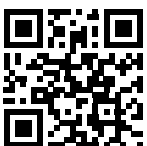




*Providing Pumping Solutions*

# **Packaged Pump Station HOMEOWNERS MANUAL**



## OWNERS DETAILS / RECORDS

<b>SUPPLIER/AGENT</b>	
<b>DATE PURCHASED</b>	
<b>OWNERS NAME</b>	
<b>OWNERS ADDRESS</b>	
<b>PUMP STN MODEL</b>	
<b>PUMP STN S/N°</b>	
<b>PUMP MODEL</b>	
<b>PUMP S/N°</b>	
<b>DRAINLAYER OR PLUMBER DETAILS</b>	
<b>ELECTRICIAN DETAILS</b>	

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## PACKAGED PUMP STATION - SYSTEM DESCRIPTION

- You are now the owner of a Fastflo Packaged Pumping Station. This station reflects a high level of engineering excellence and is designed using best available technology. It is for use where site conditions will not allow the gravity disposal of raw sewage, effluent, trade waste or storm water.
- Standard packages are approved by all relevant authorities and comprise of a sealed holding tank with single or twin submersible pumps installed in such a way as to enable easy removal and reinstallation without the need to enter the chamber.
- The pump station is supplied as a full integrated package system. c/w PE holding tank, submersible pump, pipework and valves, control panel and HL alarm. These units use conventional equipment which can be installed by any qualified tradesmen as appropriate e.g. plumbers and electricians.
- Pump(s) are supplied with either suction strainers, open-type solids handling impellers, or with an integral cutting device designed to reduce solids size. Pumps are automated by inbuilt float switches or by separate float switches wired to an electrical control panel mounted adjacent to the installation. Faults are indicated by a red flashing alarm light and an audible sounder.
- A check valve is fitted to each pump to prevent backflow into the chamber when the pump finishes its cycle. In a dual pump system, it also prevents the duty pump discharging back through the standby pump. The ball valve(s) isolates the pump station from the rising main for maintenance purposes.
- The pump station is designed to be fully automatic and gives reliable unattended operation. However, we strongly recommend regular programmed maintenance be carried out to ensure the equipment is maintained in serviceable condition. To facilitate cleaning of equipment and pit walls, a hose reel should be provided adjacent to installation. (refer to annual maintenance schedule section)

## ADVANTAGES

### WHAT MAKES FASTFLO PACKAGED PUMP STATIONS SUPERIOR TO OTHERS?



Have over 2300 Packaged Pumping Stations installed in New Zealand – that means experience next to none other.



Use holding tanks that are manufactured in New Zealand to meet New Zealand conditions.



Have been installed in most areas of New Zealand and are recognized by local councils to be a superior product.



Are well recognized in the Plumbing and Drainlaying industry to be a superior product.



Are manufactured using only top quality materials and components.



Are manufactured in accordance and comply with AS/NZ1546 : 1998 and NSF/ANS146 : 2007



Are covered by the following warranty:-  
Submersible Pump – 24 months  
Polyethylene Tank – 20 years

## WHAT NOT TO DISCHARGE INTO THE PUMPSTATION

You **must not** put the following items into your toilet which are likely to end up in your Pump Station and cause problems:

- Condoms
- Sanitary Napkins, Tampons
- Diapers, socks, wet wipes, rags or any towels or other material
- Face Cloths
- Metal, Plastic Objects
- Kitty Litter, Gravel, Sand, Aquarium Gravel
- Seafood Shells
- Flammable Materials
- Lubricating Oil, Grease and/or Fats
- Gasoline, Diesoline
- Strong Chemicals, Explosives
- Paints, Solvents, Acids or Alkalis

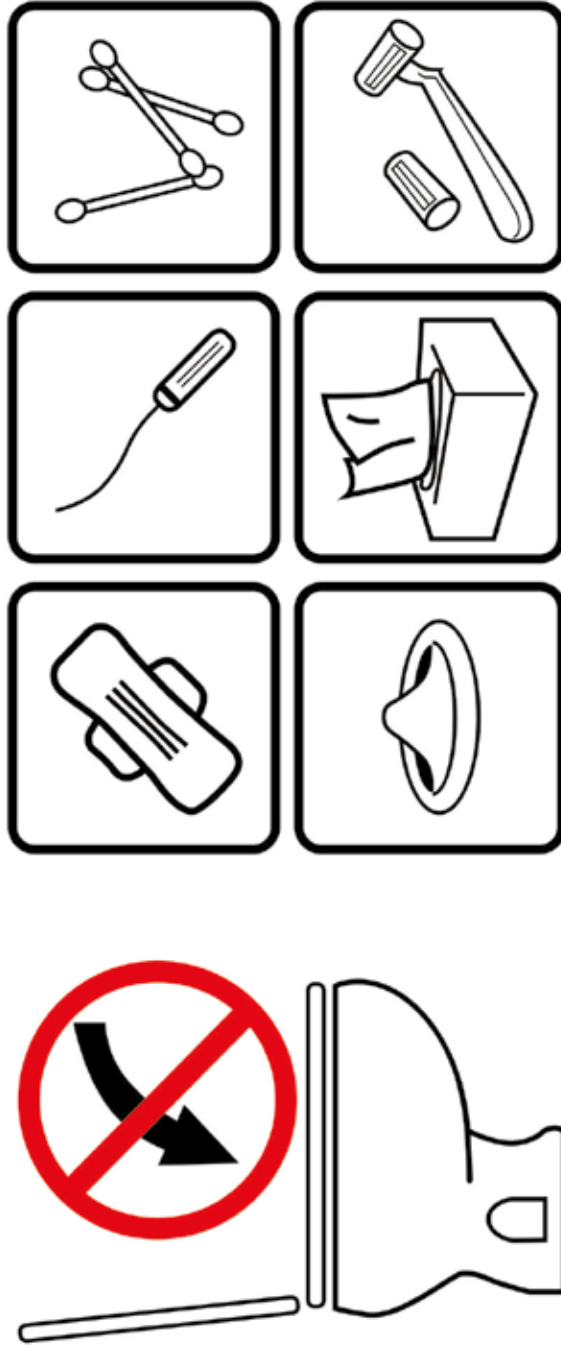
If there is a **blockage** or **damage** to the pump, and any of the above items are found to be the cause, any associated costs will not be **covered** by our **guarantee**.

(We would suggest you have a container beside the toilet to take these items).



Note: See next page for full size print version.

**WARNING! This toilet is connected to a pump.**  
To avoid pump damage / blockage, please do not put the following items down the toilet.



## HIGH LEVEL ALARM PROCEDURE

- If the alarm sounds, there are a few checks that could be done before calling a serviceman or Fastflo Pump Systems, as follows:-
- Locate the control box for the pump station. Normally this would be on the house adjacent to the pump station. This box has a red indicator light and a green indicator light located on the front cover.
- The green light indicates that the power to the pump station is ON (this green light is always on under normal conditions). If it is not ON, it would indicate that the pump MCB on the main switchboard has tripped. A most likely cause is moisture having entered the electrical system and causing a short circuit.
- The red light indicates that a high level alarm is present, and most likely that the pump has detected ragging / foreign matter which has jammed the pump. The pump overload is a clear button on the side of the control box. An attempt could be made to reset it by pressing in. If it pops out again, then it's likely to be a pump blockage. NB: Blockages are NOT covered by warranty.
- The serial number of the tank is stamped into the black lid of the pump station. It is helpful to have this information available for the serviceman or Fastflo Pump Systems, as it tells us the manufacturing date and model of the pump. (Typical serial number reads e.g. 2300-05-16)

## ANNUAL MAINTENANCE SCHEDULE

- We recommend that the pump station and the components should be checked and flushed out on a regular basis (6 months minimum – 12 months maximum). Open pump station lid and lift pump float to manually pump tank right down to the bottom. Hose down walls of tank, including pump float, and high level alarm float to remove any fat build up. Fill up both with cold water and discharge into the pump station to allow pump and any residue at bottom of pump station to be flushed out.
- In high grease applications, tank should be degreased on a regular basis by a waste removal contractor. We recommend that the pump station be filled with cold water (say ¼ full) and check operation of pump float by lifting up manually to ensure that it pumps out. Check HL alarm float switch by lifting up manually and get someone to check inside house that alarm red light and buzzer has activated – if OK then mute the alarm and then reset to normal mode.
- We recommend that the Greasement Fat Bag be replaced on a regular basis. Check the Greasement/Fat Bag in the tank still has enough mass for further time. If it is mostly or all dissipated replace the Greasement/Fat Bag with a new one (refer to separate sheet on Greasements attached)
- We recommend that you get a serviceman to remove the pump once every two years and check the pump electrics and the oil level in the pump, and the pumps mechanical seals and pump floats to ensure these are operating correctly.
- If you will be away from your property for more than 48 hours and there will be no one at home we suggest the pumpstation should be flushed out before you leave. This will avoid potentially offensive odours from the system while you are away. It is suggested that you run clean water into the pumpstation until the pump activated and runs for about 30 seconds. Filling the bathtub and then emptying it will achieve this. Do not turn off the power to the pumpstation, even if you are turning off the power to the rest of your property, in case there are any leaking taps which might fill the storage vessel.

## GREASEMINT - GREASE & SCUM DIGESTER

**Product Code: GMINT**

- ✓ Pump stations
- ✓ Sewer lines
- ✓ Waste water treatment plants
- ✓ Grease traps
- ✓ Septic tanks



### Typical breakdown process

The existing fat should gradually break down over the first four to six weeks. It will work from the liquid interface up towards the top crust. Therefore you won't see a lot happening from the top to start with but there will be a continuing thinning of the blanket going on until the top starts to break and wet up.

Pump station cleans will be much easier with any remaining fat becoming dry and quickly removed with a flick of a hose.

### What are GREASEMINTS?

- Designed to continually release powerful fat and scum digesting bacteria.
- Fat and grease in any waste streams accumulate as the waste cools. Fat deposits become very sticky and quickly build to a size that reduces grease trap efficiencies, plus upsets the function of switch gear. These deposits are also responsible for the production of dangerous and corrosive gases.
- **Greasemints** will reduce the pollutants in the waste stream as well as making pump maintenance easier and greatly reducing odours in the waste stream.
- Consistent use of **Greasemints** can reduce the number of times that grease traps will need to be pumped out.

### Suggested dose rates

- **Medium Fat Loadings**  
1 **Greasemint** every 4 - 6 months (depending on condition of pump station)
- **High Fat Loadings**  
1 **Greasemint** every 2 - 3 months (depending on condition of pump station)

These dose rates may be reduced as control is gained.  
Contact your Fastflo Consultant for more detailed dose rate recommendations tailored to your specific situation.

#### RE-ORDER INFORMATION

You can order using the order form on reverse side. Order options are as follows:

- 1. ORDER ONLINE**  
[www.fastflo.co.nz/greasemint](http://www.fastflo.co.nz/greasemint)
- 2. CALL OUR FREEPHONE**  
0800 327 835 (0800 FASTFLO)
- 3. EMAIL US**  
[sales@fastflo.co.nz](mailto:sales@fastflo.co.nz)
- 4. FAX US**  
(04) 237 8174

## GENERAL SPECIFICATION

**FASTFLO PUMP STATION MODELS:** MINI VX/CR/GR/GR-PLUS SERIES, 1000 VX/CR/GR/GR-PLUS SERIES, 1500 VX/CR/GR/GR-PLUS SERIES, 2000 VX/CR/GR/GR-PLUS SERIES

Each pump station is supplied as a fully integrated packaged system, including:-

### HOLDING TANKS

1 only Polyethylene rotationally-moulded holding tank with exterior circumferential ribs, designed for below-ground installation. Tank is complete with 600 x 600mm square polyethylene pedestrian-rated access lid.

- **Tank Size (MINI Model):** 850mm high x 800mm diameter  
**Total Tank Capacity:** 330 Litres (nominal)
- **Tank Size (1000 Model):** 1700mm high x 1100mm diameter  
**Total Tank Capacity:** 1200 Litres (nominal)
- **Tank Size (1500 Model):** 2100mm high x 1100mm diameter  
**Total Tank Capacity:** 1600 Litres (nominal)
- **Tank Size (2000 Model):** 2600mm high x 1100mm diameter  
**Total Tank Capacity:** 2000 Litres (nominal)

### PUMPS

1 only FASTFLO single-phase submersible pump, free-standing, attached to nylon rope. Each pump is complete with control float switch.

Pump Models:

**VX – F-21U(F)** Vortex 0.75kW 5.3 Amps

**CR – F-21P(F)** Cutter Pump 0.75kW 5.3 Amps

**GR – 32GF21.0(F)** Grinder 1.0 kW 6.4 Amps

**GRPLUS – 32GF21.5(F)** Grinder 1.5 kW 10.2 Amps

### PIPEWORK & VALVES

VX & CR: Pre-fabricated pump pipework and fittings are in 50mm PVC pressure pipe.

1 only 50mm full-flow ball non-return valve and 1 only 50mm full-flow isolating valve and quick-release coupling are supplied with the pipework.

GR & GR PLUS: Internal pipework and valves (as described above) are in 32mm, as the Grinder pump has a 32mm diameter outlet. Discharge outlet size is 40mm.

### ELECTRICAL CONTROLS

1 only wall-mounting polycarbonate control box is supplied with each pump station, incorporating an external overload reset button and connections for power supply, pump, alarm float and alarm plate. Indicator lights on the control box are green for “power ON” indication and red for “high level alarm” indication and also a mute switch on the front overlay. The audio-visual alarm plate incorporates LED indication for “power ON” and “high level alarm”, buzzer and mute switch.

## MINI SERIES GENERAL

### DESCRIPTION

- Compact in-ground fully automatic single pump stations designed for pumping sewage and wastewater for smaller sanitary applications in situations where gravity discharge is not feasible
- There are 4 different pump types available to suit different site conditions & applications
- Dual pump options also available

### CONSTRUCTION/FEATURES

- Tough PE Holding tank - 330 Litre c/w sealed bolted PE lid (trafficable rated lid option available if required)
- Robust, Heavy duty sewage pumps - either Vortex (VX), Cutter (CR), or Grinder (GR) options available
- Lightweight - easily handled & installed by 1 man
- Space Saving - all below-ground installation
- Sealed Unit - No ground water infiltration or leakage
- Labour Saving - on site costs are minimal as all components are supplied including pipework, valves, control box, and HL Alarm
- 2 year pump warranty



FASTFLO MINI  
800mmØ x 850mm high (330 Ltrs max)

### APPLICATIONS

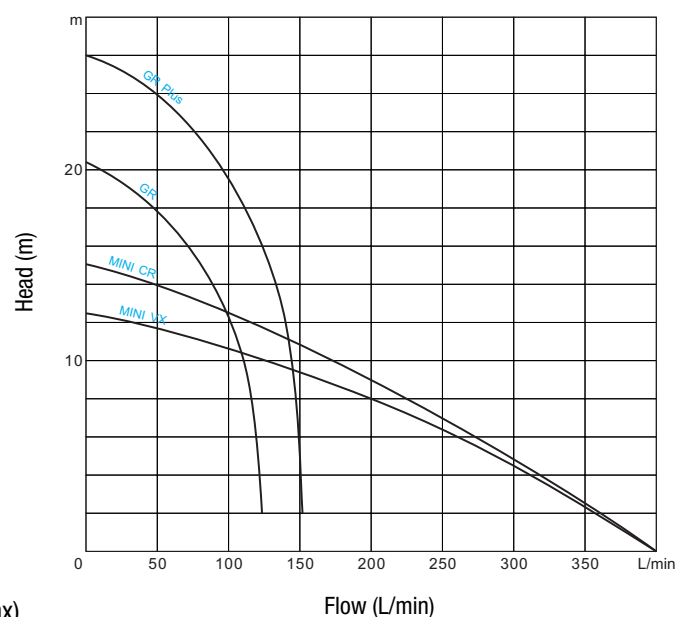
- Basement Ensuites/Bathrooms
- Granny Flats/Beach Houses/Baches
- Bathrooms/Laundries/Kitchen
- Lift Pits/Carparks
- Restaurants/Lunch Bars
- Commercial Kitchens
- Toilets, Showers, Washhand Basins, Vanity Units

**NB:** The Mini Series units are not designed for whole house situations. We do not guarantee that these pumps will handle sanitary products

Refer to Technical Overview on pump types page 46

Model	Motor size	Voltage	Solids Passage	Outlet size
Mini VX	0.75kW	230 V	35mm	50mm
Mini CR	0.75kW	230 V	40mm	50mm
Mini GR	1.0kW	230 V	N/A	32mm
Mini GR Plus	1.5kW	230 V	N/A	32mm

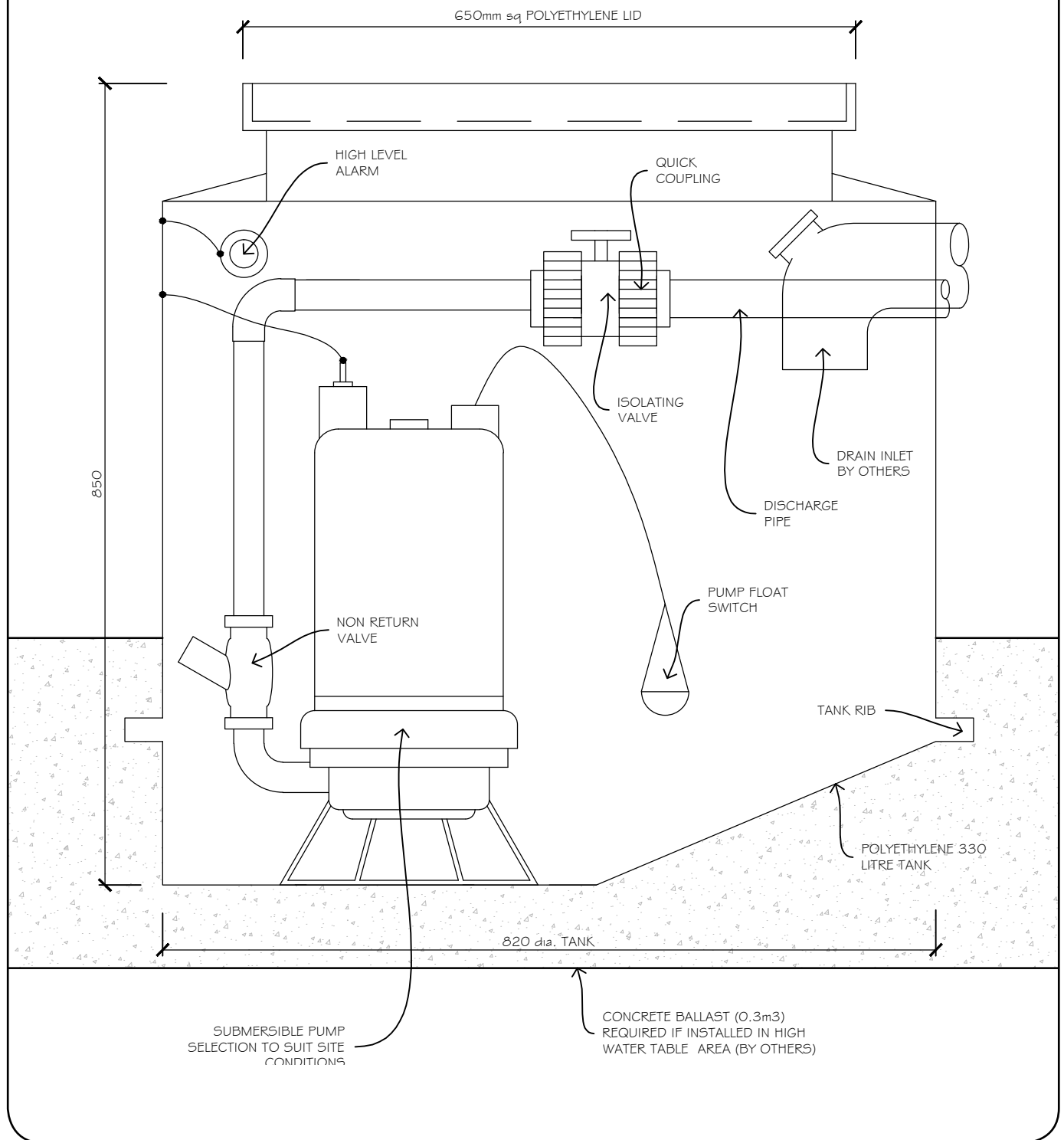
### HYDRAULIC DATA



## MINI SERIES DIAGRAMATIC DRAWING

(330 Ltr Tank Capacity)

NB: Tank must be vented



## 1000/1500/2000 SERIES – GENERAL

### DESCRIPTION

- Compact in-ground fully automatic single pump stations designed for pumping sewage & wastewater in whole house situations where gravity discharge is not feasible
- Dual pump options also available

### CONSTRUCTION/FEATURES

- Tough PE Holding Tank - 1000Ltr/1500Ltr/2000Ltr options c/w Sealed Bolted PE Lid (trafficable rated lid option available if required)
- Robust, Heavy duty sewage pumps - either Vortex (VX), Cutter (CR), or Grinder (GR) options available
- Lightweight - easily handled & installed by 2 men
- Space Saving - all below ground installation
- Sealed Unit - No ground water infiltration
- Labour Saving - on site costs are minimal as all components are supplied, including pipework, valves, control box, and HL alarm
- 2 year pump warranty/20 year tank warranty

Fastflo 1000

1.1mØ x 1.7m High

Fastflo 1500

1.1mØ x 2.1m High

Fastflo 2000

1.1mØ x 2.6m High



1000 SERIES

1500 SERIES

2000 SERIES

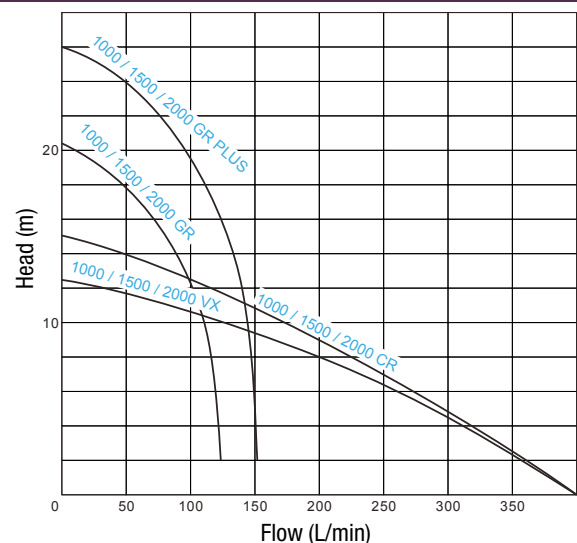
### APPLICATIONS

- Individual dwellings/houses
- Kindergartens/Schools/Colleges
- Hotels/Motels/Tourist Complexes
- Caravan Parks/Picnic Areas
- Sports Clubs/Golf Clubs/Boat Shed Facilities
- Medical Centres/Hospitals
- Industrial Complexes

**NB: We do not guarantee these pumps will handle sanitary products**  
 Refer to Technical Overview on pump types on page 46

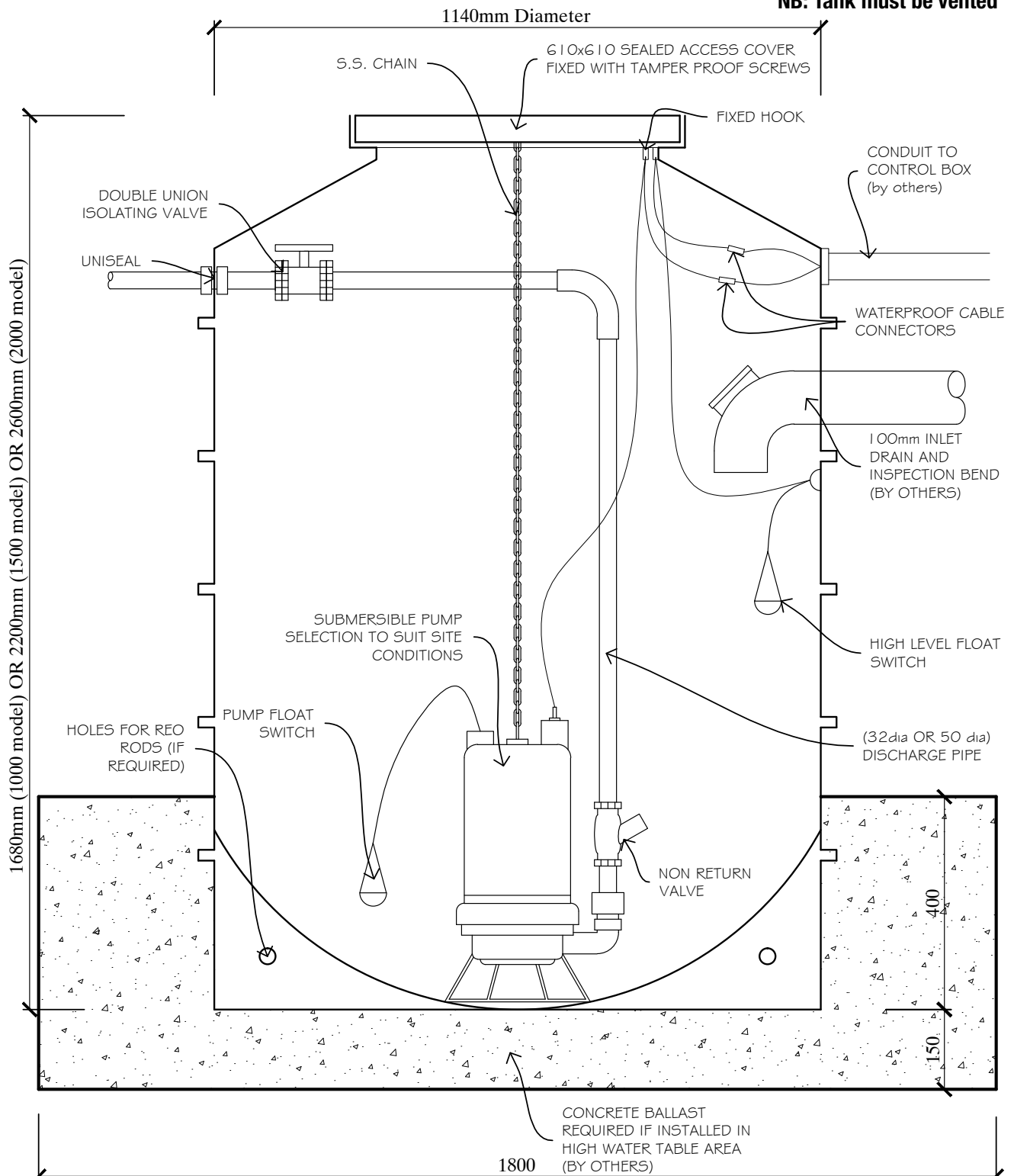
Model	Motor size	Voltage	Solids Passage	Outlet size
1000 VX	0.75kW	230 V	35mm	50mm
1500 VX				
2000 VX				
1000 CR	0.75kW	230 V	40mm	50mm
1500 CR				
2000 CR				
1000 GR	1.0kW	230 V	N/A	32mm
1500 GR				
2000 GR				
1000 GR PLUS	1.5kW	230V	N/A	32mm
1500 GR PLUS				
2000 GR PLUS				

### HYDRAULIC DATA



# 1000/1500/2000 SERIES DIAGRAMATIC DRAWING

**NB: Tank must be vented**



## PUMP STATION LIDS



POLYETHYLENE - STD		PEI
Model	Size	Description
PE 1	610mm x 610mm	Standard Pedestrian Rated PE Lid
SSFX	N/A	S/S Fixing Set c/w Sealed Washer (For PE1 Lid)

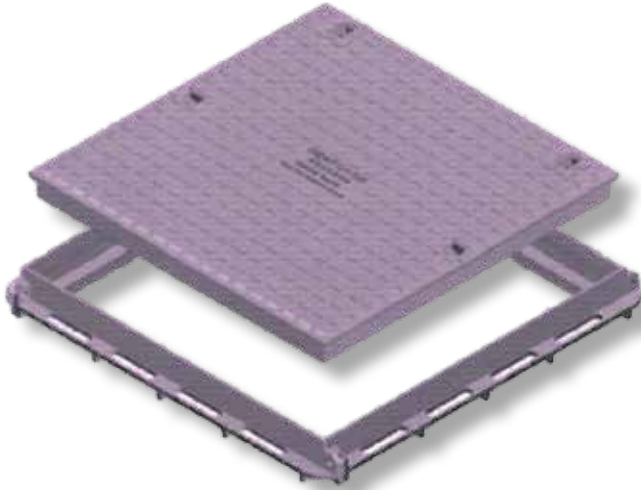


ALUMINIUM SAFETY GRILLE		ASG
Model	Size	Description
ASG	540mm x 540mm	Aluminium Safety Grille which fits inside pump station opening



GALVANISED LID/FRAME		GLF
Model	Size	Description
GLF	610mm x 610mm	5 tonne Loading Light Traffic Rated

## PUMP STATION LIDS



CAST IRON – LID/FRAME		DRC
Model	Size	Description
DRC66AB	615mm x 615mm	AB Rated – 53kN Light Duty Traffic Rated
DRC66CD	615mm x 615mm	CD Rated – 140kN Heavy Duty Traffic Rated



GALVANISED WEB GRATING		GWG
Model	Size	Description
GWG-A	610mm x 610mm	Pedestrian Rated (Class A)
GWG-B	610mm x 610mm	Pedestrian Rated (Class B) - Includes Frame
GWG-C	610mm x 610mm	Heavy Duty Rated (Class C) - Includes Frame



ALUMINIUM HINGED/LOCKABLE		ALH
Model	Size	Description
ALH-SL	610mm x 610mm	Hinged Lockable Aluminium Lid (Single)
ALH-DL	1210mm x 610mm	Hinged Lockable Aluminium Lid (Double)

## VORTEX PUMPS – GENERAL

### DESCRIPTION

- Robust, heavy duty submersible vortex pumps for solids handling applications
- Manual or automatic models available (See specs)
- Single Phase available only

### CONSTRUCTION/FEATURES

- Quality cast iron/stainless steel construction designed for more serious pumping applications
- Cast iron vortex non-clogging impellers
- Double mechanical seal in oil chamber plus lip seal
- 10m long neoprene oil resistant lead & 3 pin plug
- Free standing or guide rail mounted option available
- Thermal motor overload - Auto Reset
- 2 year warranty

### APPLICATIONS

- Domestic, Commercial, Industrial sewage & wastewater applications
- Public facilities, shopping malls, hotels & restaurants
- Septic tanks/Pump Stations/Lift Pits
- Stormwater pumping/Runoff

**NB:** We do not guarantee that these pumps will handle sanitary products



F-05U  
F-21U



F-31U

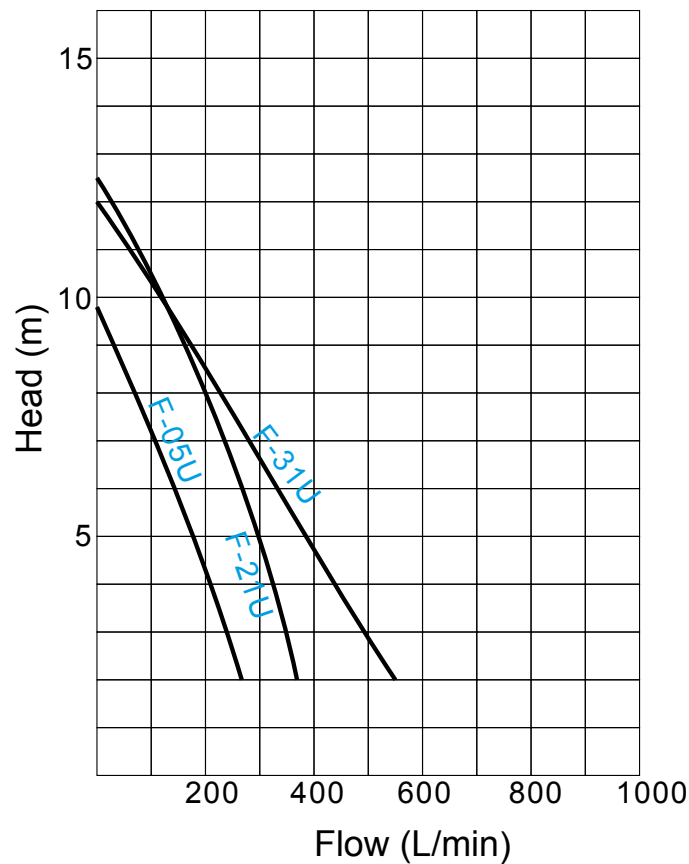
## VORTEX PUMPS – TECHNICAL

### PERFORMANCE SPECIFICATION

Model	Power HP(kW)	Discharge Inch(mm)	Phase Ø	Start Method	Head m	Capacity		Weight kg 1Ø/3Ø	Solid Passage mm	Dimension (mm)		
						m³/min	m³/h			Length	Width	Height
F-05U	1/2(0.4)	2"(50)	1	Capacitor	6	0.15	9	16	35	237	154	427
F-21U	1(0.75)	2"(50)	1	Capacitor	8	0.2	12	18	35	237	154	427
F-31U	1(0.75)	3"(80)	1	Capacitor	6.5	0.3	18	19	30	278	173	457

The above hydraulic data figures are at a given duty point. They are not the maximum pump performances.  
 - (F) Denotes pump has a float switch (automatic)

### HYDRAULIC DATA



## CUTTER PUMPS – GENERAL

### DESCRIPTION

- Robust, heavy duty submersible cutter pumps for solids handling applications Eg Sewage, Wastewater
- Single & Three Phase options available

### CONSTRUCTION/FEATURES

- Quality cast iron/stainless steel construction designed for more serious pumping applications
- Cast iron impeller & tungsten carbide cutting tip
- Double mechanical seal in oil chamber plus lip seal
- 10m long lead & 3 pin plug
- Free standing or guide rail mounted option available
- 2 year warranty



F-21P

### APPLICATIONS

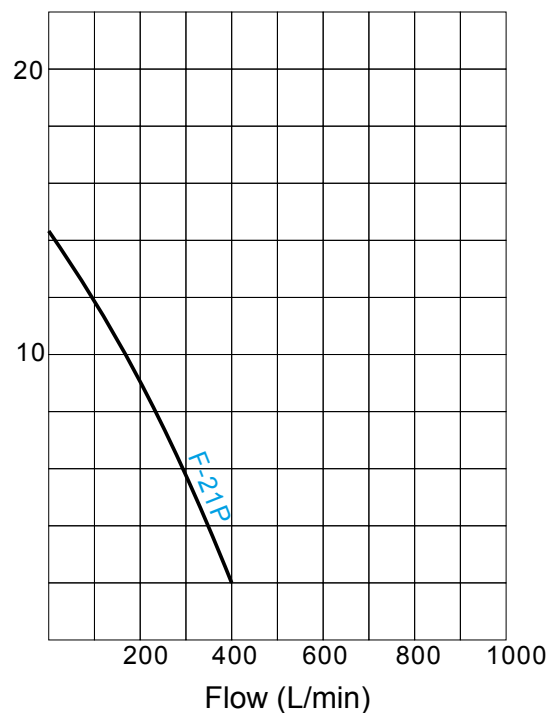
- Domestic/Industrial/Sewage & Wastewater applications
- Public facilities, shopping malls, hotels & restaurants
- Septic Tanks/Pump Stations/Lift Pits
- Pumping wastewater with stringy or long soft solids in suspension

**NB: We do not guarantee that these pumps will handle sanitary products**

Model	Motor Size	Voltage	Solids Passage	Outlet Size
F-21P	0.75kW	230V	26mm	50mm
3/F-21P	0.75kW	400V	26mm	50mm

Hose & Fittings available if required.  
Valves available if required.

### HYDRAULIC DATA



## GRINDER PUMPS – GENERAL

### DESCRIPTION

- Robust, heavy duty submersible grinder pumps
- Super grinding ability for grinding troublesome/foreign objects
- Either manual or automatic models available (See specs)
- Single & Three Phase options available (See specs)

### CONSTRUCTION/FEATURES

- Durable heavy duty cast iron construction designed for more serious pumping applications
- Grinder unit with radial cutter & cutting ring hardened to 55 - 60 Rockwell
- Double mechanical seal in oil chamber plus lip seal
- 10m neoprene oil resistant lead
- Free standing or guide rail mounted options available
- Pump Controllers available
- 2 year warranty

### APPLICATIONS

- Domestic, Commercial, Industrial Sewage
- Wastewater Applications
- Public Toilets, Schools, & Sports Facilities
- **NB: We do not guarantee that these pumps will handle sanitary products**



32GF21.5



50GF23.7

## GRINDER PUMPS – TECHNICAL

### PERFORMANCE SPECIFICATION

Model	Power HP(kW)	Discharge Inch(mm)	Phase Ø	Start Method	Head m	Capacity		Weight kg 1Ø/3Ø	Dimension (mm)		
						m³/min	m³/h		Length	Width	Height
32GF21.0 (F)	1.3(1.0)	1¼"(32)	1	Capacitor	17	0.06	3.6	28	249	177	555
32GF21.5 (F)	2(1.5)	1¼"(932)	1	Capacitor	23	0.06	3.6	36	285	203	597
3/32GF21.5			3	Direct				33			546
3/32GF21.5 (F)			1	Capacitor	26	0.06					
*32GF21-5H			3	Direct							
*32GF21.5H (F)											
32GF22.2	3(2.2)	1¼"(32)	3	Direct	29	0.06	3.6	38 35	285	203	546
50GF22.2	3(2.2)	2"(50)	3	Direct	19	0.2	12	51	393	226	616
50GF23.7	5(3.7)	2"(50)	3	Direct	26	0.2	12	53	393	226	616

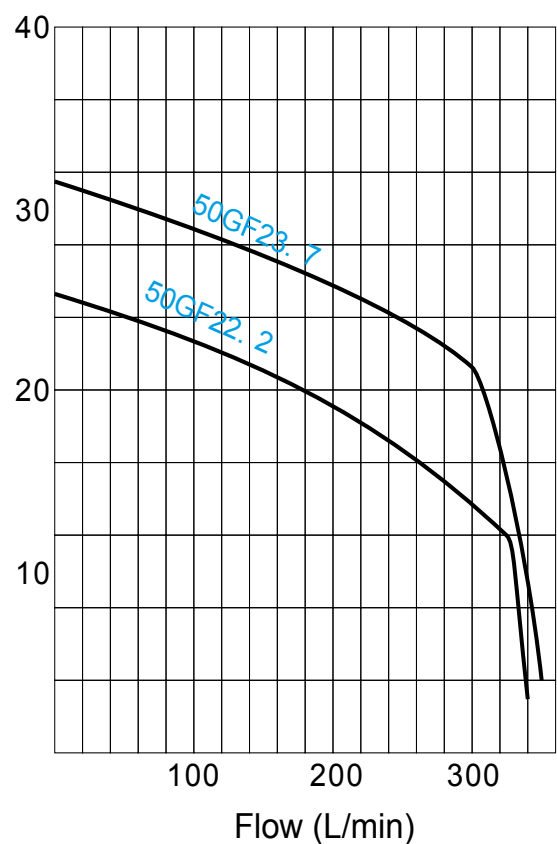
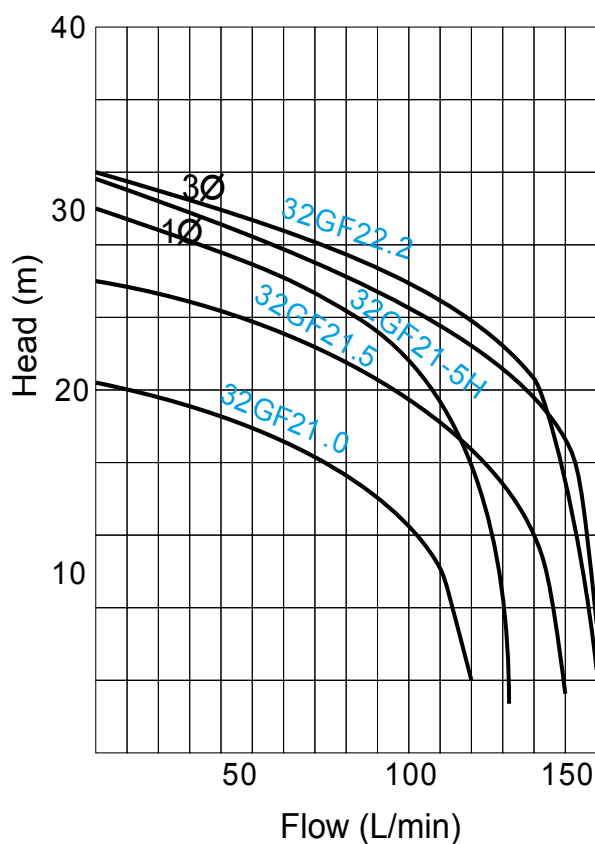
The above hydraulic data figures are at a given duty point. They are not the maximum pump performances.

- 3/ Denotes 3 phase pumps

- (F) Denotes pump has a float switch (automatic)

\*New model

### HYDRAULIC DATA



## PUMP: TECHNICAL OVERVIEW

### VORTEX SUBMERSIBLE PUMPS



- The Vortex (semi-open) Impeller produces a vortex (whirlpool effect) allowing long fibrous materials and other solid waste to pass through without contact with the impeller
  - Designed for sewage & wastewater applications in domestic and commercial applications
- NB: We do not guarantee that these pumps will pump sanitary products**

### CUTTER SUBMERSIBLE PUMPS

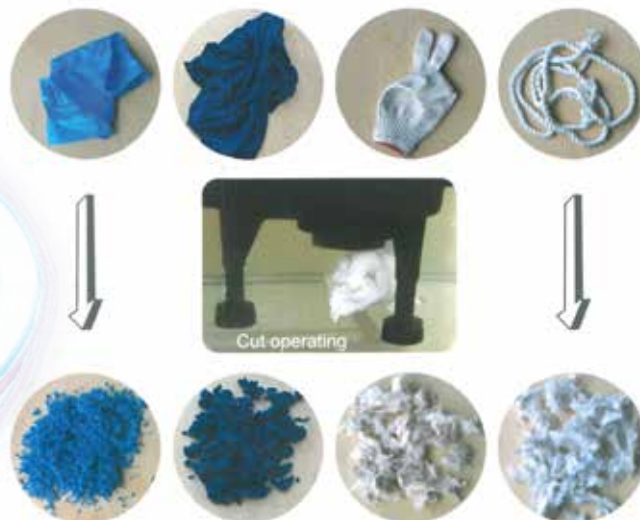


- The cutter (semi-open) impeller enables cutting of delicate materials to prevent clogging
  - The impeller is imbedded with a tungsten blade/tip to assist in cutting product
  - Designed for sewage & wastewater applications domestic and commercial applications
- NB: We do not guarantee that these pumps will pump sanitary products**

### GRINDER SUBMERSIBLE PUMPS



- The Grinder Pumps utilise grinder mechanism to grind foreign objects prior to entering pump.
  - Incorporate hardened radial cutter and cutter ring for maximum grinding action
  - Designed for Sewage and Wastewater in domestic, commercial, industrial applications
- NB: We do not guarantee that these pumps will pump sanitary products**



## PUMP OPERATION NOTES

### WARNING

Warning about hazards or unsafe practices which could result in severe personal injury or death.

- Use Breaker and ensure the ground wire (Green) is properly grounded by a qualified electrician before operation to avoid fire or personal injury that may be caused by power leakage in the event of motor failure.
- Do not lift, Carry or Hang pump by the electrical cables. Damage to the electrical cable
- can cause Shock, Burn or death.
- Do not enter the pond during pump operation to avoid personal casualties in case of leakage.
- Disconnect the power before servicing.
- The pump is designed for use with inflammable liquids and a non hazardous environment.
- Do not strain, modify, or any excessive force to the power cable, it can damage the cable and cause short circuit and even lead to electrocution or fire.
- Do not install the pump into any location classified as hazardous environment.

### CAUTIONS

Warning about hazards that will or can cause minor personal injury or product or property damage.

- If in a climate where the fluid in the casing could freeze, never leave liquid in the pump casing. Drain the casing complete. During winter months and cold weather, the liquid could freeze and damage the pump casing.
- Do not run the equipment dry or start the pump without the casing flooded.
- The pump shaft MUST turn clockwise when viewed from the motor end. It is absolutely essential that the rotation of the motor be checked before installation and starting the pumps. Incorrect rotation of the pump can unscrew the impeller nut and cause severe damage to pumping assembly.
- The applicable pumping liquid temperature should be 0-40° C, and the pump may be damaged if exceeding such range.
- Vent sewage and septic tank according to local requirements or standards.
- Check proper oil level in seal chamber periodically. Check for water in the seal housing

### PUMP IDENTIFICATION

Check carefully items received against Pump Nameplate show on pump, and to be sure that model, output (motor horsepower), Voltage are all correct. Don't operate pump if any of Nameplate information does not match to your specification.

## PUMP OPERATION NOTES

### PUMP MOUNT

- All pumps as a free standing unit. Set the pump on the floor of the basin .
- Several series of pumps may install on Guide Rail System for ease lift out inspection and service. Guide rails allow removal of the pump without disturbing the piping or require personnel to enter the wet well. (Contact with local dealer or manufacturer for appropriate Guide Rail System)
- Install the Guide Rail on hard level surface cement, asphalt, etc. Never place the pump, directly on earth, clay or gravel surfaces.

### PIPING

- All piping must be independently supported, accurately aligned and be capable of handling semi-solids.
- Reduce the number of bends in the discharge piping to keep the outlet flow as smooth as possible.
- All pump models covered in this manual are intended for use in a wet, flooded sump.
- Due to this intended service, no suction piping is required.
- The piping must not be smaller than pump discharge.

### ELECTRICAL

- Electricity is dangerous. It can burn, shock or cause death. When installing, operating or servicing this pump, following the instruction below.
- DO NOT splice the power cord.
- DO NOT handle or service the pump while it is connected to the power supply
- DO NOT operate the pump and motor unless it is properly grounded. Wire the pump directly to a grounded terminal block in automatic float or pump control panel. Be sure to follow all local electrical cods here the unit is installed.
- Make sure the supply frequency and voltage corresponds to the nameplate frequency and voltage requirements. Supply voltage must be within 10% of nameplate voltage. Incorrect voltage can seriously damage the motor and could cause fire which would invalidate the warranty. If in doubt consult a licensed electrician.
- Pump must rotate in a clockwise direction {viewed from the motor end}. Never operate pump and motor in reverse. If a three phase unit runs backwards, interchange two of three power supply wires to reverse the motor's direction of rotation.
- Connect the pump to its own circuit with nothing else on the same circuit.
- Install the pump in accordance with all applicable electrical codes. Install a fused disconnect switch or a circuit breaker.

## PUMP OPERATION NOTES

### WARNING

Hazardous impeller and possible unexpected starts. Rotation of the impeller with hands can cause loss of fingers. Disconnect the electrical power before working on or handling the pump for any reason.

- It is absolutely essential that the rotation of the pump be checked.
- All the pumps covered in this manual turn clockwise as viewed from motor end.
- An Automatic thermal overload protector in the motor will protect the motor from damage due to overheating and overloading. When the motor cools down, the thermal overload will automatically reset and start the motor. The motor protector is usually classified into A.C. Protector and Thermal Protector.
- If the thermal overload trips frequently, check for the cause. It could be impeller block, wrong/ low voltage, bad A.C. Protector, electrical failure in the motor.
- For Automatic operation, the pump must stop before the liquid level reach Pump Minimum Water Level {M.W.L.}
- Do NOT allow the pump to run in a dry sump. It will void the warranty and maybe damage the pump.

## PUMP OPERATION NOTES: TROUBLE SHOOTING

### **WARNING**

Hazardous voltage can shock, burn, or kill. Disconnect the electrical power before attempting any service or repair work on pump.

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
<b>Pump Not Operating</b>	Power failure	Check power and correct connection.
	Defective cable	Replace power cable.
	Impeller clogged	Remove the foreign objects from impeller or casing.
	Bad Motor Protector	Replace new motor protector.
	The motor burn out	Rewind or Replace new motor.
	Float switch defective	Replace new float switch.
	Bad Control Panel	Repair or replaced.
<b>Pump Stop During Operation</b>	Impeller Jammed	Remove the foreign objects from impeller or casing.
	Abnormal voltage	Check the power and make sure it corresponds to the nameplate.
	The motor protector tripped	Make sure liquid temperature is below 40°C ~ pump is complete submerged.
<b>Pump not reaching design flow rate</b>	Incorrect rotation	Reverse two of three leads on a three phase motor.
	Worn and damaged impeller or cavitation	Replace new impeller.
	The block of strainer	Remove the foreign objects from impeller or casing.
	Objects inside the pump or the impeller	Remove the foreign objects from impeller or casing.
	Valves and pipe plugged	Remove plugged objects or replace new valves or pipes.
	System head excessive	Consult dealer.
	Cavitations	Reposition liquid level control.
<b>Electric Leakage Circuit Breaker Activated</b>	Power cable damaged	Replace new Cable.
	Wet cable terminal	Reconnect after drying out.
	Worn mechanical seal cause water enter	Replace new Mechanical seals and oil seal.
	The motor burns	Replace new motor.
<b>Abnormal high Amperage</b>	Abnormal voltage	Check the power and make sure it corresponds to the nameplate.
	Incorrect rotation	Reverse two of three leads on a three phase motor.
	High viscosity liquid	More liquid needs to be added to the pump fluid to decrease its viscosity.
	Objects inside the pump or the impeller	Remove the foreign objects from impeller or casing.
	Defective bearings	Replace new bearing.

## PUMP CONTROLLER/ALARM OVERVIEW

### DESCRIPTION

- Pump Station Control Panel incorporating pump overload and High Level Alarm Indication suited to pump station installations
- Standard Controller used in domestic pump stations (eg Mini/1000/1500/2000 models)
- Two options available - either standard or deluxe

### CONSTRUCTION/FEATURES

- Poly Enclosure
- Level Alarm Indication (Keypad)
- Connections for Pump & High Level Float
- Provision for Remote Alarm Plate
- Std or Deluxe Options (for Deluxe option, call us for more details eg Red strobe light)

### APPLICATIONS

- Sewage Pumps/Pumping Stations
- Pressure Sewer Systems/Pumping Stations
- Stormwater Pumps/Pumping Stations
- Septic Tank Systems
- Refer to Sewage & Stormwater Pump Stations on pages 65-69, 71, 73

Model	Voltage	Includes
CB-STD (Controller)	230 VAC (10A MAX)	Standard Control Box c/w HL Float
CB-DELUXE (Controller)	230VAC 400VAC	Deluxe Control Box c/w Control Float/HL Float (To be used with manual pumps over 10Amp)
ALP-STD	12VDC	Standard Alarm Plate
SW-HL	230VAC	HL Float/Alarm Plate



ALARM PLATE (ALP-STD)

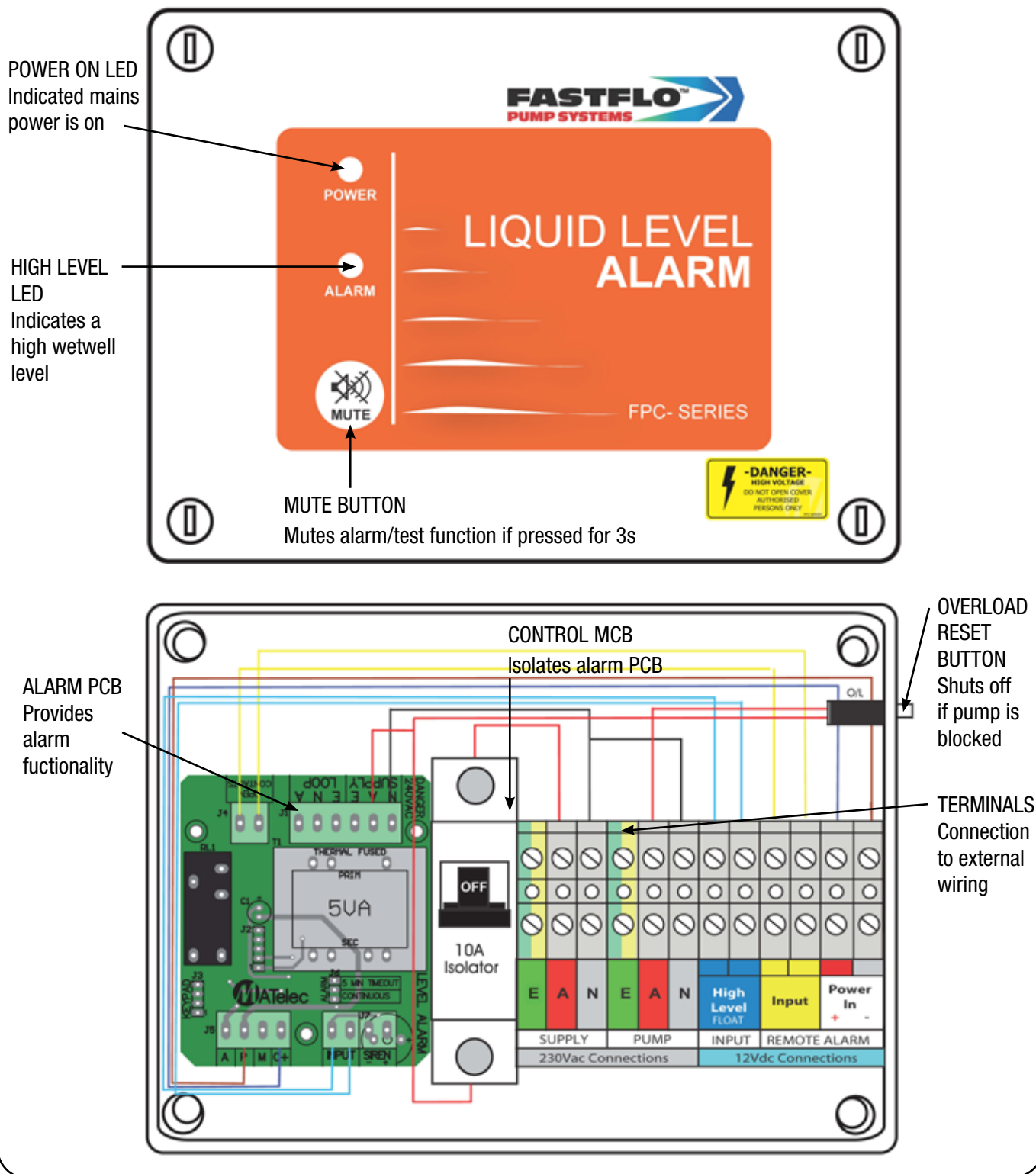


STD CONTROLLER (Model CB-STD)

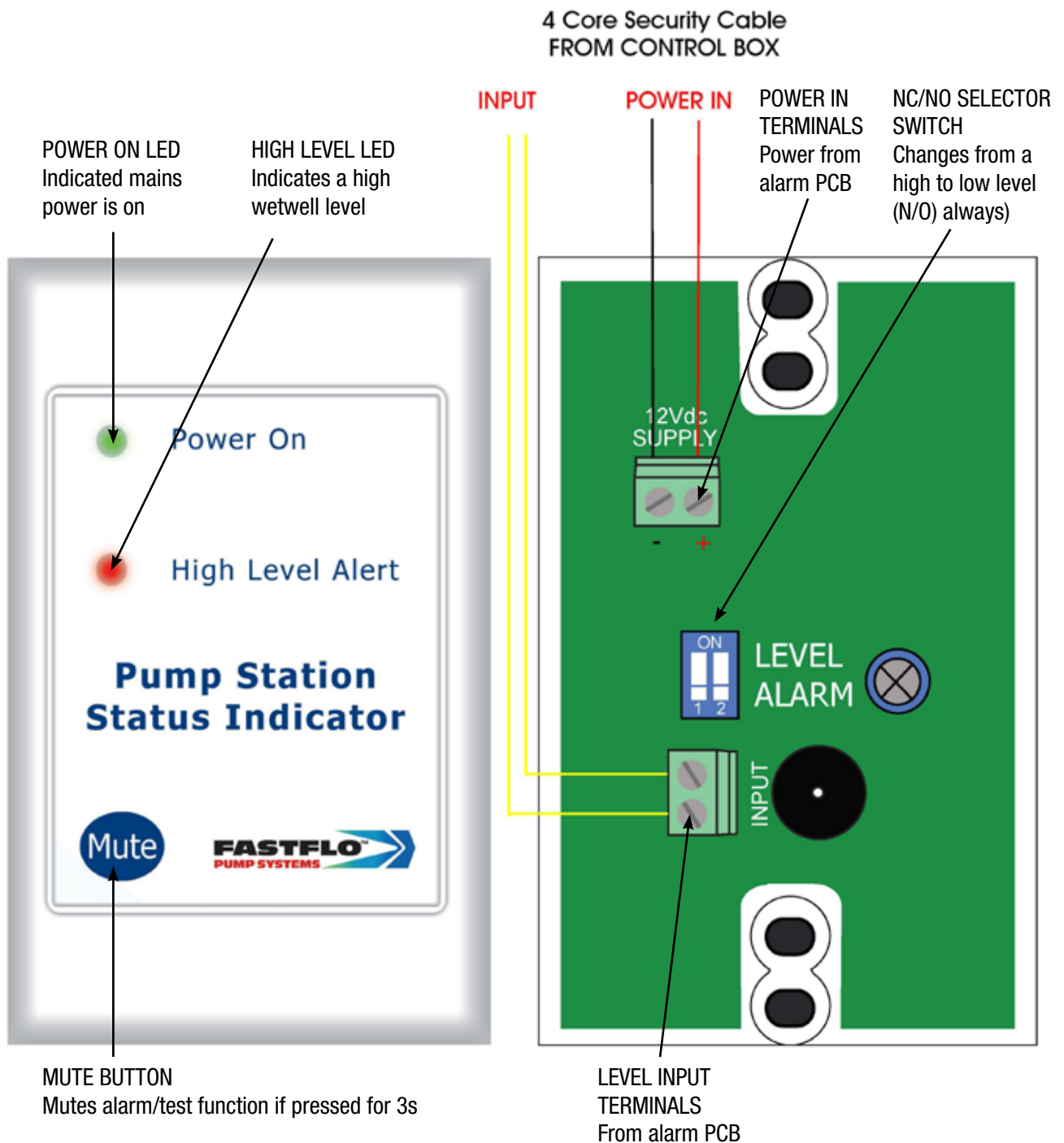


CB-DELUXE

# PUMP CONTROL BOX AND LEVEL ALARM TECHNICAL



## REMOTE ALARM PLATE TECHNICAL



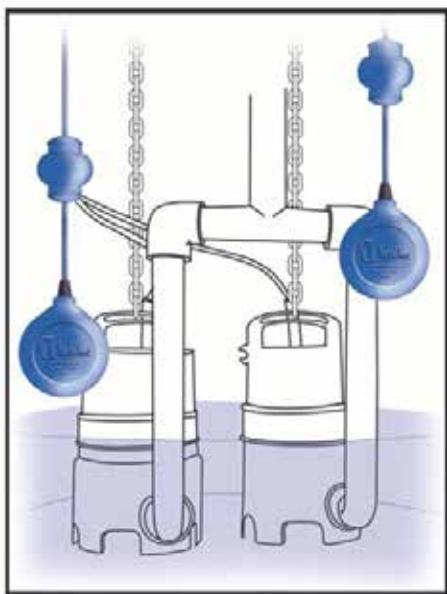
## FLOAT SWITCHES – GENERAL

### DESCRIPTION

- The proven 900 Series MATElec Float Switch, which utilises an innovative, yet simple, fool proof switching concept, has greatly enhanced Float Switch reliability.
- The positive microswitching, eliminates the possibility of more than one circuit being in operation at any one time. The design innovation of the Switch is the 'sliding detent action' which obviates wave induced oscillation (common in mercury type switches) while maintaining consistency in switching level accuracy.
- The smooth robust ABS switch housing on the 9006, 9008 and the 9010 models prevents adhesion of foreign materials.

### CONSTRUCTION/FEATURES

- Neoprene Rubber Cable
- ABS Housing Material
- Micro switch with NO/NC contacts
- Includes Cable weight
- Available in 2.5m, 10m and 20m lengths



### APPLICATIONS

- Sewage & Stormwater pumps/Pumping Stations
- Rain Water/Water Saver Systems
- Waste Water Management
- Used To Control Pumps - When Liquid Level Changes

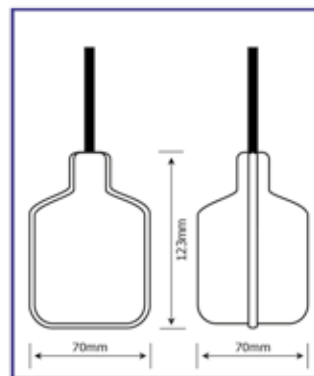
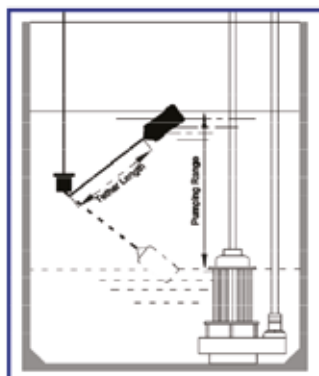
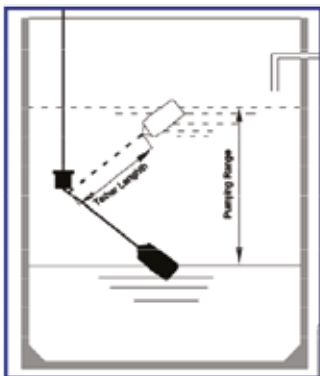
Model	Protection	Switching Capacity
FSW 9004	IP68 @ 20m	10A
FSW 9006	IP68 @ 20m	6A
FSW 9010	IP68 @ 20m	10A



## FLOAT SWITCHES – GENERAL

The proven 9000 Series Matelec Float Switch, which utilises an innovative, yet simple, fool proof switching concept, has greatly enhanced Float Switch reliability. The positive microswitching, eliminates the possibility of more than one circuit being in operation at any one time. The design innovation of the Switch is the 'sliding detent action' which obviates wave induced oscillation (common in mercury type switches) while maintaining consistency in switching level accuracy. The smooth robust ABS switch housing on the 9006, 9008 and the 9010 models prevents adhesion of foreign materials.

Liquid Temperature	Min 0°C (32°F) Max 60°C (140°F)
Protection	IP68 @ 9m (30ft) corrosion resistant
Contact Type	Mechanically activated, snap action contacts
Pumping Range	20 - 90cm (8 - 36inches)
Max Voltage	240Vac 50/60Hz
Max Run Current	10amp (COS 0)
Cable Material	Chlorinated Polyethylene
Cable Size	ø8mm / 2 x .75mm <sup>2</sup>
Housing Material	Polypropylene



## PRODUCER STATEMENT

### FASTFLO PACKAGED PUMP STATION POLYETHYLENE MODELS

#### 1. WET WELLS

Polyethylene wet wells are rotationally moulded in virgin material circumferentially reinforced, and with wall thickness designed to take internal and external hydraulic pressures as applicable to buried tanks.

Design Life: 25 years

#### 2. PUMPS

Pumps as manufactured by leading ISO 9001 certified pump companies, to meet consultant's specification. Manufacturer's standard 24 months warranty applies.

#### 3. COMPONENTRY, PIPEWORK & VALVES

All in-tank components to consultant's requirements, in new materials, including isolation and non-return valves, all conforming to applicable AS/NZS Standards.

All in-tank work by registered and experienced tradesmen.

#### 4. ELECTRICAL / CONTROLS

All electrical controls and control panels comply with appropriate AS/NZS Standards, manufactured and tested by registered electricians.

#### 5. MANUFACTURE

All fabrication and assembly of components, electrical wiring and control panels are executed in our premises by our own qualified staff.

#### 6. INSTRUCTIONS

Each pump station is provided with a comprehensive manual with full installation instructions, wiring diagrams and commissioning details. (Refer to installation instruction manual)

#### 7. WARRANTIES

All components, controls, pipework and fittings are warranted for 24 months against defective equipment and workmanship.

## 24 MONTH WARRANTY REGISTRATION FORM

**JOB NO: F** 

Thank you for purchasing a FASTFLO unit from Fastflo Pump Systems.

Please fill in the warranty form and send back to us, by post, fax or email.

The manual copy is to fill in and keep for your own records.

The warranty is not valid unless the Warranty Registration is returned to Fastflo Pump Systems.

Please Print Clearly:

**PUMP STATION MODEL:** \_\_\_\_\_

**PUMP STATION TANK NO:** \_\_\_\_\_

**SUBMERSIBLE PUMP MODEL:** \_\_\_\_\_

**SUBMERSIBLE PUMP SERIAL NO:** \_\_\_\_\_

**DATE OF PURCHASE:** \_\_\_\_\_

**DEALER PURCHASED FROM:** \_\_\_\_\_

**DEALER'S ADDRESS:** \_\_\_\_\_

**OWNER'S NAME:** \_\_\_\_\_

**OWNER'S ADDRESS:** \_\_\_\_\_

**DATE OF INSTALLATION:** \_\_\_\_\_

**INSTALLERS – PLUMBER:** \_\_\_\_\_

**PHONE NO:** \_\_\_\_\_

**INSTALLERS – ELECTRICIAN:** \_\_\_\_\_

**PHONE NO:** \_\_\_\_\_

✱ **PURCHASER'S SIGNATURE:** \_\_\_\_\_

## WARRANTY AND LIMITATION OF WARRANTY

- **Fastflo** Products when installed and operated correctly in accordance with our installation instructions and relevant plumbing and electrical regulations, will give you a trouble free service. If you are unsure of the installation, servicing and operational requirements, we recommend that you contact **Fastflo** Pump Systems. We also recommend precautions are taken against overflow or leakage of any cause.
- **Fastflo** Pump Systems warrants your unit for goods sold and used in NZ in accordance with and subject to the conditions herein contained against any original defects from faulty workmanship or materials for a period of normal use in 24 months from the date of supply for new equipment unless otherwise stated in writing. Where the unit is not installed immediately, this warranty is valid only if the unit has been stored correctly and proof of installation date is provided.
- **Fastflo** Pump Systems will not be liable for costs involved with the removal and reinstallation of the equipment that has failed under the warranty period.
- In the event of a breakdown within the warranty period, please contact **Fastflo** Pump Systems. If the fault is deemed by **Fastflo** Pump Systems not to be covered by our warranty then all replacement parts, labour, travelling and other charges will be your responsibility.
- This warranty does not extend to cover your unit or any part of it which in the reasonable opinion of **Fastflo** Pump Systems has not been installed, operated or maintained correctly, has been worn by normal wear & tear, operated in an abnormal condition or outside the parameters specified to **Fastflo** Pump Systems or has been damaged or rendered by accident, wilful act, negligence, misuse, alteration, adjustment or repair other than by **Fastflo** Pump Systems, usage of incorrect or fluctuating voltage, electrical fusion, or damaged by force majeure.
- Any goods or parts supplied or work done by **Fastflo** Pump Systems shall not extend **Fastflo** Pump Systems liability beyond the stipulated warranty period.
- Notwithstanding the warrant and undertaking above, **Fastflo** Pump Systems shall not be liable for any consequential loss or damage of any kind whatsoever (including financial loss, injury, or death of any persons, animals or loss or damage to property) whether suffered or incurred by you or by some third party where such loss or damage arises in relation to or as a result of the unit or any part of it thereof and whether arising wholly or partially as a result of the negligence of **Fastflo** Pump Systems to you or its agents or otherwise. In no circumstances shall the combined liability of **Fastflo** Pump Systems to you and to any third party exceed the total purchase price of the unit or the replacement part thereof in question.
- Where the goods are sold are consumer goods not acquired for business purposes as defined by the Consumer Guarantees Act 1993, the Warranty exclusions shall apply only to the extent permissible under the Act.

**NB: Fastflo Pump Systems is a division of the parent company Pump & Valve Specialties Ltd.**

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has rounded corners on the left side and a straight edge on the right. There is no handwriting or other markings on the page.

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