



STAINLESS VALVE CO.

Div. of **B+E** Manufacturing Co. Inc.

September 2002

Stargate-O-Port-Valve[®]

Sand Cleaner Valve

Outlast the Pocket Ball Valve

This is a study to develop a safe valve for the "Sand Valve" application. In consideration are the safety aspect that under no circumstances the pressure from the inside of the continuous digester can escape through the valve and improving mean time between refurbishment relative to the typically used pocket ball valves.

SVC designed a solution that is, in brief, described below. For the valve we consider a face to face dimension of an 8" 300# ball valve of 16.5".

The valve model has a high blade with a cylindrical chamber of 7.7" diameter. This chamber is either in line with the digester flange for accumulation of sand (A, side view) or moved over by the actuator to a position over an outlet hole (B bottom view, C side view, D Top view).

The volume available for accumulation of sand is 680in³. Two injectors wash out the accumulated sand at the end of each cycle. The takeout dimension, and thus the accumulation volume for each cycle, may be adjusted based on the available space envelope.

With the increased usable volume of the blade in comparison with the small pocket in the pocket ball valve, the actuation frequency is reduced significantly and in this way increase the time between refurbishments of the valve. A valve that must actuate only twice in a 24 hour period vs. a valve that must actuate every several minutes will experience considerably less wear and have a long service life between required refurbishments.



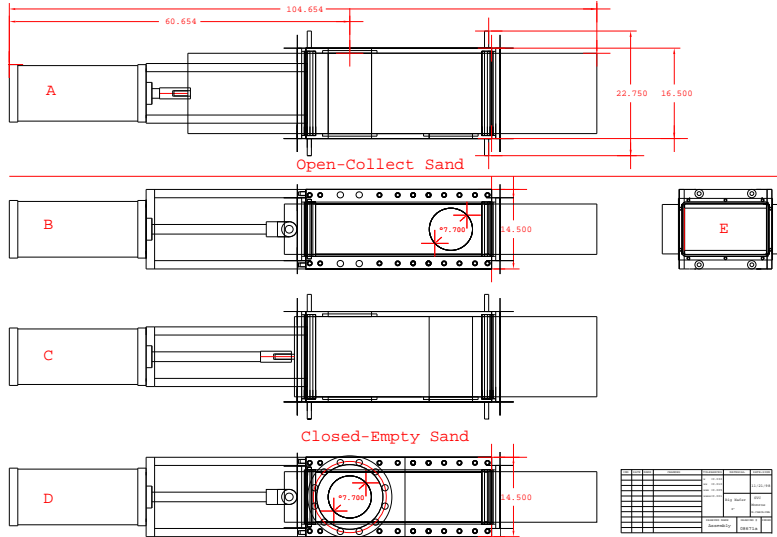


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Below the line drawing there is some additional information on two ways of designing the sand separator valve with the in and outlet in line or offset. Also in that design a pneumatic scraper is used instead of the flushing with weak black liquor.

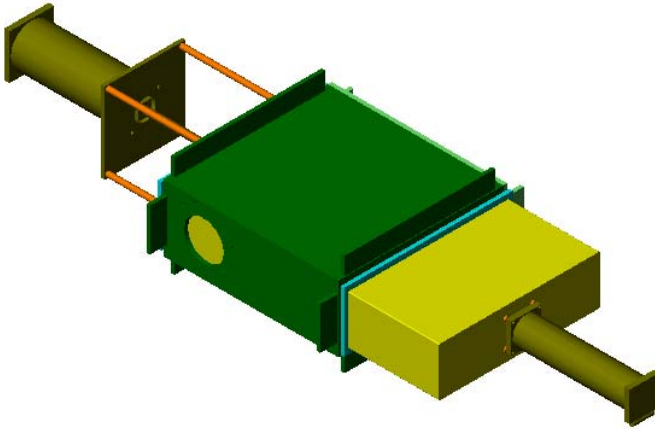




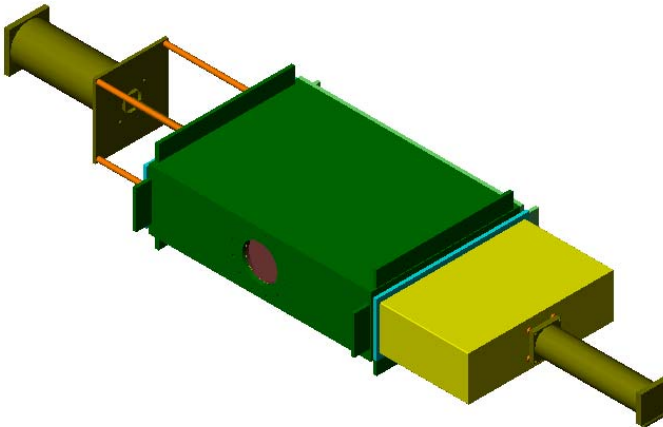
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Closed position to evacuate sand



Open position for sand collection

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Our company is certified ISO9001:2015 / Certificate No.: CERT-0124291