd. Cap Screws 3/8 x 1/2"	*	2	2	2	2	1

(*) Standard hardware item
(‡) Not shown
(†) Diffuser w/ 134240 Insert

FLINT & WALLING

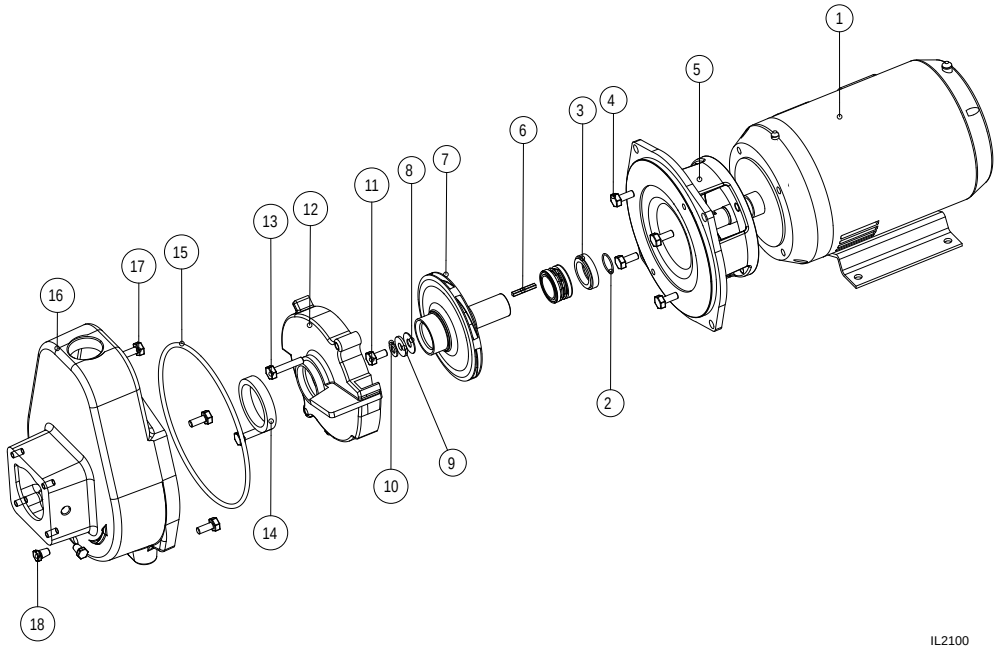
SELF-PRIMER PUMP REPAIR PARTS
"SP/EL" SERIES
(For Pricing Refer To Repair Parts Price List)



		HP	1	1-1/2	2
ITEM	SINGLE PHASE	MODEL NO.	SP10P1 EL10P1	SP15P1 EL15P1	SP20P1 EL20P1
	DESCRIPTION	PART NO.			
A	Ring, Square Cut	132429	1	1	1
B	Seal, Rotary and Ceramic (with Spring)	131100	1	1	1
C	Impeller		021280	134138	134138
D	Diffuser	132425	1	1	1
E	Diffuser Insert	134240	1	1	1
F	Rubber Diffuser	132428	1	1	1
G	Pump Body	023115	1	1	1
H*	Hex Hd. Cap Screws 3/8 in. x 3/4 in.	*	4	4	4

(*) Standard hardware item
(†) Motor assembly not available as a replacement part.

SPM SERIES HIGH POWER CENTRIFUGALS
(For Pricing Refer To Repair Parts Price List)

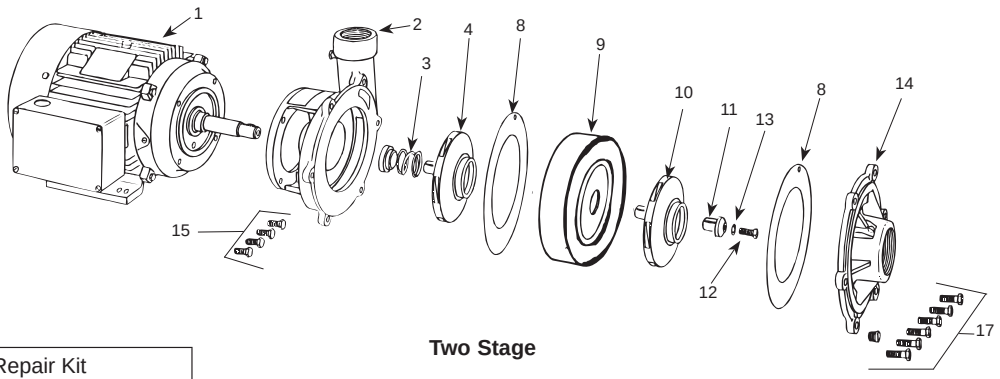


ITEM	DESCRIPTION	QTY	3 HP 1 PH	3 HP 3 PH	5 HP 1 PH	5 HP 3 PH
			PART #	PART #	PART #	PART #
1	BALDOR MOTOR	1	134962	134965	134963	134966
2	O-RING, 1.00 x .07" THICKNESS	1	024893	024893	024893	024893
3	MECHANICAL SEAL, JOHN CRANE TYPE 2100, 1.25"	1	024901	024901	024901	024901
4	CAP SCREW, 3/8-16 x .875" LONG	4	*	*	*	*
5	MOUNTING RING	1	024898	024898	024898	024898
6	KEY BALDOR	1	025247	025247	025247	025247
7	IMPELLER	1	025245	025245	025246	025246
8	GASKET, OD 1.15", ID.45" x .03" THICKNESS	1	025501	025501	025501	025501
9	WASHER, OD1.125", ID.415" x .125" THICKNESS	1	024905	024905	024905	024905
10	GASKET, OD.66", ID.35" x .05" THICKNESS	1	025502	025502	025502	025502
11	CAP SCREW, 3/8-16 x .75" LONG	1	*	*	*	*
12	DIFFUSER w/WEAR RING	1	024908	024908	024908	024908
13	CAP SCREW, 3-16 x 1.75" LONG	2	*	*	*	*
14	DIFFUSER RING GASKET, OD 3.0", ID2.4" x .53" THICKNESS	1	024909	024909	024909	024909
15	GASKET, 8.84" X 0.23" THICKNESS	1	024899	024899	024899	024899
16	PUMP BODY	1	024910	024910	024911	024911
17	CAP SCREW, 3/8-16 x .875" LONG	4	*	*	*	*
18	PIPE PLUG, 1/4" NPT	2	024593	024593	024593	024593
order from catalog	SUCTION FLANGE KIT	1	024912	024912	024913	024913

FLINT & WALLING

FW0043
0821
SUPERSEDES 0221

CENTRIFUGAL PUMP REPAIR PARTS
"C22000" SERIES
(For Pricing Refer To Repair Parts Price List)



Two Stage

Product may not be exactly as shown.

021434 Repair Kit Kit Includes:		
Qty.	Item No.	Part No. & Description
1	3	136559 Seal Assembly
1	•	136576 O-Ring, Cap Screw
1	•	136572 O-Ring, Impeller
1	•	136569 O-Ring, Impeller
2	8	124638 Gasket

ITEM	HORSEPOWER	3	5	7-1/2
	STAGE	2	2	2
	SINGLE PHASE	C22231	C22251	—
	THREE PHASE	C22233	C22253	C22273
	DESCRIPTION	PART NUMBER		
1	Motor — 1 Phase	134962	134963	—
1	Motor — 3 Phase	134965	134966	134967
2	Mounting Ring	136556	136556	136556
3	Seal Assembly	136559	136559	136559
•	Key 3/16 x 27/32"	—	—	—
•	Key 3/16 x 2-1/32"	134977	134977	134977
4	Impeller	136563	136565	136567
•	O-Ring, Impeller	136569	136569	136569
5	Retainer, Impeller	—	—	—
6	Cap Screw 1" Long	—	—	—
•	O-Ring, Cap Screw	—	—	—
7	Lock Washer 3/8" S.S.	—	—	—
8	Gasket	124638 (2)	124638 (2)	124638 (2)
9	Intermediate Stage w/Clearance Ring	136578	136578	136578
•	Clearance Ring - Large	125176	125176	125176
•	Clearance Ring - Small	136577	136577	136577
10	Impeller (Front)	136564	136566	136568
11	Retainer, Impeller	136571	136571	136571
•	O-Ring, Impeller	136572	136572	136572
12	Cap Screws 2-1/4" Long	136575	136575	136575
•	O-Ring, Cap Screw	136576	136576	136576
13	Lock Washer 3/8" S.S.	120649	120649	120649
14	Suction Flange Assembly w/Clearance Ring	023089	023089	023089
•	Clearance Ring	125176	125176	125176
•	Pipe Plug 1/4" NPT	* (5)	* (5)	* (5)
15	Hex Hd. Cap Screws 3/8 x 1"	* (4)	* (4)	* (4)
16	Hex Hd. Cap Screws 3/8 x 1-1/4"	—	—	—
17	Hex Hd. Cap Screws 3/8 x 3-1/4"	* (6)	* (6)	* (6)

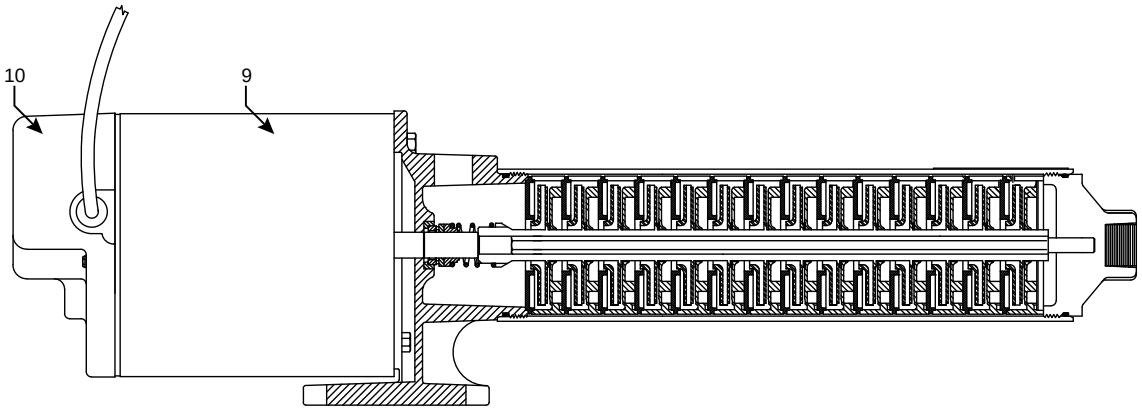
(*) Standard hardware item
(•) Not shown

PRESSURE BOOSTER PUMP REPAIR PARTS

(For Pricing Refer To Repair Parts Price List)

Replacement Motors

FORM NO. FW0045
1021
SUPERSEDES
1020



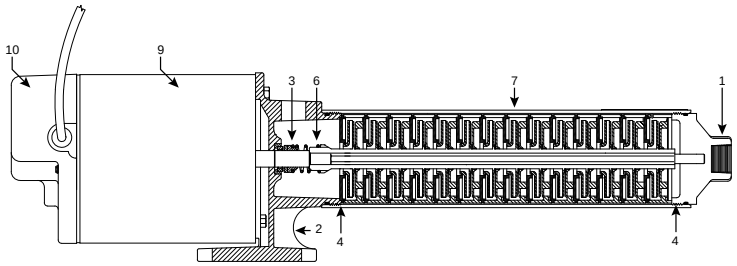
ITEM	REPLACEMENT MOTORS	QTY	CAST IRON	POWDER COATED	STAINLESS STEEL	CAST IRON	POWDER COATED	STAINLESS STEEL
			SINGLE PHASE 60 HZ			THREE PHASE 60 HZ		
9	ODP NEMA J 1/3 HP	1	98J103	98J103	98S103			
	ODP NEMA J 1/2 HP		98J105	98J105	98S105	98J305	98J305	98S305
	ODP NEMA J 3/4 HP		98J107	98J107	98S107	98J307	98J307	98S307
	ODP NEMA J 1 HP		98J110	98J110	98S110	98J310	98J310	98S310
	ODP NEMA J 1-1/2 HP		98J115	98J115	98S115	98J315	98J315	98S315
	ODP NEMA J 2 HP		98J120	98J120	98S120	98J320	98J320	98S320
	ODP NEMA J 3 HP		98J630	98J630	98S630	N/A	N/A	N/A
10	Motor Cover w/Screws	1	023212	023212	023212	023212	023212	023212
*	Screws, Motor Cover	2	021302	021302	021302	021302	021302	021302
			SINGLE PHASE 50 HZ			THREE PHASE 60/50 HZ		
9	ODP NEMA J 1/3 HP	1	98J003	98J003	98S003			
	ODP NEMA J 1/2 HP		98J005	98J005	98S005	98J305	98J305	98S305
	ODP NEMA J 3/4 HP		98J007	98J007	98S007	98J307	98J307	98S307
	ODP NEMA J 1 HP		98J010	98J010	98S010	98J310	98J310	98S310
	ODP NEMA J 1-1/2 HP		98J015	98J015	98S015	98J315	98J315	98S315
	ODP NEMA J 2 HP		98J820	98J820	98S820	98J320	98J320	98S320
10	Motor Cover w/Screws	1	023212	023212	023212	023212	023212	023212
*	Screws, Motor Cover	2	021302	021302	021302	021302	021302	021302
			SINGLE PHASE 60/50 HZ			THREE PHASE 60/50 HZ		
9	TEFC NEMA J 1/2 HP	1		020691	020691		021011	021011
	TEFC NEMA J 3/4 HP			021008	021008		021012	021012
	TEFC NEMA J 1 HP			021009	021009		020688	020688
	TEFC NEMA J 1-1/2 HP			020692	020692		020647	020647
	TEFC NEMA J 2 HP			020693	020693		020689	020689
	TEFC NEMA J 3 HP			021010	021010		025585	025585

* Not Shown
N/A - Not available

FLINT & WALLING

FORM NO. FW0046
1021
SUPERSEDES
1020

PRESSURE BOOSTER PUMP REPAIR PARTS
(For Pricing Refer To Repair Parts Price List)



	ITEM	DESCRIPTION	QTY	CAST IRON	POWDER COATED	STAINLESS STEEL	
5 - 7 - 10 - 19 GPM, 60 HZ & 50 HZ	1	Discharge Head 3/4" NPT	1	132000	136905	136640	See replacement motors. ITEMS 9 & 10
	2	Mounting Ring 3/4" NPT	1	132002	136904	136639	
27 - 35 GPM, 60 HZ & 50 HZ	1	Discharge Head 1" NPT	1	136635	137796	139166	
	2	Mounting Ring 1" NPT	1	136634	137794	139100	
55 - 85 GPM, 60 HZ & 50 HZ	1	Discharge Head 2" NPT	1	021585	-	-	
	2	Mounting Ring 2" NPT	1	021584	-	-	
ALL SERIES 60 HZ & 50 HZ	3	Seal, Rotary w/Spring	1	131100 †	131100 †	136682 ‡	
	4	O-Ring	2	131925 ■	131925 ■	136607 ▲	
	*	Hex Head Cap Screws 3/8" x 3/4"	4	121106	121106	121106	

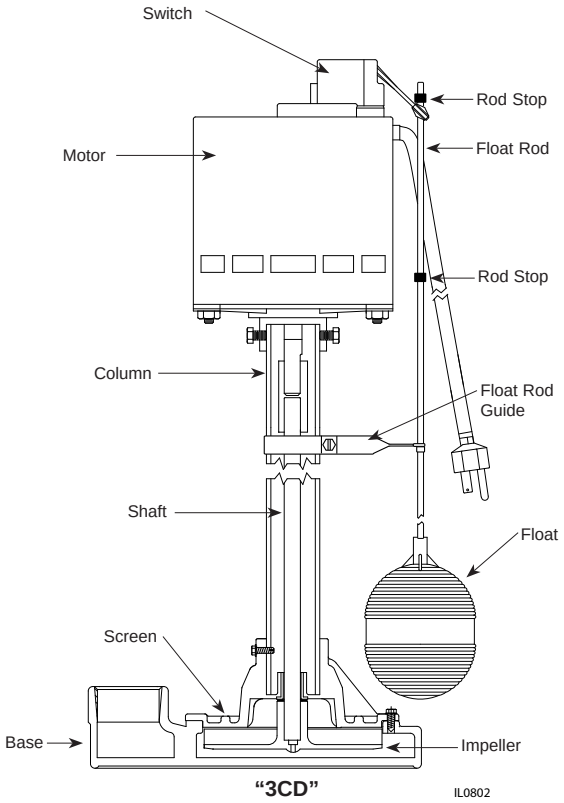
(†) Buna N - Carbon/Silicon Carbide (‡) Viton - Carbon/Silicon Carbide (■) Buna N (▲) Viton (*) Not Shown

60 HZ MODELS								
	MATERIAL	CAST IRON	PB0508AXXX	PB0512AXXX	PB0516AXXX	PB0712AXXX	PB1014AXXX	PB1016AXXX
		POWDER COATED	PB0508CXXX	PB0512CXXX	PB0516CXXX	PB0712AXXX	PB1014CXXX	PB1016CXXX
		STAINLESS STEEL	PB0508SXXX	PB0512SXXX	PB0516SXXX	PB0712SXXX	PB1014SXXX	PB1016SXXX
	ITEM	DESCRIPTION	PART NUMBER					
	5	Cartridge Assembly ‡	135163	132939	138447	134097	134998	135814
	6	Shaft & Coupling Assembly	135161	133336	138446	133336	134996	135813
	7	Barrel/Shell	135162	132003	138448	132003	134997	135815
	MATERIAL	CAST IRON	PB1914AXXX	PB2711AXXX	PB2714AXXX		PB3506AXXX	PB3508AXXX
		POWDER COATED	PB1914CXXX	PB2711CXXX	PB2714CXXX		PB3506CXXX	PB3508CXXX
		STAINLESS STEEL	PB1914SXXX	PB2711SXXX	PB2714SXXX	PB2717SXXX	PB3506SXXX	PB3508SXXX
	ITEM	DESCRIPTION	PART NUMBER					
	5	Cartridge Assembly ‡	137222	135627	136629	020980	136626	136632
	6	Shaft & Coupling Assembly	137221	136624	136628	020916	136625	136631
	7	Barrel/Shell	137223	135628	136630	138947	136627	136633
	MATERIAL	CAST IRON	PB5504XX	PB5506XX	PB8504XX	PB8505XX		
	ITEM	DESCRIPTION	PART NUMBER					
	5	Cartridge Assembly ‡	022293	022294	022295	022296		
	6	Shaft & Coupling Assembly	022289	022287	022288	022287		
	7	Barrel/Shell	022291	022292	138151	022290		

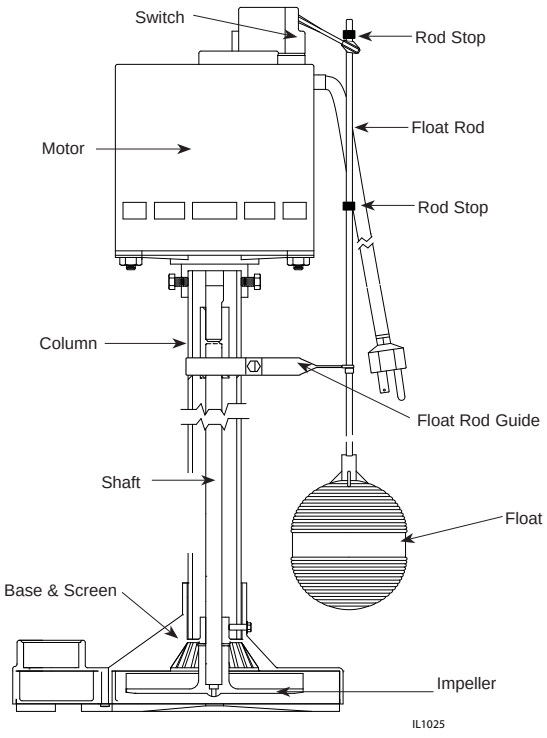
50 HZ MODELS								
	MATERIAL	CAST IRON	PB0508XXXX	PB0514XXXX	PB0714XXXX	PB1020XXXX	PB1022XXXX	PB1023XXXX
		POWDER COATED	PB0508ZXXX	PB0514ZXXX	PB0714ZXXX	PB1020ZXXX	PB1022ZXXX	PB1023ZXXX
		STAINLESS STEEL	PB0508YXXX	PB0514YXXX	PB0714YXXX	PB1020YXXX	PB1022YXXX	PB1023YXXX
	ITEM	DESCRIPTION	PART NUMBER					
	5	Cartridge Assembly ‡	135163	138150	021032	135907	020280	135911
	6	Shaft & Coupling Assembly	135161	138149	138149	135906	020278	135910
	7	Barrel	135162	138151	138151	135098	020094	135912
	MATERIAL	CAST IRON	PB1920XXXX		PB2717XXXX	PB3508XXXX	PB3514XXXXT	
		POWDER COATED	PB1920ZXXX	PB1922ZXXX	PB2717ZXXX	PB3508ZXXX	PB3514ZXXXT	
		STAINLESS STEEL	PB1920YXXX		PB2717YXXX	PB3508YXXX	PB3514YXXXT	
	ITEM	DESCRIPTION	PART NUMBER					
	5	Cartridge Assembly ‡	020982	139435	020980	136632	021017	
	6	Shaft & Coupling Assembly	020093	021425	020916	136631	021015	
	7	Barrel	020094	139436	138947	136633	021016	

(‡) Cartridge assembly includes: impellers, diffusers, o-rings and shaft & coupling assembly. Components not available individually. Sold as assembly only.

COLUMN SUMP PUMP REPAIR PARTS
(For Pricing Refer To Repair Parts Price List)



"3CD"



"3CE"

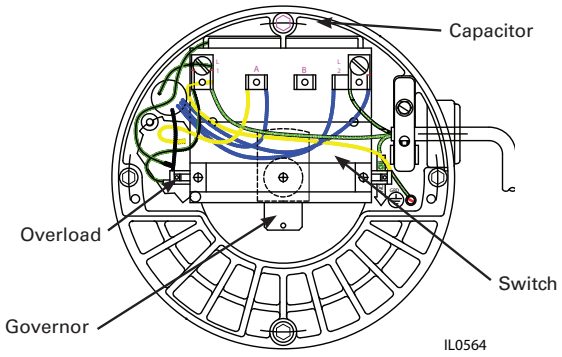
	DATE CODE					
MODEL NO.	BEFORE 95-03 (3/95)		95-03 THRU 01-10		AFTER 01-11	
	3CD	3CE	3CD	3CE	3CD	3CE
DESCRIPTION	PART NUMBER					
Base	132139	132139 †	132139	N/R	132139	N/R
Screen	N/A	N/A	130503	N/R	130503	N/R
Base & Screen	N/R	N/R	N/R	N/A	N/R	N/A
Column	N/A	N/A	128319	128319	128319	128319
Machine Screw 1/4" - 20 x 1/2"	* (2)	* (2)	* (2)	* (2)	* (2)	* (2)
Washer/Thrust	N/A	N/A	N/R	N/R	139496	139496
Shaft	N/A	N/A	N/A	N/A	138970	138970
Impeller	132073	132073	N/A	N/A	132073	132073
Float Rod Guide w/Screw	132012	132012	132012	132012	132012	132012
Float Rod w/Stops	135267	135267	135267	135267	135267	135267
Rod Stops (2)	135266	135266	135266	135266	135266	135266
Float	001134	001134	001134	001134	001134	001134
Switch	133817	133817	133817	133817	133817	133817
Motor w/Switch & Cord	128758	128758	128758	128758	128758	139359

(*) Standard hardware item
(†) Cast Iron — Plastic base not available
(N/A) Not available
(N/R) Not required

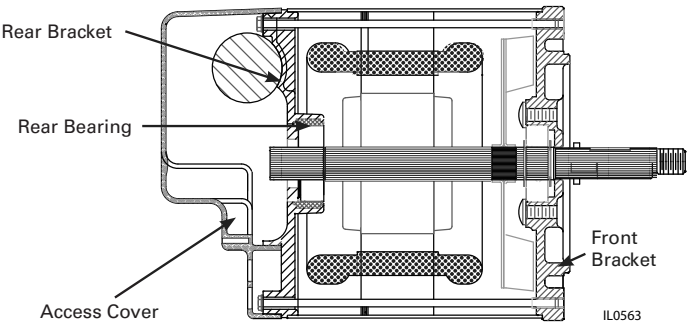
FLINT & WALLING

"98" SERIES JET PUMP MOTOR SERVICE PARTS
(For Pricing Refer To Repair Parts Price List)

FORM NO. FW1164
0122
SUPERSEDES
1020



IL0564



IL0563

Parts List for 98 Series Motors			SINGLE PHASE UNIFRAME						SINGLE PHASE													THREE PHASE					
		HP	1/3	1/2	3/4	1	1/2	3/4	1/3	1/3	1/2	3/4	1	1-1/2	2	1	1-1/2	3	1/2	3/4	1	1-1/2	1/2	3/4	1	1-1/2	2	3
		SHAFT FLATTED								98F103	98F105	98F107	98F110	98F115	98F120								98F305	98F307	98F310	98F315	98F320	
		SHAFT THREADED	98U103	98U105	98U107	98U110	98L105	98L107	98J503	98J103 /S	98J105 /S	98J107 /S	98J110 /S	98J115 /S	98J120 /S	98J610	98J615	98J630 /S	98H105	98H107	98H110	98H115	98J305	98J307	98J310	98J315	98J320	98J330
Description		Part No.																										
Switch & Governor † .567		022546	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•						
Switch & Terminal Board		137122A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•						
Governor Kit ††		022545	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•						
Governor Only .567		022543	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•						
Capacitor	25 MFD	136656														•	•	•										
	200 MFD	135884					•		•	•																		
	282 MFD	135885		•	•			•			•	•							•									
	324 MFD	135886				•							•	•	•	•	•	•		•	•	•						
Overload Protector		136123							•																			
		136124																										
		023519		•				•			•																	
		022988	•				•			•																		
		136127				•							•			•				•								
		136128												•			•				•							
		136129													•			•				•						
		136126			•							•							•									
Bearing & Housing		135309	•	•	•	•	•	•																				
Bearing, Front		023076											•	•	•	•	•	•			•	•			•	•	•	•
Bearing, Front		022962							•	•	•	•							•	•			•	•				
Bearing, Rear		022962	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Combination Bracket, Front		135314	•	•			•	•																				
		136115			•	•																						
Bracket, Front		134390							•	•	•	•							•	•			•	•				
Bracket, Front		023078											•	•	•	•	•	•			•	•			•	•	•	•
Bracket, Rear		136115	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Thru Bolts (4)	5-3/4"	136116	•				•		•	•																		
	6"	136117		•				•			•																	
	6-1/2"	134512			•							•							•				•	•				
	7"	134513				•							•			•				•					•			
	7-5/8"	136118												•			•				•							
	8-1/8"	134515													•			•				•					•	•
Access Cover, Rear*		021301R*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*					*	*	*	*	*	*
Access Cover, Rear**		023212								**	**	**	**	**	**			**	**	**	**	**						
Access Cover, Screws (2)		021302																										

NOTE: Capacitor Cover 132539 is utilized on 98J610, 98J615 and 98J630 single phase motors.

(†) To replace both the switch and governor, use switch & governor kit 022546. This kit applies to all 98 series motors regardless of date code. Kit 022546 contains governor, switch & terminal board, snap ring and spring washer

(††) Governor Kit 022545 contains governor, snap-ring and spring washer

(*) Access cover 021301R Includes cover, screws & wiring diagram

(**) Access cover 023212 used on all 98H motors and all pressure booster pump motors. Includes cover, screws, wiring diagram and vertical motor cover kit.

Notes