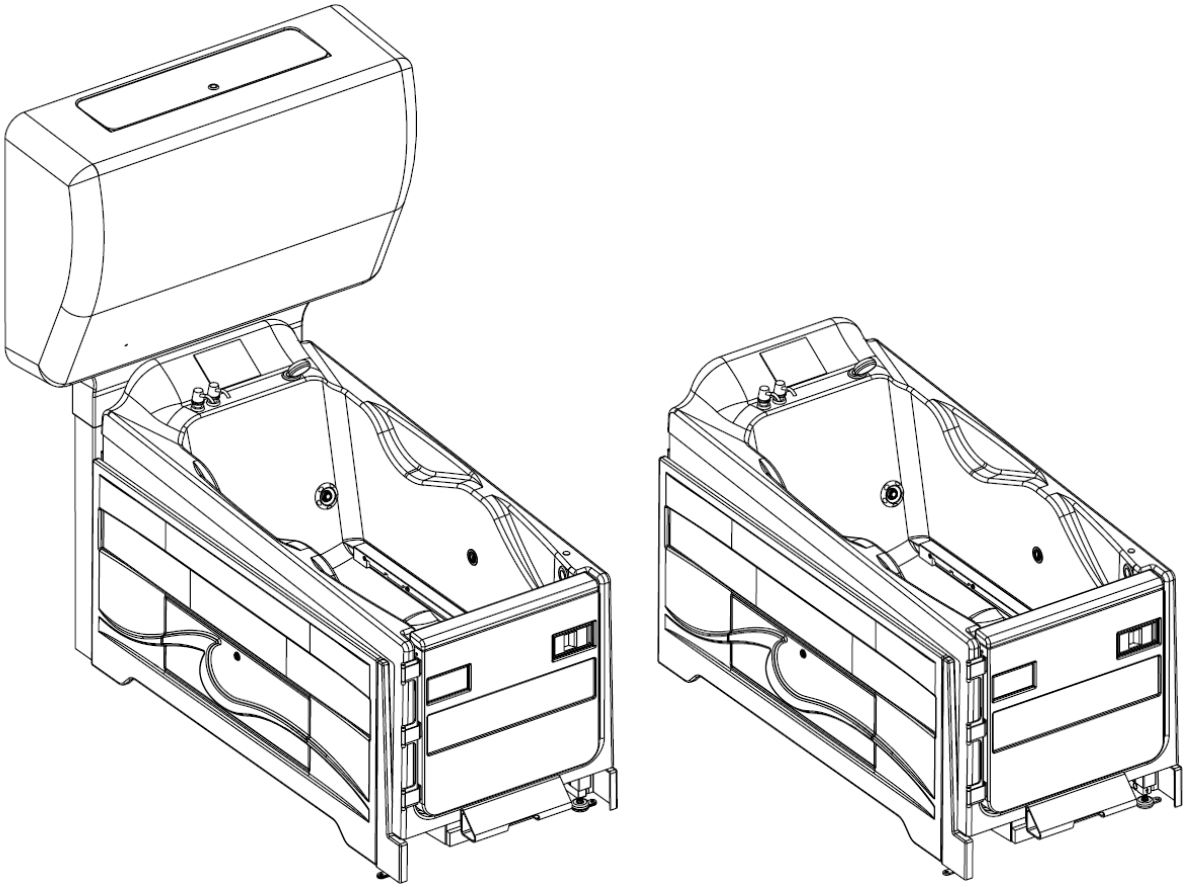
APOLLO BATH

ELEVATING SENIOR HEALTH...WITH STYLE

Solares™ Smart Spa Parts Manual



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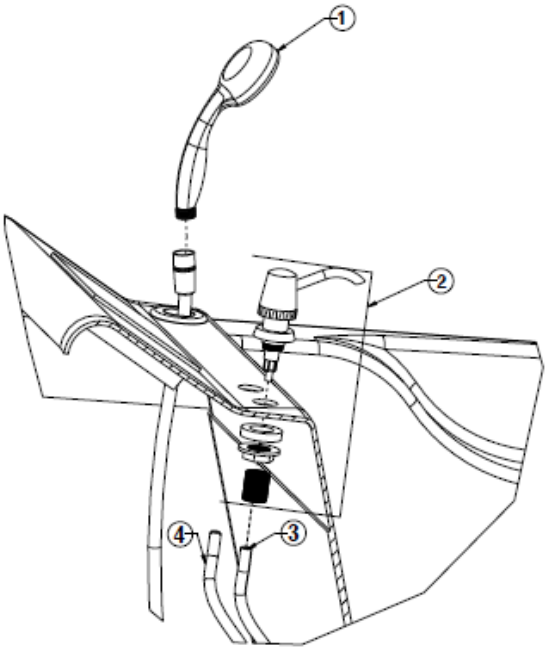
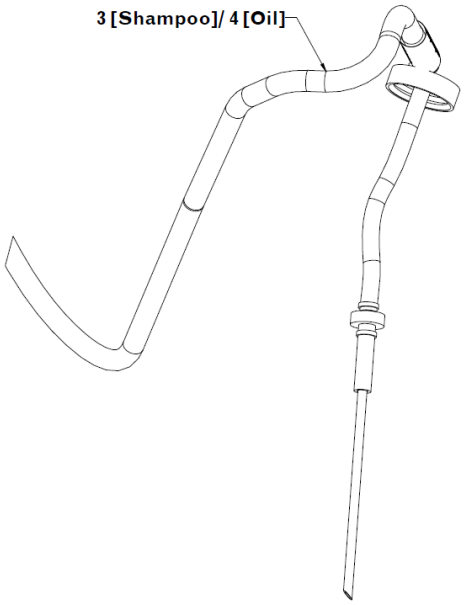
Contents

Dashboard

Item	Part #	Description	Item	Part #	Description
1	320006	Shower Wand	3	200450	Skin Care Hose Assembly; Shampoo
2	340541	Commercial Soap Dispenser	4	200451	Skin Care Hose Assembly; Oil





Replacement Instructions

Part #2 – Commercial Soap Dispenser

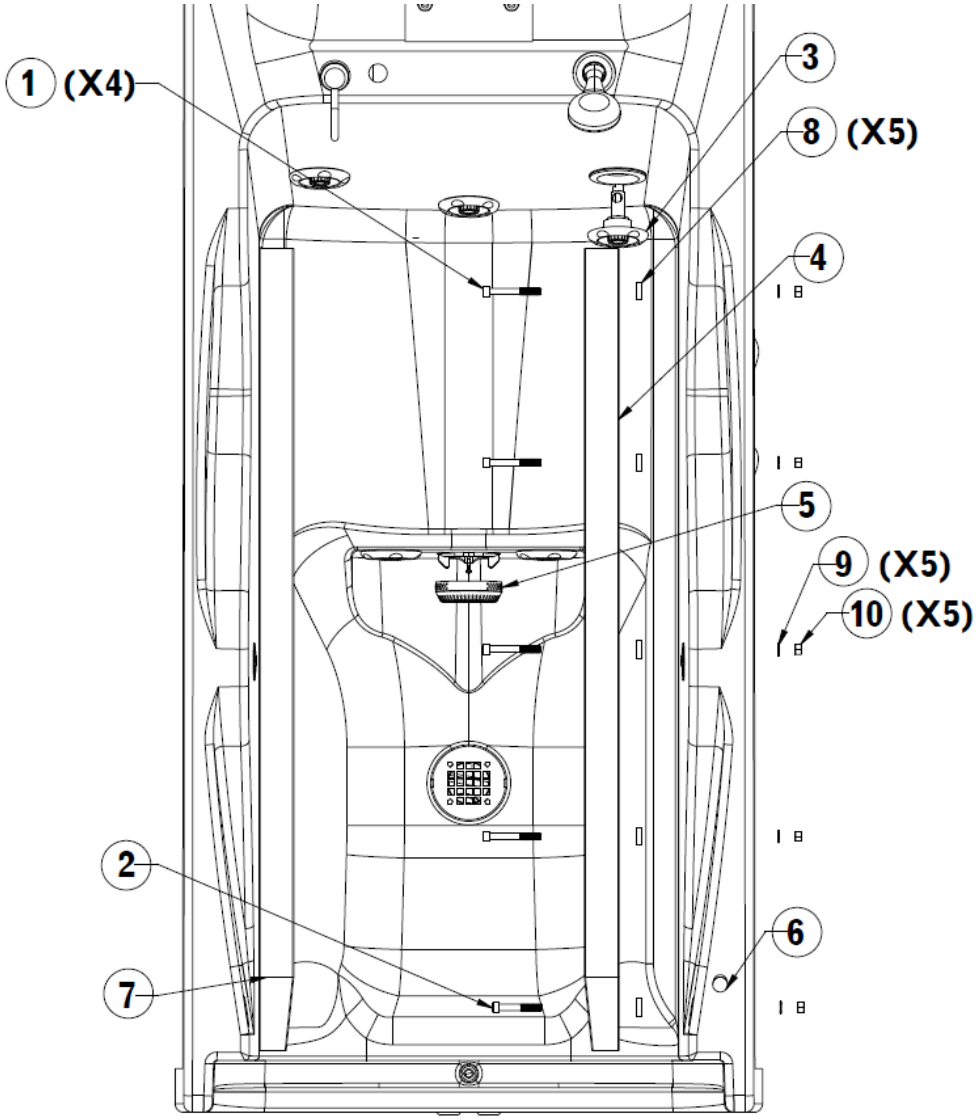
1. Use screwdriver to disengage cable clamp from hose and remove hose.
2. Remove nut and washer from underside of pump.
3. Remove old pump and install new one.
4. Replace washer and nut on underside of tub.
5. Slide hose over tube and replace clamp.

Part #3/4 – Skin Care Hose Assembly; Shampoo/ Oil

1. Unscrew end of hose from jug of product and set on cardboard.
2. Pump out as much as shampoo/ oil as possible to clear access from line.
3. Use screwdriver to disengage cable clamp from hose.
4. Remove hose and install new line.
5. Replace cable clamp onto new hose.
6. Insert opposite end of hose assembly into matching product bottle and thread cap until secured to bottle.

Rails and Jets

Item	Part #	Description	Item	Part #	Description
1	350704	Soc Cap Screw; 3/8-16 x 3.0	6	330302	Momentary Switch; Push Button
2	350703	Soc Cap Screw; 3/8-16 x 2.5	7	401041	LH Tub Transfer Beam
3	320549	TRX Jet Dir Internal; BN	8	340538	Gasket; 3/8 ID x 1 OD x 1/4
4	401040	RH Tub Transfer Beam	9	350512	3/8 Star Washer; SS
5	320572	94GPM Suction Cover; BN	10	350077	3/8-16 Thread Hex Nut



Replacement Instructions

Part # 3 – TRX Jet

1. Rotate jet counterclockwise until it stops rotating.
2. Force jet to continue rotating counterclockwise until it pops out of the body.
3. Place new jet in place and apply pressure while rotating clockwise until jet snaps into place.

Part # 4/7 – LH/RH Transfer Beam

1. Remove screws and pull rail off of tub.
2. Place Gasket (Item 8) into matching holes on the back side of the new rail.
3. Carefully place rail on tub ensuring none of the gaskets fall out of place.
4. Replace screws through rail and tub shell.
5. Apply anti-seize to screws and replace star washer and nut to end of screw.
6. Tighten until snug.

Part # 5 – 94GPM Suction Cover; BN

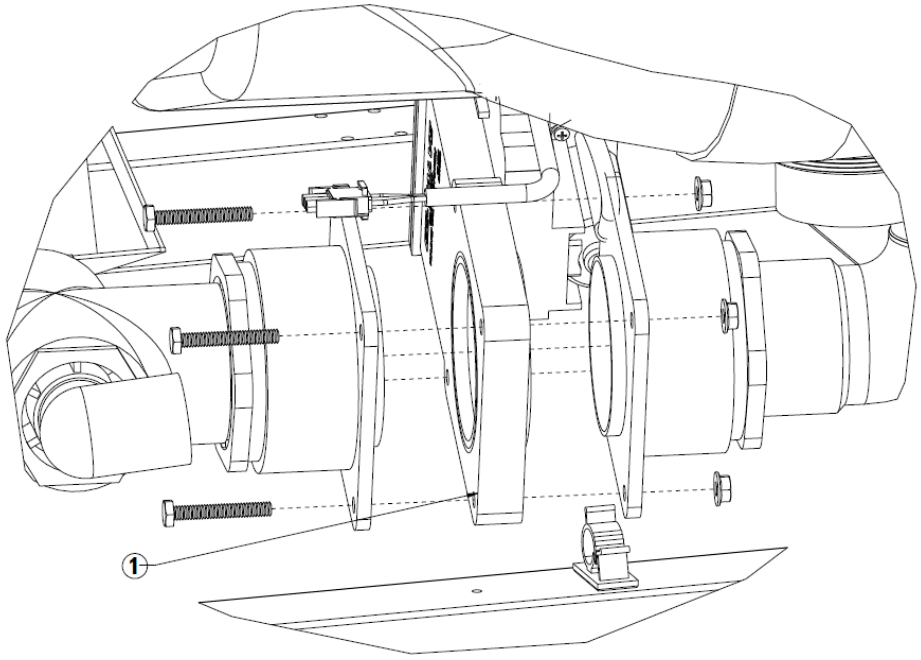
1. Remove screw from center of suction cover.
2. Remove old suction cover.
3. Place new suction cover with edge of part ensuring tab on backside of part lines up with the notch in the top of the fitting. Note: it is critical that the section of the cover without any holes is facing up as to ensure optimal drainage.
4. Replace screw in center of part.

Part # 6 – Momentary Switch; Push Button

1. Remove right side panel and right-side panel trim.
2. Switch off tub power using power switch on electrical box or unplug tub from wall. Warning! Failure to do so could result in electric shock!
3. Use small chancel locks or pliers to remove nut on underside of switch.
4. Pull button up and out of tub to expose contacts on the bottom.
5. Use screwdriver to loosen screws and remove wires from switch.
6. Attach wires to terminals of new switch and tighten down screws ensuring there are no loose strands. Which wire goes to which terminal isn't important, they just need to go in separate terminals and have no jumpers between them.
7. Drop switch back into tub and replace nut.
8. Tighten nut until switch is secure.
9. Power on unit and verify correct operation of button in input section of maintenance screen per operations manual. Screen should indicate switch is "HIGH" when pushed in and "LOW" when released. resecure connections if this is not the case.
10. Replace side panel trim and side panels.

Drain

Item	Part #	Description	Item	Part #	Description
1	320577	3” Dia Slide Valve; 12VDC	2	500354	Slide Valve Drain Seal Kit; 3in

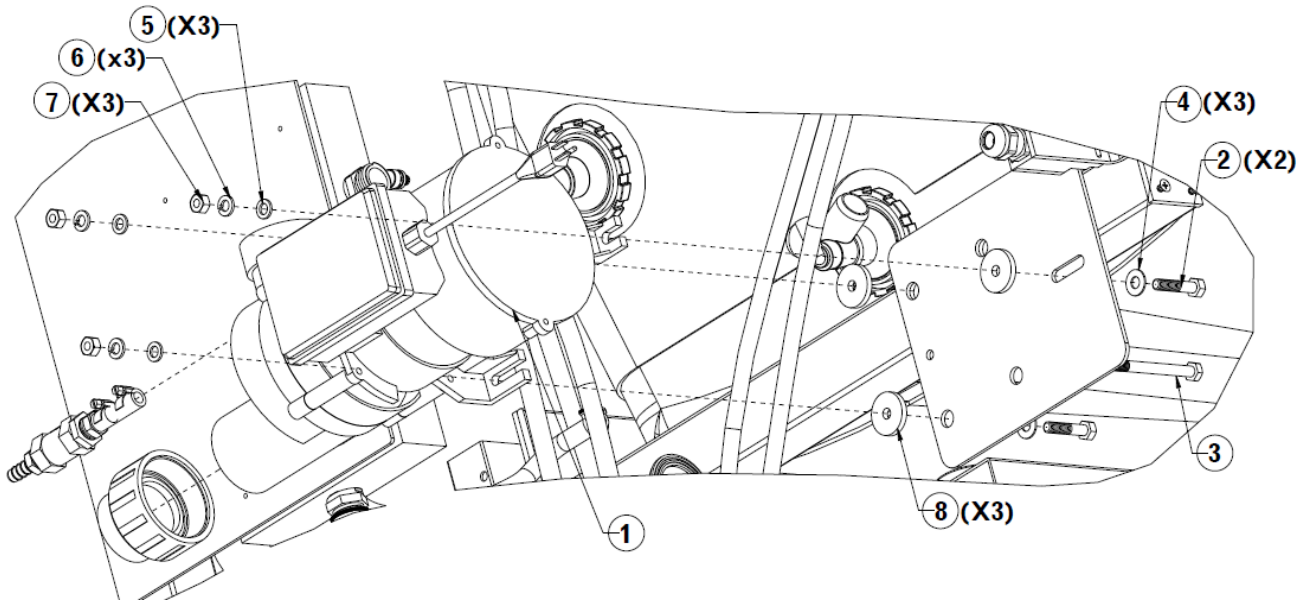


Replacement Instructions *Note: These instructions also apply for Rapid Fill Slide Valve.

1. Loosen hose clamp from Fernco coupler attaching rear side of drain assembly and remove drain hose. This will make it easier to handle the assembly.
2. Remove screws from new assembly
3. Remove PVC fittings and gaskets from valve.
4. Disconnect cable from old assembly on tub.
5. Remove screws and remove valve from plumbing.
6. Discard old gaskets and valve.
7. Apply new gaskets to PVC fittings on either side of old assembly. (large ID side of gasket fits over ridge of fitting.)
8. Place the new valve between the two halves of the old assembly and push parts together as shown above. (Valve handle should face side of tub with skin and spa care products with the valve pointed above tub frame.)
9. Use hardware from new assembly to reassemble valve.
10. Reattach hose through Fernco coupler and tighten down fitting.
11. Connect drain to cable previously removed from old drain.

Whirlpool Pump

Item	Part #	Description
1	330281	Whirlpool Pump; 7 Amp
2	350053	5/16-18 Hex Bolt x 1.5; SS
3	350706	Hex Bolt; 3/16-18 x 3.5
4	350121	3/16 Flat Washer; SS
5	350705	5/16 flat washer
6	350621	5/16 Lock Washer
7	350054	5/16-18 Coarse Thread Nut
8	400072	Motor Mount Washer; Rubber

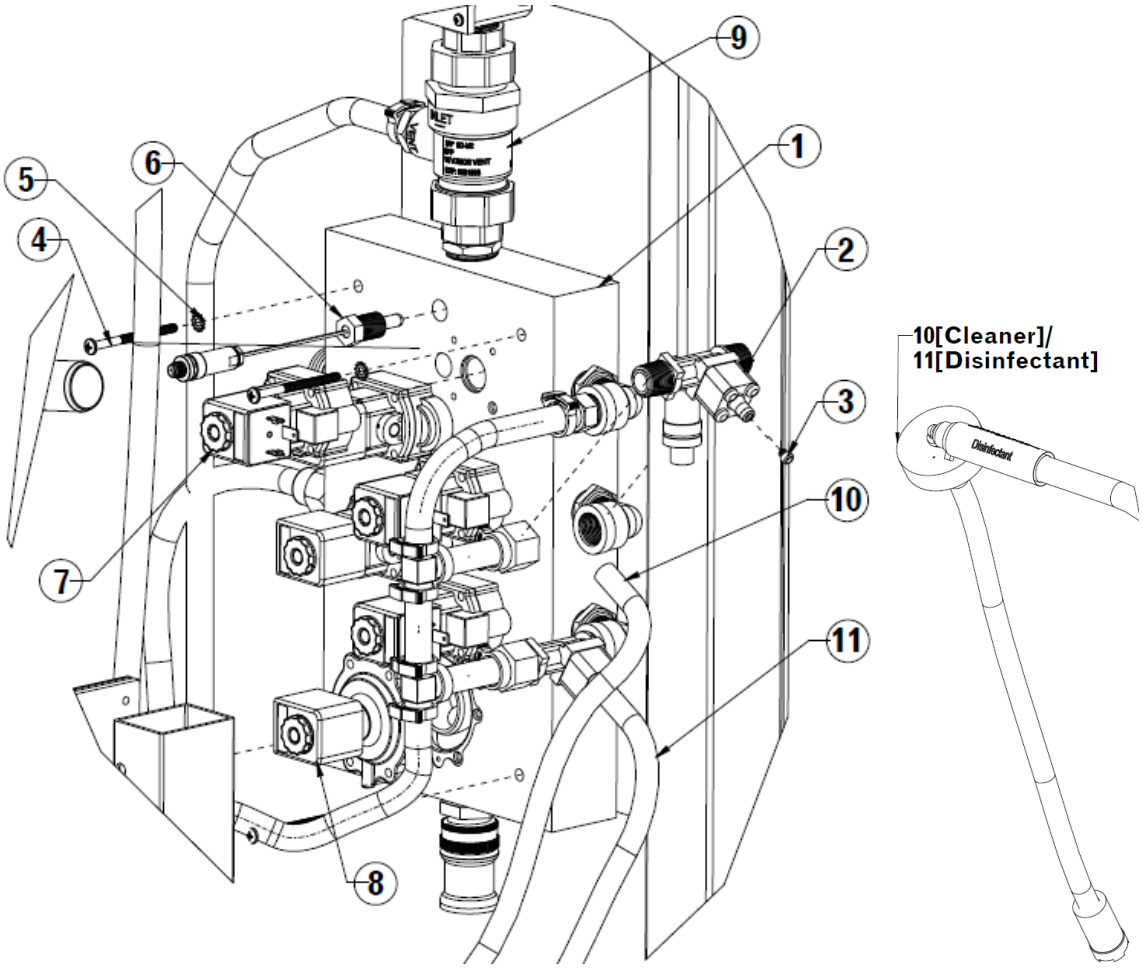


Replacement Instructions

1. Unplug the pump from the electrical box.
2. Loosen the set screw securing the ground to the pump.
3. Disconnect the ground wire from the pump.
4. Disconnect the unions from the top and side of the pump.
5. Loosen the hose clamp securing the check valve to the top port of the pump and slide it off.
6. Remove the three bolts mounting the pump in place and set the pump aside.
7. Install the new pump on the frame using the hardware as shown above. Note: The long bolt secures the highest foot of the pump.
8. Reattach the unions to the side and top of the pump.
9. Assemble the check valve onto the top port of the pump and secure the hose clamp to seal it.
10. Push the ground wire into the pump's ground fitting and secure it using the set screw in the assembly.
11. Plug the pump into the short Nema 15 cable coming out of the large electrical enclosure.

Manifold

Item	Part #	Description	Item	Part #	Description
1	200448	Fresh Water Manifold Ass.	7	330380	Series 35KR; 2-way-2pos val.
2	320566	Chemical Injector; 3/8 MPT	8	330381	Series 3685 2-way, 2pos val.
3	320589	Injector Metering Tip; Red	9	320596	Backflow W/ Air Vent; ¾ NPT
4	320728	PH Mach. screw; 8-32 x 2 1/4	10	200442	Spa Care Hose Assembly; Cleaner
5	350696	#8 Start Washer	11	200443	SPA Care Hose Assembly; Disinfectant
6	330300	NTC Thermistor; 10Kohm			



Replacement Instructions

Part #1 – Fresh Water Manifold Assembly

1. Turn off hot/ cold water supply.
2. Use touch screen to briefly open shower or fill valve to blead the water pressure from the system.
3. Disconnect all DIN cables from the valves by loosening the screw at the back of the connector all the way and pulling the connector off of the valve.

4. Disconnect union at top of manifold by placing one wrench on the bottom of the union and another on the nut.
5. Disconnect White PVC line from dual check valve assembly by loosening hose clamp and removing tube.
6. Disconnect fill hose, shower hose, and reservoir hose (if applicable.)
7. Disconnect Cleaner & disinfectant lines.
8. Disconnect part #6.
9. Remove part #4 (X4) using Philips head screwdriver and remove manifold from frame.
10. Remove union from top of old manifold and install it into new manifold. 3 wraps of thread tape with coating of PTFE thread sealant on top is recommended for most reliable seal.
11. Install new manifold onto plate using part #4 and part #5 as shown.
12. Reinstall all hoses and connections removed in previous steps.
13. Turn water back on and use touch screen to verify all valves connected properly and that there aren't any leaks.

Part #2 – Chemical Injector; 3/8 MPT; Plastic

1. Remove cleaner/ disinfectant hose from injector tip.
2. Use small flat head screwdriver to pry separate teeth of hose clamps adjacent to injector & pull hose off barb. Note: If you have ½" Vinyl tubing available it is often easier to carefully cut along the length of the tubing to remove it from the barbs and simply replace it as it can be stubborn.
3. Twist injector counterclockwise to remove from street elbow.
4. Remove barb & metering tip from old injector and install on new injector.
5. Install new injector into street elbow.
6. Replace hose over injector barb and reinstall hose clamps.
7. Replace cleaner/ disinfectant hose.

Part #6 – NTC Thermistor; 10Kohm

1. Disconnect thermistor from cable.
2. Unthread thermistor from manifold.
3. Remove M8 connector from thermistor and install it on the new thermistor per WI0107.
4. Thread new thermistor into manifold using thread tape to seal.
5. Connect M8 connector.
6. Clear thermometer error through hitting the "Reset Error" button under maintenance or by cycling the tub's power.
7. Calibrate thermistor per instructions in Solares Operation manual.

Part #7 - Series 35KR; 2-way-2pos valve

1. Disconnect DIN cable by loosening screw on back of connector all the way and pulling connector away from valve.
2. Turn off hot/ cold water supply.
3. Use touch screen to open tub or shower valve to bleed pressure from lines.
4. Use Philips screwdriver to remove all 4 screws securing valve to manifold.

5. Remove valve and replace with new one in same orientation as the original by ling up the short pipe on the bottom of the valve with the hole in the manifold. (Side of valve with round base faces center of manifold.)
6. Replace screws and the DIN connector.
7. Test valve and verify there are no leaks.

Part #8 - Series 3685 2-way, 2pos valve.

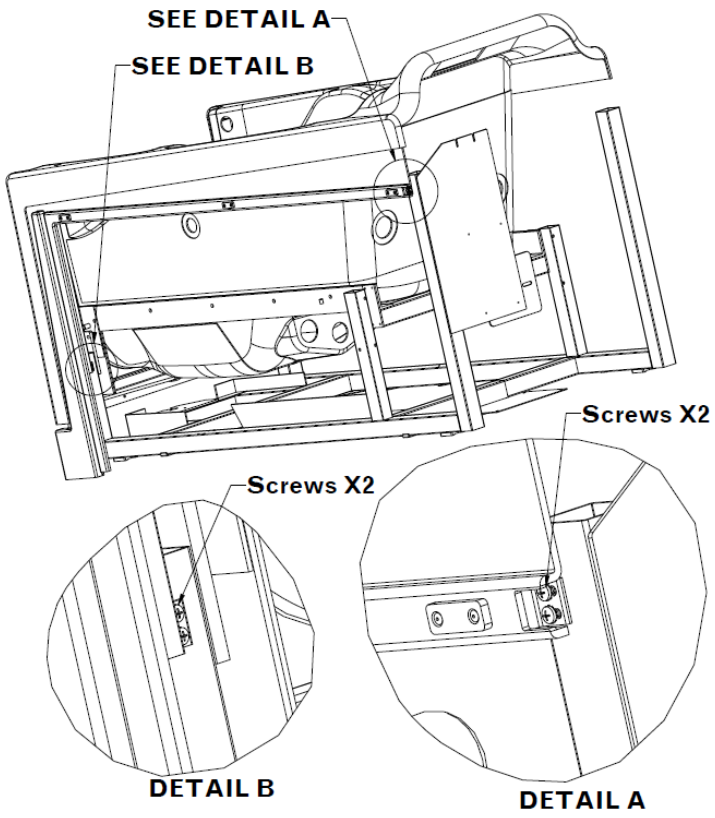
1. Disconnect DIN cable by loosening screw on back of connector all the way and pulling connector away from valve.
2. Turn off hot/ cold water supply.
3. Use touch screen to briefly open tub or shower valve to bleed pressure form lines.
4. Remove manifold from frame per freshwater manifold replacement instructions. (Note: Valve can be replaced without removing the manifold from the frame; however, it's difficult to align both the gasket and the valve together properly with the manifold while fighting gravity and trying to keep the spring from falling out. It's also very easy to accidently cross thread the screws when trying to install the valve vertically. This is why it's best to remove the manifold before attempting a replacement of this valve.)
5. Use 9/64 hex wrench to remove all screws securing valve.
6. Remove valve and rubber seal underneath it from manifold.
7. Place rubber seal from new valve in the impression on the manifold with the large stainless plate facing up. Carefully push edges of gasket into the impression. It's very important that the gasket lines up with the impression exactly.
8. Place the spring on top of the nub coming out of the center of the stainless plate.
9. Place the valve on top making sure that the side of the valve with the bump on its face is pointing downward.
10. Lightly twist the valve back and forth with slight/ increasing pressure until the valve seats securely onto the gasket. If everything is aligned, then the valve shouldn't be able to rotate freely.
11. Replace screws to secure valve to manifold. Tighten screws down lightly following a crisscrossing star pattern like you would when securing a wheel on a car.
12. Once screws are lightly fastened; go around once more to snug up each screw following the same pattern.
13. Replace DIN connector onto valve and turn water back on.
14. Press "Fill Tub" on water control screen to test valve for proper operation and ensure that there's no leaks.

Part # 9 - Backflow W/ Air Vent; ¾ NPT

1. Turn off hot/ cold water supply.
2. Use touch screen to briefly open tub or shower valve to bleed pressure form lines.
3. Use flathead screwdriver to separate teeth on hose clamp and remove it.
4. Remove vinyl hose from port on side of backflow preventer.
5. Use two wrenches to disconnect unions on top and bottom of valve without disturbing the joint on the other side.

6. Remove the valve and replace it with the new one ensuring there is a gasket on either side of the valve.
7. Alight the valve with the other half of the adjacent unions and then tighten them good and snug with two wrenches ensuring adjacent joints aren't disturbed.
8. Reattach vinyl hose to barb on side of valve and replace hose clamp.
9. Turn on water supply and verify there are no leaks.

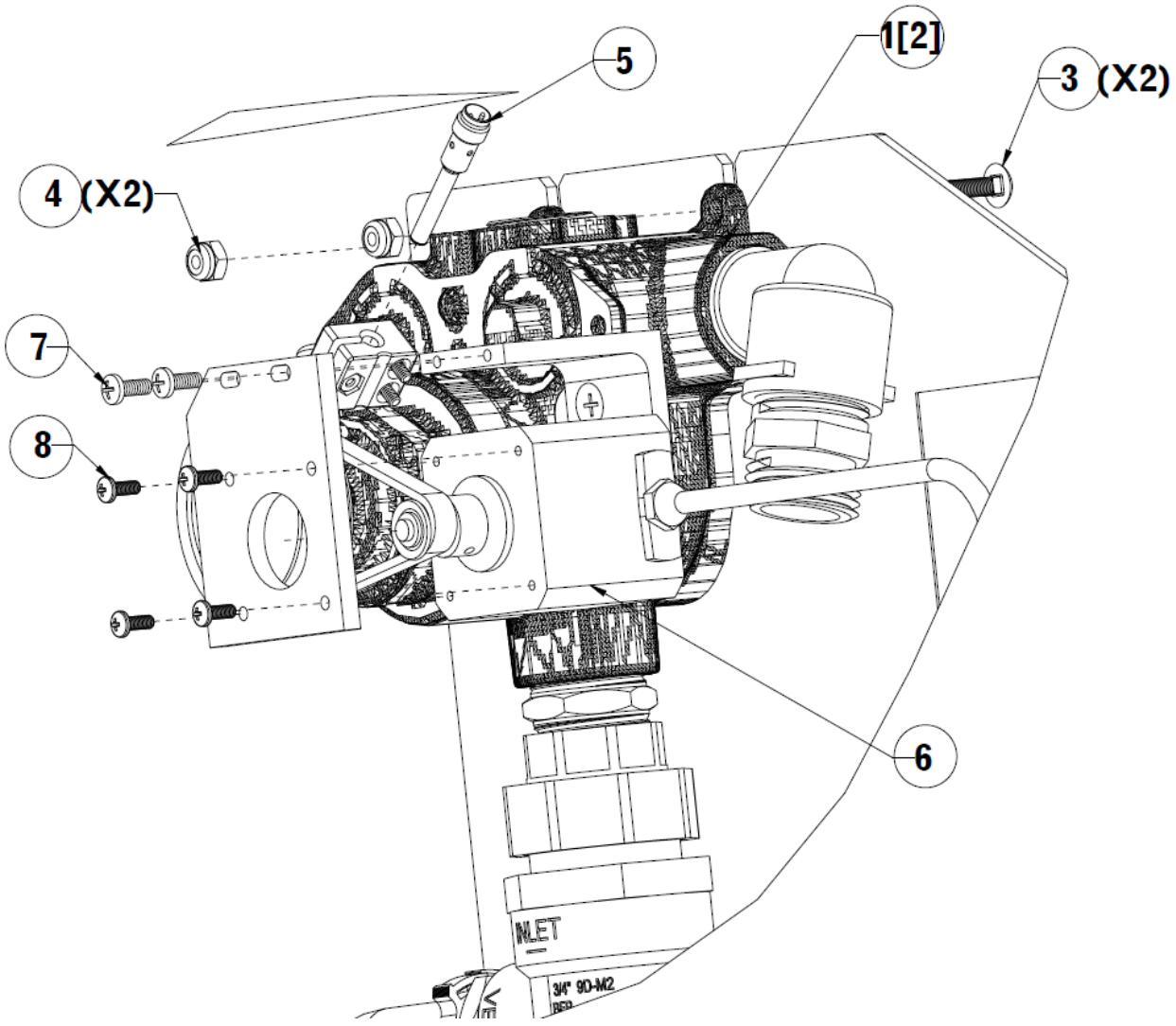
Side Panel Trim Removal



1. Ensure tub is raised up to highest position.
2. Remove side panel by opening access panels and removing thumb screw located towards back side of cutout.
3. Remove screws securing lower part of frame (Detail B) and let front of frame rotate downward.
4. Remove screws shown in detail A while supporting frame.
5. Pull frame down and out to remove from tub.
6. When ready to reinstall start by tucking front of trim into front edge of tub.
7. Slide trim up until top edge of trim is recessed behind tub shell.
8. Align rear slots of frame with threaded inserts in the back of the frame as seen in detail A and loosely install the screws.
9. Lift the front edge of the frame up until the slots line up with the holes located towards the front of the frame as shown in detail B.
10. Lightly thread in screws.
11. Adjust frame in or out so that lines up well with the tub shell and secure all the screws.

Rada Valve

Item	Part #	Description	Item	Part #	Description
1	200466	Mixing Valve Assembly	5	330286	Inductive Proximity Sensor; 1.5mm
2	510071	Rada Cartridge; Rada222	6	330285	Nema 17 Stepper Motor
3	350762	Carriage Bolt; 8-32 X 3/4	7	350508	Machine Screw 6-32 x 3/8; SS
4	350438	8-32 Coarse Thread Nylock Nut	8	350725	PH Mach Screw; M3-0.5 x 8mm



Replacement Instructions

Part #1 – Mixing Valve Assembly

1. Remove side panels and side panel trim.
2. Turn off hot/ cold water supply.
3. Use touch screen to briefly open tub or shower valve to bleed pressure form lines.
4. Remove fill hoses from both elbows of Rada Valve.

5. Disconnect M8 cable from part #5.
6. Disconnect M12 cable from part # 6.
7. Use two wrenches to disconnect union on the bottom of the assembly.
8. Loosen nuts (part #4).
9. Lift Rada assembly up to slide it out of frame.
10. Remove nuts (part #4) all the way.
11. Assemble nuts and screws (part #3 & 4) loosely onto new manifold.
12. Position Rada assembly above frame and slowly lower it so that carriage bolts make their way into the slots.
13. Verify that the backflow preventer's gasket is still in place and connect the union. Be sure to use two wrenches when tightening to prevent loosening of the adjacent fitting.
14. Tighten nuts (part #4) until valve is adequately secure.
15. Connect M8 & M12 cables to parts #5 and #6 respectively.
16. Connect fill hoses to Rada assembly ensuring that the cold line is attached to the right and the hot line to the left.
17. Verify correct assembly of the valve by running the tub fill for a while and verifying that it is able to reach and maintain the temperature shown on the screen.
18. Replace side panel trim and side panels.

Part #2 – Radatherm Cartridge; Rada 222

1. Turn off hot/ cold water supply.
2. Loosen set screw on underside of large pulley using 2mm allen wrench.
3. Loosen 4mm screw on other side of pully using 2.5mm allen wrench.
4. Lift large pulley off of valve. You may need to loosen the screws on the top of the adjacent plate to create some play.
5. Remove screw fastening down brass adjustment knob.
6. Remove both white clips from Rada assembly.
7. Remove black cap and brass adjustment knob.
8. Twist off top piece of brass assembly.
9. Pull Rada out of brass assembly. (It may help to briefly open one of the valves a bit to allow the water pressure to push out the valve.)
10. Remove new valve from its packaging and apply included silicone lubricant to the gaskets.
11. Insert the new valve into the assembly ensuring that the side marked with a large H is aligned with the left side of the assembly.
12. Thread the top brass assembly back onto the valve.
13. Turn water supply back on.
14. Go to the maintenance screen on the tub per the operations manual and push "Max Temp" button. Water should start to enter the tub. Note: The following process will be easier if you have a second person available to read off the water temperature for you as you won't be able to see it while adjusting the valve.
15. Adjust the grey knob on the Rada clockwise until the water temperature drops to the neighborhood of 100°f.
16. Turn grey knob counterclockwise until temperature is 105°f (If you can't get 105°f at the tub then adjust it just beyond the point you reach the highest temperature you can.)

17. Assemble the white adjustment stop onto the cartridge so that the stop hits the left side of the black standoffs.
18. Line up the brass knob with the inside shape of the white stop and insert it. Avoid turning the Rada knob any more than necessary while doing this.
19. Watch the water temperature for a good 15-20 seconds to make sure the temperature doesn't go above 105°f.
20. Once the valve is set you can hit the "max water temp" button again to turn off the water.
21. Place the black cap on top of the Rada valve and hold it just far enough away to prevent the teeth from interlocking.
22. Rotate the cap clockwise until you hit a stop.
23. Push the black cap in to interlock the teeth and replace the two white clips you removed earlier. The nubs should be positioned toward the opposite clip to secure them in place.
24. Place the screw you removed earlier into the brass adjustment knob and tighten it down.
25. Place the large pulley back on the brass knob ensuring you get the timing belt on both pulleys as you go.
26. If you loosened the adjacent plate earlier then you'll need to pull that plate away from the Rada until the time belt is good and tight. With force still applied to the plate tighten the two screws down on its back side to secure it into that position.
27. Turn the large pulley counterclockwise just past the point in which the inductive sensor's light (part #5) turns on.
28. Use 2mm hex wrench to tighten set screw good in snug to lock pulley in position.
29. Verify that pulley rotates clockwise without a problem and trips the sensor when rotating back counterclockwise without having to force it.
30. Go to water control screen and verify that system maintains correct temperature without a problem.

Part # 5 – Inductive Proximity Sensor; NO PNP; 1.5mm

1. Disconnect M8 cable from inductive proximity sensor.
2. Loosen top screw on inductive sensor bracket with an hex wrench and slide sensor out of bracket.
3. Spin large pulley on Rada counterclockwise until it stops.
4. Slide the new sensor into the bracket and connect the M8 cable.
5. Adjust the sensor in until it senses the screw sticking out of the pulley.
6. Tighten the top screw on the sensor bracket until sensor is snug.
7. Rotate large pulley back and forth a couple of times to verify that it's picked up by the sensor without any issues. If sensor doesn't light up then adjust it in a tad further.

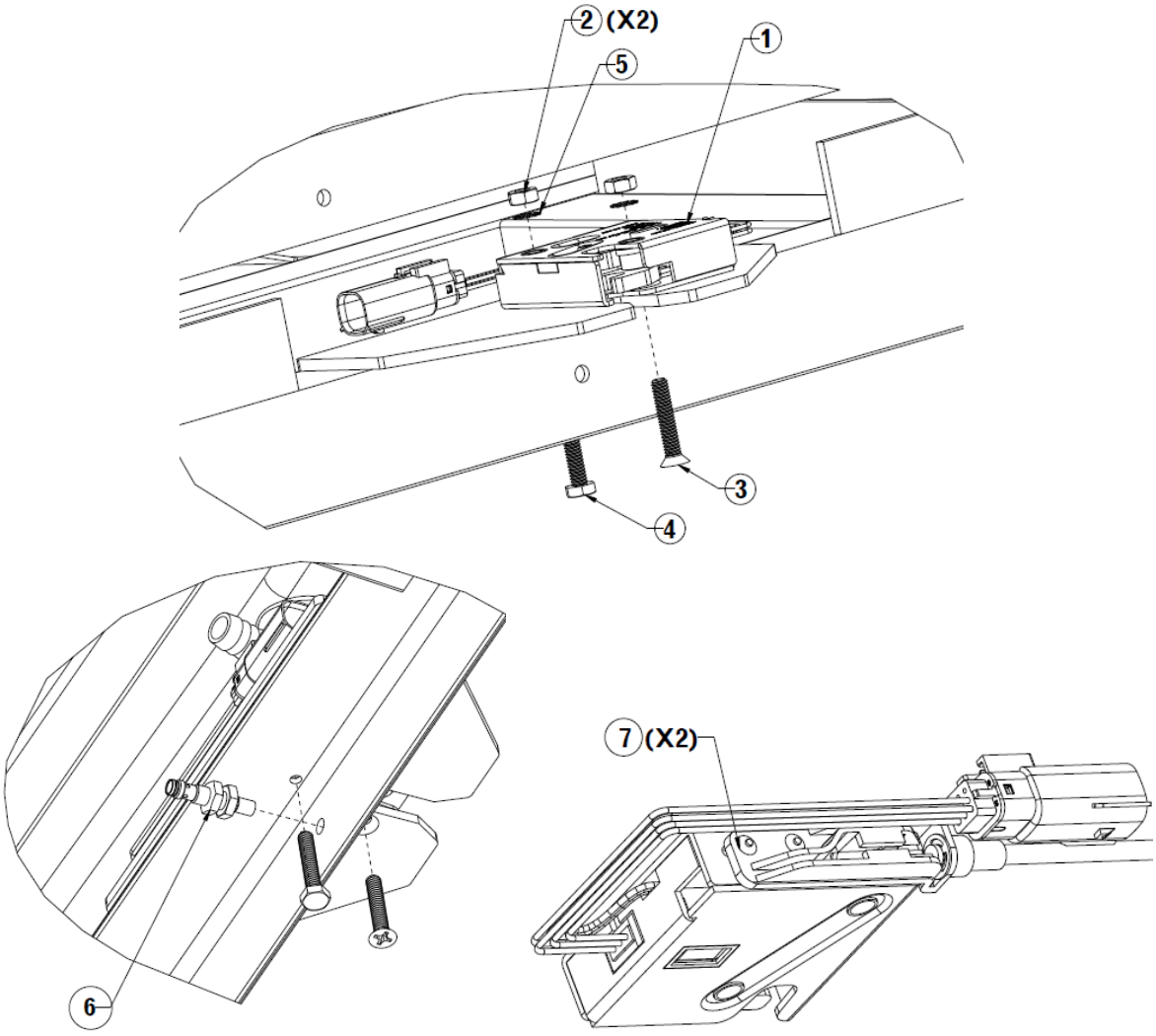
Part # 6 – Nema 17 Stepper Motor

1. Disconnect stepper motor from M12 cable.
2. Remove screws securing plate (part #7 (x2)) and free motor from timing belt.
3. Remove screws (part #8 (x4)) securing stepper motor to plate.
4. Attach motor as shown in drawing above using screws.
5. Reapply timing belt so that it bridges both pulleys.

6. Place remaining screws in top two slots and start threading them into angle bracket until they are almost all the way down.
7. Pull motor assembly away from large pulley as to make belt taunt.
8. Tighten screws to the rear of the plate down good and tight to lock the plate into position.
9. Turn large pulley counterclockwise to verify that screw coming off pulley does not hit inductive sensor and that sensor turns on when screw get in front of it. Adjust sensor as needed by loosening the top sensor bracket screw to achieve this if it's out of position. (2.5mm allen key)
10. Connect M12 cable to stepper motor.

Docking Components

Item	Part #	Description
1	330277	24VDC Sealed Rotary Latch
2	350044	¼-20 Coarse Thread Hex Nut
3	350730	PH Mach Screw; ¼-20 x 1 3/8
4	350751	Hex HD Screw; ¼-20 x 1 3/8
5	350477	¼ Star Washer; SS
6	330293	Prox Sensor; 8mm x 40mm
7	350504	Dome Blind Rivet; 1/8 x 0.4



Replacement Instructions

Part #1 – 24VDC Sealed Rotary Latch

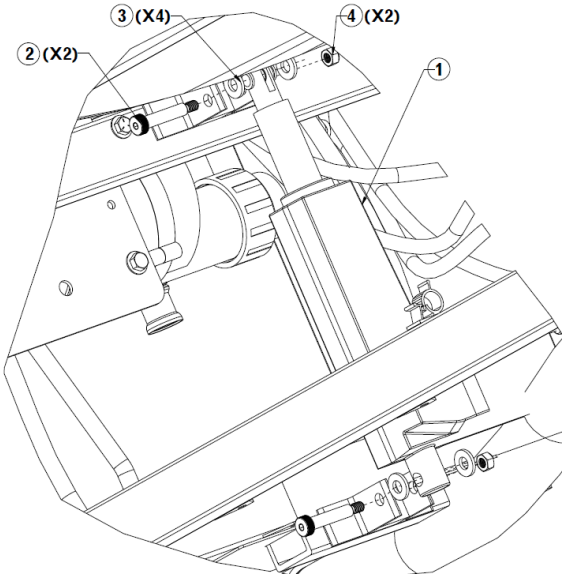
1. Disconnect latch from latch cable.
2. Remove bolts and pull latch off of frame.
3. Use 1/8” drill bit to drill out rivets (part #7) securing plastic (black) release assembly to back of latch.
4. Place black assembly onto new latch ensuring ball from cable assembly sits in front of small release lever.
5. Rivet Cable assembly to latch using 2 1/8 x 0.4” aluminum rivets (Part #7).
6. Use previously removed hardware to mount new latch on frame.
7. Reconnect electronics and verify correct operation.

Part #6 – Proximity Sensor; 8mm x 40mm

1. Disconnect M8 cable from back of sensor.
2. Remove lock nut from front of sensor.
3. Thread sensor out of the back of the frame.
4. Thread new sensor into frame so that tip is ~0.56” from the front of the frame.
5. Thread lock nut onto front of sensor to secure it in position.
6. Reconnect M8 cable.
7. Verify correct installation of sensor by docking carrier. Sensor light should be off when carrier is not connected but should light up when carrier is docked. There should also be a small air gap between the sensor and the carrier if installed correctly to prevent the sensor from being damaged.

Linear Actuator

Item	Part #	Description	Item	Part #	Description
1	330284	Actuator W/ Connector	3	350749	M10 X 2.5mm Washer, Blk
2	350722	10mm Shoulder Bolt x 40mm	4	350719	M8 x 1.25mm Nylock Nut

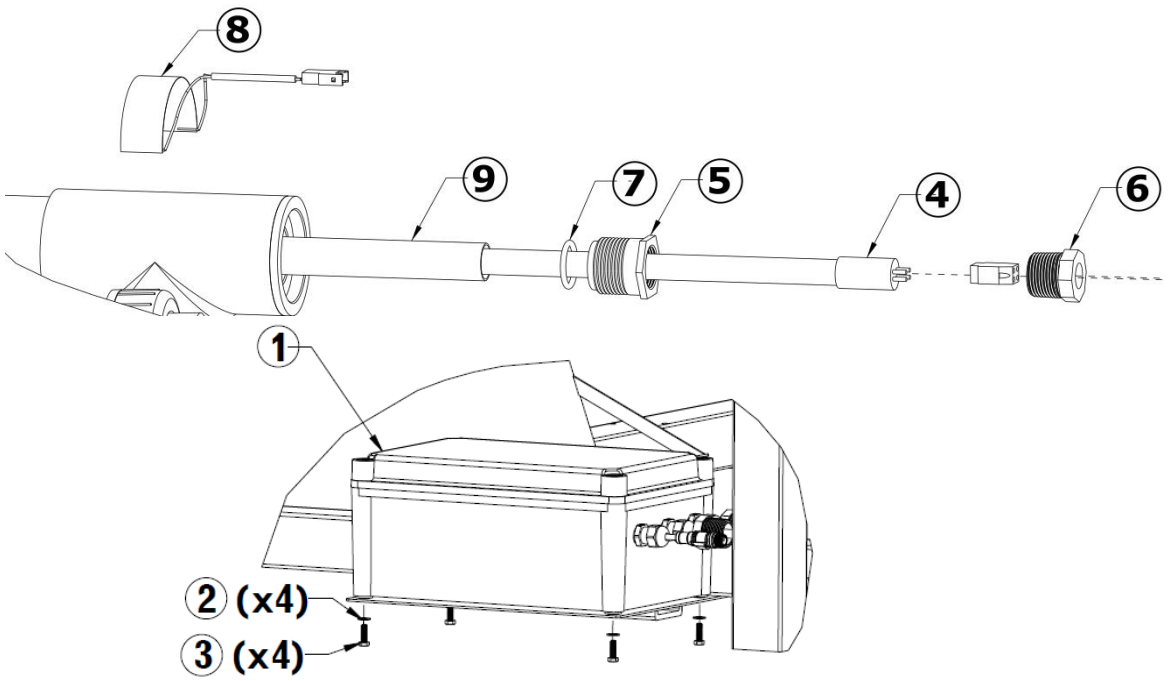


Replacement Instructions

1. Disconnect actuator from electrical box by twisting the end of the connector counterclockwise and pulling away from the box.
2. Remove nuts from top and bottom shoulder bolt.
3. Use a couple of stable supports to support the back of the tub shell.
4. If the location of the supports is not precise then you can have a couple of people lift on the back of the frame a bit to make it easier to remove the shoulder bolts.
5. Remove actuator from assembly and set to the side.
6. Install the new actuator as shown using the shoulder bolts.
7. Black washers/ spacers can be cut out to allow them to be installed after actuator is assembled to make it easier to get them between the brackets and the actuator. In this case the opening should face down as to prevent the washers from falling off shoulder bolt.
8. Reconnect actuator to electrical box by pushing it in the connector it was unplugged from. You'll need to rotate the end until you feel the connector pop in at which point you'll turn the nut counterclockwise to secure the connector. If connected properly you shouldn't be able to simply pull the cord off of the box.

Remedy™

Item	Part #	Description
1	200460	Remedy Box Assembly
2	350229	#10 Flat Washer; SS
3	350766	10-24 x 5/8 Hex Screw
4	330282	Hi-Output UV Lamp
5	401045	UV Bulb Compression Nut
6	401046	UB Bulb Retainer Plug
7	350707	O-Ring; 0.75 ID x 1.13 OD
8	200427	Solar Cell Assembly
9	N/A	Quartz Tube Assembly
Kit	500157	Quartz Tube Replacement Kit – includes items 7 and 9.



Replacement Instructions

Part # 1 – Remedy Box Assembly

1. Disconnect tub from power by unplugging the tub or turning off the power switch on the electrical box. Warning! Failure to do so could result in electrocution!
2. Disconnect Remedy box from main electrical box. (Disconnect M12 cable leading to other box.)
3. Disconnect box from UV bulbs by removing part #6 from each side of the plumbing assembly and pulling out the plug. Note: hold part #5 steady to prevent it from loosened when removing part # 6. Failure to do so could result in a leak. Never attempt to fill tub without part #5 being secured.
4. Remove the 4 hex bolts securing the box to the frame using a ratchet.
5. Remove the old remedy box and replace it with the new one.
6. Thread hex screws into the bottom of the remedy box to secure it to the frame as shown above.
7. Connect bulb cables to each bulb ensuring to align pins with holes in connector.
8. Thread item 6 into the assembly until it becomes snug. This fitting doesn't need to be tight; it just needs to prevent the bulb from sliding out of the chamber.
9. Connect the M12 cable from the remedy box to the main electrical box. The correct port will be labeled "Remedy" above the connector.
10. Power the tub back on and raise it to the highest position so it is ready for the next bath.
11. Fill tub and run whirlpool motor to verify chamber holds water. Warning! Do not stand inline with the quartz tube while pump is running. If assembly is reassembled incorrectly the tube could eject from the chamber!

Part # 4 – High Output UV Bulb

1. If replacing the top UV bulb then you will need to remove the side panel trim on the left side of the tub to get access.
2. Tilt tub to its lowest position.
3. Disconnect tub from power by unplugging the tub or turning off the power switch on the electrical box. Warning! Failure to do so could result in electrocution!
4. Disconnect UV bulbs by removing part #6 and pulling out the plug. Note: secure part #5 while loosening part #6 as accidental loosening may cause leakage.
5. Carefully pull the UV bulb out of the chamber ensuring it stays straight until fully clear of the chamber. Tilting bulb too early could result in quartz tube breakage.
6. Insert the new UV bulb in the chamber ensuring it goes in straight. Inserting at an angle could lead to breakage of the quartz tube.
7. Connect the cable to the new UV bulb ensuring to align pins with holes in connector.
8. Thread item #6 into the assembly until it just contacts the back of the connector. This fitting doesn't need to be tight; it just needs to prevent the bulb from sliding out.
9. Power the tub back on and raise it to the highest position so it is ready for the next bath.
10. Fill tub and run whirlpool motor to verify chamber holds water. Warning! Do not stand inline with the quartz tube while pump is running. If assembly is reassembled incorrectly the tube could eject from the chamber!

Part # 8 – Solar Cell Assembly

1. Disconnect solar cell by pushing in the lever on the side of its connector.
2. Pull off silicone tape.
3. Remove solar cell from Plumbing assembly.
4. Secure the new solar cell onto the clear PVC T using scotch tape on either end.
5. Cover solar cell with silicone tape to help protect it.
6. Reconnect solar cell to indicator cable. Solar cell should be connected to connector with the correct label below it. (“Top Cell” or “Bottom Cell”)

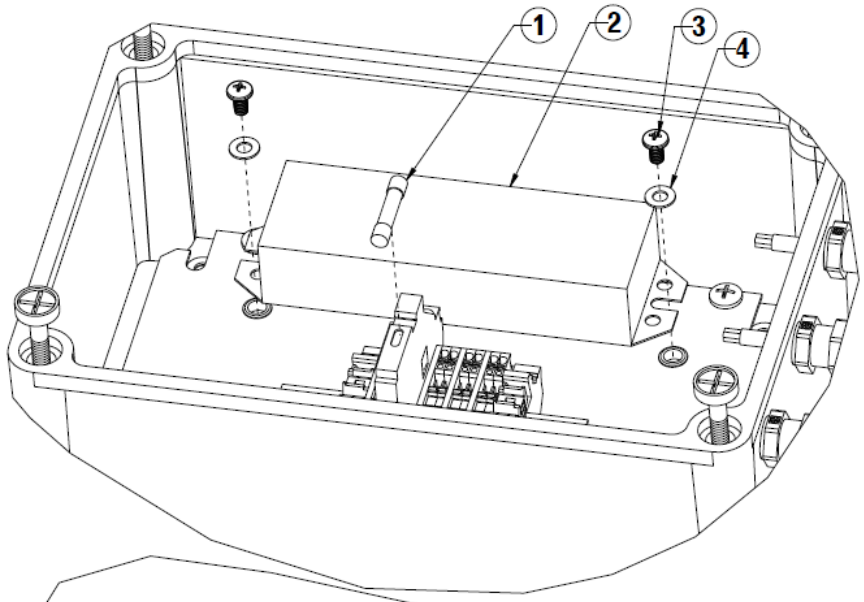
Part # 9 – Quartz Tube Assembly

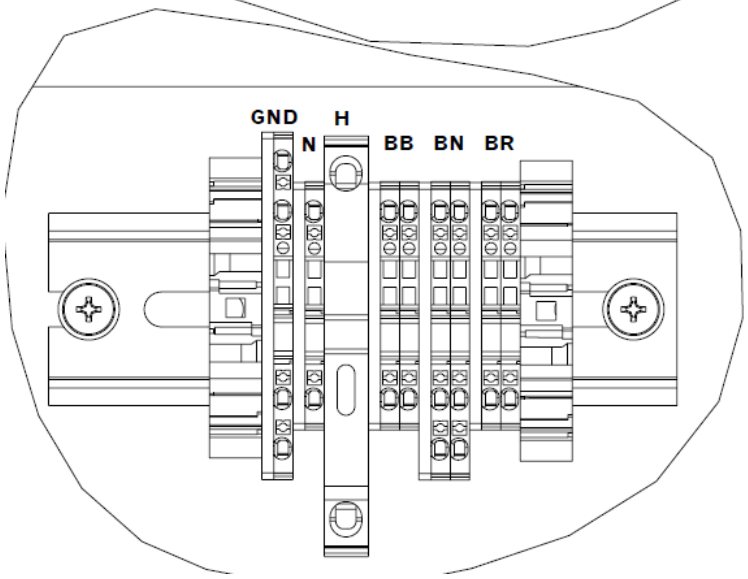
1. If replacing the top Quartz tube then you will need to remove the side panel trim on the left side of the tub to get access.
2. Tilt tub to its lowest position.
3. Disconnect tub from power by unplugging the tub or turning off the power switch on the electrical box. Warning! Failure to do so could result in electrocution!
4. Disconnect UV bulbs by removing part #6 and pulling out the plug.
5. Carefully pull the UV bulb out of the chamber ensuring it stays straight until fully clear of the chamber. Tilting bulb too early could result in quartz tube breakage.
6. Remove part # 5.
7. Place your finger in the quartz tube (Part # 9) and pull the tube out of the chamber.
8. Install part # 7 on the open end of the new quartz tube and carefully slide it into the chamber. Use a thin/ dull implement like a tongue suppressor to push the gasket in tight around the tube.
9. Replace part # 5 ensuring it is tight. Warning! Failure to install part # 5 securely could result in ejection of the quartz tube.
10. Insert the UV bulb in the chamber ensuring it goes in straight. Inserting at an angle could lead to breakage of the quartz tube.
11. Connect the cable to the new UV bulb ensuring to align pins with holes in connector.
12. Thread item #6 into the assembly until it just contacts the back of the connector. This fitting doesn’t need to be tight; it just needs to prevent the bulb from sliding out.
13. Power the tub back on. Fill the tub and run WP pump to verify there are no leaks. Warning! Do not stand inline with the quartz tube while pump is running. If assembly is reassembled incorrectly the tube could eject from the chamber!
14. Raise tub to highest position and replace side panel/ side panel trim.

15.

Remedy-Ballast and Fuse

Item	Part #	Description	Item	Part #	Description
1	330341	3AG 1A Fast Acting Fuse; 250V	3	350756	10-24 X 3/8 Screw
2	330283	UV Ballast; High-Output	4	350229	#10 Flat Washer; SS





BALLAST WIRING:
GREEN -> GND
WHITE -> N
BLACK -> H
BLUE -> BB
YELLOW -> BN
RED -> BR

Replacement Instructions

Warning! Work should only be done in electrical boxes by a qualified technician! Failure to connect wiring properly could lead to electrocution, Product Malfunction, or a Fire!

Part #1 - 3AG 1A Fast Acting Fuse; 250V

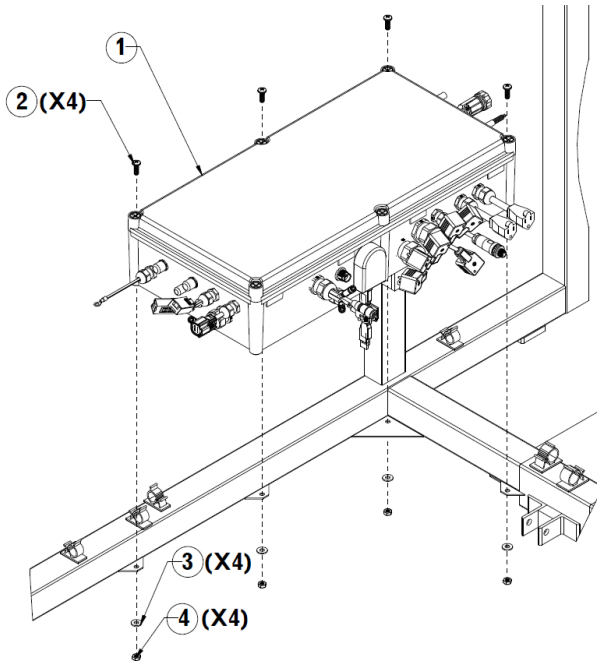
1. Disconnect tub from power by unplugging the tub or turning off the power switch on the electrical box. Warning! Failure to do so could result in electrocution!
2. Disconnect remedy box from tub per instructions in "Part #1 – Remedy Box Assembly" above. You can leave UV lamps connected and just rotate the box 180° to bring it far enough out from the tub to service it.
3. Remove Remedy box cover by loosening the 4 screws located in each corner and lifting it off the box.
4. Flip up the top of the fuse holder marked "H" above and open the left side.
5. Remove blown fuse and replace with new fuse.
6. Close side and lower top of holder back into base. Top should sit securely in base.

Part # 2 – UV Ballast; High-Output

1. Disconnect tub from power by unplugging the tub or turning off the power switch on the electrical box. Warning! Failure to do so could result in electrocution!
2. Disconnect remedy box from tub per instructions in "Part #1 – Remedy Box Assembly" above. You can leave UV lamps connected and just rotate the box 180° to bring it far enough out from the tub to service it.
3. Remove Remedy box cover by loosening the 4 screws located in each corner and lifting it off the box.
4. Disconnect all ballast wires from the terminal blocks by applying pressure to orange button adjacent to each connection using small screwdriver and pulling on wire. *To remove wires from fuse holders you'll need to place a small flathead screwdriver all the way into the adjacent hole and then push it towards the main body of the fuse holder to release the wire.
5. Remove the screws on either end of the ballast and pull ballast from box.
6. Install new ballast with what, black and green wires on the same side of the box as the green terminal block.
7. Connect all wires per wiring list next to bottom image above. The item on the left of the arrow is the wire color and the item on the right is the location to install that wire. (Adjacent image is labeled with these locations.
8. Once you are sure the ballast is wired correctly you can replace the cover and reinstall the remedy box on the tub.
9. Connect box to main power box using M12 connector labeled "Remedy"
10. Power tub back on and verify correct operation in the outputs section of the maintenance screen. (See operation manual.)

Power Hub

Item	Part #	Description	Item	Part #	Description
1	200449	Power Hub Assembly	3	350161	¼ Flat Washer; SS
2	350760	PH Mach Screw; ¼-20 X 3/4	4	350653	¼-20 Hex Nylock Jam Nut



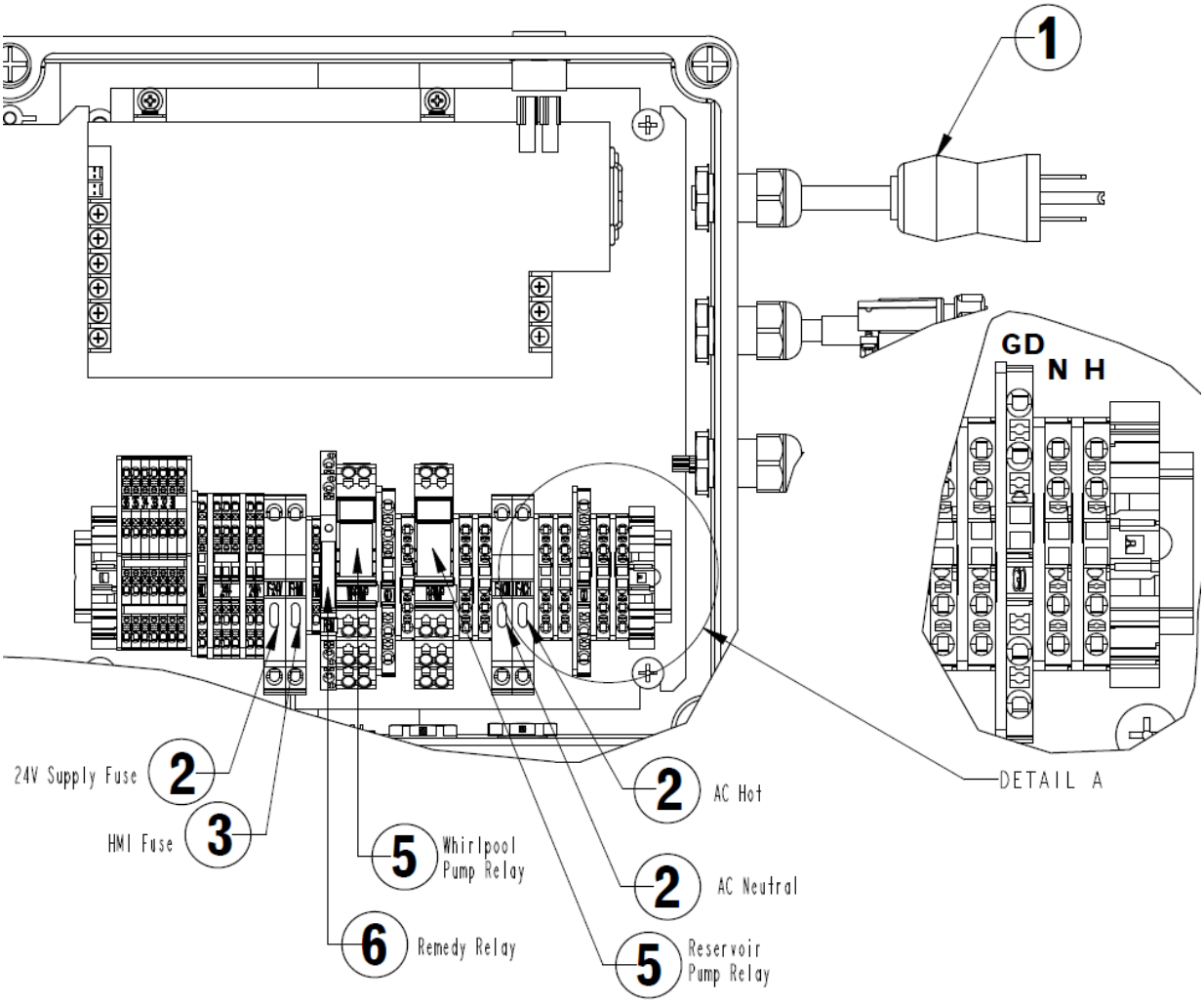
Replacement Instructions

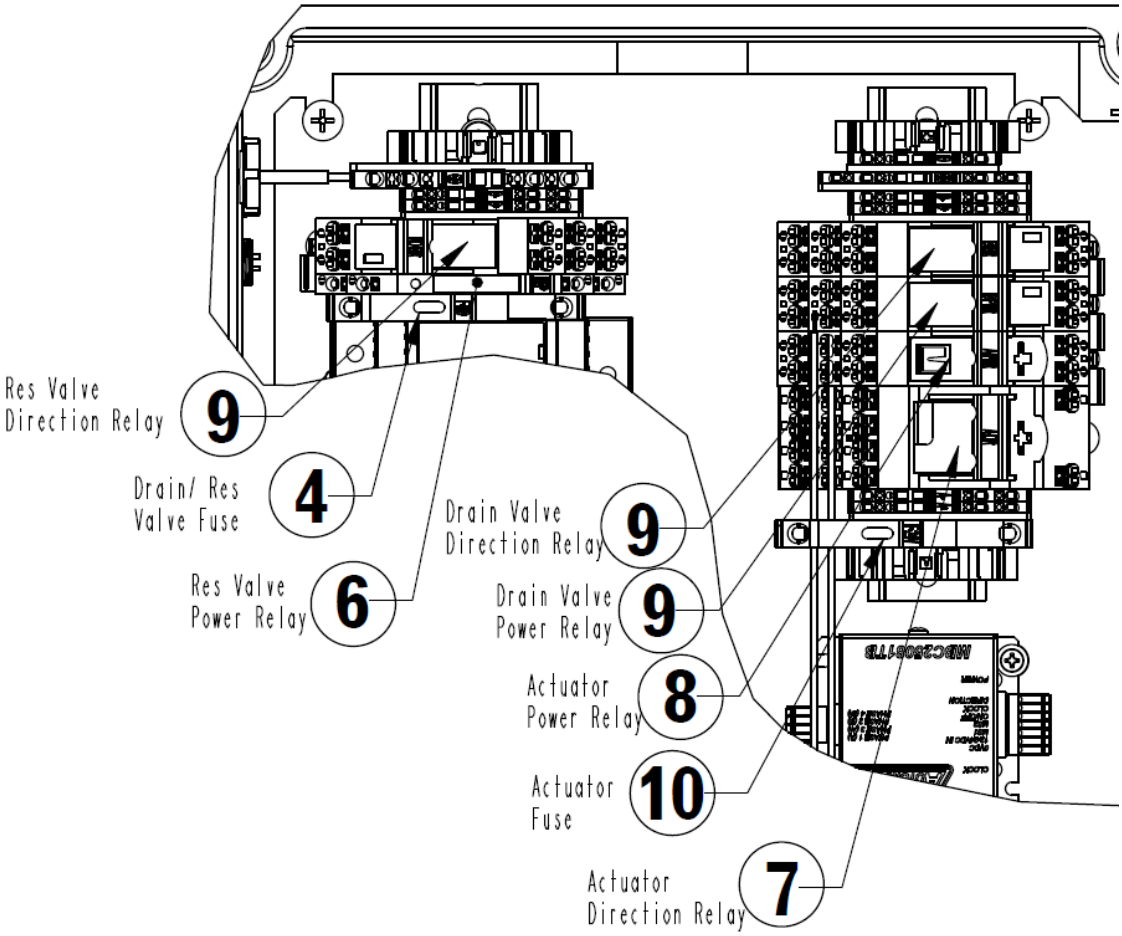
Warning! Power Hub should only be replaced by a qualified technician! Failure to connect wiring properly could lead to electrocution, Product Malfunction, or a Fire!

1. Unplug tub from outlet.
2. Disconnect all connections from electrical box and disconnect all electrical box cables from other parts of the tub. *Water level sensors can be removed by removing the two screws located towards the bottom of the sensor.
3. Loosen all screws on cover and remove it.
4. Remove screws fastening electrical box to tub frame.
5. Pull electrical box out of tub. *Cables can be removed from cable clips by pulling on lever on the front.
6. Install new electrical box using hardware as shown above.
7. Make all electrical connections per drawing 08-0312. Install water level sensors in brackets on the side of the tub. Tighten down sensor in the center of its adjustment range and adjust as needed.
8. Connect electrical box to power and test thoroughly to ensure all connection were made correctly. The inputs/ outputs screen will help with this as most inputs can be isolated and most outputs can triggered from there. Any other items will have to be tested through conducting their functions.

Power Hub – Fuses and Relays

Item	Part #	Description	Item	Part #	Description
1	330139	AWG 14-3C INT Hosp Plug	6	330385	Rep Cube; SPST Relay; 6A; 24V
2	330343	3AG 6A Fast Acting Fuse; 250V	7	330387	Rep Cube; DPDT Relay; 12A; 24V
3	330341	3AG 1A Fast Acting Fuse; 250V	8	330388	Rep Cube; SPST Relay; 9A; 24V
4	330232	3AG 4A Time Delay Fuse; 250V	9	330386	Rep Cube; DPDT Relay; 8A; 24V
5	330396	Rep Cube; SPST Relay; 16A; 24V	10	330342	3AG 5A Time Delay Fuse; 250V





Warning! Work should only be done in electrical boxes by a qualified technician! Failure to connect wiring properly could lead to electrocution, Product Malfunction, or a Fire!

Replacement Instructions

Part #1 – AWG 14-3C INT Hospital Grade Plug

1. Raise tub to highest position if it is not already in the up position.
2. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
3. Loosen screws holding on electrical box cover until they are free of the box and remove the cover.
4. Disconnect old cable from terminal blocks by pushing orange button down with small flathead screwdriver and pulling out cable.
5. Loosen the strain relief and pull the cable out of the box.
6. Trim outer jacket of new cable back to 1.5”
7. Pass new cable through the strain relief and wire to terminal blocks labeled GD, N, and H. (Shown in image above.) The Green wire goes to GD, the blue wire goes to N, and the red wire goes to H.
8. Tighten the strain relief back down.

9. Replace the cover ensuring screws are tightened down all the way.
10. Plug in electrical box and verify proper operation.

Part #2,3,4, and 10 – Fuses

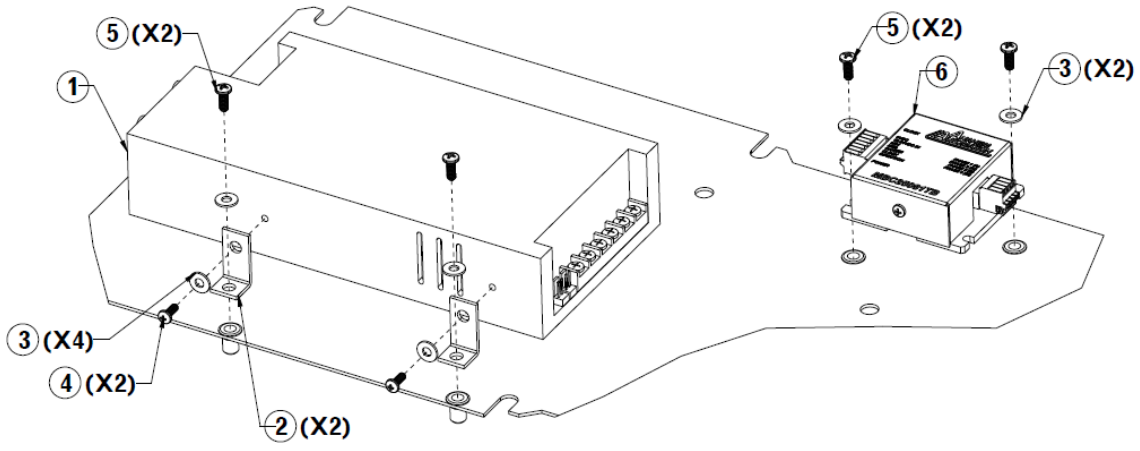
1. Raise tub to highest position if it is not already in the up position.
2. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
3. Loosen screws holding on electrical box cover until they are free of the box and remove the cover.
4. Flip up the top of the fuse holder containing the blown fuse and open the left side.
5. Remove blown fuse and replace with new fuse.
6. Close side and lower top of holder back into base. Top should sit securely in base.
7. Replace the electrical box cover.
8. Plug tub back in and verify correct operation.

Part #5,6,7,8, and 9

1. Raise tub to highest position if it is not already in the up position.
2. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
3. Loosen screws holding on electrical box cover until they are free of the box and remove the cover.
4. Find the Relay to be serviced and pull back on the relay release lever to eject the relay.
5. Line the pins of the new relay up with the contacts in the socket and slowly insert the relay cube while returning the release lever to its upright position ensuring that no pins are bent.
6. Replace the electrical box cover.
7. Plug tub back in and verify correct operation.

Power Hub – Power Supply and Stepper Driver

Item	Part #	Description	Item	Part #	Description
1	330287	Power Supply; 110VAC to 24VDC 13.4A	4	350725	PH Mach Screw; M3-0.5 x 8mm
2	401086	Power Supply Bracket	5	350727	PH Mach Screw; 6-32 x 7/16
3	350339	#6 Flat Washer; SS	6	330339	Stepper Motor Driver; 2.5A



Warning! Work should only be done in electrical boxes by a qualified technician! Failure to connect wiring properly could lead to electrocution, Product Malfunction, or a Fire!

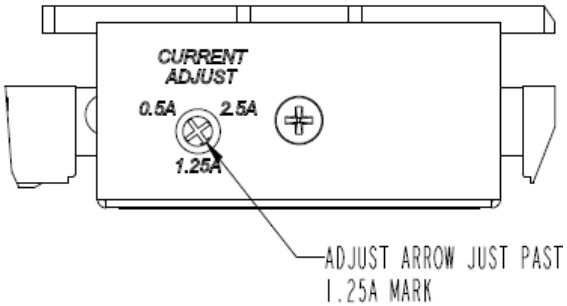
Replacement Instructions

Part # 1 – Power Supply; 110VAC to 24VDC 13.4A

1. Raise tub to highest position if it is not already in the up position.
2. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
3. Loosen screws holding on electrical box cover until they are free of the box and remove the cover.
4. Disconnect all wires from Power supply.
5. Remove Part #5 (X2) securing power supply to plate.
6. Remove the power supply from the power hub.
7. Transfer the L brackets from the old power supply to a new one. Install them with the power supply setting on a flat surface so that they line up as even with bottom of the power supply as possible.
8. Mount the new power supply in the power hub using the previously removed screws.
9. Wire power supply as follows:
    a. Green wire to Ground Connection
    b. Brown wire to ACL
    c. Blue wire to CAN
    d. Both red wires to Vo.
    e. All black wires to COM.
10. Replace the electrical box cover.
11. Plug tub back in and verify correct operation.

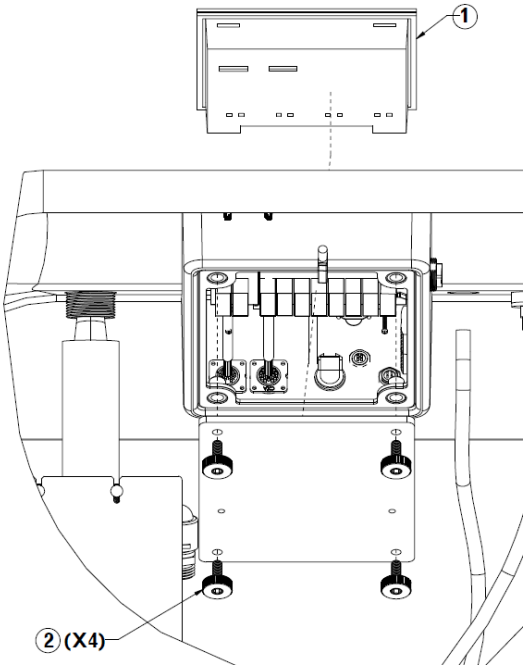
Part # 6 – Stepper Motor Driver; 2.5A

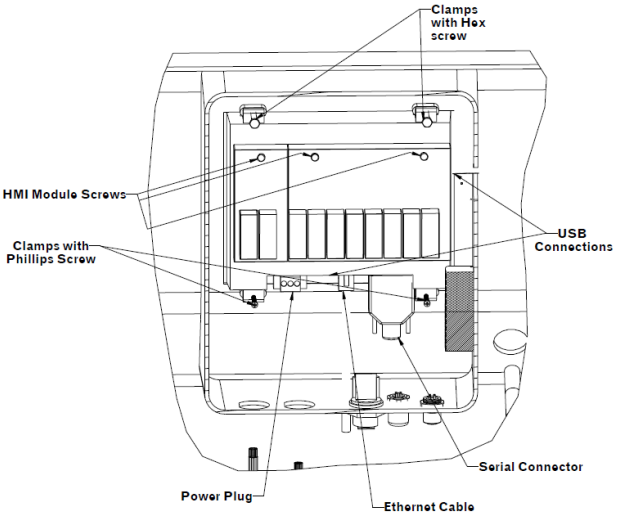
1. Raise tub to highest position if it is not already in the up position.
2. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
3. Loosen screws holding on electrical box cover until they are free of the box and remove the cover.
4. Disconnect green connectors from either side of stepper driver.
5. Remove screws securing driver to plate and remove stepper driver.
6. Adjust stepper driver to ~ 1.4amps like in the image to the right.
7. Secure new stepper driver with screws.
8. Plug green connectors into new stepper driver.
9. Replace the electrical box cover.
10. Plug tub back in and verify correct operation.



HMI

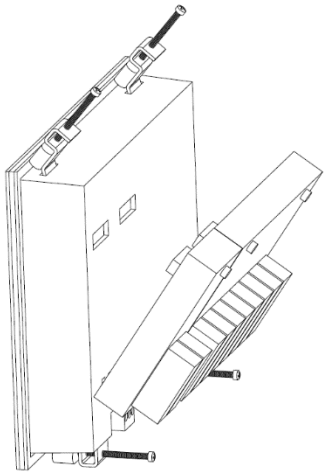
Item	Part #	Description
1	331000	HMI Touchscreen
2	350687	Knurled Thumb Screw; 5/16 x 3/4





Replacement Instructions

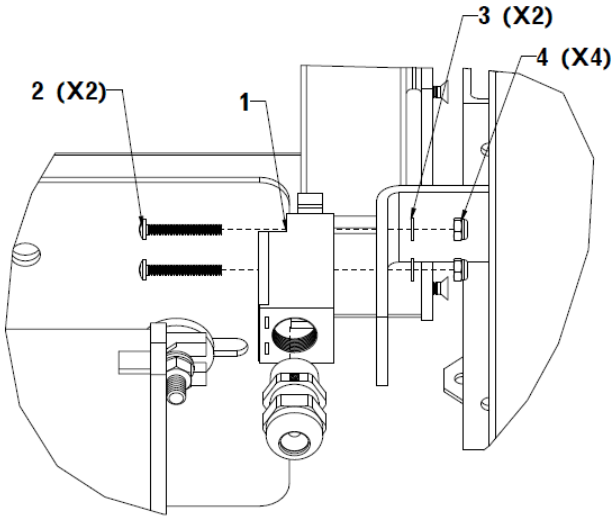
1. Unplug power cable from wall outlet. Warning! Failure to do so could result in electrocution!
2. Turn off water supply.
3. Disconnect drain and fill hoses.
4. Pull the tub far enough away from the wall for you to get behind it and work.
5. Remove thumb screws securing HMI box cover as shown.
6. Disconnect USB cable from connector on right side of enclosure. (USB cable will be in the way of HMI.)
7. Loosen screws on I/O modules until screw is free of threads, tilt them back, and then lift out of HMI. (Leave wires connected to them and let them hang out the bottom of the enclosure.)
8. unplug the power plug, ethernet cable, USB cable, and Serial connector from the HMI.
9. Loosen HMI clamp screws until they are loose enough to tilt up and pull out of the slot in the HMI. (See image to the right.) Note: The bottom two screws can be loosened using a screwdriver, but the top screws require the use of a short 7mm or 9/32 socket on a ¼" ratchet.
10. Set clams to the side, it will be easier to reuse the old ones then to assemble the new ones that come with the HMI.
11. Pull the HMI out through the front.



12. Remove the HMI from its packaging. It's easiest and safest to just slide it out from under the plastic wrap then to cut it.
13. Remove the two pieces of foil covering the two connectors on the backside of the HMI. (They're the connectors towards the top of the Old HMI that the two modules on the back plugged in to.
14. Put the new HMI in the tub from the front ensuring that the USB/ Ethernet connectors are facing downwards.
15. Secure the HMI using the clamps removed from the old unit. It's best to just get each one started before tightening any all the way down. You should tighten the clamps until the gasket on the back of the HMI is fully compressed.
16. Connect power plug, USB cable, ethernet cable, and serial cable to bottom of HMI.
17. Attach HMI modules by putting the hooks in the bottom slots and then tilting them in until the connector goes into the port at the top of the HMI. (The one you should have removed the foil from.) It's easiest to just reinstall the original modules of they are working correctly as this eliminates the need to migrate connector and reduced the risk of mixing up connections.
    a. If replacing the modules as well, then you'll need to transfer the black connectors over to the new modules. Note: It is critical that they connectors get installed into the same slots! Failure to install connectors in the same slots could result in failure of tub operations.
18. Tighten down the screws to fully secure the modules.
19. Connect the other end of the USB cable to the USB port on the right side of the enclosure. (You may need to pull on the side of the enclosure a bit depending on the thickness of the tub shell.)
20. Replace the back cover of the HMI enclosure.
21. It's recommended that you plug in the tub and verify correct operation before pushing it back against the wall.
22. Once you're sure that everything is operating correctly you can move the tub back into position and reconnect the drain and fill hoses.

Tilt Switch

Item	Part #	Description	Item	Part #	Description
1	330394	Roller; Mini-Micro Switch	3	350698	#8 Flat Washer
2	350613	PH Mach Screw; 8-32 x 1 1/4	4	350438	8-32 Coarse Thread Nylock Nut

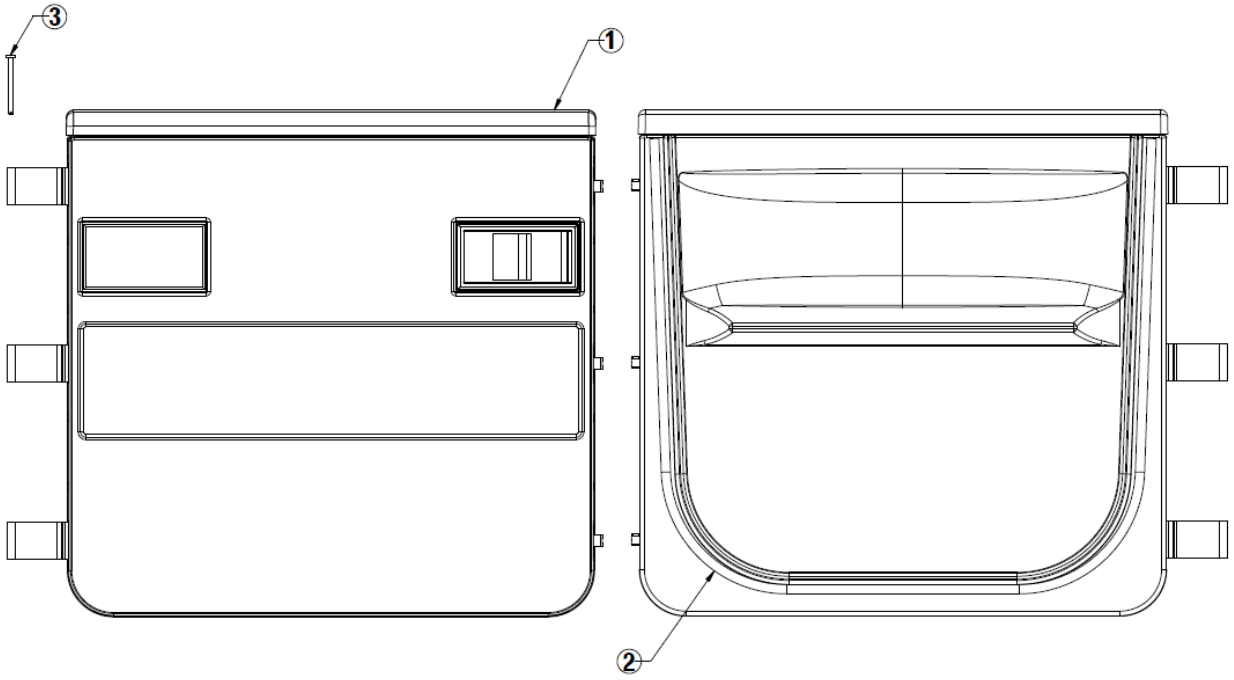


Replacement Instructions

1. Switch off tub power using power switch on electrical box or unplug tub from wall. Warning! Failure to do so could result in electric shock!
2. Remove bolts to free switch from frame.
3. Open the front panel by loosening the screw and pulling up on the panel.
4. Loosen screws to release wires.
5. Loosen strain relief and pull-out cable.
6. Move strain relief to new switch and insert wires.
7. Connect wires on each side of normally open set of contacts.
8. Replace cover and bolt switch back onto frame so that it's level with the tub frame.
9. Power tub back on.
10. Lower the tub an inch or so and then raise tub until it stops.
11. Verify that tub rails are approximately level. If rails are off, then the height of the switch needs to be adjusted to achieve level.

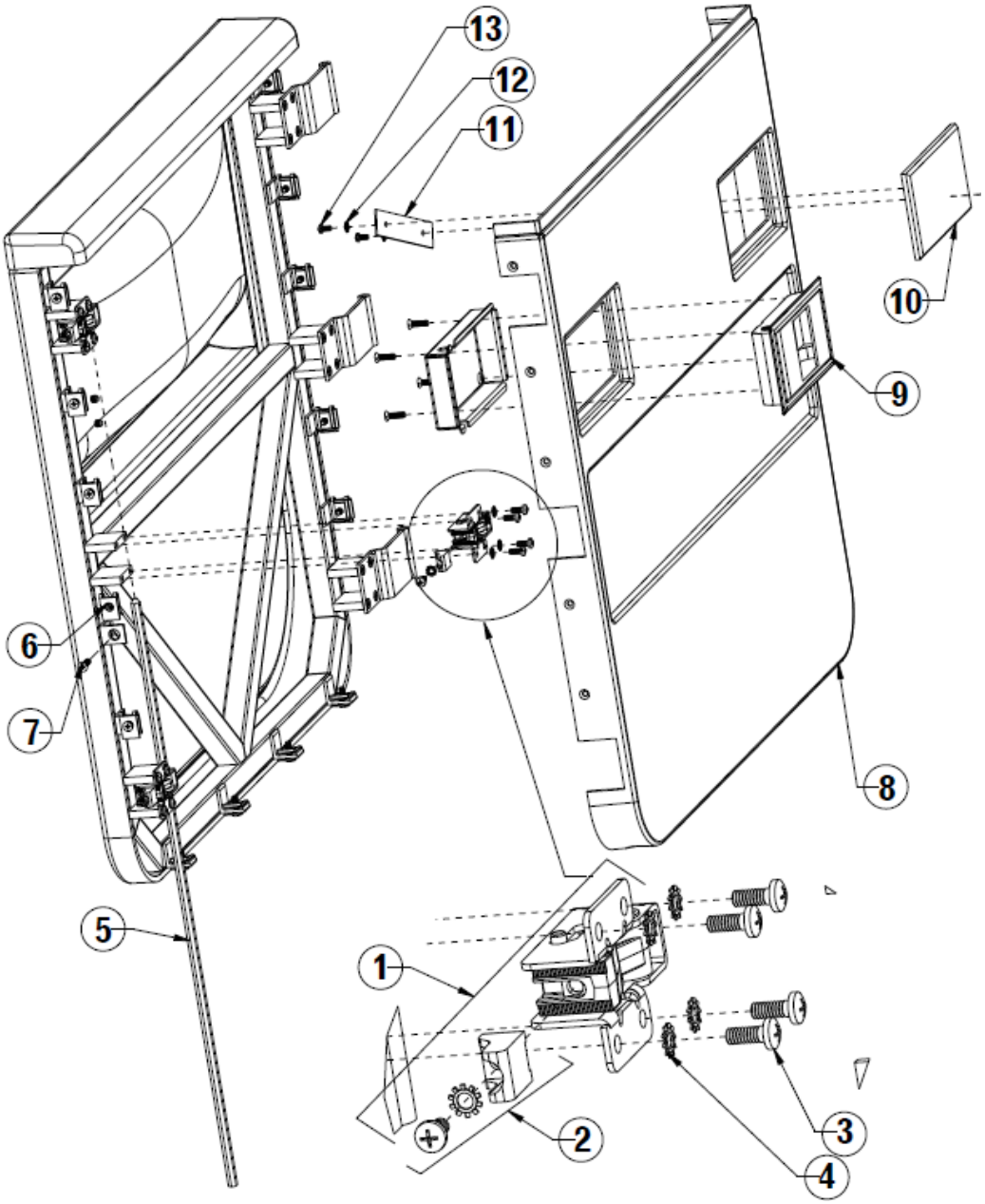
Door

Item	Part #	Description
1	200447	Solare Door Ass. Left Hinge
2	401072	Gasket Extrusion; 0.5 x 0.5 x 68"
3	350577	Door Hinge Pin
4	200446	Solare Door Ass. Right Hinge



Door Components

Item	Part #	Description
1	350551	Remote Compression Latch
2	500105	Door Latch Hardware (1 set)
3	350553	10-24 X ½ Pan Head Screw; SS
4	350300	#10 Star Washer; SS
5	300175	Hexagonal Rod
6	350574	10-24 Spring Clip U-Nut
7	350576	10-24 x ¾ PH Screw
8	401056	Solares Outer Door Skin
9	350550	Paddle Handle Actuator
10	400711	Door Handle Plug
11	400769	Door Plug Retainer
12	350229	#10 Flat Washer SS
13	350570	8-32 x 3/8 PH Head Screw



Replacement Instructions

Removing and replacing Outer Door Skin Part # 8

1. Turn handle to open position and loosen both set screws.
2. Use Pliers to grip the hex rod through the hole in the bottom of the door and pull it out.
3. Remove all screws from perimeter.
4. Lift up from bottom of skin and carefully pull out.
5. Swap out hardware.
6. Place back in inner skin by putting the top edge in place first and then dropping the bottom edge down flush.
7. Ensure all pawls are fully extended and run the rod up through the hole in the bottom of the skin and then through all pawls and the handle (Which should be closed.)
8. Open the handle and tighten down the set screws to secure the rod.
9. Replace screws around the perimeter of the door skin.

Part # 1 – Remote Compression Latch

1. Remove outer skin per above instructions.
2. Replace latch.
3. Verify that flat of latch is facing front of door. If it is not then you'll have to loosen the screw, remove it, and then reinsert it after rotating 180°.
4. Replace outer skin per above instructions.

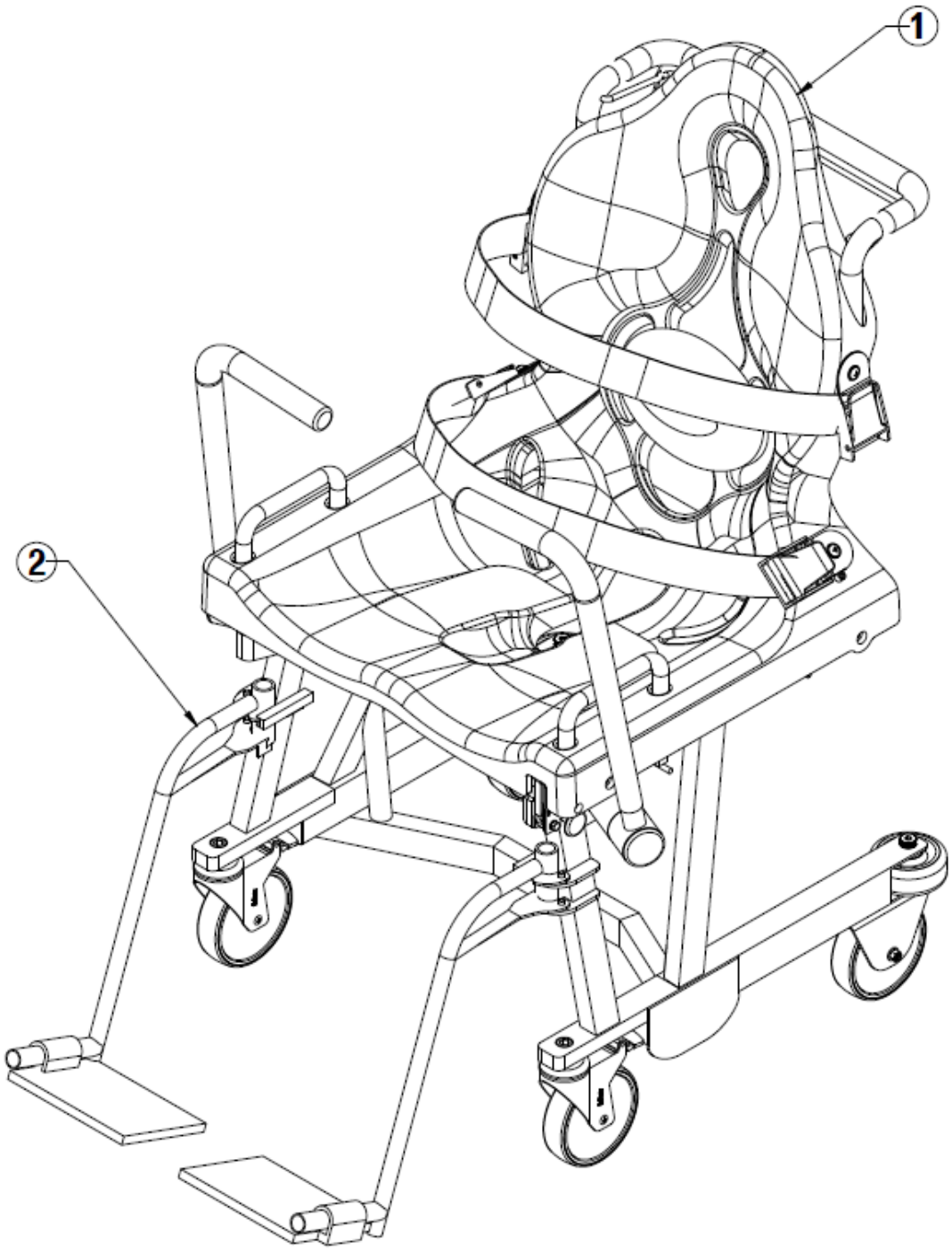
Part # 2 – Door Latch Hardware

1. Loosen screw hidden under the latch grabber and slide the assembly out of the latches body.
2. Slide the new hardware assembly into the latch ensuring that the flat face is oriented with the front face of the door.

3.

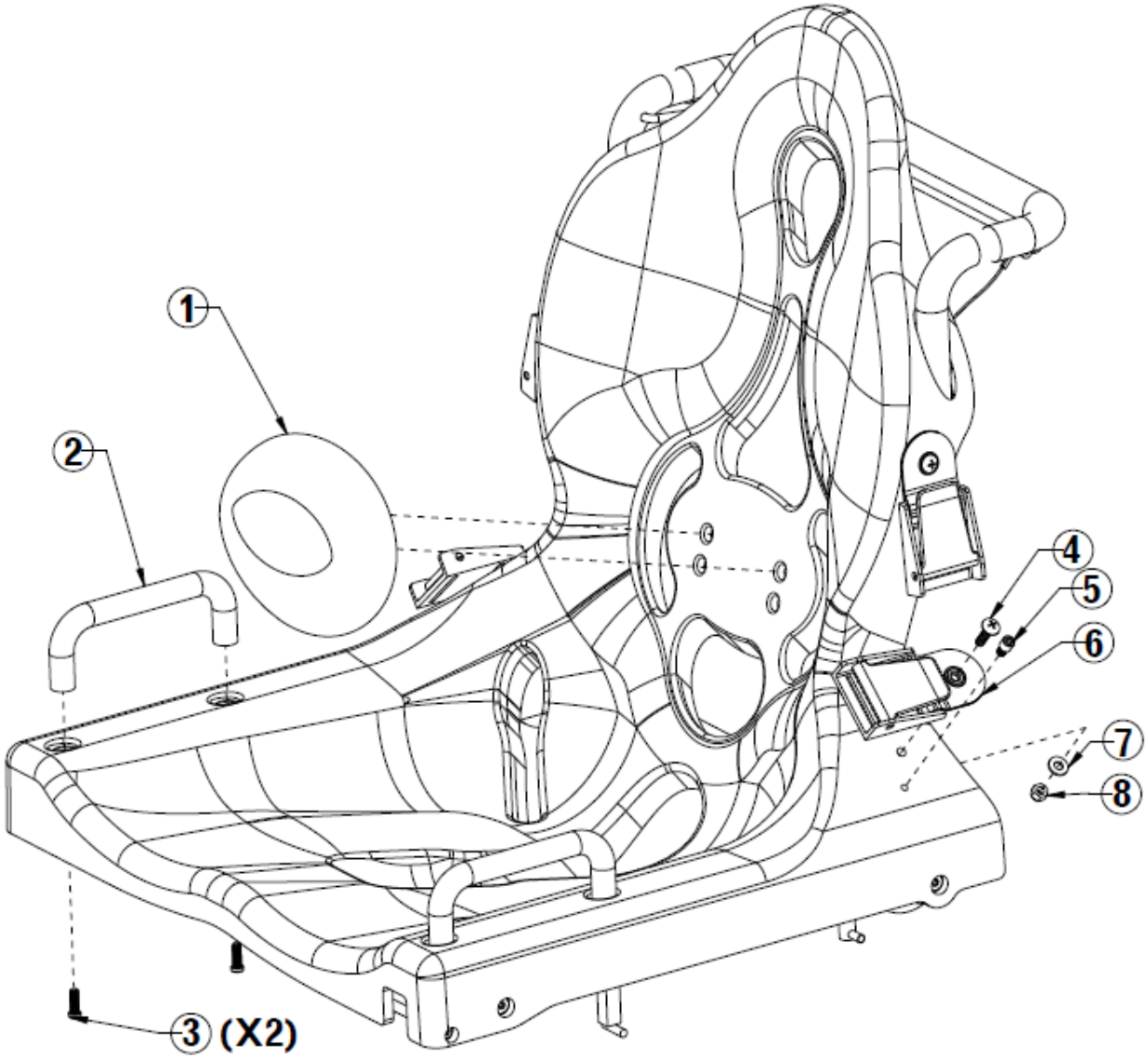
Secure Glide Transfer System

Item	Part #	Description
1	220096	Chair Assembly
2	220093	Carrier Base Assembly



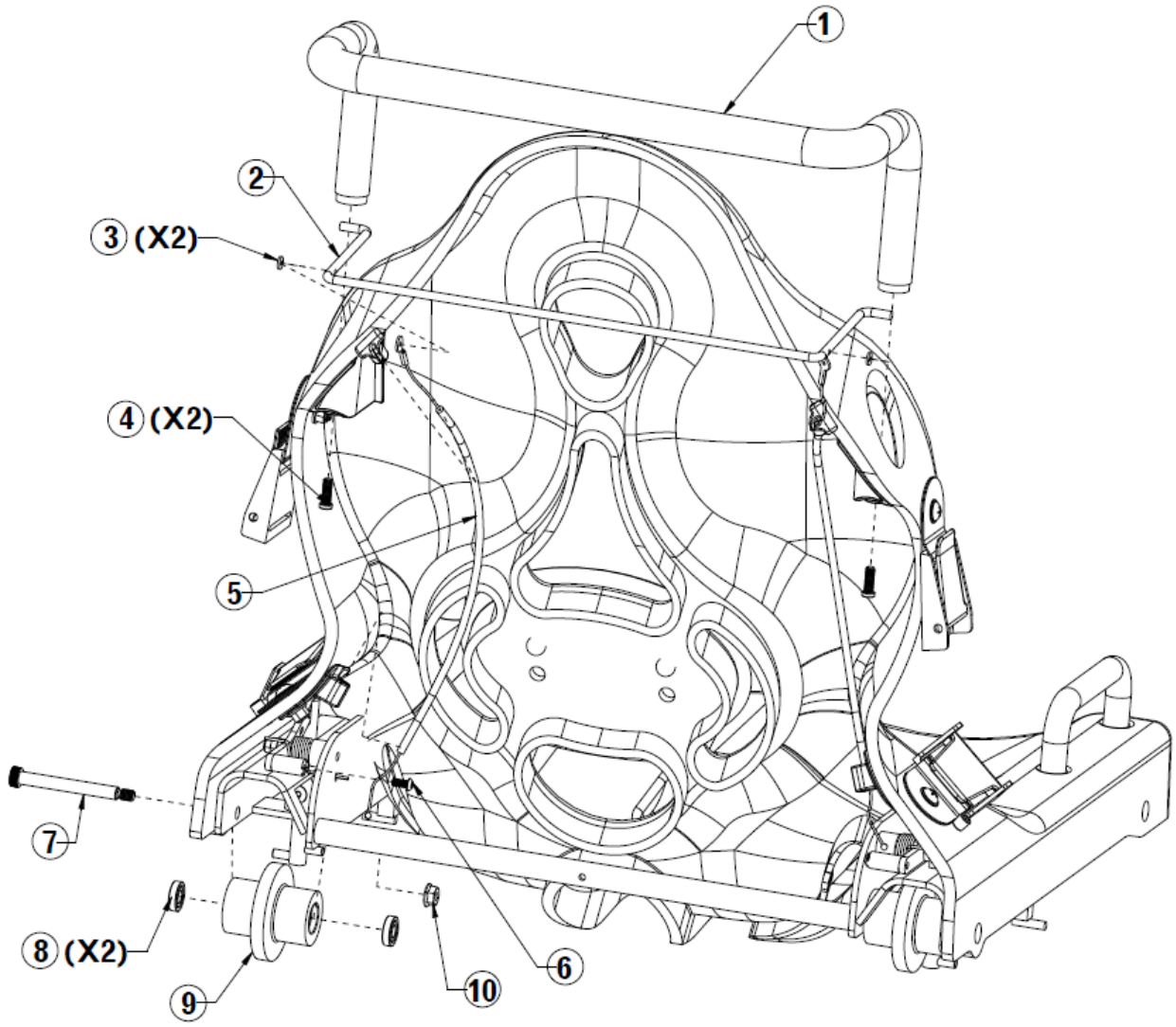
Chair Assembly-Front

Item	Part #	Description
1	401075	Lumbar Pad
2	350449	7” Tub Handle Pull; SS
3	350738	Low Soc HD Cap Scw ¼-20 x 3/4
4	350335	PH Mach Screw ½-20 X 1
5	350764	Hi-PRO Soc HD Scw; ½-20 X3/8
6	420245	Seatbelt; Buckle End
7	350161	¼ Flat Washer; SS
8	350078	¼-20 Coarse Thread Nylock Nut



Chair Assembly-Back

Item	Part #	Description
1	420251	Chair Push Handle Weldment
2	420252	Secondary Lock Release Handle
3	350505	Blind Rivet Washer; 1/8”; Alum
4	350738	Low Soc HD Cap Screw ¼ x 3/4
5	350739	Bowden Cable; 19 ¼
6	350761	HX Cap Screw 10-32 x 1/2
7	350717	3/8 Shoulder Bolt X 3”
8	350736	Washdown Bearing; Open; 3/8
9	401043	Stepper Wheel; 1 5/8 Dia
10	350105	Flanged lock nut; 5/16-18
11	350504	Dome Blind Rivet; 1/8 x 0.4



Replacement Instructions

Part # 1 – Chair Push Handle Weldment

1. Push in on sides of part #2 to pop it out of part #1.
2. Remove hardware from below part # 1 and replace with new handle.
3. Push in on sides of part #2 To pop it back into holes on either side of part #1.

Part # 2 – Secondary Lock Release Handle

1. Use 1/8” drill to drill out rivets securing Bowden cables.
2. Push in on sides of part to pop it out of part # 1.
3. Insert new part by pushing in on sides and popping it into part # 1.
4. Use part # 11 to rivet Bowden cables onto either side of the release handle.

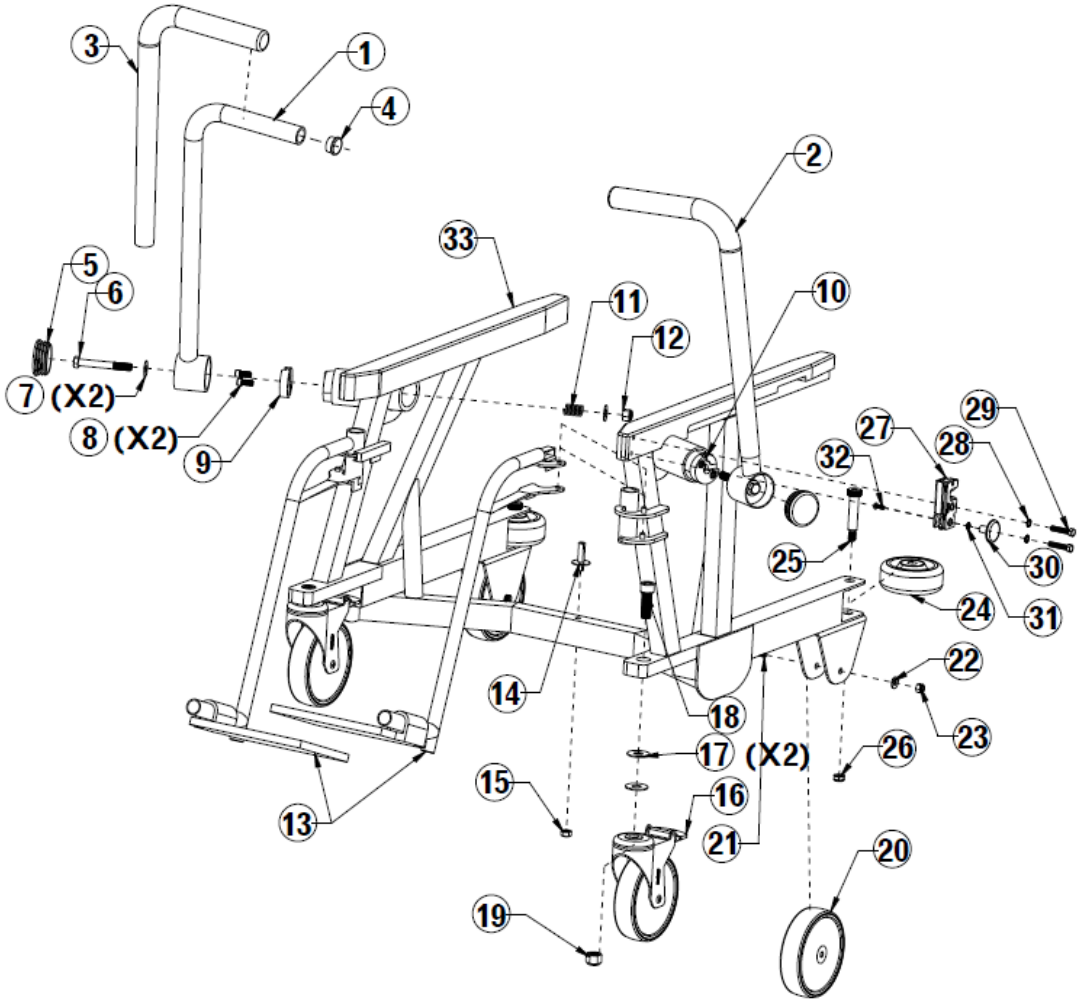
Part # 5 – Bowden Cable 19 ¼”

1. Drill out rivets securing Bowden cable to secondary release handle.
2. Loosen screw securing bottom of Bowden cable to secondary release lever.
3. Remove cable from top and bottom cable brackets.
4. Insert new cable into top and bottom cable brackets.
5. Rivet tongue fitting of Bowden cable onto release handle using Part # 11.
6. Use zip ties or other method to secure secondary release handle to fully raised position.
7. Manually raise the secondary release lever as high as it will go and insert the wire from the Bowden cable underneath the head of the screw. Note: Cable should be installed towards the outside of the chair (side closest to you) to prevent the screw from being loosened by the operation of the mechanism. Applying fresh black Loctite on the screw can also help to ensure it stays good and secure with time.
8. With the cable in place, tighten down the screw good and tight to lock it into position.
9. Release the zip tie keeping the handle in the raised position and verify that the secondary release lever raises and lowers with the hand handle.

Carrier Base Assembly

Item	Part #	Description
1	420248	Armrest Weldment; Right
2	420247	Armrest Weldment; Left
3	340474	0.94 ID Foam Grip; 21”
4	350517	0.88-14-20; Black Cap Plug; CCF
5	350744	Carrier Armrest Cap
6	350742	Hex Bolt; 3/8-16UNC x 3”
7	350018	3/8 Flat Washer
8	350765	Hex Soc HD SCRW; ½-28 x 5/8
9	420257	Armrest RH SS Insert
10	420256	Armrest LH SS Insert
11	350743	Compression Sprint; Closed End
12	350081	3/8-16 Coarse Thread Nylk Nut
13	350745	Hvy Duty Swing Away Footrests
14	350712	Striker Bolt; Integrated
15	350713	M8 x 1 ¼ Hex Nut
16	350660	5” Locking Caster
17	350047	7/16 Flat Washer; SS

Item	Part #	Description
18	350741	Hex Soc HD SCRW; ½-20 x 1 ½
19	350753	½-20 Fine Thread Nylock Nut
20	350709	5” Diameter Wheel
21	350710	5/16 Shoulder Bolt X 1 ¾
22	350161	¼ Flat Washer; SS
23	350078	½-20 Coarse Thread Nylock Nut
24	350711	3 ½” Diameter Wheel
25	350714	½” Shoulder Bolt x 2”
26	350518	3/8-16 Crse THD Nylock Jam Nut
27	420260	Rotary Latch; Modified
28	350696	#8 Star Washer
29	350608	¼-20 Hex Bolt x 1 ¼; SS
30	350120	Pull Knob; 1 x 13/16; 8-32 Insert
31	350696	#8 Star Washer
32	350501	PH Mach SCRW; 8-32 x ½”
33	401052	Carrier Frame



Replacement Instructions

Part # 1 & 2 – Armrest Weldment

1. Use flat head screwdriver to pop out Part #5.
2. Loosen items 6 & 12 to allow removal of armrest weldment.
3. Install new armrest using parts 6, 7, 11, and 12. Arm rest should be tight enough to secure itself firmly in the upright and locked position but shouldn't be difficult to pull to the side and release.

Part # 3 - 0.94 ID Foam Grip; 21"

1. Cut off the old foam grip using utility knife.
2. Rub some soap onto the armrest and slide the new foam grip over it by inching it along from the back end.

Part # 13 - Heavy Duty Swing Away Footrests

1. Pull out lever on the side of footrests (Next to where they mount to the frame) and lift them up off of the pins.
2. Drop the new footrests down on the pins.

Preventative Maintenance Schedule

Bathing System					
Description	Mthly	3 Mos	6 Mos	1 Yr	Notes/ Comments
Inspect Water Supply Lines		X			Inspect incoming lines from wall to Rada® valve.
Cleaning & Disinfecting System		X			Ensure Rinse, Clean, and Disinfect solenoids all work correctly.
Fill & Shower		X			Ensure tub fill, shower wand, and reservoir fill (if equipped) all open/ close correctly.
Shower Wand and Hose		X			Test operation for proper flow and pressure
Carrier Docking Latch	X				Ensure latch is secured to frame and latch locks when pushed in. Releases when release button hit twice in quick succession.
Rails				X	Verify pockets and stops in rails are in good shape and not excessively rounded. (Can hold carrier securely.)
Thermostatic mixing valve		X			Verify unit adjusts temperature correctly when target temperature is changed.
Thermistor				X	Verify water temperature dispensed by tub fill matches temperature shown on the screen.
Remedy Bulbs			X	X	Remove and clean annually if using Apollo cleaning solutions, otherwise every six months. Verify UV indicator lights and UV bulbs are working. Average UV bulb life span is approximately five years.
HMI				X	Verify system responds appropriately to button presses.
Inspect Door Gasket				X	Verify gasket is free of tears and damage. Ensure gasket is adhered securely to door.
Whirlpool plumbing & pump/ motor.			X		Check for water leaks
Tub Drain valve assembly.		X			Inspect for leaks; verify correct operation.
Tub Drain valve assembly.				X	Grease slide valve.
Tub Tilt			X		Verify tub tilts all the way up and down without issue. Ensure tub is stable and doesn't shift left to right.

Heel Protector		X			Verify hardware is tight.
Scale Load Cell Fasteners. *if equipped				X	Ensure load cells are secure to frame with no sign of fasteners backing off.
Scale Calibration *if equipped.				X	Calibrate per Solares Scale Calibration Instructions.

Level Glide Transfer System					
Description	Mthly	3 Mos	6 Mos	1 Yr	Notes/ Comments
Docking Pin	X				Ensure pin is tight on carrier base and that it latches securely to tub latch.
Primary Lock	X				Ensure chair latches securely when rolled into primary lock. Verify rod that catches in latch is secure in the chair and shows no signs of coming loose.
Secondary Lock Cable Adjustment.	X				Verify release levers raise all the way up when release handle is lifted to the bar.
Cable	X				Ensure cable is secured under bolt in secondary lock levers and that it cannot pull out. Verify rivets securing top of cable to handle are in good condition.
Release Levers	X				Verify that springs effectively drop release levers down after releasing handle.
Caster Locks		X			Casters lock tightly and prevent chair from rolling.
Seat belts		X			Inspect for wear. Ensure belt latches are secure.
Chair wheels (under seat)			X		ensure shoulder bolt is secure.

Rapid Fill					
Description	Mthly	3 Mos	6 Mos	1 Yr	Notes/ Comments
Float Switches		X			Ensure reservoir fills without throwing float switch related error.
Slide Valve		X			Verify Slide Valve Opens after pressing "Rapid Fill" button.
Slide Valve				X	Grease slide valve.
Pump			X		Ensure pump kicks on after footwell fills with water when using rapid fill.

Errors

Errors are displayed on the bottom of the maintenance screen and can be reset by hitting the “Reset Error” button in the bottom right-hand corner of the screen. Manual Reset errors need to be manually reset under maintenance, Auto Reset errors will automatically clear once the offending conditions have passed, and Auto/ Manual Reset errors automatically clear, but can be manually cleared as well. The effects shown in the below table describe the features that are disabled until the error is reset.

Error List:

ID	Error as shown on screen.	Expanded explanation	Type [effect]
1	[Tilt Sensor Error] Tilt sensor not detecting tub. Verify tilt sensor is working and adjusted appropriately and ensure the actuator is functioning.	Means tub was able to raise longer than expected without hitting the upper limit. Likely causes are poor positioning of the tilt limit switch and limit switch/ wiring issue.	Manual Reset [Disables tub from tilting upward]
2	[Res Drain Error] Reservoir not draining. Verify that the reservoir slide valve opens and that the top float sensor is working correctly.	Float switches still show the tank as full after the tank has been draining for a while. Likely float sensor or slide valve problem.	Manual Reset [Disables Drain Pump]
3	[Therm Fault] Thermometer Fault. Please ensure the thermometer is connected properly.	Unlikely resistance value was measured from the manifold thermometer. Likely caused by the thermometer being disconnected or wired incorrectly.	Auto Reset [Disables Valves]
4	[Temp Over Limit] Temperature over the limit. Verify Rada cartridge adjusted appropriately.	Rada unable to bring the water temperature down into an acceptable range. Could be caused by the cold-water supply being turned off.	Auto/ Manual Reset [Disables Valves]
5	[Rada Home Fail] Rada homing failed. Check Rada limit sensor adjustment and stepper motor connection.	Rada limit never detected screw coming off of Rada. Could be an issue with the inductive sensor or Rada motor mount, wiring issue, stepper motor failure.	Manual Reset [Disables Valves]
6	[Res Long Fill] Reservoir taking too long to fill. Verify correct operation of top float sensor	Reservoir filling for a long time without top sensor being triggered. This can be triggered if the plumbing does not have adequate flow or if the water heater cannot keep up resulting in a reduced flow. If this is the case, then adjust the "Reservoir Max Fill Time" variable under "Timer Adjustments" accordingly. Could also be a sensor/ wiring failure.	Manual Reset [Closes Reservoir Fill]
7	[tub long fill] Tub filling for too long. Verify top water sensor is working correctly.	The tub took significantly longer than expected to fill. Top capacitive sensor likely the culprit. Check function/ wiring or increase "Tub Max Fill Time" under "Timer Adjustments" if the cause is slow plumbing.	Manual Reset [Closes Tub Fill Valve]

8	[res long drain] Reservoir taking too long to drain. Verify correct operation of bottom reservoir float sensor.	The bottom float does not reflect that tank has emptied after a given amount of time. Could be sensor failure.	Manual Reset [Prevents reservoir pump from running]
9	[UV Stuck On] Light detected from UV lamps after UV system deactivated. Possible relay failure.	Light sensor indicate that UV lights didn't turn off when they should have. Could also be caused by relay getting stuck in closed position (This is the case if UV lights are truly on.) or by there being too much ambient light behind the tub.	Auto Reset
10	[No Cold Supply] Cold Supply Error – Can't bring down water temp. Check cold supply and verify pully secured to Rada shaft.	System unable to drop water temperature. Could be caused by cold supply be turned off, loss in cold side water pressure, or screw/ setscrew securing large pully to Rada becoming loose. If large pully becomes loose it will slip relative to brass shaft.	Auto/ Manual Reset