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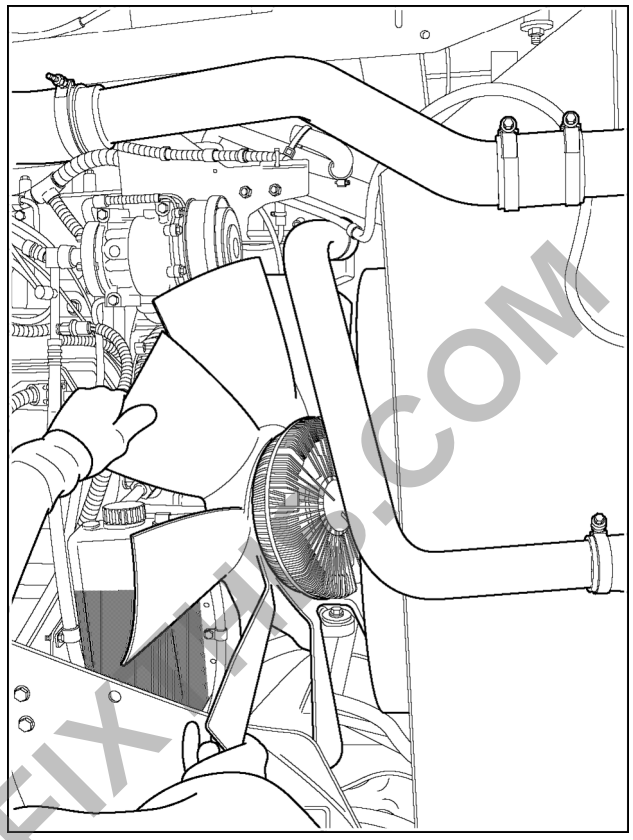
Rowtrac™ 350 / 400 / 450 / 500
Steiger® 350 / 400 / 450 / 500 / 550 / 600
Quadtrac® 450 / 500 / 550 / 600
Tier 4
Tractor

SERVICE MANUAL

Part number 47488212
English
February 2013
Replaces part number 84354095

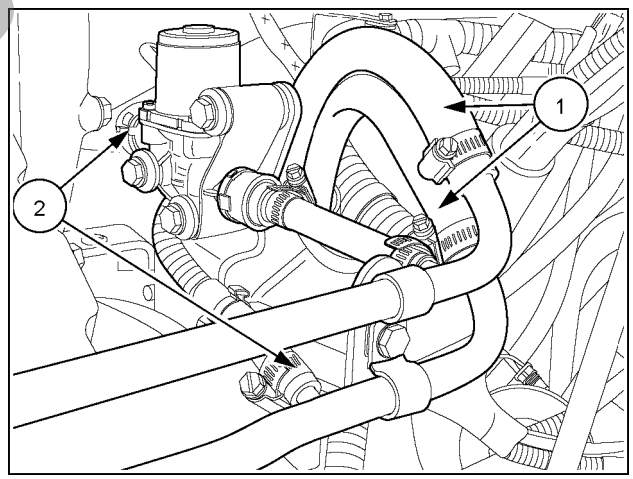
CASE IH AGRICULTURE

4. With the help of an assistant turn fan off hub. Remove out the right hand side.



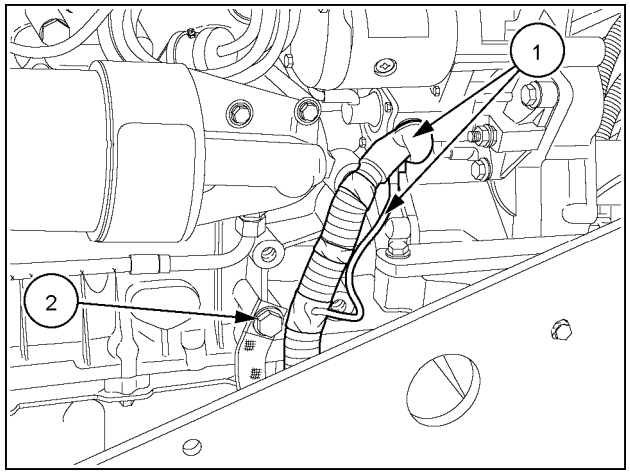
RCPH10FWD011BBC 4

5. Label and disconnect heater hoses **(1)** and DEF/Ad-Blue® solenoid hoses **(2)**.



RCPH10FWD012BBC 5

6. Disconnect starter connections **(1)**. Remove ground strap from engine block **(2)**.

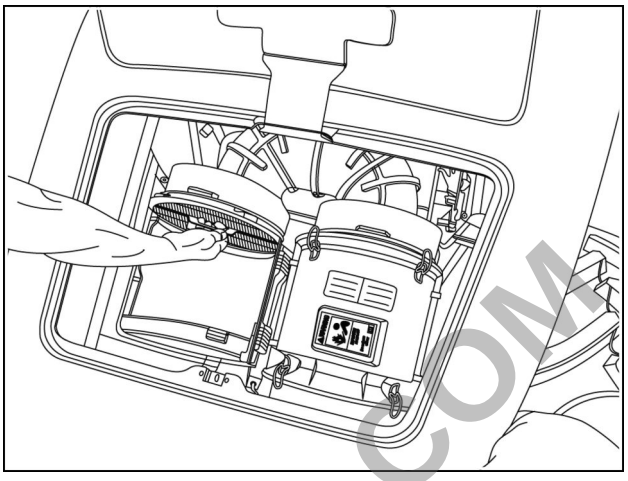


RCPH10FWD013BBC 6

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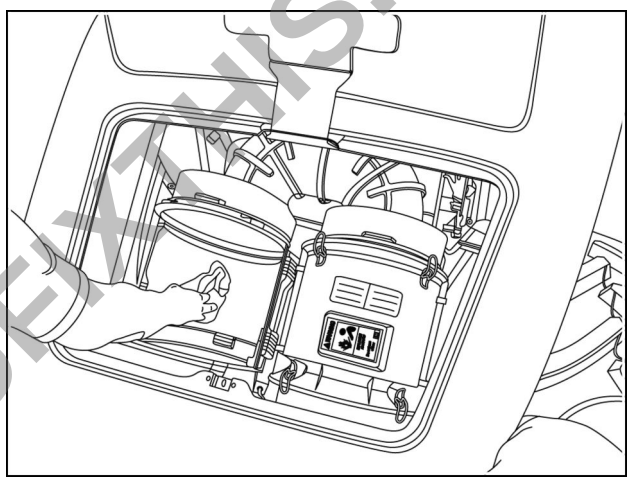
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4. Pull back and remove secondary filter.



RCPH10FWD840BAM 4

5. Clean inside of housing.



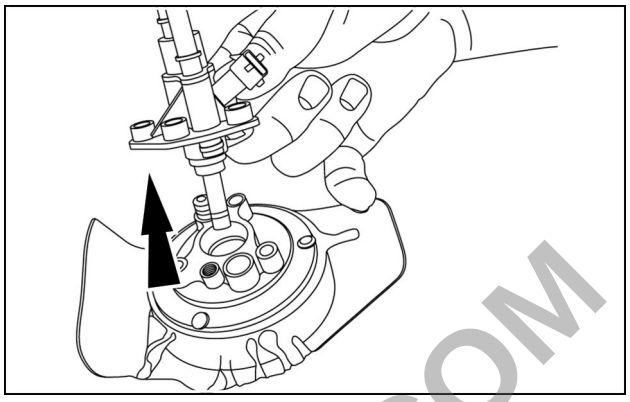
RCPH10FWD843BAM 5

6. Repeat **2** through **5** for right hand side filter.

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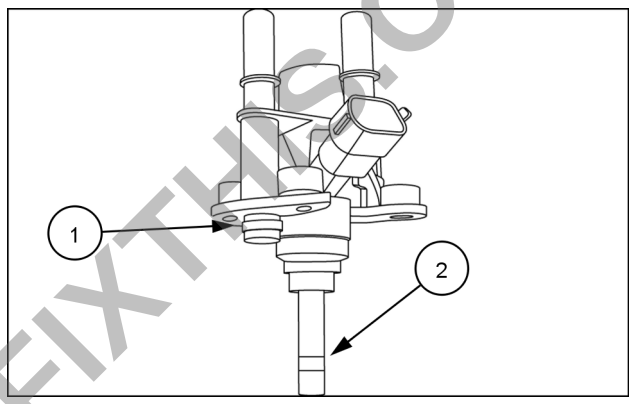
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4. Remove the dosing sensor from the sensor housing.



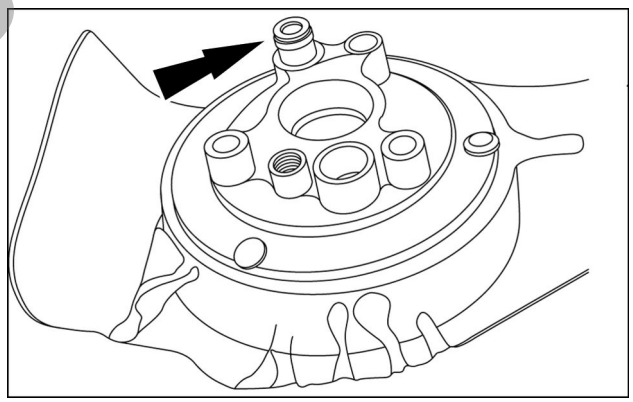
RCPH10CCH548AAB 4

5. Inspect the DEF return O-ring **(1)** and the exhaust gas seal **(2)** and replace if necessary.



RCPH10CCH549AAB 5

6. Inspect the DEF supply O-ring seal and replace if necessary.

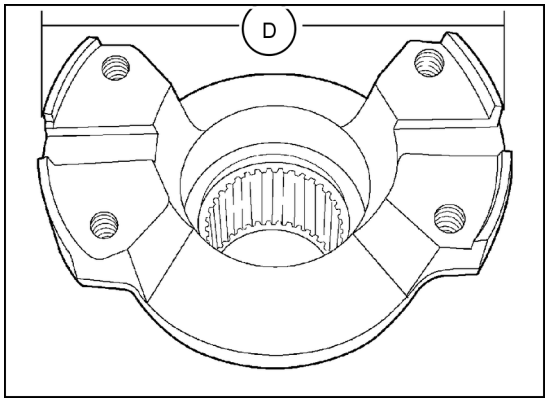


RCPH10CCH550AAB 6

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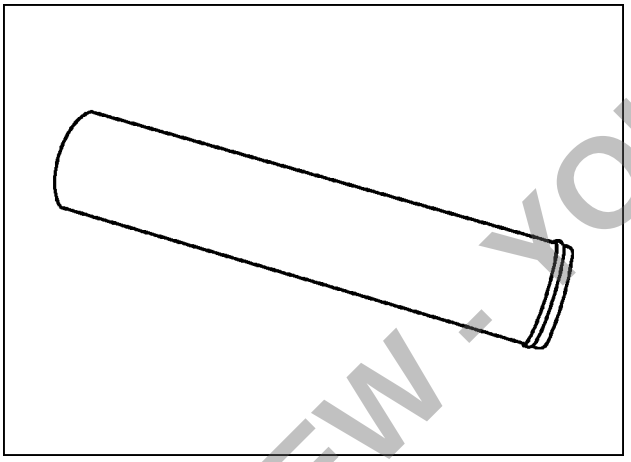
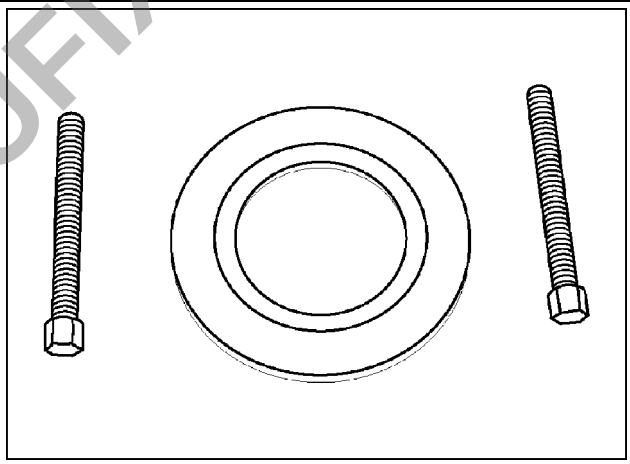
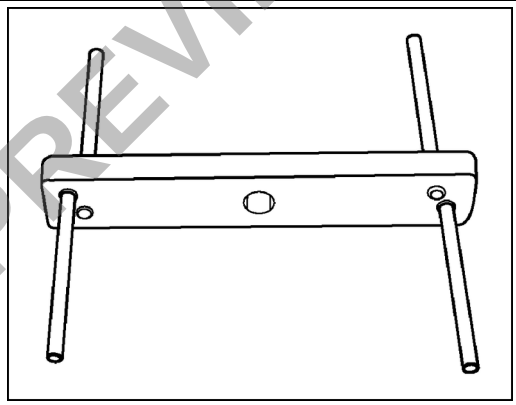
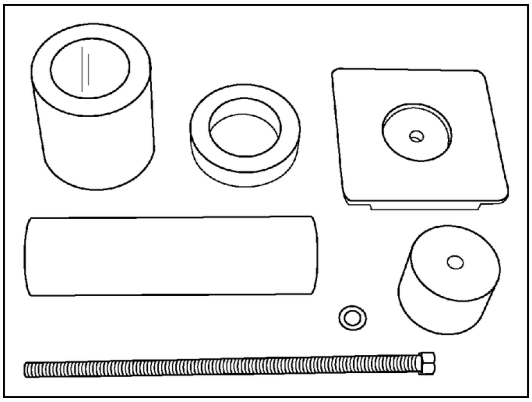


RCPH10FWD336BAC 1

9C yoke: D= **223 mm** (**8.780 in**)

Powershift transmission - Special tools - PS4 Transmission disassembly/assembly

Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

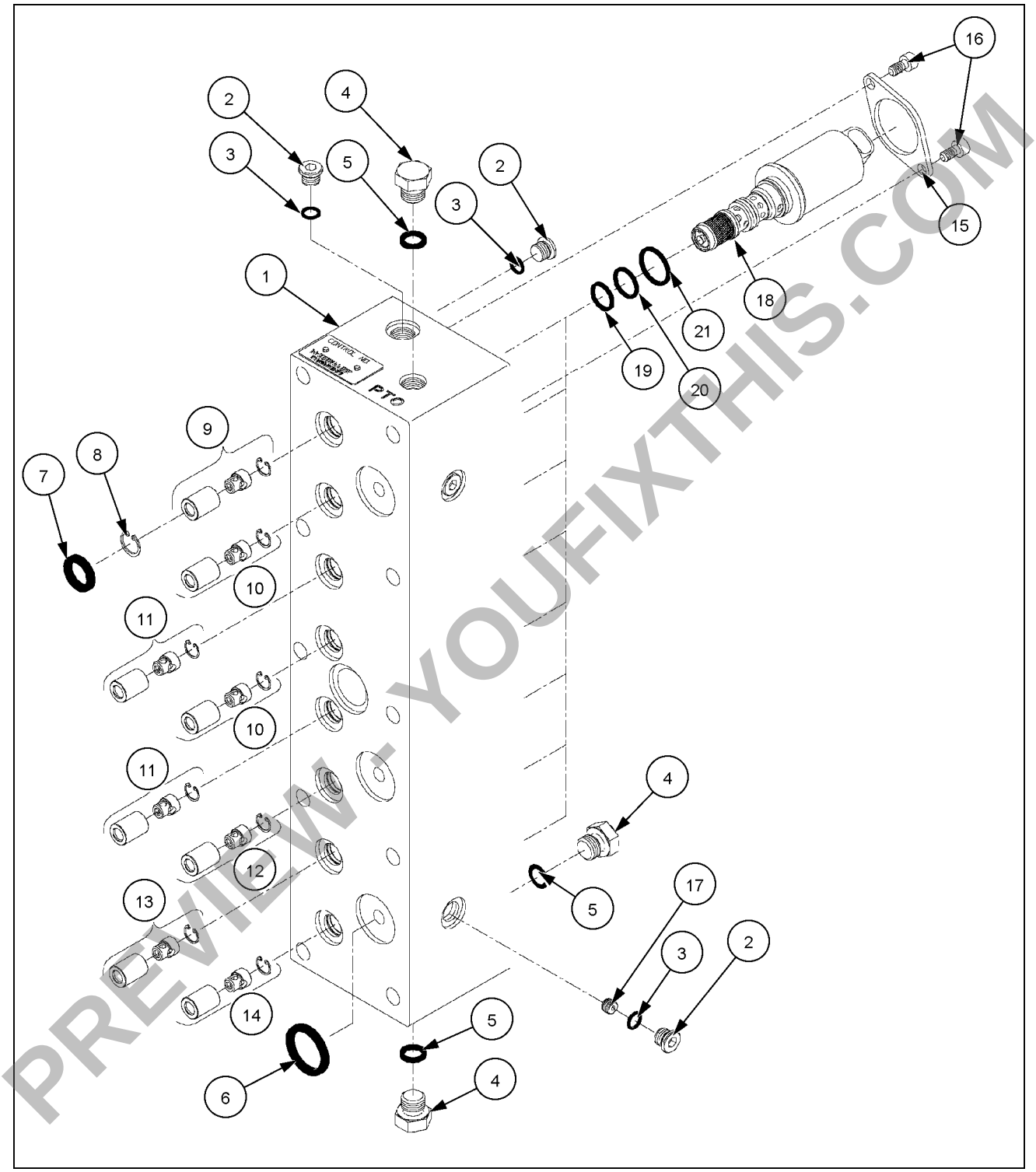
 1	 2
CAS2629 Bearing Installer	**CAS2631** Piston Spring Compressor
 3	 4
CAS2632 Clutch Gear Rolling Torque Adapter	**CAS2633** 1st and 2nd Shaft Bearing Preload Fixture

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Transmission control valve - Exploded view - Range selector valve

Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

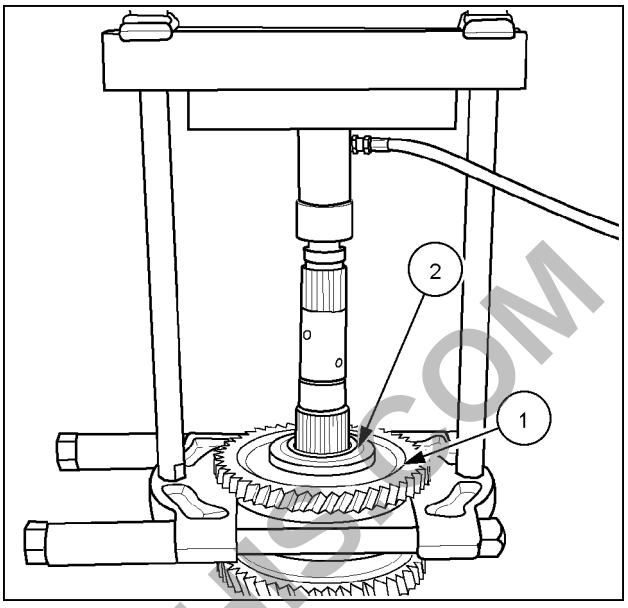


RCPH10FWD057HAG 1

1. Range selector valve body
2. Plug
3. O-ring
4. M14 plug
5. O-ring
6. O-ring
8. Internal snap ring
9. **3.45 mm** check valve assembly
10. **2.51 mm** check valve assembly
11. **2.36 mm** check valve assembly
12. **2.82 mm** check valve assembly
13. **5.54 mm** check valve assembly
15. Retainer
16. Screw
17. Orifice plug
18. PWM valve
19. O-ring
20. O-ring

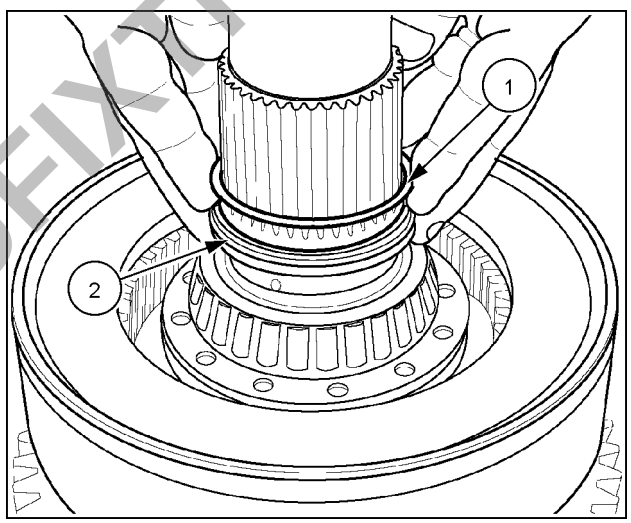
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3. Use a split flange puller and portable hydraulic press, as shown, to remove the reverse gear **(1)** and bearing cone **(2)**.



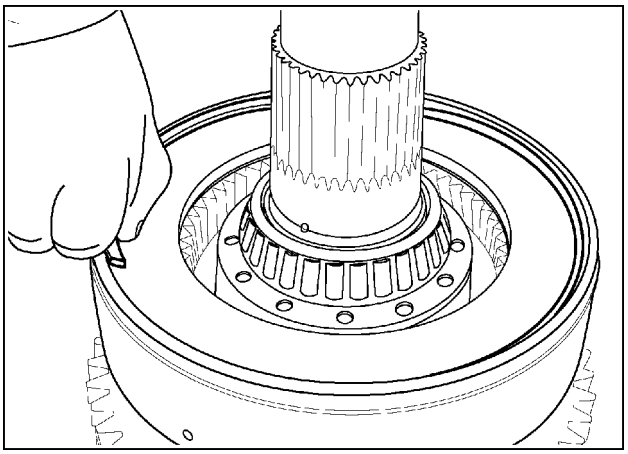
RCPH10FWD401BAC 3

4. Remove the shims **(1)** and the bearing spacer **(2)**.



RCPH10FWD402BAC 4

5. Remove the end plate retaining ring.

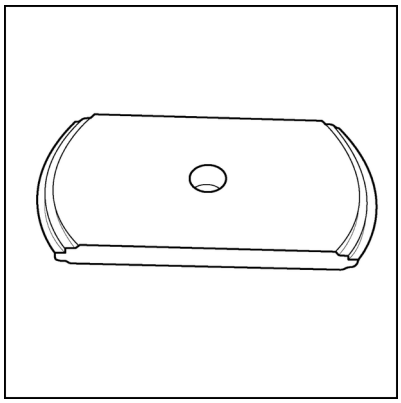


RCPH10FWD403BAC 5

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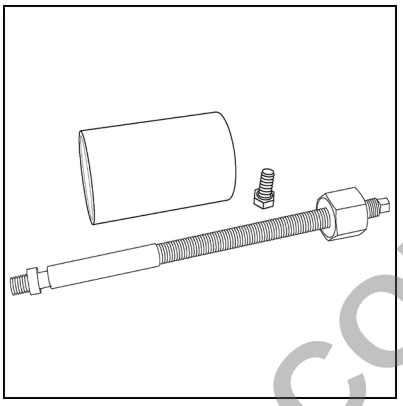
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300 and 400 Series axles



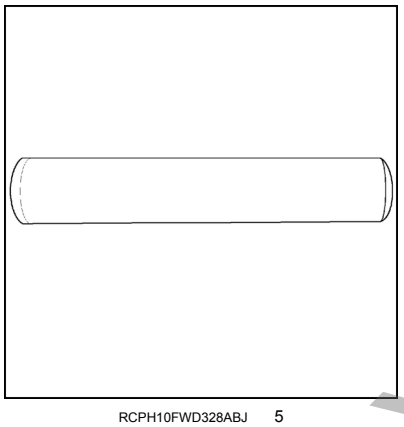
RCPH10FWD450ABJ 3

CAS2663 Final drive housing bearing cup remover/installer



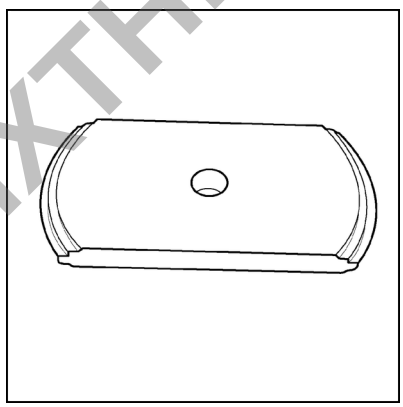
RCPH10FWD453ABJ 4

CAS2666 Axle shaft/pinion bearing cone installer



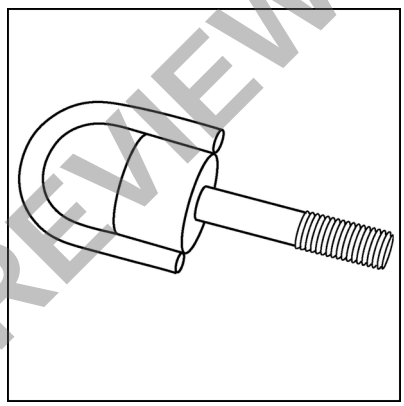
RCPH10FWD328ABJ 5

CAS2750 Axle shaft outer bearing installer



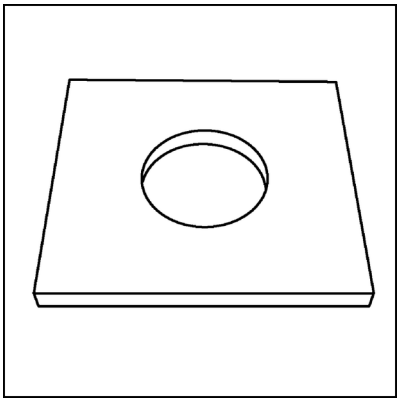
RCPH10FWD468ABJ 6

CAS2667 CNH299041 Final drive housing inner bearing cup remover



RCPH10FWD452ABJ 7

380002920 Axle shaft lifting eye



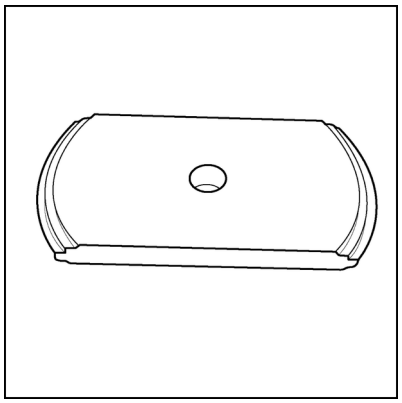
RCPH10FWD470ABJ 8

CAS2668 CNH299051 Axle shaft outer bearing press plate

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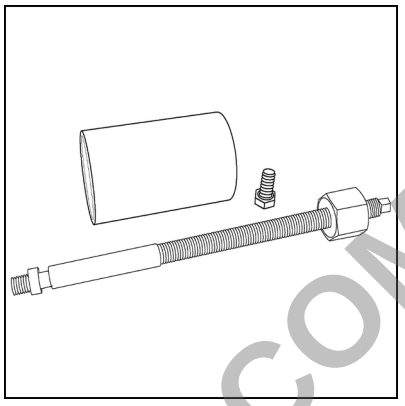
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300 and 400 Series axles



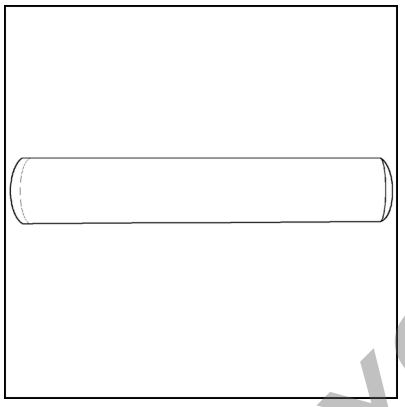
RCPH10FWD450ABJ 3

CAS2663 Final drive housing bearing cup remover/installer



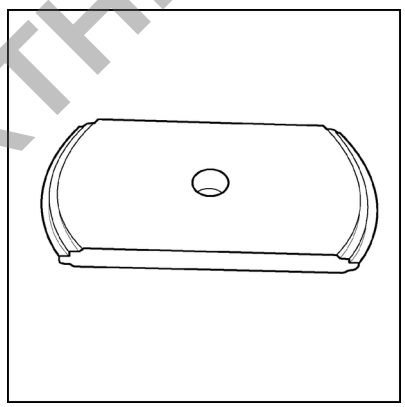
RCPH10FWD453ABJ 4

CAS2666 Axle shaft/pinion bearing cone installer



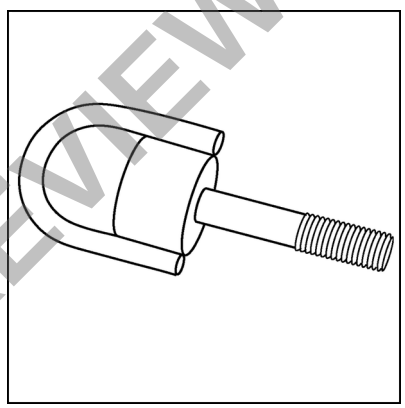
RCPH10FWD328ABJ 5

CAS2750 Axle shaft outer bearing installer



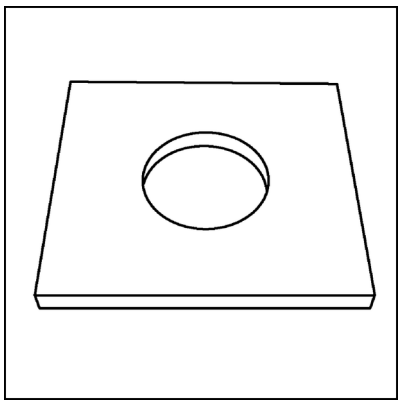
RCPH10FWD468ABJ 6

CAS2667 CNH299041 Final drive housing inner bearing cup remover



RCPH10FWD452ABJ 7

380002920 Axle shaft lifting eye



RCPH10FWD470ABJ 8

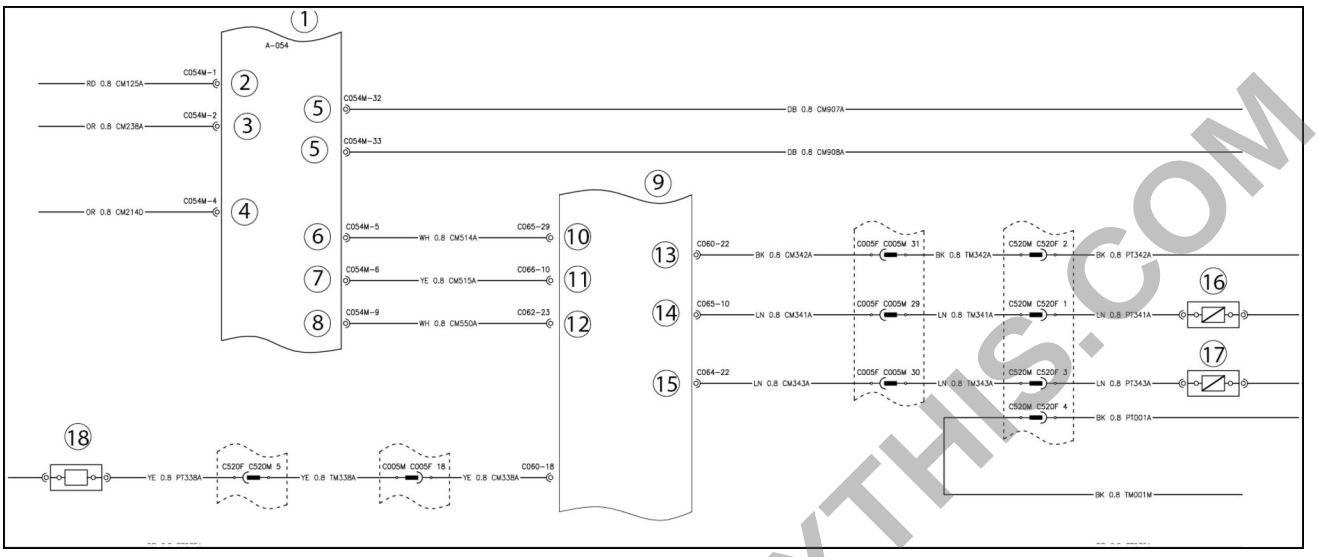
CAS2668 CNH299051 Axle shaft outer bearing press plate

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PTO electrical circuit

The PTO system utilizes pulse width modulation (PWM) solenoid valve. This circuit consists of a two position switch, a PTO indicator (at instrumentation), a PTO PWM cartridge valve and all the necessary wires and connections. Power is available from the PTO switch common battery positive through a **5 A** fuse.



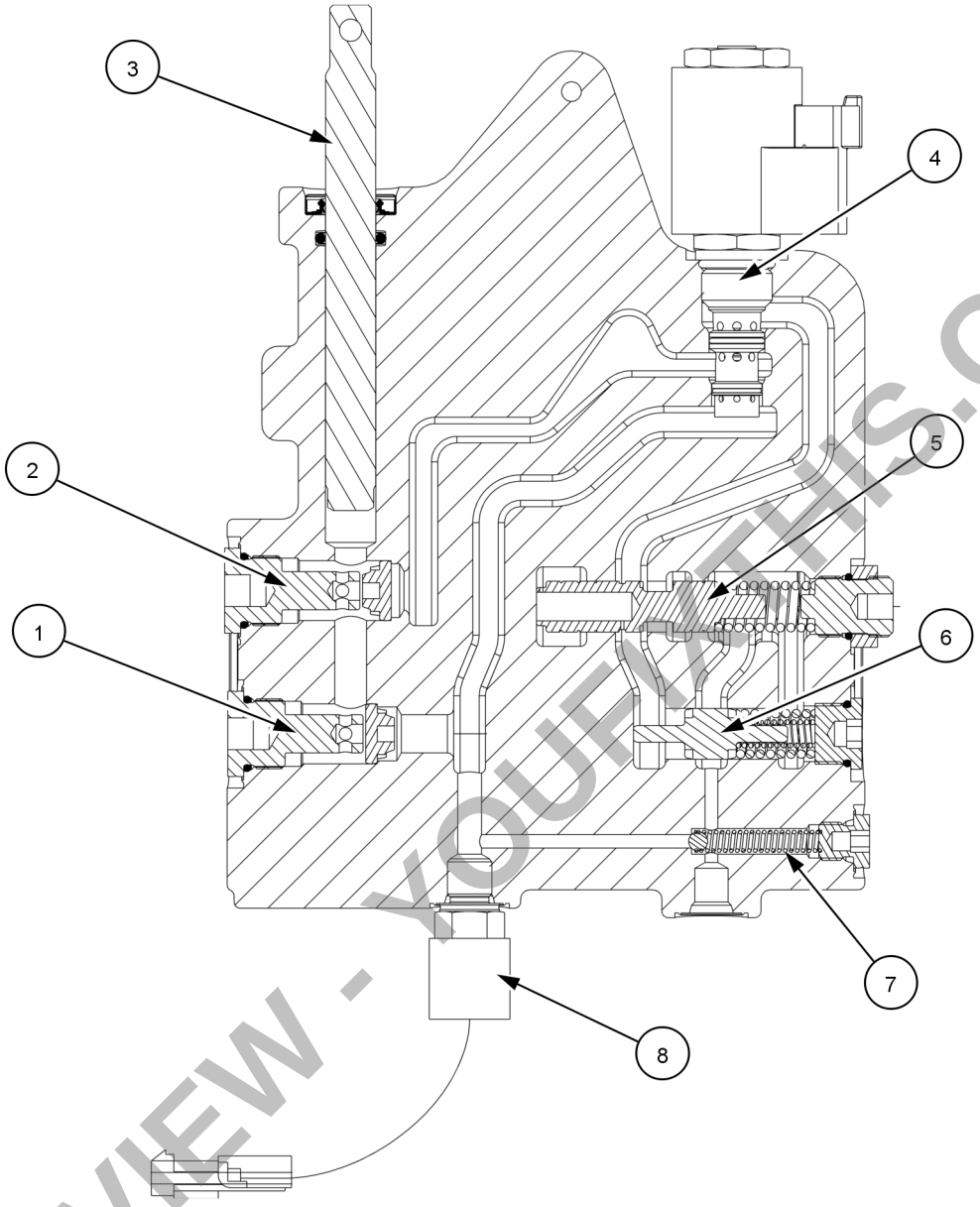
RCPH10FWD077BBJ 3

1. Armrest controller	7. PTO switch OFF	13. PTO clutch solenoid ground
2. Unswitched battery positive	8. PTO status lamp	14. PTO clutch solenoid battery positive
3. Key switch power	9. TCU controller	15. PTO lube solenoid battery positive
4. PTO switch common	10. PTO ON switch status	16. PTO solenoid
5. Power clean ground	11. PTO OFF switch status	17. PTO lube solenoid
6. PTO switch ON	12. PTO status lamp	18. PTO shaft speed sensor

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Cross section - component identification

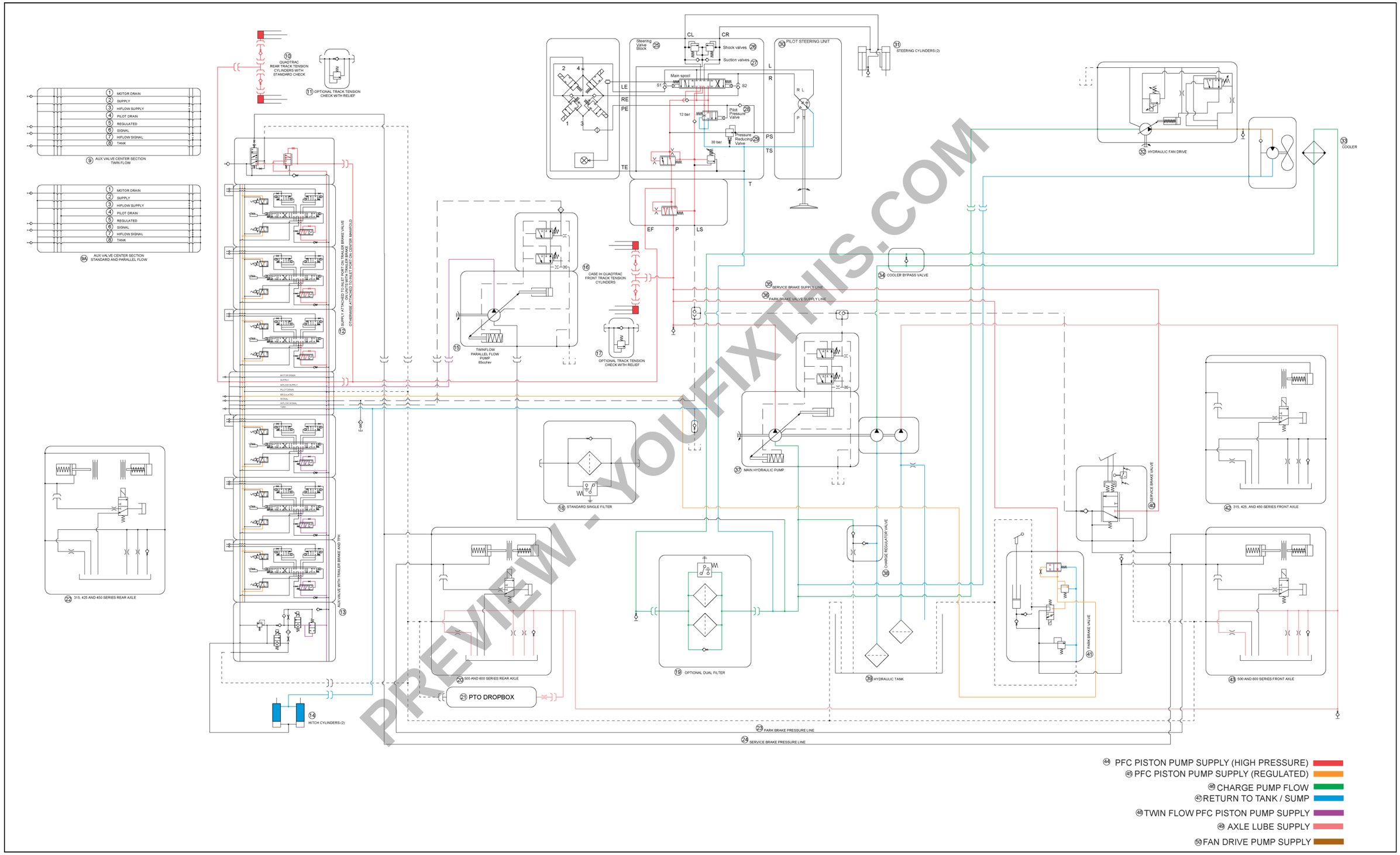


RCIL10CCH011GAE 2

1. Tow valve pump outlet check assembly	5. Regulated pressure spool assembly
2. Tow valve pump inlet check assembly	6. Regulated pressure relief spool assembly
3. Tow valve manual pump	7. Park brake overpressure relief
4. Park brake solenoid/check valve assembly	8. Park brake pressure switch

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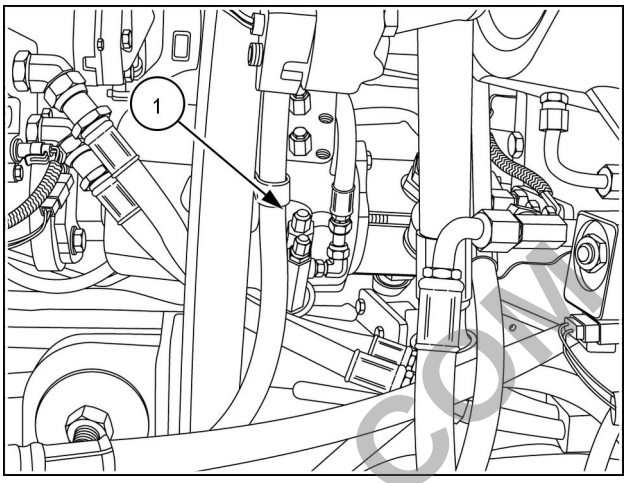
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RAIL12TR03128JA 1

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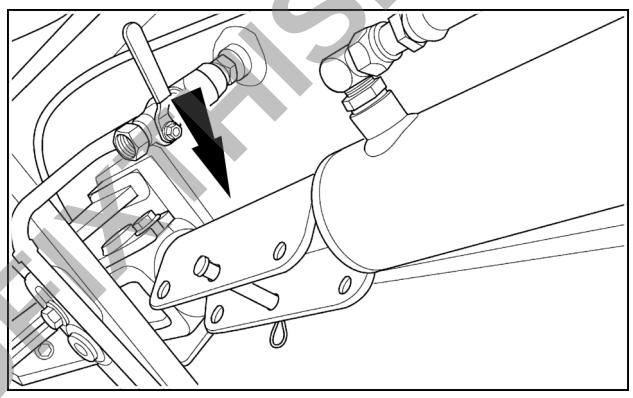
7. If the pressure is not correct, shut the engine off and adjust the high pressure screw **(1)** on the pump compensator. The PFC pump and compensator are mounted on the front of the transmission and can be reached from under the tractor. The diagram shown is viewed from under the tractor. Turn the screw **(1)** clockwise to increase the pressure or counterclockwise to decrease the pressure.

NOTE: *Make adjustments to the low pressure screw in small increments of 1/4 to 1/2 turn at a time.*



RCPH10FWD038BBC 6

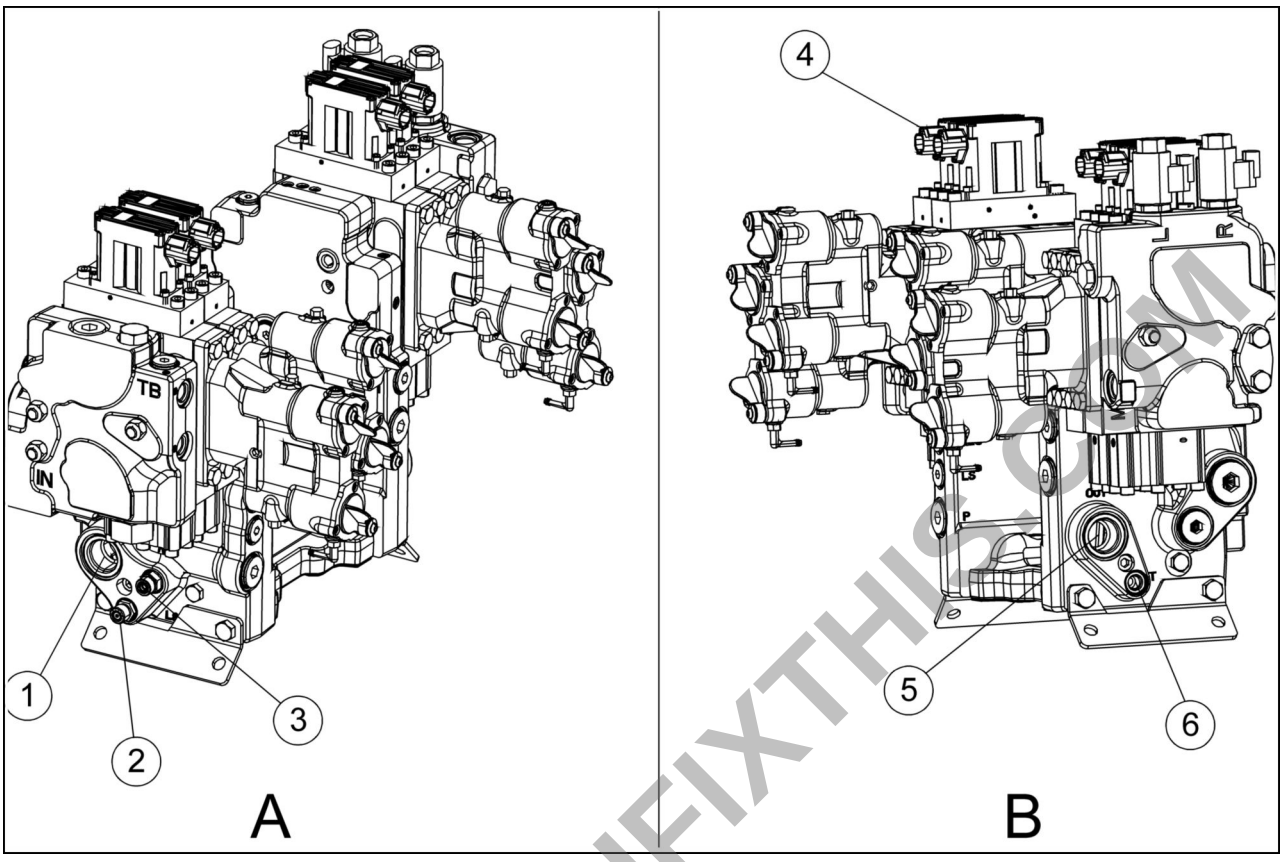
8. Start the tractor and increase engine to **1500 RPM** and recheck the pressure. If the pressure is not correct, repeat the previous step until the correct pressure is obtained. When complete, remove gauge from diagnostic port and remove both articulation cylinder locking blocks.



RCPH09FWD010FAM 7

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RCPH10FWD176BBJ 2

A = Right hand view B = Left hand view

1. Inlet	4. Solenoid valve assembly
2. Load sense	5. Outlet
3. Regulated pilot supply	6. Pilot return

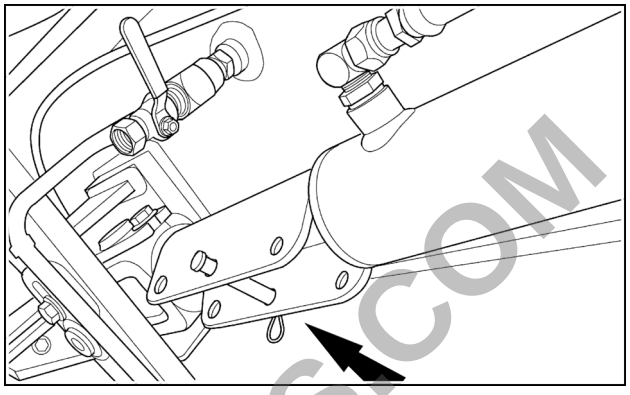
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Drawbars and towing hitches - Remove - Drawbar

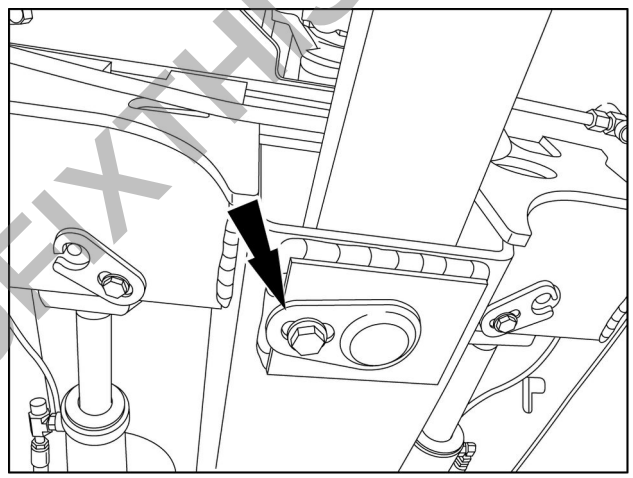
Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

1. Park the tractor on level ground. Remove the switch key. Clean the area around the drawbar. Install the center hinge locking blocks.



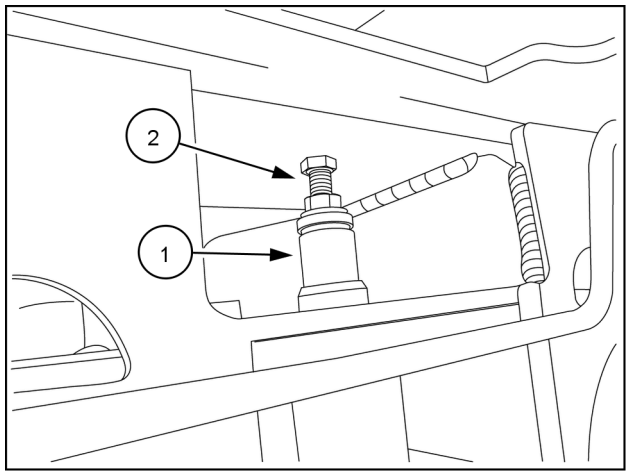
RCPH09FWD010FAM 1

2. Remove the front drawbar pin retaining bolt.



RAIL12TR03331AA 2

3. Insert a **24 mm** impact socket **(1)** and a **16 mm** nut and bolt **(2)** positioned between the frame and top of drawbar pin as shown.
4. Turn the nut or bolt **(2)** to press the front drawbar pin out.



RAIL12TR03332AA 3

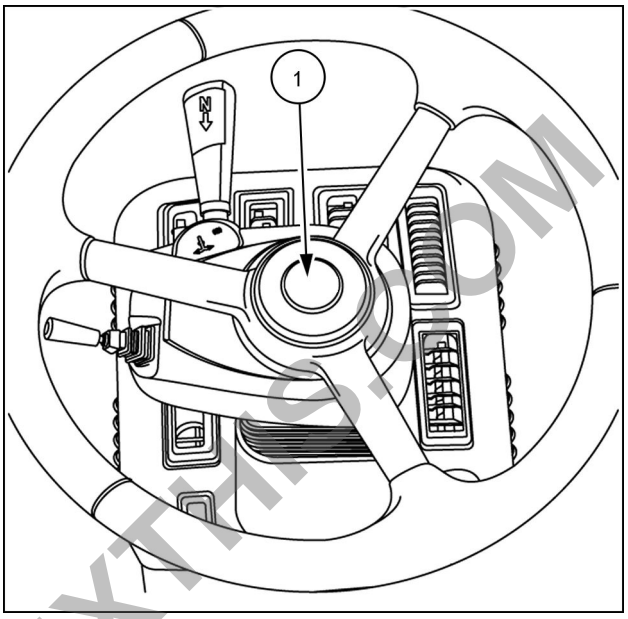
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Power steering wheel - Remove - Steering wheel

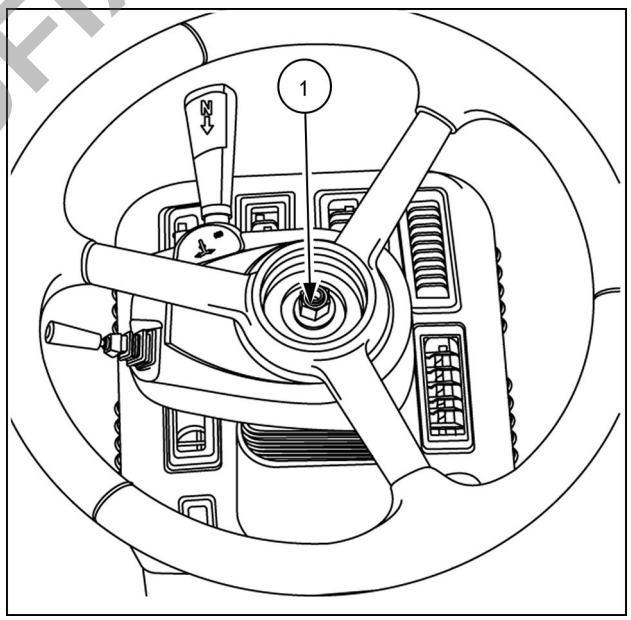
Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

1. Remove the steering wheel hub cover **(1)**.



RCPH10CCH190BAO 1

2. Remove the retainer nut and flat washer **(1)**.



RCPH10CCH184BAO 2

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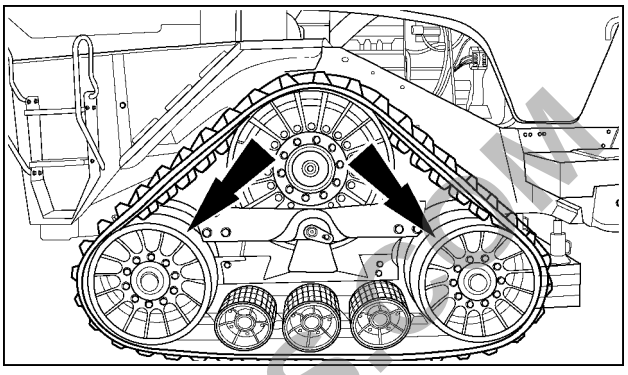
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Rubber track - Remove - Quadtrac models

Steiger 450 QT, Steiger 500 QT, Steiger 550 QT, Steiger 600 QT

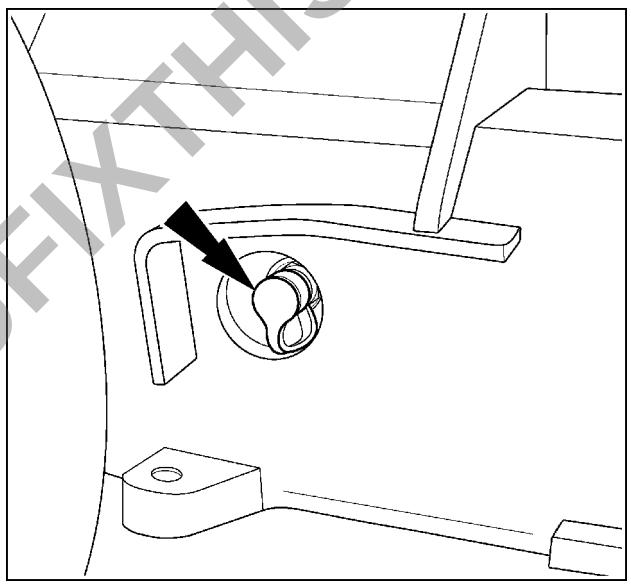
Park the tractor on a level surface. Remove the switch key.

1. Loosen (do not remove) the front and rear outside idler wheel mounting bolts.



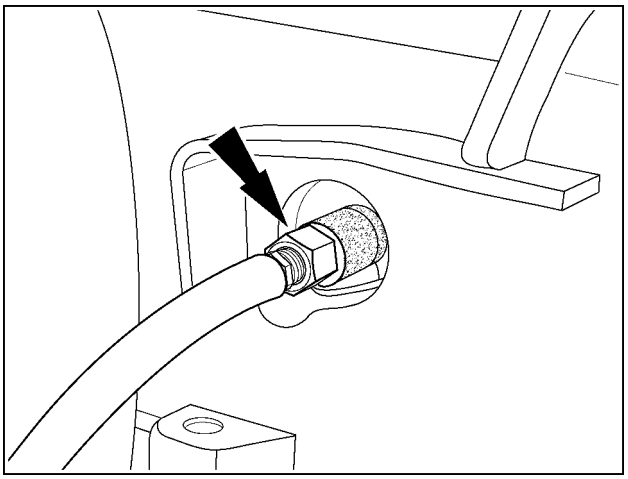
RCPH10FWD135AAC 1

2. Remove the cap from the track tension cylinder bleed valve.



RCPH10FWD136BAC 2

3. Install the CAS31–3183 drain valve and hose, supplied with the tractor, on the cylinder bleed valve fitting. Place the end of the drain valve hose into a **3.8 l** (**1.0 US gal**) or larger container.



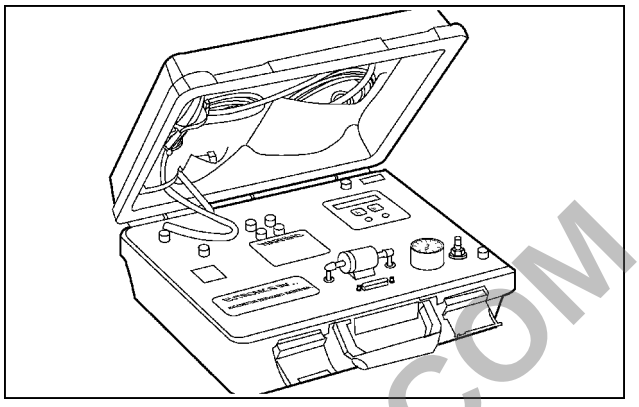
RCPH10FWD137BAC 3

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Refrigerant identifier – OEM4450

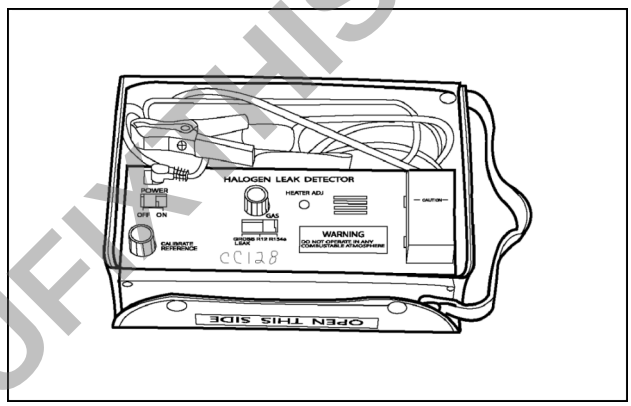
This tool is used to measure the purity of R134A refrigerant.



4

Electronic leak detector – OEM1437

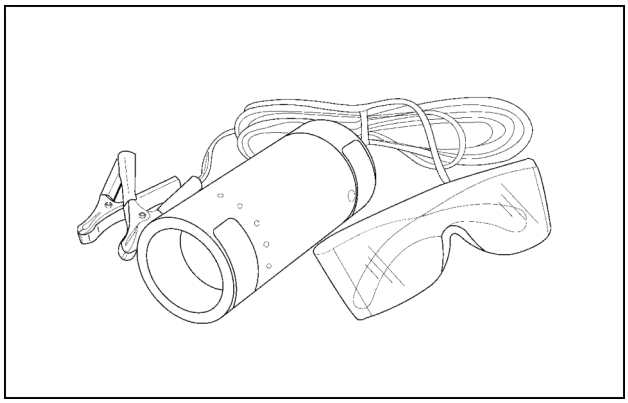
This tool detects leaking refrigerant for air conditioning troubleshooting and repair.



5

UV leak detection lamp and goggles – BSL750

This tool detects leaking refrigerant by fluorescing a dye added to the refrigerant.



RCPH07SPT105AAA 6

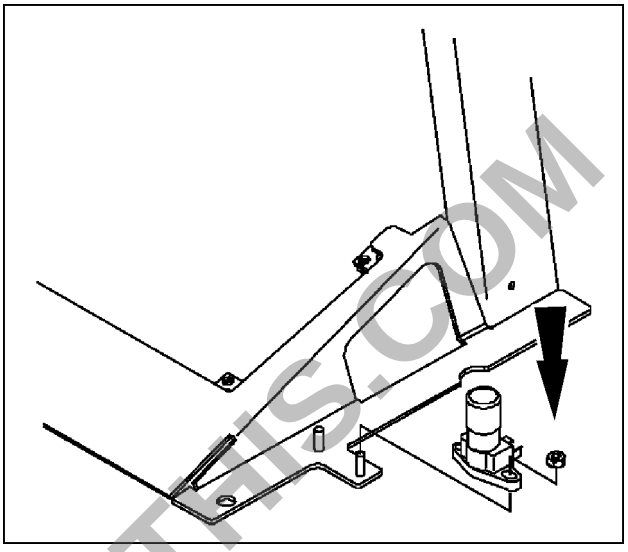
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Fuel injection system - Install - Deceleration switch

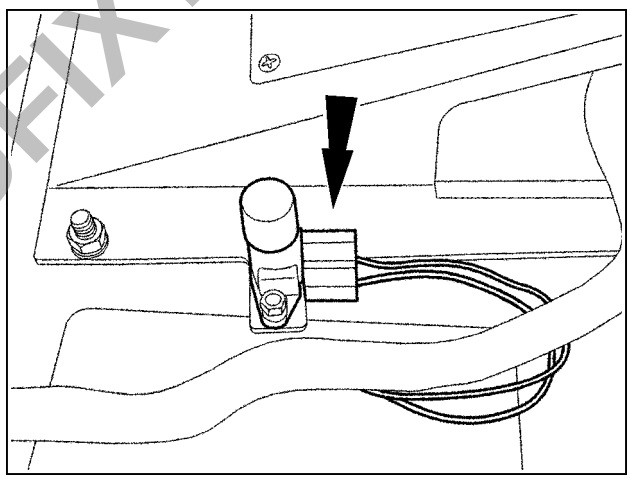
Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

1. Install the switch on the cab floor with the two mounting nuts.



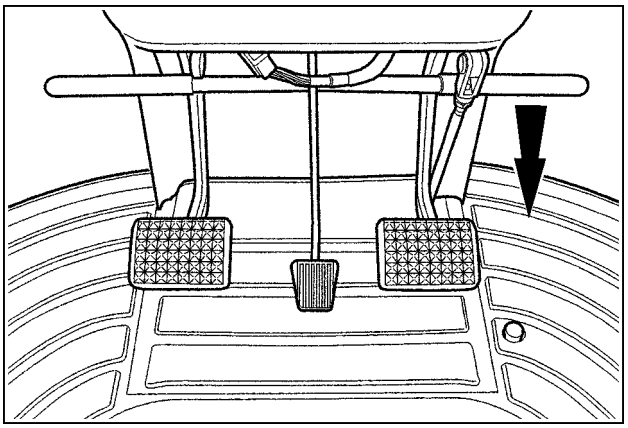
RCPH10FWD024BAM 1

2. Install the cab harness connectors on the switch.



RCPH10FWD025BAM 2

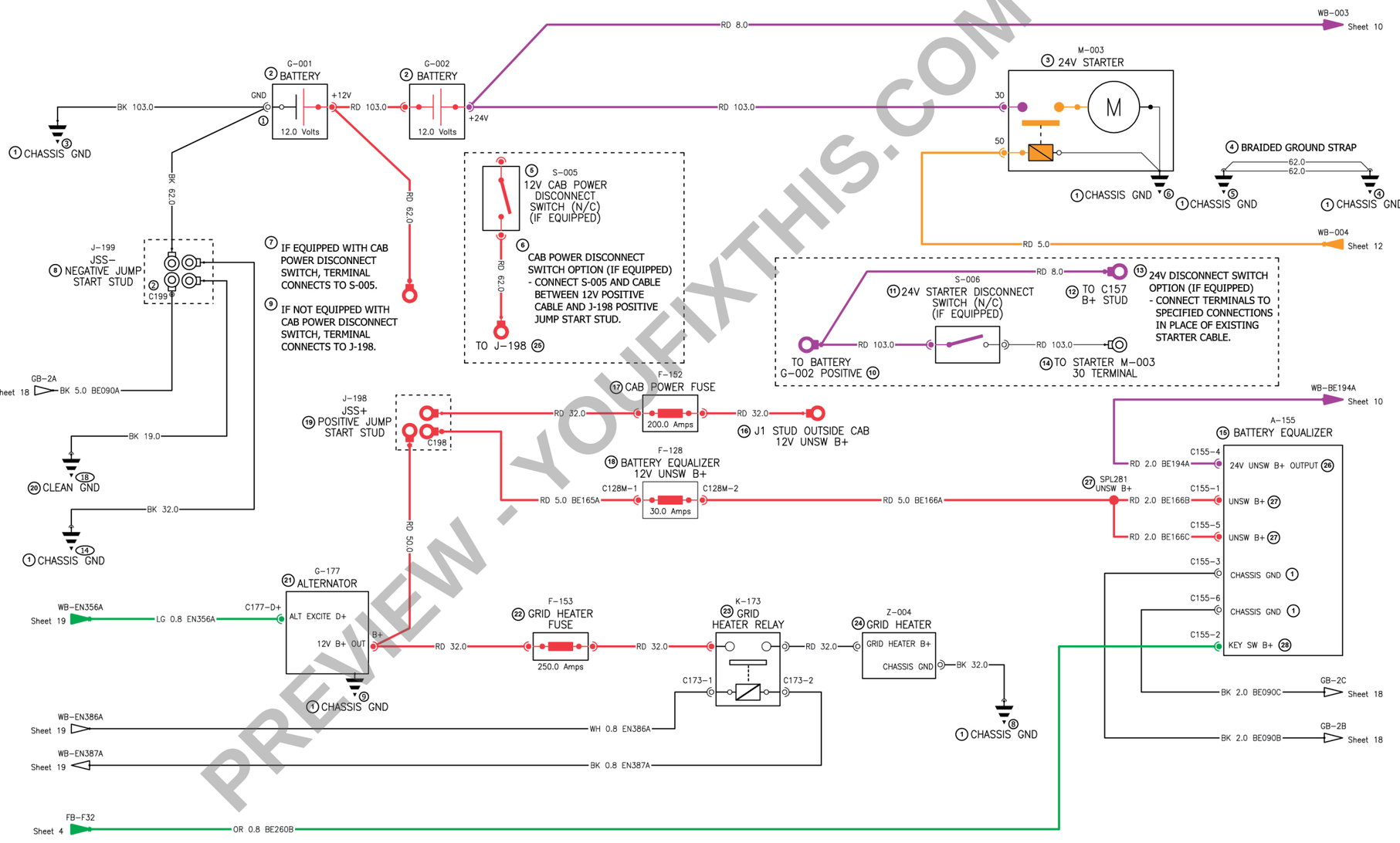
3. Install the floor mat.



RCPH10FWD096BAM 3

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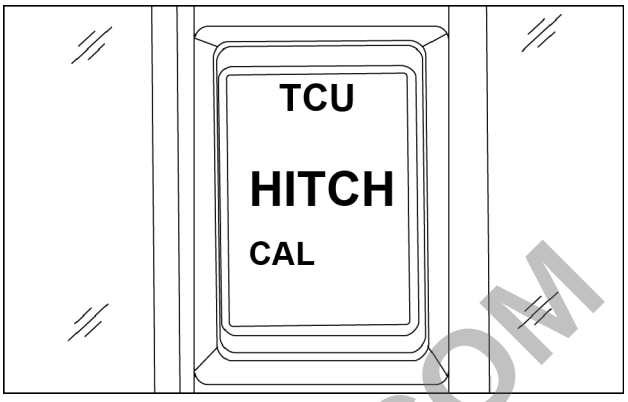
STARTING AND CHARGING SYSTEM

11

RCPH11FWD011JDM 1

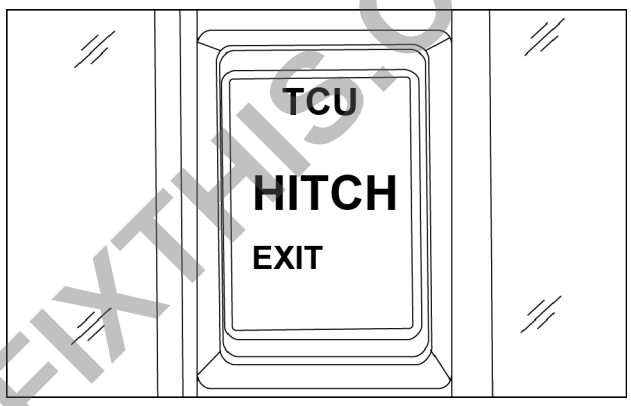
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20. The HITCH CAL screen displays



RCPH11CCH329BAA 11

21. Press the INCR key until the HITCH EXIT menu displays.
22. Press the PROG key to exit calibration.



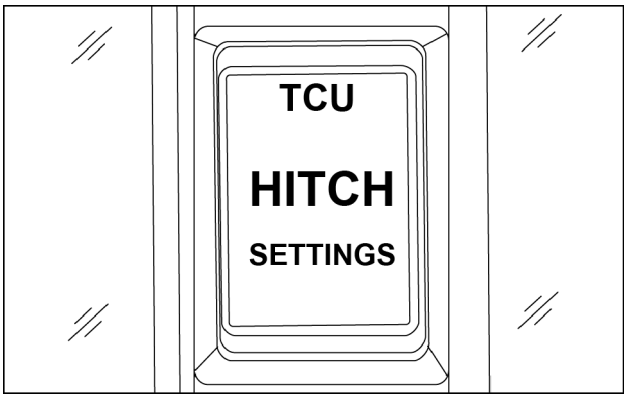
RCPH11CCH333BAA 12

NOTE: *If the screen displays "Cal Aborted" during calibration, the process has terminated and must be restarted. The most likely causes are tractor movement was detected, no engine speed was detected or the operator made a selection which caused abortion.*

NOTE: *If the screen displays "Cal Failure" during calibration, a failure occurred and the controller is in the halt mode. Press the PROG key to access the main menu. Hitch calibration cannot be restarted until the key switch has been cycled Off and then On.*

Hitch setting menu

1. Press PROG key , when the HITCH SETTINGS screen displays, to adjust various performance settings.



RCPH11CCH330BAA 13

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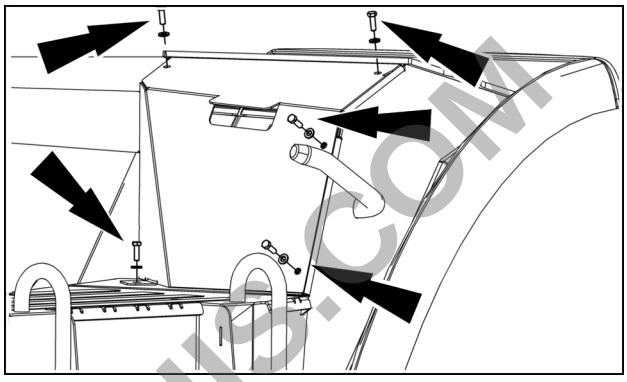
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Selective Catalytic Reduction (SCR) supply module Filter - Replace

Steiger 350 NA, Steiger 400 NA, Steiger 450 NA, Steiger 450 QT NA, Steiger 500 NA, Steiger 500 QT NA, Steiger 550 NA, Steiger 550 QT NA, Steiger 600 NA, Steiger 600 QT NA, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

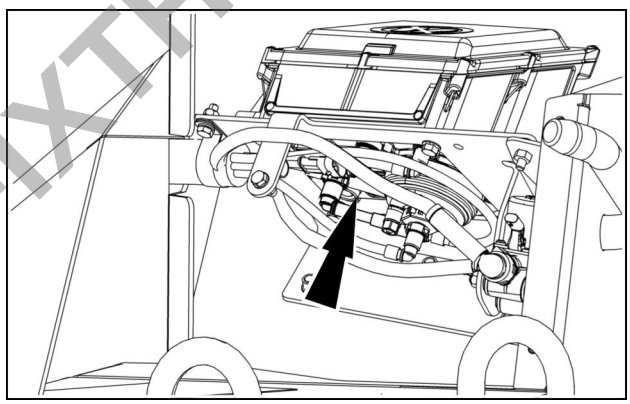
Access on Steiger 350, 400 and 450

1. Remove the five bolts and washers from the access cover on the right hand front fender and remove the cover.



RCPH10FWD985AAM 1

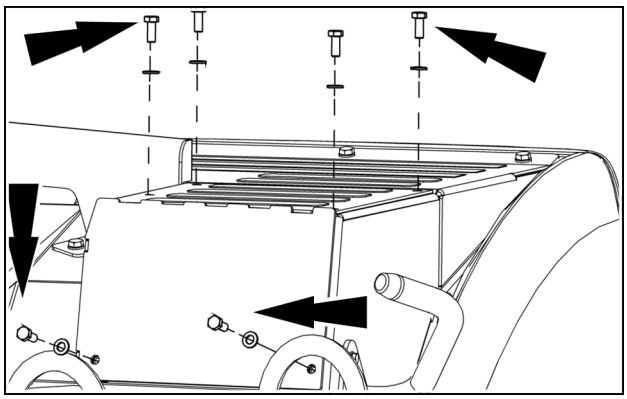
2. The filters can be serviced with the module mounted in place.



RCPH10FWD986AAM 2

Access on Steiger 500, 550 and 600

1. Remove the six bolts and washers from the access cover on the right hand front fender and remove the cover.



RCPH10FWD987AAM 3

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1002-Raise hitch valve coil short to 12 volts or raise hitch valve coil circuit failure

Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

Cause:

Possible failure modes:

1. Faulty connector
2. Faulty EDC valve raise solenoid
3. Faulty harness
4. Faulty tractor control unit (TCU)

Solution:

1. Check the EDC valve raise solenoid connector C209 and the tractor control unit (TCU) connectors C060 and C061.
   A. Ensure the connectors are connected, not damaged, the pins are in the correct position and that the fit is tight. Repair or replace as required.
   B. If the connectors are okay, continue to step **2**
2. Check the EDC valve raise solenoid.
   A. Disconnect the EDC valve raise solenoid connector C209. Measure the resistance between the solenoid terminals. If the resistance indicated is not approximately **2 Ohms**, remove and replace the EDC valve raise solenoid.
   B. If the solenoid is okay, continue to step **3**
3. Check for a short to 12 volt source.
   A. Turn the ignition switch ON. Measure the voltage between harness end connector C209 pin 1 and ground. If a voltage is indicated, repair or replace the harness as required.
   B. If a voltage is not indicated, continue to step **4**
4. Check for a short to 12 volt source.
   A. Turn the ignition switch ON. Measure the voltage between connector C209 pin 2 and ground. If a voltage is indicated, repair or replace the harness as required.
   B. If the harness is okay, download the correct level of software. If the fault reoccurs, submit a concern to ASIST.

Wire harnesses - Electrical schematic frame 59 (55.100.DP-C.20.E.59)
Wire harnesses - Electrical schematic frame 59 (55.100.DP-C.20.E.59)
Wire harnesses - Electrical schematic frame 59 (55.100.DP-C.20.E.59)

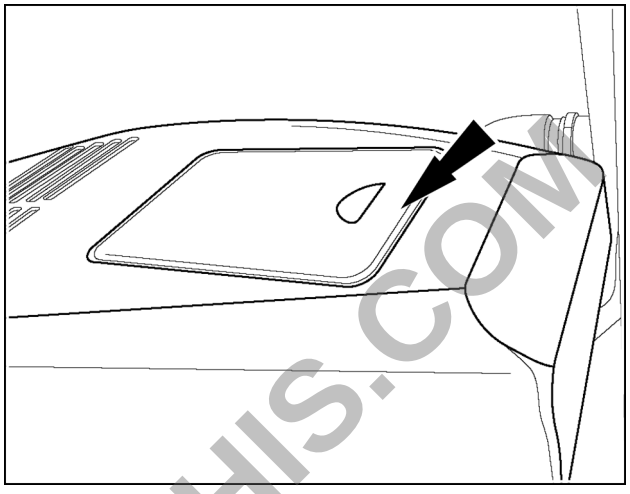
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Hood - Remove

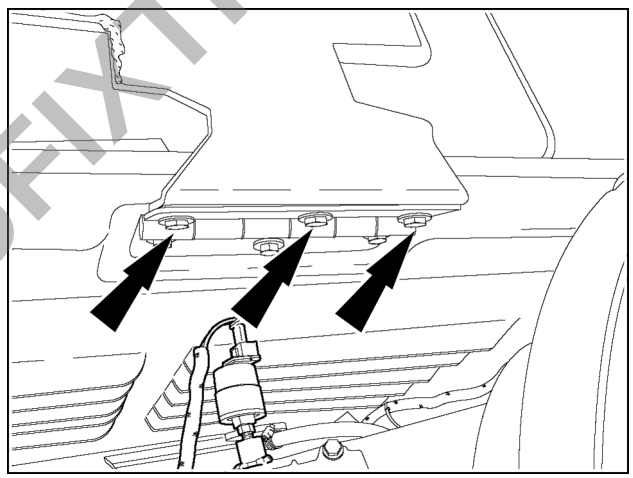
Steiger 350, Steiger 400, Steiger 450, Steiger 450 QT, Steiger 500, Steiger 500 QT, Steiger 550, Steiger 550 QT, Steiger 600, Steiger 600 QT, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

1. With hood closed, open access door at top of hood.



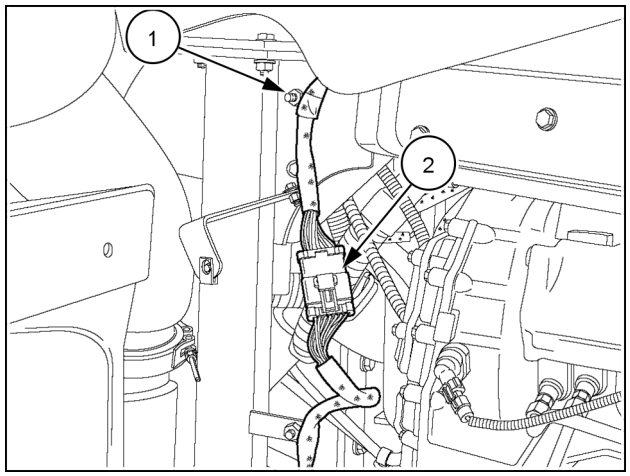
RCPH10FWD840AAC 1

2. Support access door, remove the three hinge bolts and remove the access door from the hood.



RCPH10FWD841AAC 2

3. At the right hand rear of hood remove nut **(1)** securing harness clamp to hood support frame. Unplug harness connector **(2)**. Tuck harness connector up, out of the way. Remove engine side shields **Side shield - Remove (90.102)**.



RCPH10FWD844AAC 3

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