**GCX**
*INSTRUMENT MOUNTING SYSTEMS*

**Installation Guide**

## GEMSIT Tram-rac 4A Module Housing Installation Kit

This mounting kit provides the necessary parts and hardware for attaching a single Tram-rac 4A to an M-Series or VHM Arm, or for attaching an additional Tram-rac 4A Module Housing to a VB, M-Series, VHM, or Ceiling Mount application.
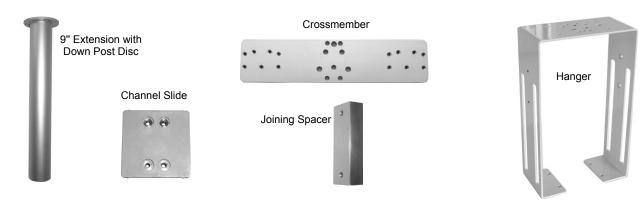
## Table of Contents

## 1.0  Parts Reference

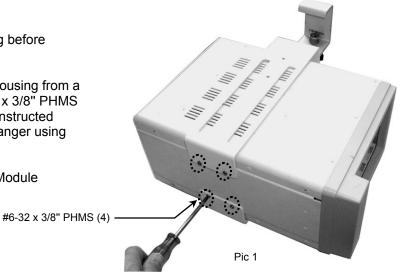The following parts and hardware are included with this installation kit (see photo for parts, hardware not shown):

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | #6-32 x 5/8" PHMS | 4 |
| 4 | Joining Spacer | 1 |
| 5 | #8-32 x 5/16" Flat Head Machine Screw (FHMS) | 4 |
| 6 | Crossmember | 1 |
| 7 | #10-32 x 7/16 FHMS | 3 |
| 8 | #10-32 x 3/8" PHMS | 6 |
| 9 | Channel Slide | 1 |
| 10 | #10-32 x 5/8" PHMS – Attaching to Single Hanger | 4 |
| 11 | #10-32 x 5/8" FHMS – Attaching to Crossmember | 4 |
| 12 | Post, 9" Extension with Lower Post Disc Attached | 1 |
| 13 | #10-32 x 3/4" PHMS – Post to Hanger | 3 |
| 14 | #10-32 x 3/8" Socket Head Cap Screw (SHCS) – Post to M/VHM | 3 |
| 15 | 5/32" Hex Key | 1 |



9" Extension with Down Post Disc

Channel Slide

Crossmember

Joining Spacer

Hanger

## 2.0  Installation Notes for All Applications

**A.** Modules should be removed from a Module Housing before removing the Housing from the Hanger.

**B.** Unless instructed otherwise, removal of a Module Housing from a Hanger is accomplished by removing four (4) #6-32 x 3/8" PHMS and sliding the Housing out of the Hanger.  Unless instructed otherwise, the Module Housing is mounted in the Hanger using the same-sized screws.

Pic 1 represents both removal and installation of a Module Housing.

#6-32 x 3/8" PHMS (4)



Pic 1

## 3.0  M-Series Arm Attachment – No Down Post

### 3.1  Single Hanger

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|:------:|-------------|:---:|
| 1 | Hanger, Universal | 1 |
| 2 | #10-32 x 5/8" Pan Head Machine Screw (PHMS) | 3 |
| 3 | #6-32 x 3/8" PHMS | 4 |

Hanger

**Tools Required for This Procedure:**  Phillips screwdriver.

1.  Remove the round plastic bolt cap from the bottom of the front end of the arm (Pic 2).

2.  Identify the 3-hole mounting patterns on the Hanger (Pic 3) and bottom of Arm. Attach the Hanger to the Arm using three (3) #10-32 x 3/8" PHMS (Pic 4).

Pic 2

Pic 3

Pic 3

3.  Mount the Module Housing in the Hanger using four (4) #6-32 x 3/8" PHMS.

### 3.2  Dual Hanger – Vertical Stack

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 5/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | #6-32 x 3/8" PHMS | 4 |

Hanger

**Tools Required for This Procedure:**  Phillips screwdriver.

1. If the upper Hanger contains a previously mounted Module Housing, remove and discard the four (4) mounting screws from the bottom of the Module Housing but do not remove the Housing from its Hanger. **Installation Note:**  The lower Hanger will be attached to the threaded mounting holes in the bottom of the upper Module Housing. A Module Housing must be inserted, but not attached, in mounting position in the upper Hanger before proceeding to Step 2.

2. Attach the lower Hanger to the upper Hanger by inserting four (4) #6-32 x 5/8" PHMS through mounting holes in both Hangers and threading the screws into the upper Housing (Pic 5).  **CAUTION:**  Do not over-tighten these mounting screws!

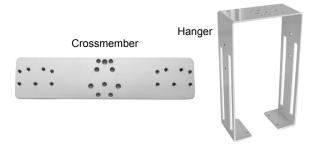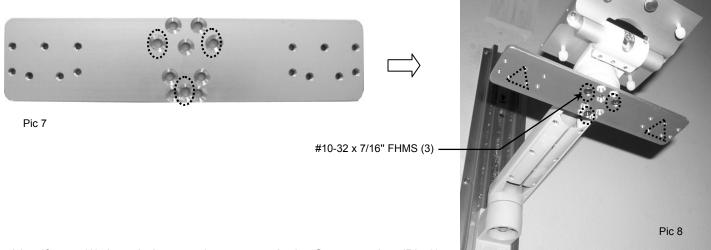3. Mount the Module Housing in the lower Hanger using four (4) #6-32 x 3/8" PHMS (Pic 6)

#6-32 x 5/8" PHMS (4)

Pic 5

Pic 6

#6-32 x 3/8" PHMS (4)

### 3.3  Dual Hanger – Side-by-Side

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | Crossmember | 1 |
| 4 | #10-32 x 3/8" PHMS | 6 |
| 5 | #10-32 x 7/16" Flat Head Machine Screw (FHMS) | 3 |

Crossmember    Hanger

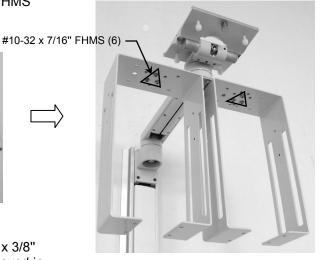**Tools Required for This Procedure:**  Phillips screwdriver.

1. Remove Module Housing from existing Hanger (see Section 2.0) and retain screws for later use. Remove existing Hanger from the Arm by unscrewing three (3) pan head screws (these screws will not be used again).

2. Identify the 3-hole mounting patterns on the Crossmember (Pic 7) and bottom of Arm.  Attach the Crossmember to the Arm using three (3) #10-32 x 7/16" PHMS (Pic 8).

Pic 7

#10-32 x 7/16" FHMS (3)

Pic 8

3. Identify two (2) three-hole mounting patterns in the Crossmember (Pic 8) and corresponding mounting patterns on two (2) Hangers (Pic 9). Attach Hangers to Crossmember using three (3) #10-32 x 3/8" PHMS per Hanger (Pic 10).

#10-32 x 7/16" FHMS (6)

Pic 9

Pic 10

4. Mount the Module Housings in the Hangers using four (4) #6-32 x 3/8" PHMS per Housing. **Installation Note:**  Use four (4) screws removed in Step 1 and four (4) screws supplied with the Installation Kit.
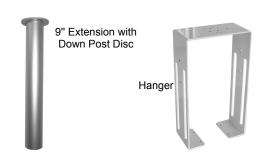
## 4.0 VHM or M-Series Attachment – Down Post Applications

### 4.1 Single Hanger with Down Post

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) – Module to Hanger | 4 |
| 3 | Post, 9" Extension with Lower Post Disc Attached | 1 |
| 4 | #10-32 x 3/4" PHMS – Post to Hanger | 3 |
| 5 | #10-32 x 3/8" Socket Head Cap Screw (SHCS) – Post to M/VHM | 3 |
| 6 | 5/32" Hex Key | 1 |

9" Extension with Down Post Disc

Hanger

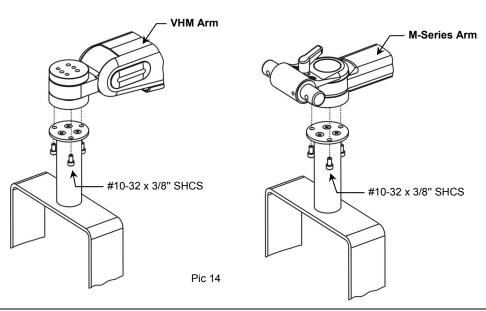**Tools Required for This Procedure:** Phillips screwdriver, 5/32" hex key (provided).

1. Identify the 3-hole mounting pattern on the Hanger (Pic 11) and attach Post to Hanger using three (3) #10-32 x 3/4" PHMS (Pic 12). Remove the round plastic bolt cap from the bottom of the front end of the arm (Pic 13).

3-Hole Mounting Pattern

Pic 11

#10-32 x 3/4" PHMS

Pic 12

2. Using the 5/32" hex wrench, attach the Module-Housing Hanger to the Arm (VHM or M-Series) with three (3) #10-32 x 3/8" SHCS (Pic 14).

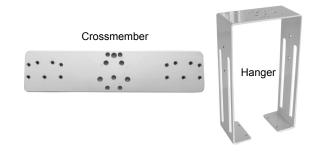3. Mount the Module Housing in the Hanger using four (4) #6-32 x 3/8" PHMS.

Pic 13

VHM Arm

M-Series Arm

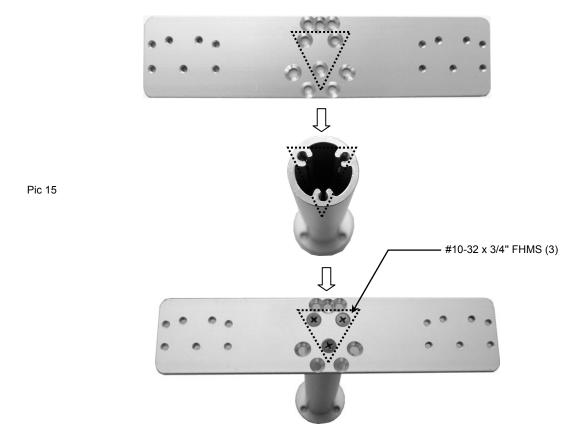#10-32 x 3/8" SHCS

#10-32 x 3/8" SHCS

Pic 14

### 4.2 Dual Hanger – Side-by-Side

**Parts and Hardware Required for This Procedure:**

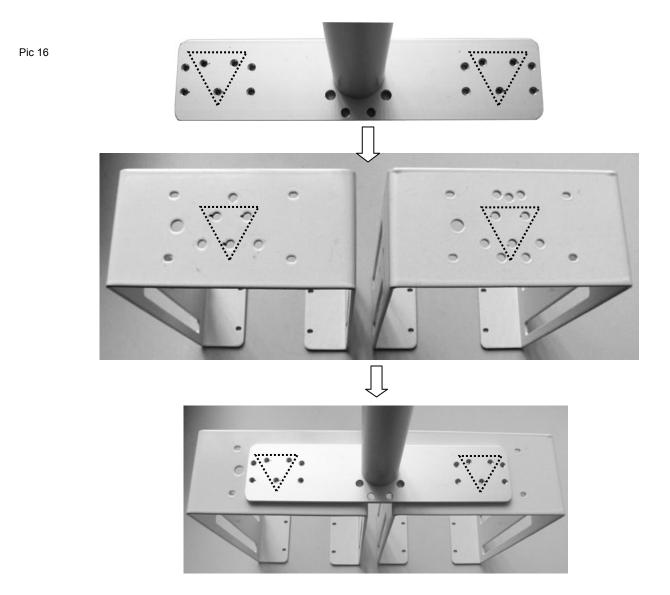| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | Crossmember | 1 |
| 4 | #10-32 x 3/8" PHMS | 6 |
| 5 | #10-32 x 3/4" Flat Head Machine Screw (FHMS) | 3 |
| 6 | 5/32" Hex Key | 1 |

Crossmember

Hanger

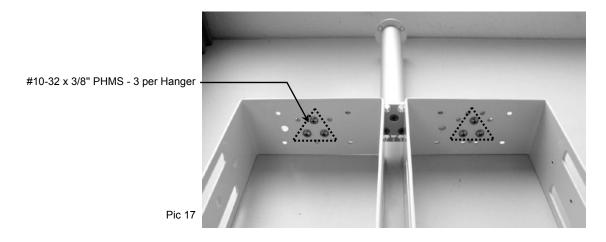**Tools Required for This Procedure:** Phillips screwdriver, 5/32" hex key (provided).

1. Using the 5/32" hex key, remove the existing Module Hanger from the Arm by unscrewing the three (3) #10-32 x 3/8" SHCS from the Down Post Disc (see page 6, Pic 14).  Remove the Module Housing from the Hanger (see Section 2.0). Retain all screws for later use.

2. Remove the existing Hanger from the Down Post by unscrewing the three (3) pan head screws (see page 6, Pic 12).  These screws will not be used again.

3. Pic 15:  Identify the three-hole mounting pattern on the Crossmember and the three (3) threaded mounting holes in the end of the Down Post.  Attach Crossmember to Down Post using three (3) #10-32 x 3/4" FHMS.

Pic 15

#10-32 x 3/4" FHMS (3)

4. Pic 16: Identify two (2) three-hole mounting patterns in the Crossmember and corresponding mounting patterns on two (2) Hangers. Align the Crossmember with its corresponding mounting holes on the Hangers.

Pic 16



5. Attach the Hangers to the bottom of the Crossmember using three (3) #10-32 x 3/8" PHMS per Hanger (Pic 17).

#10-32 x 3/8" PHMS - 3 per Hanger



Pic 17

6.  Reattach the Post to the Arm using three (3) #10-32 x 3/8" SHCS (see page 6, Pic 14).

7.  Mount the Module Housings in the Hangers using four (4) #6-32 x 3/8" PHMS per Housing (Pic 18).
    **Installation Note:**  Use four (4) screws removed in Step 1 and four (4) screws supplied with the Installation Kit.
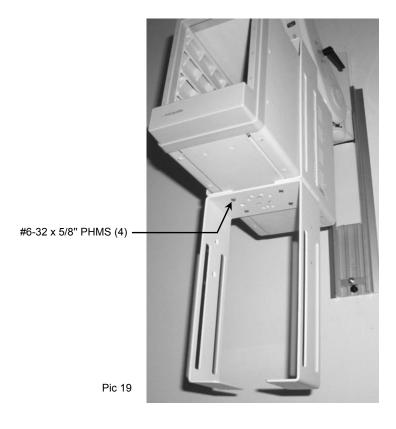
Pic 18

### 4.3  Dual Hanger – Vertical Stack

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 5/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | #6-32 x 3/8" PHMS | 4 |

Hanger

**Tools Required for This Procedure:**  Phillips screwdriver.

1. If the upper Hanger contains a previously mounted Module Housing, remove and discard the four (4) mounting screws from the bottom of the Module Housing but do not remove the Housing from its Hanger. **Installation Note:**  The lower Hanger will be attached to the threaded mounting holes in the bottom of the upper Module Housing. A Module Housing must be inserted, but not attached, in mounting position in the upper Hanger before proceeding to Step 2.

2. Attach the new Hanger to the upper Hanger by inserting four (4) #6-32 x 5/8" PHMS through mounting holes in both Hangers and threading the screws into the upper Module Housing (Pic 19).  **CAUTION:**  Do not over-tighten these mounting screws!

3. Mount the additional Module Housing in the lower Hanger using four (4) #6-32 x 3/8" PHMS (Pic 20).

#6-32 x 5/8" PHMS (4)

Pic 19

#6-32 x 3/8" PHMS (4)

Pic 20

## 5.0 VB-Series Arm Attachment

### 5.1 Dual Hanger – Side-by-Side

**Installation Note:** The Hanger provided in this installation kit may be attached to either a mounted or unmounted Module Hanger.
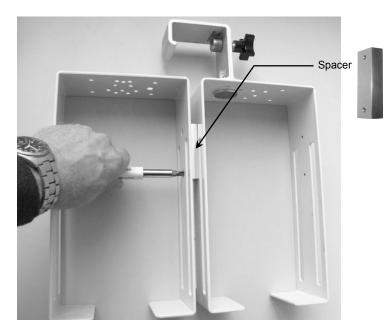
**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | Joining Spacer | 1 |
| 4 | #8-32 x 5/16" Flat Head Machine Screw (FHMS) | 4 |

Joining Spacer          Hanger

**Tools Required for This Procedure:** Phillips screwdriver.

1. Loosen the Knob on the C-Clamp and lift the mounted Module Housing off the Arm. Remove the four (4) mounting screws from the bottom of the Hanger and remove the Module Housing from the Hanger (see Section 2.0).

2. Attach the Joining Spacer between the Hangers using four (4) #8-32 x 5/16" FHMS (Pic 21).
   **Installation Note:** Two (2) countersunk holes are provided in one (1) inner side of each Hanger for attaching the Spacer. When correctly aligned, only countersunk holes will be facing the Joining Spacer. This alignment also ensures that the C-Clamp is positioned correctly over the center of the joined Hangers.

3. Mount the Module Housings in the Hangers using four (4) #6-32 x 3/8" PHMS per Housing (Pic 22).
   **Installation Note:** Use four (4) screws removed in Step 1 and four (4) screws supplied with the Installation Kit.

Spacer

Pic 21
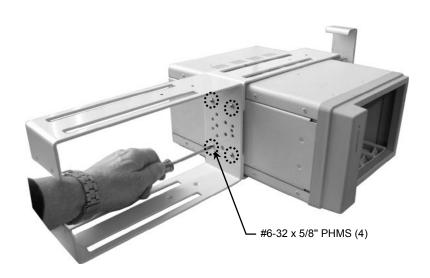
Pic 22

## 5.2 Dual Hanger – Vertical Stack

**Parts and Hardware Required for This Procedure:**

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 5/8" Pan Head Machine Screw (PHMS) | 4 |

Hanger

**Tools Required for This Procedure:**  Phillips screwdriver.

1. Loosen the Knob on the C-Clamp and lift the mounted Module Housing off the Arm.

2. If the upper Hanger contains a previously mounted Module Housing, remove and discard the four (4) mounting screws from the bottom of the Module Housing but do not remove the Housing from its Hanger.  **Installation Note:**  The lower Hanger will be attached to the threaded mounting holes in the bottom of the upper Module Housing. A Module Housing must be inserted, but not attached, in mounting position in the upper Hanger before proceeding to Step 3.

3. Attach the new Hanger to the upper Hanger by inserting four (4) #6-32 x 5/8" PHMS through mounting holes in both Hangers and threading the screws into the upper Module Housing (Pic 23).  **CAUTION:**  Do not over-tighten these mounting screws!

4. Mount the additional Module Housing in the lower Hanger using four (4) #6-32 x 3/8" PHMS (Pic 24).

#6-32 x 5/8" PHMS (4)

Pic 23

Pic 24

#6-32 x 3/8" PHMS (4)
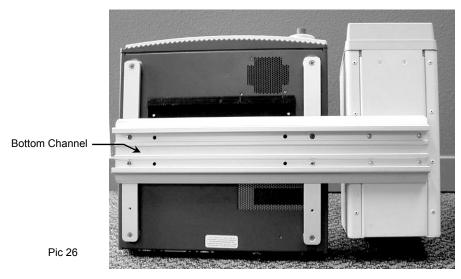
## 6.0  Ceiling Mount Attachment

**Installation Note:**  The Module Hanger can only be installed in the Bottom Channel of an *unmounted assembly*.  Remove the mounted assembly from the ceiling mount if required (procedure below) and refer to the appropriate *Hanger Attachment* procedure in Section 6.2).

### 6.1  Removing the Ceiling-Mounted Assembly (Devices attached to Bottom Channel)

**Installation Note:**  The photos below are examples of a typical Ceiling Mounting and may not represent your application.

1.  Remove any mounted device that is *not attached* to the Bottom Channel, e.g., a Flat Panel Display could be removed from the top of the Solar 8000 Base Unit.  See example in Pic 25.

2.  Unscrew Tilt-Locking screws from the Top Arms near the Clamping Knobs (Pic 25).

3.  Loosen the Knobs on each side of the ceiling mount and lift the mounted assembly from the Top Arms of the mount.

4.  Carefully lay the mounted assembly on its side to allow access to the Bottom Channel (Pic 26) and follow the appropriate *Hanger Attachment* procedure in Section 6.2.

**Ceiling Mount**



Tilt Locking Screws (2)

Knobs (One Each Side)

Mounted Assembly

Pic 25



Bottom Channel
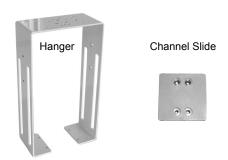
Pic 26

### 6.2  Hanger Attachment to Ceiling Mount

**Installation Note:**  These procedures are intended for either A) a new ceiling mount, or B) a ceiling mount assembly that was removed to facilitate Hanger attachment.

There are two (2) possible configurations for the additional Module Hanger:
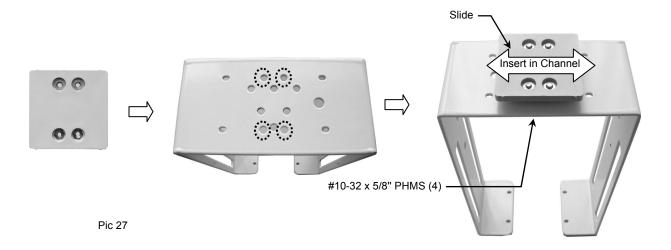
### 6.2.1  Single Hanger

**Parts and Hardware Required for This Procedure:**

Hanger          Channel Slide

| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | Channel Slide | 1 |
| 4 | #10-32 x 5/8" PHMS – Attaching to Single Hanger | 4 |

**Tools Required for This Procedure:**  Phillips screwdriver.

1. Pic 27:  Identify the four-hole mounting pattern on top of the Hanger.  Attach the Slide to the Hanger using four (4) #10-32 x 5/8" PHMS.
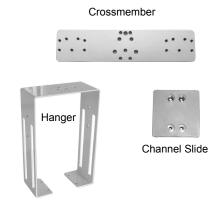
Slide

Insert in Channel

#10-32 x 5/8" PHMS (4)

Pic 27

2. Mount the Hanger in the Bottom Channel by inserting the Slide in the Channel (Pic 27).

3. Hang the mounted assembly in the Ceiling Mount and reinstall all hardware and devices as required to restore the mounted assembly to its original configuration.

4. Mount the Tram-rac Housing in the Hanger using four (4) #6-32 x 3/8" PHMS.

### 6.2.2 Dual Hanger – Side-by-Side

For this attachment it is assumed that an existing Tram-rac Hanger is available to complete the double-Hanger configuration.
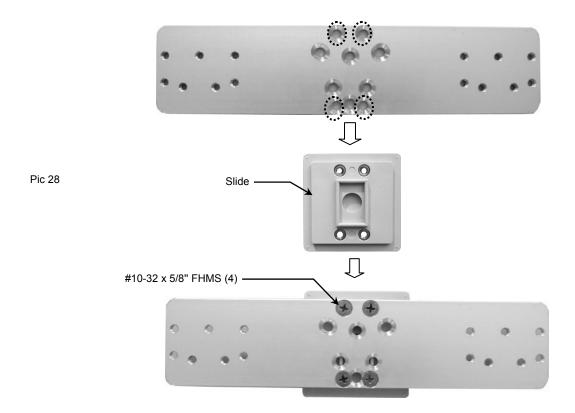
**Parts and Hardware Required for This Procedure:**

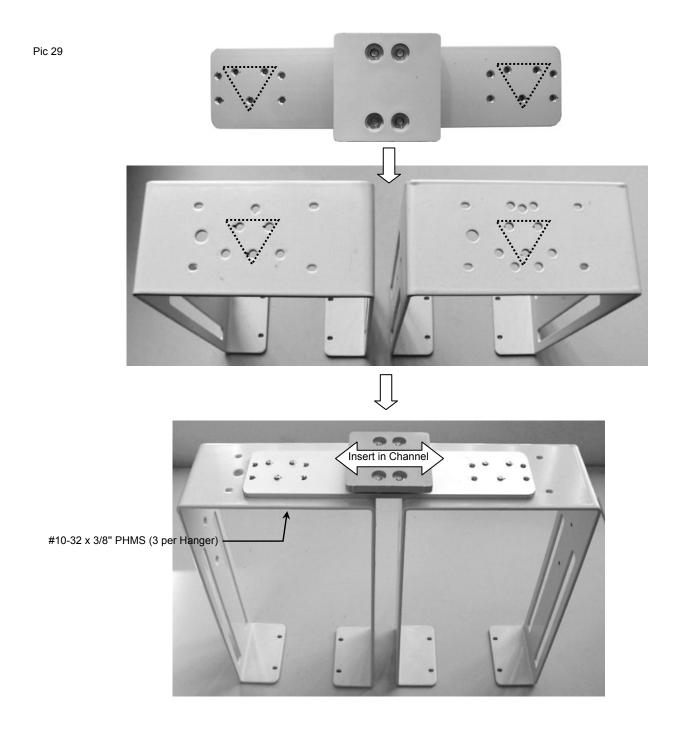| Item # | Description | Qty |
|--------|-------------|-----|
| 1 | Hanger, Universal | 1 |
| 2 | #6-32 x 3/8" Pan Head Machine Screw (PHMS) | 4 |
| 3 | Crossmember | 1 |
| 4 | #10-32 x 3/8" PHMS | 6 |
| 5 | Channel Slide | 1 |
| 6 | #10-32 x 5/8" FHMS – Attaching to Crossmember | 4 |

Crossmember

Hanger

Channel Slide

**Tools Required for This Procedure:** Phillips screwdriver.

1. Remove the Ceiling Mounting (see Section 6.1).

2. Slide the Hanger out of the Bottom Channel and unscrew the Slide from the Hanger.

3. Pic 28: Identify the four-hole mounting pattern on the Crossmember. Attach Slide to Crossmember using four (4) #10-32 x 5/8" FHMS.

Pic 28

Slide

#10-32 x 5/8" FHMS (4)

4. Pic 29: Identify two (2) three-hole mounting patterns on the Crossmember (with Slide attached). Attach the Hangers to the bottom of the Crossmember using three (3) #10-32 x 3/8" PHMS per Hanger.

Pic 29



#10-32 x 3/8" PHMS (3 per Hanger)

Insert in Channel

5. Mount the Hangers in the Bottom Channel by inserting the Slide in the Channel (Pic 20).

6. Return the mounted assembly to the Ceiling Mount and reinstall all hardware and devices as required to restore the original configuration.

7. Mount both Tram-rac Module Housings in the Hangers using four (4) #6-32 x 3/8" PHMS per Hanger.

# 7.0  Routine Maintenance and Cleaning

**Routine Maintenance**

Periodically inspect all hardware associated with the mounting system. Tighten or adjust as necessary for optimal operation and safety.

**Cleaning the Mounting Assembly**

1. The mounting assembly may be cleaned with most mild, non-abrasive solutions commonly used in the hospital environment (e.g. diluted bleach, ammonia, or alcohol solutions).

2. The surface finish will be permanently damaged by strong chemicals and solvents such as acetone and trichloroethylene.

3. Do not use steel wool or other abrasive material to clean the mounting assembly.

4. Damage caused by the use of unapproved substances or processes will not be covered by warranty. We recommend testing of any cleaning solution on a small area of the arm that is not visible to verify compatibility.

5. Do not submerge or allow liquids to enter the arm. Wipe any cleaning agents off of the arm immediately using a water-dampened cloth. Dry the arm thoroughly after cleaning.

**CAUTION:** GCX makes no claims regarding the efficacy of the listed chemicals or processes as a means for controlling infection. Consult your hospital's infection control officer or epidemiologist. To clean or sterilize mounted instruments or accessory equipment, refer to the specific instructions delivered with those products.