# G12/G12x USER MANUAL

## INDEX *(CLICK TO NAVIGATE TO PAGE)*

***PAGE***


**1** SLIDE KIT INSTALLATION

**2** SLIDE MOUNT RACK EXTENDER KIT INSTALLATION

**3** SLIDE MOUNT NOTATION REGARDING U HEIGHT

**4** INSTRUMENT BRACKET INSTALLATION

**5** CABLE TRAY INSTALLATION

**6** KEYBOARD TRAY KIT INSTALLATION

**8** TABLETOP RECEIVER MOUNTING

**9** REAR COVER INSTALLATION

**10** RACK MOUNT RECEIVER INSTALLATION

**11** RACK MOUNT EXTENDER BLOCK KIT INSTALLATION

**12** HANDLE REMOVAL AND REPOSITIONING

**13** ADJUSTING G12 & G12X ITA PROTECTIVE COVER

**14** G12X ITA ENCLOSURE ASSEMBLY

**15** KEYING PIN KIT INSTALLATION

**16** ITA & RECEIVER ENGAGEMENT

**17** RECEIVER INSTALL/ UNINSTALL CAUTIONARY NOTE

**18** TROUBLESHOOTING

**19** PRECAUTIONARY NOTES


*Please note that any printed or downloaded User Manual may not reflect the most current revisions.*
*The information contained herein is subject to change.*
*For the most current information available, visit vpc.com.*

# SLIDE KIT INSTALLATION

PART # 310113409, 310113410, 310113451, 310113411, 310113500

Dimensions shown: [millimeters]
inches

**TOOLS REQUIRED**

Phillips Head Screwdriver
Flat Head Screwdriver
$^{3}/_{32}$ Allen Wrench

**DETERMINE SLIDE LENGTH NEEDED**

1. Measure dimension A as shown in **Figure A** to determine the proper size of the slide kit needed. Make sure the slide length does not exceed dimension A + B.

2. If dimension C exceeds 1", use the Rack Extender Kit, part # 310113406 for G12 or part # 310113519 for G12x.

**INSTALLATION**

1. Install slides using manufacturer's instructions. A hard copy is included with the slide kit. (Click here to access PDF version)

2. Attach platform mounting brackets to the slides (**Figure B**). The platform mounting brackets are threaded so the washers and nuts will not need to be locked.
   ***NOTE:*** *The screws will overhang the bracket holes by $^{3}/_{8}$". These screws may also be used to mount the keyboard tray kit, Part # 310113*439.

3. Use the existing #8-32 flat head screws, washers, and hex nuts to secure the platform to the brackets after removing the rubber feet (**Figure C**).
   ***NOTE:*** *If installing a cable tray or instrument bracket, do not attach the platform until those accessories are installed.*

4. Pull the receiver out, as far as possible. The slides will lock in position. Push the blue tabs located on the middle section of the slides (**Figure D**). Apply pressure to push the receiver back in toward the rack. The smaller inner slides move into the middle section, which should not move. Push receiver until it backs into the rack. The mounting screws can now be used.

5. Secure receiver to rack.

**ALWAYS SUPPORT THE RECEIVER AND PLATFORM WITH THE MOST ROBUST (MIDDLE) SECTION OF THE SLIDES.**

To ensure proper support when extending the receiver and platform away from the rack:

1. Stop the receiver and platform approx. 6" from the rack
2. Reach around to the rear of the receiver and under the slides on both sides
3. Manually extend the middle section of the slides forward until fully underneath the platform
4. The receiver and platform may then be extended while holding this middle slide in place.
5. If done properly, the middle section of the slides will remain underneath the platform and offer the strongest support.

The platform can support 180 lbs. With optional leg kit, it can support 350 lbs.

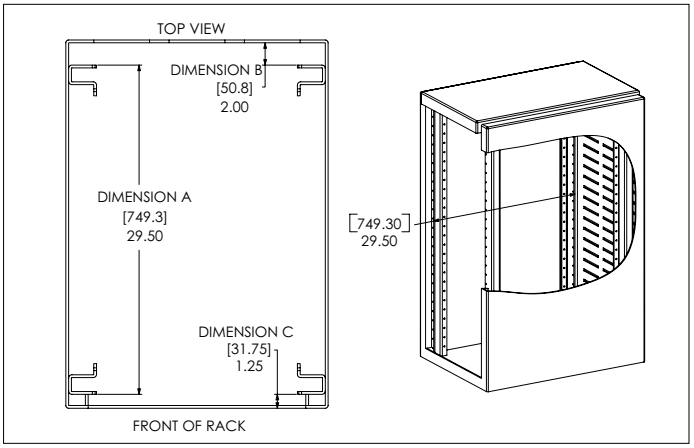



*Figure A.*

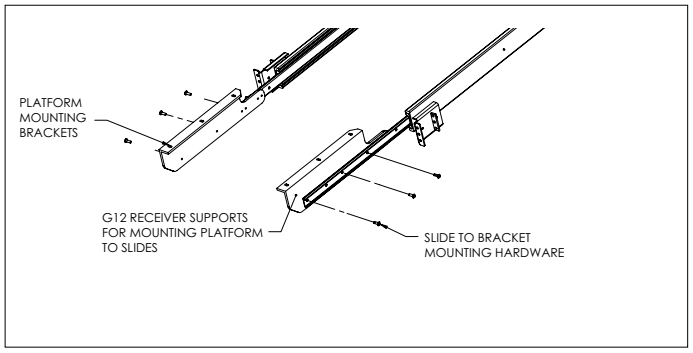



*Figure B.*

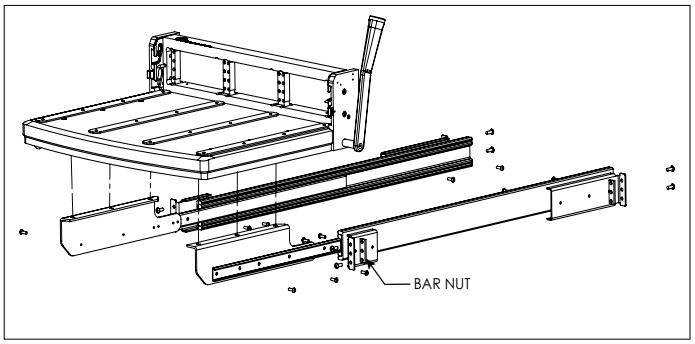



*Figure C.*


*Figure D.*

RETURN TO INDEX

# SLIDE MOUNT RACK EXTENDER KIT INSTALLATION

PART # 310113406, 310113519

NOTE: This kit is for test rack rails that are recessed more than 1” and it accommodates a maximum depth of 2.5".

**TOOLS REQUIRED**

5/32 Allen Wrench

Phillips Head Screwdriver

1. To determine if a rack extender kit is needed, verify that the distance between the front of the rack enclosure and the rail is between 1" and 2.5" (**Figure A**).

2. Attach the mounting rack mating surface on the extender brackets to the recessed rail with the cap screws. Do not fully tighten until the cover plate is attached.

3. Attach the cover to the brackets with the flat head screws.

4. With the extender kit in place, secure the G12 receiver to the mating surface on the extender brackets with #10-32 cap screws (provided with the G12).

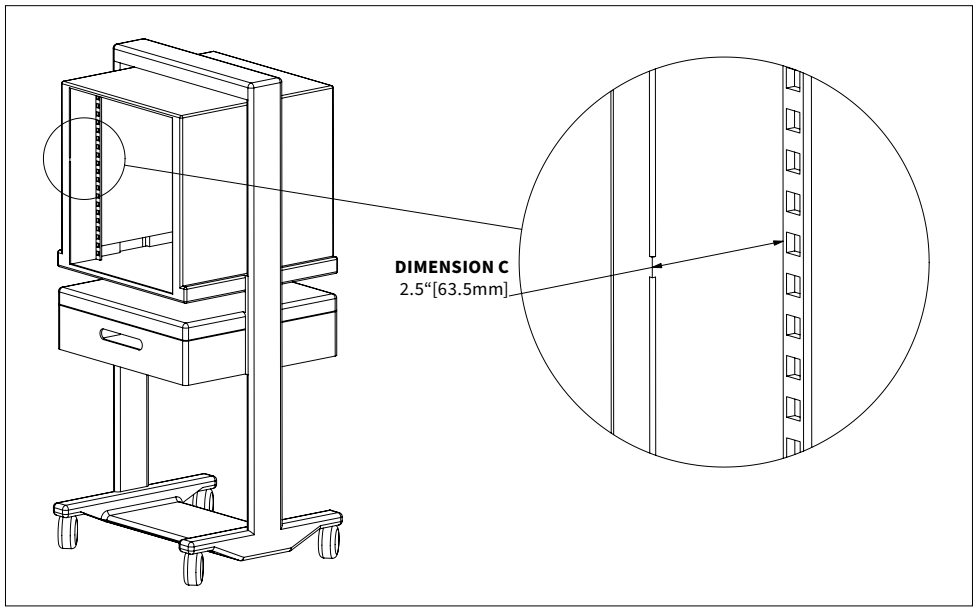



*Figure A.*

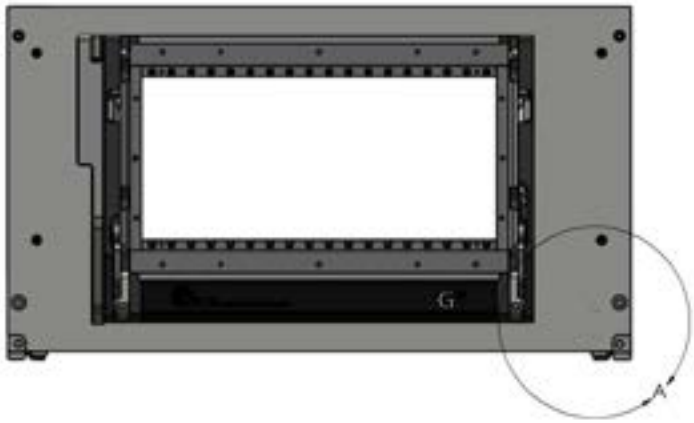
RETURN TO INDEX

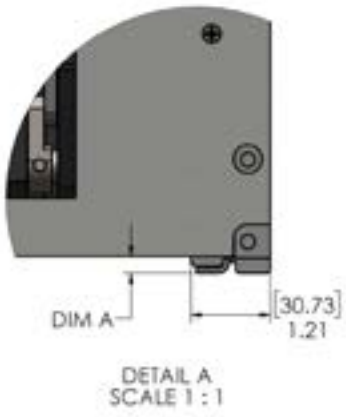
# SLIDE MOUNT NOTATION REGARDING U HEIGHT

PART # 310104416 , 310120141

**NOTE:** When using a slide kit for the part numbers listed above, the slide mechanism protrudes slightly downward into the rack's next U height on both sides of the receiver.

For the above receivers, Dimensions A in the drawings below is .46" or 11.7 mm.




RETURN TO INDEX

# INSTRUMENT BRACKET INSTALLATION

PART # 310113453

**NOTE:** Instrument brackets are only compatible with slide kits 28” or larger.

**TOOLS REQUIRED**

$^{5}/_{32}$ Allen Wrench
Phillips Head Screwdriver

1. Depress the blue tabs on the inner slides and remove.

2. Attach one of the brackets to the slide using (3) #8-32 button head screws. The brackets are identical parts and only the front two holes on each bracket are designed to line up with the slides. The left bracket assembly is shown in **Figure A**.

3. Attach the remaining bracket to the other inner slide.

4. Reinstall the inner slides.
   - Slide the left mid-section of the slide all the way out, you will feel it lock into position.
   - Feed the matching inner slide into position and ensure the inner section rides into place with the roller bearings seated into the groove. - Push the inner slide in about 6-8 inches and then pull out the right side. Slide the track of the mid-section over the right side of the inner slide.
   - Pull the slide out until the position matches the left side.
   - Reach to the back of the middle slides and release the spring locking mechanism (**Figure C**).

   **NOTE:** Now, both sides should be partially installed. It should not successfully be able to be pushed into the rack because the support tab on the instrument brackets will hit the slide mounting bracket.

5. Rotate both instrument brackets inward so the support tabs can pass the mounting brackets. Continue to push (install slides simultaneously) into position. Remember to push the blue tabs to allow the inner slide to continue to travel into the middle slide section.

   NOTE: The middle section will not go into the outer section until the inner section has been fully installed into the middle section.

6. Retighten the slide mounting screws.

**MAKE SURE ALL SCREW HEADS HAVE BEEN SECURELY TIGHTENED. ONLY USE #8-32 BUTTON HEAD SCREWS.**

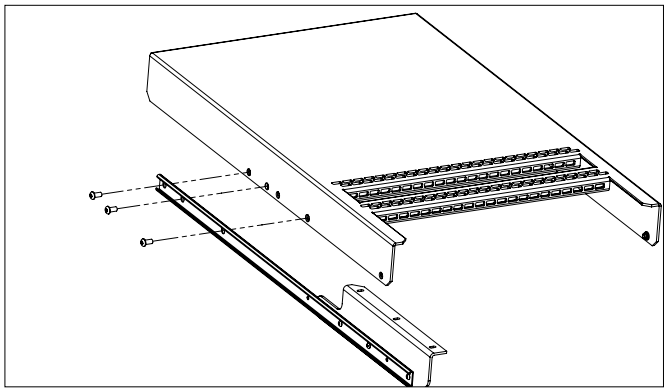


*Figure A.*

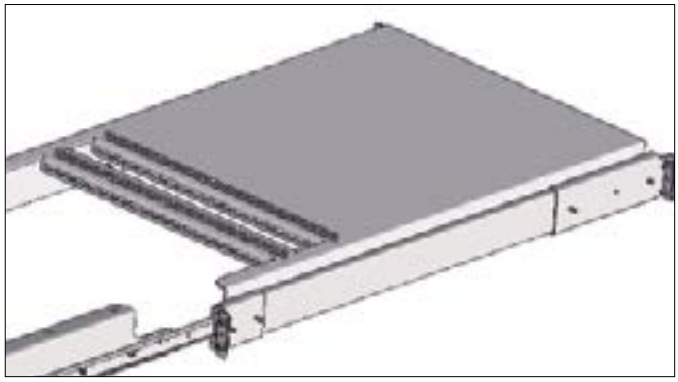


*Figure B. The slots on the instrument brackets are designed to accept a strap should you want to secure your chassis.*

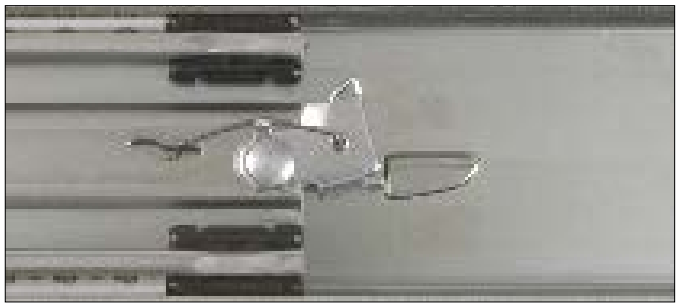


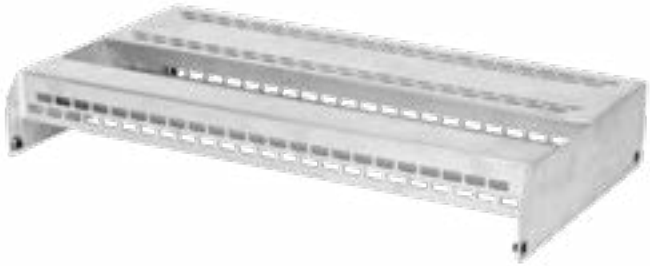
*Figure C. Spring-locking mechanism.*

RETURN TO INDEX

# CABLE TRAY INSTALLATION

PART # 310113424

**NOTE:** Not compatible with 20” or 24” slide kits or the instrument bracket kit with strain relief. The cable tray is used for strain relief and cable management with the horizontal and vertical flanges providing tie down options.



**TOOLS REQUIRED**
$^{3}/_{32}$ Allen wrench

1. Loosen the slide mounting screws with one turn.
2. Depress the blue tab and remove the inner slides.
3. Attach the cable tray to the slides with #8-32 screws ( **Figure A)**. The angled side of the cable tray should face the G12/G12x receiver. When using shorter slide kits the cable tray will sit below the lip of the instrument brackets.
4. Tighten the slide mounting screws.

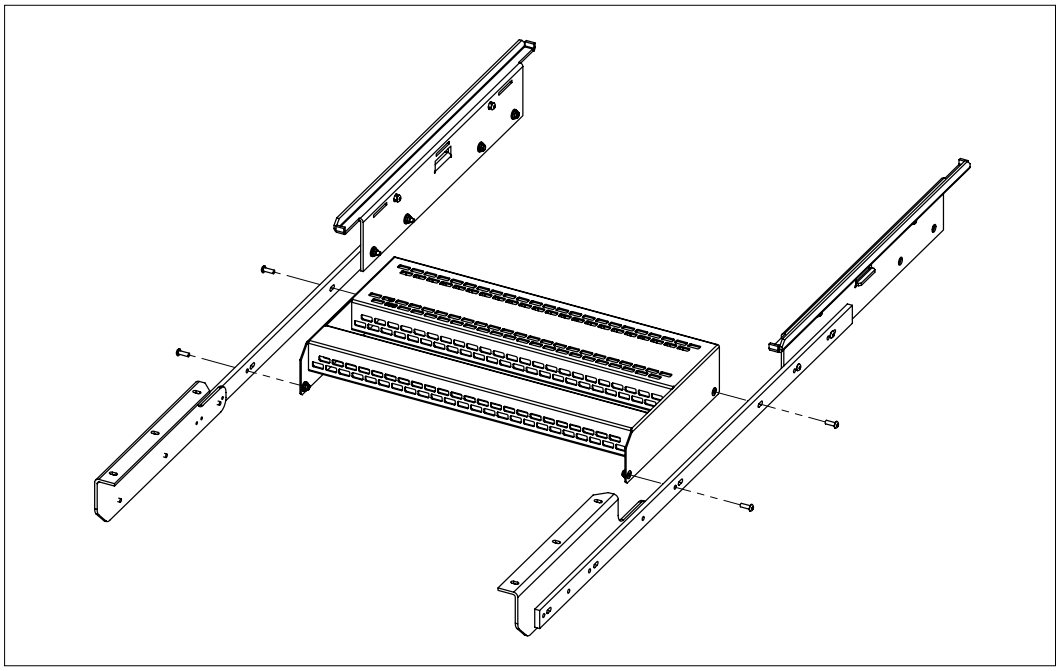


*Figure A.*

RETURN TO INDEX

# KEYBOARD TRAY KIT INSTALLATION

PART # 310113439

Dimensions shown: [millimeters]
inches

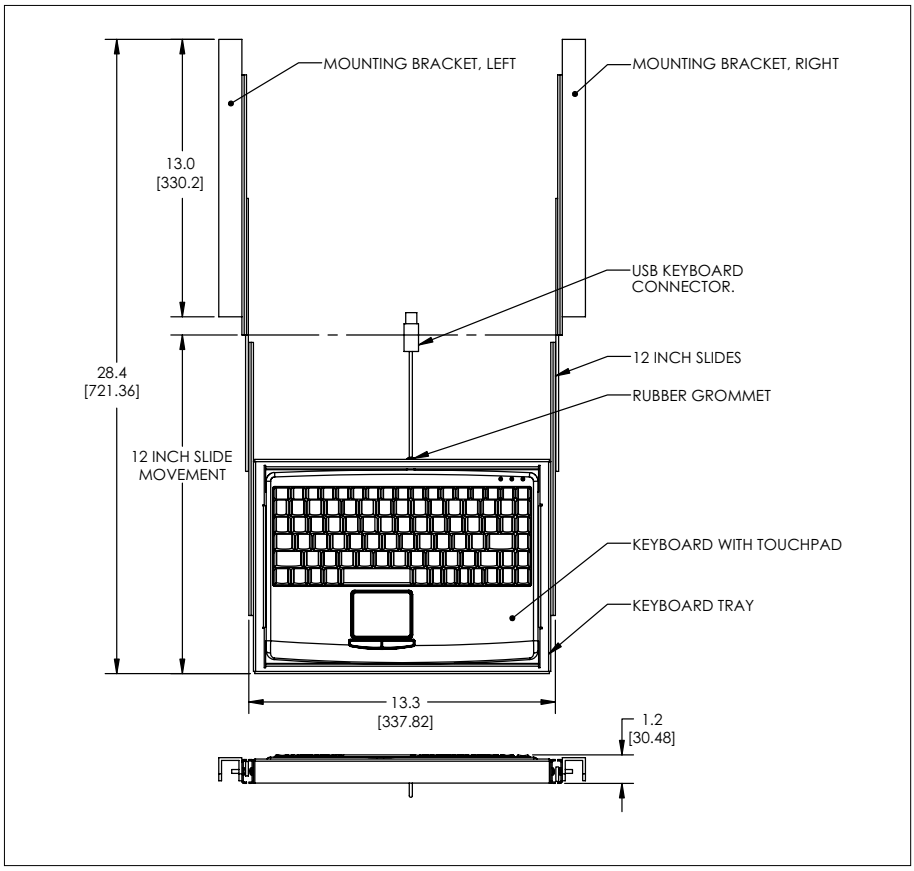



*Figure A.*

RETURN TO INDEX

# KEYBOARD TRAY KIT INSTALLATION (CONT'D)

PART # 310113439

**TOOLS REQUIRED**
$^{3}/_{32}$ Allen wrench

1. Attach the keyboard mounting brackets to the existing platform mounting brackets. Use the #8-32 nuts and lock washers to secure the keyboard mounting brackets to the three screws extending from the platform mounting brackets (**Figure B**).

2. Use the #8-32 button head screws to attach the 12" slides to the inner side of the keyboard brackets. The manufacturer stamped identification on the slides should be placed toward the rack. You need to adjust the position of the slides to access the hole locations .

3. There are floating, self-locking fasteners in the keyboard mounting brackets which prevent the screws from backing out. There will be a snug fit when tightening the screws (**Figure C)**.

4. Insert the keyboard into the keyboard tray. Wrap the plastic strain relief around the cable near the back of the keyboard and press into the hole provided on the keyboard tray.

5. Fully extend the 12" slides and mount the keyboard tray, (**Figure** ). The remaining 4 #8-32 button head screws are used to attach the keyboard tray to the slides. The different hole patterns allow for variations in the overall extension of the keyboard tray.

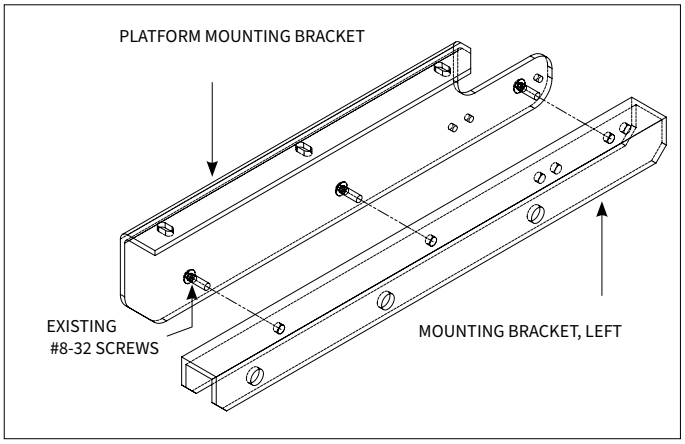



*Figure B.*

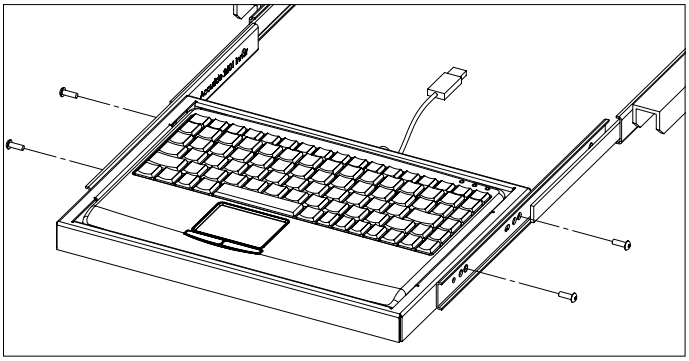


*Figure C.*

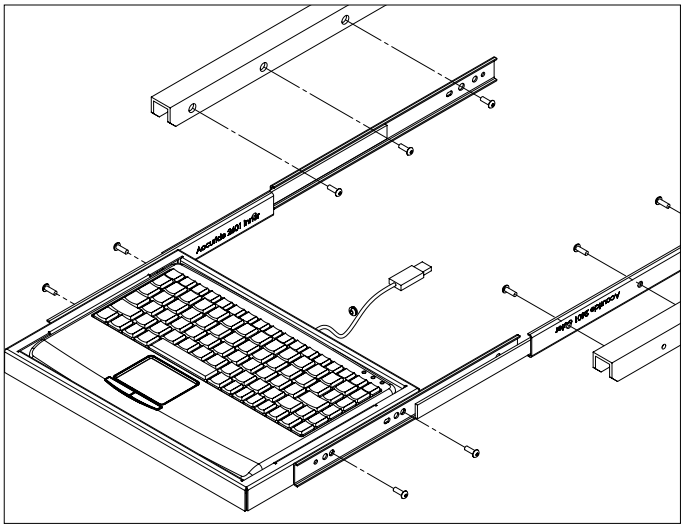


*Figure D.*

RETURN TO INDEX

# TABLETOP RECEIVER MOUNTING

PART # 310104408, 310104409, 310104410, 310104411, 310104422

**PERMANENT MOUNTING**

1. Remove rubber feet from ¼-20 tapped holes beneath the platform.

2. Prepare the mounting surface using the dimensions provided in **Figure A or B**, and drill 0.257" [6.53 mm] minimum thru holes.

3. Secure the receiver to the mounting surface with ¼-20 screws and washers.

Dimensions shown: [millimeters]
inches

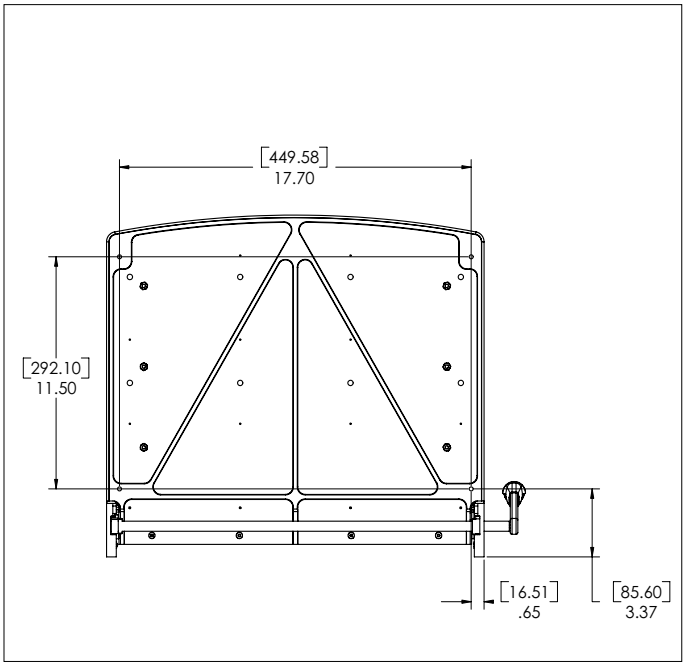



*Figure B. Receiver with 15" Platform*

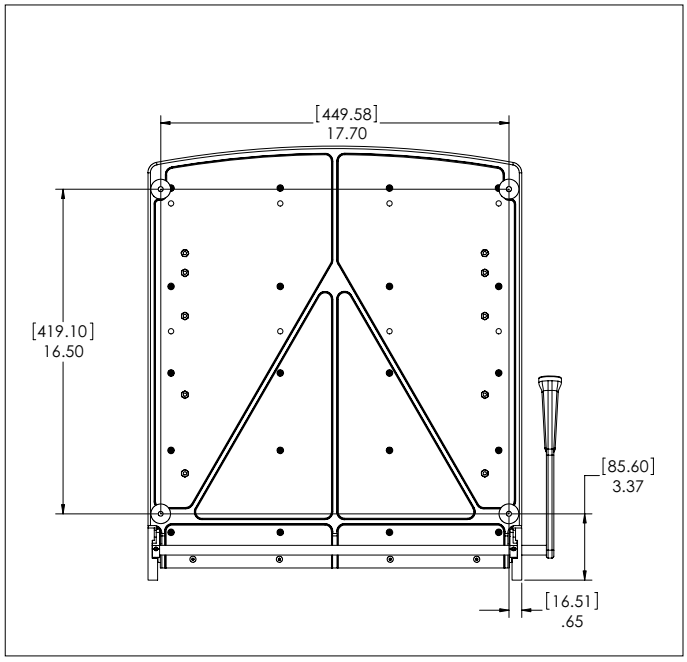



*Figure A. Receiver with 20" Platform*

RETURN TO INDEX

# REAR COVER INSTALLATION

PART # 310113421, 310113520

**TOOLS REQUIRED**

$^{3}/_{32}$ Allen Wrench

**INSTALLATION**

1. The rear cover is to be used on tabletop configurations and is designed to protect wiring from the receiver to the instruments.

2. Use the $^{3}/_{32}$ Allen wrench with the provided #8-32 screws and washers to attach the rear cover to the G12/G12x receiver. An exploded view of the assembly is provided in (**Figure A)**.

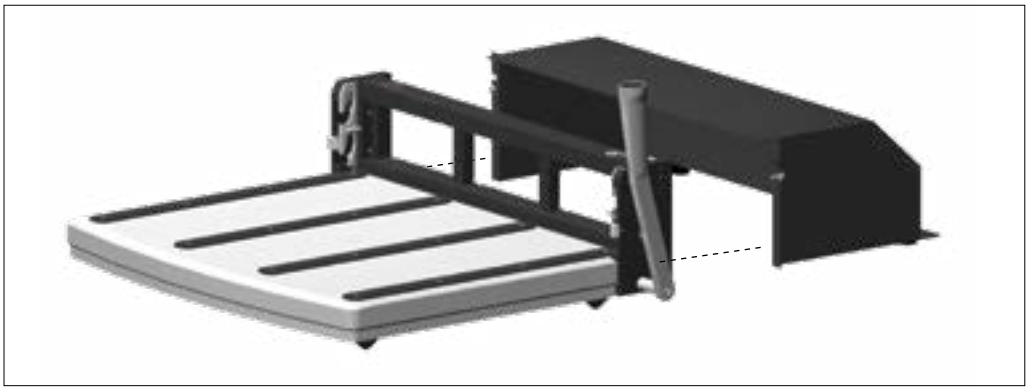


*Figure A.*

**ALTERNATE INSTALLATION METHOD**

1. Rear covers can be permanently mounted to the tabletop using the dimensions provided in **Figure B**. Hardware for this is not included.

2. Rubber feet included with rear cover are not necessary when permanently mounting the G12/G12x receiver.

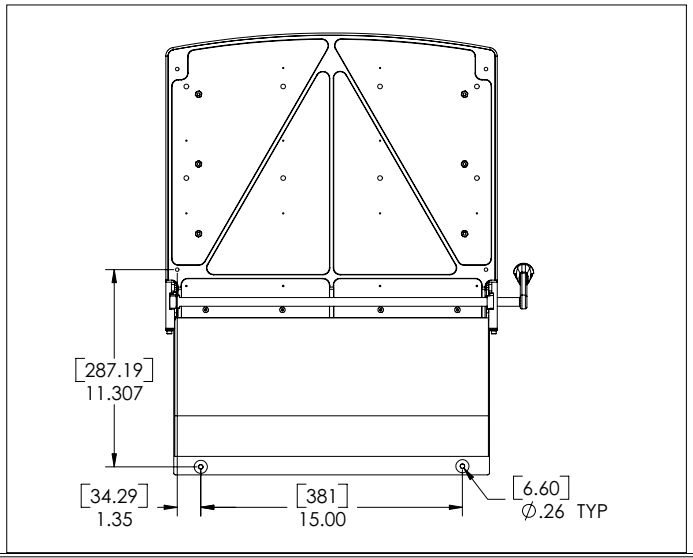



*Figure B.*

Dimensions shown: [millimeters]
inches

RETURN TO INDEX

# RACK MOUNT RECEIVER INSTALLATION

PART # 310104338

**TOOLS REQUIRED**

$^{5}/_{32}$ Allen Wrench

1. This rack mount 15” G12 includes a base shelf which can support up to 275 lbs.

2. To install place receiver over clip/cage nuts on rack, making sure they are evenly aligned (**Figure A**).

3. Tighten screws in a criss-cross pattern to ensure even torque is applied.

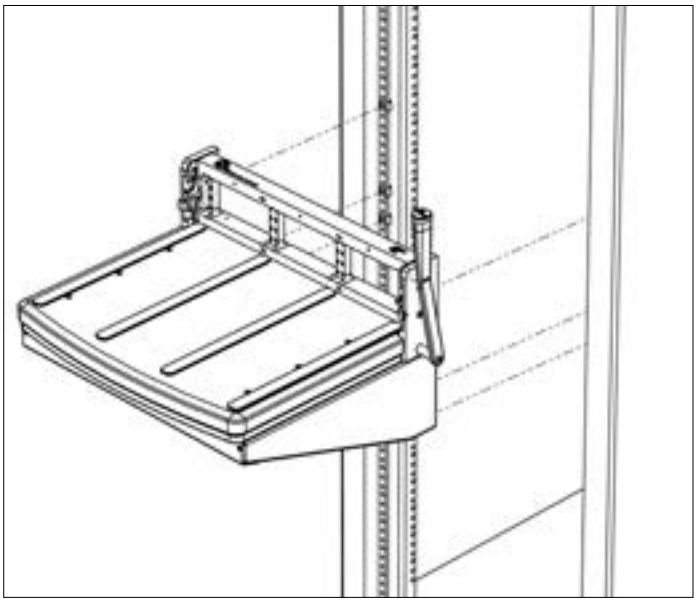


*Figure A.*

RETURN TO INDEX

# RACK MOUNT EXTENDER BLOCK KIT INSTALLATION

PART # 310113413

**NOTE:** The rack mount extender block kit is used for mounting receivers to racks when the rails are recessed more than 1". It allows for a maximum rack depth of 3.5".

**TOOLS REQUIRED**

$^{5}/_{32}$ Allen Wrench
Phillips Head Screwdriver
Flat Head Screwdriver

1. Verify that the distance from the front of the rack enclosure to the rail is between 1" and 3.5" (**Figure A**).

2. Attach the mounting rack mating surface on the extender brackets (**Figure B**), to the recessed rail with the cap screws. Do not fully tighten until the cover plate is attached.

3. Attach the cover to the brackets with flat head screws.

4. With the extender kit in place, secure the G12 receiver to the mating surface on the extender brackets with #10-32 cap screws (provided with the G12).

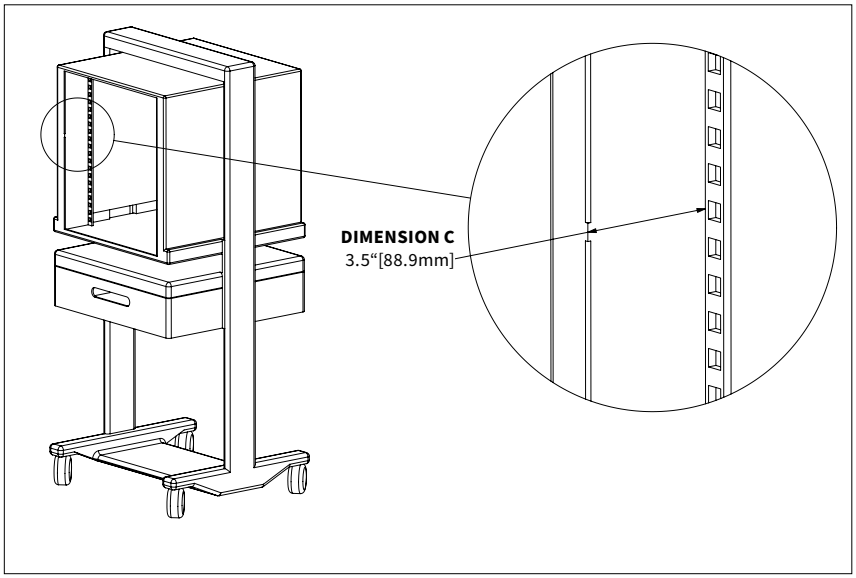



*Figure A.*

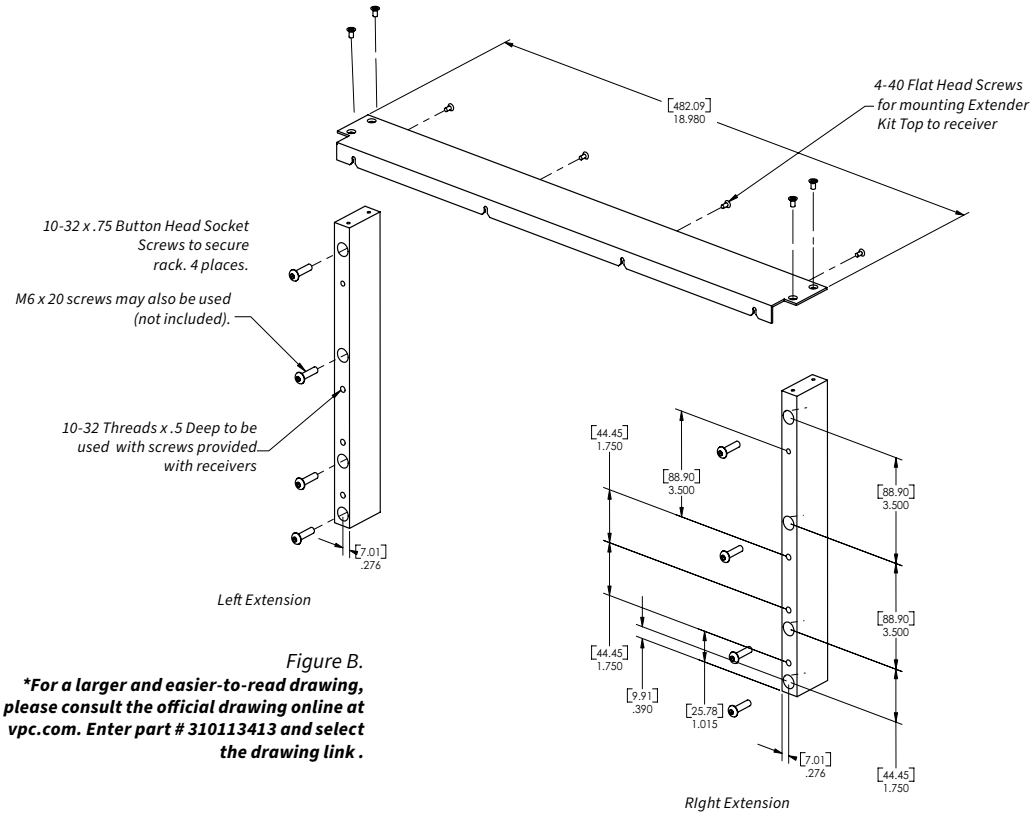



*Figure B.*

***For a larger and easier-to-read drawing, please consult the official drawing online at vpc.com. Enter part # 310113413 and select the drawing link .***

RETURN TO INDEX

# HANDLE REMOVAL AND REPOSITIONING

PART # 310104325, 310104334, 310104408, 310104409,
310104356, 310104359, 310104385, 310104386, 310104410, 310104411

NOTE: The G12/G12x receiver handle requires approximately 90° of counter-clockwise travel for engagement and 90° of clockwise travel for disengagement of the ITA. This handle is removable and adjustable to accommodate different mounting configuration requirements and for transport purposes.

**TOOLS REQUIRED**

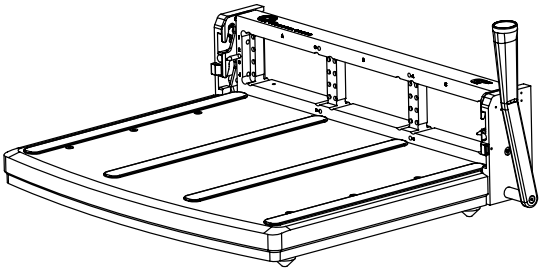
$^{3}/_{32}$ Allen Wrench

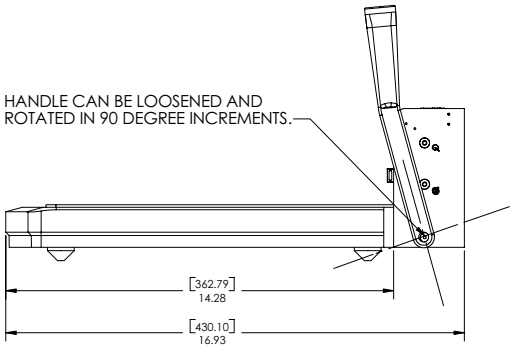
**REMOVAL**

1. Remove the handle set screw with a $^{3}/_{32}$ Allen wrench.
2. Remove the handle and reposition in 90˚ increments.
3. Replace the screw and tighten until the handle is secured tightly.

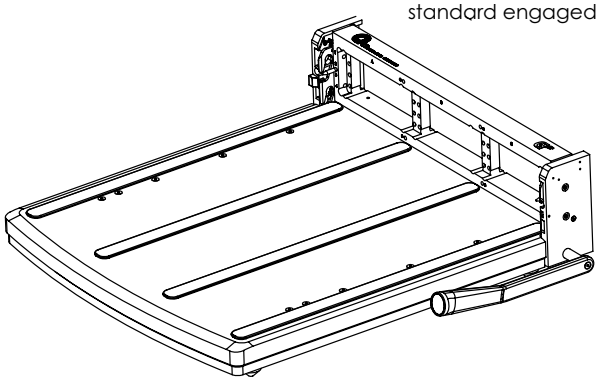
Dimensions shown: [millimeters]
inches

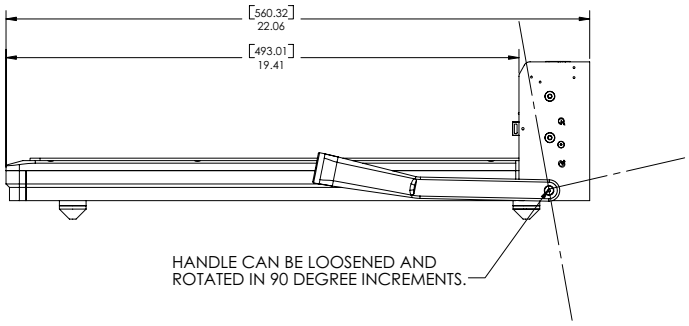
**310104325, 310104286, 310104408 & 310104409, :** G12/G12x receiver with a 15" platform shown with handle in the standard disengaged position.






**310104334, 310104385, 310104410 & 310104411, :** G12/G12x receiver with a 20" platform shown with handle in the standard engaged position.






RETURN TO INDEX

# ADJUSTING G12 & G12X ITA PROTECTIVE COVER

PART # 410104322, 410110665, 410114010, 410104474, 410112849, 410112857

NOTE: The G12/G12x ITA protective covers are designed to fit securely onto the ITA frame. These adjustments are only necessary in the rare instance that there is the presence of a gap between the ITA bearings and the retaining tabs on the cover, which may cause the cover to not fit as securely. This is done by adjusting the cover's retaining tabs which are removable and adjustable to allow for a more secure cover.

## TOOLS REQUIRED

Phillips Head Screwdriver

## ADJUSTMENT

1. Attach the cover to the ITA.

2. *Loosen* the screws but not remove them.

**NOTE:** All component locations are called out in **Figures A and B**.

3. Push the retaining tabs against the ITA bearings.

4. While holding the retaining tabs and retighten. (Recommended torque is 1-2 lbs.)

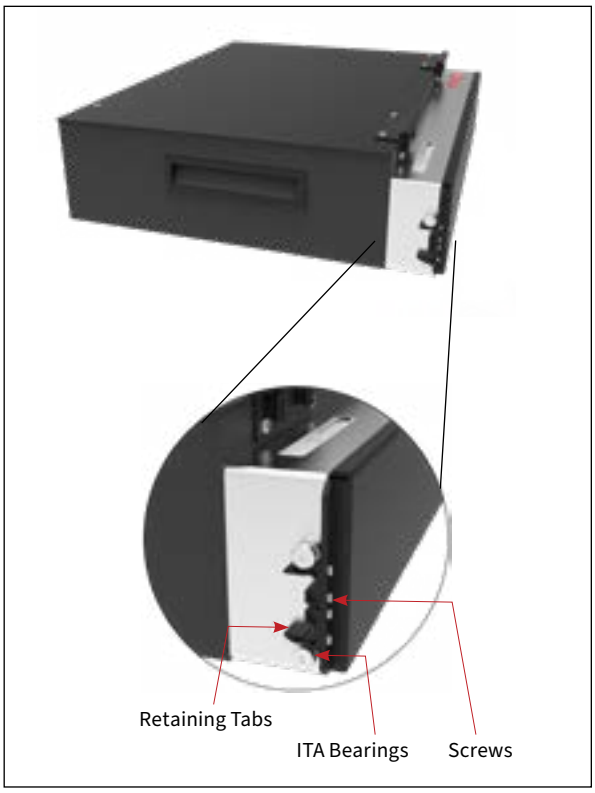



*Figure A . G12 ITA.*

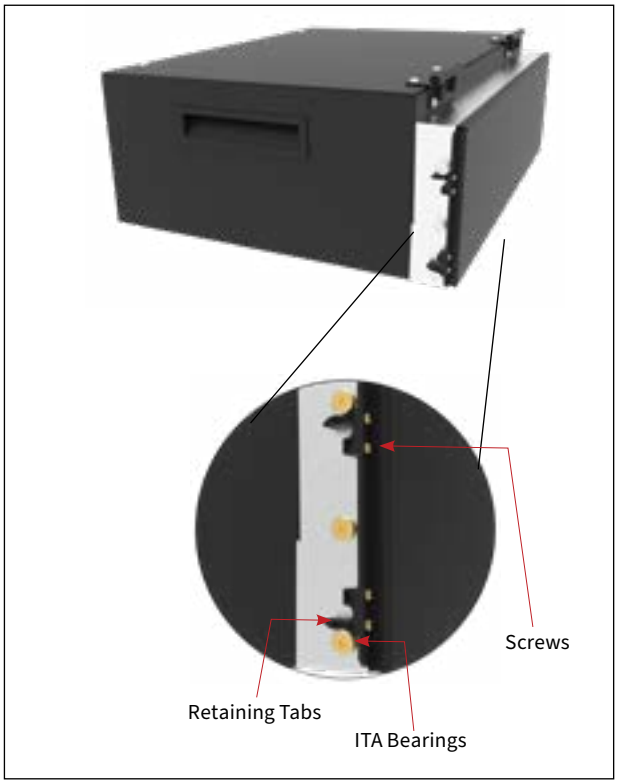



*Figure B . G12X ITA. component colors are not accurate strictly made for illustrating purposes.*

RETURN TO INDEX

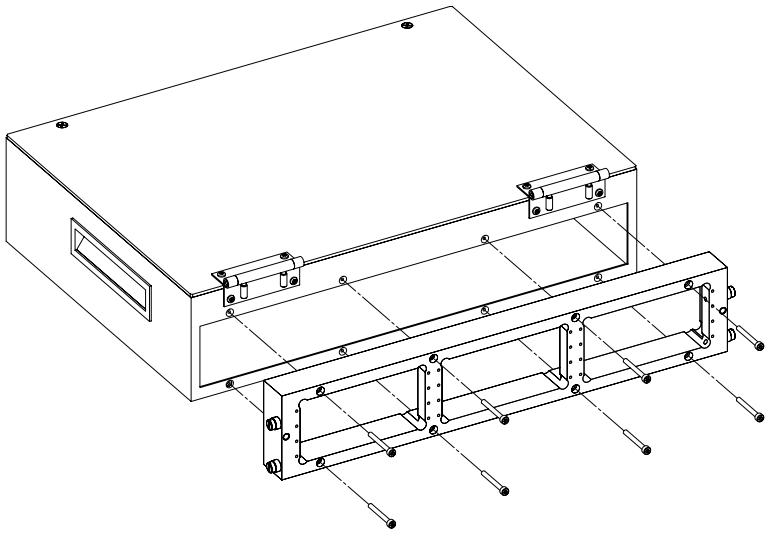
# G12 ITA ENCLOSURE ASSEMBLY

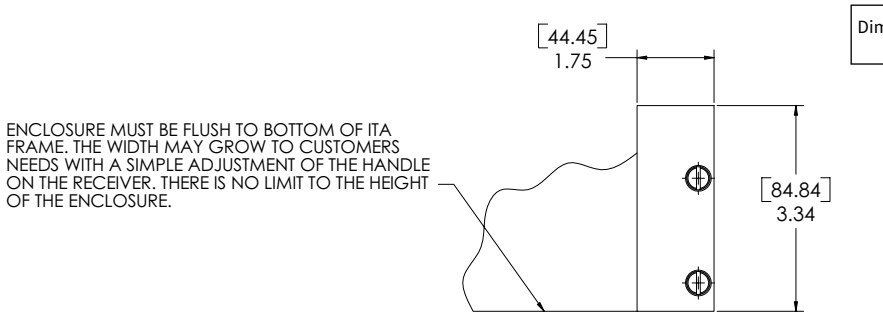
PART # 410112665, 410112739

**TOOLS REQUIRED**

3 mm Allen Wrench

Phillips Head Screwdriver





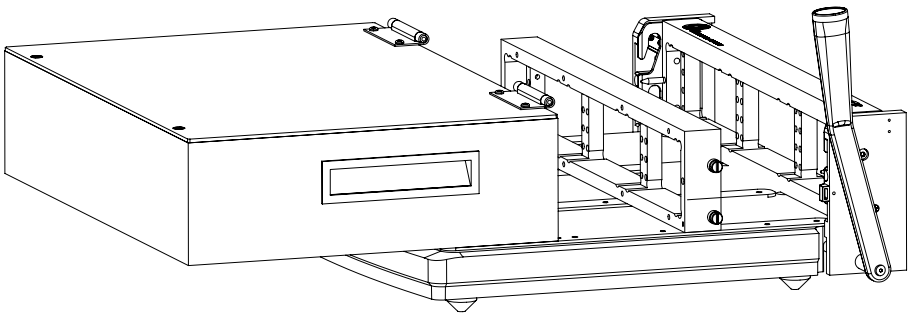



*Figure A. Enclosures must be flush with the ITA bottom to ensure the proper function of the G12 system.*

RETURN TO INDEX

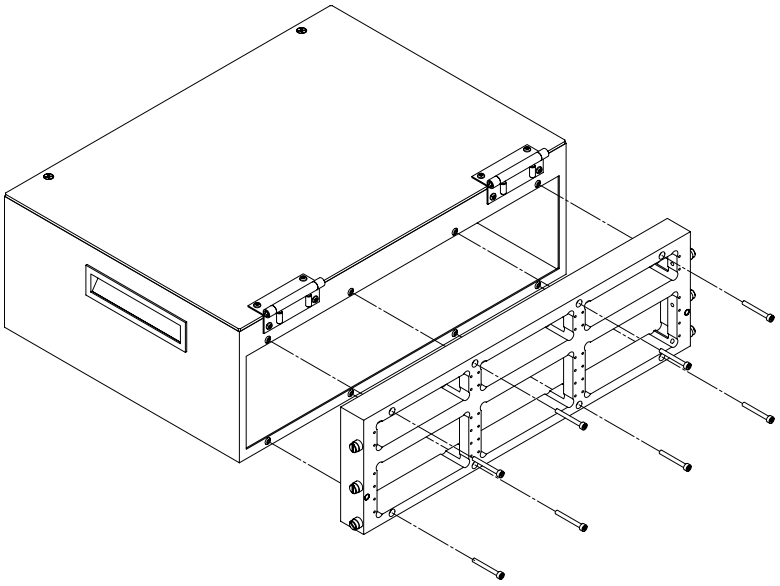
# G12X ITA ENCLOSURE ASSEMBLY

PART # 410112849, 410112856

**TOOLS REQUIRED**

3 mm Allen Wrench

Phillips Head Screwdriver



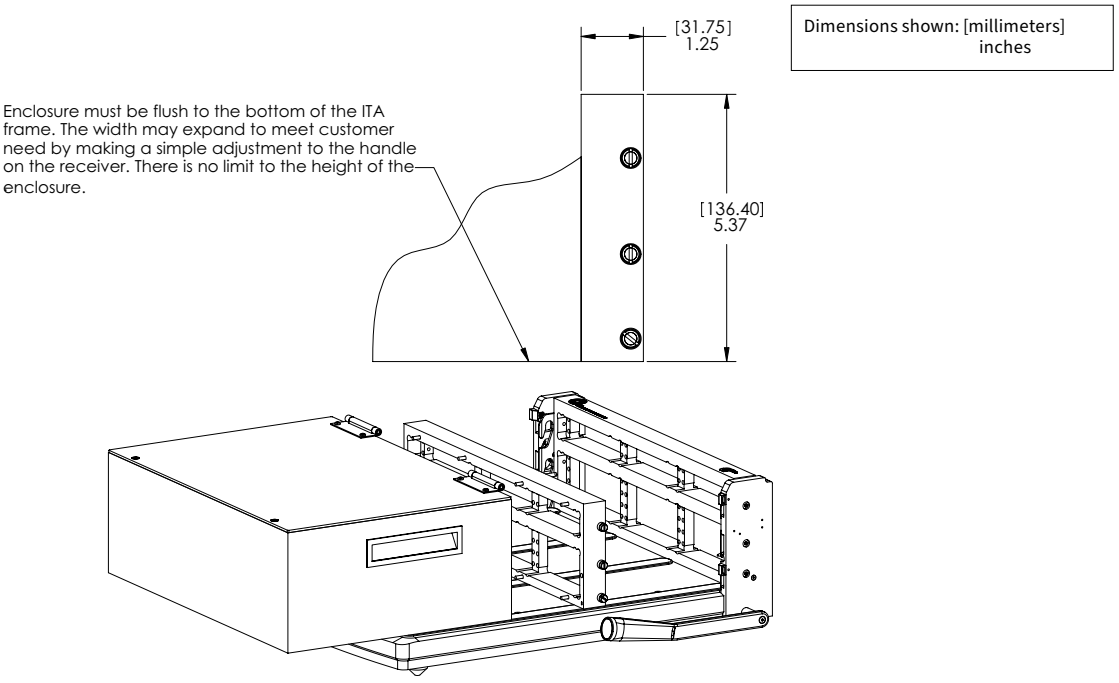



*Figure A. Enclosures must be flush with the ITA bottom to ensure the proper function of the G12x system.*

RETURN TO INDEX

# KEYING PIN KIT INSTALLATION

PART # 310118112

**TOOLS REQUIRED**

$^{3}/_{32}$ Allen Wrench

1. Choose a keying pin pattern and determine which locations in the receiver and ITA will have keying pins installed and which will be left open (Table 1).

2. Install the required keying pin combinations using the Allen Wrench (Figures A and B).

   **NOTE:** One keying pin kit allows for 6 variations. Using together with a second keying pin kit, allows for up to 36 variations.

*Table 1.*

| KEYING PIN LOCATIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PATTERN 1** | | | | **PATTERN 4** | | | |
| RECEIVER | | ITA | | RECEIVER | | ITA | |
| PIN A INSTALLED | PIN C INSTALLED | SCREW A OPEN | SCREW C OPEN | PIN A OPEN | PIN C OPEN | SCREW A INSTALLED | SCREW C INSTALLED |
| PIN B OPEN | PIN D OPEN | SCREW B INSTALLED | SCREW D INSTALLED | PIN B INSTALLED | PIN D INSTALLED | SCREW B OPEN | SCREW D OPEN |
| **PATTERN 2** | | | | **PATTERN 5** | | | |
| RECEIVER | | ITA | | RECEIVER | | ITA | |
| PIN A INSTALLED | PIN C OPEN | SCREW A OPEN | SCREW C INSTALLED | PIN A OPEN | PIN C INSTALLED | SCREW A INSTALLED | SCREW C OPEN |
| PIN B INSTALLED | PIN D OPEN | SCREW B OPEN | SCREW D INSTALLED | PIN B INSTALLED | PIN D OPEN | SCREW B OPEN | SCREW D INSTALLED |
| **PATTERN 3** | | | | **PATTERN 6** | | | |
| RECEIVER | | ITA | | RECEIVER | | ITA | |
| PIN A OPEN | PIN C INSTALLED | SCREW A INSTALLED | SCREW C OPEN | PIN A INSTALLED | PIN C OPEN | SCREW A OPEN | SCREW C INSTALLED |
| PIN B OPEN | PIN D INSTALLED | SCREW B INSTALLED | SCREW D OPEN | PIN B OPEN | PIN D INSTALLED | SCREW B INSTALLED | SCREW D OPEN |

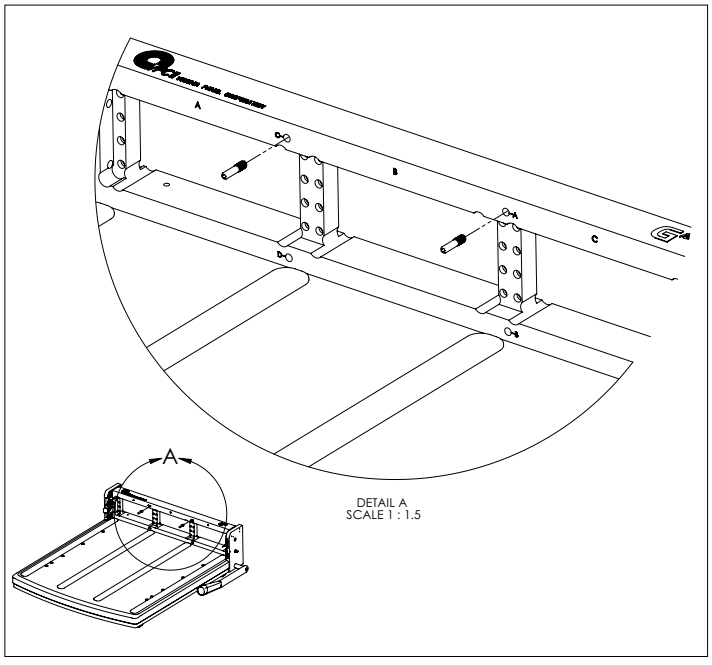



*Figure B.*

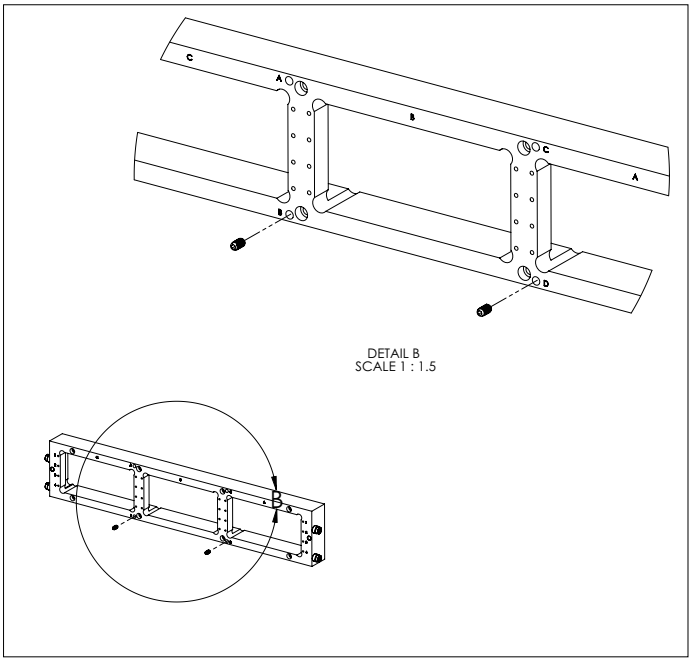


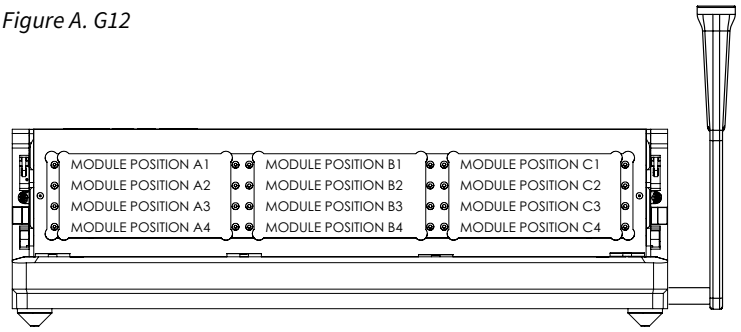

*Figure A.*

RETURN TO INDEX

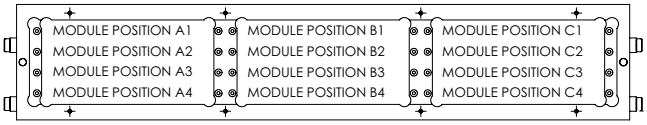
# ITA & RECEIVER ENGAGEMENT

1. Prior to engaging an ITA with the receiver for the first time, ensure all modules (ITA and receiver) are properly installed.
   - Inspect modules to ensure proper mounting and verify module positioning. Module positions are shown in **Figures A and B**.
   - Modules must be installed so that Pin 1 of each receiver and ITA module pair are mateable.
   - All ITA modules must match their respective receiver modules. It is crucial for all modules to be installed properly.
   **G12x Only:* The lower four module rows share the same description as on G12 (i.e. A1-A4). The extended tier of the G12x is considered to be rows 5 or 6.

*Figure A. G12*

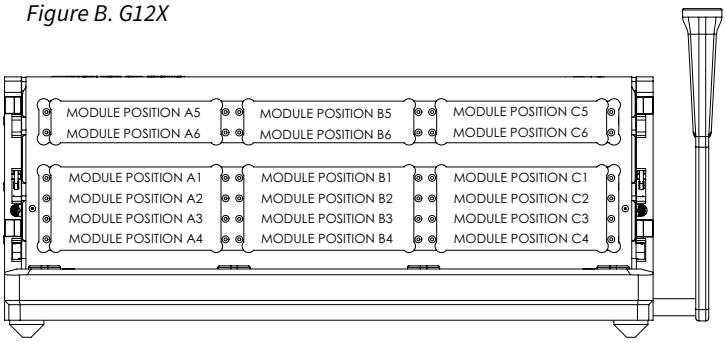



*G12 Receiver shown from the mating side*

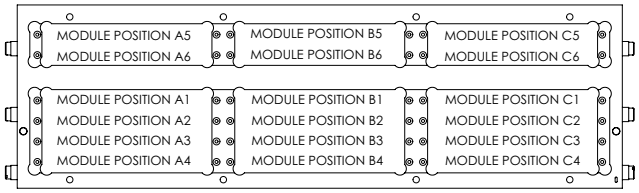



*G12 ITA shown from the wiring side (non-mating side).*

*Figure B. G12X*




*G12x receiver shown from the mating side.*




*G12X ITA shown from the wiring side (non-mating side).*

2. The receiver should be checked for any foreign objects that may interfere with engagement.

3. After inspection, the ITA is ready for engagement with the receiver. The ITA may be placed onto the receiver platform and properly positioned relative to the receiver guide pins. Ensure that the ITA roller bearings are aligned with the receiver slide openings when the receiver handle is in the open position (upward/vertical).

4. Carefully rotate the handle forward to actuate the receiver slide engagement mechanisms, which will draw the ITA into engagement position with the receiver. Once the handle reaches a positive stop at the end of its travel and latches into place, the modules are engaged.

5. Upon completing use of the ITA, rotate the receiver handle to the open position (upward/vertical), remove the ITA, reinstall the receiver protective cover and rotate the handle to the closed position (downward/horizontal).

6. Always protect the contacts when the system is not in use. The receiver contacts are protected when either the ITA or receiver protective cover is engaged. VPC recommends use of both receiver and ITA protective covers to avoid potential contact damage.

**IMPROPER ENGAGEMENT WILL DAMAGE THE MODULES, AND POSSIBLY THE ITA AND/OR RECEIVER.**

**IN THE EVENT OF COMPLICATIONS, A TRAINED TECHNICIAN SHOULD BE NOTIFIED IMMEDIATELY TO AVOID ANY DAMAGE TO THE SYSTEM. THIS APPLIES TO ANY DIFFICULTIES THAT MAY BE EXPERIENCED DURING ENGAGEMENT.**

RETURN TO INDEX

# RECEIVER INSTALL/UNINSTALL CAUTIONARY NOTE

PART # 310104325, 310104334, 310104408, 310104409,
310104385, 310104386, 310104410, 31104411

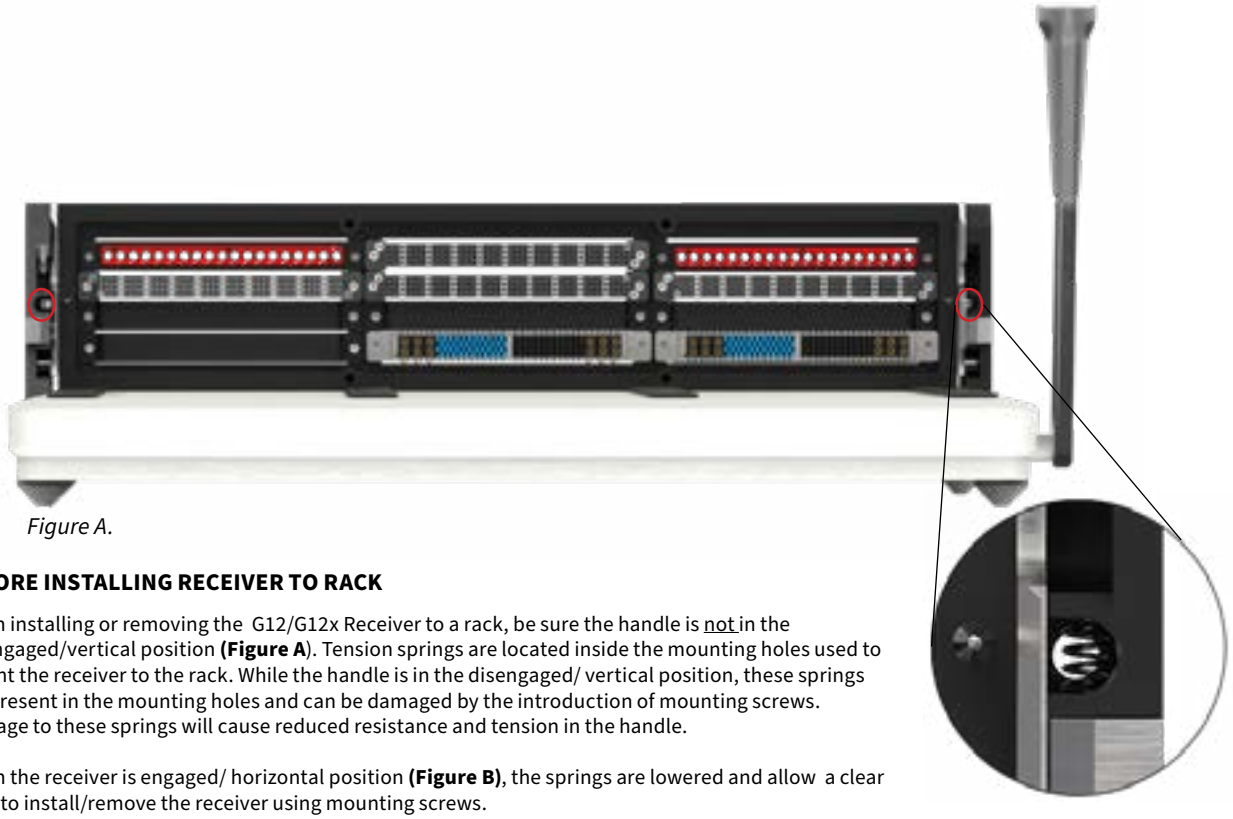


*Figure A.*

**BEFORE INSTALLING RECEIVER TO RACK**

When installing or removing the G12/G12x Receiver to a rack, be sure the handle is not in the disengaged/vertical position **(Figure A**). Tension springs are located inside the mounting holes used to mount the receiver to the rack. While the handle is in the disengaged/ vertical position, these springs are present in the mounting holes and can be damaged by the introduction of mounting screws. Damage to these springs will cause reduced resistance and tension in the handle.

When the receiver is engaged/ horizontal position **(Figure B)**, the springs are lowered and allow a clear path to install/remove the receiver using mounting screws.

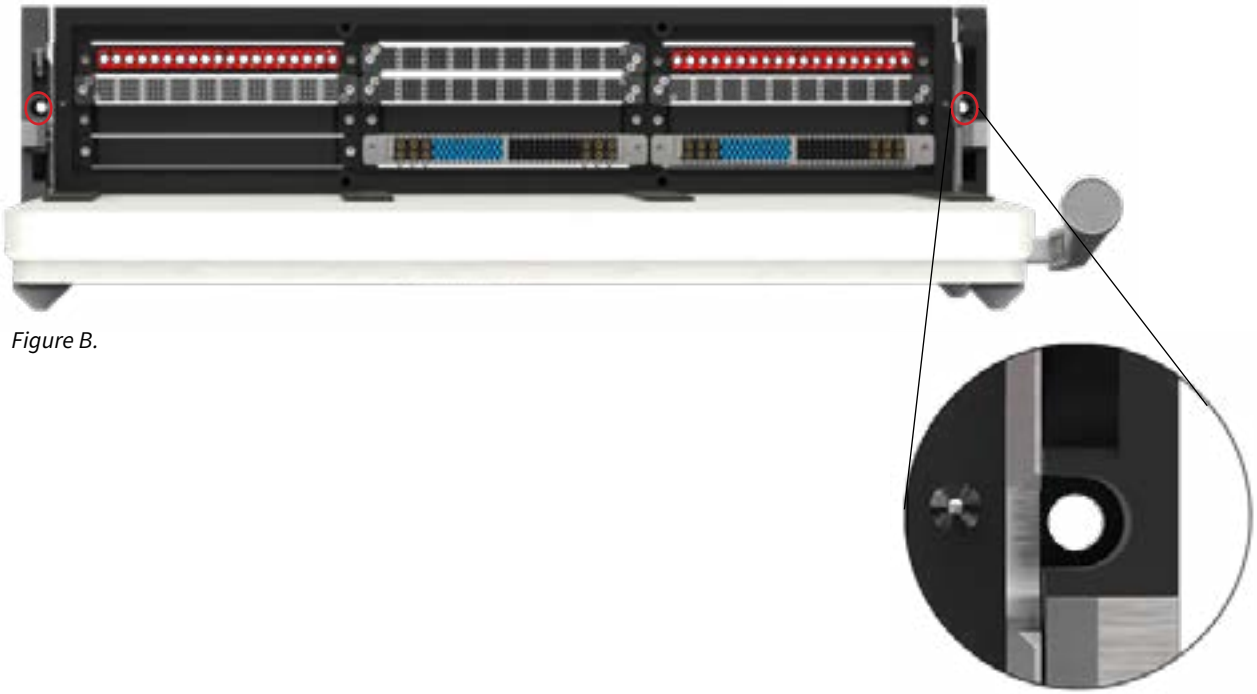


*Figure B.*

RETURN TO INDEX

# TROUBLESHOOTING

**ITA Frame is not lined up when in the process of engagement with receiver**

- This may indicate that the ITA is out of alignment or that a module is not mating with its intended module.
- Remove and inspect the ITA for alignment.
- Check for foreign objects/tools.
- Inspect the matching of modules -power ITA module to mate with power receiver module, etc.

**Excessive force is needed to engage the handle**

- With a typical contact load, approximately 35lbs force is needed to engage the handle. Consult with VPC for detailed contact loading information.
- If excessive force is required, this may indicate that the ITA is out of alignment or that a module is not mating with its intended module.
- Remove and inspect the ITA for alignment. Contact VPC– unauthorized user adjustments to the system will void the warranty.
- Check for foreign objects/tools.
- Contact damage may cause noticeable resistance. Upon replacing a contact in the ITA, the mating contact on the receiver side should also be inspected and replaced, if necessary.
- Verify the orientation of the receiver and ITA modules.
- Inspect the matching modules - power ITA module to mate with power receiver module, etc.

**ITA will not engage with the receiver after diagnosing the above problems**

- Contact VPC – unauthorized user adjustments to the system will void the warranty.

**No continuity upon engagement**

- When replacing an ITA contact, the mating contact on the receiver side should also be inspected and replaced, if necessary.
- Check wiring and replace if necessary.
- Contact not secured in module.
- A contact may be damaged. Visually check all contacts for damage to potentially isolate damaged pin prior to checking for continuity with a multi-meter.

**A “short ” in the wiring upon engagement**

- A damaged contact may cause high resistance. Upon replacing a contact in the ITA, the mating contact on the receiver side should also be inspected and replaced, if necessary.
- Check wiring and replace if necessary.

**Receiver and ITA will not disengage**

- This may indicate that the engagement mechanism within the receiver is faulty -contact VPC immediately- user adjustments to system, unless authorized, will void the warranty.

**FORCEFUL ENGAGEMENT OF THE RECEIVER AND THE ITA WILL RESULT IN SERIOUS DAMAGE TO MULTIPLE PARTS OF THE SYSTEM (MODULES, RECEIVER, ITA AND CONTACTS).**

RETURN TO INDEX

# PRECAUTIONARY NOTES

- Never probe a contact without using a mating patchcord as a test lead.
- Never forcefully engage a system if there is an excessive amount of resistance on the handle.
- Never allow an ITA to drop as this may cause misaligned engagement and/or irreparable damage.
- Always insert and extract a contact insertion/extraction tool in line with the contact. Never apply pressure to the side as this may break either the contact or tool.
- It is advisable that power to the interface system be disconnected prior to handling and maintenance.
- Caution should always be used when engaging, making sure that all foreign objects are removed from the system.

RETURN TO INDEX