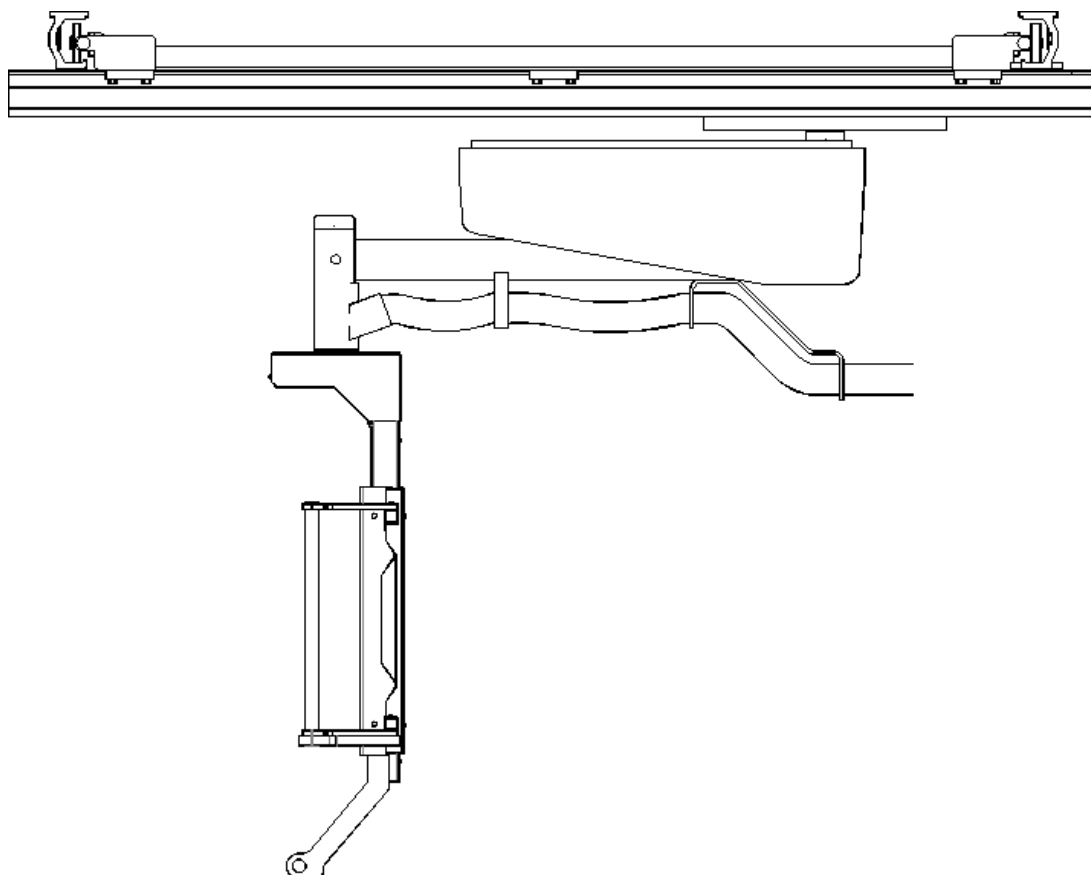


# Installation and Maintenance Guide

## Information for Installation and Users



### IDI 1000F Series

### Monitor Suspension System

Model IDI 1000F-1H  
Adapter to CAS 8000 Rails



# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

The text of this manual was originally written, approved and published by the manufacturer in English.

The information in this manual is subject to change without notice.

## CONTENTS

SECTION	TITLE
A	INTRODUCTION, PRODUCT DATA, AND OPERATION
B	SYMBOLS
C	GENERAL SAFETY
D	SAFETY HAZARDS
E	INSTALLATION
F	CLEANING
G	MAINTENANCE
H	CUSTOMER SUPPORT
I	DISPOSAL GUIDELINES
J	APPROVALS

# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

## A. INTRODUCTION

The IDI 1000F-1H Flat Panel Suspension System transports monitors used in medical imaging procedures. The system features a counterbalanced arm with vertical travel and internal cable routing. The mobile package includes clip-mounted bridge rails.

## PRODUCT DATA

### Package Includes:

Mobile gantry and counterbalanced swing arm with 36" sweep radius, 20" vertical travel and  $\pm 180^\circ$  rotation

Anodized aluminum bridge rails with *Easymount* clip system

Flat panel array with  $\pm 180^\circ$  rotation

Complete installation package; meter box mount, all mounting hardware and cable management components; brackets, covers and "flexhaust" hose

## OPERATION

The monitor is moved along the overhead rails, positioned vertically, and rotated manually using the handle.

## B. SYMBOLS



**Attention, consult accompanying documents.**  
**Failure to follow these instructions can cause accidents resulting in serious injury to patient, user, and damage to equipment.**



**Warning! Information or instructions shown near this symbol must be adhered to in order to prevent a potentially hazardous situation which if not avoided, could result in death, personal injury or damage to the equipment.**



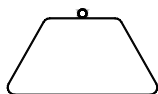
**Caution, risk of electrical shock**



**Protective Ground**  
**This is the common tie point between the AC monitor cord grounds, frame ground, and service (main) ground.**



**Alternating Current**



**Weight Limit**



**Recycle**  
**Some of the materials can be recycled rather than discarded.**

## C. GENERAL SAFETY



**Attention, consult accompanying documents.**  
**Failure to follow these instructions can cause accidents resulting in serious injury to patient, user, and damage to equipment.**

Only qualified persons may install, operate or maintain this equipment.

**Installation of this unit must adhere to applicable codes and authorities having any jurisdiction over this installation. The customer's architect or engineer is responsible for assuring that the structural support plans comply with all applicable codes and regulations.**

The unit should be used only in rooms that comply with state, federal and local recommendations concerning electrical safety when used in medical installations. All electrical connections shall be done by licensed/approved electrician per national electric codes.



**CAUTION:**

- Always switch off mains before performing nonelectrical tests or maintenance.
- Many positions exist where equipment or patient collision may occur. Care must be exercised during equipment positioning to avoid a patient or equipment collision.



Changes and additions to the equipment may be performed only by an authorized representative. These changes must conform to regulations and accepted standards of good practice. To prevent defeat of the built-in safety mechanisms, changes must be submitted in writing to the manufacturer for review.

Use only parts specified by Image Diagnostics, Inc. when repairing or servicing this equipment.

**This equipment is intended to only be used with Image Diagnostics, Inc. rails.**

Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

## D. SAFETY HAZARDS

Installers and Operators using this equipment should understand the safety issues and operating instructions provided.

Comments and questions regarding safety should be addressed to:

**Customer Support  
Image Diagnostics, Inc.  
310 AUTHORITY DRIVE  
FITCHBURG, MA 01420  
USA**

Or call IDI at (978)829-0009 or send fax to (978)829-0027  
Or call Toll Free at (877)304-5434

## SAFETY HAZARDS ALERTS

Alert	Circumstances for use
<b>DANGER</b>	Indicates an <i>imminently</i> hazardous situation which, if not avoided, will result in death or serious injury.
<b>WARNING</b>	Indicates a <i>potentially</i> hazardous situation which, if not avoided, could result in death or serious injury.
<b>CAUTION</b>	Indicates a <i>potentially</i> hazardous situation which, if not avoided, may result in minor or moderate injury or equipment damage.

## E. INSTALLATION

### UNPACK

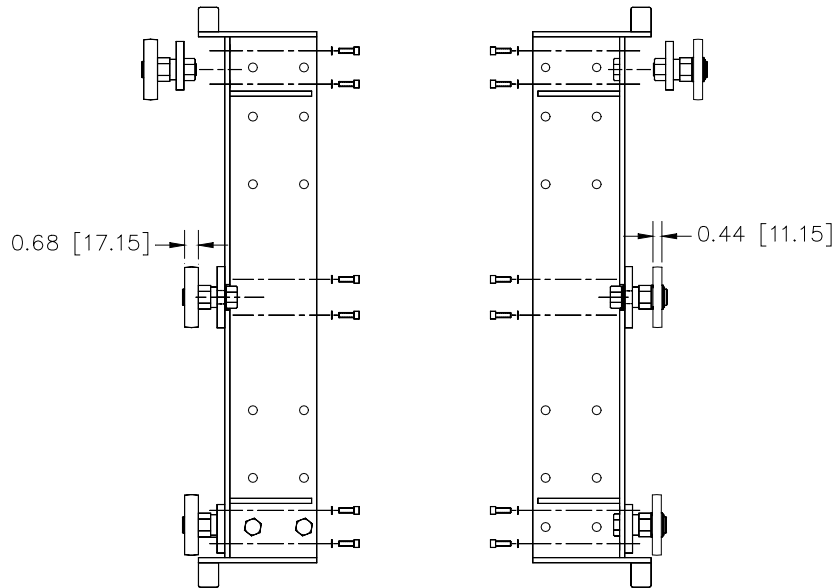


No special handling is required for unpacking this equipment at the site.  
Conventional shipping materials are used.  
Recycle or disposal of shipping material per local regulations

Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

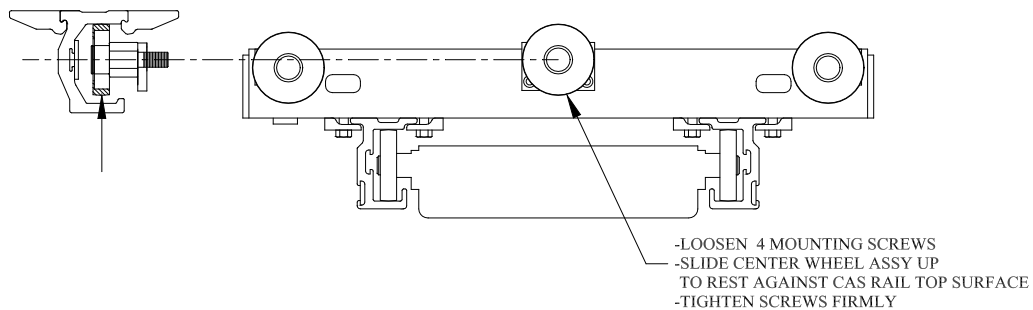
## BUILD TRANSVERSE BRIDGE

1. Please note the X/Y ceiling carriage assembly consists of two rail adapter subassemblies, two unistrut braces and two transverse rails. It is important to note the two adapters are not identical; the "guide" adapter can be identified by the thicker wheels and greater wheel offset as shown below. The guide adapter will be fitted with a pair of guide wheel bars later on this assembly.



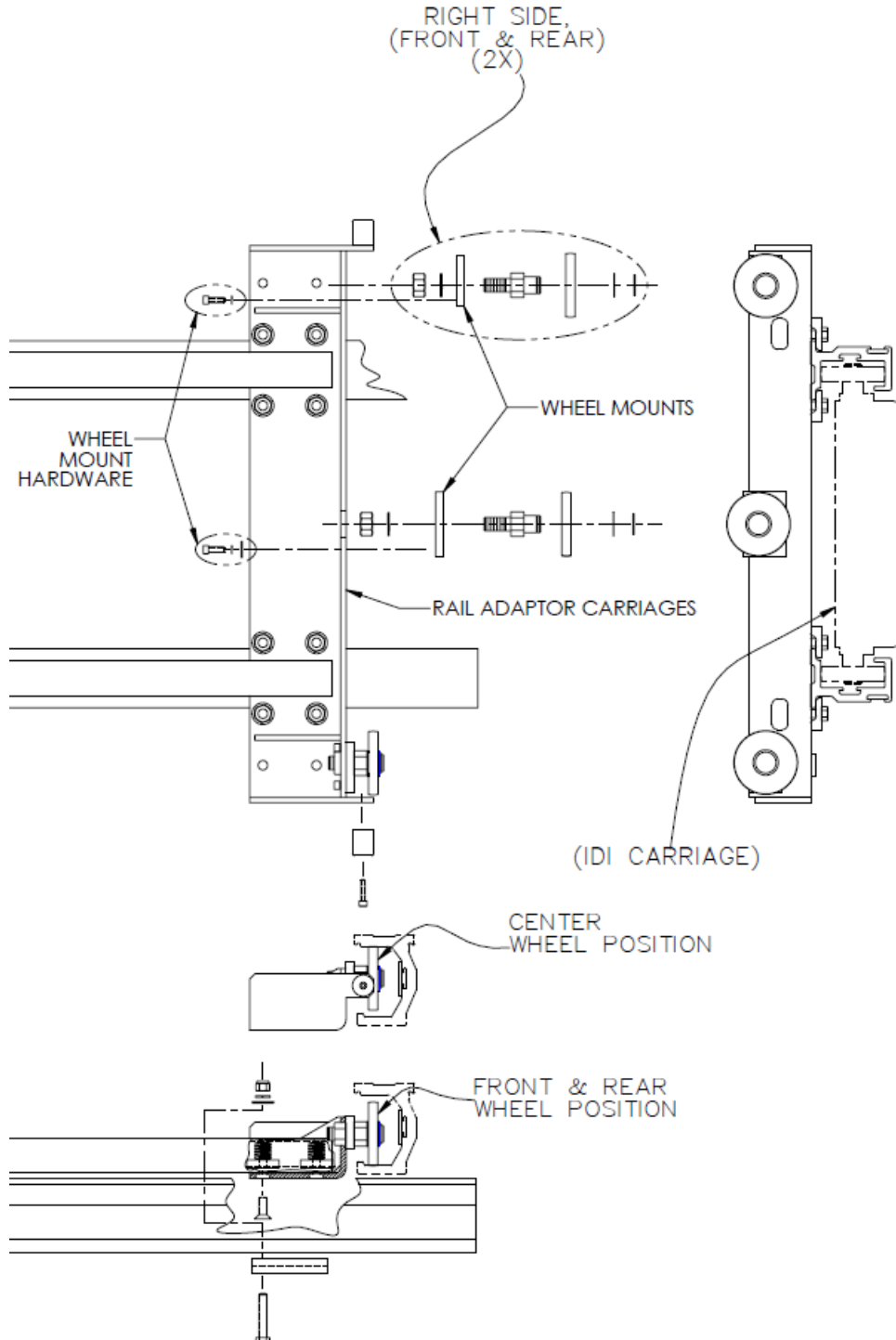
**GUIDE (left view) and STANDARD  
RAIL ADAPTER SUBASSEMBLIES**

2. The bridge assembly unit can be mounted in position, on the longitudinal rails, on the ceiling (recommended) or on the floor and then end loaded into the longitudinal rails with a Hi-Jack if there is sufficient room between longitudinal rail ends and any walls or obstructions. To assemble the bridge structure in place you must first slide each adapter subassemblies onto the left and right longitudinal rails. If you have sufficient space between the longitudinal rails and the wall you can simply end load each adapter. If you do not have adequate space at the end of the longitudinal rails, you may need to remove the center wheel subassembly so that you can install the adapters by "rolling" them in from the inside of the "C" section. See figure below.



Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

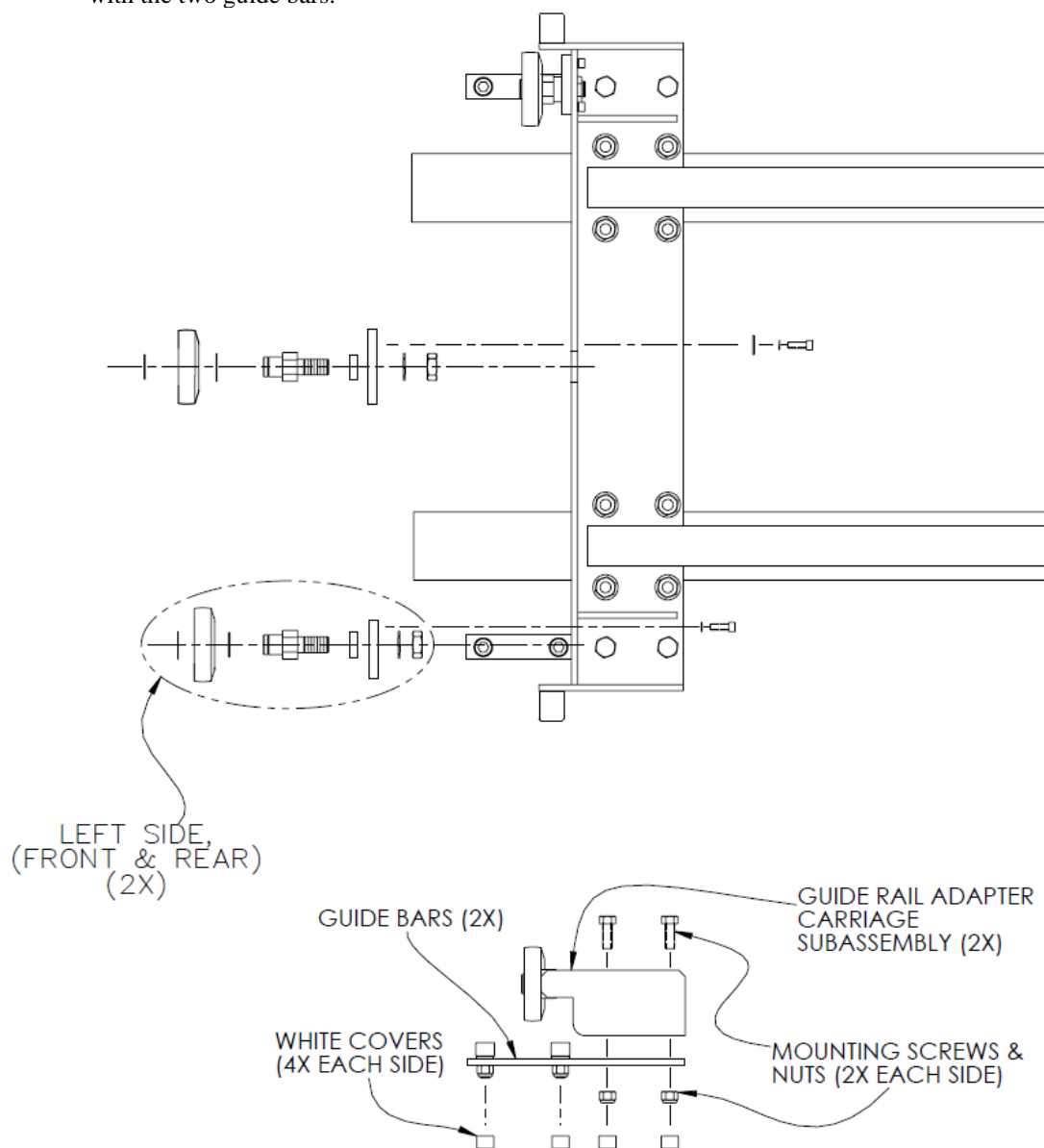
3. To side load adapters into longitudinal rails, you must loosen (preferably) or remove the wheel mounts from the rail adapter carriages by removing the mounting hardware (see view below). If you have removed the two center wheel mount subassemblies position them on the rails as you rotate each adapter into place and align the wheel stud and mounting plate to the adapter. Once the adapters have been loaded into the rails, tighten or reinstall hardware (with thread locker **LOCTITE #242** or equivalent) **while applying upward pressure on the wheel to maintain contact with the top of the longitudinal rails.**





# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

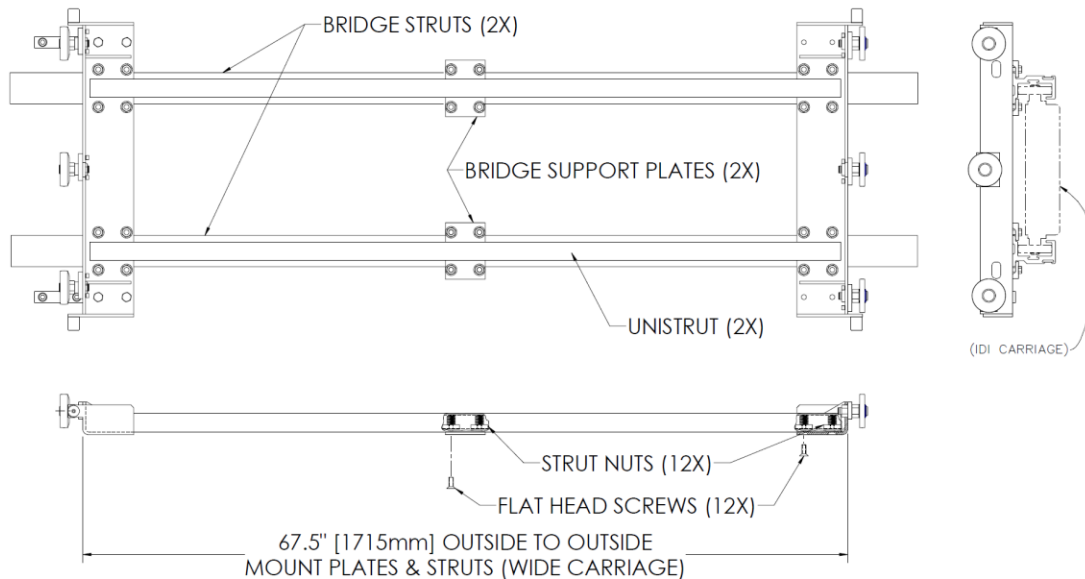
- Next, mount the two guide bars to the guide rail adapter carriage subassembly using screws and locknuts as shown below. Slip white covers over the total of eight locknuts associated with the two guide bars.



# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

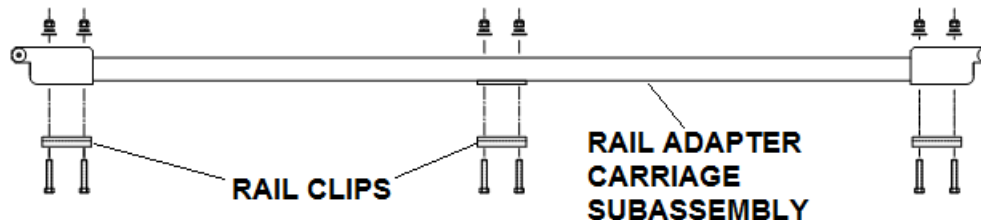
## INSTALL BRIDGE STRUTS

1. Attach the two bridge support plates to the two bridge struts using flathead screws and strut nuts as shown below. Center the plates on the struts.
2. Attach the two pieces of painted unistrut that make up the bridge between the rail adapter carriage subassemblies using flathead screws and strut nuts (see below). Use thread locker **LOCTITE #242** on screws. Snug up hardware to maintain required dimension and parallelism. Final tightening can be done after final adjustments.



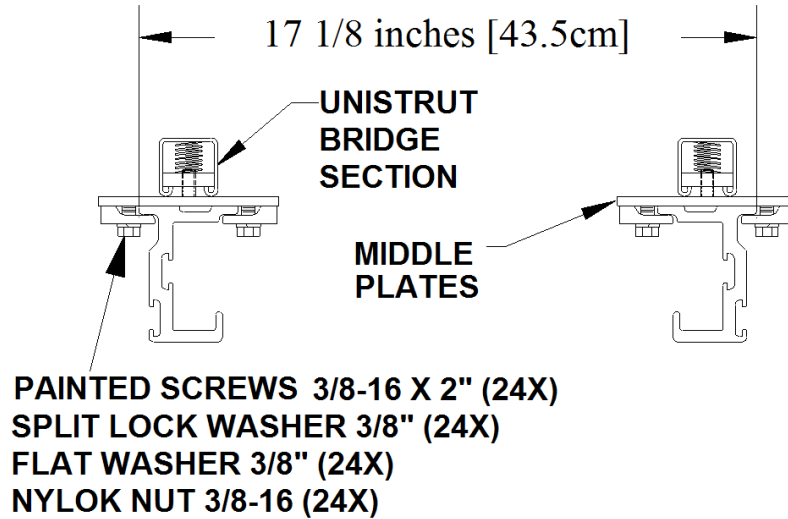
## MOUNT PLATES & STRUTS

3. Check bridge assembly carefully for both parallelism between components and perpendicularity with the longitudinal rails. Verify the load bearing support wheels on both sides of the adapter run true and as close as possible to the center of the longitudinal rails. Once this check is complete tighten all flathead screws.
4. Loosely attach rail clips to the rail adapter carriage subassemblies with hardware provided.



5. Remove one outboard rail clip from each corner of adapter carriages and the bridge support plate. Place one rail perpendicular to the adapter carriages and hold in place. Replace rail clip around the rail flanges. Lightly tighten hardware. Attach the second rail in the same manner.
6. Slide the rails back and forth to center them under the adapter carriages and to align both ends. Make adjustments until the rails are spaced 17 1/8" (43.5cm) apart at both ends. Tighten clip hardware in 16 places.

Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails



7. Attach clips to middle plates installed in step 5 with hardware as shown above. Use thread locker **LOCTITE #242** and tighten securely.

**NOTE:** Center wheel can be raised or lowered to adjust the space (lash) between the adapters and the top of the rails. Loosen screws to move mounting plate until wheel comes in contact with the surface on the top of the rail.

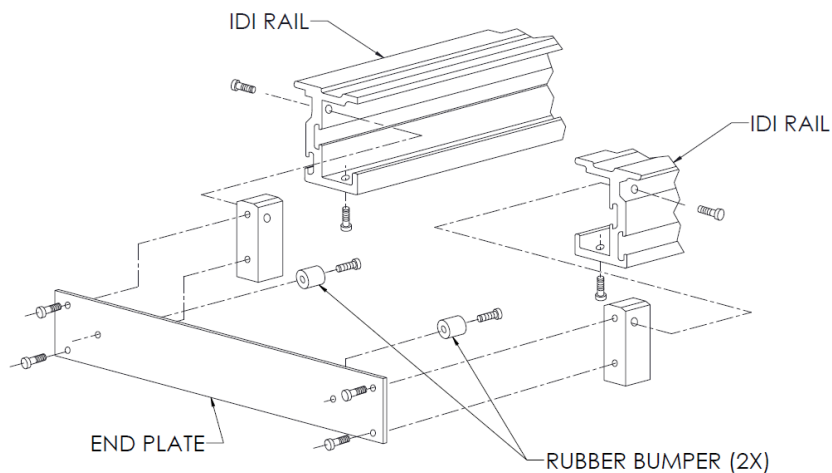


**WARNING!**

Failure to properly install this bridge system and securely attach all mounting hardware may result in serious injury to patient, user, and damage to equipment.

## INSTALL RAIL END PLATE

Install one end plate at the far end of the rails, making sure rubber bumper faces in towards the rails as shown below. Use thread locker **LOCTITE #242** on all threads.



# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

## END-LOAD GANTRY

1. Remove packing material from carriage. Using Hi-Jack or other suitable lift table, raise gantry (still attached to pallet) up and into the rails. ***Make sure all carriage wheels are engaged onto rails before lowering Hi-Jack.*** Remove pallet and shipping bars from support unit.
2. Install the second end plate at the near end of the rails, making sure rubber bumper faces in towards the carriage. (refer to view on previous page) Use thread locker **LOCTITE #242** on all threads.

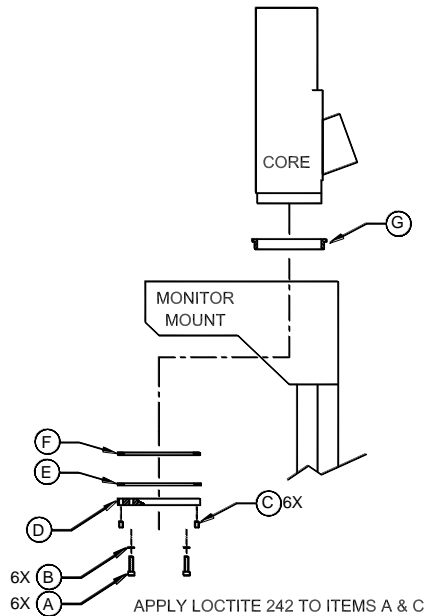


### WARNING!

**Failure to install both rail end plates may result in serious injury to patient, user, and damage to equipment.**

## INSTALL MONITOR MOUNT

**NOTE TO INSTALLER:** It is important that the load be balanced on the monitor mount.



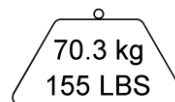
1. Remove wireway cover at top of monitor mount.
2. Drop rotation bearing (G) into pivot plate (top of monitor mount).
3. Take the moly coated thrust ring (F) and put around rotation bearing (G).
4. Place the thin stainless steel thrust ring (E) below the stainless steel thrust ring (F).
5. The six bolts (A) with lockwashers (B) go through rotation cap (D) and rotation bearing (G) into the pivot tube of the core. Use thread locker **LOCTITE #242** on hardware.
6. Apply a very little amount of thread locker **LOCTITE #242** to and insert the six setscrews (C) into the six threaded holes of the rotation cap (D). Thread the setscrews in until they contact the stainless steel ring (E). The setscrews may be tightened or loosened later to adjust rotational resistance.



### WARNING!

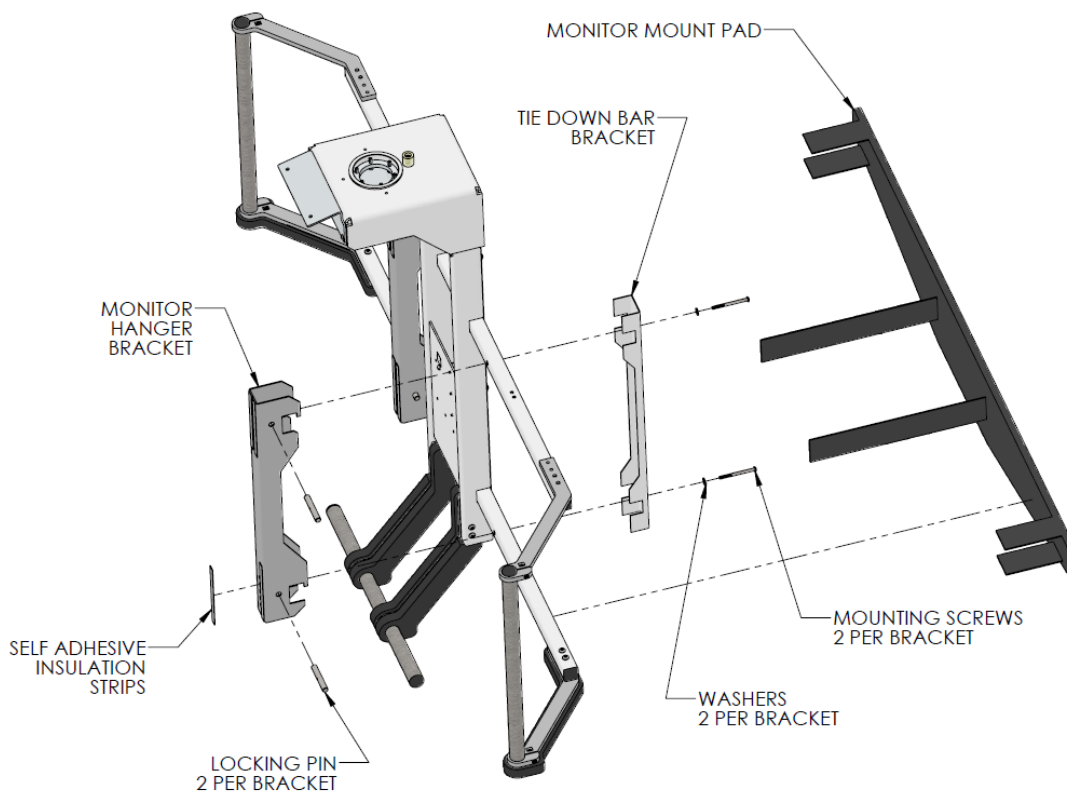
**Failure to securely attach hardware may result in serious injury to patient, user, and damage to equipment.**

## MOUNTING MONITOR



**Maximum total weight of monitors.**

1. To mount a monitor to the system, first remove the monitor mount brackets (front and rear and on each side of the central pivot body) by unscrewing the two screws that hold the front bracket to the rear bracket as shown below.



2. Insulation strips may be applied to the Monitor Hanger Brackets at this time if desired. Mount both front Monitor Hanger Brackets to the rear of the monitor using hardware provided by Image Diagnostics, Inc. Make sure that the orientation of the brackets match the view above so that the rectangle slots in the bracket will hook over the cross bars of the monitor mount. This will prevent the monitor from falling during the process of attaching it to the monitor mount. Use thread locker **LOCTITE #242** on all threaded hardware.
3. Lift the monitor using two people and hook the square slots in the Monitor Hanger Brackets over the cross bars on the Monitor Mount.
4. Slide Locking Pins (2 per bracket) into the side holes of the Monitor Hanging Brackets as shown above and orientate them so that the holes in each Locking Pin line up with the holes in the cross bars.
5. Mount the Tie Down Bar Brackets in the rear with washers and mounting screws (2 per bracket) as shown above. The screws will thread into the Locking Pins in the Monitor Hanging Brackets. Use thread-locking fluid on threads of screws.
6. Remove the Back Cover of the Monitor Mount to hard wire the power and signal cables of the Monitor to the Monitor Mount.
7. Attach Monitor Mount Pad to the back of the Bottom Bar as shown above.



### **WARNING!**

**Failure to attach hardware securely may result in serious injury to patient, user, and damage to equipment.**

# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

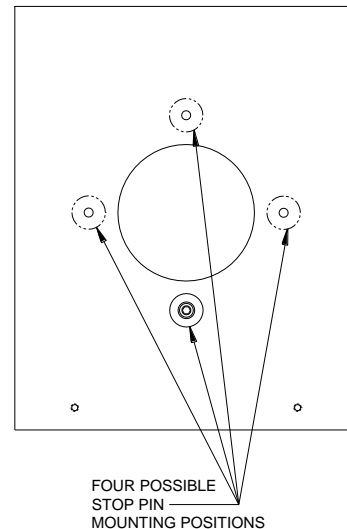
**NOTE TO INSTALLER:** Ground stud has been provided to properly ground monitor.  
Terminal strip has been provided for distribution of line voltage to monitor. Cut and strip  
monitor power cord to fit.



**WARNING!** Remove plastic cover and remove block of wood between gantry core and arm. Failure to do so may result in serious injury to user and damage to equipment.

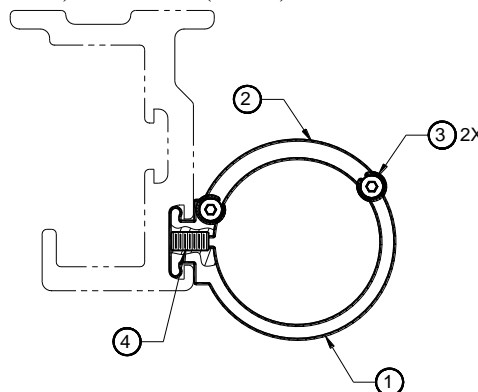
## SET ROTATIONAL LIMITS

If desired, the stop pin bumper on top of the Monitor Mount Cover can be relocated to one of four possible mounting locations.



## INSTALL STATIONARY CABLE HANDLING ASSEMBLY

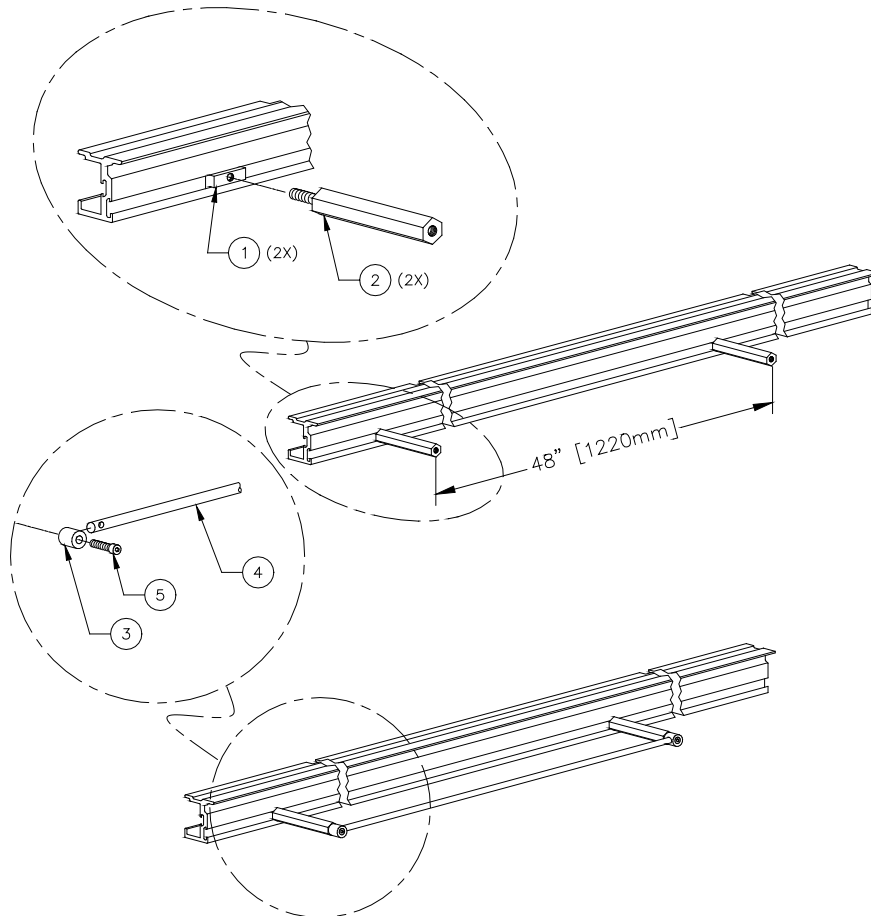
1. Determine which end of the rail the *stationary* cable handling kit will be positioned. If, at the far end of the rail, slide kit into rail track *prior* to positioning the *mobile* cable handling kit. If stationary kit is to be positioned at the near end of rail, slide into rail *after* positioning mobile cable handling kit. Stationary kit is typically mounted approximately 6 inches (15cm) from rail end.
2. After applying thread locker LOCTITE #242 to threads, tighten the setscrew (item 4) to secure in place. See diagram below for reference.
3. Remove retainer (item 2) by taking out the two mounting screws (item 3).
4. Place section of cable hose into clamp (item 1).
5. Reinstall retainer (item 2) and screws (item 3).



Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

**INSTALL MOBILE CABLE HANDLING ASSEMBLY**

1. See diagram below for reference. Slide nut plates (items 1) into rail track.
2. Position standoffs approximately 48" (122cm) from each other.
3. To assure proper fit and positioning, temporarily assemble cable hanger shaft (item 4) to standoffs.
4. Place one shaft support (item 3) onto far end standoff. Place the other shaft support to the second standoff, while temporarily installing cable hanger shaft (item 4) into holes of shaft supports.
5. Hand tighten socket head cap screws (item 5). **Use thread locking LOCTITE #242 on hardware.**



6. Position shaft/cable handling subassemblies (items 1-5) to desired location along the length of rail. Without disrupting alignment, remove shaft and shaft supports. Torque standoffs to ~35-50 inch pounds, 4.2-6.0(Nm). **Use thread locker LOCTITE #242 on hardware.**



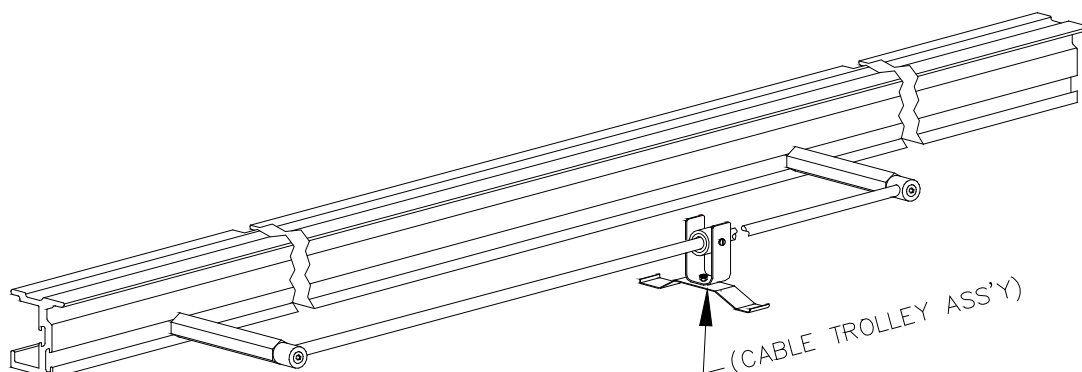
**CAUTION!**

Over tightening the standoff will weaken or break the set screw connecting the standoff to the nut plate causing attached components to fall.

7. Reattach shaft supports. Install one end of shaft to a shaft support. Tighten socket head cap screw (item 5).

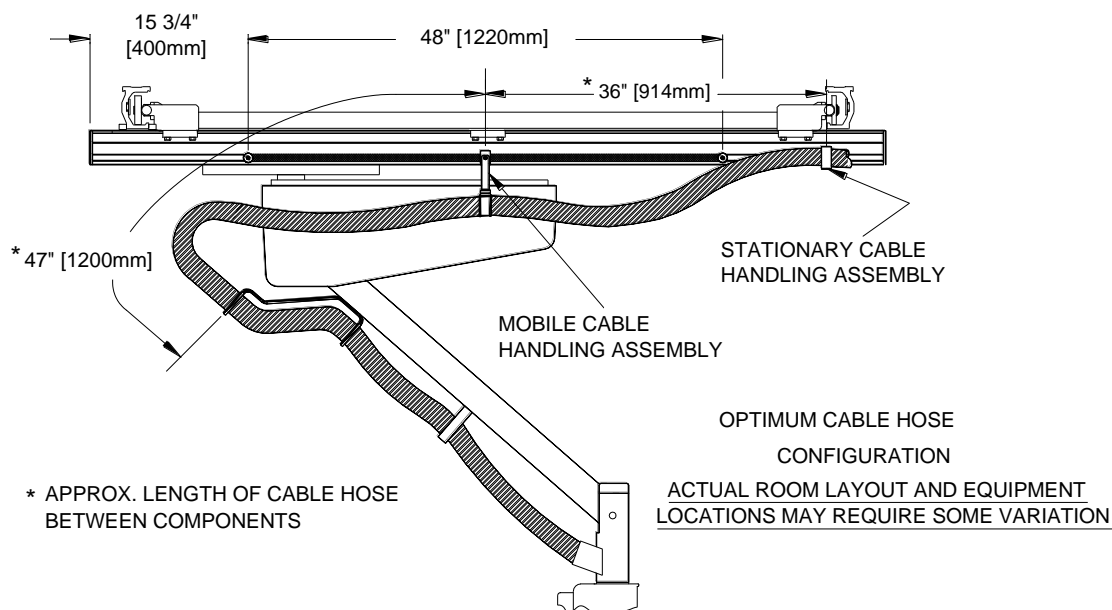
## Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

- Slide cable trolley assembly(s) onto cable hanger shaft (item 4) as shown below. Install free end of shaft into other shaft support. Tighten second socket head cap screw (item 5). **Use thread locker LOCTITE #242 on hardware.**



### DRESS CABLES

- When the monitor has been properly installed, it is recommended that the cables be brought through the pivot tube at the bottom of the arm. 2" (5cm) flexaust (provided) is to be attached to pivot tube and to be routed underneath the arm via the cable clamps as shown below. Rotate entire system and bring to maximum positions. the system should not drift from any position. If it does, check that enough cable has been left to allow freedom of motion.



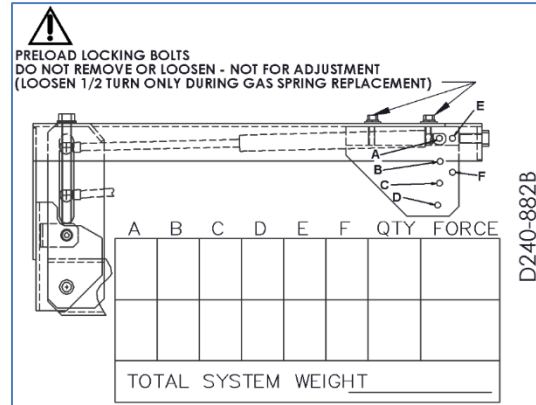


# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

## **BALANCE SYSTEM**

**Note:** System balance has been set at factory based upon quoted monitor weight.

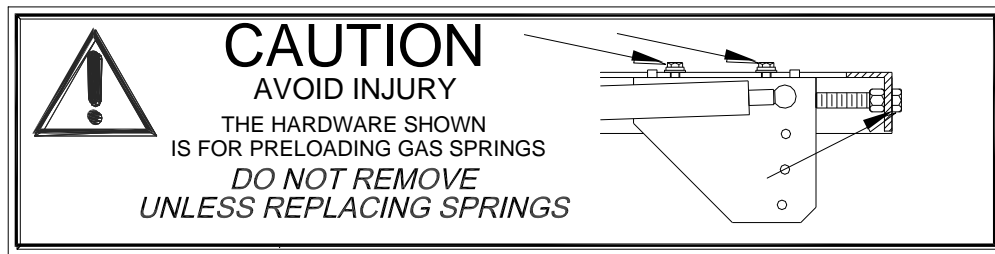
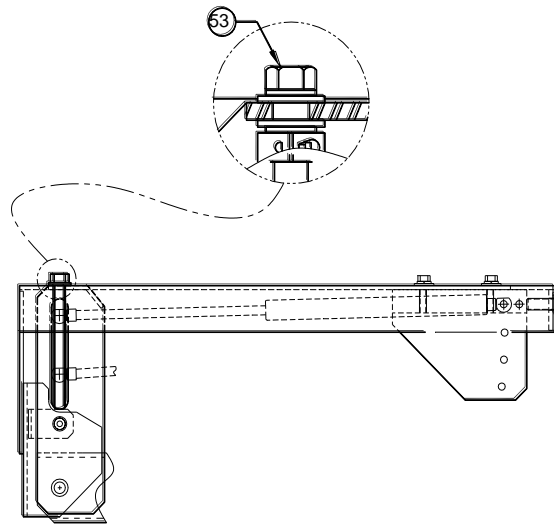
1. Note initial settings written on Spring Data label (blank label is shown below for reference). Substantial increases in payload may require spring change.
2. Prior to adjustment - payload must be secure. Fine adjustment to compensate monitor counterbalance can be made by turning adjustment screw (item 53) shown below. Rotate adjustment nut:



clockwise to increase payload capacity



counter clockwise to decrease payload capacity



**WARNING!** Do not remove gas springs. Maximum  
payload: 155 lbs. (70.3kg)

# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

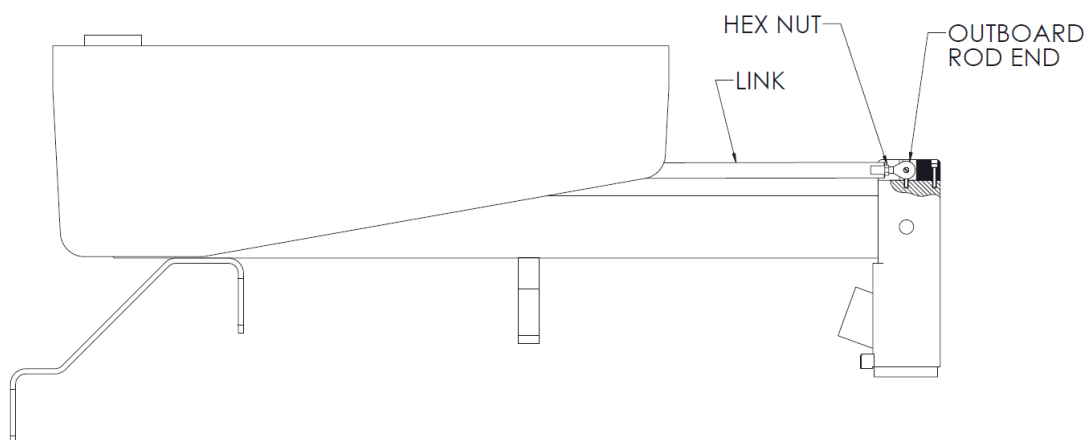
## YOKE BALANCE ADJUSTMENT



**WARNING!** Yoke has been leveled at manufacturers. Make adjustment only if absolutely necessary to compensate for an unbalanced load.

**NOTE:** Prior to yoke adjustment - payload must be secure.

Fine adjustment, to compensate for yoke balance, can be made by turning the link. Loosen threaded hex nut at outboard rod end as shown below; spin link until yoke is in a horizontal position; retighten hex nut.



## MONITOR MOUNT ASSEMBLY ROTATION RESISTANCE

1. The setscrews (C) installed in step 6 of "INSTALL MONITOR MOUNT" on page 12 can be loosened or tightened to adjust the rotation resistance of the suspended monitor mount assembly.
2. Replace wireway cover after making adjustment.

## F. CLEANING THE EQUIPMENT

No part of this unit is designed to be sterilized in an autoclave. Do not allow water or other liquids to enter the equipment as this may cause short circuits or corrosion. Clean parts with a clean cloth dampened with disinfectant or a mild detergent solution. Do not use abrasives, solvents, sprays or corrosive cleaning agents. Gently rub with a clean soft cloth to dry.

If room is to be disinfected by means of an atomizer, the equipment must be covered with plastic or similar sheeting. The equipment must be turned off well in advance of this procedure to prevent convection currents from drawing the disinfectant mist into the equipment. After the mist disperses completely, the sheeting may be removed and the equipment disinfected as described above.

# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

## G. MAINTENANCE

"Authorized Technician"

All maintenance procedures should be done by an experienced technician with demonstrated knowledge and skills (electrical and mechanical) relative to this type of equipment.

This individual must have access to this manual and the proper tools.

### Daily Maintenance Checks:

#### 1. Pre-Operational and Post-Operational Checks

When performing daily checks of the monitor suspension, perform the same steps pre-operational and post-operational.



---

**CAUTION! If any abnormality is found in the monitor suspension, stop using it. Post a sign reading "DO NOT USE" so that the system is not used by mistake. Then contact your representative for inspection and repair.**

---

#### 1.1. Visual check

Before checking the operation, confirm the following:

- The monitor suspension is not tilted.
- Monitor is securely attached.
- Any Hardware or Components have not been loosened or removed.

#### 1.2. Operational check

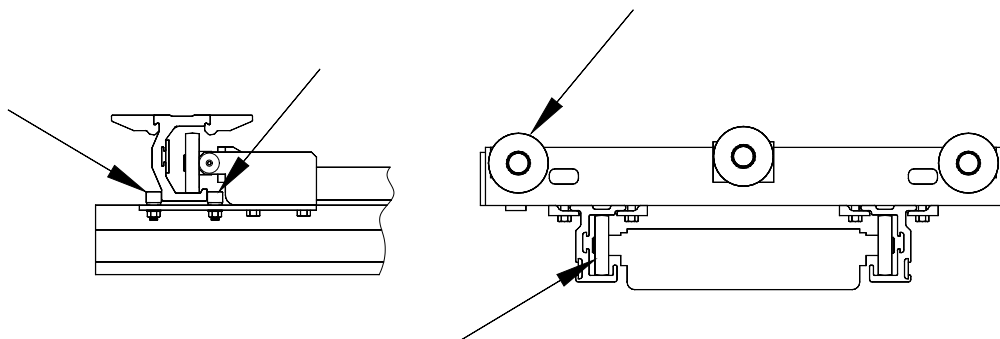
Move all the articulating sections and confirm the following:

- Operation does not lack smoothness compared to when the monitor suspension was first installed.
- There is no play.
- There are no abnormal sounds.
- The monitor is not tilted due to loose hardware.

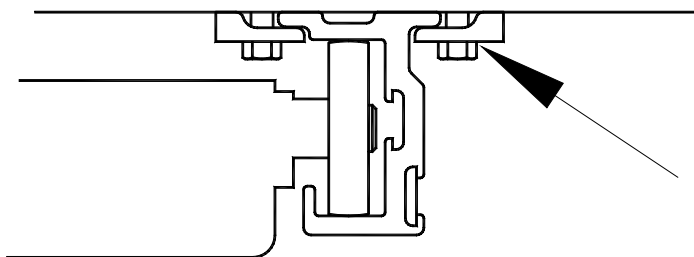
# Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

## Annual Maintenance Check:

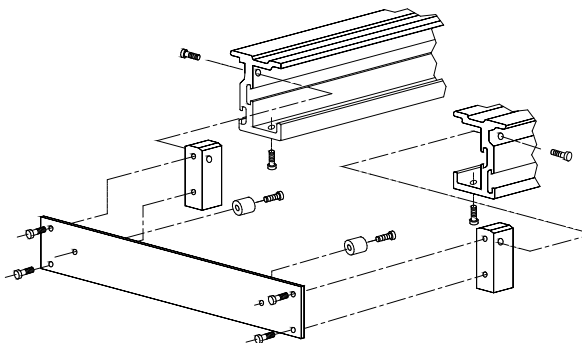
1. Clean carriage wheels and guides and the rails where carriage wheels and guides ride inside the rails.



2. Check that the rail mounting hardware has not become loose.



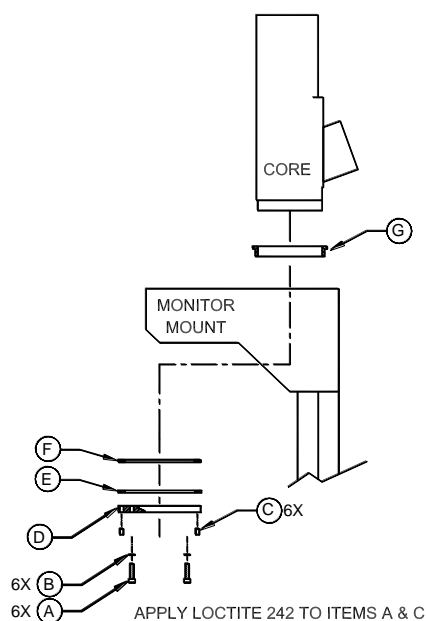
3. Check that the hardware securing the end plates are tight.



4. Perform a complete functional inspection:
  - Rotate monitor mount assembly through complete range.
  - Raise and lower monitor mount assembly.
  - Roll carriages through complete range of rails.

## Installation and Maintenance Guide for IDI 1000F Series Suspension System Model IDI 1000F-1H Adapter to CAS 8000 Rails

5. Clean and touch up painted surfaces.
6. Check that all mounting hardware is tight and that there is no wear at:
  - the end of the gantry core arm.
  - the rotational section between the gantry core arm and the monitor mount assembly.
  - the monitor mount assembly pivot joint.
  - the monitor bracket pivot and the monitor.



Should the screws labeled above as “A” become loose, there will be an opening of the mechanical junction between the gantry core arm and the monitor mount assembly.

The procedures mentioned in these instructions are based on the recommendations of HHS, I.E.C., etc.

In cases of increased wear or where severe working conditions exist, maintenance checks should be made at shorter than the specified intervals.

Should any control or indicator fail to operate properly, do not use the equipment until a repair has been completed. Operating equipment with defective components may expose the operator or the patient to safety hazards.

The manufacturer strongly recommends that a maintenance program be initiated and that a maintenance record be kept detailing dates and nature of maintenance performed, the name of the service engineer, and any other relevant information.



### **WARNING!**

**Removal of any hardware requires re-assembly with thread locker Loctite #242 or equivalent (depending on hardware size) following manufacturer's instructions.**

## H. CUSTOMER SUPPORT

**For technical assistance, be sure you have the complete model and serial number before contacting the local or national service office.**

**Customer Support  
Image Diagnostics, Inc.  
310 Authority Drive  
FITCHBURG, MA 01420-6047  
USA**

Or call IDI at (978)829-0009 or send fax to (978)829-0027  
Or call Toll Free: (877)304-5434

## I. DISPOSAL GUIDELINES



Most of the components used in this suspension system are made of metal, usually aluminum or steel, and are easily recycled.

## J. APPROVALS



SGS Testing Service



The system was tested and found to be in compliance with the requirements of all relevant directives and standards in effect within the European Union at the time of manufacture.



European  
Authorized  
Representative:

Advena Ltd. Tower Business Centre, 2nd Flr.,  
Tower Street, Swatar, BKR 4013 Malta

Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

Installation and Maintenance Guide for IDI 1000F Series Suspension System Model  
IDI 1000F-1H Adapter to CAS 8000 Rails

## REVISIONS TO THIS MANUAL

<b><u>Rev</u></b>	<b><u>Date</u></b>	<b><u>Description</u></b>
A	December 2011	Preliminary Release
B	May 2012	ECO 324
C	September 2018	Removed references to “Toshiba.”