ORIGINAL INSTRUCTIONS

- according to Directives 2006/42/EC, Annex I 1.7.4.1

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PUMA 130 CVX
PUMA 145 CVX
PUMA 160 CVX

Tractors

OPERATOR'S MANUAL

Part Number 84479483

1st edition English

January 2012

CE

CASE IH AGRICULTURE

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ALARM(S)

FAULT CODES AND SYMBOLS

DMD	LAMP	FAULT CODE	AREA of FAULT	ACTION
	-	1---	Electronical hitch control	The system fault symbols relate to an operational fault in one or more of the tractors main components, either electrical, mechanical or hydraulic. The appearance of a fault symbol may be accompanied by a four digit fault code. Consult your authorised dealer.
	-	2---	Transmission	
	-	3---	Engine	
	-	4---	Rear electronic remote valves	
 F	-	45--	Front electronic remote valves	
	-	5---	Rear **P.T.O.** system	
	-	6---	Front wheel drive	
	-	7---	Rear differential lock	
	-	8---	Front **P.T.O.** system	
	-	9---	Front 3- point hitch	
	-	10--	Front suspension	
	-	12--	Electronic park lock	
	-	13--	Universal Control Module (UCM)	
	-	15--	Turn Assist system	
	-	16--	Cab auto temperature control	
	-	18--	Armrest controller	

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SYMPTOM(S)

ENGINE

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.
	Clogged fuel filter(s).	Replace fuel filter element(s)
	Malfunctioning fuel pump or injectors.	See your authorised dealer.
	Malfunctioning fuel solenoid or solenoid relay.	See your authorised 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 authorised dealer.
	Fuel cap vent blocked.	Wash cap in clean fuel oil.
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.
	Malfunctioning fuel injectors.	See your authorised dealer.
	Malfunctioning fuel injection pump.	See your authorised dealer.
	Maximum 'no- load' speed set too low	See your authorised dealer.
	Leaking air intake boost pipes or exhaust manifold.	Check and rectify or see your authorised dealer.
	Turbocharger malfunctioning.	See your authorised dealer.
	Implement incorrectly adjusted.	See implement Operator's Manual..
Engine knocks	Fuel injection pump timing.	See your authorised dealer.
	Low engine oil level.	Add oil, as required.
	Low engine oil pressure.	See your authorised dealer.
	Low engine operating temperature.	Check thermostats.
	Engine overheats.	See Engine overheats.
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 tension, adjust or replace belt if worn.
	Leaking hose or connection.	Tighten connection and/ or replace hose.
	Malfunctioning temperature gauge or sender.	See your authorised dealer.
	Malfunctioning vistronic fan.	See your authorised dealer.
Low engine operating temperature	Malfunctioning thermostat(s).	Replace thermostat(s).

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CAPACITIES

	PUMA 130 CVX	PUMA 145 CVX	PUMA 160 CVX
FUEL TANK		**270 l** (**71.3 US gal**)	
AUXILIARY FUEL TANK		**70 l** (**18.5 US gal**)	
DEF/ AdBlue® TANK		**51 l** (**13.5 US gal**)	
COOLING SYSTEM		**26 l** (**6.9 US gal**)	
ENGINE (including filter)		**15 l** (**3.96 US gal**)	
TRANSMISSION / REAR AXLE / HYDRAULICS	**65 l** (**17.2 US gal**)		**68 l** (**18.0 US gal**)
4WD FRONT AXLE - DIFFERENTIAL		**9 l** (**2.38 US gal**)	
4WD FRONT HUBS (Class 3 Axle - less brakes)		**1.25 l** (**0.33 US gal**)	
4WD FRONT HUBS (Class 3 Axle - with brakes)		**3.0 l** (**0.79 US gal**)	
4WD FRONT HUBS (Class 4 Axle - less brakes)		**3.6 l** (**0.95 US gal**)	
4WD FRONT HUBS (Class 4 Axle - with brakes)		**4.0 l** (**1.06 US gal**)	
FRONT **P.T.O.**		**0.5 l** (**0.13 US gal**)	

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MAINTENANCE CHART

Maintenance Chart

Interval	Page Nb.	Maintenance Action	Nb. of pts	Replace	Drain fluid	Check	Cleaning	Grease	Adjust	Change fluid	Bleed	Charging
WHEN THE WARNING LAMP LIGHTS	**7-14**	CHANGE ENGINE AIR CLEANER OUTHER ELEMENT		X								
	7-15	DRAIN FUEL SYSTEM WATER SEPARATOR			X							
	7-16	CHECK BRAKE FLUID LEVEL				X						
EVERY 10 HOURS OR EACH DAY	**7-17**	CHECK ENGINE COOLANT LEVEL				X						
	7-18	CHECK ENGINE OIL LEVEL				X						
	7-18	CHECK REMOTE CONTROL VALVE DRAIN BOTTLES				X						
	7-19	CHECK WINDSCREEN WASHER RESERVOIR				X						
	7-19	DRAIN AIR RESERVOIR ON AIR OPERATED TRAILER BRAKE			X							
FIRST 50 HOURS	**7-20**	SERVICE OPERATIONS				X						
EVERY 50 HOURS	**7-22**	CLEAN CAB AIR FILTER					X					
	7-23	CLEAN SCR COVER AIR DUCTS					X					
	7-24	CLEAN COOLER SECTION					X					
	7-25	ALL GREASE FITTINGS						X				
	7-32	CHECK FRONT AND REAR WHEEL NUTS				X						
	7-32	CHECK TYRE PRESSURES AND TYRE CONDITION				X						
EVERY 100 HOURS	**7-33**	INSPECT POLY V-BELT				X						
	7-33	INSPECT COMPRESSOR DRIVE BELT				X						
EVERY 300 HOURS	**7-34**	CHECK BATTERY FLUID LEVEL				X						
	7-35	ADJUST HANDBRAKE							X			
	7-36	CHECK TRANSMISSION/REAR AXLE AND HYDRAULIC OIL LEVEL				X						
	7-37	CHECK 4WD FRONT AXLE DIFFERENTIAL AND HUBS OIL LEVEL				X						
	7-37	CHECK FRONT P.T.O. GEARBOX OIL LEVEL				X						
EVERY 600 HOURS	**7-38**	CHANGE ENGINE OIL AND FILTER		X								
	7-40	CHANGE FUEL PRE-FILTER AND FUEL FILTER ELEMENT		X								
	7-41	CHANGE ENGINE AIR CLEANER OUTHER ELEMENT		X								
		CHANGE CHARGE PUMP OIL FILTER		X								
	7-42	CHANGE CHARGE PUMP AND GEAR PUMP OIL FILTER		X								
	7-43	CHECK ENGINE AIR INTAKE CONNECTIONS				X						
	7-44	CHECK TRANSMISSION OIL COOLER PIPE COUPLINGS				X						
	7-44	CLEAN DEF/ AdBlue INLINE FILTER					X					

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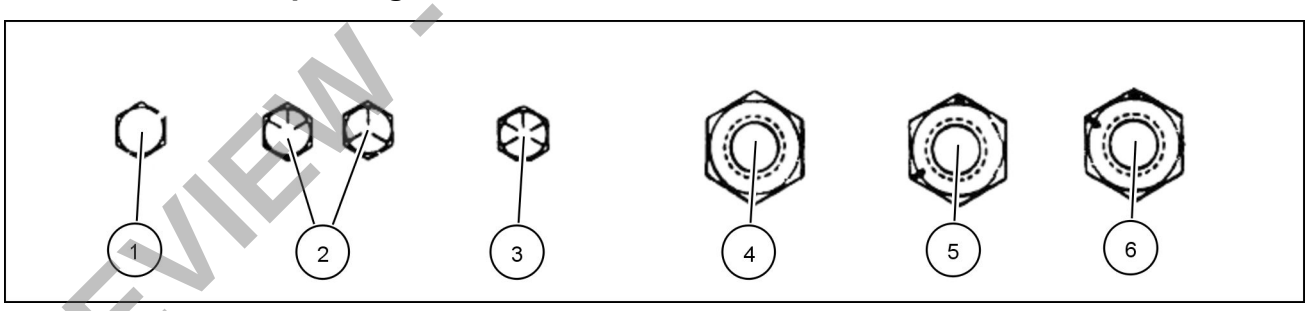
MINIMUM HARDWARE TIGHTENING TORQUES

INCH NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	SAE GRADE 5 BOLT and NUT		SAE GRADE 8 BOLT and NUT		LOCKNUT GrB W/ Gr5 BOLT	LOCKNUT GrC W/ Gr8 BOLT
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD		
1/4	**9.7 Nm (85.9 lb in)**	**13 Nm (115.1 lb in)**	**14 Nm (123.9 lb in)**	**18 Nm (159.3 lb in)**	**6.9 Nm (61.1 lb in)**	**9.8 Nm (86.7 lb in)**
5/16	**20 Nm (177.0 lb in)**	**26 Nm (230.1 lb in)**	**28 Nm (247.8 lb in)**	**37 Nm (327.5 lb in)**	**14 Nm (123.9 lb in)**	**20 Nm (177.0 lb in)**
3/8	**35 Nm (26 lb ft)**	**46 Nm (34 lb ft)**	**50 Nm (37 lb ft)**	**65 Nm (48 lb ft)**	**26 Nm (19 lb ft)**	**35 Nm (26 lb ft)**
7/16	**57 Nm (42 lb ft)**	**73 Nm (54 lb ft)**	**80 Nm (59 lb ft)**	**104 Nm (77 lb ft)**	**41 Nm (30 lb ft)**	**57 Nm (42 lb ft)**
1/2	**87 Nm (64 lb ft)**	**113 Nm (83 lb ft)**	**123 Nm (91 lb ft)**	**159 Nm (117 lb ft)**	**61 Nm (45 lb ft)**	**88 Nm (65 lb ft)**
9/16	**125 Nm (92 lb ft)**	**163 Nm (120 lb ft)**	**176 Nm (130 lb ft)**	**229 Nm (169 lb ft)**	**88 Nm (65 lb ft)**	**125 Nm (92 lb ft)**
5/8	**174 Nm (128 lb ft)**	**224 Nm (165 lb ft)**	**244 Nm (180 lb ft)**	**316 Nm (233 lb ft)**	**122 Nm (90 lb ft)**	**172 Nm (127 lb ft)**
3/4	**306 Nm (226 lb ft)**	**397 Nm (293 lb ft)**	**432 Nm (319 lb ft)**	**560 Nm (413 lb ft)**	**217 Nm (160 lb ft)**	**305 Nm (225 lb ft)**
7/8	**495 Nm (365 lb ft)**	**641 Nm (473 lb ft)**	**698 Nm (515 lb ft)**	**904 Nm (667 lb ft)**	**350 Nm (258 lb ft)**	**494 Nm (364 lb ft)**
1	**742 Nm (547 lb ft)**	**960 Nm (708 lb ft)**	**1048 Nm (773 lb ft)**	**1356 Nm (1000 lb ft)**	**523 Nm (386 lb ft)**	**739 Nm (545 lb ft)**

IDENTIFICATION

Inch Bolts and free-spinning nuts



20083682 1

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

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STARTING THE UNIT

STARTING THE ENGINE

⚠ WARNING

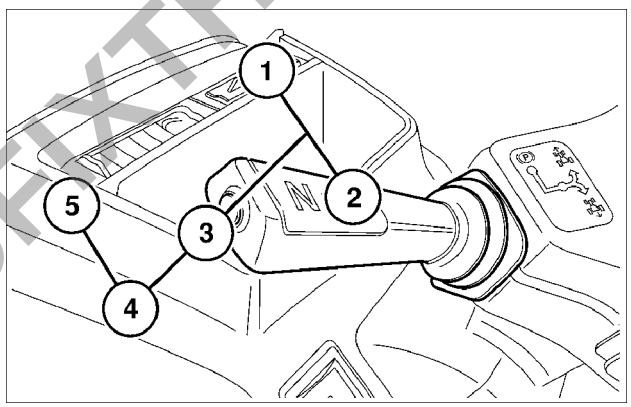
Hazard to bystanders!
Make sure the area surrounding the machine is clear of all persons before starting the engine.
Failure to comply could result in death or serious injury.

W0090A

Before starting the engine, always carry out the following procedure:

- Sit in the driver's seat.
- Ensure the parking brake is firmly applied.
- Ensure the Travel lever is in the idle position.
- Ensure the shuttle lever is in the downward **(4)** or park position **(5)**.
- Ensure that the **P.T.O.** knob is in the 'off' position.
- Place all remote control valve levers in neutral.
- Depress and hold the clutch pedal.

NOTICE: *The high operating speed of the turbo- charger makes it essential that adequate lubrication is assured when the engine is started. Therefore, idle the engine at **1000 RPM** for approximately one minute before driving the tractor.*

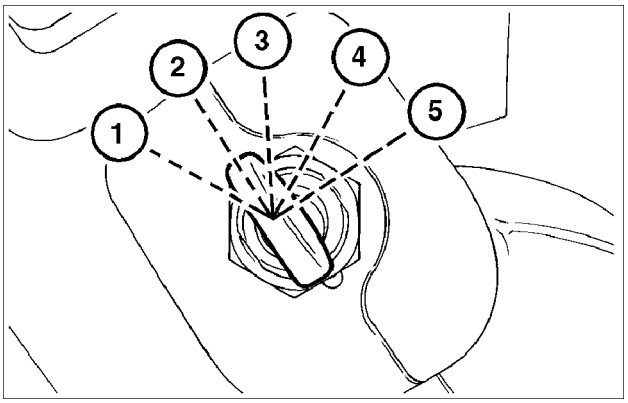


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Starting in cold weather (with a cold engine)

- Open the hand throttle halfway and turn the key-start switch clockwise to position **(4)**. An indicator light **(1)** Figure **3**, on the instrument panel will illuminate for **10 - 15 s** to show the grid heater has been activated.
- When the light extinguishes, turn the key fully clockwise to position **(5)**. Crank the engine until it starts but do not operate the starting motor for more than **60 s**.

NOTE: *If cranking is not carried out within **30 s** of the light extinguishing, turn the key- start to the 'off' position, pause and re- start the sequence.*



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ENGINE

	PUMA 130 CVX	PUMA 145 CVX	PUMA 160 CVX
Engine power (unboosted) at rated speed, **(ECE R120)**	**96 kW** (**131 Hp**)	**107 kW** (**145 Hp**)	**118 kW** (**160 Hp**)
Engine power (boosted) at rated speed, **(ECE R120)**	**118 kW** (**160 Hp**)	**129 kW** (**175 Hp**)	**140 kW** (**190 Hp**)
Number of cylinders	6 cylinders		
Valves per cylinder	4 valves		
Aspiration	Turbocharged and intercooled		
Bore	**104 mm** (**4.1 in**)		
Stroke	**132 mm** (**5.2 in**)		
Displacement	**6728 cm³** (**411 in³**)		
Compression ratio	All Models, 17.5 : 1		
Firing order	1.5.3.6.2.4		
Rated engine speed	All Models, **2200 RPM**		
Low Idle Speed	All Models, **850 RPM**		
High Idle Speed	All Models, **2350 RPM**		
Valve tappet clearance (cold) - Intake - Exhaust	 **0.25 mm** (**0.010 in**) **0.51 mm** (**0.020 in**)		

FUEL SYSTEM

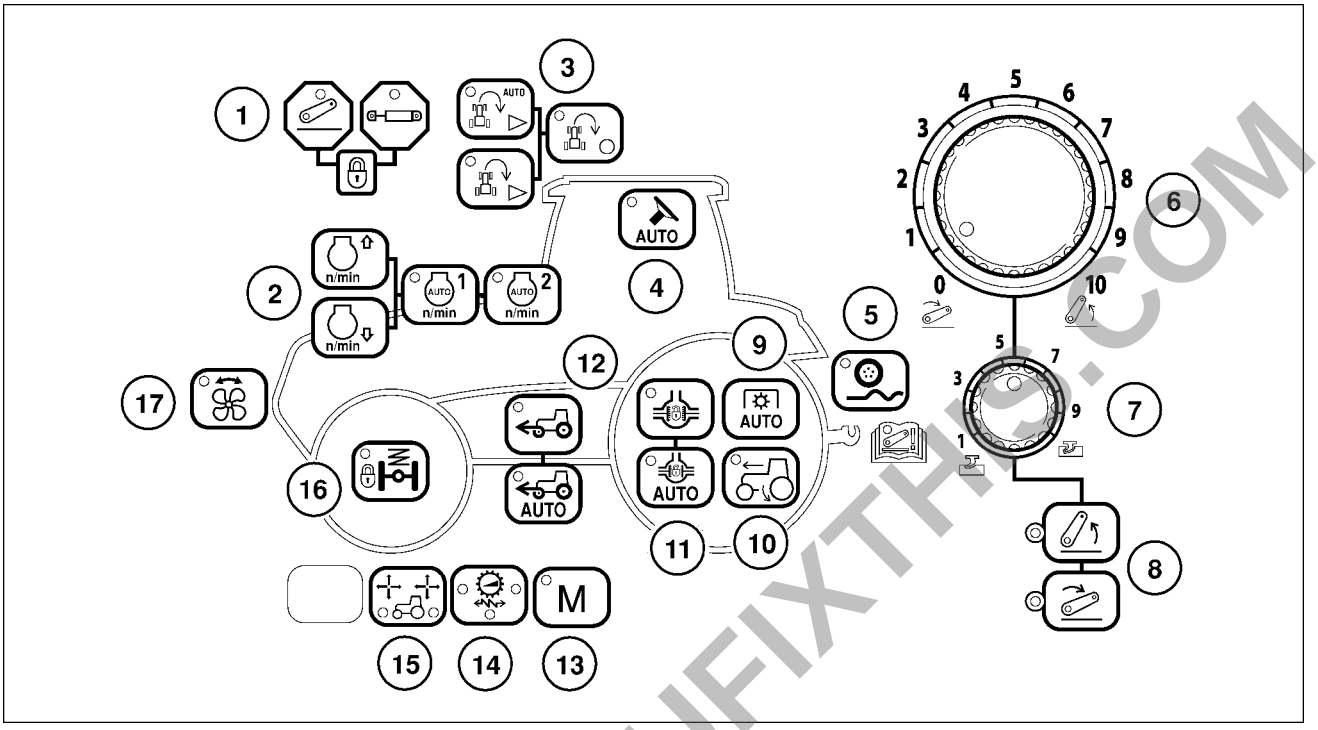
	PUMA 130 CVX	PUMA 145 CVX	PUMA 160 CVX
Type	Electronically controlled, high pressure common rail		
Fuel Injection Pump	Bosch **CR-CP3 SL**		
Diesel Fuel	**EN590** standards The usage of Diesel Fuel with Sulfur Content > **10 mg/kg** is NOT recommended.		
Bio- Diesel Fuel	Approved for **20 %** Bio- Diesel fuels conforming to **EN590** or **EN14214** standards		
DEF/ AdBlue®	**DEF/ AdBlue®** to standard **ISO22241**		

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RIGHT-HAND SIDE CONTROLS

INTEGRATED CONTROL PANEL



SS10J153 1

Your tractor is equipped with a number of electronic controls located on the arm rest unit. A full explanation of individual switch operation can be found in the relevant sections of this manual.

Right- Hand Control Console

1. Electronic remote valves and 3- point hitch lock warning lights
2. Constant Engine Speed settings
3. Auto/ Manual HMC record/ playback operation
4. Auto Guidance on/ off (see Section 6)
5. Ride Control
6. 3- point hitch position button
7. 3- point hitch draft loading button
8. 3- point hitch raise/ lower buttons and operating lights
9. Rear Auto PTO control
10. Slip Control
11. Auto/ manual rear axle differential lock engagement
12. 4WD Auto or Manual engagement
13. CVT transmission manual operation
14. CVT transmission acceleration response control
15. Front/ rear joystick operation select
16. Front axle suspension lock
17. Reversible engine fan control

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6 - WORKING OPERATIONS

GENERAL INFORMATION

VARIABLE ENGINE POWER MANAGEMENT

Power MANAGEMENT

Engine Power Management **(EPM)** is an electronically controlled engine power boost function which increases power levels where high loads may compromise tractor performance.

When the system is activated, the **EPM** light **(1)** in the instrument cluster will illuminate. As the power requirement reduces and **EPM** is de- activated, the light will extinguish.

EPM boost levels are variable depending on engine load, driveline torque and tractor speed. Dependent on tractor model, the available power increase is between **1 kW** (**1.4 Hp**) and **24 kW** (**32.6 Hp**) and will vary as the load on the engine changes.

EPM is a totally automated function requiring no input from the operator. Engine power boost can be activated during **P.T.O.** operations, road transport applications and when operating with externally powered hydraulic equipment.

NOTE: *Engine Power Management will be disabled if the engine coolant temperature exceeds **105 °C** (**221 °F**). In this situation either increase the engine speed or reduce the load on the engine until the coolant temperature is reduced.*

P.T.O. Operations

Engine Power Management will only function when the following criteria are met:

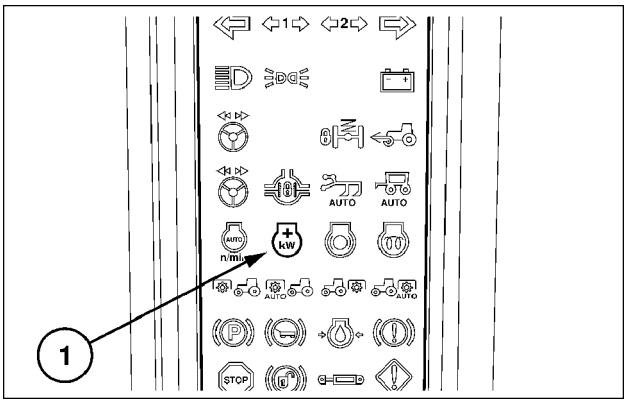
P.T.O. fully engaged.
Tractor forward speed above **0.5 km/h** (**0.3 mph**).
P.T.O. power output is above **27 kW** (**36.7 Hp**).
P.T.O. driveline torque is above **250 Nm**.
Engine coolant temperature below **105 °C** (**221 °F**)

NOTE: *Engine Power Management will operate at all **P.T.O.** speeds.*

Engaging the rear **P.T.O.** while the tractor is moving will put **EPM** into standby.

As the torque and load on the **P.T.O.** reaches or exceeds the above levels, the warning light **(1)** will illuminate and Engine Power Management will be activated.

As the load on the engine is reduced, boost levels will gradually decrease until engine power levels are within normal limits.



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2 - SAFETY INFORMATION

SAFETY PRECAUTIONS

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and take the following precautions before driving, operating or servicing the machine. Equipment should be operated only by those who are responsible and instructed to do so.

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 which, if not avoided, will result in death or serious injury.

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

⚠ CAUTION, used with the safety alert symbol, indicates a hazardous situation which, 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 which, if not avoided, could result in machine or property damage.*

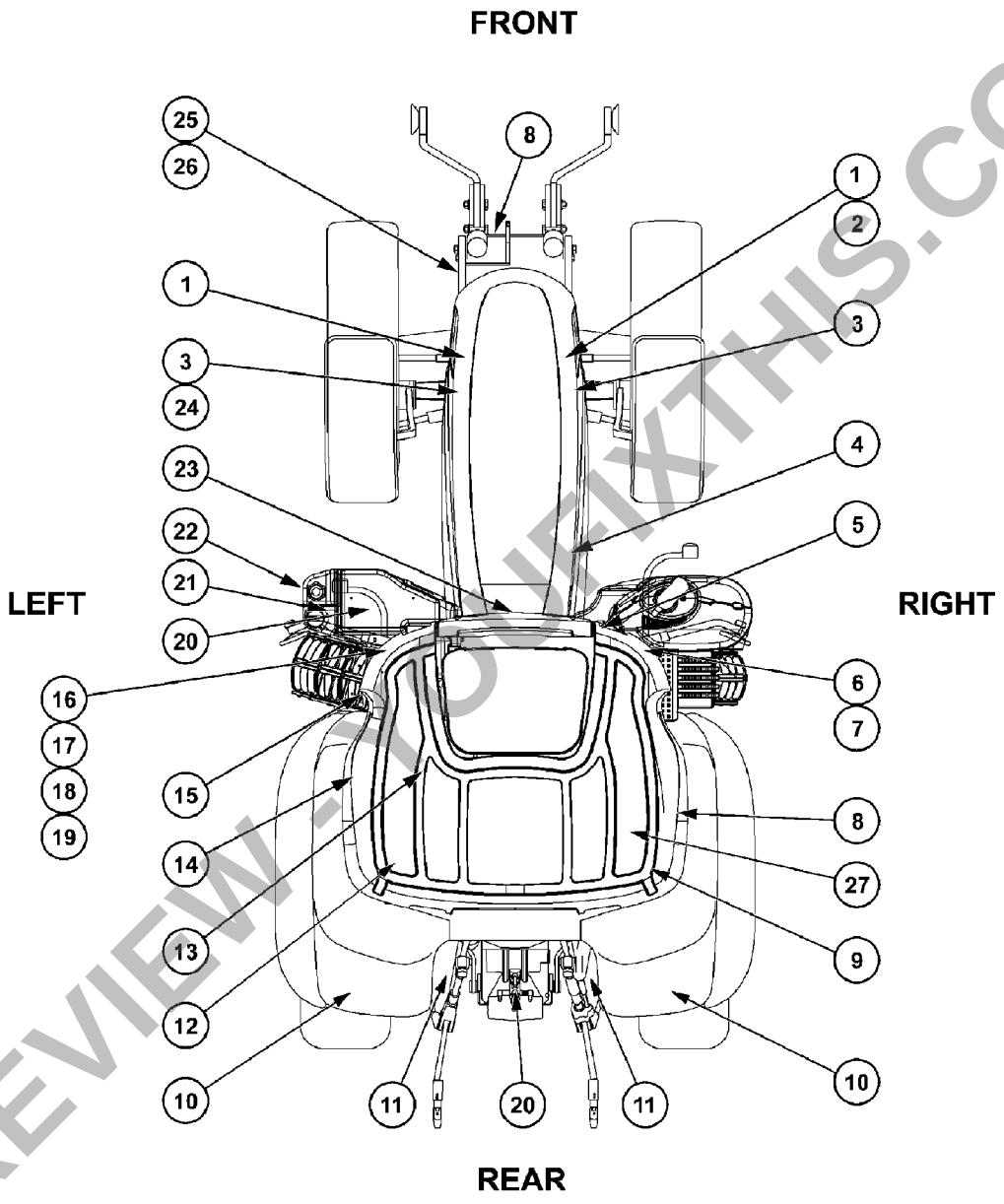
Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

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SAFETY DECALS

The decals reproduced on the following pages were installed on your tractor in the positions indicated in the drawings below. They are intended for your safety and for those working with you. Please take this Manual and walk around your tractor, noting the location of the decals and their significance. Review the decals and operating instructions detailed in this Manual with the machine operators. Clean decals and keep legible - do not use solvent, gasoline or other harsh chemicals to clean decals. Replace all worn, damaged or missing decals. If a decal is on a part that is replaced, make sure new part has the decal.



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FRONT	Front side	**REAR**	Rear side
RIGHT	Right-hand side	**LEFT**	Left-hand side

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Handling the Battery

1. Always wear eye protection when working with batteries.
2. Do not create sparks or have open flame near battery.
3. Ventilate when charging or using in an enclosed area.
4. Disconnect Negative (-) first and reconnect Negative (-) last.
5. When welding on the machine, disconnect both terminals of the battery.
6. Do not weld, grind or smoke near a battery.
7. When using auxiliary batteries or connecting booster cables to start the engine, use the procedure shown in the Operator's Manual. Do not short across terminals.
8. Follow manufacturer's instructions when storing and handling batteries.
9. Battery post, terminals and related accessories contain lead and lead compounds. Wash hands after handling.
10. Battery acid causes burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.
11. Keep out of reach of children and other unauthorized persons.

DIESEL FUEL

- Under no circumstances should gasoline, alcohol or blended fuels be added to diesel fuel. These combinations can create an increased fire or explosive hazard. In a closed container such as a fuel tank these blends are more explosive than pure gasoline. Do not use these blends.
- Never remove the fuel cap or refuel with the engine running or hot.
- Do not smoke while refuelling the tractor or when standing near fuel. Keep any type of open flame away.
- Maintain control of the fuel filler pipe nozzle when filling the tank.
- Do not fill the fuel tank to capacity. Fill only to the bottom of the filler neck to allow room for expansion.
- Wipe up spilled fuel immediately.
- Always tighten the fuel tank cap securely.
- If the original fuel tank cap is lost, replace it with an approved cap. A non- approved cap may not be safe.
- Never use fuel for cleaning purposes.
- Arrange fuel purchases so that summer grade fuels are not held over and used in the winter.



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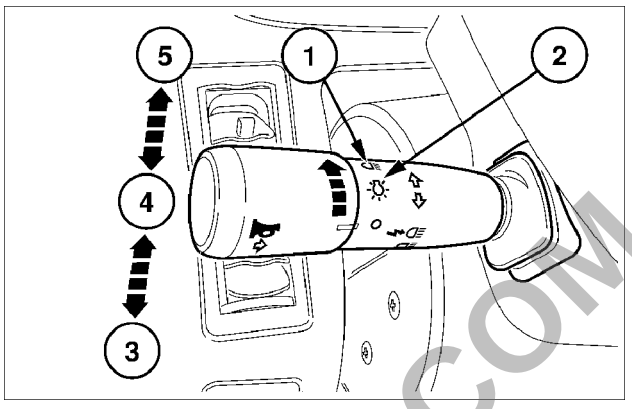
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LIGHT-/ TURN LEVER

The stalk- type switch is mounted on the left- hand side of the steering column. The switch controls the tractor lights, horn and turn signals.

The centre of the stalk switch rotates. Turn the switch to position **(2)** to switch on the instrument and position lights. Turn the switch to position **(1)** to select the headlights.

With the headlights on, push the stalk away from you to position **(3)** to change from dipped to high beam. Pull the stalk towards to position **(4)** to change back to dipped beam. With high beam selected, the blue indicator light on the instrument cluster is illuminated.



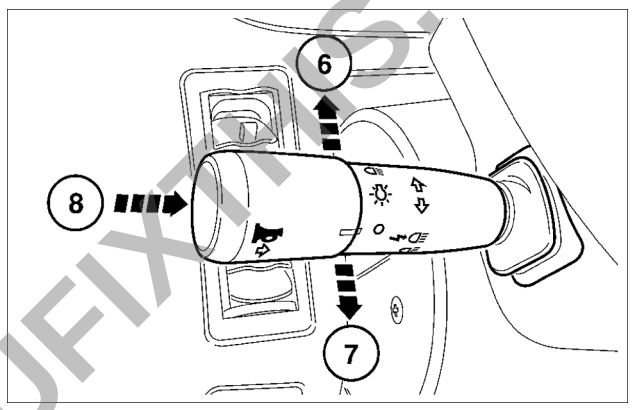
BRI3997B 1

With the headlights off, pull the stalk towards to position **(5)** against spring pressure, to flash the headlight high beam. The stalk will return to the central position when released.

Move the stalk to position **(6)** to operate the right turn signals, position **(7)** will activate the left turn signals. Indicator lights on the instrument cluster will also flash when the turn signals are activated. A warning buzzer will sound if the indicators are not cancelled within **60 s** when moving, or **5 min** when stationary.

NOTE: *With the optional self cancelling indicators fitted, the warning buzzer is deleted.*

NOTE: *The turn signals will only operate with the key-start switch turned on.*



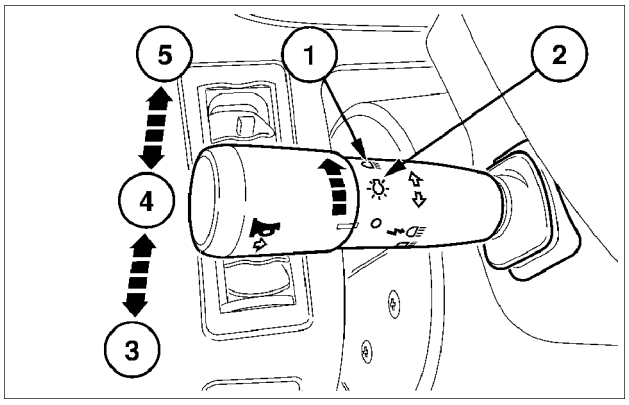
BRI3997C 2

Press in the end of the stalk, position **(8)** to sound the horn.

FOLLOW ME HOME LIGHTS

When leaving the tractor at night, external illumination can be provided for a limited period by operating the headlight flasher switch within **30 s** of key- off. This will illuminate the dip beam headlights and, depending on switch status, one of the rear worklamps.

Each movement of the headlight flasher **(5)** will provide **30 s** of illumination up to a maximum of **3 1/2 min** after which the lights will automatically extinguish.



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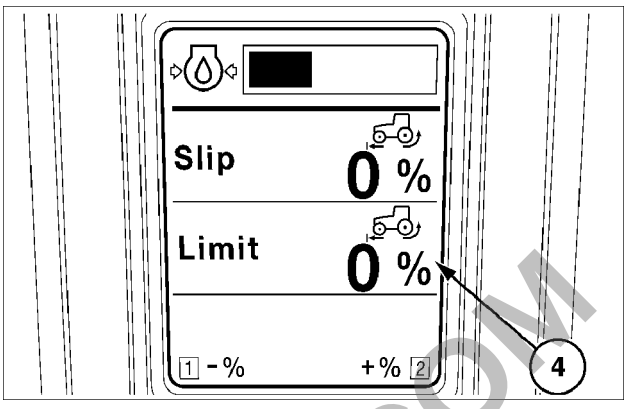
NOTE: *The wheel slip alarm is an advisory function only. Any adjustments required to reduce tractor wheel slip must be applied manually.*

To set a wheel slip limit of **15 %** carry out the following procedure.

- Depress the key **(3)** to access the wheel slip screen. The adjustable slip value appears in the lower half of the display **(4)**.
- Using select key **(2)** increase the wheel slip value to **15 %**. A momentary press will increase the value by one digit, depress/ hold the key to rapidly increase the value.
- To decrease the value, depress the select key **(1)**. A momentary press will decrease the value by one digit, depress/hold the key to rapidly decrease the value.
- When the slip limit has been set, the figure is automatically stored.

During operation, the actual wheel slip value will appear in the top of the display (Slip). Select the wheel slip screen to view.

As wheel slip approaches the set limit, a warning will appear in the dot matrix display. Adjust the tractor settings to reduce the load and lower the slip value.



BRK5803Q 11



BRK5782H 12

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5 - TRANSPORT OPERATIONS

PREPARING FOR ROAD TRANSPORT

CARRYING THE TRACTOR ON A TRANSPORTER

Transport the tractor with all four wheels on a flat bed trailer or truck. Securely chain the tractor to the transporter.

NOTICE: *Do not chain around the four wheel drive shaft, steering cylinders, front wheel drive axle or other components that could be damaged by contacting the chain or by heavy loading.*

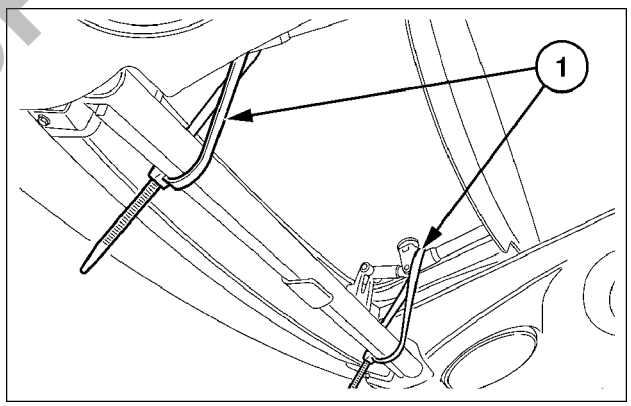
Use the drawbar or drawbar hanger for a rear tie down point.

NOTICE: *Cover the silencer outlet so that the wind does not spin the turbocharger and damage the bearings. Turbocharger turbine freewheeling (turning without engine running) must be avoided since lubrication will not be provided to the turbocharger bearings.*

SECURE THE HIGH VISIBILITY ROOF PANEL

Where road speeds in excess of **50 km/h** (**31 mph**) are likely to occur when transporting the tractor, it is advisable to secure the high visibility roof panel with ties to prevent it from opening.

Secure both handles to the sun- visor support using a flexible strap such as a cable tie **(1)** as shown in the illustration. Do not use wire or metal straps as these may damage the paintwork.



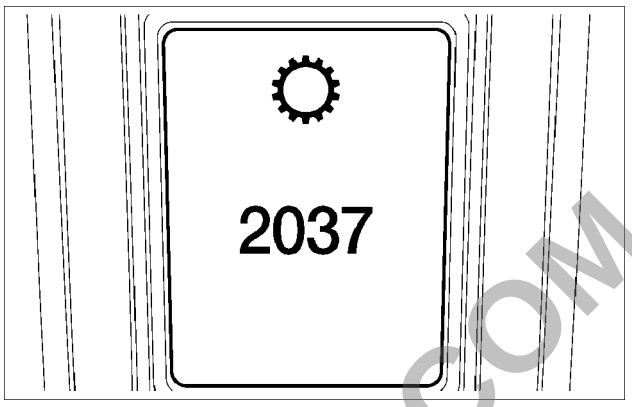
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ERROR CODES

In the unlikely event of a fault occurring in the transmission controls or electronic circuit, a malfunction symbol and a four- digit error code, will appear in the transmission display. Error codes for the transmission will start with the figure **'2 _ _ _'**.



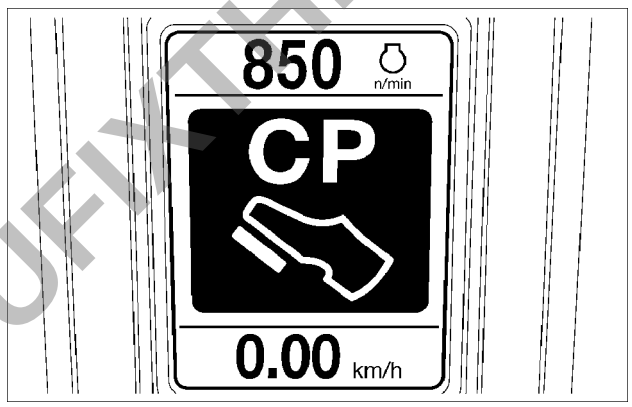
BRK5857H 1

The code indicates the faulty circuit or sensor and the type of fault, e.g., open circuit, short circuit, etc. In this event, the tractor will require the attention of your authorised dealer.

Should a fault occur causing the tractor to become disabled, contact your authorised dealer and report the error code displayed.

There are a number of 'action required' error codes which can also appear in the transmission display, these are listed below.

Error Code	Action Required
P	Parking brake or park lock on, release to move tractor.
CP	Depress clutch pedal to enable transmission (restore drive).
N	Place the shuttle lever in neutral.



BRL6430M 2

Transmission Calibration

Should transmission shifts becomes low or jerky, the clutches in the transmission may require re- calibrating. Consult your authorised dealer.

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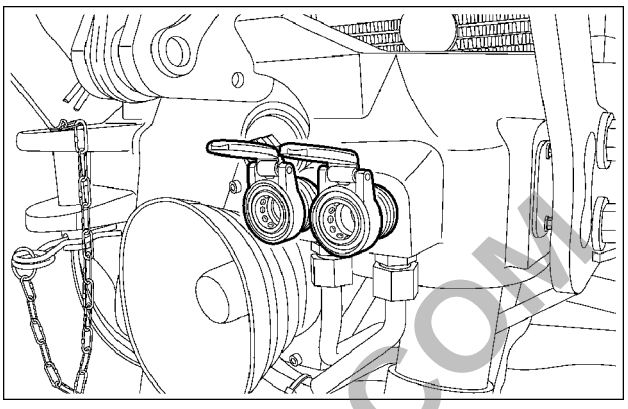
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AUXILIARY FRONT COUPLERS (where fitted)

Two auxiliary couplers with **1/2 in** female couplings may be fitted to the front of the hitch frame. These will provide a double- acting hydraulic service for equipment mounted on the front 3- point hitch.

When operated by the joystick, lateral movement of the lever (left or right) will provide pressurised oil at the couplings.

NOTE: *When the front couplers are not in use always re-insert the protective plug into the coupler to prevent dust or debris from entering the hydraulic system.*



BRL6405B 1

Disconnecting Hydraulic Hoses from Front Couplers

Before disconnecting hoses from the front couplers, any residual pressure in the hydraulic lines must be released. Depending on remote valve configuration, pressure can be released by using one of the following procedures.

NOTE: *All procedures must commence with the tractor engine running.*

Where the joystick is being used to control the rear mounted electronic valves first transfer operation of the valves to the levers as described previously.

Move the appropriate remote valve operating lever/s to the float position and switch off the engine. Apply the park brake and/ or park lock before leaving the tractor seat.

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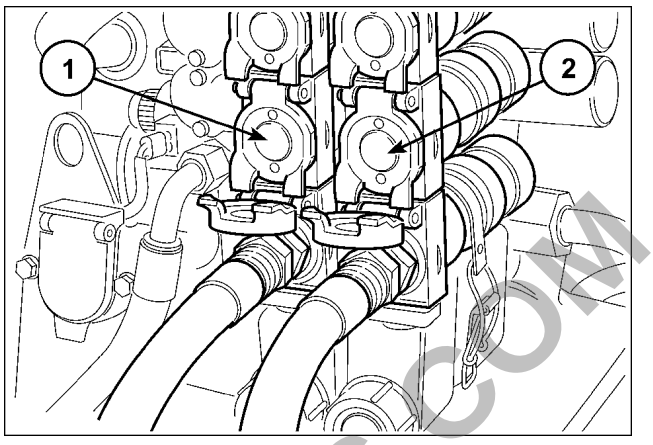
CONNECTING REMOTE CYLINDERS

Each remote control valve has a pair of **0.5 in** quick- disconnect, female couplers. These are of a self- sealing/ locking design but will allow remote cylinder hoses to pull free if the implement should become disconnected from the tractor.

The raise (extend) coupler **(1)** is on the left- hand side, the lower (retract) coupler **(2)** on the right- hand side.

Hinged, spring- loaded dust caps are provided on each coupler. To connect a remote cylinder, lift the dust cap until it locks in the raised position then insert the hydraulic hose into the coupler, ensuring that it is correctly seated.

Ensure that there is sufficient slack in the hose(s) to allow the tractor/ implement to turn in either direction. To disconnect, grip the hose a short distance from the coupler, push the hose forward, into the coupler, then quickly pull on the hose to 'pop' the coupler free.



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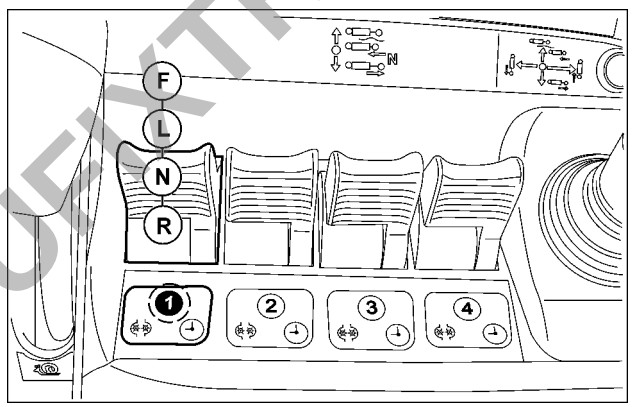
Connecting Single- Acting Cylinders

Connect the hose from a single- acting cylinder to the left-hand (raise) coupler on the remote control valve.

To extend a single- acting cylinder, pull the control lever back to the raise position **(R)**.

Manually return the lever to the neutral position to stop the cylinder when it has reached the desired position.

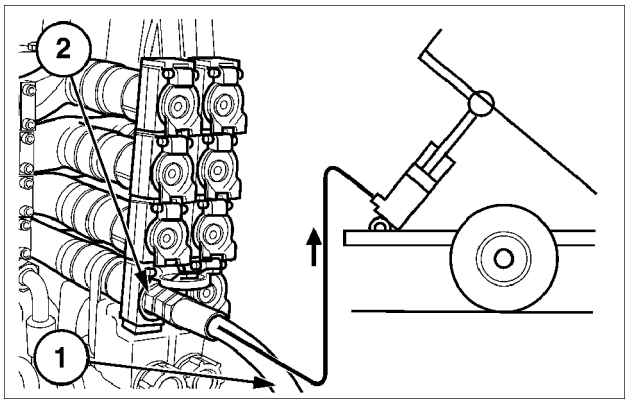
To retract a single- acting cylinder, move the lever fully forward to the float **(F)** position.



SS10M119 2

NOTE: *In single acting timer mode the remote lever will lock in the extend position and will not automatically return to the neutral position.*

NOTICE: *Always use the float position to retract a single-acting cylinder. The lower position is for double- acting cylinders only.*



BRE1539B 3

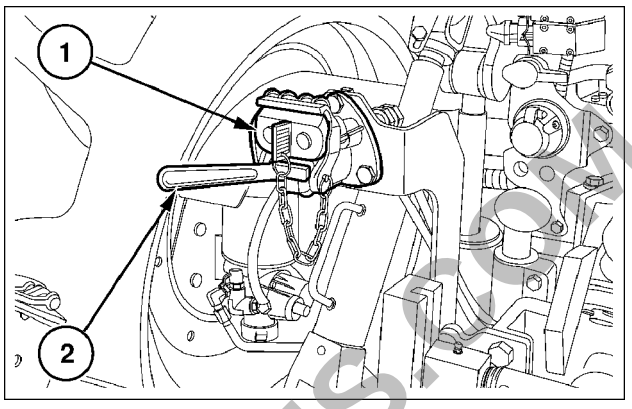
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AIR-OPERATED TRAILER BRAKES (Italy only)

This system operates in a similar manner to the dual line system, previously described, except that a combined dual coupler is utilised. Please read all the previous text relating to pneumatic trailer brakes plus the following:

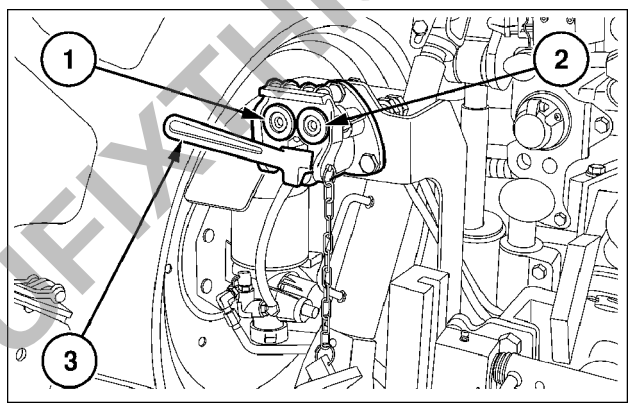
The coupler is protected by a metal cover **(1)**. To remove the cover, press the handle **(2)** down. The handle is held in position by a stiff spring and some pressure is required to move it down to release the cover **(1)**.



BRJ5018B 1

Connections

The lines to the couplers are colour- coded for ease of use. The supply line to the left- hand coupler **(1)** is red and the control line to the right- hand coupler **(2)** is yellow. The trailer hoses will have a male dual coupler. Press down the handle **(3)** and insert the trailer coupler. When the handle is released, it will lock the trailer and tractor couplers together.



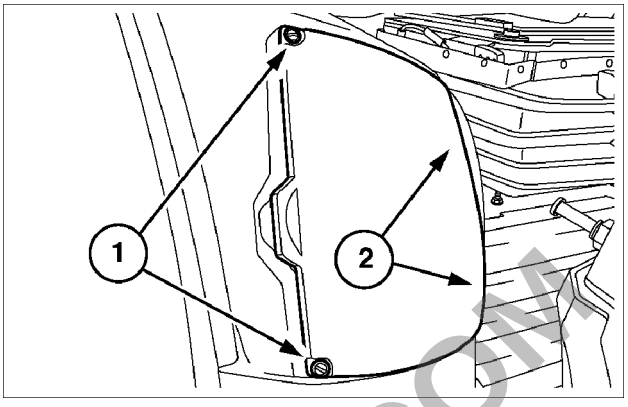
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Relay and Fuse Panel Cover

The moulded panel on the right hand side of the cab may be easily removed for service. Remove the retaining screws **(1)**, then ease the cover forward and slide it to the left removing the two retaining tongues **(2)** from their recess and allowing access to the fuses and relays.

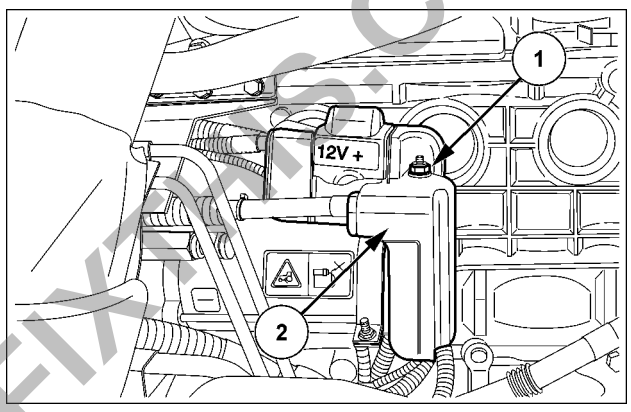


BAIL08CCM031AVA 4

Cover Main Power Fuse, Maxi Fuses (Starter Motor)

To access the maxi fuses remove the cover **(2)** from the starter motor. Loosen and remove the **13 mm** nut **(1)** then lift the cover from the starter motor.

After replacing a fuse ensure the cover and nut are replaced to prevent a build up of dust or debris around the fuses.



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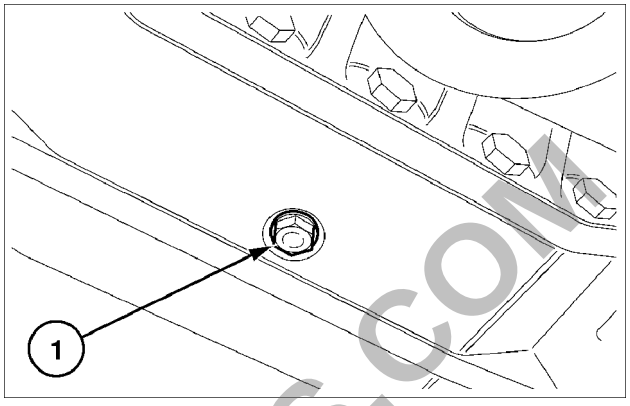
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CHANGE 4WD DIFFERENTIAL OIL

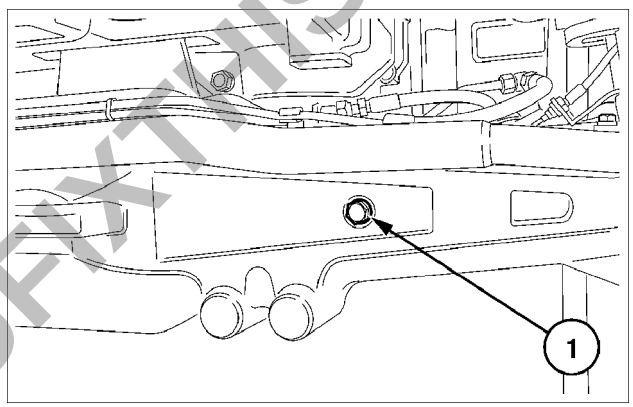
Park the tractor on level ground and engage the park brake.

1. Remove the drain plug **(1)** and completely drain all oil into a suitable container. Dispose of the oil properly.



BRI3794B 1

2. Re- install the drain plug.
   Remove the level/ filler plug **(1)**.



BRI3776B 2

3. Fill with new oil until it reaches the bottom of the level/ filler plug hole. Re- install level/ filler plug.

See on pages **7-10** and **7-11** for the correct oil specification and capacity.

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DMD	LAMP	FAULT CODE	AREA of FAULT	ACTION
	-	19--	Selective Catalytic Reduction (SCR)	
	-	140-	Instrument cluster	The system fault symbols relate to an operational fault in one or more of the tractors main components, either electrical, mechanical or hydraulic- The appearance of a fault symbol may be accompanied by a four digit fault code. Consult your authorised dealer.
	-	140-	Electronic system malfunction	
	-	140-	Data network system	
	-	141-	Steering sensor	
	-	140-	**5 V** supply voltage.	
	-	140-	Starter motor power supply.	
	-	140-	Fuel level sensor.	
	-	140-	Air brake system fault.	
	-	141-	Alternator lamp not working.	
		141- 143- 149-	Electronic locking park brake	
		149-	SWCD missing (VA)	
		149-	Configuration error	
		141-	Colour monitor present but not configured 'ON LINE'	Configure to 'ON LINE' status.

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