

PRESSURE CARTRIDGE FILTER INSTRUCTIONS



Please retain this Booklet for future reference

READ AND FOLLOW SAFETY INSTRUCTIONS!



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

! DANGER

Warns about hazards that will cause death, serious personal injury, or major property damage if ignored.

! WARNING

Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

! CAUTION

Warns about hazards that will or can cause minor personal injury or property damage if ignored.

NOTICE

Indicates special instructions not related to hazards.

CAREFULLY READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND ON EQUIPMENT
Keep safety labels in good condition; replace if missing or damaged.

! WARNING

Incorrectly installed or tested equipment may fail, causing severe injury or property damage.

Hazardous Pressure

Read and follow instructions in owner's manual when installing and operating equipment.

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

BEFORE OPERATING, MAKE THE FOLLOWING SAFETY CHECKS

1. Check all clamps, bolts, lids and system accessories before testing.
2. Release all air in system before testing.
3. Tighten trap lids.
4. Water pressure must be less than 25 PSI (172 kPa).
5. Water temperature must be less than 100° F. (38° C).

! DANGER

If filter clamp is adjusted under pressure, tank will blow off base, causing severe injury or major property damage.

BEFORE WORKING ON FILTER:

1. Stop pump.
2. Open air release valve.
3. Release all pressure from system.

GENERAL INFORMATION

⚠ DANGER Hazardous pressure. If filter is improperly disassembled or assembled, it will explode under pressure.

To avoid danger of severe injury or major property damage, always follow service instructions in this manual (Pages 8 to 10) when working on filter.

⚠ WARNING Risk of explosion. Never operate this filter system at more than 50 pounds per square inch (50 PSI/345kPa) pressure!

- 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.
- With a cartridge filter system in place and operating correctly, clean water is returned to the pool faster than the pool water is being contaminated. A typical pool installation will require approximately one week to obtain and maintain the sparkle that your filter is capable of giving you.
- Keep pool water pH at recommended level (7.2 to 7.6).
- Be sure both clamps are in place and knobs are securely tightened before starting filter.
- Maintain pressure gauge in good working order. Replace gauge if it fails or is damaged.
- Cleaning interval is based on pressure differential, not on length of time filter is operated.

NOTICE Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

POOL CHEMISTRY GUIDELINES

SUGGESTED POOL CHEMISTRY LEVELS	ACTION REQUIRED TO CORRECT POOL CHEMISTRY	
	TO RAISE	TO LOWER
pH 7.2 to 7.6	Add pH UP	Add pH DOWN
TOTAL ALKALINITY 100 to 130 ppm	Alkalinity Up	Add pH DOWN
CHLORINE (Unstabilized) 0.3 to 1.0 ppm	Add Chlorine Chemical	No action - Chlorine will naturally dissipate
CHLORINE (Stabilized) 1.0 to 3.0 ppm	Add Chlorine Chemical	No action - Chlorine will naturally dissipate
CHLORINE STABILIZER (Cyanuric Acid) 40 to 70 ppm	Add Stabilizer (Cyanuric Acid)	Dilution — partially drain & refill pool with water that has not been treated with Cyanuric Acid

INSTALLATION — GENERAL

FILTER LOCATION SHOULD:

- Provide space and lighting for easy access for routine maintenance.
- Provide adequate ventilation and drainage for pump.
- Be reasonably level.
- Be as close to pool as possible to reduce line loss from pipe friction.

PIPING

- Never use pipe joint sealing compound on pipe and fittings that are plastic or may come into contact with plastic. To seal threaded connections on PVC pipe and fittings, use only teflon tape. Pipe joint compound may cause stress cracking of plastic components.

NOTICE

Filter locations remote from pool are possible but may require larger pipe to produce adequate flow through filter.

- Check local codes if considering a 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.

VALVES

- A check valve installed between pool and filter outlet will prevent contaminants from draining back into pool.

NOTICE

A check valve between filter and pool will also prevent possible backflow which could dislocate element from its seat.

- A check valve installed between filter and heater will prevent hot water from heater from backing up into the filter and deforming filter elements.

NOTICE

Damaging filter elements through excessive heat voids the warranty.

ELECTRICAL

- **BE SURE** filter grounding and bonding meets local and National Electrical Code standards. All wiring, grounding and bonding of associated equipment must also meet local and National Electrical Code standards.

ASSEMBLING FILTER

Filter Cartridge may shift position during shipping. To make sure cartridge is in place, follow procedure below before using filter.

When disassembling filter, place all parts in a clean area.

1. Place filter in a clean area near its permanent location.
2. Remove filter head by turning Locking Ring counter clockwise Figure 1. Remove clamp by lifting straight up over tank.
3. As clamp is turned the Filter Head will rise from the tank body. Please note the Filter Head and Locking Ring are one piece.
4. Set tank head in a clean place; check for missing or damaged parts.
5. Filter element should be installed firmly by pressing into base.
6. Replace tank head evenly on filter tank shell for a tight seal. (Use pool lube)

NOTICE Be sure O-Ring and O-Ring seating area are clean.

7. Replace Filter Head and Locking Ring assembly on tank.

NOTICE To properly engage threads make sure Filter Head is on straight and push downward.

8. Tighten Locking Ring by turning clockwise until it stops **Hand Tighten Only**.
9. Attach pressure gauge and air release valve as shown in Figure 1. Apply Teflon tape to threads of pressure gauge.

NOTICE Tighten gauge hand tight only. Tighten air release valve finger tight only.

CONNECTING FILTER PIPING

NOTICE For ease of installation, plastic pipe and fittings are recommended for all piping to and from pool.
DO NOT use pipe joint compound on base of filter. To do so will cause stress cracking of base, which will void warranty and may cause property damage.

CAUTION Risk of damage to filter. Do not tighten fittings into base ports past thread stops. To do so will ruin filter base and void warranty, and may cause property damage.

NOTICE If pool water level is higher than filter base, shut-off valves must be installed in suction and return lines.

1. Wrap 1-1/2 to 2 layers of teflon tape to male threads only on all piping and fittings.
2. Hand tighten fitting in each port. Be careful not to cross thread.
3. Tighten fittings to a snug fit with wrench. Be careful not to thread fittings past thread stop.
4. If pipe connections leak, remove teflon tape, re-apply teflon tape and re-tighten in ports. Do not overtighten.

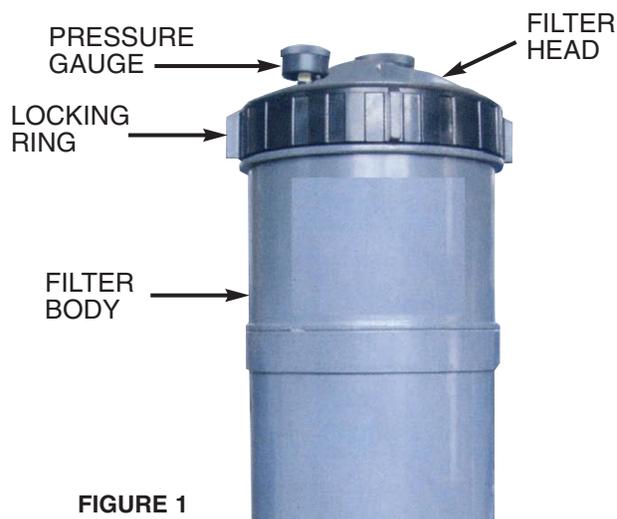


FIGURE 1

START UP

WARNING HAZARDOUS PRESSURE. Risk of severe injury or major property damage if tank explodes. READ the entire procedure before starting system or disassembling filter.

1. Turn pump OFF before starting procedure.
2. Properly seat filter clamps and securely tighten clamp knobs before proceeding.

NOTICE 1. Tightly close plugs on Tank Drain Port (Figure 2).

2. Open air release valve located on top of filter tank head.

NOTICE Air trapped inside the filter greatly increases the explosion hazard. The air release valve allows you to get accumulated air out of the filter tank. At startup, open the air release valve and make sure that it is running a solid stream of water before putting the filter in service.

1. Start pump.
2. When a steady stream of water comes from air release valve, close valve.
3. After filter is operating, record filter pressure gauge reading in owner's manual for future use.

NOTICE When installed on a new pool, filter element may need cleaning after approximately 48 hours of operation.

NOTICE A new or recently cleaned filter element may pass some foreign material until it builds up a sufficient coating to stop all "fines". This is normal. A short operational period will correct the condition.

Check pressure gauge. If pressure has risen more than 10 PSI (70kPa) above startup pressure, remove and clean element.

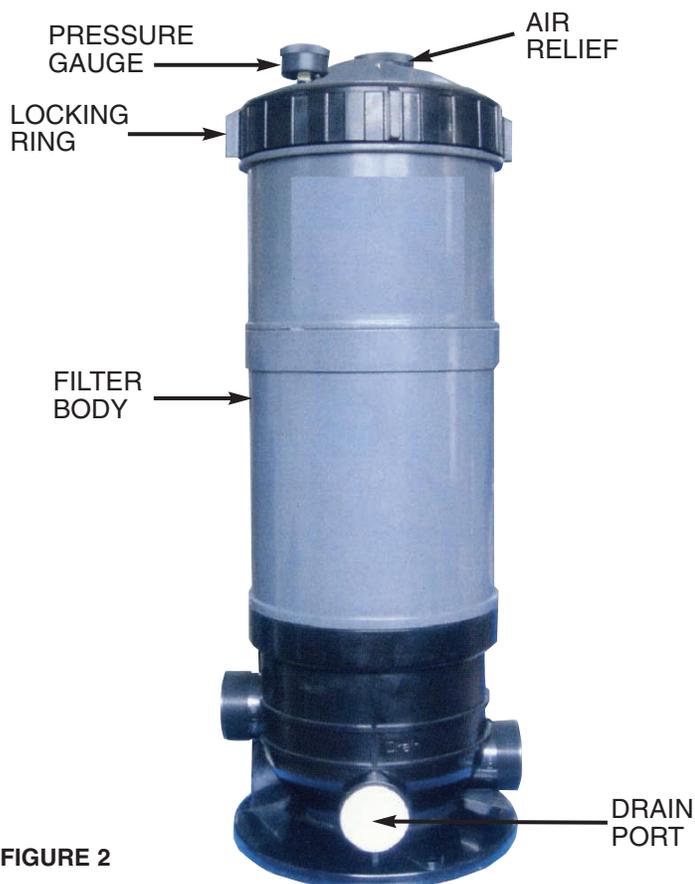


FIGURE 2

FILTER DISASSEMBLY

⚠ DANGER

Hazardous Pressure

Releasing either ring with pressure on system will cause tank or tank head to blow off base, causing severe injury or major property damage. NEVER adjust, tighten or loosen ring when tank is under pressure. If filter leaks at the ring, do not adjust the ring. Instead, follow instructions under "Filter Disassembly", below and "Filter Assembly", Page 8.



Regularly inspect clamp assemblies for cracked, corroded or broken welds and worn or stripped threads. If any wear or damage shows, replace the complete ring.



Tension stresses and aggressive pool chemicals can aggravate mechanical wear. Tank clamp assemblies and nuts or plastic knobs should be replaced every five years.



Do not use a filter that shows cracks, corrosion or distortion.

FILTER DISASSEMBLY

1. STOP PUMP.

2. **CLOSE** suction and return line valves (if used).

3. **OPEN** air release valve on top of filter.

4. **WAIT** until all pressure is released from filter tank and system before loosening either clamp.



WARNING To prevent severe or fatal injury, make sure that all pressure has been released from filter tank BEFORE proceeding.

5. Remove drain plug or open drain valve at "Tank Drain Port" and drain filter.

6. Loosen clamp ring; remove clamp by lifting it straight up over tank.

7. Remove tank head from tank body. Be careful not to damage O-Ring. Place tank head in clean area.

NOTICE

If heavy dirt deposits have collected around bottom of filter element and base, wash out base before removing element.

8. Remove the O-Ring from the filter. Clean the O-Ring and inspect it. If you see cuts, cracking, deformation or wear, replace it.

9. Rock filter element to one side to free seal.

10. Lift element out of tank body. Do not drop filter element. Place element in clean area where it can be cleaned with hose and spray nozzle attachment.

FILTER REASSEMBLY

1. Replace plugs or close valves in Tank Drain and Auxiliary Drain ports.
2. Set filter element on base.
3. Make sure filter element is flush with base of filter to avoid damaging element when you replace the filter head (Figure 3).
4. Inspect and clean the tank flanges and O-Ring seats. If flanges are deformed, cracked or corroded, replace entire filter.
5. Replace Filter Head and Locking Ring assembly on tank.
6. Tighten Locking Ring by turning clockwise until it stops. **Hand Tighten Only.**
7. Clean pump strainer basket.
8. Open system valves as needed.
9. Proceed to "Startup".

LIFT FILTER ELEMENT
STRAIGHT UPWARD
TO REMOVE

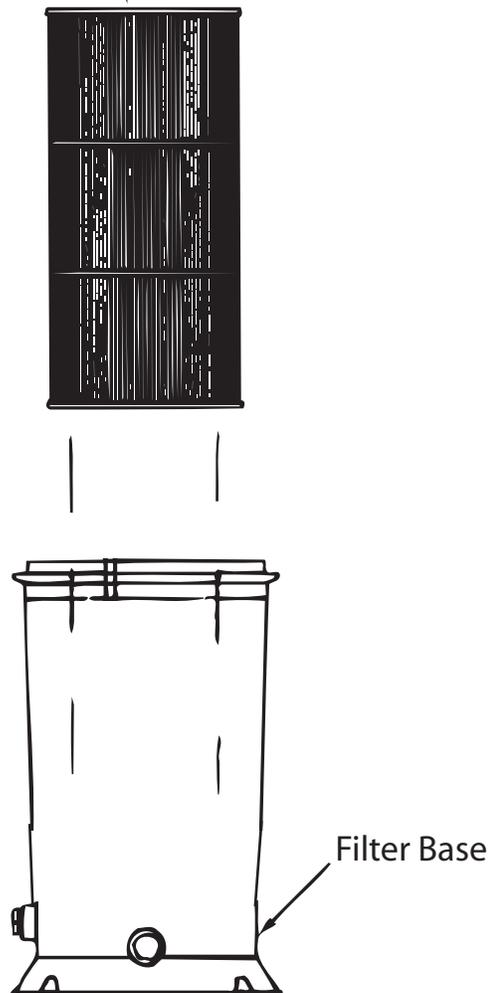


FIGURE 3

FILTER CLEANING PROCEDURE

NOTICE Keep track of filter operating pressure. When pressure reaches 10 pounds per square inch (PSI) (70kPa) above initial operating pressure, clean filter element.

NOTICE If filter is used with a spa, soak element (see Step 2, "Special Cleaning Instructions") at each regular cleaning. With hose, wash foreign material from inside of base. Try to avoid washing debris into outlet port (See figure 4)

NOTICE Be sure inside surface of base is clean.

WASHING FILTER ELEMENT (See Figures 4, 5 and 6)

1. Use a garden hose with straight flow nozzle to wash down filter element (Figure 4). For best results use a spray nozzle cleaning system.
2. Work from the top down; wash down all pleats. Wash between all pleats.
3. Turn element while spraying to wash down entire outside of element.
4. Repeat wash down process for inside of filter element. Hold nozzle as close to inside of pleats as possible (Figure 6).

- NOTICE**
- BE SURE all dirt and foreign materials are washed away from **INSIDE** pleats of element.
 - Allow cartridge to dry thoroughly before replacing it in filter
 - TIP — Have a second cartridge on hand and ready to use; this will avoid filter down time.

SPECIAL CLEANING INSTRUCTIONS

⚠ DANGER Risk of fire or explosion. Isolate filter from system before chemical cleaning; rinse filter and elements completely before returning to service.

If filter cannot be isolated, remove media and clean at another location. Follow chemical manufacturer's instructions for use. Do not mix chemicals except as directed by manufacturer. Do not allow cleaning chemicals to mix with or to come in contact with chlorine, bromine, other chemicals, or chemical feed devices.

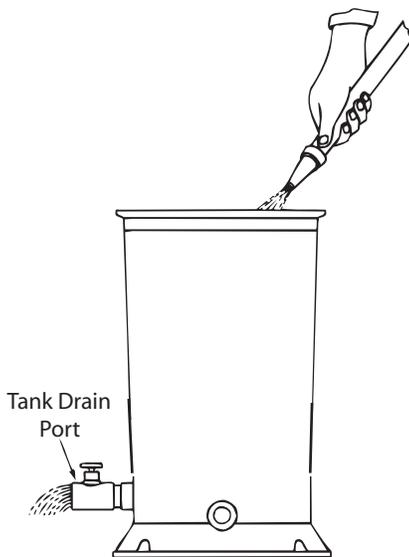


FIGURE 4



FIGURE 5

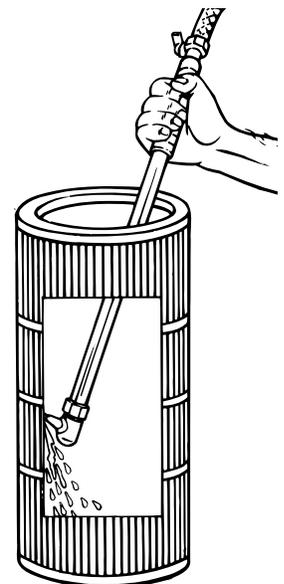


FIGURE 6

NOTICE

Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

For stubborn deposits, proceed as follows:

1. Follow Filter Cleaning Procedure (Page 9).
2. If deposits remain, soak element at least one hour with a solution of Filter Flush and water.
3. Wash off with water to remove oils, dirt and remaining cleaner solution.
4. If filter element does not come clean with this procedure, consult your pool professional. Acid washing should be done only by trained professionals who have proper safety equipment and acid disposal facilities.

POOL MAINTENANCE

VACUUM CYCLE

1. Attach vacuum hose to skimmer connection.
2. Adjust suction line valves to provide sufficient flow through vacuum tube.
3. Proceed to vacuum. Filtered water will be recirculated back to pool.

WINTERIZING

⚠ DANGER

Hazardous pressure. To avoid severe injury or major property damage, follow instructions below exactly.

⚠ WARNING

Explosion hazard. Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter or piping.

NOTICE

Filter must be protected from the weather and drained if freezing is anticipated. Allowing filter to freeze can cause damage to filter and **WILL VOID THE WARRANTY!**

1. Stop pump.
2. Open air release valve.
3. Remove drain plugs from ports or open valves at "Tank Drain Ports".
4. Drain ALL piping to and from filter.
 - a) Gravity drain system as far as possible.
 - b) Protect areas which retain water with non-toxic propylene glycol antifreeze (RV antifreeze) or pipeline Anti-Freeze.
5. Turn to Page 7 for filter disassembly instructions.
6. Remove filter element and store in a warm, dry area.

⚠ CAUTION

Do not remove or damage safety and instruction labels during cleaning. Replace any decals which may have been damaged.

TROUBLESHOOTING GUIDE

SHORT CYCLE:

NOTICE

Time between cleanings will vary with each installation. The following causes and remedies are for cycle times shorter than normal.

NOTICE

Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

1. **Chlorine residual too low** — maintain proper residual (consult pool professional for recommendation).
2. **Flow rate too high** — restrict flow to rated capacity of filter (see instruction decal on filter).
3. **Filter too small** — install larger filter or additional filter.
4. **Unstable water** — consult pool professional.
5. **Filter element not cleaned properly or plugged with algae, iron, calcium, etc** — see "Special Cleaning Instructions".
6. **Heavy or improper application of powdered chlorine or chlorine pills that contain a binder** — see "Special Cleaning Instructions".
7. **Algae in pool** — apply heavy dose of chlorine or algicide as recommended by pool manufacturer. Continue until algae is controlled.

LOW FLOW:

1. **Element is plugged** — see "Special Cleaning Instructions".
2. **Pipe blocked downstream from filter** — remove obstruction.
3. **Piping too small** — replace with larger pipe (consult dealer for recommendation).
4. **Pump hair and lint trap is plugged** — empty and clean.
5. **Pump impeller and diffuser worn** — replace with new parts. Consult pump owner's manual for information.
6. **Pump too small for system** — replace with larger pump.

POOL WATER NOT CLEAR:

1. **Chlorine dosage too low** — maintain adequate chlorine residual (consult pool professional for recommendation).
2. **Element cloth torn or punctured** — replace element.
3. **Filter too small, flow too low, or daily operating time too short, giving inadequate turnover rate** — consult dealer to verify that equipment is properly sized for your pool.
4. **Pump too large** — overpumping — reduce flow rate.
5. **Filter installed backward** — replumb.

LONG RECOVERY TIME AFTER HEAVY USAGE:

1. **Residual Chlorine level is too low** — add chlorine.
2. **Filter too small** — replace with larger unit.
3. **Pump too large** — reduce flow rate.

FILTER BY-PASSES DIRT:



To avoid severe injury or major property damage, follow instructions under “Disassembly” and “Assembly” (Pages 7 and 8) EXACTLY.

1. **Element cloth torn or punctured** — replace element.
2. **Filter element is not seated properly in filter base** — follow instructions under “Filter Disassembly - Reassembly” and reposition properly.
3. **Filter is plumbed backwards and element cloth is ruptured** — replumb properly and replace element.
4. **Colloidal fines (very small suspended dirt particles) are present and passing through element covering** — use Crystal Clear or if fines have already settled, vacuum to waste.

WARRANTY

LIMITED WARRANTY

The manufacturer supplies a limited warranty to the original consumer purchaser of the product on the following terms and conditions:

1. The product is warranted to be free from defects in material and workmanship for a period of twelve (12) months from the date that the product is originally installed.
2. Notwithstanding any provision herein to the contrary, the warranties and obligations hereunder shall not in any event extend for more than two years beyond the date of shipment of the product from Speck Pumps - Pool Products, Inc. in Jacksonville, Florida and three years from the date of manufacture.
3. Warranty is void in the following cases: damages which result in whole or in part from: (a) careless or improper installation of the product; (b) improper or negligent use and maintenance of the product. (c) tampering with the product by unauthorized repair personnel; (d) ground movement; (e) substitution of parts and/or components.
4. The manufacturer's sole obligation hereunder shall be to replace or repair any defective product. The manufacturer reserves the absolute right to determine whether any defective product should be replaced or repaired.
5. Any customer who wishes to make a claim under this Limited Warranty shall notify Speck Pumps, of such claim by telephone or by mail. After the customer has been authorized to return a defective product, the customer must return the product to Speck Pumps.

Any goods returned to Speck Pumps without prior authorization will be returned to the shipper unopened. Speck Pumps shall not bear any costs or risks incurred in shipping a defective product to Speck Pumps or in shipping a repaired or replaced product to a customer.
6. Speck Pumps will charge customers for all non-warranty work which it may perform. Warranty work will not be performed until the customer has accepted the price quoted.
7. Except as specifically set forth above, no other warranties, whether express or implied, including, without limitation, the implied warranties of merchantability and fitness for a particular purpose, are made by the manufacturer. In no event will the manufacturer be liable for any loss, including time, money, goodwill, lost profits and consequential damages based on contract, tort, or other legal theory, which may arise hereunder or from the use, operation or modification of the pump, motor or associated parts. The maximum liability of the manufacturer hereunder shall not exceed the amount actually paid by the customer for the pump, motor and associated parts.
8. Some states do not permit limitations on the terms of implied warranties or on the recovery of incidental or consequential damages. Accordingly, the limitations contained in paragraph 7, may not apply to certain customers.
9. This warranty gives customers specific legal rights. Customers may have other rights which may vary from state to state. The product is manufactured under the license from Speck Pumpen, GERMANY.