INSTRUCTION MANUAL

HEAD
RECOGNIZER
TRIGGER
S-53

At the rear of this manual, please check for change information.
The Netherlands
Tektronix Holland NV, Heerlenen.

SonyTektronix, Japan

Tektronix Ltd, United Kingdom Ltd, London

Tektronix Oceania Ltd, Charnelle Islands

Tektronix, Inc, Beaverton, Oregon, USA

Each instrument has a serial number on a panel insert Tag.

Instrument Serial Numbers

Manufacture is identified as follows:
The unit into United States have six unique digits. The country of
Manufacture is assigned sequentially are arranged sequentially and are
Stamped on the chassis. The first number or letter
Reserved.

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are reserved.

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Registered trademark or Tektronix, Inc. TELECOMPONENT

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**CHANGE INFORMATION**
- Abbreviations and symbols used in this manual are based on I.E.E.E. Standard 260 "Standard Symbols for Units" or taken directly from MIL-STD-12B and other standards of the electronics industry. Change information, if any, is located at the rear of this manual.
Fig. 1.1: S-53 Trigger Recognizer Head.
### SPECIFICATION

#### General Information

The S.53 Trigger Recognizer Head produces a stable trigger signal from input signals from DC to 1 GHz. The trigger output signal is available at the front and rear panels of the S.53 to permit triggering of a sampling time-base unit.

The operating power for the S.53 is obtained when the unit is installed into a head compartment (or connected via an interconnecting cable) in Tektronix sampling instruments. The S.53 may be used with a Type 3S2, 3S5, or 3S6 in place of one of the sampling heads.

The S.53 is placed in the rear of the Tektronix sampling oscilloscope. The S.53 will also operate separately with the Type 3S5 Power Supply.

#### Electrical Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Performance Requirement</th>
<th>Supplemental Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Signal Frequency</td>
<td>10 mV to 1 V P-P into 50Ω</td>
<td>2 V P-P maximum</td>
</tr>
<tr>
<td>TRIG OUT Signal Amplitude</td>
<td>At least 1 V into 50Ω positive-going</td>
<td></td>
</tr>
<tr>
<td>Rise Rate</td>
<td>600 mV/μs</td>
<td></td>
</tr>
<tr>
<td>Pulse Duration</td>
<td>3 ns within 2 ns at 50% amplitude level</td>
<td></td>
</tr>
<tr>
<td>Period (minimum)</td>
<td>27 μs within 2.5 μs with input signals above 50 kHz.</td>
<td></td>
</tr>
<tr>
<td>INPUT Signal to Trigger Out Signal Delay Time</td>
<td>15 ns or less</td>
<td></td>
</tr>
<tr>
<td>INPUT Signal to Trigger Out Signal Jitter</td>
<td>15 ps or less</td>
<td></td>
</tr>
<tr>
<td>Kickout at Input</td>
<td>±10 mV or less</td>
<td></td>
</tr>
</tbody>
</table>
### ENVIRONMENTAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Performance Requirement</th>
<th>Supplemental Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-operating</td>
<td>−40°C to +65°C</td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>0°C to +50°C</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-operating</td>
<td>To 50,000 feet</td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>To 15,000 feet</td>
<td></td>
</tr>
<tr>
<td>Vibration (Non-operating)</td>
<td>15 minutes along each axis at 0.015 inch. Vary the frequency from 10 to 55 to 10 Hz in 1-minute sweeps. Three minutes at any resonant point or at 55 Hz.</td>
<td></td>
</tr>
<tr>
<td>Shock (Non-operating)</td>
<td>Two shocks each of 500 g's (2 ms duration), 750 g's (1 ms duration) and 1000 g's (0.5 ms duration), in each direction and along each major axis for a total of 36 shocks.</td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>Meets National Safe Transit Committee type of test when packaged as shipped by factory.</td>
<td></td>
</tr>
</tbody>
</table>

### MECHANICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finish</td>
<td>Anodized aluminum front panel, extruded aluminum blue-vinyl painted cabinet with aluminum castings front and rear.</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 8 oz.</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>About 2 inches</td>
</tr>
<tr>
<td>Width</td>
<td>About 1 3/4 inches</td>
</tr>
<tr>
<td>Length</td>
<td>About 4 inches</td>
</tr>
</tbody>
</table>
For price and availability of these optional accessories, contact your local Tektronix Sales Office or representative.
Six foot extender cable, part number 012-0172-00.
Five foot extender cable, part number 012-0171-00.
Four foot extender cable, part number 012-0170-00.
Three foot extender cable, part number 012-0169-00.
Two foot extender cable, part number 012-0168-00.
One foot extender cable, part number 012-0167-00.

With either method of installation, the 5-3 extender cable must be used.

With the method of installation, the 5-3 extender cable must be used.

To install the extender cable:

1. Pull both knobs inward from the front panel.
2. Insert the extender cable into the rear connector opening.
3. Pull the knobs outward from the front panel.
4. Push the knobs to lock the extender cable head in place.

To remove the extender cable:

1. Pull both knobs inward from the front panel.
2. Insert the extender cable into the rear connector opening.
3. Pull the knobs outward from the front panel.
4. Push the knobs to lock the extender cable head in place.

General Information

S-33 Trigger Head

General Information

Change information, if any, affecting this section will be found at the rear of this manual.

Operating Instructions

Section 2

S-33
controls and connectors of the S-53 follows:

A brief description of the function and operation of the

CONTROLS AND CONNECTORS

Fig. 2.1. S-53 Installation Information.

(b) Installed in Type 255 Power Supply Component

S-53

(a) Installed in a Pulse Generator Component

S-53

S-1 through S-6 Sampling Heads

Choice of

Operating Instructions-S-53
Using a Pretrigger

1. Turn on the Type 284 and the Oscilloscope Power.
2. After about a 5 minute warm-up time, adjust the A Intensity control on the CRT to obtain a stable noise background.
3. Install a SMA (3 mm) termination connector to the S-6 Loop Thru (upper) connector. Connect the Type 284 pulse output (S-6 Loop Thru lower) to a Type 284 coaxial cable and an SMA (3 mm) adapter to the S-6 Loop Thru (upper) connector. Connect the Type 284 coaxial cable to the S-6 Loop Thru (lower) connector.

Procedure

1. Insert the 7512 TDR/Sampling into the center two compartments of the 7504 Oscilloscope. Any Tektronix 7000-series Oscilloscope may be substituted for the 7504.
2. Install the S-53 in the Pulse Generator compartment.
3. Disconnect the Type 284 Pulse Output cable and connect to a new SMA (3 mm) termination connector to the S-6 Loop Thru (upper) connector. Connect the Type 284 coaxial cable and an SMA (3 mm) adapter to the S-6 Loop Thru (upper) connector. Connect the Type 284 coaxial cable to the S-6 Loop Thru (lower) connector.
4. Change the Time/Div to 1 ns and set both the S-53 STABILITY control for a stable display of the Type 284 pulse output signal. See Fig. 2.2.

H.F. Triggering

1. Insert the 7512 TDR/Sampling into the center two compartments of the 7504 Oscilloscope. Any Tektronix 7000-series Oscilloscope may be substituted for the 7504.
2. Install the S-53 in the Pulse Generator compartment.
3. Disconnect the Type 284 Pulse Output cable and connect to a new SMA (3 mm) termination connector to the S-6 Loop Thru (upper) connector. Connect the Type 284 coaxial cable and an SMA (3 mm) adapter to the S-6 Loop Thru (upper) connector. Connect the Type 284 coaxial cable to the S-6 Loop Thru (lower) connector.
4. Change the Time/Div to 1 ns and set both the S-53 STABILITY and the LEVEL control for a stable sine wave display; see Fig. 2.3.
11. Set both the STABILITY and the LEVEL control

10. Remove the 50Ω termination from the S-6 Feed through (upper) connector.

8. Connect the 712 into a general-purpose sampling

6. Connect the S-6 Feed through (upper) connector to the BNC connector.

4. Connect a short BNC coaxial adapter in place. Remove the BNC coaxial cable connector.

2. Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

0. Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Set the trigger source signal to the S-53 INPUT can be obtained from the test signal by using the Feed through (upper) connector.

- Using a power divider, observe the signal divided by the Feed through (upper) connector.

- Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Set both the STABILITY and the LEVEL control.

- To convert the S-53 INPUT into a general-purpose sampling.

- Set both the STABILITY and the LEVEL control.

- The trigger source signal to the S-53 INPUT can be obtained from the test signal by using a power divider.

- Using a power divider, observe the signal divided by the Feed through (upper) connector.

- Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Set both the STABILITY and the LEVEL control.

- To convert the S-53 INPUT into a general-purpose sampling.

- Set both the STABILITY and the LEVEL control.

- The trigger source signal to the S-53 INPUT can be obtained from the test signal by using a power divider.

- Using a power divider, observe the signal divided by the Feed through (upper) connector.

- Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Set both the STABILITY and the LEVEL control.

- To convert the S-53 INPUT into a general-purpose sampling.

- Set both the STABILITY and the LEVEL control.

- The trigger source signal to the S-53 INPUT can be obtained from the test signal by using a power divider.

- Using a power divider, observe the signal divided by the Feed through (upper) connector.

- Connect the S-53 INPUT to the trigger output signal available at the S-6 panel.

- Set both the STABILITY and the LEVEL control.

- To convert the S-53 INPUT into a general-purpose sampling.
The S-55 Trigger block diagram is shown in Figure 3.1. The trigger signal is connected to the circuit through the input terminal. The trigger signal amplifies the fast positive step from the input signal. The output signal is used to trigger the front panel trigger output connectors.

The trigger signal is amplified by the S-55 Trigger block. The output signal is used to trigger the front panel trigger output connectors.

The S-55 Trigger block diagram in Section 3 of the manual is necessary during the circuit description.

The trigger signal is amplified by the S-55 Trigger block. The output signal is used to trigger the front panel trigger output connectors.

General Information

CIRCUIT DESCRIPTION

SECTION 3
The output of the circuit consists of U80 and associated components. The Holdoff circuit, consisting of U80 and associated components, is driven by the positive output pulse from the Start Tunnel diode. The circuit is ready for another Start Tunnel diode.

The output of the circuit is zero. The Start Tunnel diode and U80 are removed. The output is zero. The positive output pulse to the circuit is ready for another Start Tunnel diode.

The Holdoff circuit, consisting of U80 and associated components, is driven by the positive output pulse from the Start Tunnel diode. The circuit is ready for another Start Tunnel diode.
Always replace the rear casting making sure that the hole on
the lower assembly wets the trigger button down to the BNC con-
nectors, assembly. Remove the trigger button from the BNC con-
nectors.

2. Unplug the wires from the front panel connectors.

3. With a #2 screwdriver, remove the front panel.

4. Turn the S-53 to the right.

To install the S-53 in its housing, check that the
housing and rear panel have been removed from the S-53.

Parts Removal and Replacement

NOTE

When selecting replacement parts, it is important
to consider the part's effect on the performance of the
instrument. After replacing the S-53 Pulse Generator,
the instrument may not return to its performance at a high
temperature. If the physical size and shape of a
replacement part is different, the instrument may not operate
as expected. Therefore, it is recommended to use standard
replacement parts for easy installation.

Obtaining Replacement Parts

Contact your local Tektronix Field Service or representative
for a list of parts that are required to perform the repair. All parts
used in the S-53 can be ordered directly

Introduction

Change information, if any, affecting this section will be found at the rear of this manual.
The carton test strength for your instrument is 200 pounds.

Carefully remove the instrument from the carton by pulling from the bottom. Place instrument on a clean, flat surface. Avoid high humidity or temperatures greater than 110°F for extended periods. Do not leave the instrument in direct sunlight. Power cord and other accessories are included in the carton. Retain the carton in case of future transport.

On the back of the instrument, locate the \textbf{TRIG OUT} terminal. This is where the trigger output signal is connected. The \textbf{STABILITY} control is used to adjust the trigger amplitude. Set the \textbf{STABILITY} control to the center position for normal operation.

Troubleshooting:

1. Check all connections to ensure that power and signal sources are connected properly.
2. Verify that the trigger output signal is present and of the correct amplitude.
3. Check the \textbf{STABILITY} control setting.
4. If the output signal is not present, check the power supply and connections.
5. If the output signal is present but not stable, adjust the \textbf{STABILITY} control.
6. If the problem persists, consult the service manual or contact the manufacturer for further assistance.

Important Note: The instrument is designed for use in laboratory environments. Do not expose it to extreme temperatures or humidity. Always operate the instrument within its specified parameters to ensure reliable performance.

Maintenance:

1. Keep the instrument clean and free of dust and debris.
2. Regularly check the power supply and connections for any signs of wear or damage.
3. If the instrument requires calibration, consult the service manual or contact the manufacturer for instructions.

Precautions:

- Do not disassemble the instrument without proper training or authorization.
- Do not expose the instrument to liquids or moisture.
- Do not use the instrument in hazardous environments.

Warranty:

The instrument is warranted against defects in material and workmanship for a period of one year from the date of purchase. For more information, visit our website or contact our customer service department.
Introduction

Performance Check/Procedure

No. 012.0124-00.
2. Sampling-Head extension, 3 foot Tektronix Part.

No. 067.051-00.
and does not have a guaranteed response.

No. 067.051-00.
and does not have a guaranteed response.
Tektronix Part.

No. 012.0124.
consists of a 100 Ohm termination across a 50 Ohm line.

No. 067.051-00.

VARIABLE ATTENUATOR with GR874

103-00-00-00.
18. BNC T connection, Tektronix Part No.

011-0006-02.
17. 50 Ohm 5X attenuator, BNC Tektronix Part No.

16. 50 Ohm termination, SMA (3 mm) Tektronix Part No.
103-03-00-00.
15. Adapter, BNM, male to BNC female, Tektronix Part No.
015-1022-00.
14. Adapter, SMA (3 mm) female to female, Tektronix Part No.
017-0004-00.
13. Adapter, OR to BNC male, Tektronix Part No.
015-1018-00.
12. Adapter, SMA (3 mm) male to BNC female, Tektronix Part No.
017-0063-00.
11. These adapters, GR to BNC female, Tektronix Part No.
012.0276-00.
10. Coaxial cable, 50 Ohm, 18 inch, BNC connectors.

Equipment Required

The following test equipment or its equivalent is required for the Performance Check Procedure.

1. Oscilloscope: 7000 Series with a 7024 to accept

Plug-in units listed in Item 2.

2. 7512 DTH3522.

The Calibration Procedure is only as precise as the test equipment used, therefore the limits stated in the Section I, and the Performance Information given in this Section, are the minimums allowable. The Performance Information given in this Section is the result of the manual checking the S-55 without adjusting any internal con-

Change Information: If any, affecting this Section will be found at the rear of this manual.

PERFORMANCE CHECK/CALIBRATION

SECTION S

5-3
For 500 mV/div.

Fig. 6.5: Waveform of TRIG OUT leading edge showing the

600 mV (1/2 division) in 1 ns. See Fig. 6.1.

b. Check any portion of the rise to be greater than

Trips a portion of the TRIG OUT signal on the CRT.

c. Check TRIG OUT (Front Panel) rise rate

Amplitude point to 3 ns within 2 ns.

two volt positive-going (1 division or greater).

5. Check the TRIG OUT amplitude to be at least

b. Turn the S-3 STABILITY control fully clockwise.

c. Adjust the upper loop thru connector.

c. Connect a 1 mH coaxial choke and a 50

BNC to a BNC adapter. A BNC to a coaxial choke and a

c. Connect the converter to 1111. Connect the 1111 output to the GR

BNC to a BNC adapter. A BNC to a coaxial choke. A GR to a

A. Connect the S-5 TRIG OUT signal through a

Note: 1. Assemble the equipment as follows: Insert the

2. Set the controls as follows:

a. Horizontal mode

b. Vertical mode

c. Acquire

d. Insert

Performance Check/Calibration—S-53

2. Trigger pulse, trigger signal to trigger signal to trigger.

3. Connect the S63 TRIG OUT to the BNC adapter, 6 X attenuator, 4.2 inch BNC coaxial cable to the BNC adapter.

4. Connect a BNC adapter and X attenuator, 4.2 inch BNC coaxial cable to the BNC adapter.

5. Check the input signal.

6. Disconnect the cables from the heads. Remove the T63 coaxial head and insert a 7 9S coaxial head.

7. Disconnect the cables from the heads. Remove the T63 coaxial head, and insert a 7 9S coaxial head.

8. Check the input signal.

9. Without moving the position, trigger control of T63.

10. In the S63 TRIG OUT connector, connect the T63 coaxial head, and insert a 7 9S coaxial head.

11. Connect the T63 coaxial head, and insert a 7 9S coaxial head.

12. Check the input signal.

13. Change the Time Delay to 20, and turn the Time Delay control.

14. Set the S63 LEVEL control for a stable display.

15. Set the S63 LEVEL control, and set the Multiplier to 2.

16. Connect the T63 coaxial head, and insert a 7 9S coaxial head.

17. Connect the T63 coaxial head, and insert a 7 9S coaxial head.

18. Connect the T63 coaxial head, and insert a 7 9S coaxial head.

19. Connect the T63 coaxial head, and insert a 7 9S coaxial head.

20. Connect the T63 coaxial head, and insert a 7 9S coaxial head.
4. Change the Type 28A Period switch to 10 ns. Use the S-35 STABILITY and LEVEL controls to maintain a stable display on the screen.

5. Change the Type 28A Period switch to 100 ns. Use the S-35 STABILITY and LEVEL controls to maintain a stable display on the screen.

6. Check the TRIG OUT Period to be 27 μs with the VOLmeter connected to the tester jack and about 5.5 on the VOLmeter. The positive signal is between 0.5 and 5.5 on the VOLmeter. (Uninterrupted)

b. Connect a test oscilloscope (about 20 MHz bandwidth) to the S-35 INPUT connector.

7. Check the INPUT Signal and Sensitivity

8. Connect the TEST Oscilloscope between the S-35 INPUT connector and the LEVEL control to maintain a stable display on the screen.

9. Connect the TEST Oscilloscope between the TRIG OUT connector and the LEVEL control to maintain a stable display on the screen.

10. Connect the TEST Oscilloscope between the TRIG OUT connector and the LEVEL control to maintain a stable display on the screen.

11. Check the following controls:

- GR coaxial cable to the S-1 INPUT connector.
- Delay line connected to J111 Output 1 through a 5 μs delay.

Performance Check/Calibration—S-35

Fig. 5a. Double exposure photo showing timing of the pickup signal.

Fig. 5b. Two waveform outputs (a) Y-tube output signal from the input.

Fig. 5c. Double exposure photo showing timing of the pickup signal.
Performance Check/Calibration—S-33

1. Adjust the Zero (R32) and Stability Zeros (R30).

2. Rotate the S-33 Room in Housing (see the Manual).

3. Set the Controls as Follows:

   a. Adjust R52 until the oscilloscope face shows 0.
      b. With no input signal, use a Test Oscilloscope with
         R30 (set to 0).

4. Turn on the Type 24A, and the Oscilloscope.

   a. Present R30 Full Clocked (minimum resistance).
   b. Present R30 Full Clocked (minimum resistance).

5. DC Offset (or Fine) Calibration.

   a. Present R30 Full Clocked (minimum resistance).

   b. Turn the Control Switch to 15 My and check for a readable display.

   c. Turn the Control Switch to 15 My and check for a readable display.

   d. Turn the Control Switch to 15 My and check for a readable display.

   e. Turn the Control Switch to 15 My and check for a readable display.

6. Set the Level Control on the CRT (15 My input signal).

   a. Connect the S-33 Input to the BNC coaxial cable to the S-33 Input connector.
   b. Remove the S-33 Room in Housing (see the Manual).
   c. Present R30 Full Clocked (minimum resistance).

7. Set the Display on the CRT (15 My input signal).

   a. Connect the Type 24A, 100 to square waves, square wave.

8. Using the LEVEL control option a stable display.

   a. Connect the Type 24A, 100 to square waves, square wave.

9. Set the DC Offset to reduce the input signal to

   a. Connect the Type 24A, 100 to square waves, square wave.

10. About 10 My.

   a. Connect the Type 24A, 100 to square waves, square wave.

11. More than 1 My.

   a. Connect the Type 24A, 100 to square waves, square wave.

12. Less than 1 My.

   a. Connect the Type 24A, 100 to square waves, square wave.

13. No display.

   a. Connect the Type 24A, 100 to square waves, square wave.

Additional Tips:

1. Make sure the BNC coaxial cable is properly connected to the BNC connector.
2. Check that the signal is properly connected to the input.
3. Ensure that the oscilloscope is properly adjusted for maximum gain.
2. Adjust Arm and Start T.D. Bias (R82)

(R92)

Performance Check/Calibration—S53

a. Disconnect the connecting cables and reconnect as follows: Connect Type 294 Pulse Output through GR to BNC adapter to a BNC tee connector, Connect one output of the BNC tee connector through a 42 inch BNC coaxial cable and a BNC to GR connector to Input 1 of the 7M11 Output 1 Delay Line. Connect 7M11 Output 1 through a GR to BNC adapter, a 42 inch BNC coaxial cable, and a BNC to 3 mm adapter to S6 Loop Thru (lower connector). Connect the other output from the tee connector through an 18 inch BNC coaxial cable to S53 INPUT connector.

b. Push in the mp button. Set the m/Div to 100.

Set the m/Div Variable for a stable trace. Adjust the m/Div Variable for about a 5 division display.

c. Change the m/Div to 10. Change the Time/Div to 50 ps and change the Time-Distance knob to position the center portion of the display to the center of the CRT.

D. Adjust R82 and R92 for minimum jitter. The display may show a jump to the left before the minimum jitter point during the adjustment.
ABBREVIATIONS

ITEM NAME

Part removed after this serial number

Part first added at this serial number

SPECIAL NOTES AND SYMBOLS

Change information, if any, is located at the rear of this manual.

Replacement parts are available from or through your local Technical Field Office.

PARTS ORDERING INFORMATION

ELECTRICAL PARTS

REPLACEABLE
PARTS ORDERING INFORMATION

This mechanical parts list is intended to indicate item relationships. Following is an example of the indentation system used in the description column.

1 2 3 4 5
Name & Description

Assembly and/or Component

2.1.3.4.5
Detail Part of Assembley and/or Component

Attachment parts for Assembly and/or Component

3.2.4.5
Attachment parts for Detail Part

4.3.2.5
Attachment parts for Parts of Detail Part

5.4.3.2

PARTS LIST

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, occurs at this section of this manual.

SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number
00X Part removed after this serial number

ABBREVIATIONS

FIGURE AND INDEX NUMBERS

ITEM NAME

Note: This list is separated from the description by a colon (:) because of space limitations. Further item identification, the U.S. Federal Cataloging Handbook, can be utilized where possible.
<table>
<thead>
<tr>
<th>Fig. &amp; Index No.</th>
<th>Tektronix Part No.</th>
<th>Serial/Assembly No.</th>
<th>Qty</th>
<th>12345</th>
<th>Name &amp; Description</th>
<th>Mfr. Code</th>
<th>Mfr. Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-41</td>
<td>386-1338-17</td>
<td></td>
<td>1</td>
<td></td>
<td>(END ATTACHING PARTS) SUBPANEL,FRONT</td>
<td>80009</td>
<td>386-1338-17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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Problem: The troubleshooting waveforms were obtained with 7A16, 7B50, and 7G2 Si signals for waveforms. The 100 mv – 100 ns square wave input from Type 28 to S-S3 input.

The Type S-S3 case can be improved. Trigger the test oscilloscope from the TRIG OUT pulse to show the result.

Power is obtained from Type 285 Power Supply, or sampling head compartment using a sampling head extender so that.

Troubleshooting Conditions
MANUAL CHANGE INFORMATION