

Cast Iron Sump Pump – VF150



Distributor Catalogue

VF 150



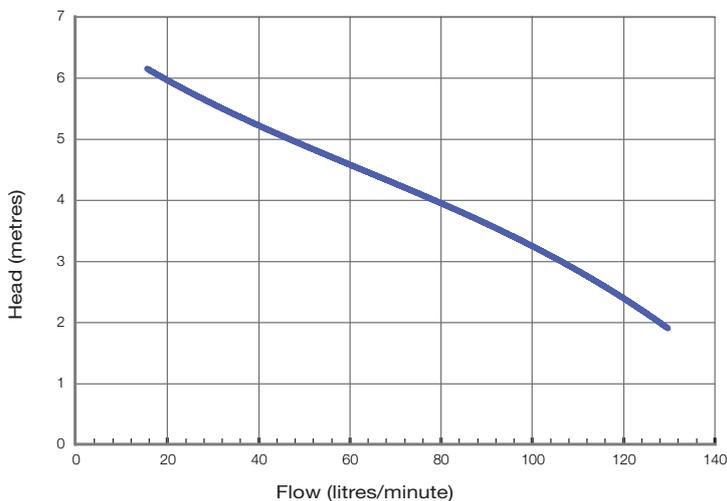
VF 150 is a single phase drainage pump. They are a handy asset to plumbers, drainers and general house holders.

Applications include septic effluent disposal, water transfer, grey water and sump pumping liquid including grey water of neutral pH with soft solids up to 15mm O.D. at a 10% content or fine solids at 1% concentration.

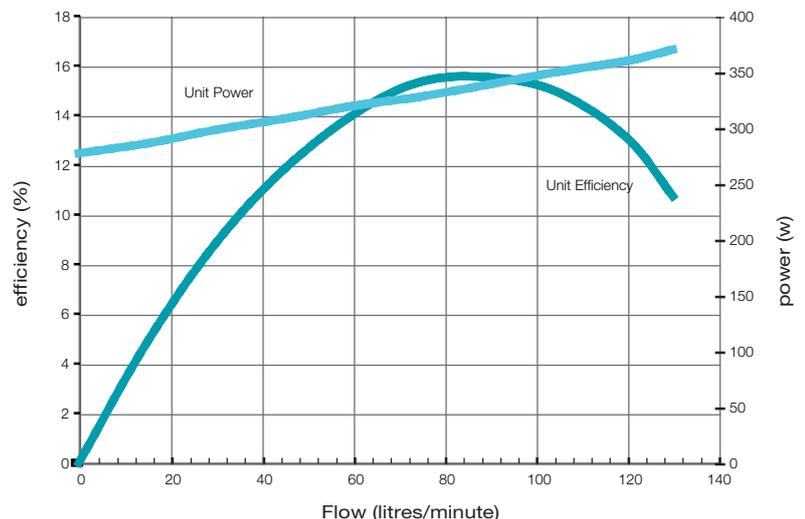


| Product Features | Customer Benefits |
|------------------------------------------|--------------------------------------------|
| Cast Iron Construction | Strong and durable for longer pump life |
| Vortex Impeller | Capable of handling soft solids up to 15mm |
| Optimum Performance | 4 Metres Head 80 Litres Per Minute |
| Automatic Float Switch Operation | Protection against pump running dry |
| Lip Seal and Dual Mechanical Seal | Improved service life |

Performance Chart



Efficiency Chart



Construction

| Component | Material |
|-----------------|----------------------------|
| Impeller | Polycarbonate |
| Pump housing | Cast Iron |
| Pump Shaft | Stainless - 304 |
| Mechanical seal | Carbon ceramic (dual seal) |
| Oil seal | Nitrile |
| Power Cable | H07RN-F |
| Float cable | H07RN-F |
| Motor Shell | 304 Stainless Steel |

Operating Conditions

| | |
|-------------------------|------------|
| Maximum flow rate (lpm) | 150 |
| Maximum head (m) | 7 |
| Water temperature range | 0°C - 40°C |
| Maximum submergence (m) | 6 |

Technical Data

| | |
|------------------------------------------|-------------------------|
| Pump Discharge connection | 1 1/4" BSPF thread |
| Supplied fitting | 1 1/4" Hose Barb |
| Power Supply | 230V - 1Ph - 50Hz |
| Voltage limits | 209V - 253V (230V ±10%) |
| Pump Weight (kg) | 9 |
| Packed Weight (kg) | 10 |
| Carton Dimensions (LxWxH)(mm) | 180 x 180 x 160 |
| Power consumption (W) | 180 |
| Full load current (Amps) | 1.75 |
| Starting current (Amps) | 9.5 |
| Electrical Cable Length (m) | 6 |
| Pump on Height (mm) (Factory Setting) | 500 |
| Pump off Setting (mm) | 75 |

VF150 Part Number Nomenclature

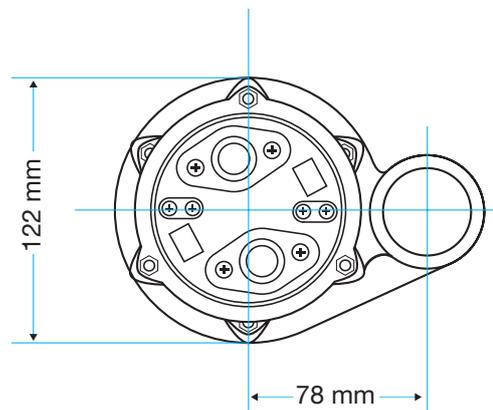
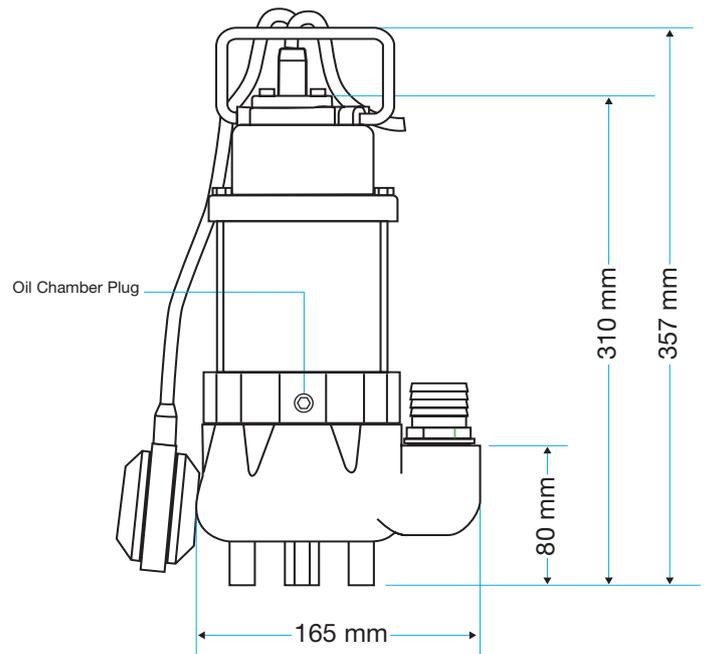
| | | |
|---|---|-----|
| V | F | 150 |
|---|---|-----|

V - Vortex

F - Float Switch

Maximum Flow Rate at open discharge (litres per minute)

Dimension Drawings



Distributor Guide

Installation details

Fittings and Accessories

Ensure that you have all required fittings and accessories prior to installing your VF150:

- Threadseal tape (hard discharge pipe installations)
- Hose clamps (flexible discharge hose installations)
- Cable ties

A larger diameter hose or pipe will offer less resistance to flow, and will result in better water pressure and better performance.

Installation

▲ IMPORTANT

Inspect your VF150 for shipping damage. Report any damage to your Onga dealer. Read the Owner's Manual that was shipped with the pump to ensure correct pump installation.

1. Securely connect a stainless steel wire, cable or a rope to the handle of the pump ensuring that the wire/cable exceeds the safe working load of 10kg.
2. If you are using a hard discharge pipe, thread this into the outlet of the pump housing. If you are using a flexible discharge hose, use hose clamps to secure this to the fitting provided.
3. Lower the pump into the pit using the rope or wire cable. Lower the pump onto a hard level surface that is elevated from the base of the pit. This is to keep the pump inlet above sediments in the bottom of the pit.
4. Ensure that the float switch can move freely within the pit - incorrect operation and pump failure may occur if the float switch becomes trapped.
5. Connect the power plug to a suitable outlet. The pump will operate when the float is higher than level, and stop operating when the pump float is in the low position.

To adjust the float to a shorter length (and higher shut off level), using a Phillips head screw driver loosen the small locking screws on the float cable clamp until the float cable can move freely within the clamp.

Shorten float cable to the required length and then tighten the screws until cable is firmly held within the clamp.

▲ IMPORTANT

If the pump must be removed from the pit, use the rope or wire cable to lift it. Do not use the power cable or the float switch to lift the pump.

▲ WARNING

This will alter the standing water level within the sump.

Operation

Operation Check

▲ IMPORTANT

1. Ensure that the pump is completely submerged. This may require that the tank has water fed into it from another source.
2. The float switch will rise to a height of 500mm and the pump will start, and empty the pit. As the pit empties the float switch will fall to a height of 75mm measured from the bottom of the pump and stop the pump.
3. Check that there is adequate pressure and flow from the discharge point.

If there are any variations to these outcomes, please see the troubleshooting section on the following page.

Electrical

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

Do not ground to a gas supply line.

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

▲ IMPORTANT

Residual Current Device (RCD) tripping indicates an electrical problem. If RCD trips and will not reset have a qualified electrician inspect and repair electrical system. Pentair Water recommends that a RCD of 30mA trip current be installed and/or be in compliance with local regulations.

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

If the power supply cord is damaged, it must be replaced by a Pentair Water authorised service agent or similarly qualified person in order to avoid hazard.

Voltage

▲ WARNING

Voltage at pump must not be more than 10% above or below motor nameplate rated voltage or pump may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when pump is running at full load, consult your power supplier.

▲ WARNING



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

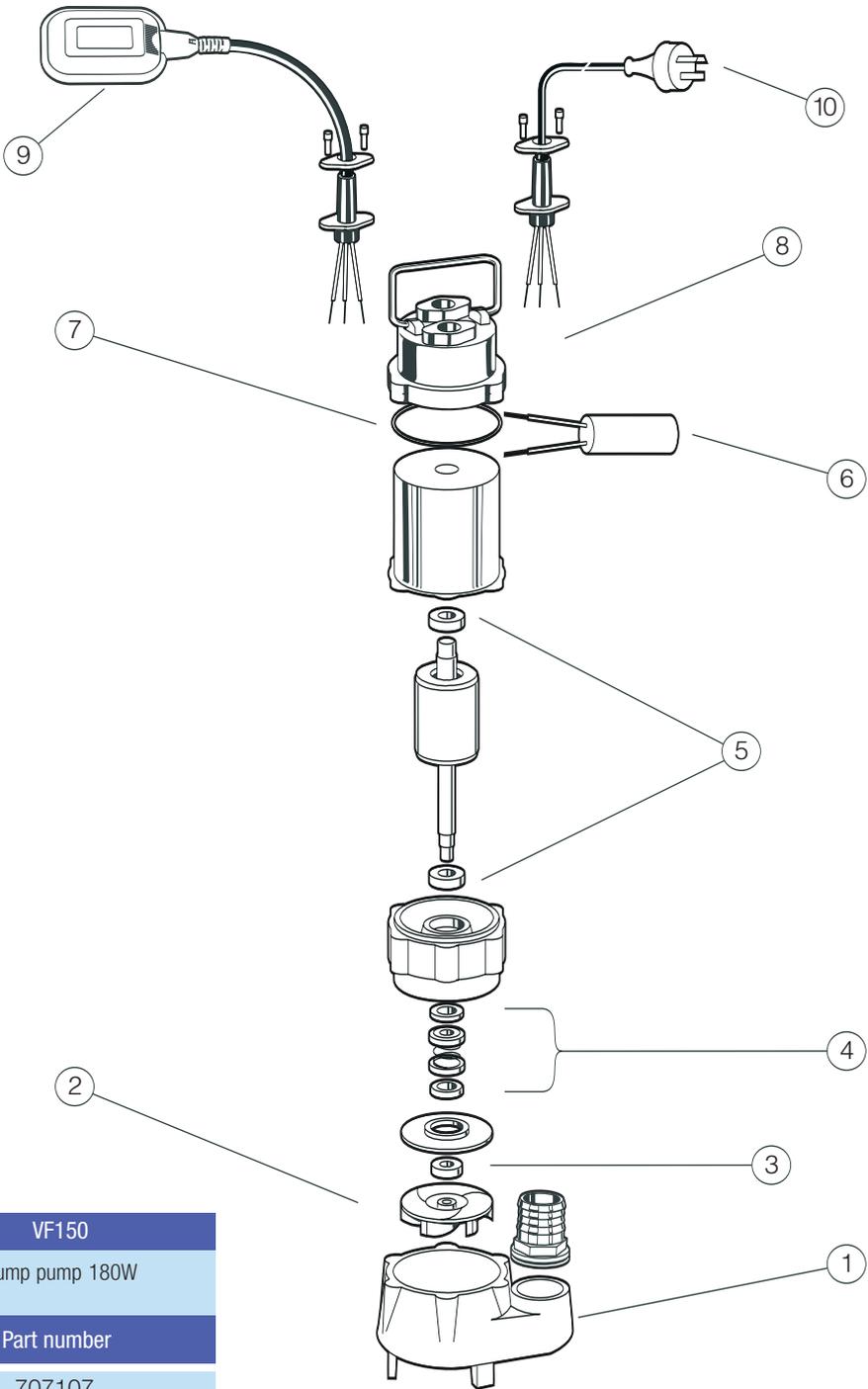
Ground Pump before connecting to power supply

▲ WARNING

Should the pump stop working, turn the pump off at the switch and disconnect from the electrical source before attempting to remove or work on the pump.

The pump may have shut down due to thermal overload and may start without warning. The pump is fitted with a thermal overload automatic reset and has the potential to start without warning.

Service Parts



| Part Number | | | VF150 |
|-------------|-------------------|-----|----------------|
| | | | Sump pump 180W |
| Item | Description | Qty | Part number |
| 1 | Pump Body | 1 | 707107 |
| 2 | Impeller | 1 | 707108 |
| 3 | Oil chamber cover | 1 | 707110 |
| 4 | Seal kit | 1 | 707111 |
| 5 | Motor bracket | 1 | 707109 |
| 6 | Capacitor | 1 | 707113 |
| 7 | (see 4) | 1 | |
| 8 | Capacitor cover | 1 | 707114 |
| 9 | Power cable | 1 | 707115 |
| 10 | Float Switch | 1 | 707112 |

Distributor Guide

Trouble Shooting

| Symptom | Cause | Remedy |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Pump doesn't start | Float switch isn't in the 'on' position | Wait until there is more water in the pit to start the pump |
| | Float is caught on something, and can't rise above level | Ensure that the float can move freely |
| | No power supply | Check fuses and circuit breakers |
| | Pump is blocked | Disconnect the pump from the power outlet, and check the pump housing and discharge for foreign matter |
| | Automatic overload tripped | Increase water level height in tank and allow pump to cool down |
| No water from pump | Blockages in the pump or discharge | Disconnect the pump from the power outlet, and check the pump housing and discharge for foreign matter |
| | Excessive lift | Ensure that the height that you are trying to lift water is within the pump's capacity. A larger pump may be required |
| | Not enough water in the pit to pump | Wait until there is more water in the pit. Ensure that float switch is operating freely |
| | Air lock in system | Ensure delivery line is filled with water to displace any trapped air in the system |
| Pump will not stop, even though there is little water in the pit | Float switch is trapped in the "up" position | Ensure that the float switch can operate freely |
| | Float switch is fused "on" | Replace the float |
| Pump runs intermittently: Thermal protection inside the pump is tripping and resetting | Water temperature is too high | Ensure that water temperature limits are observed |
| | Water level not high enough to cool motor | Increase the lower float level height by shortening the cable length (refer to installation) or increase the height of water in the tank |
| Pump runs intermittently | When the pump shuts off, water in the discharge line is running back into the pit, lifting the float switch | Fit a non-return valve at the pump discharge so that water cannot return to the pit |

Calculating Minimum Required Pit Dimensions

1. Required information:

Maximum pump capacity in application = **Q** (from HQ chart p2)

..... lpm

Float swing distance = **F**

..... m

e.g. VF150 = 0.25m

Determined by installer for other pumps

Pump 'switch on' depth (from bottom) = **d₁**

..... m

Pump 'switch off' depth (from bottom) = **d₂**

..... m

Operating depth = **D = d₁ - d₂**

..... m

Operating depth VF150 = 0.2m

Determined by installer for other pumps

2. Minimum required operating volume

V = Q / 500 =

..... m³

3. Minimum required pit area

The area of the pit is given by dividing Volume, V, by the operating depth

A = V/D =

..... /

=

..... m

4. Pit Dimensions

Pit length may be determined by the distance needed to swing the float without obstruction.

In this case pit length = **F** (as above).

Otherwise pit length can be determined by pump length, including a clearance (see dimensioned drawings on page 3).

Pit width = **A / F =**

..... /

=

..... m

Where a square pit is desired pit width = pit length = \sqrt{A} =

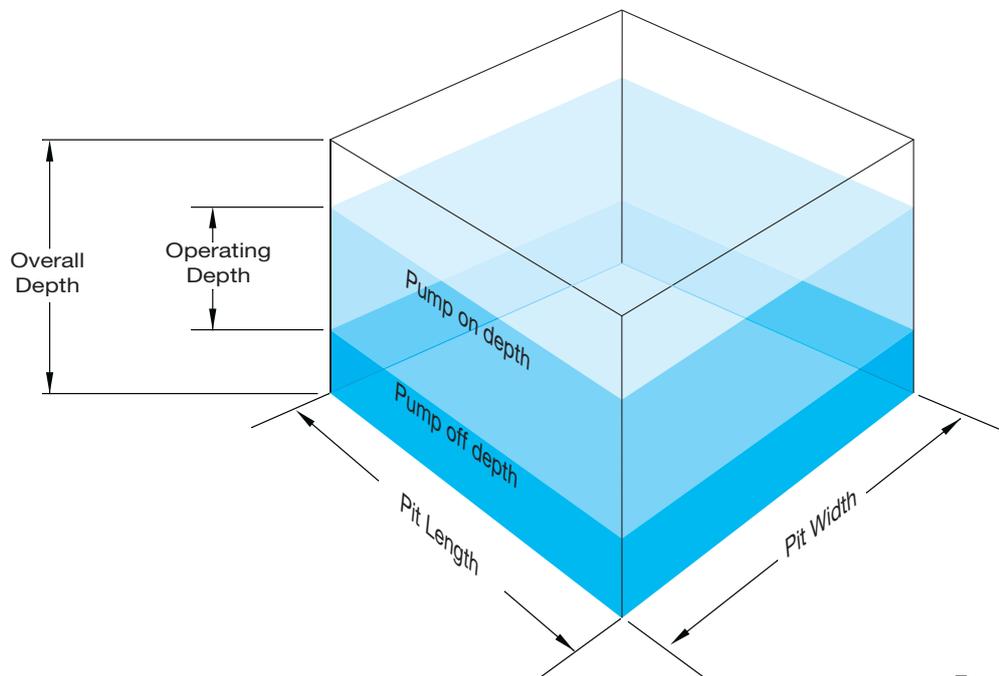
..... m

5. Pit Depth

Overall depth = pump 'switch on' depth + safety margin

Note: Pump 'switch off' depth must be greater than minimum water level for pump.

See dimensioned drawings on page 3 for this information.





**Pacific
Australia**

Head Office

Pentair Water Australia Pty Ltd

Notting Hill Victoria, Australia
Tel: +61 3 9574 4000 Fax: +61 3 9562 7237
Email: Sales@pentairwater.com.au
www.pentairwater.com.au



Pentair Water New Zealand Ltd

Penrose Auckland New Zealand
Tel: +64 9 579 6254 Fax: +64 9 579 6497
Email: auckland@pentairwater.com.au

Americas

Pentair, Inc.

Golden Valley, Minneapolis
Tel: +1 763 545 1730 Fax: +1 763 656 5400
www.pentair.com

Europe

Pentair Pumps S.p.A

Milan, Italy
Tel: +39 02/93.27.111 Fax: +39 02/93.59.51.54
www.pentairpumps.it

Asia

China

Pentair Water Shanghai
Shanghai, China
Tel: +86 21 5877 7088 Fax: +86 21 5879 8758

India

Pentair Water India Pvt. Ltd.
Goa, India
Tel: +91 832 288 3300 Fax: +91 832 288 3312

Pentair Water Australia Pty Ltd ACN 112 060 616

Pentair Water New Zealand Ltd ACN 157 6666

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