4×4 External Chemical Hydraulic Valve (Steam Jacketed)

Betts External Chemical Hydraulic Valve with steam jacket body is classified as an external self-closing stop valve and is widely used on DOT407 and 412 cargo tanks. This is a robust and proven valve that satisfies the many requirements of the chemical transportation industry. The steam jacket body includes two ¾" NPT fittings and allows for the valve to be heated for use with temperature sensitive products. The 316-stainless body and replaceable Teflon™ seal make this valve a versatile and reliable workhorse for any fleet.

This valve does NOT include a sacrificial shear section; therefore, the cargo tank must have adequate accident damage protection to shield the valve as specified in 49CFR §178.345-8.

The hydraulic actuator has a ¼" NPT inlet port and is specifically designed to completely isolate hydraulic fluid from cargo tank and piping. Hydraulic leaks are contained in the piston cylinder and will drain to the exterior of the valve through the indicator weep holes as an alert for repair.

Two indicator pins are located on the bottom of the piston cylinder and move in relation to the disc. The pins can be used as a push point to manually jack open the valve.

- **Valve MAWP:** 50 psi [3.4 bar]
- **Min. bursting pressure:** 200 psi [13.8 bar]
- **Working temperature range:** -40°F to 400°F [-40°C to 204°C]
- **Max. steam jacket pressure:** 150 psi [10.3 bar]
- **Hydraulic line pressure:** Minimum 1,500 psi [103 bar] Maximum 3,500 psi [241 bar]
- **Hyd. volume to fully open valve:** 1.22 in^3 [20 ml]
  - *A solid flat mounting surface must be provided. Recommended mounting pad is MP19752LC.*
  - *Recommended hydraulic pump is HP46982ALSL and*

hydraulic distributor is CH16283 or HD2-1EYBN.

Assembly Part #	Material	Inlet Flange (4" Sump)	Outlet (TTMA)	Dims. A	Dims. B	Dims. C	Weight
CH46960SST	316 SS	**B.C.:** 07.25" [184 mm] **8 Holes:** 0.563" [14.3 mm]	**B.C.:** 5.88 " [149 mm] **8 Holes:** 0.438" [11.1 mm]	7.63" [194 mm]	7.88" [200 mm]	16" [406 mm]	34.5 lbs. [15.6 kg]
CH46960LHT	316 SS w/ Hastelloy Trim	**B.C.:** 07.25" [184 mm] **8 Holes:** 0.563" [14.3 mm]	**B.C.:** 5.88 " [149 mm] **8 Holes:** 0.438" [11.1 mm]	7.63" [194 mm]	7.88" [200 mm]	16" [406 mm]	34.5 lbs. [15.6 kg]

*** Last three letters of part number designate material of construction as shown below:

Example Assembly

CH46960SST

(4″ x 4" External Chemical Valve + 316 Stainless Steel disc w/ PTFE Seat)

Disc Materials

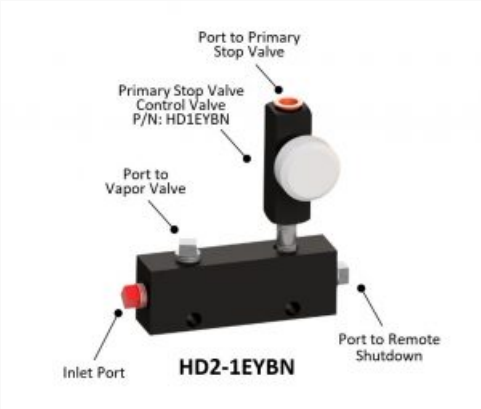
SST = 316 SS w/ PTFE Seat

LHT = 316 SS w/ Hastelloy® trim w/ PTFE Seat**

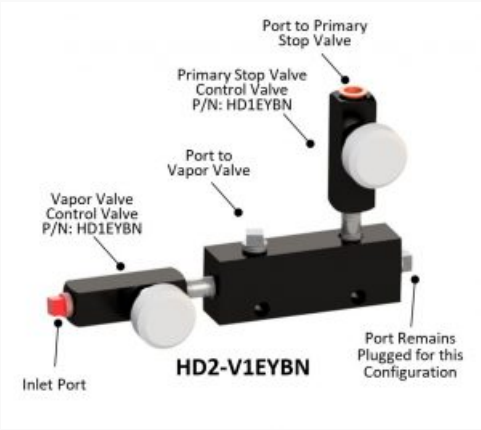
Material listing is for all wetted surfaces exposed to product during normal operation of valve.

** Part number ending in "LHT" provides a valve with a Hastelloy® C-22 overlay on the disc to fortify the area in contact with the seal. Part number ending in "LHT026" provides a valve with a Hastelloy® C-22 overlay on the disc and adds additional corrosion protection with a solid Hastelloy® C-276 upper stem.

Hydraulic Distributor (Basic Configuration)



Hydraulic Distributor for Single Compartment



Hydraulic Distributor with Vapor Valve Isolator

Hydraulic Pump (Hand Jack)

Betts prides itself in being able to provide products that meet a customer's specific needs. As a result we do offer modifications to our product standards. While not every request is always feasible, we do our best to meet your specific needs. In many cases this modification is noted by adding a suffix to the end of the standard part number. The following is a non-inclusive list of common options that are available for this product line . If the options listed below do not meet your requirements please contact one of Betts' Customer Service Representatives for further assistance. Please note that some product modifications may result in extended lead times.

Commonly Requested Options:

- Suffix "017" option for valve with double O-ring replaceable seat. Item 6a.
- Suffix "019" option for valve with double O-ring cap collar. Item 2a.
- Add suffix "J" to Part No. for heat tube version.
- (Heat tube MAWP = 150 psi)

External Chemical Hydraulic Valve Maintenance Manual #MM-CH001

Chemical Hydraulic Product Family:
S35P01A

EB-1-16: Important design change to add o-ring between disc and stem.
EB3-03: Plumbing Schematic for Hydraulic Valve System
EB8-08: Important design modification alert for Betts' Hydraulic Valves.

External Chemical Hydraulic Valve Maintenance Video #MV-CH004

⚠ **WARNING**: This product can expose you to chemicals including Chromium (hexavalent compounds) which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov. For additional information on Betts products and Proposition 65 list please see: http://www.bettsind.com/prop-65/