Workshop service manual N° 3378177 M1

CONTENTS

Introduction

Specifications	8260 / 8260 Xtra	8270 / 8270 Xtra	8280 / 8280 Xtra
VALMET ENGINE	634	645	645
Number of cylinders	6	6	6
Turbocharger	Yes	Yes	Yes
Air / Water intercooler	Yes / No	Yes / No	Yes / No
Air / Air intercooler	No / Yes	No / Yes	No / Yes
Bore (mm)	108	111	111
Stroke (mm)	134	145	145
Capacity (l)	7.4	8.4	8.4
Rated power (ISO Kw)	162 / 172	181 / 192	200 / 212
At engine speed .	2200	2200	2200
Maximum torque (ISON Nm)	878 / 980	1002 / 1120	1150 / 1260
Engine speed at maximum torque	1400	1400	1400
Idle speed	950	950	950
Maximum power speed (rpm)	2200	2200	2200
Maximum speed at no load (rpm)	2354	2354	2354
Lubrication: By gear pump - suction strainer and interchangeable external cartridge filters			
Valves: Overhead valves operated by pushrods			
Rocker arm clearance (cold)			
- Inlet - mm (inches)	0.35	0.35	0.35
- Exhaust - mm (inches)	0.35	0.35	0.35
Engine oil cooler	Yes	Yes	Yes

Injection and air filter

	8260 / 8260 Xtra	8270 / 8270 Xtra	8280 / 8280 Xtra
Fuel filter	Yes	Yes	Yes
No. of elements	2	2	2
Injection pump	Bosch	Bosch	Bosch
Injectors and nozzle holder	Stanadyne	Stanadyne/Bosch	Stanadyne/Bosch
Two stage air filter, dry filter element with filter clogging indicator.			
Start up in cold weather		Thermostart	

B . Disassembling (Fig. 4)

8. Remove the remaining screws. Unstick and disengage the PTO housing from the centre housing by levering, then remove using suitable lifting equipment.

Note:

- The PTO housing comes out complete with the clutch and driving/driven pinions. Shaft (**28**) remains in the intermediate housing and centre housing.

C . Reassembling (Fig. 4)

9. Clean the mating surfaces of the housings.

10. Coat the mating face of the centre housing with sealing product - Loctite 510 or equivalent.

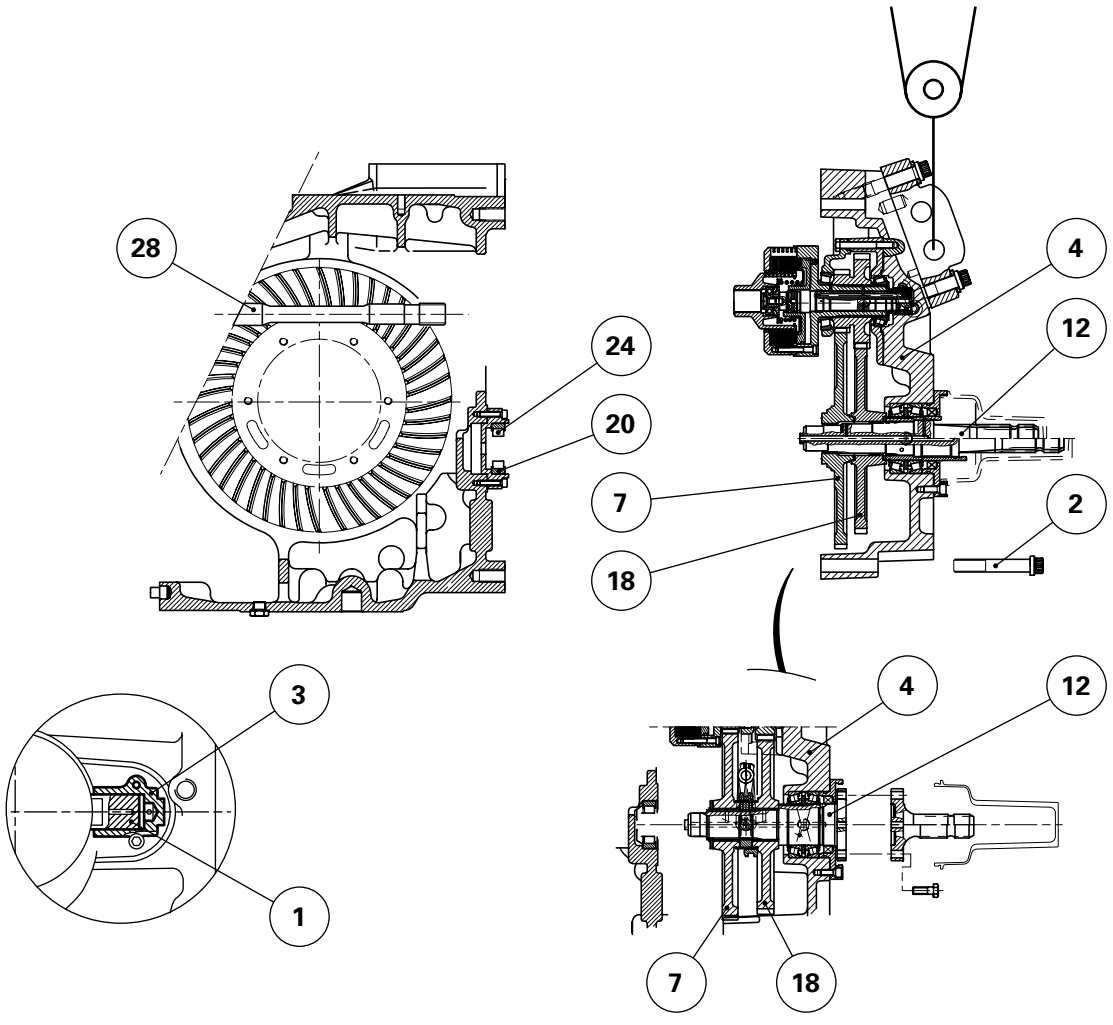


Fig. 4

Gearbox -
Power Shuttle

F . Service tools

1. Tools available in the AGCO network

- 3378240 M1 - Planetary carrier immobilizing tool (Fig. 21)

2. Locally made tools

- Sleeve for removing and refitting the clutch assembly (Fig. 22)

(**1**) - Pipe: Tu52B, external Ø 42.4, thickness 5

(**2**) - Pipe: Tu52B, external Ø 48.3, thickness 2.9

- Belleville washer compression tool (Fig. 23)

(**1**) U iron profile: 60

(**2**) Threaded rod: Ø 8

(**3**) Round iron machined with the following dimensions:
Ø = 36, L = 60.

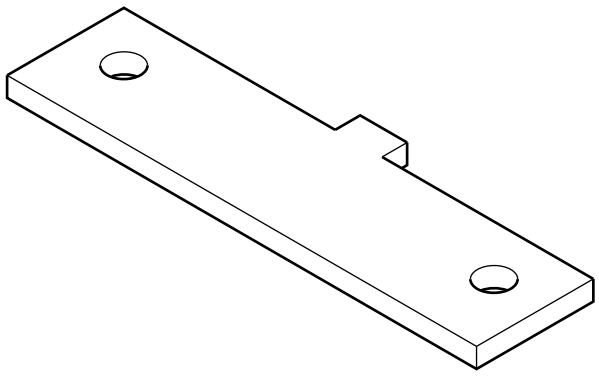


Fig. 21

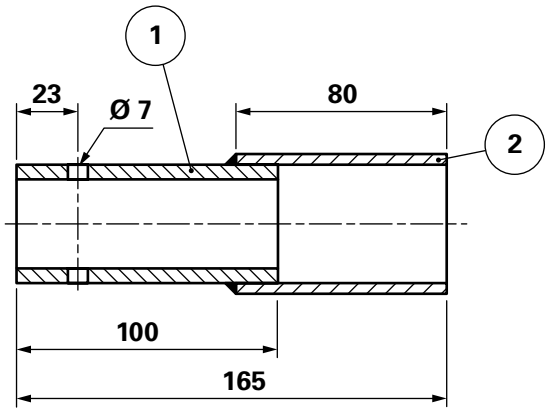


Fig. 22

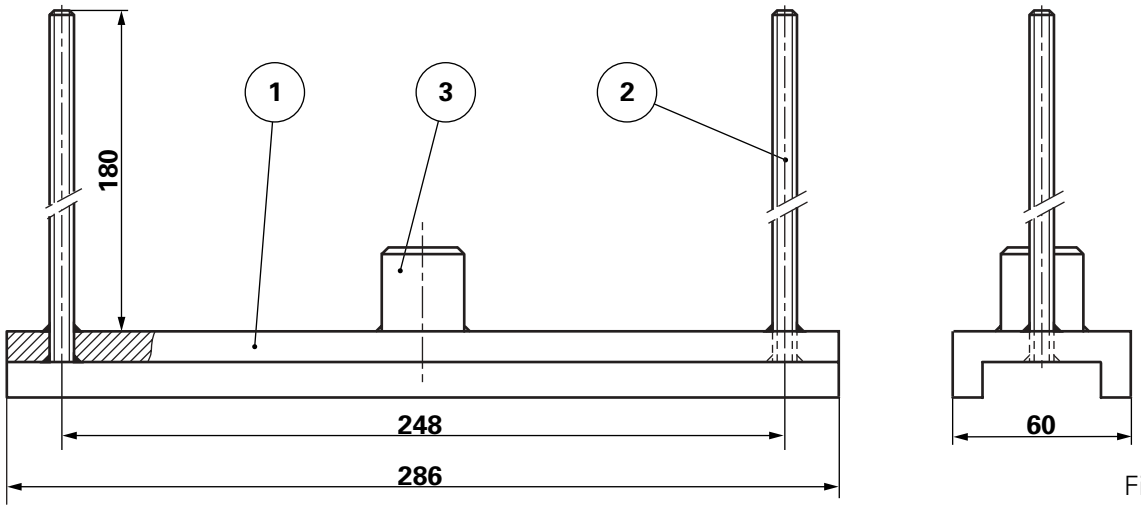


Fig. 23

Disassembly

14. On shaft (**51**) remove the snap ring (**66**) and washer (**65**) and mark the locations. Take off the 2nd gear pinion (**64**), shim(s) (**63**), spacer (**62**), 1st gear pinion (**61**), spacer (**60**), 4th gear pinion (**59**), spacer (**58**), 3rd gear pinion (**57**) and circlip (**56**) (Fig. 4).

15. If necessary, drive off needle bearing (**67**) (Fig. 4).

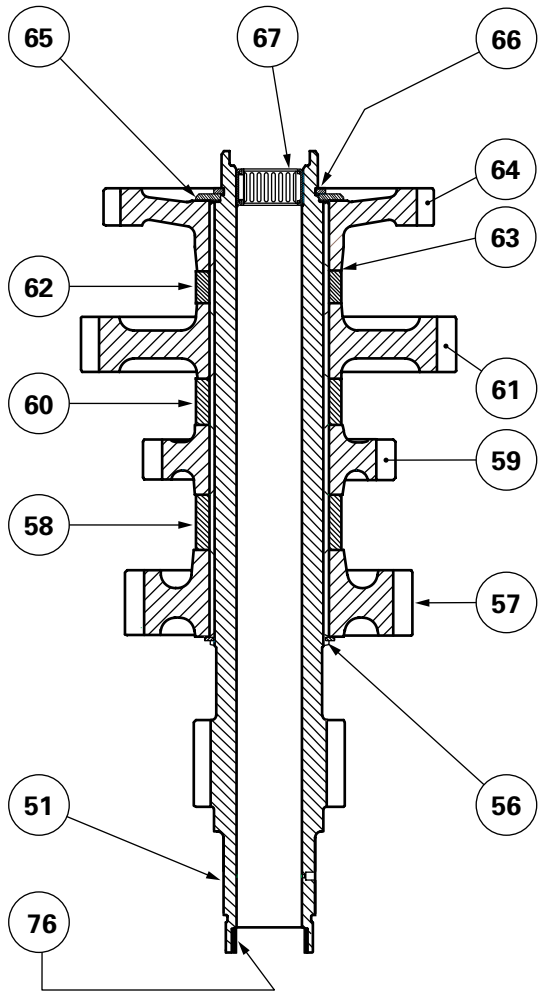


Fig. 4

C . Reassembling and refitting the layshaft

Reassembly

16. Clean and inspect the components. Replace the defective parts.

17. On the shaft, check that the lubricating ports leading to the bearing cones (**50**) (**54**) are not blocked. Check for the presence of friction ring (**76**) (Fig. 4).

18. If disassembled, insert the needle bearing (**67**) to thrust against the shoulder of shaft (**51**) with the aid of a suitable fixture.
Note: Check that the needle bearings turn freely in the cage after insertion.

19. Fit a new circlip (**56**).
Replace the 3rd gear pinion (**57**), spacer (**53**), 4th gear pinion (**59**), spacer (**60**), 1st gear pinion (**61**) and spacer (**62**).
Replace 2nd gear pinion (**64**) without the shims (**63**).
Carry out the shimming of the pinions (see § E).

20. Shim the pinions (see § E).

Refitting

Reminder

- If necessary, shim the bearings (**54**) (**55**) and (**49**) (**50**) (see § F).

21. Lubricate the cones (**50**) (**54**) and the bearing cups (**49**) (**55**).

22. If disassembled, insert the cups to thrust against the shoulder of the housing, with large cup (**49**) fitted into the rear bore of the gearbox (Fig. 5).

23. Slide cone (**54**) onto shaft with shim (**53**) the thickness of which has been determined at operation 46.

24. Place the assembled shaft in the housing. Fit cone (**50**). Pre-tighten nut (**52**) in contact with the cone (**50**).

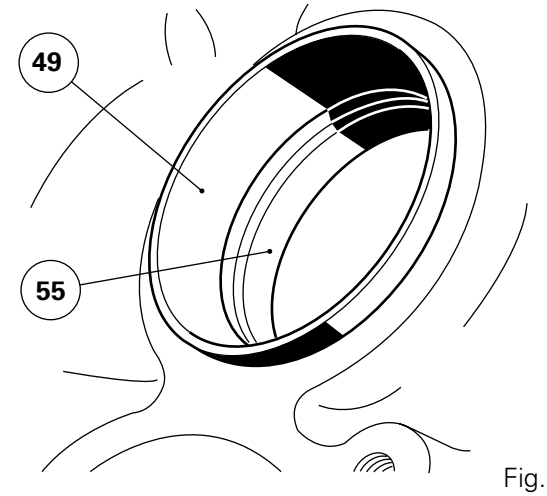


Fig. 5

Adjusting the control

On the lever (Fig. 4)

10. Place the "**L**" lever in the "Neutral" position.

11. Screw yoke (**1**) flush with the threaded end of cable (**2**).

12. Assemble the yoke on the lever using clip (**3**). Tighten nut (**4**).

13. Adjust the sheath end (**5**) on bracket (**6**) with an equal length of thread showing on each side of the nuts (**7**) (**8**).

Note: Check that the cable is not pinched.

On the automatic hook (Fig. 5)

14. Screw yoke (**1**) flush with the threaded end of the cable (**2**).

15. Fit the yoke on link **B** using clip (**3**) and ensure that the link is in the locked position. Tighten nut (**4**).

16. Assemble the sheath end (**5**) in bracket (**6**) and tighten nuts (**7**) (**8**) so that there is no play in cable (**2**) and the cable is not pinched.

Note: During adjustment, take care that link B remains locked.

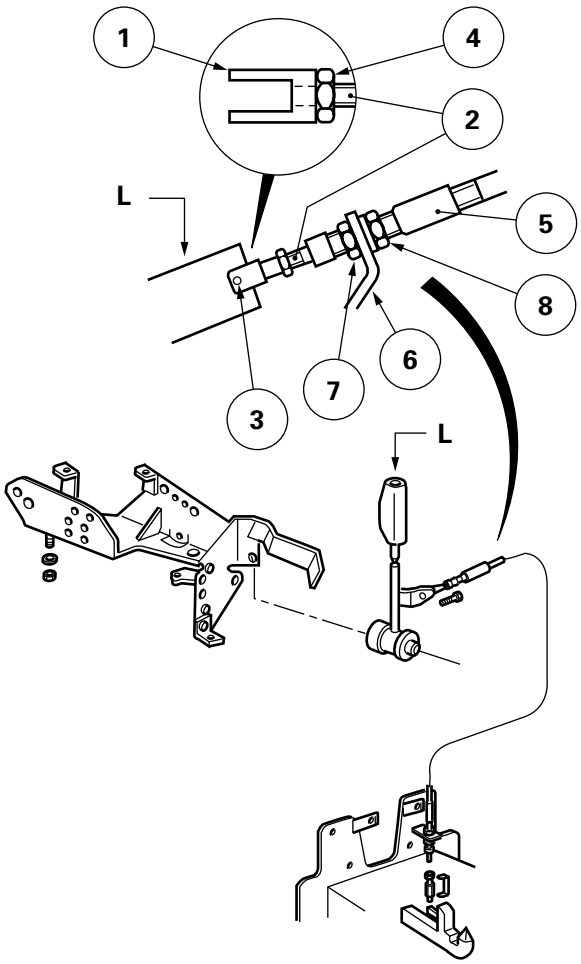


Fig. 4

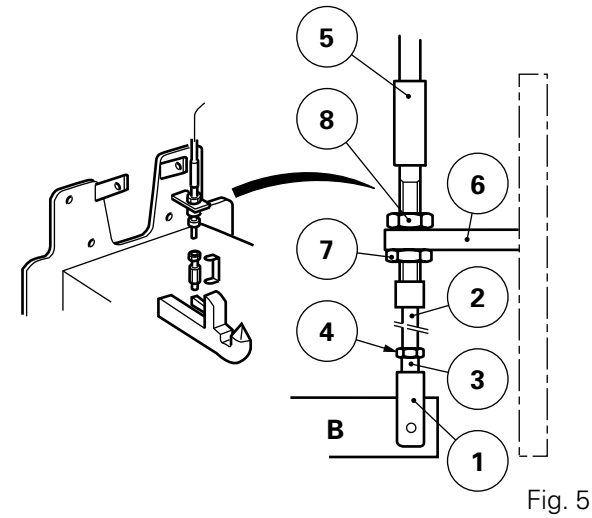


Fig. 5

A . Removing and refitting the planetary carrier, sun gear, crownwheel and wheel hub

Preliminary operations

1. Chock the rear wheels. Put the handbrake on.
Reminder
- The 4WD clutch is mechanically engaged when the tractor is stationary and the engine turned off. Raise both front wheels so as to freely turn the hub of the wheel concerned.

2. Place axle stands beneath the front axle.

3. Take off the wheel concerned.

4. Drain the final drive unit.
Special point
- The drain port machined into the planetary carrier (**49**) is aligned with a moulded cavity on wheel hub (**34**), in order to allow for the correct evacuation of the lubricating oil when draining. For this reason, the position of the planetary carrier on the hub must be located by two opposing paint marks **T** before disassembly (Fig. 2).

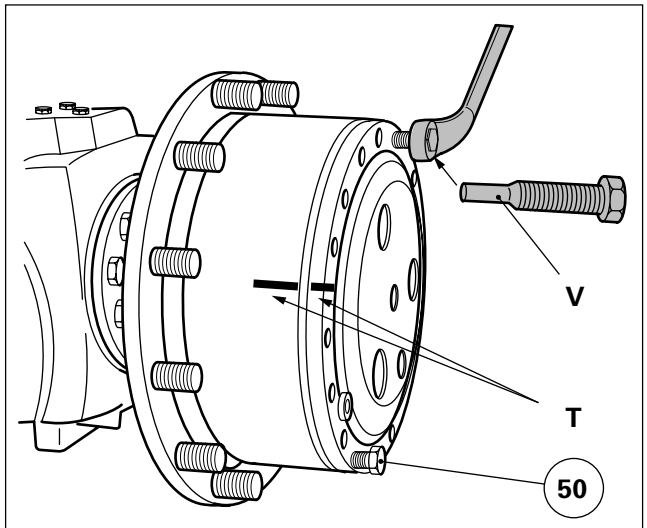


Fig. 2

Removal

5. Remove bolts (**50**) and separate the planetary carrier assembly from the hub using two extractor bolts "**V**", ref. 5870 204 016 (Fig. 2 and § J).

6. Take off snap ring (**46**), sun gear (**45**) and tab washer (**44**).

7. Correctly unlock the two castellated nuts (**42**) and successively unscrew them using socket, ref. 5870 401 082 (see § J). Discard the retainer (**43**).

8. Extract the wheel hub (**34**), crownwheel carrier (**40**) and crownwheel (**41**). Remove the assembly using a lifting device (Fig. 3). Where necessary, match and keep together bearing cones (**33**) (**38**) and bearing cups (**36**) (**37**).

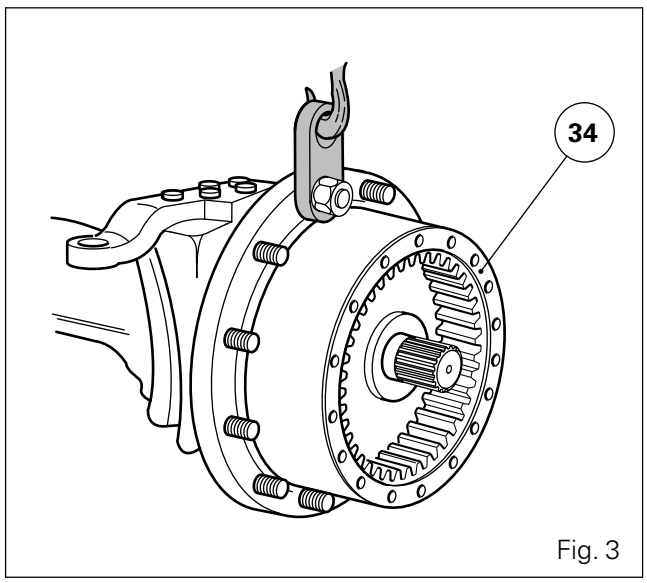


Fig. 3

Danger

- Request the assistance of another operator and take care when removing the hub.

9. If required, remove snap ring (**39**) and separate crownwheel (**41**) from the crownwheel carrier (**40**).

With low pressure circuit

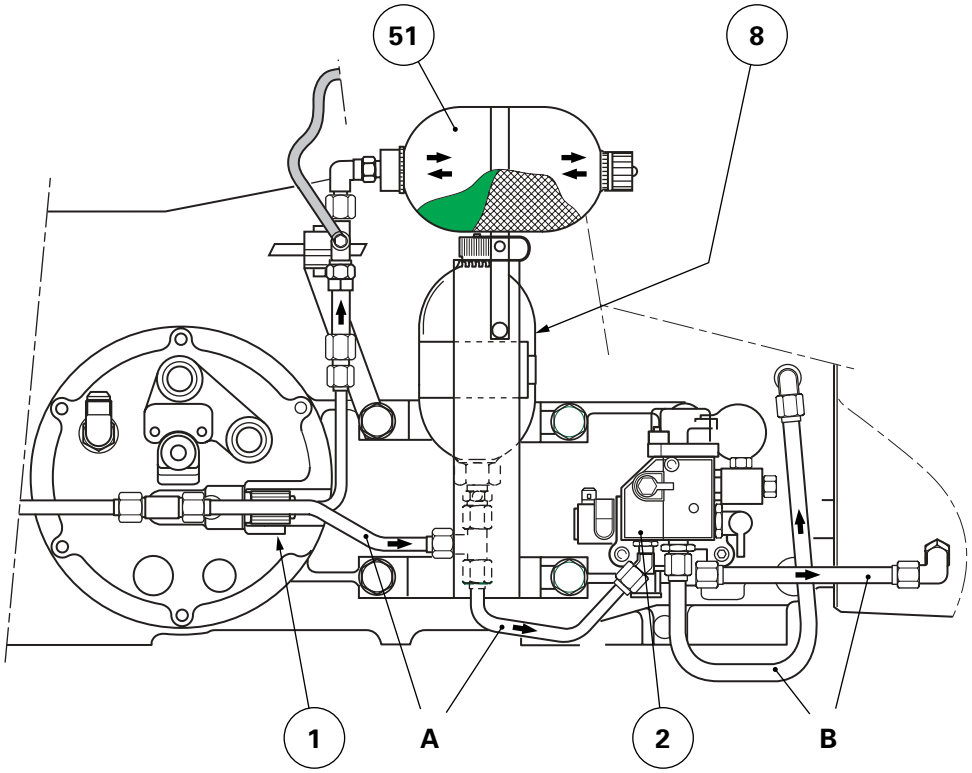


Fig. 8A

With low pressure circuit

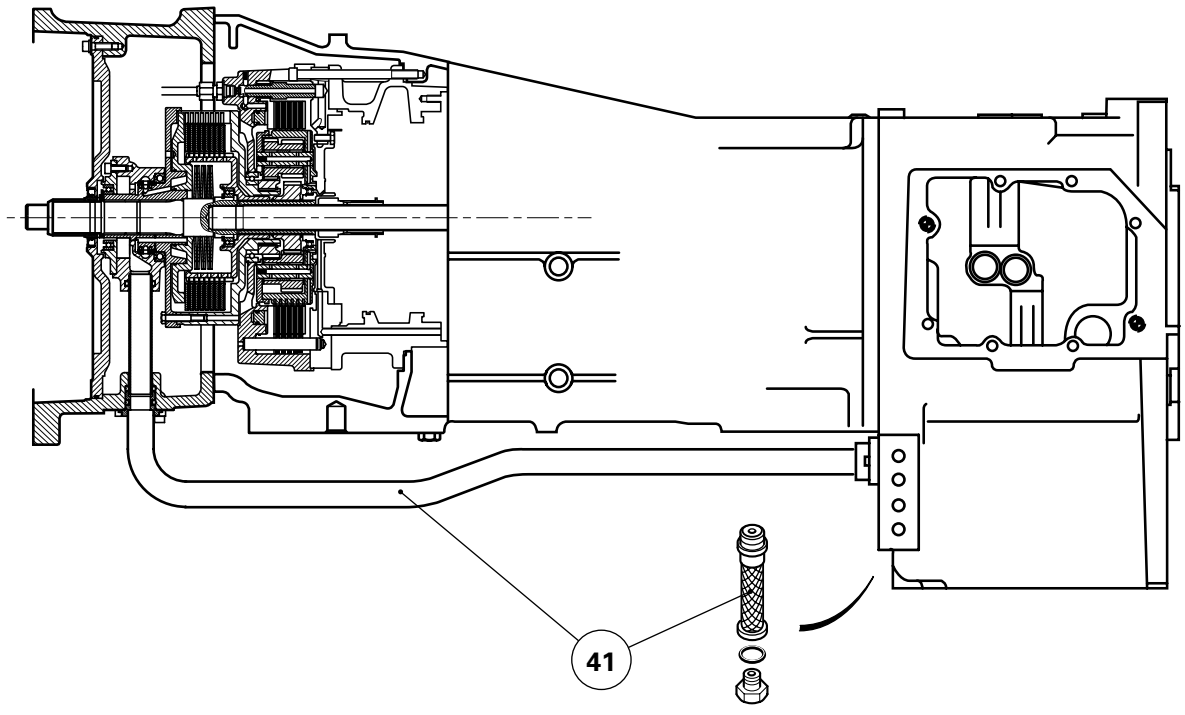
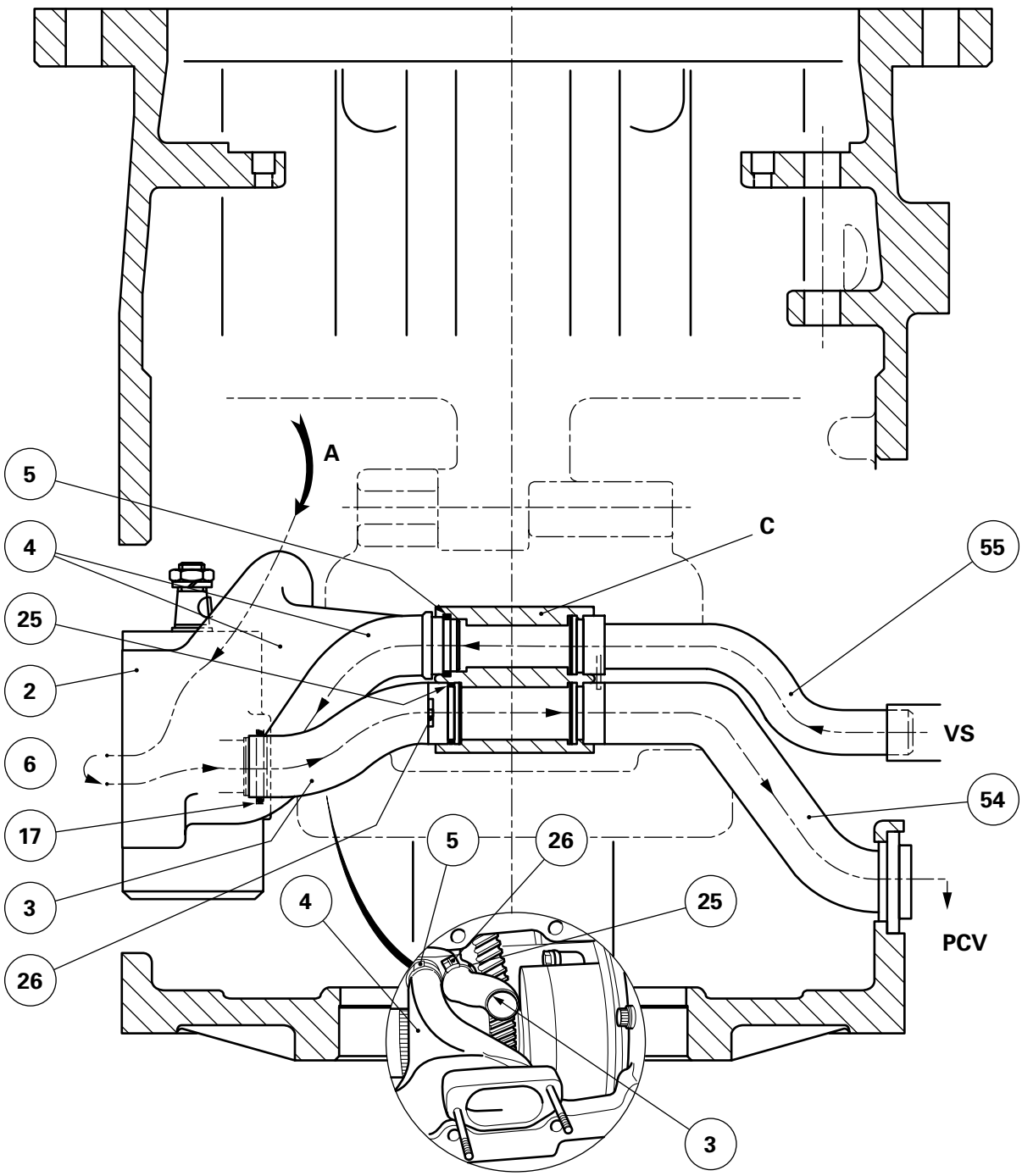


Fig. 9A



(**25**) O'ring
(**26**) Mecanindus pin
(**54**) Booster pipe
(**55**) Safety-valve pipe (see section 9G01 or 9G02 depending on hydraulic characteristics)
A Suction
PCV To the variable displacement pump (see section 9G01 or 9G02 depending on hydraulic characteristics)
VS 5 bar safety-valve
C Compartment of the intermediate housing

Fig. 2

F . Power Shuttle principles

Block diagram

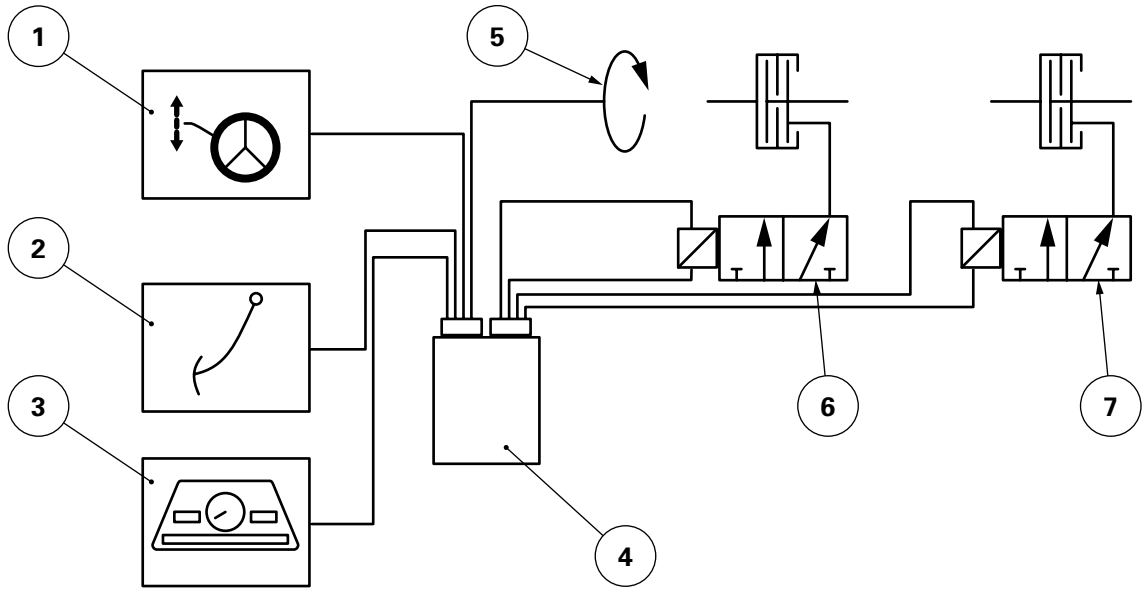


Fig. 5

Parts list

(**1**) Power Shuttle 3-position analog shift lever (see § G).
(**2**) Top and bottom clutch pedal potentiometers
(**3**) Dashboard indicator lamps (Forward and Reverse)
(**4**) Autotronic 3
(**5**) Speed sensors
- gearbox input
- forward speed

(**6**) Forward solenoid valve
(**7**) Reverse solenoid valve

The Autotronic 3 automatically controls the Power Shuttle in relation to information received from various sensors and the commands given by the driver.

Several mechanical, hydraulic and electrical components intervene for the operation of the Power Shuttle; it may be necessary to carry out clutch calibration (see § E) during replacement of one of them.

The continual autodiagnostics carried out by the system in relation to the Power Shuttle permit an idea of any fault to be indicated by the flashing of the indicator lamps on the dashboard (see § F). The Wintest software allows the precise error code to be displayed (see section 11F03).

Operating modes of the Power Shuttle

Note: The user does not choose the mode of operation

The information received by the Autotronic 3 allows it to automatically select one of the two operating modes.

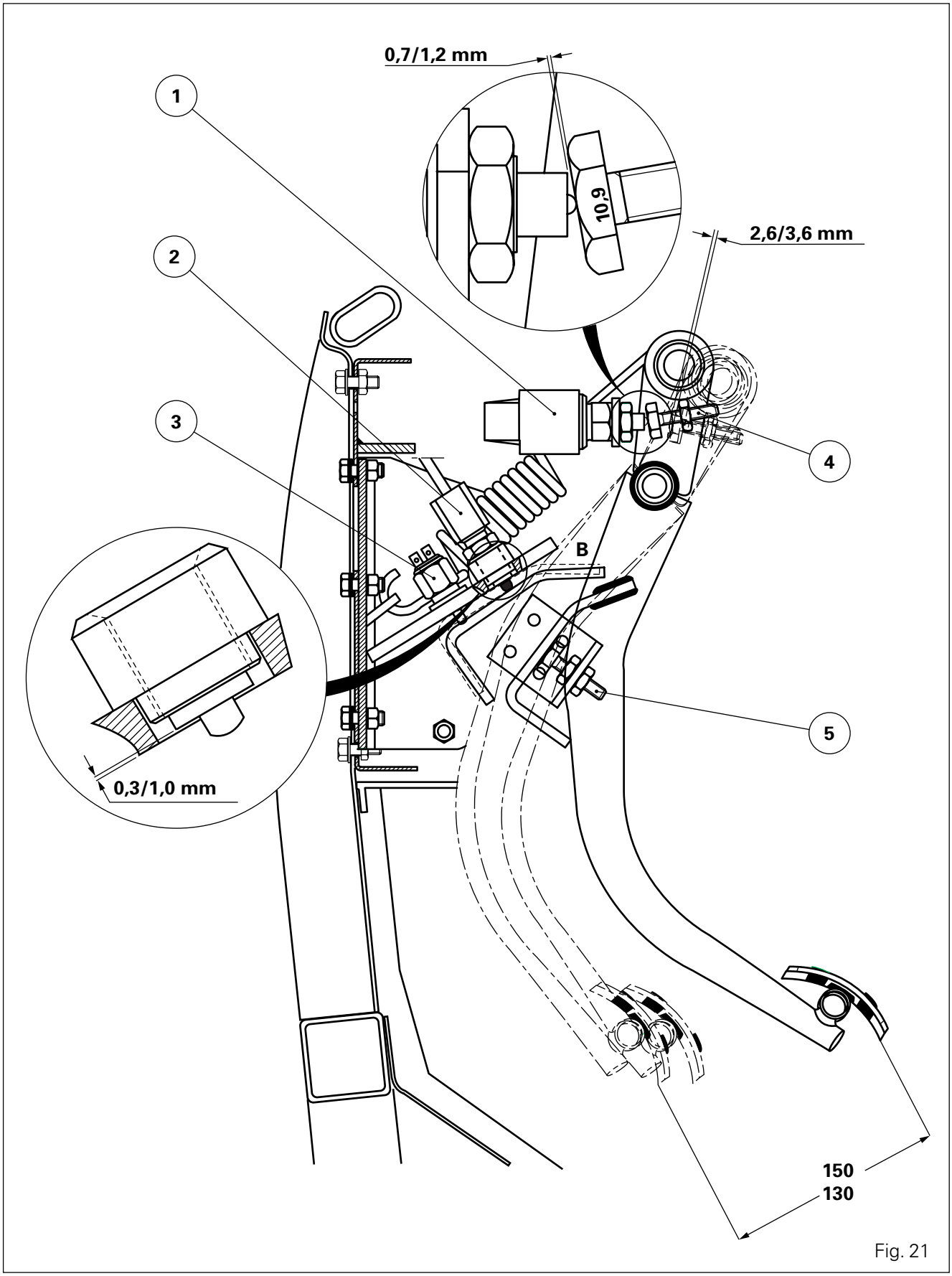


Fig. 21

DCC / TC - Error codes

Error Code 46
Low alternator regulator voltage (filtered battery signal).
- *Possible causes*: The filtered battery voltage, terminal B - J, at the TC is less than 11 V. The alternator is not charging enough.
- *Tests*: Check the voltage at terminal B - J of the TC. If the voltage is low, check whether the alternator output is low or whether there is an open circuit or short circuit in the wiring harness.

Error Code 49
High transmission temperature sensor signal.
- *Possible causes*: The earth circuit of the temperature sensor between terminal D - G of the TC and the sensor is open; or the signalling circuit between terminal D - J of the TC and the sensor is open or short circuited to 12 V.
- *Tests*: Check the circuit between terminal D-G of the TC and the sensor to detect any open circuit. Check the circuit between terminal D-J of the TC and the sensor to detect any open circuit or short circuit to system voltage.

Error Code 50
Low transmission temperature sensor signal.
- *Possible cause*: The temperature sensor signalling circuit between terminal D - J of the TC and the sensor is short-circuited to earth.
- *Tests*: Check the circuit between terminal D - J of the TC and the sensor for any short-circuiting to earth.

Error Code 53
High PTO solenoid valve current .
- *Possible causes*: The fine control circuit of the rear PTO solenoid valve is defective following a short circuit to 12 V in the return circuit, or a TC failure.
- *Tests*: Check the circuit between terminal B - D of the TC and the rear PTO solenoid valve to detect any short circuit to 12 V. Replace the TC.

Error Code 54
Low PTO solenoid valve current.
- *Possible causes*: The fine control circuit of the rear PTO solenoid valve is defective following a short circuit to earth in the return circuit, or due to a TC failure
- *Tests*: Check the circuit between terminal B - D of the TC and the rear PTO solenoid valve to detect any short circuit to earth. Replace the TC.

Error Code 55
High PTO brake solenoid valve current.
- *Possible causes*: The fine control circuit of the PTO brake solenoid valve is defective following a short circuit to 12 V in the return circuit, or due to a TC failure.
- *Tests*: Check the circuit between terminal B - E of the TC and the PTO brake solenoid valve to detect any short circuit to 12 V. Replace the TC.

Error Code 56
Low PTO brake solenoid valve current.
- *Possible causes*: The fine control circuit of the PTO brake solenoid valve is defective following a short circuit to earth in the return circuit, or due to a TC failure
- *Tests*: Check the circuit between terminal B - E of the TC and the PTO brake solenoid valve to detect any short circuit to earth. Replace the TC.

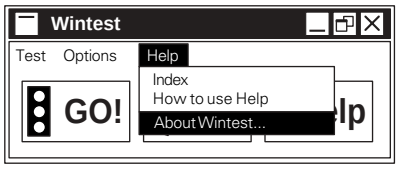
Error Code 57
High clutch "C" solenoid valve current.
- *Possible causes*: The fine control circuit of the solenoid valve of clutch "C" is defective due to a short circuit to 12 V in the return circuit, or due to a TC failure.
- *Tests*: Check the circuit between terminal C - A of the TC and the solenoid valve of clutch 'C' to detect any short circuit to 12 V. Replace the TC.

Error Code 58
Low clutch "C" solenoid valve current.
- *Possible causes*: The fine control circuit of the solenoid valve of clutch "C" is defective due to a short circuit to earth in the return circuit, or due to a TC failure.
- *Tests*: Check the circuit between terminal C-A of the TC and the solenoid valve of clutch "C" to detect any short circuit to earth. Replace the TC.

Error Code 59
High clutch "R" solenoid valve current.
- *Possible causes*: The fine control circuit of the solenoid valve of clutch "R" is defective due to a short circuit to 12 V in the return circuit, or due to a TC failure.
- *Tests*: Check the circuit between terminal C - J of the TC and the solenoid valve of clutch "R" to detect any short circuit to 12 V. Replace the TC.

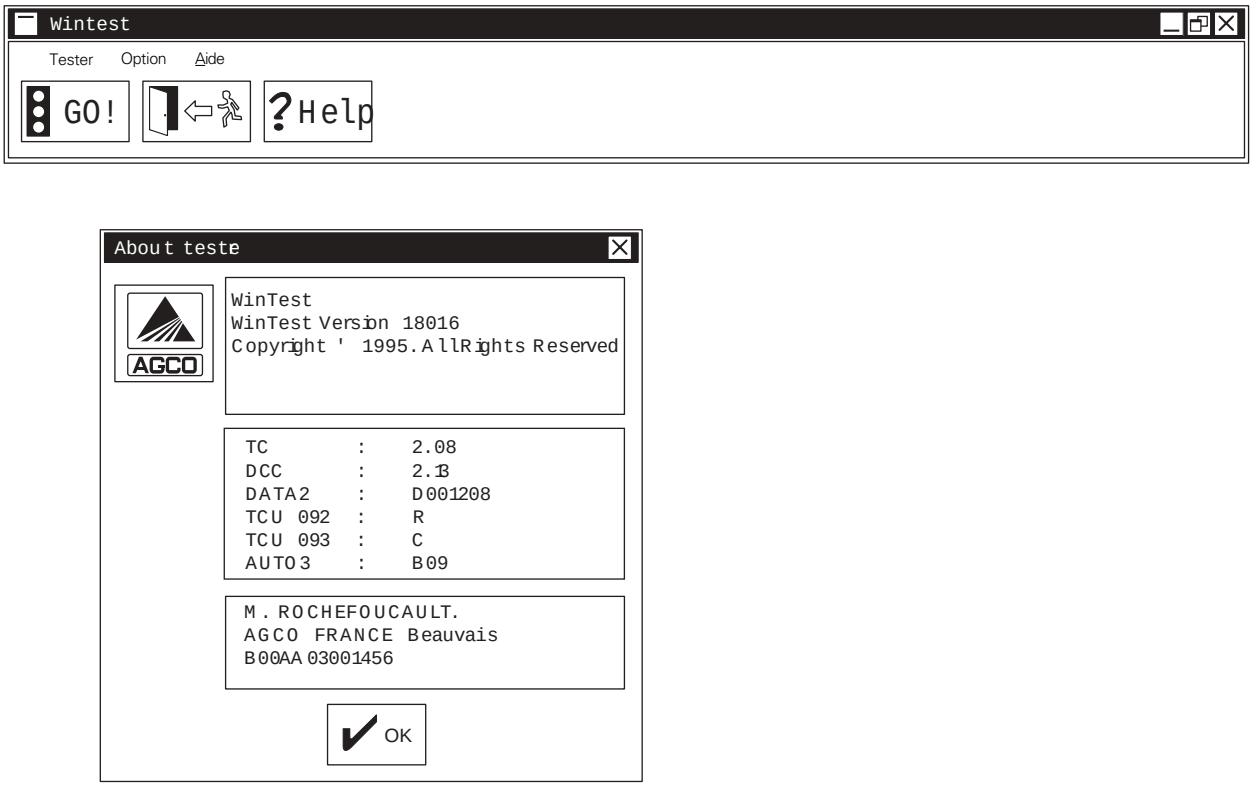
F . Wintest version

- Click on "Help", then "About Wintest" to display the software version and the programmes in the various electronic devices.



WGE-9

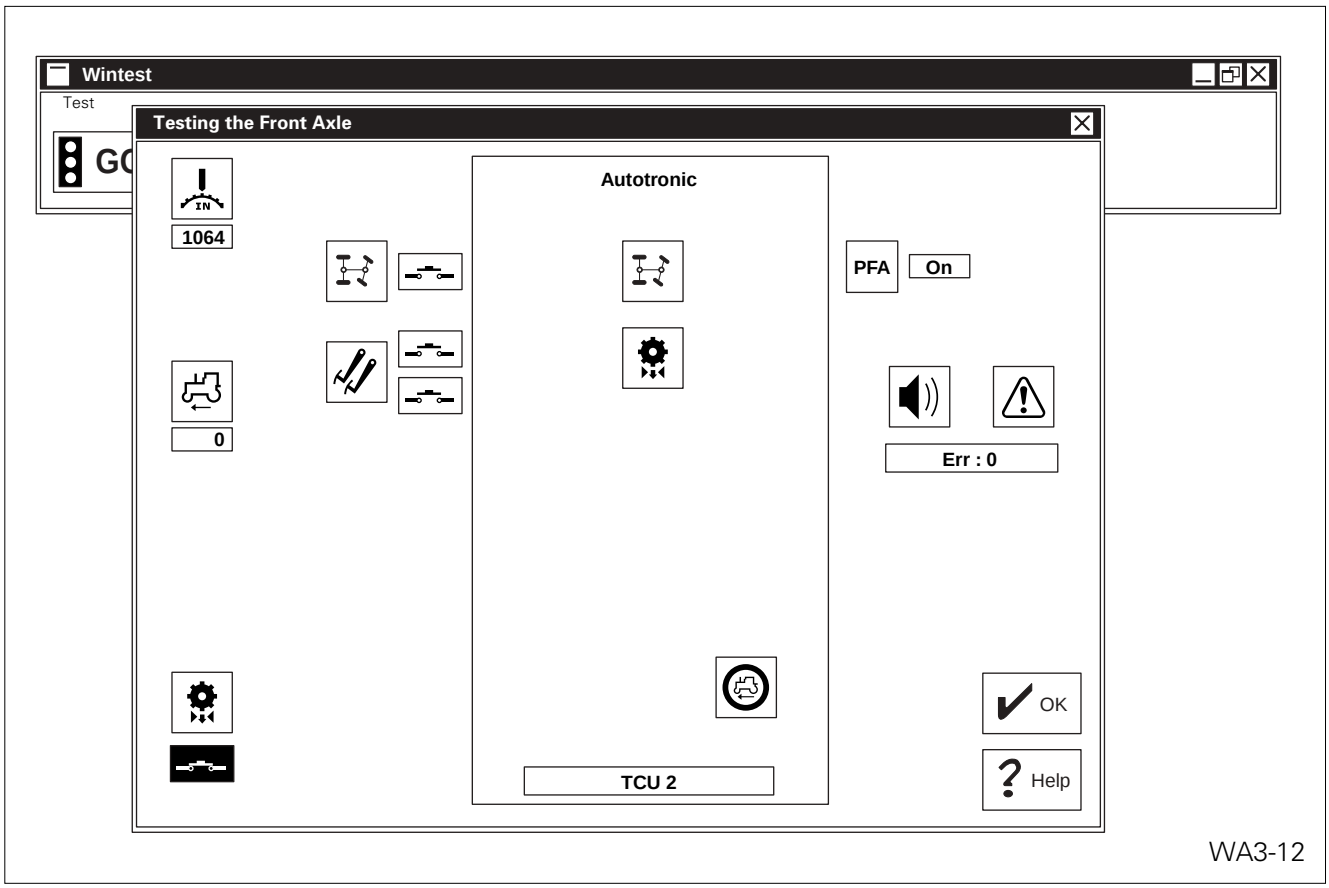
The following screen is displayed:



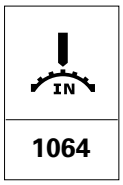
WGE-10

- Wintest software version V1.10.06
- TC version 2.14
- DCC version 2.14
- Datatronic 2 version D001208
- Autotronic 2 version ..... R or C
- Autotronic 3 version B11
- Software serial number and name of Wintest CD owner.

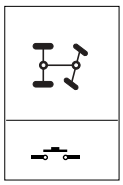
The following screen is displayed:



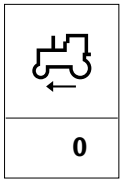
WA3-12



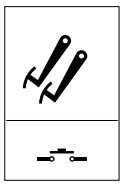
Engine speed sensor value in rpm



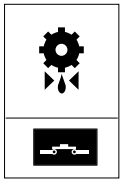
Front axle pulse switch



Design forward speed indicated by forward ground speed sensor in kph

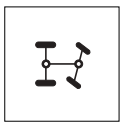


Left and right brake pedal switches



17 bar low pressure hydraulic circuit pressure switch

- if pressure is correct displayed in reverse video
- if pressure below 9 bar ± 1, displayed in normal video



Front axle indicator lamp

BB CODE - LINKAGE CALCULATOR OPTIONS

No. of electro -hydraulic spool valves	Joystick	Front Dual control	Rear Dual control	Front linkage capacity	Trailed implement control (TIC)	BB code
0	0	0	0	*	0	01
2	1	0	0	*	0	02
2	1	0	1	*	0	04
3	1	0	1	*	0	05
2	1	0	1	*	With Drawbar sensor	08
2	1	0	1	*	With and without Drawbar sensor	09
3	1	0	1	*	With Drawbar sensor	10
3	1	0	1	*	With and without Drawbar sensor	11
2	1	1	1	*	0	13
3	1	1	1	*	0	14
2	1	1	1	*	With Drawbar sensor	17
2	1	1	1	*	With and without Drawbar sensor	18

Nota : 0 = Without option
1 = With option
**** = Whatever the capacity***