G-type Non-Electric Automatic Water Filter Valve

北京康洁之晨水处理技术有限公司

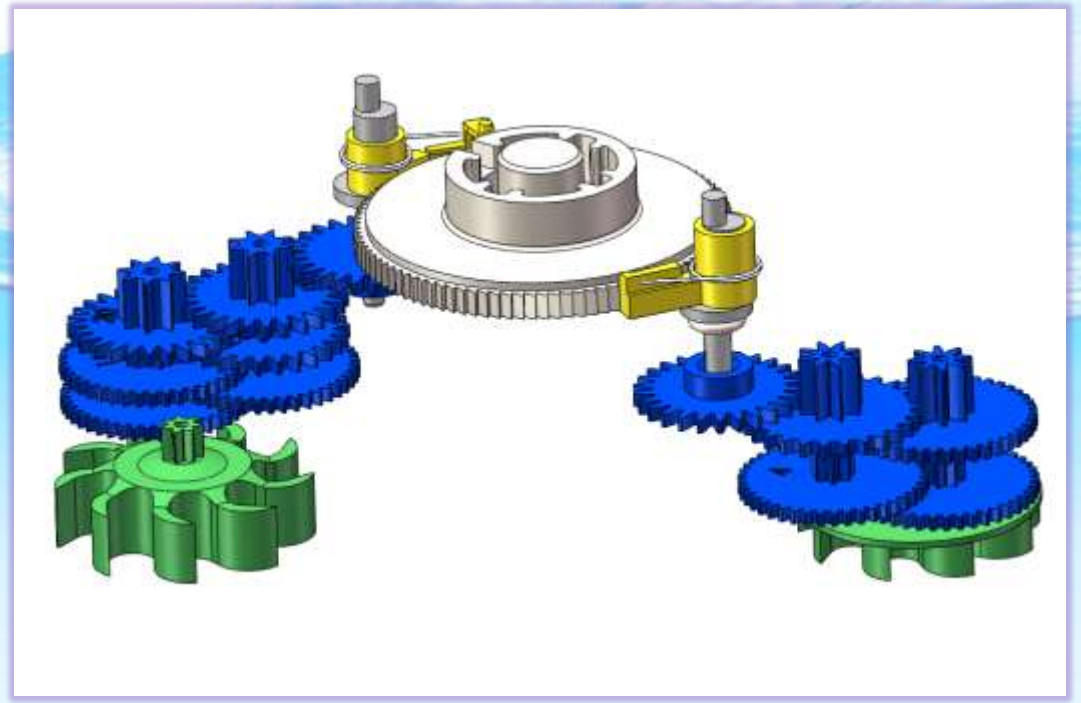
www.kangjiezc.com

Overview of G-type Non-Electric Automatic Water Filter Valve

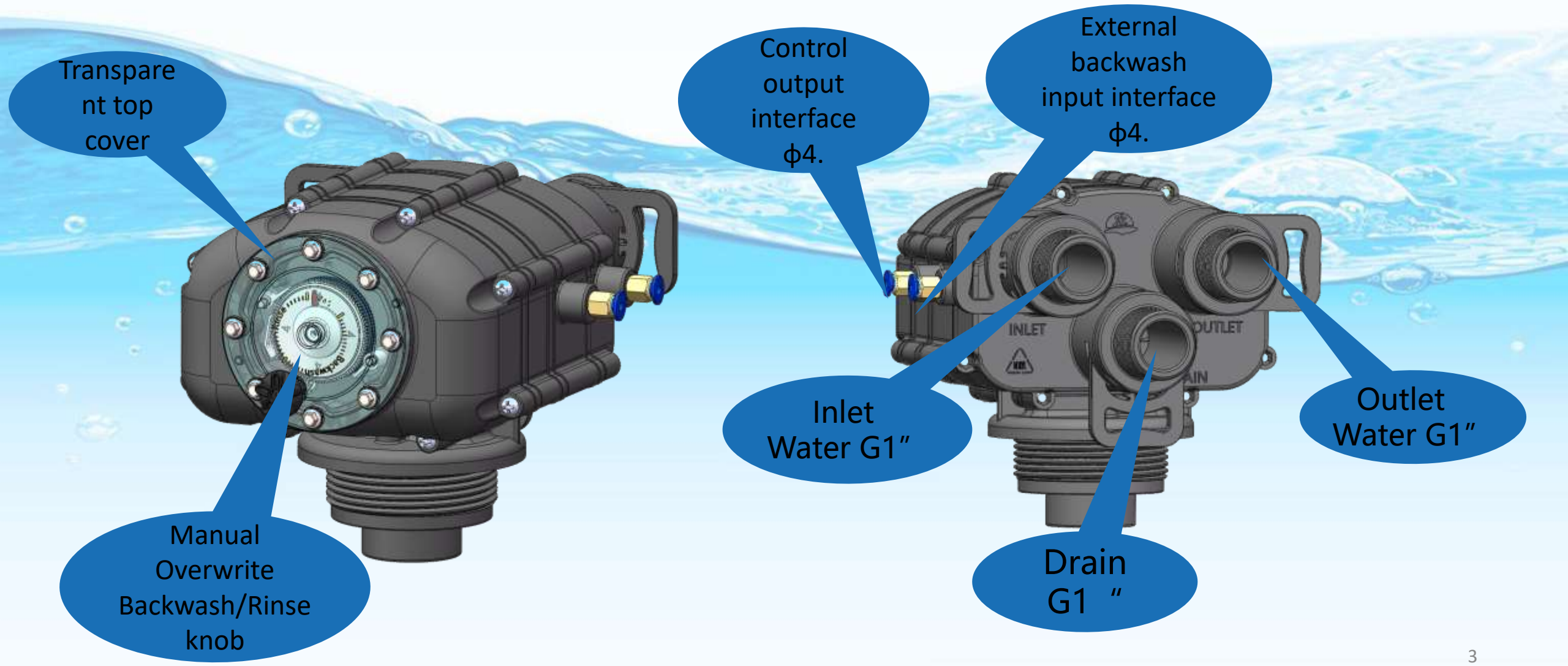
The G-type electric-less filter valve adopts a dual-gear structure and operates in an alternating manner. It incorporates a flow endpoint determination method to automatically carry out the cycling process of operation, backwashing, and flushing in a multi-media filter.

It operates without the need for a power source and relies solely on the pressure of the raw water.

Operating modes include single valve-single tank operation and multiple (E-system) operation with multiple valves and tanks running simultaneously, following a sequential backwashing process.



Appearance of G-type Non-Electric Automatic Water Filter Valve



Basic Parameters of G-type Non-Electric Automatic Water Filter Valve

Valve Material: NORLY

Connection: 2.5” NPSM

Centre Pipe Diameter: OD 32mm

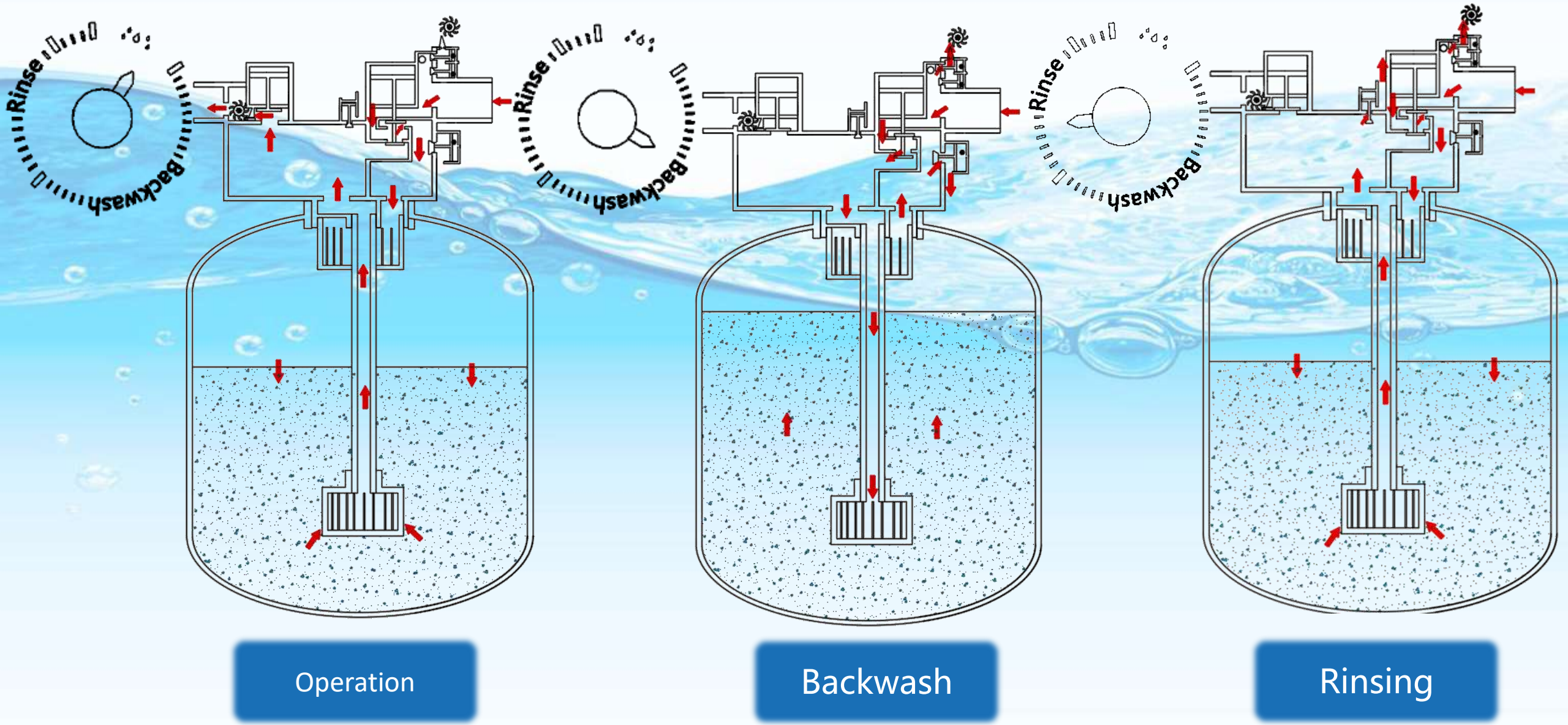
Inlet/ Outlet/Drain: 1" Threaded

Valve Dimension: L×W×H

240 X 210 X 176 mm

Valve Weight: 1.8Kg

Working Principle of G-type Non-Electric Automatic Water Filter Valve

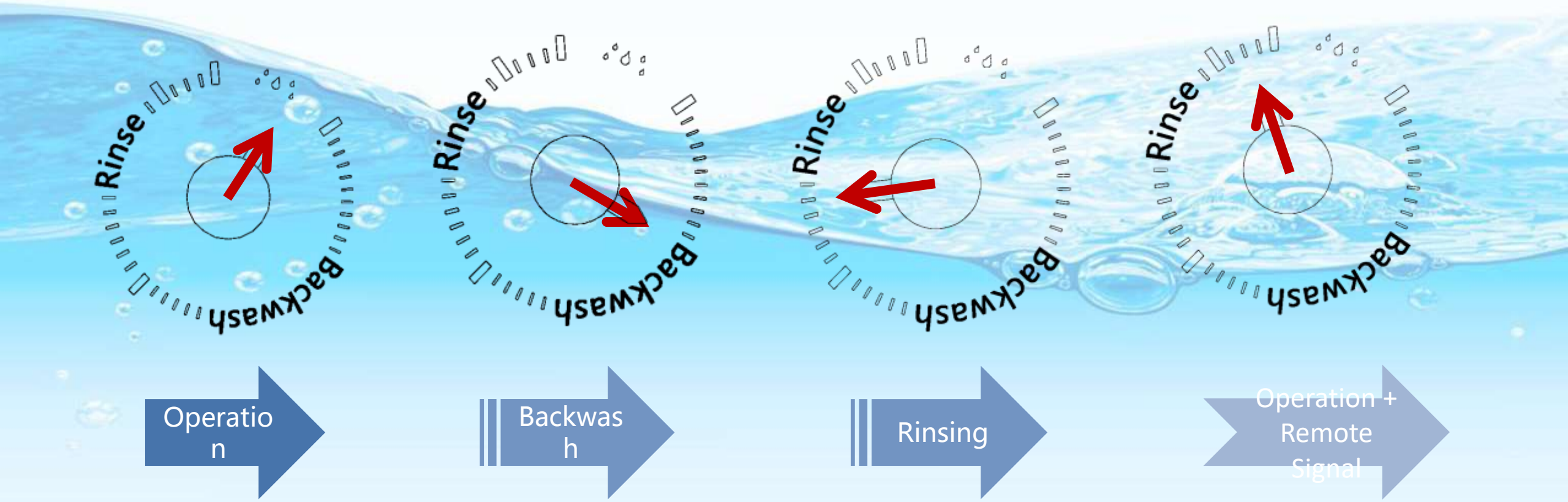


Operation

Backwash

Rinsing

Working Process of G-type Non-Electric Automatic Water Filter Valve



Operation

Backwash

Rinsing

Operation + Remote Signal

Model Parameters of G-type Non-Electric Automatic Water Filter Valve

Valve Model	G60	G61	G70	G71
Backwash duration	5min		15min	
Water Production Capacity	0.5-2.0m³/h			

Valve Model		G60/70 (Bad Water Quality)	G61/71 (Good Water Quality)
Periodic Water Production Capacity	1#Totaliser	12m³	24m³
	2#Totaliser	6m³	12m³
	3#Totaliser	4m³	8m³
	4#Totaliser	3m³	6m³
	6#Totaliser	2m³	4m³
	8#Totaliser	1.5m³	3m³

Based on own required backwash time choose G6/7 Series

Select the periodic water production based on the incoming water quality and determine the water totaliser

Model Parameters of G-type Non-Electric Automatic Water Filter Valve

Recommended backwash flow rate (12L/m²·s) - Quartz sand used as filter media.	
Filter tank size	Backwash Flowrate （m³/h)
7″	≥1.0
8″	≥1.3
10″	≥2.0

Recommended Totaliser	1#	2#	3#	4#	5#	6#	7#	8#
Percentage of water production to maximum capacity	100	50	33	25	20	17	14.3	12.5

Parallel Connection (Continuous flow, High flow rate) - G-type Non-Electric Water Filter Valve

1#

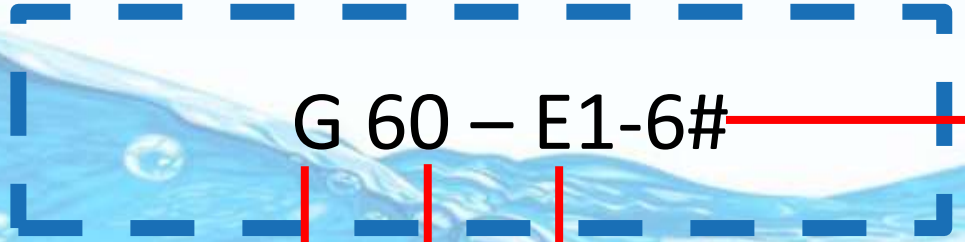
2#

N#

1、Valve 1 is the main valve, which is equipped with a water turbine and a backwash turbine. Valves 2 and other valves are subsidiary valves, which are equipped with a backwash turbine.

2、When the main valve undergoes a forced regeneration, the subsidiary valves will go through a sequential regeneration process. If you wish to individually force the regeneration of a specific tank, you will need to manually close the inlet and outlet valves of the downstream tank

Model Description of G-type Non-Electric Automatic Water Filter Valve



17% of the maximum periodic water production capacity

E1：Single or multiple valve

E2：Multi-valve online subsidiary valve

(simultaneous operation, sequential regeneration)

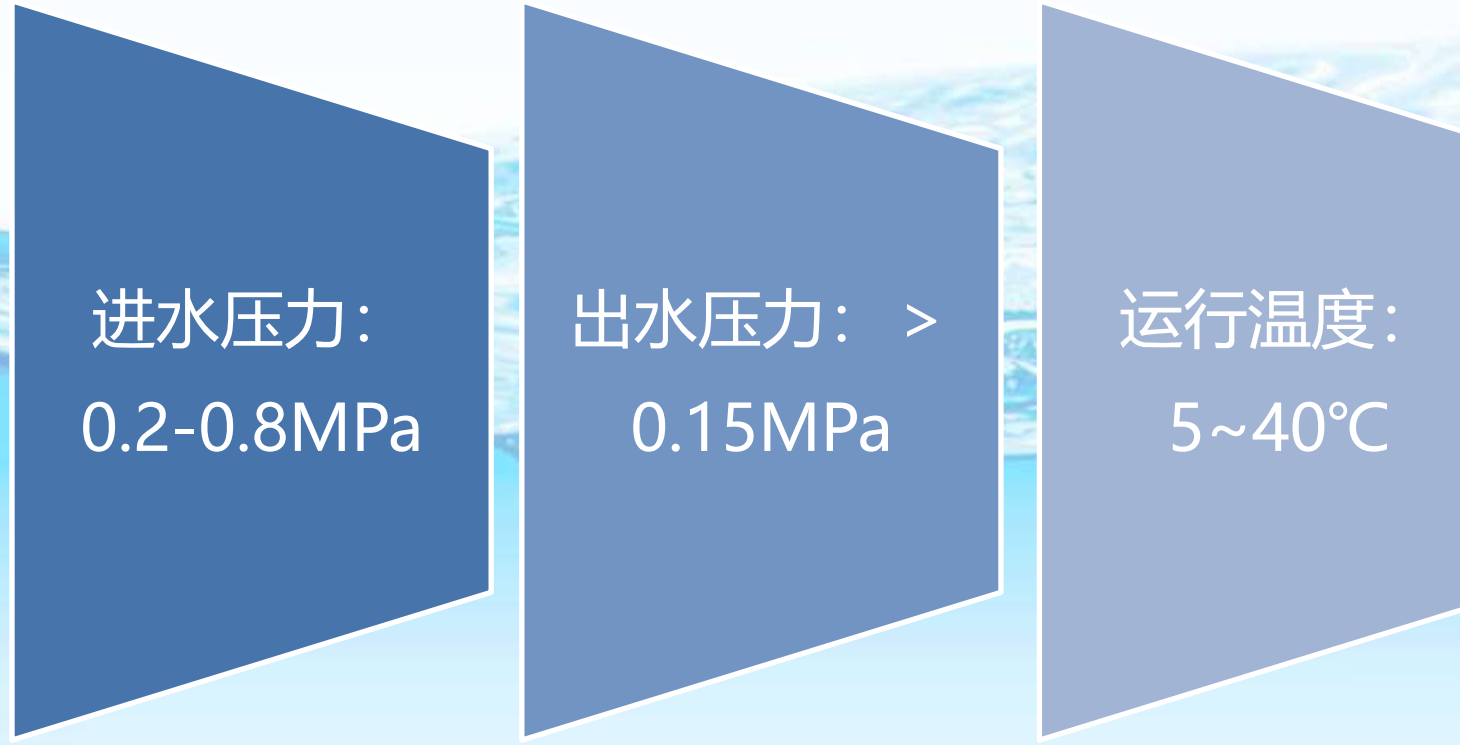
G60/G61 Valve regeneration time approximately 5min

G70 /G71 Valve regeneration time approximately 15min

electric-less filter valve

Operating Conditions of G-type Non-Electric Automatic Water Filter Valve

Incoming Water Pressure: 0.2-0.9MPa
Outlet Water Pressure: > 0.15MPa
Operating Temperature: 5~40 Deg Celcius



Note: Bursting pressure: 3.2 MPa
Fatigue Cycle：100,000（0-0.8MPa）

Installation Condition of G-type Non-Electric Automatic Water Filter Valve

Control Valve

The central pipe touches the bottom of the resin tank

The upper end of the central pipe is 10-12mm below the top opening of the tank

The upper end of the central pipe must be polished smooth

To select the correct control valve model and O-ring for the tank opening and central pipe, specific information about the system and its requirements is needed.

Fit the control valve onto the central pipe and tighten the control valve onto the

Installing manual valves for the inlet and outlet of the control valve is necessary to facilitate equipment debugging and maintenance.

Drain

The length of the drainage pipe should be ≤4m. It should be connected to the sewer outlet. Do not insert the drainage pipe into the drain trap to prevent siphoning and backflow.

Thank You

L-Type Non Electric Softener Valve

北京康洁之晨水处理技术有限公司

www.kangjiezc.com

目录

Introduction of L-Type Valve

01

- Overview
- Specification
- Conditions for Operation & Installation
- Regeneration
- Work Flow

Overview: L-Type Non Powered Softener Valve

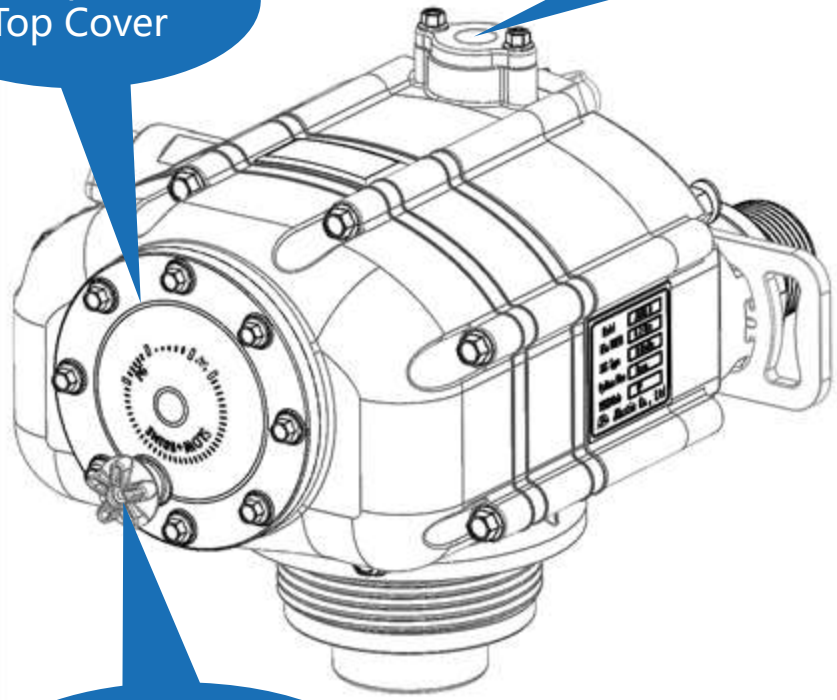
The multi-way valve uses the countercurrent regeneration softening process with a packed bed, and has two built-in turbines that are driven by the water flow to control the valve's water metering and the fully automatic control of the regeneration process through two sets of gears. During operation, the regeneration program can be activated based on the cumulative water volume output, and the opening and closing of the internal piston valves are driven to automatically complete the cycle process of the Service, brine in, rinse, and automatic water refill of the brine tank.

Power： Not required electric， instead it is powered by the incoming water pressure

Operation Modes： Single Valve & Tank、 One Duty One Standby （D-System） ， or consist of main valve & auxiliary valves running in parallel, while regen in sequnce

By replacing the water meter dial, the valve can be adjusted to 8 different cycle water output volume to adapt to different in the incoming water hardness.

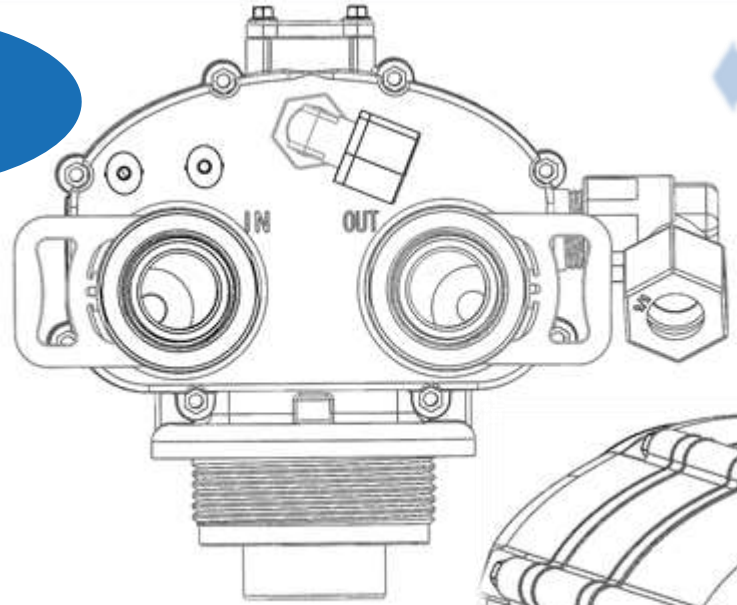
Overview: L-Type Non Powered Softener Valve



Ejector Cover

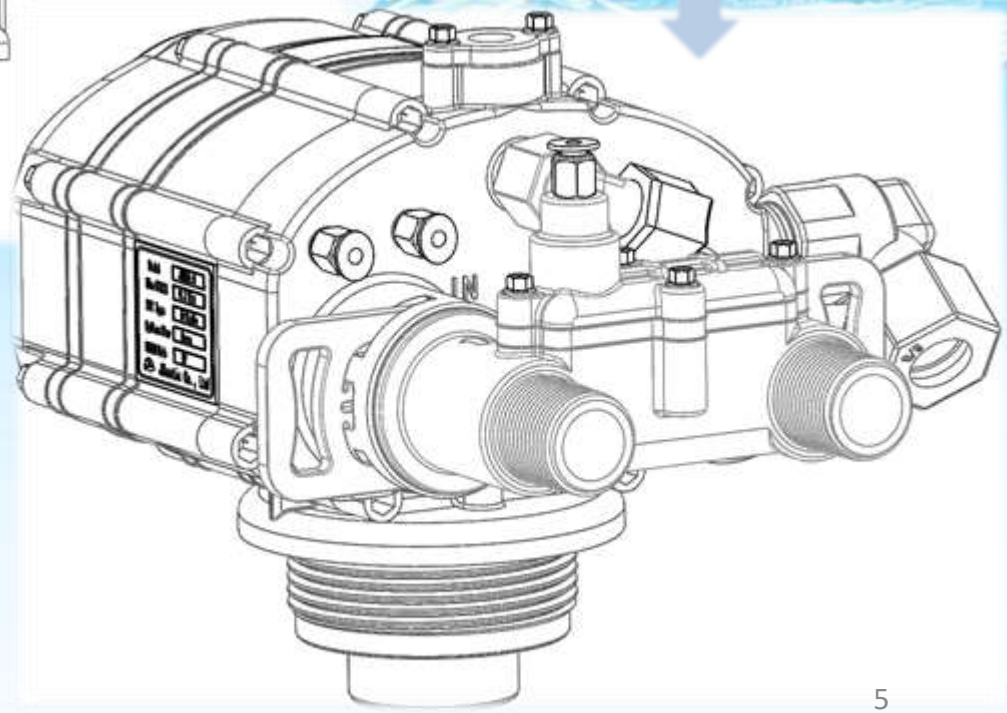
Transparent Top Cover

Force Regen Knob

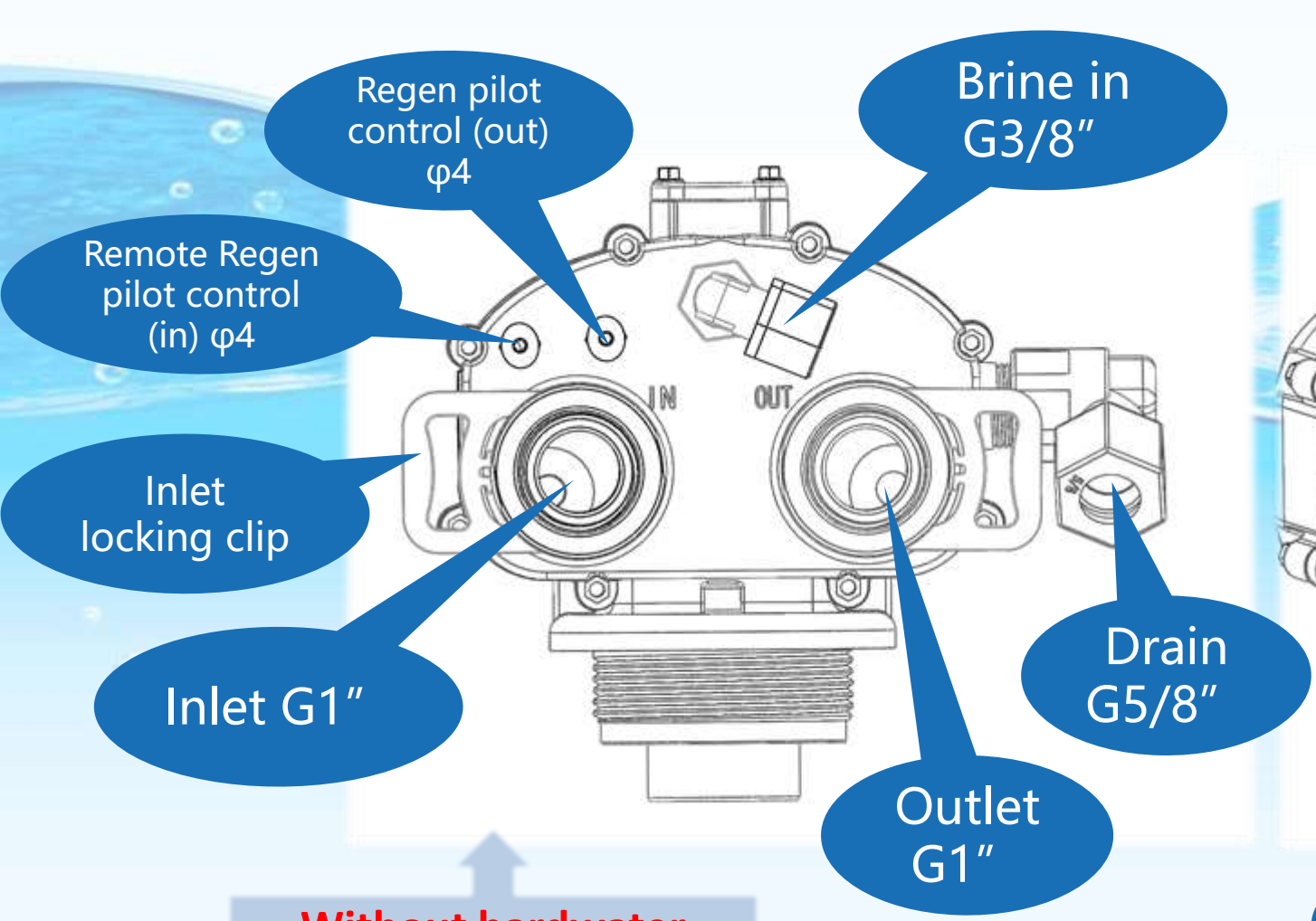


Without hardwater bypass valve

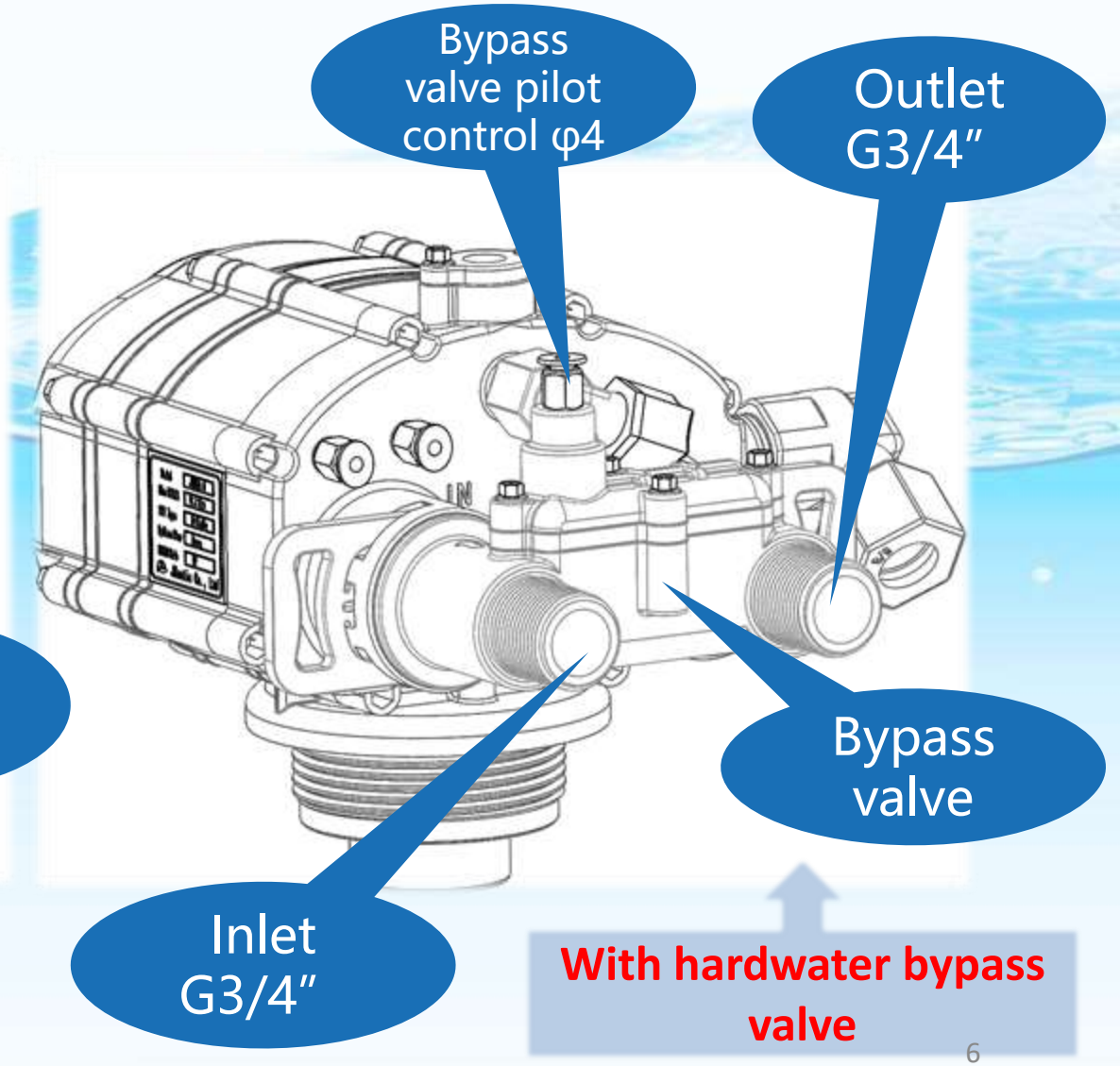
With hardwater bypass valve



Overview: L-Type Non Powered Softener Valve

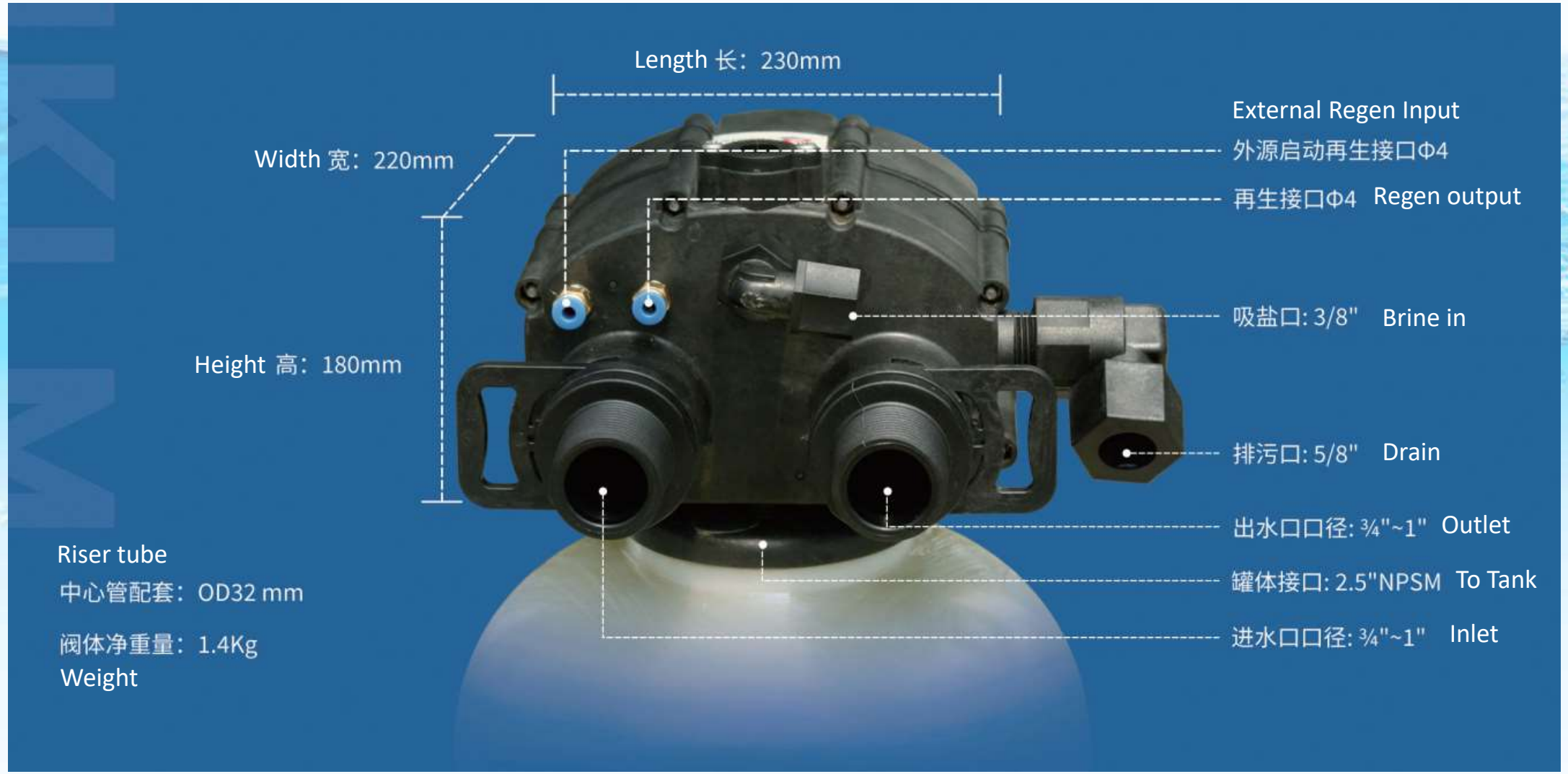


Without hardwater bypass valve



With hardwater bypass valve

Specification: L-Type Non Powered Softener Valve



Specification: L-Type Non Powered Softener Valve

Model	L0.3	L0.6	L1.0	L2.0	L3.0	L4.0
Rate Service Flow m^3/Hr	0.3	0.6	1.0	2.0	3.0	4.0
Recommended Tank Size	717	817	835	1054	1465	1665
Resin Volume L	8	13	22	58	120	170
Regen Duration Min	12	18	27	58	101	128
Saturated Brine Volume (Recommended）	3	6	9	24	50	70
Compatible Brine Valve Model	Brine Valve ‘Type 434’					
Hard Water Bypass Valve	Optional	Optional	Optional	Optional	Optional	Optional

Specification: L-Type Non Powered Softener Valve

Model		L0.3	L0.6	L1.0	L2.0	L3.0	L4.0
Soft Water Volume per cycle (m^3)	#1 Water Meter Dial	3	5.3	13	30	70	110
	#2 Water Meter Dial	1.5	2.7	6.5	15	35	55
	#3 Water Meter Dial	1	1.8	4.3	10	23.3	36.7
	#4 Water Meter Dial	0.75	1.3	3.2	7.5	17.5	27.5
	#5 Water Meter Dial	0.6	1.1	2.6	6	14	22
	#6 Water Meter Dial*	0.5	0.9	2.1	5	11.7	18.3
	#7Water Meter Dial	0.43	0.8	1.8	4.3	10	15.7
	#8 Water Meter Dial	0.38	0.7	1.6	3.7	8.8	13.8

Specification: L-Type Non Powered Softener Valve

Feedwater Hardness (mmol/L)	1	2	3	4	5	6	7	8
Recommended Water Meter Dial	1#	2#	3#	4#	5#	6#	7#	8#
Maximum Water Produced (%)	100	50	33	25	20	17	14.3	12.5

Remarks

1. If the feedwater hardness is between two water meter dials, select the larger dial
2. Replace the water meter dial whenever there is changes to the feedwater hardness
3. Default water meter dial: #6

Specification: L-Type Non Powered Softener Valve

L 3.0 -P-YD

Notes

1. Only the same capacity valve can be used in D & E configuration
2. Bypass valve can't be used in a multi softener system

Hardness：mmol/L

P：Single Softener Valve with bypass

D：1 Duty 1 Standby Softener Valve

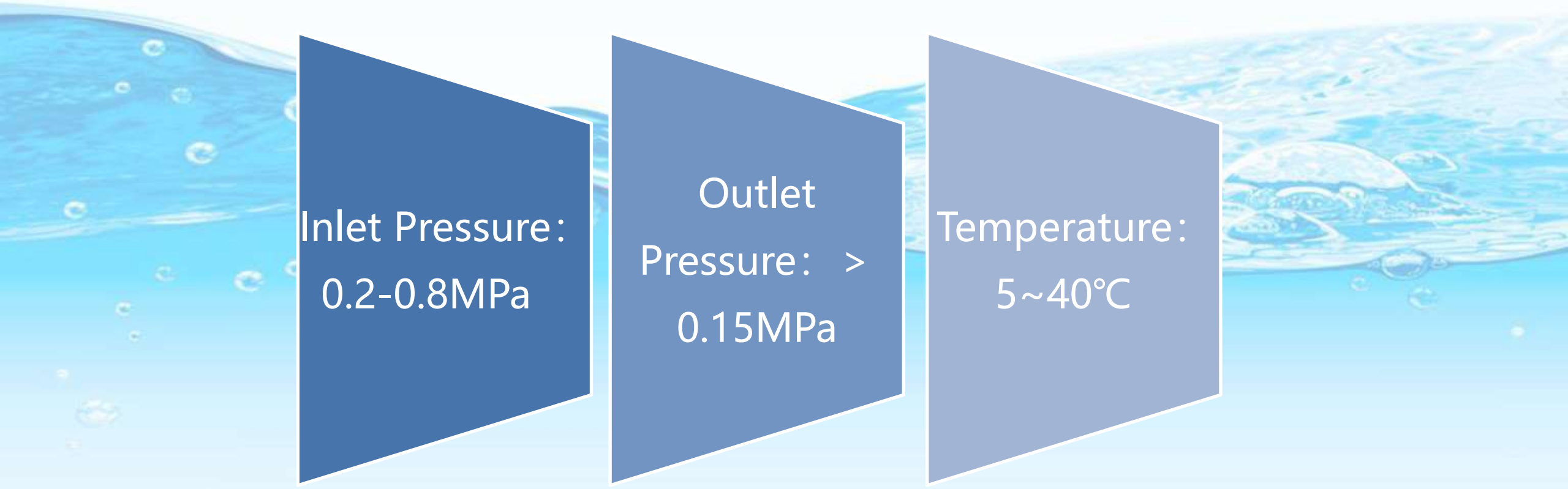
E1：Single Softener Valve (without bypass) /Master Valve in a Multi Softener System

E2: Auxiliary Valve in a Multi Softener System (Parallel running, regen in sequence)

Valve Flowrate: 3.0m³/h

L Type Softener Valve

Operation Condition: L-Type Non Powered Softener Valve



Installation Environment: L-Type Non Powered Softener Valve

Valve

Ensure the riser tube reaches the bottom of the FRP vessel. Trim the top of riser tube about 10mm from the vessel top opening

- Chamfer the top end of riser tube
- Ensure the correct valve model, FRP tank size and riser tube O-ring are selected
- Attach the riser tube to the valve, then tighten the valve to the FRP vessel
- Add isolation valves are at the inlet and outlet for easier troubleshooting and maintenance

Drain

- The drain piping should not less than 1/2“ diameter. Typical PE hose can be used. Overall length no more than 2.5 meter.
- Use sealing tape to attach the elbow connector to the drain port, then connect with the drain hose. Avoid bending of the hose. The hose is channeled to the drainage. Precaution must be taken to avoid reverse flow due to siphoning.

Brine Hose

Use sealing tape to attach the elbow connector to the Brine In port, then fasten the 10mm OD hose to the connector. Avoid bending of the hose.

- Brine valve with level control must be used.
- Ensure all connections are tightened and no leakage.

Single Softener System Start up: L-Type Non Powered Softener Valve

Verify
- Verify the plumbing connection
- Ensure valve at service position
- Brine tank is filled with salt & water

Fill up water
- Open inlet valve ~1/3 turn，outlet valve fully open. Fully open the inlet valve once water is produced
- Monitor the feed pressure≥0.2Mpa

Adjust pressure
- Adjust the outlet valve to keep outlet pressure between 0.15-0.5MPa，and achieve the rated flowrate

Regen
- Press the force regen knob，turn anticlockwise until the pointer reaches Brine in/Slow Rinse, then release. Regen starts
- Monitor the brine & drain flow

Brine refill
- After Brine in/Slow Rinse done, valve proceed to Fast Rinse。Water continue flow to drain and Refill the brine tank
- Refill automatic stop at preset level of the brine. Ensure the water level is correct

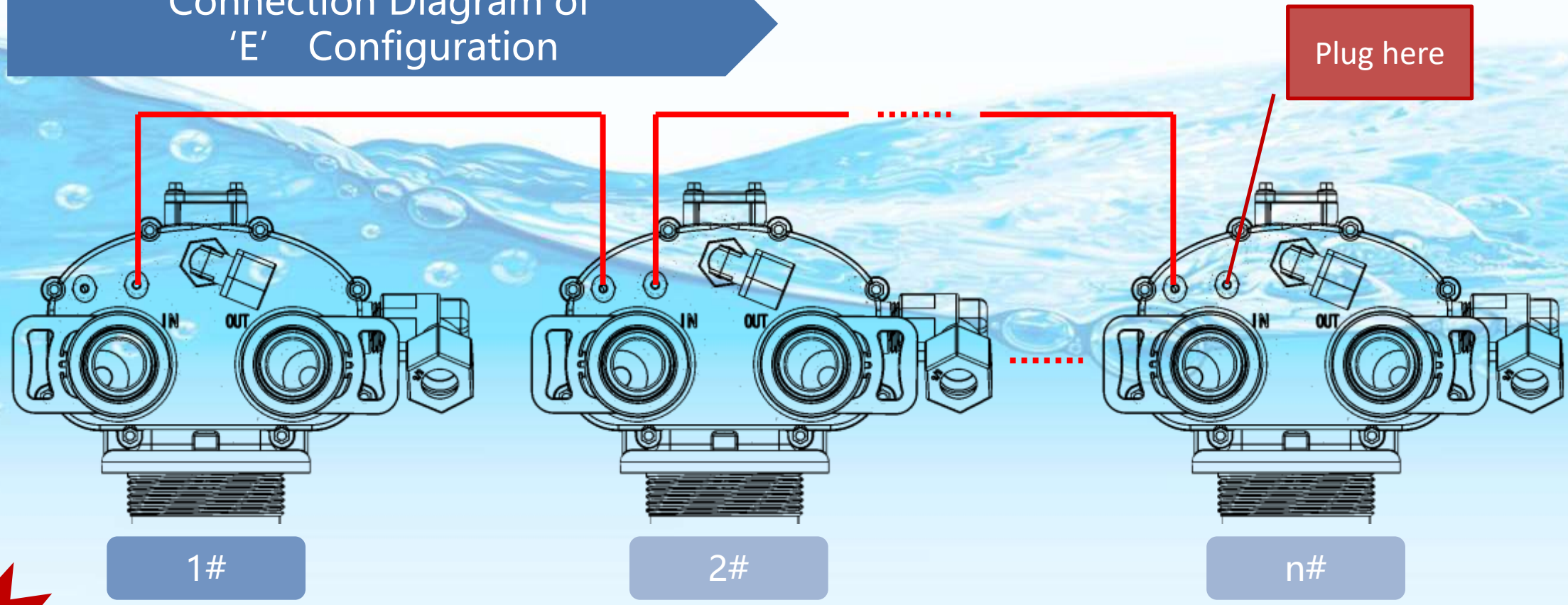
Service
- After refill complete, the valve proceed to automatic service

Notes

1. Recommended to perform ‘double regen’ for new resin
2. Regularly top up large salt tablets to brine tank. Never use fine salt to avoid clumping

Regeneration: L-Type Non Powered Softener Valve

Connection Diagram of 'E' Configuration

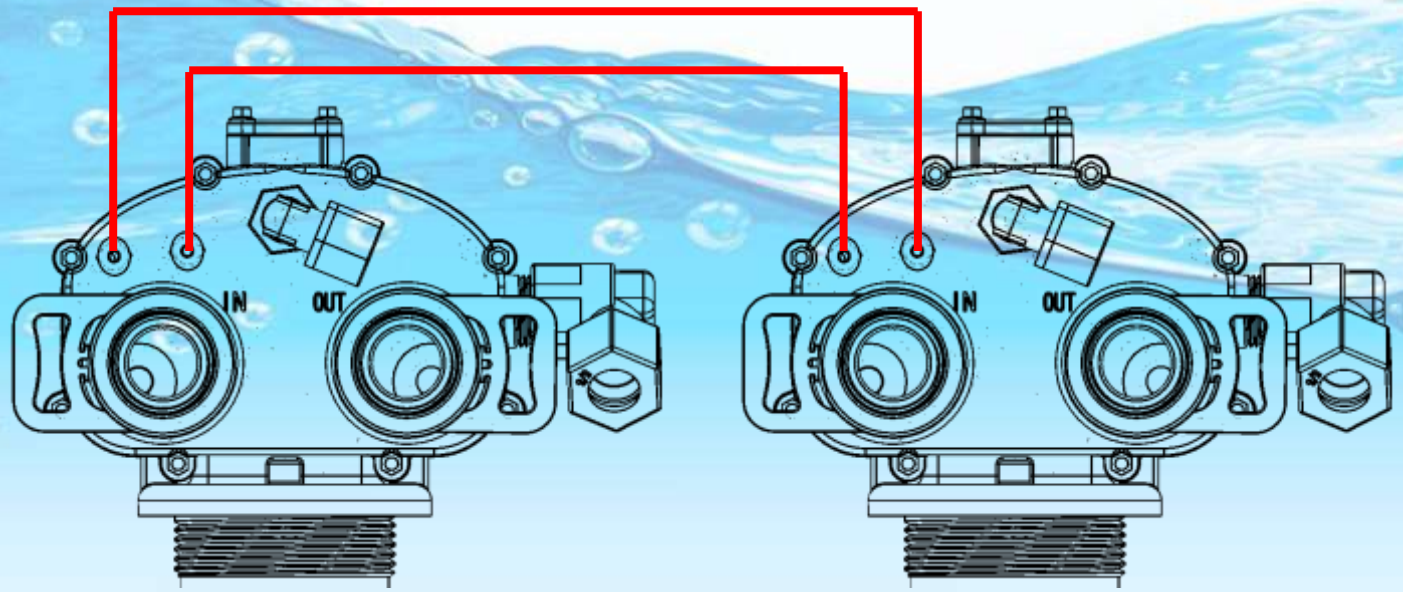


Notes

1. #1 is the master valve, with water outlet and regen mechanism built-in
2. When force regen the master valve, the auxiliary valves will follow regen in sequence. To regen a specify valve only, turn off the isolation manual valve of the JKLM valve located behind

Regeneration: L-Type Non Powered Softener Valve

Connection Diagram of ‘D’ Configuration



1#

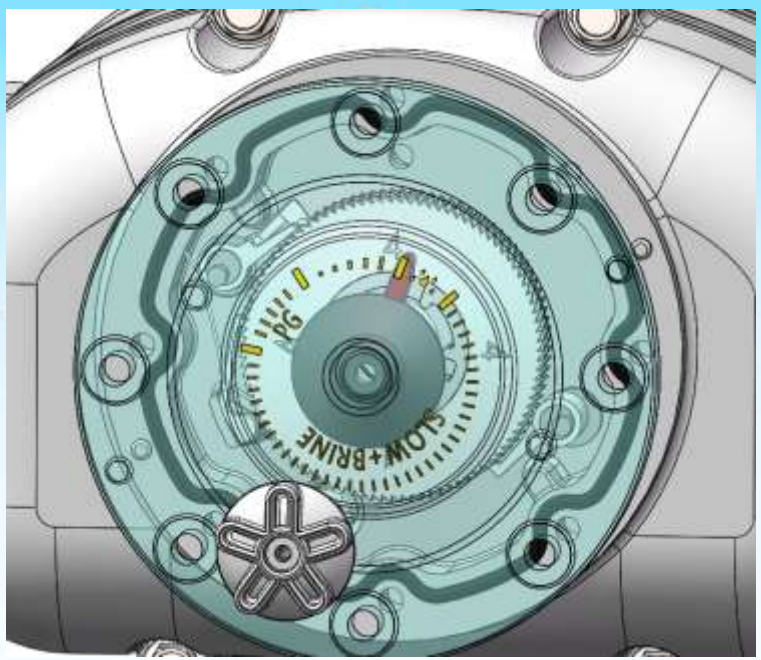
2#

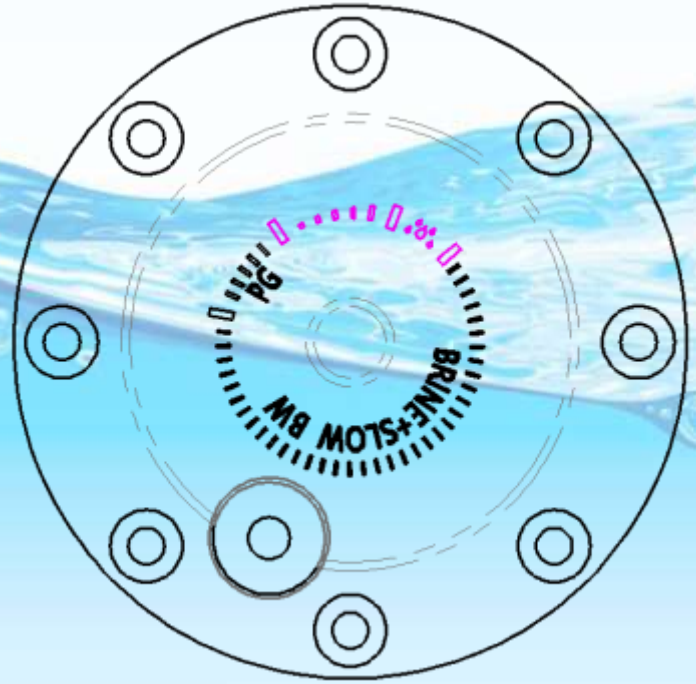
Notes

After force regen each softener, , one of the valve must be adjusted to service position, with another valve adjusted to standby initial position. This is to prevent interlocking failure between the valves, consequently both remain in standby status

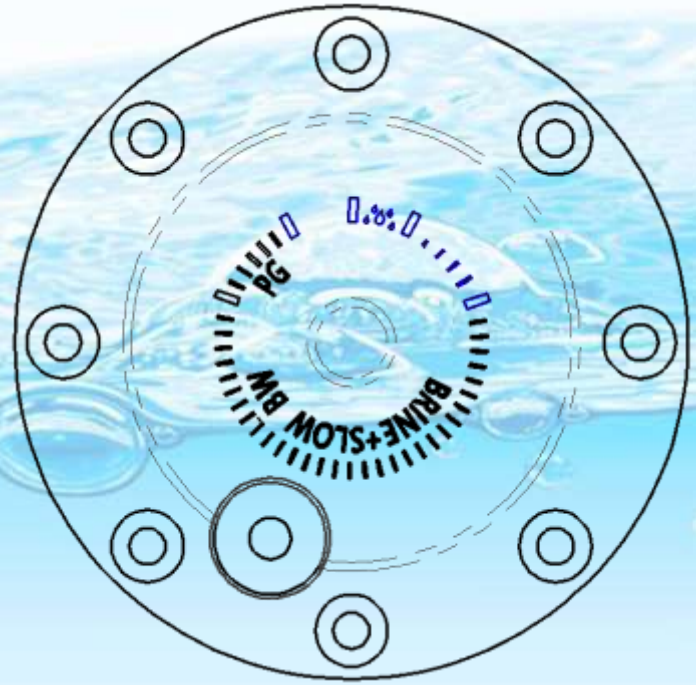
Work Flow: L-Type Non Powered Softener Valve

As the valve in operation, the pointer rotated clockwise, clearly indicated the current service and regen status。





Single Softener/
’E’ Configuration



‘D’ Configuration

Work Flow: L-Type Non Powered Softener Valve

Single Tank with bypass

Service

Brine in + Slow Rinse

(Bypass Valve Open)

Fast Rinse + Brine Refill

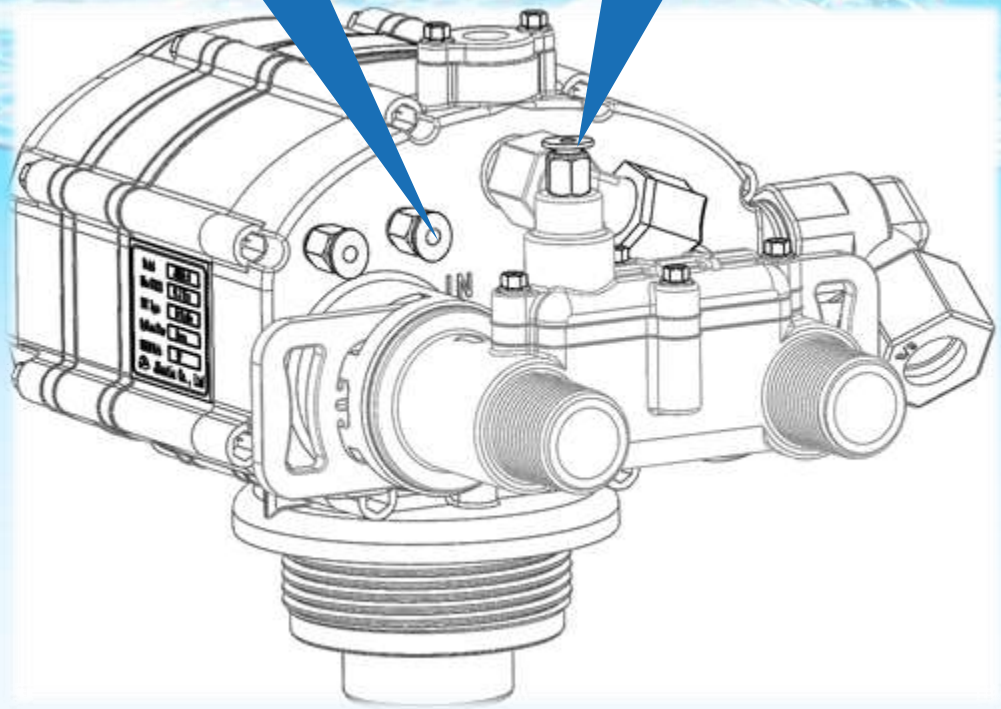
(Bypass Valve Open)

Service + Brine Refill

(Bypass Valve Open)

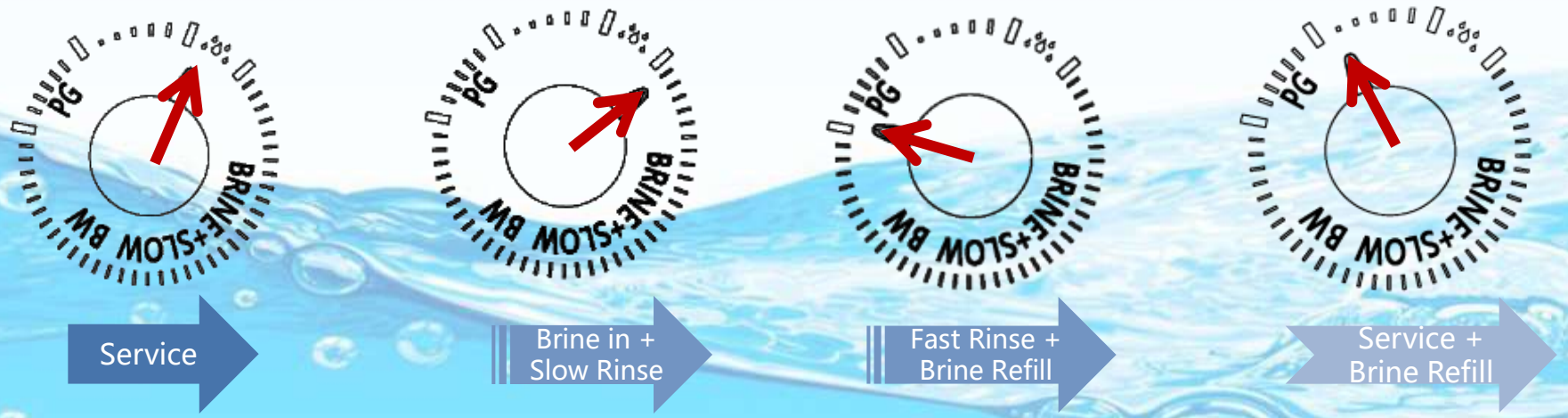
Regen Output φ4

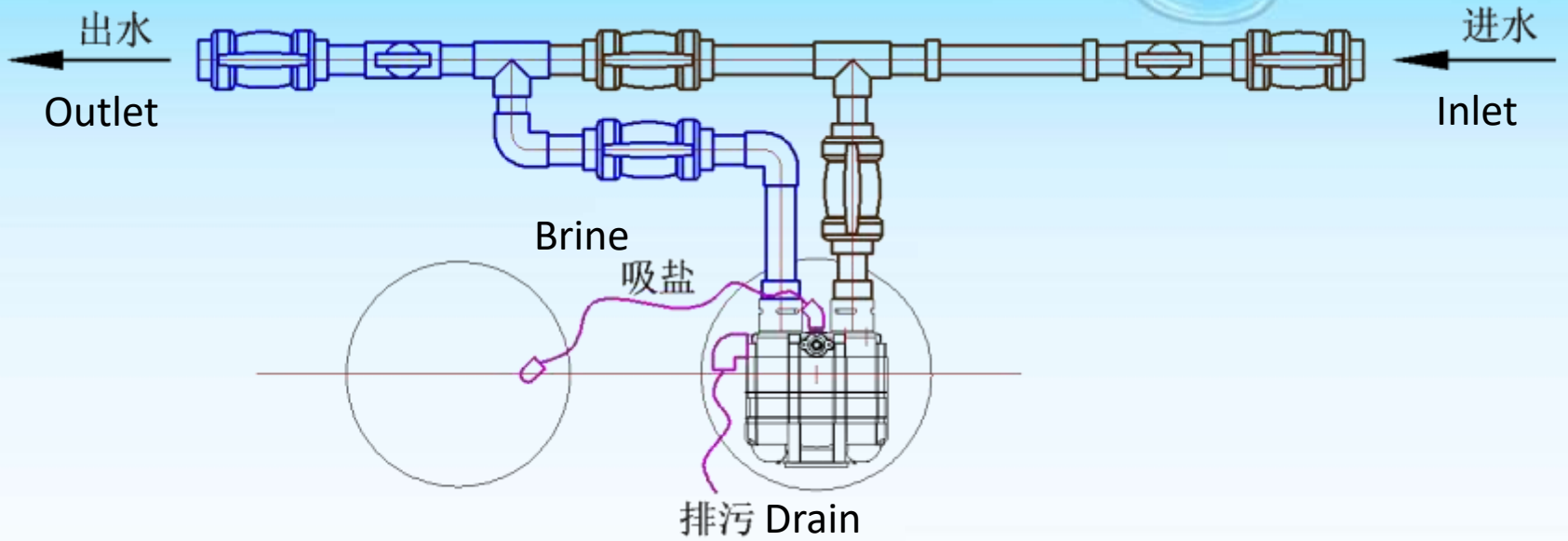
To Bypass Valve φ4



Work Flow: L-Type Non Powered Softener Valve

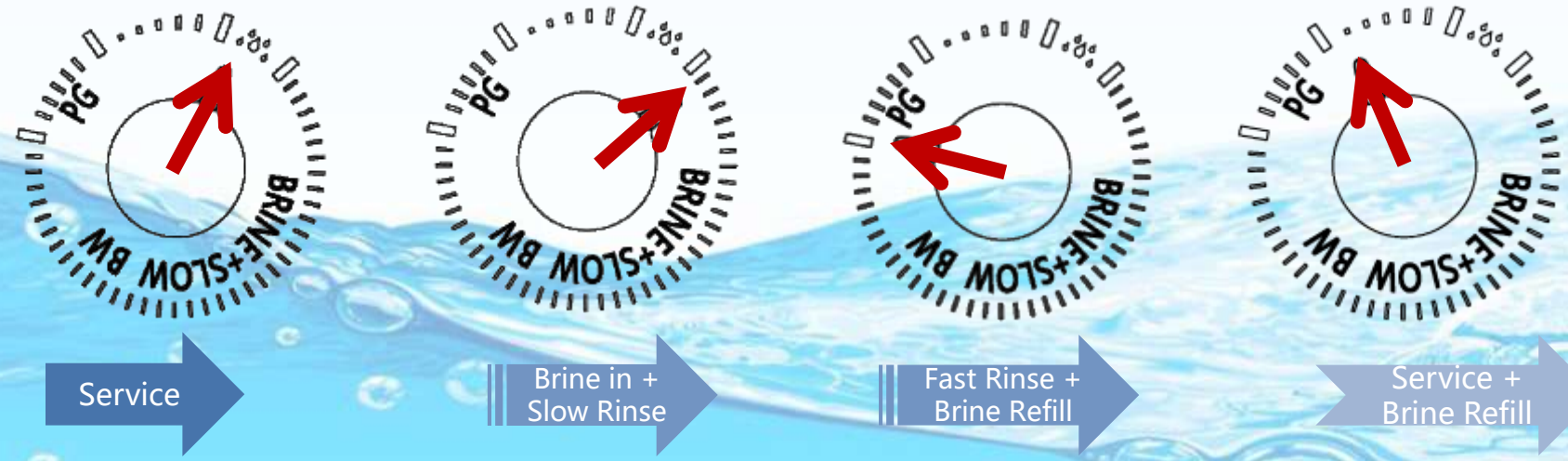
Single Tank-Without Bypass

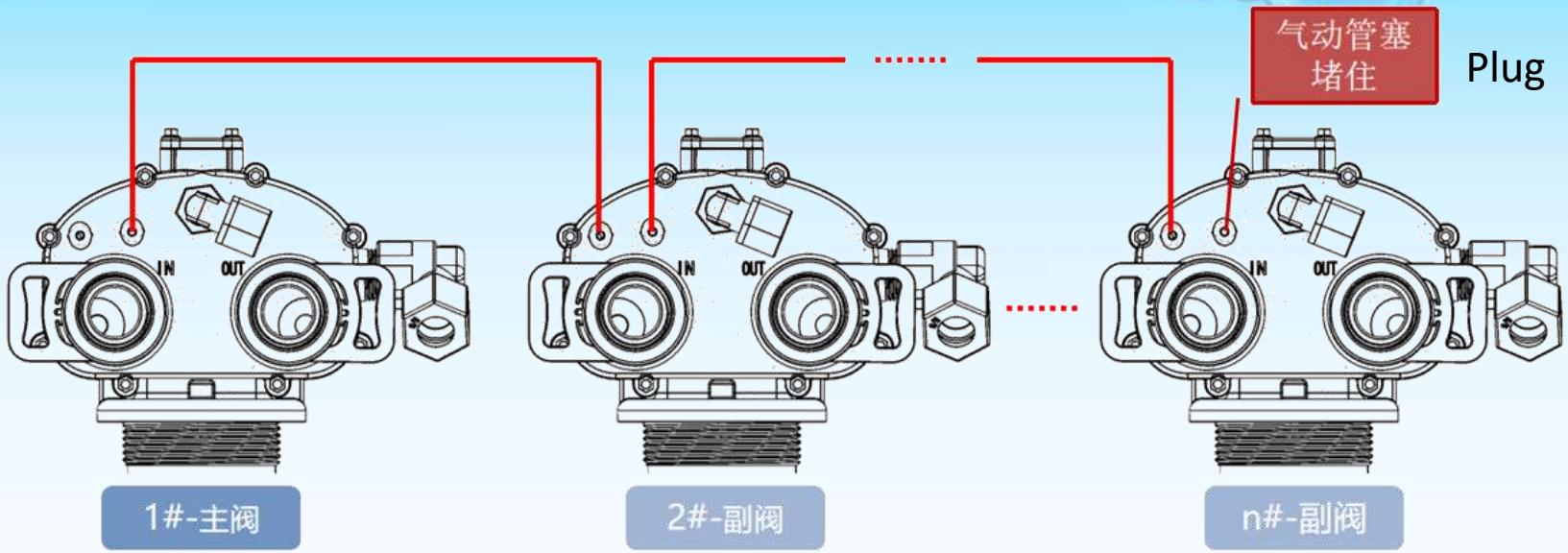




Work Flow: L-Type Non Powered Softener Valve

'E' Configuration





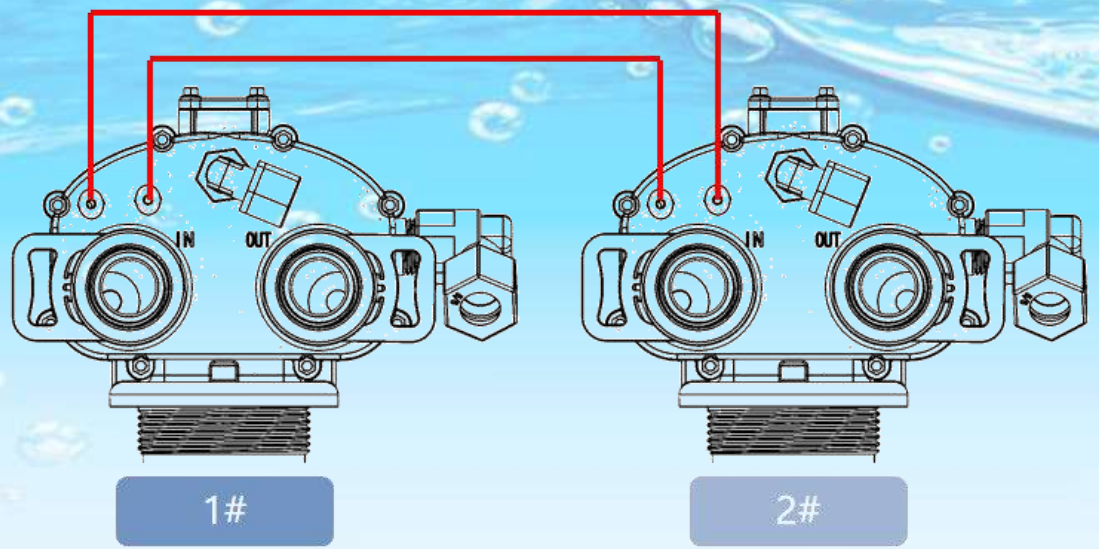
#1 Main Valve

#2 Auxiliary Valve

#n Auxiliary Valve

Work Flow: L-Type Non Powered Softener Valve

‘D’
Configuration



Service

Service +
Regen Signal out

Brine in +
Slow Rinse

Fast Rinse+
Brine Refill

Standby

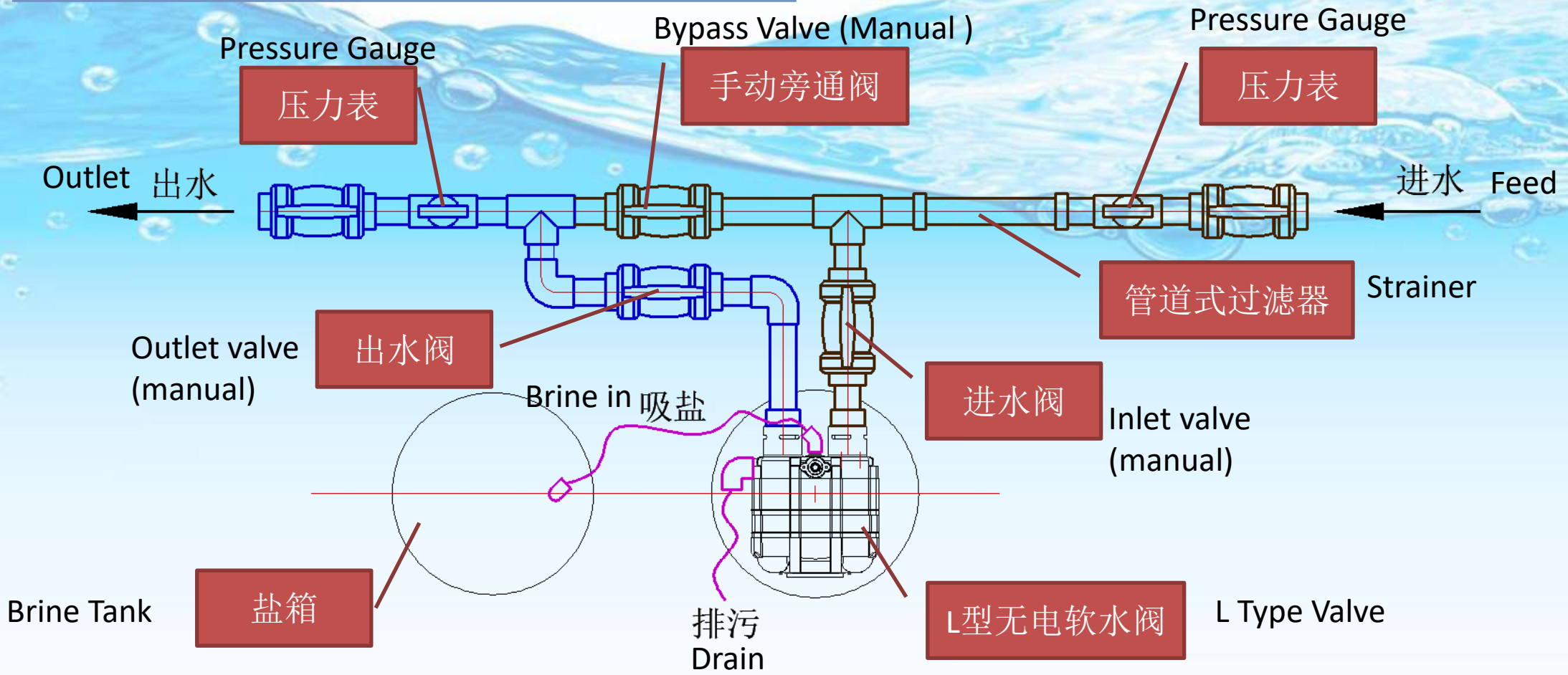
Standby + Service
Signal in+Refill

02

Application of L-Type Valve

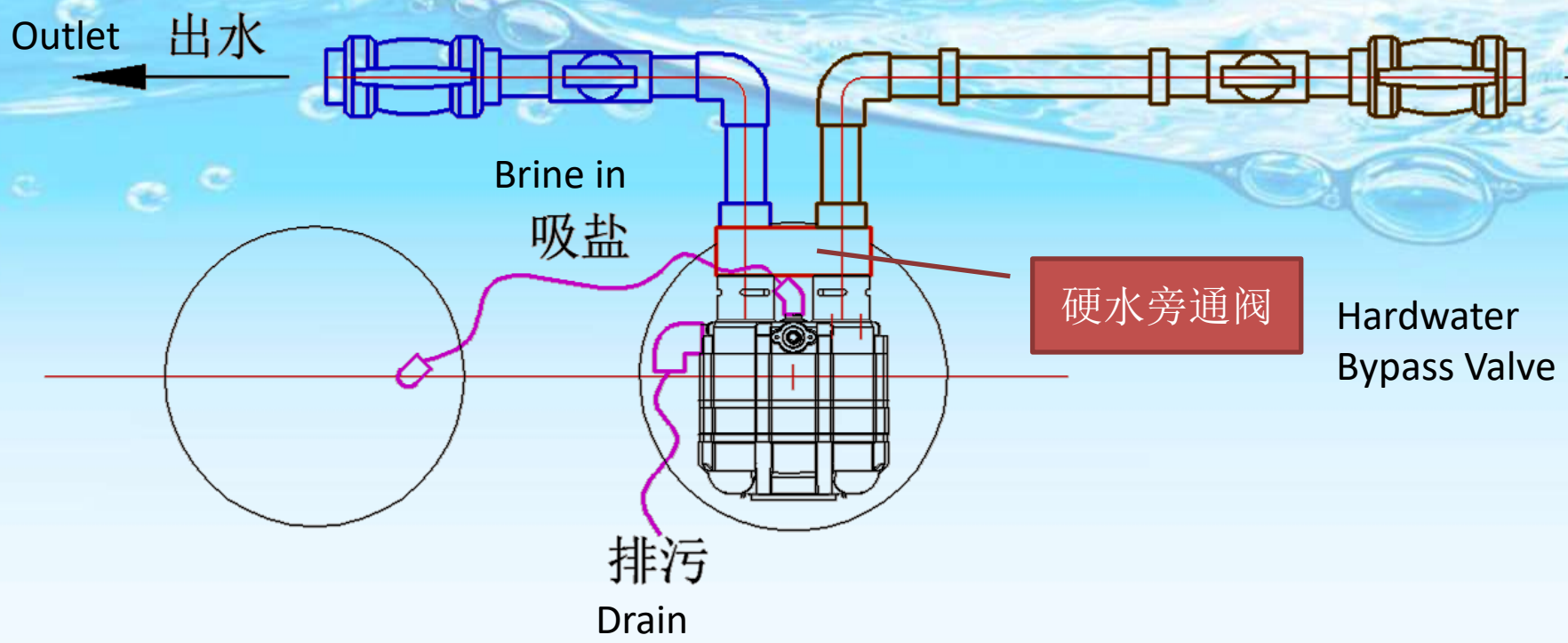
Application: L-Type Non Powered Softener Valve

JKLMQ-3-YD
Single Valve without bypass



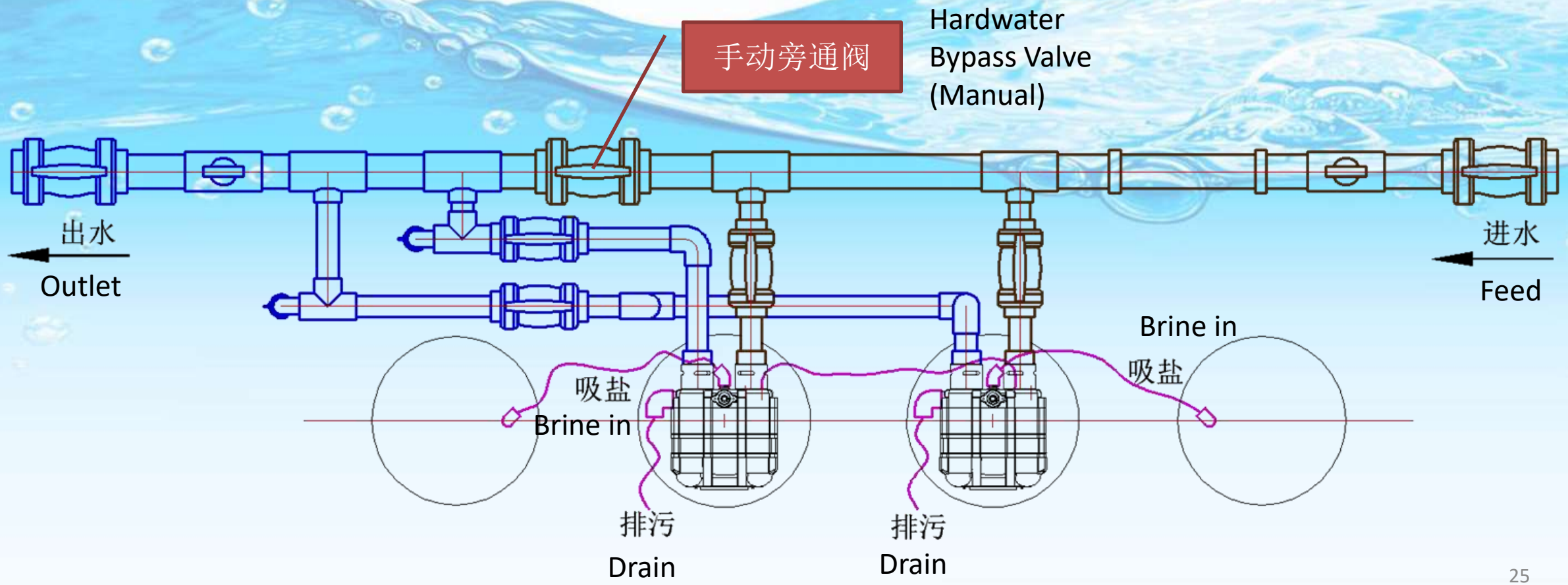
Application: L-Type Non Powered Softener Valve

JKLMQ-3-YD-P,
Single Valve with Bypass



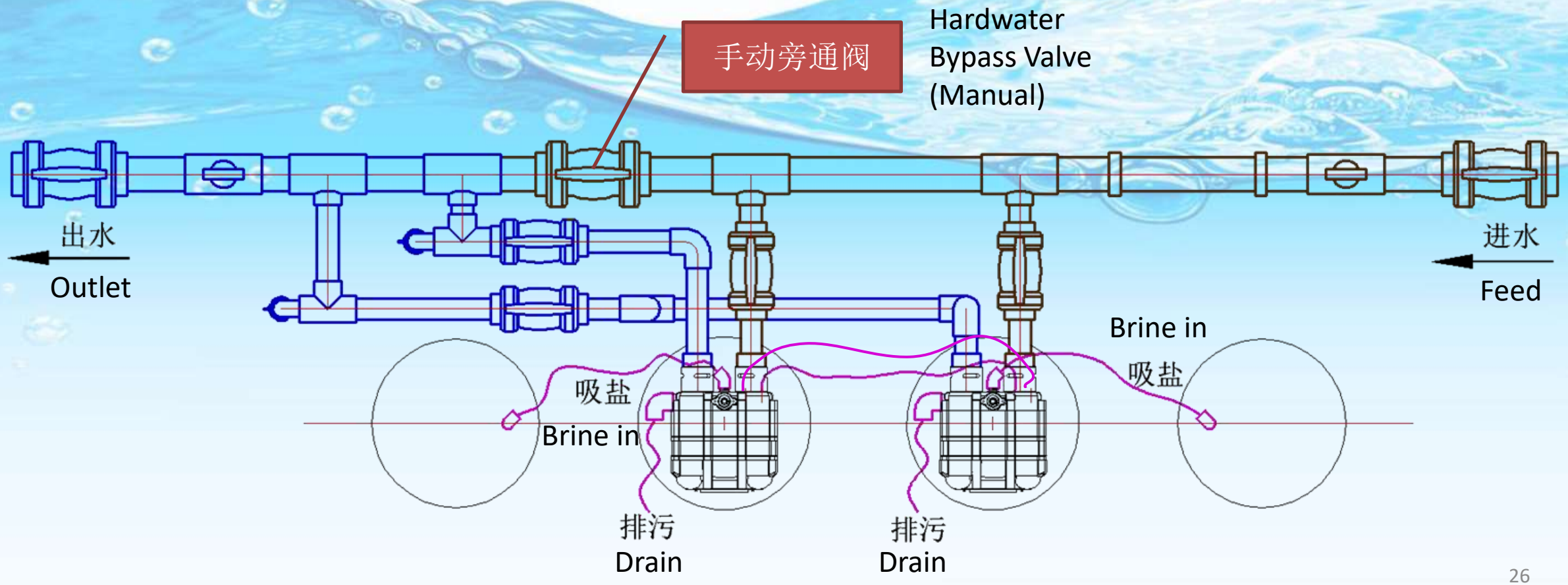
Application: L-Type Non Powered Softener Valve

JKLME-6-YD
Double Softener (Parallel Service)



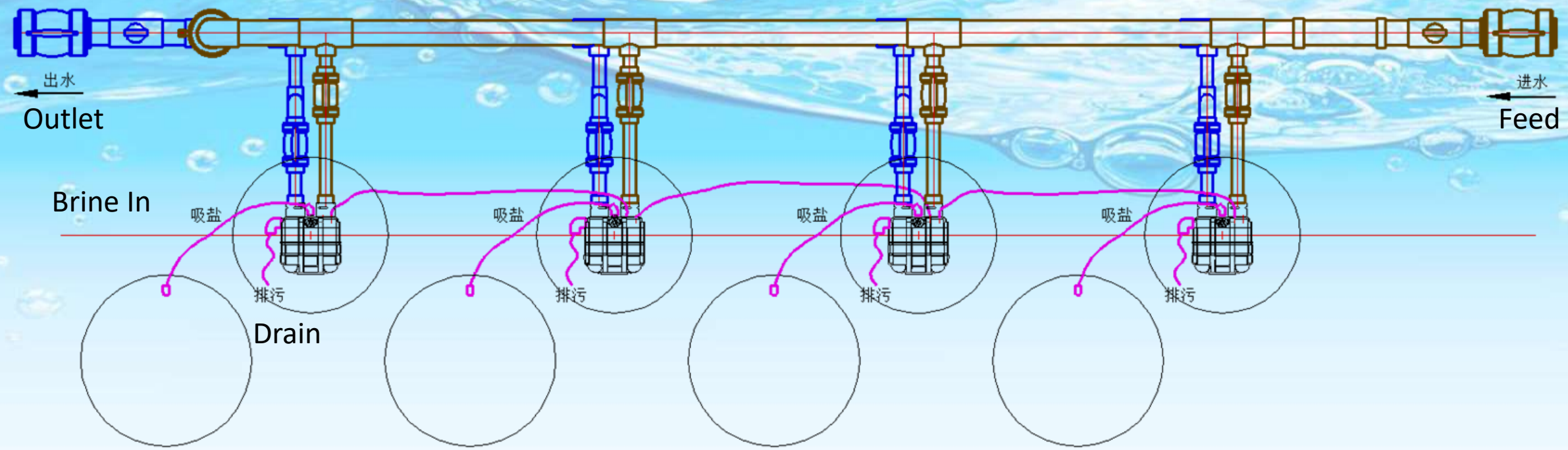
Application: L-Type Non Powered Softener Valve

JKLMD-4-YD
Double Softener (1 Duty 1 Standby)



Application: L-Type Non Powered Softener Valve

JKLME-16-YD
Four Softener (Parallel Service)



G-Type Non-Powered Filter Valve

北京康洁之晨水处理技术有限公司

www.kangjiezc.com

Working Principle: G-Type Non Powered Filter Valve

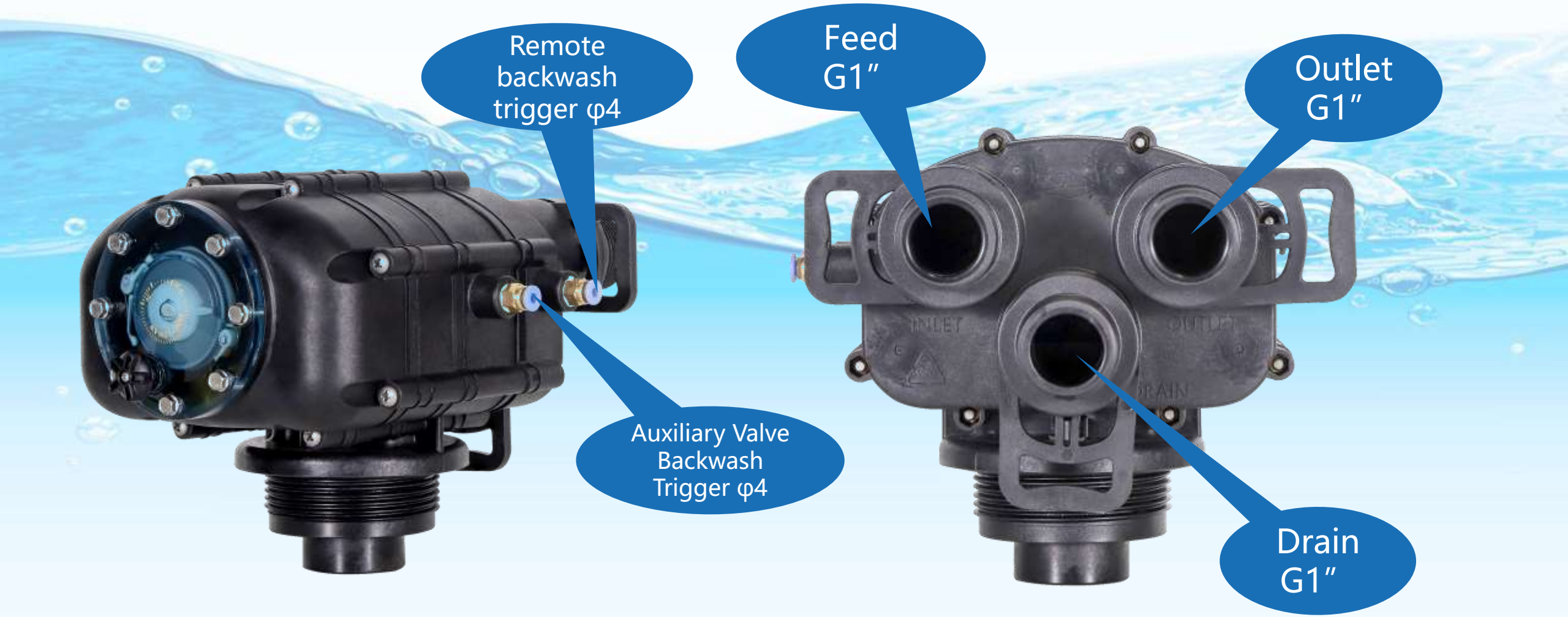
The two turbines inside the valve are driven by the water flow, which in turn drives two sets of gears for the automatic control of water metering and backwashing processes. The internal pistons are driven by the accumulated amount of water that has passed through the valve, which in turn allow the filter operates automatically through a Service, Backwash, and Rinse cycles.

Power：No electric power required. Need only feedwater pressure

Operation Modes：Single Filter/Valve, Interlink (‘E’ Configuration) Multiple Filters/Valve operate parallelly, and backwash in sequence

By replace the water meter dial，it can be adjusted to 8 types of water production volume，in order to adapt the different feedwater turbidity

Apperance: G-Type Non Powered Filter Valve



Basic Specs: G-Type Non Powered Filter Valve

Valve Body	:	Noryl
Tank Connection	:	2.5” NPSM
Riser Tube	:	OD 32mm
In/Out/Drain	:	G1”
Valve Dimension	:	L×W×H
		240×210×176mm
Weight	:	1.8Kg

Technical Parameter: G-Type Non Powered Filter Valve

Valve Model	G60	G61	G70	G71
Backwash Duration	5min		15min	
Rated Flowrate	0.5-2.0m³/h			

Valve Model		G60/70（Good Water Quality）	G61/71（Bad water quality）
Water produced per cycle	#1 Water meter dial	12m³	24m³
	#2 Water meter dial	6m³	12m³
	#3 Water meter dial	4m³	8m³
	#4 Water meter dial	3m³	6m³
	#6 Water meter dial	2m³	4m³
	#8 Water meter dial	1.5m³	3m³

Choose G6/7 Series by required Backwash Duration

Choose Water Meter Dial by the Feedwater Quality and total volume per cycle

Recommended Backwash Flow（12L/m².s）	
Tank Size	Backwash Flow（m³/h）
7”	≥1.0
8”	≥1.3
10”	≥2.0

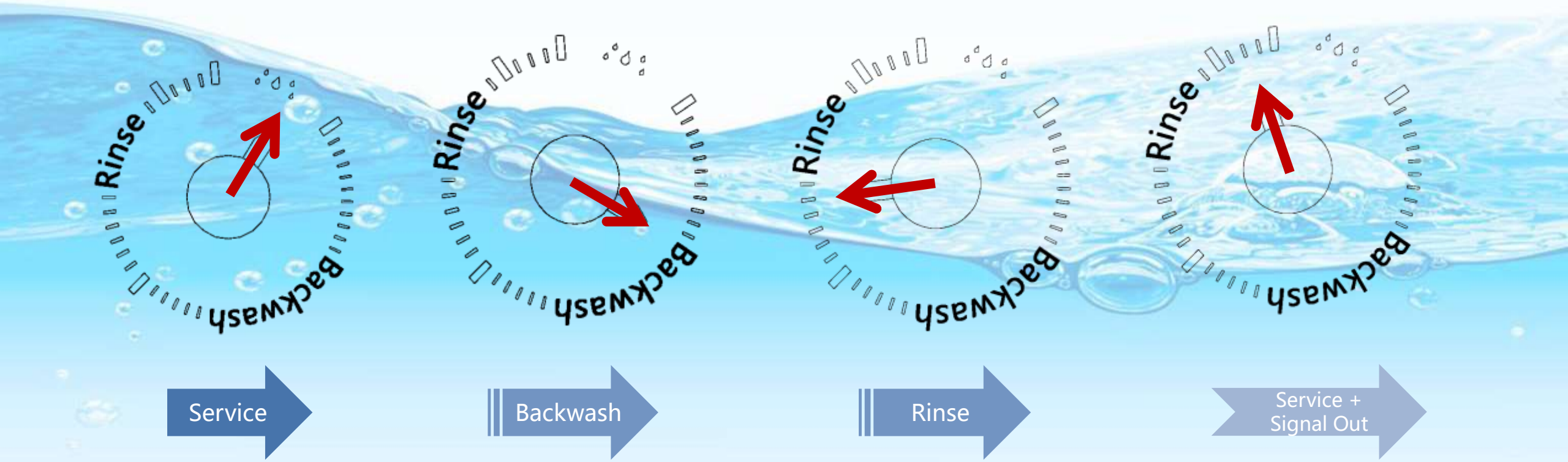
‘E’ Configuration : G-Type Non Powered Filter Valve

Caution

1、#1 is the Main Valve，with built in water meter and backwash turbine，#2 and the rest are Auxiliary Valve，with built in backwash turbine only。

2、When forcing backwash Main Valve，the auxiliary valves also backwash follow sequence。To backwash a single filter only, turn off the isolation valve of the auxiliary valves behind it

Work Flow : G-Type Non Powered Filter Valve



Thank You