

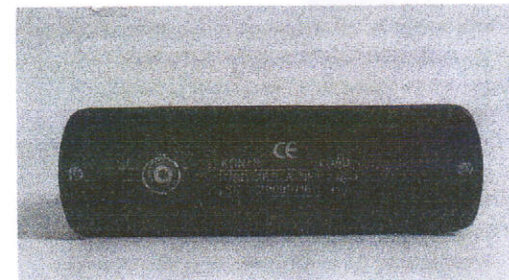
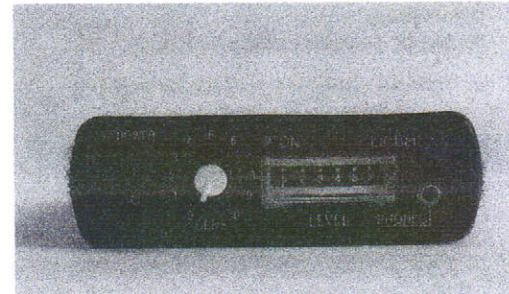
**Description** Flowing liquids, gases and vapors create ultrasonic in installations and fittings. This ultrasonic that is created is sensed by the contact probe at the surface and is displayed by means of a measuring instrument. Ultrasonic is given off in a frequency range that is outside of the range of perception of the human ear.

The steam trap testing equipment model USD-2EB- A-NF was developed to convert these inaudible ultrasonic frequencies into a visual and acoustic signal.

With the structure-borne noise probe type USD-1K a simple and quick analysis is possible for wear and function in many fields of application. The structure-borne noise probe suppresses outside and interference noises.

**Fields of Application** are functional test of steam traps, functional wear and sealing tests on sealing and control fittings for systems of steam, condensate, water, heating, compressed air, pneumatic, hydraulic, gas, installations as well as air-conditioning and cooling systems, early detection of wear with ball and slide bearings, localization of unusual noises with aggregates of all kinds.

**Operation** Firstly connect the contact probe with the probe cable to the base unit. Switch the unit on. During the switching on process, the measuring element must display a full -scale deflection reading for a moment; that is a sign that there is sufficient accumulator charge. If the LED lights up continuously, the accumulator has to be charged. After setting the sensitivity the tip of the contact probe is to be placed against the object to be tested with a slight amount of pressure.



**Functional test of steam traps** After setting the sensitivity, the tip of the probe is to be placed approximately in a vertical position to the surface of the fitting housing. The ultrasonic created at the sealing organ spreads out to all sides in the fitting housing. To be able to compare the results better with the diverter test, the same housing parts near the sealing organ should always be sensed.

*Please take note the creation of ultrasonic is much stronger with gases and vapors than with liquids!*

**It should be fundamentally noted:**

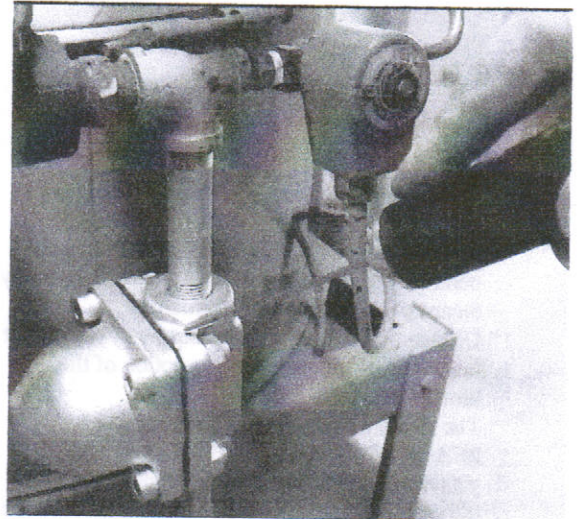
- Of the sensitivity is too low, only strong "blow-through" will be detected.
- If the sensitivity is too high, then there is the danger that a relatively large condensate volume will be interpreted as a vapor bleed-through.
- An oscillating display with short periods of full-scale deflections always an indication of condensate!

The creation of ultrasonic is much stronger with gases and vapors than with liquids. It is therefore possible to sense the ultrasonic strength on the surface of a fitting and to determine the type of flowing medium from the results.

The ultrasonic strength depends on: operating pressure, flow rate, undercooling of the condensate, form of the sealing organ and housing.

The operating pressure and flow rate essentially determine the strength of the ultrasonic. Due to this dependence, there is the danger that the displayed ultrasonic strength can be incorrectly interpreted, however, the better the characteristics of the process are known, the fewer misinterpretations are made.

The many years of experience with practical use show that optimal use of the testing unit requires knowledge of the process and practical experience with its performance. Only then is the testing unit an excellent aid for the monitoring of steam traps.



**Setting the sensitivity** The numbers of the sensitivity setting 0-10 and the display 1-6 are guide figures for orientation and do not have any real meaning.

The following tests are to firstly be carried out in order to become more familiar with the method of operation of the testing unit:

Test on a normal water tap

With the sensitivity 4, a great deal of water must flow for the display value 3 to be reached.

Test on a valve in a steam line

It is possible to determine that, with the same sensitivity 4, a smaller valve opening leads to a full-scale deflection reading.

These two tests should show:

**A large volume of water results in a middle display value. But, to the contrary, a smaller flow of steam results in an full-scale deflection reading.**

Test on an adjustable steam trap with inspection window

With uniform condensate, the sensitivity is to be set such that the display value is at 4. If the diverter is now set to vapor bleed-through, the display will then immediately give off a full-scale deflection reading. The operating condition of the diverter is to be observed with this at the inspection window.

**Short Instructions** Test all of the steam traps with setting 5

With a full-scale deflection reading of the display, the steam trap is probably letting vapor through.

With an unsteady display between 1 and 6, the diverter is okay.

**Important information:**

**Test system areas with the same operating pressure by using the same sensitivity setting.**



## Technical data

Type: USD-2EB-A-NF  
 Base unit: Aluminum housing  
 Typ of protection: IP 65  
 Height: 432 mm  
 Width: 106 mm  
 Length: 150 mm  
 Frequency response: 35 kHz to 45 kHz  
 Power consumption: NIMH Accumulator 8,4 V - 270 mA

Low level battery display via red LED on the back  
 Analogue moving-coil element scale 1-6, lit-up  
 Switchable by off-on switch  
 Adjustable sensitivity range 1-10  
 Probe connection socket RG 59  
 Headphone HD-3030  
 Charger 13 V ~ 250mA / 115 V 60 Hz / 230 V 50 Hz  
 Neck belt made of nylon



Contact probe: Type USD-1K  
 Nirosta® hand housing gummed  
 Length: approx. 0.5 mm  
 Diameter: 30 mm  
Nirosta® Probe needle: Length: approx. 105 mm  
 Diameter : 3 mm

Total length of probe: approx. 245 mm  
 Connection socket: Type RG 59  
 Probe cable: Type RG 59/U 75 ohm coaxial

Carrying Case Foam inner lining  
 Dimensions WxHxD: 450 x 320 x 110 mm

### Recharging of battery

Connect the charger plug with coaxial socket with testing Equipment. Plug the charging set into a 110 V/60Hz. Ensure power switch on the Testing Equipment is in an **OFF** position "O" on switch. Charging time of ca. 15 hours, will last for on operating time of ca. 40 h.

**Attention:** Do not charge the battery in hazardous environment.

## DOMNIK CANADA INC.

561 Edward Avenue, Unit 5,  
 Richmond Hill, Ontario, Canada L4C 9W6  
 Tel: (905) 508-9653 Fax: (905) 508-0138

Email: domnik@domnikcanada.com www.domnikcanada.com