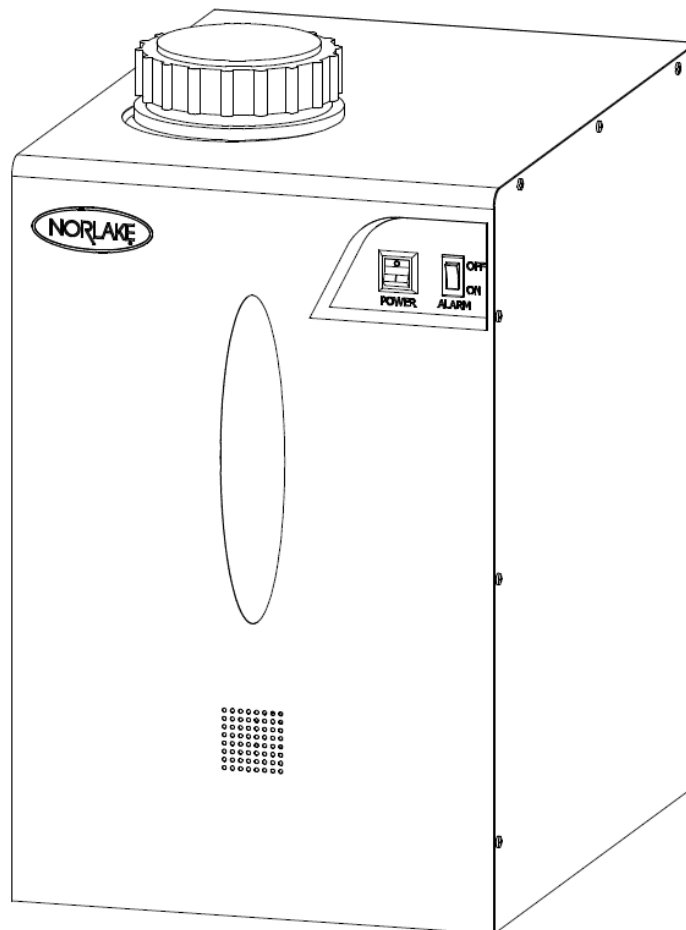

WATER RECYCLER INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

General	2
Inspection	2
Location	2
Lifting or carrying	2
Installation	3
Electrical	4
Operation	4
Maintenance	4
Periodic Cleaning	4
Filter Replacement	5
UV Lamp Replacement	5
Trouble Shooting Guide	6
Parts and Service Contact Information	6
Wiring Schematic	7
Parts Diagram	8



GENERAL

INTENDED USE

Water collection and delivery system. The water recycler was designed to be standalone water source. The water recycler can utilize clean tap water and collected condensate from a humidified cabinet, eliminating the need for a piped water supply. The water recycler also eliminates the need for a drain as all condensate is filtered and recycled back to the cabinet.

TECHNICAL SPECIFICATION

Voltage supply: 115Vac 60HZ 1 phase
Maximum fuse size: 5.0 amp fuse
Total amp draw: 5.0A
Maximum circuit fuse: 15 amp

INSPECTION

When the equipment is received, all items should be carefully checked against the bill of lading to insure all crates and cartons have been received. All units should be inspected for concealed damage by uncrating the units immediately. If any damage is found, it should be reported to the carrier at once, and a claim should be filed with the carrier. This equipment has been inspected and tested in the manufacturing facility and has been crated in accordance with transportation rules and guidelines. Manufacturer is not responsible for freight loss or damage.

LOCATION

The recycler should be located as close as possible to the connected cabinet, and within reach of an outlet that has appropriate power supply as listed above with a protective earth ground. The outlet should be easily accessible when installation is complete. The recycler should also be leveled when it is placed in its permanent location. Do not stack items on top of the unit. Vibration during shipping and handling may loosen mechanical connections. Check all connections during installation. Check all wiring, piping and fasteners. This unit has been designed for +75° F or +24°C with 50%RH at up to 2000 Meter elevation. If equipment is not used for its designed manner specified by the manufacturer, the protection provided by the equipment may be impaired.

LIFTING OR CARRYING

The recycler weighs approximately 60lbs empty. Precautions should be taken to lift safely. Make certain the area is clear of obstructions prior to lifting or moving. Team lift or use mechanical lifting devices when possible.

WARNINGS AND CAUTIONS

- Do not modify cabinet construction or associated equipment assemblies.
- Do not remove labeling or information supplied with the unit.



Warning: Electric Shock Hazard.

Do Not Remove electrical cover. Contact a qualified service representative.



CAUTION: Protective Earth Ground terminal.

Do Not Remove connected terminations.



Warning: UV exposure Hazard.

UV lamp when powered on may expose dangerous UV rays, which could potentially cause serious burns to unprotected eyes and skin.

Ensure all caps and covers are in place prior to applying power.

INSTALLATION



Important: in the event of a water leak, disconnect power and repair leak

Observe all Warning Labels. Disconnect power supply to eliminate injury from electrical shock or moving parts when servicing equipment.

INSTALLATION AND OPERATION

1. Connect 1/4" water tube to the recycler and humidified cabinet.
Connect the chamber inlet(s) to the recycler outlet (1/4" OD) using the tubing and fittings provided. Allow sufficient tubing slack so the recycler can be moved (if necessary) and side panel accessed.
2. Connect 3/8" water tube to the recycler and humidified cabinet.
Connect the chamber drain(s) to the recycler inlet (3/8" OD, larger fitting connection) using the tubing and fittings provided. Cut tubing to proper length to ensure the shortest run possible while allowing sufficient tubing slack so the recycler can be moved and side panel accessed.



Important: Because the chamber drain / recycler inlet line is a gravity drain, there can't be any kinks, traps, or vertical rises in the line.

Water supply

Clean potable tap water should be used Water supply temperature may not exceed +33°F to +104°F. Do not use Ultra-pure DI water. DI water with resistivity above 1M Ω -cm will damage the recycler and attached humidifier.



Important: Take caution to not spill on the recycler when filling. Wipe up any spills.

Filling Reservoir

1. Unscrew reservoir cap.
2. Fill reservoir with water with clean potable water. Reservoir holds 7 gallons (26.5 liters).
3. Screw reservoir cap back in place.
4. Do not over fill, monitor water level in front window

Filling Reservoir during low water alarm

1. Turn off the low water alarm
2. Unscrew reservoir cap.
3. Fill reservoir with water with clean potable water. Reservoir holds 7 gallons (26.5 liters). DI water with resistivity above 1M Ω -cm will damage the recycler and attached humidifier.
4. Do not over fill, monitor water level in front window
5. Screw reservoir cap back in place.
6. Turn on alarm.

INITIAL START UP

1. Ensure all connections have been made both electrical and water supply and drain.
2. Turn power switch on.
 - a. Recycler will light up blue
 - b. Recycler will become pressurized.
3. Turn on alarm switch Low water / condensate pump alarm
4. Water pressure will build as air is purged from the system. The pump will then activate on low pressure only.

ELECTRICAL

For electrical requirements see data information and wiring unit diagram located in parts bag. Check the proposed external power outlet/supply to be used to ensure that the voltage, phase and current carrying capacity of the circuit from the electrical panel correspond to the requirements of the cabinet. **NEVER** use an extension cord to wire any unit. Refer to the serial tag (nameplate data) for all pertinent electrical information.

OPERATION

The water recycler has been designed for use in a controlled interior environment. This unit has been designed for 75 deg with 50%RH at up to 2000 Meter elevation.

MAINTENANCE



Observe all Warning Labels. Disconnect power supply(s) to eliminate injury from electrical shock or moving parts when servicing equipment.

PERIODIC CLEANING

Disconnect power source before servicing or cleaning.

RECYCLER MAINTENANCE

PERIODIC CLEANING

Monthly Confirm all connections are water tight. Confirm UV light is not in alarm (audible or red led on transformer). Check tank for foreign objects or algae, clean as needed.

Yearly turn off unit and unplug, release pressure by opening blue drain line valve on cabinet. Completely drain and flush water from recycler tank by turning blue valve on reservoir drain line. Confirm filter life, replace if necessary, replace UV lamp.

Filter Replacement



Installation Steps

1. Shut off unit and disconnect power. Remove side panel to expose filters.
2. Disconnect existing filter water line where filter is installed.
3. Remove from old filter and reinstall compression or flare fittings, or “Quick Connect” fittings. Use Teflon tape or equivalent where appropriate. Insure proper direction of water flow and connect inlet. USE TWO WRENCHES.
4. Flush 5-6 gallons of water to drain, until water runs clear.
5. Turn off unit and connect outlet. USE TWO WRENCHES.
6. Turn on unit and check for leaks.

Check the filter after approximately 8 hours for slight leaks not visible during initial installation.

UV lamp maintenance and replacement

See Ultraviolet Sterilization System Installation Instructions and Owner's Manual

Disabling the recycler in the event of non-use or subjected to freezing temperatures:

1. Turn off recycler
2. Remove access panel
3. Open blue drain valve on reservoir.
4. Disconnect ¼” pressure line from cabinet(water will be present allow to drain)
5. Turn recycler on to purge lines.
6. Turn recycler off.
7. Remove hoses on both sides of the black pump. Allow water to drain and then reconnect ensuring the hose clamps are securely tightened.
8. Remove any water in the pre-filter/ strainer by unscrewing and dumping.

9. With a wet/dry vacuum remove any remaining water from reservoir and condensate pump.
10. Wipe interior of reservoir dry.
11. Replace access panel

Failure to remove all water may result in damage or undesirable mold growth

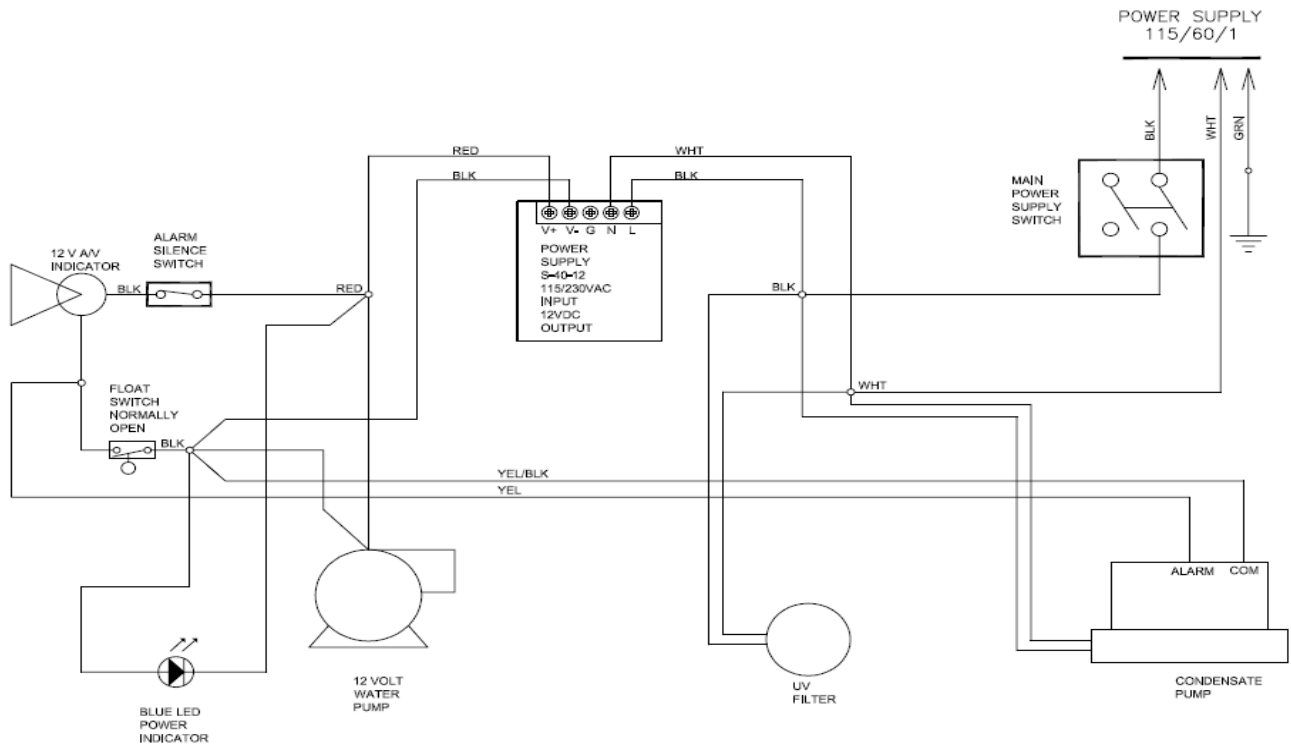
MAINTENANCE SERVICE AND ANALYSIS GUIDE

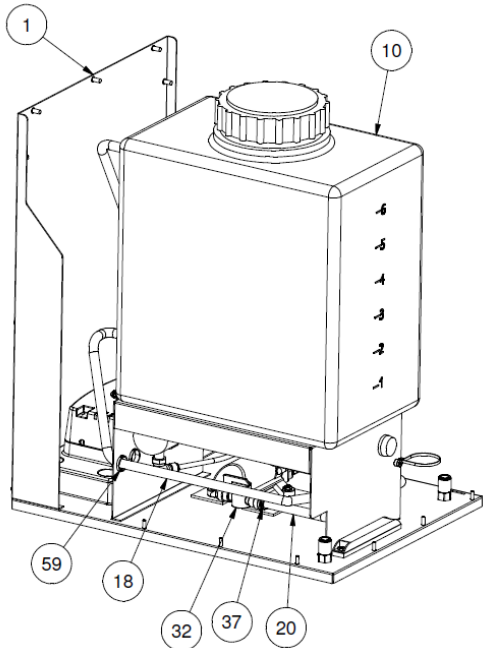
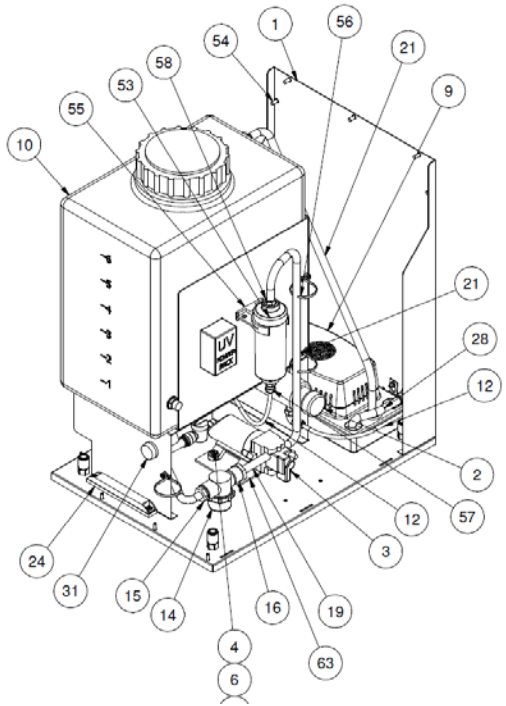
<u>MALFUNCTION</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Tank window is not illuminated / Recycler does not turn on	<ol style="list-style-type: none"> 1. Service cord unplugged 2. Power switch off 3. GFI tripped 4. Fuse blown 	<ol style="list-style-type: none"> 1. Plug in service cord 2. Turn switch on 3. Press reset on GFI 4. Replace fuse
Water leaking from unit	<ol style="list-style-type: none"> 1. Is unit on 2. Has a power failure occurred 3. Are all connections tight 4. Is the tank drain valve open 	<ol style="list-style-type: none"> 1. Confirm unit is plugged in and on 2. Confirm normal operation 3. Confirm all water connections 4. Close valve
Water not draining from the Cabinet to the recycler	<ol style="list-style-type: none"> 1. Is the inlet to the cabinet lower than the chamber drain 2. Drain line kinked 3. Is unit on 	<ol style="list-style-type: none"> 1. Raise cabinet 2. Confirm drain hose path 3. Confirm unit is plugged in and on



Parts and Service contact:
 Telephone: 800-388-5253
 Email: service@norlake.com
 Website: www.norlakescientific.com
 Address:
 727 Second St., Hudson, WI 54016

115V





BILL OF MATERIALS			
ITEM	QTY	PART NO	DESCRIPTION
1	1	156034	WATER RECYCLER FRAME WELDMENT
2	1	156040	UV WATER PURIFIER ASSY
3	1	156170	SHURFLO 105-013 PUMP
4	4	005791	SCREW MS RH 8-32X3/4 ZN PH 23
5	4	083261	SCREW MS TH 8-32X3/8 NI SL
6	4	135793	WASHER FLAT #10 ZINC
7	14	072360	INSERT LOCK NUT/#8-32 NYLON
9	1	156175	CONDENSATE PUMP LO PROFILE 120V
10	1	156180	WATER RECYCLER TANK ASSY
11	1.1667	134419	TUBING PLASTIC 1/4" SEMI-CLEAR*
12	1.541	134419	TUBING PLASTIC 1/4" SEMI-CLEAR*
14	1	156171	SHURFLO 255-313 TWIST ON STRAINER
15	1	156176	1/2"NPT x 3/8"HOSE ID BLACK HDPE ADAPTER
16	1	156177	1/2"FNPT x 3/8"HOSE ID POLYPROPYLENE FEMALE
17	1.854	002458	TUBING CLEAR 3/8ID X 5/8 OD
18	2.291	002458	TUBING CLEAR 3/8ID X 5/8 OD
19	0.208	002458	TUBING CLEAR 3/8ID X 5/8 OD
20	1.750	002458	TUBING CLEAR 3/8ID X 5/8 OD
21	1.500	002458	TUBING CLEAR 3/8ID X 5/8 OD
24	1	156168	6 INCH BLUE LED
25	27	001346	SCREW PH 8-32X5/8 ZN PH 23
26	1	157754	WIRING DIAGRAM WATER RECYCLER NSH20-R 115V
27	1	156172	3/8" BULKHEAD JOHN GUEST
28	1	156124	3/8" HIGH PRESSURE POLYETHYLENE TUBING
29	1	148583	BULKHEAD UNION JOHN GUEST 1/4" - 1/4"
30	1	156031	WATER RECYCLER MAIN COVER WELDMENT
31	1	157759	ALARM #PL22SFBZR24 BZR/FLASHER
32	1	152103	VALVE 3/8" UNION STOP
33	4	001762	STRAIN RELIEF HEYCO SR7W-2
34	1	002424	1/2 GROMMET HEYCO B-500-375
35	1	087850	SWITCH ROCKER/RA901-VB-B-1-V
36	1	124026	SWITCH ROCKER-PWR.DPST 125/250
37	1	156122	3/8" BARB TO 3/8" STEM JOHN GUEST
38	1	039775	WASHER INT.TOOHLCK #10 ZN.PL
39	1	055114	SCREW 10-24X5/8" TH PH S/S
40	1	001469	NUT STEEL ZINC PLTD. 10-24 HEX
41	1	157760	POWER SUPPLY 12VDC OUT UNIVERSAL IN
42	2	157779	SCREW M3 X .5" WITH WASHER PHILLIPS PAN HEAD
43	1	156047	WATER RECYCLER ELEC. BOX COVER
44	1	002475	ELECTRIC SHOCK LABEL
45	2	005810	SCREW MS PH 8-32X1/4 ZN PH TC
46	1	156046	WATER RECYCLER RIGHT SIDE ASSY
47	1	071917	LABEL SCIENTIFIC/NORLAKE
49	11	000705	HOSE CLAMP S.S. 5/16" TO 7/8"
50	1	157753	WATER RECYCLER LABEL
51	4	152105	TERMINAL WAGO 222-415 5 POS LEVER
52	1	157755	WATER RECYCLER WIRE ASSY
53	1	158123	WATER FILTER MICRO PLUS 2
54	9	119395	INSERT AVK AL 8-32 RIVNUT
55	1	158124	WATER FILTER BRACKET 2"
56	3	001531	CABLE TIE SCREW MT 1-3/4 BUND
57	1	148587	FEMALE ADAPTER JOHN GUEST TO NPT
58	1	156173	3/8" HOSE BARB ID BLACK HDPE ADAPTER
59	2	001729	7/8 PLASTIC BUSHING HEYCO
61	2	001352	SCREW MS PH 8-32X3/8 ZN TH-C
63	0.001	052436	FOAM INSULATION TAPE 1/8"X 2" PREMIUM BLACK

