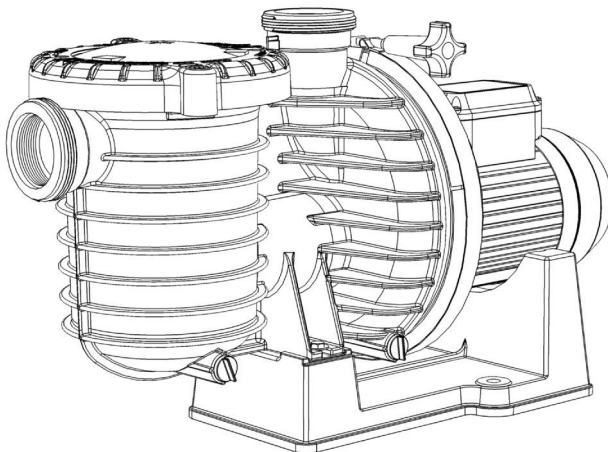


OWNER'S MANUAL



Pentair
Pool Products



MAX-E-PRO™ **POOL PUMP**

Should the installer or owner be unfamiliar with the correct installation or operation of this type of equipment you should contact the distributor/manufacturer for the correct advice before proceeding with the installation or operation of the product.

An earth leakage or residual current protection device must be fitted to all installations.

This manual should be furnished to the end user of this pump. This manual must be read and understood before operation and followed during operation.

Models:

Part Number	Motor Type
MP730100	405691
MP930100	405692
MP1100100	405692
MP1108100	405076
MP1500100	405693
MP1508100	405078
MP2201100	405694
MP2208100	405078

Technical Data

Inlet ABS Barrel Union to suit 50mm I.D. PVC pipe

Outlet ABS Barrel Union to suit 50mm I.D. PVC pipe

Max. Pump Pressure 240 kPa

Max. Working Pressure 360 kPa

Water Temperature Range	5 – 45°C (In line with Health Authority Regulations)
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Max Ambient Temperature 50°C

IP Rating IP25

Electrical Rating 240 Volt single phase are supplied as standard with built in thermal overload protection and are designed to plug directly into a 10 amp (15 Amp for MP2201100) domestic power supply to local electrical authority specifications. 415 Volt 3 phase motors should be protected with the recommended contactor and thermal overloads in accordance with local electrical authority specifications.

Optimal pH Range 7.2 - 7.8 (Guide Only)

Installation



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

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 system to a high pressure or city water system.
2. Use equipment only in a pool or spa installation.
3. Install pump with at least 2 hydraulically balanced main drains equipped with correctly installed, screw-fastened, anti-entrapment certified covers according to local regulations.
3. Trapped air in system can cause explosion. Ensure all air is out of system before operating or testing equipment.

Pressure Testing

(Have a trained pool professional perform all pressure tests.)

Before pressure testing, make the following safety checks:

- Check all clamps, bolts, lids, and system accessories prior to testing.
- Release all air in system before testing.
- Tighten trap lid to 4.1 kg-m torque for testing.
- Water pressure for test must be less than 172kPa (25 PSI).
- Water temperature for test must be less than 35°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.



Fire and burn hazard. Modern motors run at high temperatures. To reduce 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 at least 20 minutes before trying to work on it. A thermal overload switch protects the motor from heat damage during operation.

Installation (Continued)

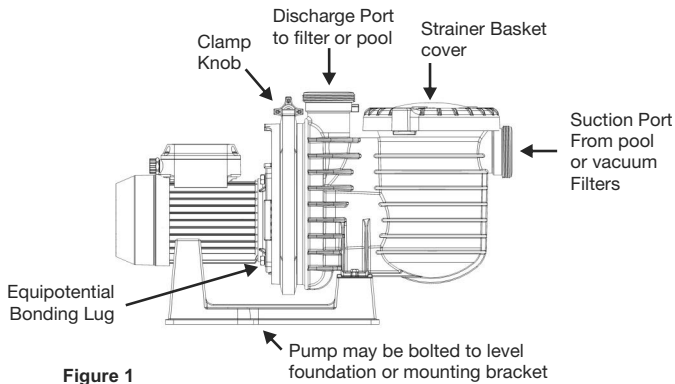


Figure 1

Only qualified, licensed personnel should install pump and wiring whilst observing local safety regulations.

Pump mount must:

Be located away from corrosive or flammable chemicals.

Have enough ventilation to maintain air temperature at less than the maximum ambient temperature rating. 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.

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

Allow for shut-off 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.

Pentair recommends mounting the pump on a concrete platform for quietest performance.

NOTICE: For three-phase motor pumps, start the motor for a few revolutions checking that rotation direction is clockwise (watch the motor from the fan side). If rotation is counter-clockwise, change over the connections of two phases.

Installation (Continued)

NOTICE: If the pump is not provided with a supply cord and a plug, or with other means of disconnection from the supply having a contact separation of at least 3mm in all poles, such means for disconnection must be incorporated in the fixed wiring.

NOTICE: Use Teflon tape for making all threaded connections to the pump. Do not use pipe dope (glue) as this will cause stress fractures in the pump.

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

Teflon Taping Instructions:

Use only new or clean PVC pipe fittings.

Wrap male pipe threads with one to two layers (or a sufficient number of layers) of Teflon tape. Cover entire threaded portion.

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

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

NOTICE: Support all piping connected with pump.

Piping:

Use at least 2" (50mm) PVC pipe. Increase size if a long run is needed.

To avoid stress on the pump, support both suction and discharge pipes independently. Place these supports as close to the pump as possible.

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.

Never use a suction pipe smaller than pump suction connection (2"/50mm).

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 shut-off valves in suction and discharge pipes.

Fittings:

Fittings restrict flow; for best efficiency use fewest possible fittings.

Avoid fittings which could cause an air trap.

Pool outlets:

Use only non-entrapping suction fitting or double suction conforming with the AS1926.3-2003 Standard.

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 minimises 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 below for outlet cover certification requirements.

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

Testing and Certification

Suction outlet covers must have been tested by a nationally recognised testing laboratory and found to comply with the latest AS1926.3-2010 Standard or ASME/ANSI Specification for *Suction Fittings For Use in Swimming Pools, Spas, Hot Tubs, and Whirlpool Bathtub Applications*.

Electrical



⚠ WARNING



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

Ground pump before
connecting to
power supply.

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

Do not ground to a gas supply line.

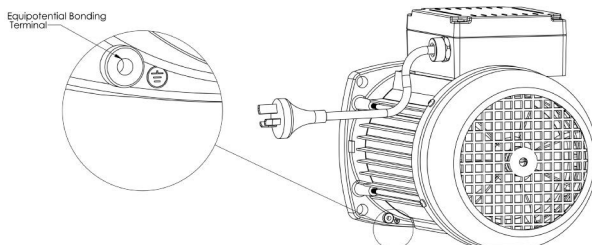
To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

Residual Current Device (RCD) tripping indicates an electrical problem. If RCD trips and will not reset, have a qualified electrician inspect and repair electrical system. The pump is to be supplied by an isolating transformer or supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA.

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

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. Warranty is void if unauthorised modifications are made to any component.

The MaxEPro series of pool pumps is classified as "Double Insulated to Water Circuit". Please refer to the Electrical Wiring Rules (AS/NZS 3000) and local statutes and regulations as to whether equipotential bonding is necessary. Pentair Water Australia recommends equipotential bonding for additional safety.



Voltage

Voltage at motor must not be 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.

Operation



NEVER run pump dry. Running pump dry may damage seals, causing leakage and flooding. Fill pump with water before starting motor.



Before removing trap cover:

1. **SWITCH OFF POWER SUPPLY** to pump and unplug from outlet before proceeding.
2. **CLOSE SHUT-OFF VALVES** in suction and discharge pipes.
3. **RELEASE ALL PRESSURE** from pump and piping system.
4. **NEVER** tighten or loosen clamp while pump is operating!

If pump is being pressure tested, ensure 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.



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 at least 20 minutes before trying to work on it. An internal thermal overload switch protects the motor from heat damage during operation.

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



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure they do not play with the appliance.

Operation (Continued)

Priming Pump

Release all air from filter, pump and piping system: refer 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, disconnect power supply to pump and remove trap cover handle ring and trap cover; fill trap and pump with water.

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.

Clean and inspect O'ring; reinstall on trap.

Replace trap cover and handle ring on trap; turn handle ring clockwise to tighten cover.

NOTICE: Tighten trap cover handle ring by hand only **(no wrenches!)**

Pump should prime now. Priming time will depend on vertical height of suction lift and horizontal length of suction piping. The self-priming time range is 1 to 5 minutes for a height difference of 2 to 3 metres, under normal installation conditions. Normal conditions are understood to be: with suction having an internal diameter of DN 50mm, water temperature at 20°C, and 50Hz mains power supply.

Should the pump not prime, ensure that all valves are open, lint trap is clear of debris and suction pipe end is submersed in water, and that there are no leaks in suction pipe.

See Troubleshooting Guide.

Operation (Continued)

Routine Maintenance

The only routine maintenance required 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. Switch off power to 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. Ensure 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. To clean transparent cover, use water and neutral soap only. Do not use solvents.
4. Clean and inspect lid o'ring; reinstall on trap.
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 (refer priming instructions).

Pump Service



Pump should only be serviced by qualified personnel. For best results, use only genuine Pentair factory parts. Be sure to prime pump before starting.

Before removing clamp or trap cover:

1. **SWITCH OFF POWER** to pump before proceeding.
2. **CLOSE SHUT-OFF VALVES** in suction and discharge pipes.
3. **RELEASE ALL PRESSURE** from pump and piping system.
4. **NEVER** tighten or loosen clamp while pump is operating!

To avoid dangerous or fatal electrical shock hazard, turn OFF power to motor and remove plug from power outlet before working on pump or motor.

No lubrication or regular maintenance is needed beyond reasonable care and periodic cleaning of strainer basket. When pump is not in use and there is a risk of frost, empty it completely through the drain plug.

If shaft seal is worn or damaged, repair as per the procedure on page 11.

Pump Service (Continued)

Pump Disassembly/Removing Old Seal



Disconnect power to pump motor.

Ensure shut-off valves on suction and return piping are closed before starting work on the pump.

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. **Ensure** there is no pressure in trap body; remove cover (unscrew by turning handle ring counterclockwise).
3. Remove clamp holding pump halves together. Motor and seal plate assembly can now be pulled away from pump body.
4. Remove five screws and washers holding diffuser to seal plate. Remove the diffuser.
5. Remove motor cowl and motor fan.
6. Hold shaft with an open-end wrench (or vice grips) on motor shaft flats.
7. Unscrew impeller from shaft (turn counterclockwise when facing it).
NOTICE: On models with impeller screw: Remove impeller screw (left hand thread - turn **clockwise**) and gasket before removing impeller. Inspect gasket for damage, cracks, etc. Replace if damaged.
8. Pull rotating member of seal off of impeller sleeve; clean sleeve.
9. Remove four screws holding seal plate to motor.
10. Place seal plate face down on flat surface and lightly tap out ceramic seat.
11. Clean seal cavity in seal plate and clean motor shaft.

Pump Service (Continued)

Pump Reassembly/Installing New Seal



1. Ceramic seat must be clean and free of dirt, grease, dust, etc. Wet outer edge of rubber cup on ceramic seat with small amount of liquid detergent; press ceramic seat into seal plate firmly and squarely with finger pressure (as per figure to left).
2. If ceramic seat will not locate properly, remove it, place **face up** on bench and reclean cavity. Repeat Step 1. 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 $\frac{3}{4}$ " (19mm) standard pipe for pressing purposes.
NOTICE: Be sure not to scratch or mar the polished surface or the seal will leak.

4. Remount seal plate on motor. Tighten bolts to 69-92 kg/cm torque.
5. Apply a **small** amount of liquid detergent to **inside** diameter of rotating half of seal.
6. Slide rotating seal member, polished face last, over impeller sleeve until rubber drive ring hits shoulder.

NOTICE: Be sure not to nick or scratch polished seal face; seal will leak if face is damaged.

7. Screw impeller onto shaft (clockwise); this will automatically locate seal in seal plate.

NOTICE: On models with impeller screw: Install impeller gasket and lock screw (left-hand thread - turn **counterclockwise** to tighten). Torque lock screw to 57.6-63 kg/cm.

8. Mount diffuser on seal plate; tighten screws to 11.2-16.1 kg/cm torque.
9. Assemble motor and seal plate to pump casing; ensuring that the body clamp is properly seated.

NOTICE: Clamp knob can be located in any position around the pump body; if it is moved after assembly, tighten knob while tapping around the clamp to assist sealing. Do not move clamp while pump is full of water.



Hazardous pressure. Release all pressure from pump and piping system before working on pump or attempting to adjust or remove clamp. Clamp may blow off of pump if adjusted under pressure.

10. Prime pump according to instructions on Page 9.

Troubleshooting Guide

Symptom	Cause	Remedy
Pump failure or reduced capacity or reduced discharge pressure.	Suction leaks / lost prime	Pump must be primed; make sure that the pump casing and strainer are full of water. Refer priming instructions.
		Make sure there are no leaks in suction piping.
		Make sure suction pipe inlet is well below the water level to prevent pump from sucking air.
		Suction lift of 3 to 6 metres will reduce performance. Suction lift of more than 6 metres will prevent pumping and cause pump to lose prime. In either instance, move the pump closer (vertically) to water source. Ensure that the suction pipe diameter is large enough.
	Clogged pipe / strainer / impeller, worn impeller.	Ensure trap is not clogged with debris; if it is, clean strainer & basket.
		Make sure that the impeller is not clogged. This should be checked by qualified personnel only.
		Impeller and diffuser may be worn. If so, check with your local Pentair dealer or suitably qualified personnel.
		Pump may be trying to push too high a column of water. If so, a "higher head" pump is required.
	No power at outlet.	Use another electrical appliance that is known to work to check the power outlet.
	Blown fuse.	Check fuse and replace if necessary.
	Motor burnt out due to voltage spike or flooded by water.	The motor may need replacing.
	Valves turned to the closed position.	Check the plumbing to ensure the valves are in the correct position for pumping on the suction and discharge.

Troubleshooting Guide (Continued)

Symptom	Cause	Remedy
	Air ingress to system.	Prime the pump. Check that there are no air leaks in the suction piping or fittings. Ensure the strainer lid is airtight and fitted securely. Check that there are no leaks coming from beneath the pump.
Pump running too slowly.	Low voltage.	Check voltage at motor terminals and at meter while pump is running – this check should be performed by a qualified electrician only. If voltage is low check for loose connections or consult your power company.
	Pump may be too hot.	Check line voltage; if less than 90% or more than 110% of rated voltage consult a licensed electrician. Increase ventilation. Reduce ambient temperature. Tighten any loose connections.
Pump leaking from between the casing and motor.	Casing bolts are not tightened sufficiently; Casing O'ring is worn; Mechanical seal requires replacing; Casing clamp is loose.	Switch off the power to the pump. Loosen the casing bolts. Check the alignment and condition of the casing o'ring before retightening the bolts. Replace the o'ring if leaking persists. Replace the mechanical seal.

Should problems persist, contact your nearest Pentair service agent.



Rainbow Pool Products

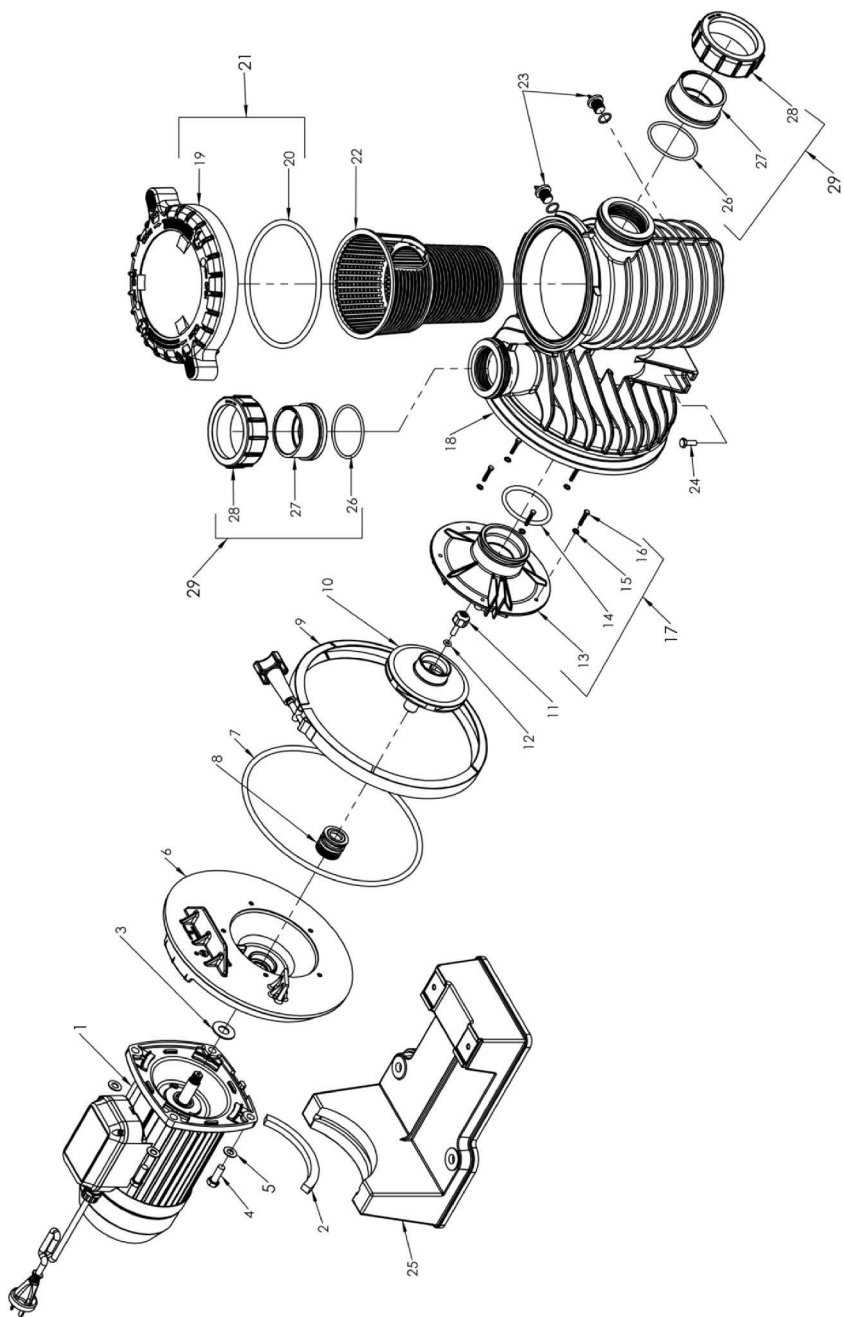
PO Box 2388, Mansfield Qld 4122

Telephone STD 61-7-3849 5385

Facsimile STD 61-7-3849 5384

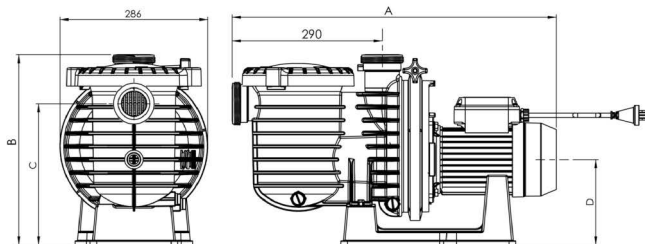
Email: info@rainbowpoolproducts.com.au

Web: www.rainbowpoolproducts.com.au



Item	Description	Item	Description
1	MOTOR	16	SCREW - DIFFUSER
2	MOTOR PAD	17	DIFFUSER KIT (INCLUDES 13,14,15 & 16)
3	WATER SLINGER	18	TANK BODY ASSEMBLY
4	SCREW 3/8in x 1in HEX ST/ST	19	TANK AND TRAP LID
5	WASHER 3/8in x 3/4in ST/ST	20	O-RING TANK AND TRAP LID
6	SEAL PLATE	21	TANK LID AND O-RING (INCLUDES 19&20)
7	O-RING BODY	22	BASKET
8	SEAL 3/4"	23	DRAIN PLUG AND O-RING
9	CLAMP	24	SCREW BASE
10	IMPELLER (INCLUDES 11&12)	25	BASE WITH MOTOR PAD AND SCREWS
11	IMPELLER SCREW (3 PHASE ONLY)	26	ORING - COLLAR UNION
12	O-RING IMPELLER SCREW (3 PHASE ONLY)	27	COLLAR UNION SLIP 2"
13	DIFFUSER	28	COLLAR UNION 2"
14	O-RING DIFFUSER	29	UNION KIT (INCLUDES 26, 27&28 x2)
15	LOCKWASHER - DIFFUSER		

Part No.	MP730100	MP930100	MP1100100	MP1108100	MP1500100	MP1508100	MP2200100	MP2208100
Description	730W - 1P	930W - 1P	1100W - 1P	1100W - 3P	1500W - 1P	1500W - 3P	2200W - 1P	2200W - 3P
Qty	Part Number							
1	405691	405692	405692	405076	405693	405078	405694	405078
2	801418	801419	801419	801366	801420	800565	801482	800565
3	1	C35-44	C35-44	C35-44	C35-44	C35-44	C35-44	C35-44
4	702594	702594	702594	702594	702594	702594	702594	702594
5	703107	703107	703107	703107	703107	703107	703107	703107
6	C103-194PSSG	C103-194PSSG	C103-194PSSG	C103-194PSSG	C103-194PSSG	C103-194PSSG	C103-194PSSG	C103-194PSSG
7	U9-228A	U9-228A	U9-228A	U9-228A	U9-228A	U9-228A	U9-228A	U9-228A
8	801428	801428	801428	801428	801428	801428	801428	801428
9	C19-37A	C19-37A	C19-37A	C19-37A	C19-37A	C19-37A	C19-37A	C19-37A
10	C105-238PPB	C105-238PRB	C105-238PSB	C105-238PSB	C105-238PLBAB	C105-238PLBAB	C105-238PHAB	C105-238PHAB
11	1							
12	1							
13	1							
14	1							
15	5							
16	5							
17	1	801273	801273	801273	801273	801274	801274	801274
18	17307-0110W	17307-0110W	17307-0110W	17307-0110W	17307-0110W	17307-0110W	17307-0110W	17307-0110W
19	1							
20	1							
21	1	801275	801275	801275	801275	801275	801275	801275
22	1	C8 -58P	C8 -58P	C8 -58P	C8 -58P	C8 -58P	C8 -58P	C8 -58P
23	2	800405	800405	800405	800405	800405	800405	800405
24	2	SRU30-918SS	SRU30-918SS	SRU30-918SS	SRU30-918SS	SRU30-918SS	SRU30-918SS	SRU30-918SS
25	1	801276	801276	801276	801276	801276	801276	801276
26	2							
27	2							
28	2							
29	2	801245	801245	801245	801245	801245	801245	801245



Part No.	MP730100	MP930100	MP1100100	MP1108100	MP1500100	MP1508100	MP2200100	MP2208100
Description	730W - 1P	930W - 1P	1100W - 1P	1100W - 3P	1500W - 1P	1500W - 3P	2200W - 1P	2200W - 3P
A	629	650	650	696	690	721	694	721
B	368	374	374	390	374	390	384	390
C	274	290	290	296	290	296	290	296
D	165	171	171	187	171	187	181	187