

# FACTORY CALIBRATION PROCEDURE

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## INTRODUCTION:

This is the guide for calibrating brand-new instruments, it therefore, calls out many procedures and adjustments that are rarely required for subsequent recalibration. *This procedure is company confidential.* In this procedure, all front panel control labels or Tektronix equipment names are in capital letters (VOLTS/DIV, etc.) internal adjustment labels are capitalized only (Gain Adj, etc.).

Tek form number:

0-352

April 1967

For all serial numbers.



ACCESSORY  
POWER SUPPLY  
(015-0073-00)

## FACTORY TEST LIMITS:

We initially calibrate the instrument to Factory Test Limits. These limits are often more stringent than advertised performance requirements. This helps insure that the instrument will meet advertised requirements after shipment, allows for inaccuracies of test equipment used, and may allow for changes in environmental conditions.

## QUALIFICATION:

Factory test limits are qualified by the conditions specified in the main body of the calibration procedure. The numbers and letters to the left of the limits correspond to the factory calibration procedure steps where the check or adjustment is made. Instruments may not meet factory test limits if calibration or check-out methods and test equipment differ substantially from those in this procedure.

## ABBREVIATIONS:

Abbreviations in this procedure will be found listed in TEKTRONIX STANDARD A-100.

## CHANGE INFORMATION:

This procedure has been prepared by Product Manufacturing Staff Engineering. For information on changes that have been made to this procedure, to make suggestions for changing this procedure, or to order additional copies: please contact PMSE, 47-261. (DH)



## EQUIPMENT REQUIRED:

The following equipment is necessary to complete this procedure:

- a. TEKTRONIX Instruments
  - 1 TYPE 530-540 SERIES OSCILLOSCOPE
  - 1 TYPE W PLUG-IN UNIT
  - 1 TYPE 76 TU LINE VOLTAGE CONTROL UNIT
- b. Test Fixtures and Accessories
  - 1 50 $\Omega$  BNC cable (012-0057-00)
  - 1 Accessory Power Supply Test Load (PM Production Tooling Dwg #1509-B)

Substitute test equipment may be used. The Plant Staff Engineer must approve any substitutions. All equipment listed must perform within its manufacturer's specifications, unless otherwise stated.

It is assumed that all equipment is provided with BNC connectors; if equipment used has other than BNC connectors, adapters, not listed, may be needed.

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- |                           |  |
|---------------------------|--|
| 1. PRELIMINARY INSPECTION | 4. RIPPLE  |
| 2. PRESETS                | a. Adjust +12V Ripple  |
| 3. VOLTAGE                | b. Check +12V Ripple and Noise:<br>Ripple: 1mV, max<br>Noise: 500 $\mu$ V, max |
| +12V $\pm$ 1%             | c. Check -;2V Ripple and Noise:<br>Ripple: 1mV, max<br>Noise: 500 $\mu$ V, max |
| -12V $\pm$ 1%             |  |

THE END

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## 1. PRELIMINARY INSPECTION

Inspect the power supply case, cable and connector for any scratches, chips, stains or defects in the paint or metal parts. Remove the power supply case, and check for unsoldered joints, rosin joints, lead dress and long ends. (Do not replace the case.)

## 2. PRESETS

Set the ACCESSORY POWER SUPPLY Ripple Adj R110 to midrange.

Set the TYPE 543A controls with TYPE W PLUG-IN UNIT installed.

TIME/CM	5mSEC
VARIABLE TIME/CM	CALIBRATED
TRIGGERING MODE	AUTO
TRIGGER SLOPE	+ LINE
HORIZONTAL DISPLAY	NORMAL (X1)

Set the TYPE W PLUG-IN UNIT controls.

V <sub>C</sub> RANGE	0
A AC-DC-GND	GND
INPUT ATTEN	10
DISPLAY	A-V <sub>C</sub>
MILLIVOLTS/CM	10
VARIABLE MILLIVOLTS/CM	CALIB
POSITION	midrange
COMPARISON VOLTAGE	1-2-0

## 3. VOLTAGE

+12V ±1%  
-12V ±1%

Connect the ACCESSORY POWER SUPPLY to the TYPE 76 TU LINE VOLTAGE CONTROL UNIT set at 115 VAC. Connect a 50Ω BNC cable from the Accessory Power Supply Test Load -12V connector to the TYPE W A input. With the TYPE W POSITION control, position the trace to the graticule center. Set the V<sub>C</sub> RANGE switch to -11 and the A AC-DC-GND switch to DC. Return the trace to the graticule center with the COMPARISON

## 3. (cont'd)

VOLTAGE ( $V_C$ ) control. Check that the dial reading is between 1.212 and 1.188 (1.200  $\pm 1\%$ ). Repeat at 103 and 127 VAC. Connect the 50 $\Omega$  cable to the +12V connector on the Accessory PS Test Load and set the  $V_C$  RANGE switch to +11. Return the trace to the graticule center with the COMPARISON VOLTAGE ( $V_C$ ) control and again check that the dial reading is between 1.212 and 1.188. Repeat at 103 and 127 VAC. Return the TYPE 76 TU to 115V.

4. RIPPLE AND NOISEa. *Adjust +12V Ripple*

Set the TYPE W  $V_C$  RANGE switch to 0 and the A AC-DC-GND switch to AC. Set the INPUT ATTEN switch to 1 and the MILLIVOLTS/CM switch to 1. While observing the display, adjust the Ripple Adj R110 for minimum ripple.

b. *Check +12V Ripple and Noise:*

*Ripple: 1mV, max*  
*Noise: 500 $\mu$ V, max*

Check ripple and noise at 115, 103 and 127 VAC. Ripple 1cm, max. Noise .5cm, max.

c. *Check -12V Ripple and Noise:*

*Ripple: 1mV, max*  
*Noise: 500 $\mu$ V, max*

Connect the 50 $\Omega$  cable to the nector on the Accessory PS Test Load. Check ripple and noise at 115, 103 and 127 VAC. Ripple 1cm, max. Noise .5cm, max.

Remove all connections from the ACCESSORY POWER SUPPLY and replace its case.

THE END