



APT 1 TEST BOX OPERATING INSTRUCTIONS

Function

The APT1 Test Box is designed to verify correct operation and for Full Test (using TS1272) of the recent DX260 Smokeheads fitted with the Acoustic Progression Firmware (PIC Software v 1.7 and subsequent) and Software. This Test Box can also be used for Full Test using TS1272 of future DX260 Smokeheads fitted with PIC Software v 1.8 .

The unit is powered by two replaceable internal size AA 1.2 V Nickel Metal Hydride (NiMH) 2000 mA/hr cells. These cells may be replaced when discharged by removing the four posidrive self-tapping screws holding the cover to the chassis.

To check for usable batteries, briefly switch the Power Switch to ON , and check that both Low and High pitch tones are clearly heard when Hi / Lo Audio Tone switch is actuated. If neither tone is clearly heard, then the batteries will require renewal.

Testing

Two methods of Test are possible: Basic Function Verification, and Full Test.

Basic Function verification:

With the Smokemeter switched on and warmed up to normal operating temperature: a "Test" smoketest should be performed as follows:

Proceed as if to perform an RPC 1 CAT 'B' (Bus/HGV) smoketest.
Do not perform the Oil temperature test – bypass it:
Perform Zero Check/calibration as instructed onscreen, then
Activate the test progression handset as advised onscreen.
When advised to place smokeprobe in the vehicle exhaust:
Remove the Smokehead from its cradle and place on a level surface:
Remove the smokeprobe by unscrewing it:
Place the APT 1 Test box with the funnel where the smokeprobe fits:
After setting the APT1 Audio Tone to LO, switch on the Power switch to ON .
A deep buzzing type noise should be heard.
When the Smoketest program onscreen requests 'Blip accelerator' or "Accelerate" :
Switch the Audio Tone switch from LO to HI and back to LO when the Onscreen message says "Stop Acceleration",

The viewing of a Red "STOP ACCELERATION" message onscreen after the Audio Tone has been changed from LO to HI on viewing a GREEN "START ACCELERATION" message is indication that the Smokemeter has reacted to the Acoustic change from LO to HI and progressed the Smoketest.

If the RPC 1 test was selected, this transition can be exercised and observed three times.

Switch off the APT1 Test Box after each use to conserve battery power.

Full Test using TS1272 and Test Software:

This procedure requires the ability to perform TS1272 Issue A or subsequent, together with some of the specified Test equipment:- DX.260-1 Interface/PSU set for 30V Output: DX.260-261 PC Serial Cable: DX.260-1B Interface cable & fan End plate Assembly: Dieseltune DX.260-1 test software: Dieseltune APT1 test box: Windows 98 +PC with Standard RS232 serial port and TCP/IP networking.

Set up and switch on the Windows 98 PC. When ready, start the DX 260 Server software, and commence a TELNET session: (Refer Page 9 TS1272 Issue A and subsequent)

Enter **REP 200 GETSTATUS**

GETSTATUS:OK

GETSTATUS: DATA:(decimal value) and 5 times per second thereafter

GETSTATUS: DATA:(decimal value) Check the decimal value is in the range 0 to 63 or 128 to 191

Filter Check – IDLE:

Set the Audio Tone switch on the APT1 Test Box to the LO position:

Insert the Output Tube into the Smoke Inlet of the Smokehead and move the Power Switch to ON.

A low pitched Buzzing tone should be audible:

Check that the decimal value returned by **GETSTATUS** is unchanged.

Filter Check – GOVERNOR:

Move the Audio Tone Switch on the APT1 Test Box to the HI position subsequent to the Idle Filter check and with the Power switched to ON for at least one second. A higher pitched tone should be audible.

Check that the decimal value returned by **GETSTATUS** is increased by 64 for 5 or more readings and returns to its original value when the Test Box Power is switched OFF.

For Smokeheads with PIC Software V 1.8 ONLY:

Set the Audio Tone switch on the APT1 Test Box to the LO position:

Insert the Output Tube fully into the Smoke Inlet of the Smokehead and move the Power Switch to ON.

A low pitched Buzzing tone should be audible:

Enter **AUTOSETAPTRIGGER**

AUTOSETAPTRIG: OK

AUTOSETAPTRIG: DATA AA BB

Note the decimal numbers returned : the 2nd Pair BB should be within the range 45 +/- 15

Change Audio Tone to HI with Power ON

Enter **AUTOSETAPTRIGGER**

AUTOSETAPTRIG: OK

AUTOSETAPTRIG: DATA XX YY

Note the decimal numbers returned : the 2nd Pair YY should be within the range 90 +/- 15

If the numbers returned for BB and YY values fall within the ranges specified, then the Adaptive Acoustic Progression device and software are operating correctly.

Battery Life should be in the order of 1 hour continuous use, or 4 to 6 hours intermittent use. The use of alkaline cells is NOT recommended as the power demand of the APT1 is in excess of the capacity of the cells. Only rechargeable NiMH cells of minimum capacity 1.5A/hr /1500mA/hr should be used.

The APT1 Test Box is supplied with 4 NiMH rechargeable 2000 mA/hr cells and a Fast Charger: Crypton Part No ELMU0206



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