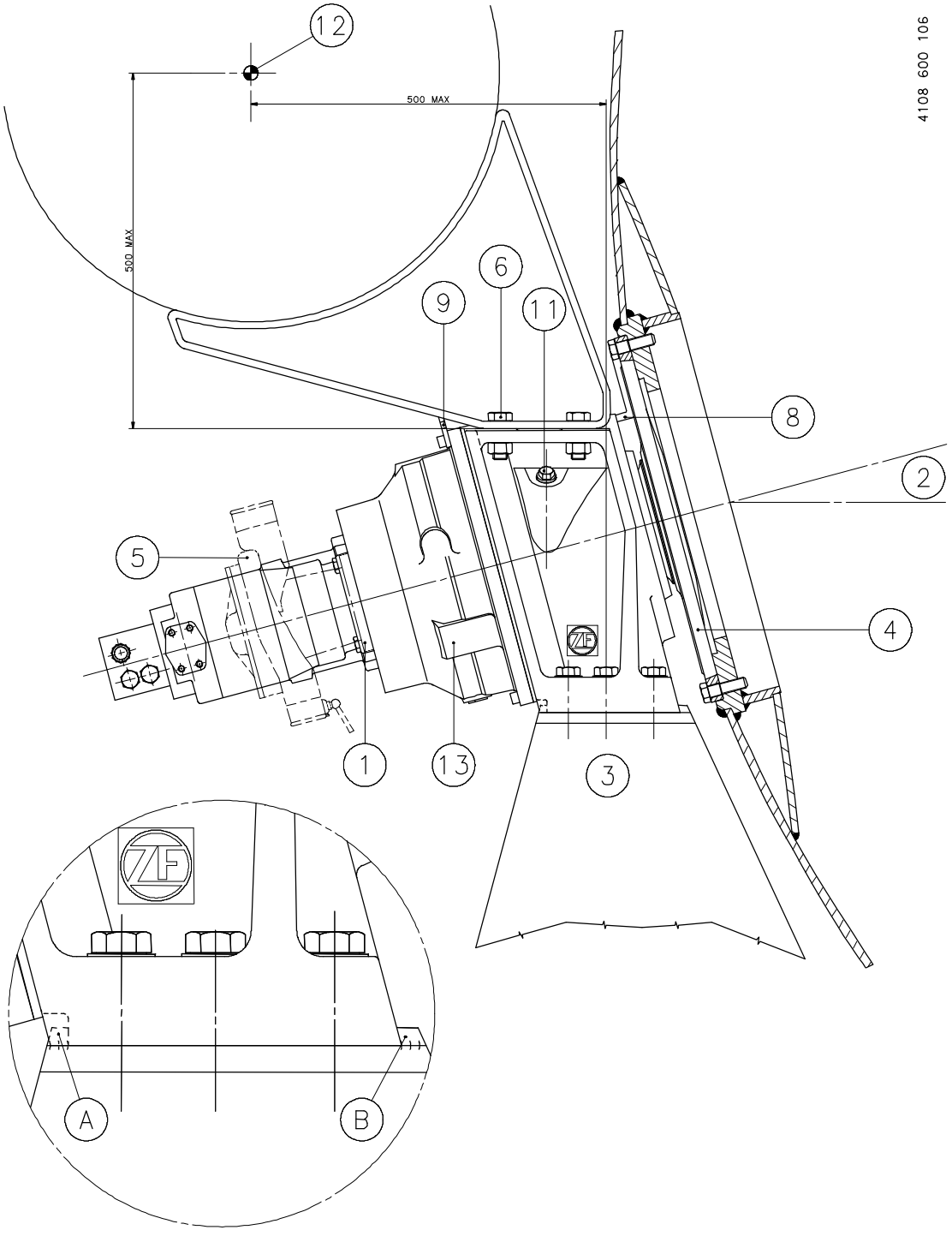
INSTALLATION AND OPERATING INSTRUCTIONS FOR ZP-MIXER DRIVES

P 3301 / P 4300 / P 5300 / P 7300 / PK 7500



ZF PASSAU GMBH

Off-Road Driveline Technology and Axle Systems

D-94030 Passau • Telephone (0851) 494-0 • Telefax (0851) 494-2191

LEGEND OF THE AFORE-MENTIONED ILLUSTRATION:

The notes marked with ▪ are very important requirements for a correct function of the total mixer drive system.

1 Hydromotor mounting. Dependent upon exact costumer version remove shaft seal to avoid fretting corrosion on SAE spline profile.
Seal required between mixer transmission and hydromotor. **DO NOT** use any other sealing material!

ZF order no. 4108 302 139 for P 3301 / P 4300 / P 5300 / P 7300
ZF order no. 4108 306 171 for PK 7500

Bolts M12, quality 8.8, tighten to 86 Nm or bolts 1/2-13 UNC-2A,
SAE grade 5, tighten to 86 Nm.

Place washer under bolt head. Washer must have min. tensile strength of 900 N/mm² and min. thickness of 2.5 mm.

2 The constructive angle between output flange and gearbox base amounts to 15°. Different installation positions of the mixer drum must be compensated by modification of the vehicle mounting pedestal.

The allowable installation angles for the different mixer drum sizes are as follows:

P 3301	P 4300	P 5300	P 7300 / PK 7500
for 6 m³ max. 15°	for 8 m³ max. 15°	for 10 m³ max. 11°	for 12 m³ max. 10°
for 7 m³ max. 15°	for 9 m³ max. 12°		
for 8 m³ max. 12°			

3 Mounting gearbox to pedestal

Allowable tolerance over total pedestal surface max. 0.3 mm. Pedestal plate must be absolutely stable (free of torsion). Min. material strength 400 N/mm².

Bolts M20, quality 10.9, tightening torque 580 Nm or bolts 3/4-10UNC-2A
SAE grade 8, tightening torque 450 Nm.

No. of bolts:

- up to 7 m³ drum size: 4 bolts (distance 120 mm)
- larger than 7 m³ drum size: 6 bolts

Flat washer must be placed under both bolt head and nut.

Minimal strength	900 N/mm²
Minimal hight	s = 3,0 mm
Outer diameter	37 - 39 mm

After installation lean stop bar against the gearbox and weld on. 2 x about 70 mm large, ca. 15 mm wide, 10 mm high, min. material strength 400 N/mm².

Stops: for rear discharge with **A**

Stops: for front discharge with **B**

During assembly of drum and gearbox to the vehicle frame horizontal and vertical alignment must be assured.

The drum must be installed so that misalignment with gearbox output flange is less than 0,5°!

4 Connection of output flange with mixer drum.

For tolerances and machining of the drum connection, see drawing.

It must be assured that the machined flange face has full contact on the drum buottom in the area of the screw holes. The contact surface must be free of paint and rust.

For the flange connection gearbox/drum, the run-out tolerance according to the drawing and with reference to the rotation axis must be assured.

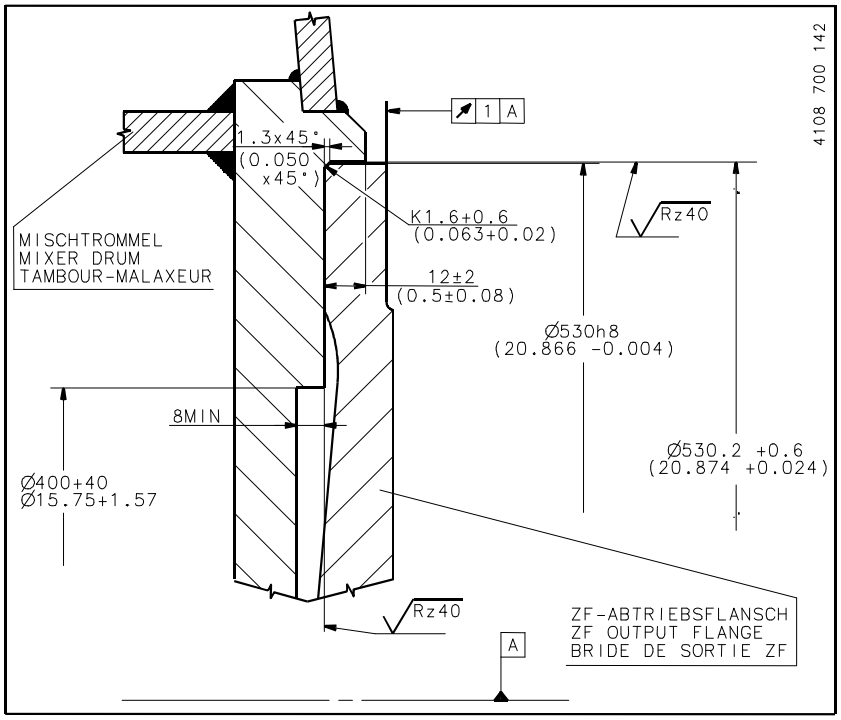
Bolts M16, quality 10.9, tightening torque 295 Nm or 5/8-11UNC-2A SAE grade 8, tightening torque 250 Nm.

No. of bolts:

- up to 7 m³ drum size: min. 12 bolts
- up to 10 m³ drum size: min. 18 bolts
- more than 10 m³ drum size: 24 bolts.

Separation of connection output flange/mixer drum by means of with-drawer threads 3 x M16 or 3 x 3/4-10UNC.

During painting cover protective collar and its contact surfaces.



5 Water pump connection (optional, except P 7300 and PK 7500)

Assembly 3 bolts M8, quality 8.8, tightening torque 25 Nm or bolts 5/16-18 UNC-2A, tightening torque 24 Nm.
The used water pump must be equipped with a torque overload protection (max. 100 Nm) to prevent damage in case of a frozen water pump.

6 Water tank

Water reservoir capacity: 1500 dm³ max.

Distance of the center of gravity - see drawing page 1, point .
In case of deviations, ask ZF for information!

8 Retaining angle

During the transport and the storing of the gearbox the retaining angle serves as a protection of the output gasket against deformation and of the main bearing against predamages.
It is necessary, that the gearbox is fixed with drum and pedestal to the vehicle frame before the retaining angle is disassembled!

Reassemble the retaining angle in case of refit or shipment of separated transmission.

9 Jack ring

The jack ring serves **o n l y** for the transport of the separated gearbox.

10 Speed transmitter (optional, except PK 7500)

Connection for the speed transmitter for the gearbox
with water pump drive ZF order no. 0501 309 557
without water pump drive ZF order no. 0501 309 560

11 Oil filling and oil level check

First filling	P 3301:	approx. 7,5 dm^3
	P 4300/P 5300/P 7300:	approx. 11,5 dm^3
	PK 7500:	approx. 16,5 dm^3

Check by means of the mark on the oil dipstick.

Oil quality see List of Lubricants TE-ML07, latest edition (request newest edition from your ZF-costumer service or see www.zf-group.de, Information, Information Service).

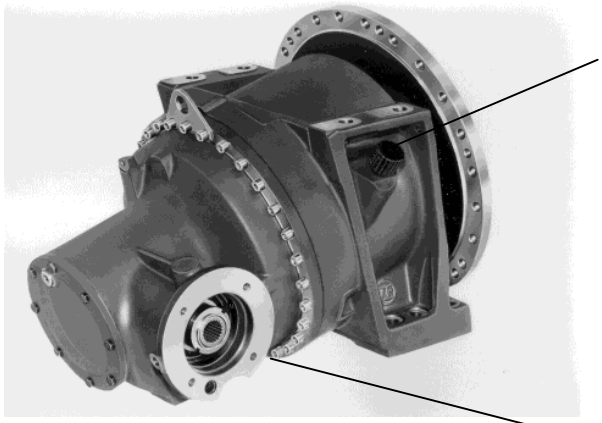
13 TType plate

OPERATION INSTRUCTIONS:

The speed of the combustion engine has to be limited for the mixer operation in such a way that the drum speed with the pump completely swung out does not-exceed 18 min^{-1}.
For gearboxes with water pump drive, the drum speed must be limited to 15 min^{-1}.
Higher speeds could cause damage.

For the fuel allocation of the Diesel engine, the vehicle should be equipped with a variable-speed governor. Idling speed- and final speed governor are not suitable for use in truck mixers.

MAINTENANCE:



1. Oil quality:
   see List of Lubricants TE-ML07, latest edition (request newest edition
   from your ZF-costumer service or see www.zf-group.de, Information, Information Service).

2. Oil level check:
   - Check oil level monthly!
   - Vehicle should be parked in a horizontal position with stopped engine.
   - Check on the warm unit after a short period of dripping (about 1 minute), dipstick screwed in.

3. Oil filling-up:
   Fill up fresh oil if level is down near the lower mark of dipstick, but do not let fall down oil level underneath lower mark. Do not exceed upper mark during filling up.

4. Oil change and oil quantities:
   First oil change after 500 operating hours.
   Every other oil change after 2000 operating hours, or at least once a year.
   The transmission should be run 5 minutes before making an oil change. Oil changes should be done with a warm unit and horizontal parked vehicle as follows:
   - Stop combustion engine
   - Open drain plug with o-ring and drain old oil.
   - Clean drain plug and sealing surface on housing and refit plug with a new o-ring 19x2.
   - Unfasten oil dipstick and clean sealing surface on main housing.
   - Fill in oil according to ZF-list of Lubricants TE-ML07 and do not exceed upper mark of screwed in dipstick.
   - Refit dipstick with a new copper ring 18x22.
   - Check of tightness.

Oil quantity:	P 3301:	approx. 7.5 dm^3
	P 4300 / P 5300 / P 7300:	approx. 11.5 dm^3
	PK 7500:	approx. 16.5 dm^3.

IMPORTANT INSTRUCTION:
Check all gearbox fastening screws periodically for the correct tightening torque (first time after 50 operating hours).

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D-94030 Passau · Telephone (08 51) 4 94-0 · Telefax (08 51) 4 94-21 91

Internet: http://www.zf-group.de