ISO 9001
ISO14001

Manufacturer
TLV CO., LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

Instruction Manual

Disc Type Check Valve

Featured Models: CK3M/CK3T/CK3R/CK3T-M/CKF3M/CKF3R/CK3MG/CKF3MG/CKF3RG

172-65120M-16
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Introduction

Thank you for purchasing the TLV disc type check valve.

This product has been thoroughly inspected before being shipped from the factory. When the check valve 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 product properly.

Due to its compact design, the disc type check valve can easily be installed in places where space is limited, and can be installed in either horizontal or vertical pipelines. It can be used even with an extremely low pressure differential.

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

This instruction manual is intended for use with the models 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.

Cautionary items and definitions

Danger
Indicates an urgent situation which poses a threat of death or serious injury

Warning
Indicates that there is a potential threat of death or serious injury

Caution
Indicates that there is a possibility of injury or equipment/product damage

Safety Considerations for the Product

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.

Caution
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.

Caution
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 and burns or other injury due to malfunction or the discharge of fluids.

Caution
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.

Caution

Use only under conditions in which no freeze-up will occur. Freezing may damage the unit, leading to fluid discharge, which may different cause burns or other injury.

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.

Model	CK3M			CK3T		
Connection	Screwed					
Size (mm)	15 to 25	32 to 50	15 to 50	15 to 25	32 to 50	15 to 50
Body material	Brass	Bronze	Stainless Steel	Brass	Bronze	Stainless Steel
Sealing surface	Metal [01]			PTFE [01]		
PMO (MPaG) [03]	1.0		2.1	1.0		1.6
TMO (°C) [03]	220			185		
PMA (MPaG) [02]	1.0		2.1	1.0		2.1
TMA (°C) [02]	220					
ΔP (MPa) [03]	0.002					
Applicable fluids	Steam			Steam, water		

[01]PTFE (fluorine resin): Perfect sealing cannot be guaranteed for metal or PTFE sealing surfaces.
[02]Maximum Allowable Pressure (PMA) and Maximum Allowable Temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS, **NOT** OPERATING CONDITIONS
[03]ΔP = Minimum Opening Differential Pressure, PMO = Maximum Operating Pressure, TMO = Maximum Operating Temperature

Model	CK3R			CK3T-M		CK3MG
Connection	Screwed					
Size (mm)	15 to 25	32 to 50	15 to 25	15	20, 25	25, 40, 50, 80
Body material	Brass	Bronze	Stainless steel	Brass		Stainless steel
Sealing surface	NBR [01]			PTFE [02]		Metal [02]
PMO (MPaG) [03]	1.0		1.6	1.0		2.1
TMO (°C) [03]	90			180		220
PMA (MPaG) [04]	1.0		2.1	1.0		3.2
TMA (°C) [04]	220					
ΔP (MPa) [03]	0.002			0.007	0.005	0.001
Applicable fluids	Air, water			Steam, water		

[01]NBR (nitrile rubber), FPM (fluorine rubber): For rubber sealing surfaces, a closing differential pressure of more than 0.05 MPa (7 psi) will be required for perfect sealing. (However, degradation of, or debris on, the rubber sealing surface may prevent perfect sealing.)
[02]PTFE (fluorine resin): Perfect sealing cannot be guaranteed for metal or PTFE sealing surfaces.
[03]ΔP = Minimum Opening Differential Pressure, PMO = Maximum Operating Pressure, TMO = Maximum Operating Temperature
[04]Maximum Allowable Pressure (PMA) and Maximum Allowable Temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS, **NOT** OPERATING CONDITIONS

Model	CKF3M	CKF3R	CKF3MG	CKF3RG
Connection	Flangeless (wafer)			
Size (mm)	15 to 40		50 to 100	50
Body material	Stainless steel			
Sealing surface	Metal [01]	FPM [01]	Metal [01]	FPM [01]
PMO (MPaG) [02]	3.0	1.6	3.0	1.6
TMO (°C) [02]	350	150	350	150
PMA (MPaG) [03]	3.0			
TMA (°C) [03]	350			
ΔP (MPa) [02]	0.002		0.001	
Applicable fluids	Steam, water	Air, water	Steam, water	Air, water

[01]PTFE (fluorine resin): Perfect sealing cannot be guaranteed for metal or PTFE sealing surfaces.
[02]ΔP = Minimum Opening Differential Pressure, PMO = Maximum Operating Pressure, TMO = Maximum Operating Temperature
[03]Maximum Allowable Pressure (PMA) and Maximum Allowable Temperature (TMA) are PRESSURE SHELL DESIGN CONDITIONS, **NOT** OPERATING CONDITIONS

Note

- PMO and TMO may vary according to the options selected. Check nameplate, drawing, etc.
- When the valve has remained closed for a long period of time, the valve and the valve seat may stick, increasing the necessary minimum opening differential pressure. Make sure to open the valve properly before the installation. In addition, the minimum opening differential pressure varies depending on the direction of flow due to the influence of the weight of the valve disc. See the following table.

Minimum Operating Differential Pressure by Direction of Flow

Model	Size (mm)	Horizontal (MPa)	Vertical/Upward (MPa)	Vertical/ Downward (MPa)
CK3M/CK3T/CK3R		0.002	0.0015	0.0025
CK3T-M	15	0.007	0.0065	0.0075
	20, 25	0.005	0.0045	0.0055
CK3MG		0.001	0.0005	0.0015
CKF3M/CKF3R		0.002	0.0016	0.0024
CKF3MG/CKF3RG		0.001	0.0005	0.0015

Cv Values

Model	Size (mm)	15	20	25	32	40	50	65	80	100
CK3M, CK3T, CK3R	Cv (US)	3.7	6.6	10	15	21	29			
	Cv (UK)	3.1	5.5	8.3	13	17	24	—		
	Kvs (DIN)	3.2	5.7	8.6	13	18	25			
CK3T-M	Cv (US)	3.7	6.6	10						
	Cv (UK)	3.1	5.5	8.3			—			
	Kvs (DIN)	3.2	5.7	8.6						
CK3MG	Cv (US)			25		55	91		180	
	Cv (UK)	—		21	—	46	76	—	150	—
	Kvs (DIN)			21		47	78		154	
CKF3M, CKF3R	Cv (US)	4.6	8.8	16	20	29				
	Cv (UK)	3.8	7.3	13	17	24	—			
	Kvs (DIN)	3.9	7.5	14	17	25				
CK3MG	Cv (US)						54	100	140	240
	Cv (UK)			—			45	83	117	200
	Kvs (DIN)						46	85	120	206
CKF3RG	Cv (US)						54			
	Cv (UK)			—			45	—		
	Kvs (DIN)						46			

Connectable Flange Standards

This applies to the flangeless connections for CKF3M, CKF3R, CKF3MG and CKF3RG.

<table>
<tr><th>Size (mm)</th><th>JIS</th><th>ASME/JPI</th><th>PN (EN/DIN)</th><th>BS Table</th></tr>
<tr><td>15</td><td rowspan="7">5, 10, 16, 20, 30K</td><td rowspan="2">Class 150, 300</td><td rowspan="7">PN 6, 10, 16, 25, 40</td><td rowspan="6">A, D, E, F, H, J</td></tr>
<tr><td>20</td></tr>
<tr><td>25</td><td rowspan="6">Class 125, 150, 250, 300</td></tr>
<tr><td>32</td></tr>
<tr><td>40</td></tr>
<tr><td>50</td></tr>
<tr><td>65</td><td>F, H, J</td></tr>
<tr><td>80</td><td rowspan="2">10, 16, 20, 30K</td><td rowspan="2">PN 10, 16, 25, 40</td><td rowspan="2">A, D, E, F, H, J</td></tr>
<tr><td>100</td></tr>
</table>

Options

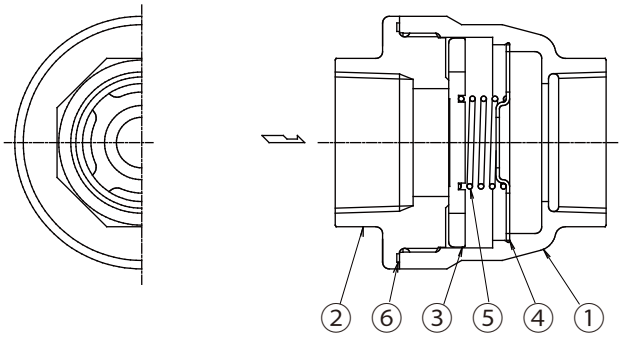
ΔP Minimum Operating Differential Pressure (MPa)	CK3M, CK3T, CK3R: 0.001, 0.01, 0.02 CKF3M, CKF3R: 0.001, 0.01 [01]
Rubber sealing material	CK3R: Fluorine rubber (FPM)/TMO 150 °C
Special use as a vacuum breaker	CK3M, CK3T,CK3T-M, CKF3M, CK3MG, CKF3MG [02]

[01]Except nominal size of 40 mm for ΔP 0.01 MPa

[02]CK3R, CKF3R and CKF3RG (with rubber sealing) should not be used. Due to the nature of the rubber, there is a possibility of the disc sticking to the metal valve seat, compromising product performance at the very low differential pressures under which vacuum breakers operate.

Configuration

CK3M/CK3T/CK3R/CK3T-M

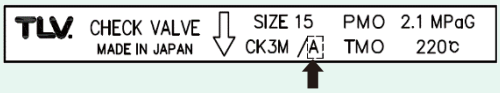


No.	Part Name	M [01]	R [01]	No.	Part Name	M [01]	R [01]
1	Body			4	Spring Holder		
2	Inlet Union			5	Coil Spring		✓
3	Valve Disc		✓	6	Union Gasket	✓	✓

[01]Replacement parts are available only in the following kits: M=Maintenance Kit, R=Repair Kit

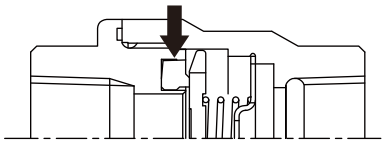
Note

- When requesting a Repair Kit, please specify the minimum opening differential pressure.
- For nominal sizes 15 to 25 mm (1/2 to 1 in), confirm that an identification code of "A" or later is present on the nameplate as shown in the figure below when requesting replacement parts. Both Maintenance Kit and Repair Kit will be available for products with such a code. If no such code is shown on the nameplate, please contact TLV.



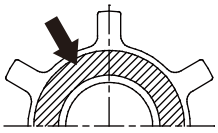
- For nominal sizes 32 to 50 mm, both maintenance kit and repair kit are available regardless of identification code.

PTFE Valve Seat (PTFE = fluorine resin)



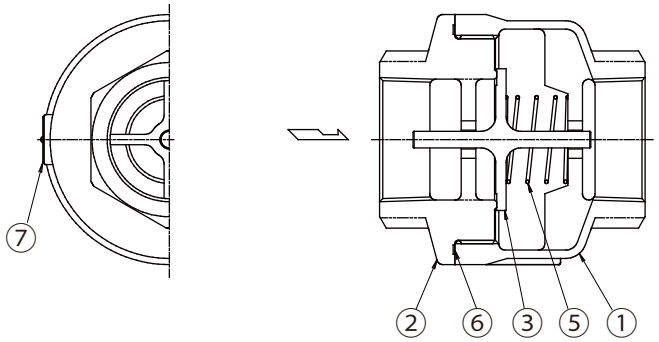
The CK3T, CK3T-M inlet union has a PTFE valve seat insert.

Rubber sesaling



CK3R valve disc is inlaid with rubber.

CK3MG

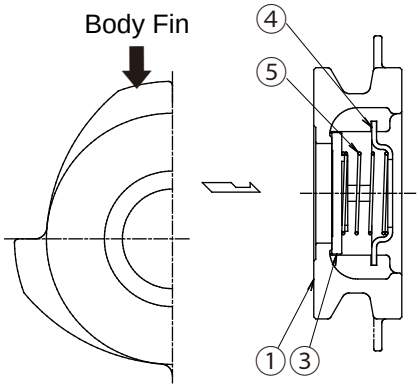


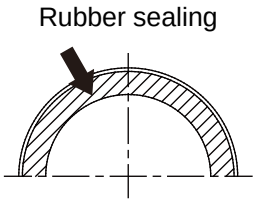
No.	Part Name	M [01]	R [01]	No.	Part Name	M [01]	R [01]
1	Body			5	Coil Spring		✓
2	Inlet Union			6	Union Gasket	✓	✓
3	Valve Disc		✓	7	Nameplate		

[01]Replacement parts are available only in the following kits: M=Maintenance Kit, R=Repair Kit

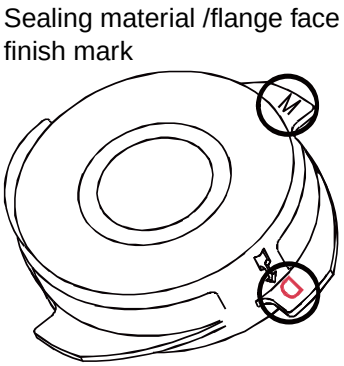
Note
When requesting a repair kit, please specify the minimum opening differential pressure.

CKF3M/CKF3R





The CKF3R valve disc is inlaid with rubber.

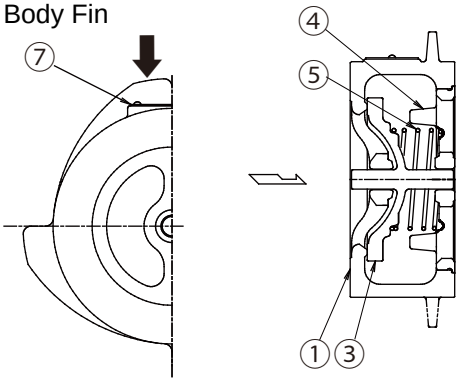


No.	Part Name	No.	Part Name
1	Body	5	Coil Spring
3	Valve Disc	7	Nameplate [01]
4	Spring Holder		

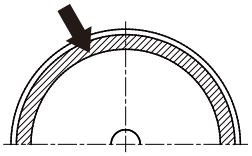
[01]CKF3MG/CKF3RG only

CKF3MG/CKF3RG

Body Fin

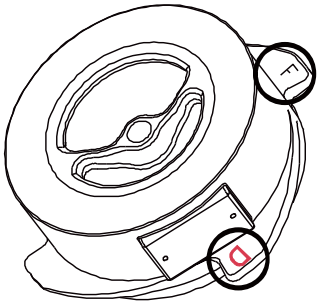


Rubber sealing



The CKF3RG valve disc is inlaid with rubber.

Sealing material /flange face finish mark
(Sealing material only indicated on CKF3RG)



No.	Part Name	No.	Part Name
1	Body	5	Coil Spring
3	Valve Disc	7	Nameplate [01]
4	Spring Holder		

[01]CKF3MG/CKF3RG only

Replacement parts are not available for CKF3 series (flangeless) check valves, as special equipment is required for assembly/disassembly.

Sealing material and flange face finish can be identified by a stamp on the body fin. The flange face finish is stamped for DIN serration only, with the "D" mark.

Mark	Model	Sealing Material	Mark	Flange Face Finish
M	CKF3M, CKF3MG	Metal	—	• Surface roughness: 3.2 to 6.3 µmRa (125 to 250 AARH) Serration • ASME B16.5 Serration
F	CKF3R, CKF3RG	Fluorine rubber (FPM) (Standard)		
N		Nitrile rubber (FPM) [01]	D	DIN serration
E		Ethylene propylene rubber (EPDM) [01]		

[01]Optional or special order materials

Installation

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.

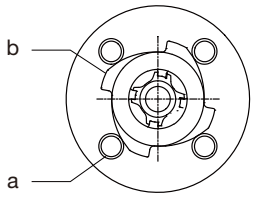
Do not use excessive force when connecting threaded pipes to the unit. Over tightening may cause breakage leading to fluid discharge, which may cause burns or other injury.

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

1. Avoid installation directly after equipment that may cause sudden changes in pressure or flow including water hammer and pulsation. (For example: high flow ON-OFF valves or pumps that start and stop frequently) Strong shocks to internal parts may result in damage to the spring or premature wear on the disc valve and seating surfaces.
2. Choose the model that meets operating temperature requirements. The CK3R optional FPM sealing model can be used to 150 °C.

Model	CKF3M CKF3MG	CK3M CK3MG	CK3T CK3T-M	CKF3R CKF3RG	CK3R
Maximum Operating Temperature (°C)	350	220	185	150	90

3. Before installation, be sure to remove all protective seals.
4. Before installing the product, blow out the inlet piping to remove any piping scraps, dirt and oil. Close the inlet valve after blowdown.
5. Before installing the product, open the valve to make sure that the valve and the valve seat do not stick to each other.
6. Install the product so the arrow on the body is pointing in the direction of flow.
7. There are no restrictions on the direction of installation, however vertical piping installation is recommended. To center the valve, install the CKF3M/CKF3MR and the CKF3MG/CKF3MRG with the bolts (a) touching the fins (b).



8. When installing a screwed type, secure the inlet and outlet piping of the product using supports, etc. to ensure that it does not place stress on the inlet union or the body of the product.
9. Open the inlet valve, and perform the necessary checks to make sure that the product functions properly.

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

Maintenance

Caution
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 and burns or other injury due to malfunction or the discharge of fluids.

Operational Check

A visual inspection of the following items should be done on a daily basis to determine whether the product is operating properly or has failed. Periodically (at least biannually) the operation should also be checked using diagnostic equipment, such as a stethoscope.

If the product should fail, it may cause damage to piping and equipment, resulting in faulty or low quality products.

Normal: Where inlet pressure is higher than outlet pressure (equal to or greater than the minimum opening differential pressure), flow, in the proper direction, can be verified. If outlet pressure becomes higher than inlet pressure, flow ceases.

Leakage: There is flow even when outlet pressure becomes higher than inlet pressure.

Parts Inspection

When parts have been removed, or during periodic inspections, use the following table to inspect the parts and replace any that are found to be defective.

Gaskets: Check for warping or damage

Valve Disc: Check for scratches

Sealing Surfaces: Check for scratches

Coil Spring: Check for scratches or wear

Spring Holder (after cleaning inside the body): Check for scratches or wear

Disassembly/Reassembly

Caution
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 and 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.)

Assembly or disassembly are not possible for CKF3M/CKF3R/CKF3MG/CKF3RG as special equipment is required. Accordingly, replacement parts are not available for these models.

Part Name & No.	During Disassembly	During Reassembly
Inlet Union 2	Remove with a wrench	Coat threads with anti-seize and tighten to the proper torque
Union Gasket 6	Remove the gasket	Replace with a new gasket if warped or damaged; make sure the gasket does not get pinched when tightening the inlet union
Valve Disc 3	Remove the valve disc	Insert, making sure the polished surface is facing the inlet union
Coil Spring 5	Remove the coil spring	CK3M/CK3T/CK3R/CK3T-M: Insert into housing CK3MG: Place the coil spring on the disc stem
Spring Holder 4 (except CK3MG)	This part is inserted tightly in the body, and is not meant to be removed	—

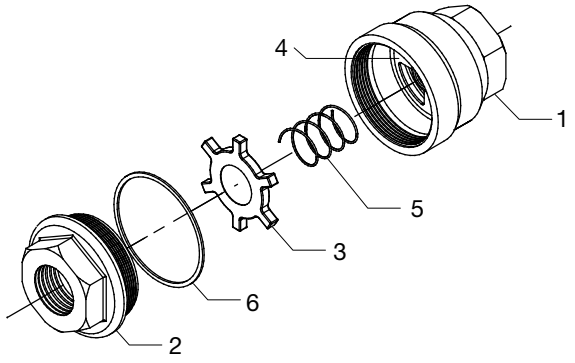
Table of Tightening Torques

Part Name & No.	Model	Size (mm)	Torque (N·m)	Distance Across Flats (mm)
Inlet Union 2	CK3M, CK3T, CK3R, CK3T-M	15	100	27
		20	150	32
		25	180	41
		32	250	50
		40	300	55
		50	400	70
	CK3MG	25	180	41
		40	600	60
		50	800	75
		80	800	100

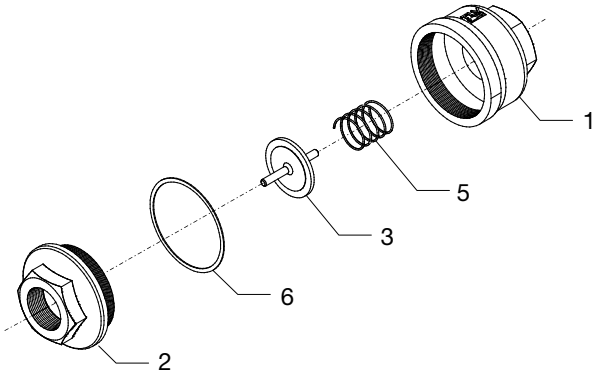
Note
If drawings or other special documentation were supplied for the product, any torque given there takes precedence over values shown here.

Exploded View

CK3M/CK3T/CK3R/CK3T−M



CK3MG



No.	Part Name	No.	Part Name
1	Body	4	Spring Holder
2	Inlet Union	5	Coil Spring
3	Valve Disc	6	Union Gasket

Troubleshooting

Caution
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.

When the product fails to operate properly, use the following table to locate the cause and remedy.

Problem	Cause	Remedy
The sound of flow can be heard when the outlet pressure is higher than inlet pressure	Dirt or damage on sealing surfaces or build-up inside the body	Clean parts
	The valve disc is catching due to wear, dirt, rust, etc.	Replace with a new check valve
	The coil spring is dislodged or broken	Screwed: Replace with a new coil spring Flangeless: Replace with a new check valve
	The spring holder is dislodged or broken	Replace with a new check valve
Leakage to the outside of the check valve	The union gasket is warped or damaged	Screwed: Replace with a new gasket
	Incorrect inlet union tightening torque	Screwed: Tighten to the proper torque
	The check valve is subject to stress from the piping (weight, torsion, etc.)	Screwed: Correct the piping
Flow is poor	The valve disc is catching due to wear, dirt, rust, etc.	Clean parts
	Incorrect operating pressure	Adjust by increasing the pressure or replace with a check valve that has a larger Cv value
The valve does not open at the specified differential pressure	Sticking of the valve and the valve seat due to rust, pipe sealing agent, etc.	Clean parts
		If the valve disc is inlaid with rubber, it may be the case that the rubber is sticking to the metal. Contact TLV for details.

Note
When replacing parts with new, use the parts list for reference and replace with parts from the Maintenance Kit, Repair Kit, etc. (Please note that replacement parts are only available in pre-packaged kits.)

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.

Service

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

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