

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
TrapMan.

TM8

(UL/cUL-certified Model)

172-65833MAF-00

Publication date 17 October 2024

Copyright © 2024 TLV CO., LTD.

Manufacturer

TLV CO., LTD.

881 Nagasuna, Noguchi, Kakogawa, Hyogo, 675-8511, Japan
Tel: [81]-(0)79-427-1800 Fax: [81]-(0)79-422-2277

TLV CORPORATION

Table of Contents

Introduction 3

Safety Considerations 4

Replacing the Battery 8

Adjustment 9

Specifications 10

Applicable Standards 12

TLV EXPRESS LIMITED WARRANTY 13

Introduction

Thank you for purchasing the TLV 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

DO NOT charge the battery with anything other than the device. Failure to observe this precaution could result in excessive 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.

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 (0.11 lbf·ft)).



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	TrapMan		
Model	TM8		
Classification markings of hazardous locations	UL:	Class I, Zone 2, AEx ic IIB T3 Gc	
		File No.: Exxxxxx	
	cUL:	Ex ic IIB T3 Gc	
		File No.: Exxxxxx	
	Mark for certified electrical equipment	AEx/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 (392 °F).
	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.  Product information location		
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 (-40 to 662 °F)		
Allowable temp. range	When in operation: -10 to 50 °C (-14 to 122 °F) (No condensation or freezing) When stored: -10 to 50 °C (-14 to 122 °F) (No condensation or freezing, battery fully charged every month) When charging: 0 to 40 °C (32 to 104 °F) (No condensation or freezing)		
Protection class	IP54		
Charging port	USB Type-C		
Frequency bandwidth and wireless outlet power	Bluetooth® Ver. 5.0 Class 1 (2.4 GHz -14 dBm)		

FCC Warning

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.



Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Caution

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

ISED Warning

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage, et
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement de l'appareil numérique du CIEM conforme.

The SAR limit adopted by USA and Canada is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The highest SAR value reported to the Federal Communications Commission (FCC) the Industry Canada (IC) for this device type when it is tested for the properly worn on the body is under 1 g 1.6 W/kg. The device complies with the RF specifications when the device is used at a distance of 0mm from your body. Ensure that the device accessories such as a device case and a device holster are not composed of metal components. Keep your device 0 mm away from your body to meet the requirement earlier mentioned.

Applicable Standards

- Explosion-proof
USA (UL): ANSI/UL 60079-0, ANSI/UL 60079-11
Canada (cUL): CAN/CSA-22.2 No.60079-0, CAN/CSA-22.2 No.60079-11
- Broadcast/radio
USA (FCC): FCC Part 15C
Canada (IC): RSS-247, Issue 3

TLV EXPRESS LIMITED WARRANTY

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

Exceptions to Warranty

This warranty does not cover defects or failures caused by:

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

Duration of Warranty

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

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

DESCRIPTION OF THE CLAIMED DEFECT AND HOW AND WHEN THE CLAIMED DEFECTIVE PRODUCT WAS USED; AND (b) THE CLAIMED DEFECTIVE PRODUCT AND A COPY OF THE PURCHASE INVOICE IS RETURNED TO TLV, FREIGHT AND TRANSPORTATION COSTS PREPAID, UNDER A RETURN MATERIAL AUTHORIZATION AND TRACKING NUMBER ISSUED BY TLV. ALL LABOR COSTS, SHIPPING COSTS, AND TRANSPORTATION COSTS ASSOCIATED WITH THE RETURN OR REPLACEMENT OF THE CLAIMED DEFECTIVE PRODUCT ARE SOLELY THE RESPONSIBILITY OF BUYER OR THE FIRST END USER. TLV RESERVES THE RIGHT TO INSPECT ON THE FIRST END USER'S SITE ANY PRODUCTS CLAIMED TO BE DEFECTIVE BEFORE ISSUING A RETURN MATERIAL AUTHORIZATION. SHOULD SUCH INSPECTION REVEAL, IN TLV'S REASONABLE DISCRETION, THAT THE CLAIMED DEFECT IS NOT COVERED BY THIS WARRANTY, THE PARTY ASSERTING THIS WARRANTY SHALL PAY TLV FOR THE TIME AND EXPENSES RELATED TO SUCH ON-SITE INSPECTION.

Exclusion of Consequential and Incidental Damages

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

Exclusion of Other Warranties

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

Severability

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

TLV CORPORATION

13901 South Lakes Drive, Charlotte, NC 28273-6790, U.S.A.

Tel: [1]-704-597-9070 Fax: [1]-704-583-1610

ISO 9001
ISO14001



Manufacturer

TLV CO., LTD.

Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001



Manuel d'utilisation

(Exigences en matière de sécurité et d'antidéflagration)

Système de gestion des purgeurs vapeur

TrapMan.

TM8

(UL/cUL-modèle certifié)

172-65833MAF-00

Date de publication 17 October 2024

Copyright © 2024 TLV CO., LTD.

Manufacturer

TLV CO., LTD.

881 Nagasuna, Noguchi, Kakogawa, Hyogo, 675-8511, Japan
Tel: [81]-(0)79-427-1800 Fax: [81]-(0)79-422-2277

TLV CORPORATION

Table des matières

Introduction	3
Règles de sécurité	4
Remplacement des batteries	8
Réglage	9
Caractéristiques techniques	10
Normes applicables	12
TLV EXPRESS LIMITED WARRANTY	13

Introduction

Merci d'avoir choisi le système de gestion des purgeurs vapeur TrapMan de TLV.

Lors de sa livraison et avant toute chose, vérifiez ses spécifications et son apparence externe afin de confirmer l'absence d'anomalie. Veuillez également lire ce manuel attentivement avant la mise en service du produit, et suivre les instructions afin de l'utiliser correctement.

Pour garantir une utilisation sûre et correcte de ce produit, veuillez à respecter les précautions de sécurité énumérées dans ce manuel en ce qui concerne l'installation, le fonctionnement, l'entretien et la réparation du produit. Conserver ce manuel dans un endroit facile d'accès.

TLV décline toute responsabilité en cas d'utilisation incorrecte du produit par le client ou par un tiers, de dysfonctionnement survenant lors de l'utilisation, d'autres défauts et de tout dommage causé par ce produit, à l'exclusion des cas dans lesquels il est tenu par la loi de payer des réparations.

Ce produit a fait l'objet d'un suivi contrôle qualité rigoureux et d'une inspection avant de sortir de l'usine. Toutefois, en cas de dysfonctionnement ou de défauts, veuillez contacter votre représentant TLV local ou le service clientèle.

Le manuel et le produit sont susceptibles d'être modifiés sans préavis en vue d'amélioration.

Toute réimpression ou reproduction non autorisée, totale ou partielle, de ce manuel ou du contenu du matériel/logiciel du produit est strictement interdite.

Règles de sécurité

- Lire attentivement cette notice avant l'utilisation et suivre les instructions.
- Tout entretien, installation, inspection, réparation, démontage et réglage doit être fait uniquement par une personne formée à l'entretien.
- Les précautions énumérées dans ce manuel ont pour but de garantir votre sécurité et d'empêcher tout dégât matériel ou toute blessure. Dans certaines situations causées par une mauvaise manipulation, trois indicateurs sont utilisés afin d'indiquer le degré d'urgence, l'échelle du dommage potentiel et le danger : DANGER, AVERTISSEMENT et ATTENTION.
- Ces trois indicateurs sont importants pour votre sécurité : observez toutes les précautions de sécurité énumérées dans ce manuel pour l'installation, l'utilisation, l'entretien, et la réparation du produit. TLV n'accepte aucune responsabilité en cas d'accident ou de dommage survenant à la suite d'un non-respect de ces précautions.

Avertissements et définitions



Danger

Indique une situation d'urgence avec risque de mort ou de blessure grave.



Avertissement

Indique une situation pouvant entraîner la mort ou des blessures graves.



Attention

Indique un risque de blessure ou de dégât matériel au produit et/ou aux installations.

Précautions générales



Danger

NE PAS démonter ou modifier le chargeur ou la batterie. Le non-respect de cette précaution pourrait entraîner un incendie ou un dysfonctionnement. Le non-respect de cette précaution pourrait entraîner une fuite du liquide de la batterie, provoquer une chaleur excessive, une rupture ou un incendie. Si du liquide de batterie fuit et entre en contact avec votre corps ou vos yeux, rincez immédiatement la zone affectée à l'eau claire et consultez un médecin.



Danger

NE PAS chauffer la batterie/le chargeur ou les jeter dans le feu. Que la batterie/le chargeur soient neufs ou usagés, NE PAS les jeter dans le feu car ils pourraient EXPLOSER et causer des blessures.



Danger

NE PAS immerger l'équipement dans l'eau. Si l'appareil est mouillé, cessez immédiatement de l'utiliser et renvoyez- à TLV. Ne pas immerger l'appareil dans l'eau ou tout autre liquide.

Précautions lors de la recharge



Avertissement

NE PAS charger des batteries avec un autre appareil que le chargeur fourni. Le non-respect de cette précaution pourrait entraîner une production de chaleur excessive ou un incendie.



Avertissement

Une fois le chargement terminé, débrancher le câble USB de l'appareil. Lorsque l'appareil est rechargé et que le chargeur est passé en mode charge lente, débrancher le câble USB afin d'éviter une génération de chaleur ou un incendie.

**Avertissement**

NE PAS brancher ou débrancher le chargeur avec les mains mouillées. Le non-respect de cette précaution pourrait provoquer une électrocution.

**Avertissement**

NE PAS charger des batteries dans des zones dangereuses. Le non-respect de cette consigne peut engendrer une explosion, un incendie ou des blessures.

Précautions concernant des batteries

**Danger**

NE PAS remplacer des batteries dans des zones dangereuses. Veillez à remplacer des batteries dans une zone sûre. Le non-respect de cette consigne peut engendrer une explosion, un incendie ou des blessures.

**Danger**

NE PAS ouvrir, démonter ou broyer des batteries. Le non-respect de cette précaution pourrait entraîner une fuite du liquide des batteries, provoquer une chaleur excessive, la rupture, l'inflammation. Si du liquide de batterie fuit et entre en contact avec votre corps ou entre dans vos yeux, rincez immédiatement la zone affectée à l'eau et consultez un médecin.

**Danger**

NE PAS chauffer des batteries ou les jeter dans un feu. Ne pas jeter des batteries au feu ou la chauffer à plus, avant ou après utilisation. Cela est dangereux et peut entraîner une explosion, une inflammation ou une rupture. La température doit être maintenue en dessous de 40 °C pendant le chargement et en dessous de 50 °C en opération.

**Danger**

NE PAS immerger des batteries dans l'eau. Ne pas immerger des batteries dans l'eau ou tout autre liquide. Le non-respect de cette précaution pourrait entraîner une fuite du liquide des batteries, provoquer une chaleur excessive, la rupture, l'inflammation.

**Danger**

NE PAS démonter des batteries si elle est endommagée. N'utilisez pas la batterie en cas d'anomalies telles que : surchauffe, odeurs inhabituelles, décoloration ou déformation, etc. L'endommagement des batteries pourrait entraîner une surchauffe, une dilatation, une fuite, de la fumée, un incendie ou une explosion.

**Danger**

NE PAS brûler des batteries. Le non-respect de cette précaution peut entraîner un incendie ou une explosion.

**Danger**

NE PAS utiliser des batterie autre que le modèle spécifié. Lors du remplacement des batteries, utilisez uniquement la batterie TLV CO., LTD. modèle P11-22050-x. Le non-respect de cette précaution pourrait entraîner un incendie ou un blessures.

**Danger**

NE PAS utiliser ou laisser l'appareil là où il risque de chauffer. Ne pas laisser l'appareil en plein soleil ou dans des zones où il risque de chauffer, comme l'intérieur des voitures, près des appareils de chauffage, etc. Le non-respect de cette précaution pourrait entraîner une fuite du liquide de la batterie, une surchauffe de la batterie, une rupture ou un incendie.

**Danger**

Tenir l'appareil hors de portée des enfants. Ne pas respecter ces conseils peut provoquer des blessures, surchauffe, émanations, allumage ou explosion.

**Avertissement**

NE PAS utiliser des batteries en cas d'anomalies telles que fuite de liquide de batterie, odeurs inhabituelles, surchauffe de la batterie, décoloration ou déformation, etc. Le non-respect de ces précautions peut entraîner des dommages sur l'appareil, un incendie ou des brûlures.

**Avertissement**

Si du liquide fuit des batteries et entre en contact avec le corps, rincez immédiatement. Il existe un risque de dégât à la peau. Rincez immédiatement tout liquide issu des batteries avec de l'eau propre.

**Attention**

Veiller à recharger régulièrement des batteries. Si l'appareil n'est pas utilisé pendant une longue période avec des batteries en place, recharger complètement la batterie une fois par mois. Sinon, la batterie se détériorera et deviendra inutilisable.

**Attention**

Ne pas retirer la batterie de l'appareil sauf quand un remplacement est nécessaire. L'étanchéité peut en être affectée. Si la pile est détériorée et doit être remplacée, envoyez-la à TLV.

**Attention**

Renvoyez les batteries inutilisées à notre bureau local ou un distributeur TLV, (isolez les bornes de contact avec du ruban adhésif), ou éliminez-les conformément aux règlements de votre entreprise.

Précautions d'utilisation/stockage

**Avertissement**

NE PAS manier le chargeur avec des mains mouillées. NE PAS brancher ou débrancher le chargeur avec les mains mouillées. Le non-respect de cette précaution pourrait provoquer une électrocution.

**Attention**

L'appareil est certifié antidéflagrant. Le marquage antidéflagrant est indiqué sur la plaque firme de l'appareil. Dans les zones dangereuses, l'appareil doit être utilisé par du personnel qualifié ayant une bonne connaissance de ces zones et de leurs classifications.

**Attention**

Faire en sorte qu'aucun corps étranger ne pénètre dans l'appareil. Dans les zones où l'on trouve des particules fines telles que la poussière métallique, prendre des mesures pour éviter que les corps étrangers ne pénètrent dans l'appareil. Le non-respect de cette précaution pourrait provoquer un incendie ou un dysfonctionnement.

**Attention**

Les mesures sont prévues sur des surfaces ayant une température comprise entre -40 et +350 °C. En cas de mesure sur une surface à 350 °C ou plus, l'extrémité de la sonde ou les parties internes peuvent être endommagées. Si la température de surface risque de dépasser 350 °C, arrêtez les mesures.

**Attention**

NE PAS faire tomber l'appareil ou le soumettre à des chocs violents. Cela peut provoquer des dommages, des dysfonctionnements, l'inflammation de le bloc de batteries ou des brûlures.

**Attention**

NE PAS laisser l'appareil là où il risque de chauffer. NE PAS laisser l'appareil dans la lumière du soleil ou des des zones endroits chauffants comme l'intérieur de voitures ou près d'un chauffage,etc. Cela peut entraîner un dysfonctionnement ou une défaillance.

**Attention**

N'utilisez pas d'objets pointus tels que des stylos pour appuyer sur les boutons. Cela peut les endommager.

**Attention**

SEULE l'extrémité de la sonde doit être positionnée sur les surfaces chaudes, aucune autre partie de l'appareil de mesure. Le non-respect de cette précaution pourrait entraîner un dysfonctionnement.

**Attention**

NE PAS faire glisser l'extrémité de la sonde contre la surface de l'objet à mesurer. Le non-respect de cette précaution pourrait entraîner un dysfonctionnement.

**Attention**

NE PAS laisser l'appareil dans des lieux exposés à de fortes vibrations ou à des quantités de poussière importantes. Le non-respect de cette précaution pourrait entraîner un dysfonctionnement.

**Attention**

NE PAS retirer le capteur de température du bout de la sonde. Le retrait forcé du capteur peut entraîner un dysfonctionnement.

**Attention**

Renvoyez les batteries inutilisées à notre bureau local ou un distributeur TLV pour traitement, ou éliminez-les conformément aux règlements de votre entreprise.

Précautions durant les audits sur les sites

**Danger**

NE PAS utiliser d'écouteurs autres que ceux spécifiés. Les écouteurs autres que ceux spécifiés ne doivent pas être utilisés dans les zones dangereuses.

**Avertissement**

NE PAS manipuler l'appareil en marchant. Vous risquez de trébucher ou de provoquer un accident.

**Avertissement**

Prendre les mesures nécessaires pour empêcher d'être pris dans des machines rotatives. Lorsque vous passez ou travaillez à proximité de machines rotatives, faites attention que la courroie, la corde de l'écouteur, les vêtements, etc. ne soient pas pris. Cela pourrait entraîner un accident ou une blessure, et des dégâts à l'appareil ou aux pièces d'équipement.

**Avertissement**

Avant d'utiliser l'appareil, assurez-vous de prendre les mesures de protection nécessaires contre les brûlures. Prenez les mesures pour éviter les brûlures en touchant accidentellement les tuyauteries chaudes.

**Attention**

Baisser le volume sonore avant de commencer à utiliser les écouteurs. L'usage des écouteurs dans des lieux très bruyants ou soumis à de fortes vibrations peut engendrer une perte de l'ouïe.

Remplacement des batteries



Danger

NE PAS remplacer des batteries dans des zones dangereuses. Veillez à remplacer des batteries dans une zone sûre. Le non-respect de cette consigne peut engendrer une explosion, un incendie ou des blessures.

Ne pas démonter des batteries. Le non-respect de cette précaution pourrait entraîner une fuite du liquide des batteries, provoquer une chaleur excessive, une rupture, un incendie.

Remplacer des batteries uniquement par le TLV CO., LTD. modèle P11-22050-x.

1. Éteindre l'appareil. Pour plus de détails, consultez le manuel.
2. Retirez les quatre boulons hexagonaux (M2) à l'arrière de l'appareil qui maintiennent le couvercle de la batterie.
3. Retirez la batterie de l'appareil et débranchez-la du connecteur. Veillez à débrancher la batterie en tirant par connecteur et non le câble pour éviter de l'abimer.
4. Connectez une nouvelle batterie et insérez-la dans l'appareil. Veiller à respecter la polarité de la batterie.
5. Verrouiller le couvercle de la batterie avec les aide des quatre boulons hexagonaux (retirés à l'étape 2) (Couple de serrage : 0.14 N·m (0.11 lbf·ft)).



Note

Veillez noter que si les vis ne sont pas serrées au couple spécifié, le degré de protection IP54 pour la résistance à l'eau et à la poussière peut ne pas être respecté.

Réglage

Le bout de la sonde, qui est utilisé pour détecter la température et les ondes ultrasoniques, est un composant crucial de l'appareil. La sensibilité peut être dégradée par l'usure ou des chocs. Nous recommandons donc une calibration périodique.

Nous recommandons donc une calibration périodique.

Fréquence : Une fois tous les 2 ans, ou lorsque la sonde est déformé ou endommagée.

Le calibrage ne peut être fait qu'à l'usine de TLV avec un équipement spécial.

Contactez votre agent TLV local ou régional TLV pour plus de détails.

Caractéristiques techniques

Type	Système de gestion des purgeurs vapeur		
Nom de l'appareil	TrapMan		
Modèle	TM8		
Marquages des zones dangereuses	UL	Class I, Zone 2, AEx ic IIB T3 Gc Dossier n° : Exxxxxx	
	cUL	Ex ic IIB T3 Gc Dossier n° : Exxxxxx	
	Marquage pour équipement électrique certifié	AEx/Ex	Indique les structures antidéflagrantes
	Type de protection	ic	Structure à sécurité intrinsèque Cet équipement peut être utilisé en zone 2.
	Groupes de gaz concernés	IIB	Gaz (acétylène, etc.) dont le rapport de courant d'allumage minimal est compris 0,45 ou plus et 0,8 ou moins.
	Classe de température	T3	Applicable lorsque la température maximale de surface de l'appareil est de 200 °C (392 °F).
	EPL (niveau de protection de l'équipement)	Gc	Cet équipement peut être utilisé en zone 2. (Pour une utilisation dans une atmosphère explosives en raison de la présence de gaz, avec un niveau de protection « élevé » qui n'est pas la source d'inflammation en fonctionnement normal ou en cas de dysfonctionnements attendus, mais pas de manière régulière.)
Plaquette nominative	Le nom de la société, le nom du produit, le numéro de série, les informations decertification et les précautions à prendre figurent dans les informations relatives auproduit. Emplacement des informations sur le produit		
Alimentation	TLV CO., LTD. : Modèle P11-22050-x (« x » pour 1 caractère alphanumérique) Batterie de secours au lithium-ion Tension nominale : 3,7 V Capacité nominale : 1000 mAh		
Plage de température de mesure	-40 à 350 °C (-40 à 662 °F)		
Temp. de fonctionnement plage	En fonctionnement : -10 à 50 °C (-14 à 122 °F) (pas de condensation ni de gel) En stock : -10 à 50 °C (-14 à 122 °F) (pas de condensation ni de gel, batterie complètement chargée tous les mois) En cours de chargement : 0 à 40 °C (32 à 104 °F) (pas de condensation ni de gel)		
Classe de protection	IP54		
Informations de charge	USB Type-C		

Bande passante de fréquence et puissance de sortie sans fil	Version Bluetooth 5.0 Class 1 (2.4 GHz -10.4 dBm)
---	---

FCC Warning

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.



Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Attention

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

ISED Warning

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage, et
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement de l'appareil numérique du CIEM conforme.

The SAR limit adopted by USA and Canada is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The highest SAR value reported to the Federal Communications Commission (FCC) the Industry Canada (IC) for this device type when it is tested for the properly worn on the body is under 1 g 1.6 W/kg. The device complies with the RF specifications when the device is used at a distance of 0mm from your body. Ensure that the device accessories such as a device case and a device holster are not composed of metal components. Keep your device 0 mm away from your body to meet the requirement earlier mentioned.

Normes applicables

- Antidéflagrant
États-Unis (UL): ANSI/UL 60079-0, ANSI/UL 60079-11
Canada (cUL): CAN/CSA-22.2 No.60079-0, CAN/CSA-22.2 No.60079-11
- Diffusion/radio
États-Unis (FCC): FCC Part 15C
Canada (IC): RSS-247, Issue 3

TLV EXPRESS LIMITED WARRANTY

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

Exceptions to Warranty

This warranty does not cover defects or failures caused by:

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

Duration of Warranty

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

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

DESCRIPTION OF THE CLAIMED DEFECT AND HOW AND WHEN THE CLAIMED DEFECTIVE PRODUCT WAS USED; AND (b) THE CLAIMED DEFECTIVE PRODUCT AND A COPY OF THE PURCHASE INVOICE IS RETURNED TO TLV, FREIGHT AND TRANSPORTATION COSTS PREPAID, UNDER A RETURN MATERIAL AUTHORIZATION AND TRACKING NUMBER ISSUED BY TLV. ALL LABOR COSTS, SHIPPING COSTS, AND TRANSPORTATION COSTS ASSOCIATED WITH THE RETURN OR REPLACEMENT OF THE CLAIMED DEFECTIVE PRODUCT ARE SOLELY THE RESPONSIBILITY OF BUYER OR THE FIRST END USER. TLV RESERVES THE RIGHT TO INSPECT ON THE FIRST END USER'S SITE ANY PRODUCTS CLAIMED TO BE DEFECTIVE BEFORE ISSUING A RETURN MATERIAL AUTHORIZATION. SHOULD SUCH INSPECTION REVEAL, IN TLV'S REASONABLE DISCRETION, THAT THE CLAIMED DEFECT IS NOT COVERED BY THIS WARRANTY, THE PARTY ASSERTING THIS WARRANTY SHALL PAY TLV FOR THE TIME AND EXPENSES RELATED TO SUCH ON-SITE INSPECTION.

Exclusion of Consequential and Incidental Damages

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

Exclusion of Other Warranties

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

Severability

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

TLV CORPORATION

13901 South Lakes Drive, Charlotte, NC 28273-6790, U.S.A.

Tel: [1]-704-597-9070 Fax: [1]-704-583-1610