WORKSHOP MANUAL Tr. Euro 40 RS/SN

GOLDONI

GOLDONI S.p.A.
FABBRICA MACCHINE AGRICOLE

EURO RS/SN

GOLDONI S.p.A.
FABBRICA MACCHINE AGRICOLE

Sede e Stab.: Via Canale, 3 – 41012 MIGLIARINA DI CARPI - Modena (Italy)
TEL.: +39 0522 640111 – FAX: +39 0522 699002
TELEGRAMMI: TLX 530023 GLDN I – CARPI
WEB SITE: www.goldoni.com – E-MAIL: sales@goldoni.com

SAT – Servizio Assistenza Tecnica

TEL.: +39 0522 640270 – FAX: +39 0522 640236
E-MAIL: service@goldoni.com

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INTRODUCTION

KEY

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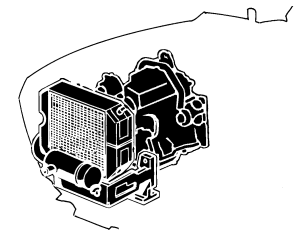
01

02



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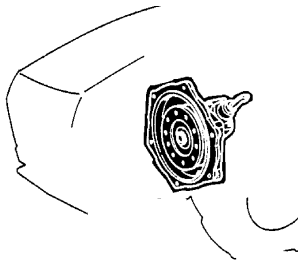

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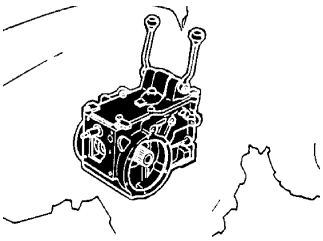

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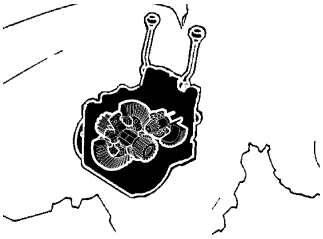

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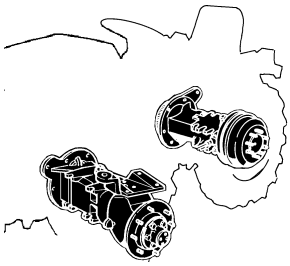

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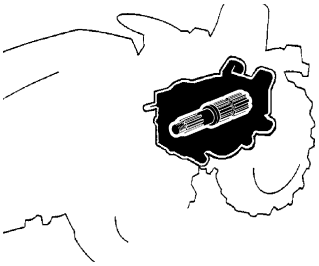

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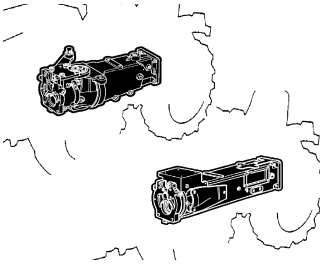

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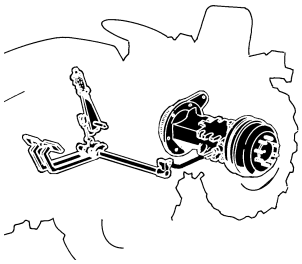

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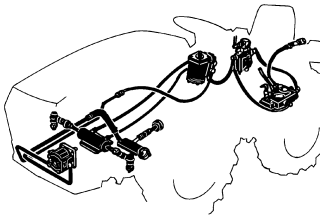

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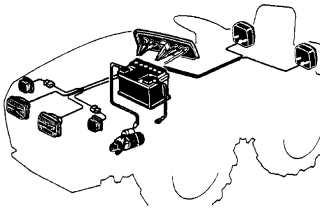

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SAFETY NOTES

Failure to comply with the safety instructions is the cause of the majority of accidents in workshops.
The machines are designed and built to make repairs and maintenance work easy. However, this is not enough to prevent accidents from happening.
Only a careful mechanic who complies with the following safety regulations is the best safeguard for both himself and others.

1. Carefully comply with the procedures described in the manual.

2. Proceed in the following way before carrying out maintenance work or repairs of any type:
   - Lower any implements to the ground.
   - Stop the engine and remove the key.
   - Disconnect the ground cable of the battery.
   - Affix a card to the steering position, prohibiting any controls to be used.

3. Make sure that all rotating parts on the machine (power take-offs, universal couplings, pulleys, etc.) are well protected.

4. Do not wear unbuttoned or loose objects and garments that could become caught up by moving parts of the machine.
   Depending on the jobs required, wear approved safety clothing such as: a helmet, footwear, gloves, dungarees and protective goggles.

5. Do not work on the machine when persons are seated at the controls unless these persons are trained and are helping with the operations required.

6. Never inspect or work on a machine with the engine running unless specifically told to do so.
   In this case, ask for help from an operator seated in the driving seat and who keeps the mechanic under visual control.

7. Never have the machine or implements connected operated from any position other than the driving one.

8. Before removing caps and covers, make sure that there are no objects in your pockets that could drop into open housings. The same care should also be taken of the tools used.

9. Do not smoke near inflammable liquids or products.

10. To deal with emergency cases, it is essential:
    - To keep an efficient extinguisher and a first-aid kit ready to hand.
    - To keep the telephone numbers of the Hospital casualty department and fire-brigade near the telephone.

11. When the brakes are rendered inactive for maintenance requirements, the machine must be kept under control by means of adequate blocking systems.

12. When towing, use the coupling points provided by the manufacturer and make sure that the towing attachments are correctly fixed.
    Keep well away from bars or ropes when they pull tight for towing requirements.

13. When a machine is being loaded on to a means of transport, take great care to ensure that the machine itself is securely fastened.
    Loading and unloading operations must always be carried out with the transport means on flat ground.

14. Use hoists or other equipment to lift or move heavy parts. Make sure that the lifting chains, ropes or belts used are efficient.
    Have all bystanders move away from the area.

15. For safety and toxicity reasons, never pour gasoline or diesel fuel in large, open vessels. Never use these products as detergents. Only use the proper non-inflammable and non-toxic products available on the market.

16. Wear goggles with side guards when compressed air must be used to clean parts.

17. Before starting an engine in a closed place, make sure that the gas exhaust device has been routed outdoors.
    If this device is unavailable, make sure that the room is adequately and continuously ventilated.

18. Operate with care and take all the necessary precautions when work must be carried underneath the machine outside the workshop. Choose flat ground, block the machine in an adequate way and wear protective garments.

19. Oil stains and puddles of water must be cleaned from the work area.

20. Do not throw rags dirtied with oil or grease into heaps as they could represent a fire hazard. These rags must be thrown into metal containers which must be kept tightly closed.

21. Wear approved protective garments such as a helmet, goggles, gloves safety footwear and special dungarees when using grinders, lapping machines and similar.

22. Wear approved protective garments such as a helmet, dark glasses, gloves, safety footwear, leg guards and special dungarees when carrying out welding work. If help from an assistant is required, he must also wear such garments.

23. Avoid creating (and therefore inhaling) dust when work is carried out on parts containing asbestos fiber.
The new technologies have allowed asbestos to be eliminated from almost all processes in which it was previously used, but the above mentioned precaution still remains valid since the parts the mechanic may encounter during work on the machines may have been produced prior to the new standards.
When working on such parts, avoid using compressed air and do not carry out brushing or grinding work. Always wear a protective mask on these jobs.
Any spare parts we send that contain asbestos fiber will bear the relative indication.

24. Unscrew the radiator plug very slowly to allow the pressure to be relieved from the system.
The expansion plug must also be treated with the same care and attention when installed.

25. Do not use flames or create sparks near the battery as this could lead to explosions. Do not smoke.

26. Never test the battery charge by making jumpers between the terminals with metal objects.

27. To prevent injuries from battery acid:
- Wear rubber gloves and protective goggles.
- Top up in a well ventilated place and do not inhale the fumes as they are toxic.
- Prevent the electrolyte from spilling or dripping.
- Only charge batteries in a well ventilated place.
- Do not charge frozen batteries as they can explode.

28. Fluid under pressure that leaks from a tiny hole can be almost invisible but have the force to penetrate under the skin, causing serious infection or dermatitis.
Never use the hands to check for leaks from the circuit. Use a piece of cardboard or wood.

29. Check the pressure in hydraulic circuits with the proper instruments.

30. ***THE SAFETY STRUCTURES OF THE TRACTOR (FRONT AND REAR ROLL-BARS, PTO SHIELDS, NETS GUARDING THE SPINNING PARTS, SUPPORTS AND TOW HOOKS, SEAT, ETC.) HAVE BEEN SUBJECTED TO APPROVAL TESTS AND AS SUCH, HAVE BEEN CERTIFIED; THESE STRUCTURES MAY NOT BE MODIFIED OR USED FOR PURPOSES OTHER THAN THOSE ENVISAGED BY THE MANUFACTURER, AS-SUCH ACTION COULD VOID THE RELATIVE APPROVAL.***

MACHINE IDENTIFICATION

GOLDONI

WARNING

KEEP THIS COUPON

This coupon **MUST** be exhibited when spare parts are required.
Type of Machine: ….
Number: ……..

Fig. 1

Fig. 2

Fig. 3

State the machine identification data each time you need to contact our assistance service for technical explanations or if spare parts are required.
These data are:

1. Type and model of the machine.

2. Chassis and serial number.

The type of machine, serial and chassis numbers are to be found on the identification tag of fig. 1, attached to all machines, or are stamped on the metal data plate of fig. 2, affixed to the machine in an easily accessible place.
The chassis number is also stamped on the actual chassis itself, as shown in fig. 3.
Consult the manuals supplied by the respective manufacturers for the engine ratings.

UPDATES

Future updates of the manual will be made by reprinting the sections describing the assemblies or parts of them involved in the modifications or additions, which will then be sent to your offices.

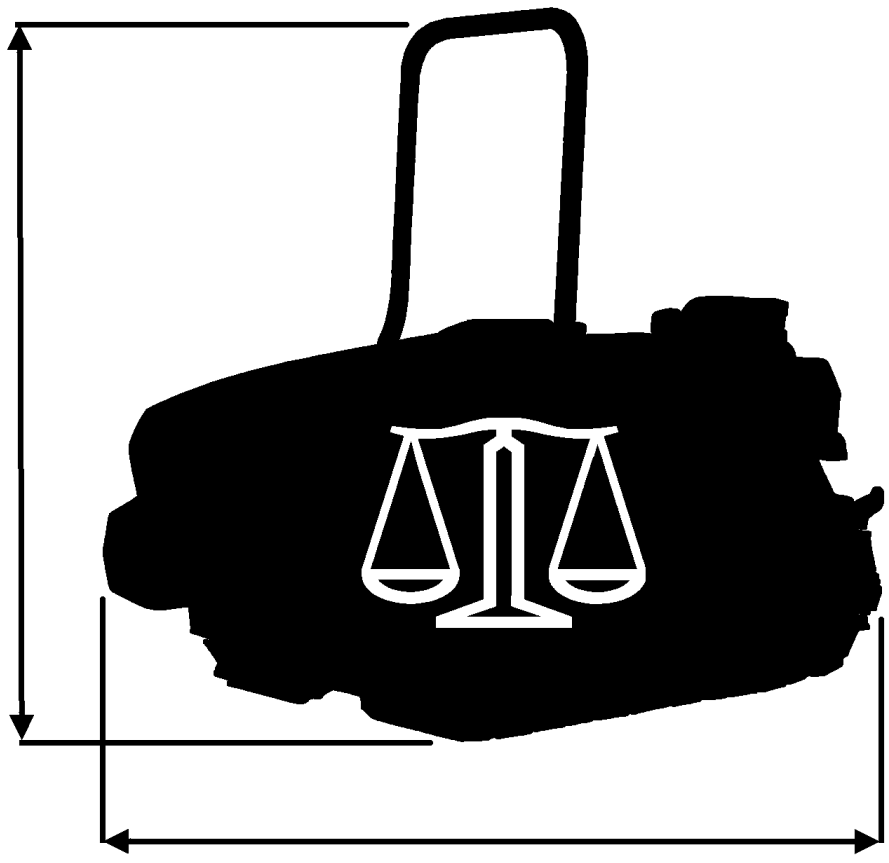
You shall then update the manual by substituting the modified parts.

The modified parts can be discarded since the updates will illustrate the operations required prior to and after the modification plus the work needed if conversion is obligatory.

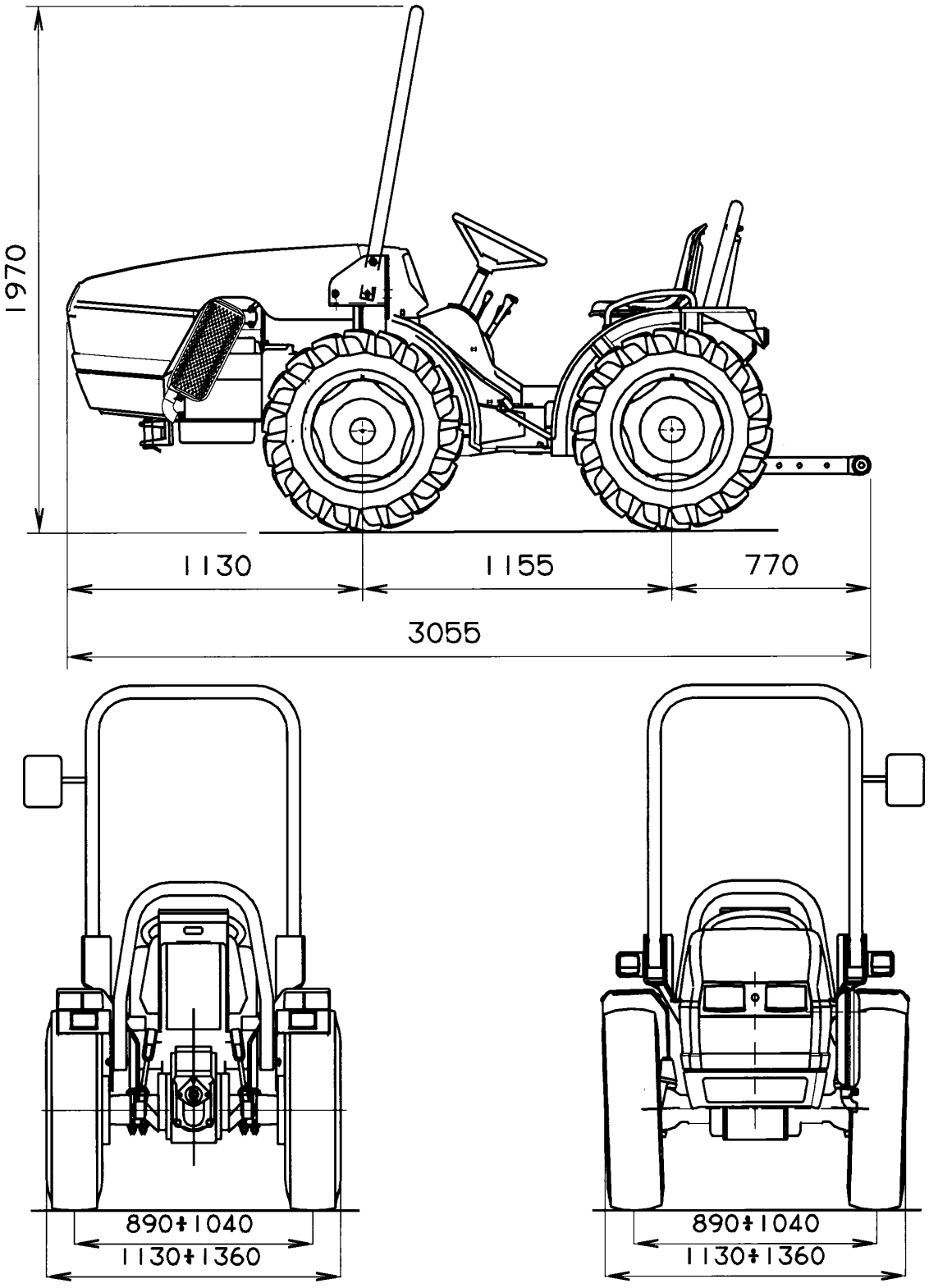
WARNING

The words "*right*", "*left*", "*front*" and "*rear*" used in the descriptions of the interventions refer to the direction in which the machine or implements are driven.

DIMENSIONS, TRACK WIDTHS SPEEDS, WEIGHTS



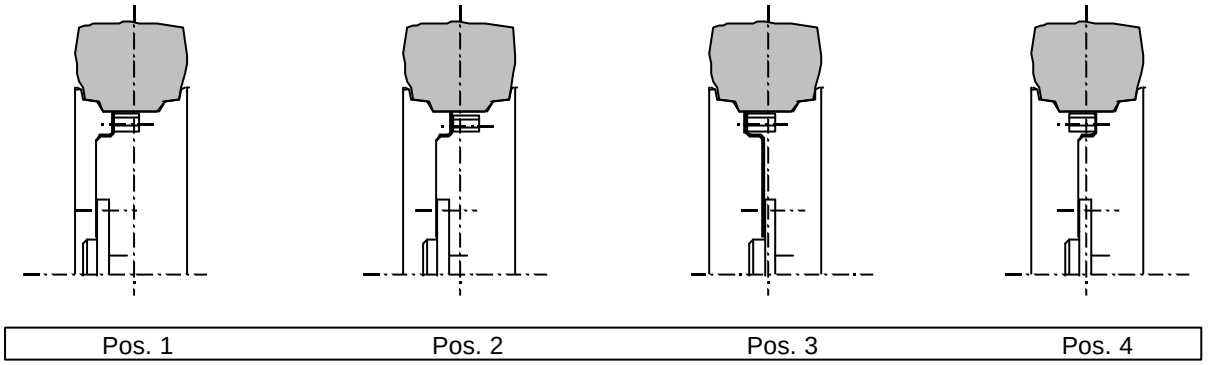
Tractor dimensions



TRACTOR TRACK WIDTHS DEPENDING ON THE TYRES MOUNTED

WHEELS

- With tyres 7.50 – 16 7.5L – 16
- With tyres 29 x 12.5 – 15

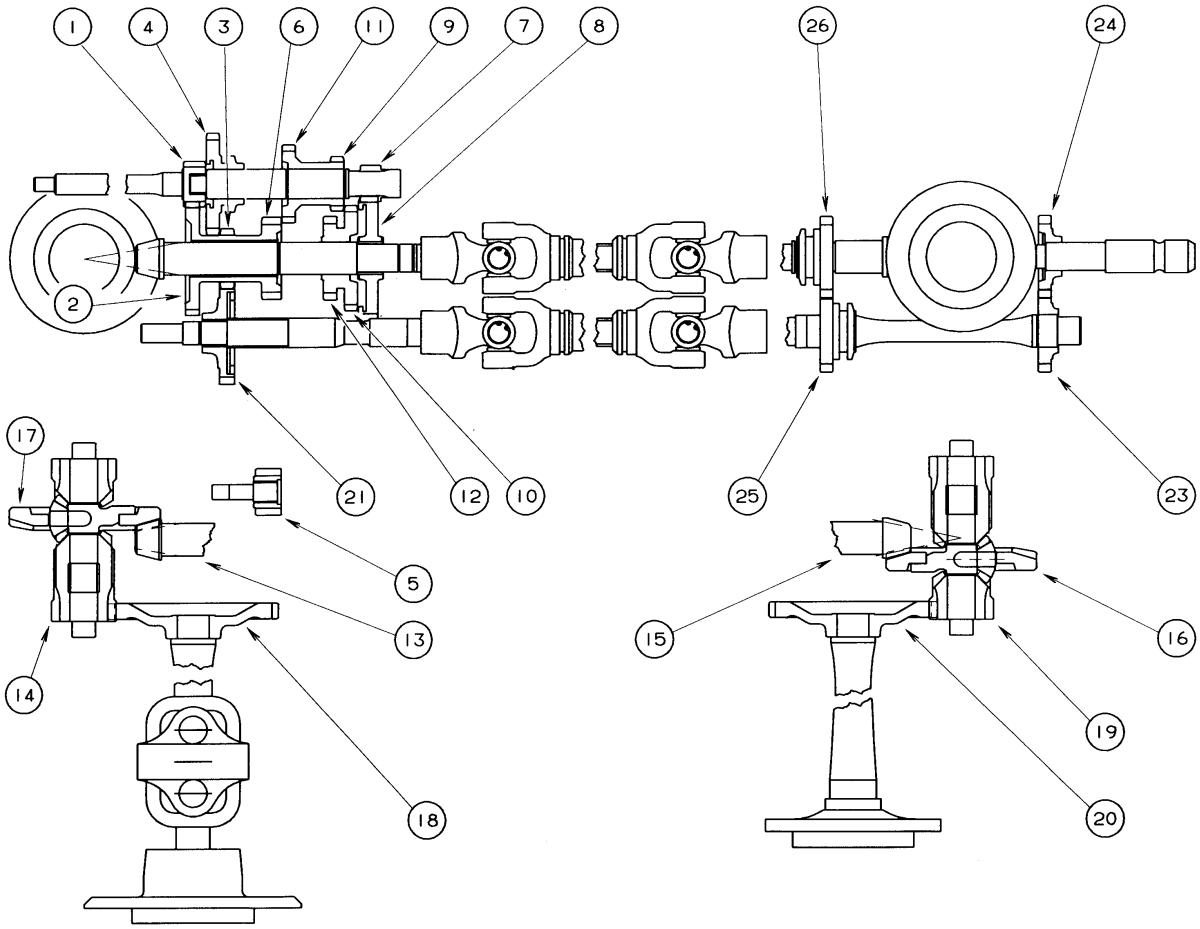


FRONT and REAR AXLE TRACK WIDTHS								
	Pos 1	**Pos 2**	**Pos 3**	**Pos 4**	**Pos 5**	**Pos 6**	**Pos 7**	**Pos 8**
Front 7.50 – 16	**890**	**/**	**/**	**/**	**990**	**/**	**/**	**/**
Rear 7.50 – 16	**890**	**/**	**/**	**/**	**990**	**/**	**/**	**/**
Front 29x12.50-15	**/**	**/**	**/**	**/**	**1040**	**/**	**/**	**/**
Rear 29x12.50-15	**/**	**/**	**/**	**/**	**1040**	**/**	**/**	**/**

NO-LOAD GROUND SPEEDS WITH ENGINE AT TOP RATE					
GEARS		TRANSMISSION RATIOS		3000 rpm	
				Speed with tyres (kph)	
		GEARBOX	TOTAL	**7.50 – 16** CIRC. ROLLING mm **2356**	**29x12.50 - 15** CIRC. ROLLING mm **2190**
NORMAL					
F	**1**	4.30	349.68	1.21	1.13
O	**2**	2.06	167.43	2.53	2.36
R	**3**	1.05	85.02	4.99	4.64
W	**4**	4.30	65.06	6.52	6.06
R	**5**	2.06	31.15	13.61	12.67
D	**6**	1.05	15.82	26.80	24.94
R	**1**	4.30	266.43	1.59	1.48
E	**2**	2.06	127.56	3.32	3.09
V	**3**	1.05	64.78	6.54	6.09

TYPE BEARING LOADS				
TYRES	**TYPE**	**MAX LOAD PER AXLE (kg)**	**PRESSURE (Bar)**	**SPEEDS (kph)**
FRONT	**7.50 – 16 4 PR**	1000	1.5	30
REAR	**7.50 – 16 4 PR**	1000	1.5	30
ALTERNATIVE TYRES	**TYPE**	**MAX LOAD PER AXLE (kg)**	**PRESSURE (Bar)**	**SPEEDS (kph)**
FRONT (1)	**29 x 12.50–15 4 PR (GOOD YEAR)**	1370	1.4	30
POSTERIORE (1)	**29 x 12.50–15 4 PR (GOOD YEAR)**	1370	1.4	30

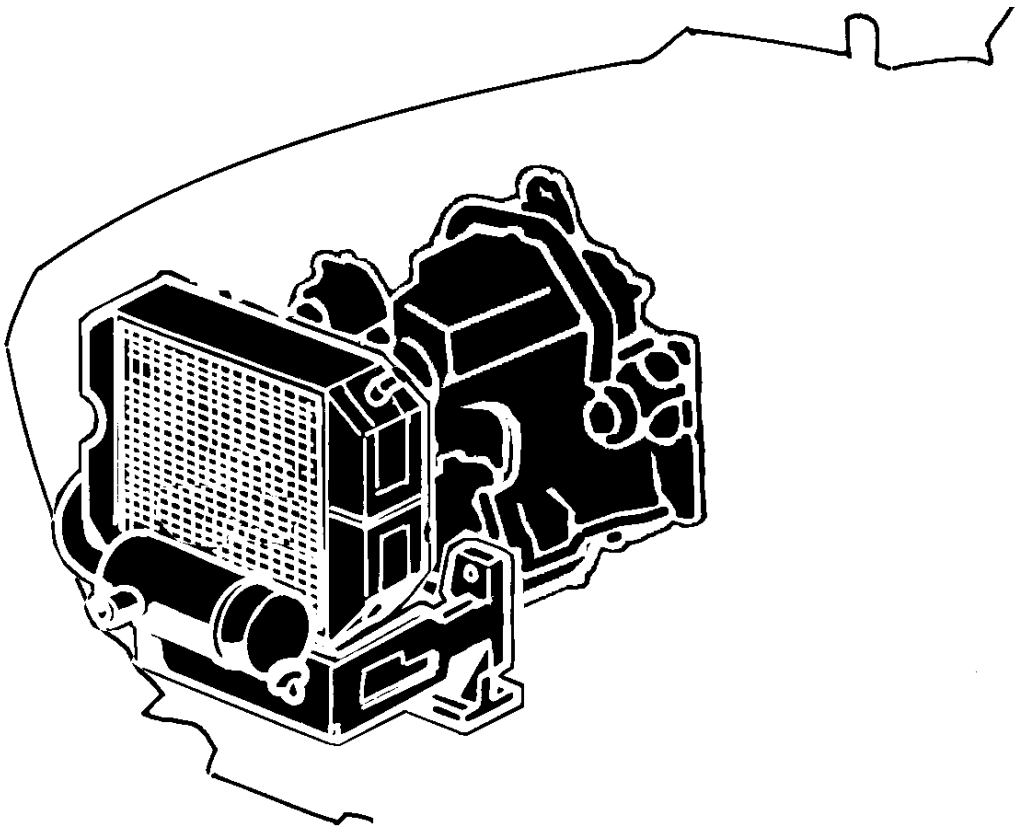
POWER TRAIN DIAGRAM



TRANSMISSION		
POS	N° TEETH	
1	Z =	15
2	Z =	43
3	Z =	16
4	Z =	30
5	Z =	11
6	Z =	21
7	Z =	10
8	Z =	43
9	Z =	17
10	Z =	35

TRANSMISSION		
POS	N° TEETH	
11	Z =	22
12	Z =	23
13	Z =	9
14	Z =	12
15	Z =	9
16	Z =	43
17	Z =	43
18	Z =	38
19	Z =	12
20	Z =	38

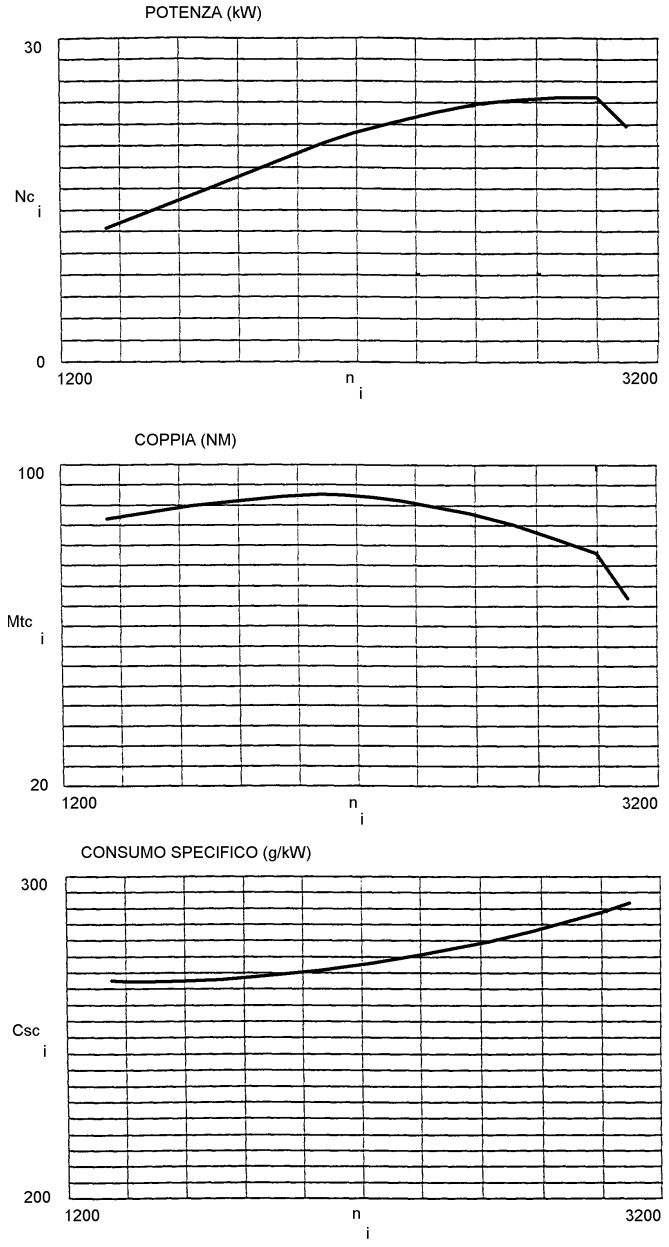
ENGINE



ENGINE SPECIFICATIONS

Engine	LDW 1503 NR
Power rating	kW / HP 24.5 - 33.5
Type	Diesel
N° cylinders	3
Swept volume	1551
Cooling	Fluid with axial fan

CHARACTERISTIC CURVES (Power (kW) - Torque (Nm) - Specific consumption (g/kW)

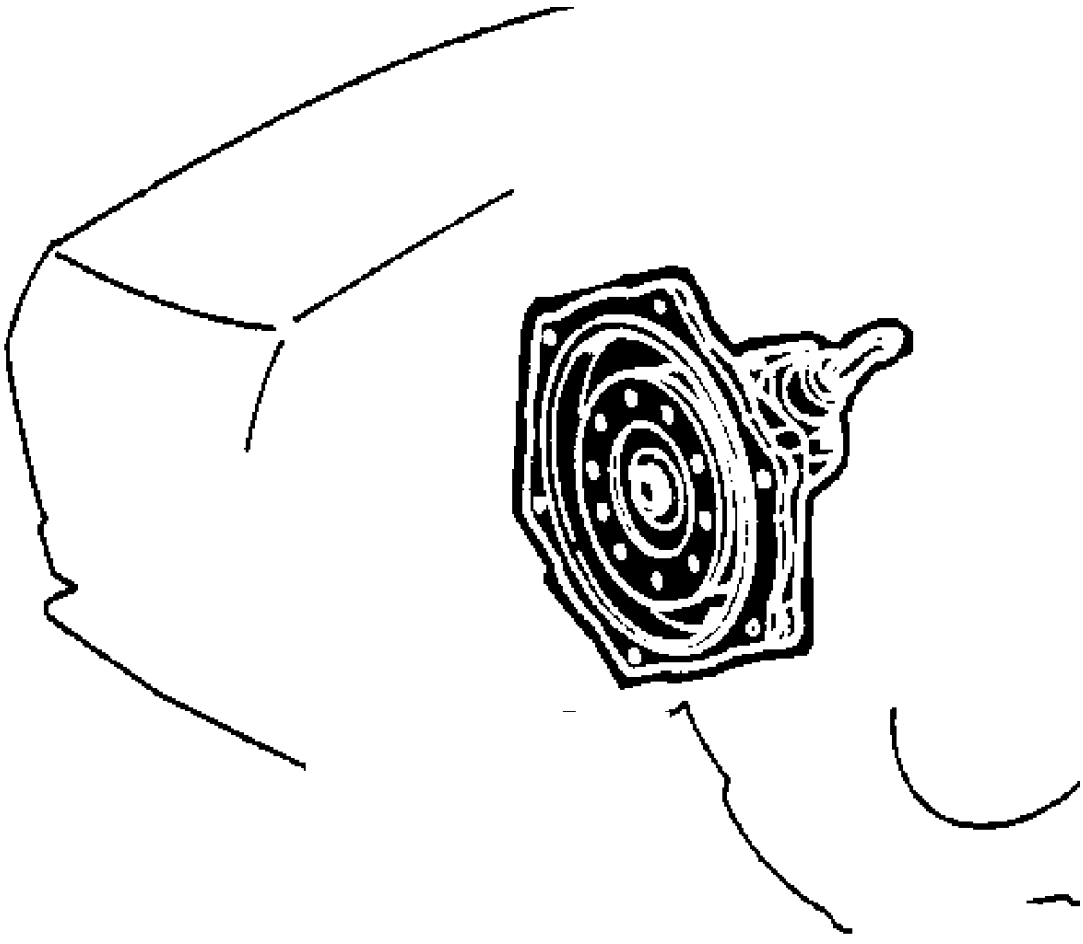


Contact an authorized Lombardini workshop if engine repairs or servicing are needed. Consult the engine operation and maintenance manual for the filter replacement, greasing and oil change operations.

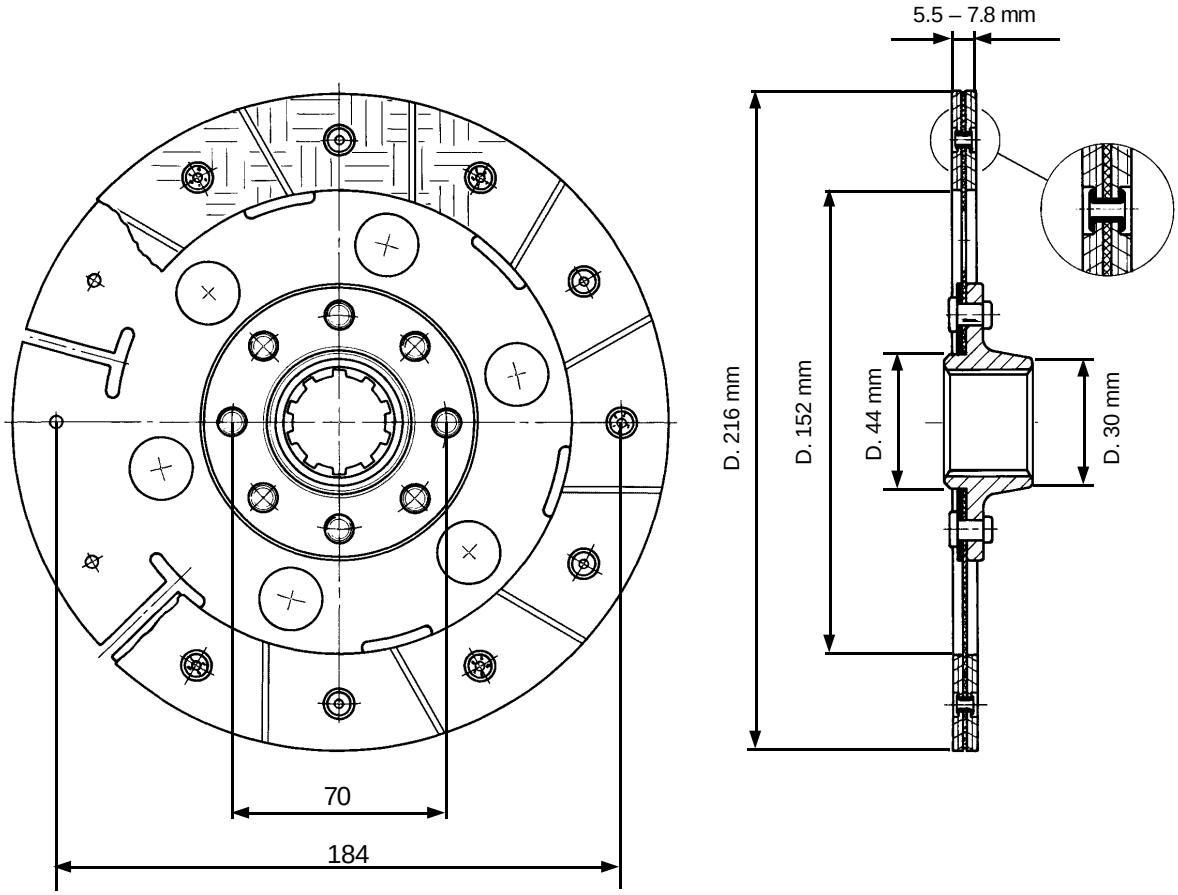
TECHNICAL SPECIFICATIONS OF LOMBARDINI ENGINE LDW 1503 NR		
Cylinders	N°	3
Swept volume	cc.	1551
Bore	mm	88
Stroke	mm	85
Compression ratio		22:1
Rpm		3000
kW power at 3000 rpm		24.5
Maximum torque	Nm	93.0/2100
Maximum torque of 3rd drive—Anti-clockwise rotation	kgm	39.2/3000
Idle rate—rpm		900
Oil consumption (Max, rpm – Power NA)	kg/h	0.024
Oil sump capacity	l.	3.8
Minimum tolerated oil pressure	kg/cm^2	2
Max. tolerated gradient for discontinuous service (instantaneous)		25° (35°)
Combustion air volume at 3000 rpm	l./min	2326
Cooling air volume at 3000 rpm	l./min	96
Dry weight	kg	155
Recommended battery	V/ah	12/88

Contact an Authorized Lombardini Dealer if the engine Workshop Manual is required.

CLUTCH

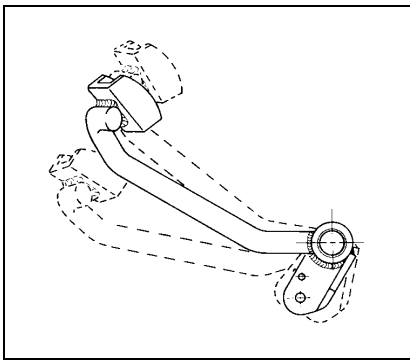


Clutch	Dry, single-plate clutch with pedal control
Type	F.**215**



FRICTION MATERIAL SPECIFICATIONS:

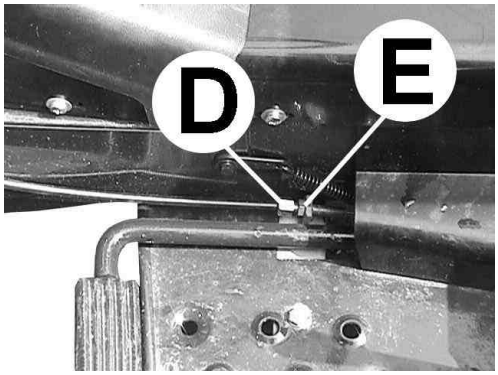
RAYBESTOS B 8402 TEXTAR T 360



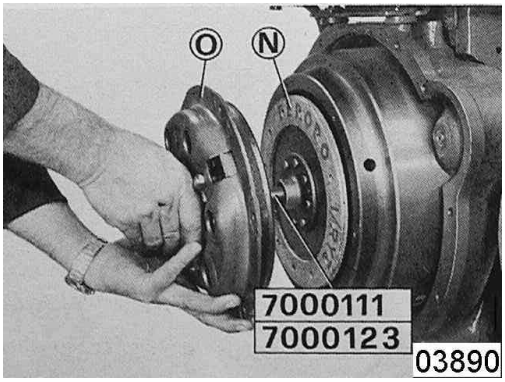
(fig. 1)

CLUTCH PEDAL ADJUSTMENT

- The play at the point where the clutch pedal detaches must be 1/3rd of the pedal's total travel (fig. 1).
- Loosen nut **D** (fig. 2).
- Unscrew adjuster screw **D** to reduce pedal play. Tighten the screw to increase the play. Lock nut **E** once the adjustments have been made.

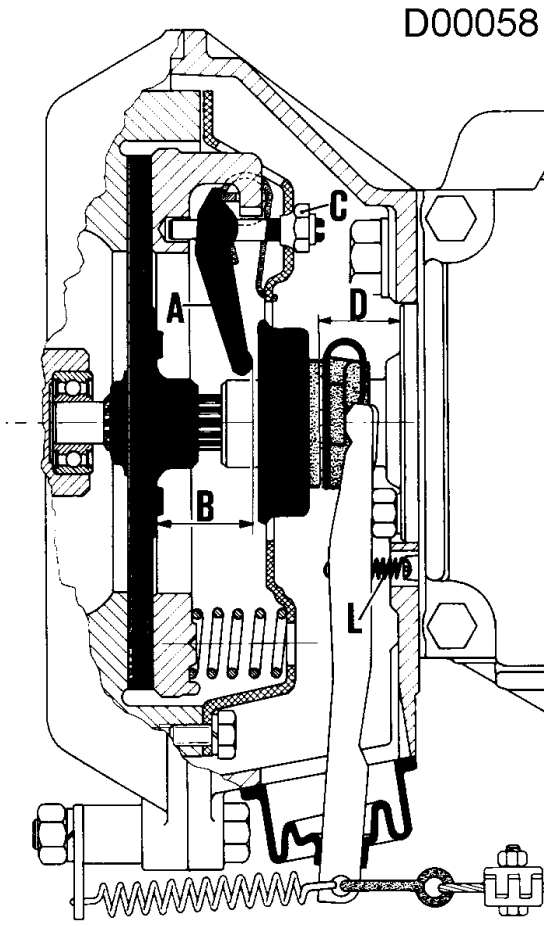


(fig. 2)

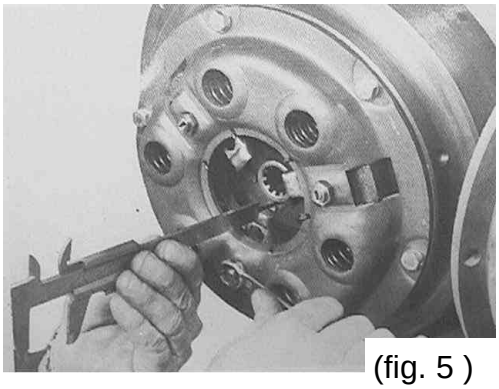


(fig. 3)

Pay particular attention when mounting driven disc **N** (fig. 3) and pressure plate **O** on the flywheel. Remember to keep disc **N** centered before fixing pressure plate **O**.
Use a piece of the main shaft as a guide in order to correctly mount the clutch assembly.



(fig. 4)

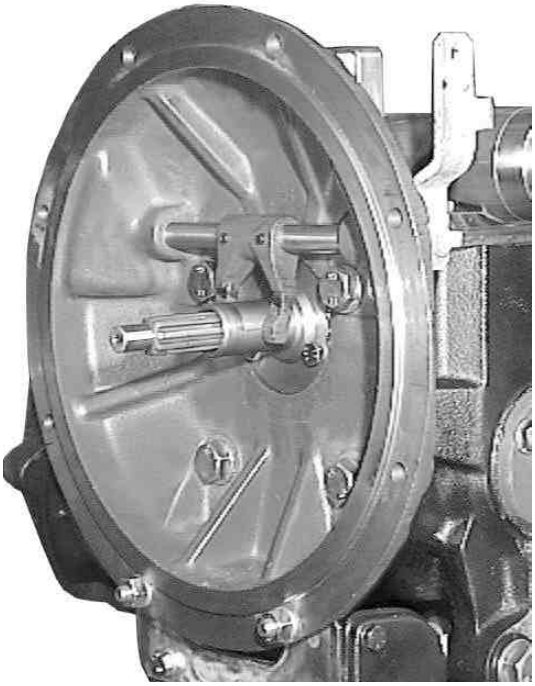


(fig. 5)

LEVER ADJUSTMENT

After having mounted the pressure plate ring on the flywheel, make sure that the levers are precisely adjusted **A** (fig. 4) **B** = 34 mm.
Work on the adjuster screw as shown in (fig. 5) to obtain the exact measurement.
Lock the nuts by punching after the adjustments have been made.

Fig. 4A

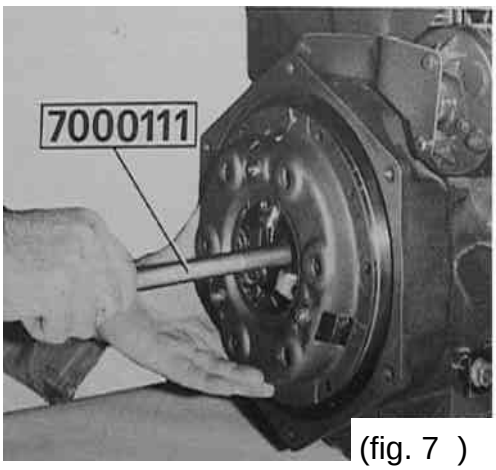


The picture 4A shows the orientation of the internal levers for the thrust bearing control, in respect to the external lever for the clutch control, which is positioned on the clutch bell.

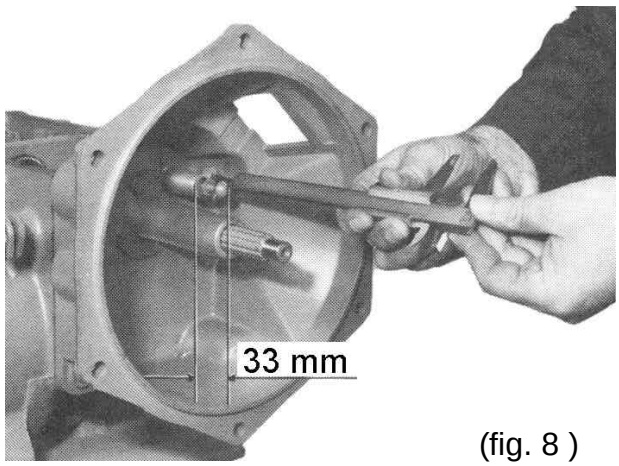
The internal levers are fixed on the rod by two spring pins.

A = 7,8 ÷ 5,5 mm.

(fig.6)

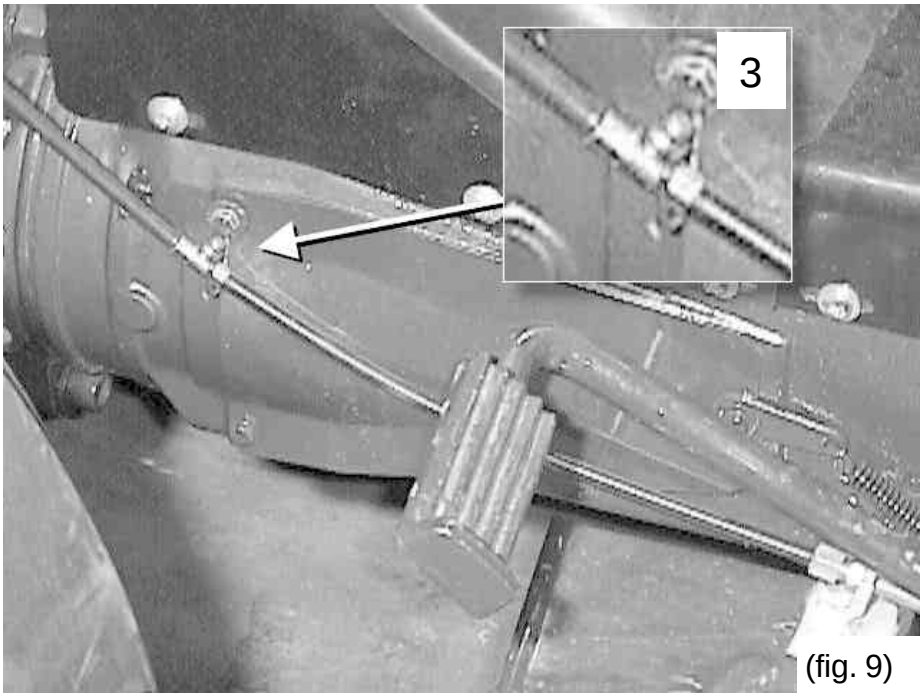


(fig. 7)



(fig. 8)

Figures 7 and 8 show how to adjust the eccentric screw and how to center the clutch plate coupling with the aid of a piece of the main shaft (part 7000111).



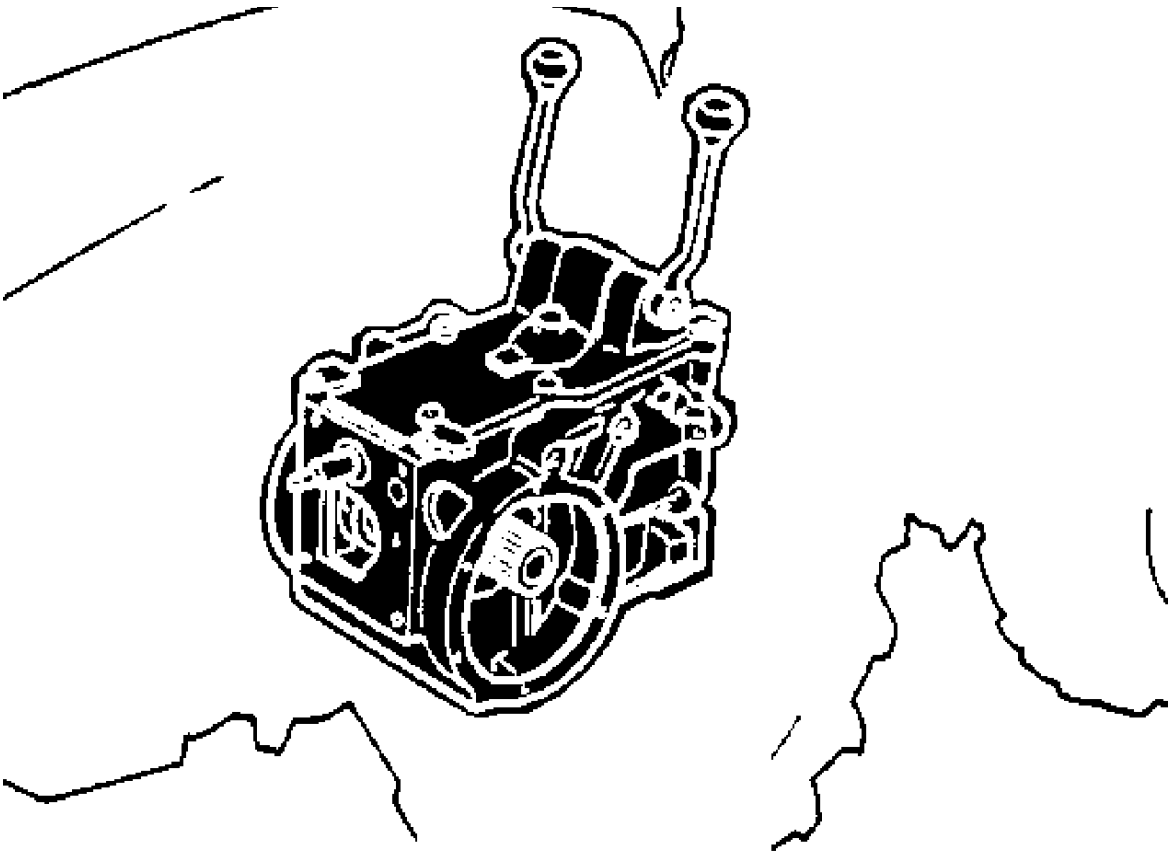
(fig. 9)

GREASING
Grease point N° 3 shown in (fig. 9) after every 50 hours service

DRIVING TORQUES

	Nm	Kgm
M8 x 20 screw that fixes the clutch assembly - flywheel	24	2.5
M8 nut to fix the ball-head screw	14	1.5
M10 x 35 engine - gearbox fixing screw	59	6
M10 x 40 engine - gearbox fixing screw	59	6

GEARBOX



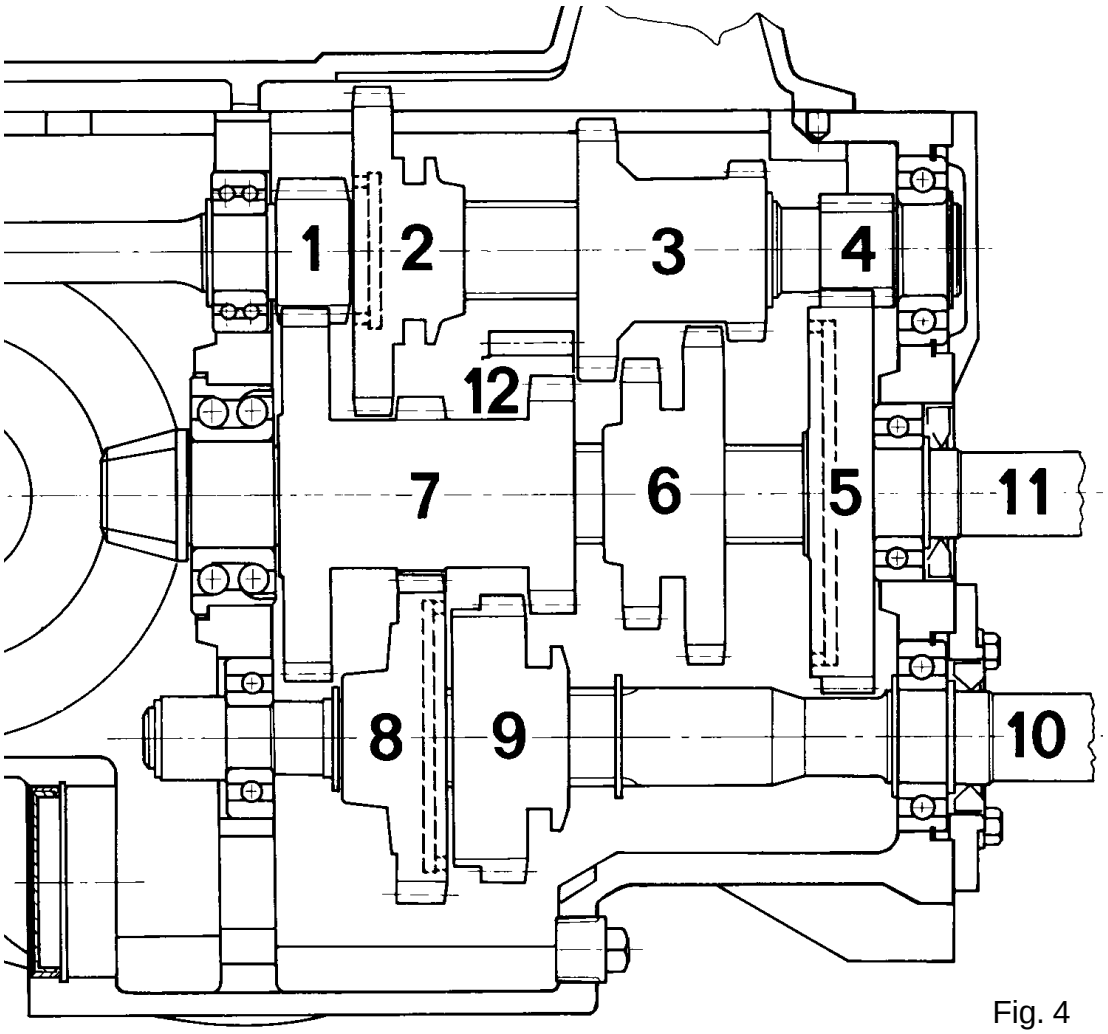


Fig. 4

Fig. 4 shows the power train diagram of the gearbox.
All the gears have been numbered and will be referred to in the following pages as shown in the table below:

1	Main shaft	7	Triple gear
2	V-R-REV sliding reduction gear	8	PTO idle gear
3	2nd-3rd speed fixed gear	9	PTO sliding gear
4	1st speed transmission shaft	10	PTO shaft
5	1st speed idle gear	11	Transmission shaft
6	2nd-3rd speed sliding gear	12	REV gear

It is important for the level of the oil in the gearbox to reach the dipstick mark in order to ensure that triple gear 7 of (fig. 4) is lubricated correctly. The bushes of this gear are lubricated through the hole in shaft 11.
The gearbox housing contains about 13.5 kg of oil type:
AGIP SUPER TRACTOR UNIVERSAL SAE 15W/40.

HOW TO ADJUST THE SPEED SELECTION CONTROL

Set the fork **D** (fig. 1) on the rod so that ball **B** is in position **2**.
Tighten or loosen rod **A** in order to obtain the exact alignment between the gear teeth when the gear is being selected (fig. 2).
Before locking nut **C**, make sure that there is play in the end of travel points of the sliding gear corresponding to **1st** and **3rd** speed selection.

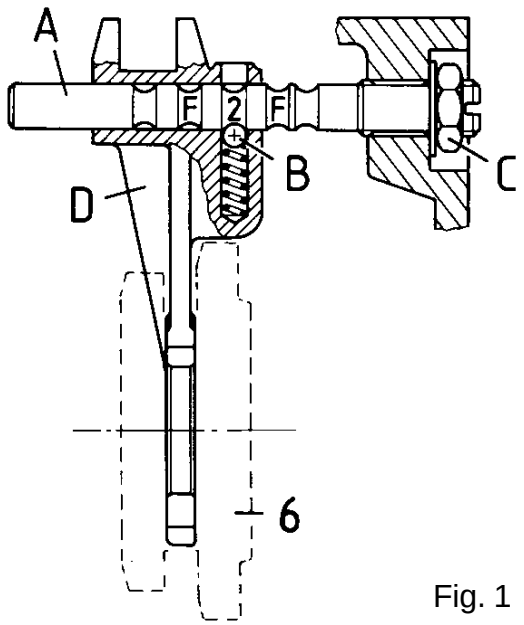


Fig. 1

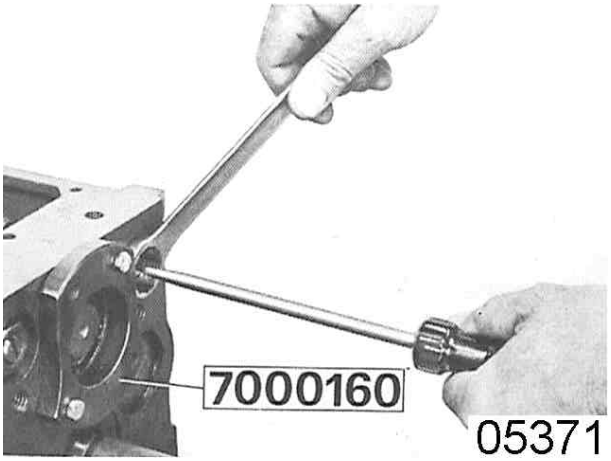


Fig. 2

FINAL DRIVE CONTROL ADJUSTMENT

- Position fork **E** (fig. 3) on the rod so that ball **G** is in position **R**;
- Tighten or loosen rod **H** in order to exactly slign the teeth of gears **2** and **7** of (fig. 4) when one of the 3 speed gears is engaged.
- Before locking nut **L**, make sure that there is play in the end of travel positions o f the gear that slides on the main shaft, corresponding to selection of the **REV** and **fast** speeds.

Fig. 3

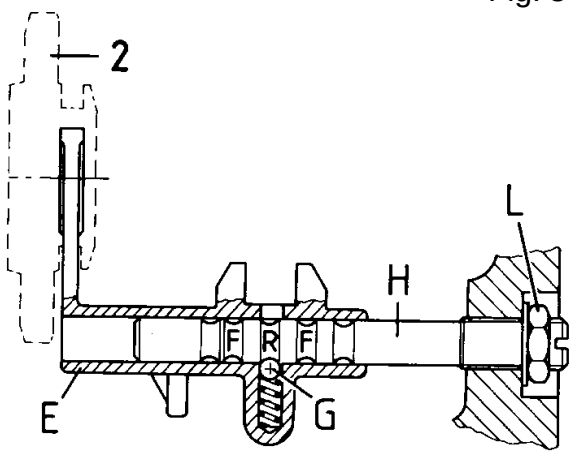
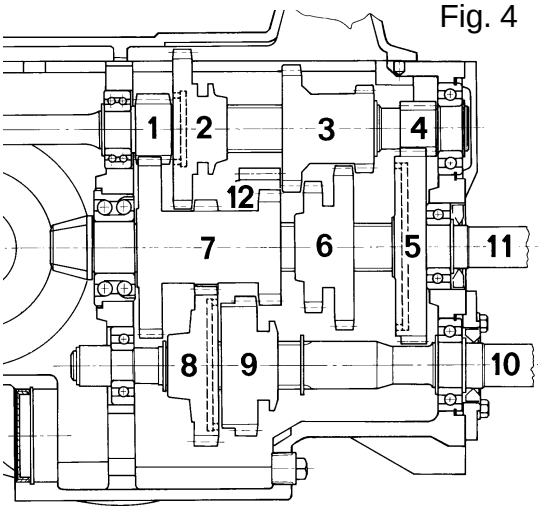


Fig. 4



BEVEL PINION FLOAT

After having tightened the screw that fixes the bearing on the pinion (fig. 5), move bearing **A** (fig. 6) to the other side of the bevel pinion until the float of the idle gear mounted on roller cage **6** of (fig. 6) has been eliminated.
When circlip **C** that closes the pack on the other side of the bevel pinion is mounted (see fig 6), insert spacers **B** to keep bearing **A** in position.

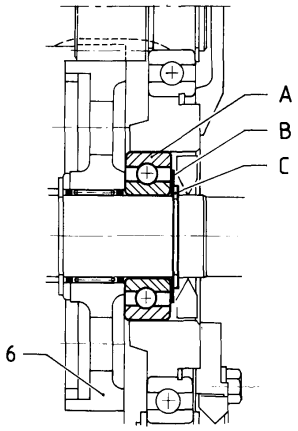
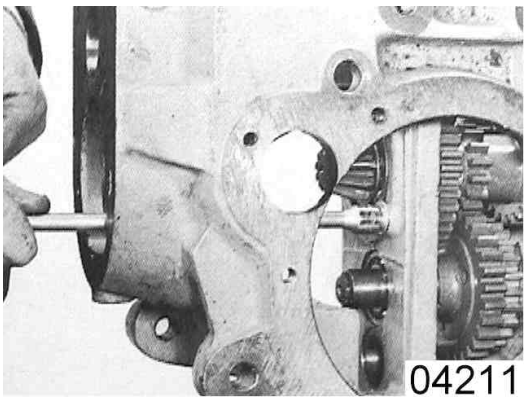


Fig. 6

Fig. 5



TRIPLE GEAR ASSEMBLY

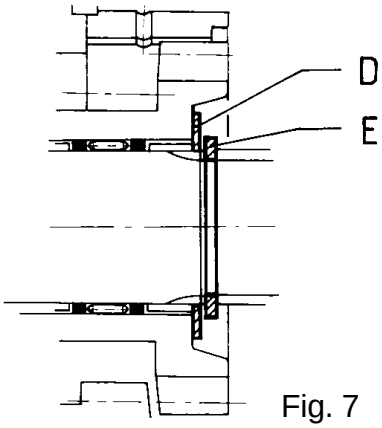


Fig. 7

The play between spacer **D** (fig.7) and circlip **E** must be **0.2-0.3** mm.

PTO SHAFT FLOAT

Move bearing **F** (fig. 8) forward through to the stop point on the housing and then take the measurements of (fig. 9) to establish the number of spacers **H** to mount before fixing cover **G.**

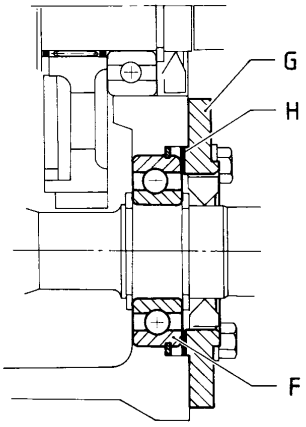
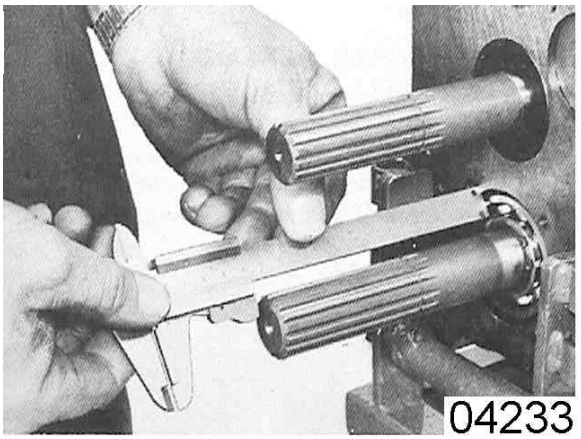


Fig. 8

Fig. 9



TRANSMISSION SHAFT FLOAT

Move bearing **C** (fig. 10) forward through to its stop point on the housing and take the measurements of (fig. 11) to establish the number of spacers **B** (fig. 10) to mount before fixing cover **A.**

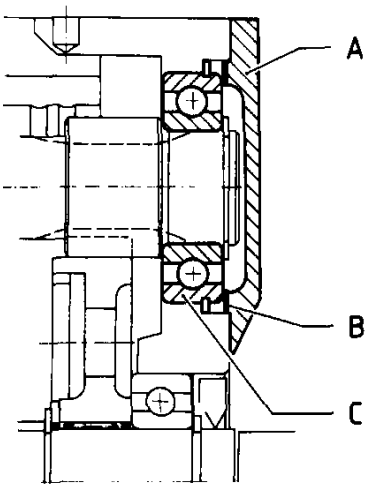


Fig. 10

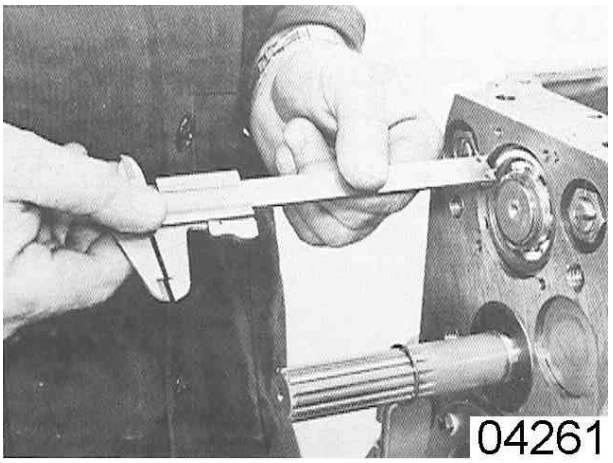
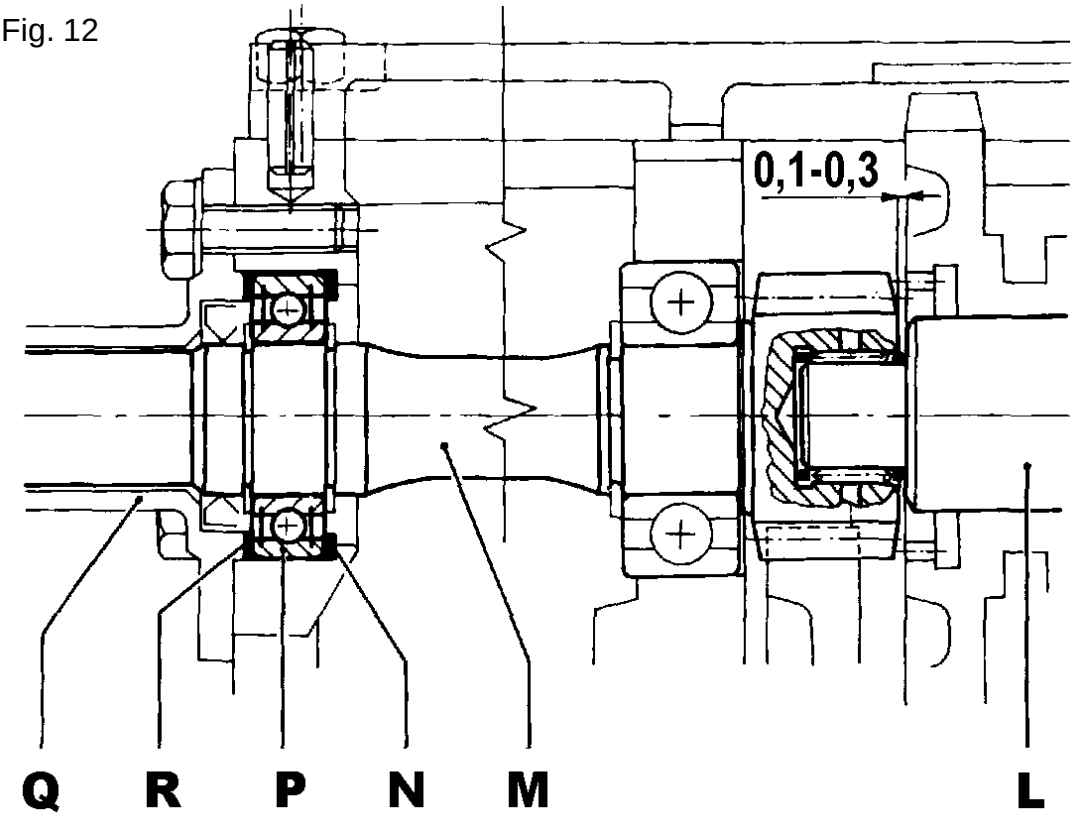


Fig. 11

MAIN SHAFT-TRANSMISSION SHAFT PLAY

Move shaft **M** of (fig. 12) forwards in the direction of transmission shaft **L** through to the stop point on the housing and make sure that the play is between 0.1 and 0.3 mm. If this fails to occur, insert spacers **N** between bearing **P** and the stop point.

Fig. 12



MAIN SHAFT FLOAT

Take the measurements shown in (fig. 13) to establish the shims (**R**) required to keep bearing **P** of (fig. 12) in position, then mount the cover **Q.**

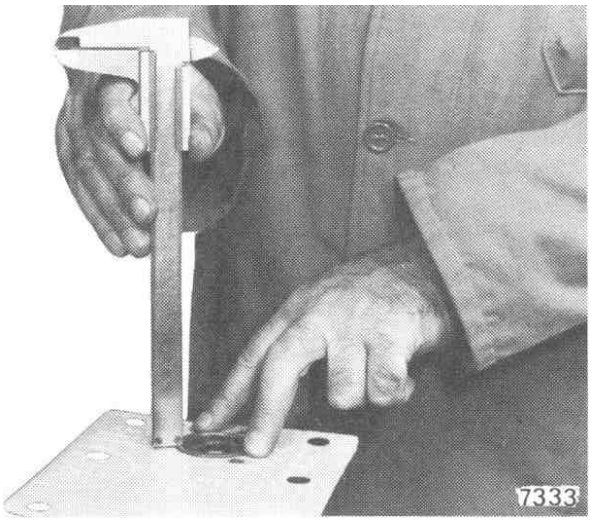
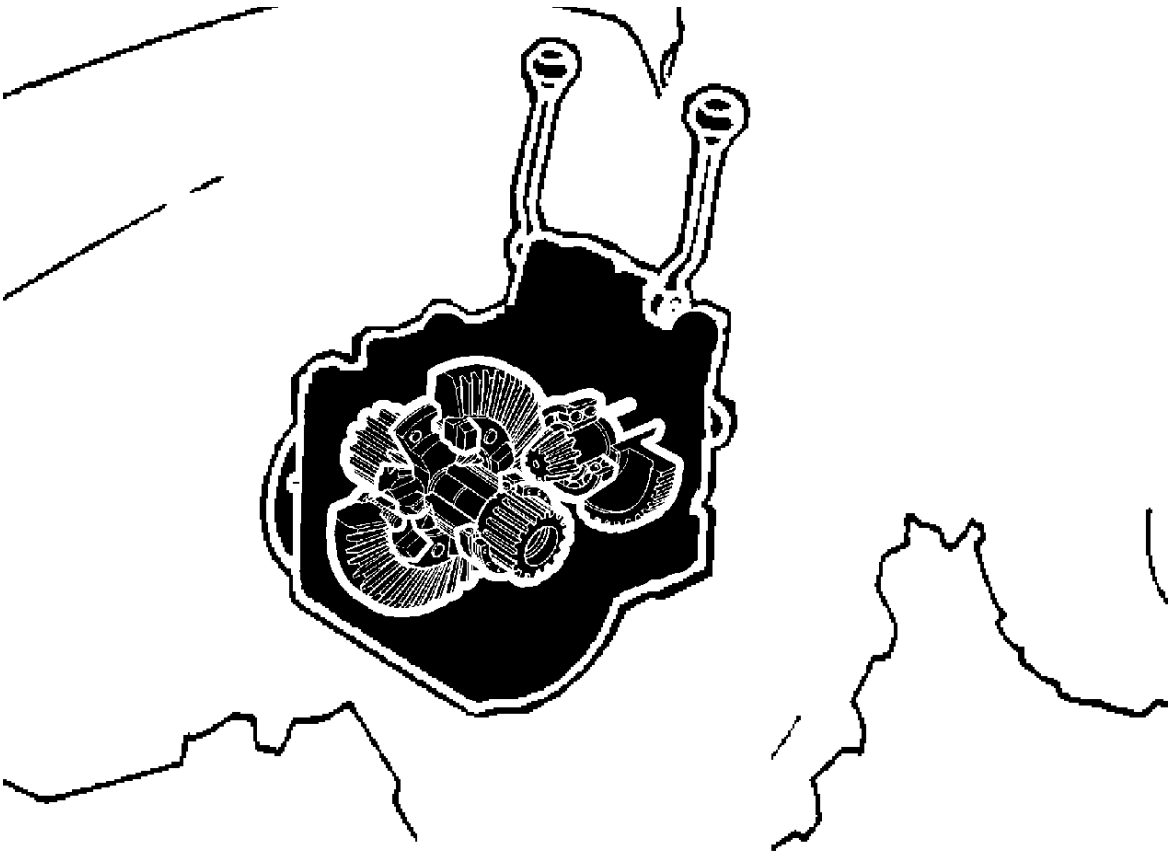


Fig. 13

DRIVING TORQUES	**Nm**
M 14 X 50 screw that fixes the gearbox-clutch bowl	**118**
M 8 X 25 screw that fixes the main shaft cover	**25**
M 8 X 30-M 8 X 25 screw that fixes the gearbox cover	**25**
M 6 X 15 screw that fixes the transmission shaft cover	**15**
M 6 x 20 screw that fixes the PTO cover	**15**
M 8 x 5 nut that fixes the PTO adjuster screw	**19**
M 14 x 14 nut that fixes the gearbox-central pivot	**89**
M 14 x 45 screw that fixes the gearbox-central pivot	**118**
M 16x1.5x15 nut that fixes the REV shaft	**118**
M 16x1.5x8 nut that fixes the gearbox control rods	**69**

FRONT DIFFERENTIAL



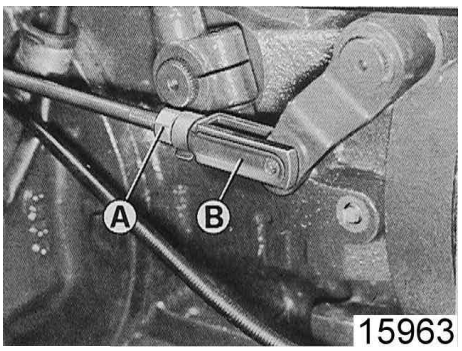


Fig. 1

FRONT DIFFERENTIAL LOCK ADJUSTMENT

The assembly is correctly adjusted when the lock control lever releases the differential 50-60mm from its on-hold position.

Proceed in the following way to adjust:

- loosen nut **A** (fig. 1);
- detach lever fork **B**;
- adjust the length by tightening or loosening fork **B;**
- after adjusting, connect the fork back on the lever and lock nut **A.**

FRONT LOCKING RING ADJUSTMENT

Play **C** (fig. 2) must be 2.5-3 mm.

The crown wheel and pinion must be adjusted (see next section) before this play can be regulated. After this:

- Loosen nut **D**.
- Tighten or loosen perforated screw **E** until the exact setting has been obtained.
- Lastly, lock nut **D**.

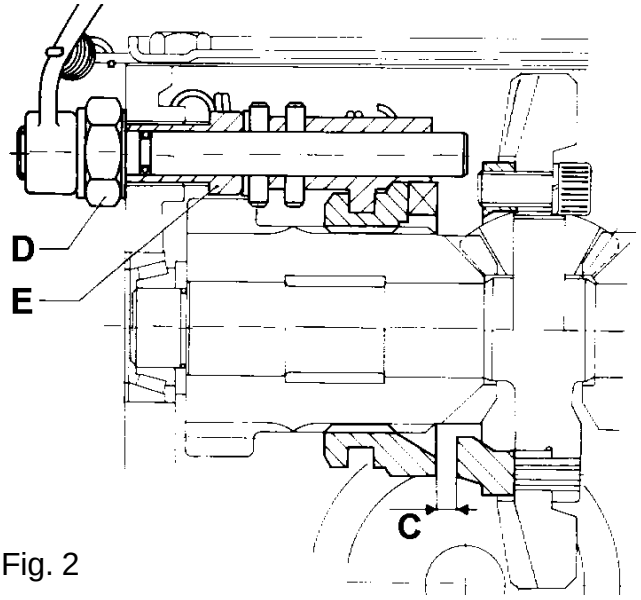
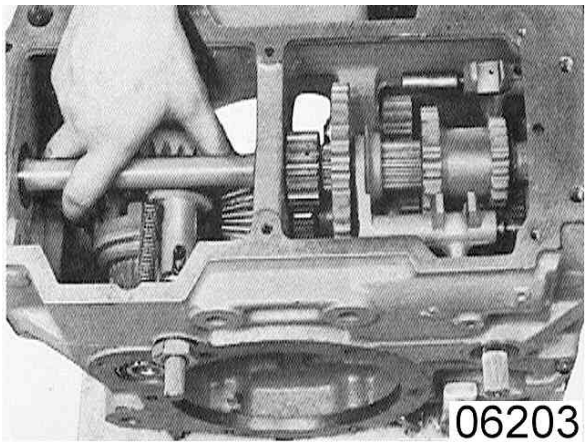
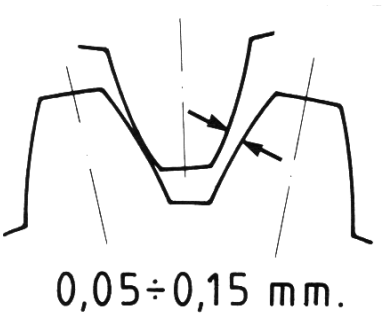


Fig. 2

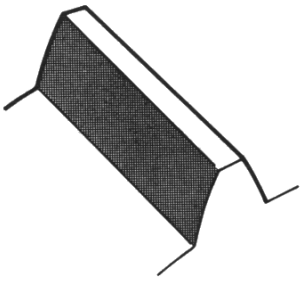


PINION - RING GEAR COUPLING

1) To achieve a good coupling, the play must be between 0.05 – 0.15 mm.
2) Correct adjustment: contact between the teeth is uniform throughout the entire length.
3) The pinion is excessively forward and works on the bottom of the tooth too much. In this case, the bevel gear pair must be replaced.
4) The pinion is excessively retracted and works on the crest of the tooth too much: in this case, add 0.2 mm shims between the bearing and housing;
5) The ring gear is too far away from the pinion and works on the crest of the tooth: in this case, remove spacers **A** (fig. 3) and then add them to an equal extent on the opposite part.
6) The ring gear is too near the pinion and works on the bottom of the tooth: in this case, remove spacers **B** (fig. 3) and then add them to an equal extent on the opposite part.



1



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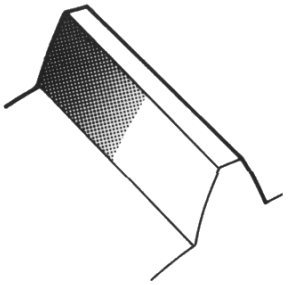

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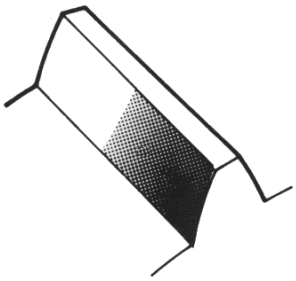

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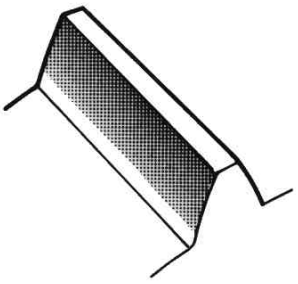

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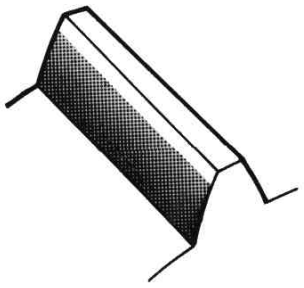

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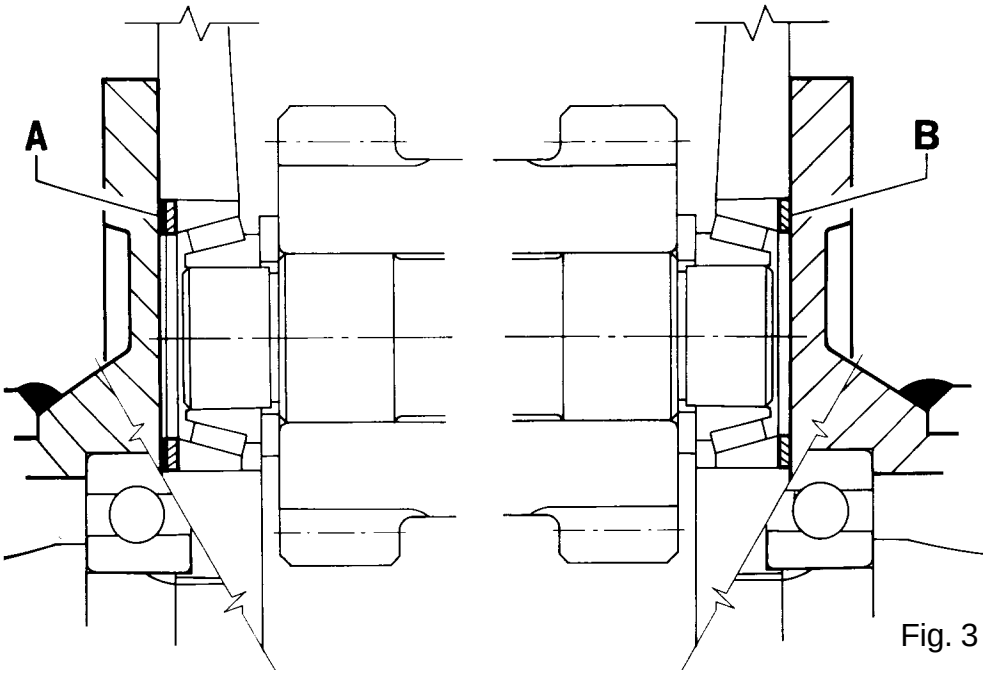


Fig. 3

When the hubs are mounted on the housing, take care of the two through holes in the housing itself: the relative screws must be wrapped in Teflon to prevent oil from leaking or oozing out (fig. 4).
The Belleville washer must be preloaded **0.8** mm in relation to the bearing surface of the housing (fig. 5).

Fig. 5

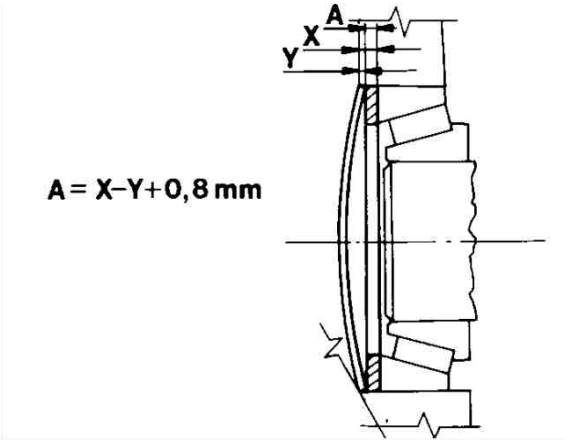
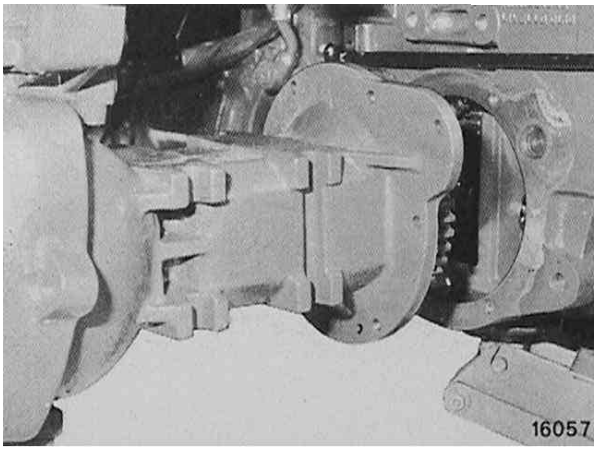


Fig. 4



VALID STARTING FROM MACHINE n° D543205

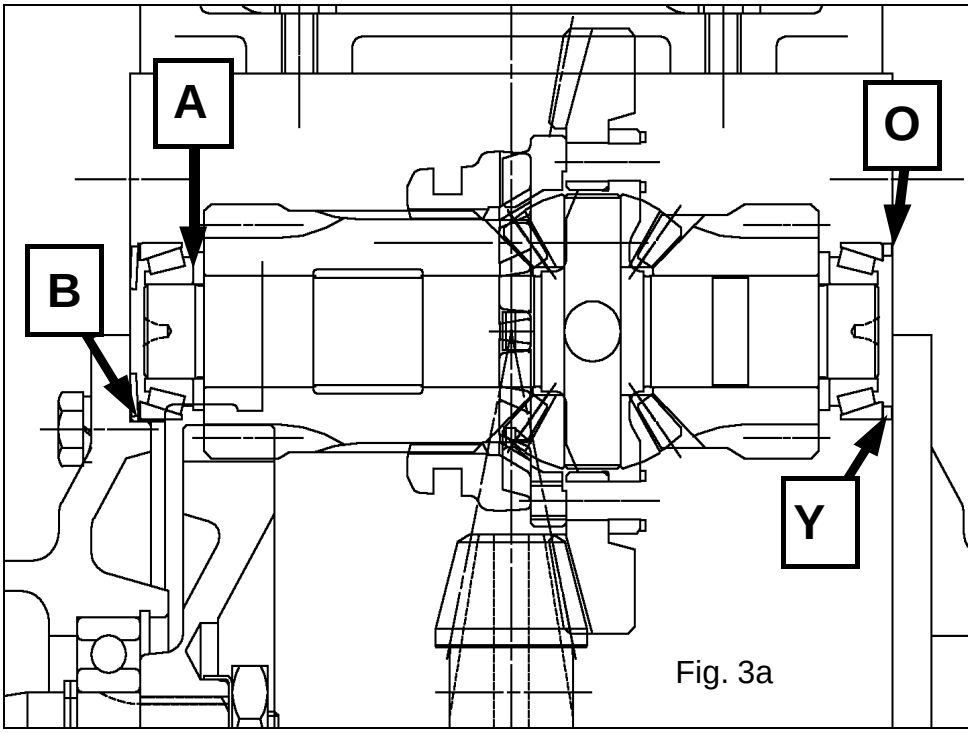


Fig. 3a

In pict. 3a is indicated the assembly of the front differential from which it is possible to find the correct placing of the spacers **A**, undulated spacers **B**, shimming spacers 0,1 - 0,2 - 0,3 with letter **O** and spacer 40x46,7x2,5 with letter **Y**.

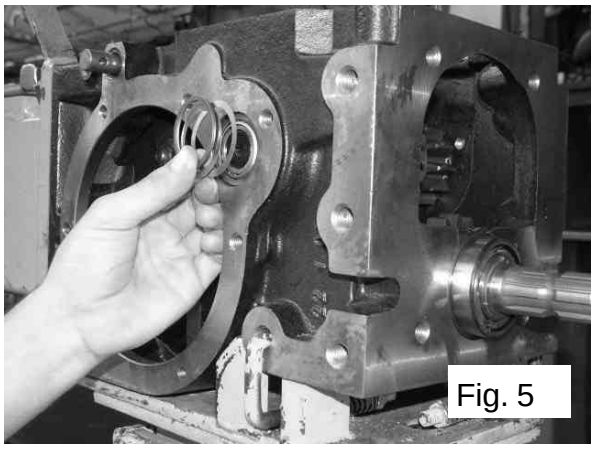


Fig. 5

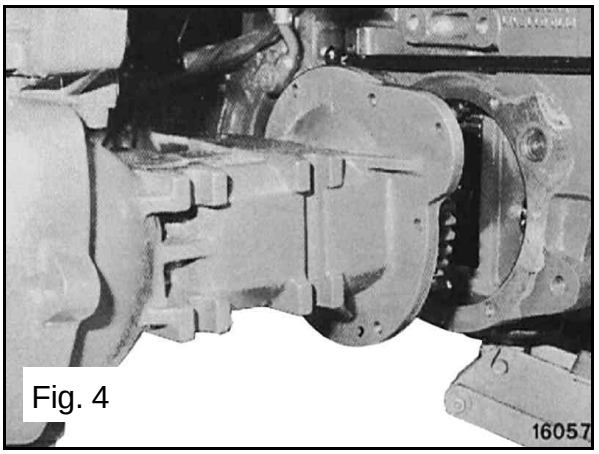
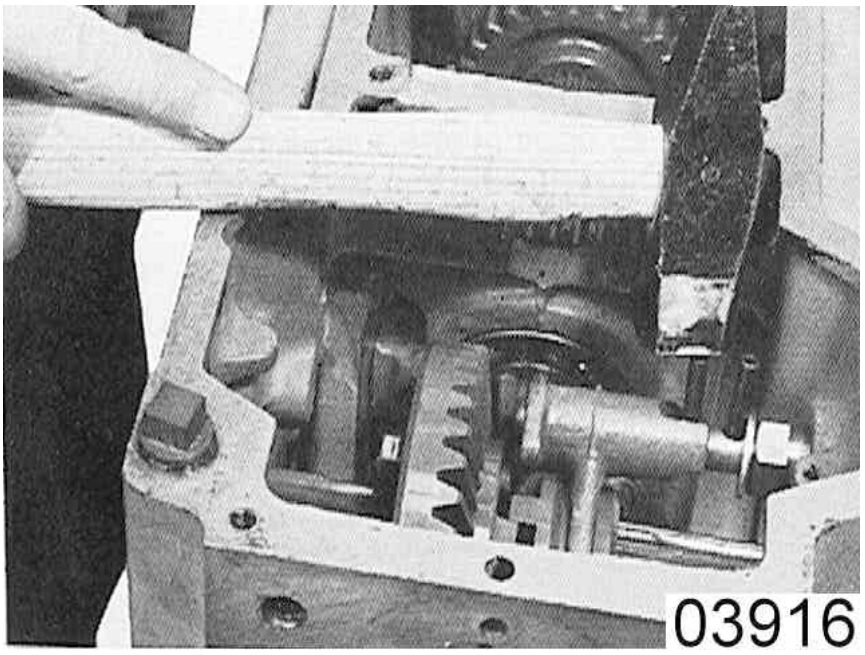


Fig. 4

Take care of the position of the notch in the spring pins as it must not touch the operating surfaces (fork and washer) (fig. 6).

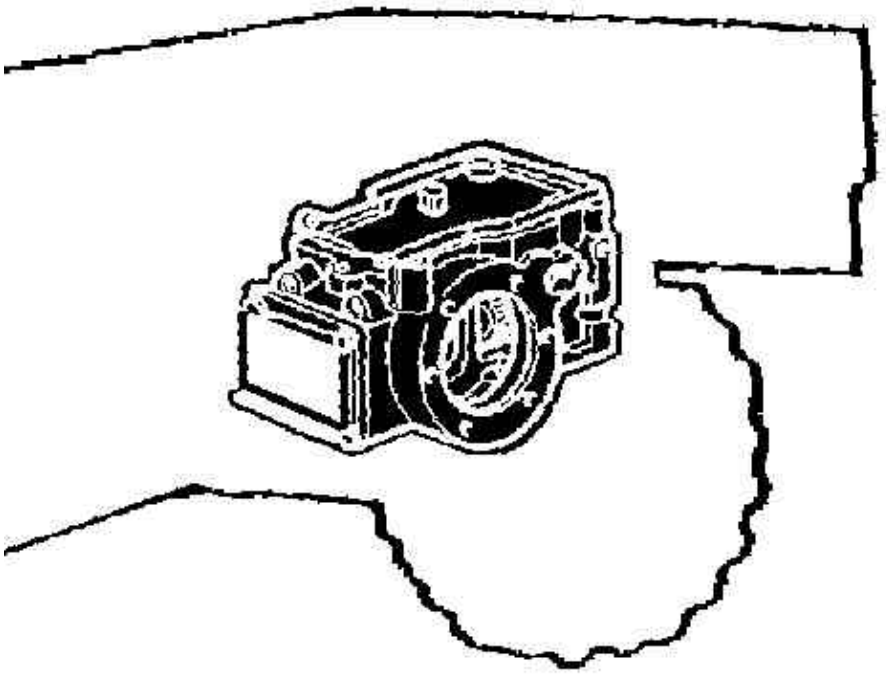
Fig. 6



DRIVING TORQUES

M 10 x 35 screw that fixes the bevel gear pair-shaft	59	Nm
M 10 x 25 fixed locking ring fastening screw	44	Nm
M 20 x1.5x9 locking guide retainer nut	49	Nm
M 10x30 hub fixing screw	54	Nm
M 10x35 hub fixing screw	54	Nm

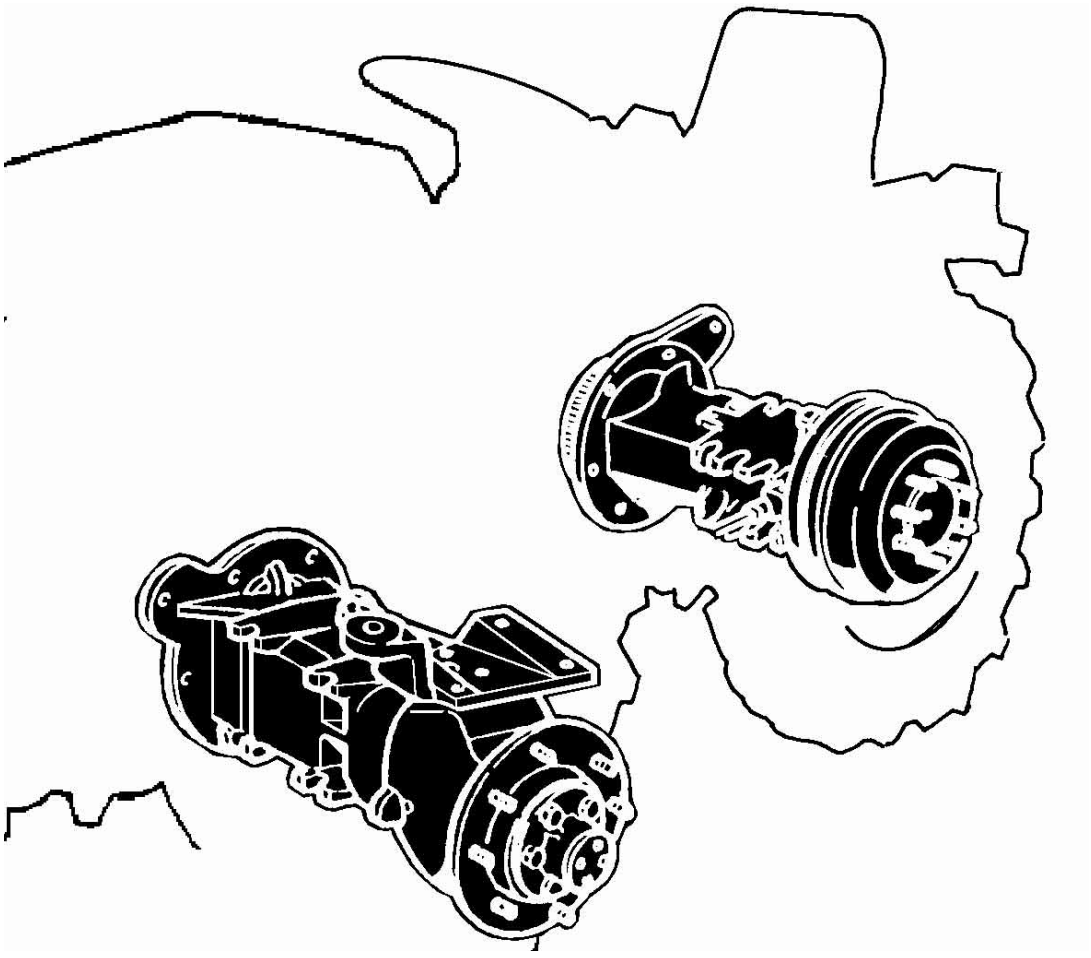
REAR DIFFERENTIAL



REAR DIFFERENTIAL

COMPLY WITH THE INSTRUCTIONS GIVEN FOR THE FRONT DIFFERENTIAL WHEN MOUNTING THE REAR DIFFERENTIAL.

FRONT FINAL DRIVE



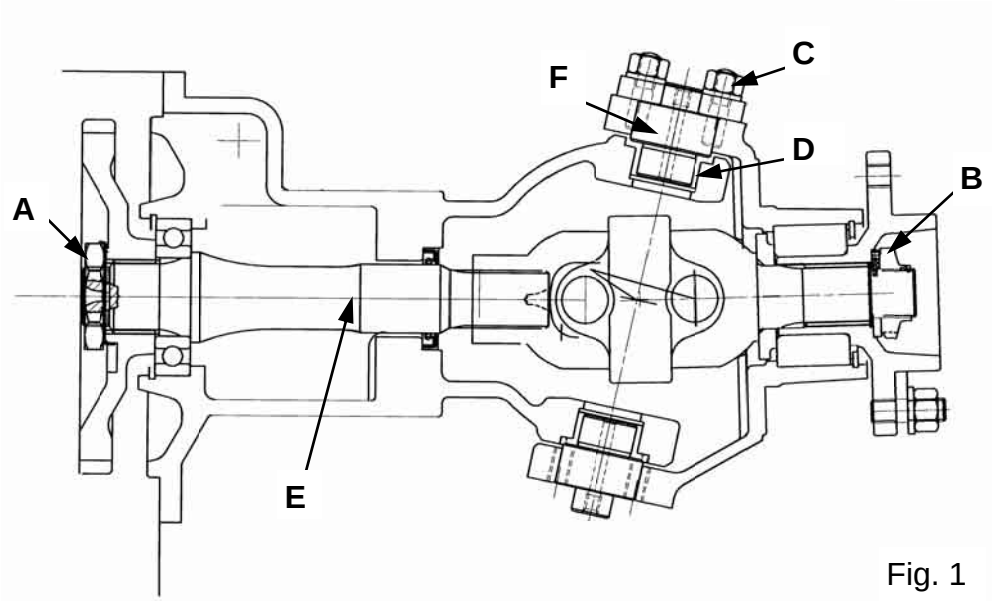


Fig. 1

Mount shaft **E** of (fig. 1) and tighten the ring nut **A** to (M20=15Kgm-M25=20Kgm) torque as shown in the photos on the right.
Punch the ring nut and make sure that the metal edge enters the groove on the shaft (fig. 2).
Mount the coupling, the spacer, the bearing and wheel hub. Tighten ring nut **B** to a 14 Kgm torque and spread Loctite 270 thread-lock on the thread.
Remember that the front axle shaft with lh threading must be mounted on the rh front hub while the front axle shaft with rh threading must be mounted on the lh front hub.

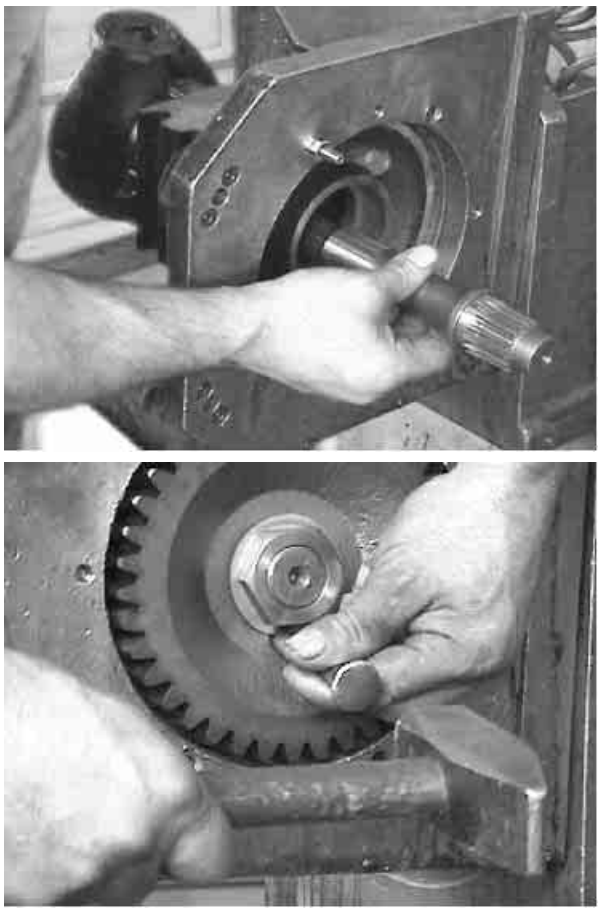


Fig. 2

Fig. 4 shows the correct sequence to comply with when mounting the front wheel pivot pins, part **F**.

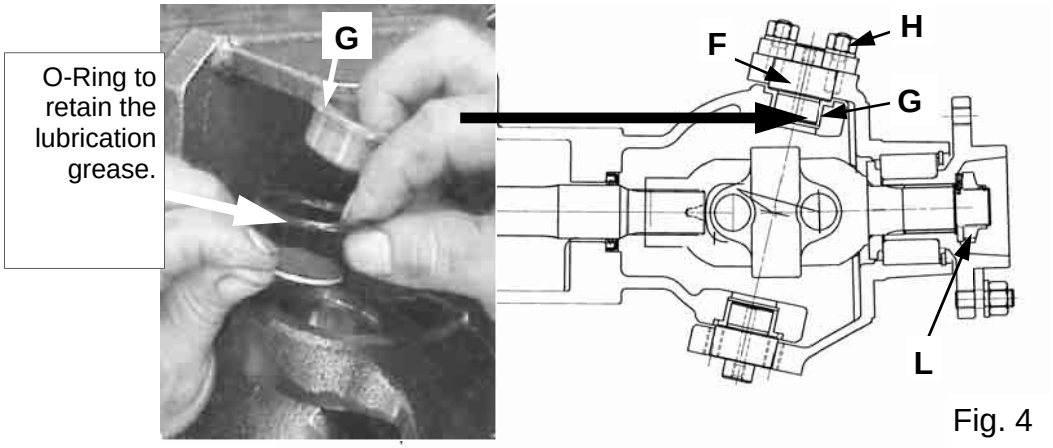


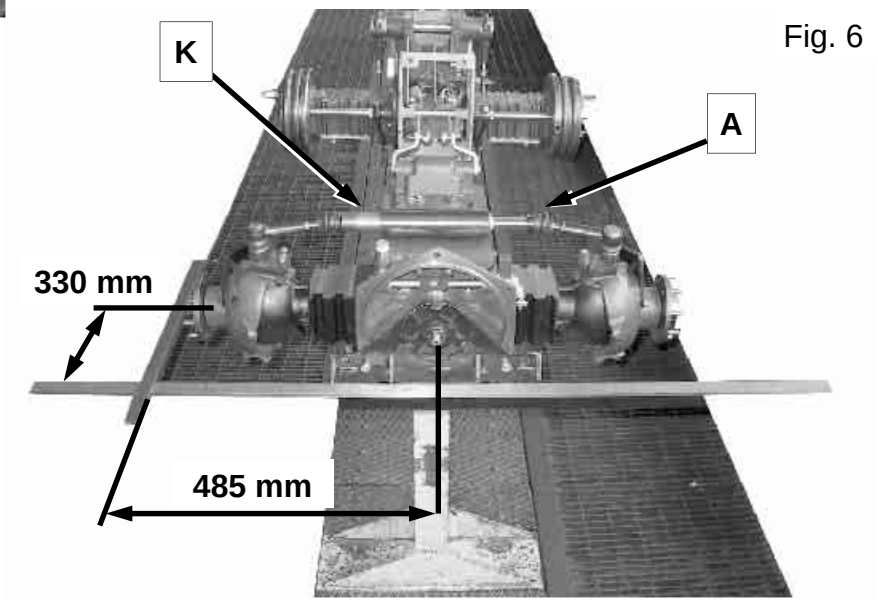
Fig. 4

Bushes **G** (fig. 4) must be replaced if the play between bush **G** and pin **F** exceeds 0.3-0.4 mm. The stud bolts that lock pivot pin **H** must be tightened to a 6 Kgm torque (fig. 4).
Stud bolts **H** and the ring nut **L** of (fig. 4) must be locked with Loctite Type 270 thread-locker. Ring nut **L** must also be held in place by punching the safety lip. To complete the front hub assembly, mount the grease nipples of fig. 5 and adequately grease the entire mechanism.

Fig. 5

HOW TO ADJUST TOE-IN:
After having assembled the entire front axle as shown in (fig. 6), arrange the geometry of the front axle in order to correctly adjust the toe-in of the front spindles to ensure that the front tyres are worn in a regular way.
Mount spacer **K** of which the dimensions are given on the steering cylinder (first on the left and then on the right side).
Move the spindle control coupling up against the spacer on the cylinder (after having unscrewed the thread of the coupling in order to achieve a dimension of 25-26 mm).

Fig. 6



After making the distances of (fig. 6) spread Loctite 270 thread locker on the threads of the joints and tighten the lock nuts fully on the joints in order to block the adjustment you have made.
The steering cylinder is fastened with M10 stud bolts tightened to 6 kgm and locked with Loctite 270 thread locker.

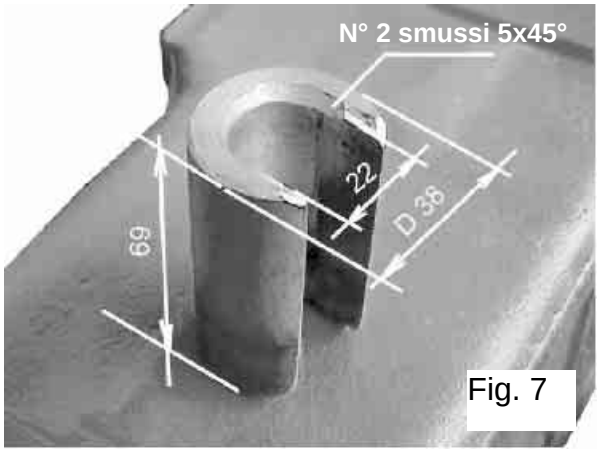


Fig. 7

Fig. 7 shows the dimensions of the spacer K to position on both sides of the steering clinder to adjust the toe-in.

Front wheel toe-in adjustment with the tractor fitted (for Mod. RS- R)

The front wheel toe-in is correct when it respects the measurements shown in fig. 8

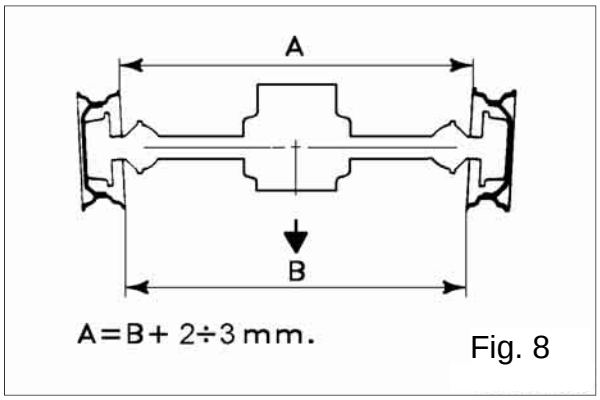
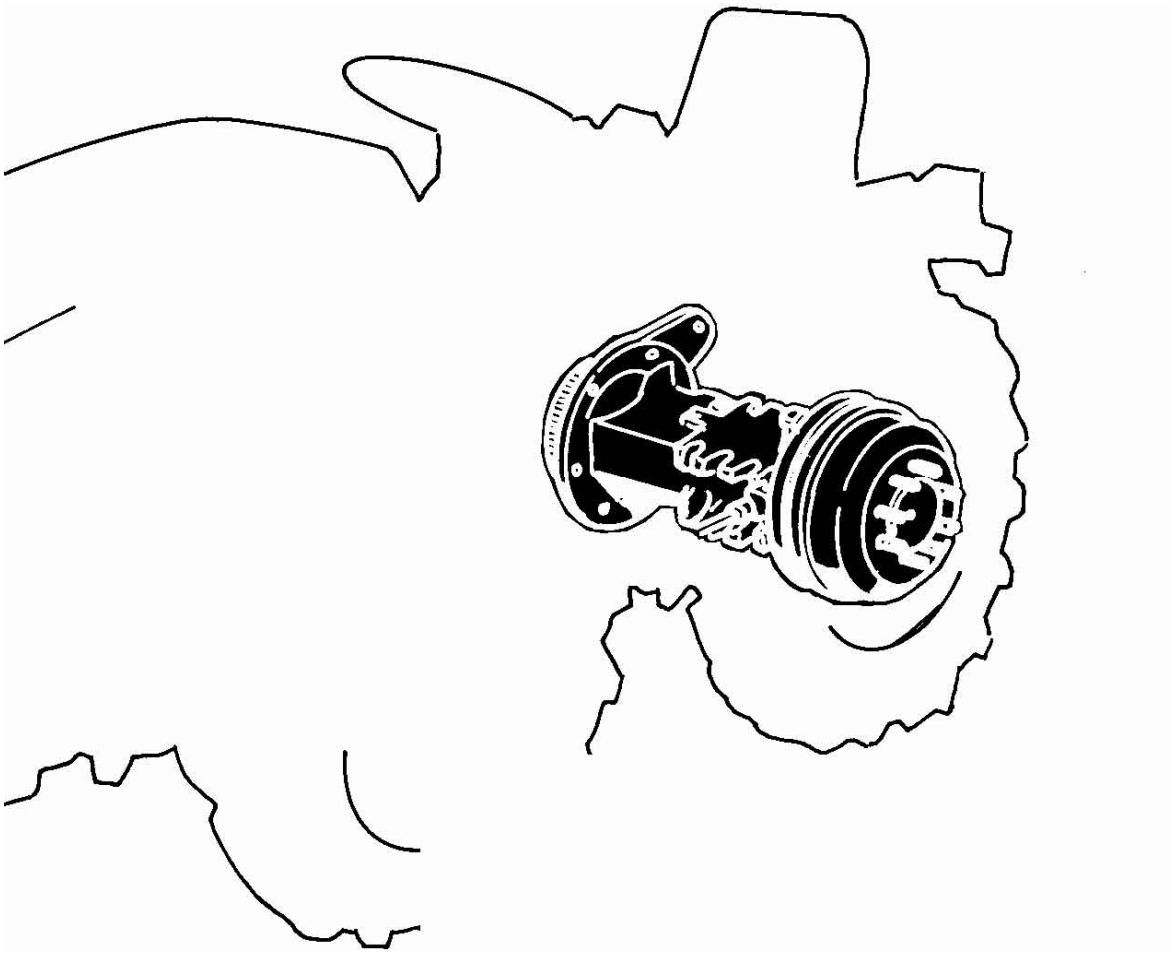


Fig. 8

TIGHTENING TORQUES	kgm
Bolt securing hub M10 x 35	6
Ring nut fixing wheel driving gear M 20	15
Ring nut fixing wheel driving gear M 25	20
Ring nut fixing wheel axle-shaft	14
Stud bolt fixing joint flange M 10	6
Nut fixing wheel to axle-shaft M 12	8

REAR FINAL DRIVE



No particular operations are required when the rear final drives are mounted: Tighten the ring nut **A** to (M20=15Kgm-M25=20Kgm) torque (fig. 1) and then punch it so that the metal lip enters the slot on the axle shaft.

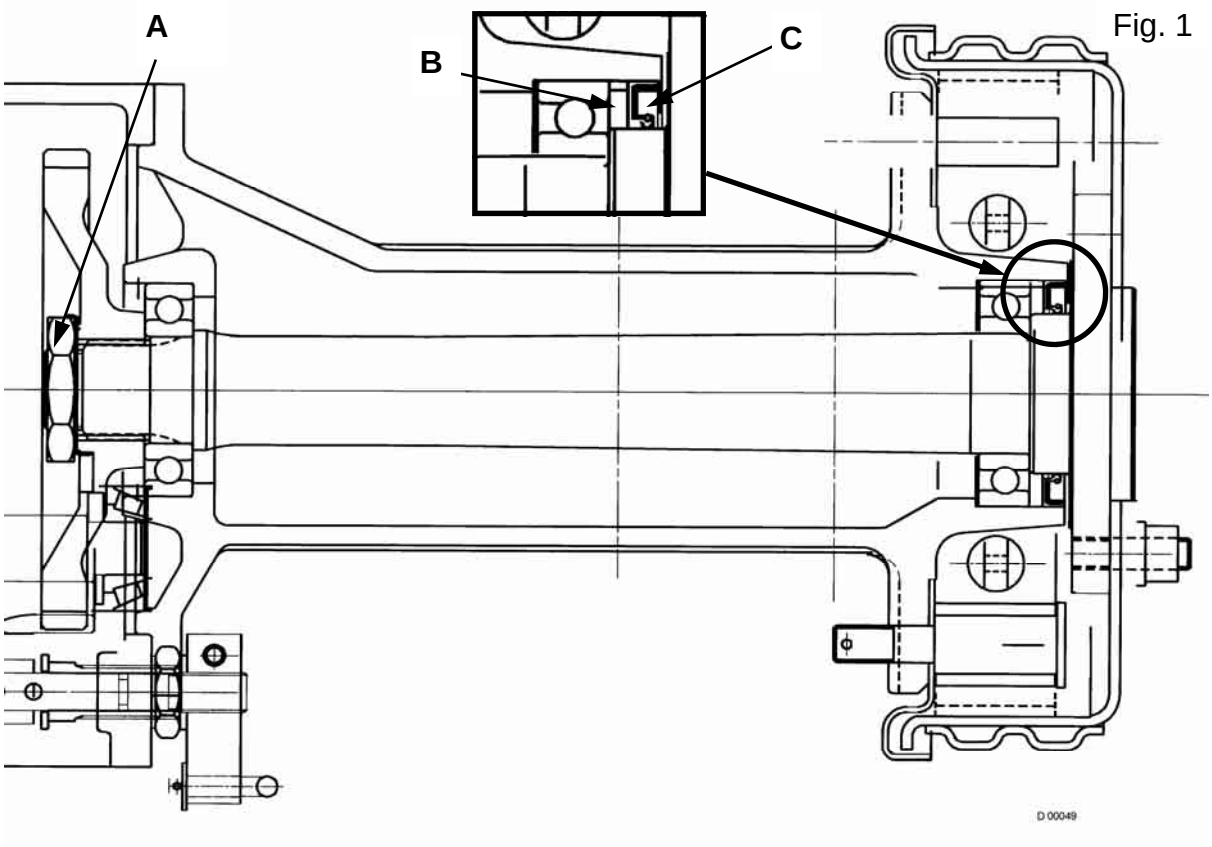


Fig. 1

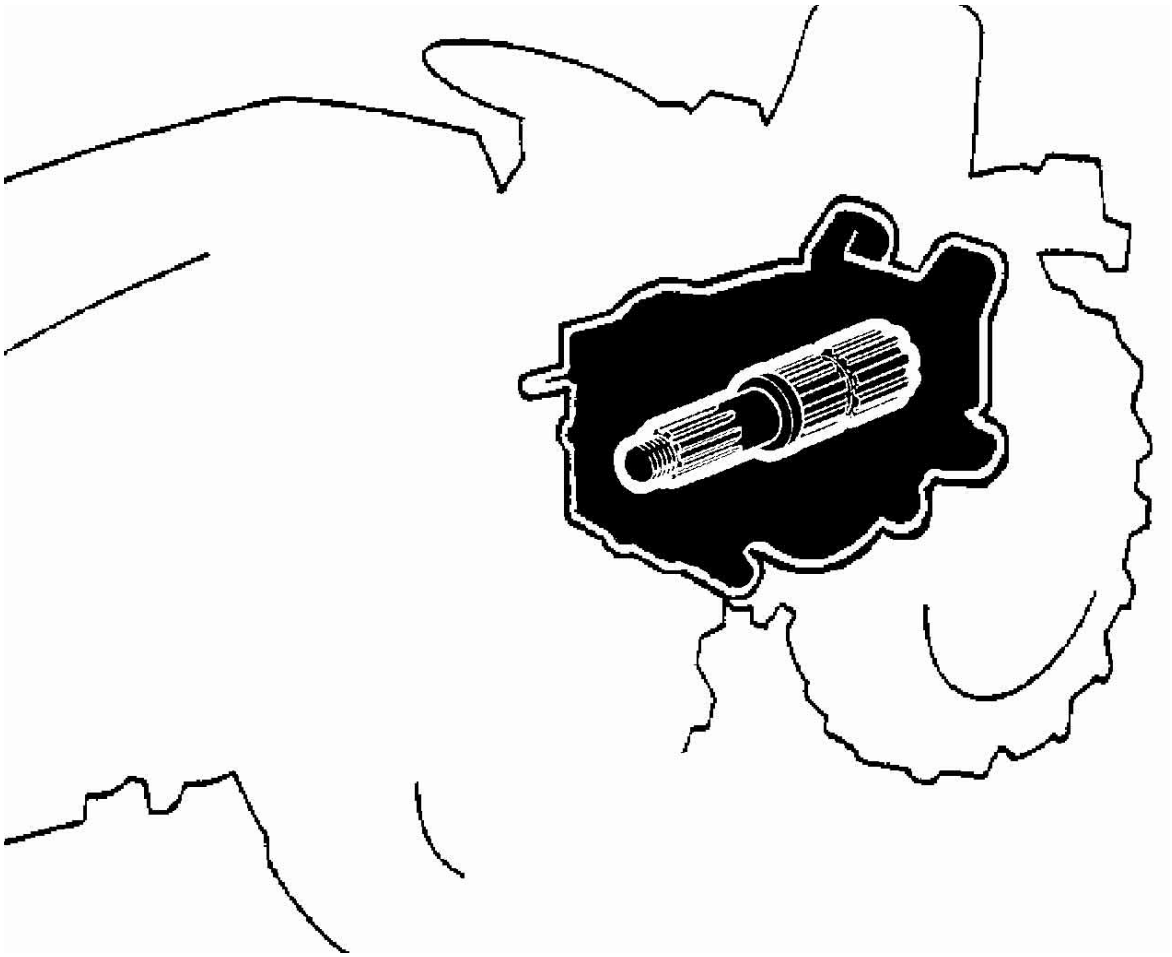
Do not forget to position spacer **B** before mounting oil retainer **C** (fig.1).

Punch the ring nut after havinbg torqued it to the indicated load (fig. 2).

Fig. 2

DRIVING TORQUE	Kgm
M10x35 screw that fixes the hub to the rear diff.	6
M12 screw that fixes the wheel to the axle shaft	8
Wheel control gear fixing nut M20	15
Wheel control gear fixing nut M25	20

REAR POWER TAKE-OFF



REAR PTO FORK ADJUSTMENT

- Set the selector rod to **S** (synchronized) as shown in (fig. 1).
- Align the two gears and lock the fork on the rod.
- Make sure that there is play in the sliding gear end of travel points on a level with the **S** (synchronized) and **N** (normal) selection settings.

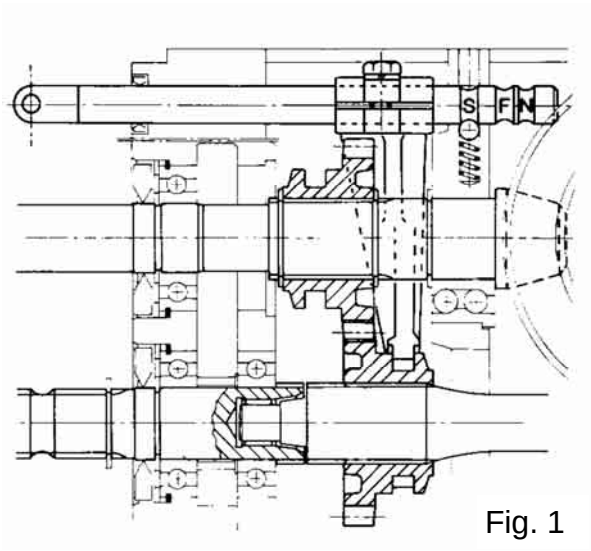
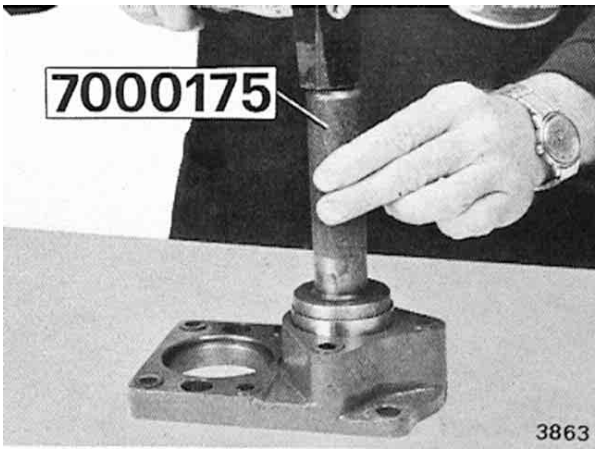


Fig. 1



REAR PTO RING NUT ADJUSTMENT

The following operations must be carried out to correctly preload the taper bearings: (fig. 2)

- Demount the complete PTO cover (part **B**).
- Remove the retainer and tighten the ring nut until the play has been eliminated.
- Now unscrew the ring nut and retighten it with the aid of a torque wrench with a 19 Nm setting (part **C**).
- Fit the retainer back on the ring nut and remount the PTO cover.
- Do not forget spacer **A** behind the oil retainer.

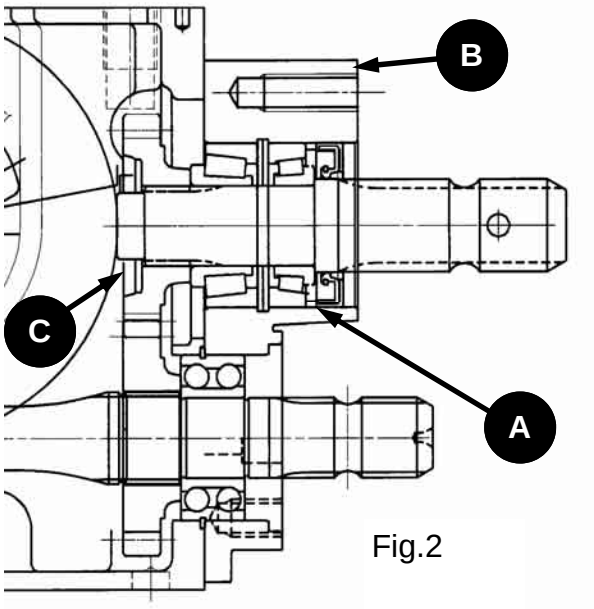


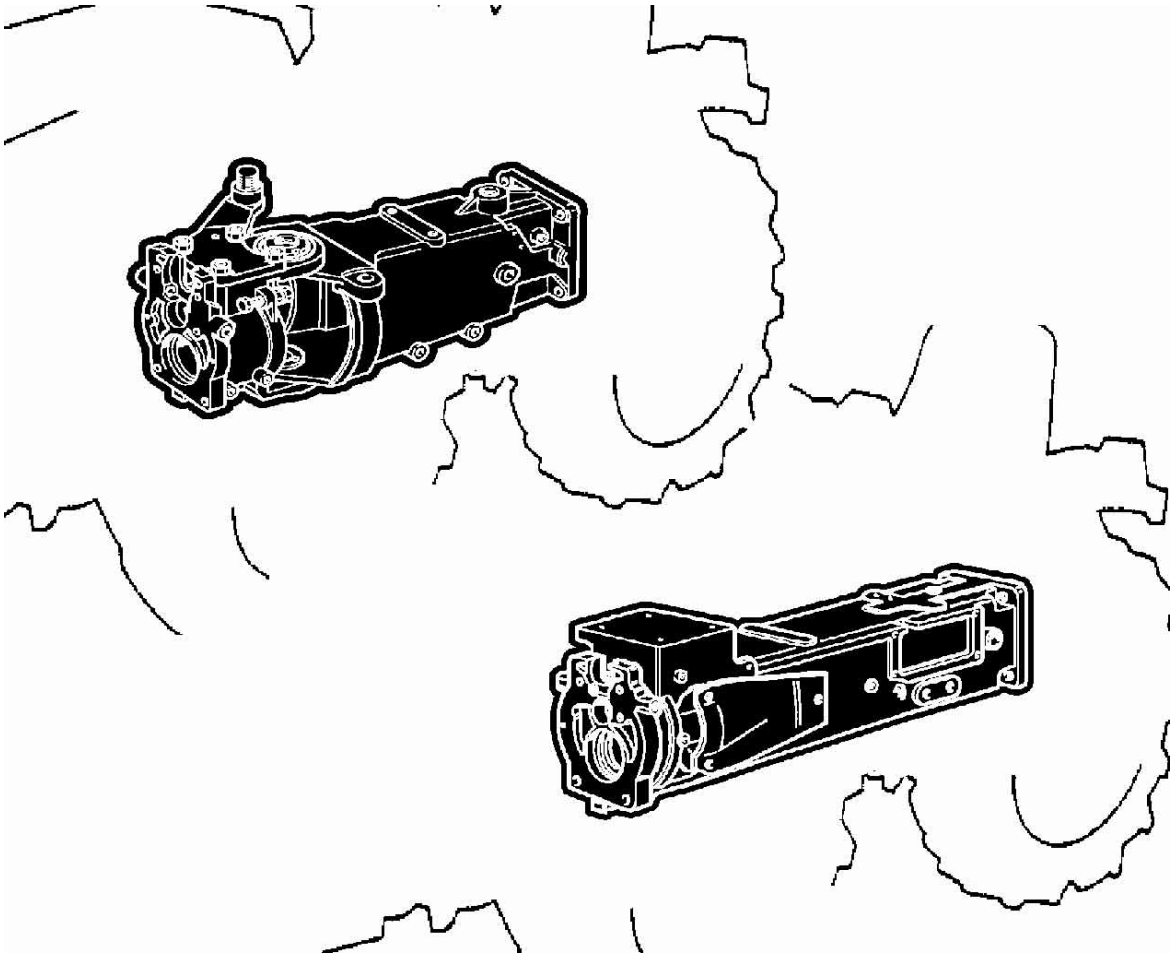
Fig.2

DRIVING TORQUES

M 25x1.5 standard PTO shaft ring nut	19 Nm
M 14x35 PTO cover screw	118 Nm
M 12x25 PTO cover screw	79 Nm
M 8x25 PTO fork screw	24 Nm
M 8x30 PTO control lever screw	19 Nm

The rear differential and rear hubs contain about 8.5 kg of oil type **AGIP ROTRA MP SAE 80W/90**.

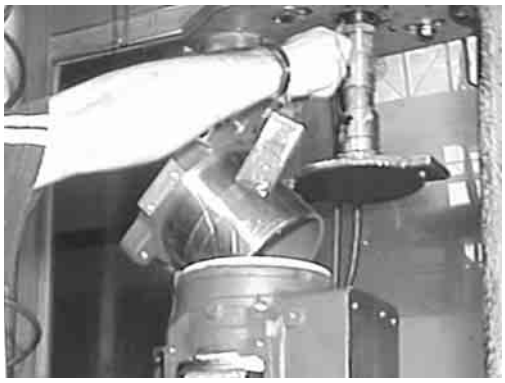
CENTRAL PIVOT



The sequence illustrated by the photos on the right shows how the central pivot is mounted.
The sheared plastic bushes must be inserted inside the pivot. Their cuts must not be mounted aligned with each other but staggered to prevent the lubricating grease from oozing out.
The pivot must be assembled with a press and relative plug able to exercise a thrust of at least 3500 N.
Once the pivot has been assembled with the press, check to make sure that the circlips enter their housing without jamming, as illustrated in (fig. 1).

Now install the relative protection ring on the circlip and tighten the two M6 screws to a 30 Nm torque after locking them with Loctite 270 thread-locker as shown in (fig. 2).

After having fitted the two couplings in the central pivot and remembering that the top coupling is the smaller one, turn both couplings so that the fine keying points towards the gearbox (fig.3).



Connect the central pivot to the gearbox and front differential and tighten the screws to a 150 Nm torque value.
Mount the grease nipples and lubricate until grease oozes from the bushes.
Turn the pivot with the aid of a hoist or jack to make sure that the pivot turns correctly.

Mount the side plates to protect the couplings.

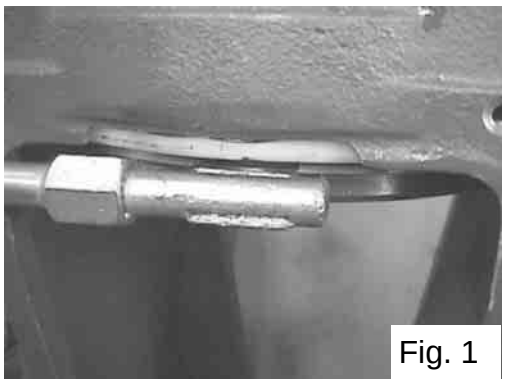


Fig. 1

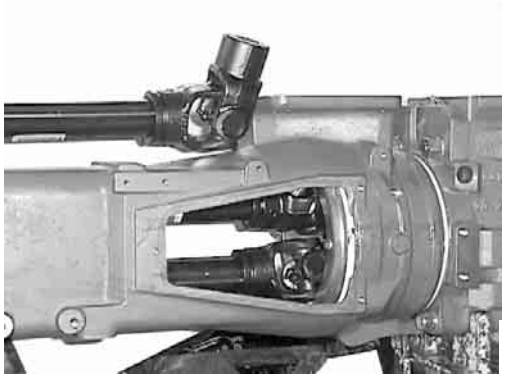


Fig. 3

Fig. 2

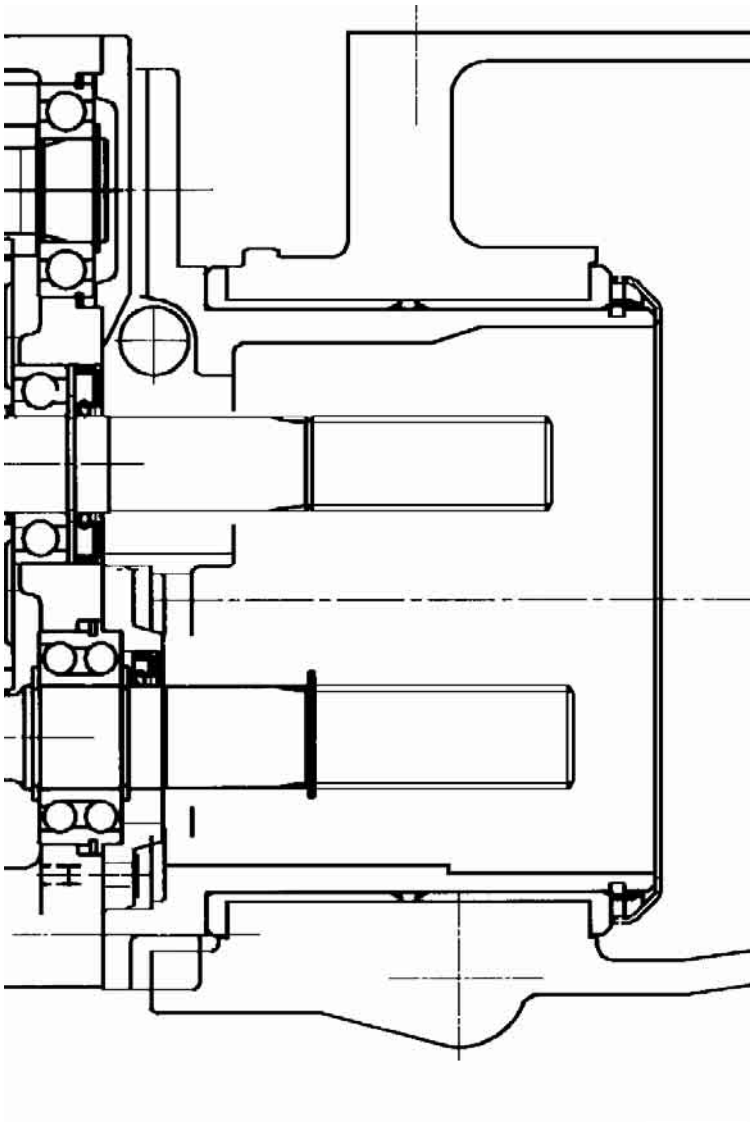
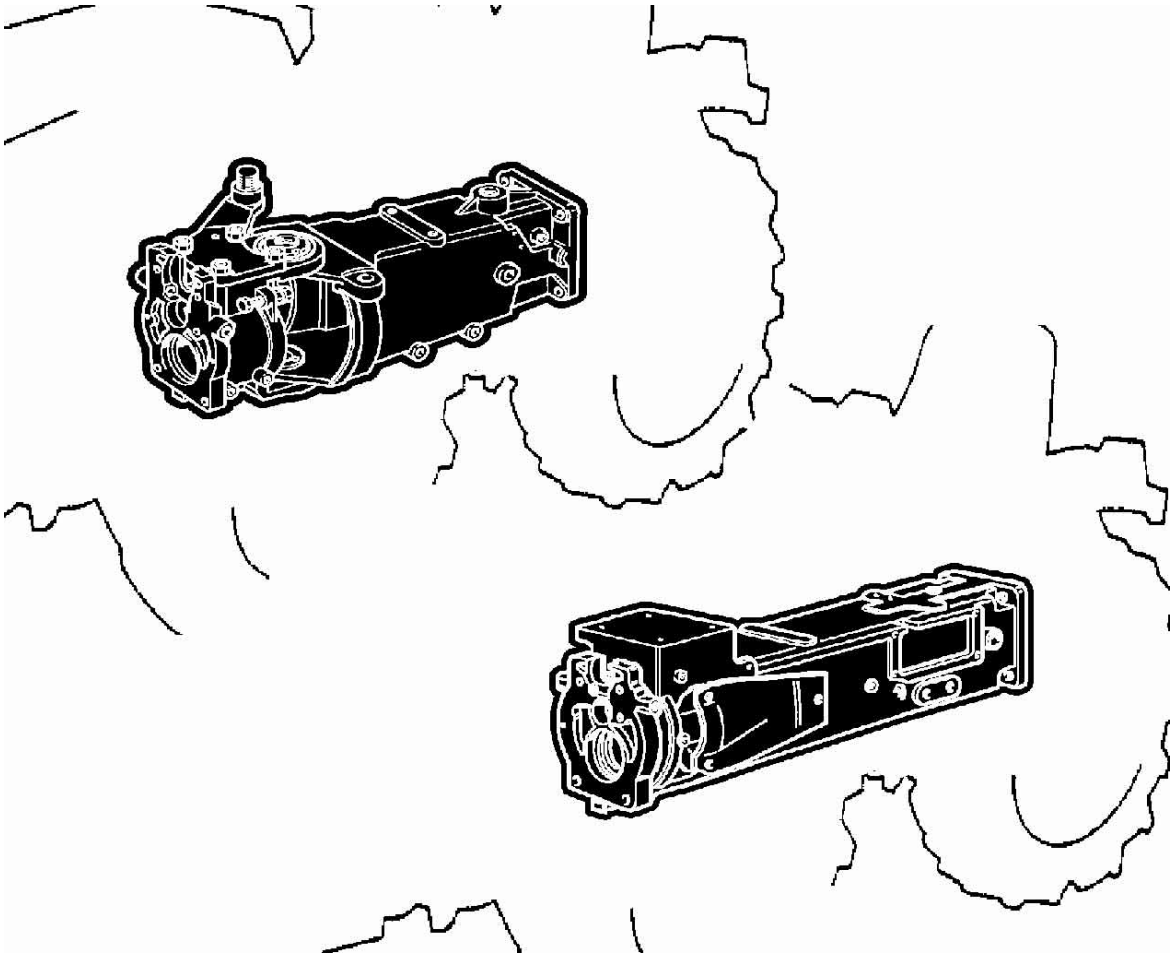


Fig. 4

Fig. 4 illustrates the complete pivot assembly.
When the play on the central pivot in the tractor exceeds 0.8 mm through wear on the plastic bushes, these latter must be replaced by working through the sequence illustrated on the previous page in reverse order.
To ensure that the plastic bushes last the right length of time, it is important to comply with the lubrication frequencies specified in the Operation and Maintenance manual.

SN VERSION



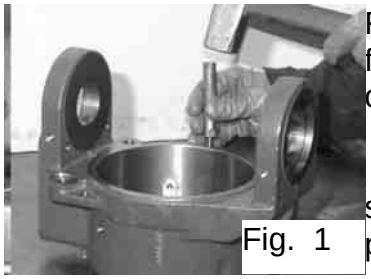


Fig. 1

Fig. 1 shows the initial phase of fitting the pivot on the central pivoted version.

In Fig. 1 and 2 the pins are inserted in their seat to prevent the plastic bushings from turning.

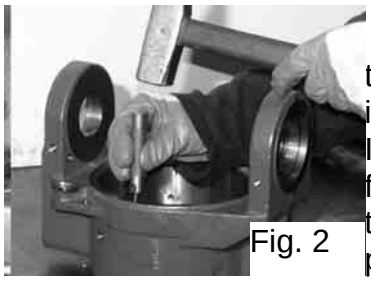


Fig. 2

In Fig. 3, before getting positioned in the castings, the bushings are siliconed.
In Fig. 4 the bushing is positioned first on the pivot side and in Fig. 5 the bushing on the other side, repeating the same operations and centring the bushings on the pins.

Fig. 3

In Fig. 7, after completing assembly (see Fig. 6), the bushings are lubricated with mineral oil and the central pivot is then inserted (see Fig. 8). The bushings remain integral with the outside and the cast iron of the central pivot rubs on the plastic bushings that, with the pins, are a single body with the outer casting.
To insert the central body inside the plastic bushings, a press is necessary (as illustrated in Fig. 9) that is able to exert a force of at least 500 kg.

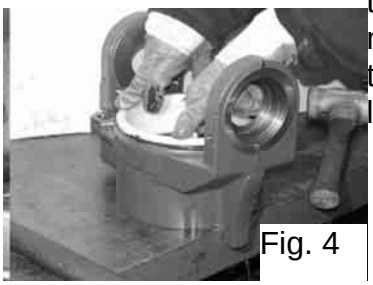


Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

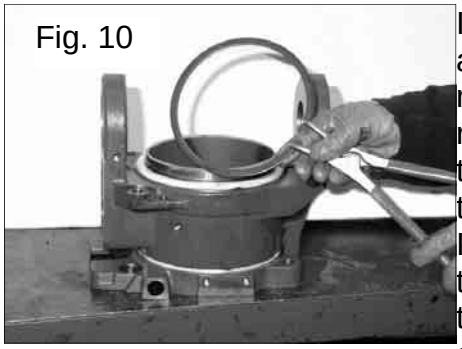


Fig. 10

In Fig. 10, with the aid of a pair of snap ring pliers, the snap ring is fitted to close the pack between the two flanges.
In Fig. 11, using a tool, you measure the gap between the ends of the snap ring

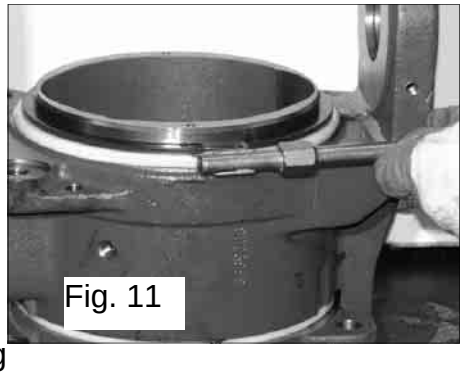


Fig. 11

to be sure it has gone into its seat properly. This operation can be avoided by assuring yourself that the snap ring is perfectly in the throat.

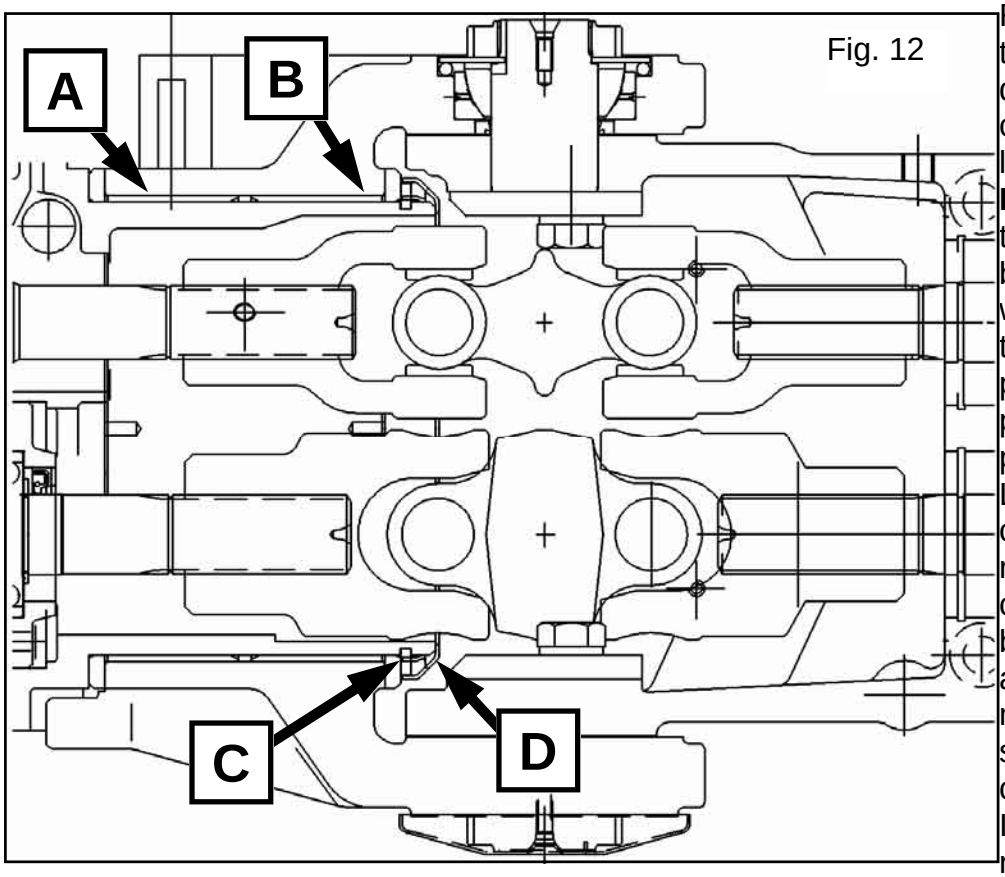


Fig. 12

Fig. 12 shows the assembly drawing of the central pivot; letters **A** and **B** indicate the two plastic bushings that were positioned in the pivot on the preceding page.
Letter **C** indicates the snap ring that closes the bushings pack and that determines the positioning of the components.
In Fig. 13 the retaining ring is fitted to prevent the snap ring from accidentally coming out of its seat. This ring is indicated by letter **D** on the assembly drawing of Fig. 12. In fig. 14, the screws securing the retaining ring are tightened to 3 kgm.

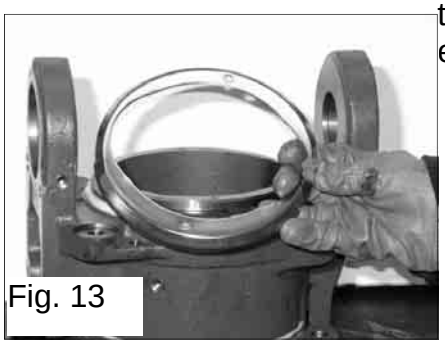


Fig. 13


Fig. 14

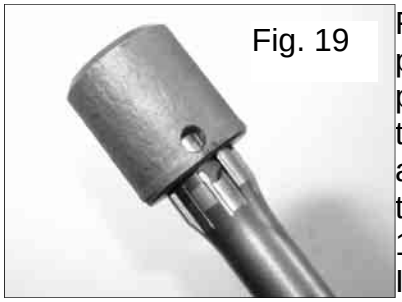


Fig. 19

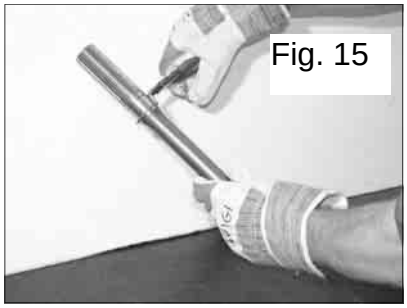


Fig. 15

Fig. 15 shows the start of preparation of the shafts to place in the pivot flanges: the snap rings and bearings are positioned using the tools shown in Fig. 15 and 16.
In Fig. 17 and 18 the shaft preparation continues, completing fitting the bearings and snap rings.

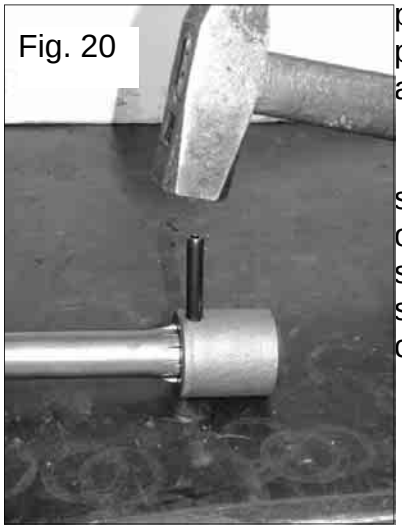


Fig. 20

In Fig. 19-20 and 21 the splined sleeves are keyed onto the other side of the shafts and in Fig. 22 the two shafts are inserted into the casting.


Fig. 16


Fig. 21


Fig. 17

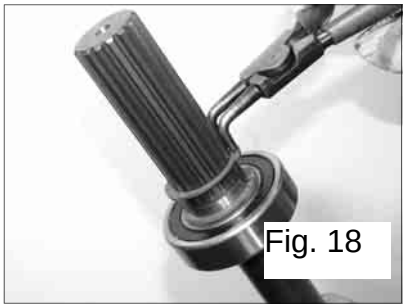


Fig. 18

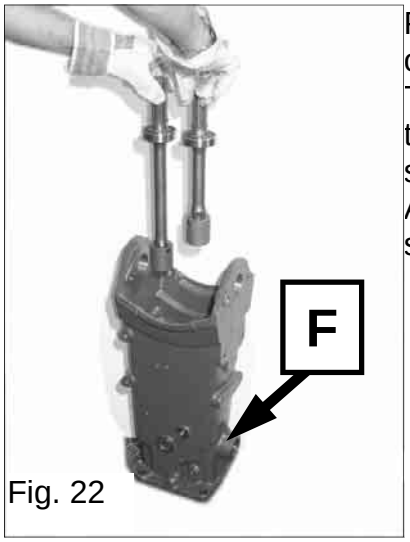


Fig. 22

Pay attention to the position of the shafts in the casting. The shorter shaft goes on the side where there is the stud labelled with the letter **F** in Fig. 22.
After inserting the shaft bearings into the casting, fit the snap ring to lock the shafts in position.

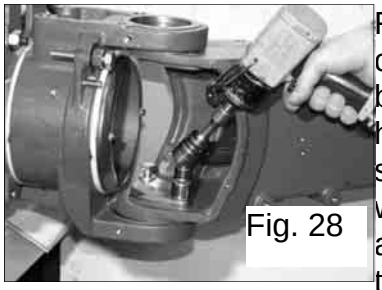


Fig. 28

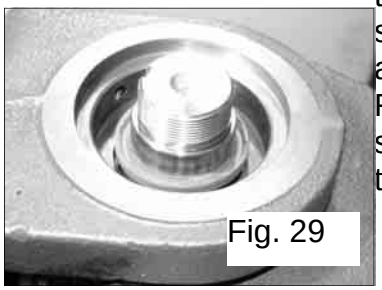


Fig. 29

Fig. 23 shows part of the pivot containing the shafts ready to be assembled to the bushing-holder flange. This union is shown in Fig. 24 and made with two pivot pins, a lower one and an upper one. In Fig. 25 the two pins are placed in their seats with the aid of a punch and rubber mallet, as shown in Fig. 27; tightening the two screws to 5 kgm positions the two pins correctly.

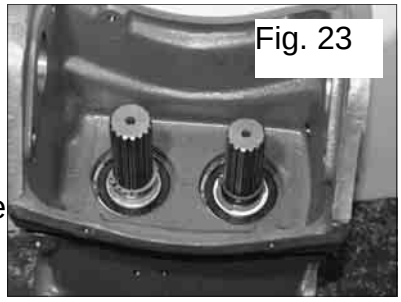


Fig. 23

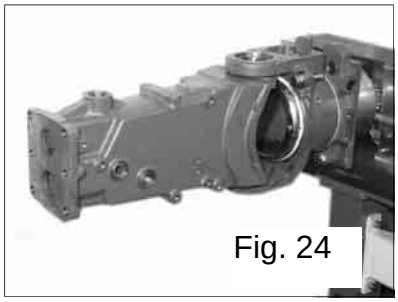


Fig. 24

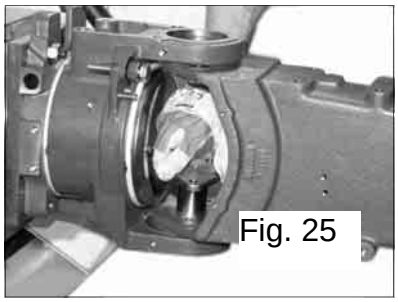


Fig. 25

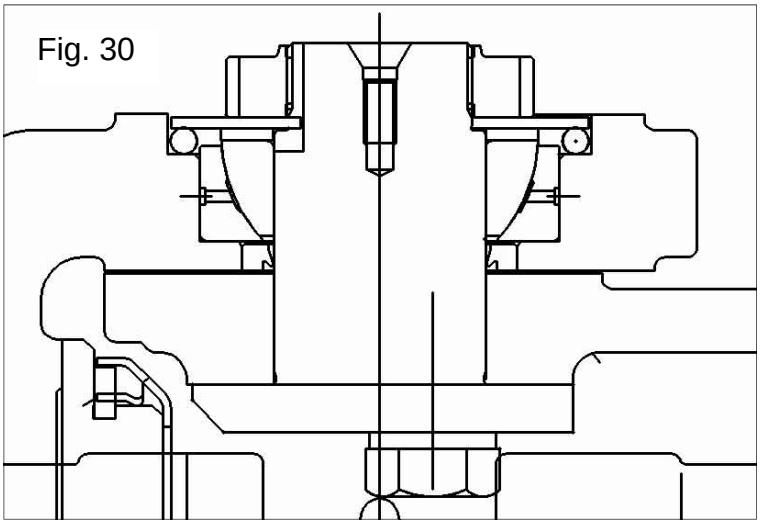


Fig. 30

Fig. 30 shows the assembly drawing of the pins and bearings forming the centre of rotation between the two flanges. In Fig. 29 the lower seal is fitted on the pin to contain the grease to lubricate the ball bearing.


Fig. 26


Fig. 31

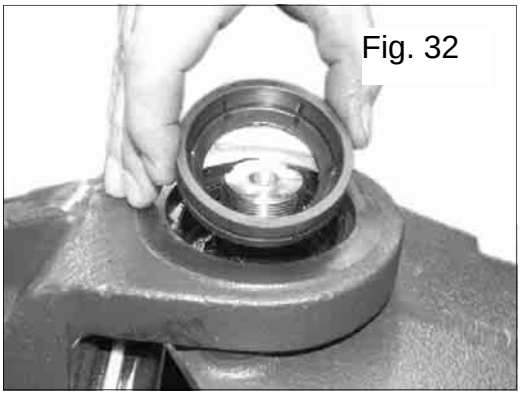


Fig. 32

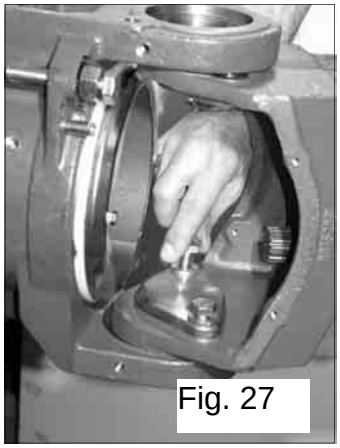


Fig. 27

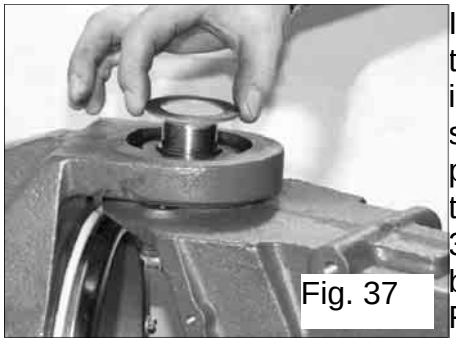


Fig. 37

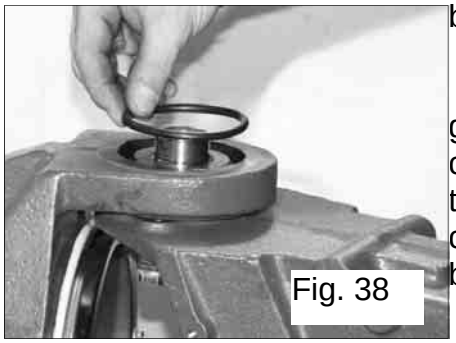


Fig. 38

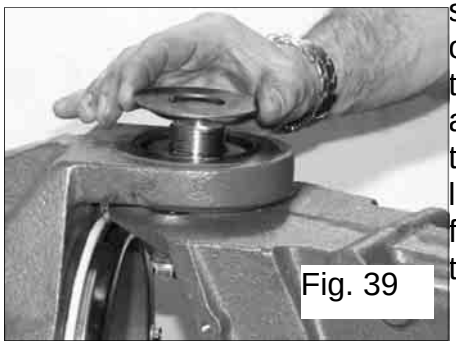


Fig. 39

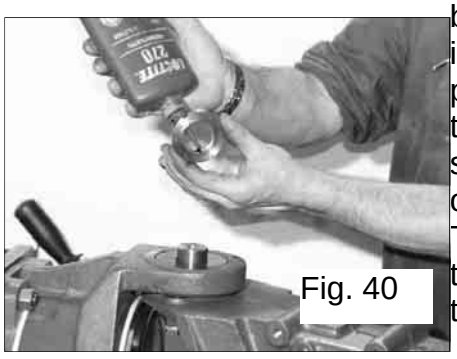


Fig. 40

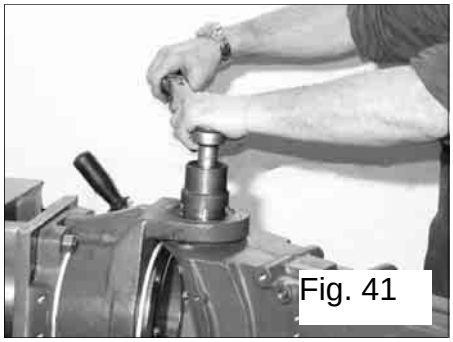


Fig. 41

In Fig. 31 (on page 8) with the aid of a block, the seal is positioned inside the seat, then in Fig. 32 (on page 8) the outer shell of the bearing is fitted. In Fig. 34 the inner shell of the bearing is fitted, which in Fig. 35 is positioned with the aid of a mallet and block.

In Fig. 37, after smearing grease on the top of the central body of the bearing, the spacer is fitted, which can be seen in the assembly drawing of Fig. 30.

In Fig. 38 the O-ring is positioned to provide the outer seal; lastly, in Fig. 39 the cover closing the pack and the ring nut tightened to 12 kgm, smeared with loctite, concludes the pack forming the centre of rotation of the pivot.

The ring nut should then be punched as illustrated in Fig. 42 on the following page, taking care to strike the edge of the ring nut inside the groove obtained on the central pin.
This operation prevents the ring nut from accidentally coming loose.

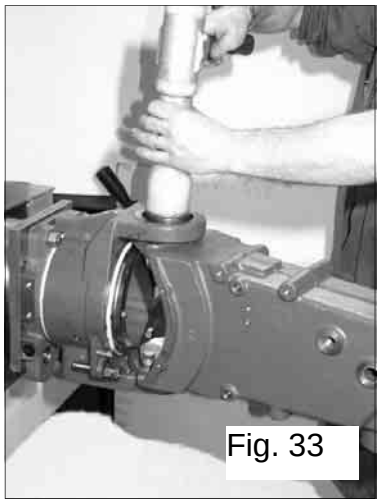


Fig. 33

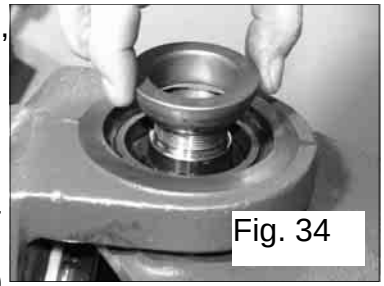


Fig. 34

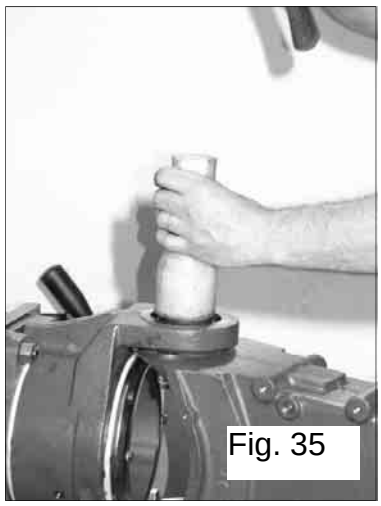


Fig. 35

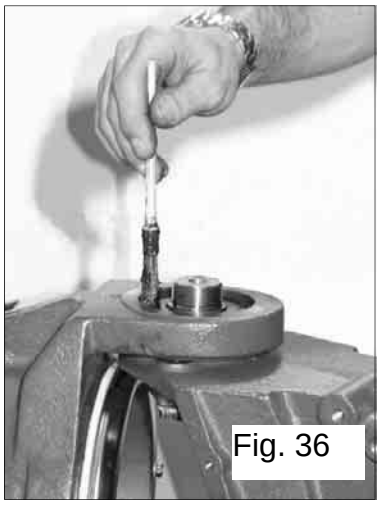


Fig. 36

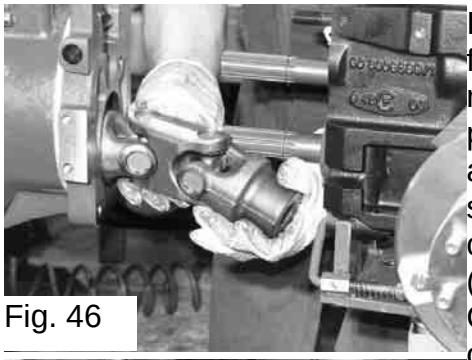


Fig. 46

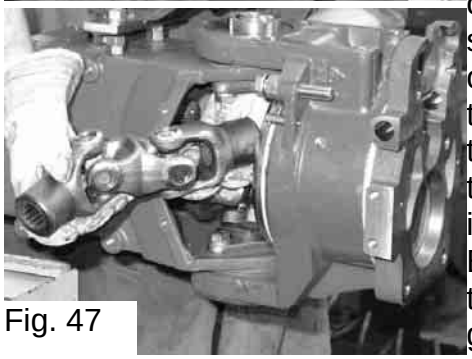


Fig. 47

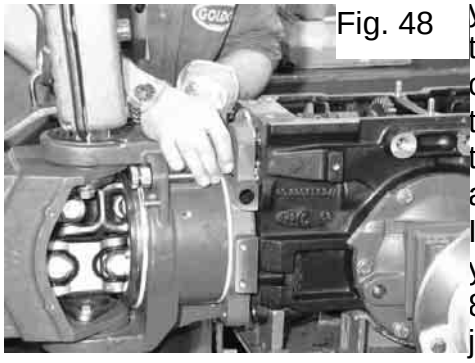


Fig. 48

In Fig. 43, after you finish punching the ring nut, fit on a protective cover and tighten the screw locking the cover to 3 kgm (see Fig. 44).
Carry out the same operations now described also for the other pin and for the other bearing to then finish fitting the pivot as shown in Fig. 45.
Before assembling the pivot to the gearbox casing, you should position the transmission couplings inside the pivot as illustrated in Fig. 46 and in Fig. 47.
In Fig. 48 and 49 you then tighten to 8 kgm the screws joining the pivot flange with the gearbox casing.

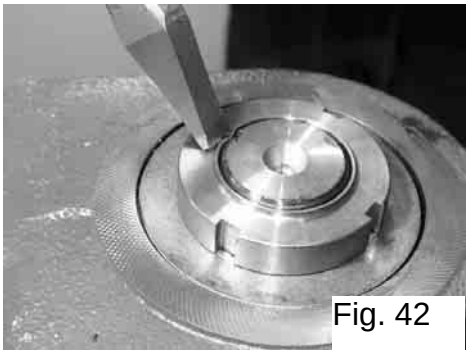


Fig. 42

Fig. 43

Fig. 44

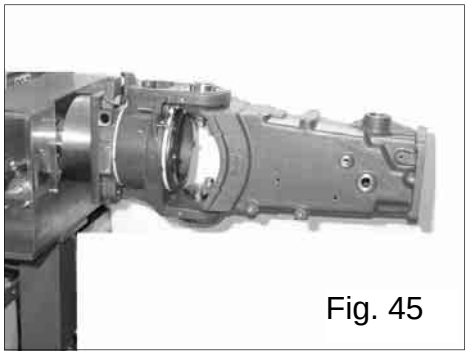


Fig. 45

Fig. 49

Fig. 54

In Fig. 50, the thread of the pivot pin of the steering cylinder is smeared with Loctite.
This pin is then screwed with 20 kgm to the casting as illustrated in Fig. 51.
Fig. 52 shows the 4 stud bolts screwed onto the casting of the pivot to 8 kgm to which the steering flange is to be fitted.
Don't forget to fit the two centring spacers labelled **Q** in Fig. 52.
Position the flange and the steering cylinder as in Fig. 53, taking care to centre the spacers on the flange without damaging them.
In Fig. 54 the ring nut securing the steering cylinder is tightened to 10 kgm.
In Fig. 56 and 57 the screws securing the steering flange, which also secure the power steering support, are tightened to 8 kgm.

Fig. 50

Fig. 51

Fig. 55

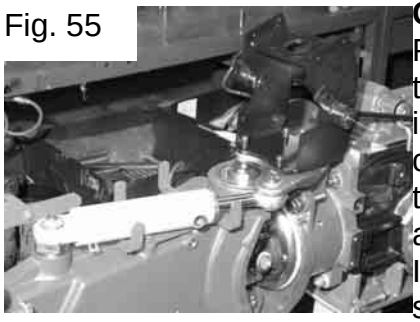


Fig. 56

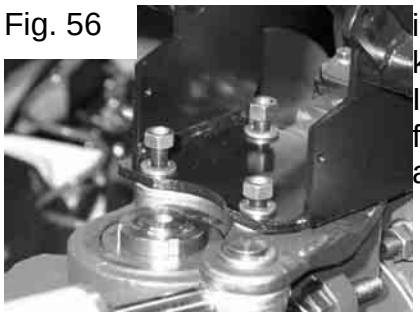


Fig. 57

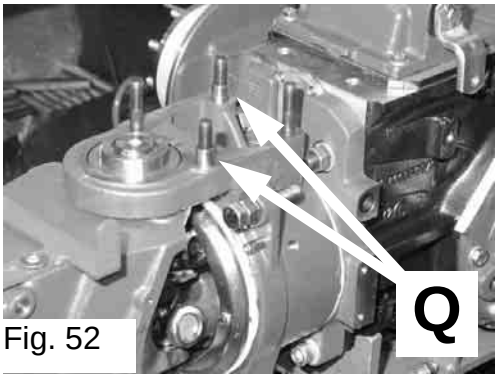


Fig. 52

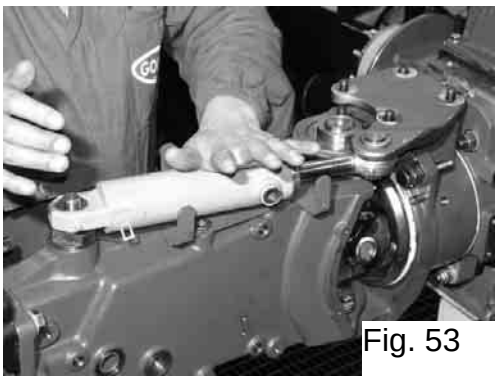


Fig. 53

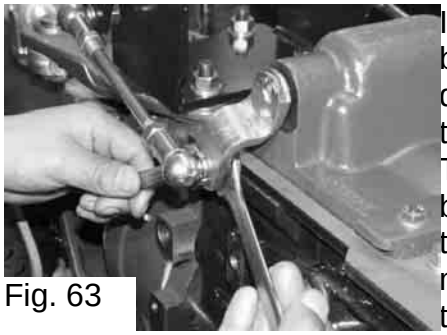


Fig. 63

In Fig. 58, after assembling the steering cylinder, you pass on to fit the gearbox linkages. The transmission, of both the gear lever and the final drive lever must connect two parts that move in relation to each other.

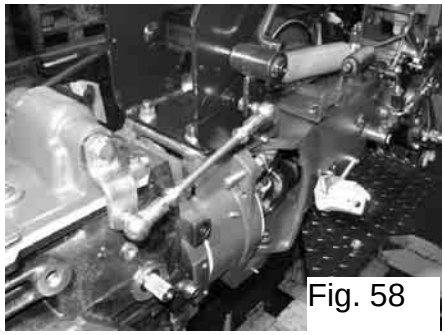


Fig. 58

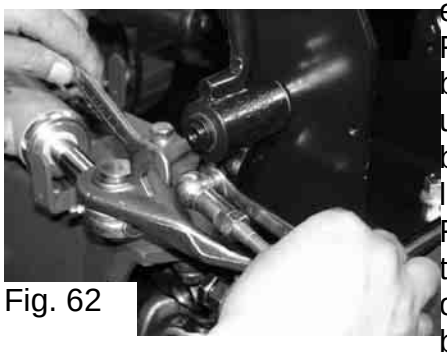


Fig. 62

For this purpose, two ball joints have been used that allow the mobile part to rotate in relation to the fixed part. Fig. 59 and 60 illustrate the assembly phases of the joints: it is possible to adjust their length and therefore correctly position the two levers held by the driver.

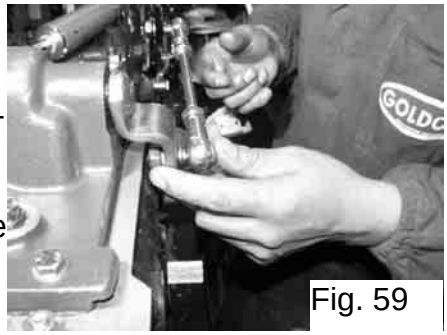


Fig. 59


Fig. 61

The nuts securing the ball joints to the respective external levers governing the gearbox and the final drive must be tightened to 3 kgm and are self locking.

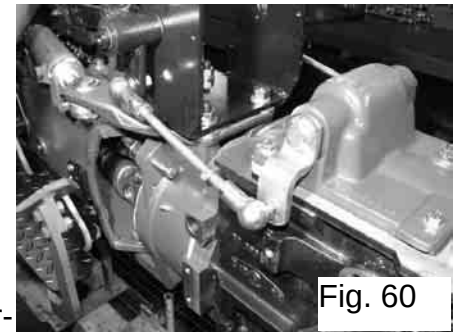
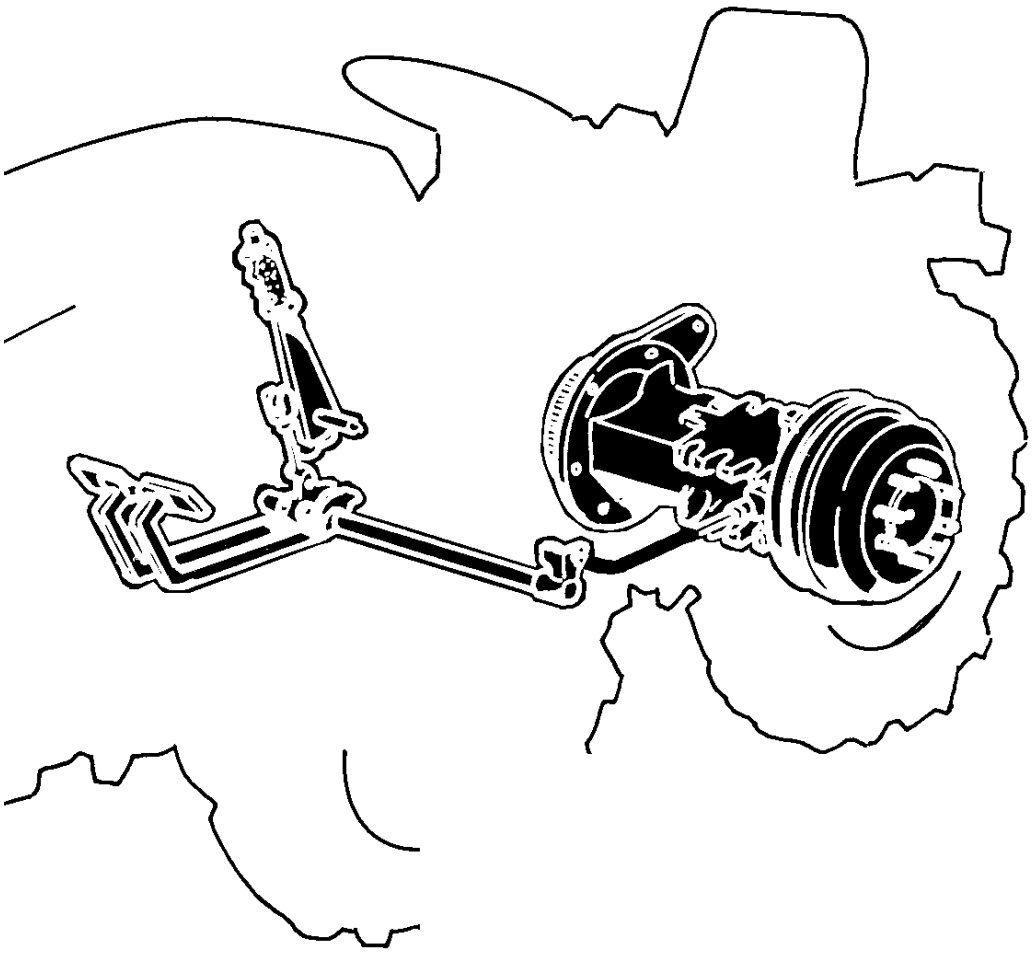


Fig. 60

The lock nuts securing the positions of the joints and therefore the length of the tie rods should also be tightened to 3 kgm.
Figs. 62 and 63 highlight the phases of adjusting the tie rods, while Fig. 58 shows the finished assembly as a whole.

DRIVING TORQUES	Kgm
Pivot bearing ring nut	12
Steering cylinder ring nut	10
Gearbox casing – pivot flange fixing screws	8
Steering lever stud bolts	8
Pivot cylinder pin	20
Pivot pin fixing screws	5

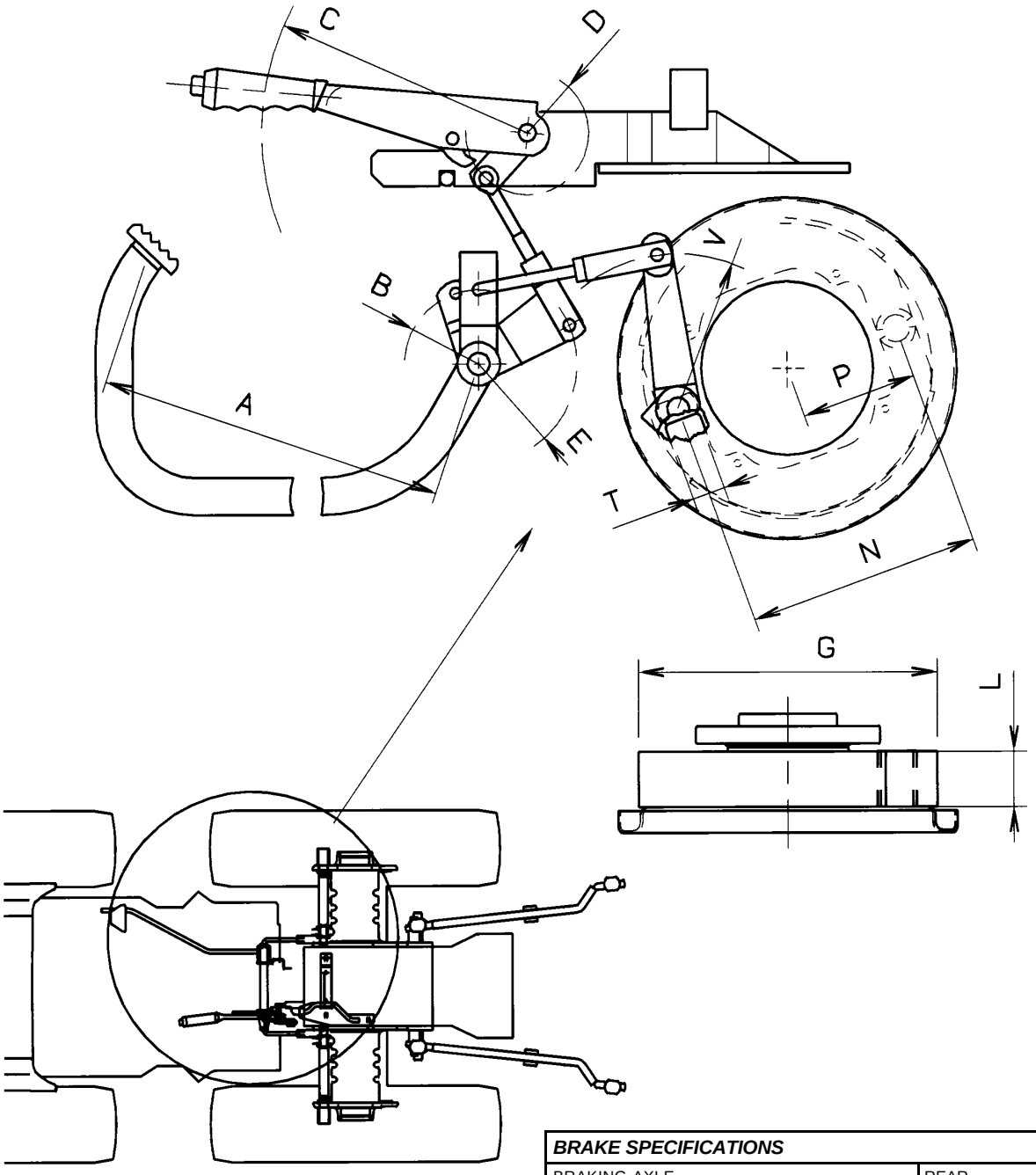
BRAKES



BRAKING SYSTEMS

- MAIN BRAKES: Drum type with mechanical control using two pedals that can be latched together, acting on the rear wheels.

- **PARKING BRAKE**: Acts on the main brakes. Operated by hand with mechanical transmission. Equipped with non-reversing mechanism.

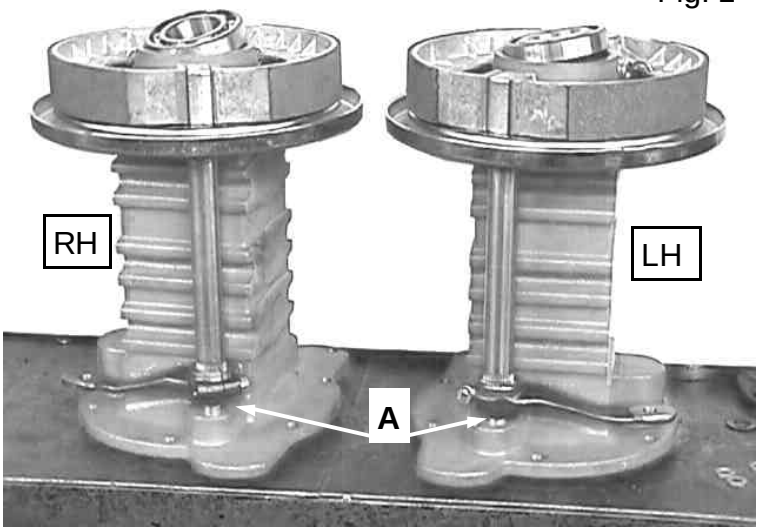


MAIN BRAKE LEVER SPECIFICATIONS		
BRAKE PEDAL LEVER (A)	mm	415
TRANSMISSION LEVER (B)	mm	60
PARKING BRAKE LEVER SPECIFICATIONS		
BRAKE LEVER (C)	mm	215
TRANSMISSION LEVER (D)	mm	50
TRANSMISSION LEVER (E)	mm	80

BRAKE SPECIFICATIONS		
BRAKING AXLE	REAR	
TOTAL BRAKING AREA	cm^2	227
MATERIAL USED (FRENOLYTE WW)	TI	401
DIAMETER OF BRAKE LINING (G)	mm	243
WIDTH OF BRAKE LINING (L)	mm	44.5
BRAKE LEVER (T)	mm	125
INTERNAL BRAKE DIAMETER (N)	mm	189
BRAKING SHOE LEVER (V)	mm	26.5
INTERNAL BRAKE RADIUS (P)	mm	94.5

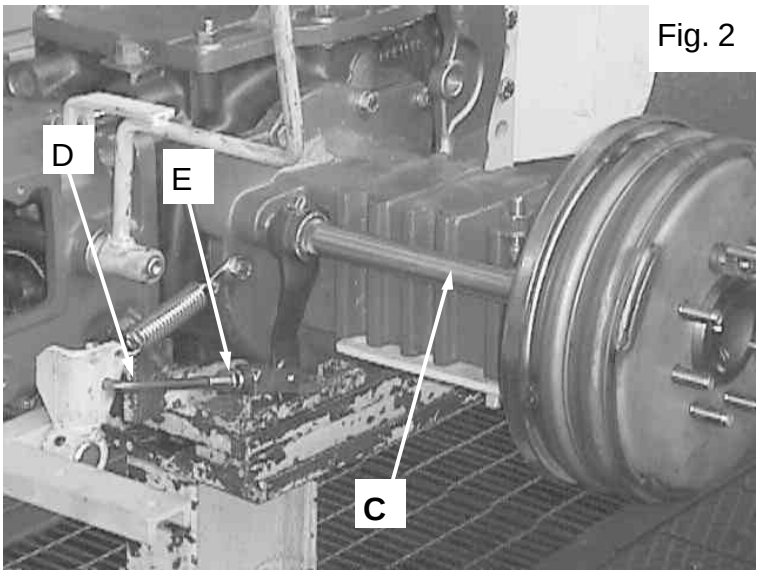
fig. 1 shows the position lever **A** must assume in the two rh and lh hubs.
No particular precautions need be taken when the brake assemblies are mounted: remember to insert the split pin into the perforated nut that positions the brake assembly fulcrum.
After having mounted the shoe expansion rod, part **C** of (fig. 2), mount the hub closing lid with jointing compound to ensure oil retention.

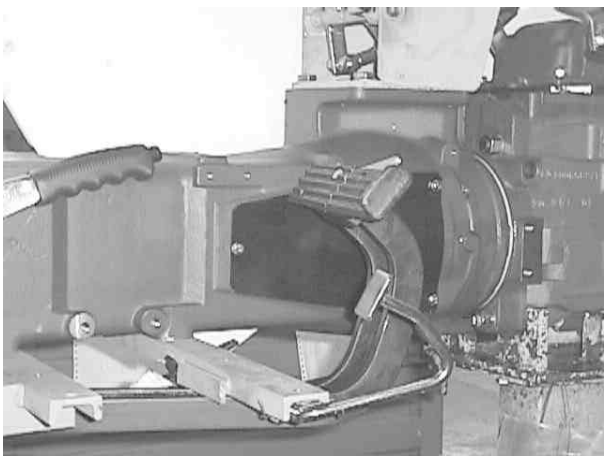
Fig. 1

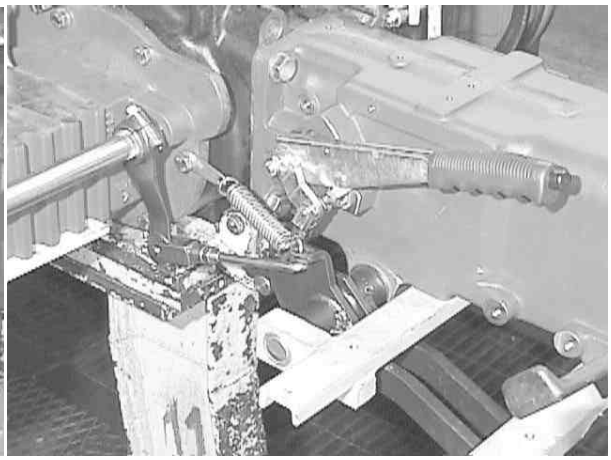


To ensure the main brake operates correctly, the wheels must block after the pedal has travelled about 70 mm. Proceed in the following way:
- loosen nut E (fig. 2);
- detach the fork by removing the pin that connects it to the brake control rod;
- adjust the length of the rod by tightening and loosening the fork;
After the adjustments have been made, re-connect the fork and tighten the nut.

Fig. 2







Both the rh and lh rods must be adjusted in this way until the braking action is equally divided between the rh and lh brake assemblies.

Emergency and parking brake adjustment.
For the emergency and parking brake to operate in the correct way, the wheels must block after the control has travelled about 100 mm. Proceed in the following way:
- adjust the length of the rod by unscrewing or tightening nut **H** (fig. 3).

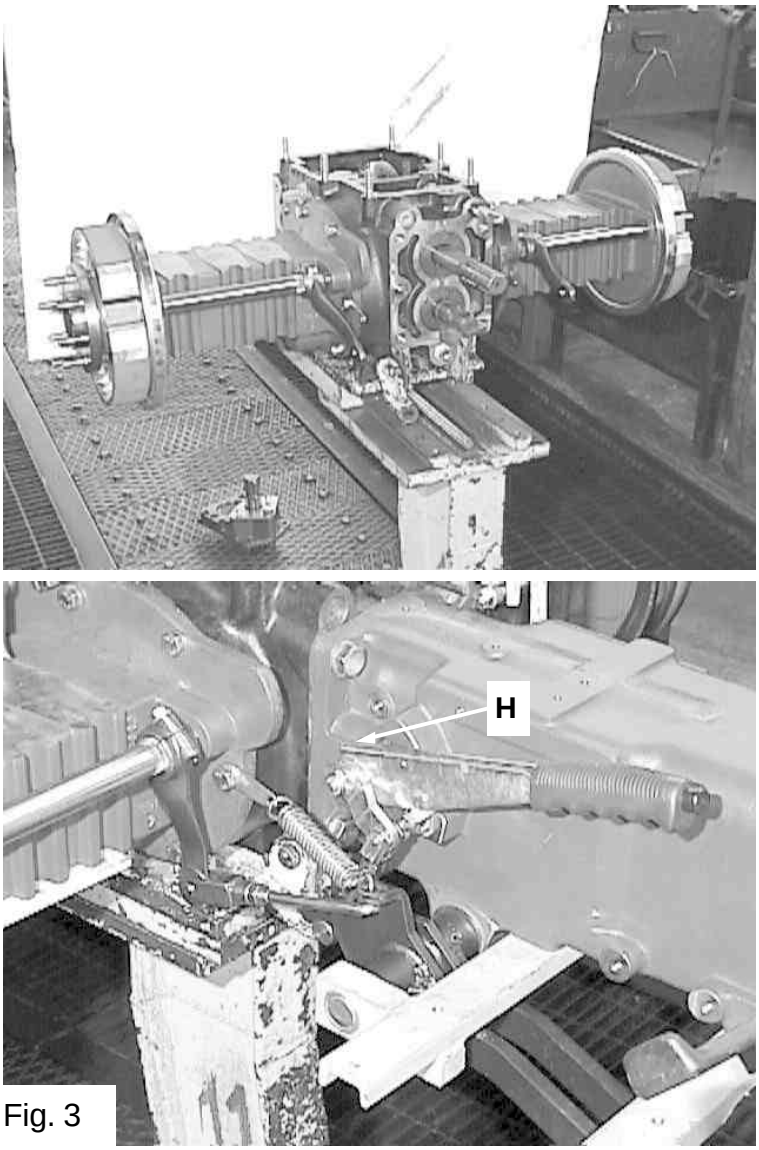
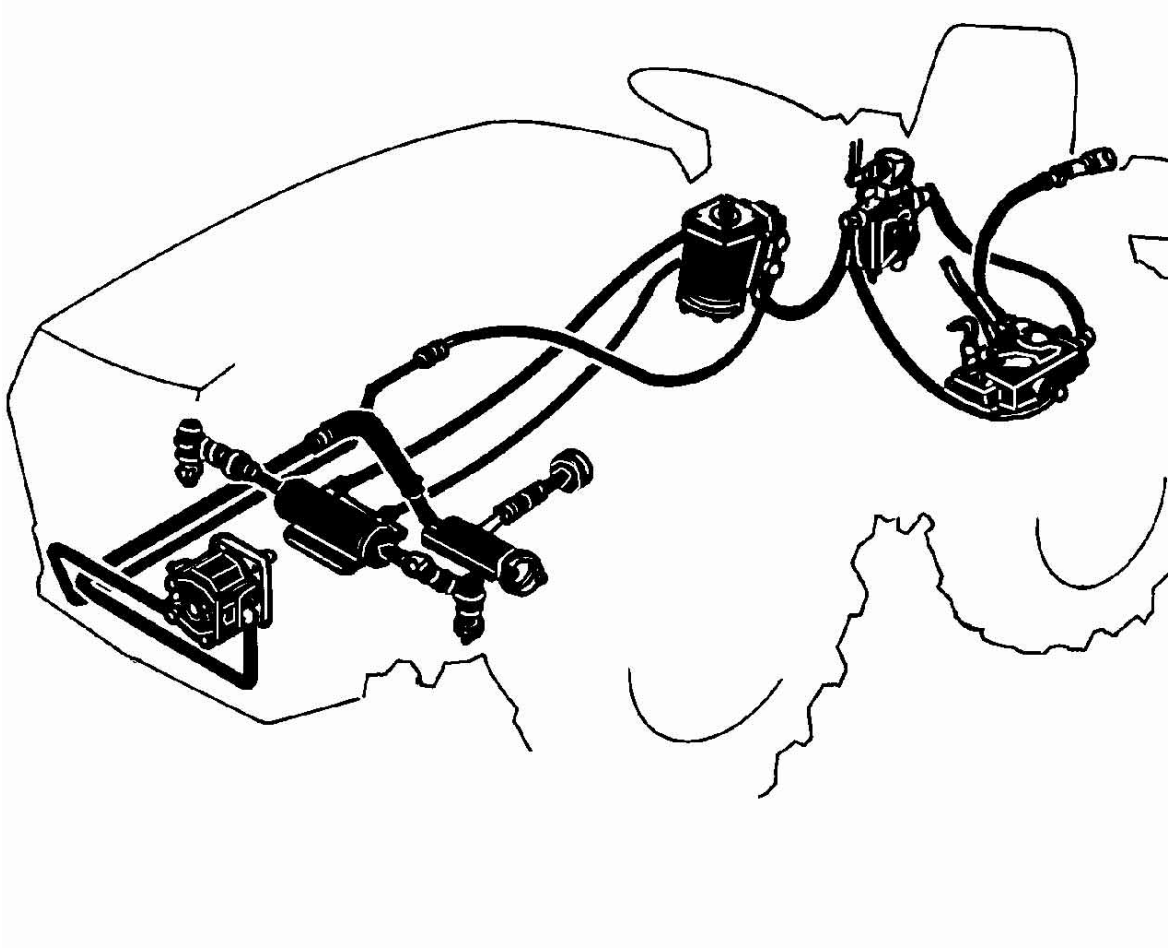


Fig. 3

DRIVING TORQUES

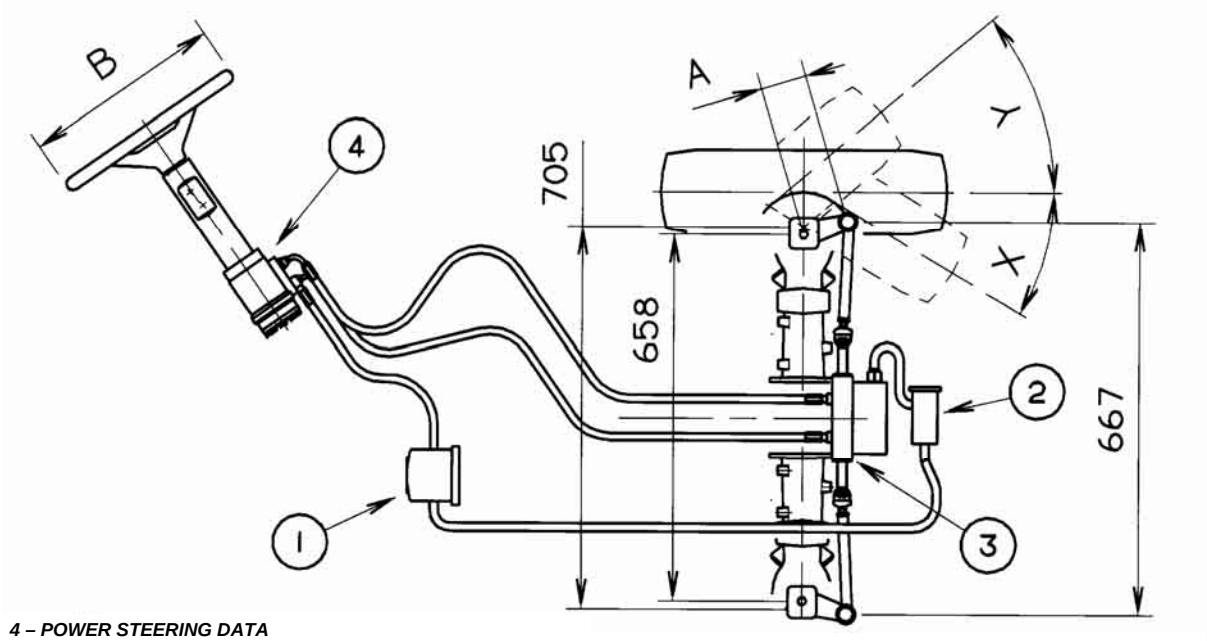
M8x35 braking assembly screw	29 Nm

HYDRAULIC CIRCUIT



STEERING SYSTEM

(Flexible tubes :1/4" SAE 100 R1 AT bursting pressure 870 BAR)
3/8" and 1/2" SAE 100 R2 AT bursting pressure 1100 BAR



4 – POWER STEERING DATA

ANTI-SHOCK VALVE SETTING	BAR	150
MAXIMUM VALVE SETTING	BAR	90
TOTAL SWEPT VOLUME	cc	32
OPERATING PRESSURE	BAR	5– 80

MAKE	***MODEL***
OGNIBENE	MSTH ON 32 G1

1 – HYDRAULIC PUMP DATA

MAKE	HIDROIRMA	
MODEL	AP200/6,5S-218	
SWEPT VOLUME	cc	6.3
PUMP FLOW RATE	L/1'	18.9

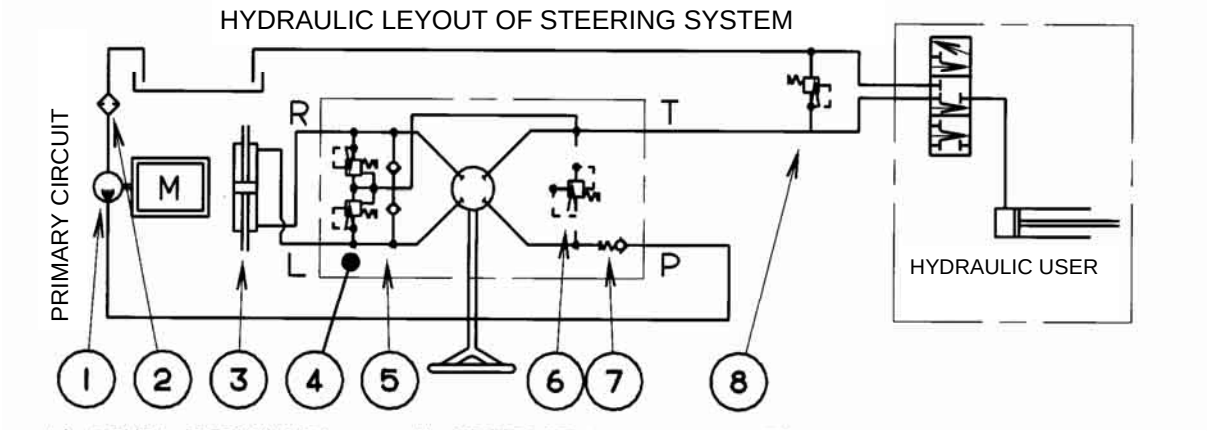
3 – STEERING CYLINDER DATA

TOTAL STROKE	MM	92
TOTAL SWEPT VOLUME	cc	80.5
STEM DIAMETER	MM	22
BORE DIAMETER	MM	40

STEERING LEVER DIMENSIONS

WORKING LENGTH OF STEER. LEVER (A)	MM	97
EXTERNAL STEERING ANGLE (Y)		34°
INTERNAL STEERING ANGLE (X)		25°
STEERING WHEEL DIAMETER (B)	MM	380

HYDRAULIC LEYOUT OF STEERING SYSTEM



1 HYDRAULIC PUMP
2 OIL FILTER
3 STEERING CYLINDER
4 POWER STEERING SYSTEM
5 ANTI-SHOCK VALVE
6 MAX. PRESSURE VALVE
7 ONE-WAY VALVE
8 VALVE SYSTEM MAX. PRESSURE VALVE

RS VERSION

The hydraulic circuit mainly consists of the hydraulic gear pump, which is supplied with the oil of the rear differential filtered by a filter with a gauze cartridge, the power steering system and the power lift valve system. The 6.3 cc pump supplies the 32 cc power steering system and then the power lift valve system. The hydraulic layout with the settings of the maximum valves of the individual components is shown on the previous page.

Since the two pressure values are added together when the tractor is turned at the same time as the power lift is operated, the sum of the settings of the maximum valves of the power steering system and power lift valve system should **never exceed 210-220 bar.**

To check these settings, use a pressure gauge with 150 bar full scale and connect it to a 1/4" rubber hose with a 14 mm diameter eyelet.

Using an M14 double perforated screw, connect the pressure gauge to one of the two supply branches of the cylinder and check the pressure created in the circuit during the maximum turning phase.

Operate the maximum pressure valve of the steering system (see fig. 1) Part **G**, if the pressure value is not correct.

Add spacers under part **H** to increase the pressure value if this is below the one given in the previous table.

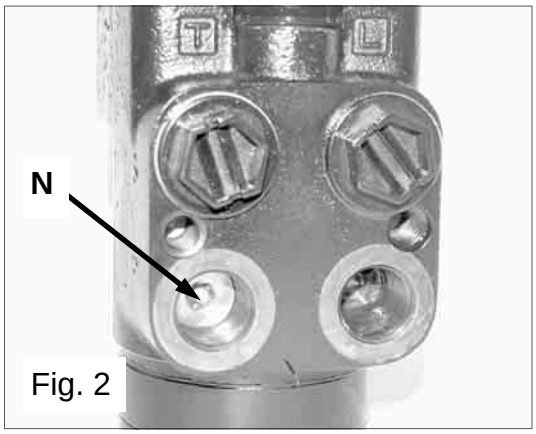
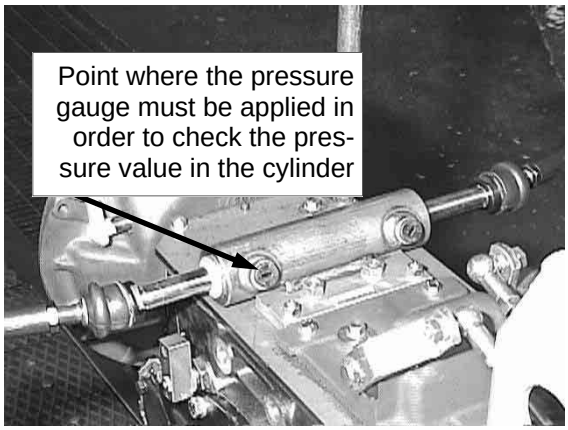


Fig. 2



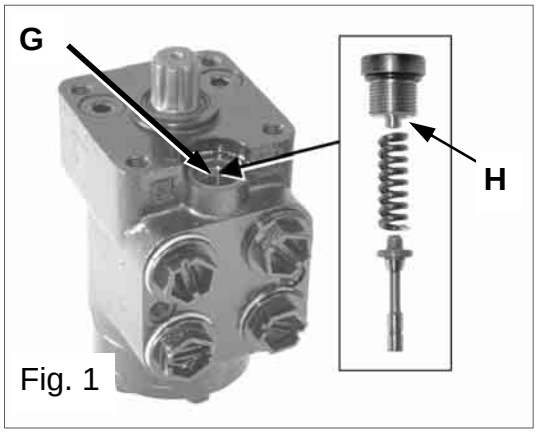


Fig. 1

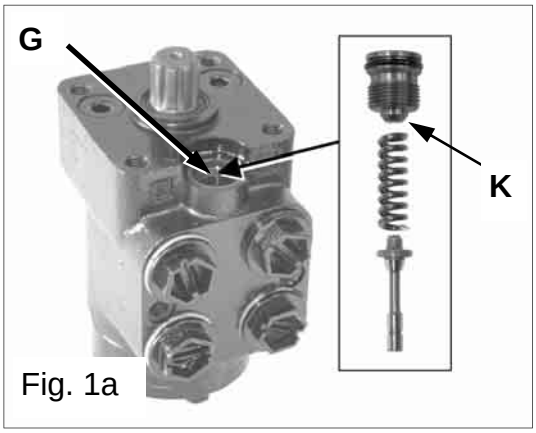


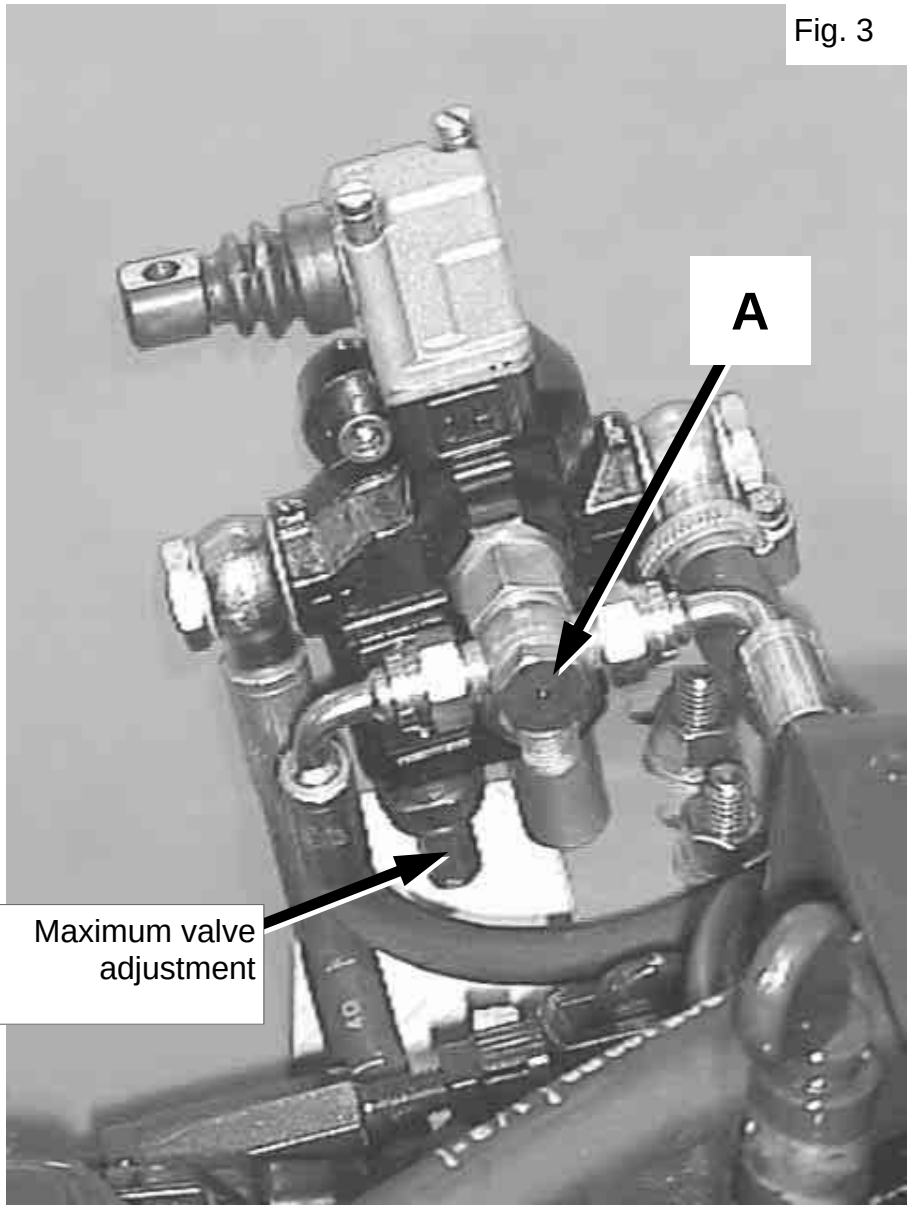
Fig. 1a

If the power steering system must be demounted and then remounted, take care to connect the pipes. The delivery pipe from the gear pump should be connected to outlet **N** of the power steering system in (fig. 2), i.e. the one with the check valve.

RS/SN VERSION

To check the setting of the maximum pressure valve of the power lift valve system, connect a pressure gauge with 150 bar full scale to a 1/4” rubber tube with a 1/4” eyelet and connect it with a double perforated screw to the power lift delivery coupling **A** of (fig. 2). Move the power lift to end of up travel and check the setting of the maximum pressure valve of the valve system.
Operate the adjuster screw of (fig. 3) if the value is incorrect.

Fig. 3



Remove the plastic guard from the valve system on the right hand side of the seat to access the maximum valve for adjustment purposes.
To make the adjustments, remove the cap shown in fig. 3, then tighten the plug to increase the pressure or unscrew it to lower the pressure.

RS VERSION

The setting of the maximum pressure valve of the power lift's valve system **must not exceed 115-120 bar**.
Since the front differential housing acts as the inlet and discharge reservoir for the entire hydraulic circuit, the oil used in the front differential housing must possess determined hydraulic specifications. Use AGIP SUPER TRACTOR UNIVERSAL SAE 15W/40. Approx. 8.5 kg of oil is required.

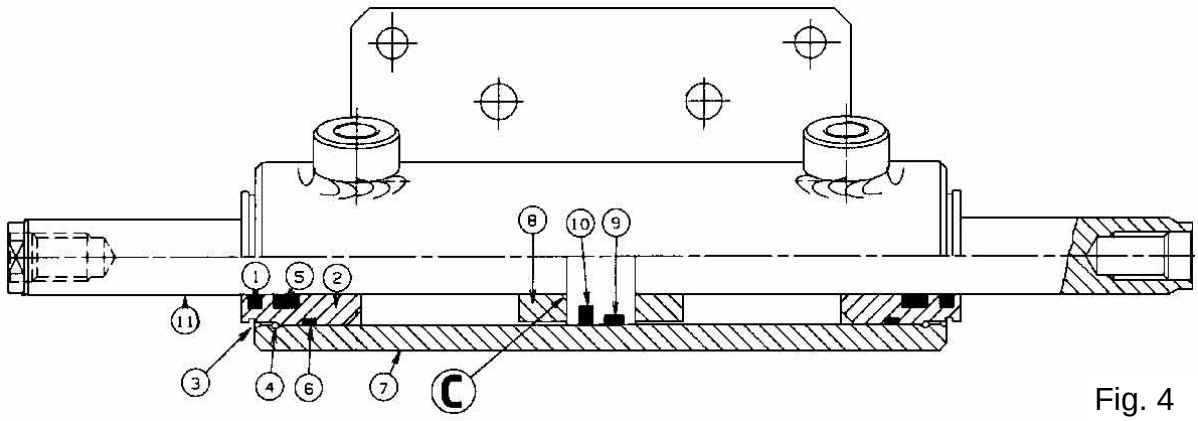


Fig. 4

Fig. 4 illustrates the constructional drawing of the steering cylinder.
Proceed in the following way if the internal cylinder seal and relative scraper (parts 9 and 10) of (fig. 4) need replacing:
- using a pair of pliers, remove the garter spring (part 4) of (fig. 4) from both the rh and lh sides of the cylinders by means of the two openings on the actual cylinder itself which have been made for this purpose;
- take out the entire piston assembly and replace the seals.
Work through the instructions in reverse order to remount the parts.
The cylinder seals must be replaced when the actual cylinder starts to ooze and the ability of the tractor to maintain its direction becomes compromised.

Proceed as described below if the power lift seals parts 2 and 3 of (fig. 5) need replacing:
- unscrew the cylinder head (part 1) of fig. 5
- take out the plunging piston and replace any damaged seals on the cylinder head. Make sure that the chromium part of the stem is not scored;
- remount all parts by working through the previously described operations in reverse order.

The plunging piston seals must be changed when there are consistent oil leaks from the lifting cylinders and the lifting capacity diminishes.

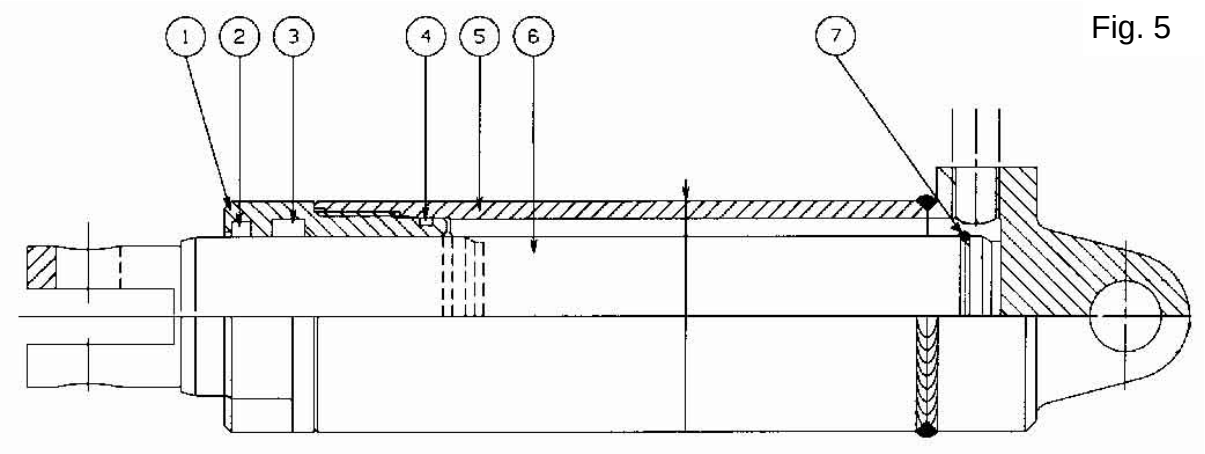
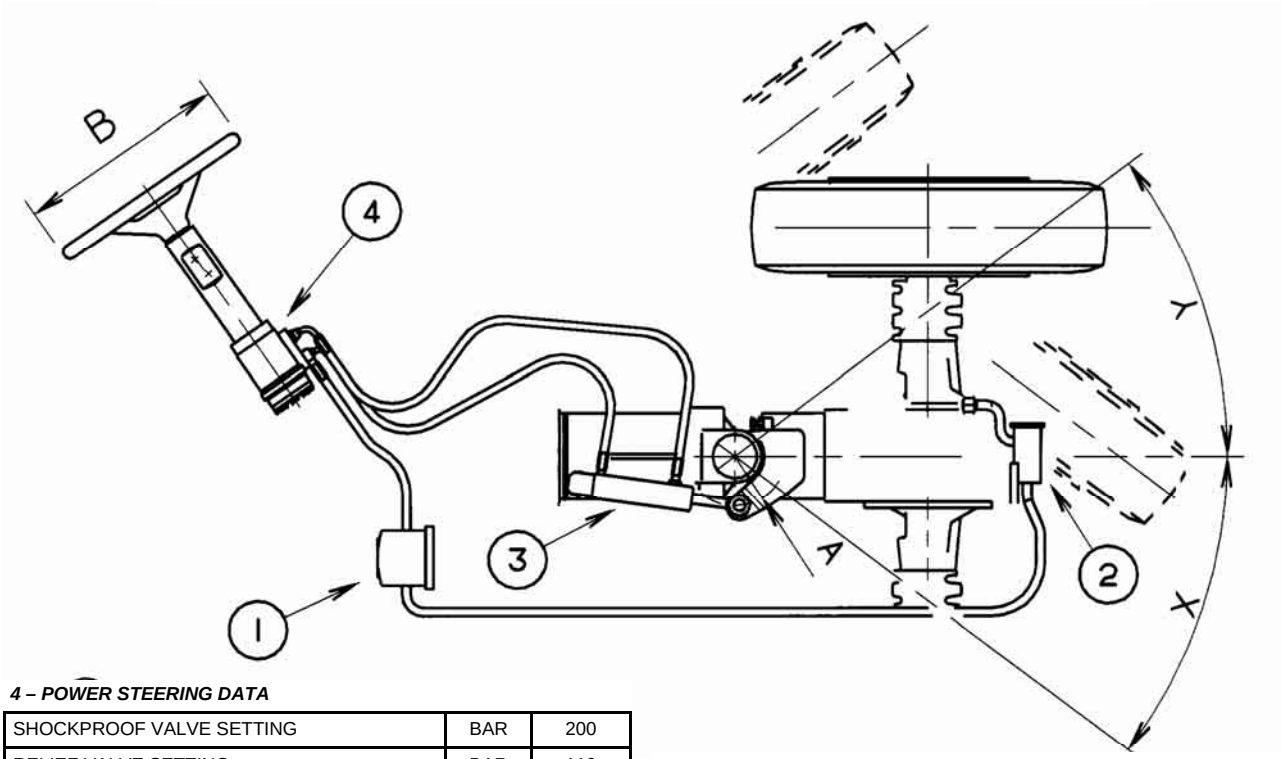


Fig. 5

SN VERSION

STEERING DEVICE

(Flexible hoses: 1/4" SAE 100 R1 AT bursting pressure 870 Bars)
3/8" and 1/2" SAE 100 R2 AT bursting pressure 1100 BAR



4 – POWER STEERING DATA

SHOCKPROOF VALVE SETTING	BAR	200
RELIEF VALVE SETTING	BAR	110
TOTAL DISPLACEMENT	cm^3	80
WORKING PRESSURE	BAR	5÷ 100

MAKE	***MODEL***
DANFOSS	OSPC 80 LS

1 – HYDRAULIC PUMP DATA

MAKE	HIDROIRMA	
MODEL	2P8.5D	
DISPLACEMENT	cm^3	8,3
PUMP DELIVERY	L/1'	23

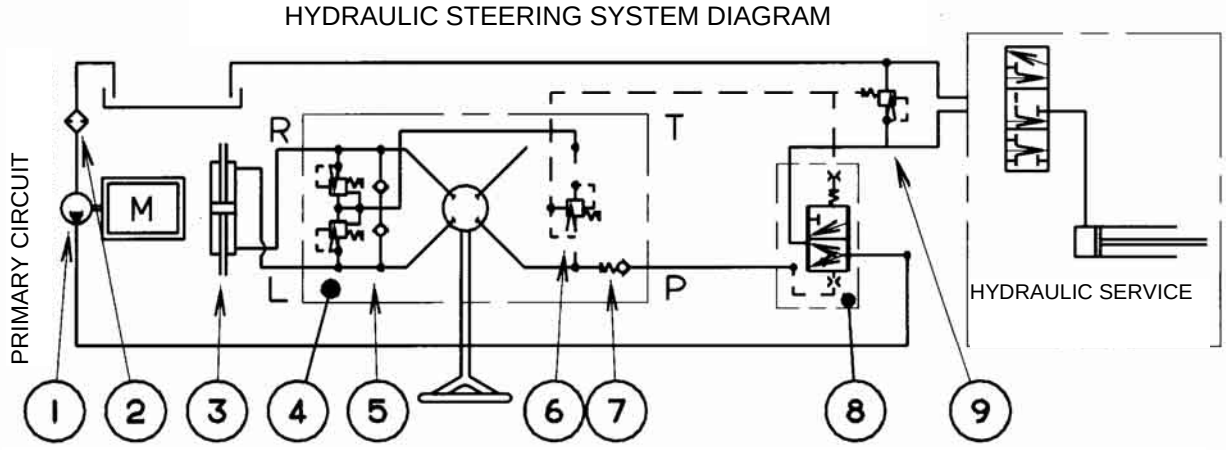
3 – STEERING CYLINDER DATA

TOTAL TRAVEL	MM	135
TOTAL DISPLACEMENT	cm^3	193/244
STEM DIAMETER	MM	22
BORE DIAMETER	MM	48

STEERING LEVER DIMENSIONS

USEFUL STEERING LEVER LENGTH (A)	MM	102
EXTERNAL STEERING ANGLE (Y)		30°
INTERNAL STEERING ANGLE (X)		30°
STEERING WHEEL DIAMETER (B)	MM	380

HYDRAULIC STEERING SYSTEM DIAGRAM



1 HYDRAULIC PUMP	4 POWER STEERING	7 ONE-WAY VALVE
2 OIL FILTER	5 SHOCKPROOF VALVE	8 PRIORITY VALVE
3 STEERING CYLINDER	6 PRESS. RELIEF VALVE	9 CONTROL VALVE PRESS. RELIEF VALVE

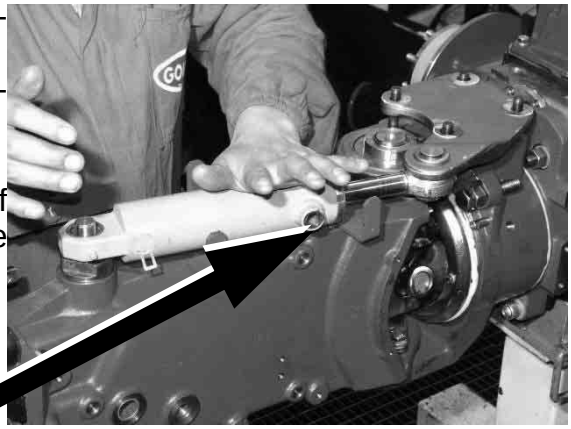
SN VERSION

The hydraulic system essentially consists: of the hydraulic gear pump supplied with oil of the rear differential casing filtered by a filter with a mesh cartridge, the power steering and the lift control valve. The pump that has a displacement of 8.3 cm^3 feeds the power steering of 80 cm^3 and subsequently the control valve driving the lift. The preceding page shows the hydraulic diagram with the settings of the pressure relief valves of the single components.

Since the power steering is equipped with a load-sensing valve, they can use the rear lift and the steering gear at the same time, without any problems of too high pressure for the hydraulic pump.
To check the settings it is necessary to have a pressure gauge with a full scale of 150 bars connect it to a 1/4" rubber hose with an eyelet of diameter 14 mm.

Connect the pressure gauge with an M14 double perforated screw to one of the two branches feeding the cylinder and in the phase of maximum steering check the pressure generated inside the circuit.
If this pressure is not correct, adjust the pressure relief valve of the power steering (see fig. 5a) Part **G**, screw in the grub screw to increase the value or unscrew it to decrease it.

To check the setting of the rear control valve, fit a pressure gauge on the connection of the auxiliary control valve or on the delivery pipe to the lift.
Take the lift to its limit stop, check the maximum pressure of the system.



Point where the pressure gauge must be applied in order to check the pressure value in the cylinder

The recent operations on the pressure relief valve of the control valve as explained on the preceding pages.

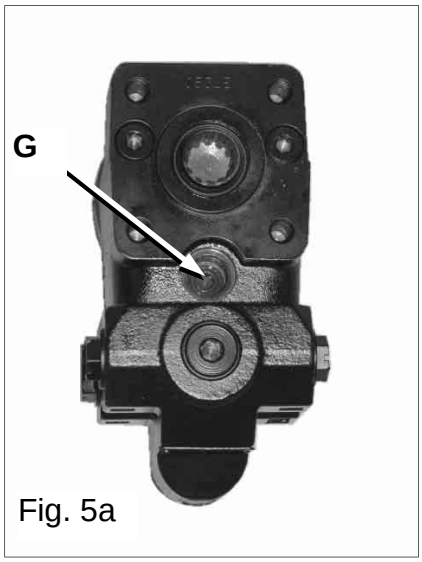


Fig. 5a

SN VERSION

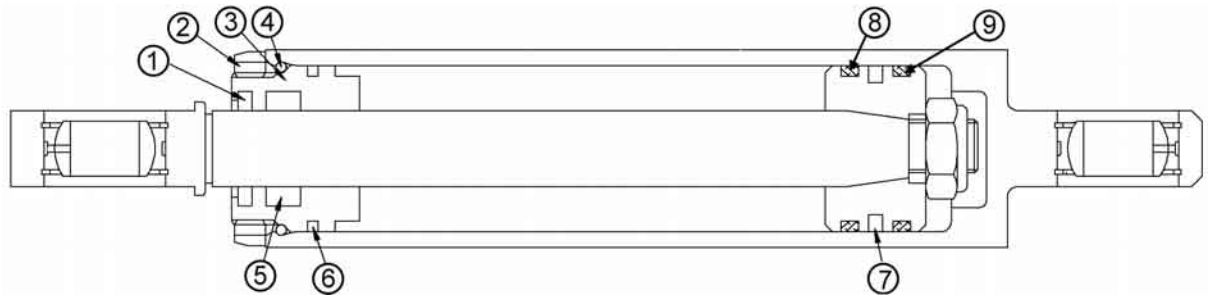


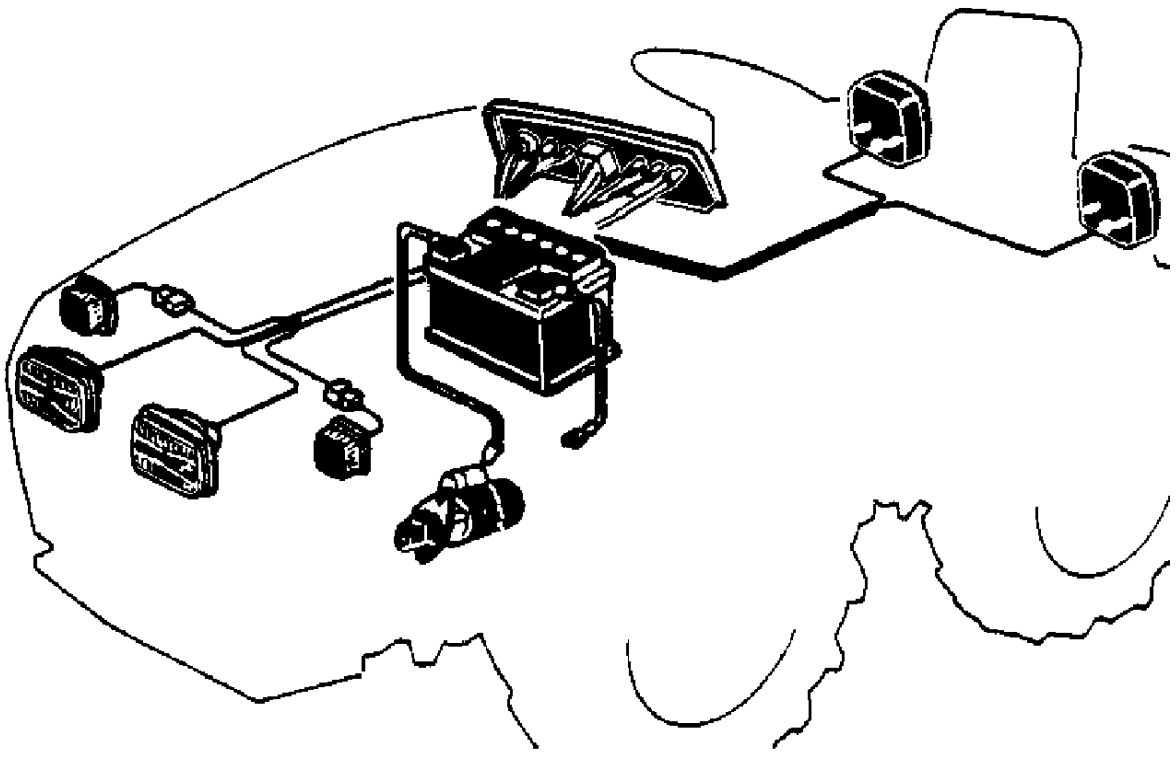
Fig. 6

Fig. 6 shows the assembly drawing of the joint cylinder.
If it is necessary to replace the inner seal of the cylinder and of the associated scraper (part 7-8 and 9) of Fig. 6 you must proceed to:

- remove, with the aid of two tweezers, the toroidal ring (part 4) of (fig. 6) using the opening on the cylinder made for this purpose;
- remove, with the aid of a wrench, the ring nut (part 2) of (fig. 6).
- take out the whole piston assembly and proceed to replace the seals.

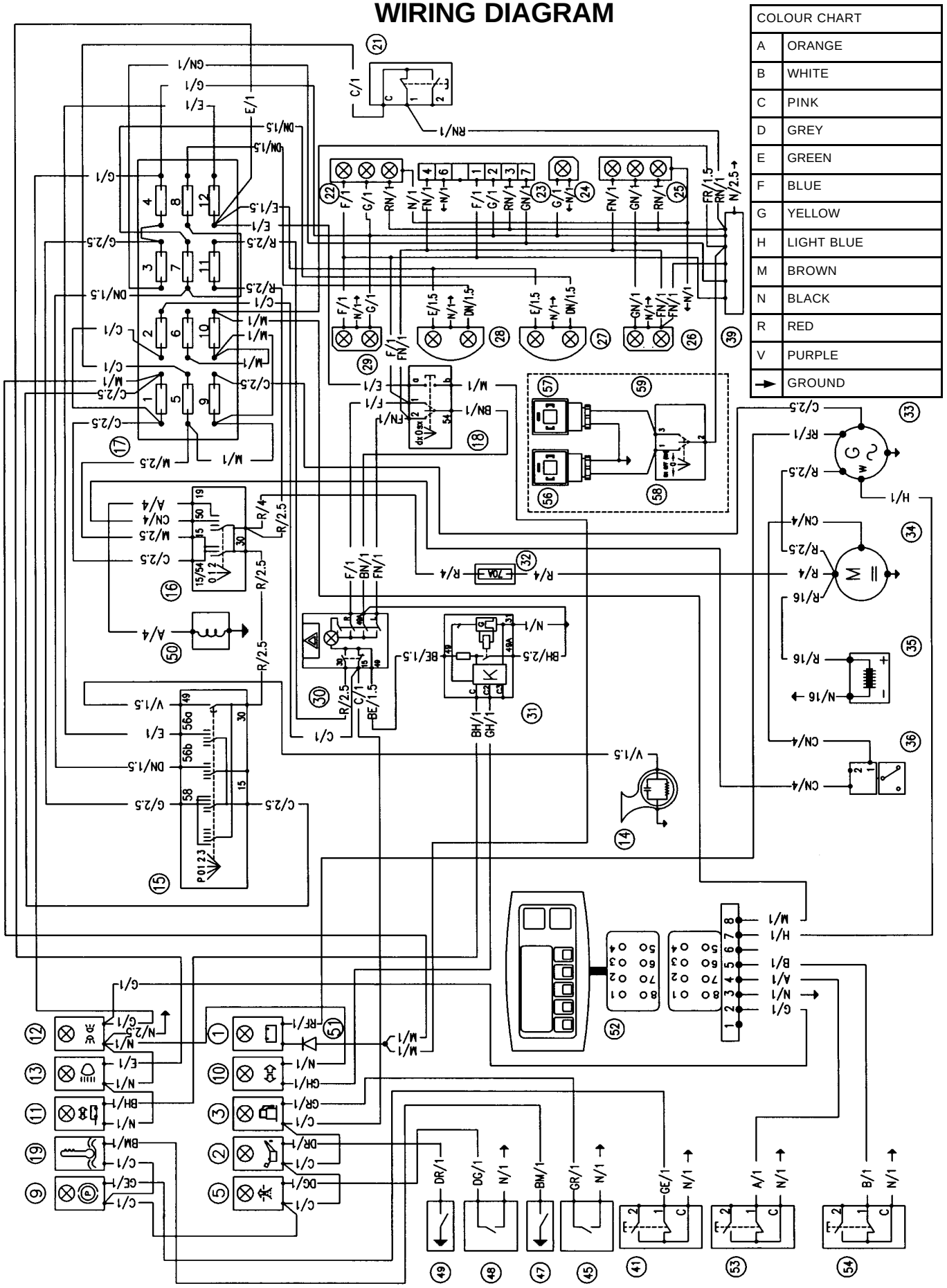
Proceed in reverse order to reassemble all the parts.
The cylinder seals must be changed if any seepage is found from the cylinder and the directionality of the tractor is impaired.

ELECTRICAL SYSTEM



WIRING DIAGRAM

COLOUR CHART	
A	ORANGE
B	WHITE
C	PINK
D	GREY
E	GREEN
F	BLUE
G	YELLOW
H	LIGHT BLUE
M	BROWN
N	BLACK
R	RED
V	PURPLE
→	GROUND



REF	DESCRIPTION
1	GENERATOR INDICATOR LIGHT
2	ENGINE OIL PRESSURE INDICATOR LIGHT
3	FUEL RESERVE INDICATOR LIGHT
5	CLOGGED AIR FILTER INDICATOR LIGHT
9	HAND BRAKE INDICATOR LIGHT
10	TURN INDICATOR LIGHT
11	TRAILER TURN INDICATOR LIGHT
12	TURN INDICATOR LIGHT INDICATOR
13	DRIVING BEAM INDICATOR LIGHT
14	HORN
15	LIGHT SELECTOR
16	IGNITION SWITCH
17	FUSE BOX
18	TURN INDICATOR SWITCH
19	COOLANT TEMPERATURE INDICATOR
21	BRAKE SWITCH
22	RH REAR LIGHT
23	7-PIN POWER SOCKET
24	REAR LICENSE PLATE LIGHT
25	LH REAR LIGHT
26	SIDE LIGHT - LH TURN INDICATOR
27	LH HEADLIGHT
28	RH HEADLIGHT
29	SIDE LIGHT - RH TURN INDICATOR

REF	DESCRIPTION
30	HAZARD LIGHT SWITCH
31	TURN INDICATOR BLINKING FUNCTION
32	70A MAXI-FUSE
33	ALTERNATOR
34	STARTER MOTOR
35	12V BATTERY
36	MOTOR STOP SOLENOID VALVE
39	PRE-ENGINEERED CAB CONNECTOR
41	MAIN BRAKE SWITCH
45	FUEL LEVEL GAUGE
47	HYDRAULIC OIL FILTER SENSOR
48	CLOGGED AIR FILTER SENSOR
49	ENGINE OIL PRESSURE SENSOR
50	GLOW PLUGS
51	DIODE 1N4007
52	DIGITAL INSTRUMENT
53	SLOW GEAR SENSOR
54	FAST GEAR SENSOR
56	DRAFT CONTROL SOLENOID VALVE
57	DRAFT CONTROL SOLENOID VALVE
58	DRAFT CONTROL MANIPULATOR
59	OPTIONAL DRAFT CONTROL CIRCUIT

FUSE TABLE		
POS.	CAPACITY	CIRCUIT PROTECTED
1	15A	LIGHT SELECTOR. BATTERY INDICATOR LIGHT 1. FLASH
2	10A	INDICATOR LIGHTS 3-2-5-9-19, KEY-OPERATED TURN INDICATOR SELECTOR
3	15A	LH SIDE LIGHTS
4	15A	RH SIDE LIGHTS, INDICATOR LIGHT 12, LICENSE PLATE LIGHT, CHECK-CONTROL LIGHT
5	10A	BRAKE LIGHTS
6	10A	STAND-BY
7	15A	DIPPED BEAMS
8	15A	DIPPED BEAMS
9	10A	ALTERNATOR CONTROL
10	10A	LIFTING SOLENOID VALVES, CHECK-CONTROL POWER SUPPLY
11	15A	EMERGENCY BUTTON
12	15A	DRIVING BEAMS

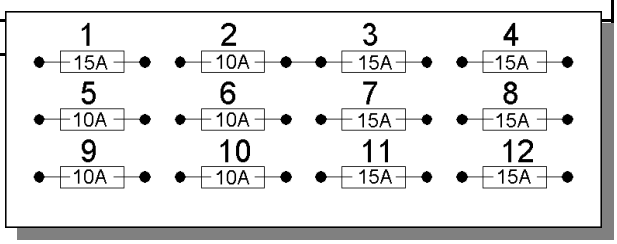


Fig. 2

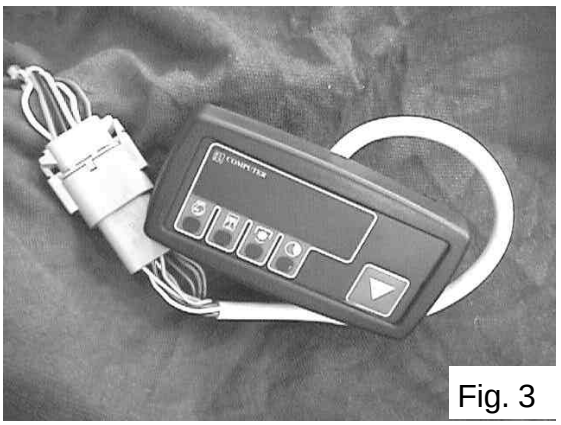


Fig. 3

Schema di collegamento DATA VISUAL-CHRONO DIGITAL TURN METER wiring diagram
Wire colours and connections for the instrument:

RED	-	12 V power supply
BROWN	-	**W** of the alternator (engine rate measurement)
WHITE	-	PTO switch
GREY	-	night lighting
BLUE	-	ground
PUTPLE	-	Second PTO switch
OTHER WIRES	-	disconnected

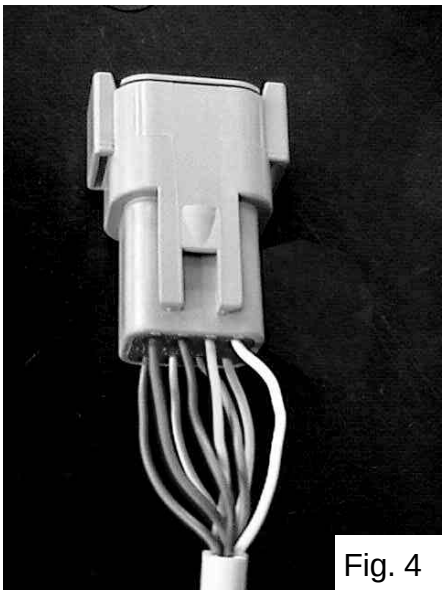


Fig. 4

Fig. 5 shows the positions of the switches that enable the PTO rate to be displayed on the Data Visual instrument (Slow and Fast).
The Data Visual instrument could operate in a faulty way unless these switches are correctly adjusted.
When the tractor's ignition key is turned, the Data Visual instruments will proceed with an internal test phase shown by the message Gold, during which all the connector connections are checked to make sure they are not broken. Subsequent display of the engine rate indicates that the initial test result is satisfactory.

The wiring diagram on the previous pages shows the connection between the Data Visual instrument and the system in the machine.

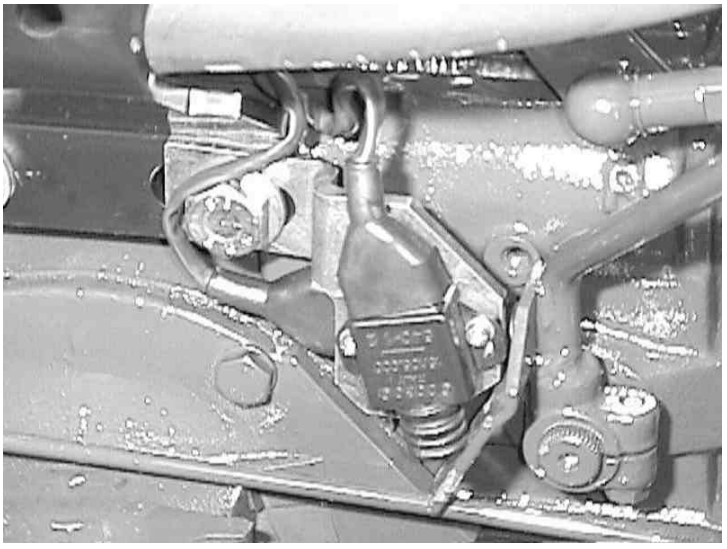


Fig. 5

INTERVENTIONS - CAUSES, REMEDIES

FAULTS	POSSIBLE CAUSES	REMEDIES
CLUTCH		
The clutch slips	**1)** - Clutch plate dirtied with oil **2)** - Incorrect clutch play	**1)** - Eliminate oil leaks (replace the oil retainer of the main shaft if necessary). Thoroughly clean the flywheel and replace the clutch plate **2)** - Adjust the clutch wire and replace the clutch plate if the fault persists
The clutch fails to disengage	**1)** - Wavy clutch plate **2)** - Clutch disengaging lever bent **3)** - Pressure plate levers incorrectly adjusted **4)** - Clutch plate stuck to flywheel surface	**1)** - Replace the clutch plate **2)** - Replace the clutch disengaging lever **3)** - Make sure that the levers are not worn and adjust them if this is not the case **4)** - Start the machine, block it with the brake, repeatedly engage and disengage the clutch and, in the event of a negative result, remount the clutch and clean it.
GEARBOX		
The gears disengage	**1)** - ISliding speed selector gear control fork incorrectly adjusted. **2)** - Speed selector rods with worn races **3)** - The selector spring is no longer elastic (correct measurement 30 mm). **4)** - Broken gearshift control fork or rod.	**1)** - Adjust the fork. **2)** - Replace the rod and adjust it. **3)** - Replace the spring and ball. **4)** - Replace the broken part.
The REV lever disengages	**1)** - Excessive play between transmission shaft and Slow-Fast and REV gear coupling. **2)** - REV reduction gear control fork incorrectly adjusted. **3)** - REV reduction gear selector rod with worn races. **4)** - Selector spring no longer elastic (normal measurement 30 mm). **5)** - Broken REV reduction gear fork or rod	**1)** - Replace the shaft and gear. **2)** - Adjust the fork. **3)** - Replace the rod and adjust it. **4)** - Replace the spring and ball. **5)** - Replace the broken part.
DIFFERENTIAL LOCK		
The diff lock fails to operate	**1)** - Control incorrectly adjusted **2)** - Control blocked	**1)** - Adjust the control **2)** - Release the control rod from the bush

FAULTS	POSSIBLE CAUSES	REMEDIES
POWER TAKE-OFF		
The speeds disengage	**1)** - Control incorrectly adjusted	**1)** - Adjust the control
Noisy power take-off	**1)** - The PTO shaft is curved **2)** - Application of a spraying pump	1) - Replace the shaft 2)- None, since the noise made by the pump is transmitted to the machine and amplified.
The PTO fails to turn	**1)-**The rear PTO control lever is in the idle position	**1)-**Engage the PTO lever
BRAKES		
The machine fails to brake	**1)** - Controls not adjusted **2)** - Worn shoes **3)** - Oil leaks from wheel hub **4)** - Drums dirtied with mud, etc.	**1)** - Adjust the controls **2)** - Replace the shoes **3)** - Replace the oil retainer and shoes **4)** - Demount the drums and clean them with emery cloth
The brake pedal fails to return in the correct way	**1)** -Broken brake shoe return spring **2)** -Broken pedal return spring **3)** -Eccentric shoe expansion pin blocked on the hub	**1)** -Demount the drum and replace the spring. **2)** -Replace the pedal return spring **3)** -Demount the shoes, remove the blocked pin and clean it with abrasive cloth
ELECTRICAL SYSTEM		
The starter motor fails to turn	**1)** - Battery low or faulty **2)** - Defective starter motor **3)** - Defective ignition switch **4)** - Battery cables faulty or broken **5)** - Ignition enabling switch on clutch pedal badly adjusted or defective.	**1)** - Recharge the battery. Replace it if it fails to remain charged **2)** - Overhaul the starter motor or replace it **3)** - Replace the switch **4)** - Clean the tarnished terminals or replace them **5)** - Adjust the switch and replace it if the fault persists.
The generator indicator fails to go out even at a high engine rate	**1)** - Regulator inefficient **2)** - The alternator fails to charge sufficiently	**1)** - Replace the regulator **2)** - Overhaul or replace the alternator: the correct alternator charge value is 10-12 Ah.

FAULTS	POSSIBLE CAUSE	REMEDIES
The battery deforms	**1)** - The battery is being charged too much	**1)** - Advise customers who work for many hours consecutively to turn on the headlights during work in order to reduce the battery charge.
The battery water becomes black	**1)-**Faulty element	**1)-**Replace the battery
The engine oil indicator light fails to go out	**1)** - Engine oil level too low **2)** - Faulty bulb **3)** - Unsuitable lubricant	**1)** - Top up the oil level **2)** - Change the bulb **3)** - Consult the engine's Operation and Maintenance Manual
The digital speed indicator fails to function	**1)-**The pin has not been correctly inserted into the W of the voltage governor **2)-**The instrument is defective **3)-**The protection fuse has burnt out	**1)-**Check the pins under the cap of the voltage governor; **2)-**Replace the instrument; **3**)-Find out why the fuse has burnt out and then replace it.
CENTRAL PIVOT		
Excessive play on the central pivot	**1)-**Worn plastic bushes	**1)-**Replace the bushes and periodically grease them

FAULTS	POSSIBLE CAUSES	REMEDIES
HYDRAULIC CIRCUIT		
The steering wheel is stiff to turn	**1)** - The front and/or rear diff lock is engaged **2)** - The filter on the hydraulic circuit intake is clogged **3)** - Not enough oil in the differential lock **4)** - The power steering system must be overhauled or replaced **5)** - Hydraulic pump out of service	**1)** - Disengage the diff lock when turning **2)** - Clean the gauze filter in the intake filter **3)** - Top up the oil level **4)** - Overhaul or replace the power steering system (The Workshop Manual of the power steering system is available if this operation is required, although it must be done by competent personnel and in a suitable place). J.D. can supply the full set of seals as a spare part. The power steering system must be replaced if there are other faults. **5)** - Replace the hydraulic gear pump.
The wheel trim cannot be kept under control	**1)-**Steering cylinder with worn retention rings **2)-**power steering with badly adjusted max or antishock valve.	**1)-**Replace the cylinder retention rings **2)-**Reset or replace the valves if necessary.
The power lift fails to operate or does not lift enough	**1)** - Not enough oil in the rear differential housing **2)** - Maximum valve of the power lift valve system incorrectly adjusted **3)** - The filter on the intake is clogged **4)** - Valve system blocked **5)** - Hydraulic pump out of service. **6)** - Faulty cylinder seal.	**1)** - Top up the oil level **2)** - Adjust the valve system's maximum valve **3)** - Clean the gauze filter in the intake filter **4)** - Replace the valve system **5)** - Replace the hydraulic pump. **6)** - Replace the seal.
ENGINE		
The engine fails to start despite the fact that the starter motor operates	**1)** - No fuel **2)** - Fuel is not reaching pump AC **3)** - Injector return tube clogged or squashed	**1)** - Top up the fuel until the level rises above the draw pipe **2)** - The fuel filter in the tank is clogged **3)** - Restore parts to functional conditions or replace the injector return tube.