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Instructions

Tektronix

Rackmount (Option 1R) Kit
WCA200 and WCA200A Series
Portable Wireless Communication Analyzers
RSA200, RSA2000A and RSA3000A Series
Real-Time Spectrum Analyzers

075-1263-03

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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- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

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, disconnect the mains power by means of the power cord or, if provided, the power switch.

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.

General Information

This introduction describes the WCA Wireless Communication Analyzers and RSA Real-Time Spectrum Analyzers Rack Adapter Kit, discusses its effects on analyzer performance, and lists its clearance requirements. Please read these topics before attempting to rackmount your analyzer.

The remainder of this document refers to the WCA Wireless Communication Analyzers and RSA Real-Time Spectrum Analyzers generically as analyzers.

Products

WCA230A and WCA280A	All serial numbers
WCA230 and WCA280	All serial numbers
RSA2203A and RSA2208A	All serial numbers
RSA230 and RSA280	All serial numbers
RSA3303A and RSA3308A	All serial numbers
RSA3408A	All serial numbers

Rack-Adapter Kit Description

The rack adapter kit is a collection of parts that, once installed, configure the analyzer for mounting in a standard 19-inch equipment rack.

NOTE. *A standard equipment rack has rails with universal hole spacing. If you use a rack with other than universal hole spacing, you may have to drill additional mounting holes in the rack.*

The dimensional drawing in Figure 3 on page 5 illustrates the rack-adapted analyzer.

Warranted Characteristics

When the analyzer is installed according to the instructions in this document, the rackmounted analyzer meets all warranted requirements except for those listed in Environmental Requirements on page 2. Analyzers mounted using methods other than those described in these instructions may cause the analyzer to not meet its warranted requirements.

Cooling air enters on the right side as shown in Figure 1. You must provide adequate cool air to meet the exhaust temperature requirements.

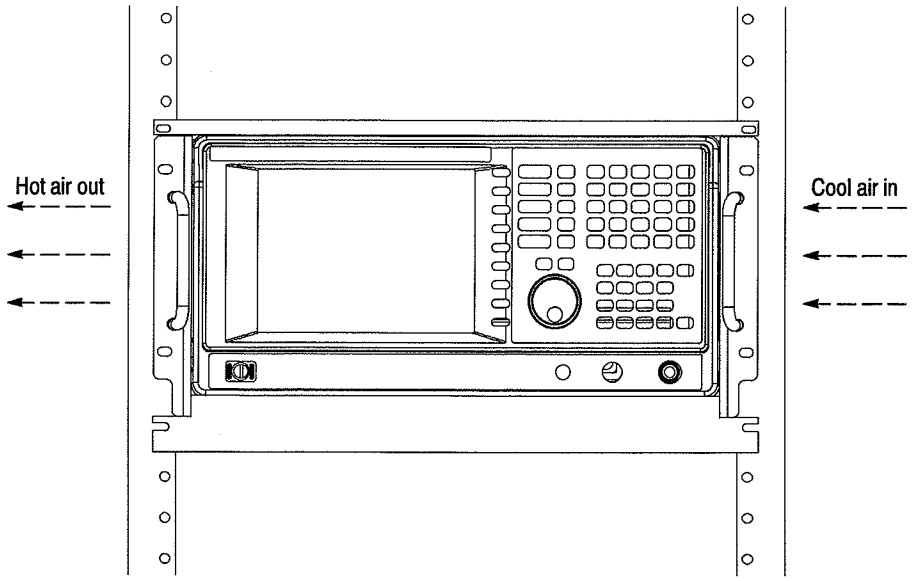


Figure 1: Analyzer cooling

Refer to *Specification* in the user or service manual that applies to your analyzer model for tables of the warranted characteristics.

Environmental Requirements

The following environmental characteristics supercede those listed in the user or service manual.

Characteristic	Description
Temperature, operating	
Inside rack cabinet	+10 °C to +40 °C

Clearance Requirements

The rack in which the rack adapted analyzer is mounted must provide the following clearance requirements:

- A minimum of 264.5 mm (10.4 in) of vertical space.
- A minimum width of 441.6 mm (17.4 in) between the left- and right-front rails in the rack.
- A minimum inside depth of at least 486.0 mm (19.1 in).



CAUTION. *Adhering to these clearance requirements mounts the rack adapted* analyzer *with sufficient for air circulation and accommodation of the power cord and mounting hardware. Failure to provide these clearances can result in overheating and can cause the analyzer to operate improperly and/or fail.*

Kit Parts List

Figure 2 on page 4	Quantity	Part number	Description
2-1	1 ea.	333-4538-01	PANEL, FRONT BLANK PANEL FOR RACK
2-2	1 ea.	407-5226-00	BRACKET HOLDING CABLE
2-3	1 ea.	407-5223-00	BRACKET SLIDE GUIDE LEFT
2-4	1 ea.	407-5224-00	BRACKET SLIDE GUIDE RIGHT
2-5	2 ea.	367-0525-00	HANDLE CARRYING
2-6	1 ea.	351-0313-01	GUIDE RACK MOUNT
2-7	1 ea.	351-0241-01	SLIDE DWR EXT
2-8	2 ea.	407-5250-00	BRACKET, RAIL; EXTENDER REAR
2-9	8 ea.	211-A039-00	SCREW M4x14mm SEMS
2-10	15 ea.	212-0518-00	SCREW 10-32x0.312 inch, PNH
2-11	8 ea.	212-0509-00	SCREW 10-32x0.625 inch, PNH
2-12	4 ea.	212-0574-00	SCREW 10-32x0.438 inch FLH
2-13	12 ea.	----------	SCREW 10-32x0.354 inch, TRUSS
2-14	1 ea.	386-7496-00	PLATE, FRONT PANEL TOP, AL
2-15	8 ea.	220-0274-00	NUT, 10-32 STL, CLIP NUT
2-16	1 ea.	335-0391-00	MARKER, IDENT;SAFETY LABEL
2-17	1 ea.	075-1263-03	INSTRUCTION MANUAL, WCA2UP-1R

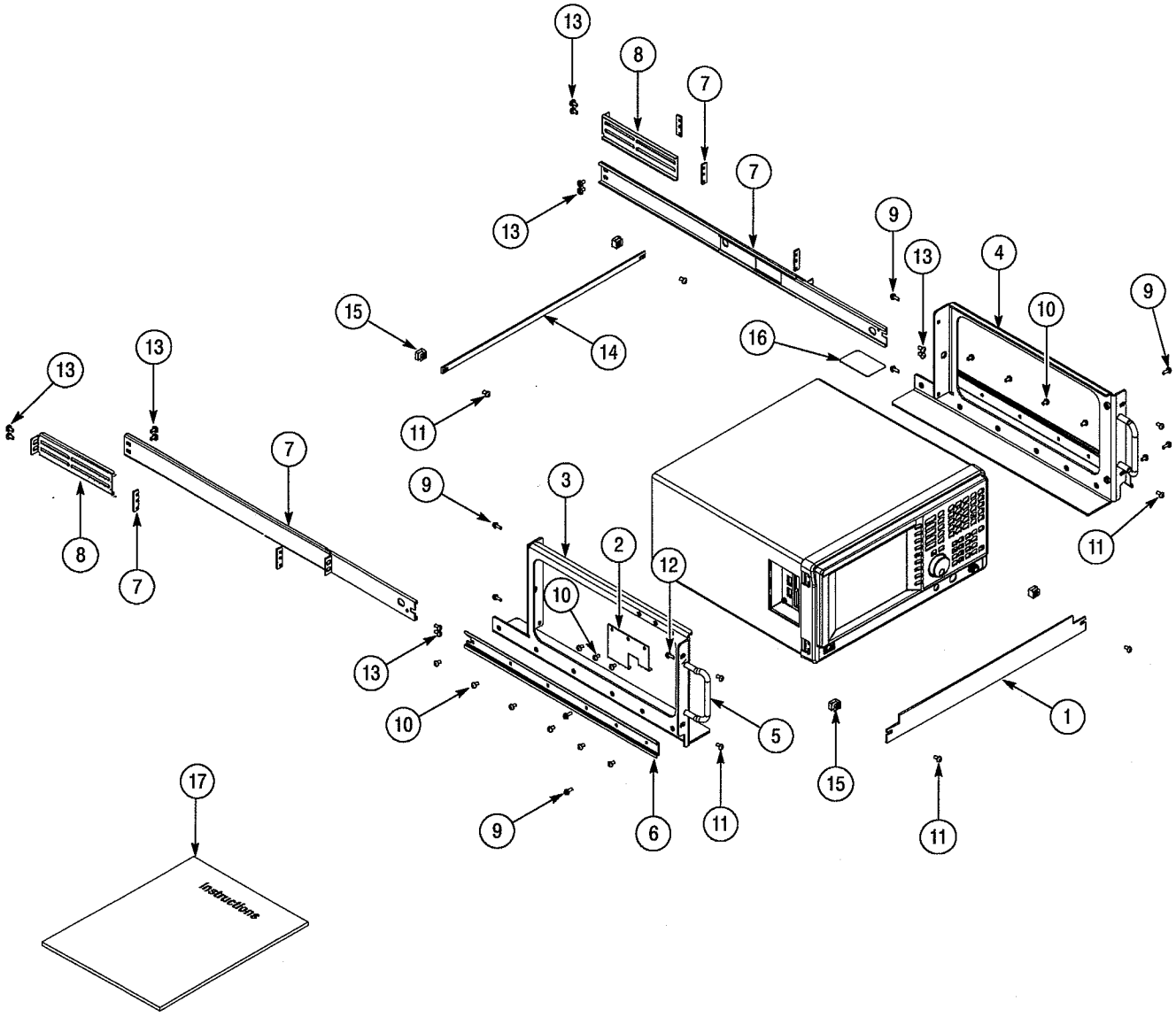


Figure 2: Rackmount kit parts

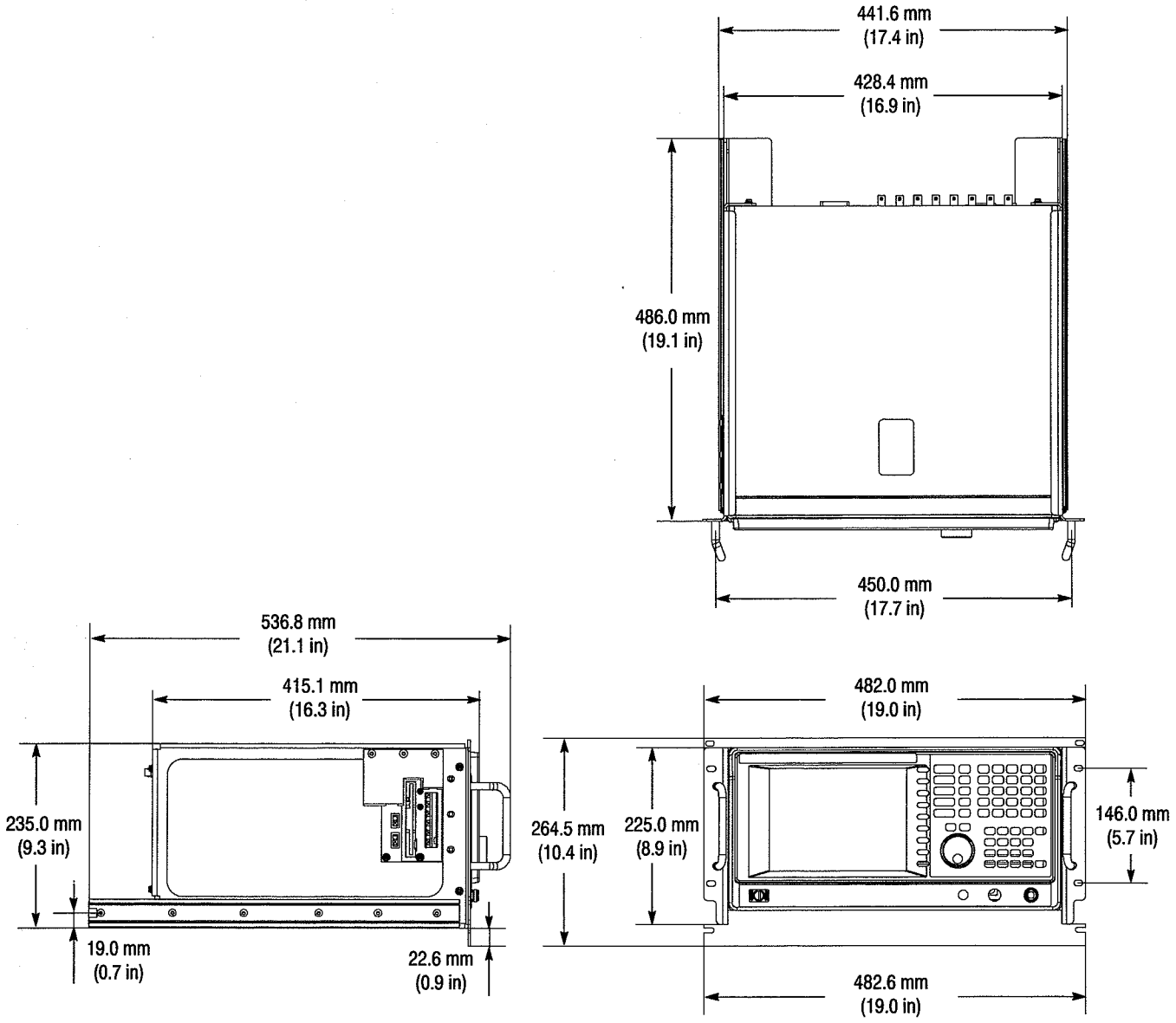


Figure 3: Instrument with rack adapter installed

Installation Instructions

This section contains all procedures needed to rackmount the WCA or RSA analyzer.



WARNING. *To avoid personal injury, prevent the instrument from tipping or dropping onto the installers. Two or more people should install this instrument into the rack cabinet. Install the instrument so that the operator will be able to access its rear panel connections without pushing on the instrument.*

Equipment List

The following tools are required to attach the rack-adapter kit hardware, install cabling hardware, and mount the rack-adapted analyzer into a standard equipment cabinet. All tools are standard tools that are readily available.

Required tools and equipment	Description
Screwdriver handle	Accepts Phillps-driver bits
#2 Phillips tip	Phillips-driver bit for #2 size screw heads

Strip the Analyzer for Conversion

Equipment Required: One #2 Phillips screwdriver.

NOTE. *All parts removed from the analyzer in this procedure should be kept. Some of those parts will be needed to perform this rack conversion and the remainder will be needed if reconversion to a standard analyzer configuration is desired at a later time.*

Procedure:

1. *Remove cables and rear cushions:*

   a. Disconnect all external cables and the power cord from the analyzer.

   b. Remove the one screw securing the rear cushion over the cabinet to the rear panel at each corner. Detach the cushions. See Figure 4.

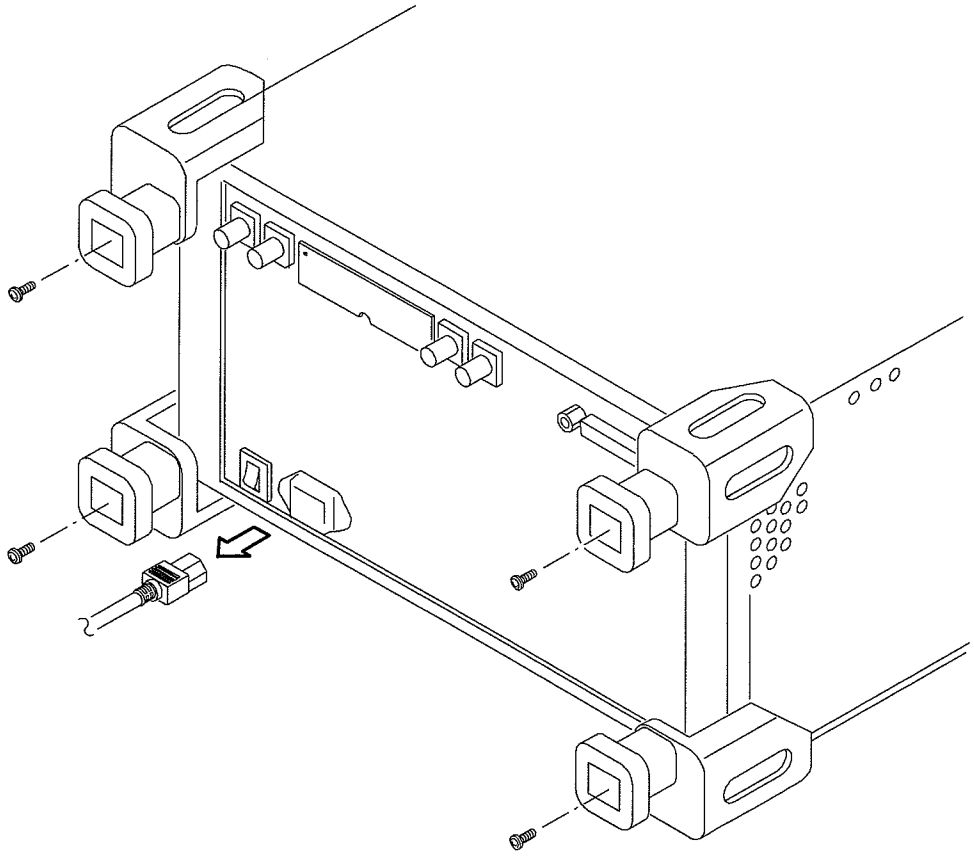


Figure 4: Removing the rear cushions

2. *Remove the Front Cushions:*

   a. Remove the two screws securing the front cushion to the side panel at each side. See Figure 5.

   b. Lifting the front of the analyzer slightly, move the front cushion away.

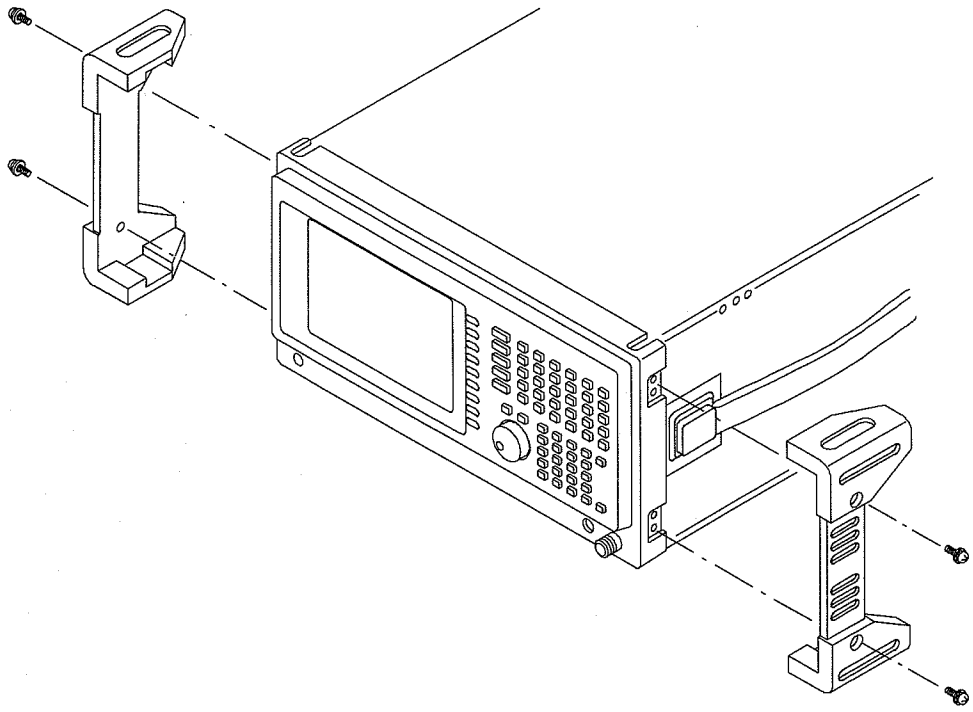


Figure 5: Removing the front cushions

Rackmount the Analyzer

This procedure describes how to assemble and install the slide-out tracks in the equipment rack, and then how to install the analyzer into the rack.

Installing the Kit Hardware

Equipment Required: One #2 Phillips screwdriver.

1. *Install the main brackets:*

   a. Install the right main bracket to the side and rear of the analyzer using four M4 x 14 screws. See Figure 6.

   b. Rotate the analyzer to face the left side and repeat step a to install the left main bracket.

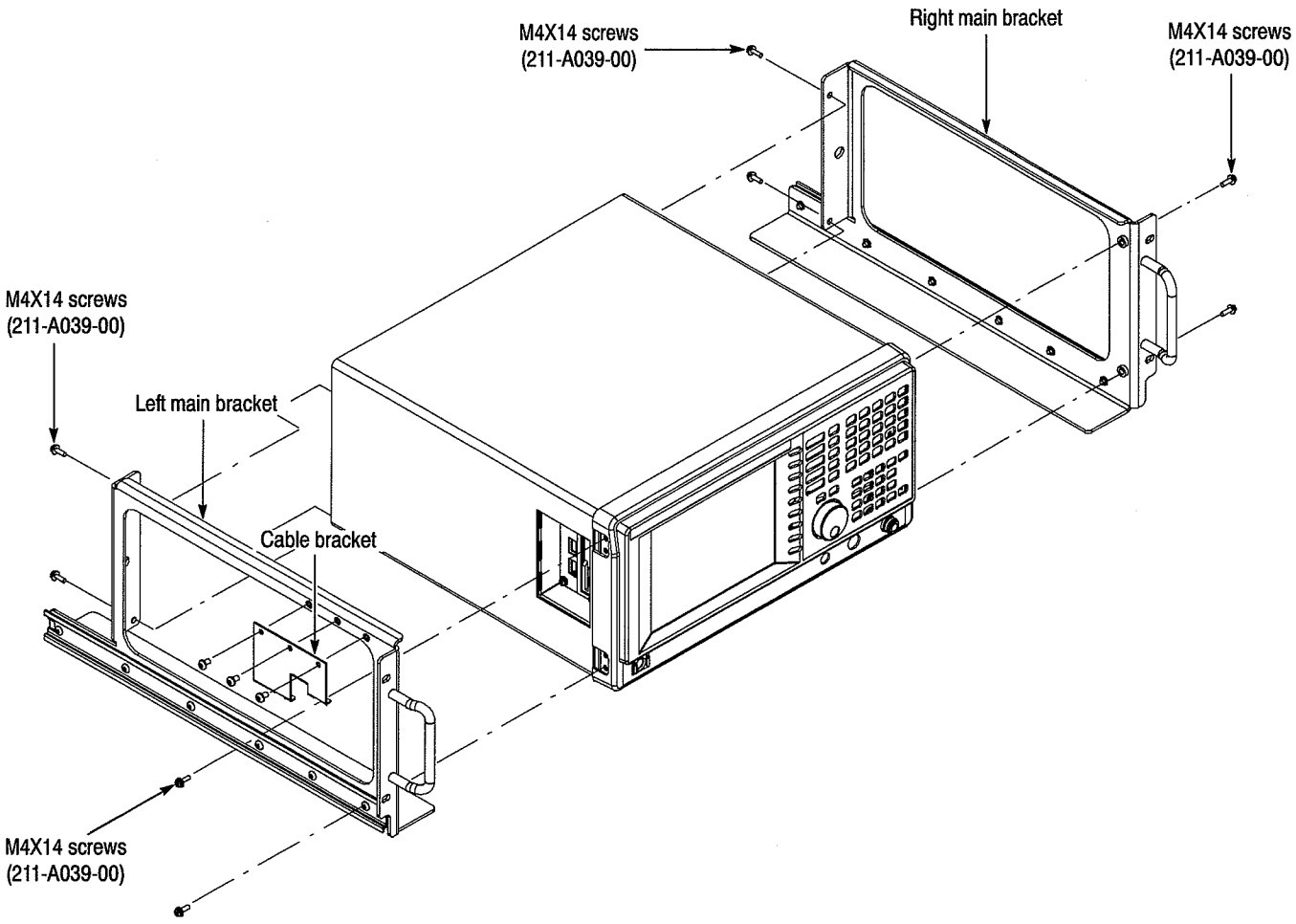


Figure 6: Rackmount assembly

2. *Install the cable bracket:*

   a. If you use the USB and LAN connectors on the left side of the analyzer, install the cable bracket to the left main bracket using three 10-32 screws. See Figure 7.

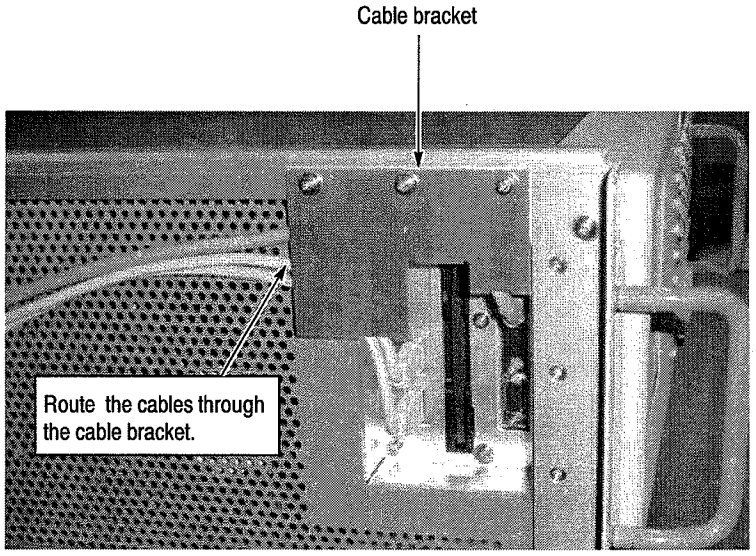


Figure 7: Installing the cable bracket

3. *Apply the CAUTION label:*

   a. Remove the protective backing from the CAUTION label, and apply it to the top center of the cabinet. See Figure 8 on page 12.

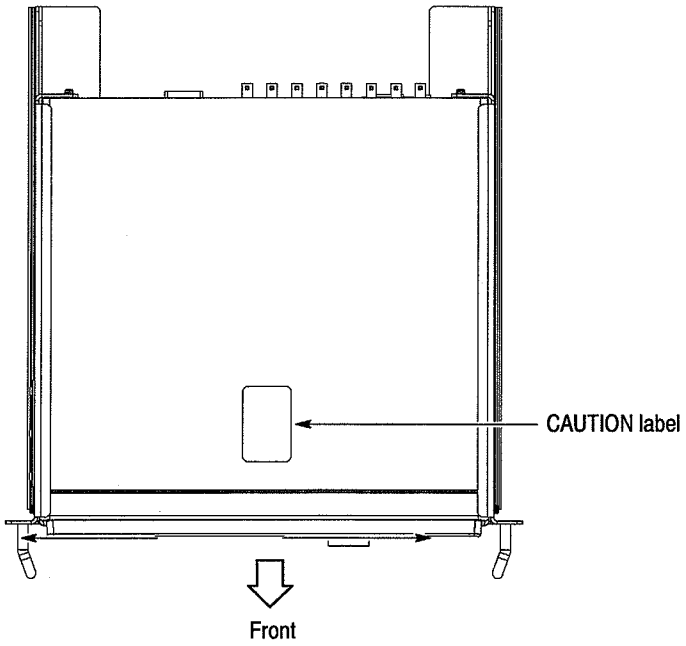


Figure 8: Applying the CAUTION label on the cabinet (top view)

Assembling the Slide-out Tracks

Equipment Required: One #2 Phillips screwdriver.

Procedure:

1. Identify the equipment rack right and left slide-out track assemblies by finding the date code label on each assembly. The equipment rack left-side assembly has a date code that ends with "LH", for left hand. The equipment rack right-side assembly has a date code ending with "RH".
2. Measure the distance between the front and rear rail of the equipment rack.
3. Align the rear bracket to the right slide-out track as shown in Figure 9 or Figure 10. Note that the rear bracket has multiple pairs of mount-through holes. When aligning the bracket and track, be sure to select a pair of holes that mount the rear bracket so that the flange-to-flange distance matches the front rail to rear rail spacing of the rackmount rack just measured in step 2.
4. Secure the rear bracket to the right slide-out track using two 10-32 screws and a bar nut. Leave the screws loose so that you can adjust the overall length of the slide-out track assembly in the rack.
5. Repeat steps 3 and 4 to assemble the left slide-out track assembly.

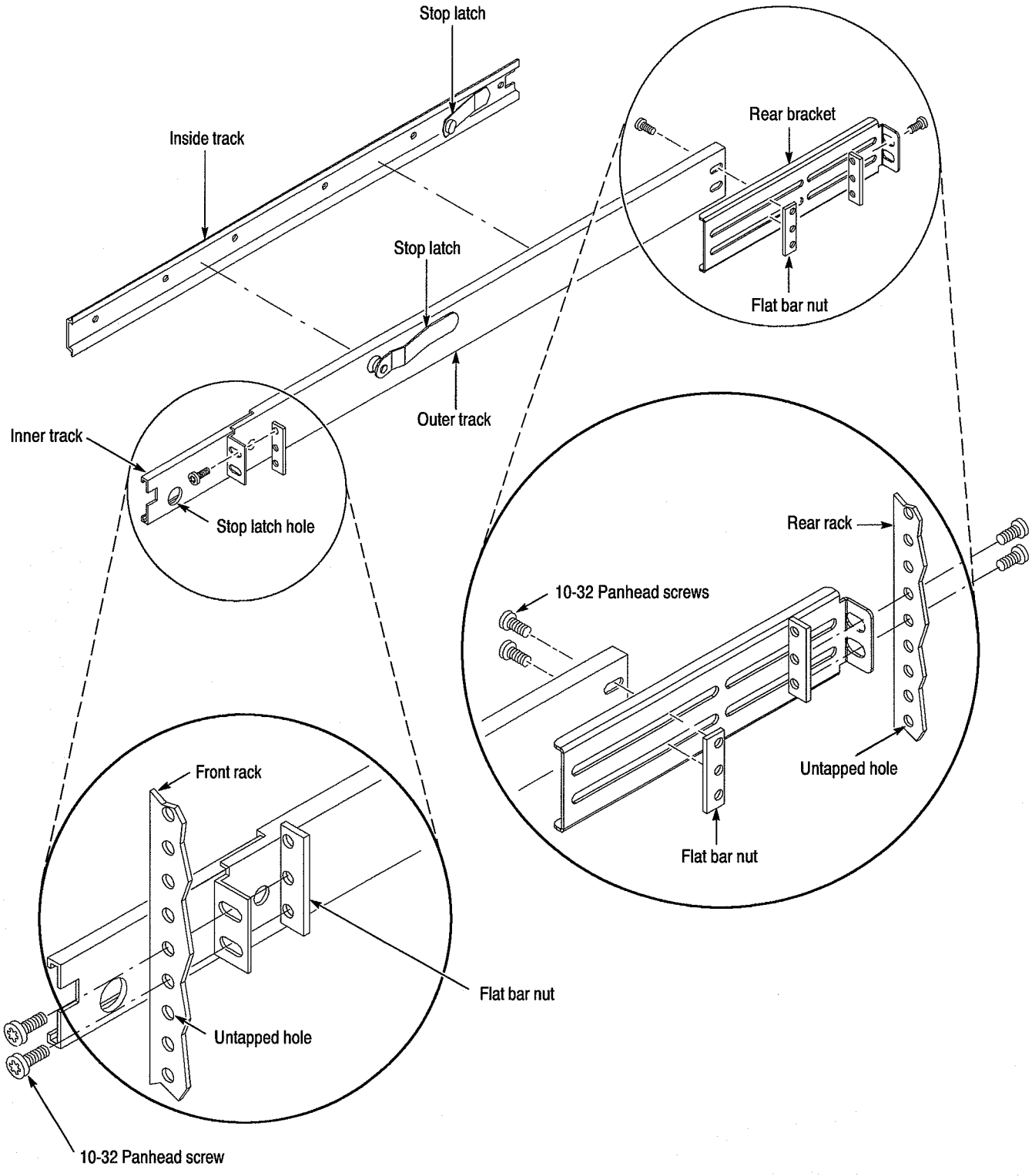


Figure 9: Assembling the slide-out tracks (for untapped rails)

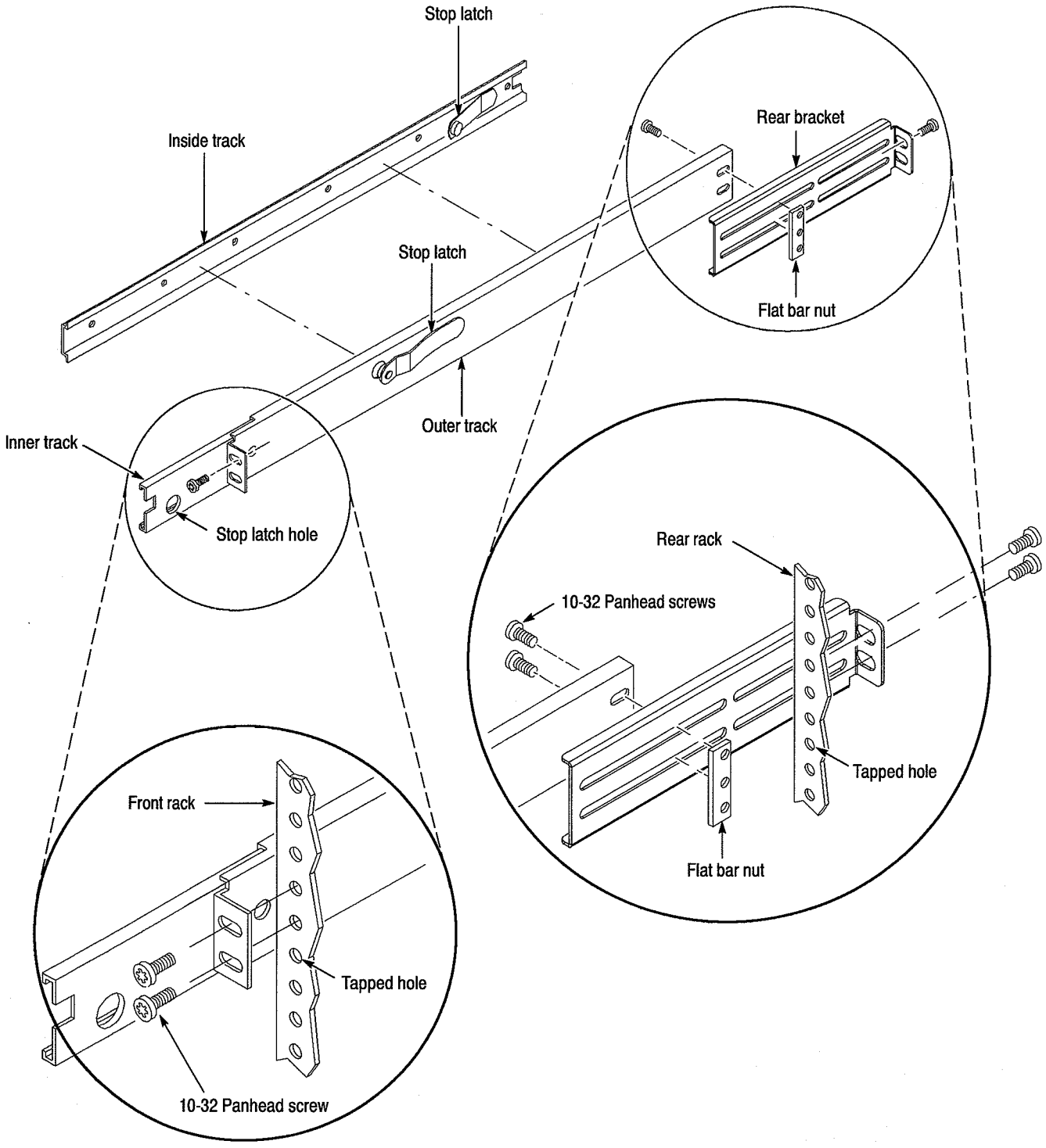


Figure 10: Assembling the slide-out tracks (for tapped rails)

Mounting the Slide-out Tracks

1. Select a 1/2 inch spaced hole in the front rail.
2. Select the mounting method according to your rack type:
   - To mount the slide-out tracks with their front and rear flanges outside of the front and rear rails, use method A shown in Figure 11 when doing step 3. This mounting method assumes tapped holes.
   - To mount with front and rear flanges inside of rack rails, use mounting method B shown in Figure 11. This mounting method assumes untapped holes.
3. Using the method and hardware determined from step 2, secure the right slide-out track assembly to the equipment rack front and rear rails. The screws should be fully, but lightly, seated so that you can adjust the rack later. See Figure 11.
4. Tighten the screws, applying 28 inch-lbs of torque, left loose in step 4 in *Assembling the Slide-out Tracks* on page 12 to fix the front to rear flange spacing of the slide-out track assembly.
5. Repeat steps 1 through 4 to mount the left slide-out track assembly.

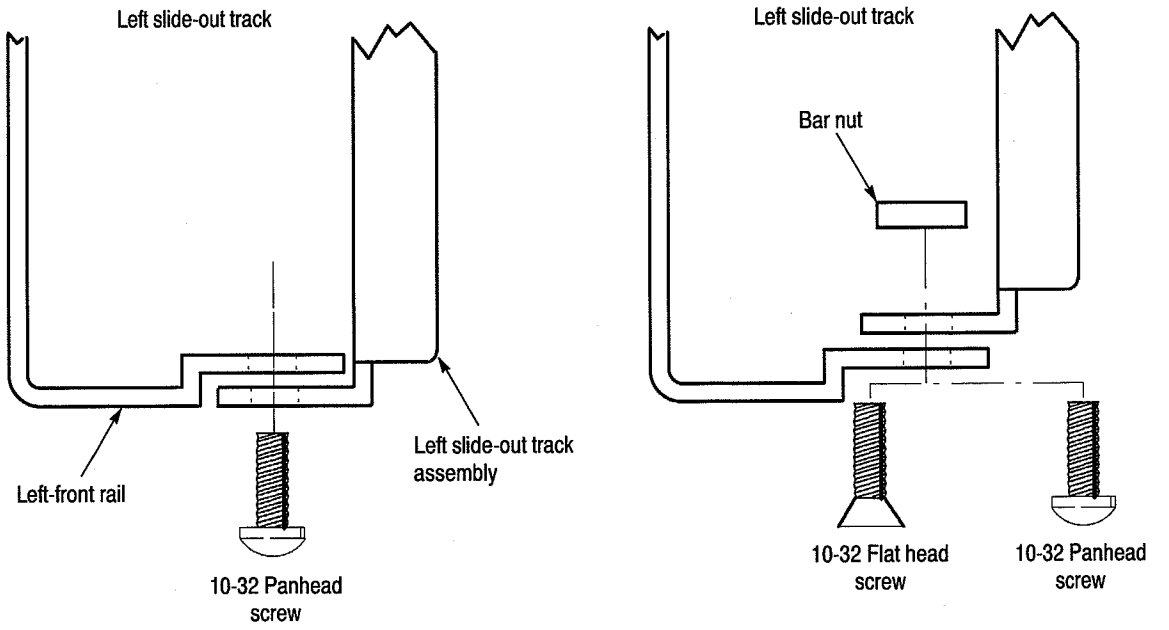


Figure 11: Installation of slide-out track assemblies in the rack (top view)

Installing the Analyzer in the Rack

Equipment Required: One #2 Phillips screwdriver.

Procedure: See Figure 12.

1. *Install the analyzer:*
   - **a.** Working from the front of the rack, slide out the inner track of each slide guide until it stops at the catch.
   - **b.** Insert the left and right inner tracks into the tracks on the analyzer. Make sure that the tracks on the analyzer slip inside the inner tracks.
   - **c.** Slide the analyzer backwards until it stops.
   - **d.** Push both stop latches, located on the outside of each track, and continue to slide the analyzer all the way into the rack.
2. *Level the rackmounted analyzer:*
   - **a.** Tighten the four screws that were left loose at the rear of the rack when you did step 3 in *Mounting the Slide-out Tracks* on page 15, then pull the analyzer part way out of the rack.
   - **b.** Be sure the four screws that were left loose at the front of the rack are loose enough to allow the slide guide assemblies to seek their normal positions.
   - **c.** Retighten the four screws and push the analyzer all the way into the rack. If the tracks do not slide smoothly, readjust the level using the method just detailed.
   - **d.** When leveling is completed, tighten the four screws at the front of the rack.
3. *Secure the analyzer and make rear panel connections:*
   - **a.** Secure the right and left main brackets to the front rails with four 10-32 screws. If the front rails have untapped holes, insert the four clip nuts on the holes that you will use to secure the main brackets.
   - **b.** Secure the upper and lower blank panels to the front rails with four 10-32 screws. If the front rails have untapped holes, insert the four clip nuts on the holes that you will use to secure the upper and lower blank panels.
   - **c.** Install the power cord on the rear panel.
   - **d.** If necessary, connect cables on the rear panel.

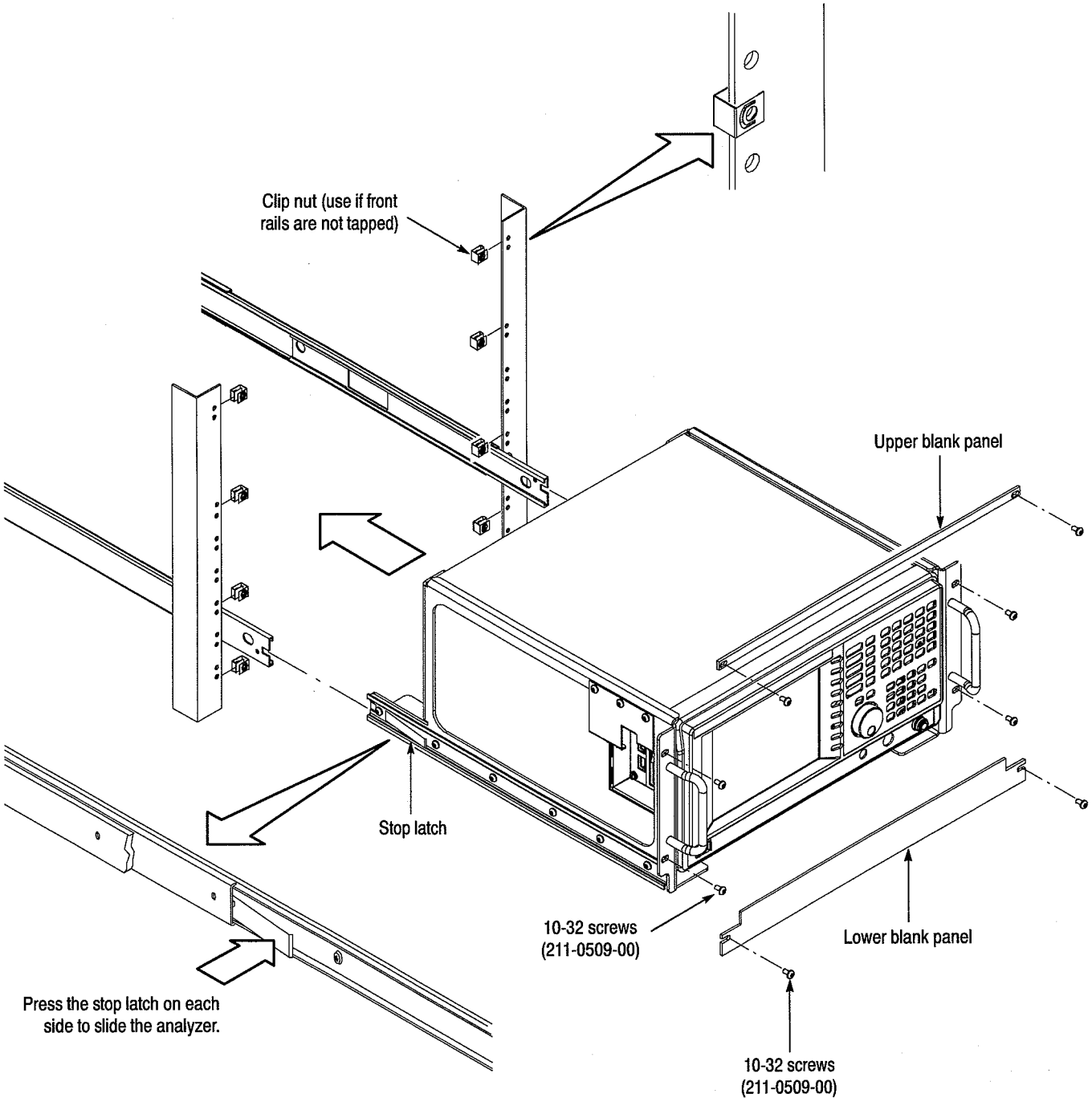


Figure 12: Installing the analyzer in the rack



WARNING. *After completing the installation procedure, the installers should verify that the instrument and rack cabinet will not tip forward while the instrument is in the extended position.*

To avoid personal injury, operators should prevent the rackmounted instrument from tipping forward onto them. Operators should verify that the rack does not become unstable with the instrument fully extended. Do not leave the instrument extended.

To remove the analyzer from the rack mount, slide it out until it stops at the catches. Support the analyzer while you press in on the automatic latch on each side. This action will free the analyzer to slide completely out of the rack. Provide support while you slide the mainframe out of the rack.

End of document

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