

**ZF-ECOSPLIT<sup>®</sup>**

**NMV 221**

**i = 0.98**

**i = 1.55**

**1315 751 102a**

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Description	Dimension	Measuring device	Remarks
01. Axial play of idler gear	0.0 - 0.10 mm	Depth gauge	Set by using appropriate ring (increment: 0.1 mm).
02. Axial play of ball bearing, diameter 180 mm	0.0 - 0.10 mm	Depth gauge	Set by using appropriate ring (increment: 0.1 mm).
03. Axial play of helical gear (disc carrier)	0.0 - 0.10 mm	Depth gauge	Set by using appropriate ring (increment: 0.1 mm).
04. Axial play of pump	0.03 - 0.065 mm	Micrometer	Play is already set. Simply needs checking.
05. Axial play of mainshaft	0.0 - 0.10 mm	Depth gauge	Set by using appropriate shim (increment: 0.1 mm).
06. Axial play of countershaft	0.0 - 0.10 mm	Depth gauge	Set by using appropriate shim (increment: 0.1 mm).
07. Tightening torque M8x30 on bearing pin	23 Nm	Torque wrench	
08. Tightening torque M8x30 (pump housing)	23 Nm	Torque wrench	
09. Tightening torque M10x32 on cover (control housing)	46 Nm	Torque wrench	
10. Tightening torque M8x30 on cover (control housing)	23 Nm	Torque wrench	

## 1 Output flange, shift mechanism and output shaft

### General

#### NOTE

Markings for the ratio of the auxiliary output  $i = 0.98$  or  $i = 1.55$  (see arrow).

#### NOTE

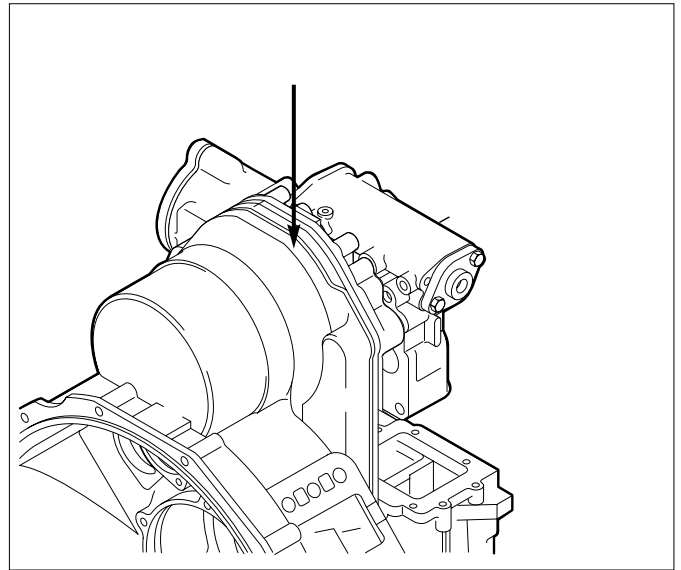
Due to the larger idler gear, the following sequence should be noted for the fitting and removal procedure when the transmission is  $i = 1.55$ ;

#### Removal

1. Clutch release fork removal (**Section 2**)
2. Quill shaft removal (**Section 3**)
3. Bearing pins removal and moving idler gear to one side (**Section 7**)
4. Shift mechanism removal (**Section 1.2**)
5. Removal of the output shaft, complete (**Section 1.3**)
6. Clutch housing removal (**Section 4.1**)
7. Idler gear removal (**Section 7**)

#### Fitting

1. Inserting idler gear (**Section 7**)
2. Installing output shaft, complete (**Section 1.3**)
3. Assembling bearing pin (**Section 7**)
4. Fitting clutch housing (**Section 4.3**)
5. Installing quill shaft (**Section 2**)
6. Assembling clutch release fork (**Section 2**)
7. Fitting shift mechanism (**Section 1.2**)



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**2 Clutch release fork  
Removal**

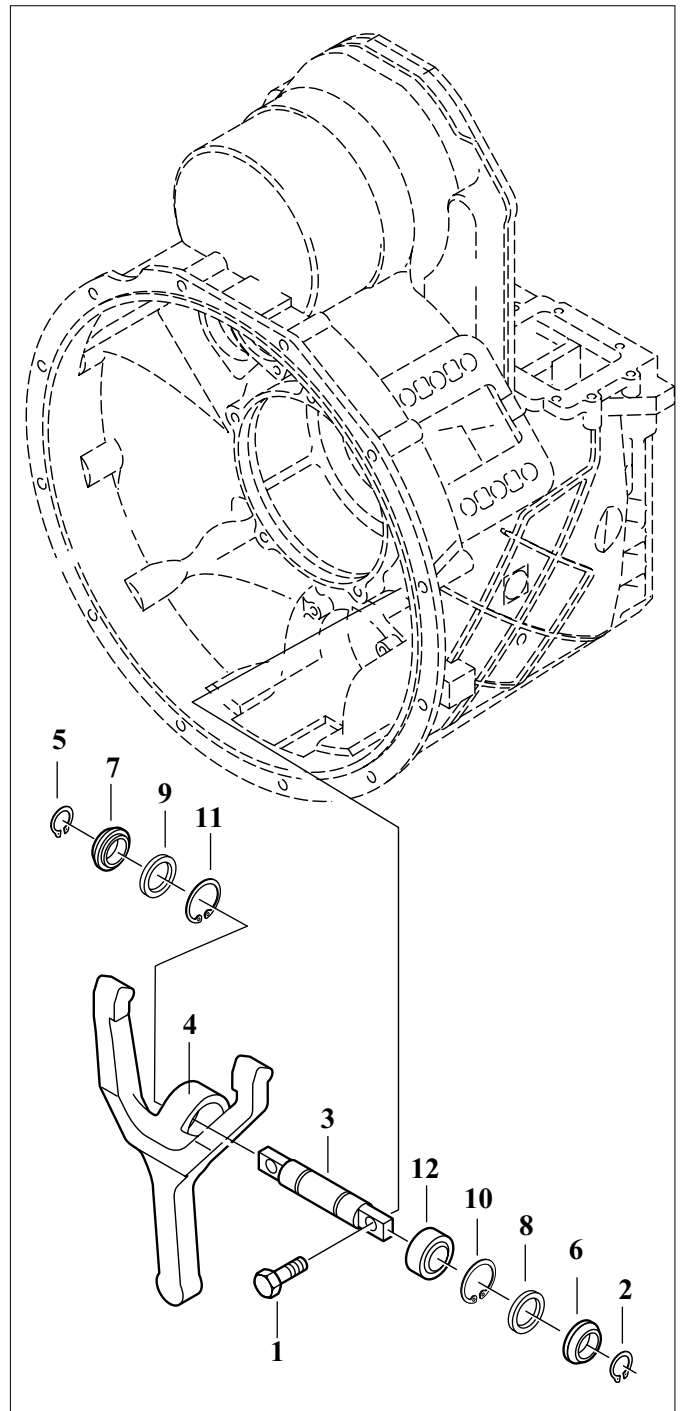
- 1 Unfasten hex screws (1) and remove with complete clutch release fork.
- 2 Remove circlip (2).
- 4 Drive pin (3) out of clutch release for (4) and remove circlip (5).
- 5 Remove sealing washers (6 and 7), sealing rings (8 and 9), circlips (10 and 11) and joint bearing (12) from clutch release fork.

**Installation**

**NOTE**

Completed clutch release fork may only be fitted once the quill shaft has been installed (see Section 3).

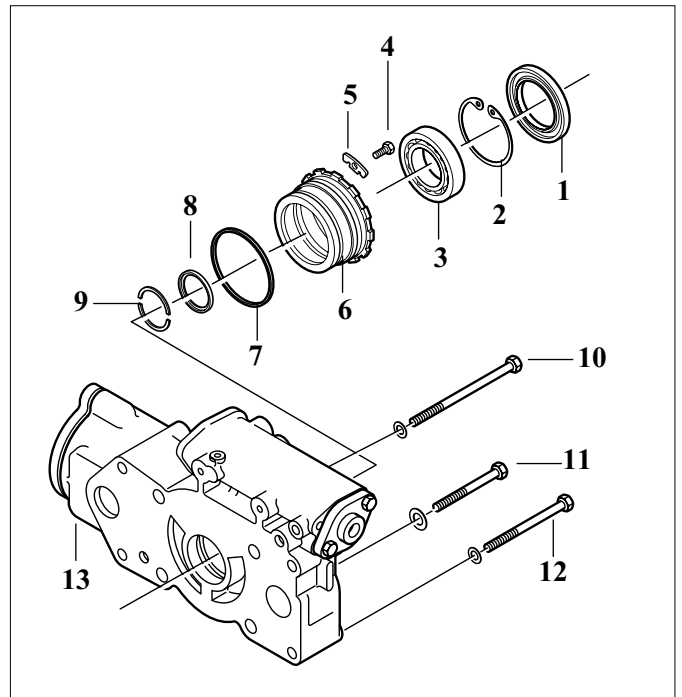
- 1 Insert circlip (11) in clutch release fork (4), push joint bearing (12) firmly home with grease (Olista Longtime 3EP) and insert circlip (10).
- 2 Insert new sealing rings (8 and 9) and sealing washers (6 and 7).
- 3 Place circlip (5) on pin (3).
- 4 Press pin into clutch release fork.
- 5 Insert circlip (2).
- 6 Place completed clutch release fork in clutch housing with hex screws (1) and tighten. Tightening torque = 115 Nm.



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**5 Control housing  
Removal**

- 1 Remove radial seal (1) and sealing ring (2) from control housing (13).
- 2 Use Rillex puller 1X56 136 802 to pull ball bearing (3) out of control housing.
- 3 Unfasten hex screw (4) and remove with retaining plate (5).
- 4 Use open-end wrench to unfasten threaded bush (6) and unscrew, remove O-ring (7).
- 5 Remove ring (8) and split ring (9) from output shaft.
- 6 Unfasten hex screws (10, 11 and 12) and remove control housing from output shaft.



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