ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The engine will not start or is difficult to start	Incorrect starting procedure	See starting procedure
	Fuel level low or empty	Check fuel level
	Air in fuel system	Bleed fuel system
	Engine oil viscosity not right	Use oil of right viscosity
	Fuel not suitable for ambient temperature	Use correct type of fuel for temperature conditions
	Fuel system contaminated	Clean system
	Fuel filter clogged	Replace filter element
	Fuel injector fault	Contact your dealer
The engine does not run properly and/or cuts out	Fuel system contaminated	Clean system
	Fuel injector fault	Contact your dealer
Engine does not reach maximum power	Engine overload	Change to lower gear or reduce load
	Air filter clogged	Carry out maintenance on air filter
	Incorrect fuel type	Use the right fuel
	Low engine operating temperature	Check thermostat
	Fuel injector fault	Have your dealer check the injectors
	Implement incorrectly set	See equipment manual

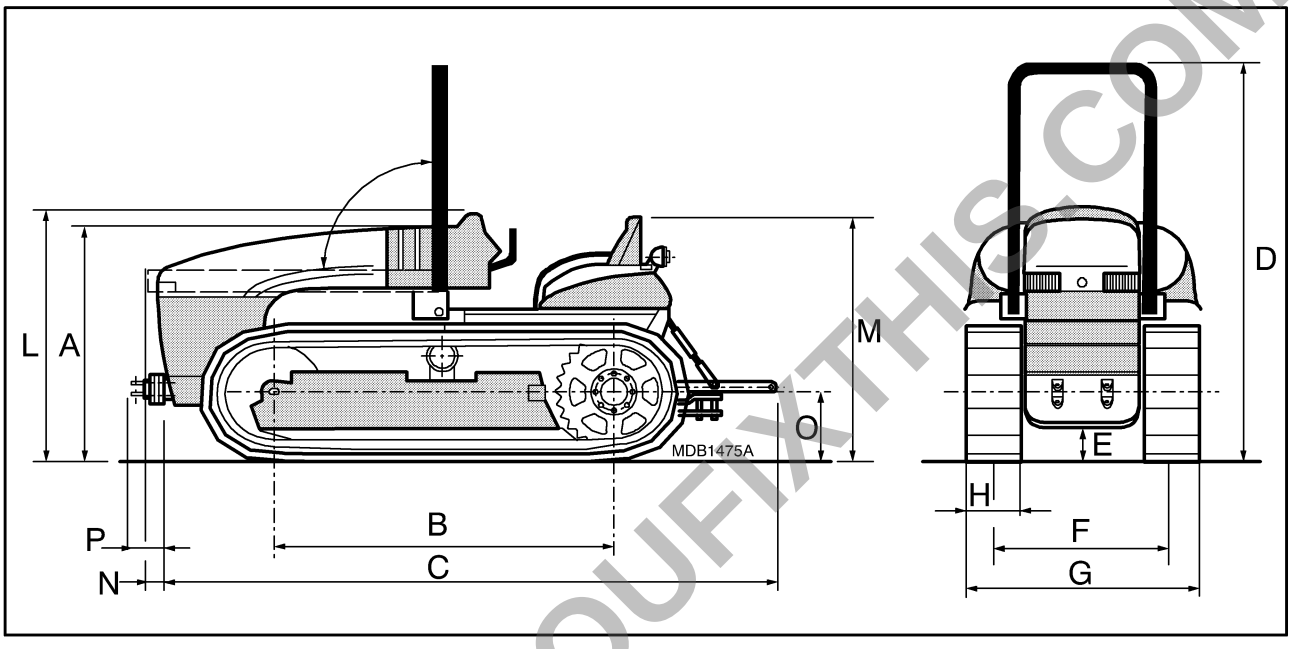
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SECTION 5

SPECIFICATIONS AND DATA

The data on the following pages is provided for your information and guidance. For further details concerning your tractor, contact your dealer.



Dimensions mm (inches)	TK76	TK76M	TK85	TK85M
A	1296 (51.02)	1300 (51.18)		
B	1586 (62.44)	1656 (65.20)		
C	3265 (128.54)			
D	2346 (92.36)	2350 (92.52)		
E	245 (9.64)	249 (9.80)		
F	1100 (43.30)	1300 (51.18)	1100 (43.31)	1300 (51.18)
G	1410 (55.51)	1650 (64.96)	1410 (55.51)	1700 (66.93)
H	310 (12.20)	350 (13.78)	310 (12.20)	400 (15.75)
L	1410 (55.51)	1405 (55.31)		
M	1471 (57.91)	1475 (58.07)		
N	100 (3.94)			
O	356 (14.01)	360 (14.17)		
P	360 (14.17)			

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.LUBRICATION AND MAINTENANCE TABLE

The numbers in the second column are with reference to the operations and illustrations in the following pages of this section.

Hours of work	Operation number	Maintenance operation	Functional check	Fill-up level	Cleaning	Greasing	Adjustment	Replacement	Page
Flexible maintenance	1	Engine oil level		●					3-6
	2	Fan belts					●		3-6
	3	Radiator expansion tank		●					3-7
	4	Radiator		●					3-7
	5	Steering clutches oil		●					3-7
	6	PTO engine clutch					●		3-8
	7	Brakes					●		3-8
	8	Central clutch		●					3-9
	9	Track chain					●		3-10
	10	Track rollers and track tension wheels					●		3-10
With lamp ON	11	Dry air filter (external cartridge)			●				3-11
	12	Air filter outlet valve			●				3-11
	13	Fuel sedimenter filter			●				3-12
Every 50hours	14	Front leaf spring pivot pin (1 grease fitting)				●			3-12
	15	Rear support bar pivot (2 grease fittings)				●			3-12
	16	Fuel filter - condensate outlet			●				3-13
	17	Central clutch engagement sleeve (1 grease fitting)				●			3-13
	18	Brakes (4 grease fittings)				●			3-13
Every 300 hours	19	Engine oil						●	3-14
	20	Engine oil filter						●	3-14
	21	Fuel feed pump			●				3-14

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OPERATING INSTRUCTIONS

CAUTION: *Before starting the engine and moving the tractor, follow the instructions noted below:*

— *do not start or operate the tractor in an enclosed area.*

— *before starting the engine, check that all controls are in neutral.*

— *all controls must only be operated from the driving position.*

— *stop the engine before carrying out any service or maintenance operations on the tractor.*

— *use the steps provided for entering and leaving the tractor.*

— *keep the guards properly fitted.*

— *when driving on roads, indicate all intentions to stop, turn or slow down.*

— *use the appropriate warning devices to signal the presence of a slow-moving vehicle.*

STARTING THE ENGINE

a. If the tractor has not been used for some time, or if started up for the first time at a low surrounding temperature, actuate the fuel pump starting lever around twenty times.

b. Disengage the central clutch and PTO engagement lever to close the starter safety device switch.

c. Move the throttle lever to approximately the half-way position.

d. Turn the starter key to position **B** (fig.1, page 2-3). Release the key as soon as the engine starts.

STARTING AND STOPPING

STARTING IN LOW OUTSIDE TEMPERATURE CONDITIONS

CAUTION**:** *When the outside temperature is low and the engine is cold, cover the radiator before starting so that the engine coolant can quickly reach the correct temperature. Then remove the cover. Also note the following warnings:*

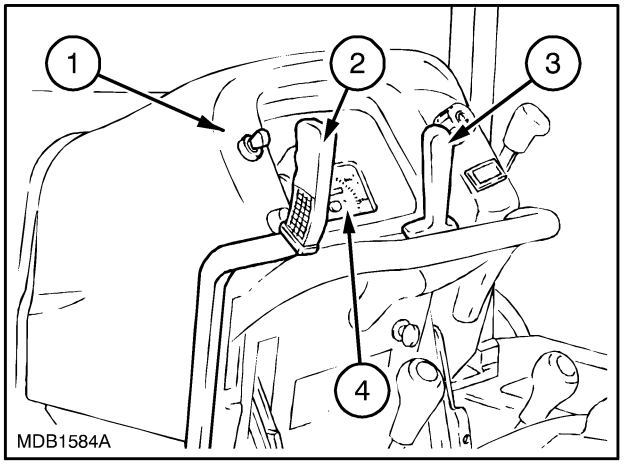
— *in order not to run the battery down, any single engine starting attempt should not last longer than 15 seconds; if, however, the engine fires but does not start, repeat up to a maximum time of 30 seconds.*

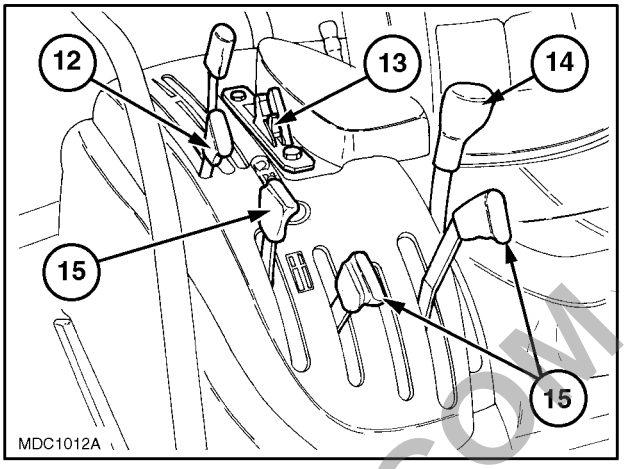
— *wait at least one minute between attempts to start the engine;*

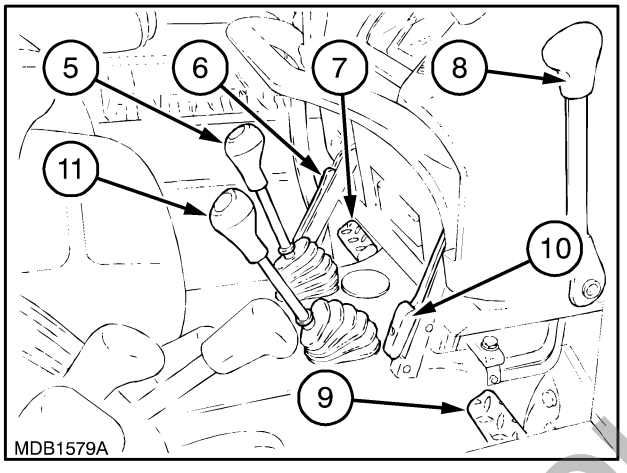
— *It is advisable not to make more than six attempts to start the engine to avoid excessive battery run-down.*

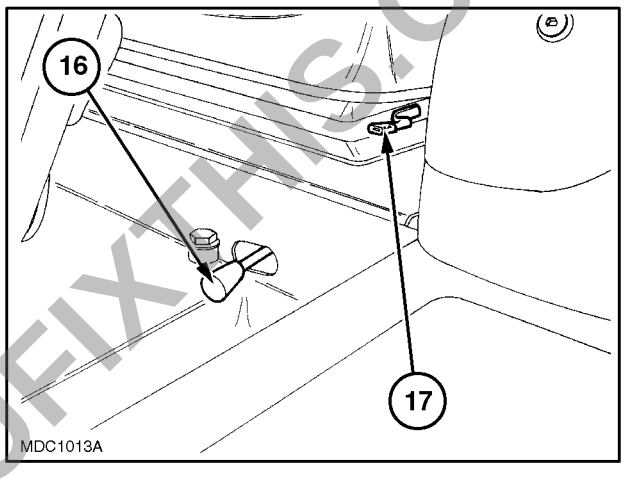
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1

CONTROLS AND INSTRUMENTS

1. **Control panel.**
2. **Central clutch control lever:**
   - forward = clutch engaged;
   - back = clutch disengaged;

   CAUTION: *To engage the clutch, the lever must be fully pushed forward.*
3. **Steering clutches lever:**
   - turned to the left: left-hand clutch;
   - turned to the right: right-hand clutch;
4. **Instrument panel.**
5. **Range lever.**
6. **Handbrake lever:**
   - raised = brake locked;
   - down = brake released;

   WARNING: *To release the handbrake, release the lever by pressing the button* ***6****.*
7. **LH brake pedal.**
8. **Engine throttle lever.**
9. **RH brake pedal.**
10. **PTO clutch lever.**
11. **Main shift lever.**
12. **Hydraulic lift lever.**
13. **Lift-o-Matic controls.**
14. **Creeper lever or Shuttle lever (depending on model).**
15. **Remote control valves levers.**
16. **PTO engagement lever.**
17. **Seat forward-backward movement lever.**

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine does not reach maximum power (cont.)	Implement incorrectly set	See equipment manual
	Valve clearance wrong	Check and adjust
	Idling speed. too low	Contact your dealer
Abnormal engine knocking	Oil level low	Top up fluid level
	Oil pressure low	Contact your dealer
Low engine operating temperature	Thermostat malfunction	Replace thermostat
Oil pressure low	Oil level low	Add oil as required
	Oil grade or viscosity wrong	Drain and refill with oil of correct grade and viscosity
Excessive oil consumption	Oil level too high	Reduce oil level
	Oil viscosity wrong	Use oil of correct viscosity
	Oil leaking	Repair leaks
	Breather pipe filter clogged	Replace breather pipe filter
Engine overheating	Radiator core clogged	Clean
	Engine overload	Change to lower gear or reduce load
	Engine oil level low	Top up fluid level
	Coolant level low	Top up fluid level in expansion tank. Check system for leaks
	Radiator cap defective	Replace cap
	Fan belt slipping or worn	Check tensioning device. If necessary, replace the belt

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WEIGHTS

The values refer to tractors fitted with: hydraulic lift, complete with implement hitching device, towing device, road pads, operator and full fuel tank, kg (lbs.)

Model	TK76	TK76M	TK85	TK85M
Without ballast	4100 (9039)	4250 (9369)	4160 (9171)	4280 (9435)
With ballast (three plates)	4190 (9373)	4340 (9568)	4250 (9369)	4370 (9634)

ENGINE

Model	TK76	TK85
Engine type	IVECO	
with clutch: 11”	8045.06	8045.05
Injection pump	BOSCH	
4-stroke diesel, direct injection:	YES	
naturally aspirated	YES	
Turbo-charged	NO	
Number of cylinders	4	
Bore and stroke mm (in.)	100 X 115 (3.94 X 4.53)	104 X 115 (4.09 X 4.53)
Compression ratio	17	
Torque increase (%)	25	20
Engine max. power DGM/DIN: kW HP	53 71	58.8 80
Total displacement cm^3 (in^3.)	3613 (220)	3908 (238)
Corresponding rpm: rpm	2500	
Maximum torque rpm: rpm	1400	

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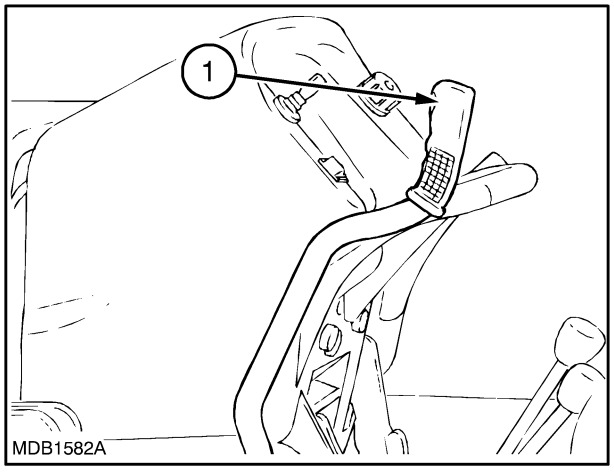
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Hours of work	Operation number	Maintenance operation	Functional check	Fill-up level	Cleaning	Greasing	Adjustment	Replacement	Page
Every 300 hours	22	Steering clutch filter			●				3-15
	25	Final drives oil		●					3-16
	26	Transmission and lift oil		●					3-16
	27	Dry air filter (internal cartridge)						●	3-16
	24	Oil filter, lift						●	3-15
	23	Fuel filter						●	3-15
Every 900 hours	28	Engine valves	●						3-17
Every 1200 hours or every year	29	Dry air filter (external and internal cartridge)						●	3-17
	30	Steering clutch oil						●	3-18
	31	Injectors	●						3-18
Every 1200 hours or every 2 years	32	Transmission and lift oil						●	3-19
	33	Final drives oil						●	3-19
	34	Engine cooling system			●				3-20
General maintenance	Bleed fuel system								3-22
	Electrical system								3-23
	Notes on bodywork maintenance								3-27
	Tractor storage								3-28

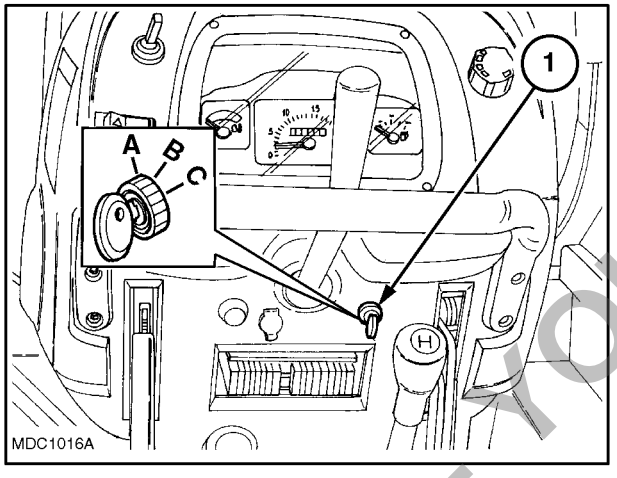
Oil table. 3-29

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3



4

CAUTION: *With outside temperatures below 0°C (32°F), in order to prevent separation of the paraffin components in the diesel fuel, leading to a reduction in fluidity and subsequent fuel supply problems (especially when starting the engine),* ***mix the diesel fuel with the antifreeze*** *(or a similar product) in the proportions described on the container.*

The winter grade fuel must be mixed with the diesel fuel ***before*** *there is any sign of paraffin separation; adding it later will have no effect on an engine if the cold has already caused the engine to stop running or prevent it being started.*

Put the winter grade fuel in the tank first, followed by the diesel fuel.

The winter grade fuel *will ensure that there is an optimum fuel supply to the engine without reducing performance, even where the external temperature drops below -20°C (-4°F).*

STARTING THE TRACTOR

— make sure that the central clutch is disengaged (lever **1,** fig. 3 back) and move the shift and range levers to the speed of the required gear.

— Accelerate the engine.

— engage the central clutch by slowly moving the lever forward, until the tractor starts to move, then push the lever fully forward.

STOPPING THE TRACTOR

— Reduce engine speed.

— Disengage the central clutch (lever **1**, fig. 3 back) and move the main shift lever to the neutral position.

— Brake with both pedals, lock with the handbrake with the engine stopped, engage the gear and engage the central clutch lever.

STOPPING THE ENGINE

— Turn the starter key (**1**) fig. 4 to position **A.**

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine overheating	Cooling system clogged	Flush cooling system
	Thermostat malfunction	Check thermostat
	Hoses leaking	Tighten hose connectors
	Temperature indicator or gauge malfunction	Contact your dealer
Excessive fuel consumption	Incorrect fuel type	Use right fuel type
	Air filter dirty or clogged	Carry out maintenance on air filter
	Engine overload	Change to lower gear or reduce load
	Valve clearance wrong	Check and adjust
	Equipment wrongly adjusted	Refer to equipment manual for correct operation
	Engine temperature too low	Check thermostat
	Too much ballast	Adjust ballast to correct weight
	Fuel injection nozzles clogged	Have your dealer service the injectors

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TIMING SYSTEM

With overhead valves	Timing data
Inlet:	
- start before TDC	12°
- end after BDC.	31°
Exhaust:	
- start before BDC	50°
- end after TDC.	16°
Valve clearance, timing inspection: .... mm (in.)	0.45 (0.01)
Valve clearance, engine cold:	
- inlet and exhaust ..... mm (in.)	0.30 ± 0.05 (.012 ± .002)

FUEL SYSTEM

Double-diaphragm fuel pump on injection pump supply line.

BOSCH rotary injection pump with centrifugal speed governor, operating at all speeds and incorporating automatic advance type VE4.

- mesh filter in the fuel pump;
- replaceable cartridge filter on the injection pump feed line with water separator.
  Fuel sediment filter (optiona).
- On request: air filter with self-cleaning device (Donaspin) (optional).

Engine injection pump:	**TK76**	**TK85**
Before TDC. of cylinder No. 1 during compression stroke	4° ± 1°	

Injectors:	**TK76**	**TK85**
- order of injection	1 - 3 - 4 -2	
- number of injection nozzles:	4	
- pressure setting:bar (psi)	260 - 268 (3771 - 3887)	

LUBRICATION

Pressurised, by gear pump.
Oil filtration: pressurised through pump intake mesh and replaceable cartridge filter on engine intake.

Lubrication pressure with engine hot and at max. revs:

- bar 2.9 ÷ 3.9 (42 ÷ 56 psi)

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