710
Tractor

JOHN DEERE

OPERATORS MANUAL

710
Tractor

OML25016 K6 English

OML25016 K6

LITHO IN U.S.A.
ENGLISH

Introduction

This new "John Deere" high performance tractor suitable for a variety of applications is constructed to satisfy the requirements of modern agricultural operations.

The tractor has the following special qualities:

Easy and convenient operation

Hydraulic power for all applications

The most economical operation is ensured under all conditions by the close correlation of engine-speed, power output and travelling speed with the particular requirements of the job in hand.

Simple maintenance

Modern in design and appearance.

Maintained and operated according to the present Operating Instructions, this modern tractor will help you to work more easily and more economically and to do a better job.

Unless attention is paid to correct operation and maintenance, no machine can be expected to provide a first-class performance. These Operating Instructions belong in the hands of the man who operates the tractor.

Before starting up the engine for the first time, the operator must read the Operating Instructions, bear them in mind and follow them.

No claims can be made on the basis of the guarantee for any damage resulting from wrong operation or maintenance.

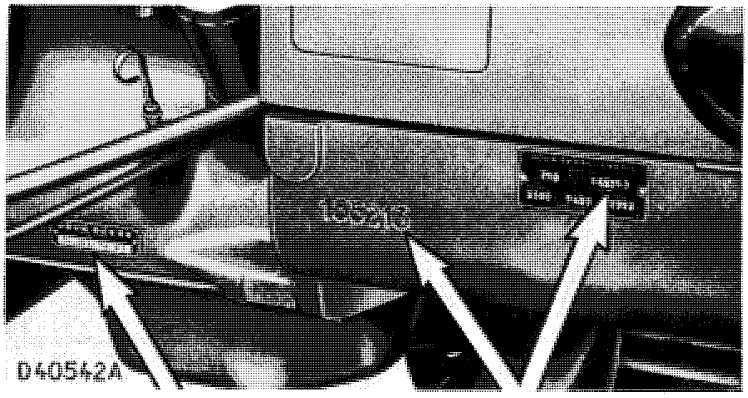
In all matters of utilisation and maintenance, take the advice of your John Deere dealer. You can be sure that for maintenance and overhauls he will use only

"Original John Deere spare parts"

In all correspondence with your dealer or with our distributors or our factory, and particularly when ordering spare parts, please do not fail to quote the chassis number of the tractor as well as the engine number (see illustration below).

In the present instructions the directions "right" and "left" indicate the sides of the tractor when looking forwards in the direction of travel.

The rear number plate must be attached as shown in Fig. 209 page 77. The number plate must have the dimensions 9,4" x 5" (240 x 130 mm).



Engine No. | Chassis No.

Enter engine and chassis Nos. of your Tractor in squares above.

Contents

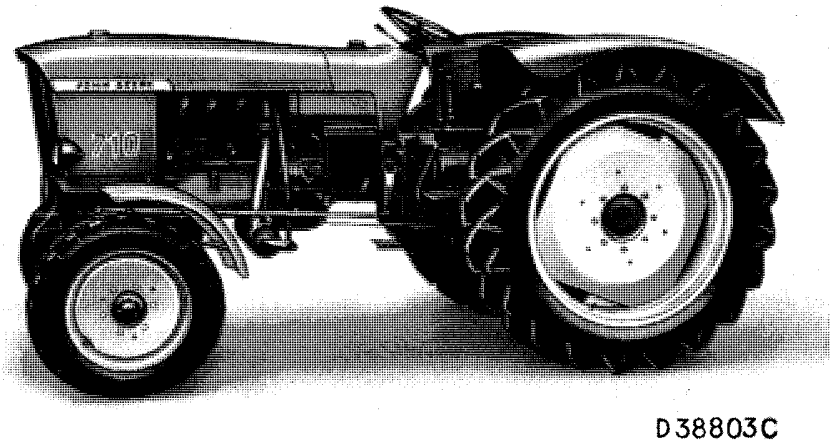


Fig. 1: Tractor, left-hand side.

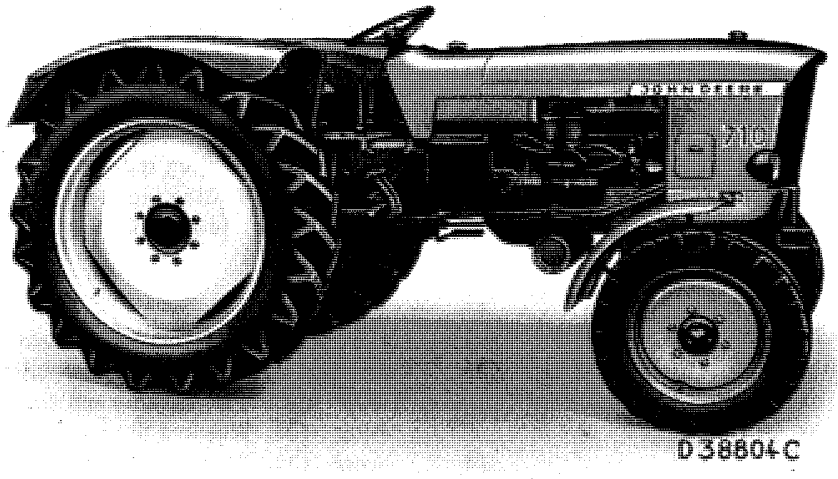


Fig. 2: Tractor, right-hand side.

This tractor complies with the Accident Prevention Regulations.
All the necessary safety devices are fitted.

Specifications:
Diesel Tractor "710"

Engine - 202 D 23L:

4-cylinder 4-stroke Diesel engine with direct fuel injection, overhead valves, double circuit water cooling, pressure lubrication, press button starter and cold start aid.

Firing sequence	1-3-4-2
Bore	3.86 ins 98 mm
Stroke	4.33 ins 110 mm
Swept volume	202.5 cu ins 3.32 litres
Revs/min at full load	2,400
Normal Revs/Min	1500 - 2400
Idling speed, revs/min	650
Horse power (Engine Net Flywheel)	49.3 h.p. 50 PS

Ground Speed in km/hr - miles/hr

Standard tractor:

Gear-group and gear forwards	Size of rear tyre 11 - 32 km	11 - 32 miles	11 - 36 km	11 - 36 miles	13 - 30 km	13 - 30 miles	14 - 30 km	14 - 30 miles
I/1	1.5	0.9	1.6	1.0	1.5	0.9	1.5	0.9
I/2	2.6	1.6	2.8	1.7	2.7	1.7	2.7	1.7
I/3	5.1	3.2	5.5	3.4	5.3	3.3	5.4	3.4
II/1	3.3	2.1	3.6	2.2	3.5	2.2	3.5	2.2
II/2	5.7	3.5	6.1	3.8	5.9	3.7	5.9	3.7
II/3	11.3	7.0	12.1	7.5	11.7	7.3	11.9	7.4
III/1	4.7	2.9	5.0	3.1	4.9	3.0	4.9	3.0
III/2	8.0	5.0	8.6	5.3	8.3	5.2	8.4	5.2
III/3	16.0	9.9	17.1	10.6	16.5	10.3	16.7	10.4
I-III/4	18.7	11.6	20.0	12.4	19.3	12.0	19.6	12.2
reverse								
R/1	2.3	1.4	2.4	1.5	2.4	1.5	2.4	1.5
R/2	3.9	2.4	4.1	2.5	4.0	2.5	4.1	2.5
R/3	7.7	4.8	8.2	5.1	8.0	5.0	8.1	5.0

High Speed Tractor:

Gear-group and forward gear	Size of rear tyre 11 - 32 km	11 - 32 miles	11 - 36 km	11 - 36 miles	12 - 36 km	12 - 36 miles	13 - 30 km	13 - 30 miles	14 - 30 km	14 - 30 miles
I/1	2.1	1.3	2.0	1.2	2.0	1.2	1.9	1.2	1.9	1.2
I/2	3.6	2.2	3.4	2.1	3.4	2.1	3.3	2.1	3.4	2.1
I/3	7.2	4.5	6.9	4.3	3.6	2.2	6.6	4.1	6.7	4.2
II/1	4.7	3.0	4.5	2.8	4.6	2.8	4.3	2.7	4.4	2.7
II/2	8.0	5.0	7.6	4.7	7.9	4.9	7.3	4.5	7.4	4.6
II/3	16.0	9.9	15.2	9.4	15.7	9.7	14.7	9.1	14.8	9.2
III/1	6.6	4.1	6.3	3.9	6.5	2.9	6.1	3.8	6.2	3.9
III/2	11.2	7.0	10.7	6.6	11.0	6.8	10.3	6.4	10.5	6.6
III/3	22.9	14.2	21.7	13.5	22.1	13.7	21.0	13.0	21.3	13.2
I-III/4	26.8	16.7	25.3	15.8	25.9	16.1	24.6	15.3	24.9	15.5
reverse										
R/1	3.0	1.9	3.0	1.9	3.1	1.9	2.9	1.8	3.0	1.9
R/2	5.4	3.4	5.2	3.2	5.4	3.4	5.0	3.1	5.1	3.2
R/3	10.8	6.7	10.3	6.4	10.7	6.6	10.0	6.2	10.1	6.3

Power take off shafts:

Front: (mower drive) 1008 revs/min at 2400 revs/min engine speed.

Rear:

Right-hand drive shaft revs/min	Left-hand drive shaft revs/min	At engine revs/min
540	944	2250
572	1000	2380
576	1008	2400

Automatic hydraulic control system (independent of clutch):

Working pressure	2332 lbs/sq. in (164 kg/cm^2)
Lifting power on drawbar, Kategory II (through full lifting range with lift rods at medium length)	3859 lbs. (1750 kg)
Stroke time	2.4 secs
Rate of oil flow with engine running at 2000 revs/min	3.5 Imp. Gals (16 Ltr)/min
With power steering	7.0 Imp. Gals(32 Ltr)/min

Flat belt pulley wheel

Diameter	11.02" (280 mm)
Width	5.51" (140 mm)
Speed, revs/min	1,430
Linear speed of belt with engine running at full speed	3950 ft/min (20 metres/sec)
Dynamo	12 volt. 90/135 Watts
Batteries	2 x 6 volt = 12 volt 98 Ah
Starter	2.9 h.p. (3 PS)

Tractor Dimensions

assuming rear tyres / front tyres	11 - 36 AS / 7.50 - 16 ASF, and front axle raised
Length	139.0" (3530 mm)
Gauge with normal track	65.1" (1652 mm)
Height over steering wheel	65.0" (1650 mm)
Height over bonnet	59.1" (1500 mm)
Ground clearance	22.2" (560 mm)
Wheelbase	86.6" (2200 mm)
Turning circle diameter	284.0" (7210 mm)
Tread width front (extension axle)	57.1"-68.9"(1450 - 1750 mm) For Field - 72.8" (1850 mm)
Tread width rear reversible wheels	53.2" and 59.1" (1350 and 1500 mm)
for tyres 13-30 or 14-30	55.1" (1400 mm)
Multiple Track-width adjustment (see opposite)	
Trailer coupling* height above ground	34.3" (870 mm)
Front hitch height above ground	25.0" (640 mm)

On request the tractor can be supplied with other tyres as per price list obtainable from your dealer.

* the permissible weight of trailer applied to the trailer hitch depends on the load capacity of the tyres, and on the official regulations for road vehicles. The maximum permissible weight is not more than 1764 lbs (800 kg) In these operations extra weights must be put on the front of the tractor.

Tank Capacities:

	approximately	
Engine Oil	1.25	Imp. Gals. (5.7 litres)
Coolant	2.75	Imp. Gals. (12.2 litres)
Fuel	13.75	Imp. Gals. (63.0 litres)
Gearbox oil	6.75	Imp. Gals. (31.0 litres)
Hydraulic oil oil-bath	2.25	Imp. Gals. (10.0 litres)
Air filter	0.25	Imp. Gals. (1.0 litres)
Belt pulley tank	0.125	Imp. Gals. (0.5 litres)

Rear wheel multiple track-width adjustment:

Assuming that the overall width of the rear axle between the axle flanges is 55.7" (1415 mm), the tread widths obtainable using tyres 11-32 or 11-36 are as follows:

50.2" (1275) - 54.1" (1375) - 58.1" (1475) - 62.0" (1575) - 66.0" (1675) - 69.9" (1775)

and with tyres 13-30; 1430 =

54.1" (1375) - 58.1" (1475) - 62.0" (1575)- 66.0" (1675) - 69.9" (1775)

with axle length 63.0" (1600 mm):

49.6" (1260) - 53.5" (1360) - 57.5" (1460) - 61.4" (1560) - 65.4" (1660) - 69.3" (1760) - 73.2" (1860) and 77.2" (1960). (With tyres 13-30 or 14-30 the tread width 49.6" (1260) is eliminated) see page 20.

Please observe that:

When travelling on the public highway the maximum permissible tractor tread width is indicated in the Ministry of Transport Regulations for Road Vehicles.

This tread width must not be exceeded.

This applies only to tractors going faster than 12.4 miles/hr (20 km/hr)

(Specifications and design subject to change without notice)

Controls and Instruments

Before putting your tractor into operation for the first time, make yourself conversant with the positions and functions of the various controls and instruments with the help of the illustrations in this instruction booklet.

Numbers in parenthesis () indicate page with detailed information.

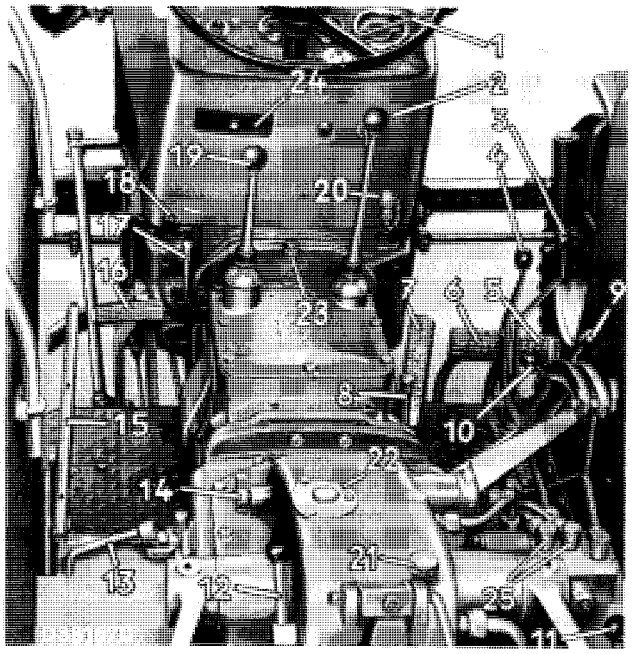


Fig. 3: Driver's controls.

1. Hand throttle (8)
2. Gear lever for gears 1-4 (14)
3. Control lever for mower, lift etc. (30)
4. Control lever for front loader etc. (30)
5. R.H. Brake pedal (16)
6. L.H. Brake pedal (16)
7. Foot throttle (8)
8. Rear power take off engagement lever (24)
9. Control lever for lifting and lowering the rear implements (28)
10. Automatic "System" selector lever (28)
11. Levelling crank for lower lift link (32)
12. Lift link locking lever (for trailer bar) (29)
13. Differential lock actuating lever (15)
14. Speed of drop control valve and lock for transport position (28)
15. Hand brake lever (16)
16. Dual clutch pedal (14)
17. Front power take off engagement lever (24)
18. Engine stop knob (9)
19. Gear range selector lever for range I, II, III, R (14)
20. Connecting point for cold starting aid (9)
21. Dipstick and filler opening for hydraulic oil (62)
22. Cover for hydraulic oil filter (62)
23. Gearbox oil-filler opening
24. Fuse Box (7)
25. Auxiliary control valves (29)

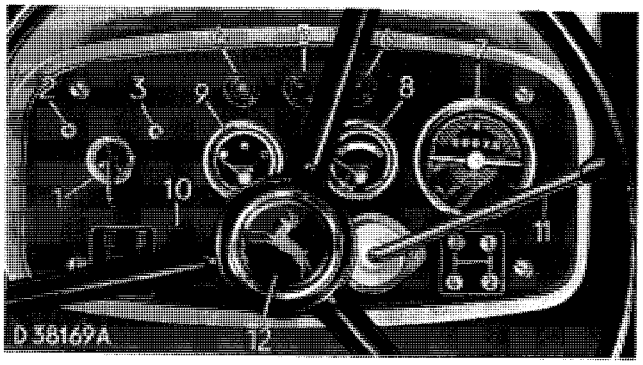


Fig. 4: Instrument panel

1. Trafficator switch with indicator light for tractor (13)
2. Indicator light for trafficatior lights on Trailer I (13)
3. Indicator light for trafficator lights on Trailer II (13)
4. Green oil pressure warning light (11)
5. Red warning light (rate of charge from dynamo) (11)
6. Blue indicator light for full beam on headlights (13)
7. Tractormeter (12)
8. Water temperature gauge (11)
9. Fuel gauge (12)
10. Socket for inspection lamp (and wiper)
11. Hand throttle (8)
12. Horn button

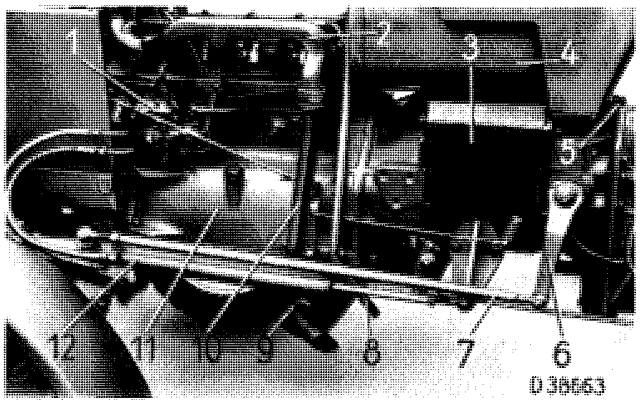


Fig. 5: Engine, left side

1. Fuel injection pump
2. Exhaust manifold
3. Battery, left (53)
4. Fuel tank (43)
5. Engine stop knob (9)
6. Steering drop arm
7. Steering drag link
8. Crank case ventilation tube (66)
9. Muffler
10. Exhaust pipe
11. Cylinder block
12. Hydraulic cylinder for power steering (39)

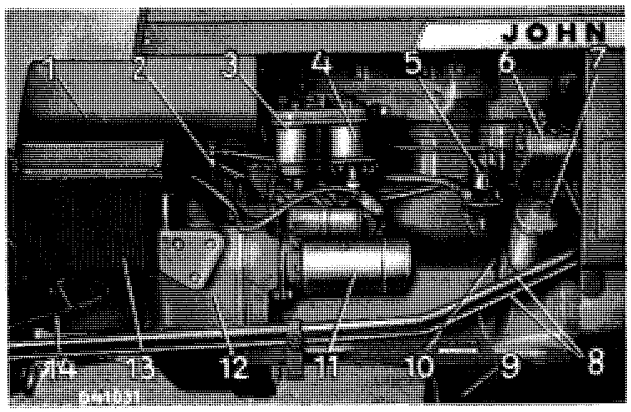


Fig. 6: Engine, right hand

1. Fuel tank (43)
2. Fuel shut-off valve (7)
3. Fuel filter, second stage (52)
4. Fuel filter, first stage (52)
5. Fuel pump with sight-glass (52)
6. dynamo (71)
7. Engine oil filter (57)
8. Hydraulic lines
9. Oil sump
10. Oil dip stick (50)
11. Starter (71)
12. Clutch housing (61)
13. Battery, right (53)
14. Throttle linkage

THINK OF YOUR SAFETY

Running-in Period

The running-in period is decisive in determining the length of life of the tractor.

After the first run with the tractor check and, if necessary, tighten the bolts on the front and rear wheels and on the extensible front axle, to make sure they are tight.

During the first 100 hours of running, the engine should run at a high speed under medium load.

After the first 20, 250 and 750 running hours as shown by your tractormeter, you must, without fail, have your dealer carry out the following work at his workshops.

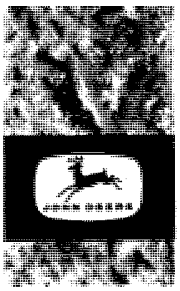
1. After the first 20 operating hours:
   a) Change engine oil, change oil filter (page 57)
   b) Clean the hydraulic oil filter (page 62)
   c) Test and adjust the front wheel bearings (page 66)

2. After the first 250 operating hours as above but in addition:
   d) Clean the oil-bath air-cleaner (page 58)
   e) Adjust the valves (page 64)
   f) Check and adjust fan belt tension (page 61)
   g) Change the gear-box oil (page 69)
   h) Test and adjust the brakes (page 59)
   i) Test and adjust the clutch (page 61)

3. After the first 750 operating hours, as above and in addition:
   k) Test the injection nozzle (page 68)
   l) Drain and refill the cooling system (page 67)
   m) Change the hydraulic oil (page 70)

Periodic maintenance work should be carried out by yourself as described and at time intervals as shown on pages 46 - 49.

We recommend that you take your tractor for testing and adjustment at regular intervals to an accredited John Deere dealer.



Engine Operation

a) Before starting up for the first time:
Do not run the engine in a closed garage
(Exhaust fumes are poisonous!)

1. Check that there is enough oil in the engine sump (page 50)
2. Check liquid level in radiator (page 50)
3. Check the oil in the air-cleaner (page 51)
4. If there is a dust trap in front of the air-cleaner, check this and if necessary empty (page 51)
5. See if there is any dirt or water in the fuel pump sight-glass, and if necessary empty this out (page 52)
6. Check sediment bowl of first stage of fuel filter (page 52).
7. Grease or oil all the lubrication points on the tractor (pages 54 and 59).

b) Starting up the engine:

1. Use cold-start aid if the engine has to be started up at cold weather (see page 9)

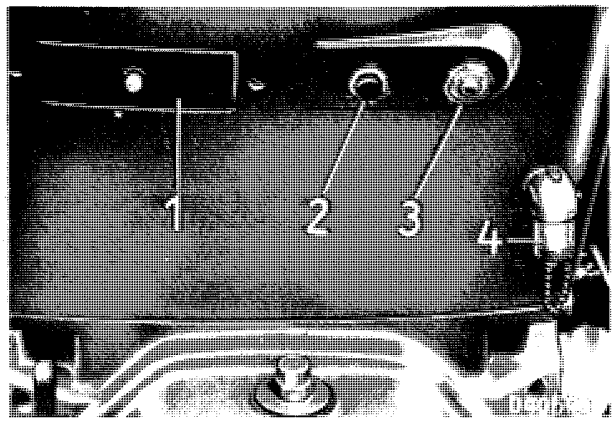


Fig. 7:
1. Fuse box
2. Starter button
3. Starter circuit and light switch key
4. Connection for cold starter.

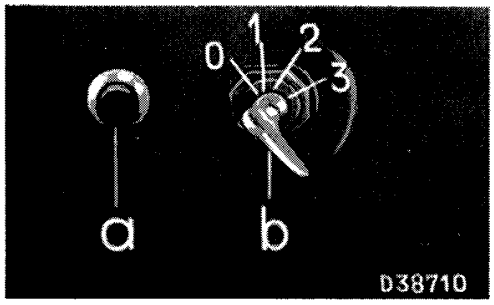


Fig. 8:
a) Starter button
b) Starter circuit and light switch key.

2. Insert the switch key:
The positions are as follows:
Position 0. (Fig. 8) Connects all circuits for daylight operation
Position 1. Side lights, Parking lights, tail lights and license plate light.
Position 2. Dipped headlights, side lights and rear lights
Position 3. Main-beam headlights with blue warning light and side lights and rear lights

When shifting starter switch from position 2 to 1 push key slightly before turning towards left.

Use only original ignition keys. If key is withdrawn in position 1 the parking lights stay on.

3. In position 0 (Fig. 8) the red warning light for the dynamo lights up and also the green warning light indicating the oil pressure, (if bulbs or fuses have burnt out they should be replaced immediately).
4. In Position 0 (Fig. 8) the fuel gauge shows the level of fuel in the tank, and the thermometer shows the cooling water temperature.
Even if the key is turned these indications remain, the amount of fuel should now be checked on the fuel gauge (Fig. 8) to make sure that there is enough fuel in the tank. (If the tank was completely drained and then refilled the fuel system must be bled of air as described on page 71).

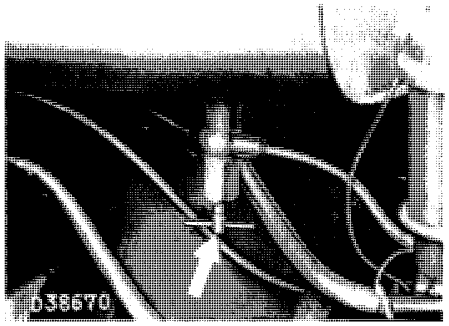


Fig. 9: Fuel shut off tap.

5. The fuel stop cock (Fig. 9) must be wide open. This cock should only be shut for cleaning the fuel filter or when the tractor is out of operation for several days. If equipped with a lockable stop knob turn knob 1/4 turn to the left and push it in.
6. Place hand throttle in medium position, if tractor has "Bosch" or "Roosa Master" injection pump; place hand throttle to full speed position, if tractor is equipped with "Roto Diesel" pump (position 2, Fig. 10).
7. The gear-selection lever must be set to neutral (Fig. 25) and the power take-off shafts must be out of engagement (Fig. 58 and 60).

8. With the switch key in the 0 position (Fig. 9) push the starter button. The switch key should be set at 0 to avoid over-draining the batteries by switching on any other units which use electricity

As soon as the engine starts, immediately release the starter button.
Both the red and the green warning lights should go out as the engine runs at full speed. If this is not the case, switch the engine off again and investigate and eliminate the cause.

9. If the starter causes only a slow turning over of the engine due to cold, depress the clutch to its lowest position (that is to its stage 2 position) and continue until the engine starts.
   Allow the clutch pedal to come back slowly.
   The warning lights must go out when the engine is running.
10. Before repeating the starting sequence be sure the engine comes to a complete stop. It is advisable to wait for one minute to allow the batteries to recover.
    Do not depress the starter button for more than 8 seconds at a time.
    Never press the starter button while the engine is running (damage to starter).
    If the engine does not start this may be due to:-
    a) The batteries are down (re charge)
    b) Air in the fuel system (bleed, as described on page 71).
    c) The fuel filter is choked (clean according to page 63).
    (For the elimination of faults see page 74).
11. When the engine has started up, the key should be left in as otherwise the electrical warning light system will not operate. Set hand throttle to low RPM.
    After the engine has started regulate engine speed. If green warning lamp still lights when engine is running at high speed it is an indication that oil pressure is too low (see page11). If red warning light continues to light, it indicates that batteries are not being charged but are being depleted by electrical connections. Depleted batteries make starting difficult.

c) Warming up the engine:

Before putting the engine under full load it must be warmed up to the correct operating temperature. Allow the engine to run for a few minutes at half speed.

Never leave the tractor alone while the engine is running.

d) Adjustment of engine speed:

For work in the field the hand throttle (Fig. 10) is set immediately to the desired setting as shown on the tractormeter (Fig. 19): When the accelerator pedal is released the engine speed will return to the speed set by the hand throttle.
For travelling on the road the hand throttle should be set to the idling position and the tractor is controlled by the foot pedal.

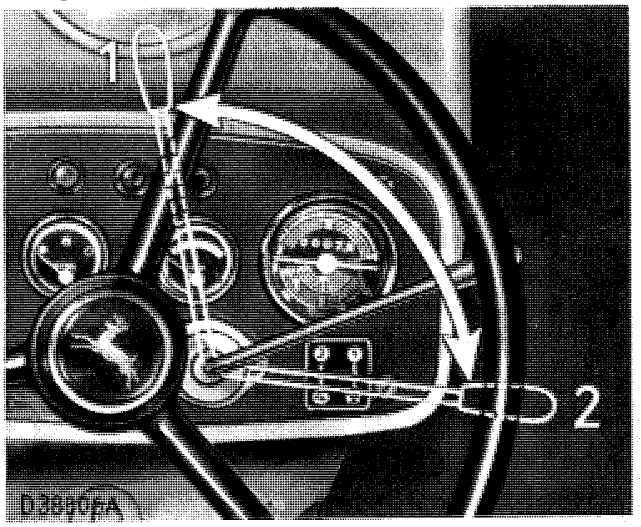


Fig. 10: Hand throttle.
1. Low revs.
2. High revs.

The engine speed can be adjusted between 650 and 2400 rev/min. by hand throttle and foot pedal.

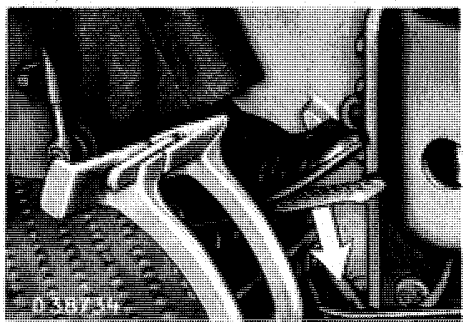


Fig. 11: Operation of the accelerator pedal.

When the tractor is stationary with the engine running the hand throttle should be set to low engine speed. When the tractor is pulling a heavy load on soft ground or sand and the rear wheels begin to slip, do not increase the engine speed. The correct procedure is to change down to a lower gear and then begin by pulling at low engine speed, which is gradually increased. (For action against slip see page 16). Because of the favourable torque characteristics of the engine, high tractive power is assured even down to 1500 revs/min. However, to prolong the lift of the tractor it is advisable to operate at full throttle for heavy work.

e) Idling:

Do not run the engine for long periods in neutral gear at high revolutions.

Do not run the engine in neutral gear unnecessarily. If the engine is not needed for some time, stop it altogether. This practice lengthens the life of the engine.

f) Stopping the engine:

Before stopping the engine allow it to run without load for a few minutes at low speed.

Fig. 12: Stopping the engine.

To stop the engine first move the hand throttle lever to idling speed and then pull out the engine stop knob (Fig. 12) and hold it until the engine has stopped. Push in the knob. (In case of lockable stop knob, unlock stop knob by turning 90° to the left and lock it by turning to the right.) When stopping the engine during the day the tractor key should be in "0" position, but at night, on the open road, in Position "1". The key should be withdrawn so as to leave the parking lights "on" (Fig. 8).

g) Operation in winter:

1. Fuel:
   In conditions of severe cold, and if the tractor was not kept in a warm building overnight, morning starting may be made difficult by the paraffin products which separated in the diesel fuel.
   Paraffin separation can occur in summer grade fuel (Solidifying point -5°C to -10°C = +23°F to 14°F) at a temperature of 0°C = +32°F, whereas this trouble does not occur with winter grade, diesel fuel (solidifying point -15°C = +5°F) until -8°C = +17.6°F is reached.
   To avoid trouble with the injector pump and nozzles, do not use stored summer grade fuel in cold-weather.

2. Batteries:
   The capacity of every battery decreases when it gets cold. If the tractor cannot be kept in a warm place overnight during cold weather it is advisable to remove the batteries (Fig. 13) and keep them in a warm room until morning. In this way it will start quickly next morning. (For reconnecting the batteries, see Fig. 134/135.)

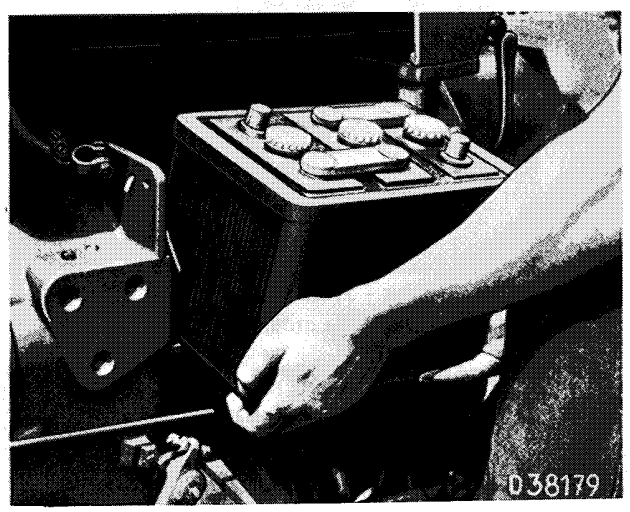


Fig. 13: Battery removal.

3. Cold starting aid.

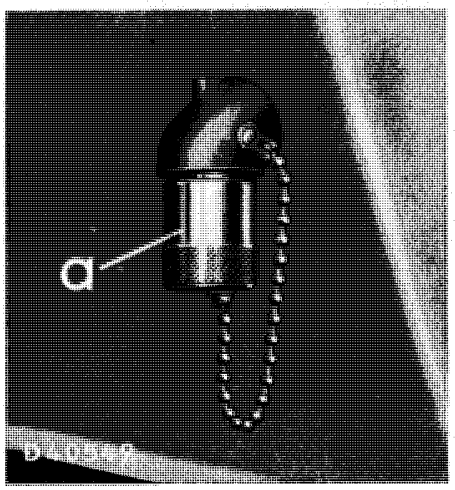


Fig. 14: Connection for the cold starting pressure can.

This cold starting device is used in cold weather (temperatures from 0°C to -30°C = +32°F to -22°F). It facilitates starting by injecting a starting aid. This liquid is stored in pressure cans and is stocked by your dealer (order AR-27814-R as Fig. 15). Handle and store carefully - inflammable.

Fig. 15: Cold Start - Pressure Can.
Arrow indicates order number.

Do not smoke. Do not use or store near an open flame. Use the starter for one turn of the engine before injecting the starting fluid. Then remove safety cap and nozzle off the pressure can.
Remove the cap (marked "A" on Fig. 14) from the connecting point on the tractor. Fit the pressure can in position (Fig. 16) and press gently upwards until it fits.

Fig. 16: Use of pressure can.

While starting:
Immediately after pushing the starter button press the can upwards several times but only for short periods, and only up to the moment when the engine has started. If the engine splutters, squeeze the can several times for a moment until the engine runs smoothly. Then remove pressure can. Shut it tight and fit safety lid. The connection fixed to the tractor must be covered as well, to avoid dust being sucked up into the engine.

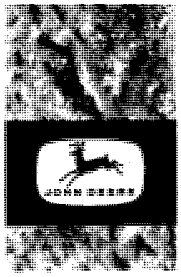
The pressure can containing the starting liquid must be stored in a cool room (not in the sun or in a hot place). Bring it up to room temperature before using it the next time.

PLEASE BE CAREFUL - INFLAMMABLE.

The cold starting fluid contains Ethyl Ether - it must, therefore, be used in a well ventilated locality. The fluid must not get into contact with your skin, use gloves. Do not set the can alight, do not perforate. Make sure it is stored out of children's reach.

Do not smoke or use an open flame near inflammables (Ether, fuel, grain, hay, etc.).

Think Of Your Safety.



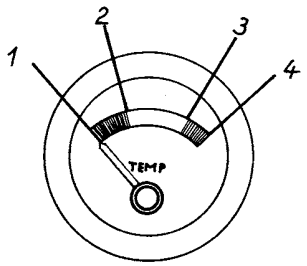
Operation Notes

a) Oil pressure warning light.

The green light 4 (Fig. 4) goes out when the required oil pressure has been reached.
The green light should come on when the key is switched on prior to starting the engine otherwise replace the burned-out bulb or fuse (page 72) If the green light does not go out after the engine has been started, the engine must be switched off again
Determine the cause and eliminate.
If the green light remains on continually, the engine must be switched off.
Check oil level in the engine crank case - top up if required (page 50).

b) Cooling water thermometer:

When the engine is cold the thermostat is closed and the cooling liquid is flowing through the radiator. Therefore, the engine quickly warms up to its operating temperature. As soon as the cooling liquid in the cylinder jacket has reached approximate operating temperature, the thermostat opens and allows the cooling water to flow through the radiator.



D 33906

Fig. 17: Thermometer.
Pointer indications:
1 - 86°F (30°C) water temperature
2 - 140°F (60°C) water temperature
3 - 219°F (104°C) water temperature
4 - 248°F (120°C) water temperature

When the tractor key is in position the electric temperature gauge shows the temperature of the cooling water (Fig. 8).

The optimum temperature is the white part of the dial. If the temperature is too low, allow the engine to warm up before applying the load (see page 8).

If the temperature is too high, stop the engine immediately, determine the cause and eliminate.

Overheating may be caused by:
1. Lack of cooling liquid. Check that the cooling system is not leaking. Fill up with water or anti-freeze mixture (see page 50).
   If the engine is hot and the cooling system is empty, don't put in cold water, as the sudden cooling may cause serious damage to the engine.
2. The fan belt is slack. Tighten it up (page 61).
3. The radiator is dirty. Clean it (page 67).
4. The thermostat does not open (defective - replace it).

If the temperature is too low:
1. There is only little load.
2. The thermostat is defective.

c) Red warning light for dynamo:

The red warning light (5 in Fig. 4) indicates the correct functioning of the dynamo. If it does not light up when the tractor key is inserted and the engine is stationary, then the bulb is burnt out or the battery is down, or the electric circuit is interrupted.
When the engine is running the red signal lamp should be out indicating that the dynamo and battery are functioning correctly.
When the tractor is operating the red signal lamp can flicker to some extent, particularly if the headlights or spotlight are being used. This is quite normal and the lamp will stop flickering in due course. But if the lamp flashes on and off, or if the tractor lights become brighter with the engine running, there is a fault which must be found and eliminated.
Some possible causes are as follows:
1. The batteries are too far discharged, or they are faulty. Recharge the batteries, or replace them.
2. The fan belt, which also drives the dynamo, is slack or oily. Tighten up belt immediately or clean it (page 61) to prevent damage to the dynamo.

3. A cable connection is loose or dirty, or a cable is broken, or there is a short circuit somewhere.
4. The carbon brushes in the dynamo are worn down or dirty, or they are not making proper contact with the commutator, Have the dynamo and the regulator checked by your John Deere dealer.

d) The fuel gauge:

The electric fuel gauge (Fig. 18) shows the amount of fuel in the tank as soon as the key is inserted. Keep a watch on your fuel level during operation, not only to avoid interruptions but also to prevent the fuel system from sucking in air.

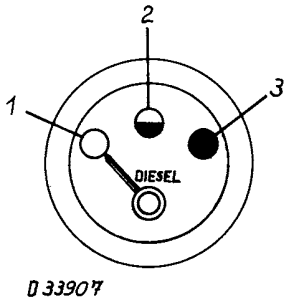


Fig. 18: Fuel gauge.

1. Empty
2. Half full - approx. 7.0 Imp. Gals. (32 litres)
3. Full - approx. 13.75 Imp. Gals. (63 litres)

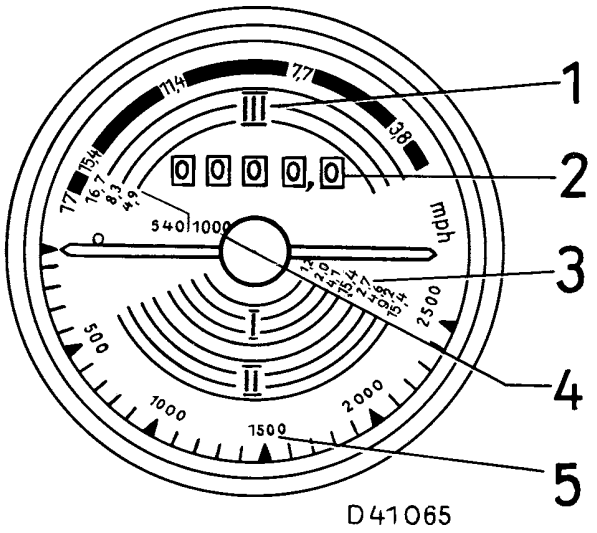
e) The tractormeter:

The tractormeter (Fig. 19) facilitates economic utilisation of the tractor under all operating conditions. The tractormeter allows you to choose correctly among the many possible gear ratios (see also page 14). For each kind of operation there is a choice of possible gear ratios together with the corresponding engine speed to give the desired travelling speed.

When the tractor is operated under heavy loads for example when ploughing, operating a Harvester, etc., the tractor will work best when the engine is turning at high speed in a low gear. On the other hand, when the work is easy, the greatest economy in fuel is obtained with the engine running at medium speed (down to 1500 revs/min.) The desired travelling speed is obtained by selecting the appropriate gear ratio (page 14). When driving machinery from the power take-off shafts the gear ratio must be such that the machinery is driven at the correct speed with the engine running at full speed (see "Specifications" on page 3).

The tractormeter (Fig. 19) indicates as follows:

1. The engine speed, corresponding to the speed setting of the throttle.



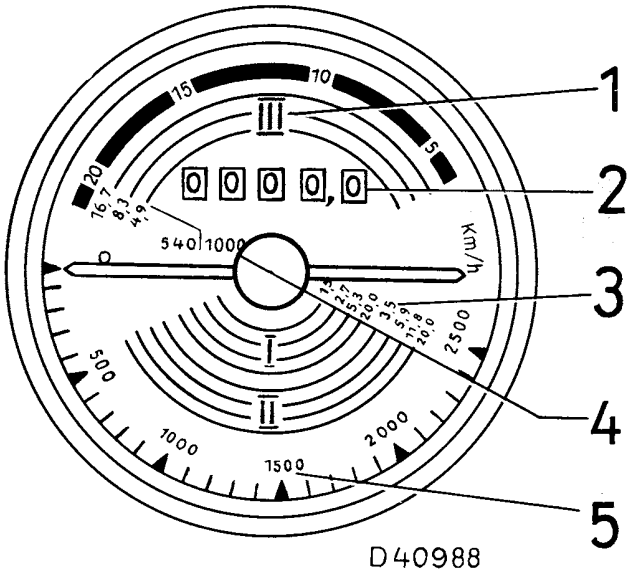


Fig. 19: Tractormeter for tractors with top speed of 12.4 mph (20 km/hr)

1. Gear group I - II - III
2. Running hours
3. Ground speed km/hr (mph) at rated speed
4. Power take-off shaft speeds revs/min.
5. Engine revs/min.

2. The tractormeter also indicates the travelling speed of the tractor in the various gears. The travelling speeds for the Group I gears are shown on the yellow lines and for the Group II gears on the green lines, by the left hand half of the instrument pointer. The travelling speeds for the Group III gears are shown on the white lines by the right hand half of the instrument pointer.
3. The speeds of the power take off shafts with the engine running at full speed are indicated by the right hand half of the instrument pointer at 540 and 1000 revs/min. (see page 3).

4. The tractormeter indicates the number of running hours, in hours and tenths of an hour, as necessary for keeping a watch on the inspection periods (page 45).

f) Headlight and blinker indicator lights:

1. Headlights:
Inserting the tractor key switches in the electric circuits, and the different lights are switched on and off by rotating the key into the different positions.
The positions 1, 2, 3 switch the lights on according to Fig. 8. The blue warning light 6 (Fig. 4) lights up when the key is in position 3 (full beam headlights) and does out when the key is switched over to position 2 (dipped) for the safety of other traffic on the road.

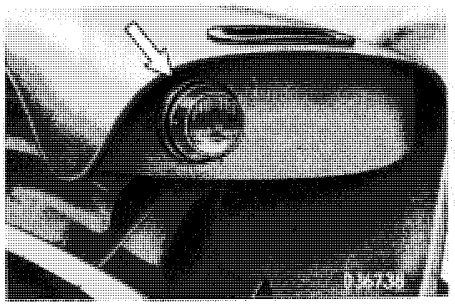


Fig. 20: Blinker and side light

For parking the key is rotated into position 1 Fig. 8 (parking lights). When the driver leaves the vehicle on a public highway he should withdraw the key in this position.

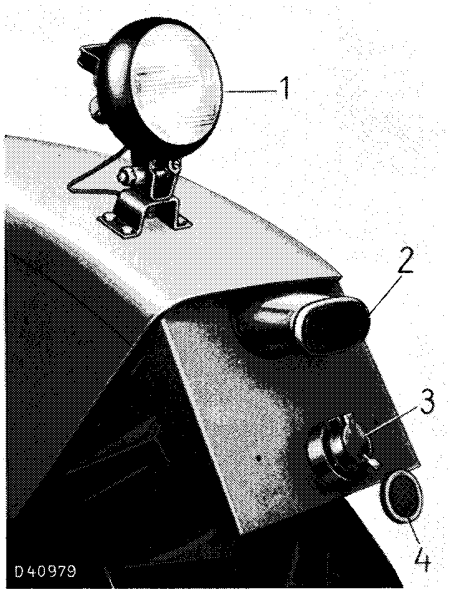


Fig. 21:
1. Spotlamp
2. Rear-, brake-, and blinker light (right)
3. 7-pole connection for trailer lighting system
4. Reflector.

2. Trafficator lights:
When operating with a trailer all the indicator lights are blinking (Fig. 22). If one of the blinker lights fails, the corresponding indicator light goes out. When operating without a trailer the indicator light in the lever indicates the failure of a blinker light by staying on continuously.

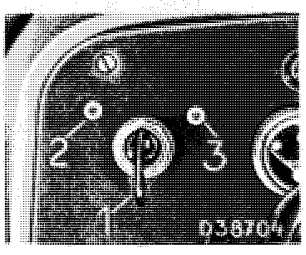


Fig. 22:
1. Switch with warning light for tractor blinker lights (trafficators)
2. Warning light for blinker light on first trailer
3. Warning light for blinker light on second trailer.

Suggest:

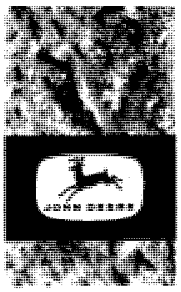
If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading



Running Operation

c) Clutch and gears:

The double clutch system is actuated by the 2-stage clutch pedal. To declutch the engine push the pedal over the first stage, which can be felt with the foot. The tractor drive through gears 1-3 in each gear group is now disengaged. This clutch position is used for changing gear. If the clutch pedal is depressed still further over the second stage the power take-off shafts are disengaged. This is also the clutch position used for engaging the common fourth gear, which gives the same travelling speed for both gear groups, that is to say irrespective of the position of the gear group lever.

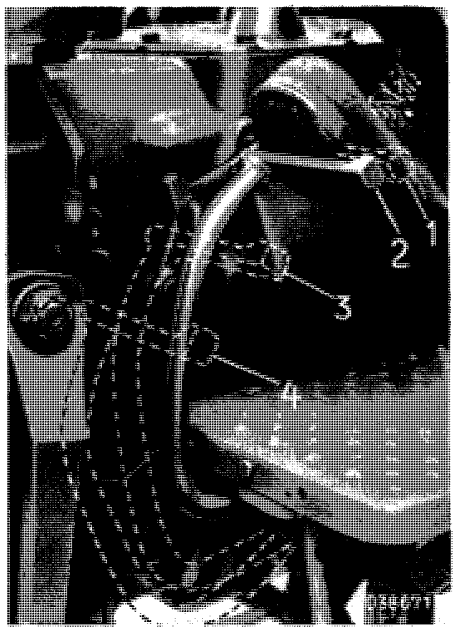


Fig. 23: Clutch pedal position (double clutch system)

1. Rest position, clutch engaged
2. Beginning of disengagement for gears of all groups 1-3
3. Clutch 1-3 gear, tractor is at a standstill
4. Power take-off shafts disengaged, when fourth gear disengaged in each group, the tractor is also at a standstill

Reduce speed when driving over rough roads, downhill or through curves. Prevention of accidents.

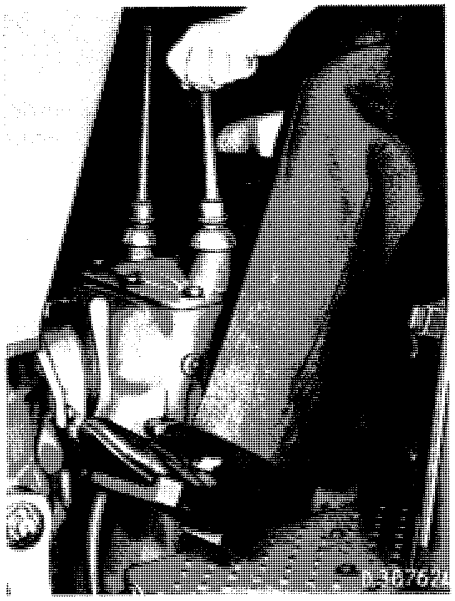


Fig 24: Clutch and gear group change.

Move the gear levers, both the group gear lever and the individual gear lever, gently into the next position Never force the gear lever.
Change the gear only with the clutch out. Change from forwards to reverse only with the tractor at a standstill.

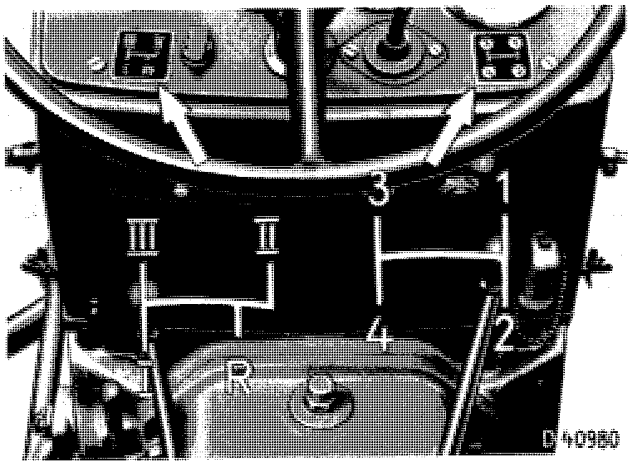


Fig. 25: Control lever positions for gear group and gear selection.

I) 1)
II) gear groups 2) gears in each group
III) 3)
R)

Gear 4 = set to top speed from each forward gear I-III
R = Reverse gears.