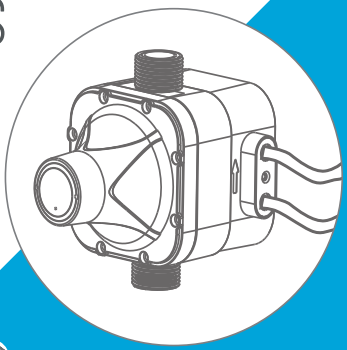
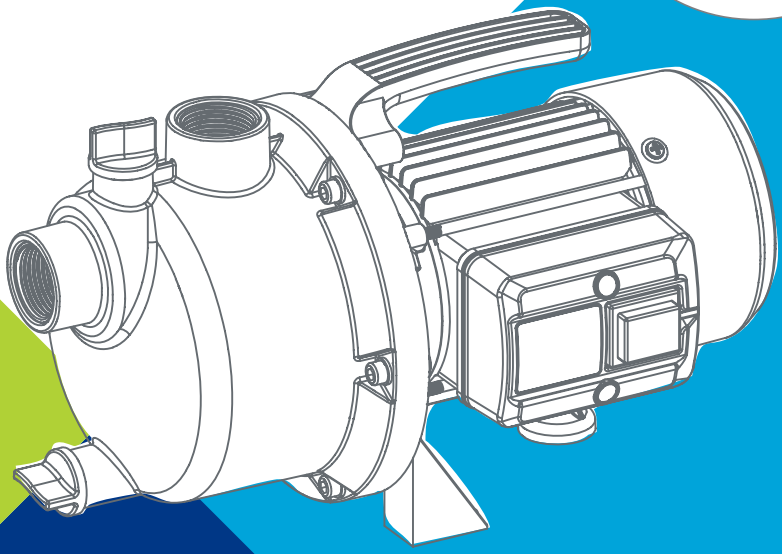
PENTAIR FLOTEC

ECOJET

DOMESTIC GARDEN JET PUMPS

OWNER'S MANUAL





CAUTION

Should the installer or owner be unfamiliar with the correct installation or operation of this type of equipment, contact the distributor or manufacturer for the correct advice before proceeding with the installation or operation of this product. We recommend, for additional protection, the pump to be supplied from socket outlet protected by a residual current device – RCD (also known as an Earth Leakage Circuit Breaker – ELCB) with a maximum rated residual current of 30mA.

ONGA.COM.AU

IMPORTANT

Please attach your sales invoice/docket here as proof of purchase should warranty service be required. Please do not return warranty form to Pentair Australia. Retain for your records.

PURCHASED FROM:
PURCHASE DATE:
SERIAL NO:
MODEL NO:

TABLE OF CONTENTS

PUMP UNIT

AUTOMATIC CONTROL UNIT

INTRODUCTION

We strongly recommend this product be installed by a suitably qualified person.

The electrical installation shall be in accordance with the national wiring rules (AS/NZS 3000) for class 1, IPX4 rated products.

These instructions are a guide only. Users not familiar with pumping equipment should seek advice from people experienced in pump equipment and installation.

Freezing conditions will damage the unit, because when water freezes it expands. Ensure that the pump is located so that it is not prone to freezing, or ensure that the product is disconnected and dried of water during cold conditions.

The EcoJet pumps are electrically connected. Ensure that they are switched off and unplugged from socket outlet during installation and any subsequent service work.

The pump is designed to be used with clean water in a residential application. Do not use it with alternative fluids, abrasive, corrosive or explosive fluids.

Do not install or operate your pump in an explosive environment or near combustible matter. Incorrectly installed or tested equipment may fail, causing severe injury or property damage.

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. Automatic thermal overload cut-out protects the motor for heat damage during operation and it will restart without notice when the motor cools down.

The pump is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the pump

Running the pump at close head (zero flow) condition can cause the water in casing to reach boiling temperature, do not disconnect the inlet, outlet, priming/drain plugs or casing until casing temperature cools down to ambient. This can cause serious burn/injuries.

APPLICATIONS

INSTALLATION SHOULD BE CARRIED OUT BY LICENSED PLUMBER. FAULTY OPERATION DUE TO UNQUALIFIED PERSONS WILL RESULT IN VOIDED WARRANTY COVERAGE.

It is applicable to household water supply, equipment support, well water lifting, pipeline pressurization, garden watering, vegetable greenhouse watering, fish farming and poultry raising, etc..

Transfer clean water and other non-corrosive liquids with low viscosity; do not transport inflammable, explosive, gasified liquids and liquids containing solid particles or fibers. The PH of water must between 6.5 and 8.5.

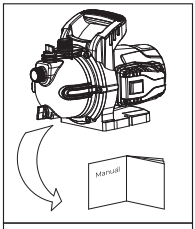
Remark:

This series of pump could be transformed into automatic water pump, which is realized through external automatic plant that is composed of pressure switch, pressure tank, etc.. Function features of the automatic pump are as follows: when the power is on, turn on the water tap and the pump will start working automatically; when the water tap is turned off, the pump will stop working automatically. If a water tower is used along with the automatic pump, connect to the upper limit switch and the pump will start or stop working automatically with water level in the water tower.

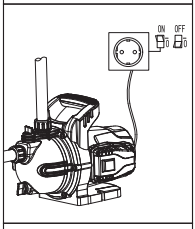
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact you local government for information regarding the collection systems available.

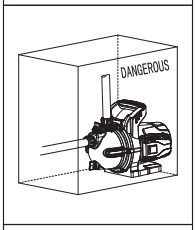
SAFETY PRECAUTIONS



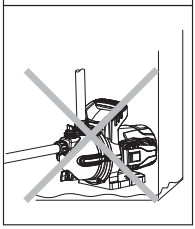
1. To ensure normal and safety operation of the electric pump, read the manual carefully before use.



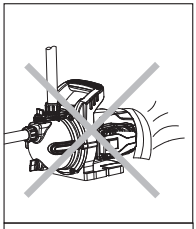
2. The electric pump should have reliable grounding to prevent short circuit; for safety, leakage protection switch should be equipped and be careful no to wet the power plug; socket should be connected in damp- proof area.



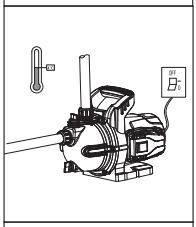
3. Do not touch the electric pump while working; do not wash, swim near working area or let livestock into the water to avoid accidents.



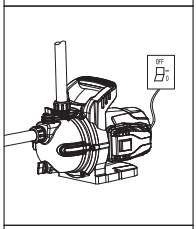
4. Avoid splashing pressured water to the electric pump as well as prevent the pump immersed by water.



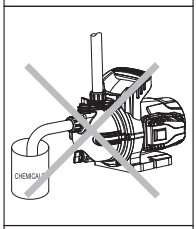
5. Keep the pump in a ventilated enclosure that can protect the pump from UV and rain exposure.



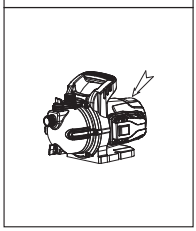
6. In case ambient temperature is lower than 4°C or the pump is not used for a long time, empty liquid the pipeline system to avoid ice cracking of the pump chamber.
   Do not keep the pump dry running for a long time.



7. The pumped liquid may be hot and under high pressure. Before moving and demounting the bump, valves in both sides of the bump should be turned off first and then empty liquids in the pump and pipelines so as not to be scalded.



8. Do not transfer any inflammable, explosive or gasified liquids that beyond the stipulation.



9. Power supply should be in accordance with the voltage stated in the nameplate.

   Keep the pump in a dry, well ventilated and cool place under room temperature for long time storage.

INSTALLATION

1. Preparation for Installation
Inspect your pump for shipping damage. Report any damage to place of purchase.
We strongly recommend this product be installed by a suitably qualified person.

Make sure the suction piping is free of air leaks and is laid so that there can be no airlocks.
Warranty of these pumps is void unless they are operated in accordance with this owner's manual.

2. Pump Protection
The pump should be protected from the weather, floods, chemicals, dust, vermin, insects etc. It is highly recommended that the pump be housed in a weather proof, well vented enclosure. If the pump is not adequately housed the warranty may be deemed void.

3. Pipe Installation
Pumps can be damaged if care is not taken when connecting pipes. Pipes should be supported so that the pump casing is not strained by the weight or misalignment.

We recommend the pump and pipe are coupled using flexible type polythene pipe, rubber hose or a multi-directional barrel union. This union coupling can also be used to remove the pump for service should it be necessary without having to cut pipes.

Pipe fittings should be carefully screwed onto the pump making sure not to cross-thread or overtighten. We recommend the use of a moulded pipe fitting to connect to the pump as this avoids possible damage to the pump threads and unnecessary replacement of parts.

For best results use teflon tape to seal the joint. Satisfactory sealing can be achieved by hand tightening fittings ensuring that no leaks are evident once under pumping pressure.

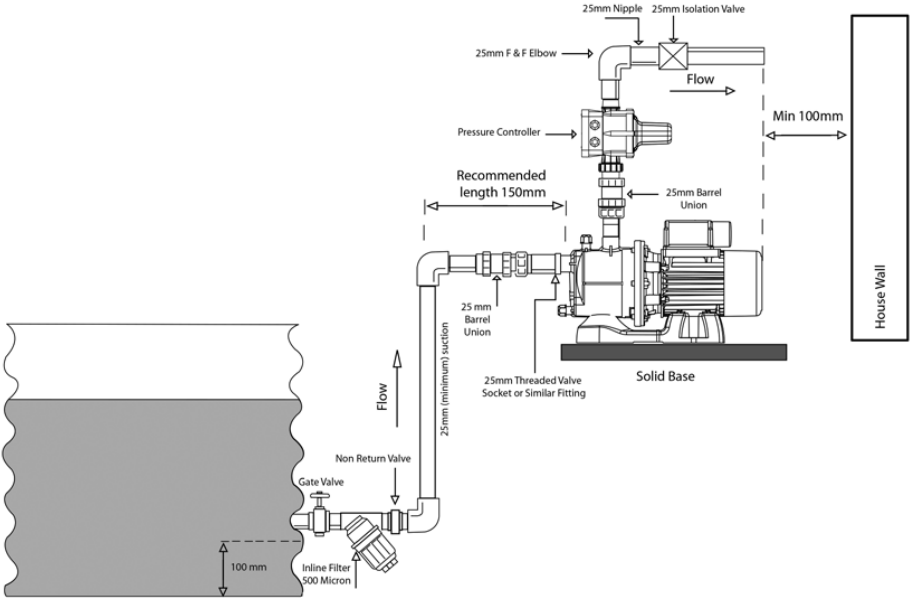
4. Locating the Pump
Find a location for your pump as close to your water source as possible. Ensure that this location is on a seperate footing from your home. To do this you can mount the pump on a concrete tile or concrete base.

5. Power Source
Arrange for an electrician to install an outdoor 10A GPO electrical outlet near the pump if there is not one there already.

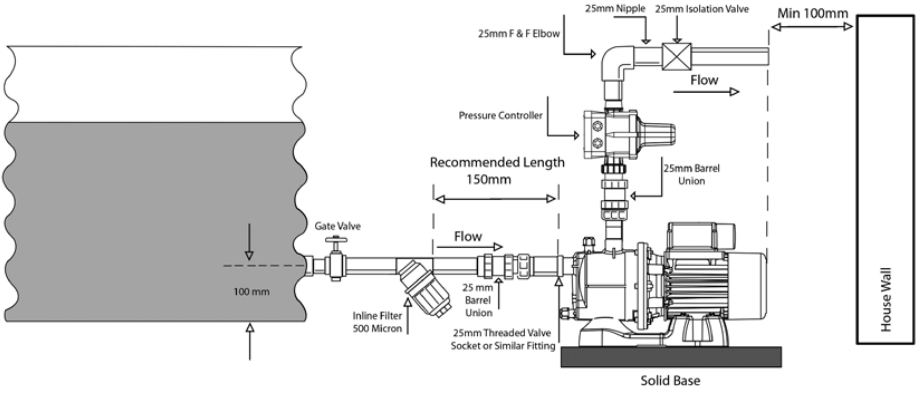
6. Suction

This is the most important part of the installation as errors will cause significant problems for the system in performance and longevity.
IMPORTANT: A gate valve must be installed at the tank outlets.

Installations where the tank base is below the pump



Installations where the tank base is level with the pump



INSTALLATION

To maintain optimum performance from your pump, the suction pipe should be:

- Kept to the shortest distance practical, but not shorter than the recommended length.
- Re-enforced crush resistant (non-collapsable) hose or pipe.
- All fittings should be air tight.
- Pipes should be equal to or larger than the diameter of the suction/inlet port.
- Ensure that the suction is completely submerged.

In-line strainers/filters are recommended and regular maintenance is required to keep them clean and provide maximum pump pressure.

7. Discharge

The length and diameter of the discharge hoses/pipes will affect the pressure and flow rate at which your pump operates. Pressure ratings of all components must exceed the maximum pressure of the pump by an appropriate safety factor. All pipework should be supported independently of the pump.

8. Pump Priming

Ensure that there is at least 200mm of water in your tank, (i.e. that the tank outlet is covered, and the pump will not draw any air into the system). Open the gate valve on the tank. Check for any leaks, and repair these if necessary.

If no leaks are present, remove the priming plug (fig.1) to open the priming port on the top of the pump case.

If the tank is above the level of the pump, water will start to run out of this port. Replace the priming plug (fig.1) carefully. Your pump is now ready to run.

(**Note:** If a check valve is installed in the suction line, water may not fill the pump. If this occurs, follow the instructions below).

If the tank water level is below the level of the pump, you will need to fill the pump body and suction line. Remove the priming plug (fig.1) and fill the pump body and suction line using a funnel. It may take several attempts to prime the pump.

Failure to correctly prime the pump may result in damage to the mechanical seal and cause the pump to leak water. This damage is not covered by warranty so care must be taken to properly fill the pump with water prior to first operation.

9. Electrical

The pump is supplied with a interconnection appliance coupler and standard Australian 10 Ampere plug and cord. Connection to the power supply is a matter of inserting the plug into the suitable socket outlet. Before plugging the power supply cord into the socket outlet, connect the pump to it using the provided IEC appliance connectors on the end of the interconnection cords. Ensuring there are no water traces on the connectors push them firmly into each other to ensure intended splash (water) proof protection. This connection shall be separated again only for service purpose and only after the power supply is removed by unplugging the cord from the socket outlet.

The socket outlet shall be in a dry and flood free location; preferably do not use extension cords for this very reason and because they can cause voltage drop.

Supply voltage outside limits specified in Model Data can cause motor to overheat leading to overload tripping, reduced component life or seriously damage pum p and voids warranty.

We recommend, for additional protection, the pump to be supplied from socket outlet protected by a residual current device – RCD (also known as an Earth Leakage Circuit breaker – ELCB) with a maximum rated residual current of 30mA.

OPERATION

1. Start-up / Operation
Ensure you have primed the pump correctly. (Instructions on priming the pump can be found in the installation section under Point 8. Priming Pump).

The EcoJet Series pumps are self priming therefore it is possible to start them without filing the suction pipe with water. However it is still necessary to fill the pump body. The priming operation requires a few minutes and it may also be necessary to fill the pump body with water several times (accordingly to length and diameter of the suction pipe).

Note: If the pump is not used for a long period of time, repeat the priming procedure before start up.

Start the pump and check rotation of the motor. It rotates in a clockwise direction when viewing the fan through the cowl behind the motor.

2. Protection switch
The EcoJet Series of pumps have a built in thermal protection switch. The pumps stops if an overload condition occurs. The motor restarts atomatically after it has cooled down (see point 3 on trouble shooting section for information on causes and corrective actions).

SERVICE & MAINTENANCE

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

To avoid dangerous or fatal electrical shock, turn OFF power to pump and remove plug from outlet before attending the pump.

RCD tripping indicates an electrical problem. If RCD trips and will not reset have a qualified electrician inspect and repair electrical system and/or pump.

If service is required to the power supply cord and/or appliance connectors, they must be replaced with the specialised cord assemblies by Pentair Water service agent or similarly qualified personnel in order to avoid a hazard.

Water may be HOT, release pressure with care before servicing.

General Care and Maintenance
Under normal conditions, the Flotec EcoJet pumps require only minimal attention.

In order to prevent possible failures, it is advisable to periodically check the pressure supplied and power absorption. A decrease in pressure is a symptom of wear. An increase current absorpion is a sign of abnormal mechanical function in the pump and/or motor.

TROUBLESHOOTING

SYMPTOMS	CAUSE	CORRECTIVE ACTION
The motor can not be started	Single-phase power supply (three-phase electric motor): a. poor connection of the power switch; b. fuse is burned out; c. loose power lead; d. phase failure of the cable.	a. repair switch contact or replace the switch; b. replace the safety fuse; c. check and tighten the power connector; d. repair or replace cables.
	Capacitor is burned out.	Replace with a same type capacitor (send to the maintenance point for repair).
	The rotating shaft and bearing are jammed.	Replace the bearing (send to the maintenance point for repair).
	Impeller is jammed.	Turn rotating shaft of the fan blade terminal with screw driver to let it rotate flexibly or demount the pump body to clear sundries.
	Stator winding is damaged.	Replace winding coils (send to the maintenance point for repair).
The motor is in operation, but no water is discharged	Incorrect direction of pump rotation.	Invert two-phase wirings of the motor (three-phase motor).
	The pump is not fully filled with water.	Re-fill the pump with water.
	The impeller is damaged.	Replace the impeller (send to the maintenance point for repair).
	Leakage of the suction pipe.	Check sealing of various joints of the inlet pipelines.
	Water level is too low.	Adjust installation height of the pump.
	Freeze caused by accumulated water in the pipeline or the chamber.	Start up the pump after ice is melted.
Insufficient pressure	Water that is too hot can result in the failure of plastic parts.	Replace the damaged parts (send to the maintenance point for repair)
	Incorrect pump type.	Select suitable model.
	The inlet pipeline is too long or with too many bends, or/ and pipe diameter is not selected as required.	Apply the pipe with the stipulated diameter, and make the inlet pipe short.
	Inlet pipeline, filter screen or pump chamber is blocked by foreign materials.	Clean pipeline, foot valve or pump chamber, clear foreign materials.
Motor works intermittently or the stator winding is burned out	The impeller is jammed or in overload operation for a long time.	Clear foreign materials in the pump chamber; operate the pump under the rated flow.
	Incorrect grounding, broken cable or the electric pump is struck by lightning.	Properly grounded, replace the broken cable , and replace winding coils.

TECHNICAL DATA

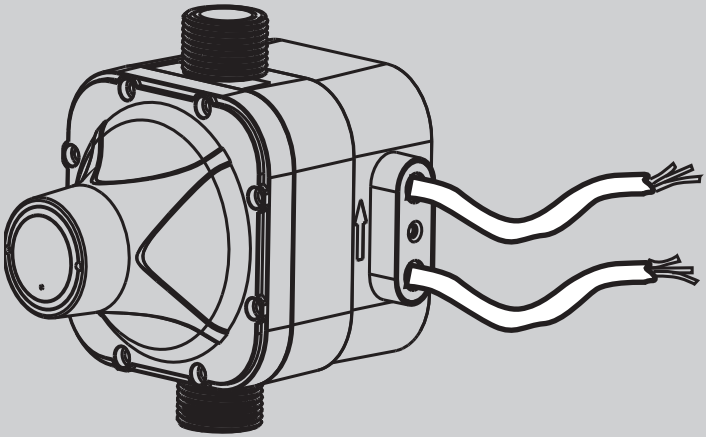
	PLASTIC JET PUMP		STAINLESS STEEL JET PUMP	
Model	**EJM40**	**EJM80**	**EJS40**	**EJS80**
Qmax	3.0m^3/h	4.5m^3/h	3.0m^3/h	4.5m^3/h
Hmax	35m	45m	35m	45m
Voltage	230-240Vac 50Hz 1ph	230-240Vac 50Hz 1ph	230-240Vac 50Hz 1ph	230-240Vac 50Hz 1ph
P1(kW)	600W	1000W	600W	1000W
P2(kW)	370W	650W	370W	650W
Current (A)	2.2	3.9	2.2	3.9
IP	X4	X4	X4	X4
Insultation Class	F	F	F	F

NOTES

PENTAIR
FLOTEC

ECOJET

AUTOMATIC PUMP CONTROLLER



TECHNICAL CHARACTERISTICS	
Max Current	10A
Max Power	220-240V/50/60Hz - 1.5kW
Max Pressure	1.0 MPa
Max Ambient Temp	60°C
Protection Degree	IP65
Inlet & Outlet	G1"
Starting Pressure & Voltage	1.5 Bar

INSTALLATION

Pump's Pressure
Confirm the starting pressure and voltage of the controller before installation (please refer to nameplate and packaging, etc.) The controller must be installed vertically, and if the starting pressure is 1.5 bar, the height from the controller to the highest tap shall not exceed 13m, and the pressure produced by the pump must be 0.8 bar higher than the starting pressure.

Starting pressure (bar)	Using height (m)	Mini pump pressure (bar)
X (bar)	H10X-2 (m)	P=X+0.8 (bar)
1.5 (bar)	13 (m)	2.3 (bar)

Please refer to **page 7** for installation diagram.

STARTING THE UNIT

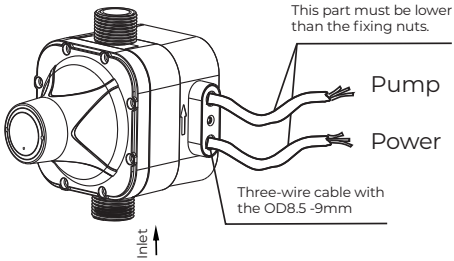
WARNING

Never take the electronic board out of the control box.

The wiring diagram inside the terminal block will show you how to make correctconnection. Wrong connection will destroy the whole electronic circuit.

Cable used for connection must be a three-wired one with compulsory grounding end. It shall have the outer diameter at 8.5mm min and 9.5mm max. One of the leading end of the cable must be lower than the position of the fixing screws while the cable being connected to the power as shown in the Fig.

The four screws on the panel board and the screw for fixing cable must be well fastened to avoid water entering into the control box and damaging the electronic circuit.



STARTING

When the unit is connected to the electrical network,the green led "Power On" lights up and the yellow led "On" (pump in operation) indicates that the pump has been started.

The pump continues to operate for dozens of seconds enabling the system to fill in the pipes and to reach the required pressure. If this lapse is insufficient,the red led "Failure" lights up.In this event, keep the "Restart" button pressed and wait, with a tap opened, until the red led is off.

Once released the button and closed the tap,the unit stops the pump at its maximum pressure.

FUNCTION

At the event of dry run or blockage of suction, etc, the failure LED will lid up and the controller will stop the pump's operation. Once water level in tank has resume to appropriate level or blockage has been removed, the system can be restarted by pressing the "Restart" button.

SAFETY WARNINGS

Always disconnect the appliance from the supply before assembling, disassembling or cleaning.

Appliances can be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved.

Pumps without indication that they are protected against the effect of freezing shall not be left outside during freezing weather conditions

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Cleaning and user maintenance shall not be carried out by children unless they are aged from 8 years and above and supervised.

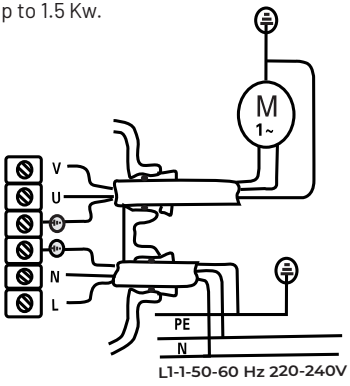
ATTENTION!
If the appliance or the supply cord is damaged, it must be repair or replace by a certified electrician.

TROUBLESHOOTING

SYMPTOMS	CAUSES DEPENDING ON THE UNIT	CAUSES NOT DEPENDING ON THE UNIT
The pump does not start	The electronic card is broken	- Voltage failure - Pump jammed - Electric cables inverted (Line/motor)
The pump does not stop	The electronic card is broken The flow detector is blocked in the upper position The reset button is blocked The pump does not provide sufficient pressure	Presence of leaks which are higher than the minimum flow 2 L/min
Intermittent pump working	The electronic card is broken The pump does not provide sufficient pressure	Presence of leaks which are lower than the minimum flow 2L/min
The pump is jammed	The electronic card is broken The pump provides a pressure which is lower than the restarting pressure	- Water failure - Suction problems

WIRING DIAGRAM

Wiring diagram for connection of single-phase 220V pumps up to 1.5 Kw.



PERIODICAL SAFETY INSPECTION

THE PUMPING PIPING SYSTEM REQUIRE SAFETY INSPECTION
EVERY **6 MONTHS** BY A **LICENSED PROFESSIONAL**.

DATE	ERROR / FAULT	RESOLUTION	MAINTENANCE PERSONNEL

PLEASE KEEP THIS SHEET AND PROVIDE WITH WARRANTY CLAIM

1-21 Monash Drive, Dandenong South, VIC 3175 Australia | 1300 137 344 | onga.com.au

0126