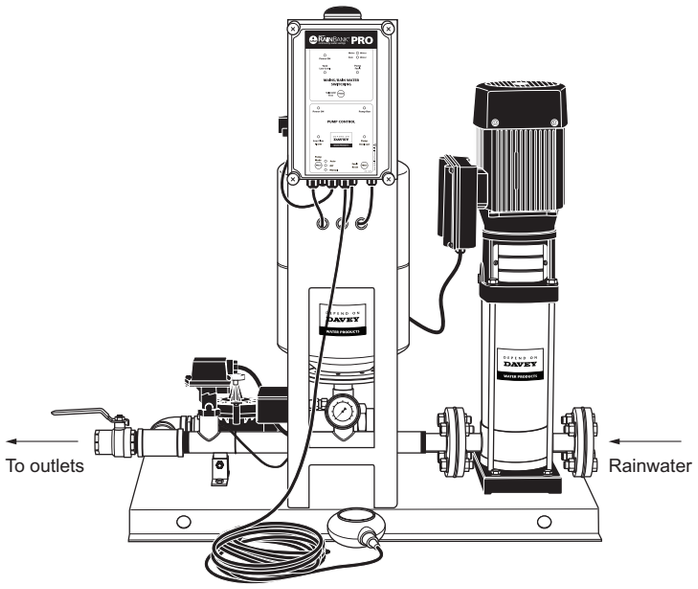
DEPEND ON
DAVEY
WATER PRODUCTS

Installation and Operating Instructions for

DAVEY
RAINBANK® community water savings **PRO**



NOTE: Prior to installation remove the inlet and outlet pipe, transport plugs & associated seals from the suction and/or discharge ports.

PLEASE READ IMPORTANT CAREFULLY

WARNING : The RainBank®PRO system and associated pipework operate under pressure. Under no circumstances should the RainBank®PRO System or associated pipework be disassembled unless the internal pressure of the unit has been relieved. Failure to observe this warning will expose persons to the possibility of personal injury and may also result in damage to the pump, pipework or other property.

WARNING: Failure to follow these instructions and comply with all applicable codes may cause serious bodily injury and/or property damage.

Please pass these instructions on to the operator of this equipment.

CONTENTS

RainBank®PRO PUMP SET COMPONENTS 3

CONNECTION TO MAINS SUPPLY 4

PRESSURE SWITCH 4

TANK PRECHARGE 4

CHOOSING A SITE 4

POWER CONNECTION 4

ELECTRICAL POWER SURGE PROTECTION 4

PIPE CONNECTIONS 5

WHERE TO USE CHECK VALVES AND FOOT VALVES 5

ABRASIVE METALS 5

INSTALLATION WITH A MAINS PRESSURE HOT WATER SYSTEM 5

PRIMING AND OPERATION 5

CONTROL BOX OPERATION 6

CONNECTION DIAGRAM – 240V 7

CONNECTION DIAGRAM – 415V 8

TYPICAL INSTALLATION 9

MAINTENANCE 10

PRESSURE SETTINGS 10

TROUBLE SHOOTING CHECK LIST 11

TERMS AND CONDITIONS 12

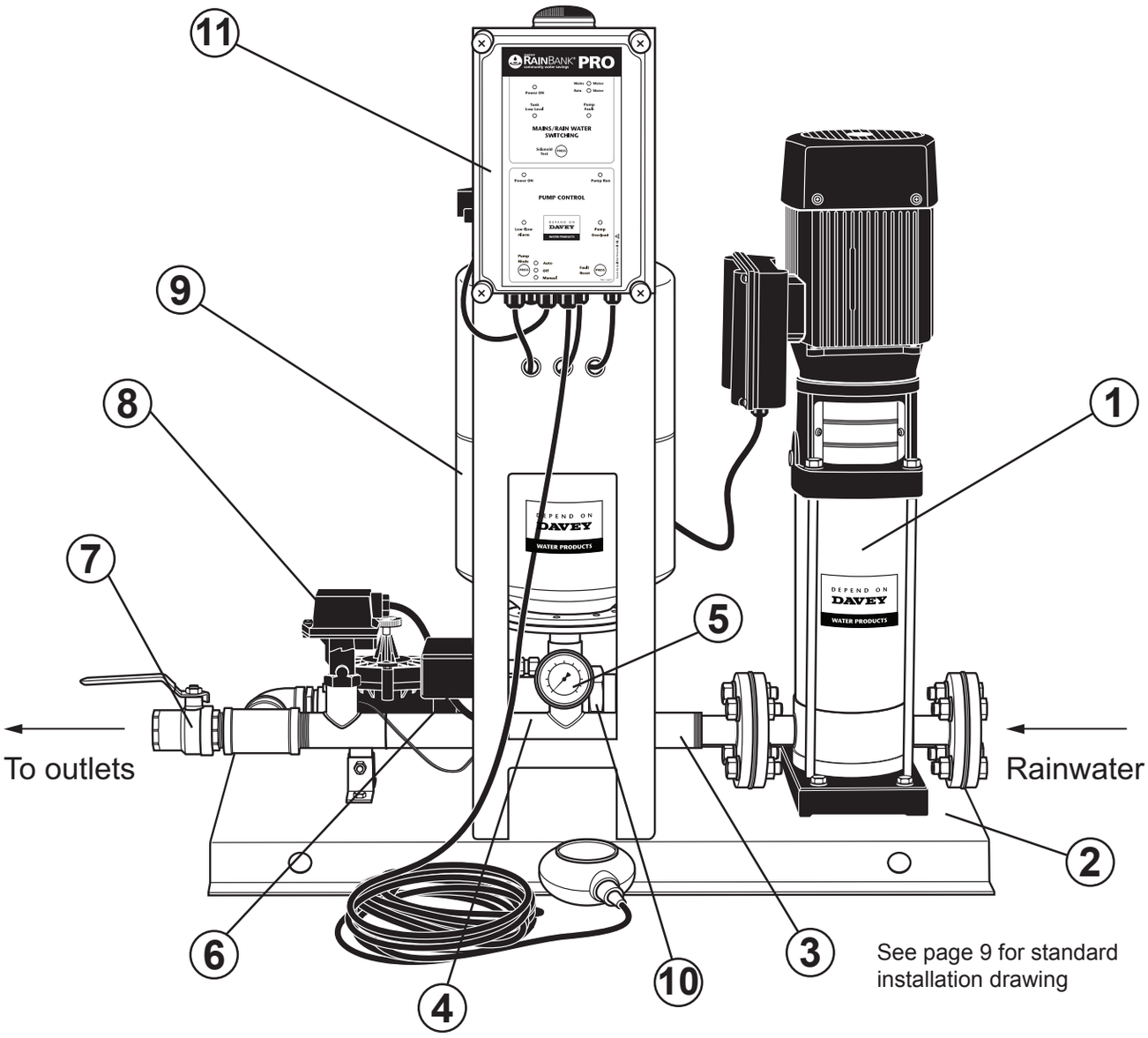
Prior to using this pump you must ensure that:

- The pump is installed in a safe and dry environment
- The pump enclosure has adequate drainage in the event of leakage
- Any transport plugs are removed
- The pipework is correctly sealed and supported
- The pump is primed correctly
- The power supply is correctly connected
- All steps have been taken for safe operation

Appropriate details for all of these items are contained in the following Installation and Operating Instructions. Read these in their entirety before switching on this pump. If you are uncertain about any of these Installation and Operating Instructions please contact your Davey dealer or the appropriate Davey office as listed on the back of this document.

Congratulations on your purchase of a high quality, Davey RainBank®PRO pump set. All components have been designed and manufactured to give trouble free, reliable operation.

RainBank®PRO PUMP SET

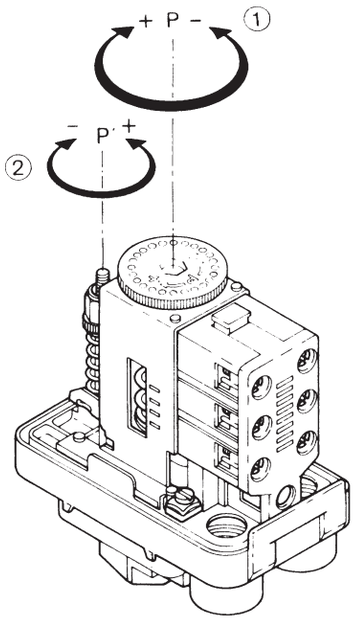


See page 9 for standard installation drawing

RainBank®PRO pump set components:

1. VM pump and motor
2. Base plate
3. Check valve
4. Discharge manifold
5. Pressure gauge
6. Pressure switch
7. Isolation valve
8. Flow switch
9. Pressure tank
10. Dual check valve (mains water entry)
11. RainBank®PRO control box

CONNECTION OF MAINS SCHEME OR TOWN WATER SUPPLY TO EITHER SUCTION OR DISCHARGE OF PUMP



Most Water Supply Authorities have strict regulations regarding direct connection of pumps to mains water supplies. In most cases an isolating storage tank is required between mains supply and pump — Davey also recommend this method. Directly applied mains pressure can exceed pump operating pressure and damage pump.

Davey Water Products Pty. Ltd. cannot accept responsibility for loss or damage resulting from incorrect or unauthorised installations.

PRESSURE SWITCH SETTINGS

Your Davey RainBank®PRO pump set should have the correct pressure switch setting for zero suction lift. If your pump is installed on a suction lift you may need to adjust the pressure setting to suit.

Any adjustment of the pressure switch settings should be made according to the pump curve*. The cut-out pressure should never be higher than 90% of the maximum pump shut head pressure OR higher than the maximum operating pressure for the pressure tank and the cut-in pressure should be set within the pump curve*. For standard pressure switch settings refer to the table in the maintenance section of these instructions.

XMP12 Adjustments

To adjust the **cut-out (high) pressure** of the system, turn the large dial (1) in the desired direction: + (CW) for higher pressure, – (ACW) for lower pressure.

To adjust the **cut-in (low) pressure** of the system, turn the smaller screw (2) in the desired direction: + (ACW) for higher pressure, – (CW) for lower pressure.

FLOW SWITCH SENSITIVITY ADJUSTMENT

There are two methods of setting the point at which the F25 flow switch operates, in relation to any given flow. By far the most effective is careful trimming of the paddle length. The second method should only be used to fine tune an installation. There is a sensitivity adjusting screw located at the upstream end of the switch under the end of the electrical housing. This is accessible by removing the hexagon headed plug, and adjustable using a broad bladed screwdriver. As supplied, the screw is wound fully in. This setting makes the switch least sensitive to liquid impinging on the paddle. The screw may be wound anticlockwise, to increase the sensitivity. That is, to make the switch respond to lower flows, or to a more smaller area of paddle eposed to the flow. The screw should never be removed or wound out more than 6 full turns, and never wound in beyond its stop. The switch will not operate if the screw is removed.

TANK PRECHARGE

The pressure tank fitted to your Davey pump set should be pre-charged with air to a value of 15kPa below the cut in pressure. For standard tank pressure settings refer to the table in the maintenance section on page 10 of these instructions.

CHOOSING A SITE

Choose a site with a firm base and as close to the water source as possible with correct power supply. Make sure your pressure pump is always connected to an adequate, reliable source of clean water.

Housing your Davey Pump: To protect your pump from the weather, make sure the housing is both water proof and frost free and has adequate ventilation.

The pump set should be mounted on its base in a firm dry area allowing for drainage, to avoid damage due to flooding etc., that over time may occur from leaking pipe joints or pump seals.

WARNING: Some insects, such as small ants, find electrical devices attractive for various reasons. If your pump enclosure is susceptible to insect infestation you should implement a suitable pest control plan.

POWER CONNECTION

Only connect the pump set to the power supply designated on the pump and motor label.

Single-phase pumps up to 1.5kW have a built in thermal overload and have been provided with a 10 amp cable and plug for connection to a standard power outlet.

Single-phase 2.2kW pumps have a built in thermal overload and have been provided with a 15 amp cable and plug for connection to a standard 15 amp power outlet.

Do not use long extension leads as they cause substantial voltage drop, poor pump performance and may cause motor overload.

The electrical connections and checks must be made by a qualified electrician and comply with applicable local standards.

* Adjusted for site conditions, i.e. suction life or positive suction pressure

ELECTRICAL POWER SURGE PROTECTION

An electrical power surge or spike can travel along the supply lines and cause serious damage to your electrical equipment. The RainBank®PRO controller fitted to this system has a metal oxide varistor (MOV) fitted to help protect its circuit. This MOV is a “sacrificial” device, meaning that it is gradually damaged every time it takes a surge. The MOV is not a lightning arrestor and may not protect the control unit if lightning or a very powerful surge hits the pump unit. Degradation of the MOV is a non-warrantable failure. If the installation is subject to electrical power surges or lightning we strongly recommend the use of suitable additional surge protection devices on ALL electrical equipment.

In accordance with AS/NZS 60335.2.41 we are obliged to inform you that this appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely.



NOTE: Young children should be supervised to ensure that they do not play with the appliance.

PIPE CONNECTIONS

For best performance use pipes **at least** the same diameter as the pump’s inlet and delivery outlet opening. Larger diameter pipe may be used to minimise resistance to flow when pumping longer distances.
Use unions at pipe connections to enable easy removal and servicing. Use sufficient tape to ensure an airtight seal but don’t over tighten. To prevent strain on pump threads always support heavy inlet and outlet pipes. If there is a likelihood that the water supply may contain solid particles such as pieces of plant or vegetable matter, a suction strainer should be installed before the pump to avoid blocking of pump. Lay suction pipe at a constant gradient to avoid air pockets which may reduce pump efficiency.



NOTE: Suction leaks are the largest cause of poor pump performance and are difficult to detect. Ensure all connections are completely sealed using thread.

WHERE TO USE CHECK VALVES AND FOOT VALVES

Installations with flooded suction require a gate valve so water supply can be turned off for pump removal and servicing. On installations with a suction lift a good quality foot valve with strainer is required. It is not recommended to fit both a foot valve and the check valve in a suction lift installation.



Abrasive Materials
The pumping of abrasive materials will cause damage to the pressure system which will then not be covered by the guarantee.

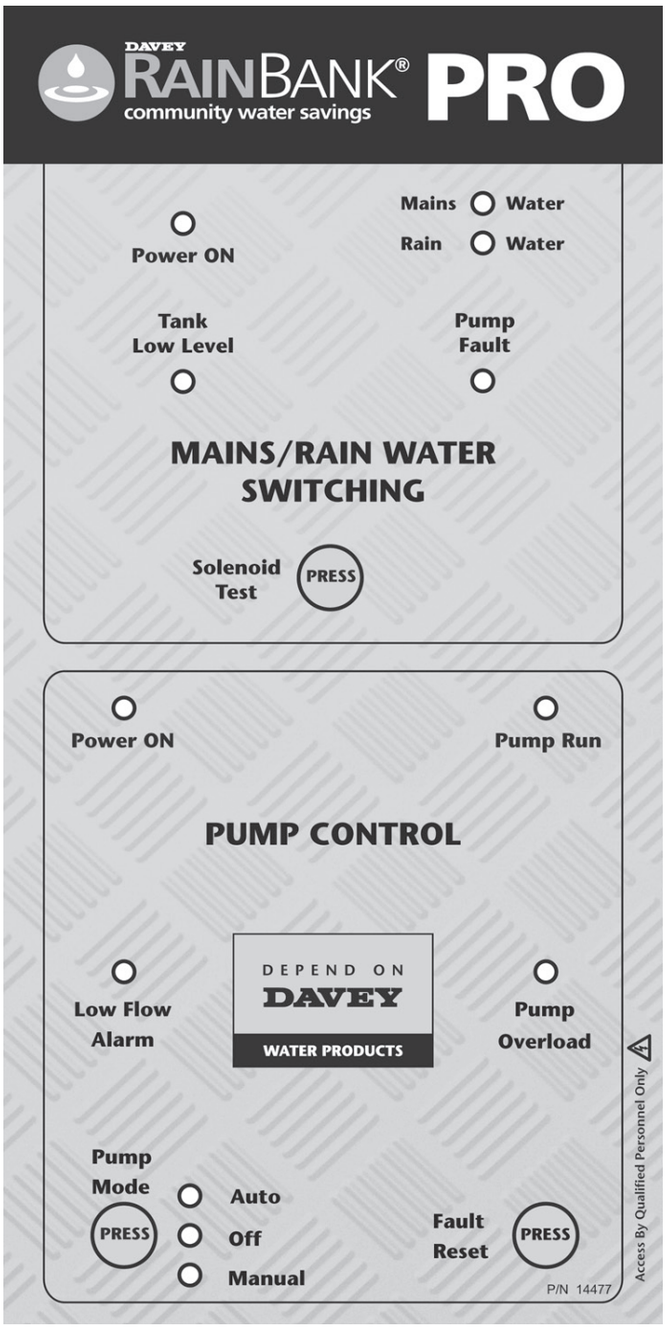
FOR AUTOMATIC PRESSURE PUMPS INSTALLED WITH A MAINS PRESSURE HOT WATER SYSTEM

To protect your system from damage caused by back pressure from hot water systems, you should always have installed on the hot water inlet an approved non-return valve.

PRIMING AND OPERATION

1. After installing pump set shut the discharge gate valve.
2. Fill pump, suction line and discharge assembly with water via the priming ports. On flooded suction simply open suction gate valve to the pump set. When full, fit priming plugs and hand tighten firmly.
3. Ensure an outlet nearest to the pump is open.
4. Ensure all valves in the suction line are open.
5. Switch pump on and partially open the discharge gate valve.
6. Prime should be established almost immediately and a strong flow of water should be evident from the outlet. Allow water to flow for approximately 20 seconds to expel air.
7. If little or no flow is evident from the outlet, switch pump off at the power point and repeat from step 1 ensuring that there is adequate supply of water available to the pump.
8. Once water flow has been achieved, shut the discharge isolation valve. The pump should slowly build up pressure (on the gauge) and turn off at the appropriate cut-out pressure.
9. Check the pressure switch settings by opening and closing the discharge isolation valve slowly and reading pressure on the pressure gauge. Adjust if necessary. Refer section on pressure switch.
10. To prime the discharge pipework, partially open discharge isolation valve and then systematically open & close all outlets on the system to expel the air within the discharge pipework.

RainBank®PRO Control Panel Operation



The following explanations describe the RainBank®PRO control panel and its operation.

MAINS/RAIN WATER SWITCHING

Indicators

LED indicators are used to display

- POWER ON
  Mains power supply is on
- MAINS WATER
  Mains water supply is in use
- RAINWATER
  Pumped rainwater is in use
- TANK LOW LEVEL
  Low level in water storage tank, mains water will be in use
- PUMP FAULT
  Pump is in fault and mains water will be in use
- SOLENOID TEST
  While depressed mains water solenoid will open, and pump will not run.

PUMP CONTROL

Indicators

LED indicators are used to display

- POWER ON
  Mains power supply is on
- PUMP RUN
  Pump is operating
- LOW FLOW ALARM
  Water flow failure (60 second timer)
- PUMP OVERLOAD
  Thermal overload on pump contactor has tripped
- FAULT RESET
  Resets the LOW FLOW fault

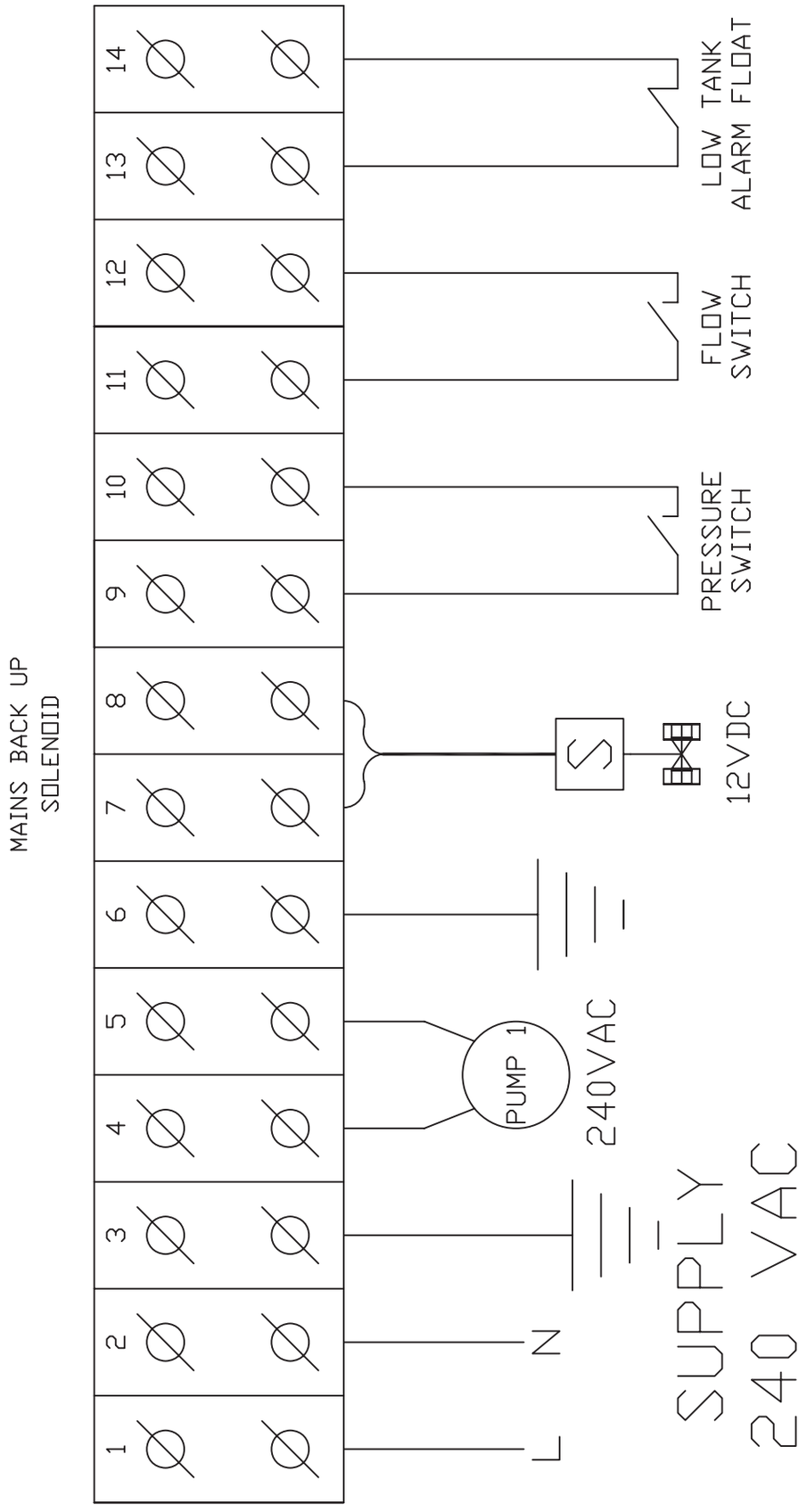
PUMP MODE SELECT BUTTON

- AUTO
  Pump ready to operate from the control input devices
- OFF
  Pump selected to not operate
- MANUAL
  The pump will operate in manual mode for $2^1/_2$ minutes then the control panel will switch to AUTO.

ALARM FUNCTIONS

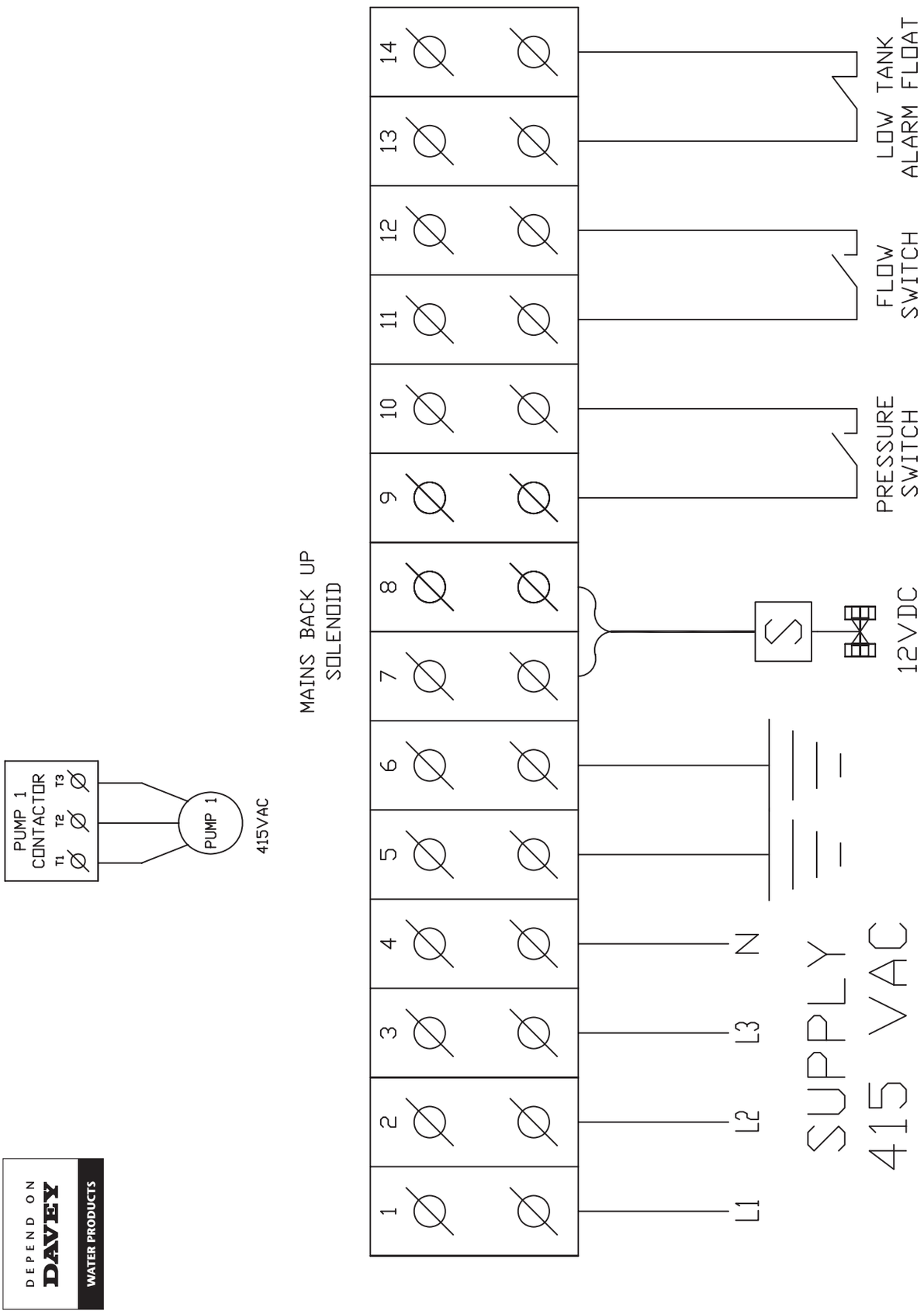
- AUDIO ALARM
  Will automatic mute after 5 minutes
- VISUAL ALARM and STROBE
  Will continue to function until the fault is corrected or the fault reset button is pressed.

RainBank®PRO Single Phase Wiring Diagram – 240V



DEPEND ON DAVEY WATER PRODUCTS

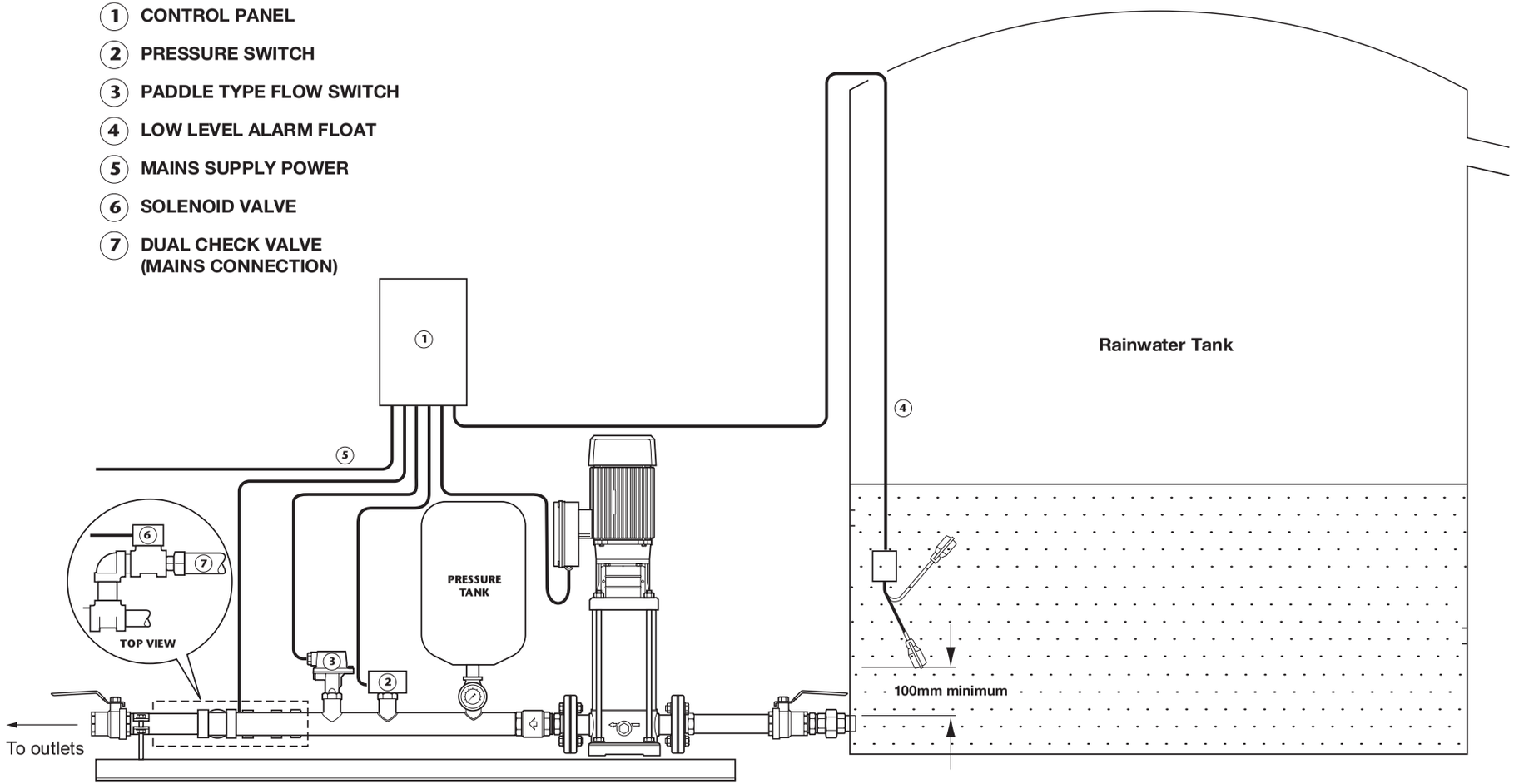
RainBank®PRO Three Phase Wiring Diagram – 415V



DEPEND ON DAVEY WATER PRODUCTS

RainBank®PRO Pump Set

1. CONTROL PANEL
2. PRESSURE SWITCH
3. PADDLE TYPE FLOW SWITCH
4. LOW LEVEL ALARM FLOAT
5. MAINS SUPPLY POWER
6. SOLENOID VALVE
7. DUAL CHECK VALVE (MAINS CONNECTION)



MAINTENANCE

The only regular attention your new pump set requires is to check the pressure tank's air charge every 6 months. This can be checked at the air valve with a tyre gauge. Do not charge tank to a higher pressure than 15 kPa below cut-in pressure setting.

To check air pressure in tank:

1. Switch off pump.
2. Open outlet nearest to pump to release water pressure.
3. Remove air valve cap from top of Supercell tank and charge tank to correct pressure using air pump and check with tyre gauge.
4. Reprime system and switch on.

NOTE: Your pump is designed to operate as an automatic pressure system. The pressure tank will require a specific precharge air pressure dependent upon model. While your pressure tank may have been precharged in manufacture, the precharge pressure should be checked upon installation and every 6 months thereafter. Follow the instructions on the tank. As a guide, the precharge settings are listed below:–

Pressure Settings

Pump	Motor	Standard Tank	Pressure Settings* Cut-in kPa	Cut-out kPa	Tank Pressure kPa
VM5-5	1.1	HP24+	200	450	185
VM5-6	1.1	HP24+	300	550	285
VM5-7	1.5	HP24+	300	650	285
VM5-8	1.5	HP24+	300	700	285
VM10-4	1.5	HP24+	300	400	285
VM10-5	2.2	HP24+	350	500	335
VM10-6	2.2	HP24+	400	600	385
VM10-7	3	HP24+	500	700	485
VM16-3	3	HP24+	250	400	235
VM16-4	4	HP24+	350	550	335
VM16-6	5.5	HP24+	450	650	435

*Standard settings. Can be adjusted to suit site conditions.

TROUBLE SHOOTING CHECK LIST

A) MOTOR RUNS WHEN SWITCHED ON BUT DOES NOT PUMP.

1. Suction line and pump body not filled with water.
2. Air leaks in suction lines or suction pipe not under water.
3. Air trapped in suction lines (also possible with flooded suction due to uneven rise in piping: eliminate humps and hollows).
4. No water at source or water level too low.
5. Valve on suction line closed.

B) PUMP SWITCHES ON AND OFF FREQUENTLY (CYCLING).

1. Check that tank air pressure is correct.
2. Leaking taps, float valves etc. Check plumbing.
3. Leaking check valve/foot valve.
4. Pressure Switch may require adjustment to cater for flooded suction installations – consult your Davey dealer for advice.

C) MOTOR DOESN'T START WHEN SWITCHED ON.

1. Power not connected.
2. Supply voltage too low.
3. Motor not free to turn e.g. a jammed impeller.
4. Internal motor fault.



NOTE: For protection, single phase motors up to 2.2kW are fitted with an automatic "over temperature" cut-out. Constant tripping of this overload device indicates a problem e.g. low voltage at pump, excessive temperature (above 40°C) in pump enclosure.



WARNING: Automatic resets may allow the pump to restart without warning. Always disconnect the pump motor from the electrical supply before maintenance or repairs.



WARNING: When servicing or attending the pump, ALWAYS ensure power is switched off and lead unplugged. Electrical connections should be serviced only by qualified persons. If the electrical supply lead of this pressure system is damaged, it must only be replaced by authorised Davey service personnel as special tools are required.



Care should also be taken when servicing or disassembling the pump to avoid possible injury from hot pressurised water. Unplug pump, relieve pressure by opening a tap on the discharge side of the pump and allow any hot water in the pump to cool before attempting to dismantle.



WARNING: Do not use hydrocarbon based or hydrocarbon propelled sprays around the electrical components of this pump.

Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within two years of the date of original purchase due to faulty materials or manufacture, Davey will at our option repair or replace it for you free of charge, subject to the conditions below.

Should you experience any difficulties with your Davey product, we suggest in the first instance that you contact the Davey Dealer from which you purchased the Davey product. Alternatively you can phone our Customer Service line on 1300 367 866 in Australia, or 0800 654 333 in New Zealand, or send a written letter to Davey at the address listed below. On receipt of your claim, Davey will seek to resolve your difficulties or, if the product is faulty or defective, advise you on how to have your Davey product repaired, obtain a replacement or a refund.

Your Davey Two Year Guarantee naturally does not cover normal wear or tear, replacement of product consumables (i.e. mechanical seals, bearings or capacitors), loss or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorized persons attempting repairs. Where applicable, your Davey product must only be connected to the voltage shown on the nameplate.

Your Davey Two Year Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey Two Year Guarantee.

Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under the Australian or New Zealand legislation and does not affect any rights or remedies that may be available to you under the Australian or New Zealand Consumer Legislation.

In Australia, 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.

Should your Davey product require repair or service after the guarantee period; contact your nearest Davey Dealer or phone the Davey Customer Service Centre on the number listed below.

For a complete list of Davey Dealers visit our website (davey.com.au) or call:

DEPEND ON
DAVEY
WATER PRODUCTS

AUSTRALIA

Customer Service Centre
6 Lakeview Drive,
Scoresby, Australia 3179
Ph: 1300 367 866
Fax: 1300 369 119
Website: davey.com.au

NEW ZEALAND

Customer Service Centre
7 Rockridge Avenue,
Penrose, Auckland 1061
Ph: 0800 654 333
Fax: 09 527 7654
Website: daveynz.co.nz

Davey Water Products Pty Ltd
Member of the GUD Group
ABN 18 066 327 517

® Davey is a registered trade mark of Davey Water Products Pty Ltd.
© Davey Water Products Pty Ltd 2011.

P/N 401900-2 supersedes P/N 401900-1

*** Installation and operating instructions are included with the product when purchased new. They may also be found on our website.**