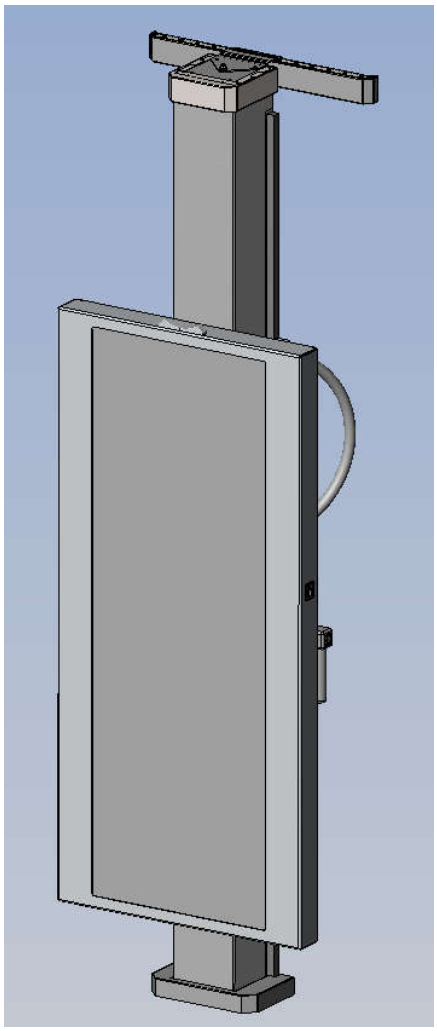
HEAVY DUTY LONG FORMAT DETECTOR WALLSTAND

J1000-51



INSTALLATION, SERVICE, AND OPERATION MANUAL

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MANUAL TEXT REVISION HISTORY

REVISION	ECR	Description	Release Date
P2	--	Preliminary Release	August 2019
A	10568	Production Release	August 2020

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1.0 DEFINITIONS AND SPECIFICATIONS

1.1 Definition of Symbols Used on the Equipment

Symbol Legends	
Symbol	**Definition**
	Date of manufacture
	Manufacturer
	Serial Number
	Reference Number (Model/Part Number)
	Keep Dry
	NOTE This symbol represents Information that assists the user of the manual in the performance of a task. It may provide the user with better methods of conducting the task, or it may point out conditions that could cause the system to fail to operate properly.
 CAUTION	Points out special procedures, or precautions, that personnel must follow to avoid equipment damage.
 WARNING	Identifies situations or actions that may affect patient or user safety. Disregarding a warning could result in patient or user injury.
	TYPE B APPLIED PART This symbol indicates equipment providing a particular degree of protection against electric shock, particularly regarding allowable leakage currents and reliability of the protective earth connection (if present).
	This symbol indicates an Electro Sensitive Device is present which must be carefully handled to prevent damage to the device.
	ELECTRIC SHOCK HAZARD WARNING This symbol indicates an electric shock hazard.
	DANGER VOLTAGE This symbol indicates hazards arising from dangerous voltages.
	DIRECT CURRENT This symbol indicates a direct current source.
	PROTECTIVE EARTH TERMINATIONS This symbol indicates protective earth terminations in device.

1.2 General Precautions and Notices

WARNING

All of the components used with the wallstand (generator, bucky, etc.) shall comply with UL 60601 standards.

Intended Use

This is an x-ray wallstand, a mechanical device intended to hold and position an X-ray image receptor during radiographic procedures.

Attenuation

The system integrator/installer must ensure certification labeling of the final assembled product to 21 CFR Chapter 1 Subchapter J [§1020.30(n)].

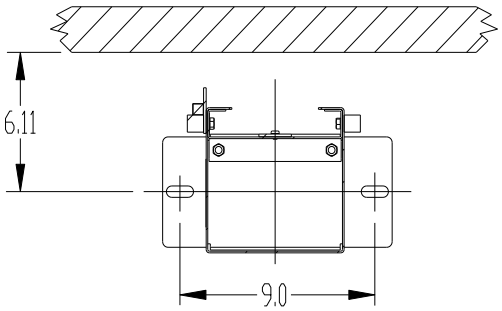
Cleaning

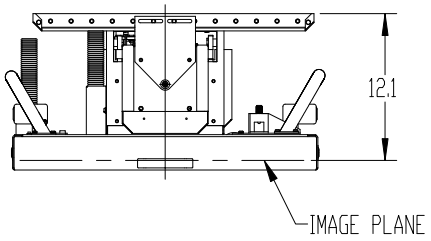
The manufacturer recommends disinfection of the equipment between uses for any surfaces that may come in contact with the patient during a radiographic procedure.

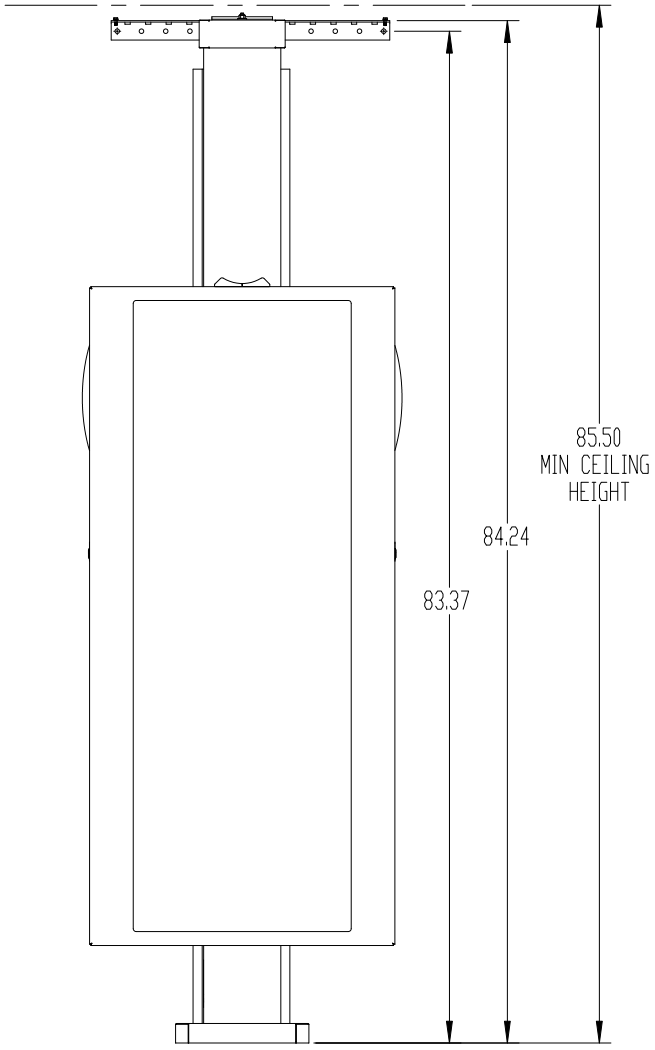
1.3 Specifications

SPECIFICATION SUMMARY TABLE	
Electrical Ratings	24VDC, 1A ⎓ (or equivalent)
Maximum Image Receptor Load	75 lbs (34 kg)
Environmental Conditions	Temperature range for: Transport and Storage: -40° F to +158° F / -40° C to +70° C Use: +50° F to +104° F / +10° C to +40° C Relative Humidity Limits for: Transport and Storage: 10% to 100% Use: 30% to 75% Atmospheric pressure range for: Transport and Storage: 14.67 inHg to 31.30 inHg / 500 hPa to 1060 hPa Use: 20.67 inHg to 31.30 inHg / 700 hPa to 1060 hPa
Information regarding potential EMC interference and advice for avoidance	• Mains power quality should be that of a typical commercial or hospital environment • Power frequency magnetic fields should be at levels characteristic of a typical location in a commercial or hospital environment
Degree of protection against harmful ingress of water	IPXO/Ordinary
Degree of protection against electric shock	Class I, Type B Applied Parts 
Applicable Standards	This X-ray Wallstand complies with the following regulatory and design standards: • UL 60601-1 • CAN/CSA C22.2 No. 601.1, CAN/CSA C22.2 No. 601.2.32-98 • X-RAY EQUIPMENT IEC60601-2-32:1994
Safety Label	
Note: The UL Classification does not include X-Ray Generator or Image Receptor.	
Equipment not suitable for use with flammable anesthetic mixture with air or with oxygen or nitrous oxide.	

1.4 System Layout Dimensions







2.0 INSTALLATION

The wallstand must be securely mounted to the floor and the wall for safe operation. Generally two installers are required to perform the installation procedure.

CAUTION

Keep the counterweight immobilized with the shipping bolts until more components are installed

The wall mount design allows fine adjustment of the wallstand to ensure the receptor center is at the center of an aligned and properly tracking x-ray beam. The column is intended to be mounted near the middle of the wall mounting bracket for a symmetrical appearance. However the column can be mounted as far as 8-1/4 inches to either side of center.

2.1 Positioning and Mounting the Column

Determine the approximate radiographic position of the wallstand column.

Position the bracket on the wall with the horizontal top surface 84-1/4 inches above the finished floor, oriented as shown below. This places the mounting bolt holes at 83-3/8 inches above the finished floor. Figure 2a shows the dimensions of the wall mounting angle.

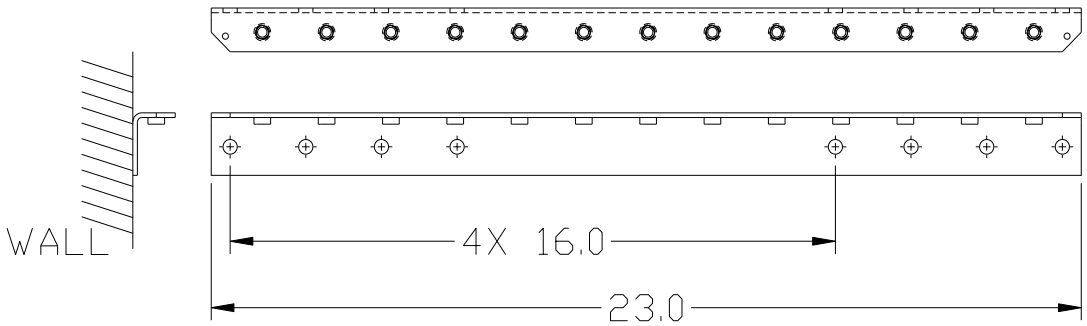


Figure 2a: Front View of Wall Mounting Bracket

The four hole pairs are spaced on 16-inch centers. Align the center of the mounting bracket with the intended column centerline (based on the beam centerline and receptor configuration), then shift left or right to align one set of these holes with the closest available wall studs. The bracket/system can be shifted up to 8.25 inches in either direction. Bolt the mounting bracket in place using hardware appropriate to the wall and stud material (not provided). The fasteners should have minimum pullout strength of 500 lbs each. For reference, a #10 steel wood screw with 2.5” of thread engagement in construction-grade wood provides 750 lbs minimum pullout strength.

Remove the nut and washer from the top threaded stud on the column. Orient the connecting plate with the slots toward the wall and the “point” of the triangle toward the front of the column. The jog in the plate faces up. See Figure 2b below.

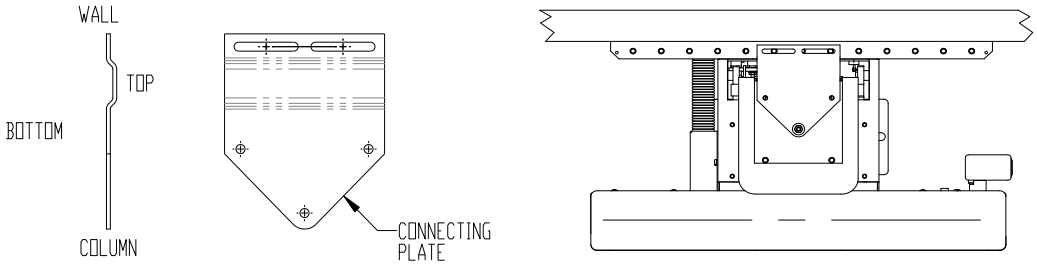


Figure 2b

Place the stud of the column through the hole at the point of the plate. Insert two ¼-20 bolts with lock washers through the remaining holes in the plate (two rear corners of the column top). Reinstall the washers and hex nut on the center column stud.

Secure the floor mount bracket to the base of the column.

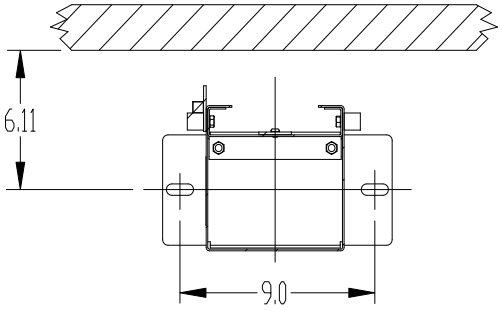


Figure 2c

Raise the column into position. Secure the connecting plate to the top of the wall mounting angle through the slots using the ¼-20 bolts, flat washers, and lock washers provided. Use at least two bolts and always use the outermost holes. Use three bolts if possible.

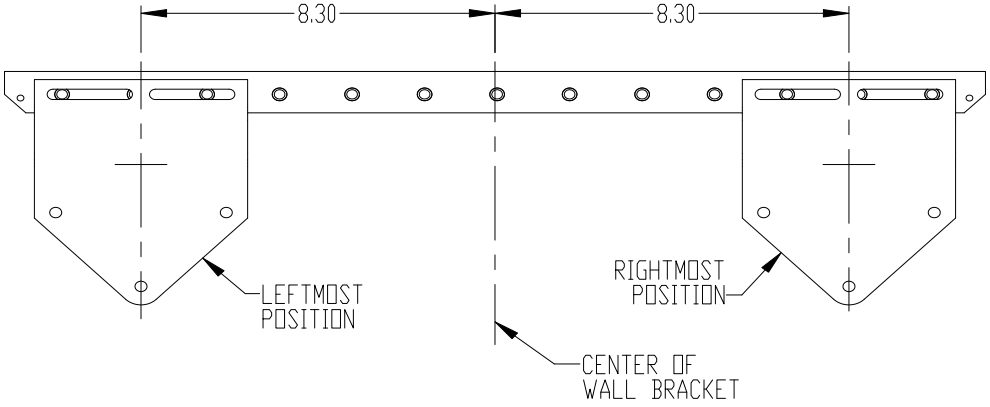


Figure 2d

2.2 Detector and Grid

To install the detector and grid, first remove the cabinet frame by removing the 8X screws securing it to the mounting pan (only 4 of 8 shown in Figure 2e below). After

separating the frame from the structure CAREFULLY unplug the remote collimator switch cables directly from the switches. Set the frame aside.

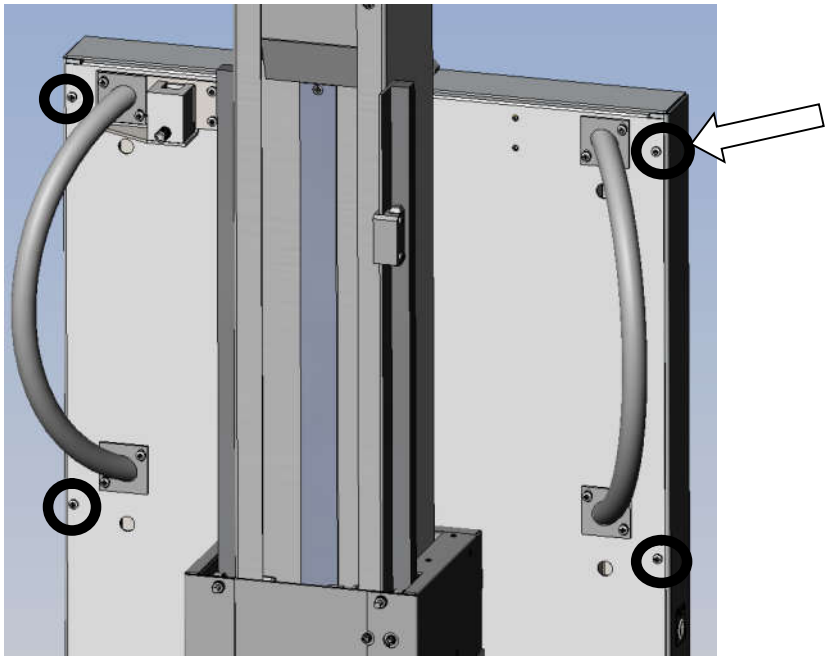


Figure 2e

Next remove at least one of the grid mounting channels by removing 6X screws securing it to the mounting pan (only 3 of 6 shown below):

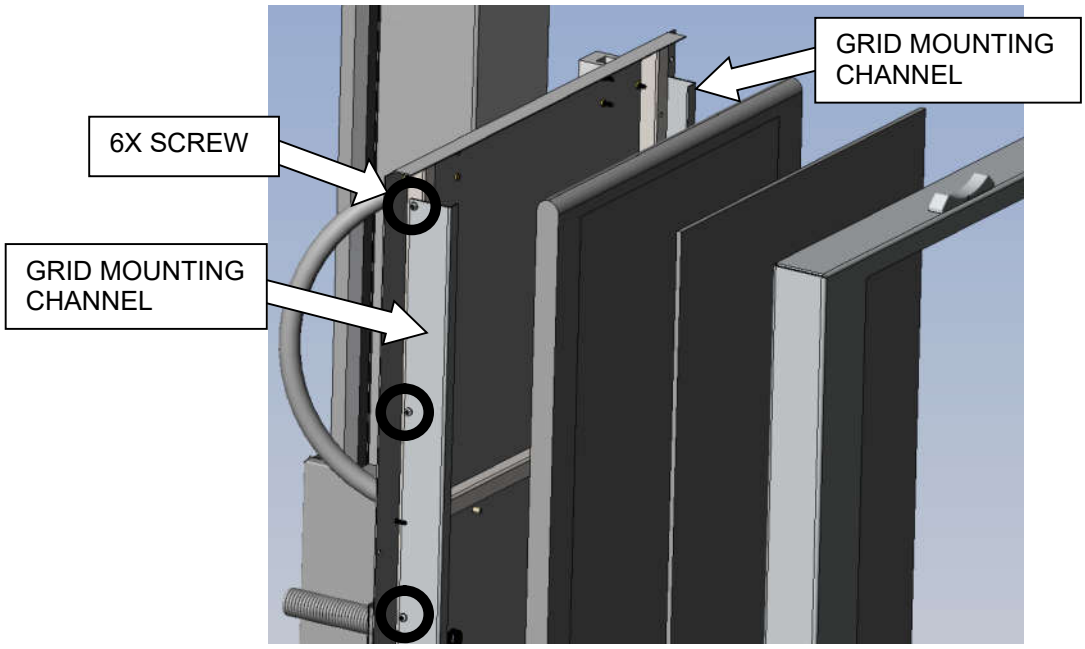


Figure 2f

Locate 8X M5x14 screws and lockwashers in the hardware kit. Install the 17x51 detector with screws through the rear of the mounting plate as shown (2 of 8 locations shown in figure 2g). Set screws through the bottom of the shelf can be adjusted to help with vertical alignment/placement (see Figure 2h).

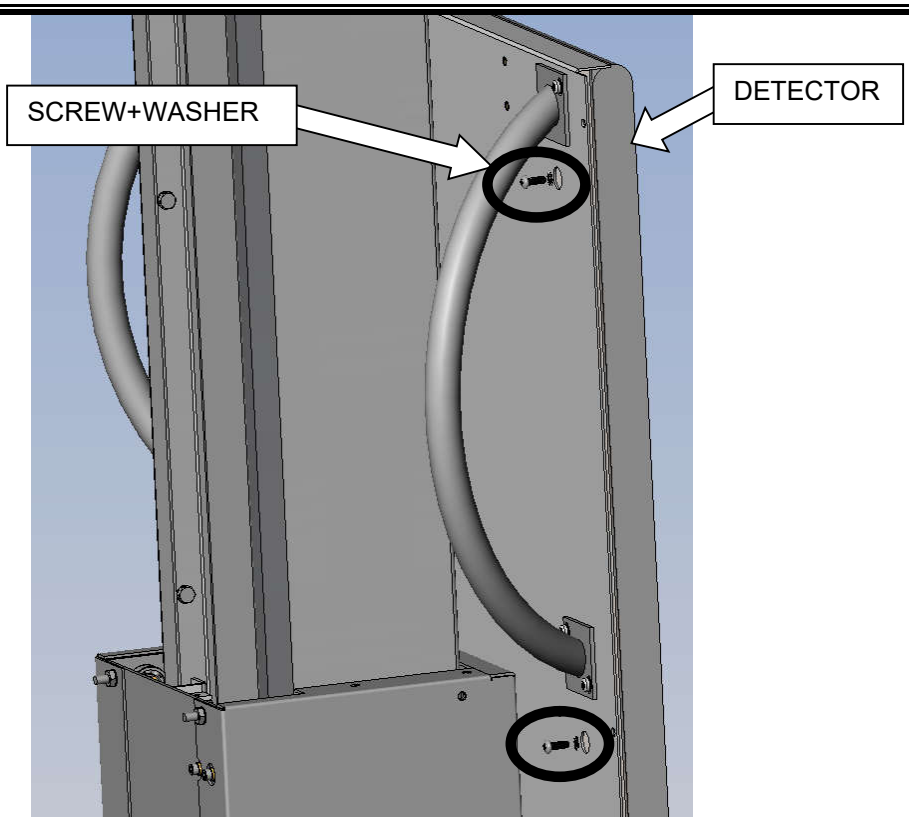


Figure 2g

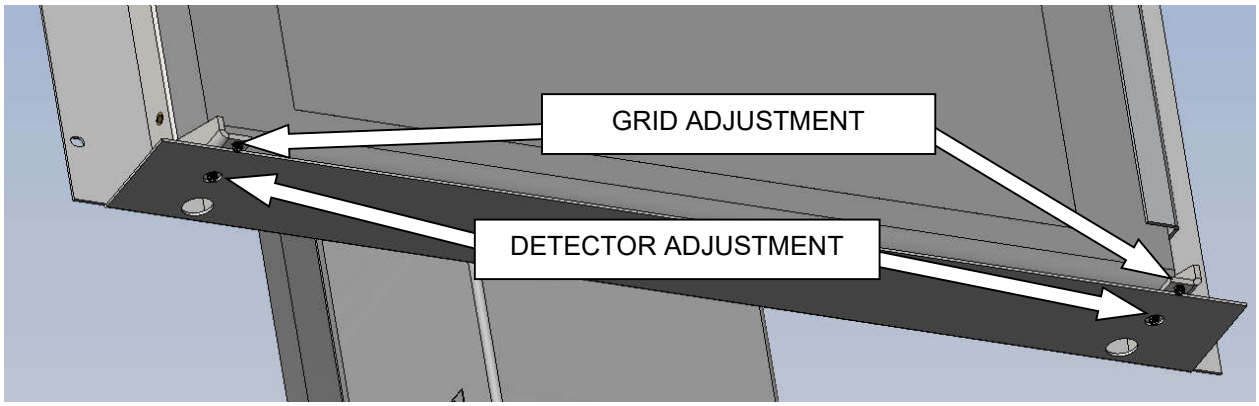


Figure 2h

Ensure the wallstand position aligns the detector centerline to the x-ray beam centerline, adjusting if necessary. Secure the base of the column to the floor with appropriate floor anchors (not provided) and lock the connecting plate to the wall bracket.

Reinstall the grid mounting channel(s) removed earlier (see Figure 2f).

Pull the required cables for the detector through the lower/outside hose on the wallstand and connect to the detector panel (see Figure 2i).

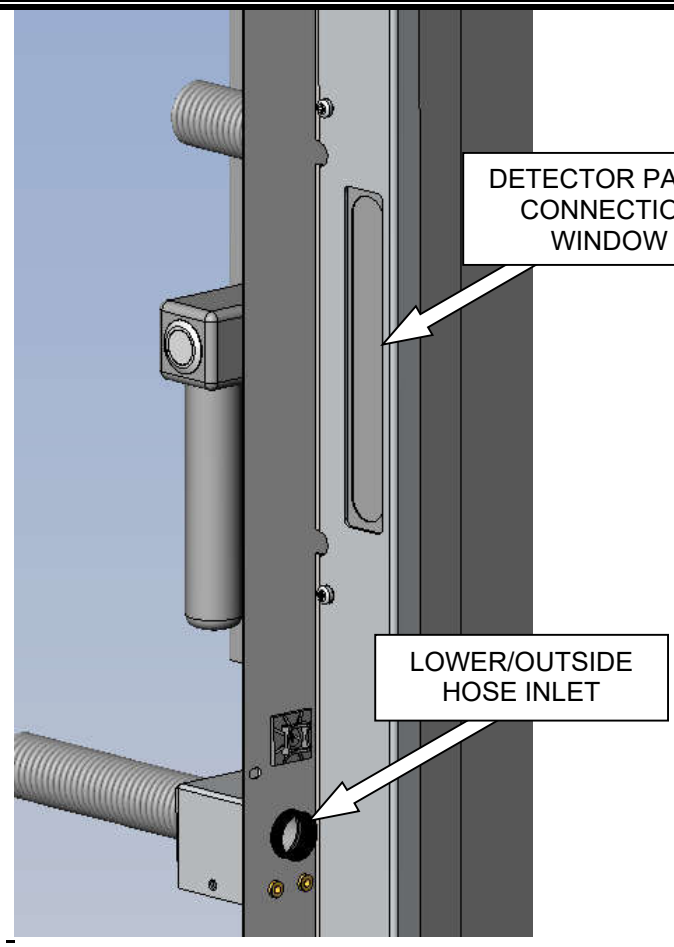


Figure 2i

Before sticking the grid assembly to the Velcro strips, use the grid adjustment screws to get the height of the grid centerline close to alignment with the detector. Remove the adhesive release liner of the Velcro and set the grid in place, centering it horizontally on the mounting channels. Apply pressure along the full length of both vertical mounting channels to adhere the Velcro to the grid. Once fully adhered, the grid position can then be readjusted.

Once all alignments are complete, reconnect the remote collimator light cables to the switches and reattach the cabinet frame (see Figure 2e). Use care not to trap the collimator light switch cables under the frame.

2.3 Power

Power the column with 24 VDC. This can be done from the generator or from an external power supply (included with the system).

2.4 Initial Trim

WARNING

The counterweight access holes are dangerous shear points when the covers are off and the counterweight is mobile in the column. Do not use these holes as handles to lift or move the column. Use extreme caution when inserting trim weights into the column.

Verify that the vertical lock is powered on. Add two 10-lb trim weights to the counterweight. Remove the two counterweight locking bolts (see Figure 2j).

CAUTION

The load may be imbalanced so use caution when releasing the vertical lock—unintended motion may result.

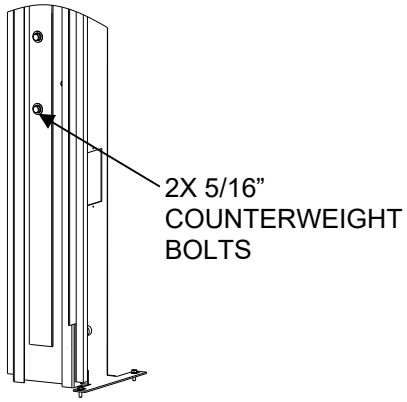


Figure 2j

Check the trim and adjust as necessary.

2.5 Lateral Handle

Plug the lateral handle into the socket at the top of the cabinet. Adjust the spring plunger depth if necessary. Add another 10-lb trim weight and perform a final check for balance.

2.6 Travel Stop Adjustment

Adjust the upper and lower travel stops for the cabinet travel to prevent contact of the cabinet with the floor or ceiling. In each case, loosen both set screws, relocate, then re-tighten the set screws.

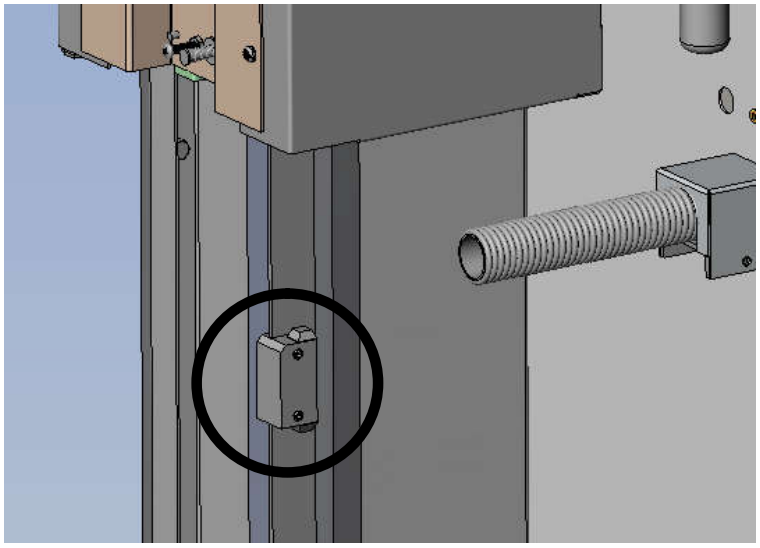


Figure 2k: Adjustable Travel Stop

2.7 Covers

Install the wall bracket cover and secure from above with two #10 hex head screws and lock washers provided (see Figure 2l).

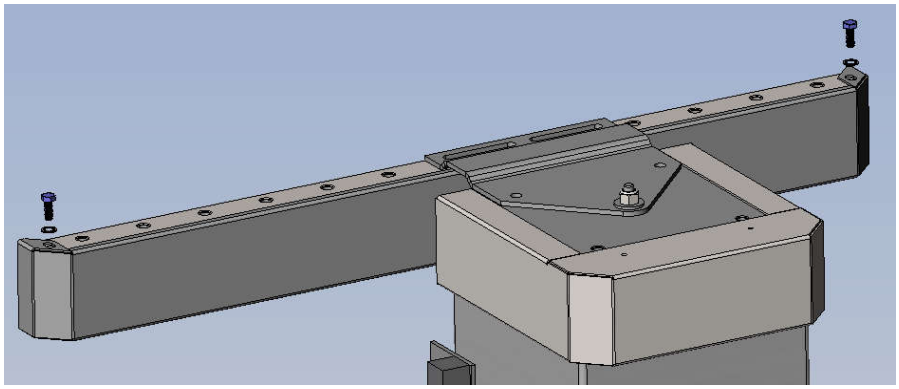
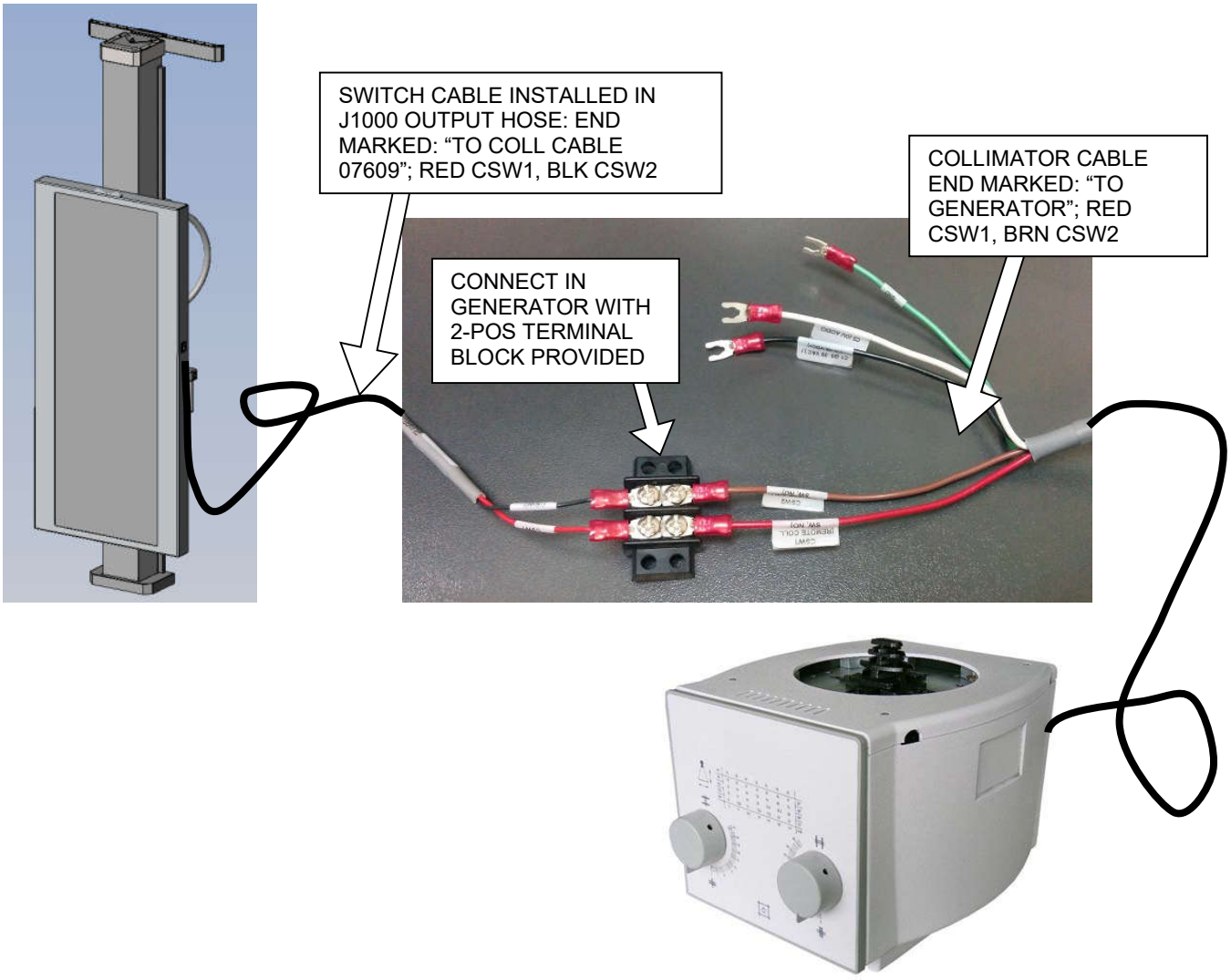


Figure 2l

Install the column top cap. Hook the rear cap tabs behind the column to hold in place.

Install the counterweight access covers and base cover.

2.8 Remote Collimator Switch Connection



3.0 BASIC MAINTENANCE

The following maintenance items are required for safety of operation, continued ease of use, and long life of the product.

The maintenance program should be performed only by qualified and authorized service personnel. Service should be performed within 90 days after installation and annually thereafter unless indicated otherwise by local codes and regulations.

Maintenance Items:

Clean exterior of the assembly, inspecting for damage and missing hardware.

Verify smooth vertical travel along the entire vertical range; check all bearings for proper operation.

Verify the travel stops are in good functional condition.

Check all fasteners for tightness including the floor and wall mounts.

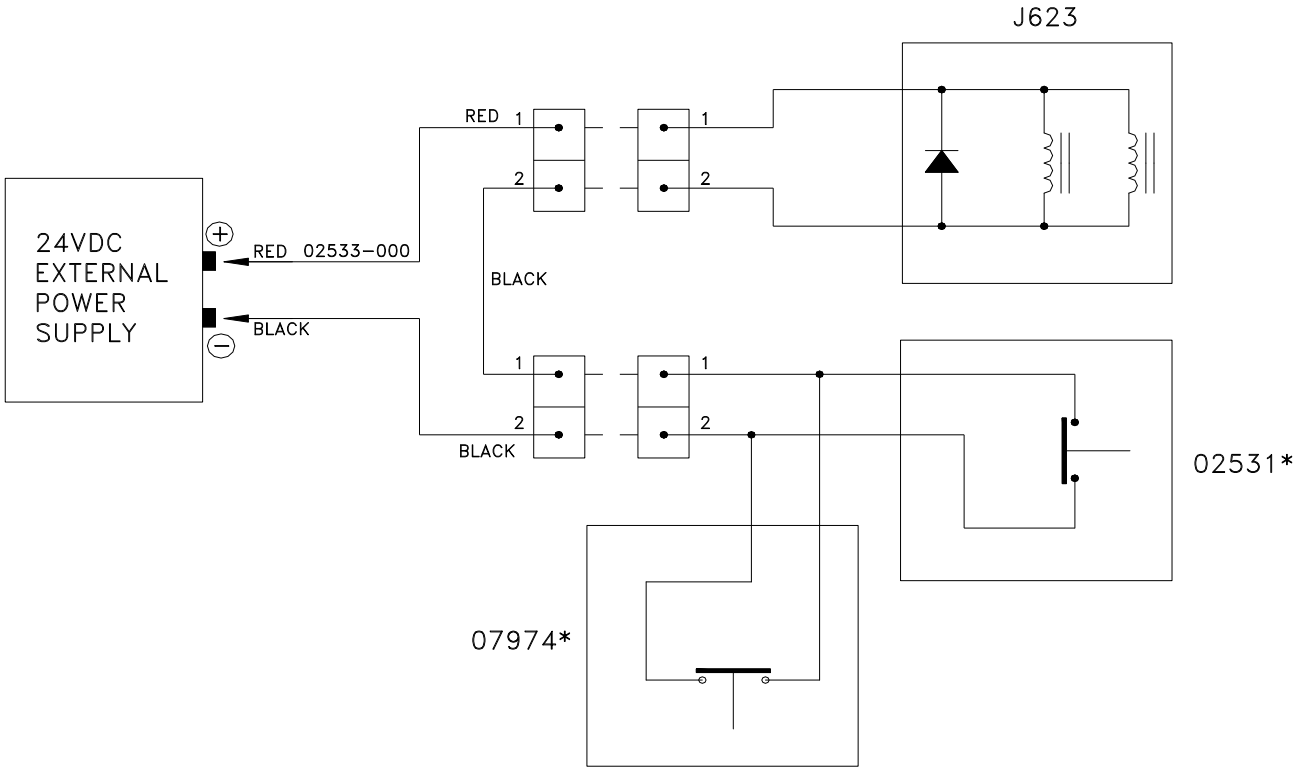
Verify proper operation of each lock release switch and handle and proper function of the lock.

Inspect all cable connections and cable strain reliefs. All connections should be tight and secure. Inspect exposed cabling for damage.

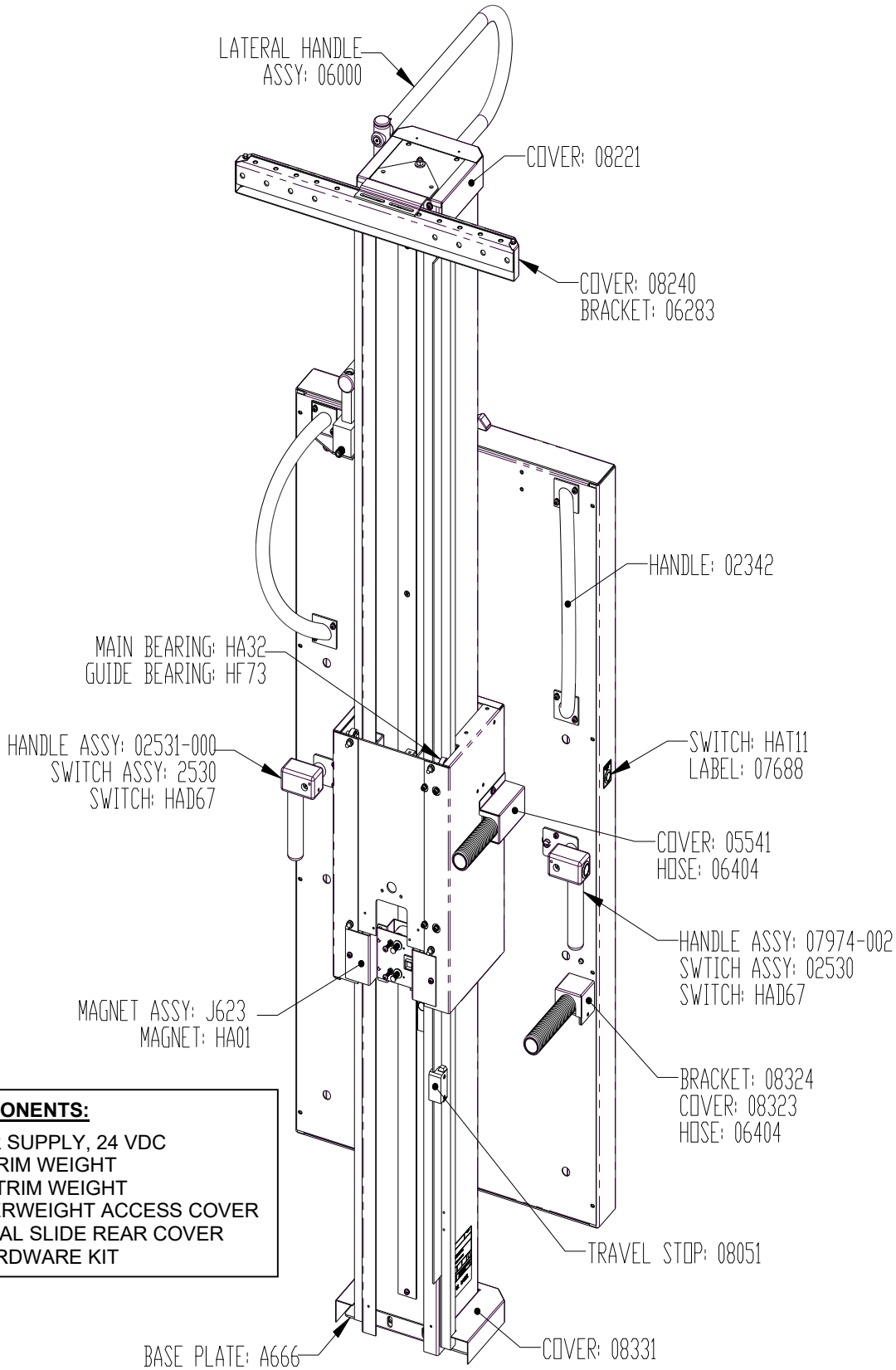
Inspect counterweight cables for fraying, damage, or wear.

Verify counterweight access covers are secure.

4.0 WIRING DIAGRAM



5.0 REPLACEMENT COMPONENT GUIDE



OTHER COMPONENTS:

05970 POWER SUPPLY, 24 VDC
A668-1 5-LB TRIM WEIGHT
A668-2 10-LB TRIM WEIGHT
A657 COUNTERWEIGHT ACCESS COVER
03081 VERTICAL SLIDE REAR COVER
02545-001 HARDWARE KIT

6.0 OPERATION

Vertical Adjustment

Lock release handles are located on both sides of the detector cabinet. Press and hold the button on either handle to release the electric lock and adjust the vertical position of the cabinet.

Remote Collimator Light Switch

Remote collimator light switches are located on both sides of the detector cabinet. Press either switch to light the collimator field from beside the cabinet.

Lateral Handle

Pull the lateral handle away from the front panel in order to adjust its tilt angle. Release for it to retract and hold position.

The entire lateral handle assembly is removable from the socket. Grasp the base and pull straight up to remove.