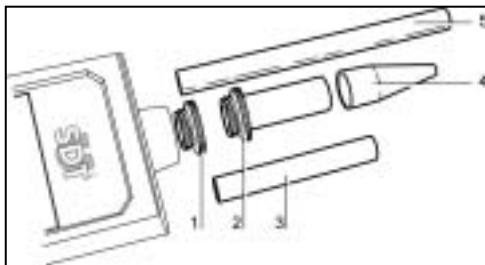


## METHODS FOR LEAK DETECTION

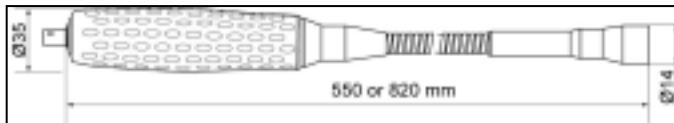
### EQUIPMENT SET-UP

1. Select the airborne ultrasound sensor to best suit the inspection.
  - a. Internal sensor
  - b. Flexible sensor
  - c. Extended Distance sensor
  - d. Parabolic sensor



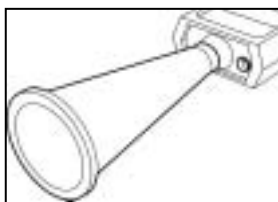
All SDT 170 ultrasonic detectors are equipped with an internal airborne sensor for detection of pressure and vacuum leaks. This sensor is ideal for day to day leak detection where the source of the leak is within reach of the inspector. Use in conjunction with the precision indicator kit (shown in Fig 1) to pinpoint the exact source of leakage.

**Figure 1 - Internal Sensor of SDT 170**



For inspections in hard to reach areas, choose the Flexible sensor available in 21" and 36" lengths. It can be bent, twisted and shaped to go into any area that is inaccessible by hand.

**Figure 2 - Flexible Sensor - 21" or 36" or custom**



Overhead piping in ceilings are prone to leakage but normally inaccessible without a ladder or scissor lift. Inspection is now possible with the EDS Extended Distance Sensor. The unique taper-shape funnels medium distance ultrasonic waves (50' – 100') onto the internal sensor of the SDT 170 providing the inspector with extended distance sensing and extreme directionality.

**Figure 3 - EDS Extended Distance Sensor**



Select the parabolic sensor if the leaks you are detecting are outside the range of the EDS (Fig 3). The parabolic shape focuses faint ultrasonic waves onto a super sensitive ultrasonic crystal amplifying and thereby extending the detection range by up to 250'. The laser sight pinpoints the exact source of the leakage, or use the rifle sight in bright daylight.

**Figure 4 - Parabolic Sensor with Laser Sight**

2. Attach whichever sensor that was chosen for the inspection to sensor input on SDT 170 (Fig 6, #12), attach headphones to audio output (Fig 6, #10) of 170.
3. Switch SDT 170 equipment on (Fig 6, #6)
4. Ensure that the sensor is correctly connected to SDT 170 by identifying the sensor in the top left corner of LCD screen (Fig 5, Type of Sensor)
5. Ensure battery charge is sufficient to take measurements by viewing icon in top right hand corner of LCD screen (Fig 5, Battery Load Icon)
6. After ensuring all safety procedures for your facility have been followed, proceed to the required inspection method described on next page.

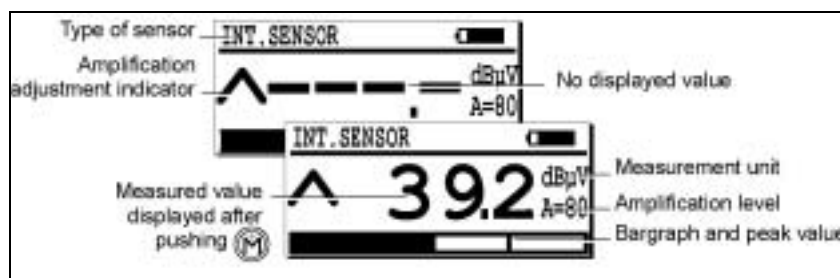


Figure 5 - LCD Display

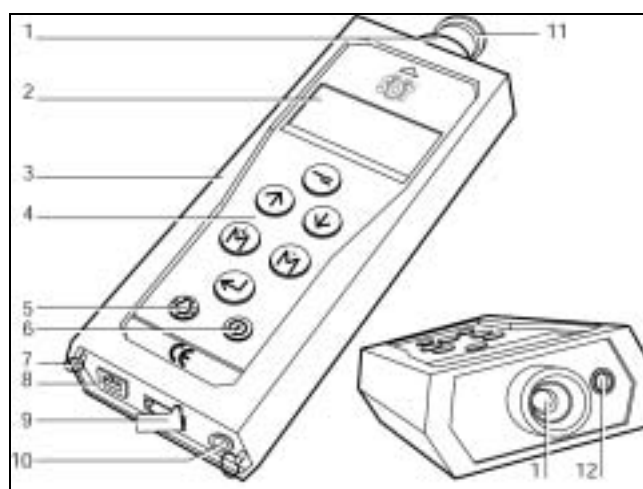


Figure 6 - Functions of the SDT 170



## METHOD FOR LEAK TESTING

7. Set sensitivity using the up or down arrows to adjust the 170 to the environment you will be working in. With the amplitude as high as allowable for that environment, scan with an up and down, back and forth motion. Scan the possible leak area for a hissing sound. Listen and watch the signal. If hissing sound is too loud, decrease the sensitivity of the SDT 170 by pressing the down arrow to a comfortable level.
8. If a hissing sound is heard, get closer to the source of the hissing sound. Press the down arrow to decrease amplitude sensitivity as you get closer if hissing sound gets too loud.
9. When you are near the leak, you may attach the localization probe to pinpoint the source of the leak. Scan back and forth, up and down, to confirm. Watch the SDT screen increase or decrease in signal as you scan. Listen to the sound get louder and fainter as you scan. The spot where the sound is loudest is the leak site.
10. Mark the leak source and repair on spot or tag for later repair.
11. Document leak information (location, type of leak, size of leak, inspector, etc...).