Service - Technical VS-2010 wk/mk/fm	BMW 2002 turbo Group: Engine	Munich, May '75 11 07 75 (962) e

Re: Engine - BMW 2002 turbo

Gentlemen:

This is to give you some hints on how to eliminate complaints, if the occasion should arise, on the BMW 2002 turbo engine.

1. Mounting the new support plate for the injection pump

If the engine should produce a rattling noise between 3500 and 4500 rpm, a cracked injection pump support plate can be the cause. To avoid such damage, a new support plate - Part No. 13 51 1 259 296 - must be installed free from distortion.

When removing or exchanging the injection pump, detach the oil filter head together with the oil cooler hoses from the crankcase. The oil filter head should be mounted to the crankcase with a cleaned sealing surface and new seal and with slightly tightened nuts.

Insert injection pump and screw on tightly to gearbox cover. Bolt on support plate tightly to injection pump and loosely - but face to face - to the oil filter head. In this position tighten oil filter head completely. Then tighten the support plate to the oil filter head. Turn the support angle in correct position so that it can be bolted on tightly to the support plate and crankcase.

Every 7500 miles/12,000 km the support plate should be checked for cracks by use of a mirror.

2. Mounting the exhaust manifold

Due to the high thermal expansion of the exhaust manifold the bore holes have different diameters (0.43 in/11 mm, 0.47 in/12 mm, 0.51 in/13 mm). In order to guarantee an exact position of the manifold in relation to the cylinder head, the mounting should be accomplished with two mounting sleeves (Special Tool No. 11 60 20); see Ill. 2.

As soon as the gaskets and the exhaust manifold as well as the hex nuts are partly mounted to the stud bolts, set up first a centering sleeve at the lower stud bolt of cylinder "two" (Pos. 1), pressing it in by hand. Now set up the second centering sleeve at the upper

stud bolt of cylinder "four" (Pos. 2), pressing it in by hand. The two diagonal hex nuts (Positions 3 and 4) are now tightened which will hold the exhaust manifold in place so that the centering sleeves may be removed and the assembling continued as usual.

When retightening the manifold nuts at regular intervals (at the pre-delivery inspection; after 600 miles/1000 km, and every 3600 miles/6000 km at the latest), first remove the support angle from the support plate. When retightening, the turbocharger position can be changed slightly. After the manifold nuts have been re-tightened, tighten the bolted connections between support angle and support plate to the prescribed torque (15.9 + 1.45 ft.lb. /2.2 + 0.2 mkp).

3. Installing the exhaust turbocharger support

When certain vibrations are overriding,the turbocharger may cause vibration damage to the exhaust system as for example cracks or loose shacked parts. The BMW 2002 turbo vehicle is equipped with a turbocharger support as of Chassis No. 4 291 535.

For later installation, the following parts are required:

QUANTITY	DESCRIPTION	PART NO.
1	SUPPORT PLATE	(((for Part Numbers see German copy)))
1	SUPPORT ANGLE	
2	HEX BOLTS M8 x 18 DIN 933 12.9	
1	HEX BOLT M8 x 20 DIN 933 8.8	
1	HEX NUT M8 DIN 934 8	
4	WASHERS 8.4 DIN 125	
3	SPRING WASHERS B8 DIN 137	

Work required: 12 work time units

Loosen nuts and bolts carefully, if necessary, use a branded solvent.

Proceed as follows:

a) Remove screening plate from exhaust manifold.

b) Remove exhaust pipe from turbocharger (when installing, use new nuts).

c) Remove hose and pipe elbow for turbocharger cooling.

d) Disconnect pressure line between turbocharger and air collector by loosening the hose clamps and pushing back the rubber sleeve at the turbocharger.

e) Loosen exhaust manifold only "slightly" and tighten it following Point 2, having it adjusted with centering sleeves.

f) Remove two locking plates from the turbocharger and transfer the remaining two locking plates by one bore, if required, and install the support plate according to Ill. 1 (tightening torque of M6 nut: 3.25 ... 3.6 ft.lb./0.45 ... 0.5 mkp).

g) Fasten the support angle at the crankcase as shown with slightly tightened hex bolts (M8 x 18). In this position, which is correctly aligned but still movable over the throughbores, the support angle and support plate must be tightly connected with bolts via the cover plate (tightening torque 15.9 + 1.45 ft.lb. /2.2 + 0.2 mkp). Now tighten the support angle to the crankcase (26.04 + 2.89 ft.lb./3.6 + 0.4 mkp).

H) Re-install pressure line between turbocharger and air collector, air hose and pipe elbow for turbocharger cooling, exhaust pipe and screening plate. (When re-installing, grease the outside rubber sleeve slightly with Vaseline in place of the hose clamps for better sliding when fastening. If the sleeve isn't fitted very well, it may be driven out by the charging pressure.)

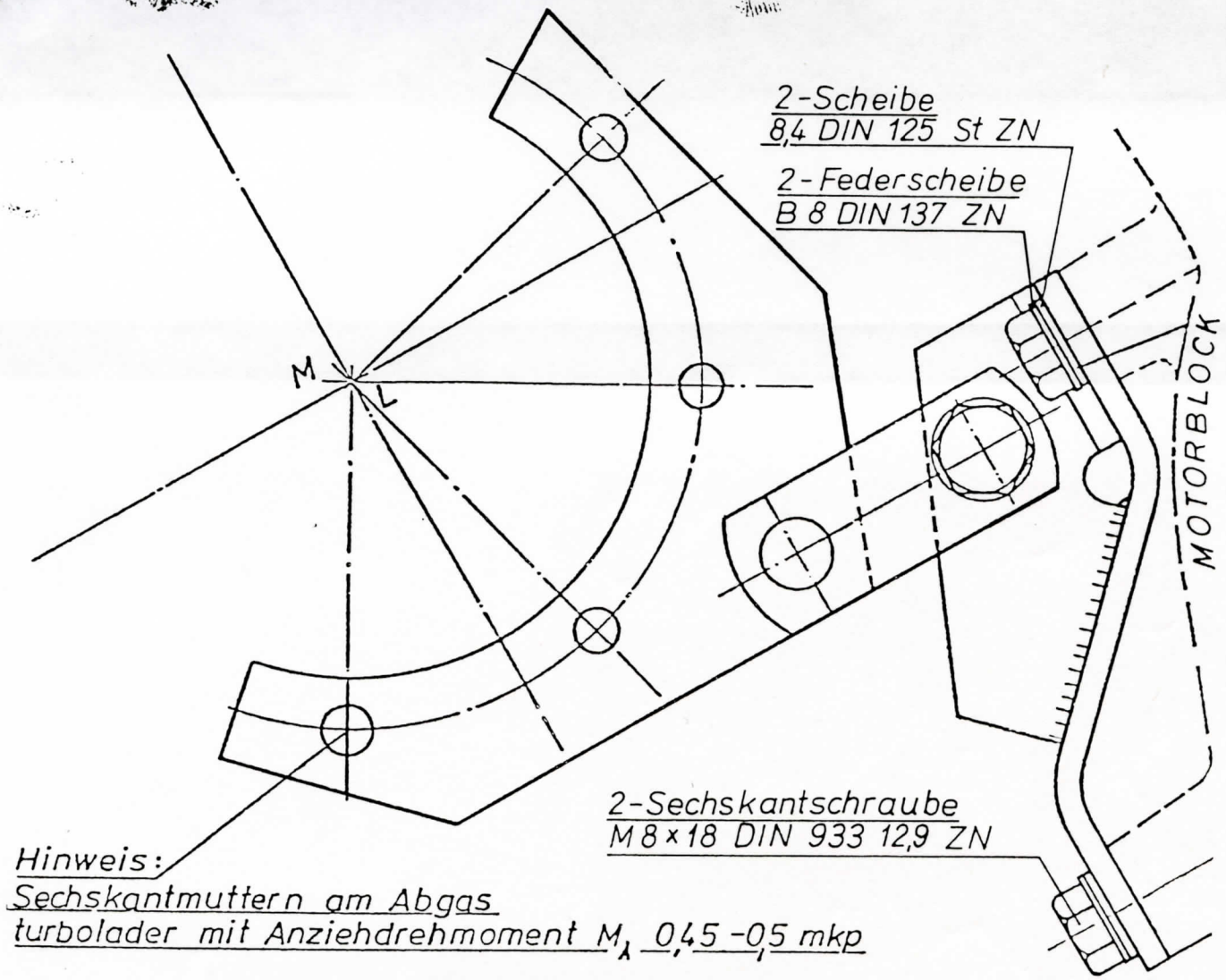
It must be mentioned in this context that the seal between the turbocharger and exhaust manifold has been omitted. When dismantling, check the flange facing at the flanged joint exhaust manifold /turbine housing for flatness (max. 0.0039 in./0.1 mm) in order to avoid leaks.

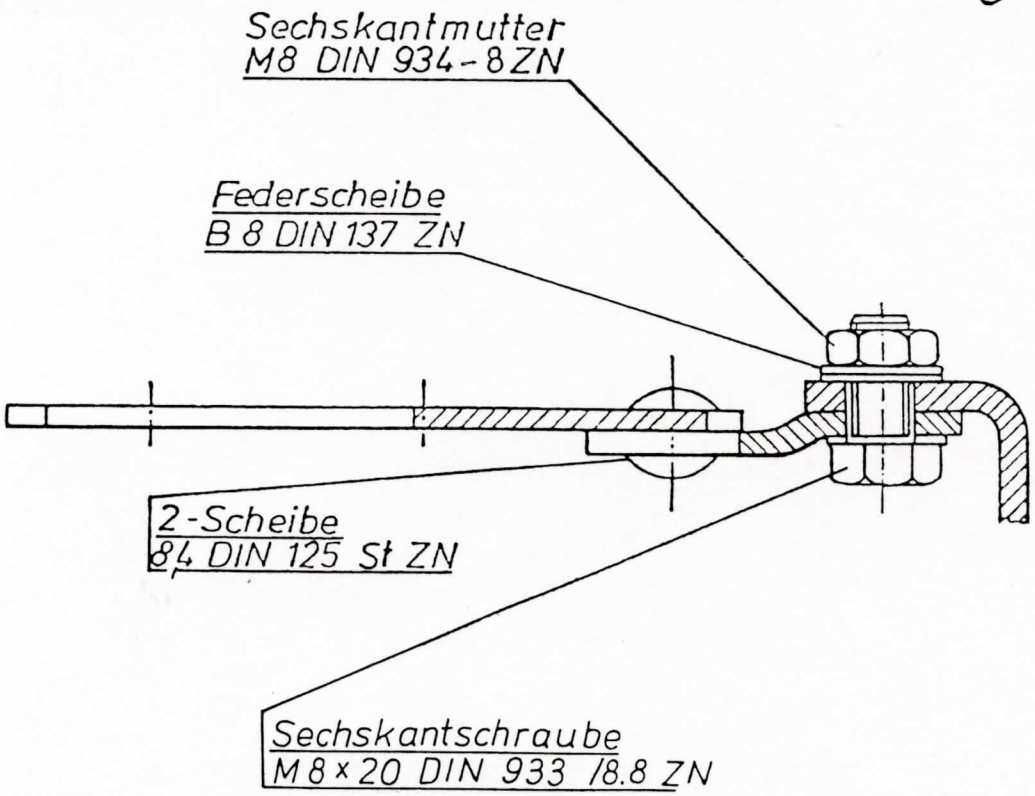
To avoid damage to the bearings after mounting or replacing the turbocharger, the connecting bore for the upper oil hose is to be filled with engine oil 20W50 before starting the engine.

Yours faithfully,
BAYERISCHE MOTOREN WERKE
Aktiengesellschaft
ppa. i.V.

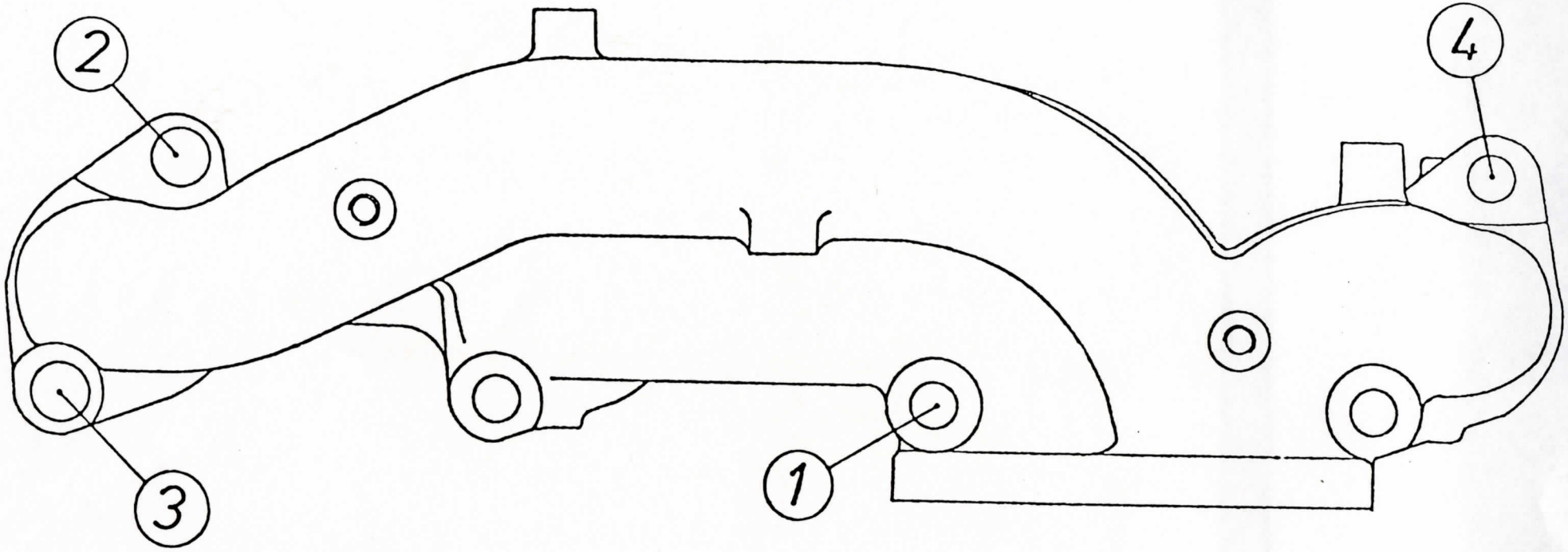
Flohr Kortas

Encl





(Anziehdrehmoment $2,2^{+0,2}$ mkp)



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