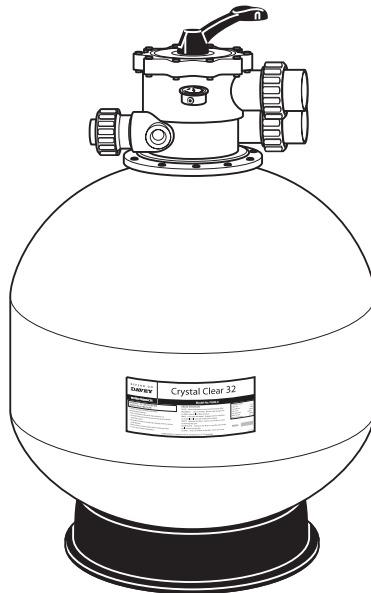


DEPEND ON

DAVEY

WATER PRODUCTS

INSTALLATION AND OPERATING INSTRUCTIONS DAVEY CRYSTAL CLEAR® FIBRE GLASS MEDIA FILTERS



The 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.

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

Your Davey Crystal Clear Media 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® Media Filter backed by Davey's Ten Year Tank Guarantee and Two Year Valve Guarantee.*

*Refer to guarantee statement for full details.

Davey Media 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 Water Products Pty Ltd.

The Crystal Clear Water Difference

Media filtration is nature's own proven method of filtration. Pool water enters the filter and passes through graded media where the suspended particles are trapped and the water is returned to the pool. As the build-up of dirt in the media 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 media bed in a process called "backwashing" which discharges the dirt to waste.

Notice to Users and Installers – 18” to 25” models

Your new Davey Crystal Clear® Media Filter combines two types of media filter construction to provide exceptional tank strength – an inner moulded polyethylene (PE) tank supported by a strong outer layer of spun-wound fibreglass.

You may notice some seepage of water and air from the filter tank upon initial usage. This is NOT a leak, but simply trapped air and water being expelled from between the inner PE tank and the outer layer of fibreglass while the tank is subjected to pressure.

Water deposits (from rain, pool splashing and condensation) between the internal tank and the outer fibreglass layer are considered normal and will not affect the performance of the filter or the pool filtration system. Please be aware that this seepage will disappear once expelled.

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 Media 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".

Assembly

1. Undo the V-band clamp or flange nuts and remove the multiport valve.
2. Look inside and check the lower under drain assembly to ensure laterals are secure.
3. Half fill the tank with water to provide a cushion for the media.
4. 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 opening.
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 media bed.
7. Remove the sand guide and all traces of media 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 (1½" 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 models CCF 28 and above or if the length of piping is over 15m. 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”.
3. Start the pump and run until water in the valve sight glass becomes clear.
4. Stop the pump and position the valve handle to “FILTER”.
5. Start the pump. The Filter is now in filtration mode.
6. 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:

Valve Position

FILTER

BACKWASH

RINSE

WASTE

RECIRCULATE

CLOSED

Function

Normal filtration and vacuuming through filter.

Clean the filter.

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, or draining the pool.

By-passes the filter to circulating water to the pool or to boost spa jets.

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



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.
2. With a clean filter, record the pressure gauge reading or mark the needle position on the pressure gauge.
3. 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.
4. 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:

1. Shut off the pump. Be sure to disconnect any automatic Vacuum Cleaner.
2. Shift the valve handle to BACKWASH.
3. Start the pump and run until the water appears clean through the sight glass (this will take two or three minutes).
4. Shut off the pump and turn the valve handle to RINSE.
5. Start the pump and run for approximately one minute.
6. Shut off the pump and turn the valve handle to FILTER.
7. Start the pump; a new filter cycle has now begun.
8. 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.



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.

Technical Data

OPERATING PERFORMANCE & MEDIA REQUIRED						
Description	Sand Required (kg/bags)	Zelbrite Required (kg/bags)	Max. Flow Rate (lpm)	Min Backwash Flow Rate (lpm)	6 Hour Turnover (litres)	Filtration Area (m ²)
CCF 18	45/3	34/3	135	90	48,600	0.16
CCF 21	85/5	64/5	185	123	66,600	0.22
CCF 25	145/8	109/8	260	173	93,600	0.32
CCF 28	215/11	161/11	336	224	120,960	0.41
CCF 32	250/13	188/12	415	277	149,400	0.50
CCF 36	350/18	263/18	520	347	187,200	0.64

Filter Care

The Davey Media 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 equipment. This filter 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 3PPM. Please consult your local pool shop regularly to have your water tested.

Trouble Shooting

Problem	Action
Reduced flow of water into pool.	Check filter pressure gauge. If 40-50kPa above clean filter reading, perform backwash (page 5).
If still reduced flow after backwashing.	Check for blocked or plugged lines which could restrict flow.
Large quantities of media returning to the pool.	One of the lower laterals may be damaged. To correct this condition, the media must be removed and the lateral replaced.
Pump is operating noisily.	Investigate for a possible air leak in the suction line, blocked pipes or rubbish in the pump strainer basket. (Refer to pump manual)

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.

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:-

1. 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.
4. Remove:
 - 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 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.

DAVEY WATER PRODUCTS GUARANTEE FOR AUSTRALIA & NEW ZEALAND

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 the valve within 2 years of original purchase or any other product component fail within 1 year of original purchase as a result of such defects, the product will be repaired free of charge.

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 Guarantee Act 1993 (NZ) as applicable.
2. The guarantee period commences on the date of original purchase of the equipment. 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 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 freezing, rain or other adverse weather conditions, corrosive or abrasive water, lightning or 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 nameplate.
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 or indirectly from the product or any defect.
6. Where the Trade Practices Act (Aust.), the Goods 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 other person whatsoever in respect of any such loss, damage or injury.
7. 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 that intention.
8. Davey may be collecting personal information from you in order to provide you with a service. Davey Water Products Pty Ltd promises only to use this information in accordance with the Provisions of the Privacy Act 1988 (Cth) and the Privacy Policy of Davey Water Products Pty Ltd which is available at davey.com.au.

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