4 - OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Refueling the tractor

⚠ WARNING

Fire hazard!
When handling diesel fuel, observe the following precautions:
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0099A

⚠ WARNING

Fire hazard!
Do not add gasoline, alcohol, or blended fuels to diesel fuel, except as recommended in this manual.
Fuel combinations may increase fire and explosion hazards.
Failure to comply could result in death or serious injury.

W0401A

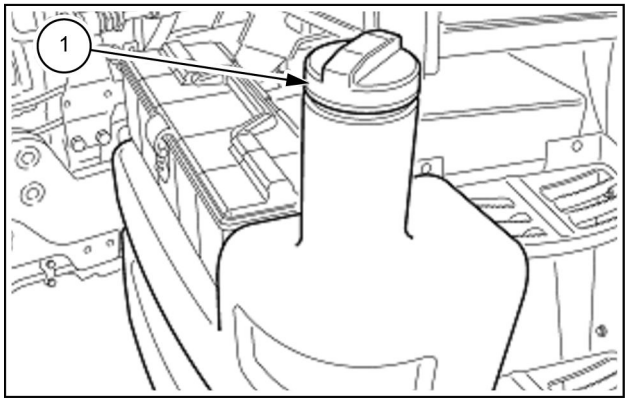
NOTE: *Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system.*

Maintenance requirements

Diesel

When handling diesel fuel, observe the following:

- Fill the tank at the end of each day to reduce overnight condensation.
- Clean the area around the fuel cap **(1)** to prevent dirt from entering tank and contaminating the fuel.
- Never take the cap off or refuel with the engine running. Remove the cap and place in a clean area during refuelling. The cap is attached to the fuel tank by a chain to prevent loss.
- Keep control of the fuel nozzle while filling the fuel tank.
- Don't fill the tank to capacity. Allow room for expansion. If the original fuel tank cap is lost, replace it with a genuine original equipment cap and tighten securely.
- After filling the tank, replace and tighten the fuel cap.
- Wipe up spilled fuel immediately.



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7 - MAINTENANCE

GENERAL INFORMATION

Introduction

This section gives full details of the service procedures necessary to maintain your tractor at peak efficiency.

Safety precautions

⚠ WARNING

Moving parts!
Disengage the Power Take-Off (PTO), turn off the engine, and remove the key. Wait for all movement to stop before leaving the operator's position. Never adjust, lubricate, clean, or unplug machine with the engine running. Failure to comply could result in death or serious injury.

W0112A

Read and observe all safety precautions listed in 'Servicing the tractor' and 'Prevention of fire or explosion' in the General information and Safety section of this Manual.

NOTE: *Dispose of used filters and fluids properly.*

Preventing system contamination

To prevent contamination when changing oils, filters, etc., always clean the area around filler caps, level and drain plugs, dipsticks and filters prior to removal. Before connecting remote cylinders, ensure that oil contained within them is clean, has not degenerated due to long storage and is of the correct grade.

To prevent dirt entry during greasing, wipe dirt from the grease fittings before greasing. Wipe excess grease from the fitting after greasing.

Warning symbols

A number of maintenance items are represented by symbols that may appear in the display screens. For more information on these symbols, refer to page **Instrument cluster - Warning** and **Basic instructions**.

During the first 50 hours operation

In addition to the regular maintenance operations listed, check the following items every 10 hours or daily during the first 50 hours of operation:

- Check the oil level of the transmission, rear axle and hydraulics
- Check the wheel nuts for tightness
- Check the oil level of the front axle hub

NOTICE: *Park the tractor on level ground and, where applicable, extend all cylinders before checking oil levels. With some wheel equipment fitted, it may be necessary to raise the front or rear of the tractor to ensure that the machine is level before checking the oil.*

Flexibility of maintenance intervals

The intervals listed in the maintenance chart are guidelines to be used when operating in normal working conditions.

Adjust the intervals for environmental and working conditions. Intervals should be shortened under adverse (wet, muddy, sandy, extremely dusty) working conditions.

Maintenance chart

NOTE: *For each service interval on the maintenance chart, your are also required to perform all prior service intervals that apply. for example, the 1200–hour or annual service will need the 50–hour, 100–hour, 300–hour and 600–hour individual maintenance actions, in addition to the 1200 hour actions.*

The maintenance chart lists the intervals when routine checks, lubrication, service and/or adjustments should be performed. Use the chart as a quick reference guide when servicing the tractor. The operations follow the chart.

Fuel injector maintenance

The fuel injectors on your tractor are electronically controlled and therefore do not require periodic servicing or adjustment.

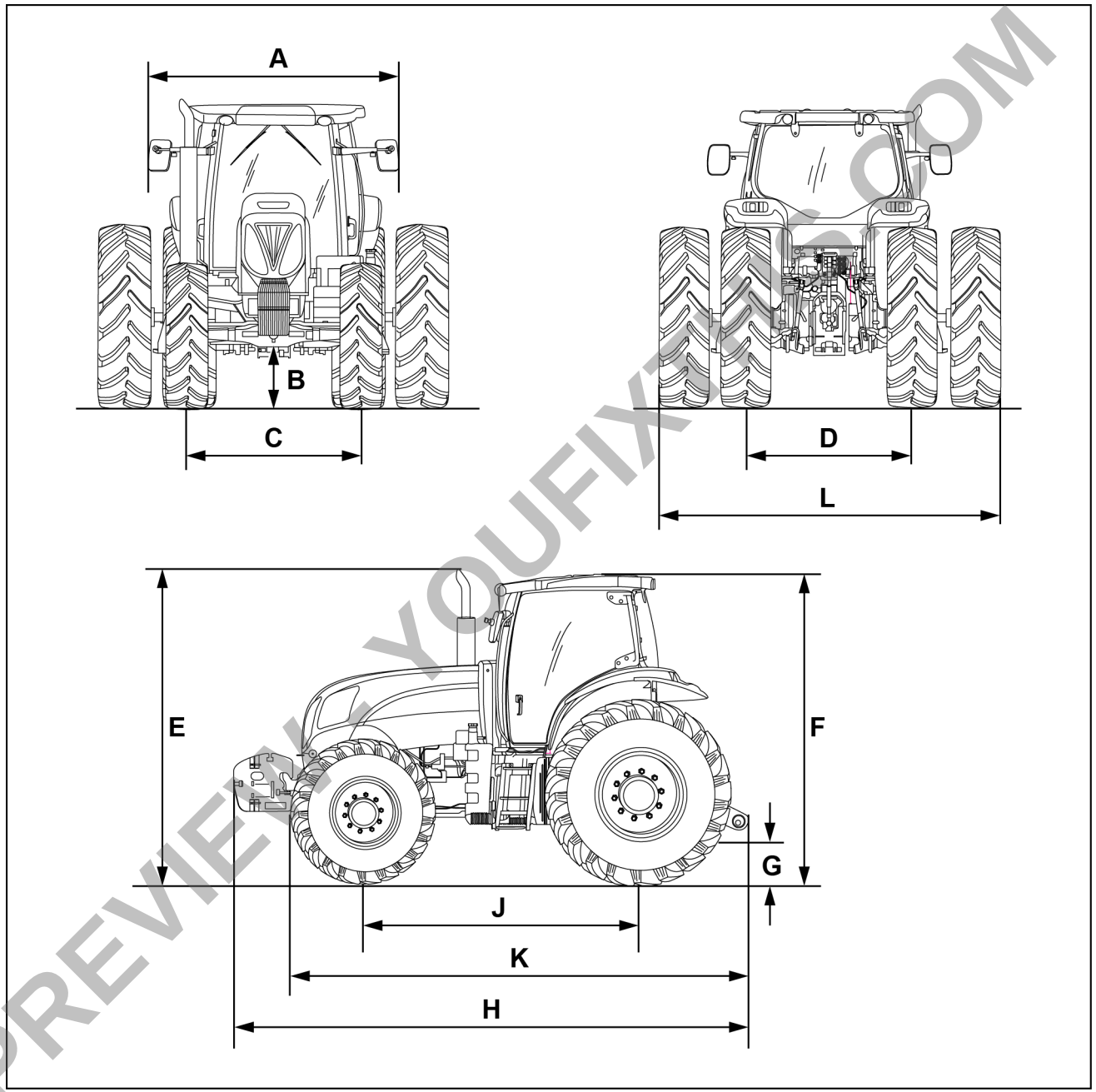
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9 - SPECIFICATIONS

General dimensions

Frame - General specification



HAIL17TRO0025GA 1

Total Length (H)	**5545 mm**
Total Width (L)	**3745 mm**

NOTE: *The following dimensions are based on standard tractors fitted with tire size as shown. If your tractor has tires of a different size then the dimensions will vary due to the difference in the rolling radius and section width of the tires fitted.*

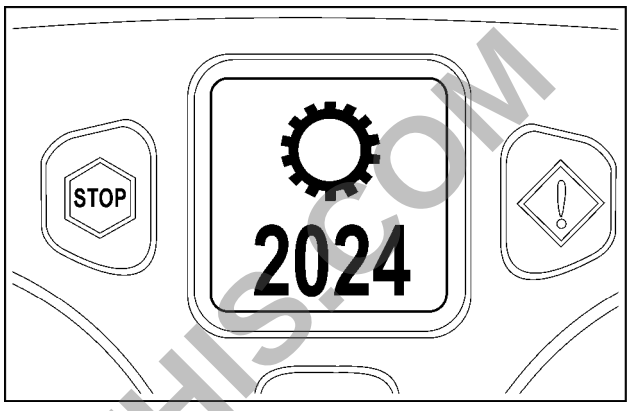
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8 - TROUBLESHOOTING

FAULT CODE RESOLUTION

Introduction

The following information is intended as a guide to assist in identifying and correcting possible tractor malfunctions and fault conditions.



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ERROR CODES

Your tractor makes extensive use of electronics to control and monitor major components within the driveline, electrical and hydraulic systems. In the unlikely event of a fault occurring in one of these areas, the malfunction will be identified with a symbol and a four or five digit error code in the Dot Matrix Display on the instrument panel. The first digit(s) of each number provide the general location of the fault and the subsequent numbers confirm the exact nature of the fault.

The code indicates the faulty circuit or sensor and the type of fault, e.g., open circuit, short circuit, etc. Each error code will be supported by the relevant symbol displayed above the number.

Should a fault occur causing the tractor to become disabled, an error code will be displayed in the instrument panel. If this should happen and you are unable to rectify the fault yourself, contact your authorised dealer and report the error code displayed.

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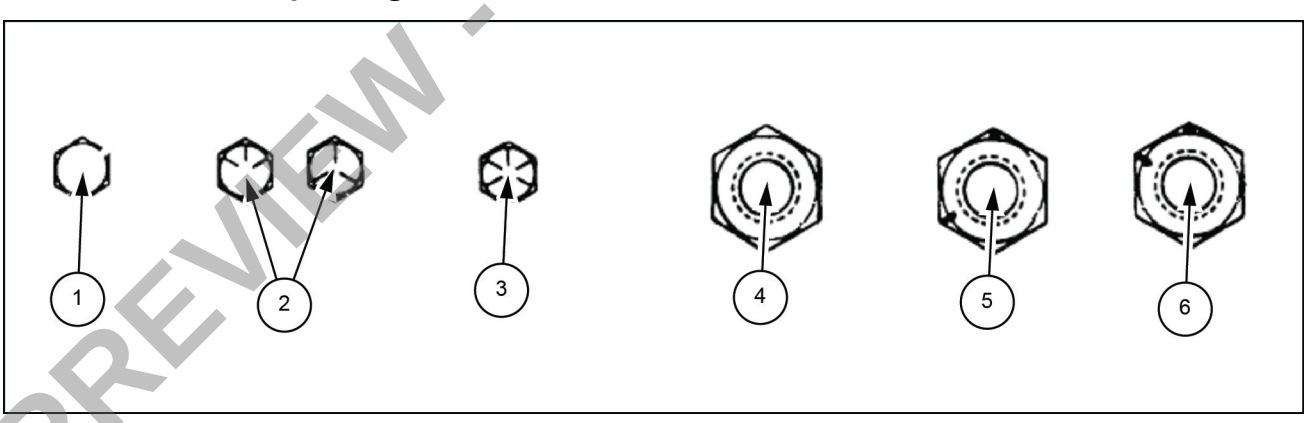
Tightening torques

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



HAIL17TRO0028EB 1

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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6 - WORKING OPERATIONS

GENERAL INFORMATION

Engine speed control

With Engine Speed Management (ESM), the operator may pre- set one or two fixed engine speeds appropriate to the work in hand. ESM will maintain a fixed engine speed, it cannot be used to provide a constant ground speed (cruise control).

With ESM activated the indicator light **(1)** on the Instrument cluster, will illuminate when the system is in operation.

When activated, ESM constantly monitors engine load and speed for any change. If engine load increases and the r.p.m. starts to drop, ESM will electronically adjust the engine speed control unit to compensate, thereby maintaining a constant engine r.p.m.

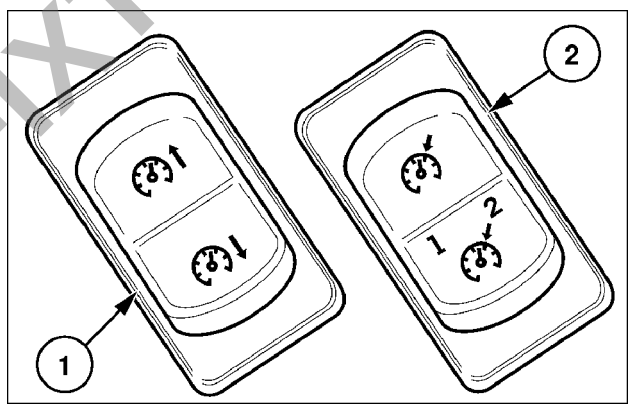
Setting Engine Speed Management

With the engine running, set the hand throttle to **1000 RPM**. To activate Speed Management, momentarily depress the top of the switch **(2)** on the right- hand console. To deactivate, depress the top of the switch again.

Select programme 1 by momentarily depressing the bottom of switch **(2)** and then, using the speed control switch **(1)**, increase the engine speed to the desired level. When the speed for programme 1 has been entered, programme 2 can then be selected (if required) by momentarily depressing the bottom of switch **(2)** again. Repeat the above procedure to set the second speed.

NOTE: *Momentarily depressing the speed adjustment switch will increase or decrease the speed in* ***10 RPM*** *increments. Maintaining pressure on the switch will permit the speed to ramp up or down at* ***100 RPM****/ second, providing there is no load on the engine.*

NOTE: *At key- off (engine stop) programme settings made during tractor operation transferred from the operating memory to the main memory. To provide sufficient time for the data to transfer, allow a minimum of* ***5 s*** *delay before turning the key on again.*



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MAINTENANCE CHART

Maintenance chart

Service_points	Grease	Cleaning	Check	Drain fluid	Replace	Adjust	Change fluid	Bleed	Charging	Page no.
WHEN THE WARNING LAMP LIGHTS										
Engine air cleaner	x									7-41
Draining the fuel filter water separator		x								7-17
EVERY 10 HOURS OR EACH DAY										
Engine coolant level			x							7-18
Engine oil level			x							7-19
Remote valve collection bottle			x							7-19
Windscreen washer reservoir			x							7-20
FIRST 50 HOURS										
Service operations			x							7-21
EVERY 50 HOURS										
Cab air filters				x						7-22
Engine and hydraulic coolers				x						7-24
Grease fittings					x					7-25
Wheel and axle torques			x							7-32
Tire inflation pressures			x							7-32
EVERY 100 HOURS										
Drive belts			x							7-33
Drive belts			x							7-33
EVERY 300 HOURS										
Battery electrolyte level			x							7-34
Handbrake						x				7-35
Transmission rear axle and hydraulic system oil level			x							7-36
Front axle			x							7-37
Front PTO oil level			x							7-37
EVERY 600 HOURS										
Change engine oil and filter	x									7-38
Fuel filters	x									7-40
Engine air cleaner	x									7-41
Transmission / hydraulic oil filters	x									7-42
Engine air intake hoses			x							7-43
Transmission oil cooler			x							7-44
EVERY 1200 HOURS OR ANNUALLY										
Cab air filters	x									7-45
Transmission / hydraulic oil filters	x									7-46
Transmission oil							x			7-47
Front axle - hubs							x			7-49
Front Power Take-Off (PTO)							x			7-49
Rear axle drive shaft					x					7-50
EVERY 1200 HOURS OR EVERY 2 YEARS										
Battery check			x							7-51
Engine air cleaner	x									7-52
Adjustment of engine valve rocker clearances			x							7-53
Change the engine coolant fluid - Conventional type coolant							x			7-54
Trailer brakes air operated	x									7-58

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Engine

Engine data					
Rated power	Kw	169.5			
at rated speed	cv	230.5			
Rated net power	Kw	172			
at rated speed	cv	234			
Cylinders		6 Cylinder			
Valves		4 Per cylinder			
Aspiration		Turbocharged and air to air intercooled			
Bore		**104 mm** (**4.1 in**)			
Stroke		**132 mm** (**5.2 in**)			
Displacement		**6728 cm³** (**410.6 in³**)			
Compression ratio		16.5 : 1			
Firing order		1-5-3-6-2-4			
Rated engine speed		2200 e.r.p.m			
Idle speed		850 +/- 50 e.r.p.m			
Maximum no load speed		2375 e.r.p.m			
Valve tappet clearance	Inlet	**0.25 mm** (**0.0098 in**)			
	Exhaust	**0.51 mm** (**0.0201 in**)			
Fuel system					
Type		Electronically controlled, high pressure common rail			
Dynamic timing (°BTDC)		3.4	5.5	6.3	6.3
Cooling system					
Type		Pressurised with full flow bypass and recovery tank			
Vistronic fan (where fitted)		9 Blades diameter **620 mm** (**24.4 in**)			
Reversible fan (where fitted)		9 Blades diameter **620 mm** (**24.4 in**)			
Thermostat starts to open		**81 °C** (**177.8 °F**)			
Thermostat fully open		**96 °C** (**204.8 °F**)			
Radiator pressure cap		**1 bar** (**14.5 psi**)			
Air cleaner system					
Type		3 stage paper element			
Spin tube pre cleaner		Standard			
Power output					
Maximum		**96.9 kW** (**132 Hp**)			

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ALARM(S)

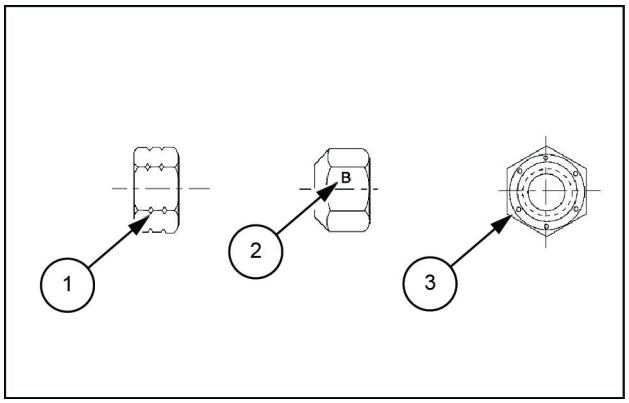
Electronic fault codes

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	
	-	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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Inch Lock Nuts, All Metal (Three optional methods)



HAIL17TRO0029AB 2

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

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	CLASS 8.8 BOLT and CLASS 8 NUT		CLASS 10.9 BOLT and CLASS 10 NUT		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	**2.6 Nm (23.0 lb in)**	**3.4 Nm (30.1 lb in)**	**3.7 Nm (32.7 lb in)**	**4.8 Nm (42.5 lb in)**	**1.8 Nm (15.9 lb in)**
M6	**8.9 Nm (78.8 lb in)**	**12 Nm (106 lb in)**	**13 Nm (115 lb in)**	**17 Nm (150 lb in)**	**6.3 Nm (55.8 lb in)**
M8	**22 Nm (195 lb in)**	**28 Nm (248 lb in)**	**31 Nm (274 lb in)**	**40 Nm (354 lb in)**	**15 Nm (133 lb in)**
M10	**43 Nm (32 lb ft)**	**56 Nm (41 lb ft)**	**61 Nm (45 lb ft)**	**79 Nm (58 lb ft)**	**30 Nm (22 lb ft)**
M12	**75 Nm (55 lb ft)**	**97 Nm (72 lb ft)**	**107 Nm (79 lb ft)**	**138 Nm (102 lb ft)**	**53 Nm (39 lb ft)**
M16	**186 Nm (137 lb ft)**	**240 Nm (177 lb ft)**	**266 Nm (196 lb ft)**	**344 Nm (254 lb ft)**	**131 Nm (97 lb ft)**
M20	**375 Nm (277 lb ft)**	**485 Nm (358 lb ft)**	**519 Nm (383 lb ft)**	**671 Nm (495 lb ft)**	**265 Nm (195 lb ft)**
M24	**648 Nm (478 lb ft)**	**839 Nm (619 lb ft)**	**897 Nm (662 lb ft)**	**1160 Nm (856 lb ft)**	**458 Nm (338 lb ft)**

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Record and replay

Headland Turn Sequence (HTS)

In the recording mode a sequence of actions or 'steps' are recorded to create a programme. In play--back mode, HTS will re--play the sequence exactly as recorded.

HTS Sequences may be re- played as a continuous operation (AUTOMATIC) or as a series of individual steps (MANUAL), each one initiated by depressing the step switch.

HTS permits up to 28 individual steps to be recorded as one or two separate programmes.

Three switches control the operation of HTS:

Play- back switch **(1)**.
To replay a programme momentarily depress the top of this switch **(A)** for AUTO re- play, depress the bottom of the switch for MANUAL re- play.

Record switch **(2)**.
This switch is used to select the recording mode.

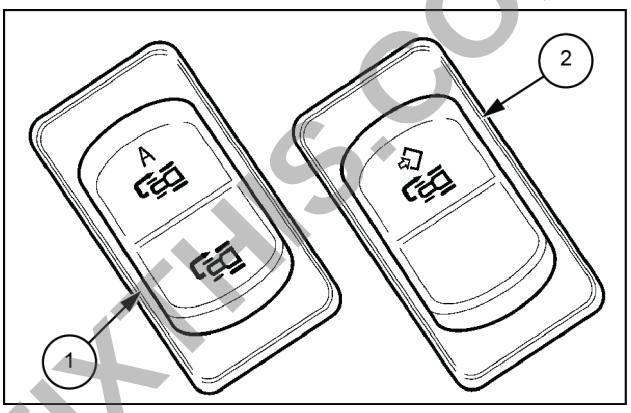
Step switch **(3)**.
The step switch is used to start, pause or stop a sequence. The step switch can also be used to insert pauses during a recording or to pause a sequence during play- back.

NOTE: *Each pause inserted during a recording will be recognised as a sequence step by HTS.*

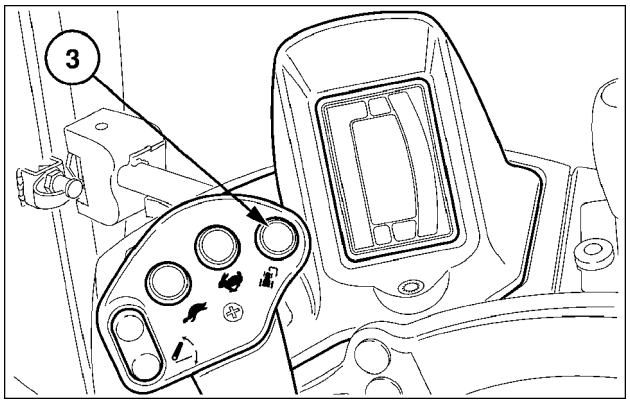
Where HTS is used to create a recording, the following actions or functions may, depending on tractor specification, be included in the sequence.

- Regulate engine speed.
- Shift transmission gears up, and/ or down.
- Raise and lower the rear three point hitch.
- Raise and lower the front three point hitch.

NOTICE: *When operating in Field Auto Mode, activating HTS will suspend the Auto Mode function. After completing the headland manoeuvre programme, HTS will be suspended and the Field Auto Mode will be resumed.*
In a similar way, ESM will also be disabled when HTS is suspended. However, the ESM light will still remain illuminated while the programme is disabled.



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BRI4087K 2

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FIRST 50 HOURS

Service operations

At the first 50-hour service, ensure that the service operations are carried out by your authorised dealer. The items are listed in the 'First 50-Hour Service' checklist, see on page **11-1**.

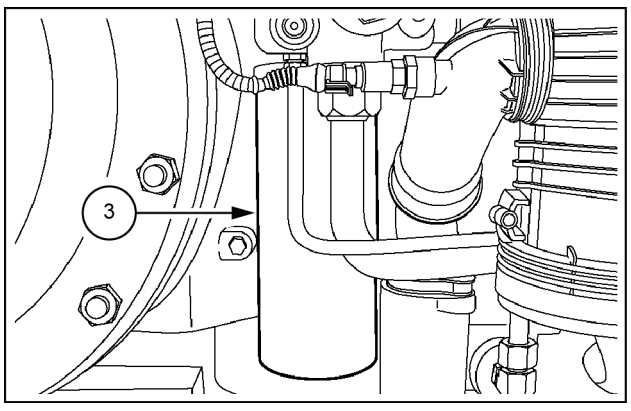
- Check engine oil level
- Change hydraulic oil filters (see NOTICE filter dimension below)
- Check transmission/rear axle/hydraulics oil level
- Clean front P.T.O. breather (where fitted)
- Check front P.T.O. oil level (where fitted)
- Check FWD differential oil level
- Check FWD axle hub oil level
- Check and adjust parking brake
- Check all engine air intake connections
- Check torque of exhaust manifold bolts
- Inspect Poly V-belt
- Check and adjust compressor drive belt tension (air condition and air operated trailer brakes-where fitted)
- Tighten all cooling system hose connections
- Check torque of safety cab or frame mounting bolts
- Check torque of front end weight clamp bolts (where fitted)

Both 50 Hour Service sheets should be signed by yourself and your dealer and one copy retained by the dealer for their records (Dealer's copy).

NOTICE: *Items listed in the first 50-hour check are important. If not performed, early component failure and reduced tractor life may result.*

NOTICE: *At the first 50 Hour service the hydraulic charge filter* ***(3)*** *MUST be changed for the larger capacity service replacement filter. Do NOT replace with one of the same size as this may reduce hydraulic system performance.*

Filter Dimensions	Length	Diameter
Original (factory fit)	**204 mm 8.03 in**	**94.3 mm 3.71 in**
Service replacement filter	**254 mm 10.00 in**	**116.8 mm 4.60 in**



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Hydraulic system

Hydraulic system	
Type	Variable displacement hydraulic pump with Electronic Draft Control (EDC)
System pressure at **2100 RPM** rated engine speed	**210 – 220 bar** (**3045.0 – 3190.0 psi**)
Flow at rated engine speed	
Standard pump	**150 l** (**39.6 US gal**)
High flow pump (optional)	**170 l** (**44.9 US gal**)
Lift capacity (theoretical) OECD	
Manufactures figures to OECD criteria, maximum lift capacity, **610 mm** (**24.0 in**) behind link ends through full lift range at **90%** of maximum hydraulic pressure.	
With x2 **80 mm** (**3.1 in**) assist rams. With quick attach link ends	Not available
With x2 **80 mm** (**3.1 in**) assist rams. With flexi ends	Not available
Manufactures figures to OECD criteria, maximum lift capacity at lift link ends at maximum hydraulic pressure, with links horizontal	
With x2 **80 mm** (**3.1 in**) assist rams. With quick attach link ends	Not available
With x2 **80 mm** (**3.1 in**) assist rams. With flexi ends	Not available
Manufactures figures to OECD criteria, maximum lift capacity, **610 mm** (**24.0 in**) behind link ends through full lift range at **90%** of maximum hydraulic pressure.	
With x2 **90 mm** (**3.5 in**) assist rams. With quick attach link ends	**4874 kg** (**10745.3 lb**)
With x2 **90 mm** (**3.5 in**) assist rams. With flexi ends	**5037 – 5364 kg** (**11104.7 – 11825.6 lb**)
Manufactures figures to OECD criteria, maximum lift capacity at lift link ends at maximum hydraulic pressure, with links horizontal	
With x2 **90 mm** (**3.5 in**) assist rams. With quick attach link ends	**6995 kg** (**15421.3 lb**)
With x2 **90 mm** (**3.5 in**) assist rams. With flexi ends	**5598 – 6547 kg** (**12341.5 – 14433.7 lb**)
Manufactures figures to OECD criteria, maximum lift capacity, **610 mm** (**24.0 in**) behind link ends through full lift range at **90%** of maximum hydraulic pressure.	
With x2 **100 mm** (**3.9 in**) assist rams. With quick attach link ends	**6016 kg** (**13263.0 lb**)
With x2 **100 mm** (**3.9 in**) assist rams. With flexi ends	**5282 – 6618 kg** (**11644.8 – 14590.2 lb**)
Manufactures figures to OECD criteria, maximum lift capacity at lift link ends at maximum hydraulic pressure, with links horizontal	
With x2 **100 mm** (**3.9 in**) assist rams. With quick attach link ends	**8647 kg** (**19063.4 lb**)
With x2 **100 mm** (**3.9 in**) assist rams. With flexi ends	**6914 – 8086 kg** (**15242.8 – 17826.6 lb**)
Manufactures figures to OECD criteria, maximum lift capacity, **610 mm** (**24.0 in**) behind link ends through full lift range at **90%** of maximum hydraulic pressure.	
With x2 **110 mm** (**4.3 in**) assist rams. With quick attach link ends	**7279 kg** (**16047.4 lb**)
With x2 **110 mm** (**4.3 in**) assist rams. With flexi ends	**6885 kg** (**15178.8 lb**)
Manufactures figures to OECD criteria, maximum lift capacity at lift link ends at maximum hydraulic pressure, with links horizontal	
With x2 **110 mm** (**4.3 in**) assist rams. With quick attach link ends	**10463 kg** (**23067.0 lb**)
With x2 **110 mm** (**4.3 in**) assist rams. With flexi ends	**9044 kg** (**19938.6 lb**)
Lift capacity (theoretical) SAE J283/ASAE	
With x2 **80 mm** (**3.1 in**) assist rams. With quick attach link ends	Not available
With x2 **80 mm** (**3.1 in**) assist rams. With flexi ends	Not available
With x2 **80 mm** (**3.1 in**) assist rams. With quick attach link ends	Not available
With x2 **80 mm** (**3.1 in**) assist rams. With flexi ends	Not available
Manufactures figures to SAE J283/ASAE criteria, maximum lift capacity, **610 mm** (**24.0 in**) behind link ends through full lift range at **90%** of maximum hydraulic pressure.	
With x2 **90 mm** (**3.5 in**) assist rams. With quick attach link ends	**5577 kg** (**12295.2 lb**)
With x2 **90 mm** (**3.5 in**) assist rams. With flexi ends	**5292 – 5364 kg** (**11666.9 – 11825.6 lb**)
Manufactures figures to SAE J283/ASAE criteria, maximum lift capacity at lift link ends at maximum hydraulic pressure, with links horizontal	
With x2 **90 mm** (**3.5 in**) assist rams. With quick attach link ends	**6995 kg** (**15421.3 lb**)
With x2 **90 mm** (**3.5 in**) assist rams. With flexi ends	**6445 – 6547 kg** (**14208.8 – 14433.7 lb**)

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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 authoriszed dealer.
	Malfunctioning fuel injection pump.	See your authorized dealer.
	Leaking air intake boost pipes 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 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).
	Vistronic fan locked up.	See your authorised dealer.

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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 and on machine decals, 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. The color associated with DANGER is RED.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

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. The color associated with Notice is BLUE.*

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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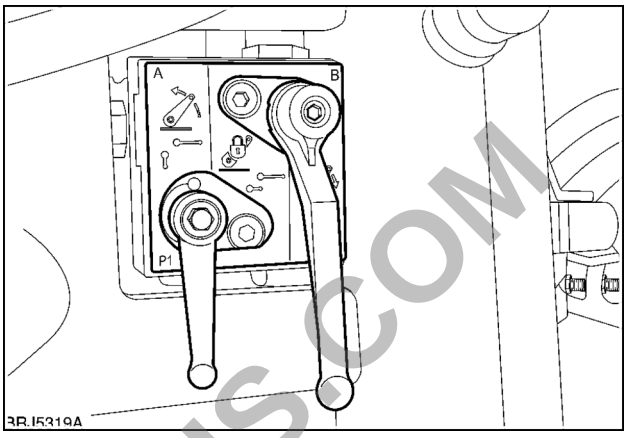
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Front Hitch-Operating

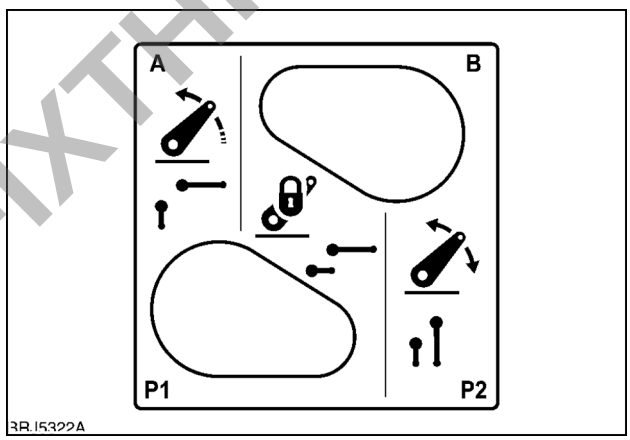
Setting the Hitch Operating Mode

Located on the front of the hitch assembly, the two selector levers permit the front hitch to be operated in single-acting mode, double-acting mode, or to be set at a fixed height..



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Position P1:
Right-hand side lever horizontal, left-hand side lever vertical. Front hitch operates in single-acting mode being hydraulically raised but lowered using weight of implement.
Position
P2: Both levers vertical.
Hitch operates in double-acting mode being hydraulically raised and lowered. Operating in this mode will provide additional penetration for ground engaging equipment in hard soil conditions or when using a front mounted scraper blade.
Lock Position: Both levers horizontal. With the levers in this position, both lift cylinders are hydraulically 'locked' preventing movement of the lower link arms. It is recommended this mode should be selected when transporting front mounted equipment on the highway..



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