
iW.FieldSense Kit Installation Instructions

<u>Model</u>	<u>Kit Part Number</u>
4150/4250 SUCB	1355087/XXX
4460 SDCB	1360618/003
4750 SDCB	1360618/001
5300/5400/5500/5600 OPR	1354611/XXX
7000 Series Reach	1355283/XXX
8310/8410 Pallet	1365258/XXX
8510/8610 Pallet	1365260/XXX
9600/9700 SWR	1354670/001
Raymond Legacy/Other Than Raymond Reach/SUCB/OPR/SWR	1381461/XXX
Raymond Legacy/Other Than Raymond Pallet Trucks	1381461/001

1364633/001B

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Compliance Statement

General

These instructions should be used by qualified service technicians for installing, troubleshooting, and maintaining the iW.FieldSense system on compatible lift trucks in the field.

A Factory Authorized Field Modification and Service Inquiry (S207) is required for all Raymond and Other Than Raymond (OTR) lift truck after-market installations.

Compliance Statement

United States

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications not expressly approved by the manufacturer could affect the user's ability to comply with applicable regulations.

Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications not expressly approved by the manufacturer could affect the user's ability to comply with applicable regulations.

Documentation/Manuals

Refer to the applicable lift truck maintenance manual as appropriate, including, but not limited to the Safety section. Unless otherwise directed, refer to this document for iW.FieldSense troubleshooting and parts information.

Acronyms List

EMI - Electro-Magnetic Interference
iW.FS - iWarehouse.FieldSense
LED - Light Emitting Diode
MFG - Magnetic Field Generator
OACH - OverAll Collapsed Height
OTR - Other Than Raymond
PND - Pedestrian Notification Device
SDCB - Sit-Down Counterbalanced
SUCB - Stand-Up Counterbalanced
VM - Vehicle Manager

Tools Required

The following tools are required for installation:

- Applicable lift truck maintenance manual
- Standard hand tools
- Ladder
- Range Adjustment Tool P/N 1323252/001
- EMI Tool P/N 1323252/005

Component Identification

These components are included in all iW.FieldSense Kits.

Table 1. Common Kit Components



Magnetic Field Generator (MFG) Assembly

P/N 1323386/xxx

NOTE: If in-line fuse (F70) is lost or damaged, replace with UL listed fuse identified below:

- 24V Systems - P/N 25275-17 (4A)
- 36/48V Systems - P/N 25275-15 (2A)



Intermittent Signal Cab Silencer



Continuous Signal Cab Silencer



Cab Silencer

P/N 1309890 (Intermittent Signal)

P/N 1376003 (Continuous Signal - Reach lift trucks with 256K VM, Model 4460, and OTR Kits only)

NOTE: If in-line fuse (F71) is lost or damaged, replace with UL listed 2A fuse P/N 25275-15



Notification Module

P/N 1309891/001

Installation Tips

Installation

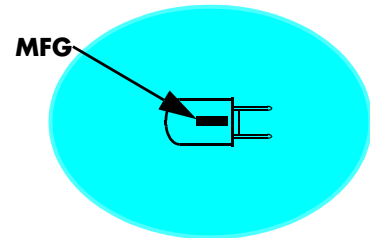
Installation Tips

Lift truck options/changes can prevent iW.FS components from being installed in the locations shown in these procedures. Refer to the tips below if iW.FS components cannot be installed in recommended locations:

- The MFG must be located at least 4 in. (10.2 cm) away from metal.

NOTE: Test all areas of the lift truck with the EMI Tool (P/N 1323252/005) to ensure there will not be interference in the locations selected for iW.FS equipment on the lift truck. Large EMI signatures will interfere with iW.FS functionality. Refer to "[EMI Tool](#)" on page 4.

- Positioning of the MFG is critical. The magnetic field is oval. The long axis of the field follows the length of the MFG. The MFG should be mounted such that the long axis of the field follows the length of the lift truck.



- The Cab Silencer should be installed at least 4 ft. (122 cm) away from the MFG, as close to the center-line of the lift truck as possible, and within the operator compartment.
- The Notification Module must be installed in a location where the operator can see and hear alerts.
- If lift truck is equipped with high intensity, non-LED strobe lights (i.e. Xenon), pick an MFG mounting location away from these lights that does not have a high EMI signature. Use the EMI Tool for assistance. Mounting location must still abide by all other restrictions listed.
- The iW.FieldSense system was designed to accommodate most lift trucks. A thorough assessment of all potential mounting locations for the MFG and connections from the iW.FS equipment to the lift truck should be completed to ensure no other components are required for installation.
- If any of the following installation instructions conflict with lift truck options installed, follow the information listed here for alternate location considerations.
- Some MFG mounting locations may interfere with drive-in-rack applications. Consider an alternate location in accordance with the information listed here.
- Refer to "[MFG Range Adjustment Procedure](#)" on page 47 for other limitations regarding proper setup of iW.FS equipment.
- Consider the operator's field of view when installing the MFG.
- Do not install the MFG directly over the operator's head.
- Install the MFG so that it remains within the overall perimeter of the lift truck frame.
- Locate the MFG so that operator compartment interference is minimized when installed on the overhead guard.
- Install the iW.FS equipment on a part of the lift truck that does not move relative to the frame. Do not install the equipment on anything that lifts/lowers, tilts, extends, etc.

A Factory Authorized Field Modification and Service Inquiry is required for all after-market field installations.

EMI Tool

Use the EMI Tool P/N 1323252/005 to verify there is no EMI signature in the vicinity of any iW.FS equipment (including OTR Installations and Warehouse Device Installations).

Directions for Use

1. Power ON the EMI Tool by removing the small plastic plug on the tool.



2. Place the EMI tool near areas where EMI signatures are suspected. If EMI is detected, the LED on the tool will illuminate.
3. Move the EMI tool until the LED is no longer illuminated. iW.FS equipment can be mounted in these areas, as long as the location is within the limitations listed in this document.

NOTE: Areas or devices with known or suspected EMI might be: non-LED or Xenon type strobe lights, motorized machinery, large conductor cables, electrical panels, etc. These areas or devices can interfere with the functionality of the iW.FS equipment.

4. Power OFF the EMI Tool by inserting the small plastic plug on the tool.

Charging

The tool will repeatedly emit 2 rapid beeps when the battery is low.

To charge:

1. Remove the plastic plug from the tool.
2. Plug the charging cord (P/N 1376825) into the port the plug was in.
3. The LED on the charger will illuminate red if the tool needs charging and green when charging is complete.
4. Reinsert plastic plug when charging is complete.

Batteries have an approximate life of at least 300 charges. Replace batteries when necessary with P/N 1376824.

Models 4150/4250 Stand-Up Counterbalanced

Models 4150/4250 Stand-Up Counterbalanced

NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to "[Installation Tips](#)" on [page 3](#) for alternate location considerations.

Kit Specific Components

Table 2. Kit P/N 1355087/001 & /003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/001 (trucks w/256K VM)	MFG Assembly - see Table 1 on page 2 .	1
	1323386/004 (trucks w/512K VM)		
2	1348630	Angle Bracket	1
3	1346658	Back Plate	1
4	5-001-004	Screw - M6 x 25 Hex Head	4
5	5-001-087	Screw - M6 x 75 Hex Head	4
6	1259902/002	Nut, Lock - M6 Flange	8
7	Notification Module - see Table 1 on page 2 .		1
8	Cab Silencer - see Table 1 on page 2 .		1
9	611-056	Cable Tie, 14.5 in.	10
10	611-046	Cable Tie, 5.6 in.	10
11	611-044	Anchor, Plastic Mount	10
12	1107096	Decal	1

Installation Procedure

For items in bold print, refer to [Table 2](#).

CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

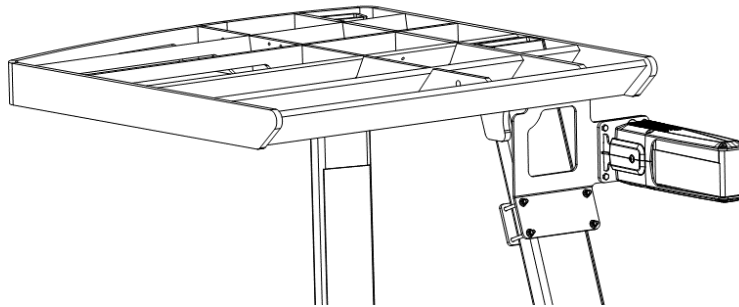
1. Turn the key switch OFF and disconnect the battery connector.
2. Remove warning decal from the overhead guard front post.
3. Clean the operator compartment side of the rear overhead guard post with isopropyl alcohol. Install Decal (**item 12**) 8 in. (20.3 cm) below the top of the rear post as shown below.



Models 4150/4250 Stand-Up Counterbalanced

4. Install Angle Bracket (**item 2**) and Back Plate (**item 3**) to the front post of the overhead guard with qty. 4 M6 x 75 Hex Head Screws (**item 5**) and qty. 4 Lock Nuts (**item 6**). Install bracket as far up the post as possible, such that the top edge contacts the underside of the overhead guard. Torque lock nuts to 8 ft. lb. (11 Nm).
5. Install the MFG Assembly (**item 1**) to the mast side of the bracket with qty. 4 M6 x 25 Hex Head Screws (**item 4**) and qty. 4 Lock Nuts (**item 6**). Make sure harness exits out groove at the bottom of the Angle Bracket (**item 2**). Torque lock nuts to 8 ft. lb. (11 Nm).

NOTE: Inspect for clearance between the MFG and the mast when it is fully tilted back. Some mast configurations may interfere. If there is interference, mount the MFG on the tractor side of the mounting plate.



6. Route the MFG harness down the overhead guard front post and into the tractor compartment. Use Anchors (**item 11**) and Cable Ties (**items 9 and 10**) to secure the harness.
7. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the lift truck TP4 terminal. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
8. Connect jumper P/N 1354748/003 (supplied with MFG (**item 1**)) to the BPOS Faston terminal on the MFG harness. The spade connector on the jumper harness should be installed on TS1-5 or TS1-6 on accessory power terminal strip. This provides switched power to the unit.
9. Clean the tractor top deck behind the hydraulic reservoir with isopropyl alcohol. Remove film from adhesive on bottom of the Cab Silencer (**item 8**) and install as shown below.



10. Connect MFG harness connector JCS1 to the Cab Silencer connector PCS1. Use Anchors (**item 11**) and Cable Ties (**item 10**) to secure the harness.
11. Clean the tractor side of the front overhead guard post with isopropyl alcohol. Remove adhesive film from the Notification Module (**item 7**) and install on the post so that it can be easily seen by the operator; approximately 8 in. (20.3 cm) above the tractor covers.
12. Connect the Notification Module connector JWM to the MFG Harness connector PWM1. Use Anchors (**item 11**) and Cable Ties (**item 10**) to secure the harness.

Model 4460 Sit-Down Counterbalanced

Model 4460 Sit-Down Counterbalanced

NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to "[Installation Tips](#)" on page 3 for alternate location considerations.

Kit Specific Components

Table 3. Kit P/N 1360618/003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/003	MFG Assembly - see Table 1 on page 2 .	1
2	1359809	MFG Mount	1
3	1354897	Harness, Extension	1
4	Notification Module - see Table 1 on page 2 .		1
5	Cab Silencer - see Table 1 on page 2 .		1
6	611-056	Cable Tie, 14.5 in.	10
7	611-046	Cable Tie, 5.6 in.	10
8	611-044	Anchor, Plastic Mount	10
9	5-003-009	Screw - M5 Socket Button Head	4
10	1259902/001	Nut, Lock - M5 Flange	4
11	1259902/002	Nut, Lock - M6 Flange	8
12	1357970	Bracket, Angled	1
13	5-001-004	Screw - M6 x 25 Hex Head	4
14	5-001-087	Screw - M6 x 75 Hex Head	4
15	1412580	Bracket	1
16	1412581	Plate	1

Installation Procedure

For items in bold print, refer to [Table 3](#).

CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

Turn the key switch OFF and disconnect the battery connector.

MFG Mounting Locations

Rear Overhead Guard Installation: If overhead clearance is less than 89 in. (226 cm), use this location.

NOTE: Mounting the MFG in this location will cause the MFG to extend beyond the footprint of the truck.

1. Install the MFG Assembly (**item 1**) on the MFG Mount (**item 2**) with existing hardware. Make sure harness exits out of groove in the bottom of the bracket. Torque to 8 ft. lb. (10.8 Nm).

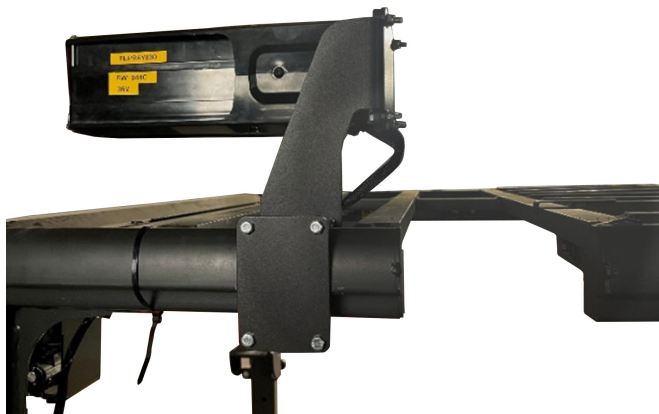
Model 4460 Sit-Down Counterbalanced

2. Install the MFG Assembly on the left overhead guard post facing backward as shown below. Adjust the mounting bracket so that the MFG is parallel with the floor. Torque to 8 ft. lb. (10.8 Nm).



Above Overhead Guard Installation: Installation of the MFG above the overhead guard increases the height to 89 in. (226 cm). If overhead clearance allows, install the MFG in this location.

1. Install the MFG Assembly (**item 1**) on the Bracket (**item 15**) with qty. 4 M6 x 25 Hex Head Screws (**item 13**) and qty. 4 M6 Flange Lock Nuts (**item 11**). Make sure harness exits out of groove in the bottom of the bracket. Torque to 8 ft. lb. (10.8 Nm).
2. Install the MFG Assembly above the overhead guard on the right side facing backward as shown below with plate (**item 16**), qty. 4 M6 x 75 Hex Heads Screws (**item 14**), and qty. 4 M6 Flange Lock Nuts (**item 11**). Torque to 2 ft lb. (2.7 Nm).

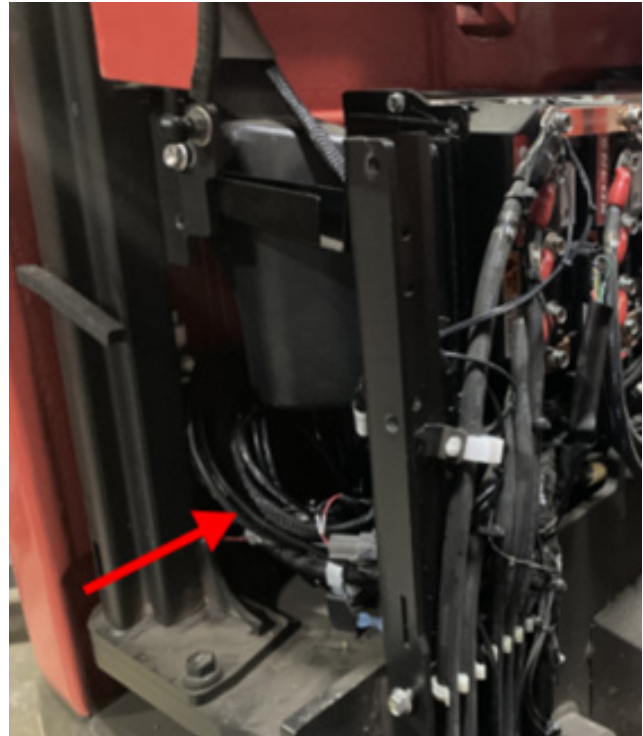


Model 4460 Sit-Down Counterbalanced

3. Route the MFG harness along the bracket and the overhead guard down the rear post. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure.

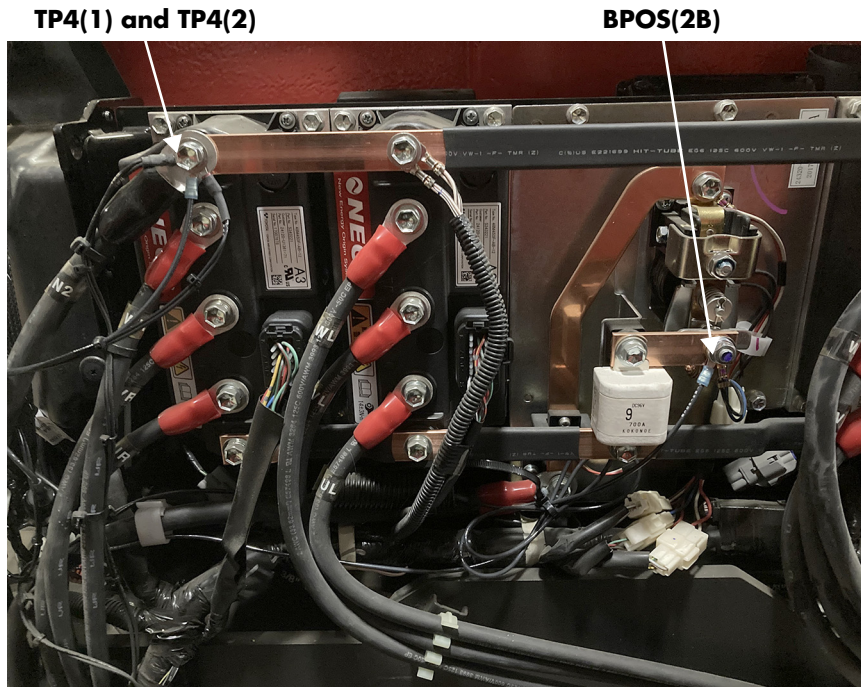


4. Route the MFG Assembly harnesses under the hood. For rear overhead guard installation, route cable across the top of the contactor panel to the right side of the truck. Coil and secure excess cable where noted. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the harness away from pinch points.

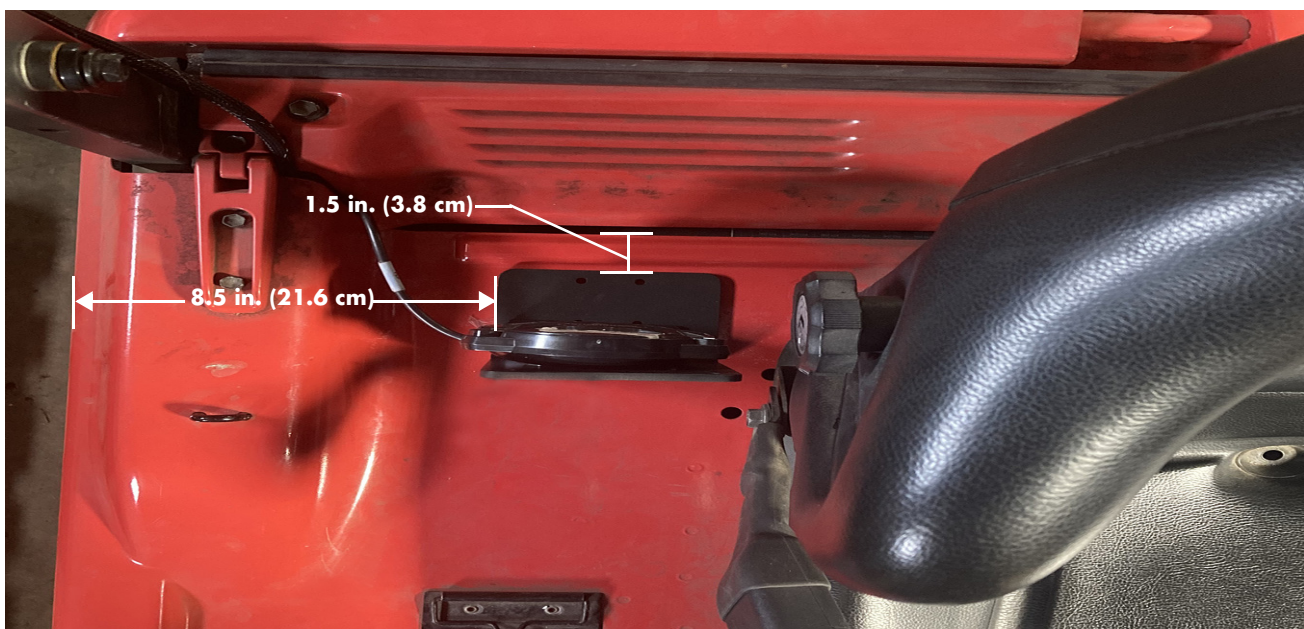


Model 4460 Sit-Down Counterbalanced

5. Install the two ring terminals marked TP4 (1) and TP4 (2) to the negative terminal shown. Connect jumper P/N 1354748/002 (included with MFG Assembly **(item 1)**) BPOS(2A) Faston terminal to BPOS1 on the MFG harness. Install ring terminal BPOS(2B) on the jumper harness to the terminal as shown.



6. Using Angled Bracket **(item 12)** as a guide, mark the locations for the holes shown below (dimensions reference edges of the hood). Use a 1/4 in. drill bit to drill the holes through the hood. Install Angled Bracket **(item 12)** with qty. 4 M5 Socket Button Head Screws **(item 9)** and qty. 4 M5 Flange Lock Nuts **(item 10)**. Torque to 6.5 ft lb. (8.8 Nm).



Model 4460 Sit-Down Counterbalanced

7. Clean the back and bottom surfaces of the Angled Bracket (**item 12**) with isopropyl alcohol. Remove the adhesive film from the back and bottom of the Cab Silencer (**item 5**) and install on the bracket.



8. Route Cab Silencer harness under the hood down to the contactor panel. Connect the Cab Silencer connector PCS1 to MFG harness connector JCS1. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the harness away from any pinch points.

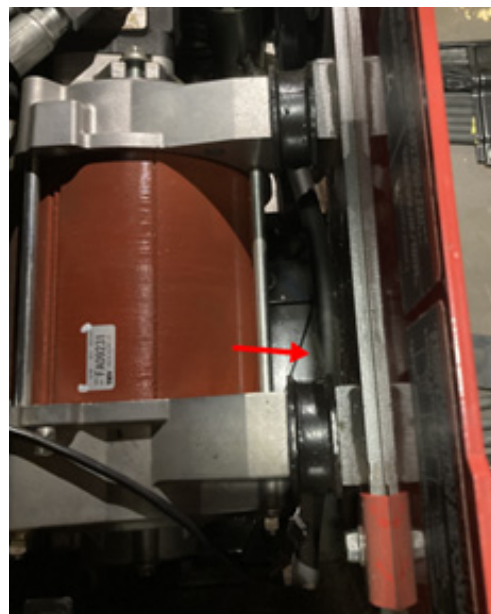


Model 4460 Sit-Down Counterbalanced

9. Clean the tractor side of the left front overhead guard post with isopropyl alcohol and allow to dry. Remove adhesive film from the Notification Module (**item 4**) and install so it can be seen by the operator.



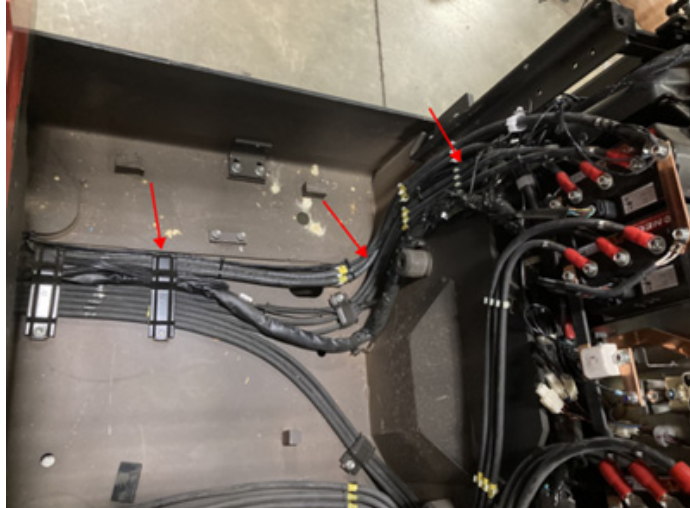
10. Route the Notification Module cable down the overhead guard post and above the left-side cylinder. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure cable away from moving parts.
11. Connect Extension Harness (**item 3**) connector PWM01 to the Notification Module (**item 4**) connector JWM1. Route cable below the floor to the right side. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the cable.



Looking down at operator's compartment floor

Model 4460 Sit-Down Counterbalanced

12. Route the Extension Harness (**item 3**) from the Notification Module along the existing harness and connect to the MFG Assembly harness. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the cable.



Model 4750 Sit-Down Counterbalanced

NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to "Installation Tips" on page 3 for alternate location considerations.

Kit Specific Components

Table 4. Kit P/N 1360618/001 Breakdown

Item	Part Number	Description	Qty.
1	1323386/003	MFG Assembly - see Table 1 on page 2 .	1
2	1359809	MFG Mount	1
3	1354897	Harness, Extension	2
4	Notification Module - see Table 1 on page 2 .		1
5	Cab Silencer - see Table 1 on page 2 .		1
6	611-056	Cable Tie, 14.5 in.	10
7	611-046	Cable Tie, 5.6 in.	10
8	611-044	Anchor, Plastic Mount	10
9	5-003-009	Screw - M5 Socket Button Head	4
10	1259902/001	Nut, Lock - M5 Flange	4
11	1357970	Bracket, Angled	1

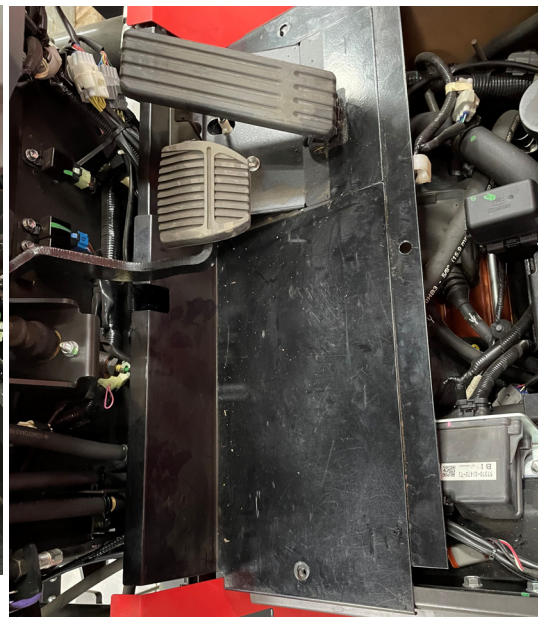
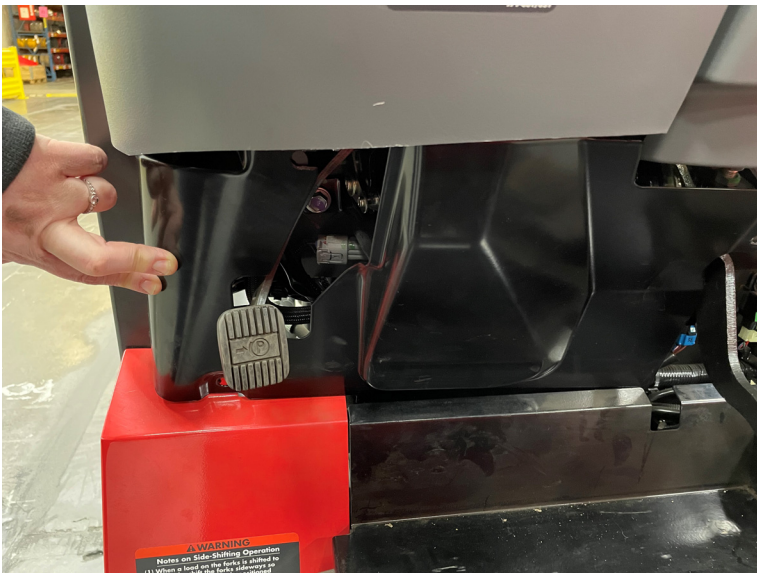
Installation Procedure

For items in bold print, refer to [Table 4](#).

CAUTION

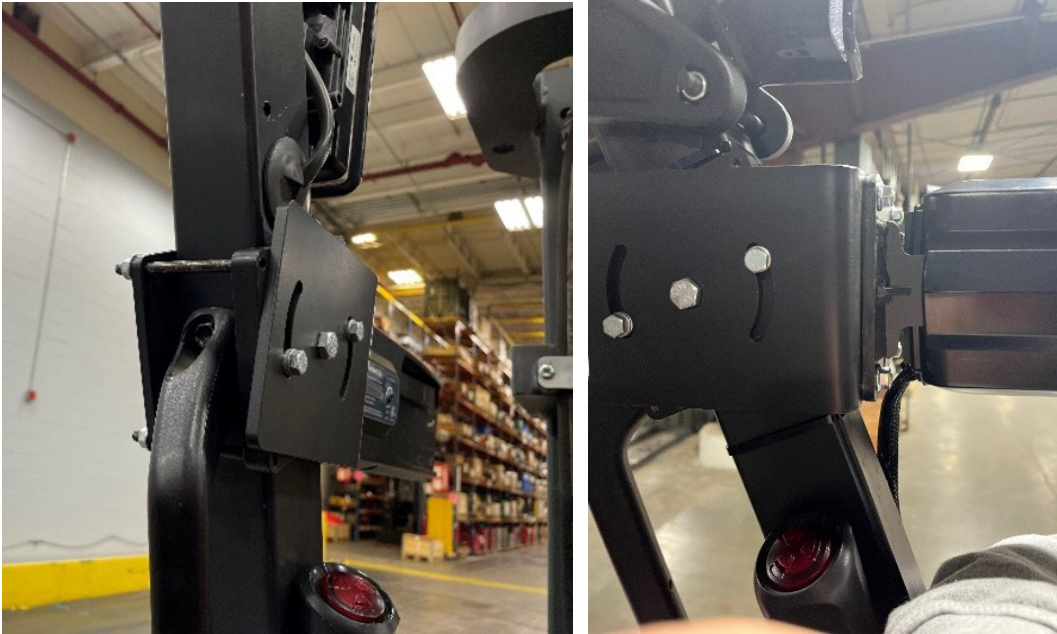
Follow all safety precautions noted in the lift truck maintenance manual.

1. Turn the key switch OFF and disconnect the battery connector.
2. Remove panel below operator console and floor panels.

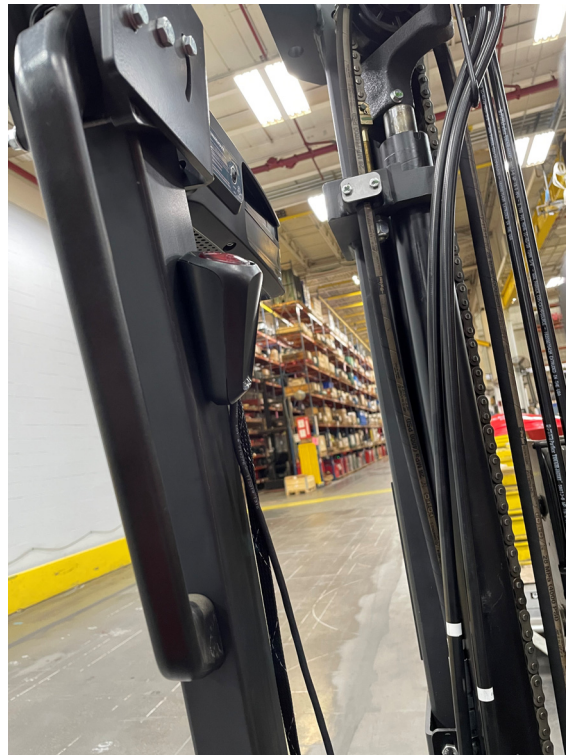


Model 4750 Sit-Down Counterbalanced

3. Install the MFG Assembly (**item 1**) on the MFG Mount (**item 2**) with existing hardware. Make sure harness exits out of groove in the bottom of the bracket. Torque to 8 ft. lb. (10.8 Nm).
4. Install the MFG Assembly on the left overhead guard post facing forward. Adjust the mounting bracket so that the MFG is parallel with the floor. Torque to 8 ft. lb. (10.8 Nm).



5. Clean the overhead guard post just below the MFG mounting bracket with isopropyl alcohol. Remove adhesive film from the Notification Module (**item 4**) and install on the post so that it can be easily seen by the operator.



Model 4750 Sit-Down Counterbalanced

6. Route the MFG and Notification Module cables down the overhead guard post and above the left side tilt cylinder. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the harness away from any moving parts.



7. Remove the left side panel to access the contactor panel. Connect Extension Harness (**item 3**) connector PWM01 to the Notification Module (**item 4**) connector JWM1. Route the MFG and Notification Module cables below the floor and down through the opening into the contactor panel. Connect Extension Harness (**item 3**) connector JWMT01 to the MFG harness. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the cables.

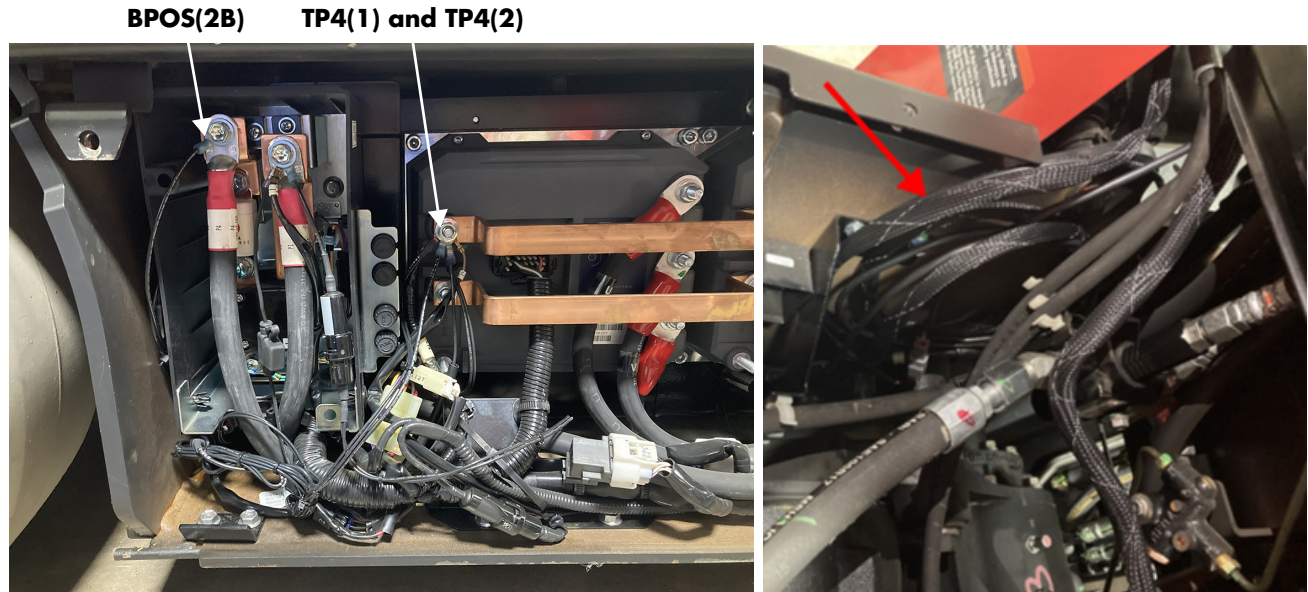


Looking down on compartment below the floor.

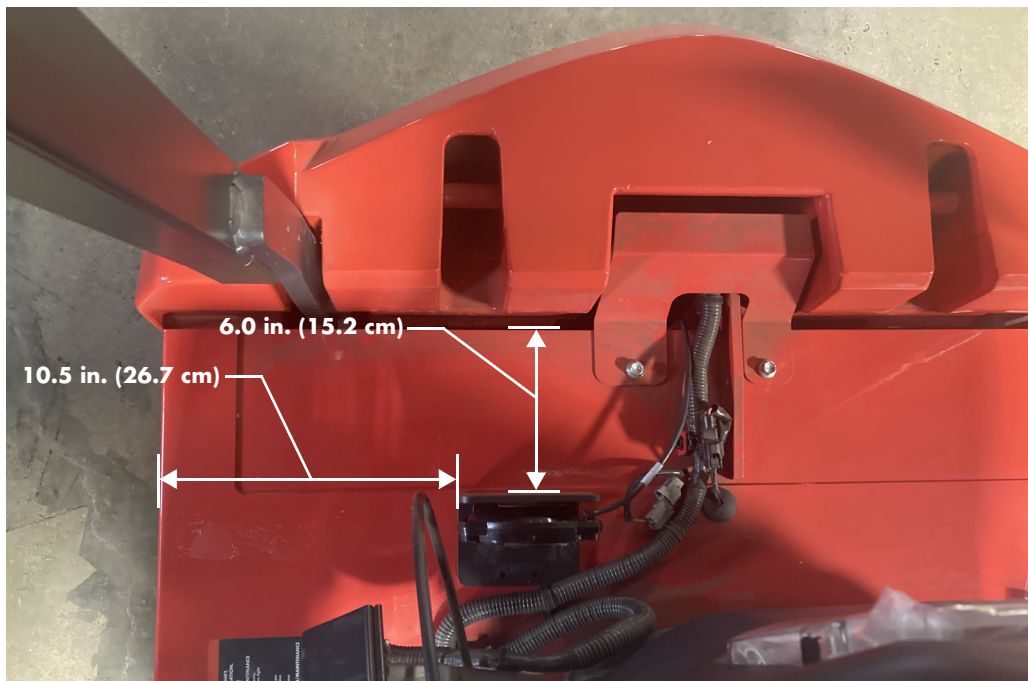
Contactor Panel in front of compartment

Model 4750 Sit-Down Counterbalanced

8. Install the two ring terminals marked TP4 (1) and TP4 (2) to the negative terminal as shown. Connect jumper P/N 1354748/002 (included with MFG Assembly (**item 1**)) BPOS(2A) Faston terminal to BPOS1 on the MFG harness. Install ring terminal BPOS(2B) on the jumper harness to the terminal as shown. Coil and secure the excess cable where shown.



9. Using Angled Bracket (**item 11**) as a guide, mark the locations for the holes shown below (dimensions reference edges of the hood). Use a 1/4 in. drill bit to drill the holes through the hood. Install Angled Bracket (**item 11**) with qty. 4 M5 Socket Button Head Screws (**item 9**) and qty. 4 M5 Flange Lock Nuts (**item 10**). Torque to 6.5 ft lb. (8.8 Nm).



Model 4750 Sit-Down Counterbalanced

10. Clean the back and bottom surfaces of the Angled Bracket (**item 11**) with isopropyl alcohol. Remove the adhesive film from the back and bottom of the Cab Silencer (**item 5**) and install on the bracket.



11. Connect Extension Harness (**item 3**) JMWT01 to Cab Silencer connector PCS1. Route cable down the back of and below the battery compartment to the contactor panel. Connect Extension Harness (**item 3**) connector PWM01 to MFG harness connector JCS1. Use Anchors (**item 8**) and Cable Ties (**item 6** or **item 7**) to secure the cables.

Model 5300/5400/5500/5600 Orderpicker

Model 5300/5400/5500/5600 Orderpicker

NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to "[Installation Tips](#)" on [page 3](#) for alternate location considerations.

Prerequisite Requirements

Installation of this kit requires a 13 conductor Over-the-Mast cable (Kit P/N 1372373/xxx).

Kit Specific Components

Table 5. Kit P/N 1354611/001 & /003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/001 (5600)	MFG Assembly - see Table 1 on page 2 .	1
	1323386/002 (5300/5400/5500)		
2	1351994	Bracket	1
3	1351805	Bracket	1
4	5-004-015	Screw - M6 x 20 Socket Flat Head	4
5	5-001-086	Screw - M6 x 100 Hex Head	4
6	1259902/002	Nut, Lock - M6 Flange	8
7	Notification Module - see Table 1 on page 2 .		1
8	Cab Silencer - see Table 1 on page 2 .		1
9	1373760	Mounting Bracket - Cab Silencer	1
10	1354899	Harness, Adapter - Cab Silencer	1
11	5-010-006	Screw - M3 x 16 Machine	2
12	5-010-042	Screw - M3 x 33 Machine	2
13	611-056	Cable Tie, 14.5 in.	10
14	611-046	Cable Tie, 5.6 in.	10
15	611-044	Anchor, Plastic Mount	10
16	1374608	Harness, Adapter - Tractor	1
17	1374607	Harness, Adapter - Carriage	1
18	5-016-001	Nut, Lock - M3	2
19	1018204/001	Screw - M2.5 x 6 Pan Head	2
20	1178693/002	Terminal Strip	1
21	1-030-002	Insulator	1
22	1374274/001	Harness, Capacitor	1

Installation Procedure

For items in bold print, refer to [Table 5](#).

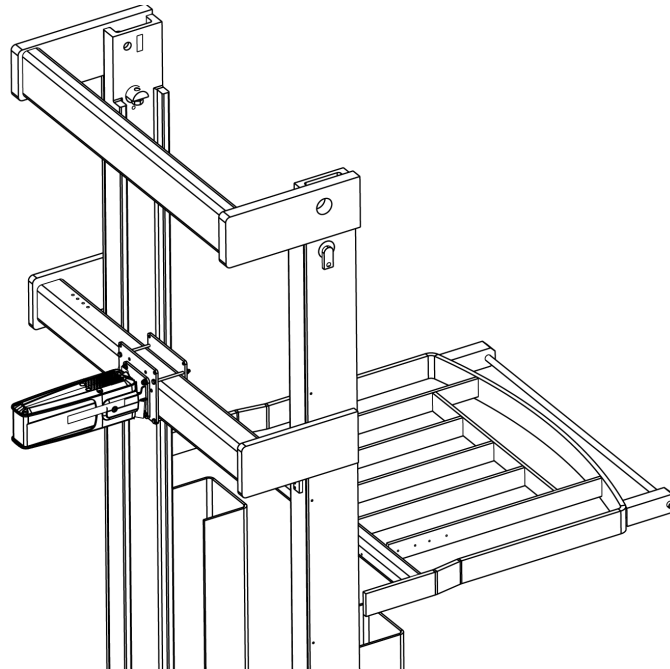
CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

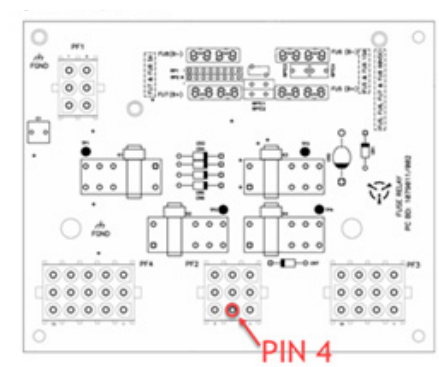
1. Turn the key switch OFF and disconnect the battery connector.
2. Install the MFG Assembly (**item 1**) to Bracket (**item 2**) with qty. 4 M6 x 20 Socket Head Screws (**item 4**) and qty. 4 Lock Nuts (**item 6**). Make sure harness exits out of groove in the bottom of the mounting plate. Torque to 8 ft. lb. (10.8 Nm).

Model 5300/5400/5500/5600 Orderpicker

3. Install the MFG Assembly on the mast mainframe cross tie with Bracket (**item 3**) and qty. 4 M6 x 100 Hex Head Screws (**item 5**). Center the MFG on the crosstie with it extending over the rear of the tractor. Torque to 8 ft. lb. (10.8 Nm), then install qty. 4 Lock Nuts (**item 6**).



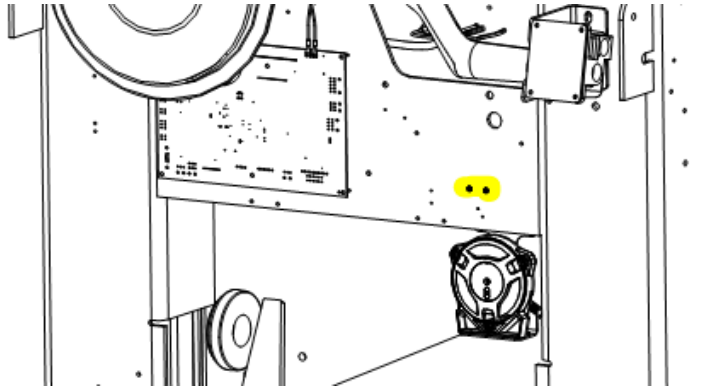
4. Route the MFG harness across the cross tie and down the left side main frame into the tractor compartment. Use Anchors (**item 15**) and Cable Ties (**items 13 and 14**) to secure the harness.
5. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the lift truck TP4 terminal. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
6. Connect jumper P/N 1354748/001 (supplied with MFG (**item 1**)) to the BPOS Faston terminal on the MFG harness. Install pin on the jumper harness in the pin 4 location of the JF2 connector on the lift truck Fuse Relay Card. This provides switched power to the unit.



Model 5300/5400/5500/5600 Orderpicker

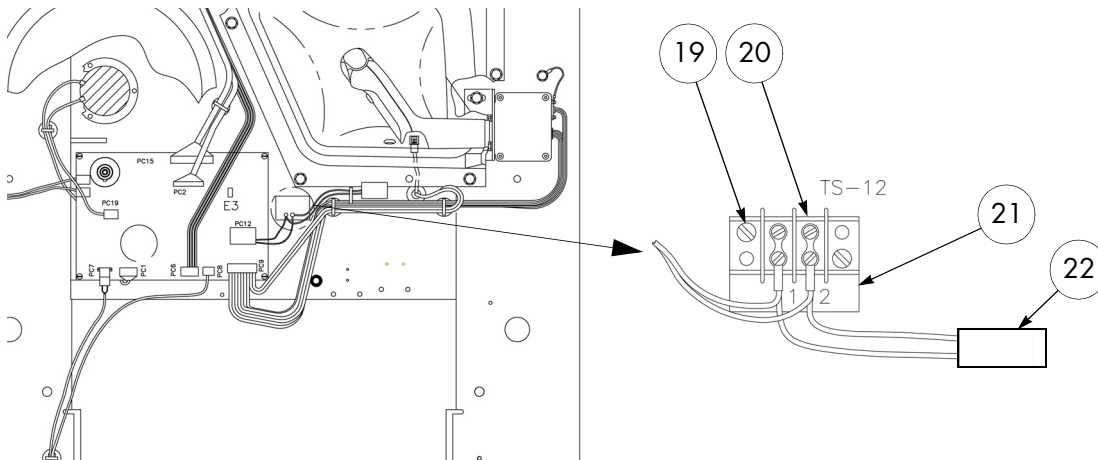
7. Install the Cab Silencer Mounting Bracket (**item 9**) on the carriage at the two holes identified below with qty. 2 M3 x16 Screws (**item 11**) and qty. 2 Lock Nuts (**item 18**). Torque to 12 in. lb. (1.35 Nm).

NOTE: These holes are used for the temperature switch on cold storage lift trucks. If the switch is installed, remove the factory installed hardware and replace with the M3 x 33 Screws (**item 12**), then install the Cab Silencer Mounting Bracket (**item 9**).



8. Install Terminal Strip (**item 20**) and Insulator (**item 21**) with qty. 2 M2.5 x 6 Pan Head Screws (**item 19**) and Capacitor Harness (**item 22**) as shown below.

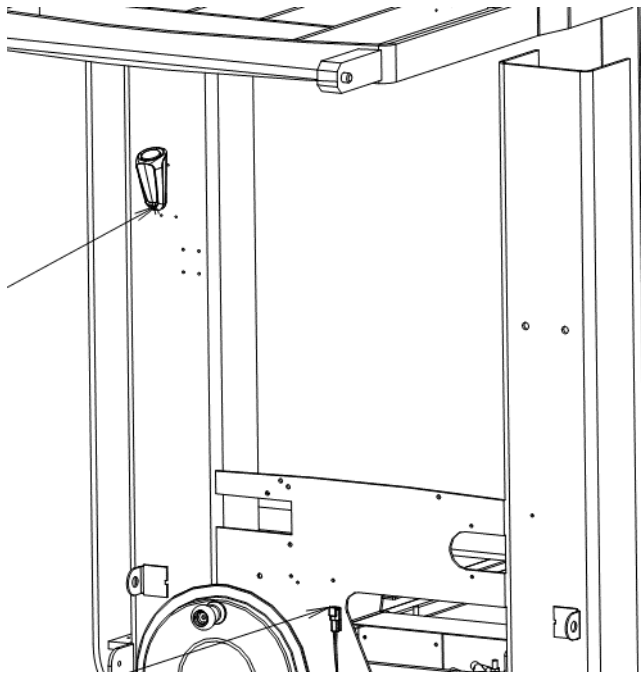
NOTE: These items may already be installed on newer lift trucks.



9. Connect the Cab Silencer Adapter Harness (**item 10**) to the Cab Silencer (**item 8**). Connect the two Faston connectors to the Carriage Terminal Strip (TS12-1 and -2). Clean bracket surface with isopropyl alcohol and allow to dry. Remove adhesive film and install the Cab Silencer (**item 8**) on the bracket. Use Anchors (**item 15**) and Cable Ties (**item 14**) to secure the harness.
10. Replace existing Over-the-Mast (OTM) cable (if necessary) with new 13 conductor OTM Cable (Kit P/N 1372373/xxx). Connect PWM1 on the tractor harness to JWMT01 on the OTM cable.

Model 5300/5400/5500/5600 Orderpicker

11. Clean the left side carriage upright at operator eye-level with isopropyl alcohol and allow to dry. Remove adhesive film from the Notification Module (**item 7**) and install as shown below.



12. Connect Notification Module connector JWM to PWM01 on the OTM cable. Use Anchors (**item 15**) and Cable Ties (**items 13 and 14**) to secure the harness.

7000 Series Reach

7000 Series Reach**Kit Specific Components**

Table 6. Kit P/N 1355283/001, /003, and /005 Breakdown

Item	Part Number	Description	Qty.
1	1323386/001 (36V trucks w/256K VM)	MFG Assembly - see Table 1 on page 2.	1
	1323386/004 (36V trucks w/512K VM)		
	1323386/006 (24V trucks - no VM dependency)		
2	1350902	Bracket	1
3	1351242	Plate	1
4	5-001-004	Screw - M6 x 25 Hex Head	8
5	1259902/002	Nut, Lock - M6 Flange	8
6	Notification Module - see Table 1 on page 2.		1
7	Cab Silencer - see Table 1 on page 2.		1
8	611-056	Cable Tie, 14.5 in.	10
9	611-046	Cable Tie, 5.6 in.	10
10	611-044	Anchor, Plastic Mount	10
11	1354897	Harness, Extension	1
12	1178693/002	Terminal Strip	1
13	5-003-530	Screw - M3 Socket Button Head	2
14	1-030-003	Insulator	1
15	412-817	Decal	1

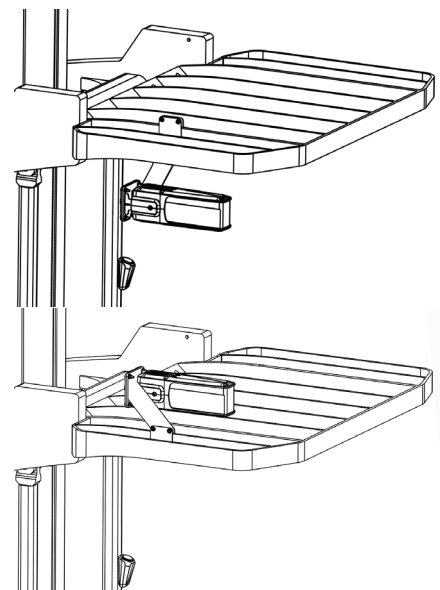
Installation Procedure

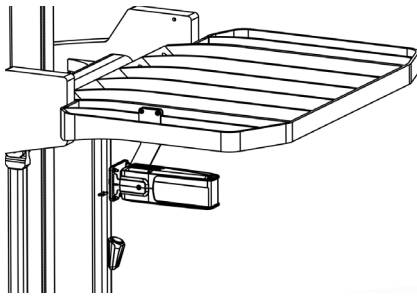
NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to ["Installation Tips" on page 3](#) for alternate location considerations.

MFG Mounting Locations

Models 7200/73xx/7500/7520 with 95 in. OACH or higher - install MFG on the third support in from the left side of the lift truck below the overhead guard.

Lift trucks with OACH shorter than 95 in. - install MFG on the third support in from the left side of the lift truck above the overhead guard.





Models 7530/7700/7720/ 7730 - install MFG on the second support in from the left side of the lift truck below the overhead guard.

NOTE: The MFG must be located 4 in. (10.2 cm) away from any steel structure on the lift truck (crossties, rear posts, etc.). Existing overhead guard mounted equipment may require relocation to gain the necessary spacing for the MFG.

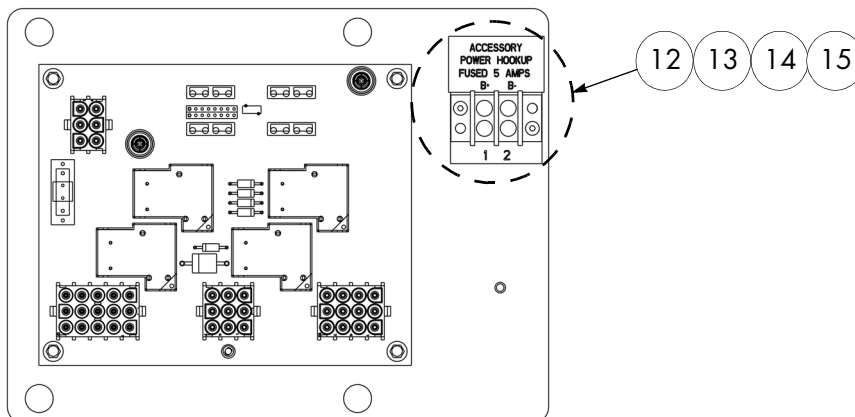
For items in bold print, refer to [Table 6](#).

⚠ CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

1. Turn the key switch OFF and disconnect the battery connector.
2. Install the MFG Assembly (**item 1**) to Mounting Bracket (**item 2**) with qty. 4 M6 x 25 Hex Head Screws (**item 4**) and qty. 4 Lock Nuts (**item 5**). Make sure harness exits out of groove in the bottom of the bracket. Torque to 8 ft. lb. (10.8 Nm).
3. Refer to “MFG Mounting Locations” above. Install the MFG Assembly on the overhead guard with Plate (**item 3**) and qty. 4 M6 x 100 Hex Head Screws (**item 4**). Torque to 8 ft. lb. (10.8 Nm), then install qty. 4 Lock Nuts (**item 5**).
4. Route the MFG harness along the bracket, overhead guard/crosstie to the right side of the mast. Route the harness down the mast and into the tractor compartment. Use Anchors (**item 10**) and Cable Ties (**items 8 and 9**) to secure the harness.
5. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the lift truck TP4 terminal. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
6. If lift truck is already equipped with the Aux Power option, proceed to Step 7.

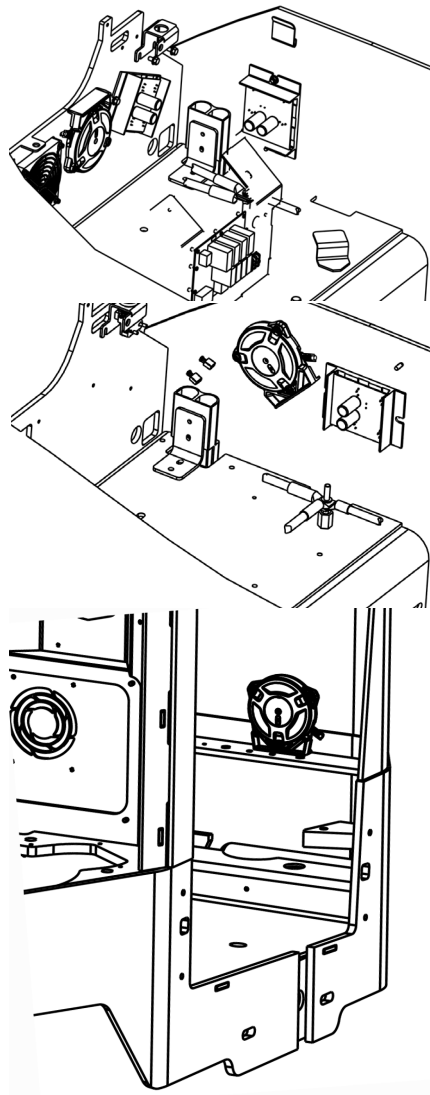
If lift truck is not already equipped with the Aux Power option, install Terminal Strip (**item 12**) with qty. 2 M3 Socket Button Head Screws (**item 13**), Insulator (**item 14**), and Decal (**item 15**) on Fuse Relay Bracket Assembly as shown below.



Fuse Relay Bracket Assembly (for reference only)

7000 Series Reach

7. On the lift truck Fuse Relay Bracket Assembly, disconnect TS1-1 BATT from the terminal strip (if necessary). Isolate this connection with heat shrink tubing. Remove heat shrink from the wire labeled TS-1 KEY and connect to TS-1.
8. Connect jumper P/N 1354748/003 (supplied with MFG **(item 1)**) to the BPOS(2A) Faston terminal on the MFG harness. Install ring terminal BPOS(2B) on the jumper harness to TS-1 on the lift truck Fuse Relay Bracket Assembly. This provides switched power to the unit.
9. Refer to "[Cab Silencer Mounting Locations](#)". Clean the metal surface where the Cab Silencer **(item 7)** will be located with isopropyl alcohol and allow to dry. Remove adhesive film and install the Cab Silencer.

Cab Silencer Mounting Locations

Models 7200/73xx/7500/7520/7700/7720 Fore/Aft Stance - install the cab silencer on the tractor bulkhead.

Models 7200/73xx/7500/7520/7700/7720 Dockstance - install the cab silencer to the inside of the right side tractor skin.

NOTE: For lift trucks with REGEN Lower, install the cab silencer on the tractor bulkhead as shown above for Fore/Aft Stance models.

Models 7530/7730 - install the cab silencer on the mounting gusset of the inertial damper located behind the operator.

NOTE: If a Continuous Signal Cab Silencer is placed within 4 ft. (122 cm) of the MFG, truck-to-truck communication can be affected. The functionality of truck-to-truck communication should be verified before finalizing the Cab Silencer location.

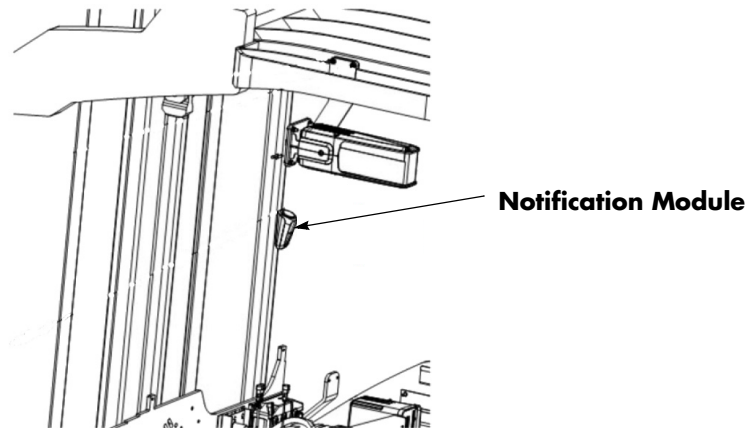


Continuous Signal Cab Silencer



Intermittent Signal Cab Silencer

10. For **Models 7200/73x0/7500/7520/7700/7720**, connect the Cab Silencer (**item 7**) to JCS1 on the MFG harness.
For **Models 7530/7730**, connect Extension Harness (**item 11**) to JCS1 on the MFG harness, and then to the cab silencer.
Secure harness using Anchors (**item 10**) and Cable Ties (**item 9**).
11. Clean the surface where the Notification Module (**item 6**) will be located with isopropyl alcohol and allow to dry.
 - For **Models 7200/73x0/7500/7520/7700/7720**, locate the Notification Module on the right side mast mainframe or main lift cylinder in the operator's field of view.
 - For **Models 7530/7730**, locate the Notification Module on the right side mast brace in the operator's field of view.
12. Remove film from adhesive on the Notification Module (**item 6**) and install at correct location.



13. Route Notification Module harness down main lift cylinder or outside mast brace. Plug Notification Module connector into MFG PWM1. Secure harness using Anchors (**item 10**) and Cable Ties (**item 8** or **item 9**).

Models 8310/8410 Pallet

Models 8310/8410 Pallet

Prerequisite Requirements

Installation of this kit requires an E-Bar Assembly. If lift truck is not so equipped, Kit P/N 1365258/001 must be installed.

Kit Specific Components

Table 7. Kit P/N 1365258/001 & /003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/026	MFG Assembly - see Table 1 on page 2.	1
2	1357970	Angle Bracket	1
3	1363480	Mounting Plate	6
4	1169843/004	Nut, Lock - M10 Flange	2
5	5-001-502	Screw - M6 x 16 Hex Cap Head	4
6	1259902/002	Nut, Lock - M6 Flange	4
7	Notification Module - see Table 1 on page 2.		1
8	Cab Silencer - see Table 1 on page 2.		1
9	611-056	Cable Tie, 14.5 in.	10
10	611-046	Cable Tie, 5.6 in.	10
11	611-044	Anchor, Plastic Mount	10
12	1146233	Mounting Bracket	1
13	1145822/002	E-Bar	1
14	5-007-539	Screw - M10 x 30 Socket Button Head	2
15	5-007-027	Screw - M6 x 30 Socket Button Head	4
16	5-003-529	Screw - M5 x 14 Socket Button Head	6
17	5-007-530	Screw - M8 x 16 Socket Button Head	2
18	5-018-004	Washer - M5	2
19	5-018-006	Washer, Flat - M8	2
20	1412668/001	Mounting Bracket	1
21	1381547	Relay Kit	1

NOTE: Items 4, 6, 12, 13, 14, and 15 apply to Kit P/N 1365258/001 only.

Installation Procedure

For items in bold print, refer to [Table 7.](#)

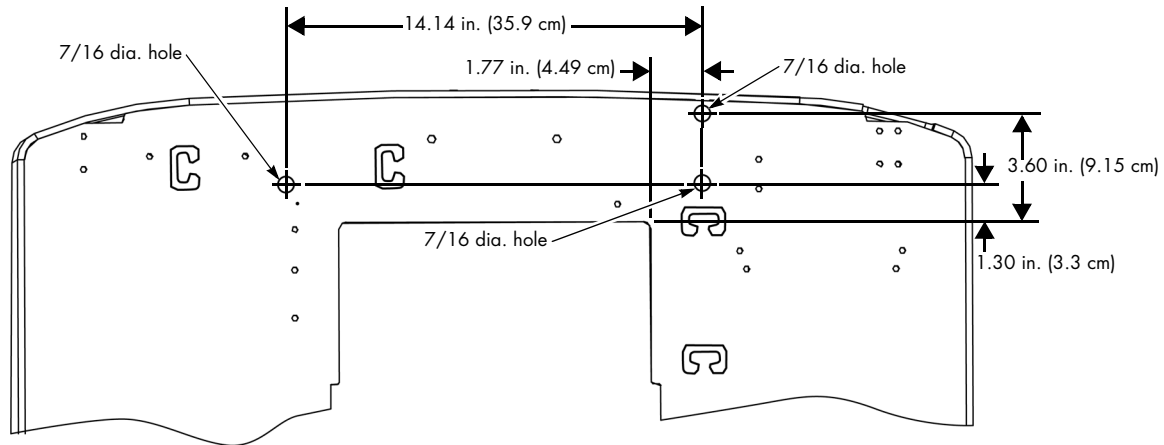
CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

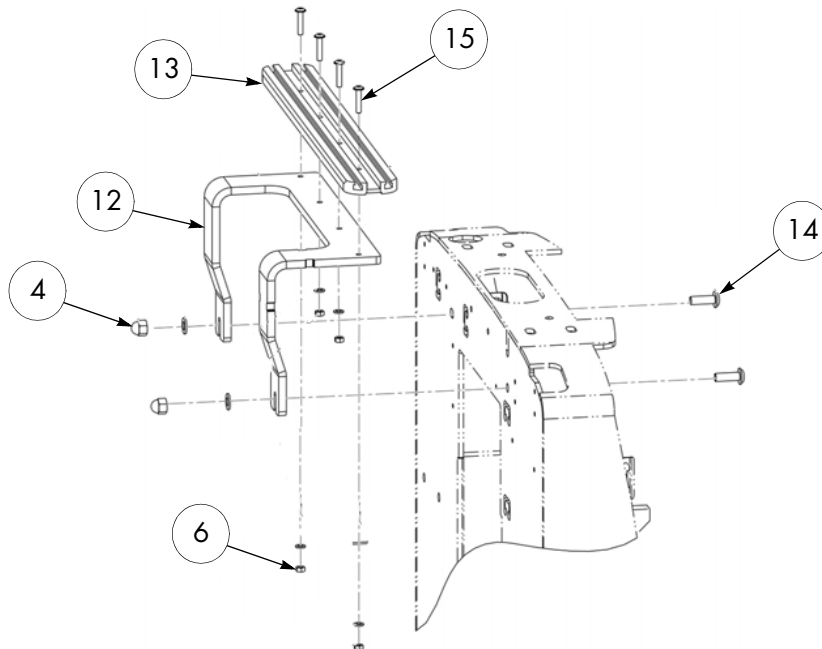
1. Turn the key switch OFF and disconnect the battery connector. Remove battery to access the tractor frame bulkhead.
2. **Accessory Bar Installation:**

NOTE: If lift truck is already equipped with a single level accessory bar, proceed to Step 3.

- a. Carefully drill three 7/16 in. holes in the tractor frame bulkhead as shown below.



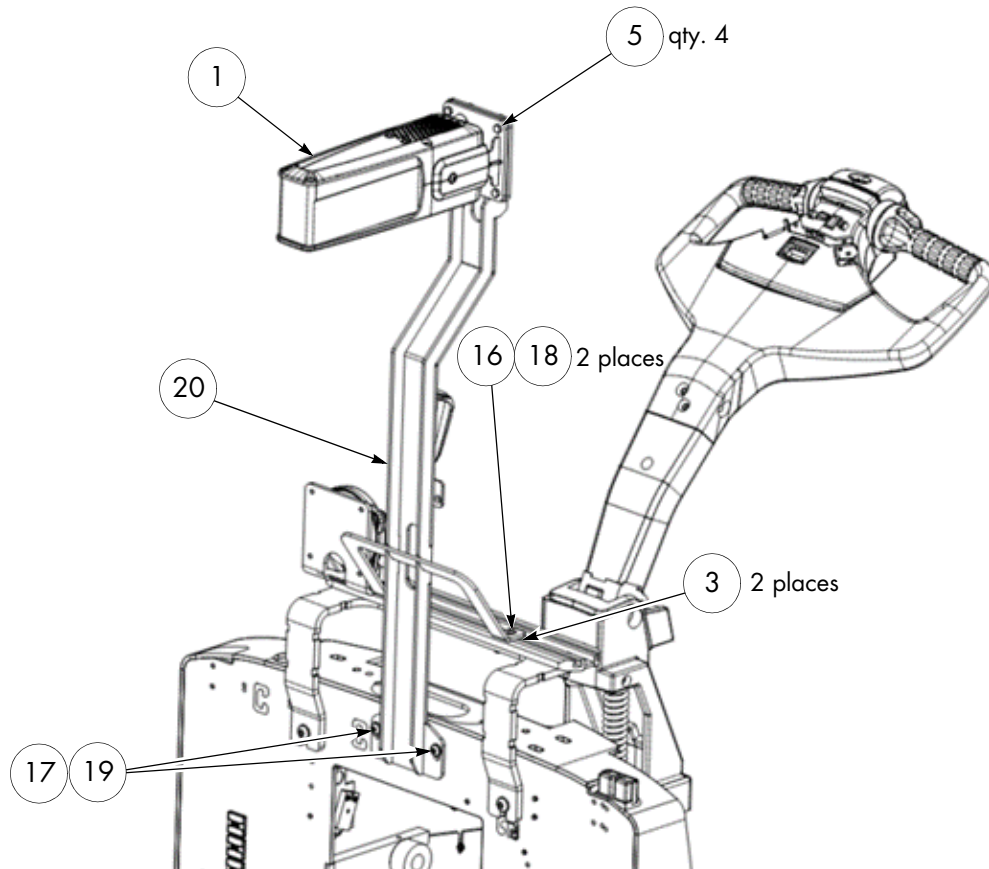
- b. Remove any burrs or sharp edges from new holes.
- c. Attach E-Bar (**item 13**) to Mounting Bracket (**item 12**) with qty. 4 M6 x 30 Socket Button Head Screws (**item 15**) and qty. 4 M6 Lock Nuts (**item 6**) as shown below. Apply thread-locking compound (P/N 1013829) to the threads of the screws prior to assembly. Torque nuts to 6 ft. lb. (8 Nm).
- d. Install E-Bar assembly to the lift truck with qty. 2 M10 x 30 Socket Button Head Screws (**item 14**) and qty. 2 M10 Lock Nuts (**item 4**) as shown below. Apply thread-locking compound (P/N 1013829) to the threads of the screws prior to assembly. Torque to 29 ft. lb. (39 Nm).



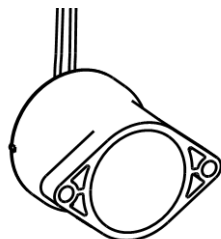
3. Install Mounting Bracket (**item 20**) with qty. 2 M8 x 16 Button Head Screws (**item 17**) and qty. 2 M8 Flat Washers (**item 19**). Torque to 21 ft. lb. (29 Nm). Insert qty. 2 Mounting Plates (**item 3**) into the front channel of the E-Bar. Attach Mounting Bracket (**item 20**) angle brackets to the mounting plates with qty. 2 M5 x 14 Button Head Screws (**item 16**) and qty. 2 M5 Flat Washers (**item 18**). Torque to 6.5 ft. lb. (8.8 Nm).

Models 8310/8410 Pallet

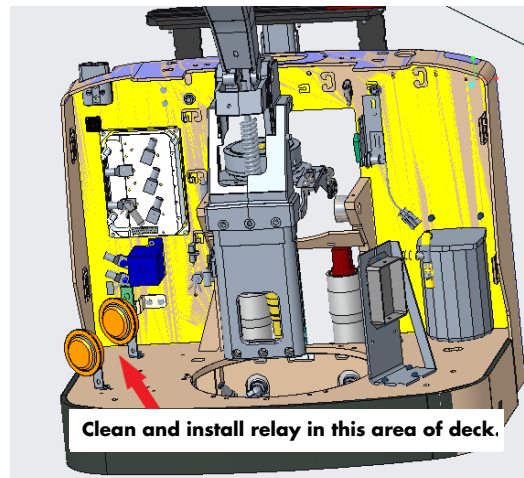
4. Install the MFG Assembly (**item 1**) on the Mounting Bracket (**item 20**) with qty. 4 M6 x 16 Hex Cap Head Screws (**item 5**). Torque to 8 ft. lb. (10.9 Nm).



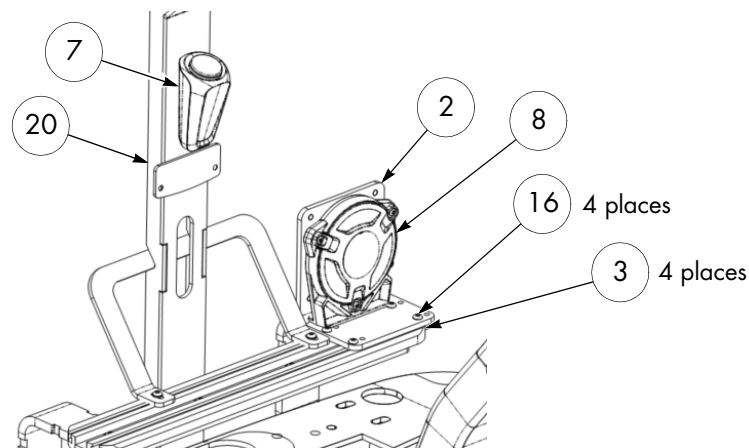
5. Route the MFG harness down the Mounting Bracket (**item 20**) and into the tractor. Use Anchors (**item 11**) and Cable Ties (**item 10**) to secure the harness.
6. Clean bottom of Relay Assembly (part of **item 21**) and lift truck deck with isopropyl alcohol. Allow to dry completely.
7. Apply double sided tape to bottom of Relay Assembly and install on lift truck deck in location shown below.



Bottom of Relay Assembly



8. Connect Relay Power Harness (part of **item 21**) to Relay Assembly:
 - a. Ring terminal K02-A1 (+) to Relay terminal +A1
 - b. Ring terminal K02-A2 (-) to Relay terminal -A2
 - c. Torque connections to 35 in. lb. (3.9 Nm).
9. Connect Relay Power Harness to lift truck and MFG:
 - a. Terminal BPOS (4) to MFG terminal BPOS
 - b. Ring Terminal K04-(+)(3) to TP1
10. Connect Relay Power Harness to lift truck for switched power:
 - a. Connect Relay Assembly Ring terminal AR02-B- and the two MFG harness ring terminals TP4 (1) and TP4 (2) to B- on the traction amp, or TP4 terminal (if equipped). Torque to 100 in. lb. (11.3 Nm) using the 2 wrench method.
 - b. Relay Assembly terminal B+_KEY (2B) to key switch jumper wire P/N 1379312/001 or /002, depending on what key switch is installed:
 - Use P/N 1379312/001 (part of **item 21**) for sealed key switch. Terminate socket contact in key switch connector position 4 or 5, dependent on availability.
 - Use P/N 1379312/002 (part of **item 21**) for standard key switch. Terminate spade terminal at key switch position IGN-2.
 - c. Route key switch jumper wire to key switch.
11. Coil and secure excess cable with Cable Ties (**item 10**).
12. Install qty. 4 Mounting Plates (**item 3**) into the front and rear channels of the E-Bar (2 in front and 2 in rear). Attach Angle Bracket (**item 2**) to the mounting plates using qty 4. M5 x 14 Button Head Screws (**item 16**). Torque to 6.5 ft. lb. (8.8 Nm).
13. Clean the Angle Bracket (**item 2**) with isopropyl alcohol and allow to dry. Remove film from the adhesive on the back and bottom of the Cab Silencer (**item 8**). Install the Cab Silencer on the bracket as shown below.
14. Route Cab Silencer harness inside tractor and connect Cab Silencer connector PCS1 to connector JCS1 on the MFG harness. Secure harness using Anchors (**item 11**) and Cable Ties (**item 10**).
15. Clean Mounting Bracket (**item 20**) with isopropyl alcohol and allow to dry. Remove adhesive film from the Notification Module (**item 7**) and install so that it can be seen by an operator.
16. Route Notification Module harness through the cutout and down into the tractor. Connect Notification Module connector JWM to connector PWM1 on the MFG harness. Secure harness with Anchors (**item 11**) and Cable Ties (**item 10**).



Models 8510/8610 Pallet

Models 8510/8610 Pallet

Prerequisite Requirements

Installation of this kit requires an E-Bar Assembly. If lift truck is not so equipped, Kit P/N 1365260/001 must be installed.

Kit Specific Components

Table 8. Kit P/N 1365260/001 & /003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/026	MFG Assembly - see Table 1 on page 2.	1
2	1357970	Angle Bracket	2
3	1363480	Mounting Plate	8
4	1169843/004	Nut, Lock - M10 Flange	2
5	5-001-502	Screw - M6 x 16 Hex Cap Head	4
6	1259902/002	Nut, Lock - M6 Flange	4
7	Notification Module - see Table 1 on page 2.		1
8	Cab Silencer - see Table 1 on page 2.		1
9	611-056	Cable Tie, 14.5 in.	10
10	611-046	Cable Tie, 5.6 in.	10
11	611-044	Anchor, Plastic Mount	10
12	1146232	Mounting Bracket	1
13	1145822/001	E-Bar	1
14	5-007-539	Screw - M10 x 30 Socket Button Head	2
15	5-007-027	Screw - M6 x 30 Socket Button Head	4
16	5-003-529	Screw - M5 x 14 Socket Button Head	14
17	1381547	Relay Kit	1

NOTE: Items 4, 6, 12, 13, 14, and 15 apply to Kit P/N 1365260/001 only.

Installation Procedure

For items in bold print, refer to [Table 8.](#)

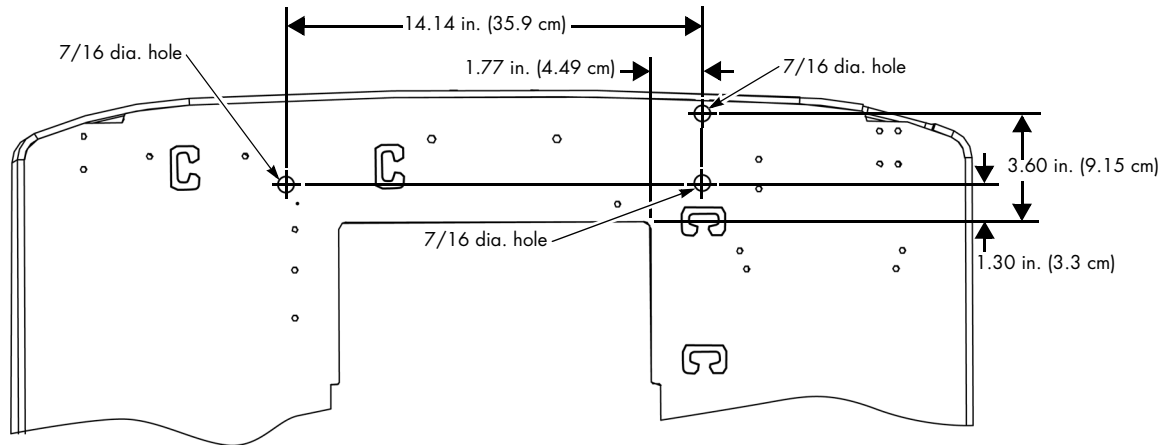
CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

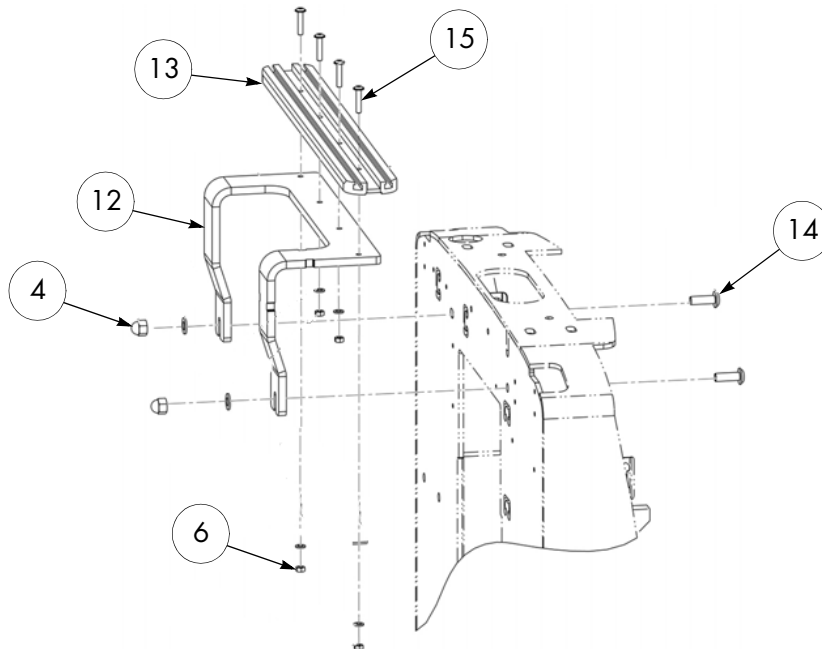
1. Turn the key switch OFF and disconnect the battery connector. Remove battery to access the tractor frame bulkhead.
2. **Accessory Bar Installation:**

NOTE: If lift truck is already equipped with a single level accessory bar, proceed to Step 3.

- a. Carefully drill three 7/16 in. holes in the tractor frame bulkhead as shown below.



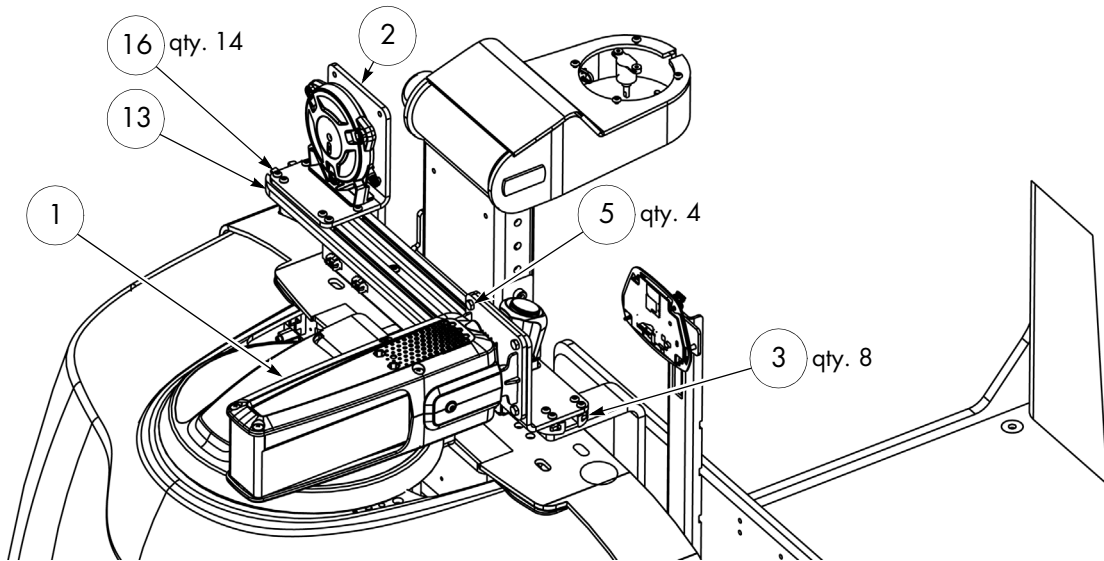
- b. Remove any burrs or sharp edges from new holes.
- c. Attach E-Bar (**item 13**) to Mounting Bracket (**item 12**) with qty. 4 M6 x 30 Socket Button Head Screws (**item 15**) and qty. 4 M6 Lock Nuts (**item 6**) as shown below. Apply thread-locking compound (P/N 1013829) to the threads of the screws prior to assembly. Torque nuts to 6 ft. lb. (8 Nm).
- d. Install E-Bar assembly to the lift truck with qty. 2 M10 x 30 Socket Button Head Screws (**item 14**) and qty. 2 M10 Lock Nuts (**item 4**) as shown below. Apply thread-locking compound (P/N 1013829) to the threads of the screws prior to assembly. Torque to 29 ft. lb. (39 Nm).



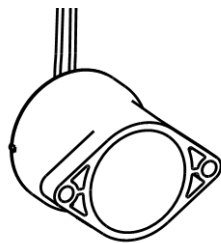
3. Install qty. 8 Mounting Plates (**item 3**) into the front and rear channels of the E-Bar (**item 13**) (4 in front and 4 in rear). Attach qty. 2 Angle Brackets (**item 2**) to the mounting plates using qty. 14 M5 x 14 Button Head Screws (**item 16**). Torque to 6.5 ft lb. (8.8 Nm). Install the Angle Brackets (**item 2**) facing opposite directions as shown below.

Models 8510/8610 Pallet

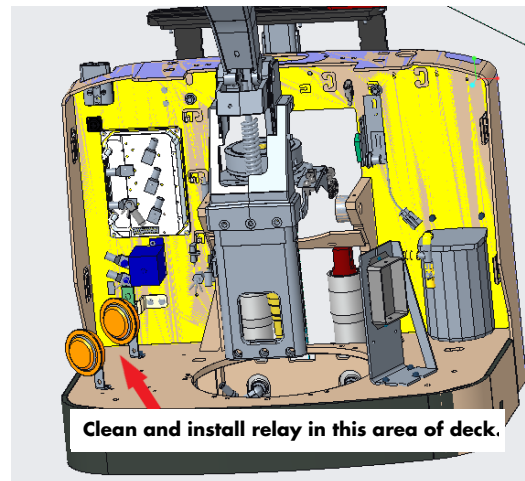
4. Install the MFG Assembly (**item 1**) on the Angle Bracket (**item 2**) with qty. 4 M6 x 16 Hex Cap Head Screws (**item 5**). Position the unit away from the control handle as shown below. Make sure the harness exits through hole in the bracket. Torque hardware to 8 ft lb. (10.8 Nm).



5. Route the MFG harness across the E-Bar and into the tractor. Use Anchors (**item 11**) and Cable Ties (**item 10**) to secure the harness.
6. Clean bottom of Relay Assembly (part of **item 17**) and lift truck deck with isopropyl alcohol. Allow to dry completely.
7. Apply double sided tape to bottom of Relay Assembly and install on lift truck deck in location shown below.

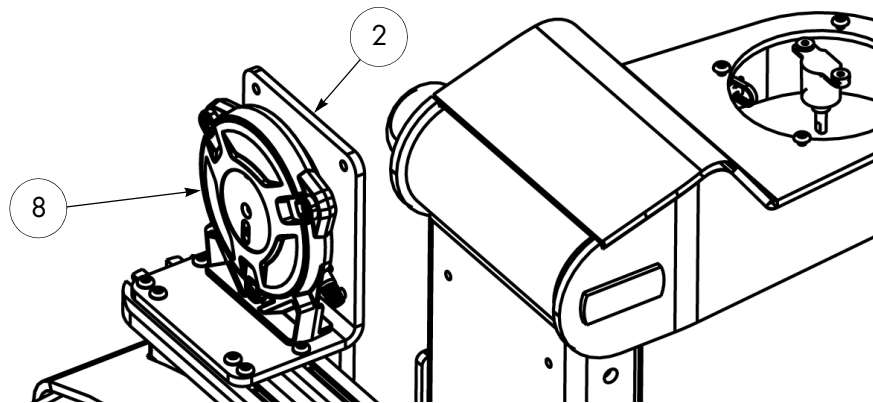


Bottom of Relay Assembly

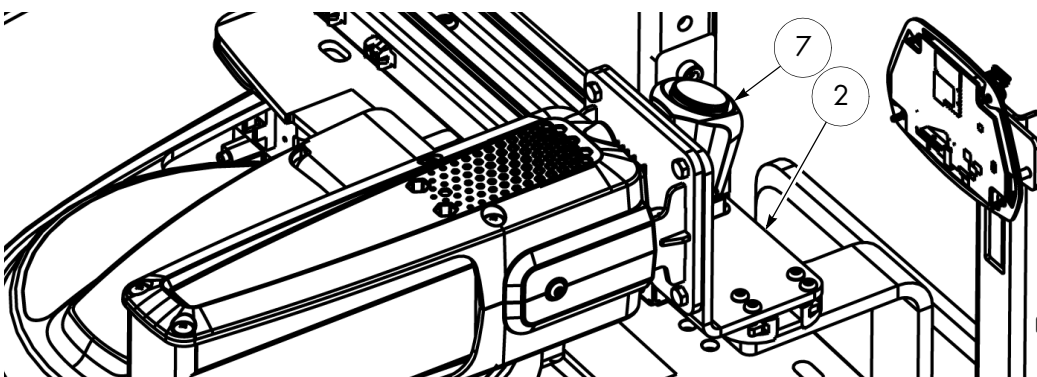


8. Connect Relay Power Harness (part of **item 17**) to Relay Assembly:
 - a. Ring terminal K02-A1 (+) to Relay terminal +A1
 - b. Ring terminal K02-A2 (-) to Relay terminal -A2
 - c. Torque connections to 35 in. lb. (3.9 Nm).
9. Connect Relay Power Harness to lift truck and MFG:
 - a. Terminal BPOS (3) to MFG terminal BPOS

- b. Ring Terminal K04-(+)(3) to TP1
10. Connect Relay Power Harness to lift truck for switched power:
- Connect Relay Assembly Ring terminal AR02-B- and the two MFG harness ring terminals TP4 (1) and TP4 (2) to B- on the traction amp, or TP4 terminal (if equipped). Torque to 100 in. lb. (11.3 Nm) using the 2 wrench method.
 - Relay Assembly terminal B+_KEY (2B) to key switch jumper wire P/N 1379312/001 or /002, depending on what key switch is installed:
 - Use P/N 1379312/001 (part of **item 17**) for sealed key switch. Terminate socket contact in key switch connector position 4 or 5, dependent on availability.
 - Use P/N 1379312/002 (part of **item 17**) for standard key switch. Terminate spade terminal at key switch position IGN-2.
 - Route key switch jumper wire to key switch.
11. Coil and secure excess cable with Cable Ties (**item 10**).
12. Clean the Angle Bracket (**item 2**) with isopropyl alcohol and allow to dry. Remove film from the adhesive on the back and bottom of the Cab Silencer (**item 8**). Install the Cab Silencer on the bracket as shown below.



13. Route Cab Silencer harness inside tractor and connect Cab Silencer connector PCS1 to connector JCS1 on the MFG harness. Secure harness using Anchors (**item 11**) and Cable Ties (**item 10**).
14. Clean surface of the MFG Angle Bracket (**item 2**) with isopropyl alcohol and allow to dry. Remove adhesive film from the Notification Module (**item 7**) and install so that it can easily be seen by an operator.



15. Connect Notification Module connector JWM to connector PWM1 on the MFG harness. Secure harness with Anchors (**item 11**) and Cable Ties (**item 10**).

Model 9600/9700 Swing-Reach

Model 9600/9700 Swing-Reach

NOTE: If any of the following installation instructions conflict with lift truck options already installed, refer to "Installation Tips" on page 3 for alternate location considerations.

Prerequisite Requirements

Installation of this kit requires 10-conductor Over-the-Mast cable P/N 1365319/xxx.

Kit Specific Components

Table 9. Kit P/N 1354670/001 Breakdown

Item	Part Number	Description	Qty.
1	1323386/001	MFG Assembly - see Table 1 on page 2.	1
2	1351994	Bracket	1
3	1351805	Bracket	1
4	5-004-015	Screw - M6 x 20 Socket Flat Head	4
5	5-001-089	Screw - M6 x 65 Hex Cap	4
6	1259902/002	Nut, Lock - M6 Flange	8
7	Notification Module - see Table 1 on page 2.		1
8	Cab Silencer - see Table 1 on page 2.		1
9	1354899	Harness, Adapter - Cab Silencer	1
10	611-056	Cable Tie, 14.5 in.	10
11	611-046	Cable Tie, 5.6 in.	10
12	611-044	Anchor, Plastic Mount	10
13	1178693/002	Terminal Strip	1
14	5-003-530	Screw - M3 Socket Button Head	2
15	1-030-002	Insulator	1
16	412-817	Decal	1

Installation Procedure

For items in bold print, refer to [Table 9.](#)

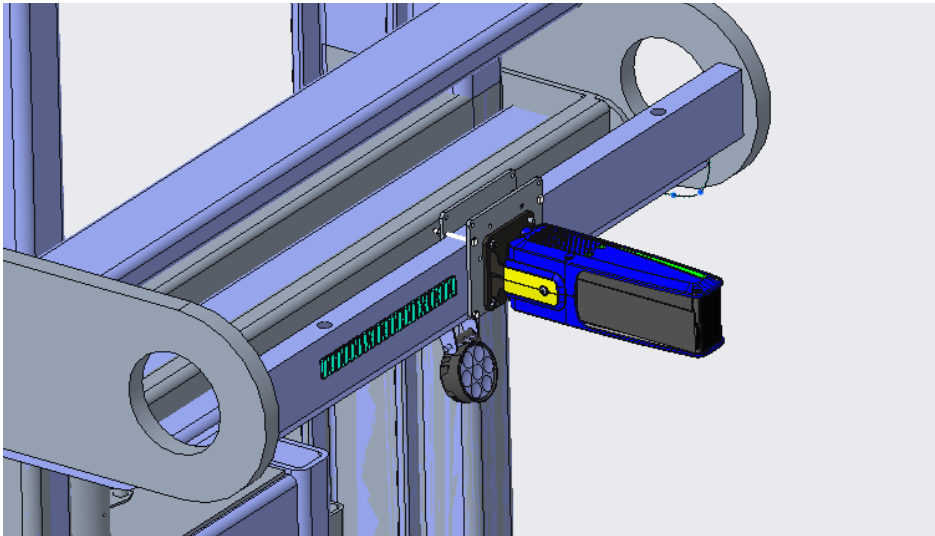
CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

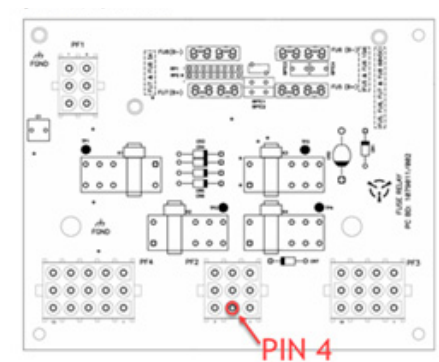
1. Turn the key switch OFF and disconnect the battery connector.
2. Install the MFG Assembly (**item 1**) to Bracket (**item 2**) with qty. 4 M6 x 20 Socket Head Screws (**item 4**) and qty. 4 Lock Nuts (**item 6**). Make sure harness exits out of groove in the bottom of the mounting plate. Torque to 8 ft. lb. (10.8 Nm).

Model 9600/9700 Swing-Reach

3. Install the MFG Assembly on the middle mainframe cross tie with Bracket (**item 3**) and qty. 4 M6 x 65 Hex Head Screws (**item 5**). Center the MFG on the crosstie with it extending over the rear of the tractor. Torque to 8 ft. lb. (10.8 Nm), then install qty. 4 Lock Nuts (**item 6**).



4. Route the MFG harness across the cross tie and down the right side main frame into the tractor compartment. Use Anchors (**item 12**) and Cable Ties (**items 10 and 11**) to secure the harness.
5. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the lift truck TP4 terminal. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
6. Connect jumper P/N 1354748/001 (supplied with MFG (**item 1**)) to the BPOS Faston terminal on the MFG harness. Install pin on the jumper harness in the pin 4 location of the JF2 connector on the lift truck Fuse Relay Card. This provides switched power to the unit.

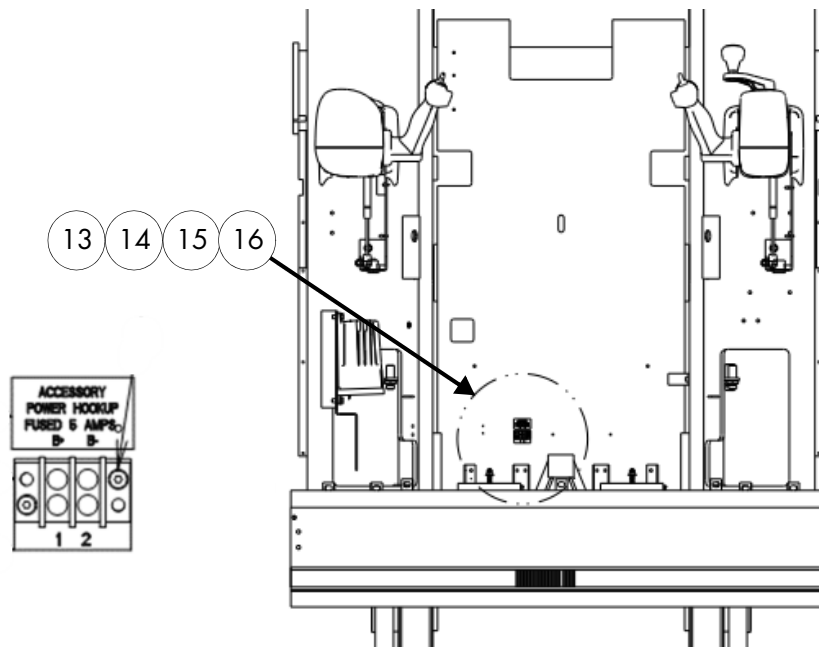


Model 9600/9700 Swing-Reach

7. Remove cover and storage bucket below operator seat. Cut and remove section of floor pad that extends behind the cover mounting tab. Clean exposed steel surface with isopropyl alcohol. Remove film from adhesive strip on bottom of the Cab Silencer (**item 8**) and install on operator platform floor as shown below.



8. If lift truck is already equipped with the Aux Power option, proceed to Step 9.
If lift truck is not already equipped with the Aux Power option:
 - a. Install Terminal Strip (**item 13**) with qty. 2 M3 Socket Button Head Screws (**item 14**), Insulator (**item 15**), and Decal (**item 16**) on carriage as shown below.



- b. Locate wires labeled TS2-2, TS2-1 (BATT), and TS2-1 (KEY) within carriage harness with terminated ends. Remove heatshrink insulation from TS2-2 wire and connect to Terminal 2.

- c. Remove heatshrink insulation from TS2-1 (KEY) and connect to Terminal 1.
- d. Secure TS2-1 (BATT) back into harness with Cable Ties (**item 11**).
9. Connect Cab Silencer Adapter Harness (**item 9**) to the Cab silencer, and connect the two spade connectors to the carriage aux power terminal strip (B+ and B-). Use Anchors (**item 12**) and Cable Ties (**item 11**) to secure the harness.
10. Replace existing Over-the-Mast (OTM) cable on the left mainframe (if necessary) with the 10-conductor cable, P/N 1365319/xxx. Connect PWM1 on tractor harness to JWMT01 on the OTM cable.
11. Clean the left side carriage upright at operator eye-level with isopropyl alcohol. Remove adhesive film from Notification Module (**item 7**) and install on the left side carriage upright.
12. Connect Notification Module connector JWM to PWM01 on the OTM cable. Use Anchors (**item 12**) and Cable Ties (**item 11**) to secure the harness.

Raymond Legacy/Other Than Raymond Lift Trucks (excluding Pallet Trucks)

Raymond Legacy/Other Than Raymond Lift Trucks (excluding Pallet Trucks)

This section provides iW.FieldSense kit installation information for the following Raymond legacy (non-current production) and Other Than Raymond (OTR) lift trucks:

- Reach lift trucks
- Stand-Up Counterbalanced lift trucks
- Sit-down Counterbalanced lift trucks
- Orderpicker lift trucks
- Swing-Reach (turret) lift trucks

Kit Specific Components

Table 10.Kit P/N 1381461/002 and /003 Breakdown

Item	Part Number	Description	Qty.
1	1323386/003 (36V trucks)	MFG Assembly - see Table 1 on page 2.	1
	1323386/005 (24V trucks)		
2	Notification Module - see Table 1 on page 2.		1
3	1376003	Cab Silencer - see Table 1 on page 2.	1
4	611-056	Cable Tie, 14.5 in.	10
5	611-046	Cable Tie, 5.6 in.	10
6	611-044	Anchor, Plastic Mount	10
7	1354897	Harness, Extension	2
8	1378147 includes:	Bracket Kit	REF
	5-001-003	Screw-Hex Cap M6 x 1 x 20	8
	5-001-004	Screw-Hex Cap M6 x 1 x 25	4
	5-001-005	Screw-Hex Cap M6 x 1 x 40	8
	5-001-058	Screw-Hex Cap M6	4
	5-001-063	Screw-Hex Cap M6	4
	5-001-087	Screw-Hex Cap M6	4
	5-001-090	Screw-Hex Cap M6 x 110	4
	5-001-507	Screw-Hex Cap M8 x 1.25 x 16	1
	5-004-016	Screw-Socket Flat Head	4
	5-018-005	Flat Washer	9
	1169843-002	Lock Nut, Flange	13
8a	1378138	Bracket, Adjustable	1
8b	1378139	Block, Mount	1
8c	1378140	Plate, Clamp	1
8d	1378141	Plate, Clamp	1
8e	1378142	Plate, Clamp	1
8f	1380654	Bracket	1
8g	1380655	Bracket	1

FOR LEGACY RAYMOND LIFT TRUCKS, CONSULT INSTRUCTIONS PROVIDED WITH THE REQUIRED S207 FOR COMPONENT PLACEMENT AND ELECTRICAL CONNECTIONS.

FOR OTR LIFT TRUCKS, CONSULT ORIGINAL EQUIPMENT MANUFACTURER FOR COMPONENT PLACEMENT AND ELECTRICAL CONNECTIONS.

Installation Procedure

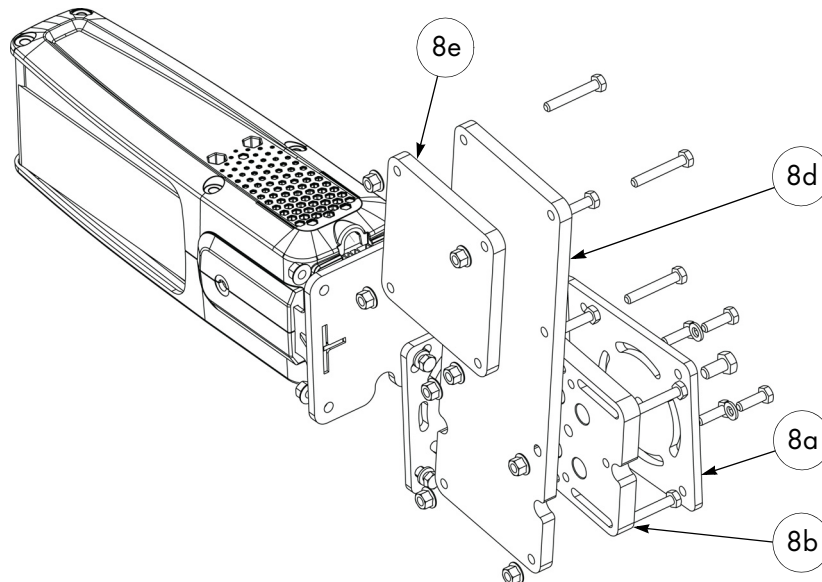
For items in bold print, refer to [Table 10](#).

CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

MFG Installation on Overhead Guard

1. Turn the key switch OFF and disconnect the battery connector.
2. Identify the best location on the overhead guard to mount the MFG Assembly (**item 1**). Determine what bracketry from the Bracket Kit (**item 8**) that will work best to mount the MFG in that location.
 - The MFG should be located as far away from any strobe lights as possible.
 - The MFG should be at least 4 in. (10.16 cm) from the frame.
 - The long axis of the generator should run parallel to the long axis of the lift truck.



3. Install the MFG Assembly (**item 1**) on overhead guard:
 - a. Install MFG on the mast side of the bracket. Make sure harness exits through groove in the bottom of the mounting plate. Torque hardware to 8 ft lb. (10.8 Nm).
 - b. Inspect for clearance between the MFG and the mast. Make sure the mast can be tilted back completely.

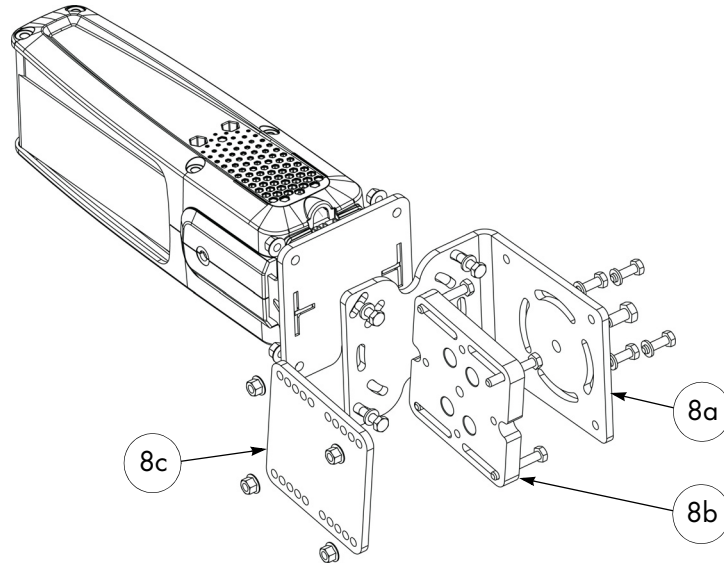
NOTE: If there is interference, mount the MFG on the tractor side of the bracket.

- c. Route the MFG harness down the overhead guard front post and into the tractor compartment. Use Anchors (**item 6**) and Cable Ties (**item 5**) to secure the harness.
4. Refer to ["Electrical Connections" on page 43](#).

Raymond Legacy/Other Than Raymond Lift Trucks (excluding Pallet Trucks)

MFG Installation on Upright Beam

1. Turn the key switch OFF and disconnect the battery connector.
2. Identify the best location on the upright beam to mount the MFG Assembly (**item 1**). Determine what bracketry from the Bracket Kit (**item 8**) that will work best to mount the MFG in that location.
 - The MFG should be located as far away from any strobe lights as possible.
 - The MFG should be at least 4 in. (10.16 cm) from the frame.
 - The long axis of the generator should run parallel to the long axis of the lift truck.



3. Install the MFG Assembly (**item 1**) on upright beam:
 - a. Install MFG on the mast side of the bracket. Make sure harness exits through groove in the bottom of the mounting plate. Torque hardware to 8 ft lb. (10.8 Nm).
 - b. Inspect for clearance between the MFG and the mast. Make sure the mast can be tilted back completely.

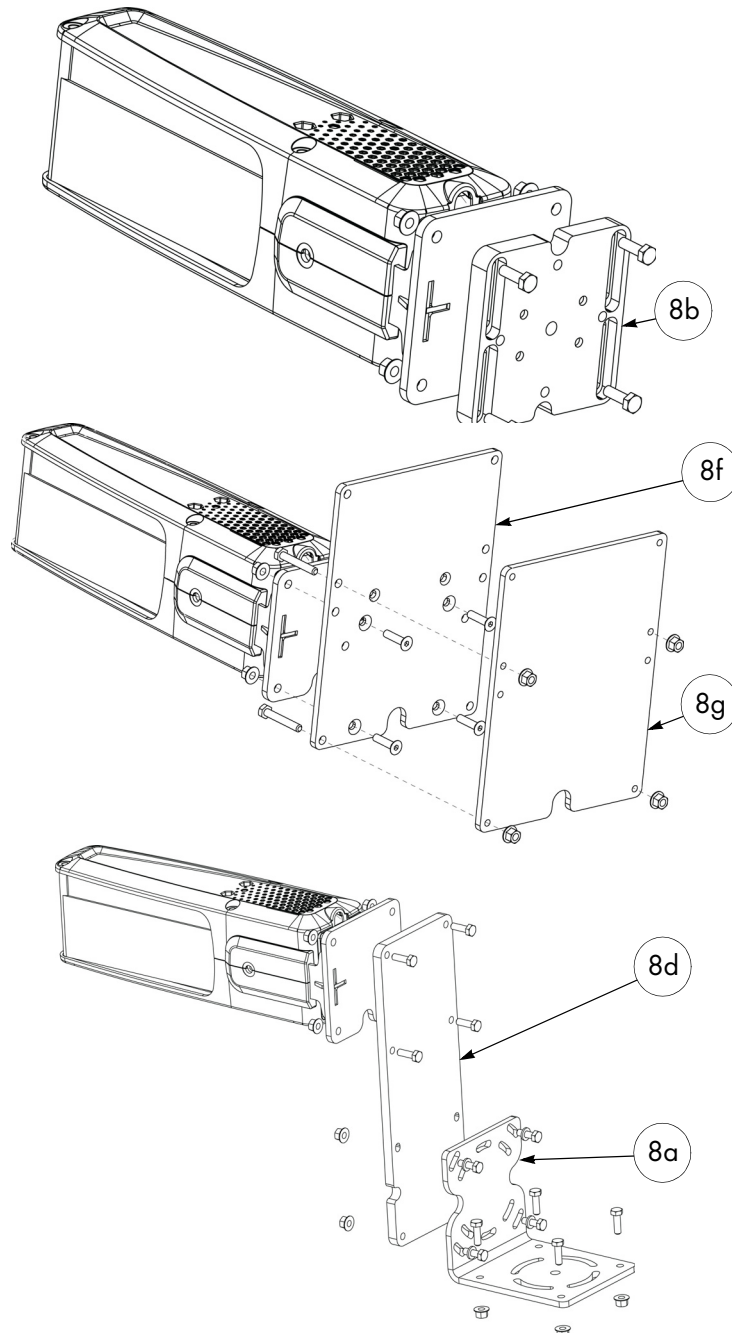
NOTE: If there is interference, mount the MFG on the tractor side of the bracket.

- c. Route the MFG harness down the overhead guard front post and into the tractor compartment. Use Anchors (**item 6**) and Cable Ties (**item 5**) to secure the harness.
4. Refer to "[Electrical Connections](#)" on page 43.

Raymond Legacy/Other Than Raymond Lift Trucks (excluding Pallet Trucks)

MFG Installation on Horizontal Crossbar

1. Turn the key switch OFF and disconnect the battery connector.
2. Identify the best location on the horizontal crossbar to mount the MFG Assembly (**item 1**). Determine what bracketry from the Bracket Kit (**item 8**) that will work best to mount the MFG in that location.
 - The MFG should be located as far away from any strobe lights as possible.
 - The MFG should be at least 4 in. (10.16 cm) from the frame.
 - The long axis of the generator should run parallel to the long axis of the lift truck.



Raymond Legacy/Other Than Raymond Lift Trucks (excluding Pallet Trucks)

3. Install the MFG Assembly (**item 1**) on horizontal crossbar:
 - a. Install MFG on the mast side of the bracket. Make sure harness exits through groove in the bottom of the mounting plate. Torque hardware to 8 ft lb. (10.8 Nm).
 - b. Route the MFG harness down the overhead guard front post and into the tractor compartment. Use Anchors (**item 6**) and Cable Ties (**item 5**) to secure the harness.
4. Refer to "[Electrical Connections](#)".

Electrical Connections

1. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the B-terminal post. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
2. Select the correct jumper necessary (supplied with the MFG (**item 1**)) to connect to a B+ KEY "Switched" connection (refer to lift truck's electrical schematic).

Notification Module Installation

NOTE: The Notification Module must be installed in a location where the operator can see and hear alerts.

1. Select a location where the Notification Module (**item 2**) can easily be seen by the lift truck operator (approximately 8 in. (20.3 cm) above the tractor covers). Clean the mounting location with isopropyl alcohol. Remove film from adhesive on the Notification Module (**item 2**) and install.
2. Connect Notification Module connector JWM to connector PWM1 on the MFG harness. Secure harness using Anchors (**item 6**) and Cable Ties (**item 5**). Use extension harness (**item 7**) if necessary.

Cab Silencer Installation

The Cab Silencer (**item 3**) should be installed at least 4 ft. (122 cm) away from the MFG, as close to the center-line of the lift truck as possible, and within the operator compartment.

 CAUTION

Placing the Cab Silencer less than 4 ft. (122 cm) away from the MFG may cause false alerts within the iW.FS system.

1. Locate an area on the lift truck that meets the distance requirements specified above. Clean the area with isopropyl alcohol. Remove film from adhesive on the Cab Silencer (**item 3**) and install.
2. Route Cab Silencer cable inside tractor compartment and connect connector PCS1 to connector JCS1 on the MFG harness. Secure harness using Anchors (**item 6**) and Cable Ties (**item 5**). Use extension harness (**item 7**) if necessary.

Raymond Legacy/Other Than Raymond Pallet Trucks

This section provides iW.FieldSense kit installation information for Raymond legacy (non-current production) and Other Than Raymond (OTR) pallet trucks:

Kit Specific Components

Table 11.Kit P/N 1381461/001 Breakdown

Item	Part Number	Description	Qty.
1	1323386/025	MFG Assembly - see Table 1 on page 2.	1
2	Notification Module - see Table 1 on page 2.		1
3	1376003	Cab Silencer - see Table 1 on page 2.	1
4	611-056	Cable Tie, 14.5 in.	10
5	611-046	Cable Tie, 5.6 in.	10
6	611-044	Anchor, Plastic Mount	10
7	1354897	Harness	2
8a	1378147	Bracket Kit	1
8b	1381547	Relay Kit	1

FOR LEGACY RAYMOND LIFT TRUCKS, CONSULT INSTRUCTIONS PROVIDED WITH THE REQUIRED S207 FOR COMPONENT PLACEMENT AND ELECTRICAL CONNECTIONS.

FOR OTR LIFT TRUCKS, CONSULT ORIGINAL EQUIPMENT MANUFACTURER FOR COMPONENT PLACEMENT AND ELECTRICAL CONNECTIONS.

Installation Procedure

For items in bold print, refer to [Table 11.](#)

CAUTION

Follow all safety precautions noted in the lift truck maintenance manual.

MFG Installation

1. Turn the key switch OFF and disconnect the battery connector. Remove battery to access the tractor frame bulkhead.
2. Identify the best location on the bulkhead to mount the MFG Mounting Plate (**item 8a**).
 - The MFG should be located as far away from any strobe lights as possible.
 - The MFG should be at least 4 in. (10.16 cm) from the frame.
3. Install the MFG Mounting Plate (**item 8a**) on the tractor frame bulkhead.
4. Route the MFG harness down the upright post and into the tractor compartment. Use Anchors (**item 6**) and Cable Ties (**item 5**) to secure the harness.

Electrical Connections

1. In the tractor compartment, install the two ring terminals marked TP4 (1) and TP4 (2) to the B-terminal post. Torque to 100 in. lb. (11.3 Nm) using 2 wrench method.
2. Select the correct jumper necessary (supplied with the MFG (**item 1**)) to connect to a B+ "Switched" connection (refer to lift truck's electrical schematic).

Raymond Legacy/Other Than Raymond Pallet Trucks**Notification Module Installation**

1. Clean surface of the upright post with isopropyl alcohol and allow to dry. Remove film from the adhesive on the Notification Module (**item 2**). Install Notification Module so that it can easily be seen by an operator.



2. Connect Notification Module connector JWM to connector PWM1 on the MFG harness. Secure harness using Anchors (**item 6**) and Cable Ties (**item 5**). Use extension harness (**item 7**) if necessary.

Cab Silencer Installation

The Cab Silencer (**item 3**) should be installed at least 4 ft. (122 cm) away from the MFG, as close to the center-line of the lift truck as possible.

⚠ CAUTION

Placing the Cab Silencer less than 4 ft. (122 cm) away from the MFG may cause false alerts within the iW.FS system.

1. Locate an area on the lift truck that meets the distance requirements specified above. Clean the area with isopropyl alcohol. Remove film from adhesive on the Cab Silencer (**item 3**) and install.
2. Route Cab Silencer cable inside tractor compartment and connect connector PCS1 to connector JCS1 on the MFG harness. Secure harness using Anchors (**item 6**) and Cable Ties (**item 5**). Use extension harness (**item 7**) if necessary.

Setup Procedures

Powering System

When the lift truck is powered ON:

- A blue LED, located on the bottom of the MFG, should illuminate, indicating power to the system.
- A single alert tone will sound and the Notification Module light will briefly illuminate.

If the system does not power ON or generates audio/visual alerts not consistent with those described in Operator Manual Insert 1387567/001, refer to the Troubleshooting section of this document.

MFG Range Adjustment Tool

The Magnetic Field Generator (MFG) range should be set based on application. Note that the maximum detection range may not be ideal for some applications, such as narrow aisles or near docks.

CAUTION

The Cab Silencer range is not adjustable. There may be overlap of the cab silencer range with both the Alert and Notification Fields if the MFG detection range is adjusted too small. The minimum MFG range must not be adjusted below a 15 ft. (4.5 m) Notification Field range. This also implies that there will be an area directly around the lift truck, especially the sides, where a Pedestrian may not get notifications.

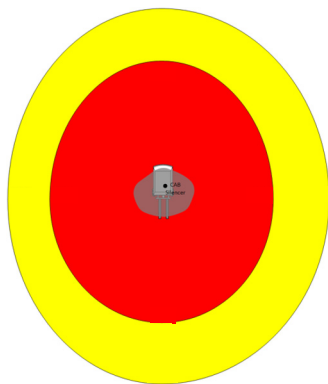
CAUTION

The magnetic field created by iW.FS may change shape and size in some circumstances.

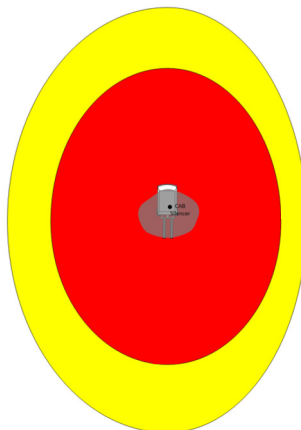
MFG Range Considerations

MFG range adjustment must take the following limitations into account:

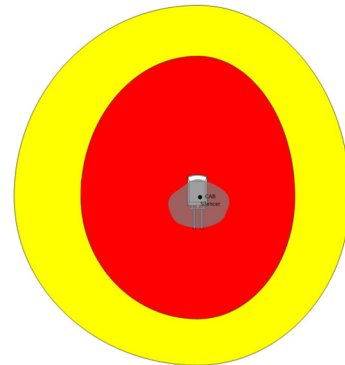
- The steel racks of a pick aisle will squeeze the magnetic fields from the sides causing them to stretch out along the pick aisle (dependent on aisle width).
- Long continuous steel structures such as pedestrian barriers or wall bumpers can cause the magnetic fields to shift.



Fields on a lift truck without significant interference from steel structures.



Fields on same lift truck in an aisle with racks causing field changes.



Fields on same lift truck near a large steel bumper along a wall causing field changes.

MFG Range Adjustment Tool

- Low steel ceilings in a building can cause the magnetic fields to stretch out in all directions which will increase the detection ranges.
- Short steel structures such as cars in a parking lot or pallet loads have minimal impact on the system.
- Lift truck steel structures can cause distortions and/or absorption of the magnetic fields which can result in uneven detection ranges in different directions around the lift truck and/or reduced detection ranges. Installation of the MFG must follow the limitations listed under Installation Tips or the appropriate lift truck instructions.
- Mounting the MFG too close to large metal structures will detune the MFG ferrite and result in reduced detection ranges.
- Metallic floor coatings and/or metallic/concrete floor mixtures can impact detection ranges.
- Excessive differences in height between system components will reduce detection ranges.
- Metals other than steel can affect the magnetic fields.

NOTE: For special considerations regarding MFG range relative to the MAC-A (P/N 1323256/001), refer to MAC-A and MAC-Z Installation Guide P/N 1387384/001.

⚠ WARNING

If the MFG range is adjusted in any of the conditions listed in MFG Range Considerations, the system may not work as expected or may not adjust in accordance with the procedure listed below. The MFG range should be adjusted in the most ideal conditions possible (for example, not under low ceilings or significant steel structures).

MFG Range Adjustment Procedure

1. Make sure all other MFGs and Pedestrian Notification Devices (PNDs) within 70 ft. (21 m) are powered OFF.
2. Power ON one PND at the maximum distance the field will be set to and leave it in place.
3. Power ON the Range Adjustment Tool (P/N 1323252/001) between 3 to 10 ft. (0.9 to 3 m) from the lift truck being adjusted by removing the small plastic plug on the tool (retain plug). The Notification Module will beep and the tool will emit a tone for approximately 2 seconds.

NOTE: The Range Adjustment Tool must be located outside the range of the Cab Silencer.

4. Hold down both switches for 5 seconds then release.



5. Press the Red switch to increase the range and the Black switch to decrease the range.

6. Make sure the desired Notification Field range is detected by the PND around the perimeter of the lift truck, testing the following:
 - Fore/Aft centered with the MFG
 - Left/Right centered with the MFG
 - 45° from each of the Fore/Aft/Left/Right locations

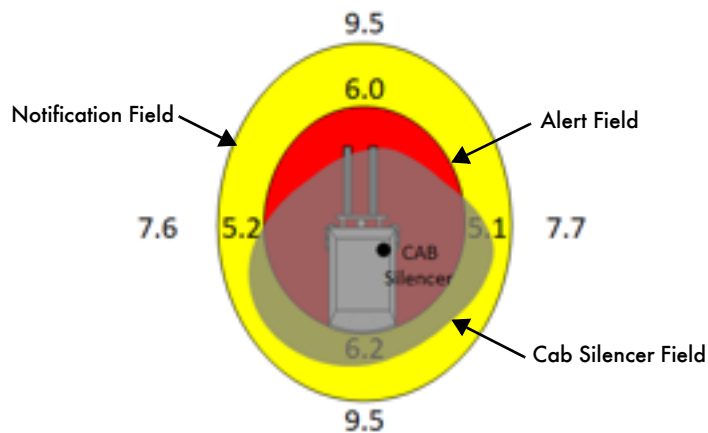
These measurements should not be less than 15 ft. (4.6 m).

7. Replace plastic plug to reset if adjustment is unsuccessful or when adjustment has been completed.

NOTE: The MFG may not always be centered on the lift truck, depending on the model. This must be taken into account when determining the best suited range for the application.

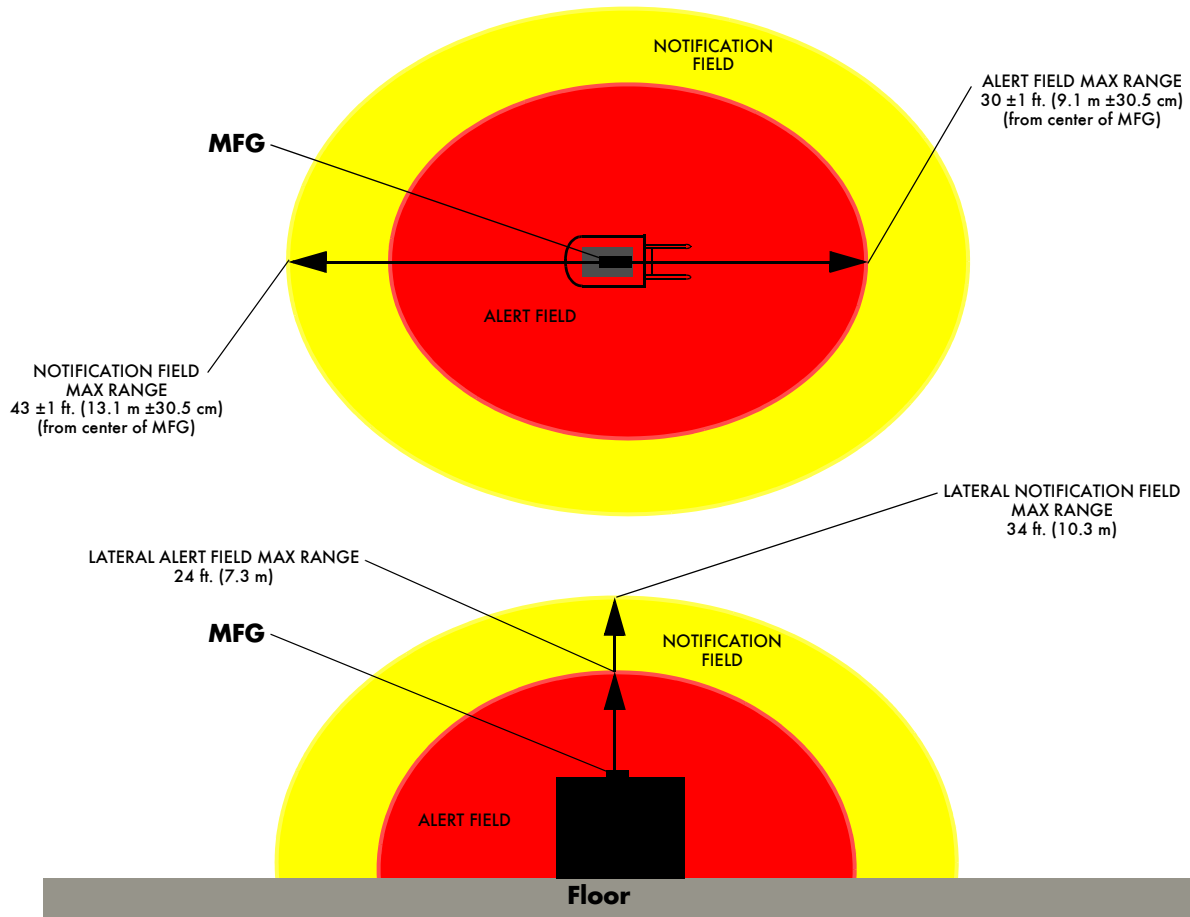
⚠ CAUTION

If the minimum range of the MFG Notification Field is set to less than 15 ft. (4.5 m) from the center of the MFG, parts of the Notification Field (and possibly the entire Alert Field) may be inside the Cab Silencer Range as shown in the example below. Alerts will not be consistent.



MFG Range Adjustment Tool

NOTE: The maximum Alert Field range, in ideal conditions, using a PND is 30 ± 1 ft. (9.1 m \pm 30.5 cm). The maximum Notification Field range, in ideal conditions, using a PND is 43 ± 1 ft. (13.1 m \pm 30.5 cm). The maximum Lateral Alert and Notification Field Ranges are 80% of the maximum detection range, or 24 ft. (7.3 m) and 34 ft. (10.3 m), respectively.



Notification Module Volume

The MFG Range Adjustment Tool is also used to change the Notification Module volume. To change the volume of the Notification Module:

1. Power ON the MFG Range Adjustment Tool within 4 ft. (1.2 m) of the MFG by removing the small plastic plug on the tool. The Notification Module will beep and the tool will emit a tone for approximately 2 seconds.
2. Press the Red switch to increase volume and the Black switch to decrease the volume.

NOTE: The nominal sound level ranges from 85 dB to 103 dB. Sound levels should be set so that the lift truck operator can hear the notifications regardless of other noise in the warehouse environment.

3. Replace plastic plug to reset if adjustment is unsuccessful or when adjustment has been completed.

Charging

The tool will repeatedly emit 2 rapid beeps when the battery is low. As battery discharges, the tool may need to be placed closer to the MFG during adjustment.

To charge:

1. Remove the plastic plug from the tool.
2. Plug the charging cord, P/N 1376825, into the port the plug was in.
3. The LED on the charger will illuminate red if the tool needs charging and green when charging is complete.
4. Reinsert plastic plug when charging is complete.

Batteries have an approximate life of at least 300 charges. Replace batteries when necessary with P/N 1376824.

Troubleshooting

Two LEDs, located on the bottom of the MFG, indicate power (blue LED) and pedestrian traffic (orange LED) when illuminated. The orange LED also provides system diagnostic information described in the table below.

Symptom	Cause	Corrective Action
Constant alarm from Notification Module at maximum volume	Processor not functioning (hardware safeguard)	Replace MFG
*No blink of Orange LED on MFG, tone on notification module	Internal communication failure	
*One blink of Orange LED on MFG, tone on Notification Module	Magnetic Field output less than 10% of setting	
*Two blinks of Orange LED on MFG, tone on Notification Module	Low input voltage failure	Check battery voltage, connections. If OK, replace MFG.
Cab Silencer not silencing PND	No power to Cab Silencer	Check Cab Silencer power connection; Check that PND is functioning properly; Replace Cab Silencer
Notification Module not providing tones or light	No power to Notification Module	Check Notification Module power connection; Replace Notification Module
*When a fault code is triggered, the Notification Module will alert with two beeps every 5 seconds. At the start of the beeps, the Orange LED on the MFG will flash the fault code (no blink, one blink, 2 blinks).		

