

TLV TRAP STATION V1/V2 Series

Important


This product connects to TLV QuickTrap series trap units. For the connection procedure and the installation procedure, see the instruction manual included with the trap unit, and make sure to work safely.




Safety Considerations

- Read this section carefully before use and be sure to follow the instructions.
- Installation, inspection, maintenance, repairs, disassembly, adjustment and valve opening/closing should be carried out only by trained maintenance personnel.
- The precautions listed in this manual are designed to ensure safety and prevent equipment damage and personal injury. For situations that may occur as a result of erroneous handling, three different types of cautionary items are used to indicate
- The three types of cautionary items above are very important for safety: be sure to observe all of them as they relate to installation, use, maintenance, and repair. Furthermore, TLV accepts no responsibility for any accidents or damage occurring as a result of failure to observe these precautions.






Symbol  **CAUTION** : Indicates that there is a possibility of injury or equipment/product damage

 CAUTION	Install properly and DO NOT use this product outside the recommended operating pressure, temperature and other specification ranges. Improper use may result in such hazards as damage to the product or malfunctions that may lead to serious accidents. Local regulations may restrict the use of this product to below the conditions quoted.
	Take measures to prevent people from coming into direct contact with product outlets. Failure to do so may result in burns or other injury from the discharge of fluids.
	When disassembling or removing the product, wait until the internal pressure equals atmospheric pressure and the surface of the product has cooled to room temperature. Disassembling or removing the product when it is hot or under pressure may lead to discharge of fluids, causing burns, other injuries or damage.
	Do not use excessive force when connecting threaded pipes to the product. Over-tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.
	Do not stand on or apply body weight to the handwheel. The handwheel may break, resulting in injury or other accidents.
	Do not carry the product by its handwheel The handwheel may turn causing the balance to shift and the product to be dropped, resulting in injury or other accidents.
	Always wear eye protection and heat-resistant gloves when operating the blowdown/test valve. Failure to do so may result in burns or other injury.
	When operating the blowdown/test valve, stand to the side well clear of the outlet to avoid contact with internal fluids that will be discharged. Operate the valve slowly and surely, taking care to avoid the area from which internal fluids are discharged and any fluids deflected off piping or the ground etc. Failure to do so may result in burns or other injury.
	Do not tighten the BD2 valve or the BD2 valve seat in excess of the appropriate tightening torque. Over-tightening may cause breakage to threaded portions, which may cause burns, other injuries or damage.
	Do not excessively loosen the BD2 valve when opening the blowdown/test valve. The valve stopper pin installed to prevent the BD2 valve from being removed may break and internal pressure may result in the BD2 valve being blown off, leading to injuries, damage and fluid discharge, causing burns.
	Use only under conditions in which no freeze-up will occur. Freezing may damage the product, reading to fluid discharge, which may cause burns or other injury.
	Use only under conditions in which no water hammer will occur. The impact of water hammer may damage the product, reading to fluid discharge, which may cause burns or other injury.

Installation & Operational Consideration

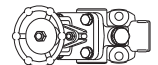
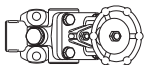
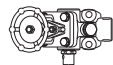
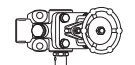
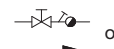





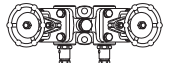
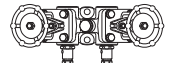
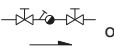



 CAUTION	Before installing the product, blow out the piping to remove any piping scraps, dirt, oil and scale. Failure to do so may lead to early clogging due to an initial heavy load of foreign material in the piping.
	Do not remove the product from its box or protective covering until just prior to installation. Remove any plugs or seals just prior to installation. The protective covers keep damage causing foreign material out of the product.
	Do not use a wire-brush or other hard devices to clean the screen. Doing so may damage or detach the meshed screen.

Specifications

Model	V1-RL / V1-RB / V1-LB		V2-RL / V2-RB / V2-LB
Name	TRAP STATION		
Inlet/Outlet Valve	Only at the inlet side		Inlet/outlet side
Body Material	SUS304		
Size	15, 20 mm (1/2, 3/4 in)		
Max. Allowable Press. PMA*1 / Max. Allowable Temp. TMA*1	4.6 MPaG (650 psig) / 425 °C (800 °F)		
Max. Operating Press. PMO*2 / Max. Operating Temp. TMO*2	4.6 MPaG (650 psig) / 425 °C (800 °F)		
Applicable Fluid	Steam, Condensate		
Connectable TLV products (Trap Unit Models)	Free Float Steam Trap S3, S5, S5H, S3-K, S5-K	Disc Type Steam Trap P46UC	Thermostatic Steam Trap L5, L21, L32, L5-C, L21-C, L32-C
			
		P32 	X1 
NOTE: Some models may not be available in all regions.			
Other trap units may be applicable. Contact TLV for QuickTrap models not listed.			

*1 Maximum Allowable Pressure (PMA) and Maximum Allowable Temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS for trap station only, NOT OPERATING CONDITIONS. (1 MPa = 10.197 kg/cm²)

*2 For trap station only; further restricted by mounted trap unit.

Model	V1-RL	V1-RB	V1-LB
Appearance	 or 		
Flow Diagram	 or 		
Flow Direction	Right or Left	Right	Left
Blowdown Valve	—	●	●
Test Valve	—	—	—
Model	V2-RL	V2-RB	V2-LB
Appearance	 or 		
Flow Diagram	 or 		
Flow Direction	Right or Left	Right	Left
Blowdown Valve	—	●	●
Test Valve	—	●	●

Manufacturer:

TLV CO., LTD.

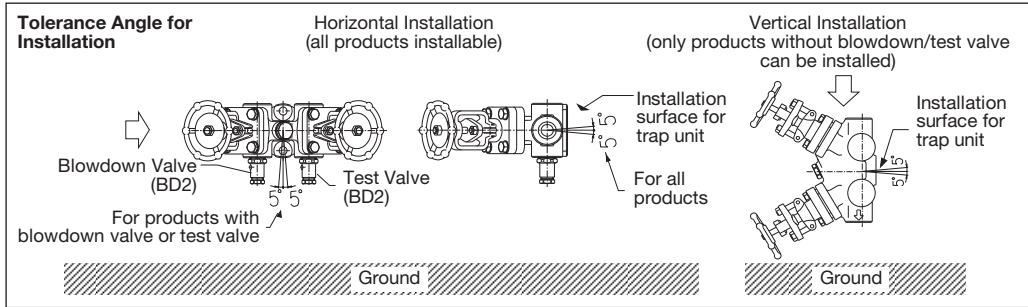
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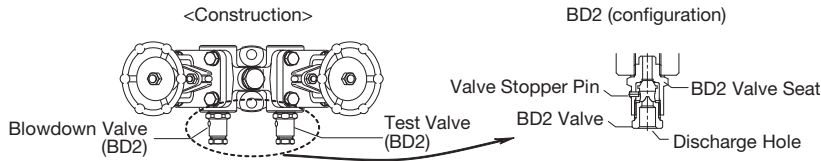
Installation

- 1. Before installation, be sure to remove all protective seals.
- 2. Before installing the product, blow out the piping to remove any piping scraps, dirt and oil.
- 3. Install the product so the arrow on the body is pointing in the direction of condensate flow.
- 4. The handwheels should be facing the operator. At this time, make sure that the installation surface for the trap unit is vertical to the ground. If a blowdown valve or test valve is installed on the product, connect the piping by making sure the discharge outlet is facing downwards (toward the ground).
- 5. If a blowdown valve or test valve is installed on the product, install the product horizontally on the piping. The allowable inclination from horizontal, and for the installation surface for the trap unit, is within 5° as shown below.
- 6. If a blowdown valve or test valve is not installed on the product, the product may be installed in either vertical or horizontal orientation. However, ensure the inlet is facing upwards for vertical piping. The allowable inclination for the installation surface for the trap unit is within 5° as shown below.
- 7. Install the trap unit onto the trap station. For installation instructions see the instruction manual shipped with the trap unit.
- 8. Connect the outlet piping.
- 9. Open the inlet and outlet valves slowly and check to make sure that the product functions properly.



Blowdown Valve / Test Valve Operation

The blowdown valve uses internal pressure to blow out condensate or other fluids from inside the unit to the atmosphere in order to remove scale and dirt. The test valve is installed at the outlet of the trap. By closing the outlet valve for the trap station and opening the test valve it becomes possible to test the operation of the trap. The TLV blowdown valve BD2 is used for both the blowdown valve and the test valve. For operation refer to the BD2 operation instructions below.

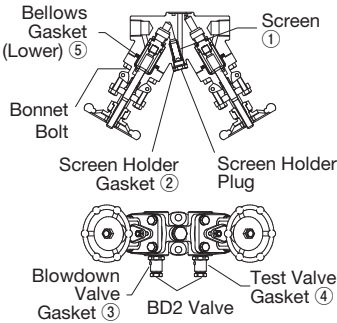


- 1. The BD2 valve is in the closed position when the Trap Station is shipped from the factory. Before attempting to operate the blowdown valve and the test valve, reconfirm that the BD2 valve is still in the closed position. Locate the blow outlet and, during operation, stand to the side and well clear of it, as the jet of condensate or steam could cause burns.
- 2. Remain in the area the entire time the BD2 valve is in the open position. Before opening the BD2 valve, grip the BD2 valve seat with a wrench and hold firmly in place so that it will not rotate when the BD2 valve is loosened. Grip the BD2 valve with another wrench and slowly loosen. Condensate and steam will discharge from the discharge hole in a jet stream. Be careful not to loosen the BD2 valve so far that it becomes removed from the BD2 valve. (If the valve stopper pin becomes damaged, large quantities of steam will be discharged in a jet stream.)
NOTE: Do not leave the vicinity while the BD2 valve is in the open position.
- 3. Close the BD2 valve until the flow of fluid completely stops. If the flow of fluid does not stop, re-open the valve (as in step 2) to blow out any scale or dirt that may be caught in the valve. Re-tighten the valve until the flow of fluid stops completely.

Table of Tightening Torques

Part Name	Torque		Distance Across Flats	
	N·m	(lbf·ft)	mm	(in)
Screen Holder Plug	60	(44)	22	(7/8)
Bonnet Bolt	60	(44)	22	(7/8)
Blowdown Valve/Test Valve	60	(44)	22	(7/8)
BD2 Valve	30	(22)	17	(21/32)

NOTE: Coat all threaded portions with anti-seize. If drawings or other special documentation were supplied for the product, any torque given there takes precedence over values shown here. Avoid the use of excessive tightening torques, as threaded parts may become damaged.



Availability of Spare Parts

Aside from parts ① – ⑤ shown in the figures under “Table of Tightening Torques”, replacement parts are not normally supplied. Consult TLV if other parts are needed.

TLV EXPRESS LIMITED WARRANTY

Subject to the limitations set forth below, TLV Corporation, a North Carolina corporation (“**TLV**”) warrants that products which are sold by it, TLV CO., LTD., a Japanese corporation (“**TLVJ**”) or TLV International, Inc., a Japanese corporation (“**TII**”), (hereinafter the “**Products**”) are designed and manufactured by TLV/J, conform to the specifications published by TLV for the corresponding part numbers (the “**Specifications**”) and are free from defective workmanship and materials. With regard to products or components manufactured by unrelated third parties (the “**Components**”), TLV provides no warranty other than the warranty from the third party manufacturer(s), if any.

Exceptions to Warranty

This warranty does not cover defects or failures caused by:

- 1. improper shipping, installation, use, handling, etc., by other than TLV or service representatives authorized by TLV; or
- 2. dirt, scale or rust, etc.; or
- 3. improper disassembly and reassembly, or inadequate inspection and maintenance by other than TLV or service representatives authorized by TLV; or
- 4. disasters or forces of nature or Acts of God; or
- 5. abuse, abnormal use, accidents or any other cause beyond the control of TLV; or
- 6. improper storage, maintenance or repair; or
- 7. operation of the Products not in accordance with instructions issued with the Products or with accepted industry practices; or
- 8. use for a purpose or in a manner for which the Products were not intended; or
- 9. use of the Products in a manner inconsistent with the Specifications; or
- 10. use of the Products with Hazardous Fluids (fluids other than steam, air, water, nitrogen, carbon dioxide and inert gases (helium, neon, argon, krypton, xenon and radon)); or
- 11. failure to follow the instructions contained in the TLV Instruction Manual for the Product.

Duration of Warranty

This warranty is effective for a period of the earlier of: (i) three (3) years after delivery of Products to the first end user in the case of sealed SST-Series Products for use in steam pressure service up to 650 psig; (ii) two (2) years after delivery of Products to the first end user in the case of PowerTrap® units; or (iii) one (1) year after delivery of Products to the first end user in the case of all other Products. Notwithstanding the foregoing, asserting a claim under this warranty must be brought by the earlier of one of the foregoing periods, as applicable, or within five (5) years after the date of delivery to the initial buyer if not sold initially to the first end user.

ANY IMPLIED WARRANTIES NOT NEGATED HEREBY WHICH MAY ARISE BY OPERATION OF LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY EXPRESS WARRANTIES NOT NEGATED HEREBY, ARE GIVEN SOLELY TO THE INITIAL BUYER AND ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF SHIPMENT BY TLV.

Exclusive Remedy

THE EXCLUSIVE REMEDY UNDER THIS WARRANTY, UNDER ANY EXPRESS WARRANTY OR UNDER ANY IMPLIED WARRANTIES NOT NEGATED HEREBY (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), IS **REPLACEMENT**; PROVIDED: (a) THE CLAIMED DEFECT IS REPORTED TO TLV IN WRITING WITHIN THE APPLICABLE WARRANTY PERIOD, INCLUDING A DETAILED WRITTEN DESCRIPTION OF THE CLAIMED DEFECT AND HOW AND WHEN THE CLAIMED DEFECTIVE PRODUCT WAS USED; AND (b) THE CLAIMED DEFECTIVE PRODUCT AND A COPY OF THE PURCHASE INVOICE IS RETURNED TO TLV, FREIGHT AND TRANSPORTATION COSTS PREPAID, UNDER A RETURN MATERIAL AUTHORIZATION AND TRACKING NUMBER ISSUED BY TLV. ALL LABOR COSTS, SHIPPING COSTS, AND TRANSPORTATION COSTS ASSOCIATED WITH THE RETURN OR REPLACEMENT OF THE CLAIMED DEFECTIVE PRODUCT ARE SOLELY THE RESPONSIBILITY OF BUYER OR THE FIRST END USER. TLV RESERVES THE RIGHT TO INSPECT ON THE FIRST END USER'S SITE ANY PRODUCTS CLAIMED TO BE DEFECTIVE BEFORE ISSUING A RETURN MATERIAL AUTHORIZATION. SHOULD SUCH INSPECTION REVEAL, IN TLV'S REASONABLE DISCRETION, THAT THE CLAIMED DEFECT IS NOT COVERED BY THIS WARRANTY, THE PARTY ASSERTING THIS WARRANTY SHALL PAY TLV FOR THE TIME AND EXPENSES RELATED TO SUCH ON-SITE INSPECTION.

Exclusion of Consequential and Incidental Damages

IT IS SPECIFICALLY ACKNOWLEDGED THAT THIS WARRANTY, ANY OTHER EXPRESS WARRANTY NOT NEGATED HEREBY, AND ANY IMPLIED WARRANTY NOT NEGATED HEREBY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DO NOT COVER, AND NEITHER TLV, TII NOR TLVJ WILL IN ANY EVENT BE LIABLE FOR, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST PROFITS, THE COST OF DISASSEMBLY AND SHIPMENT OF THE DEFECTIVE PRODUCT, INJURY TO OTHER PROPERTY, DAMAGE TO BUYER'S OR THE FIRST END USER'S PRODUCT, DAMAGE TO BUYER'S OR THE FIRST END USER'S PROCESSES, LOSS OF USE, OR OTHER COMMERCIAL LOSSES. WHERE, DUE TO OPERATION OF LAW, CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER THIS WARRANTY, UNDER ANY OTHER EXPRESS WARRANTY NOT NEGATED HEREBY OR UNDER ANY IMPLIED WARRANTY NOT NEGATED HEREBY (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) CANNOT BE EXCLUDED, SUCH DAMAGES ARE EXPRESSLY LIMITED IN AMOUNT TO THE PURCHASE PRICE OF THE DEFECTIVE PRODUCT. THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES, AND THE PROVISION OF THIS WARRANTY LIMITING REMEDIES HEREUNDER TO REPLACEMENT, ARE INDEPENDENT PROVISIONS, AND ANY DETERMINATION THAT THE LIMITATION OF REMEDIES FAILS OF ITS ESSENTIAL PURPOSE OR ANY OTHER DETERMINATION THAT EITHER OF THE ABOVE REMEDIES IS UNENFORCEABLE, SHALL NOT BE CONSTRUED TO MAKE THE OTHER PROVISIONS UNENFORCEABLE.

Exclusion of Other Warranties

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED.

Severability

Any provision of this warranty which is invalid, prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity, prohibition or unenforceability without invalidating the remaining provisions hereof, and any such invalidity, prohibition or unenforceability in any such jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

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