

SERVICE MANUAL

**RG140.B
RG170.B
RG200.B
RG140.B VHP
RG170.B VHP
RG200.B VHP
RG170.B AWD
RG200.B AWD**
GRADERS

I/I

Part Number
71114389
03/2012
1st Edition

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Graders

RG140.B / RG170.B / RG200.B
RG140.B VHP / RG170.B VHP / RG200.B VHP
RG170.B AWD / RG200.B AWD
TIER 0 / TIER 1 / TIER 2 / TIER 3

Service Manual

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GRADERS
RG140.B / RG170.B / RG200.B
RG140.B VHP / RG170.B VHP / RG200.B VHP
RG170.B AWD / RG200.B AWD

Service Manual

71114389

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GENERAL

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Section 1001

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STANDARD TORQUE ESPECIFICACIONES

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NOTE: NEW HOLLAND reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

TORQUE SPECIFICATIONS

Decimal

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 (inch)	Pound-Inches	N.m
1/4	9 - 11	12 - 15
5/16	17 - 21	23 - 28
3/8	35 - 42	48 - 57
7/16	54 - 64	73 - 87
1/2	80 - 96	109 - 130
9/16	110 - 132	149 - 179
5/8	150 - 180	203 - 244
3/4	270 - 324	366 - 439
7/8	400 - 480	542 - 651
1.0	580 - 696	787 - 944
1-1/8	800 - 880	1085 - 1193
1-1/4	1120 - 1240	1519 - 1681
1-3/8	1460 - 1680	1980 - 2278
1-1/2	1940 - 2200	2631 - 2983

GRADE 8 BOLTS, NUTS AND STUDS		
		
Size (inch)	Pound-Inches	N.m
1/4	12 - 15	16 - 20
5/16	24 - 29	33 - 39
3/8	45 - 54	61 - 73
7/16	70 - 84	95 - 114
1/2	110 - 132	149 - 179
9/16	160 - 192	217 - 260
5/8	220 - 264	298 - 358
3/4	380 - 456	515 - 618
7/8	600 - 720	814 - 976
1.0	900 - 1080	1220 - 1465
1-1/8	1280 - 1440	1736 - 1953
1-1/4	1820 - 2000	2468 - 2712
1-3/8	2380 - 2720	3227 - 3688
1-1/2	3160 - 3560	4285 - 4827

NOTE: Use thick nuts with Grade 8 bolts.

Métric

Use the following torques when specifications are not given. These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or Molydisulfide grease or oil is used.

GRADE 8.8 BOLTS, NUTS AND STUDS		
		
Size (inch)	Pound-Inches	N.m
M4	2 - 3	3 - 4
M5	5 - 6	6.5 - 8
M6	8 - 9	10.5 - 12
M8	19 - 23	26 - 31
M10	38 - 45	52 - 61
M12	66 - 79	90 - 107
M14	106 - 127	144 - 172
M16	160 - 200	217 - 271
M20	320 - 380	434 - 515
M24	500 - 600	675 - 815
M30	920 - 1100	1250 - 1500
M36	1600 - 1950	2175 - 2600

GRADE 10.9 BOLTS, NUTS AND STUDS		
		
Size (inch)	Pound-Inches	N.m
M4	3 - 4	4 - 5
M5	7 - 8	9.5 - 11
M6	11 - 13	15 - 17.5
M8	27 - 32	37 - 43
M10	54 - 64	73 - 87
M12	93 - 112	125 - 152
M14	149 - 179	300 - 245
M16	230 - 280	310 - 380
M20	450 - 540	610 - 730
M24	780 - 940	1050 - 1275
M30	1470 - 1770	2000 - 2400
M36	2580 - 3090	3500 - 4200

GRADE 12.9 BOLTS, NUTS AND STUDS		
		
Usually the torque values specified for grade 10.9 fasteners. can be used satisfactorily on grade 12.9 fasteners.		

Steel Hydraulic Fittings

Tube OD Hose ID	Thread Size	Pound- Inches	N.m
37 DEGREE FLARE FITTING			
1/4" (6.4 mm)	7/16 - 20	6 - 12	8 - 16
5/16" (7.9 mm)	1/2 - 20	8 - 16	11 - 22
3/8" (9.5 mm)	9/16 - 18	10 - 20	14 - 34
1/2" (12.7 mm)	3/4 - 16	15 - 42	20 - 56
5/8" (15.9 mm)	7/8 - 14	25 - 58	34 - 78
3/4" (19.0 mm)	1-1/16 - 12	40 - 80	54 - 108
7/8" (22.2 mm)	1-3/16 - 12	60 - 100	81 - 135
1.0" (25.4 mm)	1-5/16 - 12	75 - 117	102 - 158
1-1/4" (31.8 mm)	1-5/8 - 12	125 - 165	169 - 223
1-1/2" (38.1 mm)	1-7/8 - 12	210 - 250	285 - 338

Tube OD Hose ID	Thread Size	Pound- Inches	N.m
STRAIGHT THREADS WITH O-RING			
1/4" (6.4 mm)	7/16 - 20	12 - 19	16 - 25
5/16" (7.9 mm)	1/2 - 20	16 - 25	22 - 34
3/8" (9.5 mm)	9/16 - 18	25 - 40	34 - 54
1/2" (12.7 mm)	3/4 - 16	42 - 67	57 - 90
5/8" (15.9 mm)	7/8 - 14	58 - 92	79 - 124
3/4" (19.0 mm)	1-1/16 - 12	80 - 128	108 - 174
7/8" (22.2 mm)	1-3/16 - 12	100 - 160	136 - 216
1.0" (25.4 mm)	1-5/16 - 12	117 - 187	159 - 253
1-1/4" (31.8 mm)	1-5/8 - 12	165 - 264	224 - 357
1-1/2" (38.1 mm)	1-7/8 - 12	250 - 400	339 - 542

SPLIT FLANGE MOUNTING BOLTS		
Size (inch)	Pound-Inches	N.m
5/16 - 18	15 - 20	20 - 27
3/8 - 16	20 - 25	27 - 34
7/16 - 14	35 - 45	47 - 61
1/2 - 13	55 - 65	74 - 88
5/8 - 11	140 - 150	190 - 203

Steel Hydraulic Fittings

Nom. SAE Dash Size	Tube OD INCH (mm)	Thread Size	Pound-Inches	N.m	Thread Size	Pound-Inches	N.m
O-RING FACE SEAL END					O-RING BOSS END FITTING OR LOCK NUT		
- 4	1/4 (6.4)	9/16-18	10 - 12	14 - 16	7/16-20	17 - 20	23 - 27
-6	3/8 (9.5)	11/16-16	18 - 20	24 - 27	9/16-18	25 - 30	34 - 41
-8	1/2 (12.7)	13/16-16	32 - 40	43 - 54	3/4-16	45 - 50	61 - 68
-10	5/8 (15.9)	1 - 14	46 - 56	62 - 75	7/8-14	60 - 65	81 - 88
-12	3/4 (19.0)	1-3/16-12	65 - 80	90 - 110	1-1/16-12	85 - 90	115 - 122
-14	7/8 (22.2)	1-3/16-12	65 - 80	90 - 110	1-3/16-12	95 - 100	129 - 136
-16	1.0 (25.4)	1-7/16-12	92 - 105	125 - 140	1-5/16-12	115 - 125	156 - 169
-20	1-1/4 (31.8)	1-11/16-12	125 - 140	170 - 190	1-5/8-12	150 - 160	203 - 217
-24	1-1/2 (38.1)	2-12	150 - 180	200 - 254	1-7/8-12	190 - 200	258 - 271

Section 1002

FLUIDS AND LUBRICANTS

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FLUIDS AND LUBRICANTS

RG140.B / RG170.B / RG200.B Models Equipped with Tier 0, 1 and 2 Engines

COMPONENTS	CAPACITY		SPECIFICATIONS
	Liters	US Gal.	
Fuel tank			
Total capacity	341,0	90,0	N° 2 DIESEL
Engine oil			
Engine Tier 1 (RG140.B Models)			
With filter change	16,4	4,3	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Without filter change	14,2	3,7	
Engine Tier 0 and Tier 2 (RG170.B / RG200.B Models)			
With filter change	21,1	5,5	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Without filter change	18,9	4,8	
Engine Cooling System			
Total capacity	32,0	8,4	50% Water + 50% AGRIFLU
Hydraulic System			
Total capacity	180,0	47,5	AMBRA MASTERTRAN
Hydraulic tank with filter	90,0	23,8	
Transmission			
RG140.B / RG170.B Models with ZF transmission			
Refill capacity (with filter change)	26,0	6,9	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Refill capacity (without filter change)	25,0	6,6	
RG200.B Models with FUNK transmission			
Refill capacity (with filter change)	28,5	7,5	AMBRA MASTERTRAN
Refill capacity (without filter change)	26,0	6,9	
Rear Axle			
RG140.B Models			
Center compartment	40,0	10,5	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
RG170.B / RG200.B Models			
Center compartment	44,0	11,6	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
Tandem and Brakes			
Refill capacity (each)	69,0	18.2	Ambra TRX SAE 20W-40 API GL-4 / NH4388
Circle Turn Gear Reducer			
Refill capacity	2,80	0,75	SAE 80W-90 API GL-5 / NH 520 A (AMBRA HIPOIDE 90)
Grease Fittings			
Rear Ripper, Scarifier or Dozer Blade	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)
Front Axle Wheel Hub and Bearings	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)

RG140.B VHP / RG170.B VHP / RG200B VHP Models Equipped with Tier 3 Engines

COMPONENTS	CAPACITY		SPECIFICATIONS
	Liters	US Gal.	
Fuel tank			
Total capacity	341,0	90,0	N° 2 DIESEL
Engine oil			
Engine Tier 3 (RG140.B VHP / RG170.B VHP / RG200B VHP Models)			
With filter change	16,0	4.2	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Without filter change	15,0	4.0	
Engine Cooling System			
Total capacity	32,0	8,4	50% Water + 50% AGRIFLU
Hydraulic System			
Total capacity	180,0	47,5	AMBRA MASTERTRAN
Hydraulic tank with filter	90,0	23,8	
Transmission			
RG140.B VHP / RG170.B VHP Models with ZF transmission			
Refill capacity (with filter change)	26,0	6,9	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Refill capacity (without filter change)	25,0	6,6	
RG140.B VHP / RG170.B VHP Models with FUNK transmission			
Refill capacity (with filter change)	25,0	6,6	AMBRA MASTERTRAN
Refill capacity (without filter change)	23,0	6,0	
RG200B VHP Models with FUNK transmission			
Refill capacity (with filter change)	28,5	7,5	AMBRA MASTERTRAN
Refill capacity (without filter change)	26,0	6,9	
Rear Axle			
RG140.B VHP Models			
Center compartment	40,0	10,5	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
RG170.B VHP / RG200B VHP Models			
Center compartment	44,0	11,6	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
Tandem and Brakes			
Refill capacity (each)	69,0	18.2	Ambra TRX SAE 20W-40 API GL-4 / NH4388
Circle Turn Gear Reducer			
Refill capacity	2,80	0,75	SAE 80W-90 API GL-5 / NH 520 A (AMBRA HIPOIDE 90)
Grease Fittings			
Rear Ripper, Scarifier or Dozer Blade	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)
Front Axle Wheel Hub and Bearings	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)

RG170.B AWD / RG200.B AWD Models Equipped with Tier 3 Engines

COMPONENTS	CAPACITY		SPECIFICATIONS
	Liters	US Gal.	
Fuel tank			
Total capacity	341,0	90,0	N° 2 DIESEL
Engine oil			
With filter change	16,0	4.2	N°1 ENGINE OIL SAE 15W-40 API CH4 / NH 330 H (AMBRA MASTER GOLD HSP)
Without filter change	15,0	4.0	
Engine Cooling System			
Total capacity	32,0	8,4	50% Water + 50% AGRIFLU
Hydraulic System			
Total capacity	200,0	47.5	AMBRA HYDROSYSTEM 68 HV (MAT 3508)
Hydraulic tank with filter	90,0	23.8	
Transmission			
RG170.B AWD Models			
Refill capacity (with filter change)	25,0	6,6	AMBRA MASTERTRAN
Refill capacity (without filter change)	23,0	6,0	
RG200.B AWD Models			
Refill capacity (with filter change)	28,5	7,5	AMBRA MASTERTRAN
Refill capacity (without filter change)	26,0	6,9	
Rear Axle			
Center compartment	44,0	11,6	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
Tandem and Brakes			
Refill capacity (each)	69,0	18.2	Ambra TRX SAE 20W-40 API GL-4 / NH4388
Circle Turn Gear Reducer			
Refill capacity	2,80	0,75	SAE 80W-90 API GL-5 / NH 520 A (AMBRA HIPOIDE 90)
Front Wheel Reducer			
Refill capacity	4,10	1,00	Ambra AXF SAE 80W-90 API GL-5, Limited Slip / NH520C
Grease Fittings			
Rear Ripper, Scarifier or Dozer Blade	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)
Front Axle Wheel Hub and Bearings	-	-	Litium based Grease NLGI-2 / NH 720 A (AMBRA GR-9)

RECOMENDAÇÕES DE VISCOSIDADE DO ÓLEO E FLUIDOS

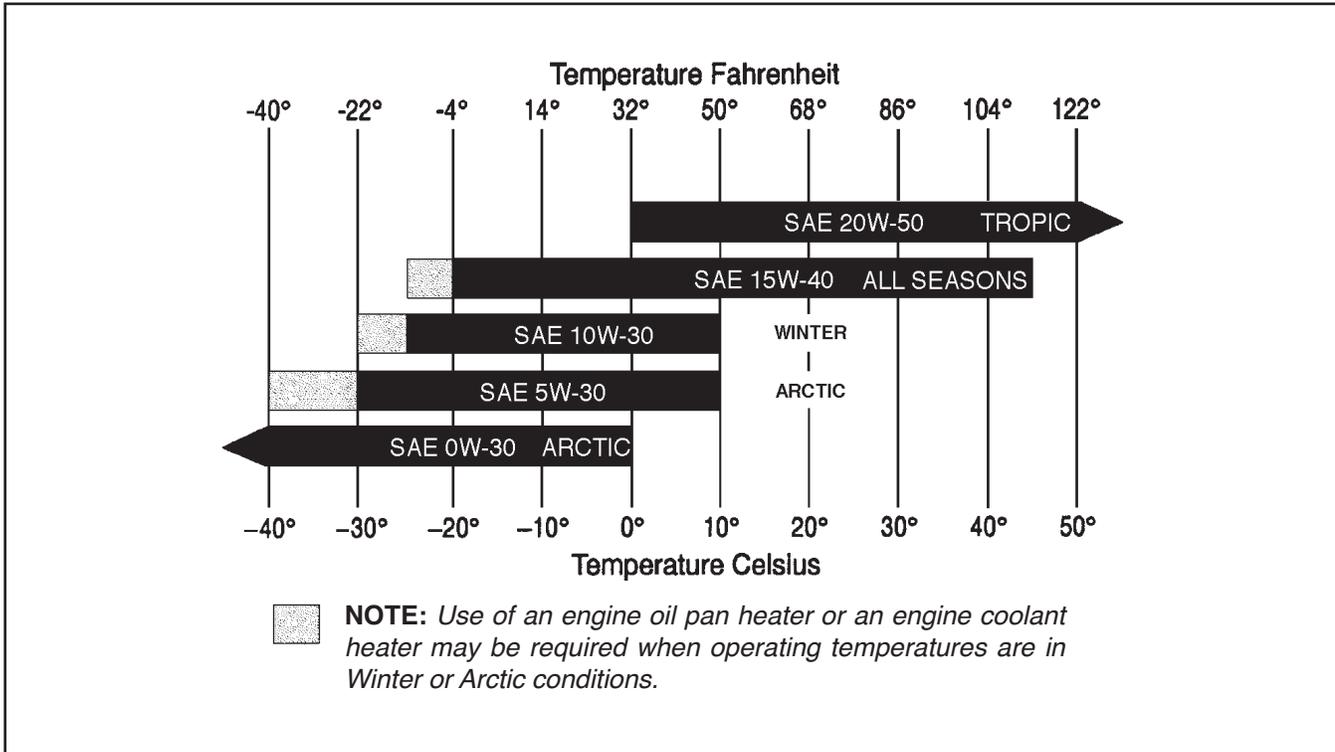
Oil Viscosity and Temperature Ranges

N°1 ENGINE OIL is recommended for use in your Engine. **N°1 ENGINE OIL** will lubricate your engine correctly under all operating conditions.

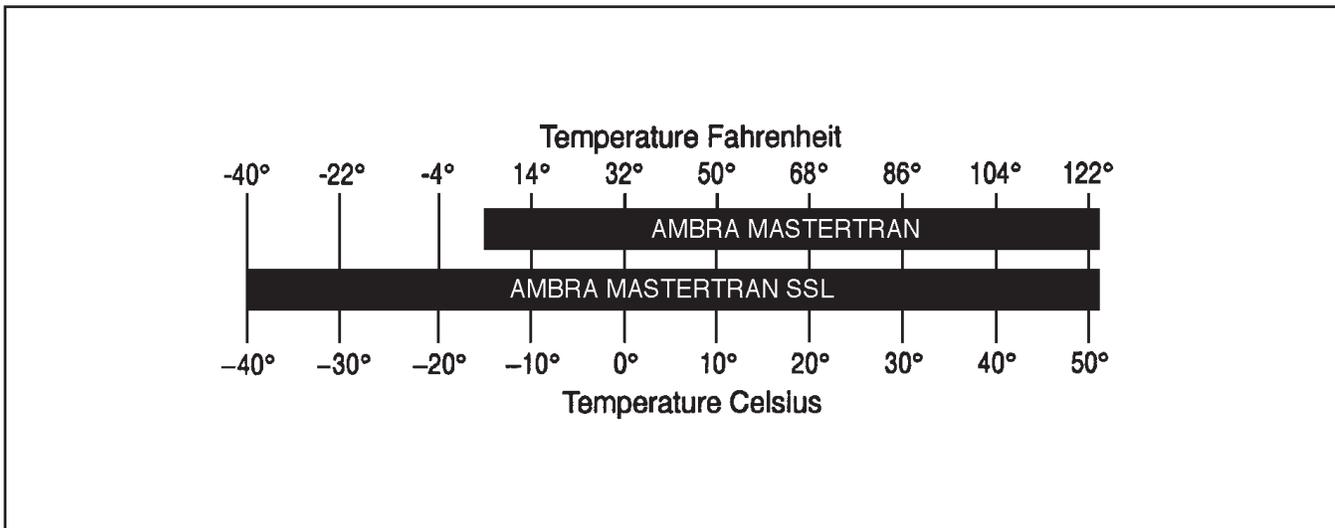
If **MULTI-VISCOSITY ENGINE OIL** is not available, use only oil meeting **API engine oil service category CH-4**.

See the chart on following page for recommended viscosity at ambient air temperature ranges.

NOTE: Do not put Performance Additives or other oil additive products in the engine crankcase. The oil change intervals given in this manual are according to tests with **NEW HOLLAND** lubricants.



Hydraulic / Brake / Transmission System – Temperature Ranges



FUEL

Diesel Fuel

Use **N°2 DIESEL** fuel in the engine of this machine. The use of other fuels can cause the loss of engine power and high fuel consumption.

In very cold temperatures, a mixture of **N°1** and **N°2 DIESEL FUELS** is temporarily permitted. See the following note.

NOTE: See your fuel dealer for winter fuel requirements in your area. If the temperature of the fuel lowers below the cloud point (wax appearance point), wax crystals in the fuel will cause the engine to lose power or not to start.

The Diesel fuel used in this machine must meet the specifications in the chart below or Specification D975-81 of the American Society for Testing and Materials.

Fuel Storage

If you keep fuel in storage for a period of time, you can get foreign material or water in the fuel storage tank. Many engine problems are caused by water in the fuel.

Keep the fuel storage tank outside and keep the fuel as cool as possible. Remove water from the storage container at regular periods of time.

Fill the fuel tank at the end of the daily operating period to prevent condensation in the fuel tank.

Specifications for Acceptable N°2 DIESEL FUEL

API gravity, minimum	34
Flash point, minimum	60°C (140°F)
Cloud point (wax appearance point), maximum	-20°C (-5°F) (*)
Pour point, maximum	-26°C (-15°F) (*)
Distillation temperature, 90% point	282 to 338°C (540 to 640°F)
Viscosity, at 38° C (100° F)	
Centistokes	2,0 to 4,3
Saybolt Seconds Universal	32 to 40
Cetane number, minimum	43 (45 to 55 for winter or high altitudes)
Water and sediment, by volume, maximum	0,05 %

* see note "Diesel Fuel" on this page.

LUBRICATION & MAINTENANCE CHART

RG140.B / RG170.B / RG200.B Models Equipped with Tier 0, 1 and 2 Engines

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
As needed	Air cleaner (Note 1)	1	*				
	Hydraulic filter (Note 2)	1	*				
	Cab Air Filter (if equipped)	1	*				
	Batteries (See Electrical System)	2					*
10 hours or daily	Engine oil level (including filters)	1	10				
	Radiator (coolant level) (Note 3)	1	10				
	Transmission oil level (warm, engine running) (ZF and FUNK Transmission)	1	10				
	Differential Lock Oil Filter (if equipped)	1	10				
50 hours or weekly	Fuel Reservoir Filter (wash screen)	1					50
	Fuel Water Separator (drain water)	2					50
	Hydraulic tank (complete system)	1	50				
100 hours or each 15 days	Moldboard Lift Cylinder Pivots	4			100		
	Moldboard Lift Cylinders Balls	2			100		
	Moldboard Side Shift Cylinders Balls	2			100		
	Articulation of Tilt Cylinders	2			100		
	Moldboard Tilt Pivots	2			100		
	Articulation Cylinders Pivots	4			100		
	Articulation Bearings	2			100		
	Drawbar Ball and Socket	1			100		
250 hours or monthly	Alternator and Air Conditioner Belt	2	250				
	Universal Joints and Drive Shaft	2			250		
	Circle Turn Gearbox Oil Level	1	250				
	Differential Lock Oil Filter (if equipped)	1		250			
	Front Axle Pivot	2			250		
	Front Wheel Lean Bar Pivots	2			250		
	Front Wheel Lean Cylinder Pivots	2			250		
	Front Wheel Knuckle Lean Pivots	4			250		
	Knucle King Pin Bearings	4			250		
	Moldboard Lift Cylinder Articulation Bearings	2			250		
	Tandem Swing Bearing	2			250		
	Tires Condition and Pressure	6	250				
	Cab Air Filter (if equipped)	1					250
	Steering Bar Ball Joints	4			250		
	Moldboard Articulation Pivots	4			250		
	Moldboard Side Shift Pivots	2			250		
Engine Oil and Oil Filter	2		250				

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
500 hours or each 3 months	Fuel Filters and Water Separator	2		500			
	Fuel Tank Drain Plug (drain sediment)	1					500
	Hydraulic System Oil Filter	1		500			
	Transmission Oil and Oil Filter (Note 4) (ZF Transmission – RG140.B / RG170.B models)	1		500			
	Transmission Oil and Oil Filter (FUNK Transmission – RG200.B models)	2		500			
	Front Wheel Bearing Grease	2		500			
	Tandem Wheel Shafts Bearings (Graziano)	8			500		
	Tandem Case Oil Level	2	500				
	Rear Axle Differential and Planetary Gear Oil Level (Graziano)	1	500				
	ROPS Fixing Bolts Torque	16				500	
	Seat Belts Fixing Bolts Torque	2				500	
1000 hours or each 6 months	Transmission Screen (FUNK Transmission – RG200.B models)	1					1000
	Transmission Oil (Note 4) (ZF Transmission – RG140.B / RG170.B models)	1		1000			
	Transmission Oil (FUNK Transmission – RG200.B models)	1		1000			
	Engine Valves Clearance	12				1000	
	Circle Turn Gear Housing Oil	1		1000			
	Alternator and Ar Conditioning Belts	2		1000			
	Air Cleaner Elements (See Air Cleaner System)	2		1000			
	Tandem Case Oil	2		1000			
2000 hours or yearly	Rear Axle Differential and Planetary Gear Oil (Graziano)	1		2000			
	Hydraulic System Oil (Note 5)	1		2000			
	Engine Coolant	2		2000			
	Turbocharger Fixing Bolts Torque	4				2000	

NOTE: See "FLUIDS AND LUBRICANTS" table on previous pages for lubricants and fluids detailed specifications and capacities.

NOTE 1: Service the air filter elements if air filter restriction indicator (Non - Critical Warnings - YELLOW) show "air filter".

NOTE 2: Service the hydraulic filters if hydraulic filter indicator lamp (Non - Critical Warnings - YELLOW) show "hydraulic filter".

NOTE 3: Check the radiator coolant level if the coolant level warning lamp (Critical Warnings - RED) show "coolant level".

NOTE 4: Change the transmission fluid and replace the filter after the first 100 hours of operation

NOTE 5: Change every 2.000 hours or once a year, whichever comes first.

*: As needed.

RG140.B VHP / RG170.B VHP / RG200B VHP Models Equipped with Tier 3 Engines

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
As needed	Air cleaner (Note 1)	1	*				
	Hydraulic filter (Note 2)	1	*				
	Cab Air Filter (if equipped)	1	*				
	Batteries (See Electrical System)	2					*
10 hours or daily	Engine oil level (including filters)	1	10				
	Radiator (coolant level) (Note 3)	1	10				
	Transmission oil level (warm, engine running) (ZF and FUNK Transmission)	1	10				
	Differential Lock Oil Filter (if equipped)	1	10				
50 hours or weekly	Fuel Reservoir Filter (wash screen)	1					50
	Fuel Water Separator (drain water)	2					50
	Hydraulic tank (complete system)	1	50				
100 hours or each 15 days	Moldboard Lift Cylinder Pivots	4			100		
	Moldboard Lift Cylinders Balls	2			100		
	Moldboard Side Shift Cylinders Balls	2			100		
	Articulation of Tilt Cylinders	2			100		
	Moldboard Tilt Pivots	2			100		
	Articulation Cylinders Pivots	4			100		
	Articulation Bearings	2			100		
	Drawbar Ball and Socket	1			100		
250 hours or monthly	Alternator and Air Conditioner Belt	2	250				
	Universal Joints and Drive Shaft	2			250		
	Circle Turn Gearbox Oil Level	1	250				
	Differential Lock Oil Filter (if equipped)	1		250			
	Front Axle Pivot	2			250		
	Front Wheel Lean Bar Pivots	2			250		
	Front Wheel Lean Cylinder Pivots	2			250		
	Front Wheel Knuckle Lean Pivots	4			250		
	Knucle King Pin Bearings	4			250		
	Moldboard Lift Cylinder Articulation Bearings	2			250		
	Tandem Swing Bearing	2			250		
	Tires Condition and Pressure	6	250				
	Cab Air Filter (if equipped)	1					250
	Steering Bar Ball Joints	4			250		
	Moldboard Articulation Pivots	4			250		
	Moldboard Side Shift Pivots	2			250		

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
500 hours or each 3 months	Fuel Filters and Water Separator	2		500			
	Fuel Tank Drain Plug (drain sediment)	1					500
	Engine Oil and Oil Filter	2		500			
	Hydraulic System Oil Filter	1		500			
	Transmission Oil and Oil Filter (Note 4) (ZF Transmission – RG140.B VHP / RG170.B VHP models)	1		500			
	Transmission Oil and Oil Filter (FUNK Transmission – RG140.B VHP / RG170.B VHP / RG200B VHP models)	1		500			
	Front Wheel Bearing Grease	2		500			
	Tandem Wheel Shafts Bearings (Graziano)	8			500		
	Tandem Case Oil Level	2	500				
	Rear Axle Differential and Planetary Gear Oil Level (Graziano)	1	500				
	ROPS Fixing Bolts Torque	16				500	
Seat Belts Fixing Bolts Torque	2				500		
1000 hours or each 6 months	Transmission Screen (FUNK Transmission – RG140.B VHP / RG170.B VHP / RG200B VHP models)	1					1000
	Transmission Oil (Note 4) (ZF Transmission – RG140.B VHP / RG170.B VHP models)	1		1000			
	Transmission Oil (FUNK Transmission – RG140.B VHP / RG170.B VHP / RG200B VHP models)	1		1000			
	Engine Valves Clearance	12				1000	
	Circle Turn Gear Housing Oil	1		1000			
	Alternator and Ar Conditioning Belts	2		1000			
	Air Cleaner Elements (See Air Cleaner System)	2		1000			
	Tandem Case Oil	2		1000			
2000 hours or yearly	Rear Axle Differential and Planetary Gear Oil (Graziano)	1		2000			
	Hydraulic System Oil (Note 5)	1		2000			
	Engine Coolant	2		2000			
	Turbocharger Fixing Bolts Torque	4				2000	

NOTE: See "FLUIDS AND LUBRICANTS" table on previous pages for lubricants and fluids detailed specifications and capacities.

NOTE 1: Service the air filter elements if air filter restriction indicator (Non-Critical Warnings – YELLOW) show "air filter".

NOTE 2: Service the hydraulic filters if hydraulic filter indicator lamp (Non-Critical Warnings – YELLOW) show "hydraulic filter".

NOTE 3: Check the radiator coolant level if the coolant level warning lamp (Critical Warnings – RED) show "coolant level".

NOTE 4: Change the transmission fluid and replace the filter after the first 100 hours of operation

NOTE 5: Change every 2.000 hours or once a year, whichever comes first.

*: As needed.

RG170.B AWD / RG200.B AWD Models Equipped with Tier 3 Engines

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
As needed	Air cleaner (Note 1)	1	*				
	Hydraulic filter (Note 2)	1	*				
	Cab Air Filter (if equipped)	1	*				
	Batteries (See Electrical System)	2					*
10 hours or daily	Engine oil level (including filters)	1	10				
	Radiator (coolant level) (Note 3)	1	10				
	Transmission oil level (warm, engine running)	1	10				
	Differential Lock Oil Filter (if equipped)	1	10				
50 hours or weekly	Fuel Reservoir Filter (wash screen)	1					50
	Fuel Water Separator (drain water)	2					50
	Hydraulic tank (complete system)	1	50				
100 hours or each 15 days	Moldboard Lift Cylinder Pivots	4			100		
	Moldboard Lift Cylinders Balls	2			100		
	Moldboard Side Shift Cylinders Balls	2			100		
	Articulation of Tilt Cylinders	2			100		
	Moldboard Tilt Pivots	2			100		
	Articulation Cylinders Pivots	4			100		
	Articulation Bearings	2			100		
	Drawbar Ball and Socket	1			100		
250 hours or monthly	Alternator and Air Conditioner Belt	2	250				
	Universal Joints and Drive Shaft	2			250		
	Circle Turn Gearbox Oil Level	1	250				
	Differential Lock Oil Filter (if equipped)	1		250			
	Front Axle Pivot	2			250		
	Front Wheel Lean Bar Pivots	2			250		
	Front Wheel Lean Cylinder Pivots	2			250		
	Front Wheel Knuckle Lean Pivots	4			250		
	Knucle King Pin Bearings	4			250		
	Moldboard Lift Cylinder Articulation Bearings	2			250		
	Tandem Swing Bearing	2			250		
	Tires Condition and Pressure	6	250				
	Cab Air Filter (if equipped)	1					250
	Steering Bar Ball Joints	4			250		
	Moldboard Articulation Pivots	4			250		
	Moldboard Side Shift Pivots	2			250		

	SERVICE POINTS	POINTS	VERIFY	REPLACE	LUBRICATE	ADJUST	CLEAN - DRAIN
500 hours or each 3 months	Fuel Filters and Water Separator	2		500			
	Fuel Tank Drain Plug (drain sediment)	1					500
	Front Wheel Drive (AWD) Pump Filter (Note 6)	1		500			
	Engine Oil and Oil Filter	2		500			
	Hydraulic System Oil Filter	1		500			
	Transmission Oil and Oil Filter	1		500			
	Front Wheel Bearing Grease	2		500			
	Tandem Wheel Shafts Bearings (Graziano)	8			500		
	Tandem Case Oil Level	2	500				
	Rear Axle Differential and Planetary Gear Oil Level (Graziano)	1	500				
	ROPS Fixing Bolts Torque	16				500	
	Seat Belts Fixing Bolts Torque	2				500	
1000 hours or each 6 months	Transmission Screen	1					1000
	Transmission Oil	1		1000			
	Engine Valves Clearance	12				1000	
	Circle Turn Gear Housing Oil	1		1000			
	Alternator and Air Conditioning Belts	2		1000			
	Air Cleaner Elements (See Air Cleaner System)	2		1000			
	Front Wheel Drive (AWD) Gear Housing Oil (Note 5)	2		1000			
	Tandem Case Oil	2		1000			
2000 hours or yearly	Rear Axle Differential and Planetary Gear Oil (Graziano)	1		2000			
	Hydraulic System Oil (Note 4)	1		2000			
	Engine Coolant	2		2000			
	Turbocharger Fixing Bolts Torque	4				2000	

NOTE: See "FLUIDS AND LUBRICANTS" table on previous pages for lubricants and fluids detailed specifications and capacities.

NOTE 1: Service the air filter elements if air filter restriction indicator (Non-Critical Warnings – YELLOW) show "air filter".

NOTE 2: Service the hydraulic filters if hydraulic filter indicator lamp (Non-Critical Warnings – YELLOW) show "hydraulic filter".

NOTE 3: Check the radiator coolant level if the coolant level warning lamp (Critical Warnings – RED) show "coolant level".

NOTE 4: Change the transmission fluid and replace the filter after the first 100 hours of operation

NOTE 5: Change every 2000 hours or once a year, whichever comes first.

NOTE 6: Change the front wheel drive gear housing oil after the first 100 hours of operation

NOTE 7: Change the front wheel drive pump hydraulic filter after the first 100 hours of operation.

*: As needed.

NOTES

Section 1003

METRIC CONVERSION CHART

1003

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CONVERSION FACTORS**Metric to U.S.**

	MULTIPLY	BY	TO OBTAIN
Area	sq. meter	10.76391	square foot
	hectare	2.47105	acre
Force	newton	3.596942	ounce force
	newton	0.224809	pound force
Length	millimeter	0.039370	inch
	meter	3.280840	foot
	kilometer	0.621371	mile
Mass	kilogram	2.204622	pound
Mass / Area	kilogram/hectare	0.000446	ton / acre
Mass / Energy	gr/kW/hr.	0.001644	bs/hp/hr.
Massa / Volume	<small>kg/cubic meter</small>	1.685555	lb/cubic yd.
Power	kilowatt	1.685555	horsepower
Pressure	kilopascal	0.145038	lb/sq. inch
	bar	14.50385	lb/sq. inch
Temperature	degree C	1.8 x °C + 32	degree F
Torque	newton meter	8.850748	lb/inch
	newton meter	0.737562	lb/foot
Velocity	kilometer/hr.	0.621371	miles/hr.
Volume	cubic centimeter	0.061024	cubic inch
	cubic meter	35.31466	cubic foot
	cubic meter	1.307950	cubic yd.
	milliliter	0.033814	ounce (US fluid)
	litre	1.056814	quart (US liquid)
	litre	0.879877	quart (Imperial)
	litre	0.264172	gallon (US liquid)
litre	0.219969	gallon (Imperial)	
Volume / Time	litre/min.	0.264172	gallon/min. (US liquid)
	litre/min.	0.219969	gallon/min. (Imperial)