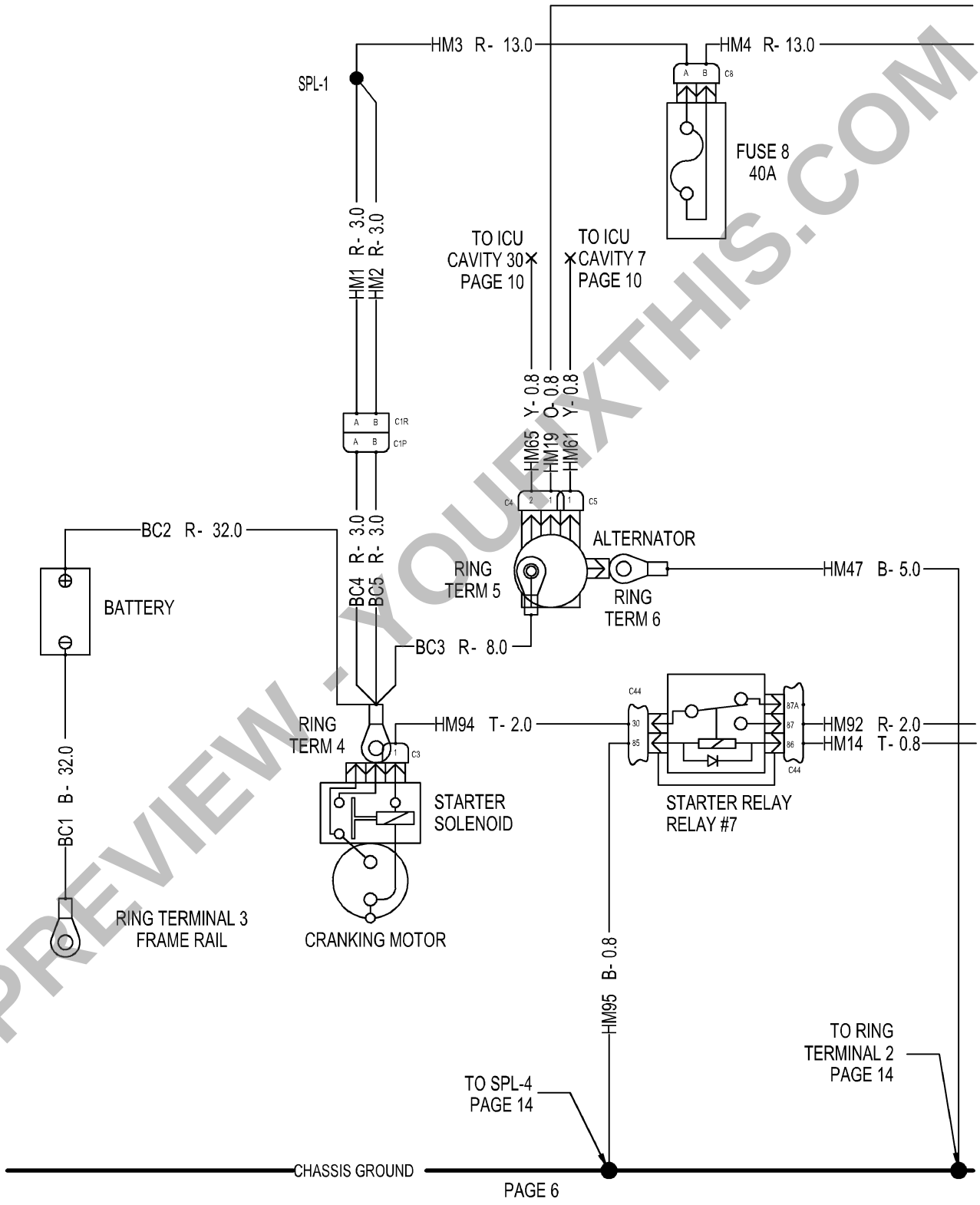
CHARGING SYSTEM



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MINIMUM HARDWARE TIGHTENING TORQUES

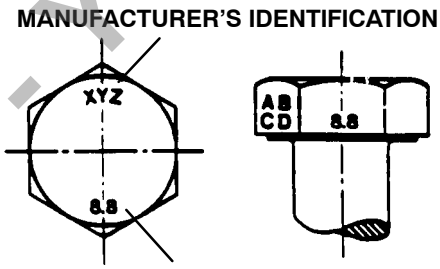
IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

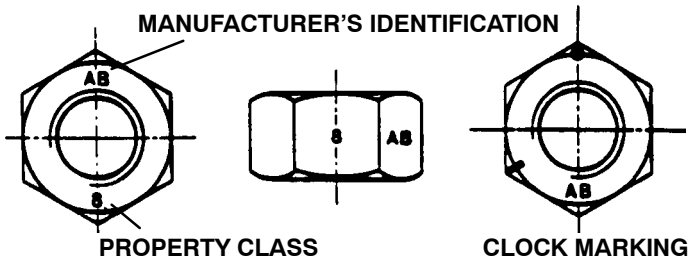
NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	1.7 (15)*	2.2 (19)*	2.6 (23)*	3.4 (30)*	3.7 (33)*	4.8 (42)*	2.3 (20)*
M6	5.8 (51)*	7.6 (67)*	8.9 (79)*	12 (102)*	13 (115)*	17 (150)*	7.8 (69)*
M8	14 (124)*	18 (159)*	22 (195)*	28 (248)*	31 (274)*	40 (354)*	19 (169)*
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	38 (28)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	66 (49)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	164 (121)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	330 (243)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	572 (422)

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
HEX CAP SCREW AND CARRIAGE BOLTS
CLASSES 5.6 AND UP



HEX NUTS AND LOCKNUTS
CLASSES 05 AND UP



86529681 REV F 5.1

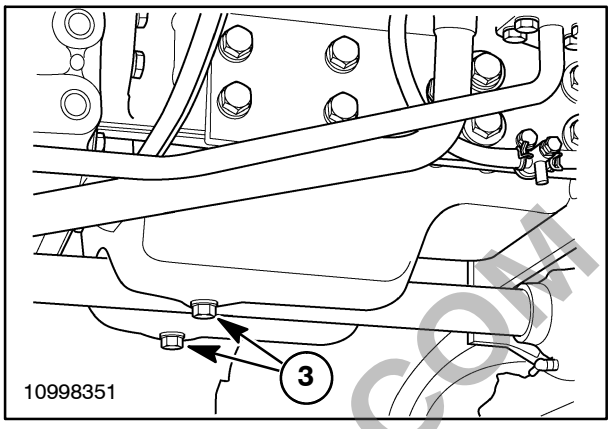
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To change the engine oil:

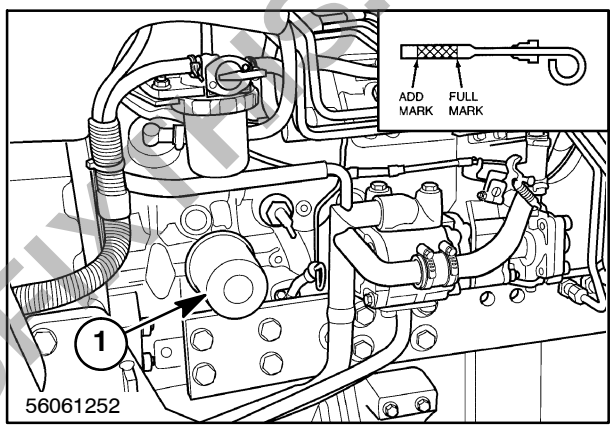
1. Remove the filler cap (2, figure 5).
2. Place a suitable container beneath the drain openings to catch the used oil. With the tractor engine off, but at normal operating temperature, remove the drain plugs, 3. Reinstall the plugs after all of the oil has been drained.

NOTE: *The combined capacity of the engine crankcase and oil filter is 6.0 liters/6.3 U.S. qts.*



6

3. Next, place a container below the oil filter, 1, to catch the used oil and unscrew the oil filter. Properly dispose of the used oil and filter.
4. Coat the gasket on the new filter with a thin film of clean oil. Screw the filter into place until the gasket contact its mating surface, then turn the filter approximately three-quarters of a turn by hand. Do not overtighten.
5. Add the proper type and level of new oil (see chart below), then start the engine and check the filter for leaks.



7

Recommended Oils

Ambient Temp (°F)	Recommended Oil
+ 40-120°	Ambra Supergold HSP (SAE30)
+10-120°	Ambra Mastergold HSP (15W40)
-10-120°	Ambra Mastergold HSP (10W30)
-20-60°	Ambra Mastergold HSP (5W30)
NOTE: *Tractors are originally shipped with (10W30) oil.*	

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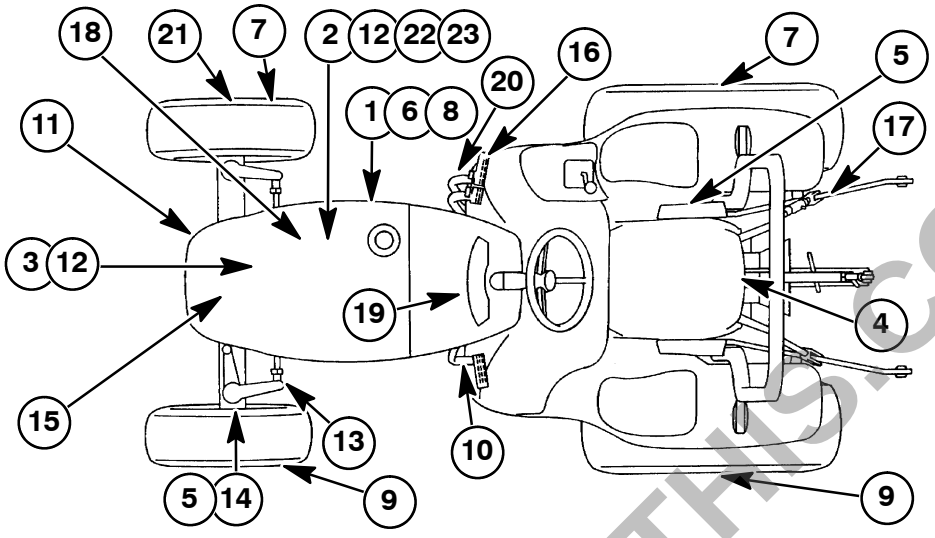
SECTION 4
SPECIFICATIONS

	Model Boomer 3040	Model Boomer 3045	Model Boomer 3050
ENGINE			
Type/Model	Diesel/N844	Diesel/N844L	Diesel/N844L
Engine Gross Horsepower	29.8 kw (40.0)	33.6 kw (45)	37.3 kw (50.0)
Cylinders	4	4	4
Bore	84 mm (3.31 in)	84 mm (3.31 in)	84 mm (3.31 in)
Stroke	90 mm (3.54 in)	100 mm (3.94 in)	100 mm (3.94 in)
Displacement	2.0 L (121.7 cu-in)	2.2 L (135.2 cu-in)	2.2 L (135.2 cu-in)
Compression Ratio	22.5:1	22.5:1	22.5:1
Firing Order	1-3-4-2	1-3-4-2	1-3-4-2
Low Idle Speed	1050 ± 50 RPM	1050 ± 50 RPM	1050 ± 50 RPM
Maximum Speed:			
High Idle	2840 ± 25 RPM	2840 ± 25 RPM	3025 ± 25 RPM
Rated	2600 RPM	2600 RPM	2800 RPM
CAPACITIES			
Fuel Tank	49.2 liters/ 13 U.S. gals	49.2 liters/ 13 U.S. gals	49.2 liters/ 13 U.S. gals
Cooling System	7.9 liters/ 8.3 U.S. qts	8.0 liters/ 8.4 U.S. qts	8.0 liters/ 8.4 U.S. qts
Engine Crankcase:			Engine Crankcase:
With Filter	6.0 liters/ 6.3 U.S. qts	6.0 liters/ 6.3 U.S. qts	6.0 liters/ 6.3 U.S. qts
Rear Axle & Transmission (Includes Hydraulics)	36 liters/ 9.2 U.S. gals	36 liters/ 9.2 U.S. gals	36 liters/ 9.2 U.S. gals
Front Axle Final Reduction /Differential Gear Case	5.3 liters/ 5.6 U.S. qts	5.3 liters/ 5.6 U.S. qts	5.3 liters/ 5.6 U.S. qts

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LUBRICATION AND MAINTENANCE CHART
NEW HOLLAND BOOMER 3040 - TWO-WHEEL DRIVE



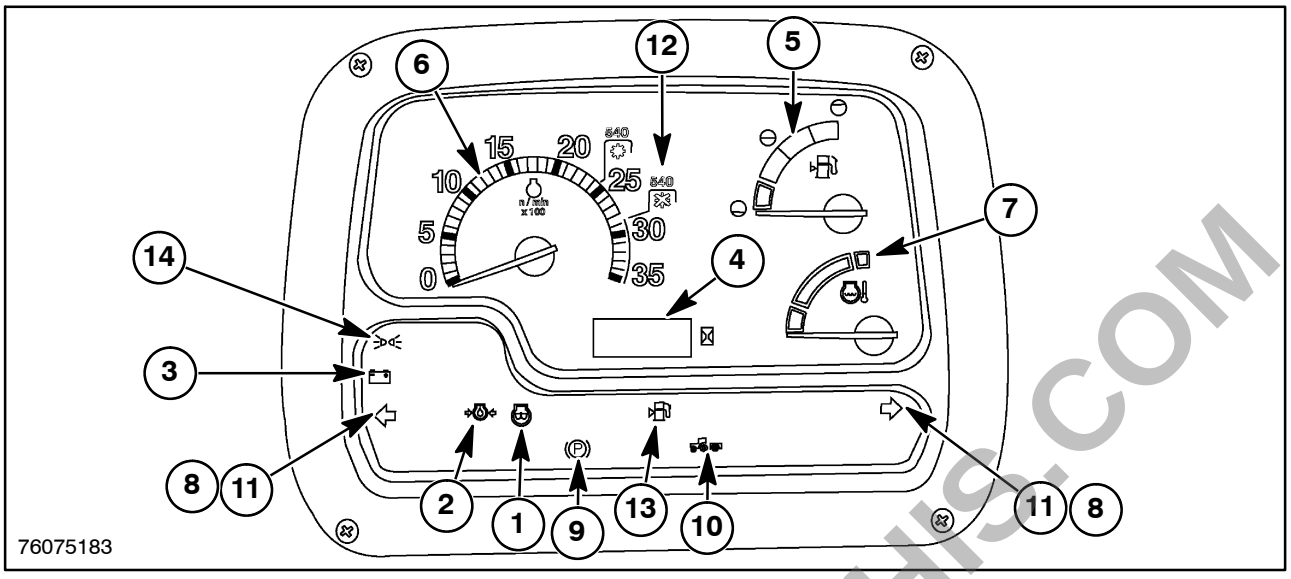
1

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTER-VALS
1	Engine Oil Level	X					Every 10 Hours or Daily
2	Air Cleaner	X					
3	Radiator Coolant	X					
4	Transmission Oil Level	X					
5	Hydraulic Filter				X		First 50 Hours
1, 6	Engine Oil & Filter				X		
7	Tire Pressure	X					
8	Fuel Filter				X		
9	Wheel Bolt Torque	X					
—	All Fluid Levels	X					
20	Brake Pedal Free Play	X					
7	Tires	X					Every 50 Hours
10	Clutch Pedal Free Play	X		X		X	
11	Battery	X					
12	Fan Belt	X					
20	Brake Pedal Free Play	X					
	Lubrication Fittings:						
13	Steering Linkage			X			
14	Front Wheel Spindles (2)			X			
15	Axle Pivot Shaft			X			
16	Brake Pedal			X			
17	3-Point Linkage			X			
18	Power Steering Cylinder			X			
19	Pedal Shaft			X			

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTER-VALS
2	Air Cleaner Element		X				Every 100 Hours
8	Fuel Filter		X				
1, 7	Engine Oil & Filter				X		Every 200 Hours
20	Brake Pedal Free Play					X	
12	Fan Belt					X	
9	Wheel Bolt Torque	X					
4	Transmission Oil				X		Every 300 Hours
5	Hydraulic Filter				X		
8	Fuel Filter Element				X		
21	Front Wheel Bearings			X			Every 600 Hours *Refer to Repair Manual
22*	Fuel Injectors	X					
23*	Valve Clearance	X					
2	Air Cleaner Element				X		Seasonal
3	Radiator Coolant				X		
2	Safety Air Filter Element				X		Every 3rd Primary Element Change or Every **1000** Hours, Whichever Comes First

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INSTRUMENT PANEL

1. **Cold Starting Indicator Light** - Illuminates when the key switch is turned to the “ACC/RUN” position. It remains lit for approximately four seconds when the key is in position, during which time the glow plugs are heating the precombustion chambers of the cylinder head.
2. **Engine Oil Pressure Warning Light** - Illuminates with the key switch in the “ACC/RUN” position and remains lit for a short period of time after the engine is started. The light indicates oil pressure only, and goes out when sufficient oil pressure is present at the oil sender. If the bulb lights during operation, stop the tractor engine immediately and investigate the cause.
3. **Battery Charge Warning Light** - Illuminates when the key switch is in the “ACC/RUN” position and goes out when the engine is started. If this bulb lights during operation, it indicates that the charging system is not operating normally. As the battery can become fully discharged under these conditions, the problem should be investigated as soon as possible.
4. **Proof Meter** - Records the hours and portions of hours that your tractor has been operated, regardless of engine RPM. Use the proof meter as a guide to determine hourly service and maintenance intervals.
5. **Fuel Gauge** - Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the “ACC/RUN” position. It will resister “empty” with the key switch in the “STOP” position.
6. **Tachometer** - Registers engine RPM (Revolutions Per Minute) The gauge is marked in increments of 100 and will return to zero when the engine is not running.
7. **Temperature Gauge** - Indicates coolant temperature. It is activated when the key switch is turned to the “ACC/RUN” position. The gauge will register “cold” with the key switch in the “STOP” position. If the needle registers in the green range of the gauge, this indicates a normal operating temperature. If the needle moves to the red portion of the gauge, indicating an overheated condition, stop the tractor engine IMMEDIATELY and investigate the cause.
8. **Flasher Warning Hazard Lights** - Operate when the flasher switch is turned on, regardless of the key switch position. Use the flasher warning lights and the SMV placard when traveling on public roads, day or night.
9. **Park Brake Light** - Illuminates if the park brake is engaged when the key switch is turned from the “OFF” position.
10. **PTO “On” Indicator** - When either of the PTO positions is engaged, and the key switch is in the “ACC/RUN” or “START” position, this indicator will be illuminated amber. PTO indicator will flash when PTO reaches or exceeds 630 PTO rpm.
11. **Flasher Turn Lights** - Operate when the turn signal switch is moved forward for right turns (the right-hand arrow will flash) or rearward for left turns (the left-hand arrow will flash.) The key switch must be in the “ACC/RUN” or “START” position for the turn signals to operate.
12. **PTO Speed Indicator** - Determined by the position of the needle on the tachometer. The tachometer is marked to indicate 540 PTO RPM. If the needle registers above the 540 RPM mark, this indicates a dangerous over speed condition, and the engine RPM should be reduced immediately.
13. **Low Fuel Indicator Light** - Will come on when fuel level reaches 1 gallon or (4.5 liters) left in tank.
14. **Head Light Indicator** - Illuminates when the key switch is turned to the “ACC/RUN” position and the head light switch is turned on.

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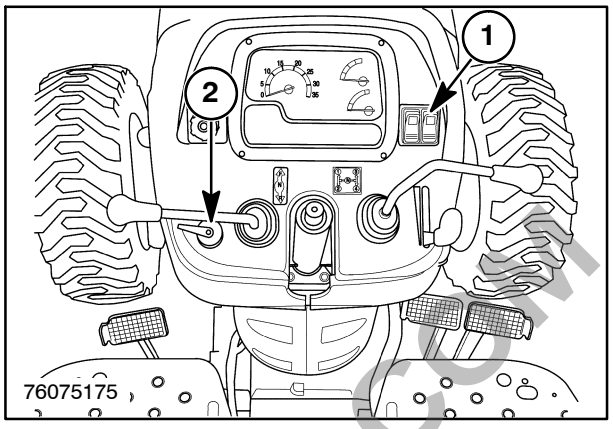
Flasher Warning (Hazard) Lights

The flasher warning lights are activated by pressing the rocker switch, 1, with the key switch in ANY position. For your protection, use the flasher warning lights and the SMV (Slow Moving Vehicle) placard (8, Figure 11), when traveling on public roads, day or night.

Flasher Turn Lights (Turn Signals)

The turn signal lights are activated by moving the selector switch, 2, forward for right turns or rearward for left turns. The key switch must be in the “ACC/RUN” position for the turn signals to operate.

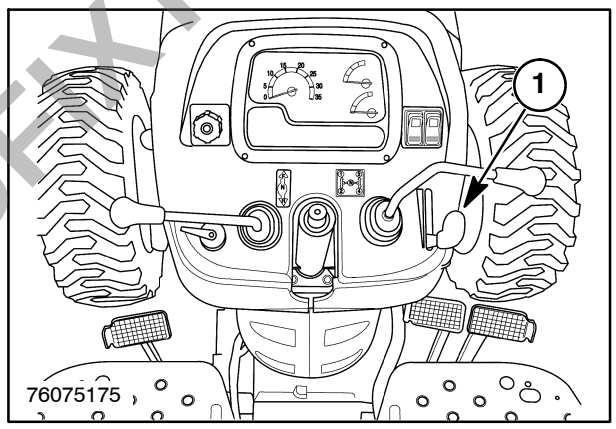
NOTE: *If the turn signals are activated while the Flasher Warning (Hazard) lights are operating, the light opposite the turn direction will stop blinking until the turn signal is turned off.*



14

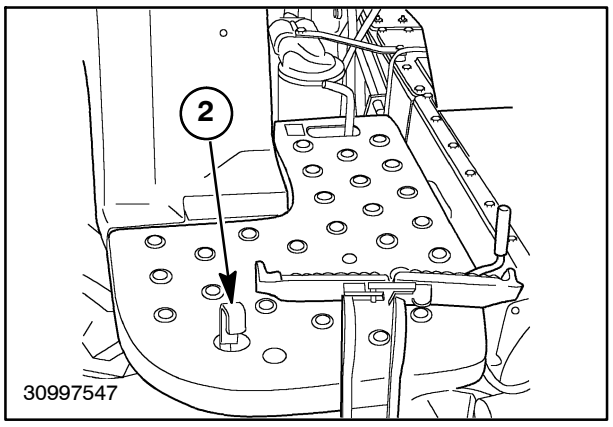
THROTTLE CONTROLS

The hand throttle, 1, is located on the right-hand side of the console. Push the throttle forward to increase engine RPM. Pull the throttle rearward to decrease engine RPM.



15

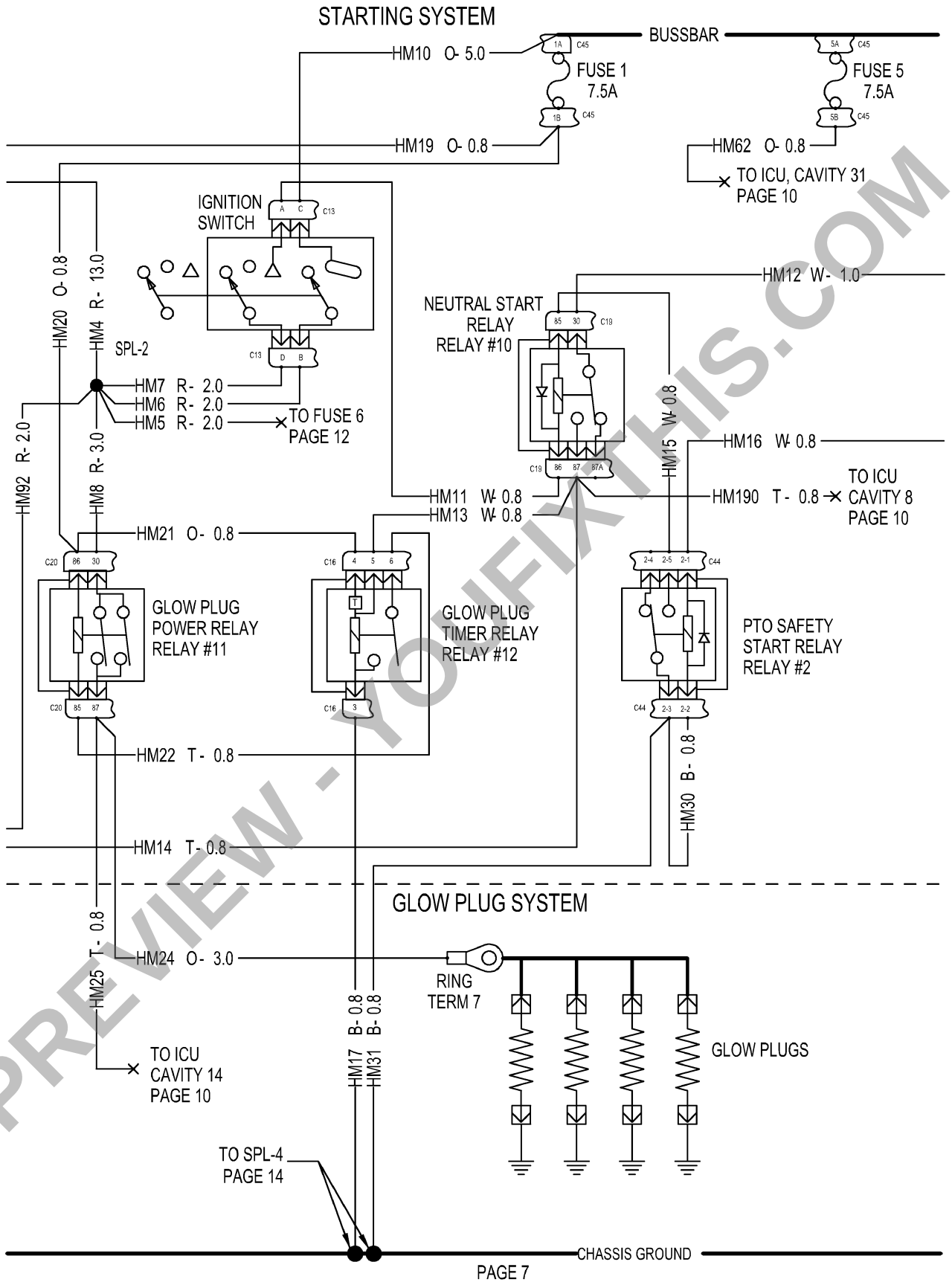
The foot throttle, 2, (gear models only) is located on the right-hand foot platform. Depress the pedal to increase engine RPM. Release the pedal to decrease engine RPM. Because the pedal is spring loaded, it will return to idle when no pressure is applied.



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MINIMUM HARDWARE TIGHTENING TORQUES

IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

INCH NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	6.2 (55)*	8.1 (72)*	9.7 (86)*	13 (112)*	14 (121)*	18 (157)*	8.5 (75)*	12.2 (109)*	1/4
5/16	13 (115)*	17 (149)*	20 (178)*	26 (229)*	28 (250)*	37 (324)*	17.5 (155)*	25 (220)*	5/16
3/8	23 (17)	30 (22)	35 (26)	46 (34)	50 (37)	65 (48)	31 (23)	44 (33)	3/8
7/16	37 (27)	47 (35)	57 (42)	73 (54)	80 (59)	104 (77)	50 (37)	71 (53)	7/16
1/2	57 (42)	73 (54)	87 (64)	113 (83)	123 (91)	159 (117)	76 (56)	108 (80)	1/2
9/16	81 (60)	104 (77)	125 (92)	163 (120)	176 (130)	229 (169)	111 (82)	156 (115)	9/16
5/8	112 (83)	145 (107)	174 (128)	224 (165)	244 (180)	316 (233)	153 (113)	215 (159)	5/8
3/4	198 (146)	256 (189)	306 (226)	397 (293)	432 (319)	560 (413)	271 (200)	383 (282)	3/4
7/8	193 (142)	248 (183)	495 (365)	641 (473)	698 (515)	904 (667)	437 (323)	617 (455)	7/8
1	289 (213)	373 (275)	742 (547)	960 (708)	1048 (773)	1356 (1000)	654 (483)	924 (681)	1

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
CAP SCREWS AND CARRIAGE BOLTS



SAE GRADE 2 | SAE GRADE 5 | SAE GRADE 8

REGULAR NUTS | SAE GRADE 5 HEX NUTS | SAE GRADE 8 HEX NUTS

LOCKNUTS



GRADE IDENTIFICATION
GRADE A NO NOTCHES
GRADE B ONE CIRCUMFERENTIAL NOTCH
GRADE C TWO CIRCUMFERENTIAL NOTCHES



GRADE IDENTIFICATION
GRADE A NO MARKS
GRADE B THREE MARKS
GRADE C SIX MARKS
MARKS NEED NOT BE LOCATED AT CORNERS



GRADE A NO MARK
GRADE B LETTER B
GRADE C LETTER C

GRADE IDENTIFICATION

86529681 REV F 5.2

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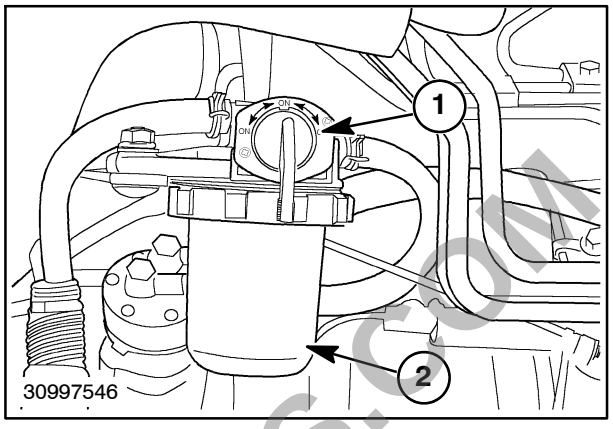
FUEL FILTER

Draining the Fuel Filter

NOTE: *The fuel filter should be drained after every 100 hours of operation.*

1. Make sure there is adequate fuel in the fuel tank and close the fuel shutoff valve, 1. (Turn the handle clockwise to the “OFF” position.)
2. Remove, empty, and clean the fuel sediment bowl, 2.
3. Open the fuel shutoff valve to allow fuel to flow from the filter. Close the shutoff valve when all water has been removed and only fuel flows from the filter base.
4. Reinstall the fuel sediment bowl and bleed the system as outlined in “Bleeding the Fuel System.”

NOTE: *Valve is shown in “open” position.*

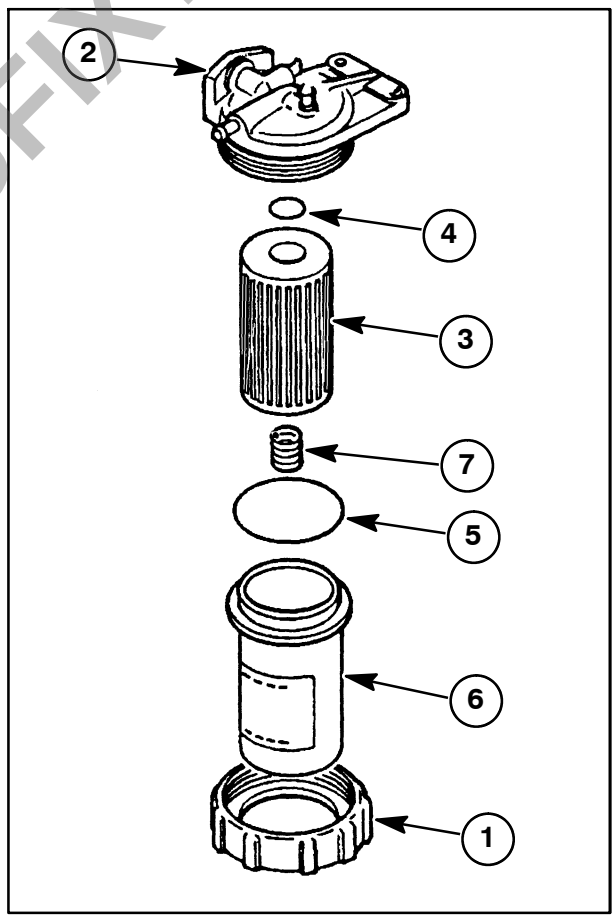


8

Changing the Fuel Filter

NOTE: *Change the diesel fuel filter after the first 50 hours of operation, then following every 300 operating hours thereafter.*

1. Make sure there is adequate fuel in the fuel tank and close the fuel shutoff valve, 2. (Turn the handle clockwise to the “OFF” position.)
2. Unscrew the retaining nut, 1, and remove, empty, and clean the fuel sediment bowl, 6. Remove and set aside the filter element, 3, O-rings, 4 and 5, and element retaining spring, 7.
3. Open the fuel shutoff valve to allow fuel to flow from the filter. Close the shutoff valve when all water has been removed and only fuel flows from the filter base.
4. Inspect the O-rings, 4 and 5, and replace if necessary.
5. Discard the old element, 3, and install a new element, with the upper O-ring, 4.
6. Install spring, 7, between the bottom of the element and the fuel sediment bowl.
7. Reinstall the lower O-ring, 5, and sediment bowl, 6, securing with the retaining nut, 1.
8. Open the fuel shutoff valve, 2, (turn the handle counterclockwise to the “ON” position), so fuel will flow to the filter.
9. Bleed the fuel filter and injection pump as described below in “Bleeding the Fuel System.”



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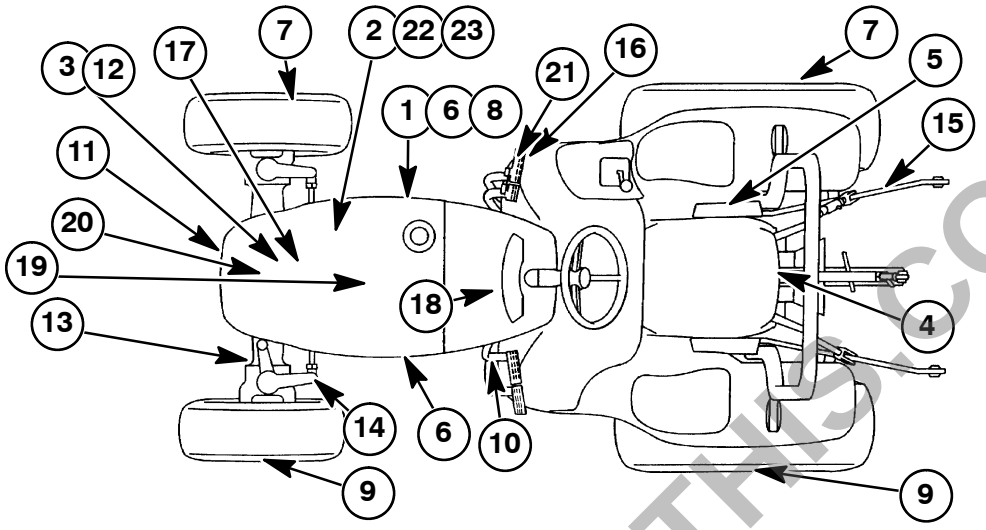
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	Model Boomer 3040	Model Boomer 3045	Model Boomer 3050
COOLING SYSTEM			
Type	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:			
Type	Centrifugal	Centrifugal	Centrifugal
Drive	V-Belt	V-Belt	V-Belt
Belt Deflection	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys
Fan Diameter	410 mm (16.1 in)	410 mm (16.1 in)	410 mm (16.1 in)
Number of Fan Blades	6	6	6
Thermostat:			
Start to Open	71°C (160°F)	71°C (160°F)	71°C (160°F)
Fully Open	85°C (185°F)	85°C (185°F)	85°C (185°F)
Radiator Cap	0.9 bar (13 PSI)	0.9 bar (13 PSI)	0.9 bar (13 PSI)
Antifreeze	Ethylene Glycol	Ethylene Glycol	Ethylene Glycol
ELECTRICAL SYSTEM			
Main System Protection	40 amp Maxifuse	40 amp Maxifuse	40 amp Maxifuse
Number Fuses for Circuit Protection	7	7	7
Alternator	12-volt, Heavy Duty, 40 amps	12-volt, Heavy Duty, 40 amps	12-volt, Heavy Duty, 40 amps
Battery Type	12-volt, w/ negative ground, 600 cca	12-volt, w/ negative ground, 600 cca	12-volt, w/ negative ground, 600 cca
Starter HP (KW) Rating	2.7 (2.0)	2.7 (2.0)	2.7 (2.0)
Battery Rating Amp Hrs.	64-69	64-69	64-69
Starting Motor	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction
FUEL SYSTEM			
Fuel Type	Diesel	Diesel	Diesel
Type of Fuel to Use if Above 40°F	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below 40°F	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:			
Type	In-Line	In-Line	In-Line
Timing	21° BTDC	21° BTDC	21° BTDC

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LUBRICATION AND MAINTENANCE CHART
NEW HOLLAND BOOMER 3040, 3045, 3050 - FRONT-WHEEL DRIVE



2

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
1	Engine Oil Level	X					Every 10 Hours or Daily
2	Air Cleaner	X					
3	Radiator Coolant	X					
4	Transmission Oil Level	X					
5	Hydraulic Filter				X		First 50 Hours
1, 6	Engine Oil & Filter				X		
7	Tire Pressure	X					
8	Fuel Filter				X		
9	Wheel Bolt Torque	X					
—	All Fluid Levels	X					
7	Tires	X					Every 50 Hours
10	Clutch Pedal Free Play	X		X		X	
11	Battery	X					
12	Fan Belt	X					
13	Front Axle Oil Level	X					
21	Brake Pedal Free Play	X					
	Lubrication Fittings:						
14	Steering Linkage			X			
15	3-Point Linkage			X			
16	Brake Pedal			X			
17	Power Steering Cylinder			X			
18	Pedal Shaft			X			
19	Drive Cover Shaft			X			
20	Axle Pivot Shaft			X			

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
2	Air Cleaner Element		X				Every 100 Hours
8	Fuel Filter		X				
1, 7	Engine Oil & Filter				X		Every 200 Hours
21	Brake Pedal Free Play					X	
12	Fan Belt					X	
9	Wheel Bolt Torque	X					
4	Transmission Oil				X		Every 300 Hours
5	Hydraulic Filter				X		
8	Fuel Filter Element				X		
13	Front Axle Oil				X		
22*	Fuel Injector	X				X	Every 600 Hours *Refer to Repair Manual
23*	Valve Clearance	X				X	
2	Air Cleaner Element				X		Seasonal
3	Radiator Coolant				X		
2	Safety Air Filter Element				X		Every 3rd Primary Element Change or Every **1000** Hours, Whichever Comes First

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