Thank you for purchasing a Phaze Solutions, 3 Phase Extension Lead Test Switch. This device is designed to be used in conjunction with a standard portable appliance tester. The switch is designed to facilitate the testing of 3 phase extension leads in isolation and cannot be adapted for any other test or purpose. (Earth and run testing of 3 phase machinery should be done using the appropriate equipment.) This switch should never be connected to a grid or generator supply under any circumstances.

Testing Procedure

Visual Test

Unplug the 3 phase extension lead from its power source and remove it from its machine lead. Inspect the outer insulation for abrasions or cuts and the plug and socket for damage. Make the appropriate decision on the integrity of the lead’s outer safety. Check the socket or plug of the lead for correct polarity of wires. Each colour needs to go to the appropriate pin. You will need to confirm only one end of the lead as the PAT Tester will test for correct polarity of each end the lead. (If one end is correct and the lead passes, both ends will be correct.) If the lead passes the visual inspection proceed to setting up for electrical testing

Set-Up for Electrical Testing

The ends of the 3 phase extension lead are fitted to the plug and socket of the test switch and the 3 pin plug and IEC socket are plugged into the portable appliance tester.

**Under no circumstances should any of the leads of the switch be connected to a mains or generator supply. This devise is for stand-alone testing only.**

Testing a Lead

**Note 1:** If a lead test is conducted with the rocker switch in the ‘I’ position and the rotary switch at the ‘E-N’ position the result is a fail. This is because the ‘E-N’ position is to test isolation between earth and neutral when the rocker switch is set to the ‘O’ position.

**Note 2:** If a lead fails an “earth continuity” test or fails “open”, check that the fail is not due to ill fitting plugs and sockets. Sometimes the pins will close up and not make good contact in the socket. It is a pain the screw the locating collar into position but this may need to be done for some test situations.
This test switch works by isolating the wires of a 3 phase lead and testing them as you would a normal extension lead. In order to test all necessary combinations a number of tests need to be done. If the lead is a 4 pin type the extension lead test will need to be repeated 3 times. If it is a 5 pin lead the extension lead test will need to be repeated 6 times. This sounds excessive but it is the only way to cover all possible combinations. The advantage of the switch is you only need to set the lead up once for testing and select the combinations using the switch. Once connected the only change is the position of the selector switch and rocker switch.

**Testing a 4 Pin Lead**

After the visual inspection is completed connect the 3 phase lead to the test switch and the switch to your PAT tester. If the lead is a 4 pin lead (no neutral) set the rocker switch to the ‘I’ position and the selector switch to the ‘L1-L2’ position. Do a standard extension lead test. If the result is a PASS the earth, L1 and L2 wires have been tested. Set the switch to the ‘L1-L3’ position and repeat the test. If a PASS is obtained the earth, L1 and L3 wires have been tested. Repeat the test for the ‘L2-L3’ position. A PASS here will indicate the earth, L2 and L3 wires have been tested. A PASS at all 3 positions of the selector switch indicates the lead is safe.

**Testing a 5 Pin Lead**

After the lead has passed the visual test connect it to the lead tester. Complete the tests as for a 4 pin lead. When the 3 tests have been completed and a PASS at each obtained you can proceed to test the neutral wire as follows.

Set the rocker switch to the ‘O’ position and the switch selector to the ‘E-N’ position. Complete a standard extension lead test. A PASS at this position indicates earth, neutral and L1 are correct and safe. Select the ‘L1-L2’ position and complete an extension lead test. A PASS here indicates neutral, L1 and L2 are correct and safe. Set the switch to the ‘L1-L3’ position and repeat the test. A PASS here indicates neutral, L1 and L3 have all been tested. (You do not need to do a test at the ‘L2-L3’ position as they are tested at the ‘L1-L2’ ‘L1-L3’ test.)

Any fail, except as noted above at “Note 1:” is a fail. If you use a “Seaward 3760 PLUS” the fail type is as indicated. ‘OPEN’ means a wire is not connected, ‘CROS’ is 2 wires crossed and ‘SHOR’ is 2 wires shorted. If earth is not connected the lead will fail the very first test when the rocker switch is in the “I” position. In the “O” position a fail for earth continuity is a fail of the neutral wire continuity.

At the completion of the test sequence all wires will have been tested for conductivity, isolation, and polarity. The visual test is still needed to ensure that the plug wiring has been done to the expected standard.

Any further questions can be directed to the manufacturer at switch@phazesolutions.com.au