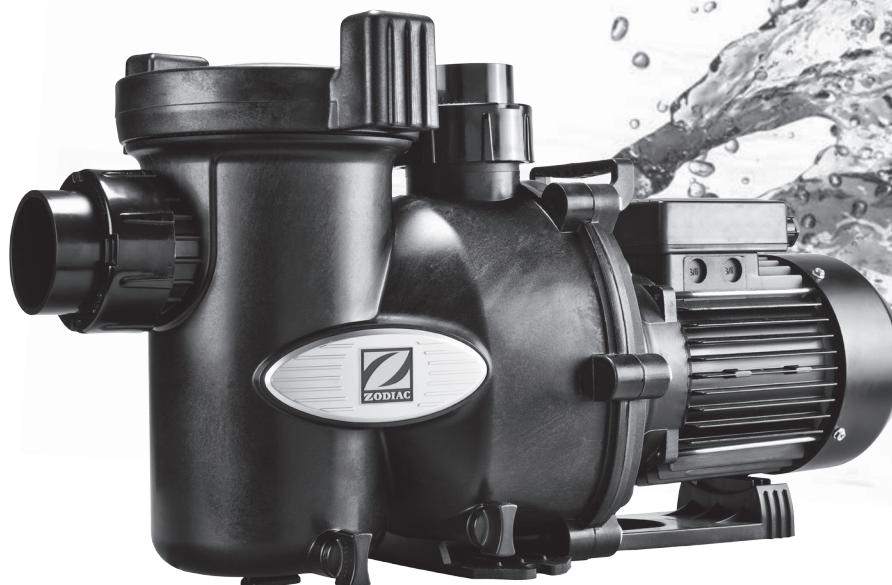




Installation and Operation Manual

FLOPRO
ssPUMP



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WARNING

- ⚠ **FOR YOUR SAFETY** - This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist. In the event no such state or local requirement exists, the installer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly. Improper installation and/or operation can create dangerous electrical hazards, which can cause high voltages to run through the electrical system. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.
- ⚠ **ATTENTION INSTALLER:** This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

EQUIPMENT INFORMATION RECORD

DATE OF INSTALLATION

INSTALLER INFORMATION

INITIAL PRESSURE GAUGE READING (WITH CLEAN FILTER)
(IF APPLICABLE)

PUMP MODEL

KILOWATT

NOTES

Section 1. Important Safety Instructions

READ AND FOLLOW ALL INSTRUCTIONS

1.1 Safety Instructions

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:



RISK OF SUCTION ENTRAPMENT HAZARD, WHICH, IF NOT AVOIDED, CAN RESULT IN SERIOUS INJURY AND/OR DEATH.

Do not block pump suction, as this can cause severe injury and/or death.



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



To reduce the risk of property damage and/or injury, do not attempt to change the backwash multiport valve position with the pump running.



The Pump is for fixed installations only and to be used in conjunction with swimming pool equipment. (E.g. filters). The pump is to be installed in accordance with the relevant requirements of the South African wiring rules. Occupational Health and Safety Act, 1993 (Act no. 85 of 1993) schedule electrical installation regulations

Also refer to the installation instructions relating to the swimming pool equipment of which the pump will be an integral part.

The pump is to be supplied through a circuit breaker with a related residual operating current of 30mA.



Chemical spills and fumes can weaken pool/spa equipment. Corrosion can cause filters and other equipment to fail, resulting in severe personal injury or property damage. Do not store pool chemicals near your equipment.



CAUTION: Do not start pump dry! Running the pump dry will cause severe damage and will void the warranty.



CAUTION: This pump is for use with permanently installed pools and may also be used with spas. 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

1.2 Pool Pump Suction Entrapment Prevention Guidelines



SUCTION HAZARD. Can cause serious injury or death. Do not use this pump for shallow pools, or spas containing bottom drains, unless the pump is connected to at least two (2) functioning suction outlets.



Pump suction is hazardous and can trap and drown or disembowel bathers. Do not use or operate swimming pools or spas if a suction outlet cover is missing, broken, or loose.



The Pump is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the pump safely.

Young Children should be supervised to ensure that they do not play with the pump.

Section 2. General Description

2.1 Introduction

This manual contains information for the proper installation, operation, and maintenance of the Zodiac FloPro series pumps. Procedures in this manual must be followed exactly. To obtain additional copies of this manual, contact Zodiac Customer Service at 0860 887 665.

2.2 Description

Zodiac FloPro Pumps are designed to meet the needs of today's more hydraulically demanding pool equipment. The pump housing, backplate, diffuser, impeller, and hair-and-lint pot (pump debris filter basket) are all made from high quality thermoplastic materials. These materials were chosen for their strength and corrosion resistance.

The pump is driven by an electrical motor directly attached to the pump impeller. As the electric motor turns, it causes the impeller to turn, which forces water to flow through the pump. The water flows through the pump inlet port and then into the pump filter basket. The basket assembly pre-strains/traps large particles. The water then enters the center of the pump housing, flows through the impeller into the diffuser, and then flows out the pump discharge port.

Section 3. Installation

3.1 Plumbing

3.1.1 Preparation

Upon receipt of the pump, check the carton for damage. Open the carton and check the pump for concealed damage, such as cracks, dents, or a bent base. If you find damage, contact the shipper or the distributor where the pump was purchased.

3.1.2 Pump Location

1. Zodiac Pool Care SA (Pty) Ltd recommends installing the pump within 300mm above water level. The pump should not be elevated more than a metre above the water level of the pool. A non-return valve is recommended on the suction line to the pump.

NOTE: Better self-priming will be achieved if the pump is installed as close as possible to the water level of the pool.

2. Zodiac Pool Care SA (Pty) Ltd recommends that the pump and other circulation equipment be located more than 1.5 metres from the water. Choose a location that will minimize turns in the piping.

3. The pump must be placed on a solid foundation that will not vibrate. To further reduce the possibility of vibration noise, bolt the pump to the foundation, or place it on a rubber mat.

NOTE: Zodiac Pool Care SA (Pty) Ltd. recommends bolting the pump directly to the foundation.

4. The pump foundation must have adequate drainage to prevent the motor from getting wet. Protect the pump from the sun and rain.
5. Proper ventilation is important to get rid of the heat that is generated by the motor, this is crucial for normal pump operation.
6. Provide access for future service by leaving a clear area around the pump. Allow plenty of space above the pump to remove the lid and basket for cleaning.
7. If the equipment is under cover, provide adequate lighting.

3.1.3. Pipe Sizing

3.1.3.1. Suction and Discharge Pipes

When the pump is located up to 15 metres from the pool, the recommended minimum pipe size for the suction and discharge side of the pump is 50mm for pumps up to 1.1kW.

Note: Smaller pipe sizes may be able to withstand the pressures the pump will deliver, but not necessarily the flow. If the pipe is too small for the pump or if the pump is elevated above the water level, the maximum litres per minute (LPM) may not be delivered. If this happens, the life of the pump may be shortened, optimum filtration will not be achieved and/or same flow dependent devices may not function as they should.

3.1.3.2. Installation Recommendations

1. If the pump is located below water level, isolation valves **must** be installed on both sides of the pump to prevent the back flow of pool water during any routine or required servicing.
2. FloPro pumps come equipped with unions on both the suction and discharge ports. This feature simplifies installation and service.
3. The piping must be well supported and not forced together in places where constant stress will be experienced.
4. Always use properly sized valves.
5. Use the fewest fittings possible. Every additional fitting has the effect of moving the equipment further away from the pool.
6. We recommend that armoured Norse cable is used to connect the motor to the DB Box.
NB. Cable supplied on the unit purchased is only for testing purposes.

NOTE: If more than 10 suction fittings are needed, the pipe size must be increased.

7. Zodiac Pool Care SA (Pty) Ltd recommends that 50mm (outer diameter) pipe is used for suction and discharge.

Section 4. Operation

4.1 Start-up

CAUTION: Never run the pump without water. Running the pump "dry" for any length of time will cause severe damage to both the pump and motor and will void the warranty.

If this is a new pool installation, make sure all piping is clear of construction debris. Check the filter for proper installation, verifying that all connections and clamps are secure according to the manufacturer's recommendations.



To avoid risk of property damage, severe personal injury, or death, verify that all power is turned off before starting this procedure.

1. Take one of the following actions to prime the pump:
 - If the pump is located below the water level of the pool ensure that the multiport valve is set to filter. Ensure all isolation valves before and after the pump is opened. Open the pump lid to prime the pump with water.
 - If the pump is located above the water level, remove the pump lid and fill the basket with water before starting the pump.
2. Prior to replacing the lid, check for debris around the lid o-ring seat. Debris around the lid o-ring seat will cause air to leak into the system, and make it difficult to prime the pump.
3. **Hand-tighten** the lid to make an air tight seal. **Do not use any tools to tighten the lid: hand-tighten only.** Ensure that the lid is secure. Make sure all valves are open and the unions are tight.
4. Restore power to the pump and then turn it on.
5. Once all the air has left the filter, close the filter pressure release valve (If applicable).
6. The pump should prime the pipe system. The time it takes to prime will depend on the elevation and length of pipe used on the suction supply pipe. See *Section 3.3.2, Installation Recommendations* for proper elevation and pipe size.
7. If the pump does not prime and all the instructions to this point have been followed, check for a suction leak. If there is no leak from the weir to the pump, repeat Steps 2 through 7.
8. For technical assistance, call Zodiac Technical Support at 0860 887 665.



Trapped air in the system can cause the filter lid to be blown off, which can result in death, serious personal injury, or property damage. Be sure all air is properly let out of the system before operating. **DO NOT USE COMPRESSED AIR TO PRESSURE TEST OR CHECK FOR LEAKS.**



Do not pressure test above 240kPa. Pressure testing must be done by a trained pool professional. Circulation equipment that is not tested properly may fail. This could result in severe personal injury or property damage.



When pressure testing the system with water, it is very important to make sure that the pump basket lid is completely secure.

Section 5. Service and Maintenance

5.1 Routine Maintenance



To avoid the risk of property damage, severe personal injury, and/or death, turn off the pump and switch off the circuit breaker to the pump motor before servicing the pump.

Inspect the pump basket for debris by looking through the clear pump lid. Remove any debris, because as debris accumulates, it will begin to block the flow of water through the pump. Keep the basket clean to improve the performance of the pump.

1. Turn off the power to the pump. If the pump is located below the water level, close the isolation valves on the suction and discharge sides of the pump to prevent backflow of water.
2. Turn the lid's locking ring counter-clockwise until 'START' aligns with the ports. Carefully remove the lid.
3. Lift the basket out of the pump. Dispose of all debris and thoroughly clean the basket, making sure all the holes are open. Using a garden hose, spray the basket from the outside to help clear the holes. Remove any remaining debris by hand.
4. Replace the basket in the pump by aligning the open section of the basket with the inlet pipe. If aligned properly, the basket will drop easily into place. Do not force it into place.
5. Remove the lid o-ring and remove debris around the lid o-ring seat, as this will cause air leaks into the system. Clean the lid o-ring and replace it.
6. Replace the lid with locking ring on the pump housing. Align 'START' with the ports and turn the lid's locking ring clockwise until 'LOCKED' aligns with the ports. **Hand-tighten** the lid to make an air tight seal. **Do not use any tools to tighten the lid.**

CAUTION: A misaligned basket will cause the lid to be improperly seated, allowing an air leak, which could result in pump damage.

7. Verify that all valves have been returned to the proper position for normal operation.
8. Check for any leakages

Section 6. Troubleshooting and Repair

Zodiac Pool Care SA (Pty) Ltd strongly recommends that you call a qualified service technician to perform any repairs on the filter/pump system. To locate a qualified technician, contact our Customer Care department on 0860 887 665 or visit www.zodiac.co.za.

6.1 Troubleshooting

SYMPTOM	POSSIBLE PROBLEM/SOLUTION
The cleaning/circulating system is not operating correctly.	Verify that skimmer baskets, pump basket and other screens are clean. Clean as necessary. Check filter and clean as necessary. Check valve positions. Adjust as necessary. NOTE: Multiple pieces of equipment operating at one time (for example, waterfalls, spa jets, and surface returns) may affect the cleaning system and prevent it from working properly. Check the cleaning system manual to ensure that the system is adjusted according to the manufacturer's recommendations.
Bubbles/air present in the pump basket. (Suction Leak)	Air in system. Check the pool or spa water level to ensure that it is at the proper level and that air is not being drawn into the suction piping. If the water is at the normal level, turn off the pump. Turn the lid's locking ring counter-clockwise until 'START' aligns with the ports. Carefully remove the lid and check for debris around the lid o-ring seat, as debris will cause air to leak into the system. Clean the lid o-ring and place on the lid. Replace the lid with locking ring on the pump housing. Align 'START' with the ports and turn the lid's locking ring clockwise until 'LOCKED' aligns with the ports. Hand-tighten the lid to make an air tight seal. Do not use any tools to tighten the lid. Turn the pump back on.
Air leaks are still present.	Check the suction side piping union. While the pump is running, try to tighten the union. If this does not stop the air leak, turn off the pump. Loosen both unions and slide the pump out of the way. Remove, clean and re-install both union o-rings. Reposition the pump next to the piping and secure the union nuts to the pump. With clean union o-rings, hand-tightening of the unions should create a seal. If the unions still do not seal, gently tighten with a large pair of tongue-and-groove pliers. Do not over-tighten.
There is no air in the system, but the pressure is still low.	It is possible that debris is caught in the pump impeller. The pump impeller moves the water, and the vanes in the impeller can become blocked with debris. See <i>Section 6.2, Service Technician Maintenance, 6.2.1, Blocked Impeller</i> , for more information.
There is no debris blocking the impeller and the pressure is still low.	The pump impeller and diffuser are showing signs of normal wear. Have a qualified service technician check the impeller and diffuser and replace as necessary. The pump seal might be leaking air. Have a qualified service technician replace the seal. If the pump is part of a relatively new installation, it could be an electrical problem. Contact a qualified service technician. Have the technician check for loose electrical connections and check the voltage at the pump motor while it is in operation. The voltage must be within 10% of the motor's data plate rating. If the voltage is not within 10%, contact a qualified electrician and/or the local power service provider.

The pump is leaking water between the motor and pump body.	This is caused by a damaged or failed mechanical seal. Replace the seal. See <i>Section 6.2, Service Technician Maintenance, 6.2.4, Mechanical Seal Replacement</i> .
The pump gets hot and shuts off periodically.	Ensure that there is adequate ventilation and room around the motor to circulate air and keep the motor cool. Have a qualified electrician check for loose connections and check the voltage at the pump motor while it is in operation. The voltage must be within 10% of the motor's data plate rating. If the voltage is not within 10%, contact a qualified electrician and/or the local power service provider.

6.2 Service Technician Maintenance



This pump must be serviced by a professional service technician, qualified in pool/spa installation. The following procedures must be followed exactly. Improper installation and/or operation can create dangerous electrical hazards, which can cause high voltages to run through the electrical system. This can cause property damage, serious injury, and/or death. Improper installation and/or operation will void the warranty.

6.2.1 Blocked Impeller



Before servicing the pump, turn off the pump and switch off the circuit breaker to the pump motor. Severe personal injury, death, or property damage may occur if the pump starts while your hand is inside the pump.

1. Turn off the pump. Switch off the circuit breaker to the pump motor.
2. Remove the lid and basket.
3. Look inside the pump for any debris. Remove any debris found inside.
4. Replace the basket and lid.
5. Switch on the circuit breaker to the pump motor.
6. Turn on the pump, and see if the problem is solved.
7. If the impeller is still blocked with debris and it is not possible to remove the debris using Steps 2 through 4, the pump will need to be disassembled in order to access the inlet and outlet of the impeller.

6.2.2 Impeller Removal



Before servicing the pump, turn off the pump and switch off the circuit breaker to the pump motor. Severe personal injury, death, or property damage may occur if the pump starts while your hand is inside the pump.

1. Turn off the pump. Switch off the circuit breaker to the pump motor. If you are not replacing the motor, do not disconnect the electrical wiring.

NOTE: If you are replacing the motor, Zodiac strongly recommends that a qualified service technician or electrician properly disconnect the electrical wiring at the pump motor.

2. Turn off any valves to prevent pool water from reaching the pump. Drain the water from the pump by loosening the unions or removing the drain plugs.
3. Using a 14mm wrench, loosen the bolts connecting the pump body to the motor backplate. (See Figure 1.)

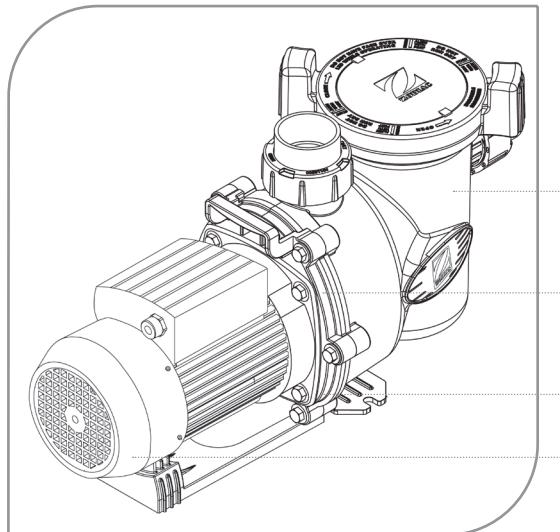


Figure 1. Remove the Pump body

4. Pull the motor and backplate out of the pump body. Remove the pump body o-ring. The impeller is connected to the motor shaft.
5. Using a No. 1 Phillips star screwdriver, remove the two (2) screws holding the diffuser. (The diffuser is the cover over the impeller). Then remove the diffuser. (See Figure 2.)

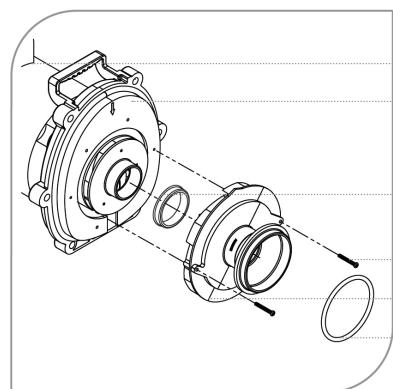


Figure 2. Remove the Diffuser

6. If necessary, remove any debris in the inlet and outlet of the impeller.
7. Remove the motor fan cover on the back of the motor by removing the 4 screws holding it in place. (See Figure 1.) The motor shaft with fan will be exposed.

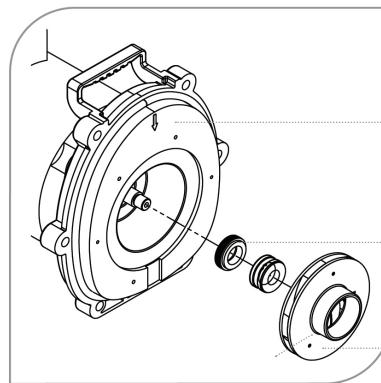


Figure 3. Remove the Impeller

Backplate

Mechanical Seal

Impeller

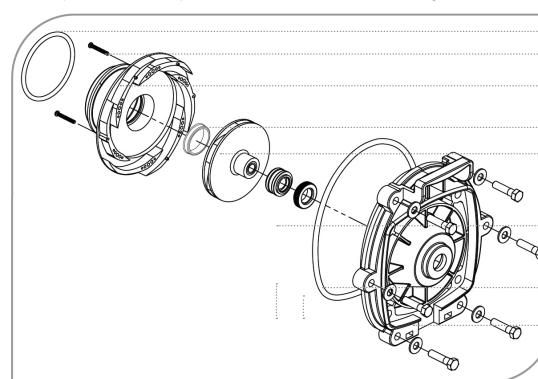


Figure 4. Diffuser and Impeller Exploded View

Diffuser O-ring
Screws (2)

Diffuser

Impeller Sleeve
Impeller

Mechanical Seal

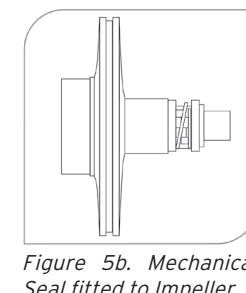
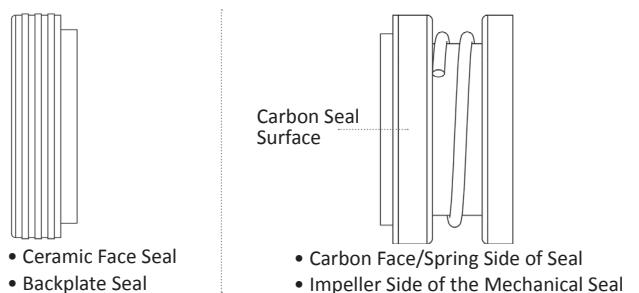
Backplate O-ring
Backplate

6.2.3 Impeller Replacement



To avoid the risk of property damage, severe personal injury, or death, turn off the pump and switch off the circuit breaker to the pump motor before beginning this procedure.

To replace the mechanical seal onto the impeller sleeve press the carbon face seal half (see Figure 5.) using a twisting motion. Make sure the carbon surface is facing toward the ceramic ring in the backplate.

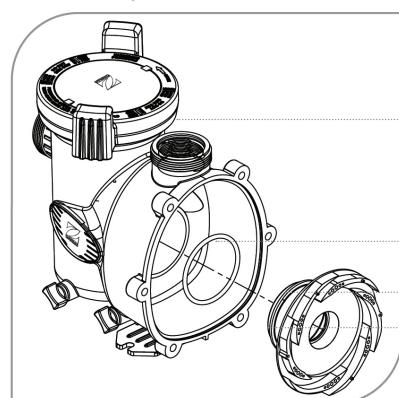


CAUTION VERY IMPORTANT! Grasp the lower portion of the seal (opposite the carbon face) when installing the seal or it will be damaged.

NOTE: To assist assembly, only use water or a soap solution as a lubricant. Any other lubricant will destroy the seal after a short period of time.

NOTE: Exercise great care to keep the seal and mating parts clean.

1. While holding the motor shaft with a flat screwdriver from behind, thread the impeller onto the motor shaft. Hand-tighten the impeller until it is secure.
2. Replace the motor fan cover and secure it with its 4 screws.
3. Replace the white impeller sleeve over the front (entry port) of the impeller.
4. Replace the diffuser over the impeller, using care to insert alignment pins into the correct holes. The alignment pins in the diffuser allow the diffuser to be inserted only one (1) way. Align the arrow onto the backplate with the arrows on the diffuser.
5. Replace the two (2) small Phillips-head screws. Tighten the screws to draw the diffuser against the motor backplate.
6. Make sure the diffuser o-ring, o-ring groove, and o-ring seal area are clean and free of debris, which could cause a leak. If you removed the diffuser o-ring during disassembly, re-install it on the diffuser, as shown in *Figure 6*. If grease is used to retain the diffuser o-ring, it **must be silicone based. Do not use petroleum-based grease.** It will destroy the o-ring.



7. Slide the diffuser into the mating hole in the pump body to connect the pump body to the backplate. While supporting the motor, start two (2) screws on opposite sides. (This will hold the motor in position while you start the other screws.) Start the other four (4) screws.
8. Tighten all six (6) screws lightly in a crossing "X" pattern using a 14mm wrench. Start with the inner (middle) two (2), then tighten the outer (top and bottom) four (4) to draw the backplate to the body in an even manner. Once all the screws are snug, torque in the same order to 10 foot-pounds.
9. If the pump is located above the water level of the pool, remove the lid and fill the basket with water before starting the pump.
10. Prior to replacing the lid, remove any debris around the lid o-ring seat, as debris will allow air to leak into the system.
11. Place the lid with locking ring on the pump housing. Align 'START' with the ports and turn the lid's locking ring clockwise until 'LOCKED' aligns with the ports. Hand-tighten the lid to make an air tight seal. Do not use any tools to tighten the lid.
12. Switch on the circuit breaker to the pump motor.
13. Turn on the pump and check the system for normal operation.
14. Check for any leakages.

6.2.4 Mechanical Seal Replacement

NOTE: Refer to *Figure 7* for an illustration of the location of the mechanical seal and impeller.

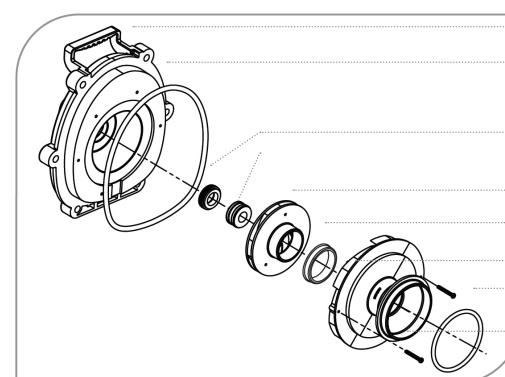


Figure 7. Backplate, Impeller, Diffuser, and Mechanical Seal Exploded View

NOTE This is a two-part replacement process. The mechanical seal must be replaced as a set.



Do not damage the ceramic or carbon surfaces of the seals. If surfaces are damaged, leaks will occur.

1. To access the mechanical seal, comply with the warning and follow steps 1 through 8 of Section 6.2.2, *Impeller Removal*.
2. Remove the carbon face seal half from the impeller sleeve. (See *Figure 5*.) This is a spring-loaded seal. Grasp the portion of the seal closest to the impeller body and pull the seal off using a twisting motion.

3. Remove the motor from the backplate following steps 1 through 3 in *Section 6.2.5, Motor Replacement*.
4. Place the backplate o-ring side down and force the ceramic seal out using a screwdriver or drift.
5. Turn the backplate o-ring side up and insert the new ceramic seal side into the backplate. Use great care to press the seal in squarely with your fingers. The ceramic is easily damaged and must be pressed in using only your fingers or soft tools. Do not use any lubricant other than water and soap solution.
6. Install the backplate to the motor following the steps in *Section 6.2.5, Motor Replacement*.
7. Install the motor to the pump body following the steps in *Section 6.2.3, Impeller Replacement*.

6.2.5 Motor Replacement

CAUTION: To ensure continued safety and reliable operation, Zodiac requires that you replace the motor with a motor that has the identical kW rating and service factor.

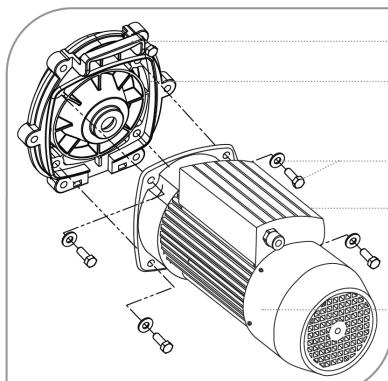
! To avoid the risk of property damage, severe personal injury, or death, turn off the pump and switch off the circuit breaker to the pump motor before beginning this procedure.

1. To disassemble the pump housing from the motor, follow steps 1 through 8 in *Section 6.2.2, Impeller Removal*.
2. Remove the four (4) screws connecting the backplate to the motor. (see figure 8.)
3. Place the backplate motor assembly o-ring side down and unscrew the four (4) 14mm screws and remove the motor.

NOTE: Before removing the backplate, note the alignment of the backplate to the motor. See Figure 8.

4. If installing a new motor, remove the protective plastic cap from the motor shaft. Place the motor on the backplate the handle on the backplate is in line with the terminal box on the motor. The terminal housing on the motor should be at the 12 o'clock position.
5. Replace the four (4) bolts and washers holding the backplate to the motor.
6. To reassemble the pump after replacing the motor, follow steps 1 through 14 of *Section 6.2.3, Impeller Replacement*.

NOTE: Zodiac recommends replacing the mechanical seal at the same time that you replace the motor. See *Section 6.2.4, Mechanical Seal Replacement*, for details.

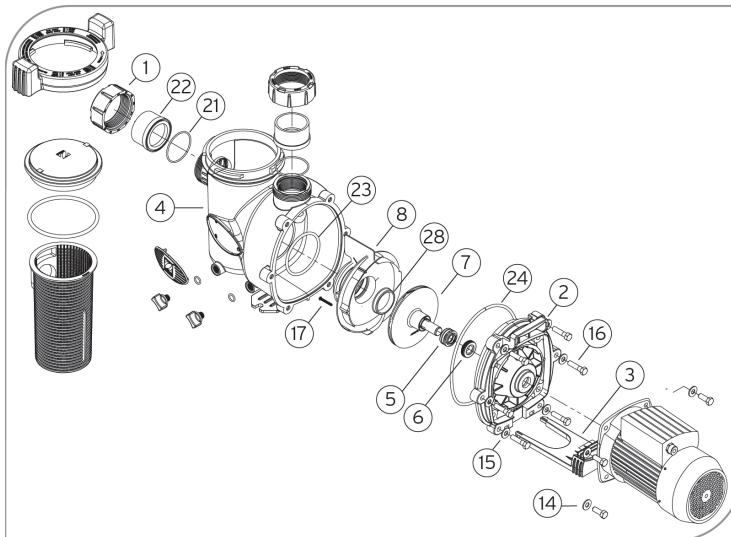


See Figure 8. Backplate Assembly

Handle
Backplate
Bolts and Washers (4)
Starting Capacitor
Motor

Section 7. Product Specifications and Technical Data

7.1 Exploded View

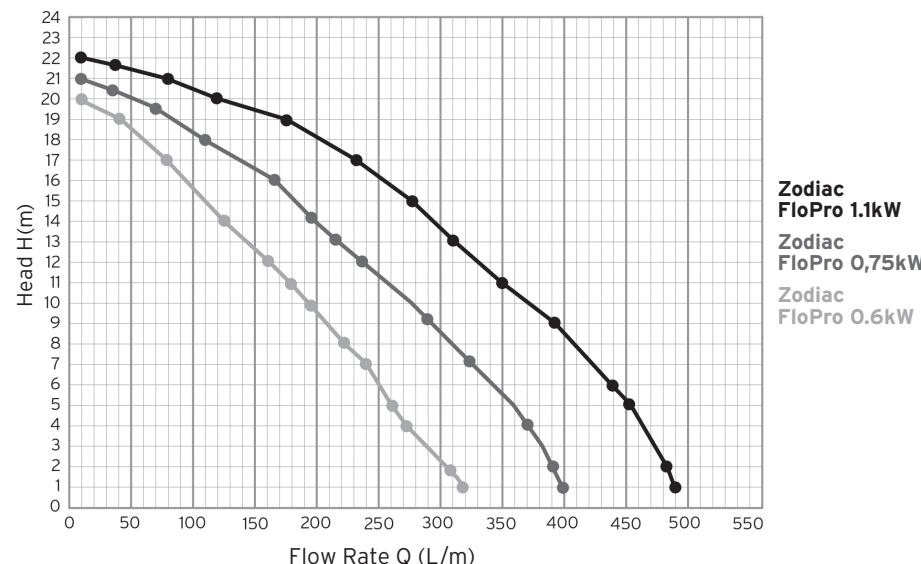


Zodiac Part no.	Description	Qty	Number on Drawing
W77124	FLOPRO SS 0.6kW POOL PUMP	1	
W70911	WET END IMPELLER ASSY 0.6kW	1	7
W77125	FLOPRO SS 0.75kW POOL PUMP	1	
W70912	WET END IMPELLER ASSY 0.75kW	1	7
W77126	FLOPRO SS 1.1kW POOL PUMP	1	

W70913	WET END IMPELLER ASSY 1.1kW	1	7
W70914	DIFFUSER, PUMP, WFHPM	1	8
W70915	PUMP BACKPLATE	1	2
W70916	PUMP FOOT MOTOR	1	3
W70917	PUMP SLEEVE	1	28
W70918	PUMP ASSY. BODY FLOPRO	1	4
W70919	WET END BACKPLATE O'RING	1	24
W70920	WET END DIFFUSER O'RING	1	23
W70921A	PUMP SEAL MECHANICAL (SPRING LOADED DRIVE BAND ASSY)	1	5
W70921B	PUMP SEAL MECHANICAL (SEAT/MATTING RING)	1	6
W70922	WET END SCREW, MOTOR TO BACKPLATE	4	14
W70923	WET END SCREW, BACKPLATE TO PUMP	6	16
W70924	PUMP WASHER, 3/8, SS SERIES N, TYPE B, ANSI B18.2.1	10	15
W70925	WET END DIFFUSER SCREW	1	17
W70926	WET END UNION ASSEMBLY	2	21, 22
W041321	REDUCING BUSH-GREY	2	

7.2 Performance curves

Zodiac FloPro ssPump - Head vs Flow Rate



7.3. Physical and Operational Specifications

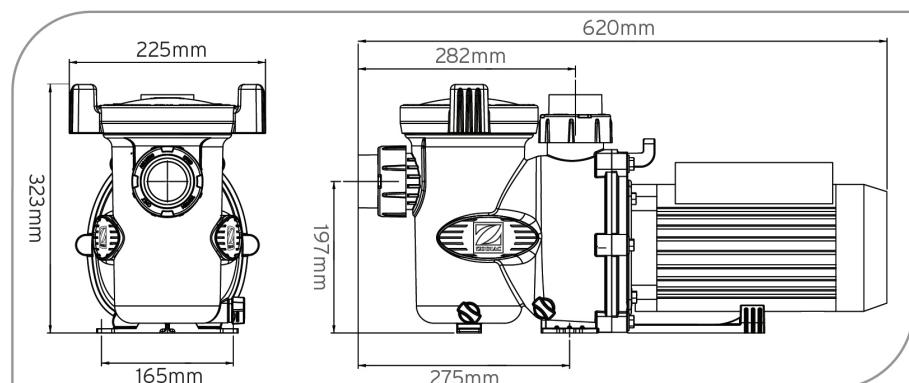


Figure 9. FloPro ssPump Dimensions (without Base or Spacers)

Zodiac FLOPRO Single Speed Pump Specs	0.6kW	0.75kW	1.1kW
Model	FLOPRO 0.6kW	FLOPRO 0.75kW	FLOPRO 1.1kW
Motor -Type	Single Phase	Single Phase	Single Phase
Pump -kW	0.6kW / 0.75HP	0.75kW / 1.0HP	1.1kW / 1.5HP
Motor -kW	0.8kW	1.0kW	1.4kW
Motor -Voltage (Alternating Current) and Frequency (Hertz)	V230 AC Hz50	V230 AC Hz50	V230 AC Hz50
Motor -Amps Maximum Amax	3.6A	4.6A	6.2A
Motor -Revolutions Per Minute RPM	2820	2820	2820
Motor -Capacitor	16µF (450V)	20µF (450V)	30µF (450V)
Insulation Class	F	F	F
International Protection Marking	IP44	IP44	IP44
Motor -Frame Size	80	80	80
Overload Protection	130°C - Autoreset	130°C - Autoreset	130°C - Autoreset
Motor -Bearing Drive end	6204 DDU	6204 DDU	6204 DDU
Motor -Bearing Non Drive end	6204 DDU	6204 DDU	6204 DDU
Water Temperature Max.	35°C	35°C	35°C
Flow -Litres per minute Q(L/min)	285-205 L/min	340-240 L/min	390-260 L/min
Flow -Litres per minute Maximum Qmax	290 L/min	350 L/min	400 L/min
Head -Metres H(m)	1-12m	1-14m	1-16m
Head -Maximum Hmax	15m	17m	20m



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