file TEK 040-195

date Jan. 21, 1959

FIELD MODIFICATION KIT

INTRODUCTION:

This modification replaces the selenium rectifiers used in the Type 310 Oscilloscope with silicon rectifiers offering more reliability and longer life.

KIT LIST:

Quantity	Description	Tek Number
1 ea.	Silicon Rectifier Bracket Assembly, consisting of:	
12 ea.	Spacer, 5/16" Ceramic Strip	361-009
1 ea.	Rectifier bracket plate	386-835
6 ea.	Ceramic Strips, 3/4 x 4 notches 3/8"	124-088
1 ea.	Screw, 4-40x1/4" BHS	211-008
1 ea.	Nut, 4-40 x 3/16 Hex.	210-406
12 ea.	Rectifiers, Silicon, 1N1566	106-056
3 ea.	Resistors, 40Ω 10 W. ±5% WW	308-012
3 ea.	Screw, 8-32 x 2-1/4", BHS	212-014
6 ea.	Nut, 8-32 x 5/16"	210-409
3 ea.	Lockwasher, #8 Int.	210-008
6 ea.	Eyelet, .190 - .183 OD Brass	210-601
1 ea.	Lug, solder #4	210-201
4"	Wire, #22, White-orange	
1-1/4"	Wire, #22, bare	
6"	Wire, #22, White-green	
4"	Wire, #22, White-yellow	

INSTRUCTIONS:

Procedure for removing rectifier bracket from instruments with serial numbers <u>below 1383</u>.

( ) 1. Remove the four rectifier bracket mounting screws.

( ) 2. Bend the rectifier bracket back and unsolder all lead connections to the selenium rectifiers and the thermal cut-out disc.

( ) 3. Pull the cable back out of the way and remove the rectifier bracket with the rectifiers, thermal cut-out and R608 left on it.

( ) 4. Remove R608 and the thermal cut-out from the rectifier bracket.

( ) 5. On the inside of the chassis, 11/16" below the R668 mounting nut, drill a 3/16" hole.

( ) 6. Mount R608, the resistor removed from the rectifier bracket in step 4, using the hole drilled in step 5. Mount with the terminals pointing in same direction as the terminal of R668. Leave the ground lug connected to the bottom terminal.

( ) 7. Locate the white-orange wire that is soldered to C601 and dressed through the grommet located next to this capacitor. Remove this lead from the cable and delete. Solder one end of the white-orange lead from the kit, to the same terminal on the capacitor, feed it through the same grommet and solder the other end of this lead to the top terminal of R608, the 2.5K resistor mounted in step 6. Solder one end of the bare jumper wire, from the kit, to this same resistor terminal.

( ) 8. Locate the white-green lead and the white-yellow leads that are soldered to C660 and dressed through the grommet located by the corner of the power transformer. Remove these two leads and in their place solder the white-yellow and white-green lead from the kit, dressing them through the same grommet. Solder the white-green lead from the kit to the same terminal on C660 that the original white-green wire was soldered to, and the same for the white-yellow lead.

( ) 9. Mount the thermal cut-out, removed from the old bracket, on the new bracket.

( ) 10. Mount the new rectifier bracket in the instrument. If the mounting holes located on the inside of the chassis do not line up with the mounting holes in the rectifier bracket, it will be necessary to drill new mounting holes. Use the new rectifier bracket as a template to drill the new holes.

( ) 11. Resolder the leads to the thermal cut-out.

Procedure for removing rectifier bracket from instruments with serial numbers <u>above 1382</u>.

( ) 1. Remove the two thermal cut-out mounting screws, the four rectifier bracket mounting screws, and the selenium rectifier mounting nuts located on the inside of the chassis.

( ) 2. Unsolder the leads to the selenium rectifiers and remove the rectifiers from the chassis.

( ) 3. Remove the old rectifier bracket and mount the new rectifier bracket in its place.

( ) 4. Remount the thermal cut-out on the new bracket.

( ) 5. Locate the white-orange lead that is dressed through the grommet located by C601 and C630. Solder this lead to the top terminal of R608.

CABLE CONNECTIONS FOR ALL SERIAL NUMBERS

( ) A. Solder the white-yellow lead, from the chassis, to the ceramic strip as shown in the photo, step A.

( ) B. Solder the green-brown lead, from the chassis, to the ceramic strip as shown in the photo, step B.

( ) C. Solder the white-green lead, from the scope chassis, to the top terminal of the resistor as shown in the photo, step C.

( ) D. Solder the white-yellow lead, from the transformer cable harness, to the same point as in Step A. In scopes with serial numbers below 1383, this yellow wire will have to be dressed back through the first cable wrapping to obtain enough length to reach this point.

( ) E. Solder the two white-red leads, from the transformer cable harness, to the ceramic strip terminals as shown in the photo, step E.

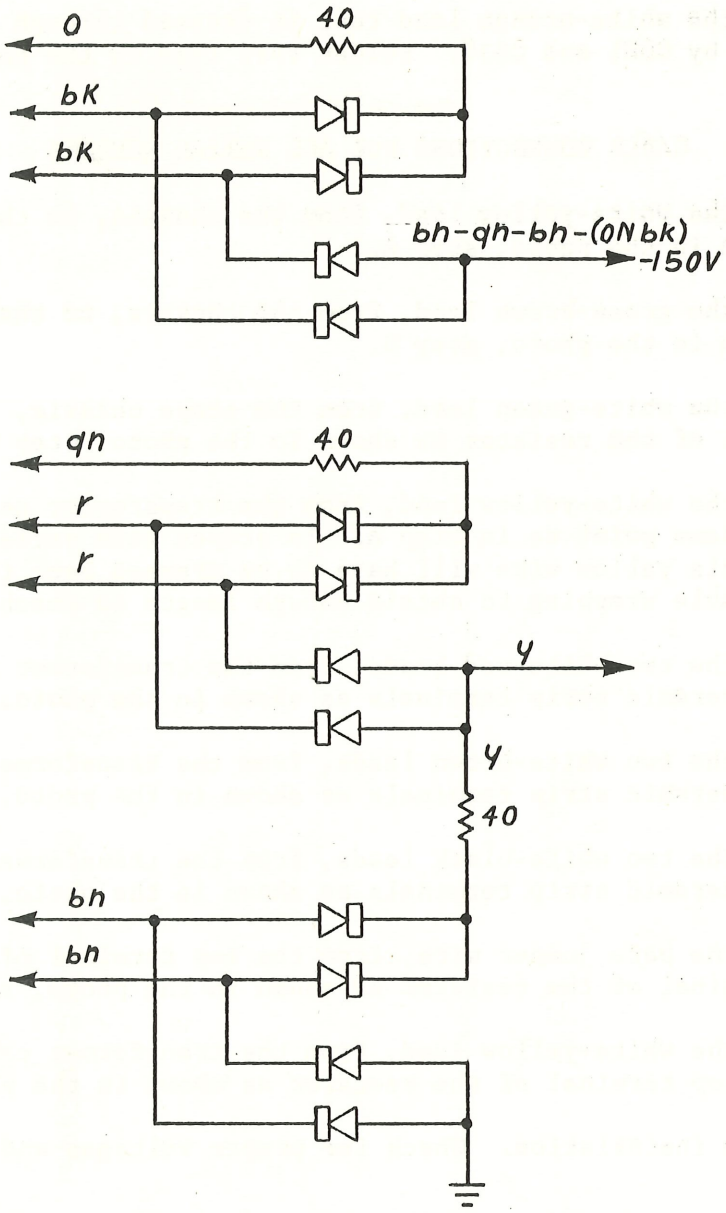
( ) F. Solder the two white-brown leads, from the transformer cable harness, to the ceramic strip terminals as shown in the photo, step F.

( ) G. Solder the two white-black leads, from the transformer cable harness, to the ceramic strip terminals as shown in the photo, step G.

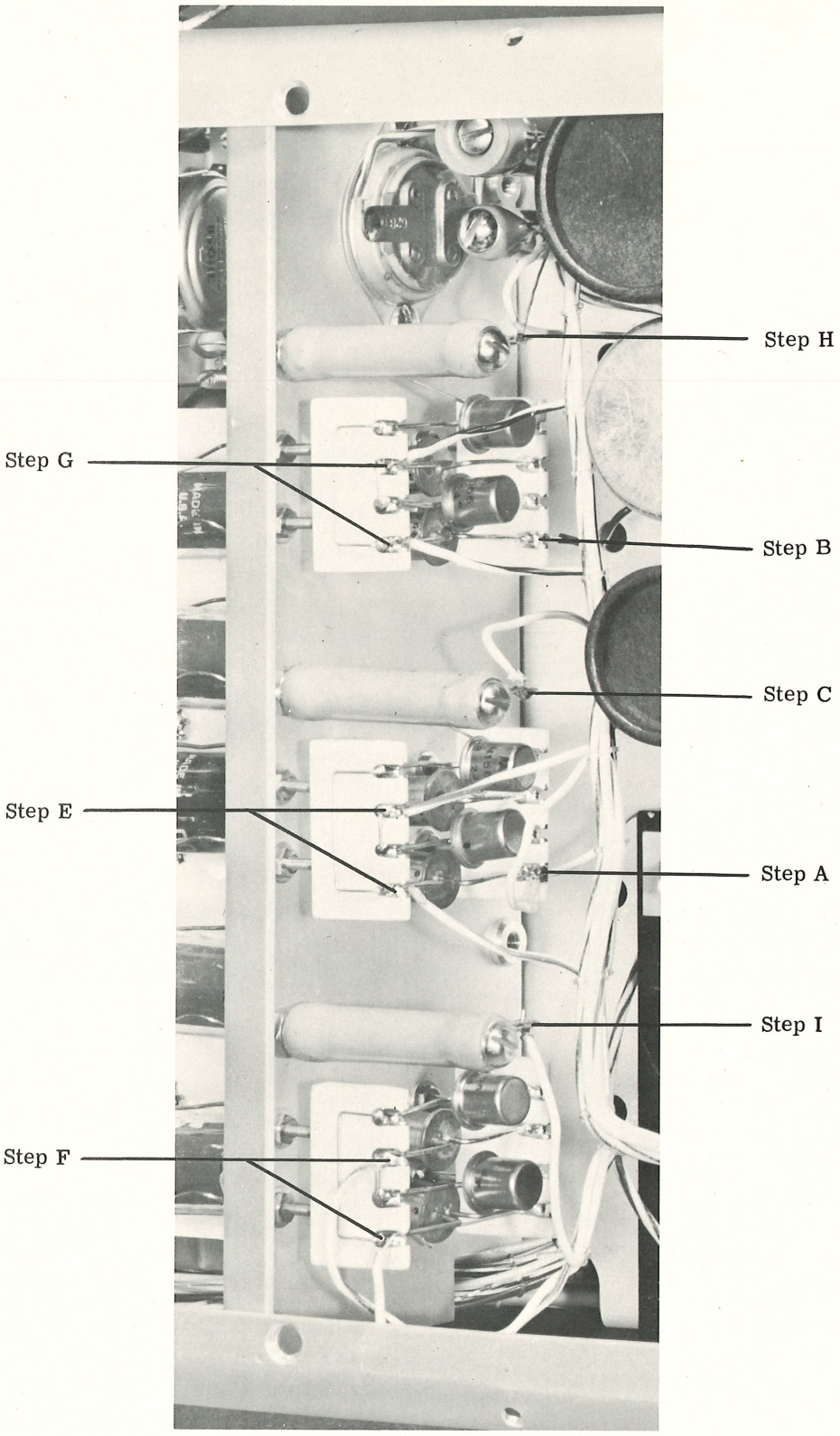
( ) H. Solder the bare jumper wire, from the top terminal of R608, to the top terminal of the resistor as shown in the photo, step H.

( ) I. Solder the white-yellow lead, from the transformer cable harness, to the top terminal of the resistor as shown in the photo, step I.

This completes the installation. Check for proper voltages and regulation of the power supply.



TYPE 310 SILICON RECTIFIER MOD. SCHEMATIC


Step H
Step G
Step B
Step C
Step E
Step A
Step I
Step F