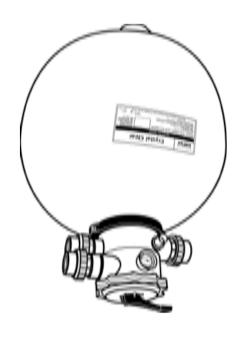
I he installation of this product should be carried out by a person knowledgeable in swimming pool plumbing requirements following the installation instructions provided in this manual.



# INSTALLATION AND OPERATING INSTRUCTIONS DAVEY CRYSTAL CLEAR® FIBRE GLASS SAND FILTERS



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# Your Davey Crystal Clear Sand Filter

Congratulations on your 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 efficient performance from your Davey Crystal Clear® Sand Filter backed by Davey's Ten Year Tank Guarantee.\*

\*Refer to guarantee statement for full details.

Davey Sand Filters have been specifically designed for the filtration of swimming pool 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 Davey Products Pty Ltd.

# The Sparkling Clear Water Difference

Sand filtration is nature's own proven method of filtration. Pool water enters the filter and passes through washed graded sand where the suspended particles are trapped and the water is returned to the pool. As the build-up of dirt in the sand increases, so the water pressure rises and the flow decreases. When the pressure reaches an unacceptable level, the flow must be reversed to clean the filter sand bed in a process called "backwashing" which discharges the dirt to waste.

# **Installation Location**

The filter should be placed in its permanent location, preferably as close to the pool as practicable. Position the filter tank and pump on a level concrete slab or similar base with minimum dimensions of 900mm x 600mm (3' x 2'). Do not use sand to level the concrete slab, as it may wash away and cause vibration and inefficient performance. Allow sufficient space around the filter for routine maintenance and provide for adequate filter drainage and pump ventilation.

Place the pump in position on the slab and locate the filter tank alongside with the multiport valve "PUMP" port oriented toward the pump.

A minimum clearance of 400mm above the multiport valve is required to permit easy removal and 150mm clearance is required behind the pump for pump cooling.

# **Weather Protection**

Davey Sand Filter tanks are made from UV stabilised materials. However to ensure years of reliable service, it is recommended that the filtration system is adequately protected from the weather. For proper care and maintenance of your filter, see section on "Filter Care".

P/N 13779-1 supersedes P/N 13779

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other person whatsoever in respect of any such loss, damage or injury.

N. Nothing in this guarantee is intended to have the effect of contracting out of the provisions of the Trade Practices Act (Aust.), the Goods and Consumer Protection Legislation of the various Australian states and Consumers Guarantee Act 1993 (NZ) except to the extent permitted by the various Acts, and this guarantee is to be modified to the extent necessary to give effect to the table to the extent necessary to give effect to the table to the extent necessary to give effect to the table to the extent necessary to give effect to the table table to the extent necessary to give effect to the table t

consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from the product or any defect.

6. Where the Trade Practices Act (Aust.), the Coods and Consumer Protection Legislation of the various Australian states and the Consumers Guarantee Act 1993 (NZ) does not apply, Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever suffered by the purchaser arising directly or indirectly from the product or any defect and the purchaser shall indemnify Davey against any claim by any the product or any defect and the purchaser shall indemnify Davey against any claim by any

5. Without limiting the original purchaser's entitlements under the Trade Practices Act (Aust.), the Goods & Consumer Protection Legislation of the various Australian states, or the Consumers Guarantee Act 1993 (NZ), 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

proof of date of original purchase, to an Authorised Davey Service Centre freight paid.

4. This guarantee is subject to due compliance by the original purchaser with all directions and conditions set out in the Installation and Operating Instructions. Failure to comply with these instructions, damage or breakdown caused by fair wear and tear, negligence, misuse, incorrect installation, chemical or additives in the water, inadequate protection against incorrect installation, chemical or additives in the water, inadequate protection against high voltage spikes or through unauthorised persons attempting repairs are not covered under guarantee. The product must only be connected to the voltage shown on the

Evidence of this date of original purchase must be provided when claiming repairs under guarantee. It is recommended you retain all receipts in a safe place.

3. This guarantee covers parts and workshop labour only. Goods should be forwarded, with

Protection Legislation of the various Australian states and the Consumers Guarantee Act 1993 (NZ) as applicable.

2. The guarantee period commences on the date of original purchase of the equipment.

TERMS AND CONDITIONS

1. This guarantee applies to all states and territories of Australia and New Zealand only and is subject to the provisions of the Trade Practices Act (Aust.), the Goods and Consumer Protection Legislation of the various Australian states and the Consumers Cuarantee Act 1993.

will be repaired free of charge.

This Davey product is guaranteed to be free of material or manufacturing defects at the time of original purchase. Should the tank fail within ten years of original purchase or any other product component fail within twelve months of original purchase as a result of such defects, the product

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# **Assembly**

- 1. Undo the V-band clamp and remove the multiport valve.
- Look inside and check the lower under drain assembly to ensure laterals are secure.
- 3. Half fill the tank with water.
- Make certain the under drain assembly is correctly located onto it's stand at the base of the tank.
- 5. Place the sand guide in the top of the filter.
- 6. Pour the correct amount of 16/30 or 1mm grade sand or Zelbrite into the tank (refer specifications), evenly distributing it around the central pipe. Level out the top of the sand bed.
- 7. Remove the sand guide and all traces of sand from the tank flange.
- 8. Ensure the closure oring is clean and in the correct position. If necessary, apply a thin film of oring lubricant to the orings. Assemble the multiport valve to the tank aligning the ports to the appropriate plumbing.
- 9. Apply Teflon tape to the thread on the pressure gauge and barrel unions and screw into the multiport valve body. 7 turns of tape is required.



# CAUTION

- A non return valve is required in between the pump and filter.
- On installations where the waste line is more than 3 metres below pool
  water level and more than 12 metres in length, a vacuum break valve
  must be fitted in the waste line close to the filter.
- If an auxiliary pump is installed in line downstream of the filter, it should be protected against causing negative pressure in the filter tank. A flow or pressure switch which only enables the auxiliary pump to run when the main filter pump is running will achieve this.
- 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 the skimmer
  box and in the return pipe from the multiport valve to the pool. This
  prevents water draining from the pool during maintenance.

FAILURE TO COMPLY WITH THE ABOVE CAUTIONS MAY RESULT IN FILTER DAMAGE NOT COVERED BY THE GUARANTEE.

# **Pipe Connections**

Use Teflon tape on all male threads. Piping should be independently supported and not impose heavy loads on the filter or pump. Use 40mm or 50mm ( $1^{1}/_{2}$ " or 2") pipe from the pump to the skimmer box, return pipe for the multiport valve to the pool and from the multiport valve to the drain.



# DO NOT OVERTIGHTEN

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

50mm pipe must be used with the FG28 P/N 32936 or if the length of piping is over 15m. 40/50mm barrel unions are provided at the multiport valve for connection of PVC pipe to "pump", "pool return" and "waste".



### NOTE:

Ensure pipework is connected to appropriately labelled multiport valve connections.

# Commissioning Filter

Refer to "operating instructions" below for safety warning and multiport valve control prior to the filter start-up. The pool should be slightly overfilled and the filter backwashed and then run on RINSE to prevent dust and fine particles in the media bed returning to the pool.

- 1. Backwash the filter.
- 2. Position the valve handle to "RINSE".
- Start the pump and run until water in the valve sight glass becomes
- Stop the pump and position the valve handle to "FILTER".
- Start the pump. The CC Filter is now in filtration mode.
- To determine the correct operating conditions, check the pressure gauge reading is 80kPa or below. Record the clean operating pressure of your filter.

# **Operating Instructions**



**WARNING - FILTER OPERATES UNDER HIGH PRESSURE** 

- Ensure all lids / closures / clamps are correctly secured before operating system.
- Never adjust clamps or change valve settings with the system under pressure.
- Relieve all pressure from system before working on filter.

### **Multiport Valve Control**

The flow of water through the filter is controlled by the multiport valve on the top of the filter tank. The handle on top of the valve can be moved to any one of six positions, which have the following functions:

vaive	Position	Function

Normal filtration and vacuuming through filter. **FILTER** 

Clean the filter. **BACKWASH** 

RINSE Used on initial filter start-up and after backwash to

prevent dirt in the sand returning to the pool. By-passes the filter; used for vacuuming to waste, **WASTE** 

or draining the pool.

By-passes the filter to circulating water to the pool RECIRCULATE

or to boost spa jets.

**CLOSED** Shuts off all flow to the filter. Do not run pump.

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# **Technical Data**

				Sand	Zeolite	Max.	Min.	Filter	Max.	Max.	Label
Size	Size			Req.	Req.	Flow	Backwash	Area	Pressure	Temp.	Part
(inches)	(mm)	Name	Model No.	(kg)	(kg)	(lpm)	(lpm)	(m <sup>2</sup> )	(kPa)	(°C)	Number
18	450	Crystal Clear 18	FG18	60	45	120	85	0.14	280	50	13769
21	533	Crystal Clear 21	FG21	90	60	190	120	0.2	280	50	13770
25	635	Crystal Clear 25	FG25	160	105	240	180	0.3	280	50	13771
28	710	Crystal Clear 28	FG28	200	150	350	230	0.38	280	50	13772
32	800	Crystal Clear 32	FG32	250	180	420	240	0.4	280	50	13773
36	900	Crystal Clear 36	FG36	300	225	500	400	0.65	280	50	13774

# Filter Care

The Davey Sand Filter is the heart of the pool equipment installation. Proper care and maintenance will add many years of service and enjoyment to your pool. Keep the exterior of the filter clean, using a mild detergent and water.

# 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 6.8 and is regularly treated with a chlorine sanitising agent with the level not exceeding 3PPM.

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

# Trouble Shooting

Reduced flow of water into the pool generally indicates the filter is ready to be backwashed. Check the filter pressure gauge (see section on Normal Filter Cycle). If backwashing is required, perform the steps described earlier in the section of "Backwashing the Filter". If there is still reduced flow after backwashing, check for blocked or plugged lines which could restrict the volume of water entering the pool.

Large quantities of sand returning to the pool during the filter cycle may indicate that one of the lower laterals is damaged. Correcting this condition requires removal of sand from the filter so that damaged laterals may be replaced.

If the pump operates noisily, investigate for a possible air leak in the suction line, blocked piping or rubbish in the pump strainer basket. Refer to the Trouble Shooting section in your Pump Manual for further assistance.

In the event of installation or operation difficulties with your product, contact the supplier from whom the equipment was purchased or your nearest authorised Davey Pool Equipment Service Centre. For assistance in locating your nearest dealer contact the Davey Customer Service Centre.



## **CAUTION:**

Never shift the valve handle position while the pump is running.



This filter tank must not be operated under vacuum. Should leaf baskets or suction lines become clogged, blocked or closed, filter damage not covered by guarantee may occur (particularly if an auxiliary pump is installed in line down stream of the filter).

- Normal Filter Cycle

  1. Set the valve to FILTER and start the pump.
- With a clean filter, record the pressure gauge reading or mark the needle position on the pressure gauge.
- Operate the filter each day for a sufficient time to turn over the water in the pool once every day. the filter should also be operated at all times the pool is in use and for about one hour afterwards. During the winter, the running time may be reduced.
- When the pressure gauge reading is 40 50kPa higher than the clean filter gauge reading as in (2) above, it will be necessary to clean or backwash the filter (see section on Backwashing the Filter).

# Backwashing the Filter

When the filter gauge reading is 40 - 50kPa above the clean filter gauge reading, cleaning or backwashing is required. To perform the backwash operation:

- Shut off the pump. Be sure to disconnect any automatic Vacuum
- Shift the valve handle to BACKWASH.
- Start the pump and run until the water appears clean through the sight glass (this will take two or three minutes).
- Shut off the pump and turn the valve handle to RINSE.
- Start the pump and run for approximately one minute.
- Shut off the pump and turn the valve handle to FILTER.
- Start the pump; a new filter cycle has now begun.
- If a backwash cycle does **not** reduce the operating pressure of the filter, the media will need to be changed. Contact your local pool shop. Your media should last between 5 to 8 years.



CAUTION: Most filter media contains dust and fine particles that must be backwashed from media before filter is set to 'Filter'.



**CAUTION:** 

Never vacuum while backwashing.

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# Removal of Filter



# **WARNING:**

Always relieve pressure from system before performing any service work.

Should it be necessary to remove the filter, the following procedure should be adopted:-

- Switch off the pump and remove the plug from the power point.
- 2. Open all air bleeds in system.
- 3. Close isolating valves where fitted.
- Remove: 4. piping connection to the pump

piping connection to the pool return piping connection to waste



NOTE: When making any enquiries about your Davey Filter, be certain to quote the Model Number from the nameplate on the equipment.



To avoid explosion and possible severe or fatal injury, filter pressure must not exceed 280kPa. Do not test filter with compressed air. Check that all clamps and fasteners are in good condition and are firmly secured before pressurising system. Never adjust clamps or fasteners while filter is pressurised.



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.



Small children using the pool or spa must ALWAYS have close adult supervision.



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 once weeking condition.

- Make sure that each socion mer, and main dain has a cover that is securely attached and in safe working condition. Make sure that all skimmer covers are securely attached and in safe working condition. These should be replaced every 3 to 4 years. Remove any obstructions or debris from the main drain cover. Ensure the skimmer baskets and the pump hair and lint pots are free of leaves and debris at least once a week.
- debris at least once a week.
- Remove obstructions and combustibles from around the pump motor.

  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. 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.