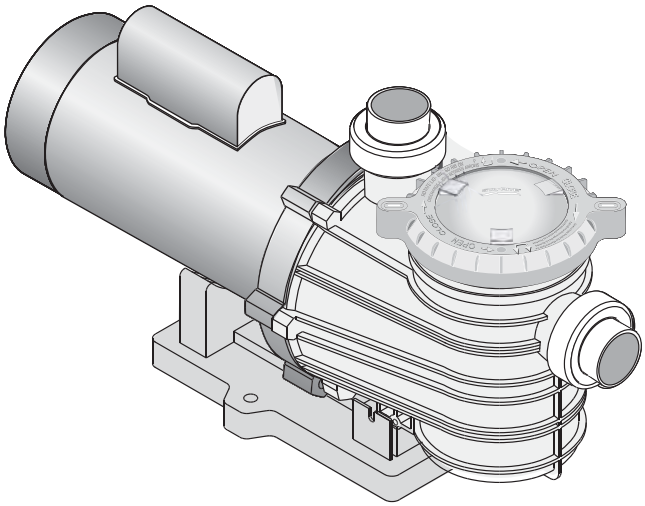
STA-RITE®

DYNA-PRO® CENTRIFUGAL PUMPS WITH INTEGRAL TRAP

O W N E R ' S M A N U A L

INSTALLATION, OPERATION & PARTS



(Unions optional)

Series MPRA, MPEA, and MPE

See Page 2 for Model Numbers

This manual should be furnished to the owner of the pump.

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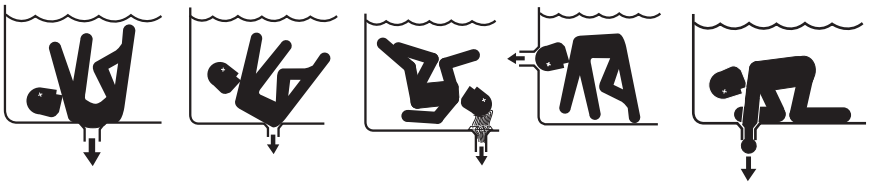
S771 Rev C 5/16/14

PUMP WARNINGS AND SAFETY INSTRUCTIONS
For Pool and Spa Pumps (Non SVRS Pumps)

⚠DANGER **FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH.** THIS PUMP SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL SERVICE PROFESSIONAL. INSTALLERS, POOL OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS IN THE OWNER'S MANUAL BEFORE USING THIS PUMP. THESE WARNINGS AND THE OWNER'S MANUAL MUST BE LEFT WITH THE POOL OWNER.

Warnings and safety instructions for Pentair Aquatic Systems pumps and other related products are available at: **http://www.pentairpool.com/pool-owner/safety-warnings/** Call (800) 831-7133 for additional free copies of these instructions. Please refer to **www.pentairpool.com** for more information related to Pentair Aquatic Systems pumps.

⚠DANGER **SUCTION ENTRAPMENT HAZARD: STAY OFF THE MAIN DRAIN AND AWAY FROM ALL SUCTION OUTLETS!**



THIS PUMP PRODUCES HIGH LEVELS OF SUCTION AND CREATES A STRONG VACUUM AT THE MAIN DRAIN AT THE BOTTOM OF YOUR POOL AND SPA. THIS SUCTION IS SO STRONG THAT IT CAN TRAP ADULTS OR CHILDREN UNDER WATER IF THEY COME IN CLOSE PROXIMITY TO A POOL OR SPA DRAIN OR A LOOSE OR BROKEN DRAIN COVER OR GRATE.

THE USE OF UNAPPROVED COVERS OR ALLOWING USE OF THE POOL OR SPA WHEN COVERS ARE MISSING, CRACKED OR BROKEN CAN RESULT IN BODY OR LIMB ENTRAPMENT, HAIR ENTANGLEMENT, BODY ENTRAPMENT, EVISCERATION AND/OR DEATH.

The suction at a pool or spa drain or outlet can cause:

Limb Entrapment: When a limb is sucked or inserted into an opening resulting in a mechanical bind or swelling. This hazard is present when a drain cover is missing, broken, loose, cracked or not properly secured.

Hair Entanglement: When the hair tangles or knots in the drain cover, trapping the swimmer underwater. This hazard is present when the flow rating of the cover is too small for the pump or pumps.

Body Entrapment: When a portion of the body is held against the drain cover trapping the swimmer underwater. This hazard is present when the drain cover is missing, broken or the cover flow rating is not high enough for the pump or pumps.

Evisceration/Disembowelment: When a person sits on an open pool (particularly a child wading pool) or spa outlet and suction is applied directly to the intestines, causing severe intestinal damage. This hazard is present when the drain cover is missing, loose, cracked, or not properly secured.

Mechanical Entrapment: When jewelry, swimsuit, hair decorations, finger, toe or knuckle is caught in an opening of an outlet or drain cover. This hazard is present when the drain cover is missing, broken, loose, cracked, or not properly secured.

NOTE: ALL SUCTION PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL AND LOCAL CODES FOR SWIMMING POOLS, SPAS AND HOT TUBS, INCLUDING NSPI STANDARDS AND CPSC GUIDELINES.

READ AND KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

PUMP (Non SVRS) WARNINGS AND SAFETY INSTRUCTIONS

⚠WARNING TO MINIMIZE THE RISK OF INJURY DUE TO SUCTION ENTRAPMENT HAZARD:

- Pools and spas should utilize a minimum of two drains per pump.
- A properly installed and secured ANSI/ASME A112.19.8 approved anti-entrapment suction cover must be used for each drain.
- Each suction cover must be installed at least three (3') feet apart, as measured from the nearest point to nearest point.
- Regularly inspect all covers for cracks, damage and advanced weathering.
- If a cover becomes loose, cracked, damaged, broken or is missing, close the pool or spa immediately, shut off the pump, post a notice and keep the pool or spa closed until an appropriate certified cover is properly installed.
- Replace drain covers as necessary. Drain covers deteriorate over time due to exposure to sunlight, pool chemicals and weather.
- Avoid getting hair, limbs or body in close proximity to any suction cover, pool drain or outlet.
- Use a safety vacuum release system ("SVRS"), suction limiting system or automatic pump shut-off system.
- Disable suction outlets or reconfigure into return inlets.

⚠WARNING A clearly labeled emergency shut-off switch for the pool pump and spa jet pump must be in an easily accessible, obvious place near the pool or spa. Make sure bathers know where it is and how to use it in case of emergency.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act creates new requirements for owners and operators of commercial swimming pools and spas.

Commercial pools or spas constructed on or after December 19, 2008, shall utilize:

(A) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:
(i) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming pools, Spas and Hot Tubs or
(ii) A properly designed and tested suction-limiting vent system or
(iii) An automatic pump shut-off system.

Commercial pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:

(A) A SVRS meeting ASME/ANSI A112.19.17 and/or ASTM F2387, or
(B) A properly designed and tested suction-limiting vent system, or
(C) An automatic pump shut-off system, or
(D) Disabled submerged outlets, or
(E) Suction outlets shall be reconfigured into return inlets.

HAZARDOUS PRESSURE: STAND CLEAR OF PUMP AND FILTER DURING START-UP

Pool and spa circulation systems operate under high pressure. When any part of the circulating system (i.e. lock ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the pump housing cover filter lid and valves to violently separate which can result in severe personal injury or death. Filter tank lid and strainer cover must be properly secured to prevent violent separation. Stand clear of all circulation system equipment when turning on or starting up pump.

CAUTION!: Electrical controls such as on/off switches, timers, and control systems, etc. should be properly installed to allow the operation (start-up, shut-down, or servicing) of any pump or filter without requiring the user to place any portion of his/her body over or near the pump strainer lid or filter lid. Such installation should allow the user to stand clear of the filter and pump during system start-up, shut down or servicing of the system.

Before servicing pool and spa equipment, make note of the filter pressure. Be sure that all controls are set to ensure the system cannot inadvertently start during service. Turn off all power to the pump. **IMPORTANT: Place filter manual air relief valve in the open position and wait for all pressure in the system to be relieved.**

Before starting the system, fully open the manual air relief valve and place all system valves in the "open" position to allow water to flow freely from the pool and spa back to the pool or spa. Stand clear of all pool and spa equipment and start the pump. **IMPORTANT: Do not close filter manual air relief valve until all pressure has been discharged from the valve and a steady stream of water appears.** Observe filter pressure gauge and be sure it is not higher than the pre-service condition.

'MPRA', 'MPEA' & 'MPE' SERIES PUMPS WITH TRAP

To avoid unneeded service calls, prevent possible injuries, and get the most out of your pump, READ THIS MANUAL CAREFULLY!

The Sta-Rite 'MPRA', 'MPEA' & 'MPE' Series Self-priming Centrifugal pump:

- Is designed for use with swimming pools or as a centrifugal pump.
- Is an excellent performer; durable, reliable.

Table of Contents

READ AND FOLLOW SAFETY INSTRUCTIONS!

⚠ This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ DANGER warns about hazards that will cause death, serious personal injury, or major property damage if ignored.

⚠ WARNING warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

⚠ CAUTION warns about hazards that will or can cause minor personal injury or property damage if ignored.

NOTICE indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

⚠ WARNING
Hazardous pressure

Incorrectly installed or tested equipment may fail, causing severe injury or property damage.

Technical Support
Sanford, North Carolina (8 A.M to 4:30 P.M.)
Phone: (800) 831-7133

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Single Speed Models		
HP	**MPRA**	**MPE, MPEA**
1/2		MPE6C-204L
3/4	MPRA6D-204L	MPEA6D-204L, MPE6D-205L
1	MPRA6E-205L	MPEA6E-205L, MPE6E-206L
1-1/2	MPRA6F-206L	MPEA6F-206L, MPE6F-207L
2	MPRA6G-207L	MPEA6G-207L, MPE6G-208L
2-1/2		MPEAA6G-208L
Two Speed Models		
HP	**MPRA**	**MPE, MPEA**
1-1/2	MPRA6YF-206L	MPE6YF-207L
2		MPEA6YG-207L, MPE6YG-208L
2-1/2		MPEAA6YG-208L

Read and follow instructions in owner's manual when installing and operating equipment. Have a trained pool professional perform all pressure tests.

1. Do not connect systems to a high pressure or city water systems.
2. Use equipment only in a pool or spa installation.
3. Trapped air in system can cause explosion. BE SURE all air is out of system before operating or testing equipment.

Before pressure testing, make the following safety checks:

- Check all clamps, bolts, lids, and system accessories before testing.
- Release all air in system before testing.
- Water pressure for test must be less than 25 PSI (7.5 kg/cm^2).
- Water Temperature for test must be less than 100^o F. (38^o C).
- Limit test to 24 hours. After test, visually check system to be sure it is ready for operation. Remove trap lid and retighten hand tight only, see Figure 1.

  NOTICE: These parameters apply to Sta-Rite equipment only. For non-Sta-Rite equipment, consult manufacturer.

  NOTICE: Do not start the pump until the strainer basket cover is on and the tab, or rib, on the discharge port aligns between the arrows.

IMPORTANT SAFETY INSTRUCTIONS

Always follow basic safety precautions with this equipment, including the following.

⚠ WARNING To reduce the risk of injury, do not permit children to use this product.

⚠ 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 may be readily disassembled for storage and reassembled to its original integrity.

SAVE THESE INSTRUCTIONS

INSTALLATION

Only qualified, licensed personnel should install pump and wiring.

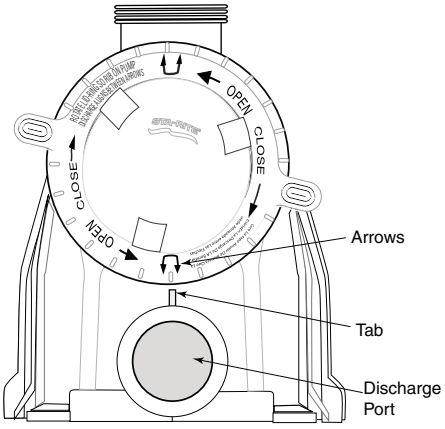


Figure 1 – Strainer basket cover alignment.

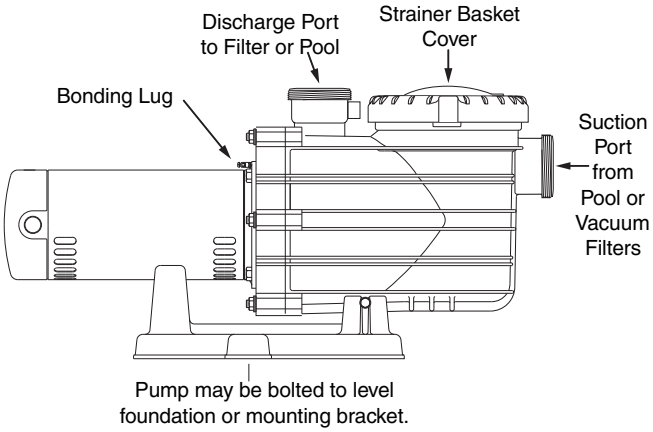


Figure 2

NOTICE: Port threads are: Internal - 2" NPT for direct connection to pipe. External - 3-1/4" Buttress. Fits Sta-Rite U11-200P Union Collar for quick disconnect pipe connection.

See Page 13 for Union Kits.

Pump mount must:

Be located away from corrosive or flammable liquids.

Have enough ventilation to maintain air temperature at less than the maximum ambient temperature rating (Max. Amb.) listed on the motor model plate. If this pump is installed in an enclosure/pump house, the enclosure must have adequate ventilation and air circulation to keep the temperature in the enclosure at or below the motor's rated ambient temperature whenever the pump is running.

Be solid - Level - Rigid - Vibration free. (To reduce vibration and pipe stress, bolt pump to mount.)

Allow pump suction inlet height to be as close to water level as possible. Pump will not lift water more than 10'(3m).

Allow use of short, direct suction pipe (To reduce friction losses).

Allow for gate valves in suction and discharge piping.

Have adequate floor drainage to prevent flooding.

Be protected from excess moisture.

Allow adequate access for servicing pump and piping.

⚠WARNING **Fire and burn hazard.** Modern 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.

NOTICE**:** When connecting threaded pipe directly to pump, use threaded seal tape to seal connections. Do not use pipe dope; pipe dope causes cracking in some plastics and may damage components in piping system.

When connecting pipe to pump with union half, use threaded seal tape between pipe and union adapter. Union collar to pump should be assembled dry and hand-tight.

NOTICE: Pump suction and discharge connections have molded in thread stops. DO NOT try to screw pipe in beyond these stops.

Taping Instructions:

Use only new or clean PVC pipe fittings.

Wrap male pipe threads with one to two layers of threaded seal tape. Cover entire threaded portion of pipe.

Do not overtighten or tighten past thread stop in pump port!

If leaks occur, remove pipe, clean off old tape, rewrap with one to two additional layers of tape and remake the connection.

NOTICE: Support all piping connected with pump!

Piping:

Use at least 2" (51mm) pipe. Increase size if a long run is needed.

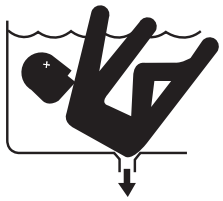
To avoid strains on the pump, support both suction and discharge pipes independently. Place these supports near the pump.

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.

⚠ DANGER



Hazardous suction. Can trap hair or body parts, causing severe injury or death.

Do not block suction.

POOL PUMP SUCTION REQUIREMENTS

⚠ Pump suction is hazardous and can trap and drown or disembowel bathers. Do not use or operate swimming pools, spas, or hot tubs 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, spas, and hot tubs.

Entrapment Protection

The pump suction system must provide protection against the hazard of suction entrapment or hair entrapment/entanglement.

Suction Outlet Covers

All suction outlet covers must be maintained. They must be replaced if cracked, broken, or missing.

See Page 5 for outlet cover certification requirements.

All suction outlets must have correctly installed, screw-fastened covers in place.

Suction Outlets Per Pump (Figure 3, Page 5)

Provide at least two hydraulically balanced main drains, with covers, as suction outlets for each circulating pump suction line. The centers of the main drains (suction outlets) on any one suction line must be at least three feet apart.

The system must be built so that it cannot operate with the pump drawing water from only one main drain (that is, there must be at least two main drains connected to the pump whenever it is running – see Figure 3, Page 5). However, if two main drains run into a single suction line, the single suction line may be equipped with a valve which will shut off both main drains from the pump (see Figure 3).
More than one pump can be connected to a single suction line as long as the requirements above are met.

Water Velocity

The maximum water velocity through the suction fitting or cover for any suction outlet must not exceed 1.5 feet per second unless the outlet complies with the latest ANSI/ASME Specification for Suction Fittings For Use in Swimming Pools, Spas, Hot Tubs, and Whirlpool Bathtub Applications. In any case, do not exceed the suction fitting's maximum designed flow rate.

If 100% of the pump's flow comes from the main drain system, the maximum water velocity in the pump suction hydraulic system must be six feet per second or less even if one main drain (suction outlet) is completely blocked. The flow through the remaining main drain(s) must comply with the latest ANSI/ASME Specification for Suction Fittings For Use in Swimming Pools, Spas, Hot Tubs, and Whirlpool Bathtub Applications.

⚠ WARNING

Hazardous voltage. Can shock, burn, or cause death.

Disconnect power before working on pump or motor.

Testing and Certification

Suction outlet covers must have been tested by a nationally recognized testing laboratory and found to comply with the latest ANSI/ASME Specifications for Suction Fittings For Use in Swimming Pools, Spas, Hot Tubs, and Whirlpool Bathtub Applications.

Fittings:

Fittings restrict flow; for best efficiency use fewest possible fittings (but at least two suction outlets).

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-entrapping suction fitting or double suction.

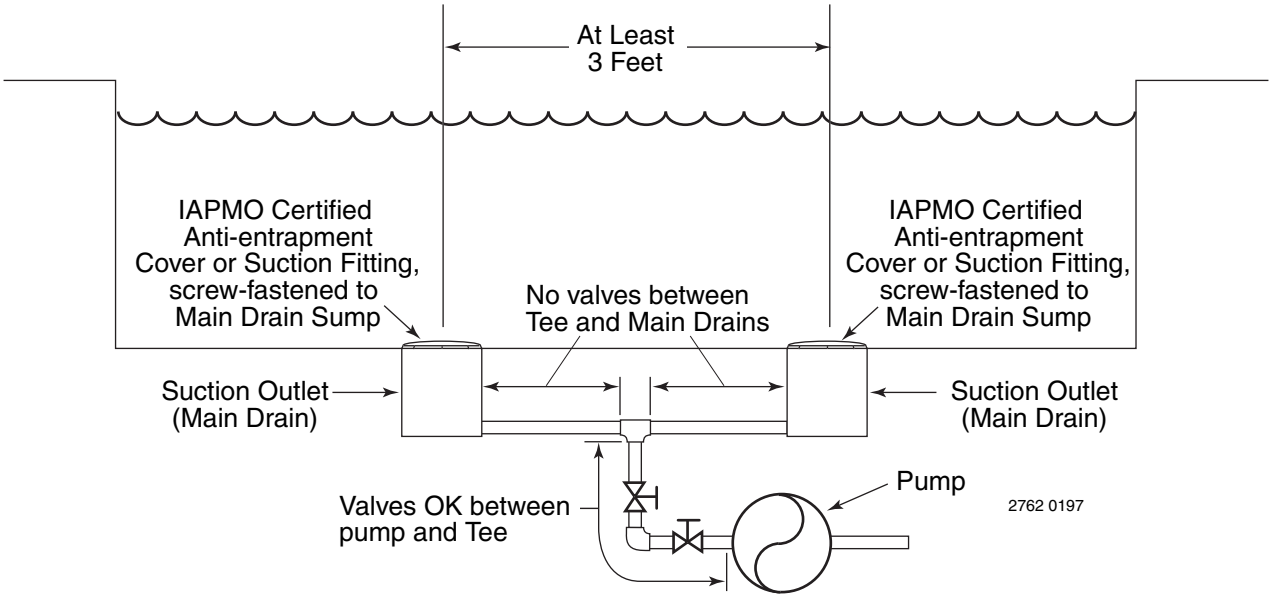


Figure 3 – Recommended pump suction layout.

ELECTRICAL

⚠ Ground motor before connecting to electrical power supply. Failure to ground motor can cause severe or fatal electrical shock hazard.

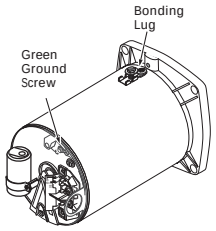


Figure 4 – Typical ground screw and bonding lug locations.

⚠ Do not ground to a gas supply line.To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

⚠ Ground Fault Circuit Interrupter (GFCI) tripping indicates an electrical problem. If GFCI trips and will not reset, have a qualified electrician inspect and repair electrical system.

⚠ Exactly match supply voltage to nameplate voltage. Incorrect voltage can cause fire or seriously damage motor and voids warranty. If in doubt consult a licensed electrician.

Voltage

Voltage at motor must be not more than 10% above or below motor nameplate rated voltage or motor may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when motor is running at full load, consult power company.

Grounding/Bonding

Install, ground, bond and wire motor according to local or the current National Electrical Code requirements.

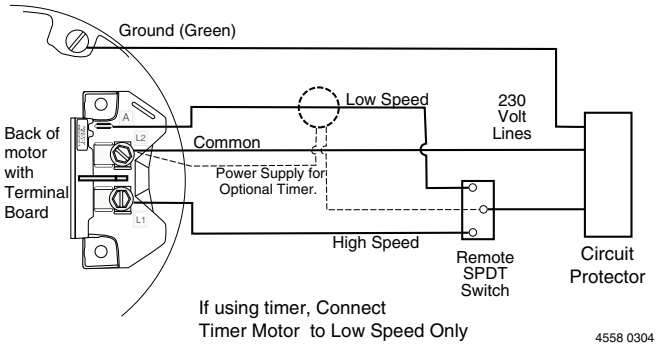
Permanently ground motor. Use green ground terminal provided under motor canopy or access plate (See Figure 4); use size and type wire required by code. Connect motor ground terminal to electrical service ground.

Bond motor to pool structure. Use a solid copper conductor, size No. 8 AWG (8.4 sq.mm) or larger. Run wire from external bonding lug (see Figure 4) to reinforcing rod or mesh.

Connect a No. 8 AWG (8.4 sq.mm) solid copper bonding wire to the pressure wire connector 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 the swimming pool, spa, or hot tub.

Figure 5A -Voltage Change Plug Set for 230 Volts

Figure 5B Voltage Change Plug Set for 115 Volts



Minimum switch and timer amp rating must equal Branch Fuse Rating given in "Recommended Fusing and Wiring Data" table.

Figure 5C: 2-Speed Motor Wiring Diagram

Wiring

NOTICE: 3 phase models require magnetic motor starters and external overload protection. If in doubt about the procedure, consult a licensed electrician.

TABLE I - RECOMMENDED CIRCUIT BREAKER AND WIRING DATA

Motor HP	Branch CB Rating Amps	Max Load Amps	Voltage/ Hz/Phase	Serv. to Motor - Dist. in Ft. (M) 0-100' (0-30)	101-200' (30-60)	201-300' (60-90)	
MPRA SERIES – SINGLE SPEED							
3/4	20/15	13.4/6.7	115/230/60/1	12/14(3/2)	10/14(5.5/2)	8/14(8.4/2)	AWG Wire Size (mm^2)
1	20/15	15.3/7.6	115/230/60/1	12/14(3/2)	8/14(8.4/2)	6/14(14/2)	
1-1/2	25/15	19.2/9.6	115/230/60/1	10/14(5.5/2)	8/14(8.4/2)	6/12(14/3)	
	2	20	12.0	230/60/1	14(2)	14(2) 12(3)	
MPEA SERIES – SINGLE SPEED							
3/4	15/15	11.0/5.5	115/230/60/1	14/14(2/2)	10/14(5.5/2)	8/14(8.4/2)	AWG Wire Size (mm^2)
1	20/15	13.8/6.9	115/230/60/1	12/14(3/2)	10/14(5.5/2)	8/14(8.4/2)	
1-1/2	25/15	16.0/8.0	115/230/60/1	12/14(3/2)	8/14(8.4/2)	6/14(14/2)	
2	15	10.4	230/60/1	14(2)	14(2)	12(3)	
2-1/2	15	11.2	230/60/1	14(2)	14(2)	12(3)	
MPRA SERIES – TWO SPEED							
1-1/2 – 1/4	15	9.2/2.5	230/60/1	14(2)	14(2)	12(3)	AWG Wire Size (mm^2)
MPEA SERIES – TWO SPEED							
2 – 1/4	15	10.0/3.0	230/60/1	14(2)	14(2)	12(3)	
2-1/2 – 1/2	15	11.3/3.3	230/60/1	14(2)	12(3)	12(3)	
MPE SERIES – SINGLE SPEED							
1/2	15/15	11.0/5.5	115/230/60/1	14/14(2/2)	10/14(5.5/2)	8/14(8.4/2)	AWG Wire Size (mm^2)
3/4	20/15	13.8/6.9	115/230/60/1	12/14(3/2)	10/14(5.5/2)	8/14(8.4/2)	
1	25/15	16.0/8.0	115/230/60/1	12/14(3/2)	8/14(8.4/2)	6/14(14/2)	
1-1/2	15	10.4	230/60/1	14(2)	14(2)	12(3)	
2	15	11.2	230/60/1	14(2)	14(2)	12(3)	
MPE SERIES – TWO SPEED							
1-1/2 – 1/4	15	10.0/3.0	230/60/1	14(2)	14(2)	12(3)	AWG Wire Size (mm^2)
2 – 1/3	15	11.3/3.3	230/60/1	14(2)	12(3)	12(3)	

Pump must be permanently connected to circuit. Table I, Page 7, give correct wire and circuit breaker sizes for the pump alone. 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 for GFCI, see manufacturer's instruction.

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

NOTICE: 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.

⚠WARNING Risk of dangerous or fatal electrical shock. Be sure that power to the motor circuit is off before working on wiring, wiring connections, or motor. Re-install the motor end cover and all other wiring covers before turning on the power.

1. Turn off power.
2. Remove the motor end cover.

To Wire a Single Speed, Single Voltage Motor

There are two terminals labeled L1 and L2. Attach the power leads to these terminals. Either wire may attach to either terminal.

To Wire a Dual-Voltage Motor

Dual voltage motors have a plug to change from 230 volts (factory setting) to 115 volts.

1. If you have 230 volts motor supply voltage, confirm that the plug is set for 230 volts. The arrow on the plug will point to the 230 volt position. Note that plug only connects with one prong in this position.
2. If you have 115 volt supply, pull the plug straight up and place it on the two brass prongs as shown.

NOTE: Arrow is highlightedfor clarity.

To Wire a Two-Speed Motor

Wire the pump as shown in the diagram on page 6.

OPERATION

DO NOT run the pump dry. If the pump is run dry, the mechanical seal will be damaged and the pump will start leaking. If this occurs, the damaged seal must be replaced. ALWAYS maintain proper water level. If the water level falls below the suction port, the pump will draw air through the suction port, losing the prime and causing the pump to run dry, resulting in a damaged seal. Continued operation in this manner could cause a loss of pressure, resulting in damage to the pump case, impeller and seal and may cause property damage and personal injury.

Before removing trap cover:

1. STOP PUMP before proceeding.
2. CLOSE GATE VALVES in suction and discharge air.
3. RELEASE ALL PRESSURE from pump and piping system.

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

⚠ Do not block pump suction. To do so with body may cause severe or fatal injury. Small children using pool must ALWAYS have close adult supervision.

⚠WARNING Fire and burn hazard. Modern 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.

NOTICE: Maximum ambient temperature for motor operation must not exceed maximum ambient temperature on motor nameplate.

Priming Pump

Release all pressure from filter, pump, and piping system; see the filter owner's manual.

In a flooded suction system (water source higher than pump), pump will prime itself when suction and discharge valves are opened.

If pump is not in a flooded suction system, unscrew and remove trap cover; fill trap and pump with water.

Clean and inspect O-Ring; reinstall on trap groove.

Do not lubricate the trap cover O-Ring. The original equipment O-Ring contains a permanent internal lubricant.

NOTICE: If you replace the O-Ring with a non-internally lubricated O-Ring, you may need to apply a silicone based lubricant.

Replace trap cover on trap; turn clockwise to tighten cover. Tighten trap cover handle ring by hand only Do not use a wrench, this may damage the trap cover handle ring which can cause property damage or personal injury. See Figure 1, Page 3.

⚠ WARNING

Pump should prime now. Priming time will depend on vertical length of suction lift and horizontal length of suction piping.

If pump does not prime, make sure that all valves are open, suction pipe end is under water, pump is not trying to lift water more than 10'(3m), and that there are no leaks in suction pipe. See Troubleshooting Guide, Page 11.

Routine Maintenance

The only routine maintenance needed is inspection/cleaning of trap basket. Debris or trash that collects in basket will choke off water flow through the pump. Follow instructions below to clean trap:

1. Stop pump, close valves in suction and discharge, and release all pressure from system before proceeding.
2. Remove trap cover handle ring (turn counterclockwise). If necessary, tap handles gently with a rubber mallet.
3. Remove strainer basket and clean. Be sure all holes in basket are clear, flush basket with water and replace in trap with large opening at pipe connection port (between ribs provided). If basket is replaced backwards cover will not fit on trap body.
4. Clean and inspect lid O-Ring; reinstall on trap groove.
5. Clean O-Ring groove on trap body and replace cover and handle ring. To help keep cover from sticking, tighten hand tight only.
6. Prime pump (see priming instructions).

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, “RV antifreeze”, is non-toxic and will not damage plastic system components; other anti-freezes 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 instructions below).

Keep motor dry and covered during storage.

To avoid condensation/corrosion problems, do not cover pump with plastic.

For outdoor/unprotected installations:

⚠WARNING 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).

Draining Pump

⚠WARNING Separation hazard. Purging the system with compressed air can cause components to violently separate, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.

1. Pump down water level below all inlets to the pool.

⚠ To avoid dangerous or fatal electrical shock hazard, turn OFF power to motor before draining pump.

2. Remove trap cover handle ring (turn counterclockwise). If necessary, tap handles gently with a rubber mallet. Low pressure air can be used to remove remaining water from the piping.

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.

   A. Gravity drain system as far as possible.

   B. Protect areas which retain water with non-toxic propylene glycol antifreeze ("RV" antifreeze).

5. Clean pump thoroughly; replace trap cover.

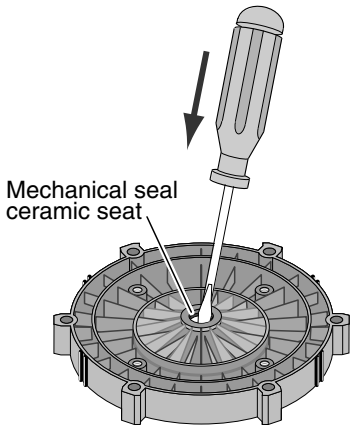


Figure 6

⚠WARNING Tighten trap cover handle ring by hand only Do not use a wrench, this may damage the trap cover handle ring which can cause property damage or personal injury.
If pump is not anchored, use caution to not break attached piping!

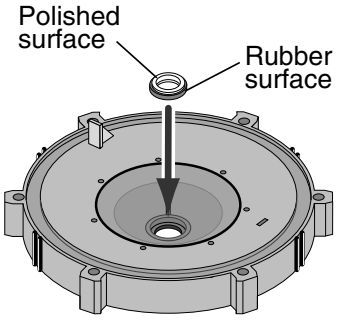


Figure 7

6. Be sure motor is kept dry and covered.

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 on Page 8.

PUMP SERVICE

Pump should only be serviced by qualified personnel.

For best results, use only genuine Sta-Rite factory parts.

Be sure to prime pump (Page 8) before starting.

⚠ CAUTION Before removing trap cover:

1. STOP PUMP before proceeding.
2. CLOSE GATE VALVES in suction and discharge air.
3. RELEASE ALL PRESSURE from pump and piping system.

⚠ To avoid dangerous or fatal electrical shock hazard, turn OFF power to motor before working on pump or motor.

Aside from lubricating trap cover O-Ring, no lubrication or regular maintenance is needed beyond reasonable care and periodic cleaning of strainer basket. If shaft seal is worn or damaged, repair as follows:

Pump Dissasembly/Removing Old Seal

Disconnect power to pump motor.

⚠ Be sure valves on suction and return piping are closed before starting work.

Release all pressure by opening all vents before starting work.

1. Drain pump by removing drain plugs on bottom of pump body and trap body.
2. Be sure there is no pressure in trap body; remove cover (unscrew by turning counterclockwise).
3. Remove 6 nuts, lockwashers and flat washers holding seal plate to pump body. Pull seal plate and motor away from pump body. (You may have to CAREFULLY use a screwdriver to separate body from seal plate.)
4. Remove seven screws and washers holding diffuser to seal plate. Remove diffuser.
5. Remove motor canopy. Being careful not to touch capacitor terminals, loosen capacitor clamp and move capacitor to one side.
6. Hold shaft with 7/16" open-end wrench on motor shaft flats.
7. Unscrew impeller from shaft (turn counterclockwise when facing it).
   NOTICE: On 2 HP model, remove impeller screw (left hand thread - turn clockwise) and gasket before removing impeller. Inspect gasket for damage, cracks, etc. Replace if damaged.
8. Remove four screws holding seal plate to motor.
9. Place seal plate face down on flat surface and tap out ceramic seat (Figure 6).
10. Remove slinger from motor shaft and inspect for damage or abrasion.
11. Clean seal cavity in seal plate and clean motor shaft.

Pump Reassembly/Installing New Seal

1. Ceramic seat must be clean and free of dirt, grease, dust, etc. Wet outer edge with small amount of liquid detergent; press ceramic seat into seal plate cavity firmly and squarely with finger pressure (Figure 7).
2. If ceramic seat will not locate properly, remove it, place face up on bench and reclean cavity. Ceramic seat should now locate.
3. If seat still will not locate properly, place a cardboard washer over the polished face and use a piece of 3/4" (19mm) standard pipe for pressing purposes.
   NOTICE: Be sure not to scratch or mar polished surface or seal will leak.
4. Replace slinger on end of motor shaft so that impeller sleeve will push it into position. If slinger shows signs of wear or damage, replace it.
5. Remount seal plate on motor. Tighten bolts to 60-80 inch-lbs. (69-92 kg/cm) torque.
6. Apply a small amount of liquid detergent to inside diameter of rotating half of seal.
7. Slide rotating seal member, polished carbon face out, over impeller sleeve until rubber drive ring hits back of impeller.
   NOTICE: Be sure not to nick or scratch polished seal face; seal will leak if face is damaged.
8. Screw impeller onto shaft (clockwise); this will automatically locate seal in seal plate.
   NOTICE: On 2 and 2-1/2 HP models; install impeller gasket and lock screw (left-hand thread - turn counterclockwise). Torque lock screw to 50-55 inch-lbs. (57.6-63 kg/cm).
9. Mount diffuser on seal plate; tighten screws to 10-14 inch-lbs. (11.2-16.1 kg/cm) torque.
10. Assemble motor and seal plate to pump body with nuts, flat washers and lock washers. Torque nuts to 120-130 in-lbs. (138-150 kg/cm).
11. Prime pump according to instructions on Page 8.

TROUBLESHOOTING GUIDE

⚠ Read and understand safety and operating instruc tions in this manual before doing any work on pump!

⚠ Only qualified personnel should electrically test pump motor!

FAILURE TO PUMP; REDUCED CAPACITY OR DISCHARGE PRESSURE

Suction leaks/lost prime:

1. Pump must be primed; make sure that pump volute and trap are full of water. See priming instructions, Page 8.
2. Make sure there are no leaks in suction piping.
3. Make sure suction pipe inlet is well below the water level to prevent pump from sucking air.
4. If suction trap O-Ring is defective, replace it.
5. Make sure pump is not trying to lift water more than 10' (3m).
6. Make sure suction pipe is at least 2" (51mm) in diameter.

Clogged pipe/trap/impeller, worn impeller:

7. Make sure suction trap is not clogged; if it is, clean trap and strainer.
8. Make sure impeller is not clogged (follow steps 1 through 7 under “Removing Old Seal”, Page 11; check impeller for clogging; follow steps 7 through 11 under “Installing New Seal”, Page 11, for reassembly).
9. Impeller and diffuser may be worn. If so, order replacement parts from Repair Parts List, Pages 13 and 14.

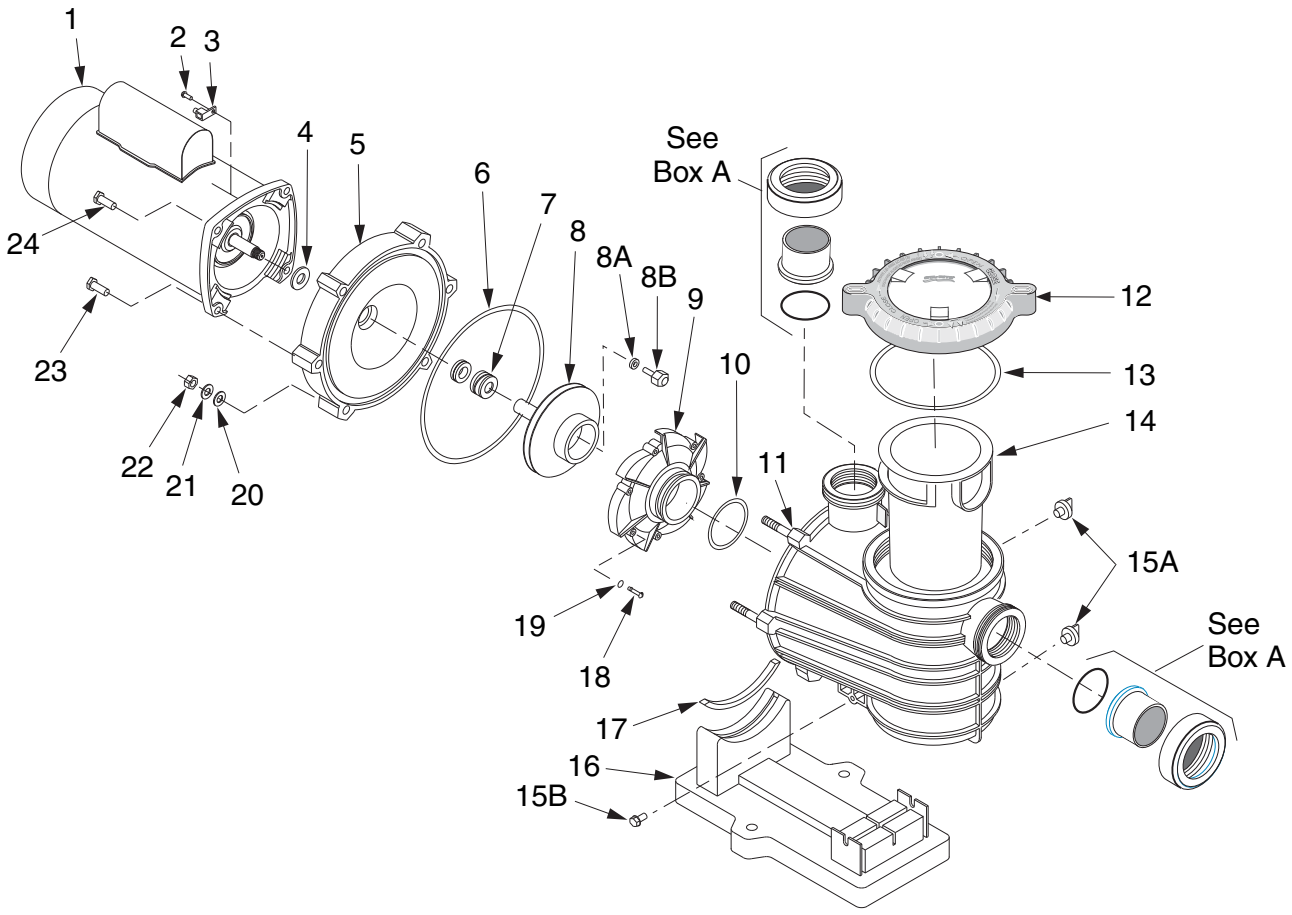
Electrical:

10. Pump may be running too slowly; check voltage at motor terminals and at meter while pump is running. If low, see wiring instructions or consult power company. Check for loose connections.
11. 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.

MECHANICAL TROUBLES AND NOISE

1. If suction and discharge piping are not adequately supported, pump assembly will be strained. See “Installation”, Page 4.
2. Do not mount pump on a wooden platform! Securely mount on concrete platform for quietest performance.

REPAIR PARTS LIST
DYNA-PRO® POOL PUMP
1/2 through 2-1/2 HP Models
Single Speed and Two Speed



Model No.	HP	Motor (Key No. 1)
Single Speed 115/230/60/1		
MPRA6D-204L	3/4	A100DLL
MPRA6E-205L	1	A100ELL
MPRA6F-206L	1-1/2	A100FLL
MPEA6D-204L	3/4	AE100DLL
MPEA6E-205L	1	AE100ELL
MPEA6F-206L	1-1/2	AE100FLL
MPE6C-204L	1/2	AE100CHL
MPE6D-205L	3/4	AE100DHL
MPE6E-206L	1	AE100EHL
230/60/1		
MPRA6G-207L	2	A100GLL
MPEA6G-207L	2	AE100GLL
MPEAA6G-208L	2-1/2	AE100G5LL
MPE6F-207L	1-1/2	AE100FHL
MPE6G-208L	2	AE100GHL
Two Speed 230/60/1		
MPRA6YF-206L	1-1/2	A100FLL-Y
MPEA6YG-207L	2	AE100GLL-Y
MPEAA6YG-208L	2-1/2	AE100G5LL-Y
MPE6YF-207L	1-1/2	AE100GLL-Y
MPE6YG-208L	2	AE100G5LL-Y

Box A

For quick disconnect pipe connections, purchase separately:
Pkg. 188 2" Slip 1/2 Union Kit or
Pkg. 189 2" NPT 1/2 Union Kit.

Includes:
U11-200PS Union Collar
U9-362 O-Ring
U11-196P 2" Slip adapter or
U11-199P 2" NPT adapter.

REPAIR PARTS LIST
DYNA-PRO® POOL PUMP
1/2 through 2-1/2 HP Models Single Speed and Two Speed

Key No.	Part Description	Qty.	MPEA6D-204L MPE6C-204L MPRA6D-204L	MPEA6E-205L MPE6D-205L MPRA6E-205L	MPEA6F-206L MPE6E-206L MPRA6F-206L MPRA6YF-206L	MPEA6G-207L MPE6F-207L MPEA6YG-207L MPE6YF-207L MPRA6G-207	MPEAA6G-208L MPE6G-208L MPEAA6YG-208L MPE6G-208L
2	Screw #10-32x1/2"	1	U30-692SS	U30-692SS	U30-692SS	U30-692SS	U30-692SS
3	Bonding ug	1	U17-568	U17-568	U17-568	U17-568	U17-568
4	Slinger	1	17351-0009	17351-0009	17351-0009	17351-0009	17351-0009
5	Seal Plate	1	C3-184P	C3-184P	C3-184P	C3-184P	C3-184P
6	Seal Plate Cord Ring	1	U9-373	U9-373	U9-373	U9-373	U9-373
7	Shaft Seal	1	37400-0027S	37400-0027S	37400-0027S	37400-0027S	37400-0027S
8	Impeller	1	C105-236P	C105-236PB	C105-236PC	C105-236PDA	C105-236PEA
8A	Gasket	1	–	–	–	33455-1047	33455-1047
8B	Impeller Lock Screw	1	–	–	–	37337-6080	37337-6080
9	Diffuser	1	C1-270PB	C1-270PC	C1-270P	C1-270P	C1-270P
10	Diffuser O-Ring	1	U9-374	U9-374	U9-374	U9-374	U9-374
11	Tank and Trap Body (Only)	1	C76-71P	C76-71P	C76-71P	C76-71P	C76-71P
12	Trap Lid and Ring Assembly	1	17307-0111S	17307-0111S	17307-0111S	17307-0111S	17307-0111S
13	Trap Cover O-Ring	1	35505-1440	35505-1440	35505-1440	35505-1440	35505-1440
14	Trap Basket	1	C8-58P	C8-58P	C8-58P	C8-58P	C8-58P
15A	Drain Plug	2	U178-920P	U178-920P	U178-920P	U178-920P	U178-920P
15B	Mounting Screw 5/16-14x5/8"	2	U30-919SS	U30-919SS	U30-919SS	U30-919SS	U30-919SS
16	Base - Plastic	1	C4-77P	C4-77P	C4-77P	C4-77P	C4-77P
17	Motor Pad - for Plastic Base	1	C35-45	C35-45	C35-45	C35-45	C35-45
18	Screw #8-32x7/8" Rd. Hd.	7	U30-542SS	U30-542SS	U30-542SS	U30-542SS	U30-542SS
19	Lock Washer #8 Ext. Tooth	7	U43-21SS	U43-21SS	U43-21SS	U43-21SS	U43-21SS
20	Flat Washer 3/8"	6	U43-62SS	U43-62SS	U43-62SS	U43-62SS	U43-62SS
21	Lock Washer 3/8"	6	U43-12SS	U43-12SS	U43-12SS	U43-12SS	U43-12SS
22	Nut 3/8-16 Hex	6	071403	071403	071403	071403	071403
23	Cap Screws 3/8-16x1-1/4" Hex. (LS Suffix)	2	–	–	U30-75SS	U30-75SS	U30-75SS
24	Cap Screws 3/8-16x1" Hex.	4	U30-74SS	U30-74SS	U30-74SS	U30-74SS	U30-74SS

For customer support or technical information about this product, contact the installer or call:

Phone: (800) 831-7133 Fax: (800) 284-4151

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