



Manufacturer

TLV CO., LTD.

Kakogawa, Japan

is approved by IRISA Ltd. to ISO 9001/14001



Instruction Manual

QuickStation[™]
Steam Trap Station

QS10-B/QS10-D/QS10-T/QS10-TD

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Introduction

Thank you for purchasing the TLV QuickStation.

This product has been thoroughly inspected before being shipped from the factory. When the product is delivered, before doing anything else, check the specifications and external appearance to make sure nothing is out of the ordinary.

Also be sure to read this manual carefully before use and follow the instructions to be sure of using the unit properly.

If detailed instructions for special order specifications or options not contained in this manual are required, please contact for full details.

The TLV QuickStation is a compact, reliable steam trap station with an all-in-one design featuring a valve and strainer on the primary (inlet) side of the trap, and a check valve and valve on the secondary (outlet) side.







This product is compatible with all TLV QuickTraps and is suitable for a range of applications, such as steam mains, tracers and light processes.

This instruction manual is intended for use with the model(s) listed on the front cover. It is necessary not only for installation but for subsequent maintenance, disassembly/reassembly and troubleshooting. Please keep it in a safe place for future reference.


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.

Symbols

	Indicates a DANGER, WARNING or CAUTION item.
	Indicates an urgent situation which poses a threat of death or serious injury
	Indicates that there is a potential threat of death or serious injury
	Indicates that there is a possibility of injury or equipment/product damage
	DO NOT use for toxic, flammable or otherwise hazardous fluids. Use only for fluids listed in the specification table. This product is for intended use only. Improper use may result in such hazards as damage to the product or malfunctions that may lead to serious accidents.
	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.

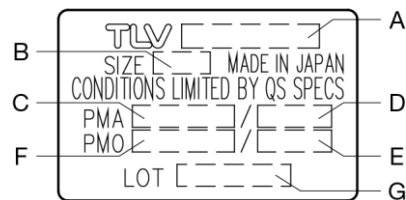
Continued on the next page

 CAUTION	<p>Be sure to use only the recommended components when repairing the product, and NEVER attempt to modify the product in any way. Failure to observe these precautions may result in damage to the product or burns or other injury due to malfunction or the discharge of fluids.</p>
	<p>Do not use excessive force when connecting threaded pipes to the unit. Over-tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.</p>
	<p>Use only under conditions in which no freeze-up will occur. Freezing may damage the product, leading to fluid discharge, which may cause burns or other injury.</p>
	<p>Do not stand on or apply body weight to the handle. The handle may break, resulting in injury or other accident.</p>
	<p>Use only under conditions in which no water hammer will occur. The impact of water hammer may damage the product, leading to fluid discharge, which may cause burns or other injury.</p>

Specifications

⚠ WARNING	DO NOT use for toxic, flammable or otherwise hazardous fluids. Use only for fluids listed in the specification table. This product is for intended use only. Improper use may result in such hazards as damage to the product or malfunctions that may lead to serious accidents.
⚠ 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.
	Use only under conditions in which no freeze-up will occur. Freezing may damage the product, leading to fluid discharge, which may cause burns or other injury.

Refer to the product nameplates on the trap unit AND on the connector body for detailed specifications. When a trap unit is installed on a connector unit and the PMA/PMA and/or PMO/TMO values displayed on the two nameplates differ, the specifications for the assembled products are restricted to the lower values.



A	Model
B	Nominal Diameter
C	Maximum Allowable Pressure (PMA)*
D	Maximum Allowable Temperature (TMA)*
E	Maximum Operating Temperature (TMO)
F	Maximum Operating Pressure (PMO)
G	Production Lot No.

* Maximum allowable pressure (PMA) and maximum allowable temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS, **NOT OPERATING CONDITIONS**.

** Valve No. is displayed for products with options. This item is omitted from the nameplate when there are no options.

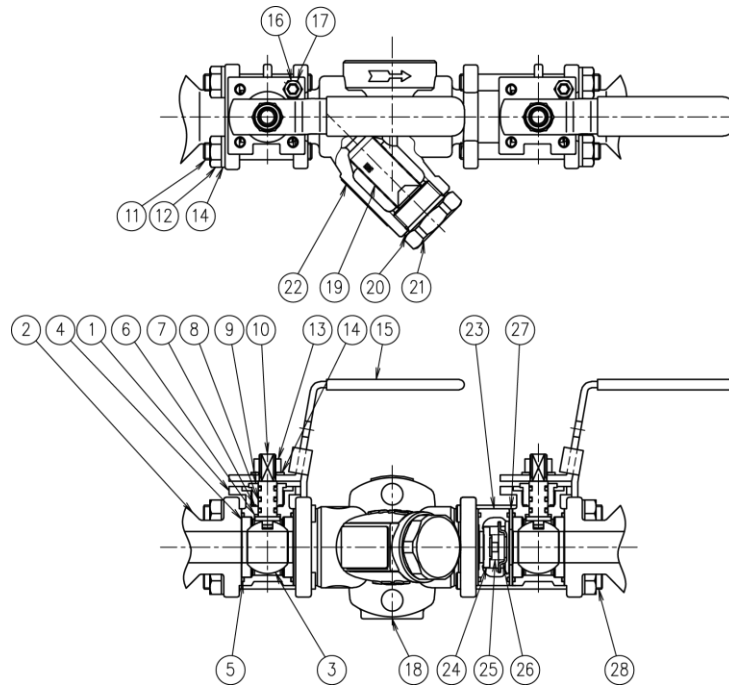
Do not use the ball valve with a half open position. The valve seat may be damaged.

Make sure to use the ball valve in a fully opened or closed position.

Furthermore do not use for slurry fluids.

Special products may differ from the above specifications. Refer to the drawings, etc. for details.



Configuration



No.	Part Name	Maintenance Kit	Repair Kit	Check Valve Unit
1	Body			
2	Cover			
3	Ball		✓	
4	Valve Seat		✓	
5	Body Gasket		✓	✓*
6	Thrust Washer		✓	
7	Gland Gasket		✓	
8	O-ring		✓	
9	Gland Nut		✓	
10	Valve Stem		✓	
11	Inlet Cover Bolt			
12	Inlet Cover Nut			
13	Handle Nut			
14	Spring Washer			
15	Handle			
16	Handle Bolt			
17	Valve Cover Nut			
18	Connector Body			
19	Screen		✓	
20	Screen Holder Gasket	✓	✓	
21	Screen Holder			
22	Nameplate			
23	Check Valve			✓*
24	Disc			✓*
25	Coil Spring			✓*
26	Spring Holder			✓*
27	Spacer			
28	Outlet Cover Bolt			

* The check valve unit is shipped assembled.

Installation

 WARNING	<p>DO NOT use for toxic, flammable or otherwise hazardous fluids. Use only for fluids listed in the specification table. This product is for intended use only. Improper use may result in such hazards as damage to the product or malfunctions that may lead to serious accidents.</p>
 CAUTION	<p>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.</p> <p>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.</p> <p>Do not use excessive force when connecting threaded pipes to the unit. Over-tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.</p> <p>Do not stand on or apply body weight to the handle. The handle may break, resulting in injury or other accident.</p>

Installation Procedures

Installation, inspection, maintenance, repairs, disassembly, adjustment and valve opening/closing should be carried out only by trained maintenance personnel.

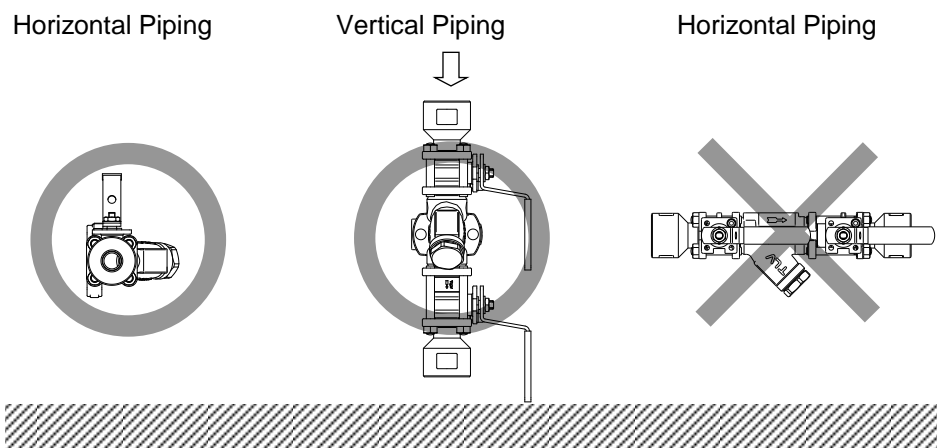
1. Before installing the product, blow out the inlet piping to remove any piping scraps, dirt and oil.
2. Before installation, be sure to remove all protective seals.
3. There is no restrictions on the inlet or outlet when installing the product.
4. Screwed connection type: installation of a union is recommended at both the inlet and outlet to facilitate maintenance.

If there is a problem, determine the cause by using the “Troubleshooting” section in this manual.


Installation Orientation

1. Install the product so the arrow on the body is pointing in the direction of condensate flow.
2. For horizontal piping, install the product so that the surface of the handle is parallel to the ground.

There is no restriction on the installation orientation for horizontal piping as long as the direction of flow and the arrow on the connection body are aligned.



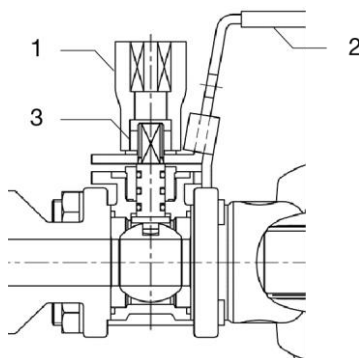
Maintenance

 CAUTION	<p>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.</p> <p>Disassembling or removing the product when it is hot or under pressure may lead to discharge of fluids, causing burns, other injuries or damage.</p>
	<p>Be sure to use only the recommended components when repairing the product, and NEVER attempt to modify the product in any way.</p> <p>Failure to observe these precautions may result in damage to the product or burns or other injury due to malfunction or the discharge of fluids.</p>

Tightening the gland section

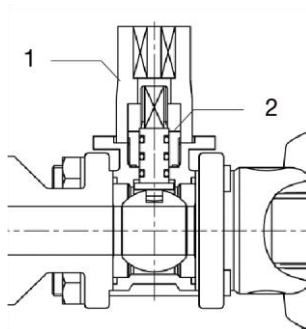
The valve gland can be tightened. If leaks from the gasket or the sealing portion continue, tighten as shown in the following steps.

- Loosen the handle nut to remove the handle.
(To remove the valve section, refer to "Disassembly/Reassembly of the Valve Section" in the "Disassembly/Reassembly" section.)



1	Socket
2	Handle
3	Handle Nut

- Tighten the gland nut with a socket wrench




1	Socket
2	Gland Nut

Notes on retightening:

- Do not tighten the gland nut all at once, and do not tighten it further once the leak has stopped.
- If a leak continues after retightening the gland nut, replace it with a new one.

Disassembly/Reassembly

 CAUTION	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.
	Be sure to use only the recommended components when repairing the product, and NEVER attempt to modify the product in any way. Failure to observe these precautions may result in damage to the product or burns or other injury due to malfunction or the discharge of fluids.

Use the following procedures to remove components. Use the same procedures in reverse to reassemble. (Installation, inspection, maintenance, repairs, disassembly, adjustment and valve opening/closing should be carried out only by trained maintenance personnel.)

Disassembly/Reassembly of the Valve Section

Part Name	During Disassembly	During Reassembly
Handle Nut 13	Remove with a socket wrench	Consult the table of tightening torques and tighten to the proper torque
Spring Washer 14	Remove the spring washer	Reattach the spring washer
Handle 15	Remove the handle	Reattach the handle
Gland Nut 9	Remove with a socket wrench	Coat threaded portions with anti-seize (e.g. Molykote) Consult the table of tightening torques and tighten to the proper torque
Valve Seat 4	Remove the valve seat	Replace with a new valve seat
Body Gasket 5	Remove the gasket and clean sealing surfaces	Replace with a new gasket
Ball 3	Remove the ball	Insert the ball
Valve Stem 10	Remove the valve stem	Insert the valve stem

Disassembly/Reassembly of the Check Valve Section

This section cannot be disassembled or reassembled as a special tool is required. For this reason, repair parts are not provided.

Disassembly/Reassembly of the Connector Body Section

Part Name	During Disassembly	During Reassembly
Screen Holder 21	Remove with a socket wrench	Coat threaded portions with anti-seize (e.g. Molykote)
Screen Holder Gasket 20	Remove the gasket and clean sealing surfaces	Replace with a new gasket
Screen 19	Remove without bending	Insert without bending

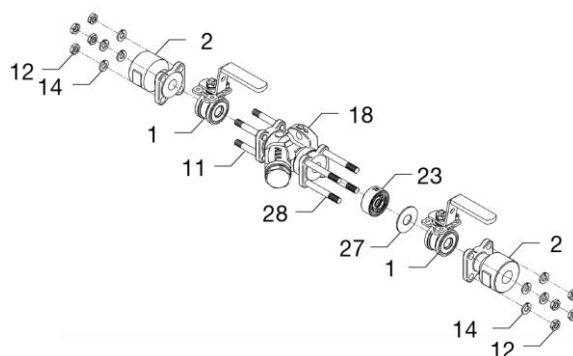
Table of Tightening Torques

Part Name	Torque		Distance Across Flats	
	N·m	(lb·ft)	mm	(in)
Handle Nut 13	30	(22)	13	(1/2)
Gland Nut 9	30	(22)	16	(5/8)
Screen Holder 21	100	(73)	30	(1 3/16)
Inlet Cover Nut 12	30	(22)	13	(1/2)

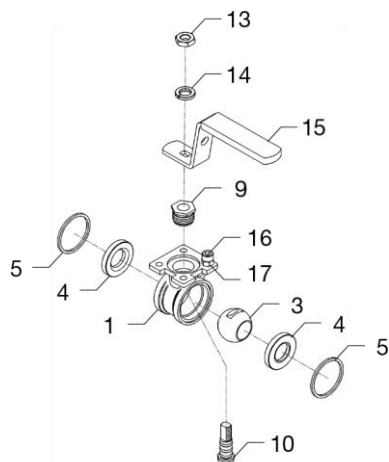
(1 N·m ≈ 10 kg·cm)

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.

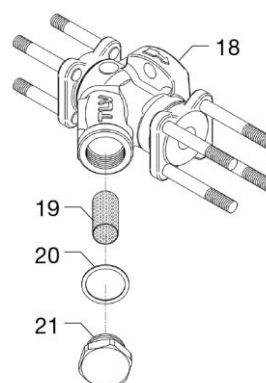
Exploded View



Valve Section

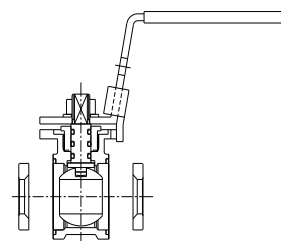


Connector Body Section



Installation orientation of the valve seat

When installing the valve seat, pay attention to its orientation. Install the valve seat with the large chamfered side facing the ball.



No.	Part Name	No.	Part Name
1	Body	15	Handle
2	Cover	16	Handle Bolt
3	Ball	17	Valve Cover Nut
4	Valve Seat	18	Connector Body
5	Body Gasket	19	Screen
6	Thrust Washer*	20	Screen Holder Gasket
7	Gland Gasket*	21	Screen Holder
8	O-ring*	22	Nameplate*
9	Gland Nut	23	Check Valve
10	Valve Stem	24	Disc*
11	Inlet Cover Bolt	25	Coil Spring*
12	Cover Nut (Inlet/Outlet)	26	Spring Holder*
13	Handle Nut	27	Spacer
14	Spring Washer	28	Outlet Cover Bolt

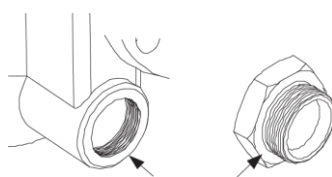
*Not Shown

Instructions for Plug/Holder Disassembly and Reassembly

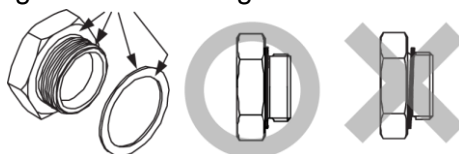
The seal on the threaded plugs/holders found on TLV products is formed by a flat metal gasket. There are various installation orientations for the gaskets, such as horizontal, diagonal and downward, and the gasket may be pinched in the thread recesses during assembly.

Instructions for Disassembly and Reassembly

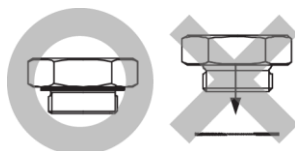
1. Remove the plug/holder using a tool of the specified size (distance across flats).
2. The gasket should not be reused. Be sure to replace it with a new gasket.
3. Clean the gasket surfaces of the plug/holder and the product body using a rag and/or cleaning agents, then check to make sure the surfaces are not scratched or deformed.



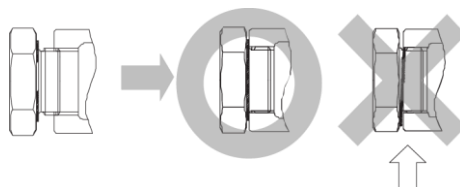
4. Coat both the gasket surface of the plug/holder and the threads of the plug/holder with anti-seize, then press the gasket onto the center of the gasket surface of the plug/holder, making sure the anti-seize affixes the gasket tightly to the plug/holder. Check to make sure the gasket is not caught in the recesses of the threads.



5. Hold the plug/holder upside down to make sure that the anti-seize makes the gasket stick to the plug/holder even when the plug/holder is held upside down.




6. Screw the plug/holder by hand into the product body while making sure that the gasket remains tightly affixed to the center of the gasket surface of the plug/holder. Make sure the entire gasket is making contact with the gasket surface of the product body. It is important at this point to make sure the gasket is not pinched in the thread recesses of the plug/holder.



7. Tighten the plug/holder to the proper torque.
8. Next, begin the supply of steam and check to make sure there is no leakage from the part just tightened. If there is leakage, immediately close the inlet valve and, if there is a bypass valve, take the necessary steps to release any residual pressure. After the surface of the product cools to room temperature, repeat the procedure beginning from step 1.

Troubleshooting

 CAUTION	<p>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.</p> <p>Disassembling or removing the product when it is hot or under pressure may lead to discharge of fluids, causing burns, other injuries or damage.</p>
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When the product fails to operate properly, use the following table to locate the cause and remedy.

Problem	Cause	Remedy
Fluid leaks from the outlet side	The valve sealing section is clogged with rust or scale, or the O-ring is scratched or damaged	Clean or replace with new parts
Fluid leaks from the gland section	Sealing surfaces and/or gaskets are clogged with rust or scale, damaged or worn	Tighten, clean or replace with new parts
The valve does not move or remained half open	The valve seat and the ball are clogged with rust or scale, or the valve seat is deformed	Clean or replace with a new valve
	The handle is worn or deformed	Replace with a new handle
Fluid leaks from where the inlet cover is assembled	Gasket deterioration or damage	Replace with new gasket(s)
	The cover nut is not properly tightened	Tighten it to the proper torque
The valve seat is damaged	Water hammer has occurred	Check whether there is a problem with the piping.
	Check whether the product is being used with the valve(s) half open	Use the product with the valves fully opened or fully closed.

TLV EXPRESS LIMITED WARRANTY

Subject to the limitations set forth below, TLV CO., LTD., a Japanese corporation (“**TLV**”), warrants that products which are sold by it, TLV International Inc. (“**TII**”) or one of its group companies excluding TLV Corporation (a corporation of the United States of America), (hereinafter the “**Products**”) are designed and manufactured by TLV, conform to the specifications published by TLV for the corresponding part numbers (the “**Specifications**”) and are free from defective workmanship and materials. The party from whom the Products were purchased shall be known hereinafter as the “**Seller**”. 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 persons other than TLV, TII or TLV group company personnel, 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 persons other than TLV or TLV group company personnel, 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, TII or TLV group companies; 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 one (1) year after delivery of Products to the first end user. Notwithstanding the foregoing, asserting a claim under this warranty must be brought within three (3) 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 THE SELLER.

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 THE SELLER IN WRITING WITHIN THE 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 THE SELLER, FREIGHT AND TRANSPORTATION COSTS PREPAID, UNDER A RETURN MATERIAL AUTHORIZATION AND TRACKING NUMBER ISSUED BY THE SELLER. 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. THE SELLER 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 THE SELLER'S REASONABLE DISCRETION, THAT THE CLAIMED DEFECT IS NOT COVERED BY THIS WARRANTY, THE PARTY ASSERTING THIS WARRANTY SHALL PAY THE SELLER 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 ITS TLV GROUP COMPANIES 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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For Service or Technical Assistance: Contact your TLV representative or your regional TLV office.

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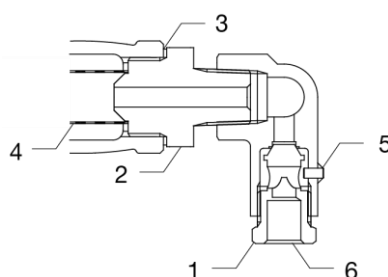
Options

With Blowdown Valve TLV-BD2N (Horizontal type)/BD2V (Vertical type)

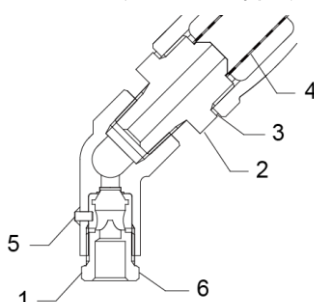
	<p>Always wear eye protection and heat-resistant gloves when operating the blowdown valve. Failure to do so may result in burns or other injury.</p>
	<p>When operating the blowdown valve, stand to the side well clear of the outlet to avoid contact with internal fluids that will be discharged. Operate 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.</p>
	<p>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.</p>
	<p>Do not excessively loosen the BD2 valve when opening the blowdown 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.</p>

Configuration

BD2N (Horizontal type)



BD2V (Vertical type)



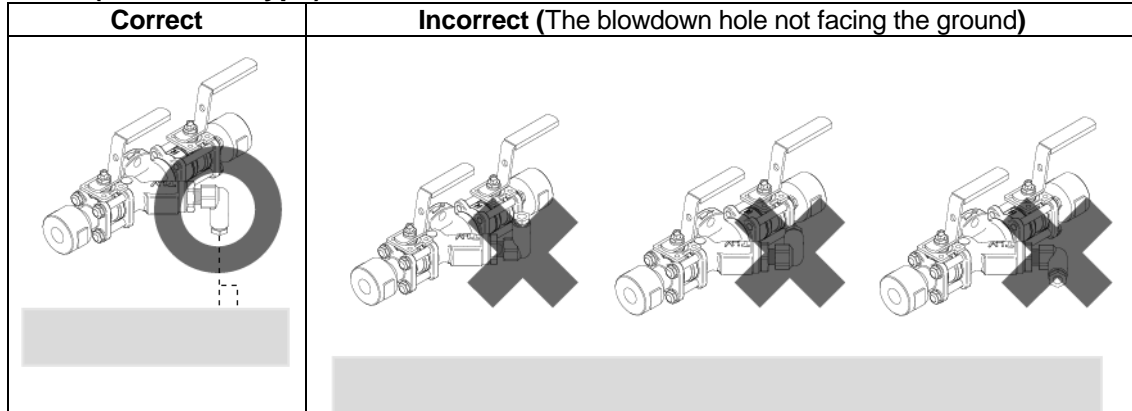
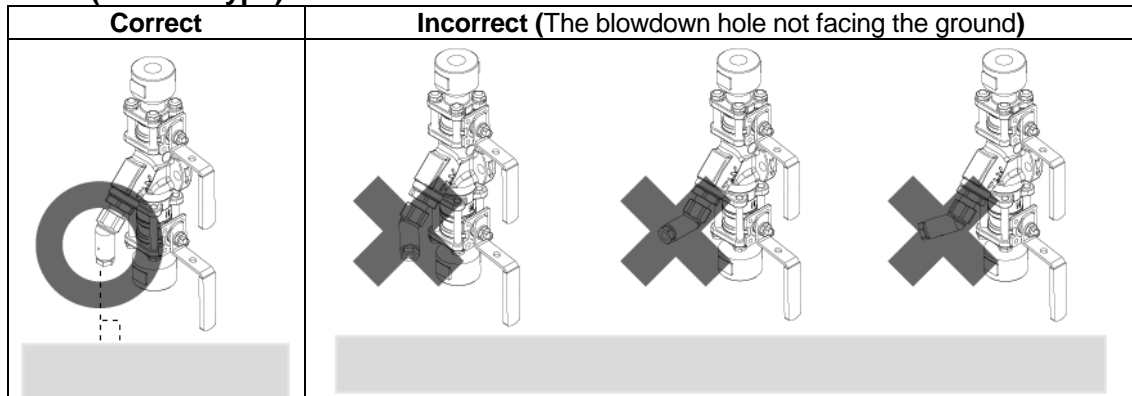
No.	Part Name
1	BD2 Valve
2	BD2 Valve Seat (Screen Holder)
3	Screen Holder Gasket
4	Screen
5	Valve Stopper Pin
6	Discharge Hole

TLV Blowdown Valve: BD2

The BD2 blowdown valve, installed in the screen area of the connector body, uses the trap's internal pressure to blow any condensate, steam, dirt or scale accumulated around the screen area out to atmosphere.

Installation Orientation

When installing the blowdown valve, make sure that the discharge hole is facing towards the ground.

BD2N (Horizontal type)**BD2V (Vertical type)**

Operating Instructions for BD2 Blowdown Valve

1. The BD2 valve is in the closed position when the BD2 is shipped from the factory. Before attempting to operate the BD2, 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 blow outlet in a jet stream. Be careful not to loosen the BD2 valve so far that it becomes removed from the BD2 valve seat. (If the valve stopper pin becomes damaged, large quantities of steam will be discharged in a jet stream.)
3. Close the BD2 valve until the flow of fluid completely stops. If the flow of fluid does not stop, re-open the BD2 valve (as in step "2") to blow out any scale or dirt that may be caught in the BD2. Re-tighten the BD2 valve until the flow of fluid stops completely.

Tightening Torques and Distance Across Flats				
Part Name	Torque		Distance Across Flats	
	N·m	(lbf·ft)	mm	(in)
BD2 Valve 1	30	(22)	17	(²¹ / ₃₂)
BD2 Valve Seat (Screen Holder) 2	100	(73)	30	(¹³ / ₁₆)

NOTE: Avoid the use of excessive tightening torques, as threaded parts may become damaged. (1 N·m ≈ 10 kg·cm)