# ZR4-1/ZR4-1-S/ZR10/ZR10-S Double Tank Floated Bed Softening Valve



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ZR Process animation



ZR Install animation

# I .Control Principle



picpic L: regenerate; R: softening

L: cleaning; R: softening Pic1: Control process L:softening; R:softening

# JIEYUAN double tank floating bed system of valve is different from the double valve two tank of softening system

**1**, One value of double swap tank, at the same time, water production, alternate regeneration, One tank of regeneration and cleaning to be able to use another exchange softened water tank.

**2**, One valve, double tank, uninterrupted water production, single tank water production and double tank water rate at the same time quite (i.e., the single tank water production can reach the rating, double tank water production slightly higher than the rating), there is no regeneration process for users to stop water supply all kinds of frustration, the user does not exist, the concept of regeneration cycle.

**3,** Equipment recommended setting parameters follows the pattern of short, frequency, fast Brine flow meter and the water meter to ensure equivalent salt consumption and water rate, give play to the role of floating bed countercurrent regeneration resin layer state, before the complete failure of resin on regeneration, each time only is part of resin regeneration of salt water. Therefore alternating double tank can ensure the effective exchange of top resin protective layer .Ensure water quality and high hardness water softening.

**4,** Double tank floating bed control valves should be suitable for the occasion of high hardness water treatment and strict control of softening index, such as the steam boiler and heating system engineering and industrial production process water, water pressure constant,

5, High floating bed velocity (available to more than 50 m/h), swap tank should be fine and high, resin filling rate was 90%.

# ${\rm II}$ $\smallsetminus$ Controller operation setting





#### 4 The operation button.:

😬 : Manual switch; 🕙: Parameter setting; 🗞: Mode switch; 🕨: Move to next

#### ▲: Plus 1

A. **Unlock**: Push tow button meantime"  $\blacktriangleright$  "&"  $\blacktriangle$ ", Displaying  $\blacksquare$ "

B. Lock: Equipment without any operation after 3 minutes, automatic to lock

 $C_{\infty} \otimes Mode switch$ : Unlock state, the operation button in time mode  $\oplus$ "and flow Mode  $\otimes$  display to switch between.

D. Manual switch: Unlock state, when pushing the button the valve switch to next station 。

 $E \$  **Parameter setting**: Unlock state, press the button and the screen will show the interface of setting parameters.

#### 4 The parameter setting.



## III、Performance, configuration, and setting parameter (recommended))

| Model                   |          | ZR4-1S-25   |        | ZR4-1S-32     | ZR10   |         |         |
|-------------------------|----------|---|--------|---------------|--------|---------|---------|
| IN & OUT size           |          | 1"M   |        | 1¼"M          | 1½"M   |         |         |
| production              |          | ≤3T/h;  | ≤4T/h; | ≤6T/h;        | ≤8T/h; | ≤10T/h; | ≤12T/h; |
| Raw water hardness      |          | 2-Ø250  | 2-Ø300 | <b>2-Ø350</b> | 2-Ø400 | 2-Ø450  | 2-Ø500  |
| ≤12mmol/L               |          | ×1650   | ×1650  | ×1850         | ×1650  | ×1850   | ×1850   |
| Salt tank capacity      |          | 100L  | 2      | 00L           | 350L   |         |         |
| Brine valve             |          | YF300   |        |               | YF600  |         |         |
| Amount of resin filling |          | capacity of the swap tank 90%-95%   |        |               |        |         |         |
| Parameter               | SOFT(t)  | [amount of resin filling in one tank] ×50%÷Raw water<br>hardness (mmol/L) |        |               |        |         |         |
| Setting                 | Regen(L) | The amount of racin filling in one tank                                   |        |               |        |         |         |
|                         | Wash(L)  |   |        |               |        |         |         |

\* Note: the raw water hardness greater than 12 mmol/L; To refer to the original TDS value, the swap tank higher or more tanks

#### IV Conditions of use

1, Water static pressure shall not be greater than 0.6 MPa. Or you want to install pressure reducing valve;

2, Floating bed shall ensure that the resin filling rate of swap tank 90%;

3, the water TDS 1200 mg/L or less;

4,Raw water hardness (with  $1/2 \mod 3$ ) :  $\leq 15 \mod L$  or less tendency for L;

5, The equipment working environment temperature should be 0 ° C  $\sim$  45 ° C.

6, Inflow filter must be installed, in case the mechanical clarifier and floccule into the control valve.

7,Check valve must be installed for inflow water pipe,in case brine flow back from tank to inflow water pipe when the feed pump stopped

## $V \smallsetminus \ensuremath{\mathsf{Installation}}$











#### ZR4-1/ZR4-1S/ZR10/ZR10-S SERVIE MANUAL



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## **WI** Tips and Precautions of Equipments

1. The equipments should use industrial salt with the size of more than 4mm to guarantee the

smooth passage of water filling and salt absorbing. If some fine salt is used, please keep it at small amount. Otherwise, it will get agglomerated, leak to the salt filter and clog the tube.

2. The bottom of the salt tank needs to be checked frequently; the deposit and sludge need to be cleared out.

3. The filter of inflow needs to be cleaned periodically in case that the inflow clogs the tubes and leads to low efficiency of the equipments as well as the decrease of the outflow amount.

4. The decrease of outflow amount and increase of pressure might due to a clogged water locator inside the swap tank. The solution is to spin off the valve, take out the center pipe, clean the water-locator and get rid of the dregs of broken resin and suspended impurities at the top of the swap tank.

# VIII. YF300 Brine valve





**Pic18: Brine valve Principle** 

#### 2.Brine valve internal structure



Pic19: Brine valve structure



# **IX Curve of Flow and Pressure for the Valve**



ZR4-1/ZR4-1S/ZR10/ZR10-S SERVIE MANUAL





ZR4-1/ZR4-1S/ZR10/ZR10-S SERVIE MANUAL

#### $\boldsymbol{X}$ Control valve structure



Pic22: Control valve structure(zr4-1 example)