Rayne Versa Service Manual

Water Conditioning

This manual contains information on setting the controller

and normal operating maintenance required by the owner.

This valve can be used on any tank but comes standard on the Rayne Versa Softeners listed on the following page

Rayne Versa Service Manual

MODEL NUMBERS DESCRIPTION COMMENTS

— Upflow Models

RVU-1000 Upflow Brining, 1 cubic foot of resin U is for Upflow Brining

RVU-1500 1.5cubicfeetof resin

RVU-2000 2 cubic feet of resin

Downflow Models

RVD-1000 RVD-1000-M Downflow Brining, 1 cubic foot of resin D is for Downflow Brining

Msuffix is for adding the mixing valve to allow settings with some

hardness “bleed by”

RVD- 1500 RVD-1500M 1.5 cubic feet of resin

RVD-2000 RVD-2000-M 2 cubic feet of resin

Valve only

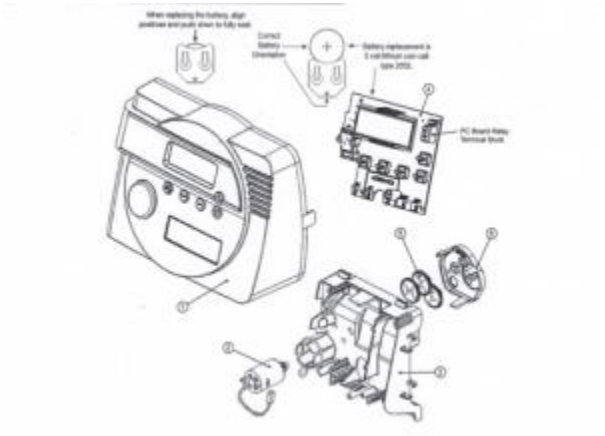
Rayne Versa Upflow Valve Valve only

Rayne Versa Downflow Valve Valve only

Rayne Versa DM Valve Valve only

Service Manual

Water Conditioning



ER Manual

ER Front Cover and Drive Assembly

Drawing No. Order No. Description Quantity

V3381-OIEG WS1ER FRONT COVER ASSEMBLY BLACKIGOLD 1

1 V3381-01ES WS 1ER FRONT COVER ASSEMBLY BLACK/SILVER

2 V3107-01 WS1 MOTOR 1

3 V3106-01 WS1 DRIVE BRACKET & SPRING CLIP 1

4 V3491ER-01BOARD WS1 THRU 2L ER PC BOARD REPLACE 1

5 V3110 WS1 DRIVE REDUCING GEAR 12X36 3

6 V3109 WS DRIVE GEAR COVER 1

V3186 WS AC ADAPTER 11OV-12V 1

V186EU WS AC ADAPTER 220..240V-12V EU

Shown Not V3186UK WS AC ADAPTER 22O-240V-12VUK

V3186-01 WS1 AC ADAPTER CORD ONLY

Not Shown V3382 WS1ER DRIVE BACK PLATE

For software revs E203.6 and lower

Relay Specifications: To insure proper fit and correct operation use either of the 14cc relay/relay socket combinations or the exact equivalents.

Manufacturer	Option 1	Option 2
Relay Socket	Idec SR3P-05C	SY4S05C
Relay	Idec RR2KP-UAC12V / RR2KP-LJCACl2V	RY2KS-UACl2V

The relay supplies 2 sets of dry contacts for user applications.

The wiring of these contacts is application specific.

Wiring For Correct On/Off Operation

PC Board Relay Terminal Block	Relay Socket Model SR3P.05C	SY4S-05C
SET	#2	#13
COM	#6 and #l0	#12 and #14
RES	#3	#9

For software revs E204.5 and higher

Relay Specifications: 12V DC Relay with a coil resistance not less than 80 ohms. If mounting the relay under the cover check-

for proper mounting location dimensions on the backplate.

Wiring For Correct On/Off Operation

PC Board Relay Relay

Terminal Block

RLY1 Coil –

COM Coil +

AC Adapter U.S. International

Supply Voltage 120 VAC 230VAC

Supply Frequency 60 Hz 50 HZ

Output Voltage 12VAC 12VAC

Output Current 500 mA 500 mA

When replacing the battery, align

positives and push down to fully seat.

ER Manual

OEM General Instructions

The control valve offers multiple procedures that allow the valve to be modified to suit the needs of the installation. These procedures are:

OEM Setup

OEM Softener System Setup

OEM Filter System Setup

Installer Display Settings

User Display Settings

Diagnostics

Valve History

Once the OEM Setup has been set, the other procedures can be accessed in any order. Details on each of the procedures are provided on the following pages.

At the discretion of the manufacturer, the field technician can access all settings. To “lock out” access to diagnostic and valve history displays and modifications to settings except hardness, day override, time of regeneration and time of day by anyone but the manufacturer, press V. NEXT, ^, and SET CLOCK in sequence after settings are made. To “unlock”, so other displays can be viewed and changes can be made, press V, NEXT, ^, and SET CLOCK in sequence.

When in operation normal user displays such as time of day, gallons remaining before regeneration, days remaining before regeneration or lbs. salt remaining before regeneration are shown. When stepping through a procedure, if no buttons are pressed within five minutes, the display returns to a normal user display. Any changes made prior to the five minute time out are incorporated.

To quickly exit OEM Softener Setup, OEM Filter Setup, Installer Display Settings, Diagnostics or Valve History press SET CLOCK. Any changes made prior to the exit are incorporated.

When desired, all programming and information in Diagnostics may be reset to defaults when the valve is installed in a new location. To reset to defaults, press NEXT and V simultaneously to go to the Softening/Filtering screen. Press ^ and V simultaneously to reset programming and diagnostic values to defaults. Screen will return to User Display.

Sometimes it is desirable to have the valve initiate and complete two regenerations within 24 hours and then return to the preset regeneration procedure. It is possible to do a double regeneration if the control valve is set to “NORMAL” or “NORMAL + on 0” in OEM Softener System Setup or OEM Filter System Setup. To do a double regeneration:

Press the “REGEN” button once. REGEN TODAY will flash on the display.

Press and hold the “REGEN” button for three seconds until the valve regeneration initiates.

Once the valve has completed the immediate regeneration, the valve will regenerate one more time at the preset regeneration time.

Proportional Brining

If the system is set up as a 1” prefill upflow softener, the control valve can also be set to normal or proportional brining.

SETThis step will appear after Step 7S and before Step8S if the system is set up as a prefill upflow softener. The following options can be selected:

NORMAL FILL – System always prefills with the salt level selected.

ProP FILL – If proportional brining is selected, the actual salt fill time will be calculated by dividing @ the actual volume of treated water used by the full volumetric capacity, then multiplying this value by the maximum salt fill time.

Press NEXT to go to the next step. Press REGEN to return to the previous step.

OEM Setup

OEM Setup instructions allows the OEM to set meter size, dPswitch or alternating valve, pre or post fill and dn or up brine where applicable. Fill and brine values are ignored when the system is set up as a filter. The OEM Softener System Setup or the OEM Filter System Setup allow the OEM to set how long cycles will last.

Step 1OS – Press NEXT and V simultaneously for 3 seconds and release. Then press NEXT and V simultaneously for 3 seconds and release. If screen in Step 20S does not appear in 5 seconds the lock on the valve is activated. To unlock press V. NEXT, ^, and SET CLOCK in sequence, then press NEXT and V

simultaneously for 3 seconds and release. Then press NEXT and V simultaneously for 3 seconds and release.

Step 20S – Use ^ or V to select 1.0 for 1" valve, 1.25 for 1.25" valve, 1.5 for 1.5" valve, 2.OL for 2L valve or 2,0 for 2" valve.

Note: When using the WS2 valve, if "2.0L" is set instead of "2.0", when the valve is in regeneration

and the piston drives to the "DRAW" cycle the piston will stall and generate a 1002 error code. Clear the error code by pressing "NEXT" and "REGEN" buttons simultaneously until the valve resets, then re-program valve to proper valve type setting.

Press NEXT to go to Step 30S, Press REGEN to exit OEM cycle sequence.

Step 30S – When 2.0L, or 2.0 are selected, an additional screen will appear. It is used to select which

size flow meter is to be used with the valve, 1.5 or 2.0.

Press NEXT to go to Step 40S. Press REGEN to return to previous step.

'When using the WS2 control valve, the circuit board software must have valve selection choices of 2.0 and 2.OL. The WS2 valve must be set for the 2.0 valve type during programming. If the software version does not have both the 2.0 and 2.OL selections, consult your equipment supplier for a replacement circuit board. When using the WS2L valve with older version software that does not have both 2.0 and 2.OL selection choices, the valve must be set to 2,0 during programming. If a WS2L valve is being used with newer version software that has both 2.0 and 2.01, selection choices, the valve must be set to 2.OL during programming.

Other notes:

Allows selection of one of the following using A or

the Control Valve to act as an alternator; or

the Control Valve to have a no hard water bypass: or

REGN • the Control Valve to have a Separate Source during the regeneration cycle.

Select OFF when none of these features are used.

Only use Clack No Hard Water Bypass Valves or Clack Motorized Alternating Valves (MAY) with

these selections. Clack No Hard Water Bypass Valves (1" or 1.25" V307OFF or V307OFM) are not

designed to be used with the alternator function or separate source mode.

Note: Clack Twin Alternator Operations

Twin alternating systems can be programmed with a day override setting combined with the normal volume-based regeneration programming. A twin alternating system in this configuration will then regenerate based on the volume used or the day override if there is a period of low water usage.

Twin alternating systems can be programmed as a time clock only based regenerating system. In this configuration, the days remaining are counted only on the unit that is in service. The unit in Stand-by Mode only notes days in diagnostics, which results in time clock only twin regeneration initiation.

Twin alternating systems can be programmed for a delayed regeneration time. The system will allow an immediate transfer of the MAY to switch tanks and place a fully regenerated unit in service once a unit becomes exhausted. The exhausted unit will then be placed into Stand-by Mode and allowed to have a delayed regeneration at the pre-set time.

For Clack Corporation alternator systems using WS 1, WS1 .25, WS1.5, and WS21, valves there will be an option to delay SET WS1, WS1.25, WS1.5,

WS2L Valves

For Clack Corporation alternator systems using the WS2 valve

WS2Valve

Er RLIR

Configuring the Control Valve for No Hard Water Bypass Operation:

a Clack No Hard Water Bypass Valve is made to the two pin connector labeled MAV DRIVE located on the printed circuit board.

NOTE: If the control valve enters into an error state during regeneration mode, the no hard water bypass valve will remain in its current state until the error is corrected and reset.

Configuring the Control Valve for Separate Source Operation:

Select “SEPS” for control operation. For separate source operation, the three wire connector is not used. Selection requires that a connection to a Clack Motorized Alternator Valve (MAV) is made to the two pin connector labeled MAV DRIVE located on the printed circuit board. The C port of the MAV must be connected to the valve inlet and the A port connected to the separate source used during regeneration. The B port must be connected to the feed water supply. When set to “SEPS”, the MAy will be driven closed before the first regeneration cycle, and be driven open after the last regeneration cycle.

NOTE: If the control valve enters into an error state during regeneration mode, the MAy will remain in its current state until the error is corrected and reset.

Press NEXT to go to Step 50S. Press REGEN to return to previous step.

The upfiow cycle may not be used on the WS 1.25, WS 1.5, WS2 or WS21, control valves, because the V3407 and V3725 pistons are designed for downflow use only.

Versa Compatible fittings and accessories:

1” PVC Male NPT Elbow Assembly; 3/4” x 1” PVC Solvent Elbow Assembly;1” Brass Sweat Assembly LF

Order No. V360702LF 1.25” Plastic Male NOT Assembly Order No. V3007.07 • Order V4007-091-0 Order No. V3007.12

1” SharkBite® Assembly 3/4” John Guest QC ElboW Assembly

Order No. V30071 Order No.:V3OO715

Order No. V3007-031F 1.25” & 1.5” PVC Solvent Assi

Order No. V3007-05 3V SharkBite® Assembly