DAVEY

DAVEY ProMaster™ VSD ECO-SERIES

Installation and Operating Instructions

Model: PM200SV

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

The installation of this product should be carried out by a person knowledgable in swimming pool plumbing requirements following the installation instructions provided in this manual.

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

Congratulations on the purchase of a quality product from the Davey Water Products range of Pool and Spa Equipment. You are assured of many years of reliable and super-efficient performance from your Davey ProMaster™ VSD Eco-Series pump.

Read these instructions in their entirety before switching on this pump. If you are uncertain as to 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.

The Davey ProMaster™ has been designed to circulate swimming pool and spa water in conditions set out in the Australian Standard for swimming pool water quality AS 3633 or equivalent. They should not be used for any other purpose without first consulting your Davey Dealer or the Davey Customer Service Centre.

Every Davey ProMaster™ is thoroughly water tested against a number of flow, pressure, voltage, current and mechanical performance parameters. Davey`s advanced pump manufacturing technology provides reliable and efficient pumping performance that lasts and lasts.

Saving Energy with your Davey ProMaster™ VSD Eco-Series Pump:

The Davey ProMaster™ Pool & Spa pump is a super efficient pump utilising a very clever, state of the art infinitaly variable AC motor that provides lower levels of noise, lower operating costs and lower greenhouse emissions than traditional pool pumps.

Due to its ability to run at lower speeds than conventional pumps, your ProMaster™ pump will also experience less mechanical wear and tear due to less stress on the internal mechanical components.

To achieve energy efficient pumping is easy. Simply run the filtration pump at a lower speed, but run it for longer (see table on page 8) than a conventional fixed speed pump to "turn over" your pool water for adequate filtration and sanitisation. The result is lower energy use and up to 70% lower operational costs.

The ProMaster™ VSD Eco-Series has infinite speed settings from 1500 to 3600RPM, so you can circulate your pool or spa water at any speed in between if required. Speeds can be adjusted to power a Suction pool cleaner, In-Floor cleaning system & Pool Heaters. A Backwash setting on the pump can be selected to backwash a media filter.

What to expect with VSD Eco speed pumping (energy efficient operation) on your pool:

If your ProMaster™ pump is replacing a traditional AC motor pump, you will need to run it longer than your old fixed speed pump. This is NORMAL and you will save energy when using lower speed settings.

You may also notice that the pressure gauge on your filter is indicating a much lower pressure than you are used to. This is also NORMAL. The lower system pressure is simply a result of the lower speed and flow rate produced by the pump.

While running at the lower speed settings you will also notice a significant reduction in pump noise. This is a major benefit for you as it allows you to run your pump during off peak electricity tariffs, which will also assist in the reduction of your operating costs. Plus you will also have much happier neighbours.

Important Considerations when running the pump on Low Flow settings:
Many pool products rely on particular minimum flow rates for best operation and/or efficiency. If you are using the low flow setting on the ProMaster pump (e.g.: speed 1 to 4) Davey recommends that you check the compatibility of the speed or minimum flow rate required to run pool equipment such as:

- Suction pool cleaners
- Ozone generators
- Pool Heaters
- Solar Heating systems
- Salt Water Chlorinator cells
- In-floor pool cleaning systems

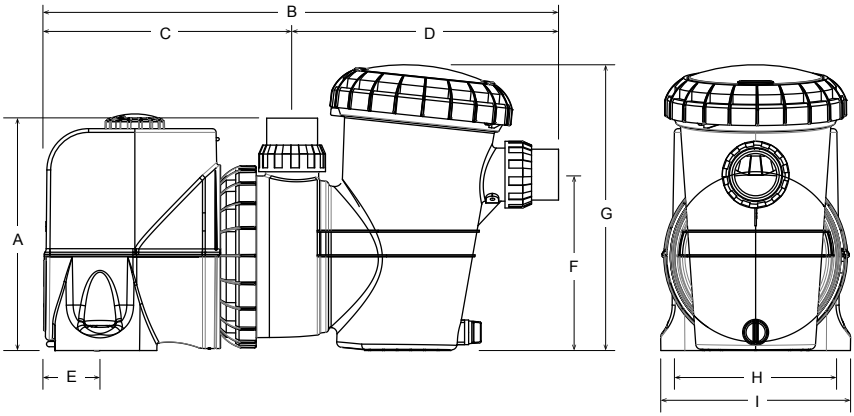
Technical Specifications:

Model	PM200SV
Head (m)	22
RPM	Speed 0 to 10 From – 1500 to 3600
	Backwash Speed – 3800
Enclosure Class (IP)	45
Insulation Class	F
Voltage (V)	220/240 AC
Supply Frequency (Hz)	50/60
Motor Input Power (W / hp)	Speed Setting 1 - 116W / 0.16 hp
	Speed Setting 5 - 488W / 0.65 hp
	Speed Setting 10 – 1000W / 1.34 hp
	Backwash Setting – 1316W / 1.76 hp

Operating Limits:

Max Water temperature	40°C
Max Ambient temperature	50°C

Dimensions:



DIMENSIONS (mm)												
Model	A	B	C	D	E	F	G	H	I	Mounting Holes Diameter	Inlet/ Outlet PVC	Net Weight (kg)
PM200SV	305	670	320	350	65	230	380	200	250	10	40/50	14

Installation of the ProMaster™ VSD Eco-Series Pump:

Location

The pump should be located as close to the water as practicable and mounted on a firm base in a well drained position, high enough to prevent any flooding. It is the installer's/owner's responsibility to locate the pump such that the nameplate can be easily read and the pump can be readily accessed for service.

Weather Protection

It is recommended that the pump is protected from the weather. Enclosures should be ventilated to prevent condensation build-up.

Power Connection

Davey ProMaster™ is suitable for connection to a nominal 220/240 volt 50/60Hz power supply and are equipped with a flex and 3 pin plug. If a power outlet is not available within 3 metres of the pump, a 3 pin power point in a safe, dry place may need to be provided by an electrician. Extension cords are unsafe around pools - and should be avoided. If the supply cord of this product is damaged it must be replaced by the dealer or manufacturer, with genuine Davey spares.

This ProMaster™ pool pump incorporates motor overload detection designed to protect the motor from overheating. If the motor gets too hot during operation, it's operating speed will reduce to bring it within a acceptable operating temperature and then will speed up to the originally set speed.

To reset the motor, switch the power off for 30 seconds, and then return the power from the mains switch.

Davey Water Products recommends that all installations are fitted with earth leakage or residual current protection devices.

CAUTION: In the interest of safety, we advise that all brands and types of pool pumps must be installed in accordance with AS3000 wiring rules or equivalent.

If the pump and filter are located below pool water level, it is necessary to fit isolating valves in the pipe between the pump and skimmer box and in return pipe from the filter to the pool.

The fittings on this product are constructed of ABS. Some PVC jointing compounds are incompatible with ABS. Check compound suitability before use.

Warning! Ensure that an electrical isolation switch is located with easy access so that the pump can be switched off in an emergency.

Rainbow Pool Products

PO Box 2388, Mansfield Qld 4122
Telephone STD 61-7-3849 5385
Facsimile STD 61-7-3849 5384
Email: info@rainbowpoolproducts.com.au
Web: www.rainbowpoolproducts.com.au

Pipe Connection

Barrel unions are provided for connecting to the piping from the pool. The pumps are designed to accept 40mm/50mm PVC fittings.

When plumbing the discharge pipe, ensure that the pipework does not interfere with the pumps speed dial.

The use of any pipe smaller than those specified above is not recommended. Suction piping should be free from all air leaks and any humps and hollows which cause suction difficulties.

The discharge piping from the pump outlet should be connected to the inlet connection on the swimming pool filter (usually at the filter control valve).

Barrel unions need to be hand tightened. No sealant, glues or silicones are required.

Prior to using this pump you must ensure that: *Checklist*

- Speed Setting chosen is a compatible setting with other pool equipment ☐
- 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 pipe-work is correctly sealed and supported ☐
- The pump is primed correctly ☐
- The power supply is correctly connected ☐
- All steps have been taken for safe operation ☐
- The filter has been plumbed with 40/50mm pipe ☐

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- The pump is primed correctly ☐
- The power supply is correctly connected ☐
- All steps have been taken for safe operation ☐
- The filter has been plumbed with 40/50mm pipe ☐

Low Energy Operation:

Your ProMaster™ VSD Eco-Series pump has speed settings from 1500 to 3600 RPM:

- 1500 – Lowest Speed, 1
- 3600 – Highest Speed, 10
- 3800 – Backwash Speed

• Speed 1 provides the lowest speed and therefore the greatest energy efficiency and savings. See page 9 for all other dial position speeds.

Operation	Recommended Speed Setting
Pool Filtration	Speed 1 to 4
Suction pool cleaner operation	Speed 5 to 8
Backwashing your media filter	Backwash Speed
Manually cleaning your pool	Speed 9 to 10
Water Feature operation	
Spa Jet operation	
Solar pool heating	

Guidelines for Recommended Pump Operating Hours:

Australian Standards AS3633: “Private swimming pools - water quality” states that “The minimum turnover rate shall be a single turnover of the full volume of the pool water, within the period that the pump would normally be operating….”

The table below provides a guide only to the running times of your pump while in filtration mode in order to achieve the minimum turn over rate:

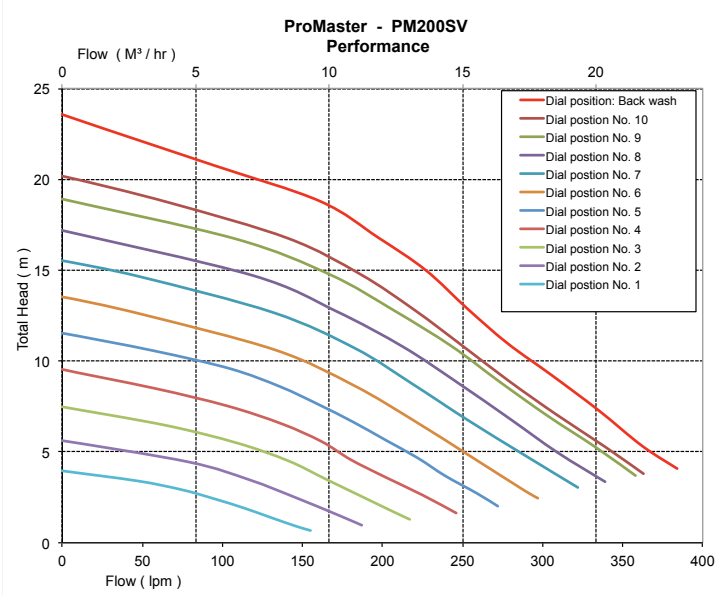
Pool Size (Litres)	Speed Setting (hours)		
	Speed 1	Speed 5	Speed 10
20,000	3.3	1.7	1.1
30,000	5.0	2.5	1.7
40,000	6.7	3.3	2.2
50,000	8.3	4.2	2.8
60,000	10.0	5.0	3.3
80,000	13.3	6.7	4.4
100,000	16.7	8.3	5.6

NOTE: Whenever you increase the pump run time, you should decrease the chlorine output of your chlorinator to avoid the risk of over chlorination.

Using your ProMaster™ VSD Eco-Series pump with a Davey Salt Water Chlorinator:

Davey ChloroMatic and EcoSalt salt water chlorinators require a minimum flow rate of 80 litres per minute (lpm) through the chlorinator cell for best efficiency and cell life. Please refer to the performance graph below as a reference for the flow in your pool and refer to the pressure indicated by the gauge on the media or cartridge filter.

Ensure flow rate is sufficient to cover your chlorinator cell plates completely at all times of operation.



Speed Setting	Maximum Input		Maximum Output		Nom Speed	Duty Point	Flow Rate
	(HP)	(W)	(HP)	(W)	(RPM)	(m)	(LPM)
Dial 1	0.17	128	0.12	90	1500	2.1	107.5
Dial 2	0.28	207	0.19	145	1900	3.0	130
Dial 3	0.39	293	0.28	205	2200	4.1	151
Dial 4	0.53	398	0.37	279	2450	5.2	169
Dial 5	0.70	524	0.49	367	2700	6.4	188
Dial 6	0.88	655	0.61	459	2950	7.5	205
Dial 7	1.08	807	0.76	565	3200	8.6	220
Dial 8	1.26	936	0.88	655	3350	9.7	232
Dial 9	1.45	1078	1.01	755	3500	10.7	244
Dial 10	1.49	1111	1.04	778	3600	11.0	247.5
Backwash	1.77	1320	1.24	924	3800	12.3	261

Operating your Suction Pool Cleaner:

Before installing or purchasing a pool cleaner for use with your ProMaster™ pool pump, it is important to know the minimum flow rates required for it to operate effectively.

To operate a suction pool cleaner with your ProMaster™ VSD Eco-Series pump:

1. Activate the High Flow setting (10) and allow the pump to fully prime by running for around 2 minutes. You will know the pump is primed when you can see a strong flow of water through the clear leaf basket lid.
2. When all air is expelled from the leaf basket, connect the pool cleaner hose firmly into the skimmer plate or dedicated wall suction.
3. Select the speed setting that enables best performance from your suction pool cleaner. Speed 3 to 7 should be ample for most cleaners, however if the cleaner requires better performance, select speeds 7 to 10. A Davey Frill-NeckWIZARD® suction pool cleaner is recommended to run between speeds 3 to 6.
4. The cleaner should only be connected for as long as is required to clean the surface of your pool. When cleaning is complete, disconnect the cleaner and remove the skimmer plate from the skimmer box.

NOTE: To get optimum energy efficiency from your ProMaster™ DO NOT keep the suction pool cleaner connected when cleaning is not required.

5. Reactivate the most efficient speed setting for daily filtration. Speeds 1 to 4 is recommended.

Maintenance: Emptying the Strainer Basket

The strainer basket should be inspected frequently through the transparent lid and emptied when a build up of rubbish is evident. The directions below should be followed.

1. Switch off pump.
2. Unscrew the strainer basket lid anti-clockwise and remove.
3. Remove the strainer basket by lifting upwards from its housing.
4. Empty the trapped refuse from the basket. Hose out with water if necessary.

NOTE: NEVER knock the plastic basket on a hard surface as it will cause damage.

5. Check the strainer basket for cracks, replace the strainer basket in the pump if OK.
6. Replace the lid and ensure that it seals on the large rubber o'ring. Firm hand tightness only is required. The o'ring & thread can be lubricated with Hydra slip or equivalent products.

Failure to undertake regular maintenance may cause damage not covered by warranty.

Power supply to this pump needs to be through an isolating transformer on RCD, having a rated operating current not exceeding 30mA.

Trouble Shooting

If the pump runs but there is no water flow or water flow is reduced, the following condition may apply:

1. The filter requires backwashing or it is blocked. Refer to the relevant section in the Filter Manual.
2. The pump is not primed. Re-prime as per instruction in 'Starting the pump'
3. There are air leaks in the suction piping. Check all piping and eliminate leaks, also check for a loose strainer basket lid. Air bubbles in the water flowing back to the pool would indicate a leak in the suction to the pump allowing air to enter the pipework.
4. A leaking pump shaft seal may also prevent operation. Evidence of this would be water on the ground under the pump.
5. The pump is not able to get water from the pool. Check that the valves to the pump are fully open and that the pool water level is up to the skimmer box.
6. Blockage in the piping or pump. Remove the strainer basket and check for any blockage to the pump impeller entry. Check the skimmer box for blockage.

If the pump does not operate, the following conditions may apply:

1. The power is not connected. For 240 volt only, check the power point by plugging in a portable appliance to ensure power is available. Also check fuses and the main power supply switch
2. Automatic overload is tripped. The pump has an in-built thermal overload which will re-set automatically after the motor has cooled following an overheating period. Determine the cause of the overload tripping and rectify. Re-set the pump by switching the power OFF for 30 seconds.
3. Blockage is preventing the pump from rotating.
4. Motor is burnt out - burning smell is evident. Replacement is required. If you are unable to resolve any installation or operation difficulties with your ProMaster™, contact the supplier from whom the pump was purchased or your nearest Authorised Davey Pool Equipment Service Centre. If any further assistance is required, contact the Davey Customer Service Centre at the address indicated in this manual.

LED Signal & Function

LED Signal	Function
ON	Pump is running
OFF	Pump is off
Slow Flash (Pump Running)	Priming or Bachwash
Fast Flash (Pump Stopped)	Fault detected - reset pump

Removal of the Pump from Pipework

Should it be necessary to remove the pump, follow these instructions:

1. Switch off the power and remove the plug from the power source.

NOTE: If the pump is wired into a time clock or another automatic control, the wiring should be removed by a qualified technician.

2. Close the water valves on the pool return and the pump inlet pipework.
3. Remove the discharge & suction barrel unions taking care not to lose the o'rings.
4. Move the pipework with the barrel unions attached until the pump can be pulled clear.

NOTE: When making any enquiries about your ProMaster™ be certain to quote the model number from the nameplate located on the motor.

Water Quality

Maintaining balanced water chemistry is important to the life of your pool pump. This pump is designed to be used with Pool & Spa water, balanced in accordance with Langlier Saturation Index, with a pH level of between 7.2 and 7.6 and is regularly treated with a chlorine sanitising agent with the level not exceeding 3.0 ppm.

Please consult your local pool shop regularly to have your water tested.

POWER CONNECTIONS AND WIRING MUST BE CARRIED OUT BY AN AUTHORISED ELECTRICIAN.

DANGER - Hazardous suction. Do not block water entry into filtration system with any part of your body as the pressure can trap hair or body parts, causing severe injury or death. Do not block suction.
Turn off pump immediately if someone becomes trapped.

Caution! Do not add chemicals directly to the pool skimmer. Adding undiluted chemicals may damage pump and filter and void warranty.

Routine Maintenance tasks - to maximise the life of your pool equipment & personal safety, use this checklist once a week. Turn pump off first.

a. Make sure that any pressure gauges are in working condition and the operating pressure is within limits as specified on the product.
b. Make sure that each suction inlet, and main drain has a cover that is securely attached and in safe working condition.
c. Make sure that all skimmer covers are securely attached and in safe working condition. These should be replaced every 3 to 4 years.
d. Remove any obstructions or debris from the main drain cover.
e. Ensure the skimmer baskets and the pump hair and lint pots are free of leaves and debris at least once a week.
f. Remove obstructions and combustibles from around the pump motor.
g. Make sure all wiring connections are clean and that all wiring and electrical equipment is in good condition. Damaged wiring must be repaired or replaced by a qualified electrician as soon as damage is discovered.
h. Check water balance and sanitiser levels at your local pool shop.

WARNING! Pump suction is hazardous and can trap and drown or disembowel bathers. Do not block suction. Do not use or operate swimming pools, spas or spa baths if a suction cover is broken, missing or loose. Two suction covers and inlets must be provided into every pump to avoid suction entrapment.

In accordance with AS/NZS60335.2.41 we are obliged to inform you that this appliance is 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 the use of the appliance by a person responsible for their safety

- Children should be supervised to ensure that they don't play with the appliance
- The maximum total head, in meters (for pumps having a rated power input exceeding 50 W)

Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within warranty periods beginning from 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 Three 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 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 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 Support Centre on the number listed below.

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

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