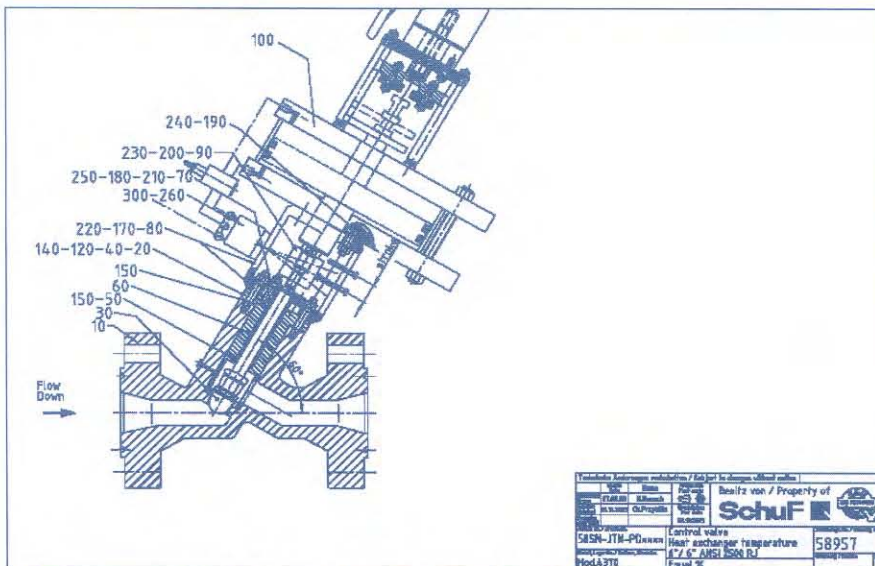


74CS (here with cage)

74BS (here with 3 stage)

Valve Tag	Valve Type	Drawing	Media	delta P	Temp	Service
HV9101	74CS Cage plug	58746	Hydrogen	160	130	Emergency venting to flare
LV9104A/B	74BS 3stage plug	58959	Product Oil	160	120	Let down service

B. Heat Exchanger

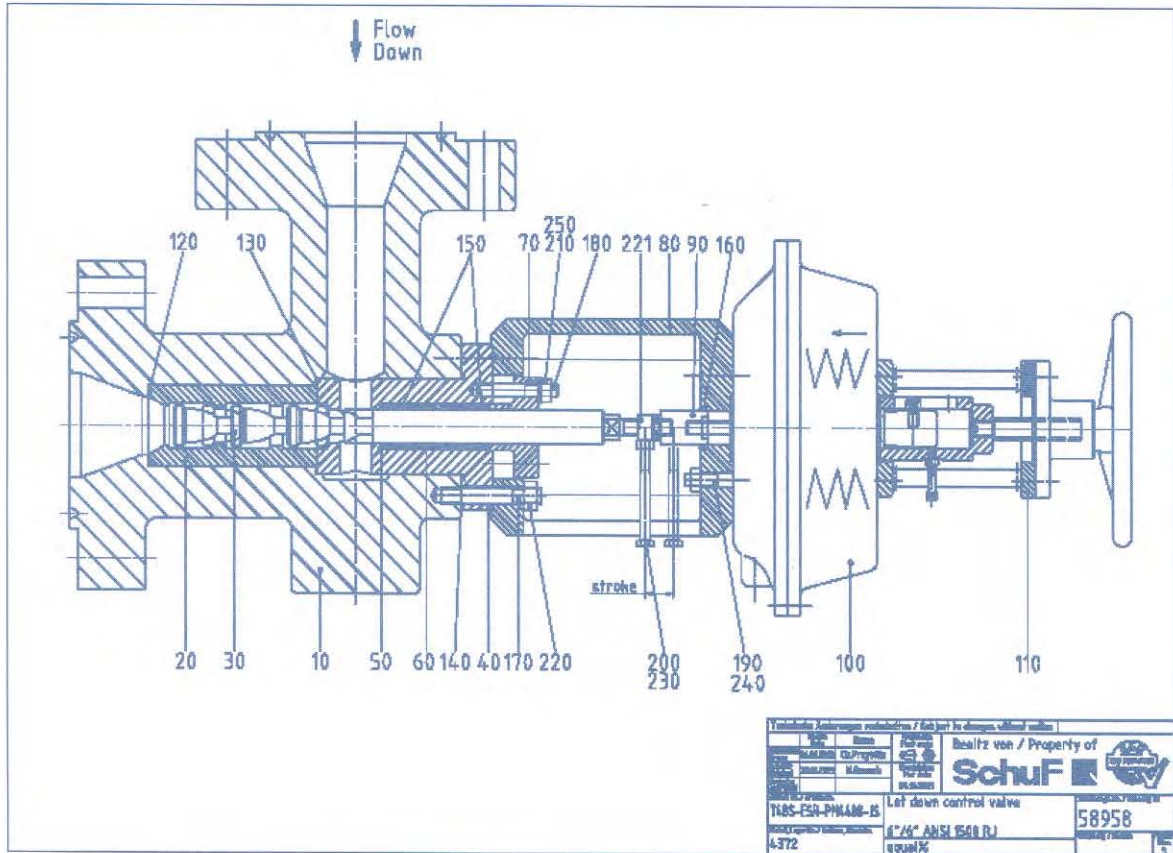


TV9102 50SN Y control 58957 Feed Oil 180 120 Heat exchanger temp. control



C. HP Booster Pump Recirculation

Another application is for high pressure booster pump recirculation control. During start-up these pumps may not run dry, so these valves allow the pump to run a "closed loop". Therefore the valve will have to dissipate the complete pressure built up by the booster pump. Once start up is completed the valve is closed. Tight shutoff is required in this case.



FV9103/4 74BS 3stage plug 58958 Feed Oil 220 120 Pump recirculation

To prove itself in this market, SchuF has delivered the valves above to the more difficult service of a residue cracker in Shanghai refinery. Our valves have been in trouble free use for the last two years. Our Kommission for Shanghai Refinery is 62517 / 2003. We have also recently received an order for these valves from Dalian Refinery (Komm Nr. 64390 / 2005) for a Hydrocracker.

In these applications our valves are often flow to open. This differentiates our valves from our competitors (Masoneilan / Fisher) which are flow to close. The advantage of a flow to open valve is that there is less tendency to plug up, which is good if the feedstock is dirty i.e. for a residue cracker. For cleaner fluids, or in case of customer preference we can also supply flow to close versions (the advantage here being the use of smaller actuators).

Hydro- and residuecracker HHPS let down service is easier than for heavy oil or coal hydrogenation, as the Hydrocracker does not normally see any solids while the residue cracker sees less. In contrast to heavy oil hydrogenation, it is the gas oils that are feed into the Hydrocracker, not the very heavy distillate residues. SchuF also delivers control valves for this services, with solid Tungsten Carbide trims and single seats.



3-Stage Plug Trim

Product Bulletin
March 2004

Specifications

Available Valves

Model 74BS Angle Valve with inlet angle of 90, 60 or 45 degree.

End Connection Styles

- Class 600, 900, 1500 and 2500
- Butt weld ends
- Flanged ends in RF, RTJ, LR or LM/LF style

Shutoff Classifications

Class V or VI per ANSI/FCS 70-2 and IEC 60534-4

Maximum Inlet Pressures and Temperatures

Consistent with applicable Class 600/900/1500/2500 pressure/temperature ratings according to ASME B16.34

Construction Materials

Body/Bonnet:

WCB, WC6, WC9, Cr-Mo Steel
CF3M, CF3, CF8M, CF8, CF8C
Duplex SST

Valve Plug/Stem (integral):

- 420 SST
- 316 SST
- 316 L SST
- 321 SST
- SAF 2205

Seat

- 316 SST
- 316 L SST
- 321 SST
- 329 SST

Yoke

- 304 SST

Valve Size

- 1" ■ 1-1/2" ■ 2" ■ 2-1/2" ■ 3"
- 4" ■ 6" ■ 8" ■ 10" ■ 12"

Flow Coefficients

1 to 750 depending on seat size

Flow Characteristics

Linear or equal percentage

Flow Direction

- Flow down
- Flow to open or flow to close

Actuator Selection

- Model PM Multi-Spring Diaphragm Actuator in 304 SST or Aluminum casing
- Model PKD Double-Acting Cylinder Actuator in steel casing
- Model PKE Single-Acting Cylinder Actuator in steel casing
- Anti-rotation device as standard

Positioner Selection

Siemens Model PS2 Smart Positioner or SMC I/P Positioner (product bulletin on request)

