

ISO 9001
ISO14001



Manufacturer

TLV CO., LTD.

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001



Instruction Manual

(Safety and Explosion-Proof Requirements)

Steam Trap Management System
Pocket TrapMan.

PT3

(ATEX/IECEx-certified Model)

172-65822MA-00

Publication date 30 January 2025

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Table of Contents

Introduction	3
Safety Considerations	4
Replacing the Battery	8
Adjustment	9
Specifications	10
Applicable Standards	12
TLV EXPRESS LIMITED WARRANTY	13
Service	15

Introduction

Thank you for purchasing the TLV Pocket TrapMan steam trap management system.

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 product properly.

To ensure safe and correct use of this product, be sure to observe the safety precautions listed in this manual as they relate to installation, operation, maintenance and repair of the product. Please keep it in a safe place for future reference.

TLV accepts no responsibility for incorrect use of the product by the customer or any third-party, malfunction occurring during use, other defects and any damage caused by this product, excluding cases in which it is under obligation to pay reparations by law.

This product has undergone strict quality management and product inspection before being shipped from the factory. However, in the event of malfunction or defects, please contact your local TLV representative or the TLV customer service center.

This instruction manual and product are subject to modification without notice, for the purpose of improvement.

Unauthorized reprinting or reproduction, in whole or in part, of this instruction manual or product is strictly prohibited.

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

General Precautions



Danger

DO NOT disassemble or modify the device or battery. Failure to observe this precaution could result in fire or malfunction. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition. If battery fluid leaks and comes into contact with your body or gets into your eyes, immediately rinse the affected area with clean water and see a doctor.



Danger

DO NOT apply heat to the batteries or throw them into a fire. Whether the battery or the device is new or used, do NOT dispose of them by throwing them into a fire, as they may EXPLODE causing injury.



Danger

DO NOT let the device become immersed in water. If the device is submerged, immediately stop using it and return it to TLV. Do not immerse or let the device become immersed in water or other liquids.

Charging Precautions



Warning

Make sure the battery is connected to PT3 when charging. Failure to observe this precaution could result in heat generation or fire.



Warning

After charging is complete, disconnect the USB cable from the device. Failure to do so may result in heat generation or fire.

**Warning**

DO NOT plug or unplug the charger with wet hands. Failure to observe this precaution could result in electrocution.

**Warning**

DO NOT charge the battery in hazardous areas. Failure to observe this warning may result in explosion, fire or injury.

Battery Precautions

**Danger**

DO NOT replace the battery in hazardous areas. Make sure to replace the battery in non-hazardous areas. Failure to observe this precaution could result in explosion, fire or injury.

**Danger**

DO NOT open, disassemble or crush the battery. Failure to observe this precaution could result in leakage of the battery fluid, battery overheating, rupture or ignition. If battery fluid leaks and comes into contact with your body or gets into your eyes, immediately rinse the affected area with clean water and see a doctor.

**Danger**

DO NOT apply heat to the battery or throw it into a fire. Do not throw the battery into a fire or heat it, neither before nor after use. Both are very dangerous and could result in explosion, ignition or rupture. The temperature should be kept between 0 to 40 °C while charging and -10 to 50 °C while in use.

**Danger**

DO NOT let the battery become immersed in water. Do not immerse or let the battery become immersed in water or other liquids. Failure to observe this precaution could result in leakage of the battery fluid, battery overheating, rupture or ignition.

**Danger**

DO NOT use the battery if damaged. Do not use the battery in the case of any abnormalities such as battery overheating, unusual odors, discoloration or deformation, etc. Battery damage could result in overheating, expansion, leakage, smoke, ignition or explosion.

**Danger**

DO NOT incinerate the battery. Failure to observe this precaution may result in fire or explosion.

**Danger**

DO NOT use a battery other than the specified model. When replacing the battery, use only the TLV CO., LTD model P11-22050-x battery. Failure to observe this precaution may result in fire or injury.

**Danger**

DO NOT use or leave the device in areas that will become very hot. Do not leave the device where it will be exposed to direct sunlight or in areas that will become very hot, such as interiors of cars, near heating equipment, etc. Failure to observe this precaution could result in leakage of the battery fluid, battery overheating, rupture or ignition.

**Danger**

Keep the device out of reach of children. Failure to observe this precaution could result in injuries, overheating, smoke, ignition or explosion.

**Warning**

DO NOT use the battery in the case of any abnormalities such as battery fluid leakage, unusual odors, battery overheating, discoloration or deformation, etc. Failure to observe these precautions may result in damage to the device, fire or burns.

**Warning**

If battery fluid leaks and comes into contact with the body, rinse immediately. There is danger of resultant damage to the skin. Immediately rinse any battery fluid off with clean water.

**Caution**

Be sure to charge the battery regularly. If the device is not used for a long time with the battery installed, fully charge the battery once a month. The battery will deteriorate and become unusable.

**Caution**

DO NOT remove the battery from the device. Water resistance may be impaired. If the battery has deteriorated and needs to be replaced, send it to TLV.

**Caution**

Return unnecessary battery to your local TLV office or distributor either before or after use of the battery, insulating the contact terminals with tape or dispose according to your company regulations.

Usage/Storage Precautions

**Warning**

DO NOT operate the device with wet hands. Do not plug or unplug the charger with wet hands. Failure to observe this precaution could result in electrocution.

**Caution**

This device is explosion-proof certified. The explosion-proof marking is indicated on the device nameplate. The device should be used by trained personnel with knowledge of the hazardous locations/classifications.

**Caution**

DO NOT allow any foreign matter to enter the device. In areas with small foreign matter such as metal dust, use the device after taking measures to prevent foreign matter entering the device. Failure to observe this precaution could result in fire or malfunction.

**Caution**

Surface temperature measurement range is -40 to 350 °C. If an object with a surface temperature of 350 °C or higher is measured, the probe tip or internal parts may be damaged. If the surface temperature is expected to exceed 350 °C, stop measuring.

**Caution**

DO NOT drop the device or otherwise subject it to strong impacts. Doing so may cause damage, malfunction, battery ignition or burns.

**Caution**

DO NOT leave the device in areas that will become very hot. Do not leave device where it will be exposed to direct sunlight or in areas that will become very hot, such as interiors of cars, near heating equipment, etc. This may cause the device to malfunction or fail.

**Caution**

DO NOT use sharp objects such as pens to operate the buttons. This may damage the buttons.

**Caution**

DO NOT place any part of the device other than the tip of the probe against a hot location. Failure to observe this precaution could result in malfunction.

**Caution**

DO NOT drag the tip of the probe across the surface of the object being measured. Failure to observe this precaution could result in malfunction.



Caution

DO NOT leave the device in places subject to excessive dust and strong vibrations. Failure to observe this precaution could result in malfunction.



Caution

DO NOT remove the temperature sensor from the tip of the probe. Forcibly removing the sensor may cause malfunction.



Caution

Return the unnecessary device to your local TLV office or distributor for disposal, or dispose according to your company regulations.

Precautions related to Site Inspections



Danger

DO NOT use earphones other than those specified. Any earphones other than those specified should not be used in hazardous areas.



Warning

DO NOT operate the device while walking. Failure to observe this precaution could lead to accidents such as tripping or collisions.



Warning

Take measures to prevent getting caught in rotating machinery. When passing by or working near rotating machinery, take measures to prevent the strap, earphone cord, clothing etc. from getting caught in the machinery. This may result in accident or injury and damage to the device or equipment.



Warning

Before using the product, make sure to take measures to prevent burns. Take measures to prevent burns from accidentally touching hot piping.



Caution

Turn down the volume first when using earphones. Using earphones in places where there is loud noise or vibrations may result in hearing loss.

Specific condition of use

1. Do not charge or replace the battery in hazardous areas. Use only TLV model P11-22050-x battery.
2. The equipment must only be connected to the charger using lead type USB Type-C. The battery must only be charged at a voltage no more than 6.0 V, in an ambient between 0 to 40 °C.

Replacing the Battery



Danger

DO NOT replace the battery in hazardous areas. Make sure to replace the battery in non-hazardous areas. Failure to observe this precaution could result in explosion, fire or injury.

DO NOT disassemble the battery. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.

Use only the P11-22050-x battery (TLV CO., LTD.) when replacing the battery.

1. Turn off the power of the device. Refer to the instruction manual for details.
2. Remove the four hex bolts (M2) that hold the battery cover on the back of the device.
3. Remove the battery from the device and disconnect it from the connector. Make sure to disconnect the battery by holding the connector instead of the wiring cable to prevent the wire from breaking.
4. Connect a new battery and insert it to the device. Be careful to observe the correct polarity of the battery.
5. Secure the battery cover with the four hex bolts (removed in step 2) (tightening torque: 0.14 N·m).



Note

Please note that if the screws are not tightened to the specified torque, IP54 protection rating for water and dust resistance may not be met.

Adjustment

The tip of the probe, which is used to detect temperature and ultrasonic waves, is a crucial component of the device. The detection sensitivity may change, not only if the device is dropped or knocked about, but also as a result of regular wear and use.

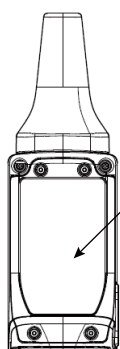
Therefore, periodic calibration is recommended.

Frequency: Every 2 years, after 30,000 measurements, or when the sensor is warped or damaged

Adjustment can only be performed with special equipment at TLV's factory.

Contact your local TLV representative or your regional TLV office for details.

Specifications

Type	Steam Trap Management System		
Device name	Pocket TrapMan		
Model	PT3		
Classification markings of hazardous locations	ATEX:	C 2776 Ex II 3G Ex ic IIB T3 Gc Certificate No.: CML 23ATEX2072X	
	IECEX:	Ex ic IIB T3 Gc Certificate No.: IECEX CML 23.0030X	
	Mark for certified electrical equipment	Ex	Indicates explosion-proof structures
	Type of protection	ic	Intrinsically safe structure This equipment can be used in Zone 2.
	Applicable gas groups	IIB	Applicable to gases (Acetylene, etc.) with minimum ignition current ratio is from 0.45 or more to 0.8 or less.
	Temperature class	T3	Applicable when maximum surface temperature of the device is 200 °C.
	EPL (Equipment Protection Level)	Gc	This equipment can be used in Zone 2. (For use in explosive atmospheres due to the presence of gas, with a 'high' level of protection that is not the source of ignition in normal operation or when subject to expected malfunctions, although not on a regular basis.)
Indication regarding product information	Company name, product name, serial number, certification information and precautions are included in the product information. <div style="text-align: center;">  <p>Product information location</p> </div>		
Power supply	TLV CO., LTD.: Model P11-22050-x battery ("x" for 1 alphanumeric character) Lithium-ion battery Rated voltage: 3.7 V Rated capacity: 1,000 mAh		
Measurement temp. range	-40 to 350 °C		
Allowable temp. range	When in operation: -10 to 50 °C (No condensation or freezing) When stored: -10 to 50 °C (No condensation or freezing, battery fully charged every month) When charging: 0 to 40 °C (No condensation or freezing)		
Protection class	IP54		
Charging port	USB Type-C		

Frequency range	2402 to 2480 MHz (Bluetooth® Ver. 5.0) 125 kHz (RFID)
Transmit power	-3.54 dBm (e.i.r.p) (Bluetooth®) -3.67 dBm (e.i.r.p) (Bluetooth® LE) 2.63 dBμA/m @ 10 m (RFID)

Applicable Standards

Refer to the declaration of conformity for details.

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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