HAYWARD FLOW CONTROL
6" & 8" PVC & CPVC SB SERIES SIMPLEX BASKET STRAINER
INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Current Version

PLEASE READ THE FOLLOWING INFORMATION PRIOR TO INSTALLING AND USING ANY HAYWARD PRODUCT. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY, OR EVEN DEATH.

1. Hayward Flow Control (Hayward), a division of Hayward Industries, guarantees its products against defective material and workmanship only. Hayward assumes no responsibility for property damage or personal injury resulting from improper installation, misapplication, or abuse of any product.
2. Hayward assumes no responsibility for property damage or personal injury resulting from chemical incompatibility between its products and the process fluids to which they are exposed. Determining whether a particular PVC or CPVC product is suitable for an application is the responsibility of the user. Chemical compatibility charts provided in Hayward literature are based on ambient temperatures of 70°F and are for reference only.
3. Hayward products are designed for use with non-compressible liquids.

WARNING

Hayward PVC & CPVC products should NEVER be used or tested with compressible fluids such as compressed air or nitrogen. Use of PVC or CPVC product in compressible fluid applications may result in product damage, property damage, personal injury, or even death.

4. The maximum recommended fluid velocity through this Hayward product is five feet per second (5 ft/s). Higher fluid velocity can result in damage due to the water hammer effect.
5. Piping systems must be designed and supported to prevent excess mechanical loading on Hayward products due to system misalignment, weight, shock, vibration, and the effects of thermal expansion and contraction.
6. The effect of temperature on plastic piping systems must be considered when the systems are initially designed. The pressure rating of plastic systems must be reduced with increasing temperature. Maximum operating pressure is dependent upon material selection as well as operating temperature. Before installing any Hayward product, consult Hayward product literature for pressure vs. temperature curves to determine any operating pressure or temperature limitations.
7. PVC and CPVC plastic products become less ductile below 34°F. Use caution in their installation and operation below this temperature.

WARNING

Hayward PVC and CPVC products should not be used in services with operating temperature below 34°F.

8. Due to differential thermal expansion rates between metal and plastic, transmittal of pipe vibration and pipe loading forces, **DIRECT INSTALLATION OF HAYWARD FLOW CONTROL PRODUCTS INTO METAL PIPING SYSTEMS IS NOT RECOMMENDED**. Wherever installation of Hayward product into metal piping systems is necessary, it is recommended that at least 10 pipe diameters in length of plastic pipe be installed upstream and downstream of the product to compensate for the factors mentioned above.
9. Published operating requirements are based on testing of new products using clean water at 70°F. Performance is affected by many factors including fluid chemistry, viscosity, specific gravity, flow rate, and temperature. These should be considered when sizing Hayward products.
10. Systems should always be depressurized and drained prior to installing or maintaining any Hayward product.

WARNING

Failure to depressurize and drain system prior to installing or maintaining any Hayward product may result in product damage, property damage, personal injury, or even death.

11. Always follow your site and/or company procedures for any safety training and/or site specific precautions or warnings in addition to those in this document.

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1. INSTALLATION:

1.1. Transporting the Basket Strainer:

Product should be stored inside factory packaging until product is ready to be installed. Packaged product should be stored indoors, at room temperature, and out of direct sunlight. Avoid storing packaged product in location where packaging may become wet. Product should be moved as close to installation site as possible prior to removing from packaging. Do not cut through tape on box any more than necessary to avoid damaging product. After removing product from carton, care must be taken not to damage product or to allow debris to enter product.

1.2. Mounting the Strainer to Floor or Skid:

Hayward SB-Series Basket Strainers are equipped with a bolt pattern on the base so that the vessel may be directly mounted to a skid or to the floor. Hayward recommends using 3/4" diameter bolts or studs with flat washers and lock washers for mounting the vessel. The bolts (or studs) should be torqued to 5-10 ft-lb in an alternating sequence in order to securely mount the vessel without damaging the base and to ensure that the vessel is installed as level as possible. The lower mounting flange is nominally 1.4" thick.

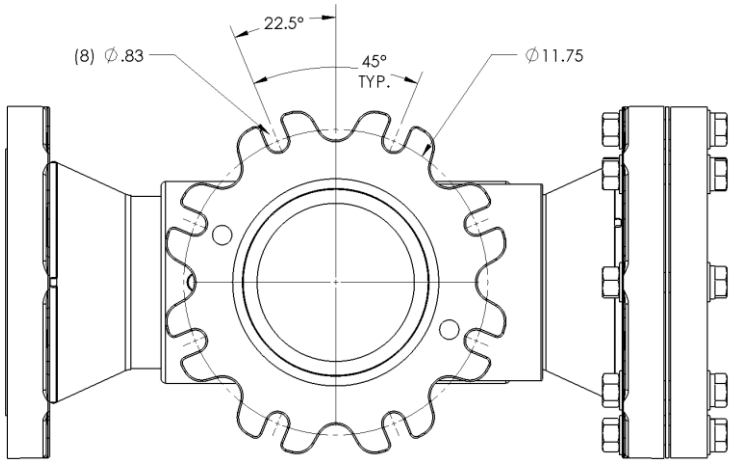

Figure 1: SB Series 6" & 8" Base, Bottom View

WARNING

Hayward PVC and CPVC products should NEVER be used or tested with compressible fluids such as compressed air or nitrogen. Use of PVC or CPVC products in compressible fluid applications may result in product damage, property damage, personal injury, or even death.

The PVC and CPVC SB Series Strainers are intended for use in liquid service only. Do not attempt to use this product for controlling air or gases. Use of this product in air or gas service may result in product damage, property damage, personal injury, or even death.

1.3. Installing the Strainer into a System:

CAUTION

Hayward SB-Series Basket Strainer must be installed in an upright position.

Do not install unsupported piping or risers onto flanges or vessel body.

Do not use vessel as a pipe support or system anchor. Sound piping system design principles should be applied when installing this vessel.

Do not install flanged metal pipe directly to the vessel flanges (see pg. 1).

Use of expansion joints or expansion loops in piping system connected to vessel may be necessary to keep differential thermal expansion / contraction stresses to a minimum.

It is highly recommended that valves are installed in the piping system, upstream and downstream of vessel, to allow for routine maintenance (i.e. basket changes / cleanout).

1.3.1. **Installing the Basket Strainer into a System:**

1.3.1.1. Remove product from packaging.

1.3.1.2. Verify that product is defect free and meets specifications.

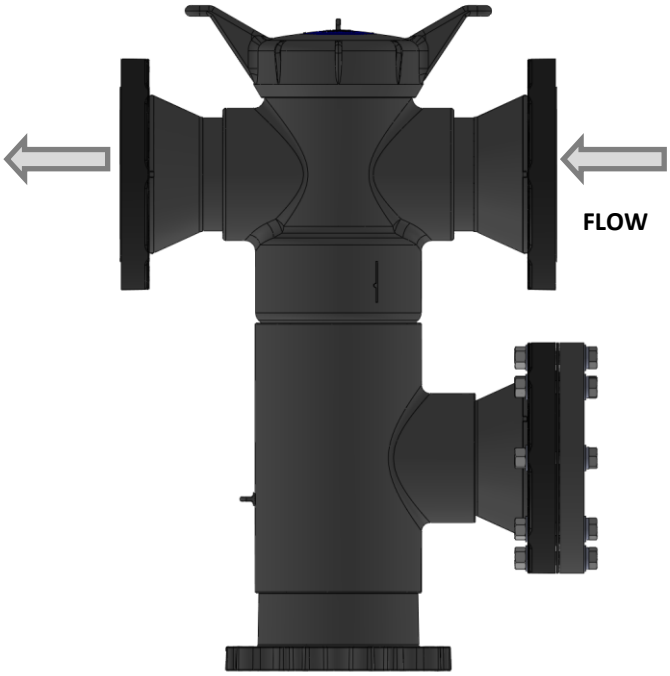

Fig. 2: Straight Flow Connection

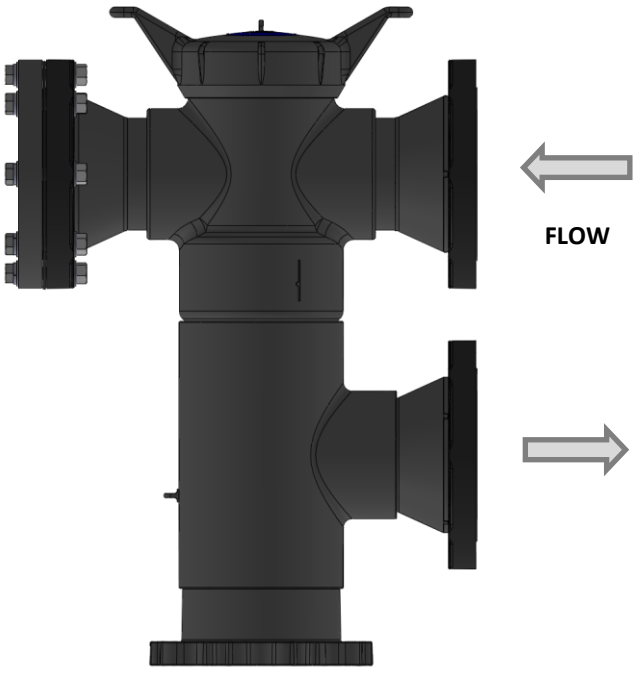

Fig. 3: Loop Flow Connection

1.3.1.3. Verify inlet and outlet ports, desired flow configuration, and position the strainer in line accordingly. The blind flange may need to be moved depending on desired flow connection, see figures 2 and 3.

CAUTION

Avoid exposing the strainer to primer, solvent cement, or their fumes, as damage to the strainer could result.

1.3.1.4. Flange Connection:

1.3.1.4.1. Flange bolts should be tight enough to compress the gasket and make a good seal, without distorting or putting excessive stress on the flanges. Suitable washers should be used between the bolt head and flange and the nut and flange. Bolts should be tightened in alternating sequence (Figure 4). See Table 1 for recommended torque.

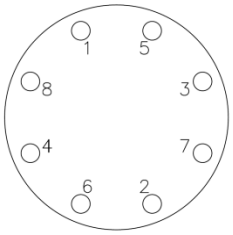

Fig. 4: Bolt Tightening Sequence

Flange Size	Bolt Dia. (in.)	Torque (ft. lbs.)
6”	3/4-10 UNC	30-40
8”	3/4-10 UNC	30-40

Table 1. Recommended Flange Bolt Torque

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2. OPERATION

2.1 Installing the Basket:

2.1.1 To install the basket into the SB Series Basket Strainer, place basket inside vessel aligning shoulder of basket with shoulder of vessel body.

2.2 Filling and Pressurizing the Basket Strainer

2.2.1 To fill and pressurize Hayward SB-Series Basket Strainer:

2.2.1.1 Verify that cover O-ring, cover O-ring groove, and cover sealing surface are clean.

2.2.1.2 Verify that cover O-ring is seated inside O-ring groove.

2.2.1.3 Open vent via the thumbscrew on top of cover (vent is opened by rotating the thumbscrew counter-clockwise). NOTE: Process media will be allowed to escape through outlet of vent as vessel is filled. Prepare to capture, collect, and dispose of vented chemicals properly.

2.2.1.4 Install cover firmly onto vessel body

2.2.1.5 Do not strike the cover.

2.2.1.6 Do not attempt to over-tighten cover.

2.2.1.7 Cover is sealed by means of a pressure energized face sealing O-ring. **Tighten cover hand-tight plus approximately 1/8-turn (i.e. 45°). It is not necessary to tighten cover beyond hand tight plus 1/8-turn.**

2.2.1.8 Slowly open valve upstream of vessel and start system pump (if necessary).

2.2.1.9 Allow process media to fill vessel, air will be purged through vent on top of cover. After all air has been purged, process media will start flowing through vent. Close vent by rotating the thumbscrew clockwise.

2.2.1.10 Allow pressure to slowly increase until system operating pressure is reached.

WARNING

Open and close valves upstream and downstream of the SB-Series Basket Strainer slowly. Rapid increases in pressure or flow can create excess water hammer effect, resulting in property damage, personal injury, or even death.

2.2.1.11 Carefully inspect vessel at cover, flange connections, and vent to verify no leaks are present. If any leaks are present, shut down system, relieve system pressure, and drain vessel prior to tightening any connections.

WARNING

If vessel is leaking, never try to stop the leak while vessel is under pressure. Doing so can result in property damage, personal injury, or even death.

WARNING

Failure to fill vessel with vent thumbscrew loosened to allow air to escape from the vessel can result in buildup of pressure and compression of air in the system, resulting in property damage, personal injury, or even death.

2.3 Operating the Basket Strainer:

2.3.1 Valves upstream and downstream of the vessel should be opened and closed slowly to prevent water hammer on the vessel.

2.3.2 The maximum recommended fluid velocity through the SB Series Basket Strainer is 5 ft/s.

2.3.3 Hayward recommends the installation and use, or monitoring, of gauges upstream and downstream of each vessel in order to monitor the increase in differential pressure that will occur as the basket becomes fouled.

2.3.4 Shut down system, remove and clean, or replace basket when differential pressure reaches 5 psi.

2.4 Depressurizing and Draining the Vessel:

Systems should always be depressurized and drained prior to installing or maintaining any Hayward product.

WARNING

Failure to depressurize and drain system prior to installing or maintaining filter vessel may result in product damage, property damage, personal injury, or even death.

2.4.1 To depressurize and drain Hayward SB-Series Basket Strainer:

2.4.1.1 Slowly close valves upstream and downstream of basket strainer.

WARNING

Open and close valves upstream and downstream of the SB Series Basket Strainer slowly. Rapid increases in pressure of flow can create excess water hammer effect, resulting in property damage, personal injury, or even death.

2.4.1.2 Slowly open vent on top of cover (vent is opened by rotating thumbscrew counter-clockwise). NOTE: Process media will be allowed to escape vent as vessel depressurizes. Prepare to capture, collect, and dispose of vented chemicals properly.

2.4.1.3 After all pressure has been relieved, remove plug from drain port at bottom of strainer body and allow vessel to drain completely. Capture and dispose of drained chemicals properly.

2.5 Removing, Replacing, or Cleaning the Strainer Basket:

2.5.1 To remove and replace strainer basket from Hayward SB-Series Basket Strainer:

2.5.1.1 Depressurize and drain basket strainer. (See "Depressurizing and Draining the Vessel" above.)

2.5.1.2 Remove cover from basket strainer and place in a clean location. Inspect cover threads and O-ring for damage or debris. Replace if needed.

2.5.1.3 Grasp the handle of the basket and lift the basket out of the strainer body.

2.5.1.4 Allow any fluid to drain from the basket as it is lifted out of the body.

2.5.1.5 Remove any collected debris from the basket by turning the basket over and emptying the contents into an appropriate container for disposal. If particles are trapped in the perforations of the basket, wash basket with water and/or use a wire brush to gently remove debris. Do not dislodge collected material from basket by striking the basket or striking the basket against another object, as this may damage the basket.

2.5.2 Replacing the basket:

2.5.1.6 Once the basket is cleaned of collected debris, install the basket into the strainer body as described in section 2.1.

3. VESSEL MAINTENANCE:

3.1 Clean internal cover threads and external body threads each time cover is removed. Threads should be cleaned with a soft brush or cloth. Care should be taken not to damage threads. If cover or nut threads are damaged due to normal "wear and tear", replace damaged cover or nuts. If body threads are damaged, replace entire basket strainer.

WARNING

Basket Strainer should never be pressurized with damaged threads on cover, body, or assembly nuts. Use of basket strainer with damaged threads could result in property damage, personal injury, or even death.

WARNING

If flanges or cover ever fail due to over pressurization or water-hammer failure, the entire unit needs to be replaced. Failure to replace unit after water-hammer failure, or failure due to over pressurization could result in property damage, personal injury, or even death.

3.2 Clean and inspect O-ring grooves, O-rings, and gaskets each time the cover or end connector is removed. Damaged O-rings or gaskets should be replaced immediately.

4. TROUBLESHOOTING:

Follow all safety rules and warnings as stated in this document, as well as facility operational and safety rules.

Problem	Cause	Solution
Leak between cover and body	Damaged O-ring	Remove cover and carefully inspect O-ring for cuts, impressions, or other damage. Replace O-ring if damaged.
	Debris in O-ring groove	Remove cover and O-ring. Clean O-ring groove using care to not scratch sealing surface.
	Loose cover / Over-tightened cover	Tighten cover hand tight plus 1/8-turn (45º). The cover should not require tightening beyond this point. Never strike cover. Never use "cheater" bar to tighten or loosen cover.
	Missing O-ring	Remove cover, clean groove, and install new O-ring.
Leak between flanges	Damaged gasket	Remove flange bolting. Carefully inspect Gasket for cuts, impressions, or other damage. Replace the gasket if damaged.
	Uneven bolt torques	With a torque wrench check bolt torques in alternating pattern. Tighten or loosen as appropriate. Make a final check of each stud/bolt torque.
	Missing Gasket	Remove flange. Install missing gasket.
Increase in pressure drop	Fouled basket	Clean or replace fouled basket with new basket. Never allow differential pressure across vessel to exceed 5 psid.
Reduction in flow through unit	Fouled basket	Clean or replace fouled basket with new basket. Never allow differential pressure across vessel to exceed 5 psid.

5. PRODUCT SPECIFICATIONS:

Maximum Pressure: 150 psi @ 70ºF (see Chart 1 for operating pressures at elevated temperatures)

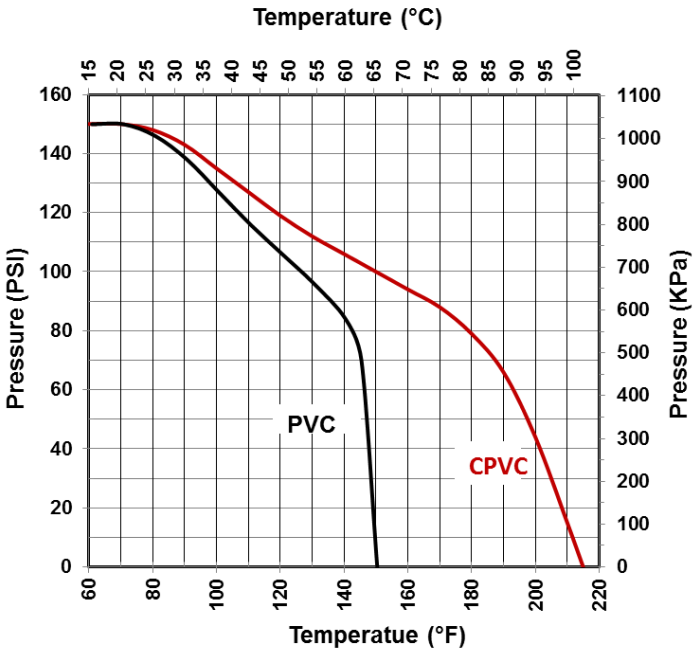
Maximum Differential Pressure: 5 psid (See Section 2.3)

Temperature Ratings:
The following ratings must be observed during operation:

Pressure rating of PVC and CPVC at 70°F is 150 psi, non-shock.
See Pressure vs. Temperature graph for pressure down rating due to temperature.

Table 2: Temperature Ratings, Minimum and Maximum		
Material	Minimum Operating Temperature	Maximum Operating Temperature
PVC	34°F (1.1°C)	140°F (60.0°C)
CPVC	34°F (1.1°C)	190°F (87.8°C)

Maximum Flow Velocity: 5 ft/s (1.5 m/s) for Simplex Basket Strainer



Graph 1: Operating Pressures of PVC and CPVC Materials at Elevated Temperatures.

CAUTION
Published operating requirements are based on testing of new products using clean water at 70°F. Performance is affected by many factors including fluid chemistry, viscosity, specific gravity, flow rate, and temperature. These should be considered when sizing systems using Hayward products.

6. **PARTS LIST:**

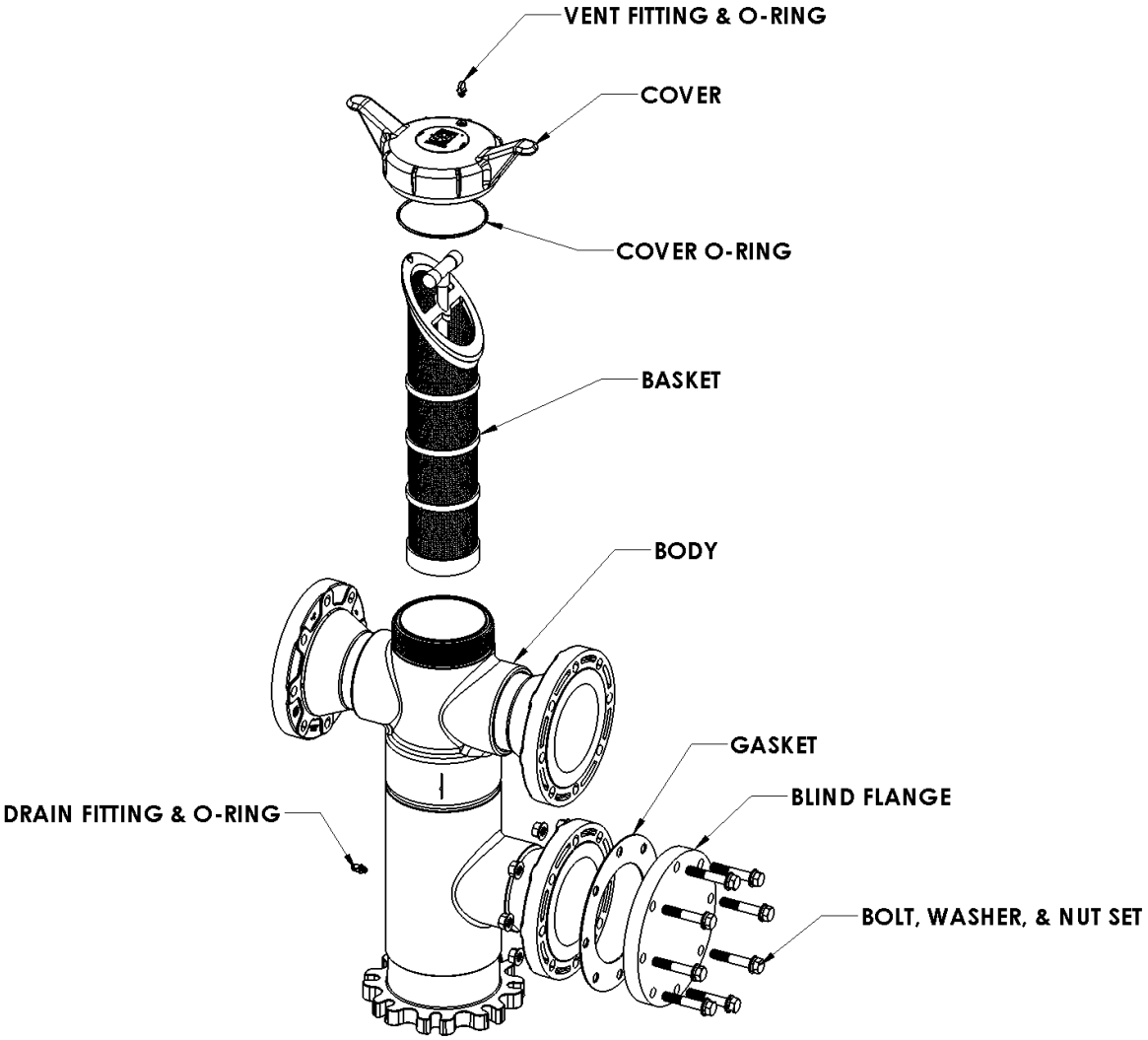


Fig. 5: Exploded View of 6" & 8" PVC and CPVC SB Series Strainer Basket Assembly

Fig. 6: Pre-2024 Version

7. WARRANTY TERMS AND CONDITIONS:

THREE YEAR WARRANTY: All products manufactured by Hayward are warranted against defects in material or workmanship for a period of three years from date of shipment. Our sole obligation under this warranty is to repair or replace, at our option, any product or any part or parts thereof found to be defective. HAYWARD MAKES NO OTHER REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty set forth above is the only warranty applicable to Hayward products and in no event shall Hayward be liable for any delay, work stoppage, cartage, shipping, loss of use of equipment, loss of time, inconvenience, loss of profits of any direct or indirect incidental resulting from or attributable to a breach of warranty. The remedies under this warranty shall be the only remedies available. OUR MAXIMUM LIABILITY SHALL NOT IN ANY EVENT EXCEED THE CONTRACT PRICE FOR THE PRODUCT.

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