TEE Transducer

Leakage Current Safety Testing

The leakage safety test is performed to evaluate the integrity of the transducer insulation that may become damaged from cuts or bites in the flexible shaft. Cuts or bites may cause serious electrical leakage which can be hazardous to the patient. Fluid can enter through the cuts and may cause mechanical and or electrical problems.

NOTE: Mindray recommends doing a leakage test before each patient exam to ensure patient safety.

Cidex® is a good electrically conductive medium that works well for testing TEE transducer with the leakage tester. If Cidex or another disinfecting agent is used in the tester setup, a Cidex® compatible soak tray should be used. BC Biomedical, the manufacturer of the leakage tester, has a Cidex® compatible soak tray available for purchase. If Cidex® is not used for the testing, a bath of 0.9% saline solution is also a suitable conductive solution for testing electrical leakage current.

Tools Required (for 120V/240V AC Mains)

1. Leakage tester
   BC Group PN: ULT-2010 or ULT-2020 (recommended)
2. Dual Conductivity Probe
   BC Group PN: ULT-PC-10 (short, 6.16 cm, recommended for BC Group BC20-42200 soak tray), ULT-PC-15 (medium, 8.9 cm, for soak trays), ULT-PC-20 (Long, 12.4 cm, for soak trays), or ULT-PC-30 (general use, for tube systems and soak trays)
3. Soak Tray - Cidex® Compatible
   BC Group PN: BC20-42200
4. Transducer Adapter
   - P8-3 TEE/P8-3mTEE Transducer Adapter
     BC Group PN: ULT-PA-29
   - P7-3Ts/P8-3Ts/P8-2Ts Transducer Adapter
     BC Group PN: ULT-PA-19
   - P7-3TE Transducer Adapter
     BC Group PN: ULT-PA-17
   - P7-3TU Transducer Adapter
     BC Group PN: ULT-PA-30

Vendor Information:

BC Group International Inc.
www.bcgroupintl.com
Toll-Free: 1 (888) 223-6763 or 1 (800) 242-8428
Local (USA) & International: 1 (314) 638-3800

Leakage Test Set-Up (see Figure 1)

1. Fill soak tray or container that will be used for leakage current testing with appropriate solution.

2. Connect dual conductivity probe and adapter to the leakage tester.
3. Connect transducer to the adapter.
4. Choose to use batteries or the AC adapter on the leakage tester. If using AC adapter, plug it into the leakage tester.
5. Insert the transducer into the soak tray being careful not to go past the 100cm mark for the P8-3 TEE/P7-3Ts/P7-3TE/P7-3TU/P8-2Ts and the 70 cm mark for the P8-3m TEE/P8-3Ts. Having liquid go past these marks can damage the transducer electronics. The flexible shaft must be immersed at least to the 75cm mark for the P8-3 TEE/P7-3Ts/P7-3TE/P7-3TU/P8-2Ts and the 50cm mark for the P8-3m TEE/P8-3Ts to pass the minimum leakage current level.
6. The dual conductivity electrodes must be immersed into the soaking solution.
7. Power on the tester.
8. Verify that the tester is set to test the right transducer on the Device Configuration screen. The transducer manufacturer is “Mindray”, and the model name matches the TEE transducer. If necessary, change the Device Configuration parameters as below:
    a. Press the 

button until the screen shows “Device Configuration:” at the top.
    b. Press the 

button until the desired parameter is highlighted.
    c. Press the 

or 

button to change the parameter.
    d. Press the 

button to exit the SETUP mode.
9. Press the “Full Test” button.
10. The transducer is safe for use if the test window reads “Test Passed”.
11. If the test window shows “Test Failed”, check the connections and try testing again. See the diagram below for proper connections to the leakage tester.
12. If the transducer is still registering “Test Failed”, check the transducer for damage. Do not use it on patients.
13. Contact MINDRAY Technical Support 1 (877) 913-9663 for assistance.

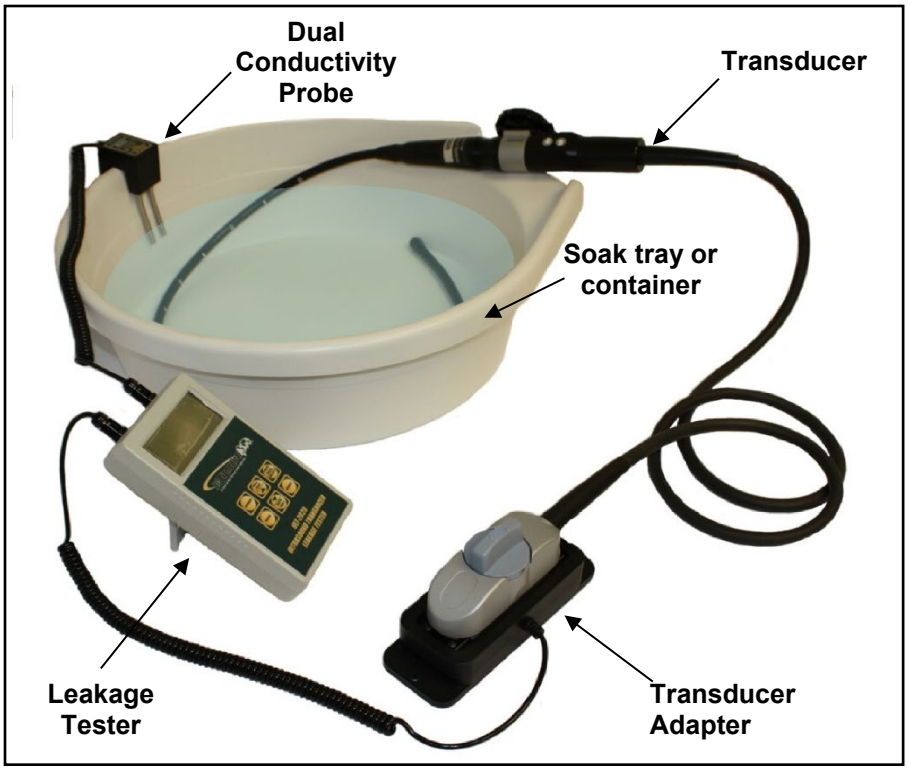


Figure 1: Typical Leakage Tester Set-up

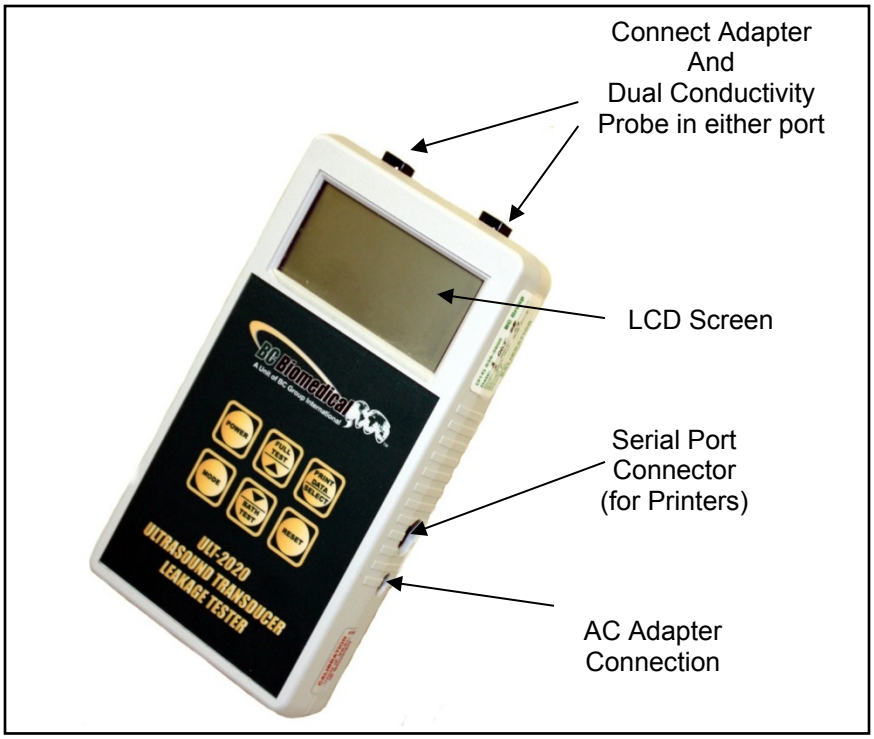


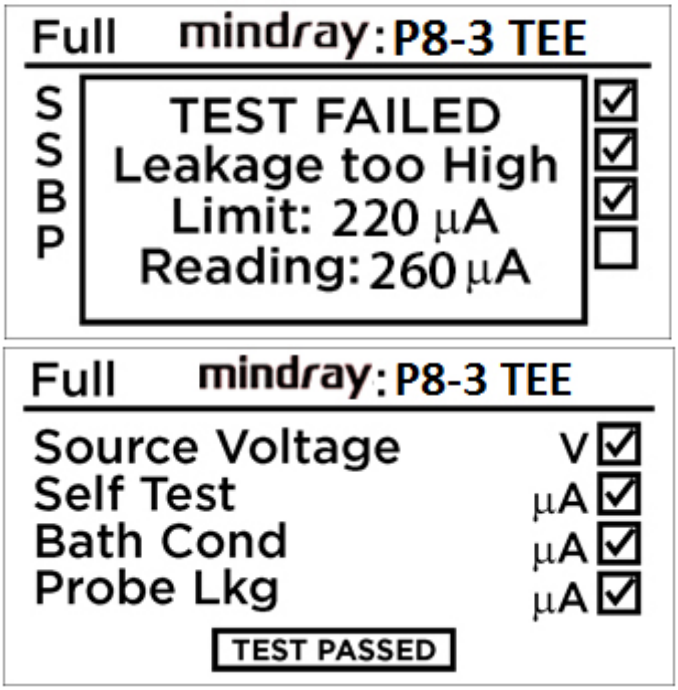
Figure 2: Leakage tester

NOTE: The leakage tester comes already programmed for Mindray TEE transducers. Please refer to the leakage tester user manual for any further adjustments.

Leakage tester buttons:

	Powers the unit on/off. When turned on it will initiate with the Main Screen.
	This key will initiate the Full System Test, which includes both a bath conductivity test and a transducer electrical leakage test.
	This key will select the next available parameter.
	Depressing and holding this key will allow entry into the SETUP mode where the configuration can be viewed and adjusted. When in SETUP mode, this key will exit the SETUP mode and return to the previously viewed screen. This will also save the system settings to the internal EEPROM memory so they will be retained even with the power turned off or battery removed.
	This key will scroll down through the available settings
	This key is used to Reset to the Main screen

Leakage tester Screens:



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