



ProVision 3 Installation Manual Model 1000-10004-PV

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FCC Waiver Conditions

Accordingly, pursuant to the delegated authority in Sections 0.31 and 0.241 of the Commission's rules, FCC waives the requirements of Sections 15.31(c), 15.35(b) and Section 15.205(a) of FCC rules to permit the certification and marketing of the Next Gen ProVision device. This waiver is subject to the following conditions:

- All installations of the ProVision System imaging devices operated under this waiver shall be restricted to indoor use only.
- Leidos shall inform purchasers that ProVision (PV3) System imaging devices may not be resold to third parties for use at another installation in the United States unless appropriate arrangements are made to meet all of the conditions of this waiver.
- This waiver shall apply to the Provision (PV3) System described herein will not have any major changes made to the transmitter circuitry or to the transmitter housing and position of the antenna masts within the system that would increase the devices radiated power or bandwidth.
- Leidos shall coordinate operation of its Provision (PV3) System imaging devices with any radio astronomy facilities within 50 kilometers that receive signals in the 20-40 GHz band, and shall coordinate any installation which is within line of sight of the observatory at Kitt Peak.

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1.0 Introduction

This manual details the installation steps for the ProVision® 3 scanner, Model 1000-10002-PV.

1.1 Relevant Procedures

The following procedures are referenced in this installation manual and might be required to complete movement or installation of certain components of the ProVision 3 scanner:

Document Title	Document No.
ProVision 2 Technical Manual	8100-23121-TM
ProVision 2 Installation Specification	8100-20571-00
ProVision 2 Isolation Footpad Procedure	8000-22070-IP
ProVision 2 Seismic Bracket Kit Installation Procedure	8000-22056-IP
ProVision 2 Top Down Power Procedure	8600-28515-IP
ProVision 2 IP Router Installation Procedure	8000-23712-IP
ProVision 2 Remote OCP Installation Procedure	8000-27088-IP
ProVision 2 Belt Barrier and OCP	8000-21314-IP
ProVision 2 Power Panel Label Installation Procedure	8600-23942-IP
ProVision 2 System Mount Resolution Station	8600-26545-IP

1.2 Minimum Technical Qualifications

This manual assumes you are factory-trained by Leidos customer support personnel in the installation, operation, maintenance and repair of the ProVision 3 scanner. It also assumes you have the following minimum technical qualifications:

- Associate's Degree in Electronics, or 5 years of related job experience.
- Full working knowledge of PC-type computer systems, using the Windows operating system.
- Good working knowledge of complex digital and analog circuitry.
- Some knowledge of complex mechanical systems.
- Thorough familiarity with the use of test equipment, especially a DVM and oscilloscope.

1.3 Contacting Customer Support

As a qualified service technician, you are encouraged to contact Leidos Security Detection & Automation customer support if you have any technical questions or require any additional information. It is Leidos Security Detection & Automation In.'s responsibility to help you solve our customers' problems as professionally, efficiently, and safely as possible.

Do not spend an excessive amount of time troubleshooting unusually difficult or previously unknown problems. If, after a few hours of professional, systematic troubleshooting techniques, you still cannot locate the cause of the problem, contact Leidos customer support.

The sole job of customer support is to help you serve customers. Be sure to have your specific problem and the troubleshooting methods you have employed documented and the installation site information available, especially the scanner location and serial number.

The **U.S. Customer Support** staff can be reached Monday through Friday, excluding company holidays, from 9:00 AM to 5:00 PM EST / EDT (14:00 to 22:00 UT). Refer to Contact Information in this manual for more information. After normal business hours, a voicemail system will automatically answer. After the announcement, leave your name, return phone or FAX number and a brief message. An L-3 Security & Detection Systems Customer Support representative will return your call as soon as possible.

Our **U.K.-based Customer Support** staff can be reached Monday through Friday, excluding company holidays, from 9:00 AM to 5:00 PM UT. Refer to Contact Information in this manual for more information. After normal business hours, a voicemail system will automatically answer. After the announcement, leave your name, return phone or FAX number and a brief message. A Leidos Security Detection & Automation Systems customer support representative will return your call as soon as possible.

Asia-Pacific Customer Support can be reached Monday through Friday, excluding company holidays, from 9:00 AM to 5:00 PM Local Time (UT + 8). Refer to Contact Information in this manual for more information. After normal business hours, a voicemail system will automatically answer. After the announcement, leave your name, return phone or FAX number and a brief message. A Leidos Security Detection & Automation Systems customer support representative will return your call as soon as possible.

2.0 Safety

The ProVision 3 scanner is designed for safe operation under a wide range of operating conditions. The scanner uses a rotating swing arm/antenna structure to inspect for contraband items. As with all such equipment, certain potential hazards exist if the scanner is operated improperly. The potential for injury from mechanical trauma or electrical shock can be avoided through proper use of the scanner.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Repair technicians must be properly trained and certified in the operation, installation and maintenance/repair of the ProVision 3 scanner.

2.1 Electrical Safety Precautions

High voltages and electrical currents are present inside the equipment. Contact with these parts can cause severe injury or death. Follow proper electrical safety precautions when working on the equipment.

As with any electrical equipment not designed for outdoor use, the scanner should not be operated after being exposed to rain or standing water. If the scanner is exposed to water for any reason, an authorized service engineer should check it prior to operation.

2.1.1 Line Voltages



The scanner can be operated on line voltages from 100 to 120 V_{AC} at 50 Hz or 60 Hz and 220 to 240 V_{AC} at 50 Hz or 60 Hz. Caution should be exercised when working at the main power input.

Always be sure the scanner is properly grounded. This system must be grounded (earthed) by a 3-wire power cord at all times. Any replacement of the power cord must be conducted by a qualified service person, and the same plug configuration must be utilized.

2.1.2 Voltage and High Current

Hazardous voltages and high current are used throughout the ProVision 3 scanner. Use caution when performing maintenance in all areas.



Figure 1: Hazardous Voltage and High Current Labels

2.2 Lockout/Tagout Requirements and Procedure

Lockout/tagout is applicable to all personnel, including contractors, involved with repairing, servicing, cleaning, routine maintenance, troubleshooting, inspection, testing, modification, installation, and disassembly of Leidos systems.

Refer to the Lockout Tagout Work Instruction (8400-10708-WI) for details on the Lockout Tagout procedures.

Lockout/tagout procedures shall be used in all situations where unexpected startup, moving parts (mast, motor, and belt) or release of stored energy could result in injury.

During activities described above, all Leidos personnel shall perform the following steps in performing a lockout/tagout procedure:

1. Notification: Notify all affected and other employees that installation, service, or maintenance is required on a system and that the system power must be shut down and locked out to prevent injury from accidental re-start. This includes bagroom, baggage handling station, and checkpoint personnel; contractors; and other Leidos employees.
2. Preparation for Shutdown: The authorized employee must be knowledgeable of the energy source and its hazards. The employee must locate the main power cord for the system and follow shut-off procedures outlined in this manual.
3. Shutdown/Isolation: Turn system off and unplug power cord.
4. Lockout/Tagout: Secure power cord at machine and apply Plug Lockout box (Grainger Item 5TB29 or equivalent). Fasten lock and tag to Plug Lockout box. Tag must indicate the name of the authorized employee, and the reason and expected duration or date of the lockout.
5. Verification of Isolation of Equipment: Ensure that the equipment is disconnected from the energy source by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button, switch or other normal operating control(s) or by testing to make certain the equipment will not operate.
6. EQUIPMENT IS NOW LOCKED OUT: The lock and tag shall not be removed until all work requiring lockout/tagout is completed.

2.3 Mechanical Safety Precautions

2.3.1 Mast Antenna

The ProVision 3 scanner has two antenna mast assemblies attached to a rotating swing arm that is belt-driven by a motor. Contact with these moving parts can cause severe injury. Do not service any moving part with power applied; always unplug the scanner and use the lockout/tagout procedure (see Section 2.2).

2.3.2 Belt Drive

The ProVision 3 scanner employs a motor-driven belt to move the two antenna masts mounted on the swing arm. Pinch point labels (shown in the following figure) are used to identify the moving equipment areas. Use caution not to get entrapped or pinched in these areas.



Figure 2: Belt-Drive Safety Labels

2.4 Toxic Safety Precautions

The consumable materials listed below are toxic to the skin, eyes, and respiratory tract. Good hygiene practice is recommended; wash your hands thoroughly after leaving your work area. Wear nitrile gloves and safety glasses when handling the consumable materials:

- Isopropyl alcohol
- Electrostatic discharge (ESD) wipes [490-26003]

Material safety data sheets are available. Consult your local safety and health staff concerning any questions about toxic hazards.

2.5 Fire Safety Precaution

In the event of a fire, a Halon fire extinguisher or comparable type is recommended to extinguish any fire inside the ProVision 3 scanner. Any ABC dry chemical fire extinguisher can be used; however, it may cause additional damage to the equipment.

2.6 Safety Features

The ProVision 3 scanner is specifically designed to prevent injury during operation or maintenance procedures. Injury can be avoided by using the electrical power switch to remove power from the scanner, as discussed in the following paragraph.

The power switch, located at either the lower left or upper right of the outer radome with the posing figure (see following figure), removes all electrical power from the ProVision 3 scanner. In case of an electrical emergency:

1. Press the portion of the power switch labeled “O” to remove all power from the scanner.
2. Unplug the power cord from the electrical outlet.

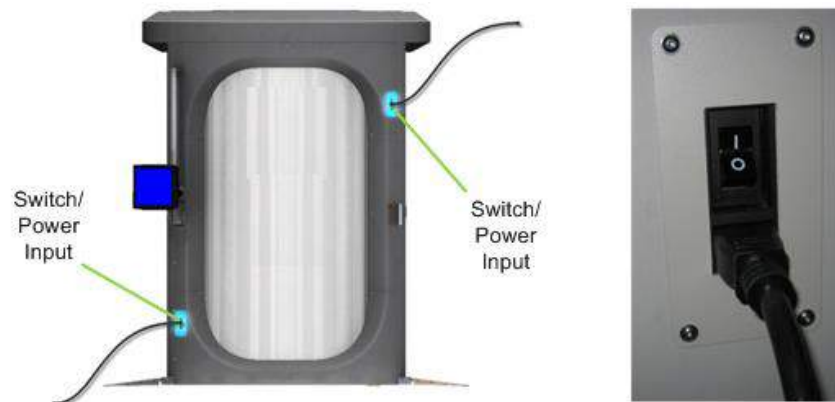


Figure 3: Electrical Power Switch (Two Options)

3.0 Tools List

3.1 Tools in Installation Kit

Reference the installation kit packing list for the materials included.

3.2 Additional Tools

In addition to the tools included in the installation kit, the following tools are required (Tables 2 and 3) or optional (Table 3).

Table 1: Required Installation Tools

Quantity	Description
1	Cutter, wire, diagonal, cushion grip, 5-5/8" long
1	Screwdriver, slotted, 3/8" blade, 10.75" long
1	Screwdriver, Phillips, (#2), 8" long
1	Screwdriver, ratcheting, insert bit, 1/4" hex bits
1	Extension, 3/8" drive, 6" overall length
1	Wrench, adjustable, 8"
1	Knife, utility
1	Miniature flashlight
1	Multi-meter (digital recommended)
1	Ratchet, 3/8" drive
1	1/2" to 3/8" drive adapter
1	3/8" to 1/2" drive adapter
1	10mm wrench (reversible ratcheting optional)
1	13mm wrench (reversible ratcheting optional)
1	15mm wrench (reversible ratcheting optional)
1	19mm wrench (reversible ratcheting optional)
1	24mm wrench (reversible ratcheting optional)
1	Socket, square drive, 10mm, standard, 3/8" drive
1	Socket, square drive, 13mm, standard, 3/8" drive
1	Socket, square drive, 15mm, standard, 3/8" drive
1	Socket, square drive, 19mm, standard, 3/8" drive
1	Socket, square drive, 24mm, standard, 3/8" drive
1	Hex key set, 6 Keys, 2mm-6mm

Quantity	Description
1	1.5mm hex key
1	10mm hex key
1	Hex Bits Set
1	Torque wrench, 3/8" square drive, 30–250 in-lb / 3.4–28.2 Nm
1	Torque wrench, 1/2" drive, 20–150 ft-lb / 27.1–203.4 Nm
1	3/8" impact socket
1	7/16" impact socket
1	9/16" impact socket

Table 2: Required Troubleshooting/Service Tools

Quantity	Description
1	Field service laptop
1	Long-nose electrical pliers
1	Locking pliers 130mm
1	Torque wrench, 5/16"
1	Ratchet, 1/4" drive
1	Screwdriver, slotted, narrow blade, 3mm tip width, 150mm long

Table 3: Optional Tools

Quantity	Description
1	Drill, driver, cordless, 14.4V, heavy duty, 1/2" (13mm) chuck, with charger and two batteries
1	Square drive socket universal joint, 3/8" drive
1	Adapter, 1/4" hex to 3/8"square drive male, 2" length

4.0 Crate Unpacking

4.1 General Guidelines

The area should be large enough to unpack and set aside the contents of the two crates until needed. The installation kit arrives in one crate, and the scanner is in the second, larger crate:

4.1.1 Installation Kit Crate

- Hardware kit, genie lifts, brackets, casters, ramps, calibration aids required to move and install the ProVision 3 scanner (including additional brackets and hardware necessary to install other Leidos products but not needed for the ProVision 3).

4.1.2 Scanner Crate

- Upper/lower frame assembly with shipping legs (4) and power input box/cables attached
- Columns (2 left and 2 right)
- Column head clamps (4)
- Bolt-on side frames (2)
- Outer windows (1 plain and 1 with stance or two plain)
- Outer windows angle brackets (2 top and 2 bottom)
- Outer windows bracket supports (4)
- Outer windows bracket retainers (4)
- Inner radomes (2)
- Inner radome top angle rails (2)
- Inner radome base flange support brackets (2)
- Inner radome edge support brackets (4)
- Antenna masts (2)
- Cosmetic mast wrap (2)
- Entrance/exit covers (2 left and 2 right)
- Middle OCP cover
- Plain middle cover
- Middle belt barrier covers (2)
- Upper/lower cover with switch/power input w/ cover plate
- Plain upper/lower covers (3)
- Ceiling panel
- Roof
- Top side covers (2)
- Top entrance/exit covers (2)
- Middle cover brace brackets (12)
- Housing brace brackets (2)
- Floor cover trim pieces (2)
- Floor side panels (2) and center panel
- Entrance/exit ramp assemblies (2)

- Entrance/exit ramp supports (2)
- OCP mounting brackets (3)
- Operator control panel (OCP) and OCP mount pole
- Belt barrier kit
- Cable pass-through hole cover plate/grommet
- Blank cover plate
- Seismic bracket kit [optional]
- Power cord
- Hardware kit

4.2 Scanner Crate Unpacking

The scanner crate lid is secured with approximately ten lag bolts (can differ from system to system).

1. Remove the bolts, lift the lid, and set it aside.
2. Remove all items on the top shelf and set aside. Handle the longest box with care (this box contains both antenna masts).



Figure 4: Masts and Other Items on Top Shelf

3. Remove the two halves of the top shelf and set aside.



Figure 5: Scanner Crate with Top Shelf to Be Removed

4. Remove one long crate side and the two short crate sides (the ends) by removing the lag bolts. Set the side and ends aside.
5. Remove 8 lag (2 each column) bolts securing the columns base to the crate base.
6. Remove and set aside all items in the base area, including the four columns. Remove the screws holding the columns in place as shown in Figure 5.

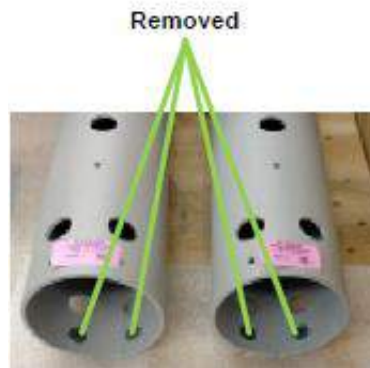


Figure 6: Column Screws to Be Removed

7. Remove all screws/bolts and brackets securing the upper/lower frame assembly to the crate base.



Figure 7: Screws/Bolts and Brackets to Be Removed

4.3 Installation Kit Crate Unpacking

1. Remove end panel and lay panel down as a ramp, as shown in the following figure (left side), by hooking the bolts in the holes at bottom of opening.
2. Remove all items in front of the Genie Lifts as shown in the following figure (right side) and set aside.



Figure 8: Installation Kit

3. Unscrew and remove the wood chock used to prevent the Genie Lifts from moving during transport.
4. Roll the Genie Lifts out of the installation kit crate.
5. Remove the straps securing ladders (with kits including ladders) to the Genie Lifts.
6. Set all items aside.

5.0 Genie Lift Assembly

NOTE:

Genie Lift equipment requires inspection to be performed by a qualified inspection technician on an annual basis at a minimum. Each owner of Genie Lift equipment should have it inspected and tested. If inspection is required, hire a local inspection company to have the Genie Lifts inspected and tested per local country laws and regulations.

PRE-USE INSPECTION REQUIREMENT:

After assembling a Genie Lift and prior to use for the first time at a field site location, the Leidos user must perform a written inspection of the Genie Lift. The Genie Lift Pre-Use Inspection Form must be completed in its entirety prior to use and is provided in Appendix G or form # 8200-21134-09.

Return the form to Leidos Security Detection & Automation, Inc., EH&S Department after use on-site. Forms can be faxed to 781-939-3996 or emailed to: joel.sadler@leidos.com.

5.1 Genie Lift Components

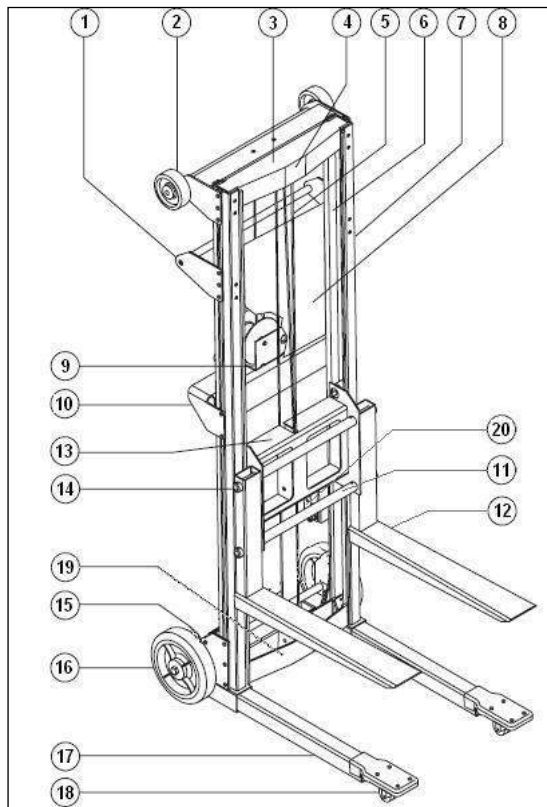


Figure 9: Genie Lift Components

1 Handle
2 Loading wheel
3 Upper inner frame pulley
4 Cable anchor
5 Cable
6 Inner frame
7 Outer frame
8 Decal plate
9 Winch
10 Winch mounting bracket
11 Fork mounting tube
12 Standard fork (modified fork not pictured)
13 Carriage
14 Fork lock pin
15 Leg lock pin (behind solid rubber wheel)
16 Solid rubber wheel
17 Leg – standard base
18 Caster – 2-inch dual wheel
19 Lower inner frame pulley
20 Carriage lock bar

5.2 Leg and Wheelie Bar Attachment

1. Lay the first of two Genie Lifts horizontally on its wheels.
2. Insert a leg into a square tube leg socket with the casters facing away from the Genie Lift as shown in Figure 9.
3. Slide the leg in until it hits the spring-loaded leg lock pin.
4. Holding onto the leg with one hand, reach under the lift and pull the spring-loaded pin until the leg starts to drop. Let the pin go, and continue to lower the leg until the pin snaps into the first captivation hole on the leg.
5. Repeats steps 2 and 3 for the other leg.
6. Stand the lift upright. Pull the spring-loaded leg lock pin a second time and slide the leg in a little further. Let go of the pin, and continue to slide the leg in until the pin snaps into the second captivation hole on the leg. Repeat for the other leg.
7. From the back (wheel side) of the lift, remove the crank handle by pulling the spring-loaded pin on the winch. Rotate the crank handle so it points out and reattach it to the Genie Lift by again pulling the spring-loaded pin on the winch, as shown in Figure 10.



Figure 10: Spring-Loaded Pin and Crank Handle (Rotated from In to Out)

8. Pull the spring-loaded pin on the carriage lock bar and rotate the bar up and out of the way as shown in the following figures.



Figure 11: Spring-Loaded Pin and Crank Handle and Carriage Lock Bar

9. From the back of the lift, insert a wheelie bar into the back of the leg tube with the holes in the wheelie bar facing up, as shown in Figure 12.



Figure 12: Wheelie Bars (at Right)

10. Push the wheelie bar in until it touches the spring-loaded pin.
11. Pull the spring-loaded pin just enough so the wheelie bar can move forward into the leg without allowing the leg itself to move.
12. Once the wheelie bar has moved forward slightly, release the spring-loaded pin and push the wheelie bar further into the leg until the pin snaps into the first captivation hole on the wheelie bar.
13. Repeat for the other wheelie bar.
14. Repeat steps 1 to 12 for the second Genie Lift.

5.3 Modified Cradle Fork Attachment

1. Take four fork lock pins from the fanny pack provided in the installation kit.
2. Slide a modified cradle fork onto the two fork support tubes, as shown in the following figure.

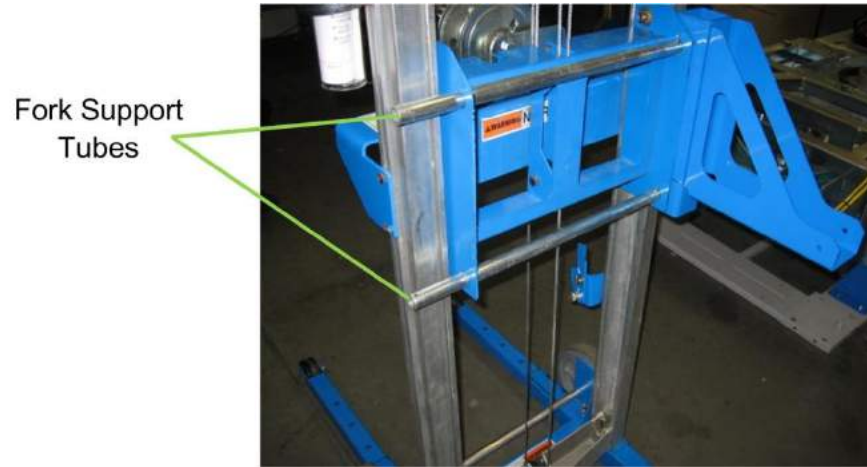


Figure 13: Fork Support Tubes

3. Insert a fork lock pin into the hole on each fork support tube, then flip the rings over the end of fork support tubes, as shown in the following figure.
4. Repeat for other side.
5. Repeat steps 1 to 4 for the second Genie Lift.

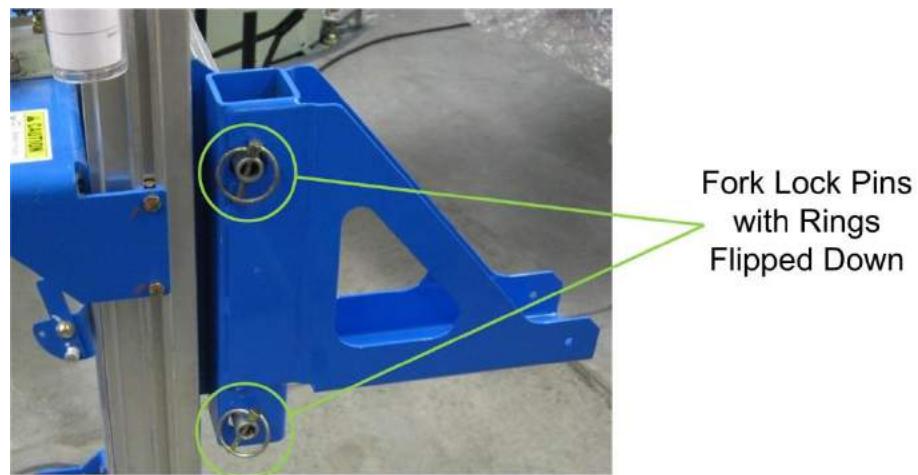


Figure 14: Modified Cradle Forks with Rings in Place

6.0 Caster Operation

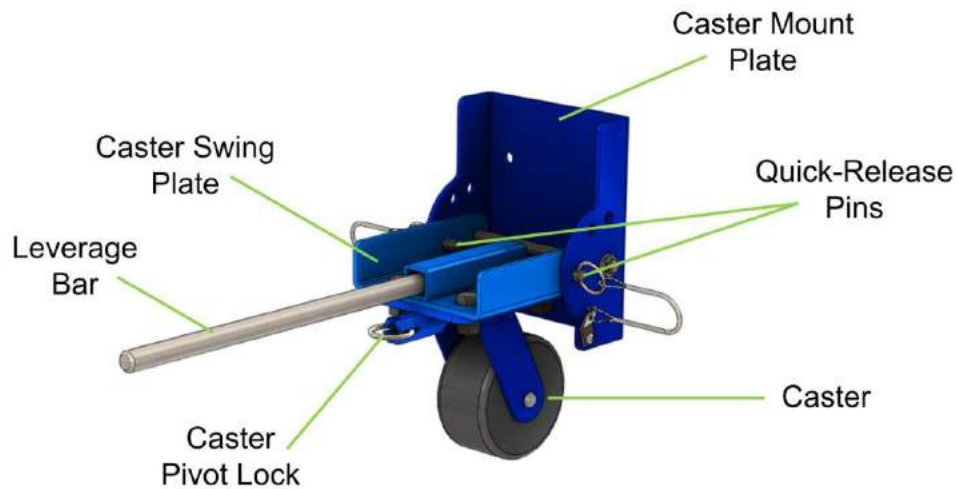


Figure 15: Caster Assembly

Following are some important notes on caster operation. The step-by-step procedures are presented in the next chapter.

1. When the caster assemblies are mounted onto the caster end plates, they must be in the “closed” (vertical) position to access the two lower screw holes and “dolly” (intermediate) position to access the two upper screw holes, as shown in the following figures.

When they are deployed downward to enable movement of the upper/lower frame assembly, they are in “open” position.

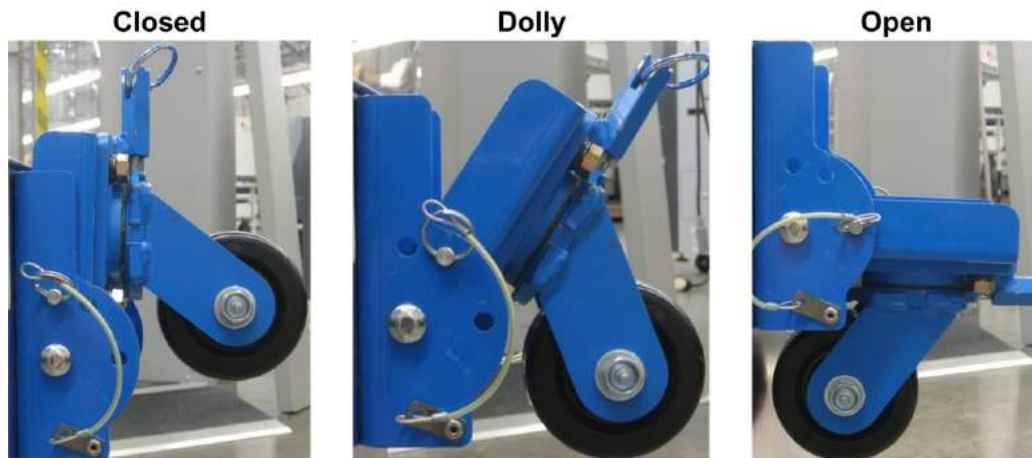


Figure 16: Caster Positions

- After the caster assemblies are attached to the upper/lower frame assembly (described in next chapter), they are moved to the open position by ensuring the two quick-release pins are removed, then inserting the leverage bar into the square tube in the center of the caster swing plate. The caster must be correctly oriented with the wheel bracket nearly vertical, as shown in Figure 17, before applying pressure on the leverage bar.

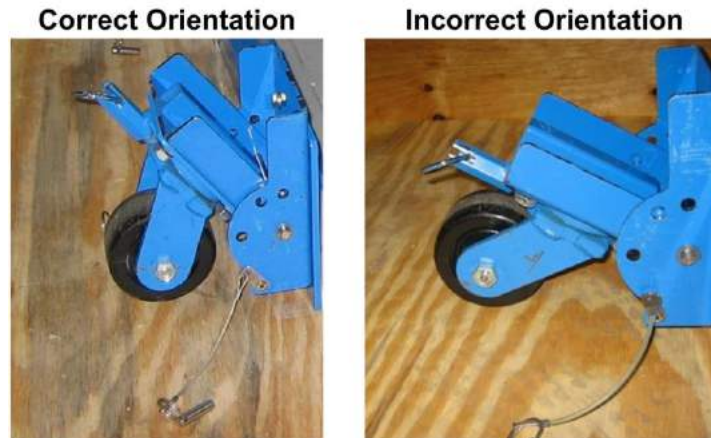


Figure 17: Caster Orientation

- Keep hands, fingers, and any other body part, tool or other items clear of the “Caster Caution Area” between the caster mount plate and the caster swing plate at all times when leveraging the caster swing plates downward and lifting the weight of the scanner assembly. Both caster swing plates on the end being raised must be leveraged downward at the same time by two technicians.

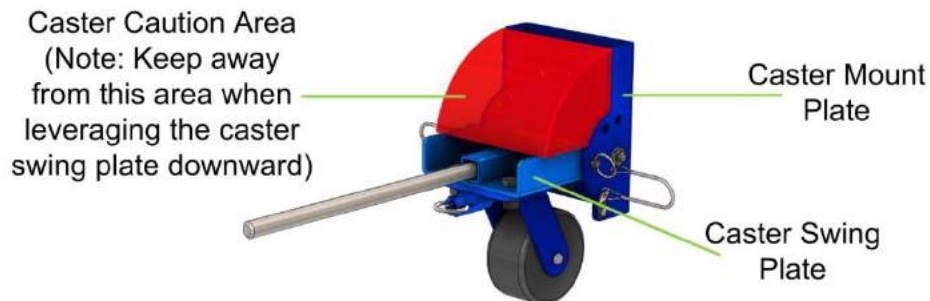


Figure 18: Caster Caution Area

- The quick-release pins are re-inserted into their holes once the caster swing plates are leveraged downward to lock them into place.
- Each caster can be locked in a fixed direction or unlocked to swivel freely, enabling direction changes when moving the scanner. To switch from locked to unlocked, pull the spring-loaded ring out of the deep groove (see following figure), rotate the ring 90 degrees to the shallow groove and release it.

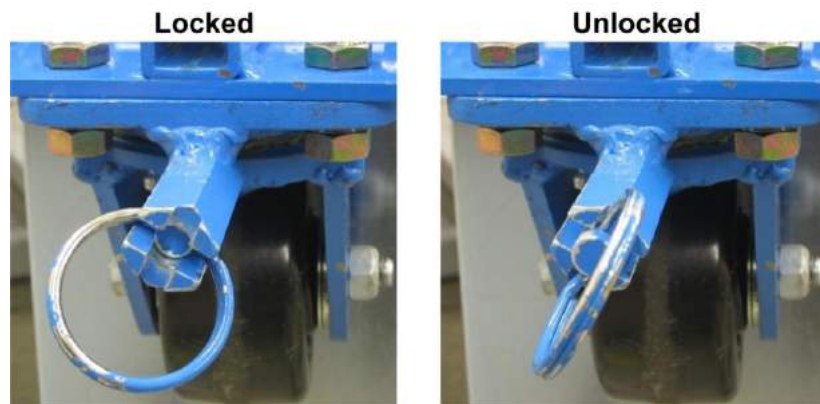


Figure 19: Caster Pivot Lock

7.0 Removal from Scanner Crate

1. Attach each of the two ramps (2800-20769-00) to the crate using two 2½-in. PFH drywall screws [0200-10176-40] in the outer screw holes per ramp, as shown in the following figure, ensuring that the ramps are the proper width apart to accommodate offloading the upper/lower frame assembly.



Figure 20: Ramps Attached

2. Attach the first of two caster end plates to the upper/lower frame assembly as shown in the following figure using four M10 x 25 FHC screws (0201-20444-25) horizontally and three M8 x 20 FHC screws [0201-20452-20] vertically. After all screws have been started, tighten the four horizontal screws first, then the three vertical screws.



Figure 21: Caster End Plate Installation

3. Attach the first of two casters to the caster end plate using four M8 x 20 FHC screws (0201-20452-20). With the caster swing plate lowered to the dolly position, insert the two upper screws. Leave the screws loose.
4. Raise the caster swing plate to the closed position and insert a quick-release pin to hold it, then insert and tighten the two lower screws.

Tip: It is easier to insert and tighten the two lower screws if you also pull the caster pivot lock ring and rotate the caster upward 180 degrees. Once the lower screws are tight, pull the caster pivot lock

ring and return the caster to the down position, pull the quick-release pin and lower the caster swing plate to the dolly position, and then tighten the two upper screws.

5. Repeat for the other caster.

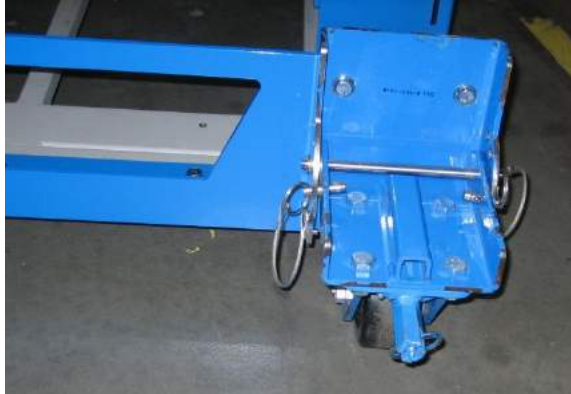


Figure 22: Caster Attachment to Caster End Plate

6. Repeat steps 2 to 4 for the other caster end plate.
7. Retrieve two leverage bars from the installation kit and move to the end of the upper/lower frame assembly that is further away from the edge of the crate.
8. Insert a leverage bar into the square tube in the center of the caster swing plate; repeat for other caster assembly.
9. Ensure that each caster is oriented downward, then grasp the end of the leverage bar with one hand and, with a quick-release pin in the other hand, push down on the leverage bar until the quick-release pin holes align in the caster swing plate and the caster mount plate.

Both technicians should leverage the two caster swing plates downward at the same time.

WARNING

When leveraging the casters, do not use your feet to step/push down on the rods as this is extremely dangerous and could also result in damage to the bars and scanner itself.

10. Maintain downward pressure until you have locked the caster swing plate in place with both quick-release pins, switching hands without releasing leverage on the leverage handle.
11. Ensure both pins are fully inserted into the caster assembly and then slowly release and remove the leverage bar.
12. Repeat steps 7 to 10 to raise the other end (nearer the edge of the crate).
13. Move each caster pivot lock to the unlocked position.

14. Roll the assembly forward to the edge of the crate so that the casters align with the two ramps. At a minimum, two people are required to move the assembly down the ramps. Keep both hands on the assembly at all times. Move slowly; quick movements can make the assembly uncontrollable.
15. Maintaining a secure hold on the assembly to keep it under control, slowly roll the assembly down the ramps.
16. Remove the ramps and move the crate base out of the way.

8.0 Movement to the Install Location

1. To maintain control when moving the upper/lower frame assembly, Leidos recommends to keep the two “front” (leading) casters locked unless steering around a corner. Both hands should be kept on the assembly at all times. Move slowly as quick movements can make the assembly uncontrollable.
2. Slowly push the assembly to the desired location. When turning corners, unlock the front (leading) casters.
3. At the install location, orient the assembly so that the electrical enclosure end (see following figure) is where the operator control panel (OCP) is to be located. This is typically the exit end of the scanner but can be rotated 180 degrees to be the entrance if desired.



Figure 23: Electrical Enclosure End of Upper/Lower Frame Assembly

4. If optional seismic brackets (see Section 10.5) are being installed, threaded insert floor anchors might have been pre-installed into the floor by host facility personnel. If so, position the scanner such that the brackets will fit over the threaded insert floor anchors.
5. Once the upper/lower frame assembly is in the desired location, the casters may need to be pivoted so that they are turned in towards the assembly. The weight of the assembly can make it difficult to rotate the caster by hand, and it is not recommended. There are several ways to rotate the caster; the easiest is with a large adjustable wrench or pair of locking pliers.

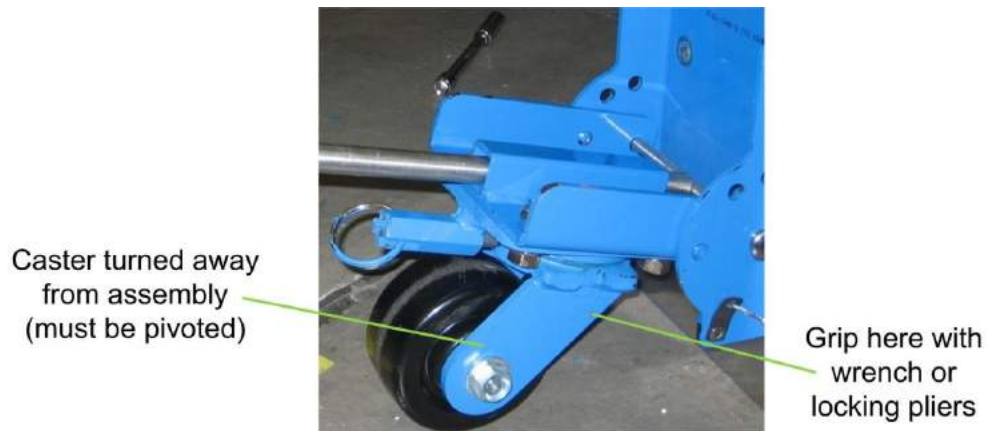


Figure 24: Grip Point for Rotating Casters

6. Pull the caster pivot lock ring and rotate it to the unlocked position.
7. Grasp the caster with the locking pliers at the grip point shown in the previous figure and turn.
8. Once the caster is turned in towards the upper/lower frame assembly, return the pivot lock ring to the locked position. Make sure the caster is locked and cannot swivel.
9. Repeat steps 6 to 8 for the other casters.
10. Insert a leverage bar into the square tube in the center of the caster swing plate; repeat for other caster assembly. Both technicians should leverage the two caster swing plates at the same time.
11. Grasp the end of the leverage bar with one hand and push down on it so the quick-release pins are no longer bearing weight and can thus be removed.
12. Remove the first quick-release pin and, maintaining downward pressure, switch hands and remove the other quick-release pin.
13. Slowly reduce the downward pressure on the leverage handle and allow it to rise until the assembly is resting on the ground.
14. Remove the casters and caster end plates and set aside.

9.0 Upper Assembly Lift

Before beginning this procedure, ensure that the casters and caster end plates are removed.

9.1 Preparation of Assembly and Genie Lifts

1. Remove the two “outer” bolts (nearest either end of the scanner) from each shipping leg, as shown in the following figure.

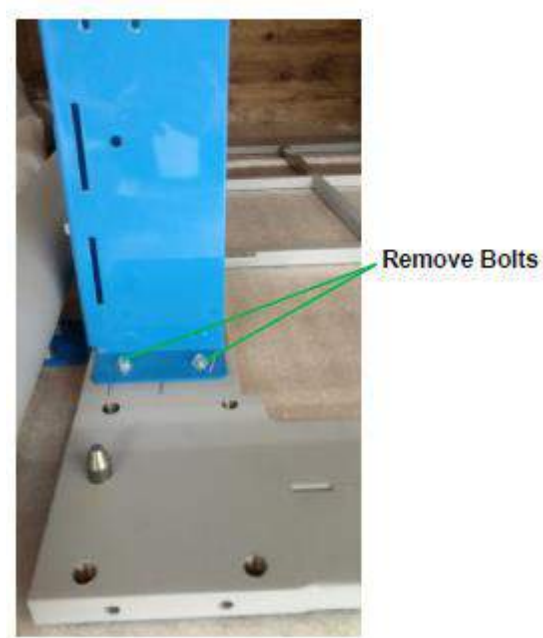


Figure 25: Bolts to Remove from Shipping Legs

2. Retrieve the two lifting brackets [1000-11907-00] from the installation kit and attach the first between the two shipping legs at one end of the upper/lower frame assembly. Insert the hooked tabs on the lifting bracket into the slots on the side of the two shipping legs nearest this end and lift upward, then insert the quick-release pin, as shown in the following figure.

CAUTION

Do not attempt to insert lifting bars or lift the upper/lower frame assembly without having quick-release pins securing the lifting bracket in the locked position. Equipment damage and injury can result from failing to lock the lifting bracket in the correct position.

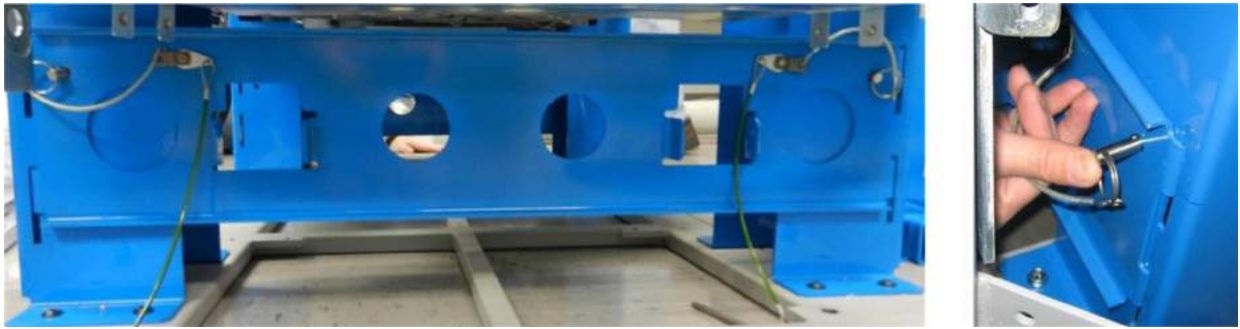


Figure 26: Lifting Bracket with Quick-Release Pin Being Inserted

3. Repeat for the second lifting bracket at the other end of the assembly.
4. Retrieve the two long rectangular lifting bars from the installation kit and insert them through the square holes in the two lifting brackets. Lift them up and secure them in place, as shown in the following figure, with the quick-release pins provided in the hardware kit.



Figure 27: Lifting Bar Inserted Through Lifting Bracket and Pinned in Place

5. Remove the column head clamps (3810-10059-00), shown in the following figure, from the four corners of the upper/lower frame assembly, set them aside along with the bolts securing them to the upper/lower frame assembly.



Figure 28: Column Head Clamp

6. Retrieve the four columns removed from the scanner crate earlier. There are two left columns (1000-26550-00) and two right columns (1000-26550-01). With the foot pointed toward you, the left

column has the base plate on the left and the right column has it on the right, as shown in the following figure.

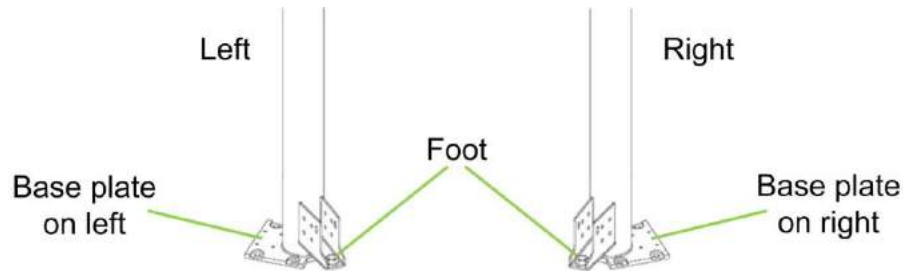


Figure 29: Left and Right Columns

7. One left column should be installed at the left side of each end of the assembly, and one right column should be installed at the right side of each end.
8. Rotate each column so that the bolt holes line up and the foot points away from the entrance or exit (as shown in the following figure), then lift the column and fit it onto the cone-shaped pin.
9. Attach each column with four M16 x 30mm HC bolts (0201-10290-30) and four M16 flat washers (0221-10051-00). Leave the bolts loose. You tighten them in the next section.



Figure 30: Orientation of Columns

10. Attach each of the four column head clamps using the hardware removed during step 0, as shown in the following figure. Leave the clamps loose.

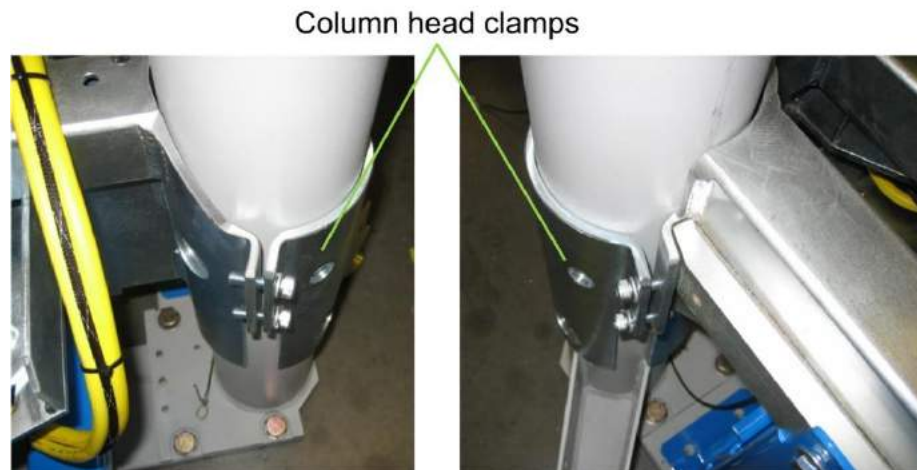


Figure 31: Columns Attached with Bolts and Column Head Clamps

11. Position one Genie Lift (assembled in Chapter 5) at one end of the upper/lower frame assembly with its modified cradle forks pointing at the assembly and its wheelie bars pointing away.
12. Position the other Genie Lift at the other end with its modified cradle forks pointing at the assembly (and the other Genie Lift) and its wheelie bars pointing away.



Figure 32: Genie Lift Position

13. Lower the cradle forks on each lift until they are a few inches above the floor.
14. Move the Genie Lifts to line up the holes at the end of each modified cradle fork with the holes near the end of each lifting bar and insert a quick-release pin to secure them, as shown in the following figure.

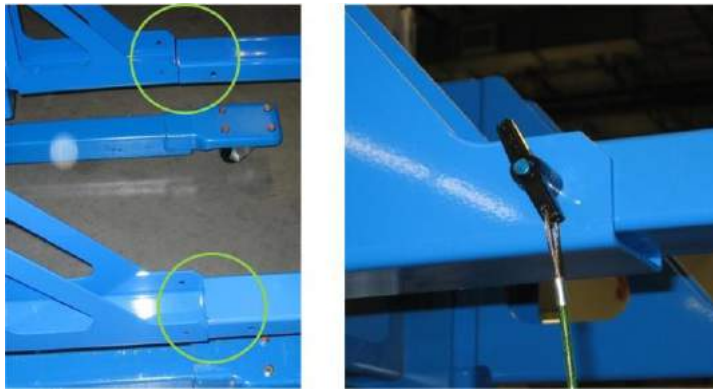


Figure 33: Modified Cradle Fork and Lifting Bar Secured with Quick-Release Pin

15. Put a wheel chock behind each wheel of the Genie Lift wheelie bars (four in total).



Figure 34: Wheel Chock

16. Tap each wheel chock with your foot to wedge the chocks under the Genie Lift wheels.
17. Rotate the crank handles on the Genie Lifts a bit to take up the slack between the lifting bars and the lifting brackets.
18. Remove the two remaining bolts securing each shipping leg to the lower frame, as shown in the following figure.



Figure 35: Shipping Leg with Two Remaining Lower Bolts Removed

9.2 Upper Frame Assembly Lifting

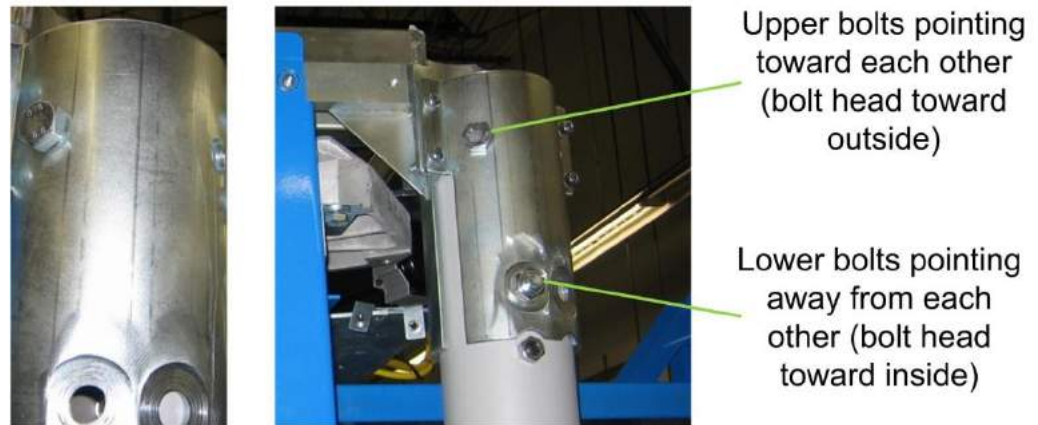
1. Rotate the crank handles on the Genie Lifts simultaneously to begin lifting the upper frame assembly. If the upper frame assembly does not separate from the lower frame, verify that all bolts have been removed securing shipping legs to lower frame, and verify there are no wires or cabling hooked from the upper frame to the lower frame.
2. During the lift, ensure that the upper frame stays level by simultaneously raising both lifts.
3. Raise the upper assembly past the holes at the midway point of the columns.
4. Insert four M12 x 130mm SHC bolts (020220433-30) pointing away from each other, such that the bolt heads are toward the inside. Thread an M12 flat washer (0221-10076-00) and an M12 hex nut (0216-20441-00) over the end of each bolt.
5. Continue raising the upper assembly to the top of the columns, approximately 2 in. [5.1cm] past the bolt holes, as shown in the following figure. This provides enough clearance to insert the stop bolts past the lifting bars.
6. Remove the stop bolts from the midway point of the columns and move them one at a time to the upper stop bolt holes, again with the bolts pointing away from each other and the bolt heads toward the inside, as shown in the following figure.



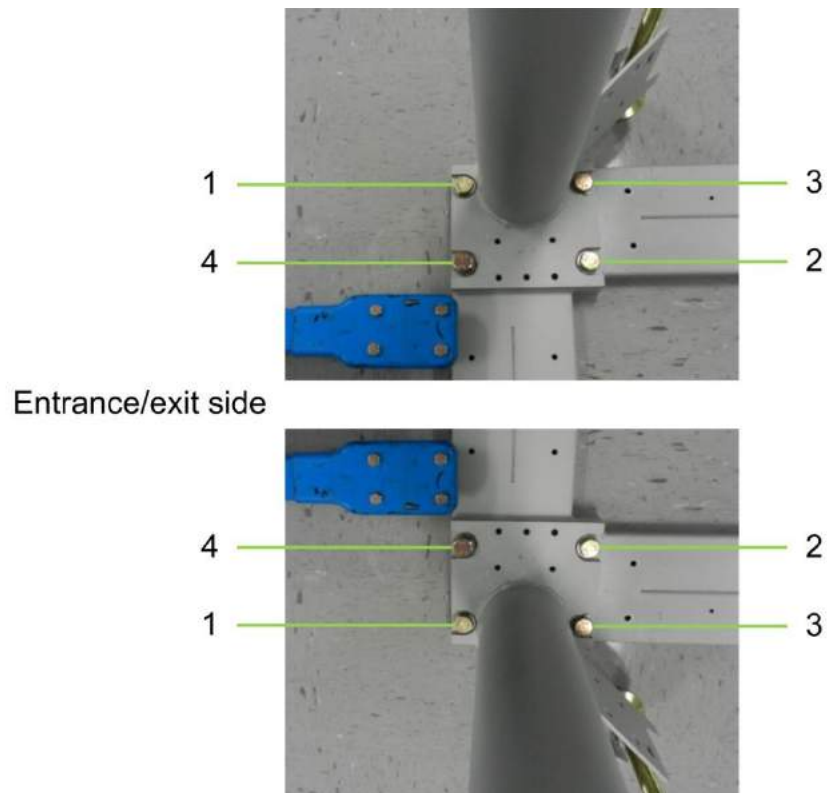
Upper frame raised
2" [5.1 cm] above
Stop bolt hole

Figure 36: Stop Bolt in Upper Bolt Hole

7. Lower the Genie Lifts until the column upper and lower bolt holes line up, then insert four M16 x 40mm column upper bolts (0202-20431-40) and four M16 x 40mm column lower bolts (0202-20431-40) as shown in the following figures.
8. Be sure to follow the direction of the bolts as shown in the following figure right, thread an M16 flat washer (0221-10051-00) and an M16 hex nut (0216-20432-00) over the end of each bolt. Leave the bolts loose.

**Figure 37: Column Bolt Direction**

9. Using a 24mm socket, torque three of the column base bolts to 94.9 Nm (70.0 ft-lb) in the following order: first 1, then 2, then 3 (refer to the following figure). Leave bolt 4 (the bolt diagonally opposite the leveling foot) loose.

**Figure 38: Bolts 1–3 Torqued on Left (Top) and Right (Bottom) Columns**

10. Loosen the shipping leg top bolts but do not remove them.

11. Retrieve the two cross braces from the installation kit and attach each between the shipping legs on either side of the assembly, as shown in the following figures.

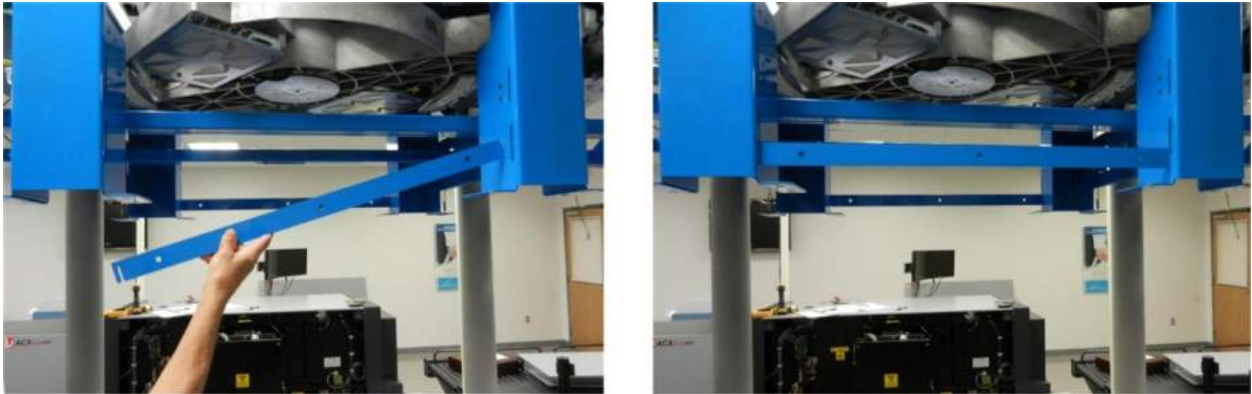


Figure 39: Cross Braces Between Shipping Legs

12. Remove the bolt through each of two L brackets that is screwed vertically into the end of the swing arm, as shown in the following figure.



Figure 40: Bolt Through L Bracket into Swing Arm

13. Remove the shipping leg top bolts.

9.3 Genie Lift Removal

1. Carefully begin lowering the Genie Lifts. If the shipping legs do not separate from the upper frame, verify that all bolts have been removed.
2. Rotate the crank handles on the Genie Lifts simultaneously to lower the shipping legs and brackets.
3. When the shipping legs reach the ground, remove the pins holding the cradle forks and lifting bars.
4. Remove the wheel chocks, then roll the Genie Lifts out of the way.
5. Remove the lifting bars and return to the installation kit.
6. Pull the pins and remove the lifting brackets; return them to the installation kit.
7. Remove the cross braces and return them and the shipping legs to the installation kit.
8. Place bolts and quick-release pins into the installation kit hardware case.
9. Break down the Genie Lifts and pack them into the installation kit.

10.0 Scanner Leveling and Alignment

10.1 Pre-leveling

The ProVision 3 scanner arrives with the leveling feet fully raised and with two lock nuts on the threaded stem, one between the leveling foot and the welded column plate and the other above the welded nut (see following figure; note that the bolt-on side frame is already in place in photo).

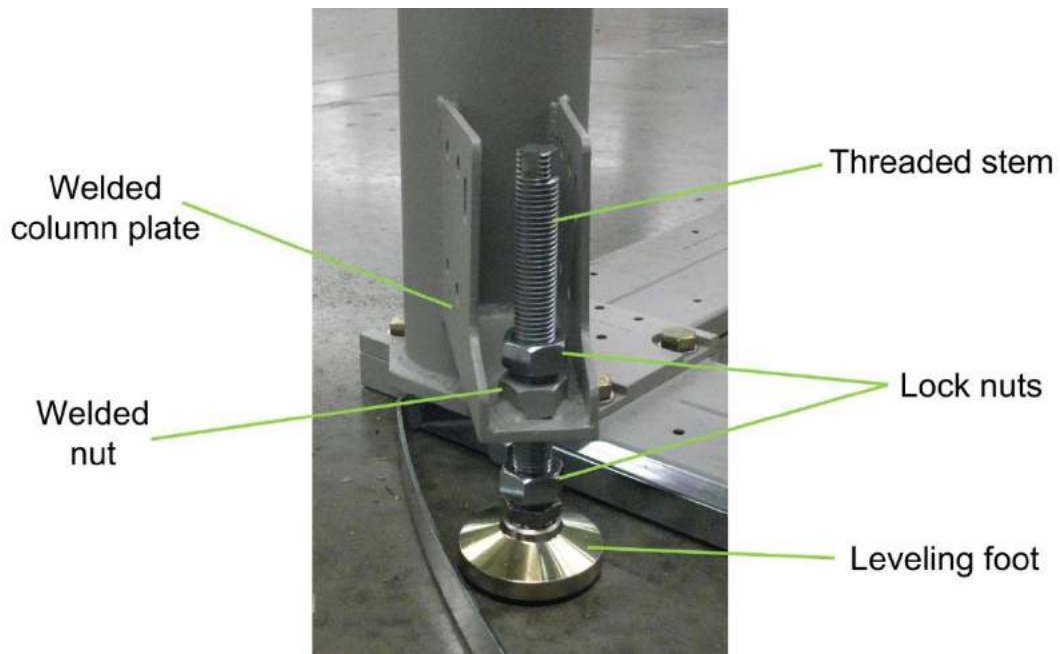


Figure 41: Leveling Foot

To verify that the leveling feet are fully raised before beginning this procedure:

1. Turn each threaded stem counterclockwise until the leveling foot can be raised no further.
2. Ensure that the lower lock nut is not preventing the threaded stem from turning.

10.2 Bolt-On Side Frames

1. Set the first of two bolt-on side frames (3810-10073-00) in place along one side of the scanner's lower frame, as shown in the following figures. It might be necessary to remove the leveling feet from their threaded stems to set the side frame in place.
2. Secure the bolt-on side frame using four M10 x 45mm HC bolts (0201-20777-45) and four M10 spring lock washers (0221-10003-00) as shown in the following figure, no bolts are required for the two center holes.
3. Reattach the leveling feet if removed in step 1.
4. Install one U-style clip (410-23861) per open hole on the frame as shown in the following figure.

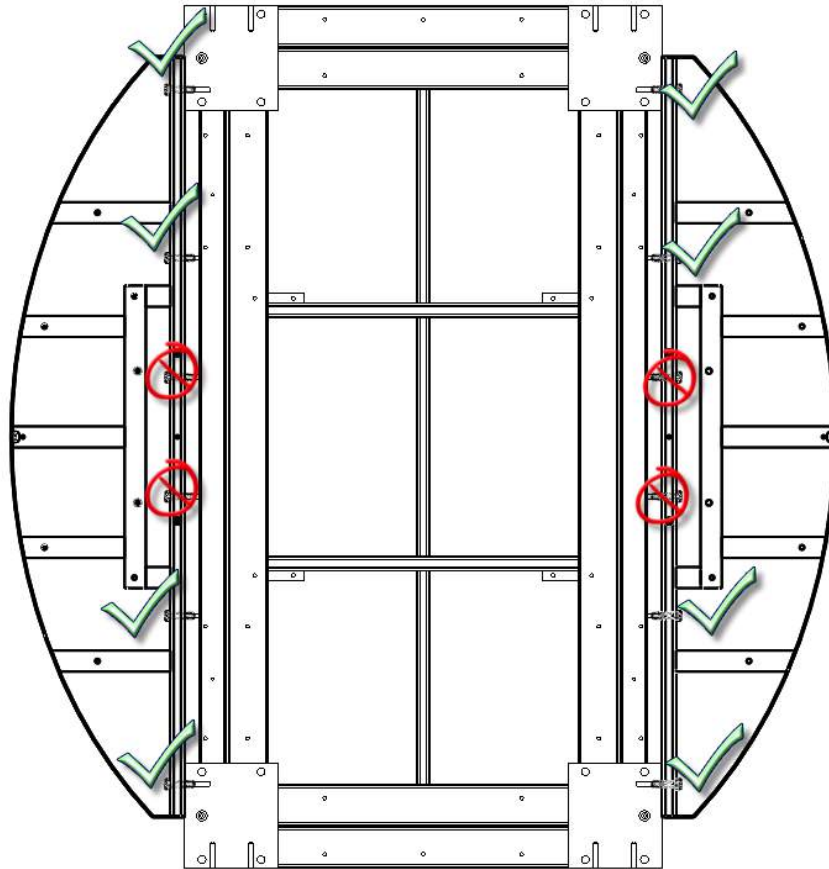


Figure 42: Bolt-On Side Frames



Figure 43: U-clip Installed on Frame

5. Repeat for the other frame along the other side.

10.3 Isolation Footpads (optional)

Install the optional isolation pads per 8100-23121-TM or Leidos document: 8000-22070-IP

10.4 Feet Lowered

1. Lower the leveling feet by turning each threaded stem clockwise until each foot touches the floor.
2. Once the feet are touching the floor, turn each threaded stem clockwise a full turn using an adjustable wrench to raise the scanner off the facility floor.

10.5 Seismic Bracket Kit (optional)

3. Install the optional seismic bracket kit per 8100-23121-TM or Leidos document: 8000-22056-IP.

10.6 Scanner Leveling

1. Lay the level diagonally across the center of the floor, as shown in the following figure, then diagonally the other way, then lengthwise, and then widthwise across the scanner, checking for level in each direction.



Figure 44: Cross-Level Check

2. Using an adjustable wrench, turn the leveling feet bolts clockwise to raise the scanner where needed as indicated by the level.
3. Recheck for level and repeat step 2 until the scanner is leveled.
4. After leveling, if any leveling foot is not touching the floor, turn its bolt clockwise to lower it until it touches the floor, then turn it an additional half turn so it bears a portion of the scanner's weight.
5. Lock each leveling foot in place by tightening one lock nut against the underside of the welded column plate and the other against the welded nut on the top side of the welded column plate.

11.0 Scanner Assembly

11.1 Upper Frame Torque

1. Using a 6mm hex bit socket and 3/8th drive torque wrench, torque the 16-column head clamp screws to 13.6 Nm (10.0 ft-lb) using a cross pattern to prevent binding the screws (see Figure 45). The spacing on both sides of each clamp should be equal.
2. Using a 24mm wrench, 24mm socket, and half inch drive torque wrench, torque the eight column upper and lower bolts to 67.8 Nm (50.0 ft-lb) (refer to the following figure).
3. Using a 10mm hex key, 19mm socket, and 3/8th drive torque wrench, torque the four stop bolts to 27.1 Nm (20.0 ft-lb) (refer to the following figure).
4. Verify system remained aligned per section 10.6.

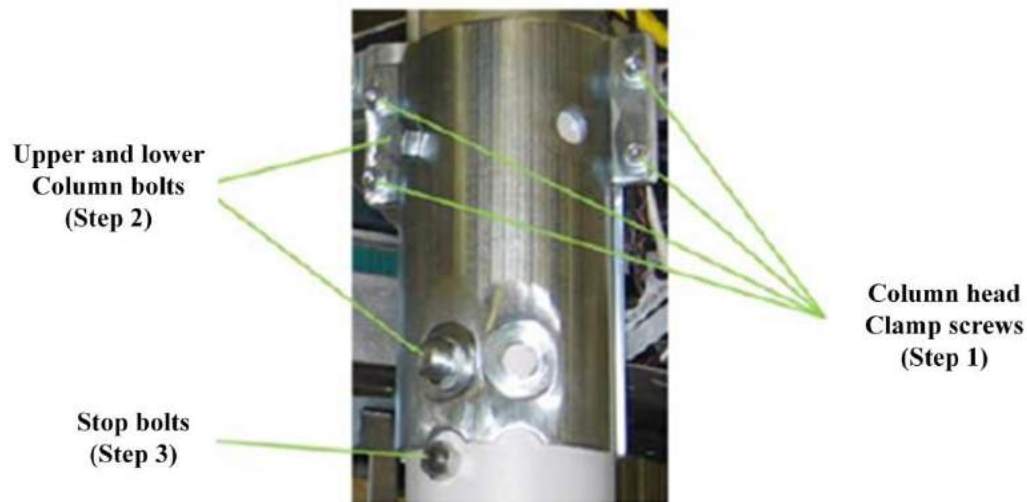


Figure 45: Other Column Screws/Bolts Torqued

11.2 Bottom Outer Window Angle Brackets

1. Install the first of two bottom outer radome angle brackets (3810-10065-00), as shown in the following figure, using four M6 x 12mm FHC screws (0201-10069-12).



Figure 46: Bottom Outer Radome Angle Bracket

2. Repeat for the other angle bracket.

11.3 Floor Cover Trim

1. Install one of the two floor cover trim pieces (3810-10085-00) shown in the following figure left, just inside the bottom outer radome angle bracket, as shown in the following figure right.\
2. Fastened the floor cover trim with four M8 x 16mm PFH screws (0201-20413-16) in the locations circled in green as shown in Figure 47.



Figure 47: Floor Cover Trim and Install Detail

3. Repeat steps 1 and 2 for installing the other floor cover trim piece on the opposite side of the scanner.

11.4 Mounting Brackets

1. Determine the location of the operator control panel (OCP). The OCP can be located on the left or right side of the electrical enclosure end of the scanner.
2. Install the first of three mounting brackets (3000-23601-00) onto the column at the location selected in step 1.
3. Use the set of holes directly over the leveling foot (see following figure left and center), not the other set that is around by the end of the scanner. The face of the bracket should point away from the center of the scanner.
4. The mounting bracket is fastened using three M6 x 16mm FBHS screws (0201-10291-16) two M6 fender washers (0221-10027-00) on the top and bottom holes as and one curved plate (3000-23601-01) on the center hole as shown circled in red in the following figure right .
5. Leave the bracket loose enough so that it can be repositioned later, when the middle cover is installed.



Figure 48: Mounting Bracket Installed on Column

6. Install two additional mounting brackets onto the columns at the opposite end of the scanner; these were used for the barrier belt installed later. As with the first mounting bracket, use the set of holes directly over the leveling foot (as shown in the previous figure left and center), not the other set that is around by the end of the scanner.
7. Install each bracket so that the face of each bracket points away from the center of the scanner. Each mounting bracket is fastened using three M6 x 16mm FBHS screws (0201-10291-16), two M6 fender washers (0221-10027-00) on the top and bottom holes, and one curved plate (3000-23601-01) on the center hole as shown circled in red in Figure 49.
8. Leave the bracket loose enough so that it can be repositioned later, when the middle cover is installed.

11.5 Top Window Angle Brackets

1. Install the first of two top outer window angle brackets (3810-10076-00) as shown in the following figure, using five M8 x 20mm FHC screws (0201-20452-20). Ensure the bolts are tight.

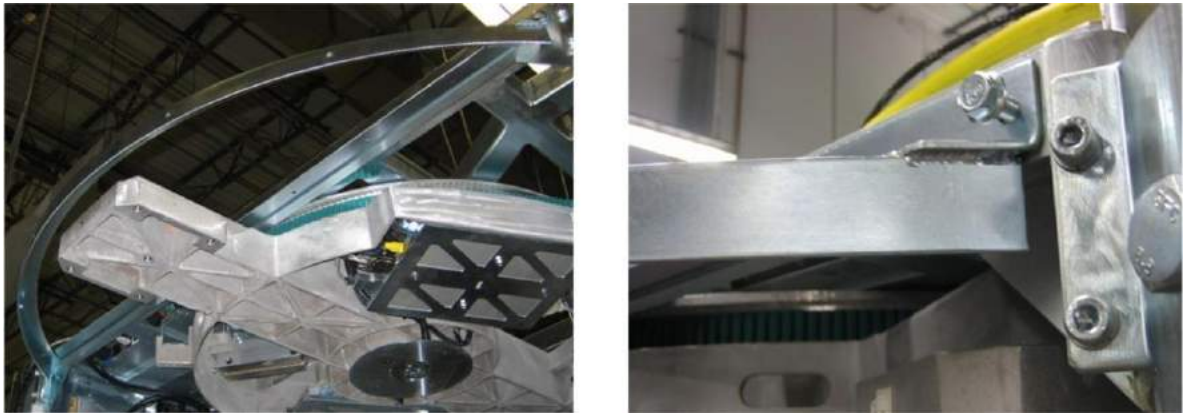


Figure 49: Top Outer Radome Angle Bracket with Bolt Inserted (Right)

2. Repeat for the other bracket.

11.6 Motor Brake Release

1. Connect the motor brake release jumper located on top of the electrical enclosure as shown in Figure 50.

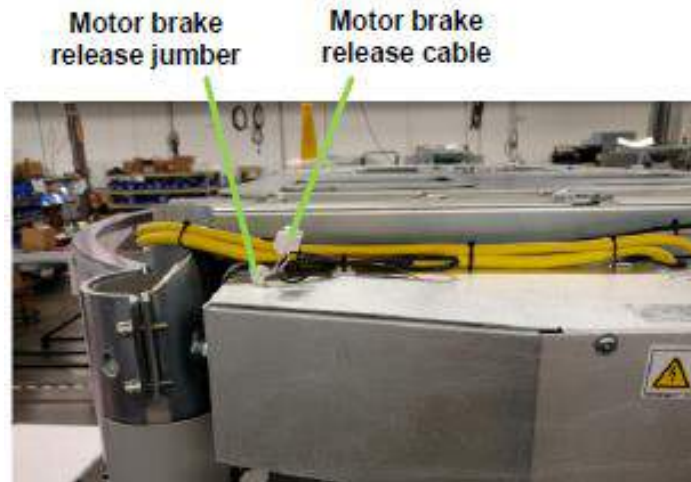


Figure 50: Motor Brake Release Cable and Detail Showing Jumper Connected

11.7 Power Cord

1. The power cord included with the scanner should be appropriate for the location and available power source. There are several power cord length/plug options. Contact a Leidos Security Detection & Automation representative if a different power cord is required.
2. Connect the end of the power cord to the power input box, which should be hanging along one side of the scanner.



Figure 51: Power Input Box

3. Connect the other end of the power cord to a wall outlet or other specified power source.
4. Power on the scanner by pressing the portion of the scanner's power switch labeled "I", shown in the following figure.



Figure 52: Power Switch in the On Position

11.8 Swing Arm

1. Move swing arm by hand to the calibration position (across the scanner, 90 degrees from the longitudinal center line), as shown in Figure 53.



Figure 53: Swing Arm in Calibration Position

2. Turn the power off by pressing the portion of the power switch labeled “O”.
3. Unplug the scanner’s power cord from the electrical outlet and use the lockout/tagout procedure (see Section 2.2) to prevent injury due to accidental re-start of the scanner.

11.9 Antenna Masts

1. Retrieve the two antenna masts (1000-11899-00). The masts are packed in two-inch long corrugated box.
2. Open the box and remove the mast. It does not matter which side the mast is mounted on as they are identical.
3. Position the mast close to the swing arm and gently rotate the mast upright with the L bracket up.
4. Attach the L bracket of the mast to the swing arm as shown in the following figures.

The mast is fastened to the arm with five M12 x 35mm HC bolts (0201-10005-35), five M12 spring lock washers (0221-10002-00) and five M12 flat washers (0221-10076-00). Four around the perimeter and one in the center.

5. Torque the four perimeter bolts to 54.2 Nm (40.0 ft-lb) in a cross pattern and torque the center bolt to 37.9 Nm (28.0 ft-lb).



Figure 54: Antenna Mast Being Attached to Swing Arm

6. Repeat steps 2 to 5 for the other antenna mast.

11.10 Mast Cables

1. Remove the upper rear cover from the first mast and gently pull the coiled-up wires out. Replace the cover.
2. Route the wires from the first mast through the hole in the swing arm to the left of the mast when viewed from behind the mast (to the right of the mast when viewed from inside the scanner).



Figure 55: Cables Routed Through Swing Arm Hole

3. Connect the 25-pin D-sub cable to the image sampling unit (ISU) 25-pin connector.
4. Ensure that the 13 pins in the top row align with the 13 holes.
5. Ensure that the 12 pins in the bottom row align with the 12 holes (do not force the connection). Tighten the screw locks.

6. Connect the BNC connectors of the five color-coded cables to the ISU, matching each to its color-coded or color-labeled connector. From the D-sub connector, shown at the right side of the following figure right, the sequence is red (R), green (G), orange (OR), blue (BL), yellow (Y).
7. Secure the cables to the swing arm using a zip tie at the point shown in the previous figure and two zip tie points located on the inner portion of the swing arm.
8. Cut a small piece of corrugated tube approximately 15cm (6 inches) and slip over the mast antenna cables so that the cables are not sitting on the swing arm frame shown in figure below. Secure with two zip ties at both ends of the tube.



Figure 56: Corrugated Tube



Figure 57: Connectors on ISU and Cables from Mast Connected to ISU

11.11 Cosmetic Mast Wrap

1. Retrieve the two rolls of cosmetic mast wrap (3000-32879-00).
2. Unroll the first wrap and remove the protective film from both sides, as shown in the following figure.



Figure 58: Cosmetic Mast Wrap Protective Film Being Removed

3. Wipe down the now filmless wrap with electrostatic discharge (ESD) wipes (490-26003) included in the hardware kit.
4. Fold the wrap around the mast so that its ends meet vertically along the back (outside) of the mast and the holes line up as shown in the following figures.

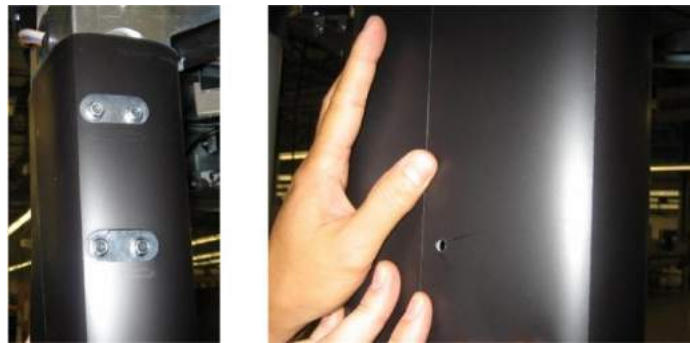


Figure 59: Cosmetic Mast Wrap Installation

- Starting from the top of the mast and working down, insert the plastic push-in rivets (410-21034) as shown in the following figure.



Figure 60: Push-In Rivets Inserted

- Repeat steps 2 to 5 for the other mast.

11.12 End Cap Top Bracket

- Install the first of four end cap brackets (3000-23128-00) use one nut plate (3000-23129-00) and two M6x16mm SFH screws (0201-10293-16). The nut plate sits on top of the end cap bracket as shown in below pictures.
- Repeat for remaining three brackets.

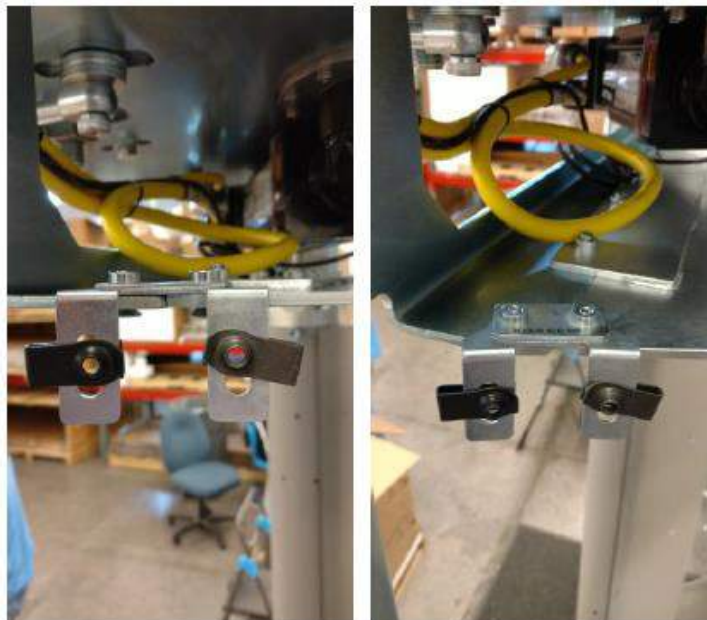


Figure 61: Nut Plate

11.13 Entrance/Exit End Cap

1. Remove the column bolt (bolt #4) that was left loose in each column when they were installed.
2. Install one left entrance/exit cover (3000-22286-01) and one right one (3000-22286-00) at one end of the scanner as shown in the following figures.

Each cover is fastened with two M6 x 16mm FBHS screws (0201-22775-16) in the top and three M8 x 10mm FBHS screws (0201-10292-10) in the bottom. Leave loose.

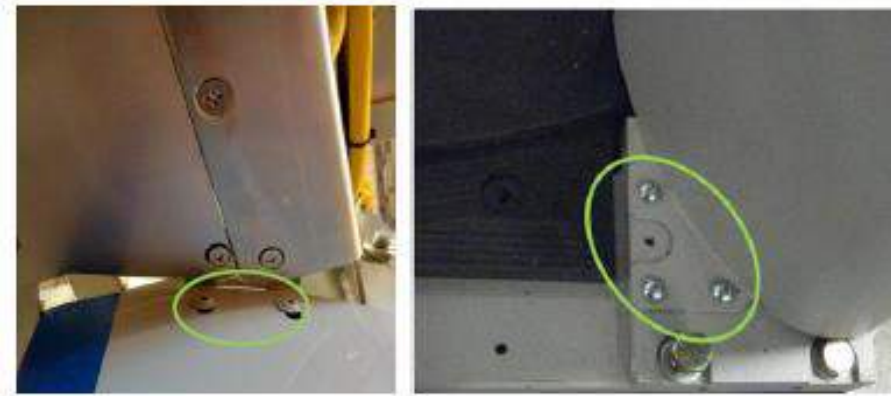


Figure 62: Right Entrance/Exit Cover – Top (Left) and Bottom (Right)

3. Repeat for the other end of the scanner.
4. Put the column bolts back in and, using a 24mm socket, torque them to 94.9 Nm (70.0 ft-lb).

11.14 Vibration Control Kit

Install the vibration control kit as explained in Section 14 of this manual or 8100-21350-IP.

11.15 Outer Window Scratch Guards

1. Peel and remove the scratch guard film from both sides of the first outer window as shown in the following figure.



Figure 63: Scratch Guard Film Being Removed

2. Repeat for the other outer window.

11.16 Outer Windows

1. There are two outer windows: one with a figure demonstrating the pose to hold for 3 seconds (3810-10062-01) and one plain (3100-10062-00). There is also the option of having two plain outer windows. If the system has two plain outer windows skip to step 4.

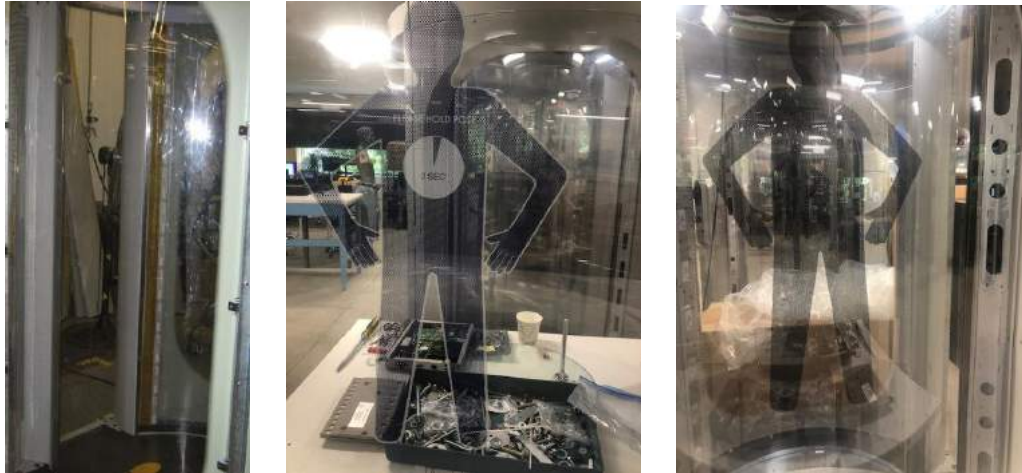


Figure 64: Outer Windows

2. Install the outer window with the stance on the right side of the scanner when viewed from the electrical enclosure end.
3. Orient the outer window so “PLEASE HOLD POSE 3 SEC” can be read from inside the scanner.
4. Clean the inward-facing side of the outer window with ESD wipes (490-26003), then slide one edge of the outer window behind the column until it is flush against the entrance/exit cover, which was installed previously.
5. Flex the outer window around the curve of the top and bottom angle brackets and tuck the other edge of the outer window behind the column and foot bracket. Because of the thickness and stiffness of the outer window, this will require some force to accomplish.
6. Install eight M6 x 16mm FBHS screws (0201-10291-16), each with an M6 flat washer (0221-10027-00), to hold the outer window in place. Leave screws loose.
7. Clean the outward-facing side of the outer window with ESD wipes (490-26003).
8. Repeat steps 4 to 7 for the plain outer window.

11.17 Outer Window Bracket Supports

1. Install the first of four outer window bracket supports (1000-26549-00) and (1000-26549-01), ensuring that the middle cover bracket is pointing toward the centers of the window as shown in the following figure right.

The support is fastened as shown in the following figures left/center with an M6 x 12mm FHC screw (0201-10069-12) in the top and an M8 x 20mm FHC screw (0201-20452-20) in the bottom. Leave screws loose.



Figure 65: Outer Window Bracket Support – Top (Left) and Bottom (Center)

2. Install one u-style clip (410-23861) per middle cover bracket as shown in figure above.
3. Repeat for the other three supports.

11.18 Outer Window Bracket Retainers

1. From inside the scanner, install the first of four outer window bracket retainers (3810-10201-00) vertically on the inside of the first outer window as shown in the following figures.

The retainer can be installed on either the left or right side of the first outer window. The retainer is fastened with seven M6 x 25mm FBHS screws (0201-20428-30). Leave screws loose. It might be necessary to push on the window to get the screws started.



Figure 66: Outer Window Bracket Retainer: Overall and Upper and Lower Closeups

2. Repeat for the other side of the first outer window.
3. Repeat Steps 1 and 2 for the second outer window.

11.19 Outer Window Screw Tightening Order

1. Tighten the top screw of each of the four outer radome bracket supports.
2. Tighten the bottom screw of each.
3. Tighten the screws along the outside top and bottom of the two outer radomes.
4. From inside the scanner, tighten the outer radome bracket retainer screws, upper and lower end cap screws.

11.20 Antenna Operation Verification

CAUTION

It is important to set up a safety area before proceeding. Subsequent installation steps are going to make the swing arm and masts rotate even though some of the protective barriers (the inner radomes) have not yet been installed.

11.20.1 E4.10.XX and SS5.1.XX

1. Connect the Ethernet cable behind the OCP to a field service laptop and turn the field service laptop on. Wait at least five minutes.
2. Log in to the field service laptop as sv_admin.
3. Double-click the **Field Service Tool** icon on the desktop to launch the Field Service Tool program.
4. Click the **Connect** button at upper right to activate the testing and diagnostics features.
5. Click **Start SVDiagnostics** on the right side of the Field Service Tool window.
6. Click on **Calibration** to open the Calibration window.
7. Click on Pre-cal.
 - a. The system performs the motion cal (if this is after power-up) and VCO cal automatically.
 - b. If any faults occur. click on LIP reset then click Pre-cal again.
8. Once complete, a green check appears besides Pre-cal and VCO cal.
9. Position the calibration beam in the center of the scanner.

10. Click **Close Cal** and click **OK** at Verify the cal target is in place. Wait for completion (green check by Closed cal).
11. Remove the calibration beam from the scanner.
12. Click **Open Cal**. Then click on OK at Verify the scanner is empty. Wait for completion (green check by Open cal).
13. Click **Clutter cal** .
14. Once the clutter cal completes a second window appears and prompts you to review of the test results.
15. Review the results for any failure. Both ISU0 and ISU1 needs reviewed before the system will allow the baseline to be saved.
16. After reviewing the test results click save baseline, this is only allowable after the test results have be reviewed and are passing.
17. Once complete close all programs on the Field Service Laptop and disconnect it from the system, then power off the system.
18. Remove the floor center panel and retain hardware for use later.

11.20.2 3.20.XXX

1. Rotate the swing arm by hand from one bump stop to the other bump stop (for example, across the full range of travel) to verify that there are no obstructions and that no cables get snagged.
2. Remove the motor brake release jumper.
3. Connect the power cord to the power input box and to an ordinary wall outlet or other power source.
4. Install the floor center panel [1000-11902-00] so that the feet are facing the posing figure on the outer radome; secure loosely with four M8 x 25mm SHC screws (0201-10018-25) to keep it in place.

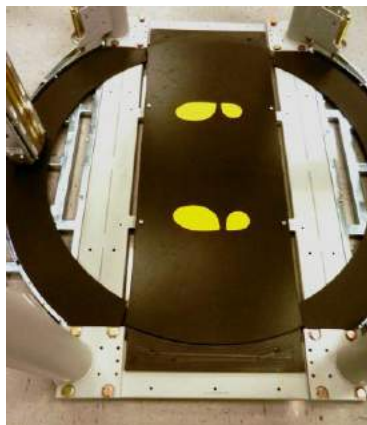


Figure 67: Floor Center Panel

5. Turn on the scanner and wait at least five minutes.
6. Connect the Ethernet cable that is attached to the upper end of the outer radome bracket support to a field service laptop and turn the field service laptop on.
7. Wait at least five more minutes.
8. Log in to the laptop as sv_admin.
9. Double-click the **Field Service Tool** icon on the desktop to launch the Field Service Tool program.
10. Click **Connect** at upper right.
11. Click **Start SVDiagnostics** on the right side of the Field Service Tool window.
12. Click the **Lip console** button on the right side of the SVDiagnostics window.
13. Click **Lip reset** at the bottom of the LipConsole Dialog window.
14. The buttons on the right side of the window become activated. Click **Pre-cal** at the upper right of the LipConsole Dialog window.

After Pre-cal is clicked, the masts move slowly in one direction, then at speed in the other before moving to the calibration position. If the masts do not move to the calibration position, repeat the previous two steps; if the masts still do not move, there is a problem that requires troubleshooting and fixing.

15. Click **Lip reset**, then **VCO cal** (the second button at upper right).
16. Position the calibration beam in the center of the scanner.
17. Click **Lip reset**, then **Closed cal** (the third button at upper right).
18. Remove the calibration beam from the scanner.
19. Click **Lip reset**, then **Open cal** (the fourth button at right).
20. Click **Lip reset**, then **Clutter cal** (the fifth button at right). The scanner makes four mast sweeps; ignore any errors.
21. Once Clutter cal is complete, click **Close** at the bottom of the window to close the Lip console and return to the SVDiagnostics screen.
22. Click the **Close Window icon** (white X with a red background) at upper right to close SVDiagnostics.
23. On the Field Service Tool screen, click **Start Auto test** on the right side of the window.

24. In the left hand column, click **Software tests** and verify that all tests pass. Correct any failures as needed.
25. In the left hand column, under Hardware tests, click **Mast antenna ISU0 test**. Verify all pass. Correct any failures as needed.
26. Click the next test under Hardware tests, **Mast antenna ISU1 test**, as shown in the following figure. Verify all pass. Correct any failures as needed.
27. Restore the motor brake release jumper.
28. Move masts to the calibration position.
29. Disconnect the Ethernet cable.
30. Power the scanner off and disconnect the power cord.
31. Remove the floor center panel and retain hardware for use later.

11.21 Housing Brace Brackets

1. Install one of the two housing brace brackets (3810-10092-00) in the center hole of one of the two top outer window angle brackets, as shown in the following figure. Notice that the outer window is tabbed or notched where the bracket is to be placed. The housing brace bracket is fastened with one M6 x 12mm FHC bolt (0201-10069-12).
2. Install one U-style clip (410-23861) per bracket as shown in the following figure.



Figure 68: Housing Brace Brackets

3. Repeat for other side.

11.22 Cabling Routes

1. If both the OCP and power input box are being located on the right column at the electrical enclosure end, route all cabling along the top of the upper frame, over the top of the column and down the right side of the electrical enclosure end (as shown at lower left of the following figure).

2. If the OCP is being located on the left column at the electrical enclosure end, and the power input box is being located in the upper position at the motor/pulley end of the scanner, you must separate the cables.
3. Route the power input box/cable to its selected location and route the OCP, Ethernet and any other cables to the OCP's selected location.



Figure 69: Cabling Route with Power Input Box, OCP, and Other Cables Together

4. Cable-tie all cables. No cables should be allowed to drape off the side of the scanner, or drape into the scanner. In addition, the cables should be tied in such a way as to prevent them from becoming tangled with the moving parts on top of the scanner.

11.23 Top Down Power

Install an optional top down power per 8100-23121-TM option section or 8600-28515-IP.

11.24 Power Input Box

1. Install the power input box at the selected location, either at lower right of the electrical enclosure end or at upper left of the motor/pulley end.

The power input box is fastened to the outer window bracket support, as shown in the following figure, with two M6 x 12mm FHC bolt (0201-10069-12) one in each bracket.



Figure 70: Power Input Box in the Lower (Electrical Enclosure End) Position

11.25 Router

If an optional router is required, it should be installed in accordance with 8100-23121-TM option section or 8000-23712-IP.

11.26 Remote OCP

If an optional remote OCP is required, it should be installed in accordance with 8100-23121-TM option section or 8000-27088-IP.

11.27 Roof

1. Locate the roof (3000-27086-00) and position so that the perforated area is above the advanced system control unit (ASCU) toward the electrical enclosure end.
2. Install one (0215-20642-00) clip per hole on edge of roof panel.

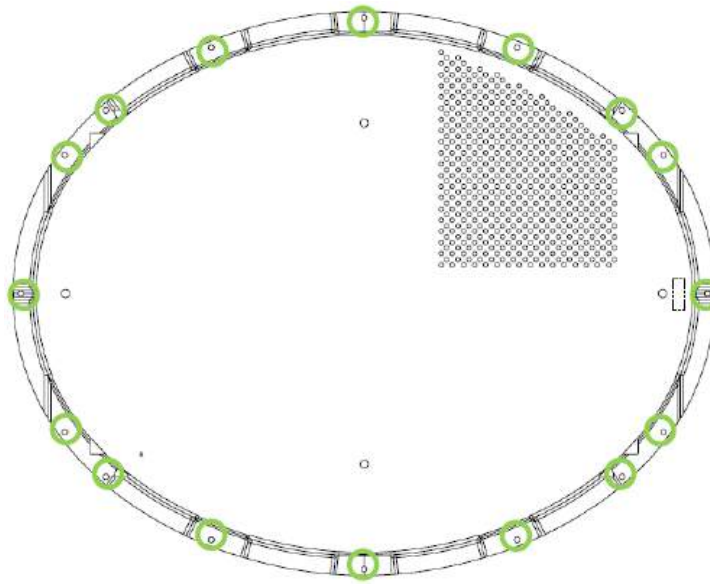


Figure 71: Roof Middle Holes

3. Install the roof so that the four middle hole (shown circled in green in the following figure) align with the brackets that are already installed on the upper frame.
4. The roof is secured using four M6 x 10mm FBHS screws (0201-22775-10) and four M6 fender washers (0220-23073-00). Leave screws loose until final cover fitting/alignment.

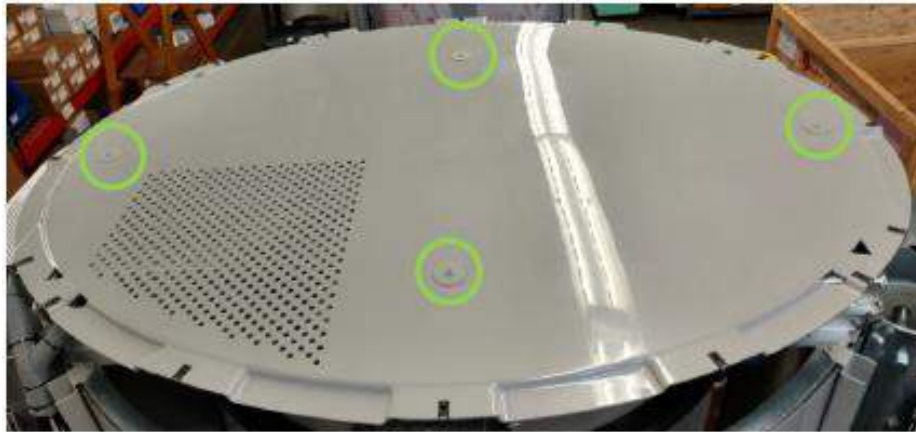


Figure 72: Roof Middle Holes (Viewed from Motor/Pulley End)

11.28 Top Side Covers

1. Locate the first of two top side covers (3000-27085-00), shown in the following figure, and install two clip-on panel nuts (410-23861) in the locations circled in red in the figure; leave the center hole blank.
2. Install the nuts with the flat side toward the outer curve, as shown in the following figure.



Figure 73: Top Side Cover and Clip-On Panel Nuts

3. Slide the notched end of the top side cover into the bracket at the top of the entrance/exit cover, as shown in the following figure left.
4. Repeat steps 1 to 4 for the other top side cover.
5. Line up the holes along the top edge of the top side cover (shown circled in green in the previous figure) with the clip-on panel nuts along either side of the roof.

Note: The hole at the bottom center and the two panel nuts circled in red is used later to fasten the upper covers.

6. The top edge of the top side cover is fastened using five #8 x .750 PTH screws (0200-20643-12) and five #8 flat washers (0220-20783-00). Align the top side cover as shown in the following figure right, and then tighten the screws.



Figure 74: Top Side Cover Sliding into Entrance/Exit Cover

11.29 Notch Delete

Install the notch delete kit per **Error! Reference source not found.** or 8000-25161-00.

11.30 Blank Plate and Cable Pass-Through Hole

1. Attach the blank plate (3000-23667-00) to the lower hole of the middle OCP cover (3000-27080-00) if located on right side of electrical enclosure end or upper hole if located on the left side of the electrical enclosure, as shown in the following figure left, using four M3 flat washers (410-14123) and four M3 lock nuts (0216-10012-00).
2. Attach the cover plate with 1½-in. [38.1mm] circular hole (3000-23666-00) to the upper hole of the middle OCP cover if located on right side of electrical enclosure end or lower hole if located on the left side of the electrical enclosure, as shown in the following figure left, using four M3 flat washers (410-14123) and four M3 lock nuts (0216-10012-00).
3. Pass the OCP power cord, video graphics array (VGA) cable, touchscreen USB cable, data/reports universal serial bus (USB) cable, and field service laptop Ethernet cable through the hole, as shown in the following figure.
4. Install the large rubber grommet (0235-20349-00) to the cable pass-through hole, as shown in the following figure right. Modify grommet if necessary to fit the hole.

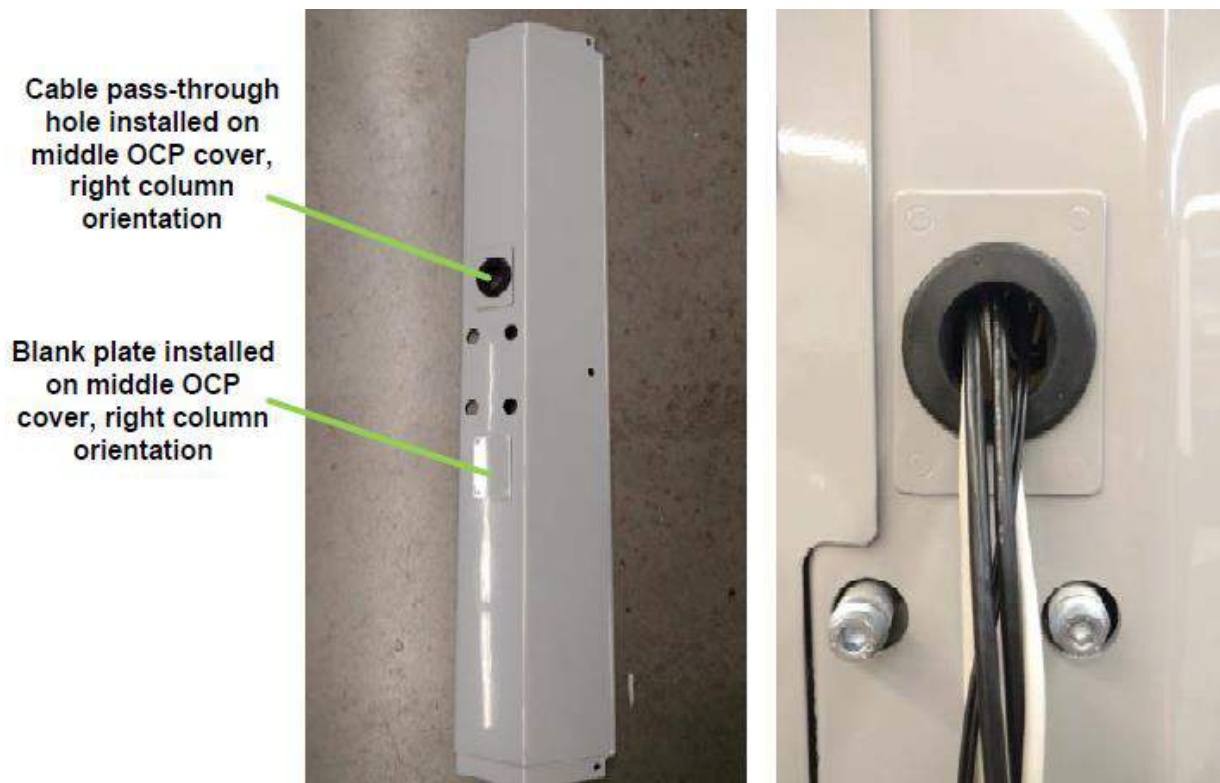


Figure 75: Blank Plate and Cable Pass-Through Hole

11.31 Middle OCP Cover

1. Grasp the middle OCP cover from the previous section (3000-27080-00) in both hands.
2. Slide the edge nearest the four large mounting holes into the pocket of the entrance/exit cover, as shown in the following figure left, and check to see if the four holes line up with those on the OCP mounting bracket. Also check that the screw hole shown circled in red in the following figure right lines up with the hole on the middle cover brace bracket.
3. Remove the middle OCP cover and adjust the OCP mounting bracket if needed so all holes line up.
4. Tighten the OCP mounting bracket.
5. Install the middle OCP cover by once again sliding its edge into the pocket and lining up the four mounting holes and one screw hole, ensuring that the cables are tucked behind the middle OCP cover.
6. Fasten the middle OCP cover using one M6 x 16mm FBHS screw (0201-22775-16).

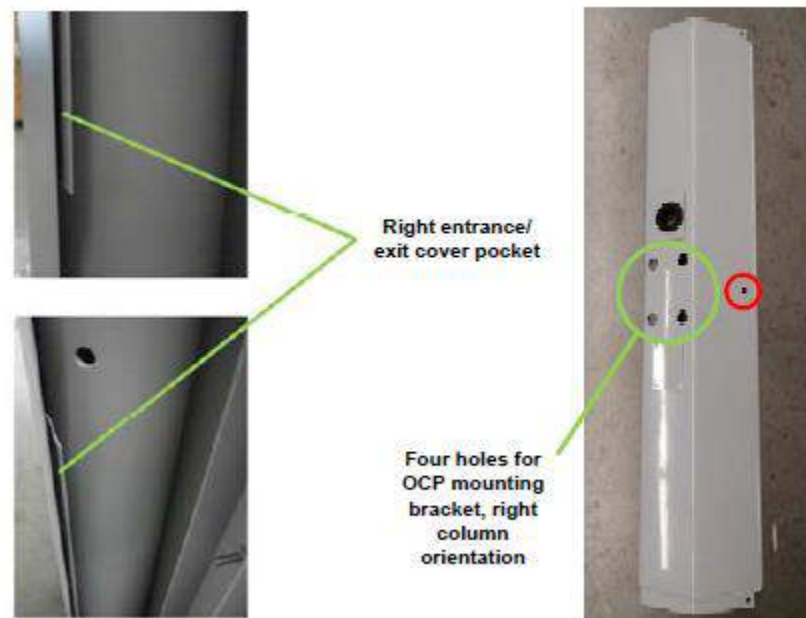


Figure 76: Middle OCP Cover

11.32 Plain Middle Cover

1. Locate the plain middle cover (3000-27081-00). It can fit on either the right or left side of the electrical enclosure end.
2. Slide the edge with the notch at top and bottom (see the following figure) into the pocket of the entrance/exit cover and line up the screw hole shown circled in red in the following figure with the hole on the middle cover brace bracket.
3. The plain middle cover is fastened using one M6 x 16mm FBHS screw (0201-22775-16).

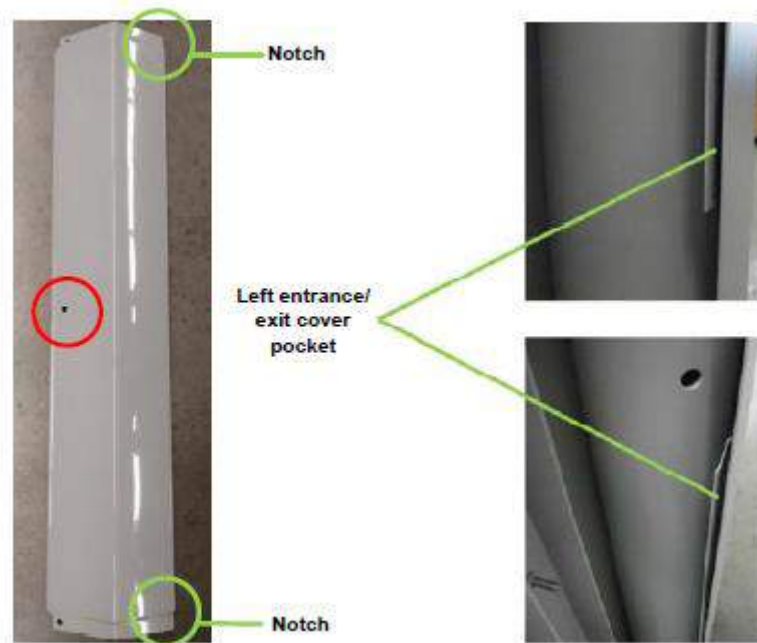


Figure 77: Plain Middle Cover

11.33 Middle Covers for Barrier Belt

1. Locate the first of two middle covers for barrier belt (3000-27079-00). The two covers are interchangeable.
2. Slide the edge nearest the four large mounting holes into the pocket of the entrance/exit cover and check to see if the four holes line up with those on the mounting bracket for the barrier belt at the motor/pulley end. Also check that the screw hole shown circled in red in the following figure lines up with the hole on the middle cover brace bracket.
3. Remove the middle cover and adjust the mounting bracket for the barrier belt if needed so all holes line up.
4. Tighten the mounting bracket for the barrier belt.
5. Install the first middle cover for barrier belt by once again sliding its edge into the pocket and lining up the four mounting holes and one screw hole.

6. Fasten the middle cover for barrier belt using one M6 x 16mm FBHS screw (0201-22775-16).

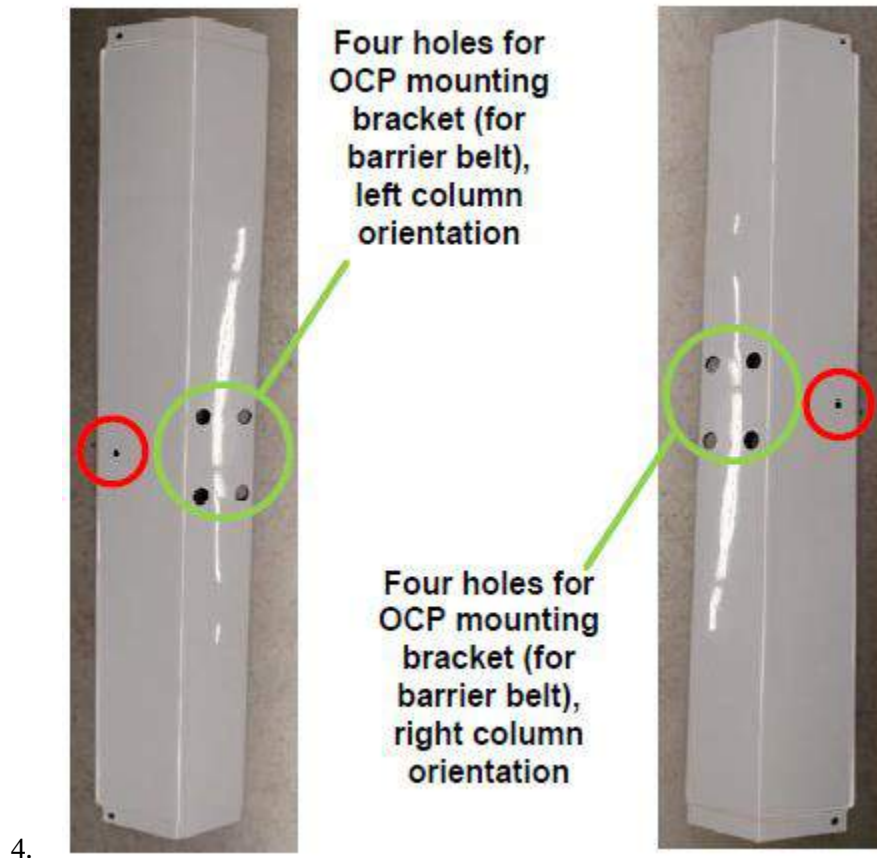


Figure 78: Middle Covers for Barrier Belt

7. Repeat steps 1 to 6 for the other middle cover for barrier belt.

11.34 Upper/Lower Cover with Switch/Power Input

1. Orient the upper/lower cover with switch/power input so that the cutout is located where the power input box is located (lower electrical enclosure end or upper motor/pulley end).
2. Slide one side (vertical edge) into the pocket of the entrance/exit cover, as you did for the middle covers previously, then slide the other side into the pocket of the opposite entrance/exit cover.
3. Ensure that the holes line up with those on the top side cover (if being used as an upper cover) or bolt-on side frame (if a lower cover) and the middle cover underneath (see following figure right), and also ensure that the holes on the power input box line up with the cover plate (discussed in step 4).
4. Secure the cover using three M6 x 16mm FBHS screws (0201-22775-16) as shown circled in green in the following figure center, and two M6 x 25mm FBHS screws (0201-22775-25) as shown circled in red in the following figure center.

5. Attach the cover plate with 3" rectangular hole (3000-23668-00) to the upper/lower cover using four M4 x 16mm BHS screws (410-22394).



Figure 79: Upper/Lower Cover with Switch/Power Input in Lower Position

11.35 Plain Upper/Lower Covers

1. Locate the first of three plain upper/lower covers (3000-27082-00). The three plain upper/lower covers are interchangeable.
2. As in the previous section, slide one side (vertical edge) into the pocket of the entrance/exit cover, then slide the other side into the pocket of the opposite entrance/exit cover. Ensure that the holes line up with those on the top side cover (if being used as an upper cover) or bolt-on side frame (if a lower cover) and the middle cover underneath.
3. Secure the cover using three M6 x 16mm FBHS screws (0201-22775-16) and two M6 x 25mm FBHS screws (0201-22775-25) in the locations shown in the previous figure.
4. Repeat steps 1–3 for the other two covers.

11.36 Label Kit

Install a label kit per Appendix E or 8600-23942-IP.

11.37 Top Entrance/Exit Covers

1. Locate the first of two top entrance/exit covers (3000-27084-00) and install it by lining up the holes along the top, shown circled in green in the following figure, with those on the roof.
2. The top entrance/exit cover is fastened using three #8 x .750 PTH screws [0200-20643-12] and three #8 flat washers (0220-20783-00). Leave screws loose until final cover fitting/alignment.



Figure 80: Top Entrance/Exit Cover

3. Repeat steps 1 and 2 for the other top entrance/exit cover.

11.38 Belt Barrier Assembly

Install the belt barrier assembly per Appendix F or 8000-21314-IP.

11.39 Operator Control Panel

Install the OCP per Appendix F or 8000-21314-IP System Mounted Resolution Station.

11.40 Optional Resolution Station

Install optional system mounted Resolution station per 8100-23121-TM option section or 8600-26545-IP

11.41 Inner Radome Top Angle Bracket

1. Install the first of two inner radome top angle brackets (3810-10075-00) to the upper frame as shown in the following figure.

The inner radome top angle rail is fastened to the upper frame (above the entrance and exit) with four M8 x 16mm PFH screws([0201-20413-16). Leave the screws loose for now; they are tightened after the inner radomes are installed.



Figure 81: Inner Radome Top Angle Rail and Attachment Point

2. Repeat for the other rail.

11.42 Inner Radome Base Flange Support Brackets

1. Install the first of two inner radome base flange support brackets (3810-10103-00) as shown in the following figure.

The inner radome base flange support bracket does not require screws or other fasteners. It has two holes to accommodate the two guide pins that stick up from the bolt-on side frames.



Figure 82: Inner Radome Base Flange Support Bracket and Guide Pin

2. Repeat for the other bracket.

11.43 Inner Radome Scratch Guards

1. Peel and remove the scratch guard film from both sides of the inner radome, as shown in the following figure.



Figure 83: Scratch Guard Film Being Removed

2. Wipe both sides of the inner radome with the ESD wipes (490-26003) included in the hardware kit.
3. Repeat steps 1 and 2 for the other inner radome.

11.44 Inner Radome Edge Support Brackets

1. Locate two of the four inner radome edge support brackets (3000-22310-00) and install the first vertically along the side of one of the inner radomes.
2. Slide the bracket over the edge of the inner radome, as shown in the following two figures, such that the edge of the inner radome fits inside the bracket and the holes line up. The bracket uses tabs to lock onto the radome.

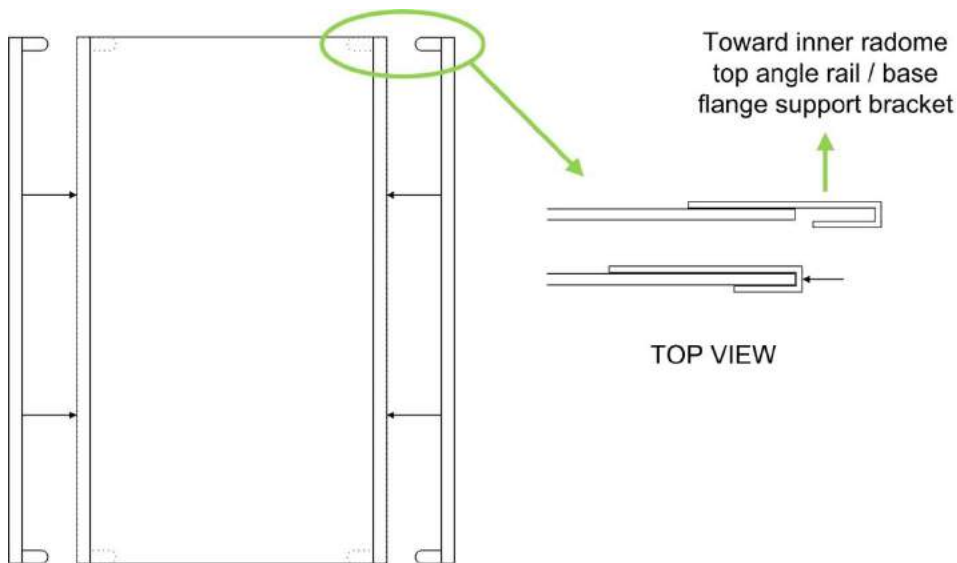


Figure 84: Placement of Inner Radome Edge Support Brackets

3. Repeat for the other side of the inner radome, ensuring that the L-shaped ends of the second bracket are on the same surface as for the first bracket.
4. Repeat steps 1 and 2 for the second inner radome.

11.45 Inner Radomes

1. With the inner radome edge support brackets in place, install the first of two inner radomes (3810-10061-00) using either the standard method beginning in Step 2 or the alternative method beginning in Step 6.
2. Standard Method: Lift the inner radome and move it into position inside the scanner, ensuring that the L-shaped ends of the inner radome edge support brackets are facing and contacts the inner radome top angle rail and the inner radome base flange support bracket, as shown in the previous figure.
3. Flex the inner radome by pressing in at the top and bottom of the inner radome and fasten it in place with 10 M6 x 16mm FBHS screw (0201-10291-16) starting with the center holes on the top and bottom.

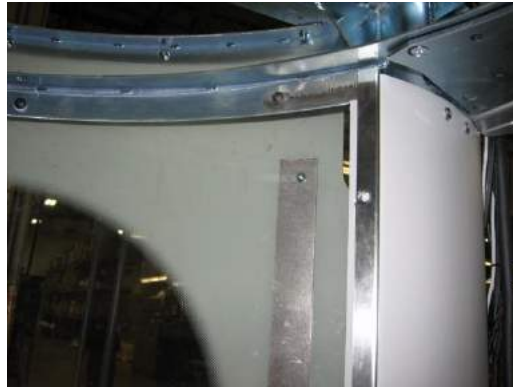


Figure 85: Inner Radome Fastened in Place

4. Tighten the center screws first, then tighten the outer screws working from the center out.
5. Secure inner radome to end cap using six #8 x .625 PTH screws [0200-20643-10] and six M4 nylon retaining washers [0221-29376-00] 3 on each side of the radome.
6. Repeat Steps 2–5 for the other inner radome.
7. Alternative Method: The center slotted hole (see following figure left) at the top and bottom of the inner radome can be utilized to hook the inner radome onto two pre-installed screws.
- 5.
8. Insert an M6 x 16mm FBHS screw (0201-10291-16) partway into the center hole of the inner radome top angle rail (inside the scanner) and another partway into the center hole of the inner radome base flange support bracket on one side of the scanner. Leave about 2/3 of each screw sticking out for now, as shown in the following figure right.

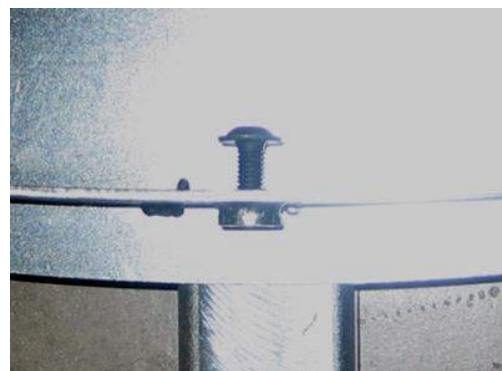


Figure 86: Inner Radome Slotted Hole and Screw Sticking Out

9. Lift the inner radome and move it into position inside the scanner, ensuring that the L-shaped ends of the inner radome edge support brackets are facing and will contact the inner radome top angle rail and the inner radome base flange support bracket.

10. Flex the inner radome by pressing in at the top and bottom of the inner radome and fit the slotted holes over the two screw heads left sticking out in the previous step.
11. Slide the inner radome while pushing in until the screws are at the end of the slots.
12. Fasten the inner radome in place with eight additional M6 x 12mm FBHS screws (0201-10291-16),
13. Tighten the center screws first, then tighten the outer screws working from the center out.
14. Secure inner radome to end cap using six #8 x, 750 PTH screws (0200-20643-12) and six M4 nylon retaining washers (0221-29376-00) three on each side of the radome.
15. Repeat steps 6 to 13 for the other inner radome.

11.46 Ceiling

1. Install the ceiling (1000-20731-00) inside the scanner by aligning the indented portions with the electrical enclosure end and the motor end.
2. The ceiling is fastened to the upper frame weldment using ten M6 x 20mm SHC (0201-20419-20) screws, as shown in the following figures. Leave the screws above the entrance and exit (circled in red below) loose until final cover fitting/alignment.

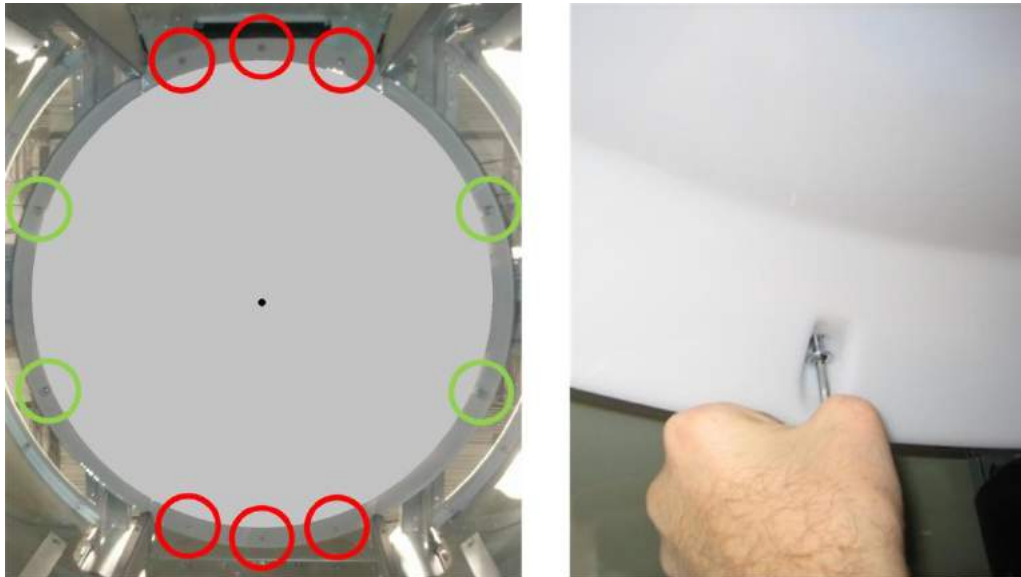


Figure 87: Ceiling

11.47 Entrance/Exit Ramp Supports and Ramp

1. Install the first of two ramp supports [3000-22249-00] at either end of the scanner, as shown in the following figure.
2. The ramp support is secured with four M10 x 25 FHC screws [0201-20444-25] as shown circled in green in the following figure.



Figure 88: Ramp Support

3. Repeat steps 1 and 2 for the other ramp support at the opposite end of the scanner.
4. Install the bolt covers 3000-26607-00 and 3000-26607-01 onto the ramps using 3 (0200-28484-08) SCR, KA35 X 8, TFPH, Z/CLR per cover included with the covers.

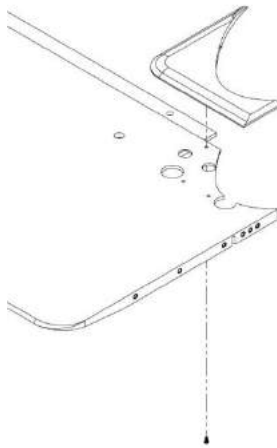


Figure 89: Bolt Cover

5. Install the first of two ramps (1000-26611-00) at either end of the scanner, as shown in the following figure.

6. The ramp assembly is secured with two M8 x 25mm SHC screws (0201-10018-25) as shown circled in green in the following figure. Tighten the screws but do not over-tighten.

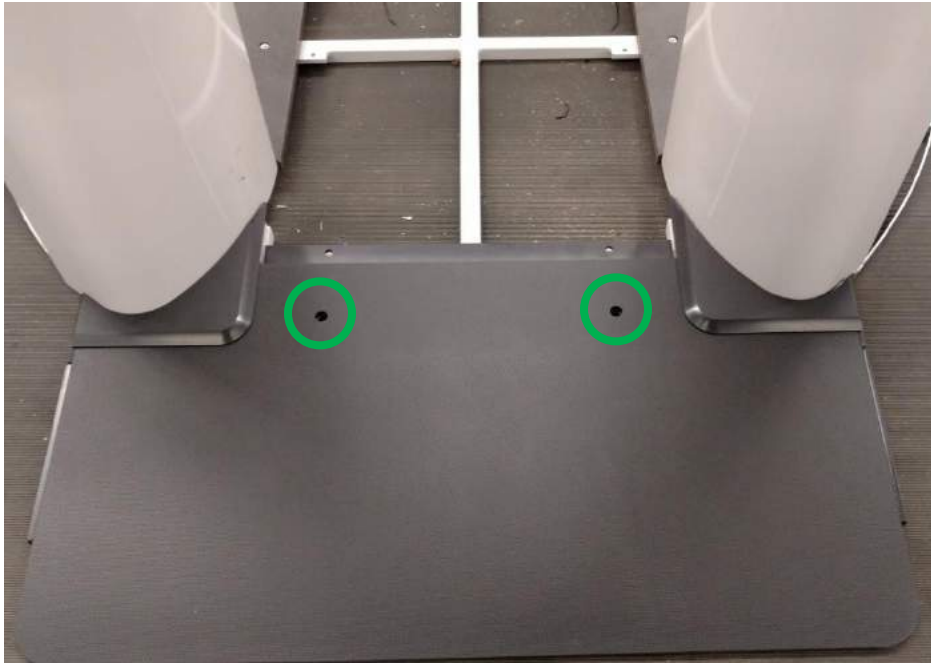


Figure 90: Ramp Assembly

7. Repeat steps 4 and 5 for the other ramp assembly at the opposite end of the scanner.

11.48 Center Floor Board**CAUTION**

Not installing the center floor panel correctly can cause a subject being screened to stand in the portal facing the wrong direction. Doing so can have a drastic impact on scanning results.

1. Install the floor center panel (1000-26606-00) with the feet facing towards the right when viewed from the electrical enclosure end.
2. Fasten the panel in place with eight M8 x 25mm SHC screws (0201-10018-25) as shown circled in green in the following figure.

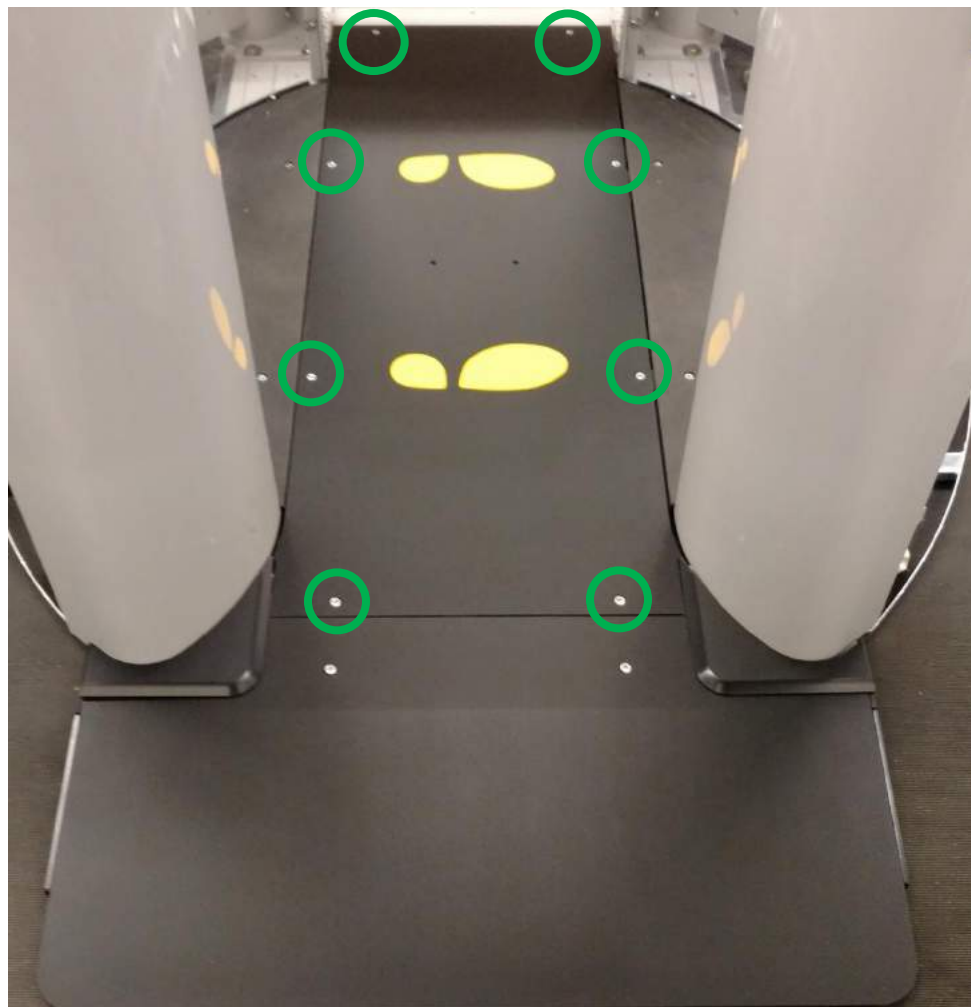


Figure 91: Floor Center Panel

11.49 Floor Side Panels and Center Panel

1. Install one of the two floor side panels (3810-10080-00) on either side of the floor by fitting it over the two guide pins as shown circled in red in the following figure.
2. Fasten the panel in place with four M8 x 25mm SHC screws (0201-10018-25) in the holes shown circled in green in the following figure.

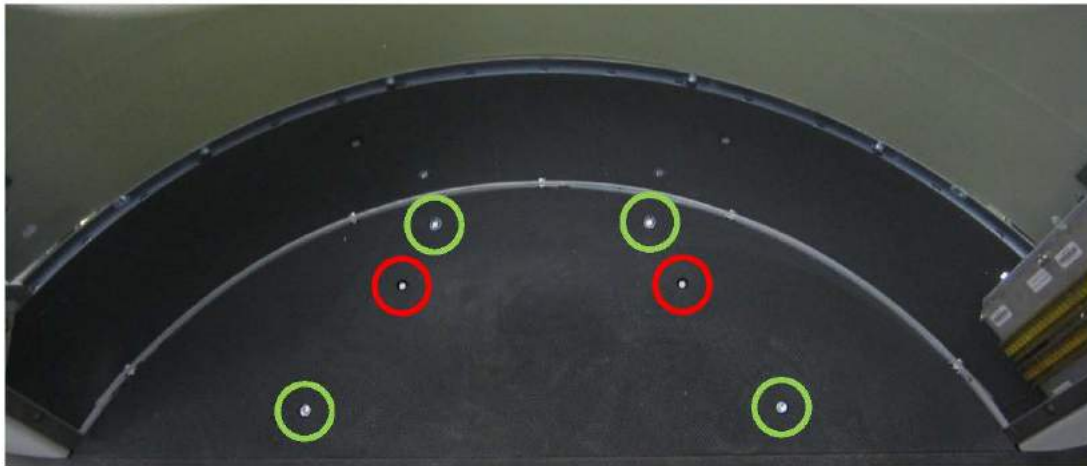


Figure 92: Floor Side Panel

3. Repeat steps 1 and 2 for the other floor side panel.

11.50 Final Cover Fitting/Alignment

1. Adjust the top side covers and top entrance/exit covers as necessary to eliminate any gaps and achieve best fit, as shown in the following figures.
2. When optimum fit is achieved, tighten the screws left loose in these covers and in the roof and ceiling.

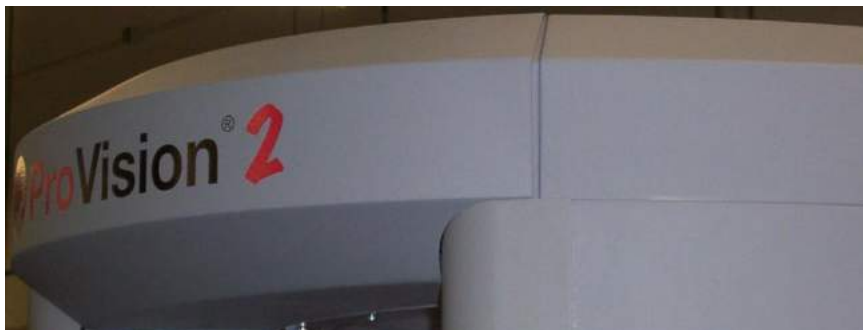


Figure 93: Cover Fitting to Eliminate Gaps

12.0 Scanner Power-Up

12.1 Pre-Power-Up Checks

- Remove the power cord from the power input receptacle, then turn the power switch to the on position by pressing the portion of the power switch labeled “I”, as shown in the following figure.
- Using a digital multimeter in ohm mode, check the resistance from each point listed in the following table and indicated in the following figure.

Table 4: Resistance Measurement Points

Point A	Point B	Meter Reading
1	2	Greater than 1M ohm
2	3	Greater than 500K ohm
1	3	Greater than 1M ohm

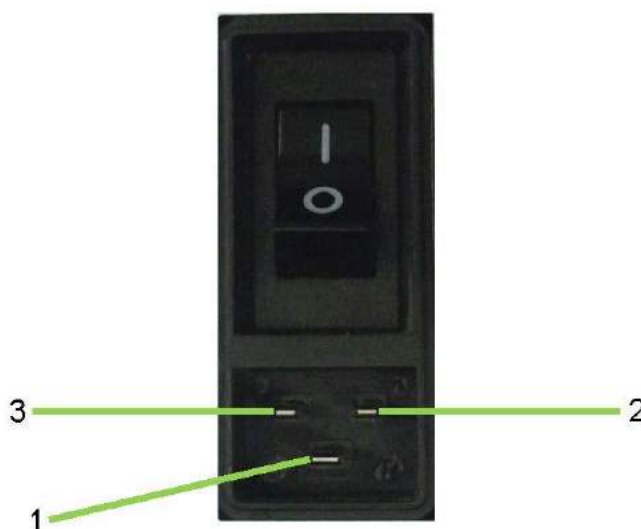


Figure 94: Power Input Receptacle

- Turn the power switch to the off position by pressing the portion of the power switch labeled “O”, and then reattach the power cord to the power input receptacle.

12.2 Power Cable Routing

1. After performing the pre-power-up checks, plug the power cord into the power input receptacle on the scanner.
2. If the power input receptacle is located at the lower position, route the cord downward along the edge of the entrance/exit cover.
3. Lift the cable clips referenced in Section 11.34 and slide the cord under each clip and into the rubberized portion of the clip.
4. Ensure the power cord has as small a loop or bend as possible but not to the point where there is stress on the plug/power input receptacle.
5. If the power input receptacle is located at the upper position, route the cord upward along the edge of the entrance/exit cover, as shown in the following figure.
6. Lift the cable clips referenced in Section 11.34 and slide the cord under each clip and into the rubberized portion of the clip.
7. Ensure the power cord has as small a loop or bend as possible, but not to the point where there is stress on the plug/power input receptacle.
8. Continue routing the cable up to the top of the scanner and secure to the closest screw on the top with a plastic P-clip.

12.3 Scanner Power-Up and Warm-Up

1. Plug the power cord into a wall outlet or other specified power source, then press the portion of the power switch labeled “I” to turn on the scanner. Once the switch is turned on, the ASCU fans emit an audible noise for a few moments and then quiet down.
2. Verify the lights inside the scanner turn on.
3. Make a note of the time. You need to let the scanner warm up for at least 30 minutes before performing the scanner calibrations described later in Section 12.6.

This warm-up period is necessary to allow all electronics to reach operating temperatures before the scanner calibrations are performed. Proceed to the next section to set the date and time.

12.4 Date/Time Setting

1. Open a remote desktop connection and perform the following or connect a keyboard and mouse to the ASCU
 - a. Double-click the **SCU** icon located on the Desktop of the Field Service Laptop.
 - b. Follow on screen prompts to connect to the ASCU desktop
 - c. At the Remote Desktop Connection window, click **Yes**.
2. Click on the time or date in the lower right corner of the Windows task bar.
3. Click change Date and Time settings.
4. At Date and Time click change Time Zone
5. Select the correct Time Zone from the pull down menu, the time zone should be set to the time zone of the location where the system is installed.
6. Click **OK**.
7. Click Change Date and Time...
8. Change the Date and/or the time as needed to match the local date and time.
9. Click **OK**.
10. Click **OK** on the Date and Time window.

12.5 Scanner Calibration

12.5.1 Scanner Calibration E4.10.XX and SS5.1.XX

1. Connect the Ethernet cable behind the OCP to a field service laptop and turn the field service laptop on.
2. Wait at least five minutes.
3. Log in to the field service laptop as sv_admin.
4. Double-click the **Field Service Tool** icon on the desktop to launch the Field Service Tool program, which is shown in the following figure.

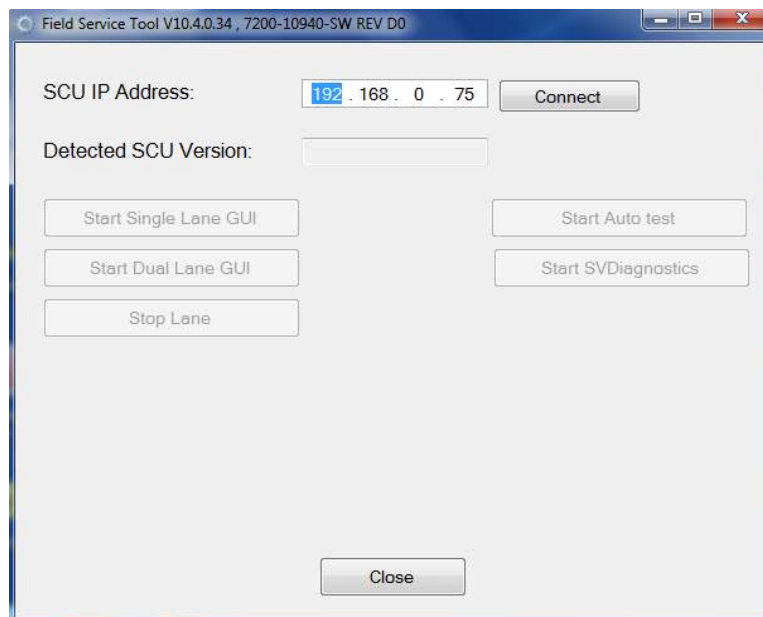


Figure 95: Field Service Tool Connect Page

- Click the **Connect** button at upper right to activate the testing and diagnostics features.

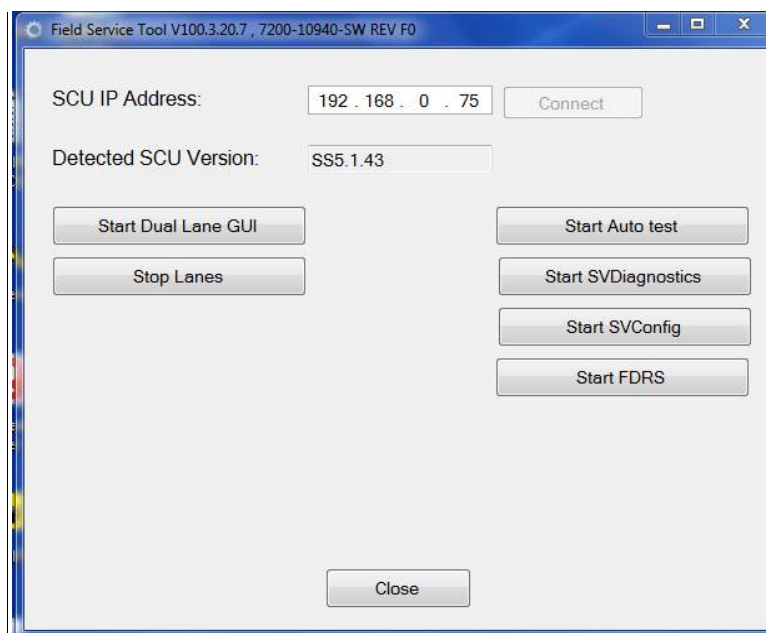


Figure 96: Field Service Tool Testing, Diagnostics

- Click **Start SVDiagnostics** on the right side of the Field Service Tool window.
- Click on **Calibration** to open the Calibration window.

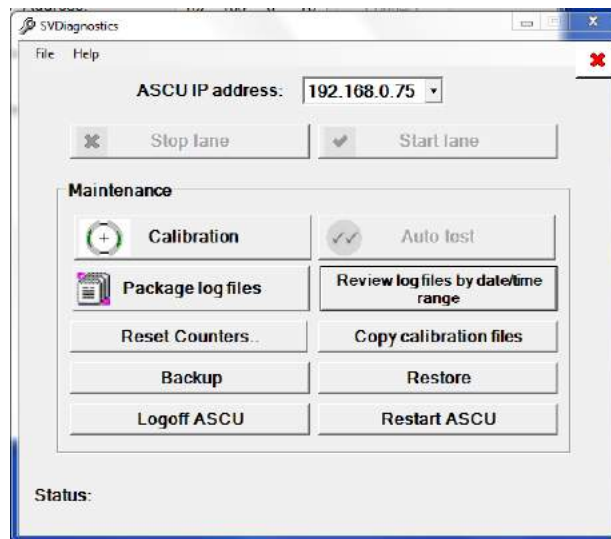


Figure 97: SVDiagnostics

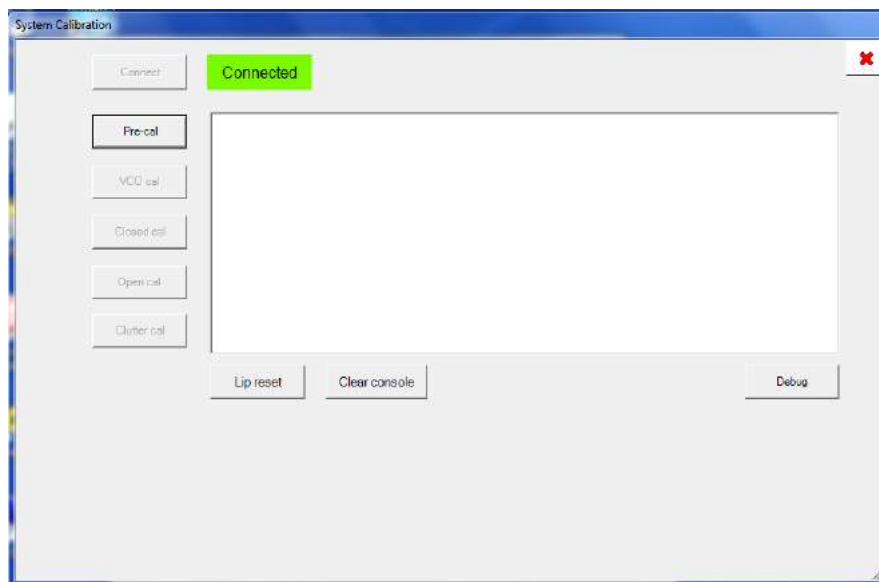


Figure 98: Calibration Window

8. Click on Pre-cal.
 - a. The system performs the motion cal (if this is after power-up) and VCO cal automatically.
 - b. If any faults occur click on LIP reset then click Pre-cal again.
9. Once complete, a green check appears beside both Pre-cal and VCO cal.

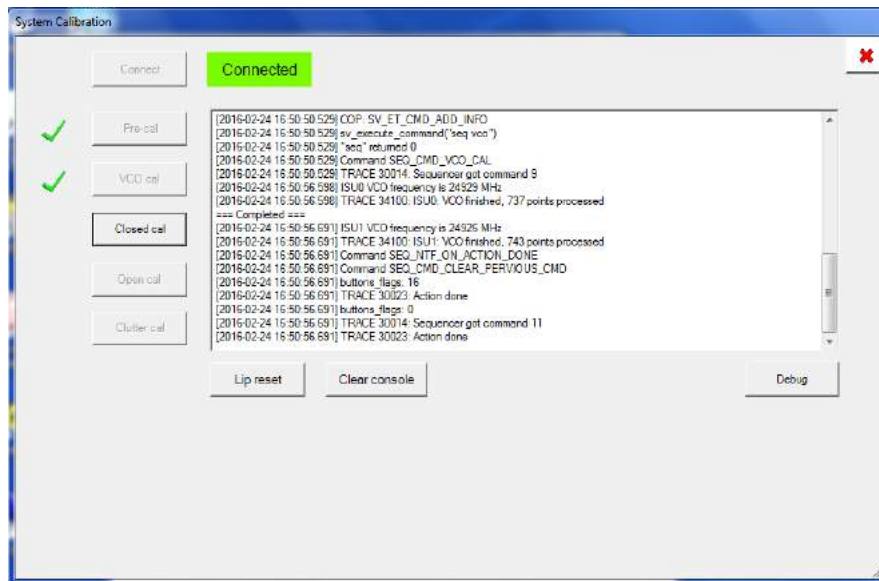


Figure 99: Pre-cal and VCO Cal

10. Position the calibration beam in the center of the scanner.
11. Click on Close Cal. Then click on OK at **Verify the cal target is in place**. Wait for completion (green check by Closed cal).
12. Remove the calibration beam from the scanner.
13. Click on Open Cal. Then click on OK at **Verify the scanner is empty**. Wait for completion (green check by Open cal).
14. Click **Clutter cal**.
15. Once the clutter cal completes a second window will open asking for review of the test results. Review the results for any failure. Both ISU0 and ISU1 needs reviewed before the system will allow the baseline to be saved.



Figure 100: Pre-cal and VCO Cal

16. After review the test results click save baseline, this is only allowable after the test results have been reviewed and are passing.
17. Click the **Close Window icon** (white X with a red background) at upper right to close SVDiagnostics.

12.5.2 Auto Test Verification with Field Service Laptop

1. Press Ctrl+Alt+Shift+X to close the lane application and return to the Field Service Tool window.
2. In the Field Service Tool window, click **Start Auto test**.
3. On the left side of the Auto test window, click **Software tests** and verify that all software tests pass. Correct any failures as needed.
4. On the left side of the Auto test window, click **Hardware tests** and verify that all hardware tests pass. Correct any failures as needed.
5. Test the system in accordance with customer requirements to verify detection results.

13.0 Acronyms and Abbreviations

ASCU	Advanced System Control Unit
BHS	Button Head Socket
cm	Centimeter(s)
ESD	Electrostatic Discharge
EULA	End User License Agreement
FBHS	Flange Button Head Socket
FDRS	Field Data Reporting System
FHC	Flange Hex Cap
HC	Hex Cap
Hz	Hertz
IQT	Image Quality Test
ISU	Image Sampling Unit
K	Thousand
M	Million
mm	Millimeter(s)
MS	Microsoft Licensing, Inc.
Nm	Newton-meter(s)
OCP	Operator Control Panel
OSD	On-Screen Display
PFH	Phillips Flat Head
PPH	Phillips Pan Head
PTH	Phillips Truss Head
SFC	Socket Flat Head
SHC	Socket Head Cap
USB	Universal Serial Bus
V _{AC}	Voltage – Alternating Current
VGA	Video Graphics Array

14.0 Appendix A: ProVision 3 Control Kit Install Procedure

15.0 Purpose

This instruction explains how to install the Provision 3 Vibration Control Kit (1600-21348-00).

16.0 Scope

The Provision 3 Vibration Control Kit (1600-21348-00) is installed on units in the field that are experiencing mast vibration/excitation due to dynamic, harmonic, periodic, transient or impulse loading caused by machinery operating, moving, rotating or most likely human movement such as walking, running or jumping.

This loading is seen in older facilities that have beam spans and floor girder construction that allow free mode shape.

17.0 Applicable Documents

- ProVision Lock out/Tag out Operating Procedure – 8301-10708-00
- ProVision 2 Installation Manual – 8100-20556-00

18.0 Definitions

- Radome – Curved inner clear plastic panel
- End-cap – Sheet metal panel the holds the radome in place.

19.0 Requirements

Provision 3 Vibration Control Kit (1600-21348-00) includes the following components:

Part Number	Description	Qty
3000-22208-00	FOAM, MAST, ANTI-VIB, BLUE, PV2	5 (4 + 1 extra)
0540-22609-00	TAPE, 3M 4930, 1"W, 1.5YD RL	As required

19.1 Tools and Equipment

Tools required for dismantling Provision 3 to access or remove the inner radome/endcaps.

- Scissors or razor knife
- Tape measure
- Fine tip marker
- Alcohol
- Template to locate foam (3000-22607-00)

20.0 Responsibilities

This procedure is to be performed by a Leidos field service representative.

21.0 Installation Overview

This appendix explains how to install the Provision 3 Vibration Control Kit on a Provision AIT-2. This instruction assumes that the scanner is powered off and the Lock Out-Tag Out procedures have been followed.

21.1 Installation Sequence

Installing the Provision 3 Vibration Control Kit requires the masts to be in the 'calibration position'. The Leidos technician should place the masts in that configuration prior to power down.

1. Remove the required components to access the inner end cap panels.
2. There are two methods for determining how to locate the foam block on the endcaps.

21.2 Method 1

1. In the vibration kit (1600-21348-00), locate the white mylar template (3000-22607-00).
2. Clean the area that the foam block adheres to with alcohol.
3. Position the template (as shown in the following figureFigure 101) and mark the position for the foam.
4. Repeat this process for the four endcaps.

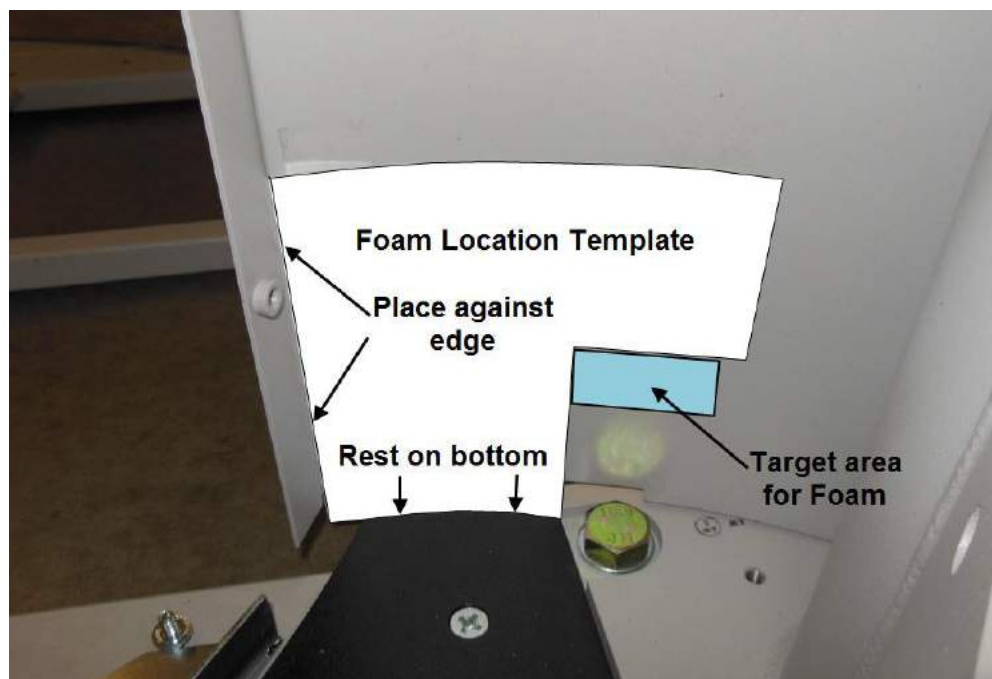


Figure 101: Using Template to the Locate Foam Block

21.3 Method 2

1. Clean the area where each foam block is to be attached with alcohol.
2. On each of the end caps measure and mark 3.25 inches up from the bottom of the scanner and 3.75 inches from the tangent of the last bend.
3. Clean an area approximately 4" up and 2" across from the corner of the mark (as shown in the following figure).
4. Repeat this process for the four endcaps.

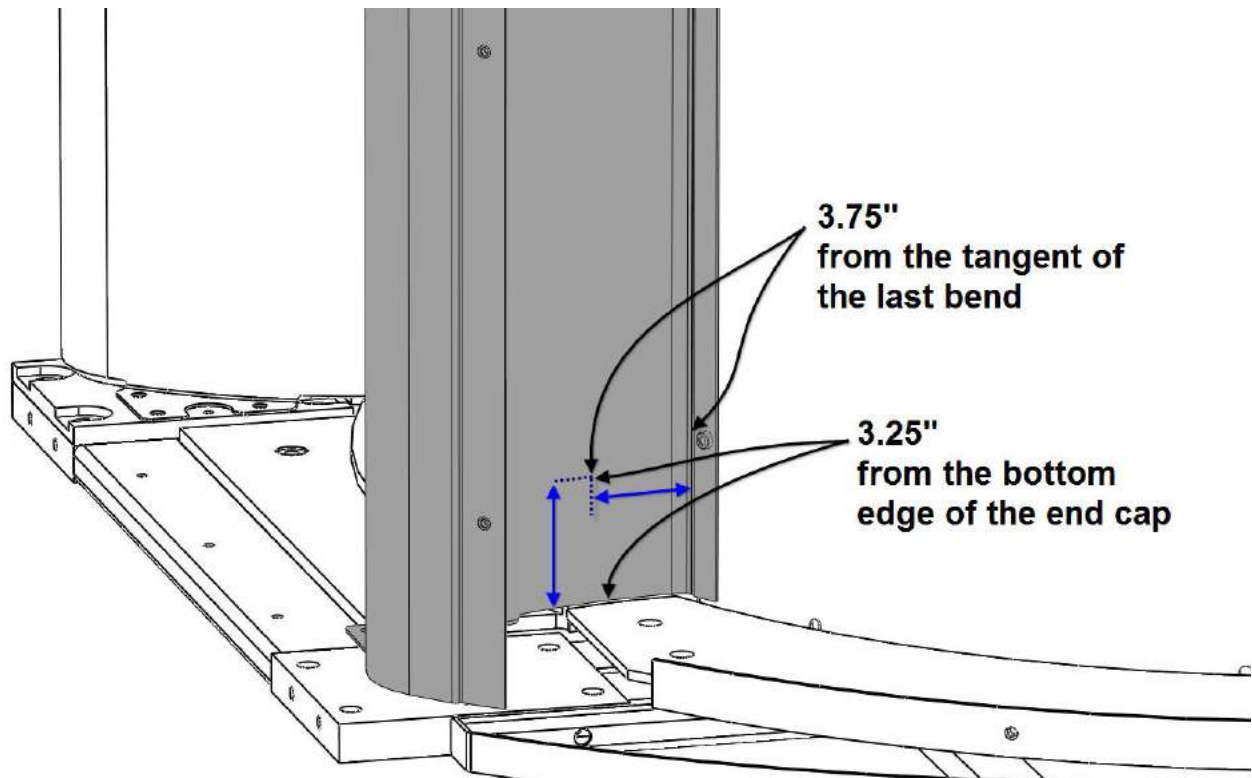


Figure 102: End Cap Measurements

5. Prepare the foam blocks by applying tape to the backside of the foam block.
6. Cut 4 pieces of double sided tape 2 inches long.
7. Pull the backing paper off of the double sided tape.
8. Place one piece of double sided tape on each side of the back of the foam block.
9. Center the tape longitudinally to the foam block face (as shown in the following figure).



Figure 103: Foam Block

10. Pull the backing off of the double sided foam tape on the back of the foam block.
11. Place the foam block with the double sided tape so that the foam block edges aligns with the mark put previously on the endcap face (see the following figures).
12. Place the barcode label for P/N 3000-22208-00 above the block on the endcap as shown in Figure 105.

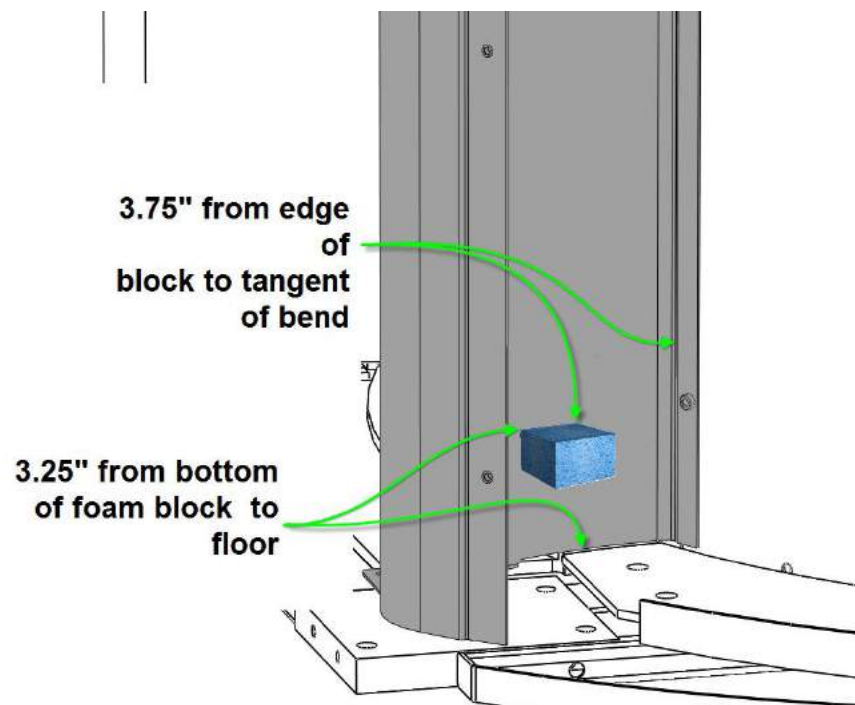
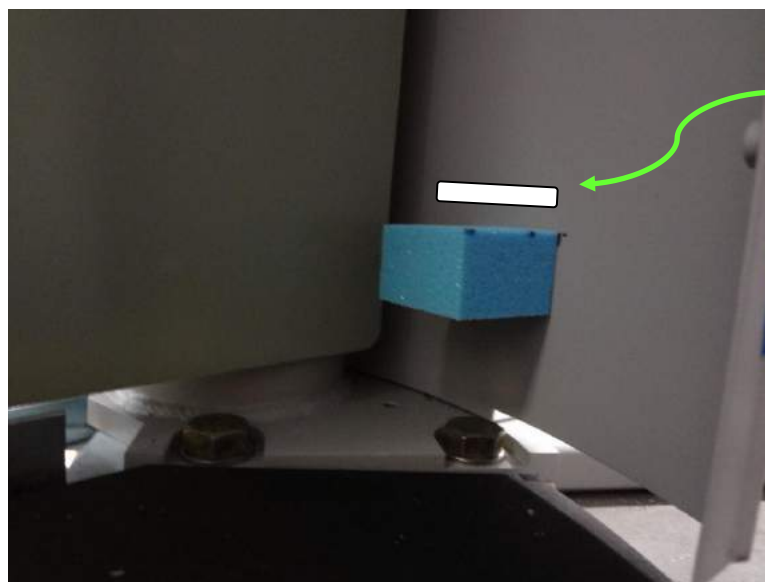


Figure 104: Foam Block Placement



**Add foam block
P/N label**

Figure 105: Barcode Label Above Block

13. Check if the foam blocks are properly installed when the mast comes to its end of travel or is at start of travel, the foam blocks should be softly touching the front corner edge of the mast. See top down view in Figure 106.

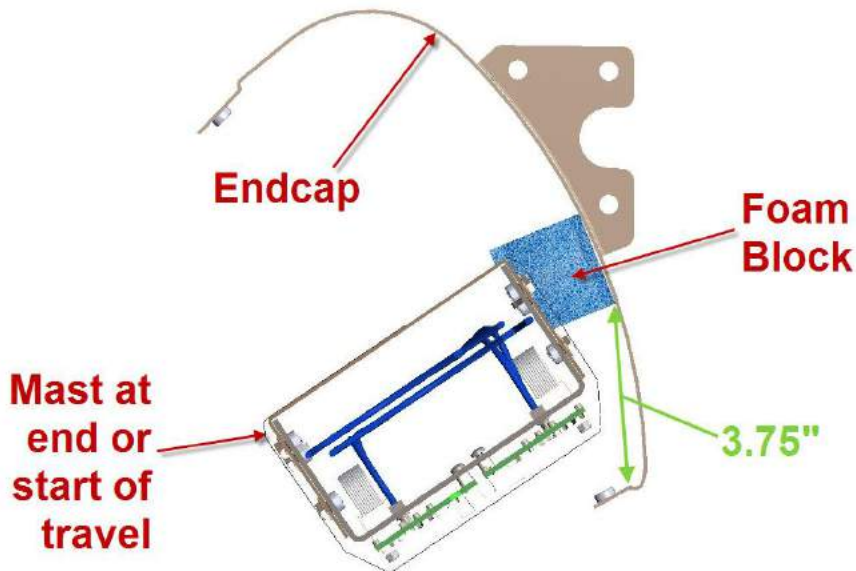


Figure 106: Top Down View

14. If the foam blocks are touching correctly, replace the components removed to access the inner endcaps.
15. Verify AIT-2 is working properly.

22.0 Appendix B: End Cap Notch Delete Plate Installation Procedure

23.0 Purpose

This appendix explains the process to install the end cap notch delete panels (3000-25159-00 or 3000-24159-001) on to the Provision 3 system.

24.0 Scope

The ProVision 3 end cap panels have a notch to allow the OCP to be mounted on any leg. When the OCP is not mounted on that leg, the end cap delete panel should be employed.

25.0 Applicable Documents

8100-24685-00 - Installation Manual

26.0 Definitions

OCP = Operator Control Panel

27.0 Requirements

- 1600-25160-00 KIT, PLATE, NOTCH DELETE, END CAP, GRY, PV2 or
- 1600-25160-001 KIT, PLATE, NOTCH DELETE, END CAP, WHT, PV2

28.0 Responsibilities

This procedure is used by Leidos field service technicians.

29.0 Preparing System

To prepare the system:

1. Remove all fiberglass panels necessary to access the notches on the end caps with no OCP mount.



Figure 107: Fiberglass Panel Removal

2. Start at the end cap directly across the exit from the OCP.
3. Clean an area on the inside of the end cap with alcohol at the notch as shown in Figure 108.

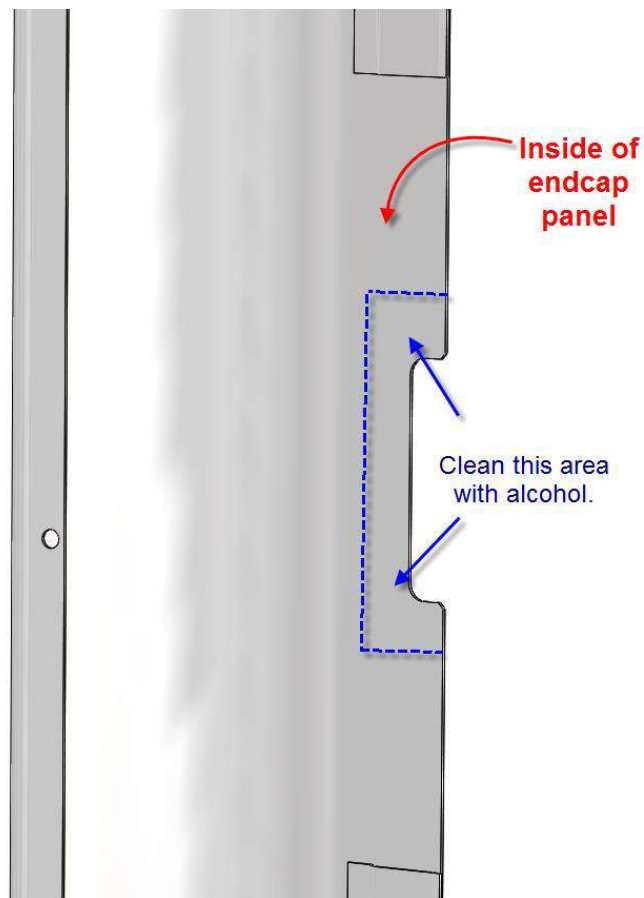


Figure 108: Clean Area with Wipe

4. Determine which way the end cap delete plate [3000-25159-00] will be applied to the end cap.
5. If the back plate (3000-25159-01) has the double sided tape applied, skip to step 7.
6. Clean the backing plate [3000-25159-01] and the end cap notch delete plate (3000-25159-00) with alcohol.

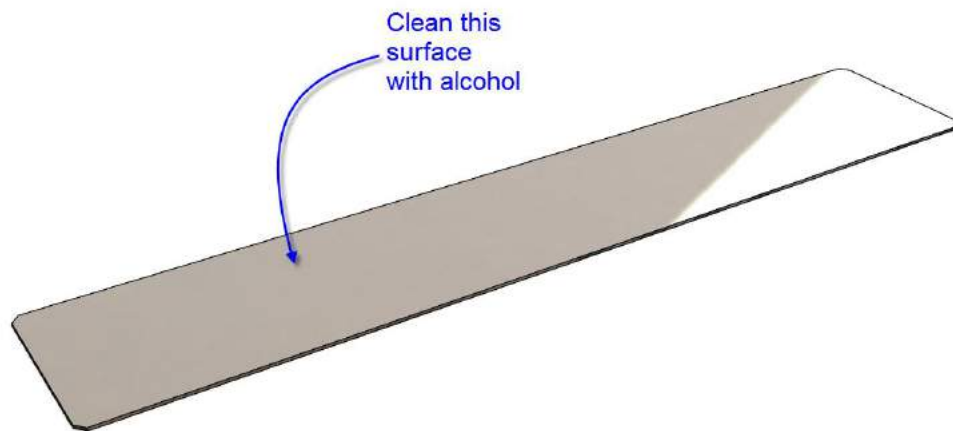


Figure 109: Clean Surface

7. Apply a strip of tape along the full length of the backing plate.

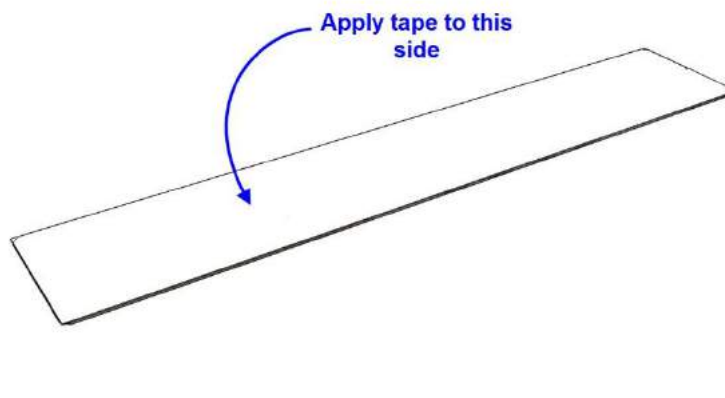


Figure 110: Apply Tape Strip

8. Peel the paper off of the tape.

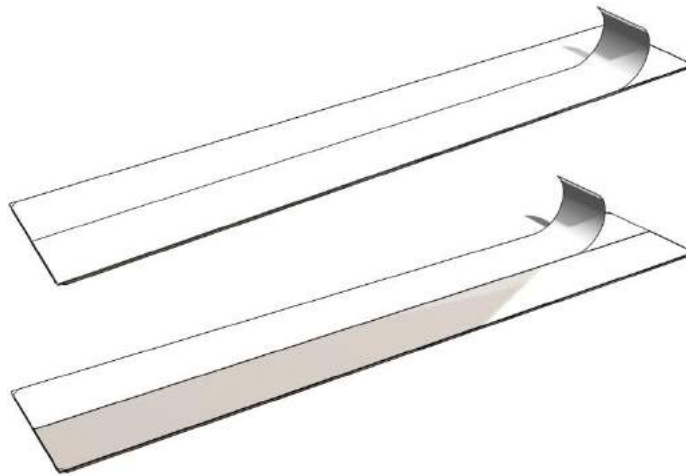


Figure 111: Peel Paper Off

9. Line up the front edge of end cap notch delete plate with one edge of the backing plate and center. You can lay both edges on a flat surface for easier alignment.

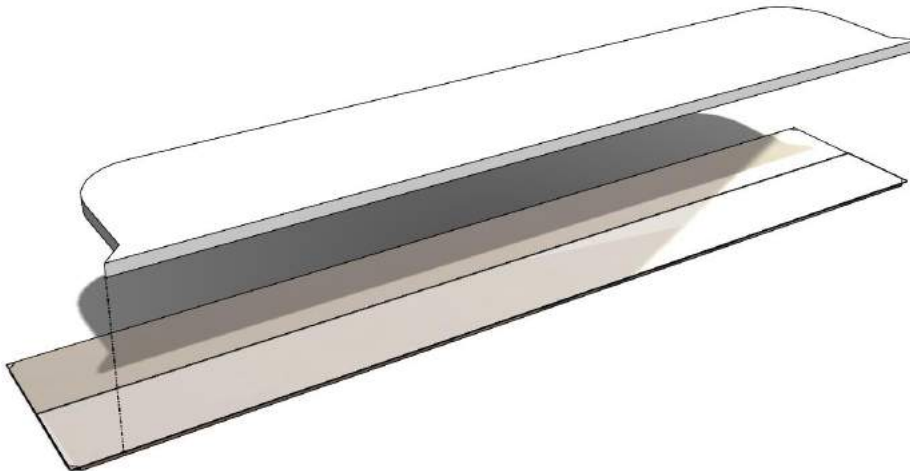


Figure 112: Line Up Plate

10. Press the end cap notch delete plate down on the backing plate.

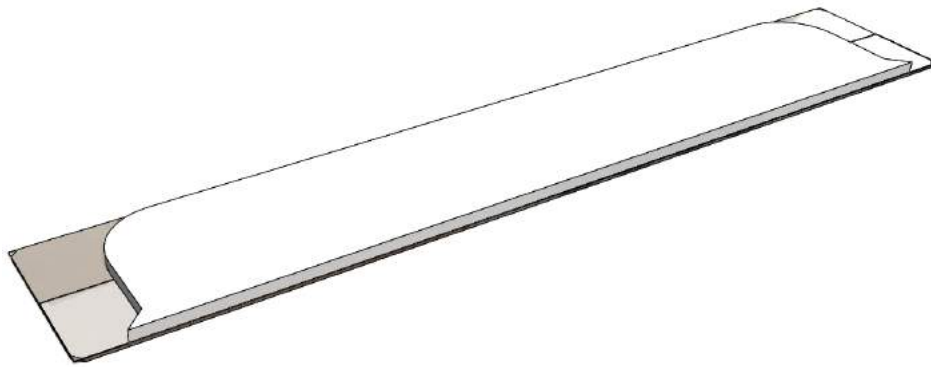


Figure 113: Plate Alignment

11. Ensure the front edge of the end cap delete plate lines up with the edge of the end cap. Attach to the end cap and press together to adhere the tape.

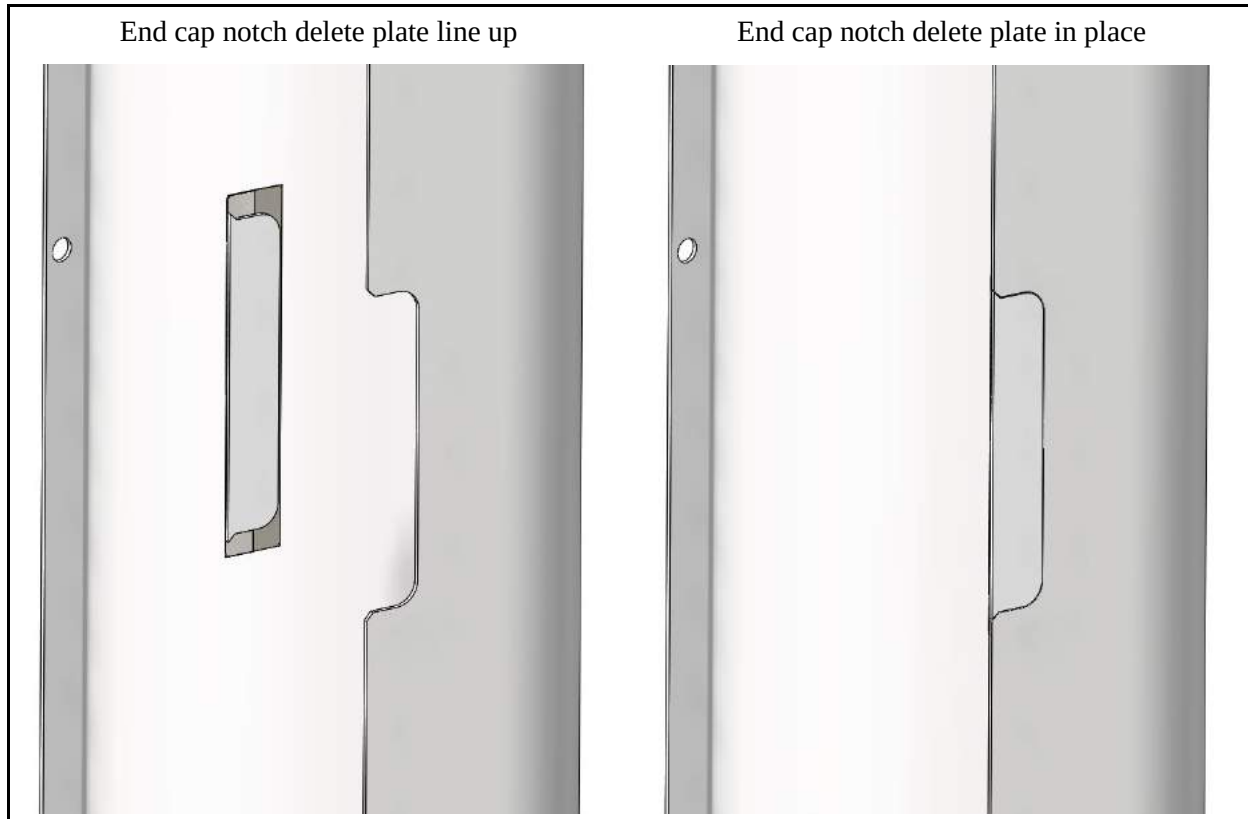


Figure 114: End Cap Alignment

12. Repeat the above steps for the other two endcaps.
13. Reassemble scanner.

30.0 Appendix C: Label Kit

31.0 Purpose

The purpose of this appendix is to provide instructions to field personnel for placing labels on the power entry panel after customer has defined whether power entry is to be from the bottom or top of the system. Also explained is the labeling procedure when the customer decides to change the power entry scheme of an installed system.

32.0 Scope

This procedure applies only to Provision 3 systems and to be used by customer service technicians or in some cases factory assemblers.

33.0 Requirements

- Customer has defined whether power is to enter at the top or bottom of the system.
- Power entry panel has been installed.
- System in place and leveled.

33.1 Tools and/or Equipment

- Mini Level or any small level such as a torpedo level.
- 1600-23775-00 KIT, LBL, PWR ENTRY PNL, ROW, PV2 or
- 1600-25550-00 KIT, LABEL, PV2, TSA

Leidos P/N	Description	Qty.	Remarks
6000-21170-00	LBL, SYSTEM ID, PV2	1	Printed with the system model number. and S/N.
510-26395	LBL, WARNING HIGH LEAKAGE CURR	1	
6000-21172-00	LBL, PROV. SYS P/N-Rev	1	Printed with the system. P/N and revision.
510-26423	LBL, FCC CERT	1	
510-26433	LBL, PATENT No. SPEC	1	
6000-22199-00	LBL, 2" X 1", PART NUMBER ONLY	1 ROW 0 TSA	
6000-21320-00	LBL, MOTOR END COVER ONLY	1	
510-21471	LABEL WARNING-MOVING PARTS	1	

34.0 Responsibilities

Anyone that needs to apply the system labels on the power entry panel.

35.0 Procedure

1. Determine whether the power entry panel is to be installed on the top or bottom of the system.
2. Install the power entry panel. System leveling should be completed.
3. Ensure all of the labels are applied to the panel straight and neat.
4. Use a small level, if necessary, to place the labels straight.
5. Place all labels in the order shown in the following figures.

One label might not be in the kit, depending on the system being installed. If the label is not in this kit, it does not need to be installed. That is label style 6000-22199-00 and has a P/N printed on the label with a barcode. The P/N and barcode starts with 1600-XXXXX-00. This label is located at the bottom of the bottom power entry panel and at the top of the top power entry panel.

6. Ensure you plan ahead the spacing of the labels so that they all fit and have even spacing between them. Usually labels cannot be removed because they can remove the paint.
7. Observe the label keep out areas as shown in the following figures.

Part numbers printed on some the labels can be different than shown depending on the system being installed.

Note: Care should be taken when placing labels onto the painted panel. If a label is applied incorrectly and needs to be removed, it might also remove the paint on the panel.

8. Once spacing is determined, start from the power input receptacle and work outward to the top or bottom. Use of a small level can be used to aid in getting the label straight.

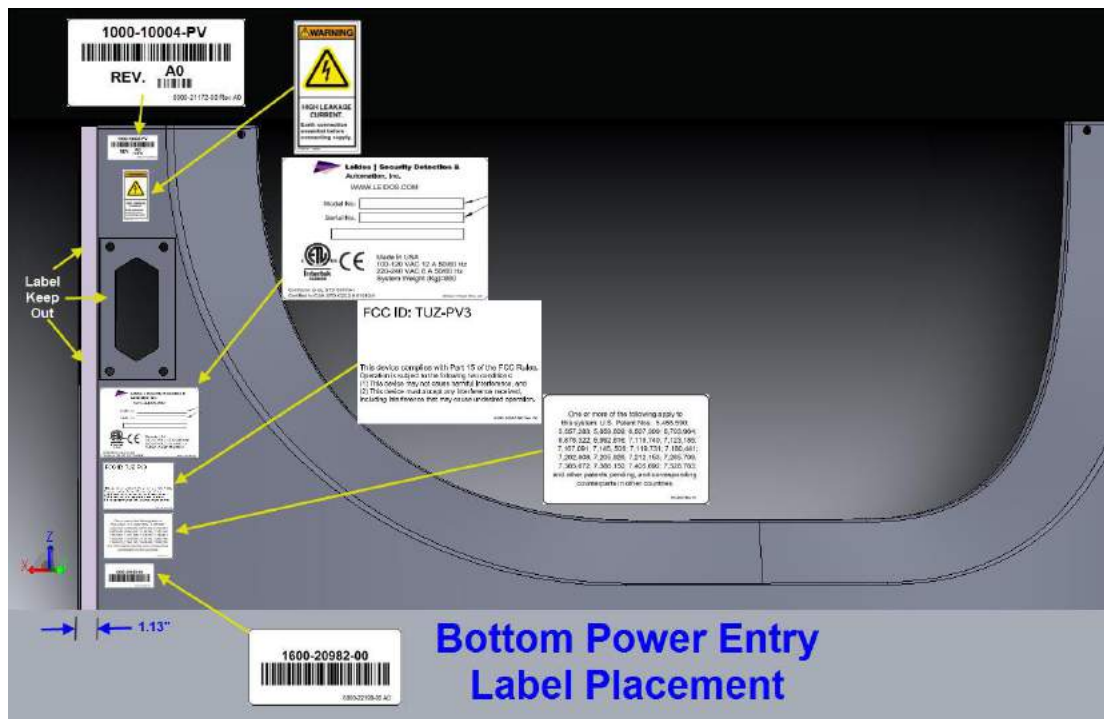


Figure 115: Labeling for Bottom Power Entry

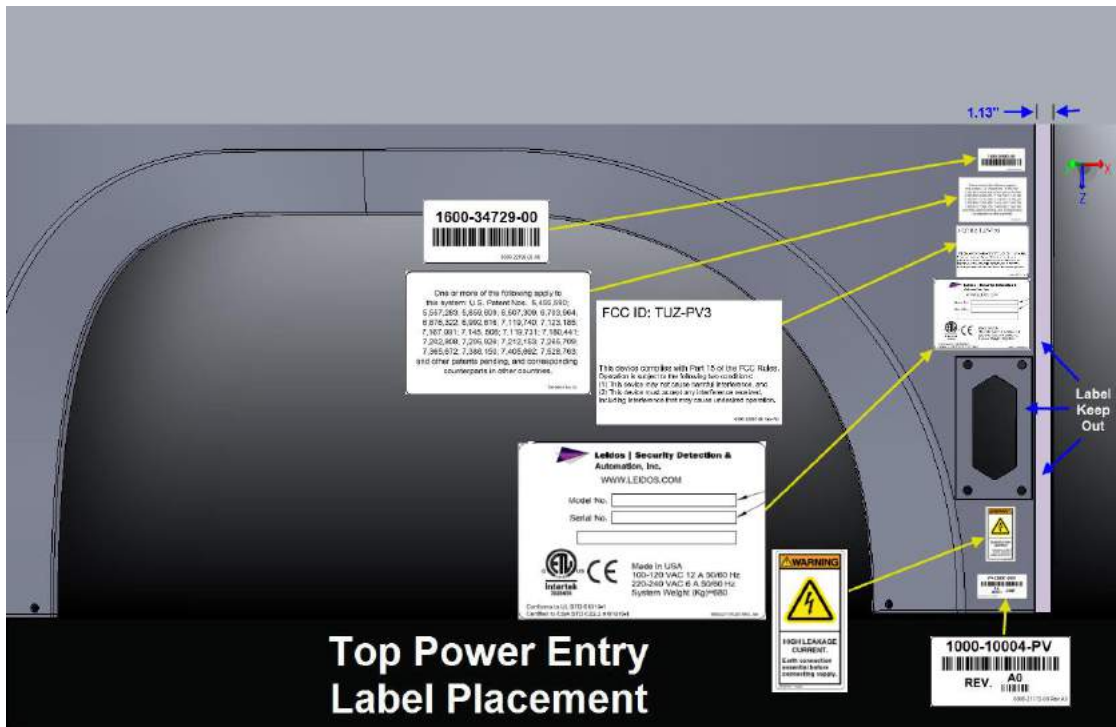


Figure 116: Labeling for Top Power Entry

9. Ensure the labels are pressed onto the panel with no bubbles or edges sticking up.
10. Add labels 6000-21320-00 and 510-21471 to the one entrance/exit panel that covers the motor end of the upper frame. See Figure 117.

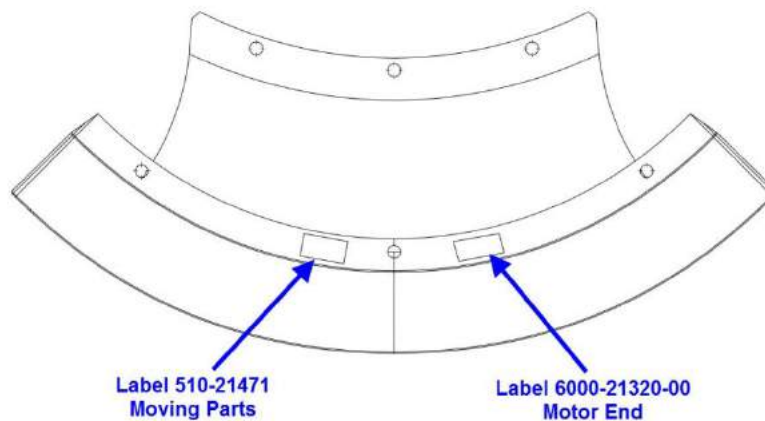


Figure 117: Label position for Entrance/Exit Panel on Motor End

36.0 Appendix C: OCP and Belt Barrier

37.0 Purpose

This procedure is to be followed when installing an OCP mounting kit and/or belt barrier on a ProVision 3 or SafeView system.

38.0 Scope

Both manufacturing and field service can use this document to install the options as required.

39.0 Applicable Documents

Refer to assembly manual supplied with monitor support post.

40.0 Definitions

OCP -	Operator Control Panel
PPH -	Phillips PanHhead
FSHC -	Flanged Socket Head Cap
ROW -	Rest of World
TSA -	Transportation Safety Administration

41.0 Requirements

CAUTION

Always disconnect power from the system prior to removing panels or any disassembly. Use the Lock Out/Tag Out procedures (8400-10708-WI) when performing this instruction.

42.0 Installation of Barrier Belt Option



Figure 118: Barrier Belt

The barrier belt has two parts; belt canister and belt receiver. These are installed on either side of the entrance.

1. Attach the receiver end bracket supplied with the barrier belt (0125-20359-00) to the wall mount angle bracket (3000-20412-00 or 3000-23604-00) using two M3-0.5x4mm PPH screws (0201-20380-04). Refer to Figure 119.

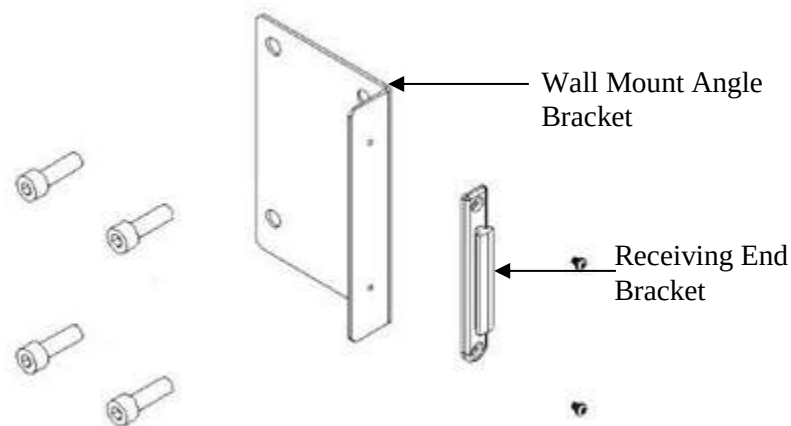


Figure 119: Receiver End

2. Attach the wall mount-angle bracket to system entrance left side mounting holes on LCD mounting bracket (3000-23601-00X) using four each, M8x30mm FSHC screws (0201-22862-30).
3. Loosely install four .58" spacers (3000-22751-00) to entrance right-side LCD mounting bracket using four each, M8x30mm FSHC screws (0201-22862-30), with 1/4" of threads exposed.
4. Place the barrier belt bracket 3000-20411-01 over exposed threads and slide down to lock heads into bracket keyholes. See Figure 120. Tighten bolts. Earlier version of bracket does not have keyholes. Assemble as required.



Figure 120: Belt End

5. Secure Barrier Belt (0125-20359-00) to studs on barrier belt bracket with M4 nuts (0216-10084-00).

42.1 Installation of Monitor Pole Mount Option

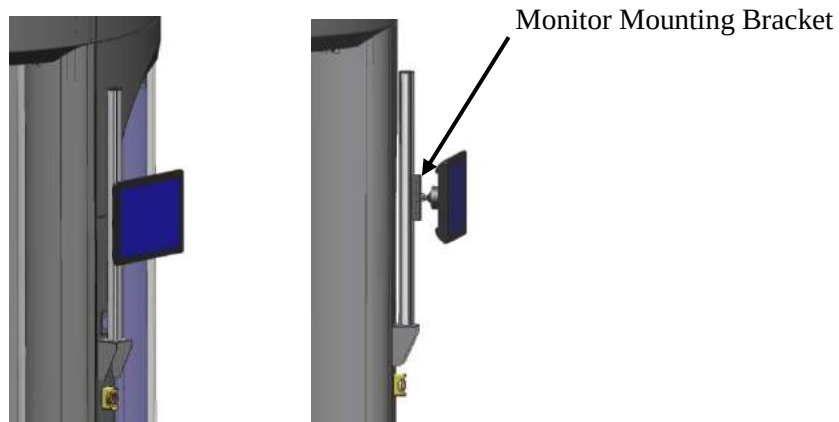


Figure 121: Monitor Attached With Support Post

1. The monitor mount assembly is supplied with the monitor pole (0120-20358-00).
2. Separate the monitor mounting bracket from the monitor mount by moving the release lever and lifting as shown in Figure 122.



Figure 122: Monitor Mount Disassembly

3. Insert two provided thumb screws and snap into place as shown in Figure 123. These are for locking monitor height.



4.

Figure 123: Install Thumb Screws

5. Attach Monitor Mount to pole by sliding into one of four channels in the Monitor Pole. Ensure manufacturer's logo is readable and not upside-down. Refer to Figure 124.

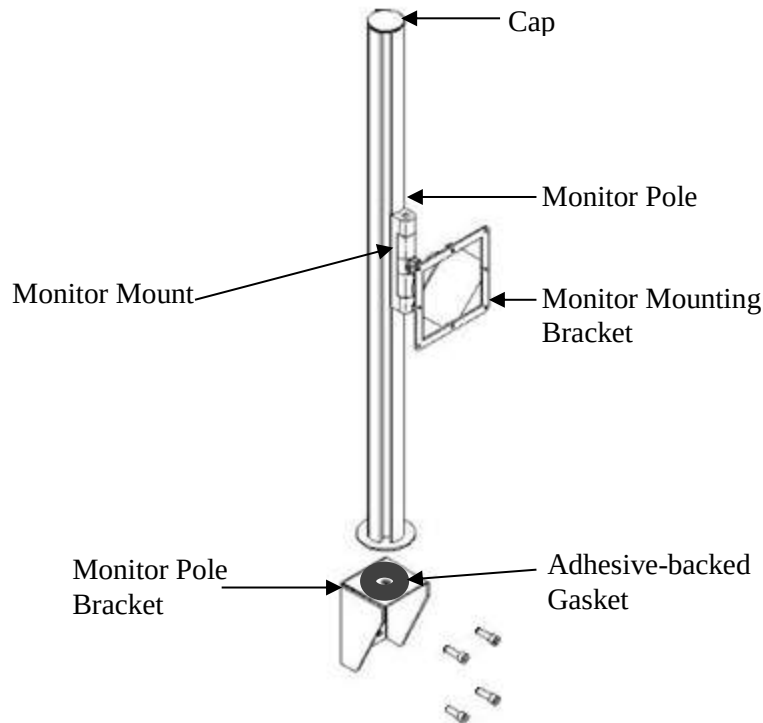


Figure 124. Monitor Support Post Assembly

- 6.
7. The install cap is included with pole to open end of monitor pole.
8. With mid-panel installed with grommet cover plate (3000-23666-00) and 1-1/4" ID rubber grommet (0235-20349-00) installed in upper hole, pull monitor power, video, and USB cables through.
9. Secure the monitor pole bracket (3000-23602-00X) to mounting holes in the LCD mounting bracket (3000-23601-00X) on the left exit end of the scanner using four M8x30mm FSHC screws (0201-22862-30).
10. Install pole manufacturer-supplied gasket: remove backing paper to expose adhesive and adhere to mounting bracket top-side as shown in Figure 124.
11. Attach the monitor pole to the monitor pole bracket using the bolt and washer included with the pole by the manufacturer. Insert the bolt with washer through the hole in the monitor pole bracket from underneath and into the monitor pole. Tighten the bolt, but do not over-tighten.
- 12.
- 13.
14. Do not use screws included with bracket or monitor damage can occur:

15. If installing OCP (1000-24266-00 ROW) or (1000-24641-00 TSA)

16. Attach OCP (1000-24266-00 ROW) or (1000-24641-00 TSA) to monitor mounting bracket removed in step 1 using four M4-.7X8MM PPH screws (0201-10001-08). Install with the bracket release lever toward the monitor top.

17. If installing OCP (1000-30159-00 ROW) or (1000-27624-00 TSA)

18. Lay the monitor face down on a protected surface. Place the four spacers (0235-27550-00) over each of the holes in the recessed cavity on the back of the monitor. Carefully place the monitor mounting bracket, removed in step 1, on top of the four spacers, aligning the holes. The monitor mounting bracket locking lever should be towards the top of the monitor. Drop the 4 screws (0201-10001-14) in each hole of the bracket. Carefully tighten each screw without over tightening.

19. Remove the monitor cable cover by removing the securing screws.

20. Place monitor on pole by lowering monitor mounting bracket into monitor mount attached to pole. It snaps into position when properly installed.

21. Connect the monitor power, video, and USB cables to the monitor. Replace the cover.

22. Place the cables in gray sleeving and wire-tie as needed.

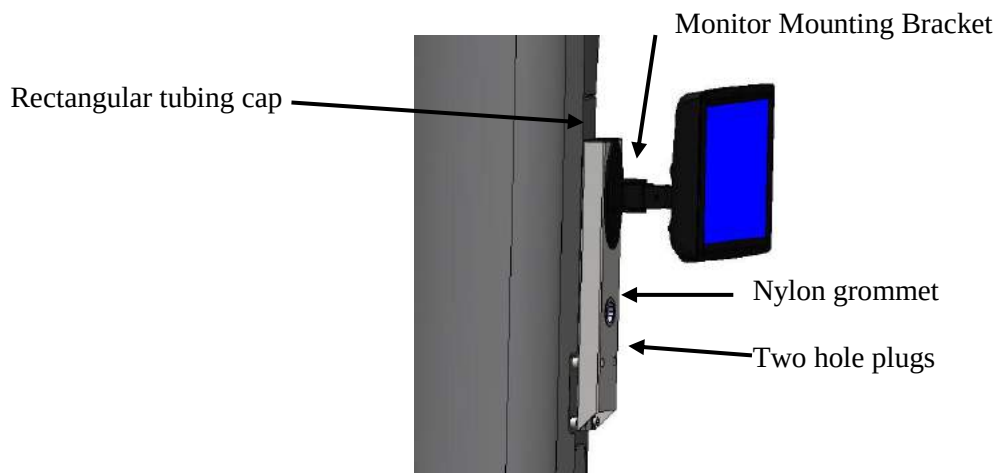
42.2 Installation of Monitor Fixed Mount Option

Figure 125: Monitor Attached With Fixed Riser

1. Insert rectangular tubing cap (0295-23713-00) in top of riser.
2. Install 1-3/8" nylon grommet in riser cable round through-hole.

23.

**Figure 126: Screws and Spacers Installed**

3. Feed monitor power, video, and USB cables through mid-panel. Secure the panel.
4. Slip four .88" spacers (3000-22752-14) onto four M8x30mm FSHC screws, (0201-22862-30) and thread loosely into OCP mounting bracket (3000-23601-00X) where monitor is to be located. See Figure 126.
5. Extend monitor video, USB, and power cables from system through riser from behind for later connections. Ensure cables are enclosed in black sleeving (0580-10038-16) secured with black tie-wraps, 0380-10030-00.
6. Using the keyholes and slots, slide OCP Fixed Riser (3000-23700-00) onto the screws between the spacers and screw heads. Tighten four screws using 6mm Allen driver.
7. Press two plastic plugs (2000-27380-00) in screw access holes.

24.

**Figure 127: Riser Installed**

8. Place monitor face-down on flat protected surface.

25. If installing a OTEK Monitor (older)

26. Place the OCP monitor mount assembly (1000-27378-00) over the four holes on the back of the monitor and loosely install two M4 x 8mm PPH screws (0201-10001-08) in top two mounting holes. Carefully tighten the four screws without over tightening them.

27. If installing a GVision Monitor

28. Lay the monitor face down on a protected surface. Place the four spacers (0235-27550-00) over each of the holes in the recessed cavity on the back of the monitor. Carefully place the monitor mounting bracket (1000-27378-00), on top of the four spacers, aligning the holes. Drop the four screws (0201-10001-14) in each hole of the bracket. Carefully tighten each screw without over tightening.

9. Remove monitor cable cover by removing securing screws. Retain screws.
10. Secure monitor mount assembly (1000-27378-00) to riser with slotted holes upward (manufacturer logo readable) using two M8x16mm PFH screws (0201-20413-16).
11. Place monitor on monitor mount with the two loosely install screws in slots to support. Install two more screws in lower mounting holes. Tighten all four screws. Do not over-tighten.
12. Connect monitor power, video, and USB cables to monitor. Replace cover using retained screws.
13. Dress the cables.

43.0 Appendix D: Installation Checklist

Section	Completed	Task
4.0	☐	Ensure there is enough space to unpack crates and install scanner, and there is clear access to the install site
4.2	☐	Open and unpack scanner crate
4.3	☐	Open and unpack installation kit crate
5.0	☐	Assemble Genie Lifts
5.0	☐	Inspect Genie Lifts prior to use (Ref: Appendix E)
7.0	☐	Attach ramps to scanner crate
7.0	☐	Attach caster end plates to upper/lower frame assembly
7.0	☐	Attach casters to caster end plates
7.0	☐	Insert leverage bars and lift assembly onto casters
7.0	☐	Roll assembly down ramps and off scanner crate
8.0	☐	Move assembly to install location
8.0	☐	Orient assembly so it faces desired direction
8.0	☐	Pivot casters and lower assembly to floor
8.0	☐	Remove casters and caster end plates
9.1	☐	Remove outer shipping leg bolts
9.1	☐	Install lifting brackets
9.1	☐	Insert lifting bars
9.1	☐	Install columns and column head clamps
9.1	☐	Position Genie Lifts
9.1	☐	Connect cradle forks to lifting bars with quick-release pins
9.1	☐	Chock wheels of Genie Lifts
9.1	☐	Remove remaining shipping leg bolts
9.2	☐	Turn Genie Lift cranks to raise assembly past midway
9.2	☐	Install stop bolts at midway point (bolt heads inward)
9.2	☐	Raise assembly to top, 2" past bolt holes
9.2	☐	Move stop bolts from midway point to upper position
9.2	☐	Turn Genie Lift cranks to lower assembly 2"
9.2	☐	Install upper column bolts (bolt heads outward)
9.2	☐	Install lower column bolts (bolt heads inward)
9.2	☐	Torque 3 of 4 column base bolts, then column head clamp screws
9.2	☐	Torque upper and lower column bolts, then safety stop bolts
9.2	☐	Loosen shipping leg top bolts
9.2	☐	Install two cross braces between shipping legs
9.2	☐	Remove L bracket bolts, then shipping leg top bolts
9.3	☐	Lower and remove Genie Lifts, brackets and shipping legs
10.1	☐	Verify leveling feet are fully raised
10.2	☐	Set bolt-on side frames in place (remove feet if necessary)
10.2	☐	Secure bolt-on side frames (reattach feet if removed)
10.3	☐	Install Isolation Pads [OPTIONAL] if required.
10.4	☐	Lower feet to raise scanner off floor
10.5	☐	Install seismic brackets [optional] – refer to 8000-22056-IP
10.6	☐	Level scanner, ensure all feet are touching floor, and lock feet in place
2.2	☐	Use the lockout/tagout procedure to prevent injury
11.1	☐	Torque upper frame bolts
0	☐	Install bottom outer radome angle brackets

Section	Completed	Task
11.3	☐	Install floor cover trim
11.4	☐	Determine location for OCP and install OCP mounting bracket
11.4	☐	Install two additional OCP mounting brackets for barrier belt
11.5	☐	Install top outer radome angle brackets
11.9	☐	Install antenna masts
11.10	☐	Route antenna mast cables and connect to ISUs
11.11	☐	Clean cosmetic mast wrap with ESD wipes and install
11.12	☐	End cap top bracket
11.13	☐	Install entrance/exit covers
11.14	☐	Install vibration control pads
11.15	☐	Peel outer radome scratch guards and clean inner side with ESD wipes
11.16	☐	Install outer radomes and clean outer side with ESD wipes
11.17	☐	Install outer radome bracket supports
11.17	☐	Install middle cover brace bracket U-clips
11.18	☐	Install outer radome bracket retainers
11.19	☐	Tighten outer radome screws
11.20	☐	Verify antenna operation
11.21	☐	Install housing brace brackets
11.22	☐	Route power cable/other cables; separate and cable-tie if necessary
11.23	☐	Install top down power [OPTIONAL] if required.
11.24	☐	Install power input box
11.25	☐	Install router [optional] – refer to 8000-23712-IP
11.26	☐	Install remote OCP [optional]
11.27	☐	Install roof
11.28	☐	Install clip-on panel nuts in top side covers, then install top side covers
Error! Reference source not found.	☐	Install blank plate and cable pass-through hole/grommet
11.31	☐	Install middle OCP cover
11.32	☐	Install plain middle cover
11.33	☐	Install middle covers for barrier belt
11.34	☐	Install upper/lower cover with switch/power input
11.35	☐	Install plain upper/lower covers
11.36	☐	Install top entrance/exit covers
11.37	☐	Install barrier belt assembly
11.38	☐	Install OCP mount pole and OCP
11.39	☐	Install label kit
11.40	☐	Install system mounted Resolution Station [optional]
11.41	☐	Install inner radome top angle rails
11.42	☐	Install inner radome base flange support brackets
11.43	☐	Peel inner radome scratch guards and clean with ESD wipes
11.44	☐	Install inner radome edge support brackets
11.45	☐	Install inner radomes
11.45	☐	Tighten inner radome screws
11.46	☐	Install ceiling
11.47	☐	Install ramp supports and ramp assemblies
11.48	☐	Install floor side panels and center panel

Section	Completed	Task
11.50	☐	Adjust top side and entrance/exit covers and tighten screws
12.1	☐	Conduct pre-power-up checks
12.2	☐	Route power cable
12.3	☐	Power up and warm up scanner
12.4	☐	Set date/time
	☐	Calibrate OCP if finger touches are mistracked or misinterpreted
Error! Reference source not found.	☐	Lock out on-screen display (OSD)
12.5	☐	Calibrate scanner
	☐	Verify operation and test system

44.0 Appendix E: Genie Lift Pre-Use Inspection Form

Genie Lift GL-8

Form 8200-20034-09

****Fill out all items that are highlighted below.**

DATE: _____ **INSPECTOR:** _____ **LOCATION:** _____

Install Crate Serial Number: _____ **Last Calibration Date:** _____

Type of Lift: Genie GL-8 **Capacity:** 400 LB Wire Rope Hoist *Inspect each Genie Lift and add Serial # below.*

ITEM (for PreUse checks - be sure to visually inspect for the following items prior to <u>each</u> use)	Inspect for the following details	Unit #1	Unit #2	Actions Required
		Serial# _____	Serial# _____	
Winch Handle & Cable Assembly	Raise Winch Handle: Raise to top of frame by turning handle clockwise, carriage should move freely with no hesitation or binding.			
	Lower Winch Handle: Lower carriage by turning handle counterclockwise, carriage should move freely with no hesitation or binding.			
	Inspect Wire Cable: Free of kinks, frays, abrasion distortion, bird-caging and defects			
Decals and Labels in Place	Check to ensure all decals and labels / name plate are intact and legible.			
Frame, wheel & leg components Check for any damage, denting or problems with the following components:	Base Inner & Outer Frame, Legs and Roller Wheels Castors: All in good condition?			
	Wire Cable Pulley and Anchor in good condition?			
	Entire frame is free of dents or other damage?			
Forks, Load Platform & Boom Check for any damage, denting or problems with the following components:	Forks in good condition. No denting or damage?			
	Load platform and boom in good condition. No denting or damage?			
Review of Other Genie Components	Final inspection of entire unit. Ensure that all structural and components are present and fasteners / locking pins in place. Free of damage.			
	Ensure entire unit is free of dents, damage and corrosion and oxidation.			
	Ensure entire unit has no cracks in welds or structural components.			
	No other defects or observations that can affect use or lift capability			
	Carriage lock (hook mounted on top frame member) pointing vertically. Ref: 8100-12172-00 - Figure 25. Look for any damage / defects Operators Manual printed and available in the ProVision Installation Kit.			Note: If not pointing vertically, adjust prior to use.
Additional Comments:				
If there is damage to the unit listed above that could affect safe operation, immediately Red Tag the unit and remove from service. Contact Customer Service for a replacement lift. NOTE: For further information refer to Genie Lift Operators Manual. Part Number 35566.				

**Manual Feedback Form****Document Number****Document Revision****Software Revision (if applicable)****Document Title****Comments** *(Include proposed rewrite or recommended improvements – Attach additional pages as needed)***Submitted by****Title****Date Submitted****Company / Organization Name and Address****Telephone****E-mail***After completing this form, mail, fax, or e-mail it as follows:*

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Revision History

Date	Rev.	Originator	Workflow No.	Change Description
10/19/2020	A0	L. Kovner	PMF006041	Initial Release.
05/25/21	A1	L. Kovner	AXE006794	Update screenshots