

# 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 degree of urgency and the scale of potential damage and danger: DANGER, WARNING and CAUTION.
- 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** : Indicates that there is a possibility of injury or equipment/product damage

	<b>Install properly and DO NOT use this product outside the recommended operating pressure, temperature and other specification ranges.</b> 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.
	<b>Take measures to prevent people from coming into direct contact with product outlets.</b> Failure to do so may result in burns or other injury from the discharge of fluids.
	<b>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.</b> Disassembling or removing the product when it is hot or under pressure may lead to discharge of fluids, causing burns, other injuries or damage.
	<b>Do not use excessive force when connecting threaded pipes to the product.</b> Over-tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.
	<b>Do not stand on or apply body weight to the handwheel.</b> The handwheel may break, resulting in injury or other accidents.
	<b>Do not carry the product by its handwheel</b> The handwheel may turn causing the balance to shift and the product to be dropped, resulting in injury or other accidents.
	<b>Always wear eye protection and heat-resistant gloves when operating the blowdown/test valve.</b> Failure to do so may result in burns or other injury.
	<b>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.</b> Failure to do so may result in burns or other injury.
	<b>Do not tighten the BD2 valve or the BD2 valve seat in excess of the appropriate tightening torque.</b> Over-tightening may cause breakage to threaded portions, which may cause burns, other injuries or damage.
	<b>Do not excessively loosen the BD2 valve when opening the blowdown/test valve.</b> 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.
<b>Use only under conditions in which no freeze-up will occur.</b> Freezing may damage the product, leading to fluid discharge, which may cause burns or other injury.	
<b>Use only under conditions in which no water hammer will occur.</b> The impact of water hammer may damage the product, leading to fluid discharge, which may cause burns or other injury.	

## Installation & Operational Consideration

	<b>Before installing the product, blow out the piping to remove any piping scraps, dirt, oil and scale.</b> Failure to do so may lead to early clogging due to an initial heavy load of foreign material in the piping.
	<b>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.</b> The protective covers keep damage causing foreign material out of the product.
	<b>Do not use a wire-brush or other hard devices to clean the screen.</b> Doing so may damage or detach the meshed screen.

## Specifications

Model	V1-RL / V1-RB / V1-LB	V2-RL / V2-RB / V2-LB	
Name	<b>TRAP STATION</b>		
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 <sup>1</sup> / Max. Allowable Temp. TMA <sup>1</sup>	4.6 MPaG (650 psig) / 425 °C (800 °F)		
Max. Operating Press. PMO <sup>2</sup> / Max. Operating Temp. TMO <sup>2</sup>	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.		

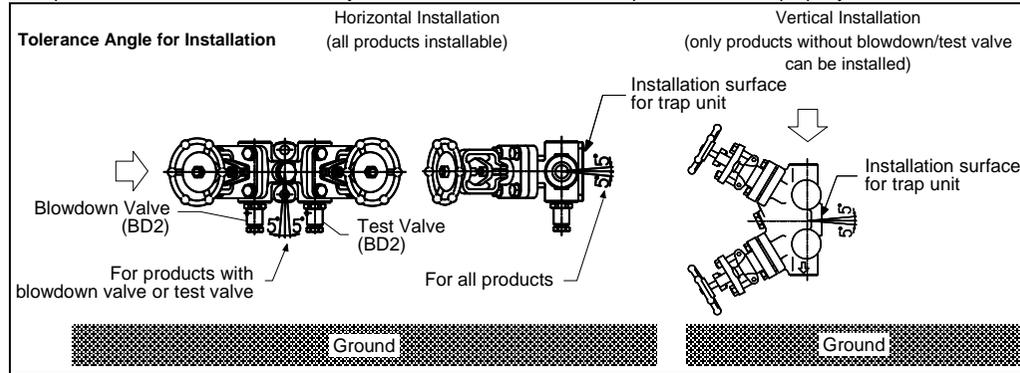
<sup>1</sup> Maximum Allowable Pressure (PMA) and Maximum Allowable Temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS for trap station only, NOT OPERATING CONDITIONS. (1 MPa = 10.197 kg/cm<sup>2</sup>)

<sup>2</sup> For trap station only; further restricted by mounted trap unit.

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

## 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.

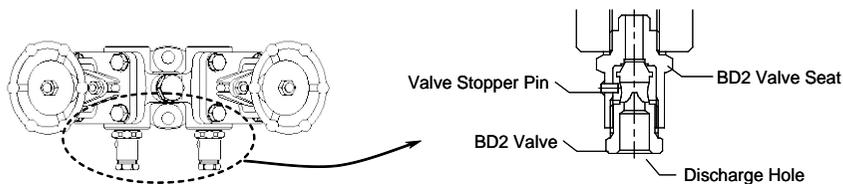


## Blowdown Valve / Test Valve Operation

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.

<Construction>

BD2 (configuration)



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.

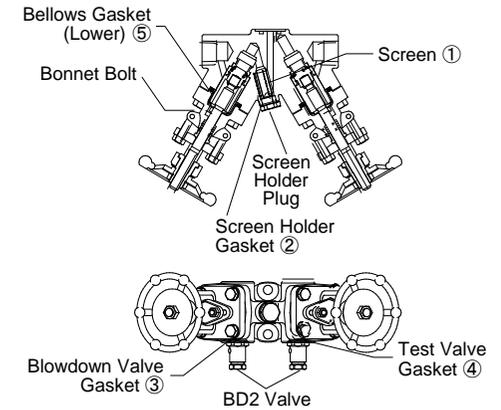
## Table of Tightening Torques

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

(1 N·m ≈ 10 kg·cm)

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.

## Product Warranty

1. Warranty Period  
One year following product delivery.
2. Warranty Coverage  
TLV CO., LTD. warrants this product to the original purchaser to be free from defective materials and workmanship. Under this warranty, the product will be repaired or replaced at our option, without charge for parts or labor.
3. This product warranty will not apply to cosmetic defects, nor to any product whose exterior has been damaged or defaced; nor does it apply in the following cases:
  - 1) Malfunctions due to improper installation, use, handling, etc., by other than TLV CO., LTD. authorized service representatives.
  - 2) Malfunctions due to dirt, scale, rust, etc.
  - 3) Malfunctions due to improper disassembly and reassembly, or inadequate inspection and maintenance by other than TLV CO., LTD. authorized service representatives.
  - 4) Malfunctions due to disasters or forces of nature.
  - 5) Accidents or malfunctions due to any other cause beyond the control of TLV CO., LTD.
4. Under no circumstances will TLV CO., LTD. be liable for consequential economic loss damage or consequential damage to property.

## Service

For Service or Technical Assistance: Contact your TLV representative or your regional TLV office.

North America:	[1]-704-597-9070	China:	[86]-(0)21-6482-8622
Mexico:	[52]-55-5359-7949	Singapore:	[65]-6747-4600
Argentina	[54]-(0)11-4781-9583	Malaysia:	[60]-3-8052-2928
United Kingdom:	[44]-(0)1242-227223	Korea:	[82]-(0)31-726-2105
France:	[33]-(0)4-7248-2222	Other South-East Asian Countries:	[65]-6747-4600
Australia:	[61]-(0)3-9873-5610	Other Countries:	[81]-(0)79-427-1818
Germany & Other European Countries:	[49]-(0)7263-9150-0		

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