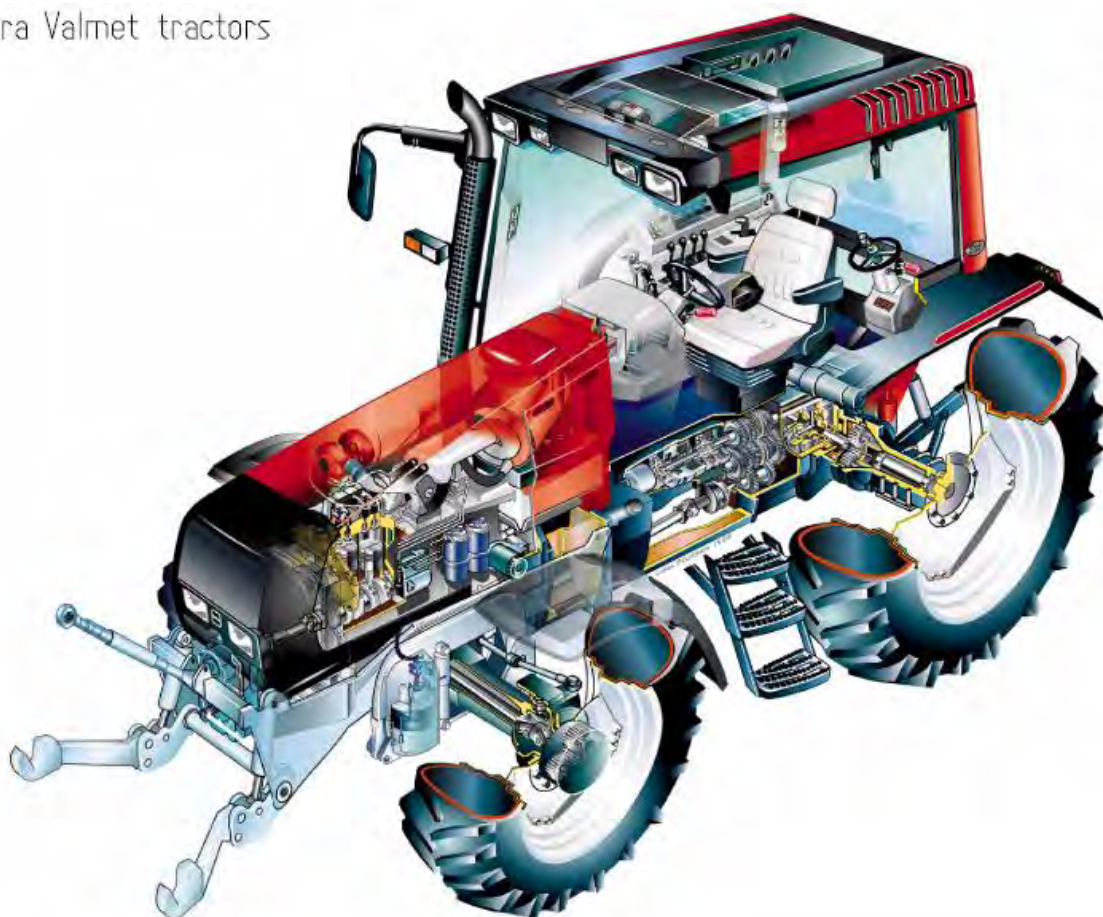


# VALTRA – VALMET MEGA MEZZO HI-TEC

Valtra Valmet tractors



## WORKSHOP MANUAL

# VALTRA

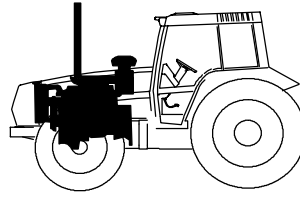
## Service Manual Tractors

Groups 10–100

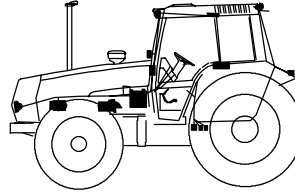
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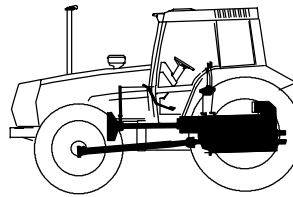
**10** General



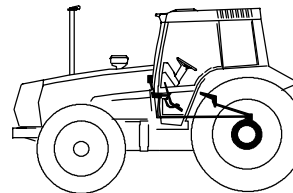
**20** Engine



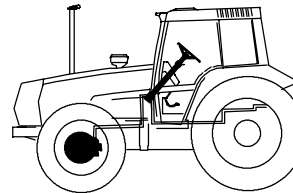
**30** Electrical system



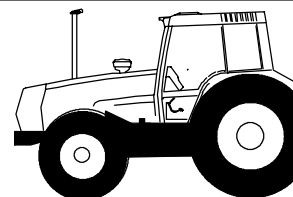
**40** Power transmission



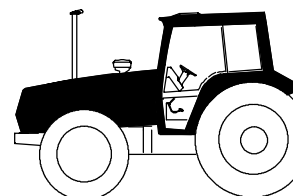
**50** Brake system



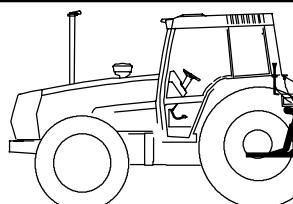
**60** Steering system and Front axle



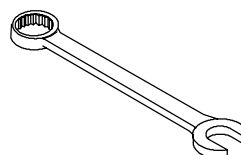
**70** Frame and Wheels



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**90** Hydraulics



**100** Tools

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## Technical data

4WD is engaged electro–hydraulically by means of a multi–disc clutch.

Axle type designation:

– 6000–8400 ..... Sige CS17VSD

Gear ratios:

– differential ..... 3,20  
– hub reduction gears ..... 5,538  
– total gear ratio ..... 17,72

Gear ratios front axle–rear axle, tractors with 2–step quick–shift gear:

– transmission 300/30 km/h (tractors 6100–6400 and 8000) ..... 1,391  
– transmission 300/40 km/h (tractors 6100–6400 and 8000) ..... 1,381  
– transmission 420/30 km/h (tractors 6600 and 8100) ..... 1,317  
– transmission 420/40 km/h (tractors 6600 and 8100) ..... 1,315

**Note!** Tractors with Delta Powershift, see page 420/2A.

Camber ..... 1  
KPI ..... 5°  
Caster ..... 0  
Toe–in ..... 0–5 mm  
Front axle oscillation ..... ±12°  
Front axle oscillation, 662538–, 8100–8400 ..... ±8°  
Steering lock (adjustable) ..... 30°–55°  
Flange distance ..... 1700 mm  
Automatic differential brake:  
– number of friction discs ..... 3+3 pcs  
– number of intermediate discs ..... 4+4 pcs  
– thrust plates ..... 1+1 pcs  
Oils: ..... 80W/90 GL–5 EP  
or 10W30 GL–4 STOU  
Oil capacities:  
– differential ..... 8 litres  
– hub ..... 2x1 litres

### Tightening torque

Front axle attaching bolts ..... 380 Nm  
Front wheel nuts ..... 550 Nm  
Propeller shaft flange joint ..... 35 Nm  
Tie rod–steering arm ..... 160 Nm  
King pin attaching bolts ..... 120 Nm  
Ring gear attaching bolts ..... 75 Nm  
Crown wheel attaching bolts ..... 70 Nm  
Pinion shaft nut ..... 250 Nm  
Axle housing bolts ..... 190 Nm  
Planetary gear housing attaching bolts ..... 70 Nm

### Setting values

Thickness of diff. brake disc set ..... 14,51–14,69 mm  
Steering knuckle bearing preload ..... 0,6 mm  
Differential bearing preload ..... 0,05 mm  
Tooth backlash, crown wheel/pinion shaft ..... 0,2–0,25 mm (measured at pinion shaft drive flange)  
Rolling resistance, pinion shaft bearings (measured using spring balance (without seals) ..... 3–5 kg ø 60 mm (0,9–1,5 Nm)  
Axial clearance (between axle housing–pivot bearing brackets) ..... 0,1–1,1 mm

### Sealing compounds and locking fluids used:

Sealing compound Loctite 290  
– on outer sides of oil seals  
– on wear ring inner surfaces  
– on hub seal dust cover  
Medium strength locking fluid Loctite 242  
– ring gear attaching bolts  
Heavy strength locking fluid Loctite 586  
– tie rod–piston rod

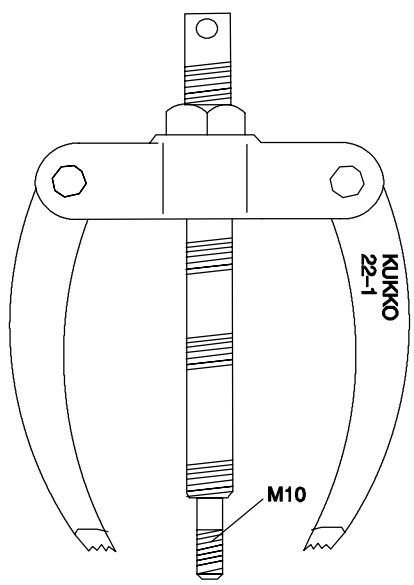
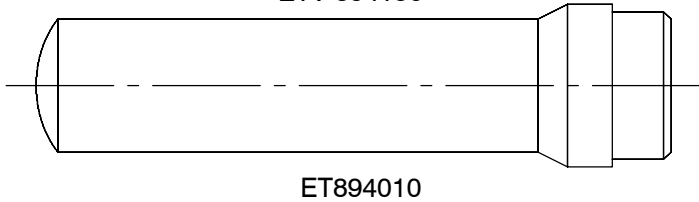
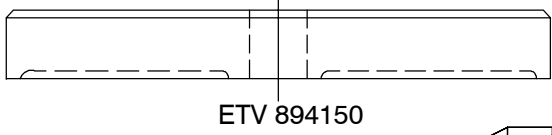
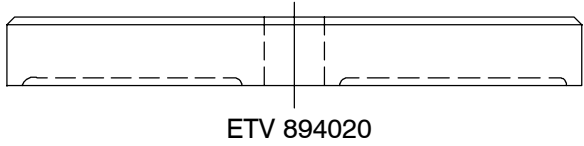
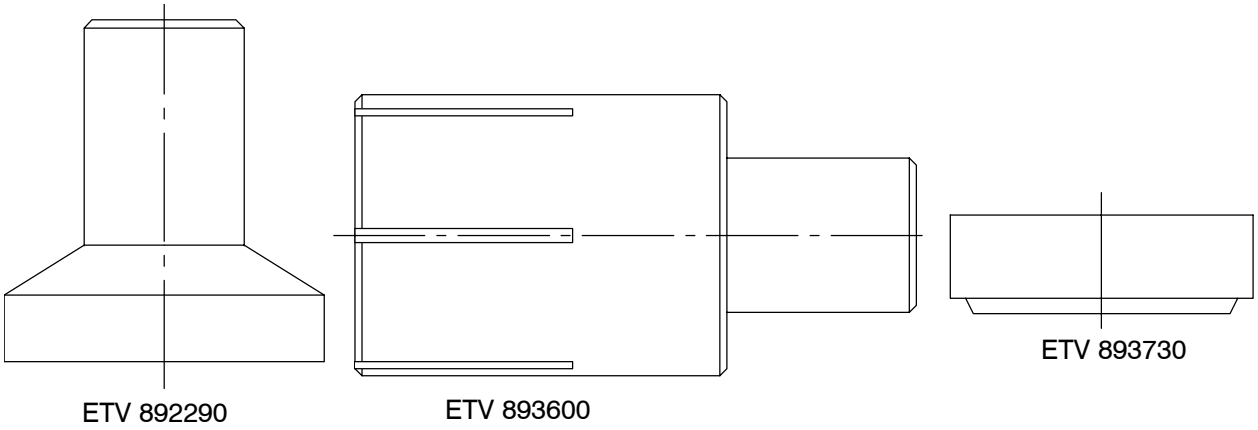
<b>64. Powered front axle</b>	<del>1. 1. 1995</del>	Model	Code	Page
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### Special tools

- ETV 892 290 Sleeve for fitting drive shaft outer oil seal (powered front axle 505-905)
- ETV 893 600 Sleeve for fitting pinion shaft oil seals (powered front axle 505-905)
- ETV 893 730 Plate for fitting drive shaft inner oil seal (powered front axle 505-905))
- ETV 894 020 Plate for fitting hub oil seal (powered front axle 505-905)
- ETV 894 150 Plate for fitting hub oil seal of cassette type (1701/94-)

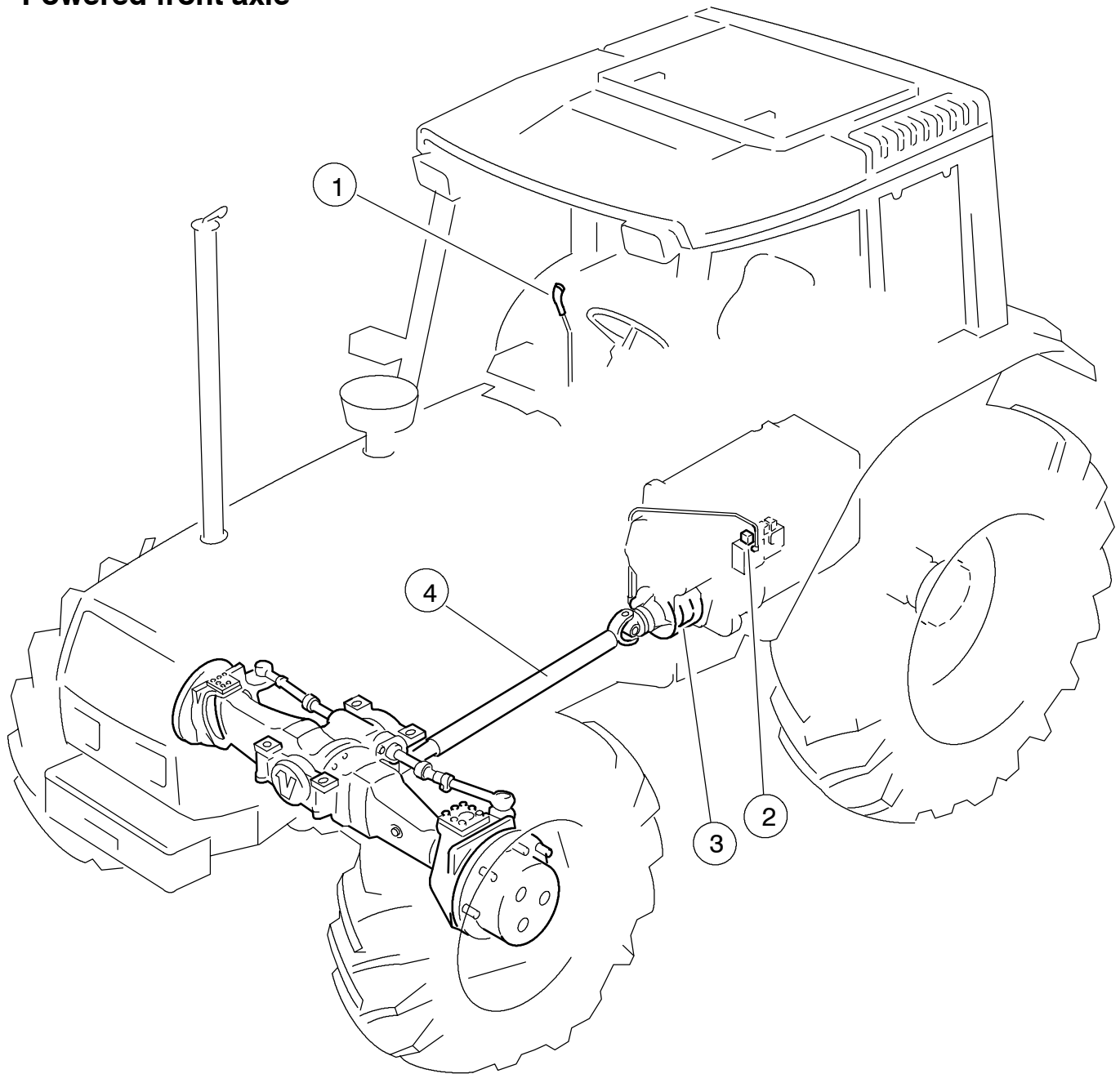
### Locally prepared tools

- ET 894 010 Drift for fitting/removing drive shaft bushing (powered front axle 505-905)
- Extractor for removing king pins



Extractor for removing king pins

## Powered front axle



**Figure 1.** Powered front axle

1. 4WD switch is placed on the range gear lever knob
2. Solenoid valve for 4WD on the servo valve block
3. 4WD clutch/output shaft is fitted in the lower part of the reverse shuttle housing
4. Propeller shaft

**Note!** Reconditioning 4WD clutch, see section 44

**Note!** 4WD engages automatically when the brake pedal/pedals are depressed

## Powered front axle, description

Powered front axle on 6100-8100 tractors is the same Sige-axle as on Valmet -05 series.

The powered front axle is attached to the front end of the tractor by two bearing brackets. There is a small clearance between the axle housing and central pivot bearing brackets. This clearance can be adjusted with shims.

The power is transmitted from the gearbox to the pinion shaft by the propeller shaft. From the pinion shaft, power is transmitted through the differential to the drive shafts and through the double universal joints to the hub reduction gears and the front wheels.

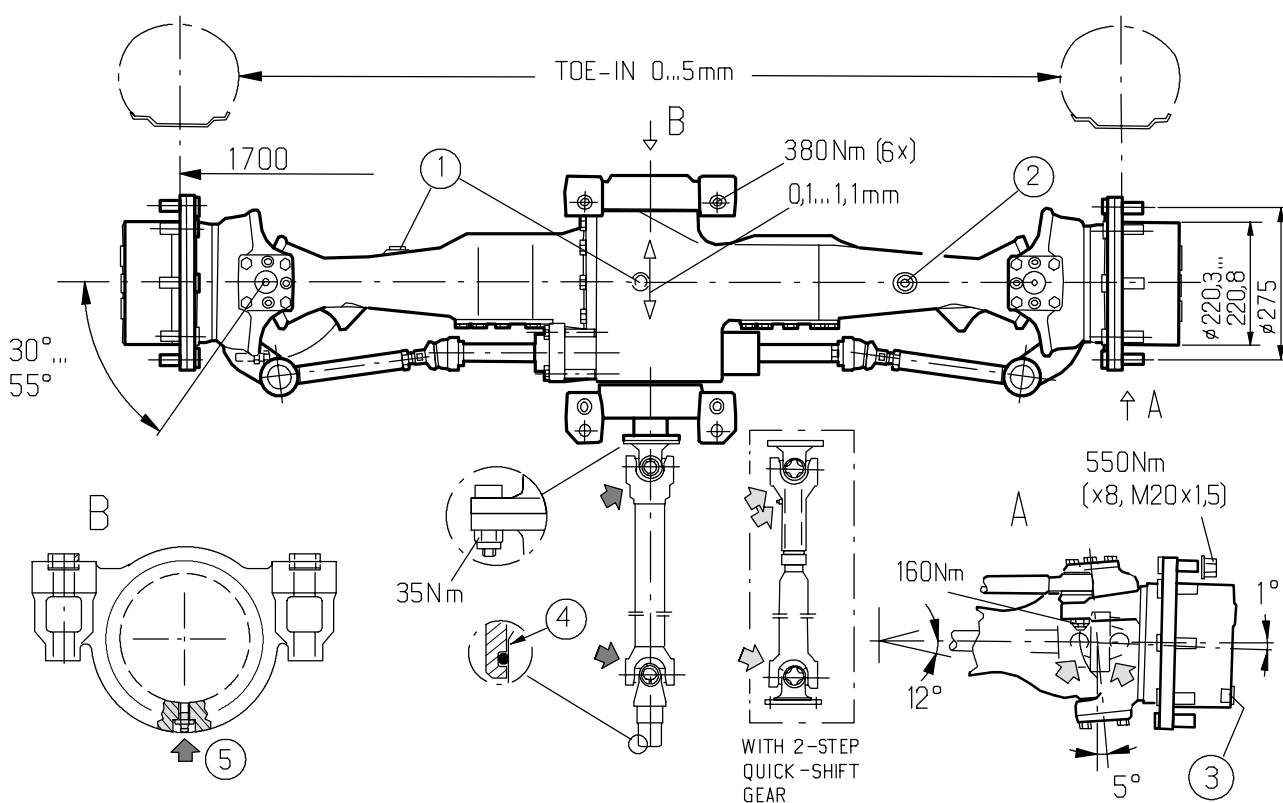
The drive shafts are carried in bearing bushings in the axle housing and in ball bearing in the swivel housings.

In each hub gear the planetary pinions (3 off) are carried in roller bearings in the retainer. The ring gear is bolted to the steering knuckle.

The steering knuckle is attached to the front axle housing by the king pins which are carried in taper roller bearings. The bearing preload of the king pins is adjusted with shims at the upper pin.

The differential is provided with an automatic differential brake. The friction discs are fitted between the differential side gears and the differential casing.

Position of pinion shaft, tooth backlash and differential and pinion bearing preload are adjusted with shims.



**Figure 2.** Sige front axle

1. Plug for checking and raining oil in differential housing
2. Oil filling plug for differential housing
3. Oil filling and draining plug for hub

**Note!** Oil levels in the axle should be checked every 500 running hours. Oil should be changed yearly/every 1000 running hours. Central pivot bearing bracket nipples (B) must be greased at every 50 running hours, other nipples at every 250 running hours.

4. Pressure resistat grease on splines in connection with repairs
5. Earlier two grease nipples, later one grease nipple.

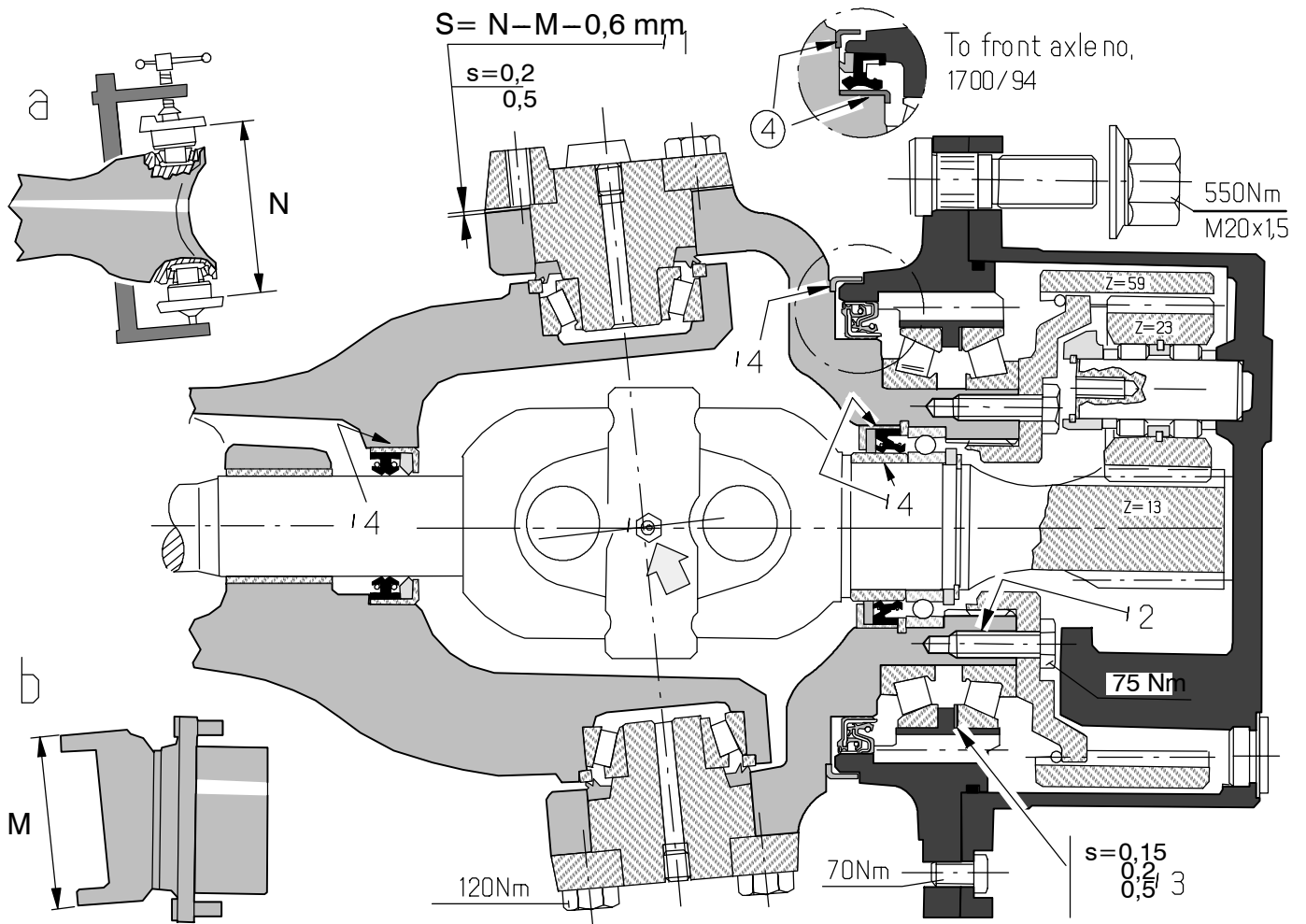


Figure 3. Planetary gear, Sige front axle

- 1. Shims for adjusting steering knuckle bearing preload
- 2. Locking fluid Loctite 242 on threads
- 3. Shims for adjusting wheel bearing preload
- 4. Sealing compound Loctite 290
- a) Adjustment of steering knuckle bearings preload
- b) Adjustment of steering knuckle bearings preload



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