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 thos people, who will let us have their suggestions in order to make this publication more complete.

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5 - VEHICLE

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AGROPLUS 75 - 85 - 95 - 100 TRACTOR CONFIGURATIONS

AGROPLUS 75 - 85 - 95 - 100	**2WD**	WITH PLATFORM
	2WD	WITH CAB
	4WD	WITH PLATFORM
	4WD	WITH CAB
	2WD	WITH HIGH VISIBILITY CAB
	4WD	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 15reverse 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
Kerb weight				
	Front	Kg	1600	1670
	Rear	Kg	2200	2530
	Total	Kg	3800	4200
Maximum permissible load				
	Front	Kg	3000	3000
	Rear	Kg	4500	5000
	Total	Kg	6200	7200
Maximum imposed load				
	Front	Kg	1400	1330
	Rear	Kg	2300	2470
	Total	Kg	2400	3000

DIMENSIONS

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

* (Tyres 13.6R28/14.9R38)

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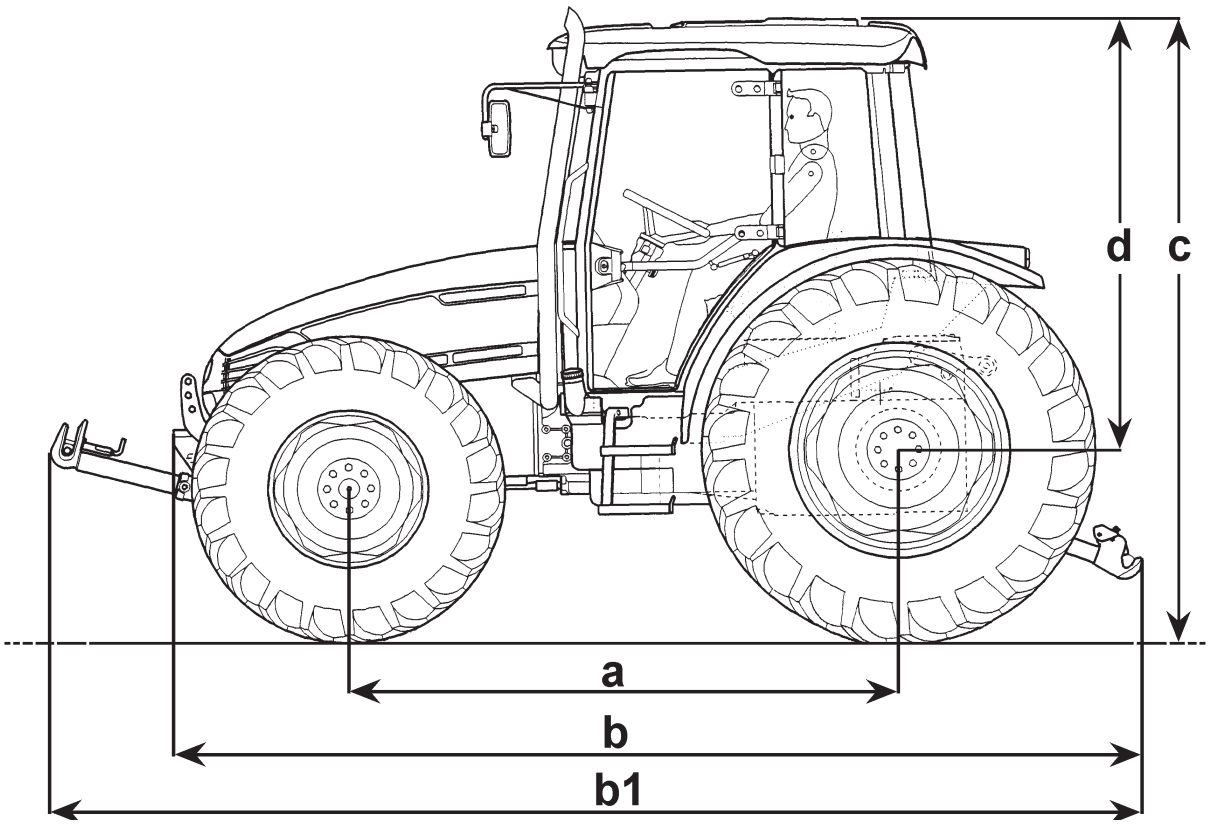


PRESCRIBED LUBRICANTS AND FUELS

(amounts in litres)

<table>
<tr><th>Part to be supplied</th><th>Amt</th><th colspan="3">Oil type</th></tr>
<tr><td rowspan="3">Engine</td><td rowspan="3">9 *
75-85-95HP

12.5 *
100 HP</td><td rowspan="2">Oil type</td><td>Grade API</td><td>CC, CD, CE, CF-4</td></tr>
<tr><td>Grade CCMC</td><td>D4</td></tr>
<tr><td>Visco-sity index</td><td colspan="2">multi-grade engine oil
SAE 15W 40</td></tr>
<tr><td>Gearbox and Rear axle
Hydraulic Power-lift
Auxiliary Systems
Hydrostatic steering</td><td>73 **</td><td colspan="3" rowspan="3">API GL 4

SAE 10W 30</td></tr>
<tr><td>Front PTO</td><td>2.5</td></tr>
<tr><td>Front- wheel drive
• Central axle
• Side reductions</td><td>10.5
2.5 x 2</td></tr>
<tr><td>Brakes and clutch control</td><td>Max. level</td><td colspan="3">ATF DEXRON II</td></tr>
<tr><td>Lubrication points</td><td></td><td colspan="3">NLGI 2
LITIO/Ca</td></tr>
<tr><td>Fuel tank</td><td>140</td><td colspan="3"></td></tr>
<tr><td>Radiator antifreeze</td><td colspan="4">16 litres for 4-cylinder engines
18 litres for 6-cylinder engines</td></tr>
</table>

* 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.

Intervals between oil changes:	**every 250 operating hours** for lubricants with **API-CC** specifications
	every 500 operating hours for lubricants **API-CD, API-CE, API-CF-4, CCMC-D4** 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.	cm2	6.452
cm2	Sq.ft.	0.155
Sq.ft.	m2	0.093
m2	Sq.ft.	10.77
Sq.yard	m2	0.835
m2	Sq.yard	1.197
Cu.in.	cm3	16.39
cm3	Cu.in.	0.061
Cu.ft.	Liter	28.36
Liter	Cu.ft.	0.035
Cu.yard	m3	0.763
m3	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/cm2	0.070
kg/cm2	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/m3	16.21
kg/m3	lb./cu.ft.	0.062
cu.ft./lb.	m3/kg	0.062
m3/kg	cu.ft./lb.	16.21
Nm	kgm	0.102
kgm	Nm	9.81
kW	PS	1.36
PS	kW	0.736
bar	kg/cm2	1.014
kg/cm2	bar	0.981
dm3	l	1
l	dm3	1

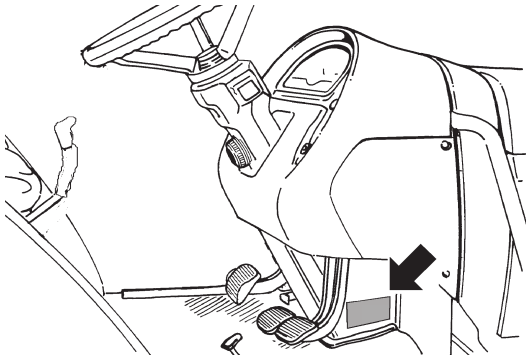
HOW TO ORDER SPARE PARTS

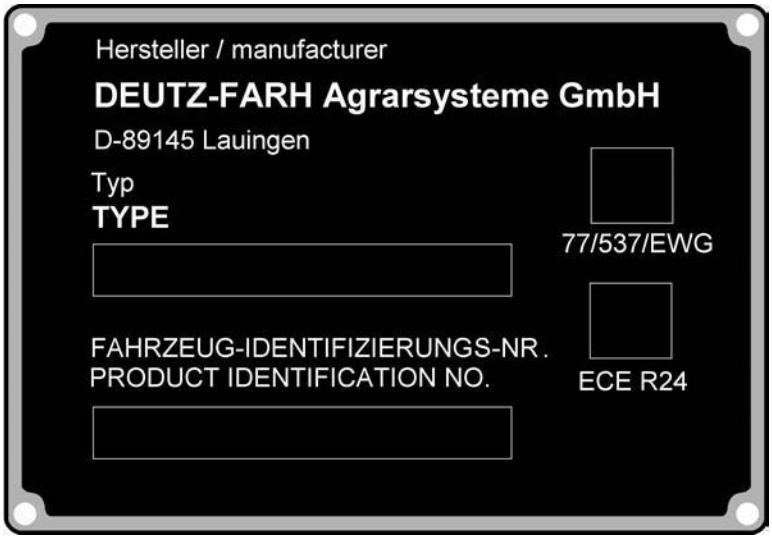
To ensure perfect tractor efficiency and avoid serious drawbacks, as well as optimize your investment and operational expenses, the use of "ORIGINAL SPARE PARTS" is recommended.

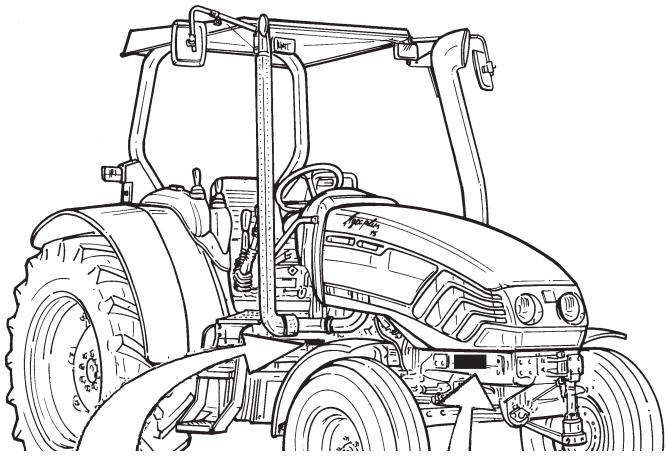
Spare parts orders must specify the following:

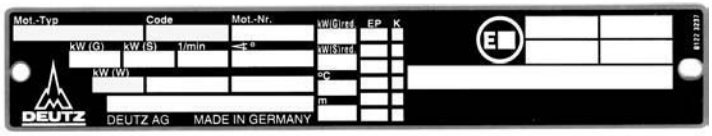
— **Tractor's serial number and engine's serial number(if the engine is concerned).**
— **Denomination and reference number of the required spare part.**

TRACTOR IDENTIFICATION DATA PLATE









ENGINE TYPE AND SERIAL NUMBER

TRACTOR TYPE AND SERIAL NUMBER

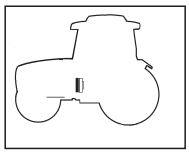
ENGINE

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

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		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	$8.5^{+0.3}_{-0.3}$	$8.5^{+0.3}_{-0.3}$
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: Load on the pressure plate		11000 Nm	

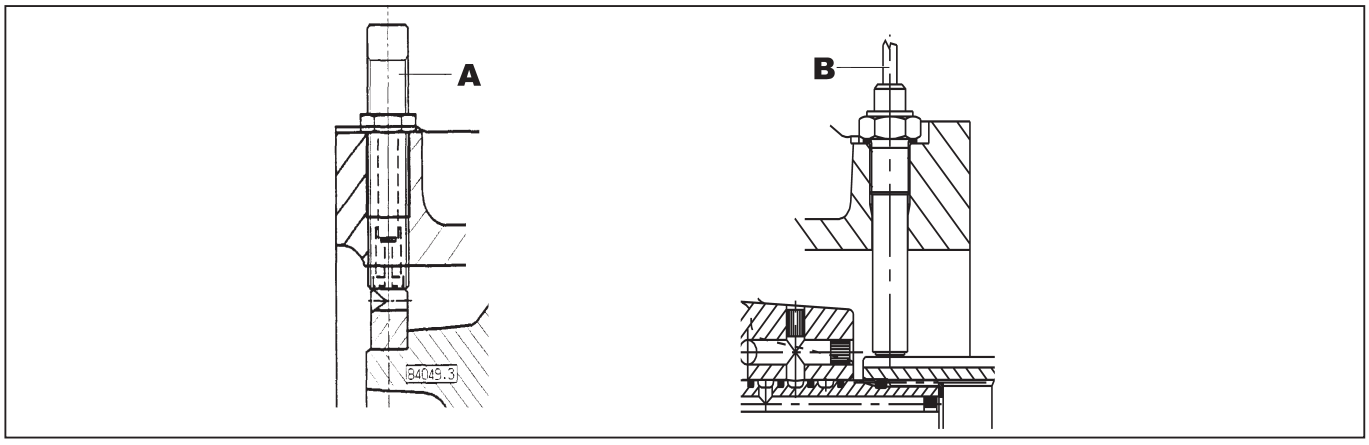


Fig. 1 - **A**: Flywheel pick-up coil
B: Clutch shaft pickup unit

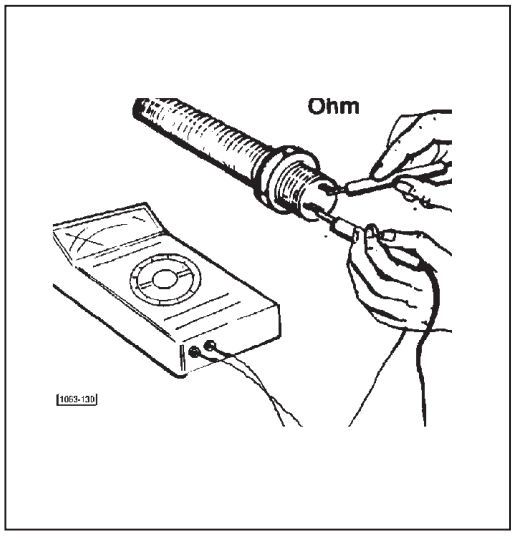


Fig. 2 - Checking the pickup unit resistance

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 ½ 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

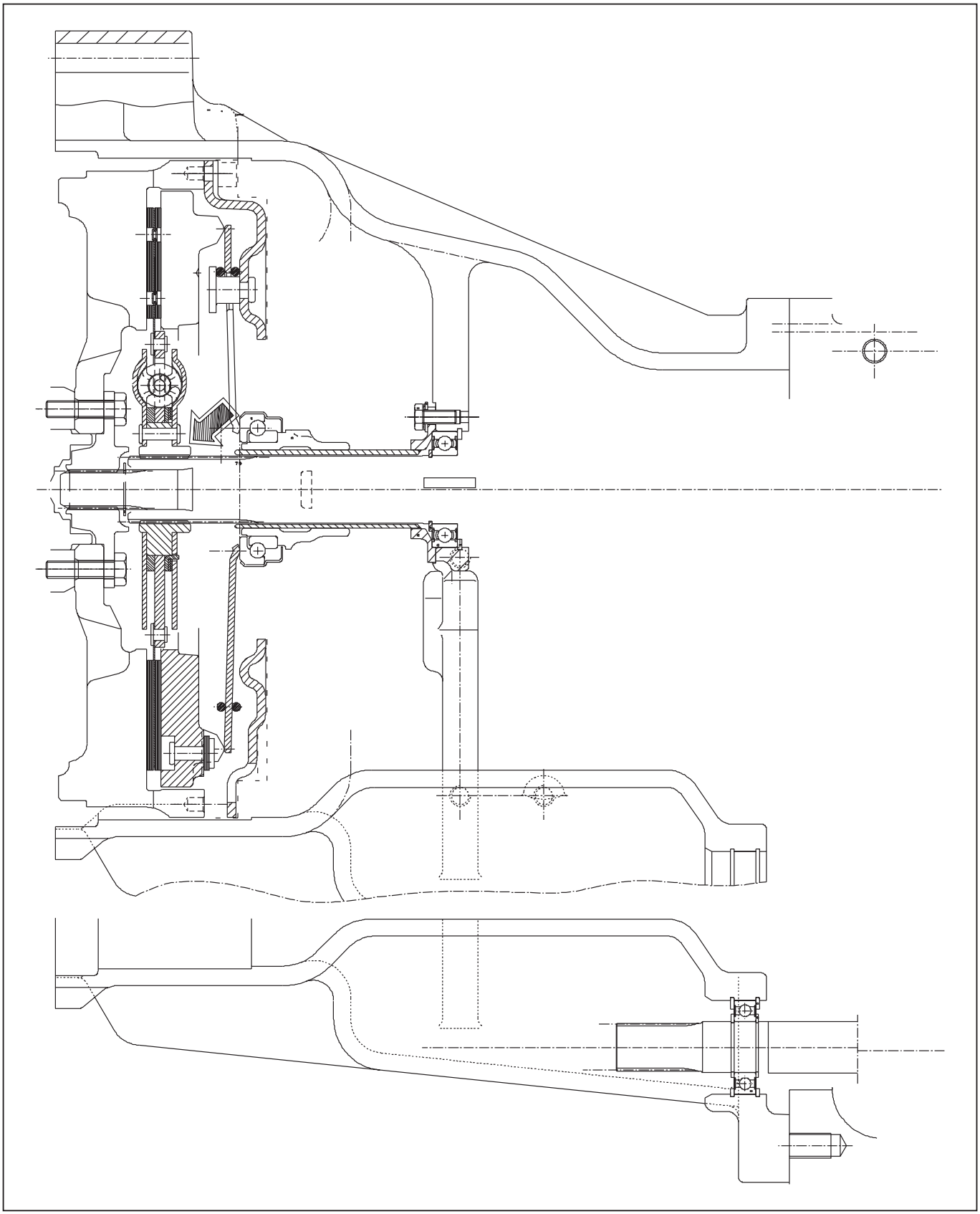


Fig. 3 - Clutch assembly.

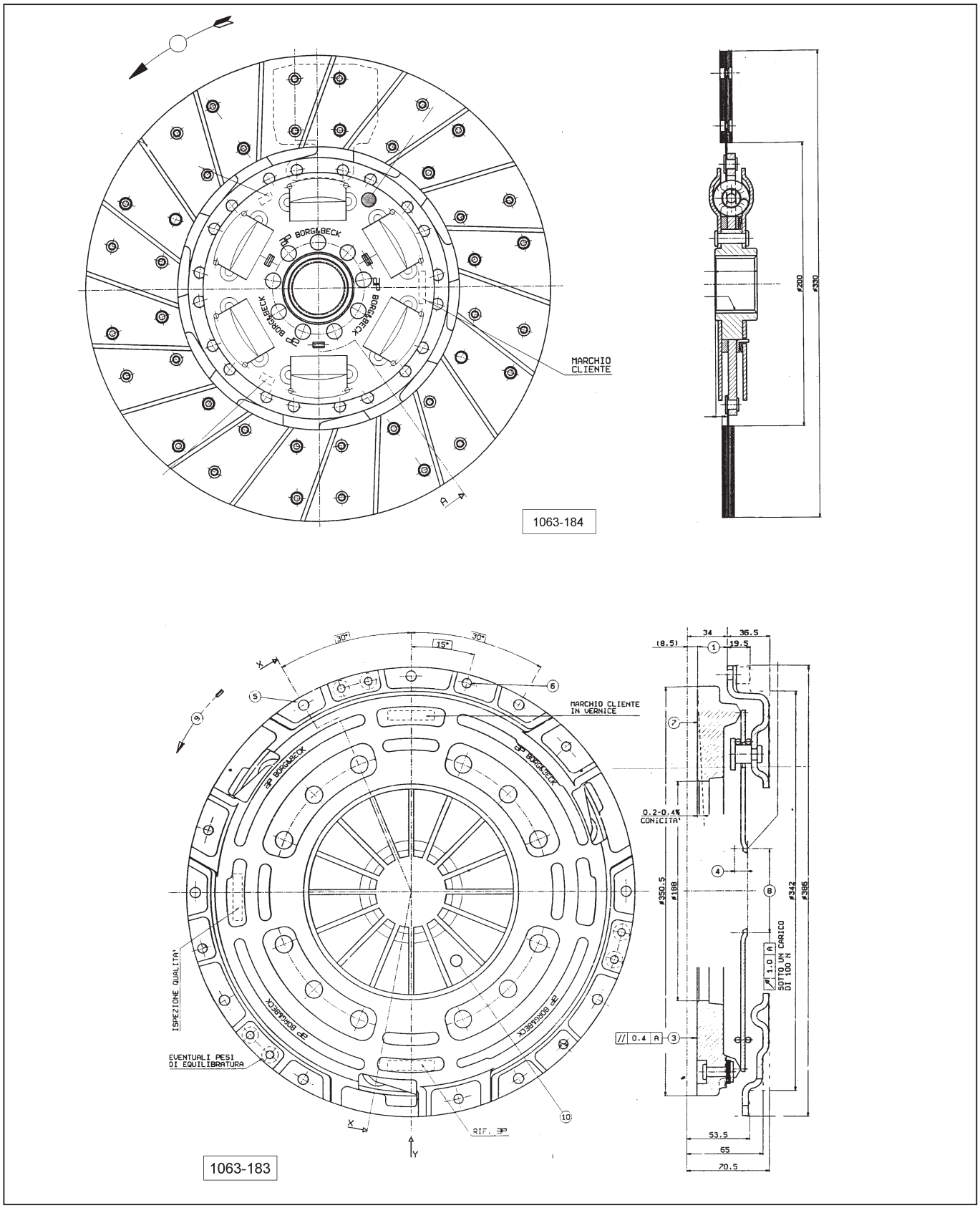


Fig. 4 - Clutch unit for **AGROPLUS 75-85-95.**

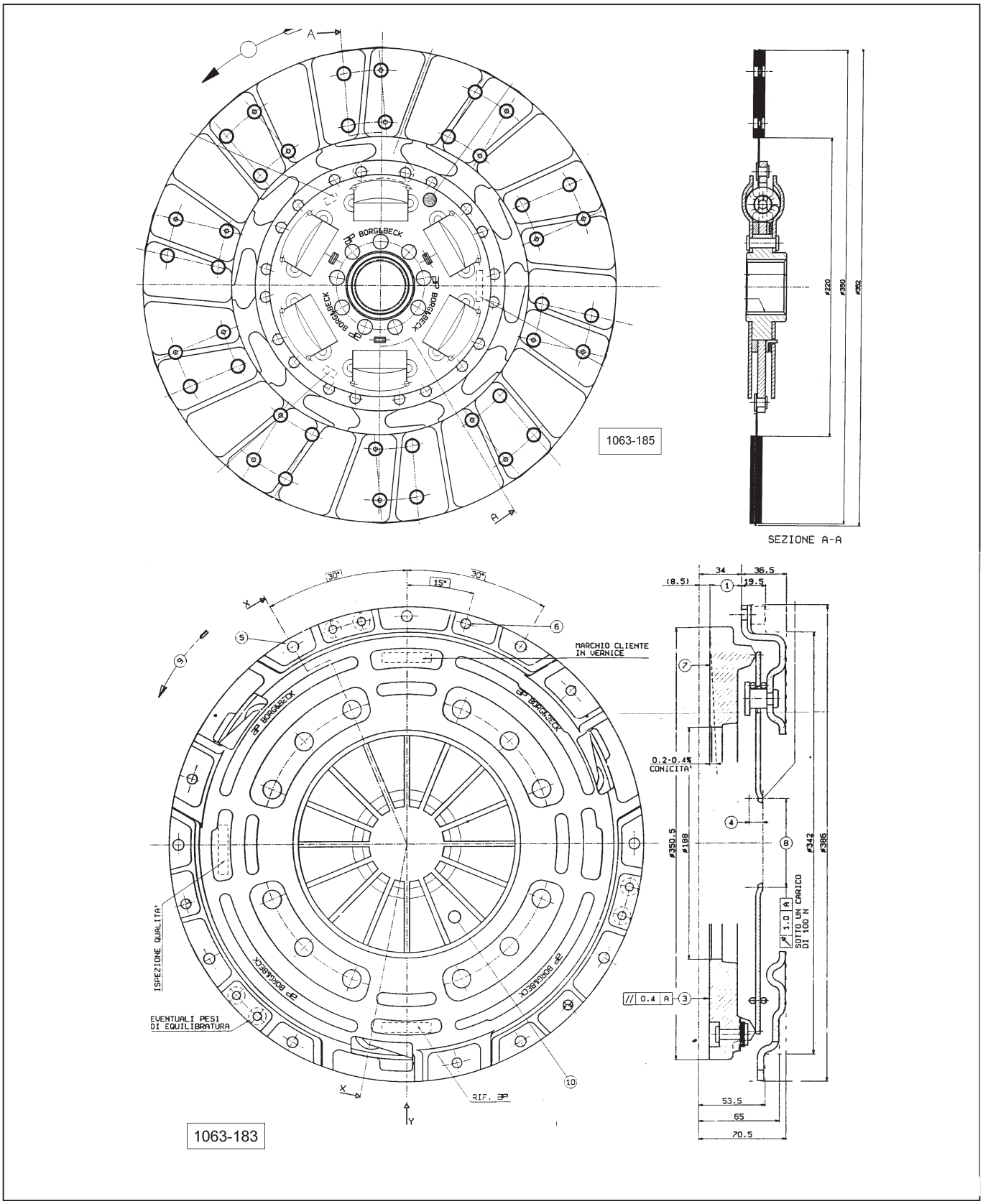


Fig. 5 - Clutch unit for **AGROPLUS 100.**

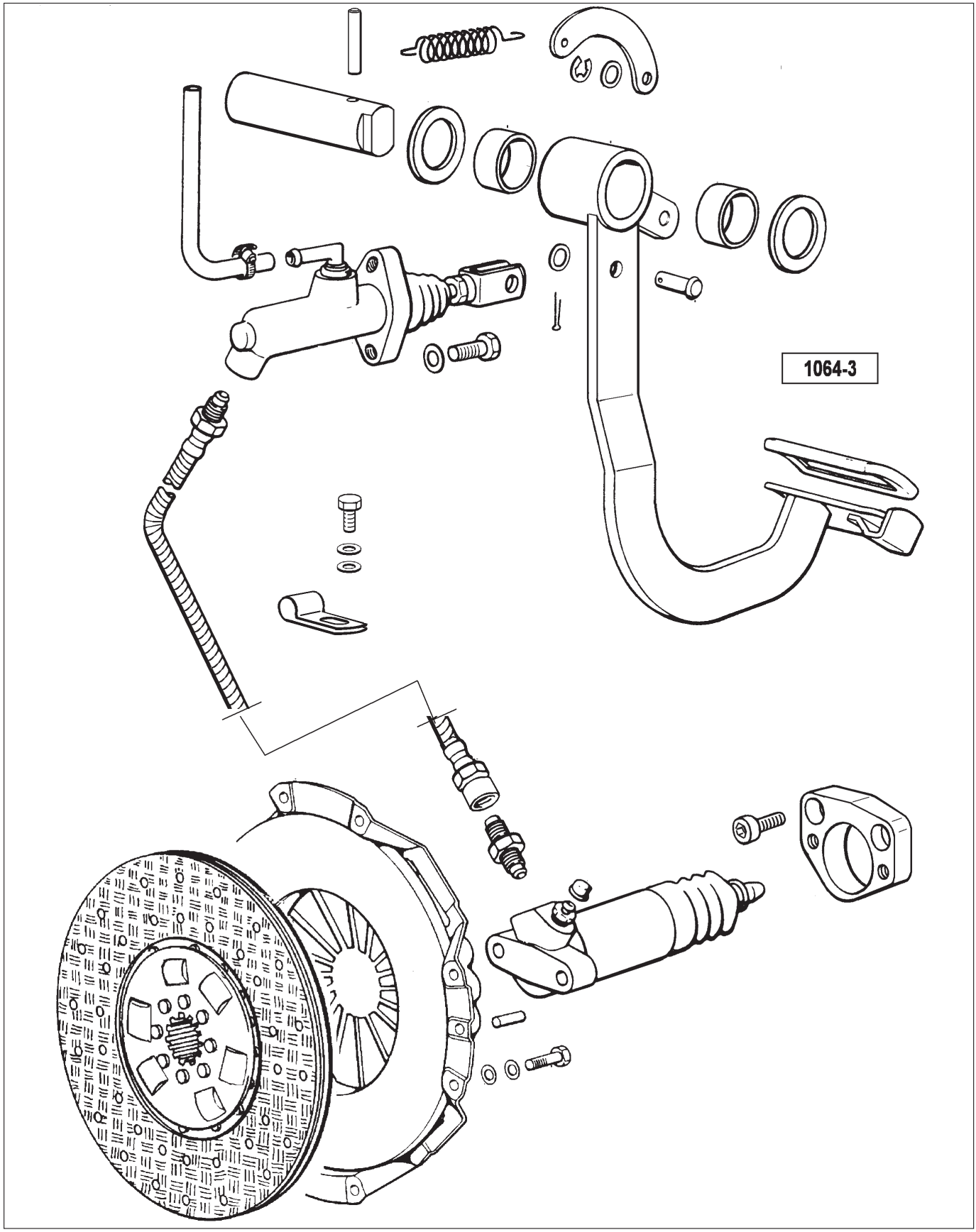


Fig. 6 - Components of clutch assembly.

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**.

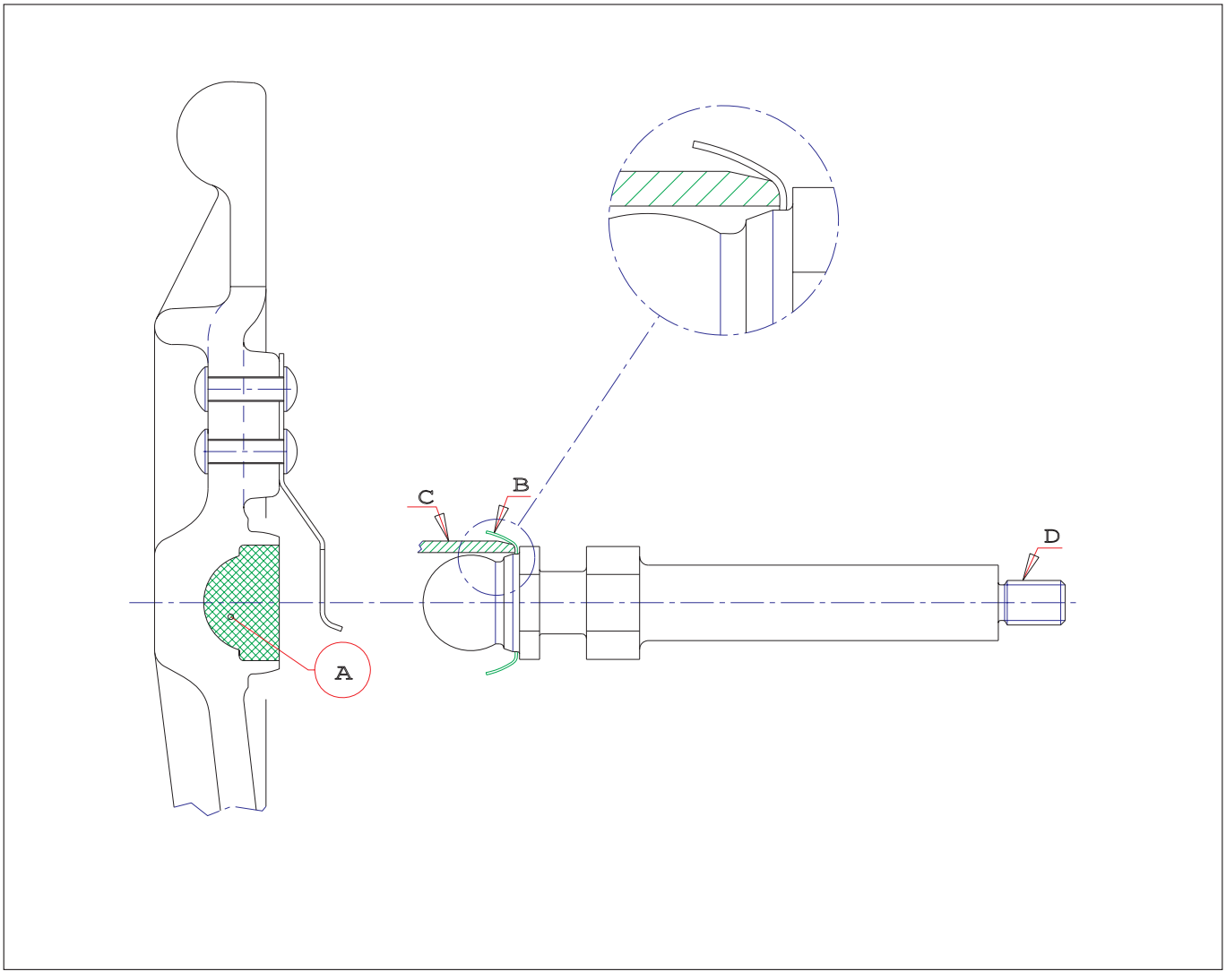


Fig. 7 - Fitting the clutch release fork.

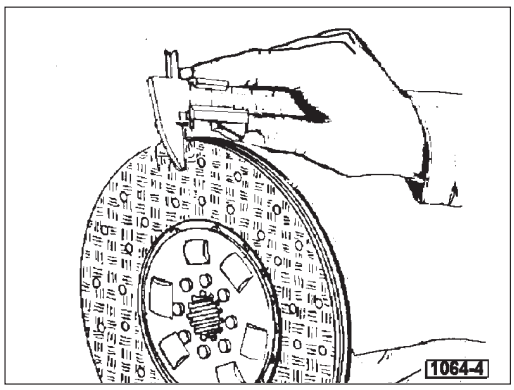


Fig. 8 - Checking clutch disk thickness.

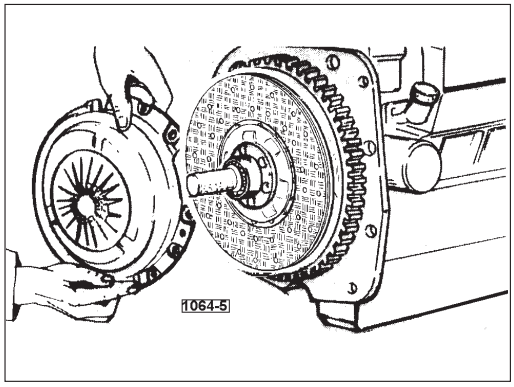


Fig. 9 - Installing clutch assembly through n. 5.9030.256.4/10 equipment.

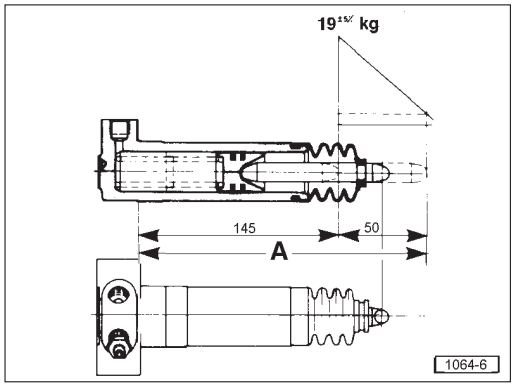


Fig. 10 - Clutch assembly hydraulic operating cylinder.

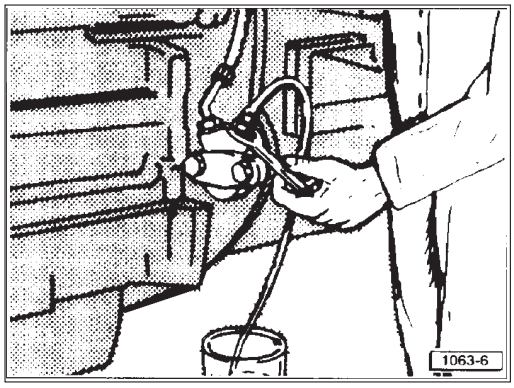


Fig. 11 - Bleeding the air from the clutch hydraulic circuit.

Cecking 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±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.