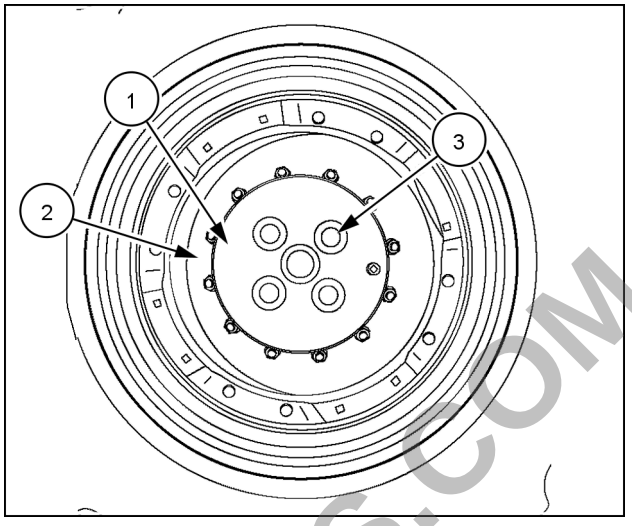
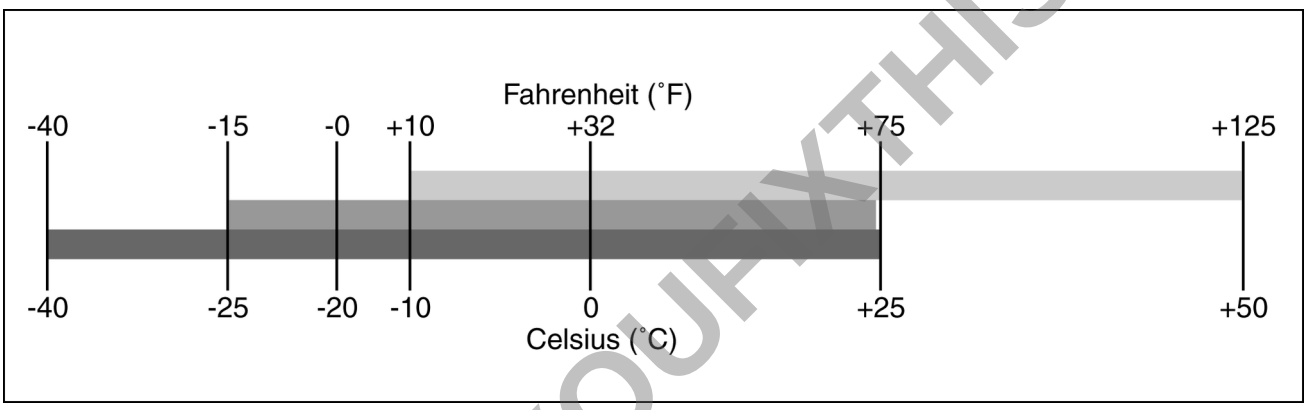
Measure the distance from the outer face of the hub **(1)** and bolting surface of the wheel **(2)**, and count the number of pins **(3)** on the wheel end to determine axle type for your tractor.



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RCIL08CCH001EAA 2

Axle oil viscosity/temperature usage recommendation

CASE IH AKCELA GEAR 135 H EP 85W-140

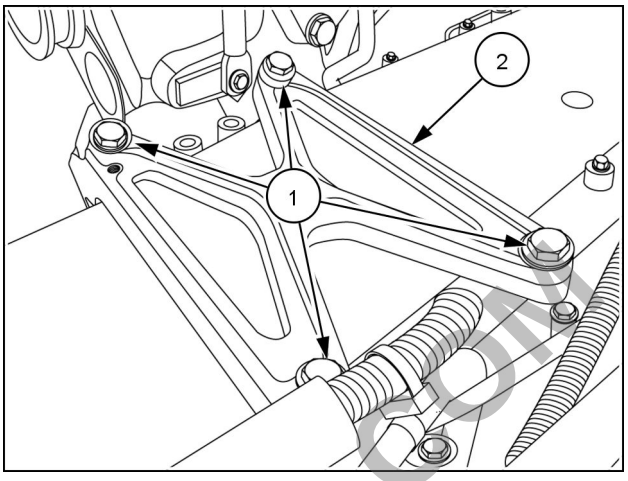
CASE IH AKCELA GEAR 135 H EP 80W-90

CASE IH AKCELA GEAR LUBE SSL 75W90

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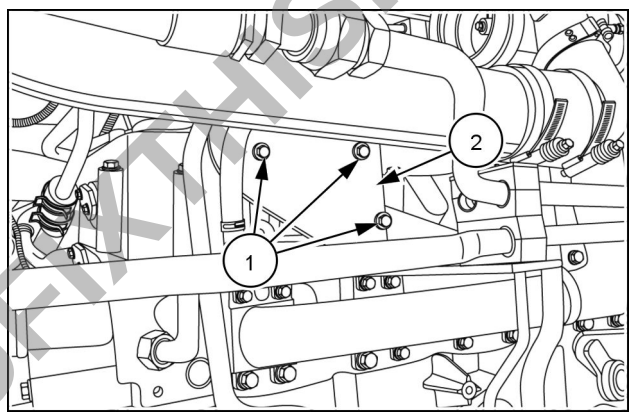
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4. Remove the four bolts **(1)** securing the turbocharger flange bracket **(2)**. Remove the bracket.



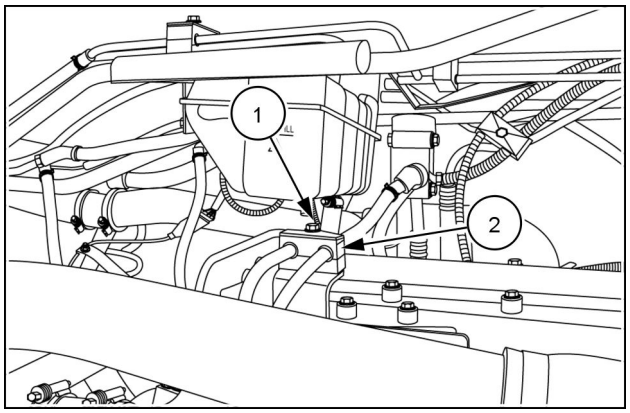
RCPH10CCH044BAB 4

5. Remove the three bolts **(1)** securing the front tube support bracket **(2)**.



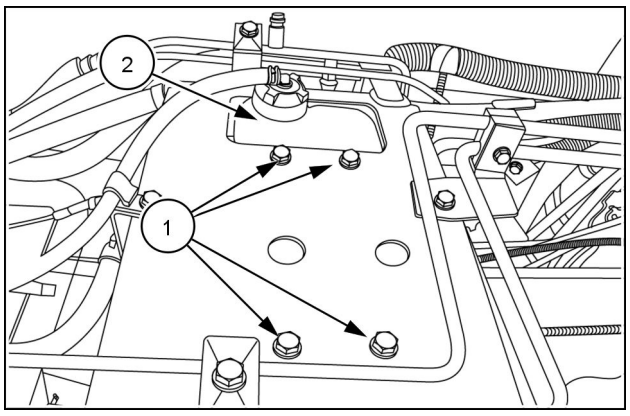
RCPH10CCH855AAB 5

6. Remove the nut **(1)** securing the tube clamp **(2)**. Remove the clamp.



RCPH10CCH856AAB 6

7. Remove the four bolts **(1)** securing the deaeration tank. Move the tank **(2)** to allow access to the valve cover.



RCPH10CCH857AAB 7

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Shaft assemblies Range countershaft - Exploded view

Magnum 235 [ZCRD02585 -] NA, Magnum 260 [ZCRD02585 -] NA, Magnum 290 [ZCRD02585 -] NA, Magnum 315 [ZCRD02585 -] NA, Magnum 340 [ZCRD02585 -] NA

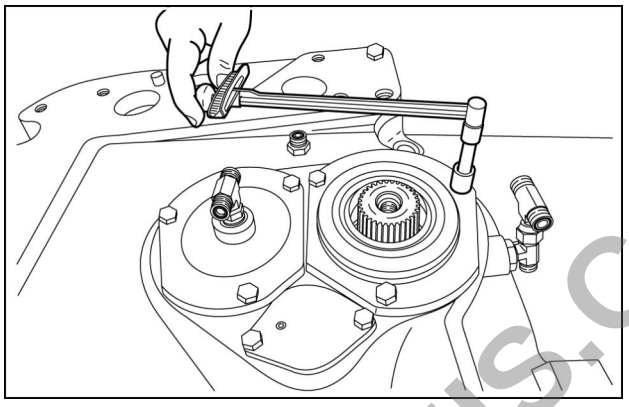
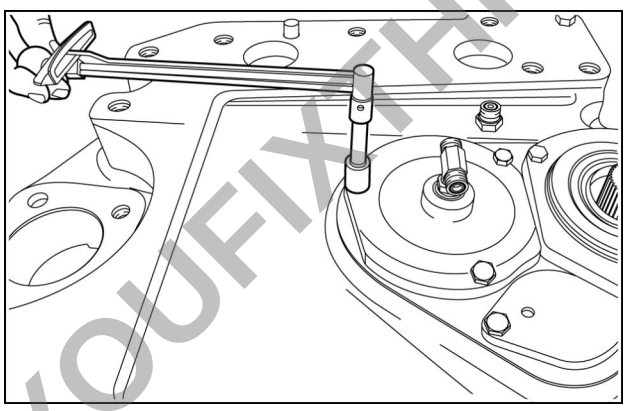
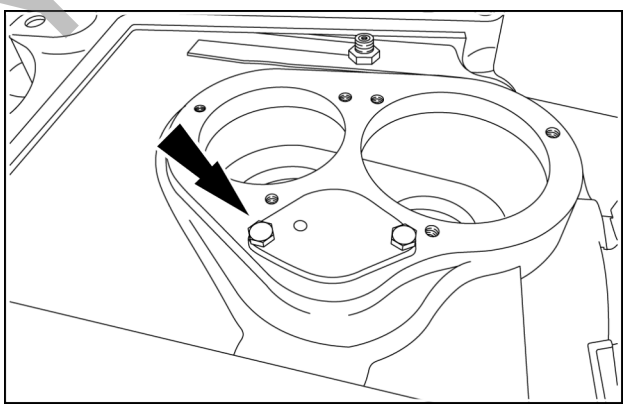
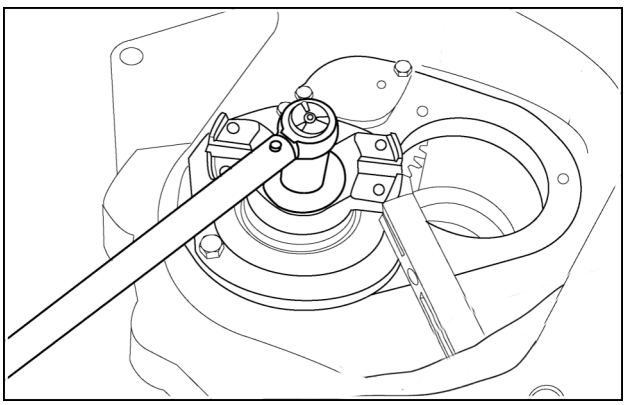
1. Shaft assembly	24. O-ring
2. Pin	25. Piston
3. Needle bearing	26. Seal ring
4. Snap ring	27. O-ring
5. Belleville spring	31. Separator disc
6. Seal ring	32. Friction disc
8.Thrust washer	33. Separator disc
9. Thrust bearing	34. Clutch disc
10. Snap ring	35. Snap ring
11 Pinion gear - 39 tooth	36. Seal ring
12. Seal ring	37. Seal
13. Gear - 25 tooth	39. Needle bearing
14. Spacer	40. Spacer
15. Pinion gear - 23 tooth	41. Spacer
18. Bearing cone	42. Roller bearing
19 Bearing cup	43. Bearing cup
20. Thrust washer	44. Bearing cage
21. Thrust bearing	45. plug
22. Gear - 54 tooth	47. Bolt
23. Seal ring	50. Shim

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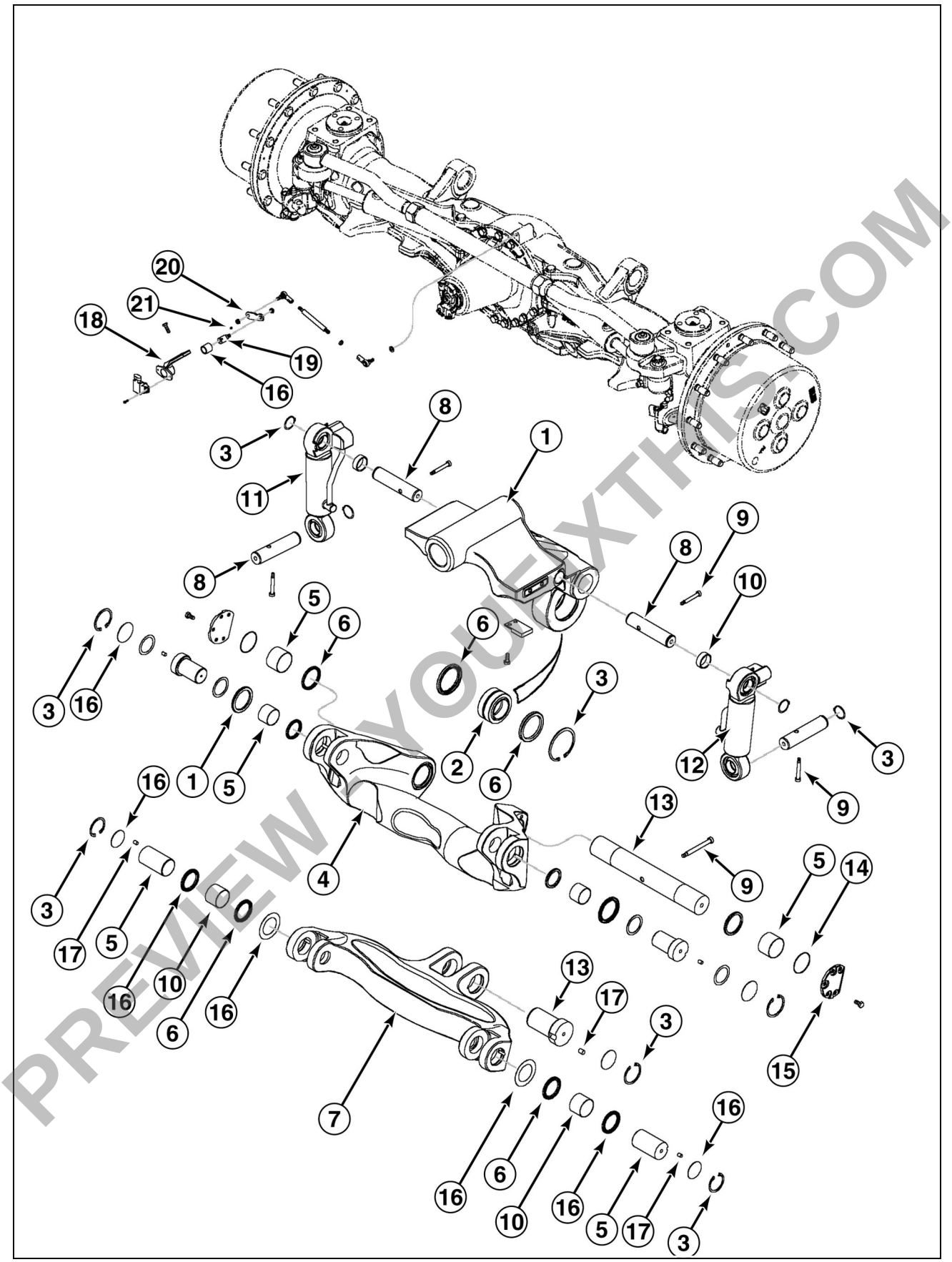
Dropbox Shaft - Torque

Magnum 235 [ZCRD02585 -] NA, Magnum 260 [ZCRD02585 -] NA, Magnum 290 [ZCRD02585 -] NA, Magnum 315 [ZCRD02585 -] NA, Magnum 340 [ZCRD02585 -] NA

Component	N·m	Identification	lb-ft
Bearing cage bolts for input shaft assembly	**51 - 57 Nm**	 RCPH11CCH015ABB 1	**38 - 42 lb ft**
Bearing cage bolts for output shaft assembly	**51 - 57 Nm**	 RCPH11CCH019ABB 2	**38 - 42 lb ft**
Idler cover bolts for idler gear assembly	**51 - 57 Nm**	 RCPH11CCH022ABB 3	**38 - 42 lb ft**
Yoke center bolt for input shaft assembly	**252 - 280 Nm**	 RCPH11CCH043ABB 4	**186 - 207 lb ft**

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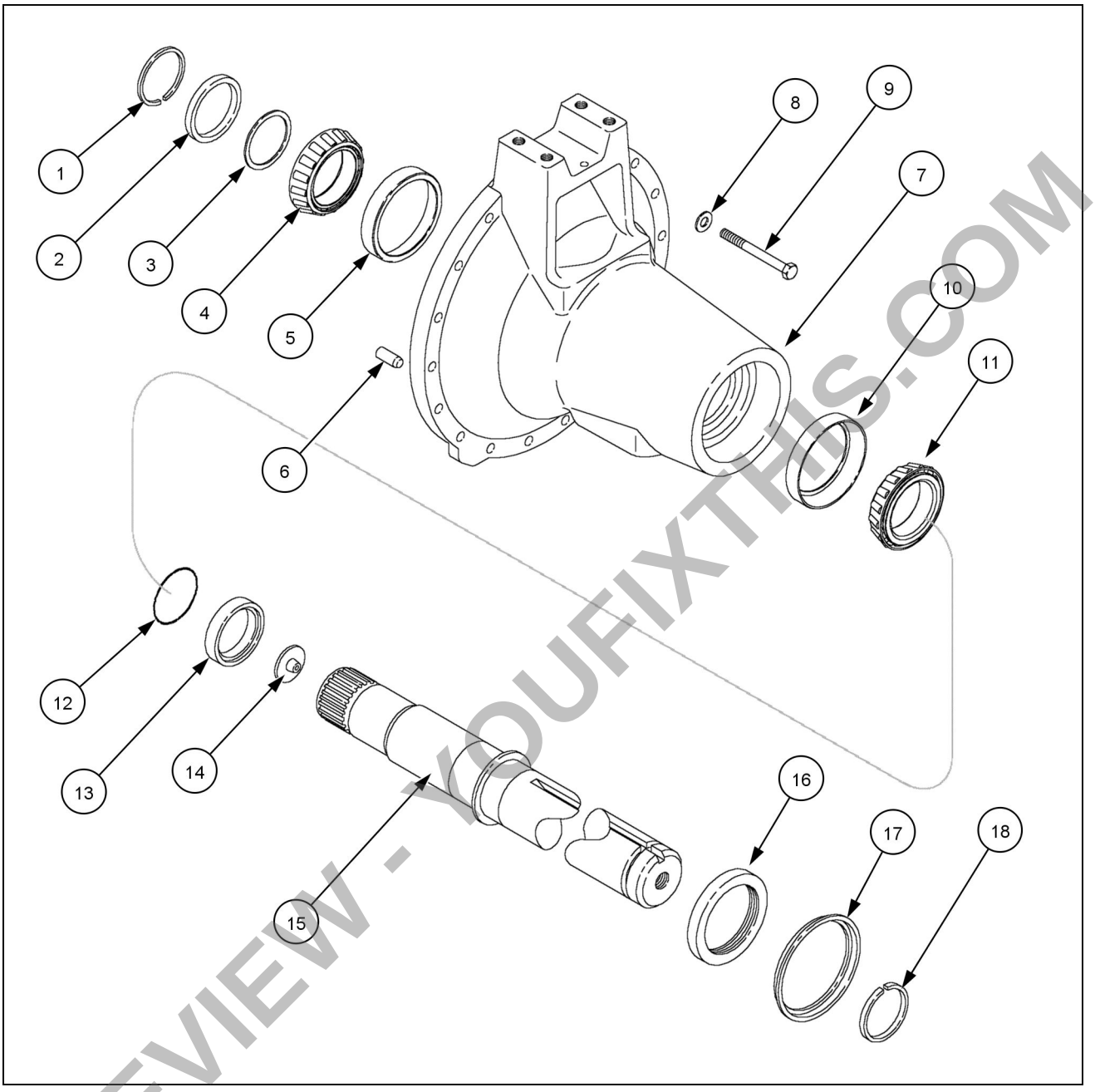


RCPH07CCH007HAA 1

1. Cradle	8. Axle pin	15. Plate
2. Bearing	9. Shoulder bolt	16. Thrust washer
3. Snap ring	10. Spacer	17. Dowel

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Rear axle housing - Exploded view



RCPH07CCH024GAA 1

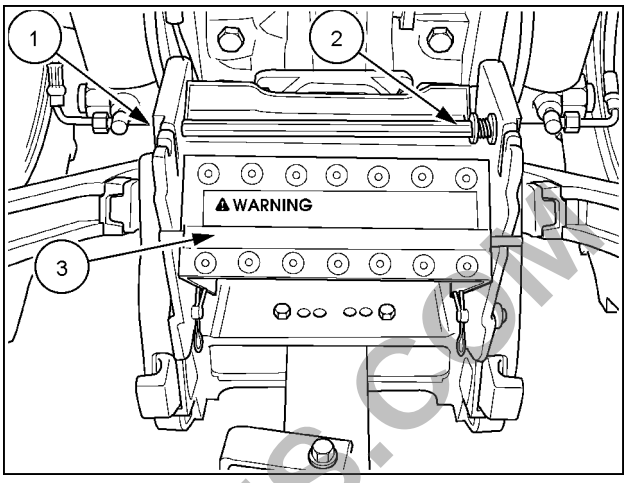
1. Retaining ring	7. Axle housing	13. Axle bushing
2. Thrust ring	8. Washer	14. Axle wear insert
3. Shims	9. Bolt	15. Axle shaft
4. Bearing cone	10. Bearing cone	16. Oil seal
5. Bearing cup	11. Bearing cup	17. Wear sleeve, if needed
6. Dowel pin	12. O-ring	18. Retaining ring

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Output shaft - Remove - Non reversible

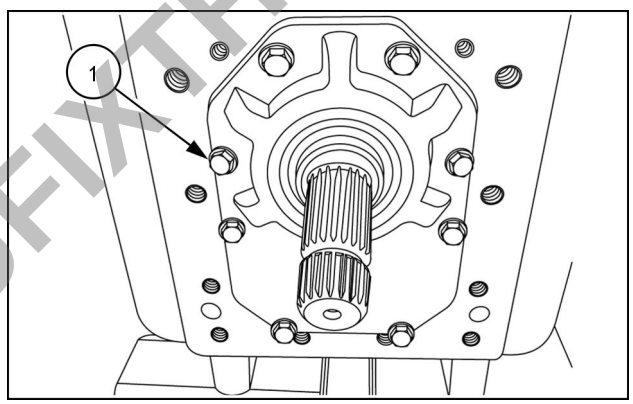
1. Disengage the cotter pin **(1)**. Remove the PTO cover support rod, spacers and spring **(2)**. Remove the cover **(3)** and set aside.



RCPH08CCH351AAC 1

NOTE: *The following steps will show the PTO guard and hitch support removed for clarity.*

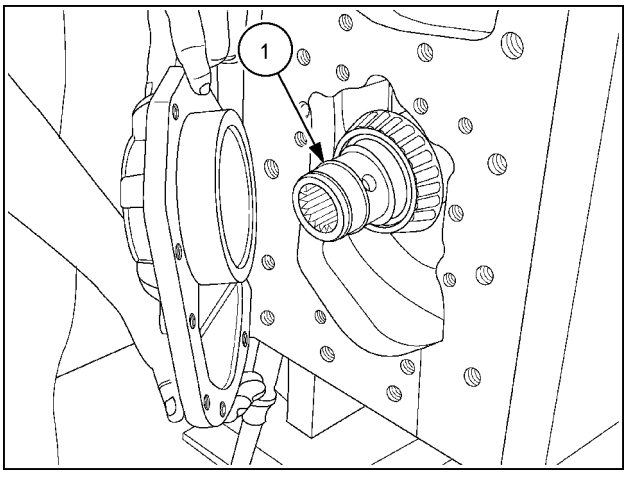
2. Remove the eight cover bolts **(1)**.



RCPH09CCH330ABB 2

3. Remove the cover.

NOTE: *PTO output shaft **(1)** shown is a dual speed reversible. Cover removal is the same.*



RCPH07CCH729BBC 3

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Parking brake internal controls - Exploded view - Park brake clutch

Magnum 235, Magnum 260, Magnum 290, Magnum 315, Magnum 340

1. Shaft, MFD and park brake	17. Retaining ring
2. Jumper tube with O-rings and fittings	18. Spacer, if required
3. Hex head bolt, M12 x 50	19. Belleville spring
4. MFD tube	20. Piston
5. Shield half	21. Piston O-ring
6. Shield half	22. Piston seal
7. Socket head screw, M8 x 16	23. Park brake hub seal
8. Shield clip	24. Park brake hub O-ring
9. Shaft seal ring	25. Park brake hub
10. Roller bearing	26. Retaining ring
11. Bearing cup	27. Separator plate
12. Retaining ring	28. Friction plate
13. Carrier	29. Backing plate
14. Shim	30. Retaining ring
15. Bearing spacer	31. MFD hub with needle bearings
16. Retaining ring	32. Snap ring

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Hydraulic systems - Hydraulic schematic frame 01 Tractors with Power Shift transmissions

Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

Hydraulic schematic 47513531 — Sheet 1 — Power shift Transmission.

	PFC PISTON PUMP
	REGULATED CIRCUIT PUMP
	CHARGE /LUBE PUMP FLOW
	RETURN TO TANK/SUMP
	OIL COOLER / FILTRATION AUX. CHARGE PUMP FLOW

1. REMOTE SECTION	31. TRANSMISSION CONTROL VALVES
2. LOAD SENSE DIAGNOSTIC	32. PARK CLUTCH
3. PILOT / HITCH DRAIN	33. INLET BRAKE VALVE
4. PILOT SUPPLY	34. PRIORITY REGULATOR VALVE
5. RETURN	35. THERMAL BYPASS VALVE
6. SUPPLY	36. OIL COOLER
7. HITCH VALVE	37. LUBE REGULATOR
8. CATEGORY 4 HITCH	38. PRESSURE AND FLOW COMPENSATED (PFC) PISTON PUMP
9. HITCH CYLINDERS	39. FILTER
10. RETURN	40. PTO CLUTCH LUBE
11. SUPPLY	41. ODD / EVEN LUBE
12. SIGNAL	42. DROP BOX LUBE
13. CASE DRAIN	43. CREEP DRIVE LUBE
14. POWER BEYOND MANIFOLD (OPTIONAL)	44. MASTER CLUTCH LUBE
15. PTO / DIFFERENTIAL LOCK VALVE	45. RIGHT BRAKE / DIFFERENTIAL LUBE
16. PTO CLUTCH / BRAKE	46. MFD / RANGE LUBE
17. DIFFERENTIAL LOCK CLUTCH	47. LEFT BRAKE / DIFFERENTIAL LUBE
18. BEVEL PINION LUBE	48. TO PARK BRAKE VALVE SOLENOID
19. LUBE SUPPLY	49. SERVICE BRAKE
20. MFD CLUTCH	50. MASTER CLUTCH
21. LOW CLUTCH	51. INLET
22. MEDIUM CLUTCH	52. MASTER CLUTCH INCHING VALVE
23. HIGH CLUTCH	53. PARK / EMERGENCY BRAKE
24. REVERSE CLUTCH	54. BRAKE RELEASE PUMP
25. FIFTH CLUTCH	55. STEERING HAND PUMP
26. THIRD CLUTCH	56. STEERING CYLINDERS
27. FIRST CLUTCH	57. BYPASS VALVE
28. EVEN CLUTCH	58. BRAKE VALVE
29. ODD CLUTCH	59. NOTE: SWITCH IS OPENED WHEN PEDAL REACHES FULL STROKE WHEN HYDRAULIC POWER IS LOST
30. CREEPER CLUTCH	60. ACCUMULATOR

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Operating modes

The electronic draft control (EDC) system operates in three modes: position control, load control and slip control.

In position control mode, hitch position and movement is directly related to the position of the control lever. The electronic draft control (EDC) system monitors the position of the hitch through a position sensor on the rock shaft and raises or lowers the hitch to match the signal from the hitch position control. The tractor and the implement must be operated in the field to set correct hitch position.

In load control mode, the electronic draft control (EDC) system maintains a constant draft load on the three point hitch in changing soil conditions. When load increases, as sensed by the lower link draft pins, the system raises the hitch to match the load set by the operator with the load control. When load decreases, the system lowers the hitch to the depth set with the position control.

Slip limit control mode is only available when the tractor is equipped with radar. The instrument controller determines the actual slip percentage from radar and the wheel speed sensor input. The percentage is relayed to the electronic draft control (EDC) system on the data bus. The operator sets a desired slip limit range between 5 and 40%. The hitch system compares the actual and desired slip percentages and raises the hitch when the slip limit is exceeded. When actual slip no longer exceeds the slip limit, the hitch lowers to the position command setting. The tractor must be travelling above **3.2 km/h** (**2 mph**) before the system enters slip limit control mode.

Hitch valve operation - Neutral position

The hitch control valve is added to the remote system valve stack. When viewed from the rear, the hitch valve section is to right of center manifold assembly.

The hitch valve is a closed center valve that receives oil from the pressure and flow compensating (PFC) hydraulic circuit.

In neutral, no electrical current is supplied to either the raise or lower proportional solenoid valve. Immediately upon start up, pump supply is available through internal passages to the hitch flow control spool. The hitch flow control spool maintains a constant pressure drop across the raise solenoid when raising the hitch.

The supply oil passes through an orifice in the flow control spool; pressure builds and begins to force the spool against the spring. Once pressure is high enough to overcome the spring force, the hitch flow control spool shifts, and the supply flow is available to the raise solenoid valve. The flow control spool continues to shift metering flow to the raise solenoid valve. The flow control spool is in balance, and supply flow is available to the closed raise proportional solenoid valve.

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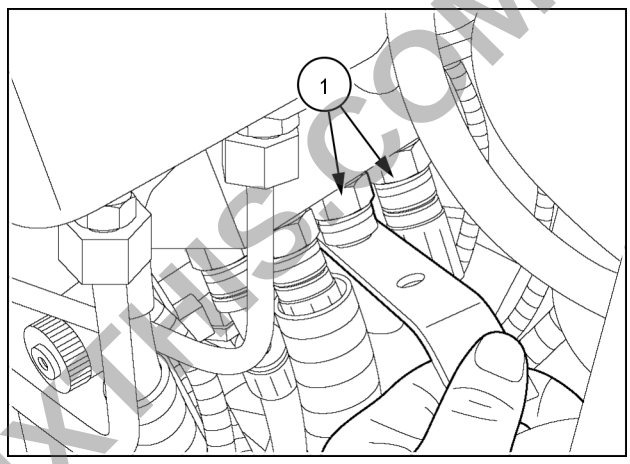
Power steering pump - Inspect

Magnum 235, Magnum 260, Magnum 290, Magnum 315, Magnum 340

NOTE: *The tractor is equipped with an emergency steering system. If the main steering system fails, the emergency system provides sufficient steering to move the tractor to the side of the road.*

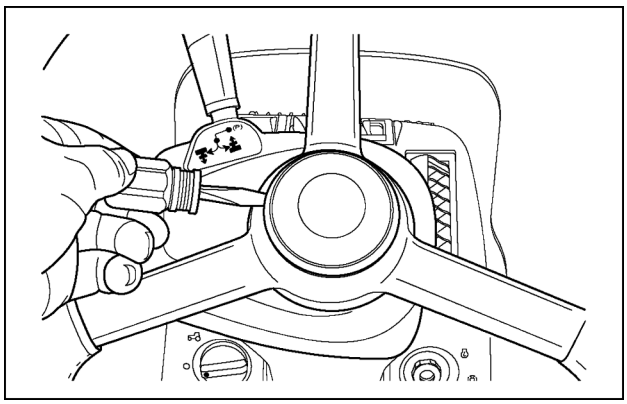
NOTE: *Initial inspection is recommended at 3000 hours of operation and each 1000 hours thereafter.*

1. Periodic inspection is recommended to ensure proper operation of the emergency steering function.
2. With tool **380000795**, disconnect the hoses **(1)** from the steering hand pump to the steering cylinders.



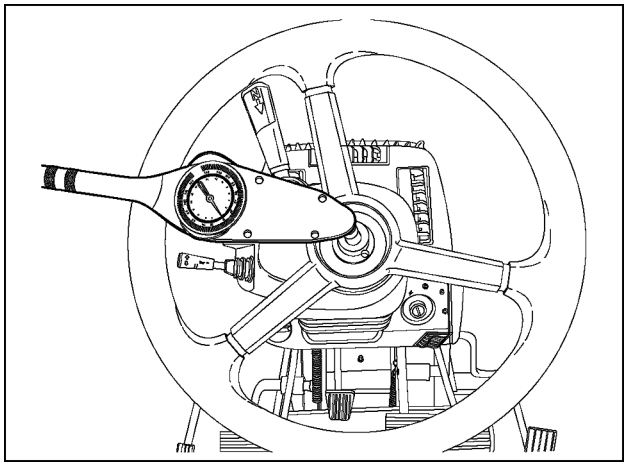
RCPH07CCH076BAB 1

3. Do not start the engine.
4. Remove cover from the center of the steering wheel.



RCPH11CCH098AAB 2

5. Apply **30 Nm** (**22 lb ft**) torque to the steering wheel lock nut in a clockwise direction.



RCPH11CCH067BAB 3

6. Maximum slippage must not exceed **25 RPM** with an oil temperature of **38 °C** (**100 °F**) or less.
7. Install cover on the center of the steering wheel.

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Air conditioning - Dynamic description - System flushing

Magnum 235, Magnum 260, Magnum 290, Magnum 315, Magnum 340

When flushing is necessary, all affected components should be flushed to eliminate the possibility of contaminants remaining in the system.

There are two methods of A/C system flushing: individual component flushing and complete circuit flushing. The complete circuit is the system minus the compressor, receiver-drier and thermal expansion valve. The compressor, receiver-drier and thermal expansion valve are always bypassed (removed) during circuit flushing and serviced individually. The receiver-drier is always replaced anytime a system is flushed. The expansion valve, due to its small orifices, is removed from the system and cleaned (or replaced). The compressor is either replaced or reused, but is never flushed.

The preferred method of system flushing is individual component flushing. Given the size of Case IH equipment and the distance between components, individual component flushing will dislodge and flush out more contamination than complete circuit flushing. Which individual components are flushed will depend on the source of the contamination and is left to the discretion of the technician.

For “mildly” contaminated systems, complete circuit flushing may be used, where the contamination is oxidized refrigerant oil or small amounts of receiver-drier desiccant. Complete circuit flushing requires little system disassembly, minimal special connectors and the least amount of service time.

The most likely sources of contamination are compressor failure and receiver-drier failure.

Compressor failure

A failed compressor generally sends debris downstream to the condenser, the receiver-drier and towards the thermal expansion valve. If the compressor fails internally, it must be replaced. Also individual flushing of the hose between the compressor and condenser, of the hose between the condenser and receiver-drier, of the condenser itself and replacing the receiver-drier are appropriate service actions for compressor failure.

For most condensers with a single flow path, flushing effectively removes debris. For condensers with parallel flow paths, since flushing takes the path of least resistance around any blockage, condenser replacement may be the only option.

The receiver-drier has a fine mesh screen to capture contaminants, but the contaminants may penetrated the screen. Check the discharge port of the receiver-drier to see if contaminants have penetrated the screen. If so, individual flushing of the hose between the receiver-drier and the expansion valve and cleaning the thermal expansion valve are appropriate. If the thermal expansion valve is damaged, replace it as well.

Additional flushing of the system beyond the thermal expansion valve is at the discretion of the service technician who can best judge how far the contamination has traveled.

Receiver-drier failure

Receiver-driers should not normally fail if replaced:

1. When system has been opened before.
2. When receiver-drier has been in service two or more years.
3. When the system has been open for a long period of time because of a leak (broken hoses, loose connection) that has permitted air and moisture to enter the system.
4. When contaminated refrigerant was recovered from the system.

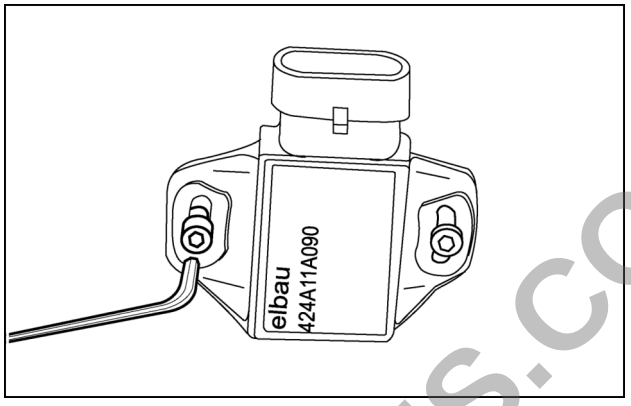
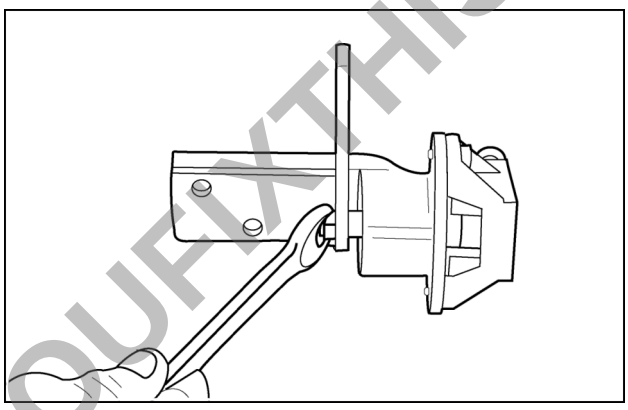
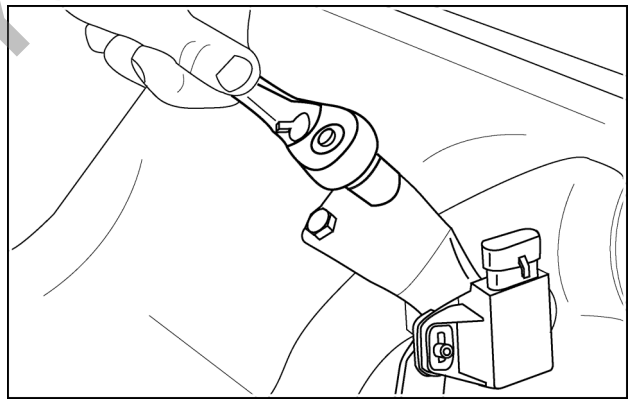
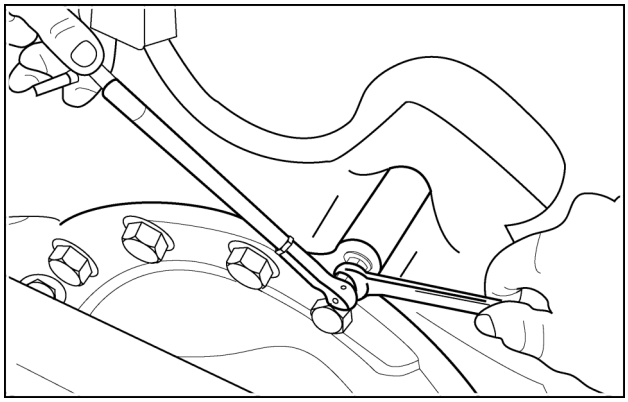
However, if the desiccant pouch is punctured by a debris from a failed compressor or fails from age, desiccant particles may flow downstream toward the thermal expansion valve and the evaporator. An indicator of receiver-drier failure is soft golden-brown particles found at its outlet. The thermal expansion valve should always be checked after receiver-drier failure.

If the receiver-drier fails, it must be replaced. Also individual flushing of the liquid hose between the receiver-drier and the thermal expansion valve and cleaning the valve are appropriate.

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Front axle control system - Torque - Axle position sensor

Magnum 235, Magnum 260, Magnum 290, Magnum 315, Magnum 340

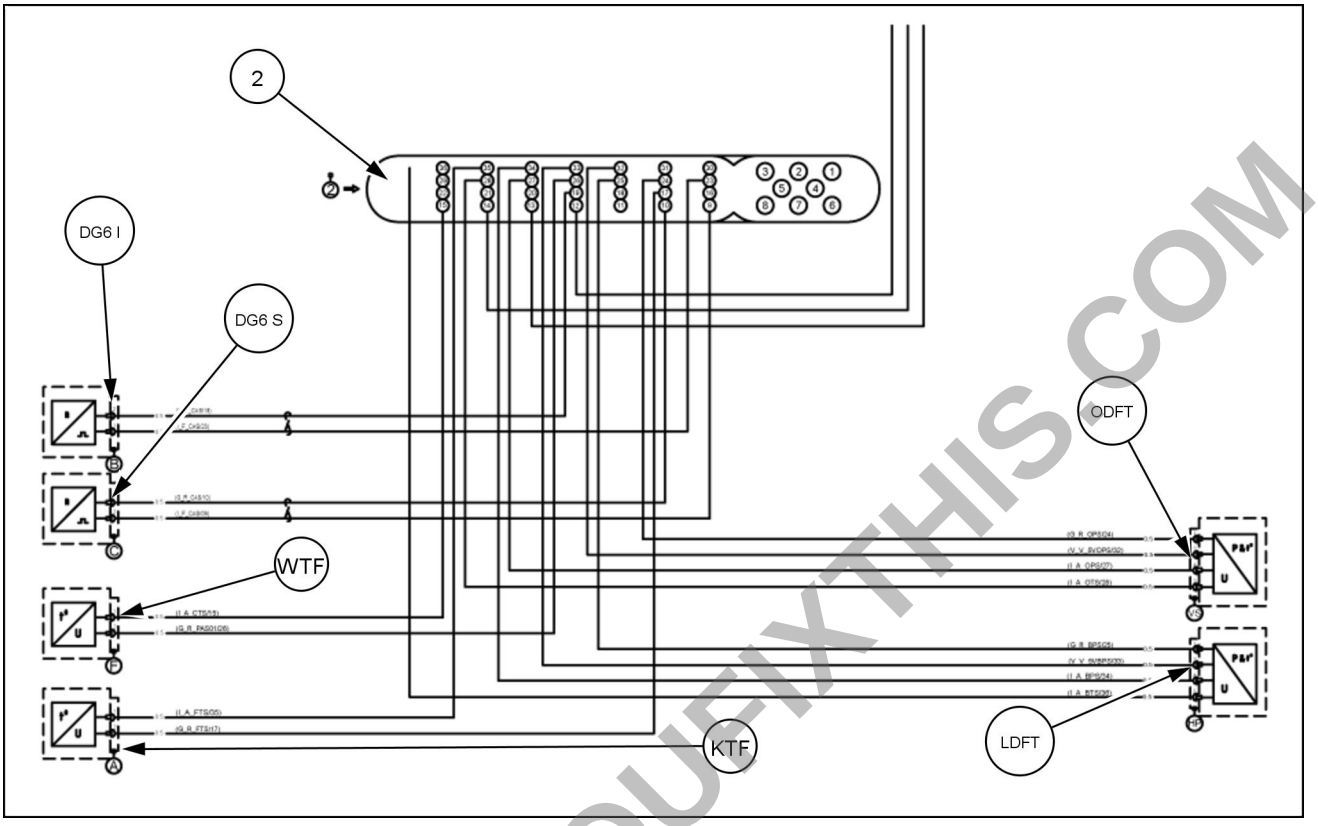
Component	N·m	Identification	lb ft/lb in
Mounting bracket screws	**4.0 - 4.5 Nm**	 RCPH07CCH684AAA 1	**36 - 40 lb in**
Short link to shaft nut	**20 - 22.5 Nm**	 RCPH07CCH685AAA 2	**180 - 200 lb in**
Bracket bolts	**22 - 24 Nm**	 RCPH07CCH686AAA 3	**16 - 16 lb ft**
Axle housing ball joint	**20 - 22.5 Nm**	 RCPH07CCH687AAA 4	**180 - 200 lb in**

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Wire harnesses - Electrical schematic frame 02

Magnum 235 NA, Magnum 260 NA, Magnum 290 NA, Magnum 315 NA, Magnum 340 NA



T4 C9 FRAME 2 1

Sensor Harness

Connector ID	Description
LDFT	Boost pressure sensor to ECU engine harness
WTF	Coolant temperature sensor to ECU engine harness
2	Engine control unit (ECU) to ECU engine harness
KTF	Fuel temperature sensor to ECU engine harness
DG6 Incr.	Increment speed sensor (Crankshaft speed sensor) to ECU engine harness
ODFT	Oil pressure sensor with oil temperature sensor to ECU engine harness
RDS4	Rail pressure sensor to ECU engine harness
DG6 Segm	Segment speed sensor (Camshaft speed sensor) to ECU engine harness

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Engine starting system - Problem solving

Magnum 235, Magnum 260, Magnum 290, Magnum 315, Magnum 340

OPERATION

Unswitched battery power is supplied through fuse 7 to the ignition switch connector **X-161**. When the key switch is turned to the start position, current is supplied to the FNRP module at connector **X-051**. If the transmission is in park, current flows to the bussman box starter relay and then to the intermediate start relay which energizes the starter relay.

TROUBLESHOOTING

Before troubleshooting the charging system, system make sure that the following conditions are met:

- The batteries are fully charged and all connections are clean and tight.
- Fuse 7 must be powered and intact.
- Transmission in neutral or park.
- Check all connectors for tight connection. Check for loose, corroded or damaged – broken, bent or recessed – pins.

NOTE: *Use a multimeter for these tests. Do not use a self-powered test light for any of these test. A self-powered test light will damage components in these systems.*

Problem	Possible Cause	Correction
Engine does not crank when key switch is turn to the Start position.	Fuse 7	Perform Step 1 in **Ignition switch - Testing - Ignition switch power (55.201)**.
	Ignition switch	See **Ignition switch - Testing - Ignition switch power (55.201)**, and perform Steps 1-2 in **Ignition switch - Testing - Ignition switch (55.201)**.
	FNRP module	See **Transmission hand lever - Testing - FNRP module (21.135)** .
	Starter relay	See **Engine start relay - Testing (55.201)**.
	Intermediate start relay	See **Engine start relay Intermediate start relay - Testing (55.201)**.
	Starter motor	See **Engine starter - Testing - Starter motor (55.201)**.
Click is heard when key switch is turned to the Start position, but engine does not crank.	Starter motor	Perform Steps 3-5 in **Engine starter - Testing - Starter motor (55.201)**.
	Starter relay	See **Engine start relay - Testing (55.201)**.
	Intermediate start relay	See **Engine start relay Intermediate start relay - Testing (55.201)**.
Engine cranks slowly.	Starter motor	Perform Steps 3-5 in **Engine starter - Testing - Starter motor (55.201)**.
	Engine mechanical problem	Refer to the engine repair manual.
Starter motor continues to operate after key switch is released from the Start position to the Run position.	Ignition switch	See **Ignition switch - Testing - Ignition switch (55.201)**. Confirm that switch turns off when the key switch is released.
	Starter relay	Perform Step 6 in **Engine start relay - Testing (55.201)**. Confirm that relay turns off when the key switch is released.
	Intermediate start relay	See **Engine start relay Intermediate start relay - Testing (55.201)**. Confirm that relay turns off when the key switch is released.

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3007-Coolant Temperature Signal - Signal Above Range Maximum

Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

Context:
This error could result from a signal out of range or a signal that is either erratic or intermittent.

Cause:
The coolant temperature sensor signal to the ECU is out of range of the upper threshold limit.

Possible failure modes:

1. Faulty Coolant temperature sensor.
2. Faulty electrical wiring, short to high source or open circuit condition.
3. Faulty ECU, supply voltages or grounds.

Solution:

1. Verify that the error code is active.

   A. If the error code is active, continue with **2**.

   B. If error code is no longer active, continue with step **6**.
2. Check for an open circuit in supply voltage to the sensor.

   Remove the harness connector from the coolant temperature sensor **WTF**.

   Use the test lead labeled "Coolant/Fuel Temp Sensor" from the Tier II (NEF) diagnostic repair kit **380040185** to access the pins on the connector.

   Turn the engine keyswitch on.

   Measure voltage between pins 1 and 2.

   Expected reading is approximately **5 volts**.

   A. If **5 volts** is present, continue with step **4**.

   B. If **5 volts** is not present, continue with step **3**.
3. Check for faulty wiring.

   Turn the keyswitch off.

   Remove and perform continuity tests between the coolant temperature sensor **WTF** and engine connector **2** on the engine sensor harness.

   Flex harness during test to check for any intermittent operation.

   Use the test lead labeled "Coolant/Fuel Temp Sensor" from the Tier II (NEF) diagnostic repair kit **380040185** to access the pins on the sensor connector **WTF**.

   Use the **0.4 mm** (**0.017 in**) diameter test probes for **2** connector.

Test type	Test point 1	Test point 2	Expected Results
1. Continuity	**WTF**, pin 1	Connector **2**, pin 15	About **0 - 0.10 ohms**
2. Continuity	**WTF**, pin 2	Connector **2**, pin 26	About **0 - 0.10 ohms**
3. Short circuit	Connector **2**, pin 15	Connector **2**, pin 32	Open circuit
4. Short circuit	Connector **2**, pin 15	Connector **2**, pin 33	Open circuit
5. Short circuit	Connector **2**, pin 15	Connector **2**, pin 26	Open circuit

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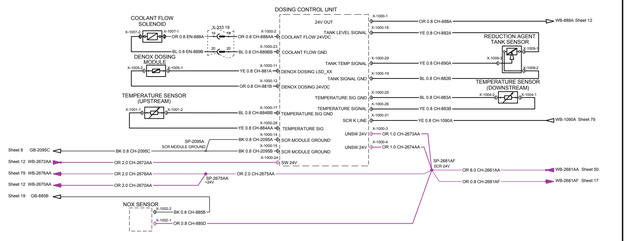
Platform, cab, bodywork, and decals - 90

Engine shields, hood latches, and trims - 102

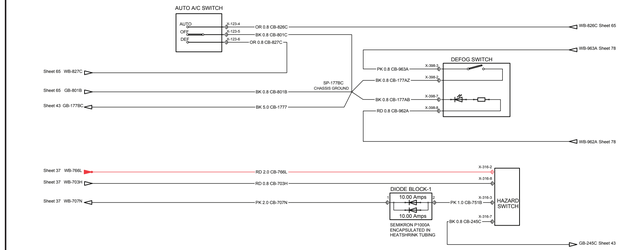
Magnum 235 NA
Magnum 260 NA
Magnum 290 NA
Magnum 315 NA
Magnum 340 NA

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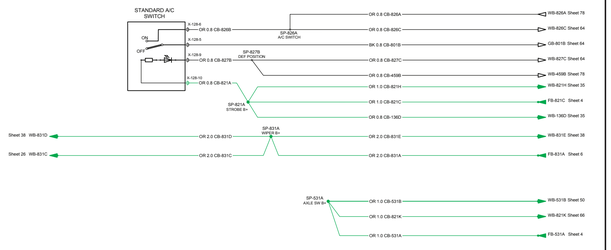
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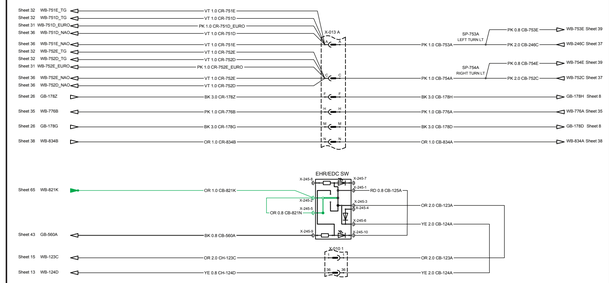
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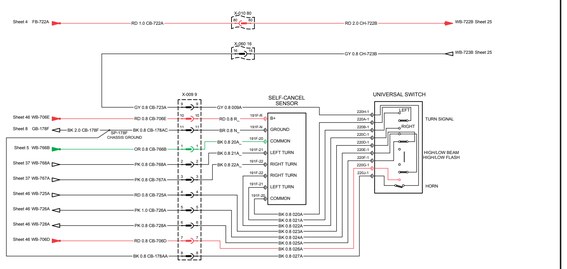
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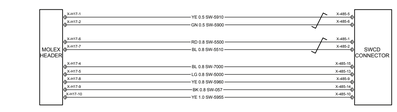
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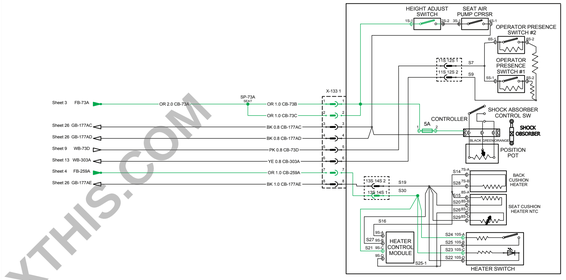
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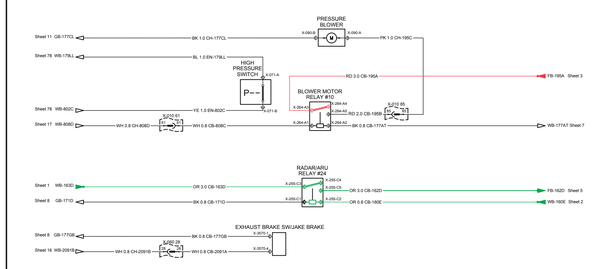
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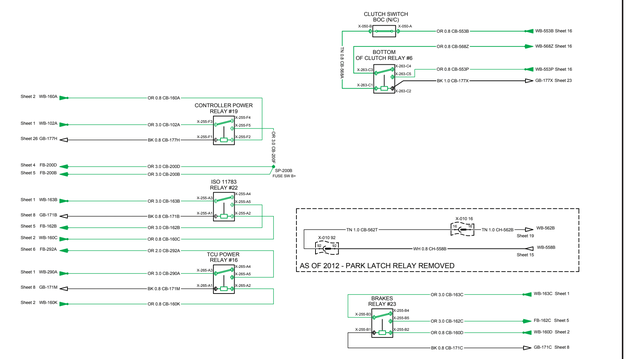
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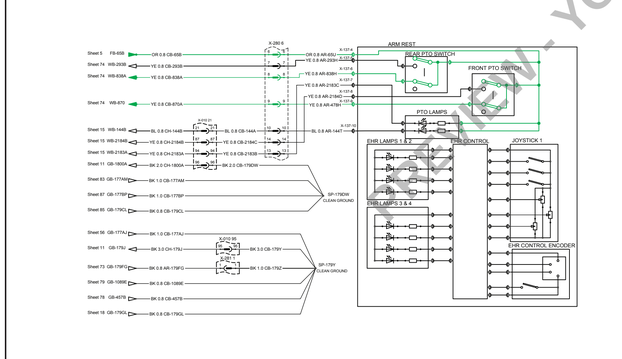
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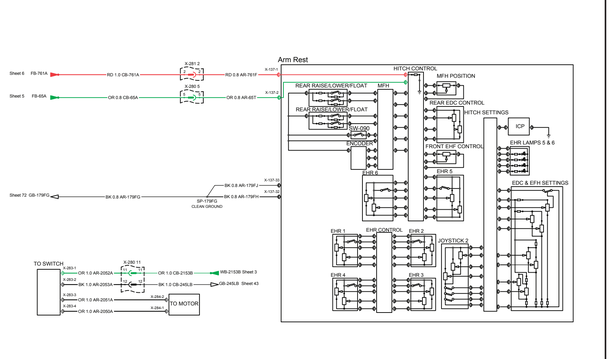
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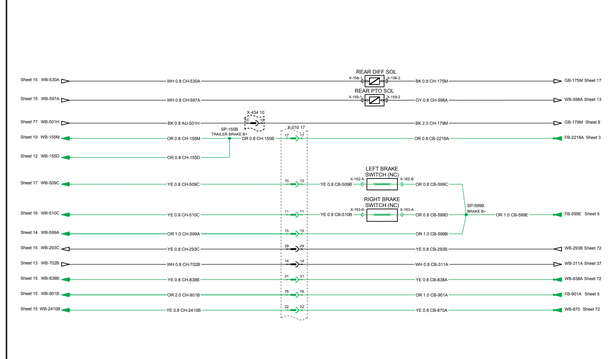
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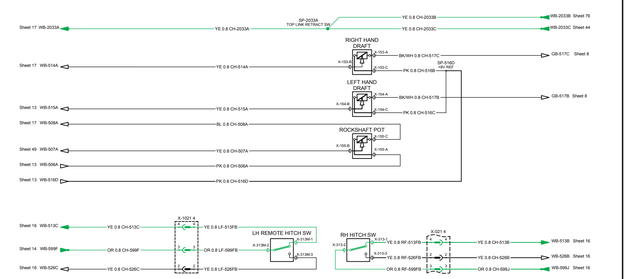
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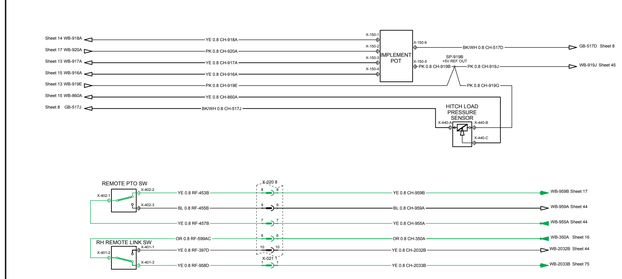
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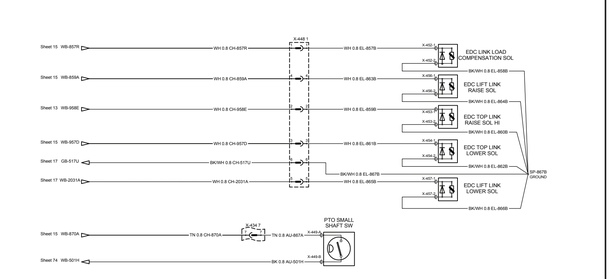
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MAGNUM 235, 260, 290, 315 AND 340 TRACTOR SERIES WITH POWER SHIFT TRANSMISSION P.I.N. ZDRD02585 AND AFTER ELECTRICAL SCHEMATIC RAC 47516259

LEGEND

INDICATES CONSTANT POWER

INDICATES POWER WHEN KEY SWITCH IS ON

INDICATES POWER WHEN KEY SWITCH IS IN START POSITION

INDICATES 24 VOLT CIRCUIT

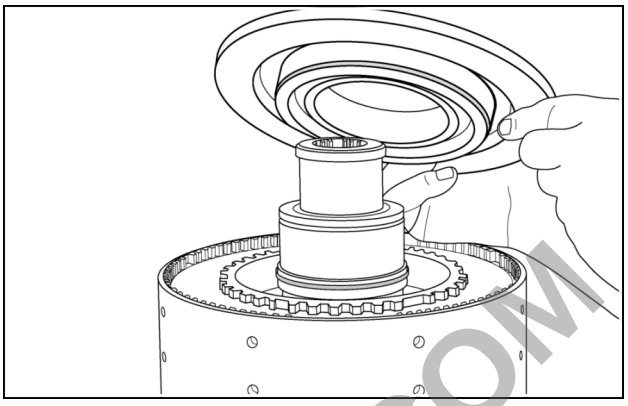
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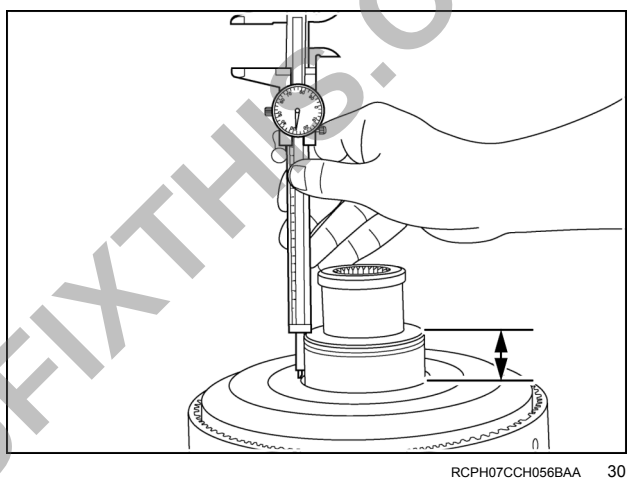
30. Install the piston over the shaft.



RCPH07CCH188AAA 29

31. Measure the distance between the top of the hub flange and the top of the piston.
    - If the measured dimension is greater than **29.7 mm**, use one spring spacer during reassembly.
    - If the measured dimension is greater than **31.2 mm**, use two spring spacers during reassembly.
    - If the measured dimension is less than **29.7 mm**, do not use a spring spacer during reassembly.

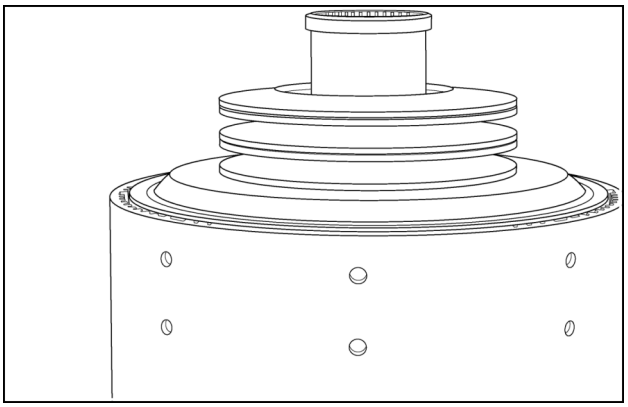
NOTE: *If a spring spacer(s) is needed, it will be installed between the belleville springs and the retainer ring later.*



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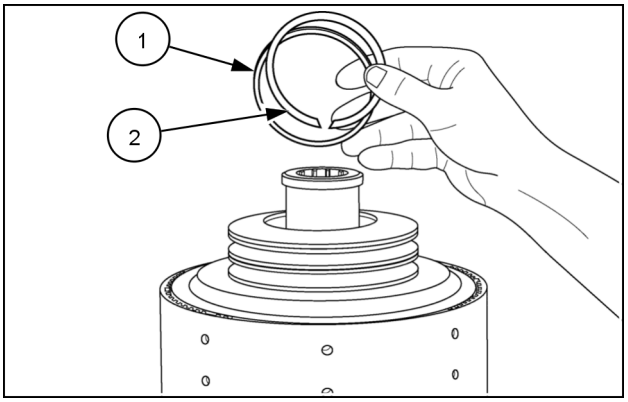
32. Remove piston, spacers, friction plates and backing plate from the hub.
33. Install the five belleville springs over the shaft as shown.

NOTICE: *Align and center the springs so they will not catch on the shaft when they are compressed.*



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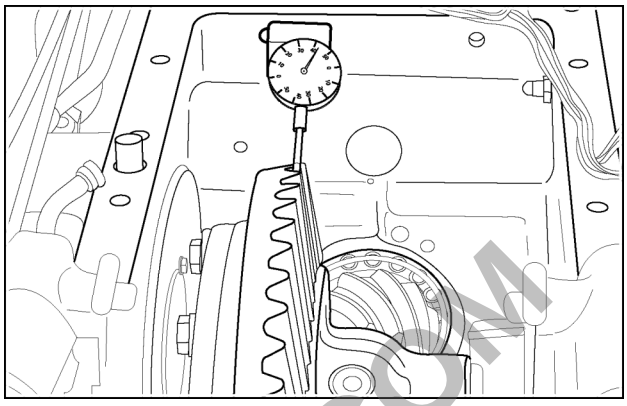
34. Place the spring spacer(s), if required, and the locking ring **(1)** and retaining ring **(2)** over the shaft.



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4. Adjust ring and pinion backlash as follows:
   A. Mount a dial indicator on the rear frame.
   B. Position the dial indicator so that it contacts one tooth on the ring gear. Do not move the pinion gear.
   C. Rotate the ring gear in either the forward or reverse direction to achieve full contact with the pinion gear.
   D. Zero the dial indicator.
   E. Rotate the ring gear in the opposite direction to achieve full contact with the pinion gear in the opposite direction.
   F. Record the dial indicator reading.
   G. The dial indicator reading is the ring and pinion gear backlash. The backlash for the standard duty set must be between **0.18 - 0.28 mm** (**0.007 - 0.011 in**). The backlash for the heavy duty set must be between **0.23 - 0.36 mm** (**0.009 - 0.014 in**).
   H. To adjust the ring and pinion gear backlash, move shims from one side of the differential to the other. Moving a **0.254 mm** (**0.010 in**) shim from one side to the other will change the backlash approximately **0.169 mm** (**0.0067 in**).



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NOTICE: *The pinion shaft must be fixed and may not move during this measurement.*

Next operation:
Differential - Gear tooth contact (27.106)

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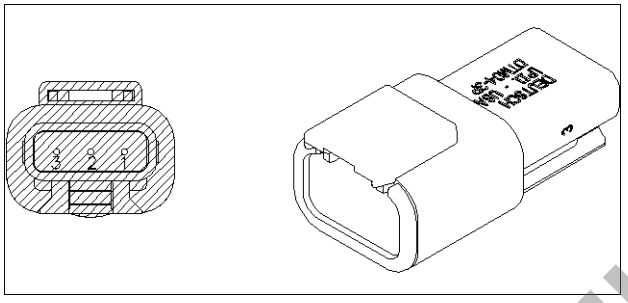
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CONNECTOR X-112 - LEFT HAND POWER MIRROR

CONNECTOR X-112 - LEFT HAND POWER MIRROR			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	951A (WH)	LEFT HAND MIRROR HORIZONTAL	
2	950A (GY)	LEFT HAND MIRROR COMMON	
3	949A (WH)	LEFT HAND MIRROR VERTICAL	



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5021-Auto PTO disabled 1106
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5022-PTO switch is in the on position when the engine is off 1107
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5026-The 12 volt supply to the PTO is too low 1108
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5027-Low side of PTO solenoid shorted to ground 1109
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5028-Clutch speed sensor open or short to B+ 1110
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5029-Clutch speed sensor short to ground 1112
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5030-Shaft size speed sensor open or short to B+ PTO small shaft switch 1114
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5031-Shaft size speed sensor short to ground 1115
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

5032-12VF3 voltage supply is low 1116
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6001-MFD solenoid failed 1117
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6002-Rear diff lock solenoid failed 1119
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6003-Brake light relay fault 1121
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6004-Rear diff lock switch failure 1123
Magnum 235 [ZCRD02585 -] Full Powershift Transmission, Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6005-Diff lock and auto diff lock switches are both active 1124
Magnum 235 [ZCRD02585 -], Magnum 260 [ZCRD02585 -] Full Powershift Transmission, Magnum 290 [ZCRD02585 -] Full Powershift Transmission, Magnum 315 [ZCRD02585 -] Full Powershift Transmission, Magnum 340 [ZCRD02585 -] Full Powershift Transmission

6006-MFD switch failed 1125
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Test type	Test point 1	Test point 2	Expected results
1. Continuity	**ODFT**, pin 1	**2**, pin 24	Approximately **0 - 0.10 ohms**
2. Continuity	**ODFT**, pin 2	**2**, pin 28	Approximately **0 - 0.10 ohms**
3. Continuity	**ODFT**, pin 3	**2**, pin 32	Approximately **0 - 0.10 ohms**
4. Continuity	**ODFT**, pin 4	**2**, pin 27	Approximately **0 - 0.10 ohms**
5. Short circuit	**2**, pin 28	**2**, pins 24, 27, 32	Open circuit
6. Short circuit	**2**, pin 24	**2**, pins 27, 32	Open circuit
7. Short circuit	**2**, pin 27	**2**, pin 32	Open circuit

A. If readings equal expected results, go to step **4**.

B. If readings do not equal expected results, find and repair the damaged section(s) of the wiring harness. Return unit to field operation.

4. Check voltage and ground at the engine controller.

Turn the keyswitch off.

Remove connector **1** from the ECU.

Turn the engine keyswitch on; engine remains off.

Measure voltage and continuity between the test points indicated in the table below.

Use the **0.4 mm** (**0.017 in**) diameter test probes from the Tier II (NEF) repair kit **380040185** when connecting the multimeter to the engine connector.

Test Type	Test point 1	Test point 2	Expected Results
1. Voltage	**1**, pins 2, 3, 8, 9, 40	Ground (engine block)	Approximately **12 volts**
2. Continuity	**1**, pins 5, 6, 10, 11	Ground (engine block)	Approximately **0 - 0.10 ohms**

A. If the voltages and ground are correct, continue with step **5**.

B. If the voltages and ground are not correct, repair or replace the harness and return unit to field operation.

5. Download the most recent software in the engine controller.

Test engine operation.

A. Error code does not redisplay. Return unit to field operation.

B. Error codes redisplays. Replace the engine controller, and return unit to field operation.

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