PARTS & SERVICE NEWS

REF NO.	A890082
DATE	May 10, 1989

SUBJECT: MODIFICATION OF TRANSMISSIONS.

PURPOSE: To modify the transmissions on the HA250 and HA270

RELATED PARTS / SERVICE INFORMATION NO.: -

APPLICATION:

HA250 from serial no.: N60691 to N60960, included s/no: N60636.
HA270 from serial no.: N65201 to N65449.

DESCRIPTION:

1. Introduction.

The modifications:
- To change the transmission gear shift from *hard shift* to *semi-soft shift*.
- To reduce the *lock-up* pressure with constant clutch pressure: 15 bar +2 bar.

2. Repair/installation procedure.

See procedure on page 2, 3, and 4.

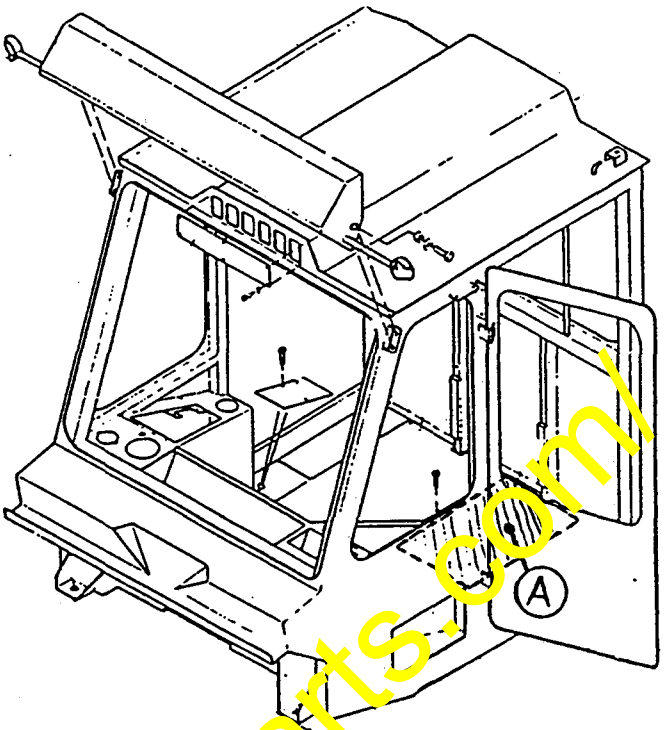
3. Assemblies and parts required.

Q'ty.	Part name	ZF part no.	Komatsu part no.
1	Complete modification kit	0899 198 090	BW152969
	Following parts are included in this kit:		
1	Kit (lock-up valve)	0899 198 088	BW152970
1	Piston 59.040	4642 306 322	BW152961
1	Bush 59.080	4644 306 324	BW152963
1	Distance piece 59.154	4644 306 252	BW152917
1	Gasket 6.020	4644 306 147	BW152604
1	Gasket 6.024	4644 306 148	BW152114
1	Diaphram 6.040	4642 306 090	BW152916
1	Diaphram 6.050	4642 306 144	BW152677
1	Gasket 6.150	4644 306 163	BW152848
1	Gasket 6.154	4642 306 228	BW152115
1	Gasket 59.172	4644 306 345	BW152163

2. Repair/installation procedure.

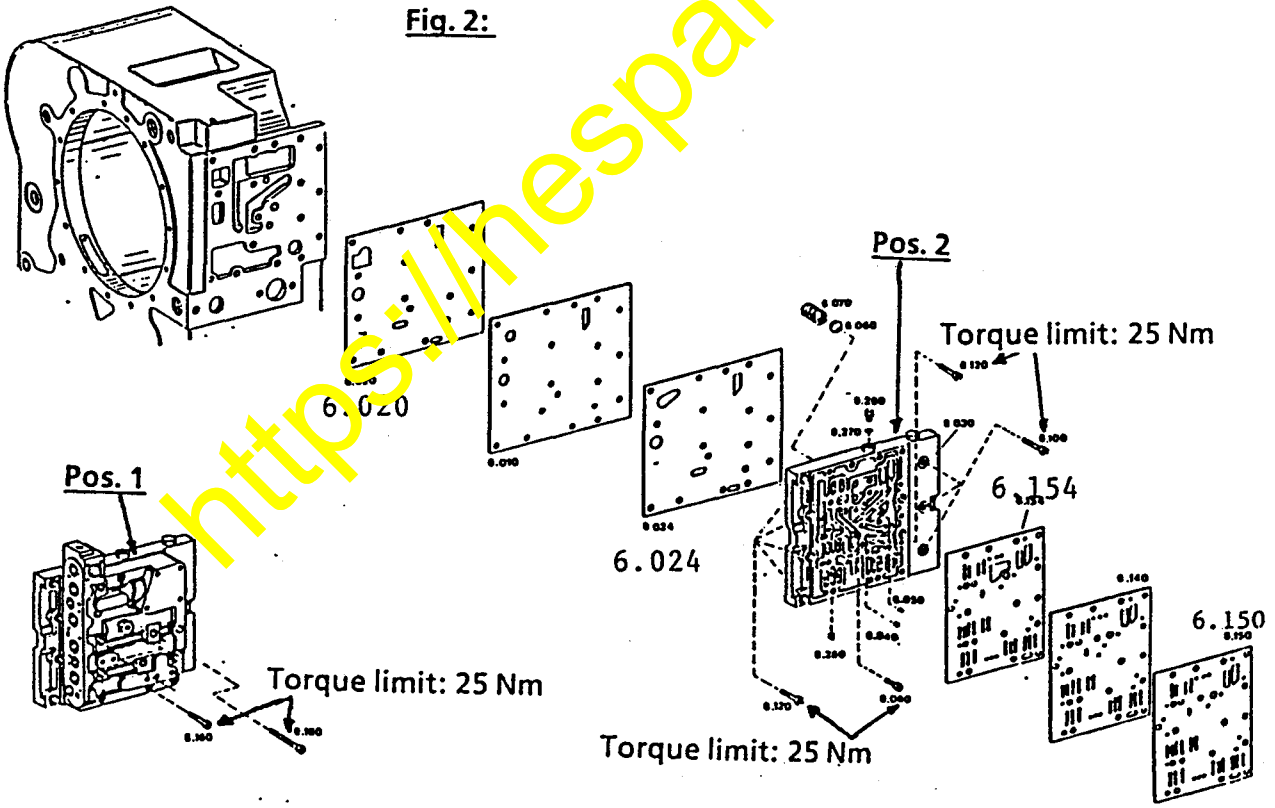
1. Remove L. H. floor plate, pos. A from cabine. Clean the area around the control valve ass'y. See fig. 1.

Fig. 1:



2. Remove valve block, fig. 2, pos. 1 by unscrewing 16 cap screws M8. See fig. 2, pos. 1.
3. Remove channel plate, fig. 2, pos. 2 by unscrewing 12 cap screws M8 (6.080, 6.100 and 6.120). Pay attention to ball (6.060) and spring (6.070). See fig. 2, pos. 2.

Fig. 2:



4. See fig. 3.
   Fit 0,7 and 1,0 mm diaphram into the channel plate as indicated.

   Installation instructions for diaphrams, see fig. 4:
   a) Remove excisting diaphram from indicated bores.
   b) Install the diaphram half way in, as indicated in fig. 4.
   c) Use a hammer and expander and expand the top of the diaphrams. This to obtain a locking function between threads in plate and diaphram.
   d) Screw in the diaphram so that the top is approx. 1 mm below surface on plate.

   NOTE! Do not use LOCTITE! (Dangerous for the orifice.)

Fig. 3:

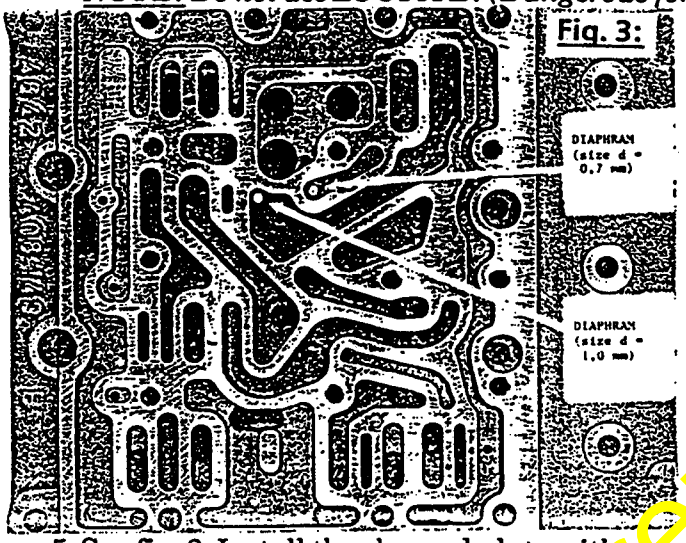
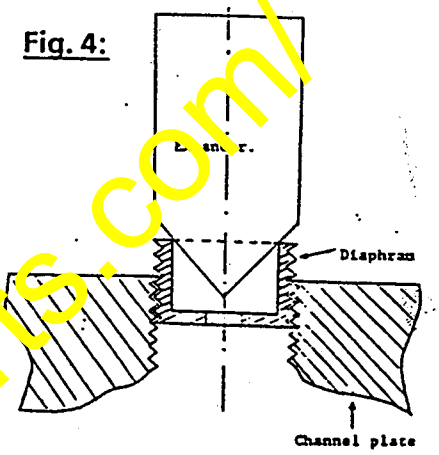


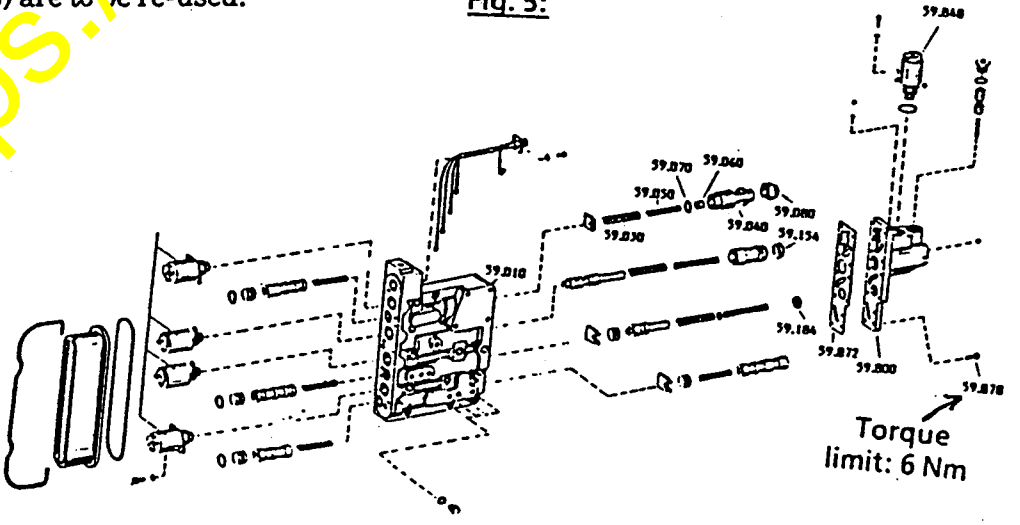
Fig. 4:



5. See fig. 2. Install the channel plate with new gaskets (6.020 and 6.024). Pay attention to the two different types of gaskets, and install the gaskets according to the fig.

6. See fig. 5.
   a) Remove lock-up valve (59.800) from valve block (59.010). Pay attention to the spring effect!
   b) Remove valve (59.040) and bushing (59.080) and replace with new parts from modification kit. Use old parts 59.030, 59.050, 59.070, 59.060.
   c) Remove distance plate (59.154) with new part from modification kit.
   d) Remove distance plate (59.184). Not longer used.
   e) Fit new lock-up valve (59.800) and new gasket (59.872) from kit. Solenoid valve (59.848) are to be re-used.

Fig. 5:



7. See fig. 2. Fit the valve block with new gaskets (6.154 and 6.150). Pay attention to the two different gaskets according to the figures.

8. Test values.
Control pressure = 15 bar (+2 bar).
Lock-up clutch pressure: =11 bar (±1 bar).
Test procedure: See fig. 6.
Attach pressure gauge (25 bar) to the lock-up pipe (21.520) by removing test plug M10×1 from banjo connector at rear of the lock-up valve and install pressure gauge. Stall engine in 6th gear against brake until transmission oil temperature reaches 70° C (max. 1500 rpm). Select neutral and increase engine speed to 1500 rpm. Apply a 24 V feed to the lock-up solenoid (orange wire to solenoid). Check lock-up pressure (11 ±1 bar). Check converter pressure on dash board (15 bar +2 bar).
Stop engine, remove pressure gauge, wire to solenoid and fit the plug. Start engine and check for oil leaks.

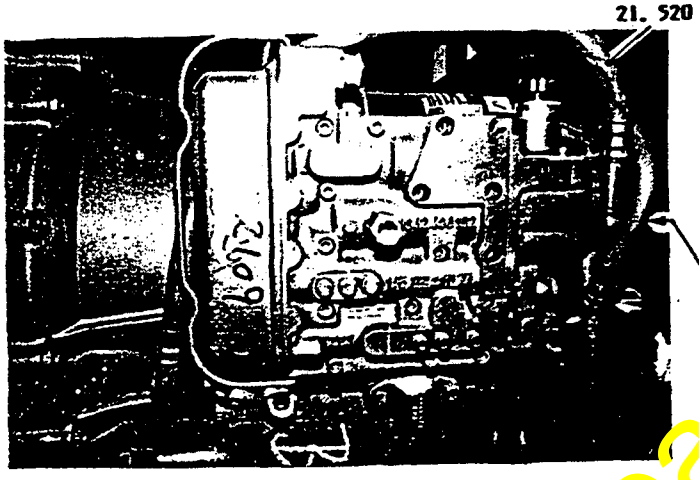
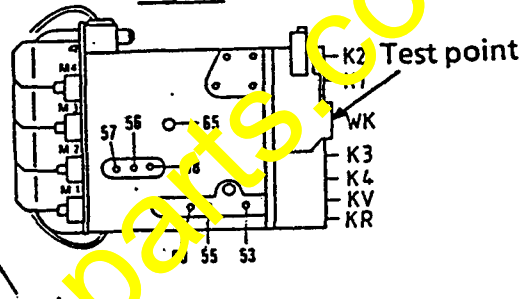


Fig. 6:



9. See fig. 7.
Add an "M" for modified behind the serial no. on the serial no. plate.

Fig. 7: