Bianco NXT FerroCORE

Self-priming Cast Iron Jet Pump

BIA-FERRO60CORE – 808397

Installation and Operation Manual



1. Introduction

Congratulations on your purchase of **Bianco NXT Ferro** cast iron, surface-mounted, 'jet' pressure system with **Bianco NXT CORE** pressure controller.

Ferro jet pumps incorporate an internal venturi which enables water to be drawn from below ground level and to 'self-prime'.

Your pump will be equally comfortable pumping from a tank, boosting low-pressure water mains or working in conjunction with a rainwater changeover device.

With the aim of getting you up and running smoothly, your pump is supplied pre-wired.

Connect a suction line to the inlet, connect the outlet piping to the pressure side of the pump, fill the pump with water and you'll be up and running in no time.

This user manual has some tips and advice to ensure your pump will operate reliably and provide excellent service throughout its working life.

2. Key Features

- Corrosion-resistant pump body, diffuser and impeller to ensure pump durability
- High quality mechanical shaft seal and high-quality bearings
- 240V single-phase TEFC motor with inbuilt auto-reset thermal overload to prevent the pump from overheating
- Includes fully electronic pump controller for automatic pump starting, stopping and restart after power loss and/or water loss
- Pump controller pre-set to start once the pressure falls below 2.2 bar
- Button-press user adjustment of start pressure
- Run-dry protection to prevent pump damage
- Pump control fitted and wired with plug-and-play leads so a licensed electrician is not required during installation.

This pump is ideal for supplying potable water to domestic installations and applications, either tank-fed or where a suction lift is required.

Approved for Drinking Water AS/NZS 4020	**Bianco NXT FERRO** pumps meet **AS/NZS 4020 Drinking Water Approval** and demonstrate compliance with requirements of Australia & New Zealand Standards of products that come into contact with water intended for human consumption. This approval also ensures that the water coming from the pump will not be contaminated by toxic materials or metals. It also means the water will not support the growth of micro-organisms and will not cause a change in taste or appearance.

3. Controller Quick Guide

Scan to access the complete NXT CORE user manual

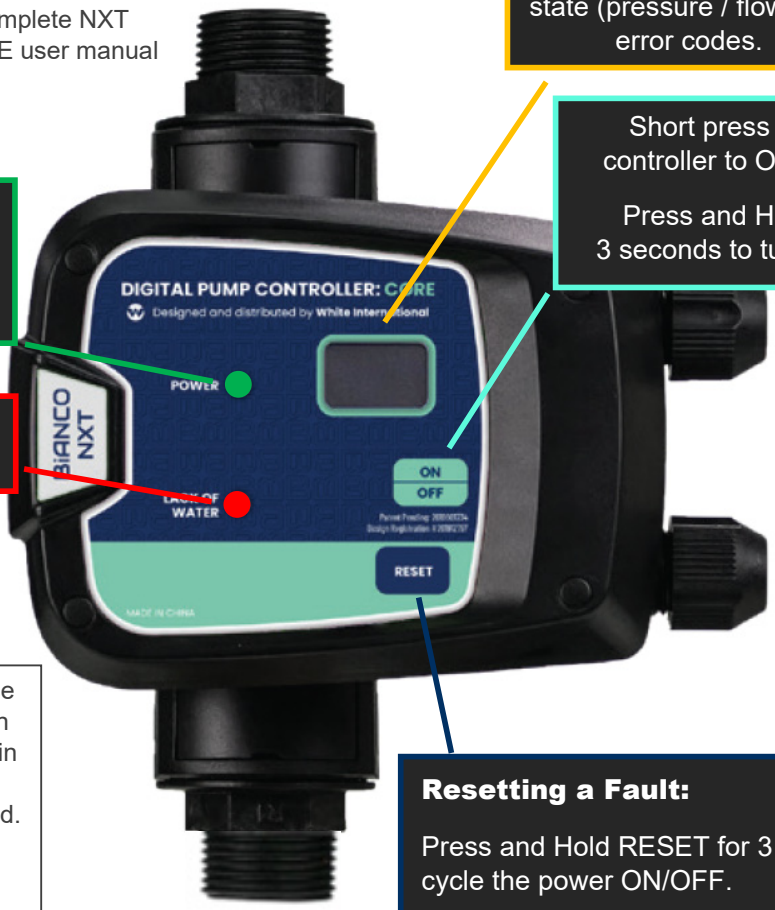
Display provides running state (pressure / flow) and error codes.

Short press to set controller to ON state.

Press and Hold for 3 seconds to turn OFF.

LED illuminated when there is power supplied to the controller.

LED indicating a lack of flow.

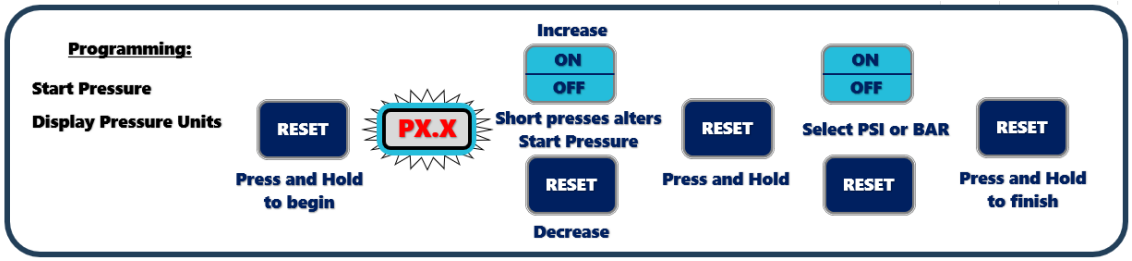


The most common cause for a pump failing to turn off is due to small leaks in the system creating a continuous water demand.

Check by closing the isolating valve on the outlet.

Resetting a Fault:

Press and Hold RESET for 3 seconds OR cycle the power ON/OFF.



Bianco NXT CORE Specs			
Input Voltage	240V 50Hz	**Ingress Protection**	IP55
Max. Current	10A 1.5kW (P2)	**Dimensions (mm)**	225L x 150W x 212H
Max. Pressure	10 bar	**Default Cut-in**	2.2 bar (adjustable)
Max. Operating Temp	60°C	**Power Cable**	1.2m PVC 10A plug

4. Contents

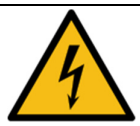
1. Introduction 2
2. Key Features 2
3. Controller Quick Guide 3
4. Contents 4
5. Symbols used in this manual 4
6. Warnings 5
7. Technical Specifications 6
8. Electrical Connections 6
9. Installation notes 7
10. Water supply below the pump inlet (suction lift) 9
11. Performance Curve and Pressure Tanks 10
12. Warranties – Terms and Conditions 11
13. Troubleshooting Guide 12

5. Symbols used in this manual

	Warning – Electrical safety
	Warning – Potential consequences of use outside of intended application(s). Includes environmental condition warnings.
	Mandatory warning
	Warning to disconnect power
	Read carefully

	**SAA Approvals** is accredited by the Joint Accreditation Service of Australia and New Zealand (JAS-ANZ) as a third-party certification body to issue of Certificates of Approval for declared and non-declared electrical equipment that has proven to comply with the safety requirements of the applicable Australian Standard.

6. Warnings

	Read the manual carefully before starting.
	Prior to starting installation or any maintenance the pump must be disconnected from the power supply and pressure relieved from the system including controller, pump and associated pipework.
	Any changes or modification to the wiring must be carried out by suitably qualified personnel.
	A qualified electrician should correctly size and install circuit breakers to protect the power supply. The fitment of additional surge protection is recommended.
	Never open the controller cover or pump terminal box cover while controller is connected to electrical supply.
	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 that they do not play with the appliance.
	To avoid excessive thermal shock to the motor the pump should not start more than 20 times in any one-hour period.
	Ensure that the installation will comply with all applicable local regulations.

Boosting Mains supply



Connecting this type of pump directly to mains water supply is not recommended. If mains pressure is poor, best practice is to install an isolating (break) tank.

Pumps supplying Mains Pressure Hot Water Systems:



An approved non-return valve should be fitted to the hot water inlet to protect the pump from back-pressure due to expansion.

Pumps supplying Low Pressure Hot Water Systems:



Fit a pressure-reducing valve to ensure pump maximum pressure doesn't exceed hot water cylinder rating.

7. Technical Specifications

	NXT FERRO60 CORE
Maximum head	45m
Maximum flow	58 lpm
Pump Start pressure	Preset 2.2 bar - User adjustable (digital adjustment 0.5 - 6.0 bar)
Pump stop	Flow less than 0.5 lpm
Input power	220 (-6%) - 240V (+6%) 1ph 50Hz
Motor	Asynchronous TEFC motor with in-built auto reset thermal overload
IP Rating / Insulation	Ingress Protection - IPX4 / F Class Motor Insulation
Motor Rating	0.6kW, 0.8hp
Max Amperage	4.5 amps
Start Capacitor	12 uF
Pump materials	Pump body: Cast Iron HT200 Jet/Venturi, Diffuser, Impeller: Noryl Glass Reinforced O Rings: Nitrile
Mechanical Seal	Carbon/Ceramic/Nitrile
Inlet/Outlet Size	Suction 1" BSPF / Discharge 1" BSPM
Pressure Tank	3 - 18 litre recommended for most efficient operation
Maximum pressure	8 bar
Working temp range	2 - 40°C
Power Cable	1.5m long 10 amp rated H05 flex with AS/NZ 3112 (Type 1) 3 pin male power plug
Weight	18 kg
	808397

8. Electrical Connections



Always use an electrical outlet that is protected by Residual Current Device (RCD) safety switch with a trip current of 30mA or less. A safety switch is required by Australian/New Zealand Standard AS/NZS 3000.



The pump is supplied with a 10A-rated lead and AS/NZS 3112 (Type 1) 3-pin male power plug for connecting to mains power.



Exercise care with the power cord. Route the cord carefully to avoid potential snagging or chafing hazards. Never lift the pump by the power cord or disconnect from the power supply by pulling the cord.

Avoid extension cords if possible. If an extension cord must be used ensure it is correctly rated.

9. Installation notes

Protect the pump and controller from rain and moisture and minimise exposure to extremes of heat and cold. Operating range 3 – 40°C.

Running the pump without water or allowing the pump to run dry will damage the mechanical seal and void the warranty.

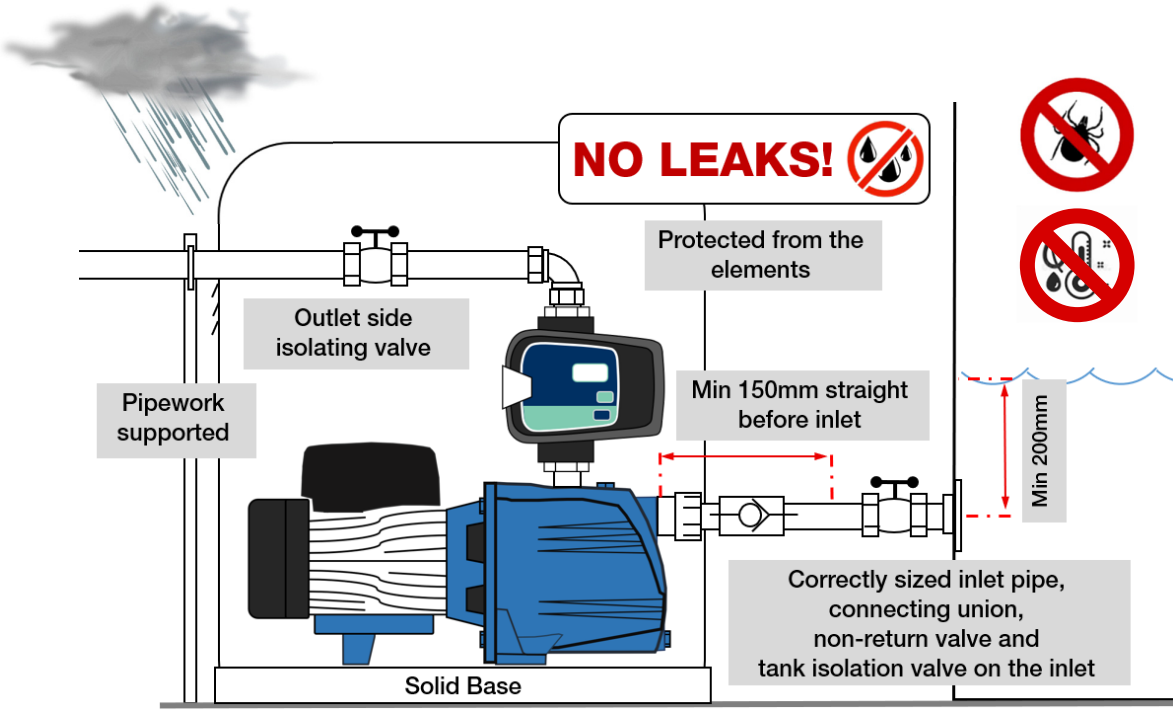
The pump is designed for use with clean water. Contamination including sand or mineral deposits may affect the operation of the pump and controller.

The pH of the water must be between 6.5 and 8.5.

This pump is not suitable for use with spa or pool water.

Avoid situations where the pump could be exposed to corrosive liquids or gasses, or to flammable materials, solvents, etc.

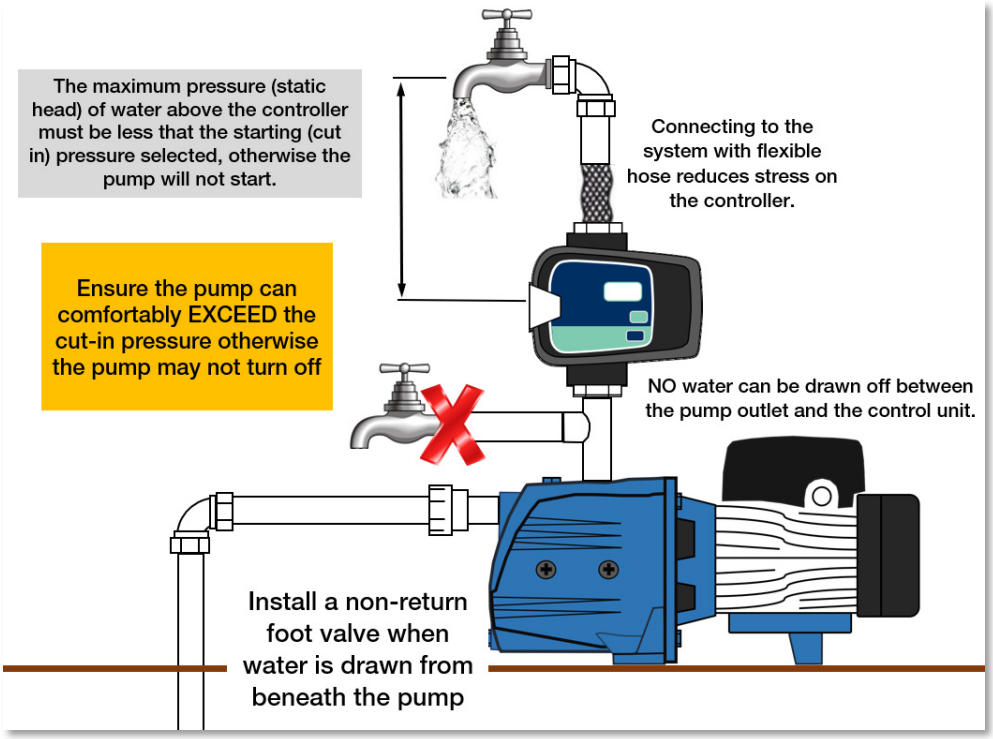
Fitment and replacement must be carried out by competent, skilled, qualified personnel.



Review Section 6 (warnings) prior to installing

- Choose a pump location with a firm base as close to your water source as possible and close to a suitable power supply.
- If solid fittings are used to connect to the pump, ensure the pump is mounted securely on a concrete tile, concrete base, or similar. If the pump is not mounted securely then flexible piping connectors are recommended.
- The pump should be housed in a weatherproof, free-draining, well-vented enclosure to protect it from the extremes of temperature, moisture, flooding, chemicals, vermin and insects, dust, etc.
- Before installation, inspect the pump for any shipping damage.
- Avoid strain on the pump casing and controller by supporting your pipework.

System supplied pre-wired and pre-set by the manufacturer at a cut-in pressure of 2.2 bar. The controller start pressure can be manually adjusted (range 0.5 – 6.0 bar).



The intake suction piping is the most critical part of any installation. Errors or air leaks will cause significant issues for performance and pump reliability.

Ensure the inlet pipe is the same size or larger than the inlet port.

Before powering the controller, check the suction piping. Ensure that the pump and suction line are primed (filled) before starting the pump the first time.

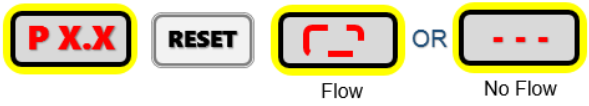
Dry operation causes irreparable damage to the mechanical seal and voids the warranty.

When the unit is connected to the electrical network, the **green** LED "Power On" illuminates.

A short press of the ON/OFF button sets the controller in a run state and supplies power to the pump.



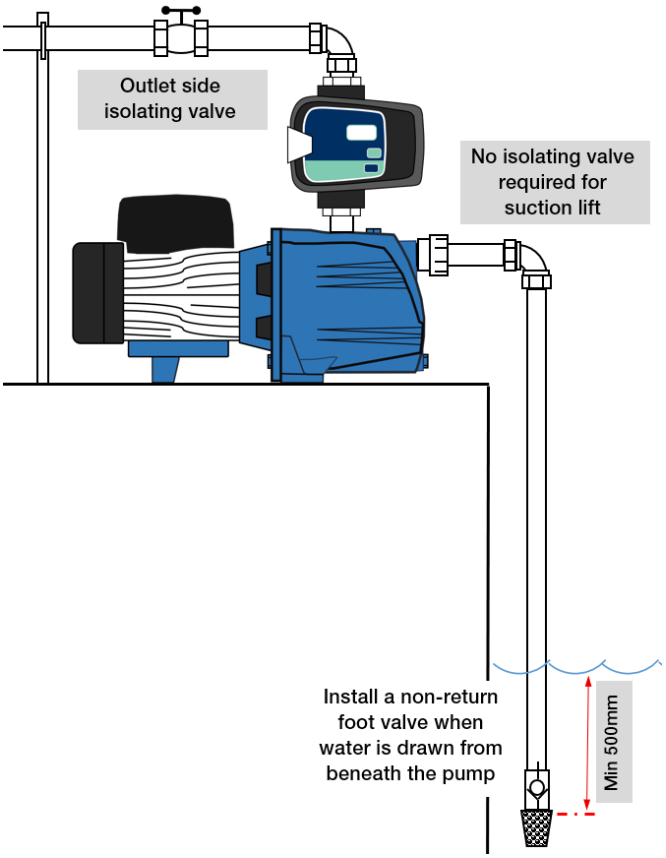
Short presses of the RESET button rotate the display indication from the current system pressure to operational status.



If the controller shuts down and the **red** 'FAILURE' LED lights up, press the restart button, with a tap opened, until the red LED goes off. It may be necessary to refill the pump body and suction piping.

Close the tap, and the controller stops the pump at its maximum pressure.

10. Water supply below the pump inlet (suction lift)



Reminders of best practice

Suction pipes drawing upwards more than 1m require a non-return foot valve and an intake screen.

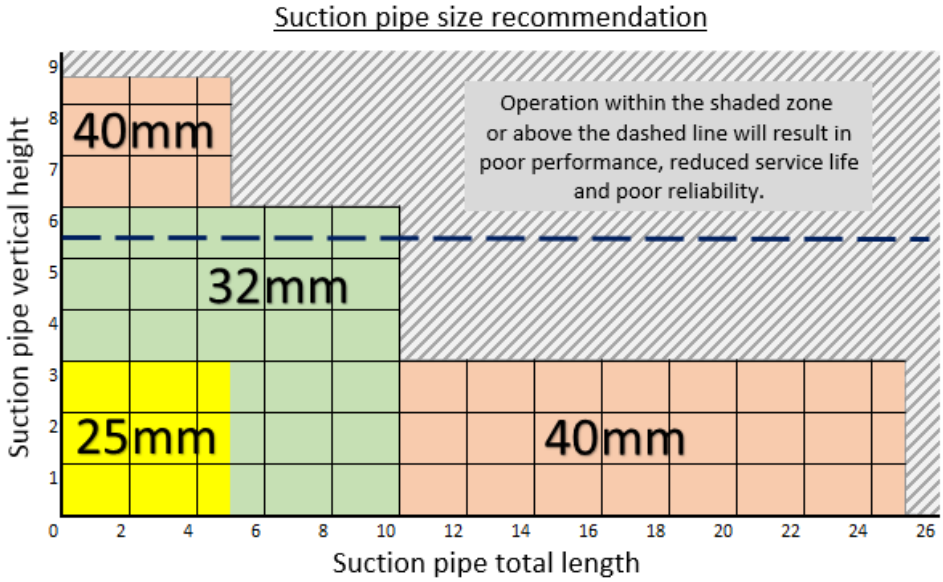
Ensure there is at least 500mm of water above the intake at all times.

Keep the intake screen at least 100mm above the bottom of the tank or well.

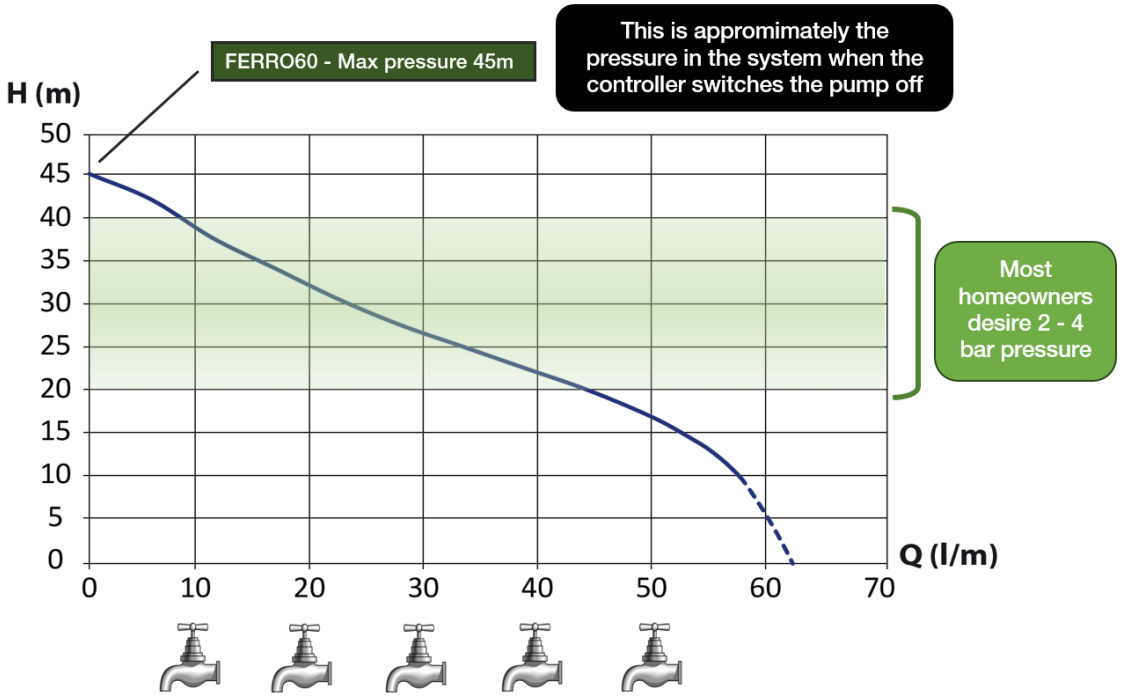
Avoid pipework which could trap air.

Use the Suction Pipe Recommendation chart to select the correct inlet pipe size.

Note that intake pipes which are too small, long, or have to lift significantly, result in a substantial reduction from the pump-rated duty.



11. Performance Curve and Pressure Tanks

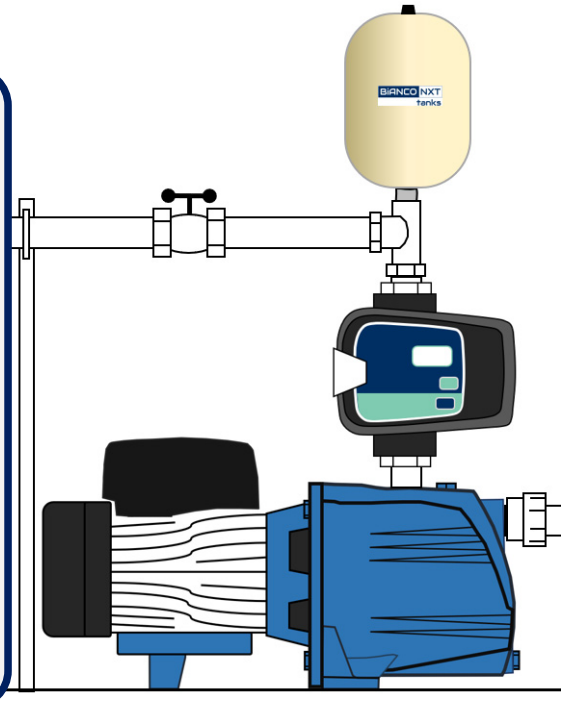


A pressure vessel holds an amount of stored, pressurised water and reduces pump starts in the event of small draw-offs or leaks.

In domestic situations, a 3, 8 or 18L tank will extend the life of the pump and save on energy costs.

Fewer pump starts equals:

- **Less wasted energy**
- **Lower power bills**
- **Longer pump life expectancy**



Set the pressure tank gas pressure to 2/3rds of the expected max. system pressure:

Ferro60 = **2.97 bar**

12. Warranties – Terms and Conditions

This warranty is given in addition to the consumer guarantees found within the Australian Competition and Consumer Act 2010 (Cth) for goods purchased in Australia and the Consumer Guarantees Act 1993 NZ for goods purchased in New Zealand:



1) White International Pty Ltd / White International NZ Ltd (White International) warrant that all products distributed are free from defects in workmanship and materials, for their provided warranty period as indicated on the top or opposite side of this document. Subject to the conditions of the warranty, White International will repair any defective products free of charge at the premises of our authorised service agents throughout Australia and New Zealand if a defect in the product appears during the warranty period. If you believe that you have purchased a defective product and wish to make a claim under this warranty, contact us on our Sales Hotline on 1300 783 601, or send your claim to our postal address or fax line below and we will advise you as to how next to proceed. You will be required to supply a copy of your proof of purchase to make a claim under this warranty.

2) This warranty excludes transportation costs to and from White International or its appointed service agents and excludes defects due to non-compliance with installation instructions, neglect or misuse, inadequate protection against the elements, low voltage or use or operation for purposes other than those for which they were designed. For further information regarding the suitability of your intended application contact us on our Sales Hotline on 1300 783 601. If you make an invalid claim under this warranty, the original product will be sent back to you unrepaired.

3) This warranty refers only to products sold after the 1st January 2012, and is not transferable to another product type and only applies to the original owner, purchaser or end user, and is in addition to the consumer guarantees found within the Competition and Consumer Act 2010 (Cth) for goods purchased in Australia and the Consumer Guarantees Act 1993 (NZ) for goods purchased in New Zealand.

4) Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

5) To the fullest extent permitted by law, White International excludes its liability for all other conditions or warranties which would or might otherwise be implied at law. To the fullest extent permitted by law, White International's liability under this warranty and any other conditions, guarantees or warranties at law that cannot be excluded, including those in the Competition and Consumer Act 2010 (Cth), is expressly limited to: (a) in the case of products, the replacement of the product or the supply of equivalent product, the payment of the cost of replacing the product or of acquiring an equivalent product or the repair of the product or payment of the cost of having the product repaired, is at the discretion of White International or a 3rd party tribunal elected under the Competition and Consumer Act 2010 (Cth) for goods purchased in Australia and the Consumer Guarantees Act 1993 (NZ) for goods purchased in New Zealand; and

6) To the fullest extent permitted by law, this warranty supersedes all other warranties attached to the product or its packaging.

7) In the case of services, supplying the services again or the payment of the cost of having the services supplied again, is at the discretion of White International or a 3rd party tribunal elected under the Competition and Consumer Act 2010 (Cth) for goods purchased in Australia and the Consumer Guarantees Act 1993 (NZ) for goods purchased in New Zealand.

8) Our warranty commences from the date of purchase of the above-mentioned products. Proof of purchase is required before consideration under warranty is given.

Print a copy of this page and record your date of purchase in the space below.
Retain the printed copy along with your purchase receipt for your records.

Date of Purchase ..... **Model Purchased** .....

13. Troubleshooting Guide

Experience has shown that the vast majority of issues encountered by users are not directly related to the pump or the controller.

Ensuring pump installation basics are done well is very important. Leaks on the discharge side or (air) leaks in the suction line can result in unusual behaviours.

	POSSIBLE CAUSE	POTENTIAL SOLUTIONS
The pump won't start and makes no noise	1. No electricity 2. Fuses or RCD tripped 3. Internal motor fault 4. The static head pressure is greater than the cut in setting (applies when commisioning) 5. Controller has sensed dry run and is its auto restart cycle (Failure light slowly flashing)	1. Check the power supply *Is the power LED on the controller illuminated?* 2. Fuses or RCD tripped may indicate more serious problems 3. Contact an expert to check the motor 4. Static water head above the controller must be less than 20m 5. Press the controller reset button
The pump doesn't start but makes a noise	1. Motor not free to turn i.e. Internal jamming 2. Faulty Capacitor	1. Check whether pump can rotate freely 2. Contact an expert to check/replace capacitor
The pump runs but there is no flow or only poor flow	1. Valves closed 2. Air entering suction line (loss of prime) 3. The water level may be too low 4. Pump may be worn or damaged 5. Blockages in the pump, suction or discharge 6. In-line filters blocked (if fitted) 7. The piping may be too long or too small	1. Check suction and discharge isolating valves 2. Check for leaks and ensure all joins or fittings are sealed 3. Check water availability 4. Contact your service agent for repair 5. Contact your service agent for repair 6. Clean any filters/strainers in the system 7. Contact your pump professional
The pump runs. There is flow but poor pressure	1. Excessive flow demand 2. Total head requirement too great for the pump 3. Pump may be worn or damaged 4. Air entering suction line reducing performance	1. Check that the pump selected is correct for the application 2. Check the pump specification 3. Contact your service agent 4. Ensure the suction line is sealed correctly
Pump cycling on and off	1. Small water draw off or leak 2. Leak in suction or discharge line 3. Contamination in the controller	1. Check for small leaks i.e. taps or cistern 2. Check for leaks including suction line non return valve 3. Contact your service agent to inspect
Pump runs intermittently	1. Overheating and thermal protection tripping	1. Ensure the water temp is less than 40 deg C Ensure sufficient airflow to cool the motor *Note that low voltage can cause the motor to overheat*
Pump vibrates and is noisy	1. Incorrectly mounted/fixed 2. Internal blockage causing impeller imbalance 3. If the flow requirement is greater than the pump is capable of it will cavitate. *Cavitation sounds like gravel inside the pump*	1. Ensure the pump is solidly attached to a base 2. Contact your service agent 3. Reduce the water demand to see if the noise disappears. Ensure the suction pipe is sized correctly A different pump model may be required Contact your service agent
Water leaking from the centre of the pump	1. The mechanical seal is leaking	1. Contact your service agent for repair
	POSSIBLE CAUSE	POTENTIAL SOLUTIONS

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