

Instructions



040-1665-00

MTG100 & MTG300

Rackmount (Option 1R) Upgrade Kit

061-A020-50

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

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Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* in the product service manual or the instruction manual.

Do Not Service Alone. Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power. To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power.

Use Care When Servicing With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

Kit Description

NOTE. The following conventions apply throughout this document:

- The MTG100 and MTG300 MPEG Generator is simply referred to as the “MPEG generator.”
 - The MPEG generator is referred to as being either a “standard” or “Option 1R” version. The “standard” MPEG generator does not include rackmounting hardware. The “Option 1R” MPEG generators have rackmounting hardware on the sides of the instrument’s cabinet.
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The MTG100 and MTG300 Rackmount (Option 1R) Upgrade Kit provides parts and instructions for you to perform the following tasks:

- Replace the standard cabinet on your MPEG generator with an Option 1R (rackmount ready) cabinet
- Install the MPEG generator into a standard 19-inch equipment rack

If your MPEG generator was ordered with Option 1R, Tektronix shipped the MPEG generator with the rackmount cabinet already installed. If this is your case, you will need to perform only the instructions for mounting your MPEG generator into an equipment rack.

NOTE. A standard equipment rack has rails with universal hole spacing. If your equipment rack uses hole spacing that is different than universal hole spacing, you may have to drill additional mounting holes in the rack to accommodate the mounting hardware included in this kit.



CAUTION. Mounting the MPEG generator into an equipment rack requires certain minimum clearances around the instrument. Be sure to read the information in Environmental Requirements before you install the MPEG generator into an equipment rack.

If you rackmount the MPEG generator using methods that are different than those described in these instructions, the MPEG generator may not meet its warranted specifications.

Products

MTG100 and MTG300 MPEG Generators All Instruments

Environmental Requirements

Mounting the MPEG generator into an equipment rack requires certain minimum clearances around the instrument. When the MPEG generator is installed in an equipment rack according to the instructions in this document, the rackmounted MPEG generator meets all warranted specifications.

The rack into which the rack-adapted MPEG generator is mounted must provide the following clearance requirements:



CAUTION. *If you adhere to these clearance requirements when you rackmount the MPEG generator, the instrument will have sufficient air circulation and room to accommodate the power cord and mounting hardware. Failure to provide these clearances can result in overheating and can cause the MPEG generator to not operate properly and/or fail.*

- A minimum of 50 mm (2 inches) of vertical space above the instrument.
- A minimum of 75 mm (3 inches) of rear space.
- A minimum width of 455 mm (17.9 inches) between the left- and right-front rails in the rack.
- A minimum inside height depth of at least 635 mm (25 inches).

Figure 1 shows the dimensions of the MPEG generator after the rackmount cabinet is installed.

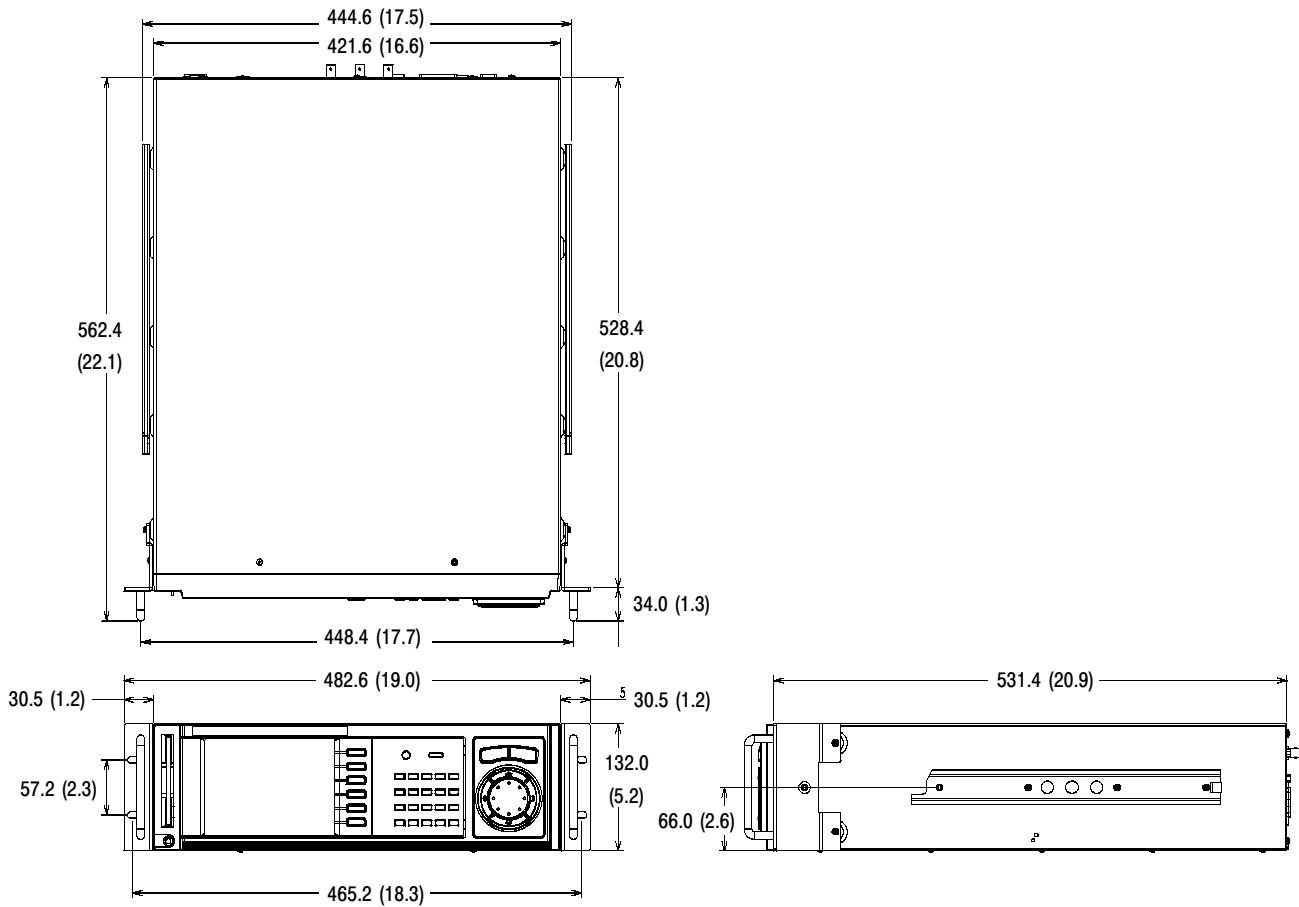


Figure 1: The MPEG Generator with Rack Adapter Installed

Required Tool and Equipment List

Table 1 lists the tools required to install the rack-adapter hardware, and to mount the rack-adapted MPEG generator into a standard 19-inch equipment rack. All tools are standard tools that are readily available. Depending on the type of installation you are doing, you may not need every item in this list.

Table 1: Tools required for rackmount installation

| Item no. | Name | Description |
|----------|-------------------------------|---|
| 1 | Screwdriver handle (magnetic) | Accepts ¼ inch hex-head driver tips |
| 2 | #2 Phillips tip | Phillips®-driver tip for M3 size screw heads |
| 3 | No. 2 Pozidrive tip | Pozidrive®-driver tip for number 2 size screw heads |

Kit Parts List

Table 2 lists the parts included in the MTG100 and MTG300 Rackmount (Option 1R) Upgrade Kit. See Figure 2.

Table 2: Rackmount kit parts list

| Part number | Quantity | Description |
|-------------|----------|---|
| NS | 1 | MTG100 and MTG300 rackmount cabinet, assembled <i>Replaceable Mechanical Parts</i> on page 21 lists the part numbers for the replaceable parts of the rackmount cabinet. |
| 351-0623-00 | 1 | Slide-out Tracks kit (both side tracks and mounting hardware are included) |
| 211-0785-00 | 4 | Screws, M3 X 6 mm |
| 211-0945-00 | 6 | Screws, M3 X 8 mm |
| NS | 1 | Marker, Ident, 040-1665-XX |
| 061-A020-50 | 1 | Rackmount kit instructions |

NS - Not Saleable

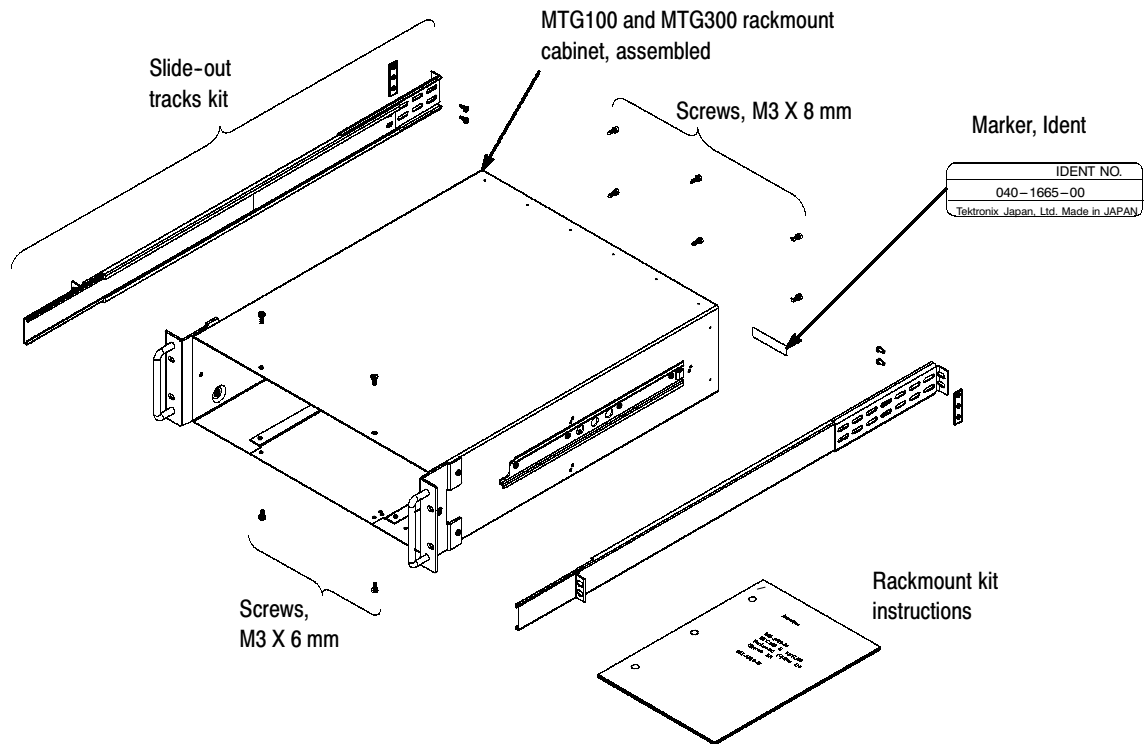


Figure 2: Included parts of the MTG100 & MTG300 Rackmount (Option 1R) Upgrade Kit

Installation Instructions

These instructions are written for personnel who are familiar with servicing the MPEG generator. If you need further details for disassembling or reassembling the instrument, refer to the *MTG100 and MTG300 MPEG Generator Service Manual* (Tektronix, Inc. part number 071-0616-50). Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service if you need installation assistance.

The installation instructions include the following procedures:

- *Installing the Rackmount Cabinet on the MPEG Generator* page 9
- *Rackmounting the MPEG Generator* page 13

Before You Begin



CAUTION. *To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

Read the Service Safety Summary starting on page 1 before you perform these installation instructions.

The procedures in these installation instructions refer to the “front,” “back,” “top,” etc. of the MPEG generator as shown in Figure 3.

Installing the Rackmount Cabinet on the MPEG Generator

Perform this procedure if you are replacing the standard cabinet on your MPEG generator with a rackmount cabinet.

NOTE. *Keep all of the parts that you remove from the MPEG generator during this procedure. Some of the removed parts will be needed to complete the rackmount installation. The remaining parts will be needed if you want to reconfigure your MPEG generator to a standard cabinet at a later time.*

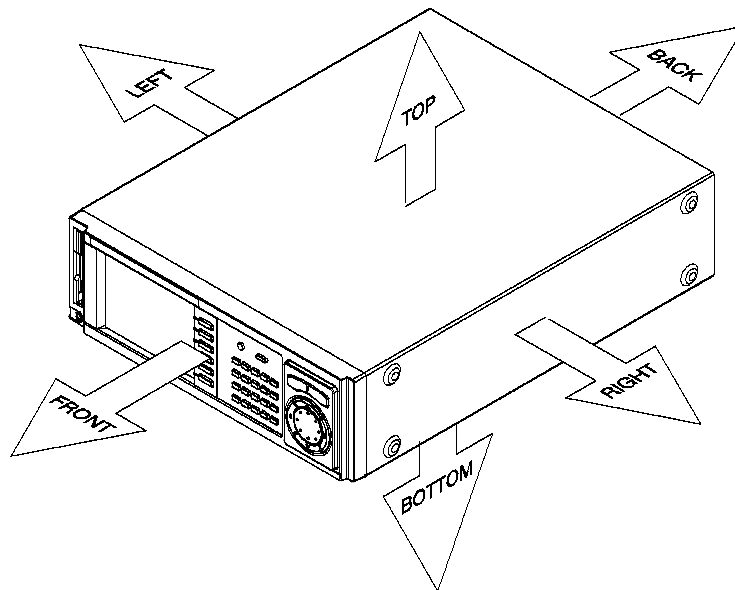


Figure 3: MPEG generator orientation

Removing the Standard Cabinet

Perform the following procedure to remove the standard cabinet from the MPEG generator:

1. Remove the power cord and disconnect any cables from the rear of the MPEG generator.
2. Using the screwdriver with a #2 Phillips tip, remove the four screws securing the front of the cabinet to the MPEG generator. See Figure 4.
3. Using the screwdriver with a #2 Phillips tip, remove the six screws securing the rear of the cabinet to the MPEG generator. See Figure 4.
4. Position the MPEG generator so its bottom is on the work surface and its front is facing you.



CAUTION. *To prevent damage to internal instrument cabling, be careful not to bind or snag the cabinet on internal cabling as you remove the cabinet.*

5. Grasp the right and left edges of the cabinet near the back of the MPEG generator, and then carefully slide the cabinet towards the back of the MPEG generator to remove the cabinet. See Figure 4. Some force may be necessary to get the cabinet to start sliding.

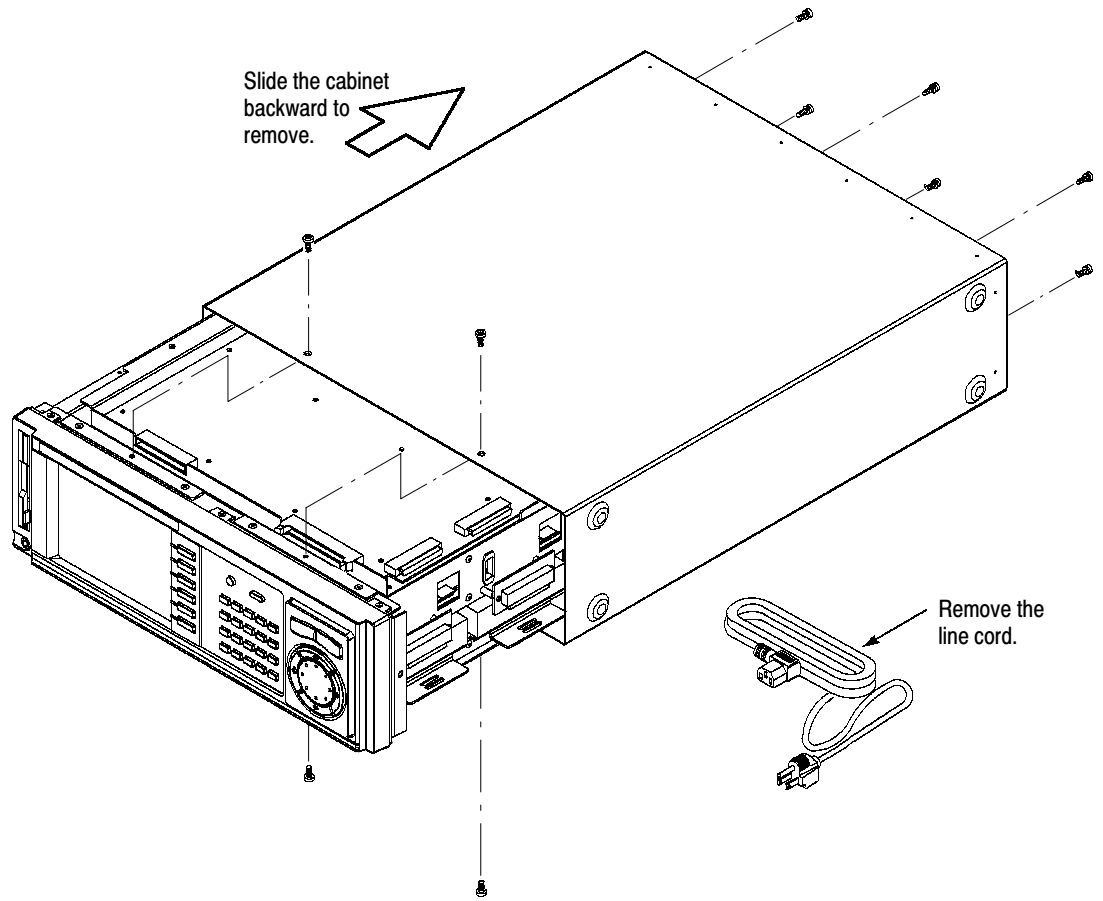


Figure 4: Removing the standard cabinet

Installing the Rackmount Cabinet

Perform the following procedure to install the rackmount cabinet onto your MPEG generator:

1. Position the MPEG generator so its bottom is on the work surface and its front is facing you.



CAUTION. To prevent damage to internal instrument cabling, be careful not to bind or snag the cabinet on internal cabling as you install the cabinet.

2. To install the cabinet, grasp the right and left edges of the cabinet, and then carefully slide the cabinet towards the front of the MPEG generator. See Figure 5.
3. Using the screwdriver with a #2 Phillips tip, install the six screws securing the rear of the cabinet to the MPEG generator. See Figure 5.
4. Using the screwdriver with a #2 Phillips tip, install the four screws securing the front of the cabinet to the MPEG generator. See Figure 5.

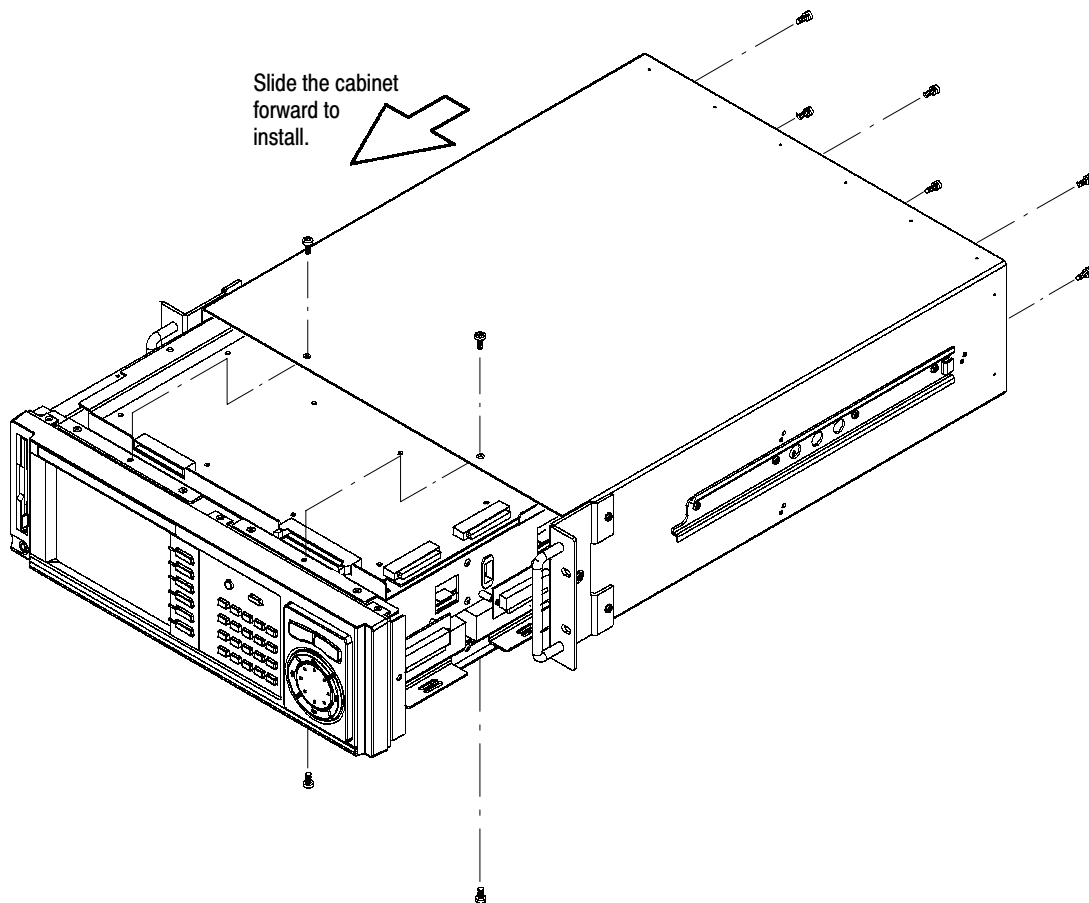


Figure 5: Installing the rackmount cabinet

Rackmounting the MPEG Generator

Use the procedures in this section to install your rackmount-ready MPEG generator into an equipment rack.

NOTE. *This kit contains extra hardware that allows you to mount the MPEG generator into several different rack configurations. Depending on your specific application, you will not need all of the hardware in this kit to rackmount your MPEG generator.*

The cabinet of the MPEG generator must be equipped with rackmount hardware (Option 1R or from the hardware in this kit) before you can install the instrument into an equipment rack.

This section contains the following procedures:

- *Assembling the slide-out tracks*
- *Installing the slide-out track assemblies*
- *Rackmounting the MPEG generator*

Assembling the Slide-out Tracks

The slide-out tracks permit the rackmounted MPEG generator to be extended out of the equipment rack for rear-panel and connector maintenance without removing the MPEG generator from the rack.



WARNING. *To prevent personal injury and equipment damage, if you disassemble the slide-out track assemblies for maintenance, do not interchange the inner left and right tracks when you reinstall them into the outer left and right tracks.*

If you interchange the inner left and right tracks, you will defeat the extension stop (safety latch) feature of the tracks. The MPEG generator could, when extended, come out of the slides and fall from the equipment rack, possibly causing personal injury and equipment damage.

NOTE. *The slide-out track assemblies included in the rackmount kit come partially assembled with the inner tracks attached inside of the outer tracks. Leave the track assemblies partially assembled to simplify their installation and to avoid accidentally swapping their inner tracks. (See WARNING above.)*

When the left and right slide-out tracks are correctly assembled and oriented as shown in Figure 6 on page 15, the round cutout is below the square cutout at the end of the both inner tracks.

Perform the following procedure to assemble the slide-out tracks:

1. Identify the right and left slide-out track assemblies:
 - a. Find the date code label on each track assembly.
 - b. The track assembly to be mounted on the left side of the equipment rack (the side of the rack nearest the left side of the MPEG generator (see Figure 3 on page 10)) has a date code that ends with “LH,” for left hand.
 - c. The track assembly to be mounted on the right side of the equipment rack has a date code ending with “RH,” for right hand.
2. Measure the distance between the front and rear rails of the equipment rack.
3. Align one of the rear brackets to the right slide-out track assembly as shown in Figure 6.

NOTE. *The rear brackets have multiple pairs of mounting holes. When you align the rear bracket and the slide-out track, be sure to select a pair of holes that mount the rear bracket so that the flange-to-flange distance (see Figure 6) matches the front to rear rail measurement from step 2.*

4. Use a screwdriver with a #2 Pozidrive tip to secure the rear bracket to the right slide-out track using two screws (10-32) and a bar nut as shown in Figure 6. Leave the screws loose so that the overall length of the slide-out track assembly can be adjusted when you install it in the rack (refer to step 4 on page 17).
5. Repeat steps 3 and 4 to assemble the left slide-out track assembly.

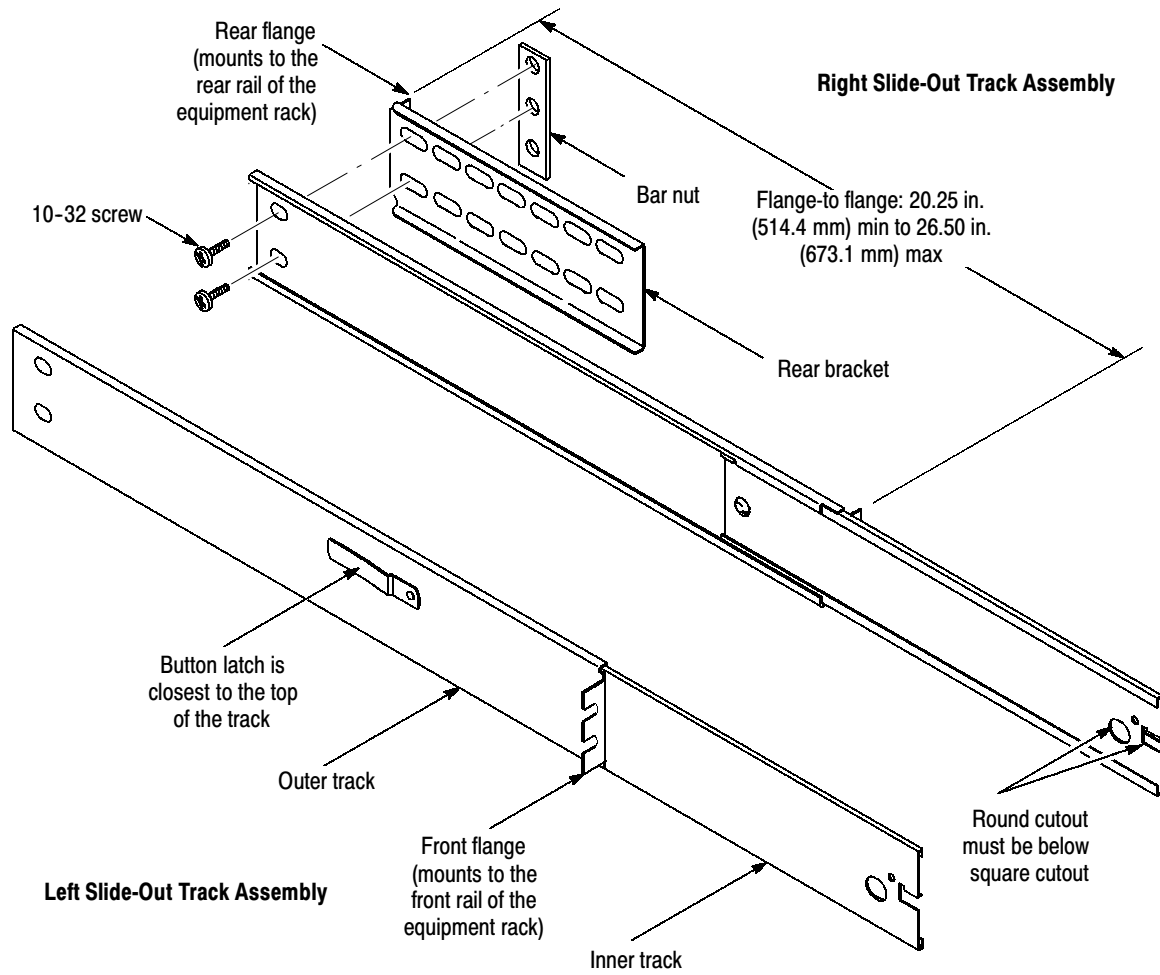


Figure 6: Assembling the slide-out tracks

Installing the Slide-out Track Assemblies

Perform the following procedure to install the slide-out track assemblies into the equipment rack:

NOTE. The slide-out tracks must be properly assembled before you install the tracks into your equipment rack. Refer to Assembling the Slide-out Tracks on page 13 for more information.

1. Select the mounting position in the equipment rack.
 - a. Select two ½ inch spaced holes in the front rail of the equipment rack.
 - b. Verify that the 5 inch and 10.5 inch clearances exist relative to those mounting holes. See Figure 7.

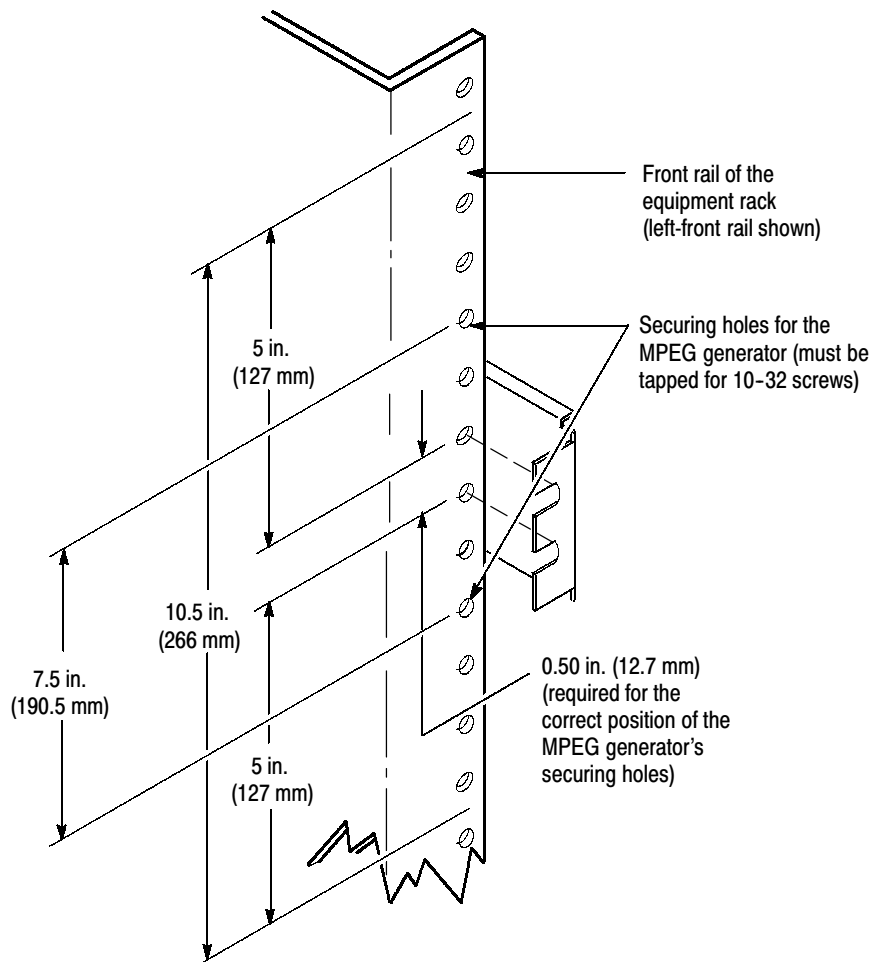


Figure 7: Required vertical clearances for rack installation

- 2.** Select the method for mounting the slide-out track assemblies according to the type of equipment rack.
 - a.** To mount the slide-out tracks with their front and rear flanges outside of the front and rear rails of the equipment rack, use mounting method A (as shown in Figure 8) when you perform step 3. Add a bar nut to the installation only if the rails have untapped mounting holes.
 - b.** To mount the slide-out tracks with their front and rear flanges inside of rails, use the mounting method B outlined in Figure 8. (This mounting method assumes untapped mounting holes in the rail of the rack.)
- 3.** Install the slide-out track assemblies into the equipment rack.
 - a.** Using the method and hardware determined from step 2, secure the right slide-out track assembly to the front and rear rails of the equipment rack.
 - b.** The screws should be fully, but lightly, seated so that the mounting can be adjusted later (refer to step 2 on page 19).
 - c.** Repeat substeps **a** and **b** for the left slide-out track assembly.
- 4.** Fix the front-to-rear length of the slide-out track assemblies.
 - a.** Locate the screws securing the rear mounting bracket to the right slide-out track assembly that were intentionally left loose in step 4 on page 14.
 - b.** Tighten the screws to fix the front-to-rear flange spacing of the right slide-out track assembly.
 - c.** Repeat substeps **a** and **b** for the left slide-out track assembly.

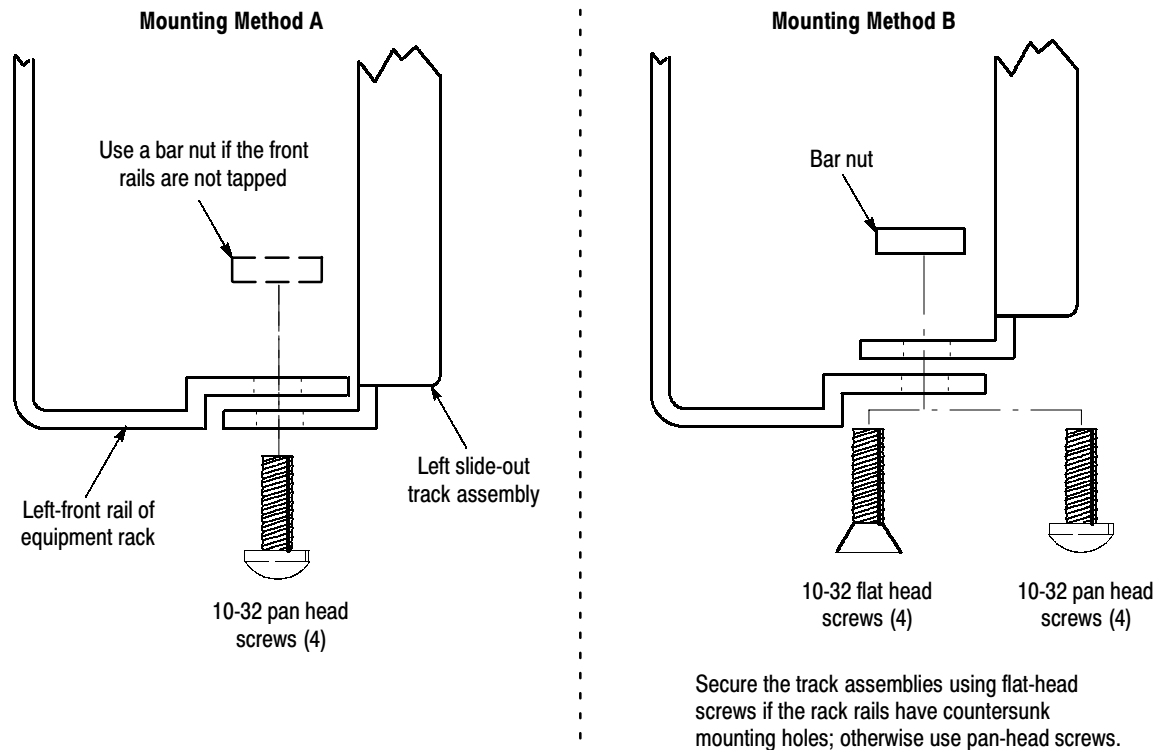


Figure 8: Installing the slide-out track assemblies into the equipment rack (top view)

Rackmounting the MPEG Generator

Perform the following procedure to mount the MPEG generator into the equipment rack:



WARNING. To prevent personal injury and equipment damage, the slide-out tracks must be properly assembled and installed before you mount the MPEG generator into the equipment rack. Refer to *Assembling the Slide-out Tracks on page 13* and *Installing the Slide-out Track Assemblies on page 16* for more information.

1. Install the MPEG generator into the equipment rack.
 - a. Working from the front of the equipment rack, slide out the inner track of each slide-out track assembly until it extends from the front of the rack. Continue to slide the inner tracks out from the rack until they lock into place.
 - b. With the front of the MPEG generator facing away from the equipment rack, insert the left and right rackmount tracks that extend from the cabinet of the MPEG generator into the ends of the slide-out tracks you just extended from the equipment rack. Make sure the rackmount tracks on the MPEG generator slip inside the extended slide-out tracks.

Replaceable Mechanical Parts

This section contains a list of the replaceable components and accessories that are used to adapt the MPEG generator for mounting in a standard 19-inch (48.3 mm) rack. Use the parts list, as described below, to identify and order replacement rackmounting hardware. Refer to the *MTG100 and MTG300 MPEG Generator Service Manual* (Tektronix, Inc. part number 071-0616-50) for a complete list of all replaceable mechanical parts for the MPEG generator.

Parts Ordering Information

Replacement parts are available from or through your local Tektronix, Inc. service center or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest circuit improvements. Therefore, when ordering parts, it is important to include the following information in your order:

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If a part you order has been replaced with a different or improved part, your local Tektronix service center or representative will contact you concerning any change in the part number.

Using the Replaceable Parts List

The tabular information in the Replaceable Parts List is arranged for quick retrieval. Understanding the structure and features of the list will help you find the all the information you need for ordering replacement parts.

Item Names In the Replaceable Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, U.S. Federal Cataloging Handbook H6-1 can be used where possible.

Indentation System This parts list is indented to show the relationship between items. The following example is of the indentation system used in the Description column:

| <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>Name & Description</i> |
|----------|----------|----------|----------|----------|--|
| | | | | | <i>Assembly and/or Component</i> |
| | | | | | <i>Attaching parts for Assembly and/or Component</i> |
| | | | | | <i>(END ATTACHING PARTS)</i> |
| | | | | | <i>Detail Part of Assembly and/or Component</i> |
| | | | | | <i>Attaching parts for Detail Part</i> |
| | | | | | <i>(END ATTACHING PARTS)</i> |
| | | | | | <i>Parts of Detail Part</i> |
| | | | | | <i>Attaching parts for Parts of Detail Part</i> |
| | | | | | <i>(END ATTACHING PARTS)</i> |

Attaching parts always appear at the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation. Attaching parts must be purchased separately, unless otherwise specified.

Abbreviations Abbreviations conform to American National Standards Institute (ANSI) standard Y1.1

Cross index - mfr. code number to manufacturer

| Mfr. code | Manufacturer | Address | City, state, zip code |
|------------------|--|--------------------------------------|-----------------------------------|
| TK0435 | LEWIS SCREW CO | 4300 S RACINE AVE | CHICAGO IL 60609-3320 |
| TK1163 | POLYCAST INC | 9898 SW TIGARD ST | TIGARD OR 97223 |
| TK1321 | BERGFORD & ASSOCIATES | 2705 WESTWIND DR NW | OLYMPIA WA 98502 |
| TK1465 | BEAVERTON PARTS MFG CO | 1800 NW 216TH AVE | HILLSBORO OR 97124-6629 |
| TK1719 | NEDELCO BV (THOMAS & BETTS) | POSTBUS 6431 | 3002 AK ROTTERDAM THE NETHERLANDS |
| 0J9P9 | GEROME MFG CO INC | PO BOX 737 403 NORTH MAIN | NEWBERG OR 97132 |
| 0KB01 | STAUFFER SUPPLY | 810 SE SHERMAN | PORTLAND OR 97214 |
| 06383 | PANDUIT CORP | 17301 RIDGELAND | TINLEY PARK IL 07094-2917 |
| 06666 | GENERAL DEVICES CO INC | 1410 S POST RD PO BOX 39100 | INDIANAPOLIS IN 46239-9632 |
| 28520 | HEYCO MOLDED PRODUCTS | 750 BOULEVARD P O BOX 160 | KENILWORTH NJ 07033-1721 |
| 74868 | AMPHENOL CORP R F CONNECTORS (OPNS) | 1 KENNEDY AVE | DANBURY CT 06810-5803 |
| 76814 | NORTHERN ENGRAVING CORP | 803 S BLACK RIVER ST | SPARTA WI 54656-2221 |
| 80009 | TEKTRONIX INC | 14150 SW KARL BRAUN DR PO BOX 500 | BEAVERTON OR 97077-0001 |

Replaceable parts list

| Fig. & index number | Tektronix part number | Serial no. effective | Serial no. discont'd | Qty | Name & description | Mfr. code | Mfr. part number |
|--------------------------------|------------------------------|-----------------------------|-----------------------------|------------|---|------------------|-------------------------|
| 9-1 | 351-0623-00 | | | 1 | SLIDE,DWR,EXT:22.0X1.54,STEELSAFETY CONTROLLED | 80009 | |
| -2 | 211-0945-00 | | | 6 | SCREW,MACHINE:M4X8MM L,STL,MFZN-C,CROSS REC | 80009 | |
| -3 | 367-0520-00 | | | 2 | HANDLE,BOW:100MM L,BLACK,BRASS | 80009 | |
| -4 | 407-4760-01 | | | 2 | BRACKET,ANGLE:SIDE,RACKMOUNT,AL | 80009 | |
| -5 | 212-A009-00 | | | 4 | SCREW,MACHINE:M5X10MM L,FLH,STL,NI PL,CROSS REC | 80009 | |
| -6 | 211-0945-00 | | | 8 | SCREW,MACHINE:M4X8MM L,STL,MFZN-C,CROSS REC | 80009 | |
| -7 | 351-0104-03 | | | 1 | SL SECT,DWR EXT:12.625 L,W/OHARDWARESAFETY CONTROLLED | 80009 | |
| -8 | 390-1203-01 | | | 1 | CABINET,ASSY:RACKMOUNT,AL | 80009 | |
| -9 | 211-0785-00 | | | 4 | SCREW,MACHINE:M3X6MM L,FLH,STL,BLK ZN PL,CROSS REC | 80009 | |
| -10 | 211-0945-00 | | | 6 | SCREW,MACHINE:M4X8MM L,STL,MFZN-C,CROSS REC | 80009 | |
| -11 | 334-1377-50 | | | 1 | MARKER,IDENT:MKD Tektronix Japan, Ltd. Made in JAPAN | 80009 | |
| | | | | | ACCESSORY | | |
| | 061-A020-50 | | | 1 | MANUAL,TECH: RACKMOUNTING INSTRUCTIONS | 80009 | 061A02000 |

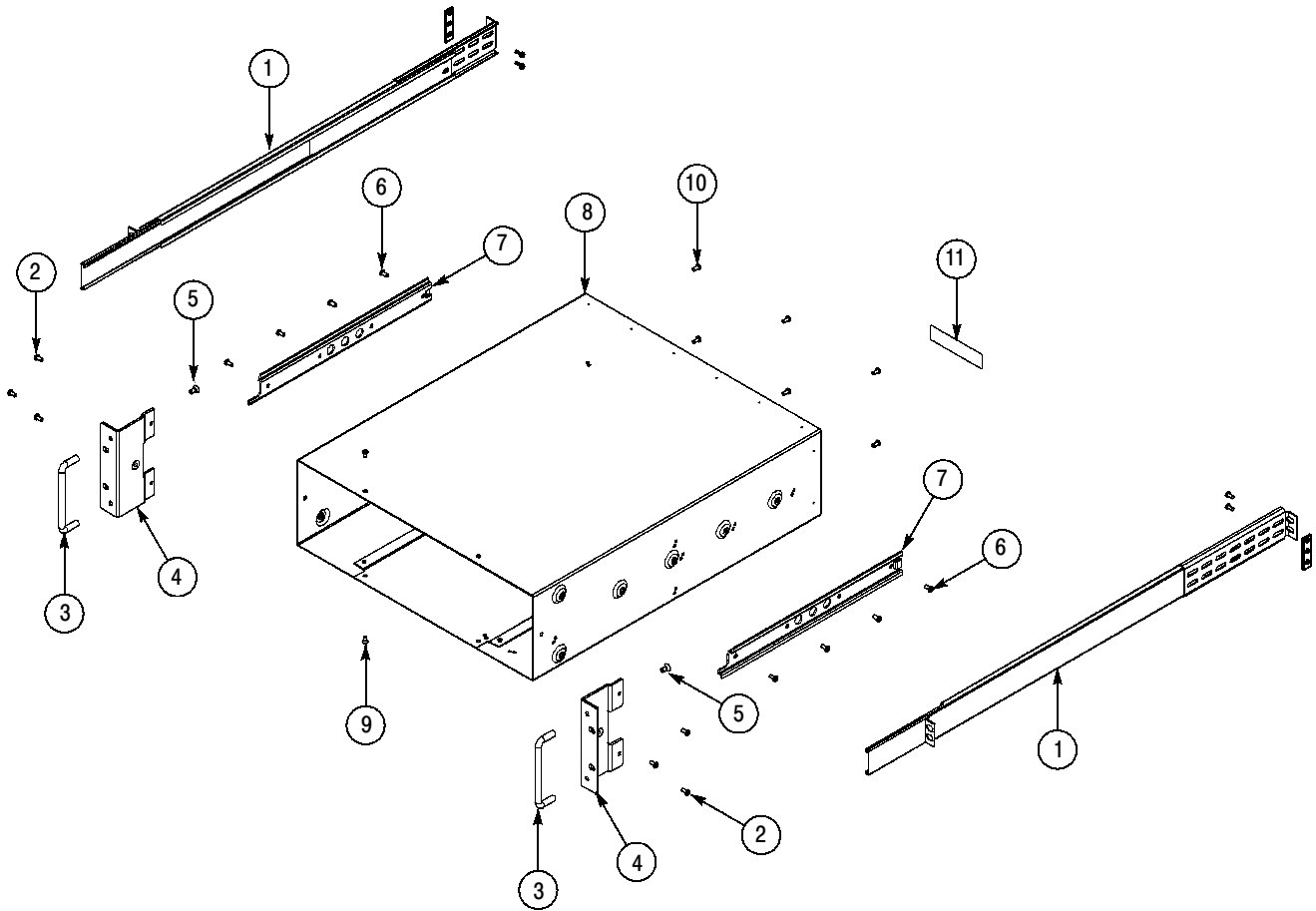


Figure 9: Rackmount hardware exploded view

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