

ORIGINAL



RETROFIT

All the Parts You Need... Before You Need Them!

PARTS REFERENCE GUIDE

FOR
Wet Well Mounted
Pump Stations



Your Helpful Parts Resource

For S&L Product Codes: 15, 16, 25, 28, 30
(First Two Numbers of Station Serial Number)

Smith & Loveless, Inc.
www.smithandloveless.com

ENGINEERING DATA



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Wet Well Mounted Pump Stations

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PUMP PARTS

Includes: shaft diameter, impeller, maximum diameter, Suction Side - Diameter Eye, front head, pump stand, volute, gaskets, motor adapter, impeller bolt, impeller washer.

4B2B, TURBO 4B2C, 4B2D, 4B3B, 4C2B, 4C2D 26

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ELECTRICAL COMPONENTS

ALARMS

PART DESCRIPTION	PART #
Station Flooding Pressure Switch	4L178
Telephone Line 8 Pin Relay for Remote Alarm Panel	4L191
Socket Base, 8 Pin, for 4L191 relay	5L49B
Horn, 120 VAC, 60 cycle	4L73A
Horn, 12 VDC.	4L73B
Horn, Weatherproof Box	4L73D
RED ALARM LIGHT ASSEMBLY:	
Light, Red 12 VDC	28B580A
Lamp, 12 VDC, 50 W for 28B580A Light	4L120
Light, Red 120 VAC	28B580B
Lamp, 120 VAC, 50 W for 28B580B Light	4L95A
Light Fixture Body for Alarm Light	5L76 *
Light Fixture Adapter for Alarm Light	5L77 *
Red Globe for 5L77 for Alarm Light	5L78B *
Globe Guard for 5L77 for Alarm Light	5L79 *
Trickle Charger (CURRENT) Can be used in place of 4L222	4L222C**
Trickle Charger (OLD STYLE)	4L222

* **PARTS ORDERING NOTE:** Must identify as either Appleton or Killark

**Consult the factory.

ALARMS – UNAUTHORIZED ENTRY

PART DESCRIPTION	PART #
Unauthorized Entry Alarm Assembly. Required parts & quantities called out below.	
Right hand switch assembly	87B397A
Cable Assembly	87B365
Flat Washers (2 required)	6L61F
Galvanized Nylock Nut (2 required)	6L104D
Uninsulated Hood Cap Screw (2 required)	6L20CD
Insulated Hood Cap Screw (2 required)	6L20CH
Assembly Drawing (See Section 6)	87B402
Control Panel Requirements:	
Keyed Selector Switch	4L366A
Switch Contact Block	4L14A
On-Delay Timer	4L304A
Timer Base	5L49B

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ALTERNATORS, PUMP

PART DESCRIPTION	PART #
Alternator for older stations – plug-in with 12 pin rectangular base (replaces 4L187) <i>(Can also be modified to PN 4L187B. Requires wiring modifications.)</i>	4L187A
Socket Base, 12 pin rectangular, for Alternator 4L187A	5L161
Alternator (orange) for newer stations – plug-in with 11 pin round base	4L187B
Socket Base, 11 pin round, for Alternator 4L187B	5L49C
Alternator/Timer for old stations, 2 Switches, Wire-in 16 Hour (8 on/off) (Replaces Zenith 4L282A)	4L343 *
Alternator/Timer for new stations, 1 Switch, Wire-in 16 Hour (8 on/off)	4L365A
Relay, Alternator	4L105A

* **PARTS ORDERING NOTE:** Customer will require wiring installation instructions if this replaces a 4L282A

CONTACTORS

Not descriptive enough. Ask customer if they mean contact terminal block, Auxiliary Relay, Starter, etc.

CR RELAYS (VACUUM PUMP RELAY)

PART DESCRIPTION	PART #
Relay, for Vacuum Pump (1CR, 2CR)	4L107A
Relay, for Vacuum Pump (1CR, 2CR) "Series Stations"	4L424A

ER RELAYS (ELECTRODE RELAY)

PART DESCRIPTION	PART #
Relay, for Electrode current style - (1ER, 2ER) (requires modification if replacing 4L29 or 4L408)	4L408F (Adjustable) or 4L408H
Relay, for Electrode – (1ER, 2ER) Older Style (determine which part is needed)	4L29* or 4L408
Socket Base, 8 pin for 4L29 Relay	5L49B

* If customer switches to 4L408, 4L408H, or **SONIC START® STREAMLINE™** from the 4L29 Electrode Relay, the Rectifier/Diode, Resistor & Capacitor are no longer required in the control panel.

FLOAT (DISPLACEMENT) SWITCHES

PART DESCRIPTION	PART #
Float Switch (Normally Open Blue), 30 ft. cord	4L291A
Float Switch (Normally Closed Red), 30 ft. cord	4L291B
Float Switch (Normally Open Blue), 45 ft. cord	4L291C
Mercury-Free (Normally Open, Normally Closed) 40ft cord	4L291F

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CORD CONNECTOR, FOR FLOAT SWITCHES	
PART DESCRIPTION	PART #
Cord Connector, Float Switch Adjustment	5L57C

GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES	
PART DESCRIPTION	PART #
GFCI Receptacle, 15 Amp, Color: Ivory	5L269C
GFCI Receptacle, 20 Amp, Color: Ivory	5L269D
GFCI Receptacle, 20 Amp, Color: Black	5L269E

HEATER	
PART DESCRIPTION	PART #
Heater, Strip/Panel Mount 120 Volt 500 Watt (Replaces 4L276) (OBSOLETE P/N 4L364 replaced with P/N 4L364A)	OBSOLETE
Heater, Strip/Panel Mount with Thermostat – UL Listed 120 Volt 500 Watt	4L364A
Heater, Auxiliary, with Fan, 120 Volt 1320/1650 Watt	4L84
Fan Motor for 4L84 Heater	4L84-1
Thermostat Switch for 4L84 Heater	4L84-2

LIGHTNING PROTECTION	
PART DESCRIPTION	PART #
Surge Capacitor	4L368
Lightning Arrestor	4L369

LIGHTS	
PART DESCRIPTION	PART #
Light, Red Neon, Indicator Light for Panel (Replaces 5L243)	4L293A
RED ALARM LIGHT ASSEMBLY:	
Light, Red 12 VDC	28B580A
Lamp, 12 VDC, 50 W for 28B580A Light	4L120
Light, Red 120 VAC	28B580B
Lamp, 120 VAC, 50 W for 28B580B Light	4L95A
Light Fixture Body for Alarm Light	5L76 *
Light Fixture Adapter for Alarm Light	5L77 *
Red Globe for 5L77 for Alarm Light	5L78B *
Globe Guard for 5L77 for Alarm Light	5L79 *

* **PARTS ORDERING NOTE:** Must identify as either Appleton or Killark

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PHASE MONITOR RELAYS

PART DESCRIPTION	PART #
Phase Monitor, Voltage: 190 to 270	4L336A
Phase Monitor, Voltage: 430 to 480	4L336B

POWER SUPPLY – 24 VOLT

Powers all 24 volt panel components

PART DESCRIPTION	PART #
Power Supply, 24 VDC (2.3 Amp rating)	4L452C

PRESSURE TRANSDUCERS/SENSORS, SUBMERSIBLE

(Submersible Pressure Transducer hangs down from the pump station and into the wet well, in addition to the float switches used for back-up. Both are used for wet well level sensing.)

PART DESCRIPTION	PART #
0-15 PSI, Submersible Pressure Transducer – 25' Cord (old style) (Old PN: 4L563B-Now 4L563J + reprogrammed E-PROM through Retrofit)	See Retrofit
0-7.5 PSI, Submersible Pressure Transducer – 25' Cord (<i>Replaces 4L563A</i>) (CURRENT STYLE) (<i>Replaces 4L563C</i>).	4L563J

PUMP FAILURE ALARM (Check Valve Limit Switch)

PART DESCRIPTION	PART #
Pump Failure Alarm Retrofit Kit for Relay Logic (two pump – LH & RH)	H87A376
Pump Failure Alarm Retrofit Kit for Relay Logic (one pump – RH only)	H87A383A
Pump Failure Alarm Retrofit Kit for Relay Logic (one pump – LH only)	H87A383B
*Pump Failure Alarm – Switch Only – (one pump - RH only)	87B397A
*Pump Failure Alarm – Switch Only – (one pump – LH only)	87B397B
Pump Failure Alarm Tester	87B399
Time Delay Relay (<i>1 per pump required if no limit switch already installed</i>)	4L304A
8 Pin Socket (<i>1 per pump required if no limit switch already installed</i>)	5L49B
Relay (<i>1 per pump required if no limit switch already installed</i>)	4L264S

PROTRONIX CONTROLLER

PART DESCRIPTION	PART #
PROTRONIX® II Input/Output Module (8 In/8 Out) Expansion Card	4L536C-2
PROTRONIX® II Controller - 4L452C-1 (SOLD THRU RETROFIT ONLY)	Call Retrofits

**Note: 87B397A & 87B397B are only switches & do not include parts required for initial installation of the pump failure alarm. Customer must verify that they have already installed a pump failure alarm. Otherwise, you will either need H87A376, H87A383A, or H87A383B.*

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RECTIFIER [DIODE] – RESISTOR – CAPACITOR

(only used with 4L29* electrode relay)

PART DESCRIPTION	PART #
Rectifier Replacement Kit (includes rectifier [diode], capacitor, & resistor)	80A145
Rectifier [Diode], 2½ Amp max.	4L119A
Resistor, 5K Ohm, 3¼ Watt	4L278A
Capacitor, 20 MF rating	4L277A

**If customer switches to 4L408, 4L408H, or SONIC START® STREAMLINE™ from the 4L29 Electrode Relay, the Rectifier/Diode, Resistor & Capacitor are no longer required in the control panel.*

RELAYS

PART DESCRIPTION	PART #
Relay, for Alternator	4L105A
Relay, for Vacuum Pump (1CR, 2CR)	4L107A
Relay, for Vacuum Pump (1CR, 2CR) "Series Stations"	4L424A
Relay, Intrinsically Safe Relay (Replaces 4L279A)	4L374
Relay, for Electrode (1ER, 2ER) Current Style (requires modification if replacing 4L29 or 4L408)	4L408H
Relay, for Electrode – (1ER, 2ER) Older Style (determine which part is needed)	4L29* or 4L408
Socket Base, 8 pin for 4L29 Relay	5L49B
Relay, SONIC START® Operating Module	4L264S
SONIC START® STREAMLINE™ Delay Timer	4L406B

** If customer switches to 4L408, 4L408H, or SONIC START® STREAMLINE™ from the 4L29 Electrode Relay, the Rectifier/Diode, Resistor & Capacitor are no longer required in the control panel.*

RUNNING TIME METER

PART DESCRIPTION	PART #
Running Time Meter-NEMA 12- Fits through round hole Door Mount Unit	4L198A
Running Time Meter-NEMA 3R-Rectangular	4L198C

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SOLENOID VALVES (IN PORT GOES TO DOME, OUT PORT GOES TO VACUUM PUMP)

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Vacuum Dome for Pump Stations (NEWEST Solenoid Dome Arrangement)	87B728
2-Way Solenoid Valve (5/16" orifice) (Newest Solenoid – Upgrade from 1L406A & 1L406E Style)	1L545A remote mounted using standard DIN connection and used on SONIC START® STREAMLINE™ Vacuum Dome
DIN Connector for 1L545A with 8' cord (OLD P/N: 1L545A-1) (Required for initial installation of 1L545A)	87A481-STK
Solenoid Clip (top piece removed when solenoid opened, clip holds unit in place)	1L545A-3
2-Way Solenoid Valve (5/16" orifice) (Newest Solenoid – Upgrade from 1L406A & 1L406E Style)	1L545B conduit connection mounted through panel & backpan
Solenoid Clip (top piece removed when solenoid opened, clip holds unit in place)	1L545A-3
Reduced Maintenance Vacuum Priming System Retrofit Kit	OBSOLETE
2-Way Solenoid Valve (5/16" orifice) (Old PN: H87A343A) (Newest – Upgrade from 1L406A & 1L406E Style)	OBSOLETE
3-Way Solenoid Valve (3/32" orifice) (Replaced Old Style 1L299A, 1L349A & 1L406A) <i>Current S&L standard solenoid valve is the PN 1L545A remote mounted needs DIN connector PN 1L545A-1 or PN1L545B that mounts through control panel and backpan. Conduit Connection, Ref: 87B16.)</i>	1L406E*
Conduit Nut for 3-Way Solenoid Valve (required when ordering 1L406E first time)	5L13A*
Valve Sleeve Wrench for 1L406A	1L406W
Valve Sleeve Wrench for 1L406E	1L406EW

*1L406E and 5L13A **must be ordered together**

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ELECTRICAL COMPONENTS (CONTINUED)

NEMA RATED STARTERS – 4L421*			
Motor Horsepower	208 Volts	230 Volts	460 Volts
	Part Numbers	Parts Numbers	Parts Numbers
$\frac{3}{4}$ & 1	4L421A	4L421A	4L421A
1½	4L421A	4L421A	4L421A
2	4L421A	4L421A	4L421A
3	4L421A	4L421A	4L421A
5	4L421B	4L421B	4L421B
7½	4L421B	4L421B	4L421B
10	4L421C	4L421C	4L421B
15	4L421D	4L421C	4L421C
20	4L421D	4L421D	4L421C
25	4L421D	4L421D	4L421C
30	4L421E	4L421D	4L421D
40	4L421E	4L421E	4L421D
50	4L421F	4L421E	4L421D
60	4L421F	4L421F	4L421E
75	4L421F	4L421F	4L421E
100	Special Order	4L421F	4L421E

*Call Factory for dimensions if replacing older starters

PARTS ORDERING NOTE: If the customer is replacing older starters with new starters (new part numbers listed above), they will also need to purchase new overload coils.

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ELECTRICAL COMPONENTS (CONTINUED)

STARTERS – I.E.C. STARTERS – 4L420

MOTOR HORSEPOWER	208 VOLTS		230 VOLTS		460 VOLTS	
	PART #	OPTION #	PART #	OPTION #	PART #	OPTION #
¾ & 1	4L420D	03	4L420D	03	4L420D	03
1½	4L420D	03	4L420D	03	4L420D	03
2	4L420D	03	4L420D	03	4L420D	03
3	4L420D	03	4L420D	03	4L420D	03
5	4L420E	04	4L420D	03	4L420D	03
7½	4L420G	05	4L420E	04	4L420D	03
10	4L420H	06	4L420G	05	4L420D	03
15	USE		4L420H	06	4L420E	04
20	* NEMA		RATED		4L420G	05
25					STARTERS	
30						

PARTS ORDERING NOTE: If the customer is replacing older starters with new starters (new part numbers listed above), they will also need to purchase new overload coils.

NOTE: Use NEMA rated starters if dimensions are checked and will fit in panel.

Requirements for 208 volts: 15 hp or higher select 480 volt options as noted.

Requirements for 230 volts: 20 hp or higher select 480 volt options as noted.

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ELECTRICAL COMPONENTS (CONTINUED)

Motor Horsepower	208 Volts	230 Volts	460 Volts
	Part Number	Part Number	Part Number
¾	4L413H	4L416G	4L413E
1	4L413H	4L413H	4L413F
1½	4L413J	4L413J	4L413G
2	4L413K	4L413K	4L413H
3	4L413L	4L413L	4L413J
5	4L413M	4L413M	4L413K
7½	4L413N	4L413N	4L413L
10	4L413P	4L413P	4L413M
15	4L413R	4L413Q	4L413N
20	4L413T	4L413X	4L413P
25	4L413Y	4L413Y	4L413Q
30	4L413Z	4L413Y	4L413W
40	4L413AA	4L413Z	4L413X
50		4L413AA	4L413Y
60			4L413Y
75			4L413Z
100			4L413AA

PARTS ORDERING NOTE: If the customer is replacing older starters with new starters (new part numbers listed above), they will also need to purchase new overload coils.

*Call Factory for dimensions if replacing older starters

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ELECTRICAL COMPONENTS (CONTINUED)

THREE PHASE MOTOR CIRCUIT BREAKERS –

Use when increasing or decreasing horsepower.

Motor HP	208 Volts	230 Volts	460 Volts
	Part Numbers	Parts Numbers	Parts Numbers
¾ & 1	4L202B	4L202B	4L258CA
1½	4L202B	4L202B	4L258CA
2	4L202B	4L202B	4L258CA
3	4L202C	4L202C	4L258CA
5	4L202F	4L202E	4L258CA
7½	4L202H	4L202H	4L258CB
10	4L202L	4L202K	4L258CE
15	4L202M	4L202M	4L258CG
20	4L202N	4L202N	4L258CH
25	4L164G	4L164G	4L258CJ
30	4L164G	4L164G	4L258CK
40	-	4L164G	4L258CL
50	-	-	4L164F
60	-	-	4L164G
75	-	-	4L164G

REQUIREMENTS FOR 208 VOLTS: 40 HP OR HIGHER SELECT 480 VOLT OPTIONS AS NOTED.

REQUIREMENTS FOR 230 VOLTS: 50 HP OR HIGHER SELECT 480 VOLT OPTIONS AS NOTED.

SINGLE PHASE MOTOR CIRCUIT BREAKERS –

Use when increasing or decreasing horsepower.

	230 Volts
Motor HP	Parts Numbers
¼	4L218B
1/3	4L218B
½	4L218B
¾	4L218B
1	4L218B
1½	4L218C
2	4L218E
3	4L218G
5	4L218J

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ELECTRICAL COMPONENTS (CONTINUED)

BREAKERS – “QUICKLAG C” TYPE, SINGLE POLE, 5000 AMPERE INTERRUPTING CAPACITY, 120/240 VAC

(TYPICALLY CONTROLS CIRCUIT BREAKER)

PART DESCRIPTION	PART #
10, Continuous Amp Rating	4L82RB
15, Continuous Amp Rating	4L82RC
20, Continuous Amp Rating	4L82RD
25, Continuous Amp Rating	4L82RE
30, Continuous Amp Rating	4L82RF
35, Continuous Amp Rating	4L82RG
40, Continuous Amp Rating	4L82RH
50, Continuous Amp Rating	4L82RJ
60, Continuous Amp Rating	4L82RL
Handle Tie (California)	4L82P
30, Continuous MilliAmp Rating	4L82Q
5, Continuous MilliAmp Rating	4L82R

BREAKERS – “QUICKLAG C” TYPE, AB DE-LON, 2 POLE, 10-100 AMPERES, 240 VAC

(TYPICALLY TRANSFORMER CIRCUIT BREAKER OR SINGLE PHASE
PUMP MOTORS)

PART DESCRIPTION	PART #
10, Continuous Amp Rating	4L218A
15, Continuous Amp Rating	4L218B
20, Continuous Amp Rating	4L218C
25, Continuous Amp Rating	4L218D
30, Continuous Amp Rating	4L218E
35, Continuous Amp Rating	4L218F
40, Continuous Amp Rating	4L218G
50, Continuous Amp Rating	4L218H
60, Continuous Amp Rating	4L218J
70, Continuous Amp Rating	4L218K
90, Continuous Amp Rating	4L218L
100, Continuous Amp Rating	4L218M
Breaker Handle Lock – “Quicklag C” Type	4L403

PARTS ORDERING NOTE: Each time a Breaker is ordered as a part or with a retrofit, a Breaker Handle Lock is required.

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ELECTRICAL COMPONENTS (CONTINUED)

**BREAKERS – “QUICKLAG C” TYPE, AB DE-LON, 2 POLE, 10-100
AMPERES, 480 VAC**

**(TYPICALLY TRANSFORMER CIRCUIT BREAKER OR SINGLE PHASE
PUMP MOTORS)**

PART DESCRIPTION	PART #
15, Continuous Amp Rating	4L258BA
20, Continuous Amp Rating	4L258BB
25, Continuous Amp Rating	4L258BC
30, Continuous Amp Rating	4L258BD
35, Continuous Amp Rating	4L258BE
40, Continuous Amp Rating	4L258BF
45, Continuous Amp Rating	4L258BP
50, Continuous Amp Rating	4L258BG
60, Continuous Amp Rating	4L258BH
70, Continuous Amp Rating	4L258BJ
80, Continuous Amp Rating	4L258BQ
90, Continuous Amp Rating	4L258BK
100, Continuous Amp Rating	4L258BL
Breaker Handle Lock – “Quicklag C” Type	4L403

PARTS ORDERING NOTE: Each time a Breaker is ordered as a part or with a retrofit, a Breaker Handle Lock is required.

ELECTRICAL COMPONENTS (CONTINUED)

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BREAKERS – “QUICKLAG C” TYPE, AB DE-LON, 3 POLE, 10-100 AMPERES, 240 VAC

(TYPICALLY USED WITH 3 PHASE PUMP MOTORS 240 AND BELOW)

PART DESCRIPTION	PART #
10, Continuous Amp Rating *	4L202A **
15, Continuous Amp Rating	4L202B
20, Continuous Amp Rating	4L202C
25, Continuous Amp Rating	4L202D
30, Continuous Amp Rating	4L202E
35, Continuous Amp Rating	4L202F
40, Continuous Amp Rating	4L202G
45, Continuous Amp Rating	4L202P
50, Continuous Amp Rating	4L202H
55, Continuous Amp Rating	4L202J
60, Continuous Amp Rating	4L202K
70, Continuous Amp Rating	4L202L
80, Continuous Amp Rating	4L202Q
90, Continuous Amp Rating	4L202M
100, Continuous Amp Rating	4L202N
Breaker Handle Lock – “Quicklag C” Type	4L403

PARTS ORDERING NOTE: Each time a Breaker is ordered as a part or with a retrofit, a Breaker Handle Lock is required.

MOUNTING STRAP FOR BREAKERS – “QUICKLAG C” TYPE

PART DESCRIPTION	PART #
Mounting Strap	4L83

* Not UL Listed

** Low Usage Item

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ELECTRICAL COMPONENTS (CONTINUED)

BREAKERS – THERMAL MAGNETIC TYPE EHD, 1/2/3 POLE, 10-100 AMPS (15,000 AMPS INTERRUPTING CAPACITY)

(TYPICALLY USED WITH 3 PHASE PUMP MOTORS 480 VOLT)

AMP RATING @ 40°F (CONT.)	1-POLE 277 VAC (MAX.)	2-POLE 277 VAC (MAX.)	3-POLE 480 VAC (MAX.)
10 *	4L258AN **	4L258BN **	4L258CN **
15	4L258AA	4L258BA	4L258CA
20	4L258AB	4L258BB	4L258CB
25	4L258AC	4L258BC	4L258CC
30	4L258AD	4L258BD	4L258CD
35	4L258AE	4L258BE	4L258CE
40	4L258AF	4L258BF	4L258CF
45	4L258AP	4L258BP	4L258CP
50	4L258AG	4L258BG	4L258CG
60	4L258AH	4L258BH	4L258CH
70	4L258AJ	4L258BJ **	4L258CJ
80	4L258AQ	4L258BQ	4L258CQ
90	4L258AK	4L258BK	4L258CK
100	4L258AL	4L258BL	4L258CL
100 NA	4L258AM	4L258BM	4L258CM
Breaker Handle Lock – “EHD” Type		4L404	

PARTS ORDERING NOTE: Each time a Breaker is ordered as a part or with a retrofit, a Breaker Handle Lock is required.

BREAKERS – MCP MOTOR CIRCUIT PROTECTOR, 3-POLE

TRIP RANGE AMPS	CONTINUOUS AMP RATING	PART #
100 – 300	30	4L164D
160 – 480	50	4L164E
275 – 1000	100	4L164F
450 – 1550	150	4L164G
Transformer	Breaker	4L218B

* Not UL Listed

** Low Usage Item

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ELECTRICAL COMPONENTS (CONTINUED)

MOTORS – VERTICAL “P”

BASE PUMP MOTORS, ODP, 3/60/230-460 VOLT			STANDARD SEAL
HORSEPOWER	RPM	OLD PART #	NEW PART #
1 hp, Motor	900	95L39-1	95L39041-1AA001R0
1½ hp, Motor	900	95L39-2	95L39051-1AA001R0
2 hp, Motor	900	95L39-3	95L39061-1AA001R0
2 hp, Motor	1200	95L39-4	95L39161-1AA001R0
3 hp, Motor	900	95L39-5	95L39071-1AA001R0
3 hp, Motor	1200	95L39-6	95L39171-1AA001R0
3 hp, Motor	1800	95L39-28	95L39271-1AA001R0
5 hp, Motor	900	95L39-8	95L39081-1AA001R0
5 hp, Motor	1200	95L39-9	95L39181-1AA001R0
5 hp, Motor	1800	95L39-10	95L39281-1AA001R0
7½ hp, Motor	900	95L39-11	95L39091-1AA001R0
7½ hp, Motor	1200	95L39-12	95L39191-1AA001R0
7½ hp, Motor	1800	95L39-13	95L39291-1AA001R0
10 hp, Motor	900	Consult Factory *	Consult Factory *
10 hp, Motor	1200	95L39-15	95L391A1-1AA001R0
10 hp, Motor	1800	95L39-16	95L392A1-1AA001R0
15 hp, Motor	900	95L39-17	95L390B2-1AA001R0
15 hp, Motor	1200	95L39-18	95L391B2-1AA001R0
15 hp, Motor	1800	95L39-19	95L392B1-1AA001R0
20 hp, Motor	900	Consult Factory *	95L390C3-1AA001R0
20 hp, Motor	1200	Consult Factory *	Consult Factory *
20 hp, Motor	1800	Consult Factory *	Consult Factory *
25 hp, Motor	1200	95L39-23	95L391D3-1AA001R0
25 hp, Motor	1800	95L39-24	95L392D2-1AA001R0
30 hp, Motor	1200	95L39-25	95L391E3-1AA001R0
30 hp, Motor	1800	95L39-26	95L392E2-1AA001R0
40 hp, Motor	1200	95L39-46	95L391F3-1AA001R0
40 hp, Motor	1800	95L39-27	95L392F3-1AA001R0
50 hp, Motor	1200	95L39-47	95L391G3-1AA001R0
50 hp, Motor	1800	95L39-34	95L392G3-1AA001R0
60 hp, Motor	1200	95L39-48	95L391H3-1AA001R0
60 hp, Motor	1800	95L39-52	95L392H3-1AA001R0
75 hp, Motor	1200	95L39-49	95L391J3-3BA002B0
75 hp, Motor	1800	95L39-53	95L392J3-3BA000B0

*Need shaft size confirmation to determine correct motor

*MOTORS — TEFC, Explosion-proof, Immersible call factory for sizing, pricing, and delivery

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ELECTRICAL COMPONENTS (CONTINUED)

TEMPERATURE CONTROL (Thermodisc)

PART DESCRIPTION	PART #
Temperature Control, 37° to 52° Heater	4L135B
Temperature Control, 90° to 75° Blower	4L135C

TIMER (also see Alternators)

PART DESCRIPTION	PART #
Timer/Alternator for new stations, 2 Switches, Wire-in 16 Hour (8 on/off) (Replaces Zenith 4L282A)	4L343 *
Timer/Alternator for new stations, 1 Switch, Wire-in 16 Hour (8 on/off)	4L365A
Timer, 2 second delay (for Solenoid Valve, used with Electrode Relay)	4L406
Timer (small blue) with knob, 8 pin, 0.1 sec – 10 min on delay	4L304A
SONIC START® STREAMLINE™ Delay Timer	4L406B

* PARTS ORDERING NOTE: Customer will require wiring installation instructions if this replaces a 4L282A

TRANSFORMER DESCRIPTION

DESCRIPTION	PART #
2 KVA, 240/480 TO 120/240	4L402A
3 KVA, 240/480 TO 120/240	4L402B
3 KVA, 208 TO 120/240	4L402D
5 KVA, 240/480 TO 120/240	4L402E
5 KVA, 208 TO 120/240	4L402EA

SWITCHES

PART DESCRIPTION	PART #
Alternator Selector Switch (4L207A, replaced by 4L23)	See 4L23
Float Switch (P/N 87A80 Obsolete-Replaced by 4L291A)	4L291A
Float Switch (Normally Open Blue), 30 ft. cord	4L291A
Float Switch (Normally Closed Red), 30 ft. cord	4L291B
Float Switch (Normally Open Blue), 45 ft. cord	4L291C
H-O-A Toggle Switch (3 Position), SPDT	4L272A
Station Flooding Pressure Switch	4L178
Thermostat Switch for Heater	4L84-2
Toggle Switch (On/Off), SPST (Not UL Listed) (replaces 4L207A)	4L23

VOLTAGE SUPPRESSOR PART DESCRIPTION

Voltage Suppressor 4L139A - No longer used or required. Need to upgrade electrode relays to PN: 4L408H	OBSOLETE
---	----------

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MECHANICAL, PIPING, & PARTS

(DRESSER) COUPLING – TRANSITION COUPLING

PART DESCRIPTION	PART #
4" Nominal Pipe Size (Ductile Iron to Ductile Iron)	2L120A
4" Nominal Pipe Size (Ductile Iron to Steel or PVC)	2L120AA
4" Nominal Pipe Size (Steel to Steel or PVC)	2L120AAA
6" Nominal Pipe Size (Ductile Iron to Ductile Iron)	2L120B
6" Nominal Pipe Size (Ductile Iron to Steel or PVC)	2L120BB
6" Nominal Pipe Size (Steel to Steel or PVC)	2L120BBB
8" Nominal Pipe Size (Ductile Iron to Ductile Iron)	2L120C
8" Nominal Pipe Size (Ductile Iron to Steel or PVC)	2L120CC
8" Nominal Pipe Size (Steel to Steel or PVC)	2L120CCC

LIFTING STANCHION

PART DESCRIPTION	PART #
Lifting Stanchion *	87B39A
Lifting Stanchion Connecting Pipe *	87B39B

***PARTS ORDERING NOTE:** Requires both the Lifting Stanchion & Lifting Stanchion Connecting Pipe to make one (1) Lifting Stanchion that inserts into the stantions Lifting Stanchion Sleeve.

PUMP PARTS	4B2B*1	TURBO 4B2C	4B2D
VERIFY ALL CASTED PARTS WITH FACTORY	Pump	Pump	Pump
Shaft Diameter	1 $\frac{7}{8}$ "	1 $\frac{7}{8}$ "	1 $\frac{7}{8}$ "
Impeller, CW (Clockwise)	60D21	87D103	60C76
Impeller, CCW (Counter-Clockwise)	60D42	87D104	60C75
Maximum Diameter	10 $\frac{1}{8}$ "	10 $\frac{1}{8}$ "	10 $\frac{1}{8}$ "
Suction Side - Diameter Eye	4"	-	4"
Front Head	87C1-300	Part of Volute	4"- 87C1-300
Pump Stand	None	None	None
Volute (Some pumps have integral front heads. Call Factory before ordering to verify.)	87D3-300	60D230-300 (CW) 60D231-300 (CCW)	87D3-300
Volute Gasket (1/64 & 1/16 thickness available)	60A26 (1/32")	60A26 (1/32")	60A26 (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	60B165A-300	60B165A-300	60B165A-300
Impeller Bolt	60A12	60A12	60A12
Impeller Washer	60A20	60A20	60A20

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MECHANICAL, PIPING, & PARTS (CONTINUED)

PUMP PARTS <i>VERIFY ALL CASTED PARTS WITH FACTORY</i>	4B3B Pump	4C2B * Pump	4C2D * Pump
Shaft Diameter	1 $\frac{7}{8}$ "	2 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "
Impeller, CW (Clockwise)	60D43	60D63	60C77
Impeller, CCW (Counter-Clockwise)	60D1	60D64	60C78
Maximum Diameter	12"	10 $\frac{1}{8}$ "	10 $\frac{1}{8}$ "
Suction Side - Diameter Eye	4"	4"	4"
Front Head	4" – 60C85-300 6" – 60C87-300	4" – 87C1-300 87C200-300 ** 60C156-300 ***	4" – 87C1-300 87C200-300 ** 60C156-300 ***
Pump Stand	None	None	None
Volute (<i>Some pumps have integral front heads. Call Factory before ordering to verify.</i>)	60D249-300	60D249-300	60D252-300
Volute Gasket (1/64 & 1/16 thickness available)	60A28 (1/32")	60A26 (1/32")	60A26 (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	60B165D-300****	60B165B-300	60B165B-300
Impeller Bolt	60A12	60A12	60A12
Impeller Washer	60A20	60A20	60A20

*Used only for 20 HP @ 1800 RPM Motors **Used on 4_2_ pumps in 3-pump WWMPs *** Used on 4_2_ pumps in 2-Pump WWMPs

****Consult the Factory for 20HP, 1800 RPM Motors

PARTS ORDERING NOTE: Remind customer that gaskets may be needed when ordering casted parts

PUMP PARTS <i>VERIFY ALL CASTED PARTS WITH FACTORY</i>	4C3B Pump	4D3B Pump	4D4B Pump
Shaft Diameter	2 $\frac{1}{8}$ "	3"	3"
Impeller, CW (Clockwise)	60D44	60D129	60D259
Impeller, CCW (Counter-Clockwise)	60D23	60D193	60D258
Maximum Diameter	12"	12"	15"
Suction Side - Diameter Eye	4"	4"	6"
Front Head	4" – 60C85-300 6" – 60C87-300	4" – 60C85-300 6" – 60C87-300	4" – n/a 6" – 60B124-300
Pump Stand	None	None	None
Volute (<i>Some pumps have integral front heads. Call Factory before ordering to verify.</i>)	60D249-300	60D249-300	60D252-300
Volute Gasket (1/64 & 1/16 thickness available)	60A28 (1/32")	60A28 (1/32")	60A106B (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	60B165E-300****	60B165M-300	60B118-300
Impeller Bolt	60A12	60A87	60A87
Impeller Washer	60A20	60A86	60A86

****Consult the Factory for 20HP, 1800 RPM Motors

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MECHANICAL, PIPING, & PARTS (CONTINUED)

PUMP PARTS <i>VERIFY ALL CASTED PARTS WITH FACTORY</i>	6B3B Pump	6B3B (Series) Pump	6C3B Pump
Shaft Diameter	1 $\frac{7}{8}$ "	1 $\frac{7}{8}$ "	2 $\frac{1}{8}$ "
Impeller, CW (Clockwise)	60D45	60D45	60D47
Impeller, CCW (Counter-Clockwise)	60D34	60D34	60D46
Maximum Diameter	12"	12"	12"
Suction Side - Diameter Eye	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "
Front Head	60C88-300	87C94-300 *	60C88-300
Pump Stand	None	None	None
Volute (<i>Some pumps have integral front heads. Call Factory before ordering to verify.</i>)	87D78-300	60D35-300 *	87D78-300
Volute Gasket (1/64 & 1/16 thickness available)	60A28 (1/32")	60A28 (1/32")	60A28 (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	87D77-300	60B165D-300 *	87D98-300
Impeller Bolt	60A12	60A12	60A12
Impeller Washer	60A20	60A20	60A20

* Differences in Series Pump

PARTS ORDERING NOTE: Remind customer that gaskets may be needed when ordering casted parts

PUMP PARTS <i>VERIFY ALL CASTED PARTS WITH FACTORY</i>	6C3B (Series) Pump	6D3B Pump	6D3B (Series) Pump
Shaft Diameter	2 $\frac{1}{8}$ "	3"	3"
Impeller, CW (Clockwise)	60D47	60D90	60D90
Impeller, CCW (Counter-Clockwise)	60D46	60D192	60D192
Maximum Diameter	12"	12"	12"
Suction Side - Diameter Eye	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "
Front Head	87C94-300 *	60C88-300	87C94-300 *
Pump Stand	None	None	None
Volute (<i>Some pumps have integral front heads. Call Factory before ordering to verify.</i>)	60D35-300 *	87D78-300	60D35-300 *
Volute Gasket (1/64 & 1/16 thickness available)	60A28 (1/32")	60A28 (1/32")	60A28 (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	60B165E-300 *	87D107-300	60B165M-300 *
Impeller Bolt	60A12	60A87	60A87
Impeller Washer	60A20	60A86	60A86

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PUMP PARTS <i>VERIFY ALL CASTED PARTS WITH FACTORY</i>	8C4D Pump	8D4D Pump
Shaft Diameter	2 $\frac{1}{8}$ "	3"
Impeller, CW (Clockwise)	60D178	60D150
Impeller, CCW (Counter-Clockwise)	60D179	60D151
Maximum Diameter	15"	15"
Suction Side - Diameter Eye	7"	7"
Front Head	8" – 60C155-300	8" – 60C155-300
Pump Stand	None	None
Volute (<i>Some pumps have integral front heads. Call Factory before ordering to verify.</i>)	60D211-300	60D211-300
Volute Gasket (1/64 & 1/16 thickness available)	60A88 (1/32")	60A88 (1/32")
Volute/Elbow Gasket (Rectangular)	87A11	87A11
Volute/Base Gasket (Replaces 87A63)	60A108	60A108
Motor Adapter – Also sell S/N NAMEPLATE	60B165P-300	60B165P-300
Impeller Bolt	60A12	60A87
Impeller Washer	60A20	60A86

* Differences in **Series Pump**

PARTS ORDERING NOTE: Remind customer that gaskets may be needed when ordering casted parts

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MECHANICAL SEALS - SINGLE

SEAL & SPARE PARTS	B-SHAFT 1 7/8"	C-SHAFT 2 1/8"	D-SHAFT 3"
Seal Kit, Single Mechanical Seal	H87A28	H87A97	H87A182
Bronze Seal Housing	87B2	87B19***	87B73***
Seal Housing – Flat Gasket **	60A11	60A17	60A84
Seal Housing – Quad Ring **	60A110	60A111	60A112
Ceramic Rotating Wear Ring	60A32 *	60A33 *	60A85 *
Carbon Stationary Wear Ring	60A36 *	60A37 *	60A52 *
Rotating O-Ring	60A39 *	60A41 *	60A53 *
Stationary Quad Ring	60A38 *	60A40 *	60A54 *
Spring	60A30 *	60A31 *	60A55 *
Impeller Bolt	60A12	60A12	60A87
Impeller Washer	60A20	60A20	60A86
Volute Gasket	See Volute Gasket Table		

* Parts contained in H87A28, H87A97, or H87A182 Mechanical Seal Kits

PARTS ORDERING NOTE: Each time the impeller bolt is removed (required for seal replacement), Smith & Loveless recommends installation of a new impeller bolt that has the embedded Nylock.

PARTS ORDERING NOTE: Each time a new seal, ceramic, carbon or spring is installed, a volute gasket, seal housing gasket or quad ring, and impeller bolt are recommended.

** **PARTS TIP: Seal Housing – Flat Gasket vs. Quad Ring:** The older seal housing has a flat surface and uses the flat gasket for both the single and double mechanical seals. The newer seal housing has a groove and it can use either the flat gasket or the quad ring.

*** **SEAL HOUSING:** Call factory for different seal housings for 4-frame pumps.(4B4B, 6C4V)

**** **BOLDED PARTS:** Always quote all bolded parts when quoting a mechanical seal kit.

TEE - DISCHARGE

PART DESCRIPTION	PART #
Discharge Tee – slightly angled (Only used with Old Style 15's with piping below the baseplate). See drawing 87D32 Pretest Assembly	87C9-300
4" Nominal Pipe Size	2L12A
6" Nominal Pipe Size	2L12B
8" Nominal Pipe Size	2L12C

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MECHANICAL, PIPING, & PARTS (CONTINUED)

DOUBLE BALANCED (FOR OVER 200' TDH****) MECHANICAL SEALS

SEAL & SPARE PARTS (HIGH HEAD SEALS – For Over 200' TDH**** or Series P.S.)	C-SHAFT 2-1/8"	D-SHAFT 3"
Seal Kit, Mechanical Seal – Double Balanced (DOES NOT INCLUDE BALANCE SLEEVE)	H60A156	H60A137
Complete Assembly including Bronze Seal Housing & Mechanical Seal (Parts include Upper Housing thru Lower Housing) (Order one extra Seal Housing Quad Ring)	87C425	87C427
Bronze Seal Housing, Upper	87C424	87C428
Bronze Seal Housing, Lower	60C95	60C97
Seal Housing Gasket - Flat ***	60A17	60A84
Seal Housing Gasket - Quad Ring ***	60A111	60A146
Ceramic Rotating Wear Ring (requires 2)	60A155 *	60A85 *
Carbon Stationary Wear Ring (requires 2)	60A153 *	60A136 *
Stationary Quad Ring (requires 2)	11L47E *	60A54 *
Spring	60A154 *	60A135 *
O-Ring-Balance Sleeve, Inner (D-Shaft – new style sleeve 60C112/B requires 2, old style sleeve 60C112/A requires 1)	11L207C *	11L207A *
O-Ring Balance Sleeve, Outer (Both old & new require two out O-Rings)	11L207D *	11L207B *
Balance Sleeve	60C159**	60C112**
Impeller Bolts	60A12	60A87
Impeller Washer	60A20	60A86
Volute Gaskets	See the Volute Gasket Table	

BOLDED PARTS: Always quote all bolded parts when quoting a mechanical seal kit.

* Parts contained in H60A156 or H60A137 Double Balanced Mechanical Seal Kits

** **PARTS ORDERING NOTE:** Each time the balance sleeves are replaced, new Balance Sleeve O-Rings are recommended.

PARTS ORDERING NOTE: Each time the impeller bolt is removed (required for seal replacement), Smith & Loveless recommends installation of a new impeller bolt that has the embedded Nylock.

PARTS ORDERING NOTE: Each time a new seal, ceramic, carbon or spring is installed, a volute gasket, seal housing gasket or quad ring, and impeller bolt are recommended.

*** **PARTS TIP:** Seal Housing – Flat Gasket vs. Quad Ring: The older seal housing has a flat surface and uses the flat gasket for both the single and double mechanical seals. The newer seal housing has a groove and it can use either the flat gasket or the quad ring.

**** **NOTE:** Series 4 Pump C&D Shaft WWMPs-See Factory. High Head Seals on Second Stage Pumps may be required For Over 200'TDH. Add Pump 1 & Pump 2 TDH together to determine if more than 200'TDH. See Factory.

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MECHANICAL, PIPING, & PARTS (CONTINUED)

GASKETS, VOLUTE PUMP SIZE	STANDARD GASKET PART #	OTHER GASKETS 1/64" & 1/16" THICKNESS
4B2B, TURBO 4B2C, 4B2D, 4C2B, 4C2D	60A26 (1/32")	60A27 (1/16")
4B3B, 4C3B, 4D3B, 6B3B (& SERIES), 6C3B (& SERIES), 6D3B(& SERIES)	60A28 (1/32")	60A29 (1/16")
4D4B	60A106B (1/32")	60A106A (1/64") 60A106C (1/16")
8C4D, 8D4D	60A88 (1/32")	60A90 (1/64") 60A89 (1/16")

PARTS ORDERING NOTE: New volute gasket is required each time the rotating assembly (motor, impeller, mechanical seals, &/or volute) is disassembled.

PUMP IMPELLERS & PUMP X-PELLERS® - VACUUM PRIMED

PUMP MODEL	MOTOR RPM	IMPELLER CW PART #	IMPELLER CCW PART #	ADDITIONAL PARTS 1 SET PER IMPELLER PART#
4B2B	-	60D21	60D42	60A12, 60A20, 60A26
TURBO 4B2C	-	87D103	87D104	60A12, 60A20, 60A26
4B2D	-	60C76	60C75	60A12, 60A20, 60A26
4B2X	-	60B252A	60B252B	60A12, 60A20, 60A26
4B2X	-	60B252A	60B252B	60A12, 60A20, 60A26
4B2X	-	60B252A	60B252B	60A12, 60A20, 60A26
4B3B	-	60D43	60D1	60A12, 60A20, 60A28
4C2B	-	60D63	60D64	60A12, 60A20, 60A26
4C2D	-	60C77	60C78	60A12, 60A20, 60A26
4C2X	1800	60B252C	60B252D	60A12, 60A20, 60A26
4C3B	-	60D44	60D23	60A12, 60A20, 60A28
4D3B	-	60D129	60D193	60A87, 60A86, 60A28
4D4B	-	60D259	60D258	60A87, 60A86, 60A106B
6B3B (& SERIES)	-	60D45	60D34	60A12, 60A20, 60A28
6B3X	-	60B204	60B209	60A12, 60A20, 60A28
6C3B (& SERIES)	-	60D47	60D46	60A12, 60A20, 60A28
6C3X	-	60B217	60B218	60A12, 60A20, 60A28
6D3B (& SERIES)	-	60D90	60D192	60A87, 60A86, 60A28
6D3X	-	60B219	60B220	60A87, 60A86, 60A28
8C4D	-	60D178	60D179	60A12, 60A20, 60A88
8D4D	-	60D150	60D151	60A87, 60A86, 60A88

PARTS ORDERING NOTE: When ordering & replacing standard impeller with X-PELLER® call factory for sizing & trim requirements.

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OTHER PARTS

BLOWER / EXHAUST FAN

PART DESCRIPTION	PART #
Blower – 265 CFM (Newer Stations)	7L195
Blower – 110 CFM (Older Stations)	7L40
Louver for Vent in Hood	11L138A
Air Discharge Seal (the seal between blower & hood)	87A86

EMERGENCY KIT

PART DESCRIPTION	PART #
Float Switch *	Normally Open: 4L291A Normally Closed: 4L291B
Control Relay	4L107A
Electrode Relay	4L408H
Single Mechanical Seal	(see page 30)
Solenoid Valve *	1L406E, 1L545A or 1L545B
Vacuum Dome (replaces 87B133, 87B133A)	87B133B***
Ferrules, 3/8"	1L366C
Vacuum Pump *	1 Cylinder (Single Piston): 8L29 or 8L44 2 Cylinder (Dual Piston): 8L32**

* **SELECT THE PART(S) NEEDED FOR THE SPECIFIC INSTALLATION**

** **SEE SECTION 6 FOR COMBINED EXHAUST CONFIGURATION**

*** **PARTS ORDERING NOTE:** Small O-Ring (P/N 11L4J) & Quad Ring (11L47D) are recommended (not included with dome).

CONTINUOUS HINGE & BACKING BAR RETROFIT KIT

HOOD SIZES	PART #
49" W x 64" L	SMALL
62" W x 64" L or 62" W x 70" L	LARGE

GAS CYLINDER, BALL STUD & SAFETY CLIP

PART DESCRIPTION	PART #
13MM Ball Stud	11L241AA
10MM Ball Stud	11L241BB
Safety Clip	11L241CC

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OTHER PARTS (CONTINUED)

GASKETS	
PART DESCRIPTION	PART #
4" & 6" Volute/Discharge Elbow Gasket (Rectangular)	87A11
4" Flange Gasket (check valves & suction/discharge piping)	11L1A
6" Flange Gasket (check valves & suction/discharge piping)	11L1C
8" Flange Gasket (check valves & suction/discharge piping)	11L1D
10" Flange Gasket (check valves & suction/discharge piping)	11L1E
12" Flange Gasket (check valves & suction/discharge piping)	11L1F
14" Flange Gasket (check valves & suction/discharge piping)	11L1G
Volute/Base Gasket (Replaces 87A63 O-Ring)	60A108
Seal Housing Gasket - Flat *	B Shaft: 60A11
	C Shaft: 60A17
	D Shaft: 60A84
Seal Housing Gasket - Quad Ring *	B Shaft: 60A110
	C Shaft: 60A111
	D Shaft: 60A146

* **PARTS TIP: Seal Housing Gasket - Flat vs. Quad Ring:** The older seal housing has a flat surface and uses the flat gasket for both the single and double mechanical seals. The newer seal housing has a groove and it can use either the flat or the quad ring gasket.

GASKETS, VOLUTE PUMP SIZE	STANDARD GASKET PART #	OTHER GASKETS 1/64" & 1/16" THICKNESS
4B2B, TURBO 4B2C, 4B2D, 4C2B, 4C2D	60A26 (1/32")	60A27 (1/16")
4B3B, 4C3B, 4D3B, 6B3B (& SERIES), 6C3B (& SERIES), 6D3B(& SERIES)	60A28 (1/32")	60A29 (1/16")
4D4B	60A106B (1/32")	60A106A (1/64") 60A106C (1/16")
8C4D, 8D4D	60A88 (1/32")	60A90 (1/64") 60A89 (1/16")

PARTS ORDERING NOTE: New volute gasket is required each time the rotating assembly (motor, impeller, mechanical seals, &/or volute) is disassembled.

GAUGES, AIR PRESSURE	
PART DESCRIPTION	PART #
0 – 60 PSI with 3½" Dial	1L84E
0 – 60 PSI with 4½" Dial	1L84H

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OTHER PARTS (CONTINUED)

GAUGES, COMBO VACUUM-AIR PRESSURE	GLYCERIN-FILLED
PART DESCRIPTION	PART #
Handles Up To 65 TDH (0-30" HG: 0-30 PSI) (Old P/N 1L275CB)	1L780B*
Handles Up To 135 TDH (0-30" HG: 0-60 PSI) (Old P/N 1L275DB)	1L780C*
Handles Up To 230 TDH (0-30" HG: 0-100 PSI) (Old P/N 1L275EB)	1L780D*
Gauge Guard (built into new gauges, Only needed on new gauges if extra protection is desired.)	1L372A

* **3-1/2" diameter dial (Customer must verify fit. If smaller dial is needed, contact factory)**
PARTS ORDERING TIP: If no gauge is currently in use, order 1L780C. Consult Factory

GAUGE, WATER	PART #
PART DESCRIPTION	
0 – 200 Inches with 2½" Dial	1L119D

HOOD	PART #
PART DESCRIPTION	
Fiberglass Hood - MUST also sell S/N NAMEPLATE	Consult Factory
<u>NOTE:</u> Hardware (louvers, hinges, & handle) not included with the hood - must be requested separately.	

**NOTE TO REPS: PLEASE BE SURE TO OFFER HOOD LIFT ASSIST AND CONTINUOUS
HINGE & BACKING BAR RETROFIT KITS WHEN REPLACING A HOOD**

HOOD (FIBERGLASS) REPAIR KIT	PART #
PART DESCRIPTION	
Fiberglass Hood Repair Kit (1 pt. S&L light green gel coat, 1 pt. Polyester resin, 3 sq. ft. fiberglass mat.) Recommend selling s/n name plate at same time.	No Longer Available

HOOD LIFT ASSIST RETROFIT KIT		
HOOD SIZE	HOOD TYPE	PART #
49" W x 64" L	Non-Insulated	LIFTASSIST
49" W x 64" L	Insulated	LIFTASSIST
62" W x 64" L	Non-Insulated	LIFTASSIST
62" W x 64" L	Insulated	LIFTASSIST
62" W x 70" L	Non-Insulated	LIFTASSIST
62" W x 70" L	Insulated	LIFTASSIST

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OTHER PARTS (CONTINUED)

HOOD LIFT ASSIST REPLACEMENT SAFETY CLIP & BALL STUD

PART DESCRIPTION	PART #
Safety Clip	11L241CC
13MM Ball Stud	11L241AA
10MM Ball Stud	11L241BB

HOOD LIFT ASSIST REPLACEMENT SHOCKS

PART DESCRIPTION	HOOD SIZE	PART #
Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Blue)</i>	49" W x 64" L	11L241H
Non-Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Blue)</i>	49" W x 64" L	11L241K
Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Orange)</i>	62" W x 64" L	11L241N
Non-Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Orange)</i>	62" W x 64" L	11L241M
Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Orange)</i>	62" W x 70" L	11L241N
Non-Locking Hood Lift Assist Replacement Gas Shock <i>(Label Color Orange)</i>	62" W x 70" L	11L241M

KEYSTOCK (MOTOR SHAFT KEY)

PART DESCRIPTION	PART #
B Shaft	95L39-0
C Shaft	95L39-0
D Shaft	95L39-01

OTHER PARTS (CONTINUED)

LOUVER – VENT IN HOOD

PART DESCRIPTION	PART #
Louver for Vent in Hood	11L138A
Seal for Louver (Placed between louver & fiberglass)	87A86
Blower – 265 CFM (Newer Stations)	7L195
Blower Mounting Plate	84A130
Blower – 110 CFM (Older Stations)	7L40

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OTHER PARTS (CONTINUED)

NAME PLATE, FOR S&L SERIAL NUMBER	
PART DESCRIPTION	PART #
Name Plate for Hood	CF
Name Plate for Motor Adapter (includes addition of GPM @ TDH)	CF

O&M'S	
PART DESCRIPTION	PART #
O&M's – Requires Job Serial Number	O&MMANUAL

PAINT (VERSAPOX) & TOUCH-UP KITS	
PART DESCRIPTION	PART #
Aquamarine VERSAPOX ®, Part A, Gallon	12L181B *
Light Green VERSAPOX ®, Part A, Gallon	12L109B *
Dark S&L Green VERSAPOX ®, Part A, Gallon	12L104B *
Catalyst, VERSAPOX ®, Part B, Gallon	12L105B
Primer (RED), Part A, Gallon	12L138A *
Primer Catalyst, Part B, Gallon	12L138B
Touch-Up Paint Kit – Aquamarine	H87A424
Touch-Up Paint Kit – Light Green	H87A426
Touch-Up Paint Kit – Georgian Hemlock	H87A425

* Order one gallon of Catalyst Part B for each gallon of paint/primer – must be mixed before use.

RECTANGULAR GASKETS	
PART DESCRIPTION	PART #
4" & 6" Volute/Discharge Elbow Gasket (Rectangular)	87A11

SHADE AIDE™ (HMI SCREEN SUN BLOCKER)	
PART DESCRIPTION	PART #
SHADE AIDE ™ Kit, Small (covers HMI Screen 9.5" W x 7" H x 2.25" D)	H87A379
SHADE AIDE ™ Kit, Small Stainless Steel (covers HMI Screen 9.5" W x 7" H x 2.25" D)	H87A379B
SHADE AIDE ™ Kit, Large (covers HMI Screen 15" W x 11" H x 2.25" D)	H87A485
SHADE AIDE ™ Kit, Large Stainless Steel (covers HMI Screen 15" W x 11" H x 2.25" D)	H87A485A
SHADE AIDE ™ Kit, Extra Large (covers HMI Screen 19.875" W x 14" H x 2.25" D)	H87A503A
SHADE AIDE ™ Kit, Extra Large Stainless Steel (covers HMI Screen 19.875" W x 14" H x 2.25" D)	H87A503B

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OTHER PARTS (CONTINUED)

SLINGER RINGS (FOR MOTORS)

PART DESCRIPTION	PART #
B Shaft	95L39-B*
C Shaft	95L39-C*
D Shaft	95L39-D*

VIDEOS - TRAINING

PART DESCRIPTION	PART #
How To Replace the Single Mechanical Seal – DVD Format	12L318DVD-1
How To Replace the Single Mechanical Seal – VHS Format	12L318VHS-1

VACUUM PRIMING SYSTEM

DELAY TIMER – SONIC START® STREAMLINE™

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Delay Timer – Required for SONIC START® STREAMLINE™ <i>Comes standard in the H87A391J & H87A457 upgrade kits.</i>	4L406B

ELECTRODE DOMES – VACUUM DOMES

PART DESCRIPTION	PART #
Electrode Dome (one hole at top)	87B133B **
Vacuum Dome (one hole at top)	87B133B**
Aluminum Electrode Dome (two holes at top) <i>(old P/N 87B15 no longer available, order H87A329A 1st time for conversion to electrode or H87A391J for conversion to SONIC START® STREAMLINE™)</i>	OBSOLETE <i>(Order H87A329A)</i>

***PARTS ORDERING NOTE:** Part # extension varied based on manufacturer. Motor manufacturer needs to be identified prior to sale.

****PARTS ORDERING NOTE:** Small O-Ring (P/N 11L4J) & Quad Ring (11L47D) are recommended (not included with dome).

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VACUUM PRIMING SYSTEM (CONTINUED)

ELECTRODE DOME ASSEMBLIES – VACUUM DOME ASSEMBLIES

PART DESCRIPTION	PART #
Electrode Dome Assembly with new style SOLID Stainless Steel 5 1/4" long Electrode and Quick Disconnect Fitting (Can be used to replace the obsolete 87B134B & 87B309 assemblies)	87B309B *
Electrode Dome Assembly with new style SOLID Stainless Steel 6" Long Electrode and Quick Disconnect Fitting. (Can be used to replace the obsolete 87B134A & 87B309A assemblies)	87B309C *
* Ferrule Connection Fitting <i>(OPTIONAL replacement for Quick Disconnect Fitting on new style electrodes that are included with these assemblies/kits)</i>	1L248A
SONIC START® Vacuum Dome Complete Assembly	87B452A
SONIC START® STREAMLINE™ for Pump Stations Vacuum Dome Assembly (includes vacuum dome + 2-way solenoid valve & interconnecting piping to make assembly.) <i>SPECIAL NOTE: Solenoid has DIN connector w/cable connection.</i>	87B728
Blank Vacuum Dome Assembly (only use with 4-pump series vacuum primed pump stations and only on pump not regulating wet well flow. List of parts A-I required to make assembly.)	
A. Vacuum Dome (1 required)	87B133B*
B. Bulk Head Union (1 required)	1L481C
C. Stainless Steel Nut (2 required)	6L30K
D. Quad Ring (1 required)	11L47D
E. Stainless Steel Stud (2 required)	6L200DE
F. Stainless Steel Flat Washer (2 required)	6L65F
G. Dome Compression Ring (1 required)	87A226
H. O-Ring (1 required)	11L4J
I. Cap for Bulkhead Union (1 required)	1L481CA

PARTS ORDERING TIP: Hollow electrode parts for obsolete assemblies 87B134A & 87B134B available individually

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VACUUM PRIMING SYSTEM (CONTINUED)

ELECTRODE DOME – VACUUM DOME CONVERSION KITS	
PART DESCRIPTION	PART #
Electrode Dome Assembly Conversion Kit – <i>Required when replacing the Old Style 87B15 Electrode Dome, which has two holes at the top to new Solid Stainless Steel Electrode system. Includes all parts in 87B309C. (Replaces H87B135)</i>	H87A329A
Two Hole Electrode Dome Kit Conversion to SONIC START® STREAMLINE™ Kit (Old PN: H87A391F)	H87A391J
Electrode Dome Conversion/Reduced Maintenance Vacuum Priming Combo Kit (OLD PN: H87A330A)	OBSOLETE
Reduced Maintenance Vacuum Priming System Retrofit Kit (OLD PN: H87A310C)	OBSOLETE
* Ferrule Connection Fitting <i>replacement for Quick Disconnect Fitting on new style electrodes that are included with these assemblies/kits</i>	(OPTIONAL) 1L248A
SONIC START® STREAMLINE™ Vacuum Dome Conversion Kit (1 pump)	H87A391J
STREAMLINE™ Only Upgrade Kit + 200 millisecond SONIC START® Probe	H87A457 & 4L628F

ELECTRODE RELAYS – ER1 & ER2	
PART DESCRIPTION	PART #
Electrode Relay (Old Style)	4L29
Socket Base, 8 pin for 4L29 Relay	5L49B
Electrode Relay (Old Style)	4L408*
Electrode Relay (Current) (Includes a rewiring installation booklet)	4L408H*
Socket Base (8 Pin) for 4L29, 4L408, 4L408H	5L49B
Reduced Maintenance Vacuum Priming System Retrofit Kit (<i>Includes one each 87B309B & 87B309C electrode dome assemblies, 4L408H electrode relay upgrade, 1L545B solenoid valve, and latest vacuum priming system to retrofit stations that have the 87A229 hollow electrode</i>) (For both Duplex and Series [parallel] Pump Stations)(Old PN: H87A310C)	OBSOLETE
SONIC START® Operating Module	4L264S

* If customer switches to 4L408, 4L408H, or **SONIC START®** from the 4L29 Electrode Relay, the Rectifier/Diode, Resistor & Capacitor are no longer required in the control panel.

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VACUUM PRIMING SYSTEM (CONTINUED)

ELECTRODES (OLD TECHNOLOGY – STATE-OF-THE-ART IS SONIC START® PROBE)	
PART DESCRIPTION	PART #
Solid Aluminum Electrode (old P/N 87A72 no longer available) <i>Convert to Solid Electrode with Kit H87A329A or SONIC START® STREAMLINE™ Dome Retrofit Adapter Piece PN 87A225 & Hardware or the SONIC START® STREAMLINE™ Conversion kit H87A391J</i>	OBSOLETE
Hollow SS Electrode, 5 ⁷ / ₈ " Long (old P/N 87A229A no longer available Order 87B309C as replacement)	OBSOLETE
Hollow SS Electrode, 5" Long ONLY (Available until current stock is depleted) <i>Convert to PN 87A285 + Bulk Head Fittings or SONIC START® STREAMLINE™</i>	87A229B *
5 ¹ / ₄ " Long Solid Stainless Steel Electrode ONLY <i>Recommend Converting to low maintenance SONIC START® STREAMLINE™</i>	87A285 *
5 ¹ / ₄ " Long Solid Stainless Steel Electrode Dome Complete Assembly <i>Recommend Converting to low maintenance SONIC START® STREAMLINE™</i>	87B309B *
6" Long Solid Stainless Steel Electrode ONLY <i>Recommend Converting to low maintenance SONIC START® STREAMLINE™</i>	87A285A *
6" Long Solid Stainless Steel Electrode Dome Complete Assembly <i>Recommend Converting to low maintenance SONIC START® STREAMLINE™</i>	87B309C *

* **Must identify correct electrode length requirement**

ELECTRODES – NEWER STYLE SOLID STAINLESS STEEL ELECTRODE *	
FOR DOMES WITH ONE HOLE AT THE TOP (OLD TECHNOLOGY REPLACED BY SONIC START® PROBE)	
PART DESCRIPTION	PART #
5 ¹ / ₄ " Long Solid S.S. Electrode	87A285 *
6" Long Solid S.S. Electrode (<i>used with PN 87A225 Dome Retrofit Adapter</i>)	87A285A *
Jam Nut	6L222A
Small O-Ring (for top of dome)	11L4J
Quad Ring (for base of dome)	11L47D
Male Quick Disconnect Fitting	1L460D
³ / ₈ "T x 1/4 NPT Ferrule Connection Fitting (<i>Optional replacement for 1L460D</i>)	1L248A
Female Reducer Coupling	1L552A
Reduced Maintenance Vacuum Priming System Retrofit Kit (<i>Old PN: H87A310C</i>)	OBSELETE

* **Must identify correct electrode length requirement**

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ELECTRODES – OLD STYLE: FOR DOMES WITH TWO HOLES AT THE TOP, OLD TECHNOLOGY REPLACED BY SONIC START® PROBE.

PART DESCRIPTION	PART #
2-Hole Dome (old P/N 87B15 no longer available. Convert to SONIC START® STREAMLINE™ with kit H87A391J)	OBSOLETE
Solid Aluminum Electrode (old P/N 87A72 no longer available. Convert to SONIC START® STREAMLINE™ with kit H87A391J)	OBSOLETE
Gasket for Stud	87A31
Quad Ring (if surface of dome has a groove)	11L47D
Electrode Dome Gasket (if surface of dome is flat)	87A7
Stud for Electrode	6L51CF
Nut for 6L51CF (2 required)	6L60E
Bolt for Holder (2 required)	6L20CE
Flatwasher for Holder (2 required)	6L61F
Male Connector for Electrode Dome	1L248G
90° Connector for Tubing to Valves	1L190B
Straight Fitting for Tubing to Valves	1L248A
Insulator Boot	5L68B
Tubing, Green $\frac{3}{8}$ " (Other colors available – see page 49)	1L142BB

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ELECTRODES – OLDER STYLE HOLLOW ELECTRODE *

FOR DOMES WITH ONE HOLE AT THE TOP (OLD TECHNOLOGY REPLACED BY SONIC START® PROBE)

PART DESCRIPTION	PART #
5 $\frac{7}{8}$ " Long Hollow S.S. Electrode (Old P/N: 87B229A no longer available - Order 87B309C as replacement) (<i>used with PN 87A225 Dome Retrofit Adapter</i>)	OBSOLETE
5" Long Hollow S.S. Electrode (<i>ONLY Available until current stock is depleted</i>)	87A229B *
Bulkhead Union	1L481C
Terminal Lug	5L52G
Small O-Ring (2 required)	11L4J
Quad Ring	11L47D
Retainer Ring (Compression Ring)	87A226
Retrofit Adapter Ring	87A225
Stud - Stainless Steel (2 required)	6L200DH
Nut - Stainless Steel (4 required)	6L30K
Washer – Stainless Steel (2 required)	6L65F
90° Elbow, $\frac{3}{8}$ " x $\frac{1}{4}$ "	1L190B
Quad Ring	11L47D
Insulator Boot	5L68B
Tubing, Green $\frac{3}{8}$ " (Other colors available – see page 49)	1L142BB
Ferrule, 3/8"	1L366C
Ferrule, Nut & Sleeve	1L786A
Electrode Dome Assembly Conversion Kit (<i>Replaces H87B135 & H87A329</i>) (<i>converts 2 hole dome to 1 hole dome</i>) Required when replacing the Old Style 87B15 Electrode Dome that has two holes at the top. (<i>The kit Includes all parts in the 87B309C assembly and other parts needed for conversion.</i>)	H87A329A

* **Must identify correct electrode length requirement**

FLOAT CHECK VALVES – CURRENT STYLE

PART DESCRIPTION	PART #
Float Check Valve, $\frac{3}{8}$ " NPT (Complete Assembly) (Replaces 1L443, 1L443G, and 87A76)	1L443H
Adapter Fitting, $\frac{3}{8}$ " x $\frac{1}{4}$ "	1L43D
Body (See drawing - not normally replaced)	(Sec 12 pg 23)
Ball Seat (for 1L443H)	1L443HA
Valve Ball 1 $\frac{1}{2}$ " Diameter	1L443B
O-Ring (for 1L443H)	1L443HB
Bowl Only (for 1L443H) (Also includes O-Ring P/N 1L443B)	1L443HC
Drain Valve	1L333
Float Check Valve SONIC START® STREAMLINE™ Piping (connects between float check valve & vacuum tubing.) Includes gauge port, shut off valve & quick disconnect tubing connections	87B739

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FLOAT CHECK VALVES – OLDER STYLE

PART DESCRIPTION	PART #
Older Style Ball Seat (for 1L443G)	1L443A
Older Style O-Ring (around outside lip of 1L443)	1L443C
Older Style O-Ring (around inside lip of 1L443G)	1L443E
Older Style Bowl Assembly (for 1L443G)	1L443F
Drain valve (for 1L443 or 1L443G)	1L333
Older Style O-Ring (for 87A76)	1L410C
Older Style Bowl Assembly (for 87A76)	1L410D
Older Style Bowl Insert (for 87A76)	1L410H

QUICK DISCONNECT FITTINGS

PART DESCRIPTION	PART #
Quick Disconnect (new style) elbow – 3/8" x 1/4" NPT	1L546C
Quick Disconnect(new style) straight – 3/8" x 1/4" NPT	1L460D
Quick Disconnect(new style) straight & used on SONIC START ® STREAMLINE ™ (P/N:87B728) Dome Assembly	1L460E

REDUCED MAINTENANCE VACUUM PRIMING SYSTEM KITS

PART DESCRIPTION	PART #
Reduced Maintenance Vacuum Priming System Retrofit Kit (Includes one each 87B309B & 87B309C electrode dome assemblies, 4L408H electrode relay upgrade, 1L545A) (Obsolete P/N:H87A310C) Replacement part is SONIC START ® STREAMLINE ™ P/N:H87391J	Replaced with SONIC START ® STREAMLINE ™ H87391J
Electrode Dome Conversion/Reduced Maintenance Vacuum Priming Combo Kit (Includes H87A329A, 4L408H upgrade, and 1L545A solenoid upgrade) (Obsolete P/N:H87A330A) Replacement part is SONIC START ® STREAMLINE ™ P/N:H87391J	Replaced with SONIC START ® STREAMLINE ™ H87391J
Vapor Filter 12-Pack Replacement Part Kit	H87A321A

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SOLENOID VALVES (IN PORT GOES TO DOME, OUT PORT GOES TO VACUUM PUMP)

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Vacuum Dome for Pump Stations (NEWEST Solenoid Dome Arrangement)	87B728
2-Way Solenoid Valve (5/16" orifice) (Newest Solenoid – Upgrade from 1L406A & 1L406E Style)	1L545A remote mounted using standard DIN connection and used on SONIC START® STREAMLINE™ Vacuum Dome
DIN Connector for 1L545A with 8' cord (OLD P/N: 1L545A-1) (Required for initial installation of 1L545A)	87A481-STK
Solenoid Clip (top piece removed when solenoid opened, clip holds unit in place)	1L545A-3
2-Way Solenoid Valve (5/16" orifice) (Newest Solenoid – Upgrade from 1L406A & 1L406E Style)	1L545B conduit connection mounted through panel & backpan
Solenoid Clip (top piece removed when solenoid opened, clip holds unit in place)	1L545A-3
Reduced Maintenance Vacuum Priming System Retrofit Kit USE H87A391J	OBSOLETE
2-Way Solenoid Valve Upgrade Kit (5/16" orifice) (Old PN: H87A343A) (Newest – Upgrade from 1L406A & 1L406E Style) USE H87A391J	OBSOLETE
3-Way Solenoid Valve (3/32" orifice) (Replaced Old Style 1L299A, 1L349A & 1L406A) <i>Current S&L standard solenoid valve is the PN 1L545A remote mounted needs DIN connector PN 1L545A-1 or PN1L545B that mounts through control panel and backpan. Conduit Connection, Ref: 87B16.)</i>	1L406E
Conduit Nut for 3-Way Solenoid Valve (required when ordering 1L406E first time)	5L13A
Valve Sleeve Wrench for 1L406A	1L406W
Valve Sleeve Wrench for 1L406E	1L406EW

SONIC START® KITS (SEE SONIC START® STREAMLINE™)

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Upgrade Kit for One Pump (Old P/N: H87A391A)	H87A391J
SONIC START® STREAMLINE™ Upgrade Kit for Two Pumps -Must order 2 kits (Old P/N: H87A391B)	H87A391J
SONIC START® STREAMLINE™ Drill & Tap Kit	H87A390A
SONIC START® STREAMLINE™ Conversion Kit from the 2 Holed Electrode Dome Kit – Every part needed to make the full conversion (Old P/N H87A391F)	H87A391J

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SONIC START® STREAMLINE™ REPLACEMENT PARTS

These parts come standard in the SONIC START® STREAMLINE™ Kits

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Replacement Sensor Probe – 120 VAC (Old P/N: 4L628A)	4L628F
SONIC START® STREAMLINE™ Replacement Sensor Probe – 24 VAC (Old P/N: 4L628B)	4L628G
Explosion Proof SONIC START® Probe (Old P/N: 4L628CC)	4L628H
SONIC START® Operating Module	4L264S
SONIC START® DIN Connector Cable (Old P/N: 1L545A-1, 1L545A-2)	87A481-STK
SONIC START® 8 Pin Socket	5L49B
SONIC START® Cord Grip	5L57L
SONIC START® Cable Ties	5L150A
SONIC START® Brass Bulkhead Adapter	87A384
SONIC START® O-Ring for Bulkhead Adapter	11L4J
SONIC START® Jam Nut	6L222A
SONIC START® Reducer Coupling	1L552A
SONIC START® Male Tubing Connector	1L460D
SONIC START® O-Ring for Cord Grip	5L57L-2
SONIC START® Nut for Cord Grip	5L57L-1

SONIC START® STREAMLINE™ UPGRADE KITS

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ Complete upgrade kit (1-pump kit) Required to upgrade from electrodes to SONIC START® STREAMLINE™	H87A391J
The Bundle: STREAMLINE™ Only Kit + 200 millisecond SONIC START® Probe (I-pump bundle) Required to upgrade from SONIC START® Probe to SONIC START® STREAMLINE™	H87A457 & 4L628F
SONIC START® Drill & Tap Kit- (Convenience Kit, has all drill bits & tap for SONIC START® Probe drilling & tapping of motor adapter.	H87A390A

SONIC START® STREAMLINE™ VACUUM DOME/SOLENOID VALVE ASSEMBLY – NEWEST & CURRENT STYLE

PART DESCRIPTION	PART #
SONIC START® STREAMLINE™ VACUUM DOME/SOLENOID VALVE ASSEMBLY	87B728

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SONIC START® VACUUM DOME ASSEMBLY – OLD STYLE.

PART DESCRIPTION	PART #
SONIC START® Vacuum Dome Complete Assembly	87B452A

PARTS NOTE: Do Not Use With SONIC START® STREAMLINE™

SONIC START® VACUUM DOME INDIVIDUAL PARTS FOR

P/N 87B452A

PART DESCRIPTION	PART #
Ferrule Connection Fitting (Optional)	1L248A
Male Quick Disconnect Connection Fitting, Brass	1L460D
Reducer Coupling, Brass	1L552A
Jam Nut, Brass	6L222A
Vacuum Dome Housing	87B133B*
Small O-Ring	11L4J
SONIC START® Bulk Head Fitting, Brass	87A384
Quad Ring	11L47D

VACUUM DOME

PART DESCRIPTION	PART #
Vacuum Dome	87B133B*
Little O-Ring (for top of dome)	11L4J
Quad Ring (for bottom of dome)	11L47D

***PARTS ORDERING NOTE:** Small O-Ring (P/N 11L4J) & Quad Ring (11L47D) are recommended (not included with dome).

VACUUM PUMP - HEAVY DUTY - SINGLE PISTON & SPARE PARTS

PART DESCRIPTION	PART #
Heavy Duty 1/6 HP (For Pumps with 4" Piping) (<i>Complete pump</i>)	8L29
Repair Kit	8L29AB
Inlet Filter	8L29A1
Head Gasket	8L29A4
Valve Outlet	8L29A5
Valve Plate	8L29A6
Inlet Valve	8L29A7
Cylinder Gasket	8L29A8
Piston Ring	8L29A10
Piston Seal	8L29A11
Rider Ring	8L29A12
Fan	8L29A20
Shroud	8L29A21
Motor, 1/6 HP 1725	8L29A22
Vibration Isolator (See Section 6)	87A291

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VACUUM PUMP - STANDARD - SINGLE PISTON & SPARE PARTS

PART DESCRIPTION	PART #
Standard 1/8 HP (for pumps with 4" piping) (<i>Complete pump</i>)	8L44
Repair Kit	8L44-48

VACUUM PUMP - HEAVY DUTY - DUAL PISTON & SPARE PARTS

PART DESCRIPTION	PART #
Heavy Duty 1/2 HP (For Pumps with 6" Piping) (<i>Complete pump</i>) (replaces 8L40A*)	8L32**
Repair Kit (K262 or K263)	8L32-1
Head Gasket	8L32-2
Outlet Valve	8L32-3
Inlet Valve	8L32-4
Cylinder Gasket	8L32-5
Felt	8L32-6
Piston Ring	8L32-7
Piston Seal	8L32-8
Rider Ring	8L32-9
Valve Plate	8L32-10
Motor 1/2 HP 1725 RPM	8L32-11***
Shroud	8L32-12
Fan	8L32-13
Cylinder Head	8L32-14
Vibration Isolator (See Section 6)	87A291

* **NOTE:** Parts available for 8L40A – see drawing in Section 7

** SEE SECTION 6 FOR COMBINED EXHAUST CONFIGURATION

*** PURCHASE OF NEW 8L32 REQUIRED

PARTS ORDERING NOTE: * Most commonly replaced in overhaul of vacuum pump – typical repair kit parts.

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OLD 8L40A VACUUM PUMP DUAL PISTON - SPARE PARTS ONLY*

Diaphragm	OBSOLETE
Head (old P/N 8L40-9 no longer available)	OBSOLETE
Valve Keeper	8L40-14
Diaphragm Hold Down Plate	OBSOLETE
Head Screw	8L40-18
Exhaust Flapper Screw	8L40-19
Intake Flapper Screw	8L40-23
Valve Plate Screw	8L40-24
Filter Assembly	8L40-34

NOTE: If complete pump is needed, replace with 8L32

VACUUM RELEASE VALVE

PART DESCRIPTION	PART #
Vacuum Release Valve – Required for SONIC START® STREAMLINE™ . (Comes standard as part of H87A391J & H87A457 upgrade kits)	1L764B

VACUUM TUBING

PART DESCRIPTION	PART #
Vacuum Tubing - $\frac{3}{8}$ "	Natural: 1L142BA
* $\frac{1}{4}$ " & $\frac{1}{2}$ " also available	Green: 1L142BB
	Red: 1L142BC

VACUUM TUBING FITTINGS (for electrode domes, solenoid valves, & float check valves)

PART DESCRIPTION	PART #
Ferrule (old style) elbow - $\frac{3}{8}$ " x $\frac{1}{4}$ " NPT	1L190B
Ferrule (old style) straight - $\frac{3}{8}$ " x $\frac{1}{4}$ " NPT	1L248A
Ferrule (old style - for 2-hole dome) straight - $\frac{3}{8}$ " x $\frac{1}{8}$ " NPT	1L248G
Quick Disconnect (new style) elbow - $\frac{3}{8}$ " x $\frac{1}{4}$ " NPT	1L546C
Quick Disconnect (new style) straight - $\frac{3}{8}$ " x $\frac{1}{4}$ " NPT	1L460D
Quick Disconnect (new style) straight used on SONIC START® STREAMLINE™ (P/N: 87B728 Dome Assembly)	1L460E

VAPOR FILTER – NOT USED WITH SONIC START® STREAMLINE™

PART DESCRIPTION	PART #
Vapor Filter 12-Pack Replacement Part Kit	H87A321A

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VALVES

PLUG VALVES

PART DESCRIPTION	PART #
4" Plug Valve (requires 2 PN 11L1A flange gaskets)	2L104A-300 *
Handle/Wrench Only for 4" Plug Valve (Chilean Red)	2L104AA1
4" Flange Gasket	11L1A
6" 3-Way Tapered Plug Valve (requires 3 PN 11L1C flange gaskets)	2L148M-300 *
Handle/Wrench Only for 6" Plug Valve (Chilean Red)	2L104AA1
6" Flange Gasket	11L1C

WAFFER CHECK VALVES, SPRING LOADED

PART DESCRIPTION	PART #
4" Left Hand Wafer Check Valve - requires (2) 11L1A, (4) 6L20HS & (4) 6L60L to install (replaces 2L139A, 2L161A, 2L153A, 2L153E)	2L153N*
4" Right Hand Wafer Check Valve - requires (2) 11L1A, (4) 6L20HS & (4) 6L60L to install (replaces 2L139B & 2L161B, 2L153B, 2L153F)	2L153P*
4" Flange Gasket (requires 2 per valve)	11L1A
Bolt for 4" Valve Installation (4 needed per valve)	6L20HS
Nut for 4" Valve Installation (4 needed per valve)	6L60L
6" Left Hand Wafer Check Valve - requires (2) 11L1C, (4) 6L20JV & (4) 6L60M to install (replaces 2L139C & 2L161C, 2L153C, 2L153G)	2L153Q*
6" Right Hand Wafer Check Valve - requires (2) 11L1C, (4) 6L20JV & (4) 6L60M to install (replaces 2L139D & 2L161D, 2L153D, 2L153H)	2L153R*
6" Flange Gasket (requires 2 per valve)	11L1C
Bolt for 6" Valve Installation (4 needed per valve)	6L20JV
Nut for 6" Valve Installation (4 needed per valve)	6L60M

* **PARTS ORDERING NOTE:** 2 new Flange Gaskets per Check Valve will be required.

* **NOTE:** Arms and Shafts are now drilled for double roll pins.

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VALVES (CONTINUED)

4" Wafer Check Valve Spare Parts

PART DESCRIPTION	2L153A,B PART #	2L153E,F PART #	2L153N,P (-300) PART #
Seat Ring	55A30	55A38C ***	11L207F
Brass Arm *	Obsolete **	Obsolete **	55A32
Brass Clapper	55B39	55B39	55B39
Shoulder Bolt - Stainless Steel	6L184A	6L184A	6L184A
Roll Pin - Stainless Steel	2L153A6	2L153A6	2L153A6
Shaft - Stainless Steel *	55B44	55B44	55B32
Bronze Bushing (2 required)	55A34	55A34	55A34
O-Ring (2 required)	2L153A9	2L153A9	2L153A9
Steel Bar Arm/Handle	Obsolete **	55A36	55A36
Pin - Stainless Steel	2L153A11	2L153D11	2L153D11
Eye Bolt (from body to spring)	6L55N	6L55N	6L55N
Spring - Stainless Steel	11L104N	11L104N	11L104N
Pipe Plug	1L69B	1L69B	1L69C
Eye Bolt (from handle to spring)	6L55M	6L55M	6L55M
4" Flange Gasket (2 required per valve)	111L1A	111L1A	111L1A

* NOTE: Arms and Shafts are now drilled for double roll pins. ** Not Available – must order new check valve

*** Cut to size, then use Permatex Black Max 380 or Loctite Blue to connect ends & to glue O-Ring to Seat

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VALVES (CONTINUED)

6" Wafer Check Valve Spare Parts

PART DESCRIPTION	2L153C,D PART #	2L153G,H,L,M PART #	2L153Q,R (-300) PART #
Seat Ring	55A31	55A38D ***	11L207G
Brass Arm *	55A33	55A33	55A39
Brass Clapper	55B29/55B40	55B2955B40	55B40
Shoulder Bolt – Stainless Steel	6L184B	6L184B	6L184B
Roll Pin - Stainless Steel	2L153C6	2L153C-12	2L153C-12
Shaft - Stainless Steel *	Obsolete **	Obsolete **	55B37
Bronze Bushing (2 required)	55A35	55A35	55A35
O-Ring (2 required)	2L153C9	2L153C9	2L153C9
Steel Bar Arm/Handle	55B31	55A37	55A37
Pin - Stainless Steel	2L153C11	2L153A11	2L153A11
Eye Bolt (from body to spring)	6L55N	6L55N	6L55N
Spring - Stainless Steel	11L104N	11L104M	11L104M
Pipe Plug	1L69B	1L69B	1L69D
Eye Bolt (from handle to spring)	6L55M	6L55M	6L55M
6" Flange Gasket (2 required per valve)	11L1C	11L1C	11L1C

* **NOTE:** Arms and Shafts are now drilled for double roll pins. ** **Not Available** – must order new check valve

*** *Cut to size, then use Permatex Black Max 380 or Loctite Blue to connect ends*

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SUGGESTED SPARE PARTS

LIST OF SUGGESTED SPARE PARTS

PART DESCRIPTION	PART #	
Mechanical Seal (Select the correct seal for your pump)		
<input type="checkbox"/> B-Shaft Single Mechanical Seal – 1-7/8"	H87A28	
<input type="checkbox"/> C-Shaft Single Mechanical Seal – 2-1/8"	H87A97	
<input type="checkbox"/> D-Shaft Single Mechanical Seal – 3"	H87A182	
Volute Gasket (Select the correct volute gasket for your pump) <i>A new volute gasket is required each time the rotating assembly (motor, impeller, mechanical seals, and /or volute) is disassembled.</i>		
<input type="checkbox"/> 4B2B, TURBO 4B2C, 4B2C, 4B2D, 4C2B, 4C2D	60A26 ($\frac{1}{32}$ ")	
<input type="checkbox"/> 4B3B, 4C3B, 4D3B, 6B3B (& SERIES), 6C3B (& SERIES), 6D3B (& SERIES)	60A28 ($\frac{1}{32}$ ")	
<input type="checkbox"/> 4D4B	60A106B ($\frac{1}{32}$ ")	
<input type="checkbox"/> 8C4D, 8D4D	60A88 ($\frac{1}{32}$ ")	
Seal Housing Gasket (Select the correct gaskets for your pump) <i>A new seal housing gasket is required each time the mechanical seal is replaced.</i>		
<input type="checkbox"/> Flat – B-Shaft – 1-7/8" – Older Style	60A11	
<input type="checkbox"/> Flat – C-Shaft – 2-1/8" – Older Style	60A17	
<input type="checkbox"/> Flat – D-Shaft – 3" – Older Style	60A84	
<input type="checkbox"/> Quad Ring – B-Shaft – 1-7/8" – Seal Housing with Groove	60A110	
<input type="checkbox"/> Quad Ring – C-Shaft – 2-1/8" – Seal Housing with Groove	60A111	
<input type="checkbox"/> Quad Ring – D-Shaft – 3" – Seal Housing with Groove	60A146	
Nylock Impeller Bolt (Select the correct bolt for your pump) <i>A new Nylock Impeller Bolt is recommended from a safety standpoint each time it is removed.</i>		
<input type="checkbox"/> B-Shaft & C-Shaft Nylock Impeller Bolt – 1-7/8" & 2-1/8"	60A12	
<input type="checkbox"/> D-Shaft Nylock Impeller Bolt – 3"	60A87	
Impeller Washer (Select the correct washer for your pump)		
<input type="checkbox"/> B-Shaft & C-Shaft Impeller Washer – 1-7/8" & 2-1/8"	60A20	
<input type="checkbox"/> D-Shaft Impeller Washer – 3"	60A86	
Prime Sensing Probe (Select the style installed on your pump station)		
<input type="checkbox"/> 5-1/4" Long Solid S.S. Electrode Dome Assembly	87B309B	
<input type="checkbox"/> 6" Long Solid S.S. Electrode Dome Assembly	87B309C	
<input type="checkbox"/> SONIC START ® Prime Sensing Probe	4L628F	
<input type="checkbox"/> SONIC START ® STREAMLINE ™ Vacuum Dome – Solenoid Valve Assembly (If SONIC START ® STREAMLINE ™ is installed on your station.)	87B728	
Vacuum Dome (Clear Dome Only) Small O-Ring (P/N 11L4J) & Quad Ring (11L47D) are recommended (not included with dome).		87B133B
Vacuum Dome Top O-Ring	11L4J	
Quad Ring (Old PN: 11L4K Vacuum Dome Bottom O-Ring)	11L47D	
Vacuum Tubing – 3/8" - Red	1L142BC	

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GENERAL LIST OF OTHER POSSIBLE SPARE PARTS

PART DESCRIPTION	PART #
Alternator (Select the correct alternator for your pump)	
<input type="checkbox"/> Alternator, Sequential – New Style 2-Pump P.S. (plug-in with 11 pin)	4L187B
<input type="checkbox"/> Socket Base, 11 pin, for Alternator 4L187B	5L49C
<input type="checkbox"/> Alternator, Sequential – Old Style 2-Pump P.S. (replaces 4L187, 12 Pin)	4L187A
<input type="checkbox"/> Socket Base, 12 pin, for Alternator 4L187A	5L161
<input type="checkbox"/> Alternator/Timer for old stations, 2 Switches, Wire-In 16 Hour (8 on/off) Replaces Zenith 4L282A <i>Customer will require wiring installation instructions if this replaces a PN 4L282A</i>	4L343*
<input type="checkbox"/> Alternator/Timer for new stations, 1 Switch, Wire-In 16 hour (8 on/off)	4L365A
<input type="checkbox"/> Relay, Alternator	4L105A
Blower (Select the correct blower for your pump station)	
<input type="checkbox"/> Blower – 265 CFM (Newer Stations)	7L195
<input type="checkbox"/> Blower – 110 CFM (Older Stations)	7L40
CR Relay (Vacuum Pump Relay) (Select the correct CR Relay for your station)	
<input type="checkbox"/> Relay for Vacuum Pump (1CR, 2CR)	4L107A
<input type="checkbox"/> Relay for Vacuum Pump (1CR, 2CR) “Series Stations”	4L424A
ER Relay (Electrode Relay) (Determine which ER Relay. If SONIC START® STREAMLINE™ is installed on pump station replacement is operating module.)	
<input type="checkbox"/> Electrode Relay (most current ER relay)	4L408H
<input type="checkbox"/> Electrode Relay (old style)	4L408
<input type="checkbox"/> Electrode Relay (oldest style)	4L29
<input type="checkbox"/> Rectifier/Diode, Resistor, Capacitor (required only if 4L29 Electrode Relay is installed)	80A145
SONIC START® Operating Module	4L264S
Float Check Valve	1L443H
Float Check Valve Drain Valve	1L333
Float Switches (Determine which floats are installed on your pump station)	
<input type="checkbox"/> Normally Open Float Switch (typical)	4L291A
<input type="checkbox"/> Normally Closed Float Switch (Special Alarms only)	4L291B
H-O-A Toggle Switch (3 Position), SPST (Not UL Listed) (replaces 4L207A)	4L272A
Impeller (Must be identified by pump station serial number)	Call Factory
Off-On Test Selector Switch , Toggle Switch, SPST (Not UL Listed)	4L23

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GENERAL LIST OF OTHER POSSIBLE SPARE PARTS (CONTINUED)

PART DESCRIPTION	PART #
Paint (Determine which paint your station requires)	
* Order one gallon of Catalyst Part B for each gallon of paint/primer – must be mixed before use.	
() Dark S&L Green VERSAPOX ®, Part A, Gallon	12L104B *
() Light Green VERSAPOX ®, Part A, Gallon	12L109B *
() Aquamarine VERSAPOX ®, Part A, Gallon	12L181B *
() VERSAPOX ® Catalyst, Part B, Gallon	12L105B
() Primer (RED), Part A, Gallon	12L138A *
() Primer Catalyst, Part B, Gallon	12L138B
() Touch-Up Paint Kit – Aquamarine	H87A424
() Touch-Up Paint Kit – Light Green	H87A426
() Touch-Up Paint Kit – Georgian Hemlock	H87A425
Solenoid Valve (Select the style installed on your pump station)	
() 3-Way Solenoid Valve	1L406E
() 2-Way Solenoid Valve (Remote Mounted using standard DIN connection & used on SONIC START ® STREAMLINE ™)	1L545A
() 2-Way Solenoid Valve (Conduit Connection Mounted Through Panel & Backpan)	1L545B
SONIC START ® Operating Module (If SONIC START ® is installed)	4L264S
Temperature Control , 37° to 52° Heater	4L135B
Temperature Control , 90° to 75° Blower	4L135C
Thermostat Switch for Heater	4L84-2
Tubing (Select the correct tubing for your pump station)	
() Vacuum Tubing – 3/8"	Natural: 1L142BA Green: 1L142BB Red: 1L142BC
() Vacuum Tubing – 1/4"	Red: 1L142AC
() Vacuum Tubing - 1/2"	Natural 1L142CA
Vacuum Pump (Select the correct vacuum pump for your station)	
() Heavy Duty 1/6 hp Single Piston Vacuum Pump – 4" station piping	8L29
() Standard Duty 1/8 hp Single Piston Vacuum Pump – 4" station piping	8L44
() Heavy Duty 1/2 hp Dual Piston Vacuum Pump – 6" station piping	8L32
Valves – Check Valve, Spring Loaded	Call Factory
Valves – Plug Valve	Call Factory
Vapor Filter – 12-Pack Replacement Kit (use with electrodes only)	H87A321A

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Maintenance

the secret to longevity

Maintenance of equipment is the secret of longevity. We at Smith & Loveless firmly believe that if you give a WWMP5 6 hours of maintenance a year, you will have very few problems, if any.

So, what is included in this maintenance?

- Clean the solenoid twice a year.
- Verify that all vacuum pumps pull 24 inches of Hg.
- Lubricate the motor annually (remember over greasing can cause severe damage).
- Inspect or replace all vacuum lines.
- Inspect and clean all fittings.
- Verify the wet well is clean.
- Inspect the motor adapter for any sign of mechanical seal leakage, replace if necessary. Also, twice a year, remove the vacuum line from the electrode dome/priming dome.
- Note the length of time it takes each pump to prime. Periodically check this against your recorded numbers.
- Install gauges on all pumps.

Smith & Loveless now offers a complete set of glycerin gauges with an internal diaphragm. These quality compact gauges can be sized by Smith & Loveless for every station.

If you put the annual 6 hours of maintenance in your schedule, these stations require very little and you're sure to have trouble-free station operation. Just last week, we had a customer come in for an electrode housing and he said he had not done a thing to the station since 2001. While we do not recommend this, it just goes to show how durable Smith & Loveless pump stations are.

Smith & Loveless Inc.
After Market Division

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