



## FULL OPEN STYLE SILENT CHECK VALVE

The silent check valve is applied on lift pipe or fluid pipe with pressure. The valve gate, with restoring force, will be closed at suitable speed when pump is shut down to separate the collision and noise between the inertia fluid (positive pressure) and the back flow (negative pressure) caused by power off.

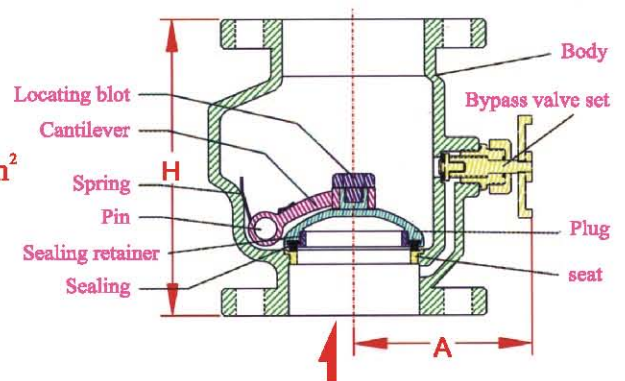
The silent check valve plays an important role on piping, especially applied on the outlet of the pump. The silent check valve applied on the outlet of the pump should be selected carefully, and it must be able to resist the highest pressure, the largest water hammer effect and the biggest fluid impact. If the silent check valve is not good enough, when silent check valve is damaged, it will cause the fluid flowing back and losing pressure or, more serious, the damaged parts will fall on the blades and damage the pump seriously and, hence, loses more money.

To avoid the defects mentioned above, our company manufacture a more practical and economical model, called

### " FULL OPEN STYLE SILENT CHECK VALVE"

#### Features:

- ▶ The design of the valve is full flow lift type and water flow does not directly push the valve gate. Hence, the valve can work for a long time and have huge flow rate.
- ▶ The design of plug is hang type and automatically locating. It can adjust the close position of the plug no matter high or low pressure.
- ▶ The design of sealing is "U" and it is suitable for high and/or low pressure condition. And the tightness of the valve gate is best.
- ▶ The design of plug is semi-round and can resist higher pressure.
- ▶ When the pressure is high, plug and seat work together to prevent the sealing from being pushed by the high pressure to lengthen the longevity of sealing.
- ▶ Test pressure : Stainless Steel : 35 kgf/cm<sup>2</sup> ;  
Ductile Iron : 35 kgf/cm<sup>2</sup> ; Cast Iron : 21 kgf/cm<sup>2</sup>
- ▶ Maximum applied pressure : Stainless Steel : 20 kgf/cm<sup>2</sup> ;  
Ductile Iron : 20 kgf/cm<sup>2</sup> ; Cast Iron : 16 kgf/cm<sup>2</sup>
- ▶ Applied temperature : -15~80°C
- ▶ Vertical and horizontal installation is acceptable.



(Flange End)

| Item No | Size | Connection type | H(mm) | A(mm)        | Weight (kg) | CV   |
|---------|------|-----------------|-------|--------------|-------------|------|
| CHF-50  | 2"   | Flange          | 183   | 122          | 9           | 180  |
| CHF-65  | 2.5" | Flange          | 200   | 132          | 12          | 270  |
| CHF-80  | 3"   | Flange          | 210   | 147          | 14          | 410  |
| CHF-100 | 4"   | Flange          | 220   | 160          | 16          | 720  |
| CHF-125 | 5"   | Flange          | 260   | 180          | 27          | 1050 |
| CHF-150 | 6"   | Flange          | 280   | 200          | 32          | 1615 |
| CHF-200 | 8"   | Flange          | 370   | Upon request | 61          | 2865 |
| CHF-250 | 10"  | Flange          | 450   | Upon request | 117         | 4025 |
| CHF-300 | 12"  | Flange          | 520   | Upon request | 138         | 5700 |

©The bypass valve set won't be attached if the diameter is larger than 6 inches.

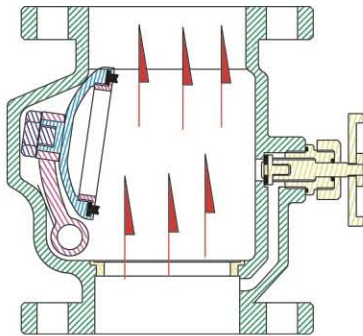
| Part Name        | Material        |                     |
|------------------|-----------------|---------------------|
| Body             | Cast Iron       | Stainless Steel 304 |
| Bypass valve set | Brass           | Stainless Steel 304 |
| Plug             | Brass           | Stainless Steel 304 |
| Seat             | Cast Iron       | Stainless Steel 304 |
| Locating bolt    | Brass           | Stainless Steel 304 |
| Cantilever       | Brass           | Stainless Steel 304 |
| Spring           | Stainless Steel | Stainless Steel 304 |
| Pin              | Stainless Steel | Stainless Steel 304 |
| Sealing retainer | Brass           | Stainless Steel 304 |
| Sealing          | NBR             | NBR                 |



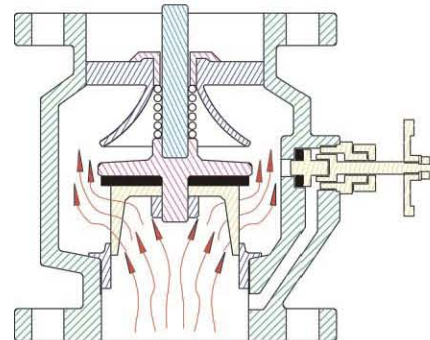
# IMPROVEMENT OF THE FLOW OF FULL OPEN STYLE SILENT CHECK VALVE

## The Improvement of Full Open Style Silent Check Valve on Flow Rate

The full open style silent check valve adapts the lift open style plug and the plug has hidden bypass design, which will bring the smallest flow resistance inside the valve body. When fluid flow through the valve, and hence, will reduce the loss of pump running effect and improve the power efficiency. Since that, the defects of traditional silent check valve, e.g. Many turning points, large resistance, not smooth flow way and fluid impact the valve directly and shorten the valve life, have been improved.

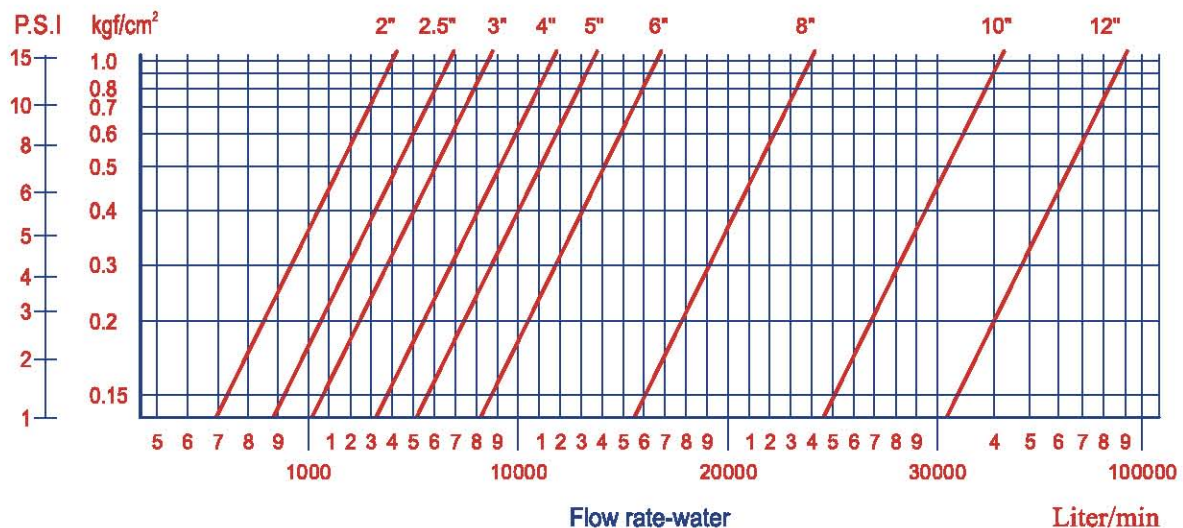


**Full Open Style Silent Check Valve**



**Traditional Silent Check Valve**

## Full Open Style Silent Check Valve Flow Chart



## The comparison of CV values between Full Open Style Silent Check Valve and Traditional Silent Valve

$$CV = \frac{Q}{\sqrt{\Delta P/S}}$$

Q=Rate of flow (GPM)

P=Pressure drop across valve (p.s.i)

S=Fluid density  
(1 Gallon=3.785 Liter)

|                       | 2"  | 2.5" | 3"  | 4"  | 5"   | 6"   | 8"   | 10"  | 12"  |
|-----------------------|-----|------|-----|-----|------|------|------|------|------|
| Z-Tide full open type | 180 | 270  | 410 | 720 | 1050 | 1615 | 2866 | 4025 | 5700 |
| Traditional type      | 70  | 105  | 155 | 275 | 435  | 625  | 1115 | 1770 | 2500 |