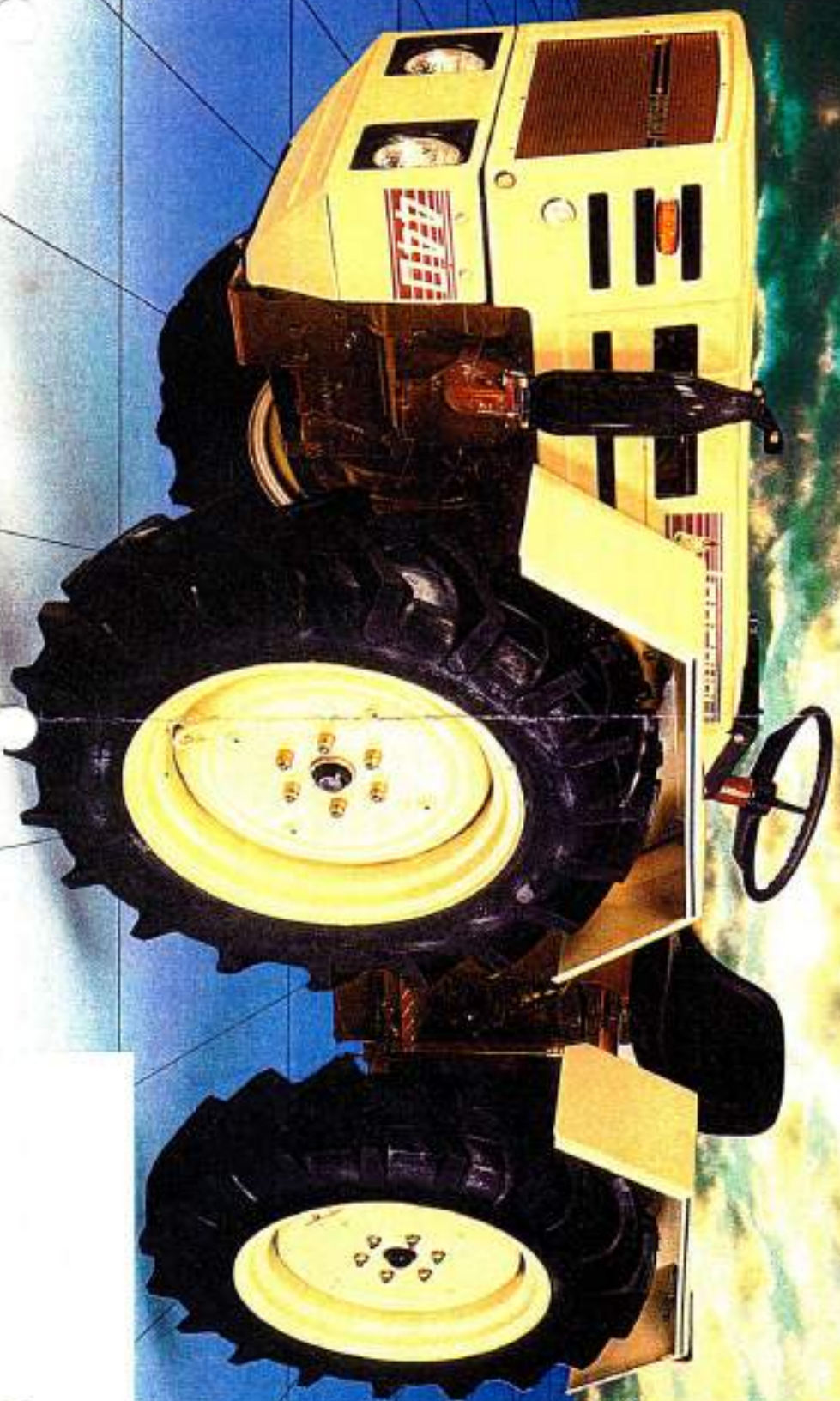


**pasquati** 440

492



**Type 440 - Lombard** - gear type 832 - governor kW 28 - 60 - planetary HR ca. in. - 2 cylinders - cycle - 4 stroke diesel - air cooled

**Type 440 - Mercer Lombardini type 832 - puissance kW 28** - cylindres 648 cm - 2 cylindres - cycle - 4 temps diesel - refroidi par air

**1 - 4 - Lombardini Motor Type 832 - Leistung kW 28 - Hubraum 648 cm<sup>3</sup> - 2 Zylinder - Arbeitsverfahren: Viertakt - Diesel - Luftgekühlt**

**Clutch**  
Single dry disc

**Gearbox**  
12 speeds, 9 forward and 3 reverse

**Speeds RPM**  
Aval -440 forward: 0.56 - 1.00 - 1.56 - 2.06 - 3.05  
4.54 - 6.60 - 10.25 - 15.33  
reverse: 1.37 - 1.86 - 12.90  
Aval -492 forward: 0.53 - .99 - 1.61 - 2.23 - 3.23  
4.67 - 6.78 - 9.51 - 14.54  
reverse: 1.11 - 1.33 - 9.94

**Differential lock**  
Trans by means of lever and rear by means of pedal with automatic return

**Power take-off**  
Standard independent with 2 speeds 580/740 r.p.m. Synchronised with 12 speeds from 50 to 1510 r.p.m.

**Brakes**  
Disc Hydraulic brakes  
Disc mechanical emergency and parking brake

**Steering**  
Primary steering with tow bars

**Hydraulic lift**  
Position and draft control with 3-point hitch ca. 1 pot. ideal to be used with distributor for rear mounted implements. Auxiliary hydraulic rear plug with quick-coupling connection.

**Rubber wheels**  
9.50-20

**Electric lighting and starting system**  
12 Volt battery - starting motor - alternator - headlights with parking lights, rear and main beams - rear parking, stop and directional lights - front directional lights - speed instrument (ignition key, dip switch, direction indicator switch, direction indicator warning light, low fuel warning light, oil pressure warning light, engine cutoff

**Transmission**  
R.p.m. of engine, oil lower p.a.o., run time, in hours  
Safety device  
Impossibility of starting the engine accidentally without depressing the clutch pedal  
Burr-block  
Fixed and adjustable in height

**Hydraulic lift**  
Steering type 2 way  
12 stresses 9 AV + 3 AR  
Yresses - kW/A  
Model 440 AV: 0.9 - 1.6 - 2.6 - 3.6 - 4.9  
1.3 - 10.5 - 16.3 - 24.5  
AR: 2.2 - 6.2 - 20  
Model 492 AV: 0.9 - 1.6 - 2.6 - 3.6 - 5.2  
7.5 - 10.9 - 15.3 - 25  
AR: 1.8 - 7 - 16

**Differential**  
AV avec blocage par levier, AR avec blocage par pédale avec engren. automatique

**Prix de force**  
Normaliser, indépendance à 2 vitesses 580/740 r/min. Synchroniser à 12 vitesses de 50 à 1510 r/min.

**Freins**  
Hydrauliques à disque  
Frein de secours et de stationnement mécanique à disque

**Direction**  
Hydraulique avec deux vitesses

**Régulateur hydraulique**  
A effet et position contrôlés avec mélange à trois points Car 1 prédisposé pour le distributeur pour les outils à us. à l'arrière. Prise auxiliaire hydraulique avec attache rapide.

**Roues pneumatiques**  
9.50-20

**Dispositif d'éclairage de démarrage et d'arrêt**  
Batterie 12 Volt - démarreur - alternateur - phares AV avec feux de position de croisement et de route - feux AR de position, de direction et arrêt - indicateurs de direction AV - tableau de bord - ck de démarrage, contrôleur des feux, commande des feux de direction, voyant d'indicateurs de direction, indicateur de réserve de combustible, voyant de pression d'huile, bouton d'arrêt du moteur

**Transmission**  
Régime du moteur, de la prise de force, nombre d'heures de travail effectives

**Dispositif de sécurité antiscission**  
Ne permet pas le démarrage accidentel du moteur sans avoir pressé le pédale de l'embrayage

**Couche d'antidive**  
Houdesigne, réglable en hauteur

**Typ 492 - VA1 Motor Typ 832 - Leistung kW 28 - Hubraum 648 cm<sup>3</sup> - 2 Zylinder - Arbeitsverfahren: Viertakt - Diesel - Luftgekühlt**

**Typ 492 - VA1 Motor Typ 832 - Leistung kW 28 - Hubraum 648 cm<sup>3</sup> - 2 Zylinder - Arbeitsverfahren: Viertakt - Diesel - Luftgekühlt**

**12 Geschwindigkeiten**  
9 VG + 3 RG  
Typ 440 VG: 0.9 - 1.6 - 2.6 - 3.6 - 4.9  
7.3 - 10.5 - 16.3 - 24.5  
RG: 2.2 - 6.2 - 20  
Typ 492 VG: 0.9 - 1.6 - 2.6 - 3.6 - 5.2  
7.5 - 10.9 - 15.3 - 25  
RG: 1.8 - 7 - 16

**Differential gesperrt**  
Vorne durch Hebel, hinten durch Pedalbedienung und zweiseitige Klippstiftung

**Gewinn Zapfwelle**  
Ursprünglich mit 2 Geschwindigkeiten 580/740 U/min. Synchronisiert mit 12 Geschwindigkeiten von 50 bis 1510 U/min.

**Bremsen**  
Hydraulische Scheibenbremsen  
Hinterrad und Feststellbremse mechanischer Scheibenbremse

**Lenkung**  
Hydraulische mit zwei Stufen

**Hydraulischer Kranheber**  
Lage- und Regelpotenzial mit Druckverteilungskolben (Vorschub für den Verteiler für Heckbauwerkzeuge) - Hydromech. Stoßdämpfer mit Schnellverschluss

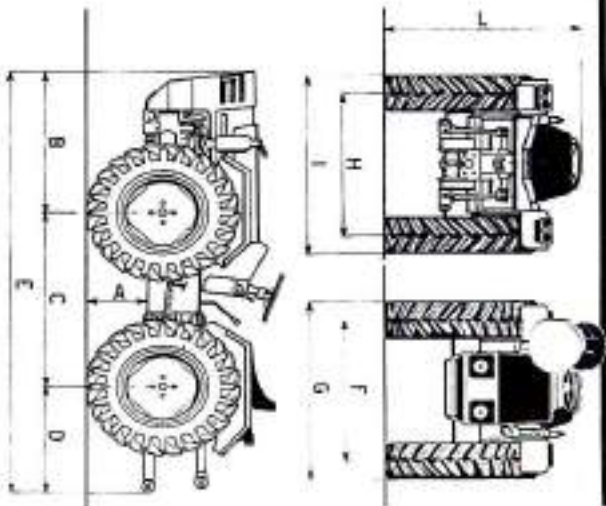
**Beleuchtung**  
9.50-20

**Elektrische Aussen- und Beleuchtungseinrichtung**  
12 Volt Batterie - Anlasser - Lichtmaschine - Frontscheinwerfer mit Stand-, Abblend- und Fernlichter - hinterere Leuchten im Stand-, Blink- und Bremslichter - Anzeichen vorwärtiger Blinkleuchten (links/rechts), - Anzeichen auf dem Schalthebel - Zusatzschalter, Umwahrer für Leuchten, Umschalter für Blinkleuchten, Anzeiger Blinkleuchten (links/rechts), Anzeiger Kraftstoffreserve, Öldruckwahrnehmer, Abwärtsschaltknopf

**Triebwerk**  
Leistungswert des Motors, der Zylinder, gekühlter Standardwert

**Sicherheitsvorrichtung**  
Es ist nicht möglich den Motor anzulassen, wenn das Kupplungspedal nicht durchgetreten wird

**Zughafter**  
Lehrstuhl, regulierbar in der Höhe



A	13"	330 mm
B	37"	950 mm
C	52"	1310 mm
D	33"	838 mm
E	122"	3098 mm
F	39 + 46"	998 - 1158* mm
G	49 + 53"	1243 - 1393* mm
H	39 + 46"	998 - 1158* mm
I	49 + 53"	1243 - 1393* mm
J	50"	1260 mm
Leads radio Barre de Vissage	Viscous 118"	2.800 mm
Weight Poid (sans fuel)	2888 lbs	1310 kg
Weight Poid (avec fuel)	2932 lbs	1330 kg

\* with reversible tires / \* avec jantes réglables / \* mit Vorschleifen



macquilli

macchine agricola s.p.a.

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# ***pasquali***



**4wheel  
drive**

## **ARTICULATING TRACTORS**

Brake pads	Robesios	D43
Calliper kits	Robesios	WK1070
OIL Filter	Napa	1342
Fuel Filter	Napa	3166

## **MODELS**

### **440**

### **and**

### **492**

## **OPERATIONS**

## **AND**

## **PARTS**

## **MANUAL**

## INDEX

- Preface .....	Page 2
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The illustrations, descriptions and technical data of this manual are only indicative and not binding. Pasquali Macchine Agricole S.P.A. reserves the right to modify them without notice.

## PREFACE

We welcome you among the numerous customers of Pasquali Macchine Agricole s.p.a.

This tractor is the result of accurate studies carried out by specialized engineers to build a modern, rugged and functional machine that helps farmers improve the productivity of their farm.

A long experience in this field, the use of high quality material, the accuracy of workmanship assure the greatest efficiency of our tractor which will offer you excellent performances for many years if you use it in the proper way and carry out the necessary maintenance.

The world wide reputation enjoyed by Pasquali is the best guarantee for you.

We, therefore, suggest to you to read this manual carefully; it will make you familiar with the use of the tractor, its construction and operating features also making maintenance easier for you.

## MAINTENANCE

All maintenance operations required to keep the tractor in perfect operating condition are described in this manual; however, not all these operations can be easily carried out by the private owner. It is, therefore, advisable to use only skilled mechanics recommended by our local distributor, when more complicated work is to be carried out. (In most cases our local distributor has his own suitably equipped workshop, with original spare parts and personnel trained by us).

To ensure perfect operation of the tractor in all its parts, we recommend that only original replacement parts should be used. Orders of spare parts must be made in accordance with our spare parts catalogue.

It is also advisable to read the engine manual thoroughly.

## IDENTIFICATION DATA

The type and identification number of the tractor are stamped on the front differential case and on the name plate (Fig.1).

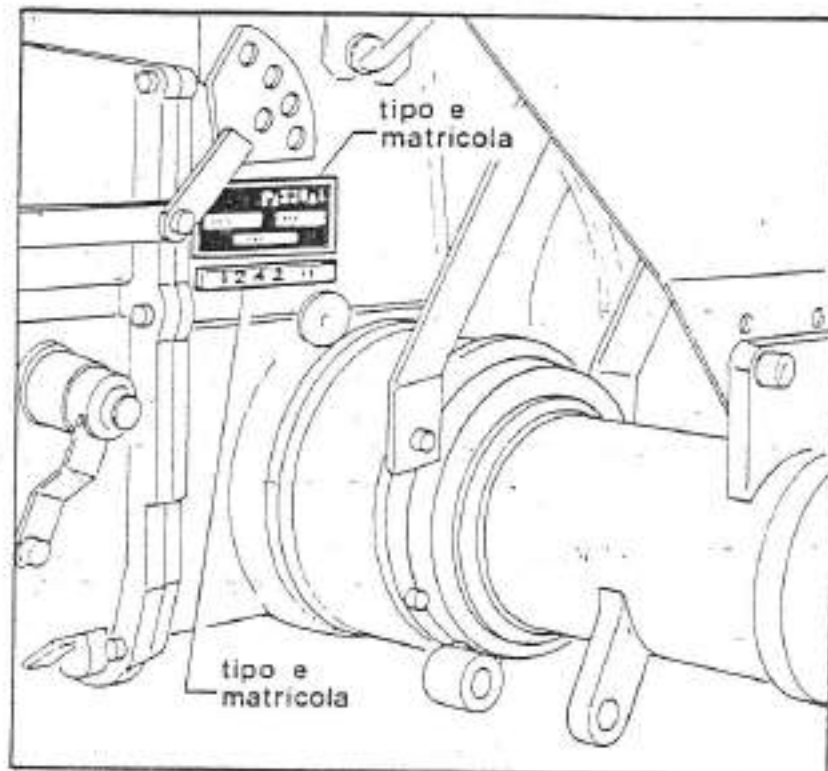


Fig. 1

The identification numbers are composed of:

- three digits indicating the type of tractor;
- the successive digits indicating the serial number, that is the progressive production number.

Also the spare parts of the tractor have an identification number indicated in the spare parts catalogue.

When placing orders for spare parts always state part number, type and serial number of the tractor.

## TECHNICAL SPECIFICATIONS OF TRACTOR

- Engine for tractor - 4 - stroke Lombardini fuel Diesel type 832, mod.440 direct injection, two-cylinder in-line, bore 100mm, stroke 105 mm, displacement 1648 cc totally, compression ratio 17,5:1, max.power 28 kw, 38HP at 3000 r.p.m., max.torque 100 Nxm at 1700 r.p.m, cooling by axial fan, forced lubrication, automatic starting extra fuel device, oil-bath air cleaner.
- Engine for tractor - 4 - stroke VM fuel Diesel type HR 392A, mod.492 direct injection, three-cylinder in-line, bore 92 mm, stroke 90 mm, displacement 1794 cc, compression ratio 17,5:1, max.power 31 kw 42 HP at 3000 r.p.m., max. torque 110 Nxm at 2100 r.p.m., air oil cooled, lobed rotor pump forced lubrication, oil-bath air cleaner.
- Clutch - Single dry plate
- Accelerator - Dual-control accelerator:  
- by hand lever on dashboard  
- by pedal
- Gearbox - 12 speeds : 9 forward and 3 reverse
- Drive - On the four wheels
- Transmission - With pinion crown/differential :  
front ratio 1:2,470;  
rear ratio 1:2,530;  
Differential lock on both axles;  
  
Final reduction gears:  
-front and rear epicyclic gears)ratio 1:4,055 (for tractor 440  
)ratio 1:5 (for tractor 492
- Forward speed - See performance table on page 6
- Brakes - Disc type service brakes on rear wheels with calipers operated by hydraulic pump.  
  
- Parking mechanical handbrake controlled by lever (with lock pin), which by means of self-centered driving levers activates special calipers acting on the discs of the service brakes.

Tires	- Agricultural tires: Front and rear 9.50-20 4PR or 31.5 * 15.5 * 15 floatation
Steering	- Hydraulic power steering with pressure adjustment valve.
Hydraulic	- With gear pump, rear hydraulic lift with position and draft control. Rear hydraulic power plug with quick coupling.
Implement hitch	- 3 - point hitch ISO cat.1. Rear plate with towing hook, height adjustable.
Power take-off	- Rear standardized with ASA 1" 3/8 profile. It can be used independent or synchronized.
Electric lighting and starting system	- 12 Volt battery, starting motor, alternator, voltage regulator; headlights, parking and number plate lights; tail and front direction indicators, stop lights; rear socket.
Dashboard	- Key switch, light switch, engine oil pressure warning light, reserve fuel warning light, direction indicator switch with warning light, engine stop button; tractometer: it shows r.p.m. of engine, of independent power take-off, forward motion at the various speeds, run-in hours.
Dimensions	- Length 3098 mm Width 1233 : 1393 mm Max.height 1260 mm Min.height above ground 320 mm Wheel base 1310 mm
Weight (without ballast)	- 1170 kg for tractor 440 1340 kg for tractor 492

#### IMPORTANT NOTICE

Pasquali tractors with their basic design, low center of gravity and proper distribution of weight are extremely stable; this is an indispensable requisite to work on hillsides. However, do not abuse this advantage and always avoid hazardous manoeuvres with respect to the limits of the laws of gravity, inertia and ground adhesion, especially when the tractor is used to tow a loaded trailer.

Move slowly when terrain:

- 1) is very rough
- 2) has steep slopes on a hillside
- 3) is frozen or covered with snow.



- When going down a slope always keep the tractor in gear, generally using the same gear required if going uphill on the same route and with the same weight; of course, the heavier the weight, the lower the gear should be.

Speed table with engine at 3000 r.p.m. and wheels 9.50-20			
Position of levers		Speeds km/h	
Ratio selector	Gear change	440	492
Low	1st	0,9	0,9
	2nd	1,6	1,6
	3rd	2,5	2,6
Normal	1st	3,3	3,6
	2nd	4,9	5,2
	3rd	7,3	7,5
High	1st	10,5	10,9
	2nd	16,5	15,3
	3rd	24,5	25
Low	R (Reverse)	2,2	1,8
Normal		6,2	7
High		20,0	16

#### Revolutions at the power take-off

Independent (clockwise direction) (for tractor 440 = 580-740 r.p.m.)  
 (for tractor 492 = 593-757 r.p.m.)

Synchronized (for tractor 440 = 10,257 for each revolution) of rear wheels  
 (for tractor 492 = 10,415 for each revolution) of rear wheels

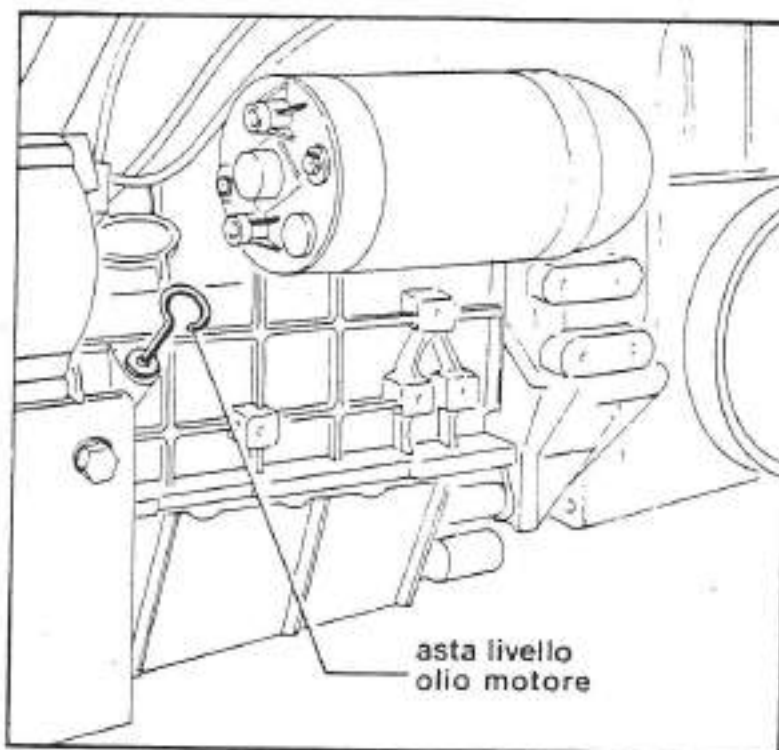
## CHECKING THE NEW TRACTOR

The tractor is delivered completely supplied with oil; however, before operating it always check that the levels are correct.

- Engine
- Check oil level by means of the appropriate dipstick; should the level be under the minimum mark, before starting the engine top it up until the maximum level is reached (Fig.2a - 2b).
  - Make sure that enough fuel is in the tank; if it is completely or almost empty fill it; however, before starting the engine drain the feeding line loosening the delivery pipe of the injection pump and repeatedly depressing the lever of the feed pump. Always proceed as above whenever you have run out of fuel. It is, therefore, advisable to refuel before the tank is completely empty.
  - As soon as the engine starts, the oil pressure warning light (Fig.9) on the dashboard should be "off"; if it remains on or suddenly lights up during the regular operation, stop the engine immediately because it means that the oil pressure is insufficient, in which case do not use the tractor till the fault has been rectified.
- Engine air filter
- Check oil level and if necessary, refill with oil of the same quality used for the engine until it reaches (without exceeding) the mark on the filter housing.
- Front and rear cases
- Check oil level in both cases through the appropriate caps with dipstick and if necessary, top oil up until the maximum level is reached (Fig.2c - 17).
- Hydraulic system
- Check the quantity of oil in the hydraulic system. The reservoir is located in the position and draft control body and is fitted with a dipstick cap (Fig.14).
- Battery
- Check that the battery is correctly connected; that the terminals are properly smeared with pure vaseline, that the electrolyte completely covers the battery elements (if necessary, top it up with distilled water only).
- Greasing and lubrication
- Check that all not painted parts are protected with grease; that the ball bearings of the steering shaft (equipped with grease nipples) and all pins of levers and driving levers are sufficiently greased.
- Fan belt
- Make sure that the tension of the engine fan belt is correct; pressing the central free section with a finger it should yield about 1 cm (see Fig.3a - 3b). An excessive or poor tension would jeopardise belt life and proper cooling.
- Braking system
- Check brake oil level in the transparent reservoir under the seat (Fig.7).

## Tires

- Verify the inflation pressure of the tires which should generally be 1,5 atm.



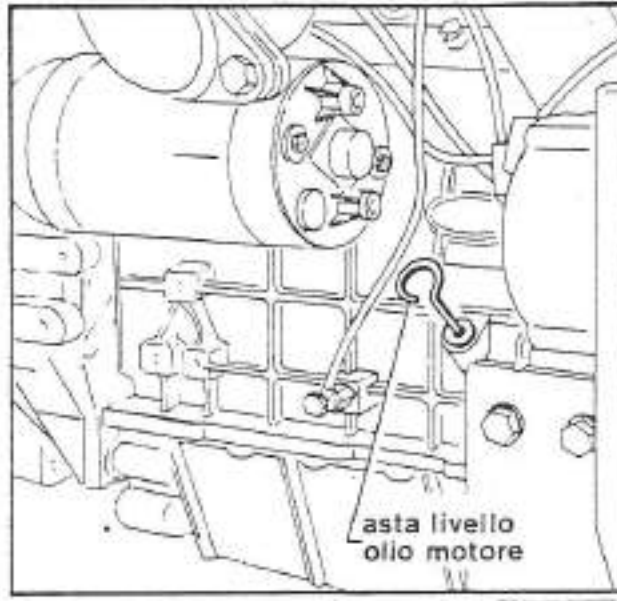
engine oil  
dipstick

for tractor 440

Fig.2a

## RUNNING-IN

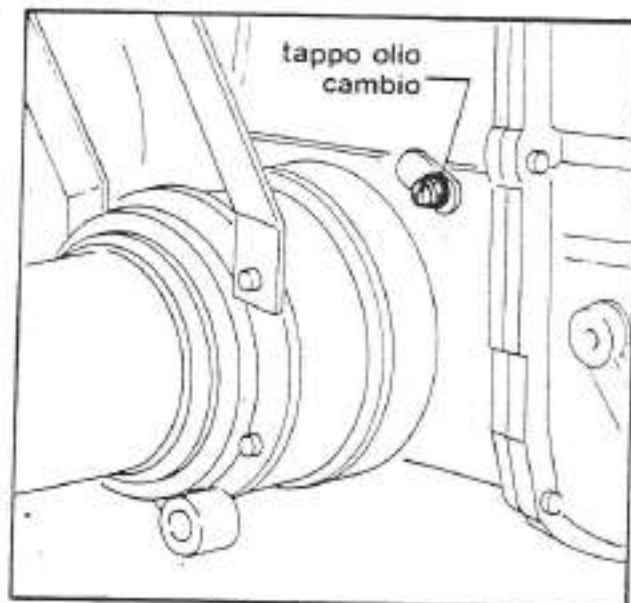
- 1) During the first 50 hours of operation both if the tractor is new or completely overhauled, perform only work requiring 60% : 70% of the engine power at the most.
- 2) Starting the engine the first time in the day, especially in cold days, run the engine at tickover in neutral for a few minutes.
- 3) Change engine oil after the first 20 hours.
- 4) Change air filter oil after the first 8 hours.
- 5) Periodically check that there are no oil leaks and that all screws and nuts are strongly tightend especially those securing the wheels



engine oil  
dipstick

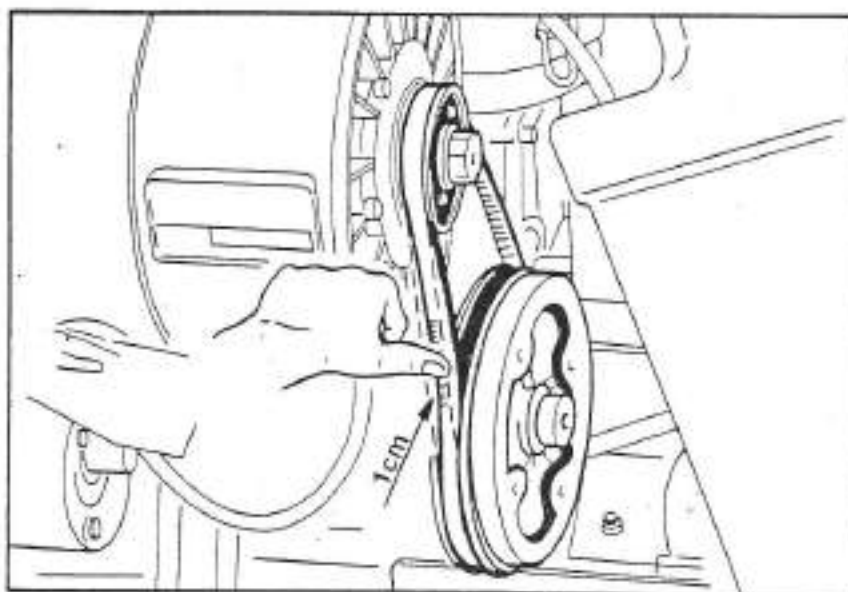
for tractor 492

Fig.2b



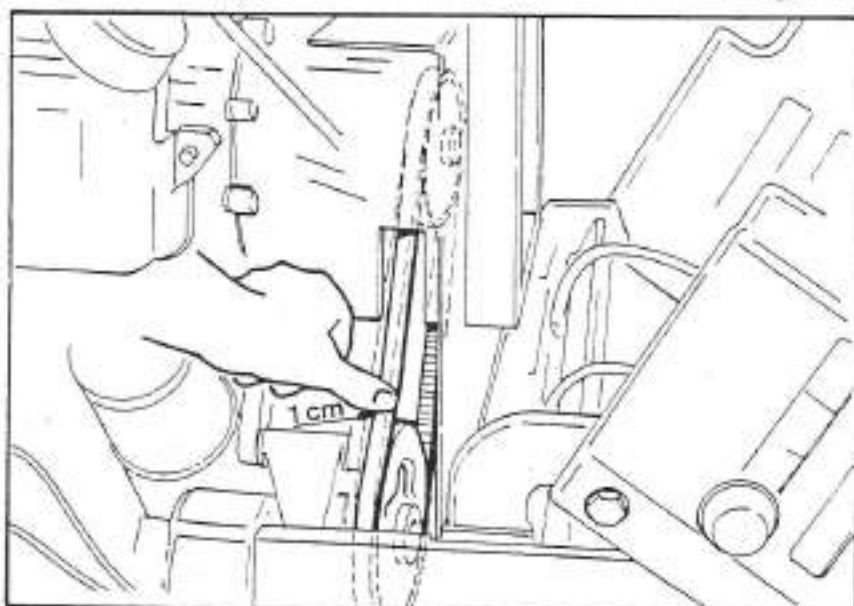
gear box  
oil cap

Fig.2c



440

Fig. 3a



492

Fig. 3b

## CONTROLS AND INSTRUMENTS

- A - Gear control lever
- B - Ratio selector
- C - Throttle lever
- D - Clutch pedal
- F - Front differential lock lever
- G - Rear differential lock pedal
- H - Independent power take-off control lever
- K - Independent or synchronized power take-off control lever
- I - Brake pedal
- L - Hand brake lever
- M - Power steering wheel
- N - Engine stop knob
- O - Main switch and start key
- P - Switch for lights
- Q - Engine oil pressure warning light
- R - Direction indicator switch
- S - Direction indicator warning light
- T - Tractometer
- U - Reserve fuel warning light
- V - Draft control adjustment lever
- Z - Position control adjustment lever
- X - Implement lowering speed regulator
- Y - Auxiliary hydraulic plug cock
- W - Sensitivity regulator of draft control

See Fig.4,5,6,7,8,9,10.

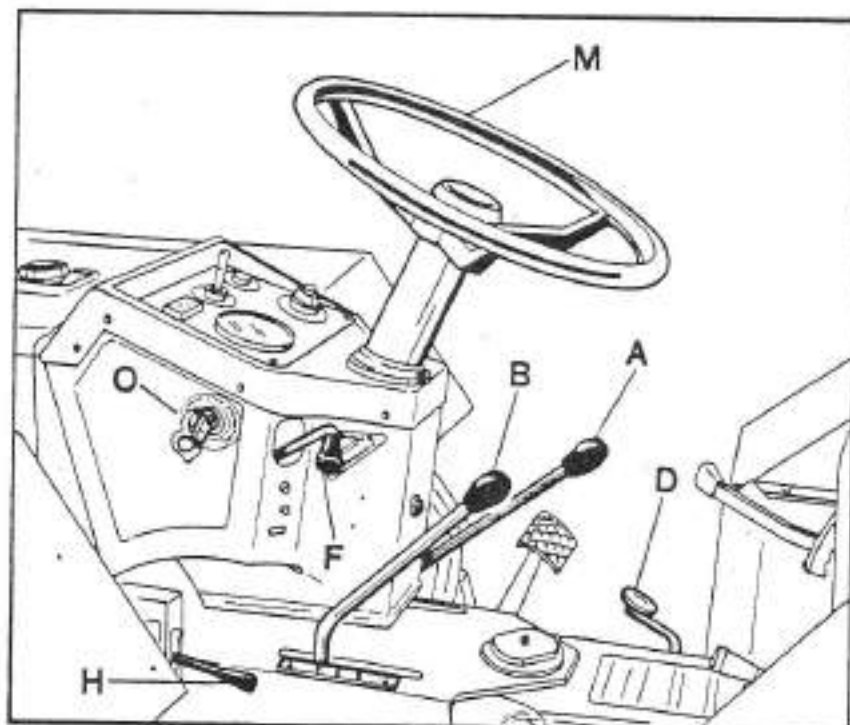


Fig. 4

A - GEAR CONTROL LEVER (Fig.4-5)

- It is used to engage first forward, second, third gears and reverse.
- Three neutral positions are between each gear.
- Use the clutch before engaging each gear.

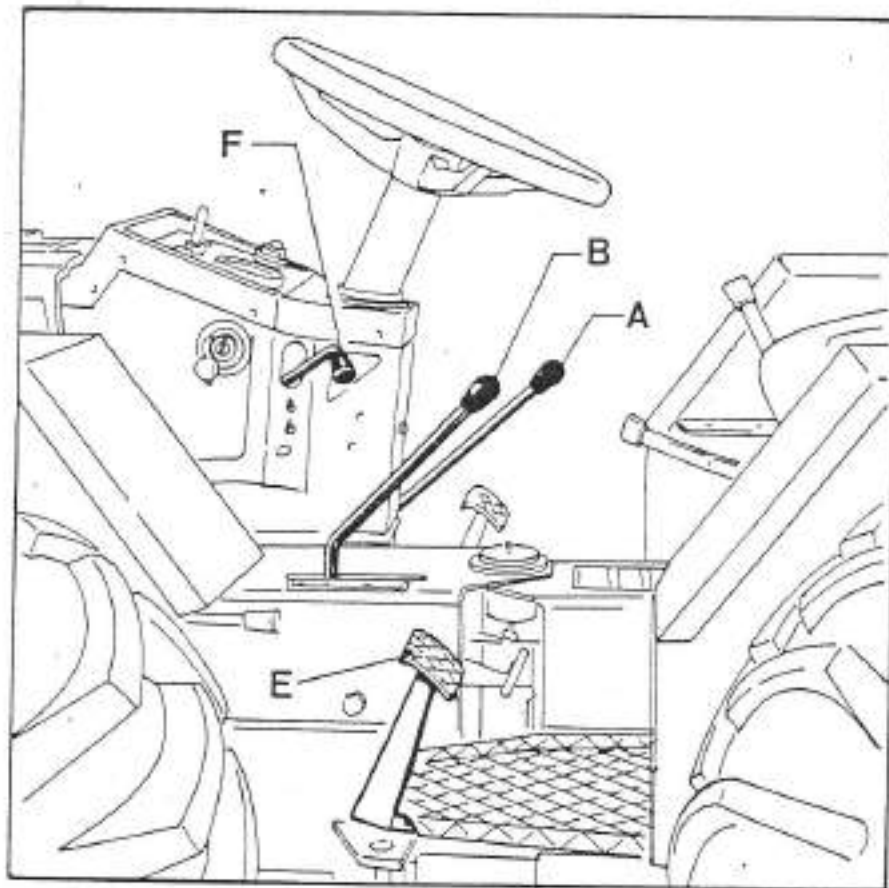


Fig. 5

B - RATIO CONTROL LEVER (Fig.4-5)

- For each gear engaged with lever A three possible speeds can be selected by means of the ratio selector lever B which controls the engagement of low, normal, high speed gears to obtain 12 speeds (9 forward and 3 reverse) as shown in the table on page 6.
- Two neutral intermediate positions are alternated with the three engaged positions.
- The clutch must be used before engaging the ratio selector lever.

C - THROTTLE LEVER (Fig.6)

- By lifting this lever the maximum acceleration of engine revolutions is obtained, by lowering it the number of revolutions decreases to the minimum.
- The throttle lever control is particularly useful when the tractor has to go a long way at constant low speed and when cultivating the soil.

D - ACCELERATOR PEDAL (Fig.4-6)

- The accelerator pedal is particularly useful when manoeuvring, and generally when frequent variations of the engine revolutions are required (e.g tough going, on slopes etc.).

E - CLUTCH PEDAL (Fig.5)

- Use of the clutch is essential before:
  - 1) starting the engine
  - 2) engaging or disengaging the speeds
  - 3) engaging or disengaging the ratio lever
  - 4) engaging or disengaging the power take-off
- for safety's sake a switch fitted on the clutch control lever prevents the engine from starting if the clutch is not disconnected. Hence, before starting the engine always depress the clutch pedal.
- When changing speed, engaging the ratio selector or the power take-off, if the gears do not engage immediately, it is better to depress the clutch a second time rather than push the control lever.
- Clutch pedal must always be depressed to its fullest extent and released gradually and gently.



F - FRONT DIFFERENTIAL LOCK LEVER (Fig.4-5)

- The front differential lock must be used only when the tractor moves forward (e.g. when ploughing) or when the wheels slip due to poor ground adhesion.
- When the differential lock is engaged, the two axle shafts become integral as if they were one rigid axle. Therefore, use the differential lock only when it is really necessary avoiding steering (considering that the tractor is equipped with power steering), if the differential lock is engaged to prevent premature wear of the tires and stress to the transmission gears.
- Gently jerking the steering wheel to the right or to the left will make the engaging or disengaging of the differential lock easier.

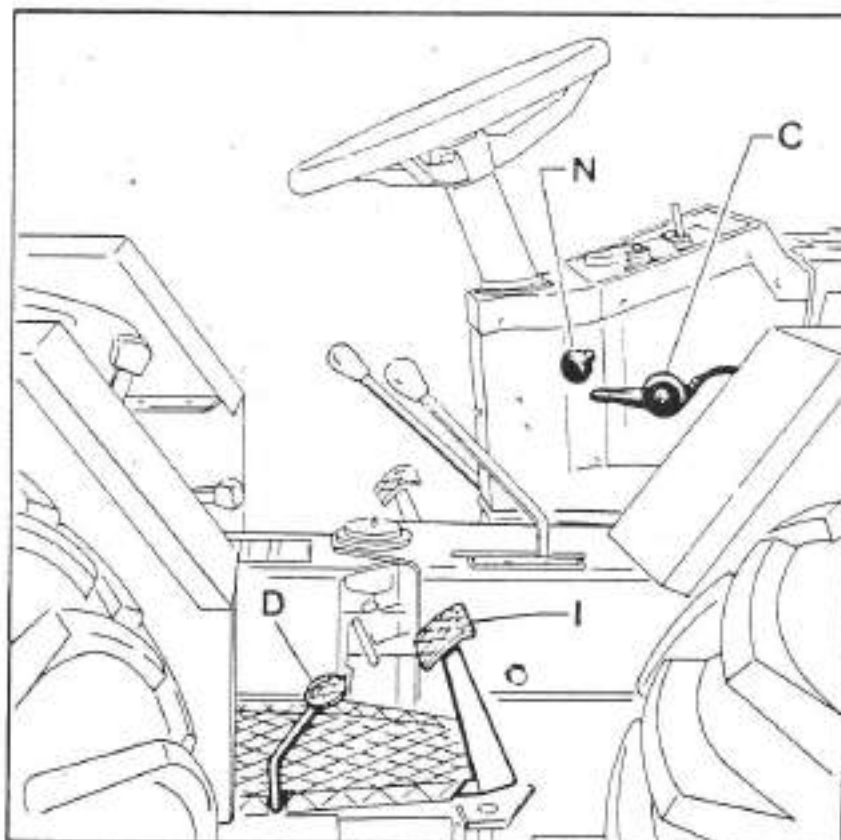
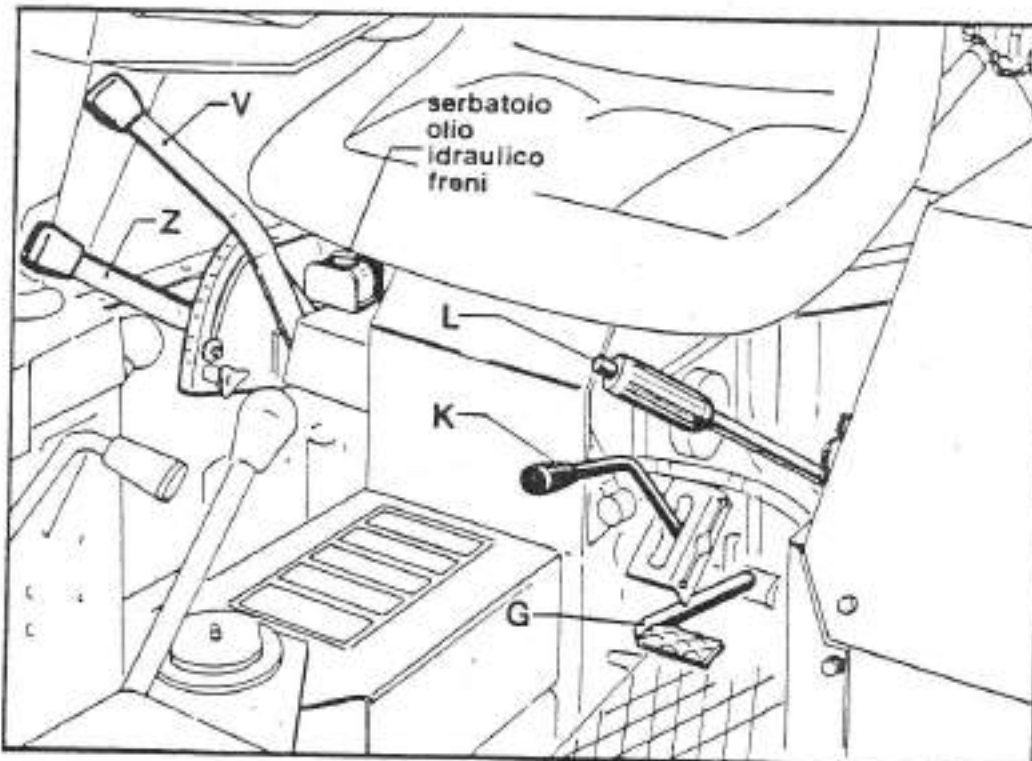


Fig. 6

G - REAR DIFFERENTIAL LOCK PEDAL (Fig.7)

- The same considerations for the front differential lock are valid also for the rear one. However, in this case the rear differential is locked by depressing the pedal and automatically disengaged by releasing it. The rear differential lock is especially used when in muddy ground the tractor wheels tend to slip due to poor ground adhesion (it is used alone or together with the front differential lock) and when ploughing to prevent the wheel that is not in the furrow from slipping.



hydraulic  
system oil  
reservoir  
cap.

Fig. 7

H - INDEPENDENT POWER TAKE-OFF CONTROL LEVER (Fig.4)

- It is used to change the rotation speed of the rear power take-off (standardized ASA 1" 3/8 profile) independently from tractor forward motion; the power take-off can therefore operate either when the tractor is in motion or stationary.
- Besides the two obtainable speeds, the lever has also an intermediate neutral position to stop the rotation of the power take-off.
- Depress the clutch before engaging or disengaging the power take-off or changing its speed.

When using the tractor excluding the independent power take-off (e.g when ploughing) it is recommended - especially the first times when the tractor is used - to often run the power take-off (even in neutral) to obtain a better lubrication of the moving parts and a good running-in of the gears.

- As to the r.p.m. and rotation direction of the independent power take-off, see page 6.

K - INDEPENDENT OR SYNCHRONIZED POWER TAKE-OFF CONTROL LEVER (Fig.7)

- In the rear case there is a double coupling activated by means of lever K. When this lever is moved up, the power take-off rotates independently from tractor forward motion. When it is moved down the power take-off is synchronized with the r.p.m. of the rear drive wheels (as to the synchronization ratio see page 5.)
- The lever has also an intermediate neutral position to stop the rotation of the power take-off.
- Before engaging or disengaging the independent or synchronized positions depress the clutch.

I - BRAKE PEDALS (Fig.6)

The pedal acts on the pumps which, by means of hydraulic connections, closes the calipers on the cast iron disc flanged to the ends of the rear axle shafts of the tractor (see Fig.18). By depressing the brake pedal the rear stop lights, necessary for road travel, light up.

L - HAND BRAKE LEVER (Fig.7)

- It is used when the tractor is stationary and as an auxiliary brake in case of emergency.
- The control lever (fitted with a lock pin), when moved up, closes by means of self-centered mechanical linkage the independent calipers which act on the discs of the service brakes (Fig.17)

M - POWER STEERING WHEEL (Fig.4-8)

The steering wheel, directly connected to the pivoting group of the power steering, when turned clockwise or anticlockwise causes the oil of the hydraulic circuit to flow into the steering controlling ram. This practically avoids any manual effort on the steering wheel which becomes particularly sensitive and accurate. Appropriate built-in shock-resistant valves assure the absorption of shocks coming from the wheels, wherefore no reaction will be noticed on the steering wheel. All this assures an easy and safe drive.

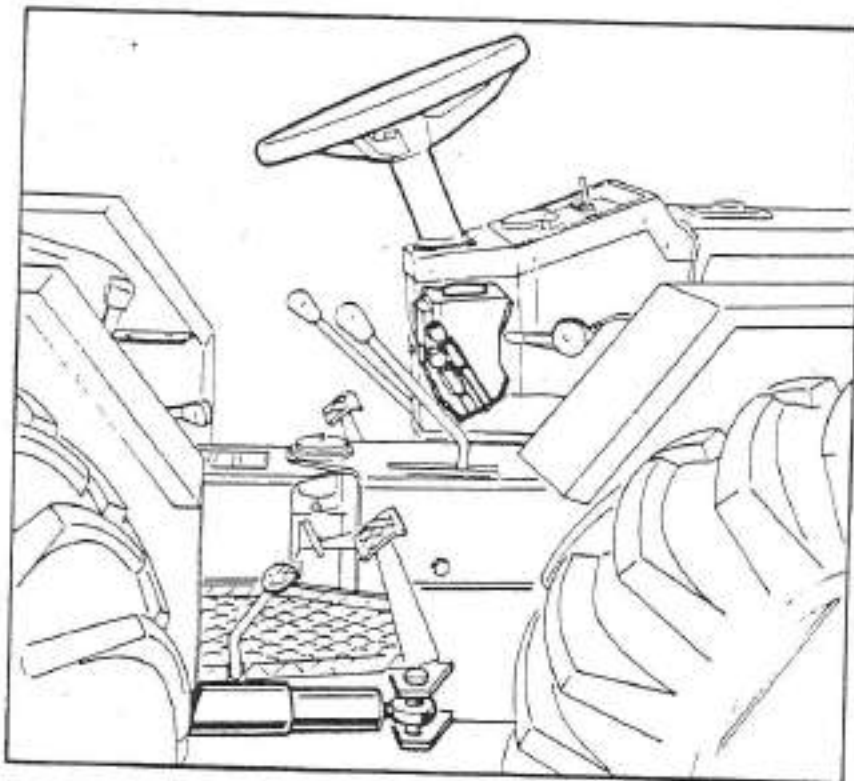


Fig. 8

Should the hydraulic system of the power steering fail by some mishap, the hydraulic steering already prearranged to work as hand pump allows to drive the tractor just the same; however a greater manual effort will be required to turn the steering wheel. This occurs also when it is necessary to steer with the engine not running.

**N - ENGINE STOP KNOB (Fig.6)**

It serves to stop the engine; when pulled it interrupts the flow of fuel to the injection pump thus stopping the engine. When released the knob returns to its prior position and is ready for the successive start. If the knob is in the pulled position the engine does not start.

Do not stop the engine by turning or removing the key of the main switch because the engine would remain in motion and this might cause damage to the battery, alternator and voltage regulator.

**O - MAIN SWITCH AND START KEY (Fig.4-9)**

It acts only by inserting its key. It has two positions: one if turned clockwise and the other if turned anticlockwise. In the first position, that is clockwise, the electric circuit is on (with the exclusion of the starter motor). In the second position the starter motor is activated but, as soon as the key is released, by means of a return spring the switch returns to its first position that is in the normal running position with the alternator recharging the battery and with the electric lighting and warning light system on.

If the key is turned anticlockwise, the switch turns on the circuit of the lighting and warning light system which can be used with the engine not running (parking position) for a short lapse of time to avoid discharging the battery completely. In this position the key can be removed.

**P - SWITCH FOR LIGHTS (Fig.9)**

With the main switch in "off" position the electric system circuit is on; by turning the light switch clockwise to the first position the parking lights (including the licence-plate light) light up, to the second position the traffic beams are on, to the third the country beams. By turning the main switch to its original (open) position all lights turn off (Fig.11).

**Q - ENGINE OIL PRESSURE WARNING LIGHT (Fig.9)**

When the engine is running, the warning light controlled by a pressure switch should go out. If it lights up (red light), it means that the oil pressure is insufficient for a good lubrication of the moving parts. In that case stop the engine immediately and do not use the tractor until the fault has been rectified.

R - DIRECTION- INDICATOR SWITCH (Fig.9)

By turning the appropriate control lever to the right or to the left it signals the desired direction of motion. It can be used irrespective of the position of the main switch.

S - DIRECTION INDICATOR WARNING LIGHT (Fig.9)

The alternating green light lights up when the direction indicator switch is activated.

T - TRACTOMETER (Fig.9)

The instrument in the centre of the dashboard shows: r.p.m of engine and of independent power take-offs, forward motion, run time in hours.

U - RESERVE FUEL WARNING LIGHT (Fig.9)

- The reserve fuel-warning light lights up when the quantity of Diesel oil in the tank is below 8 litres, that is about 1/3 of the max.tank capacity.

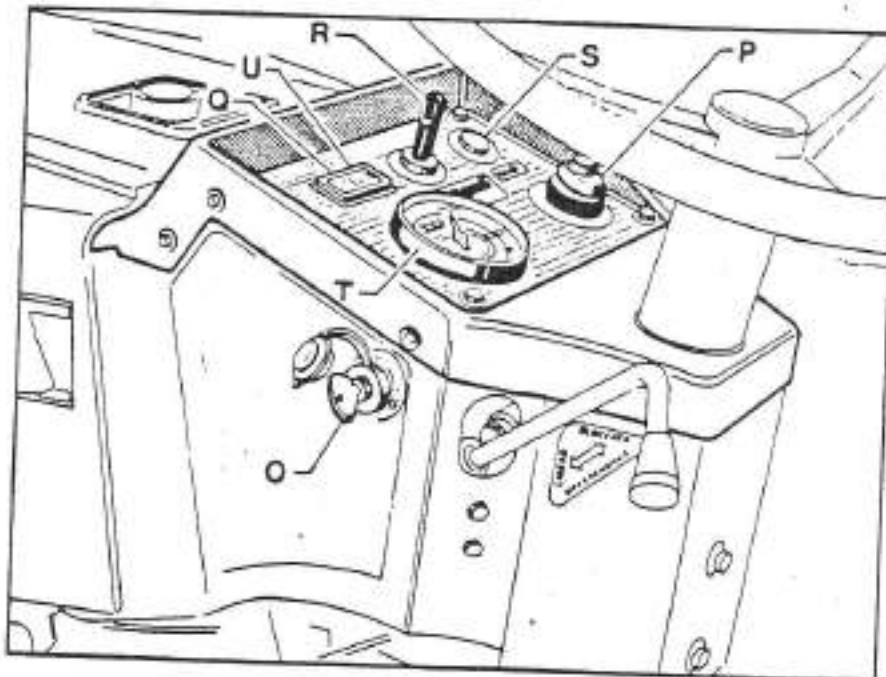


Fig. 9

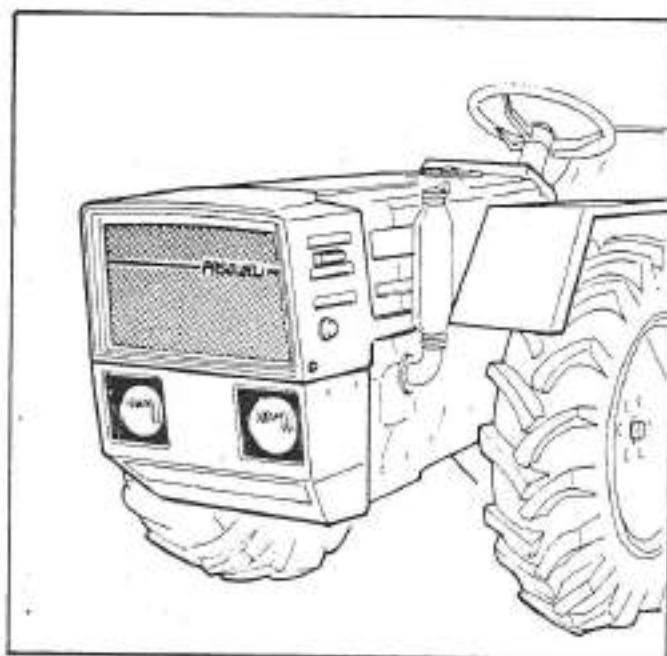


Fig. 10

- V - DRAFT CONTROL ADJUSTMENT LEVER (Fig.11)
- Z - POSITION CONTROL ADJUSTMENT LEVER (Fig.11)

By appropriately adjusting the position and draft control levers it is possible to obtain the automatic variation of working depth of the implement proportional to the traction strain required from the tractor. The lifter adapts the working depth to soil conditions, thereby avoiding to the tractor power losses due to slipping; in addition it keeps constant the selected maximum working depth, even on undulating ground. The draft and position control is particularly useful on uneven grounds where, owing to tractor motion, the implements tend to sink in or pull out of the soil. It is indispensable in orchards and market gardens and where the required working depth is not excessive but constant.

- X - IMPLEMENT LOWERING SPEED REGULATOR AND HYDRAULIC LOCK (Fig.11)

By screwing or unscrewing the regulation screw the speed of the lifter is raised or lowered. When the regulation screw is completely tightened the lock of the lifter is obtained indispensable especially for road travel.

Y - AUXILIARY HYDRAULIC PLUG COCK (Fig.11)

The tractor is equipped with an auxiliary hydraulic plug with quick coupling (Fig.14) generally used to let the hydraulic oil flow into the ram of a trailer for platform lifting. when cock Y is tightened and lever V (position control) is moved up the oil flows into the hydraulic plug; by lowering lever V the oil flows back into the hydraulic circuit of tractor.

W - SENSITIVITY REGULATOR OF DRAFT CONTROL (Fig.11)

Lifter operation can be improved under draft controlled conditions by regulating screw W. The lifter sensitivity increases if the regulation screw is turned clockwise and reduces if it is turned anti-clockwise. The lifter is basically used when the regulation screw is set in max. sensitivity position; only when the implement excessively vibrates, turn the regulation screw anticlockwise until the fault has been rectified.

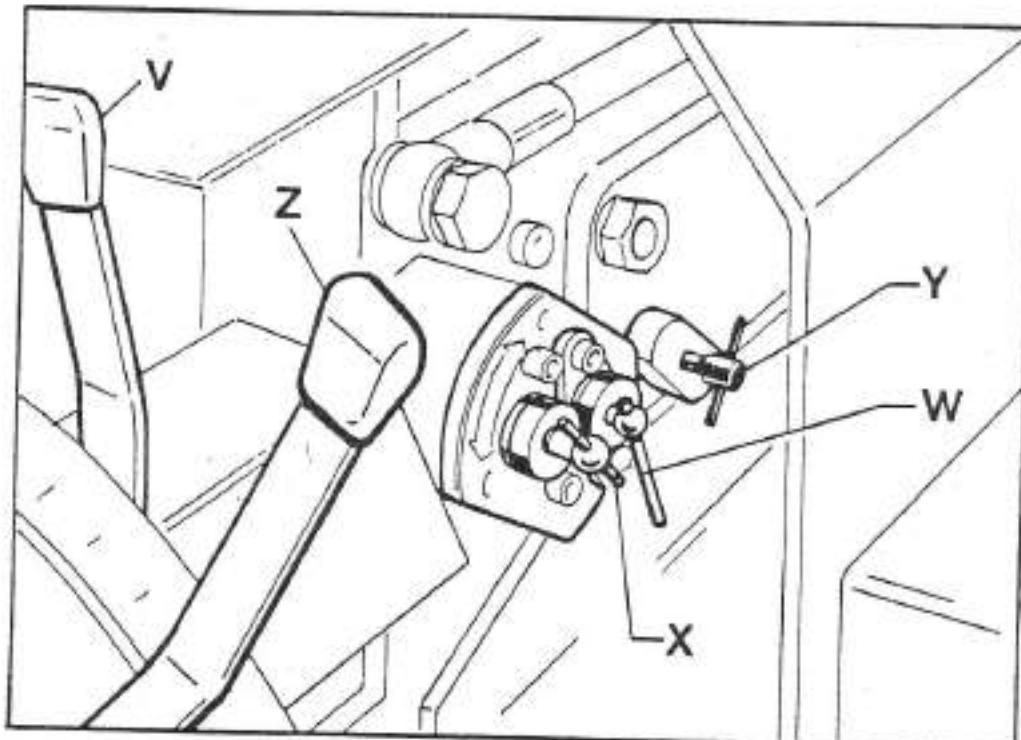


Fig. 11



## REFUELLING (Fig.12)

The tractor is fitted with a 4-stroke fuel diesel engine. Fill fuel tank with diesel fuel before starting the engine. It is imperative that only such fuel be used in this engine.

Refuelling should be carried out with the utmost care to avoid impurities entering the tank to prevent fuel blockage.

When filling the tank always use a funnel provided with a mesh filter. Tank capacity is about 23 litres.

Every 300 hours clean or change filter element in the lower part of the tank on the right.

Also follow the instructions in "Engine Instruction Booklet".

Diesel  
oil tank  
cap



Fig. 12

## STARTING ENGINE

Before starting the engine always check:

- engine oil level;
- air filter oil level;
- that the tank is sufficiently filled with fuel to prevent air from entering into the fuel line.

During the preparation for the start depress the clutch pedal and make sure that:

- the tractor is stationary with the parking brake put on;
- the gear change lever and the ratio selector lever are in neutral position;
- the independent or synchronized power take-off control is in neutral;
- the lever of the draft and position control are up.

Then proceed as follows:

- shift the accelerator control lever to mid-way;
- insert the ignition key in the switch and turn it clockwise to N\* 2 position (contact with starting motor). After few revolutions of the starting motor the engine should start, if not, try again for 3 or 4 seconds waiting 15 seconds before making the next attempt.
- as soon as the engine runs, release the key of the starting switch. it will automatically return to its first normal position;
- set the throttle lever to minimum position and after having released the clutch pedal, let the engine run for some minutes until it is warm enough.

If the engine does not start because the battery is not sufficiently charged, start it by towing. This method should be used only if really necessary in which case proceed as follows:

- attach the tractor to a towing vehicle;
- engage de highest forward gear (3rd high);
- set the accelerator lever to half travel position;
- depress the clutch pedal and have the tractor towed until 15 kw/h are reached;
- release the clutch pedal gently;
- as soon as the engine starts, depress the clutch pedal setting the engine to tickover, the gear lever in neutral and unhook the tractor from the towing vehicle;
- then turn the starting switch key clockwise to first position and let the engine run at 1500 r.p.m. or so for several minutes to allow the alternator to charge the battery for the next start.

## IMPROVEMENT OF TRACTOR SIDE STABILITY

To adapt the tractor to the working requirements of some implements and special cultivations and to increase its side stability on hilly lands, it is possible to widen the tractor track by reversing the wheels, that is by changing the right wheel with the left ones and viceversa making sure that tire tread is pointing toward the front of the tractor.

## USE OF BALLAST

When the tractor undergoes high tractive efforts and very heavy implements are used which way jeopardise its longitudinal stability, the wheels, even if the differential lock is used, can slip due to poor ground adhesion; this causes losses of power and speed, higher fuel consumption and wear of tires. In this case it is necessary to ballast the tractor by applying wheel weights to the front wheels and if necessary to the rear ones.

- Never use ballast other than that recommended by the manufacturer.
- Never ballast the tractor if it is not necessary; this, besides being useless, can also be harmful; a higher weight in fact also increases fuel consumption.

(only for tractor 440)

- Tractor 440 can be fitted with a front weight support to permit the assembly of front weights (total weight 150 kg).
- When the tractor is fitted with front ballast and has to cover a distance without implements attached to the rear, a careful drive is recommended, avoiding sudden variations of speed since the tractor, being very heavy in the front part, runs the risk of losing its longitudinal stability in case of sudden braking; this especially in slopes and in soil with considerable lateral gradient.

## CHOISE OF TIRES

The choise of the most suitable tires has to be made in consideration of the type of soil in which the tractor will work keeping in mind that:

- narrow tires are suitable if the tractor works on hard soil offering good adhesion conditions and in cultivations with narrow rows;
- wide tires are recommended if the tractor works on soft (muddy, sandy etc.) soils, since their wider supporting surface with respect to that with narrow section reduces the possibility to slip or bog down besides allowing the tractor to enhance its traction force.

**IMPORTANT:** Do not use wide flotation tires, heavily loaded, for heavy operations.

Periodically check the inflation pressure of the tires (when they are cold).

Make sure that:

- front and rear tire inflation pressure should be basically, (in condition of load balanced on both axles) 1,5 atm;

#### IMPORTANT

If the engine is started without battery detach the two yellow cables connecting the alternator to voltage regulator.

### STARTING THE TRACTOR

Before starting the tractor check the oil level in the:

- front differential gearbox case (Fig.2c)
- rear differential case (Fig.17)
- hydraulic circuit (Fig.14)
- brake oil tank (Fig.7)

After starting the engine proceed as follows:

- release hand brake lever;
- depress clutch pedal;
- engage the most adequate gear for the work to be performed using the gear change and ratio selector levers;
- speed up the engine gradually and at the same time gently release the clutch pedal until the tractor is in motion.
- speed up gradually until the motion speed corresponding to the selected speed is obtained.

N.B.: - Before activating one of the speed or ratio selector control levers always depress clutch pedal to its fullest extent.

### USE OF TRACTOR

The high quality of the material used in the construction of Pasquali tractors is a guarantee; if the tractor is used properly it is also possible to obtain the best performance; we recommend you observe the following advice carefully:

#### SELECTION OF THE MOST SUITABLE SPEEDS

The selection of the most suitable speeds to every type of work to be performed is considerably affected by many factors such as the type and slope of the land, the implements used, the load on the trailer, the turning radius to be made etc. The ideal speed and hence also the appropriate gear to be selected are those which enable you to obtain the highest performance with the minimum fuel consumption. We basically recommend lower speeds for the work requiring considerable tractive effort and the higher speeds for lighter work. It is a good rule to avoid submitting the engine to continuous overstress because its performances will be poor and the exhaust very smoky owing to incomplete combustion. When the engine is overstressed, it tends to reduce its revolutions even when it is speeded up at maximum; this is the typical case when it is necessary to use a lower speed.

## USE OF FRONT AND REAR DIFFERENTIAL LOCKS

- They must be used only when it is really necessary. Always unlock them before turning to avoid damage to the transmission (especially if the tractor is fitted with power steering).
- The front differential lock actuated by means of a lever is mainly used when the tractor moves forward in straight line and to prevent the front wheels from slipping; the rear differential lock actuated by pedal with quick unlocking is used when ploughing to prevent the off-furrow wheel from slipping and also in muddy and slippery soil at large (sometimes it is necessary to engage also the front differential lock).

## USE OF THE POWER TAKE-OFF (Fig.13)

The tractor is provided with a rear power take-off. The spline shaft is standardized that is 1" 3/8 (equal to 34,92 mm), has 6 splines, protrudes by 75 mm, has a transversal 8,3 mm diameter hole whose center is at 25,4 mm from the shaft rear end line. We have already seen in the preceding pages how the power take-off is engaged or disengaged in the synchronized position; how it is engaged, the speed selected, how the power take-off is disengaged in the independent position and that for any operation the use of the clutch is essential.

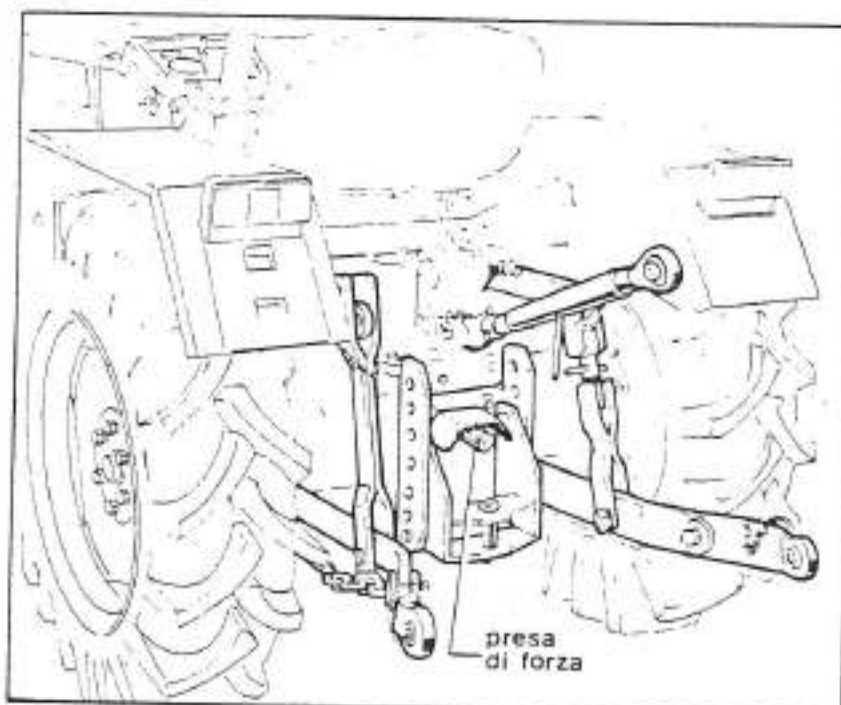


Fig. 13 power take-off

When engaging the power take-off by means of control levers H (Fig.4) and K (Fig.7) always make sure that the engagement is complete; an incomplete engagement may cause wear or damage.

The synchronized power take-off (see synchronization ratio on page 5) operates with the tractor forward motion only and basically serves to drive a trailer with drive wheels.

The size of the tires and the reduction ratio of the trailer gears must be selected on the basis of the r.p.m. of the power take-off, keeping in mind that for any distance and under any load condition a trailer with drive wheels should always be slightly slower than the tractor by 1: 1,5% to allow the latter to turn correctly (especially in slopes).

Important: when a trailer with drive wheels is attached to the tractor, the lever of the power take-off (K Fig.7) which drives the trailer differential must always be in the synchronized position. An incorrect engagement of the power take-off in independent position would almost certainly cause the breaking of transmission parts. The power take-off used in the independent position (two speeds) operates independently of the drive wheel transmission and being its ratio of revolutions proportional to the engine speed it can drive the various implements both when the tractor is stationary and when in motion (for example in the case of rotary tillers, pumps, hole augers, winches, spading machines, generators, sprayers, wood choppers, cutter bars etc.).

#### USE OF THE HYDRAULIC LIFTER (Fig.14)

The hydraulic lifter is fitted with regulation devices which give the possibility of operating the implements attached to the tractor

- with position control
- with draft control
- with draft and position control
- with floating position

Each of these possibilities is to be selected each time in function of the work to be carried out, the type of implement and the resistance of soil. Therefore, by activating the corresponding levers the lifter will operate as desired (Fig.10).

The draft and position controls allow to lower, lift and keep the implement in any position in respect to tractor (i.e in or out of the soil).

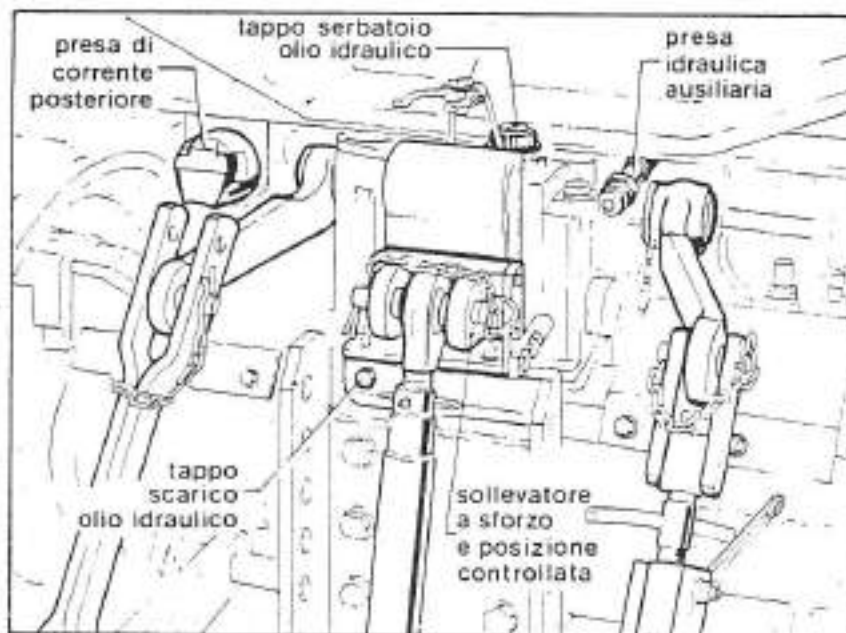
Each position of lever V on the scaled sector corresponds to certain height of implement.

The controlled position is used whenever it is necessary to reach and keep constant any working depth or height vis-a-vis the soil; it is also used to attach implements to the 3-point hitch.

hydraulic  
oil  
reservoir  
cap

rear  
socket

hydraulic  
oil drain  
cap



auxiliary  
hydraulic  
plug

position  
and draft  
control

Fig. 14

The draft control answers to the need to automatically vary the sinking depth of an implement when it carries out a job requiring a tractor strain at the admissible slipping limit for the driving wheels of tractor. By activating lever U on the scaled sector the lifter automatically regulates the working depth, adjusting itself to the resistance, variations of soil and therefore to the required tractor strain.

When the soil offers a homogeneous resistance the working depth will be constant both if the surface to be worked is even or undulating (with bumps or depressions).

If on the contrary the resistance of soil fluctuates, the lifter, to keep constant the traction strain required from the tractor, will vary the working depth of the implement considerably increasing it where the soil is not too hard and reducing it where the soil is hard or stony.

The simultaneous use of the position and draft control joins to the advantage of having - besides the traction strain control and a constant working depth in soils with homogeneous resistance - also the possibility of limiting at a pre-selected position both the maximum sinking and the excessive reduction of working depth in undulating or even soils.

This condition is particularly useful when it is necessary to work at a modest depth, as it is thus possible "to peel" the terrain without letting the plough come out of soil.

Finally with floating position the lifter arms are free to move vertically, therefore allowing the various implements to follow the profile of the terrain.

- in case of particular load conditions, (when a tire is overloaded it reduces its rolling height and hence also its speed), however, inflation pressure should be adjusted so as to allow the front carriage to always tow the rear one with a slipping ratio between 1:1,5% as foreseen by the different transmission ratio of the two axles; the above is important especially when the tractor is often used for road travel also because "Tractor" tires are originally not destined to road travel;
- when using the tractor avoid that the tires - especially the tire sides bump into sharp edges;
- at the end of a working day check the state of the tread and remove the rocks that may have gone stuck in the tires.

If the tires have to be replaced owing to wear or other reasons it is advisable to replace the 4 tires by new ones of the same make; this with a view to avoiding that the inevitable rolling difference in tires of different make may cause slipping and hence premature wear.

#### IMPORTANT

Never keep your left foot on the clutch pedal when the tractor is in motion; even the slightest pressure on the pedal causes rapid wear or burning of the clutch plate.

#### CHECKS DURING OPERATION

During the period of use always make sure that the tractor works in perfect order. If not, stop engine immediately, troubleshoot and take action to eliminate the causes.

#### FUEL TANK (Fig.12 and 15)

Make sure not to run out of fuel otherwise air might enter the engine feeding circuit in which case it would be necessary to drain it as described on page 6. It is advisable to fill the fuel tank also at the end of a working day to avoid - especially at night - that water vapour may condense on the inside walls of the tank causing the formation of water.

#### MAIN STARTING SWITCH (Fig.9)

When the engine is running the switch key should always be in the first click position in clockwise direction. If during the operation the key is turned in the removing position, besides excluding the engine oil pressure warning light it also excludes the battery charge regulator and the alternator excitation circuit and this might cause the gassing of the electrolyte and serious damage to the alternator and regulator.



## ENGINE OIL PRESSURE (Fig.9)

The warning light on dashboard should turn off just a few seconds after the engine has started. Should it remain on or suddenly light up during the regular operation of the engine, warning that insufficient pressure is in lubrication circuit, stop the engine immediately otherwise serious damage may ensue. Insufficient oil pressure may be caused by one of the following reasons;

- insufficient oil in the engine oil pump
- obstructed filter
- r.p.m. too low
- not appropriate oil viscosity
- faults in the pump or circuit

**IMPORTANT:** the warning light might light up if the engine is very hot at the minimum of r.p.m.; however, if speeding it up a little it turns off immediately, it is only due to the regular thermal expansion of the main bearings.

## GRADE OF EXHAUST SMOKE

- Excessive exhaust smoke is due to faulty ignition and operation. The colour of smoke gives useful information for troubleshooting.
- **BLACK SMOKE** is generally caused by incomplete fuel combustion; the reason can be:
  - engine overloaded (it is necessary to engage a lower speed);
  - air filter obstructed;
  - faulty operation of the injectors;
  - injection pump out-of-tune or faulty timed.
- **BLUE SMOKE** is caused by oil entering the combustion chamber. First of all check if the trouble is caused by an excessive quantity of oil in the air filter; if the level is correct and the engine oil consumption is abnormal contact a specialized workshop.

## IMPORTANT

When opening the hood for any inspection with running engine the gear control lever must be moved to neutral position between the 1st gear and the reverse gear and the ratio selector lever B to one of the two neutral positions.

## STOPPING THE ENGINE

Before stopping the engine make sure that the control levers are in neutral position; then pull the stop knob. Do not try to stop the engine by turning and removing the switch key because the engine would continue running causing to the electric system the damage previously described. Turn and remove the switch key only when the engine is not running.

If the tractor has worked for a long time and the engine is very hot it is advisable to let it run at tickover for a few minutes to obtain a more gradual cooling.

## ELECTRIC STARTING LIGHTING SYSTEM

### BATTERY (Fig.15)

The electric lighting and starting system is equipped with a 92 . .  
12 volt battery.

Check the electrolyte level in each element at least every 50 workin  
hours, before starting work and when the battery is at rest.

The electrolyte should completely cover the battery cells by 1 cm.

If the electrolyte level is low top it up with distilled water.

The battery must be kept clean and dry especially the top part.

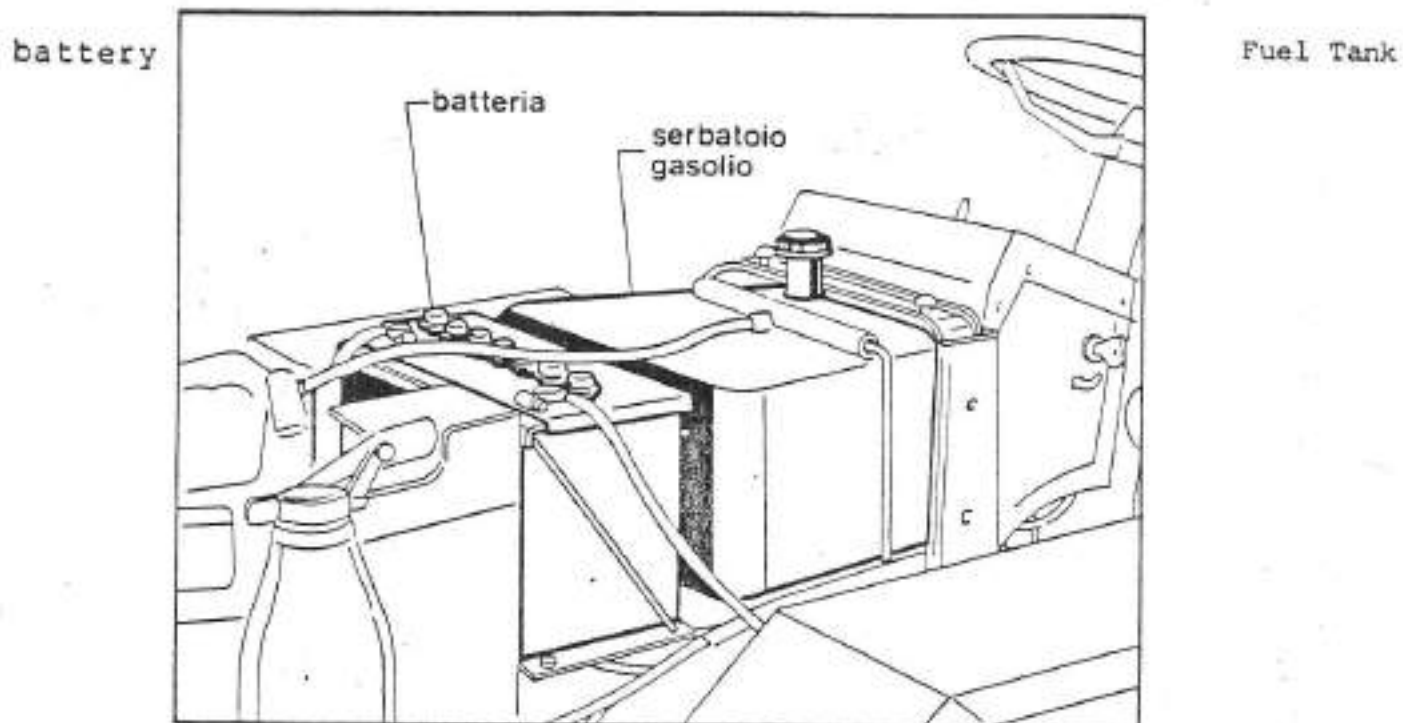


Fig. 15

Make sure that the terminals are well connected to the battery poles  
and often smear them with pure vaseline.

To tighten and unscrew the terminals nuts, use a spanner but first  
disconnect the earth cable.

## IMPORTANT

- never keep the light on when the engine is not running;
- never let the battery discharge completely;
- never recharge it with external means if not disconnected;
- never invert the terminals;
- make sure that the polarities of the battery and battery charger are correct;
- if the battery requires frequent topping up with distilled water apply to a specialized workshop.

## ALTERNATOR

The electric system is fed by an alternator generating plenty of current to recharge the battery. To obtain a satisfactory operation of the alternator it is necessary to observe some rules because the diodes and transistors in the rectifier circuit are sensitive to overloads and reversion of polarity. When the alternator is operating.

- 1) never disconnect the cables between the voltage regulator, alternator and battery;
- 2) never short-circuit the terminals of the alternator and voltage regulator between them and never earth them.

Generally the alternator does not require any maintenance. In case of overhauling carefully clean commutators, check brush and rectifier diodes. Grease axle bearings every 2000 hours. All these operations should be done by specialized mechanics. Often verify the tension of the engine fan wheel belt; pressing its central free section with a finger it should yield about 1 cm. An excessive or poor tension should be corrected by increasing or removing the spacers placed between the two half-pulleys of the air conveyor shaft (Fig3a - 3b).

## VOLTAGE REGULATOR

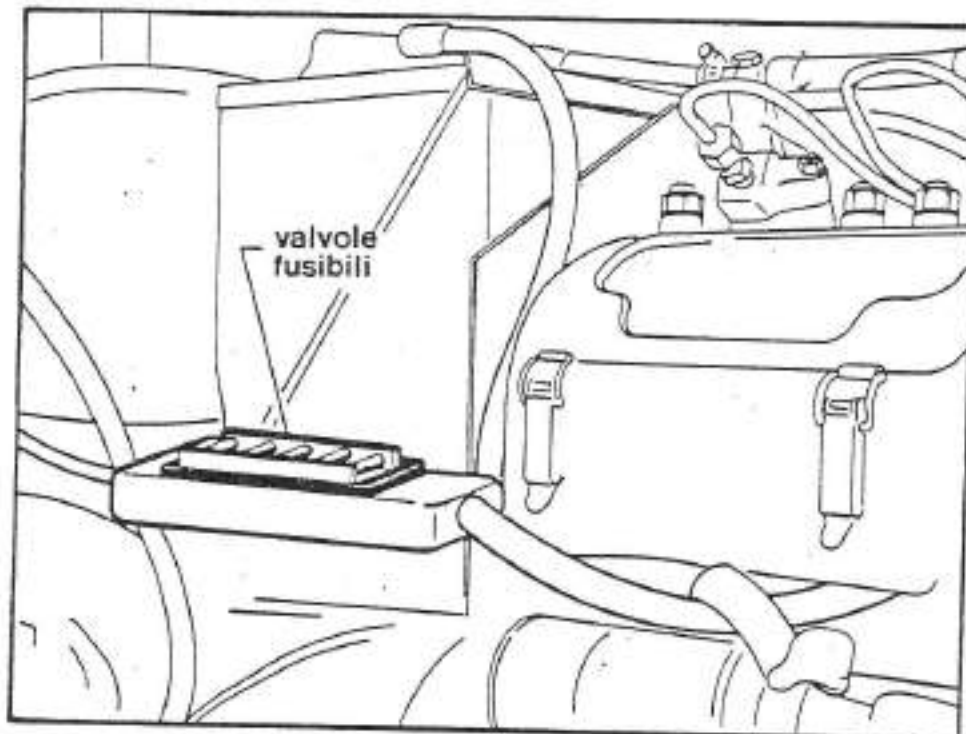
No maintenance is required. Any trouble, however, should be fixed by a specialized motor vehicle electrician and by no means by unskillful persons. Its checkover requires appropriate tools and technique.

## STARTER MOTOR

It does not require either maintenance or lubrication. When starting it, if the engine does not start immediately and further attempts have to be made, between one attempt and the other wait until the starter motor pinion has completely stopped.

## FUSES (Fig.16)

The electric system is equipped with fuses to protect the lights and the starting system. Should a fuse blow, replace it by another with the same amperage. If this happens again, have the system checked by a motor vehicle electrician.



fuses

Fig. 16

## REAR SOCKET (Fig.14)

When a trailer is attached to the tractor by inserting its electric plug in the tractor socket (situated in the support of the rear mudguards) it is possible to use the rear lights of the trailer necessary for road travel.

## BRAKING SYSTEM (Fig.17-18)

The tractor is equipped with disc brakes on the rear wheels the pedal acts on the pump which by means of a hydraulic mechanism activates the pistons of the calipers; they exert a pressure on the brake linings forcing them against the cast iron discs flanged to the end of the rear axle shafts.

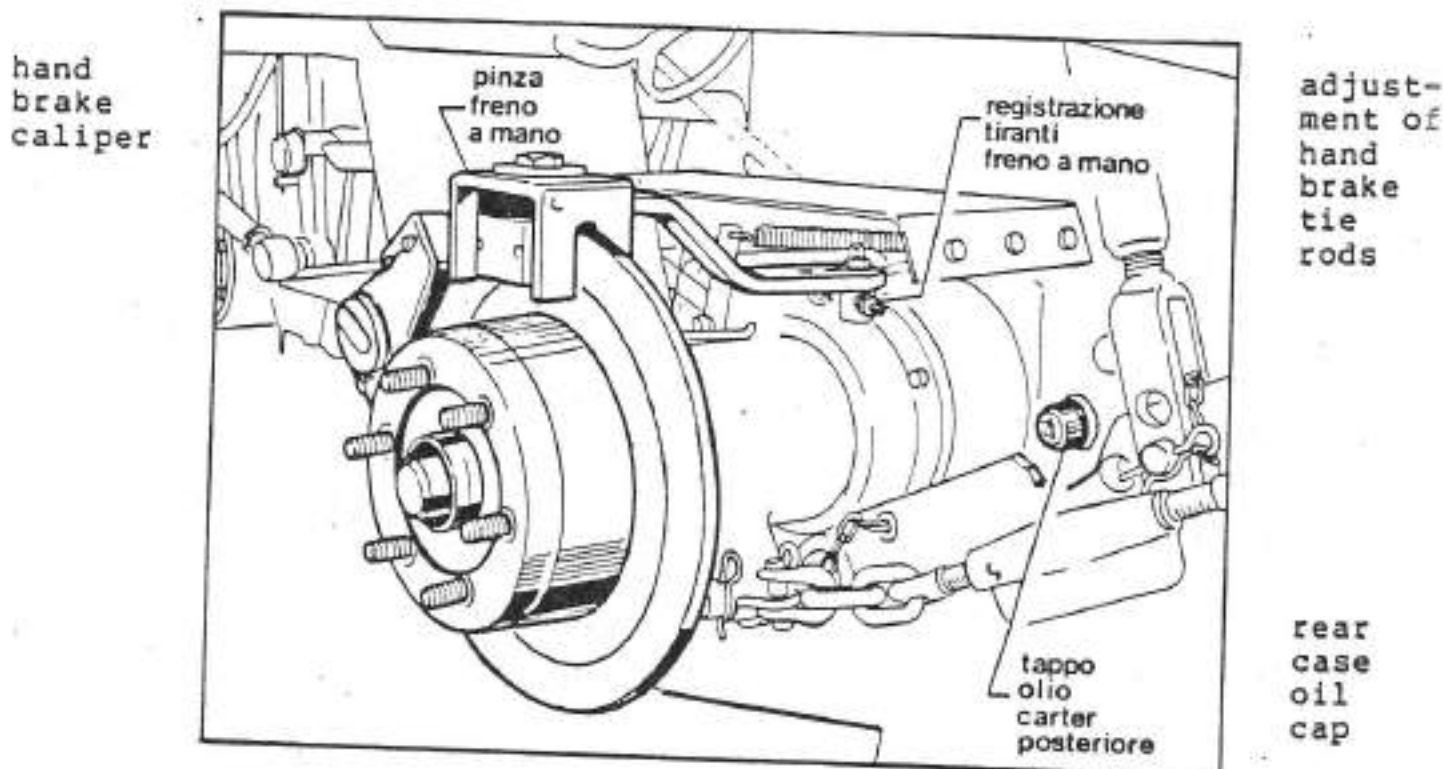


Fig. 17

As the linings wear, the pistons of the caliper cylinders move little by little towards the discs allowing to obtain a gradual wear of brakes until they are completely worn out. The replacement of the brake linings is extremely simple and a matter of few minutes: it is, however, necessary- at least once after two replacements - to grind the cast iron discs which will inevitably wear or at least score.

As a general rule, even if the braking system works quite satisfactorily, check it every 100 working hours and any fault should be eliminated immediately.

Frequently check oil level of brakes in the transparent reservoir. (located under the seat Fig.7) which is subject to slight variations owing to the wear of the brake linings. Should the oil level suddenly sink, stop the tractor, troubleshoot and eliminate the leakage; then top up. Should the above fault turn up again, apply to a specialized specialized workshop provided with original spare parts.

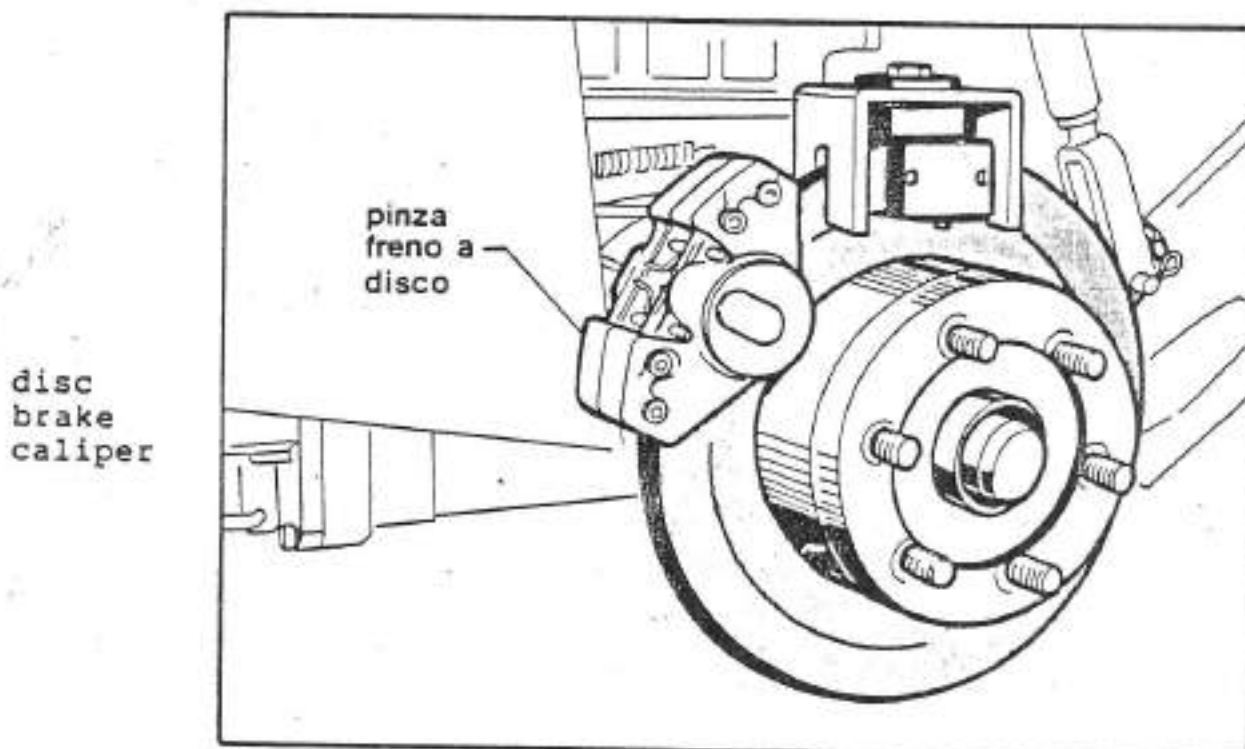


Fig. 18

The hand brake is mechanical: the lever, when moved up, by means of self-centered driving levers controls the closing of appropriate calipers (completely independent from the service brake ones) which act on the cast iron discs previously mentioned. special adjusting screws (Fig.17) are fitted on the control levers of the hand brake calipers which serve to balance the tie rods and to restore the travel as the brake linings wear.

When going down a slope especially with a loaded trailer attached to the tractor, always brake with the engine using the same gear required if going uphill on the same route.

#### CLUTCH ADJUSTMENT (Fig.19)

To ensure that the clutch correctly connects the engine to the gearbox the clutch pedal should have a 3 cm free travel before disengaging the clutch. After some time the free travel will reduce owing to the wear of clutch plate. When the clutch travel is below a certain limit it should be adjusted to avoid slipping, overheating and wear of clutch.

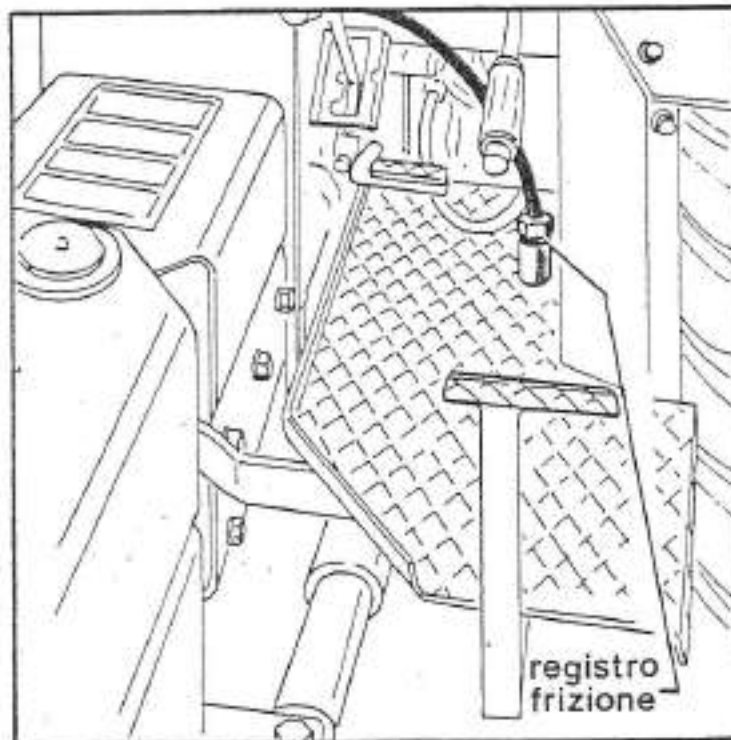


Fig. 19

The distance is adjusted by means of the appropriate adjuster situated at the base of the control cable (Fig.19)

When the adjustment is not possible because there is no more p to the adjuster, the clutch plate must be replaced.

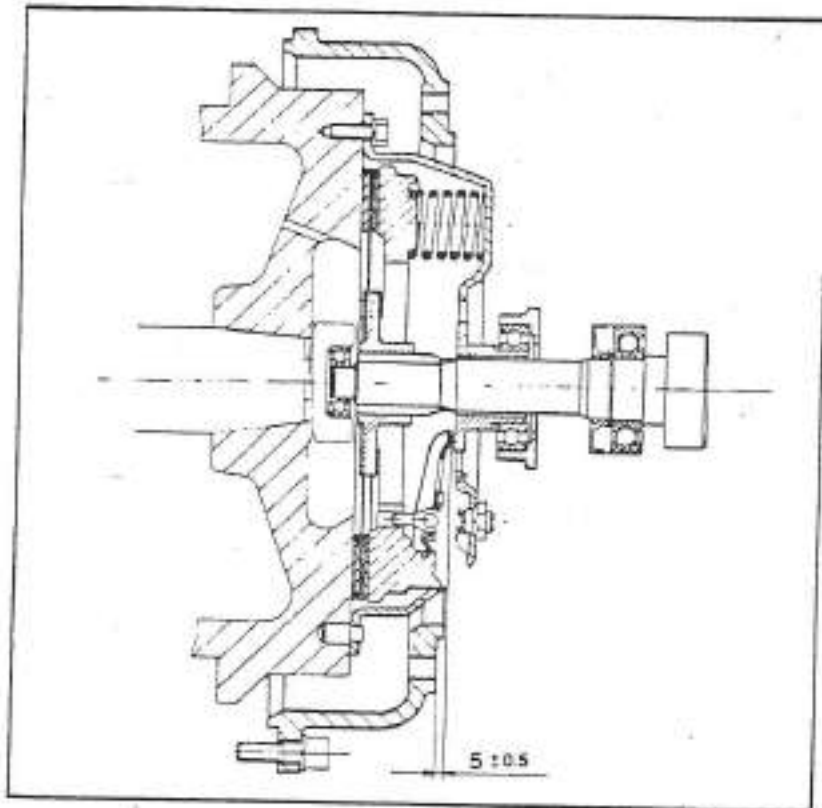


Fig. 20

Once replaced check that the distance indicated on Fig.20 is  $5 + 0,5$ . The adjustment -if necessary- is effected acting on the screws of the 3 plates of the pressure plate.



## SCHEDULE OF MAINTENANCE

To obtain the best performance and a long life of the tractor the following periodical inspections are necessary.

### EVERY 8 HOURS

- check engine oil level
- change air filter oil (in very dusty conditions every 5 hours)
- clean air filter

### EVERY 30 HOURS

- grease bearings of steering pins (2 grease nipples)

### EVERY 60 HOURS

- grease clutch pedal pin
- grease brake pedal pin
- grease hand brake lever pin and lock pin
- grease driving lever pin of reverse gear
- grease independent P.T.O. speed control lever pin
- grease 3-point hitch pin
- check tire pressure

### EVERY 100 HOURS

- change engine oil
- check tension of turbofan and alternator belt
- check electrolyte battery level
- check oil level of front differential gearbox
- check oil level of rear differential assembly
- check and adjust clutch play
- check and adjust brakes
- check regular tires wear
- tighten all screws and nuts of tractor (engine, wheels, hubs, steering wheel etc.).

### EVERY 300 HOURS

- change or accurately clean fuel filter
- change engine oil filter element
- check density of battery electrolyte and recharge battery, if necessary
- check hydraulic system oil level and clean filter.

#### EVERY 500 HOURS

- clean engine cooling fins
- clean engine feed pump membrane
- change turbofan belt and alternator
- check and set injectors and injection pump
- check and adjust opening and closing play of engine valves

#### EVERY 1000 HOURS

- change oil of front differential gearbox
- change oil of rear differential
- change oil of hydraulic system

#### EVERY 2000 HOURS

- grease alternator shaft bearings (maintenance to be made by a motor vehicle electrician).

#### PRECAUTIONS TO BE TAKEN WHEN LAYING UP

In case of a rather long period of inactivity, proceed as follows:

- 1) clean all the tractor outside;
- 2) remove the air filter and clean it carefully (see Engine Instruction Booklet);
- 3) check that oil lubrication plugs do not leak;
- 4) grease all not painted parts;
- 5) disconnect the terminals from the battery poles and smear both of them with vaseline;
- 6) fill tank with fuel to maximum level;
- 7) store the tractor in a neither damp or dusty place and if possible lift it from the ground laying it on appropriate stands;
- 8) cover the tractor with a protective canvas.

When the tractor is to be used again, arrange for all the inspections indicated in paragraph "Checking the new tractor".

## LUBRICATION TABLE FOR TRACTOR

Oil filling points	Lubrication type	Quantity	Lubrication interval
ENGINE FOR ) TRACTOR 440 (	Agip oil superdiesel	3,2 kg	Every 100 hours (in case of a new engine change it after the first 20 hours)
ENGINE FOR ) TRACTOR 492 (	Multigrade SAE 15 w/40	4,5 kg	
AIR FILTER	Same oil as for engine	0,3 kg	Every 8 hours
FRONT CASE	Agip oil Rotra Sae 85W/140 (ARCO AW 46)	7,5 kg	Every 1000 hours
REAR CASE	Agip oil Rotra Sae 85W/140	4,5 kg	Every 1000 hours
HYDRAULIC SYSTEM	Agip oil Oso 68	6,0 kg	Every 1000 hours
STEERING PINS	Agip Grease 30		Every 30 hours
-PINS AND ) ADJUSTERS (	Agip Grease 30		Every 60 hours
WITHOUT ) GREASE NIPPLES (			

## SAFETY INSTRUCTIONS

The Pasquali line of tractors has been designed and tested with the goal in mind; "to reduce or minimize the potential for accidents". However, with careless or improper operation, coupled with inadequate maintenance, the possibility for personal injury to the operator increases. The following listed safety instructions are meant to remind the operator of some of the more obvious hazards associated with operating mechanical equipment coupled with some less obvious operating characteristics associated with articulated tractors. Please read them carefully before operating our equipment.

### Before operating

- 1) Read and understand that portion of this manual that covers the operation of this vehicle. Be familiar with all of the controls and know how to stop quickly.
- 2) Keep all safety shields in place and confirm that all safety devices are operable.
- 3) Wear long pants and substantial shoes. If you are working in heavy brush or in orchards with low-hanging limbs, safety glasses and a helmet are advisable.
- 4) Be sure that the safety start is adjusted so that the tractor can only be started, when the clutch pedal is fully depressed disengaging the drive clutch. This if your tractor is equipped with safety start switch.
- 5) Verify that the P.T.O. speed selection lever is in neutral. If you are not using the P.T.O., the 1-3/8" 6-splined stub shaft should be removed and stored in the toolbox under the front hood. Place the protective rubber hood over the P.T.O. shaft socket to eliminate contamination from entering into the splined receiver.

### While operating

- 6) Start and operate the tractor only while sitting in the seat.
- 7) Before starting the engine:
  - a) Assure drive transmission levers are in neutral.
  - b) Assure P.T.O. shift lever is in neutral.
  - c) Set the parking brake.
  - d) Depress the clutch fully.
- 8) After starting the engine, release the clutch slowly to confirm the transmission levers are in fact, in neutral.
- 9) Do not run the engine in a closed area without adequate ventilation. The exhaust fumes can cause great discomfort and might prove to be hazardous.
- 10) The tractors are designed to be operated by a single person. Under no circumstances should they carry passengers.
- 11) Operating these tractors safely requires constant attention; to minimize risks and maintain control, the operator should:
  - a) Operate the equipment only in daylight or where there is good artificial light.
  - b) Watch for deep holes or other hidden hazards.
  - c) Do not drive too closely to deep ditches, creeks or other hazards.

- d) Reduce speed when on rough terrain or making sharp turns, particularly when on a hillside.
  - e) Avoid sudden stops and starts.
  - f) Do not leave the tractor unattended while it is running.
  - g) Keep the tractor in gear while going down a steep grade.
  - h) Adjust the weight distribution if wheels come off the ground.
- 12) Shut off the engine and set the hand brake before making any adjustment or repairs on the tractor.
  - 13) Do not touch the engine or muffler while the engine is running it is hot enough to cause a burn.
  - 14) to reduce fire hazard, keep the engine free of grease, grass, leaves or other flammable material.
  - 15) Do not overspeed the engine. Maximum speed of the engine is 3.000 RPM's unloaded. Any adjustments to the governor settings should be made by a trained, authorized dealer, using an external tachometer.
  - 16) Do not check the engine oil level or hydraulic oil level with the tractor running. Do not add hydraulic oil or engine lubricating oil with the engine running.