

INSTRUCTION MANUAL

Serial Number _____

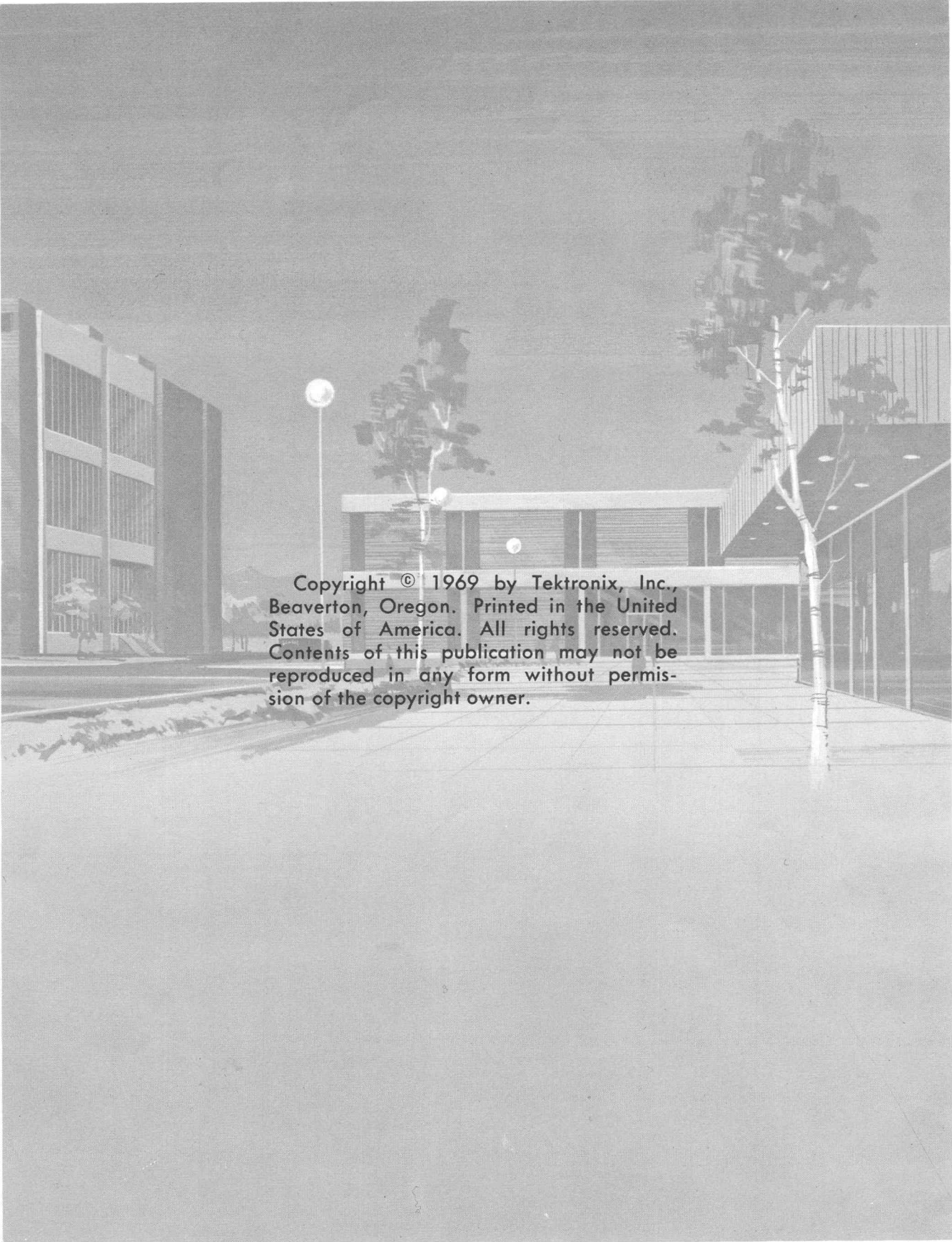
TYPE S-3110 OPERATING INSTRUCTIONS

Tektronix, Inc.

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070-3017-00

869

A black and white photograph of a modern building complex. The scene features a paved plaza in the foreground, a street lamp, and several trees. The buildings have a contemporary architectural style with large windows and flat roofs. The sky is clear and bright.

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OPERATING INSTRUCTIONS

TYPE S-3110

General

Control descriptions, installation procedures, turn-on instructions, etc., for the individual System instruments may be found in their respective Instruction Manuals. External System connections are listed under the IN/OUT Panel description in the Accessory Section of this Manual.

These instructions are provided to demonstrate the use of the Type S-3110 as an automated system for measuring the parameters of semi-conductor devices.

The Type R241 is the primary control instrument for automating a series of tests. Its facilities are used to control the programmable functions of the other instruments. Each of the Type R241's fifteen program cards has a 159-bit capacity. Since this capacity is sufficient to control all the programmable functions of the systems instruments, fifteen different tests may be automatically conducted on a given device. Test results are displayed in analog form on the Type R568 CRT and in numerical form on the Type R230. The results can also be subjected to limitative analysis (go-no-go) by the Type R230 circuitry. Data recording facilities are not provided with this system, but may be added, since the measurement results are available as an unused output from the Type R230.

A test fixture for holding the device under test, voltages for establishing the necessary operating conditions and input signals for stimulating the device are not a part of the Type S-3110. These items must be supplied by the operator.

To prepare for a series of tests, the operating conditions and stimulus signals must be set up, the device inserted in the test fixture, the instrument turn-on procedures completed, and the program unit programmed for the desired type of test. The programming used for each card will be dependent on such factors as type of device to be tested, desired information, intended disposition of an out-of-limits device, etc. Program Test Formats (Figures 1 through 15) are included in the First Time Operating information. Further programming procedures for the Type R241 cards are described in the Type R241 instruction manual.

FIRST TIME OPERATION

The following procedures are provided to demonstrate some typical automatic measurements using the three operating modes of the Type R241: Single Test, Manual Sequencing and Automatic Sequencing. Only the System's instruments are required for this demonstration, Programming of the Type R241 Program Cards required for this demonstration is in accordance with the Test Format sheets at the end of this section. Vertical deflection factor, sweep time and delay time are programmed to position the point of interest near the center of the CRT. Since the oscilloscope Calibrator output signals are applied simultaneously to the A and B Vertical channels, sufficient offset voltages are included to displace the display of the channel not being considered from the CRT center. These tests were selected primarily for operator familiarization, using only system instruments, and are not intended as demonstrations of the System's capabilities.

The fifteen Program Cards are programmed with the following demonstration tests listed in Table 1.

Equipment Setup Instructions:

1. Check the following cable connections:

J101 cable between J101 of the Type 230 and J202 of the Type 568.

J113 cable between J113 of the Type 568 and the S-3 Heads.

J201 cable between J201 of the Type 230 and J201 of the Type 241.

J202 cable between J202 of the Type 230 and J202 of the Type 241.

J203 cable between J203 of the Type 230 and J203 of the Type 241.

J204 cable between J204 of the Type 230 and J204 of the Type 241.

J224 cable between J224 of the Type 241 and J224 of the Type 568.

J214 cable between J214 of the Type 568 and J214 of the Type 241.

J303 cable between J303 of the Type 241 and J303 of the IN/OUT Panel.

TABLE 1

Test No.	Test Description	Measures or Demonstrates
1.	"A" Channel vertical amplitude	500 mV pulse amplitude of input signal
2.	"A" Channel pulse width	pulse width of input signal
3.	"A" period with high-speed function	period of input signal using high-speed function
4.	"B" Channel vertical amplitude	50 mV pulse amplitude of input signal
5.	"B" Channel pulse width	pulse width of input signal
6.	"B" pulse width with high-speed function	pulse width of input signal using high-speed function
7.	"A" Channel with chopper enabled	signal chopped between 500 mV and ground
8.	"B" Channel with chopper enabled	signal chopped between 50 mV and ground
9.	"A" Channel risetime	risetime of calibrator pulse, leading edge delayed to CRT center
10.	"B" Channel risetime	risetime of calibrator pulse, leading edge delayed to CRT center
11.	"A" Channel overlimits	upper limit is deliberately set below signal amplitude to show red light condition
12.	"A" Channel overlimits	lower limit is deliberately set above signal amplitude to show yellow light condition
13.	Dots/div check	sweep intensified between 10 and 90 mm lines
14.	Dots/div check	sweep intensified between 10 and 90 mm lines
15.	Dots/div check	sweep intensified between 10 and 90 mm lines

2. Connect the 5 V output of the Type R568 Calibrator to the "A" channel Vertical input. Use the following accessories: 50 Ω coaxial cable, BNC to probe tip adapter (Tektronix Part No. 013-0084-00), 10X probe attenuator (supplied with chopper), Signal Chopper (Tektronix Part No. 015-0128-01), S-3 Sampling Head.

3. Connect the .5 V output of the Type 568 Calibrator to the "B" channel Vertical input. Use the following accessories: 50 Ω coaxial cable, BNC to probe tip adapter (Tektronix Part No. 013-0084-00), 10X probe attenuator (supplied with chopper), Signal Chopper (Tektronix Part No. 015-0128-01), S-3 Sampling Head.

4. Connect the +Pre-Trigger output of the Type 568 through a 50 Ω coaxial cable to the Timebase BNC connector on the In/Out panel.

5. Connect the Type S-3110 to a suitable power source and turn on all instrument and System power switches.

6. While the instruments are warming up, set the front panel controls as follows:

Type R568

Intensity	Normal brightness
Focus	As desired
Scale illumination	As desired
Calibrator	100 kHz
CRT Cathode Selector (Rear panel switch)	Chopped Blanking

Type 3S6

Mode	Ext Prog
Invert (Both channels)	Normal
Other controls	As desired

Type 3T6

Program Selector	Ext
Trigger Mode	Ext, Auto
Trigger Polarity	+
Other controls	As desired

Type R230

Ref Zones	Both
Time Measurement	On
Measurement Mode	Ext Prog.
Display Time	Midrange
Triggered Measurement	Off

Type R241

Test Mode	Single (Select Test)
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7. Using the Type 3T6 Horizontal Pos Control, position the trace to start at the first graticule line.

the Type R230 and the Type 3T6 are externally programmed and that the Type R241 is ready to begin a test. Since the Test Mode switch is set to Single (Select Test), the Ready lamp should remain illuminated during this part of the demonstration. To perform this part of the demonstration, press each Test pushbutton in turn and note the CRT display and the Type R230 readout. When a Test pushbutton is pressed to an on position, its Active lamp should be illuminated. In this mode of operation, an activated test may be repeated by pressing the Advance switch. It is possible to de-activate all the tests by pressing one of the disabled Test pushbuttons partially in, until the Active lamp is extinguished, and then releasing the pushbutton.

Single Test Mode Demonstration

An illuminated Type R241 Ready lamp indicates that

As each Test is activated, look for the following display and readout indications as listed in Table 2.

TABLE 2

Test	CRT Display	Type 230 Readout
1.	Pulse waveform, 2.5 cm X 5 cm	.475 V to .575 V
2.	Pulse waveform, 5 cm X 5 cm	4.75 μ s to 5.25 μ s
3.	Pulse waveform, 2.5 cm X 2.5 cm	9.50 μ s to 10.50 μ s
4.	Pulse waveform, 1 cm X 5 cm	47. mV to 53. mV
5.	Pulse waveform, 1 cm X 5 cm	4.75 μ s to 5.25 μ s
6.	Pulse waveform, 1 cmX 5 cm	4.75 μ s to 5.25 μ s
7.	Chop action from ground reference to signal level, 2.5 cm change	.475 V to .525 V
8.	Chop action from ground reference to signal level, 1 cm change	47. mV to 53. mV
9.	Leading edge of a 2.5 cm pulse	.1 μ s to .5 μ s
10.	Leading edge of a 2.5 cm pulse	.1 μ s to .5 μ s
11.	Pulse waveform, 2.5 cm X 5 cm	(Both limits are programmed at .490 to light red lights on the Type R230 and Type R241)
12.	Pulse waveform, 2.4 cm X 5 cm	(Both limits are programmed at .510 to light yellow lights on the Type R230 and Type R241)
13.	Sweep intensified from 1 to 9 cm	7.76 ns to 8.24 ns
14.	Sweep intensified from 1 to 9 cm	15.52 ns to 16.48 ns
15.	Sweep intensified from 1 to 9 cm	38.8 ns to 41.2 ns

Manual Sequence Demonstration

Move the Type R241 Test Mode selector to the Manual position. This mode allows the operator to progress through a sequence of tests in ascending order, starting at Test No. 1, by pressing the Advance button once for each test. If any Test pushbutton is actuated, the sequence terminates at that test. After the last test in the sequence has been performed, pressing the Advance button once more resets the Type R241 to the Ready state and disables all tests. Resetting can be accomplished at any time by pressing the Reset button.

1. With all tests disabled, press the Advance button. The System should cycle through the first test and the number 1 Active lamp should be illuminated.
2. Press the Advance button again and the system should cycle through the second test. Repeat this procedure of pressing the Advance button to cycle the system through the next test until test number 15 is completed.
3. Press the Advance button again. The Type R241 should be returned to a ready state with all the tests disabled.
4. Press IN Test pushbutton Number 5 (or any other test).
5. Repeatedly press the Advance button to cycle the System through the tests and note that the sequence terminates with test number selected.

Automatic Sequencing Demonstration

Move the Type R230 Trigger Selector to ON.

Move the Test Mode selector to its Automatic position. In this mode of operation, pressing the Advance button will initiate an automatic progression through the tests com-

mencing with test Number 1. At the end of test Number 15, automatic Reset occurs. Automatic Reset may be programmed to occur at the end of any other test by pushing in the Test pushbutton of the desired test. If the Test pushbutton of test Number 5 is pressed in, when the Advance button is pressed, tests 1 through 5 are performed in sequence and at the end of test Number 5, automatic Reset occurs.

The Stop Sequence switches are operative only when the Test Mode switch is in Automatic Sequence position. Any combination of the three Stop Sequence switches may be actuated. The test sequence is stopped whenever a corresponding Limit lamp turns on. After an out-of-limit or within limits stop has been accomplished the sequence can be resumed by pressing the Advance button, or can be terminated by pressing the Reset button.

1. With all the tests disabled, press the Advance button. The System should sequence through all the tests and return to a Reset condition.
2. Press the Above Limits Stop Sequence button to its in position.
3. Press the Advance button. The System should sequence through the tests from 1 through 11 and stop. The above limits lamp should be illuminated. Press the Reset button.
4. Press the Above Limits Stop Sequence button to its OUT position. Press the Below Limits Stop Sequence button to its IN position.
5. Press the Advance button. The System should sequence through the tests from 1 through 12 and stop. The yellow below limits lamp should be illuminated.

This concludes the demonstration procedure.

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS												
A		B		SEC/DIV T x 10 ^{-E}		DELAY		REF.		ZONES		START		STOP		UPPER		LOWER		
<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> E=3	<input type="radio"/> E=4	<input type="radio"/> 8000	<input type="radio"/> 4000	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 0%	<input type="radio"/> B	<input type="radio"/> CH B [A]	<input type="radio"/> - [H]	<input type="radio"/> 2000	<input type="radio"/> 1000	<input type="radio"/> 800	<input type="radio"/> 400	<input type="radio"/> 200	<input type="radio"/> 100	
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> E=2	<input type="radio"/> E=1	<input type="radio"/> 2000	<input type="radio"/> 1000	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 2%	<input type="radio"/> 2	<input type="radio"/> HOR mm	<input type="radio"/> 2000	<input type="radio"/> 1000	<input type="radio"/> 400	<input type="radio"/> 200	<input type="radio"/> 100	<input type="radio"/> 200	<input type="radio"/> 100	
<input type="radio"/> + [-]	<input type="radio"/> + [-]	<input type="radio"/> OFFSET	<input type="radio"/> + [-]	<input type="radio"/> E=10	<input type="radio"/> E=10	<input type="radio"/> 800	<input type="radio"/> 400	<input type="radio"/> 1/2	<input type="radio"/> 1/2	<input type="radio"/> REF	<input type="radio"/> FROM 100%	<input type="radio"/> FROM 100%	<input type="radio"/> - [H]	<input type="radio"/> 800	<input type="radio"/> 400	<input type="radio"/> 200	<input type="radio"/> 100	<input type="radio"/> 800	<input type="radio"/> 400	
<input type="radio"/> Center	<input type="radio"/> Center	<input type="radio"/> mV	<input type="radio"/> Center	<input type="radio"/> Center	<input type="radio"/> Center	<input type="radio"/> 200	<input type="radio"/> 100	<input type="radio"/> PEAK 4	<input type="radio"/> PEAK 4	<input type="radio"/> [AVG]	<input type="radio"/> PEAK 2	<input type="radio"/> - [H]	<input type="radio"/> 200	<input type="radio"/> 100	<input type="radio"/> 80	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 80	<input type="radio"/> 40
<input type="radio"/> Screen	<input type="radio"/> Screen	<input type="radio"/> 80	<input type="radio"/> 40	<input type="radio"/> T=4	<input type="radio"/> T=2	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> PEAK 2	<input type="radio"/> PEAK 2	<input type="radio"/> [SLOPE]	<input type="radio"/> 2nd [1st]	<input type="radio"/> SLOPE	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10
<input type="radio"/> Voltage	<input type="radio"/> Voltage	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> T=1	<input type="radio"/> T=1	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> PEAK 1	<input type="radio"/> PEAK 1	<input type="radio"/> [2nd]	<input type="radio"/> 1st	<input type="radio"/> 2nd [1st]	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 10
<input type="radio"/> 800	<input type="radio"/> 800	<input type="radio"/> PIN 9	<input type="radio"/> PIN 9	<input type="radio"/> PIN 9	<input type="radio"/> PIN 9	<input type="radio"/> 80	<input type="radio"/> 40	<input type="radio"/> A. CHOP	<input type="radio"/> A. CHOP	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 80	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 80	<input type="radio"/> 40
<input type="radio"/> 400	<input type="radio"/> 400	<input type="radio"/> PIN 10	<input type="radio"/> PIN 10	<input type="radio"/> PIN 10	<input type="radio"/> PIN 10	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> VOLTS	<input type="radio"/> VOLTS	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 40	<input type="radio"/> 20	<input type="radio"/> 10
<input type="radio"/> 200	<input type="radio"/> 200	<input type="radio"/> PIN 11	<input type="radio"/> PIN 11	<input type="radio"/> PIN 11	<input type="radio"/> PIN 11	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> [TIME]	<input type="radio"/> [TIME]	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 20	<input type="radio"/> 10	<input type="radio"/> 10
<input type="radio"/> 100	<input type="radio"/> 100	<input type="radio"/> PIN 12	<input type="radio"/> PIN 12	<input type="radio"/> PIN 12	<input type="radio"/> PIN 12	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> HI SPEED	<input type="radio"/> HI SPEED	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 10
<input type="radio"/> SPARES	<input type="radio"/> SPARES	<input type="radio"/> PIN 13	<input type="radio"/> PIN 13	<input type="radio"/> PIN 13	<input type="radio"/> PIN 13	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> PCAL	<input type="radio"/> PCAL	<input type="radio"/> 1/2	<input type="radio"/> 1/2	<input type="radio"/> 1/2	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 8	<input type="radio"/> 4	<input type="radio"/> 2
<input type="radio"/> ON J303	<input type="radio"/> ON J303	<input type="radio"/> PIN 14	<input type="radio"/> PIN 14	<input type="radio"/> PIN 14	<input type="radio"/> PIN 14	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> [NORMAL]	<input type="radio"/> [NORMAL]	<input type="radio"/> PEAK 4	<input type="radio"/> PEAK 4	<input type="radio"/> PEAK 2	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 4	<input type="radio"/> 2	<input type="radio"/> 1
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> PIN 15	<input type="radio"/> PIN 15	<input type="radio"/> PIN 15	<input type="radio"/> PIN 15	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> [AVG]	<input type="radio"/> [AVG]	<input type="radio"/> A. CHOP	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> PIN 16	<input type="radio"/> PIN 16	<input type="radio"/> PIN 16	<input type="radio"/> PIN 16	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> PEAK 2	<input type="radio"/> PEAK 2	<input type="radio"/> B. CHOP	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> A. CHOP	<input type="radio"/> A. CHOP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.

[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.

▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information.

TEST NUMBER 1 TEST DESCRIPTION "A" channel vertical pulse amplitude.

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output from the Type R568 Calibrator.

NOTE: Draw heavy lines between circles to indicate diode positions.



Figure 1

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 355/356 VERTICAL		TYPE 375/376 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS									
A		B		REF.		ZONES		START		STOP		UPPER		LOWER			
SENSITIVITY 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> 0.5 <input type="radio"/>		SENSITIVITY 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> 0.5 <input type="radio"/>		E=8 <input type="radio"/> E=4 <input type="radio"/> E=2 <input type="radio"/> E=1 <input type="radio"/> [E=10]		POSITION 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		POSITION 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		CH B [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]		CH B [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]		- [H] <input type="radio"/> 2000 <input type="radio"/> 1000 <input type="radio"/>		- [H] <input type="radio"/> 2000 <input type="radio"/> 1000 <input type="radio"/>	
OFFSET Center Screen Voltage		OFFSET Center Screen Voltage		1/2 <input type="radio"/> PEAK 1 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>		FROM 100% [0%] <input type="radio"/> - [H] SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>		FROM 100% [0%] <input type="radio"/> - [H] SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>		REF FROM 100% [0%] <input type="radio"/> - [H] SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>		800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100 <input type="radio"/>		800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100 <input type="radio"/>		800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100 <input type="radio"/>	
mV		mV		A 100% POSITION 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		B 100% POSITION 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		START LEVEL 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10 <input type="radio"/>		STOP LEVEL 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10 <input type="radio"/>		80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10 <input type="radio"/>		80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10 <input type="radio"/>		80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10 <input type="radio"/>	
SPARES ON J303		SPARES ON J303		PIN 9 <input type="radio"/> PIN 10 <input type="radio"/> PIN 11 <input type="radio"/> PIN 12 <input type="radio"/>		PIN 13 <input type="radio"/> PIN 14 [AVG] <input type="radio"/> PIN 15 <input type="radio"/> PIN 16 <input type="radio"/>		RESET INHIBIT [NORMAL] <input type="radio"/>		RESET INHIBIT [NORMAL] <input type="radio"/>		EX - 2 [NORMAL] <input type="radio"/>		EX - 2 [NORMAL] <input type="radio"/>		EX - 2 [NORMAL] <input type="radio"/>	
SMOOTH [NORMAL] <input type="radio"/>		HI SPEED PGM [NORMAL] <input type="radio"/>		VOLTS [TIME] <input type="radio"/>		AVERAGE OF 8 [NORMAL] <input type="radio"/>		B CHOP <input type="radio"/>		A CHOP <input type="radio"/>		8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>		8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED. [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information. TEST NUMBER 2 TEST DESCRIPTION "A" channel pulse width. NOTE: Draw heavy lines between circles to indicate diode positions.

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 Calibrator.

Figure 2

TYPE 241 TEST FORMAT

TYPE 355/356 VERTICAL		TYPE 375/376 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS	
				ZONES					
				A 0% POSITION	B 0% POSITION	START	STOP	UPPER	LOWER
<input type="radio"/> A	SENSITIVITY 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + [-]	<input type="radio"/> B	SENSITIVITY 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + [-]	<input type="radio"/> 8	<input type="radio"/> 8	CH 8 [A]	CH 8 [A]	<input type="radio"/> - [H]	<input type="radio"/> - [H]
<input type="radio"/> 800	OFFSET Center Screen Voltage	<input type="radio"/> 800	OFFSET Center Screen Voltage	<input type="radio"/> 4	<input type="radio"/> 4	HOR mm	HOR mm	<input type="radio"/> 2000	<input type="radio"/> 2000
<input type="radio"/> 400	mV	<input type="radio"/> 400	mV	<input type="radio"/> 2	<input type="radio"/> 2	%	%	<input type="radio"/> 1000	<input type="radio"/> 1000
<input type="radio"/> 200		<input type="radio"/> 200		<input type="radio"/> 1	<input type="radio"/> 1	mm BELOW [ABOVE]	mm BELOW [ABOVE]	<input type="radio"/> 800	<input type="radio"/> 800
<input type="radio"/> 100		<input type="radio"/> 100		<input type="radio"/> 1/2	<input type="radio"/> 1/2	FROM 100% [0%] - [H] SLOPE 2nd [1st]	FROM 100% [0%] - [H] SLOPE 2nd [1st]	<input type="radio"/> 400	<input type="radio"/> 400
<input type="radio"/> 80		<input type="radio"/> 80		<input type="radio"/> PEAK 4 [AVG] PEAK 2	<input type="radio"/> PEAK 4 [AVG] PEAK 2	START LEVEL	STOP LEVEL	<input type="radio"/> 200	<input type="radio"/> 200
<input type="radio"/> 40		<input type="radio"/> 40		<input type="radio"/> A 100% POSITION	<input type="radio"/> A 100% POSITION	<input type="radio"/> 80	<input type="radio"/> 80	<input type="radio"/> 100	<input type="radio"/> 100
<input type="radio"/> 20		<input type="radio"/> 20		<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 40	<input type="radio"/> 40	<input type="radio"/> 80	<input type="radio"/> 80
<input type="radio"/> 10		<input type="radio"/> 10		<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 20	<input type="radio"/> 20	<input type="radio"/> 40	<input type="radio"/> 40
<input type="radio"/> 5		<input type="radio"/> 5		<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 10	<input type="radio"/> 10	<input type="radio"/> 20	<input type="radio"/> 20
<input type="radio"/> PIN 3		<input type="radio"/> PIN 3		<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 10	<input type="radio"/> 10
<input type="radio"/> PIN 4		<input type="radio"/> PIN 4		<input type="radio"/> 1/2	<input type="radio"/> 1/2	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> PIN 5		<input type="radio"/> PIN 5		<input type="radio"/> PEAK 4 [AVG] PEAK 2	<input type="radio"/> PEAK 4 [AVG] PEAK 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> SPARES ON J303		<input type="radio"/> SPARES ON J303		<input type="radio"/> A CHOP	<input type="radio"/> A CHOP	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> [NORMAL]		<input type="radio"/> [NORMAL]		<input type="radio"/> VOLTS [TIME]	<input type="radio"/> VOLTS [TIME]	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 800		<input type="radio"/> 800		<input type="radio"/> AVERAGE OF 8	<input type="radio"/> AVERAGE OF 8	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 400		<input type="radio"/> 400		<input type="radio"/> HI SPEED PGM	<input type="radio"/> HI SPEED PGM	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 200		<input type="radio"/> 200		<input type="radio"/> [NORMAL]	<input type="radio"/> [NORMAL]	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 100		<input type="radio"/> 100		<input type="radio"/> RESET INHIBIT	<input type="radio"/> RESET INHIBIT	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 80		<input type="radio"/> 80		<input type="radio"/> [NORMAL]	<input type="radio"/> [NORMAL]	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 40		<input type="radio"/> 40		<input type="radio"/> EX - 2	<input type="radio"/> EX - 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 20		<input type="radio"/> 20		<input type="radio"/> [NORMAL]	<input type="radio"/> [NORMAL]	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 10		<input type="radio"/> 10		<input type="radio"/> [NORMAL]	<input type="radio"/> [NORMAL]	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 1	<input type="radio"/> 1

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.
 [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information. NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 4 TEST DESCRIPTION "B" channel vertical amplitude.

PROGRAM NOTES Input signal is the 100-kHz, 50 mV output of the Type R568 Calibrator.

Figure 4

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS	
A	B	SEC/DW	DELAY	REF. A 0%	REF. B 0%	START	STOP	UPPER	LOWER
SENSITIVITY 4 2 1 + [-]	SENSITIVITY 4 2 1 + [-]	1 X 10 ^{-E} E=8 E=4 E=2 E=1 [E=10]	8000 4000 2000 1000	POSITION 8 4 2 1	POSITION 8 4 2 1	CH B [A] HOR mm % mm BELOW [ABOVE]	CH B [A] HOR mm % mm BELOW [ABOVE]	- [H] 2000 1000	- [H] 2000 1000
OFFSET Center Screen Voltage mV 800 400 200 100	OFFSET Center Screen Voltage mV 800 400 200 100	T=4 T=2 T=1	800 400 200 100	1/2 PEAK 4 PEAK 1 PEAK 2	1/2 PEAK 4 PEAK 1 PEAK 2	REF FROM 100% [0%] - [H] SLOPE 2nd [1st]	REF FROM 100% [0%] - [H] SLOPE 2nd [1st]	800 400 200 100	800 400 200 100
80 40 20 10	80 40 20 10	PIN 9 PIN 10 PIN 11 PIN 12	80 40 20 10	A 100% POSITION 8 4 2 1	B 100% POSITION 8 4 2 1	START LEVEL 80 40 20 10	STOP LEVEL 80 40 20 10	80 40 20 10	80 40 20 10
5 PIN 3 PIN 4 PIN 5	5 PIN 6 PIN 7 PIN 8	PIN 13 PIN 14 PIN 15 PIN 16	8 4 2 1	1/2 PEAK 4 [AVG] PEAK 2	1/2 PEAK 4 [AVG] PEAK 2	8 4 2 1	8 4 2 1	8 4 2 1	8 4 2 1
SMOOTH [NORMAL]	SPARES ON 1303	SPARES ON 1303	HI SPEED PGM [NORMAL]	VOLTS [TIME]	AVERAGE OF 8 [NORMAL]	RESET INHIBIT [NORMAL]	RESET INHIBIT [NORMAL]	EX - 2 [NORMAL]	EX - 2 [NORMAL]

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.

[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information.

NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 5 TEST DESCRIPTION "B" channel pulse width.

PROGRAM NOTES Input signal is the 100-kHz, 50-mV output of the Type R568 Calibrator.

Figure 5

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR		LIMITS									
A		B		REF.		ZONES		START		STOP		UPPER		LOWER	
SENSITIVITY		SENSITIVITY		POSITION		POSITION		CH B [A]		CH B [A]		- [H]		- [H]	
4		4		8		8		HOR mm		HOR mm		2000		2000	
2		2		4		4		%		%		1000		1000	
1		1		2		2		mm		mm		200		200	
+ [-]		+ [-]		1		1		BELOW [ABOVE]		BELOW [ABOVE]		100		100	
OFFSET		OFFSET		1/2		1/2		REF		REF		800		800	
Center		Center		PEAK 4		PEAK 4		FROM 100%		FROM 100%		400		400	
Screen		Screen		[AVG]		[AVG]		[0%]		[0%]		200		200	
Voltage		Voltage		PEAK 2		PEAK 2		- [H]		- [H]		100		100	
mV		mV		1		1		SLOPE		SLOPE		80		80	
800		800		A 100%		A 100%		2nd [1st]		2nd [1st]		40		40	
400		400		POSITION		POSITION		REF		REF		20		20	
200		200		8		8		START LEVEL		START LEVEL		10		10	
100		100		4		4		80		80		8		8	
80		80		2		2		40		40		4		4	
40		40		1		1		20		20		2		2	
20		20		1/2		1/2		10		10		1		1	
10		10		VOLTS [TIME]		VOLTS [TIME]		RESET INHIBIT [NORMAL]		RESET INHIBIT [NORMAL]		EX - 2		EX - 2 [NORMAL]	
5		5		A CHOP		A CHOP		B CHOP		B CHOP		1		1	
PIN 3		PIN 3		B CHOP		B CHOP		AVERAGE		AVERAGE		8		8	
PIN 4		PIN 4		HI SPEED PCGM [NORMAL]		HI SPEED PCGM [NORMAL]		OP 8		OP 8		4		4	
PIN 5		PIN 5		SPARES ON J303		SPARES ON J303		[NORMAL]		[NORMAL]		2		2	
PIN 6		PIN 6		SMOOTH [NORMAL]		SMOOTH [NORMAL]		AVERAGE		AVERAGE		1		1	
PIN 7		PIN 7		[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.		[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.		OP 8		OP 8		8		8	
PIN 8		PIN 8		FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.		FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.		RESET INHIBIT [NORMAL]		RESET INHIBIT [NORMAL]		4		4	
SPARES ON J303		SPARES ON J303		[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.		[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.		B CHOP		B CHOP		2		2	
SMOOTH [NORMAL]		SMOOTH [NORMAL]		SEE PROGRAMMING INFORMATION DRAWER.		SEE PROGRAMMING INFORMATION DRAWER.		A CHOP		A CHOP		1		1	

See back side of Format for additional programming information.

TEST NUMBER 6 TEST DESCRIPTION "B" channel pulse width with high speed function programmed.

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 Calibrator.

Figure 6

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 355/356 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS									
A		B		REF.		ZONES		START		STOP		UPPER		LOWER			
SENSITIVITY 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		SENSITIVITY 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		CH B [A] <input type="radio"/> <input type="radio"/>		CH B [A] <input type="radio"/> <input type="radio"/>		— [H] <input type="radio"/> <input type="radio"/>		— [H] <input type="radio"/> <input type="radio"/>	
2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		HOR mm <input type="radio"/> <input type="radio"/>		HOR mm <input type="radio"/> <input type="radio"/>		2000 <input type="radio"/> <input type="radio"/>		2000 <input type="radio"/> <input type="radio"/>	
1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		% <input type="radio"/> <input type="radio"/>		% <input type="radio"/> <input type="radio"/>		1000 <input type="radio"/> <input type="radio"/>		1000 <input type="radio"/> <input type="radio"/>	
+ [-] <input type="radio"/> <input type="radio"/>		+ [-] <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		BELOW [ABOVE] <input type="radio"/> <input type="radio"/>		BELOW [ABOVE] <input type="radio"/> <input type="radio"/>		1000 <input type="radio"/> <input type="radio"/>		1000 <input type="radio"/> <input type="radio"/>	
OFFSET Center Screen Voltage		OFFSET Center Screen Voltage		1/2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		1/2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		1/2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		FROM 100% [0%] <input type="radio"/> <input type="radio"/>		FROM 100% [0%] <input type="radio"/> <input type="radio"/>		800 <input type="radio"/> <input type="radio"/>		800 <input type="radio"/> <input type="radio"/>	
mV 800 <input type="radio"/> <input type="radio"/>		mV 800 <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		— [H] <input type="radio"/> <input type="radio"/>		— [H] <input type="radio"/> <input type="radio"/>		400 <input type="radio"/> <input type="radio"/>		400 <input type="radio"/> <input type="radio"/>	
400 <input type="radio"/> <input type="radio"/>		400 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		SLOPE 2nd [1st] <input type="radio"/> <input type="radio"/>		SLOPE 2nd [1st] <input type="radio"/> <input type="radio"/>		200 <input type="radio"/> <input type="radio"/>		200 <input type="radio"/> <input type="radio"/>	
200 <input type="radio"/> <input type="radio"/>		200 <input type="radio"/> <input type="radio"/>		A 100% POSITION 8 <input type="radio"/> <input type="radio"/>		A 100% POSITION 8 <input type="radio"/> <input type="radio"/>		A 100% POSITION 8 <input type="radio"/> <input type="radio"/>		START LEVEL 80 <input type="radio"/> <input type="radio"/>		START LEVEL 80 <input type="radio"/> <input type="radio"/>		100 <input type="radio"/> <input type="radio"/>		100 <input type="radio"/> <input type="radio"/>	
100 <input type="radio"/> <input type="radio"/>		100 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		40 <input type="radio"/> <input type="radio"/>		40 <input type="radio"/> <input type="radio"/>		80 <input type="radio"/> <input type="radio"/>		80 <input type="radio"/> <input type="radio"/>	
80 <input type="radio"/> <input type="radio"/>		80 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		20 <input type="radio"/> <input type="radio"/>		20 <input type="radio"/> <input type="radio"/>		40 <input type="radio"/> <input type="radio"/>		40 <input type="radio"/> <input type="radio"/>	
40 <input type="radio"/> <input type="radio"/>		40 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>		10 <input type="radio"/> <input type="radio"/>		10 <input type="radio"/> <input type="radio"/>		20 <input type="radio"/> <input type="radio"/>		20 <input type="radio"/> <input type="radio"/>	
20 <input type="radio"/> <input type="radio"/>		20 <input type="radio"/> <input type="radio"/>		1/2 <input type="radio"/> <input type="radio"/>		1/2 <input type="radio"/> <input type="radio"/>		1/2 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		10 <input type="radio"/> <input type="radio"/>		10 <input type="radio"/> <input type="radio"/>	
10 <input type="radio"/> <input type="radio"/>		10 <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		PEAK 4 [AVG] <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>	
5 <input type="radio"/> <input type="radio"/>		5 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		PEAK 2 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>	
PIN 3 <input type="radio"/> <input type="radio"/>		PIN 6 <input type="radio"/> <input type="radio"/>		A CHOP <input type="radio"/> <input type="radio"/>		A CHOP <input type="radio"/> <input type="radio"/>		A CHOP <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>		2 <input type="radio"/> <input type="radio"/>	
PIN 4 <input type="radio"/> <input type="radio"/>		PIN 7 <input type="radio"/> <input type="radio"/>		AVERAGE OF 8 [NORMAL]		AVERAGE OF 8 [NORMAL]		AVERAGE OF 8 [NORMAL]		1 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>		1 <input type="radio"/> <input type="radio"/>	
PIN 5 <input type="radio"/> <input type="radio"/>		PIN 8 <input type="radio"/> <input type="radio"/>		VOLTS [TIME]		VOLTS [TIME]		VOLTS [TIME]		RESET INHIBIT [NORMAL]		RESET INHIBIT [NORMAL]		RESET INHIBIT [NORMAL]		RESET INHIBIT [NORMAL]	
SMOOTH [NORMAL]		SPARES ON J303		HI SPEED PGM. [NORMAL]		HI SPEED PGM. [NORMAL]		HI SPEED PGM. [NORMAL]		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>		8 <input type="radio"/> <input type="radio"/>	
[NORMAL]		ON J303		[NORMAL]		[NORMAL]		[NORMAL]		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>		4 <input type="radio"/> <input type="radio"/>	

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED. [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information. "A" channel, vertical amplitude with the signal chopper enabled. NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 7 TEST DESCRIPTION

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 calibrator.

Figure 7

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS			
A	SENSITIVITY 4 <input type="radio"/> <input checked="" type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + <input type="radio"/> [-] <input type="radio"/>	B	SENSITIVITY 4 <input type="radio"/> <input checked="" type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + <input type="radio"/> [-] <input type="radio"/>	SEC/DIV T x 10 ⁻⁵ E=8 <input type="radio"/> <input type="radio"/> E=4 <input type="radio"/> <input type="radio"/> E=2 <input type="radio"/> <input type="radio"/> E=1 <input type="radio"/> <input type="radio"/> [E=10]	DELAY 8000 <input type="radio"/> <input type="radio"/> 4000 <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/>	A 0% POSITION 8 <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/>	B 0% POSITION 8 <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/>	START CH B [A] <input type="radio"/> <input type="radio"/> HOR mm <input type="radio"/> <input type="radio"/> % <input type="radio"/> <input type="radio"/> mm <input type="radio"/> <input type="radio"/> BELOW <input type="radio"/> <input type="radio"/> [ABOVE]	STOP CH B [A] <input type="radio"/> <input type="radio"/> HOR mm <input type="radio"/> <input type="radio"/> % <input type="radio"/> <input type="radio"/> mm <input type="radio"/> <input type="radio"/> BELOW <input type="radio"/> <input type="radio"/> [ABOVE]	UPPER - [-] <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/>	LOWER - [-] <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/>
<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100	<input type="radio"/> 800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100
<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10	<input type="radio"/> 80 <input type="radio"/> 40 <input type="radio"/> 20 <input type="radio"/> 10
<input type="radio"/> 5 <input type="radio"/> PIN 3 <input type="radio"/> PIN 4 <input type="radio"/> PIN 5	<input type="radio"/> 5 <input type="radio"/> PIN 6 <input type="radio"/> PIN 7 <input type="radio"/> PIN 8	<input type="radio"/> PIN 9 <input type="radio"/> PIN 10 <input type="radio"/> PIN 11 <input type="radio"/> PIN 12	<input type="radio"/> PIN 13 <input type="radio"/> PIN 14 <input type="radio"/> PIN 15 <input type="radio"/> PIN 16	<input type="radio"/> SPARES ON 1303	<input type="radio"/> HI SPEED PCM <input type="radio"/> [NORMAL]	<input type="radio"/> 1/2 <input type="radio"/> PEAK 4 <input type="radio"/> AVG 2 <input type="radio"/> PEAK 2 <input type="radio"/> A CHOP <input type="radio"/> VOLTS [TIME]	<input type="radio"/> 1/2 <input type="radio"/> PEAK 4 <input type="radio"/> AVG 2 <input type="radio"/> PEAK 2 <input type="radio"/> B CHOP <input type="radio"/> AVERAGE OF 8 [NORMAL]	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1
<input type="radio"/> SMOOTH [NORMAL]	<input type="radio"/> SPARES ON 1303	<input type="radio"/> PIN 9 <input type="radio"/> PIN 10 <input type="radio"/> PIN 11 <input type="radio"/> PIN 12	<input type="radio"/> PIN 13 <input type="radio"/> PIN 14 <input type="radio"/> PIN 15 <input type="radio"/> PIN 16	<input type="radio"/> SPARES ON 1303	<input type="radio"/> HI SPEED PCM <input type="radio"/> [NORMAL]	<input type="radio"/> 1/2 <input type="radio"/> PEAK 4 <input type="radio"/> AVG 2 <input type="radio"/> PEAK 2 <input type="radio"/> A CHOP <input type="radio"/> VOLTS [TIME]	<input type="radio"/> 1/2 <input type="radio"/> PEAK 4 <input type="radio"/> AVG 2 <input type="radio"/> PEAK 2 <input type="radio"/> B CHOP <input type="radio"/> AVERAGE OF 8 [NORMAL]	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1	<input type="radio"/> 8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1
<input type="radio"/> RESET INHIBIT [NORMAL]	<input type="radio"/> EX - 2 [NORMAL]										

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.

[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.

▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information.

NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 8 TEST DESCRIPTION "B" channel, vertical amplitude with the signal chopper unit enabled.

PROGRAM NOTES Input signal is the 100-kHz, 50-mV output of the Type R568 Calibrator.

Figure 8

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 355/356 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS									
A		B		DELAY		REF.		ZONES		START		STOP		UPPER		LOWER	
SENSITIVITY		SENSITIVITY		8000		POSITION		POSITION		CH B [A]		CH B [A]		- [-]		- [-]	
4		4		8000		8		8		HOR mm		HOR mm		2000		2000	
2		2		4000		4		4		%		%		1000		1000	
1		1		2000		2		2		min		min		200		200	
+ [-]		+ [-]		1000		1		1		BELOW [ABOVE]		BELOW [ABOVE]		100		100	
OFFSET		OFFSET		800		1/2		1/2		REF		REF		800		800	
Center		Center		400		PEAK 4		PEAK 4		FROM 100%		FROM 100%		400		400	
Screen		Screen		200		[AVG]		[AVG]		[0%]		[0%]		200		200	
Voltage		Voltage		100		PEAK 2		PEAK 2		- [-]		- [-]		100		100	
mV		mV		80		1		1		SLOPE		SLOPE		80		80	
800		800		80		A 100%		A 100%		2nd [1st]		2nd [1st]		40		40	
400		400		40		POSITION		POSITION		STOP LEVEL		STOP LEVEL		20		20	
200		200		20		8		8		80		80		10		10	
100		100		10		4		4		40		40		8		8	
80		80		80		2		2		20		20		4		4	
40		40		40		1		1		10		10		2		2	
20		20		20		1/2		1/2		8		8		1		1	
10		10		10		PEAK 4		PEAK 4		4		4		8		8	
5		5		8		[AVG]		[AVG]		2		2		4		4	
PIN 3		PIN 6		4		PEAK 2		PEAK 2		1		1		2		2	
PIN 4		PIN 7		2		A CHOP		A CHOP		RESET		RESET		1		1	
PIN 5		PIN 8		1		VOLTS		VOLTS		INHIBIT		INHIBIT		EX - 2		EX - 2	
SMOOTH		SPARES		HI SPEED		[TIME]		[TIME]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]	
[NORMAL]		ON J303		PGR		AVERAGE		AVERAGE		OF 8		OF 8		OF 8		OF 8	
				[NORMAL]													

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.
 [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.



See back side of Format for additional programming information. NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 9 TEST DESCRIPTION "A" channel, risetime.
 PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 Calibrator.

Figure 9

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS												
A		B		SEC/DIV		DELAY		REF.		ZONES		START		STOP		UPPER		LOWER		
SENSITIVITY	4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + [-] <input type="radio"/>	SENSITIVITY	4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/> + [-] <input type="radio"/>	T x 10 ^{-E}	E=8 <input type="radio"/> E=4 <input type="radio"/> E=2 <input type="radio"/> E=1 <input type="radio"/> [B=10]	8000 <input type="radio"/> 4000 <input type="radio"/> 2000 <input type="radio"/> 1000 <input type="radio"/>	CH 8 [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]	CH 8 [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	CH 8 [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]	CH 8 [A] <input type="radio"/> HOR mm <input type="radio"/> % <input type="radio"/> mm BELOW [ABOVE]	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>
OFFSET	Center Screen Voltage	OFFSET	Center Screen Voltage	mV	800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100 <input type="radio"/>	800 <input type="radio"/> 400 <input type="radio"/> 200 <input type="radio"/> 100 <input type="radio"/>	REF FROM 100% [0%] <input type="radio"/> - [H] <input type="radio"/> SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>	REF FROM 100% [0%] <input type="radio"/> - [H] <input type="radio"/> SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	FROM 100% [0%] <input type="radio"/> - [H] <input type="radio"/> SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>	FROM 100% [0%] <input type="radio"/> - [H] <input type="radio"/> SLOPE <input type="radio"/> 2nd [1st] <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>
SPARES ON J303	SPARES ON J303	PIN 9 <input type="radio"/> PIN 10 <input type="radio"/> PIN 11 <input type="radio"/> PIN 12 <input type="radio"/>	PIN 9 <input type="radio"/> PIN 10 <input type="radio"/> PIN 11 <input type="radio"/> PIN 12 <input type="radio"/>	SPARES ON J303	SPARES ON J303	SPARES ON J303	SPARES ON J303	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	START LEVEL	START LEVEL	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	POSITION	8 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 1 <input type="radio"/>	
SMOOTH <input type="radio"/> [NORMAL]	SMOOTH <input type="radio"/> [NORMAL]	SPARES ON J303	SPARES ON J303	HI SPEED PCM <input type="radio"/> [NORMAL]	HI SPEED PCM <input type="radio"/> [NORMAL]	HI SPEED PCM <input type="radio"/> [NORMAL]	HI SPEED PCM <input type="radio"/> [NORMAL]	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/> A. CHOP <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/> B. CHOP <input type="radio"/>	RESET INHIBIT <input type="radio"/> [NORMAL]	RESET INHIBIT <input type="radio"/> [NORMAL]	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	POSITION	1/2 <input type="radio"/> PEAK 4 [AVG] <input type="radio"/> PEAK 2 <input type="radio"/>	
EX -- 2 <input type="radio"/> [NORMAL]	EX -- 2 <input type="radio"/> [NORMAL]																			

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.

[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED.

▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information.

NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 10 TEST DESCRIPTION "B" channel, risetime.

PROGRAM NOTES Input signal is the 100-k-Hz, 50-mV output of the Type R568 Calibrator.

Figure 10

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 3S5/3S6 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS							
A		B		REF.		ZONES		START		STOP		UPPER		LOWER	
SENSITIVITY		SENSITIVITY		POSITION		POSITION		CH B [A]		CH B [A]		- [H]		- [H]	
4		4		8		8		HOR mm		HOR mm		2000		2000	
2		2		4		4		%		%		1000		1000	
1		1		2		2		mm BELOW [ABOVE]		mm BELOW [ABOVE]		1000		1000	
+ [-]		+ [-]		1		1		mm BELOW [ABOVE]		mm BELOW [ABOVE]		1000		1000	
OFFSET		OFFSET		1/2		1/2		REF		REF		800		800	
Center		Center		PEAK 4		PEAK 4		FROM 100%		FROM 100%		400		400	
Screen		Screen		[AVG]		[AVG]		[0%]		[0%]		200		200	
Voltage		Voltage		PEAK 2		PEAK 2		- [H]		- [H]		100		100	
mV		mV		PEAK 2		PEAK 2		SLOPE		SLOPE		100		100	
800		800		1		1		2nd [1st]		2nd [1st]		100		100	
400		400		A 100 %		A 100 %		START LEVEL		START LEVEL		80		80	
200		200		POSITION		POSITION		80		80		40		40	
100		100		8		8		40		40		20		20	
80		80		4		4		20		20		10		10	
40		40		2		2		10		10		8		8	
20		20		1		1		HI SPEED		HI SPEED		4		4	
10		10		1/2		1/2		PGM		PGM		2		2	
PIN 3		PIN 3		PEAK 4		PEAK 4		[NORMAL]		[NORMAL]		1		1	
PIN 4		PIN 4		[AVG]		[AVG]		AVERAGE		AVERAGE		8		8	
PIN 5		PIN 5		PEAK 2		PEAK 2		OF B		OF B		4		4	
PIN 6		PIN 6		B CHOP		B CHOP		[NORMAL]		[NORMAL]		2		2	
PIN 7		PIN 7		A CHOP		A CHOP		VOLT'S		VOLT'S		1		1	
PIN 8		PIN 8		VOLTS		VOLTS		[TIME]		[TIME]		8		8	
SPARES ON J303		SPARES ON J303		[NORMAL]		[NORMAL]		RESET		RESET		4		4	
SMOOTH		SMOOTH		[NORMAL]		[NORMAL]		INHIBIT		INHIBIT		2		2	
[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		1		1	
[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		EX-2		EX-2	
[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]		[NORMAL]	

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.

[] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information.

TEST NUMBER 11 TEST DESCRIPTION "A" channel, vertical amplitude.

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 Calibrator.

Both limits are programmed for 490, causing a red light condition.

NOTE: Draw heavy lines between circles to indicate diode positions.



Figure 11

TYPE 241 TEST FORMAT

TYPE 355/356 VERTICAL		TYPE 3T5/3T6 SWEEP		TYPE 230 DIGITAL UNIT COMPARATOR				LIMITS	
				REF.		ZONES			
				A 0 %		B 0 %			
A	SENSITIVITY	B	SENSITIVITY	POSITION	POSITION	START	STOP	UPPER	LOWER
<input type="radio"/>	4	<input type="radio"/>	4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	2	<input type="radio"/>	2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	1	<input type="radio"/>	1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	+ [-]	<input type="radio"/>	+ [-]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	OFFSET		OFFSET						
	Center Screen Voltage		Center Screen Voltage						
	mV		mV						
<input type="radio"/>	800	<input type="radio"/>	800	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	400	<input type="radio"/>	400	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	200	<input type="radio"/>	200	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	100	<input type="radio"/>	100	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	SEC/DIV		SEC/DIV						
<input type="radio"/>	T x 10 ^E	<input type="radio"/>	T x 10 ^E						
<input type="radio"/>	E=8	<input type="radio"/>	E=8						
<input type="radio"/>	E=4	<input type="radio"/>	E=4						
<input type="radio"/>	E=2	<input type="radio"/>	E=2						
<input type="radio"/>	E=1	<input type="radio"/>	E=1						
	DELAY		DELAY						
<input type="radio"/>	8000	<input type="radio"/>	8000						
<input type="radio"/>	4000	<input type="radio"/>	4000						
<input type="radio"/>	2000	<input type="radio"/>	2000						
<input type="radio"/>	1000	<input type="radio"/>	1000						
	DELTA		DELTA						
<input type="radio"/>	800	<input type="radio"/>	800						
<input type="radio"/>	400	<input type="radio"/>	400						
<input type="radio"/>	200	<input type="radio"/>	200						
<input type="radio"/>	100	<input type="radio"/>	100						
	START LEVEL		START LEVEL						
<input type="radio"/>	80	<input type="radio"/>	80						
<input type="radio"/>	40	<input type="radio"/>	40						
<input type="radio"/>	20	<input type="radio"/>	20						
<input type="radio"/>	10	<input type="radio"/>	10						
	STOP LEVEL		STOP LEVEL						
<input type="radio"/>	80	<input type="radio"/>	80						
<input type="radio"/>	40	<input type="radio"/>	40						
<input type="radio"/>	20	<input type="radio"/>	20						
<input type="radio"/>	10	<input type="radio"/>	10						
	RESET INHIBIT		RESET INHIBIT						
<input type="radio"/>	8	<input type="radio"/>	8						
<input type="radio"/>	4	<input type="radio"/>	4						
<input type="radio"/>	2	<input type="radio"/>	2						
<input type="radio"/>	1	<input type="radio"/>	1						
	SPARES ON J303		SPARES ON J303						
<input type="radio"/>	PIN 3	<input type="radio"/>	PIN 3						
<input type="radio"/>	PIN 4	<input type="radio"/>	PIN 4						
<input type="radio"/>	PIN 5	<input type="radio"/>	PIN 5						
<input type="radio"/>	PIN 6	<input type="radio"/>	PIN 6						
<input type="radio"/>	PIN 7	<input type="radio"/>	PIN 7						
<input type="radio"/>	PIN 8	<input type="radio"/>	PIN 8						
<input type="radio"/>	PIN 9	<input type="radio"/>	PIN 9						
<input type="radio"/>	PIN 10	<input type="radio"/>	PIN 10						
<input type="radio"/>	PIN 11	<input type="radio"/>	PIN 11						
<input type="radio"/>	PIN 12	<input type="radio"/>	PIN 12						
<input type="radio"/>	PIN 13	<input type="radio"/>	PIN 13						
<input type="radio"/>	PIN 14	<input type="radio"/>	PIN 14						
<input type="radio"/>	PIN 15	<input type="radio"/>	PIN 15						
<input type="radio"/>	PIN 16	<input type="radio"/>	PIN 16						
<input type="radio"/>	SMOOTH	<input type="radio"/>	SMOOTH						
<input type="radio"/>	[NORMAL]	<input type="radio"/>	[NORMAL]						
	HI SPEED POK		HI SPEED POK						
<input type="radio"/>	[NORMAL]	<input type="radio"/>	[NORMAL]						
	VOLTS [TIME]		VOLTS [TIME]						
<input type="radio"/>	8	<input type="radio"/>	8						
<input type="radio"/>	4	<input type="radio"/>	4						
<input type="radio"/>	2	<input type="radio"/>	2						
<input type="radio"/>	1	<input type="radio"/>	1						
	PEAK 4 [AVG]		PEAK 4 [AVG]						
<input type="radio"/>	1/2	<input type="radio"/>	1/2						
<input type="radio"/>	PEAK 2	<input type="radio"/>	PEAK 2						
<input type="radio"/>	8 CHOP	<input type="radio"/>	8 CHOP						
<input type="radio"/>	8	<input type="radio"/>	8						
<input type="radio"/>	4	<input type="radio"/>	4						
<input type="radio"/>	2	<input type="radio"/>	2						
<input type="radio"/>	1	<input type="radio"/>	1						
	FROM 100% [0%]		FROM 100% [0%]						
<input type="radio"/>	800	<input type="radio"/>	800						
<input type="radio"/>	400	<input type="radio"/>	400						
<input type="radio"/>	200	<input type="radio"/>	200						
<input type="radio"/>	100	<input type="radio"/>	100						
	CH B [A]		CH B [A]						
<input type="radio"/>	80	<input type="radio"/>	80						
<input type="radio"/>	40	<input type="radio"/>	40						
<input type="radio"/>	20	<input type="radio"/>	20						
<input type="radio"/>	10	<input type="radio"/>	10						
	— [-]		— [-]						
<input type="radio"/>	2000	<input type="radio"/>	2000						
<input type="radio"/>	1000	<input type="radio"/>	1000						
	EX - 2		EX - 2						
<input type="radio"/>	[NORMAL]	<input type="radio"/>	[NORMAL]						

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED. [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information. NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 12 TEST DESCRIPTION "A" channel, vertical amplitude.

PROGRAM NOTES Input signal is the 100-kHz, 500-mV output of the Type R568 Calibrator.

Both limits are programmed for 510, causing a yellow light condition.

Figure 12

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 355/356		TYPE 315/316		TYPE 230 DIGITAL UNIT		LIMITS			
VERTICAL		SWEEP		COMPARATOR					
A	B	SEC/DIV	DELAY	A 0%	B 0%	START	STOP	UPPER	LOWER
SENSITIVITY 4 2 1 + [-]	SENSITIVITY 4 2 1 + [-]	T X 10 ^{-E} E=8 E=4 E=2 E=1 [E=10]	8000 4000 2000 1000	POSITION 8 4 2 1	POSITION 8 4 2 1	CH B [A] HOR mm % mm BELOW [ABOVE]	CH B [A] HOR mm % mm BELOW [ABOVE]	- [+] 2000 1000	- [+] 2000 1000
OFFSET Center Screen Voltage mV 800 400 200 100	OFFSET Center Screen Voltage mV 800 400 200 100			1/2 PEAK 4 [AVG] PEAK 2	1/2 PEAK 4 [AVG] PEAK 2	FROM 100% [0%] - [+] SLOPE 2nd [1st]	FROM 100% [0%] - [+] SLOPE 2nd [1st]	800 400 200 100	800 400 200 100
80 40 20 10	80 40 20 10	T=4 T=2 T=1	80 40 20 10	A 100% POSITION 8 4 2 1	B 100% POSITION 8 4 2 1	START LEVEL 80 40 20 10	STOP LEVEL 80 40 20 10	80 40 20 10	80 40 20 10
5 PIN 3 PIN 4 PIN 5	5 PIN 6 PIN 7 PIN 8	PIN 9 PIN 10 PIN 11 PIN 12	HI SPEED PCSK [NORMAL]	1/2 PEAK 4 [AVG] PEAK 2 A CHOP	1/2 PEAK 4 [AVG] PEAK 2 B CHOP	8 4 2 1	8 4 2 1	8 4 2 1	8 4 2 1
SMOOTH [NORMAL]	SPARES ON J303	SPARES ON J303		VOLTS [TIME]	AVERAGE OF 8 [NORMAL]	RESET INHIBIT [NORMAL]	RESET INHIBIT [NORMAL]	EX → 2 [NORMAL]	EX → 2 [NORMAL]

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED. [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.

See back side of Format for additional programming information. **TEST NUMBER** 13 **TEST DESCRIPTION** Dots/div check.

PROGRAM NOTES Intensified portion of the sweep between 10 and 90 mm.

Figure 13

Tektronix Part Number 070-0908-00

TYPE 241 TEST FORMAT

TYPE 3S5/3S6
VERTICAL

TYPE 3T5/3T6
SWEEP

TYPE 230 DIGITAL UNIT
COMPARATOR

LIMITS

A SENSITIVITY 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> + [-] <input type="radio"/> <input type="radio"/>		B SENSITIVITY 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> + [-] <input type="radio"/> <input type="radio"/>		DELAY 8000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		REF. A 0% POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		ZONES B 0% POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		START CH B [A] <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> HOR mm <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> % <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 8mm <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> BELOW [ABOVE] <input type="radio"/> <input type="radio"/>		STOP CH B [A] <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> HOR mm <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> % <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 8mm <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> [ABOVE] <input type="radio"/> <input type="radio"/>		UPPER - [H] <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		LOWER - [H] <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1000 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
OFFSET Center Screen Voltage mV 800 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 400 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 200 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 100 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		REF. A 100% POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		DELAY 80 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 40 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 20 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 10 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		REF. B 100% POSITION 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		START LEVEL 80 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 40 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 20 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 10 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		STOP LEVEL 80 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 40 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 20 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 10 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		UPPER 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		LOWER 8 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 4 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>			
SMOOTH [NORMAL] <input type="radio"/>		SPARES ON J303 <input type="radio"/>		HI SPEED PGM [NORMAL] <input type="radio"/>		VOLTS [TIME] <input type="radio"/>		AVERAGE OF 8 [NORMAL] <input type="radio"/>		RESET INHIBIT [NORMAL] <input type="radio"/>		EX - 2 [NORMAL] <input type="radio"/>					

FUNCTIONS ARE PROGRAMMED BY PLACING DIODES IN CLIPS WITH THE CATHODE TO THE RIGHT USING THE TOOL PROVIDED.
 [] INDICATES FUNCTION OBTAINED WHEN DIODE IS OMITTED. ▲ SEE PROGRAMMING INFORMATION DRAWER.



See back side of Format for additional programming information. NOTE: Draw heavy lines between circles to indicate diode positions.

TEST NUMBER 15 TEST DESCRIPTION Dots/div check.

PROGRAM NOTES Intensified portion of the sweep between 10 and 90 mm.

Figure 15



