TLV®

TrapMan®

Computerized Steam Trap Management System

Factory Management in the 21ˢᵗ Century.

Fundamental issues facing management will include:

Developing Total Productive Maintenance (TPM) through:
- Establishing an effective maintenance system.
- Achieving goals set for preventive maintenance.

Improving Efficiency by:
- Saving energy.
- Setting and achieving standards in control.

Satisfying Environmental Concerns, such as:
- Meeting the requirements of ISO 14001 certification.
- The reduction of CO_2 emissions.

Maximizing
The Performance of Steam Process Plant.

The **TLV TrapMan** Steam Trap Management System will help to resolve these concerns. The elements of the System are made up of :

TrapManager®
Management software
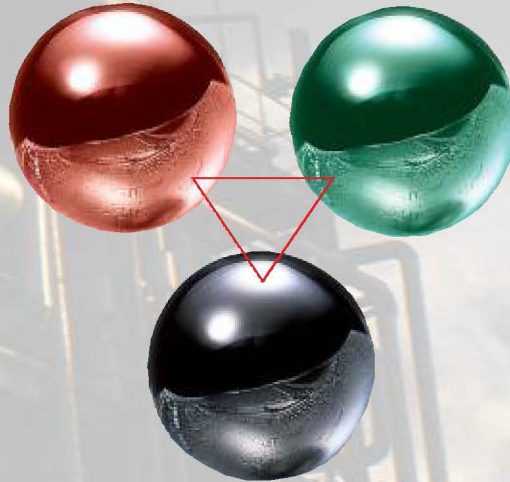
TM5N-EX
Diagnostic instrument and datalogger combined

Technical support plus training

Why is steam trap management so important ?

The role of steam traps

It is incredible, but nevertheless fact, that the performance of such a relatively small and seemingly insignificant component, the steam trap, can have dramatic consequences on the operation of a steam system.

Faulty or incorrectly applied steam traps can:

- Turn a well designed steam system into a safety hazard, with the potential risk of injury to personnel.
- Reduce the efficiency of production.
- Lead to quality problems in the manufactured product.
- Increase the cost of maintenance.
- Waste energy: On average, a single faulty trap will lose 11 lb/hr of steam.
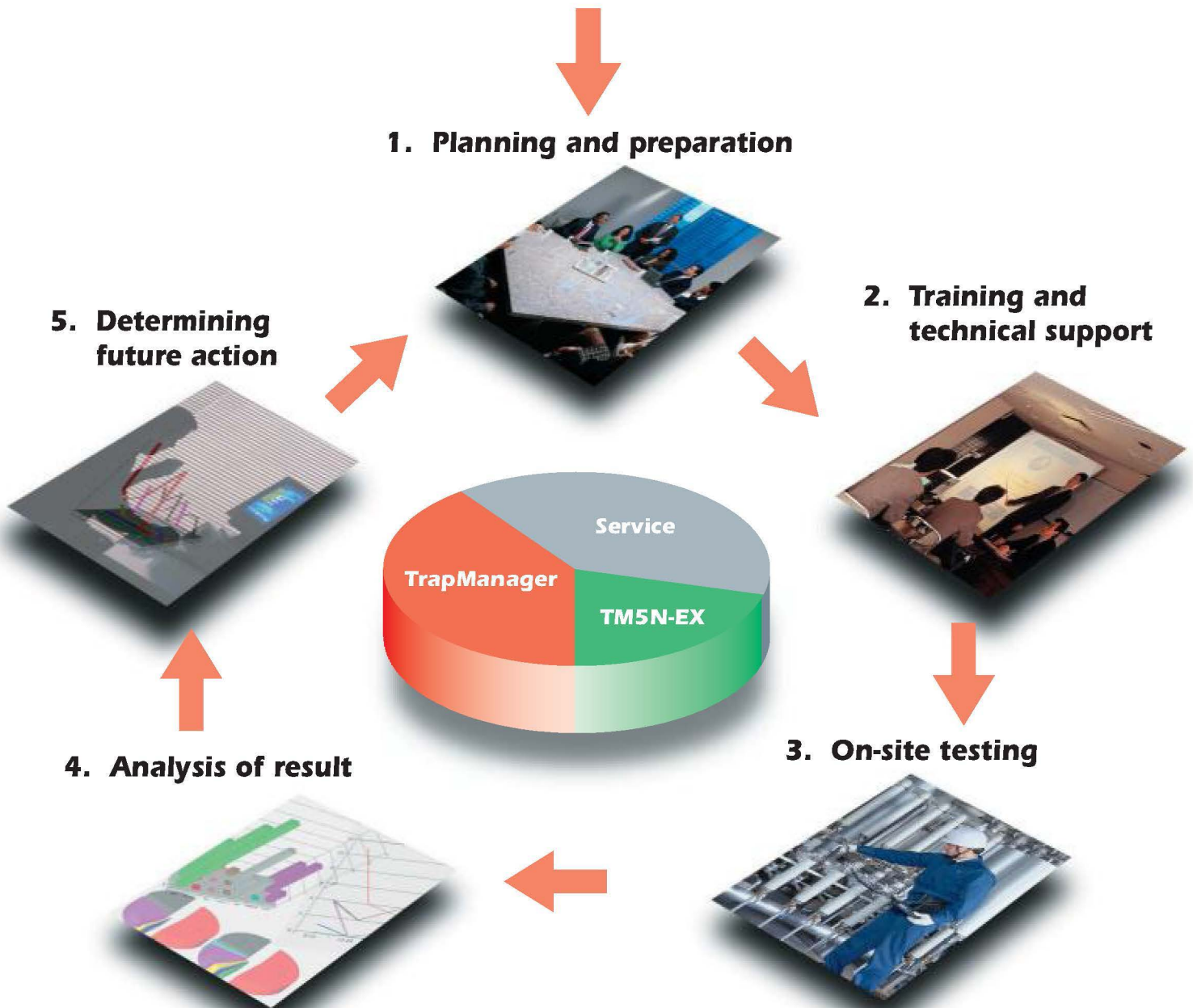- Prevent compliance with required environmental standards.

TrapMan.
Steam Trap Management System

TLV provides software, hardware and service that can solve problems in your steam system.
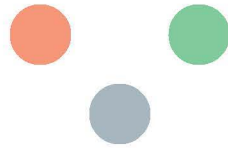
From initial preparations and inspection route planning to final check of results, the **TLV** **TrapMan** System offers powerful support for managing steam trap operations. Much more than the tools themselves, the combined experience of **TLV** specialist engineers, has led to the development of the methods for establishing a truly cost effective management system.

TLV helps users accomplish site objectives including energy, reliability, environmental, and safety improvements.

1. Planning and preparation

5. Determining future action

2. Training and technical support

Service

TrapManager

TM5N-EX

4. Analysis of result

3. On-site testing

Software TrapManager®

The Ideal Steam Trap Management Software with a Wealth of Functions

Establishing records of the maintenance for any individual steam trap is important for both TPM and conformance to ISO Standards. Using **TrapManager**, users can create a log, update inspection records and receive survey data from **TM5N-EX** for detailed analysis. **TrapManager** is also capable of being configured by the user to meet specific needs.

The Process of Trap Management - Creation and Inspection

Creating Trap Records

The data required for steam trap management -- trap type, size, type of connection, operating pressure, operating status, etc. – can be created and stored in the management log.
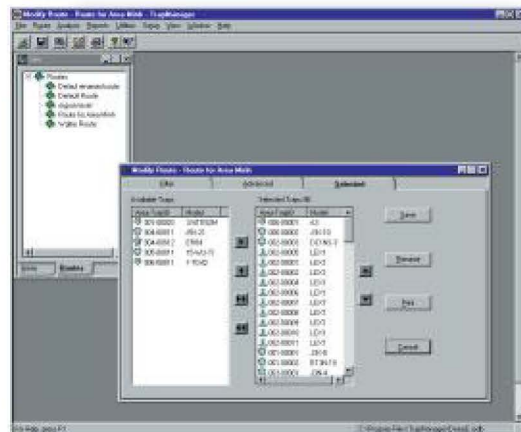
Creating Inspection Routes

TrapManager allows users to determine the inspection route in advance. Then users can simply download this data to the **TM5N-EX**. When the inspection of one trap is complete, the number for the next trap to be inspected appears on the **TM5N-EX** display screen.

Trap Log Maintenance Screen
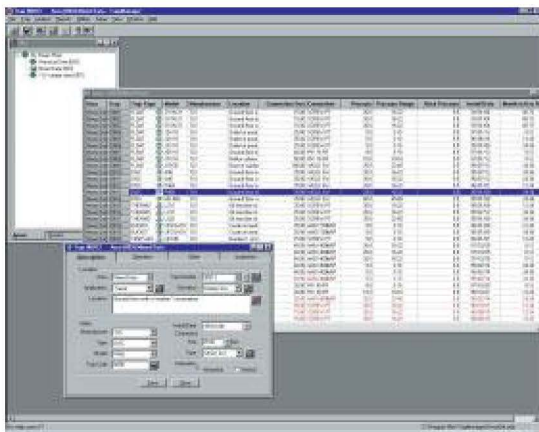
Inspection Route Setting Screen

The Process of Trap Management - Results and Analysis

Determining the Results

TrapManager processes data from **TM5N-EX** and then presents the results in a number of ways that users can select. For example, users can tabulate data for specific conditions and calculate the current failure state and rate based on available historical data.

## Determine Steam Leakage and Monetary Losses Instantly

Users can display the amount of steam leakage and the resultant monetary losses for individual traps or for the entire factory.

Locate Faulty Traps Quickly

All traps whose operation is judged to be faulty are highlighted in the display, as well as being presented in a table that appears automatically when **TrapManager** starts up.

Gather Data for Preventive Maintenance
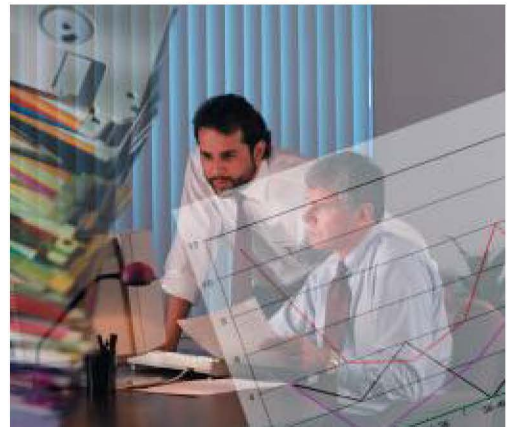
Gathering data is the first step toward preventive maintenance.
Trap records are automatically saved and will include the installation and inspection dates as well as inspection results so that trap histories are available for future trend analysis.

Prepare Reports and Export Data

Users can print the detailed information contained in trap logs and histories and the analysis results. Users may also copy graphs depicting the analysis results and paste them into reports, plus export data easily into other software programs.

Professional Accurate Diagnosis in a Single Compact Unit

The **TM5N-EX** is a precision automatic steam trap analyzer that uses ultrasound and surface temperature measurements to analyze traps. The **TM5N-EX** is easy to operate – so a technician can quickly be trained to use it. It is also light (only 2 lb), so you won't get tired carrying it, even during long inspections.

Automatic analysis in only 15 seconds

The **TM5N-EX** performs the analysis automatically. All users need to do is hold the probe against the surface of the trap for 15 seconds.

Dependable trap analysis

The **TM5N-EX** uses data obtained from testing over 3,000 individual steam trap models. The trap under testing is compared to the stored data of that specific model and its performance is analyzed.

TM5N-EX's judgement accuracy has been validated by a globally recognized, independent agency.

Allows quantitative analysis

Measurement with the **TM5N-EX** yields quantitative results. For steam leakage measurement, the estimated amount of steam leakage can be calculated and displayed as one of 15 leakage levels.

The TM5N-EX is all you need at the site

Input of data into the **TM5N-EX** is easy – so other instruments and pads of paper for recording information are not required.

Eliminates variations due to human error

With the **TM5N-EX**, measurements do not vary depending on who performed the inspection. The tip of the probe is configured so that it always contacts the trap with the same pressure, hence the results are always the same.

The TM5N-EX is intrinsically safe

The **TM5N-EX** has been certified to meet all of the following standards.
cULus: Class I, Zone 1, AEx ib ⅡB T3   Class I, Zone 1, Ex ib ⅡB T3
        File No. E346614
ATEX: C€ 0081 ⟨Ex⟩ Ⅱ 2G Ex ib ⅡB T3   DEMKO 12 ATEX 1212672X
IECEx: Ex ib ⅡB T3   IECEx UL 12.0016X

IMPORTANT NOTE:
• This device includes a hardware control/disable function. Because periodic maintenance is necessary in order to maintain highly accurate diagnosis, a warning will be displayed on screen when periodic maintenance is due (2 years from first use). Please contact TLV at this time to request maintenance. **If maintenance is not carried out, the unit will be automatically locked.**

• **TrapManager** ver. 3.4.x or later is required in order to use the **TM5N-EX** Diagnostic Unit. If you are already using the **TrapMan** system with **TrapManager** ver. 3.3.x or earlier, you will need to upgrade to ver. 3.4.x or later.

Other features

- Detailed judgment is possible
  - Automatic judgement: Good / Leak (Small, Medium, Large) / Blowing / Blocked / Low Temperature / Temperature Adjustment Failure (only for Temperature Control Traps)
  - Manual judgement: Body Leak / Gasket Leak / Not in Service / Not Inspected

- Records and stores a large variety of relevant trap data
  - Total available registered trap models: 3400 (more than 4000 available in **TrapManager**). / Registered model calls: 30 models per trap type / Inspection data storage: 1,600 traps
  - Information items: 20 (Model / Judgement / Temperature / Pressure / Inspection Date and Time / Application / Installation Date / Connection, etc.)

- Ni-MH replaceable main batteries allow two hours of recharge to enable 10 hours of continuous use. **TM5N-EX** includes overcharge protection and Automatic Power OFF for conserving battery power.

- Screen brightness / contrast and earphone volume are adjustable.

- The leather carrying case fastened to a waist belt prevents the instrument from being dropped and damaged, even when stretching to inspect hard-to-reach traps. This also leaves the user's hands free for greater safety and inspection efficiency.

The **TrapMan** System package

PART NAMES

①**Display**
Screen displays the area and trap number of the trap being measured, the judgement and other data

②**Power Keys (ON & OFF)**
Keys to turn the power on and off

③**Function Keys**
Keys for a variety of frequently accessed functions

④**Model Input Keys**
Keys to enter the trap type for the trap being measured

⑤**Communications Cable Connector**
Port for cable to upload or download data to / from the PC

⑥**Charger Connector**
Port for charger used to recharge the TM battery

⑦**Number Keys**
Keys to adjust the time on the internal clock and enter numerical values, etc.

⑧**Probe Connector**
Connector for the coiled cord for the probe

⑨**Backlight Switch**
Key to turn the display screen backlight on and off

⑩**SHIFT Key**
Key to toggle the **TM5N-EX** to letter input mode

⑪**ENT Key**
Key to enter numbers and other data, and confirm judgement, etc.

⑫**Probe**

⑬**Coiled Cord**

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Member of
FCI
Fluid Controls Institute, Inc.
Technical Resource for Instrumentation and Fluid Control

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

ISO 9001
ISO 14001

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Specifications subject to change without notice.