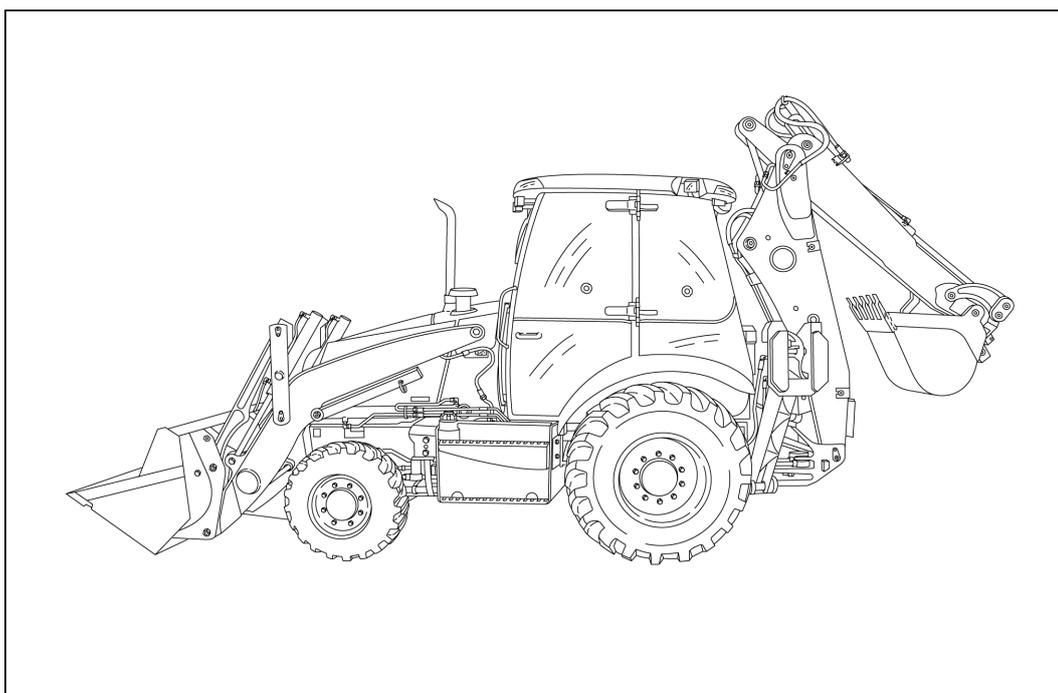


CASE

CONSTRUCTION

SERVICE MANUAL



580N
580SN WT
580SN
590SN

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Sample of manual. Download All 3501 pages at:

<https://www.arepairmanual.com/downloads/2012-case-580n580sn-wt580sn590sn-loader-backhoe-service-repair-workshop-manual/>

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Safety rules

580N NA, 580SN NA, 580SN WT NA, 590SN NA

⚠ DANGER

**Improper operation or service of this machine can result in an accident.
Do not operate this machine or perform any lubrication, maintenance, or repair on it until you have read and understood the operation, lubrication, maintenance, and repair information.
Failure to comply will result in death or serious injury.**

D0010A

⚠ WARNING

**Maintenance hazard!
Always perform all service procedures punctually at the intervals stated in this manual. This ensures optimum performance levels and maximum safety during machine operation.
Failure to comply could result in death or serious injury.**

W0132A

⚠ WARNING

**Pressurized system!
Before attempting any service procedure, it is your responsibility to know the number of accumulators on the machine, and the correct procedure for releasing the pressure of each accumulator.
Failure to comply could result in death or serious injury.**

W0136A

NOTICE: *Extreme working and environmental conditions require shortened service intervals.*

Use Case fluids, lubricants, and filters for the best protection and performance of your machine. All fluids, lubricants, and filters must be disposed of in compliance with environmental standards and regulations. Contact your dealer with any questions regarding the service and maintenance of this machine.

Read the safety decals and information decals on the machine. Read the Operator's Manual and safety manual. Understand the operation of the machine before you start any service.

Before you service the machine, put a 'Do Not Operate' tag on the steering wheel or over the key switch. Ensure the tag is at a location where everyone who might operate or service the machine may see clearly. One tag is included with your new machine. Additional tags are available from your dealer.

Plastic and resin parts

- Avoid using gasoline, paint thinner, etc. when cleaning plastic parts, console, instrument cluster, etc.
- Use only water, mild soap, and a soft cloth when you clean these parts.
- Using gasoline, thinners, etc. can cause discoloration, cracking, or deformation of the part being cleaned.

Safety rules - Ductile iron

580N NA, 580SN NA, 580SN WT NA, 590SN NA



⚠ DANGER

**Improper operation or service of this machine can result in an accident.
Any unauthorized modifications made to this machine can have serious consequences. Consult an authorized dealer on changes, additions, or modifications that may be required for this machine. Do not make any unauthorized modifications.
Failure to comply will result in death or serious injury.**

D0030A

Before you weld, cut, or drill holes on any part of this machine, make sure the part is not cast ductile iron. See your dealer if you do not know if a part is cast ductile iron. The following are cast ductile iron parts:

- two wheel drive steering link
- dump links
- front axle
- stabilizers
- extendahoe
- swing
- bucket linkage
- Air Conditioning (A/C) compressor mounting bracket

Unauthorized modifications to cast ductile iron parts can cause injury or death. Welding, cutting, or drilling can cause cast ductile iron to break. Do not weld, cut, or drill to repair or to attach items to cast ductile iron parts on this machine.

Safety rules

580N NA, 580SN NA, 580SN WT NA, 590SN NA

Unless otherwise instructed, always perform these steps before you service the machine:

1. Park the machine on a flat, level surface.
2. Place the backhoe in the transport position with the swing lock pin installed for transport.
3. Place the loader bucket on the ground, with the bottom of the loader bucket parallel to the surface.
4. Place the direction control lever and the transmission in neutral.
5. If you need to open the hood to perform service, raise the loader arms and install the support strut.
6. Shut down the engine.
7. Place a 'Do Not Operate' tag on the key switch so that it is visible to other workers or remove the key.

Basic instructions - Important notice regarding equipment servicing

580N NA, 580SN NA, 580SN WT NA, 590SN NA

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The information in this manual is up-to-date at the date of the publication. It is the policy of the manufacturer for continuous improvement. Some information could not be updated due to modifications of a technical or commercial type, or changes to the laws and regulations of different countries.

In case of questions, refer to your CASE CONSTRUCTION Sales and Service Networks.

Battery - Basic instructions

580N NA T4, 580SN NA T4, 580SN WT NA T4, 590SN NA T4

⚠ WARNING

Explosive gas!

Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.

Failure to comply could result in death or serious injury.

W0005A

⚠ WARNING

Hazardous chemicals!

Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.

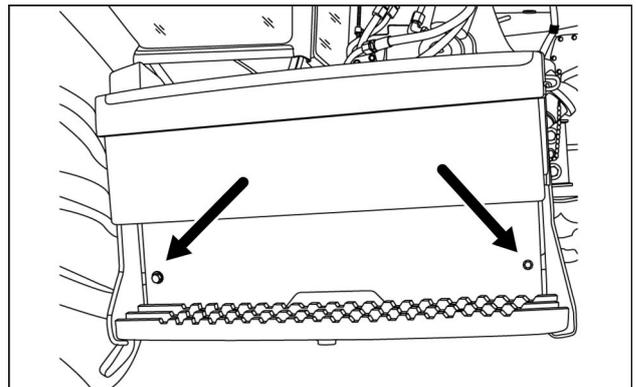
Failure to comply could result in death or serious injury.

W0006A

- Do not run the engine with the alternator wires disconnected.
- Before using an electric welder, disconnect the alternator wires, instrument cluster and batteries. Disconnect the ECU connectors.
- Do not use a steam cleaner or a cleaning solvent to clean the alternator.
- Keep the battery vents clean. Ensure the battery vents are not restricted.

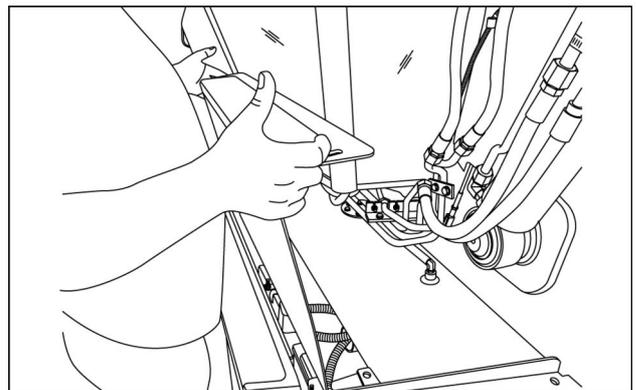
Disconnect battery

1. Remove the battery cover hardware.



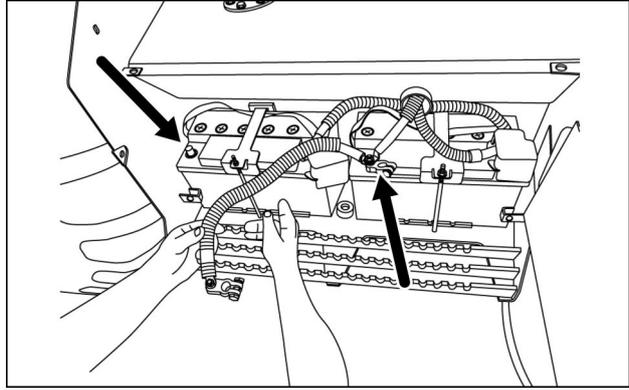
RCPH11TLB001AAM 1

2. Remove the battery cover.



RCPH11TLB002AAM 2

3. Disconnect the negative battery cable from the negative battery terminal.



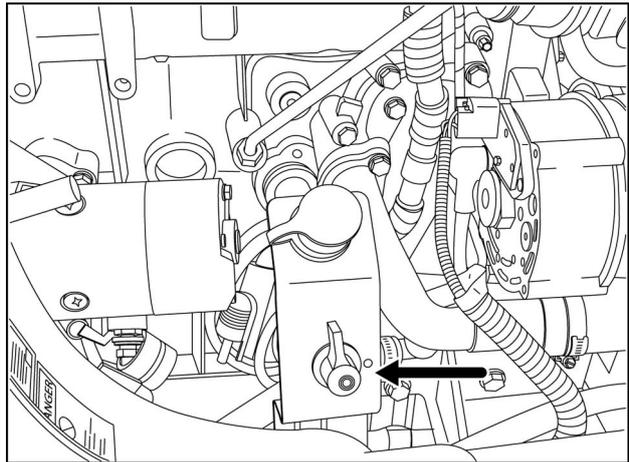
RCPH11TLB003AAM 3

Master disconnect switch (if equipped)

Enable or disable electrical power from the machine batteries to the electrical components using the master disconnect switch, located on the right hand side of the engine.

NOTICE: Wait at least 60 seconds after ignition key is placed in the OFF position before turning master disconnect switch to OFF. This allows the machine controllers to shutdown properly.

NOTICE: Some machine service procedures require an actual terminal disconnect of the batteries. Do not use the master disconnect for those types of procedures, such as welding on the machine.



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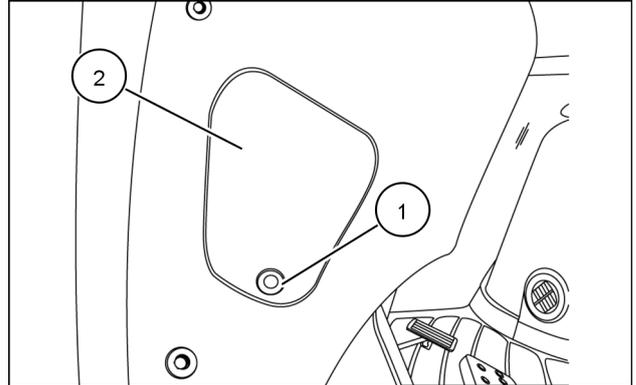
Basic instructions - Fuse and relay locations

580N NA T4, 580SN NA T4, 580SN WT NA T4, 590SN NA T4

The machine is equipped with four fuse box locations. Two locations in the front console, a side console box and an external location.

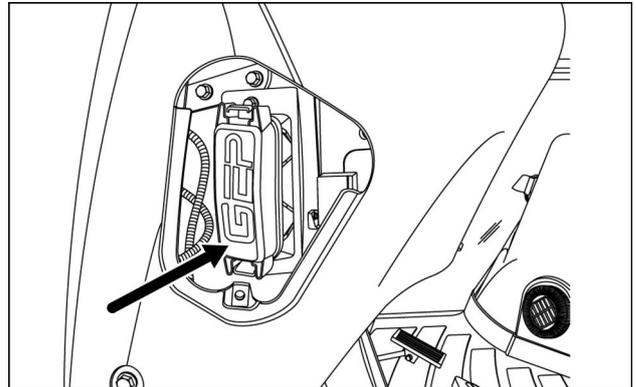
Front console box

1. Turn the thumb screw (1) to loosen the panel cover (2) for the fuse box. Remove the panel cover.

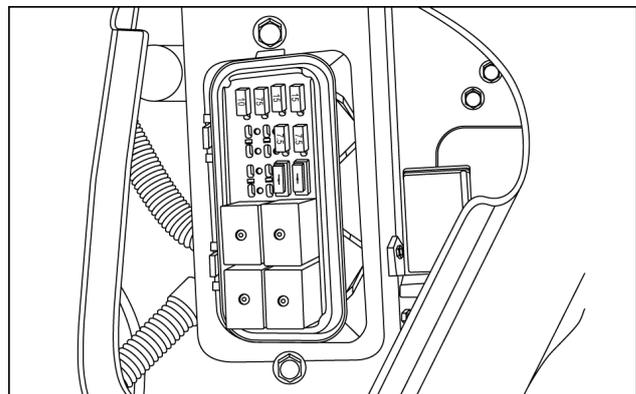


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2. Remove the fuse box cover.

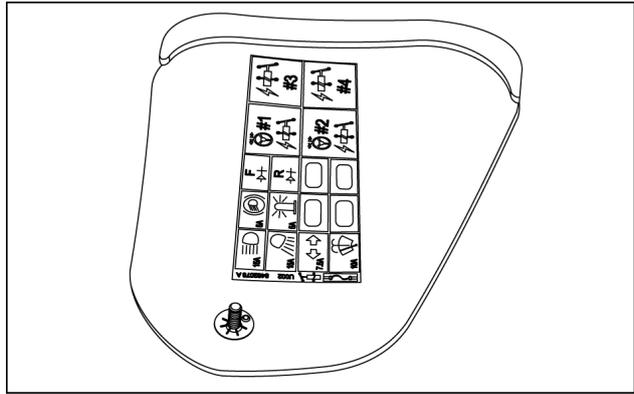


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RCPH10TLB303AAF 3

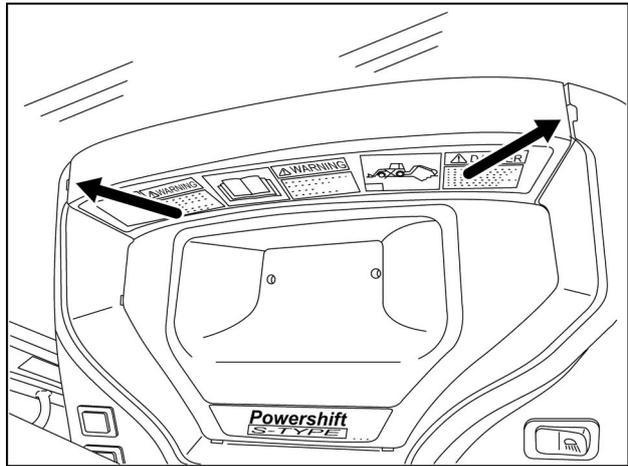
3. Refer to the decal on the interior side of the panel cover for fuse, relay, and/or diode functions.



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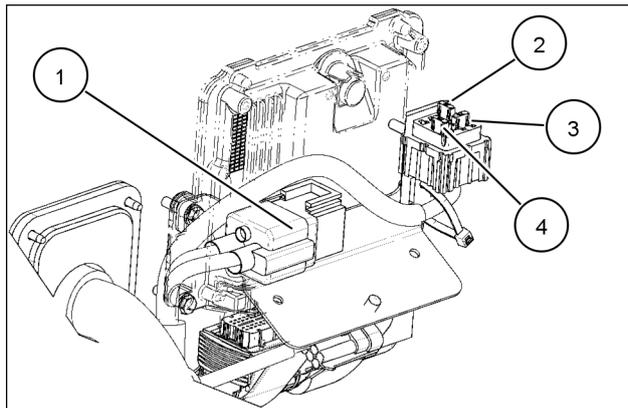
Front console ECU fuse and relay

1. Remove the cover from the steering column shroud.



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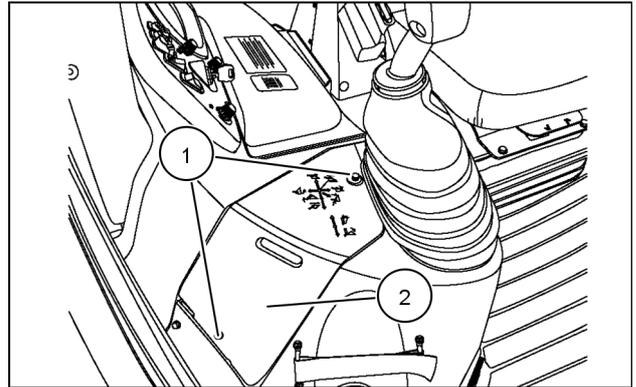
Fuse or relay reference	Designation
(1)	ECU B+ relay
(2)	ECU B+ 20 A fuse
(3)	ECU B+ 7.5 A fuse
(4)	LAMBDA SENSOR B+ 7.5 A fuse



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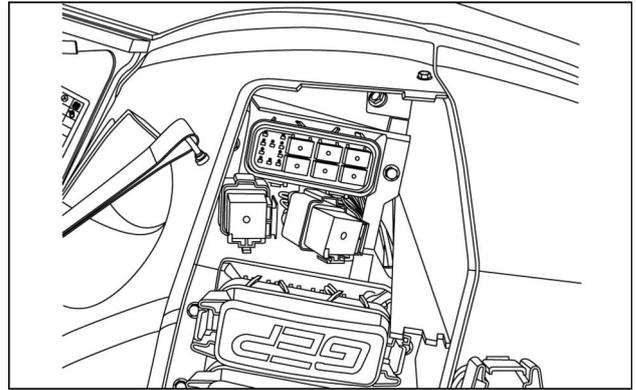
Side console box

1. Turn the thumb screws (1) to loosen the panel cover (2) for the fuse box. Remove the panel cover.

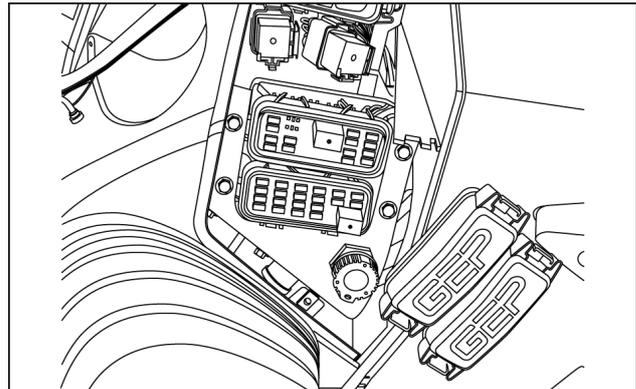


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2. Remove the fuse box covers as needed.

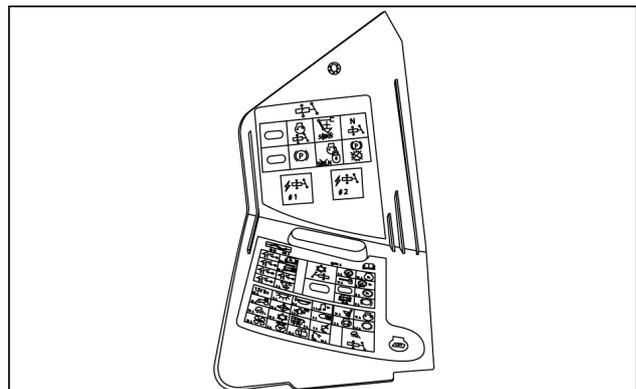


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RCPH10TLB302AAF 9

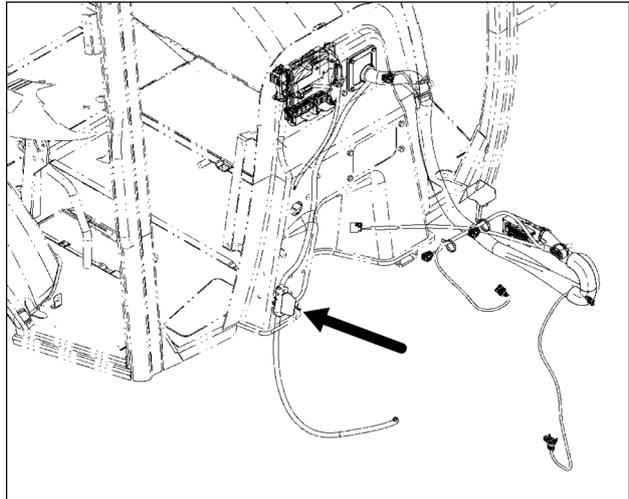
3. Refer to the decal on the interior side of the panel cover for fuse, relay, and/or diode functions.



RCPH10TLB319AAF 10

Glow-plug Control Unit (GCU) fuse

1. Raise the loader arm and engage the safety support.
2. Lift the engine hood.
3. Locate the **60 A** fuse box for the GCU on the right hand side of the engine attached to the cab frame.

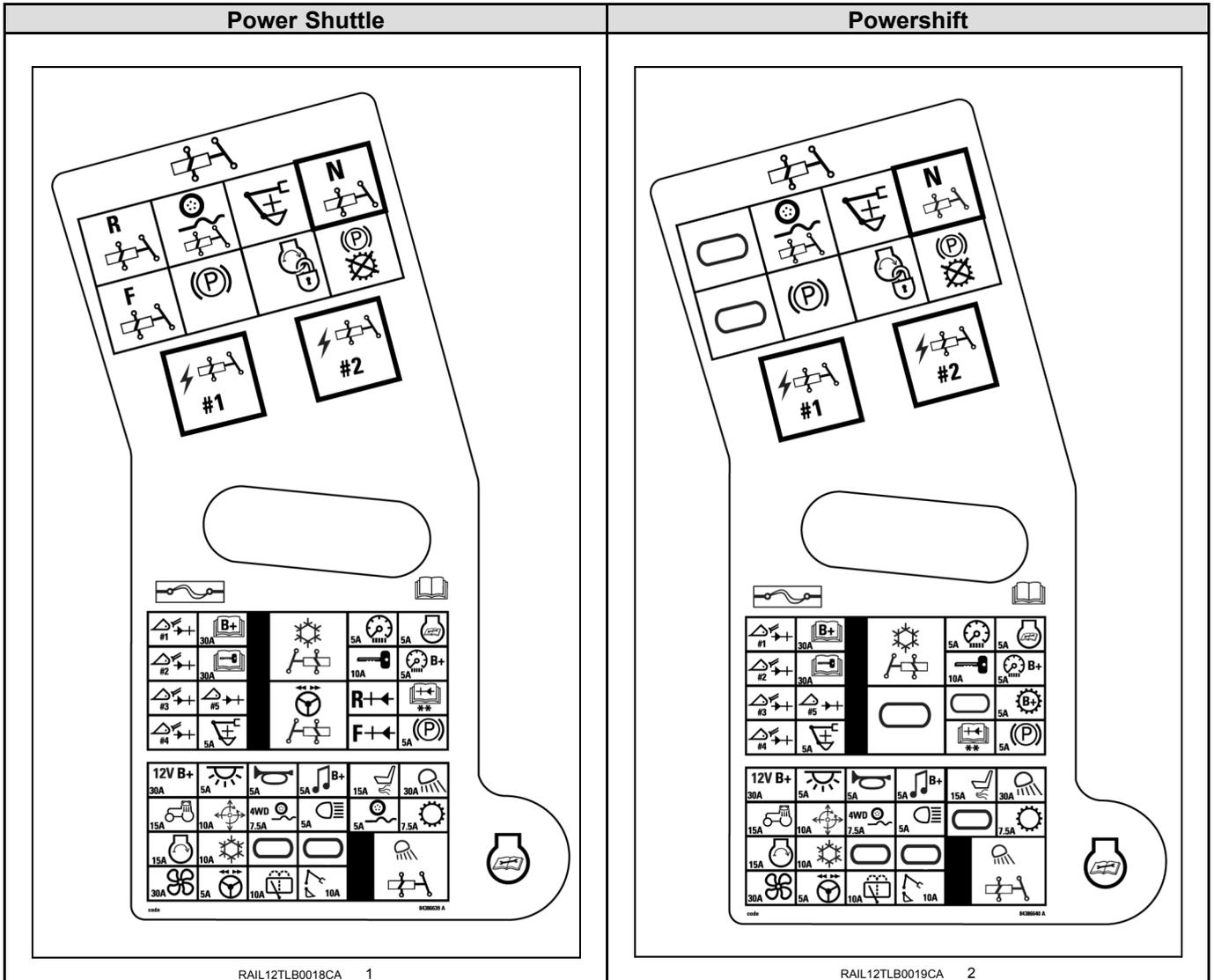


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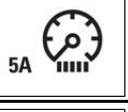
Basic instructions Fuse, relay and diode icon definitions

580N NA T4, 580SN NA T4, 580SN WT NA T4, 590SN NA T4

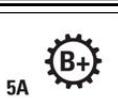
Right hand side console panel



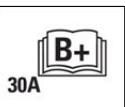
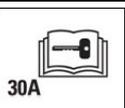
Fuse icon definitions

Symbol	Function
	ECU B+
	Instrument cluster key ON
	Instrument cluster B+

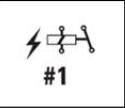
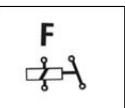
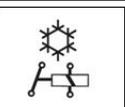
INTRODUCTION

Symbol	Function
	Rear lights
	Rear wipers/washers
	Transmission differential lock
	Tail lights
	Pilot controls
	Cigarette lighter plugs
	4WD, Auto Ride Control
	Dome light
	Radio B+
	Horn
	Blower motor
	A/C
	TRAX B+
	Key switch
	Air seat

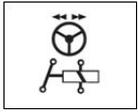
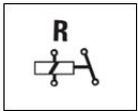
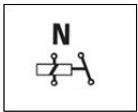
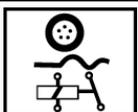
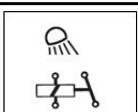
INTRODUCTION

Symbol	Function
	2WD, Ride Control
	Quick coupler, EH Clam, Radio Key ON
	SAHR brake
	Comfort Steer
	PowerLift
	Side lights
	Customer B+
	Customer key ON

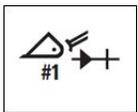
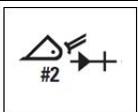
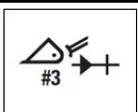
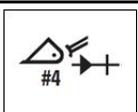
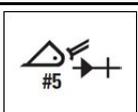
Relay icon definitions

Symbol	Function
	Power relay #1
	Power relay #2
	SAHR park brake relay
	SAHR park brake transmission cutout relay
	Forward relay (Power Shuttle only)
	A/C relay

INTRODUCTION

Symbol	Function
	Comfort Steer relay (Power Shuttle only)
R 	Reverse relay (Power Shuttle only)
N 	Neutral relay
	Starter interlock relay
	Auto Ride Control relay
	Rear light relay
	PowerLift relay

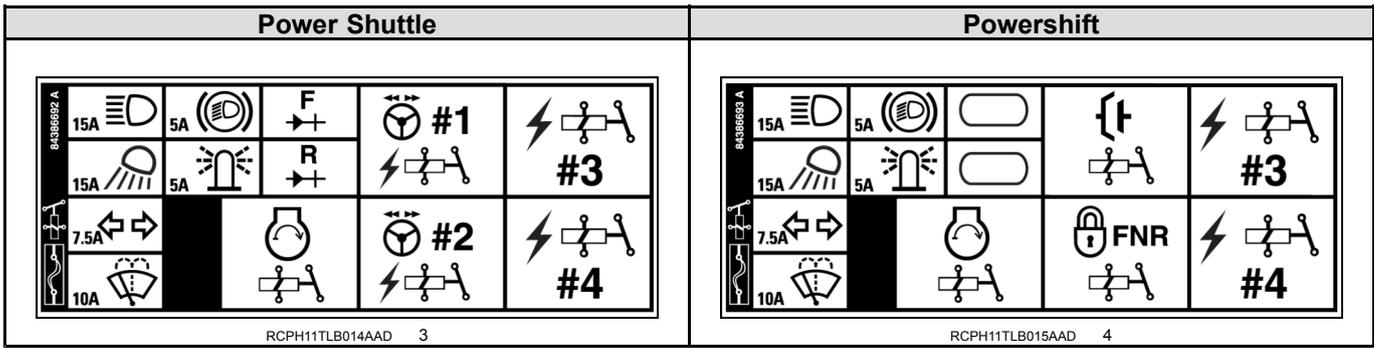
Diode icon definitions

Symbol	Function
	Quick coupler diode #1
	Quick coupler diode #2
	Quick coupler diode #3
	Quick coupler diode #4
	Quick coupler diode #5
R ←	Reverse signal diode (Power Shuttle only)
F ←	Forward signal diode (Power Shuttle only)

INTRODUCTION

Symbol	Function
	Torque control diode

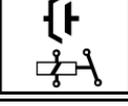
Left-hand side steering column console panel



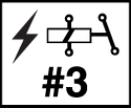
Fuse icon definitions

Symbol	Function
	Head lights
	Front work lights
	Turn signal, Hazards
	Front wiper/washer
	High beam
	Beacon

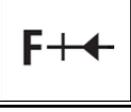
Relay icon definitions

Symbol	Function
	Comfort steer relay and Power relay #1 (Power Shuttle only)
	Comfort steer relay and Power relay #2 (Power Shuttle only)
	Transmission De-clutch relay (Powershift only)

INTRODUCTION

Symbol	Function
	Transmission lock relay (Powershift only)
	Power relay #3
	Power relay #4
	Start relay

Diode icon definitions

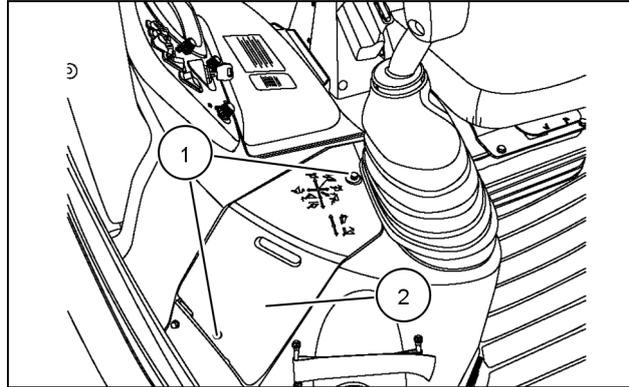
Symbol	Function
	Reverse Signal Diode (Power Shuttle only)
	Forward Signal Diode (Power Shuttle only)

Basic instructions - Diagnostic service tool port

580N, 580N NA, 580SN, 580SN NA, 580SN WT, 580SN WT NA, 590SN, 590SN NA

The diagnostic/service tool port is located in the fuse box at the side console. Connect the Electronic Service Tool (EST) or DATAR to this port to update software and/or perform service and diagnostic tests.

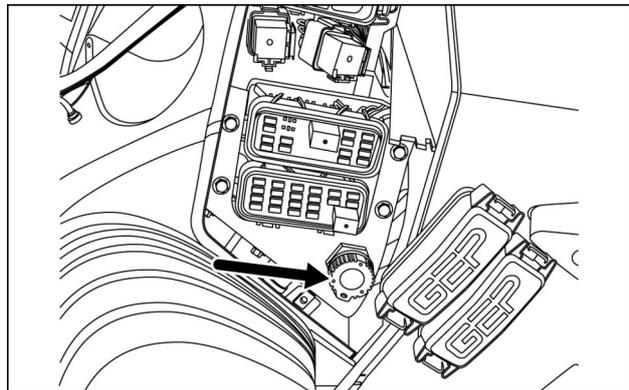
1. Turn the thumb screws **(1)** to loosen the panel cover **(2)** for the fuse box. Remove the panel cover.



RCPH10TLB437AAF 1

2. Unscrew the cap for the diagnostic/service tool port.

NOTE: You do not have to remove the fuse box covers.



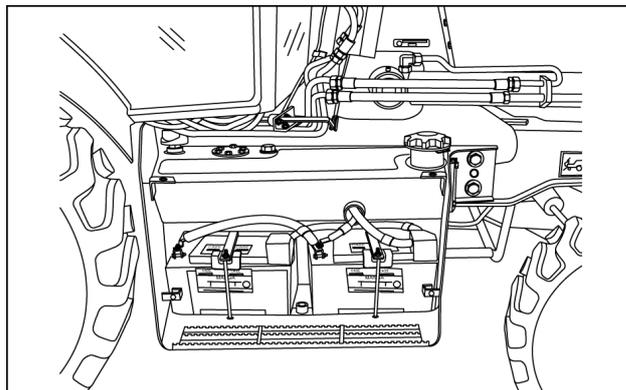
RCPH10TLB302AAF 2

Basic instructions - Welding on the machine

580N NA T4, 580SN NA T4, 580SN WT NA T4, 590SN NA T4

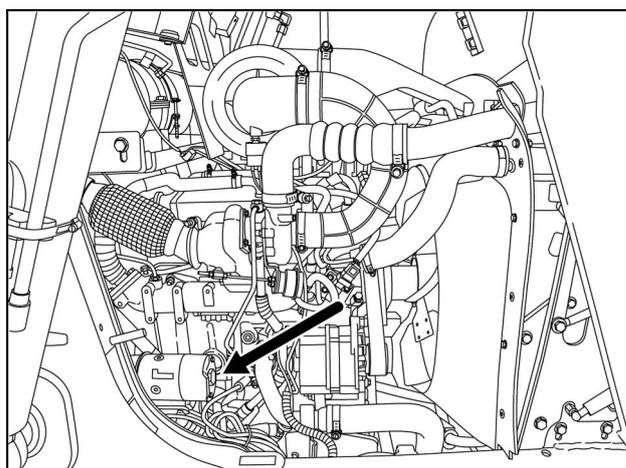
Contact your dealer if you have any questions before welding on this machine. The following procedures must be completed before welding.

Remove the battery cover and disconnect the batteries.



RCPH10TLB429AAF 1

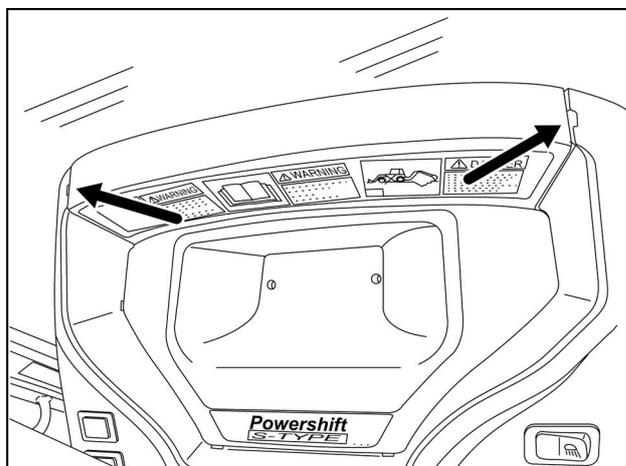
Disconnect the alternator terminal wires.



RCPH11TLB005BAD 2

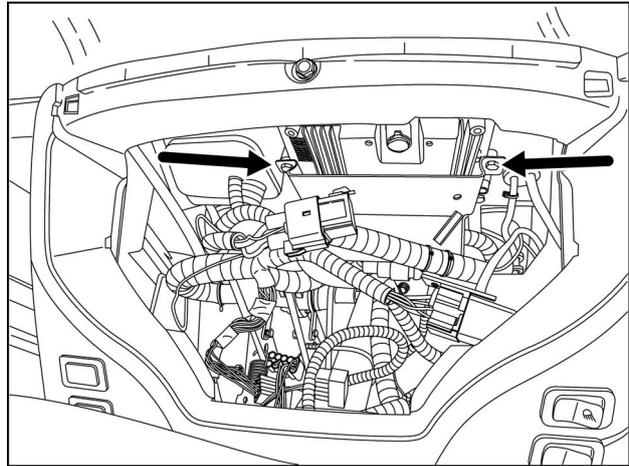
Disconnect the engine control unit (ECU)

1. Remove the cover from the steering column shroud.



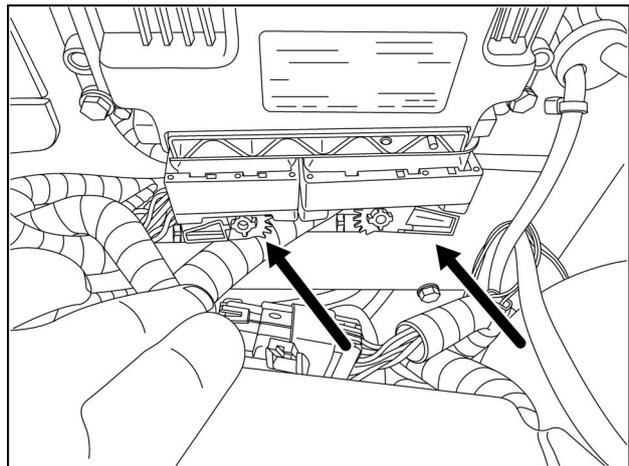
RCPH11TLB012BAD 3

2. Remove the ECU guard plate.



RCPH11TLB009BAD 4

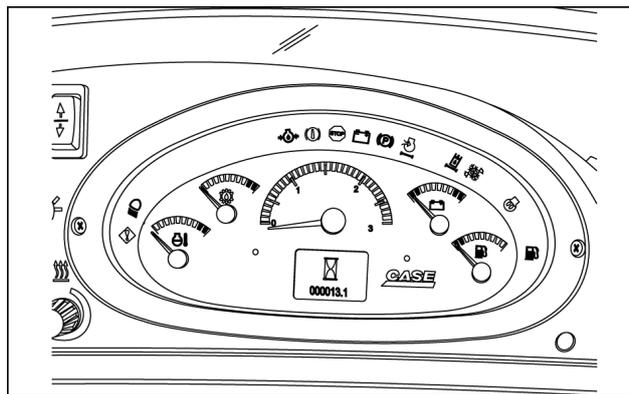
3. Disconnect both connectors.



RCPH11TLB054BAD 5

Disconnect the instrument cluster.

1. Remove the instrument cluster panel.
2. Disconnect all connectors from the back of the panel.



RCPH10TLB339AAF 6

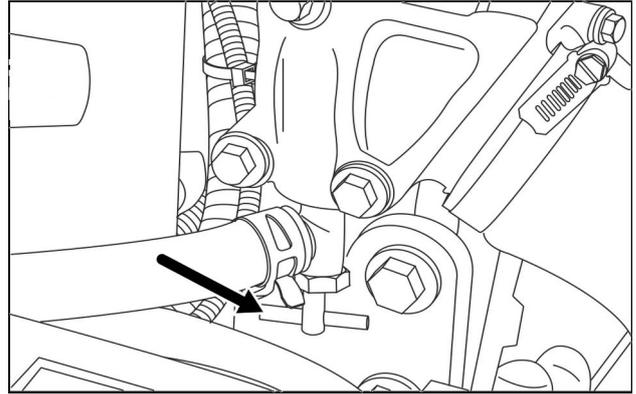
- Disconnect the controller for backhoe pilot controls, if equipped (one connector).
- Disconnect the transmission controller, if equipped (one connector, located under the front steering cowling).
- Disconnect the controller for the loader 4 in 1 bucket or auxiliary hydraulics, if equipped (one connector, located under the loader valve at the rear, left underside of the machine).

Cab heater - Basic instructions

580N NA, 580SN NA, 580SN WT NA, 590SN NA

The heater coolant shutoff valve controls the flow of hot coolant to the heater.

- In warm ambient temperatures, turn the shutoff valve clockwise to stop hot coolant flow to the heater.
- In cold ambient temperatures, turn the shutoff valve counter-clockwise to allow hot coolant to flow to the heater.



RCPH10TLB159AAF 1

Basic instructions

580N NA, 580SN NA, 580SN WT NA, 590SN NA

⚠ WARNING

Crushing hazard!

If you service the machine with the loader lift arms raised, always use the support strut. Remove the retaining pin and place the support strut onto the cylinder rod. Install the retaining pin into the support strut. Lower the lift arms onto the support strut.

Failure to comply could result in death or serious injury.

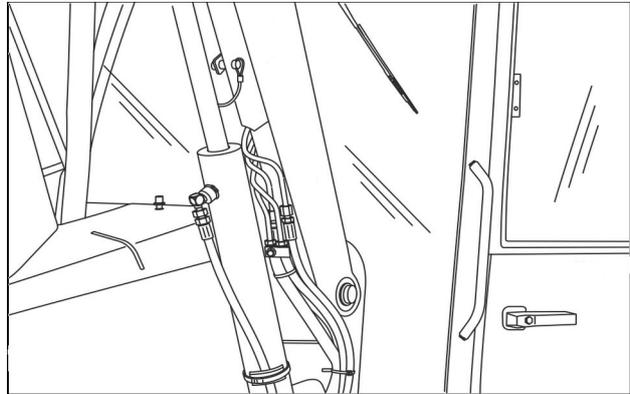
W0230A

Raise and support loader lift arms:

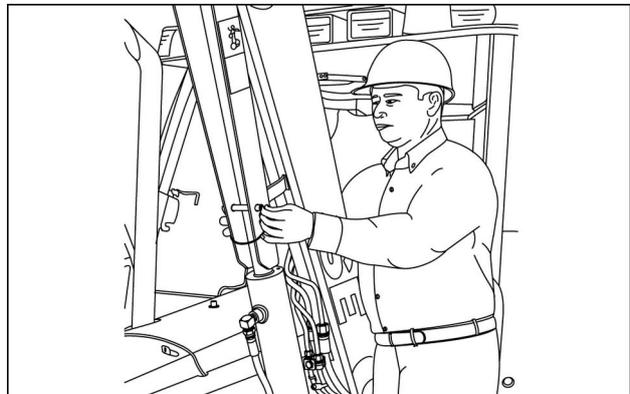
1. Empty the loader bucket.
2. Raise the loader lift arms to the maximum height.
3. Shut down the engine.

4. Remove the retaining pin.
5. Lower the support strut onto the cylinder rod.
6. Install the retaining pin.

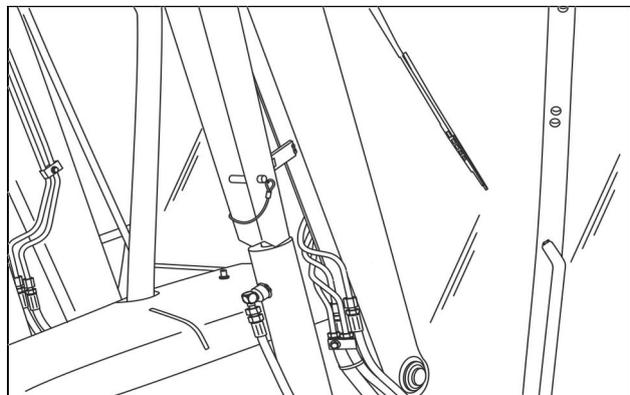
7. Start the engine.
8. Slowly lower the lift arms so that the end of the support strut rests on the cylinder.



RCPH10TLB230AAF 1



RCPH10TLB221AAF 2

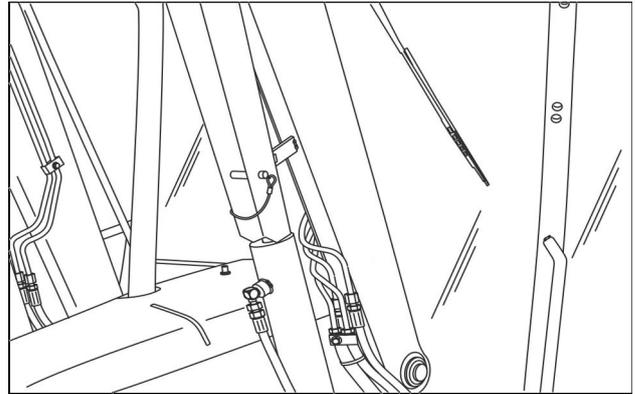


RCPH10TLB227AAF 3

INTRODUCTION

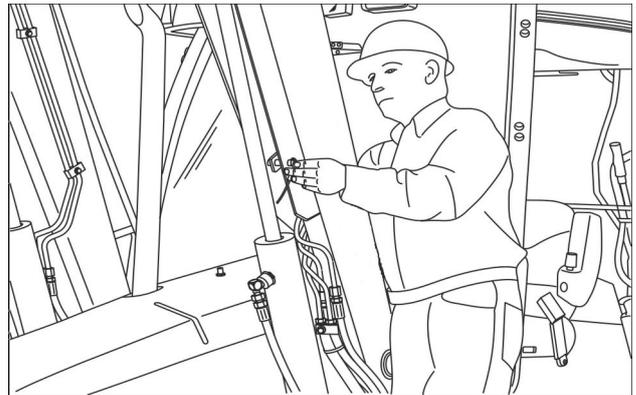
Lower supported loader lift arms:

1. Raise the lift arms so that the end of the support strut no longer rests on the cylinder.
2. Shut down the engine.



RCPH10TLB227AAF 4

3. Remove the retaining pin from the support strut.
4. Raise the support strut up to the storage position and secure with the retaining pin, as shown.



RCPH10TLB231AAF 5

5. Start the engine.
6. Lower the loader to the ground.

Torque - Minimum tightening torques for normal assembly

580N NA, 580SN NA, 580SN WT NA, 590SN NA

METRIC NON-FLANGED HARDWARE

NOM. SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT	LOCKNUT CL.10 W/CL10.9 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr		
M4	2.2 N·m (19 lb in)	2.9 N·m (26 lb in)	3.2 N·m (28 lb in)	4.2 N·m (37 lb in)	2 N·m (18 lb in)	2.9 N·m (26 lb in)
M5	4.5 N·m (40 lb in)	5.9 N·m (52 lb in)	6.4 N·m (57 lb in)	8.5 N·m (75 lb in)	4 N·m (36 lb in)	5.8 N·m (51 lb in)
M6	7.5 N·m (66 lb in)	10 N·m (89 lb in)	11 N·m (96 lb in)	15 N·m (128 lb in)	6.8 N·m (60 lb in)	10 N·m (89 lb in)
M8	18 N·m (163 lb in)	25 N·m (217 lb in)	26 N·m (234 lb in)	35 N·m (311 lb in)	17 N·m (151 lb in)	24 N·m (212 lb in)
M10	37 N·m (27 lb ft)	49 N·m (36 lb ft)	52 N·m (38 lb ft)	70 N·m (51 lb ft)	33 N·m (25 lb ft)	48 N·m (35 lb ft)
M12	64 N·m (47 lb ft)	85 N·m (63 lb ft)	91 N·m (67 lb ft)	121 N·m (90 lb ft)	58 N·m (43 lb ft)	83 N·m (61 lb ft)
M16	158 N·m (116 lb ft)	210 N·m (155 lb ft)	225 N·m (166 lb ft)	301 N·m (222 lb ft)	143 N·m (106 lb ft)	205 N·m (151 lb ft)
M20	319 N·m (235 lb ft)	425 N·m (313 lb ft)	440 N·m (325 lb ft)	587 N·m (433 lb ft)	290 N·m (214 lb ft)	400 N·m (295 lb ft)
M24	551 N·m (410 lb ft)	735 N·m (500 lb ft)	762 N·m (560 lb ft)	1016 N·m (750 lb ft)	501 N·m (370 lb ft)	693 N·m (510 lb ft)

NOTE: M4 through M8 hardware torque specifications are shown in pound-inches. M10 through M24 hardware torque specifications are shown in pound-feet.