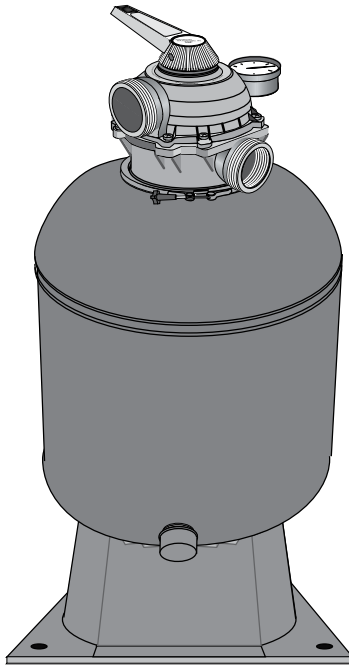


OWNER'S MANUAL



onga[®]

Pentair Water



Cristal-Flo High Rate Sand Filters

Installation, Operation & Parts

For best possible performance and continuous, satisfactory operation, read these instructions before installing your new pump. Should service be required, this manual can be a valuable guide. It should be kept near the installation for ready reference. Record nameplate data from pump on blank nameplate inside this manual for future reference.

Relax - you've bought an **ongá** ...

Congratulations on your decision to purchase an Onga product. Onga is one of the best know brands in its field, with a proud local and international reputation.

Onga is a brand for reliability, value for money and technological innovation. You will find Onga product wherever people need to move water in 3 broad markets covering:



Residential

Technologically advanced solutions for moving and treating water in the Home, Garden, Pool and Spa.



Agricultural

Innovative Stock and Crop water management solutions for Primary Industries.



Process

Water movement products for Building services, Emergency services and Original Equipment Manufacturers.

1. Continual Product Improvement

We employ the best engineers both in Australia and around the world to develop new and better ways to take water further.

2. Operational Excellence

There is only one standard that we set ourselves for both product quality and the quality of our service. That standard is excellence... to have no-one better than us at what we do... nothing short of that is acceptable. Our commitment to quality is reinforced with our ISO 9001:2000 accreditation.



3. A Fair Price

Onga products are neither the cheapest nor the most expensive in their field. Our products do, on the other hand, always represent very good value for money; they always have and they always will.

4. Our Team of Dealers

The hand picked authorised Onga dealer network throughout Australia and worldwide are second to none. We invest considerable time and resources training and supporting them through the Onga Training Academy.



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Safety




Incorrectly installed or tested equipment may fail, causing severe injury or property damage. Read and follow instructions in owner's manual when installing and operating equipment. Have a trained pool professional perform all pressure tests.


1. Do not connect system to a high pressure or city water system.
2. Use equipment only in a swimming pool installation.
3. Trapped air in system can cause explosion. BE SURE all air is out of system before operating or testing equipment.

Before pressure testing, make the following safety checks:

- Check all clamps, bolts, lids, and system accessories before testing.
- BE SURE all air is out of system before testing.
- Tighten Sta-Rite trap lids to 30 ft. lbs. (4.1 kg-cm) torque for testing.
- Water pressure for test must be less than 25 PSI (172 kPa).
- Water temperature for test must be less than 95° F. (35° C).
- Limit test to 24 hours. After test, visually check system to be sure it is ready for operation. Remove trap lid and retighten hand tight only.

NOTICE: These parameters apply to Onga equipment only. For non-Onga equipment, consult manufacturer.

	⚠️ DANGER	BEFORE WORKING ON THE FILTER:
	<p>Hazardous Pressure! Can cause severe injury or major property damage from tank explosion.</p>	<ol style="list-style-type: none"> 1. Stop Pump 2. Release all pressure from system, by turning valve handle to waste.

	⚠️ WARNING	BEFORE WORKING ON THE PUMP OR MOTOR:
	<p>Filter pumps require hazardous voltage which can shock, burn, or cause death.</p>	<p>Disconnect power to motor.</p>

General Information

- Clean a new pool as well as possible before filling pool and operating filter. Excess dirt and large particles of foreign matter in the system can cause serious damage to the filter and pump.



NEVER test this filter with compressed air.



Do not operate filter at water temperatures above 95°F (35°C).



NEVER operate this filter system at more than the stated pressure on the filter tank.

INSTALLATION

Installation of filter should only be done by qualified, licensed personnel.

Filter mount must:

- Provide weather and freezing protection.
- Provide space and lighting for easy access for routine maintenance.
- Be on a reasonably level surface and provide adequate drainage.
- Be as close to pool as possible to reduce line loss from pipe friction.

Piping:

- Piping must conform to local/state plumbing and sanitary codes.
- Use pipe joint sealing compound or Teflon® tape on all male connections of metal pipe and fittings (except unions). Use Teflon® tape or Plasto-Joint Stik® on all male connections of plastic pipe and fittings. DO NOT use pipe dope on plastic pipe; it will cause the pipe to crack. Do not use sealant or tape on unions – assemble them dry and hand tight.
- Do not damage union sealing surfaces and “O” Rings.
- Support pipe independently to prevent strains on filter or valve.
- Use 40mm or 50mm pipe to reduce pressure losses as much as possible.

General Information

NOTICE: Filter may be located away from pool, but for adequate flow larger pipe may be needed. Check local codes when considering remote installation.

- Fittings restrict flow; for best efficiency use fewest possible fittings.
- Keep piping tight and free of leaks: pump suction line leaks may cause trapped air in filter tank or loss of prime at pump; pump discharge line leaks may show up as dampness or jets of water.
- When unions are provided, use as follows for leak free connections:
 1. O-Ring and sealing surfaces must be clean.
 2. Assemble hand tight only (no wrenches).
 3. No pipe compound or Teflon® tape on unions.

Valves:

- A check valve installed between filter and heater will prevent hot water from backing up into filter and deforming internal components.
- Use care before assembly not to damage union sealing surfaces or O Ring.

Wastewater:

- Be sure all provisions for waste water disposal meet applicable local, state or national codes. 100 gallons (379 litres) or more of pool water will be discharged during filter backwashing. Do not discharge where water will cause flooding or damage.

Startup/Operation

⚠ WARNING Hazardous pressure. To avoid explosion and possible severe or fatal injury, filter system pressure must not exceed the stated pressure in the filter tank under any circumstances. **NEVER** test this filter system with compressed air; never operate system with water temperature above 95° F (35° C).

⚠ CAUTION To prevent equipment damage and possible injury, turn pump **OFF** before changing valve position.

NOTICE: Do not add chemicals directly into the pool skimmer. Adding undiluted chemicals may damage equipment and void warranty.

1. Open system valves and make sure pump is filled with water. Make sure pool water level is 2" (50mm) above bottom of skimmer opening.
2. With pump OFF, set valve to 'BACKWASH' position.
3. Start pump, circulating water backwards through filter to waste. Do not install pressure gauge until a steady stream of water runs out of gauge port; then stop pump and install gauge.

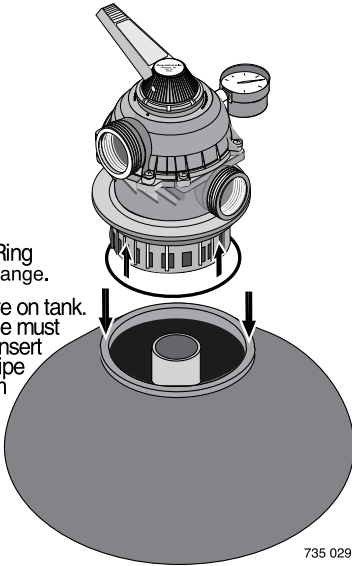
NOTICE: To prevent pump from running dry, be sure water level never drops below bottom of skimmer inlet. Add water to pool if necessary to keep skimmer flooded while backwashing and rinsing.

4. Backwash until water runs clear (3-5 minutes).
5. Stop pump; set valve to 'RINSE' position.
6. Start pump; run pump for one minute.
7. Stop pump; set valve to 'FILTER' position.
8. Filter is now ready for service.
9. Record clean starting filter pressure gauge reading as a reference.
10. When pool is first filled, backwash once a day until pool water is sparkling clear. After that, backwash when pressure gauge shows 5 to 7 PSI (34.5 to 48 kPa) higher than starting pressure.

Startup/Operation

Figure 6

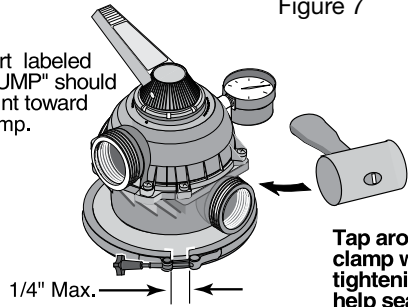
1. Install O-Ring on valve flange.
2. Install valve on tank. Tank flange must be clean; insert collector pipe into bottom of valve.



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Figure 7

Port labeled "PUMP" should point toward pump.



1/4" Max.

Install clamp and tighten until clamp ends (under bolt) are 1/4" apart.

If unable to close gap to 1/4" or less, wait 15-30 minutes and retighten.

Tap around clamp while tightening to help seat clamp.

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Figure 8



FILTER
Normal filtration and vacuuming; water goes through filter to pool.



BACKWASH
Reverses flow for cleaning; water goes through filter to waste.



WASTE
Lowers pool level or drains pool; water bypasses filter, goes to waste.



RINSE
For initial startup cleaning and sand bed leveling after backwash; water goes through filter to waste.



CLOSED
Shuts off all flow to filter and pool.



RECIRCULATE
Circulates pool water; bypasses filter.



WINTERIZE
Leaves all valve ports partially open for winter storage.

Figure 9: Valve settings for startup. Stop pump before changing valve position.



Startup/Operation

STORAGE/WINTERIZING



CAUTION Pool chemicals may give off corrosive fumes. Store chemicals away from system in a well ventilated area.

NOTICE: Allowing water to freeze will damage filter and void warranty. If antifreeze is needed, use propylene glycol; it's plastic compatible and non-toxic. Follow manufacturers instructions. Do not use ethylene glycol based anti-freeze – it's toxic and it may damage plastic components.

1. Open all system valves. Set multiport valve at 'WINTERIZE' to allow air passage to all ports.
2. Remove drain plug from filter.
3. Drain filter tank completely and replace drain cap .
4. Cover with plastic or tarpaulin to protect from weather, but do not seal from air circulation.
5. Protect from freezing.



Fig. 11: Valve setting for winterstorage. Stop pump beforechanging valve position.

Startup for Winterized Equipment:

1. Remove any temporary weather protection placed around system for shutdown.
2. See "Startup", Page 7, for reactivation of the filter.
3. Inspect all electrical wiring to pump for damage or deterioration over the shutdown period. Have a qualified serviceman repair/replace wiring as needed. Inspect and tighten all watertight connections.
4. Open all valves in suction and return piping.
5. Remove any winterizing plugs in system.
6. Drain all winterizing chemicals (if used) from system; flush system.
7. Close all drain valves and replace all drain plugs in system.
8. Fill pool with water to proper level (see pool manufacturer's instructions).

Startup/Operation

MULTI-PORT VALVE SERVICE

⚠ WARNING Hazardous pressure. Stop pump and release all pressure from system before working on filter, valve, or clamp. Filter and valve design allows air to bleed off automatically in normal service. However, always be sure pressure is off system before working on filter, valve or clamp.

NOTICE: if Multi-Port valve is below pool water level, close suction and discharge valves before disassembly to prevent draining pool.

Handle Replacement:

1. Stop pump.
2. Place handle in 'FILTER' position.
3. Remove pin (Key 1, Figures 12A and 12B) to disconnect handle. If it cannot be removed by hand, use a hammer and center punch and lightly tap it out.
4. Remove handle; replace with a new one. Be sure new handle is in 'FILTER' position.
5. Replace pin.

Lid and Plug replacement:

1. Remove Handle (see 'Handle Replacement' above).

2. Remove plug:

- A. Remove all screws and nuts (Key Nos. 2 and 6, Figures 12A and 12B).
- B. Remove lid (Key No. 3) by pulling straight up while holding plug shaft (Key No. 5) down with thumb.

3. Inspect Internal Parts:

Inspect plug and gasket spring, O-Rings, and internal washers (Key No. 4). Replace if necessary.

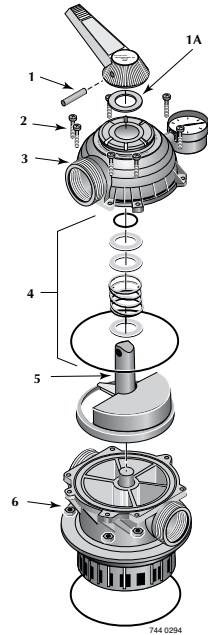


Fig. 12A: Valve Disassembly (1-1/2" Multiport Valve)

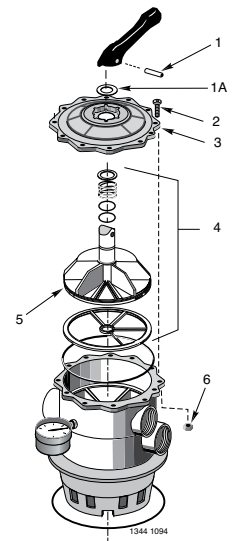


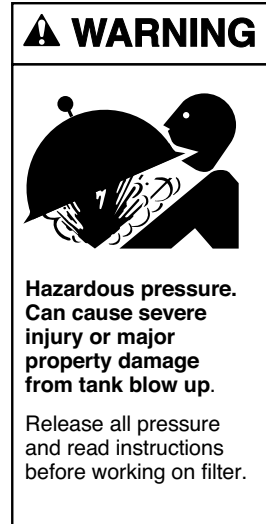
Fig. 12B: Valve Disassembly (2" Multiport Valve)

Trouble Shooting Guide

1. Short Cycle between backwashes:

NOTICE: Time between backwashes will vary with each installation and between different areas of the country. Ask installer about normal backwash interval in your area. The following causes and remedies are for cycle times shorter than normal for your area.

- A. Flow rate too high or filter too small; consult dealer for system sizing recommendations.
- B. Water is chemically out of balance; consult pool serviceman.
- C. Excess dirt/dust in pool; vacuum pool directly to waste.
- D. Body oil/lotion build-up in filter; consult dealer for chemical filter cleaners and follow cleaner manufacturer's instructions.
- E. Filter inadequately backwashed. See instructions under "Startup/Operation", Page 7.
- F. Algae in pool. Consult pool professional about proper chemical maintenance.
- G. Residual chlorine level too low. Consult pool professional about proper chemical maintenance.
- H. Inspect filter sand for solidification caused by dust, calcium, skin oils, of suntan lotions.



2. Low Flow:

- A. Pipe blocked downstream from filter; remove obstruction.
- B. Piping too small; use larger pipe (consult dealer for sizing).
- C. Plugged pump; plugged hair and lint trap or skimmer basket. Clean thoroughly.

3. Pool Water Not Clear:

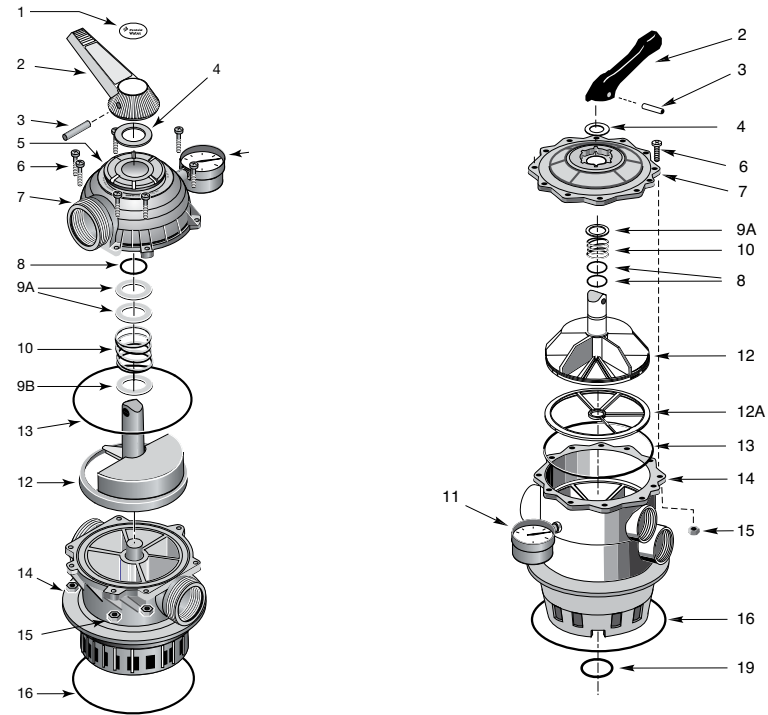
- A. Water is chemically out of balance; consult pool professional.
- B. Filter is too small; consult dealer about equipment sizing.
- C. Sand in pool means broken lateral. Drain both water and sand out of tank. Remove valve; follow procedure under "Filter Setup", Page 6, and instructions with new lateral to replace broken part.



To avoid severe injury or major property damage, follow instructions under 'Valve Installation', Figures 6 and 7, Page 7).

- 1. Follow valve removal procedure, Page 10.
- 2. Replace lateral according to instructions supplied with new lateral.
- 3. Reassemble filter according to instructions under "Filter Setup", Page 6.

Spare Parts



Key No.	Part Description	Qty	WC112-148A	14971-TM-22-L
1	Valve Handle Decal	1	14965-0021	-
2	Handle	1	14962-0032	14971-SM10E1
3	Dowel Pin	1	35857-0021	14971-SM10E3
4	Washer	1	14965-0007	14971-SM10E3
5	Operating Inst, Decal	1	14965-0020	-
6	Screw		37337-3056(7)	14971-SM10E4(10)
7	Valve Cover	1	14965-0011	14971-SM20E6
8	O-Ring	1	35505-1228	14971-SM10E10
9A	Washer	2	14965-0007	14971-SM10E8
9B	Washer	1	14965-0007	-
10	Spring	1	14965-0006	14971-SM10E9
11	Pressure Guage	1	15060-0000T	15060-0000T
12	Plug & Gasket Ass	1	14965-0028	14971-SM20E11
12A	Gasket	1	-	14971-SM20E12
13	Cover O-Ring	1	35505-1275	14971-SM20E7
14	Valve Body Ass	1	14965-0013	14971-SM20E13
15	Nut		35407-0071(7)	14971-SM10E14(10)
16	Tank Flange O-Ring	1	U9-369	U9-369
17	Sight Glass Gasket	1	-	14971-SM20E17
18	Sight Glass	1	-	14971-SM10E16
19	Stand Pipe O-Ring (EPDM)	1	-	35505-1243

Pentair Water Product Warranty

Pentair Water warrants that, when this product is used for the purpose it was designed, is correctly housed and vented against weather, vermin, dust etc., that it will be free of material and manufacturing defects at the time of the original purchase. **This warranty is limited to the cost of the product and does not cover third party costs including the costs of electricians, plumbers, etc. unless authorised by Pentair Water.**

TERMS AND CONDITIONS APPLICABLE INTERNATIONALLY

How long the warranty is effective Internationally

- 1) This Pentair Water product is warranted for 12 months for all parts from the date of the first consumer purchase. Should any parts fail as a result of such defects within the specified period, the part will be replaced free of charge. (This does not include travel charges, removal and reinstallation charges.)

TERMS AND CONDITIONS APPLICABLE IN AUSTRALIA AND NEW ZEALAND

- 1) YOU SHOULD CAREFULLY READ THE INSTRUCTIONS SUPPLIED PRIOR TO USING THIS PENTAIR WATER PRODUCT.
This product is to be installed and operated in accordance with the instructions provided.
This warranty will not apply if it is used in a manner other than in accordance with the instructions.

What the warranty covers:

Pentair Water warrants its products to be free of defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, then Pentair Water will, at its sole option repair or replace the product with a like product. Replacement product or parts may include re-manufactured or refurbished parts or components.

How long the warranty is effective:

- 1) This Pentair Water product is warranted for 36 months for all parts from the date of the first consumer purchase.
- 2) Authorised workshop labour will be free of charge for the first 12 month period from date of the first consumer purchase when unit is found to have failed due to defective workmanship or material supplied by Pentair Water Australia. Infield service by an authorised Pentair Water Service Agent will incur a travel, removal & reinstallation fee payable by customer.
- 3) Where this Pentair Water product is sold for commercial application as defined in the relevant Trade Practices and Consumer Protection legislation the warranty shall be for a period of six months from the date of purchase by the end user.

Who the warranty protects:

This warranty is valid only for the consumer purchaser.

What the warranty does not cover:

- 1) Damage, deterioration or malfunction resulting from:
 - a) accident, misuse, negligence, fire, water, lightning, or other acts of nature, unauthorised product modification or failure to follow instructions supplied with the product;
 - b) repair or attempted repair by anyone not authorised by Pentair Water;
 - c) any damage to the product due to shipment;
 - d) removal or installation of the product;
 - e) causes external to the product such as electric power fluctuations or failure;
 - f) use of supplies or parts not meeting Pentair Water specifications;
 - g) normal wear and tear;

Pentair Water Product Warranty (Continued)

- h) water ingress or exposure to abnormal corrosive conditions or "run dry" conditions;
 - i) any other cause which does not relate to a product defect.
- 2) Damage caused to the product as a consequence of use of another manufacturer's product used in conjunction with Pentair Water and affiliate companies.
 - 3) Ingress of insects into the unit causing electrical malfunction is not warranted, care should be taken to avoid this occurrence.

Spare Parts:

Spare parts are usually stocked for a reasonable period of time following last production.

Pentair Water does not warrant that spare parts will be made available for the whole of the reasonable period and reserves its right to cease supplying spare parts or providing facilities for repair of spare parts in circumstances which are beyond its control including the requirement to remove spare parts from sale as a consequence of changes in the law or otherwise as it deems fit.

How to get service:

In Australia please contact 1800 664 266 In New Zealand please contact 0800 664 269

Claims under this warranty must give evidence of date of purchase, model and serial number of the product and the claimants name, address and telephone number.

- 1) To obtain warranted service, you will be required to provide to either Pentair Water state office or recommended service agent:-
 - a) the product;
 - b) confirmation in writing specifying the nature of your claim;
 - c) proof providing date of original purchase;
 - d) full contact details including name and address;
 - e) the serial number of the product if any.
- 2) The product is to be forwarded by the customer freight paid to an Authorised Pentair Water service agent.
- 3) Warranty service work will be denied or suspended, on equipment not readily accessible to service personnel, that is products that are behind barriers, tiled or bricked in, installed in roofs or second story external walls including inaccessible power points.
- 4) Any service of any product which is found to be faulty due to abuse, fair wear & tear, misuse or improper installation will be charged to the owner at the service agents current servicing hourly rate.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of damages:

PENTAIR WATER'S LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. ONGA SHALL NOT BE LIABLE FOR:

- 1) DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE OF BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- 2) ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.
- 3) ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effective law:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Nothing in this warranty limits or restricts, or is intended to derogate from, any right or remedy which the purchaser or ultimate user of the product may have pursuant to Australian state and/or Australian federal consumer protection legislation, New Zealand Sale of Goods Act, Consumer Guarantees Act, Fair Trading Act or any other relevant and applicable New Zealand legislation or authority and where necessary shall so be read and construed.

IMPORTANT

Please attach your sales invoice/docket here as proof of purchase should warranty service be required.

Please do not return Warranty - Retain for your records.

Purchased From

Purchase Date..... Serial No..... Model No.....



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

Disclaimer: Every endeavour has been made to publish the correct details in this data sheet.
No responsibility will be taken for errors, omissions or changes in product specifications.
Pentair Water reserves the right to change specifications

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