PRODUCT MODIFICATION SUMMARY EXPLANATION

A product modification summary is a history of the modifications made to an instrument after the initial instrument design. Only modifications which affect replaceable parts are described (for example, one cannot purchase a bare circuit board, only a completely assembled and tested board, therefore changes to bare circuit boards are not described in a mod summary). These changes may have occurred for a number of reasons: components may no longer be manufactured by the vendor, product improvement, product enhancement, to facilitate product manufacture, etc.

A product modification summary consists of two parts: (1) index pages and (2) summary pages. The index pages lists the modifications, in serial number sequence, with a description of each. The summary pages provide additional details, if required. The index pages indicate the location of the appropriate summary pages.

Shown below is an example of the header which appears at the top of each page in a mod summary and the header which appears above each description on the index pages. Following the example, are descriptions of each of the terms in the headers.

PRODUCT MODIFICATION SUMMARY

2465 OSCILLOSCOPE

INDEX PAGE: 1 TITLE: PROCESSOR AND DIGITAL CONTROL

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE

INDEX PAGE

INDEX PAGE should not be construed as a page number, but rather as a section number within the mod summary. The number which appears after INDEX PAGE (1 in the example above) refers to the number, within the diamond, on the tab of each schematic page in the instrument service manual. Thus, a mod summary will generally have several INDEX PAGEs, with each referring to a single schematic page in the instrument service manual.

For those service manuals without diamonds on the tabs, the INDEX PAGE numbers are arranged according to the order of the schematics in the instrument service manual, with the first INDEX PAGE corresponding to the first schematic in the manual.

Some service manuals arrange the schematics by circuit boards. In these cases, one INDEX PAGE per circuit board is provided, even though the circuit board may have more than one schematic page.

If numerous modifications have been made to the circuit represented by a schematic, an INDEX PAGE may actually consist of several pages. Since each page refers to the same schematic, the INDEX PAGE number for each of the pages will be the same, as

will the title. To differentiate between such pages, a page number is placed at the bottom, right-hand corner of each page. Using 10.2 as an example of one such page number, note that this number has two parts. The first part of the page number is 10. This number refers to the INDEX PAGE to which the page belongs, and hence the schematic number, to which the modifications on the page apply. The second part of the page number, separated from the first by a period, is 2 . This means it is the second page in the sequence, within those pages which share the same INDEX PAGE number. As an example, suppose INDEX PAGE 10 consists of 5 pages, those pages would be numbered as follows: 10.1, 10.2, 10.3, 10.4, and 10.5.

Three additional INDEX PAGEs are included - Miscellaneous, Modification Kits, and Parts Replacement Kits. Detailed information about these pages is provided below.

TITLE

The index page title corresponds to the schematic page tab in the service manual.

SERIAL NO.

The modifications are arranged by instrument serial number with the highest serial number being the most recent modification. If specific serial number information is not appropriate or not available, "NA" is listed under SERIAL NO. Modifications with an NA under SERIAL NO. will be listed in order of the CHANGE NO. Some modifications may not affect all instrument configurations (options). Information listed to the right of the serial number details these exceptions.

CLASS

The classification (CLASS) defines the urgency of field installation. The classifications are as follows:

1 - Required

2 - Recommended

3 - Information Only

A Required modification (1) is one that should be installed in every instrument. It usually involves operator safety or instrument damage. In most cases, a special modification kit is provided.

A Recommended modification (2) is one that has been recommended for installation during routine maintenance in the instrument.

An Information Only modification (3) is one which is neither required nor necessarily recommended. In most cases, these modifications do not need to be installed unless the instrument has problems in the area indicated by the modification.

CHANGE NO.

CHANGE NO. is a number assigned to the modification for internal tracking purposes. Occasionally, for clarity of explanation, a index entry for a product modification will be separated into sections. To indicate this, a suffix number will be assigned to each index entry (for example, M45078-1 and M45078-2) to allow for discrete handling of each section of the modification.

PAGE

PAGE indicates where additional information for the modification can be found. The first digit of the page number indicates SECTION. The next two digits, immediately to the left of the decimal, indicate INDEX PAGE. The two digits to the right of the decimal indicate SUMMARY PAGE (see below).

SECTION - This number is usually "1". A product modification summary may have more than one section, when supplemental service manual(s) are available or more than one instrument is combined in one modification summary, for example, 8000 Series Emulators (in this case a table of contents is provided).

INDEX PAGE - This is the number of the index page and usually is taken from the associated schematic diagram.

SUMMARY PAGE - This number is assigned in numerical order when the change information is inserted. Each index page may have from XXX.01 to XXX.99 summary pages.

The summary pages are arranged according to the SECTION first, INDEX PAGE second and the SUMMARY PAGE last. Page 112.21, for example, indicates SECTION ONE, INDEX PAGE twelve, and SUMMARY PAGE twenty-one.

All Section 1 pages are located at the front of the summary pages. All summary pages for each index page are grouped together. The summary pages are arranged according to the numerical order of the two numbers after the decimal point.

If a summary page is required for a modification that affects more than one index page, the summary page number is assigned from the first index page on which the change appears.

KIT PN

KIT PN is the part number of a Modification Kit or Parts Replacement Kit affected by the change. A kit initially set up by a modification is listed as XXX-XXXX-00. Each subsequent change to the parts contained in the kit is listed with the corresponding suffix change, for example, XXX-XXXX-01, XXX-XXXX-02, etc. Each version is listed with the entry which effected that change. Usually, only the most current version of the kit is included in the modification summary.

KIT PAGE

This is the summary page on which the latest version of the kit can be found.

Description of Modification

A description of the modification appears on the index page under each header. It includes information about the problem being solved and components being changed. If the affected circuit board part number changes, this also is indicated. Additional information, if necessary, is found on the indicated summary page.

MISCELLANEOUS INDEX PAGE

This page includes all changes to the product that cannot be referenced on another INDEX PAGE. This page generally lists (though it is not limited to) mechanical hardware changes.

MODIFICATION KIT PAGE

This page lists the most current version of the modification kits applicable to the product. A modification kit includes parts and instructions used to improve reliability, to provide instrument enhancement, or to facilitate field installation of a catalog option.

USEABLE SN RANGE

Serial number range of the product into which the kit can be installed.

KIT TITLE

The kit title is taken from the modification kit title.

PAGE NO.

This is the summary page on which a copy of the kit can be found.

LABOR TIME

The time required for kit installation.

KIT NUMBER

The part number of the kit. Kits are listed in numerical order.

PARTS REPLACEMENT KIT PAGE

This page lists the latest version of the Parts Replacement Kits. A Parts Replacement Kit is a kit of parts and instructions (a copy of which is included in the summary pages) to replace a part for which a direct replacement is no longer available. Please refer to the MODIFICATION KIT INDEX PAGE above for an explanation of each column.

REVISION DATE EXPLAINED

Every page of the mod summary index has a date at the bottom of the page. If every entry on a page has been entered on the same date then, by definition (established here), no revision has taken place. The date at the bottom of the page is formatted, for example, DEC 1984.

Whenever new entries are added to a page which already has entries, revision markers, "|", will be placed along the right margin, next to the most recent revision. Any previously existing revision markers are removed from the page. When a revision has occurred, the date at the bottom of the page is changed to correspond to the date the revision was entered.

If a page has no entries, the date the mod summary for that product was established is referenced at the bottom of the page, for example, DEC 1984. However there are exceptions. The word processing system originally used to produce the mod summaries has been replaced by a newer system. As a result, the date listed at the bottom of the mod summaries, for products which were in existence prior to the introduction of the new word processing system, actually reflects the date the mod summary was converted from the old system to the new. For products introduced after the new word processing system came on-line, the date at the bottom of the page reflects the date the mod summary for the instrument was established, provided there are no revision markers in the right margin.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 1 TITLE: COLLECTOR SUPPLY

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B061180	3	M21286-4			

False triggering and step lock-out when in STEP SINGLE mode was eliminated by adding CR115 and CR125 (pn 152-0141-02) between pin 1 and pin 4 (cathode end) of K115 and K125, respectively. Collector Sweep circuit board changes from pn 670-2426-00 to pn 670-2426-01.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B100000	3	M30702	101.01		

To ensure future instruments comply with CSA standards, several mechanical changes were made and the circuit runs were relocated on the Power Supply and Collector Switch circuit boards. The part numbers of the circuit boards changed from 670-2427-02 and 670-2426-01 to 670-2427-04 and 670-2426-02, respectively.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 2 TITLE: STEP GENERATOR

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010120	3	PC-6	102.01		

Wire added to plug-in test fixture connector to allow trace intensification or blanking from the test fixture.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010120	3	PC-17	102.02		

When the MAX PEAK POWER-WATTS switch is in the 0.6 range or below, a push button added to the MAX PEAK POWER-WATTS switch overrides the collector sweep disable circuit.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010120	3	PC-21	102.03		

Several components were changed in value to improve the adjustment range of R278 (Step Amp Adj.) and R281 (X.1 Step Amp Adj.).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B020210	3	PC-9			

C223, C226 and C291, 0.01μF, 150V capacitors, pn 283-0068-00, and C332, a 0.01μF, 500V capacitor, pn 283-0003-00, were all replaced with 0.01μF, 500V capacitors, pn 283-0002-00, to facilitate assembly.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050770	3	M20113-2	102.04	050-0665-02	102.05

To ensure sufficient unblanking delay with all brands of microcircuits, circuit and component changes were made. Also, see M21286-1.

INDEX PAGE: 2 TITLE: STEP GENERATOR

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B061180	3	M21286-1	102.06		

Several circuit changes were made to ensure that the Step Generator runs in SINGLE without first activating REPetitive.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B061180	3	M21286-2	102.06		

Noise on the horizontal display was eliminated by adding C264, a 0.01μF capacitor (pn 283-0002-00), between pin 14 and pin 7 of U268. See M21286-1 for further details.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M21527-1			

To facilitate assembly, DS311, X10 OFFSET indicator lamp, changed from pn 150-0048-00 to pn 150-0048-01.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-1	102.07		

To eliminate Step Generator jitter, C215, C218, C265, C268, C273, R212 and R213 were changed on the Main circuit board which changed from pn 670-2428-03 to pn 670-2428-04. See M23019-2 on page 3 for further details.

INDEX PAGE: 2 TITLE: STEP GENERATOR

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104920		3	M37562-1			

To ensure optimum pulse width, R231, a 4.3kΩ resistor (pn 315-0432-00), was replaced with a 4.7kΩ, 5%, 0.25W resistor (pn 315-0472-00).

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B106840	577D1	3	M48104			
B106860	577D2					

To improve the linearity of the step generator, especially during the beginning portion of each staircase, Q310 (pn 151-0302-00) was replaced with a different NPN transistor (pn 151-0192-00) having a higher beta gain.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107005	577D1	3	M50302			
B107025	577D2					

To ensure the base current step transitions are equal for each level, C201, a 0.47μF capacitor (pn 283-0134-00), was replaced with a different 0.47μF capacitor (pn 283-0203-00). The new capacitor has a tighter tolerance.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107533	577D1	3	M55336			
B107452	577D2					

To improve component availability, the operational amplifier (pn 156-0158-02), used for U305, was replaced with a new Op Amp (pn 156-1191-01). Resistor R305 (56MΩ, pn 315-0566-00), was removed when the new Op Amp was installed. The part number for the Main Circuit board changed from 670-2428-05 to 670-2428-06.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 3 TITLE: STEP AMPLIFIER

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030178	3	M20318-2			

With the STEP GENERATOR set to 0.05V and the COLLECTOR SUPPLY to + polarity, releasing the PULSED 300μs switch causes loss of step generator output. The problem is corrected by changing R364 from 3kΩ (pn 315-0302-00) to 6.2kΩ (pn 315-0622-00).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040594	3	M20215		050-0757-00	103.01

The display will drift with the STEP/OFFSET AMPLIFIER set at X.1 when switching the LEFT-RIGHT switch from off to the device under test. The drift is eliminated by changing Q450 from a dual FET, pn 151-1011-00, to a monolithic FET, pn 151-1081-00. See M23019-2.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050770	3	M20113-2	102.04	050-0665-02	102.05

To ensure sufficient unblanking delay with all brands of microcircuits, circuit and component changes were made.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050770	3	M20113-3	103.02		

Instrument protection was improved by adding a fuse between the floating power supply and S404, the STEP/OFFSET AMPLITUDE Switch.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 3 TITLE: STEP AMPLIFIER

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050770	3	M20113-4	103.03		

To improve Step Generator current linearity. CR440 and CR441 were relocated to be in series with the collectors of Q440 and Q436, respectively.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-2	102.07	050-0756-00	103.04
				050-0757-00	103.01
				050-0759-00	103.05

To allow for tolerance variation of microcircuits and reduce high transistor reject rate, several components were changed on the Main circuit board which changed from pn 670-2428-03 to pn 670-2428-04. Also see M24239.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M24239			

To provide the optimum temperature coefficient, the current through zener diodes (VR380 and VR382) was increased by changing R381 from an 866Ω, 1%, 0.125W resistor (pn 321-0187-00), to a 680Ω, 5%, 0.25W resistor (pn 315-0681-00). Also, see M23019.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104920	3	M37562-2			

To ensure the OUTPUT Z adjustment (R456) operates near the center of its adjustment range, R457, a 2.67kΩ resistor (pn 321-0234-00), was replaced with a 2.74kΩ, 1%, 0.125W resistor (pn 321-0235-00).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 4 TITLE: STEP/OFFSET AMPLIFIER SWITCH

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE

NO MODIFICATIONS

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 5 TITLE: TEST FIXTURE INTERFACE

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE

NO MODIFICATIONS

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 6 TITLE: VERTICAL AND HORIZONTAL AMPLIFIERS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030178	3	M20259-2	106.01		

To improve linearity when using VERT MAG. four diodes were removed.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030178	3	M20259-3	106.02		

Trace looping causes microcircuit saturation reading or other tests having fast vertical changes difficult to make.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040192	3	M19842	106.03	050-0633-00	106.04

Insufficient current available from the +15V and -15V supplies.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B061180	3	M21286-1	102.06		

Vertical Display noise when FILTER DISPLAY is in the out position and the VERTICAL POSITION is at 10X was eliminated by several circuit changes. New board also incorporates changes made by M20113-2.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M21527-2			

To facilitate assembly. DS535. MAG ON indicator lamp. changed from pn 150-0048-00 to pn 150-0048-01.

INDEX PAGE: 6 TITLE: VERTICAL AND HORIZONTAL AMPLIFIERS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-3	102.07		

To reduce the need to test select components. R570 was changed and C513 (test selectable with nominal value of 240pF) was added in parallel with C509. See M23019-2 for parts list and additional information.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
BJ92660	3	M22672	106.05		

To improve the 577 vertical and horizontal positioning capability. several electrical and mechanical changes were made to accommodate new positioning potentiometers which changed the Main circuit board from pn 670-2428-04 to pn 670-2428-05. Supersedes a portion of M20943.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B100000	3	M30702	101.01		

To ensure future instruments comply with CSA standards. several mechanical changes were made and the circuit runs were relocated on the Power Supply and Collector Switch circuit boards. The part numbers of the circuit boards changed from 670-2427-02 and 670-2426-01 to 670-2427-04 and 670-2426-02. respectively.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 7 TITLE: VERT AND HORIZ OUTPUT AMPLIFIERS (D1)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010129	3	PC-19	107.01		

Several components were changed in value to improve the linearity in the Horizontal Amplifier. Also, see M23019.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050920	3	M21663			

To allow interchangeability of transistor brands at Q1006, Q1116, Q1126 and Q1136, the values of the base input resistors, R1103, R1113, R1123 and R1133, were changed from 39Ω, 10% (pn 316-0390-00) to 110Ω, 5% (pn 315-0111-00) resistors. Also, see M23019.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-4	107.02		

To improve horizontal display linearity, the Vertical and Horizontal Output Amplifier circuit was redesigned requiring new layouts of the High Voltage circuit boards. The part numbers of the boards changed from 670-2559-00 (D1) and 670-2561-00 (D2) to 670-4126-00 (D1) and 670-4126-01 (D2).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 8 TITLE: CRT CIRCUIT (D1)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B020224	3	M19202	108.01		

To reduce the clutter of tick marks on the crt graticules. the solid lines with minor division tick marks were changed to dashed lines.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040829	3	M21287	108.02		

Two spots at either edge of the crt display. when the BRIGHTNESS control is counterclockwise. were eliminated by two circuit changes.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104720	3	M35275			

To prevent leakage current from causing the crt bias to change. the 14-pin polypropylene socket assembly (pn 136-0301-01) was replaced with a 14-pin polysulfone crt socket assembly (pn 136-0202-04y.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 9 TITLE: STORAGE CIRCUIT (D1)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B020508	3	M20096	109.01	050-0670-01	109.02

M20096 and M20966 were run at the same time. S1372A & B was replaced with a more reliable switch which required changing the mounting spacer to a shorter type. Superseded by M32038.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030556	3	M18934	109.03		

Circuit changes were made to facilitate installation of Auto Erase custom mod.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030556	3	M21154			

To prevent spontaneous erasure to stored traces. R1332 was changed from 200Ω (pn 315-0201-00) to 2kΩ, 5%, 0.25W (pn 315-0202-00).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040829	3	M21287			

Two spots at either edge of the crt display. when the BRIGHTNESS control is counterclockwise. were eliminated by two circuit changes.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M21527-3			

To facilitate assembly. DS1390. Power On indicator lamp. changed from pn 150-0048-00 to pn 150-0048-01.

INDEX PAGE: 9 TITLE: STORAGE CIRCUIT (D1)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-5		050-0760-00	109.04

To improve the heat sink and transistor mounting, a hole was added to the heat sink which changed the part number from 214-1612-01 to 214-1612-02. A nylon post (pn 385-0100-00) and two screws (pn 211-0507-00 and pn 211-0504-00) were added to the Storage circuit board.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B103990	3	M32038			

To ensure component availability, the ERASE SELECT switch, S1372A & B (pn 260-1232-01), was replaced with a more available switch (pn 260-1232-00).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104720	3	M35275			

To prevent leakage current from causing the crt bias to change, the 14-pin polypropylene socket assembly (pn 136-0301-01) was replaced with a 14-pin polysulfone crt socket assembly (pn 136-0202-04).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107670 577D1	3	M57372			

To ensure the part is operated within the recommended voltage specification, the five transistor heat sinks (pn 214-1611-00) used for Q1362, Q1364, Q1372, Q1392 and Q1396 on the Storage circuit board, A4, were replaced with new heat sinks (pn 214-2569-00).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 10 TITLE: VERT AND HORIZ OUTPUT AMPLIFIERS (D2)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050920	3	M21663			

To allow interchangeability of transistor brands at Q1106, C1116, C1126 and Q1136, the values of the base input resistors, R1103, R1113, R1123 and R1133, were changed from 39Ω, 10% (pn 316-0390-00) to 110Ω, 5% (pn 315-0111-00) resistors. Also, see M23019.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23109-4	107.02		

To improve horizontal display linearity, the Vertical and Horizontal Output Amplifier circuit was redesigned, requiring new layouts of the High Voltage circuit boards. The part numbers of the boards changed from 670-2559-00 (D1) and 670-2561-00 (D2) to 670-4126-00 (D1) and 670-4126-01 (D2).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 11 TITLE: CRT CIRCUIT (D2)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010123	3	PC-23			

The trace does not appear until the INTENSITY potentiometer is rotated past the 12 o'clock position. The problem is corrected by adding a 5.1kΩ resistor (pn 315-0512-00) between ground and the junction of R1202, R1206, R1207 and R1208.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B010150	3	M19202	108.01		

To reduce the clutter of tick marks on the crt graticule, the solid lines with minor division tick marks were changed to dashed lines.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M21527-4			

To facilitate assembly. DS1255, Power On indicator lamp, changed from pn 150-0048-00 to pn 150-0048-01.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104720	3	M35275			

To prevent leakage current from causing the crt bias to change, the 14-pin polypropylene socket assembly (pn 136-0301-01) was replaced with a 14-pin polysulfone crt socket assembly (pn 136-0202-04).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 11 TITLE: CRT CIRCUIT (D2)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104750	3	M36653	111.01		

To allow machine insertion of resistors on the High Voltage circuit board. several resistors were changed from 10%. 0.25W resistors to 5%. 0.25W resistors.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 12 TITLE: POWER SUPPLY

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030249 B030178	577D1 577D2	3	M20259-1	112.01		

Shorting the high voltage floating step amplifier power supply to ground may damage the power supply circuit board.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B030249 B030178	577D1 577D2	3	M20318-1	112.02		

It is possible to connect the instrument to the wrong line voltage. A tag was added to indicate line voltage required.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040300 B040192	577D1 577D2	3	M19842	106.03	050-0633-00	106.04

Insufficient current available from the +15V and -15V supplies.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040770		3	M20773			

Thermal drift in the -30V Power Supply was eliminated by changing R776 from 1.24kΩ (pn 321-0202-00) to 1.37kΩ (pn 321-0206-02) and R777 from 4.53kΩ (pn 321-0256-00) to 4.87kΩ (pn 321-0259-09).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 12 TITLE: POWER SUPPLY

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B050770	3	M20113-1	112.03		

Several component and circuit changes were made to eliminate oscillations in the +5V, +30V, and -30V supplies.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S21455			

The solder mask was removed from fuse runs F721, F731, F711 and F714 and a 2-wire ribbon cable (pn 175-0825-00) and a single white-orange wire (pn 175-0529-00) were replaced with a 3-wire ribbon cable (pn 175-0826-00) on the Main circuit board (pn 670-2428-03).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-6		050-0758-00	112.04

To ensure the +30V Supply regulates at low line (105V) if Q766 has low beta, R744 was changed from 68kΩ (pn 315-0683-00) to 100kΩ (pn 301-0104-00) and R754 was changed from 680kΩ (pn 315-0685-00) to 300kΩ (pn 315-0304-00).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B100000	3	M30702	101.01		

To ensure future instruments comply with CSA standards, several mechanical changes were made and the circuit runs were relocated on the Power Supply and Collector Switch circuit boards. The part numbers of the circuit boards changed from 670-2427-02 and 670-2426-01 to 670-2427-04 and 670-2426-02, respectively.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B040730	3	M20362			

To provide a more positive identification of serial numbers, the rear panel mounted identification label, pn 334-1378-00, was replaced with a front panel mounted identification plate, pn 334-1418-00.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S21373			

To prevent part failure, the front flexible shaft coupling (pn 376-0084-00) on the VARIABLE COLLECTORS shaft was changed to a universal coupling (pn 376-0005-00). Superseded by M34545.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B051110	3	M21375			

All mini-Berg sockets, pn 136-0252-04, were changed to multi-pin sockets, pn 136-0220-00 (3-pin), pn 136-0235-00 (6-pin), and pn 136-0514-00 (8-pin). In addition, 14-pin microcircuit sockets were changed from pn 136-0269-00 to pn 136-0269-02 and 16-pin microcircuit sockets were changed from pn 136-0260-01 to pn 136-0260-02.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B071470	3	M20943	113.01		

The front panel was extensively modified to allow the use of a single lens readout system. A portion of M20943 is superseded by M22672.

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B072250	3	M23528			

To eliminate clearance problems, the 3-pin transistor sockets (pn 136-0220-00) were replaced with (3 each) pin connector sockets (pn 136-0252-04) on the Main, Collector Sweep and Power Supply circuit boards.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23308			

To prevent breakage of the front coupling on the VARIABLE COLLECTORS shaft, the flexible shaft coupling (pn 376-0084-00) and the universal coupling (pn 376-0005-00) were replaced with two flexible shaft couplings (pn 376-0084-01). Superseded by M34545.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B080000	3	M23019-5		050-0760-00	109.04

To improve the heat sink and transistor mounting, a hole was added to the heat sink which changed from pn 214-1612-01 to pn 214-1612-02. A nylon post (pn 385-0100-00) and two screws (pn 211-0507-00 and pn 211-0504-00) were added to the Storage circuit board.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B092730	3	M24038			

To prevent the power switch from pulling loose during instrument turn-on, the POWER switch, S1201, and its mounting bracket were slightly modified. The part numbers remained the same.

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S30697			

To reduce the possibility of stripping the threads in the Vertical and Horizontal FINE Positioning knobs, the plastic knobs (pn 366-1619-00) were replaced with metal knobs (pn 366-1619-01).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B093060	3	M30827			

To provide clearance for the new vertical position trim potentiometer added by M22672, a 0.312 inch radius was milled out of the lower right corner of the front cabinet frame.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B093340	3	S31129			

Because of a change in the pressmount stud for the chassis (earth) ground lug, the nut assembly (pn 210-0586-00) and terminal lug (pn 210-0201-00) were changed to pn 210-0457-00 and pn 210-0202-00, respectively.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B100000	3	M30702	101.01		

To ensure future instruments comply with CSA standards, several mechanical changes were made and the circuit runs were relocated on the Power Supply and Collector Switch circuit boards. The part numbers of the circuit boards changed from 670-2427-02 and 670-2426-01 to 670-2427-04 and 670-2426-02, respectively.

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B103550	3	M31309			

To increase instrument reliability, a circuit board clip and eyelet were added to the main chassis which changed from pn 441-0991-00 to pn 441-0991-02.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B103840	3	M32954			

To comply with safety standards, a 10mm diameter Ground Symbol marker, pn 334-3379-02, was added adjacent to the protective ground terminal lug for the power cord on the rear of the frame assembly.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104300	3	M34545			

To reduce breakage of the MAX PEAK VOLTS flexible shaft couplings, the two couplings, pn 376-0084-01, were replaced with new couplings, pn 376-0084-02. Supersedes S21373 and M23308.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104430	3	M32762			

To allow the use of a common part, the display unit chassis was replaced, changing the part number from 441-0991-02 to 441-0991-03.

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B104720	3	M36717			

To identify instruments which are CSA certified, an identification label was added on the rear panel.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S36747			

To allow the use of common parts, the latch locking plates used with the pawl fasteners for the top and bottom scope cabinets were replaced. The part number of the plates changed from 386-0226-00 to 386-1151-00.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M38698			

To facilitate manufacturing, the 4-40 x 0.312 screws (pn 211-0116-00) with two integral washers, used for circuit board mounting, were replaced with 4-40 x 0.29 screws (pn 211-0292-00) with a single cone-type integral washer.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M39061			

To facilitate assembly, a part number was set up for the retainer for K436. The relay socket (pn 136-0393-00) and the retainer (pn 214-3047-00) are now supplied as individual items rather than as a unit.

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M42706			

The TO-92 transistors used for the vertical and horizontal output amplifiers on the new High Voltage circuit board (after M23019) do not require heat sinks. The four transistor heat sinks (pn 214-1291-00) were removed from the High Voltage circuit board.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	577D2	3	S42713			

To reflect actual usage of parts in the build process, nine transistor sockets (pn 136-0220-00) and three pin connector sockets (pn 136-0252-07) were removed from the D2 High Voltage circuit board (pn 670-4126-01). There are a total of 42 pin connector sockets used on the board.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	577D1	3	S42714			

To reflect actual usage of parts in the build process, ten transistor sockets (pn 136-0220-00) were removed and three pin connector sockets (pn 136-0252-07) were added on the D1 High Voltage circuit board (pn 670-4126-00). There are a total of 45 pin connector sockets used on the board.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M44498			

To reduce the reject rate and to facilitate manufacturing, the background on the HORIZ VOLTS/DIV knob skirt was changed from black to clear and the nomenclature was changed from clear to black. The part number of the knob remained the same.

INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B106655	577D1	3	M46387			
B106655	577D2					

To ensure part availability, the fuseholder (pn 352-0076-00) for the line power fuse, F1201, was replaced with a fuseholder body (pn 204-0833-00), a fuseholder cap (pn 200-2264-00) and a lock washer (pn 210-1039-00).

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B106655	577D1	3	M46685	113.02		
B106655	577D2					

To improve contact between the microcircuit leads and the microcircuit sockets and thereby improve relaibility, several sockets on the Main (A1) and the Collector Sweep (A2) were replaced.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B106775	577D1	3	M41224			
B106795	577D2					

To improve knob reliability and reduce manufacturing reject rate, the HORIZ POS and VERT POS knobs (both pn 366-1215-00) were replaced with new molded knobs (pn 366-1215-03).

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B106960	577D1	3	M51086			
B107030	577D2					

To ensure part availability, the cable clamp (pn 343-0042-00) used to secure the cabling near the thermal cutoff switch, S1200, was replaced with a new clamp (pn 334-0042-01).

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SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107090 B107190	577D1 577D2	3	M52209			

To ensure the two screws, which are used to attach the display unit chassis to the lower frame section at the front, have sufficient length, the 8-32 x 0.312, hex head screws (pn 212-0084-00) were replaced with 8-32 x 0.375, hex head screws (pn 212-0103-00). A 0.17 ID x 0.032 thk x 0.375 OD flat washer (pn 210-0804-00) was installed under the head of each screw.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107175 B107261	577D1 577D2	3	M53034			

To ensure the sockets for the base and emitter leads of the power transistor, Q1252, on the High Voltage circuit board have open bottoms, the two sockets (pn 136-0254-00) were replaced with new sockets (pn 136-0254-01).

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107270 B107310	577D1 577D2	3	M51540			

To prevent shaft slippage, the pushbutton shaft coupler (pn 376-0114-00) for the STEP X.1 switch, S310, was replaced with a new coupler (pn 376-0114-00) which has two 4-40 x 0.094 inch setscrews (pn 213-0075-00).

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INDEX PAGE: 13 TITLE: MISCELLANEOUS

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107481 B107421	577D1 577D2	3	M52303			

To allow for common usage of parts, the main display chassis, pn 441-0991-03, was replaced with a new chassis, pn 441-0991-06. The new chassis requires four additional post spacers (pn 129-0628-00) to align the Storage circuit board, A4 (D1 only), with the pushbutton holes in the front panel.

SERIAL NUMBER		CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
B107670	577D1	3	M57372			

To ensure the part is operated within the recommended voltage specification, the five transistor heat sinks (pn 214-1611-00) used for Q1362, Q1364, Q1372, Q1392 and Q1396 on the Storage circuit board, A4, were replaced with new heat sinks (pn 214-2569-00).

PRODUCT MODIFICATION SUMMARY
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INDEX PAGE: 14 TITLE: TEST ADAPTERS (PN 013-XXXX-XX)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S31036	114.01		

Due to the inavailability of the transistor socket (pn 136-0471-00), the Transistor Test Adapter (pn 013-0127-00) was redesigned to accommodate a different socket. The part number of the adapter changed to 013-0127-01.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S32205			

To reduce possible heat damage to the socket during the installation of the solder sleeves, the solder sleeves (pn 162-0654-00), used in the manufacture of the In-Line Adapter (pn 013-0138-01), were replaced with heat shrinkable insulation sleeving (pn 162-0589-00), approxiately 0.5 inch for each socket lead.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	S34472			

To facilitate packaging of the Axial Lead Diode Adapter, pn 013-0111-00, the adapter data sheet (pn 062-1208-00) was added to the bill-of-materials for the adapter.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M40844	114.02		

The four-contact and six-contact transistor sockets used in the manufacture of the Transistor Adapter (pn 013-0098-02) and the FET Adapter (pn 013-0099-02) were no longer available. The replacement sockets required a new layout of the circuit boards used within the adapters.

INDEX PAGE: 14 TITLE: TEST ADAPTERS (PN 013-XXXX-XX)

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M42843	114.03		

The contact (pn 131-1079-00), used in the manufacture of the Integrated Circuit Adapter, was no longer available. The available replacement connector required extensive redesign of the IC Adapter. The part number of the adapter changed from 013-0124-00 to 013-0124-02.

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M49228			

To ensure part availability, the socket (pn 136-0681-00) used in the Transistor Test Adapter (pn 013-0127-01) was replaced with a new socket (pn 136-0817-00). The part number of the adapter data sheet changed from 062-1388-01 to 062-1388-02.

PRODUCT MODIFICATION SUMMARY
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INDEX PAGE: 15 TITLE: 035-5028-00 SCR TURN-OFF TIME ADAPTER

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
NA	3	M46685			

Contact intermittency between the microcircuit leads and the microcircuit sockets were causing reliability problems. To improve reliablity, the two 8-pin sockets (pn 136-0514-00), used for U47 and U51, and the 14-pin socket (pn 136-0269-02), used for U22, were replaced with 8-pin sockets (pn 136-0727-00) and a 14-pin socket (pn 136-0728-00).

SERIAL NUMBER	CLASS	CHANGE NUMBER	PAGE	KIT PN	KIT PAGE
000273	3	M51678		050-1804-00	115.01

Due to process changes in the microcircuit, the timer, U51, would not always trigger. To compensate for the variations and ensure triggering, resistor, R26 (56kΩ, pn 315-0563-00), was replaced with a 91kΩ resistor (pn 315-0913-00).

PRODUCT MODIFICATION SUMMARY
577 D1 or D2 CURVE TRACER

MODIFICATION KITS

USABLE SN RANGE	KIT TITLE	PAGE NO.	LABOR TIME	KIT PN
	NONE			

PRODUCT MODIFICATION SUMMARY
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PARTS REPLACEMENT KITS

USABLE SN RANGE	KIT TITLE	PAGE NO.	LABOR TIME	KIT PN
B010100-B040299 577D1 B010100-B040191 577D2	T701 REPLACEMENT	106.04	1.0h	050-0633-00
B010100-B040769	MAIN CIRCUIT BOARD REPLACEMENT	102.05	2.0h	050-0665-02
B020508-B103989 577D1	UPPER & LOWER ERASE SWITCH REPLACEMENT	109.02	0.5h	050-0670-01
B010100-B080000	Q384 & Q386 REPLACEMENT	103.04	0.5h	050-0756-00
B010100-B080000	Q450 REPLACEMENT	103.01	0.5h	050-0757-00
B010100-B082439 577D1 B010100-B082449 577D2	Q766 REPLACEMENT	112.04	0.5h	050-0758-00
B010100-B082439	U380 REPLACEMENT	103.05	0.5h	050-0759-00
B010100-B080000 577D1	STORAGE BOARD TRANSISTOR HEAT SINK REPLACEMENT	109.04	1.0h	050-0760-00
0000100-0000273	U51 REPLACEMENT (for 035-5028-00)	115.01	0.5h	050-1804-00

product modification

M30702

577

CSA STANDARDS INCORPORATED

Effective Prod SN B100000

To insure future instruments comply with CSA standards, the following changes were made:

The rear cover on the curve tracer, pn 200-1433-01, was replaced with a cover with longer spacer posts to increase the distance between the Power Supply circuit board and the rear chassis. The rear cover part number remained the same.

To reduce the size of the holes in the bottom of the cabinet, a perforated plate was welded to the bottom cabinet which changed part number from 390-0320-00 to 390-0320-01.

A cable clamp and washer were added to the rear stud of the thermal cutout, to secure the cable located near the thermal cutout.

The circuit runs on the Power Supply and Collector Sweep circuit boards were relocated to insure sufficient clearance. The circuit board part numbers changed as indicated in the following parts list.

PARTS REMOVED:

A2	1 ea	670-2426-01	Circuit board, Collector Sweep
A3	1 ea	670-2427-02	Circuit board, Power Supply
	1 ea	390-0320-00	Cover, scope:bottom

PARTS ADDED:

A2	1 ea	670-2426-02	Circuit board, Collector Sweep
A3	1 ea	670-2427-04	Circuit board, Power Supply
	1 ea	390-0320-01	Cover, scope:bottom
	1 ea	210-0851-00	Washer, flat
	1 ea	343-0042-00*	Clamp, loop

*Replaced by M51086 (see Index page 13).

7-27-78

product modification

PC-6

Type 577

PROVIDES INTENSITY CONTROL FROM TEST FIXTURE

Effective Prod SN B010120

A wire was added to the plug-in test fixture connector (J110 pin L) to allow trace intensification or blanking from the test fixture. The following changes were made:

1) A new pin #1 was added to the P524 on the main circuit board and all pin numbers on P524 were changed to the next higher, i.e. 1-8 became 2-9.

2) A run was added to the main circuit board to connect pin 1 of P611 to the new pin 1 of P524.

3) J524 was changed from an 8 wire cable to a 9 wire cable.

For field installation add a 12 inch #26 wire from pin L of J110 to pin 1 of J611 on the main circuit board.

See Type 577 Step Generator Schematic ◇2◇ for details.

12-22-72

102.01

product modification

PC-17

Type 577

MAX PEAK POWER-WATTS SWITCH MODIFIED

Effective Prod SN D1-B010200
D2-B010120

A push button switch was added to the MAX PEAK VOLTS-SERIES RESISTOR switch to override the collector sweep disable circuit. The override circuit normally operates if the current of the devise under test results in a vertical display of 2.5 times the full screen display. The MAX PEAK VOLTS-SERIES RESISTOR switch was renamed MAX PEAK POWER-WATTS - SERIES RESISTOR switch. When the MAX PEAK POWER-WATTS switch is in the .6 range or lower, the added push button switch is activated and overrides the collector sweep disable circuit that normally operates when the device under test current causes a vertical display of 2.5 times screen deflection.

The following changes were made:

1) Wafer 5 on the SERIES RESISTOR switch (S120B) was removed.

2) A push button switch was added to the rear of the MAX PEAK VOLTS and SERIES RESISTOR switch.

PARTS REMOVED:

S120B	260-1457-00	Switch Max Peak Volts

PARTS ADDED:

S120B	260-1457-01	Switch Max Peak Volts	
S120C	260-0735-00	Switch	
	162-0533-00	Thermo-Fit 1/4" 1 Per of 3/4"	(3/4")
	162-0561-00	Thermo-Fit 3/32" 2 Per of 3/8"	(3/4")
	175-0825-00	Wire 2 Cond Ribbon #26 Strand	(15 1/2")
	210-0008-00	Lockwasner, #8 Int.	
	214-1749-00	Spacer	

12-22-72

102.02

product modification

PC-21

Type 577

R278-R281 RANGE INCREASED

Effective Prod SN D1-B010200
D2-B010120

Insufficient adjustment range of R278, the Step Amplitude adjust potentiometer, and R281, the X.1 Step Amplitude adjust potentiometer, was corrected as follows:

1) R278 and R281 were changed from 500Ω potentiometers to 1K potentiomters.

2) R277 and R280 were changed from 1K resistors to 806Ω resistors.

PARTS REMOVED:

R277 R280	321-0193-00	Resistor 1K 1/8W 1%
R278 R281	311-1362-00	Resistor,Var. 500Ω

PARTS ADDED:

R277 R280	321-0184-00	Resistor 806Ω 1/8W 1%
R278 R281	311-1123-00	Resistor, Var. 1K

12-22-72

102.03

product modification

M20113-2

Type 577

U230 Circuit Modified

Effective Prod SN B050770

To insure sufficient unblanking pulse delay with all bands of IC's, the following changes were made to the U230 circuit.

1) R230, a 10K resistor, was added between pin 6 of U230 and the +30 volt supply.

2) Diode CR230 was added from pin 6 of U230 to the +5 volt supply. Install diode with anode to pin 6 of U230

3) R241 was changed from 1K to 2.4K

Parts Removed:

	670-2428-00	Circuit board, Main

Parts Added:

	670-2428-02	Circuit board, Main

The new main circuit board, 670-2428-02, is the same as 670-2428-00 except for the following:

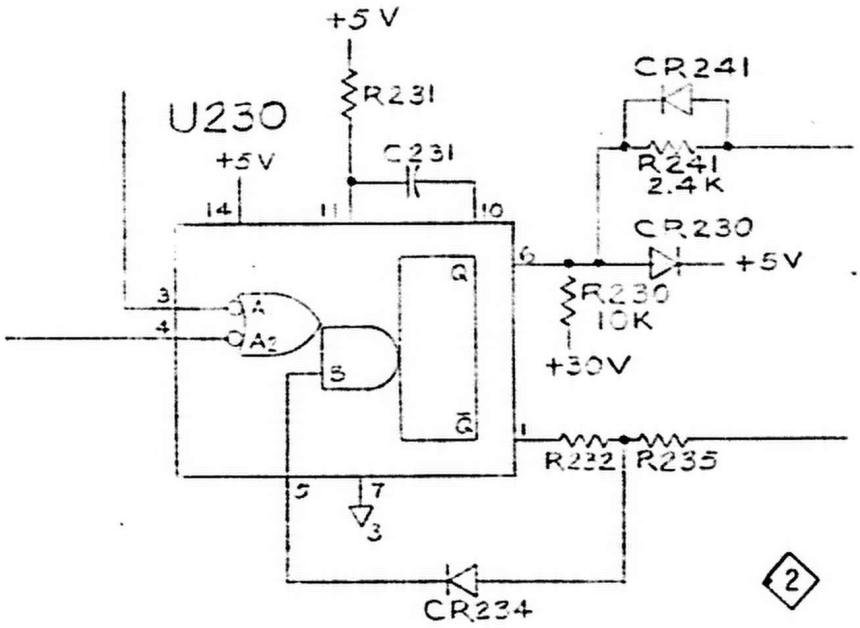
Parts Removed:

R241	315-0102-00	Resistor, 1K 1/4W 1%

Parts Added:

CR230	152-0141-02	Diode, silicon
R230	315-0103-00	Resistor, 10K 1/4W 5%
R241	315-0242-00	Resistor, 2.4K 1/4W 5%

11-16-73



PARTIAL - STEP GENERATOR

product modification

050-0665-02

M20113, M21286, M23019,

Type 577

MAIN CIRCUIT BOARD REPLACEMENT

For TEKTRONIX® Type 577 Storage Curve Tracer

Serial Numbers B010100-B040769

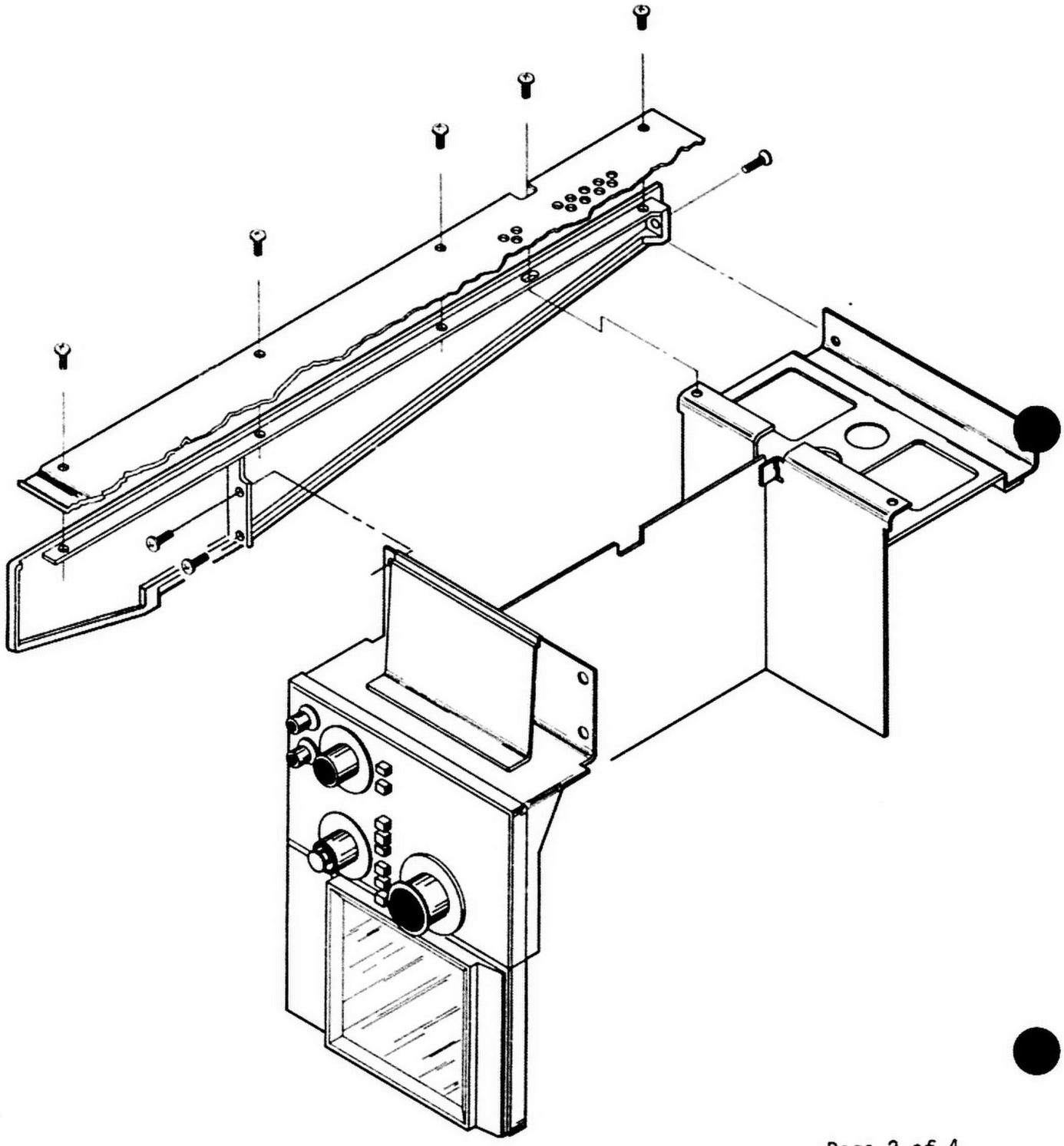
Main Circuit Board 670-2428-04 replaces Main Circuit Boards 670-2428-03, 670-2428-02, and 670-2428-00 which are no longer available. The new Main Circuit Board is not a direct replacement for the old Main Circuit Board.

NOTE: If the serial number of your instrument is above those listed, or if this kit has been installed, disregard the instructions as 670-2428-04 is a direct replacement.

6-4-76
Supersedes: 050-0665-01

PARTS INCLUDED IN PARTS REPLACEMENT KIT

Quantity	Part Number	Description
1 ea	670-2428-04	Circuit board, Main
1 ea	175-0828-00	Wire, ribbon w/5 #26 stranded 2 wires 10" & 3 wires 6 1/2" w/10 131-0707-00 connectors and w/1 352-0161-00 holder, w/1 352-0163-00 holder and w/1 352-0169-00 holder



INSTRUCTIONS:

( ) 1. Remove the left and right side covers, and the bottom cover.

Remove Main Circuit Board as follows:

( ) 2. Note the position of the STEP/OFFSET AMPL and HORIZ VOLTS/DIV switches. Loosen the set screws and remove the knobs.

( ) 3. Remove the hex nuts from the through-panel bushings and remove the bushings from the front panel.

( ) 4. Place all pushbuttons in the out position.

( ) 5. Referring to the drawing and remove the right-side rail as follows:

a. Remove five machine screws from the bottom of the rail.

b. Remove the screw from the lower-right corner of the rear panel.

c. Remove two screws on the right, inside the plug-in test fixture compartment and remove the side rail.

( ) 6. Remove the multi-pin lead connectors. The plastic bodies are color-coded to the P number (with the exception of leads originating in the display unit). The color code follows the familiar resistor color code. The last digit of the P number indicates the connector body color.

( ) 7. Remove the machine screws securing the flat-pack transistors, Q384 and Q386, to the panel at the rear of the circuit board.

Note the insulating, heat-conducting washer between the transistor and the panel.

( ) 8. Remove the four machine screws securing the circuit board to the chassis, and pull the rear of the circuit board out toward the side of the instrument and then slide the circuit board to the rear to remove.

Install the Main Circuit Board.

( ) 9. Stand the instrument upright on the rear end.

( ) 10. Place the two hex panel-bushing nuts over the cam-switch shafts.

( ) 11. Slide the cam-switch shafts through the front-panel holes (pushbuttons must be aligned with the plastic guide bushings before the circuit board can be moved to its permanent position).

( ) 12. Align the pushbuttons with the front-panel holes by reaching through with a device that will not damage the plastic buttons (for example, a cotton-tipped applicator or a slender rubber-tipped rod) while carefully sliding the circuit board toward the front panel.

INSTRUCTIONS (Continued)

( ) 13. Start the rear circuit board securing screw but do not tighten.

( ) 14. Push the through-panel bushings through the front panel around the switch shafts. Place the hex nuts on the bushings and tighten.

( ) 15. Coat both sides of the insulating washers with silicone grease and assemble the washers and transistors to the panel with the machine screws, but do not tighten.

( ) 16. Place the three circuit board screws and tighten.

( ) 17. Tighten the screws securing the transistors to the panel.

( ) 18. Replace the knobs in the original positions.

( ) 19. Replace the circuit board connectors the same as they were except as follows:

Remove the 5 wire multi-pin connector from P120 on the Collector Supply circuit board and discard the wire.

( ) 20. Connect the five wire end of the multi-pin lead, from the kit to P120 on the Collector Supply circuit board and the white-brown, white-red and white-orange wires to P560* pins 1-3 and connect the white-yellow and white-green wires to the new connector P510 pins 1 and 2.

Refer to your Instruction Manual and recalibrate as necessary and reinstall side and bottom covers.

*P560 was five pins on the old Main circuit board.

INSTRUCTION MANUAL

MODIFICATION INSERT

MAIN CIRCUIT BOARD REPLACEMENT

Type 577 SN B010100-B040769

Installed in Type_____SN_____Date_____

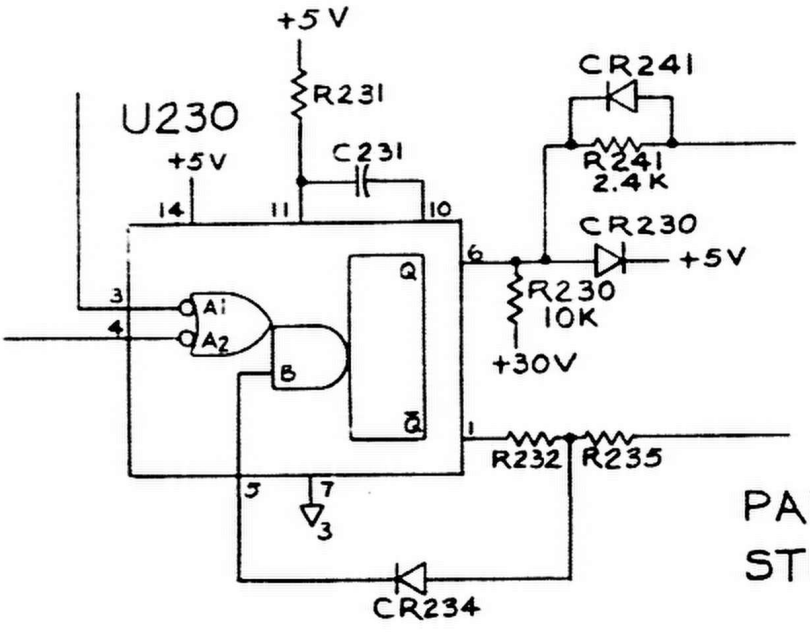
This modification insert is provided to supplement the Instruction Manual for the above listed products. The information given in this insert supersedes that given in the Manual.

GENERAL INFORMATION

Main circuit board 670-2428-04 replaces Main circuit boards 670-2428-03, 670-2428-02, and 670-2428-00 which are no longer available. The new Main circuit board is not a direct replacement for the old Main circuit board.

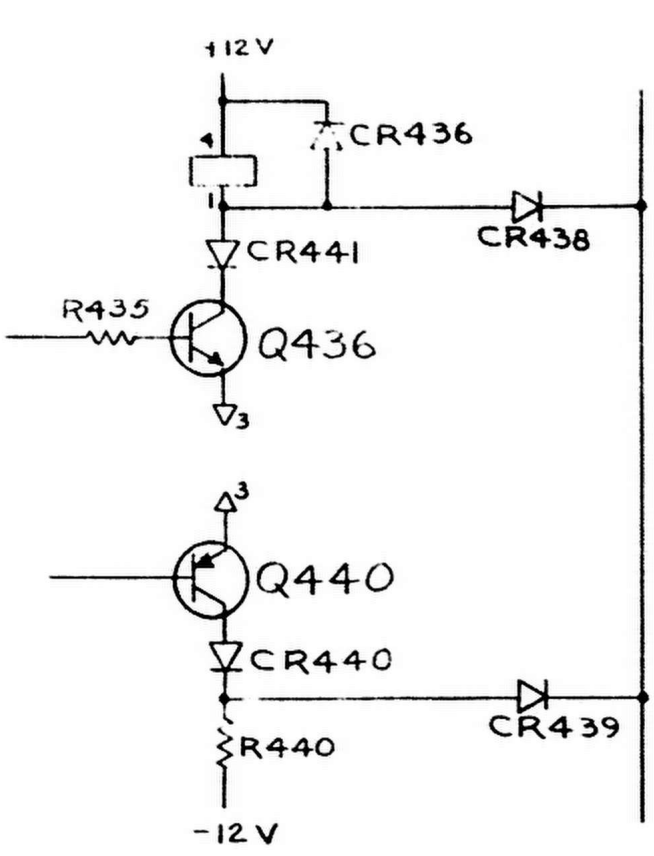
ELECTRICAL PARTS LIST:

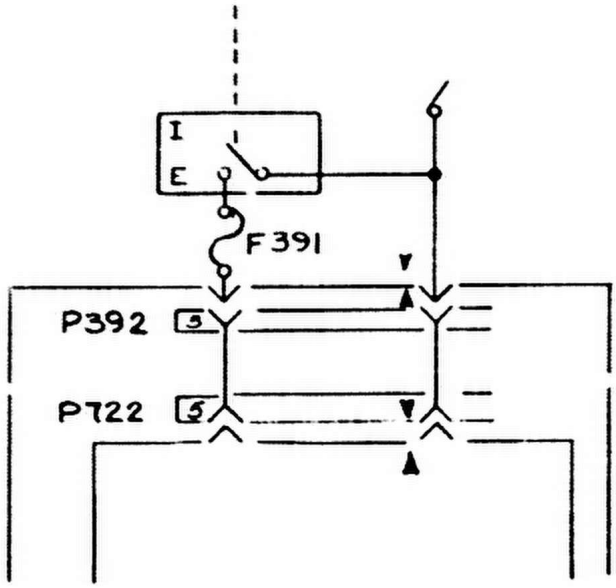
Ckt. No.	Part Number	Description
		CAPACITORS
C215	290-0283-00	.47µF 35V 10%
C218	290-0283-00	.47µF 35V 10%
C264	283-0002-00	.01µF 500V Cer.
C265	290-0580-00	.27µF 50V 20%
C268	290-0580-00	.27µF 50V 20%
C273	283-0111-00	.1µF 50V
C321	283-0002-00	.01µF 500V Cer.
C382	283-0002-00	.01µF 500V Cer.
C383	283-0065-00	1000pF 100V Cer.
		DIODES
CR230	152-0141-02	Silicon
VR380	152-0278-00	Zener 3V
VR382	152-0278-00	Zener 4V
		FUSES
F391	159-0114-00	1 Amp Fast Blo
		RESISTORS
R212	315-0681-00	680Ω 1/4W 5%
R213	315-0681-00	680Ω 1/4W 5%
R230	315-0103-00	10K 1/4W 5%
R241	315-0242-00	2.4K 1/4W 5%
R322	315-0393-00	39K 1/4W 5%
R327	315-0682-00	6.8K 1/4W 5%
R381	321-0187-00	866Ω 1/8W 1%
R388	308-0365-00	1.5Ω 3W 5%
R389	308-0365-00	1.5Ω 3W 5%
R450	321-0280-00	8.06K 1/8W 1%
R453	321-0278-00	7.68K 1/8W 1%
R455	311-1123-00	1K
R570	311-1813-00	200K



2 M20,113/973

PARTIAL-
STEP GENERATOR





3

PARTIAL
STEP AMPLIFIER

product modification

M21286-1
M21286-2
Type 577

VERTICAL DISPLAY NOISE ELIMINATED

Effective Prod SN B061180

Vertical Display noise when FILTER DISPLAY is in the out position and the VERTICAL POSITION is at 10X was eliminated by redesigning the Main Circuit Board to include the following:

1. A ground run to S568 on the front of the board was removed.
2. A run was added between the base of S502 and S568 on the back of the board.

To insure that the Step Generator runs in SINGLE without activating REPetitive. the following were added to the Main Circuit Board:

1. R322, 39K, was added between pin 10 and +5V (pin 14) of U220C.
2. R327, 6.8K, was added between pin 6 of U220D and +12V.
3. Pin 10 and pin 6 of U220 were connected to REP section of S330. See attached drawing for details.
4. C321, .01µF, was added between pin 10 of U220C and pin 6 of U220D.
5. C382, .01µF, was added between (+12V) pin 8 of U350B and (-12V) pin 4 of U380A.

In additon to the above changes the new Main Circuit Board includes changes made by M21286-3 and M20113-2.

PARTS REMOVED:

	670-2428-02	Main Ckt. Bd. Assy.

PARTS ADDED:

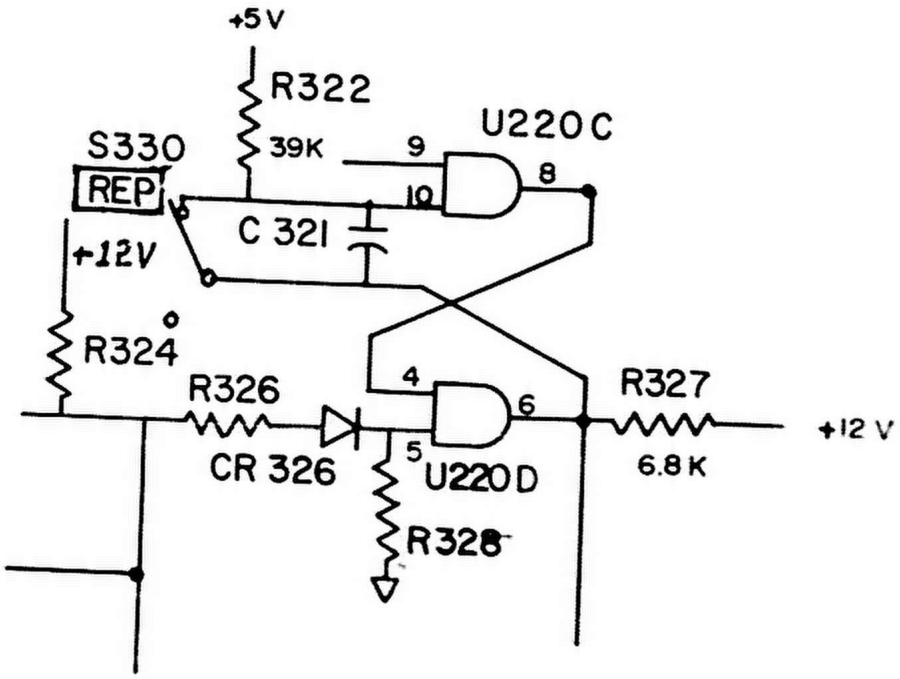
	670-2428-03	Main Ckt. Bd. Assy.

The new Main Circuit Board 670-2428-03 is the same as the old Main Circuit Board 670-2428-02 except as follows:

PARTS REMOVED: NONE

PARTS ADDED:

C264, C321, C382	283-0002-00	Capacitor Fxd. cer. Diel .01µF 500V
R332	315-0393-00	Resistor Fxd. comp. 39K 1/8W 5%
R327	315-0682-00	Resistor Fxd. comp. 6.8K 1/8W 5%



PARTIAL STEP GENERATOR 2

product modification

23019-2

577

REDUCE SELECTION OF COMPONENTS

Effective Prod SN B080000

To reduce the need to test select U380, the value of R388 and R389 were changed and R382 was replaced with (2) back to back Zener diodes, VR380 and VR382.

To reduce the need to test select Q450, the value of R450, R453 and R455 were changed and C383 was added between pins 2 and 7 of U380.

To reduce the high transistor reject rate, Q384 and Q386 were replaced with new transistors, pn 151-0606-00 and pn 151-0607-00, respectively.

See parts list and Figs. 1 and 2 for additional information. M23019-1 and M23019-3 are included in the parts list below as these changes are a part of the new Main circuit board (pn 670-2428-04).

PARTS REMOVED:

A1	1 ea	670-2428-03	Circuit board, Main
Q384	1 ea	151-0414-00	Transistor, Si, NPN (MJE1102)
Q386	1 ea	151-0415-00	Transistor, Si, PNP (MJE1092)

PARTS ADDED:

A1	1 ea	670-2428-04	Circuit board, Main
Q384	1 ea	151-0606-00	Transistor, Si, NPN (TIP142)
Q386	1 ea	151-0607-00	Transistor, Si, PNP (TIP147)

7-26-78

The new Main circuit board, pn 670-2428-04, is the same as 670-2428-03 except as follows:

PARTS REMOVED:

*C215, *C218, *C265, *C268	4 ea	290-0534-00	Capacitor, elect., 1µF 20% 35V
*C273	1 ea	283-0023-00	Capacitor, cer., 0.1µF +80-20% 10V
*R212, *R213	2 ea	315-0561-00	Resistor, cmpsn, 560Ω 5% 0.25W
R382	1 ea	315-0511-00	Resistor, cmpsn, 510Ω 5% 0.25W
R388, R389	2 ea	308-0677-00	Resistor, WW, 1Ω 5% 2W
R450	1 ea	321-0164-00	Resistor, prec., 499Ω 1% 0.125W
R453	1 ea	321-0160-00	Resistor, prec., 453Ω 1% 0.125W
R455	1 ea	311-1120-00	Resistor, var., nonwire, 100Ω 30% 0.25W
**R570	1 ea	311-1302-00	Resistor, var., nonwire, 100kΩ 30% 0.25W
	5 ea	136-0183-00	Socket, plug-in:3-pin, round

PARTS ADDED:

*C215, *C218	2 ea	290-0283-00	Capacitor, elect., 0.47µF 10% 35V
*C265, *C268	2 ea	290-0580-00	Capacitor, elect., 0.27µF 20% 50V
*C273	1 ea	283-0111-00	Capacitor, cer., 0.1µF 20% 50V
*C383	1 ea	283-0065-00	Capacitor, cer., 0.001µF 5% 100V
**C513	1 ea	281-0638-00	Capacitor, cer., 240pF (nominal val) sel.
*R212, *R213	2 ea	315-0681-00	Resistor, cmpsn, 680Ω 5% 0.25W
R388, R389	2 ea	308-0365-00	Resistor, WW, 1.5Ω 5% 3W
R450	1 ea	321-0280-00	Resistor, prec., 8.06kΩ 1% 0.125W
R453	1 ea	321-0278-00	Resistor, prec., 7.68kΩ 1% 0.125W
R455	1 ea	311-1123-00	Resistor, var., nonwire, 1kΩ 30% 0.25W
**R570	1 ea	311-1813-00	Resistor, var., nonwire, 200kΩ 30% 0.25W
VR380, VR382	2 ea	152-0278-00	Diode, Zener, 400mA 5% 3V (1N4372A)
	35 ea	131-0589-00	Contact, elec., 0.46" long
	[1] 42 ea	131-0252-04	Socket, pin terminal, 0.188" long
	[2] 45 ea	131-0252-04	Socket, pin terminal, 0.188" long

[1] D1 Only.
[2] D2 Only.

* M23019-1 (page 2)
** M23019-3 (page 6)

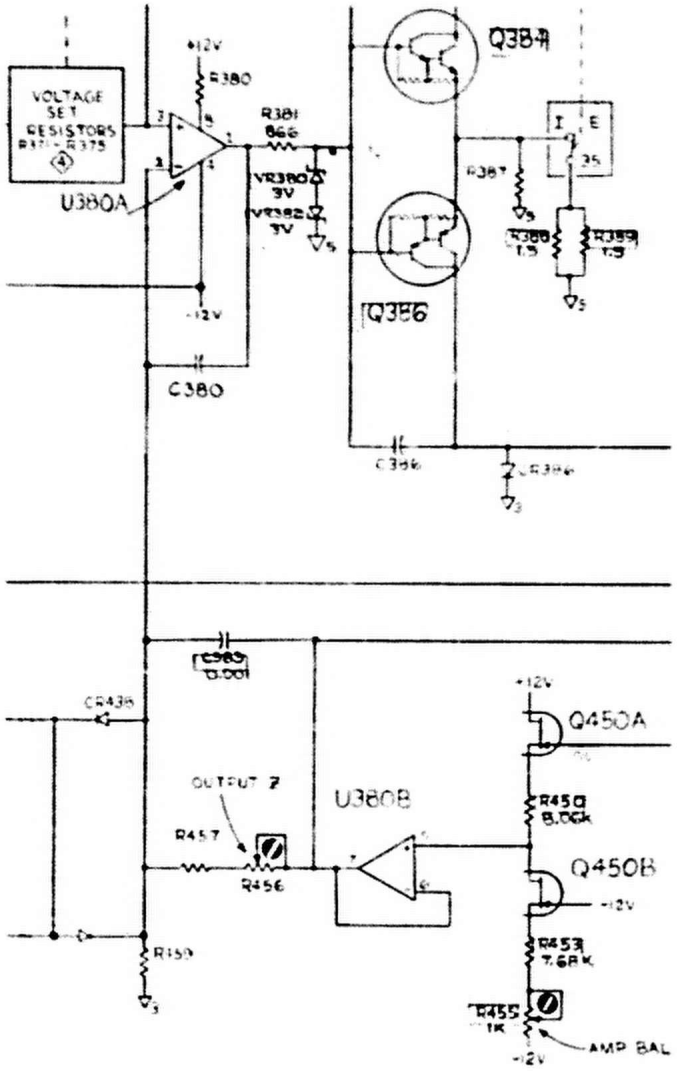


Fig. 1. Partial - Step Amplifier ◇3

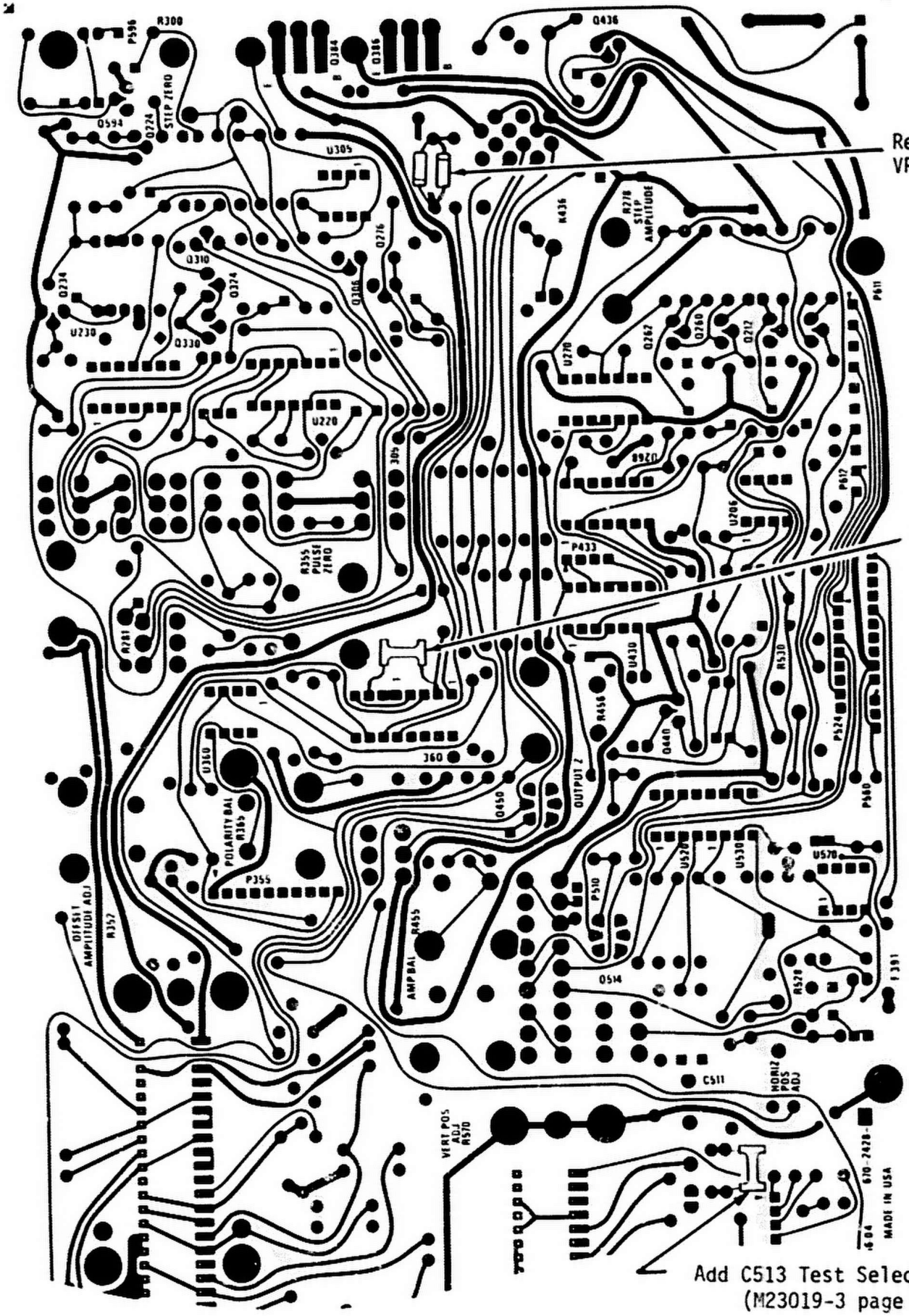


Fig. 2 Parital - Main circuit board

product modification

050-0757-00
M23019
Type 577

Q450 REPLACEMENT

For TEKTRONIX® 577 Curve Tracers
Serial Numbers B010100-B080000

To eliminate the need to select transistors for compliance in the current mode Q450 was changed from a 151-1011-00 type transistor to a 151-1081-00 type transistor.

The use of the new transistor necessitates the changing of three components and the addition of C383, a .001μF capacitor, connected between pins 2 and 7 of U380.

2-18-76

PARTS INCLUDED IN PARTS REPLACEMENT KIT

Ckt No.	Quantity	Part Number	Description
Q450	1 ea	151-1081-00	Transistor, FET
C383	1 ea	283-0065-00	Capacitor, cer, .001µF 100V
R455	1 ea	311-1123-00	Resistor, var., 1k
R453	1 ea	321-0278-00	Resistor, prec., 7.68k 1/8W 1%
R450	1 ea	321-0280-00	Resistor, prec., 8.06k 1/8W 1%

INSTRUCTIONS

DISCONNECT THE INSTRUMENT FROM ITS POWER SOURCE!

( ) 1. Remove the right-hand cabinet side.

Make the following changes on the Main circuit board:

( ) 2. Replace R450, a 499Ω 1/8W 1% resistor connected between the source of Q450A and the drain of Q450B, with the 8.06k 1/8W resistor from the kit.

( ) 3. Replace R453, a 453Ω 1/8W 1% resistor, connected between the source of Q450B and R455 (Amp. Bal. Adjust potentiometer), with the 7.68k 1/8W resistor from the kit.

( ) 4. Replace R455, the 100Ω Amp Bal potentiometer, with the 1k variable resistor from the kit.

( ) 5. Install C383, a .001µF 100 volt ceramic capacitor from the kit, between pins 2 and 7 of U380.

( ) 6. Replace Q450, a 151-1011-00 FET, with the 151-1081-00 FET from the kit.

INSTRUCTION
MANUAL

MODIFICATION INSERT

Q450 REPLACEMENT

Type 577

Installed in Type_____SN_____Date_____

This modification insert is provided to supplement the Instruction Manual for the above listed products. The information given in this insert supersedes that given in the Manual.

GENERAL INFORMATION

To eliminate the need to select transistors for compliance in the current mode, Q450 was changed from a 151-1011-00 type transistor to a 151-1081-00 type transistor.

ELECTRICAL PARTS LIST

Ckt No.	Part Number	Description
		CAPACITORS
C383	283-0065-00	.001µF 100V cer.
		TRANSISTORS
Q450	151-1081-00	FET N Chan dual
		RESISTORS
R450	321-0280-00	8.06k 1/8W 1%
R453	321-0278-00	7.68k 1/8W 1%
R455	311-1123-00	1k var.

product modification

M20113-3

Type 577

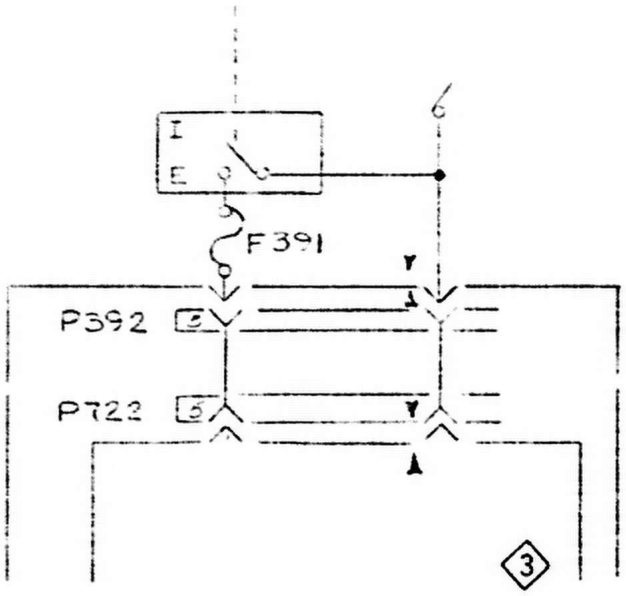
F391 ADDED

Effective Prod SN B050770

F391, a 1Amp fast blo fuse was added between the floating power supply and S404, the STEP/OFFSET AMPLITUDE switch, to improve instrument protection.

Parts Added:

F391	159-0114-00	Fuse, cartridge 1A Fast-blo



PARTIAL - STEP AMPLIFIER

11-16-73

product modification

M20113-4

Type 577

LINEARITY IMPROVED & NOISE REDUCED

Effective Prod SN B050770

To improve current linearity in the Step Generator, CR440 and CR441 were relocated to be in series with the collectors of Q440 and Q436 respectively.

The layout of the Main circuit board was changed to accommodate the above electrical changes. At the same time, three runs were removed to eliminate noise.

To accommodate the changes, P560 was changed from 5 pins to 3, P510 a 2 pin connector, was added to the DISPLAY switch, and a white-green wire was added from the Main circuit board to R567 on S512, the DISPLAY switch.

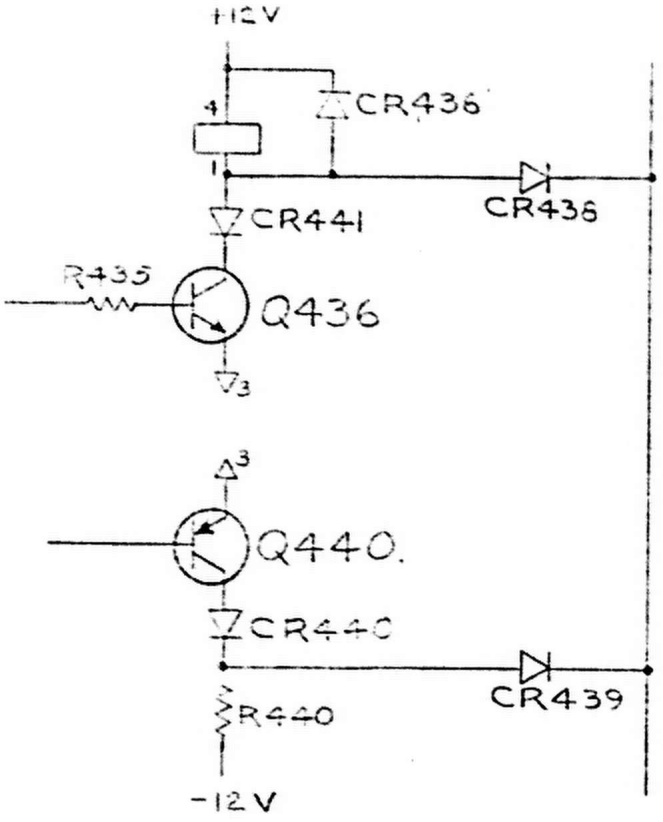
Parts Removed:

670-2428-00	Circuit board, Main
352-0163-00	Holder, conn. 5 slot, black

Parts Added:

670-2428-02	Circuit board, Main
352-0161-00	Holder, conn. 3 slot, black
352-0169-00	Holder, conn. 2 slot, black
175-0529-00	Wire, ins. #26 stranded consisting of 1 piece 4 in. coded 9-5, 1 piece 3 1/2 in. coded 9-4, and 1 piece 3 1/2 inch coded 9-5

11-16-73



product modification

050-0756-00

M23019

Q384 AND Q386 REPLACEMENT

For TEKTRONIX® 577 Curve Tracers

Serial Numbers B010100 - B082439

Power transistors Q384, pn 151-0606-00, and Q386, pn 151-0607-00, replace power transistors, pn 151-0415-00 (Q384) and pn 151-0414-00 (Q386), respectively.

Transistors, pn 151-0414-00 and pn 151-0415-00, are not suitable for this circuit application and both transistors must be replaced at the same time.

NOTE

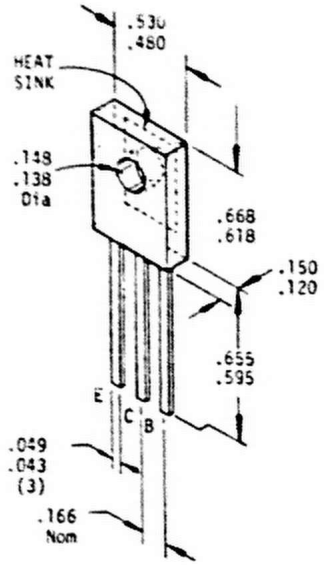
If the serial number of your instrument is above those listed, or if this kit has been installed, disregard the instructions as pn 151-0606-00 and pn 151-0607-00 are direct replacements for Q384 and Q386, respectively.

7-24-81
Supersedes: 4-10-78

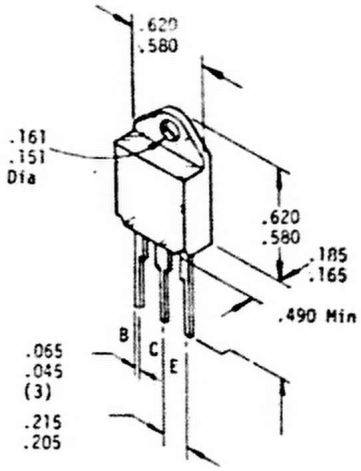
PARTS INCLUDED IN PARTS REPLACEMENT KIT:

Ckt No.	Quantity	Part Number	Description
Q384	1 ea	151-0606-00	Transistor, silicon power, NPN
Q386	1 ea	151-0607-00	Transistor, silicon power, PNP

TO-127



X-86



NOTE

Transtors, pn 151-0414-00 and pn 151-0415-00, were TO-127 case-style transistors. The replacement transistors, pn 151-0606-00 and pn 151-0607-00, are X-86 case-style transistors. Bend the collector lead to fit the circuit board and cross wire the base and emitter leads with insulated wire.

INSTRUCTIONS

DISCONNECT THE INSTRUMENT FROM ITS POWER SOURCE!

( ) 1. Remove the right-hand cabinet side.

Q384 and Q386 are located at the back edge of the Main circuit board and are heat sinked on the power transformer bracket.

( ) 2. Remove the mounting hardware for Q384 and Q386.

( ) 3. Unsolder the Q384 and Q386 leads from the Main circuit board, and remove the transistors.

( ) 4. Fasten the new transistors to the power transformer bracket and then solder the leads to the Main circuit board (see note).

Refer to your Instruction Manual and recalibrate as necessary.

For future reference, correct the Electrical Parts List in your Instruction Manual.

product modification

050-0759-00

M23019

577

U380 REPLACEMENT

For TEKTRONIX® 577 D1 or D2 Curve Tracers

Serial Number B010100 - B082439

When replacing U380, pn 156-0158-00, in instruments in the above listed serial number range, associated circuitry on the Main circuit board, A1, needs to be modified. The modification consists of replacing R382 with two 3V zener diodes and changing the values of R388 and R389.

NOTE

If the instrument serial number is greater than those listed above or if this kit has been installed, disregard these instructions and use the included microcircuit as a direct replacement for U380.

6-27-80

PARTS INCLUDED IN PARTS REPLACEMENT KIT:

Ckt. No.	Quantity	Part Number	Description
VR380 VR382	2 ea	152-0278-00	Semicond dvc, diode, zener, 3V 5% 0.4W
U380	1 ea	156-0158-00	Microcircuit, linear, dual op amp
R388 R389	2 ea	308-0365-00	Resistor, ww, 1.5Ω 5% 3W

INSTRUCTIONS:

WARNING

Before proceeding, ensure the POWER switch is OFF, then disconnect the 577 Curve Tracer from the power source.

( ) 1. Remove the right side cover.

( ) 2. Make the following changes on the Main circuit board, A1:

( ) a. Replace R388 and R389, 1Ω, 2W wire-wound resistors, with the provided 1.5Ω, 3W wire-wound resistors. R388 and R389 are located above S310, the STEP X .1 switch, and between R352, the Offset Amplitude adjustment, and R281, the X .1 Step Amplitude adjustment, near the top of the circuit board.

( ) b. Remove R382, the 510Ω resistor located above K436 (the polarity relay near the rear of the circuit board).

( ) c. Add the series combination of VR380 and VR382, the provided 3V zener diodes, in the holes vacated by R382 in the following manner, keeping leads as short as practical:

( ) i. Cathode (banded end) of VR380 to pad connecting to R381, 680Ω or 866Ω resistor adjacent to K436.

( ) ii. Anode of VR382 to pad connecting to R387, 13Ω resistor connected to emitter of Q384.

( ) iii. Solder the anode of VR380 and the cathode of VR382 together in 'tepee' fashion above the circuit board.

( ) d. Replace U380 with the provided operational amplifier. U380 is located behind S430, the POLARITY switch, near the center of the board.

( ) 3. Refer to the Check and Adjustment Procedure Section (5) of the 577 D1 or D2 Curve Tracer Service Instruction Manual and check instrument performance, making any necessary adjustments.

( ) 4. Install the right side cover.

( ) For future reference, attach the following Manual Insert to the service instruction manual.

DRL:cs

INSTRUCTION MANUAL

MODIFICATION INSERT

U380 REPLACEMENT

for

577 D1 or D2 SN B010100 - B082439

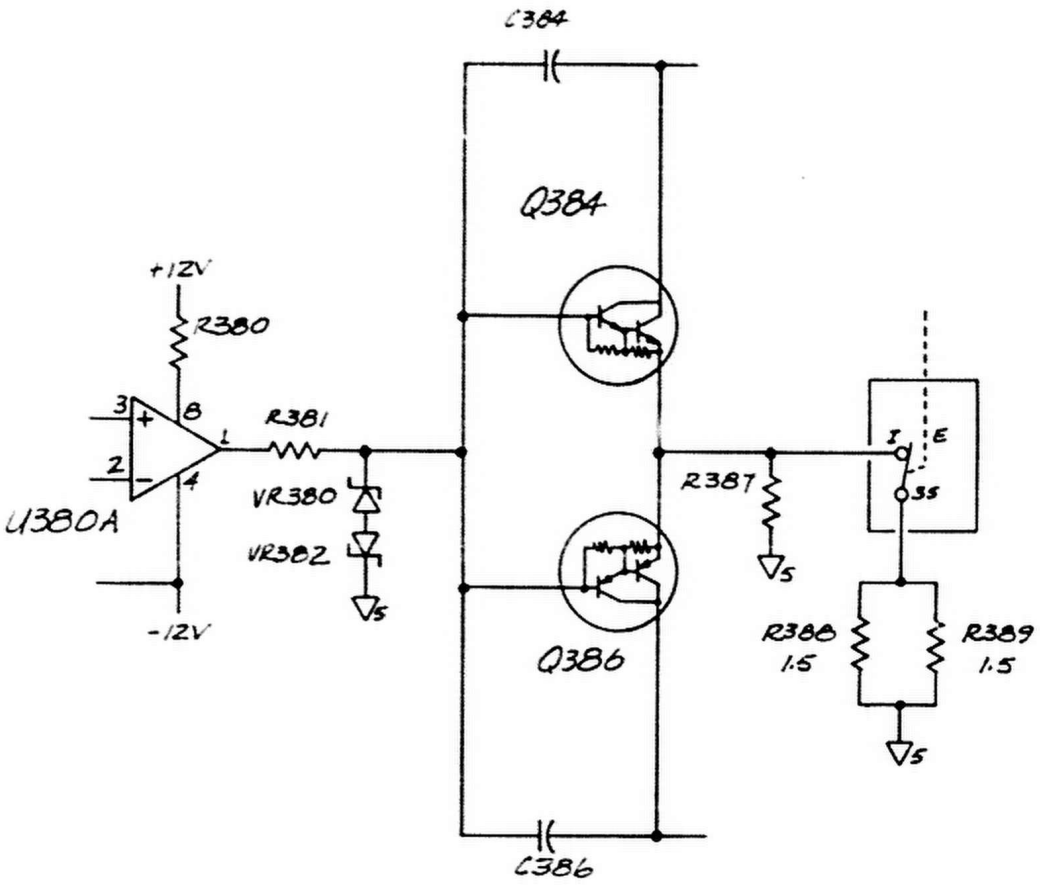
Installed in SN_____Date_____

This modification insert is provided to supplement the Instruction Manual for the above listed products. The information given in this insert supersedes that given in the Manual.

GENERAL INFORMATION

Replacement of U380 required modification of associated circuitry on the Main circuit board, A1. R382 was replaced with two 3V zener diodes and the values of R388 and R389 were changed.

Ckt. No.	Part Number	Description
R382	DELETE	
R388	308-0365-00	Resistor, ww, 1.5Ω 5% 3W
R389	308-0365-00	Resistor, ww, 1.5Ω 5% 3W
VR380	152-0278-00	Semicond dvc, diode, zener, 3V 5% 0.4W
VR382	152-0278-00	Semicond dvc, diode, zener, 3V 5% 0.4W



Partial STEP AMPLIFIER 3

product modification

M20259-2

Type 577

VERT MAG LINEARITY IMPROVED

Effective Prod SN D1-B030249
D2-B030178

Non-linearity in the Vert Amplifier, especially with the Mag turned on, was caused by the FET switches in the chopper circuit. Linearity was improved by replacing four silicon diodes with link connectors. At the same time, R567 and R568 were changed in value from 46.4K to 49.9K.

Parts Removed:

CR552, CR554 CR556, CR558	152-0141-02	Diode, silicon
R567 R568	321-0353-01	Resistor, prec. 46.4K 1/8W 1%

Parts Added:

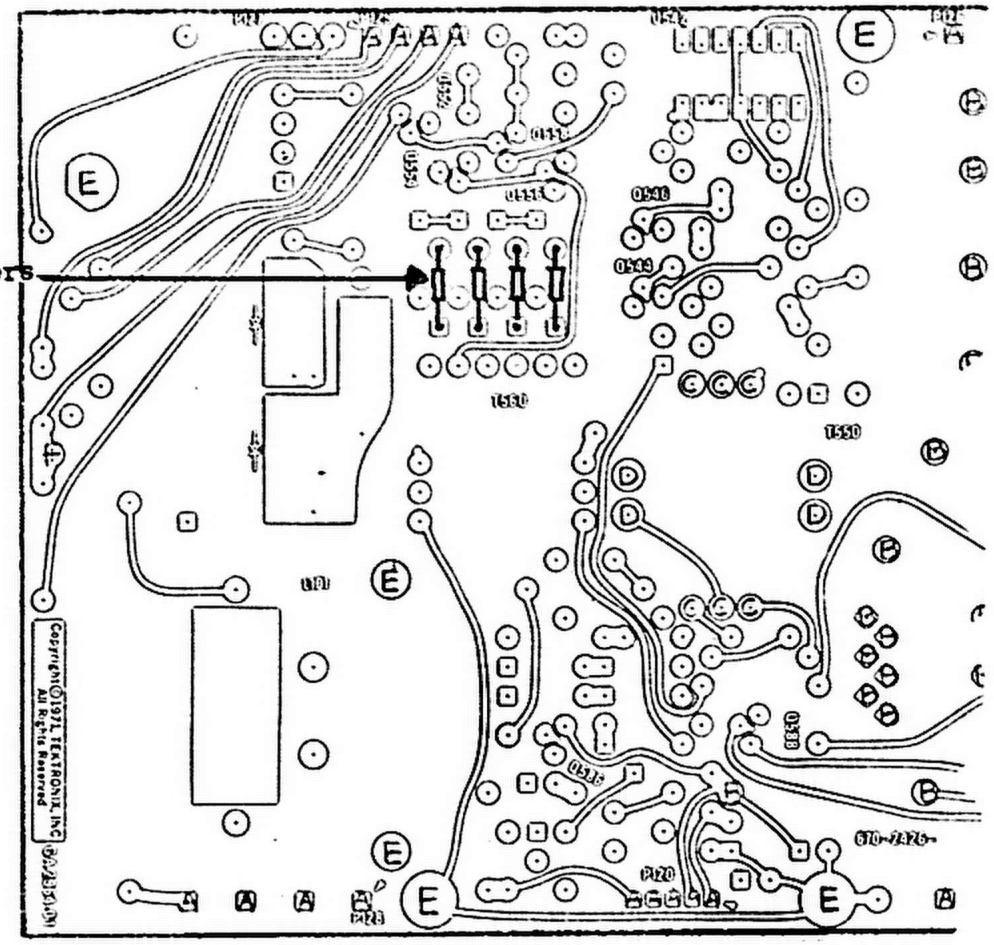
R567 R568	321-0692-00	Resistor, prec. 49.9K 1/8W 1%
	131-0566-00	Terminal, link connector (4)

INSTALLATION:

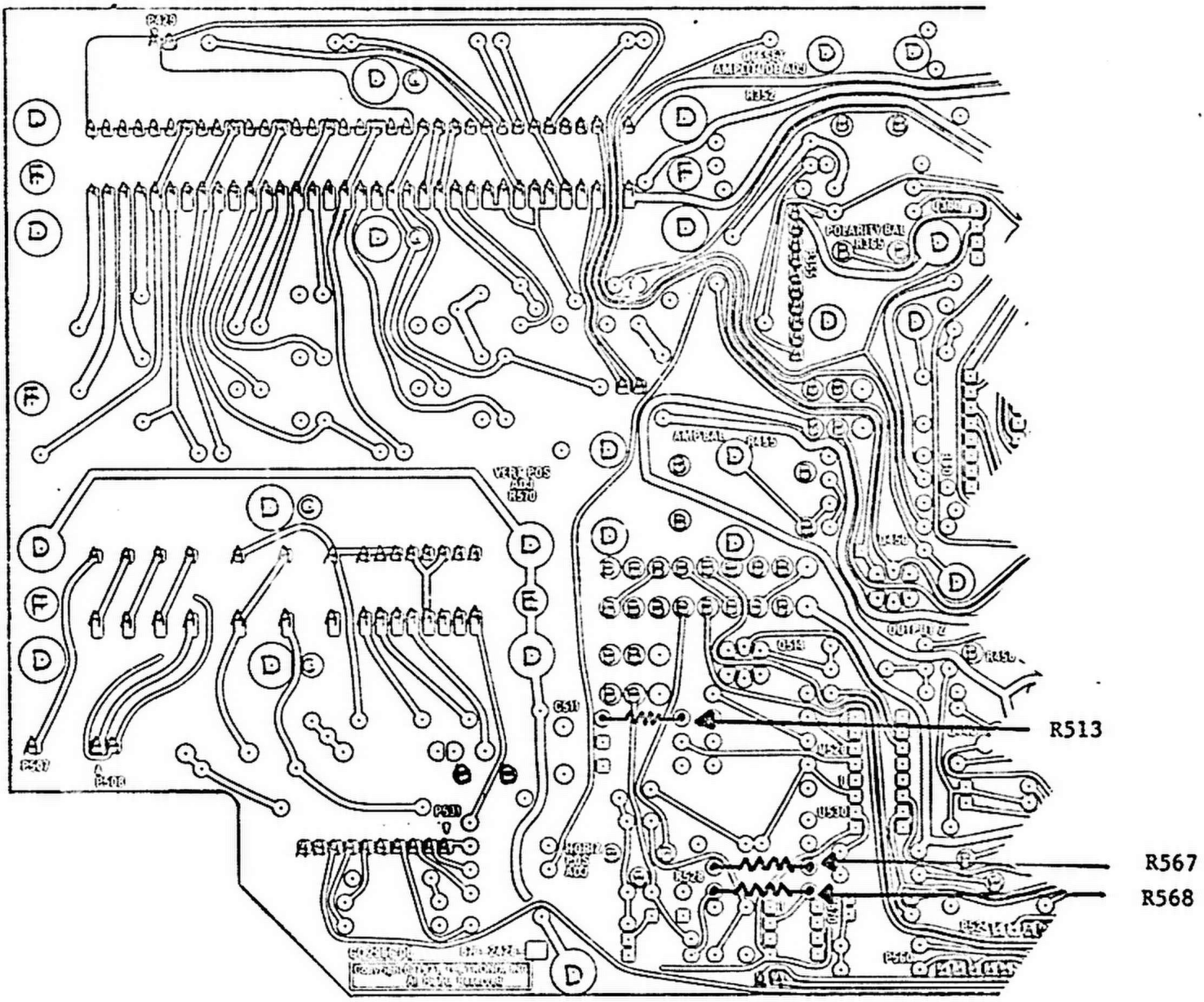
Parts required - See "Parts Added".

1) Replace CR552, CR554, CR556 and CR558, four silicon diodes located on the Collector Supply circuit board, with link connectors.

2) Replace R567, and R568, two 46.4K 1/8W resistors located on the Main circuit board, with 49.9K resistors.



PARTIAL COLLECTOR SUPPLY BD



PARTIAL MAIN BD.

product modification

M20259-3

Type 577

TRACE LOOPING ELIMINATED

Effective Prod SN D1-B030249
D2-B030178

Trace looping due to cross talk into the gate of Q514A from the run at P120-4 and the DISPLAY NORM/INVERT switch causes IC saturation reading or any tests that have fast vertical changes difficult to make.

Testing of small signal devices with controls set as follows, results in horizontal looping:

1)	MAX PEAK VOLTS	25V
2)	SERIES RESISTOR	1.9
3)	HORIZONTAL VOLTS/DIV	COLLECTOR VOLTS at 5
4)	X10 HORIZ MAG	ON
5)	STEP FAMILY	TO REP

Adjust collector supply for 2 steps.

The problem is eliminated by decreasing the impedance of the gate circuit. R513 was changed from 220K to 10K.

Parts Removed:

R513	315-0224-00	Resistor, comp. 220K 1/4W 5%

Parts Added:

R513	315-0103-00	Resistor, comp. 10K 1/4W 5%

4-20-73

product modification

M19842

Type 577

±15 VOLT SUPPLY IMPROVED

Effective Prod SN D1-B040300
D2-B040192

The ±15 volt power supply is a Zener controlled power supply that is used as a current source for devices being tested.

To assure sufficient power from the ±15 volt power supply, the following changes were made:

1) Two turns were added on each side of the 15V winding.

2) R581 and R582 were changed from 100Ω 3W resistors to 120Ω 3W resistors.

Parts Removed:

R581 R583	308-0075-00	Resistor, w.w. 100Ω 3W 5%
T701	120-0830-00	Transformer, Power

Parts Added:

R581 R583	308-0431-00	Resistor, w.w. 120Ω 3W 5%
T701	120-0830-01	Transformer, Power

4-20-73

product modification

050-0633-00
M19842
Type 577

T701 REPLACEMENT

For the following TEKTRONIX® Curve Tracers
Type 577/D1 Storage Curve Tracer SN B010100 - B040299
Type 577/D2 Curve Tracer SN B010100 - B040191

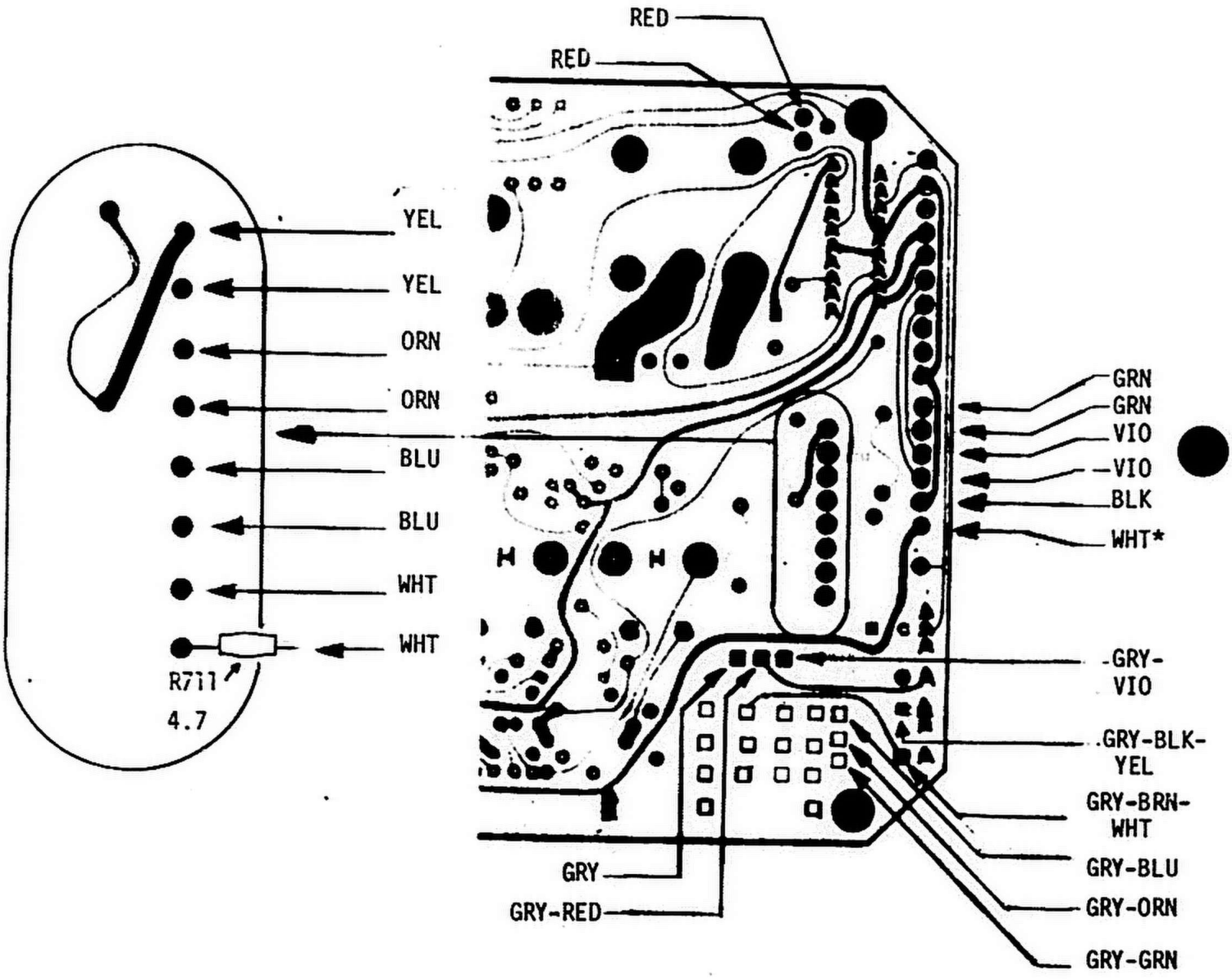
Power Transformer, T701, a 120-0830-01, replaces Power Transformer 120-0830-00 which is no longer available. Use of the new transformer necessitates changing the value of two resistors on the Collector Supply circuit board.

NOTE: If the serial number of your instrument is above those listed, or if this Kit has been installed, disregard the instructions and use 120-0830-01 as a direct replacement for T701.

12-17-73

PARTS INCLUDED IN PARTS REPLACEMENT KIT:

Ckt. No.	Quantity	Part Number	Description
T701	1 ea	120-0830-01	Transformer, power
R711	1 ea	307-0023-00	Resistor, comp. 4.7Ω 1/2W
R581 R583	2 ea	308-0431-00	Resistor, WW 120Ω 3W 5%



Partial Regulator Circuit Board
Fig. 1

*Center tap for Orange Winding

INSTRUCTIONS:

( ) 1. Disconnect the Curve Tracer from its source of power.

( ) 2. Remove the right and left cabinet sides.

( ) 3. Remove the lower rear cover to gain access to the regulator circuit board.

( ) 4. Remove the U722, U732, Q766 and Q788 mounting hardware from the edge of the Regulator circuit board.

( ) 5. Remove the Regulator circuit board from the lower rear cover, unsolder the T701, Power Transformer leads and remove the Power Transformer.

( ) 6. Disconnect the CRT filament lead connector from the Deflection Amplifier/High Voltage board.

( ) 7. Unsolder three wires from the Collector Supply circuit board (red, yellow, red).

( ) 8. Install the new Power Transformer and connect as shown in the drawing*.

( ) 9. Solder the three wires referred to in Step 7, to the Collector Supply circuit board and connect the CRT filament lead connector to the Deflection Amplifier/High Voltage board.

( ) 10. Remount the Regulator circuit board on the lower rear cover. Remount U722, U732, Q766 and Q768, and reinstall the lower rear cover.

( ) 11. Replace R581 and R583, two 100Ω 3W 5% resistors located on the Collector Sweep board near Q552 and Q554, with two 120Ω 3W 5% resistors.

( ) 12. Refer to your Instruction Manual and recalibrate as necessary. Reinstall covers.

*For 577-D1 Instruments below B030249 and 577-D2 Instruments below B030178 add R711 in series with the white transformer lead as shown in the drawing.

JT:mh

product modification

22672

577

IMPROVED POSITIONING CAPABILITY

Effective Prod SN B092660

To improve the 577 vertical and horizontal positioning capability, the following electrical and mechanical changes were made:

1. The vertical POSITION potentiometer was changed from a single 20kΩ (R575) to a dual 2 x 20kΩ potentiometer (R575 and R573). Refer to Fig. 1 for wiring details.

2. The horizontal POSITION potentiometer was changed from a single 20kΩ (R535) to a dual 2 x 20kΩ potentiometer (R535 and R533). Refer to Fig. 1 for wiring details.

3. The vertical and horizontal POSITION knobs were replaced with (1 each) COURSE and FINE POSTIION knobs. The STEP/OFFSET AMPL knob was also changed.

4. To reduce interference between the knobs on the 177 and 577, the hole locations, for the POSITION potentiometers, on the Front Panel and Subpanel were moved 0.225 inch to the right.

5. R574 was removed from the Main circuit board and added to the center tap of R575 in tepee fashion with added R572 (6.2MΩ) which connects to the center tap of R573. W574 was added to the location on the Main circuit board where R574 was removed.

6. R534 was removed from the Main circuit board and added to the center tap of R535 in tepee fashion with added R529 (270kΩ) which connects to the center tap of R533. W534 was added to the location on the Main circuit board where R534 was removed.

7-26-78

PARTS REMOVED:

A1	1 ea	670-2428-04	Circuit board, Main
R535 R575	2 ea	311-1310-00	Resistor, var., 20kΩ 20% 1.0W
	1 ea	333-1652-01	Panel, front
	1 ea	386-2392-01	Subpanel, front
	2 ea	366-0494-00	Knob, gray position
	1 ea	366-1417-01	Knob, steps, offset, w/skirt

PARTS ADDED:

A1	1 ea	670-2428-05	Circuit board, Main
R529	1 ea	315-0274-00	Resistor, cmpsn, 270kΩ 5% 0.25W
R533-R535 R573-R575	2 ea	311-1805-00	Resistor, var., 2 x 20kΩ 20% 0.5W
R534	1 ea	315-0273-00	Resistor, cmpsn, 27kΩ 5% 0.25W
R572	1 ea	315-0625-00	Resistor, cmpsn, 6.2MΩ 5% 0.25W
R574	1 ea	315-0624-00	Resistor, cmpsn, 620kΩ 5% 0.25W
	0.25 ft	175-0825-00	Wire, 2 conductor ribbon, 26AWG
	1 ea	333-1652-02	Panel, front
	2 ea	366-1215-00	Knob, gray coarse position
	1 ea	366-1417-02	Knob, steps, offset, w/skirt
	2 ea	366-1619-00	Knob, gray fine position
	1 ea	386-2392-02	Subpanel, front

The Main circuit board, pn 670-2428-05, is the same as 670-2428-04 except for the following:

PARTS REMOVED:

R534	1 ea	315-0273-00	Resistor, cmpsn, 27kΩ 5% 0.25W
R574	1 ea	315-0624-00	Resistor, cmpsn, 620kΩ 5% 0.25W

PARTS ADDED:

W534 W574	2 ea	131-0566-00	Link, terminal connector, 0Ω dummy resistor

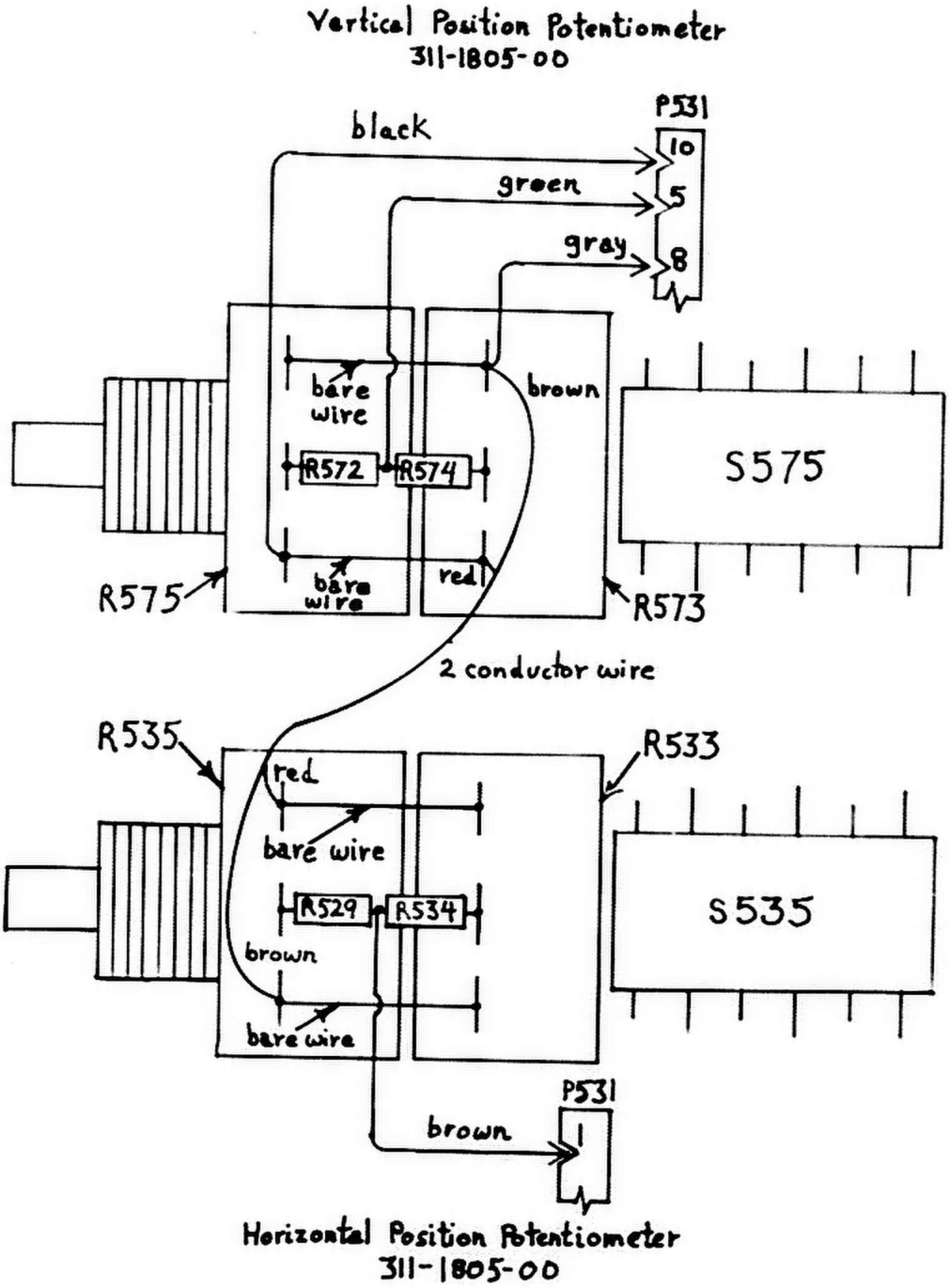


Fig. 1. Vertical and Horizontal Position Potentiometer Wiring Diagram

product modification

PC-19

Type 577/D1

DISPLAY IMPROVED

Effective Prod SN B010129

Floodgun current may cause nonlinearity in the center of the Horizontal display. The problem is eliminated by lowering the impedance of the Horizontal output amplifier. To accommodate the additional current, heat sinks were added to the output transistors Q124 and Q134.

PARTS REMOVED:

R1124 R1134	308-0564-00	Resistor	20K	4W	1%
R1125	301-0272-00	Resistor	2.7K	1/2W	5%
R1126	321-0179-00	Resistor	715Ω	1/8W	1%
R1128 R1138	301-0752-00	Resistor	7.5K	1/2W	5%
R1136	311-1308-00	Resistor	Var.	250Ω	

PARTS ADDED:

R1124 R1134	308-0053-00	Resistor	8K	5W	5%
R1125	301-0152-00	Resistor	1.5K	1/2W	5%
R1126	321-0139-00	Resistor	274Ω	1/8W	1%
R1128 R1138	303-0302-00	Resistor	3K	1W	5%
R1136	311-1328-00	Resistor, Var.		100Ω	
Q1124 Q1134	214-1291-00	Heat Sinks			

12-22-72

IMPROVED HORIZONTAL LINEARITY

Effective SN: B080000

To improve horizontal display linearity, the Vertical and Horizontal Output Amplifier circuits were redesigned. Because of the changes to the output amplifiers, the layout of the High Voltage circuit board was revised. At the same time, square pins were added to the circuit board to be used for interboard connection. To utilize these square pins, pin connectors and connector holders were added to the ends of the cables which connect to the High Voltage circuit board. As a result, it was not recommended to install the new version of the circuit board into instrument with serial numbers prior to B080000. The old version of the circuit board remained available for replacement purposes in those instruments. For further details on the changes to the High Voltage circuit board, refer to the attached schematic and below parts list.

PARTS REMOVED:

A5	670-2559-00	Circuit board, High Voltage (D1)
A5	670-2561-00	Circuit board, High Voltage (D2)

PARTS ADDED:

A5	670-4126-00	Circuit board, High Voltage (D1)
A5	670-4126-01	Circuit board, High Voltage (D2)
35 ea	131-0621-00	Connector, term, 22-26 AWG
1 ea	352-0169-04	Holder, term conn, 2-wire, yellow
1 ea	352-0197-00	Holder, term conn, 1-wire, black
1 ea	352-0198-02	Holder, term conn, 2-wire, red
1 ea	352-0198-07	Holder, term conn, 2-wire, violet
1 ea	352-0199-05	Holder, term conn, 3-wire, green
1 ea	352-0202-01	Holder, term conn, 6-wire, brown
1 ea	352-0205-03	Holder, term conn, 9-wire, orange
1 ea	352-0206-00	Holder, term conn, 10-wire, black

The new D1 High Voltage circuit board, pn 670-4126-00, is the same as the old A5 circuit board, pn 670-2559-00, except for the revised layout and the following component changes:

PARTS REMOVED:

Q1104	151-0279-00	Transistor, Si, NPN
Q1106	151-0190-00	Transistor, Si, NPN
Q1114	151-0279-00	Transistor, Si, NPN
Q1116	151-0190-00	Transistor, Si, NPN
Q1124	151-0279-00	Transistor, Si, NPN

Q1126	151-0190-00	Transistor. Si. NPN
Q1134	151-0279-00	Transistor. Si. NPN
Q1136	151-0190-00	Transistor. Si. NPN
R1101	315-0101-00	Resistor. cmpsn. 100Ω. 5%. 0.25W
R1102	315-0221-00	Resistor. cmpsn. 220Ω. 5%. 0.25W
R1103	315-0111-00	Resistor. cmpsn. 110Ω. 5%. 0.25W
R1104	308-0564-00	Resistor. ww. 20kΩ. 1%. 4W
R1106	321-0179-00	Resistor. film. 715Ω. 1%. 0.125W
R1108	301-0752-00	Resistor. cmpsn. 7.5kΩ. 5%. 0.25W
R1112	315-0221-00	Resistor. cmpsn. 220Ω. 5%. 0.25W
R1113	315-0111-00	Resistor. cmpsn. 110Ω. 5%. 0.25W
R1114	308-0564-00	Resistor. ww. 20kΩ. 1%. 4W
R1116	311-1308-00	Resistor. var. 250Ω. 30%. 0.25W
R1118	301-0752-00	Resistor. cmpsn. 7.5kΩ. 5%. 0.25W
R1122	315-0221-00	Resistor. cmpsn. 220Ω. 5%. 0.25W
R1123	315-0111-00	Resistor. cmpsn. 110Ω. 5%. 0.25W
R1124	308-0053-00	Resistor. ww. 8kΩ. 5%. 5W
R1125	301-0152-00	Resistor. cmpsn. 1.5kΩ. 5%. 0.5W
R1126	321-0139-00	Resistor. film. 274Ω. 1%. 0.125W
R1128	303-0302-00	Resistor. cmpsn. 3kΩ. 5%. 1W
R1132	315-0221-00	Resistor. cmpsn. 220Ω. 5%. 0.25W
R1133	315-0111-00	Resistor. cmpsn. 110Ω. 5%. 0.25W
R1134	308-0053-00	Resistor. ww. 8kΩ. 5%. 5W
R1136	311-1328-00	Resistor. var. 100Ω. 30%. 0.25W
R1138	303-0302-00	Resistor. cmpsn. 3kΩ. 5%. 1W
5 ea	131-0566-00	Bus. conductor. dummy resistor (0Ω)

PARTS ADDED:

Q1106	151-0444-02	Transistor. Si. NPN
Q1107	151-0444-02	Transistor. Si. NPN
Q1116	151-0444-02	Transistor. Si. NPN
Q1117	151-0444-02	Transistor. Si. NPN
Q1126	151-0444-02	Transistor. Si. NPN
Q1127	151-0444-02	Transistor. Si. NPN
Q1136	151-0444-02	Transistor. Si. NPN
Q1137	151-0444-02	Transistor. Si. NPN
R1103	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1104	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1106	321-0253-00	Resistor. film. 4.22kΩ. 1%. 0.125W
R1107	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W
R1108	315-0473-00	Resistor. cmpsn. 47kΩ. 5%. 0.25W
R1113	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1114	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1116	311-1560-00	Resistor. var. 5kΩ. 5%. 0.5W
R1117	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W

R1118	315-0473-00	Resistor, cmpsn, 47kΩ, 5%, 0.25W
R1123	315-0390-00	Resistor, cmpsn, 39Ω, 5%, 0.25W
R1124	323-0395-00	Resistor, film, 127kΩ, 1%, 0.5W
R1125	315-0163-00	Resistor, cmpsn, 16kΩ, 5%, 0.25W
R1126	321-0253-00	Resistor, film, 4.22kΩ, 1%, 0.125W
R1127	301-0154-00	Resistor, cmpsn, 150kΩ, 5%, 0.5W
R1128	315-0473-00	Resistor, cmpsn, 47kΩ, 5%, 0.25W
R1133	315-0390-00	Resistor, cmpsn, 39Ω, 5%, 0.25W
R1135	323-0395-00	Resistor, film, 127kΩ, 1%, 0.5W
R1136	311-1560-00	Resistor, var, 5kΩ, 5%, 0.5W
R1137	301-0154-00	Resistor, cmpsn, 150kΩ, 5%, 0.5W
R1138	315-0473-00	Resistor, cmpsn, 47kΩ, 5%, 0.25W
35 ea	131-0589-00	Pin, terminal, 0.4 x 0.0025 sq
2 ea	348-0023-00	Plug, hole

The new D2 High Voltage circuit board, pn 670-4126-01, is the same as the old A6 circuit board, pn 670-2561-00, except for the revised layout and the following component changes:

PARTS REMOVED:

Q1104	151-0279-00	Transistor, Si, NPN, SGC2622
Q1106	151-0190-00	Transistor, Si, NPN
Q1114	151-0279-00	Transistor, Si, NPN, SGC2622
Q1116	151-0190-00	Transistor, Si, NPN
Q1124	151-0279-00	Transistor, Si, NPN, SGC2622
Q1126	151-0190-00	Transistor, Si, NPN
Q1134	151-0279-00	Transistor, Si, NPN, SGC2622
Q1136	151-0190-00	Transistor, Si, NPN
R1101	315-0101-00	Resistor, cmpsn, 100Ω, 5%, 0.25W
R1102	316-0221-00	Resistor, cmpsn, 220Ω, 10%, 0.25
R1103	315-0111-00	Resistor, cmpsn, 110Ω, 5%, 0.25W
R1104	308-0564-00	Resistor, ww, 20kΩ, 1%, 4W
R1106	321-0179-00	Resistor, film, 715Ω, 1%, 0.125W
R1108	301-0752-00	Resistor, cmpsn, 7.5kΩ, 5%, 0.5W
R1112	316-0221-00	Resistor, cmpsn, 220Ω, 10%, 0.25
R1113	315-0111-00	Resistor, cmpsn, 110Ω, 5%, 0.25W
R1114	308-0564-00	Resistor, ww, 20kΩ, 1%, 4W
R1118	301-0752-00	Resistor, cmpsn, 7.5kΩ, 5%, 0.5W
R1116	311-1308-00	Resistor, var, 250Ω, 30%, 0.25W
R1122	316-0221-00	Resistor, cmpsn, 220Ω, 10%, 0.25
R1123	315-0111-00	Resistor, cmpsn, 110Ω, 5%, 0.25W
R1124	308-0564-00	Resistor, ww, 20kΩ, 1%, 4W
R1125	301-0272-00	Resistor, cmpsn, 2.7kΩ, 5%, 0.5W
R1126	321-0179-00	Resistor, film, 715Ω, 1%, 0.125W
R1128	301-0752-00	Resistor, cmpsn, 7.5kΩ, 5%, 0.5W

R1132	316-0221-00	Resistor. cmpsn. 220Ω. 10%. 0.25
R1133	315-0111-00	Resistor. cmpsn. 110Ω. 5%. 0.25W
R1135	308-0564-00	Resistor. ww. 20kΩ. 1%. 4W
R1136	311-1308-00	Resistor. var. 250Ω. 30%. 0.25W
R1138	301-0752-00	Resistor. cmpsn. 7.5kΩ. 5%. 0.5W

PARTS ADDED:

Q1106	151-0444-02	Transistor. Si. NPN
Q1107	151-0444-02	Transistor. Si. NPN
Q1116	151-0444-02	Transistor. Si. NPN
Q1117	151-0444-02	Transistor. Si. NPN
Q1126	151-0444-02	Transistor. Si. NPN
Q1127	151-0444-02	Transistor. Si. NPN
Q1136	151-0444-02	Transistor. Si. NPN
Q1137	151-0444-02	Transistor. Si. NPN
R1103	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1104	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1106	321-0253-00	Resistor. film. 4.22kΩ. 1%. 0.125W
R1107	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W
R1108	315-0473-00	Resistor. cmpsn. 47kΩ. 5%. 0.25W
R1113	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1114	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1116	311-1560-00	Resistor. var. 5kΩ. 5%. 0.5W
R1117	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W
R1118	315-0473-00	Resistor. cmpsn. 47kΩ. 5%. 0.25W
R1123	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1124	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1125	315-0163-00	Resistor. cmpsn. 16kΩ. 5%. 0.25W
R1126	321-0253-00	Resistor. film. 4.22kΩ. 1%. 0.125W
R1127	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W
R1128	315-0473-00	Resistor. cmpsn. 47kΩ. 5%. 0.25W
R1133	315-0390-00	Resistor. cmpsn. 39Ω. 5%. 0.25W
R1135	323-0395-00	Resistor. film. 127kΩ. 1%. 0.5W
R1136	311-1560-00	Resistor. var. 5kΩ. 5%. 0.5W
R1137	301-0154-00	Resistor. cmpsn. 150kΩ. 5%. 0.5W
R1138	315-0473-00	Resistor. cmpsn. 47kΩ. 5%. 0.25W
35 ea	131-0589-00	Pin. terminal. 0.4 x 0.0025 sq
2 ea	348-0023-00	Plug. hole

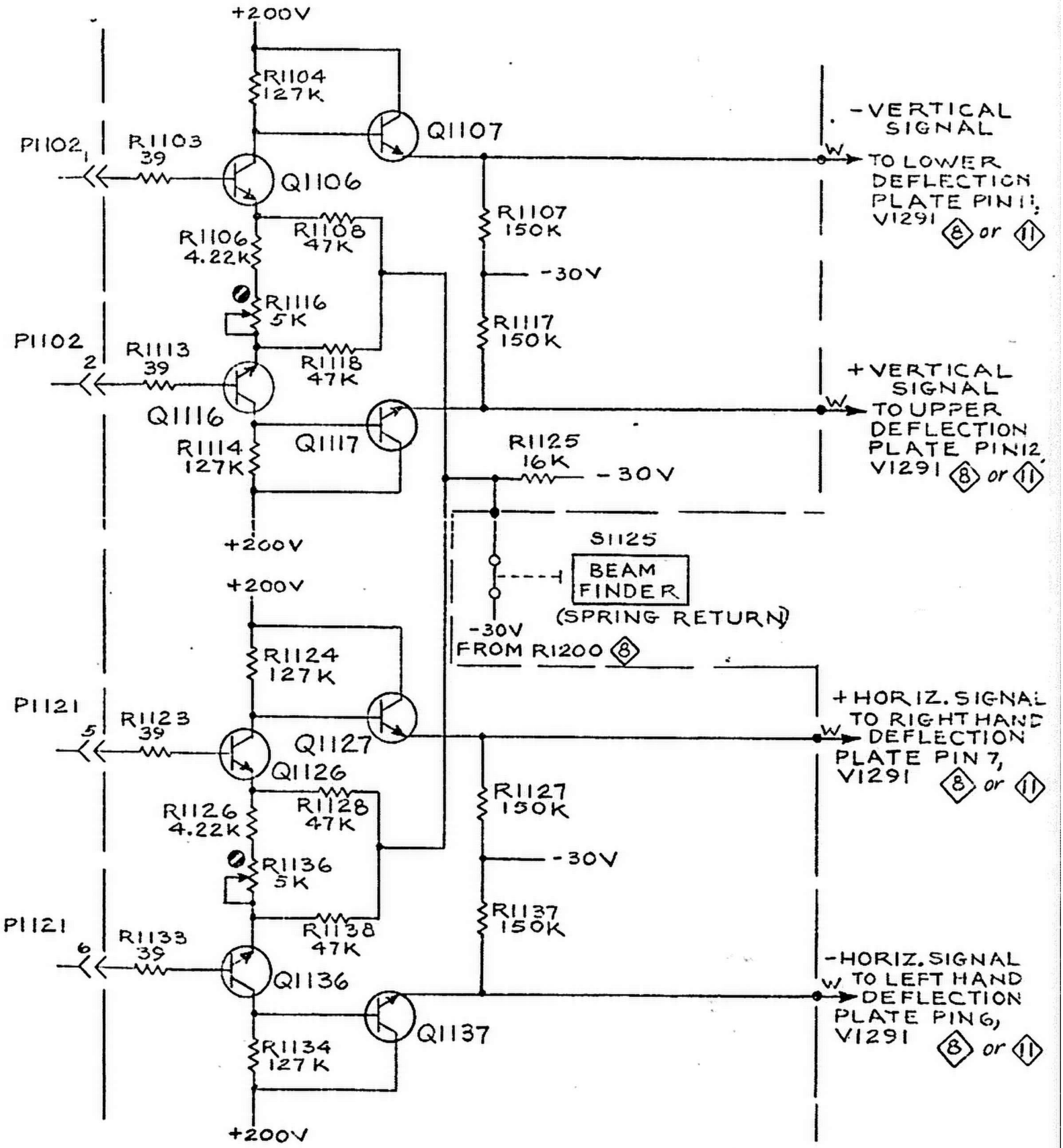


Fig. 1. Partial - VERT AND HORIZ OUTPUT AMP (7) or (10).

product modification

M19202

Type 577-D1-D2

CRT'S REPLACED

Effective Prod SN D1 B020224
D2 B010150

To reduce the clutter of tick marks on the CRT graticules, the solid lines with minor division tick marks were changed to dashed lines. At the same time the CRT's were replaced with internal graticule type CRT's.

Parts Removed:

V291	154-0633-00	CRT, T5111-31-1
V291	154-0634-00	CRT, T5112-400

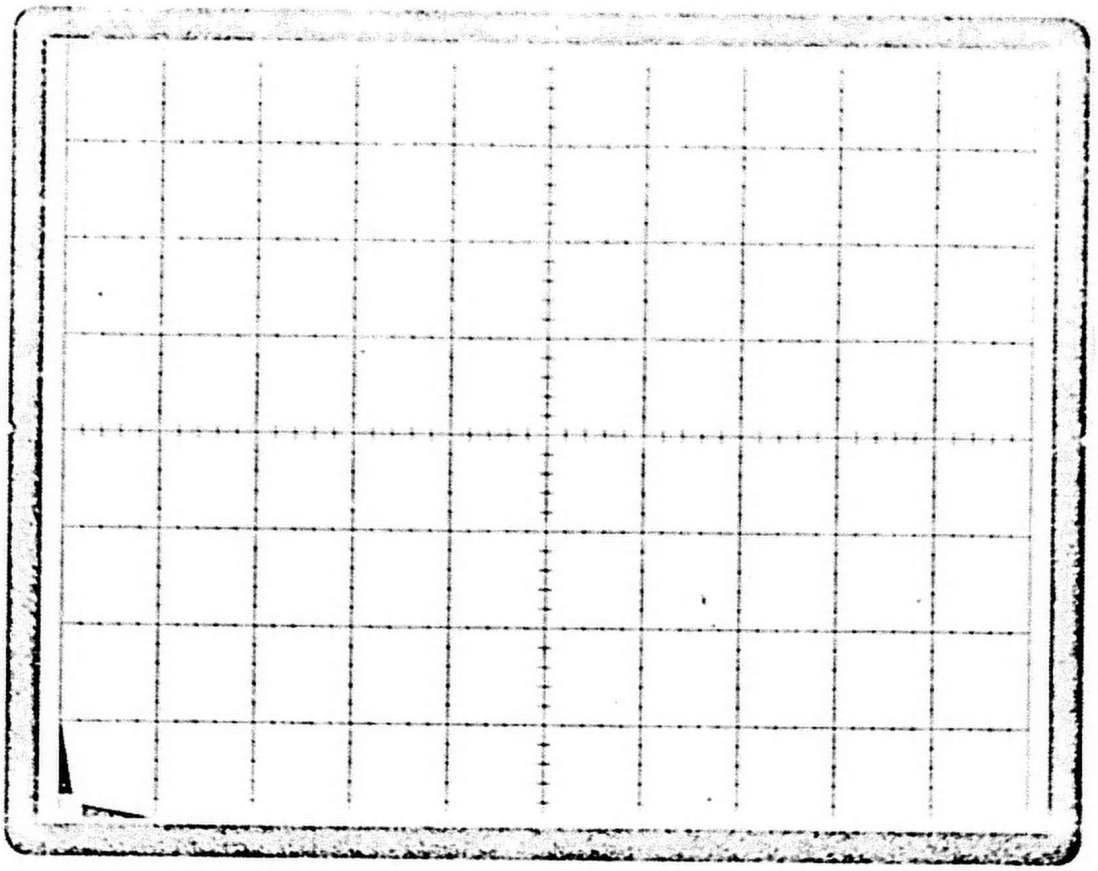
Parts Added:

V291	154-0633-05	CRT, T5111-31-1
V291	154-0634-10	CRT, T5112-400

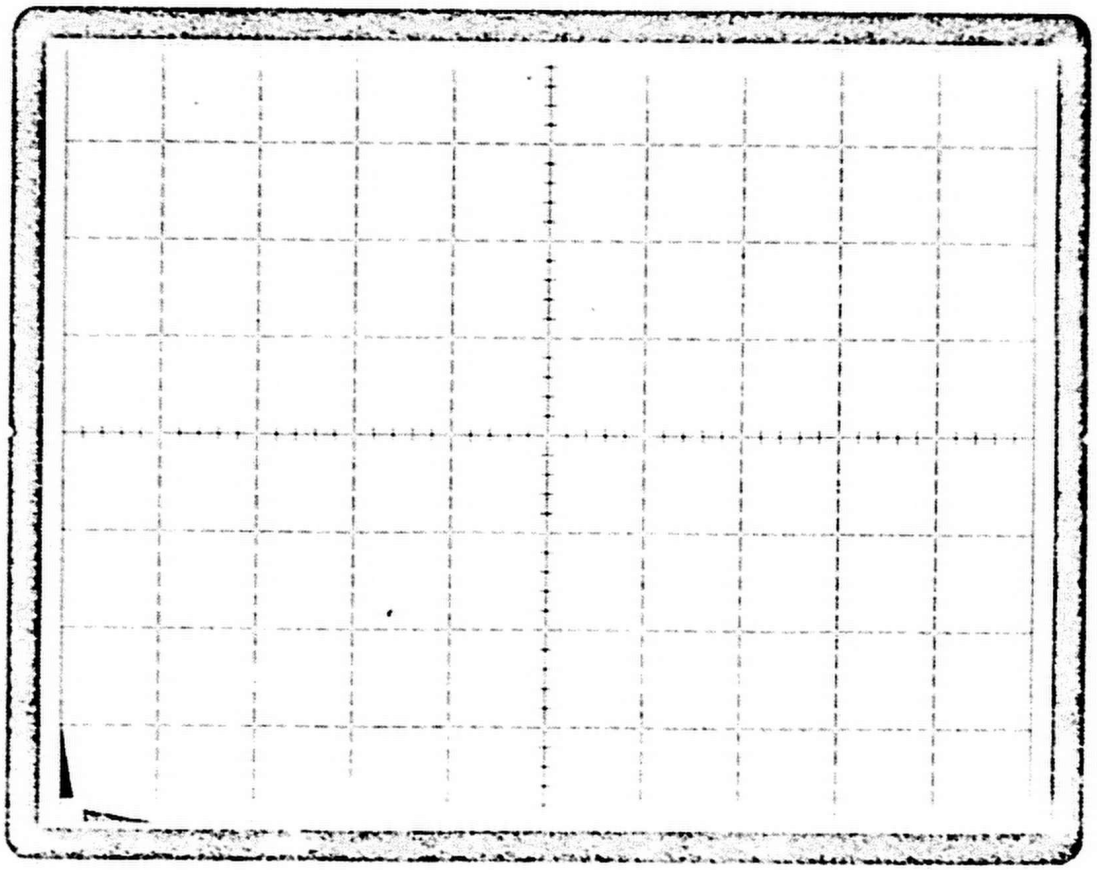
2-23-73

#2 Portion of M19202

M19202
Type 577-D1-D2



5100 Series Graticule Configuration (Before M19202)



5100 Series Graticule Configuration (After M19202)

product modification

M21287

Type 577 - D1

UNBLANKING TIMING IMPROVED

Effective Prod SN B040829

Set the VARIABLE COLLECTOR % Control to '0' and the HORIZ VOLTS/DIV. Switch in the 200 VOLTS/DIV position. Position the spot to the right or left edge of the CRT and turn the BRIGHTNESS Control to the counter-clockwise position and there will be two dots present in the display.

The problem was corrected as follows:

1) C1307 a .001μF capacitor connected in parallel with R1307, was removed.

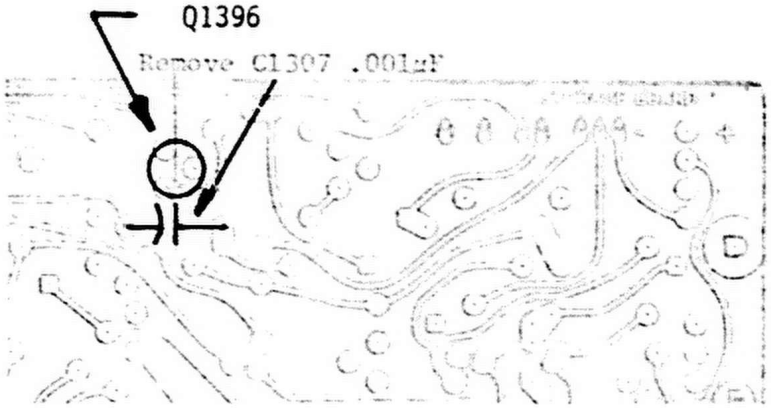
2) C1212, a .0022μF capacitor, was added between the base and grounded emitter of Q1214.

PARTS REMOVED:

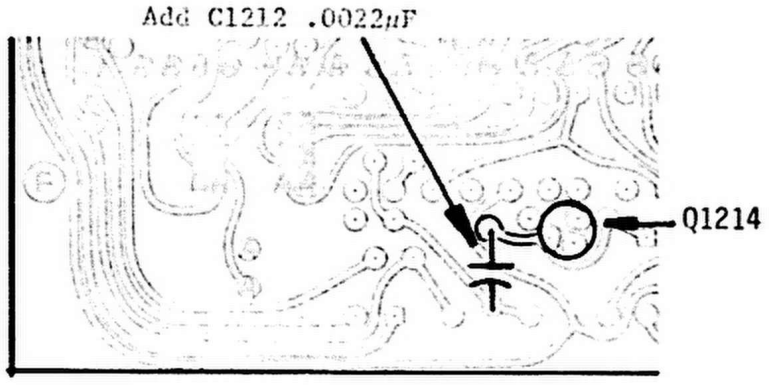
C1307	283-0067-00	Cap. cer. .001μF 200V +10%

PARTS ADDED:

C1212	283-0119-00	Cap. cer. .0022μF 200V +10%



PARTIAL STORAGE CIRCUIT BOARD



PARTIAL HIGH VOLTAGE CIRCUIT BD.

2-15-74

product modification

M20096
M20966

Type 577 D1

S1372A-B REPLACED

Effective Prod SN D1-B020508 Usable in field instruments SN B010100-B020507

S1372A and B, the UPPER and LOWER ERASE push switches were changed from 260-1232-00 switches to more reliable 260-1232-01 switches. The new switch is not a direct replacement for the old switch. Use of the new switch requires changing the switch mounting spacers from .109 inch spacers to .078 inch spacers.

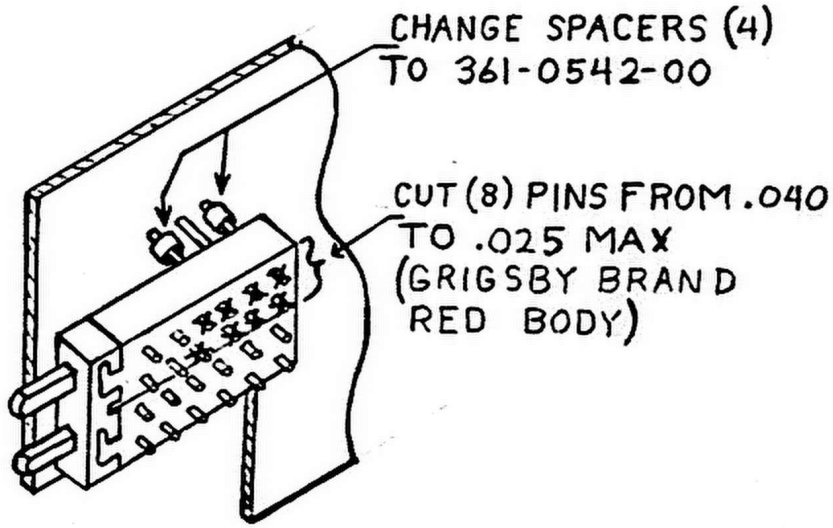
Parts Removed:

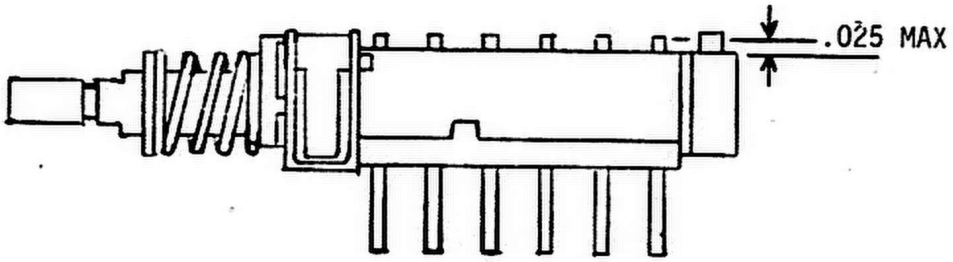
S1372A-B	260-1232-00	Switch Push (4) per module	
	361-0411-00	Spacer, push switch CRL .109 thk.	(4)

Parts Added:

S1372A-B	260-1232-01	Switch Push Grigsby Only	
	361-0542-00	Spacer, push switch CRL .078 thk.	(4)

8-24-73





SIDE VIEW 260-1232-01

PARTIAL STORAGE CIRCUIT BOARD S1372A and B

UPPER & LOWER ERASE SWITCH REPLACEMENT

For the following TEKTRONIX© Oscilloscopes

5103/D11, R5111	Single Beam Storage	SN B061151 - B119179
5103/D13, R5113	Dual Beam Storage	SN B070951 - B114949
5103/D15, R5115	Single Beam Storage	SN B040851 - B083139
577D1	Storage Curve Tracer	SN B020508 - B103989

S372A and S372B, the UPPER and LOWER ERASE switch, pn 260-1232-00, replaces the UPPER and LOWER ERASE switch, pn 260-1232-01, which is no longer available.

The new switch is not a direct replacement and requires replacing four circuit board mounting spacers.

NOTE

If the serial number of your instrument is other than those listed, or if this kit has been installed, disregard the instructions and use pn 260-1232-00 as a direct replacement.

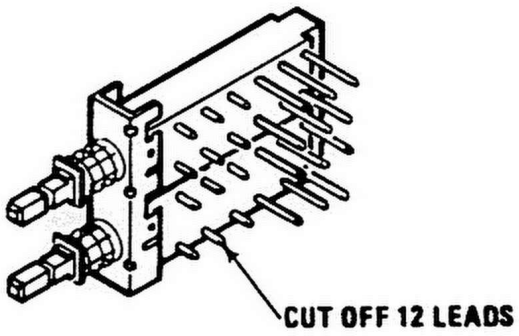


Fig. 1. Location of Twelve Switch Leads To Be Trimmed.

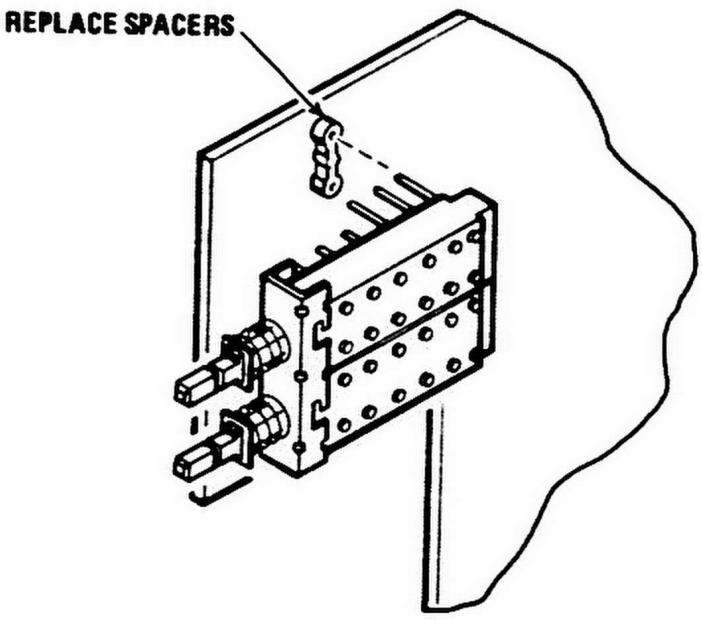


Fig. 2. Location of Switch Spacers.

PARTS INCLUDED IN PARTS REPLACEMENT KIT:

Ckt. No.	Quantity	Part Number	Description
	1 ea	006-1356-00	Wick, solder removing*
S372A & S372B	1 ea	260-1232-00	Switch, push
	4 ea	361-0411-00	Spacer, switch mounting, 0.109 thk
	1 ea		Marker, identification

INSTRUCTIONS:

( ) 1. Remove the right cabinet side and remove the storage board from the instrument.

( ) 2. Trim the front 12 leads off the new switch provided in the kit (see Fig. 1).

( ) 3. Replace S372A and S372B with the switch from the kit and be sure to replace the 0.078 inch spacers with the 0.109 inch spacers from the kit (refer to Fig. 2).

NOTE

Some instruments may not have spacers present; however, to facilitate installation, use of spacers included in kit is recommended.

( ) 4. Reinstall the storage circuit board and replace the right cabinet side.

( ) 5. Remove the protective backing from the identification marker provided in the kit and place it on a clean, dry area on the rear panel.

( ) 6. For future reference, update the Replaceable Electrical Parts List in your manual using the information in the kit Parts List on this page.

*The kit contains solder wick to facilitate the removal of solder from the board. To remove solder:

1. Place the solder wick over the place to be soldered.

2. Apply a well-tinned soldering iron to the wick and allow time for solder to be drawn into the wick.

3. Use a clean section of the wick for each connection.

product modification

M18934

Type 577 - D1 or D2

AUTO ERASE

Effective Prod SN B030556

The following changes were made to the storage circuit board to facilitate installation of the custom Auto Erase modification.

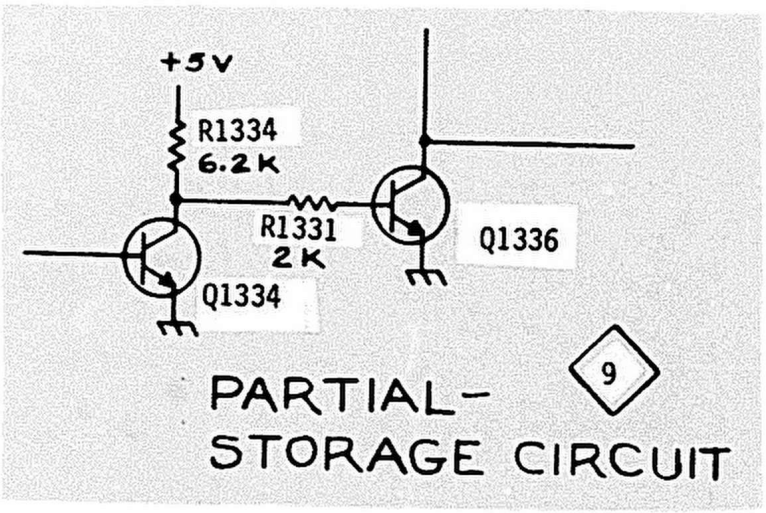
1) R1334, a 4.7K resistor in the collector circuit of Q1334 was changed to 6.2K was relocated.
2) R1331, a 2K resistor, was added between the collector of Q1334, and the base of Q1336.
3) The circuit board layout was modified to accommodate the addition of R1331.

PARTS REMOVED:

R1334	316-0472-00	Res. comp. 4.7K, 1/4W 10%

PARTS ADDED:

R1331	315-0202-00	Res. comp. 2K 1/4W 5%
R1334	315-0622-00	Res. comp. 6.2K 1/4W 5%



2-15-74

product modification

050-0760-00

M23019

Type 577 D1

STORAGE BOARD TRANSISTOR HEAT SINK REPLACEMENT

For the TEKTRONIX® 577 D1 Storage Curve Tracers

Serial Numbers B010100 - B080000

Storage circuit board transistor heat sink PN 214-1612-02, a nylon spacer post and mounting hardware are required to replace transistor heat sink PN 214-1612-01 to assure that the transistors will not be pulled partially out of the socket by slight movement of the heat sink.

NOTE: If the serial number of your instrument is above those listed or if 050-0760-00 has been installed, disregard these instructions and use the heat sink, PN 214-1612-02, as a direct replacement.

3-23-77

PARTS INCLUDED IN PARTS REPLACEMENT KIT

Quantity	Part Number	Description
1 ea	211-0504-00	Screw, panhead, pozidrive, 6-32 x 0.25
1 ea	211-0507-00	Screw, panhead, pozidrive, 6-32 x 0.312
1 ea	214-1612-02	Heat sink, transistor
1 ea	385-0100-00	Spacer, post, nylon, 0.312 OD x 0.5

INSTRUCTIONS:

TURN THE INSTRUMENT OFF AND DISCONNECT FROM THE POWER SOURCE!

( ) 1. Remove the cabinet right side by loosening the two pawl fasteners near the front.

NOTE: If the serial number of your D1 Display Unit is below B030556, the Storage circuit board may not have the hole required to mount the nylon post spacer provided in this kit. The nylon spacer provides added support for the transistor heat sink. This added support reduces the possibility of pulling the heat sinked transistor loose from the sockets. The loose transistors would cause intermittent or no storage operation. (Transistors with longer leads may reduce the problem.) On those instruments with no hole in the circuit board and which the heat sinked transistor are not having socket problems, the transistor heat sink, PN 214-1612-02, may be used as a direct replacement.

If the added support for the transistor heat sink is desired for Display Units prior to B030556, a hole will need to be added to the Storage circuit board. This hole may be added by first removing the Storage circuit (steps 2 through 8). The new transistor heat sink, PN 214-1612-02, may be used as a template by attaching it to the heat sinked transistors with the five mounting screws. Mark the circuit board directly under the unused hole near Q1372. Remove the transistor heat sink. Drill a 5/32 inch hole in the circuit board at the mark point, insuring that no runs will be cut. Proceed to step 9.

( ) 2. Remove the BRIGHTNESS knob.

( ) 3. Remove the UPPER and LOWER STORE, the UPPER and LOWER ERASE and the ERASE push buttons.

( ) 4. Disconnect P1389, the 10-pin connector located near the upper right corner of the Storage circuit board (A4).

( ) 5. While holding the metal sleeve spacer, located between the transistor heat sink and the Storage circuit board, remove the attaching screw from the upper left corner of the heat sink.

INSTRUCTIONS: (Cont'd)

( ) 6. Remove the transistor heat sink by removing the five remaining attaching screws.

( ) 7. Remove the three Storage circuit board mounting screws.

( ) 8. Maneuver the Storage circuit board rearward and upward so that the board can be swung out and away from the instrument.

( ) 9. Attach the nylon post spacer, from the kit, on the component side of the Storage circuit board using a 6-32 x 0.312 screw, from the kit. Mount the spacer in the hole which is located directly above the NON STORE nomenclature and near Q1372, one of the heat sinked transistors.

( ) 10. Reinstall the Storage circuit board and secure with the three 4-40 x 0.25 screws.

( ) 11. Attach the new transistor heat sink, from the kit, using the 6-32 x 0.25 screw, from the kit, and the five 4-40 x 0.188 screws with lock washers removed in step 6.

( ) 12. Reinstall the metal spacer and 4-40 x 0.875 screw in the upper left corner of the transistor heat sink and reconnect P1389, the ten pin connector disconnected in step 4, to the storage circuit board.

( ) 13. Reinstall the front panel knob and push buttons and the cabinet right side.

product modification

M36653

577/D1/D2

MACHINE INSERTION OF RESISTORS

Effective Prod SN B104750

To allow machine insertion of resistors on the High Voltage circuit board, the following resistors were changed from 10% 0.25W resistors to 5% 0.25W resistors.

PARTS REMOVED:

R1203, R1268	2 ea	316-0103-00	Resistor, cmpsn, 10kΩ 10% 0.25W
R1207	1 ea	316-0822-00	Resistor, cmpsn, 8.2kΩ 10% 0.25W
R1208	1 ea	316-0473-00	Resistor, cmpsn, 47kΩ 10% 0.25W
R1222	1 ea	316-0102-00	Resistor, cmpsn, 1kΩ 10% 0.25W
R1223, R1231	2 ea	316-0472-00	Resistor, cmpsn, 4.7kΩ 10% 0.25W
R1232	1 ea	316-0274-00	Resistor, cmpsn, 270kΩ 10% 0.25W
R1242, R1248, R1270	3 ea	316-0223-00	Resistor, cmpsn, 22kΩ 10% 0.25W
R1243, R1274, R1276	3 ea	316-0105-00	Resistor, cmpsn, 1MΩ 10% 0.25W
R1263	1 ea	316-0183-00	Resistor, cmpsn, 18kΩ 10% 0.25W
R1266	1 ea	316-0334-00	Resistor, cmpsn, 330kΩ 10% 0.25W
R1267	1 ea	316-0333-00	Resistor, cmpsn, 33kΩ 10% 0.25W
R1271	1 ea	316-0395-00	Resistor, cmpsn, 3.9MΩ 10% 0.25W
R1278	1 ea	316-0562-00	Resistor, cmpsn, 5.6kΩ 10% 0.25W

(continued)

(continued)

PARTS ADDED:

R1203, R1268	2 ea	315-0103-00	Resistor, cmpsn, 10kΩ 5% 0.25W
R1207	1 ea	315-0822-00	Resistor, cmpsn, 8.2kΩ 5% 0.25W
R1208	1 ea	315-0473-00	Resistor, cmpsn, 47kΩ 5% 0.25W
R1222	1 ea	315-0102-00	Resistor, cmpsn, 1kΩ 5% 0.25W
R1223, R1231	2 ea	315-0472-00	Resistor, cmpsn, 4.7kΩ 5% 0.25W
R1232	1 ea	315-0274-00	Resistor, cmpsn, 270kΩ 5% 0.25W
R1242, R1248, R1270	3 ea	315-0223-00	Resistor, cmpsn, 22kΩ 5% 0.25W
R1243, R1274, R1276	3 ea	315-0105-00	Resistor, cmpsn, 1MΩ 5% 0.25W
R1263	1 ea	315-0183-00	Resistor, cmpsn, 18kΩ 5% 0.25W
R1266	1 ea	315-0334-00	Resistor, cmpsn, 330kΩ 5% 0.25W
R1267	1 ea	315-0333-00	Resistor, cmpsn, 33kΩ 5% 0.25W
R1271	1 ea	315-0395-00	Resistor, cmpsn, 3.9MΩ 5% 0.25W
R1278	1 ea	315-0562-00	Resistor, cmpsn, 5.6kΩ 5% 0.25W

product modification

M20259-1

Type 577

CIRCUIT BOARD PROTECTED

Effective Prod SN D1-B030249
D2-B030178

Damage to the power supply circuit board,due to a short in the step generator which can short the high voltage floating step amplifier power supply to ground, is prevented as follows:

1) Add R711, a 4.7Ω 1/2W fusing resistor, between the transformer winding and CR711.

Parts Added:

R711	307-0023-00	Resistor, prec.	4.7Ω	1/2W

product modification

M20318-1

Type 577

LINE VOLTAGE INFO ADDED

Effective Prod SN D1-B030249
D2-B030178

A 'CAUTION' label was added to the rear cover to indicate the line voltage setting of the line voltage selector.

The part number of the label is 334-2154-00.

4-20-73

112.02

product modification

M20113-1

Type 577

OSCILLATIONS ELIMINATED

Effective Prod B050770

Possible oscillations in the +5 volt, +30 volt and -30 volt power supplies were eliminated by making the following changes:

1) C733-R733, a series RC network, consisting of a 6.8pF capacitor and a 220Ω resistor connected between the base and collector of Q772. (-30 volt supply) were removed.
2) C757, a capacitor in the +30 volt supply was replaced with a 270pF capacitor.
3) C788-R788, a series RC network connected between the base and collector of Q786 were changed from 270pF-300Ω to 650pF-200Ω respectively.
4) C724, a .01μF capacitor, was added across the 5 volt regulator. (See schematic).
5) Fusing resistor R711 was replaced by a fuse run on the Regulator board.
6) The +30 volt supply adjust potentiometer was replaced with a right angle type potentiometer and a hole was added to the back panel to permit adjustment without removing a cover.
7) To accommodate the above changes, the Regulator board was redesigned.

Parts Removed:

200-1433-00	Panel, Rear
670-2427-00	Circuit board, Power Supply

Parts Added:

*200-1433-01	Panel Rear
348-0031-00	Grommet, plastic .125 ID
670-2427-02	Circuit board, Power Supply

*Also see M30702 for a subsequent change to the rear panel.

11-16-73

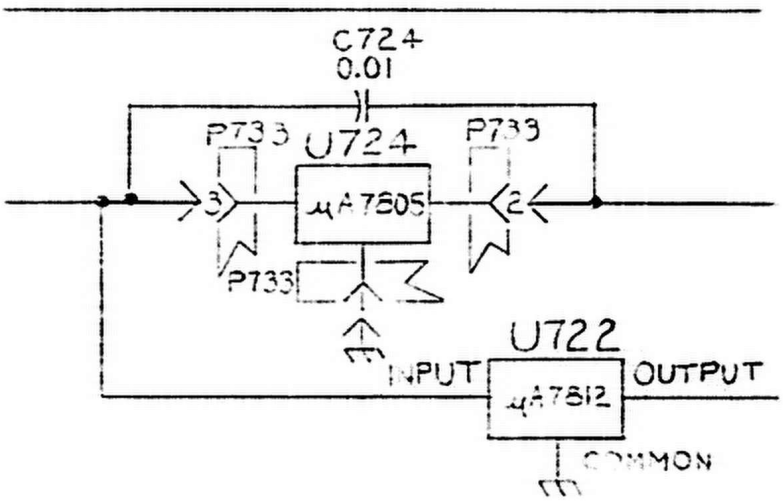
The New Regulator board 670-2427-02 is the same as 670-2427-00 except for the following:

Parts Removed:

C757	281-0550-00	Capacitor, Cer	120pF	500V	
C773	281-0572-00	Capacitor, Cer	6.8pF	500V	
C788	281-0543-00	Capacitor, Cer	270pF	500V	
R711	307-0023-00	Resistor, Comp	4.7Ω	1/2W	10%
R765	311-1308-00	Resistor, Var	250Ω		
R773	315-0221-00	Resistor, Comp	220Ω	1/4W	5%
R788	315-0301-00	Resistor, Comp	300Ω	1/4W	5%

Parts Added:

C724	283-0068-00	Capacitor, disc	.01	500V	
C757	281-0543-00	Capacitor, Cer	270pF	500V	
C788	281-0623-00	Capacitor, Cer	650pF	500V	
R765	311-1124-00	Resistor, Var	250Ω		
R788	315-0201-00	Resistor, Comp	200Ω	1/4W	5%



PARTIAL POWER SUPPLY 12

050-0758-00

M23019

Q766 REPLACEMENT

For the following TEKTRONIX® Curve Tracers:

577 D1	Serial Numbers	B010100 - B082439
577 D2	Serial Numbers	B010100 - B082449

Replacement of Q766 requires changing the value of resistor R754 from 680kΩ to 300kΩ. Without this change, the +30V supply may not regulate properly if the beta of Q766 is low and the power supply is operating under a low line voltage, high load condition.

NOTE

If the instrument serial number is greater than those listed above or if this kit has been previoulsy installed, the instructions may be disregard and the transistor, included in this kit, may be used as a direct replacement for Q766.

KIT PARTS LIST:

Ckt. No.	Quantity	Part Number	Description
Q766	1 ea	151-0405-00	Transistor, Si, NPN, sel from MJE800
R754	1 ea	315-0304-00	Resistor, cmpsn, 300kΩ, 5%, 0.25W
	1 ea		Label, ident, 050-kit

INSTRUCTIONS:

WARNING

Dangerous electrical shock hazards may be exposed when the instrument covers are removed or opened. Before proceeding, ensure the mainframe power switch is in the off position. Then, disconnect the instrument power cable from the power source.

( ) 1. Remove the four (4) screws located near the corners of the power supply rear cover. This cover is the lower one of the two panels at the rear of the instrument.

( ) 2. Swing the right side (looking from the rear) of the power supply rear cover outward and to the left. Allow the interconnecting wires to support the power supply assembly. The components to be changed will be accessible from this position.

( ) 3. Replace resistor R754, 680kΩ, with the 300kΩ resistor included in the kit. R754 is located near the GND test point on the left side of the Power Supply circuit board, A3. R754 is connected to the collector of the transistor Q766. See Fig. 1.

( ) 4. Unsolder the leads of transistor Q766 from the Power Supply circuit board.

( ) 5. Remove the screw, nut and washer used to attach Q766 to the chassis and remove the transistor. Ensure the transistor insulator remains in place.

WARNING

For best heat conduction between the transistor and the chassis, a thin coating of silicone grease needs to be applied to the transistor. Use care when handling the silicone grease. Avoid getting the grease in the eyes. Thoroughly wash the hands after usage.

( ) 6. Apply a thin coating of silicone grease to the back of the new transistor, included in the kit.

( ) 7. Secure the new transistor to the chassis, using the screw, nut and washer removed earlier.

( ) 8. Solder the leads of Q766 to the Power Supply circuit board.

( ) 9. Refer to the Adjustment Procedure in the Check and Adjustment Procedure Section (5) of the 577 D1 or D2 Curve Tracer Service Manual and check instrument performance, making any necessary adjustments. Carefully check the power supply adjustments.

( ) 10. Swing the power supply rear cover back into position and secure the cover to the rear frame section with the four screws removed earlier.

( ) 11. Remove the protective backing from the 050-kit label (included in the kit) and apply the label to a clean, dry area on the rear panel.

( ) 12. Attach the following manual insert to the 577 D1 or D2 Curve Tracers Service Manual.

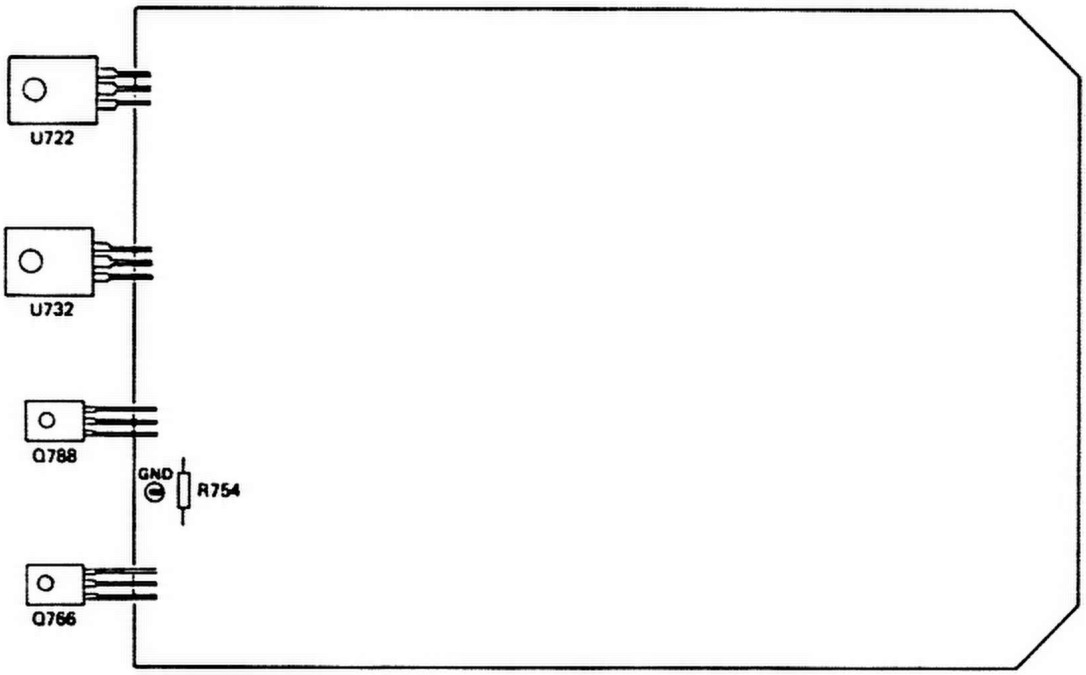


Fig. 1. Partial Power Supply circuit board.

TEKTRONIX

MANUAL MODIFICATION INSERT

Q766 REPLACEMENT

for

577 D1 Serial Numbers B010100 - B082439

577 D2 Serial Numbers B010100 - B082449

Installed in SN _____ Date _____

This modification insert is provided to supplement the manual for the above listed product(s). The information given in this insert supersedes that given in the manual.

GENERAL INFORMATION

When transistor Q766 was replaced, the value of resistor R754 on the Power Supply circuit board was changed. This changed ensured that the +30V power supply would regulate properly when operating under a low line voltage (≤105V), high load condition.

Ckt. No.	Part Number	Description
Q766	151-0405-00	Transistor. Si. NPN. sel from MJE800
R754	315-0304-00	Resistor. cmpsn. 300kΩ. 5%. 0.25W

product modification

M20943

Type 577

READOUT SYSTEM CHANGED

Effective Prod SN B071470

The front panel was extensively modified to allow the use of a single lens readout system. This required changing hole positions and configurations on the front subpanel. The STEP OFFSET and the HORIZ VOLTS/DIV knobs were replaced with improved ones.

The front subpanel PN changed to 386-2392-01. The front panel PN changed to 333-1652-01 which has a different nomenclature. The D1 frame section PN changed to 426-0739-01 and the D2 frame section PN changed to 426-0740-01. The D1 front panel changed to 333-1706-01 and the D2 front panel changed to 333-1707-01.

Parts Removed:

DS310,DS536	150-0048-00	Bulb, Incandescent	
	200-0935-00	Cap, Lampholder	(2)
	333-1652-00	Front Panel, D1	
	333-1706-00	Front Panel, D2	
	333-1707-00	Front Panel	
	352-0157-01	Lampholder, Blk, Plastic	(2)
	366-1417-00	Knob, STEP OFFSET	
	366-1418-00	Knob, HORIZ VOLTS/DIV	
	378-0635-00	Lens, Ind. White Plastic	(2)
	386-2392-00	Subpanel, Front	
	426-0739-00	Frame Assembly, D1	
	426-0740-00	Frame Assembly, D2	

Parts Added:

DS1255	150-0048-00	Bulb, Incandescent, D2
DS1390	150-0048-00	Bulb, Incandescent, D1
	200-0935-00	Cap, Lampholder, D1, D2
	*333-1652-01	Front Panel
	333-1706-01	Front Panel, D1
	333-1707-01	Front Panel, D2
	352-0157-00	Lampholder, White Plastic, D1, D2
	*366-1417-01	Knob, STEP OFFSET
	366-1418-01	Knob, HORIZ VOLTS/DIV
	378-0602-00	Lens, Ind. Green, D1, D2
	*386-2392-01	Subpanel, Front
	426-0739-01	Frame Assembly, D1
	426-0740-01	Frame Assembly, D2

* Superseded by M22672.

10-11-74

MICROCIRCUIT SOCKETS REPLACED

577D1 Effective SN: B106655
577D2 Effective SN: B106655

The microcircuit sockets, which were being used on the Main (A1) and the Collector Sweep (A2) circuit boards, were intended for use with microcircuits with stiff leads. Most of the microcircuits in current usage have leads of a softer material, usually lead. Intermittent contact between the socket and the microcircuit leads could develop, causing reliabilty problems. To reduce the possibility of intermittencies, the sockets were replaced with sockets from a different manufacturer. See the Remove/Add list below for further information.

Main circuit board (A1), pn 670-2428-05:

PARTS REMOVED:

2 ea	136-0260-02[1]	Socket, plug-in, microckt, 16 DIP
5 ea	136-0269-02[2]	Socket, plug-in, microckt, 14 DIP
4 ea	136-0514-00[3]	Socket, plug-in, microckt, 8 DIP

PARTS ADDED:

4 ea	136-0727-00[3]	Socket, plug-in, microckt, 8 contact
5 ea	136-0728-00[2]	Socket, plug-in, microckt, 14 contact
2 ea	136-0729-00[1]	Socket, plug-in, microckt, 16 contact

Collector Sweep circuit board (A2), pn 670-2426-02:

PARTS REMOVED:

1 ea	136-0269-02[4]	Socket, plug-in, microckt, 14 DIP

PARTS ADDED:

1 ea	136-0728-00[4]	Socket, plug-in, microckt, 14 contact

[1]Used for U350, U380, U520 and U530 (two microcircuits in each socket).
[2]Used for U220, U230, U268, U270 and U430.
[3]Used for U206, U305, U360 and U570.
[4]Used for U542.

SOCKET REPLACED

Effective SN: NA

The transistor socket was no longer available from the vendor. The replacement socket required a number of changes to the Transistor Test Adapter. Because of the part changes, the part number of the adapter changed as indicated below. Refer to the the parts list for additional information.

PARTS REMOVED:

1 ea	013-0127-00	Adapter, test, Transistor

PARTS ADDED:

1 ea	013-0127-01	Adapter, test, Transistor

The new Transistor Test Adapter, pn 013-0127-01, is the same as the old adapter, pn 013-0127-00, except for the following:

PARTS REMOVED:

1 ea	062-1388-00	Data sheet, 013-0127-00
1 ea	136-0471-00	Socket, plug-in, transistor, 3-contact
1 ea	136-0471-02	Socket, plug-in, transistor, 4-contact
1 ea	200-1279-00	Cover, test adapter, 013-0127-00

PARTS ADDED:

1 ea	062-1388-01*	Data sheet, 013-0127-01
1 ea	136-0681-00*	Socket, plug-in, transistor, 3-contact
1 ea	200-1279-01	Cover, test adapter, 013-0127-01

*Changed by M49228.

TRANSISTOR SOCKETS REPLACED

Effective SN: NA

The four-contact and six-contact transistor sockets, used in the manufacture of the Transistor Adapter (pn 013-0098-02) and the FET Adapter (pn 013-0099-02), were no longer available. Because the pin spacing of the new sockets is different than that of the old ones, the layout of the circuit boards, within the adapters, needed to be revised. The part numbers of the circuit boards changed as indicated below. For additional information on the sockets, refer to the parts list.

For Transistor Test Adapter, pn 013-0098-02:

PARTS REMOVED:

1 ea	670-0697-02	Circuit board, Bipolar Tester Adapter
1 ea	062-1774-00	Data sheet, 013-0098-02

PARTS ADDED:

1 ea	670-0697-03	Circuit board, Bipolar Tester Adapter
1 ea	062-5823-00	Data sheet, 013-0098-02

The new Bipolar Tester Adapter circuit board, pn 670-0697-03, is the same as the old adapter circuit board, pn 670-0697-02, except for revised layout and the following part changes:

PARTS REMOVED:

2 ea	136-0257-00	Socket, plug-in transistor, 4 contact
1 ea	136-0329-00	Socket, plug-in transistor, 6 contact
1 ea	136-0332-00	Socket, plug-in transistor, 6 contact
2 ea	136-0434-00	Socket, plug-in transistor, 4 contact

PARTS ADDED:

2 ea	136-0257-01	Socket, plug-in transistor, 4 contact
1 ea	136-0329-01	Socket, plug-in transistor, 6 contact
1 ea	136-0332-01	Socket, plug-in transistor, 6 contact
2 ea	136-0434-01	Socket, plug-in transistor, 4 contact

For FET Tester Adapter, pn 013-0099-02:

PARTS REMOVED:

1 ea	670-0699-02	Circuit board, FET Tester Adapter
1 ea	062-1775-00	Data sheet, 013-0099-02

PARTS ADDED:

1 ea	670-0699-03	Circuit board, FET Tester Adapter
1 ea	062-5824-00	Data sheet, 013-0098-02

The new FET Tester Adapter circuit board, pn 670-0699-03, is the same as the old adapter circuit board, pn 670-0699-02, except for revised layout and the following part changes:

PARTS REMOVED:

2 ea	136-0257-00	Socket, plug-in transistor, 4 contact
1 ea	136-0329-00	Socket, plug-in transistor, 6 contact
1 ea	136-0332-00	Socket, plug-in transistor, 6 contact
2 ea	136-0434-00	Socket, plug-in transistor, 4 contact

PARTS ADDED:

2 ea	136-0257-01	Socket, plug-in transistor, 4 contact
1 ea	136-0329-01	Socket, plug-in transistor, 6 contact
1 ea	136-0332-01	Socket, plug-in transistor, 6 contact
2 ea	136-0434-01	Socket, plug-in transistor, 4 contact

ADAPTER REDESIGNED

Effective SN: NA

The electrical contact (pn 131-1079-00) used in the manufacture of the Integrated Circuit Adapter (pn 013-0124-00) was no longer available from the vendor. The available replacement connector required many changes to the adapter. Because of these changes, the part number of the adapter changed as shown below. Refer to the parts list below for additional details.

PARTS REMOVED:

1 ea	013-0124-01	Adapter, test, Integrated Circuit, w/test leads

PARTS ADDED:

1 ea	013-0124-03	Adapter, test, Integrated Circuit, w/test leads

The new Integrated Circuit Adapter with test leads, pn 013-0124-03, is the same as the old adapter with leads, pn 013-0124-01, except for the following:

PARTS REMOVED:

1 ea	013-0124-00	Adapter, test, Integrated Circuit
1 ea	070-1181-00	Sheet, tech, instr, Microckt Adapter

PARTS ADDED:

1 ea	013-0124-00	Adapter, test, Integrated Circuit
1 ea	070-4391-00	Manual, tech, instr, 576 IC Adapter

The new Integrated Circuit Adapter, pn 013-0124-02, is the same as the old adapter, pn 013-0124-00, except for the following:

PARTS REMOVED:

5 ea	134-0108-00	Plug, tip, u/w 0.169 ID jack, 6-32 ext thd
1 ea	134-0133-00	Dummy conn, plug, test adapter
1 ea	200-1198-01	Cover, test adapter
1 ea	670-1425-00	Circuit board, IC Adapter

PARTS ADDED:

5 ea	134-0108-03	Plug, tip, u/w 0.169 ID jack, 6-32 ext thd
1 ea	134-0133-03	Dummy conn, plug, test adapter
1 ea	200-1198-03	Cover, test adapter
1 ea	670-1425-01	Circuit board, IC Adapter

The new IC Adapter circuit board, pn 670-1425-01, is the same as the old circuit board, pn 670-1425-00, except for a revised layout and the following:

PARTS REMOVED:

44 ea	131-1079-00	Contact, electrical

PARTS ADDED:

6 ea	120-0407-00	Transformer, toriod, 5 turn
1 ea	131-1373-02	Connector, rcpt, ckt bd mount, 16 contact
6 ea	136-0261-00	Socket, pin terminal, u/w 0.022 to 0.025 pin
28 ea	136-0781-00	Socket, pin terminal, 0.036 - 0.04 dia
16 ea	276-0621-00	Core, em, toroid, ferrite, 0.75 OD x 0.035 ID

U51 REPLACEMENT

For TEKTRONIX® SCR Turn-Off Time Adapters, pn 035-5028-00

Serial Numbers 0000100 - 0000273

The included 555 timer microcircuit replaces the timer microcircuit, U51, on the SCR Turn-Off Time circuit board. The part number is the same (156-0402-00) for both the new and old microcircuits. Because of internal changes to the trigger circuit of the new microcircuit, the load resistor, R26, for transistor Q28 needs to be change from 56kΩ to 91kΩ to ensure proper triggering of the Turn-Off Timing circuit.

NOTE

If the serial number is greater than those listed above or if this kit has been previously installed, the instructions may be disregarded and the included microcircuit used as a direct replacement for U51.

KIT PARTS LIST:

Ckt. No.	Quantity	Part Number	Description
U51	1 ea	156-0402-00	Microcircuit. linear. timer. 8 DIP: 555
R26	1 ea	315-0913-00	Resistor. cmpsn. 91kΩ. 5%. 0.25W
	1 ea		Label. ident. 050-kit

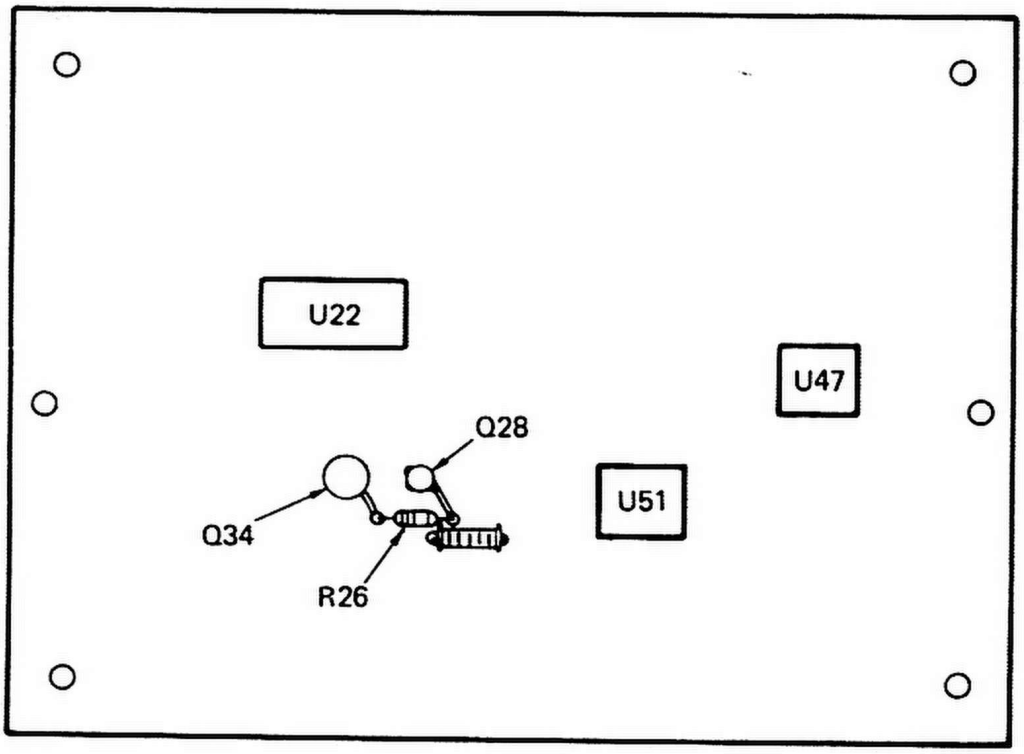


Fig. 1. Partial component locator for the SCR Turn-Off Time circuit board. showing locations for R26 and U51.

INSTRUCTIONS:

WARNING

Before proceeding, ensure the 577 D1/D2 POWER switch is in the OFF position, then disconnect the SCR Turn-Off Time Adapter from the 177 Test Fixture.

( ) 1. Rest the top of the adapter on the work surface.

( ) 2. Remove the eight pan head screws used to secure the two housing halves to the top and bottom of the adapter.

( ) 3. Remove the two housing halves.

( ) 4. Rotate the bottom of the adapter toward the side where the five contector plugs are located. This will provided access to the SCR Turn-Off Time circuit board.

( ) 5. Carefully unsolder the 56kΩ resistor, R26, from the SCR Turn-Off Time circuit board. Resistor R26 connects between the collector of transistor Q28 and the emitter of transistor Q34. See Fig. 1 for location.

( ) 6. Install and solder the new 91kΩ resistor into the mounting holes for resistor R26.

( ) 7. Replace microcircuit U51, on the SCR Turn-Off Time circuit board, with the microcircuit included in the kit. Refer to Fig. 1.

( ) 8. Rotate the adapter bottom back into its proper position.

( ) 9. Install and secure the right housing half, using four of the screws removed earlier. The right housing half is on the side where the five connector plugs are located.

( ) 10. Refer to the Calibration Section (5) of the 035-5028-00 SCR Turn-Off Time Adapter instruction manual and check instrument for proper operation, making any necessary adjustments.

( ) 11. Install and secure the left housing half, using the four remaining screws.

( ) 12. Remove the protective backing from the included 050-kit label and apply the label to a clean, dry area on the adapter bottom near the serial number.

( ) 13. Attach the following manual insert to the adapter instruction manual.

TEKTRONIX

MANUAL MODIFICATION INSERT

U51 REPLACEMENT

for

SCR Turn-Off Time Adapter. pn 035-5028-00

Serial Numbers 0000100 - 0000273

Installed in SN_____Date_____

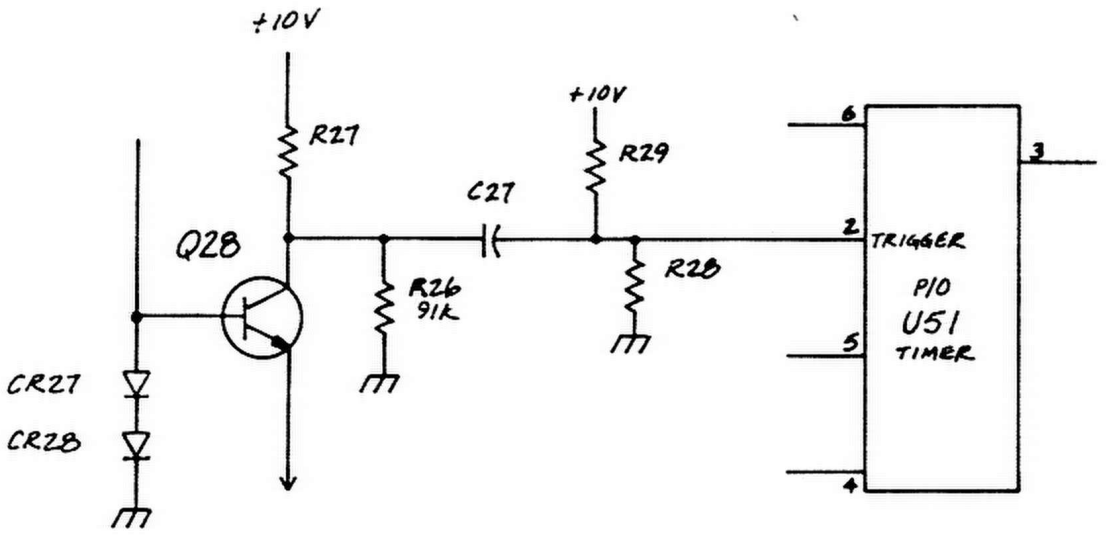
This modification insert is provided to supplement the manual for the above listed product(s). The information given in this insert supersedes that given in the manual.

GENERAL INFORMATION

The timer microcircuit. U51. was replaced with a microciruit which has different internal characteristics in the triggering circuit. The part number for the microcircuit remained 156-0402-00. To ensure proper triggering with the new microcircuit. the load resistor. R26. for transistor Q28 was changed from 56kΩ to 91kΩ.

REPLACEABLE ELECTRICAL PARTS

Ckt. No.	Tektronix Part Number	Description
U51	156-0402-00	Microcircuit, linear, timer, 8 DIP: 555
R26	315-0913-00	Resistor, cmpsn, 91kΩ, 5%, 0.25W



Partial SCR TURN-OFF TIME ADAPTER Schematic