LOFTNESS™

John Deere 325G, 331G & 333G Oil Cooler Cab Mount Kit

Installation Instructions

(Originating with Oil Cooler Serial Number 50-665)

209231 Rev. A

10.25.21


LOFTNESS

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Dealer Information

Some components of the Universal Hydraulic Oil Cooler Cab Mount Kit for the John Deere 325G, 331G and 333G Track Loader are shipped disassembled and need to be removed from their shipping positions, assembled, and secured in their operating position before being delivered to the owner.

To ensure safe and proper set-up of the oil cooler cab mount kit, it is mandatory that you thoroughly study this manual and follow its recommendations and information. Proper assembly is essential to prevent injury or damage and to maximize the life of the oil cooler.

For specific operating and maintenance instructions, specifications, and serviceable parts for the Loftness Universal Oil Cooler, refer to the Owner's Manual (N14882) that is shipped with each cooler, or visit www.loftness.com for an electronic file of the manual.

Continuous improvement and advancement of Loftness products may result in changes to this equipment that may not be reflected in this publication. Loftness reserves the right to make product improvements to the oil cooler cab mount kit at any time. Although great care has been taken to ensure the accuracy of this publication, Loftness does not assume any liability for errors or omissions.

Dealer Responsibility

Assemble and set up the oil cooler cab mount kit in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and/or laws, and in compliance with on-product labeling and these instructions.

Make sure that all personnel employed to set up and assemble the oil cooler cab mount kit:

- has read this manual and thoroughly understands safe and correct installation procedures.
- is familiar with the oil cooler and track loader.
- has a full understanding of the tools and/or equipment used to set up the oil cooler cab mount kit, such as hoists, power tools, etc.

Make sure the oil cooler cab mount kit is installed correctly before being placed into service.

Fulfill and assist the owner with all warranty obligations so as not to void the warranties. The warranty policy included in the Owner's Manual for the oil cooler outlines the warranty policy of Loftness.

Safety Instructions

Safety First

Accidents can be prevented by recognizing the causes or hazards before an accident occurs and doing something about them. Regardless of the care used in the design and construction of the oil cooler cab mount kit, there are some areas that cannot be safeguarded without interfering with accessibility and efficient operation.

Safety Alert Symbol

This message alert symbol identifies important safety messages on the product and in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

In this manual and on decals used on the oil cooler the words **DANGER, WARNING, CAUTION, IMPORTANT,** and **NOTE** are used to indicate the following:

DANGER: This word warns of immediate hazards which, if not avoided, will result in severe personal injury or death. The color associated with Danger is RED.

WARNING: This word refers to a potentially hazardous situation which, if not avoided, could result in severe personal injury or death. The color associated with Warning is ORANGE.

CAUTION: This word refers to a potentially hazardous or unsafe situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

IMPORTANT: Highlights information that must be heeded.

NOTE: A reminder of other related information that needs to be considered.

If Safety Decals on the oil cooler are ISO two panel pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as and if used, are RED.

Be certain all assemblers are aware of the dangers indicated by safety decals applied to the oil cooler, and be certain they follow all safety decal instructions. Contact Loftness for safety decal replacement.

Loftness cannot anticipate every possible circumstance that may involve a potential hazard. The warnings in this manual are not all inclusive.

Safety Rules

These are general safety considerations. Additional precautions may be necessary to set up the oil cooler cab mount kit in a safe manner. Be certain you are operating your equipment and tools in accordance with all safety codes, OSHA rules and regulations, insurance requirements and local, state, and federal laws while setting up this Loftness unit.

Set-up Safety

- Do not allow anyone to set up and/or assemble the oil cooler cab mount kit until he or she has read the dealer set-up manual and is completely familiar with all safety precautions.
- Become familiar with the safety decals on the oil cooler.
- Do not allow inexperienced persons unfamiliar with the track loader, or the tools/equipment used to set up the oil cooler cab mount kit, to perform any set up procedures.
- Do not allow persons under the influence of alcohol, medications, or other drugs that can impair judgment or cause drowsiness to set up the oil cooler cab mount kit.
- Make sure the set-up area is clear of any distracting objects. Keep work areas clean and free of grease and oil to avoid slipping or falling.

Safety Rules (Cont'd)

Set-up Safety (Cont'd)

- Keep children, bystanders and other workers away from the unit while being set up.
- Wear safety glasses, ear protection, respirators, gloves, hard hats, safety shoes and other protective clothing when required.
- It is the dealer's responsibility to be aware of work area hazards when assembling the oil cooler cab mount kit.
- Do not replace components or parts with other than factory-supplied parts. To do so may decrease the effectiveness of the oil cooler. If you notice any missing or damaged parts contact Loftness immediately.
- Never attempt to make any adjustments to the oil cooler cab mount kit if the engine is running or the key is in the "ON" position in the track loader. Before leaving the operator's position, disengage power to the track loader and remove ignition key.

Hoist (Lifting) Safety

During maneuvering and set-up, it is recommended that a power hoist, or lift, be used to lift the cooler cab mount kit assembly into the operating position.

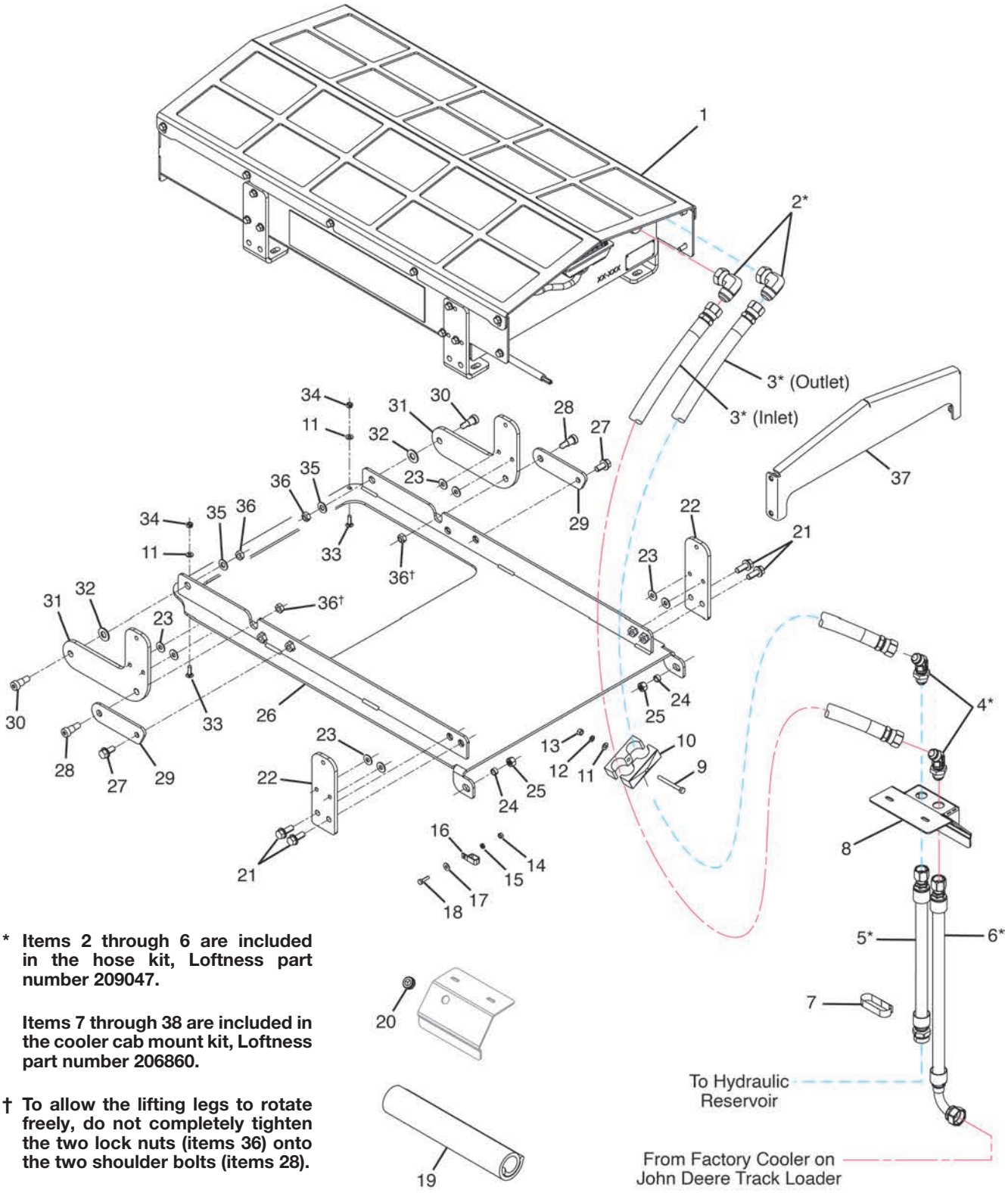
- Make sure the lifting device (hoist or heavy equipment) is capable of lifting the specified parts and/or assemblies.
- All personnel must be properly trained and experienced lift operators.

Hydraulic Safety

- The hydraulic system is under high pressure. Make sure all lines and fittings are tight and in good condition. These fluids escaping under high pressure can have sufficient force to penetrate skin and cause serious injury.
- Never check for leaks by using any part of your body to feel for escaping fluid.
- Always use a piece of wood to check for leaks.

WARNING: *Contact with high pressure fluids may cause fluid penetration and burn hazards. Fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. If fluid is injected into the skin, seek medical attention immediately!*

Universal Oil Cooler Kit (John Deere 325G, 331G and 333G) Options



*** Items 2 through 6 are included in the hose kit, Loftness part number 209047.**

Items 7 through 38 are included in the cooler cab mount kit, Loftness part number 206860.

† To allow the lifting legs to rotate freely, do not completely tighten the two lock nuts (items 36) onto the two shoulder bolts (items 28).

Universal Oil Cooler Kit (John Deere 325G, 331G and 333G) Options

#	QTY.	PART #	DESCRIPTION
1	1	201760	OIL COOLER, FINAL ASSEMBLY
2	2	N19270	ELBOW, 90 DEG - 16MJC - 16FJC
3	2	209051	HOSE, 1 X 63 -16FJIC -12FJIC
4	2	202975	ADAPTER, 45 BULKHEAD -12MJIC
5	1	209053	HOSE, 3/4 X 19.50 -12FJIC -16MORFS
6	1	209055	HOSE, 3/4 X 26.00-12FJIC-16FORFS90SH
7	1	209060	TIE, FOLD OVER SST 10IN
8	1	206870	MOUNT, JD COOLER BULKHEAD
9	1	4004	BOLT, 5/16" X 3" GRADE 5
10	1	N49250	WELD-MOUNT CLAMP 1.5"
11	3	N28927	WASHER, FLAT 5/16 SAE
12	1	4228	WASHER, 5/16" LOCK
13	1	4237	NUT, 5/16" STANDARD
14	1	4230	NUT, STANDARD 1/4"
15	1	4231	WASHER, LOCK 1/4"
16	1	N25234	CLAMP, LOOP 1/2" X 1-3/4 VINYL
17	1	3183	WASHER, FLAT 1/4"
18	1	4000	BOLT, 1/4" X 1" GRADE 5
19	1	209231	INSTRUCTIONS, JD COOLER MOUNT
20	1	N19297	GROMMET-RUBBER
21	4	N18360	BOLT,1/2-13 X 1-1/4 SER FLG
22	2	206863	PLATE, JD MOUNT LEG BACK
23	8	4064	WASHER, FLAT 3/8"
24	2	206859	BUSHING, BRONZE SLEEVE
25	2	206861	NUT, LOCK M12 X 1.75 CLASS 10
26	1	206858	WELDMENT, JD COOLER MOUNT
27	2	N26748	BOLT, 1/2" X 1" SER FLG
28	2	202769	BOLT, SHOULDER 5/8IN X 5/8IN
29	2	206864	PLATE, JD COOLER STAND
30	2	206866	BOLT, SHOULDER 5/8IN X 3/4IN
31	2	206862	PLATE, JD MOUNT LEG FRONT
32	2	4997	WASHER, FLAT 5/8" SAE
33	2	N26741	BOLT, CARRIAGE 5/16" X 1"
34	2	4051	NUT, LOCK 5/16"
35	2	4068	WASHER, 1/2" SAE FLAT
36	4	4054	NUT, LOCK 1/2" TOP
37	1	209050	PLATE, OIL COOLER END CAP


LOFTNESS

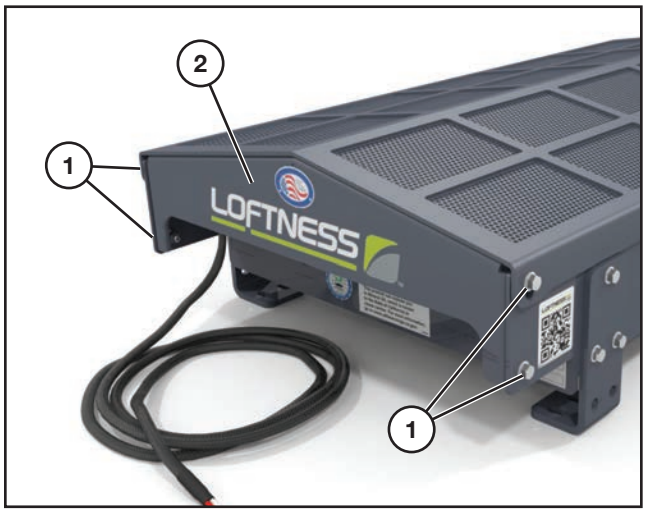
Set-up

To ensure safe and proper set-up of the oil cooler cab mount kit, it is mandatory that you thoroughly study this manual and follow its recommendations and information.

Become familiar with all parts and part numbers in the John Deere Oil Cooler Mount Kit and the Cooler Hose Kit before starting.

Refer to the drawing and parts list on pages 4 and 5 to assemble the cab mount kit.

Installing the Cab Mount Kit to the Loader

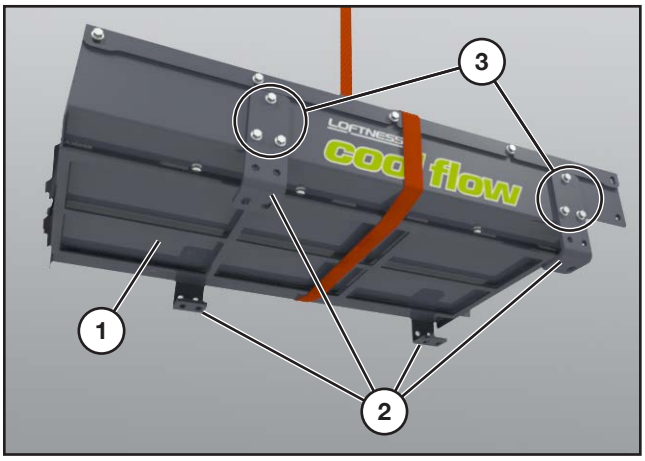


While the oil cooler is still on the ground remove the four bolts (1) securing the back cover (2) to the cooler frame.

Pull the back cover out and set it and the bolts aside.

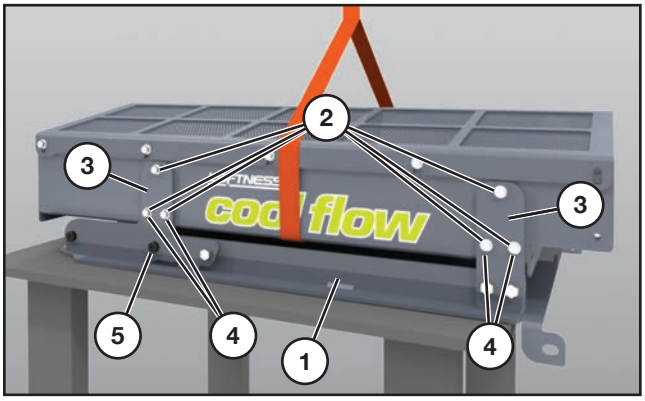
NOTE: *Removing the back cover allows for easier access to the hydraulic fittings and the wiring harness during installation.*

⚠	**WARNING:** *The cooler mounting frame and the oil cooler are heavy. It is recommended that a power hoist be used to lift and place them into position.*



Suspend the universal oil cooler (1) with a hoist and straps.

Remove all four of the factory-installed legs (2) from the oil cooler by unscrewing the mounting bolts (3) (three bolts per leg, twelve total), these will be used to remount the oil cooler to the cab mount assembly.



Install the oil cooler onto the cab mount (1).

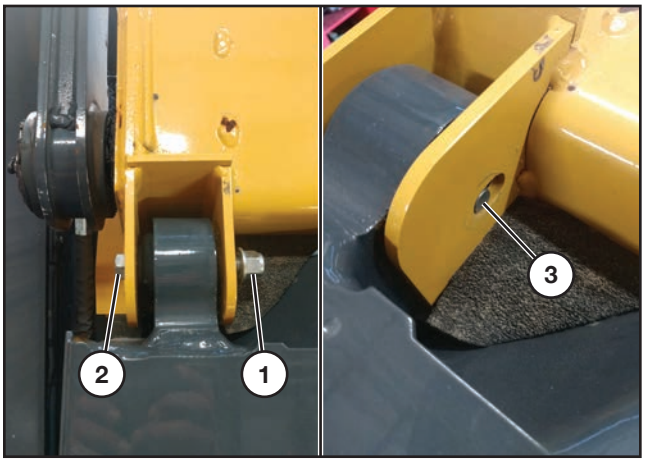
Reinstall the mounting bolts (2) through all four cab mount brackets (3) with 3/8 in. flat washers (4) installed between the brackets and the oil cooler body on the bottom two bolts (two sets on each side). Refer to the drawing on page 4 for direction.

Tighten the bolts.

IMPORTANT: *DO NOT tighten the shoulder bolts/lock nuts completely at location 5 (both sides). This is a pivot point for the lifting legs when moving the oil cooler into the service position and must be allowed to move freely. Refer also to items 28 and 36 on the exploded illustration on page 4.*

Set-up (Cont'd)

Mounting the Frame and Oil Cooler



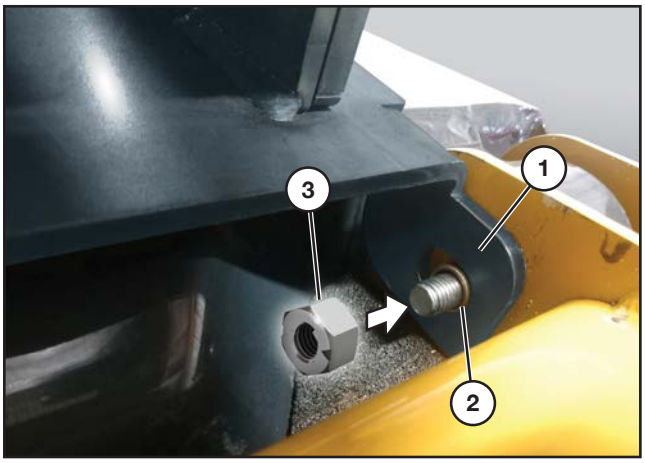
Remove the lock nut (1) on the John Deere cab pivot bolt (2), then back the bolt out so the threaded end is flush with the frame (3).

IMPORTANT: *DO NOT remove the pivot bolt(s). If the bolt is removed, damage to the cab wiring, etc. can occur.*

Repeat this procedure on the opposite side of the cab.

Carefully lift the oil cooler cab mount kit onto the cab of the track loader.

⚠	**WARNING: Crushing hazard.** *Do not stand under the oil cooler cab mount kit while it is being raised, or while it is the raised position.*

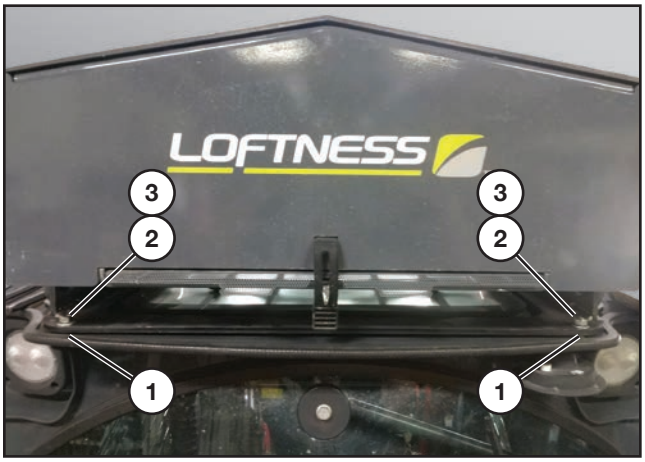


When setting the oil cooler cab kit down onto the cab, tip the back of the cab kit down to align the holes on the ears (1) of the cab mount to the bolts in the cab pivot.

Push the cab pivot bolt through, then install a bushing (2) on the bolt as shown above.

Install a lock nut (3) included with the kit onto the pivot bolt and tighten.

Repeat this procedure on the opposite side of the oil cooler kit.



Lower the front of the oil cooler down onto the cab.

Install the front carriage bolts (1), washers (2) and lock nuts (3).

NOTE: *A punch may be needed to assist with alignment.*

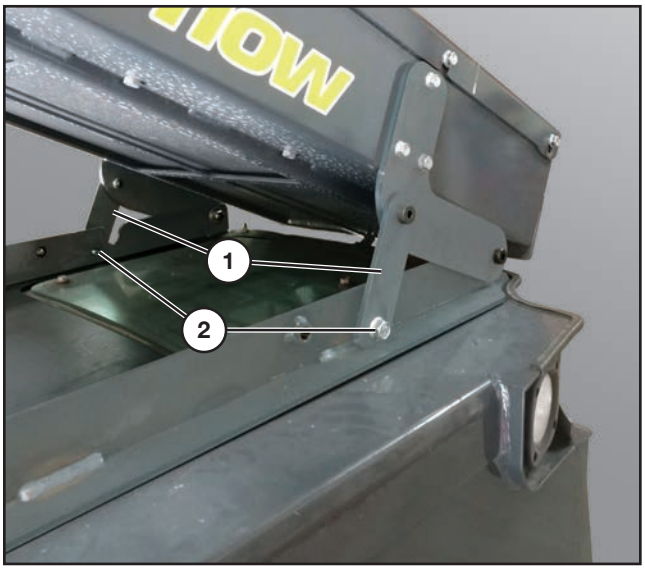
Set-up (Cont'd)

Raising Oil Cooler into Service Position

Remove the bolts (1) securing the rear legs to the mount (two bolts on each side of the oil cooler). Set the bolts aside.

Remove the hex bolts (1) (one on each side of the oil cooler) that secure the lifting legs in the storage position.

Keep the bolts near, they will be used to prop up the oil cooler in the next step.



Using a hoist, lift the rear of the oil cooler up and pivot the lifting legs (1) until the open holes in the legs align with service position holes in the cab mount. Reinstall the bolts (2).

Move the hoist out of the way and make sure all tools, parts, equipment and personnel are cleared from the area.

Lifting Loader Arms

Start the track loader.

Lift the track loader arms all the way up, then turn out the safety lock from inside the cab and lower the arms gently down onto the stop. Refer to the John Deere track loader owner's manual for instructions.

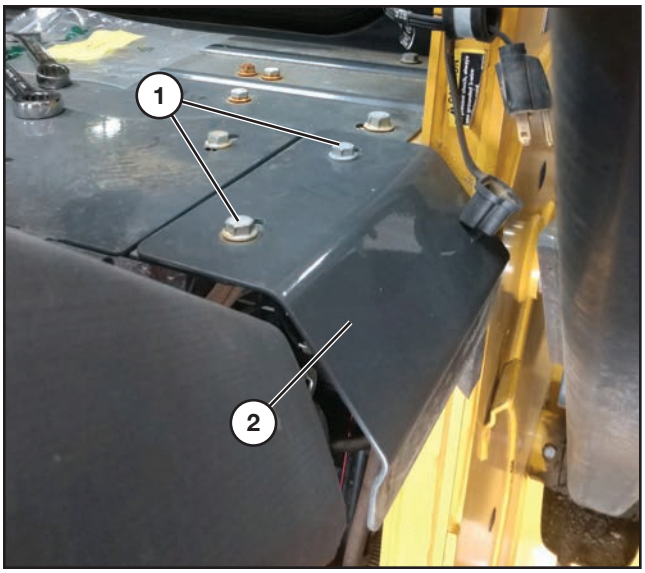
Shut OFF the track loader.

⚠	**WARNING:** *Failure to shut down and lock out power could result in serious injury, or death.*

Set-up (Cont'd)

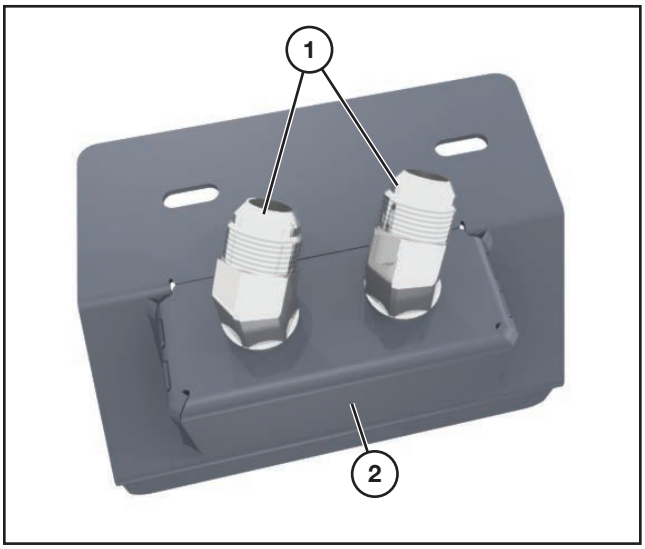
Mounting the Bulkhead and Fittings

Lift the rear engine compartment door up and remove the right and left side engine panels. Refer to the John Deere track loader owner's manual for instructions.

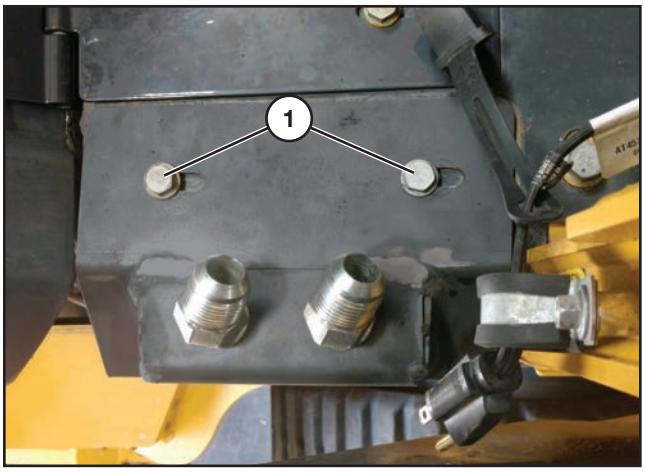


Unscrew the two bolts (1) and set aside. These bolts will be used to secure the new bulkhead.

Remove the small body panel (2).



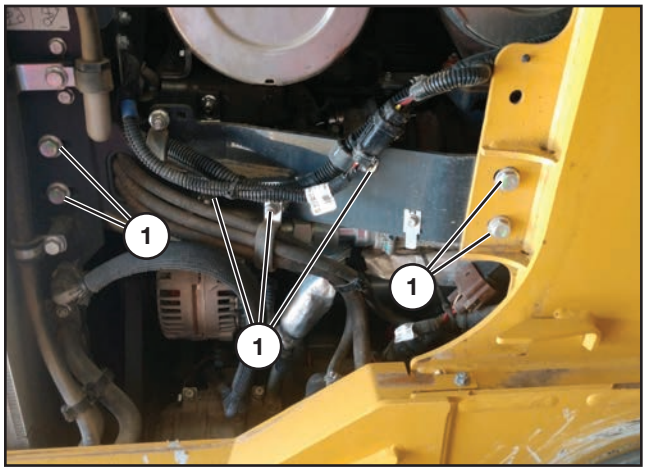
Install the two bulkhead fittings (1) (Loftness part no. 202975 in the cooler hose kit) onto the new bulkhead panel (2) in the direction shown. Tighten the fittings.



Using the two bolts (1) that were removed from the small panel, secure the bulkhead panel assembly onto the frame in the same location as the former panel.

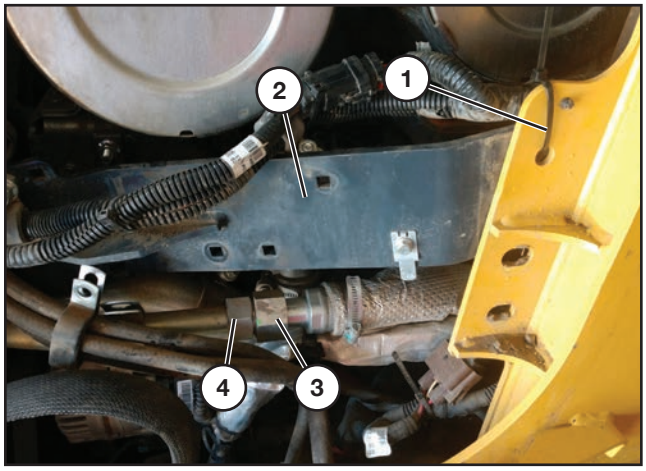
Set-up (Cont'd)

Connecting Hydraulic Hoses



Remove the hardware at the locations shown (1) to gain access to the return line that routes between the factory-installed oil cooler and the hydraulic tank.

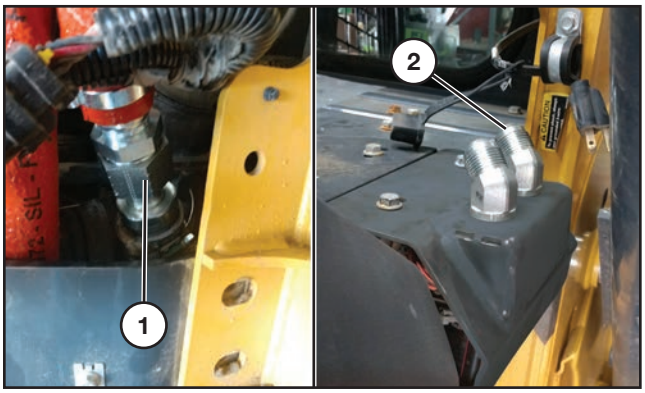
Set the hardware aside. It will be needed to re-secure the bracket and hose/wiring clamps after the hydraulic hose connections are complete.



Use a zip-tie (1) to temporarily secure the bracket (2) away from hydraulic line.

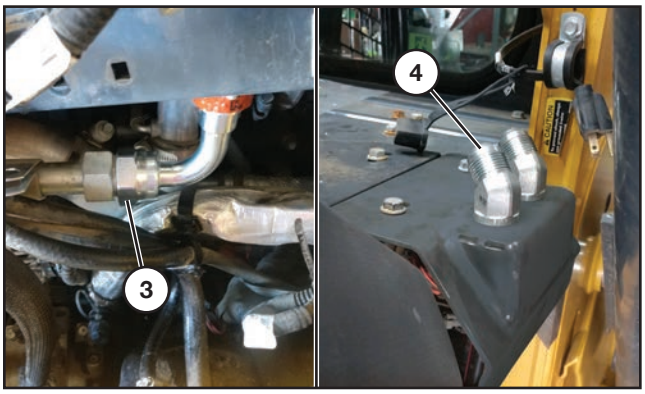
Disconnect the flexible tank line (3) from the steel oil cooler line (4).

IMPORTANT: *Tip the tank line end up and temporarily secure it to keep from draining the reservoir while performing the installation.*



Connect one end of the 19-1/2 in. hydraulic hose (Loftness part no. 209053 in the cooler hose kit) to the flexible tank line (location 1).

Connect the opposite end to the bottom of the FRONT bulkhead fitting (location 2). Tighten both connections.



Connect the 90-degree end of the 26 in. hydraulic hose (Loftness part no. 209055 in the cooler hose kit) to the steel cooler line (location 3).

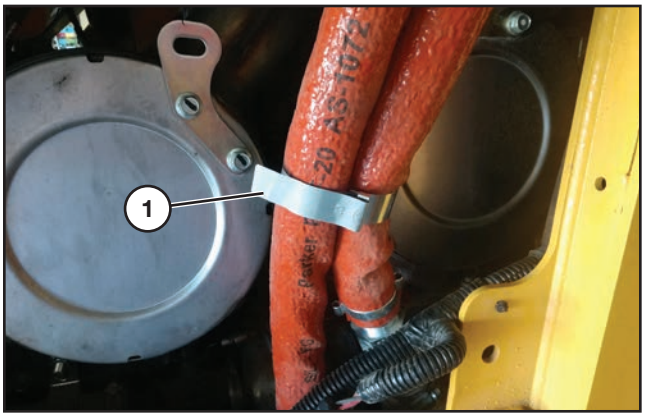
Connect the opposite end to the bottom of the REAR bulkhead fitting (location 4). Tighten both connections.

Remove the temporary zip tie installed earlier and return the bracket and hose/wiring clamps back into position. Reinstall all hardware and tighten.

(Procedure continued on following page.)

Set-up (Cont'd)

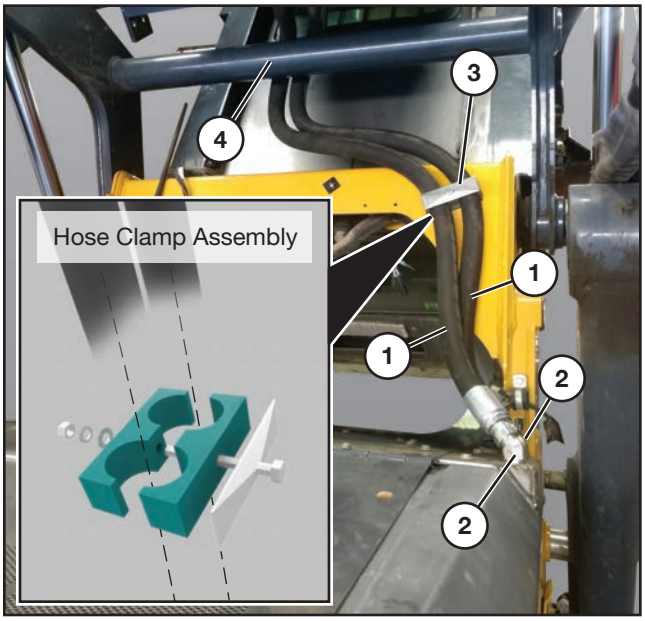
Connecting Hydraulic Hoses (Cont'd)



Use the metal tie-band (1) from the kit to secure the two hoses together.

Lift the cab into the service position and set the red safety stop.

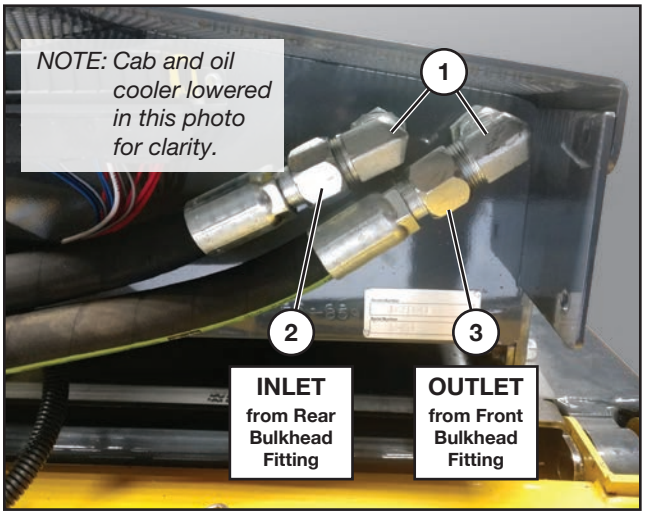
IMPORTANT: *Refer to the John Deere track loader owner's manual for instructions on safely lifting and stabilizing the cab.*



Connect one end of each 63 in. hydraulic hoses (1) (Loftness part no. 209051 in the cooler hose kit) to the bulkhead fittings (2) as shown. Tighten both connections.

Install the double hose clamp (3) with hoses onto the cab. Leave the clamp slightly loose until the hoses are routed and connected to the cooler. Refer to the inset illustration for assembly instructions and hose routing.

Route the hydraulic hoses behind the track loader arm stabilizer tube (4).



Install the two 90-degree elbow fittings (1) (Loftness part no. N19270 in the cooler hose kit) onto the two straight oil cooler fittings. Secure the fittings at the angles shown above. Tighten both fittings.

Connect the end of the hose (2) coming from the REAR bulkhead fitting to the inside elbow on the cooler (INLET port). Tighten.

Connect the end of the hose (3) coming from the FRONT bulkhead fitting to the outside elbow on the cooler (OUTLET port). Tighten.

Tighten the hose clamp.

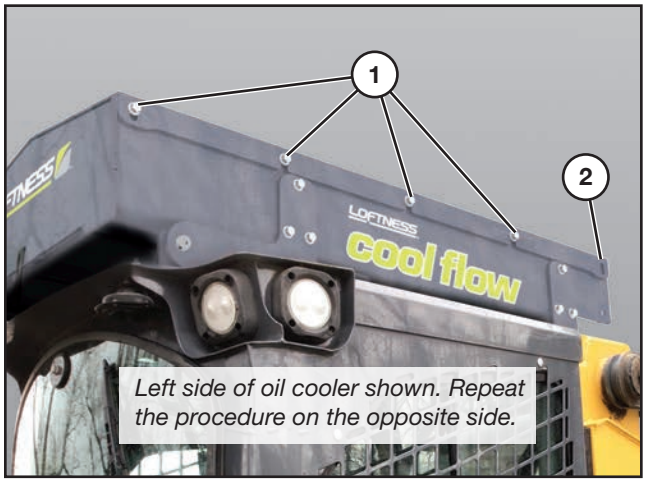
(Procedure continued on following page.)

Set-up (Cont'd)

Connecting Hydraulic Hoses (Cont'd)

Make sure the hydraulic hoses are routed as shown above. Tighten all connections.

Routing Wiring Harness

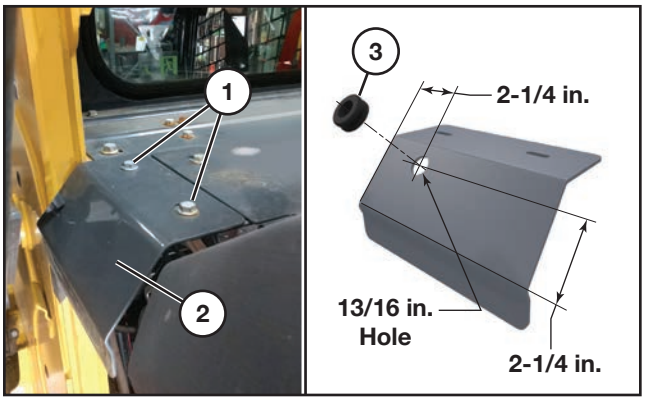


Left side of oil cooler shown. Repeat the procedure on the opposite side.

Loosen the remaining 8 bolts (1) (four on each side). Pivot the back end of the top cover up.

NOTE: *Rear bolt top bolt (2) should have already been removed in an earlier step of the installation.*

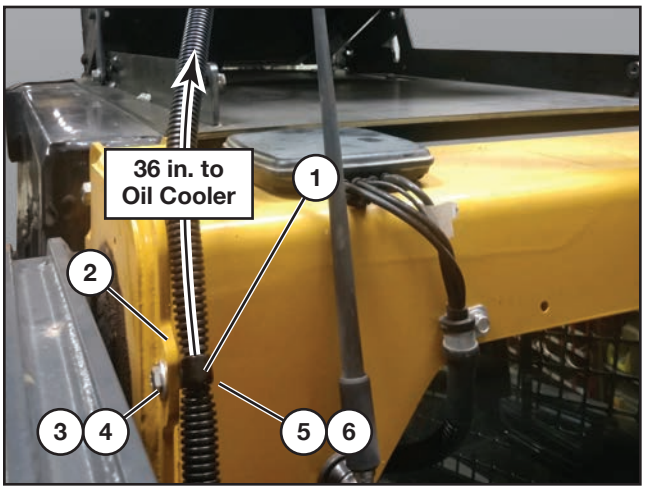
Pull the main wire harness from inside the cooler and install the harness with the grommet in the rear panel of the cooler.



Remove the two bolts (1) and pull out the left side body panel (2) located behind the cab.

Drill a 13/16 in. hole into the panel. Use the dimensions provided above for hole location.

Insert the grommet (3) that is supplied with the kit.



Route the wiring harness from the Loftness oil cooler along the rear left side of the track loader.

Measure 36 in. (minimum) of harness from the back panel of the Loftness oil cooler and position the retaining clip (1) onto the hole/tab (2) located on the left side rear of the track loader cab.

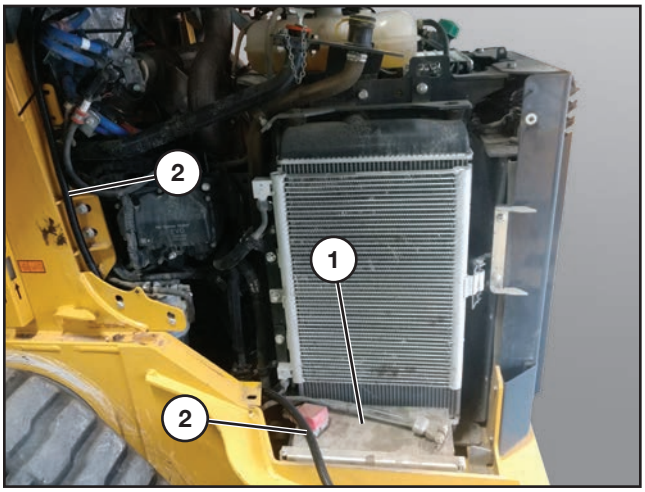
Secure the clip onto the cab with the 1/4 in. bolt (3), washer (3), lock washer (5), and nut (6) that is supplied with the kit.

Reinstall the left side body panel with grommet.

Push the end of the wiring harness a few inches through the new grommet. The remainder of the harness will be pulled though in the following procedure.

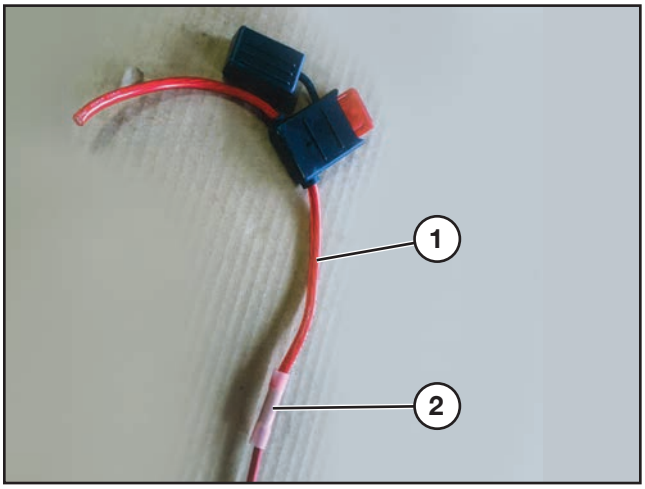
Set-up (Cont'd)

Electrical Connections



With the left side engine panel removed, locate the battery (1) and make sure it is clear of any debris.

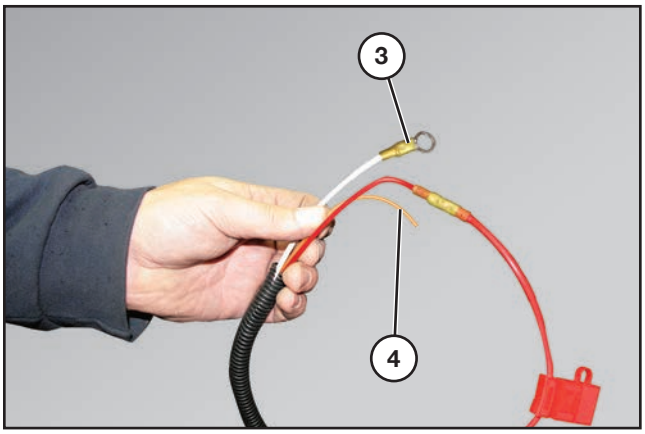
Pull the wiring harness (2) through the grommet and safely route it through the engine bay and back to the battery.



Cut the loop of the inline fuse holder (1) at the half-way mark, keeping an equal length of wire on either side of the fuse holder. Strip both ends of the wire.

Connect one end to the red positive (+) 8 AWG wire of the harness using a butt connector (2).

Attach a ring terminal on the other end for battery connection.



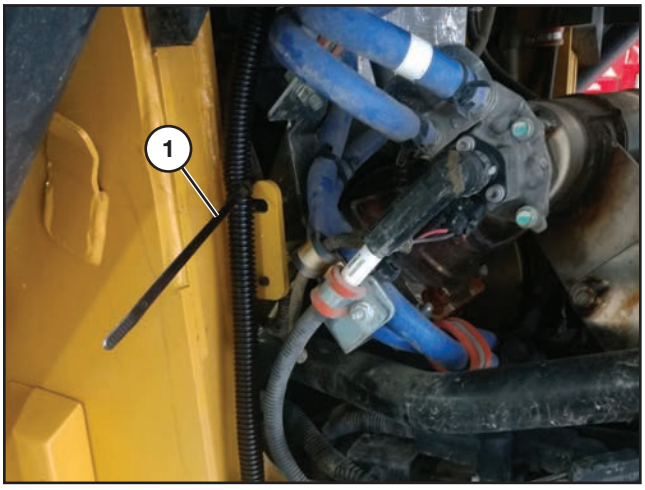
Strip the end of the white negative (—) 18/8 AWG wire and attach a ring terminal (3).

Connect the white negative (—) 18/8 AWG wire from the oil cooler harness to the negative terminal on the battery.

Connect the red positive (+) 8 AWG wire from the main fuse holder to the positive terminal on the battery.

Connect the orange (4) 18 AWG wire from the oil cooler harness to a keyed power source on the track loader.

NOTE: *John Deere dealer to determine a location for the keyed power source.*



Secure the wiring harness with zip-ties (1) as needed to avoid direct contact with moving parts and/or hot components within the engine bay.

Finalizing Installation

Lower the track loader cab back into the operating position.

IMPORTANT: *Refer to the John Deere track loader owner's manual for instructions on lowering and securing the cab.*

Lower the oil cooler back down into the operating position.

NOTE: *Reverse the procedure for raising the oil cooler. Refer to "Raising Oil Cooler into Service Position" on page 9 for instructions. Ensure all hardware has been re-installed and is secure.*

Securing Hoses and Wiring Harness

Make sure the oil cooler hydraulic hoses and wiring harness are secure. The hydraulic hoses and wiring harness coming from the oil cooler should route as shown above.

Avoid any potential pinch points or sharp turns that could cut or wear on the hoses or wires.

Provide slack in the hoses and wires to allow them to move freely when the cab is tilted up and down.

Checking for Leaks

Start the track loader and check all new hydraulic connections for leaks. If any leaks are present, make necessary corrections.

Turn track loader off.

Check Hydraulic Oil Level

The oil cooler cab mount kit is shipped without hydraulic oil present. Also, some hydraulic oil may have been lost during the installation, especially when the track loader's original hoses were disconnected.

After the oil cooler cab mount kit installation, check the hydraulic oil level in the track loader. Add as needed.

NOTE: *Refer to your John Deere 325G, 331G, or 333G Owner's Manual for checking and adding hydraulic oil.*

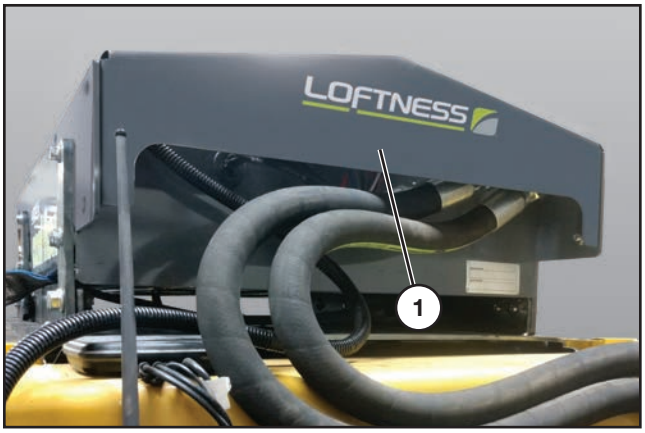
Finalizing Installation (Cont'd)

Reinstalling Panels

Shut down the power on the track loader before re-installing the oil cooler and track loader panels.

⚠	**WARNING:** *Failure to shut down and lock out power could result in serious injury, or death.*

Re-installing Oil Cooler Panel



Reinstall the back access cover (1) onto the oil cooler and tighten the bolts.

Re-installing Track Loader Panels and Door

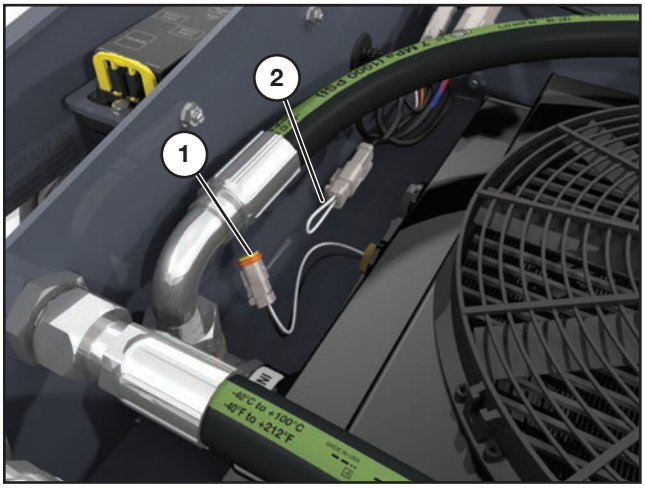
With the track loader turned off, reinstall the side engine panels and then the rear engine compartment door. Refer to the John Deere track loader owner's manual for instructions.

Lowering Arms

After the panels and door are secured, start the track loader and lower the arms. Refer to the John Deere track loader owner's manual for instructions.

Turn the track loader off.

Check and Verify Fan Operation



Remove the temperature sensor plug (1) on the main harness.

With the track loader key set to "ON", use a jumper wire or Deutsch plug jumper (2) (dealer-made) to activate fan #1. Fan #2 will activate 25-30 seconds later.

Preset 120° F temperature setting is non-adjustable.

After checking the fans and ensuring they are running properly, turn the track loader key to "OFF".

Remove the plug jumper and reconnect the temperature sensor plug.

Re-install the top cover.

Torque Specifications

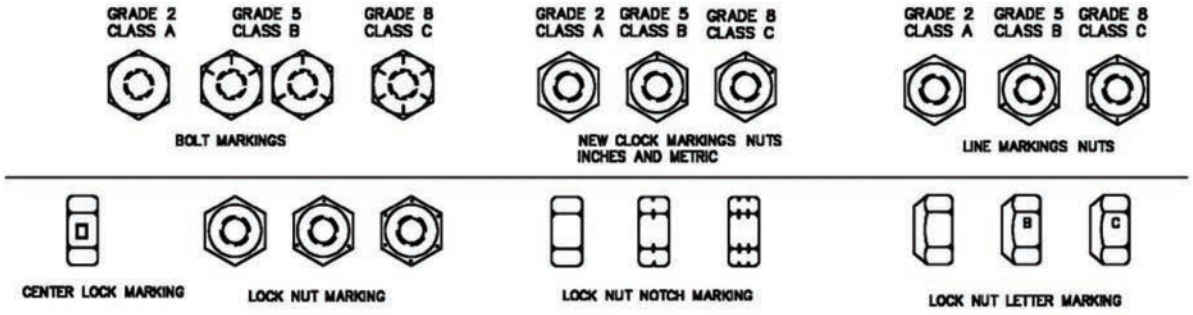
Inches Hardware and Lock Nuts

TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications
(Standard Hardware and Lock Nuts)

SAE Gr. 2	SAE Grade 5		SAE Grade 8		LOCK NUTS			
Nominal Size	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Grade W / Gr. 5 Bolt	Grade W / Gr. 8 Bolt
1/4	55 in.-lb. (6.2 N•m)	72 in.-lb. (8.1 N•m)	86 in.-lb. (9.7 N•m)	112 in.-lb. (12.6 N•m)	121 in.-lb. (13.6 N•m)	157 in.-lb. (17.7 N•m)	61 in.-lb. (6.9 N•m)	86 in.-lb. (9.8 N•m)
5/16	115 in.-lb. (13 N•m)	149 in.-lb. (17 N•m)	178 in.-lb. (20 N•m)	229 in.-lb. (26 N•m)	250 in.-lb. (28 N•m)	324 in.-lb. (37 N•m)	125 in.-lb. (14 N•m)	176 in.-lb. (20 N•m)
3/8	17 ft.-lb. (23 N•m)	22 ft.-lb. (30 N•m)	26 ft.-lb. (35 N•m)	34 ft.-lb. (46 N•m)	37 ft.-lb. (50 N•m)	48 ft.-lb. (65 N•m)	19 ft.-lb. (26 N•m)	26 ft.-lb. (35 N•m)
7/16	27 ft.-lb. (37 N•m)	35 ft.-lb. (47 N•m)	42 ft.-lb. (57 N•m)	54 ft.-lb. (73 N•m)	59 ft.-lb. (80 N•m)	77 ft.-lb. (104 N•m)	30 ft.-lb. (41 N•m)	42 ft.-lb. (57 N•m)
1/2	42 ft.-lb. (57 N•m)	54 ft.-lb. (73 N•m)	64 ft.-lb. (87 N•m)	83 ft.-lb. (113 N•m)	91 ft.-lb. (123 N•m)	117 ft.-lb. (159 N•m)	45 ft.-lb. (61 N•m)	64 ft.-lb. (88 N•m)
9/16	60 ft.-lb. (81 N•m)	77 ft.-lb. (104 N•m)	92 ft.-lb. (125 N•m)	120 ft.-lb. (163 N•m)	130 ft.-lb. (176) N•m	169 ft.-lb. (229 N•m)	65 ft.-lb. (88 N•m)	92 ft.-lb. (125 N•m)
5/8	83 ft.-lb. (112 N•m)	107 ft.-lb. (145 N•m)	128 ft.-lb. (174 N•m)	165 ft.-lb. (224 N•m)	180 ft.-lb. (244) N•m	233 ft.-lb. (316 N•m)	90 ft.-lb. (122 N•m)	127 ft.-lb. (172 N•m)
3/4	146 ft.-lb. (198 N•m)	189 ft.-lb. (256 N•m)	226 ft.-lb. (306 N•m)	293 ft.-lb. (397 N•m)	319 ft.-lb. (432 N•m)	413 ft.-lb. (560 N•m)	160 ft.-lb. (217 N•m)	226 ft.-lb. (306 N•m)
7/8	142 ft.-lb. (193 N•m)	183 ft.-lb. (248 N•m)	365 ft.-lb. (495 N•m)	473 ft.-lb. (641 N•m)	515 ft.-lb. (698 N•m)	667 ft.-lb. (904 N•m)	258 ft.-lb. (350 N•m)	364 ft.-lb. (494 N•m)
1	213 ft.-lb. (289 N•m)	275 ft.-lb. (373 N•m)	547 ft.-lb. (742 N•m)	708 ft.-lb. (960 N•m)	773 ft.-lb. (1048 N•m)	1000 ft.-lb. (1356 N•m)	386 ft.-lb. (523 N•m)	545 ft.-lb. (739 N•m)



Torque Specifications (Cont'd)

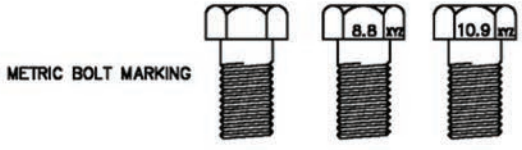
Metric Hardware and Lock Nuts

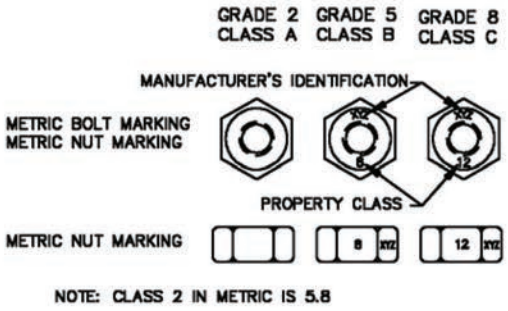
TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications
(Metric Hardware and Lock Nuts)

	Class 5,8		Class 8,8		Class 10,9		Lock nuts
Nominal Size	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Class 8 W / CL. 8,8 Bolt
M4	1.7 N•m (15 in.-lb.)	2.2 N•m (19 in.-lb.)	2.6 N•m (23 in.-lb.)	3.4 N•m (30 in.-lb.)	3.7 N•m (33 in.-lb.)	4.8 N•m (42 in.-lb.)	1.8 N•m (16 in.-lb.)
M6	5.8 N•m (51 in.-lb.)	7.6 N•m (67 in.-lb.)	8.9 N•m (79 in.-lb.)	12 N•m (102 in.-lb.)	13 N•m (115 in.-lb.)	17 N•m (150 in.-lb.)	6.3 N•m (56 in.-lb.)
M8	14 N•m (124 in.-lb.)	18 N•m (159 in.-lb.)	22 N•m (195 in.-lb.)	28 N•m (248 in.-lb.)	31 N•m (274 in.-lb.)	40 N•m (354 in.-lb.)	15 N•m (133 in.-lb.)
M10	28 N•m (21 ft.-lb.)	36 N•m (27 ft.-lb.)	43 N•m (32 ft.-lb.)	56 N•m (41 ft.-lb.)	61 N•m (45 ft.-lb.)	79 N•m (58 ft.-lb.)	30 N•m (22 ft.-lb.)
M12	49 N•m (36 ft.-lb.)	63 N•m (46 ft.-lb.)	75 N•m (55 ft.-lb.)	97 N•m (72 ft.-lb.)	107 N•m (79 ft.-lb.)	138 N•m (102 ft.-lb.)	53 N•m (39 ft.-lb.)
M16	121 N•m (89 ft.-lb.)	158 N•m (117 ft.-lb.)	186 N•m (137 ft.-lb.)	240 N•m (177 ft.-lb.)	266 N•m (196 ft.-lb.)	344 N•m (254 ft.-lb.)	131N•m (97 ft.-lb.)
M20	237 N•m (175 ft.-lb.)	307 N•m (226 ft.-lb.)	375 N•m (277 ft.-lb.)	485 N•m (358 ft.-lb.)	519 N•m (383 ft.-lb.)	671 N•m (495 ft.-lb.)	265 N•m (195 ft.-lb.)
M24	411 N•m (303 ft.-lb.)	531 N•m (392 ft.-lb.)	648 N•m (478 ft.-lb.)	839 N•m (619 ft.-lb.)	897 N•m (662 ft.-lb.)	1160 N•m (855 ft.-lb.)	458 N•m (338 ft.-lb.)





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