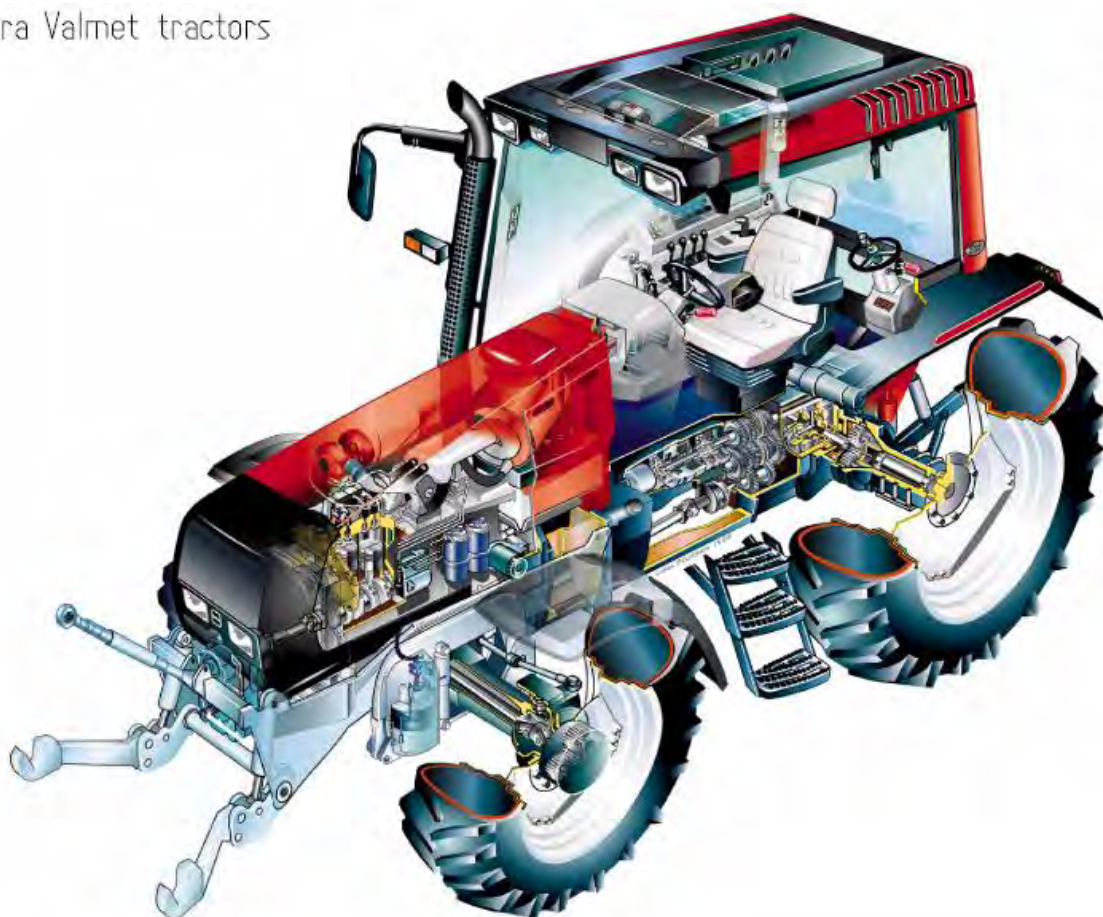


# VALTRA – VALMET MEGA MEZZO HI-TEC

Valtra Valmet tractors



## WORKSHOP MANUAL

# VALTRA

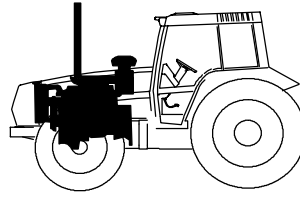
## Service Manual Tractors

Groups 10–100

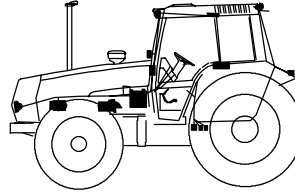
Valtra Inc.  
44200 Suolahti, Finland

Virtakäyttöön Käyttöohje  
Stromläsere Anb. f. u. s. r. am  
rel. K3 K4

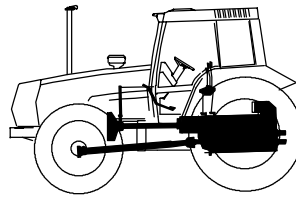
**10** General



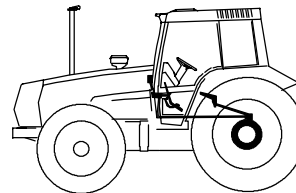
**20** Engine



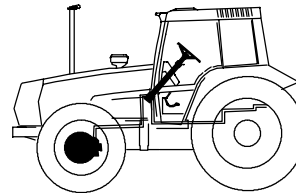
**30** Electrical system



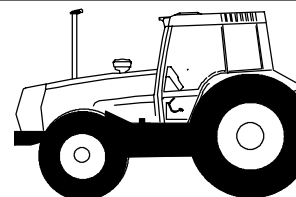
**40** Power transmission



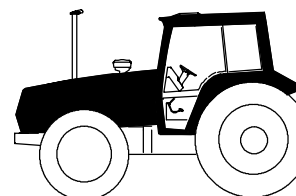
**50** Brake system



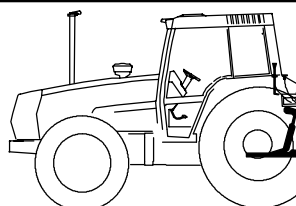
**60** Steering system and Front axle



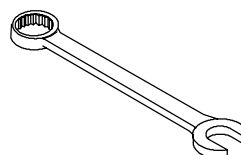
**70** Frame and Wheels



**80** Cab and Shields



**90** Hydraulics



**100** Tools

51. Brake system	<del>1. 11. 1998</del>	Model	Code	Page
	1. 9. 2002	6000–8750	521	1

## 2. Parking brake

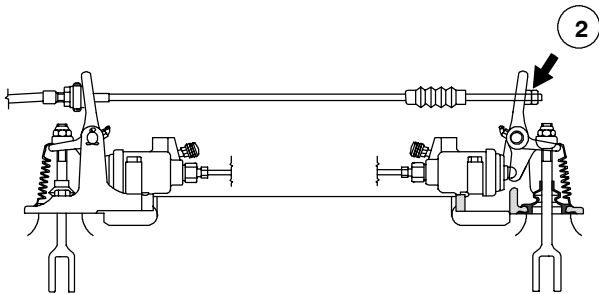
**Note!** Adjusting parking brake on tractors with pressure air system for trailer brakes, see instr. **E** on page 511/6.

**Note!** Parking brake on tractors with HiTech Shuttle, see instruction **B** on pages 521/2–3.

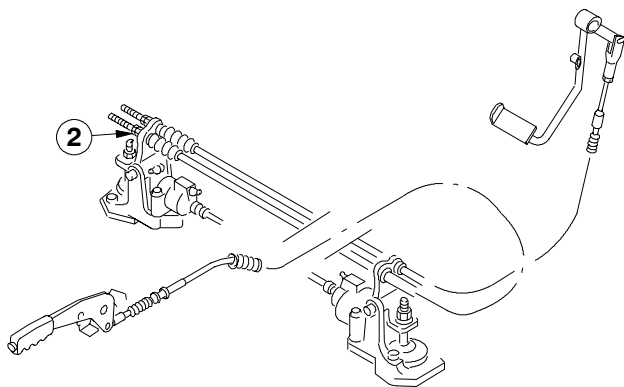
### A. Adjusting parking brake (not HiTech tractors)

**Note!** The parking brake is controlled mechanically and it is connected to the foot brake mechanism by a cable. The parking brake is adjusted in the factory and re-adjustment is not necessary unless parts of brake mechanism have been changed. The parking brake is affected when the foot brakes are adjusted (**see instr. 1B**).

1. Before adjusting the parking brake, adjust foot brakes (see instr. **1B** on page 511/2).

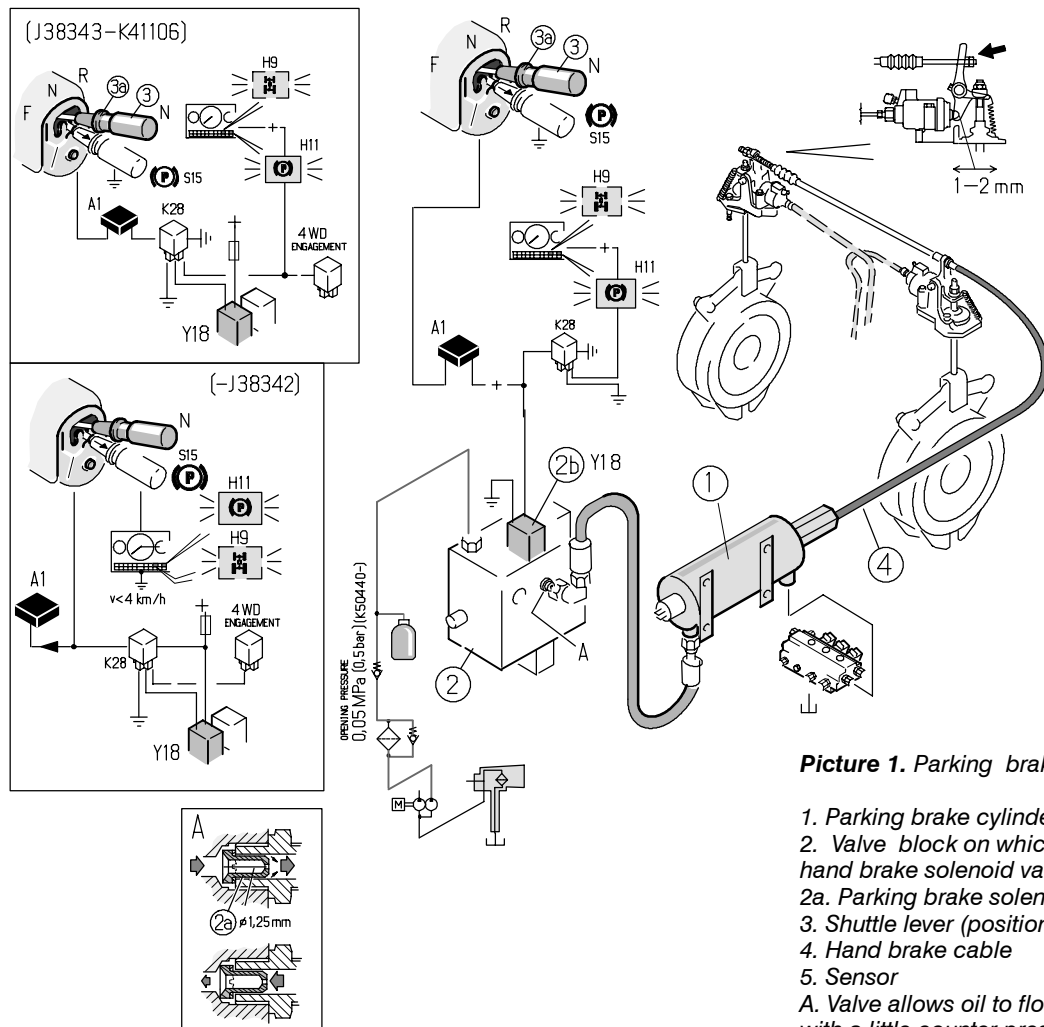


2. Adjust the parking brake lever free travel to about **50 mm** (at the lever end) by turning the adjusting nut (2) at the rear end of the cable.



**Note!** If the tractor has reverse drive controls (TwinTrac), the parking brake adjustment is done with nut (2), but there are two cables connected to brake mechanism. The other cable is for the rear brake pedal.

## B. Parking brake on tractors with HiTech Shuttle



**Picture 1.** Parking brake mechanism

1. Parking brake cylinder
  2. Valve block on which there is a hand brake solenoid valve
  - 2a. Parking brake solenoid valve Y18
  3. Shuttle lever (position P)
  4. Hand brake cable
  5. Sensor
- A. Valve allows oil to flow out of ram with a little counter pressure

In connection with HiTech Shuttle the hand brake is controlled electro–hydraulically. When the engine is running and the shuttle lever (3) is moved to position P, hydraulic oil pressure from the low pressure circuit is cut off in the ram (1) (solenoid valve (2a) becomes unenergised) and the ram spring pulls the hand brake on.

When pressure again is connected to the ram (solenoid valve energised), pressure compresses the spring and hand brake is released.

When the engine is stopped (pump stops), the hand brake comes on automatically with an aid of the spring force.

If the hand brake does not disengage (engine running) although the shuttle lever is moved to the N, R or F position so:

– check whether the solenoid valve (2a) is energised (magnetic), when the hand brake is disengaged. If not, measure the solenoid resistance, which should be **11–12 ohms**.

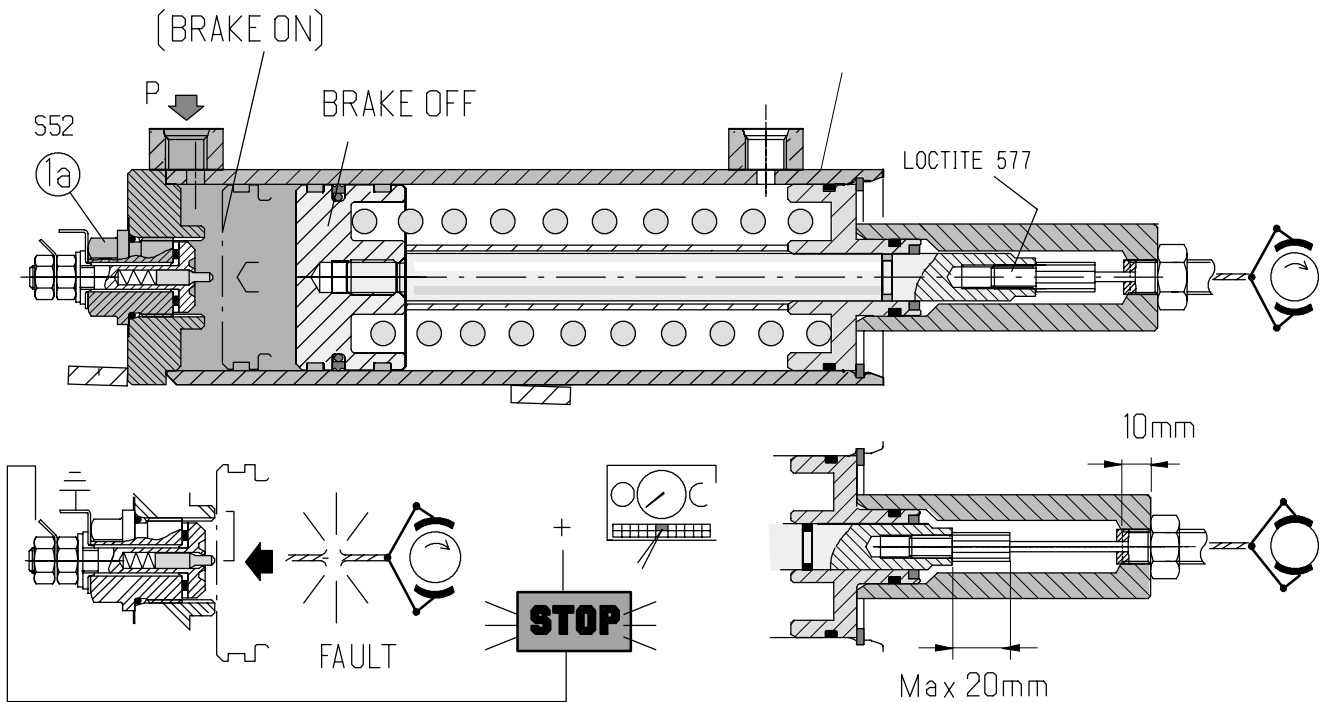
– If the solenoid is faulty, it should be replaced.  
– If the solenoid is OK, measure whether current comes up to the solenoid connector. If not, check the solenoid wires and connectors.

– The condition of the shuttle lever switch can be tested in the AC 5/5.2 test mode, see pages 370/10 or 371/8.  
– If the solenoid and its wiring and the hand brake switch are OK, the fault can lie in the hand brake relay or in the AC 5/5.2 control unit.  
– If these are OK, the fault can lie in the hydraulic system.

**Note!** If the hand brake engages itself during driving, the solenoid valve (2a) has become unenergised or low pressure circuit has malfunctions.

**Note!** If the driving speed exceeds 2 km/h (in the beginning of the production 4 km/h), the hand brake engagement is prevented by relay K28 (in the lever console).

– a non–return valve from ser. no. **K50440** incl. has been fitted in the system which together with the AC 5.2 program modification, retards the pressure drop in the low pressure circuit in cases that e.g. engine stops during driving (e.g. fuel runs out). Program disengages all transmission multi–disc clutches, if the engine stops and the driving speed exceeds 5 km/h. In this case the parking brake cylinder starts to brake after 15..30 seconds.

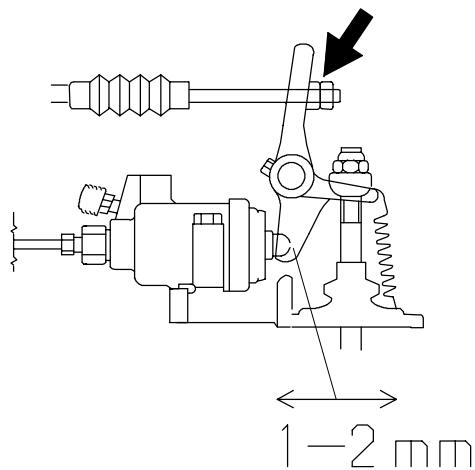


**Picture 2.** Hand brake ram on HiTech tractors.

1a) Safety switch lights up the STOP light in the dashboard, if e.g. the hand brake cable breaks.

**Note!** Adjusting dimensions MAX 20 and 10 mm must come true when fitting a new cable.

### Adjusting hand brake on HiTech tractors



The length of the hand brake cable is adjusted, when necessary, so that when the hand brake is disengaged (=ram pressurised), the clearance between the RH side brake cylinder push rod and the brake mechanism lever is **1-2 mm**. The clearance can be adjusted with nuts at the end of the cable (arrow).

**Note!** Before adjustment ensure, that the foot brake is correctly adjusted, see instr. **B** on page 511/2.

BRAKE VALVE, FITTING INSTRUCTION	<del>26.09.1997</del>	Model	No	Page
	28.07.1999	6000–8950	<b>59.1</b>	1(6)

6000–6400, 6900 8000, 8000R:

Br.valve, pressure ratio . . . . . **1:5,44 32556110**  
, **1:7,11 33646300**  
**1:11,1 32530210**

6600, 6800, 8050–8750:

Br.valve, pressure ratio . . . . . **1:5,44 33640900**  
**1:7,11 33646400**  
**1:11,1 33641300**

6250Hi–8950Hi:

Br.valve, pressure ratio . . . . . **1:5,44 33619300**  
**1:7,11 33670200**  
**1:11,1 33619400**

- The brake valve is used with trailers which have hydraulic brakes. The brake valve steers the tractor hydraulic pressure into the trailer brake cylinders when braking.

**CHOOSING CORRECT BRAKE VALVE:**

- The max operating pressure of the brake valve is 15 MPa and valve pilot part pressure ratios are 1:5,44 or 1:11,1

NOTE! Check that the trailer max. allowable pressure is not lower than 15 MPa (see trailer type plate).

Pressure ratio 1:5 is intended to be a universal valve for so called "normal" trailers.

Pressure ratio 1:11 is intended to be fitted on heavy trailers or on trailers whose brake cylinders require a high pressure e.g. small cylinders. (The brake pressure does not even in this case rise over 15 MPa, but full braking power is obtained faster).

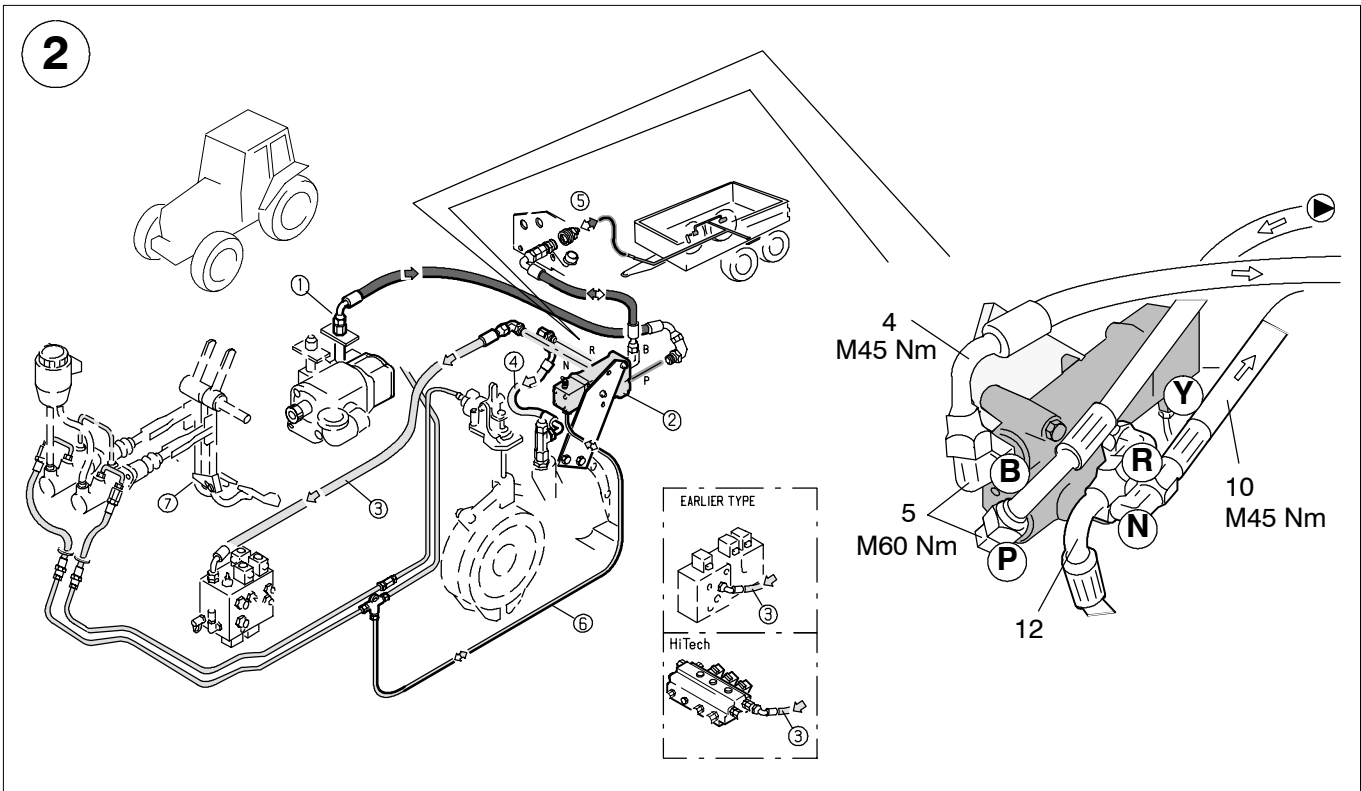
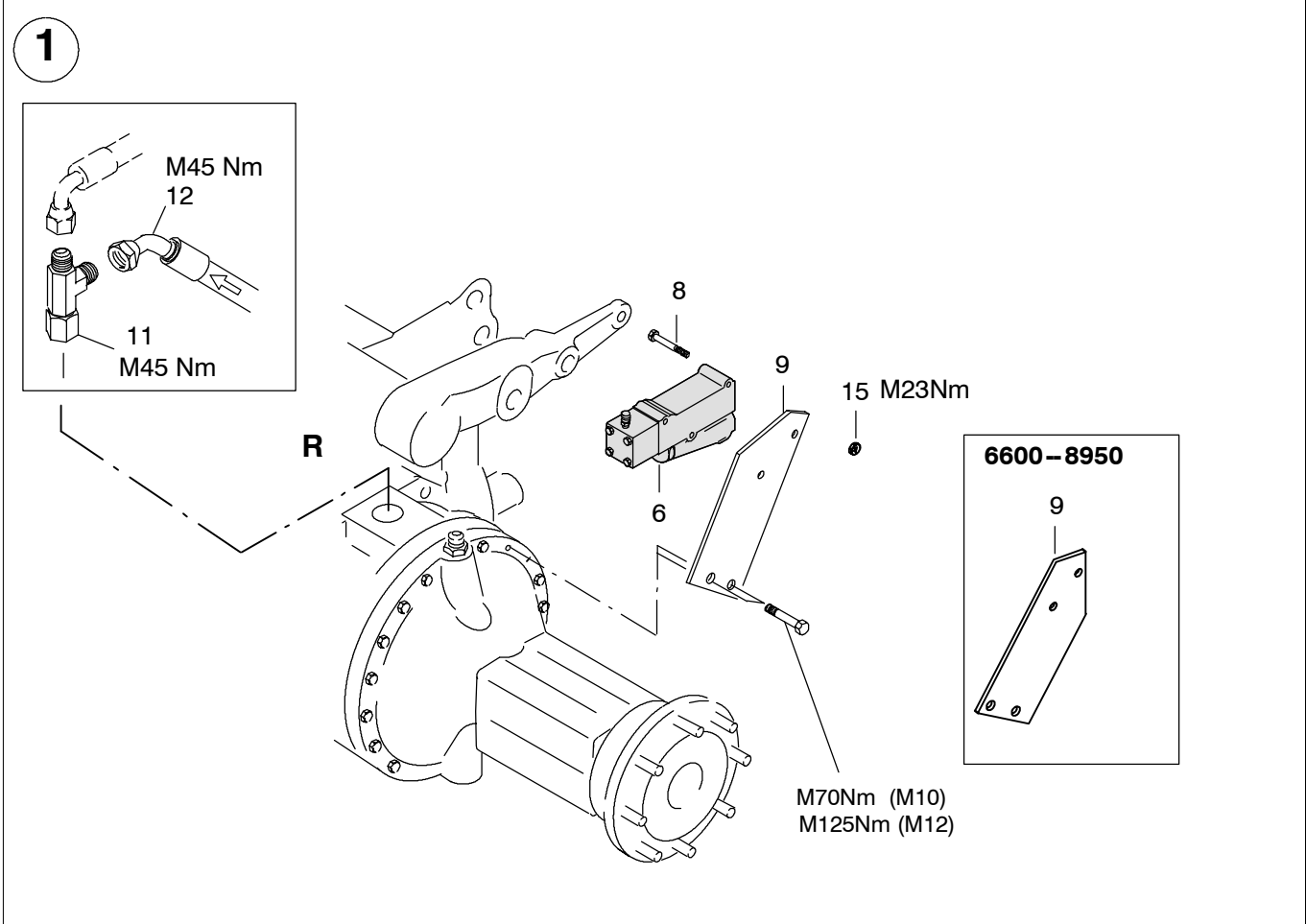
Fitting instruction:

- Lower the lower links to the lowest position. Remove the LH side rear wheel.
- Connect T–connector **11** to the final drives return pipe and then connect the hose **12** end (fig. 1) to the T–connector.

BRAKE VALVE, FITTING INSTRUCTION	<del>26.09.1997</del>	Model	No	Page
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- Fit the brake valve bracket **9** under two screws of the rear axle housing according to the fig. 1.  
Rear axle housing fitting bolts:
  - 70 Nm ( M10 property class is 10.9 )
  - 125 Nm ( M12 property class is 10.9 )
  
- Attach the brake valve (2 pcs screws **8** + nut **15**).
- Fit instead of the LH side brake pipe connector piece a T–connector **14** and connect the brake pipe **13** to the pilot part of the valve. Shape the pipe if necessary.
- Detach the hose end (pump/pressure filter – valve plate) from the LH side gearbox valve block.  
**Hi Shift:** detach the hose end (pressure filter–hydraulic block), from the clutch hydr. block (see picture 3b).  
**HiTech:** detach the hose end (pressure filter–hydraulic block) from hydr. block (F–R, C3).
- Easiest way to connect the hoses is the following order (fig. 2):
  1. N
  2. R
  3. P or B
- Connect hose **10** to the brake valve port "N" using an angle connector **5** and connect the hose other end to the gearbox (standard models) valve block  
**Hi Shift:** to the clutch hydraulic block (see picture 3b).  
**HiTech:** to the hydr. block (F–R, C3).
- Connect the end of the hose **12** to the brake valve port "R".
- Connect the detached pressure hose end to the port "P" with an angle connector **5**.
- Connect hose **4** to the brake valve port "B" and fasten the pipe other end to the quick–action coupling bracket using intermediate nipple **3** and male connector **1**.
- Bleed brake system.
- Check for leaks in brake system. Measure the brake valve pressure from the quick–action coupling. Start the engine (hydraulic oil temperature 50–65 °C, engine revs 1500 r/min). Latch the brake pedals together and increase gradually brake pedal force. The pressure should rise up to 15 MPa.

BRAKE VALVE, FITTING INSTRUCTION	<del>26.09.1997</del>	Model	No	Page
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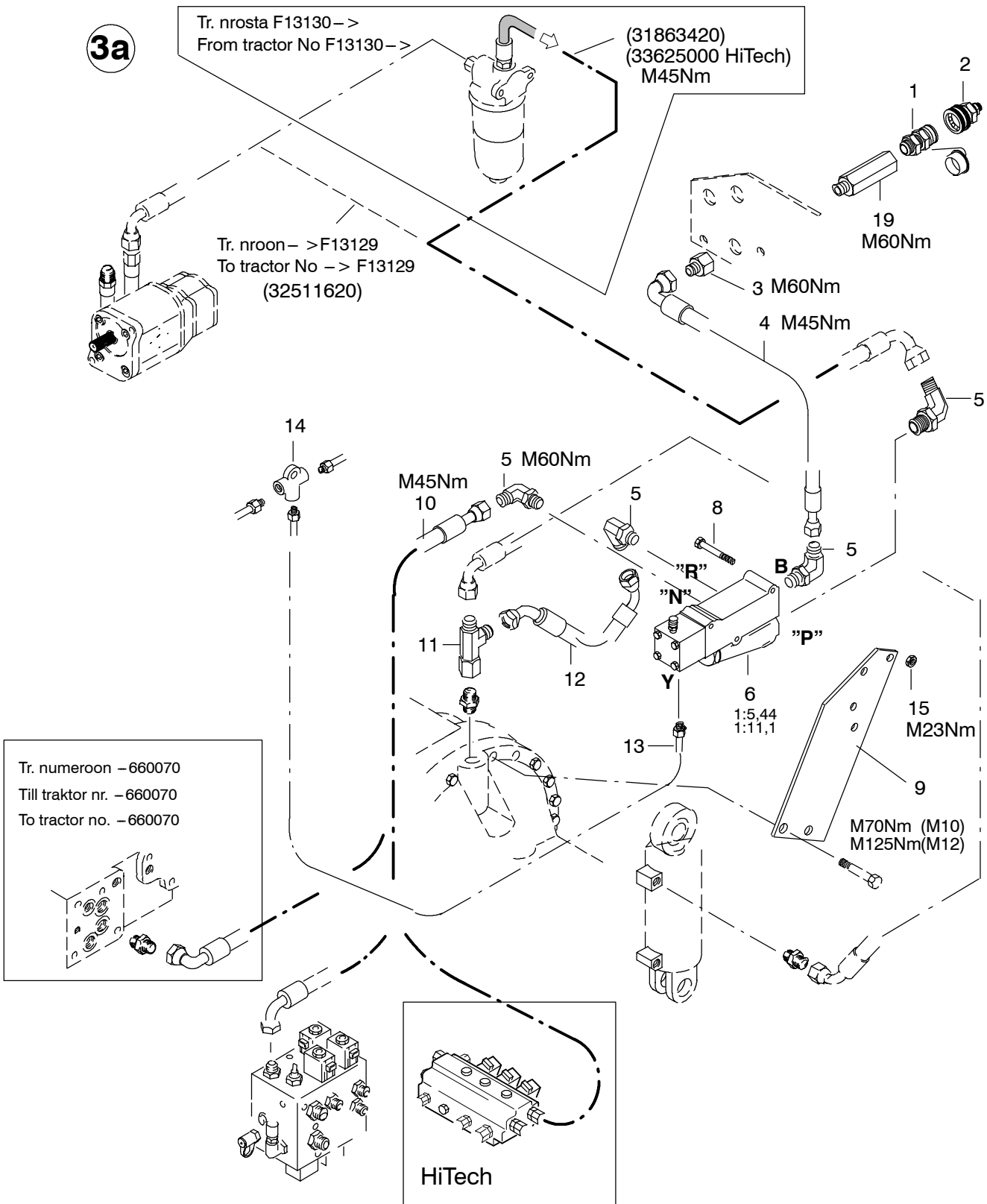


**3a**

Tr. nrosta F13130 ->  
From tractor No F13130 ->

(31863420)  
(33625000 HiTech)  
M45Nm

Tr. nroon -> F13129  
To tractor No -> F13129  
(32511620)



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