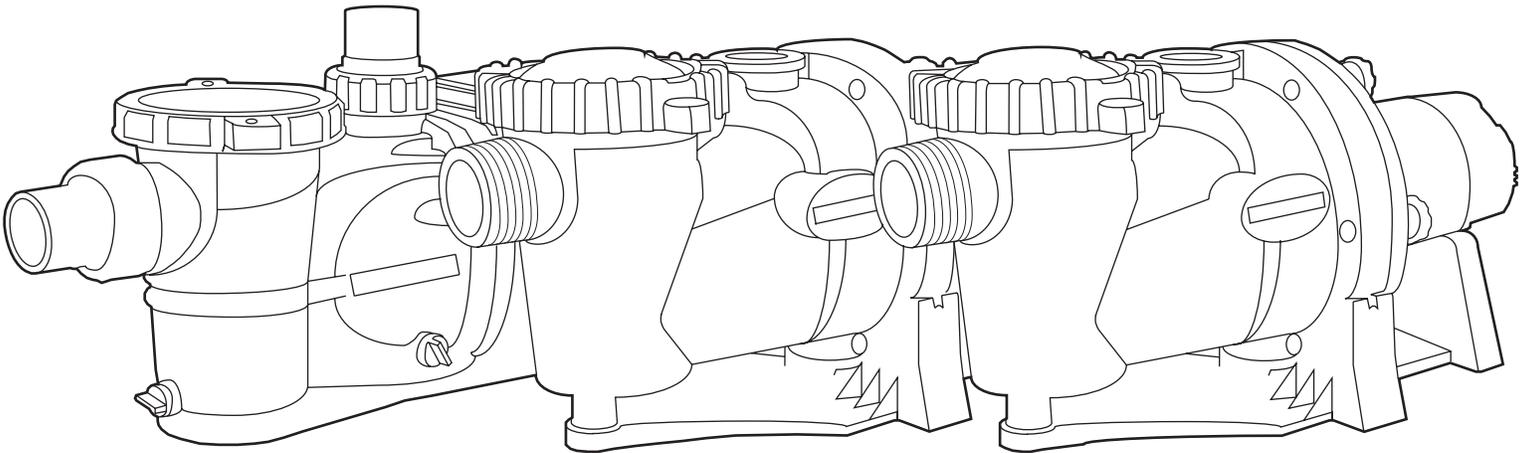




OWNER'S MANUAL

DV FLO PUMP

APEX SERIES



Questions, problems, missing parts? Before returning to the store,
call Customer Service
8 a.m. - 6 p.m., EST, Monday - Friday

1-877-278-2797

ECOQUAPRO.COM

THANK YOU

We appreciate the trust and confidence you have placed in us through the purchase of this pool pump. We strive to continually create quality pool products. Visit us online to see our full line of products available. Thank you!

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Safety Information

DESCRIPTION

These self priming pool pumps are for high efficiency, and easy maintenance, with an oversized strainer basket. It is constructed of durable thermoplastic for years of trouble free service. These swimming pool pumps are designed for use with permanently installed swimming pools and spas only. Do not use with storable pools.

UNPACKING

After unpacking the unit, carefully inspect for any damage that may have occurred during transit. Check for loose, missing or damaged parts.

SAFETY GUIDELINES

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS.

As a user, you are important to us. Thus, one copy of the Operating Instructions and Parts Manual is included with each pump shipped from our factory. This manual contains important sections relative to user safety, use, maintenance, warranty, etc. It is a good idea to ask for extra copies for other installers/users. Extra copies, free of charge, are available.

Do not use pump for any purpose other than pool/spa application. Components have not been designed for other applications. Severe pump failure, may result. Any unapproved use will void warranty.



DANGER: To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.



WARNING: Risk of electrical shock. Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI. The unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.



CAUTION: This pump is for use with permanently-installed pools and may also be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently- installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity. Do not install within an outer enclosure or beneath the skirt of a hot tub or spa.



CALIFORNIA PROPOSITION 65

WARNING: This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

NOTICE: PLEASE SAVE THESE INSTRUCTIONS.

General Safety (continued)

ALWAYS FOLLOW BASIC SAFETY PRECAUTIONS WITH THIS EQUIPMENT, INCLUDING:

- Provide sufficient ventilation to maintain air temperature below the maximum ambient temperature rating shown on the motor nameplate. Pump house must allow adequate ventilation to assure the ambient temperature remains below the motor rating when the pump is operating.
- Locate the pump on a non combustibile surface. The surface should be hard, level, dry, well ventilated, and out of direct sunlight. The surrounding area should provide protection from the elements and allow sufficient space for maintenance and service. Ensure the drainage will flow away from the pump. To reduce vibration and pipe stress, use anchor bolts to secure pump base to surface. Support the suction and discharge piping.
- Design the piping system to allow the pump suction inlet height to be as close to water level as possible. Mount the pump below water level for easy priming. If the pump must be located above the filled water level, keep the vertical distance to a minimum. Use short, direct piping to the suction as this will minimize friction loss.



WARNING: Fire and burn hazard. Motors run at high temperatures. Do not allow leaves, debris, or foreign matter to collect around the pump motor. Keep ventilation holes open. Allow the motor to cool before handling. Keep flammable liquids away.

- If the thermal overload protection in the motor trips or if the GFCI trips, determine the reason and correct the problem before re-starting pump.
- Use rigid or flexible PVC pipe. Ensure pipe ends are clean and free of any flash caused by cutting. Use the proper glue for the type of pipe selected.



NOTE: Use a supplier recommended primer to ensure glued joints are secure. Many local codes require primer with a purple tracer to verify primer use.

Consider climatic conditions when applying adhesives. Atmospheric conditions with high humidity will make the adhesive action of certain glues less effective. Follow the manufacturer's instructions.

POOL SAFETY GUIDELINES

RESPONSIBLE ADULT SUPERVISION

Constant and responsible adult supervision is mandatory in the pool or spa environment. Always supervise children around pools and spas. Never allow a child to play in a way that could permit the child's hair to come near the drain cover.

DRAINS, SUCTION FITTINGS, AND JETS

Keep hair and clothing away from the suction fitting drain cover. Wear a bathing cap or pin hair up if you have long hair. Current grates and covers help prevent body or hair entrapment. Make sure that drain covers meet the ANSI/ASME A112.19.8 standard. Safety doors should be installed in all pool cleaner wall suction lines. Pools or spas with drain covers that are broken, missing, or not adequately secured should not be used until the proper replacement has been installed.

ELECTRICAL HAZARDS

A licensed electrician, experienced in swimming pools and spas, should inspect your equipment to make sure everything is properly grounded, bonded, and protected by proper GFCI circuits according to Article 680 of the National Electric Code.

DROWNING PREVENTION

Install and routinely inspect fences, self-closing and latching gates, baby barrier fences, and alarms. Eliminate incidental routes to pool including machinery or equipment that provides a route over fencing into pool area. **INDOOR INSTALLATIONS**

Pools and spas located indoors must comply with ANSI/ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers) standard 62-2001 to ensure adequate ventilation and safe use.

WARNING SIGNS

Protect your family and guests. Make sure that all warning signs provided by the manufacturer, builder, or installer are displayed according to the manufacturer's specifications.

Installation



WARNING: Shock Hazard! Only qualified, licensed personnel should install pump and wiring. A professional trained and familiar with pool pump installation must perform pressure tests.

TOOLS REQUIRED



Wrench



Phillips
screwdriver



Plumber's
seal tape

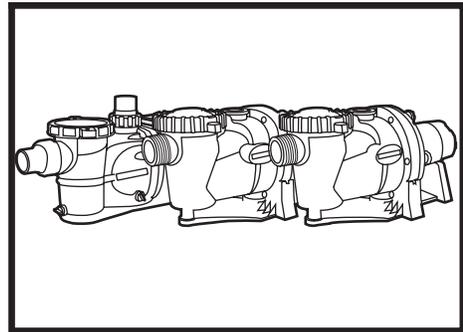


Figure 1 - Swimming Pool Pumps

INSTALLATION INSTRUCTIONS

The pump mount must be located away from corrosive or flammable chemicals. Do not connect the pump to a municipal water system. The pump is only designed for pool or spa installation. The pump must be installed with at a minimum of 2 main drains equipped with certified anti-entrapment covers that comply with ASME/ANSI A112.19.8B standard (see Figure 2). All air must be removed from piping system before operating or testing equipment (see filter manual).

THREADED CONNECTIONS

Use only Plumber's Seal tape or equivalent on threaded plumbing connections. Other pipe compounds may damage threads. Do not use silicone or petroleum based compounds.

PUMP PLUMBING

Suction pipe should be as large as or larger than discharge pipe. Avoid using a suction pipe smaller than pump connection.

Larger diameter pipes reduce noise and improve performance.

1. Keep the piping as straight and short as possible, and of suitable size.
2. Avoid connecting an elbow directly into the pump inlet. A length of straight pipe will allow proper entry of the water to the pump.
3. Slope horizontal runs upward to the pump to prevent trapping air.
4. Use independent piping supports to reduce strain on the pump.
5. Keep as much of the suction line as possible below the water level to reduce priming time.
6. Install valves and unions in the pump suction and return lines to facilitate servicing. Valves are also essential for pump maintenance if the system is installed below pool water level.
7. Keep all valves fully open during operation. Partially closed valves waste energy!

Use Plumber's Seal tape for making threaded connections to the pump. Do not use pipe dope.

PLUMBER'S SEAL TAPING INSTRUCTIONS

Use only new or clean PVC pipe fittings. Wrap male pipe threads with one to two layers of Plumber's Seal tape. Cover entire threaded portion. Do not over tighten. If leaks occur, remove pipe, clean off old tape, rewrap with one to two additional layers of tape and remake the connection.

FITTINGS

Fittings restrict flow; for best efficiency use fewest possible fittings. Avoid fittings which could cause an air trap. Pool fittings must conform to International Association of Plumbing and Mechanical Officials (IAPMO) standards. Use only non-entraping suction fitting or double suction.

Installation (continued)

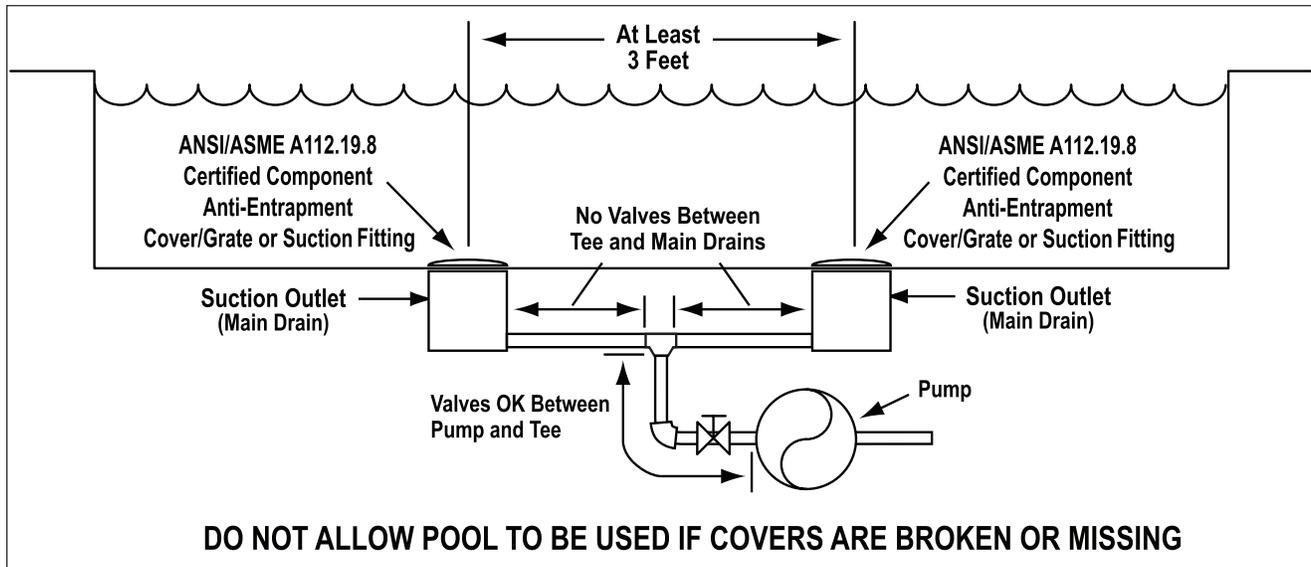


Figure 2

PRIOR TO PRESSURE TESTING

- ❑ Securely tighten knobs, drain fittings, lid, and system accessories.
- ❑ Air may collect at the highest point in the plumbing system. Normally an air purge valve is provided with the pool filter. Consult your pool filter instruction manual for air purging instructions.
- ❑ The basket lid must be rotated and locked into position as indicated in Figure 3.
- ❑ Test system at a water pressure of 25 psi or less.
- ❑ Water Temperature for test must be less than 100° F.
- ❑ After 24 hours visually check the system for leaks.

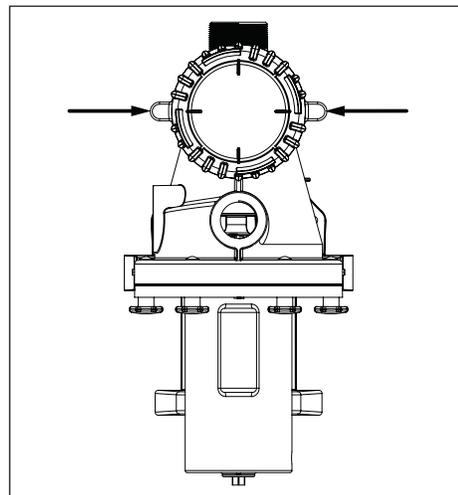


Figure 3 - Clamp rings

POOL PUMP SUCTION REQUIREMENTS



WARNING: Pump suction is hazardous and can trap, drown or disembowel bathers. Do not use or operate swimming pools or spas if a suction outlet cover is missing, broken, or loose. Follow the guidelines below for a pump installation which minimizes risk to users of pools and spas.



DANGER: Ground the motor before connecting to electrical power supply. Failure to ground the motor may cause severe or fatal electrical shock hazard.

ENTRAPMENT PROTECTION

The pump suction must be designed to eliminate the possibility of suction entrapment or hair entrapment/entanglement.

SUCTION COVERS

All suction inlet covers must be maintained and replaced if cracked, broken, or missing. See Figure 2 for outlet cover certification

Installation (continued)

requirements.

TESTING AND CERTIFICATION

All suction inlet covers must comply with ASME/ANSI A112.19.8B specifications for suction fittings for use in swimming pools, spas and whirlpool bathtub applications. The product must be tested for compliance with the standards and the certification must be included with the components.

Single or Multiple Pump Circulation Systems must be provided with a minimum of 2 (two) suction inlets of the approved type.

Do not install multiple pumps in one hydraulic circuit. The pump is not designed to accept output flow from another pump. Do not allow water to back flow through the pump. Water flowing in the discharge and out the suction during an upset condition can cause the motor to rotate backwards. Never attempt to start the pump if the shaft is rotating due to a hydraulic turbine action. This could cause pump to operate in reverse and damage internal components.

OUTLETS PER PUMP

Provide at least two hydraulically balanced main drains, with covers for each swimming pool pump suction line. The centers of the main drains suction fitting must be at least 3 ft. apart (see Figure 2). The system must be built so that it cannot operate with the pump drawing water from only one main drain. Two main drains must be connected to the pump whenever it is running. If two main drains run into a single suction line, the single suction line can be equipped with a single valve that shuts off both main drains from the pump. **A valve in each suction line is not allowed.**

PIPING

Use at least 1-1/2" (38mm) pipe (use 2"(51mm) pipe if possible). Increase size if a long run is needed. To avoid strains on the pump, support both suction and discharge pipes independently. Place these supports near the pump.

To avoid a strain left by a gap at the last connection, start all piping at the pump and run pipe away from the pump.

To avoid airlocking, slope suction pipe slightly upward toward the pump.

NOTICE: To prevent flooding when removing pump for service, all flooded suction systems must have gate valves in suction and discharge pipes.

DV FLO pump includes 1 1/2" female NPT, or 2" slip-fit connections.

APEX Series pumps include 2" female NPT connections.

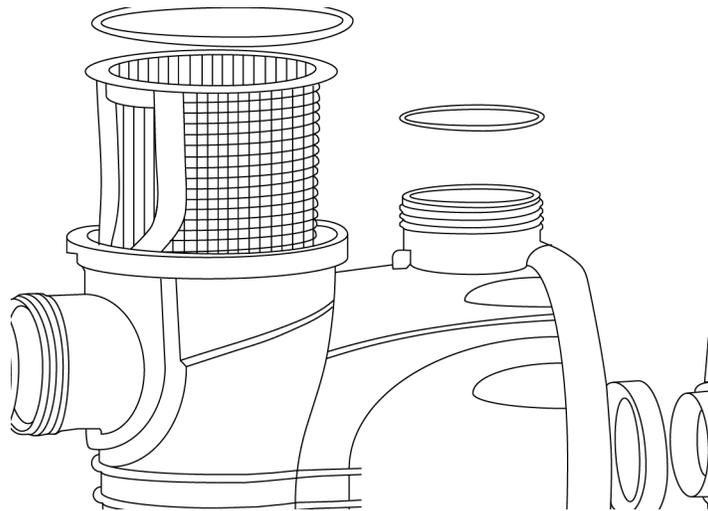


Figure 4 - DV FLO

Electrical

A Ground Fault Circuit Interrupter (GFCI) is required in the circuit. For size of GFCI required see the GFCI manufacturer's instructions.

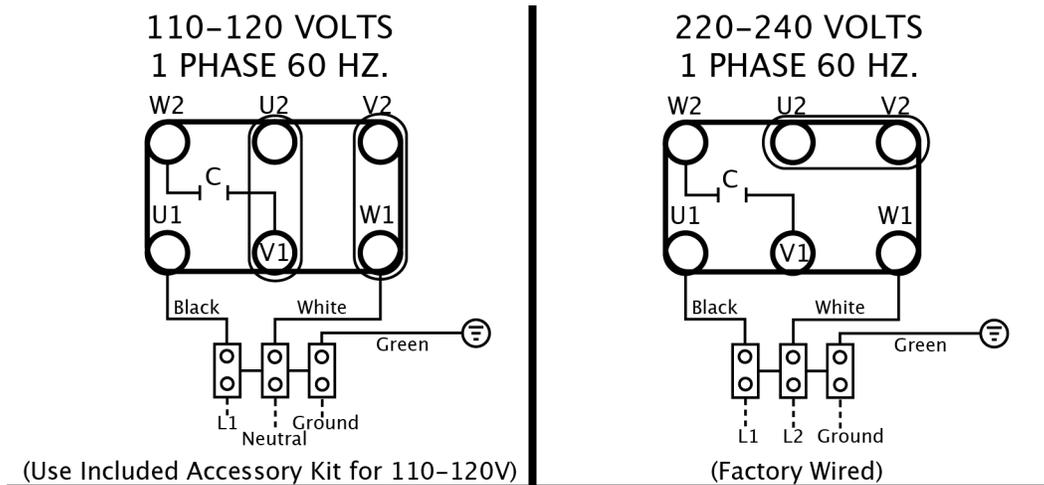
- Never ground to a gas supply line.
- To avoid dangerous or fatal electrical shock turn the pump OFF, disconnect the power at its source, lock out power to motor, and place a tag on the dedicated GFCI circuit breaker indicating the power is to remain OFF before working on electrical connections.

Ground Fault Circuit Interrupter (GFCI) tripping indicates an electrical problem. If GFCI trips, determine the reason for tripping. If you are uncertain, have a qualified electrician inspect and repair the electrical system. Verify that the supply voltage matches the nameplate voltage. Incorrect voltage can cause fire or seriously damage the motor and voids the warranty.

VOLTAGE & CHANGING DEFAULT SETTING

Voltage at the motor must be within 10% of the motor nameplate rated voltage or the motor may overheat, causing overload tripping and reduced component life. Verify voltage is correct before applying power. If voltage does not fall within the specified range during operation consult the power company.

DV FLO pump is factory wired for 230 volt operation. This pump can also be used with 115 volt. Please refer to the wiring diagram and use the supplied electrical components (located in filter basket of new pump) to change from 230 volt factory setting to 115 volt operation.



- * Use Copper Conduits Only
- * Acceptable for Field Wiring
- * Bond Required
- * Must be Grounded & Bonded in Accordance with Local and National Electric Codes

Figure 5 - DV FLO Pump Wiring Diagram

Electrical (continued)

APEX Series pumps are factory wired for 230 volt operation. This pump can also be used with 115 volt.

If you have 230 volt motor supply voltage, confirm that the plug is set for 230 volts. The arrow on the plug will point to the 230 volt position. Refer to the diagram below.

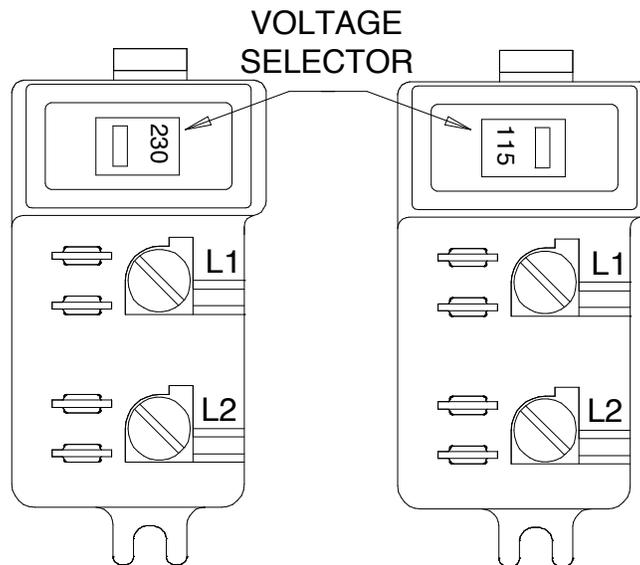


Figure 6 - APEX Series Pump Wiring Diagram

GROUNDING/BONDING

Install, ground, bond and wire motor according to local or National Electrical Code requirements. Permanently ground motor. Use green ground terminal provided under motor canopy or access plate; use size and type wire required by code. Connect motor ground terminal to electrical service ground.

Connect a No. 8 AWG (8.4 sq.mm) solid copper bonding wire to the bonding lug provided on the motor housing and to all metal parts of the swimming pool, spa, or hot tub and to all electrical equipment, metal piping or conduit within 5 feet (1.5 m) of the inside walls of swimming pool, spa, or hot tub.

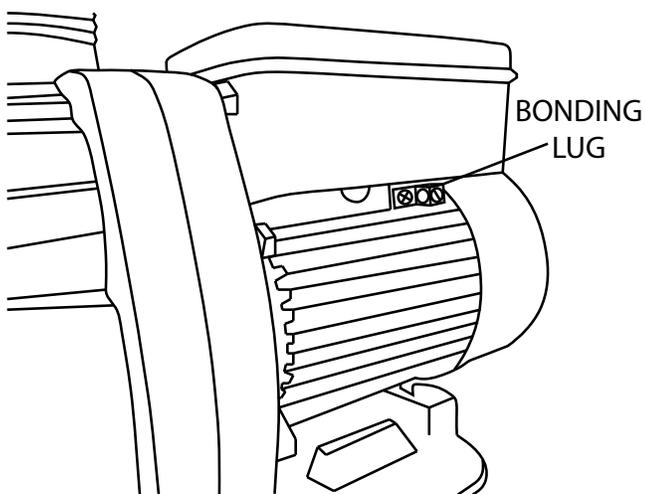


Figure 7 - DV FLO Pump Bonding Lug Location

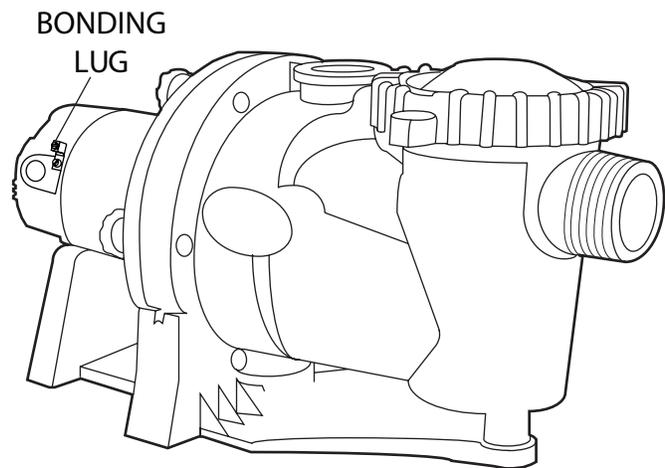


Figure 8 - APEX Series Pump Bonding Lug Locations

Electrical (continued)

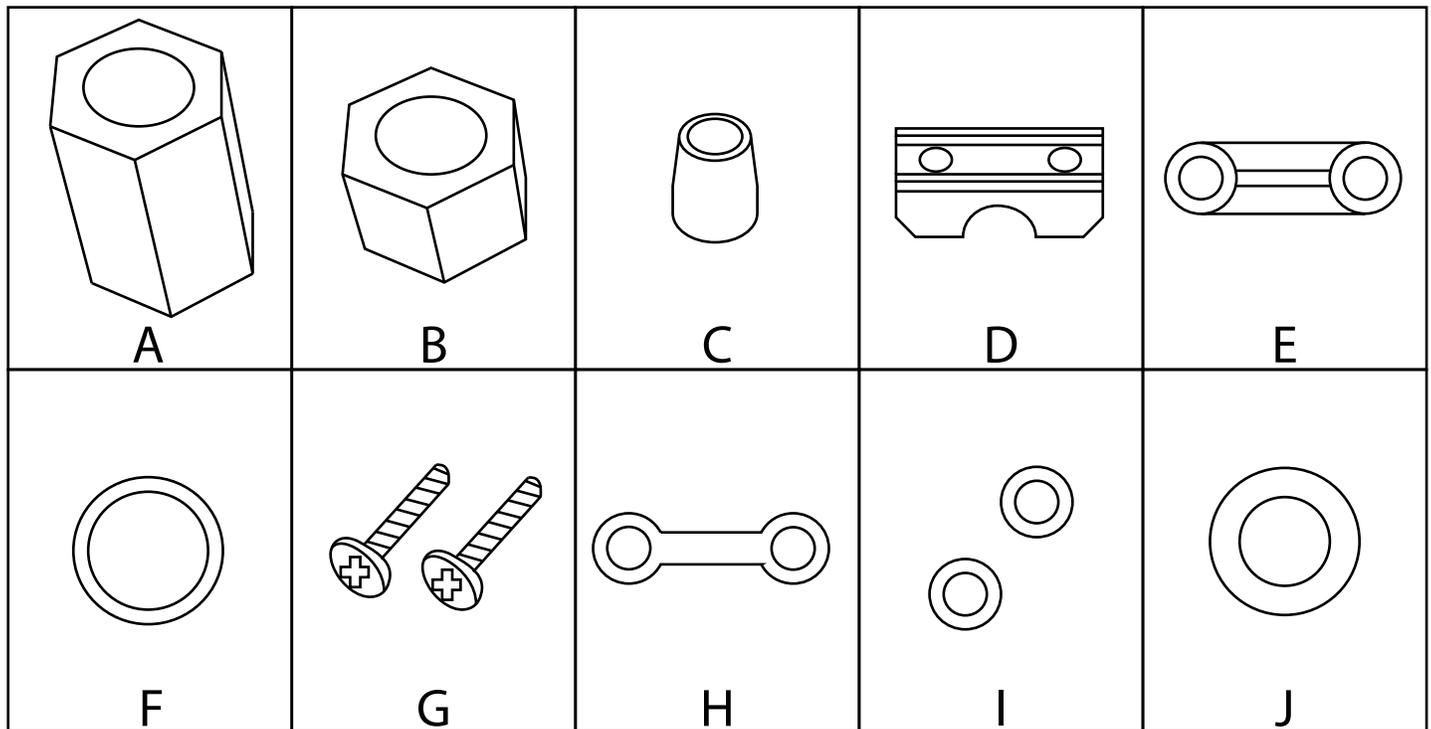


Figure 9 - DV FLO Pump Electrical Accessories

230V WITH CONDUIT

- 1 - Remove pump box cover (four screws included with pump)
- 2 - Pull wires into pump box, per wiring diagram (see figure 5)
- 3 - Connect conduit to long hex adapter (part A, already attached)
- 4 - install white cord strain relief (part E)
- 5 - Use included screws (part G), to secure white cord strain relief (part E)
- 6 - Reinstall box cover

115V WITH 16 GAUGE POWER CORD

- 1 - Remove long hex adapter (part A) off pump
- 2 - Remove pump box cover (four screws included with pump)
- 3 - Unscrew and realign the brass bridge (part H), and brass washers (part I), to match 115V wiring diagram (see figure 5)
- 4 - Run the 16 gauge cord through the rubber cone gasket (part C). Insert cone gasket into black hex cap (part B).
- 5 - Pull wires into pump box, per wiring diagram
- 6 - install white cord strain relief (part E)
- 7 - Use included screws (part G), to secure white cord strain relief (part E)
- 8 - Tighten black hex cap (part B) to pump box
- 9 - Reinstall box cover

Electrical (continued)

115V WITH 12 GAUGE POWER CORD

- 1 - Remove long hex adapter (part A) off pump
- 2 - Remove pump box cover (four screws included with pump)
- 3 - Unscrew and realign the brass bridge (part H), and brass washers (part I), to match 115V wiring diagram (see figure 5)
- 4 - Run the 12 gauge cord through black rubber o-ring (part F). Insert cone gasket into the black hex cap (part B).
- 5 - Pull wires into pump box, per wiring diagram
- 6 - install black cord strain relief (part D)
- 7 - Use included screws (part G), to secure black cord strain relief (part D)
- 8 - Tighten black hex cap (part B) to pump box
- 9 - Reinstall box cover

WIRING

Pump must be permanently connected to circuit. Table I gives correct wire and circuit breaker sizes for the pump alone. It is recommended to use a dedicated breaker; however If other lights or appliances are also on the same circuit, be sure to add their amp loads to pump amp load before figuring wire and circuit breaker sizes. (If unsure how to do this or if this is confusing, consult a licensed electrician.) Use the load circuit breaker as the master on-off switch.

Install a Ground Fault Circuit Interrupter (GFCI) in circuit; it will sense a short-circuit to ground and disconnect power before it becomes dangerous to pool users. For size of GFCI required and test procedures, see GFCI manufacturer's instruction.

In case of power outage, check GFCI for tripping (which will prevent normal pump operation). Reset if necessary.



NOTE: If you do not use conduit when wiring motor, be sure to seal wire opening on end of motor to prevent dirt, bugs, etc. from entering..

Motor HP	Branch Fuse Rating Amps*	Max Load Amps	Voltage/Hz/Phase	Service to Motor - Distance in Ft (m)		
				0-100'(0-30)	101-200'(30-60)	201-300'(60-90)
				AWG Wire Size (mm ²)		
1	20	7.5	115/60/1	12(3)	10(5.5)	8(8.4)
1-1/2		14			8(8.4)	6(14)
1	15	3.5	230/60/1	14(2)		
1-1/2		7.0 - 7.2				

* Time delay fuses are recommended instead of standard fuses in any motor circuit

** Chart is for reference only. Refer to National Electric Code for details

*** Copper conductor only

**** If 208V, please call factory

Figure 10 - Wire Gauge Matrix For APEX Series Pumps

Operation



DANGER: Risk of fire and burns. Motors run at high temperatures. To reduce the risk of fire, do not allow leaves, debris, or foreign matter to collect around the pump motor. To avoid burns when handling the motor, let it cool for 20 minutes before trying to work on it. An automatic internal cutoff switch protects the motor from heat damage during operation.



DANGER: Hazardous Suction. Can trap hair or body, causing severe injury or death. Do not block suction. Keep small children under close adult supervision at all times.



NOTE: Do NOT run the pump dry! It will void your warranty and may damage seals, causing leakage and flooding. Fill the pump with water before starting the motor.

BEFORE REMOVING THE TRAP COVER

1. CLOSE GATE VALVES in suction and discharge pipes.
2. RELEASE ALL PRESSURE from pump and piping system.

If the pump is being pressure tested, be sure pressure has been released before removing the trap cover.

PRIMING PUMP

Release all pressure from the filter, pump, and piping system; see the filter owner's manual. In a flooded suction system (water source higher than pump), pump will prime automatically when suction and discharge valves are opened. If the pump is located above the normal pool water level, remove ring and cover assembly and slowly fill the basket and pump with water. Clean and inspect the O-ring and reinstall on the trap. Replace the ring and cover assembly and rotate clockwise to tighten the cover (see Figure 3).

The clamp ring must engage with the pump body. Push down and rotate until the internal stops are felt. Properly aligned tabs shown above in Figure 3. Ensure the lid is securely clamped. Failure to tighten clamp ring as indicated will reduce product strength, resulting in failure of components, and bodily injury.



NOTE: Pump prime time will depend on vertical distance and length of suction line. If the pump does not prime, make sure that all valves are open and the suction pipe is submerged. Verify there are no leaks in suction lines. See Troubleshooting Guide for further assistance.

Maintenance

All of our pumps are shipped from the factory with DANGER and/or WARNING labels already on the pump. These labels contain a series of basic, yet extremely important safety messages for the user and bystander. Regardless of how well these labels are attached or how scratch resistant or wear-resistant they may be, it is possible that, in time, the wording may become illegible with normal use. Whenever you are repairing the pump, performing routine maintenance, or have the opportunity to inspect the pump, make sure the label is readable. If the label is not legible, replace the label with an adhesive version that is available at no charge by calling 1-888-658-1594. The unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.

Use only parts supplied by the manufacturer. Similar looking parts may not have sufficient strength for safe operation.

The only routine maintenance needed is inspection/cleaning of the strainer basket. Debris or trash that collects in the basket will choke off water flow through the pump.

BEFORE ATTEMPTING TO CLEAN THE BASKET

A. Stop the pump, disconnect power at its source, lock out power, place a tag on the dedicated GFCI circuit breaker indicating the power is to remain OFF, close valves in suction and discharge, and release pressure from the system.

Maintenance (continued)



DANGER: Hazardous suction can trap hair or body parts, causing severe injury or death. Do not block suction.

- B. Remove the ring and cover assembly by turning counterclockwise. If necessary, tap handles gently with a rubber mallet.
- C. Remove the basket and clean. Inspect holes in the basket for blockage. Clean the basket with water and replace in the basket housing. Do not hit the basket to clean. Verify the basket is oriented correctly in the housing.
- D. Clean and inspect the lid O-ring. Reinstall ring and cover assembly.
- E. Prime the pump (see priming instructions).

DRAINING THE PUMP



DANGER: Risk of electric shock . Can shock, burn or kill. Disconnect power before working on pump or motor.

- 1. Pump down water level below all inlets to the pool. Risk of electric shock . Can shock, burn or kill. To avoid dangerous or fatal electrical shock hazard, turn OFF power to motor before draining pump.
- 2. Remove trap cover and use low pressure air to blow accumulated water from the piping system. Never use high pressure air to purge system.
- 3. Cap inlet piping after draining to keep water out of the pipes.
- 4. To prevent pump from freezing, remove trap cover and drain the tank body through the two drain plugs provided. Clean pump thoroughly; replace trap cover.

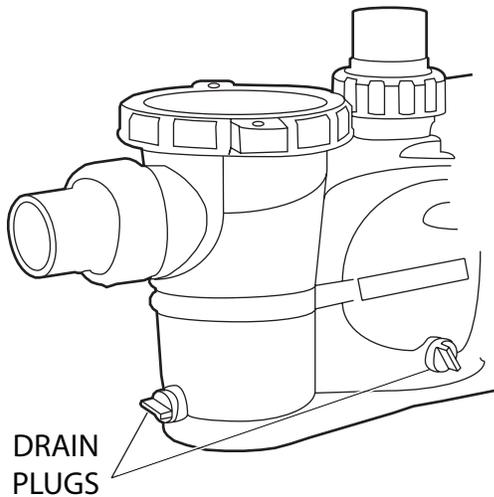


Figure 11 - DV FLO Pump Drain Plugs

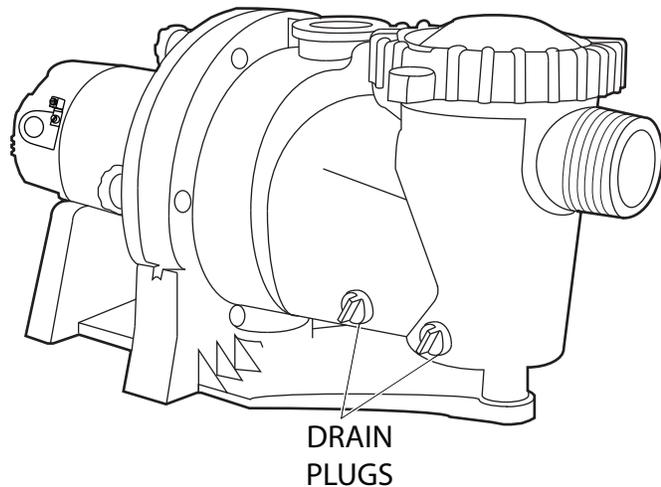


Figure 12 - APEX Series Pump Drain Plugs



NOTE: Tighten trap cover by hand only (no wrenches)! If pump is not anchored, use caution to avoid breaking attached piping.

- 5. Be sure motor is kept dry and covered.

Maintenance (continued)



DANGER: To avoid dangerous or fatal electrical shock hazard, turn OFF power to the motor before draining the pump. Disconnect the power at its source, lock out the power, and place a tag on the dedicated GFCI circuit breaker indicating the power is to remain off.

STORAGE / WINTERIZING

NOTICE Allowing pump to freeze will damage pump and void warranty!

NOTICE Do not use anti-freeze solutions (except propylene glycol) in your pool/spa system. Propylene glycol, or “RV antifreeze”, is non-toxic and will not damage plastic system components; other anti-freeze formulas are highly toxic and may damage plastic components in the system.

Drain all water from pump and piping when expecting freezing temperatures or when storing pump for a long time (see Draining The Pump).

Keep motor dry and covered during storage. To avoid condensation/corrosion problems, do not cover pump with plastic.

For outdoor/unprotected installations:

1. Enclose entire system in a weatherproof enclosure.
2. To avoid condensation/corrosion damage, allow ventilation; do not wrap system in plastic.
3. Use a 40% propylene glycol/60% water solution to protect pump to -50°F (-46°C).

STARTUP FOR WINTERIZED EQUIPMENT

1. Remove any temporary weather protection placed around system for shutdown.
2. Follow filter manufacturer’s instructions for reactivation of the filter.
3. Inspect all electrical wiring for damage or deterioration over the shutdown period. Have a qualified serviceman repair wiring as needed.
4. Inspect and tighten all watertight connections.
5. Open all valves in suction and return piping.
6. Remove any winterizing plugs in piping system.
7. Drain all antifreeze from system.
8. Close all drain valves and replace all drain plugs in piping system.
9. Prime pump according to instructions in Priming Pump.



DANGER: To avoid dangerous or fatal electrical shock hazard, turn OFF power to the motor before draining the pump. Disconnect power at its source, lock out the power, and place a tag on the dedicated GFCI circuit breaker indicating the power is to remain off.



NOTE: Allowing the pump to freeze will damage the pump and void warranty! Use only non-toxic antifreeze. Do not use automotive antifreeze. It is highly toxic and may damage plastic components in the system.

Troubleshooting

Read and understand the safety and operating instructions in this manual before doing any work on the pump! Only qualified personnel should electrically test the pump motor!

WATER LEAKING AROUND THE MOTOR

A water leak in the area of the motor to the pump connection indicates a mechanical seal failure and a shock hazard. Take the pump out of service and replace the seal immediately to avoid damage to other components and to reduce the risk of an electric shock. Refer to the pump maintenance section.

FAILURE TO PUMP: REDUCED CAPACITY OR DISCHARGE PRESSURE SUCTION LEAKS/LOST PRIME:

1. The pump must be primed; make sure that the pump body and the basket body are full of water. See the priming instructions.
2. Make sure there are no leaks in the suction piping.
3. Make sure the suction inlet is well below the water level to prevent the pump from sucking air.
4. Lower the pump closer (vertically) to the water source or install check valve in the suction line.



WARNING: Some safety vacuum release system (SVRS) devices are not compatible with the installation of check valves. If the pool has an SVRS device, be sure to confirm that it will continue to safely operate when any check valves are installed.

FAILURE TO PUMP: CLOGGED PIPE/TRAP/IMPELLER, WORN IMPELLER:

5. Make sure the suction trap is not clogged; if it is, clean the trap and the strainer. See Maintenance section.
6. Make sure the impeller is not clogged (follow steps 1 through 7 under “DISASSEMBLY”; check the impeller for clogging; and follow steps under “REASSEMBLY”).
7. Impeller and diffuser may be worn. If so, order replacement parts by calling 1-888-658-1594.
8. The pump may be trying to push too high a column of water. If so, a “higher head” pump is needed. Call us at 1-888-658-1594.

FAILURE TO PUMP: ELECTRICAL

9. The pump may be running too slowly. Check voltage at the motor terminals and at the meter while the pump is running. If low, see wiring instructions or consult power company. Check for loose connections.
10. The pump may be too hot.
 - A. Check line voltage; if less than 90% or more than 110% of rated voltage consult a licensed electrician.
 - B. Increase ventilation.
 - C. Reduce ambient temperature.
 - D. Tighten any loose connections.

Replacement Parts

FOR REPLACEMENT PARTS OR TECHNICAL ASSISTANCE, PLEASE CALL 1-888-658-1594

Please provide the following information:

- Model number
- Serial number
- Part description and number as shown in parts list

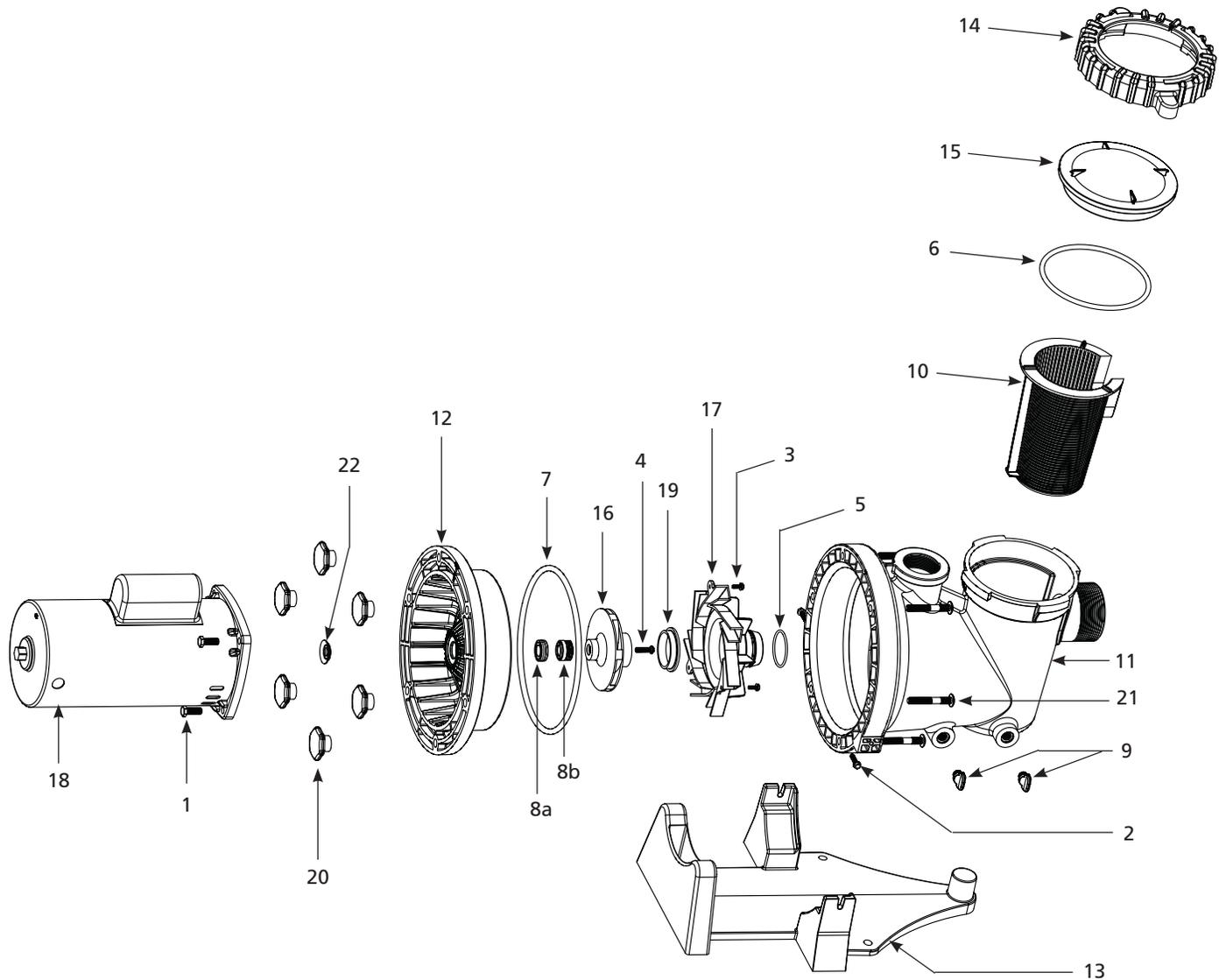


Figure 13 - APEX Series Pump Replacement Parts

Replacement Parts (continued)

Ref. No.	Description	Part Number	Qty.
1	Machine Screw 3/8-16 x 1.00 UNC 2A	4383	4
2	Base Screw	4951	2
3	Machine Screw 10-32 x 1/2 UNC 2A	08831	3
4	Machine Screw 1/4-20 x 1 UNC 2A Left Handed	14052	1
5	Diffuser O-Ring	19014-001	1
6	Strainer Basket O-Ring	19084-001	1
7	Housing O-Ring	19087-002	1
8a	Seal Stationary	21212-001	1
8b	Bellows Assembly	21212-002	1
9	Drain Plug	14421	2
10	Filter Basket	28570-001	1
11	Pump Housing	28571-002	1
12	Seal Plate	28572-001	1
13	Pool Pump Base	28573-001	1
14	Locking Ring	29595-001	1
15	Clear Basket Cover	29596-001	1
16	1-1/2 HP Impeller (58702-XXXX, 59921-XXXX)	29861-001	1
17	Diffuser 7 Vane (58702-XXXX, 59921-XXXX)	29863-001	1
18	SEE LIST OF REPLACEMENT MOTORS BELOW	SEE BELOW	1
19	Floating Wear Ring	46066-001	1
20	Knob	67121-001	6
21	Rib Neck Bolts	67122-001	6
22	Slinger	(Included with Motor)	1

REPLACEMENT PART KITS

Seal Kit	69013-001	(Parts 6 & 7)
Motor Kit		
1-1/2 HP (58702-XXXX)	69016-001	(Parts 7, 8 & 18c)
1-1/2 HP 2 Speed (59921-XXXX)	66316-001	(Parts 7, 8 & 18H)
Impeller Kit		
1-1/2 HP (58702-XXXX, 59921-XXXX)	69021-001	(Parts 4, 7, 16c & 19)
Diffuser Kit		
1, 1-1/2, 2 HP (58702-XXXX, 59921-XXXX)	69024-001	(Parts 5, 7 & 17b)
Wet End Kits		
1-1/2 HP (58702-XXXX)	69131-001	(Parts 18c, 16c, 17b, 1, 3, 4, 5, 7, 8a, 8b, 12, 19, 22)
1.5 HP 2 Speed (59921-XXXX)	66330-001	(Parts 18H, 16c, 17b, 1, 3, 4, 5, 7, 8a, 8b, 12, 19 & 22)
Seal Plate Kit	69027-001	(Parts 7, 8 & 12)

REPLACEMENT MOTORS FOR APEX PUMPS

32166-001	REPLACEMENT MOTOR FOR APEX Series 115/208-230V 3/4HP FULLRATED ENGY EFF
32166-002	REPLACEMENT MOTOR FOR APEX Series 115/208-230V 1HP UPRATE ENGY EFFICIENT
32165-001	REPLACEMENT MOTOR FOR APEX Series 115/208-230V 1HP FULLRATED ENGY EFF
32165-002	REPLACEMENT MOTOR FOR APEX Series 115/208-230V 1 1/2HP UPRATE ENGY EFFI
32164-001	REPLACEMENT MOTOR FOR APEX Series 208-230V 1.5HP FULLRATED ENGY EFFICIENT
32164-002	REPLACEMENT MOTOR FOR APEX Series 208-230V 2HP UPRATE ENGY EFFICIENT
32163-001	REPLACEMENT MOTOR FOR APEX Series 208-230V 2HP FULLRATED ENGY EFFICIENT
32163-001	REPLACEMENT MOTOR FOR APEX Series 208-230V 2 1/2HP UPRATE ENGY EFF
32162-001	REPLACEMENT MOTOR FOR APEX Series 208-230V 3HP FULLRATED ENGY EFFICIENT
32194-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 3/4hp FULL RATED ENGY EFFICIENT
32194-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 1hp UPRATED ENGY EFFICIENT
32195-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 1.0hp FULLRATED ENGY EFFICIENT
32195-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 1.5hp UPRATED ENGY EFFICIENT
32196-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 1.5hp FULL RATED ENGY EFFICIENT
32196-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 2.0hp UPRATED ENGY EFFICIENT
32197-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 2.0hp FULLRATED ENGY EFFICIENT
32197-001	REPLACEMENT MOTOR FOR APEX Series 2-Speed 2.5hp UPRATED ENGY EFFICIENT
33000-001	REPLACEMENT MOTOR FOR APEX Series 2.4HP Variable Speed Pool Pump

Figure 13 (continued) - APEX Series Pump Replacement Parts

Replacement Parts (continued)

FOR REPLACEMENT PARTS OR TECHNICAL ASSISTANCE, PLEASE CALL 1-888-658-1594

Please provide the following information:

- Model number
- Serial number
- Part description and number as shown in parts list

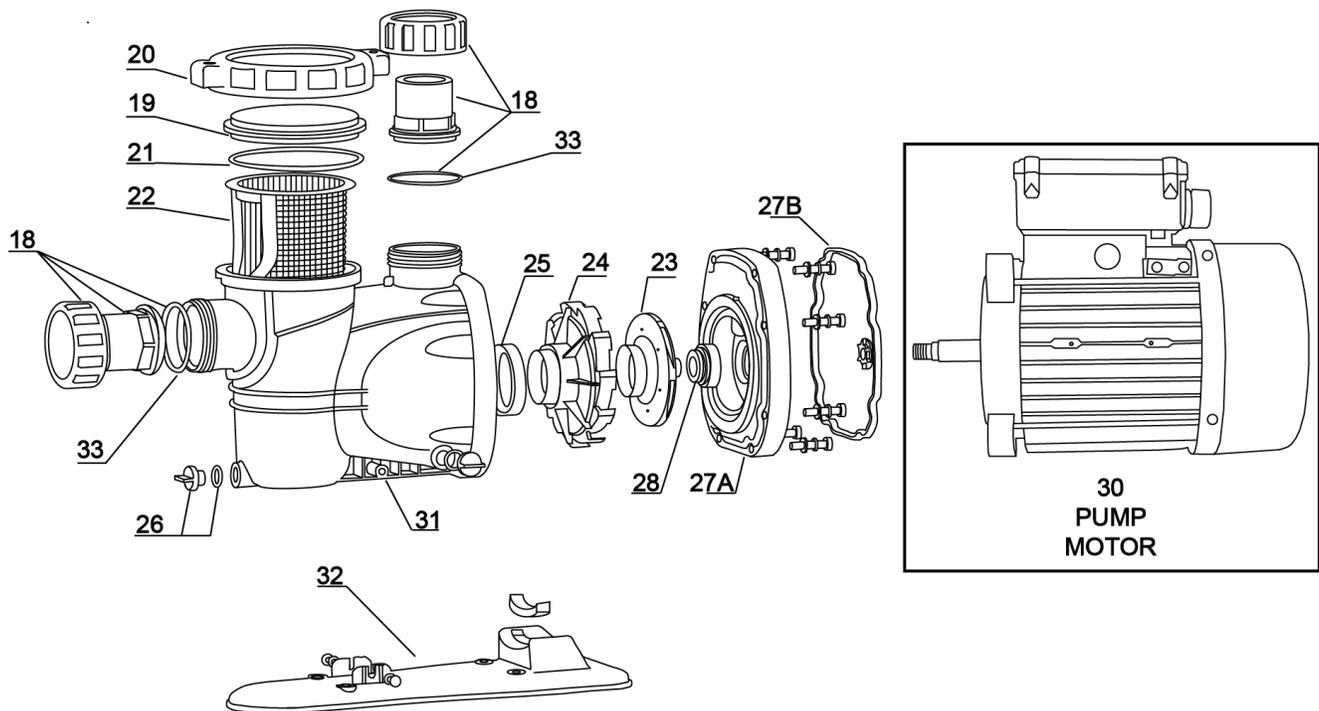


Figure 14 - DV FLO Pump Replacement Parts

Replacement Parts (continued)

Ref. No.	Part No.	Description	QTY
18	63061-01	Union Adapter Kit to 1-1/2" F NPT	2
19	63057-01	Clear Basket Cover	1
20	63056-01	Basket Locking Ring	1
21	63059-01	Filter Basket Lid O-ring	1
22	63058-01	Filter Basket	1
23	63008-01	Impeller (1.0HP)	1
24	63007-01	Diffuser (1.0HP)	1
25	63006-01	Diffuser Seal	1
26	63001-01	Drain Plug	1
27A	63003-01	Seal Plate	1
27B	63010-01	Seal Plate O-ring	1
28	63009-01	Shaft Seal	1
29	63040-01	Motor Capacitor (1.0HP) 30uf	1
30	GRPDVM075	3/4 HP TEFC Replacement Motor (no cord)	1
30A	GRPDVM10	1.0 HP TEFC Replacement Motor (no cord)	1
30B	GRPDVM15	1.5 HP TEFC Replacement Motor (no cord)	1
31	65034-01	Pump Main Wet-End Housing Only	1
32	63000-01	Pump Base	1
33	65034-002	Union O-Ring (set of 2)	1

Figure 14 (continued) - DV FLO Pump Replacement Parts

Warranty Information

Limited Warranty

For one (1) year from the date of purchase, the manufacturer will repair or replace, at its option, for the original owner any parts of its pumps ("Product") which are found upon examination by the manufacturer to be defective in materials or workmanship.

Please call the manufacturer at 1-877-278-2797 for instructions. Be prepared to provide a receipt, the model number and serial number when exercising this limited warranty.

Purchaser must pay all labor and transportation charges on Products or parts submitted for repair or replacement.

All non-warranty service charges are the responsibility of the original owner. Failure to pay for non-warranty service charges will void this Limited Warranty.

This Limited Warranty does not cover Products that have been damaged as a result of accident, freezing, abuse, misuse, neglect, improper installation, improper maintenance or failure to operate in accordance with the manufacturer's written instructions. All maintenance and service must be performed by service agents approved by the manufacturer. Any unauthorized alteration or repairs will void this Limited Warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE (1) YEAR FROM THE DATE OF PURCHASE. THIS IS THE EXCLUSIVE REMEDY AND ANY LIABILITY FOR ANY AND ALL INDIRECT OR CONSEQUENTIAL DAMAGES OR EXPENSES WHATSOEVER IS EXCLUDED.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusions or limitations of incidental or consequential damages, so the above limitations might not apply to you. This limited warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

In no event, whether as a result of breach of contract warranty, tort (including negligence) or otherwise, shall the manufacturer or its suppliers be liable for any special, consequential, incidental or penal damages including, but not limited to loss of profit or revenues, loss of use of the products or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, downtime costs, or claims of buyer's customers for such damages.

This Limited Warranty does not include freight charges for equipment or component parts, to and from the factory, services such as maintenance or inspection, repair or damage due to negligence such as freezing conditions, incorrect installation, nor acts of God. The liability of the manufacturer shall not exceed the repair or replacement of defective parts under this Limited Warranty. This Limited Warranty also does not include unnecessary service calls due to erroneous operational reports, external valve positions, or electrical service. If a non-warranty service call is made, and the homeowner is unwilling to pay for the service call, this Limited Warranty will be voided. This Limited Warranty is voided if the product is repaired or altered by any persons or agencies other than those authorized by the manufacturer. This Limited warranty applies only within the continental USA. For warranty outside the continental USA, contact the manufacturer.

You MUST retain your purchase receipt along with this form. In the event you need to exercise a warranty claim, you MUST present a copy of the purchase receipt at the time of service. Please call the manufacturer at 1-877-278-2797 for service or return authorization and instructions.

DO NOT MAIL THIS FORM TO THE MANUFACTURER. Use this form only to maintain your records.

MODEL NO. _____ SERIAL NO. _____ INSTALLATION DATE _____



Questions, problems, missing parts? Call Customer Service
8 a.m.-6 p.m., EST, Monday-Friday

1-877-278-2797

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Retain this manual for future use.