



# PenCheck® System Package

## COMPUTERIZED STEAM TRAP MANAGEMENT SYSTEM FOR PRODUCTIVE MAINTENANCE

### Features

**Complete measurement and analysis system for effective management of small to medium steam trap populations.**

1. PK1 eliminates the need for multiple testing instruments.
2. Auto-judgement of operating conditions by PK-DL, based on a test standard, eliminates tester subjectivity.
3. Testing efficiency is maximized through the use of integrated on-site and office software.
4. Office-based software (PK-PC) offers a comprehensive range of features and database editing tools that enable effective management of the entire steam trap population.
5. Graphs and reports can be printed or exported to most well-known commercial software packages to facilitate professional reporting and assist with implementation of corrective actions.



### Package Components\*

#### ● PK1 Diagnostic Unit

Pocket-size precision testing instrument for simultaneous ultra-sonic vibration and temperature measurement.

Also includes: hard case, extra battery packs, earphone, manuals, flat file

#### ● Pocket PC

Hand-held computer that runs the PK-DL software.

Also includes: cradle/charger with communications cable, AC adapter, rechargeable battery pack, soft case, Windows-based operating system software and manuals

#### ● PK-DL Software\*\*

Software, used on the included Pocket PC, for recording trap details, PK1 test results and steam trap operational judgement.

#### ● PK-PC Software\*\*

Trap management database software, used on an office PC to facilitate management of the steam trap population.

Also includes: hardlock security key (HASP)



\* Contained in custom carrying case, to provide maximum portability

\*\* Software applications and Quick Start Guide found on included CD-ROM

### Sample Screens

#### ● PK-DL Software

Trap List

| AreaID | TrapID | Maker | Type |
|--------|--------|-------|------|
| 1      | 001    | 00001 | TLW  |
| 2      | 001    | 00005 | TLW  |
| 3      | 001    | 00010 | TLW  |
| 4      | 001    | 00015 | TLW  |
| 5      | 001    | 00020 | TLW  |
| 6      | 001    | 00025 | TLW  |
| 7      | 001    | 00030 | TLW  |
| 8      | 001    | 00035 | TLW  |
| 9      | 002    | 00041 | TLW  |
| 10     | 002    | 00100 | TLW  |
| 11     | 002    | 00200 | TLW  |
| 12     | 002    | 00300 | TLW  |

Trap Details

AreaID: 001 TrapID: 00100

Maker: Type: Model: TLV-PCAT-23C-10

Installed: 07/13/2000

Pressure: 55 SFC: Trip: 1.25

PK-XXX: 0 SFC: Trip: 1.25

Inspected: 07/13/2000

Location: Good

#### ● PK-PC Software

Trap Master Log

AreaID: 001 TrapID: 00100

Maker: Type: Model: TLV-PCAT-23C-10

Installed: 07/13/2000

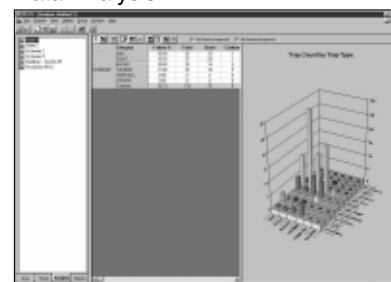
Pressure: 55 SFC: Trip: 1.25

PK-XXX: 0 SFC: Trip: 1.25

Inspected: 07/13/2000

Location: Good

Data Analysis



## Specifications for PK1 (Diagnosis Instrument)

|                               |                             |                                                                                                                                        |
|-------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Model                         | PK1*                        |                                                                                                                                        |
| Temperature Measurement Range | 0 °C – 255 °C               |                                                                                                                                        |
| Central Frequency             | Approximately 40 kHz        |                                                                                                                                        |
| Band Width                    | Approximately 20 kHz (-3dB) |                                                                                                                                        |
| PK1 Display                   | Average Vibration Level     | 0.00 – 255.0 Scale Reading (AVG)                                                                                                       |
|                               | Peak Vibration Level        | 0.00 – 255.0 Scale Reading (PEAK)                                                                                                      |
|                               | Surface Temperature         | 0 °C – 255 °C (TEMP)                                                                                                                   |
|                               | Level Indicators            | Vibration levels are shown in bar graph form as well as on a numeric digital display                                                   |
| Overload                      |                             | Indicators appear if the vibration level limit is exceeded or if the surface temperature falls outside the allowable measurement range |
| Measurement "Auto Start"      |                             | Measurement begins automatically when the tip of PK1 is placed against the object to be measured                                       |
| Data Display "Auto Hold"      |                             | When the tip is removed from the tested object, data is automatically retained                                                         |
| Auto Power-off                |                             | Yes                                                                                                                                    |
| Power Source                  |                             | One (1) lithium battery pack (3CR-1/3N)                                                                                                |
| Total Battery Use Time        |                             | Approximately 5 hours                                                                                                                  |
| Weight                        |                             | Approximately 65 g                                                                                                                     |

\* For more detailed information, see the separate PK1 specification data sheet

## Specifications for PK-DL (On-site Database and Judgement Software)

|                            |                          |                                                                                                                                  |
|----------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Model                      | PK-DL                    |                                                                                                                                  |
| Main Features              | Management Log           | Can display and maintain trap lists and trap details                                                                             |
|                            | Judgement                | Auto-judgement of trap test data by comparison to a reference standard according to trap type classification (float, disc, etc.) |
|                            | Communication            | Traps operating between pressures of 0.1 MPaG and 4.0 MPaG                                                                       |
| Pocket PC Specifications** | OS                       | Automatic data transfer with TLV PK-PC software                                                                                  |
|                            | CPU                      | Windows CE 3.0 or later                                                                                                          |
|                            | Interface                | MIPS or ARM based CPU                                                                                                            |
|                            | Required Hard Disk Space | Serial: RS-232C, infrared: IrDA Ver. 1.0 protocol                                                                                |
|                            | RAM                      | 1 MB for software installation, plus approximately 0.25 MB for 1000* trap records                                                |
|                            | Display                  | (Minimum) 32 MB                                                                                                                  |
|                            | Operating Temperature    | Hyper Amorphous Silicon TFT 65,536 Color LCD or Monochrome                                                                       |
|                            | Power Supply             | 0 °C to 40 °C                                                                                                                    |
|                            | Weight                   | Main: Rechargeable battery pack<br>Back-up: One lithium battery<br>Approximately 200 g                                           |

\* Recommended maximum number of traps for optimum performance

1 MPa = 10.197 kg/cm<sup>2</sup>

\*\* Contact your TLV representative for further details about the Pocket PC included in the PenCheck System Package

## Specifications for PK-PC (Analysis and Management Software)

|                 |                          |                                                                                                                                                               |
|-----------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model           | PK-PC                    |                                                                                                                                                               |
| Main Features   | Management Log           | Can display and maintain trap tables, failed traps and trap histories                                                                                         |
|                 | Trap Route               | Survey route can easily be set and saved                                                                                                                      |
|                 | Analysis                 | Can analyze and save inspection data by selecting various conditions in detail                                                                                |
|                 | Report                   | Can print log details, inspection history, failed trap list, trap route, etc.                                                                                 |
| PC Requirements | Communication            | Automatic data transfer with TLV PK-DL software                                                                                                               |
|                 | OS                       | Windows 95 or 98                                                                                                                                              |
|                 | CPU                      | (Minimum) Intel Pentium 166, (recommended) Intel Pentium 350 or higher capability, PK-DL has been designed to work with Intel processors                      |
|                 | Required Hard Disk Space | 20 MB for software installation                                                                                                                               |
|                 | RAM                      | (Minimum) 32 MB, (recommended) 64 MB or more                                                                                                                  |
|                 | CD-ROM Drive             | (Minimum) 2 x (double speed)                                                                                                                                  |
| Display         |                          | (Minimum) VGA monitor (600 x 800) with graphic features to display 256 colors, best viewed with resolution 1024 x 768 pixels (or higher), High Color (16-bit) |

Windows is a trademark of Microsoft Corporation, and Pentium is a trademark of Intel Corporation.

Manufacturer

ISO 9001/ISO 14001

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

