

Engineering Report - Yamaha CS-80

Serial number: 1543

Systems Internals and Electronics

Unit received dead apart from pilot lamp on. +8.5 and -6.5 volt rails present from PSU, but both +/-15 volt rails missing. Both over current sensing resistors R726/7 o/c. Replace with WW ceramic 5W types. Reservoir capacitors on PSU board starting to drop electrolyte. Replace all with high quality 105 degree types.

Varying degrees of operation from M cards. Repair summary below:

CH 1, 1: Working
CH 1, 2: Working
CH 1, 3: Replace VCO III, WSC, VCA (IC6)
CH 1, 4: Replace VCA (IC3)
CH 1, 5: Replace VCO III
CH 1, 6: Working

CH 1, 7: Audio output muted at IC5, control pin 2 swung 3 volts negative. Pin 'O7' on KBC I card stuck at -5V because of defective detection amp IC21. Replace RC4558.

CH 1, 8: Working

CH 2,1: Working
CH 2, 2: Replace VCO III, VCF-LP, VCF-HP, EG-VCA
CH 2, 3: Replace EG-VCA
CH 2, 4: Replace VCA (IC 5)
CH 2, 5: Replace VCO III, VCA (IC 4)
CH 2, 6: Replace VCO III, VCA (IC 5)
CH 2, 7: Replace VCO III
CH 2, 8: Replace VCA (IC 2)

Other issues with sub-assemblies below associated with chorus and tremelo circuits:

SUB: Replace VCO II (IC 5)
OE1: Replace FETs 1-4 and 100K bias resistor for FET 2 and 4.
OE2: Replace MN3001 BBD IC

Numerous after touch issues caused by defective logic on TKC board. Defective devices flushed out on a case by case basis. Large numbers of 4000 series CMOS logic replaced. Replace all 10 multiplexers on TSB cards in case of impending fail.

Control Panel

Push button selectors in poor condition with 'Flute' preset jammed in. Dismantle. Chemically treat all buttons with silicon and replace 2 x pigmy lamps. Clean and reassemble.

VCF Level slide pot with broken shaft, rebuild from scrap unit. Effects speed 10KB pot jammed, replace.

All switches, jacks and pots chemically treated. All slide potentiometers, including memory preset banks, treated with liquid silicon for smooth operation.

Replace missing slider and switch caps:

CHI PWM speed, CHI noise, CHI after level, CH2 VCF level, CH2 VCA release slider cap, SUB OSC function and OSC range caps.

Ribbon controller spring corroded and broken in several places. Strip controller assembly, clean carbon track and replace with 8.1mm OD music wire spring.

Exterior

Rear panel jacks corroded and replaced/refurbished. Wood facia surround painted black, so stripped and revarnished by a professional cabinet maker. Obtrusive mains inlet from front of instrument replaced with standard C14 IEC socket. Mains earth reconnected.

Presentation

Case cleaned inside and out.

Calibration and Tests

Check condition of internal wiring loom and patch where applicable. Check condition of mains wiring and earthing of exposed external metalwork. Perform complete factory calibration and perform 'two person' functional test. Any problems missed by first pass corrected. Tuning final check before reassembly and delivery to vendor.