



# STAINLESS VALVE CO.

Tuesday, September 20, 2016

## Stargate O-Port-Valve® Big Screen™

If you have to stop production, take flanges loose, and replace screens, please consider our Big Screen™ below.

This is a screen, which can be replaced **without stopping production** just pressing a button.

The actuator moves the screens, bringing the one, which is to be exchanged, outside the screen body and at the same time the clean one into the flow area. While the one screen is outside the body it can be cleaned and prepared for the next exchange.

An example for the application of such a screen is the vent on the steaming vessel. In this case the Big Screen™ features for example a screen pattern of 1/4" diameter holes on a 1/2" square centerlines, the cut rings, which shear the protruding fibers from the screen surface, glass filled PTFE screen guides, expanded PTFE rope packing, a long 14" face to face dimension with an optional "man-hole" for removing any fiber accumulation in front of the screen, if after several screen exchanges fibers should have accumulated in the screen body, and an actuator with 8000 lbs. of force for a 12" screen.

Another option is a feature of the Big Screen™, which allows any accumulation of fines (smaller than the screen opening size) above the horizontal screen blade to be returned to the space below the screen when screens are exchanged.

For other applications different screen sizes (2" to 72" diameter) with different hole sizes, different spacing and different face to face dimensions can be selected.

There are other possible applications like a back up screen behind the rotary screen for the recovery boiler, reducing possible plugging of the heat exchangers and burners.

**Please call us about your removable screen needs.**

P.S. **The Big Screen™ is part of the SVC product family, i.e. Big Blow™, Big Cap™, Big Knife™, Big Wafer™, and Stargate O-Port-Valve®.**

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**STAINLESS VALVE CO. Inc. - Division of B+E Manufacturing Co. Inc.**

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Our company is certified ISO9001:2008 / Certificate No.: CERT-009075

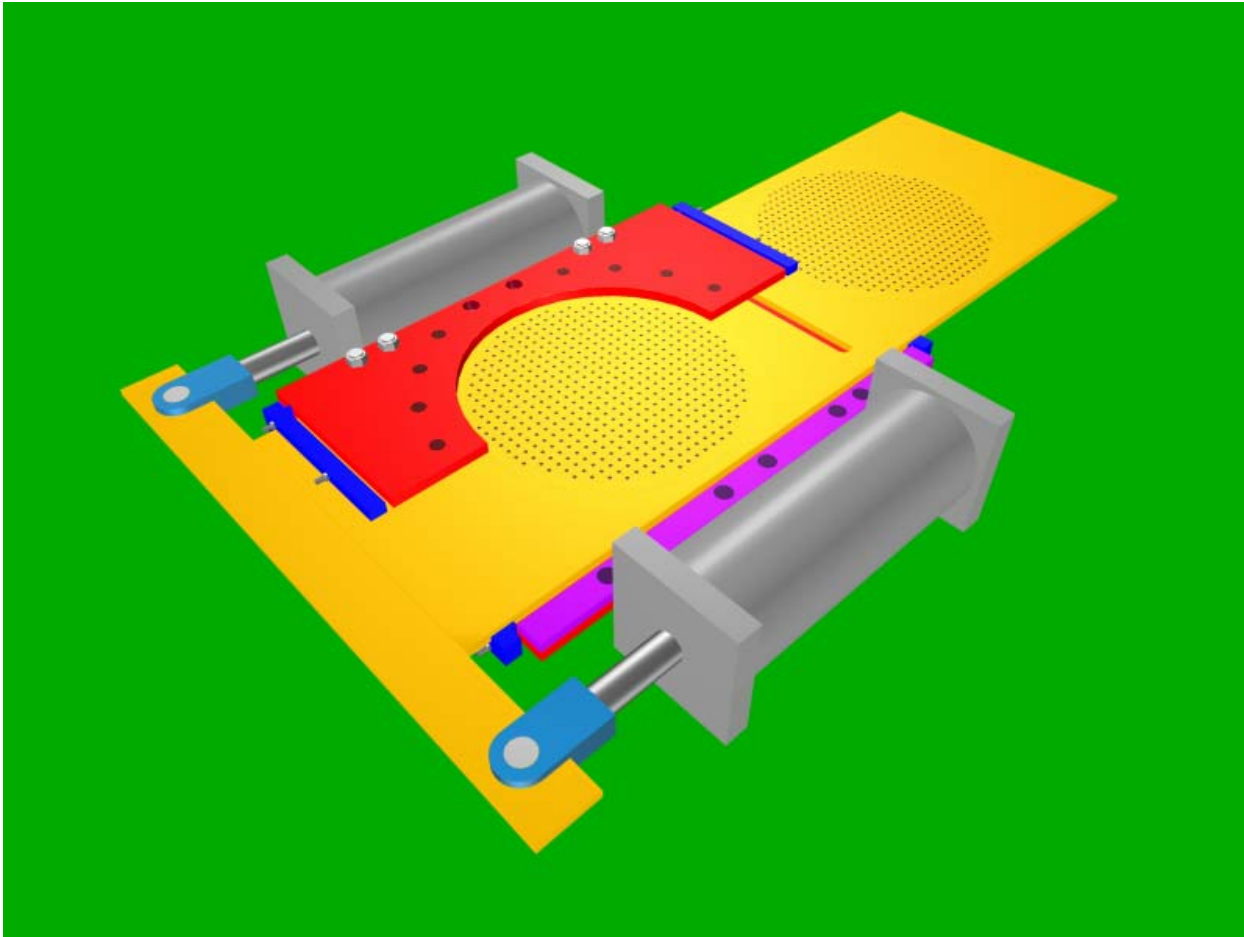






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## Big Screen™ with backflow cleaning

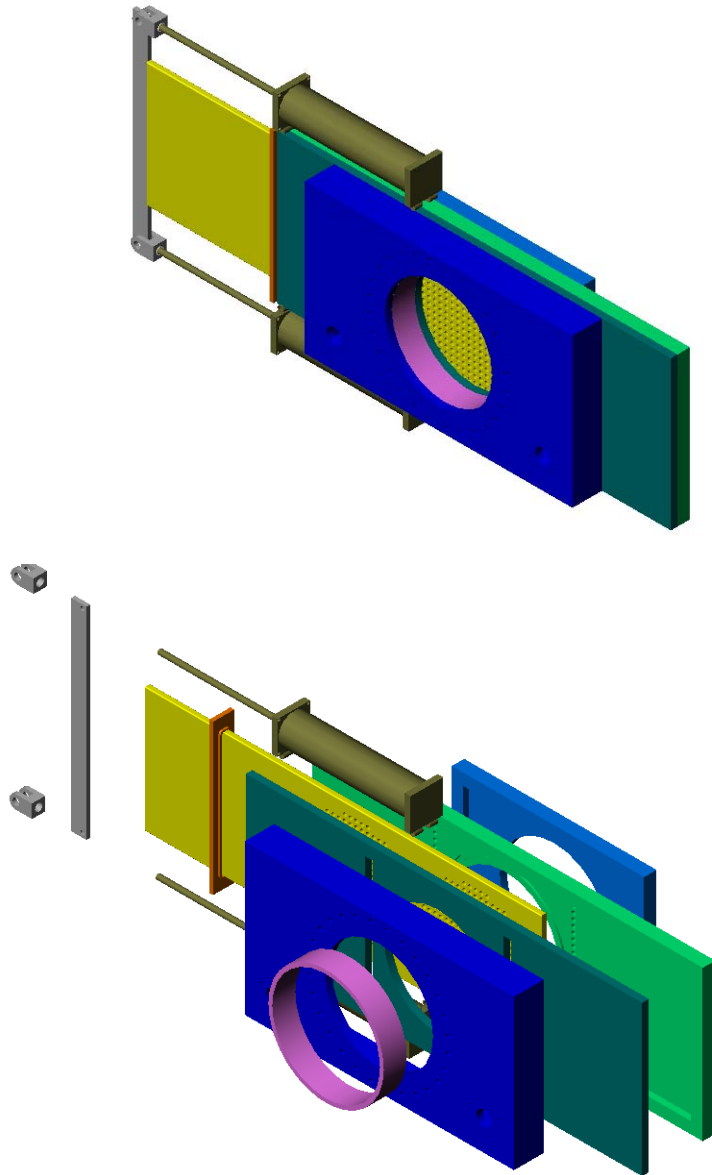
1. This Big Screen™ is designed in a 30" diameter, so that the flow cross section of a 24" pipe will correspond reasonably well with the flow cross section through the Big Screen openings.
2. The blade has two sets of 1" openings. They are recessed, an 80 mesh screen is placed in the recess and another support plate with the 1" openings is mounted on top. This allows changing of screen mesh size.
3. The blade moves between two side plates, SP1 (darker green) and SP2 (lighter green). Both side plates have seats, which have to seal against the blade and have to guide the blade.
4. On the SP2 there is another side plate mounted, the SP4, (light blue). The downstream pipe flange is mounted against this side plate.
5. The void between SP2 and SP4 allows the filtered water to flow back through the two sets of holes in the SP2.
6. On the SP1 there is another side plate mounted, the SP3, (dark blue). The upstream pipe flange is mounted against this side plate.
7. Water flowing back from the sets of holes in SP2 through the screen openings to be cleaned passes through the two openings in SP1 and gets into the void between SP1 and SP3.
8. Two 4" pipes can be connected to the two openings in the SP3 to pipe the dirty back flow water out. The expected particle size to be back-flushed is less than 1" diameter for this example.
9. The short piece of pipe separates the incoming water from the back-flushed water.
10. The two 4" outlet pipes can be joined into one line. A back flushing valve has to be set in this line. When back-flushing is required this valve has to be opened.
11. The back flushing is carried out during the time in which the blade is moved from one to the other position.
12. The holes in the SP1 act as nozzles and spray through the openings in the blade to flush material back.
13. The switching of the blade positions should be done slowly, about 45 s for the 31" stroke of the blade. Flow control valves on the solenoid controlling the actuators provide this speed control.
14. The back flushing valve should be interlocked to the solenoid valve: When the solenoid valve is opened in one or the other direction the back flush valve is opened at the same time. And closed when the solenoid valve is de-energized.





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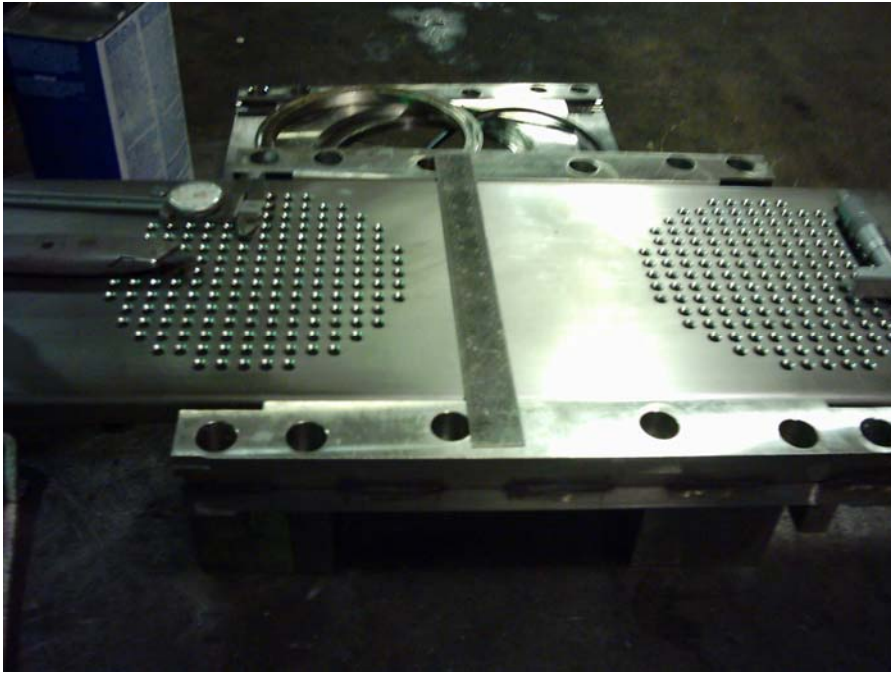
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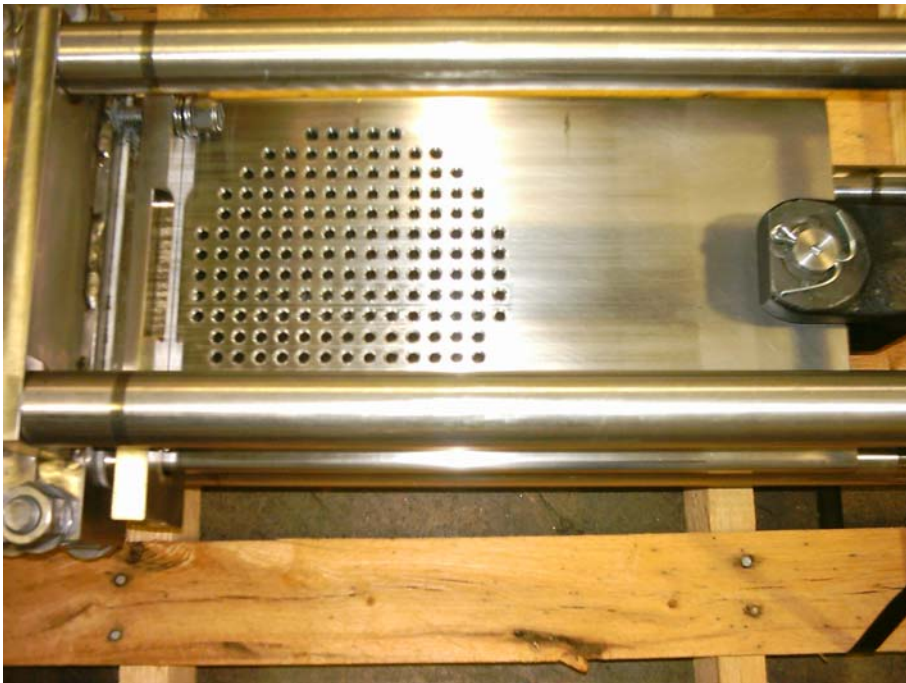


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8" Big Screen™, open



8" Big Screen™, assembled, blade area

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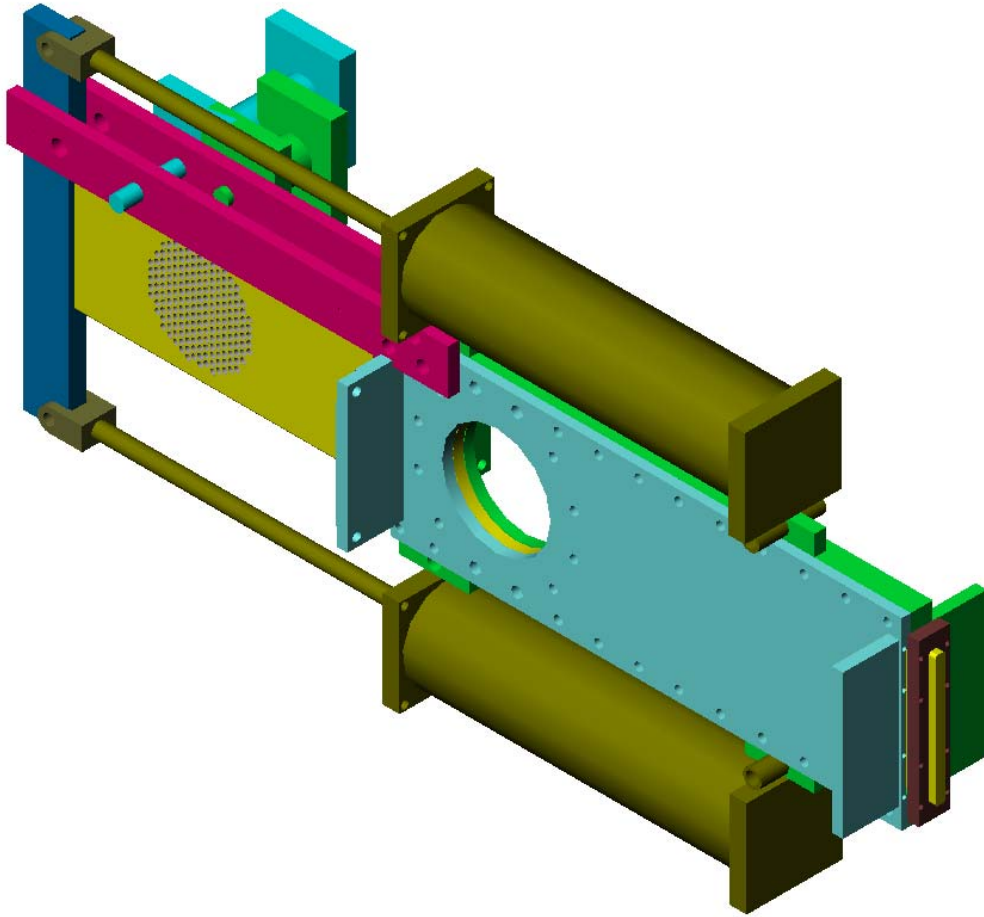
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## 10" Big Screen™/valve combination

Stargate O-Port-Valve® Big Screen™ valves for use as **combination of screen and valve with class VI shut-off for pressure and vacuum** as follows:

Stargate O-Port-Valve® Big Screen™ Valve Model # 10237a304

Description: 10" diameter Stargate O-Port-Valve® Big Screen™  
150 # service flange drilling, Temperatures up to 450 deg F.  
Face to face dimension 2.75".



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Stainless Steel 304L for all parts in contact with the flow media; also fasteners, pushers and tie bars in stainless steel.

Pneumatic actuator type PA2, epoxy-painted, for 60 psi minimum air pressure, stainless steel rod (X5CrNiCuNb17-4-4, 1.4548), in line with the long valve axis. Maximum air pressure 250 psi, maximum hydraulic pressure 720 psi.

Glass filled PTFE double seats for tight shut off in both directions. The blades are guided in solid PTFE guides at both ends of the valves in the packing glands, sealed with graphite filled expanded PTFE packing material.

SVC locking device LC for locking in the closed position and limit switches LS.

Valve weight approx. 1500lb.

The valve will have the 4 cylinders piped to the 3 solenoid valves. All cylinders have integrated limit switches. The customer will program his control system for proper setting of stops when actuating the valve. The logic is as follows:

The valve actuators will work in conjunction with a single coil solenoid valve S1. There are two more solenoid valves S2 and S3 for the locking cylinders.

1. When S1 and S2 are energized the actuators will bring the blade to the position in which the screen is in line.
2. When the valve has to close first S2 is de-energized to extend the lock of the blue locking cylinder, the S1 is de-energized and the valve closes stopping in the right position with the crossbar against the blue locking pin.
3. When now the blue locking pin is pulled back, the valve will go to the discharge position.
4. When the valve has to close from the discharge position, S3 is energized, which brings the green locking pin into extended position. And then S1 is energized so that the valve closes, now pushing against the green locking pin.
5. When now the green locking pin is pulled back the valve goes again into the screen position.

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