

HYDROCART JR

OPERATIONS MANUAL



Introduction

Congratulations on the purchase of your new Hydrocart JR water generator. This ingeniously designed machine incorporates important features that are not available on any other.

Three Mode Operation. The Hydrocart JR machine can be operated in any of 3 different modes to accommodate the needs of each particular job for the conditions at that site.

- Reverse Osmosis Only: This mode reduces back pressure off the permeate side of the membrane which allows for higher volume pure water production rate at lower supply water pressures and temperatures. Most economical operational mode.
- DI Only: Allows for direct connection of garden hose water supply to DI resin cartridge. Provides 1.5 gallons per minute of deionized water for high reach applications when RO production won't reach desired height. Highest cost water production rate. See DI cartridge volume capacity chart below.
- Reverse Osmosis & DI combo: Removes up to 98% of dissolved solids from the supply water. Then the remaining is removed by the DI resin. Produces high quality, low cost pure water. See DI cartridge volume capacity chart below.

DI Only

Supply TDS (ppm)	Capacity Total Gallons
50	259.4
75	172.9
100	129.7
125	103.7
150	86.5
175	74.1
200	64.8
225	57.6
250	51.9
275	47.2
300	43.2
325	39.9
350	37.1
375	34.6
400	540.3
425	30.5
450	28.8
475	27.3
500	25.9
525	24.7
550	23.6
575	22.6
600	21.6

RO & DI

Supply TDS (ppm)	Capacity Total Gallons
50	12967.5
75	8645.0
100	6483.8
125	5187.0
150	4322.5
175	3705.0
200	3241.9
225	2881.7
250	2593.5
275	2357.7
300	2161.3
325	1995.0
350	1852.5
375	1729.0
400	540.3
425	1525.6
450	1440.8
475	1365.0
500	1296.8
525	1235.0
550	1178.9
575	1127.6
600	1080.6

New Machine Setup Procedure

1. Unpack unit and inspect machine for shipping damage.

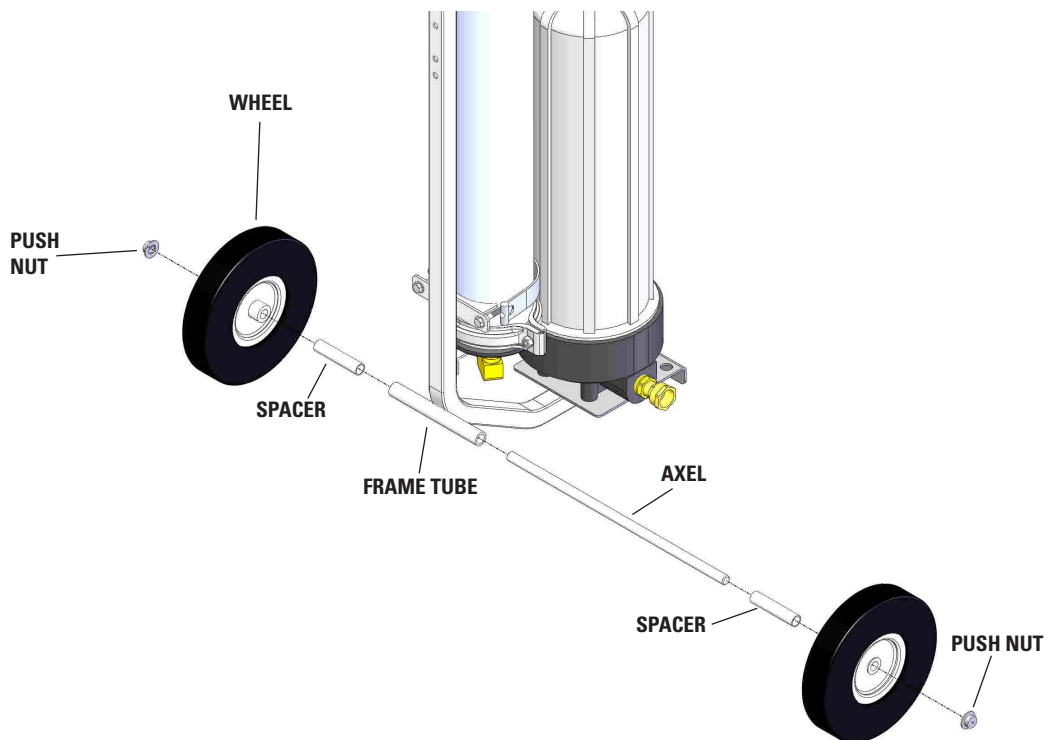
2. Take an inventory of the following items shipped along with the unit.

- Qty. 1 - Large Filter Wrench
- Qty. 1 - Small Filter Wrench
- Qty. 1 - 40 inch Blue interconnect hose
- Qty. 1 - Red Waste Water hose
- Qty. 1 - Magic Lube-o-ring lubricant
- Qty. 1 - TDS meter
- Qty. 1 - Bag of Fasteners (2 Bolts - 1³/₄" , 4 Washers, 2 Nuts, 2 Push Nuts, 2 Spacers)
- Qty. 1 - Axle
- Qty. 2 - Wheels
- Qty. 2 - RO Protect
- Qty. 1 - 1/4" x 50 ft hose

3. Note: The RO membrane, the 5 micron Sediment/ Carbon block pre-filter and pre-filled DI Cartridge have been pre-installed at the factory.

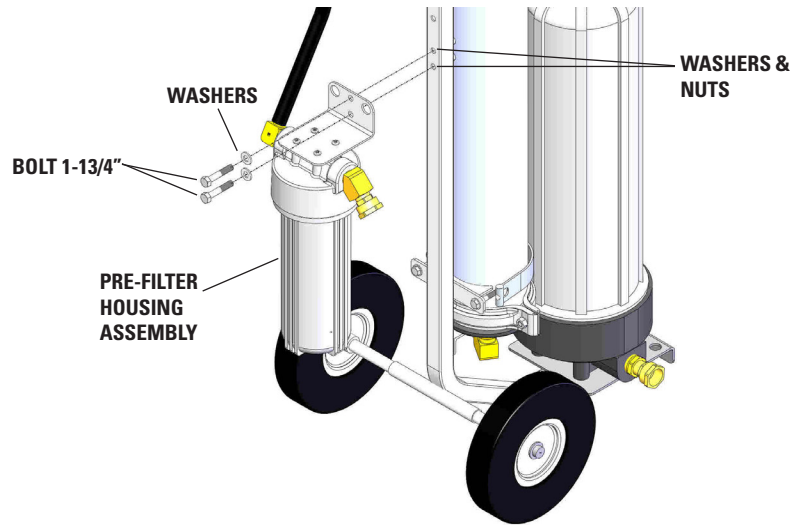
4. Wheel Assembly

1. Insert Axle into Frame Tube
2. Slide a spacer over Axle on both sides
3. Place a wheel on both sides of Axle
4. Using a hammer, tap push nut onto each end of Axle



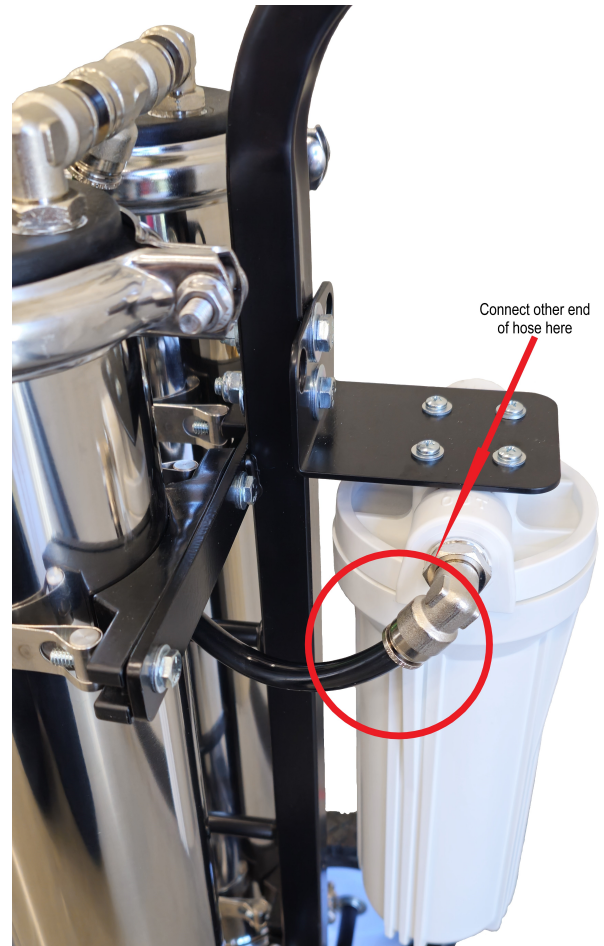
5. Pre-Filter Housing Assembly

1. Position Pre-Filter Mounting bracket on frame, align holes
2. Place washer on 1-3/4" long bolts
3. Insert bolts through holes
4. Attach washers and nuts
5. Tighten with 1/2" wrench



9. Install Prefilter to RO housing:

1. Wet end of hose with water. Insert into fitting until hose locks into place.



7. Install blue interconnect hose

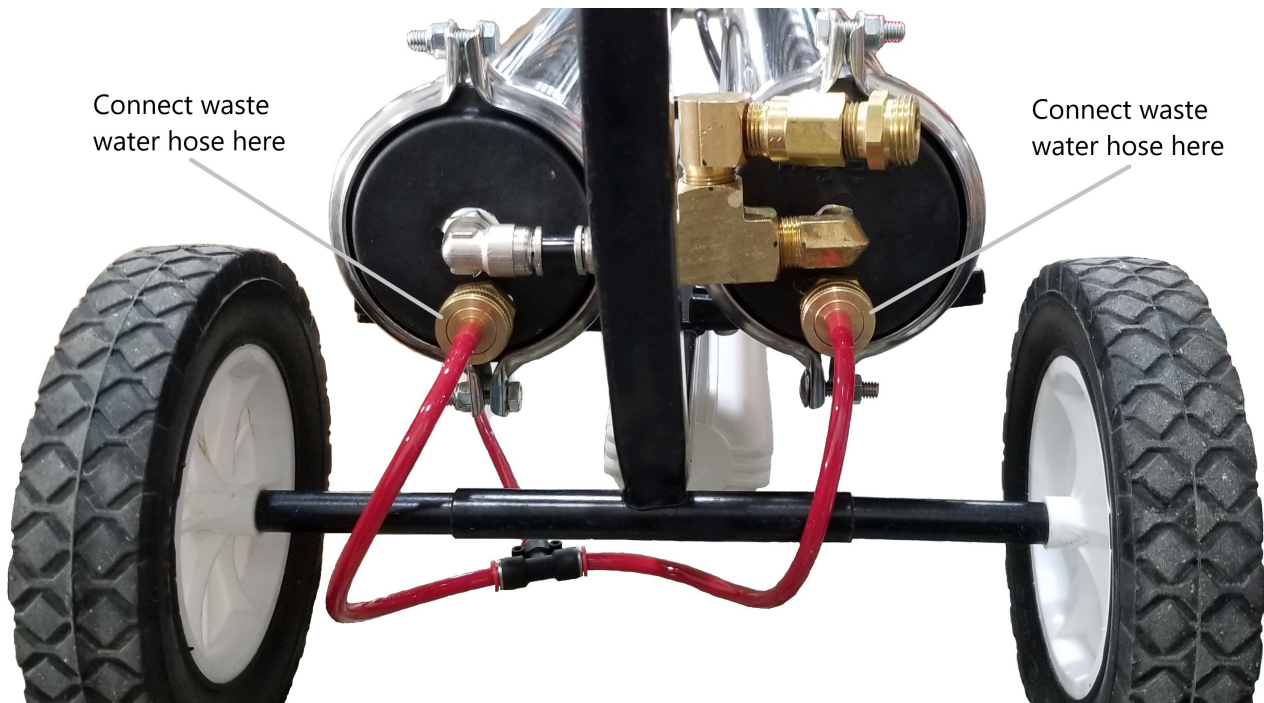
1. Remove plug from DI Inlet and cap from DI outlet. Discard both.
2. Attach female end of hose to the male fitting on the DI housing outlet.
3. Attach male end of hose to the female fitting on the DI housing inlet.

Interconnect
Hose



8. Install red wastewater discharge hose

1. Attach female swivel end of 24 inch red wastewater discharge hose to the male fitting pointing straight down from the bottom of the RO Membrane Housing



NOTE: For transit mode, connect male end to prefilter inlet (see picture on pg 14)

Reverse Osmosis water only mode



Operating Instructions

Startup Procedure

Reverse Osmosis water only mode:

1. Connect the female end of a garden hose to a pressurized potable water source.



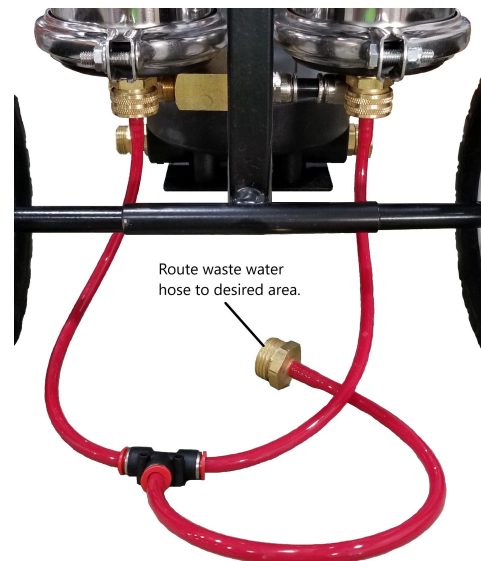
2. Connect the male end of garden hose to the female swivel fitting on the Pre-filter housing inlet.

3. Connect the female swivel end of the 50 ft. pure water hose to the male outlet fitting on the bottom of the RO membrane housing. Open ball valve.

4. Connect the male end of the 50 ft. pure water hose to the female connector on the hose for the water fed pole.

5. Place male end of wastewater discharge hose to direct wastewater flow to desired area. Example: Grass area, landscape, rock bed, street, sewer, collection tank, etc. Note: If needed, a garden hose may be attached to reach desired target drain point.

6. Turn On water supply.
7. Allow pure water to flow from brush for a couple of minutes. Take a water sample with TDS Meter. Be sure to rinse cup and end of meter to ensure an accurate reading. If TDS reading is below 15 PPM, unit is operating properly and ready to wash glass.

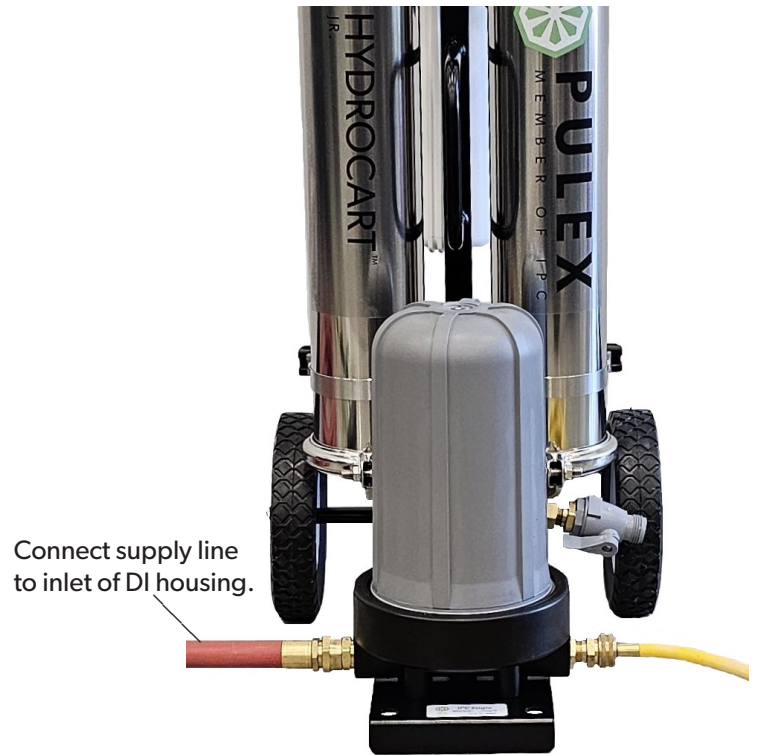


Deionized water only mode



Deionized water only mode:

1. Connect the female end of a garden hose to a pressurized potable water source.

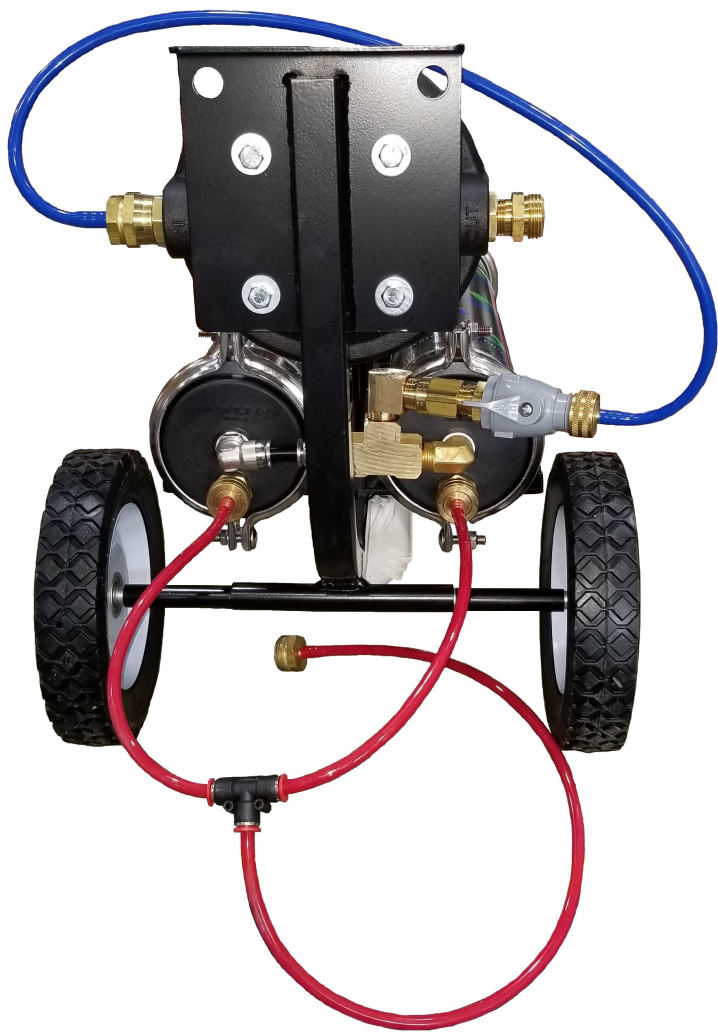


2. Remove both ends of the 40 inch interconnect hose from DI housing and connect them together.
3. **Connect male end of the supply hose to inlet of DI housing.**
4. Connect the female swivel end of the 50 ft. pure water hose to the male outlet fitting on the DI housing.
5. Connect the male end of the 50 ft. pure water hose to the female connector on the hose for the water fed pole.
6. Turn On water supply.
7. Allow pure water to flow from brush for a couple of minutes. Take a water sample with TDS Meter. Be sure to rinse cup and end of meter to ensure an accurate reading.
8. If TDS reading is below 15 PPM, unit is operating properly and ready to wash glass.
9. Check TDS periodically during use. When TDS increase trends up and exceeds 15 PPM, Change cartridge



Note: The outlet fitting on the DI housing contains a 1.5 gallon per minute flow regulator. This will prevent excessive water flow which will provide for a longer cartridge life.

Reverse Osmosis and DI combo mode



Reverse Osmosis and DI combo mode:

1. Connect the female end of a garden hose to a pressurized potable water source.



2. Connect the male end of garden hose to the female swivel fitting on the Pre-filter housing inlet.

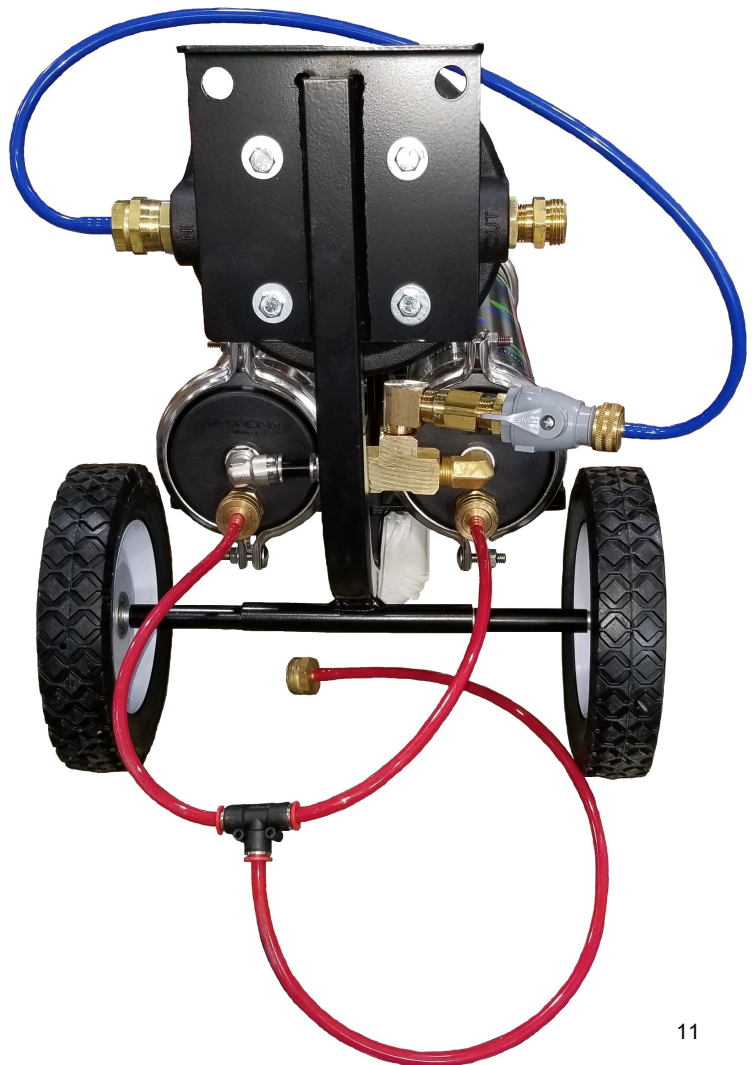
3. Disconnect the female swivel fitting of the 40 inch interconnect hose from the DI housing outlet.

4. Connect it to the male outlet fitting on the bottom of the RO membrane housing. Open ball valve.

5. Connect the waste water hose to the waste water outlet on bottom of the RO housings caps.

6. Place male end of waste water discharge hose to direct waste water flow to desired area. Example: Grass area, landscape, rock bed. Street sewer, collection tank, etc.

Note: If needed, a garden hose may be attached to reach desired target drain point.



7. Connect the female swivel end of the 50 ft. pure water hose to the male outlet fitting on the DI housing.

8. Connect the male end of the 50 ft. pure water hose to the female connector on the hose for the water fed pole.

9. Turn on water supply.

10. Allow pure water to flow from brush for a couple of minutes. Take a water sample with TDS meter. Be sure to rinse cup and end of meter to ensure an accurate reading.

11. If TDS reading is below 15 PPM, unit is operating properly and ready to wash glass.



Shut Down Procedure

Reverse Osmosis water only mode:

1. Turn off water supply.
2. Disconnect garden hose from Pre-filter inlet.
3. Close ball valve and disconnect 50 ft. pure water hose from RO membrane housing outlet.
4. Connect male end of wastewater hose to female swivel fitting on the Pre-filter inlet.
5. The unit is now sealed up and ready for transportation.

Deionized water only mode:

1. Turn off water supply.
2. Disconnect garden hose from DI housing inlet.
3. Disconnect 50 ft. pure water hose from DI housing outlet.
4. Connect ends of interconnect hose to DI housing inlet & outlet.
5. The unit is now sealed up and ready for transportation.

Reverse Osmosis and DI combo mode:

1. Turn off water supply.
2. Disconnect garden hose from Pre-filter inlet.
3. Disconnect 50 ft. pure water hose from DI housing outlet.
4. Close ball valve on RO outlet & remove interconnect hose.
5. Connect interconnect hose female swivel fitting to DI housing outlet.
6. Connect male end of wastewater hose to female swivel fitting on the Pre-filter inlet.
7. The unit is now sealed up and ready for transportation.



Transport Mode

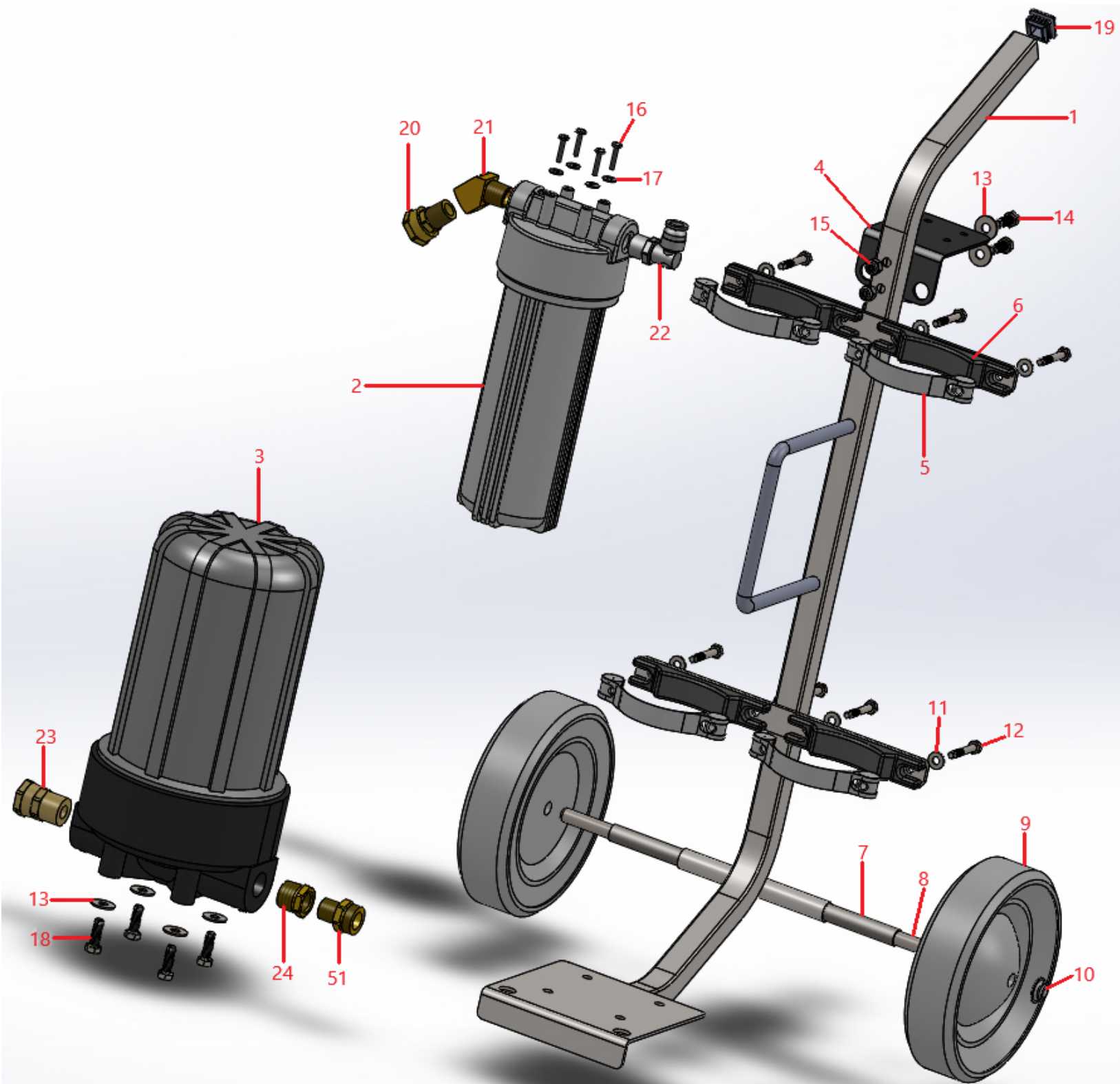
System Maintenance

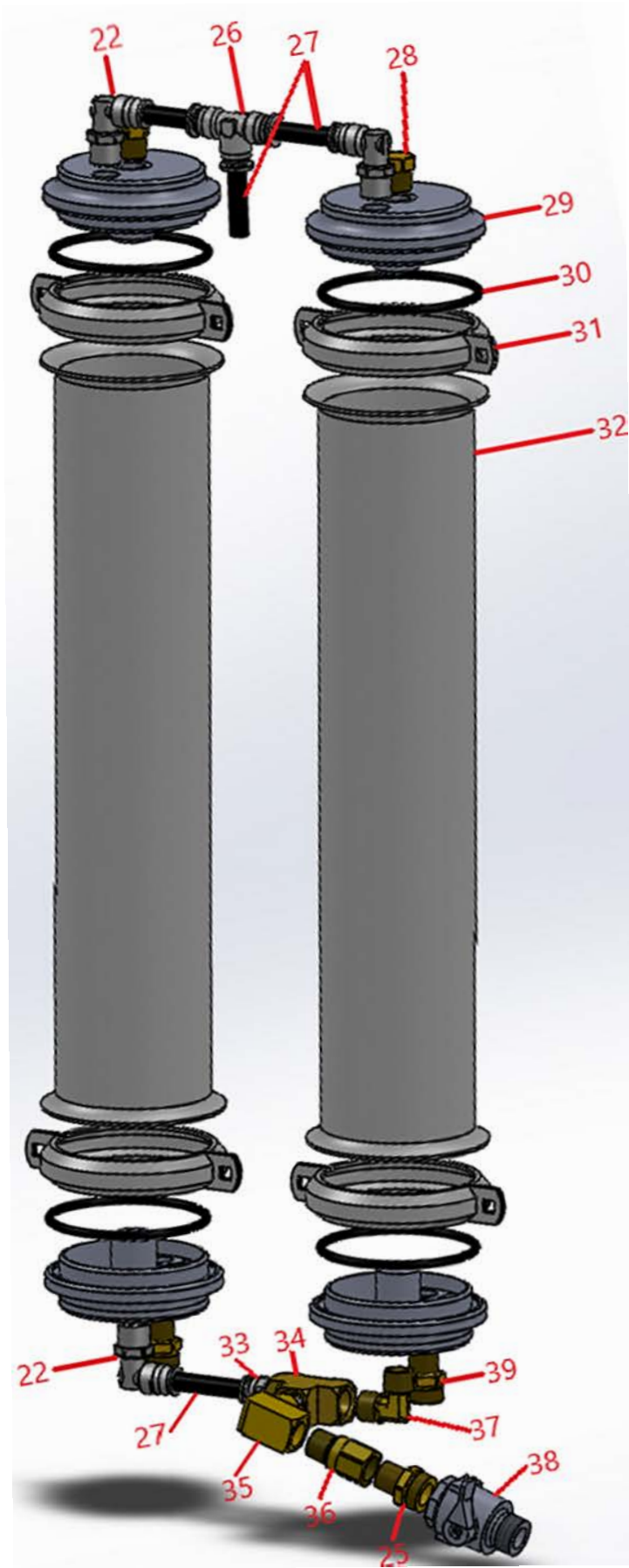
4. Install DI resin cartridge.

1. Slide the Large Filter Wrench over the top of the large gray housing and turn CCW to loosen. Remove tool and spin housing completely off.
2. Remove empty DI cartridge.
3. Remove new resin filled cartridge from the sealed bag and place onto the base cap with seal washer in the down position.
4. Lubricate o-rings on housing with Magic Lube o-ring lubricant.
5. Place housing over cartridge and screw into base cap.
6. Tighten housing with Large Filter Wrench.

5. Install 5 Micron Carbon/Sediment filter cartridge in the Pre-filter housing.

1. Slide the Small Filter Wrench over the small white Pre-filter housing and turn CCW to loosen. Remove tool and spin housing completely off.
2. Lubricate o-ring on housing with Magic Lube o-ring lubricant.
3. Remove the plastic wrap from the new 5 Micron Carbon/Sediment filter cartridge and place into the housing with seal washer in the up position.
4. Screw housing into base cap.
5. Tighten housing with Large Filter Wrench.







Ref #	Part #	Description	Qty
1	BD555140	FRAME ASSEMBLY, SUB-XERO	1
2	BD505104	SLIMLINE PREFILTER HOUSING	1
3	BD505025	BIG GREY FILTER HOUSING 4 X 10	1
4	BD555087	MOUNTING BRACKET PRE-FILTER	1
5	BD555077	CLAMP, BAND 10"L X 3/4"W S/S	4
6	BD505135	SADDLE FOR SS VESSEL 4x40	4
7	BD555085	SPACER WHEEL, WCR WASH IT CART	2
8	BD555088	AXEL, WCR WASH IT CART	1
9	BD554999	WHEEL, 8" DIA., 1.75 WIDE	2
10	BD545150	AXLE PUSH NUTS FOR HYDROTUBE	2
11	BD431000	WASHER, 1/4" SAE FLAT	8
12	BD410513	BOLT, 1/4-20X1.5" HHCS	8
13	BD432001	WASHER, 5/16" USS FLAT, BRIGHT	8
14	BD411515	BOLT, 5/16-18X1.75" HHCS	2
15	BD442000	NUT, 5/16-18 NYLOCK, BRIGHT	2
16	BD407001	SCREW, #10-14 PHILLIPS PAN PLASTITE X 3/4"	4
17	BD430003	WASHER #10 SAE FLAT	4
18	BD411509	BOLT, 5/16-18X1" HHCS	4
19	BD555076	END TUBE CAP WCR FRAME	1
20	BD515092	FITTING, 1/2 NPT-M X 3/4 F-GH	1
21	BD515117	FITTING, 1/2" NPT X 45° STREET	1
22	BD500156	1/2" PUSHLOCK X 1/2" NTP MALE	4
23	BD515067	FITTING 3/4" NPT-M X 3/4" FGH	1
24	BD515157	FITTING, 1/2 NPT-F X 3/4 NPT-M	1
25	BD515221	FITTING, 1/2" NPT-M X 3/4" GH	1
26	BD500566	1/2" PUSH LOCK UNION TEE	1
27	BD500157	1/2" PUSHLOCK HOSE, NYON BLACK	2
28	BD515069	FITTING, 1/2" NPT HEX PLUG,	2
29	BD505138	END CAP 4040SS VESSEL	4
30	BD505128	O RING, END CAP SS VESSEL	4
31	BD505129	CLAMP SET 4040 SS VESSEL	4
32	BD505253	PRESSURE VESSEL 4X21 SS	2
33	BD500567	1/2" PUSH LOCK X 1/2" MALE CON	1
34	BD515125	FITTING, 1/2" NPT FEMALE TEE	1
35	BD515058	FITTING, 1/2" NPT 90° STREET	1
36	BD515220	CHECK VALVE, 1/2" NPT MALE	1
37	BD515070	FITTING, 1/2" NPT-M 90° ELBOW	1
38	BD505014	BALL VALVE 3/4" F GHx3/4" M GH	1
39	BD500104	HYDROCART FLOW REGULATOR ASSEM	2
40	BD515090	FILTER WRENCH, LARGE	1
41	BD515214	FILTER WRENCH, SMALL	1
42	BD505230	WASTE WATER HOSE 2X ASSEMBLY	1
43	BD500117	DI FILTER, HYDRO CART	1
44	BD505108	CARBON BLOCK FILTER	1
45	BD515068	REPLACEMENT RO MEMBRANE	2
46	BD545179	TDS METER	1
47	BD515153	MAGIC LUBE	1
48	RO PROTECT	RO PROTECT MEMBRANE STORAGE	1
49	BD500150	ASSEMBLY INTERCONNECT HOSE WCR	1
50	BD545135	HOSE, 50' X 1/4" FOR HYDROTUBE	1
51	BD500113	FLOW REGULATOR, 6 LITER	1

Troubleshooting Procedure

System performance evaluation:

In order to properly evaluate and troubleshoot the system, you will need to perform a complete set of tests on the unit. These tests will help identify the cause of the problem.

To run these tests, you will need the following items:

- Stop watch or clock with a sweep second hand.
- A 3 gallon bucket.
- Volume measurement method. This could be volume graduation marks inside the bucket or a measuring cup/container.

Flow testing procedure:

1. With water running from hose being tested, direct flow into bucket for exactly 1 minute while timing with watch.
2. Measure volume of water and record the gallons per minute flow rate.
3. If water volume is very low, perform a 2 - minute test and divide flow by 2.
4. If water volume is more than your bucket can hold in 1 minute, take a 30 second flow test and multiply the result by 2.
5. Record the results in gpm (gallons per minute).
6. Use this procedure for all of the required flow tests as listed in the following System Testing section.

RO System Testing

1. Set up unit to run as per operation/owner's manual.
2. Before connecting the supply water hose to the machine, measure the water flow from the end of the hose.
 - Supply water flow _____ gpm
3. Measure the TDS and temperature of the supply water.
 - Supply water TDS _____ ppm
 - Supply water temperature _____ °F
4. If possible, attach a pressure gauge to the supply water hose and measure the pressure.
 - Supply water pressure _____ psi
5. Connect supply water hose to Pre-filter inlet.
6. Turn on supply water. Open ball valve on pure water outlet at bottom of membrane housing.
7. Measure the water flow from the wastewater hose.
 - Wastewater flow _____ gpm
8. Measure the water flow from the pure water hose. Do not measure flow from brush.
 - Pure water flow _____ gpm
9. Measure the TDS of the pure water.
 - Pure water TDS _____ ppm
10. Measure the TDS of the wastewater.
 - Wastewater TDS _____ ppm
11. Turn off water supply and compare test results to normal operation specifications.

System Analysis

The following information of flows and pressures are median values for the system. System parameters will vary due to geological differences in water supply temperature, pressure and TDS level. System setup may also affect the readings. i.e. hose lengths, diameters & vertical lift. It is imperative to connect the machine directly to the water source when evaluating performance.

Description	Actual Flow	Normal
Supply water	_____	Tolerance 5 gpm
TDS _____		minimum
Temperature _____	Check with local water authority	
Pressure _____	Varies by season and region, 40 psi	
Wastewater	minimum Flow _____	1.0 gpm ± 0.25 gpm
	TDS _____	
Pure water	Flow _____	.5 gpm ± 0.25 gpm Less than
Pure water	TDS _____	15 ppm

Identify the parameters that are outside of the normal range and use the information in the following troubleshooting matrix to correct the situation.

If after performing all tests and working through the matrix, you still have operational issues, please fill out this form completely before contacting WindowCleaner.com. This complete set of information is required for proper evaluation of the system.

Specifications

Mode		DI Only	RO Only	RO & DI
Power		Supply Water	Supply Water	Supply Water
Dimensions	Inches	23" X 15.5" X 41.5"	23" X 15.5" X 41.5"	23" X 15.5" X 41.5"
Packaged Dimensions	Inches	39" X 16" X 25"	39" X 16" X 25"	39" X 16" X 25"
Packaged Weight	lbs.	71	71	71
Pure Water Flow	gpm	1.5	.6 ± .25	.6 ± .25
Cleaning Height	Floors	5	2	2
Working Hose Length	feet/cm	50'/1524 cm	50'/1524 cm	50'/1524 cm
Filtration	Stages	1	2	3
Carbon & DI Filters	Inches	3 x 10	2.5x10 & 3x10	2.5x10 & 3x10

RO MEMBRANE BREAK IN PROCEDURE

For best results, the RO membrane needs to saturate for 24 hours before the DI can be connected.

1. Connect unit using the start up procedure for the RO Only mode in the manual.
2. Check TDS and then run unit for 15 minutes. Recheck TDS.
3. Close pure water valve and shut off water supply to unit. Disconnect supply hose.
4. Attach waste water hose outlet to the inlet of the prefilter to keep water in the RO pressure vessel. See transport mode in manual.
5. Let water saturate the RO membrane for 24 hours or overnight.
6. Remove waste water hose and allow unit to drain for 15 minutes
7. Run system for 15 minutes and check TDS.
8. Connect DI using procedure in manual.

IPC Eagle Warranty Policy

Limited Warranty

IPC Eagle warrants new cleaning equipment against defects in material and workmanship under normal use and service to the original purchaser as detailed below.

1 year

Subject to the conditions stated below, IPC Eagle warrants all other cleaning equipment components to be free from defects in materials and workmanship for a 1-year period. Parts replaced or repaired are warranted for the remainder of the original warranty period. Batteries are pro-rated for one year.

IPC Eagle will furnish and charge for replacement parts, including transportation, to the original owner through an IPC Eagle authorized service center. If the part is returned within 30 days and is found defective, the owner will be credited for the cost of the replacement part including shipping and handling.

Wear items exempt from warranty include belts, carbon brushes, power cords, wheels, handle grips, filters, and screens.

This warranty shall not apply to failures caused by misuse or abuse, improper maintenance as stated in the operation manuals, use of unauthorized repair parts, repairs by other than an IPC Eagle authorized service center, and damage in transit.

IPC Eagle disclaims and denies any liability for any direct, indirect, special incidental or consequential damage which may be suffered as a result of sale, delivery, servicing, use, loss of any product, downtime, labor, freight, or other charges not expressly included herein.

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www.ipceagle.com

Thank you for choosing to partner with IPC . Your IPC Product has been thoroughly tested and inspected and is warranted to be free of defects in material and workmanship for a specific period, depending on the product purchased. This warranty does not cover normal wear items such as brushes, belts, filters, power cords. squeegee blades, wheels and switches. Other items may apply or not apply based on your specific IPC unit.

If such defects occur, this warranty is void if service is attempted by non-authorized IPC service providers.

To register your product, go online to

www.ipcworldwide.com/us/warranty or scan the QR code on the right. If preferred, you can call 651-686-5399 to register by phone.

You will need the machine serial number(s) and date of purchase when you register. For future sales on parts or your warranty service, please contact the IPC distributor you purchased through.

