Introduction / Comments:

The following Instructions are for Ford F-250

Note:

Read all instructions prior to installation. Review the Adrian Steel **GENERAL PRECAUTIONS PAGES (56638**) before attempting installation. Only personnel familiar with using electrical best practices should perform this install. Reference **ELECTRICAL BEST PRACTICES MANUAL (54479)** before attempting installation.

Ford F-250 Inverter Instruction

Bill Of Materials: All Kits

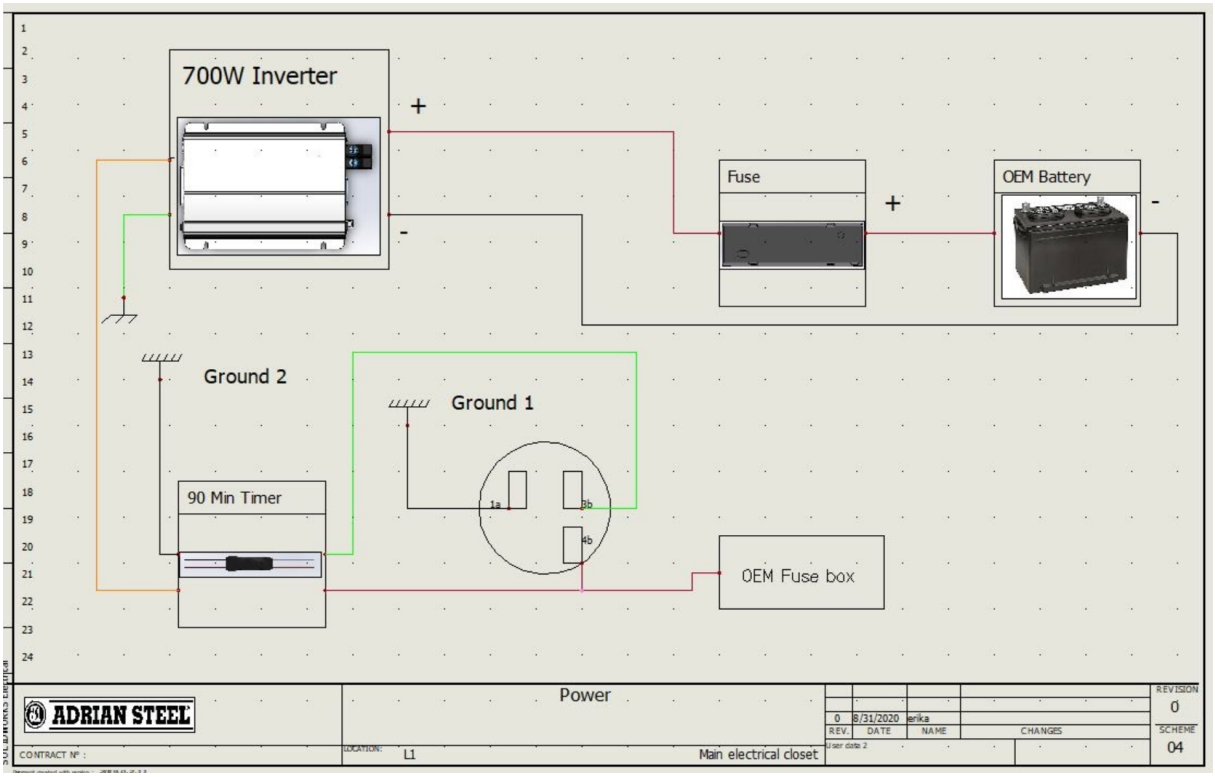
Kit 62490	700W Ford F-SD	Quantity
FAS0018	SCREW,HFLNG 1/4-20X.62 ZP	7
FAS0025	SCREW,THP 10-24X.50 ZP	2
FAS0029	NUT,HEX NLK 10-24 ZP	2
FAS0055	NUT,HEX NLK FLG 1/4-20 ZP	7
FAS0060	WASHER,LCK SPLIT 1/4 ZP	4
FAS0067	WASHER,FLAT USS 1/4 ZP	4
FAS0079	SCREW,HH 1/4-20X1.5 G8 ZP	4
FAS0086	WASHER,FLAT USS 5/16 ZP	2
FAS0095	SCREW,HH 5/16-18X2 G8 ZDY	2
FAS0098	WASHER,LCK SPLIT 5/16 ZP	2
FAS0148	SCREW,FHP TEK 10-24X.5 ZN	1
FAS0164	WASHER,FLAT SAE 5/16 AL	4
FAS0218	PLUSNUT,1/4-20 PB WS450	4
FAS0222	PLUSNUT,5/16-18 PB WS450	2
FAS0317	NUT,HEX NLK M8-1.25 SS	4
FAS0641	SCREW,HH TEK 1/4-20X.7 ZP	2
03927-2	SPACER,FLR,1010,11/16 ZP	2
44918-B	BRKT, FUSE HLDR, F150	1
52929-G	PLATE,UNIV.INV.MOUNT-GRAY	1
52930-G	BRACKET,UNIV.INV.PLT.GRAY	1
56904	INV TS12-700	1
62890	KIT CBL,0.7KW F2	1
63030	INS INV ALL INVS F2	1

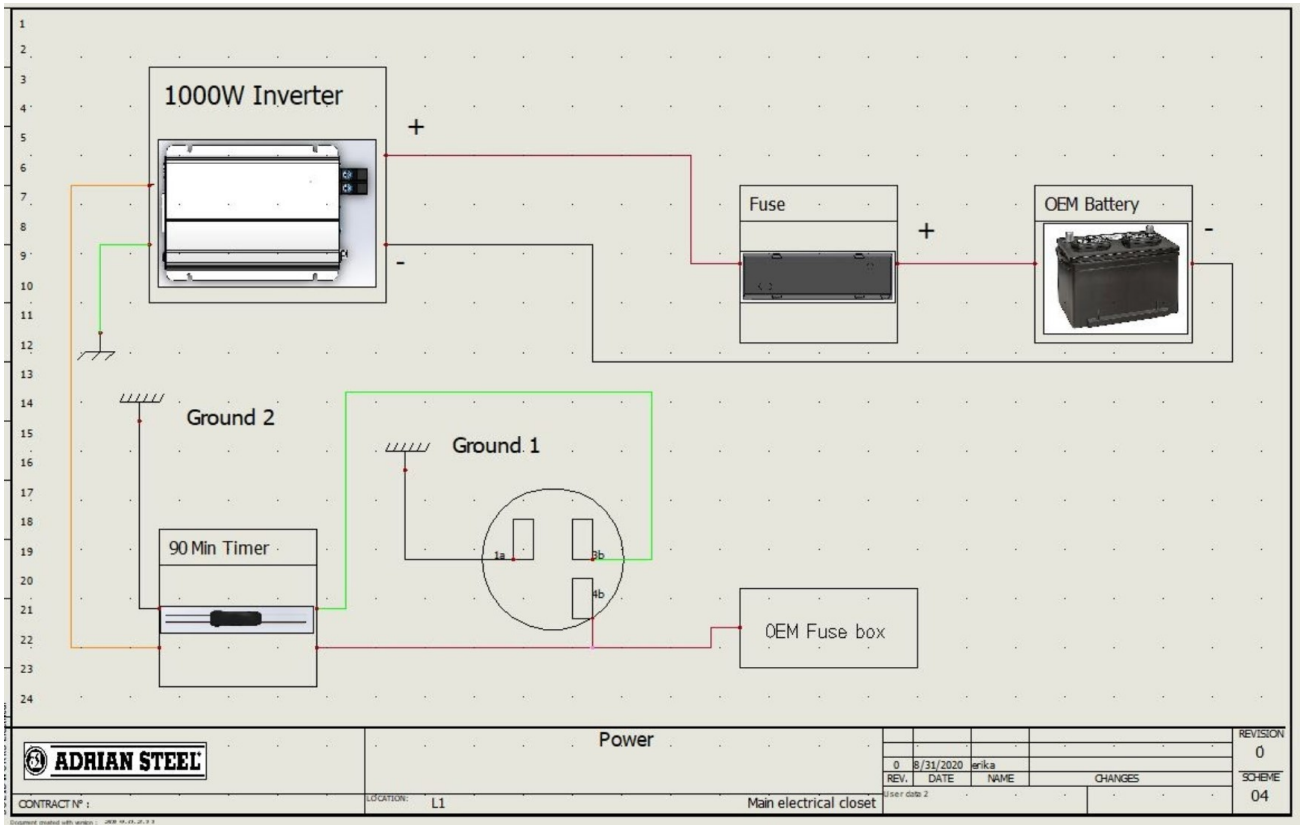
Kit 62491	1000W Ford F-SD	Quantity
FAS0018	SCREW,HFLNG 1/4-20X.62 ZP	7
FAS0025	SCREW,THP 10-24X.50 ZP	2
FAS0029	NUT,HEX NLK 10-24 ZP	2
FAS0055	NUT,HEX NLK FLG 1/4-20 ZP	7
FAS0060	WASHER,LCK SPLIT 1/4 ZP	4
FAS0067	WASHER,FLAT USS 1/4 ZP	4
FAS0079	SCREW,HH 1/4-20X1.5 G8 ZP	4
FAS0086	WASHER,FLAT USS 5/16 ZP	2
FAS0095	SCREW,HH 5/16-18X2 G8 ZDY	2
FAS0098	WASHER,LCK SPLIT 5/16 ZP	2
FAS0148	SCREW,FHP TEK 10-24X.5 ZN	1
FAS0164	WASHER,FLAT SAE 5/16 AL	4
FAS0218	PLUSNUT,1/4-20 PB WS450	4
FAS0222	PLUSNUT,5/16-18 PB WS450	2
FAS0317	NUT,HEX NLK M8-1.25 SS	4
FAS0641	SCREW,HH TEK 1/4-20X.7 ZP	2
03927-2	SPACER,FLR,1010,11/16 ZP	2
44918-B	BRKT, FUSE HLDR, F150	1
52929-G	PLATE,UNIV.INV.MOUNT-GRAY	1
52930-G	BRACKET,UNIV.INV.PLT.GRAY	1
56903	INV TS12-1000	1
62891	KIT CBL,1.0KW F2	1
63030	INS INV ALL INVS F2	1

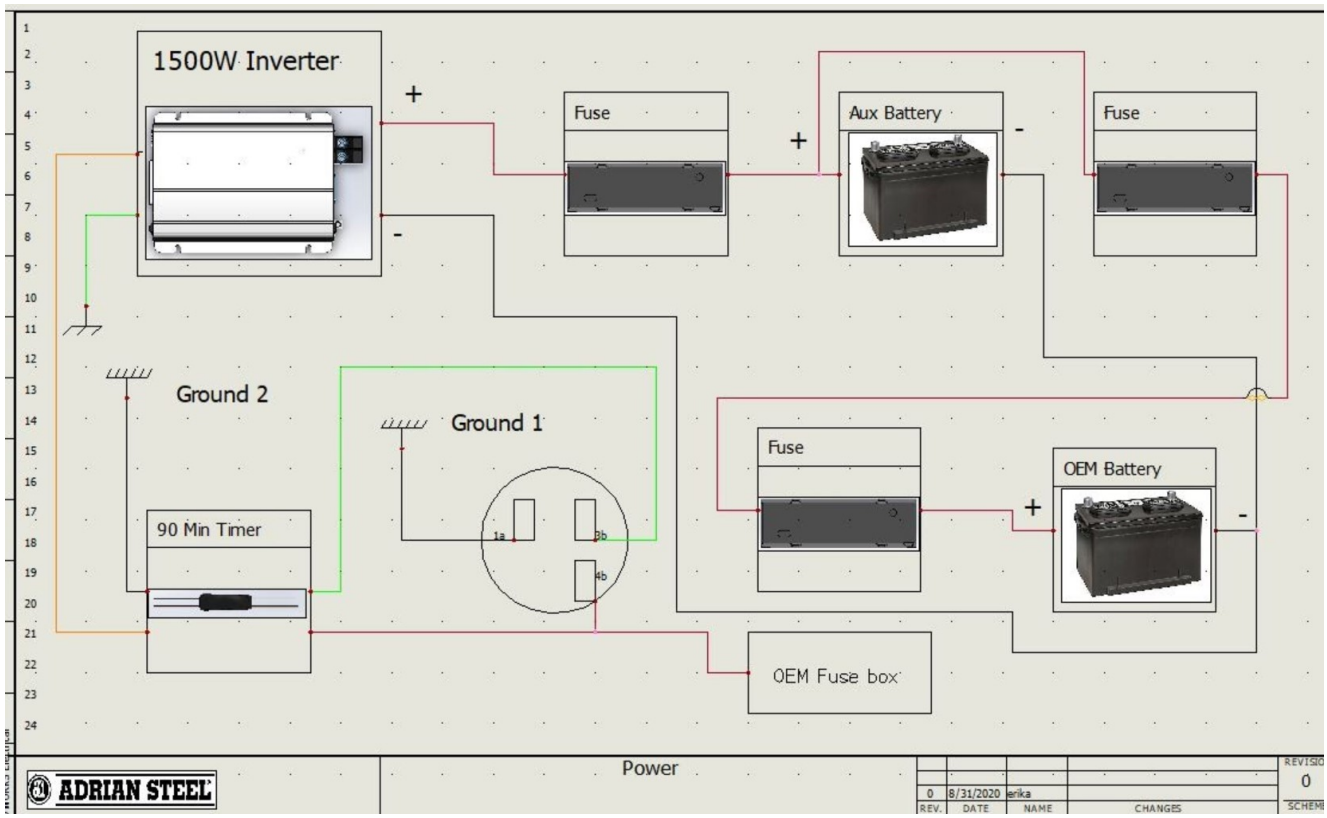
Kit 62492	1500W Ford F-SD	Quantity
FAS0018	SCREW,HFLNG 1/4-20X.62 ZP	7
FAS0025	SCREW,THP 10-24X.50 ZP	6
FAS0029	NUT,HEX NLK 10-24 ZP	6
FAS0048	SCREW,BHCS 5/16-18X2.0 ZN	4
FAS0055	NUT,HEX NLK FLG 1/4-20 ZP	7
FAS0060	WASHER,LCK SPLIT 1/4 ZP	4
FAS0067	WASHER,FLAT USS 1/4 ZP	4
FAS0079	SCREW,HH 1/4-20X1.5 G8 ZP	4
FAS0091	PLUSNUT,5/16-18 PB DC	4
FAS0148	SCREW,FHP TEK 10-24X.5 ZN	1
FAS0164	WASHER,FLAT SAE 5/16 AL	2
FAS0218	PLUSNUT,1/4-20 PB WS450	4
FAS0317	NUT,HEX NLK M8-1.25 SS	2
FAS0641	SCREW,HH TEK 1/4-20X.7 ZP	2
FAS0833	WASHER,CUP FLANGED 1.5"	4
03927-1	SPACER,FLR,1010,11/32 ZP	4
38352	BATTERY,AGM 92AH 12 VDC	1
44918-B	BRKT, FUSE HLDR, F150	1
52929-G	PLATE,UNIV.INV.MOUNT-GRAY	1
52930-G	BRACKET,UNIV.INV.PLT.GRAY	1
56906	INV TS12-1500	1
62892	KIT CBL,1.5KW 1AUX F2	1
63030	INS INV ALL INVS F2	1

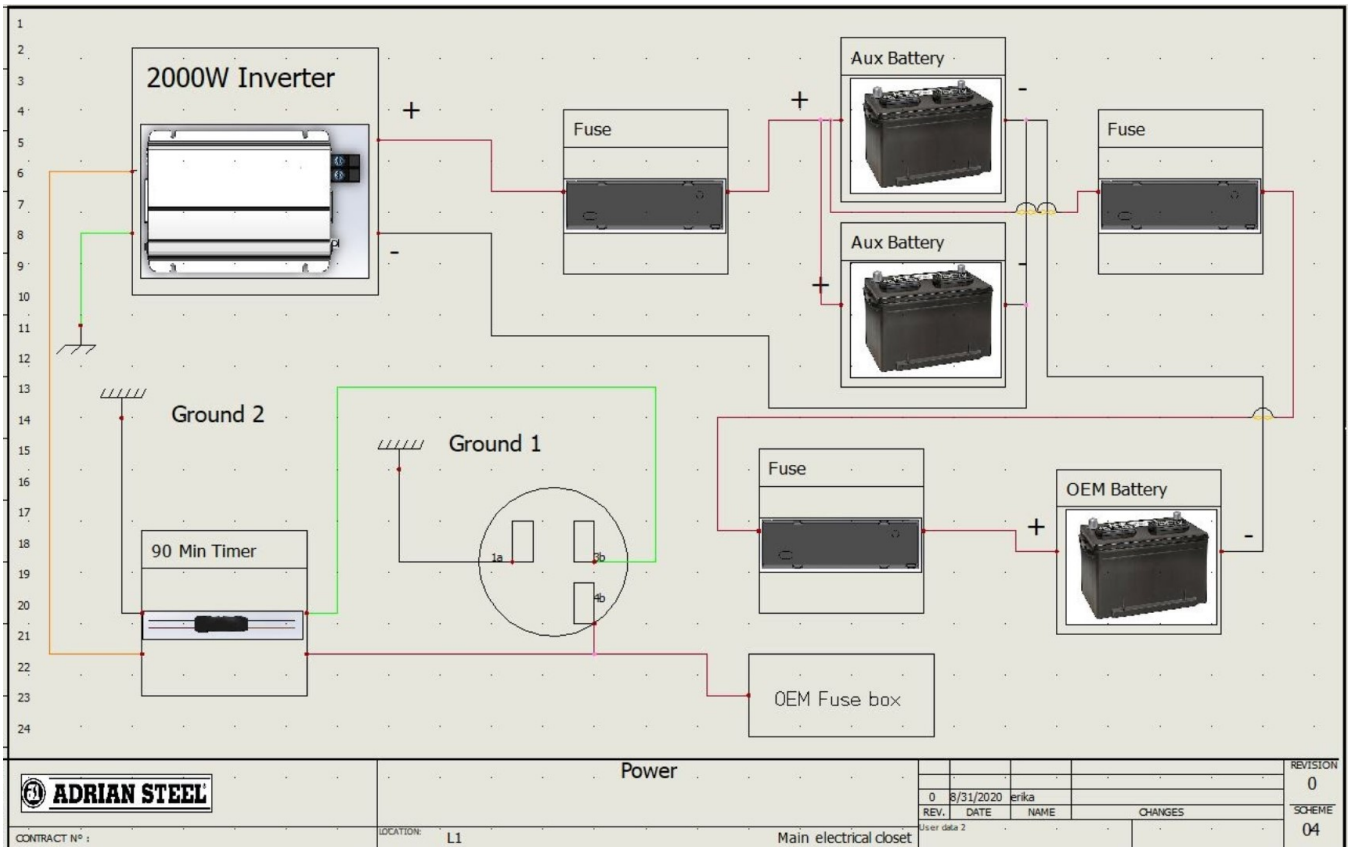
Kit 62489	2000W Ford F-SD	Quantity
FAS0018	SCREW,HFLNG 1/4-20X.62 ZP	7
FAS0025	SCREW,THP 10-24X.50 ZP	6
FAS0029	NUT,HEX NLK 10-24 ZP	6
FAS0048	SCREW,BHCS 5/16-18X2.0 ZN	8
FAS0055	NUT,HEX NLK FLG 1/4-20 ZP	7
FAS0060	WASHER,LCK SPLIT 1/4 ZP	4
FAS0067	WASHER,FLAT USS 1/4 ZP	4
FAS0079	SCREW,HH 1/4-20X1.5 G8 ZP	4
FAS0091	PLUSNUT,5/16-18 PB DC	8
FAS0148	SCREW,FHP TEK 10-24X.5 ZN	1
FAS0164	WASHER,FLAT SAE 5/16 AL	2
FAS0218	PLUSNUT,1/4-20 PB WS450	4
FAS0317	NUT,HEX NLK M8-1.25 SS	2
FAS0641	SCREW,HH TEK 1/4-20X.7 ZP	2
FAS0833	WASHER,CUP FLANGED 1.5"	8
03927-1	SPACER,FLR,1010,11/32 ZP	8
38352	BATTERY,AGM 92AH 12 VDC	2
44918-B	BRKT, FUSE HLDR, F150	1
52929-G	PLATE,UNIV.INV.MOUNT-GRAY	1
52930-G	BRACKET,UNIV.INV.PLT.GRAY	1
56905	INV TS12-2000	1
62893	KIT CBL,2.0KW 2AUX F2	1
63030	INS INV ALL INVS F2	1

Review order drawings to determine inverter placement
Also if any power strip kits will need to be installed also and their placement.
NOTE: Not all applications will use all the components listed.

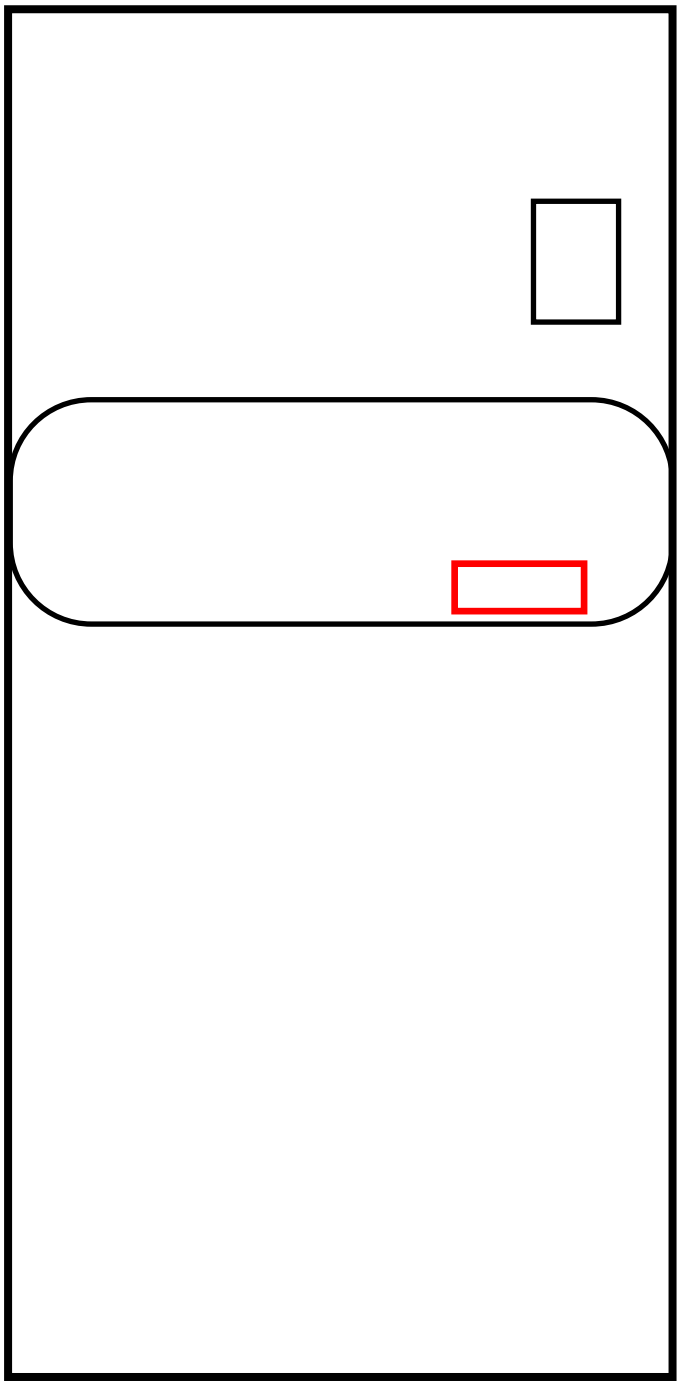




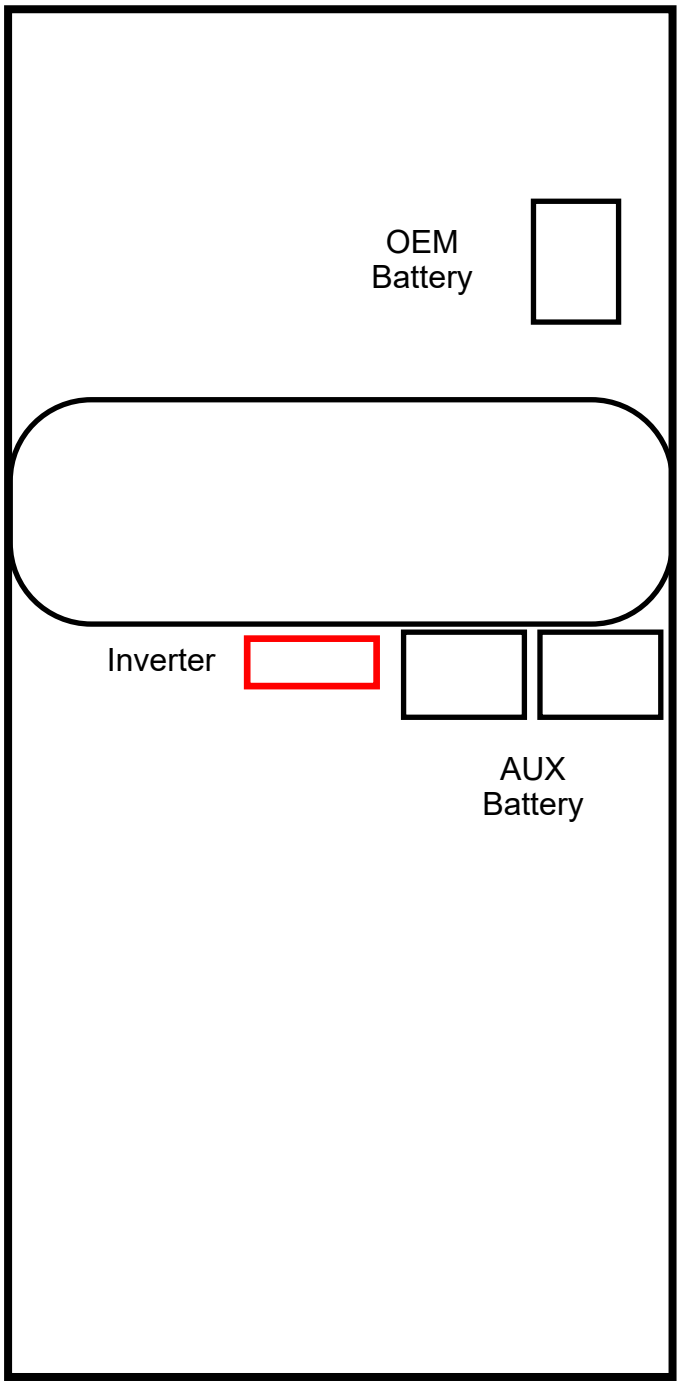

1500W Inverter
+
-
Fuse
+
Aux Battery
-
Fuse
Ground 2
Ground 1
90 Min Timer
1a
3b
4b
Fuse
+
OEM Battery
-
OEM Fuse box
ADRIAN STEEL
Power
0 8/31/2020 erika
REV. DATE NAME CHANGES
REVISION
0


2000W Inverter
+
-
Fuse
+
Aux Battery
-
Aux Battery
+
-
Fuse
Ground 2
Ground 1
90 Min Timer
1a
3b
4b
Fuse
+
OEM Battery
-
OEM Fuse box
ADRIAN STEEL
Power
0 8/31/2020 erika
REV. DATE NAME CHANGES
REVISION
0
SCHEME
04
CONTRACT N° :
LOCATION:
L1
Main electrical closet
User data 2

CAB MOUNTED INVERTER
700 Watt and 1000 Watt
INSTRUCTION SET 3a—5a



BED MOUNTED INVERTER
1500 Watt and 2000 Watt
INSTRUCTION SET 3b—5b



NOTE:
Number of AUX Batteries will vary depending on installation check BOM

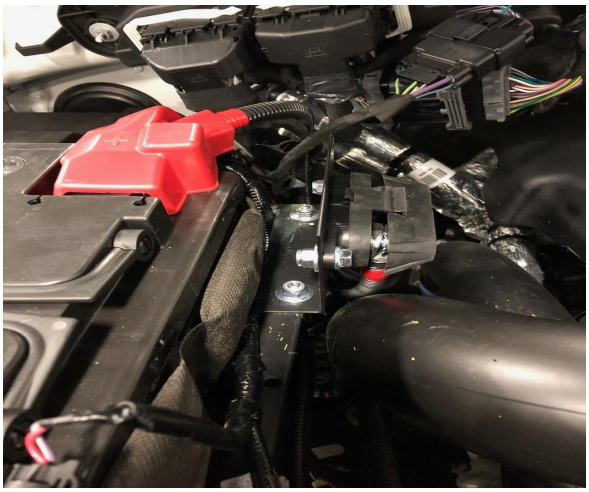
Step 1: Disconnect Negative battery cable

Remove OEM battery cable from battery and position it away from battery to prevent unintentional contact with the battery post while doing the install.

Tools required:
?? mm socket

Notes:
Make sure removed battery cable cannot contact battery post using tie straps etc. if necessary.

Step 2: Attach Fuse Holder Bracket and Fuse Holder



Locate the F150 fuse holder bracket (44918-B).
Remove the harness locator pin from the OEM battery box.
Align the middle hole of the bracket with the hole in the battery box for the locator.
Attach the bracket to the box with 2 Tek screws (FAS0641)
Attach the Bussman fuse holder to the bracket using 2 (FAS0025) Screws and 2 (FAS0029) Nuts.
Do not mount the 200 Amp Mega fuse at this time.
Connect the ring terminal of the short red cable to the front stud on the fuse holder. Do not connect the other end of this cable to the battery at this time.
Connect the ring terminal of the long red cable to the rear stud of the fuse holder.

Tools required:
7/16” Socket / Wrench
3/8” Socket / Wrench
#2 Phillips Head

Notes:
Do not install the FUSE at this time

Step 3a: Jack Removal and Prep for Relocation

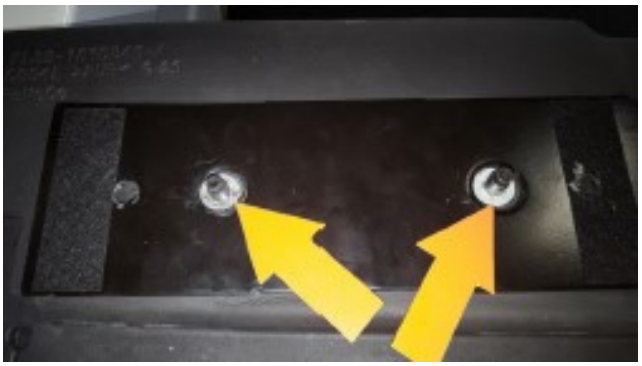
Remove the jack from behind the passenger seat.

Remove the OEM jack mounting plate with T40 star bit.

Seal OEM holes with silicone.

Make a mark 1.5" toward the outside of each mounting bolt and drill holes with a 3/8” drill bit.

Tools required:
T40 Star Socket
3/8” Drill Bit



Put an FAS0317 nut on the bottom of each of the OEM studs and tighten

Step 4a: Jack Relocation

Place the modified OEM jack mounting bracket on step behind driver's seat.
Measure 7.5" over from plastic B-Pillar trim.
Be sure to measure from under the pocket not the pocket itself and mark holes for drilling.

Using a 1-1/8" carpet saw drill through mat at the marked holes.
Open the holes with a 1/2" stepper bit equipped with a drill stop.
Apply aluminum primer to holes.
Set (2) FAS0222 plusnuts into the holes
Set an FAS0164 washer on top of each plusnut then a tall spacer (03927-2)

Secure the jack plate to the step with:
(2) FAS0095 screws
(3)FAS0098 washers
(2)FAS0086 washers

Notes:
Use caution when drilling. Make sure holes clear any OEM parts that may be in the way, fluid lines, wiring harnesses, etc.

Tools required
Plusnut gun
3/8" drill
Tape Measure
1/2" stepper drill bit with stop
1–1/8" hole saw
1/2" Socket / Wrench

Reinstall jack by placing on mounting bracket studs and slide towards the driver side,
Reinstall strap through hoop and pull to tighten attaching Velcro when done.

Step 5a: Inverter Plate assembly and Inverter Mounting

Assemble the 52930-G bracket to the bottom of the 52929-G plate with (3) FAS0018 screws and (3) FAS0055 nuts. The bottom of the plate has the hole in the center between two slots.
Use the assembled inverter mounting plate as template to mark the locations for the fasteners to be drilled behind the rear passenger seat and the jack step.
Pull the fabric below the window away from the back wall. Confirm that the upper two plusnuts will be in a good location (not in a hole).
Cut the fabric where the plusnuts will be set.
Mount the inverter to the plate with (4) FAS0018 screws and (4) FAS0055 nuts so that its fan is facing down.
Drill four 3/8” holes at the four location marked for the plate fasteners.
Apply self-etching primer to the holes and allow it to dry.
Set four 1/4” plusnuts (FAS0218) in the holes.
Mount the plate and inverter assembly with (4) FAS0079 Screw, (4) FAS0060 Lock Washer, and (4) FAS0067 Flat Washers.

Notes:
Use caution when drilling. Make sure holes clear any OEM parts that may be in the way, fluid lines, wiring harnesses, etc.

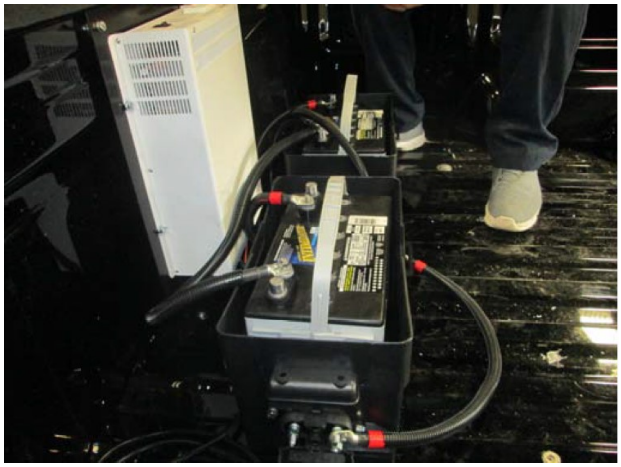
Tools required
Plusnut gun
3/8” drill
Self Etching Primer
7/16” Socket / Wrench

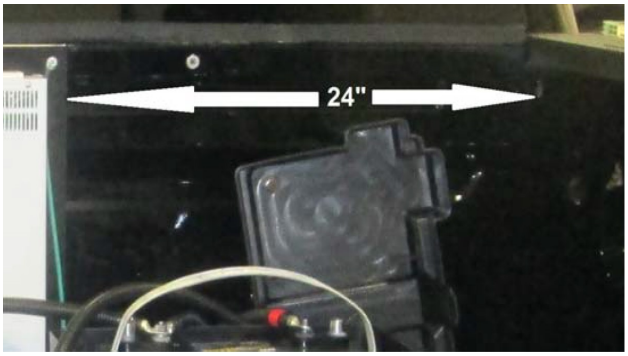
Remove the child safety seat hook from the rear cab wall behind the passenger seat and stow it and its fastener in the glove compartment.

Step 6a: Cut holes for Inverter Power Wires

Drill two 1-1/4” holes in the floor. 5-1/2” from the outer edge of the curbside door trim The rear most hole is 1-1/2” forward of the rear seat support. The front hole is 1 -3/4” forward of the rear hole. Check below the floor before drilling.
Apply self-etching primer to the holes and allow it to dry.
Insert the grommets into the holes.

Step 3b: Inverter Plate and Inverter Install





Assemble the 52930-G bracket to the bottom of the 52929-G plate with (3) FAS0018 screws and (3) FAS0055 nuts. The bottom of the plate has the hole in the center between two slots.
Use the assembled inverter mounting plate as template to mark the locations for the fasteners to be drilled into the front of the pickup box. 24” from the passenger side.
Mount the inverter to the plate with (4) FAS0018 screws and (4) FAS0055 nuts so that its fan is facing down.
Drill four 3/8” holes at the four location marked for the plate fasteners.
Apply self-etching primer to the holes and allow it to dry.
Set four 1/4” plusnuts (FAS0218) in the holes.
Mount the plate and inverter assembly with (4) FAS0079 Screws, (4) FAS0060 Lock Washer, and (4) FAS0067 Flat Washers.

Step 4b: Battery Box Preparation, Location, and mounting

The battery placement is 4” rearward of the inverter and the batteries are placed side by side with 3” between them. Mark the boxes in their corners aligning them with the ridges of the bed.
Drill four 1/4” holes in each battery box.
Use the battery boxes as templates mark the mounting holes into the floor of the pickup box.
Drill four 3/8” holes for each battery box.
Apply self etching primer to the holes and allow them to dry.
Set (4) FAS0222 5/16” plusnuts into the holes.
Mount each battery box to the bed with (4) FAS0048 5/16 Screws, (4) FAS0833 cupped washers, and (4) 03927-1 Spacer 11/32”.
Remember to put the Nylon straps under each box before mounting it.

Note:
The mounting holes for battery boxes should be placed on the ridges of the pickup box.

Tools required:
Plus Nut Gun
7/16” Socket / Wrench
1/4” & 3/8” Drill Bits

Step 5b: Route Switch Remote Wire

Drill a 3/8” in the lower corner of the vent grommet on the driver’s side of the pickup box.
Route the switch harness through the hole.
Route the harness to the OEM harness near the frame rail.
Secure the harness to the OEM harness with wire ties.
Route the harness to the rear section of the driver’s door.

Remove the stepwell trim from the driver’s door area. Pull the OEM ductwork out the way. Drill a 1/2” hole in the stepwell area. Apply self-etching primer to the hole. Insert the 3/8” ID grommet into the hole. Route the harness through the grommet and forward to the driver’s kick panel area.

Step 6b: Drill Holes for Inverter Power Cables

Drill two 1-1/4” holes in the floor of the pickup box on the curbside front corner.
They both are in the center of the curbside valley in the floor as shown
The forward most hole is 8” rearward of the front of the pickup box.
The rear hole is 2” behind the front hole.
Apply self-etching primer to the holes and allow it to dry.
Insert the grommets into the holes.
Wire the inverter and cables for the AUX batteries per the schematic found at the beginning of these instructions.

Note:
Use caution when drilling. Make sure holes clear any OEM parts that may be in the way, fluid lines, wiring harnesses, etc.
Use caution when routing and attaching harness. Avoid heat, sharp edges and moving parts

Tools required:
1-1/4” Drill Bit
3/8” Drill Bit
1/2” Drill Bit
Self Etching Primer

Step 7: Route Main Inverter Power Cables

Underhood route the long red cable from the rear of the fuse holder and the long black cable rearward along the curbside to the bulkhead
Make sure you leave enough slack at the battery negative terminal for the black wire to attach
Route the cables down to the curbside frame rail.
Retain the cables with wire ties to OEM harnesses and tubing.
Route the cables rearward on the outer side of the frame rail to the holes.

Secure the cables with cable clamps under body on the OEM studs for the running board with:
(2)FAS0317 nuts
(2)FAS0164 aluminum washers
Route the cables through the grommets.
Connect the cables to the inverter.

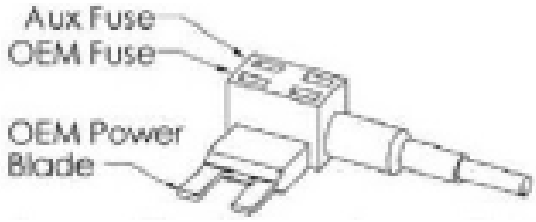
Note:
Use caution when drilling. Make sure holes clear any OEM parts that may be in the way, fluid lines, wiring harnesses, etc.
Use caution when routing and attaching harness. Avoid heat, sharp edges and moving parts

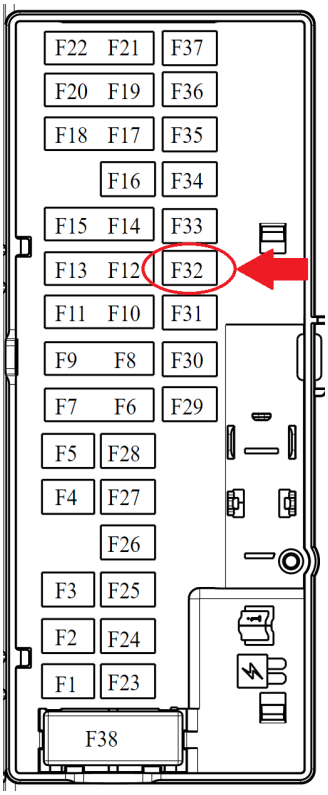
Tools required:
13mm Socket / Wrench

Step 8: Connect the Inverter Power Cables

Attach the cables to the inverter
Tighten the cables
Wiggle test then tighten again
Check the dip switches are set as follows
1 UP
2 UP
3 UP
4 Down

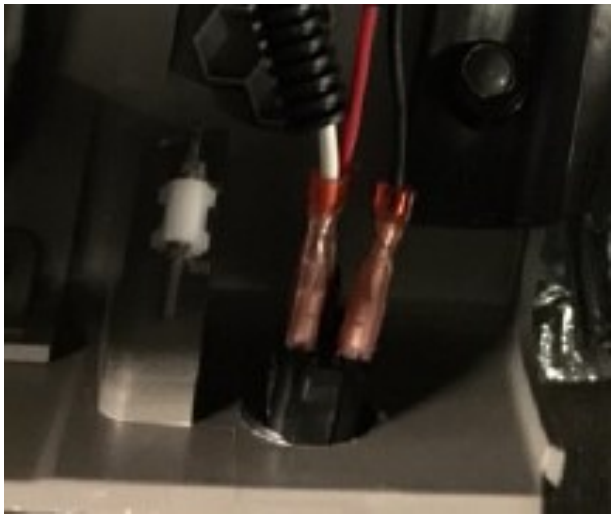
Step 9: Connect Inverter Case Ground and Remote Wire



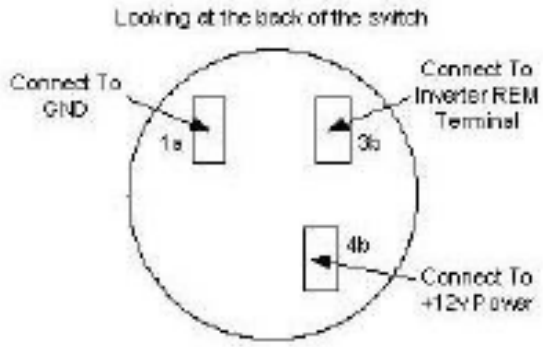


Remove the floor door trim panels from the curbside door.
Ground the small black cable in the door floor channel.
Route the cable to the casing ground clamp in the rear of the inverter.
Trim the cable to length.
Attach the cable to the inverter.
Insert the orange wire harness into port 1
Route the harness to the door channel.
Route harness forward to passenger kick panel area.
Locate the fuse panel trim cover in passenger kick panel area and remove fuse panel trim cover.
Locate fuse #32 by using the fuse diagram
Remove the #32 OEM fuse (20 Amp)
Locate the red switch power wire and the add a fuse.
Strip the end of the red wire and insert into the add a fuse and crimp it.
Insert the #32 OEM fuse (20 Amp) into the add a fuse in the OEM Fuse location.
Insert the 5 Amp Micro2 fuse into the add a fuse in the Aux. Fuse location.
Insert the add a fuse into #32 fuse location
Route the red wire harness out of the fuse panel area and replace the trim cover.

Step 10: Inverter Remote Switch Installation and Connections



Route the orange and red harnesses across the dash to the streetside.
Retain the harnesses under the dash, so that they do not interfere with the foot pedals and do not hang down in the foot area of the driver or passenger.
Drill a 3/4” hole in the dash to the left of the steering column
Ground the black wire to the metal area of the dash.
Route the harness with the green wire, the harness with the orange wire, and the black ground wire through the hole
Trim the wires at the switch.
Strip these wires and insert female spade connectors on each wire and crimp them
Refer to the switch diagram for the connections to the switch
Insert the switch and apply the decal around the switch



Tools required
3/4” drill
Wire Strippers
Wire Crimpers

Notes:
Use caution when routing and attaching harness.
Avoid heat, sharp edges and moving parts

Step 11: OEM battery final connections

Install the fuse and tighten nuts to 15Nm.
Connect the short red cable to the positive stud of the battery cable
Trim the red plastic cover to allow it to be replaced.
Install the fuse cover.
Reconnect the OEM negative battery cable and tighten to 8Nm
Connect the long black cable to the negative stud of the battery cable

Step 12: Secure Wiring

Using the supplied cable ties make sure all wiring is secured and clear of sharp objects, moving parts, and heat sources.

Step 13: Verify Inverter Powers Up

Turn on the switch on the Inverter case to REM (remote).
Turn on switch in the dash.
Start the engine and verify the DC input LED on the inverter turns green.

Step 14: Test the Inverter Output

Ship Thru Operations:
Plug the load tester (part # 48340) into the inverter outlet.
Test the inverter as per the load tester instructions.

Step 15: Finalize and Cleanup

Review installation for any unsecure wiring watching out for sharp edges, moving parts, and heat sources.
Seal all grommets with silicone.
Inspect all power connections for proper torque.
Install all trim removed in previous steps
Install battery covers on OEM and AUX batteries (if applicable).
Turn off dash switch for transportation and leave the inverter switch in REM.