



01 - Introduction - Specifications

CONTENTS

1A10 - Using the manual

1B10 - SPECIFICATIONS - General specifications

1B11 - SPECIFICATIONS - Forward speeds

1B12 - SPECIFICATIONS - Dimensions

1B13 - SPECIFICATIONS - Capacities

1C10 - Miscellaneous



PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





02 - Splitting the tractor

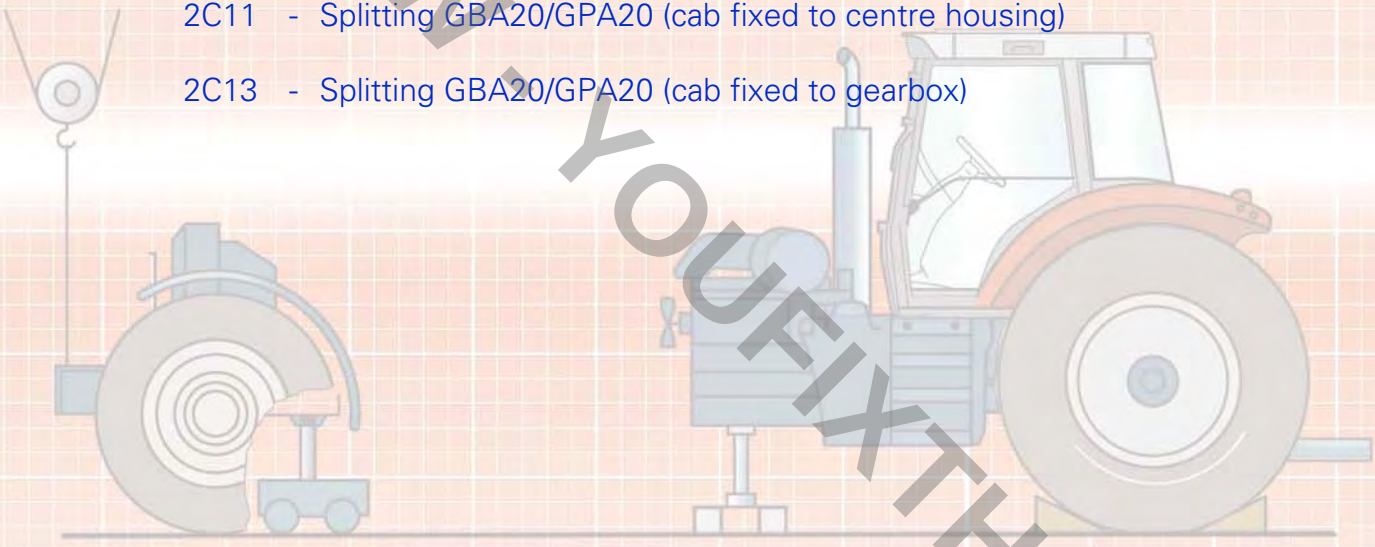
CONTENTS

2A10 - Splitting - Front frame / Perkins engine

2B11 - Splitting Perkins engine / GTA2020

2C11 - Splitting GBA20/GPA20 (cab fixed to centre housing)

2C13 - Splitting GBA20/GPA20 (cab fixed to gearbox)



PREVIEW.YOUFIXTHIS.COM

MASSEY FERGUSON





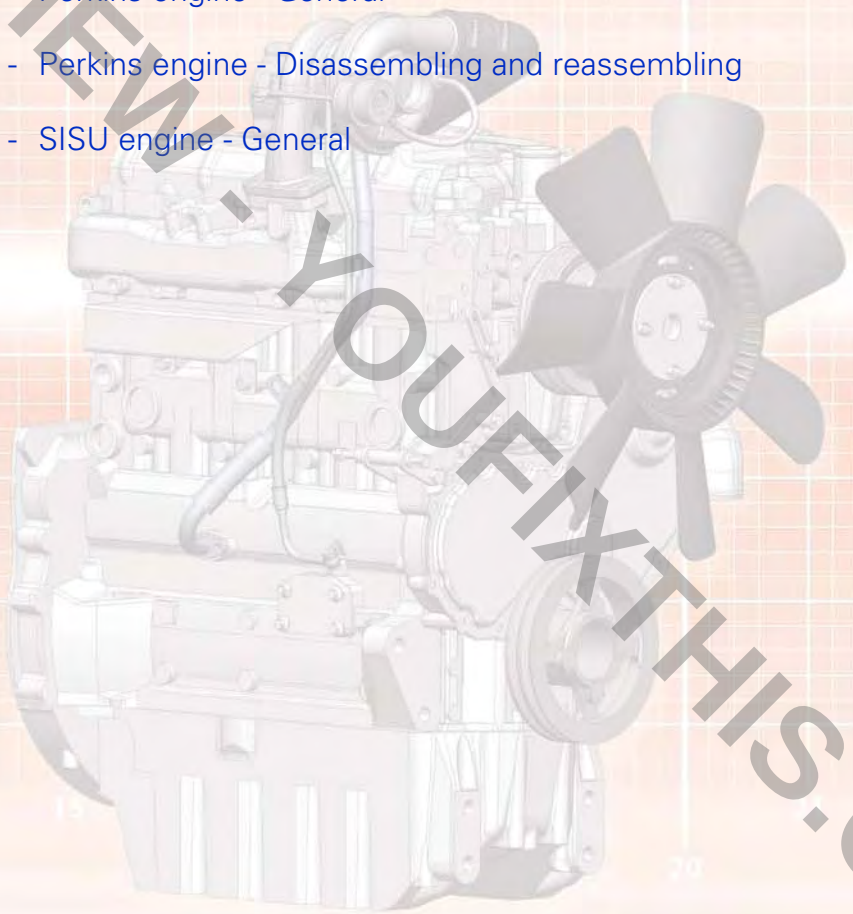
03 - Engine

CONTENTS

3A10 - Perkins engine - General

3A11 - Perkins engine - Disassembling and reassembling

3B10 - SISU engine - General



PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





04 - Clutch

CONTENTS

4A10 - GBA20 - DRY CLUTCH - Disassembling and reassembling

4A11 - GBA20 - DRY CLUTCH - Bleeding



PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





05 - Gearbox

CONTENTS

5A10 - GBA20 - Mechanical reverse shuttle - General - Operation

5A11 - GBA20 - Mechanical reverse shuttle - Input unit

5A12 - GBA20 - Mechanical reverse shuttle - Shuttle

5A13 - GBA20 - Mechanical reverse shuttle - Speedshift

5A14 - GBA20 - Mechanical reverse shuttle - Selector cover plate

5A15 - GBA20 - Mechanical reverse shuttle - Selector rails

5A16 - GBA20 - Mechanical reverse shuttle - Output shaft

5A17 - GBA20 - Mechanical reverse shuttle - Layshaft

5A18 - GBA20 - Mechanical reverse shuttle - Intermediate shaft

5B10 - GBA20 - Power Shuttle - General - Operation

5B11 - GBA20 - Power Shuttle - Input unit

5B12 - GBA20 - Power Shuttle - Shuttle

5B13 - GBA20 - Power Shuttle - Speedshift

5B14 - GBA20 - Power Shuttle - Selector cover plate

5B15 - GBA20 - Power Shuttle - Selector rails

5B16 - GBA20 - Power Shuttle - Output shaft

5B17 - GBA20 - Power Shuttle - Layshaft

5B18 - GBA20 - Power Shuttle - Intermediate shaft

PREVIEW - YOU FIX THIS.COM

MASSEY FERGUSON





06 - Rear axle

CONTENTS

6A10 - GPA20 - General - Operation

6A11 - GPA20 - Normal Duty trumpet housings

6A12 - GPA20 - Heavy Duty trumpet housings

6A13 - GPA20 - Brake piston

6A14 - GPA20 - Hand brake unit and control

6A15 - GPA20 - Differential

6A16 - GPA20 - Hitch and linkage

6A17 - GPA20 - Auto-hitch

6A18 - GPA20 - Rear wheels/hubs

PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





07 - Power take off

CONTENTS

7A10 - GPA20 - General - Operation

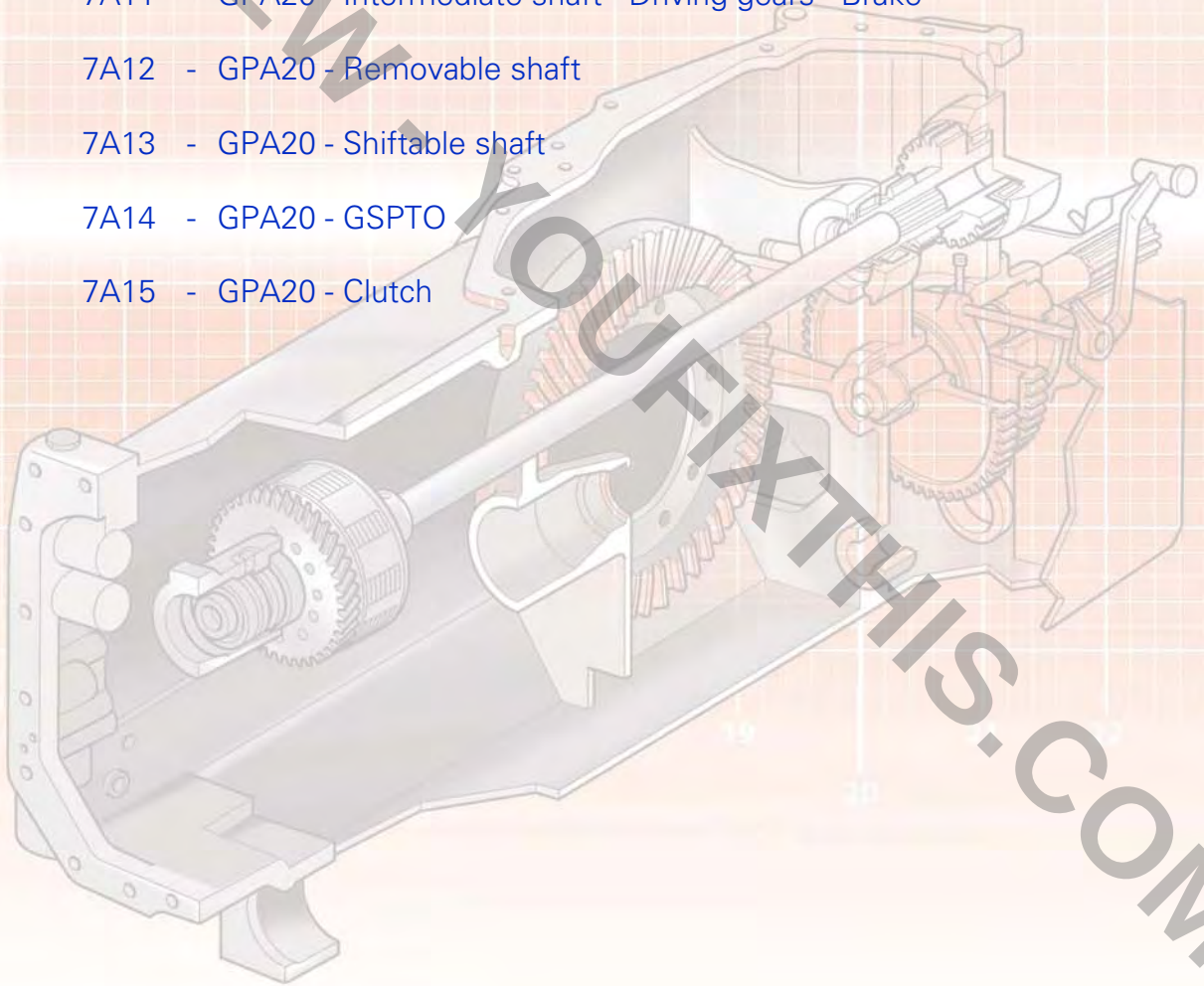
7A11 - GPA20 - Intermediate shaft - Driving gears - Brake

7A12 - GPA20 - Removable shaft

7A13 - GPA20 - Shiftable shaft

7A14 - GPA20 - GSPTO

7A15 - GPA20 - Clutch



PREVIEW. YOUFIXTHIS.COM

MASSEY FERGUSON





08 - Front axle

CONTENTS

8A10 - DANA - General

8A11 - DANA - Final drive units

8A12 - DANA - Differential

8A13 - DANA - Bearing and transmission shaft

8A14 - 4WD GPA20 clutch

8B10 - CARRARO - General

8B11 - CARRARO - Final drive units

8B12 - CARRARO - Differential

8B13 - CARRARO - Bearing and transmission shaft

8B14 - 4WD GPA20 clutch

8C10 - 2WD front axle

8D10 - 2WD front axle, 6-cylinder engine

PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





09 - Hydraulics

CONTENTS

9A10 - Description of open centre system (OC 57 l/min)

9A20 - Description of open centre system (OC 100 l/min)

9A30 - Description of Load Sensing system

9B10 - OC 57 l/min hydraulic tests

9B20 - OC 100 l/min hydraulic tests

9B30 - Load Sensing hydraulic tests

9C10 - Right-hand cover plate (OC 57 l/min)

9C20 - Right-hand cover plate (OC 100 l/min)

9C30 - Load Sensing right-hand cover plate

9D10 - Left-hand cover plate (OC 57 l/min)

9D20 - Left-hand cover plate (OC 100 l/min)

9D30 - Load Sensing left-hand cover plate

9E10 - Unassisted brake master cylinders

9E11 - Assisted brake master cylinders

9F10 - Trailer braking - Bosch valve

9F20 - Load Sensing trailer braking

9H10 - Linkage spool valve (OC)

9H20 - Load Sensing linkage spool valve

PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





10 - Electrical equipment

CONTENTS

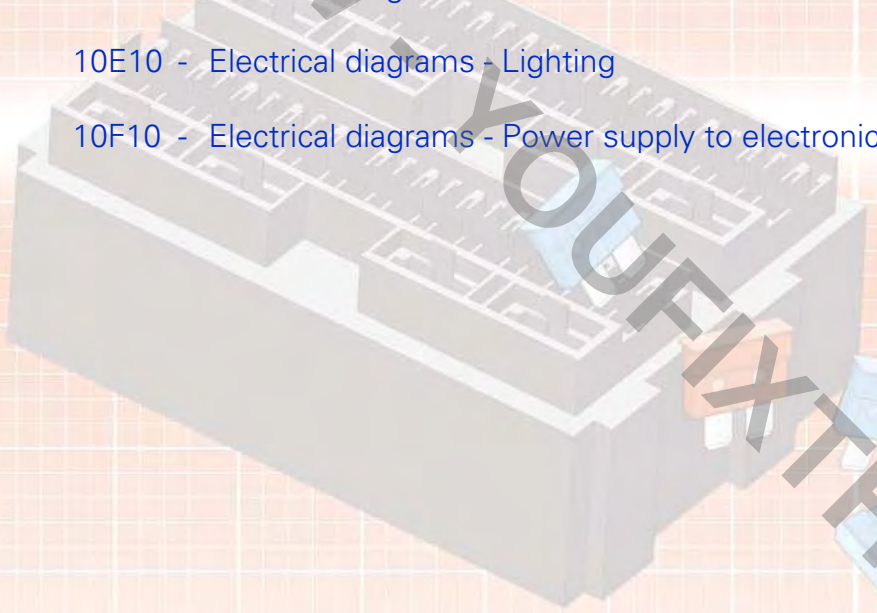
10B10 - Electrical diagrams - Cab equipment

10C10 - Electrical diagrams - Engine equipment

10D10 - Electrical diagrams - Transmission

10E10 - Electrical diagrams - Lighting

10F10 - Electrical diagrams - Power supply to electronic boxes



PREVIEW - YOUFIXTHIS.COM

MASSEY FERGUSON





11 - Electronics

CONTENTS

GUF111 - ELECTRONIC INJECTION - Perkins - Programming

GUF112 - Perkins ELECTRONIC INJECTION - Tests and diagnostics

GUF113 - Perkins ELECTRONIC INJECTION - Error codes

GUF115 - Perkins ELECTRONIC INJECTION - Electrical Diagrams

11B10 - AUTOTRONIC 5 - Description

GUF511 - AUTOTRONIC 5 - Power Shuttle - Programming and setting parameters

GUF512 - AUTOTRONIC 5 - Power Shuttle - Tests and diagnostics

GUF513 - AUTOTRONIC 5 - Power Shuttle - Error codes

GUF514 - AUTOTRONIC 5 - Power Shuttle - Calibration and adjustments

GUF515 - AUTOTRONIC 5 - Power Shuttle - Electrical diagrams

11C10 - ELECTRONIC LINKAGE - Description

11C12 - ELECTRONIC LINKAGE - Tests and diagnostics

11C13 - ELECTRONIC LINKAGE - Error codes

11C14 - ELECTRONIC LINKAGE - Adjustment

11C15 - ELECTRONIC LINKAGE - Electrical diagrams

11C20 - Autotronic 5 - Linkage - Description

GUF521 - AUTOTRONIC 5 - Linkage - Programming and setting parameters

GUF522 - AUTOTRONIC 5 - Linkage - Tests and diagnostics - MF5400

PREVIEW YOUR MANUALS.COM

MASSEY FERGUSON

12B10- Air conditioning - General

CONTENTS

A . General 3
B . Schematic diagram 5
C . Technical specifications 7
D . Safety instructions. 9
E . General maintenance 10
F . System troubleshooting 10

PREVIEW - YOUFIXTHIS.COM

PREVIEW - YOUFIXTHIS.COM

I . Refitting the injection pump (6-cylinder engine)

183. Check the position of the first cylinder piston is at TDC in compression travel (see § G).

NOTE: *A new injection pump may be supplied with the pump pin in locked position.*

The injection pump pin should not be turned without the spacer (2) (Fig. 37) in position under the lock screw (1). Before turning the crankshaft or assembling the injection pump, position the spacer (2) under the lock screw (1) to ensure that the pump pin is not locked.

184. Fit a new "O" ring (3) (Fig. 37) to the injection pump flange.

185. Lightly lubricate the "O" ring (3) with clean engine oil. Fit the timing pin in the injection pump. Fit the pump on the three studs. Fit the three nuts on the studs. Tighten to a torque of 22 Nm.

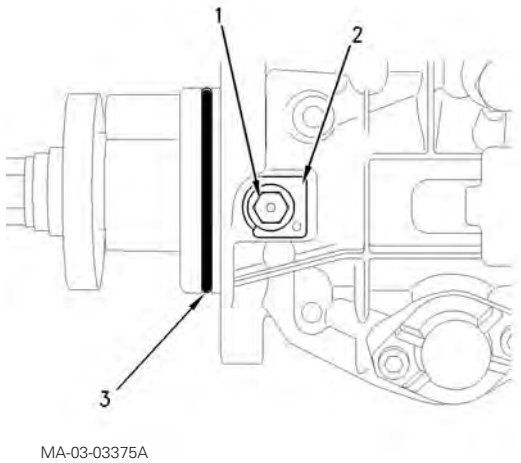
186. Assemble the nut and screw (5) (Fig. 38) of the injection pump support.

NOTE: *When the support is assembled, check that no force is applied to the injection pump.*

187. Tighten the nut and screw (5) of the pump support to a torque of 22 Nm.

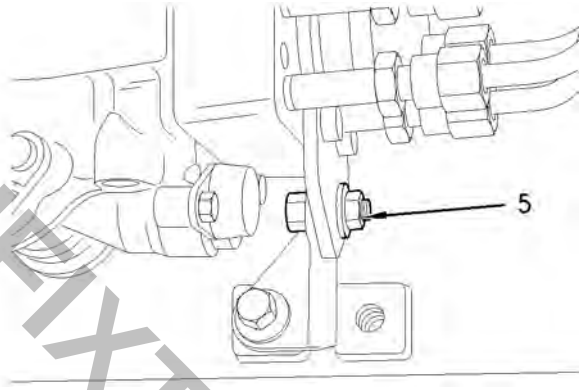
188. Assemble the injection pump gear on the pump hub. To prevent any backlash, check that the four pressure screws (6) (Fig. 39) are centred in the gear slots. Fit the four injection pump screws (6) without tightening.

NOTE: *The injection pump gear must be assembled on the pump before turning the crankshaft.*



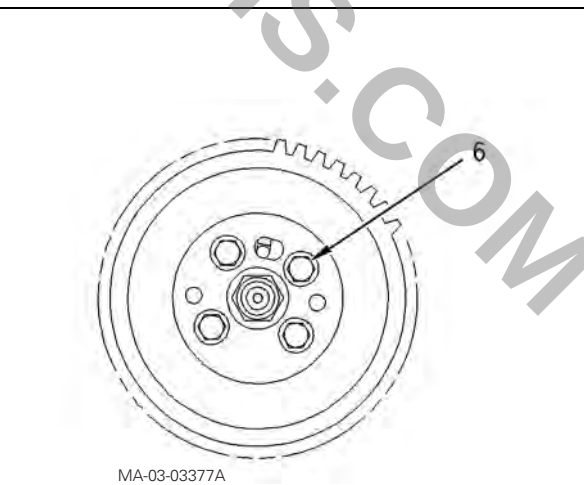
MA-03-03375A

Fig. 37



MA-03-03376A

Fig. 38



MA-03-03377A

Fig. 39

PREVIEW - YOUFIXTHIS.COM

A . General

The bearings (28) (30) separated by a spacer (80) rotate the driving gear (29) on the output shaft. The bearings (79) (81) operate as axial stops.

A single cone synchroniser allows range shifting between gears (29) (Hare) and (36) (Tortoise).

Preloading, or the clearance between the cones (39) (40) and their respective cups (48) (37) is adjusted according to the thickness of the circlip (49).

Description

The output shaft transmits movement from the different ratios to the rear axle transfer shaft. It is fitted on the lower transmission line at the rear of the unit.

It is supported at the front by a needle roller bearing fitted in the layshaft bore and at the rear by two opposing tapered roller bearings.

The shaft (44) supports:

- the driving gear (29) fitted idle onto the combined bearings (28) (30);
- the idle-fitted gear (36) and ring (35) assembly;
- the Hare/Tortoise synchroniser (31), integral rotation by splines.

To ensure correct operation of the assembly depending on the load applied to the transmission, several adjustments are required:

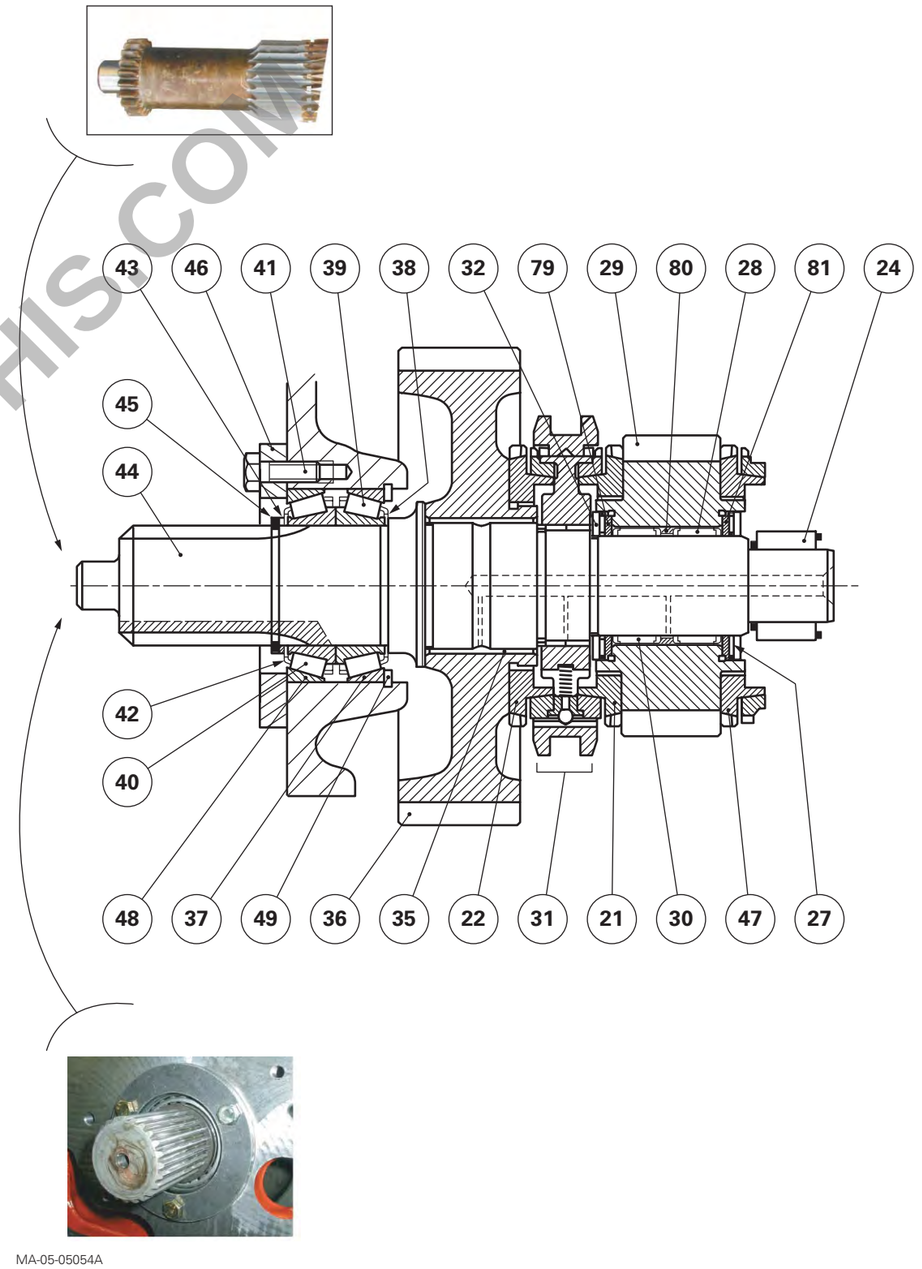
- **Shimming J3:** via the circlip (49), this shimming cancels out the clearance between the cones (39) (40) and their respective cup.
- **Shimming J4**: the shim(s) (38) positioned between the shoulder of the shaft (44) and the cone (39) provide axial clearance for the gear (29).
- **Shimming J5:** the shim(s) (42) fitted between the cone (40) and the shim (43) cancel out the axial clearance of the cones (39) (40) on the shaft (44).

NOTE: *The GBA20 gearbox output shaft without creeper gears may be replaced by two other shafts relating to the following options respectively: creeper unit or super creeper unit.*

Parts list (Fig. 1)

(21) Synchroniser cone (Hare)
(22) Synchroniser cone (Tortoise)
(24) Needle roller bearing
(27) Thrust washer
(28) Needle roller bearing
(29) 3rd driving gear (Hare)
(30) Needle roller bearing
(31) Hare / Tortoise single cone synchroniser
(32) Thrust washer
(35) Ring
(36) Tortoise gear
(37) Bearing cup
(38) Shim(s)
(39) Bearing cone
(40) Bearing cone
(41) Screw
(42) Shim(s)
(43) Shim
(44) Output shaft
(45) Circlip
(46) Stop plate
(47) 3rd synchroniser cone
(48) Bearing cup
(49) Circlip
(79) Needle roller bearing
(80) Spacer
(81) Needle roller bearing

View of the assembly



MA-05-05054A

Fig. 1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Reassembly

22. Check and clean all components. Replace those that are defective.

23. Position the needle roller bearing (24) in the bore of the layshaft "R", taking care to position the smaller diameter of the flexible ring towards the 3rd driving gear (Hare) (29) (Fig. 4).

24. Fit the shaft in the housing without the gears.

25. Fit a temporary circlip (49), minimum thickness.

26. Position the cup (37).

Preparation for J3 shimming (Fig. 5)

27. Slide cones (39) (40) and hold them against the shoulder of shaft (44) by applying pressure by hand. Fill space Y between the rear of cone (40) and the groove of circlip (45) with shims (42) and shim (43) which will be placed against circlip (45). Take a new circlip. The circlip must be held closed in the groove under a slight pressure (Fig. 6).

28. Fit the cup (48) and the stop plate (46). Tighten screws (41) to a torque of 25 - 35 Nm.

IMPORTANT: *For gearboxes fitted with a creeper unit, use the unit plate (1) (Fig. 9) to replace the stop plate (46) (Fig. 8). Tighten the screws to a torque of 33.8 - 51.5 Nm.*

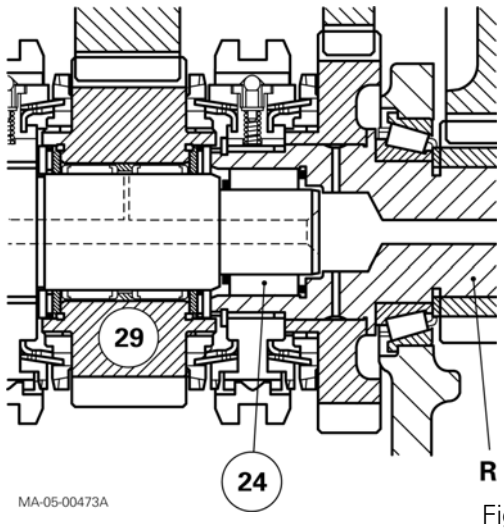


Fig. 4

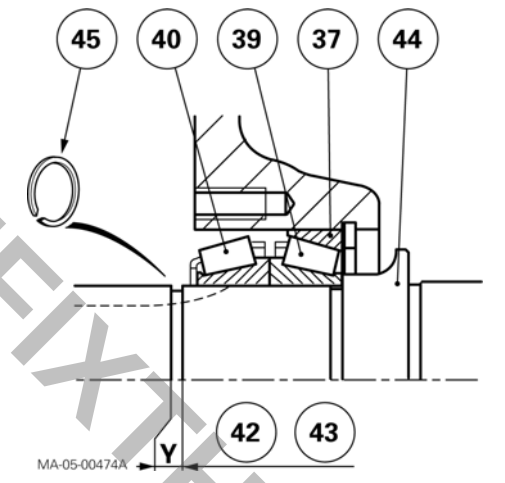


Fig. 5

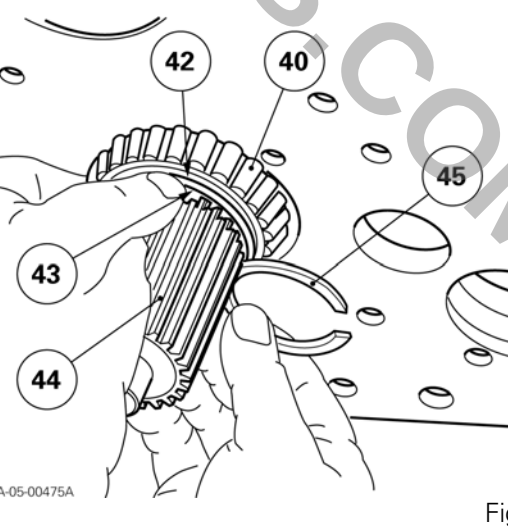
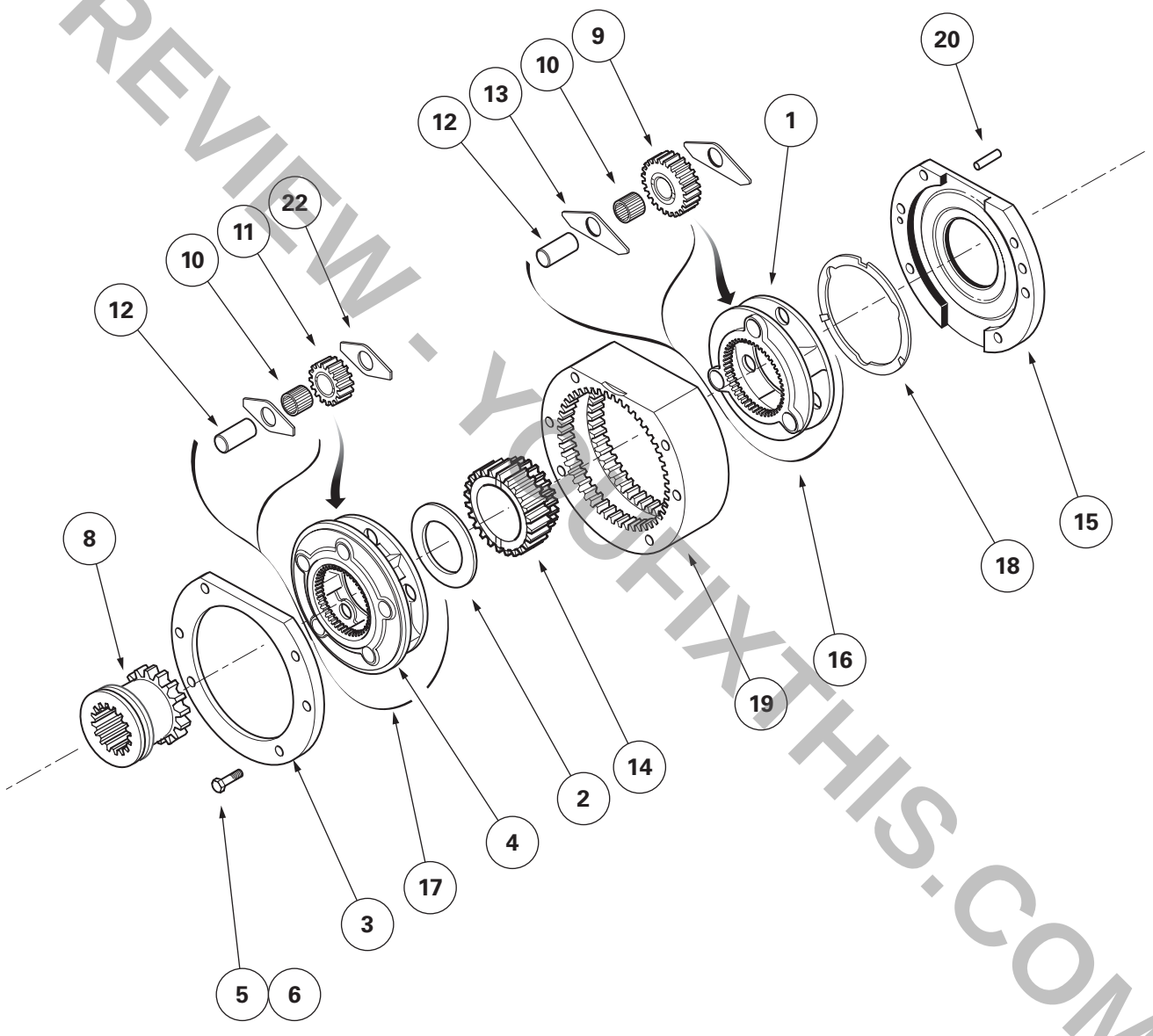


Fig. 6

PREVIEW - YOUFIXTHIS.COM

Blown-up view



PREVIEW - YOUFIXTHIS.COM

Fig. 4

Parts list

(1) Oil receiver
(2) Bearing
(3) Ring
(4) Gear (540 rpm)
(5) Coupler
(6) Hub
(7) Gear (1000 rpm)
(8) Circlip
(9) Snap ring
(10) Bearing
(11) Seal ring
(12) Deflector
(13) PTO shaft
(14) Unit
(15) Screw
(15A) Screw
(16) Sensor
(17) Nut
(18) "O" ring
(19) Ring
(20) Ring
(21) Rod
(22) Pin
(23) "O" ring
(24) Pads
(25) Fork
(26) Set screw
(27) Special spacers
(28) Plug
(29) "Bayonet" protective cap
(30) Protective screw cap
(31) Flanged shaft
(32) End fitting (6 or 21 splines)
(33) Dowels
(34) Screw

PREVIEW - YOUFIXTHIS.COM

29. Assembly diagram for tools ref. CA119182 and CA119228 (see § J) on the differential housing supports.

Using a depth gauge, measure distance B (between the bearing pin and the bearing point of the pinion head or bearing base) (Fig. 24).

30. To determine the necessary thickness S between the pinion and the bearing, subtract the value V engraved on the pinion head (V = specified taper distance) from the measured value B (Fig. 25):

S = B - V

31. Select the required thickness S from the range of shims available and insert the chosen shim under the pinion head.

NOTE: *Ensure that it is fitted correctly.*

Range of shims										
Thickness	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
Quantity	-	-	-	-	-	-	-	-	-	-

32. After inserting the correct shim with its chamfer facing the pinion, force fit the bearing at the end of the pinion pin using special tool ref. CA715004 (see § J) and a press, ensuring that it is seated correctly.

Fit the shims and a new flexible spacer (Fig. 26).

NOTE: *Systematically fit a new flexible spacer.*

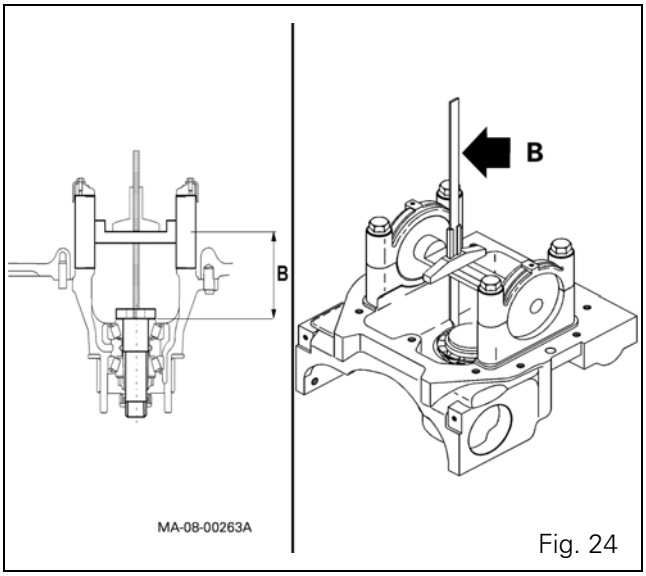


Fig. 24

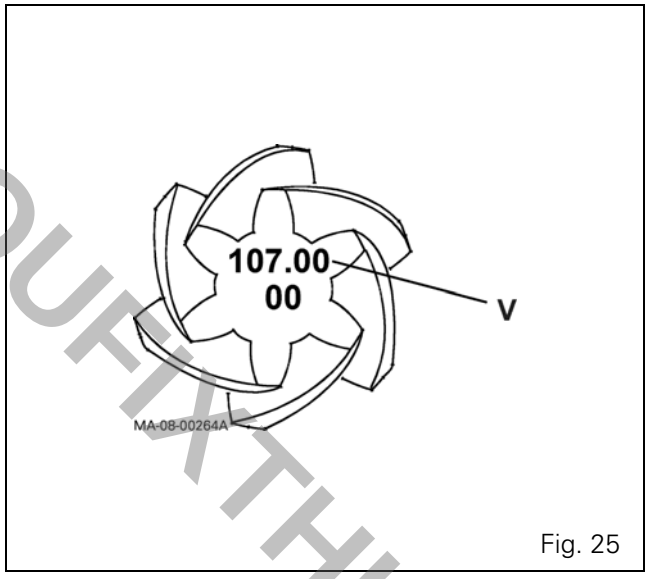


Fig. 25

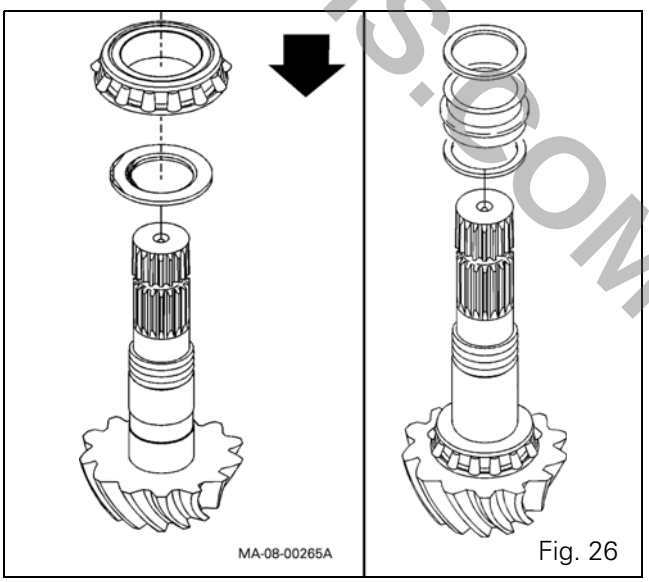


Fig. 26

PREVIEW - YOUFIXTHIS.COM

Checking the supply pressure of the Power Shuttle control unit

- Connect a pressure gauge with a capacity of approximately 30 bar to the diagnostics connector (1) of the control unit located at the front right of the gearbox.
- Check **P8**:

Engine speed (rpm)	P8 (bar)
1000	18 ± 1
2200	18 ± 1

PREVIEW - YOUFIXTHIS.COM

Parts list (Fig. 8)

(1) Master cylinder assembly
(2) Rod
(3) Spool
(4) Piston
(5) Brake system supply reserve
(6) Pressure balance valve
(7) Piston guide screw
(8) Master cylinder capacity
(9) Port
(10) Port
(11) Bore
(12) Groove

A Power supply
B Piston (4) chamber
C To housing return
D To main brake or FTE valve (if fitted)

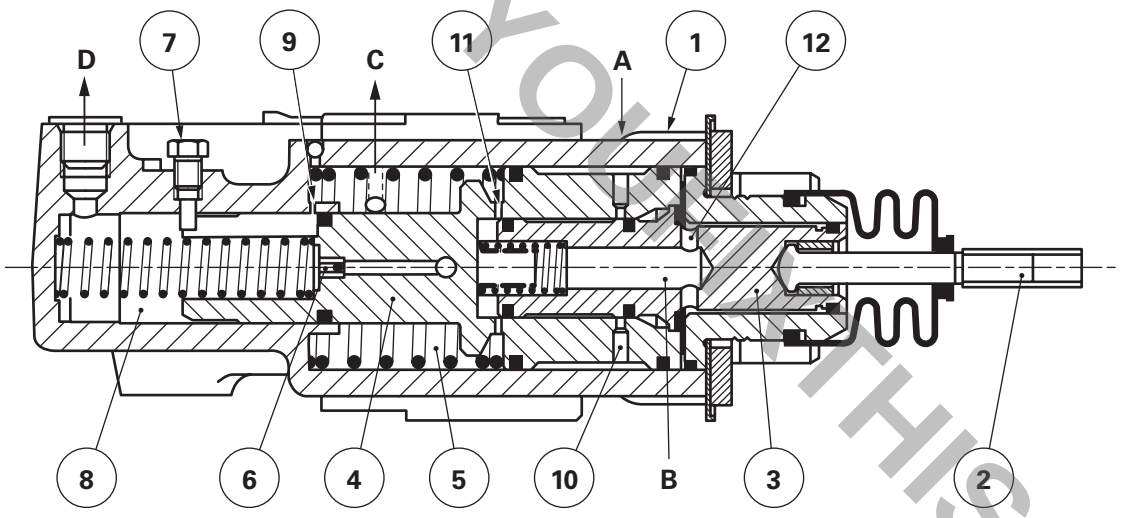
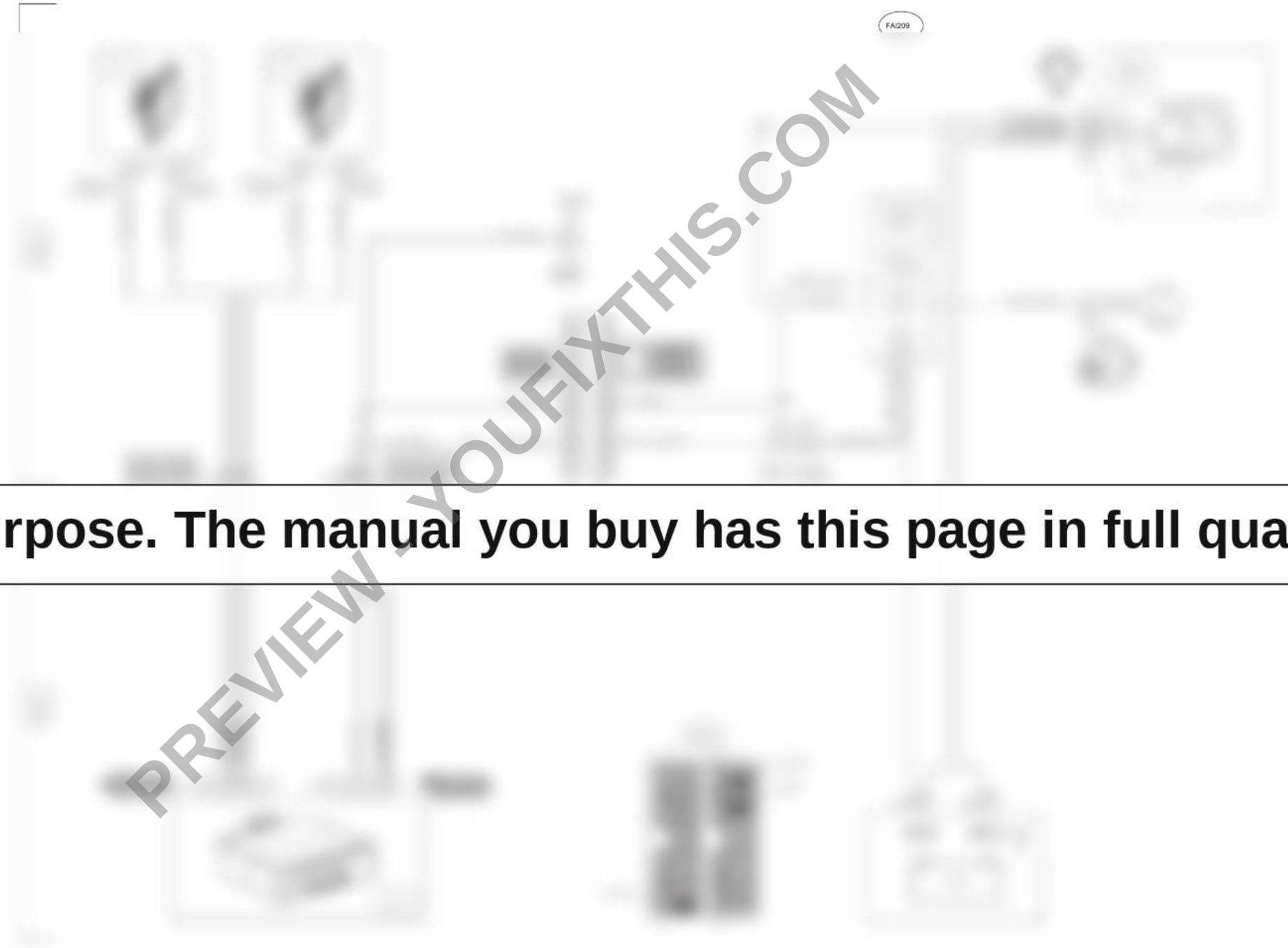


Fig. 8

PREVIEW - YOUFIXTHIS.COM

GBA25 radio without circuit breaker - Germany

FAI 232 Radio harness



PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

Trailer connector - North America

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

TR11: PTO solenoid valve

Description

Location: on the right-hand hydraulic cover (Fig. 8)
ON/OFF solenoid valve controlled by frequency carrier signal.

- Pins 1: Signal
- Pins 2: Ground

Signals:
OFF solenoid valve: 0A
ON solenoid valve: 12V

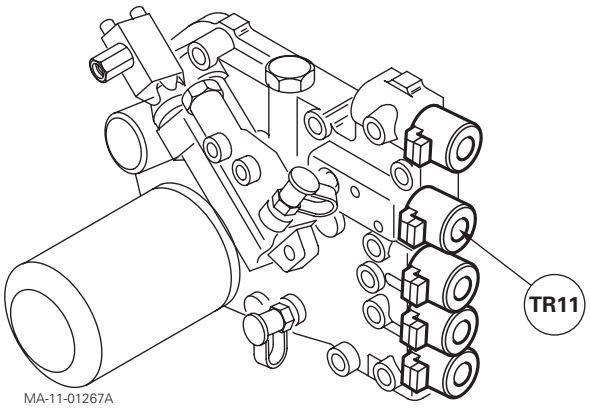


Fig. 8

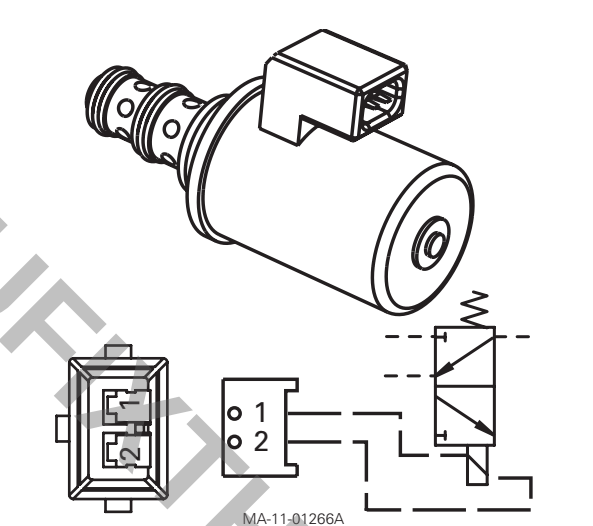


Fig. 9

Possible error codes

Errors	Description	Reaction of the System	Solutions	Resetting the system after clearing error
207	Short circuit at +12V	PTO locked	Check: - Contacts - Harness connections - Wiring - F6 fuse	Press the clutch pedal to contact the BOC or move the PTO switch from ON to OFF
208	Short circuit at 0V			
209	Open circuit			
211	Switch ON and PTO inactive		Move the PTO switch from ON to OFF	

PREVIEW - YOUFIXTHIS.COM

B . Electrical diagrams

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 25 of 2110 pages

The full manual includes:

- All 2110 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Massey Ferguson 5425, 5435, 5445, 5455, 5460, 5465, 5470, 5460 SA, 5470 SA, 5475 SA Repair Manual



Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual