MXU100, MXU110, MXU115, MXU125, MXU135 Tractors Limited Models

Operator's Manual

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82999248
Replaces 82999166

CASE IH

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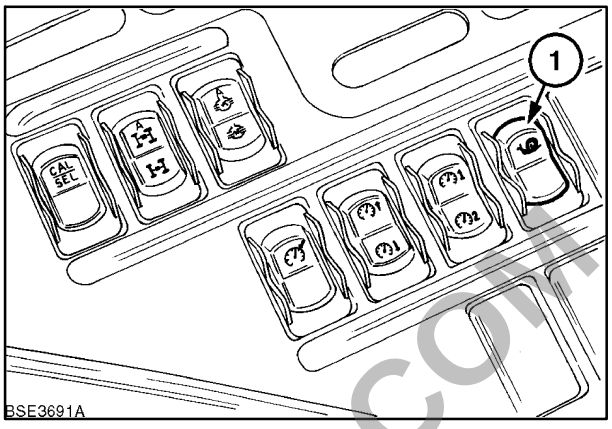
CREEPER GEARS (where fitted)

For operations requiring extra low ground speeds, reduction gear sets (creeper gears) are available.

The reduction gear set provides an additional twenty four gears in forward and reverse.

The creeper gears are selected with a rocker switch, 1, located on the right-hand console.

With the engine running, the clutch pressed and the shuttle lever in neutral, apply the tractor foot brakes. Momentarily press the upper part of the selector switch, 1, to engage the creeper gears.

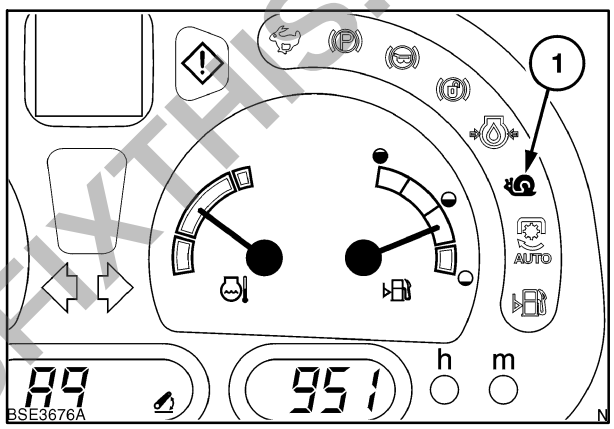


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The creep speed symbol, 1, will appear in the Instrument panel.

To disengage the creeper gears, repeat the above procedure. The creep speed symbol will cease to illuminate.

IMPORTANT: *The creeper gears offer very low ground speeds. Do not use the low gearing advantage to apply excessive draft loads to the tractor.*



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ERROR CODES (24 x 24)

If a fault occurs in the transmission controls, causing the tractor to become disabled, an error code will be displayed on the instrument panel. If this happens, contact your authorized dealer and report the error code. Disabling error codes are shown in the table to the right.

Transmission Calibration

If transmission shifts become slow or harsh, the clutches in the transmission require re-calibrating. Consult your authorized dealer.

Error Code	Fault
2011	Clutch pedal potentiometer signal too low.
2012	Clutch pedal potentiometer signal too high.
2021	Drive line harness disconnected.
2035	Dump solenoid closed circuit.
2036	Dump solenoid open circuit.
2037	Clutch disconnect switch open circuit.
2038	Clutch 3 solenoid short circuit.
2039	Clutch 3 solenoid open circuit.
2040	Clutch 4 solenoid short circuit.
2041	Clutch 4 solenoid open circuit.
2048	Clutch pedal switch set too low.
2053	5 volt reference failed, shorted to 12 volts.
2054	5 volt reference failed, shorted to earth (ground).
C	Wheel speed too high for creeper gears.
CP	Press clutch pedal to enable transmission (restore drive).

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ENGINE TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine will not start or is difficult to start	Incorrect starting procedure.	Review starting procedure.
	Low or no fuel.	Check fuel level.
	Air in fuel lines.	Bleed fuel system.
	Low ambient temperature.	Use cold starting aid.
	Contaminated fuel system.	Clean and bleed fuel system.
	Fuel pump inoperative.	Check fuse. If satisfactory, replace pump.
	Clogged fuel filter(s).	Replace fuel filter element(s).
	Malfunctioning fuel injectors.	See your authorized dealer.
	Malfunctioning fuel solenoid or solenoid relay.	See your authorized dealer.
	Incorrect engine oil viscosity.	Use correct viscosity oil.
	Incorrect fuel for operating temperature.	Use correct type fuel for temperature conditions.
	Slow starter speed.	See slow starter speed in Electrical.
Engine runs roughly and/or stalls	Clogged fuel filter(s).	Replace fuel filter element(s).
	Contaminated fuel system.	Clean and bleed fuel system.
	Fuel solenoid incorrectly adjusted.	See your authorized dealer.
	Fuel cap vent blocked.	Wash cap in clean fuel oil.
Engine knocks	Fuel injection pump timing.	See your authorized dealer.
	Low engine oil level.	Add oil, as required.
	Low engine oil pressure.	See your authorized dealer.
	Low engine operating temperature.	Check thermostats.
	Engine overheats.	See Engine overheats.

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TRACTOR FLUID CAPACITIES

CAPACITIES		MXU100	MXU110	MXU115	MXU125	MXU135
Fuel tank	Liters	180	180	254	254	254
	US gals	47.5	47.5	67.0	67.0	67.0
Cooling system	Liters	23	23	25	25	25
(with cab)	US gals	6.07	6.07	6.6	6.6	6.6
Engine	Liters	10	10	15	15	15
(including filter)	US gals	2.64	2.64	3.96	3.96	3.96
Transmission/rear axle						
(with 24x24, Standard Duty axle)	Liters	58.5	58.5	–	–	–
	US gals	15.4	15.4	–	–	–
(with 24x24, Heavy Duty axle)	Liters	65.5	65.5	65.5	65.5	65.5
	US gals	17.3	17.3	17.3	17.3	17.3
(with 16x16, Standard Duty axle)	Liters	55	55	–	–	–
	US gals	14.5	14.5	–	–	–
(with 16x16, Heavy Duty axle)	Liters	62	62	62	62	62
	US gals	16.3	16.3	16.3	16.3	16.3
4WD Front hubs	Liters	1.25	1.25	1.25	1.25	1.25
(quantity for **one** hub only)	US qts	1.3	1.3	1.3	1.3	1.3
4WD Front axle differential	Liters	7.5	7.5	7.5	9.0	9.0
(All axles)	US qts	7.92	7.92	7.92	9.5	9.5

IMPORTANT: *When operating remote cylinders, the rear axle oil level will be affected. When topping up the rear axle to accommodate the oil requirement of remote cylinders, no more than 20 liters (5.28 U.S. gallons) should be added to bring the oil level up to the upper mark in the sight glass when all rams are fully extended.*

Remote cylinders with an oil capacity of up to 18 liters (4.75 U.S. gallons) can be connected to the tractor hydraulic system without adding oil, provided the tractor is being operated on level ground.

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LUBRICATION AND MAINTENANCE CHART

Service Interval	Operation No.	Maintenance Requirement	Check	Clean	Lube	Change	Adjust	Drain	Wash	Page No.
When warning lamp lights	1	Engine air cleaner outer element	X	X						4-10
	2	Brake fluid level	X				X			4-12
	3	Fuel system water separator	X					X		4-12
	4	Engine coolant level	X				X			4-13
Every 10 hours or daily	5	Engine oil level	X				X			4-14
	6	Windshield washer reservoir	X				X			4-14
Every 50 hours	7	Radiator, oil cooler and air conditioner condenser	X	X						4-15
	8	Cab air filters	X	X						4-16
	9	All grease fittings			X					4-18
	10	Front and rear wheel nut torque	X				X			4-24
	11	Tire pressures and condition	X				X			4-25
	12	Remote control valve drain bottles	X							4-25
Every 100 hours	13	A/C drive belts	X				X			4-25
Every 300 hours	14	Poly V-belt	X				X			4-26
	*15	Battery electrolyte level (tropical climates)	X	X			X			4-26
	16	Four wheel drive front axle and hubs oil level	X				X			4-28
	17	Front suspension cylinder upper bearing			X					4-28
	18	Transmission/rear axle/hydraulics oil level	X				X			4-29
	19	Cab mounting bolts torque	X				X			4-29
	20	Parking brake	X				X			4-31
Every 600 hours	#21	Engine oil and filter				X				4-32
	22	Hydraulic and transmission oil filters				X				4-34
	23	Air cleaner outer element				X				4-35
	24	Engine air intake connections	X							4-35
	25	Fuel pre-filter and fuel filter elements	X			X				4-36
Every 1200 hours or annually	26	Cab air filters				X				4-39
	27	Transmission/rear axle/hydraulic oil and filter				X				4-40
	28	Four wheel drive axle differential oil				X				4-41
	29	Four wheel drive axle hub oil				X				4-42
	30	Battery electrolyte level (temperate climates)	X	X			X			4-43
Every 1200 hours or two years	31	Engine coolant				X				4-44
	32	Engine air cleaner inner element				X				4-48
	33	Check and adjust tappet clearance	X				X			4-49
Every 1800 hours	34	Fuel injectors	X	X			X			4-50
Every Three Years	35	Air Conditioner System	X	X		X				4-51
General Maintenance	36	Bleeding the fuel injection system	X				X			4-52
	37	Foot brakes	X				X			4-52
	38	Engine idle speed	X				X			4-53
	39	Headlight and worklamp adjustment	X			X				4-53
	40	Bulb replacement	X			X				4-54
	41	Fuse replacement	X			X				4-57
	42	Cleaning the tractor	X	X						4-63

***** Batteries on tractors operating in temperate climates need only be checked every 1200 hours.

Oil and filter change interval will be reduced if the diesel fuel has a high sulphur content or if the tractor is operated in extremely cold temperatures. See “Sulphur in Fuel”.

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MINIMUM HARDWARE TIGHTENING TORQUES

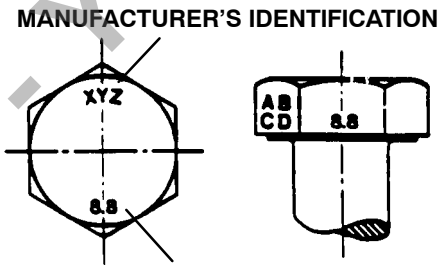
IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

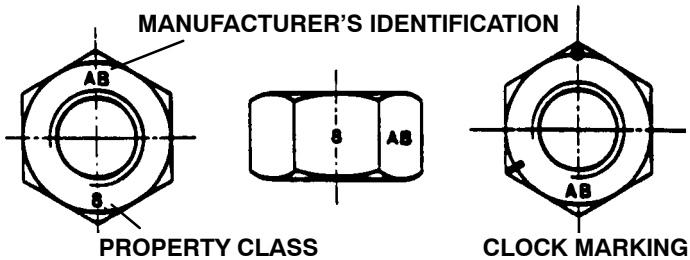
NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	1.7 (15)*	2.2 (19)*	2.6 (23)*	3.4 (30)*	3.7 (33)*	4.8 (42)*	2.3 (20)*
M6	5.8 (51)*	7.6 (67)*	8.9 (79)*	12 (102)*	13 (115)*	17 (150)*	7.8 (69)*
M8	14 (124)*	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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EVERY 50 HOURS MAINTENANCE

Carry out the preceding checks plus the following:

OPERATION 7

CLEANING THE RADIATOR, OIL COOLER AND AIR CONDITIONER CONDENSER CORES

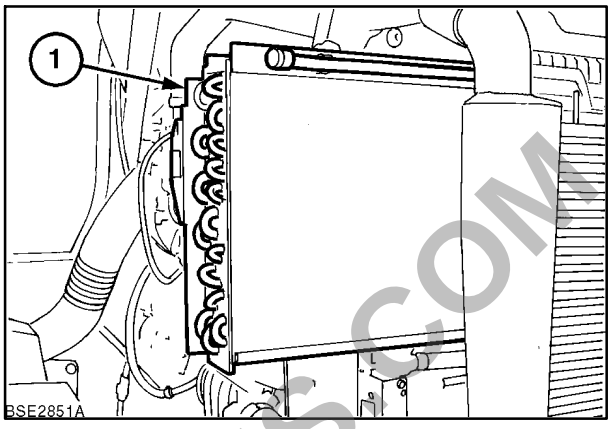
Check the cores for chaff accumulation or blockage. If any is noted, clean as follows:

⚠ WARNING ⚠

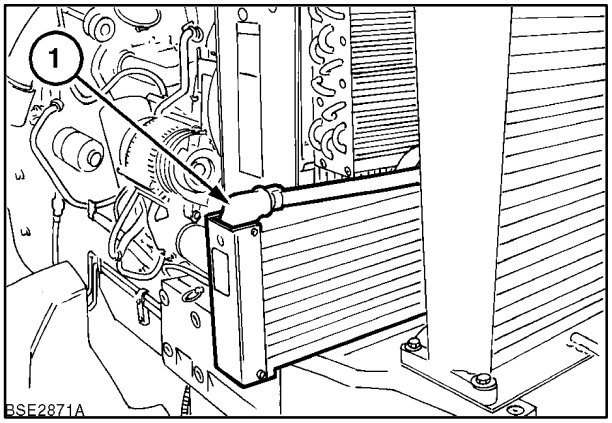
Wear eye protection and protective clothing during the cleaning process. Clear the area of bystanders so they are not struck by flying particles.

1. For cleaning, use compressed air or a pressure washer not exceeding 7 bar (100 psi).
2. The air conditioner condensor, 1, Figure 22 and the driveline oil cooler Figure 22, located in front of the engine radiator, slide out for ease of service. Turn the two quick-release fasteners, 3, counterclockwise to release.
3. Slide the oil cooler and the air conditioner condensor out to the right to gain access to the engine coolant radiator, 1, Figure 23.
4. Direct the air or water through each core from the back to the front. Clean the radiator first, then the air conditioner condenser and, finally, the driveline oil cooler. Carefully straighten any bent fins.

NOTE: *If the cores are blocked with any oily substance, apply a detergent solution and remove it with a pressure washer.*



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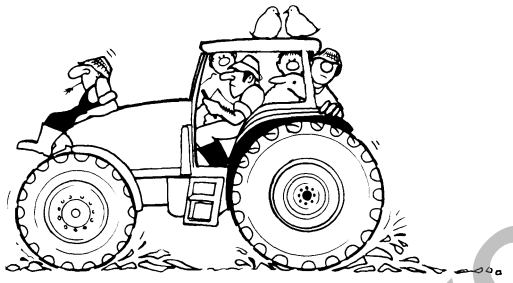
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⚠ SAFETY PRECAUTIONS ⚠

ABOUT THE TRACTOR

1. Read the Operator's Manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
2. Only allow properly trained and qualified persons to operate the tractor.
3. To prevent falls, use the handrails and step plates when getting on and off the tractor. Keep steps and platform clear of mud and debris.
4. Replace all missing, illegible or damaged safety decals.
5. Keep safety decals free of dirt or grime.



6. Do not permit anyone but the operator to ride on the tractor except for driver training or instruction. When used for these purposes an additional seat may be fitted in the cab. Passengers should not be carried on the tractor at any time.
7. Keep children away from the tractor and farm machinery at all times.
8. Do not modify or alter or permit anyone else to modify or alter the tractor or any of its components or any tractor function without first consulting your dealer.
9. Install all guards before starting the engine or operating the tractor.

DRIVING THE TRACTOR

1. Always sit in the driver's seat while starting or driving the tractor.
2. When driving on public roads, have consideration for other road users. Pull in to the side of the road occasionally to allow any following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors.
3. Use a rotating beacon and/or Slow Moving Vehicle warning when driving on public roads to indicate that the vehicle is slow moving and is a possible hazard.
4. Dip the tractor lights when meeting a vehicle at night. Make sure the lights are adjusted to prevent blinding the driver of an oncoming vehicle.
5. Reduce speed before turning or applying the brakes. Brake both wheels simultaneously when making an emergency stop. Ensure that both brake pedals are locked together when travelling at road speeds or when on public roads to ensure correct operation of trailer brakes, balanced operation of the tractor brakes and four wheel braking (MFD tractors only).

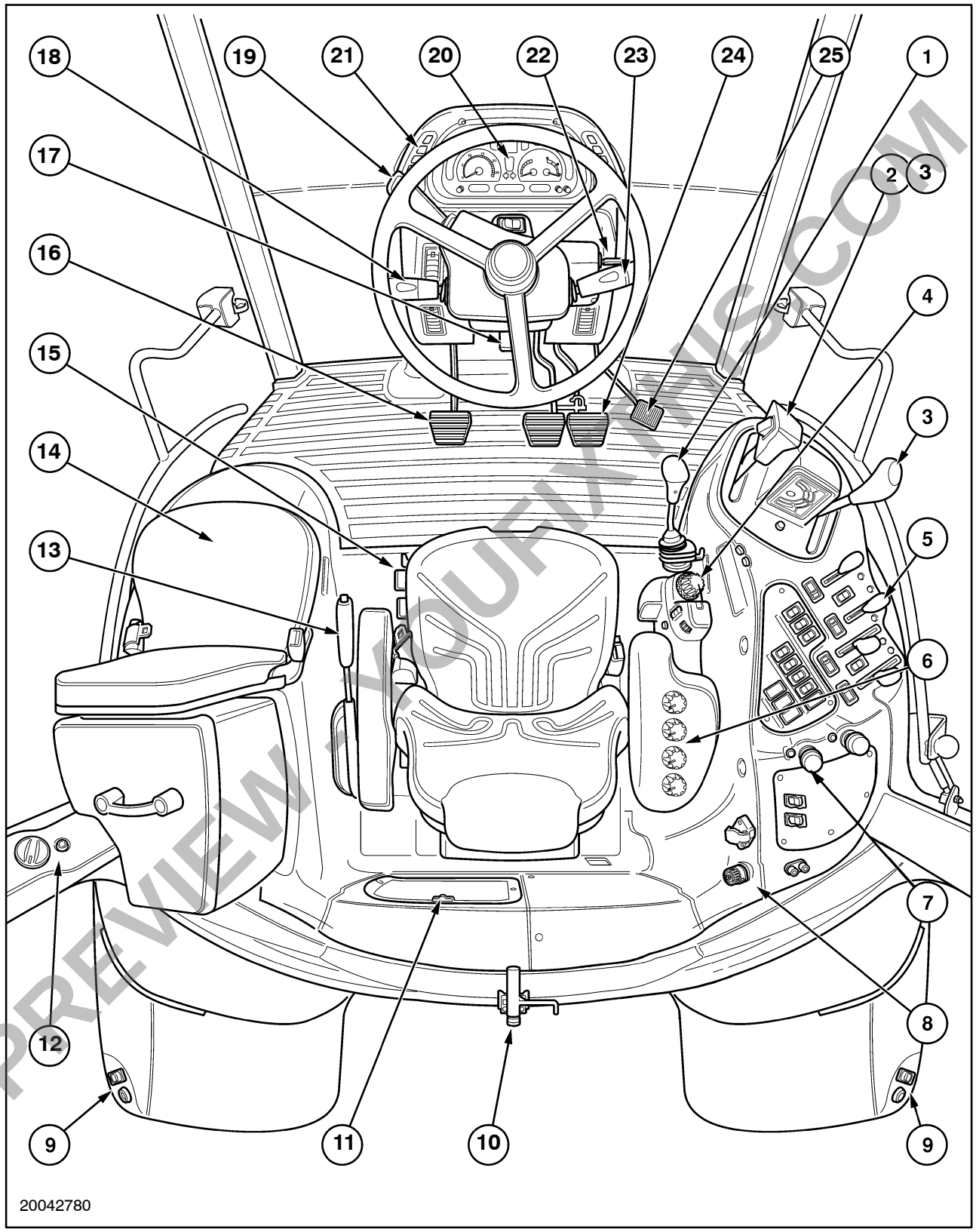


6. On four wheel drive tractors, the drive to the front axle is automatically engaged, to provide four wheel braking, when both footbrakes are applied. Owners should be aware of the effectiveness of four wheel braking which greatly enhances braking performance. Appropriate care should be exercised during fierce braking.
7. Use extreme caution and avoid hard application of the tractor brakes when towing heavy loads at road speeds.

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CAB AND PLATFORM CONTROLS



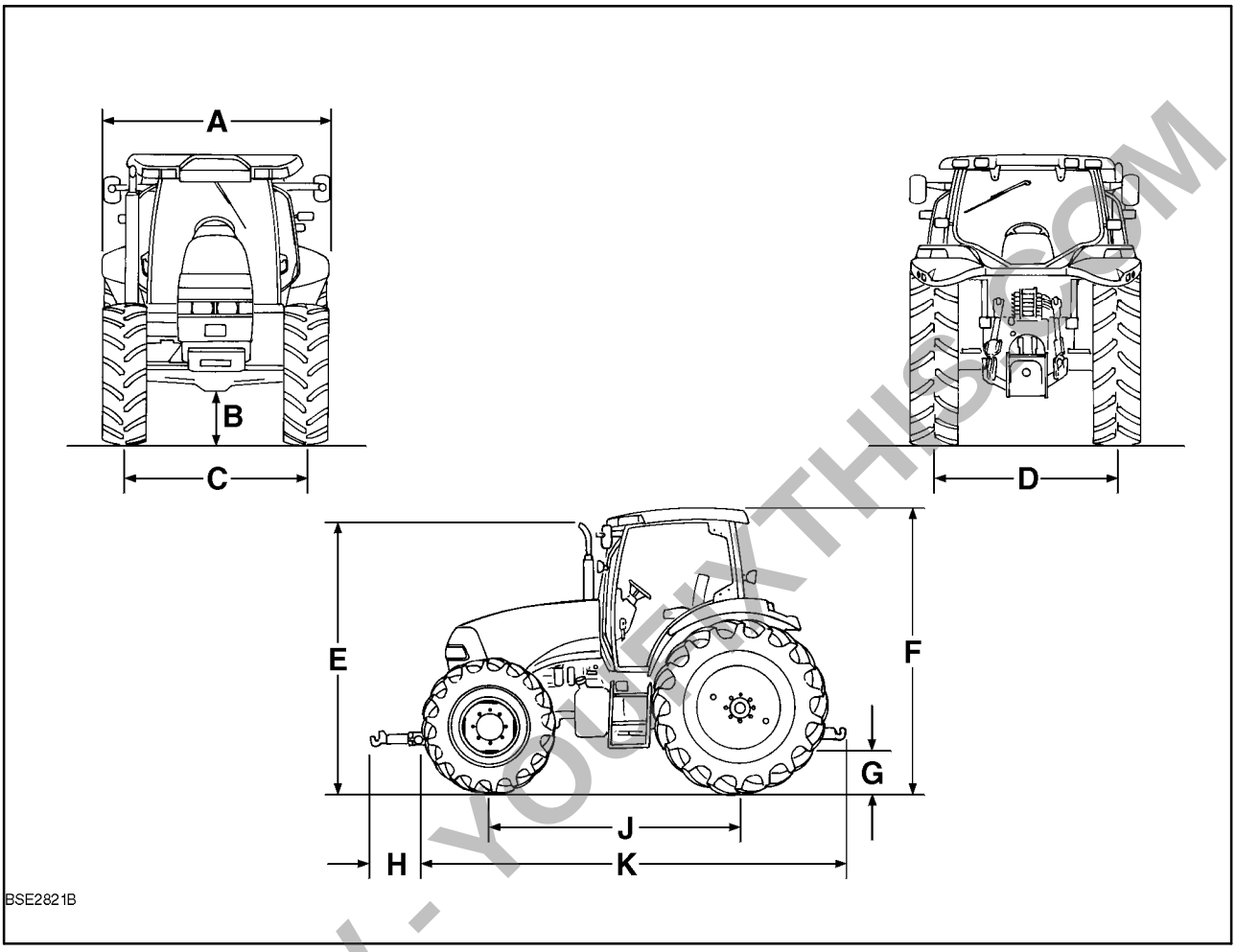
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General View of Tractor Controls - With Cab

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GENERAL DIMENSIONS – MXU100 AND MXU110



NOTE:*The following dimensions are based on Limited tractors fitted with tire sizes shown. Allowance must be made for tires of larger or smaller dimensions:*

		MXU100 and MXU110	
		2WD	**MFD**
The following dimensions are based on tractors with tire sizes shown:	Front	7.50 x 16	14.9 R24
	Rear	16.9 R38	16.9 R38
A. Width across fenders			
Standard fenders	mm	2170	2170
	in	85.4	85.4
Extended fenders	mm	2550	2550
	in	100.3	100.3

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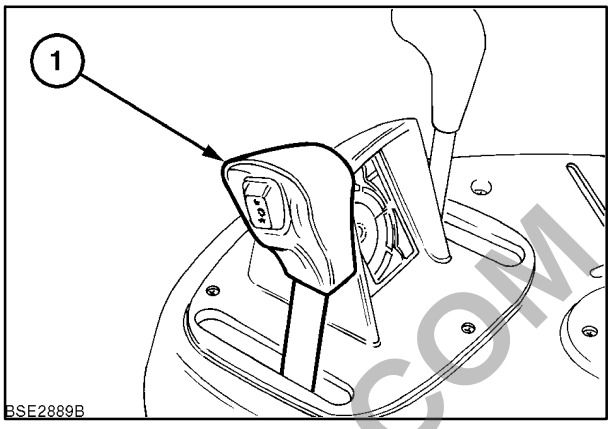
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HAND THROTTLE

The hand throttle, 1, can be used independently of the foot throttle to control the speed of the tractor. Move the throttle lever forward to increase engine speed.

⚠ CAUTION ⚠

Always return the hand throttle to the idle position when using the foot throttle for road transport applications.



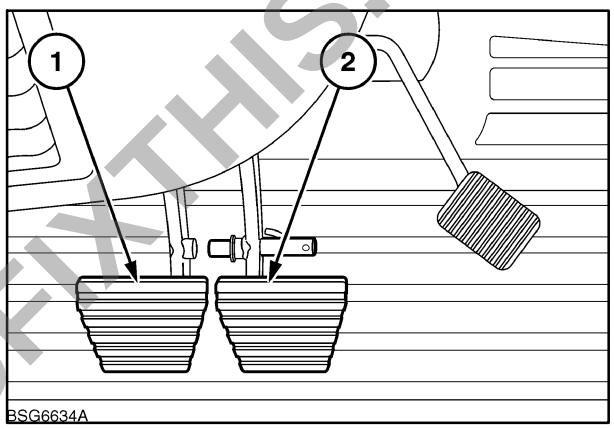
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FOOT BRAKES

The brakes are actuated by the two foot pedals, 1, and, 2. When operating in the field they can be unlocked and operated independently, to aid turning in confined spaces. When independent braking is not required, ensure both pedals are locked together to provide normal braking.

⚠ CAUTION ⚠

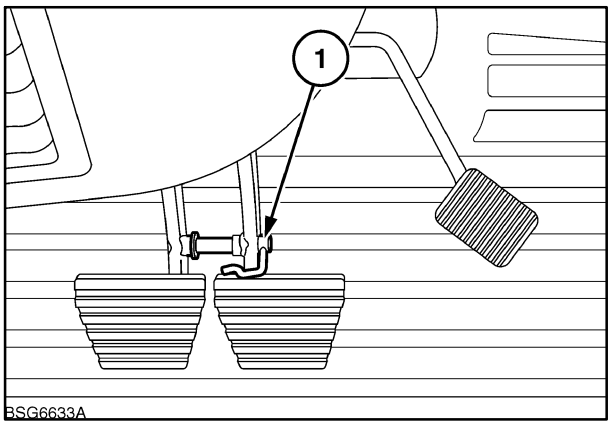
On four wheel drive tractors the drive to the front axle is automatically engaged when both brake pedals are applied simultaneously to provide four wheel braking. Owners should be aware of the effectiveness of four wheel braking which greatly enhances braking performance. Appropriate care should be exercised during heavy braking.



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⚠ WARNING ⚠

For your safety, always lock the brake pedals together when travelling at transport speeds or if any type of braked trailer is attached to the tractor. To lock the pedals together, engage the locking pin in the left pedal and swivel the latch, 1, over the right pedal support to lock, as shown.



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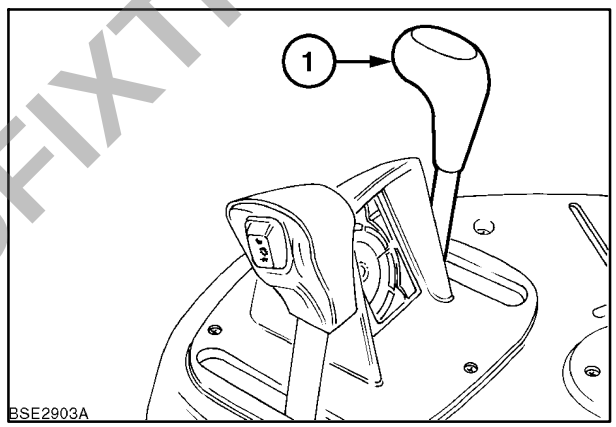
16 x 16 SEMI-POWERSHIFT TRANSMISSION

The Semi-Powershift transmission has 16 forward, and 16 reverse gear ratios. An optional reduction gear set (creeper gears) provides an additional 16 ratios in forward and reverse.

IMPORTANT: *When travelling at high road speeds with trailed or semi-mounted equipment attached to the tractor, ensure the equipment is rated for 50KPH operation in respect to its construction, brakes and tires.*

The transmission is controlled by a range lever, 1, plus a powershift control and a range change button on the hand throttle. A shuttle lever mounted to the left of the steering wheel is used to select forward or reverse drive. Transmission and throttle controls are color-coded orange.

This transmission provides four powershift gears in each of the four intermediate ranges A (1-4), B (5-8), C (9-12), and D (13-16). Clutchless shifts between gears 4 and 5, 12 and 13 are made by using the range button in conjunction with the powershift buttons. Range shifts between Low and High (8th and 9th gears), can only be made with the clutch pedal fully pressed.



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MAIN SHIFT LEVER

The main shift lever, 1, is used to select both range gears and main gears. When selecting High or Low ranges (moving the lever forward or rearward) the clutch pedal must always be pressed.

With the shuttle lever in neutral and clutch pedal fully pressed, move the main shift lever rearward into the Low (field) range. In this range, powershift gears 1–4 or 5–8 can be selected. Move the lever fully forward to select powershift gears 9–12 or 13–16 in the High range. To engage neutral, move the lever to the mid position.

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ELECTRONIC DRAFT CONTROL (where fitted)

Description

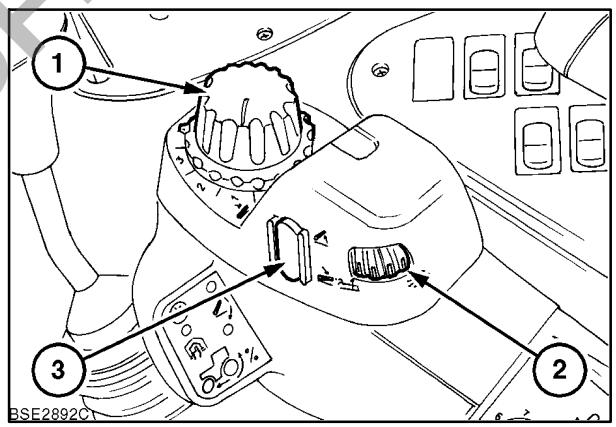
The Electronic Draft Control (EDC) system senses changes in the draft loading using sensors in the lower link pins of the 3-point linkage and changes in the position of the linkage using a sensor on the cross shaft. The system operates in Position Control or Draft Control.

Position Control provides accurate control of implements, such as sprayers, mowers or graders that operate above the ground. Once the implement height has been set, the position of the lower links will remain constant.

Draft Control is designed for mounted or semi-mounted implements operating in the ground. Changes in the working depth and soil resistance cause the draft loading on the implement to increase or decrease.

Draft Control Operational Notes

Draft Control sets the working depth in the soil by maintaining a constant draft load. If the Position Control knob, 1, is set just below the normal Draft Control working depth, it will prevent the implement from diving or working too deep if an area of soft or light soil is encountered.



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Position Control will override Draft Control when the Position Control knob is moved above the working depth set by the draft loading wheel, 2. Therefore, the Position Control lever can be used to lift the implement out of the ground, from the normal Draft Control working depth, without changing the Draft Control setting.

This function can be useful when a gradual lift out is required. The adjustable stop can be set so that the Position Control knob can be returned quickly to a lower limit position just below the normal Draft Control working depth.

The raise/lower switch, 3, would normally be used to raise or lower an implement during a work cycle.

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EQUIPMENT MOUNTING POINTS

Description

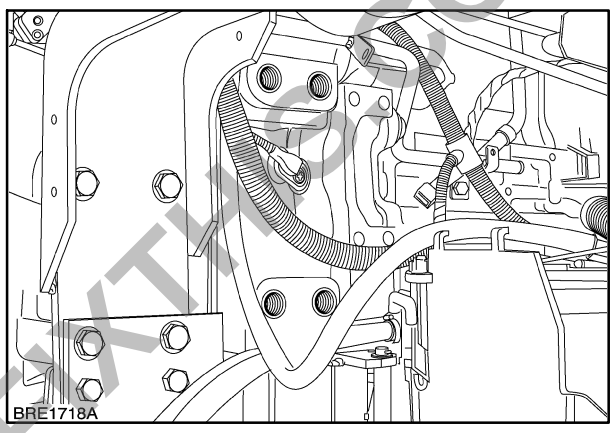
Your tractor is provided with a number of threaded holes for attaching optional equipment. All threaded holes will accept M20 x 2.5 fasteners. The depth of the holes will vary depending on the location on the tractor. It is important that all holes are checked before inserting any mounting bolt or stud, to avoid damage to the thread or metal casting.

Transmission Housing

Figure 127 shows the mounting points on the left side of the tractor. There are matching threaded holes on the right side.

IMPORTANT: *Use care, when mounting equipment to the transmission housing, to avoid, interference with the cab or components below the tractor.*

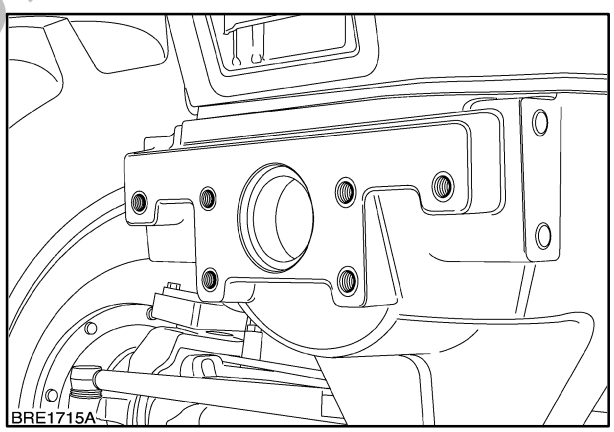
IMPORTANT: *Do not attach any equipment or brackets to the cab mounting points*



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Front Axle Support Casting

NOTE: *If you have front end weights on your tractor then these holes will have already been used for the weight carrier.*



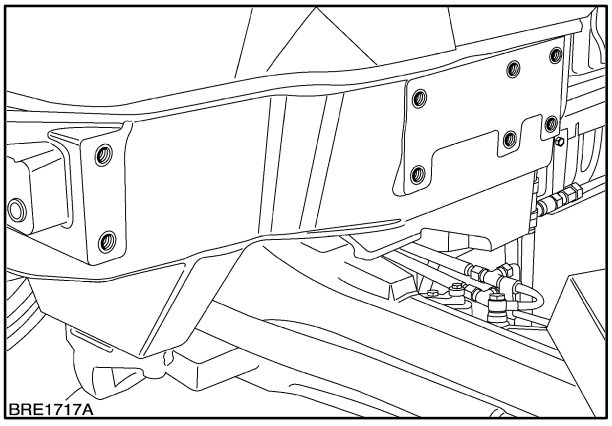
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Depending on the tractor specification, the number of holes in the side of the axle support casting may vary.

NOTE: *Consult the hardware torque chart in Section 8 for correct fastener torque values when attaching equipment to the mounting points. Check the fastener torque after one hour of operation and on a daily basis thereafter.*

⚠ CAUTION ⚠

When attaching equipment to the mounting points, adjust the tire pressures to compensate for the additional weight. Ensure the maximum axle loads for the tractor are not exceeded.



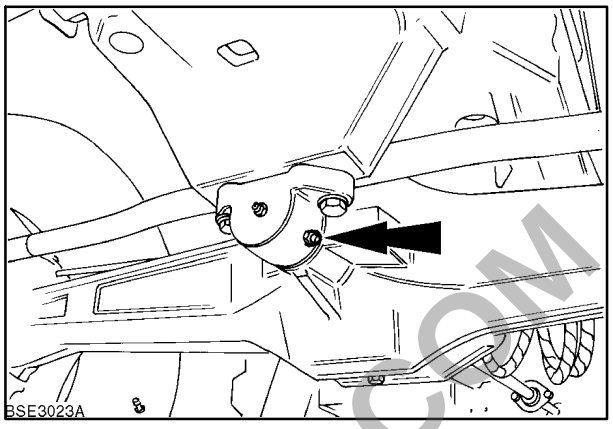
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Front Trunnion Pin (Standard MFD Axle)

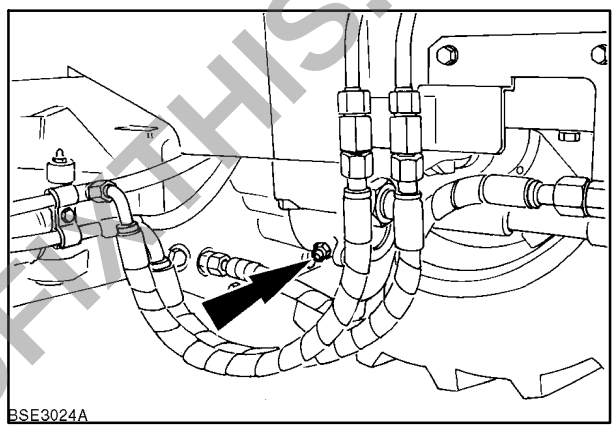
Apply a grease gun to the lubrication fitting as shown.



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Rear Trunnion Pin (Standard MFD Axle)

Apply a grease gun to the lubrication fitting as shown.



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Engine (continued)

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine lacks power	Engine overloaded.	Shift to lower gear, reduce draft load or ballast carried.
	Air cleaner restricted.	Service air cleaner.
	Low engine operating temperature.	Check thermostats.
	Engine overheats.	See Engine overheats.
	Clogged fuel filter(s).	Replace fuel filter element(s).
	Incorrect fuel.	Use correct type fuel.
	Incorrect engine valve clearance.	Check and adjust.
	Malfunctioning fuel injectors.	See your authorized dealer.
	Malfunctioning fuel injection pump.	See your authorized dealer.
	Maximum “no-load” speed set too low.	See your authorized dealer.
	Leaking air intake or exhaust manifold.	Check and rectify or see your authorized dealer.
	Turbocharger malfunctioning.	See your authorized dealer.
	Implement incorrectly adjusted.	See implement Operator’s Manual.
Engine overheats	Low engine oil level.	Add oil, as required.
	Low engine coolant level.	Fill coolant recovery tank. Check cooling system for leaks.
	Defective thermostat(s).	Check thermostat(s)
	Dirty/blocked radiator core.	Clean.
	Excessive engine overload.	Shift to lower gear, reduce draft load or ballast carried.
	Faulty radiator pressure cap.	Replace cap.
	Cooling system blocked.	Flush cooling system.
	Loose or worn fan belt.	Check automatic tensioner, replace belt if worn.
	Leaking hose or connection.	Tighten connection and/or replace hose.
	Malfunctioning temperature gauge or sender.	See your authorized dealer.
	Malfunctioning vistronic fan.	See your authorized dealer.

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