



VELAN

February 2014

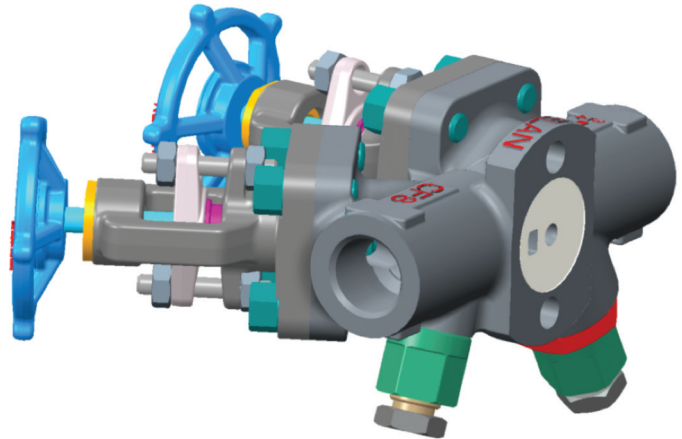
Model VTCS Steam Trap Connector Station

Compact steam trap connector station combines inlet and outlet isolation valves with integral strainer, blow down valve and test valve for isolation, testing and safe depressurization of trap for maintenance

For use with all brands of 2-bolt swivel connector steam traps

Designed and tested to ASME B16.34 Class 600

CoCr Hardfacing (API Trim #5) Standard



Over all design features

- **Single block:** Two isolation valves, blow down valve, test port, strainer all are combined in one unit as compact assembly which results in easy installation. Integral strainer has provision of in-line maintenance.
- **Universal mounting:** VTCS is designed for use with all manufacturer's swivel connector steam traps. The steam trap is connected to the VTCS by way of two hexagon bolts.
- **Robust construction:** VTCS are designed to meet ASME rating Class 600. It is a compact and sturdy design for high pressure-temperature service, which makes it suitable for wide range of applications.
- **Globe type isolation valves:** Globe type isolation valves are used in vtcs and simple construction.
- **CoCr alloy hardfacing:** Solid CoCr alloy disc ensures low friction and long service life.
- **In line servicing:** Stem-bonnet and disc assembly can be easily be removed and replaced on valves with bolted bonnet.
- **Packing rings:** Pre-compressed to 4000 psi to provide a high integrity seal.
- **Body guided disc:** The top- and bottom- guided disc assures perfect seat and disc alignment in spite of side thrust caused by high velocity flow. This prevents stem from scoring and galling and provides longer disc seal and body life.
- **Body – bonnet joint:** Fully encased spiral wound gasket: the design of the gasketed joint is critical. Its compression is better controlled in a fully enclosed cavity. Also, the possibility of unwinding of the ss spiral metal is eliminated.
- **Safer and tighter stem seal.**
- **Stem:** Hardened and ground.
- **Packing rings:** Each packing ring individually inserted and compressed for better tightness.
- **Bolts:** Sturdy full-length threaded corrosion-resistant bolts provide the required high packing stress.
- **Positive backseat:** Stem bevel against integral backseat.

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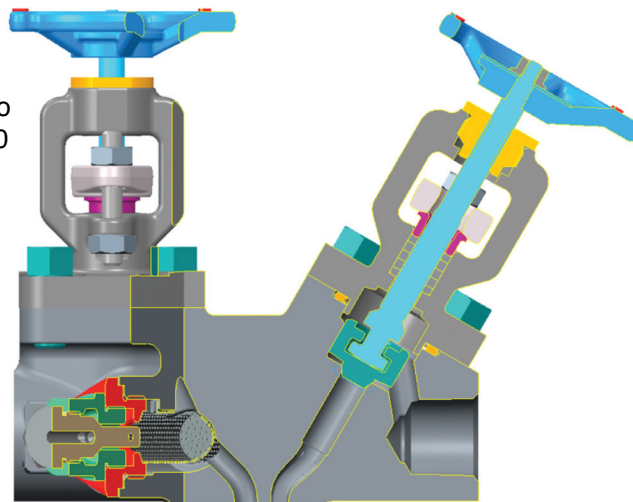
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Benefits of the Velan VTCS

- **Performance** While the Velan VTCS will operate with all brands of swivel connector steam traps, the greatest energy savings can be achieved by use in combination with the Velan UST trap. Savings of up to \$1 million USD annually can be realized for every 1000 Thermodynamic traps replaced.
- **Low maintenance**
Reduced maintenance and downtime compared to standard trapping stations. Allows trap change in less than 4 minutes.
- **Ease of operation.**
- **Standardized tools**
One wrench for blow down and test port valves.
- Suitable for both saturated and superheated steam.
- **Longer life CoCr alloy seats and trim** in both valves and UST trap when used as combination.
- **Easy in-line isolation** allowing safe upstream and downstream depressurization.
- The Velan VTCS improves site capability to verify trap operation and offers built in facility to block and bleed traps.
- Allows any other manufacturers two bolt connector trap to be fitted to the Velan VTCS trap station.
- **CRN** approved for sale in Canada.
- **PED** approved.
- **Standard 3 year warranty.**
- It can also be incorporated in a Velan one-piece fabricated steam or condensate manifold distribution. (Separate data sheet available for Velan manifolds on request.)



Model	VTCS
Figure number	2444B
Standard flow direction	Left to right / right to left
Connections	NPT / Socket weld

PART	STANDARD MATERIALS
Body	Carbon Steel Grade WCB
Seat	Hardface Co Cr alloy
Bonnet	A105N
Stem	410 Stainless Steel
Disc	Co.Cr alloy (solid)
Packing flange	Carbon Steel
Gland	416
Packing ring	Graphite
Gland stud	Grade B6
Gland nut	Grade 2H
Hand wheel nut	Steel (plated)
Gasket	SS 316 and graphite
Yoke bushing	Al. bronze
Hand wheel	Malleable Iron
Name plate	SS 304 - 316
Retainer bushing	Stainless steel Gr. 304
Gasket	Stainless steel Gr. 316
Body - BDV	Stainless steel Gr. 304
Stem - BDV	Stainless steel Gr. 304
Cotter pin	Stainless steel
Strainer	Stainless steel
Bypass valve*	Stainless steel

* Bypass valve on inlet port offered based on customer requirement only

MAXIMUM OPERATING PRESSURE

As per ASME B16.34 Class 600	1440 psi @ 100°F (99.3 bar @ 38°C)
	710 psi @ 1000°F (48.9 bar @ 538°C)
Max. cold hydrostatic test pressure:	2175 psi (149 bar)

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Operation of the Velan VTCS

In normal trap operation

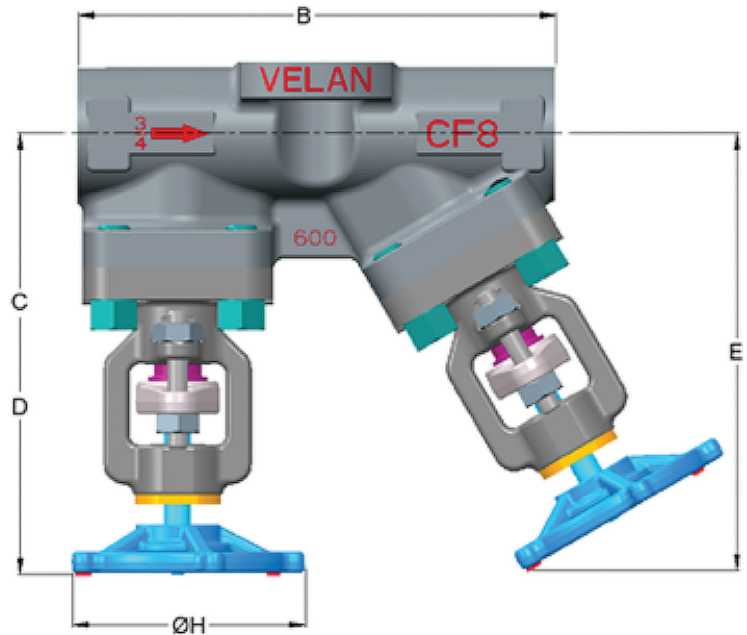
In normal operation, both inlet valve (stem straight) and outlet valve (stem inclined) are kept in open position to admit steam through strainer, Blow down valve and trap. Hand wheel to be rotated in anti clockwise to open the valve.

Trap functioning

Condensate from trap passes thru the test valve and outlet valve. To check functionality of trap, test valve need to be opened to see the condensate discharge.

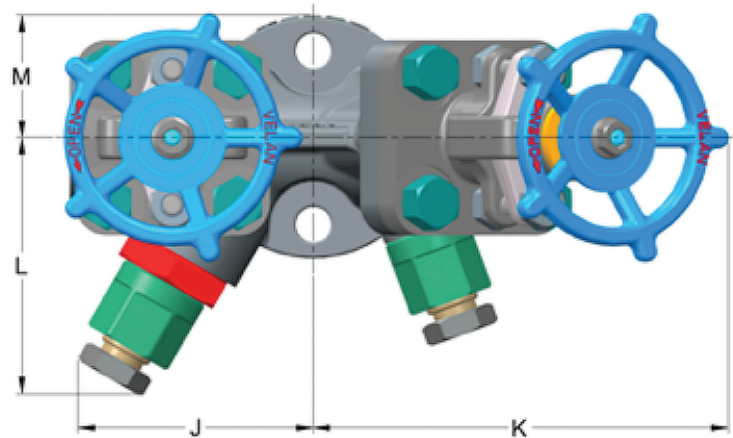
During trap changeover

Close both inlet and outlet valve. Depressurize the cavity between inlet valve and trap by releasing blow down valve. Open the test valve to de pressurize cavity between trap and outlet valve.



Trap Installation

- Ensure both inlet and outlet valves are closed.
- Depressurize both upstream and down steam cavity of trap using blow down and test valve.
- Replace the trap with new one.
- Open inlet valve while the outlet remain closed.
- Check functioning of trap by opening test valve outlet valve.



DIMENSIONS AND WEIGHTS

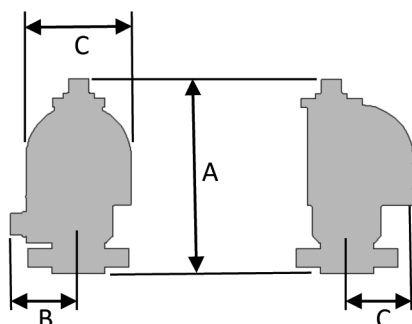
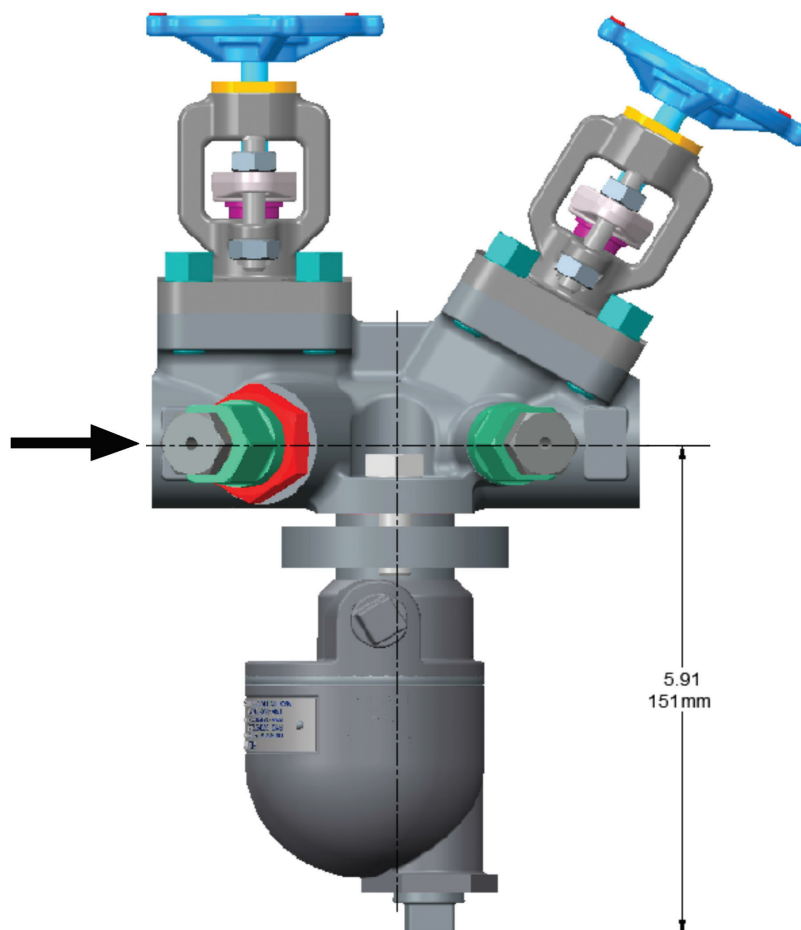
SIZE	B	C	D	E	F	H	J	K	L	M	WEIGHT
in mm	End-to-end	Center-to-top, closed	Center-to-top, open	Center-to-top, open angular	Center-to-bottom	Handwheel	Center-to-end, BDV	Center-to-end, handwheel	Center-to-bottom, BDV	Center-to-flange, top	lb kg
1/2	5.625	5.2	5.5	5.4	0.85	2.5	2.8	4.9	3.0	1.4	8.5
15											
3/4	143	132	140	137	22	64	70	124	76	36	3.9
20											

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Velan VTCS fitted with Velan UST trap

FOR MORE INFORMATION
SEE VELAN STEAM TRAP
CATALOGUE



DIMENSIONS AND WEIGHTS

A	B	C	D	WEIGHT
Overall length	Center-to-blowdown plug	Center-to-top, cover	Cover diameter	lb kg
5 1/8 130	1 7/8 48	1 3/4 45	2 3/4 70	3 1/2 1.5

Pressure range ⁽¹⁾ psi/bar	PMO Psi / bar	Material	Max. temp. °F/°C	Orifice in/mm	Max. capacity lb/hr/kg/hr
0-300 (0-21)	300 (21)	S/S CF8M	600 315	5/16 8	690 315
0-450 (0-31)	450 (31)			1/4 6.4	400 180

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Check out our website
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PU-VTCS-02-14

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