

SERVICE MANUAL

T8.320 / T8.350 / T8.380 / T8.410 Powershift Transmission (PST) Tractor

PIN ZERE08100 and above

Part number 47794972

1st edition English
November 2014



Sample of manual. Download All 4263 pages at:

<https://www.arepairmanual.com/downloads/new-holland-t8-320-t8-350-t8-380-t8-410-powershift-transmission-pst-tractor-service-repair-manual-2/>

Copyright © 2014 CNH Industrial America LLC. All Rights Reserved.



SERVICE MANUAL

T8.320 696110028 PST TIER 4B [ZERE08100 -]
T8.350 696110038 PST TIER 4B [ZERE08100 -]
T8.380 696110048 PST TIER 4B [ZERE08100 -]
T8.410 696110058 PST TIER 4B [ZERE08100 -]

Link Product / Engine

Product	Market Product	Engine
T8.320 696110028 PST TIER 4B [ZERE08100 -]	Europe	F2CFE613G*B001
T8.350 696110038 PST TIER 4B [ZERE08100 -]	Europe	F2CFE614G*B002
T8.380 696110048 PST TIER 4B [ZERE08100 -]	Europe	F2CFE614D*B002
T8.410 696110058 PST TIER 4B [ZERE08100 -]	Europe	F2CFE614C*B002

Contents

INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase	10.1
[10.101] Cylinder heads	10.2
[10.202] Air cleaners and lines	10.3
[10.216] Fuel tanks	10.4
[10.218] Fuel injection system.....	10.5
[10.304] Engine lubrication system.....	10.6
[10.310] Aftercooler.....	10.7
[10.400] Engine cooling system	10.8
[10.414] Fan and drive	10.9
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....	10.10
Power coupling.....	19
[19.100] Drive shaft.....	19.1
[19.110] Flywheel damper	19.2
[19.120] Drive shaft shield assembly	19.3
Transmission.....	21
[21.105] Powershift transmission lubrication system	21.1
[21.113] Powershift transmission	21.2
[21.135] Powershift transmission external controls.....	21.3
[21.155] Powershift transmission internal components.....	21.4
[21.200] Dropbox	21.5
[21.900] Hydraulic pump drive.....	21.6
Four-Wheel Drive (4WD) system	23
[23.202] Electro-hydraulic control	23.1
[23.314] Drive shaft.....	23.2

Front axle system	25
[25.100] Powered front axle	25.1
[25.102] Front bevel gear set and differential	25.2
[25.108] Final drive hub, steering knuckles, and shafts	25.3
[25.122] Axle suspension control	25.4
Rear axle system	27
[27.100] Powered rear axle	27.1
[27.106] Rear bevel gear set and differential	27.2
Power Take-Off (PTO)	31
[31.104] Rear electro-hydraulic control	31.1
[31.110] One-speed rear Power Take-Off (PTO)	31.2
[31.114] Two-speed rear Power Take-Off (PTO)	31.3
[31.146] Front Power Take-Off (PTO)	31.4
Brakes and controls	33
[33.110] Parking brake or parking lock	33.1
[33.202] Hydraulic service brakes	33.2
[33.220] Trailer brake hydraulic control	33.3
[33.224] Trailer brake pneumatic control	33.4
[33.240] Emergency brake	33.5
Hydraulic systems	35
[35.000] Hydraulic systems	35.1
[35.102] Pump control valves	35.2
[35.106] Variable displacement pump	35.3
[35.114] Three-point hitch control valve	35.4
[35.124] Three-point hitch hydraulic adjustment	35.5
[35.204] Remote control valves	35.6
[35.300] Reservoir, cooler, and filters	35.7
[35.304] Combination pump units	35.8

Hitches, drawbars, and implement couplings.....	37
[37.110] Rear three-point hitch	37.1
[37.162] Front hitch	37.2
Steering.....	41
[41.101] Steering control	41.1
[41.200] Hydraulic control components.....	41.2
[41.206] Pump	41.3
[41.432] Autoguidance steering	41.4
[41.910] Auxiliary steering	41.5
Wheels	44
[44.520] Rear wheels	44.1
Cab climate control	50
[50.100] Heating	50.1
[50.200] Air conditioning.....	50.2
[50.300] Cab pressurizing system	50.3
Electrical systems	55
[55.010] Fuel injection system.....	55.1
[55.012] Engine cooling system	55.2
[55.014] Engine intake and exhaust system.....	55.3
[55.024] Transmission control system	55.4
[55.045] Front axle control system	55.5
[55.046] Rear axle control system.....	55.6
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system.....	55.7
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls.....	55.8
[55.100] Harnesses and connectors.....	55.9
[55.130] Rear three-point hitch electronic control system	55.10
[55.201] Engine starting system	55.11
[55.301] Alternator.....	55.12

[55.302] Battery.....	55.13
[55.510] Cab or platform harnesses and connectors.....	55.14
[55.512] Cab controls.....	55.15
[55.513] Cab transmission controls.....	55.16
[55.518] Wiper and washer system.....	55.17
[55.640] Electronic modules.....	55.18
[55.988] Selective Catalytic Reduction (SCR) electrical system	55.19
[55.DTC] FAULT CODES.....	55.20
Platform, cab, bodywork, and decals.....	90
[90.100] Engine hood and panels	90.1
[90.102] Engine shields, hood latches, and trims	90.2
[90.124] Pneumatically-adjusted operator seat.....	90.3
[90.150] Cab.....	90.4
[90.151] Cab interior.....	90.5
[90.160] Cab interior trim and panels.....	90.6



INTRODUCTION

Contents

INTRODUCTION

Foreword - Important notice regarding equipment servicing	3
Safety rules	4
Safety rules - General maintenance safety	5
Safety rules - Personal Protective Equipment (PPE)	6
Safety rules - Do Not Operate tag	7
Safety rules - Ecology and the environment	8
Torque - Minimum tightening torques for normal assembly	9
Capacities	14
Capacities	15

Foreword - Important notice regarding equipment servicing

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The information in this manual is up-to-date at the date of the publication. It is the policy of the manufacturer for continuous improvement. Some information could not be updated due to modifications of a technical or commercial type, or changes to the laws and regulations of different countries.

In case of questions, refer to your NEW HOLLAND Sales and Service Networks.

Safety rules


Personal safety





This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Safety rules - General maintenance safety

General maintenance safety

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

Close all access doors and install all panels after servicing the machine.

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Always make sure that working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless the equipment is securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When you tow a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before you weld on the machine. Always wash your hands after you handle battery components.

Safety rules - Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE)

Wear Personal Protective Equipment (PPE) such as hard hat, eye protection, heavy gloves, hearing protection, protective clothing, etc.

Safety rules - Do Not Operate tag

Do Not Operate tag

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.

Safety rules - Ecology and the environment

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances required by advanced technology, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

NOTE: *The following are recommendations that may be of assistance:*

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use, and dispose of these substances.
- Agricultural consultants will, in many cases, be able to help you as well.

Helpful hints

- Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems that may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
- Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil, but should be collected and disposed of properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your NEW HOLLAND dealer or air conditioning specialist has a special extractor for this purpose and will have to recharge the system properly.
- Repair any leaks or defects in the engine cooling or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

Torque - Minimum tightening torques for normal assembly

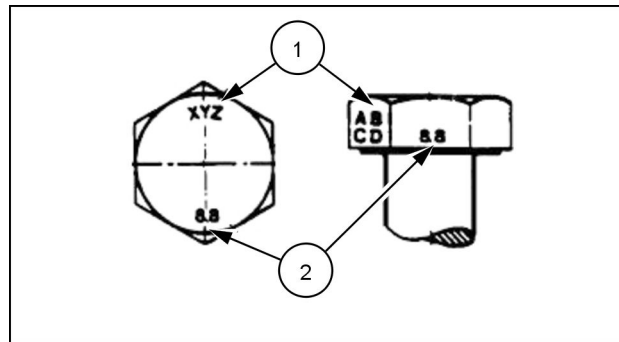
METRIC NON-FLANGED HARDWARE

NOM. SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT	LOCKNUT CL.10 W/CL10.9 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr		
M4	2.2 N·m (19 lb in)	2.9 N·m (26 lb in)	3.2 N·m (28 lb in)	4.2 N·m (37 lb in)	2 N·m (18 lb in)	2.9 N·m (26 lb in)
M5	4.5 N·m (40 lb in)	5.9 N·m (52 lb in)	6.4 N·m (57 lb in)	8.5 N·m (75 lb in)	4 N·m (36 lb in)	5.8 N·m (51 lb in)
M6	7.5 N·m (66 lb in)	10 N·m (89 lb in)	11 N·m (96 lb in)	15 N·m (128 lb in)	6.8 N·m (60 lb in)	10 N·m (89 lb in)
M8	18 N·m (163 lb in)	25 N·m (217 lb in)	26 N·m (234 lb in)	35 N·m (311 lb in)	17 N·m (151 lb in)	24 N·m (212 lb in)
M10	37 N·m (27 lb ft)	49 N·m (36 lb ft)	52 N·m (38 lb ft)	70 N·m (51 lb ft)	33 N·m (25 lb ft)	48 N·m (35 lb ft)
M12	64 N·m (47 lb ft)	85 N·m (63 lb ft)	91 N·m (67 lb ft)	121 N·m (90 lb ft)	58 N·m (43 lb ft)	83 N·m (61 lb ft)
M16	158 N·m (116 lb ft)	210 N·m (155 lb ft)	225 N·m (166 lb ft)	301 N·m (222 lb ft)	143 N·m (106 lb ft)	205 N·m (151 lb ft)
M20	319 N·m (235 lb ft)	425 N·m (313 lb ft)	440 N·m (325 lb ft)	587 N·m (433 lb ft)	290 N·m (214 lb ft)	400 N·m (295 lb ft)
M24	551 N·m (410 lb ft)	735 N·m (500 lb ft)	762 N·m (560 lb ft)	1016 N·m (750 lb ft)	501 N·m (370 lb ft)	693 N·m (510 lb ft)

NOTE: M4 through M8 hardware torque specifications are shown in pound-inches. M10 through M24 hardware torque specifications are shown in pound-feet.

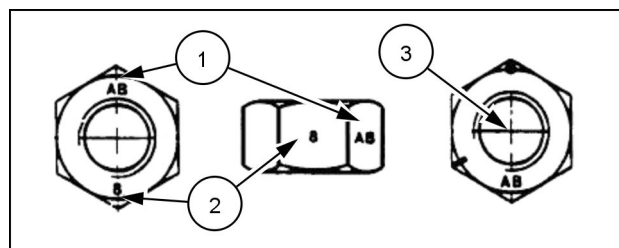
METRIC FLANGED HARDWARE

NOM. SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT	LOCKNUT CL.10 W/CL10.9 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr		
M4	2.4 N·m (21 lb in)	3.2 N·m (28 lb in)	3.5 N·m (31 lb in)	4.6 N·m (41 lb in)	2.2 N·m (19 lb in)	3.1 N·m (27 lb in)
M5	4.9 N·m (43 lb in)	6.5 N·m (58 lb in)	7.0 N·m (62 lb in)	9.4 N·m (83 lb in)	4.4 N·m (39 lb in)	6.4 N·m (57 lb in)
M6	8.3 N·m (73 lb in)	11 N·m (96 lb in)	12 N·m (105 lb in)	16 N·m (141 lb in)	7.5 N·m (66 lb in)	11 N·m (96 lb in)
M8	20 N·m (179 lb in)	27 N·m (240 lb in)	29 N·m (257 lb in)	39 N·m (343 lb in)	18 N·m (163 lb in)	27 N·m (240 lb in)
M10	40 N·m (30 lb ft)	54 N·m (40 lb ft)	57 N·m (42 lb ft)	77 N·m (56 lb ft)	37 N·m (27 lb ft)	53 N·m (39 lb ft)
M12	70 N·m (52 lb ft)	93 N·m (69 lb ft)	100 N·m (74 lb ft)	134 N·m (98 lb ft)	63 N·m (47 lb ft)	91 N·m (67 lb ft)
M16	174 N·m (128 lb ft)	231 N·m (171 lb ft)	248 N·m (183 lb ft)	331 N·m (244 lb ft)	158 N·m (116 lb ft)	226 N·m (167 lb ft)
M20	350 N·m (259 lb ft)	467 N·m (345 lb ft)	484 N·m (357 lb ft)	645 N·m (476 lb ft)	318 N·m (235 lb ft)	440 N·m (325 lb ft)
M24	607 N·m (447 lb ft)	809 N·m (597 lb ft)	838 N·m (618 lb ft)	1118 N·m (824 lb ft)	552 N·m (407 lb ft)	

IDENTIFICATION**Metric Hex head and carriage bolts, classes 5.6 and up**

20083680 1

1. Manufacturer's Identification
2. Property Class

Metric Hex nuts and locknuts, classes 05 and up

20083681 2

1. Manufacturer's Identification
2. Property Class
3. Clock Marking of Property Class and Manufacturer's Identification (Optional), i.e. marks **60 °** apart indicate Class 10 properties, and marks **120 °** apart indicate Class 8.

INCH NON-FLANGED HARDWARE

NOMINAL SIZE	SAE GRADE 5 BOLT and NUT		SAE GRADE 8 BOLT and NUT		LOCKNUT GrB W/ Gr5 BOLT	LOCKNUT GrC W/ Gr8 BOLT
	UN- PLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UN- PLATED or PLATED SILVER	PLATED W/ZnCr GOLD		
1/4	8 N·m (71 lb in)	11 N·m (97 lb in)	12 N·m (106 lb in)	16 N·m (142 lb in)	8.5 N·m (75 lb in)	12.2 N·m (109 lb in)
5/16	17 N·m (150 lb in)	23 N·m (204 lb in)	24 N·m (212 lb in)	32 N·m (283 lb in)	17.5 N·m (155 lb in)	25 N·m (220 lb in)
3/8	30 N·m (22 lb ft)	40 N·m (30 lb ft)	43 N·m (31 lb ft)	57 N·m (42 lb ft)	31 N·m (23 lb ft)	44 N·m (33 lb ft)
7/16	48 N·m (36 lb ft)	65 N·m (48 lb ft)	68 N·m (50 lb ft)	91 N·m (67 lb ft)	50 N·m (37 lb ft)	71 N·m (53 lb ft)
1/2	74 N·m (54 lb ft)	98 N·m (73 lb ft)	104 N·m (77 lb ft)	139 N·m (103 lb ft)	76 N·m (56 lb ft)	108 N·m (80 lb ft)
9/16	107 N·m (79 lb ft)	142 N·m (105 lb ft)	150 N·m (111 lb ft)	201 N·m (148 lb ft)	111 N·m (82 lb ft)	156 N·m (115 lb ft)
5/8	147 N·m (108 lb ft)	196 N·m (145 lb ft)	208 N·m (153 lb ft)	277 N·m (204 lb ft)	153 N·m (113 lb ft)	215 N·m (159 lb ft)
3/4	261 N·m (193 lb ft)	348 N·m (257 lb ft)	369 N·m (272 lb ft)	491 N·m (362 lb ft)	271 N·m (200 lb ft)	383 N·m (282 lb ft)
7/8	420 N·m (310 lb ft)	561 N·m (413 lb ft)	594 N·m (438 lb ft)	791 N·m (584 lb ft)	437 N·m (323 lb ft)	617 N·m (455 lb ft)
1	630 N·m (465 lb ft)	841 N·m (620 lb ft)	890 N·m (656 lb ft)	1187 N·m (875 lb ft)	654 N·m (483 lb ft)	924 N·m (681 lb ft)

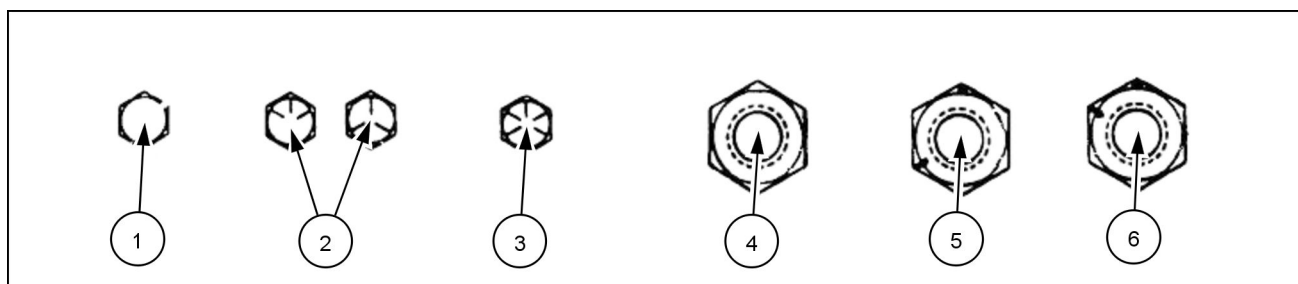
NOTE: For Imperial Units, **1/4 in** and **5/16 in** hardware torque specifications are shown in pound-inches. **3/8 in** through **1 in** hardware torque specifications are shown in pound-feet.

INCH FLANGED HARDWARE

NOM- INAL SIZE	SAE GRADE 5 BOLT and NUT		SAE GRADE 8 BOLT and NUT		LOCKNUT GrF W/ Gr5 BOLT	LOCKNUT GrG W/ Gr8 BOLT
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD		
1/4	9 N·m (80 lb in)	12 N·m (106 lb in)	13 N·m (115 lb in)	17 N·m (150 lb in)	8 N·m (71 lb in)	12 N·m (106 lb in)
5/16	19 N·m (168 lb in)	25 N·m (221 lb in)	26 N·m (230 lb in)	35 N·m (310 lb in)	17 N·m (150 lb in)	24 N·m (212 lb in)
3/8	33 N·m (25 lb ft)	44 N·m (33 lb ft)	47 N·m (35 lb ft)	63 N·m (46 lb ft)	30 N·m (22 lb ft)	43 N·m (32 lb ft)
7/16	53 N·m (39 lb ft)	71 N·m (52 lb ft)	75 N·m (55 lb ft)	100 N·m (74 lb ft)	48 N·m (35 lb ft)	68 N·m (50 lb ft)
1/2	81 N·m (60 lb ft)	108 N·m (80 lb ft)	115 N·m (85 lb ft)	153 N·m (113 lb ft)	74 N·m (55 lb ft)	104 N·m (77 lb ft)
9/16	117 N·m (86 lb ft)	156 N·m (115 lb ft)	165 N·m (122 lb ft)	221 N·m (163 lb ft)	106 N·m (78 lb ft)	157 N·m (116 lb ft)
5/8	162 N·m (119 lb ft)	216 N·m (159 lb ft)	228 N·m (168 lb ft)	304 N·m (225 lb ft)	147 N·m (108 lb ft)	207 N·m (153 lb ft)
3/4	287 N·m (212 lb ft)	383 N·m (282 lb ft)	405 N·m (299 lb ft)	541 N·m (399 lb ft)	261 N·m (193 lb ft)	369 N·m (272 lb ft)
7/8	462 N·m (341 lb ft)	617 N·m (455 lb ft)	653 N·m (482 lb ft)	871 N·m (642 lb ft)	421 N·m (311 lb ft)	594 N·m (438 lb ft)
1	693 N·m (512 lb ft)	925 N·m (682 lb ft)	979 N·m (722 lb ft)	1305 N·m (963 lb ft)	631 N·m (465 lb ft)	890 N·m (656 lb ft)

IDENTIFICATION

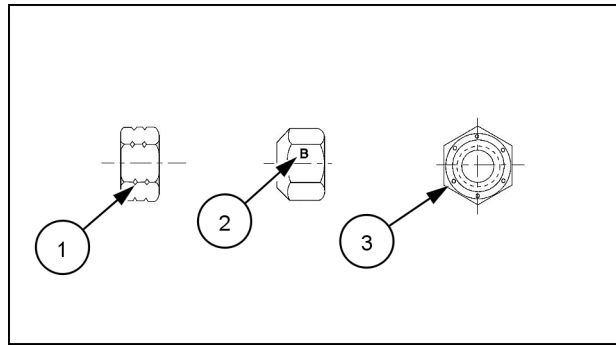
Inch Bolts and free-spinning nuts



20083682 3

Grade Marking Examples

SAE Grade Identification			
1	Grade 2 - No Marks	4	Grade 2 Nut - No Marks
2	Grade 5 - Three Marks	5	Grade 5 Nut - Marks 120 ° Apart
3	Grade 8 - Five Marks	6	Grade 8 Nut - Marks 60 ° Apart

Inch Lock Nuts, All Metal (Three optional methods)

20090268 4

Grade Identification

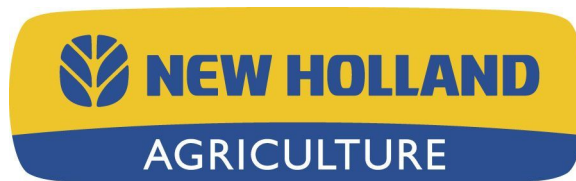
Grade	Corner Marking Method (1)	Flats Marking Method (2)	Clock Marking Method (3)
Grade A	No Notches	No Mark	No Marks
Grade B	One Circumferential Notch	Letter B	Three Marks
Grade C	Two Circumferential Notches	Letter C	Six Marks

Capacities

System	Metric	U.S.	Imperial
9.0 l engine			
NEW HOLLAND AMBRA UNITEK MASTERGOLD SBL CJ-4			
Engine oil – no filter change	25 l	6.6 US gal	5.5 UK gal
Engine oil – with filter change	25 l	6.6 US gal	5.5 UK gal
Cooling system	26.5 l	7 US gal	5.8 UK gal
Transmission/hydraulic system – NEW HOLLAND AMBRA MASTERTRAN® ULTRACTION			
Wheeled Powershift with standard rear axle	172 l	45.5 US gal	38 UK gal
Wheeled Powershift with heavy duty rear axle	184 l	48.5 US gal	40.4 UK gal
Track Powershift with heavy duty rear axle	160 l	42.5 US gal	35.2 UK gal
Wheeled Continuously Variable transmission (CVT) with standard rear axle	187 l	49.5 US gal	41.25 UK gal
Wheeled Continuously Variable transmission (CVT) with heavy duty rear axle	206 l	54.5 US gal	45.4 UK gal
Track Continuously Variable transmission (CVT) with heavy duty rear axle	184 l	48.5 US gal	40.4 UK gal
Mechanical Front Drive (MFD) axles — TUTELA HYPOIDE EP GEAR LUBE or NEW HOLLAND AMBRA HYPOIDE 140			
Class 4.75 fixed and saddle suspended front axle			
Differential	16.5 l	17.4 US qt	29.0 UK pt
Planetary (each)	4.3 l	9.1 US pt	7.6 UK pt
Class 5.0 fixed and saddle suspended front axle			
Differential	16.5 l	17.4 US qt	29.0 UK pt
Planetary (each)	4.5 l	9.5 US pt	8 UK pt
Class 5.0 wide fixed and saddle suspended front axle			
Differential	17.0 l	18.0 US qt	30.0 UK pt
Planetary (each)	4.5 l	9.5 US pt	8 UK pt
Front PTO	4.2 l	4.4 US qt	--
Track undercarriage idler/roller wheel hubs			
Idler hub - SAE 50W TO 4 oil	600 mL	20 US fl oz	21.1 UK fl oz
Roller hub - SAE 30W engine oil	250 mL	8 US fl oz	8.8 UK fl oz
DEF/AdBLUE® tank	87 l	23 US gal	23.8 UK gal
Fuel tank			
Tractors with rear wheels	636 l	168 US gal	140 UK gal
Tractors with rear tracks	662 l	175 US gal	146 UK gal

Capacities

System	Metric	U.S.	Imperial
9.0 l engine			
NEW HOLLAND AMBRA UNITEK MASTERGOLD SBL CJ-4			
Engine oil – no filter change	25 l	6.6 US gal	5.5 UK gal
Engine oil – with filter change	25 l	6.6 US gal	5.5 UK gal
Cooling system	26.5 l	7 US gal	5.8 UK gal
Transmission/hydraulic system – NEW HOLLAND AMBRA MASTERTRAN® ULTRACTION			
Powershift with standard rear axle	172 l	45.5 US gal	38 UK gal
Powershift with heavy duty rear axle	184 l	48.5 US gal	40.4 UK gal
Continuously Variable transmission (CVT) with standard rear axle	187 l	49.5 US gal	41.25 UK gal
Continuously Variable transmission (CVT) with heavy duty rear axle	206 l	54.5 US gal	45.4 UK gal
Mechanical Front Drive (MFD) axles — TUTELA HYPOIDE EP GEAR LUBE or NEW HOLLAND AMBRA HYPOIDE 140			
Class 4.75 fixed and saddle suspended front axle			
Differential	16.5 l	17.4 US qt	29.0 UK pt
Planetary (each)	4.3 l	9.1 US pt	7.6 UK pt
Class 5.0 fixed and saddle suspended front axle			
Differential	17.5 l	18.5 US qt	30.8 UK pt
Planetary (each)	4.5 l	9.5 US pt	8 UK pt
Front PTO	4.2 l	4.4 US qt	--
DEF/AdBLUE® tank	87 l	23 US gal	23.8 UK gal
Fuel tank	636 l	168 US gal	140 UK gal



SERVICE MANUAL

Engine

T8.320 696110028 PST TIER 4B [ZERE08100 -]
T8.350 696110038 PST TIER 4B [ZERE08100 -]
T8.380 696110048 PST TIER 4B [ZERE08100 -]
T8.410 696110058 PST TIER 4B [ZERE08100 -]

Contents

Engine - 10

[10.001] Engine and crankcase	10.1
[10.101] Cylinder heads	10.2
[10.202] Air cleaners and lines	10.3
[10.216] Fuel tanks	10.4
[10.218] Fuel injection system.....	10.5
[10.304] Engine lubrication system.....	10.6
[10.310] Aftercooler.....	10.7
[10.400] Engine cooling system	10.8
[10.414] Fan and drive	10.9
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....	10.10



Engine - 10

Engine and crankcase - 001

T8.320 696110028 PST TIER 4B [ZERE08100 -]
T8.350 696110038 PST TIER 4B [ZERE08100 -]
T8.380 696110048 PST TIER 4B [ZERE08100 -]
T8.410 696110058 PST TIER 4B [ZERE08100 -]

Contents

Engine - 10

Engine and crankcase - 001

SERVICE

Engine	
Remove	3
Install	12

Engine - Remove

Prior operation:

Disconnect the batteries — **Battery - Disconnect (55.302)**

Prior operation:

Remove the hood — **Hood - Remove (90.100)**

Prior operation:

Side shield - Remove (90.102)

Prior operation:

Recover the refrigerant — **Air conditioning - Recover (50.200)**

Prior operation:

Drain the coolant — **Engine cooling system - Emptying (10.400)**

Prior operation:

Engine cooling system - Remove (10.400)

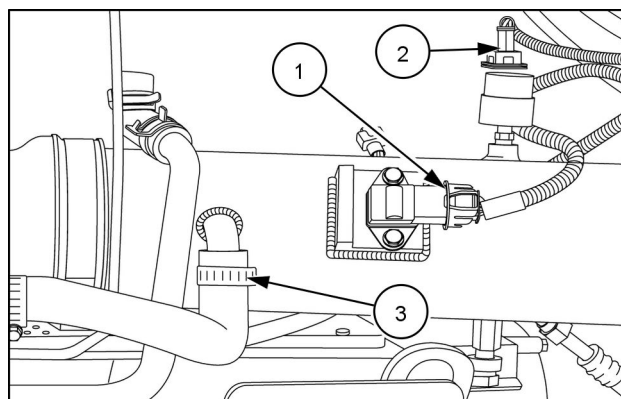
Prior operation:

Diesel Oxidation Catalyst (DOC) - Remove (10.500)

NOTE: Clean all fittings before disconnecting.

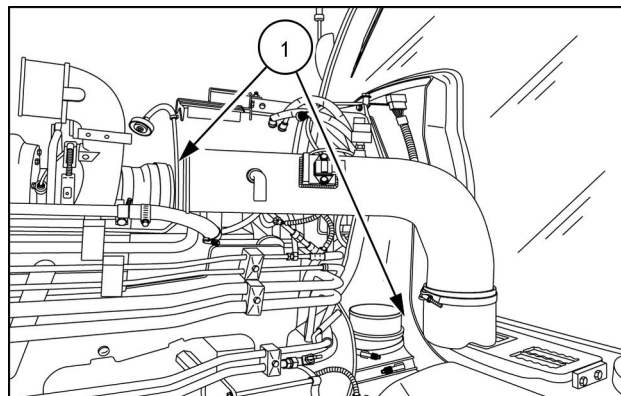
NOTE: Cap or plug all lines and ports when disconnecting hydraulic components.

1. Disconnect the harness connector to the humidity sensor **(1)** and the air restriction sensor **(2)**. Disengage the hose clamp **(3)** and disconnect the hose from the air intake tube.



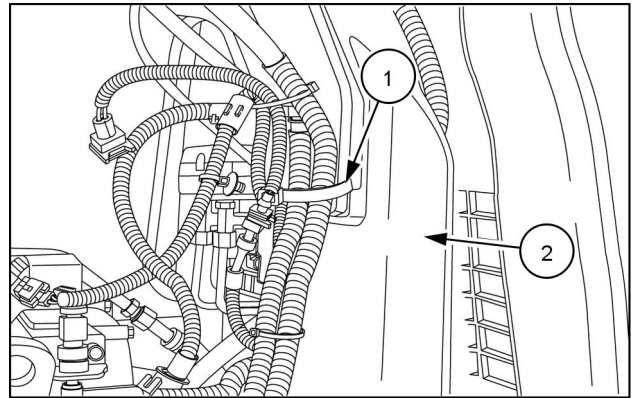
RAIL13TR04202AA 1

2. Disconnect the clamps **(1)** from each end of the air intake tube and remove the tube.



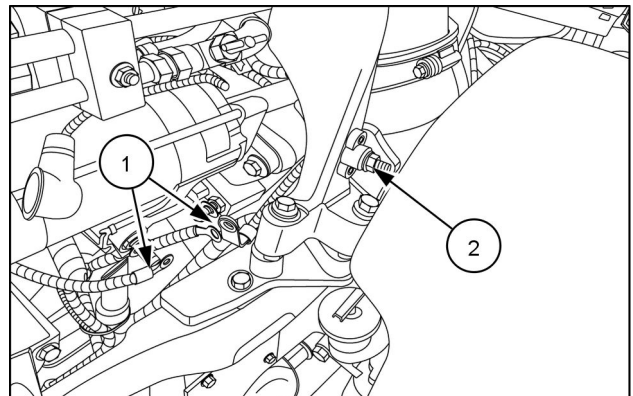
RAIL13TR04211AA 2

3. Cut the wire tie (1) securing the harness to the hood support (2).



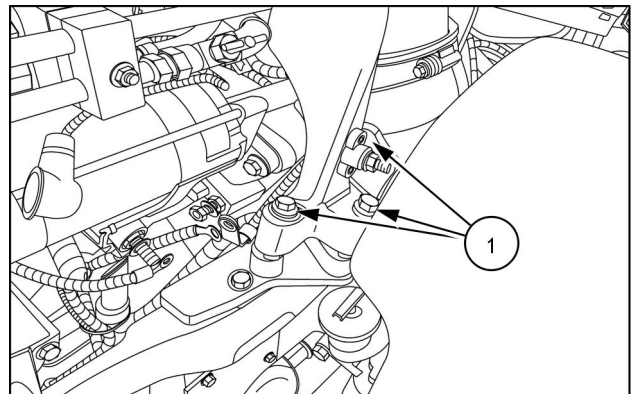
RAIL13TR04204AA 3

4. Disconnect the starter cables (1) and the auxiliary wire (2).



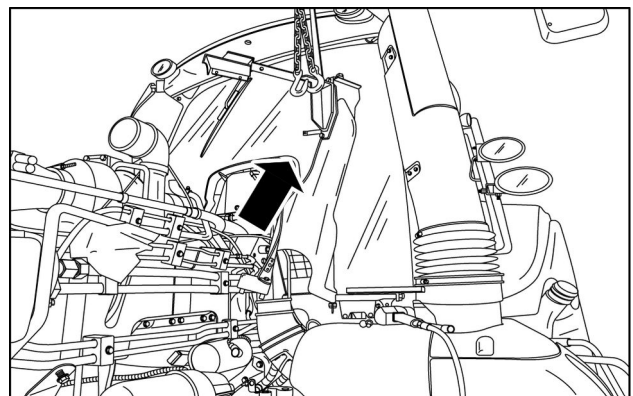
RAIL13TR04209AA 4

5. Remove the three bolts (1) securing the hood support to the frame.



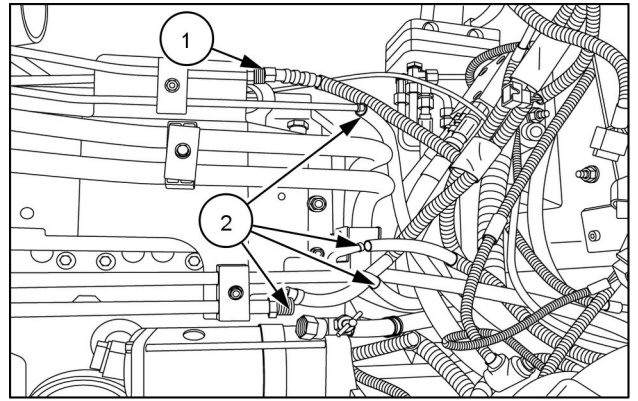
RAIL13TR04209AA 5

6. Remove the hood support.



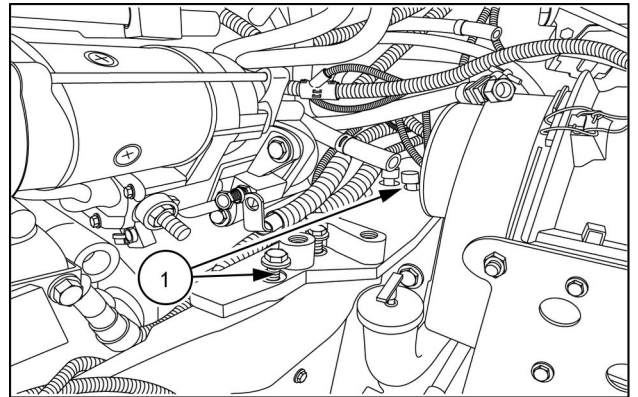
RAIL13TR04212AA 6

~~8-350-t8-380-t8-410-powershift-transmission-pst-tractor-service-repair-manual~~
Disconnect the high pressure A/C hose (1) and the coolant lines (2). Plug or cap all ports and lines.



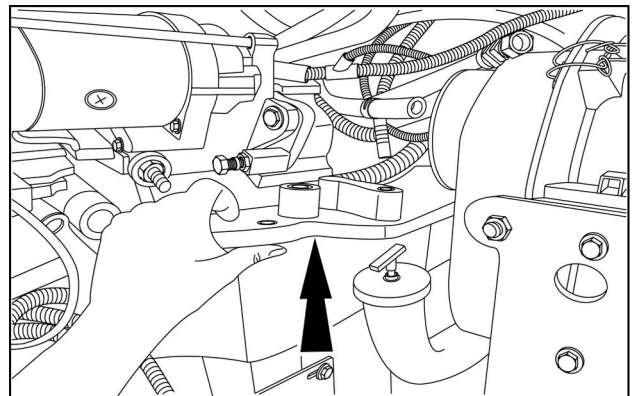
RAIL13TR04230AA 7

8. Remove the two bolts (1) from the rear engine mount plate.



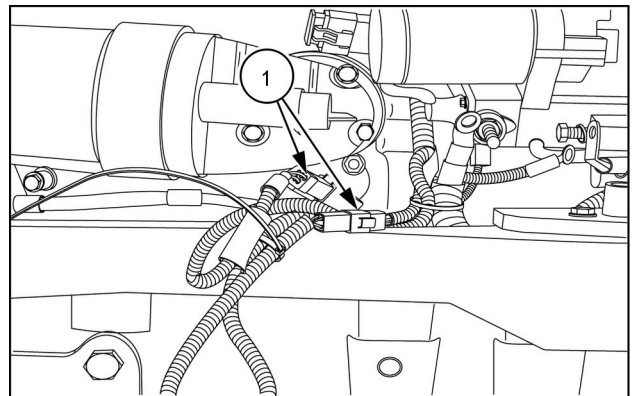
RAIL13TR04243AA 8

9. Remove the engine mount cover plate.



RAIL13TR04244AA 9

10. Disconnect the suspended axle electrical connectors (1) if equipped.



RAIL13TR04237AA 10