

About the Safety Hook

Purpose: A safety hook secures the Ferno® product (cot or iNjX®) inside the ambulance during the loading and unloading process while the operators extend or retract the legs. A correctly-positioned safety hook allows the cot to be loaded into the ambulance and unloaded from the ambulance without interference, but will catch the cot-mounted safety bar during every loading and unloading sequence.

Requirement: A safety hook must be installed and used with the Ferno cot. Remove any previously-installed safety hook and determine if the mounting holes may be re-used. Drill new holes if needed for proper hook placement as instructed in this manual.

Versions: Several safety hook versions are available to accommodate variations in ambulance design. Contact the ambulance manufacturer for assistance and recommendation for the type of ambulance you have, or Ferno Customer Relations to order a safety hook.

Notice: An iNjX-compatible safety hook must be used with the iNjX®. These hooks are compatible with other Ferno products with a safety bar.

Ambulance Requirements

U.S.A. Compliance: Refer to KKK-A-1822 revision F, section 3.9.6 regarding the permissible height and length of the ambulance bumper. Ferno cots are designed to be compatible with ambulances that meet these KKK specifications (Figure 1):

- The depth of the bumper step must be between 5"/127 mm (minimum) and 10"/254 mm (maximum).
- If the bumper step depth is more than 7"/178 mm, it must have the ability to fold.
- The bumper step height must be equidistant between the ground and the ambulance deck (floor), $\pm 2"/51$ mm.
- The bumper step height must not exceed 22"/559 mm.

Prior to Installation

- **Installation requires the skills of a mechanic familiar with ambulance construction.**
- **Consult the ambulance manufacturer** regarding the location of wiring, oxygen or fuel lines, any other elements under the ambulance floor, and about the ambulance warranty.
- **Remove any other safety hook** before installing and using the safety hook. Be aware that new mounting holes may be required for proper positioning of the safety hook.
- **Do not modify the Ferno cot or safety hook.** Modify the ambulance if needed. Before modifying the ambulance, contact the ambulance manufacturer for assistance.
- **The safety hook must be installed level on the ambulance floor.** After following the placement directions in this manual, if the door sill interferes, modify the ambulance, not the hook, as follows:
 - Insert a metal shim (not provided) under a portion of the safety hook to make the safety hook sit level on the floor.
 - Modify the door sill to allow the safety hook to sit level. Contact the ambulance manufacturer for confirmation that any adaptation will not interfere with door function.

 **WARNING**

Improper installation of the kit can cause injury. Install the kit only as described in this manual.

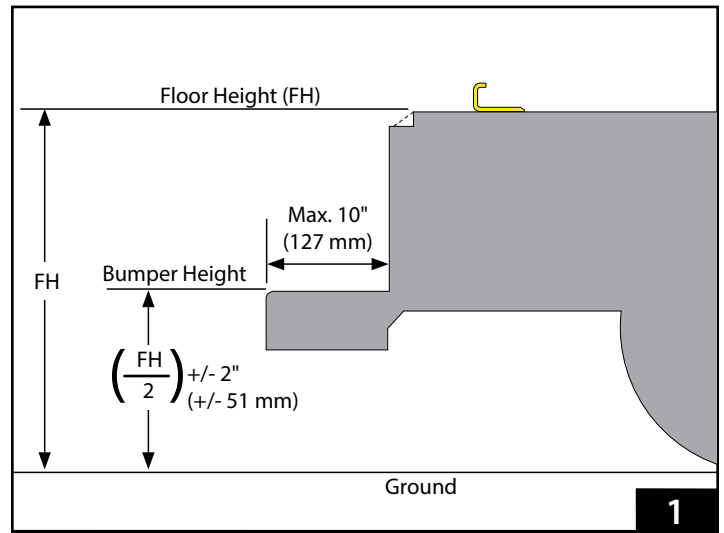
Modifying the kit components can cause injury and damage. Use the kit only as designed by Ferno.

NOTICE

For iNjX, a compatible antler and safety hook must be used. Contact Ferno Customer Relations for assistance.

If the hook is installed too far inside the ambulance, you will not be able to properly extend or retract the cot legs. After installation, confirm there is sufficient clearance for the cot legs to fold and unfold.

Two door-sill styles are in use: a straight/square style, and a sloped style. Begin the front-to-back measurement where the flat floor (ambulance deck) meets the door sill. Follow the instructions in this manual.



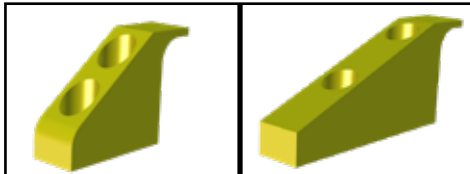
INSTALLING A BARE-FLOOR SAFETY HOOK KIT



082-2447
iNjX J-Hook

082-2503
FDNY J-Hook

082-2019
POWERFlexx J-Hook



090-5015
Standard 2.5"

090-1308
Standard 4"

Positioning the Safety Hook

Install the safety hook to meet both front-to-back and side-to-side requirements.

- **Front-To-Back:** Position the hook a minimum of 3.75" (95 mm) from the door sill edge to the face of the hook. The face is the inner surface where the safety bar catches the hook (Figures 3-4 on page 3).
- **Side-To-Side:** The hook must engage the center of each cot-mounted safety bar during every loading and unloading sequence (Figure 2).
 - You may initially position the safety hook offset slightly from the antler centerline to allow the cot to be pulled away from the fastening-system rail, then guided into the safety hook.
 - Load and unload the cot in various positions and angles (including centered, all the way to the left and right) and note the location of the loading wheels and safety bar(s).

Installing the Safety Hook

Use the hardware specified at right. Mounting hardware must be of at least SAE Grade 5 with UNC-2 threading or equivalent. (Hardware not supplied).

1. Mark the floor at the location that meets the front-to-back and side-to-side requirements.
2. For excess doorway width, modify the ambulance by placing a guide, shield, bumper, etc. to guide the cot toward the hook. Do not modify the cot or safety hook.
3. Verify the front-to-back and side-to-side positioning is correct, following the instructions above.
4. Drill holes for the fastening screws at the proper mounting location.
5. Orient the safety hook with the hook toward the front of the ambulance (Figures 2-4).
6. Attach the safety hook to the floor with screws, flat and lock washers, and jam nuts of the appropriate length and type (Figure 4).
7. Test the hook before placing the ambulance with hook in service. Load the cot into, and unload it from, the ambulance. Verify that there is no interference with extending or retracting the legs.

NOTICE

If the hook is installed too far inside the ambulance, you will not be able to properly extend or retract the cot legs. After installation, confirm there is sufficient clearance for the cot legs to fold and unfold.

Install the safety hook only with hardware of at least SAE Grade 5 with UNC-2 threading (or equivalent). Hardware is not supplied.

Two door-sill styles are in use: a straight or square style, and a sloped style. Begin the front-to-back measurement where the flat floor (ambulance deck) meets the door sill.

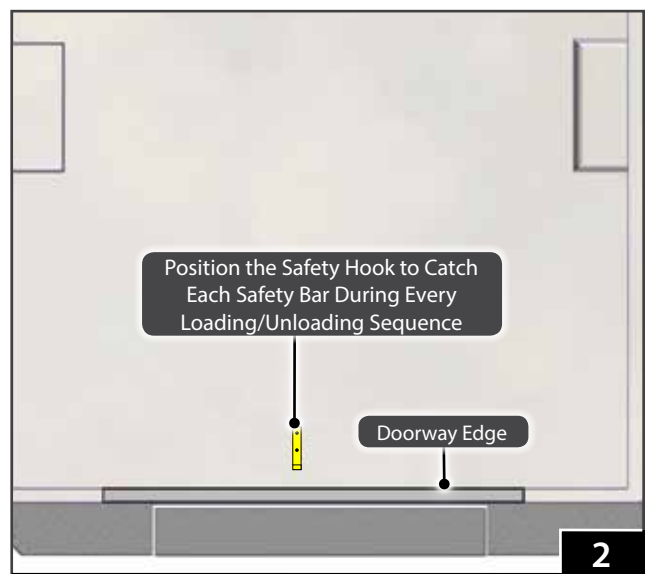
Bare Floor Safety Hook Kits - Parts Supplied

Safety Hook	1
Installation manual	1

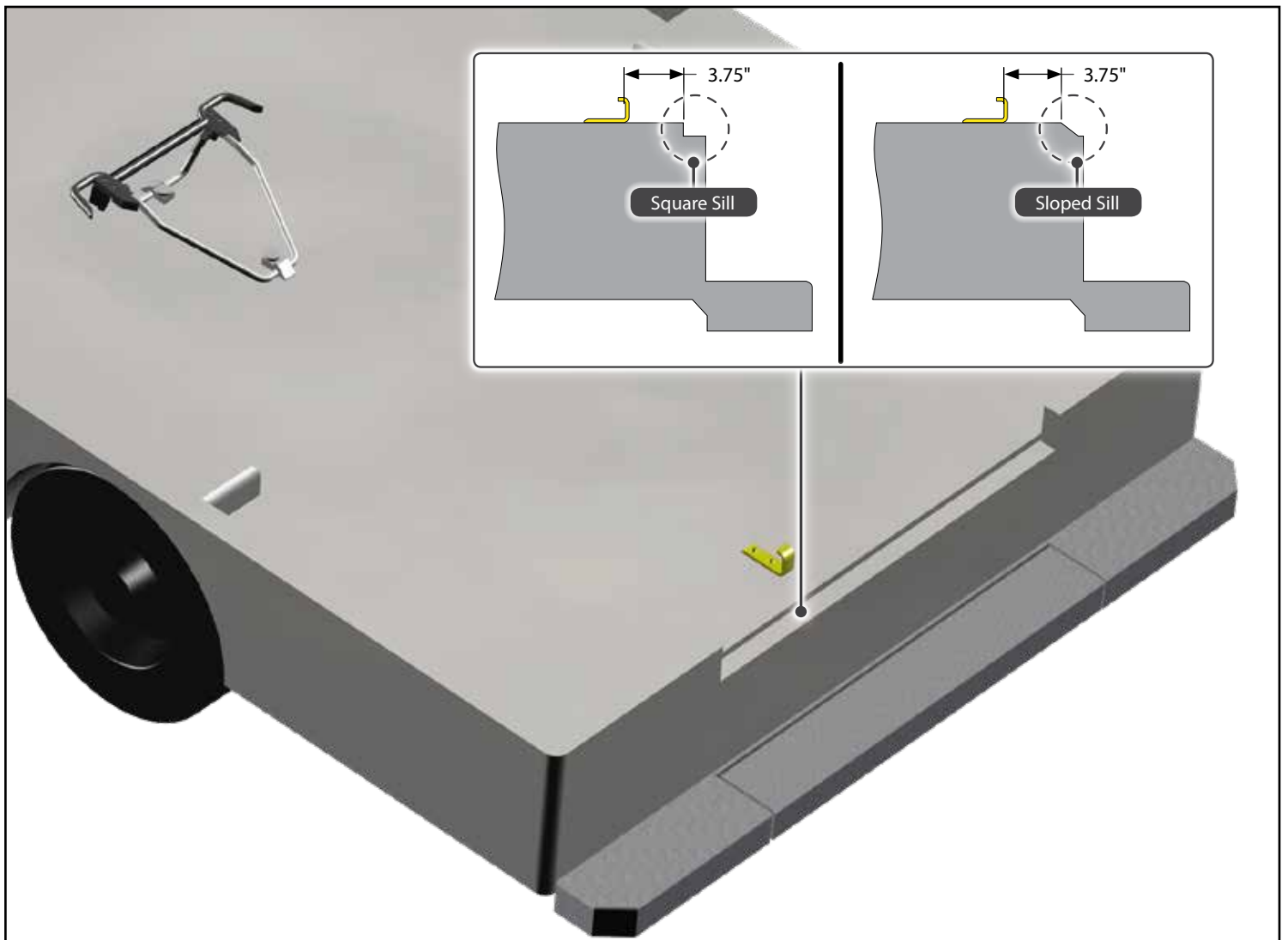
Tools Required (Not Supplied)

2.5" or 4" Safety Hook	
1/4"-20 Socket-head cap screw*	2
Flat washer	2
Lock washer	2
1/4-20 Nut	2
Drill and bits for your particular installation	As needed
J-Hook	
1/4"-20 Flat-head machine screw*	2
Flat washer	2
Lock washer	2
1/4-20 Nut	2
Drill and bits for your particular installation	As needed

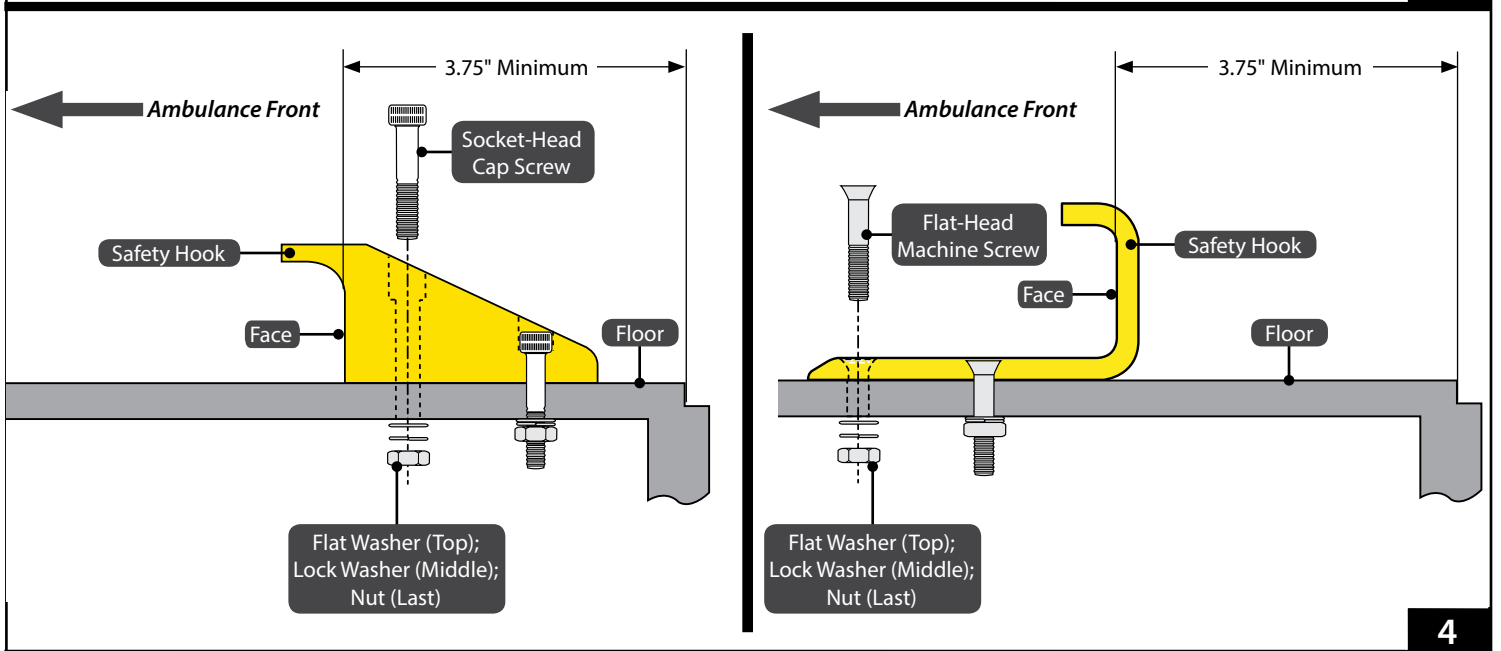
* The screws must be long enough to pass through the safety hook, patient compartment floor, both washers and still have at least two full threads extending past the nut.



Ferno Safety Hooks



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082-2504 PRO F1 SAFETY HOOK KIT

PRO F1 Safety Hook Parts Supplied

1/4"-20 x 5/8" Flat-head Machine Screw	2
Safety Hook Insert	1
Safety Hook	1
Threadlocker (Loctite® 242® blue)	1

Tool Required (Not Supplied)

5/32" Hex Wrench	1
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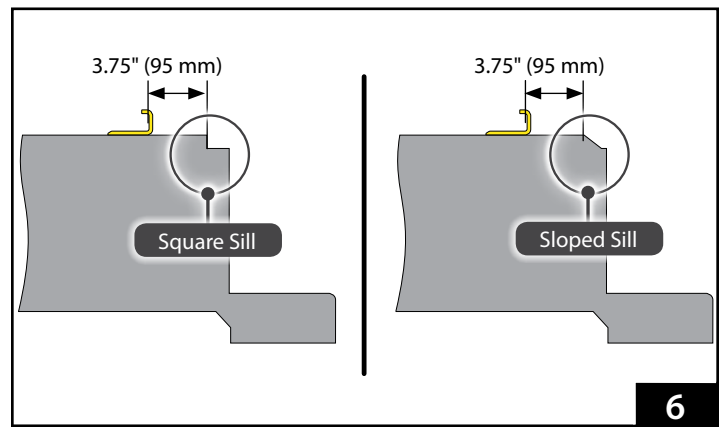
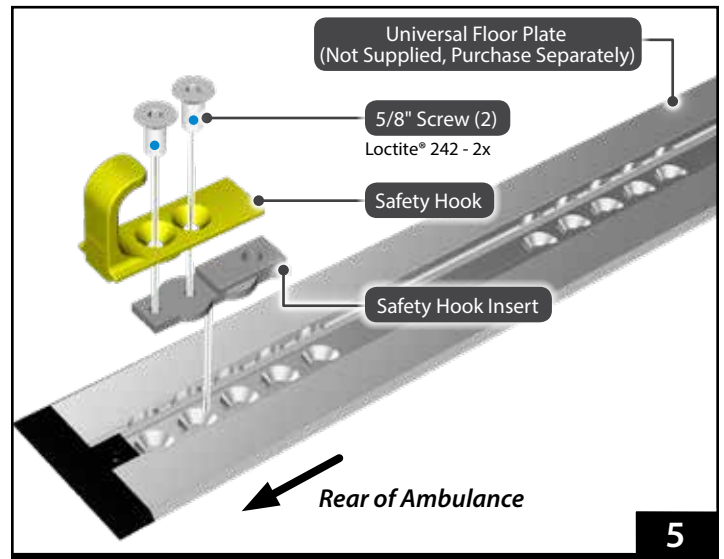


Installing the Safety Hook

Note: The kit is for use only with the Ferno® Universal Floor Plate. Contact Ferno Customer Relations to purchase the floor plate. The components in this kit are also provided with purchase of any of the following:

- 056-7065 Ferno® PRO F1 Fastening System with ICS (Integrated Charging System)
- 056-7066 Ferno® PRO F1 Fastening System (no ICS)
- 080-0646 PRO F1 Mounting Hardware (includes all parts to install the PRO F1 fastening system)

1. Orient and place the safety hook insert in the floor plate near the rear of the ambulance, with the milled side up as shown. Then, set the safety hook on top of the insert (Figure 5).
2. Position the hook exactly 3.75" (95 mm) from the edge of the door sill to the face of the hook. The face of the hook is the inner surface where the safety bar catches the hook (Figure 6).
3. Prepare the two 1/4-20 x 5/8" flat-head screws and receiving threads in the safety-hook insert:
 - Clean the threads of the screws, plus the receiving threads in the insert with acetone or an appropriate Loctite® cleaner/primer (not supplied). Allow the threads to dry completely.
 - Apply 1 drop of threadlocker to the threads of the screws. Install the screws immediately. Wipe off any excess threadlocker.
4. Use a 5/32" hex wrench and to install the screws to the hook and insert. Wipe off excess threadlocker.
5. Allow the Loctite threadlocker to dry for a minimum of one hour before use. Full cure time is 24 hours.



NOTICE

If the hook is installed too far inside the ambulance, you will not be able to properly extend or retract the cot legs.

Typical door sills are straight/square, or sloped. Begin the front-to-back measurement where the flat floor (ambulance deck) meets the door sill.

Always clean and prime screw threads before applying Loctite® threadlocker.

Allow the Loctite® threadlocker to dry for a minimum of one hour before use. Full cure time is 24 hours.

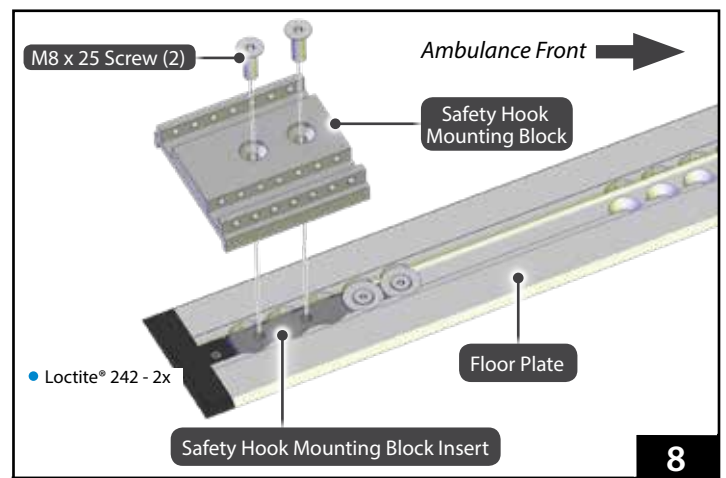
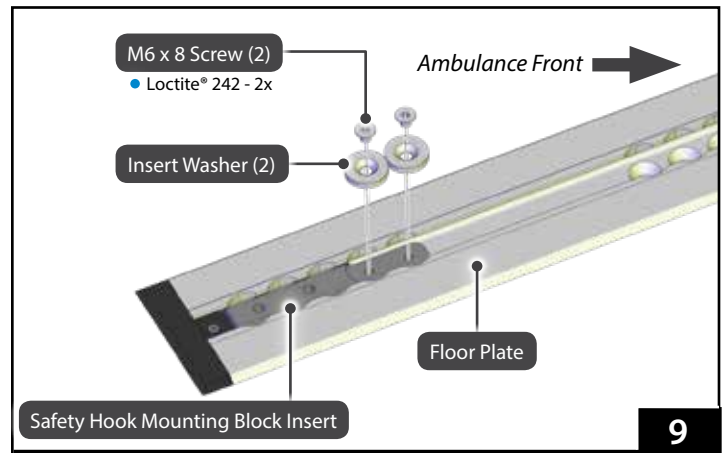
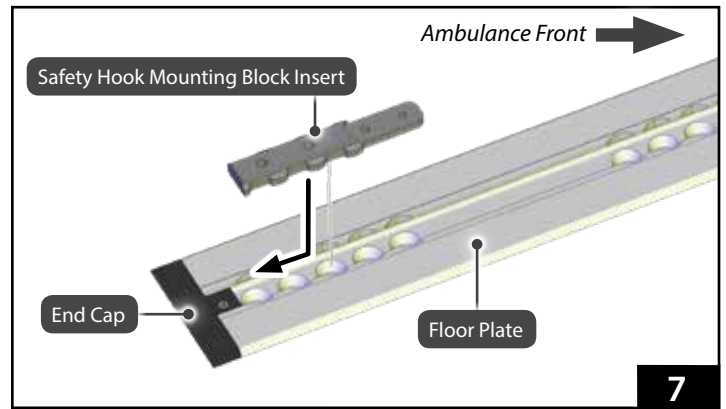
90-0298 iNLINE® SAFETY HOOK KIT

iNLINE Safety Hook Parts Supplied

Mount Block Insert	1
Insert Washer	2
M6 x 8 Flat-head hex screw for insert	2
M8 x 25 Flat-head hex screw for safety hook mount block	2
Safety Hook Mount Block	1
Safety Hook	1
Hold-down Block	1
Locator Pin	4
Threadlocker (Loctite® 242® blue)	1

Tools Required (Not Supplied)

4 mm Hex Wrench	1
5 mm Hex Wrench	1
Measuring Tape	1
Acetone or Loctite® Cleaner/Primer	small amount



Installing the iNLINE Safety Hook Block

Note: The kit is for use only with the Ferno® Universal Floor Plate. Contact Ferno Customer Relations to purchase the floor plate or options for short, medium and long iNLINE Fastening Systems, with or without ICS (Integrated Charging System).

Note: The components in this kit are also provided with purchase of Kit 080-0642 iNLINE Fastening System Mounting Hardware Kit.

1. Prepare the safety hook mounting block insert, M6 x 8 screws and M8 x 25 screws:
 - Clean the threads of each screw, plus the mating threads in the safety hook mounting block insert with acetone or an appropriate Loctite® cleaner/primer (not supplied). Allow the threads to dry completely.
 - Apply 1 drop of Loctite to the threads of the screws. Install them immediately. Wipe off excess threadlocker.

Note: The insert only fits into the floor plate in one direction.

2. Orient the safety hook mounting block insert as shown (milled side facing up), insert it into the track, and slide it against the end cap.
3. Place two insert washers into safety hook mounting block insert, with the countersunk side of each washer facing up.
4. Install two M6 x 8 screws using a 4 mm hex wrench. Wipe off excess threadlocker.
5. Orient the safety hook mounting block over the safety hook mounting block insert.
6. Attach the safety hook mounting block to the safety hook mounting block insert using two M8 x 25 screws using a 5 mm hex wrench. Wipe off excess threadlocker.
7. Allow the Loctite threadlocker to dry for a minimum of one hour before use. Full cure time is 24 hours.

Installing the inLINE Safety Hook

1. Place the safety hook in the slot at the patient-left side of the safety hook mounting block as shown (Figure 11).
2. Position the hook exactly 3.75" (95 mm) from the edge of the door sill to the face of the hook. The face of the hook is the inner surface where the safety bar catches the hook (Figure 10).
3. Insert two locator pins to secure the safety hook in the safety hook mounting block (Figure 11). The location of the pins can vary based on the position of the safety hook.
4. Place the hold-down block in the slot at the patient-right side of the safety hook mounting block, with the threaded hole toward the rear of the ambulance. Align the insert so it is even with the safety hook.
5. Insert two locator pins to secure the hold-down block in the safety hook mounting block (Figure 11). The location of the pins can vary based on the position of the hold-down plate.

NOTICE

If the hook is installed too far inside the ambulance, you will not be able to properly extend or retract the cot legs.

Typical door sills are straight/square, or sloped. Begin the front-to-back measurement where the flat floor (ambulance deck) meets the door sill.

Always clean and prime screw threads before applying Loctite® threadlocker.

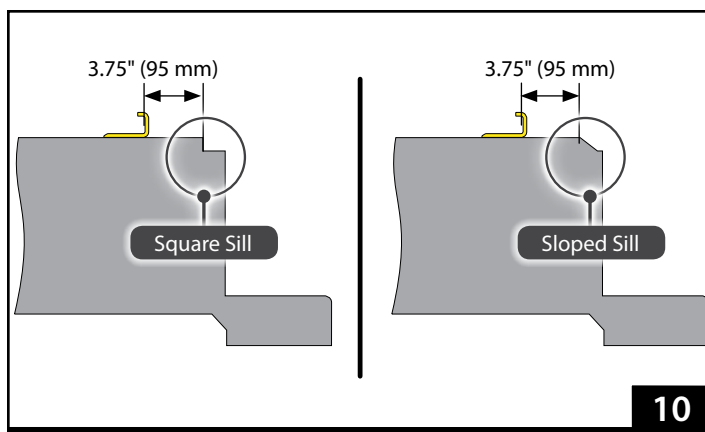
Allow the Loctite® threadlocker to dry for a minimum of one hour before use. Full cure time is 24 hours.

Use all four locator pins with the safety hook mounting block (two for the safety hook and two for the hold-down block). The positions of the pins vary based on the measurement from the edge of the door sill to the safety hook face, but must match side-to-side.

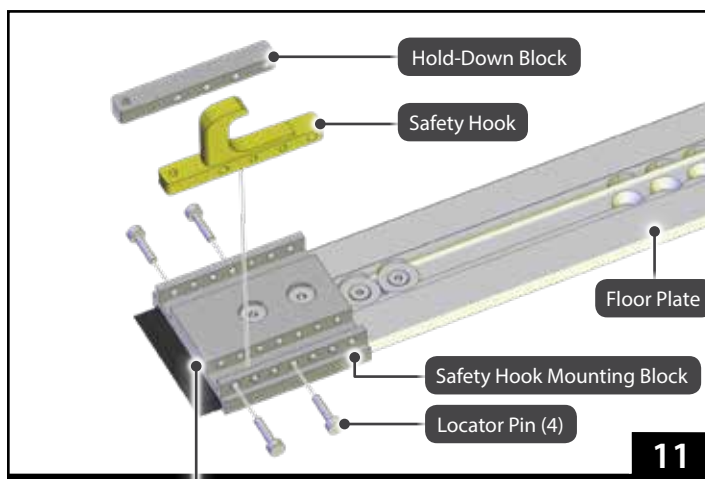
Tip

Safety Hook Position

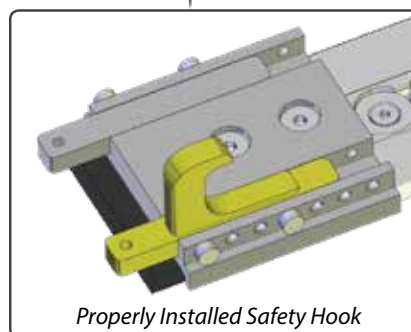
The safety hook must be exactly 3.75" (95 mm) from the edge of the door sill. If the various pin locations do not allow proper alignment of the safety hook, remove the safety-hook mounting block from the insert, rotate it 180°, and reinstall.



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Repairs or Parts

EMSAR® is the only organization authorized by Ferno to manage, service, and repair Ferno products.



Telephone (Toll-free)	1.800.73.EMSAR
Telephone (Worldwide)	1.937.383.1052
Fax (Worldwide)	1.937.383.1051
Internet	www.EMSAR.com

Ferno Customer Relations

For ordering assistance or general information:

CANADA AND THE U.S.A.

Telephone (Toll-free)	1.877.733.0911
Telephone	1.937.382.1451
Fax (Toll-free)	1.888.388.1349
Fax	1.937.382.1191
Internet	www.ferno.com

ALL OTHER LOCATIONS

For assistance or information, please contact your Ferno distributor. If you do not have a Ferno distributor, please contact Ferno Customer Relations:

Ferno-Washington, Inc., 70 Weil Way
Wilmington, Ohio 45177-9371, U.S.A.

Telephone	+1.937.382.1451
Fax	+1.937.382.6569
Internet	www.ferno.com

Limited Warranty Statement

The products sold by Ferno are covered by a limited warranty, which is printed on all Ferno invoices. The complete terms and conditions of the limited warranty, and the limitations of liability and disclaimers, are also available upon request by calling Ferno at 1.800.733.3766 or 1.937.382.1451.



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