

REPAIR MANUAL

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ZF-TC[®]TRONiC

TC2 for 12 AS 2740 TOTC

4190 751 101

This repair manual is intended for skilled personnel trained by ZF Friedrichshafen AG to carry out maintenance and repair work on ZF products.

This manual deals with the standard ZF product in accordance with the state of development on the date of issue.

However, due to continuing development of the product, repair work might require work practices and test or adjustment data not contained in this manual.

We recommend that work done on your ZF product is carried out only by skilled mechanics who have had their practical and theoretical knowledge updated on a regular basis at our After-Sales Service training centers.

Service points equipped by ZF Friedrichshafen AG all over the world offer you:

1. Continually trained personnel
2. Specified equipment, e.g. special tools
3. Genuine ZF spares, to our latest specifications

All work performed at these service points is carried out conscientiously and with utmost care.

Warranty:

Repair work carried out at ZF service points is subject to the contractual conditions prevailing in the individual case.

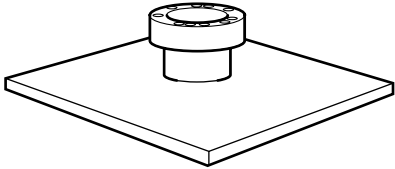
Damage resulting from work performed by non-ZF personnel in an improper and unprofessional manner and any consequential costs are excluded from the contractual liability agreement. Exclusion of liability also applies if genuine ZF spares are not used.

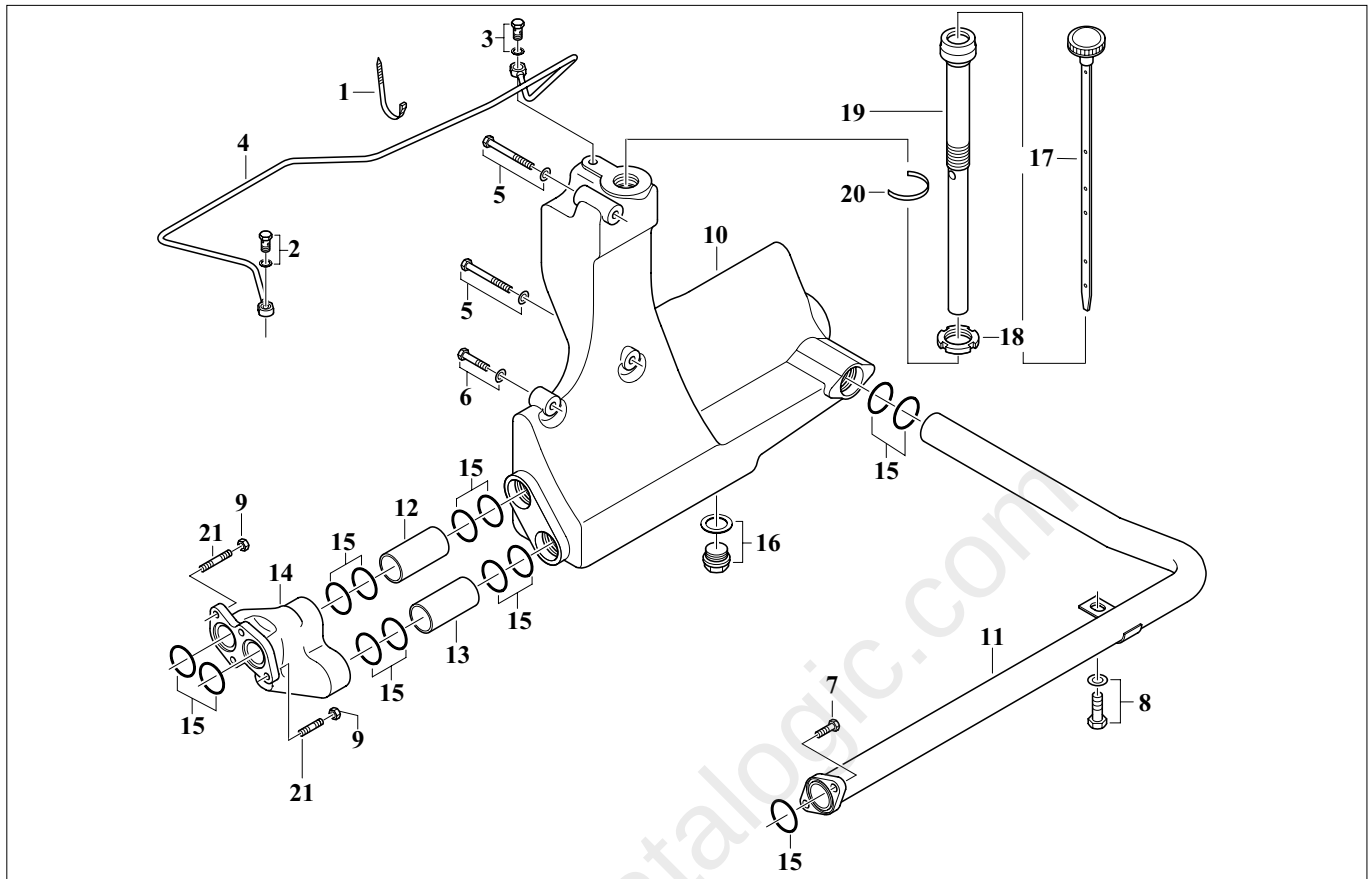
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Description	Dimension	Measurement device	Remarks
27. Tightening torque of M12x1.5 screw plug on control	35 Nm	Torque wrench	Use new sealing ring.
28. Tightening torque of M6x18 M6x12 on cover/control	14 Nm 10 Nm	Torque wrench	
29. Tightening torque of M5x12 on solenoid valve	5.5 Nm	Torque wrench	
30. Tightening torque of M6x40 on valve housing	9.5 Nm	Torque wrench	
31. Tightening torque of M8x25, M8x35 M8x40, M8x60 on control housing	23 Nm	Torque wrench	
32. Tightening torque of TC2 cylindrical screws M12x115 M10x110 stud bolts M12x215 M10x215 nuts M12 M10 (2x) hex bolts M8x80, M8x50 on retarder housing	100 Nm 46 Nm 18 Nm 13 Nm 90 Nm 43 Nm 23 Nm	Torque wrench	see Chapter 12.4

Fig. no.	Special tools	Order no.	Application	Qty.	Remarks
16		1X56 139 137 Assembly fixture for complete Transmatic		1	Chapter 2 Chapter 5



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3 Oil tank for TC2 oil supply

Removal

CAUTION - REMAINING OIL

Do not allow oil to escape into the soil, ground water or sewage system. Collect overflowing oil in appropriate container and dispose of in accordance with environmental guidelines.

- 1 Remove cable connectors (1). Loosen union screws (2 and 3). Take off union screws with seals and pipe (4).
- 2 Loosen hex bolts (5, 6, 7 and 8) and hex nuts (9). Take off with washers.
- 3 Take off oil tank (10) with pipes (11, 12 and 13) and connection piece (14).
- 4 Remove pipes from oil tank and take off O-rings (15).
- 5 Loosen and take off oil drain plug (16).
- 6 Remove oil dipstick (17). Loosen grooved nut (18) and take off with filler neck (19). Remove old sealing tape.
- 7 If necessary, loosen and take off stud bolts (21).

7 Converter

Disassembly

NOTE (TC2 removed from transmission)

If only the converter needs to be changed, then you must ensure that the selector clutch is secured by means of the clamping bar **1X56 104 910**.

This is the only means by which oil can be stopped from running over the clutch disc. Use a depth gauge to measure the distance between the faces of several threaded journals at converter and the connecting face of the converter housing.

Note down dimensions "C".

TC2 = 81.6 mm

NOTE (TC2 attached to transmission)

When changing converter, use clutch fixation **1X56 138 151** and hook **1X56 138 349** to stop release fork. Use this to press and hold release device to input.

1 Release and remove retaining ring (1).

2 Remove washer (2) with O-ring (3).

NOTE

As an aid, insert hex bolt and pull off using mounting lever.

3 Remove O-ring (3) from washer.

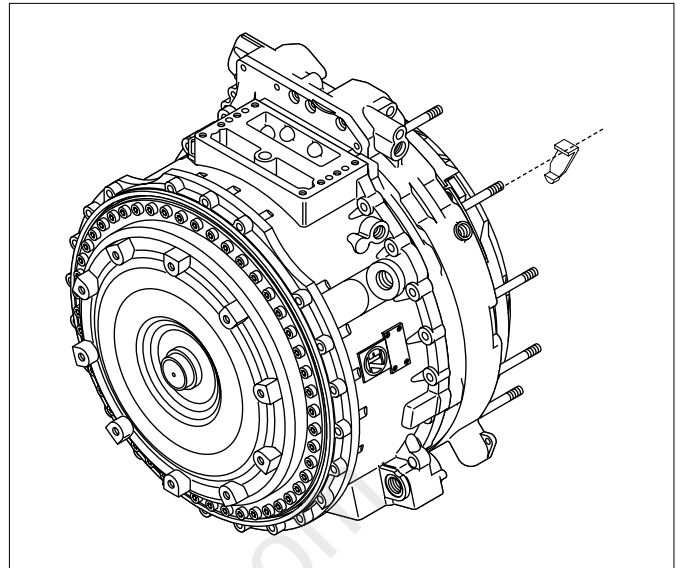
4 Loosen and remove tension bolt (4).

NOTE

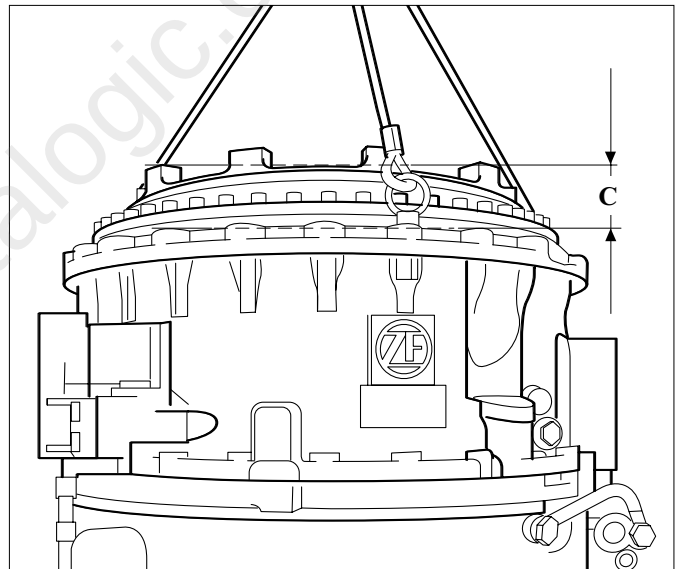
Use mounting lever to ensure converter cannot rotate.

5 Use lifting device **1X56 137 539** to engage retaining ring and remove converter (5) from converter housing.

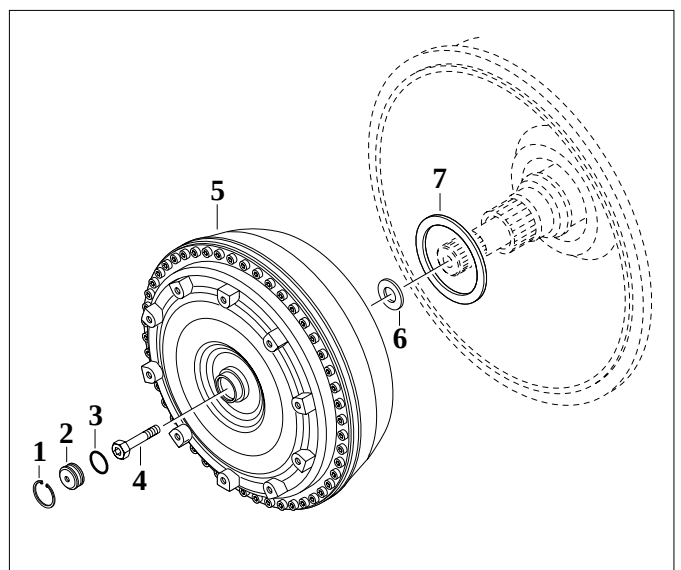
6 Remove shims (6 and 7) from turbine shaft and oil feed flange.



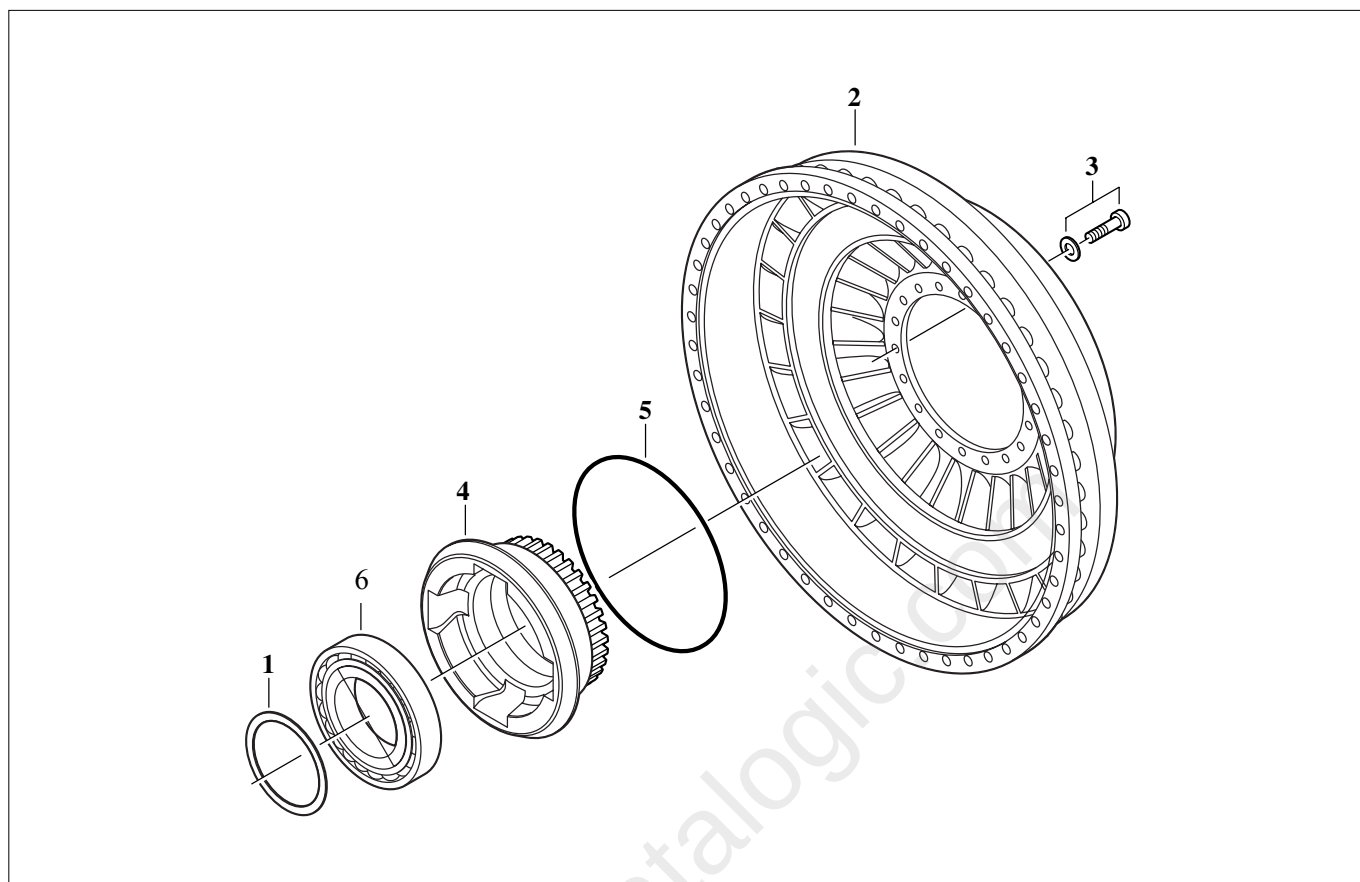
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7.1.4 Dismantling pump

- 1 Take spacer (1) off pump (2) and rotate pump.
- 2 Unfasten cylindrical screws (3) and take off with washers.

NOTE

Mark position of pump hub (4) in relation to pump (2).

- 3 Remove pump hub (4) from pump (2).
- 4 Take off O-ring (5) and use mounting lever to remove angular ball bearing (6).

Assembling pump

- 1 Use grease to insert new O-ring (5) in pump hub (4).
- 2 Insert pump hub in accordance with the mark made on the pump (2).

NOTE

To simplify the installation, use suitable cylindrical pins.

- 3 Insert cylindrical screws (3) with washers and tighten.
Tightening torque = 25 Nm.

NOTE

For installation of the angular ball bearing (6), the spacer (1) and attachment of pump, refer to **Chapter 7.1.5**.

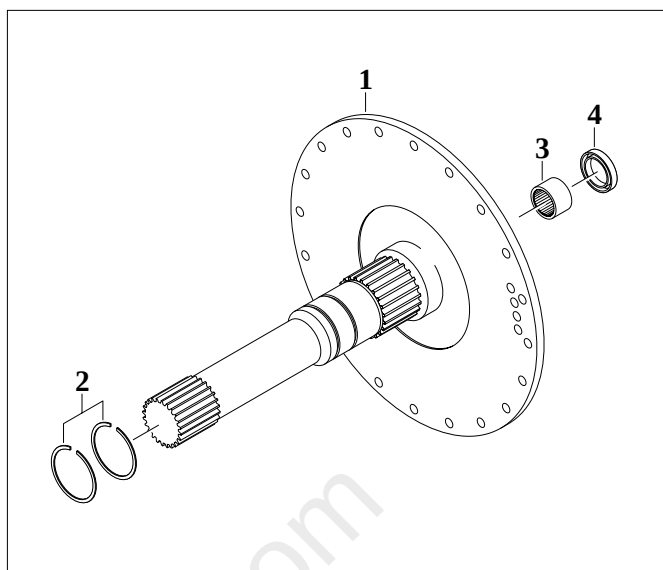
8 Turbine shaft

Disassembly

NOTE

Turbine shaft can be taken off after disassembling the selector clutch and removing the converter.

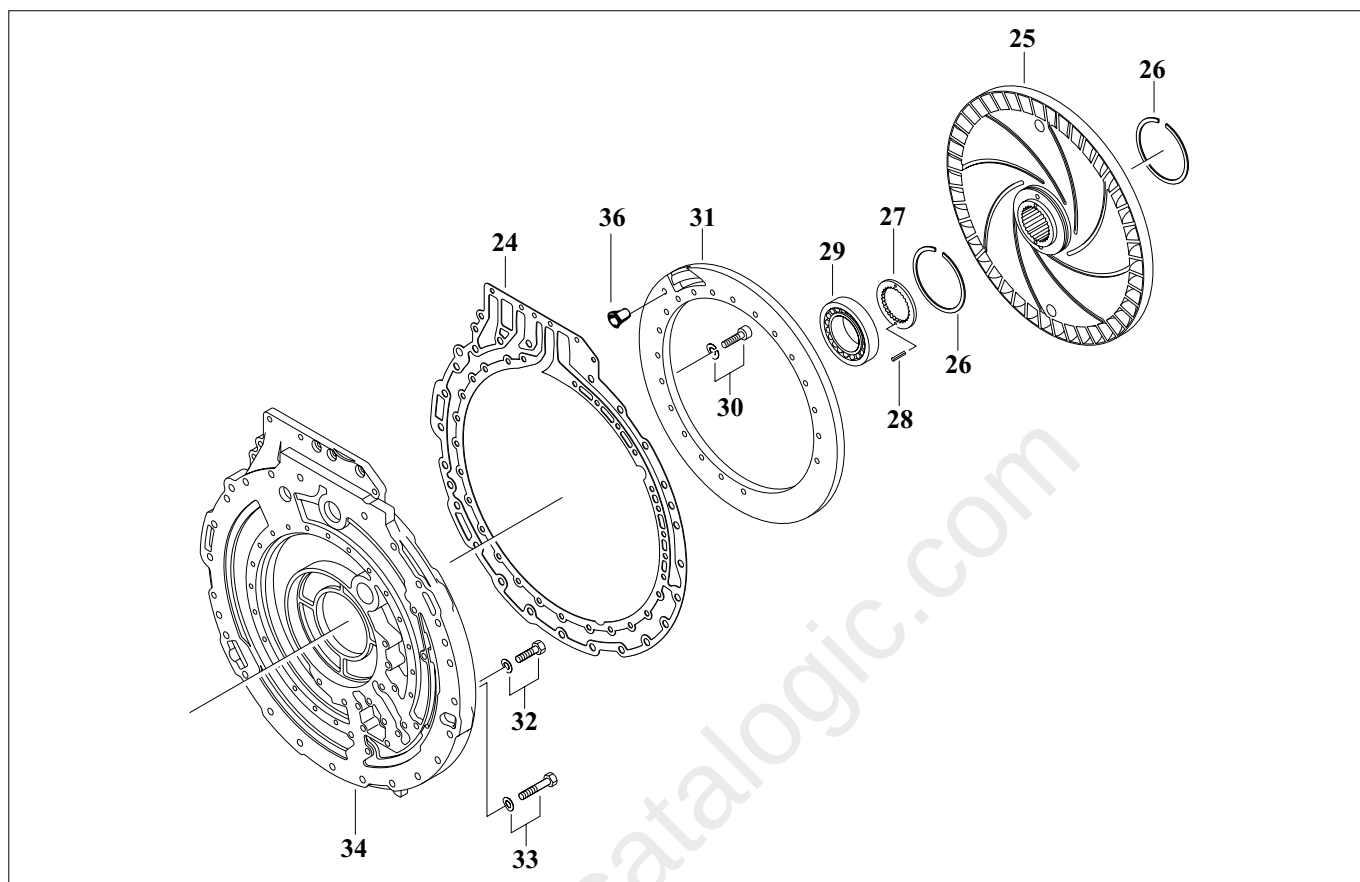
- 1 Use lifting device **1X56 136 242** to lift converter housing with retarder over turbine shaft **(1)**.
- 2 Remove piston rings **(2)** from turbine shaft.
- 3 Use conventional two-armed extractor to grip needle sleeve **(3)** from below and remove from turbine shaft with shaft seal **(4)**.



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Assembly

- 1 Use adapter **1X56 138 341** to press greased needle sleeve **(3)** into contact point of turbine shaft **(1)**.
- 2 Use adapter **1X56 138 341** to insert shaft ring **(4)** into contact point.
- 3 Insert piston rings **(2)** in turbine shaft.
- 4 Insert turbine shaft in housing.



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- 10 Remove gasket **(24)**.
- 11 Remove rotor **(25)**. Remove piston rings **(26)** and washer **(27)** with pins **(28)**.
- 12 Remove inner bearing race **(29)** from oil feed flange.
- 13 Loosen cylindrical screws **(30)** and take off with stator **(31)**.
- 14 Loosen and remove hex bolts **(32 and 33)**.
- 15 Remove retarder housing **(34)** at input side from converter housing.
- 16 If necessary, remove orifice **(36)**.

Full Version Available

ZF TC2 12 AS 2740 Transmission Service Manual

ZF TC2 12 AS 2740, TC2 for 12 AS 2740 transmission service manual with repair, adjustment and test procedures. Instant PDF download.

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