

# WORKSHOP MANUAL

**AGROPLUS 75**

**AGROPLUS 85**

**AGROPLUS 95**

**AGROPLUS 100**

## Introduction

This publication is intended for the trained technician who must operate on our tractors.

It contains all general information relating to our tractor range, and in particular it highlights the inspection, overhauling and adjustment procedures as well as the main instructions for dismantling and reassembling operations.

The workshop manual is a natural summary for the mechanic who has attended the vocational training and specialization courses, which are held every year at our Service School, to permit him to perform a precise and qualified work on tractor.

Its contents are therefore an exhaustive reference book for the experienced mechanic who desires to refresh his memory on the sequence of the operations to be done. It is then good practice for every authorized dealer mechanic to have at his disposal this publication, so that it may be consulted quickly when necessary.

We wish to thank in advance for the cooperation all those people, who will let us have their suggestions in order to make this publication more complete.

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# AGROPLUS 75 - 85 - 95 - 100 TRACTOR CONFIGURATIONS

AGROPLUS 75 - 85 - 95 - 100	<b>2WD</b>	WITH PLATFORM
	<b>2WD</b>	WITH CAB
	<b>4WD</b>	WITH PLATFORM
	<b>4WD</b>	WITH CAB
	<b>2WD</b>	WITH HIGH VISIBILITY CAB
	<b>4WD</b>	WITH HIGH VISIBILITY CAB

- CAB**
- ventilation + heating
  - with ventilation + heating + air conditioning

## GEARBOX

On request, the tractors may be equipped with the following gearboxes, providing:  
15 forward and 15 reverse speeds: 5 gears x 3 ranges (hair-tortoise-snail) + reverse shuttle;  
20 forward and 20 reverse speeds: 5 gears x 4 ranges (hair-tortoise-snail-superslow) + reverse shuttle;  
30 forward and 15 reverse gears: 5 gears x 3 ranges (hair-tortoise-snail) x 2 selections (normal-minireduction) + reverse shuttle;  
40 forward and 20 reverse gears: 5 gears x 4 ranges (hair-tortoise-snail-superslow) x 2 selections (normal-minireduction) + reverse shuttle;

Optional: POWERSHIFT gearbox, which allows selection of all speeds  -  -  - in the selected version for a total of:

45 forward and 45 reverse speeds: 5 gears x 3 ranges (hair-tortoise-snail) x (3-speed POWERSHIFT) + reverse shuttle;

60 forward and 60 reverse speeds: 5 gears x 4 ranges (hair-tortoise-snail-superslow) x (3-speed POWERSHIFT) + reverse shuttle.

In addition, each gearbox can be equipped on request with POWER-SHUTTLE, which allows the driver to shift from forward to reverse without use of the clutch pedal.

## CONTROLS

- clutch electrohydraulically operated rear PTO
- electrohydraulically operated 4WD and differential locks
- electrohydraulically operated 4WD and differential locks + ASM System

## MECHANICALLY OPERATED REAR POWER-LIFT

- with supplementary rams
- without supplementary rams

## ELECTRONIC REAR POWER-LIFT

- with supplementary rams
- without supplementary rams
- with slip control
- without slip control
- with ASM System + RADAR + Slip control

## DOTAZIONI PRINCIPALI

- front PTO
- front lift
- high-capacity hydraulic pump 56 l/min
- hydraulic trailer braking
- 4-way or 6-way or 8-way control valves with "Flow Divider"
- PERFORMANCE MONITOR
- Ecc...

## DIMENSIONS AND WEIGHTS

### WEIGHTS

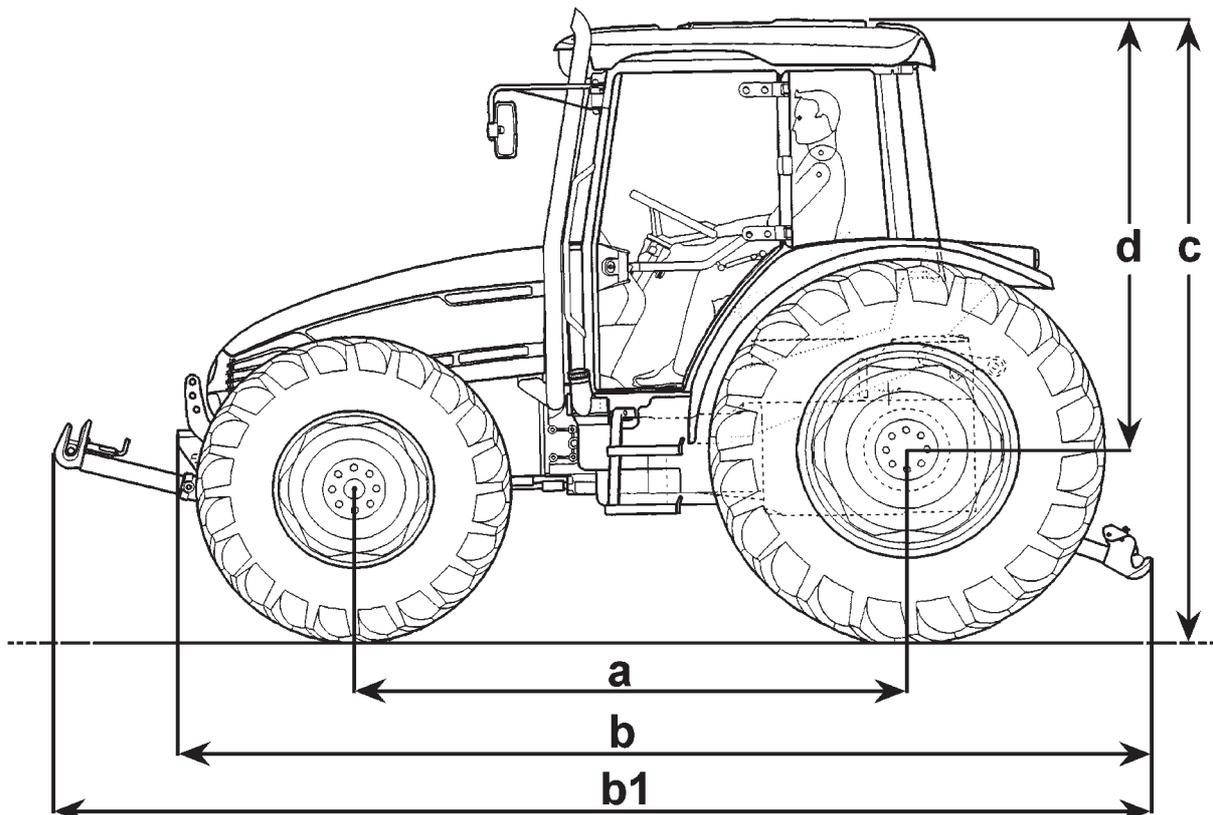
			75-85-95 CV	100 CV
<b>Kerb weight</b>	Front	Kg	1600	1670
	Rear	Kg	2200	2530
	Total	Kg	3800	4200
<b>Maximum permissible load</b>	Front	Kg	3000	3000
	Rear	Kg	4500	5000
	Total	Kg	6200	7200
<b>Maximum imposed load</b>	Front	Kg	1400	1330
	Rear	Kg	2300	2470
	Total	Kg	2400	3000

### DIMENSIONS

			75-85-95 CV	100 CV
<b>Max. length.</b>				
- with rear linkage	(B)	mm	3988	4216
- with rear and front linkage	(B1)	mm	4660	4888
<b>Max. height</b>				
- at cab/safety frame*	(C)	mm	2677	2677
- from wheel centres to cab	(D)	mm	1879	1879
<b>Ground clearance</b>		mm	472	484
<b>Wheel base</b>	(A)	mm	2340	2568
<b>Min. turning radius</b>				
- without brakes		mm	4060	4370

\* (Tyres 13.6R28/14.9R38)

**7158-311**



## PRESCRIBED LUBRICANTS AND FUELS

(amounts in litres)

Part to be supplied	Amt	Oil type		
<b>Engine</b>	9 *	Oil type	Grade API	CC, CD, CE, CF-4
	<b>75-85- 95HP</b>		Grade CCMC	D4
	12.5 *	Visco- sity index	multi-grade engine oil SAE 15W 40	
<b>Gearbox and Rear axle Hydraulic Power-lift Auxiliary Systems Hydrostatic steering</b>	73 **	API GL 4  SAE 10W 30		
<b>Front PTO</b>	2.5			
<b>Front- wheel drive</b> • Central axle • Side reductions	10.5 2.5 x 2			
<b>Brakes and clutch control</b>	Max. level	ATF DEXRON II		
<b>Lubrication points</b>		NLGI 2 LITIO/Ca		
<b>Fuel tank</b>	140			
<b>Radiator antifreeze</b>	16 litres for 4-cylinder engines 18 litres for 6-cylinder engines			

\* Quantity of oil not including filter (with filter +1.5 litres).

\*\* Indicative value, which may vary by a few litres according to the type of gearbox; always check the level on the transmission dipstick.

**First engine oil change:** after 50 hours duty.

<u>Intervals between oil changes:</u>	<b>every 250 operating hours</b> for lubricants with <b>API-CC</b> specifications <b>every 500 operating hours</b> for lubricants <b>API-CD, API-CE, API-CF-4, CCMC-D4</b> specifications (see following note).
---------------------------------------	--

**N.B.** - Oil change intervals should be halved when:

- the operating temperature is <10°C (+14°F)
- the fuel contains more than 0.5% of sulphur
- “Bio-diesel” fuel is used

**IMPORTANT:** the oil must be changed **at least once a year**, regardless of the number of operating hours completed.

It is advisable to always use the same type of oil when replenishing.

## CONVERSION TABLE

FROM	TO	multiply by:
inch	cm	2.540
cm	inch	0.394
foot	m	0.305
m	foot	3.281
yard	m	0.914
m	yard	1.094
Eng. miles	km	1.609
km	Eng. miles	0.622
Sq.in.	cm <sup>2</sup>	6.452
cm <sup>2</sup>	Sq.ft.	0.155
Sq.ft.	m <sup>2</sup>	0.093
m <sup>2</sup>	Sq.ft.	10.77
Sq.yard	m <sup>2</sup>	0.835
m <sup>2</sup>	Sq.yard	1.197
Cu.in.	cm <sup>3</sup>	16.39
cm <sup>3</sup>	Cu.in.	0.061
Cu.ft.	Liter	28.36
Liter	Cu.ft.	0.035
Cu.yard	m <sup>3</sup>	0.763
m <sup>3</sup>	Cu.yard	1.311
Imp.gall.	Liter	4.547
Liter	Imp.gall.	0.220
US gall.	Liter	3.785
Liter	US gall.	0.264
pint	Liter	0.568
Liter	pint	1.762
quart	Liter	1.137
Liter	quart	0.880
oz.	kg	0.028
kg	oz.	35.25
lb.	kg	0.454
kg	lb.	2.203
lb.ft.	kgm	0.139
kgm	lb.ft.	7.233
lb/in.	kg/m	17.87
kg/m	lb/in.	0.056
lb./sq.in.	kg/cm <sup>2</sup>	0.070
kg/cm <sup>2</sup>	lb./sq.in.	14.22
lb./Imp.gall.	kg/l	0.100
kg/l	lb./Imp.gall.	10.00
lb./US gall.	kg/l	0.120
kg/l	lb./US gall.	8.333
lb./cu.ft.	kg/m <sup>3</sup>	16.21
kg/m <sup>3</sup>	lb./cu.ft.	0.062
cu.ft./lb.	m <sup>3</sup> /kg	0.062
m <sup>3</sup> /kg	cu.ft./lb.	16.21
Nm	kgm	0.102
kgm	Nm	9.81
kW	PS	1.36
PS	kW	0.736
bar	kg/cm <sup>2</sup>	1.014
kg/cm <sup>2</sup>	bar	0.981
dm <sup>3</sup>	l	1
l	dm <sup>3</sup>	1

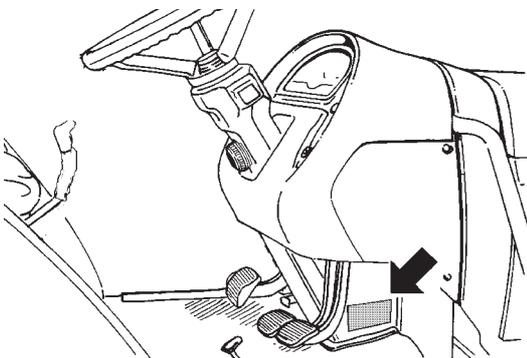
# HOW TO ORDER SPARE PARTS

To ensure perfect tractor efficiency and avoid serious drawbacks, as well as optimize your investment and operational expenses, the use of "ORIGINAL SPARE PARTS" is recommended.

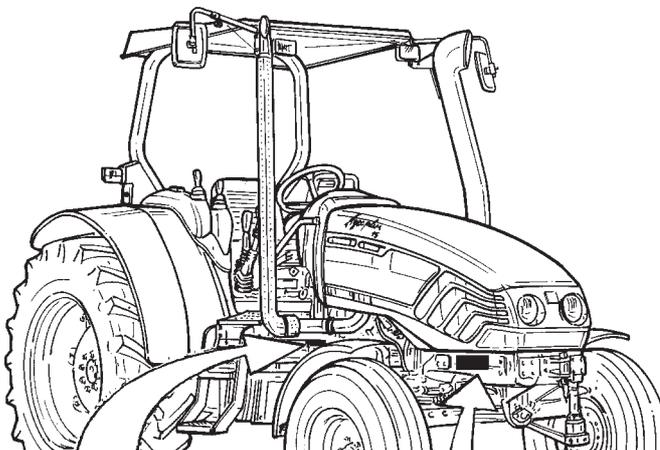
Spare parts orders must specify the following:

- Tractor's serial number and engine's serial number(if the engine is concerned).
- Denomination and reference number of the required spare part.

## TRACTOR IDENTIFICATION DATA PLATE



Hersteller / manufacturer	
<b>DEUTZ-FARH Agrarsysteme GmbH</b>	
D-89145 Lauingen	
Typ	<input type="checkbox"/>
<b>TYPE</b>	<b>77/537/EWG</b>
<input type="text"/>	
FAHRZEUG-IDENTIFIZIERUNGS-NR.	<input type="checkbox"/>
PRODUCT IDENTIFICATION NO.	<b>ECE R24</b>
<input type="text"/>	



Mot.-Typ	Code		Mot.-Nr.	kW(G)int	EP	K	E
	kW (G)	kW (S)	1/min	—	—	—	
	kW (W)			kW (int)	PC		
<b>DEUTZ AG</b> MADE IN GERMANY							

**DFA AAAAA** ☆ **0000** ☆

ENGINE TYPE AND SERIAL NUMBER

TRACTOR TYPE AND SERIAL NUMBER

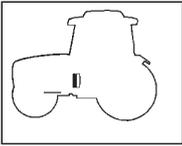
# ENGINE

AGROPLUS 75 - 85 - 95 - 100 are powered by BF4 M1012 E - BF4 M1012 EC - BF6 M1012 E engines. The workshop manual for these engines could be ordered to the following address:

**DEUTZ-FAHR Agrarsysteme GmbH**  
**Abt. LT-ZE**  
**Deutz-Fahr-Straße 1**  
**89415 Lauingen**  
**Telefax-Nr.: 09072/997-360 or -353**

Using the following code:

**0297 7393**



**2**

## Clutch and transmission

**23**

### Clutch

#### Gearshift clutch

##### General specifications

The clutch, a single stage type, comprises a friction disc, a pressure plate and a diaphragm spring.

The hydrostatic control is self-adjusting: a master cylinder operated by the pedal directs oil to the slave cylinder mounted to the left hand side of the intermediate housing, which in turn operates the clutch release lever.

##### Technical specifications

Technical specifications		AGROPLUS 75-85-95	AGROPLUS 100
Type of clutch		single disc dry organic facing	single disc dry organic facing
Type of operation		hydrostatic with automatic take-up of free travel	
Disc diameter	mm	330	350
Minimum permissible thickness of disc	mm	6	6
Thickness of friction disc	mm	8.5 <sup>+0.3</sup> <sub>-0.3</sub>	8.5 <sup>+0.3</sup> <sub>-0.3</sub>
Type of facing material on friction disc		TEXTAR T385	TEXTAR T385
Type of master cylinder		Benditalia 3/4"	
Type of oil		AKROS MATIC	
Spring specifications to Belleville washer for the clutch engagement:		11000 Nm	
Load on the pressure plate			

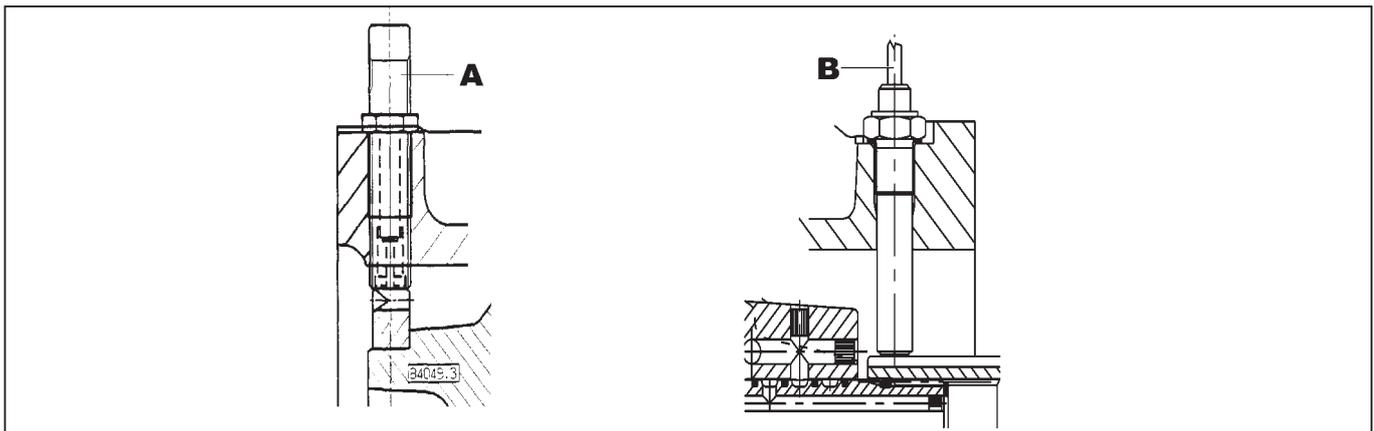


Fig. 1 - **A:** Flywheel pick-up coil  
**B:** Clutch shaft pick-up unit

#### Fitting and testing of the 2 pickup units

##### Flywheel pickup unit (A)

The pickup unit must be fitted as follows:

##### Adjustment of a new pickup unit

Screw the pickup unit into the threaded hole (M16 pitch 1.5) in the bell housing until it touches the ring gear, then tighten the locknut;

##### Adjustment of a used pickup unit

If the pickup unit has already been used, screw it in until touches the ring gear, then screw it out a 1/2 turn and secure in position at a distance of 0.65 - 0.75 mm from the ring gear.

##### Clutch shaft pickup unit (B)

This pickup unit does not operate in contact with the clutch shaft and therefore is simply screwed fully into its bore.

Resistance value

Flywheel pickup unit	1000 Ω
Clutch shaft pickup unit	2.5 KΩ

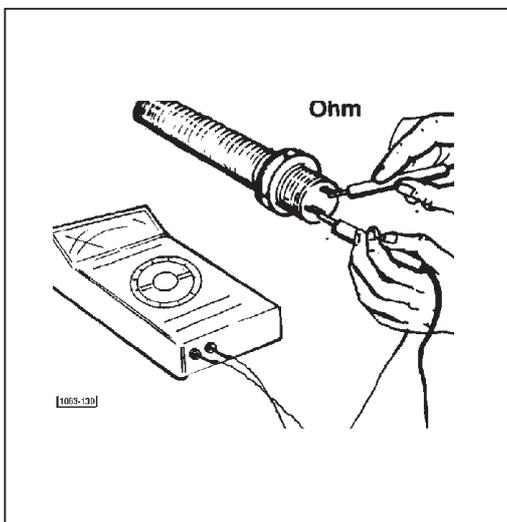


Fig. 2 - Checking the pickup unit resistance

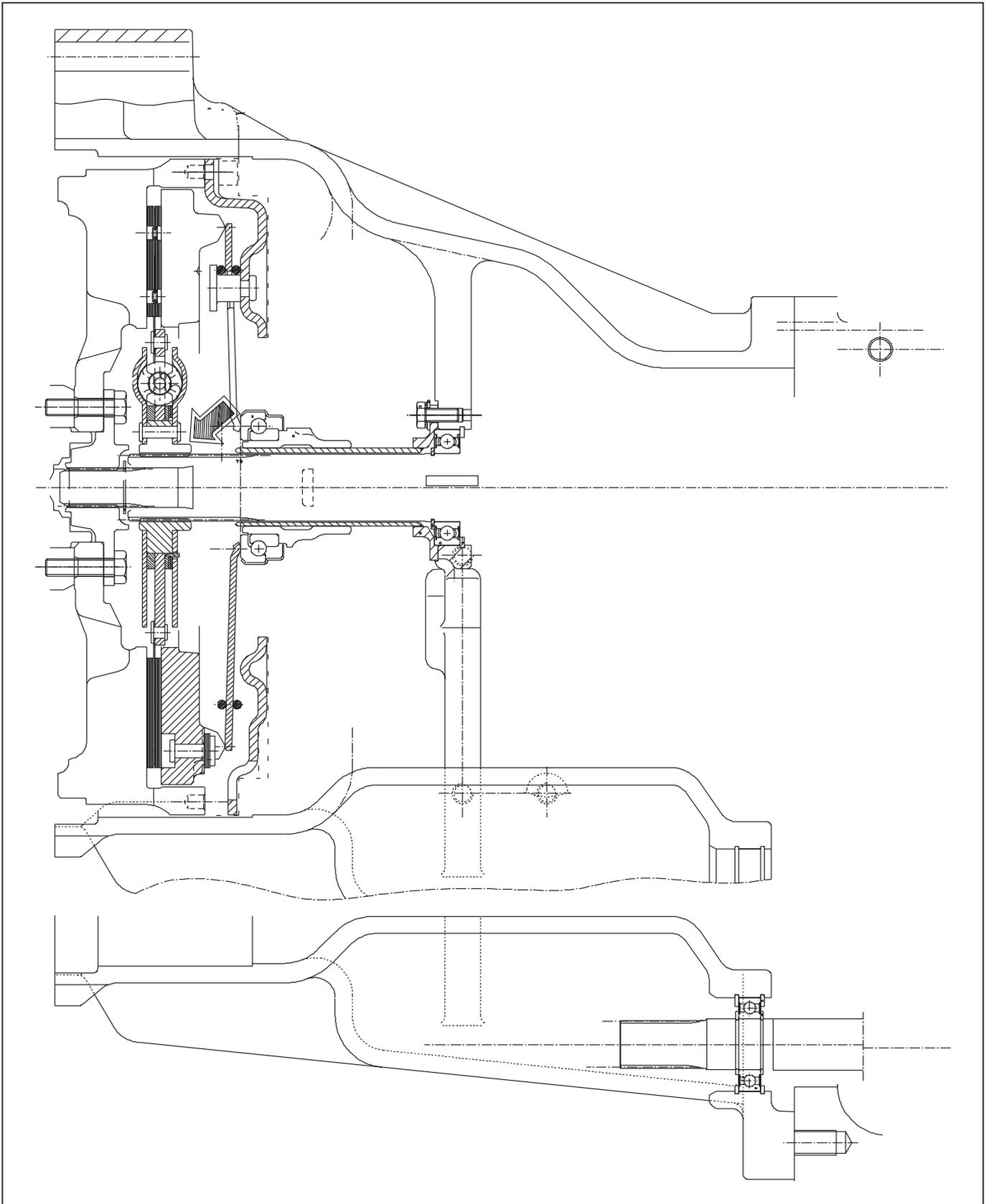
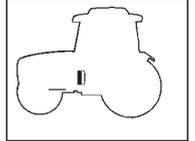
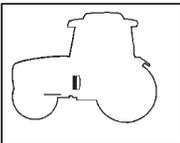


Fig. 3 - Clutch assembly.



## 2 Clutch and transmission

### 23 Clutch

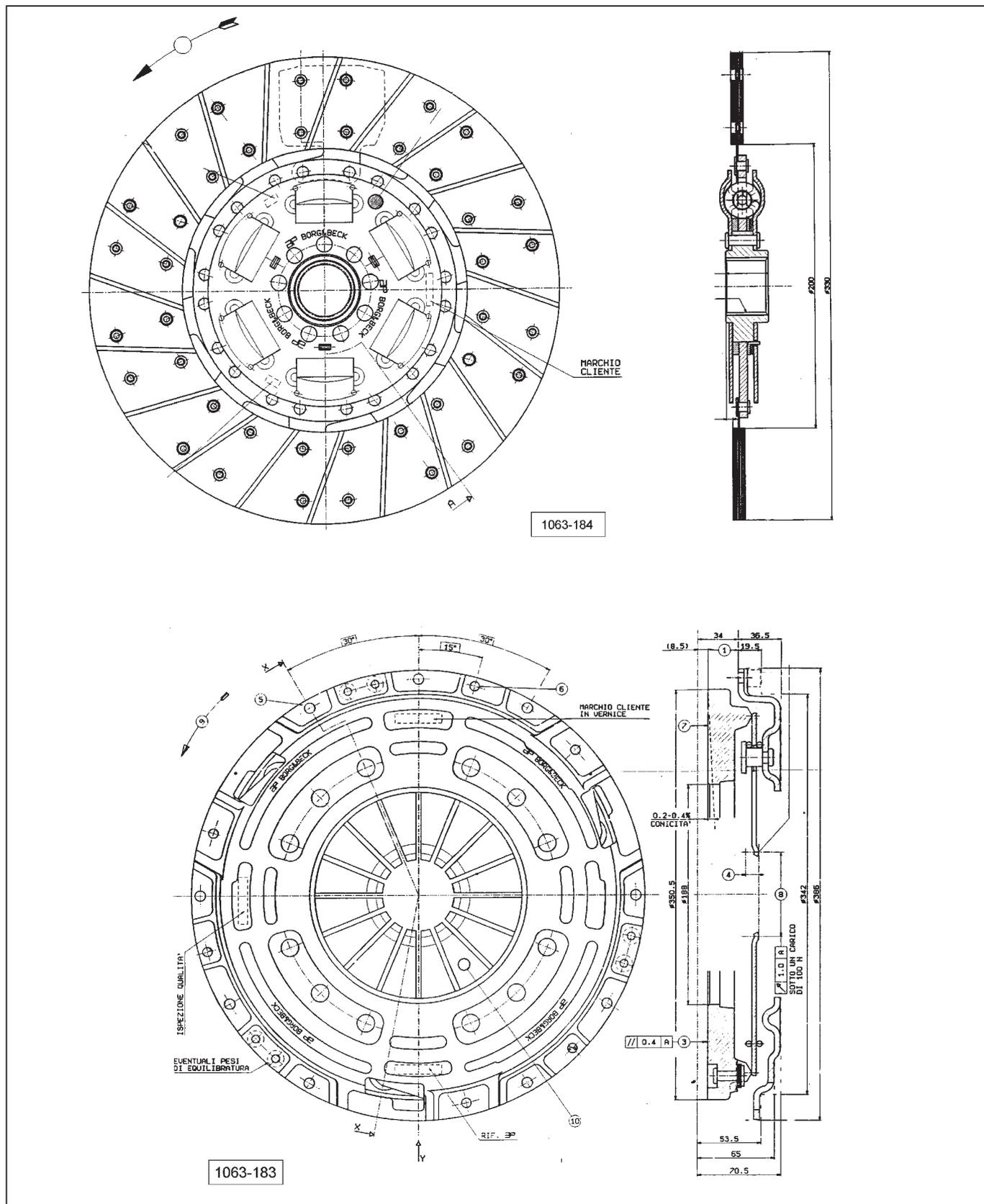


Fig. 4 - Clutch unit for **AGROPLUS 75-85-95**.

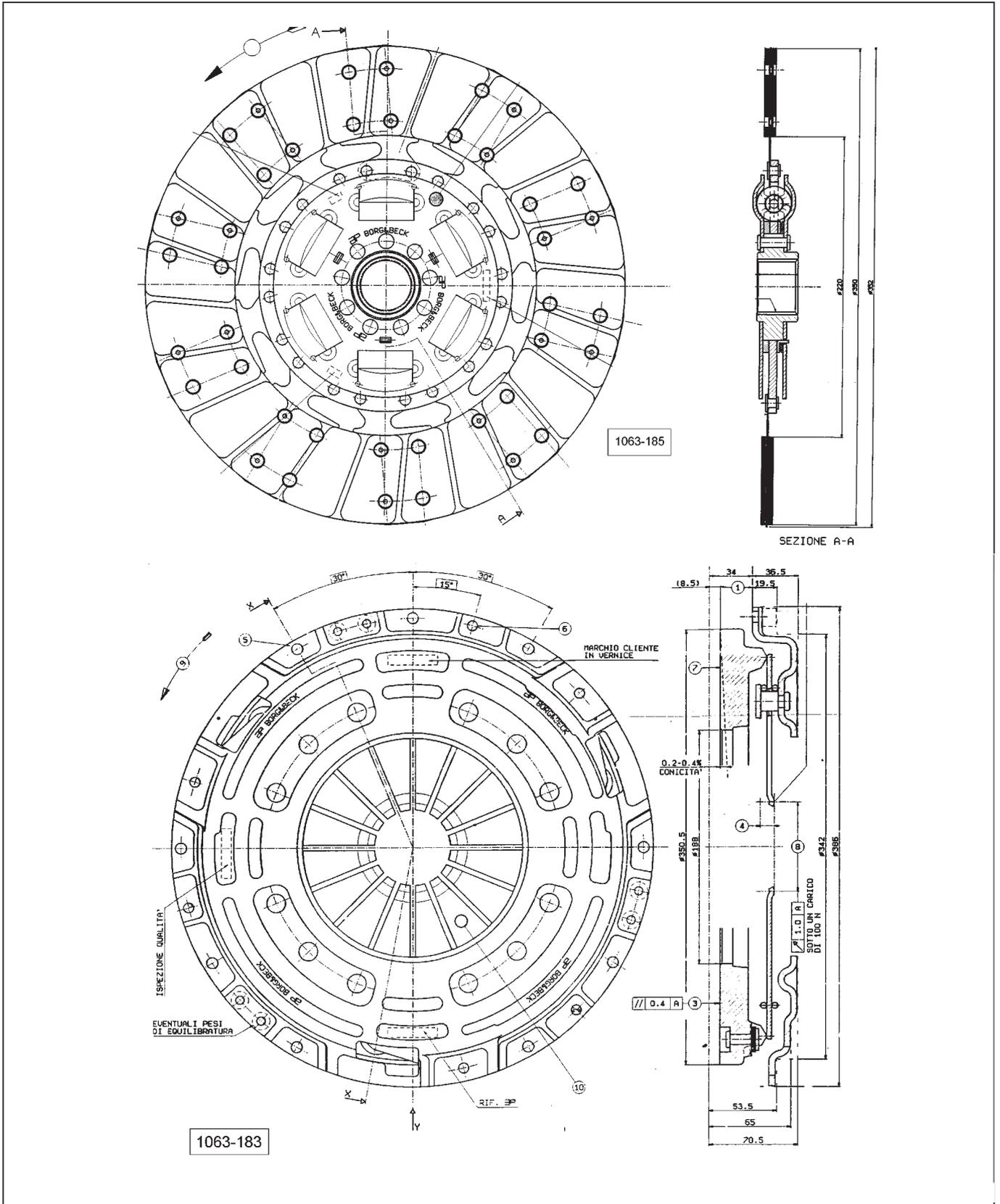
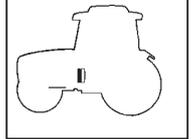
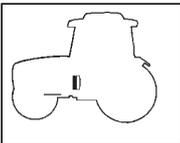


Fig. 5 - Clutch unit for **AGROPLUS 100**.



## 2 Clutch and transmission

### 23 Clutch

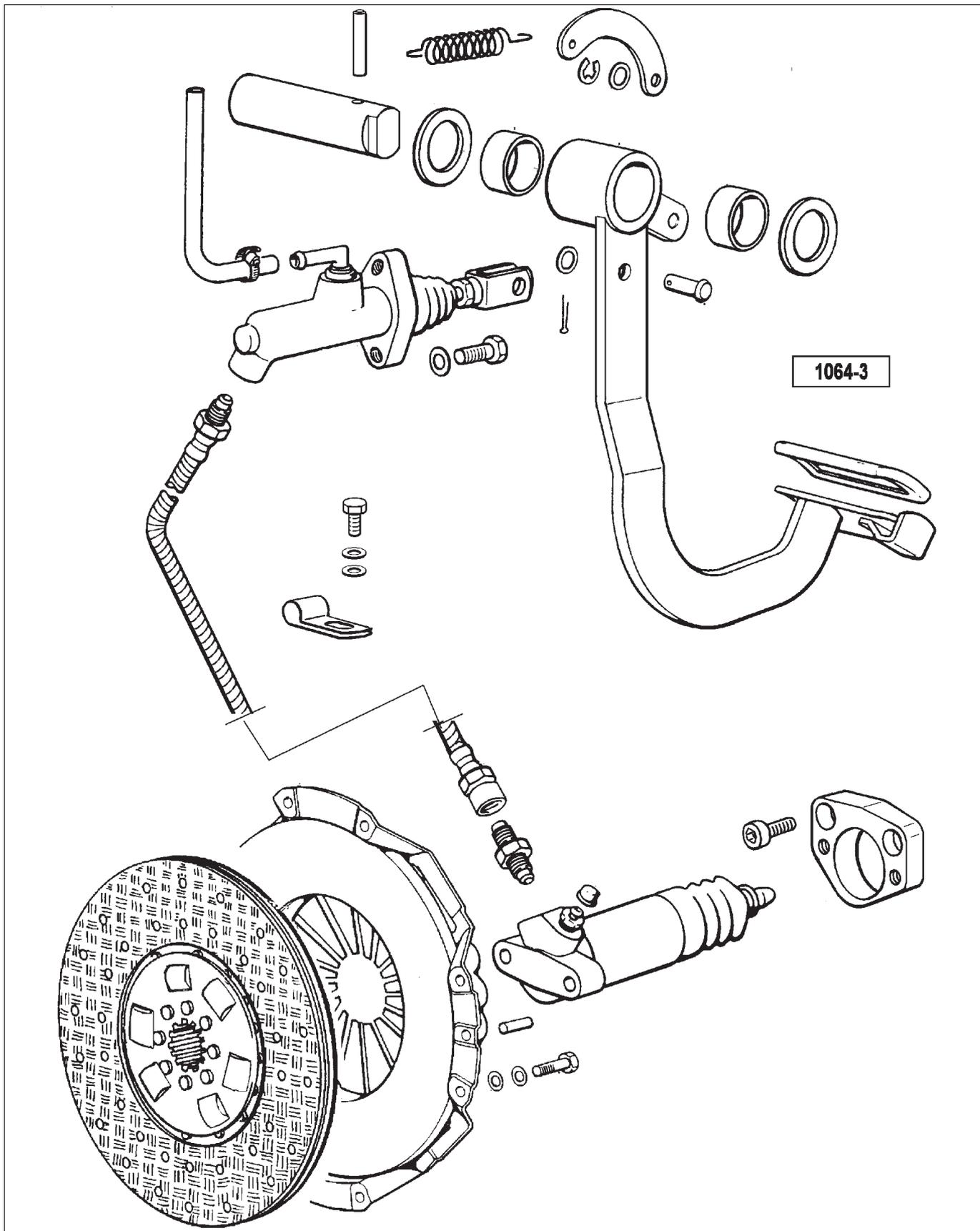
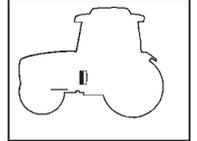


Fig. 6 - Components of clutch assembly.



## INSTALLATION OF THE CLUTCH RELEASE FORK

Before refitting the clutch fork inside the clutch housing, fill part **A** (Fig. 7), with Molycote GN-PLUS.

Fit plate **B** using a suitable tool **C** as shown in the detail of figure 7.

Secure the clutch fork pivot shaft by applying Loctite 242 to thread **D**.

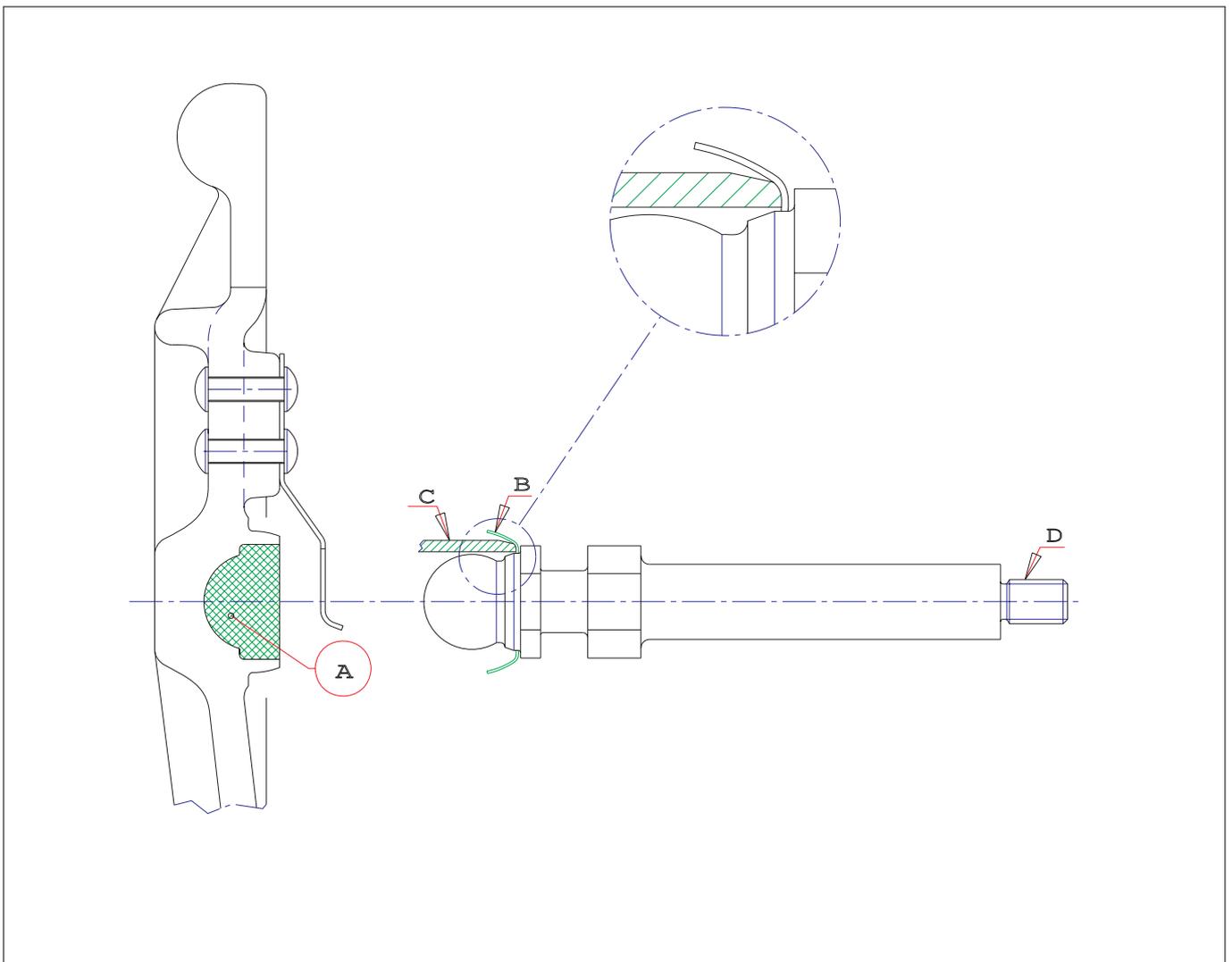
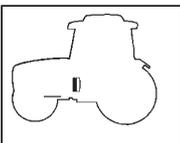


Fig. 7 - Fitting the clutch release fork.



## 2 Clutch and transmission

### 23 Clutch

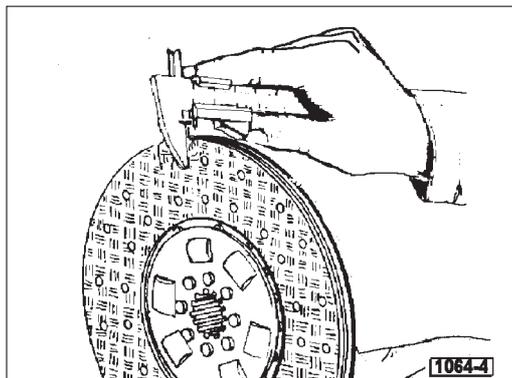


Fig. 8 - Checking clutch disk thickness.

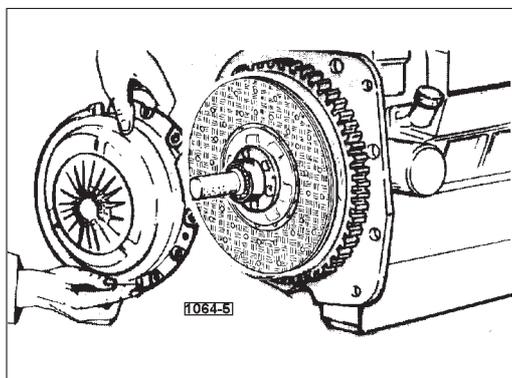


Fig. 9 - Installing clutch assembly through n. 5.9030.256.4/10 equipment.

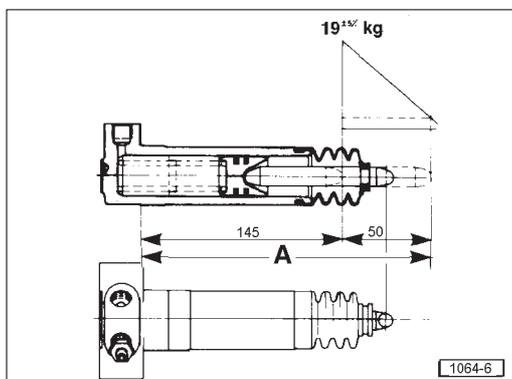


Fig. 10 - Clutch assembly hydraulic operating cylinder.

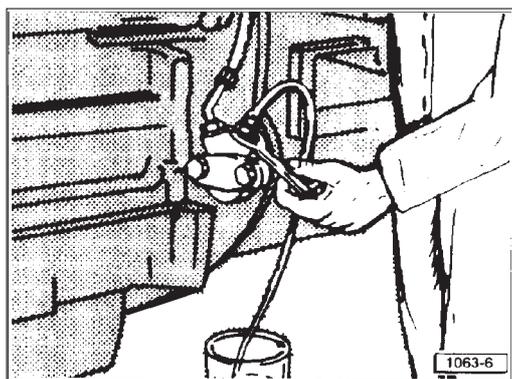


Fig. 11 - Bleeding the air from the clutch hydraulic circuit.

### Checking clutch

Check the disk lining for signs of chipping and the disk friction face for scoring which may prevent the clutch from operating properly.

Check that the sliding surface of the engine flywheel is not scored; if signs of scoring are evident, machine the surface.

Check the disk thrust plate for scoring or bluish areas caused by tempering and also ensure the diaphragm-type spring has not lost its efficiency; if so the whole clutch assembly shall be replaced.

Be sure the clutch disk is free to move in its housing and the friction lining securing rivets are duly riveted.

On reassembly ascertain dimension **A** (see Fig. 10) between the operating cylinder fixing face and the push rod contacting the engagement lever is 195 mm.

**NOTE:** To facilitate correct clutch disk assembly the use of number 5.9030.256.4/10 centering tool is recommended.

**Warning:** with engine running, never ride the clutch pedal with your foot to prevent the clutch disk from being damaged because of overheating.

**Important:** The thrust bearing is prelubricated, and must never on any account be cleaned with fuel oil or other solvents as these will render the prelubrication treatment ineffective.

### Adjusting clutch control pedal

Make sure the distance between pump fixing surface and fork hole centre is  $106 \pm 1$  (Fig. 18); otherwise loosen nut **A** and operate adjusting stay rod **B** (Fig. 18).

### Bleeding air from the hydraulic circuit

Operate the clutch pedal several times, then keeping the clutch pedal in fully depressed position, slightly unscrew and soon after tighten the air bleeding screw valve again (this being located on thrust lever operating cylinder). This operation should be repeated as many times as the oil flows out of the bleeding screw valve without air bubbles.

**IMPORTANT:** If the clutch has been removed, when refitting, take care to position it as shown by the arrow in figure 3, as the clutch disc is not symmetrical.

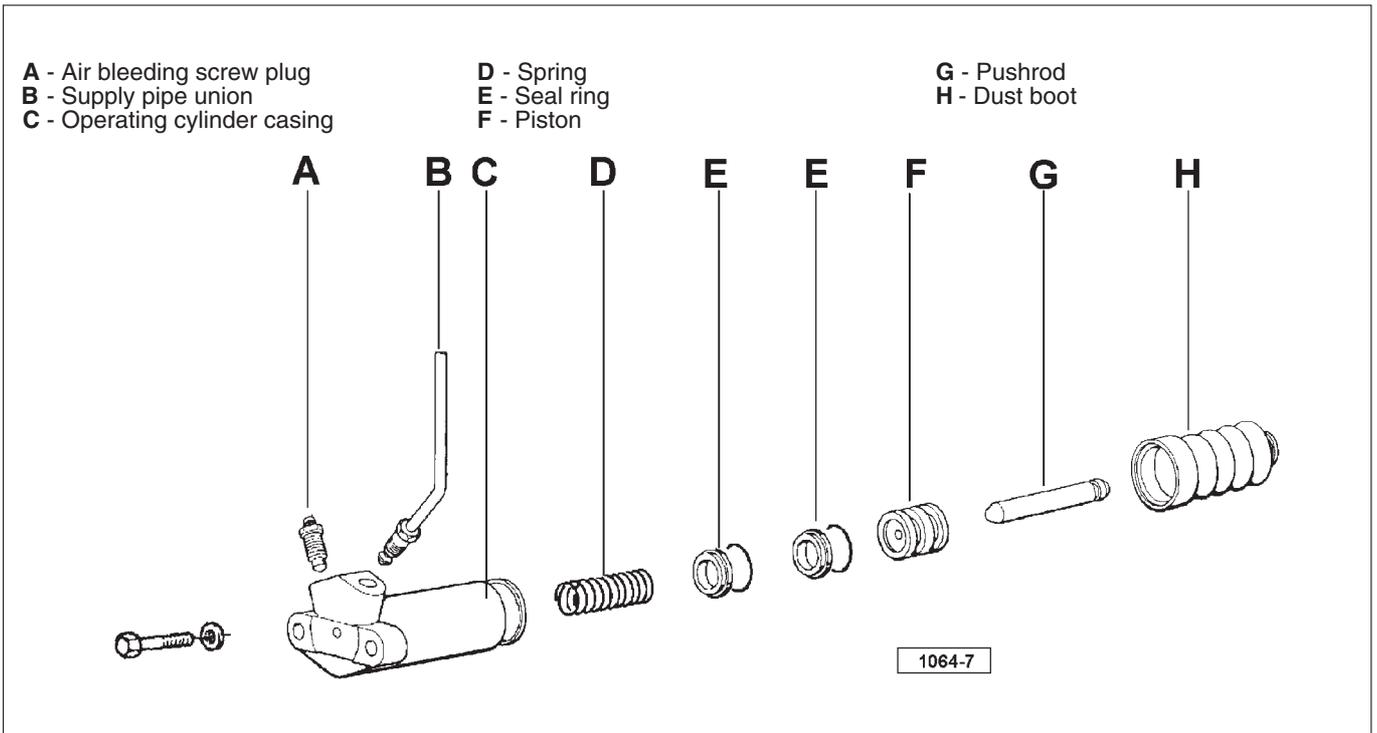
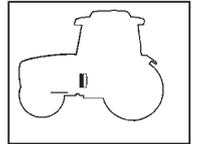


Fig. 12 - Clutch operating cylinder.

### Stripping the slave cylinder (Fig. 12)

Remove the boot **H**. Withdraw the piston **F** carefully from the cylinder **C**, blasting with compressed air at low pressure to assist removal.

Remove the spring **D** from the cylinder and loosen the bleed screw **A**. Remove the seals **E** from the piston **F**.

### Inspections

- Check both internal and external piston surfaces for scratching. Replace if required.
- Make sure the seal ring grooves are duly clean; blow the grooves with compressed air if necessary.
- Inspect seal ring, dust boot conditions as well as spring efficiency, worn-out parts should be replaced.
- Ensure the air bleeding hole is free from impurities.

### Notes on refitment

- To clean components prior to refitting the pump, use only the prescribed clutch/brake fluid (see page 14). Do not use petrol, paraffin or other mineral oils as these could damage the rubber parts.
- When reconnecting the transmission housing, check that the clutch fork remains correctly positioned and free to rock on its fulcrum pivot. This can be ensured by removing the side plug from the flange of the intermediate housing and viewing the fork through the hole. In the event of the fork pivot being unseated, reposition correctly with the aid of a screwdriver inserted through the hole vacated by the plug.
- Before refitting the slave cylinder, fill with the recommended oil so as to facilitate the subsequent bleeding procedure.
- Once all components are correctly and securely in place, bleed the hydraulic circuit.

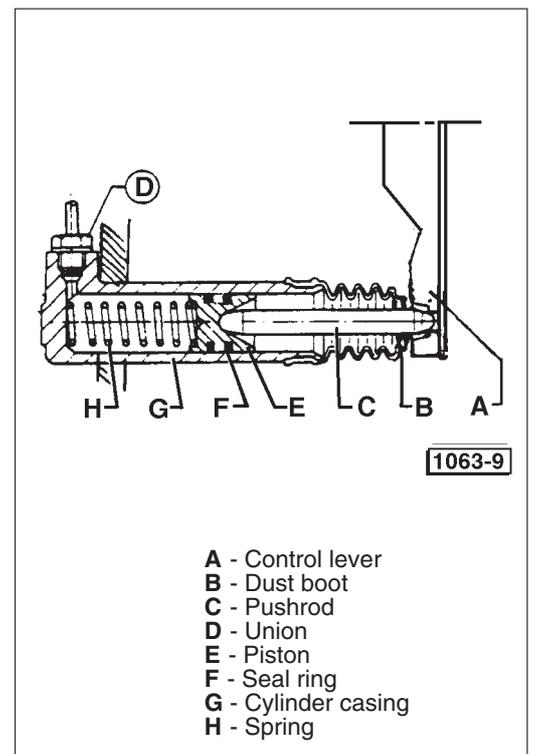
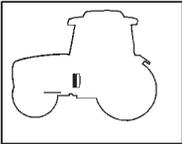


Fig. 13 - Clutch operating cylinder cutaway view.



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## Clutch e trassmissione

**23**

### Clutch

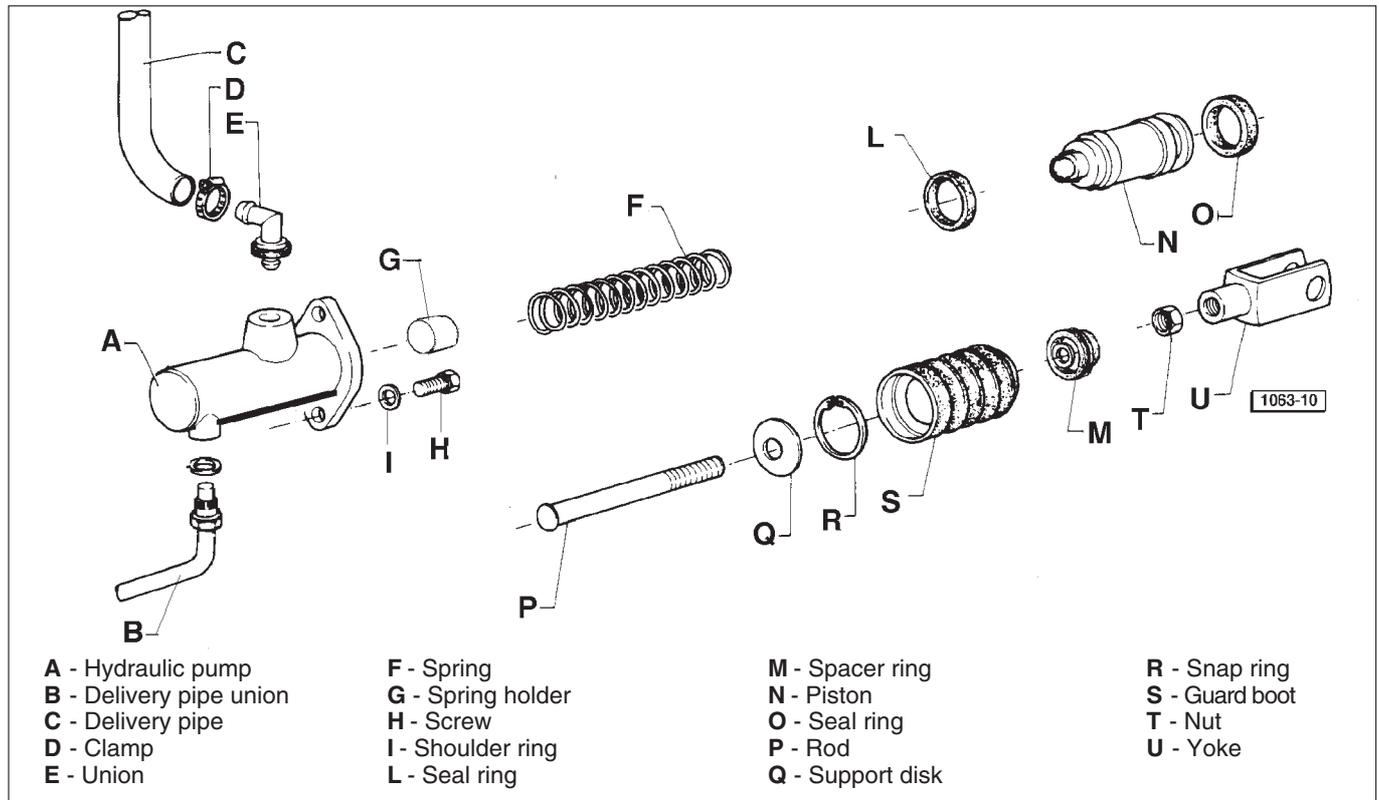


Fig. 14 - Clutch hydraulic pump parts.

### Stripping the master cylinder

Referring to figure 16, remove the protective boot **E**, dislodge the circlip **B** and withdraw the rod **D** together with the disc **C**.

Remove the piston together with the spacer, the seal, the backup washer and the spring beneath.

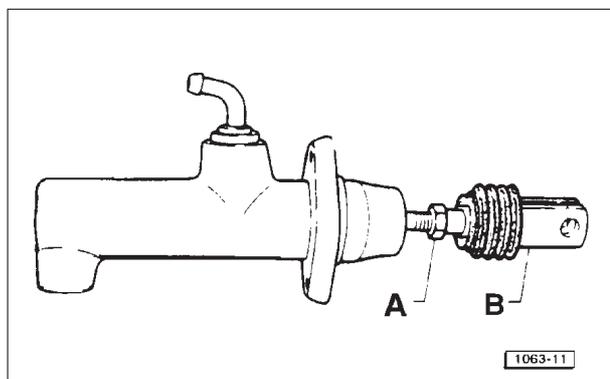


Fig. 15 - Clutch pump control positioning.

**A** - Locknut  
**B** - Yoke

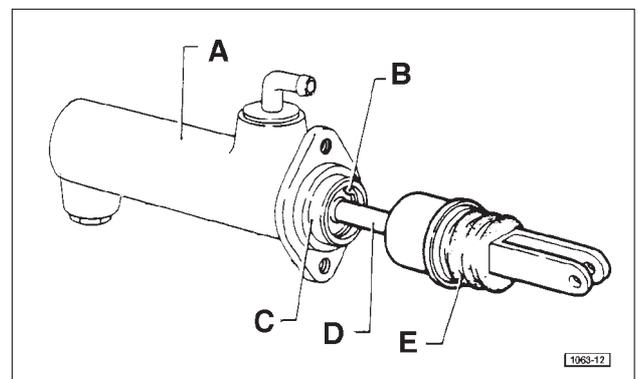
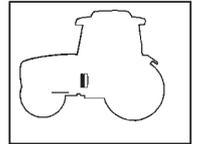


Fig. 16 - Seal ring del Command pompa

**A** - Pump  
**B** - Snap ring  
**C** - Support disk  
**D** - Rod  
**E** - Guard boot



## Inspections and checks

**WARNING:** To clean and wash the hydraulic pump components use only the oil type recommended for brakes and clutch. Never use petrol, kerosene or other mineral oils to prevent damaging the rubber parts.

Inspect both internal and external piston sliding surfaces for scratching.

Replace if required.

Make sure the seal ring grooves are duly clean; blow the grooves with compressed air if necessary.

Inspect seal ring, dust boot conditions as well as spring efficiency, worn-out parts should be replaced.

Inspect all pump internal compartments, apertures and passages and make sure these are properly clean and free from foreign matters.

Check that the spring is neither lazy nor deformed; replace if necessary.

## Reassembly

Reassemble the cylinder, repeating the disassembly steps in reverse order and observing the following directions:

- Lubricate surfaces engaged in relative sliding contact, using the recommended oil (see page 14).

- Verify correct operation of the cylinder, making certain that the piston is able to complete its full stroke unimpeded.

In the event that the fork linking the master cylinder with the pedal has been removed, check that with the push rod fully extended, the distance between the reference surface of the cylinder and the centre of the hole in the fork is as indicated in figure 18.

If not (referring to Fig. 15), remove the boot, loosen the lock nut **A** and screw or unscrew the fork **B** to obtain the prescribed clearance, then retighten the lock nut and reposition the boot.

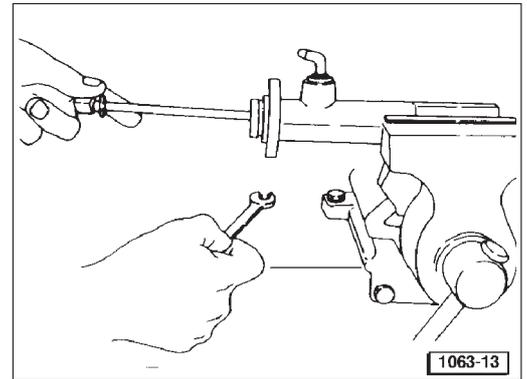


Fig. 17 - Removing the oil pump inside parts.

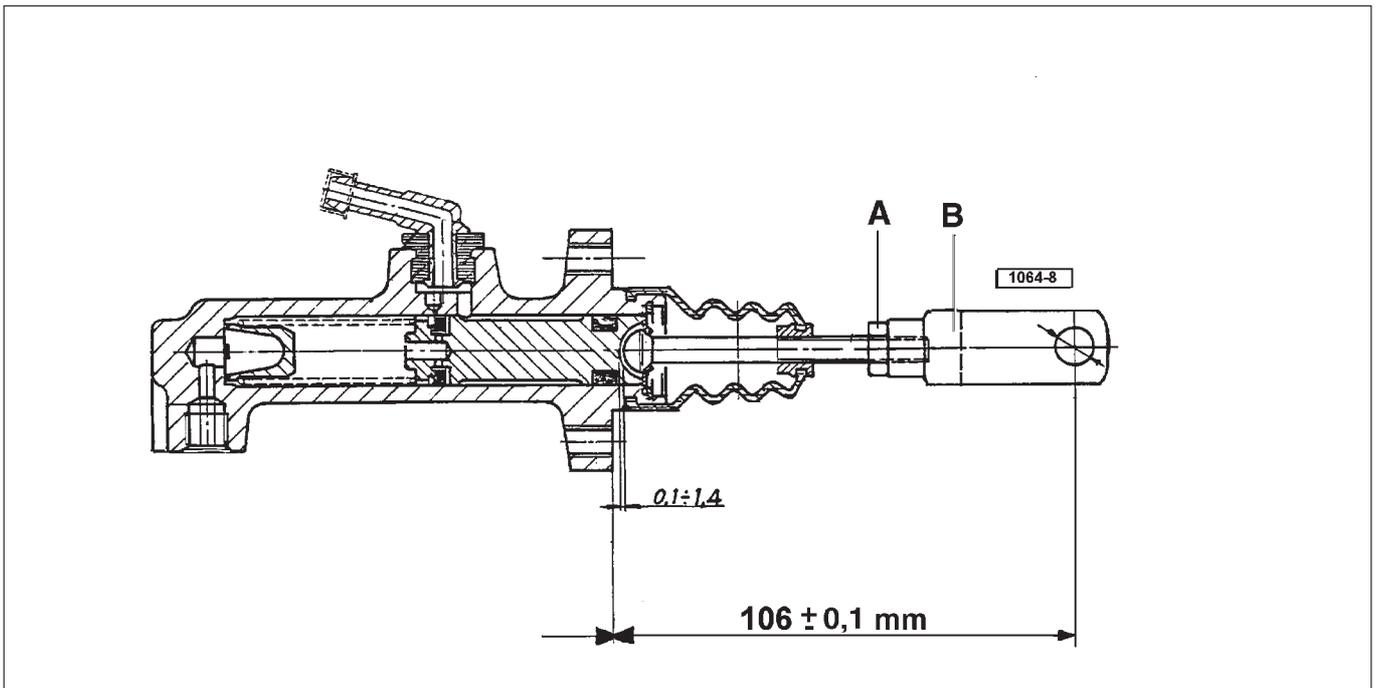
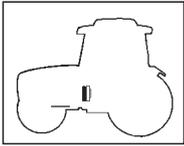


Fig. 18 - Section through clutch master cylinder.



2

## Clutch and transmission

23

### Diagnosing malfunctions

lubricant in clutch housing	renew the front gearbox oil seal and the rear engine oil seal	clean oil seal contact surfaces with petrol	replace disk
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#### Clutch slips

clutch worn	check condition of clutch disk	check condition of the spring disk	fit new clutch assembly
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thrust bearing sticking	clean surfaces and apply grease	replace thrust bearing	clean or replace the disk
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clutch disk surfaces dirty	clean the friction surfaces		
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clutch disk surfaces dirty	replace clutch disk		
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#### Clutch jerks

clutch disk warped	clutch disk worn	replace clutch disk	
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disk	replace clutch disk		
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difficulty in engaging gears when engine running	clutch disk warped	replace disk	
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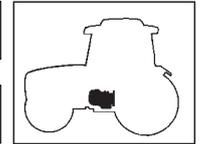
#### Clutch fails to disengage

hydraulic pump inefficient	check the stroke of the clutch control piston and replace any worn parts		
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clutch disk stuck to flywheel	clean contact surfaces with a wire brush and petrol		
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#### Clutch noisy when disengaged

worn parts in clutch engagement mechanism	replace parts		
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### Powershift unit

The Powershift unit is composed of an **epicyclic speed reducer** and **three oil-immersed multiple disc clutches (LOW - MED - HIGH)**.

The unit is located between the clutch-coupled shaft and the gearbox.

The speed reducer is engaged and disengaged selectively by way of the three clutches, which are a push button

and mounted to the knob of the shift lever.

Selecting the control, the **MED** clutch releases as the force of the belleville discs is overcome by hydraulic pressure; at the same time, the **HIGH** clutch engages, locking the planet carrier of the epicyclic train to the relative housing so that drive is transmitted to the range input shaft with no speed reduction whatever.

Selecting the control, the **MED** clutch releases as the force of the belleville discs is overcome by hydraulic pressure; at the same time, the **LOW** clutch engages, and the shaft carrying the sun wheel is locked to the structure of the transmission housing. As a result, the planet carrier is made to rotate as one with the epicyclic housing and drive is transmitted to the layshaft at a speed reduction of 0.687 (the ratio between the annulus and the sun wheel gear teeth).

Selecting the control, the POWERSHIFT unit is isolated from hydraulic pressure altogether and the belleville discs are able to engage the **MED** clutch, with the result that the shaft in mesh with the larger planet wheel is locked to the transmission housing. This gives a reduction of 0.825, by reason of the compound ratio between the planet wheels and the flange of the speed reducer in mesh with the range input shaft.

### Technical specifications

Clutch				
Maker		SAME DEUTZ-FAHR GROUP		
Number of friction discs		7	4	2
Diameter of friction discs	mm	129.5	129.5	129.5
Overall thickness of assembled friction discs complete the intermediate discs	nominal	25.2 ÷ 25.4	17.50 ÷ 17.60	11.70 ÷ 12.40
Number of intermediate discs		3+1	2+1	2+1
Disc lubrication pressure	bar	5	5	5
Maximum pressure	bar	16	16	16
Piston thrus	Kg	1986	1986	1986
	Nm	19463	19463	19463
Oil filter				
filtration capacity	micron	25	25	25
Epicyclic speed reducer				
- LOW		$1 + (33/72) = 1.4583$		
- MEDIUM		$1 + (21 \times 18) : (24 \times 72) = 1.2188$		
- HIGH		1		

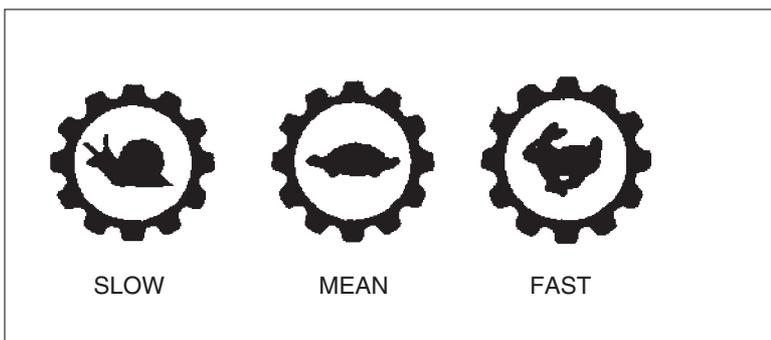


Fig. 1 - Range selection indicators mounted to the instrument panel.

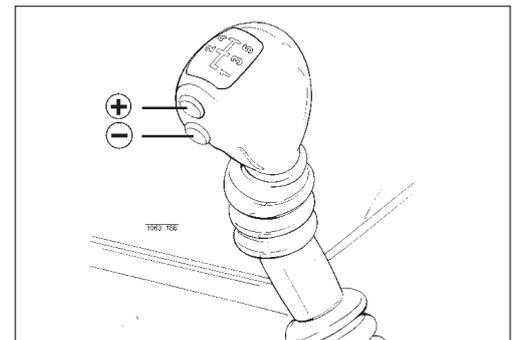
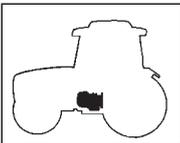


Fig. 2 - Powershift control.



**2 Clutch and transmission**  
**27 Powershift**

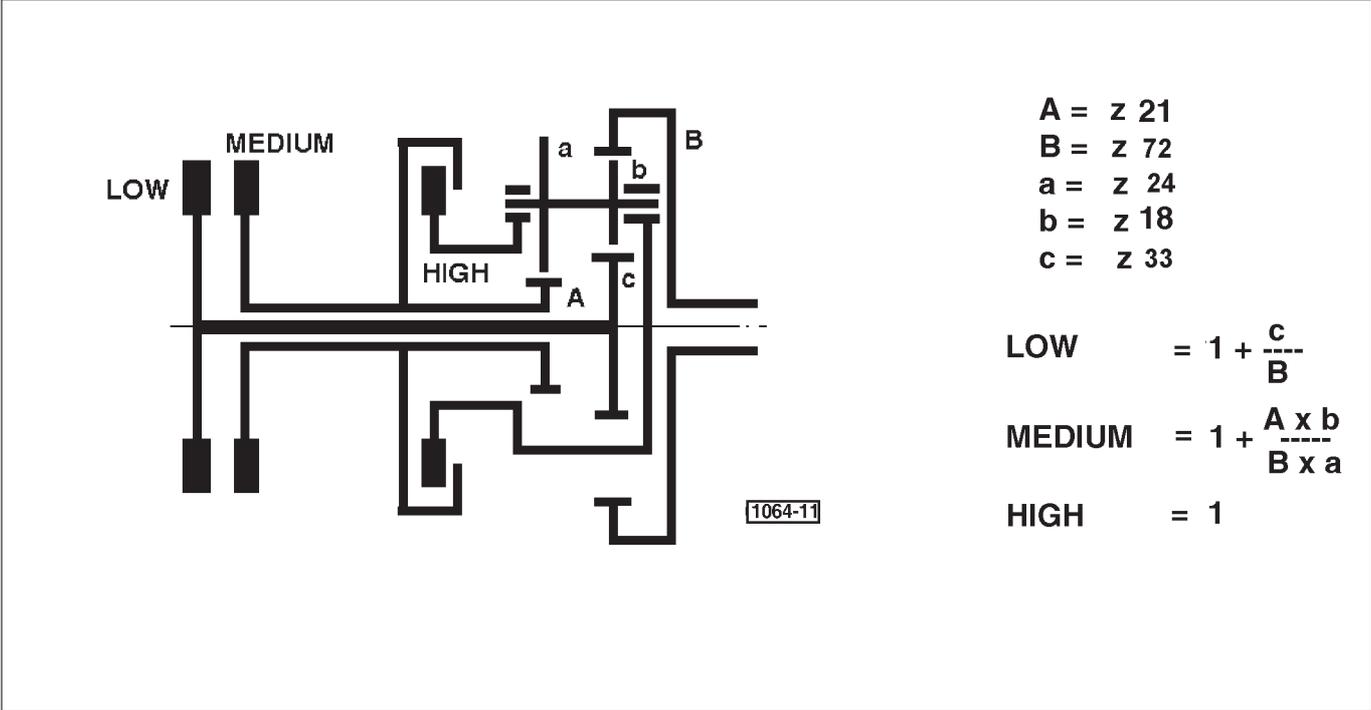


Fig. 3 - Diagram illustrating operation of the POWERSHIFT system.

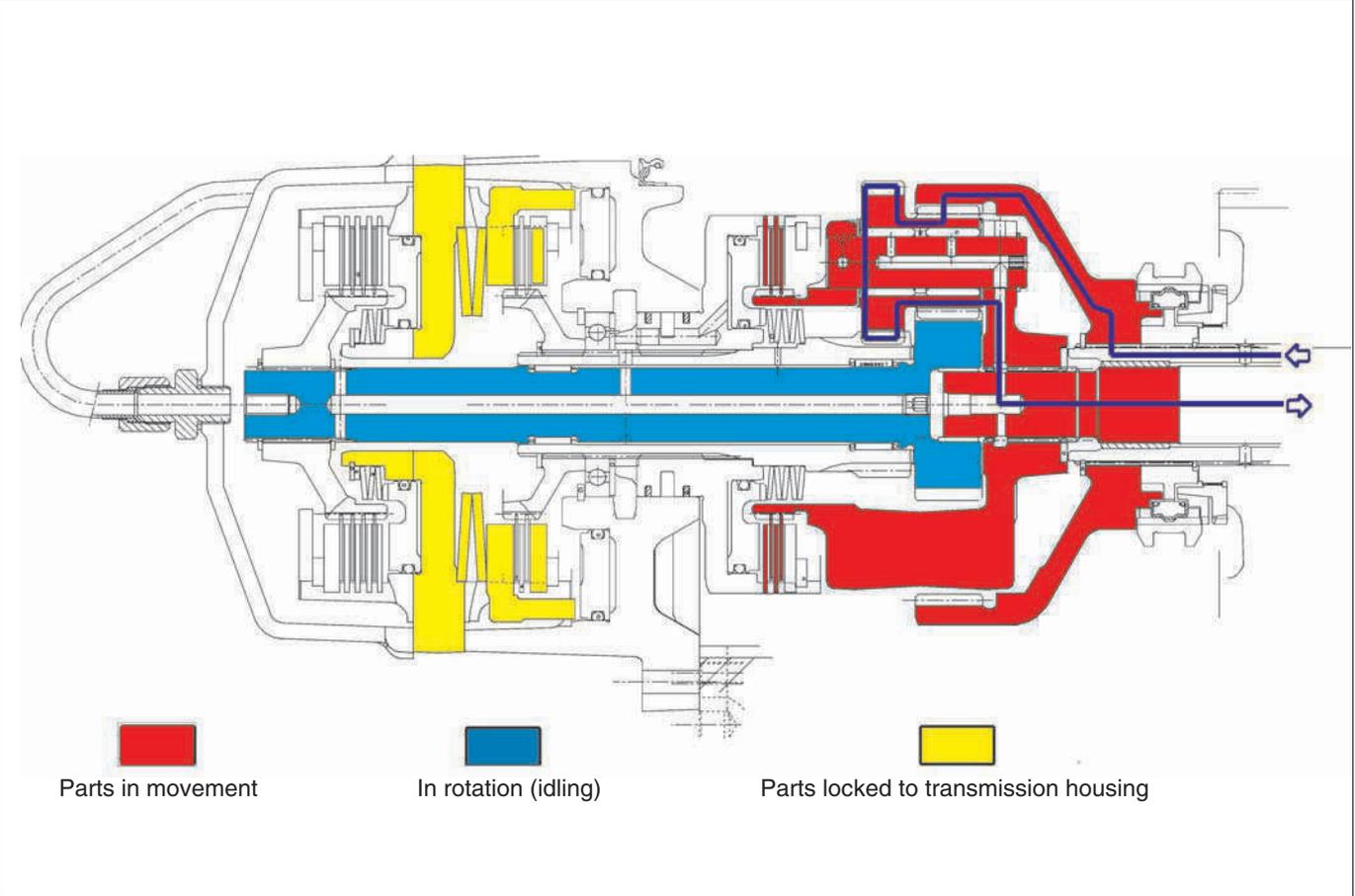


Fig. 4 - Diagram showing engagement of POWERSHIFT with MED range selected.

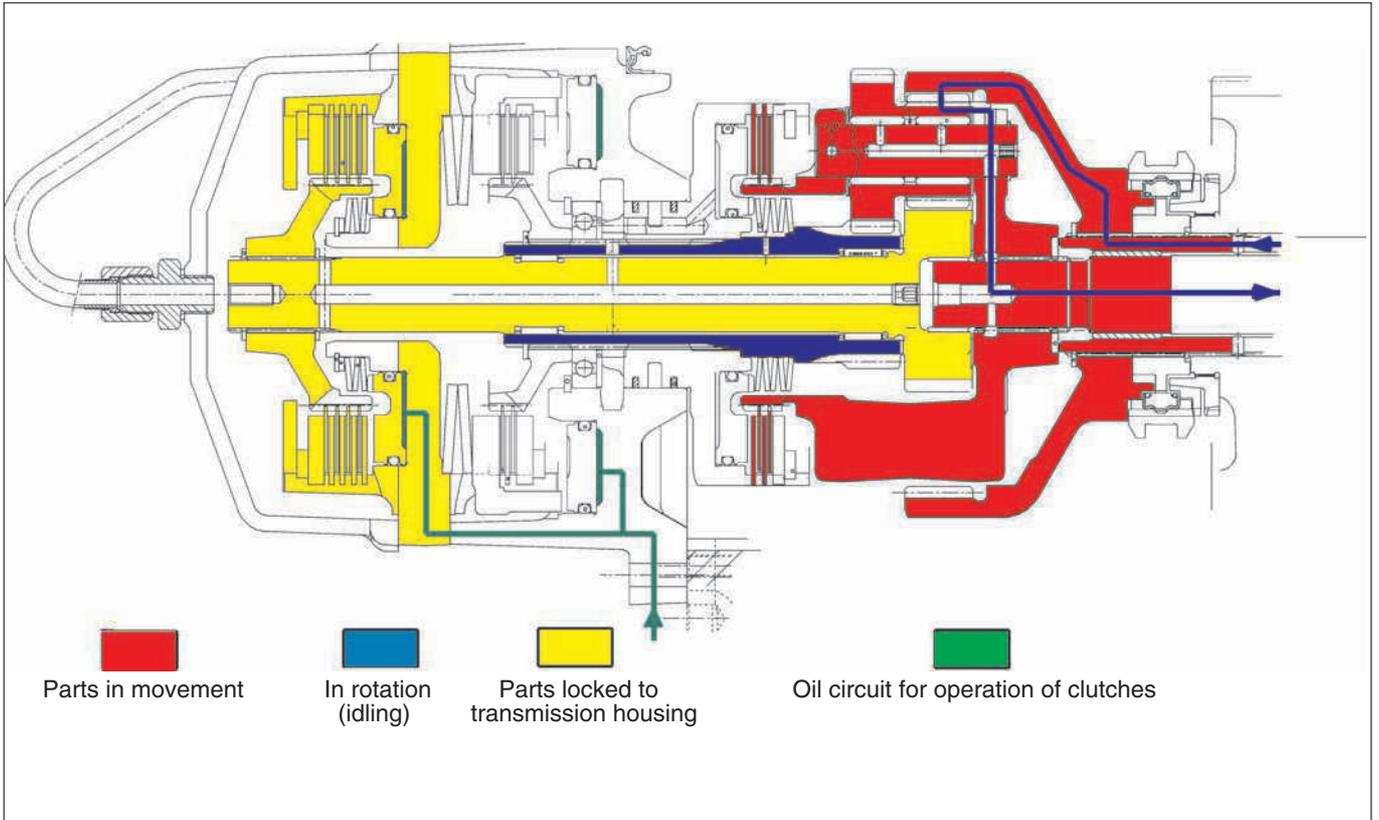
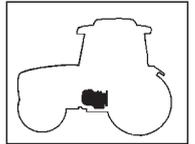


Fig. 5 - Diagram showing engagement of POWERSHIFT with LOW range selected.

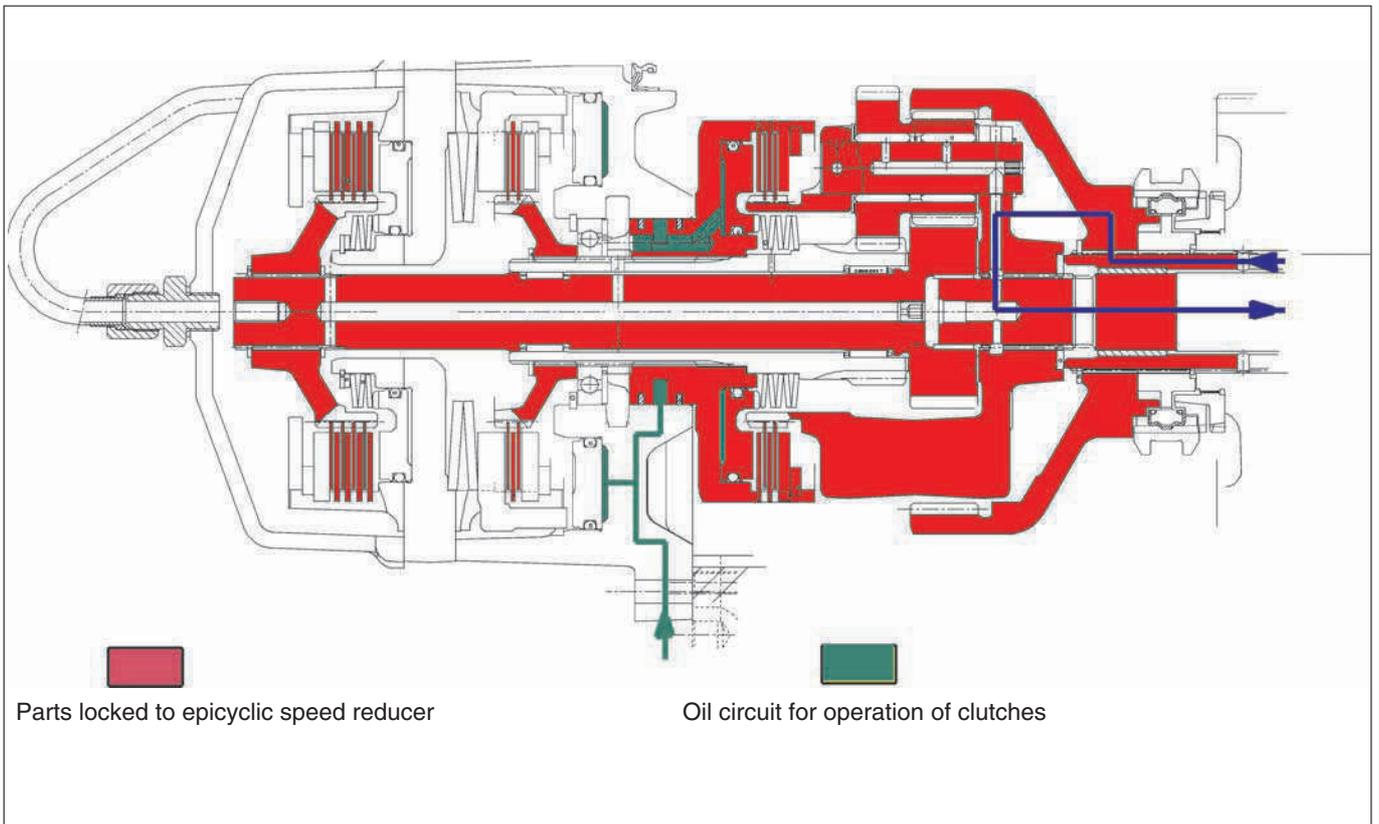
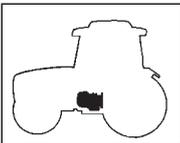


Fig. 6 - Diagram showing engagement of POWERSHIFT with HIGH range selected.



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## Clutch and transmission

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### Powershift

A - Gearshift clutch shaft

B - Cover

C - LOW clutch

D - LOW clutch piston

E - Clutch housing MEDIUM - LOW

F - MEDIUM clutch bellville discs

G - MEDIUM clutch

H - MEDIUM piston

I - Flange

L - HIGH clutch housing

M - HIGH clutch piston

N - HIGH clutch

O - LOW clutch hub

P - MEDIUM clutch hub

Q - Planet wheel

R - Epicyclic speed reducer

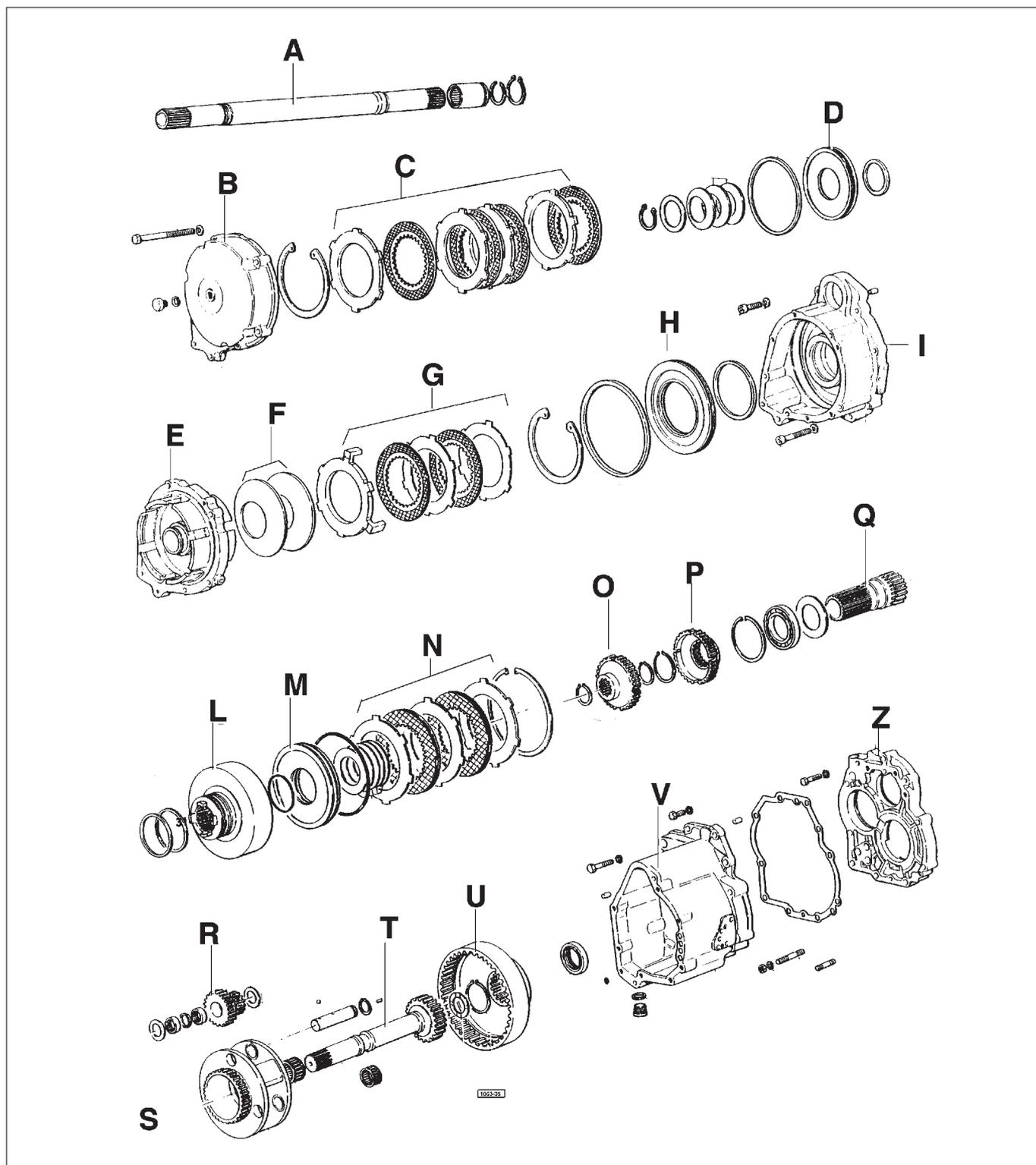
S - LOW shaft

T - Albero LOW

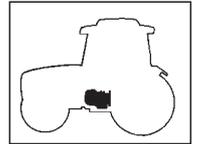
U - Epicyclic annulus

V - Flange

Z - Flange



Powershift unit.



### Fitment of the Powershift unit

To accommodate the Powershift system, the basic transmission with standard issue of **lay shaft A** and **range input shaft B** must be equipped instead with special shafts (**A** = p/n 009.7644.3/10 and **B** = p/n 009.7643.3/10).

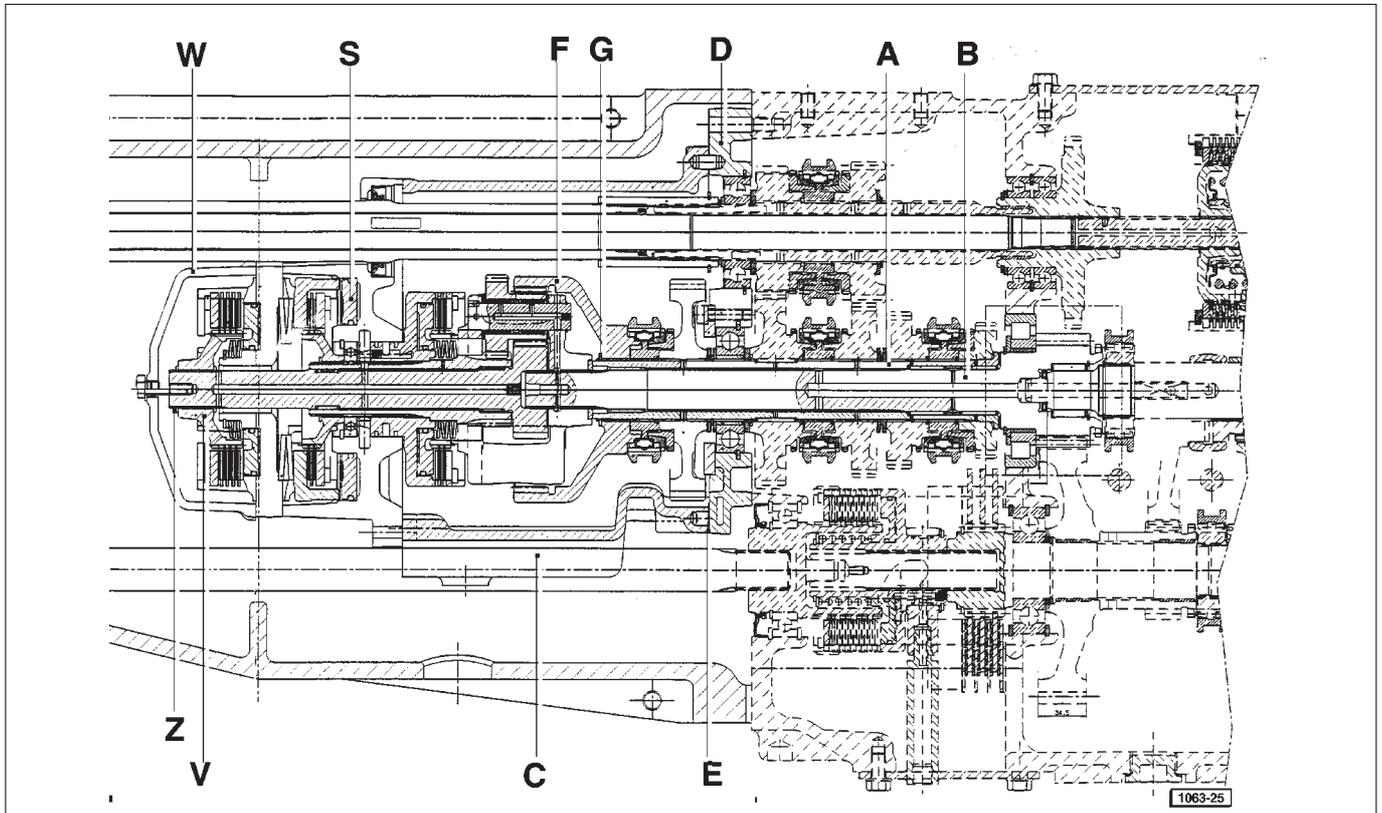
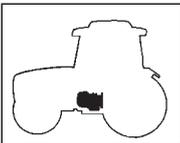


Fig. 7 - Components of the Powershift unit.

**Note:** No special tools are required for reassembly of the unit, other than one M8x1.25x30 bolt which is used to keep the centre shaft **Z** in position when adjusting end float in the **Powershift** unit.

#### Proceed to assemble the unit, observing the following directions:

- Secure the housing **C** p/n 007.6743.3 to the flange **D** p/n 007.3461.0, locating the gasket **E** p/n 255.3356.0 between the two.
- Fit the input wheel **F** p/n 009.7645.0 to the layshaft, securing with the circlip **G**.
- Working at the bench, preassemble the LOW shaft **H** p/n 007.6139.3/40 with the planet carrier flange **I** p/n 008.5677.0 (Fig. 8).
- When fitted to the shaft, the planet wheels must be positioned so that the punched countermarks coincide with the reference marks on the planet carrier flange (Fig. 8).
- Working at the bench, preassemble the MEDIUM shaft **L** p/n 007.6149.0/20 and the Belleville discs **M** p/n 007.6149.0 (Fig. 9).
- Position the HIGH clutch complete with all its component parts in the relative housing **N** p/n 007.6745.3. Take care that the VESPEL seals are correctly positioned, to avoid damage.
- Fit the unit to the MEDIUM shaft, while holding the shaft vertical (Fig. 9).
- Fit the oil baffle **O**, the bearing **P** and the circlip **Q** (Fig. 9).



## 2 Clutch and transmission

### 27 Powershift

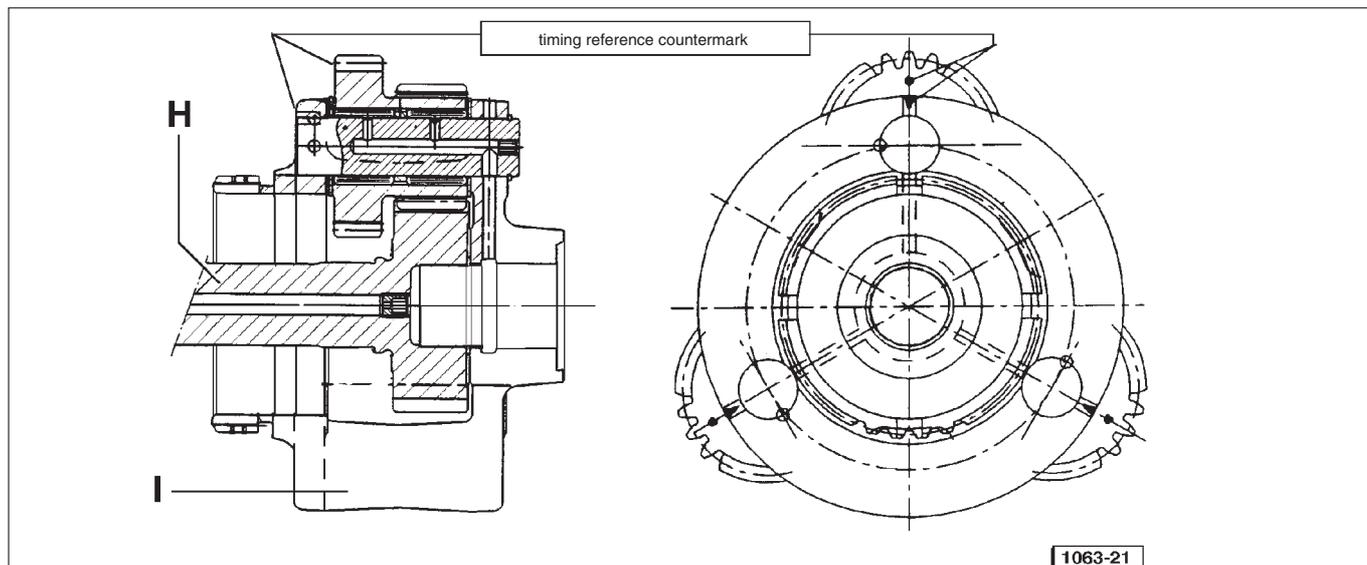


Fig. 8 - Timing the epicyclic speed reducer of the Powershift unit.

- Fit the MEDIUM hub **R** p/n 009.7649.0/10, securing with the respective circlip and compacting the belleville discs **M** with the relative press.
- Fit the MEDIUM actuator piston **S** p/n 008.5669.0, having first located the relative O-rings.
- Working at the bench, preassemble the friction discs of the MEDIUM - LOW housing **T** p/n 007.6744.3 (Fig. 10). Align the discs initially using the housing itself as a reference, then compress the belleville discs **U** p/n 2.1499.127.0.
- Position the MEDIUM - LOW assembly in the housing **N** applying sealant (Pianermetic 510) to the mating surfaces.
- **CAUTION:** take care when applying sealant not to foul the clutch oil inlet ports.
- Fit the planet carrier assembly to the shaft **L**, position the hub **V** p/n 008.0213.0 and fit the circlip **Z**.
- Fit the cover **W** p/n 007.6198.0 (Fig. 7), applying sealant (Pianermetic 510) to the mating surfaces.

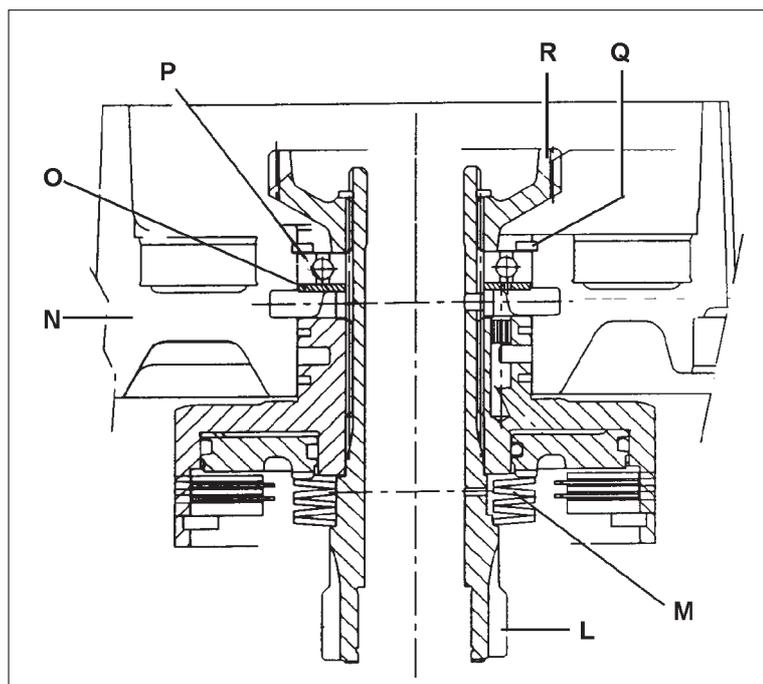


Fig. 9 - Preassembly of parts on MEDIUM shaft.

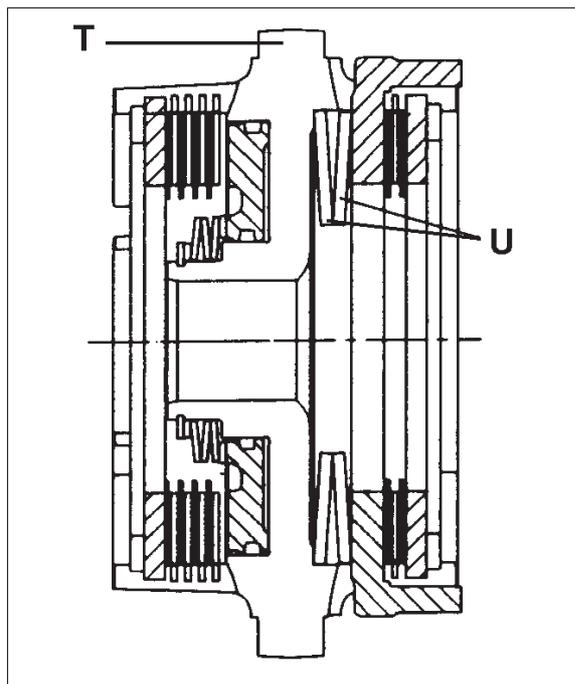


Fig. 10 - Preassembly of MEDIUM-LOW clutches.

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