NOTE REGARDING FACTORY CALIBRATION PROCEDURES AND TEST SPECIFICATIONS

Factory Calibration Procedures and Test Specifications are intended for use at the factory as a general guide for calibrators and quality control men. Most of the tolerances listed in these sheets are closer than advertised specifications. This is done purposely in order to insure that the instrument will meet or exceed advertised specifications when it reaches the customer.

These calibration procedures and test specifications should be used, therefore, as a guide only.

Some of the test equipment referred to in the calibration procedures is not available commercially; the Tektronix field engineer will be glad to suggest alternate approaches.

1/16/61
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TEKTRONIX TYPE Q PLUG-IN

T E N T A T I V E

F A C T O R Y C A L I B R A T I O N P R O C E D U R E

PRELIMINARY INSPECTION

Check for unsoldered joints, rosin joints, clearance of protruding parts, loose hardware, and shorted wiring. Check to see that calibrator resistors are in place.

1. CHECK RESISTANCE TO GROUND.

Check resistance on connecting plug pins.

1	8.5 k	11	infinity
2	gnd	12	infinity
3	8.5 k	13	infinity
9	infinity	14	infinity
10	25 k	15	100Ω

2. CHECK ATTENUATOR ACCURACY.

Unsolder C5728 at the ceramic strip connection. Connect the calibrator output from the junction of R5730A and C5728 to ground. Connect from the grid (pin #2) of V5734 to ground with a 1X probe from the test scope. Switch the Calibrator to 100 v. Check the attenuator steps as follows:

Scope v/cm	μstrain/div	Deflection
.05	10000	2 cm
.05	5000	4 cm
.1	2000	5 cm
.2	1000	5 cm
.5	500	4 cm
1	200	5 cm
2	100	5 cm
5	50	4 cm
10	20	5 cm
20	10	5 cm

These checks are made with the plug-in cold. Resolder C5728 to ceramic strip.

3. CHECK VOLTAGE TO GROUND.

Insert plug-in in scope. Check voltage on interconnecting plug pins.

1	65-67 v	11	225 v
2	0 v	12	350 v
3	65-67 v	13	100 v
9	-150 v	14	100 v
10	100 v	15	75 v

4. ADJUST OSCILLATOR AMPLITUDE, FREQUENCY, AND CHECK REGULATION.

Set:	External arms	0
	Function	Inst Zero
	Polarity	Normal

4. Con't.

Connect a 10X probe to pin #6 of T5779. Adjust L5773 for a frequency of 40 µsec per cycle. (25 kc) The waveform should be approximately 20 v peak to peak. Vary the line voltage from 105 to 125. The amplitude should not vary. Switch to all positions of the EXTERNAL ARMS switch. The amplitude should not vary.

5. CHECK DEMODULATOR BALANCE.

Measure the voltage across R6721 and across R6723. These two voltages should be equal. (Approximately 1.25 v) Any large amount of unbalance may be due to a bad diode or miswired transformer. Remove the probe.

6. ADJUST VERT POS RANGE.

Set the VERTICAL POSITION knob at center scale. Adjust the VERT POS RANGE to center the trace on the crt.

7. ADJUST LOW PASS FILTER AND 25 KC TRAP.

Adjust L6743 to approximately 6 threads from maximum inductance. (Almost all the way in.) Switch the FUNCTION switch to BALANCE and the µSTRAIN/DIV switch to 1000. Adjust L6745 for maximum deflection on the scope.

8. CHECK AND BALANCE BRIDGE.

Set µSTRAIN/DIV to 100. Adjust coarse and fine RESISTANCE and CAPACITANCE controls for minimum presentation. Increase the sensitivity as needed. Check the FINE controls for coverage between steps on all ranges. When the bridge is balanced, the coarse CAPACITANCE control should be in step #5 or #6 from the ccw end of the range.

9. ADJUST 50 KC TRAP.

Switch the FUNCTION switch to OPERATE (µS/DIV 100). Unbalance the bridge enough to position the trace off the screen by turning the RESISTANCE or CAPACITANCE controls. Use the vertical position to reposition the trace on the screen. Adjust L6741 for minimum 50 kc (second harmonic) output on the waveform.

10. ADJUST C5705.

Rebalance the bridge and switch the FUNCTION switch to OPERATE. Remove R5705 (150 k Cal. Res.). Set the µSTRAIN/DIV to 10. Adjust C5705 for minimum shift while pushing CAL. button. Replace the 150 k resistor and recheck the bridge balance.

11. ADJUST PHASE.

With the function switch to OPERATE and POLARITY at NORMAL, center the trace and set the µSTRAIN/DIV switch to 100. Adjust PHASE for maximum negative deflection of the trace while pushing the CAL. button. Keep the trace on the screen with the fine gain adjust. (The Phase control will reach a maximum negative deflection peak and then go in a positive direction.)

12. ADJUST GAIN.

Switch the FUNCTION switch to OPERATE. Set the μSTRAIN/DIV to 100. Adjust GAIN for 4 divisions of negative unbalance when pushing CAL. button. Switch from NORMAL POLARITY to INVERTED. Pushing the button should now give 4 divisions of positive unbalance. Check the VARIABLE gain control for 8/1 range of gain. Switch the POLARITY switch to NORMAL.

13. CHECK EXTERNAL ARMS AND CONNECTOR.

Set the FUNCTION switch to BALANCE. Connect the external arms calibration box to the external jack. Set the external arms to:

External arms switch	Arms/external box	
0	0	Check balance
1	1	Check balance
2	2	Check balance
3	3	Check balance
4	4	Check balance

14. CHECK INDICATOR LIGHTS.

The UNCALIBRATED light should light whenever the VARIABLE control is not in the CALIBRATED position. The NON-OPERATE light should be on whenever the FUNCTION switch is not in the OPERATE position.