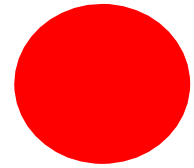




Cascade



Aqua-Aire®

Premier Bathing Systems

Parts Breakdown & Assemblies

Side Entry – Side Entry High Seat – End-opening – Swivel Lift Tub



**Premier Standard
360020-1P**



**Premier Elite
360020-1EP**

Cabinet Styles: Standard and Elite Premiers

360748P Revision "G" 12/17/18

Penner Patient Care

101 Grant Street

Aurora. NE 68818

**For Service Please Call:
1-800-732-0717 or 1-866-736-6377**

Visit Our Web Site: <http://pennerbathingspas.com/>

Table of Contents

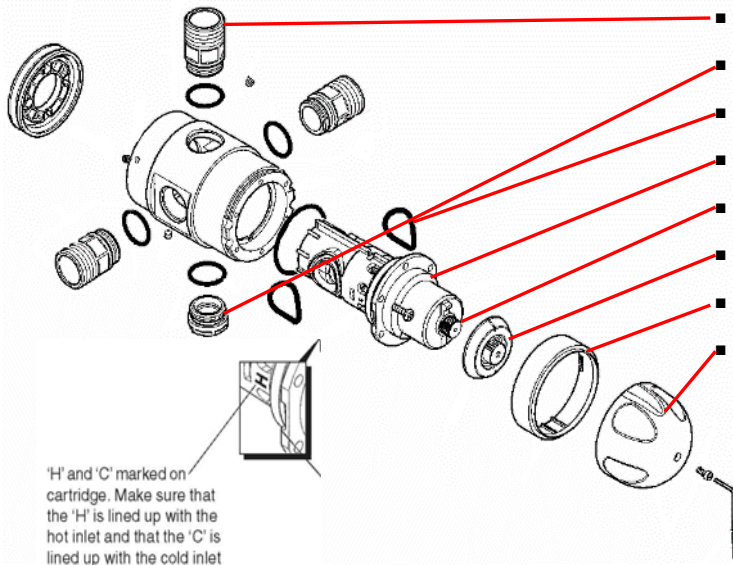
Rada 320 Mixing Valve Service Component Breakdown & Removal	4
Mixing Valve Adjustment.....	5
Mixing Valve Adjustment Rada 222.....	6
Checking for the correct dilution of disinfection	7
Electrical Box Standard and Elite Premier	8
Timer Adjustments Explanation	8
TV, Mounting, and Glass (Standard and Elite).....	8
Inside Tub Components Drain and Temperature Probe.....	9
Water Doors with lock.....	9
Side Opening Water Door Internal Parts	10
Water Door Internal & Exterior	10
Water Door Handle (Side and End Opening)	10
End Opening Door Internal Parts.....	11
End Opening Door Parts	11
Jets - Parts.....	12
Plumbing Drain and Overflow.....	13
Temperature Probe	13
Drain and Overflow Complete Assembly.....	14
Blower and Water Trap Assembly	14
Swivel Lift Actuator Limit Switch Parts	15
Swivel Lift Actuator Breakdown.....	15
Swivel Lift Chair Components	16
Swivel Lift Scale.....	16
Swivel Lift Electrical Box	17
Swivel lift tub Calibration Procedure.....	18
Controls - Standard Premier	19
Bottle Tray and Check Valves.....	20
Shower (by-pass) Hose Connection Standard & Elite Premiers.....	20
Solenoids and Identification - Standard Premier.....	21
Water Supply Connection Points & Inlet Screens - Standard Premier	21
Plumbing - Standard Premier	22
Vacuum Breakers - Elite Premier	23
Air System Assembly - Standard and Elite Premier	23

Controls Deck - Elite Premier Left Side Access Views - Elite Premier (Right Hand).....	24
Right Side Lower Access View - Elite Premier (Right Hand)	25
Hoses - Elite Premier.....	26
Solenoid Identification - Elite Premier.....	26
Control Panel Elite Premier View From Behind.....	27
Inside the Reservoir	27
Reservoir Gate Valve and Blower Location Elite Premier.....	28
Installation Kit includes the following:	29
Tub Access Doors.....	29
Cabinet Access Doors - Elite Premier.....	29
Cabinet Access Doors - Standard Premier	30

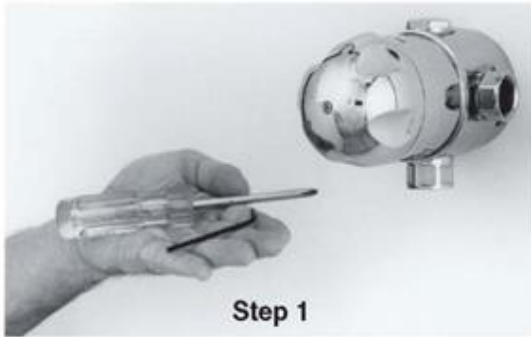
NOTE: (TV warranty is processed through the manufacturer of the TV) NOTE: Keep your invoice or proof of purchase of the premier and the TV. This is your record of the TV model, serial number, and the date of purchase. Telephone numbers of warranty contacts are in the TV operating manual.

Rada 320 Mixing Valve Service Component Breakdown & Removal

350150 – Complete Mixing Valve – Rada 320



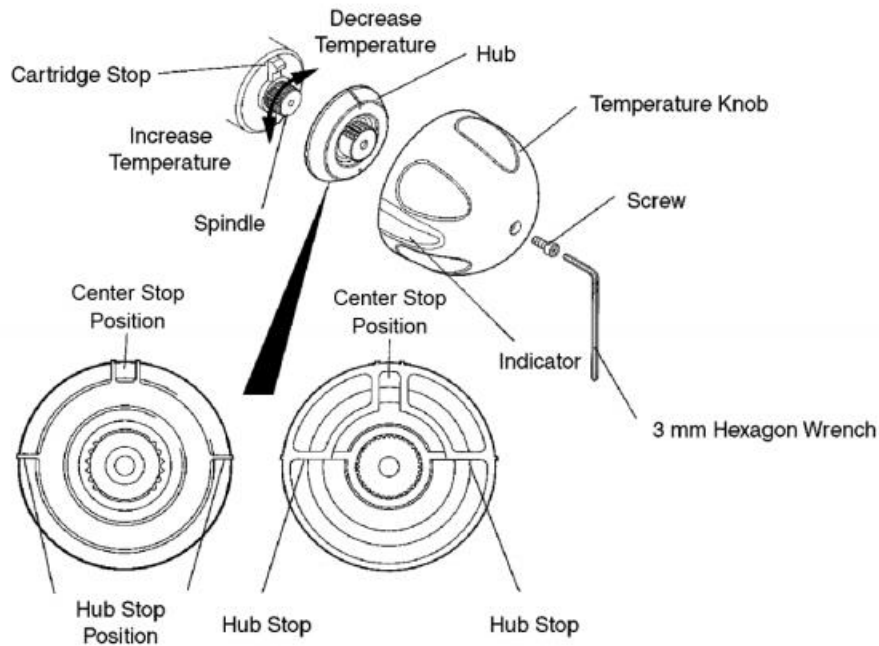
- 350157 - Inlet/Outlet Adapter, 3/4 Female (3 ea)
- 350163 - Cap (with O-ring)
- 350158 - Seal Pack (includes all O-rings)
- 350151 - Cartridge – with O-rings Rada 320
- Temperature Spindle
- 350154 - Hub
- 350152 - Temperature indicating ring
- 350162 - Knob Pack (Knob, screw, and wrench)
- 350159 – Screw Pack (includes all screws)



The Rada 320 Mixing Unit features a single "sealed for life" disposable internal cartridge. With an allen key (3 mm) to remove the handle retaining screw and a phillips head screwdriver to remove the 6 cartridge retaining screws, the entire mixing unit can be serviced and/or replaced in approximately 10 minutes.

Note: All seals are pre-lubricated. If further lubrication is required, use only silicone based lubricants on this product. Do not use petroleum based lubricants.

Mixing Valve Adjustment

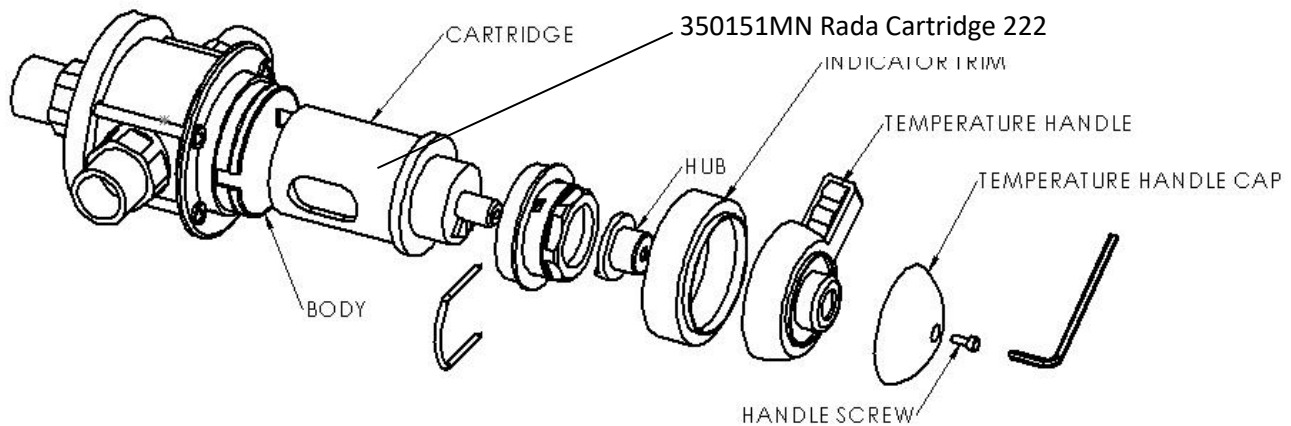


To Adjust the High Temperature Limit:

1. Remove the temperature knob screw using a 3 mm hexagonal wrench (supplied). Remove the temperature knob.
2. Pull off the white polymer hub which may inadvertently remain attached to the inside of the temperature control handle. This is a “push fit” and can be “levered” out using a thin blade screwdriver or pliers.
3. Rotate the spindle until required maximum blend temperature is obtained at outlet point (clockwise = decrease temperature, counterclockwise = increase temperature). When resistance is felt does not use force to turn any further, as this can damage the internal parts.
4. Once the desired maximum blend temperature is achieved, re-fit the hub without disturbing the spindle: Position the hub so that the hub stop comes up against the cartridge stop preventing any further rotation in a counterclockwise direction. Check that blend temperature has not altered.
5. Refit the temperature knob. Make sure that the indicator points to 9 o'clock.

Mixing Valve Adjustment Rada 222

(Currently applicable only in Minnesota)



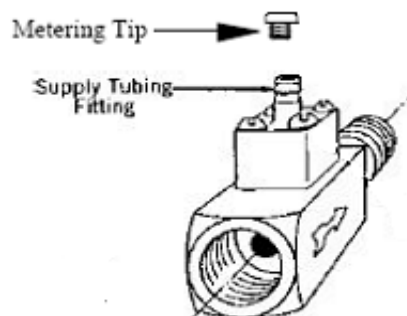
1. Remove the handle screw, temperature handle cap, temperature handle, and indicator trim using 3mm hex key.
2. Pull off the temperature hub.
3. Using the temperature hub, rotate the spindle until required maximum blend temperature is obtained at discharge point (clockwise = decrease temperature). If resistance is felt, do not use force to turn any further, as this can damage the internal parts.
4. Once the desired maximum temperature is set, position the hub such that the lug is against the side of the stop on the cartridge face, thus preventing counter-clockwise rotation past the stop.
5. Check that the max temperature has not been altered.
6. Refit the indicator trim, handle, and cap so that the indicator on the metal knob is aligned to the left of the red markings (approximately in the 9 O'clock position), then secure with the handle screw and a 3 mm hex key.

Checking for the correct dilution of disinfection

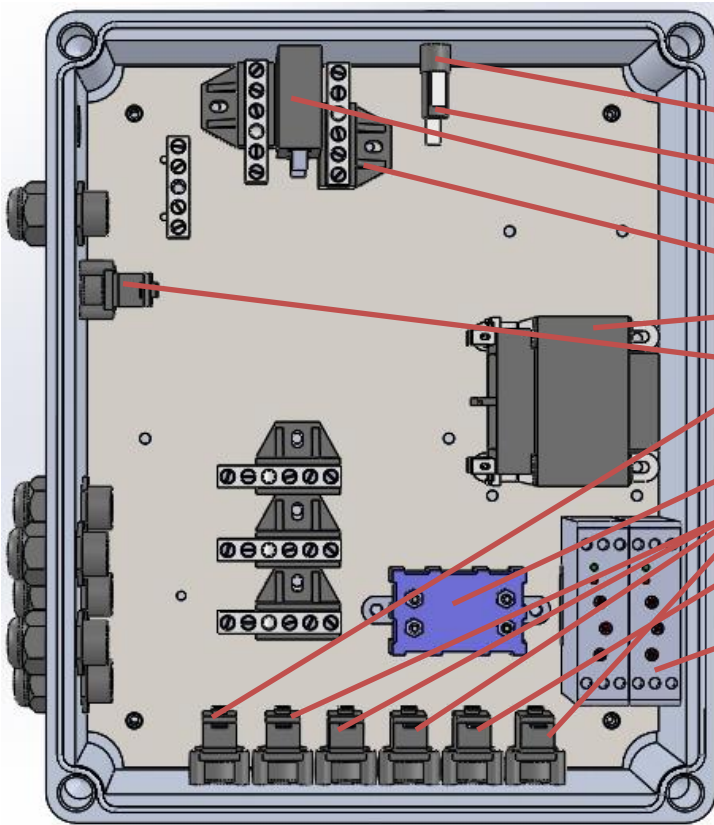
1. Check to see if a container of disinfectant has been installed. Assure that the disinfectant tube is inserted into the container and connected to the injector with black metering tip. See the drawing of the injector below for location of the metering tip.
2. Visually check if disinfectant is in the hose all the way to the injector. If not, the disinfectant can be brought to the injector pushing the disinfect button on the tub until disinfectant fills the hose all the way to the injector.
3. With the drain open, push the fill button on the tub to check the water temperature. Adjust the temperature control to read 60 degrees to 65 degrees (F). When the temperature remains in the above range, turn off the fill button.
4. Allow the water to drain from the tub. Close the tub drain, push and hold the disinfect button long enough to bring the disinfectant mixture into the tub then release the disinfect button.
5. Test the solution in the foot-well of the tub with the Dilution Check Kit (140481). A dispenser of test paper (part number 219201) is included in this kit.
6. Tear off a strip of test paper from the dispenser and immerse in the solution for at least (10) seconds. Compare the color that the test paper turns with the chart on the dispenser. If the test paper matches the green in the range of 600-800, the disinfecting solution is the correct strength.
7. If the color of the test paper matches a color on the dispenser chart in the 800-1000 range, install the next smaller metering tip. See metering tip chart for color reference. The injector is furnished with a metering tip installed. The Metering tips listed below are included in the Dilution check kit, (Part number 140481).
8. If the color of the test paper matches a color on the dispenser chart in the 0-400 range, install a metering of the next larger size and re-test.

METERING TIP CHART APPLICABLE TO THE AQUA-AIR JET DISINFECTION INJECTOR

<u>Color</u>	<u>Part Number</u>	<u>Metering Tip Size</u>	<u>Solution Strength</u>
Black	404824	Large	Preferred Strength
Blue	1404822	Medium	Less Strength



Electrical Box Standard and Elite Premier



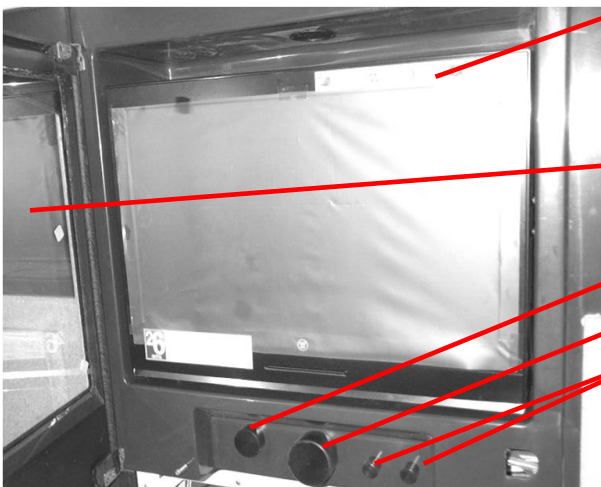
- 350533 - Fuse - 3ag 1 amp Slo-Blo
- 350530 - Fuse Holder
- 350525 - Circuit Breaker 20 amp
- 140926 - Neutral Bar with Insulator
- 140952 - Transformer 24 volt 5 amp
- 350510 - Air Switch TBS 310 two each) Tub Fill & Blower
- 370305 – Load Pak
- *350505 - Air Switch TBS 362A
- 370505 - Air Switch TBS 302 (Reservoir Fill Off)
- 350545-09 – Timer (Two each)
- *350505 - Air Switch TBS362A replaced TBS304

NOTE: A spare fuse is taped inside the Lid in case it is needed.

Timer Adjustments Explanation

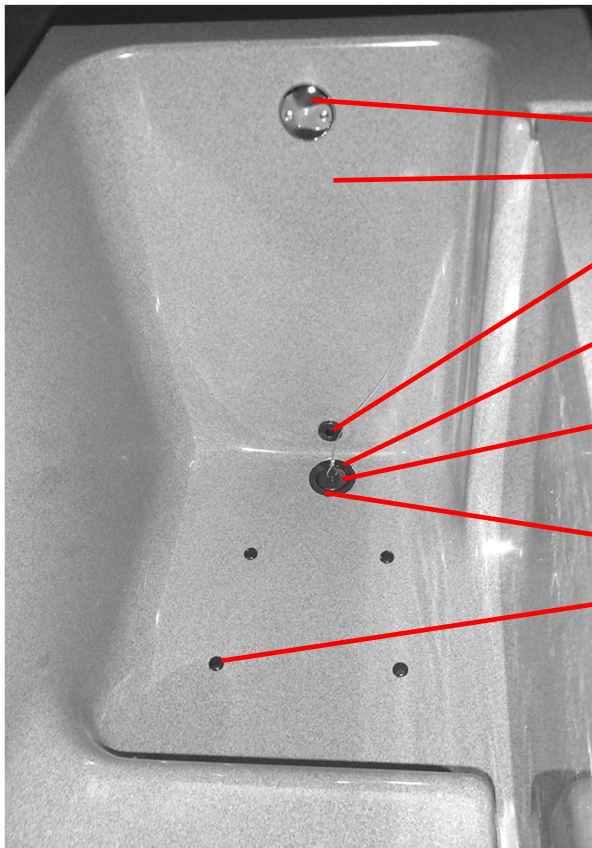
The timer located in the lower right hand corner of the Electrical Kit (shown above). It is adjusted by setting the timer sector and value. An example is the **Time Sector** setting of 100S = 100 seconds and with the **Time Value** set at 5, the timer is now set for 50 seconds. Another example is the **Time Sector** setting of 1000S = 1000 seconds and with the **Time Value** set at 5, the timer is now set for 500 seconds.

TV, Mounting, and Glass (Standard and Elite)



- 360704 - (Standard) - 360704EP (Elite) TV HDTV/DVD
- 360705 - (Standard and Elite) TV Articulating Mount (not shown)
- 360865 - (Standard) Door Glass
- 361865 - (Elite) Door Glass
- 360522P - Outlet Spout – Premier
- 360305P - Reservoir Outlet Fitting - Premier
- 350220 - Dispenser Spout - Oil & Soap

Inside Tub Components Drain and Temperature Probe



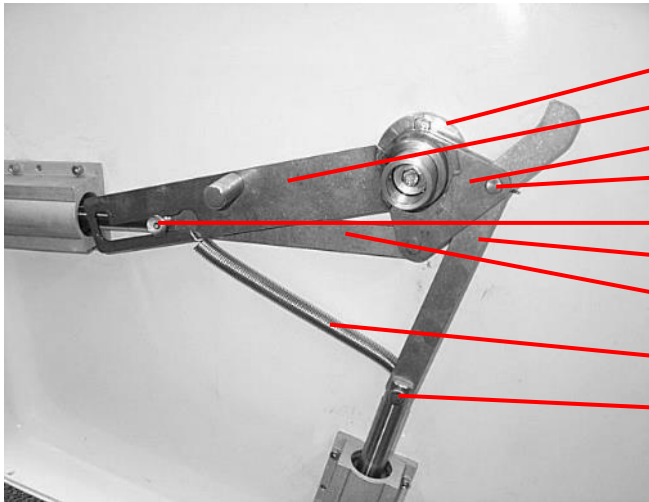
- 350172 - Escutcheon, Chrome
- 350177 - Drain Plug Replacement Kit
- 360630-14 - Adapter - Temp Probe
- 1050401 - Base Shoe Basket Brass
- 1050345 - Washer - 1 7/8 x 2 1/8 x 1/16 Rubber
- 350391 - Cross Hair Drain Screen (In Drain)
- See "Jets - Parts" section of this Manual

Water Doors with lock



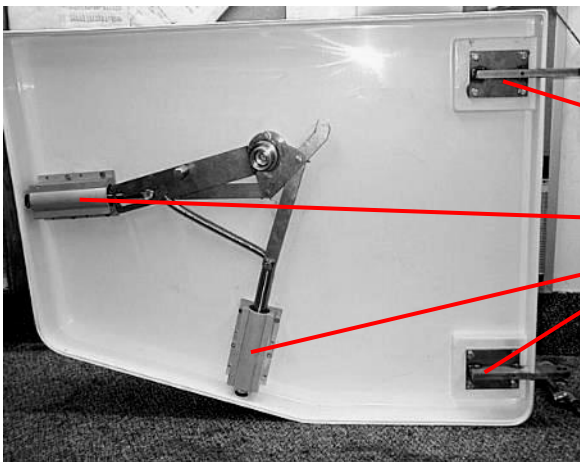
- 360125K - Door Seal Replacement Kit
Includes everything needed to replace the door seal. It works for either the end opening or the side opening water doors.

Side Opening Water Door Internal Parts



- 360280 - Door Lock Spindle
- 360315 - Secondary Lock Assembly
- 360320 - Hub Assembly
- 360425 - Clevis Pin - 3/8 X 1" (2ea)
- 360310 - Pin - 2nd Lock
- 360331 - Linkage - Off-Set
- 360326 - Linkage – Straight
- 360435 - Spring
- 360430 - Clevis Pin - 1/2 X 1 1/4" SS

Water Door Internal & Exterior



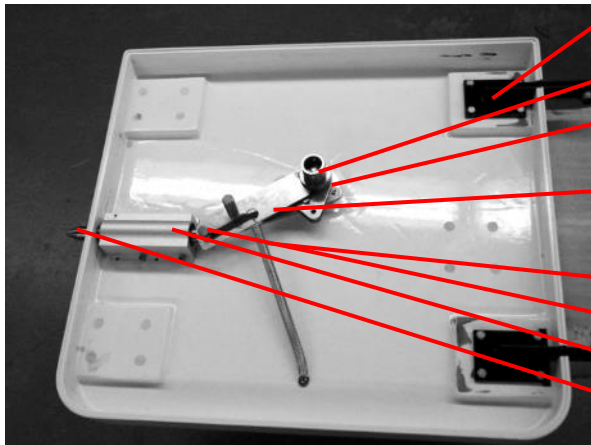
- 360335 - Hinge Assembly (2 ea)
- 360101 - Bearing, Linear Modified

Water Door Handle (Side and End Opening)



- 360720-12 - Label - Leave Door Open
- 360440 - Roll Pin - 1/4 X 1 3/4" SS
- 360297 - Handle Cast Complete
- 360309 - Secondary Lock Knob

End Opening Door Internal Parts



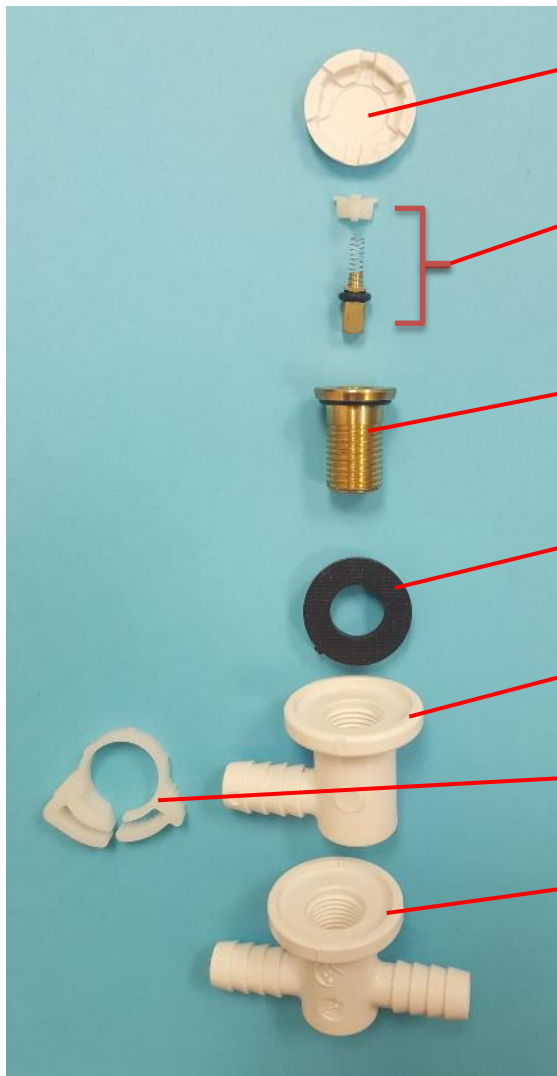
- 360335E - Hinge Assembly (RH Hinge) (2 ea)
- 360335EL -Hinge Assembly (LH Hinge) (2ea)
- 360280 - Door Lock Spindle
- 360320E -Hub Assembly-EO (RH)
- 360320EL - Hub Assembly EO (LH)
- 360315E - Secondary Lock Assembly-EO
- 360315EL - Secondary Lock Assembly-EO LH
- 360435 - Spring
- 360310 - Pin - 2nd Lock
- 360101 - Bearing, Linear Modified
- 360302 - Door Lock Bolt - Short

End Opening Door Parts



- 360336E - Hinge Assembly – (Tub End Opening)
- 360276 - Hinge Spacer
- 360250 - Lock Bushing

Jets - Parts



- 360646 – Cap White
- 360644 – Cap Black

- 350134 – Kit – Internal Jet Replacement

- Jet body

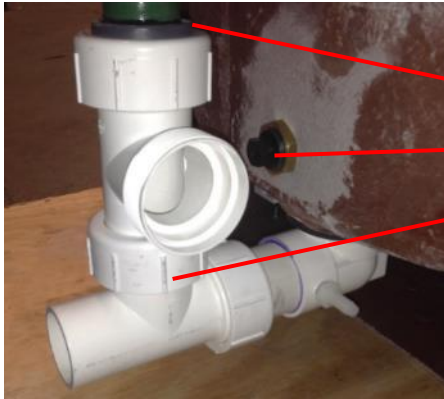
- Washer (Included with Elbow or Tee below)

- 360655 - Elbow – Air Jet (Washer Included)

- 201900 - SNAP CLAMP SIZE 08 NYLON

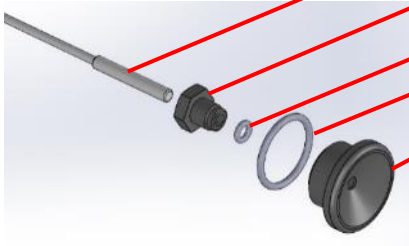
- 360650 - Tee - Air Jet (Washer Included)

Plumbing Drain and Overflow



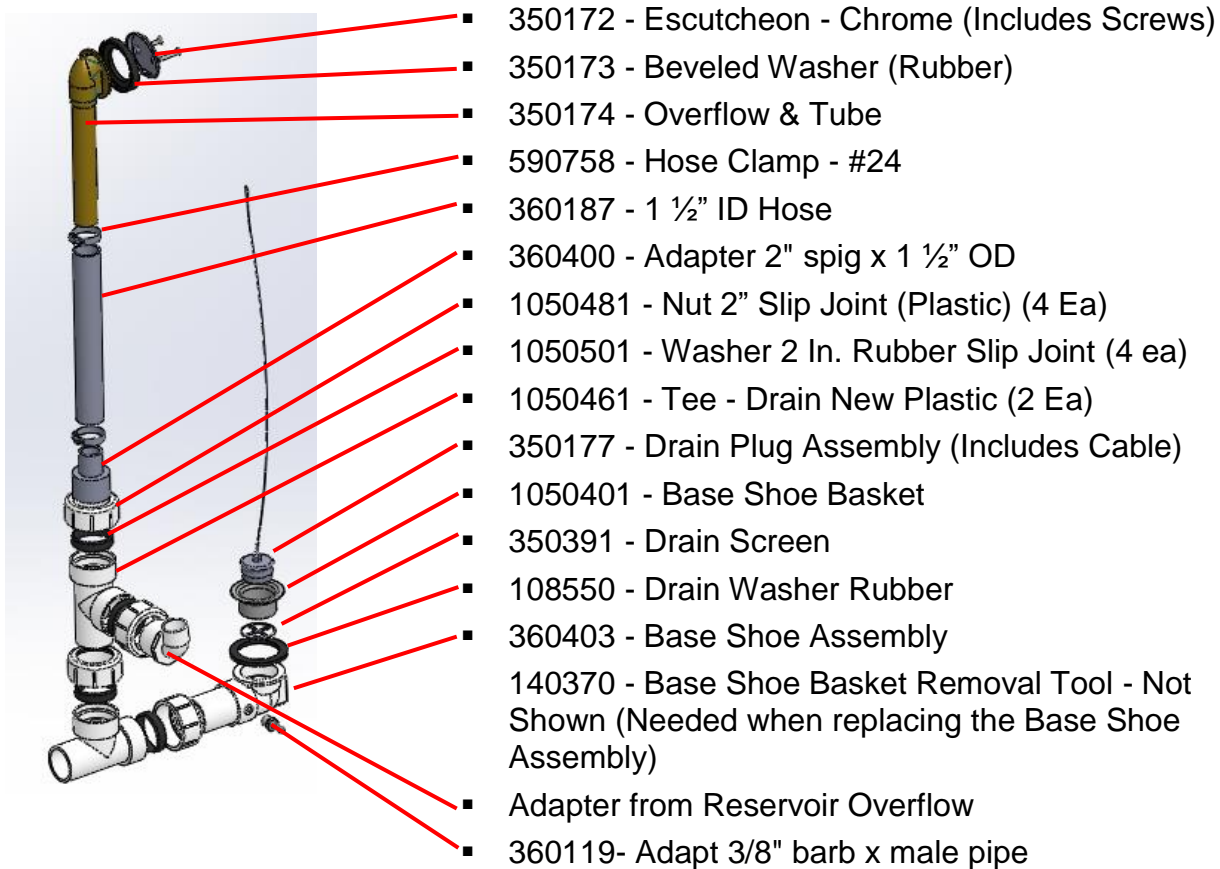
- 360187 - Green pipe 1 1/2" ID flex 16"
- Temperature Probe Assembly - See Below
- Tub Drain assembly - See Below

Temperature Probe



- Temp Probe from Temperature Readout
- 360637 - Temp Probe Nut
- 360638 - O-Ring - #108
- 360363 - O-Ring 1 1/4"ID X 1/8" #218
- 360630-14 - Adapter - Temp Probe 2014

Drain and Overflow Complete Assembly



Blower and Water Trap Assembly



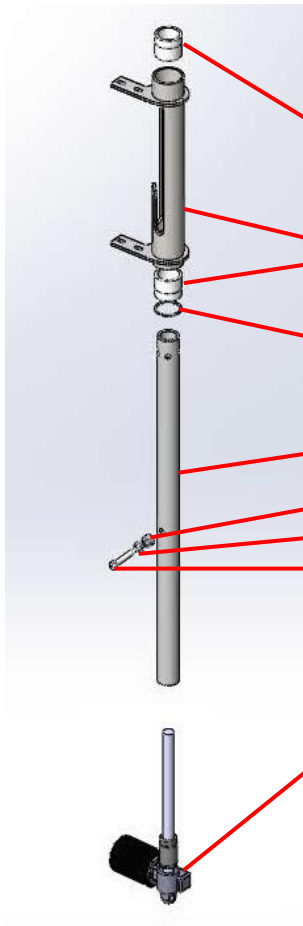
- 350602 - Air Blower
- 350601 - Air Filter
- 360680 - Vibration Mount (4 each)
- Water Trap

Swivel Lift Actuator Limit Switch Parts



- 480367 - Proximity Switch - Actuator (Upper Limit)
- 340610 - Proximity Switch - Actuator (Lower Limit)
- 480368 - Switch Limit - Actuator (No-Load)
- 340590 - Linkage
- 340572 - Clevis Pin with cotter pin

Swivel Lift Actuator Breakdown



- 360420 - Bearing
- 340525 - Outside Tube Assembly - Post
- 340525L - LH Outside Tube Assembly - Post
- 340535 - Retaining Ring
- 340520 - Inside Tube
- 340581 - Roller
- 380575 - Washer $\frac{1}{2}$ x $\frac{1}{8}$ SS
- 380574 - Shoulder Screw $\frac{1}{2}$ x $2\frac{1}{2}$ Modified
- 341122 - Actuator

Swivel Lift Chair Components



- 481151-2 - Chair brown w/hole
- 481151-3 - Chair gray w/hole
- 481160-2 - Arm rest - RH brown (Shown)
- 481160-3 - Arm rest - RH gray
- 481161-2 - Arm rest - LH brown (Shown)
- 481161-3 - Arm rest - LH gray

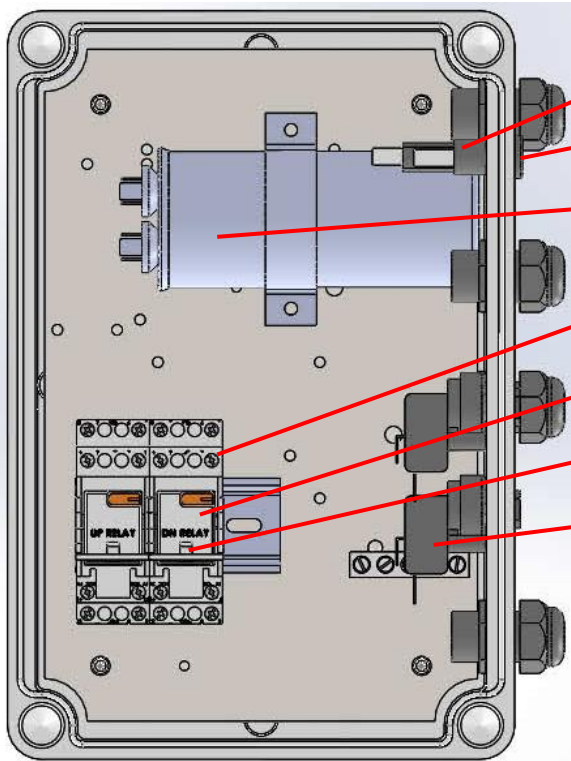
Swivel Lift Scale

Swivel Lift Electrical Kit If Applicable to your system (Located behind End Panel of Swivel Lift Tub)



- 390640 - Screw 1/4-20 x 1/2 PH TR HD SS
- 3411068 - Scale PSC48 Complete display (only)
Service Replacement
- 381198 - Printed Circuit Board only (Replacement)
- 360820 - Cover, lift scale arm
- 360830 - Cover, no scale lift arm
- 350495 - Air transmitter - black raised

Swivel Lift Electrical Box



- 350530 - Fuse Holder
- 340620 - Fuse - 3AG 3/8 A Fast Acting
- 340115 - Capacitor - Post Tub Actuator
- 390530-09 - Base Blade Socket - 2ea
- 390540-09 - Relay for Actuator - 2ea
- 390545-09 - Retainer Clips - 2 ea
- *350505 - Air Switch TBS362A - 2ea

*350505 - Air Switch TBS362A replaced TBS304

Note: The Actuator System Schematic is inside the Electrical Kit Lid.

Note: This view is up side down for left hand tubs.

Penner Manufacturing, Inc.

Swivel lift tub Calibration Procedure



It **is very important** that you use an absolutely accurate 25 lb. weight. If not, you will have variations in your patient weighing.

Requirements: Calibrated 25lb. weight.

1. To enter the calibration mode, first press and hold the "ON / ZERO" pad. While holding the "ON / ZERO" pad, press and hold the "LB / KG" pad. After approximately 3 (three) seconds the message on the display will change from "ZERO" to "CAL". Release both pads at this time and the display will show the "C 0" message.
2. Make sure the chair is empty and not in contact with any part of the tub and is *stable (not moving or vibrating). Press the "ON / ZERO" pad once again. The indicator will count down from "8" to "0". When finished, the indicator will show "C 25".
3. Place the 25lb calibrated weight on the chair, allow it to stabilize* and press the "ON / ZERO" pad once again. The indicator will again count down from "8" to "0" as before and then will read "25". Remove the weight and the indicator should read "0". The indicator then automatically returns to the normal weighing mode. Calibration is now complete.

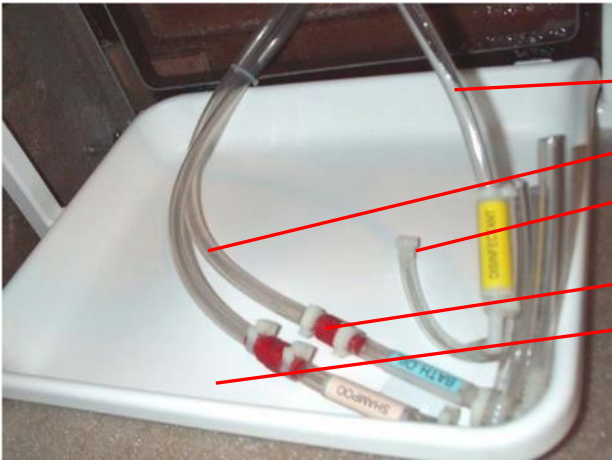
*Failure to stabilize the unit during the calibration process may cause the scale to display an inaccurate weight or not permit calibration.

Controls - Standard Premier



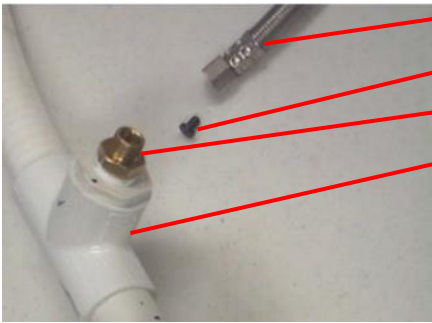
- 350535M-SER - Thermometer Display (Fahrenheit / Celsius) (3 ea)
- 350495 - Air Transmitter (9 Each)
- 370325 - Reservoir Handle
- 350151 - Replacement Valve Cartridge
- 350151MN - Cartridge for Rada 222 (Minnesota only)
- 350200 - Dispenser Pump Complete (2 ea)
- 350201 - "O" Ring for Dispenser Pump (Included in 350200)
- 350204 - Spring - Dispenser Pump (Included in 350200)
- 350210 - Nut - Pump Mount (White) (Included in 350200)
- 350215 - Cap - Dispenser Pump (Included in (350200)
- 140106CHT - Hand Shower
- 360551 - Adapter - Shower Sprayer
- 350190CH - Hose Shower 78" Chrome (Not Shown)
- 360550 - Deck Mount-Hand Shower
- 360431 - Latch - Magnetic W/Plate

Bottle Tray and Check Valves



- 140261 - Hose 1/4" ID Clear
- 350276 - 3/8 ID Clear Tubing
- 140489 - Foot Strainer (clear)
On end of Disinfectant Hose
- 350235 - Check Valve
- 360866 - Tray - Bottle Premier
(Standard Premiers Only)

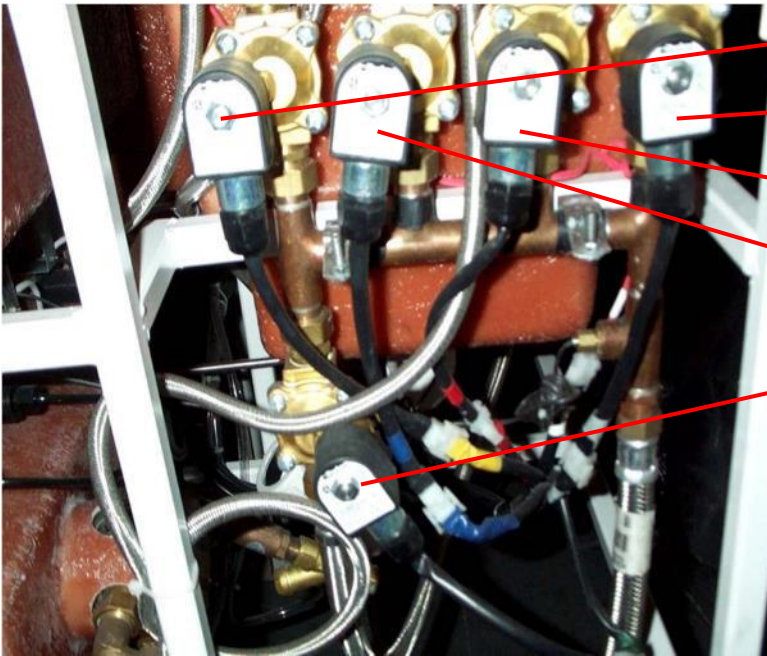
Shower (by-pass) Hose Connection Standard & Elite Premiers



- 360492 - Hose - 3/8" x 60" SS
- 360439 - Orifice - Shower Vent (Inside Hose)
- 360667 - Adapter-1/2" M x CMPR 3/8 Brass
- Overflow Plumbing for Reservoir

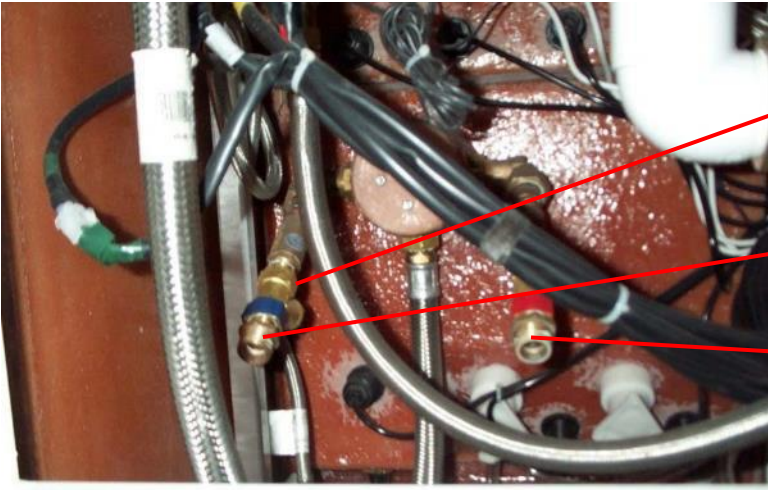
Solenoids and Identification - Standard Premier

Systems have the solenoid connections marked with the colors indicated below to easily identify correct connection and to improve communications in the field for service when diagnosing solenoid problems.



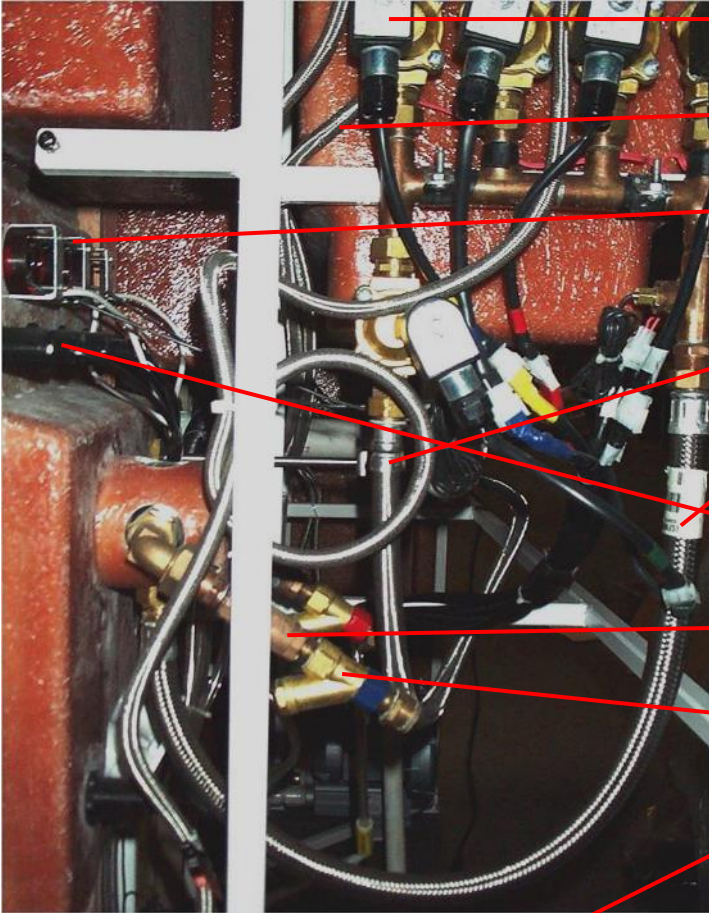
- Tub Disinfect - Yellow 
- Reservoir Fill - Grey 
- Tub Shower - Red 
- Tub Rinse - Blue 
- Tub Fill - Green 

Water Supply Connection Points & Inlet Screens - Standard Premier

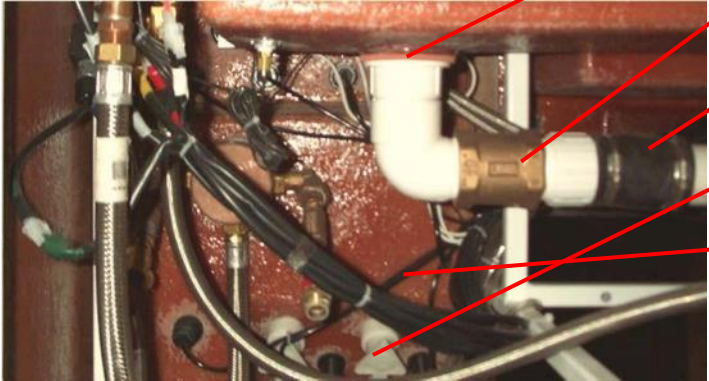


- 350315 - Inlet Screen 1/2" 40 Mesh in-Line (on both Hot and cold inlet lines)
- Inlet Connection - Cold Water - (blue)
- Inlet Connection - Hot Water - (red)

Plumbing - Standard Premier

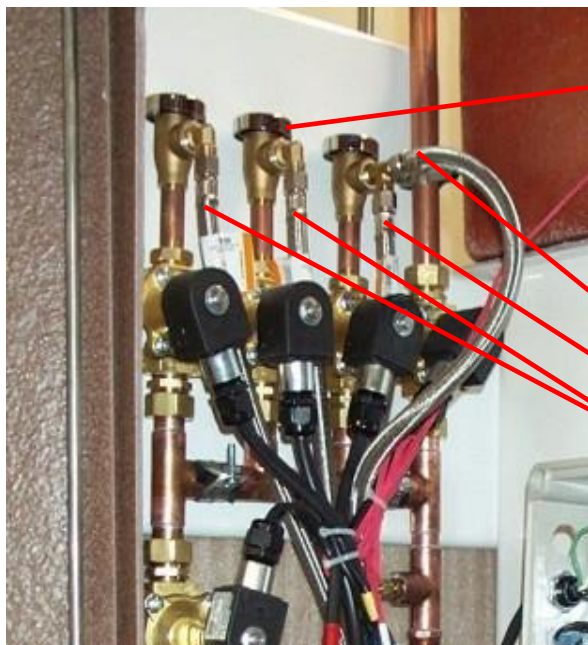


- 140124 - Solenoid Valve W/plugin (5 ea)
- 360185 - Hose - 3/8" x 72" SS
- 350535M-SER - Thermometer Display (3 ea)
- 360491 - Hose - 3/8" x 48" SS W/Elbow
- 350185 - Hose Assembly - 36"
- 350495 - Air Transmitter - Black Raised
- 350320 - Bronze Check Valve 1/2"
- 350315 - Screen 1/2" 40 Mesh In-Line



- 108550 - Washer - rubber drain
- 370412 -Valve - 2" Brass
- 370435 - Coupling, 2" PVC Flex
- 350200 - Dispenser Pump (2 ea)
- 040955 - Tube 1/8" ID

Vacuum Breakers - Elite Premier



- 144105 - Vacuum Breaker Watts 288A-3/8 (3 ea)
- 144110 - Service Kit for Vacuum Breaker (Not Shown)
- 360185 - Hose - 3/8" X 72" SS
- 360492 - Hose - 3/8" X 60" SS
- 360496 - Hose - 3/8" Comp X 1/2" FIP x 30"

Air System Assembly - Standard and Elite Premier



- 140474 - Check Valve (2 ea)
- 1404804 Injector - Dema Complete

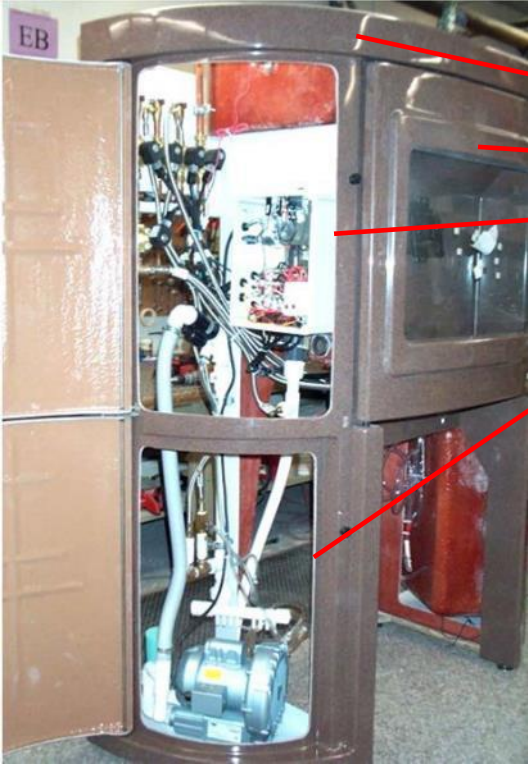
If you need to replace the larger black check valve or some other part of the glued PVC assembly, contact the service department with model and serial number. The phone numbers are on the cover and back pages of this manual.

Controls Deck - Elite Premier



- 350495 - Air Transmitter (7 ea)
- 350535M-SER -Thermometer Display (3 ea)
- 350151 - Replacement Valve Cartridge
350151MN - Cartridge for Rada 222
(Minnesota Only)
- 140106CHT - Hand Shower
- 360551 - Adapter - Shower Sprayer
- 350190CH - Hose Shower 78" Chrome (not shown)
- 370325 - Reservoir Handle
- 350200 - Dispenser Pump Complete (2 ea)
- 350201 - "O" Ring for Dispenser Pump
(Included in 350200)
- 350204 - Spring - Dispenser Pump Replacement
(Included in 350200)
- 350210 - Nut - Pump Mount (White)
(Included in 350200)
- 350215 - Cap - Dispenser Pump
(Included in (350200))

Left Side Access Views - Elite Premier (Right Hand)



- Cabinet Lid
- Cabinet TV Window Door
- Left Access to Vacuum Breakers, Solenoids, and Electrical Box
- Left Access to Blower and Air Manifold

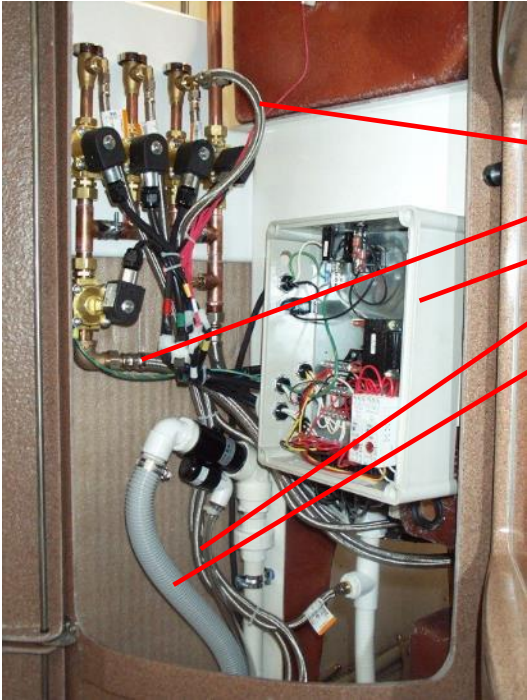
Right Side Lower Access View - Elite Premier (Right Hand)



Right Side Lower Access Opening.

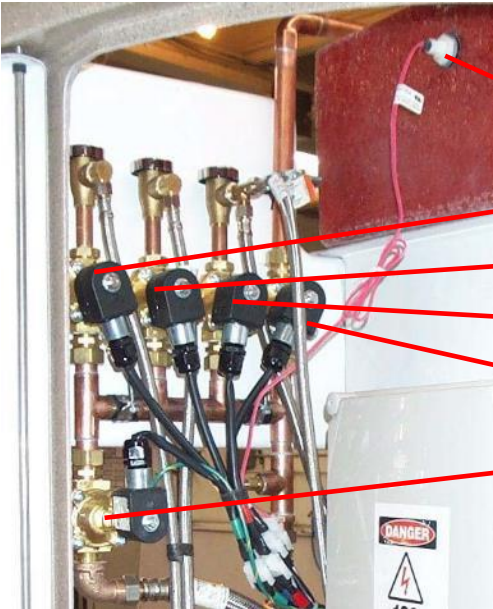
This where the Liquids (Disinfectant, Bath Oil, and Shampoo) are stored.

Hoses - Elite Premier



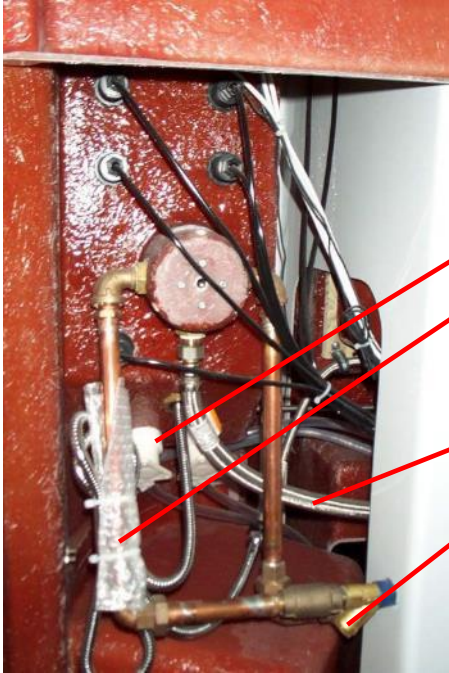
- 360185 - Hose - 3/8" x 72" SS
- 350185 - Hose Assembly - 3/4" x 36"
- Cascade Elite Premier Electrical Kit
- 140261- Hose 1/4" Heavy Wall Clear
- 390409 - Hose - Vacuum 1-1/4 ID

Solenoid Identification - Elite Premier



- 370300 Float Switch Assembly
- Disinfect - Yellow
- Tub Rinse - Blue
- Tub Shower - Red
- Reservoir Fill - Grey
- Tub Fill - Green

Control Panel Elite Premier View From Behind



- 350200 - Dispenser Pump
- 350190CH - 78" Double Spiral Hose - SS (Is connected to 350185 on page 26) This hose is tied up as indicated during shipping then hangs freely.
- 390100 - Braided Hose - 72"
- 350315 - Screen - 1/2" 40 mesh in-line

Inside the Reservoir



- Reservoir fill outlet
- 370300 - Float Switch
- Overflow pipe

Reservoir Gate Valve and Blower Location Elite Premier



- 370412 - Valve Ball 2" brass



- 360605 - Manifold PVC
- 350602 - Blower
- 360404EP - Water Trap Assembly Cascade Elite

Installation Kit includes the following:

- 390100 - Hose Assembly - 72" (2 ea)
- 350889 - Access Door Keys - (4 - 6 ea)
- 350650 - Label - Warranty Registration (1 ea)
- 360748P - Parts Manual - Cascade Premier Standard and Elite (1 ea)
- 360750P - Operation and Daily Maintenance Manual (1 ea)
- 360745P - Installation Manual - Cascade Premier Standard and Elite (1 ea)
- Training DVD - Cascade Premier Standard and Elite (1 ea)

Tub Access Doors



- 350895 - Door Lock - 1 ¼" (One Each Door)
- 140018 Rivet - 5/32 aluminum (Four Each Door)
- 1400191 - Bracket - Tub Door Spring (Two Each Door)

If an Access Door is needed, contact your distributor or Penner Patient Care (see front cover for phone number) and define which door and color that is needed.

Cabinet Access Doors - Elite Premier



- 350890 - Door Lock - 15/16 (1 ea Door except for control door)

Cabinet Access Doors - Standard Premier



- 350890 - Door Lock 1 ¼ (3 ea on the front doors and 1 ea on the tv door)



- 350894 - Door Lock 15/16 (4 ea -- 2 ea on each end panel)

Your Penner distributor and his personnel are trained to provide in-service instruction and maintenance information on your Cascade bath system. If you have any questions about the operation or maintenance of your Cascade bath system, please contact your Penner distributor. For your nearest Penner distributor, contact

Penner Patient Care, Inc.

at

1-800-732-0717

OR

1-866-736-6377