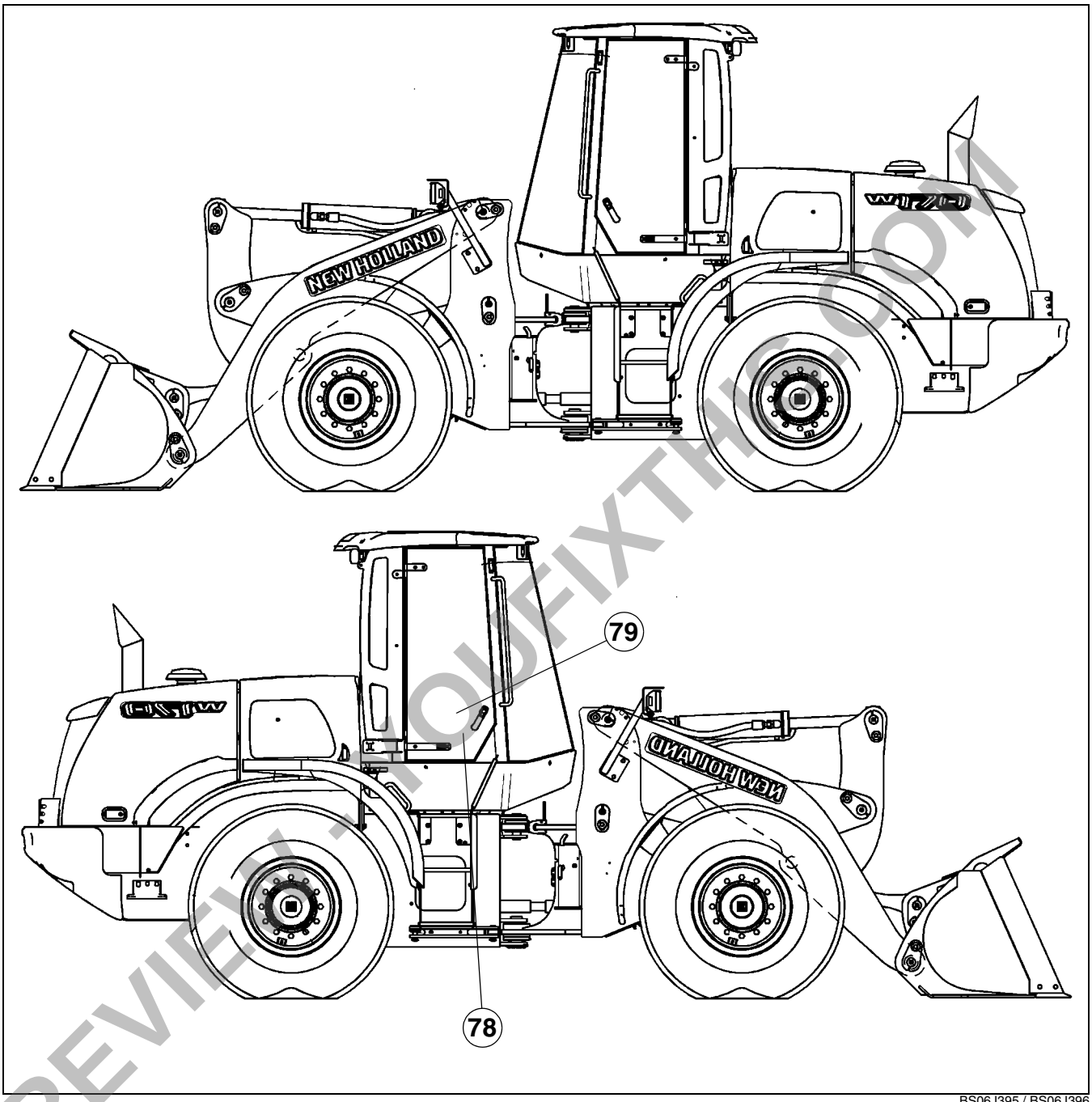
72 – Hydraulic Filter Restriction Switch		
Located on hydraulic filter block.		
Check Points	**Correct Reading**	**Possible Cause of Bad Reading**
NOTE: *Hydraulic filter restriction switch closes at 2.8 bar (40 psi).*		
Check between the housing of the hydraulic filter restriction switch and ground	Continuity	Bad ground connection between the hydraulic filter restriction switch and ground.
NOTE: *Put the master disconnect switch and the ignition switch in the ON position.*		
Terminal for wire 31H to ground.	Approximately 11.5 volts	Check the instrument cluster (62).
NOTE: *If the readings are correct replace the hydraulic filter restriction switch.*		

73 – Hydraulic Oil Temperature Sender		
Located on hydraulic filter block.		
Check Points	**Correct Reading**	**Possible Cause of Bad Reading**
Terminal for wire 0-HW to ground	Continuity	Bad ground circuit.
NOTE: *Disconnect the connector from the hydraulic oil temperature sender.*		
Between terminals of hydraulic oil temperature sender	3521 ohms at 20° C (68° F)	Replace hydraulic oil temperature sender.
NOTE: *Put the master disconnect switch and the ignition switch in the ON position.*		
Terminal A for wire 36H to ground	Approximately 5 volts	Check the instrument cluster (62).

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BACK UP ALARM CONTROLS



BS06J395 / BS06J396

78. BACK UP ALARM RELAY

79. BACK UP ALARM DISABLE SWITCH

NOTE: *The battery must be at full charge and all connections clean and tight before doing any testing of the electrical system. Use a Multimeter for the following tests.*

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TORQUE SPECIFICATIONS - DECIMAL HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers dry, or when lubricated with engine oil. Not applicable if special graphities, Molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs



Size	Pound-Inches	Newton metres
1/4 inch	108 to 132	12 to 15
5/16 inch	204 to 252	23 to 28
3/8 inch	420 to 504	48 to 57
Size	Pound-Feet	Newton metres
7/16 inch	54 to 64	73 to 87
1/2 inch	80 to 96	109 to 130
9/16 inch	110 to 132	149 to 179
5/8 inch	150 to 180	203 to 244
3/4 inch	270 to 324	366 to 439
7/8 inch	400 to 480	542 to 651
1.0 inch	580 to 696	787 to 944
1-1/8 inch	800 to 880	1085 to 1193
1-1/4 inch	1120 to 1240	1519 to 1681
1-3/8 inch	1460 to 1680	1980 to 2278
1-1/2 inch	1940 to 2200	2631 to 2983

Grade 8 Bolts, Nuts, and Studs



Size	Pound-Inches	Newton metres
1/4 inch	144 to 180	16 to 20
5/16 inch	288 to 348	33 to 39
3/8 inch	540 to 648	61 to 73
Size	Pound-Feet	Newton metres
7/16 inch	70 to 84	95 to 114
1/2 inch	110 to 132	149 to 179
9/16 inch	160 to 192	217 to 260
5/8 inch	220 to 264	298 to 358
3/4 inch	380 to 456	515 to 618
7/8 inch	600 to 720	814 to 976
1.0 inch	900 to 1080	1220 to 1465
1-1/8 inch	1280 to 1440	1736 to 1953
1-1/4 inch	1820 to 2000	2468 to 2712
1-3/8 inch	2380 to 2720	3227 to 3688
1-1/2 inch	3160 to 3560	4285 to 4827

NOTE: *Use thick nuts with Grade 8 bolts.*

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16 – Grid Heater Relay

Located in the right side of the engine compartment on cooling fan housing, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
Terminal for wire 0-BV to ground	Continuity	Bad ground circuit or bad EDC7 (24).
NOTE: *Put the master disconnect switch in the ON position and the ignition switch in ON position.*		
Terminal for wire 1-Y to ground	24 volts	Bad 150 ampere fuse. Check wires 1-Y and 1-E.
NOTE: *Have an assistant put the transmission in neutral and the ignition switch in the START position. Make sure engine temperature is below -0° C (32° F).*		
Terminal for wire 28G to ground	24 volts	Bad EDC7 (24), also check circuit 28G.
Terminal for wire 1-BE to ground	24 volts	Bad grid heater relay.

17 – Grid Heater

Located in the right side of the engine in intake manifold, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
NOTE: *Disconnect terminal for wire 1-BE from grid heater.*		
Terminal for wire 0-ES to ground	Continuity	Bad ground circuit.
Terminal for wire 1-BE of grid heater to ground	Resistance	If an open or short circuit is obtained, replace the grid heater.

18 – Circuit breaker Cab B+

Located in the right side of the engine compartment on cooling fan housing, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
Between terminal A and B on circuit breaker	Continuity	Bad circuit breaker

19 – Water Separator Heater

Located in the right side of the engine compartment on water separator housing, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
Terminal for wire 0-BW to ground	Continuity	Bad ground circuit.
NOTE: *Disconnect connector WSH from water separator heater.*		
Between terminals A and B of heater	1.9 ohms	Bad heater.
NOTE: *If the readings are good, check circuit 1-G between water separator heater connector WSH and power relay module C connector PRM-C1.*		

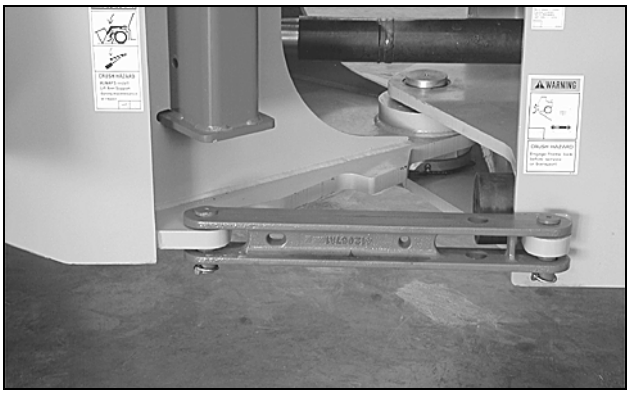
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ENGINE

Removal

STEP 1



BD03A040

Park machine on a level surface and lower bucket to ground. Put articulation lock in LOCKED position.

STEP 2

Stop engine. Actuate brake pedal several times to discharge brake accumulators. Put key switch in ON position and move loader control lever back and forth at least 30 times to release any pressure from hydraulic circuit. Put key switch in OFF position.

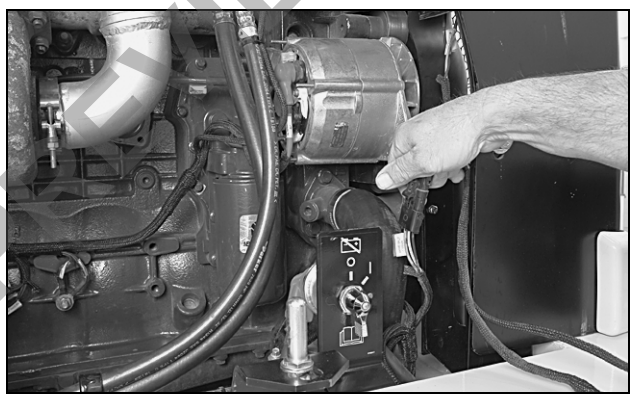
STEP 3

Slowly loosen the filler cap for hydraulic reservoir to release air pressure in hydraulic reservoir.

STEP 4

Put master disconnect switch in OFF position. Disconnect batteries from the machine.

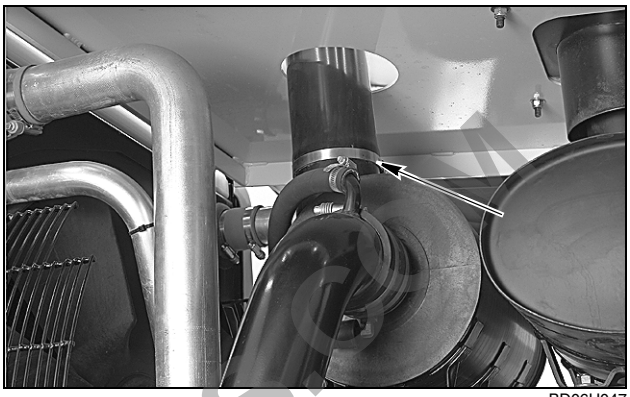
STEP 5



BD06H046

Disconnect the backup alarm.

STEP 6



BD06H047

Loosen clamps and remove air filter intake from air filter.

STEP 7



BD06H048

Run a lifting strap through the back hinge on each side of the hood, route the strap behind the exhaust stack.

STEP 8



BD06H052

Route the strap in front of the exhaust stack, attach lifting equipment to the strap, take up the slack.

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1 – Starting Relay

Located in the right side of the engine compartment on cooling fan housing, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
Terminal for wire 0-GB to ground	Continuity	Bad ground circuit.
NOTE: *Put the master disconnect switch in the ON position.*		
Terminal for wire 1-Z to ground	24 volts	Check circuit to batteries.
NOTE: *Put the transmission in NEUTRAL. Have another person hold the ignition switch in the START position.*		
Terminal for wire 21D to ground	24 volts	Check crank control relay (4), also check circuit 21D.
Terminal for wire 1-BB to ground	24 volts	Bad starting relay.

2 – Resistor

Located in the cab access panel for fuses and relays.

NOTE: *Turn master disconnect switch off, disconnect terminals from resistor.*

Check Points	Correct Reading	Possible Cause of Bad Reading
Between terminals of resistor	75 ohms	Bad resistor.

3 – Alternator

Located on left side of engine, open engine compartment to gain access.

Check Points	Correct Reading	Possible Cause of Bad Reading
Between housing of alternator and ground	Continuity	Bad ground connection.
NOTE: *Put the master disconnect switch in the ON position.*		
Between the B+ terminal of alternator and ground	24 volts	Check circuit to positive post of left battery. Bad master disconnect switch.
Between terminal for wire 1-BA and ground	24 volts	Bad wire 1-BA.
NOTE: *Put the ignition switch in the ON position.*		
Between the B+ terminal of alternator and ground	24 volts	Check circuit to positive post of left battery.
Terminal for wire 14 to ground	20 volts	Check circuit 14, 75 ohm resistor, and diode module. Bad fuse ECA-F4. Check power relay module A, and 105 ampere circuit breaker in engine compartment of machine.
NOTE: *If the readings are good, repair or replace the alternator.*		

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W130B Wheel Loader
Service Manual 84249884
(Replaces 87634759)

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Racine, WI 53404 U.S.A.

84249886

(Replaces 5-7070)

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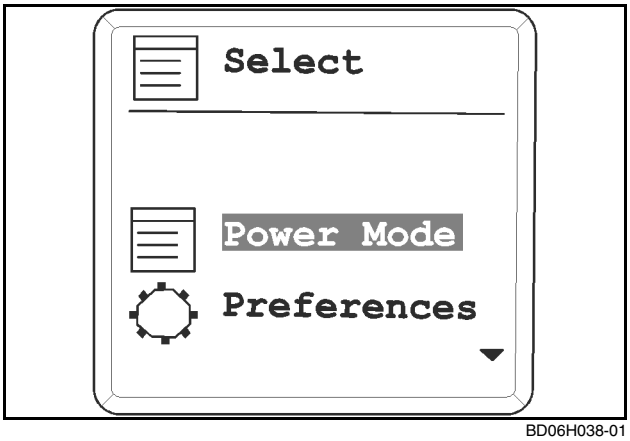
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POWER MODE SELECTION

1. After the oil temperatures have been raised to operating temperatures the power mode must be set to “Auto”.



BD06H038-01

2. Press and hold the confirmation “enter” button for two seconds to arrive at the above service screen.
3. Use down arrow to scroll through the menu’s.
4. High light Power Mode and press the enter key.
5. Power Mode Menu
   A. Max - Maximum power possible
   B. Standard - Standard operation
   C. Auto - Will cycle between Max and Standard
   D. Eco - Limited power for economy
6. High light Auto mode and press the enter key.
7. Press the escape key to return to the normal driving screen.

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Wire Identification Codes

21C Bk - 1.0

- 21C — Wire Name
- Bk — Wire Color
- 1.0 — Wire Size (mm^2)

Wire Size (mm^2)				
0.8 mm	1.0 mm	2.0 mm	5.0 mm	

Wire Color				
Bk = Black	DU = Dark Blue	S = Gray	LG = Light Green	K = Pink
T = Tan	W = White	N = Brown	G = Green	U = Blue
LU = Light Blue	Or = Orange	R = Red	P = Purple	Y = Yellow

Wire Identification			From Connector		To Connector	
Wire	**Circuit**	**Color, Size, and Material**	**Connector**	**Cavity**	**Connector**	**Cavity**
43 B	Dome Light Auto Mode	DU 0.8 GXL	ROOF, Roof to Cab Conn.	A	LDM2, Dome Light Auto	1
44A A	Brake Light Relay Out	T 0.8 GXL	SPL-BRK, Ultrasonic	A	ECC, Work Lights	D6
44A B	Brake Light Relay Out	T 0.8 TXL	SPL-BRK, Ultrasonic	A	AIC-1, Adv Instrument Cluster 1	15
44A C	Brake Light Relay Out	T 0.8 GXL	CAB-E, Cab Engine	8	SPL-BRK, Ultrasonic	A
44A D	Brake Light Relay Out	T 1.0 SXL	ENG, Engine Cab	8	SPL-B8, Ultrasonic	A
44A DN	Brake Light Relay Out	T 1.0 SXL	ENG, Engine Cab	8	ENG-H, Engine to Hood	2
44A E	Brake Light Relay Out	T 1.0 SXL	LLR-E, LH Rear Comb Light	1	SPL-B8, Ultrasonic	A
44A EN	Brake Light Relay Out	T 1.0 SXL	HD-N, Hood to Engine	2	SPL-J2-N, Ultrasonic	A
44A F	Brake Light Relay Out	T 1.0 SXL	LRR-E, RH Rear Comb Light	1	SPL-B8, Ultrasonic	A
44A FN	Brake Light Relay Out	T 1.0 SXL	LLR-N, LH Rear Comb Light	A	SPL-J2-N, Ultrasonic	A
44A GN	Brake Light Relay Out	T 1.0 SXL	LRR-N, RH Rear Comb Light	A	SPL-J2-N, Ultrasonic	A
44A J	Brake Light Power	T 1.0 SXL	SPL-L1, Ultrasonic	A	HD-9, Hood to Engine	2
44A K	Brake Light Power	T 1.0 SXL	SPL-L1, Ultrasonic	A	LRR-9, RH Rear Comb Light	1
44A L	Brake Light Power	T 1.0 SXL	LLR-9, LH Rear Comb Light	1	SPL-L1, Ultrasonic	A
44 A	Brake Light Control Power	T 0.8 GXL	CAB-F, Cab Front Chassis	23	ECC, Work Lights	D5
45A A	Left Turn Switch Power	N 0.8 GXL	FLSHR, Flasher Module	9	SRHSTLK, RH Stalk Switch	L
45B A	Right Turn Switch Power	N 0.8 GXL	FLSHR, Flasher Module	10	SRHSTLK, RH Stalk Switch	R
45H	Hazard Switch Power	N 0.8 GXL	FLSHR, Flasher Module	11	SHZ, Hazard Switch	3
45L	Left Turn Signal	N 1.0 SXL	FRONT, Cab Front Chassis	1	LLF, Lights LH	5
45L 9	Left Turn Signal	N 1.0 SXL	HD-9, Hood to Engine	3	LLR-9, LH Rear Comb Light	2
45L A	Left Turn Signal	N 1.0 SXL	ENG, Engine Cab	10	LLR-E, LH Rear Comb Light	2
45L AN	Left Turn Signal	N 1.0 SXL	ENG, Engine Cab	10	ENG-H, Engine to Hood	3
45L B	Left Turn Signal	N 0.8 GXL	CAB-E, Cab Engine	10	SPL-PK3, Splice 3-4 Way	D
45L BN	Left Turn Signal	N 1.0 SXL	HD-N, Hood to Engine	3	LLR-N, LH Rear Comb Light	C
45L C	Left Turn Signal	N 0.8 GXL	CAB-F, Cab Front Chassis	1	SPL-PK3, Splice 3-4 Way	C
45L D	Left Turn Signal	N 0.8 GXL	FLSHR, Flasher Module	8	SPL-PK3, Splice 3-4 Way	B
45L E	Left Turn Signal	N 0.8 TXL	SPL-PK3, Splice 3-4 Way	A	AIC-2, Adv Instrument Cluster 2	9
45N A	Flasher OPP Side Control	N 0.8 GXL	FLSHR, Flasher Module	2	64F, Flasher Connector	1

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83 – Dome Lamp

Located in top of cab.

Check Points	Correct Reading	Possible Cause of Bad Reading
Bulb	Continuity	Bad bulb.
Terminal for wire 0-MB to ground	Continuity	Bad ground circuit.
NOTE: *Put master disconnect switch in ON position. Put dome lamp switch in ON position.*		
Terminal for wire 19U-C to ground	24 volts	Check fuse ECC-F1, also check circuit 19U.
Terminal for wire 43-B to ground	24 volts 3 to 5 seconds	Check circuit 43, also check advanced instrument cluster (62) and time delay module (7).
NOTE: *If readings are good, replace dome lamp.*		

84 – Beacon Switch (Option)

Located on right side console.

Check Points	Correct Reading	Possible Cause of Bad Reading
Terminal for wire 0-B15 to ground	Continuity	Bad ground circuit.
NOTE: *Put master disconnect switch in ON position and driving lamp switch (95) in position 3.*		
Terminal for wire 19U-H to ground	24 volts	Check fuse ECC-F1, also check circuit 19U.
NOTE: *Put the beacon switch in the ON position.*		
Terminal for wire 46-C to ground	24 volts	Bad beacon switch.

85 – Left Hand Front Work Lamp

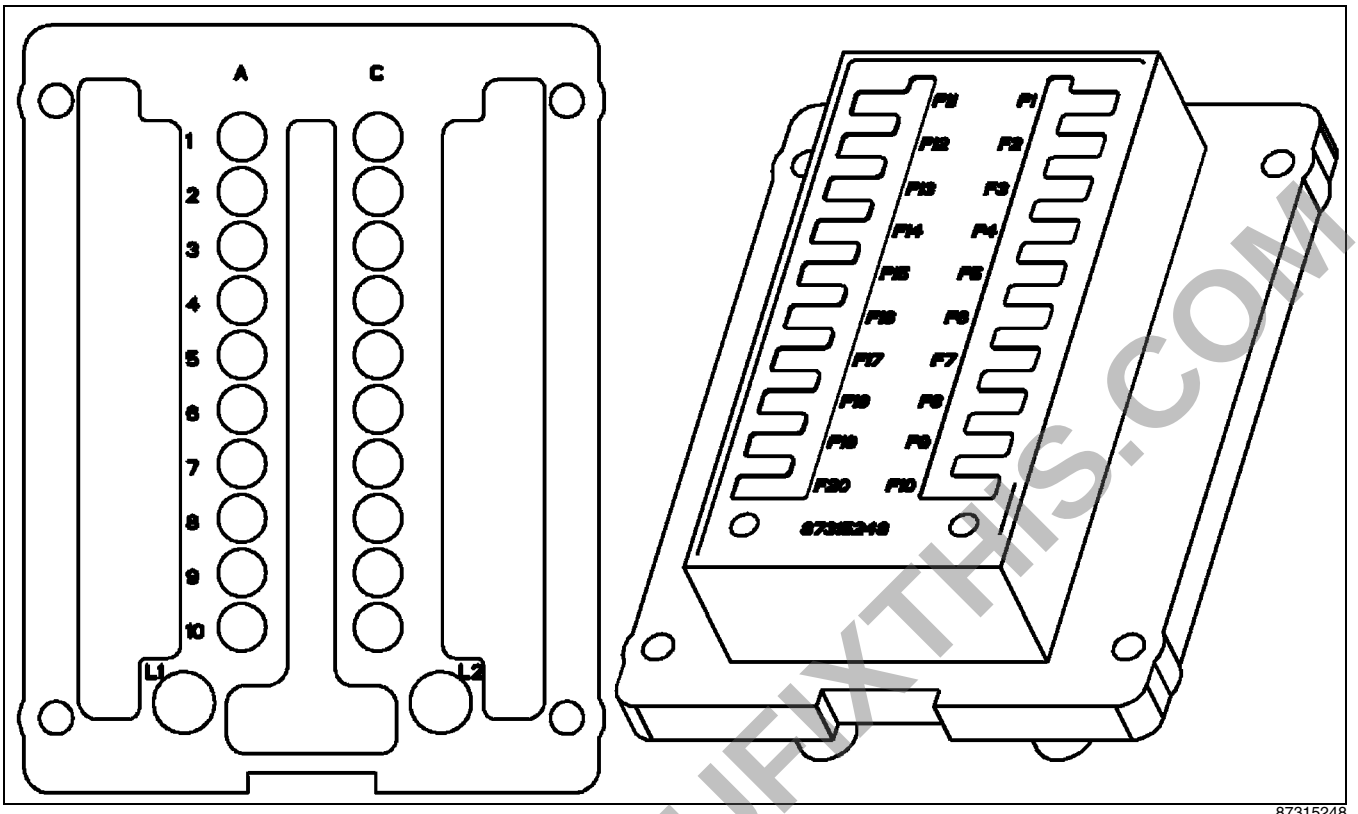
Located on left front side of cab.

Check Points	Correct Reading	Possible Cause of Bad Reading
NOTE: *Disconnect wiring harness connector LLFW from LH front work lamp connector.*		
Flood lamp connector pin A to pin B	Continuity	Bad lamp bulb.
NOTE: *Connect wiring harness connector LLFW to LH front work lamp connector.*		
Terminal for wire 0-MU to ground	Continuity	Bad ground circuit.
NOTE: *Put master disconnect switch in ON position. Put driving lamp switch (95) in position 3.*		
Terminal for wire 42C-H to ground	24 volts	Check fuse ECB-F1 and driving lamp switch (95). Also check circuit 42C from flood lamp to lamp switch (95) and wire 42-A to fuse ECC-F2.

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CONNECTOR ECA - ELECTRICAL CENTER A



87315248

CAV	WIRE IDENT	CIRCUIT
A1	19A-N	Transmission Fused Power
A2	18L-A	Comfort Steering Fused Power
A3	19E-A	AIC Wake Up Ignition
A4	19RR	Sec. Steering Ignition Fused Pwr
A5	19C-A	Pilot Control Relay Fused Pwr
A6	19D-A	Park Brake Relay Fused Power
A7	19P	Pin Engage/Fan Fused Power
A8	19B	Turn Signal Fused Power
A9	13C-B	Fuel Shutoff Fused Power
C1	18N	Blower Motor Fused Power
C2	19J	Front Wiper Fused Power
C3	19K	Rear Wiper Fused Power
C4	19H	Backup Alarm Relay Fused Pwr
C5	18M	AC Relay Fused Power
C6	19N	Seat Compressor Fused Pwr
C7	19M	Sec. Steering ACC Fused Pwr
L1	J1	Transmission ECM Power
L1	J2	Trans ECM Comfort Steering
L1	J3	Comfort Steering AIC Power
L1	J4	Emergency Steering AIC Pwr
L1	J5	Emergency Strg Plt Em Dtnts

CAV	WIRE IDENT	CIRCUIT
L1	J6	Pltem Dtnts Park Brake Sol
L1	J7	Park Brake Solenoid Horn
L1	J8	Fan Reverse/Turn Signal
L1	J9	Turn Signal Engine Shutdown
L2	J11	Blower Motor Power
L2	J12	Blower Mtr Front Wiper Washer
L2	J13	Front Wiper Rear Wiper Washer
L2	J14	Rear Wiper Washer Backup
L2	J15	Backup AC
L2	J16	AC Seat Compressor
L2	J18	Seat Compressor Emergency Steering

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MAINTENANCE

Electrolyte Level

If the battery is a maintenance free battery, check the level of the electrolyte every 1000 hours of operation or six months, whichever occurs first. For all other batteries, check the level of the electrolyte every 250 hours of operation.

NOTE: *A maintenance free battery will have the words Maintenance Free on the decal on the top of the battery. If the center part of the decal has been removed for access to the battery caps, it is possible that the words Maintenance Free have been removed from the decal.*

Check the level of the electrolyte more often during hot weather. The use of a large amount of water by the battery can be caused by high battery temperature or a voltage regulator setting that is too high. Keep the electrolyte level above the top of the plates in the battery at all times to prevent damage to the battery.

NOTE: *On maintenance free batteries it is necessary to remove the center part of the decal for access to the battery caps. Do not discard the center part of the decal. Install the center part of the decal after the battery caps have been installed.*

If the level of the electrolyte is low, add distilled water or other clean water until the electrolyte is 5 mm (¼ inch) below the level of the ring. Do not add more water than is needed. Too much water can cause bad performance, a short service life, and corrosion around the battery.

NOTE: *Add water only. DO NOT add electrolyte.*

Inspecting and Cleaning a Battery

If damage causes an electrolyte leak, replace the battery.

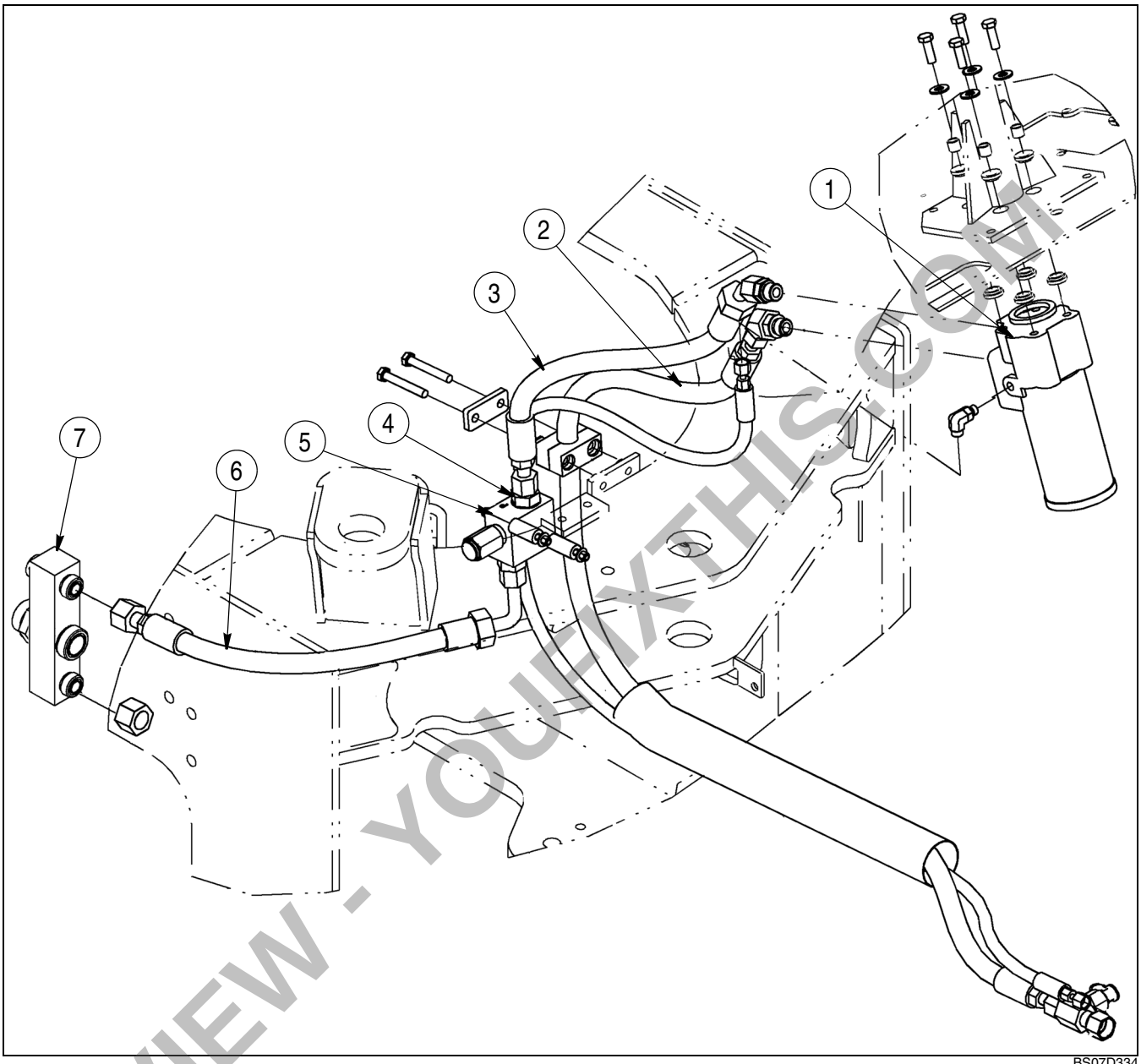
Inspect the battery at regular intervals for dirt, corrosion, and damage. Electrolyte and dirt on the top of the battery can cause the battery to discharge by making a passage for the current to flow.

If the battery must be cleaned, remove the battery from the battery carrier and clean the battery, cable terminals, and the battery carrier. When available, use Case Battery Saver and Cleaner according to the instructions on the container. Case Battery Saver and Cleaner also helps prevent corrosion. If Case Battery Saver and Cleaner is not available, use baking soda and water as a cleaner. DO NOT permit any type of cleaner to enter the cells of the battery.

Install the battery in the machine and make sure the fasteners are tight. Apply Case Battery Saver and Cleaner or Urethane Seal Coat to the cable terminals to prevent corrosion. See the Parts Counter Catalog. DO NOT apply grease.

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BS07D334

1. STEERING CONTROL VALVE
2. RETURN HOSE
3. PRESSURE HOSE
4. CONNECTOR M27 ORB
5. RELIEF VALVE
6. RETURN HOSE TO FILTERS
7. RETURN MANIFOLD

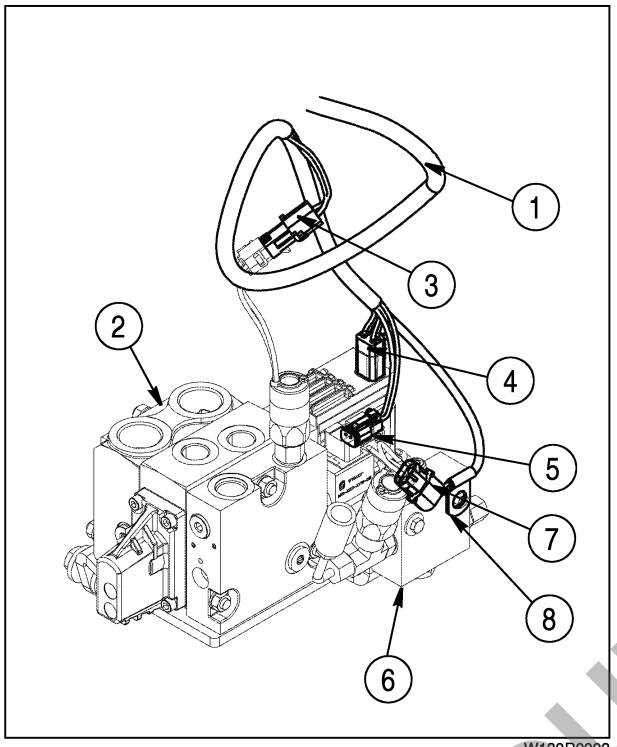
STEERING BACK PRESSURE VALVE ILLUSTRATION

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Installation

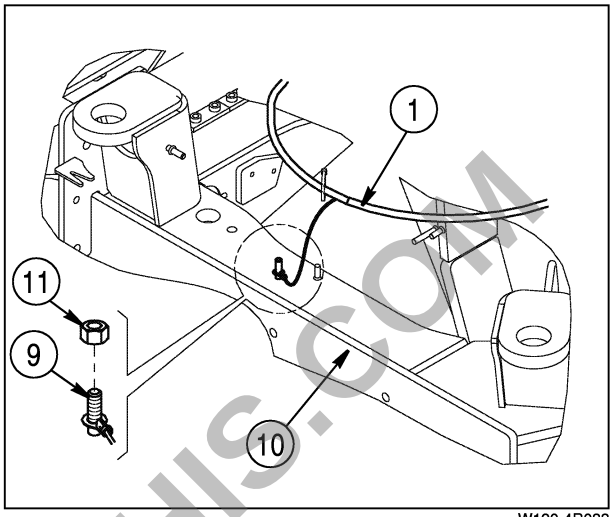
STEP 12



W130R0003

Connect the chassis harness (1) to the valve PVG32 (2), connect the connector (3) to the pilot pressure switch. Connect connector (5) to the solenoid valve. Connect connector (4) of the proportional valve. Connect connector (7) to the pressure switch on valve PVFC ((6) and secure the harness with strap (8) on the valve.

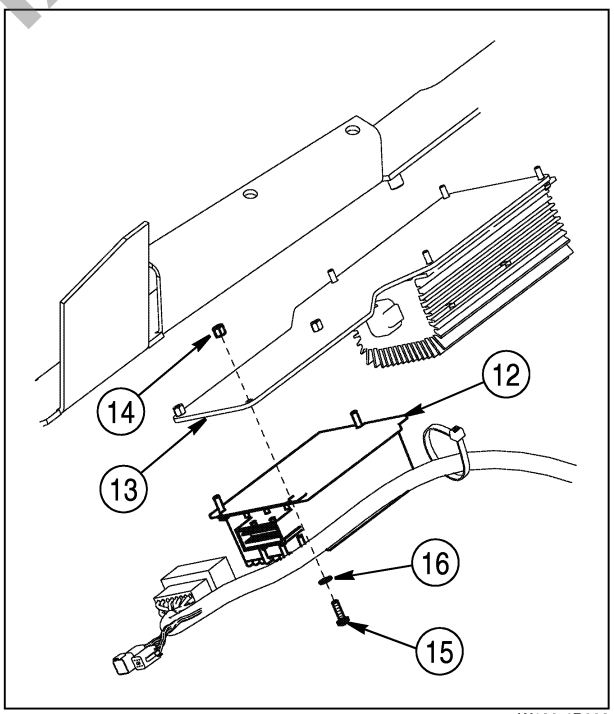
STEP 13



W190-4R088

Fasten the chassis harness (1) to the grounding stud (9) on the rear chassis frame (10). Install and tighten the nut (11).

STEP 14



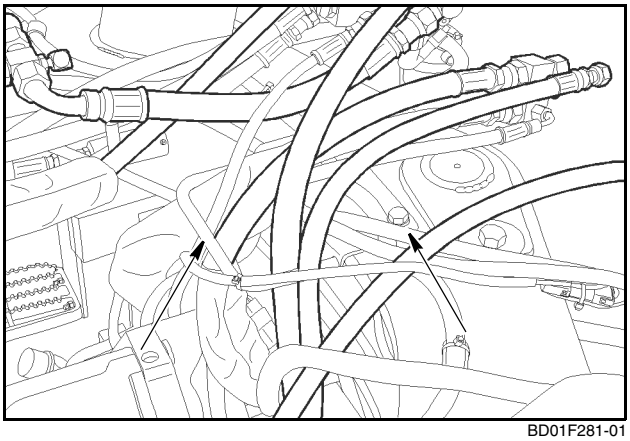
W190-4R083

Open the access panel on the right-hand side of the cab to access the fuse and relay compartment. Install the steering control module (12) on the supporting plate (13) by installing the three nuts (14), capscrews (15) and washers (16). Tighten the capscrews.

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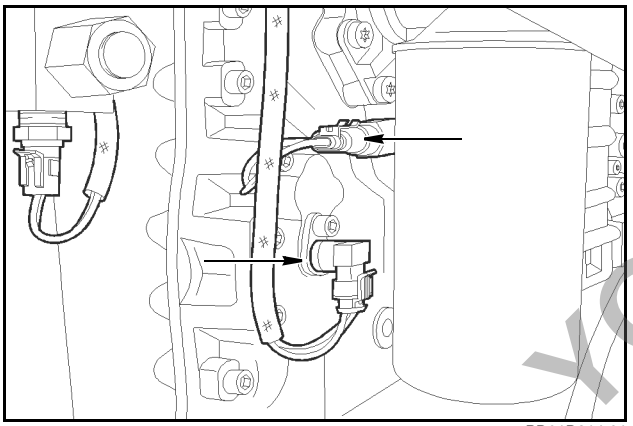
STEP 39



BD01F281-01

Position hose retainer on front of rear chassis and secure using two washers and bolts.

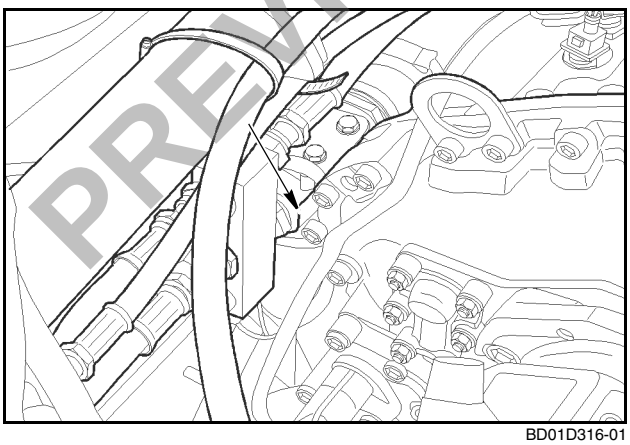
STEP 40



BD01D314-01

Connect transmission wiring harness connectors to output speed sensor and filter maintenance switch following tags installed during removal. Remove and discard tags.

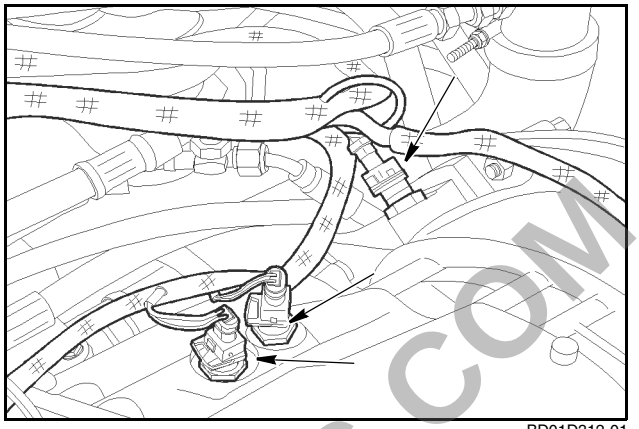
STEP 41



BD01D316-01

Install socket head bolt to secure wiring harness clamp.

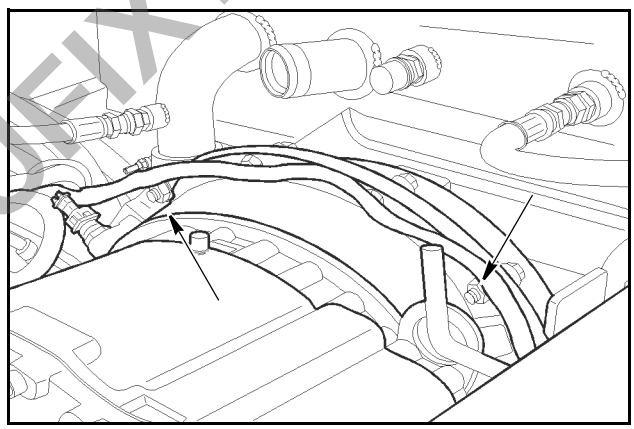
STEP 42



BD01D312-01

Connect transmission wiring harness connectors to turbine speed sensor, intermediate speed sensor, and engine speed sensor following tags installed during removal. Remove and discard tags.

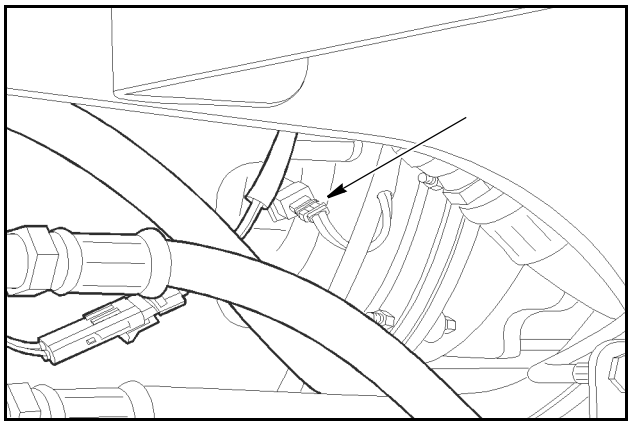
STEP 43



BD01D310-01

Install two socket head bolts to secure transmission wiring harness clamps.

STEP 44



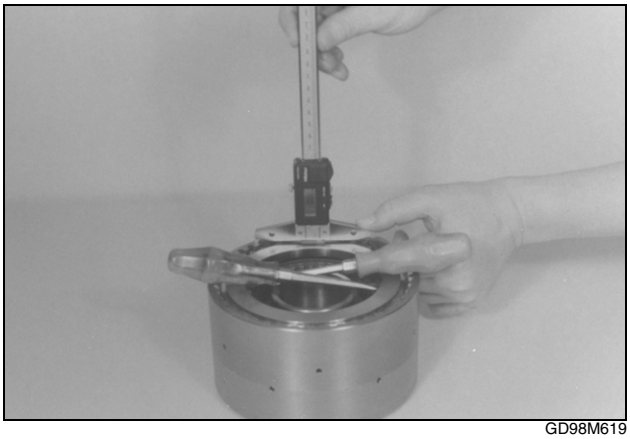
BD01D317-01

Connect transmission wiring harness connector to temperature sensor following tag installed during removal. Remove and discard tag.

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STEP 81



GD98M619

Use tools to lift the end shim against snap ring (upward) until contact is obtained. Measure and record dimension (B) from carrier face to end shim using depth gauge as shown. Subtract this measurement from the measurement of Step 80. The difference is the running clearance.

Example
Dimension A . . . . . 7.25 mm (0.29 in)
Dimension B . . . . . 4.45 mm (0.18 in)

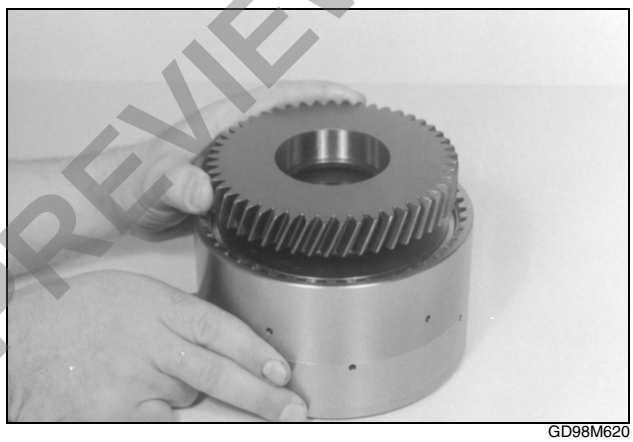
Difference = Running. . . . . 2.80 mm (0.11 in)
Clearance

Required running clearance is 2.7 to 2.9 mm (0.106 to 0.114 in). Use snap ring(s) of different thickness as necessary to obtain correct running clearance.

STEP 82

Remove clutch disc pack, apply oil to discs, and install clutch disc pack, end shim, and snap ring as determined in Step 81.

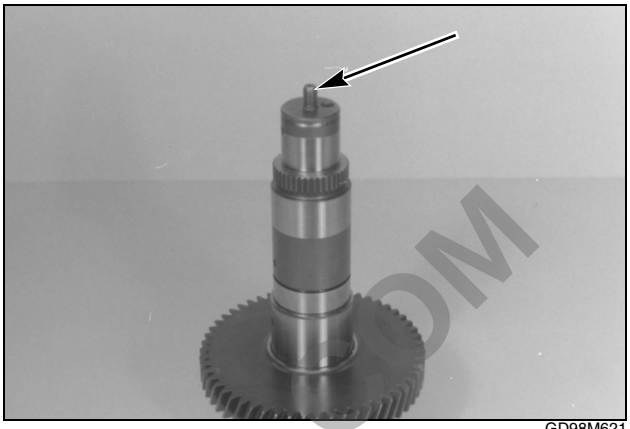
STEP 83



GD98M620

Install idler gear to align and engage all inner discs, then remove idler gear.

STEP 84



GD98M621

Apply Loctite 243 to stud. Tighten stud to a torque of 17 Nm (150 lb-in).

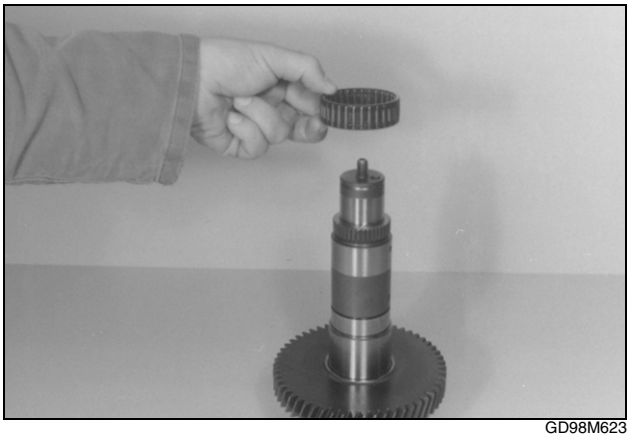
STEP 85



GD98M622

Install ball bearing until contact is obtained. Secure using snap ring.

STEP 86



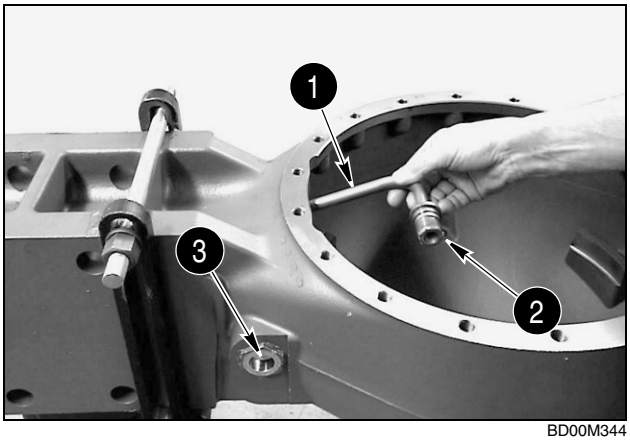
GD98M623

Install needle bearing.

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STEP 121

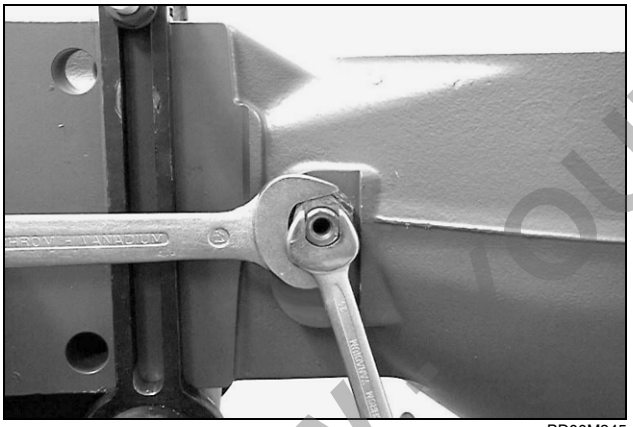


BD00M344

1. BRAKE TUBE
2. FITTING
3. CONNECTOR

Install the brake tube (1) in the axle housing, inserting the fitting (2) through the connector (3).

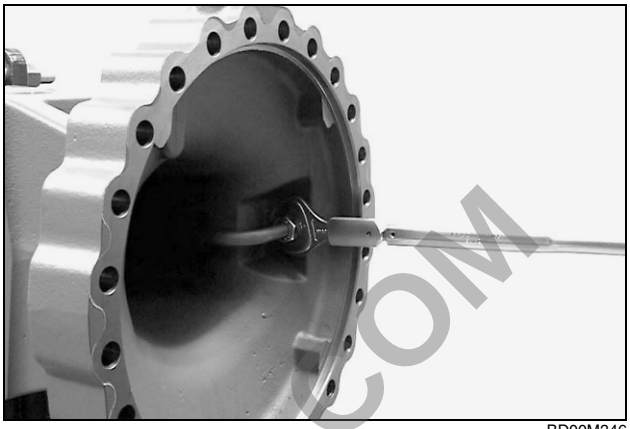
STEP 122



BD00M345

Install the nut to secure the brake tube fitting. Tighten the nut to a torque of 70 Nm (52 lb-ft).

STEP 123

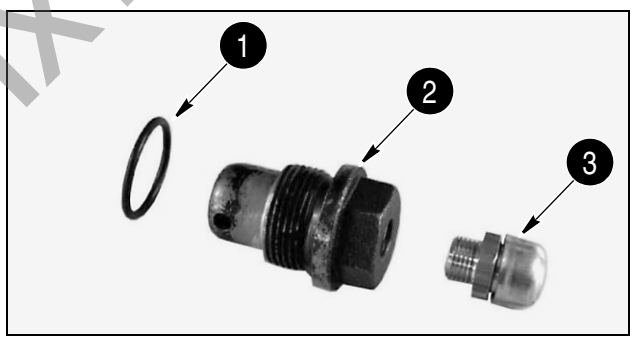


BD00M346

Connect fitting on opposite end of brake tube to fitting installed in wheel end. Tightening brake tube fitting to a torque of 80 Nm (60 lb-ft).

NOTE: *Do Steps 117 to 123 on other wheel end.*

STEP 124

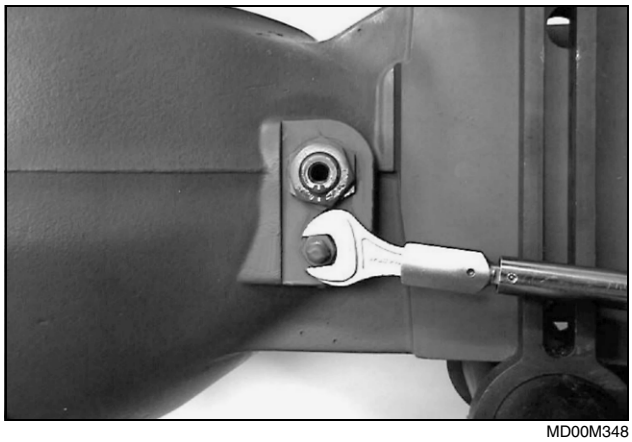


BD00M347

1. O-RING
2. PLUG
3. BREATHER

Remove and discard O-ring (1) from plug (2) and install a new O-ring. Install breather (3) in plug.

STEP 125

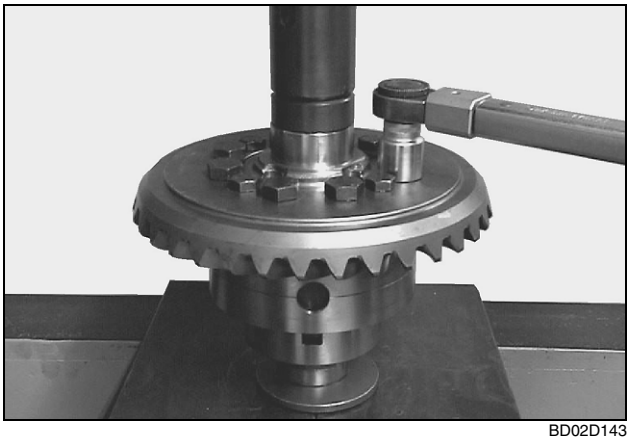


MD00M348

Install the plug in axle housing. Tighten plug to a torque of 70 Nm (52 lb-ft)

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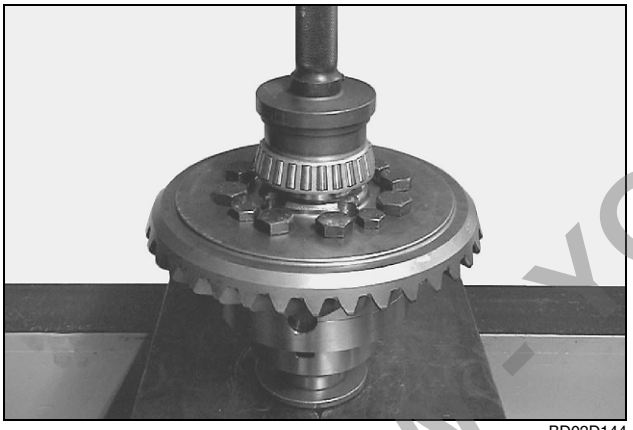
STEP 163



BD02D143

Put the differential in a press to prevent it from turning. Apply Loctite 262 to threads of bolts (13 and 14). Tighten M16 bolts (13), to a torque of 300 Nm (221 lb-ft); tighten M12 bolts (14) to a torque of 120 Nm (88 lb-ft).

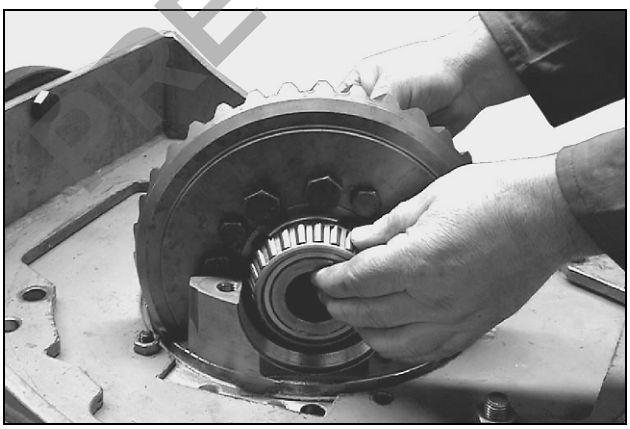
STEP 164



BD02D144

Using proper size sleeve pushing on inner race of bearing, press bearing on differential housing until bearing is against housing. Repeat to install other bearing.

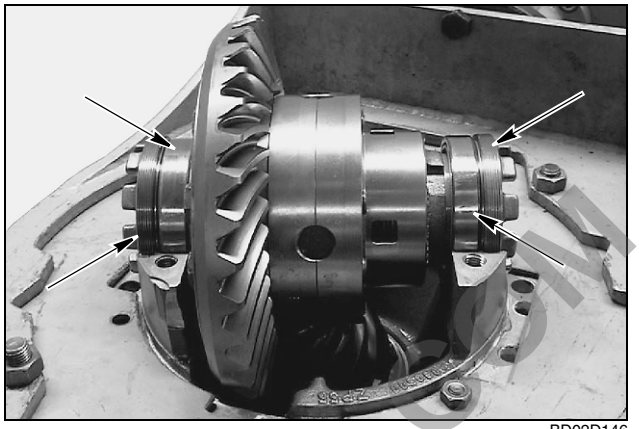
STEP 165



BD02D145

Install differential in differential carrier.

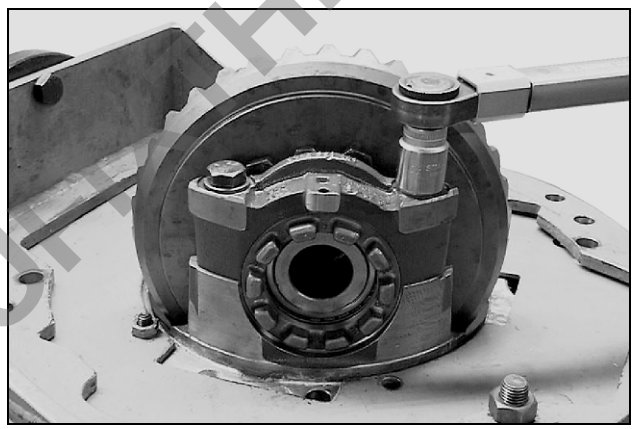
STEP 166



BD02D146

Install both bearing cups and adjusting nuts.

STEP 167



BD02D147

Position bearing brackets; make sure threads of bearing brackets and adjusting nuts are not crossed. Put Loctite 262 on threads of four bolts. Install bolts and tighten to a torque of 185 Nm (136 lb-ft).

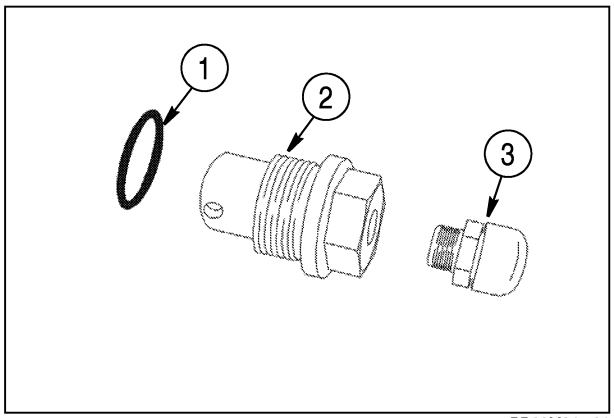
STEP 168

Using a spanner wrench, tighten the two adjusting nuts evenly until there is a light pressure against the bearings on each side of the differential.

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STEP 187



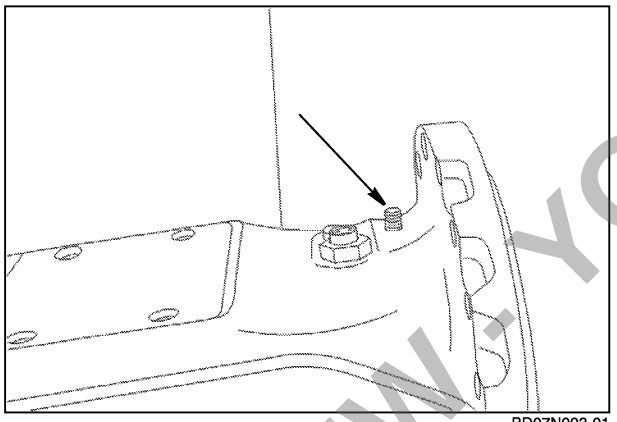
BD00M347-01

BREATHER VENT EXPLODED VIEW

1. O-RING
2. PLUG
3. BREATHER

Remove and discard O-ring (1) from plug (2) and install a new O-ring. Install breather (3) in plug and tighten to general bolt torque specifications.

STEP 188

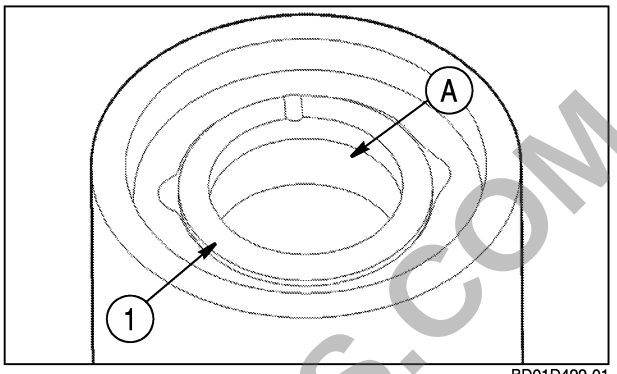


BD07N003-01

Install the breather plug in axle housing and tighten to general bolt torque specifications.

Pivot Pin Bushing Removal

STEP 189



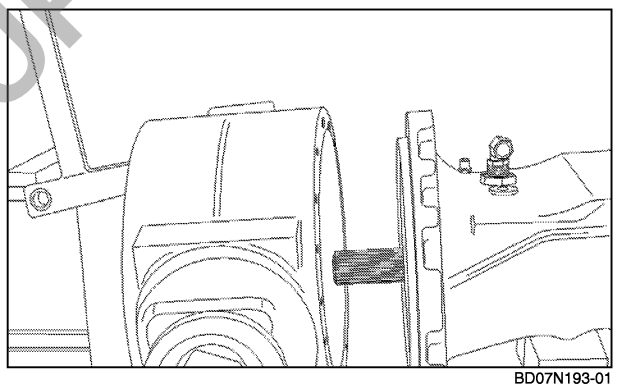
BD01D499-01

1. DIFFERENTIAL HOUSING PIVOT PIN BUSHING

A. THRUST SURFACE

Inspect pivot pin bushings (1) in differential housing for cracks, breaks, deformation, or other damage. Check oil splash grooves for scoring or chipping. Check for scoring on thrust surface (A). If bushings require replacement, do Steps 190 through 198.

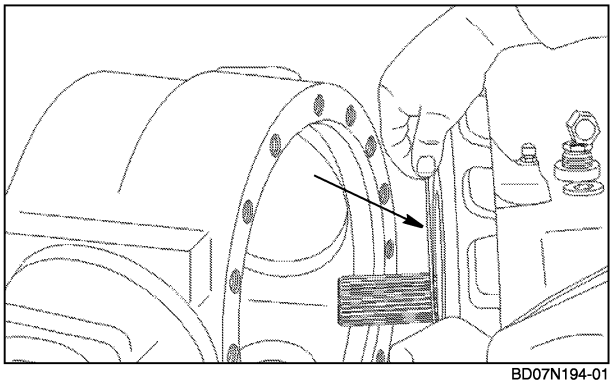
STEP 190



BD07N193-01

Support left axle housing and wheel end with a suitable stand. Using acceptable lifting equipment to support differential housing, remove bolts and remove from left axle housing.

STEP 191



BD07N194-01

Remove and discard O-ring from axle housing.

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Testing the Brake Modulation Pressure 6
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BRAKE PUMP OUTPUT TEST 9
brake pump output test 9
Brake Valve Exploded View 10

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STEP 89



BD01D710

Align the pivot pin with the front frame and install the spacer, washer and bolt. Tighten the bolt.

STEP 90



BD01D708

Remove the caps and plugs and connect the hoses to the lift cylinder.

STEP 91

If the yoke of the lift cylinder is not aligned with the loader frame, have another person start and run the engine at low idle and use the loader control lever to SLOWLY move the yoke into alignment with the loader frame.

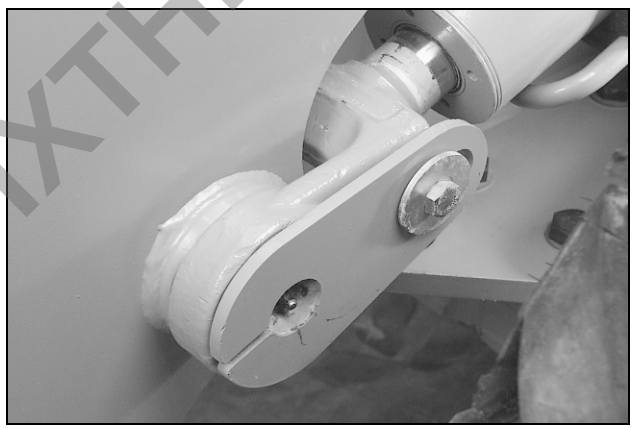
STEP 92



BD01D712

Install the pivot pin for the yoke. Stop the engine.

STEP 93



BD01D709

Align the pivot pin with the yoke and install the spacer, washer and bolt. Tighten the bolt.

STEP 94

SLOWLY extend and retract the piston rod three times to remove any air from the lift cylinders.

STEP 95

Lubricate the pivot pins with molydisulfide grease.

STEP 96

Check the level of hydraulic oil in the reservoir and add as required. Tighten the filler cap on the hydraulic reservoir.

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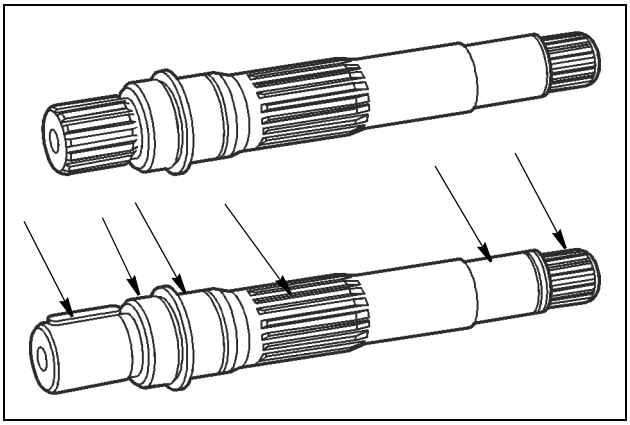
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Inspection

STEP 16

Clean all parts in cleaning solvent. Be careful not to remove the alignment marks made during disassembly.

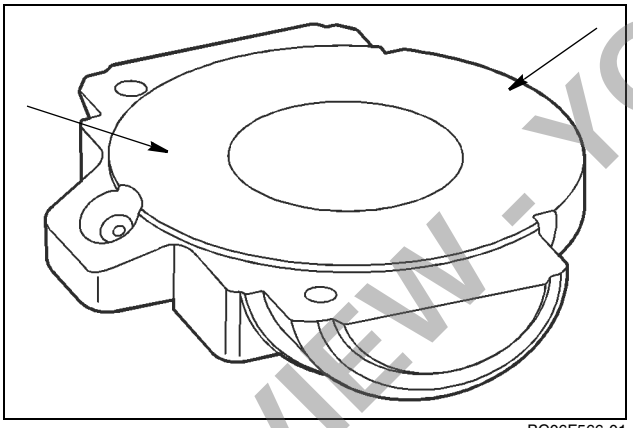
STEP 17



BC06F565-01

Check for wear on the splines, seal areas for grooves, bearing areas for scaring, and key set.

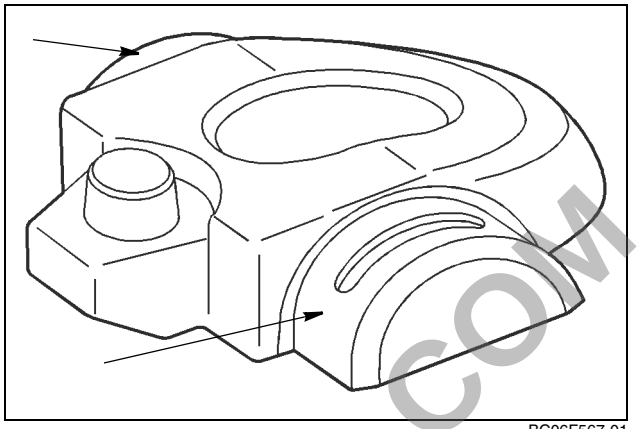
STEP 18



BC06F566-01

Check the surface that the pistons contact for grooves and scaring.

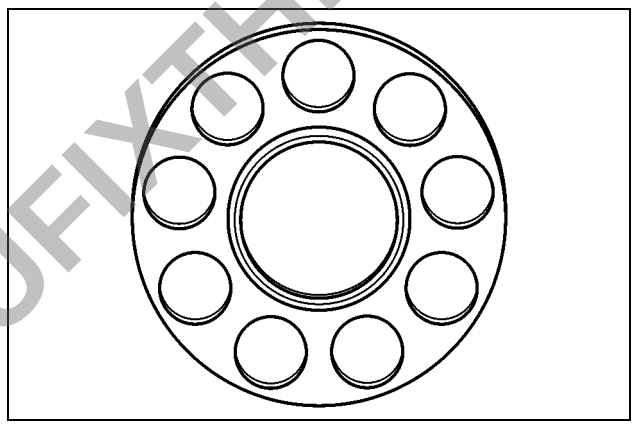
STEP 19



BC06F567-01

Check the bearing surface.

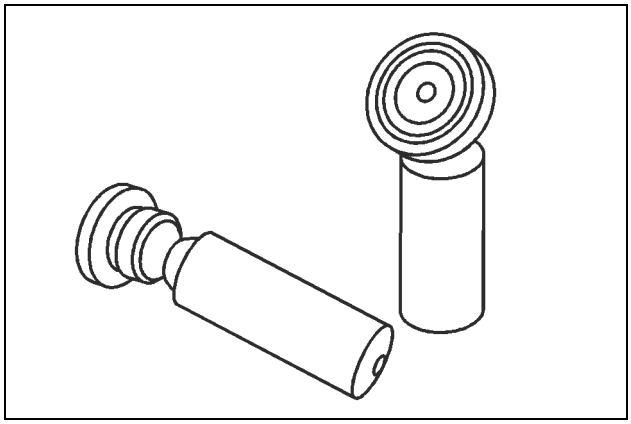
STEP 20



BC06F568-01

Check that the retaining plate is free of grooves and that there is no sign of wear.

STEP 21



BC06F569-01

Check the sliding surface for scratches or metal deposits, check the tightness of the cup on the piston.

NOTE: *If a piston needs to be replaced, all of the pistons must be replaced.*

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Charging Accumulator With Nitrogen

IMPORTANT: *The four valves A, D, and E must be in the positions noted in the procedure before connecting the Nitrogen Accumulator Charging Kit to the machine or nitrogen, refer to illustration on page 5.*

1. Close the shutoff valve (D) by turning it all the way to the left (counterclockwise), refer to the illustration on page 5.
2. Close the gauge valve (E) by turning it all the way to the right (clockwise).
3. Connect the charging gauges to the nitrogen supply tank, open the supply tank valve.
4. Slowly turn valve (D) clockwise while watching the pressure gauge (B). Stop turning valve (D) when the needle on the gauge (B) reaches 10 bar (145 psi).

NOTE: *If the needle goes over the needed pressure, quickly open and close valve (E) and check the pressure again.*

The charging kit is now ready to be installed on the accumulator.

5. Remove the cap from the accumulator.
6. Loosen the sealing plug with an Allen wrench.

NOTE: *just loosen do not open to far so the gas leaks out*

7. Install adapter 380001168 (F).
8. Back off the needle valve (A) on the accumulator end of the charging hose by turning it counterclockwise to the maximum amount. This prevents nitrogen from escaping from the accumulator when the charging hose is attached to the accumulator gas charging valve.
9. Install the charging hose fitting onto the adapter.
10. Tighten the needle valve by turning it clockwise. Slowly open the gauge valve (E) and observe the reading on the gauge. This reading is the nitrogen pressure level inside the accumulator.
11. Fill the accumulator to pressure according to Temperature/Charge Pressure chart.

TEMPERATURE		CHARGE PRESSURE	
10° C	50° F	16.36 BAR	237 PSI
13° C	55° F	16.55 BAR	240 PSI
16° C	60° F	16.74 BAR	243 PSI
18° C	65° F	16.87 BAR	245 PSI
21° C	70° F	17.06 BAR	248 PSI
24° C	75° F	17.26 BAR	254 PSI
27° C	80° F	17.45 BAR	250 PSI
29° C	85° F	17.58 BAR	253 PSI
32° C	90° F	17.77 BAR	258 PSI
35° C	95° F	17.96 BAR	261 PSI
38° C	100° F	18.15 BAR	263 PSI

TEMPERATURE/CHARGE PRESSURE CHART

12. Close valve (E) by turning to the right (clockwise). After a few minutes open valve (E) and check the accumulator for leakage.
13. Back off the needle valve (A) on the accumulator end of the charging hose by turning it counterclockwise the maximum amount. This will prevent nitrogen from escaping from the accumulator as the hose is removed.
14. Close the valve on the nitrogen supply tank.
15. Adjust the regulator (D) to the minimum pressure setting by turning the knob counterclockwise.
16. Slowly remove the charging hose from the accumulator pressure valve.

NOTE: *A small amount of nitrogen will escape when disconnecting the hose.*

17. Snug the gas charging valve on the accumulator, remove the adapter from the accumulator.
18. Torque the gas charging valve to 20 to 25 Nm (15 to 18.5 pound feet)
19. Install the cap on the accumulator.
20. Remove the charging gauges from the nitrogen supply tank.

NOTE: *A small amount of nitrogen will escape when disconnecting the hose.*

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Removal

STEP 17
Park the machine on a level surface and lower the bucket to the floor.

STEP 18
If changing any air conditioning components, discharge the air conditioning system according to the instructions in Section 9003.

STEP 19

BD02N160

If changing the heater core, put a 37 liter (10 gallon) container below radiator drain. Remove radiator cap. Remove cap and drain coolant into container. Install cap after coolant has drained. Install radiator cap.

STEP 20
Place the master disconnect in the OFF position.

STEP 21
Disconnect the wiring harness from the operator's seat (if equipped with air seat option).

STEP 22

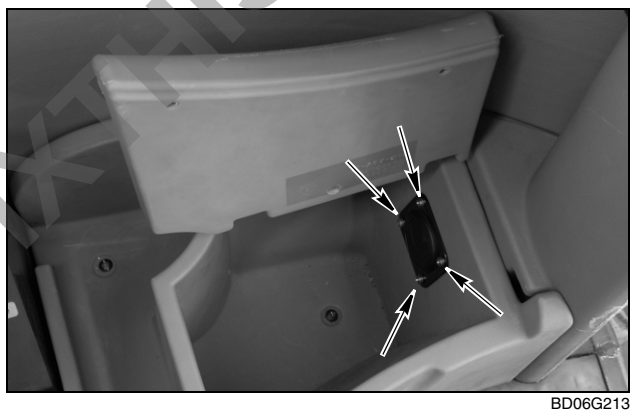
BD06G202

Remove the four bolts that fasten the operator's seat to the upper box, remove the seat from the machine.

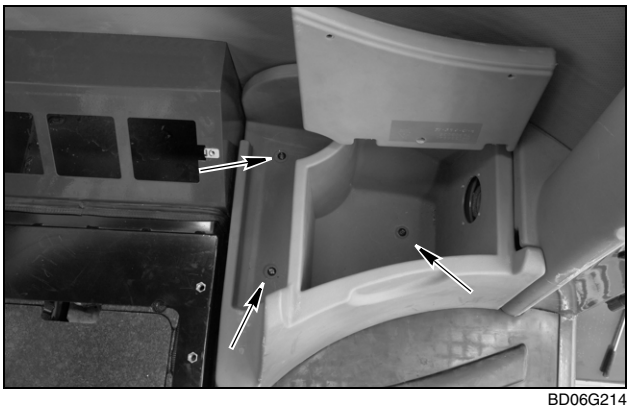
STEP 23

BD06G212

Open the cover on the cooler.

STEP 24

BD06G213

Remove the four screws securing the air vent, remove the vent cover.

STEP 25

BD06G214

Remove the three screws securing the cooler to the cab, remove the cooler.

STEP 26
Fold the rubber mat over to gain access to the upper box mounting bolts.

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