

# HARMSCO® WaterBetter® Filters

## Installation & Operation Manual

- Harmsco® WaterBetter® filters provide exceptionally long filter runs, reduced maintenance and lower filtration costs in conventional filtration applications.

### Features

- ▶ 304 stainless steel filter housings
- ▶ Electropolished for superior finish
- ▶ Resistant coatings available
- ▶ Fail-safe lids with individual studs for security
- ▶ Brass wing-nuts for convenience
- ▶ CPVC standpipe for up-flow design
- ▶ Choice of cartridges available

### HOW THEY WORK

#### Up-flow Cartridge

Trapped air is automatically purged due to principal of up-flow filtration. Filtered liquid exits the filter at the highest point, as it is filtered. A secure top plate prevents cross contamination of filtered and unfiltered liquid. This patented up-flow design allows Harmsco to utilize 100% of cartridge surface area, providing efficient filtration. Filter efficiencies are dramatically improved to provide longer filter runs and reduced filtration costs. Harmsco® Hurricane® filter cartridges for the Waterbetter® filters are available in a wide range of micron ratings and may be cleaned and re-used in most applications and most micron ratings.



WB 90SC-1  
WB 90SC-2

WB 170SC-1  
WB 170SC-2

WB 40SC-1  
WB 40SC-2

### Models & Specifications

Six Waterbetter® Filter models are available for a wide range of applications. Models and specifications are as follows:

SPECIFICATION	WB 40SC-1	WB 40SC-2	WB 90SC-1	WB 90SC-2	WB 170SC-1	WB 170SC-2
Flow rate (GPM)	Up to 25	Up to 50	*	Up to 100	*	Up to 150
Filter area (pleated)	40 sq. ft.	40 sq. ft.	90 sq. ft.	90 sq. ft.	170 sq. ft.	170 sq. ft.
Pipe sizes, inlet & outlet	1" NPT	2" NPT	1" NPT	2" NPT	1" NPT	2" NPT
Pipe size, drain	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT
Filter height	21"	21"	31"	31"	41"	41"
Filter diameter	13"	13"	13"	13"	13"	13"
Floor space required	15"x15"	15"x15"	15"x15"	15"x15"	15"x15"	15"x15"
Service height clearance	31"	31"	51"	51"	72"	72"
Shipping weight (approx.)	40 lbs.	40 lbs.	51 lbs.	51 lbs.	64 lbs.	64 lbs.
Temperature rating**	140° (60°C)	140° (60°C)	140° (60°C)	140° (60°C)	140° (60°C)	140° (60°C)

\* Typically used on low flow applications, i.e. whole house filtration, activated carbon filtration, heavy solids removal.

\*\* Varies based on pressure and time under load.

Stainless Standpipes are available instead of CPVC, as an added cost option.

## Temperature & Pressure Ratings

Waterbetter® Filters are rated for pressures to 150 psi and temperatures to 140°F.

## Sizing

Use the chart shown below to size Waterbetter® Filters for your application:

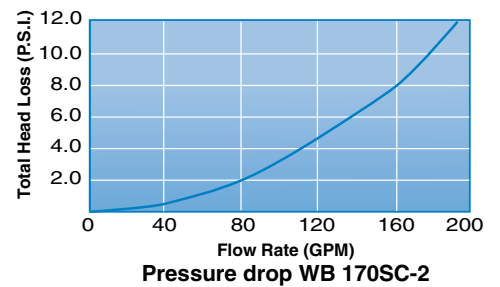
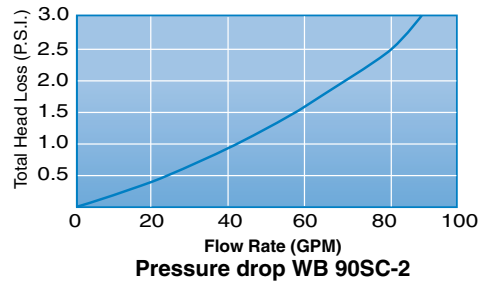
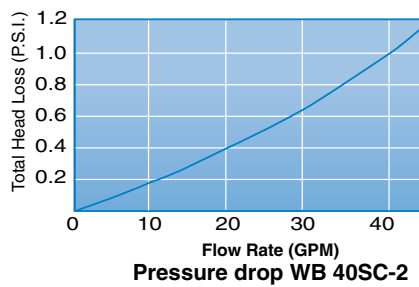
Maximum Flow Rate	Recommended Flow Rate	Model	Pleated Filter Area
Up to 50 GPM	30 GPM	WB 40SC-1/WB 40SC-2	40 sq. ft.
Up to 100 GPM	70 GPM	WB 90SC-2	90 sq. ft.
Up to 150 GPM	100 GPM	WB 170SC-2	170 sq. ft.
Up to 300 GPM	200 GPM	WB 170SC-2 (two filters*)	340 sq. ft. (two filters*)
Up to 450 GPM	350 GPM	WB 170SC-2 (three filters*)	510 sq. ft. (three filters*)
Up to 600 GPM	450 GPM	WB 170SC-2 (four filters*)	680 sq. ft. (four filters*)
Up to 750 GPM	600 GPM	WB 170SC-2 (five filters*)	850 sq. ft. (five filters*)

\*Parallel installation with valves to isolate filters for service while other filters are operational.

Note: Lower flow rates and pressures result in longer cartridge life. Designing to 70-80% of maximum flow will increase overall performance.

## Pressure Drop

The total head loss data shown below was developed by NSF International and indicates pressure drop with Waterbetter® Filter and one micron filter cartridge in clean water.



## Hurricane® Replacement Cartridges

Hurricane® replacement cartridges are available in a wide range of nominal ratings, shown right.

Cartridges are rated for temperatures to 140°F and may be used to separate solids in liquids with a pH of 3 to 11.

Packaged one cartridge per carton.



Filter Model	Cartridge Product Code	Nominal Micron Rating	Cartridge Dimensions			Ship Wt./Ctn. (One Cartridge)
			L	x OD	x ID	
<b>WB 40SC-1 &amp; WB 40SC-2</b>	HC/40-0.35	0.35	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-1	1	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-5	5	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-10	10	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-20	20	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-50	50	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-100	100	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-150	150	9-5/8"	7-3/4"	3" FPT	4 lbs.
	HC/40-EZ-CLEAN	NR*	9-5/8"	7-3/4"	3" FPT	4 lbs.
<b>WB 90SC-1 &amp; WB 90SC-2</b>	HC/90-0.35	0.35	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-1	1	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-5	5	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-10	10	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-20	20	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-50	50	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-100	100	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-150	150	19-1/2"	7-3/4"	3" FPT	7 lbs.
	HC/90-EZ-CLEAN	NR*	19-1/2"	7-3/4"	3" FPT	7 lbs.
<b>WB 170SC-1 &amp; WB 170SC-2</b>	HC/170-0.35	0.35	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-1	1	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-5	5	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-10	10	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-20	20	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-50	50	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-100	100	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-150	150	30-3/4"	7-3/4"	3" FPT	10 lbs.
	HC/170-EZ-CLEAN	NR*	30-3/4"	7-3/4"	3" FPT	10 lbs.

Activated carbon and Poly-Pleat Hurricane® cartridges available. Please see catalog.

\* NR - not rated

## Cartridge Cleaning Instructions

Hurricane® cartridges are made of Polyester Plus™, a proprietary blend of polyester fibers which can be cleaned in most applications and micron ratings to make Waterbetter® filter elements reusable! For best results, follow the directions described below:

### When Cartridge Cleaning is Possible

Clean cartridge when pressure differential is 12 psi above startup differential.

### Non-cleanable Applications

Replace cartridge when pressure differential is 30 psi above start-up differential or when flow has diminished to an unacceptable level, indicating cartridge is at capacity.

### Cartridge Removal

To remove filter cartridge, drain filter housing. Remove wing-nuts and lid. Hold cross-bar in retainer nut and pull upward to remove filter cartridge and top plate from filter housing. Follow cleaning instructions described herein.

### Lid Replacement

Replace wing-nuts systematically, rotating around filter. "Finger tight" is normally sufficient. However, in extreme duty applications it may be necessary to tighten to 75 inch lbs. of torque. Over-tightening can cause damage to the rim gasket.

## Cartridge Cleaning in Aqueous Applications

For best results, clean cartridges with pressure nozzle using standard hose. Direct spray at an angle to remove particulate (see photo). Follow these directions to remove oils, organic matter, algae and mineral deposits.



**Caution:** Do not rinse cartridges with acid until oils and organic matter are removed. Use detergent first and follow with acid bath for mineral removal. Flush cartridges with water after muriatic or tri-sodium phosphate baths.

**OILS:** Soak cartridge in a solution of tri-sodium phosphate or similar strong detergent (2 lbs. to 10 gallons of water). Soak up to 12 hours for best results. Rinse after bath.

**ORGANIC MATTER, ALGAE:** Use tri-sodium phosphate solution as described above, plus 1 pint of liquid chlorine to kill organic matter and algae. Soak cartridge one hour or longer until surface is no longer "slippery." Rinse after bath.

**CALCIUM MINERAL DEPOSITS:** Follow directions for "oils" described above. Soak cartridge for approximately ten minutes in a solution of one part of muriatic acid to twenty parts of water. Rinse cartridge thoroughly with water.

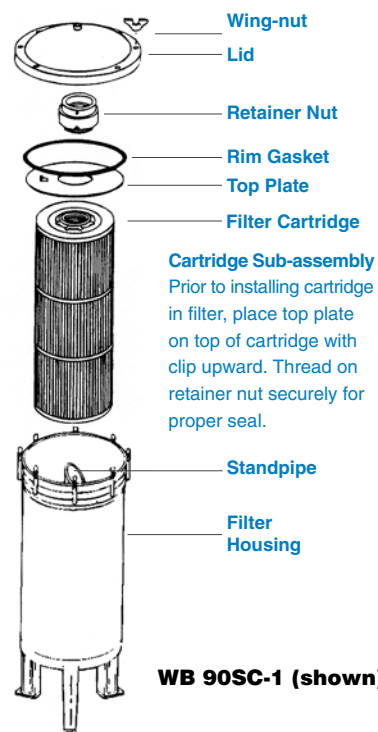
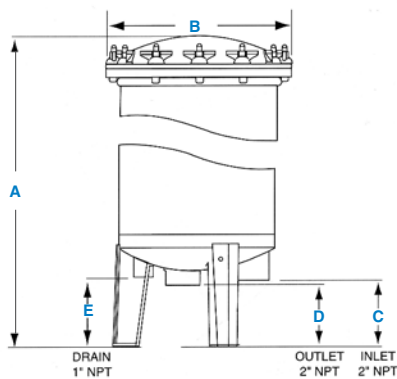
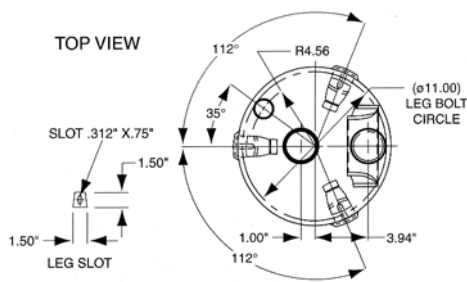
### When Cartridge Cleaning is Not Possible

Generally, it is not possible to clean Hurricane® filter cartridges when filtering petroleum-base liquids, toxic substances, and one and below micron applications.

*Note: Pressure gauges are recommended to indicate when cartridge cleaning or replacement is necessary.*

Model	A Height	B Diameter	C Inlet	D Outlet	E Drain
WB 40SC-1	19-1/4"	13"	4-5/8"	4"	4-5/8"
WB 40SC-2	19-1/4"	13"	3-7/8"	4-1/4"	4-1/2"
WB 90SC-1	29-3/8"	13"	4-5/8"	4"	4-5/8"
WB 90SC-2	29-3/8"	13"	3-7/8"	4-1/4"	4-1/2"
WB 170SC-1	39-1/8"	13"	4-5/8"	4"	4-5/8"
WB 170SC-2	39-1/8"	13"	3-7/8"	4-1/4"	4-1/2"

WB 170SC-2 Diagram Shown



WB 90SC-1 (shown)

Some of the information contained in this publication has been obtained from outside sources and is considered accurate. Temperature ratings, flow rates and chemical resistance can be affected by a number of unknown factors. For this reason, we do not assume any liability for the accuracy or completeness of the data in this publication. End users should perform their own tests to determine suitability for each application.

## Installation

Install filter using 2" couplers for inlet and outlet with 1" coupler for drain pipe. Shut-off valves should be installed on inlet, outlet and on drain pipe to be able to service the filter and isolate it when necessary.

Pressure gauges are also recommended before and after the filter to easily calculate the pressure differential and to know when cartridge should be cleaned or replaced.

## 1/4" FPT Lid Fitting

One-quarter inch FPT fittings are installed in Waterbetter® Filter lids for a number of customer supplied options, including petcock for pressure relief, pressure gauge, sensor, thermocouple, etc. This fitting should be plugged at time of installation if one of these options is not installed.



## Part List

Waterbetter® Filter parts and components are listed below:

Part No.	Material	Description
550-E	EPDM	Rim gasket to seal filter
905	PVC	Retainer nut for filter cartridge
309	Stainless steel	Top plate for all WB xxxSC-1 units
903	Stainless steel	Top plate for all WB xxxSC-2 units
530-AC	Stainless steel	Lid with vent
562-C-1	CPVC	Standpipe for WB 40SC-1
562-C	CPVC	Standpipe for WB 40SC-2
563-C-1	CPVC	Standpipe for WB 90SC-1
563-C	CPVC	Standpipe for WB 90SC-2
564-C-1	CPVC	Standpipe for WB 170SC-1
564-C	CPVC	Standpipe for WB 170SC-2
202-B	Brass	Wing-nut
<b>Options:</b>		
550-B	Buna-N	Rim gasket to seal filter
550-V	Viton	Rim gasket to seal filter

## Harmsco, Inc. Industrial Filters Limited Warranty

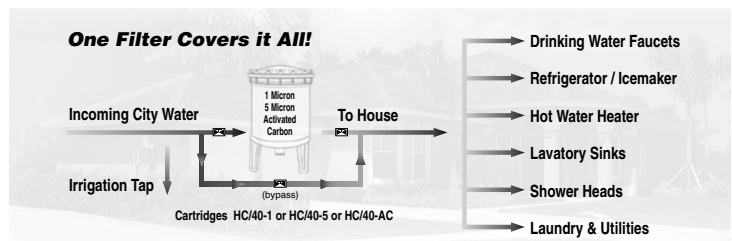
- Harmsco, Inc. warrants its line of Industrial Filters to be free of defects in material and workmanship for a period of one year from the date of installation.
- The warranty for Industrial Filters ordered with special coatings is limited only to the recoating of the defective parts due to failure in materials or workmanship for one year from date of installation.
- This warranty does not cover any equipment purchased for use in applications in which the product is not suited. It is the responsibility of the buyer to determine if a product is suitable for a particular application.
- THIS WARRANTY EXCLUDES THE FOLLOWING:
  - Any fresh water unit installed for salt water use.
  - Damage caused by improper installation, operation or care.
  - Chemical attack.
  - Rubber type parts and normal wear items, i.e. "o" rings, rim gaskets, wing nuts, pipe caps, holding rods.
  - Any costs of labor or expenses incurred in the removal and/or installation of Unit, or any surrounding device.
  - Damage caused by galvanic or electrolytic attack.
  - Altering or removing the Harmsco, Inc. information label.
  - Any unit not grounded.
- Service under this warranty is to be provided by the dealer/distributor who sold the unit to the distributor. If the dealer/distributor is unable to provide warranty service, contact:

Harmsco, Inc. P.O. Box 14066  
 North Palm Beach, Florida 33408, U.S.A.  
 Phone (561) 848-9628 • Fax (561) 845-2474

A Returned Goods Authorization (RGA) number must be received from the above office and placed on all shipments to and correspondence with Harmsco, Inc. Please be prepared with the following information:

- Model number and serial number
- Date of installation
- Name of installer
- Nature of problem
- Your address, telephone number and email address.

## Harmsco® Whole House Filtration Featuring Harmsco® WB 40SC-1 Filter



## Available From:



**HARMSCO® Filtration Products**

[www.harmsco.com](http://www.harmsco.com)



P.O. Box 14066, North Palm Beach, FL 33408

Made in USA

(561) 848-9628 • Toll-free: (800) 327-3248 • Fax: (561) 845-2474 • E-mail: [sales@harmsco.com](mailto:sales@harmsco.com)

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