



ITT

Wastewater

Goulds Pumps

ST31 Submersible Sump/ Effluent Pump



FEATURES

- Corrosion-resistant construction.
- Cast iron body.
- Thermoplastic impeller and cover.
- Replaceable power cord.
- **Bearings:** Upper sleeve and lower heavy duty ball bearing construction.
- **Built-In Vent Hole:** Prevents air-binding with no added labor.
- Motor is permanently lubricated for extended service life and is powered for continuous operation. All ratings are within the working limits of the motor.
- Complete unit is heavy duty, portable and compact.
- Mechanical Seal: carbon/ceramic/Buna/stainless steel.
- Stainless steel fasteners and stainless steel pipe plug.

AGENCY LISTINGS



Goulds Pumps is a brand of ITT Corporation.

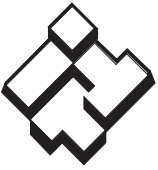
www.goulds.com

Engineered for life



Tested to UL 778 and
CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

Goulds Pumps is ISO 9001 Registered.



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GOULDS PUMPS Wastewater

APPLICATIONS

Specially designed for the following uses:

- Basement draining
- Water transfer
- Dewatering
- Effluent Transfer

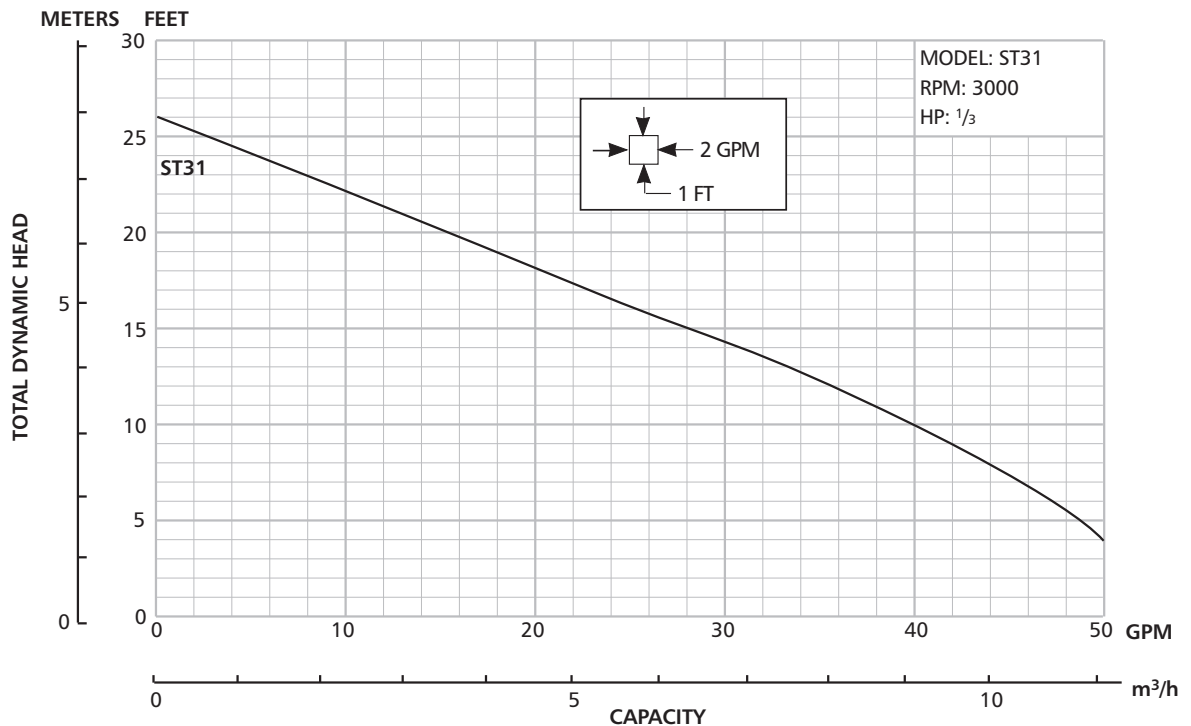
SPECIFICATIONS

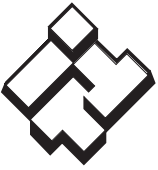
Pump:

- Discharge size: 1½" NPT
- Capacities: to 50 GPM.
- Maximum head: to 26 feet.
- Temperature: 104°F (40°C) maximum, continuous when completely submerged.
- Solids handling: ½" maximum sphere.
- Automatic models include a float switch.
- Manual model available.
- Pumping range: see performance chart or curve below.

MOTOR

- ST31: ⅓ HP, 115 V, 60 Hz, single phase, 3000 RPM, 12.0 amps maximum.
- Built-in thermal overload protection with automatic reset.
- Class B insulation.
- Oil filled design.
- High strength carbon steel shaft.
- Power cord: Quick disconnect 10 foot standard length, heavy duty 16/3 SJTW with NEMA 5-15 P three prong grounding plug, 115V.





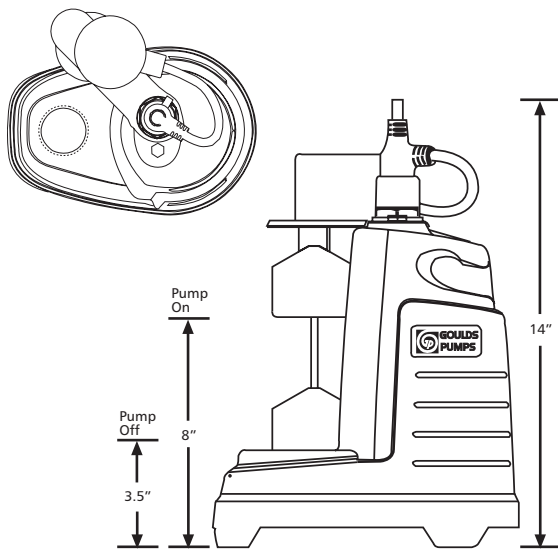
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GOULDS PUMPS Wastewater

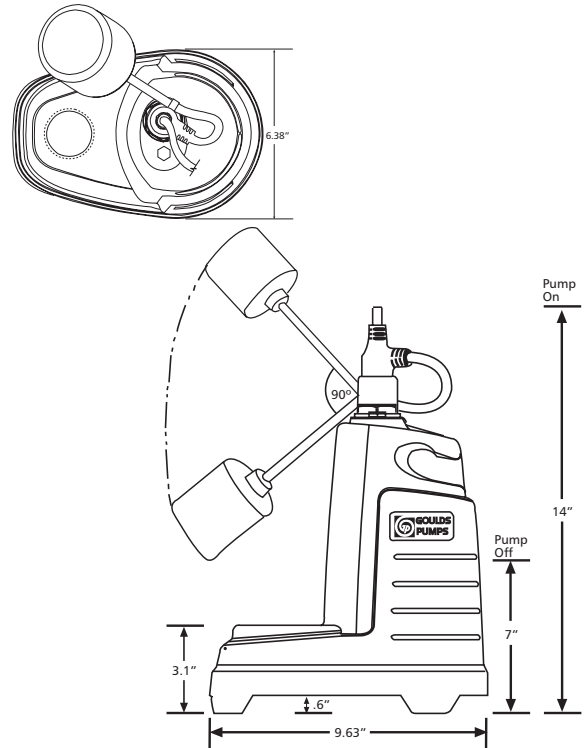
DIMENSIONS

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

Vertical Float Switch



Wide Angle Float Switch



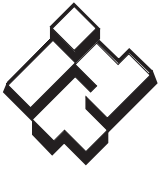
PERFORMANCE RATINGS

ST31

Total Head (feet of water)	GPM	GPH
4	50	3,000
10	40	2,340
15	28	1,680
20	15	900

MODEL INFORMATION

Order No.	HP	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum On Level	Minimum Off Level	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight lbs/kg
ST31AV	1/3	115	12.0	20	1	Built-In Vertical	10'	1 1/2"	8"	3.5"	11"	1/2	29 / 13.2
ST31A1						Built-In Wide Angle			14"	7"	18"		
ST31M						Plug / No Switch			Manual	Manual	11"		
ST31P1						Piggyback Wide Angle			14"	7"	18"		
ST31PV						Piggyback Vertical			8"	3.5"	11"		



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Wastewater



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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

BST31 March, 2007

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Engineered for life



RSES

Wastewater

Goulds Pumps

Sump, Effluent and Sewage
REPAIR PARTS

Engineered for life

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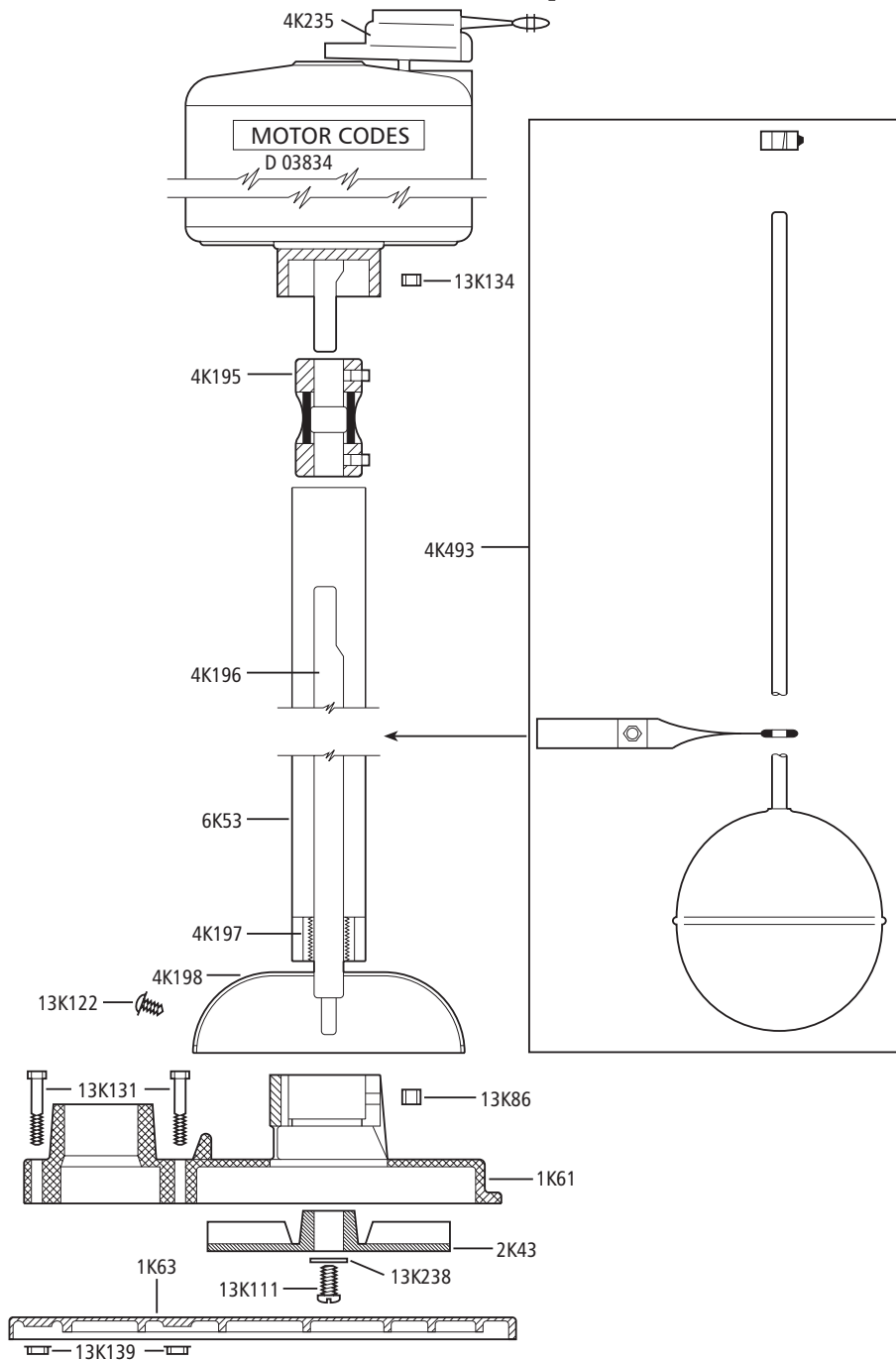
4K432 OIL SPECIFICATION:
5 gallon can of ASTM 150 Turbine Oil

COMPARABLE BRAND NAMES:

Sunoco	Sunvis 932
Mobil	DTE Light
Texaco	Regal R&O 32
Shell	Turbo 32
Gulf	Harmony 32
Amoco	Am. Industries Oil 32
Exxon	Nuto 32
Chevron	GST 32

Note: Repair Motor List Prices are in the "K", "L" and Numeric Repair Part Price Book.

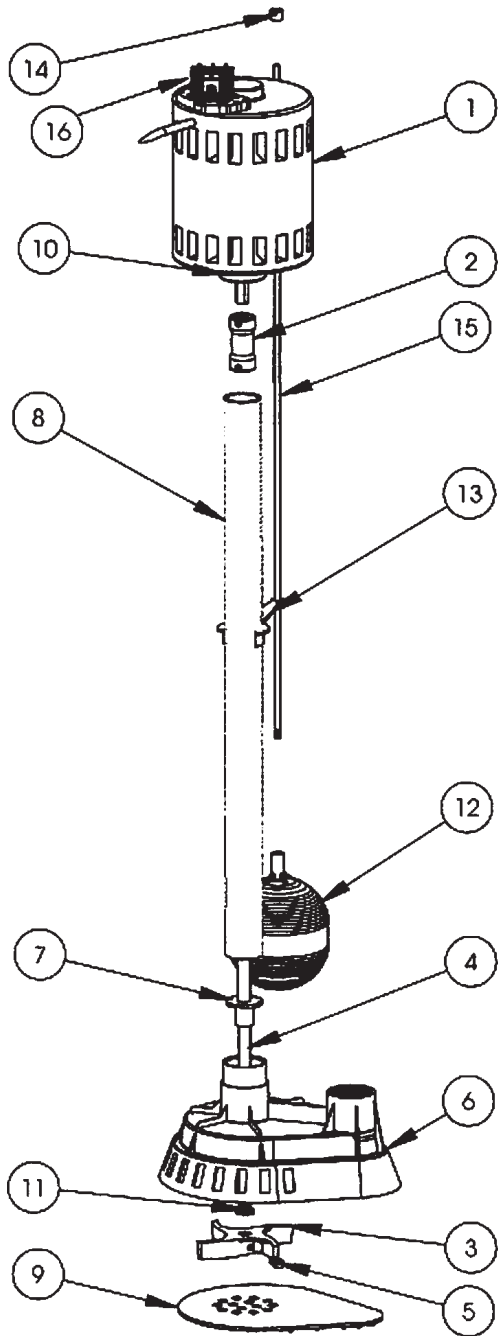
MODEL DVP (OBSOLETE) – Replace with CVP03 or PVP03



Part No.	Part Name
1K61	Casing - Obsolete - No replacement
1K610	
1K63	
2K43	Impeller
4K195	Coupling
4K196	Shaft
4K197	Bearing spider assembly
4K198	Suction strainer (obsolete, no replacement)
4K493	Float rod repair kit
4K235	Replacement switch
6K53	Column pipe with bearing
13K86	Set screw – casing $\frac{3}{16}$
13K238	Impeller washer
13K111	Impeller bolt
13L122	Screw – strainer
13K131	Bolt – base to casing
13K134	Set screw – column $\frac{1}{4}$
13K139	Flanged locknut

*Motor D03837–no longer available.

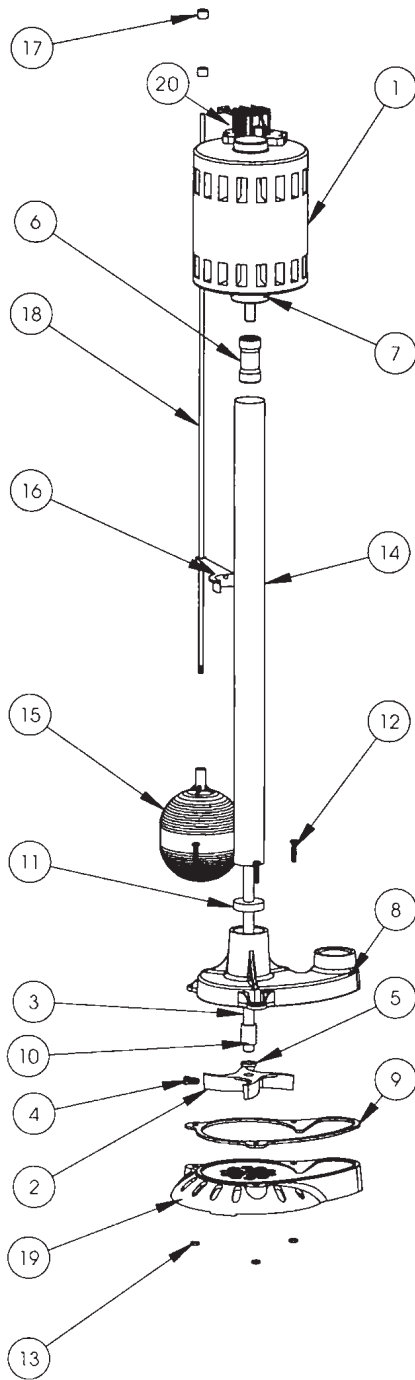
MODEL PVP03



Item Number	Part Number	Description	Quantity Required
1	3501000	Motor 1/3 HP with switch and cord	1
2	3513000	Coupling, 1/2 flexible	1
3	3511000	Impeller, CI	1
4	3523000	Shaft 304SS 1/2 X 23/8	1
5	3507000	Set screw 5/16" - 18 X 1/2" SST sq. hd.	1
6	NA	Housing, PVC	1
7	NA	Bearing nylatron	1
8	NA	Column, PVC 1 1/2 X 24 X .140	1
9	NA	Baseplate, PVC	1
10	3506000	Set screw 1/4 - 20 X 1/4 hex	3
11	3516000	Seal, cork, 1/2 X 3/4 X 1/8	1
12	3519000	Float ball	1
13	3518000	Float rod guide	1
14	3521000	Float rod stop	2
15	3520000	Float rod	1
KITS			
6, 7, 8	NA	Housing assembly and column with bearing	1 Kit
12, 13, 14, 15	3524000	Kit: float rod, ball, guide, rod stops (2)	1 Kit
16	3527000	Switch kit	1 Kit

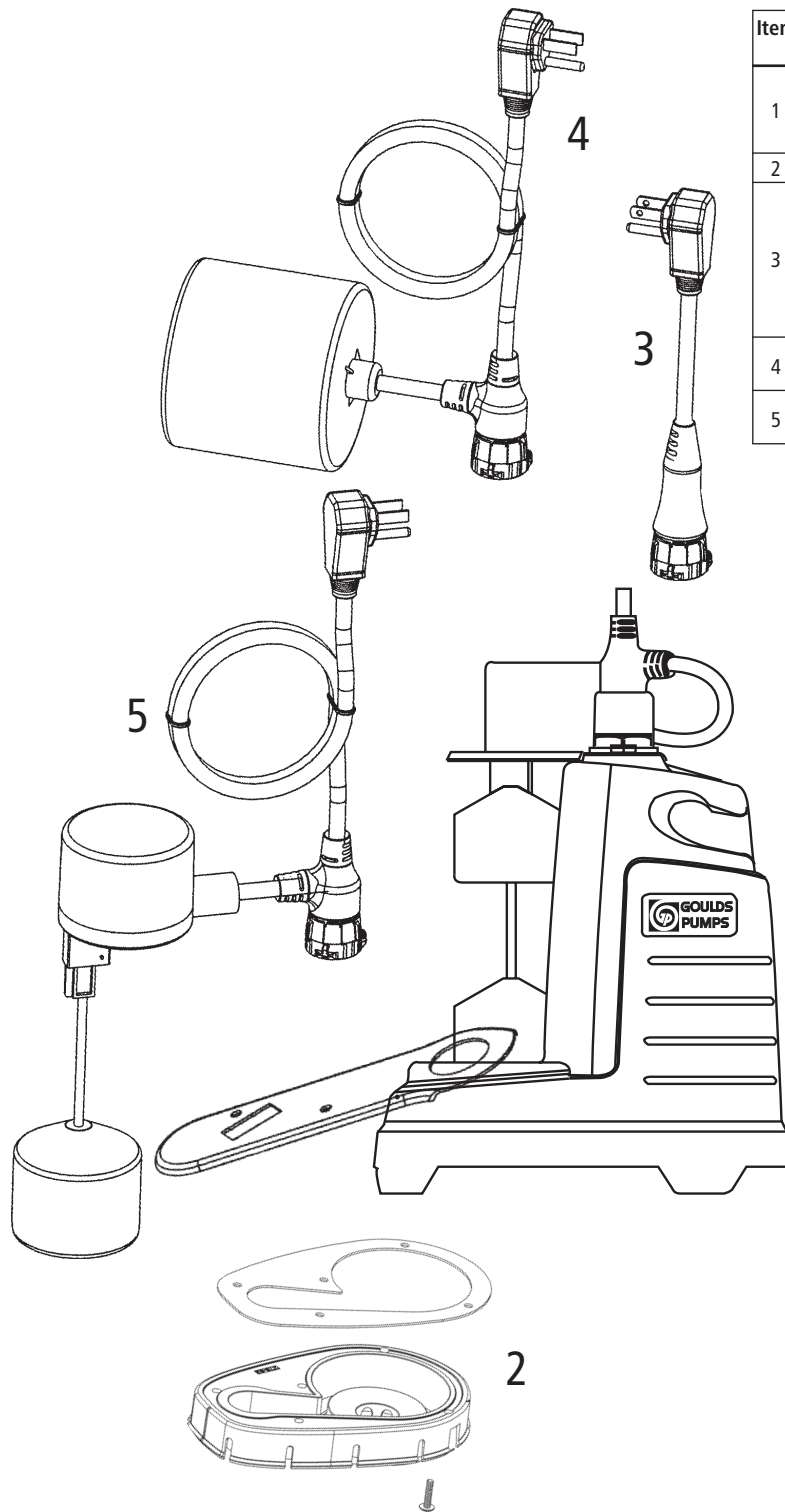
NA = No longer available

MODEL CVP03

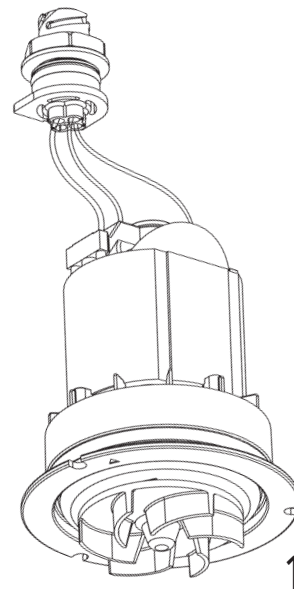


Item Number	Part Number	Description	Quantity Required
1	3501000	Motor 1/3 HP with switch & cord	1
2	3511000	Impeller, cast iron	1
3	3523000	Shaft 304SS 1/2 X 23 7/8	1
4	3507000	Set screw 5/16" - 18 X 1/2" SST sq. hd.	1
5	3516000	Seal, cork, 1/2 X 3/4 X 1/8"	1
6	3513000	Coupling, 1/2 Flexible	1
7	3506000	Set scr 1/4 - 20 X 1/4 hex	3
8	3509000	Housing, cast iron, blue	1
9	3517000	Gasket, base	1
10	3514000	Bearing, pdrmtl .5 X .75 X 1"	1
11	3515000	Washer, felt .5 x 1.5 x .375"	1
12	3508000	Screw 10-24 X 1 PH HD SS	3
13	3505000	Nut 10-24 Hex SS	3
14	3512000	Column, steel 1.5 x 24 x .049"	1
15	3519000	Float ball	1
16	3518000	Float rod guide	1
17	3521000	Float rod stop	2
18	3520000	Float rod	1
19	3510000	Base, cast iron black	1
KITS			
8, 10, 11, 14	3522000	Housing assembly & column with bearing	1 Kit
15, 16, 17, 18	3524000	KIT; float rod, ball, guide, rod stops (2)	1 Kit
20	3527000	Switch kit	1 Kit

MODEL ST



Item	Part Name	Description	Part No.
1	1/5 HP Motor Assembly- 115 Volt	Motor, Seal Housing,	15K26
	1/2 HP motor Assembly- 115 Volt	Receptacle, Jam Nut, O-Ring,	15K28
	3/4 HP motor Assembly- 115 Volt	Mechanical Seal, Impeller	15K29
2	Base Assembly	Base, Gasket, Screws	15K27
3	Cord Set- 115 Volt	10' Cord Set with 5-15P Nema Plug (used with piggyback float)	9K372
	Cord Set- 115 Volt	20' Cord Set with 5-15P Nema Plug (used with piggyback float)	9K375
4	Cord Set- 115 Volt and float assembly	10' Pumpmaster with bracket-cord	9K373
5	Cord Set- 115 Volt and float assembly	10' Verticalmaster with bracket- cord	9K374



MODEL SPBB/SPBB2

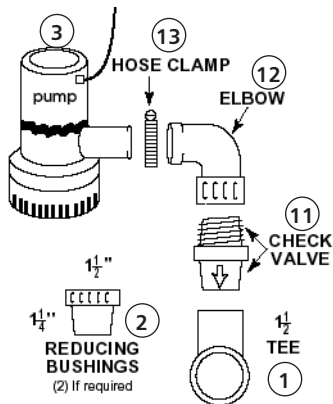


Figure 1

Item Number	Part Description	Material	Quantity Required	Repair Part SPBB	Repair Part SPBB2
1	Tee, 1 1/2" Socket	Thermoplastic	1	6K146	
2	Reducing Bushing, 1 1/2" x 1 1/4"	Thermoplastic	2	4K499	
3	Pump - 2000GPH or 3700GPH	Varies	1	9K318	9K499
4	Float Switch Assembly	—	1	9K319	
5	Fuse Holder	—	1	9K320	
6	Fuse - 15 Amps/25 Amps	—	1	9K321	9K565
7	Wire Terminals	—	1	9K322	
			1	9K323	
			2	9K324	
			3	9K325	
8	Terminals - Top Post Battery	—	2	9K326	
9	Battery Case	Thermoplastic	1	9K327	
10	Charger Assembly	—	1	9K328	
11	Check Valve - 1" MPT	Thermoplastic	1	6K147	6K174
12	Elbow - 1" FPT	Thermoplastic	1	6K148	6K175
13	Hose Clamp	—	1	4K497	
14	Pump / Switch Bracket	—	1	9K329	
15	Hose Clamp	—	1	4K498	

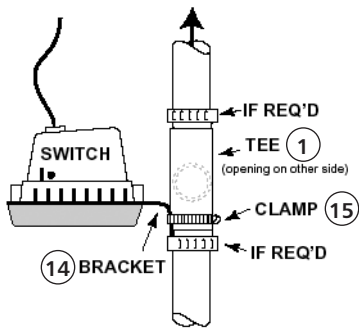


Figure 2

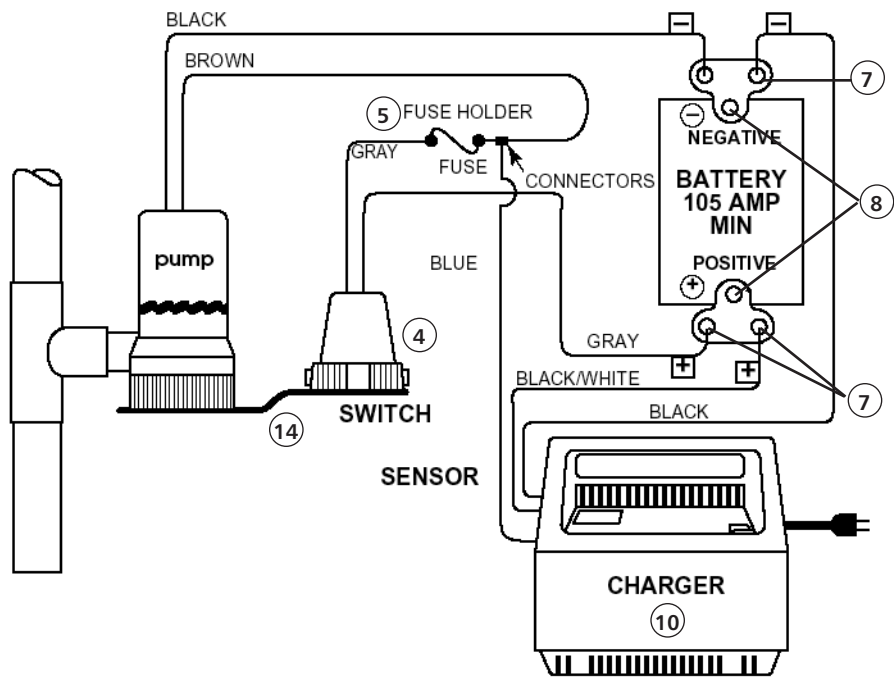


Figure 4

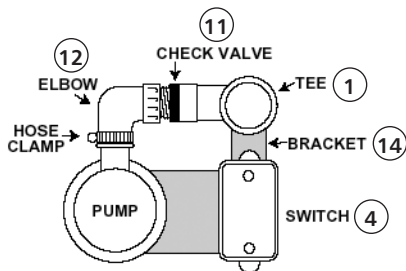
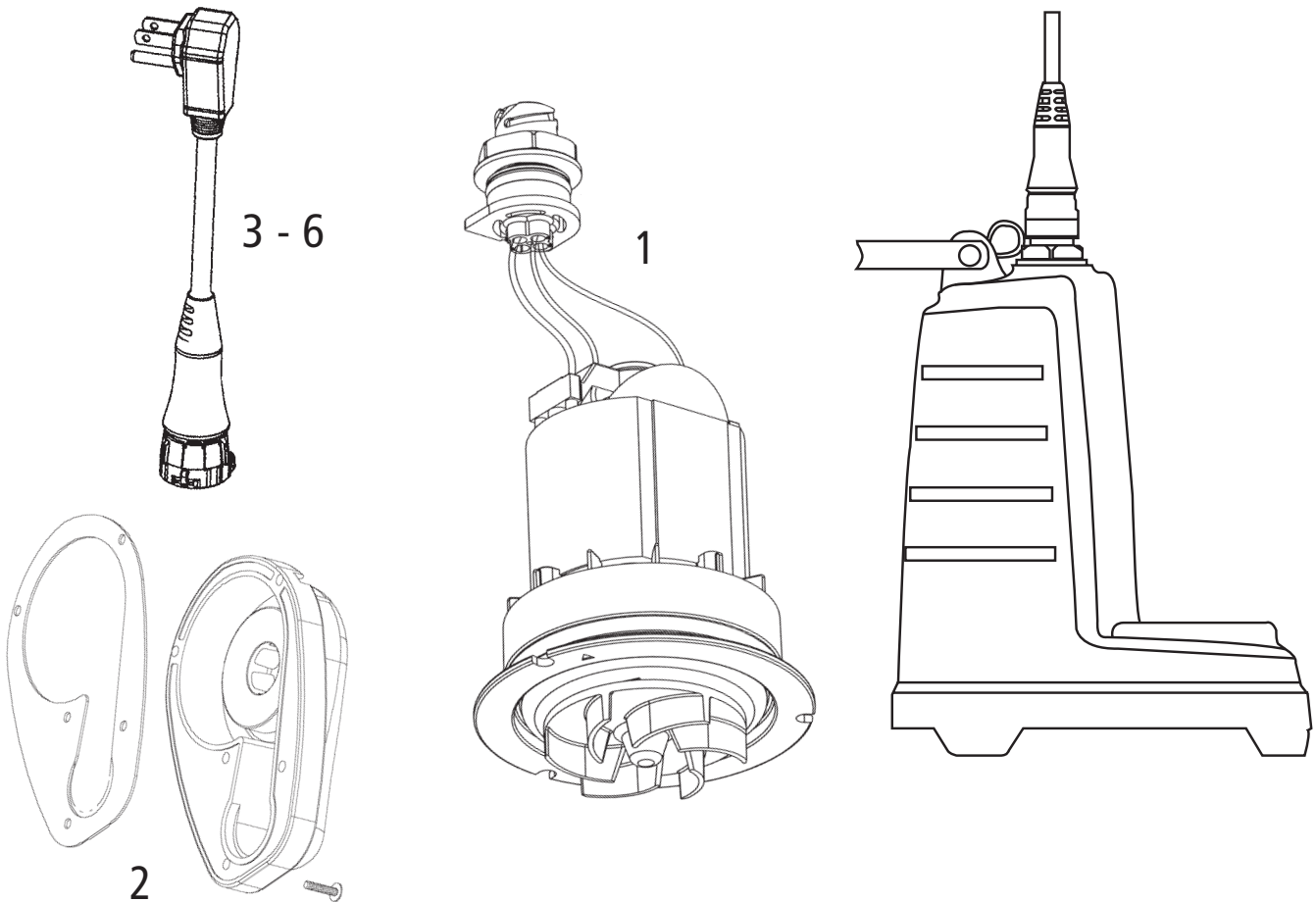


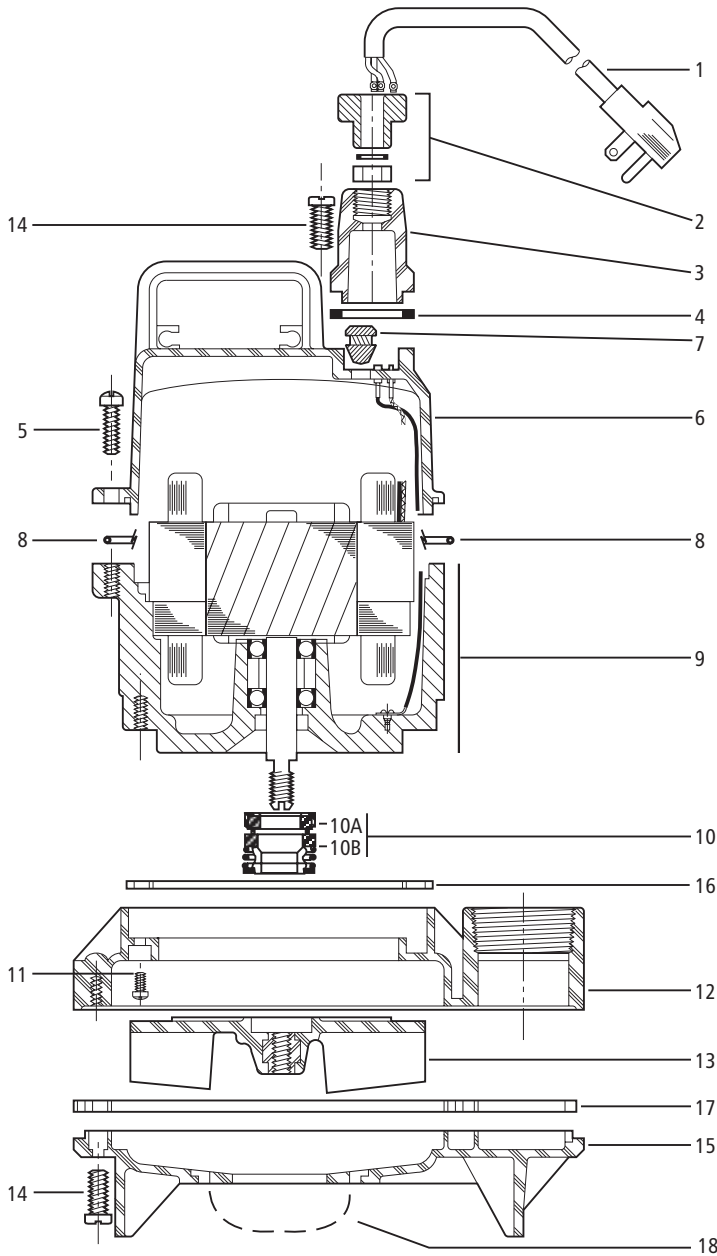
Figure 3

MODEL PE

Item Number	Part Name	Description	Repair Part Order Number
1	1/3 HP Motor Assembly – 115V	Motor, Seal Housing, Receptacle, Jam Nut, O-ring, Mechanical Seal, Impeller	15K26
	4/10 HP Motor Assembly – 115V		15K28
	1/2 HP Motor Assembly – 115V		15K29
	4/10 HP Motor Assembly – 230V		15K45
	1/2 HP Motor Assembly – 230V		15K46
2	Base Assembly	Base, Gasket, Screws	15K27
3	Cord Set – 115V	10' Manual – 115V with 5-15P Nema Plug	9K372
4		20' Manual – 115V with 5-15P Nema Plug - Standard	9K375
5		30' Manual – 115V with 5-15P Nema Plug	9K380
6		50' Manual – 115V with 5-15P Nema Plug	9K377
		30' Pumpmaster – 115V with 5-15P Nema Plug	9K446
—		Cord Set – 230V	20' Manual – 230V with 6-15P Nema Plug - Standard
—	30' Manual – 230V with 6-15P Nema Plug		9K422
—	Float Switch – 115V	10' Pumpmaster with Hardware - 115V, 13A	A2D11
		20' Pumpmaster with Hardware - 115V, 13A	A2D31
		30' Pumpmaster with Hardware - 115V, 13A	A2D51
—	Float Switch – 230V	20' Pumpmaster with Hardware - 230V, 13A	A2D32
		30' Pumpmaster with Hardware - 230V, 13A	A2D52



MODEL 3871 – EP04/EP05 Series



Item No.	Part Description	Material	Qty. Req.	Repair Part Order No.
1	10' Cord Set with Plug - 115 V	SJTOW - 16/3	1	9K207
	10' Cord Set with Plug - 230 V			9K208
	20' Cord Set with Plug - 115 V			9K209
	20' Cord Set with Plug - 230 V			9K210
	30' Cord Set with Plug - 115 V*			9K403
2	Strain Relief Assembly, Cord Set	Varies	1	5K113
3	Gland Nut Housing	Thermoplastic	1	9K226
4	O-ring - gland nut housing	Buna-N, AS 568A-024		5K197
5	Fillister Head Screw - Motor Cover	AISI 300 SS	4	13K347
6	Motor Cover	Thermoplastic	1	1K257
7	Oil Plug Grommet	Buna-N	1	6K87
8	O-ring - Motor Cover	Buna-N, AS 568A-161	1	5K196
9	Motor Assembly - 115V, 4/10 HP	Varies	1	1K282
	Motor Assembly - 230V, 4/10 HP			1K283
	Motor Assembly - 115 V, 1/2 HP			1K284
	Motor Assembly - 230 V, 1/2 HP			1K285
10	Mechanical Seal Assembly - Type 16	Carbon/Ceramic	1	10K32
11	Fillister Head Screw - Casing	AISI 300 SS	4	13K347
12	Casing	Thermoplastic	1	1K233
13	Impeller - (EP04 - 4/10 HP)	Thermoplastic	1	2K498
	Impeller - (EP05 - 1/2 HP)			2K731
14	Thread Forming Screw	AISI 300 SS	10	13K243
15	Base	Thermoplastic	1	1K258
16	Gasket - Motor Adapter	Composite	1	5K182
17	Gasket - Casing	Composite	1	5K219
18	Strainer	Thermoplastic	1	4K528
	Insulating Oil - see note on Index page	Turbine Oil - ATSM 150	—	4K432

Item No. 9 includes motor adapter, rotor, stator, tolerance ring, ground wire and ground screw.

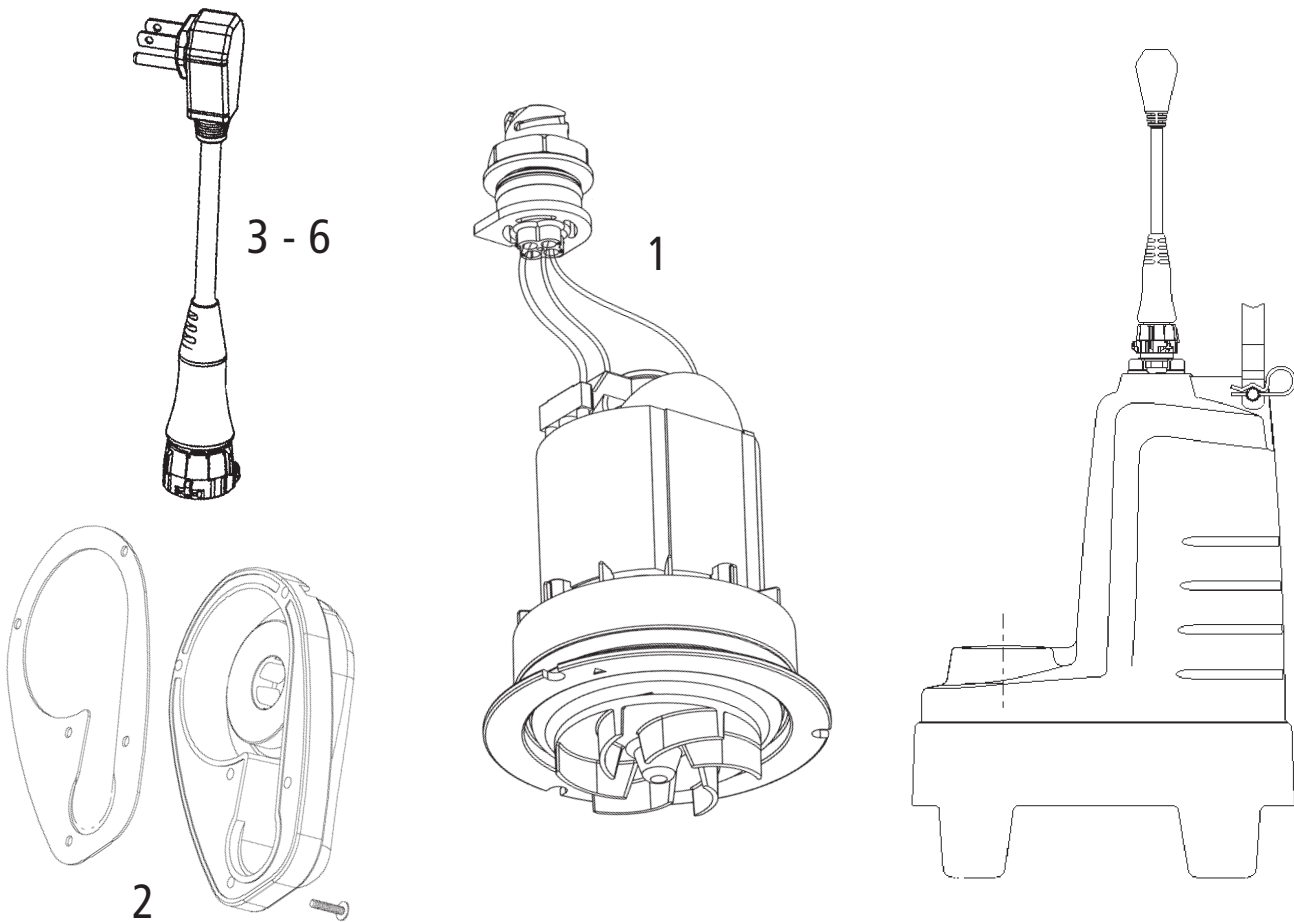
4/10 HP – 1 quart of insulating oil required.

1/2 HP – .85 quarts of insulating oil required.

* Effective December 3, 2003.

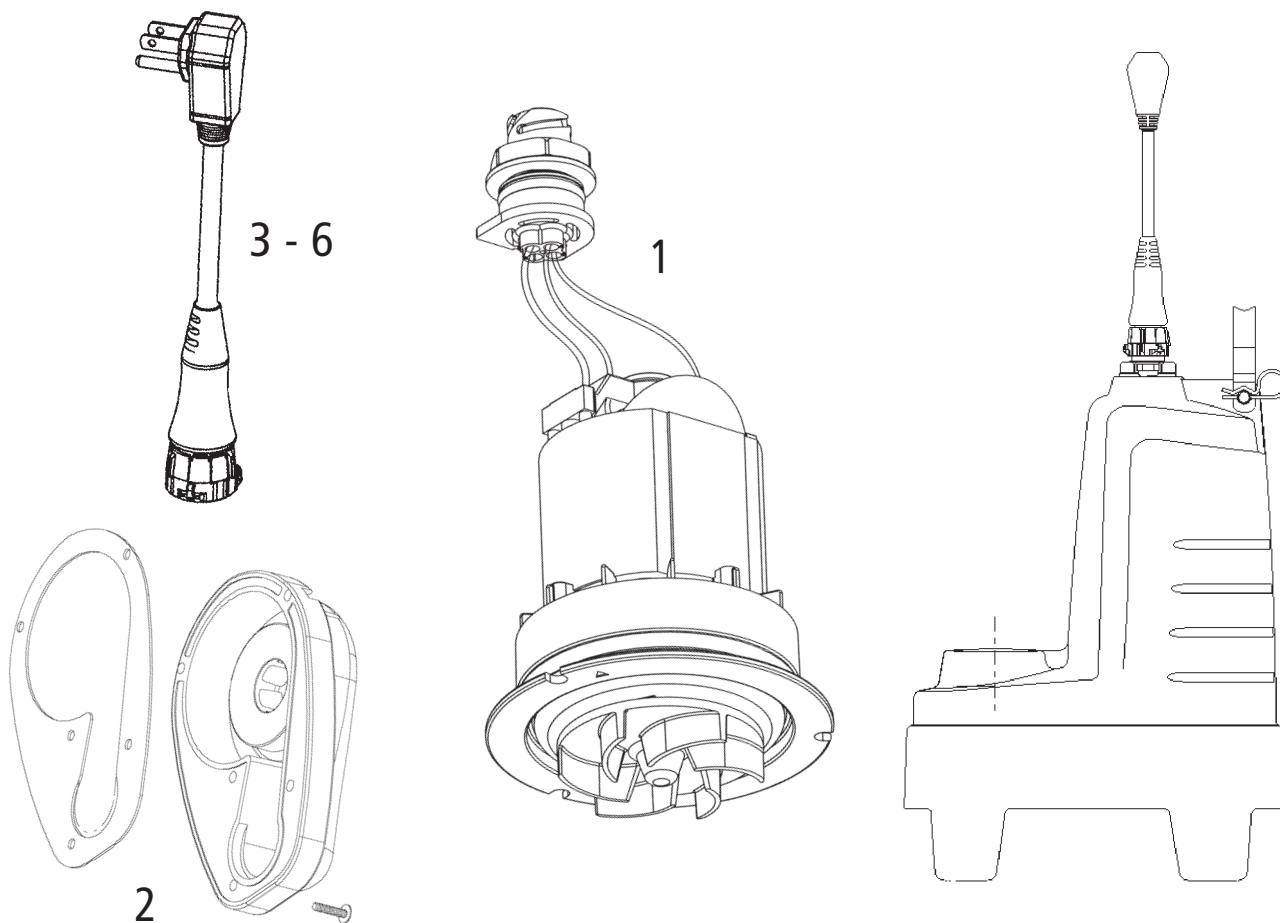
MODEL PS41, 51

Item Number	Part Name	Description	Repair Part Order Number
1	4/10 HP Motor Assembly – 115V	Motor, Seal Housing, Receptacle, Jam Nut, O-ring, Mechanical Seal, Impeller	15K30
	1/2 HP Motor Assembly – 115V		15K31
	4/10 HP Motor Assembly – 230V		15K47
	1/2 HP Motor Assembly – 230V		15K48
2	Base Assembly	Base, Gasket, Screws	15K39
3	Cord Set – 115V	10' Manual – 115V with 5-15P Nema Plug	9K372
4		20' Manual – 115V with 5-15P Nema Plug - Standard	9K375
5		30' Manual – 115V with 5-15P Nema Plug	9K380
6		50' Manual – 115V with 5-15P Nema Plug	9K377
		30' Pumpmaster – 115V with 5-15P Nema Plug	9K446
—		Cord Set – 230V	20' Manual – 230V with 6-15P Nema Plug - Standard
—	30' Manual – 230V with 6-15P Nema Plug		9K422
—	Float Switch – 115V	10' Pumpmaster with Hardware - 115V, 13A	A2D11
		20' Pumpmaster with Hardware - 115V, 13A	A2D31
		30' Pumpmaster with Hardware - 115V, 13A	A2D51
—	Float Switch – 230V	20' Pumpmaster with Hardware - 230V, 13A	A2D32
		30' Pumpmaster with Hardware - 230V, 13A	A2D52

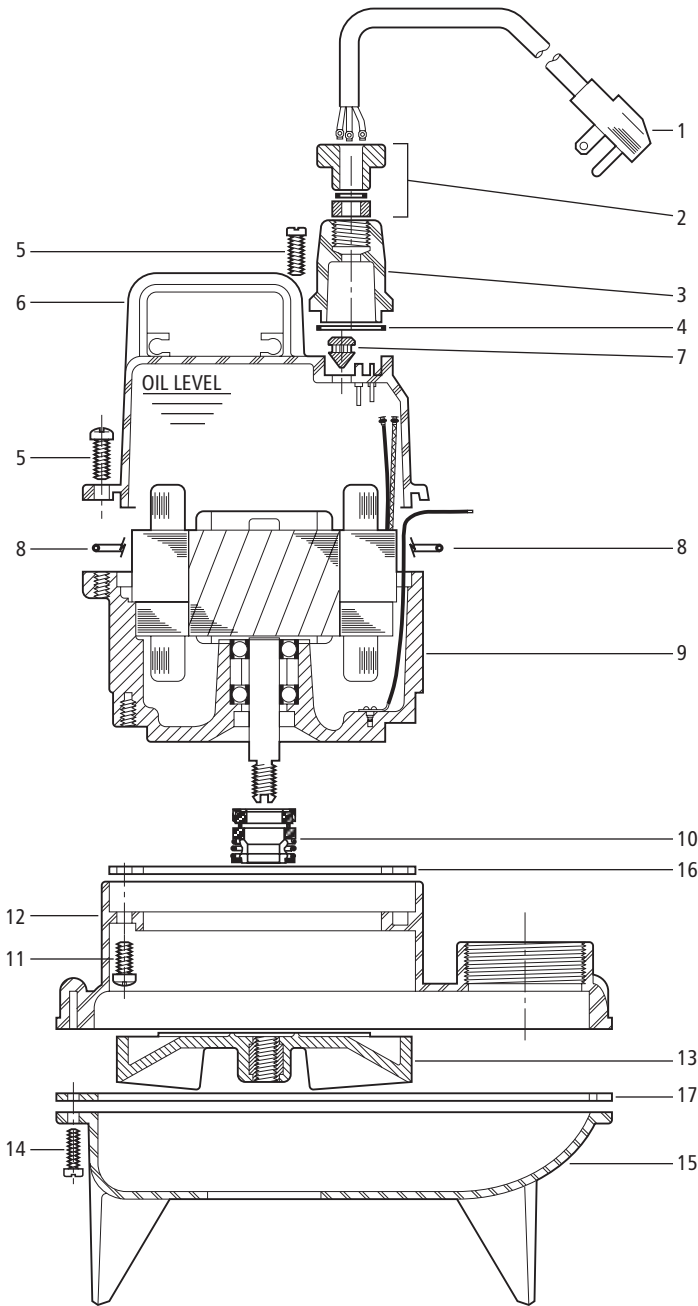


MODEL PV51 – Vortex

Item Number	Part Name	Description	Repair Part Order Number
1	½ HP Motor Assembly – 115V	Motor, Seal Housing, Receptacle, Jam Nut, O-Ring, Mechanical Seal, Impeller	15K58
	½ HP Motor Assembly – 230V		15K59
2	Base Assembly	Base, Gasket, Screws	15K57
3	Cord Set – 115V	10' Manual – 115V with 5-15P Nema Plug	9K372
4		20' Manual – 115V with 5-15P Nema Plug - Standard	9K375
5		30' Manual – 115V with 5-15P Nema Plug	9K380
6		50' Manual – 115V with 5-15P Nema Plug	9K377
7		30' Pumpmaster – 115V with 5-15P Nema Plug	9K446
8		Cord Set – 230V	20' Manual – 230V with 6-15P Nema Plug - Standard
9	30' Manual – 230V with 6-15P Nema Plug		9K422
10	Float Switch – 115V	10' Pumpmaster with Hardware - 115V, 13A	A2D11
		20' Pumpmaster with Hardware - 115V, 13A	A2D31
		30' Pumpmaster with Hardware - 115V, 13A	A2D51
11	Float Switch – 230V	20' Pumpmaster with Hardware - 230V, 13A	A2D32
		30' Pumpmaster with Hardware - 230V, 13A	A2D52



MODEL 3872 – WW05 Series



Item No.	Part Description	Material	Qty. Req.	Repair Part Order No.
1	10' Cord Set with Plug - 115 V	SJTOW - 16/3	1	9K207
	10' Cord Set with Plug - 230 V			9K208
	20' Cord Set with Plug - 115 V			9K209
	20' Cord Set with Plug - 230 V			9K210
2	Strain Relief Assembly, Cord Set	Varies	1	5K113
3	Gland Nut Housing	Thermoplastic	1	9K226
4	O-ring - gland nut housing	Buna-N, AS 568A-024		5K197
5	Fillister Head Screw - Motor Cover	AISI 300 SS	4	13K347
6	Motor Cover	Thermoplastic	1	1K257
7	Oil Plug Grommet	Buna-N	1	6K87
8	O-ring - Motor Cover	Buna-N, AS 568A-161	1	5K196
9	Motor Assembly - 115 V, 1/2 HP	Varies	1	1K284
	Motor Assembly - 230 V, 1/2 HP			1K285
10	Mechanical Seal Assembly - Type 16	Carbon/Ceramic	1	10K32
11	Fillister Head Screw - Casing	AISI 300 SS	4	13K347
12	Casing	Thermoplastic	1	1K274
13	Impeller	Thermoplastic	1	2K494
14	Thread Forming Screw	AISI 300 SS	10	13K243
15	Base	Thermoplastic	1	1K275
16	Gasket - Motor Adapter	Composite	1	5K182
17	Gasket - Casing	Composite	1	5K217
	Insulating Oil - see note on Index page	Turbine Oil - ATSM 150	—	4K432

Item No. 9 includes motor adapter, rotor, stator, tolerance ring, ground wire and ground screw.

1/2 HP – .85 quarts of insulating oil required.

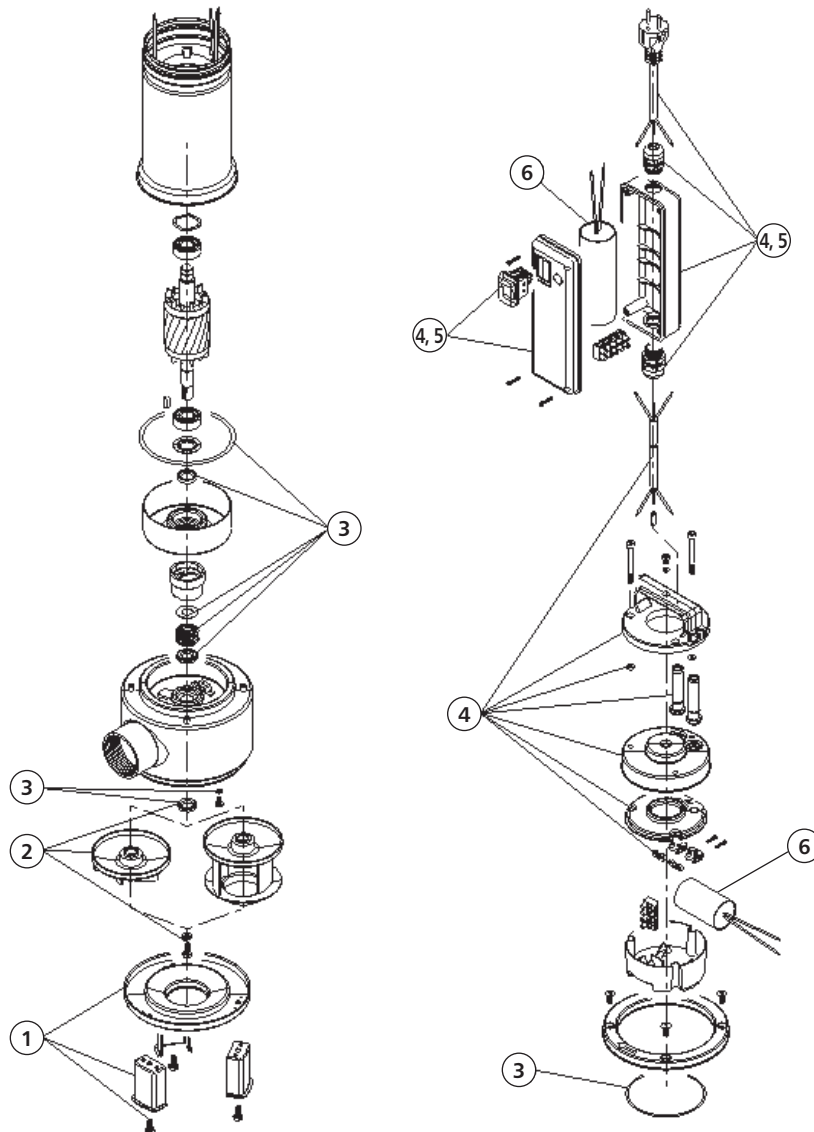
MODEL 1/2DM, 1/2DV

Item Number	Part Description	Repair Parts Order Number			
		½ HP	¾ HP	1 HP	1½ HP
1	Base Package (Suction Flange, Feet, Screws)	15L1	15L2		
2	DV Impeller Package (Impeller, Screw, Key, V-Ring)	15L3	15L4	15L5	15L6
	DM Impeller Package (Impeller, Screw, Key, V-Ring)	15L7	15L8	15L9	15L10
3	Pump Seal Package (V-Ring, Mechanical Seal, O-Rings)	15L11			
4*	Cord / Handle / Capacitor Box Assembly	115V, Single Phase	15L60	N/A	
	Cord / Handle Assembly	230V, Single Phase	15L61		N/A
		230/460V, Three Phase	15L62		
4**	Cord / Handle / Capacitor Box Assembly	115V, Single Phase	15L58	N/A	
		230V, Single Phase	15L13		15L59
5	Capacitor Box / Cord Assembly	15L51	N/A	15L57**	N/A
6	Capacitor - pumps built after June, 2002	115V, Single Phase	9L122		
		230V, Single Phase	9L113	9L123	9L124

* After 11/04

** Used from 6/02 to 11/04

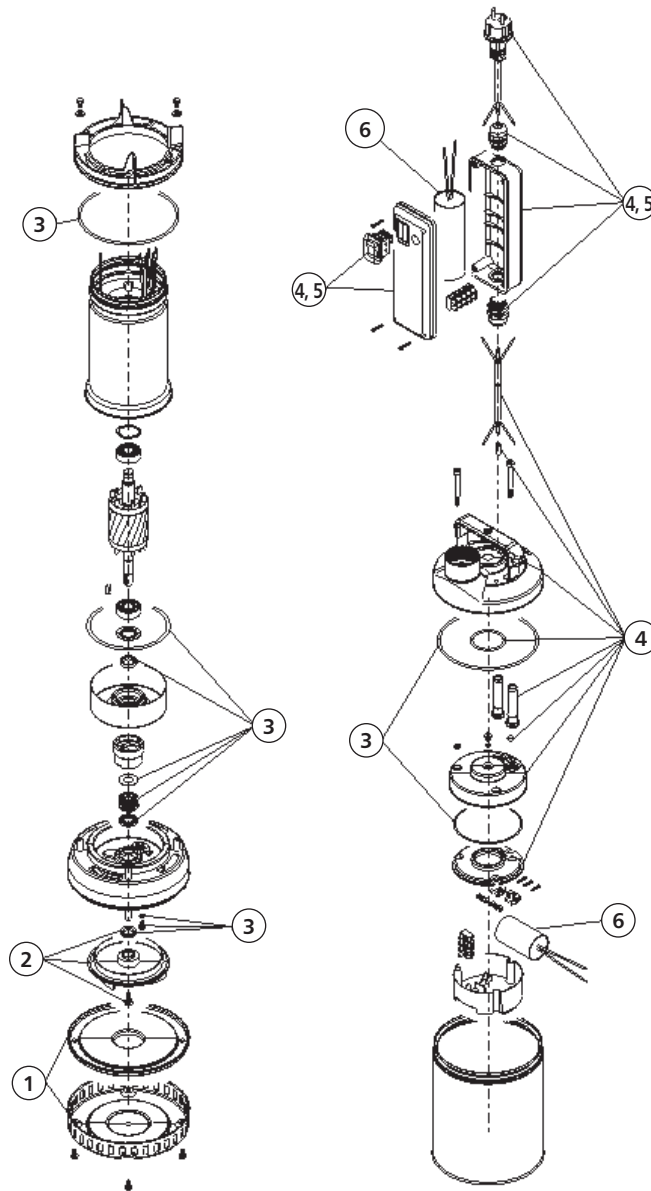
Capacitors not available for pumps before June, 2002.



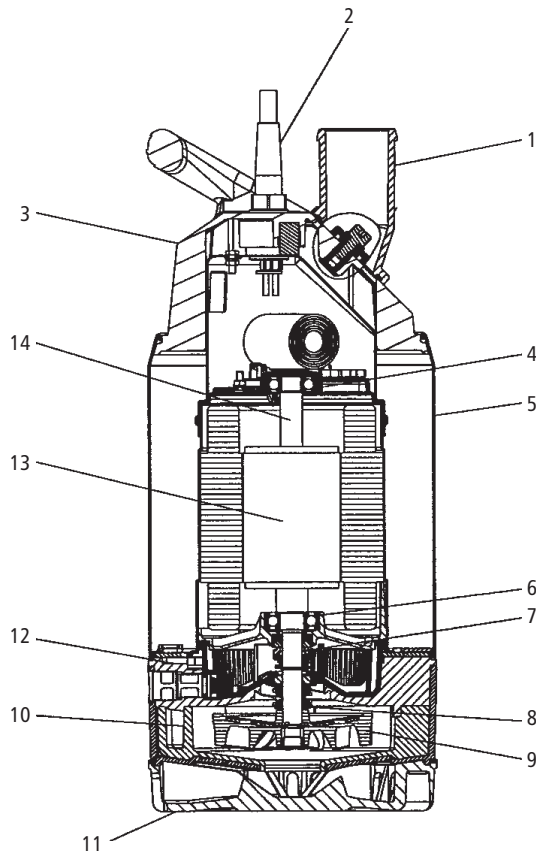
MODEL 1DW

Item Number	Part Description	Repair Parts Order Number			
		½ HP	¾ HP	1 HP	1½ HP
1	Strainer Package (Suction Flange and Strainer)	15L17			
2	Impeller Package (Impeller, Screw, Key, V-Ring)	15L19	15L20	15L21	15L22
3	Pump Seal Package (V-Ring, Mechanical Seal, O-Rings)	15L23			
4	Cord / Handle / Capacitor Box Assembly	115V, Single Phase	15L54	N/A	
		230V, Single Phase	15L55		N/A
	Cord / Handle Assembly	230/460V, Three Phase	15L56		
5	Capacitor Box / Cord Assembly	15L51		15L16	N/A
6	Capacitor - pumps built after June, 2002	115V, Single Phase	9L122	N/A	
		230V, Single Phase	9L113	9L123	9L124

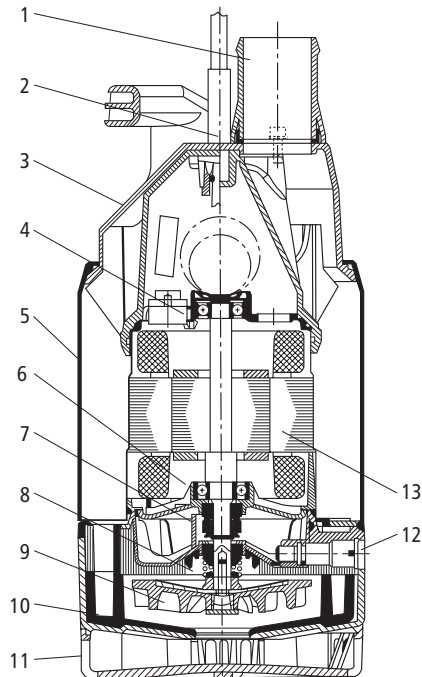
Capacitors not available for pumps before June, 2002.



MODEL 2DW



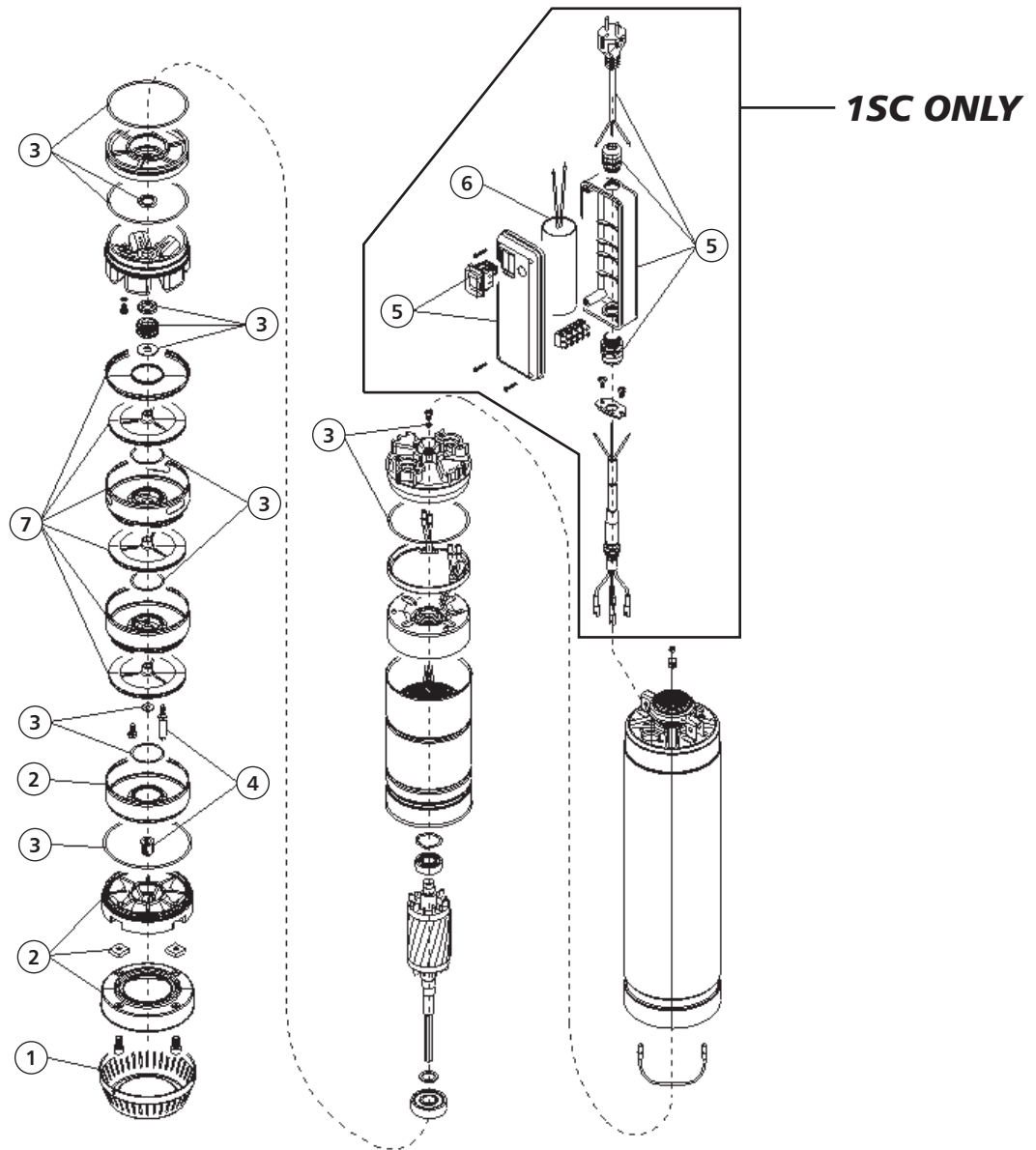
New Style



Old Style

Item No.	Part Description	Qty. R'qd.	Repair Part Order No.	
			After 8/05	Before 8/05
1	Discharge Connection Kit	1	6K171	6K167
2	Cordset - 1 Phase, 115V		9K497	9K386
	Cordset - 1 Phase, 230V		9K498	9K387
3	Handle / Cover		—	—
4	Bearing - Upper		—	—
5	Casing		—	—
6	Bearing - Lower		—	—
7	Mechanical Seal - Lower		—	—
8	Mechanical Seal - Upper		—	—
9	Impeller		—	—
10	Diffuser		—	—
11	Strainer		—	—
12	Plug - Oil		—	—
13	Motor	—	—	
Kits		Kit		
Impeller - ½ HP	Impeller, Impeller Screw, Protective Plug, Washer, Assembly Instructions	1	15K11	
Impeller - 1 HP			15K73	
Diffuser	Diffuser, Screws, Washers, Assembly Instruction		15K62	15K13
Mechanical Seal - Lower	Mechanical Face-Seal Unit, Assembly Instruction		15K14	
Mechanical Seal-Upper & Lower	Complete Mechanical Seal Kit		15K41	
Ball Bearing Kit	Upper and Lower Ball Bearings		15K42	
O-Ring Kit (Complete Set)	Complete O-Ring Set		15K63	15K43

MODELS SE and 1SC



MODEL SE

Item Number	Part Description	Repair Parts Order Number		
		8SE	16SE	26SE
1	Suction Strainer	15L28		
2	Lower Bearing Support Package	15L29		
3	Pump Seal Package (Mechanical Seal and O-Rings) – New	15L52		
4	Bushing Package	15L31	N/A	N/A
5	Power Cord - 16/3 SJTW x 10 ft. with Bare Leads	115V, Single Phase	9L120	
		230V, Single Phase		
6	Capacitor	115V, Single Phase	9L118 (50 mfd, 250V)	
		230V, Single Phase	9L119 (16 mfd, 450V)	
7	Impeller / Diffuser Package	15L53 (4)	15L33 (3)	15L34 (3)

MODEL 1SC - After 5/06

Item Number	Part Description	Repair Parts Order Number		
		½ HP – 3 Stage	¾ HP – 4 Stage	1 HP – 5 Stage
1	Suction Strainer	15L28		
2	Lower Bearing Support Package	15L29		
3	Pump Seal Package (Mechanical Seal and O-Rings) – New	15L52		
4	Bushing Package	N/A		15L31
5	Capacitor Box / Cord Assembly	115V, Single Phase	15L51	
		230V, Single Phase	N/A	
	Cord Assembly	230V, Three Phase	9L121 (6-15P Plug)	
6	Capacitor	115V, Single Phase	9L125	
		230V, Single Phase	No Longer Available	
7	Impeller / Diffuser Package – Low Flow	15L114 (25 mfd, 450V)	9L124 (30 mfd, 450V)	
	Impeller / Diffuser Package – High Flow	15L33 (3)	15L33 (4)	15L33 (5)
		15L34 (3)	15L34 (4)	15L34 (5)

MODEL 1SC - 6/02 to 5/06

Item Number	Part Description	Repair Parts Order Number		
		½ HP – 3 Stage	¾ HP – 4 Stage	1 HP – 5 Stage
1	Suction Strainer	15L28		
2	Lower Bearing Support Package	15L29		
3	Pump Seal Package (Mechanical Seal and O-Rings) – New	(15L30 Obs.) - 15L52		
4	Bushing Package	15L31		
5	Capacitor Box / Cord Assembly	115V, Single Phase	15L51	
		230V, Single Phase	N/A	
6	Capacitor	115V, Single Phase	15L16	
		230V, Single Phase	15L57	
7	Impeller / Diffuser Package – Low Flow	9L122 (70 mfd, 250V)	N/A	
		230V, Single Phase	9L114 (25 mfd, 450V)	
		15L33 (3)	15L33 (4)	15L33 (5)
		15L34 (3)	15L34 (4)	15L34 (5)

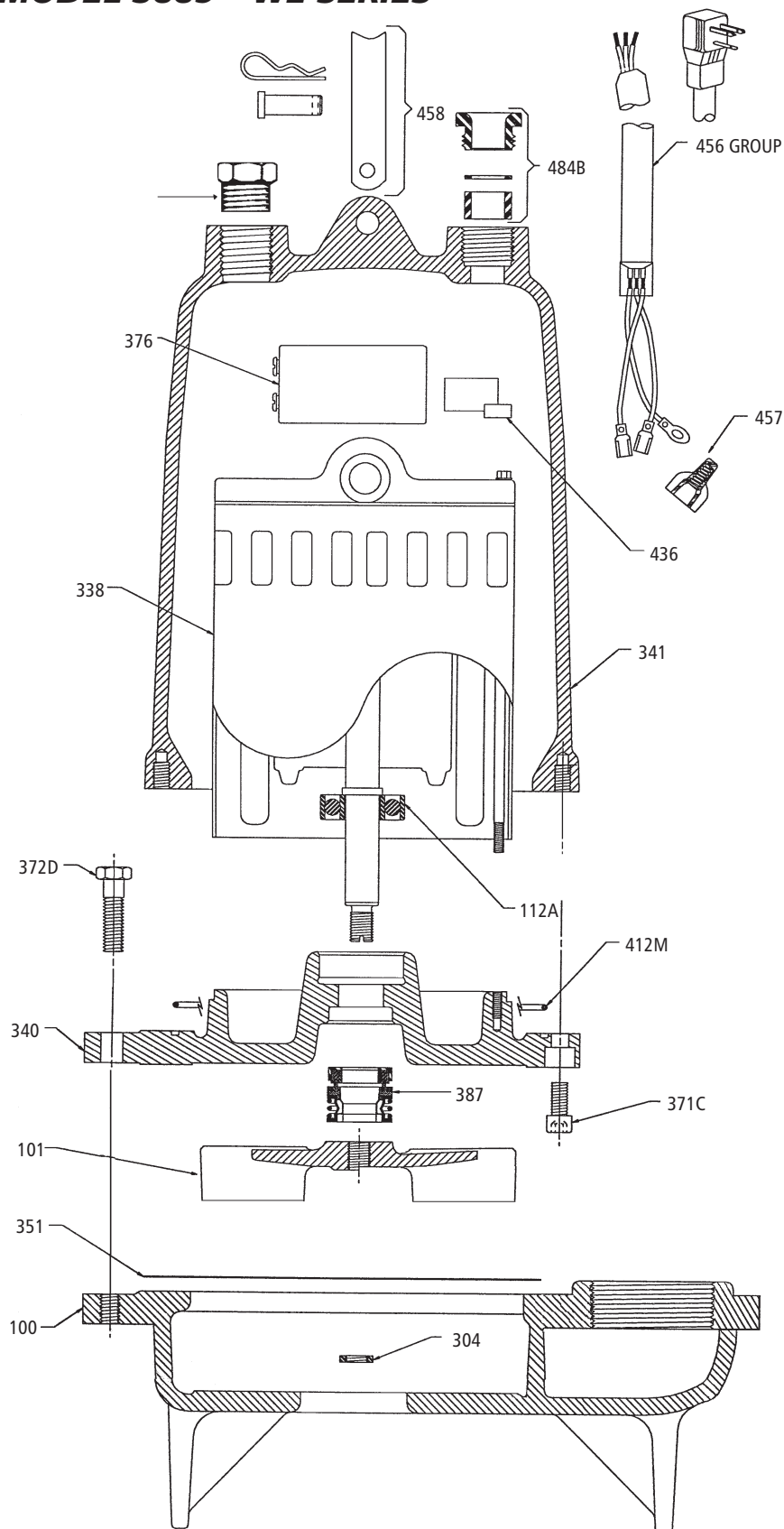
MODEL 1SC - 4/97 to 6/02

Item Number	Part Description	Repair Parts Order Number		
		½ HP – 3 Stage	¾ HP – 4 Stage	1 HP – 5 Stage
1	Suction Strainer	15L28		
2	Lower Bearing Support Package	15L29		
3	Pump Seal Package (Mechanical Seal and O-Rings) – New	(15L30 Obs.) - 15L52		
4	Bushing Package	15L31		
5	Capacitor Box / Cord Assembly	230V, Single Phase	15L16	
6	Capacitor	115V, Single Phase	15L32	
		230V, Single Phase	No Longer Available	
7	Impeller / Diffuser Package – Low Flow	9L113 (20 mfd, 450V)	9L114 (25 mfd, 450V)	
		230V, Single Phase		
		15L33 (3)	15L33 (4)	15L33 (5)
		15L34 (3)	15L34 (4)	15L34 (5)

Old Pump had a single mechanical seal and the capacitor was located outside the pump.

New Pump has a dual mechanical seal and the capacitor is located inside the pump (except ½ HP, 1/60/115 V model).

MODEL 3885 – WE SERIES



CAPACITOR DATA		
"K" no.	MFD	VAC
9K197	161/193	110
9K351	30	370
9K352	200/240	220

MODEL 3885 – WE SERIES

Item No.	Part Description	Material	Qty. Req'd.	Repair Parts Order Number						Max. Wt. (lbs.)
				1725 RPM		3450 RPM				
				½ HP	½ HP	¾ HP	1 HP	1½ HP	2 HP	
100	Casing – ½ HP "L" Model Only 59115	Cast Iron	1	1K171	N/A					13.0
	Casing – All Others (M, H, HH) 59114			N/A	1K170					
101	Impeller	Cast Iron	1	2K158	2K220	2K219	2K218	2K217	2K840	2.0
	Impeller	Bronze		2K271	2K272	2K273	2K274	2K275	2K841	2½
	Impeller – High Head "HH"	Cast Iron		N/A	2K225	N/A	N/A	2K221	N/A	3½
	Impeller – High Head "HH"	Bronze		N/A	2K276	N/A	N/A	2K277	N/A	4.0
112A	Lower Ball Bearing	Steel	1	4K132				4K384	–	
112B	Upper Ball Bearing	Steel	1	4K132					–	
218	Insulating Turbine Oil	ASTM150		4K432 (1 gallon ½-1½ HP, .88 gallons 2 HP)					7½ lbs./gal.	
304	Impeller Locknut - All	AISI 300 SS	1	13K286					–	
338	Motor	Motor with Stainless Steel Shaft	1	118-121R	118-1222R	N/A	N/A	N/A	N/A	13.0 to 24.0
				118-1215R	118-1236R	118-1236R	118-1238R	118-1238R	N/A	
				118-122R	118-1223R	118-1232R	118-1233R	118-1234R	120-845R	
				N/A	118-1333R	118-1334R	118-1335R	118-1336R	120-8425R	
				N/A	118-1321R	118-1322R	118-1323R	118-1324R	120-8425R	
				N/A	118-1328R	118-1330R	118-1330R	118-1331R	120-8435R	
340	Seal / Bearing Housing	Cast Iron	1	1K167				1K332	10.0	
341	Motor Cover	Cast Iron	1	1K207			1K208		23.0	
				N/A	1K208					
351	Casing Gasket - All Except "HH"	Composite	1	5K170				–		
	Shim Set - "HH" Models Only	Plastic	1	5K169				–		
358E	Plug – Motor Cover ¾" NPT	AISI 300 SS	1	6K169				–		
371C	Skt. Hd. Screw – Housing to Motor Cover	AISI 300 SS	4	13K271				–		
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K186				–		
376	Capacitor (1 Phase Only)	Varies	1	9K197				9K352	–	
				N/A				9K351		
387	Mechanical Seal – Standard	Silicon Carbide	1	10K120				10K119	–	
	Mechanical Seal – Optional	Tungsten Carbide	1	10K122				10K123	–	
412M	O-ring – Motor Cover	BUNA-N, AS 568A-166	1	4K252				–		
436	Motor Start Switch (1 Phase Only)		1	629002-2				9K356	–	
457	Wire Nut (Power Cable)	Special Nylon Housing	2 up to 6	N/A				9K145	–	
				N/A	9K145					
458	Handle Assembly	AISI 300 SS	1	4K243				–		
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113			5K111		–	
				N/A	5K111				–	
	Loctite #271 - Impeller / Nut		1	AL27121				–		

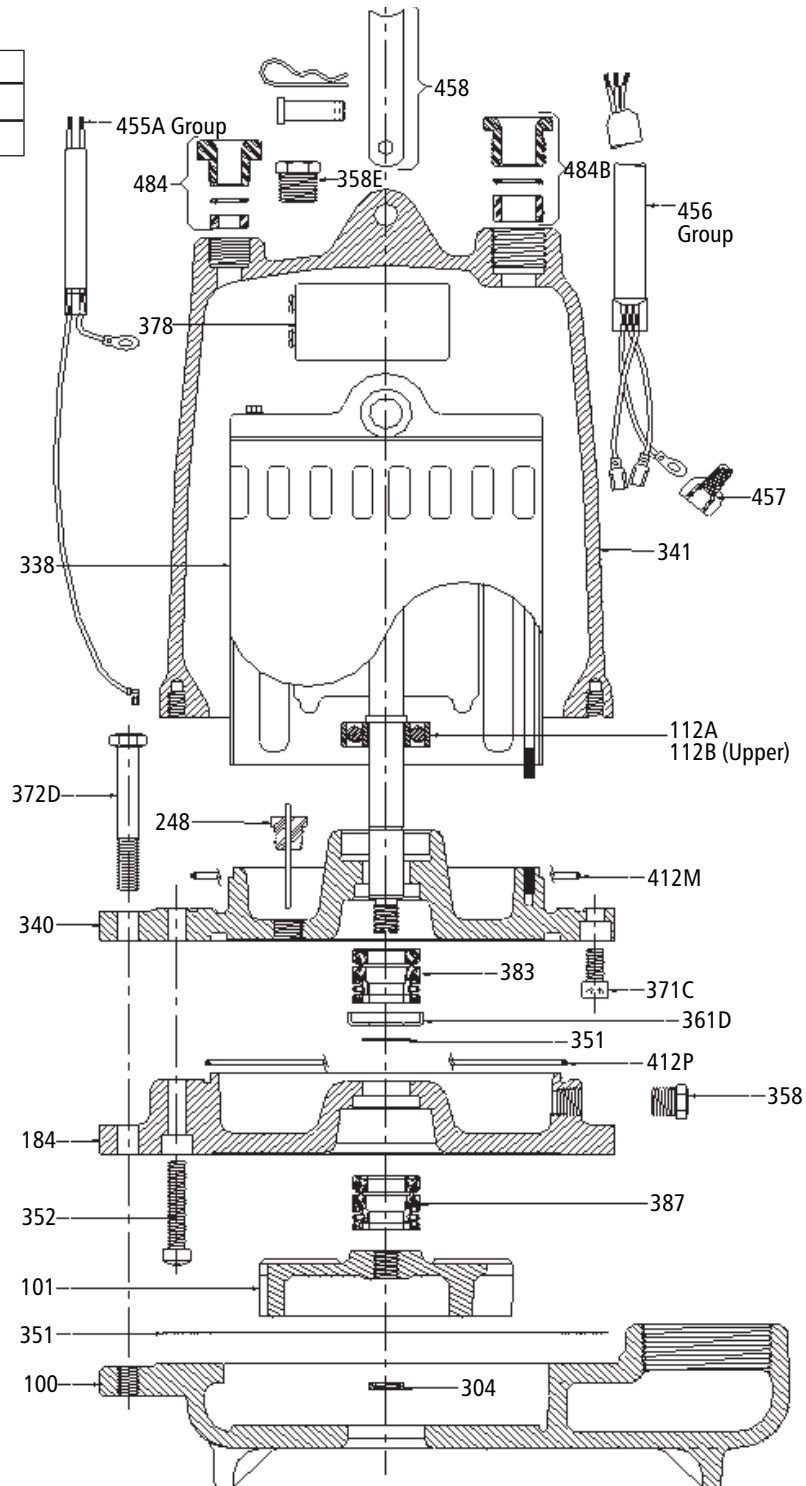
Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths				Wt. (lbs./5 ft.)
		20'	30'	50'	100'		
1 PH: ½ HP, 115 V; standard with plug, optional length cords have bare leads.	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5	
1 PH: ½ HP, 115 V; standard with plug, optional length cords have bare leads.	STOW – 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9	
1 PH: ½ & ½ HP, 208 & 230 V; standard with plug, opt. length cords have bare leads.	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5	
1 PH: ¾ & 1 HP, 208 & 230 V; standard with plug, opt. length cords have bare leads.	STOW – 14/3	9K444 - SJTOW	9K216*	9K161*	9K217*	0.9	
1 PH: 1½ HP, 208 & 230 V with bare leads.	STOW – 14/3	9K163	9K216*	9K161*	9K217*	0.9	
1 PH: 2 HP, 230 V with bare leads.	STOW – 14/3	9K266	9K267	9K268	9K269	0.9	
3 PH: ½ – 2 HP, 200–230/460/575 V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1	

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

"P" option – 9K445 1PH, 208/230 V, 14/3 SJTOW Cord with Plug, 30 ft.

MODEL 2ED

CAPACITOR DATA		
"K" no.	MFD	VAC
9K197	161/193	110



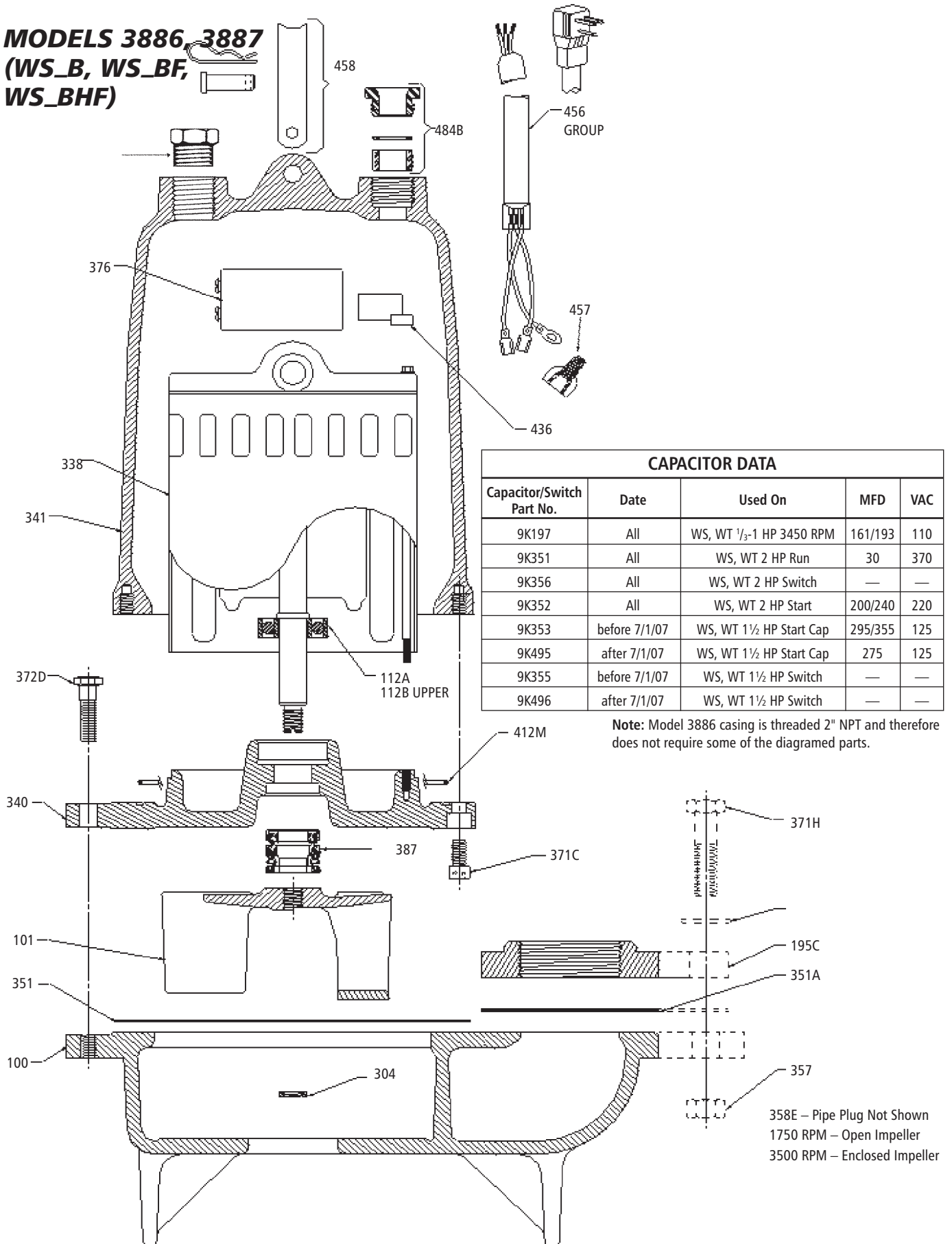
Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 PH: ½ HP, 115 V; standard with plug, optional lengths have bare leads.	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: ½ HP, 115 V; standard with plug, optional lengths have bare leads.	STOW – 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: ½ & ½ HP, 208 & 230 V; standard with plug, opt. lengths have bare leads.	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: ¾ – 1½ HP, 208 & 230 V with bare leads.	STOW – 14/3	9K163	9K216	9K161	9K217	0.9
3 PH: ½ – 1½ HP, 200–230/460/575 V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1
Item No. 455A, Sensor Cables						
Mechanical Seal Sensor - Standard for All Models	SJTOW – 16/2	9K189	9K220	9K221	9K222	0.5
Mechanical Seal/Heat Sensor - Optional for 3-Phase Models	SJTOW – 18/4	9K237	9K238	9K239	9K240	0.5

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

MODEL 2ED (Dual Seal)

Item No.	Part Description	Material	Qty. Reqd.	Repair Parts Order Number					Max. Wt. (lbs.)
				1725 RPM	3450 RPM				
				1/3 HP	1/2 HP	3/4 HP	1 HP	1 1/2 HP	
100	Casing – "F" Model Only (8th Digit)	Cast Iron	1	1K171	N/A				13.0
	Casing – All Others			N/A	1K170				
101	Impeller – Standard	Cast Iron	1	2K158	2K220	2K219	2K218	2K217	4.0
	Model Number (8th Digit) = Diameter	Bronze		E, F = 5 3/8"	D = 3 9/16"	C = 4 1/8"	B = 4 7/16"	A = 4 9/16"	2.5
	Impeller – Standard			2K271	2K272	2K273	2K274	2K275	
	Model Number (8th Digit) = Diameter	Cast Iron		E, F = 5 3/8"	D = 3 9/16"	C = 4 1/8"	B = 4 7/16"	A = 4 9/16"	3.5
	Impeller – High Head			N/A	H = 3 7/8"	N/A	N/A	2K221	
	Model Number (8th Digit) = Diameter			Bronze	N/A	2K276	N/A	N/A	
Impeller – High Head	H = 3 7/8"		G = 5 1/2"						
Model Number (8th Digit) = Diameter									
112A	Lower Ball Bearing	Steel	1	4K132				–	
112B	Upper Ball Bearing	Steel	1	4K132				–	
184	Seal Housing	Cast Iron	1	1K229				9.5	
218	Insulating Oil – Gallons Required	Turbine Oil - ASTM150	–	4K432				7 1/2 lbs./gal.	
	Gallons Required in Seal Housing			0.10					
	Gallons Required in Motor Cover			1.0					
246	Seal Sensor – Plug and Rod	Nylon/Brass	1	9K191				–	
304	Impeller Locknut - All	AISI 300 SS	1	13K286				–	
338	Motor	Stainless Steel Shaft	1	119-493R	119-4931R	N/A			13.0 to 24.0
				119-49815R	119-4992R	119-4992R	119-4994R	119-4994R	
				119-494R	119-4932R	119-4934R	119-4934R	119-4935R	
				N/A	119-4971R	119-4973R	119-4973R	119-4974R	
				N/A	119-4941R	119-4943R	119-4943R	119-4944R	
				N/A	119-4951R	119-4954R	119-4954R	119-4954R	
340	Bearing Housing	Cast Iron	1	1K228				10.0	
341	Motor Cover	Cast Iron	1	1K230		1K231			23.0
				N/A	1K231				
351	Casing Gasket	Composite	1	5K170				–	
	Shim Set - "High Head" Models Only	Plastic	1	5K169				–	
352	Skt. Hd. Screw – Seal Housing to Motor Cover	AISI 300 SS	2	13K219				–	
358	Plug – Seal Housing 1/4" NPT	AISI 300 SS	1	6K168				–	
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169				–	
361	Retaining Ring	AISI 300 SS	1	4K375				–	
361D	Seal Retainer	AISI 300 SS	1	4K379				–	
371C	Skt. Hd. Screw – Bearing Housing to Motor Cover	AISI 300 SS	2	13K271				–	
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K222				–	
376	Capacitor (1 Phase Only) - Start	–	1	9K197				–	
383	Mechanical Seal – Upper	Carbon/Ceramic	1	10K121 (Type 16)				–	
387	Mechanical Seal – Lower (Standard)	Silicon Carbon	1	10K120 (Type 16)				–	
	Mechanical Seal – Lower (Optional)	Tungsten Carbon	1	10K122 (Type 16)				–	
412M	O-ring – Motor Cover	BUNA-N, AS 568A-166	1	4K252				–	
412P	O-ring – Seal/Bearing Housing	BUNA-N, AS 568A-163	1	5K181				–	
457	Wire Nut	Special Nylon Housing	N/A	None Required				–	
			1 pkg.	N/A	9K145 (package of 8)			–	
			1 pkg.	9K145 (package of 8)				–	
458	Handle Assembly	AISI 300 SS	1	4K243				–	
484	Strain Relief Assembly, Sensor Cable	Varies	1	5K113				–	
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113		5K111		–	
			1	N/A	5K111			–	
	Heat Sensor Kit (Optional)	–	1	9K261				–	
	Seal Installation Tool	–	1	A02A013				–	
	Loctite #271	–	1	AL27121				–	

MODELS 3886, 3887 (WS_B, WS_BF, WS_BHF)



MODEL 3886 (WS_B)

Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number				Max. Wt. (lbs.)
				1725 RPM				
				1/3 HP	1/2 HP	3/4 HP	1 HP	
100	Casing	Cast Iron	1	1K168				16.5
101	Impeller	Cast Iron	1	2K268	2K239	2K240	2K241	3.0
	Impeller	Bronze	1	2K279	2K280	2K281	2K282	3.5
112A	Lower Ball Bearing	Steel	1	4K132				–
112B	Upper Ball Bearing	Steel	1	4K132				–
218	Insulating Turbine Oil	ASTM150	-	4K432 (1 gallon 1/3 - 1 HP)				7.5 lbs./gal.
304	Impeller Locknut - All	AISI 300 SS	1	13K286				–
338	Motor – 1 Phase, 115V	Motor with Stainless Steel Shaft	1	118-121R	118-123R	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 208V			118-1215R	118-1215R	118-1217R	118-1217R	
	Motor – 1 Phase, 230V			118-122R	118-124R	118-1212R	118-1213R	
	Motor – 3 Phase, 200 V			N/A	118-1314R	118-1316R	118-1316R	
	Motor – 3 Phase, 230/460 V			N/A	118-132R	118-134R	118-134R	
	Motor – 3 Phase, 575 V			N/A	118-139R	118-1311R	118-1311R	
340	Seal / Bearing Housing	Cast Iron	1	1K167				10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K207				20.0
	Motor Cover – 3 Phase			1K208				
351	Casing Gasket	Composite	1	5K170				–
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169				–
371C	Skt. Hd. Screw – Housing to Motor Cover	AISI 300 SS	4	13K271				–
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K186				–
376	Capacitor (1 Phase only) Start	Varies	1	9K197		9K235		–
387	Mechanical Seal – Standard	Silicon Carbide	1	10K120				–
	Mechanical Seal – Optional	Tungsten Carbide	1	10K122				–
412M	O-ring – Motor Cover	BUNA-N, AS568A-166	1	4K252				–
457	Wire Nut (Power Cable)	1 Phase	-	N/A				–
		3 Phase	up to 6	N/A	9K145			–
458	Handle Assembly	AISI 300 SS	1	4K243				–
484B	Strain Relief Assembly (Power Cable)	1 Phase	1	5K113				–
		3 Phase	1	N/A	5K111			
	Loctite #271	–	1	AL27121				–

Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 PH: 1/3 HP, 115 V; standard with plug, optional length cords have bare leads.	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: 1/2 HP, 115 V; standard with plug, optional length cords have bare leads.	STOW – 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: 1/3 and 1/2 HP, 208 & 230 V; standard with plug, opt. length cords have bare leads.	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: 3/4 & 1 HP, 208 & 230 V; standard with plug, opt. length cords have bare leads.	STOW – 14/3	9K444 - SJTOW	9K216*	9K161*	9K217*	0.9
3 PH: 1/2 – 1 HP, 200-230/460/575 V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

"P" option –9K445 1PH, 208/230 V, 14/3 SJTOW Cord with Plug, 30 ft.

MODEL 3887 (WS_BF)

Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number				Max. Wt. (lbs.)
				1725 RPM				
				1/3 HP	1/2 HP	3/4 HP	1 HP	
100	Casing	Cast Iron	1	1K178				16.5
101	Impeller	Cast Iron	1	2K268	2K239	2K240	2K241	3.0
	Impeller	Bronze	1	2K279	2K280	2K281	2K282	3.5
112A	Lower Ball Bearing	Steel	1	4K132				–
112B	Upper Ball Bearing	Steel	1	4K132				–
195C	Discharge Flange (2" NPT STD.)	Cast Iron	1	6K76				1.5
	Discharge Flange (3" NPT OPT.)			A1-3				
218	Insulating Turbine Oil	ASTM150	1	4K432 (1.0 gallons, 1/3 - 1 HP)				7.5 lbs./gal.
304	Impeller Locknut - All	AISI 300 SS	1	13K286				–
338	Motor – 1 Phase, 115V	Motor with Stainless Steel Shaft	1	118-121R	118-123R	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 208V			118-1215R	118-1215R	118-1217R	118-1217R	
	Motor – 1 Phase, 230V			118-122R	118-124R	118-1212R	118-1213R	
	Motor – 3 Phase, 200 V			N/A	118-1314R	118-1316R	118-1316R	
	Motor – 3 Phase, 230/460 V			N/A	118-132R	118-134R	118-134R	
	Motor – 3 Phase, 575 V			N/A	118-139R	118-1311R	118-1311R	
340	Seal / Bearing Housing	Cast Iron	1	1K167				10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K207				20.0
	Motor Cover – 3 Phase			1K208				
351	Casing Gasket	Composite	1	5K170				–
351A	Discharge Flange Gasket	Composite	1	5K150				–
357	Hex Nut – Discharge Flange	AISI 300 SS	2	13K99				–
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169				–
371C	Skt. Hd. Screw – Housing to Motor Cover	AISI 300 SS	4	13K271				–
371H	Hex Cap Screw – Discharge Flange	AISI 300 SS	2	13K153				–
372D	Hex Screw – Housing to Casing	AISI 300 SS	4	13K186				–
376	Capacitor (1 Phase Only) Start	Varies	1	9K197		9K235		–
387	Mechanical Seal – Standard	Silicon Carbide	1	10K120				–
	Mechanical Seal – Optional	Tungsten Carbide	1	10K122				–
412M	O-Ring – Motor Cover	Buna-N, AS 568A-166	1	4K252				–
457	Wire Nut, Power Cable, 3 Phase	Special Nylon Housing	Up to 6	N/A		9K145		–
458	Handle Assembly	AISI 300 SS	1	4K243				–
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113				–
				N/A	5K111			
528	Washer – Discharge Flange	AISI 300 SS	2	13K82				–
	Loctite #271	–	1	AL27121				–

Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 PH: 1/3 HP, 115 V; standard with plug, optional length cords have bare leads.	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: 1/2 HP, 115 V; standard with plug, optional length cords have bare leads.	STOW – 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: 1/3 & 1/2 HP, 208 & 230 V; standard with plug, optional length cords have bare leads.	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: 3/4 & 1 HP, 208 & 230 V; standard with plug, optional length cords have bare leads.	STOW – 14/3	9K444 - SJTOW	9K216*	9K161*	9K217*	0.9
3 PH: 1/2 – 1 HP, 200-230/460/575 V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

"P" option – 9K445 1PH, 208/230 V, 14/3 SJTOW Cord with Plug, 30 ft.

MODEL 3887 (WS_BHF)

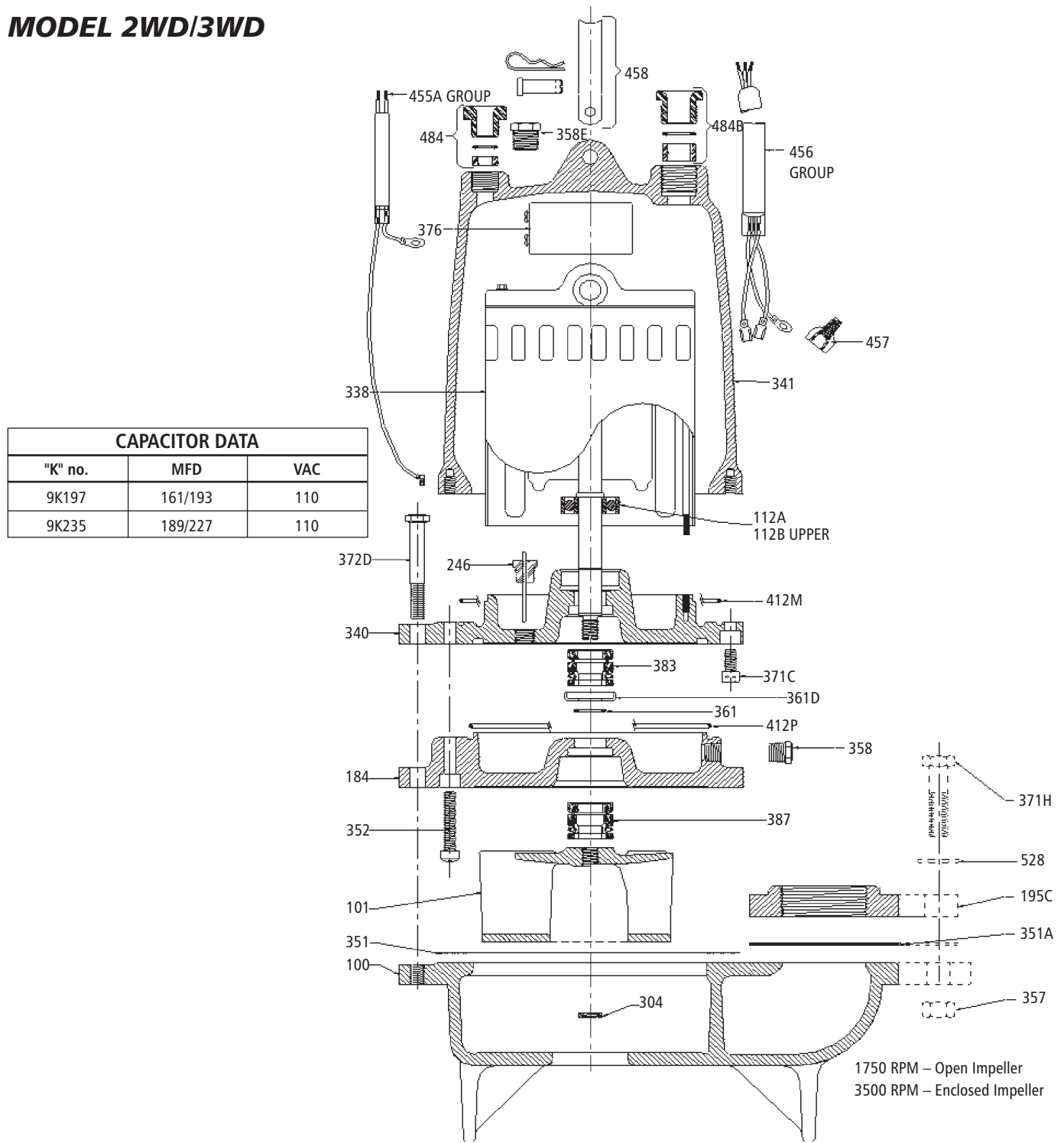
Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number						Max. Wt. (lbs.)
				3450 RPM						
				1/2 HP	1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	
100	Casing	Cast Iron	1	1K330						16.5
101	Impeller	Cast Iron	1	2K858	2K856	2K854	2K852	2K800	2K798	3.0
	Impeller	Bronze	1	2K859	2K857	2K855	2K853	2K801	2K799	3.5
112A	Lower Ball Bearing	Steel	1	4K132				4K384		–
112B	Upper Ball Bearing	Steel	1	4K132						–
195C	Discharge Flange (2" NPT STD.)	Cast Iron	1	6K76						1.5
	Discharge Flange (3" NPT OPT.)	Cast Iron	1	A1-3						1.5
218	Insulating Turbine Oil	ASTM150	-	4K432 (1 gallon 1/2-1 HP, .88 gallons 1 1/2 and 2 HP)						7.5 lbs./gal.
304	Impeller Locknut - All	AISI 300 SS	1	13K286						–
338	Motor – 1 Phase, 115V	Stainless Steel Shaft	1	118-1222R	118-1222R	N/A	N/A	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 208V			118-1236R	118-1236R	118-1236R	118-1238R	N/A	N/A	
	Motor – 1 Phase, 230V			118-1223R	118-1223R	118-1232R	118-1233R	120-844R	120-845R	
	Motor – 3 Phase, 200 V			N/A	118-1333R	118-1334R	118-1335R	120-8425R	120-8425R	
	Motor – 3 Phase, 230/460 V			N/A	118-1321R	118-1322R	118-1323R	120-8425R	120-8425R	
	Motor – 3 Phase, 575 V			N/A	118-1328R	118-1330R	118-1330R	120-8435R	120-8435R	
340	Seal / Bearing Housing	Cast Iron	1	1K167				1K332		10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K207				1K208		20.0
	Motor Cover – 3 Phase			1K208						
351	Casing Gasket	Composite	1	5K170				–		
351A	Discharge Flange Gasket	Composite	1	5K150				–		
357	Hex Nut – Discharge Flange	AISI 300 SS	2	13K99				–		
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169				–		
371C	Skt. Hd. Screw – Housing to Motor Cover	AISI 300 SS	4	13K271				–		
371H	Hex Cap Screw – Discharge Flange	AISI 300 SS	2	13K153				–		
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K186				–		
387	Mechanical Seal – Standard	Silicon Carbide	1	10K120				10K119		–
	Mechanical Seal – Optional	Tungsten Carbide	1	10K122				10K123		–
412M	O-Ring – Motor Cover	BUNA-N, AS568A-166	1	4K252				–		
457	Wire Nut (Power Cable)	Special Nylon Housing	2 up to 6	N/A				9K145		–
				N/A	9K145				–	
458	Handle Assembly	AISI 300 SS	1	4K243						–
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113				5K111		–
				N/A	5K111					
528	Washer – Discharge Flange	AISI 300 SS	2	13K82				–		
	Loctite #271	–	1	AL27121						–

Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 PH: 1/2 HP, 115 V; standard with plug, optional lengths have bare leads.	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: 1/2 HP, 115 V; standard with plug, optional lengths have bare leads.	STOW – 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: 1/2 and 1/2 HP, 208 & 230 V; standard with plug, optional lengths have bare leads.	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: 3/4 – 1 HP, 208 & 230 V; standard with plug, optional lengths have bare leads.	STOW – 14/3	9K444 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: 1 1/2 and 2 HP, 230 V with bare leads.	STOW – 14/3	9K266	9K267	9K268	9K269	0.9
3 PH: 1/2 – 2 HP, 200-230/460/575 V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

"P" option – 9K445 1PH, 208/230 V, 14/3 SJTOW Cord with Plug, 30 ft.

MODEL 2WD/3WD



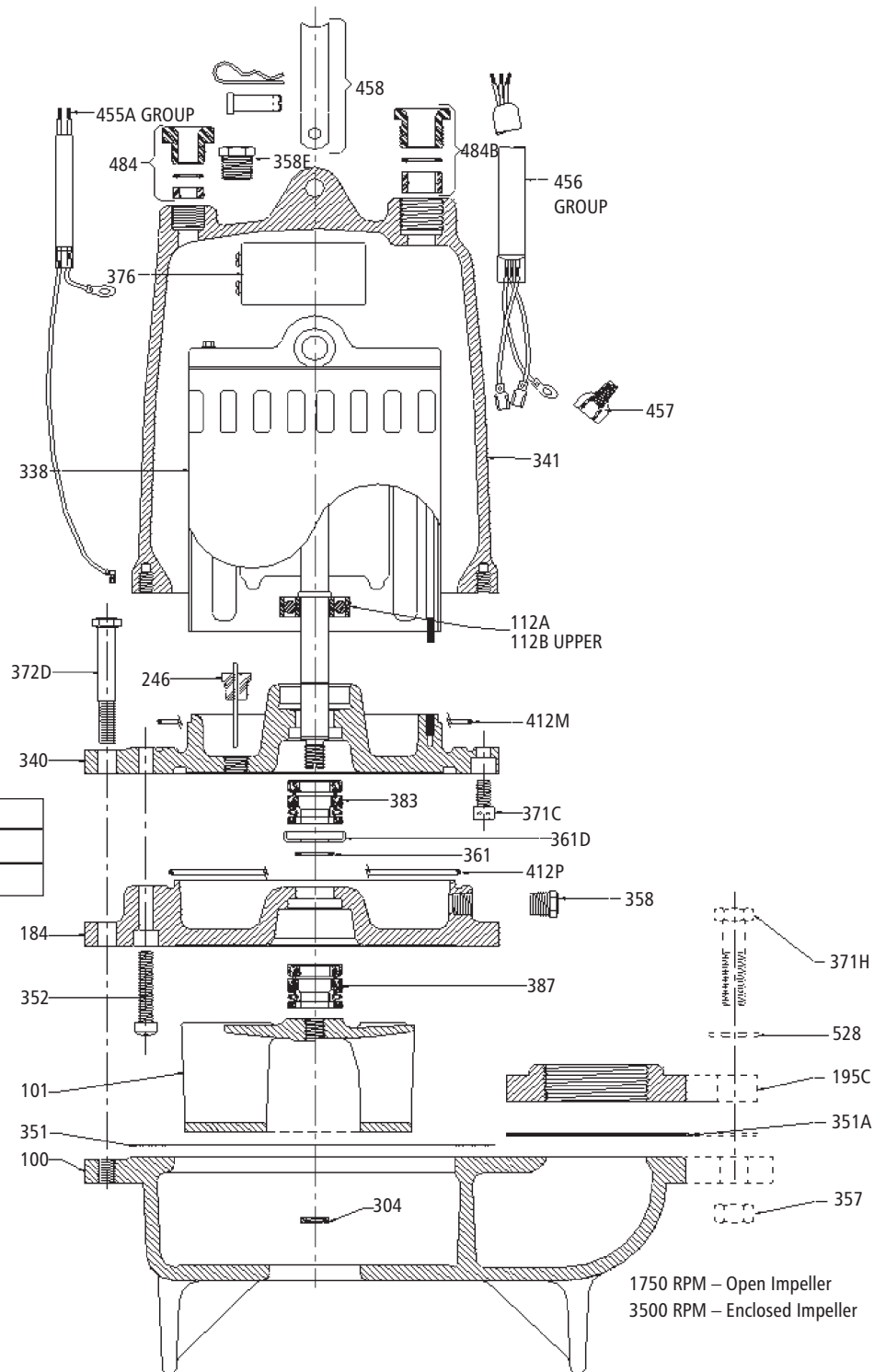
Item No. 456, Power Cables	Type and AWG Size	Standard length		Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'		
1 PH: 1/2 HP, 115 V; standard with plug, optional lengths have bare leads.	SJTOW - 16/3	9K165	9K214	9K215	N/A	0.5	
1 PH: 1/2 HP, 115 V; standard with plug, optional lengths have bare leads.	STOW - 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9	
1 PH: 1/2 & 1/2 HP, 208 & 230 V; standard with plug, opt. lengths have bare leads.	SJTOW - 16/3	9K164	9K214	9K215	N/A	0.5	
1 PH: 3/4 - 1 HP, 208 & 230 V with bare leads.	STOW - 14/3	9K163	9K216	9K161	9K217	0.9	
3 PH: 1/2 - 1 HP, 200-230/460/575 V with bare leads.	STOW - 14/4	9K153	9K218	9K154	9K219	1.1	
Item No. 455A, Sensor Cables							
Mechanical Seal Sensor - Standard for All Models	SJTOW - 16/2	9K189	9K220	9K221	9K222	0.5	
Mechanical Seal/Heat Sensor - Optional for 3-Phase Models	SJTOW - 18/4	9K237	9K238	9K239	9K240	0.5	

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

MODEL 2WD/3WD (1725 RPM)

Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number				Max. Wt. (lbs.)
				1725 RPM				
				1/3 HP	1/2 HP	3/4 HP	1 HP	
100	Casing	Cast Iron	1	1K178				16.5
101	Impeller	Cast Iron	1	2K268 E = 4 ¹ / ₁₆ "	2K239 D = 5"	2K240 C = 5 ³ / ₈ "	2K241 B = 5 ³ / ₄ "	3.0
	Impeller	Bronze	1	2K279 E = 4 ¹ / ₁₆ "	2K280 D = 5"	2K281 C = 5 ³ / ₈ "	2K282 B = 5 ³ / ₄ "	3.5
112A	Lower Ball Bearing	Steel	1	4K132				–
112B	Upper Ball Bearing	Steel	1	4K132				–
184	Seal Housing	Cast Iron	1	1K229				9.5
195C	Discharge Flange - Standard 2" NPT	Cast Iron	1	6K76				1.5
	Discharge Flange - Optional 3" NPT			A1-3				
218	Insulating Oil – Gallons Required	Turbine Oil - ASTM150	–	4K432				7.5 lbs./gal.
	Gallons Required in Seal Housing			0.10				
	Gallons Required in Motor Cover			1.0				
246	Seal Sensor - Plug and Rod	Nylon/Brass	1	9K198				–
304	Impeller Locknut – All	AISI 300 SS	1	13K286				–
338	Motor – 1 Phase, 115V	Stainless Steel Shaft	1	119-493R	119-493R	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 208V			119-4981R	119-4981R	119-4983R	119-4983R	
	Motor – 1 Phase, 230V			119-494R	119-494R	119-496R	119-496R	
	Motor – 3 Phase, 200V			N/A	119-4961R	119-4963R	119-4963R	
	Motor – 3 Phase, 230/460V			N/A	119-4911R	119-4913R	119-4913R	
	Motor – 3 Phase, 575V			N/A	119-4921R	119-4923R	119-4923R	
340	Bearing Housing	Cast Iron	1	1K228				10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K230		1K231		20.0
	Motor Cover – 3 Phase			1K231				
351	Casing Gasket	Composite	1	5K170				–
351A	Discharge Flange Gasket	Composite	1	5K150				–
352	Skt. Hd. Screw - Seal Hsg. to Motor Cover	AISI 300 SS	2	13K219				–
357	Hex Nut – Discharge Flange	AISI 300 SS	2	13K99				–
358	Plug – Seal Housing 1/4" NPT	AISI 300 SS	1	6K168				–
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169				–
361	Retaining Ring	AISI 300 SS	1	4K375				–
361D	Seal Retainer	AISI 300 SS	1	4K379				–
371C	Skt. Hd. Screw – Brg. Hsg. to Motor Cover	AISI 300 SS	2	13K271				–
371H	Hex Cap Screw – Discharge Flange	AISI 300 SS	2	13K153				–
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K222				–
376	Capacitor (1 Phase only) – Start	Varies	1	9K197		9K235		–
383	Mechanical Seal – Upper	Carbon/Ceramic	1	10K121 (Type 16)				–
387	Mechanical Seal – Lower (Standard)	Silicon Carbide	1	10K120 (Type 16)				–
	Mechanical Seal – Lower (Optional)	Tungsten Carbide	1	10K122 (Type 16)				–
412M	O-ring – Motor Cover	BUNA-N, AS568A-166	1	4K252				–
412P	O-ring – Seal/Bearing Housing	BUNA-N, AS568A-163	1	5K181				–
457	Wire Nut Power Cable - 3 Ph., 460V Seal/Heat Cable - Opt. 3 Ph. Only	Special	1 pkg.	N/A	9K145 (package of 8)			–
		Nylon Housing	1 pkg.	9K145 (package of 8)				–
458	Handle Assembly	AISI 300 SS	1	4K243				–
484	Strain Relief Assembly, Sensor Cable	Varies	1	5K113				–
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113		5K111		–
				N/A	5K111			
528	Washer – Discharge Flange	AISI 300 SS	2	13K82				–
–	Heat Sensor Kit (Optional)	–	1	9K261				–
–	Seal Installation Tool	–	1	A02A013				–
–	Loctite #271	–	1	AL27121				–

MODEL 2WD/3WD



CAPACITOR DATA		
"K" no.	MFD	VAC
9K197	161/193	110

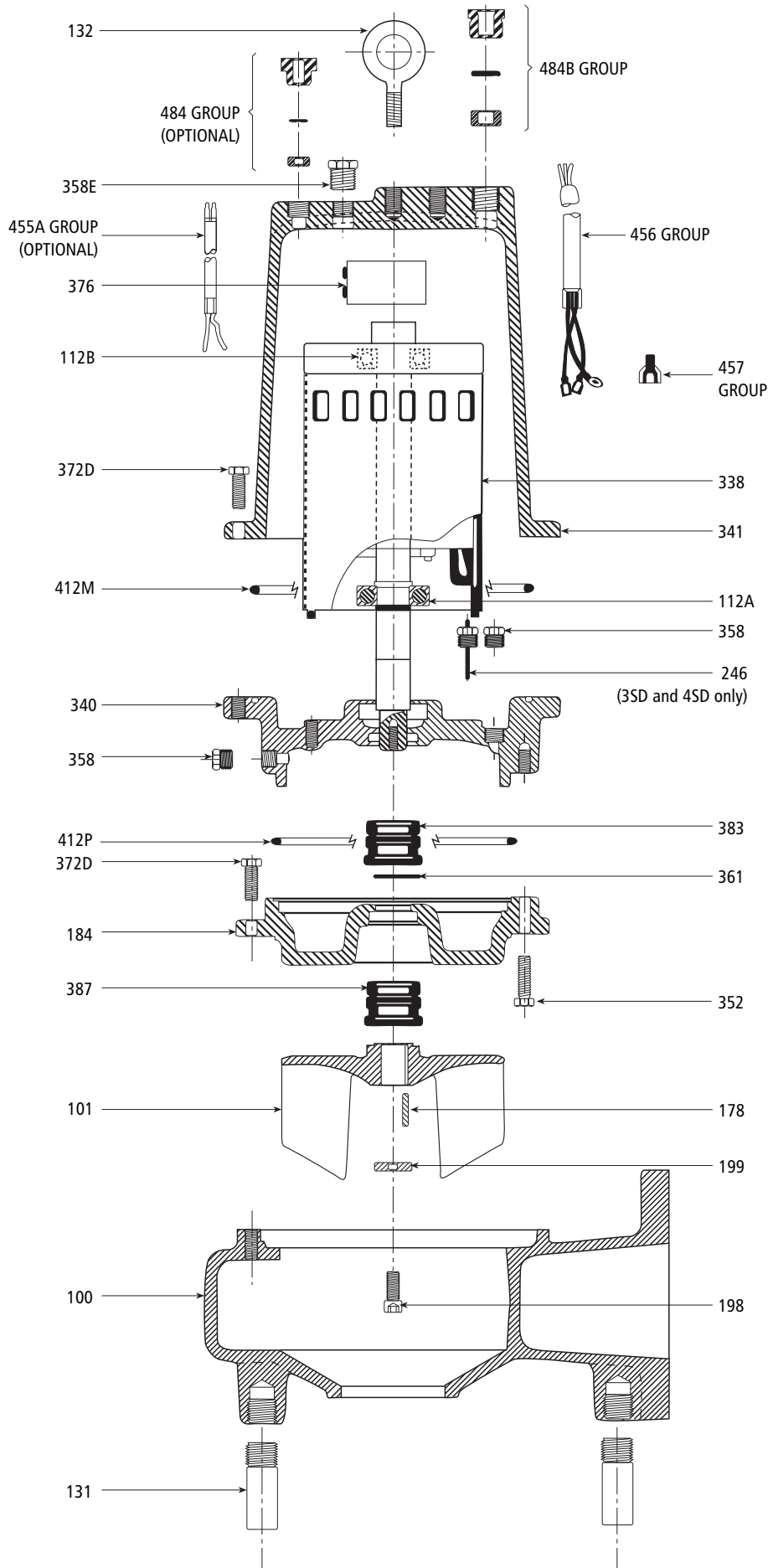
Item No. 456, Power Cables	Type and AWG Size	Standard length	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 PH: ½ HP, 115 V; standard with plug, optional lengths have bare leads.	SJTOW - 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: ½ HP, 115 V; standard with plug, optional lengths have bare leads.	STOW - 14/3	9K385 - SJTOW	9K216*	9K161*	9K217*	0.9
1 PH: ½ & ½ HP, 208 & 230 V; standard with plug, opt. lengths have bare leads.	SJTOW - 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: ¾ - 1 HP, 208 & 230 V with bare leads.	STOW - 14/3	9K163	9K216	9K161	9K217	0.9
3 PH: ½ - 1 HP, 200-230/460/575 V with bare leads.	STOW - 14/4	9K153	9K218	9K154	9K219	1.1
Item No. 455A, Sensor Cables						
Mechanical Seal Sensor - Standard for All Models	SJTOW - 16/2	9K189	9K220	9K221	9K222	0.5
Mechanical Seal/Heat Sensor - Optional for 3-Phase Models	SJTOW - 18/4	9K237	9K238	9K239	9K240	0.5

* Requires 5K111 Strain Relief Assembly and 1K208 Motor Cover.

MODEL 2WD/3WD (3500 RPM)

Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number				Max. Wt. (lbs.)
				3450 RPM				
				1/3 HP	1/2 HP	3/4 HP	1 HP	
100	Casing	Cast Iron	1	1K330				16.5
101	Impeller	Cast Iron	1	2K858 K = 2 ¹⁵ / ₁₆ "	2K856 J = 3 ³ / ₁₆ "	2K854 H = 3 ³ / ₁₆ "	2K852 A = 3 ³ / ₄ "	3.0
	Impeller	Bronze	1	2K859 E = 2 ¹⁵ / ₁₆ "	2K857 J = 3 ³ / ₁₆ "	2K855 H = 3 ³ / ₁₆ "	2K853 A = 3 ³ / ₄ "	3.5
112A	Lower Ball Bearing	Steel	1	4K132				–
112B	Upper Ball Bearing	Steel	1	4K132				–
184	Seal Housing	Cast Iron	1	1K229				9.5
195C	Discharge Flange - Standard 2" NPT	Cast Iron	1	6K76				1.5
	Discharge Flange - Optional 3" NPT			A1-3				
218	Insulating Oil – Gallons Required	Turbine Oil - ASTM150	–	4K432				7.5 lbs./gal.
	Gallons Required in Seal Housing			0.10				
	Gallons Required in Motor Cover			1.0				
246	Seal Sensor - Plug and Rod	Nylon/Brass	1	9K191				–
304	Impeller Locknut – All	AISI 300 SS	1	13K286				–
338	Motor – 1 Phase, 115V	Stainless Steel Shaft	1	119-4931R	119-4931R	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 208V			119-4992R	119-4992R	119-4992R	119-4994R	
	Motor – 1 Phase, 230V			119-4932R	119-4932R	119-4934R	119-4934R	
	Motor – 3 Phase, 200V			N/A	119-4971R	119-4973R	119-4973R	
	Motor – 3 Phase, 230/460V			N/A	119-4941R	119-4943R	119-4943R	
	Motor – 3 Phase, 575V			N/A	119-4951R	119-4954R	119-4954R	
340	Bearing Housing	Cast Iron	1	1K228				10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K230		1K231		20.0
	Motor Cover – 3 Phase			1K231				
351	Casing Gasket	Composite	1	5K170				–
351A	Discharge Flange Gasket	Composite	1	5K150				–
352	Skt. Hd. Screw - Seal Hsg. to Motor Cover	AISI 300 SS	2	13K219				–
357	Hex Nut – Discharge Flange	AISI 300 SS	2	13K99				–
358	Plug – Seal Housing 1/4" NPT	AISI 300 SS	1	6K168				–
358E	Plug – Motor Cover 3/8" NPT	AISI 300SS	1	6K169				–
361	Retaining Ring	AISI 300 SS	1	4K375				–
361D	Seal Retainer	AISI 300 SS	1	4K379				–
371C	Skt. Hd. Screw – Brg. Hsg. to Motor Cover	AISI 300 SS	2	13K271				–
371H	Hex Cap Screw – Discharge Flange	AISI 300 SS	2	13K153				–
372D	Hex Cap Screw – Housing to Casing	AISI 300 SS	4	13K222				–
376	Capacitor (1 Phase only) – Start	Varies	1	9K197				–
383	Mechanical Seal – Upper	Carbon/Ceramic	1	10K121 (Type 16)				–
387	Mechanical Seal – Lower (Standard)	Silicon Carbide	1	10K120 (Type 16)				–
	Mechanical Seal – Lower (Optional)	Tungsten Carbide	1	10K122 (Type 16)				–
412M	O-ring – Motor Cover	BUNA-N, AS568A-166	1	4K252				–
412P	O-ring – Seal/Bearing Housing	BUNA-N, AS568A-163	1	5K181				–
457	Wire Nut Power Cable - 3 Ph., 460V Seal/Heat Cable - Opt. 3 Ph. Only	Special	1 pkg.	N/A	9K145 (package of 8)			–
		Nylon Housing	1 pkg.	9K145 (package of 8)				–
458	Handle Assembly	AISI 300 SS	1	4K243				–
484	Strain Relief Assembly, Sensor Cable	Varies	1	5K113				–
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K113		5K111		–
				N/A	5K111			
528	Washer – Discharge Flange	AISI 300 SS	2	13K82				–
–	Heat Sensor Kit (Optional)	–	1	9K261				–
–	Seal Installation Tool	–	1	A02A013				–
–	Loctite #271	–	1	AL27121				–

MODELS 388D3/3SD, 388D4/4SD



CAPACITOR DATA			
"K" no.	MFD	VAC	Qty. Req.
9K144 ^①	20	370	2
9K233 ^②	30	370	2
9K262	50	370	2
9K332	60	370	See item 376
9K456 ^③	40	370	2

① Used prior to March 1991.

② Replaced by (1) 9K332.

③ Used on new 1 1/2 & 2 HP motors after May 2006 – check capacitor ratings before ordering replacements.

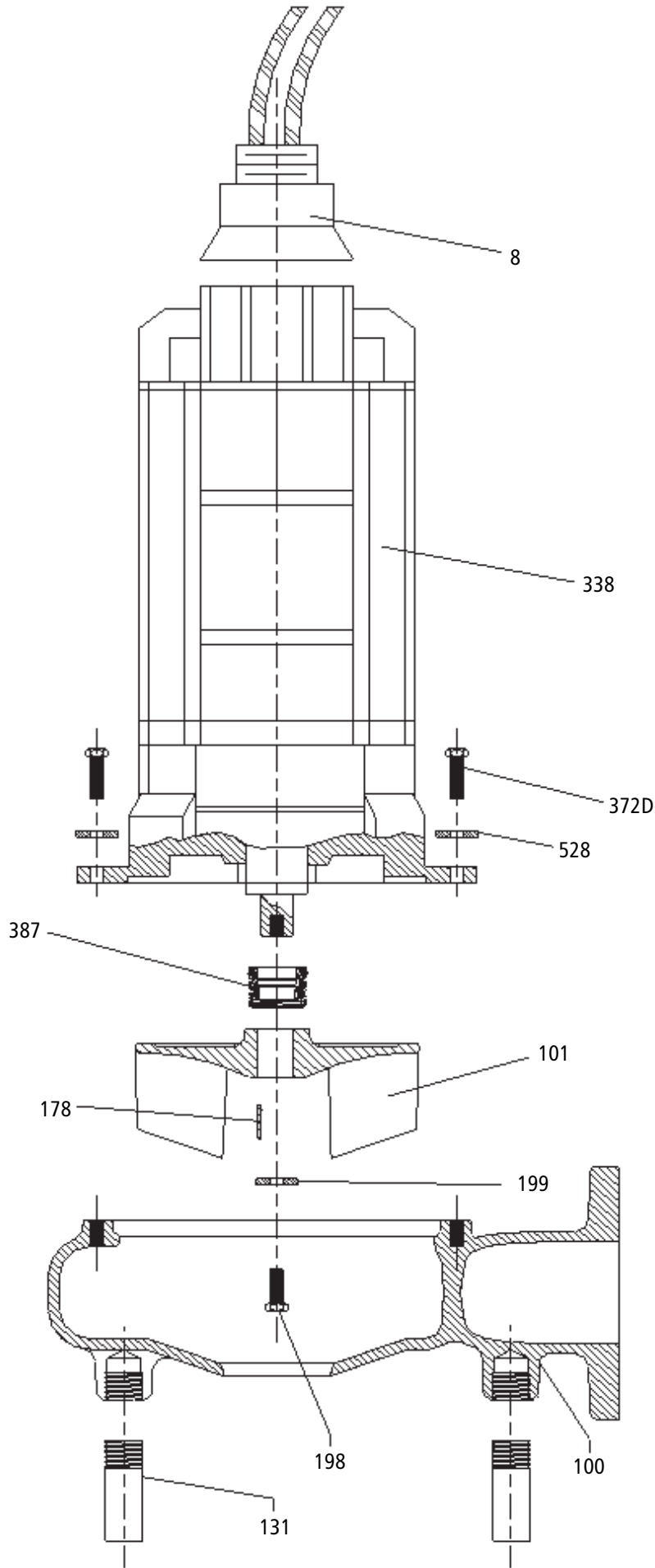
MODELS 3888D3/3SD, 3888D4/4SD

Item No.	Part Description	Material	Qty. Req.	Repair Parts Order Number – 1725 RPM						Max. Wt. (Lbs.)	
				1½ HP M	1½ HP	2 HP	3 HP	5 HP	7½ HP		
100	Casing – 3888D3, 3SD	Cast Iron	1	1K190						42.0	
	Casing – 3888D4, 4SD			1K219						52.0	
101	Impeller – 3888D3, 3SD, Standard	Cast Iron	1	2K514 5¼"	2K24 6½"	2K25 7.0"	2K26 7¼"	2K27 8.0"	N/A	7.0	
	Impeller – 3888D3, 3SD, Optional	Bronze		2K515 5¼"	2K284 6½"	2K285 7.0"	2K286 7¼"	2K287 8.0"	N/A	8.0	
	Impeller – 3888D4, 4SD, Standard	Cast Iron		2K512 5⅝"	2K294 6¼"	2K295 6⅝"	2K296 7.0"	2K830 7¼"	2K532 7⅞"	7.5	
	Impeller – 3888D4, 4SD, Optional	Bronze		2K513 5⅝"	2K329 6¼"	2K328 6⅝"	2K327 7.0"	2K326 7¼"	2K533 7⅞"	8.5	
112A	Lower Ball Bearing	Steel	1	4K135						4K402	–
112B	Upper Ball Bearing	Steel	1	4K384						–	
131	Pump Leg - Standard	Steel	3	4K42						–	
	Pump Leg - Optional	Cast Iron	1	4K625						–	
132	Eye Bolt	Galvanized Steel	1	13K193						–	
178	Impeller Key	AISI 300 SS	1	4K11						–	
184	Seal Housing – 3888D3, 3SD	Cast Iron	1	1K189						N/A	19.0
	Seal Housing – 3888D4, 4SD	Cast Iron	1	1K218						18.0	
198	Impeller Bolt	17-4PH SS	1	13K48						–	
199	Impeller Washer	AISI 300 SS	1	13L39						–	
218	Insulating Turbine Oil	Turbine Oil - ASTM 150	–	4K432						7.5 lbs./gal.	
	Gallons required in Seal Housing			3888D3, 3SD - .44 — 3888D4, 4SD - .38							
	Gallons required in Motor Cover			1.75				1.5			
246	Seal Sensor - Available Only on 3SD, 4SD	Nylon/Brass	1	9K191						–	
338	Motor – 1 Phase, 208V	Stainless Steel Shaft	1	114-9210R	114-9210R	114-9210R	114-9210R	N/A	N/A	–	
	Motor – 1 Phase, 230V			114-925R	114-925R	114-926R	114-927R	114-928R	N/A		
	Motor – 3 Phase, 200 V			114-9230R	114-9230R	114-9230R	114-9231R	114-9232R	N/A		
	Motor – 3 Phase, 230/460 V			114-9217R	114-9217R	114-9217R	114-9218R	114-9219R	119-961R		
	Motor – 3 Phase, 575 V			114-9227R	114-9227R	114-9227R	114-9228R	114-9229R	119-963R		
340	Bearing Housing	Cast Iron	1	1K176						1K303	28.0
341	Motor Cover– 3888D3, 3888D4	Cast Iron	1	1K177						39.0	
	Motor Cover – 3SD, 4SD	Cast Iron	1	1K299						39.0	
352	Hex Cap Screw-Seal Housing to Bearing Housing	AISI 300 SS	4	13K81						–	
358	Plug – Seal Housing ¼" NPT	AISI 300 SS	2	6K168						–	
358E	Plug – Motor Cover ½" NPT	AISI 300 SS	1*	6K170						–	
361	Retaining Ring	AISI 300 SS	1	4K305						–	
372D	Hex Screw – Bearing Housing to Motor Cover and Seal Housing to Casing	AISI 300 SS	8	13K186						–	
376	Capacitor, Run - 1 Phase, 208 V	Varies	1	9K262 Qty. - 2	9K262 Qty. - 2	9K262 Qty. - 2	9K262 Qty. - 2	N/A		–	
	Capacitor, Run - 1 Phase, 230 V - 9K332, pre D06 - 2 HP, pre F06 - 1.5 HP			9K332 Qty. - 1	9K332 Qty. - 1	9K332 Qty. - 1	9K262 Qty. - 2	9K332 Qty. - 2	N/A	–	
	Capacitor, Run - 1 Phase, 230 V - 9K456, D06 - 2 HP, F06 - 1.5 HP			9K456 Qty. - 2	9K456 Qty. - 2	9K456 Qty. - 2	9K262 Qty. - 2	9K332 Qty. - 2	N/A	–	
383	Mechanical Seal – Upper	Carbon/Ceramic	1	10K21 (Type 21)						–	
387	Mechanical Seal – Lower (Standard)	Silicon Carbide	1	10K28 (Type 31)						–	
	Mechanical Seal – Lower (Optional)	Tungsten Carbide	1	10K22 (Type 31)						–	
412M	O-Ring – Bearing Housing to Motor Cover	BUNA-N, AS568A-374	1	4K242						–	
412P	O-Ring – Bearing Housing to Seal Housing	BUNA-N, AS568A-265	1	5K74						–	
457	Wire Nut (Power Cable)	Special Nylon Housing	2	9K145 (14/3 Cords), 9K252 (10/3 Cords)						N/A	–
				6	9K145 (14/4 Cords), 9K252 (10/4 Cords)						–
					2	9K145					
484	Strain Relief Assembly – Sensor Cable	Varies	1	5K113						–	
484B	Strain Relief Assembly (Power Cable)	Varies	1	5K234 (14/3 Cords), 5K355 (10/3 Cords)						N/A	–
				5K226 (14/4 Cords), 5K227 (10/4 Cords)						–	
	Seal Installation Tool – Guide	Delrin	1	A01A008						–	
	Seal Installation Tool – Driver	Delrin	1	A02A017						–	
	Loctite #271		1	AL27121						–	

* 1 for 3SD/4SD and 2 for 3888D3/3888D4.

Power and Sensor Cables Description		Type and AWG Size	Standard Length	Optional Lengths			Wt. (lbs./5 ft.)
				20'	30'	50'	
Item No. 456, Power Cables							
1 PH: 1½ and 2 HP, 230 V, standard with bare leads.		STOW – 14/3	9K266	9K267	9K268	9K269	0.9
1 PH: 2 HP, 3 HP and 5 HP, 208 V, standard with bare leads.		STOW – 10/3	9K289	9K290	9K291	9K293	1.6
3 PH: 1½, 2 HP, 3 HP (except 200 V) and 5 HP, 460 V, 575 V – bare leads.		STOW – 14/4	9K153	9K218	9K154	9K219	1.1
3 PH: 3 HP, 200 V, 5 HP 200/230 V and all 7½ HP – bare leads.		STOW – 10/4	9K251	9K247	9K248	9K250	1.6
Item No. 455A, Sensor Cables							
Mechanical Seal Sensor: Standard on 3SD and 4SD. (N/A on 3888D3 and 3888D4)		SJTOW – 16/2	9K189	9K220	9K221	9K222	0.5
Seal/Heat Sensor: Optional on 3SD and 4SD.		SJTOW – 18/4	9K237	9K238	9K239	9K240	0.5

MODELS 3SDX/4SDX



MODELS 3SDX/4SDX

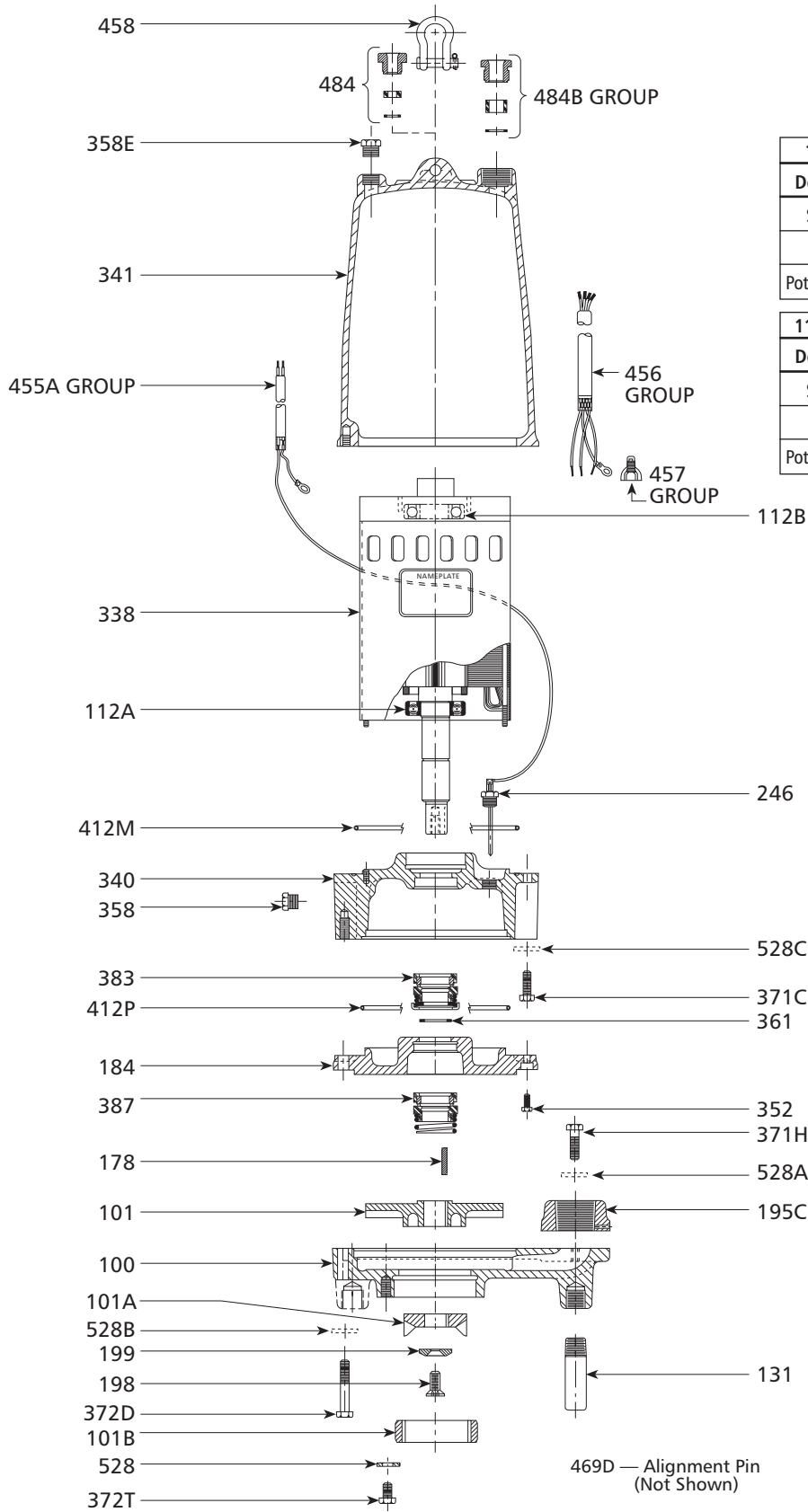
Item No.	Part Description	Material	Qty. Reqd.	Repair Parts Order Number					Max. Wt. (lbs.)
				1750 RPM					
				1½ HP	2 HP	3 HP	5 HP	7½ HP	
100	Casing – 3SDX	Cast Iron	1	1K429					35.0
	Casing – 4SDX			1K428					53.0
101	Impeller – 3SDX	Cast Iron	1	2K918 5 ³ / ₁₆ "	2K916 6 ¹ / ₈ "	2K914 6 ³ / ₄ "	2K912 7 ⁵ / ₈ "	2K910 8 ⁵ / ₁₆ "	
	Impeller – 3SDX	Bronze		2K919 5 ³ / ₁₆ "	2K917 6 ¹ / ₈ "	2K915 6 ³ / ₄ "	2K913 7 ⁵ / ₈ "	2K911 8 ⁵ / ₁₆ "	
	Impeller – 4SDX	Cast Iron		N/A	2K904 5 ¹ / ₁₆ "	2K906 6 ⁵ / ₁₆ "	2K908 7 ¹ / ₈ "	2K532 7 ¹¹ / ₁₆ "	
	Impeller – 4SDX	Bronze			2K905 5 ¹ / ₁₆ "	2K907 6 ⁵ / ₁₆ "	2K909 7 ¹ / ₈ "	2K533 7 ¹¹ / ₁₆ "	
131	Foot - Standard	Steel	3	4K42					–
	Foot - Optional	Cast Iron	1 Kit	4K625					–
178	Impeller Key	AISI 300 SS	1	4K11					–
198	Impeller Bolt	17-4 PH	1	13K48					–
199	Impeller Washer	AISI 300 SS	1	13L39					–
338	Motor	Stainless Steel	1	278-72 12	278-72 22	278-72 32	N/A	N/A	180TY 200 lbs. Air Filled
				278-72 13	278-72 23	278-72 33	278-72 43	278-72 53	
				278-72 14	278-72 24	278-72 34	278-72 44	278-72 54	
				278-72 15	278-72 25	278-72 35	278-72 45	278-72 55	
				278-72 16	278-72 26	278-72 36	278-72 46	278-72 56	
372D	Hex Cap Screw - Casing to Motor	AISI 300 SS	8	13K304					–
NEW STYLE	Mechanical Seal – Standard	Carbon/Ceramic	1	10K137 (180TY)					–
	Mechanical Seal – Optional	Silicon/Silicon	1	10K134 (180TY)					
	Mechanical Seal – Optional	Silicon/Tungsten	1	10K135 (180TY)					
OLD STYLE	Mechanical Seal – Standard	Carbon/Ceramic	1	10K136 (140TY)					–
	Mechanical Seal – Optional	Silicon/Silicon	1	10K132 (140TY)					
	Mechanical Seal – Optional	Silicon/Tungsten	1	10K133 (140TY)					
528	Lockwasher	AISI 300 SS	8	13K158					–

Reliance	Part Description	Material	Quantity	Repair No.	Motor Frame
Motor Repair Parts	Mechanical Seal Kit – Upper & Lower	Carbon/Ceramic	1 Set	10K183	180TY
	Bearing Kit – Upper & Lower	Steel	1 Set	4K700	
	O-Ring Kit	BUNA-N	1 Set	5K422	

Item No.	Models 3SDX/4SDX, Power and Control Cap/Cables	Type and AWG Size	Standard length	Optional Lengths	Wt. (lbs./5 ft.)
			25'	50'	
8	1 PH: 1½ HP, 230V, 140TY	SOW, SOOW – 10/4	9K357	9K358	
	1 PH: 1½, 2 and 3 HP, 230V, 180TY	SOW, SOOW – 8/4	9K359	9K360	
	3 PH: 1½, 2 and 3 HP, 200-230/460/575V, 140TY	SOW, SOOW – 14/4	9K361	9K362	
	3 PH: 5 HP, 200-230/460V, 180TY	SOW, SOOW – 12/4	9K365	9K366	
	3 PH: 7½ HP, 200-230/460V, 180TY	SOW, SOOW – 10/4	9K367	9K368	
	3 PH: 5 and 7½ HP, 575V, 180TY	SOW, SOOW – 14/4	9K363	9K364	
	3 PH: 1½, 2 and 3 HP, 200, 230, 460, 575V, 180TY	SOW, SOOW – 14/4	9K363	9K364	

Control Cable is AWG Size 18/5 - SOW.

MODEL 1GD



114-92 New Capacitor Package – 10/05			
Description	Repair	MFD	VAC
Start Cap		238	330
Run Cap	CP1GDB	50	370
Potential Relay		155031 - 102 or 110	

114-92 Old Capacitor Package – Pre 10/05			
Description	Repair	MFD	VAC
Start Cap		594	125
Run Cap	CP-1B	30	370
Potential Relay		RB60 (155031 - 102)	

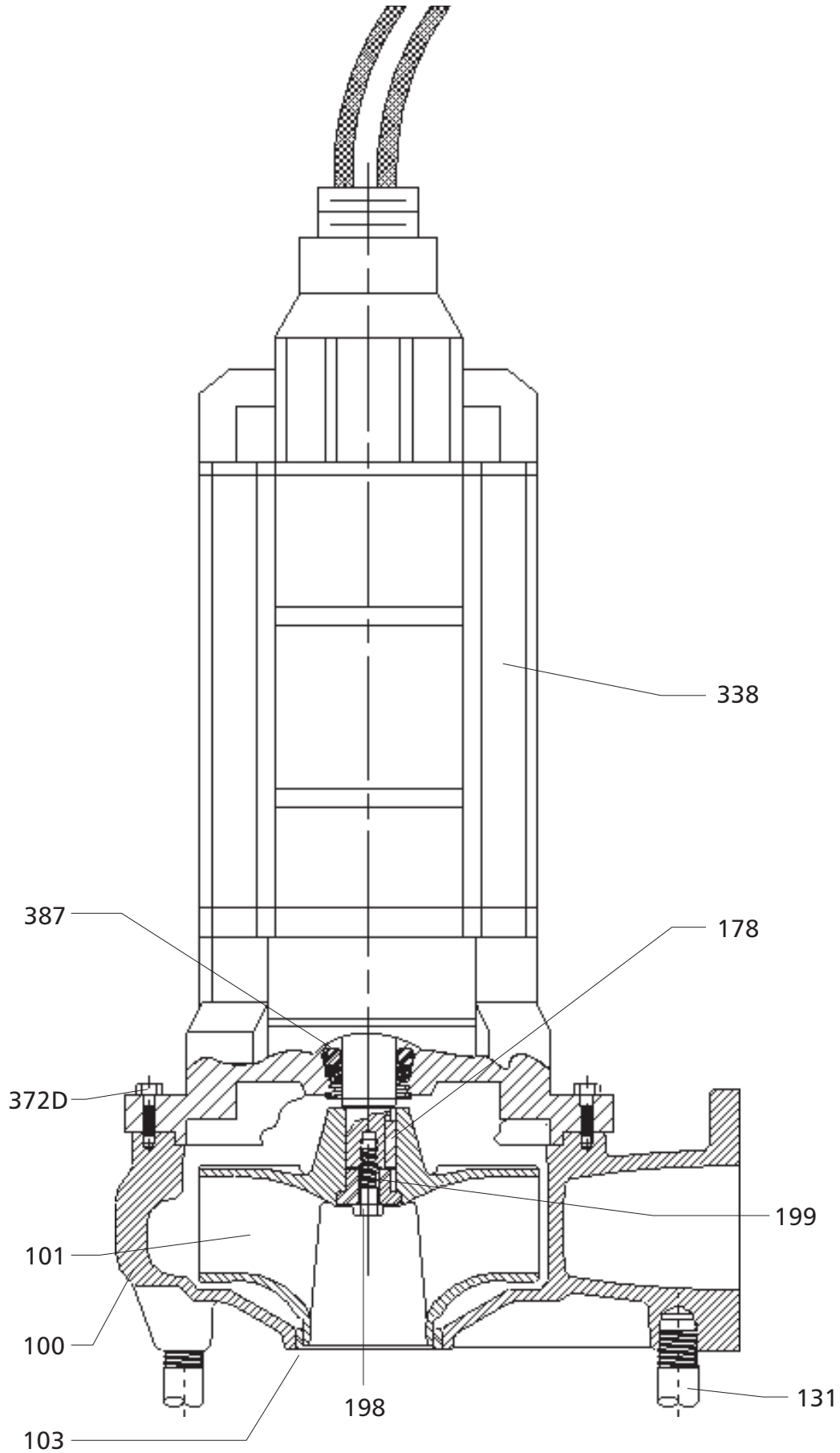
Item No. 456, Power Cables	Type and AWG Size	Standard length				Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
1 and 3 PH: 2 HP, 200–230/460/575V with bare leads.	STOW – 14/4	9K153	9K218	9K154	9K219	1.1
Item No. 455A, Sensor Cables						
Mechanical Seal Sensor - Optional	SJTOW – 16/2	9K189	9K220	9K221	9K222	0.5
Heat Sensor - Standard 1 Phase, Optional 3 Phase.	SJTOW – 16/2	9K189	9K258	9K259	9K260	0.5
Mechanical Seal/Heat Sensor - Optional	SJTOW – 18/4	9K237	9K238	9K239	9K240	0.5

MODEL 1GD

Item No.	Part Description	Material	Quantity Required	Repair Parts Order Number	Weight (lbs.)
100	Casing	Cast Iron	1	1K174	10.5
101	Impeller – 8th Digit Model Designation and Diameter	Bronze	1	2K247 A = 5 ⁵ / ₈ "	3.0
				2K332 B = 5 ¹ / ₄ "	
				2K333 C = 4 ³ / ₄ "	
				2K334 D = 4 ¹ / ₄ "	
101A	Cutter	AISI 440C SS	1	4K303	0.5
101B	Cutter Ring	AISI 440C SS	1	4K304	0.5
112A	Lower Ball Bearing	Steel	1	4K135	–
112B	Upper Ball Bearing	Steel	1	4K384	–
131	Foot – Standard	Steel	3	4K343	–
	Foot – Optional	Cast Iron	1 Kit	4K639	
178	Impeller Key	AISI 300 SS	1	4K11	–
184	Seal Housing	Cast Iron	1	1K226	8.5
195C	Discharge Flange	Cast Iron	1	4K313	1.0
198	Impeller Screw	AISI 300 SS	1	13K190	–
199	Impeller Washer	AISI 300 SS	1	13K191	–
218	Insulating Oil – Gallons Required	Turbine Oil - ASTM150	–	4K245	7.5 lbs./gal.
	Gallons Required in Seal Housing			0.98	
	Gallons Required in Motor Cover			0.23	
246	Seal Sensor - Plug and Rod (See Note)	Nylon/Brass	1	9K191	–
338	Motor – 1 Phase, 208V	Stainless Steel Shaft	1	114-921R	26.0 to 40.0
	Motor – 1 Phase, 230V			114-921R	
	Motor – 3 Phase, 200V			114-9220R	
	Motor – 3 Phase, 230/460V			114-9212R	
	Motor – 3 Phase, 575V			114-9292R	
340	Bearing Housing	Cast Iron	1	1K227	14.5
341	Motor Cover with Seal Sensor (See Note)	Cast Iron	1	1K197	23.0
	Motor Cover without Seal Sensor (See Note)			1K209	
352	Screw - Seal Housing to Bearing Housing	AISI 300 SS	2	13K347	–
358	Plug – Bearing Housing 1/4" NPT	AISI 300 SS	1	6K168	–
358E	Plug – Motor Cover 3/8" NPT	AISI 300 SS	1	6K169	–
361	Retaining Ring	Steel	1	4K305	–
371C	Hex Cap Screw – Brg. Hsg. to Motor Cover	AISI 300 SS	4	13K78	–
371H	Hex Cap Screw – Discharge Flange to Casing	AISI 300 SS	2	13K186	–
372D	Hex Cap Screw – Casing to Bearing Housing	AISI 300 SS	4	13K52	–
372T	Hex Cap Screw – Cutter Ring Retainer	AISI 300 SS	3	13K218	–
383	Mechanical Seal – Upper	Carbon/Ceramic	1	10K21 (Type 21)	–
387	Mechanical Seal – Lower (Standard)	Silicon Carbon	1	10K28 (Type 31)	–
	Mechanical Seal – Lower (Optional)	Tungsten Carbon		10K22 (Type 31)	
412M	O-ring – Motor Cover	BUNA-N, AS568A-166	1	4K252	–
412P	O-ring – Seal/Bearing Housing	BUNA-N, AS568A-256	1	5K73	–
457	Wire Nut	Nylon Housing	3	9K145	–
			4		
			6		
			3		
			2		
458	Lifting Handle	304 SS	1	4K494	–
469D	Alignment Roll Pin (Not Shown)	Steel	2	9K265	–
484	Strain Relief Assembly, Sensor Cable (See Note)	Varies	1	5K113	–
484B	Strain Relief Assembly, Power Cable	Varies	1	5K111	–
528	Washer –Cutter Ring Retainer	AISI 300 SS	3	13K212	–
528A	Lockwasher –Discharge Flange to Casing	AISI 300 SS	2	13K158	–
528B	Lockwasher –Casing to Bearing Housing	AISI 300 SS	4	13K158	–
528C	Lockwasher –Bearing Housing to Motor Cover	AISI 300 SS	4	13K117	–
–	Heat Sensor Kit (See Note)	–	1	9K261	–
–	Seal Installation Tool - Guide	Delrin®	1	A01A008	–
–	Seal Installation Tool - Driver	Delrin®	1	A02A017	–
–	Loctite® #271	–	1	AL27121	–

Notes: 1 phase (Old 114-92 #2 motor) has Heat Sensor (93711) supplied with motor, Goulds 3 phase is optional, Marlow 3 phase is standard.
 New 1 Phase 114-92 #1 motor has in-line thermal protector
 Old 1 Phase 114-92 #2 motor had pilot duty thermal protector

MODELS 4NS/4XD with Reliance Motors



MODELS 4NS/4XD with Reliance Motors

Item No.	Part Description	Material	Qty. Reqd.	Repair Parts Order Number								Max. Wt. (lbs.)	
				1750 RPM						1150 RPM			
				7½ HP	10 HP	15 HP	20 HP	25 HP	30 HP	40 HP	7½ HP		10 HP
100	Casing – with Wear Ring	Cast Iron	1	1K326								75.0	
101	Impeller – 4NS/4XD	Cast Iron		2K781 7½"	2K779 8"	2K776 9"	2K774 9¾"	2K772 10⅝"	2K771 10¾"	2K770 11"	2K773 10⅝"	2K770 11"	21.5- 28.0
	Impeller – 4NS/4XD	Bronze		2K795 7½"	2K793 8"	2K790 9"	2K788 9¾"	2K786 10⅝"	2K785 10¾"	2K784 11"	2K787 10⅝"	2K784 11"	25.0- 32.5
103	Casing Wear Ring	Bronze	1	4K264								2.0	
131	Foot - Standard	Steel	3	4K367 (Old), 4K42 (New)								2.0	
	Foot - Optional	Cast Iron	1 Kit	4K625								–	
178	Impeller Key	AISI 300 SS	1	4K392								–	
198	Impeller Bolt	AISI 300 SS	1	13K275								–	
199	Impeller Washer	AISI 300 SS	1	4K431								–	
338	Motor	Replace 279-26 with 279-27 for UL listed Explosion Proof Motor. Index Suffixes are the same.	1	279-26 1 (210TY)	279-26 11 (210TY)	279-26 21 (210TY)	279-26 31 (210TY)	279-26 41 (250TYS)	279-26 51 (250TYS)	279-26 61 (250TYS)	279-26 71 (210TY)	279-26 81 (210TY)	210TY 315 lbs. Air Filled 250TYS 750 lbs. Air Filled
				279-26 2 (210TY)	279-26 12 (210TY)	279-26 22 (210TY)	279-26 32 (210TY)	279-26 42 (250TYS)	279-26 52 (250TYS)	279-26 62 (250TYS)	279-26 72 (210TY)	279-26 82 (210TY)	
				279-26 3 (210TY)	279-26 13 (210TY)	279-26 23 (210TY)	279-26 33 (210TY)	279-26 43 (250TYS)	279-26 53 (250TYS)	279-26 63 (250TYS)	279-26 73 (210TY)	279-26 83 (210TY)	
				279-26 4 (210TY)	279-26 14 (210TY)	279-26 24 (210TY)	279-26 34 (210TY)	279-26 44 (250TYS)	279-26 54 (250TYS)	279-26 64 (250TYS)	279-26 74 (210TY)	279-26 84 (210TY)	
				279-26 5 (210TY)	279-26 15 (210TY)	279-26 25 (210TY)	279-26 35 (210TY)	279-26 45 (250TYS)	279-26 55 (250TYS)	279-26 65 (250TYS)	279-26 75 (210TY)	279-26 85 (210TY)	
372D	Hex Cap Screw - Casing to Motor	AISI 300 SS	8	13K45								–	
387	Mechanical Seal – Standard	Carbon/Ceramic	1	10K157			10K160			10K157		–	
	Mechanical Seal – Optional	Silicon/Silicon	1	10K158			10K161			10K158			
	Mechanical Seal – Optional	Silicon/Tungsten	1	10K159			10K162			10K159			

Power and Control Cap/Cables for Reliance Motors	Type and AWG Size	Standard length		Optional Lengths		Wt. (lbs./5 ft.)
		25'	50'	50'	50'	
	SOW, SOOW 14/4	9K423		9K431		
	SOW, SOOW 12/4	9K424		9K432		
	SOW, SOOW 10/4	9K425		9K433		
	SOW, SOOW 8/4	9K426		9K434		
	SOW, SOOW 6/4	9K427		9K435		
	SOW, SOOW 4/4	9K428		9K436		
	SOW, SOOW 2/4	9K429		9K437		
	SOW, SOOW 1/0/4	9K430		9K438		

Control Cable is AWG Size 18/5 - SOW-A, SO.

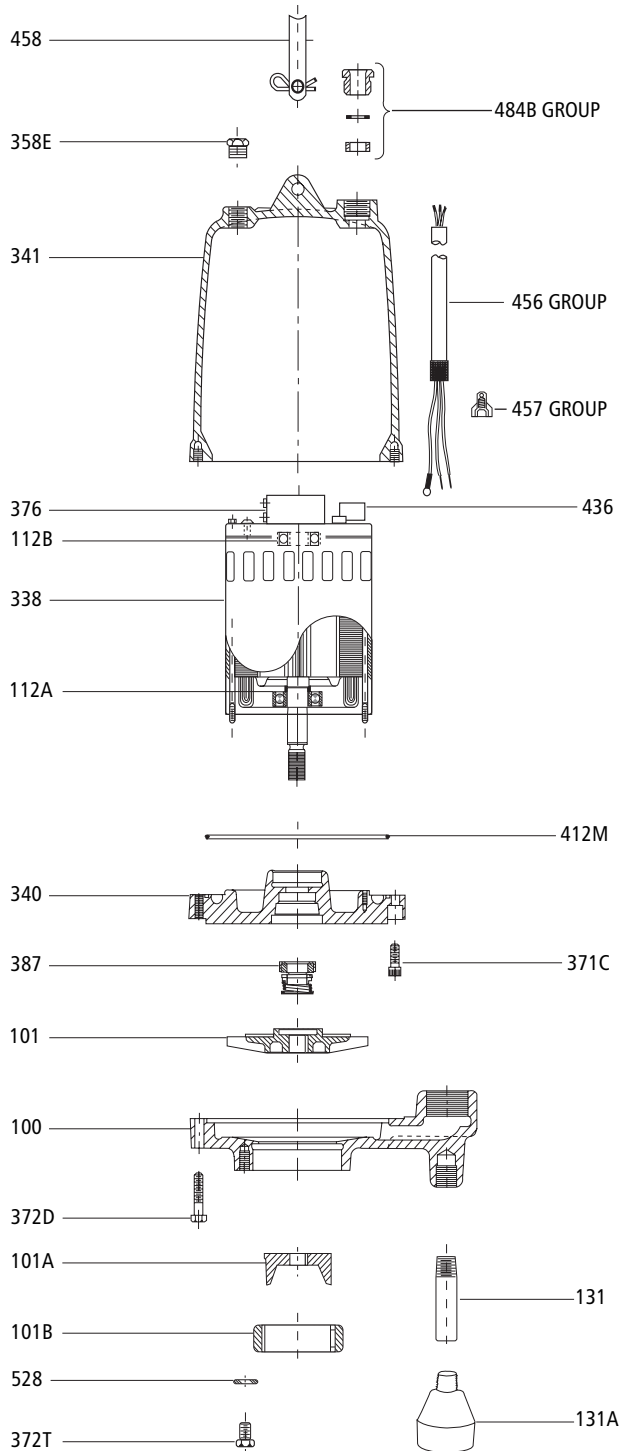
Parts for Pumps with USEM Motors							
372E	Hex Cap Screw - Bracket to Motor	AISI 300 SS	2	13K226	13K277	13K226	–
387	Mechanical Seal – Optional	Carbon/Ceramic	1	10K82	10K142	10K82	–
	Mechanical Seal – Optional	Silicon/Tungsten	1	10K83	10K85	10K83	
458	Lift Bracket	AISI 300 SS	1	4K433	4K434	4K433	3.5

Reliance	Part Description	Material	Quantity	Repair No.	Motor Frame	Repair No.	Motor Frame
Motor Repair Parts	Mechanical Seal Kit – Upper & Lower	Carbon/Ceramic	1 Set	10K181	210TY	10K182	250TY
	Bearing Kit – Upper & Lower	Steel	1 Set	4K698		4K699	
	O-Ring Kit	BUNA-N	1 Set	5K420		5K421	

Power and Control Cap/Cables for USEM Motors	Type and AWG Size	Standard Length	
		25'	50'
7½ – 15 HP, 200/230/380V; 7½ – 30 HP, 460/575V	SO – 8/4	9K279	9K280
20 – 25 HP, 200/230V	SO – 4/4	9K281	9K282
30 HP, 200/230V	SO – 2/4	9K283	9K284

Control Cable is AWG Size 18/5 - SOW-A, SO.

MODEL RGS2012



Item No.	Part Name	Material	Qty.	Repair Parts Order Number	Wt. (lbs.)
100	Casing	Cast iron	1	1K313	11
101	Impeller 5.69" dia.	Bronze	1	2K705	2.0
101A	Cutter with shims	AISI 440C SS	1	4K409	0.5
101B	Cutter ring	AISI 440C SS	1	4K304	0.5
112A	Lower ball bearing	Steel	1	4K384	—
112B	Upper ball bearing	Steel	1	4K132	—
131	Foot	Steel	3	4K343	—
131A	Optional Pump Legs	Steel	3	4K639	—
218	Insulating oil	Turbine Oil ASTM150	.98 gal	4K432 See Index Page	7.5 lbs/gal
338	Motor with Brg. Hsg. #340	—	—	120-212R	19
340	Bearing housing	Cast iron	—	—	—
341	Motor cover – Use with cord with NEMA plug power cable without plug	Cast iron	1	1K207 1K208	18.5
358E	Plug – motor cover 3/8" NPT	AISI 300 SS	1	6K169	—
371C	Screw – bearing housing to motor cover	AISI 300 SS	4	13K271	—
372D	Screw – casing to bearing housing	AISI 300 SS	4	13K336	—
372T	Screw – cutter ring retainer	AISI 300 SS	3	13K218	—
376	Capacitor (start)	—	1	9K353	—
387	Mechanical seal (standard) Mechanical seal (optional)	Silicon Carbide Tungsten Carbide	1	10K119 10K123	—
412M	O-ring – motor cover	BUNA-N	1	4K252	—
436	Solid state switch	—	1	9K395	—
456	Power cable	—	1	See power cable chart	—
457	Wire nut	Nylon	2	9K145	—
458	Handle assembly	AISI 300 SS	1	4K243	—
484B	Strain relief assembly – power cable with plug power cable without plug	Varies	1	5K113 5K111	—
528	Washer – cutter ring retainer	AISI 300 SS	3	13K212	—

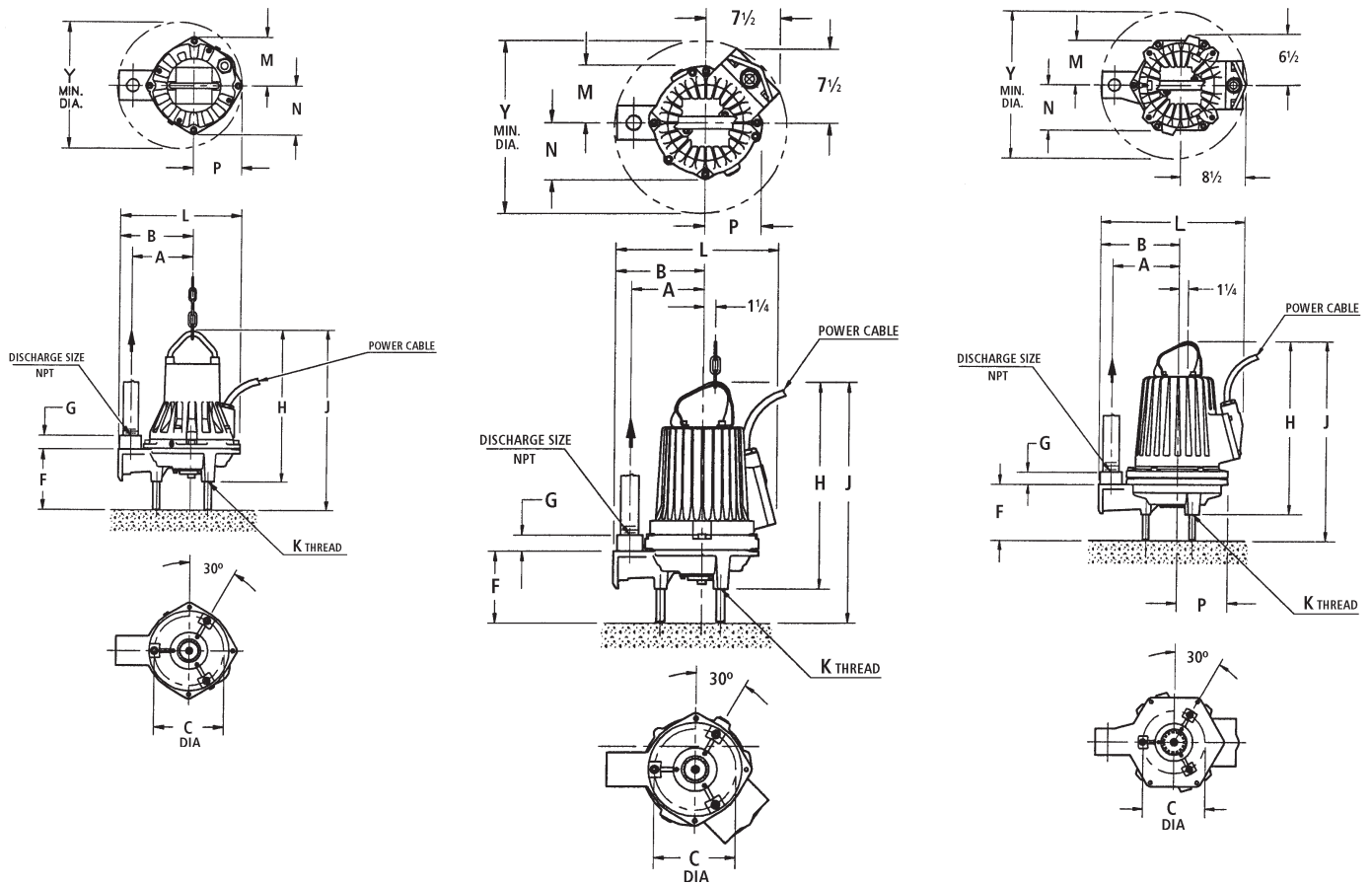
RESIDENTIAL GRINDER POWER CABLES

Residential Grinder Power Cables	Standard length	Optional Lengths			Wt. (lbs./5 ft)
	20'	30'	50'	100**	
1 Phase, 2 HP, 230V - STOW - 14/3 with bare leads	9K266	9K267	9K268	9K269	0.9
1 Phase, 2 HP, 230V - SJTOW - 14/3 with Nema plug	9K393	9K394	N/A	N/A	0.9

* Maximum allowable cord length. ** Includes 230V NEMA plug.

9K353 capacitor is a 295/355 MFD, 125 VAC start capacitor with resistor.

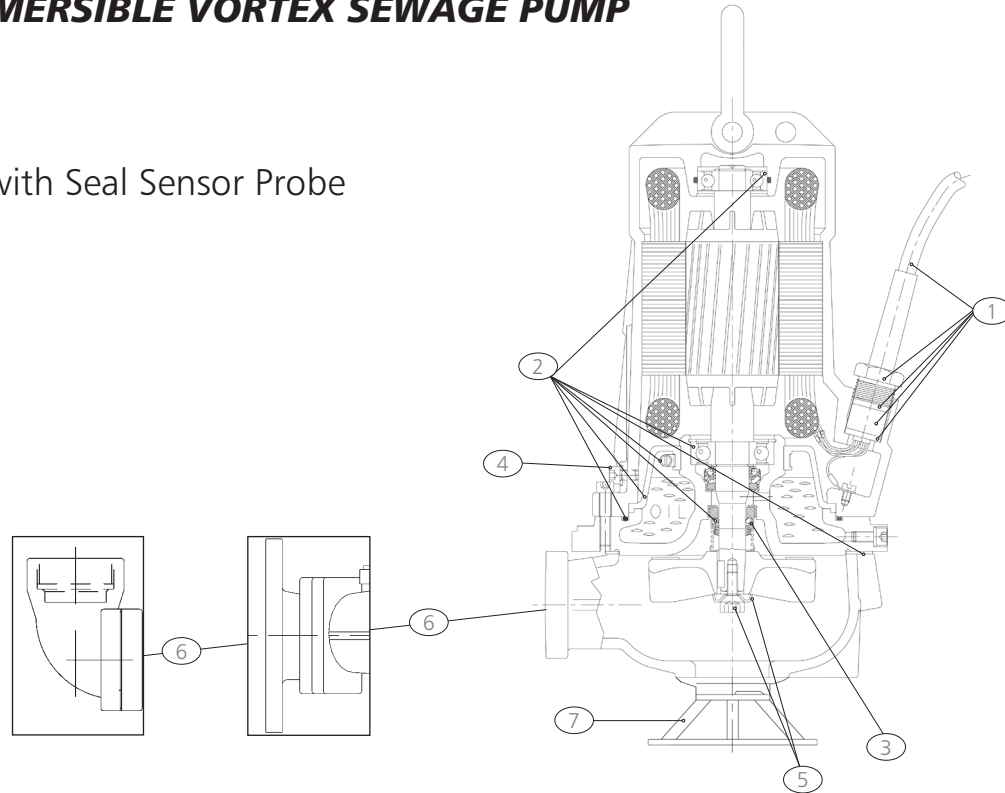
MODELS 1GA/2GA



Please contact Customer Service for part information.
 Phone (315) 568-7123 or Fax (888) 3222-5877 (toll free)

ROBOT – SUBMERSIBLE VORTEX SEWAGE PUMP

Dual Seal with Seal Sensor Probe



Goulds Part No.	Item No.	Robot Pump	Description	Included
9K502	1	Up to and including 5.4 HP	14/7 cable with accessories and connections	Cable, cable entry gland, clamp, sleeve, cable connectors crimps and hardware
9K503		Up to and including 16.5 HP	12/7 cable with accessories and connections	Cable, cable entry gland, clamp, sleeve, cable connectors crimps and hardware
5K459	2	Up to and including 6.2 HP	Repair Kit	Bearings, both mechanical seals, o-rings and gaskets
10K193	3	Up to 6.2 HP	Lower Mechanical Seal	Lower Mechanical Seal
5K463	4	Up to 6.2 HP	Dobo Ring	Dobo ring
4K789	5	Up to 6.2 HP	Impeller Hardware	Key, cap, screw
1K588	6	2" Discharge kit	2" discharge Kit	2" Discharge Elbow, NPT
1K589		3" Discharge Kit	3" Discharge Kit	3" Discharge Flanged
1K590		4" Discharge Kit	4" Discharge Kit	4" Discharge Flanged
1K591	7	2" - 2.5" Suction Pump Stand**	See suction size on bulletin	Pump Stand
1K592		2.88" Suction Pump Stand**		
1K593		3" Suction Pump Stand**		
1K594		4" Suction Pump Stand**		

* Higher HP accessories will be special ordered. ** Note: These are rated on SUCTION size NOT discharge.

CONTROL PANEL REPAIR PARTS

RB Number	Description	SES Control Panel	"A" Series Control Panel	Manufacturing Number
RB-1	Single phase contactor, 2 pole	D10020, D10020N1, D10027, D10036	A6-0511, A6-1012, A-2012, A6-3012, A-5012, G6-2012	Furnas 41NB20AFP
RB-4	Pump circuit breaker		A6-3012	Square D – QOU230
RB-5	Pump circuit breaker		A6-5012	Square D – QOU240
RB-6	Pump circuit breaker		G6-2012 / A6-1012	Square D – QOU220
RB-24	Three phase contactor		03-J3	ABB DP40C3P-1/B
RB-30	Control circuit breaker		A6-1012, A6-2012, A6-0511	Square D – QOU110
RB-31	Seal sensor relay		A4-3, A4-4	Boulay BFI-SFR-120
RB-32*	Single phase contactor, 2 pole with auxiliary contact	S10020, S10020N1, S10027, S10036 with relays	A3-2012, A3-3012, A3-5012, G3-2012	Furnas 41NB20AFPM6R used on panels with relays
RB-34	Control circuit transformer	All three phase SES controls	A3-5034, A6-5032, A6-5034	Square D – XF75
RB-35	Time delay relay		A6-0511, A6-1012, A6-2012, A6-5032, A6-5034, A5-1 (Before 11/98)	SSAC, TSD 74115
RB-36	Control relay	All SES simplex controls	A6-0511, A6-1012, A6-2012, A6-5032, A6-5034, A5-1, A4-1, A4-1N4 (Before 11/98)	Potter and Brumfield KUP14A15-120
RB-37	Pump circuit breaker		A6-0511	Square D – QOU115
RB-38	Pump circuit breaker		A6-2012 (Before 11/98)	Square D – QOU215
RB-39	Control circuit breaker		A6-5032	Square D – QOU210
RB-40	Pump circuit breaker		A6-5032	Square D – QOU330
RB-41	Control circuit breaker		A6-5034	Airpax 219-2-1-63-7-2-10
RB-42	Pump circuit breaker		A6-5034	Airpax 219-3-1-63-7-2-15
RB-46	Three phase contactor, 3 pole with auxiliary	S31625-S32025		Furnas 41NB30AFPM6R
RB-47	Three phase contactor, 3 pole	D31625-D32025		Furnas 41NB30AFP

* Panels with plug-in relays. Units with printed circuit boards use RB-81.

Continued on next page.

CONTROL PANEL REPAIR PARTS (continued)

RB Number	Description	SES Control Panel	"A" Series Control Panel	Manufacturing Number
RB-50	Alarm horn	All SES controls		Floyd MW-09-201-QC
RB-51	Control relay	All SES duplex controls	A4-1, A4-1N4 (After 11/98)	Potter and Brumfield KHUA-11A11-120
RB-52	Motor circuit protector	S31625, D31625		Cutler Hammer A-302 GN
RB-53	Motor circuit protector	S32540, D32540		Cutler Hammer A-302 HN
RB-54	Motor circuit protector	S34063, D34063		Cutler Hammer A-302 JN
RB-55	Motor circuit protector	S36310, D36310		Cutler Hammer A-302 KN
RB-56	Motor circuit protector	S31016, D31016		Cutler Hammer A-302 LN
RB-57	Motor circuit protector	S31620, D31620		Cutler Hammer A-302 MN
RB-58	Motor circuit protector	S32025, D32025		Cutler Hammer A-302 NN
RB-59	Overload relay		A3-5012, A3-3012, A6-3012, A6-5012, G3-2012, G6-2012	Furnas 48DA18AA4
RB-60	Motor start relay		G3-2012, G6-2012	Franklin Electric 155031102
RB-61	Motor start capacitor		G3-2012, G6-2012	Mallory 580UF
RB-62	Motor run capacitor		G3-2012, G6-2012	30UFC370VAC
RB-63	Flashing red alarm light	All SES simplex panels (before 11/98)		BL4-30
RB-64	Flashing red alarm light	All SES duplex panels (before 11/98)		BL4-40
RB-70	Flashing red alarm light (after 11/98)	All S31625-S32025 D10020, D10020N1, S10020, S10020N1		Ingram MX-15
RB-71	Flashing red alarm light (after 11/98)	All D31625-D32025 D10027, D10036		Ingram LRX-40
RB-72	Pump run light assembly	All SES panels except S10020, D10020N1		BACO, C20SA20
RB-73	Alarm test button assembly	All SES panels except S10020N1, D10020N1		BACO, C21AA01
RB-74	Alarm reset button assembly	D10020, D10027, D10036 D31625-D32025		BACO, C21AA02
RB-75	Duplex logic control board	All SES duplex panels	A6-2012, G6-2012, A6-5032, A6-5034, A6-3012, A6-5012 (after 11/98)	Boulay BFI-LLC-120
RB-76	Alarm silence button assembly	All SES panels except D10020N1, S10020N1		BACO, C21AA01
RB-77W	Replacement LED white	All SES panels		Square D ZB5AVG1
RB-77G	Replacement LED green	All SES panels		Square D ZB5AVG3
RB-77R	Replacement LED red	All SES panels		Square D ZB5AVG4
RB-79G	Lens light green	All SES panels		Square D ZB5AV033
RB-77G	Lens light white	All SES panels		Square D ZB5AV013
RB-77R	Lens light red	All SES panels		Square D ZB5AV043
RB-78	Circuit Breaker	D10020N1, D10020		QOU-225
RB-80	Simplex logic board	All simplex panels		BFI-SIMLLC-120
RB-81	Contactora 1Ø	S10020, S10020N1, D10020, D10020N1 AFTER 1-1-09		ABB DP30C2P-1

SUMP, EFFLUENT AND SEWAGE REPAIR PARTS OIL VOLUMES

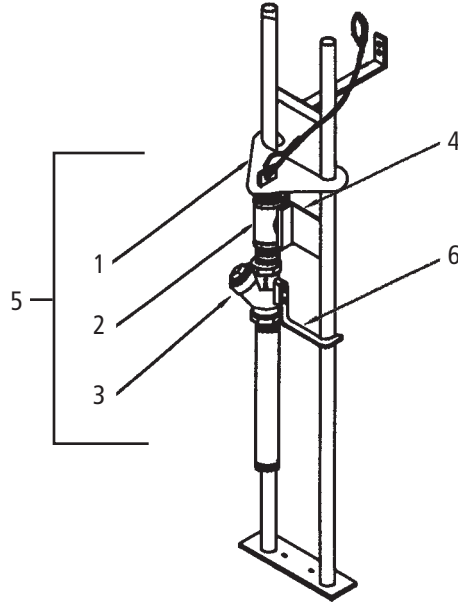
Model	Oil Volume - Motor Housing	Oil Volume - Seal Housing
	Quarts	Quarts
ST 31	1.32	N/A
PE31	1.32	N/A
PE41	1.32	N/A
PE51	1.32	N/A
PS41	1.70	N/A
PS51, PV51	1.70	N/A
3871 (EP's - .4 hp)	1.00	N/A
3871 (EP's - .5 hp)	0.85	N/A
3872 (WW's)	0.85	N/A
3885 (WE's) - A.O. Smith	3.90	N/A
3885 (WE's) - Franklin	3.50	N/A
2ED's - A.O. Smith	3.90	0.40
3886 (WS__B)	3.90	N/A
3887BF (WS__BF)	3.90	N/A
3887BHF (WS_BHF) - A.O. Smith	3.90	N/A
3887BHF (WS_BHF) - Franklin	3.50	N/A
2/3WD's - A.O. Smith	3.90	0.40
3888D3 (WS____D3)	7.00	1.70
3SD's	7.00	1.70
3888D4 (WS____D4)	7.00	1.50
4SD's	7.00	1.50
3888D4 (WS____D4) - 7½ HP	6.00	1.50
4SD's - 7½ HP	6.00	1.50
RGS2012	3.90	N/A
1GD - Single Phase	3.55	0.90
1GD - Three Phase	3.90	0.90

Noco T-32 oil is standard.

Note: Normally a minimum of a 1" air gap at the top of the motor/seal housing should be maintained due to thermal expansion of the oil.

A10-12, A10-2015 and A10-20

Item No.	Description	A10-12	A10-20 and A2015
1	Upper Guide Bracket	4K800	4K801
2	Brass Qick Disconnect	4K802	4K803
3	CI Ball Check Valve	4K804	4K805
4	O-Ring Disconnect	4K806	4K807
5	Movable Side	4K808	4K809
6	Lower Stand Off	4K810	4K811



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Wastewater

Goulds Pumps

Sump Pumps

Installation, Operation and
Maintenance Instructions



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- a subsidiary of ITT Industries, Inc.

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Engineered for life

TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PUMP.



This is a **SAFETY ALERT SYMBOL**. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.



Warns of hazards that **WILL** cause serious personal injury, death or major property damage.



Warns of hazards that **CAN** cause serious personal injury, death or major property damage.



Warns of hazards that **CAN** cause personal injury or property damage.


NOTICE: Indicates special instructions which are very important and must be followed.


THIS MANUAL MUST BE KEPT WITH THE PUMP.


MAINTAIN ALL SAFETY LABELS.


IMPORTANT PRE-INSTALLATION INFORMATION




 All electrical work must be performed by a qualified technician. Always follow the National Electrical Code (NEC), or the Canadian Electrical Code, as well as all local, state and provincial codes.

 The pump must be connected to a dedicated electrical circuit protected by a properly sized circuit breaker or fuses. Install a disconnect where required by code. Code questions should be directed to your electrical inspector. **See Chart 1 for specific information.**

 Disconnect electrical power before installing or servicing the pump. The motor's automatic thermal overload protection may allow an overheated pump to restart unexpectedly.

 Pump is not designed for use in swimming pools, open bodies of water, hazardous liquids, or where flammable gases exist.

 Pumps and floats equipped with a 3-prong grounded plug must be connected to a 3-wire receptacle. Do not attach to extensions or connectors without a 3-prong grounded plug. Removing the plug from the power cord is allowable as long as the hard wiring is done per code by a qualified technician. Removing the plug will not void the warranty or agency listing.

1. GENERAL INFORMATION

- 1.1. Sump pumps are designed to operate intermittently and usually seasonally. It is recommended that you test the pump before your rainy season begins to insure that the pump and switch are operating properly.
- 1.2. We suggest installing a high water alarm system and a battery back-up pump system for finished basements or areas where flooding will cause property damage. A back-up generator is another option you can discuss with your pump installer. Most power outages occur during rain storms, just when you need your sump pump the most! Pump manufacturer's warranties cover only the pump. Labor and incidental damage such as flooding is not covered.

2. PRE-INSTALLATION CHECKS

- 2.1. Open all cartons and inspect for shipping damage. Report any damage to your supplier immediately.
- 2.2. Verify that all equipment is the correct voltage. Warranty does not cover damage caused by connecting pumps and controls to incorrect voltage.
- 2.3. Is your basin sized correctly and the proper type for the location?

Diameter - It must be wide enough to allow the pump and switch to physically fit and provide room for the switch to operate freely. The vertical switch models typically require less diameter than the wide-angle float models. See "*min. basin diameter*" in Chart 1.



Depth - It must be deeper than the minimum depth at which the switch turns the pump On. As an example, if the pump turns on at 15" you want to use a basin deeper than 15". See "*On level*" in Chart 1.



Style - There are several sump basin styles available. The location of the sump determines if you require a cover and what type you require. It is important to keep debris from entering the sump and clogging the pump. An open sump in a traffic area such as a basement is dangerous. If children or pets will be playing

in the area a bolt-on or child-proof cover is recommended.

3. PIPING

- 3.1. Discharge pipe should be the same size as the pump discharge to insure optimum performance. Using undersized pipe may dramatically reduce the flow and therefore waste energy. Your pump supplier can suggest the correct pipe for your installation.
- 3.2. Install a threaded pipe adapter, matched to the pipe type you are using, into the threaded pump discharge. One end will have a male thread and the other end will have a barbed connector, compression fitting or solvent weld connector. Use Teflon[®] tape on all threaded joints. If using solvent welded pipe and fittings it is best to dry fit them first and after verifying the fit, solvent weld. A union installed just above the sump or basin cover will facilitate future maintenance and replacement. See Chart 1 for discharge sizes.
- 3.3. Install a line check valve within 2 feet of the pump. Install per valve manufacturer's instructions.


IMPORTANT - Drill a 1/8" (3.2mm) relief hole in the discharge line approximately 2" (51 mm) above the pump discharge connection but below the check valve and within the sump. This "relief" hole allows trapped air to escape from the pump and prevents air-locking the pump. Failure to drill this hole is a major cause of sump pumps failing to pump after long periods of inactivity such as seasonal use. Model ST is self-venting - no hole is required.

4. INSTALLATION IN SUMP

- 4.1. The pump can be placed directly on the bottom of a poly or fiberglass sump basin or a concrete sump bottom. If the bottom is packed gravel the stones must be larger than 1/2" (13mm) in diameter and the pump should be placed on bricks for support.
- 4.2. After connecting the discharge pipe to the pump it can be lowered into the sump (basin). Always lower the pump by the handle and the pipe, never by the power cord. Place the pump against the basin wall so the switch is to the center. See "*Installation Data*".

- 4.3. Check to insure all piping connections are tight. The pipes should be supported by fastening to floor joists or wall. This will prevent the pump from moving in the sump. If it moves the switch could get stuck and either keep the pump running or not let it turn on.
- 4.4. The power to the outlet should be Off at this point. The dedicated outlet should supply power only to the pump.
- 4.5. Our sump pumps have either a single power cord for pumps with built-in switches or two power cords for pumps with piggyback switches:
Built-In/Single Cord - plug the single power cord into a dedicated power outlet.
Piggyback/Two Power Cords - insert the piggyback switch male plug into a dedicated power outlet. You then plug the standard male pump plug into the back, female side, of the piggyback switch plug.
- 4.6. Fasten the power cords to the discharge pipes using tie wraps or electrical tape. Coil and store any excess power cord outside the sump.

5. OPERATION

- 5.1. Turn the power On at the breaker panel and/or the disconnect switch.
- 5.2. Fill the basin with water and observe where the pump turns On and Off. It should go On well before the water overflows the top of the sump. The pump should go Off before the water goes below the pump suction. The On-Off cycle on models with wide-angle float switches is adjustable. Adjustment is made by changing the tether length between the switch body and the switch tether (pivot) point. The tether length cannot be less than 3" – 3.5". Tethers less than 3" may not allow the float to drop down enough to turn off. See "Installation Data".
- 5.3.  **WARNING** Install a cover on the sump basin if there is a danger of debris, children, or pets falling into the basin. See Basin "Style" in Section 2.3.

6. SEASONAL SERVICE / MAINTENANCE

- 6.1. If your sump pump only operates seasonally and then sits idle for months it is recom-

mended that you test the pump before your rainy season begins. Fill the sump with water and check for debris and proper switch operation. Remove any debris which could clog the suction strainer or jam the switch. Insure that the switch operates freely and does not hit the sump wall or hang-up on piping or power cords.

7. OPTIONS

- 7.1. Your pump supplier has a full line of basins, covers, high water alarms, and battery back-up pump systems available to complete your system. We also sell simplex and duplex pump control panels. A duplex system is recommended when the inflow is constant and the pumps run almost continuously. The duplex system provides a back-up pump in the event the primary pump fails.

8. TROUBLE SHOOTING CHART

Extreme caution should be exercised when servicing electrical devices. Fatal injuries could result from electrical shock. Always disconnect the electrical power from the device being serviced unless it is necessary for the work being done.

MOTOR NOT RUNNING

(See causes 1, 2, 3, 4, 6, 8)

LITTLE OR NO LIQUID DELIVERED

(See causes 5, 6, 7, 8, 10)

PUMP WILL NOT TURN OFF

(See causes 7, 8, 9, 10, 13)

PUMP CYCLES CONSTANTLY

(See causes 9, 11, 12, 13)

PROBABLE CAUSES:

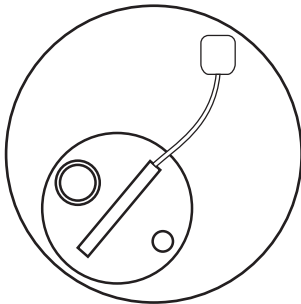
1. Tripped thermal protector.
2. Open Circuit breaker of blown fuse.
3. Rotating parts binding.
4. Defective motor.
5. Air locked.
6. Low voltage.
7. System head too high.
8. Pump clogged.
9. Level control defective or switch not properly positioned.
10. Improper check valve direction.
11. Check valve leaking.
12. Incorrect size basin or wet-well.
13. Inflow excessive for size of pump.

MODEL INFORMATION (CHART 1)

Series No.	HP	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Min. On Level	Min. Off Level	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight lbs/kg
ST31	1/3	115	12.0	20	1	Vertical Switch	10'	1 1/2"	8"	3.5"	11"	1/2"	29 / 13.2
						Wide Angle Switch			14"	7"	18"		
						No Switch			Manual	Manual	11"		
LSP03	1/3	115	2.9	10	1	No Switch	10' / 20'	1 1/2"	Manual	Manual	9"	3/8"	11 / 5
						Wide Angle Switch			11"	5"	12"		
						Vertical Switch			8.5"	2"			
LSP07	3/4	115	7.1	10	1	No Switch	20'	1 1/2"	Manual	Manual	9"	3/8"	15 / 6.8
		230	3.5			Wide Angle Switch			12.5"	6.5"	12"		
SPO24	1/4	115	2.4	10	1	Vertical Switch	10'	1 1/4"	6"	3"	9"	3/8"	8 / 3.6
SPO25			1 1/2"										
SP035			1/3					3.0	No Switch	Manual	Manual		
SP28C	*	115	75 WATT	10	1	Plug / Comp. Controlled	8'	1 1/2"	1"	5/8"	9"	1/16"	10 / 4.5

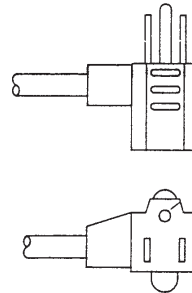
* This is a D.C. motor. It starts every 1 minute looking for a load. If there is water in the basin it will pump down to 5/8" and shut-off. There is no HP rating.

INSTALLATION DATA



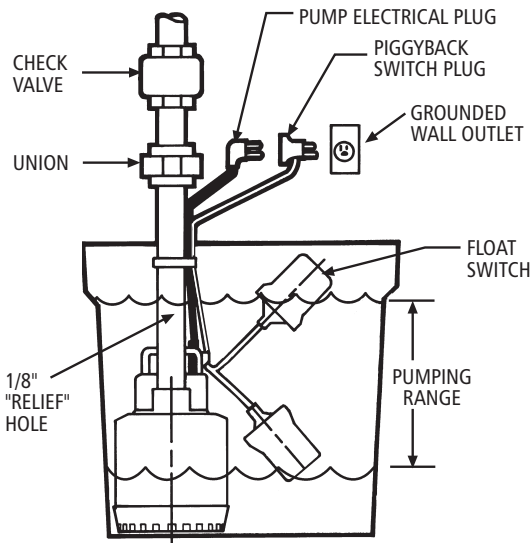
Suggested Pump Positioning in Sump

Figure 1



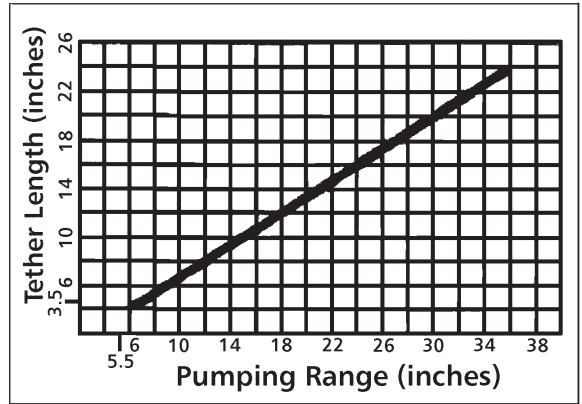
Piggyback Plug

Figure 2



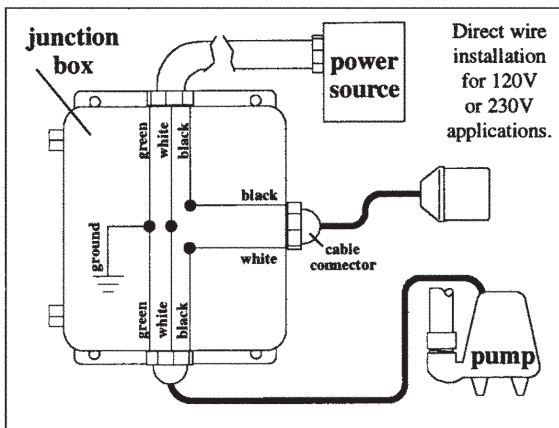
Typical Pump Installation in Sump

Figure 3



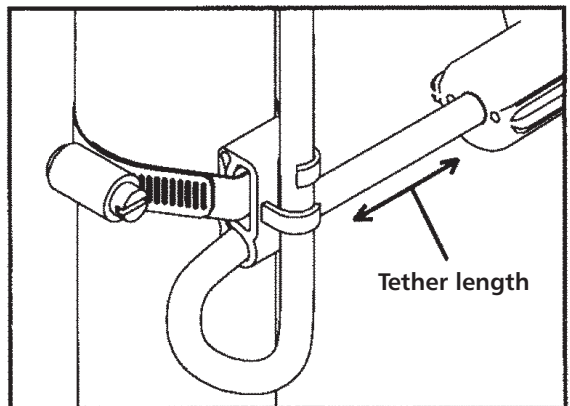
Tether Length vs. Pumping Range Curve

Figure 5



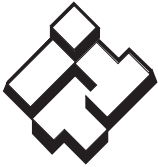
Pumpmaster and Pumpmaster Plus
Hard Wired

Figure 4



Wide Angle Float Mounting Strap

Figure 6



ITT

Wastewater

GOULDS PUMPS LIMITED WARRANTY

This warranty applies to all water systems pumps manufactured by Goulds Pumps.

Any part or parts found to be defective within the warranty period shall be replaced at no charge to the dealer during the warranty period. The warranty period shall exist for a period of twelve (12) months from date of installation or eighteen (18) months from date of manufacture, whichever period is shorter.

A dealer who believes that a warranty claim exists must contact the authorized Goulds Pumps distributor from whom the pump was purchased and furnish complete details regarding the claim. The distributor is authorized to adjust any warranty claims utilizing the Goulds Pumps Customer Service Department.

The warranty excludes:

- (a) Labor, transportation and related costs incurred by the dealer;
- (b) Reinstallation costs of repaired equipment;
- (c) Reinstallation costs of replacement equipment;
- (d) Consequential damages of any kind; and,
- (e) Reimbursement for loss caused by interruption of service.

For purposes of this warranty, the following terms have these definitions:

- (1) "Distributor" means any individual, partnership, corporation, association, or other legal relationship that stands between Goulds Pumps and the dealer in purchases, consignments or contracts for sale of the subject pumps.
- (2) "Dealer" means any individual, partnership, corporation, association, or other legal relationship which engages in the business of selling or leasing pumps to customers.
- (3) "Customer" means any entity who buys or leases the subject pumps from a dealer. The "customer" may mean an individual, partnership, corporation, limited liability company, association or other legal entity which may engage in any type of business.

THIS WARRANTY EXTENDS TO THE DEALER ONLY.



GOULDS PUMPS

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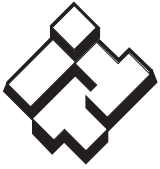
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IM105R02 February, 2006

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Agua Residual

Goulds Pumps

Bombas para sumideros

Manual de Instalación
y Operación



Goulds Pumps son una marca de fábrica de ITT Water Technology, Inc. - un subsidiario de ITT Industries, inc.

www.goulds.com

Engineered for life

PARA EVITAR LESIONES PERSONALES GRAVES O AÚN FATALES O SERIOS DAÑOS MATERIALES, LEA Y SIGA TODAS LAS INSTRUCCIONES DE SEGURIDAD EN EL MANUAL Y EN LA BOMBA.



Éste es un **SÍMBOLO DE ALERTA DE SEGURIDAD**. Cuando vea este símbolo en la bomba o en el manual, busque una de las siguientes palabras de señal y esté alerta a la probabilidad de lesiones personales o daños materiales.



Advierte los peligros que **CAUSARÁN** graves lesiones personales, la muerte o daños materiales mayores.



Advierte los peligros que **PUEDEN** causar graves lesiones personales, la muerte o daños materiales mayores.



Advierte los peligros que **PUEDEN** causar lesiones personales o daños materiales.

AVISO: Indica instrucciones especiales que son muy importantes y que se deben seguir.

ESTE MANUAL DEBE MANTENERSE CON LA BOMBA.

MANTENGA TODAS LAS ETIQUETAS DE SEGURIDAD.

INFORMACIÓN IMPORTANTE DE PREINSTALACIÓN



Todo el trabajo eléctrico debe ser realizado por un técnico calificado. Siempre siga el Código Eléctrico de EE.UU. (NEC) o el Código Eléctrico Canadiense, además de todos los códigos locales, estatales y provinciales.



La bomba debe conectarse a un circuito eléctrico dedicado protegido con un cortacircuitos o fusible del tamaño apropiado. Instale un desconectador cuando el código así lo requiera. Las preguntas acerca del código deben ser dirigidas al inspector eléctrico. *Ver la Tabla 1 para obtener información específica.*



Desconecte la corriente eléctrica antes de instalar o dar servicio a la bomba. La protección automática contra la sobrecarga térmica del motor podría permitir que una bomba recalentada arranque inesperadamente.



La bomba no está diseñada para usarse en albercas, masas abiertas de agua, líquidos peligrosos o donde existan gases inflamables.



Las bombas y flotadores equipados con un enchufe de 3 clavijas conectado a tierra deben enchufarse a un receptáculo trifilar. No conecte a extensiones o conectores sin un enchufe de 3 clavijas conectado a tierra. Se permite quitar el enchufe del cable de alimentación, siempre que un técnico calificado haga el cableado directo de acuerdo con el código. Si se quita el enchufe, no se anulará la garantía ni la aprobación de la agencia.

1. INFORMACIÓN GENERAL

- 1.1. Las bombas para sumidero están diseñadas para funcionar intermitentemente y habitualmente por temporadas. Se recomienda que pruebe la bomba antes del comienzo de la estación lluviosa para asegurar que la bomba y el interruptor estén funcionando correctamente.
- 1.2. Sugerimos instalar un sistema de alarma por alto nivel de agua y un sistema de bomba de reserva a batería para sótanos habitables o áreas donde la inundación podría causar daños materiales. Un generador de reserva es otra opción que puede consultar con el instalador de la bomba. La mayoría de los cortes eléctricos ocurren durante temporales de lluvia, justo cuando necesita más su bomba para sumidero. Las garantías del fabricante de la bomba sólo cubren la bomba. La mano de obra y los daños y perjuicios imprevistos, tales como inundaciones, no están cubiertos.

2. VERIFICACIONES PRELIMINARES A LA INSTALACIÓN

- 2.1. Abra todas las cajas e inspeccione el equipo para determinar si se ocasionaron daños durante el envío. Notifique cualquier daño a su proveedor de inmediato.
- 2.2. Verifique que todo el equipo sea de la tensión correcta. La garantía no cubre daños causados por conectar bombas y controles a la tensión incorrecta.
- 2.3. ¿Es el estanque del sumidero del tamaño y tipo correctos para la ubicación?

Diámetro – debe ser suficientemente ancho para permitir introducir la bomba y el interruptor y además dejar espacio para operar libremente el interruptor. Los modelos de interruptor vertical típicamente requieren menos diámetro que los modelos anchos de flotador angular. *Consulte el “diámetro mín. del estanque” en la Tabla 1.*

PRECAUCIÓN *Profundidad* – Debe ser más profundo que la profundidad mínima a la cual el interruptor enciende la bomba. Por ejemplo, si la bomba se enciende a 15 pulgadas, el estanque debe ser de más de 15 pulg. de profundidad. *Consulte el “Nivel de encendido” en la Tabla 1.*

ADVERTENCIA *Estilo* - Hay varios estilos de estanque de sumidero disponibles. La ubicación del sumidero determina si se requiere una cubierta y de qué tipo. Es importante impedir la entrada de residuos al sumidero ya que podrían obstruir la bomba. Un sumidero abierto en un área de mucho tráfico como un sótano es peligroso. Si el área es frecuentada por niños o animales domésticos, se recomienda una cubierta empennada o a prueba de niños.

3. TUBERÍAS

- 3.1. La tubería de descarga debe ser del mismo tamaño que la descarga de la bomba para asegurar un rendimiento óptimo. Si se utiliza una tubería de tamaño insuficiente, podría reducirse marcadamente el flujo y, por lo tanto, derrocharse energía. El proveedor de la bomba puede sugerir la tubería correcta para su instalación.
- 3.2. Instale un adaptador roscado, que corresponda con el tipo de tubería que está utilizando, en la descarga roscada de la bomba. Un extremo tendrá una rosca macho y el otro extremo tendrá un conector tipo arpón, un accesorio tipo compresión o un conector tipo soldadura con solvente. Utilice cinta de Teflon® en todas las uniones roscadas. Si está utilizando accesorios y tubería soldados con solvente, es mejor ajustarlos al seco primero y verificar el ajuste antes de soldar. Una unión instalada justo arriba de la cubierta del sumidero o estanque facilitará el mantenimiento y reemplazo futuros. *Consulte la Tabla 1 con respecto a los tamaños de descarga.*
- 3.3. Instale una válvula de retención de línea a menos de 2 pies de la bomba. Instale de acuerdo con las instrucciones del fabricante de la válvula.

IMPORTANTE – Perfore un orificio de alivio de 1/8 pulg. (3.2 mm) en la línea de descarga a aproximadamente 2 pulg. (51 mm) sobre la conexión de descarga de la bomba, pero debajo de la válvula de retención y dentro del sumidero. Este orificio de “alivio” permite que el aire atrapado escape de la bomba e impide que la bomba se bloquee con aire. La no perforación de este orificio es una de las

causas principales por las cuales las bombas de sumidero no bombean después de largos períodos de inactividad, tal como el uso por temporada. El ST del modelo es uno mismo-expresio'n - no se requiere ningún agujero.

4. INSTALACIÓN EN EL SUMIDERO


- 4.1. La bomba puede colocarse directamente en el fondo de un estanque de sumidero de polietileno o fibra de vidrio, o en el fondo de un sumidero de concreto. Si el fondo es de grava compactada, la grava debe ser de más de ½ pulg. (13 mm) de diámetro y la bomba debe colocarse sobre un soporte de ladrillos.
- 4.2. Después de conectar la tubería de descarga a la bomba, ésta puede ser bajada al interior del sumidero (estanque). Siempre sujete la bomba de la manija y la tubería al bajarla, y nunca del cable de alimentación. Coloque la bomba contra la pared del estanque, de manera que el interruptor esté en el centro. *Consulte los "Datos de instalación".*
- 4.3. Inspeccione para asegurar que todas las conexiones de tubería estén apretadas. Las tuberías deben apoyarse afianzándolas a las vigas del piso o a la pared. Esto impedirá que la bomba se mueva en el sumidero. Si se mueve, podría atascarse el interruptor y ya sea mantener a la bomba funcionando o no dejar que se encienda.
- 4.4. Por ahora, la corriente a la salida debe estar apagada. La salida dedicada debe suministrar electricidad a la bomba únicamente.
- 4.5. Nuestras bombas para sumidero tienen ya sea un solo cable de alimentación para bombas con interruptores incorporados o dos cables de alimentación con interruptores en tándem.

Interruptores incorporados / un solo cable – enchufe el cable de alimentación único a una salida de corriente dedicada.

Interruptores en tándem / cables de alimentación – introduzca el enchufe macho de los interruptores en tándem en una salida de corriente dedicada. Luego conecte el enchufe macho estándar de la bomba a la parte trasera, lado hembra, del enchufe de los interruptores en tándem.

- 4.6. Afiance los cables de alimentación a las tuberías de descarga con amarras o cinta aislante. Enrolle y guarde el exceso de cable de alimentación fuera del sumidero.

5. OPERACIÓN

- 5.1. Encienda la corriente en el panel de cortacircuitos y/o interruptor desconexión.
- 5.2. Llene el estanque con agua y observe dónde la bomba se enciende y se apaga. Debe encenderse mucho antes que el agua rebase el sumidero. La bomba debe apagarse antes de que el nivel de agua llegue por debajo de la succión de la bomba. El ciclo de encendido – apagado en los modelos con flotador de ángulo ancho es ajustable. El ajuste se realiza cambiando el largo de la traba entre el cuerpo del interruptor y el punto de traba (pivote) del interruptor. El largo de la traba no puede ser de menos de 3 a 3.5 pulg. Las trabas de menos de 3 pulg. podrían no permitir que el flotador baje lo suficiente para apagar la bomba. *Consulte los "Datos de instalación".*
- 5.3.  **ADVERTENCIA** Instale una cubierta sobre el estanque del sumidero si pudiesen caer residuos o si fuese peligroso para los niños o animales domésticos. *Consulte el "Estilo" del estanque en la Sección 2.3.*

6. SERVICIO DE TEMPORADA / MANTENIMIENTO

- 6.1. Si la bomba para sumidero sólo funciona por temporada y luego permanece inactiva durante varios meses, se recomienda que pruebe la bomba antes del comienzo de la estación lluviosa. Llene el sumidero con agua, verifique que no haya residuos y que el interruptor esté funcionando correctamente. Quite cualquier residuo que pudiese obstruir el colador de succión o atascar el interruptor. Asegure que el interruptor funcione libremente y que no choque contra la pared del sumidero que se atasque en la tubería o en los cables de alimentación.

7. OPCIONES

7.1. El proveedor de la bomba tiene una línea completa de estanques, cubiertas, alarmas por alto nivel de agua y sistemas de bombas de reserva a batería disponibles. También vendemos paneles de control de bombas simples y dobles. Se recomienda un sistema doble cuando el flujo de entrada es constante y las bombas funcionan casi continuamente. El sistema doble proporciona una bomba de reserva en caso de falla de la bomba principal.

8. TABLA DE IDENTIFICACIÓN Y RESOLUCIÓN DE PROBLEMAS

Hay que ser extremadamente cauteloso cuando se dé servicio a dispositivos eléctricos. El electrochoque puede producir lesiones fatales. Siempre desconecte el suministro eléctrico del dispositivo que está recibiendo servicio, a menos que sea necesario para el trabajo que se está realizando.

EL MOTOR NO ESTÁ FUNCIONANDO

(Ver las causas 1, 2, 3, 4, 6, 8)

SE ENTREGA POCO O NADA DE LÍQUIDO

(Ver las causas 5, 6, 7, 8, 10)

LA BOMBA NO SE APAGA

(Ver las causas 7, 8, 9, 10, 13)

LA BOMBA CICLA CONSTANTEMENTE

(Ver las causas 9, 11, 12, 13)

CAUSAS PROBABLES:

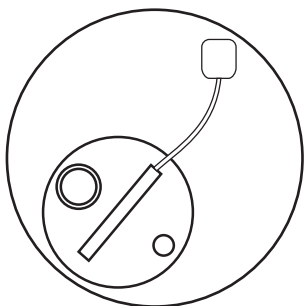
1. Protector térmico disparado.
2. Cortacircuitos abierto o fusible quemado.
3. Roce de las partes giratorias.
4. Motor defectuoso.
5. Bloqueo con aire.
6. Baja tensión.
7. Carga del sistema demasiado alta.
8. Bomba obstruida.
9. Control de nivel defectuoso o interruptor situado incorrectamente.
10. Dirección incorrecta de la válvula de retención.
11. Fuga de la válvula de retención.
12. Tamaño incorrecto del estanque o del pozo del sumidero.
13. Flujo de entrada excesivo para el tamaño de la bomba.

INFORMACIÓN DEL MODELO (TABLA 1)

Nº. de orden	HP	Voltios	Amperios	Cortacircuitos mín.	Fase	Estilo de interruptor del flotador	Largo del cable	Conexión de descarga	Nivel mín. de encendido	Nivel mín. de apagado	Diám. mín. del estanque	Tamaño máx. de sólidos	Peso de envío Lbs/kg
ST31	1/3	115	12.0	20	1	Interr. vertical	10'	1 1/2"	8"	3.5"	11"	1/2"	29 / 13.2
						Interr. de ángulo ancho			14"	7"	18"		
						Sin interr.			Manual	Manual	11"		
LSP03	1/3	115	2.9	10	1	Sin interr.	10' / 20'	1 1/2"	Manual	Manual	9"	3/8"	11 / 5
						Interr. de ángulo ancho			11"	5"	12"		
						Interr. vertical			8.5"	2"			
LSP07	3/4	115	7.1	10	1	Sin interr.	20'	1 1/2"	Manual	Manual	9"	3/8"	15 / 6.8
		230	3.5			Interr. de ángulo ancho			12.5"	6.5"	12"		
SP024	1/4	115	2.4	10	1	Interr. vertical	10'	1 1/4"	6"	3"	9"	3/8"	8 / 3.6
SP025			3.0					1 1/2"					
SP035	1/3		3.0			Sin interr.			Manual	Manual			
SP28C	*	115	75 vatios	10	1	Enchufe / control, por comput.	8'	1 1/2"	1"	5/8"	9"	1/16"	10 / 4.5

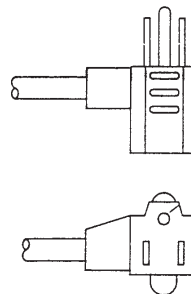
* Éste es un motor de CC. Arranca cada minuto buscando una carga. Si hay agua en el estanque, bombeará hasta reducir el nivel a 5/8 y se apagará. No hay clasificación de potencia.

DATOS DE INSTALACIÓN



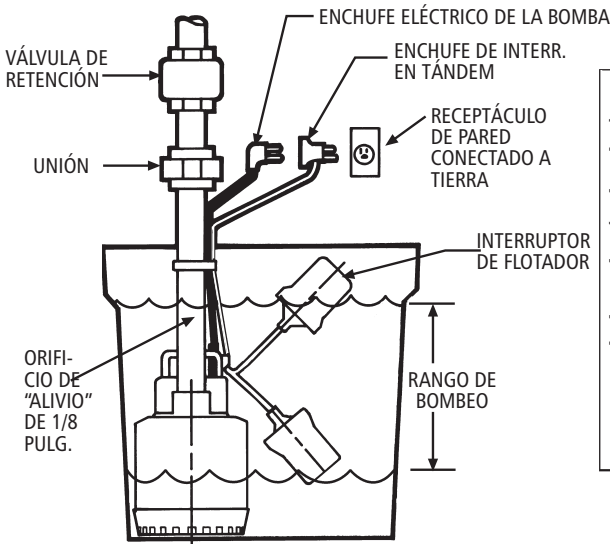
Posicionamiento sugerido de la bomba en el sumidero

Figura 1



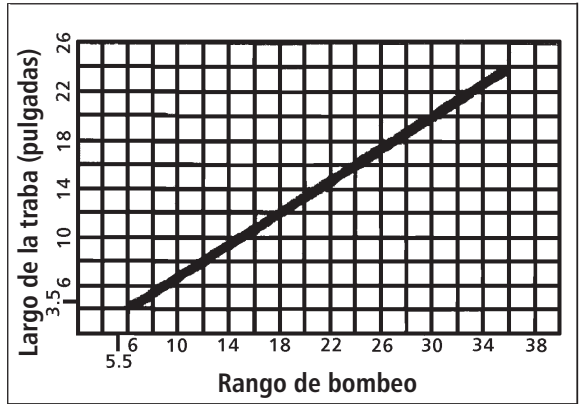
Enchufe en tándem

Figura 2



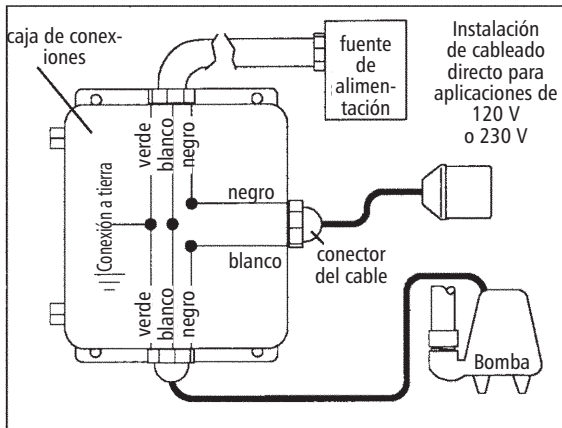
Instalación típica de la bomba en el sumidero

Figura 3



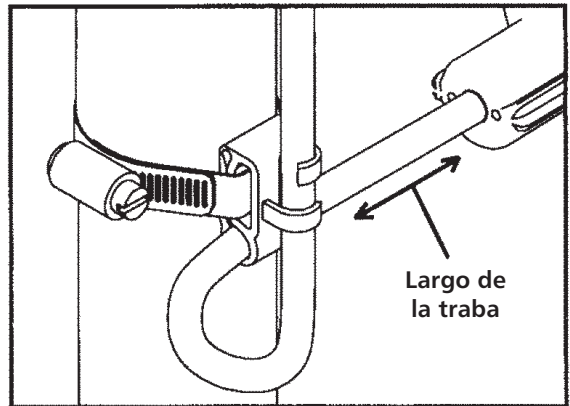
Curva del largo de la traba vs. rango de bombeo

Figura 5



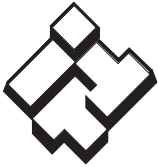
Pumpmaster y Pumpmaster Plus cableado directo

Figura 4



Correa de montaje del flotador de ángulo ancho

Figura 6



ITT

Agua Residual

GARANTÍA LIMITADA DE GOULDS PUMPS

Esta garantía es aplicable a todas las bombas para sistemas de agua fabricadas por Goulds Pumps.

Toda parte o partes que resultaren defectuosas dentro del período de garantía serán reemplazadas durante dicho período de garantía sin cargo para el comerciante. Tal período de garantía se extiende por doce (12) meses a partir de la fecha de instalación, o dieciocho (18) meses a partir de la fecha de fabricación, la que se cumpla primero.

El comerciante que considere que existe lugar a un reclamo de garantía deberá ponerse en contacto con el distribuidor autorizado de Goulds Pumps del cual adquiriera la bomba y brindar información detallada con respecto al reclamo. El distribuidor está autorizado a liquidar todos los reclamos por garantía a través del Departamento de Servicios a Clientes de Goulds Pumps.

La presente garantía excluye:

- (a) La mano de obra, el transporte y los costos relacionados en los que incurra el comerciante;
- (b) los costos de reinstalación del equipo reparado;
- (c) los costos de reinstalación del equipo reemplazado;
- (d) daños emergentes de cualquier naturaleza; y
- (e) el reembolso de cualquier pérdida causada por la interrupción del servicio.

A los fines de esta garantía, los términos “Distribuidor”, “Comerciante” y “Cliente” se definen como sigue:

- (1) “Distribuidor” es aquel individuo, sociedad, corporación, asociación u otra entidad jurídica que opera entre Goulds Pumps y el comerciante para la compra, consignación o contratos de venta de las bombas en cuestión.
- (2) “Comerciante” es todo individuo, sociedad, corporación asociación u otra entidad jurídica que realiza negocios de venta o alquiler-venta (*leasing*) de bombas a los clientes.
- (3) “Cliente” es toda entidad que compra o adquiere bajo la modalidad de *leasing* las bombas en cuestión de un comerciante. El término “cliente” puede significar un individuo, sociedad, corporación, sociedad de responsabilidad limitada, asociación o cualquier otra entidad jurídica con actividades en cualquier tipo de negocios.

LA PRESENTE GARANTÍA SE EXTIENDE AL COMERCIANTE ÚNICAMENTE.



GOULDS PUMPS

Goulds Pumps y el símbolo ITT Engineered Blocks son marcas registradas y marcas comerciales de ITT Industries.

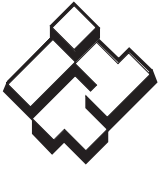
Teflon es una marca registrada de Dupont.

LAS ESPECIFICACIONES ESTÁN SUJETAS A CAMBIO SIN PREVIO AVISO.

IM105R02 Febrero, 2006

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Engineered for life



ITT

Eaux usées

Goulds Pumps

Pompes de puisard

Manuel d'installation
et d'utilisation



GOULDS PUMPS

Goulds Pumps est une marque d'ITT Water
Technology, Inc., une filiale d'ITT Industries, Inc.

www.goulds.com

Engineered for life

AFIN DE PRÉVENIR LES BLESSURES GRAVES OU MORTELLES ET LES DOMMAGES MATÉRIELS IMPORTANTS, LIRE ET SUIVRE TOUTES LES CONSIGNES DE SÉCURITÉ FIGURANT DANS LE MANUEL ET SUR LA POMPE.



Le symbole ci-contre est un **SYMBOLE DE SÉCURITÉ** employé pour signaler sur la pompe et dans le manuel les mots-indicateurs dont on trouvera la description ci-dessous. Sa présence sert à attirer l'attention afin d'éviter les blessures et les dommages matériels.



Prévient des risques qui **VONT** causer des blessures graves, la mort ou des dommages matériels importants.



Prévient des risques qui **PEUVENT** causer des blessures graves, la mort ou des dommages matériels importants.



Prévient des risques qui **PEUVENT** causer des blessures ou des dommages matériels.

AVIS : Sert à énoncer les directives spéciales de grande importance que l'on doit suivre.

LE PRÉSENT MANUEL DOIT ÊTRE CONSERVÉ PRÈS DE LA POMPE.

N'ENLEVER AUCUNE DÉCALCOMANIE DE SÉCURITÉ.

INFORMATIONS IMPORTANTES À LIRE AVANT L'INSTALLATION



L'installation électrique doit être entièrement effectuée par un technicien qualifié. Il faut toujours suivre les prescriptions du code provincial ou national de l'électricité.



On doit brancher la pompe à un circuit électrique indépendant protégé par un disjoncteur ou des fusibles de calibre approprié. Poser un sectionneur si le code de l'électricité l'exige. Adresser toute question relative au code à un inspecteur en électricité. *Voir les informations sur les modèles dans la table 1.*



Couper l'alimentation électrique de la pompe avant de procéder à l'installation ou à l'entretien de celle-ci. Le protecteur thermique du moteur arrête automatiquement celui-ci en cas de surchauffe et le redémarre de façon imprévue quand il a refroidi.



La pompe n'est pas conçue pour les piscines, l'eau libre, les liquides dangereux ni les endroits pouvant contenir des gaz inflammables.



Les contacteurs à flotteur et les pompes munis d'une fiche à trois broches (avec mise à la terre) doivent être branchés sur une prise à trois fils. Ne pas les brancher à une rallonge électrique ni à une prise sans une fiche à trois broches (avec mise à la terre). On peut enlever la fiche du cordon d'alimentation et utiliser un raccordement fixe à condition que celui-ci soit fait par un technicien qualifié conformément au code de l'électricité. L'enlèvement de la fiche n'annulera pas la garantie ni l'enregistrement auprès des organismes de normalisation pertinents.

1. INFORMATIONS GÉNÉRALES

- 1.1. Les pompes de puisard sont conçues pour un usage intermittent, généralement saisonnier. Il est recommandé d'essayer la pompe avant la fonte des neiges et le début des pluies printanières pour s'assurer de son bon fonctionnement et de celui du contacteur.
- 1.2. La pose d'un avertisseur de haut niveau d'eau et d'un système de pompage de réserve à batterie est suggérée dans tout endroit ou sous-sol aménagé où une inondation causerait des dommages matériels. Discuter de l'utilisation d'une génératrice de secours avec l'installateur de la pompe. La plupart des pannes de courant ont lieu pendant les pluies torrentielles, quand on a le plus besoin de la pompe ! Les garanties des fabricants de pompes ne couvrent que les pompes, pas les frais de main-d'œuvre ni les dommages accessoires dus aux inondations.

2. VÉRIFICATIONS AVANT INSTALLATION

- 2.1. Ouvrir tous les cartons et vérifier si le matériel est endommagé. Signaler immédiatement tout dommage au fournisseur.
- 2.2. Vérifier si la tension d'alimentation est appropriée pour tout le matériel. La garantie ne couvre pas les pompes ni les commandes endommagées par une mauvaise tension d'alimentation.
- 2.3. Vérifier si la cuve est de la dimension et du type appropriés :

Diamètre de cuve — il doit être suffisant pour permettre la pose de la pompe et le libre mouvement de son contacteur. Les contacteurs verticaux requièrent moins d'espace que les contacteurs à grand déplacement angulaire. *Voir le diamètre de cuve minimal dans la table 1.*

ATTENTION *Profondeur de cuve* — elle doit être supérieure au niveau de démarrage minimal de la pompe. Par exemple, si ce niveau est de 15 po, employer une cuve d'une profondeur de plus de 15 po. *Voir le niveau de démarrage minimal dans la table 1.*

AVERTISSEMENT *Type de cuve* — il existe divers types de cuves. Selon l'emplacement du puisard, un couvercle peut être

nécessaire pour empêcher débris et objets de tomber dans le puisard et d'engorger la pompe. Un puisard ouvert situé dans un sous-sol ou autre endroit passants représente un danger pour les enfants et les animaux de compagnie. La pose d'un couvercle bouclonné ou à l'épreuve des enfants est alors recommandée.

3. TUYAUTERIE


- 3.1. Le tuyau et l'orifice de refoulement de la pompe devraient avoir le même calibre pour permettre des performances optimales. Un tuyau de calibre moindre pourrait réduire le débit de la pompe de beaucoup et causer ainsi une perte d'énergie. Le fournisseur de pompes peut suggérer le calibre de tuyau convenant à l'installation.
- 3.2. Visser à l'orifice de refoulement de la pompe un raccord-adaptateur de tuyau convenant au type de tuyau employé. Le raccord est du type à barbillons, à compression ou à coller au solvant à une extrémité et à filetage extérieur à l'autre extrémité. Utiliser du ruban de Téflon^{MD} sur chaque joint fileté. Si l'on utilise un tuyau et un raccord à coller au solvant, il vaut mieux en vérifier l'ajustement avant de les coller. Un raccord union posé juste au-dessus du puisard ou du couvercle de la cuve facilitera l'entretien et l'enlèvement de la pompe. *Voir le diamètre de raccord de refoulement dans la table 1.*
- 3.3. Poser un clapet de non-retour sur le tuyau de refoulement, à moins de 2 pi de la pompe, suivant les directives du fabricant du clapet.

IMPORTANT : afin de prévenir l'accumulation de poches d'air dans la pompe, percer un trou-purgeur d'air de 3,2 mm (1/8 po) de diamètre dans le tuyau de refoulement à environ 51 mm (2 po) au-dessus du raccord de refoulement de la pompe, en amont du clapet de non-retour, mais à l'intérieur du puisard. L'absence du trou-purgeur d'air est la principale cause de l'accumulation d'air dans la pompe et, ainsi, du débit de pompage trop faible après les longues périodes d'arrêt saisonnières. Modèle ST est art de l'auto-portrait-venting - aucun trou n'est exigé.

4. INSTALLATION DANS LE PUISARD

- 4.1. On peut placer la pompe directement au fond d'une cuve en polyéthylène ou en fibre de verre ou d'un puisard en béton. Si le fond est en gravier compacté, la grosseur du gravier doit dépasser 13 mm (½ po), et l'on doit utiliser des briques comme assise pour la pompe.
- 4.2. Une fois le tuyau de refoulement raccordé à la pompe, on peut poser celle-ci dans le puisard (ou la cuve) en la saisissant par la poignée et le tuyau, mais jamais par le cordon d'alimentation. La placer contre la paroi du puisard, le contacteur orienté vers le centre du puisard. Voir les « *Données sur l'installation* ».
- 4.3. Vérifier si tous les joints sont étanches. La tuyauterie devrait être fixée aux solives de plancher et aux murs avec des attaches pour immobiliser la pompe dans le puisard. Si la pompe bougeait, le contacteur pourrait rester coincé et empêcher la pompe d'arrêter ou de démarrer.
- 4.4. L'alimentation de la prise de courant réservée devrait être coupée à cette étape-ci. La prise devrait alimenter seulement la pompe.
- 4.5. Les pompes à contacteur intégré sont munies d'un seul cordon d'alimentation, et les pompes à contacteur à fiche-prise, de deux cordons.
Pompe à contacteur intégré, à cordon simple — brancher la fiche sur la prise de courant réservée.
Pompe à contacteur à fiche-prise, à cordon double — brancher la fiche-prise du contacteur sur la prise de courant réservée, puis la fiche de la pompe sur la fiche-prise.
- 4.6. Après avoir enroulé et accroché la longueur excédentaire du (ou des) cordon d'alimentation hors du puisard, fixer le (ou les) cordon d'alimentation au tuyau de refoulement avec des attaches autobloquantes (*tie wraps*) ou du ruban isolant.

5. UTILISATION

- 5.1. Rétablir le courant au panneau de disjoncteurs ou au sectionneur, ou aux deux si c'est le cas.
- 5.2. Remplir le puisard (ou la cuve) d'eau et noter le niveau de l'eau quand la pompe démarre et arrête. La pompe devrait démarrer bien avant que le puisard déborde et s'arrêter avant que le niveau de l'eau atteigne l'orifice d'aspiration. On peut régler les cycles de marche et d'arrêt des pompes à contacteur à flotteur en changeant la longueur du câble du contacteur. Celle-ci ne doit pas être inférieure à 3 po (ou 3,5 po), car le flotteur pourrait ne pas baisser suffisamment pour arrêter la pompe. Voir les « *Données sur l'installation* ».
- 5.3.  Poser un couvercle sur le puisard ou la cuve si les enfants, les animaux de compagnie et les débris risquent d'y tomber. Voir « *Type de cuve* », à 2.3.

6. ENTRETIEN SAISONNIER

- 6.1. Si la pompe n'a qu'un usage saisonnier et ne sert donc pas des mois durant, il est recommandé de l'essayer avant la fonte des neiges et le début des pluies printanières : remplir le puisard, enlever les débris, qui pourraient engorger la crépine d'aspiration ou bloquer le contacteur, puis vérifier le bon fonctionnement de ce dernier. S'assurer que celui-ci peut bouger librement, qu'il ne touche pas à la paroi du puisard et qu'il ne peut rester accroché à la tuyauterie ni au(x) cordon(s) d'alimentation.

7. PRODUITS EN OPTION

- 7.1. Le fournisseur de pompes offre une gamme complète de produits : cuves, couvercles, avertisseurs de haut niveau d'eau et systèmes de pompage de réserve à batterie. Goulds vend en outre des tableaux de commande pour système à pompe simple ou double. Un système à pompe double est recommandé quand le débit entrant est constant et que la pompe fonctionne presque sans arrêt, car la pompe de réserve se mettrait en marche si la pompe principale tombait en panne.

8. DIAGNOSTIC DES ANOMALIES

On doit prendre des précautions extrêmes quand on effectue l'entretien d'un appareil électrique. Les chocs électriques peuvent être mortels. On doit toujours débrancher l'appareil avant de procéder à son entretien, sauf si la tâche en question requiert l'utilisation de courant.

ANOMALIE

NON-FONCTIONNEMENT DU MOTEUR

(V. causes probables 1, 2, 3, 4, 6 et 8)

DÉBIT DE REFOULEMENT FAIBLE OU NUL

(V. causes probables 5, 6, 7, 8 et 10)

FONCTIONNEMENT SANS ARRÊT DE LA POMPE

(V. causes probables 7, 8, 9, 10 et 13)

RÉPÉTITION SANS ARRÊT DU CYCLE DE FONCTIONNEMENT

(V. causes probables 9, 11, 12 et 13)

CAUSES PROBABLES

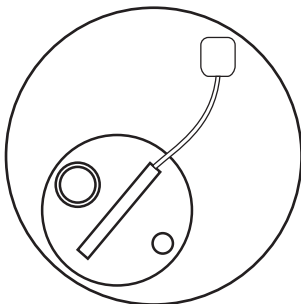
1. Protecteur thermique déclenché
2. Disjoncteur ouvert ou fusible sauté
3. Pièces mobiles grippées
4. Moteur défectueux
5. Poche d'air dans la pompe
6. Basse tension électrique
7. Hauteur de charge trop élevée du système
8. Pompe obstruée
9. Régulateur de niveau défectueux ou contacteur à flotteur mal placé
10. Clapet de non-retour posé à l'envers
11. Fuite du clapet de non-retour
12. Puisard, cuve ou fosse humide de dimensions inappropriées
13. Débit entrant supérieur au débit de refoulement

TABLE 1 — INFORMATIONS SUR LES MODÈLES

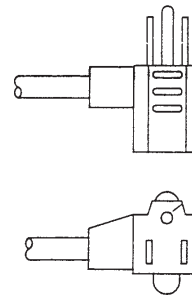
N° de catal.	hp	V	A	Calibre (A) min. du disjonct.	∅	Type de contact. à flotteur	Long. du cordon (pi)	Diam. de raccord de refoul. (po)	Niv. de démarr. min. (po)	Niv. d'arrêt min. (po)	Diam. de cuve min. (po)	Grosseur max. des solides (po)	Poids à l'expéd. (lb/kg)
ST31	1/3	115	12,0	20	1	Vertical	10	1 1/2	8	3,5	11	1/2	29/13,2
						À déplacem. angul.			14	7	18		
						Aucun contacteur			Manuel	Manuel	11		
LSP03	1/3	115	2,9	10	1	Aucun contacteur	10 ou 20	1 1/2	Manuel	Manuel	9	3/8	11/5
						À déplacem. angul.			11	5	12		
						Vertical			8,5	2			
LSP07	3/4	115	7,1	10	1	Aucun contacteur	20	1 1/2	Manuel	Manuel	9	3/8	15/6,8
		230	3,5			À déplacem. angul.			12,5	6,5	12		
SP024	1/4	115	2,4	10	1	Vertical	10	1 1/4	6	3	9	3/8	8/3,6
SP025			3,0					1 1/2					
SP035	1/3					Aucun contacteur							
SP28C	*	115	75 W	10	1	Autocommande par ordinateur	8	1 1/2	1	5/8	9	1/16	10/4,5

* Cette pompe, alimentée en courant continu, démarre à toutes les minutes à la recherche d'une charge. S'il y a de l'eau dans la cuve, elle la pompera jusqu'à ce que le niveau atteigne 5/8 po du fond, puis elle s'arrêtera. La puissance (hp) nominale n'est pas indiquée.

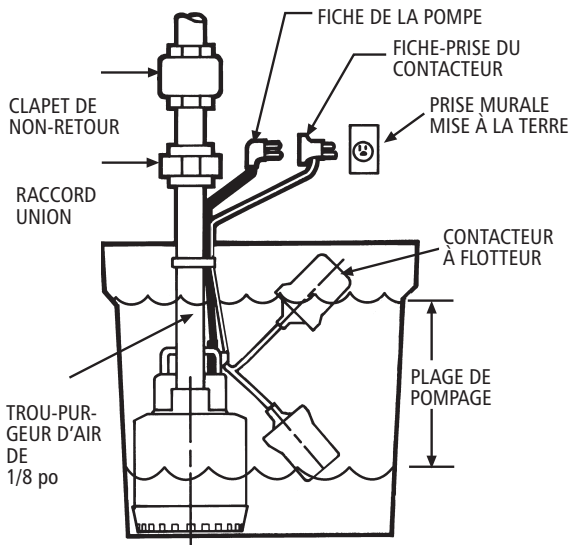
DONNÉES SUR L'INSTALLATION



Position suggérée de la pompe dans le puitsard
Figure 1

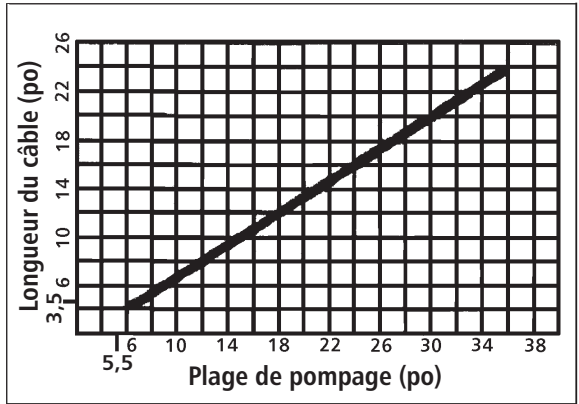


Fiche-prise
Figure 2



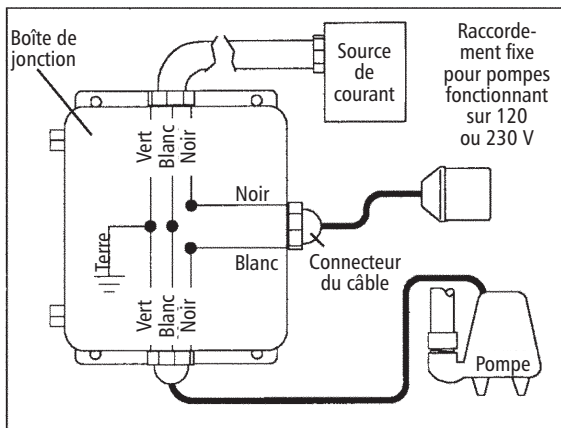
Installation type

Figure 3



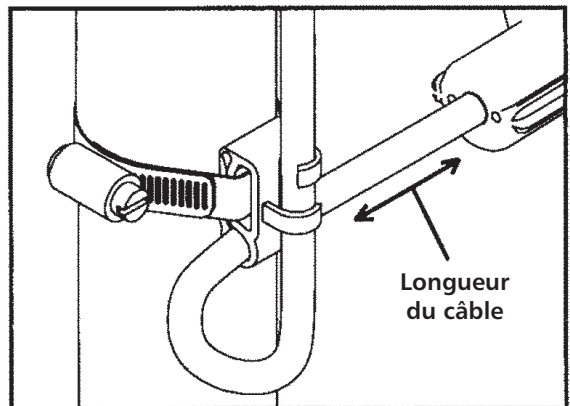
Courbe plage de pompage-longueur du câble

Figure 5



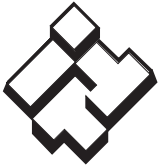
Raccordement fixe des contacteurs à flotteur Pumpmaster et Pumpmaster Plus

Figure 4



Fixation du contacteur à grand déplacement angulaire

Figure 6



ITT

Eaux usées

GARANTIE LIMITÉE DE GOULDS PUMPS

La présente garantie s'applique à chaque pompe de système d'alimentation en eau fabriquée par Goulds Pumps.

Toute pièce se révélant défectueuse sera remplacée sans frais pour le détaillant durant la période de garantie suivante expirant la première : douze (12) mois à compter de la date d'installation ou dix-huit (18) mois à partir de la date de fabrication.

Le détaillant qui, aux termes de cette garantie, désire effectuer une demande de règlement doit s'adresser au distributeur Goulds Pumps agréé chez lequel la pompe a été achetée et fournir tous les détails à l'appui de sa demande. Le distributeur est autorisé à régler toute demande par le biais du service à la clientèle de Goulds Pumps.

La garantie ne couvre pas :

- a) les frais de main-d'œuvre ni de transport ni les frais connexes encourus par le détaillant ;
- b) les frais de réinstallation de l'équipement réparé ;
- c) les frais de réinstallation de l'équipement de remplacement ;
- d) les dommages indirects de quelque nature que ce soit ;
- e) ni les pertes découlant de la panne.

Aux fins de la présente garantie, les termes ci-dessous sont définis comme suit :

- 1) « Distributeur » signifie une personne, une société de personnes, une société de capitaux, une association ou autre entité juridique servant d'intermédiaire entre Goulds Pumps et le détaillant pour les achats, les consignations ou les contrats de vente des pompes en question.
- 2) « Détaillant » veut dire une personne, une société de personnes, une société de capitaux, une association ou autre entité juridique dont les activités commerciales sont la vente ou la location de pompes à des clients.
- 3) « Client » signifie une entité qui achète ou loue les pompes en question chez un détaillant. Le « client » peut être une personne, une société de personnes, une société de capitaux, une société à responsabilité limitée, une association ou autre entité juridique se livrant à quelque activité que ce soit.

CETTE GARANTIE SE RAPPORTE AU DÉTAILLANT SEULEMENT.



Goulds Pumps et le logo à blocs siglés ITT sont des marques déposées et de commerce d'ITT Industries.

Téflon est une marque déposée de Dupont.

LES CARACTÉRISTIQUES PEUVENT CHANGER SANS PRÉAVIS.

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