

### Input Shaft and Reverse Change Gears (Front Transmission)

#### Sub-assembly of the Sleeve Metal with the Release Bearing and the Drive Shaft

To assemble the sleeve metal with the release bearing and the drive shaft, [⇒ Fig 33. \(□ F-34\)](#)

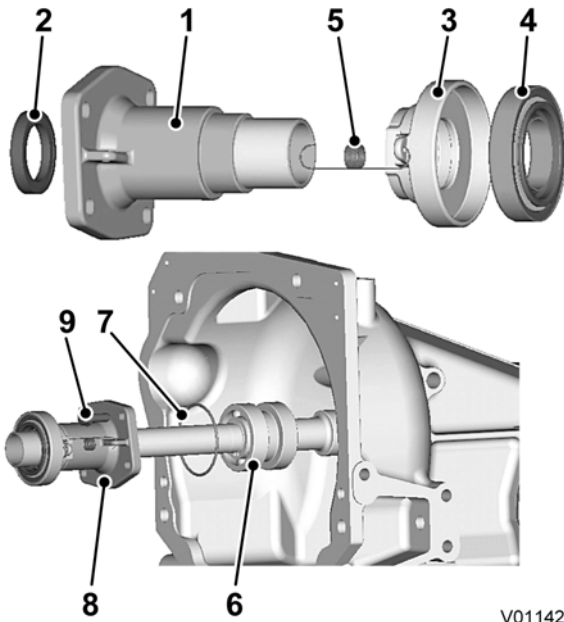


Fig 33.

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- 1 Sleeve metal
- 2 Oil seal (D)
- 3 Sleeve
- 4 Release bearing
- 5 Spring
- 6 Bearing
- 7 O-ring
- 8 Sleeve metal sub-assembly
- 9 Bolts

**Note:** Apply grease to the O-ring and the oil seal.

#### Installation of the Reverse Metal and related parts.

Reassemble in reverse order of disassembly, taking note of the following:

- 1 Install the reverse metal sub-assembly from the spacer transmission referring to [⇒ Fig 30. \(□ F-32\)](#), [⇒ Fig 33. \(□ F-34\)](#), [⇒ Fig 34. \(□ F-34\)](#) and [⇒ Fig 35. \(□ F-35\)](#).
- 2 Oil seals should be installed in their correct direction., be careful not to interchange these seals.
- 3 Apply grease to the O-ring, the oil seal and the needle

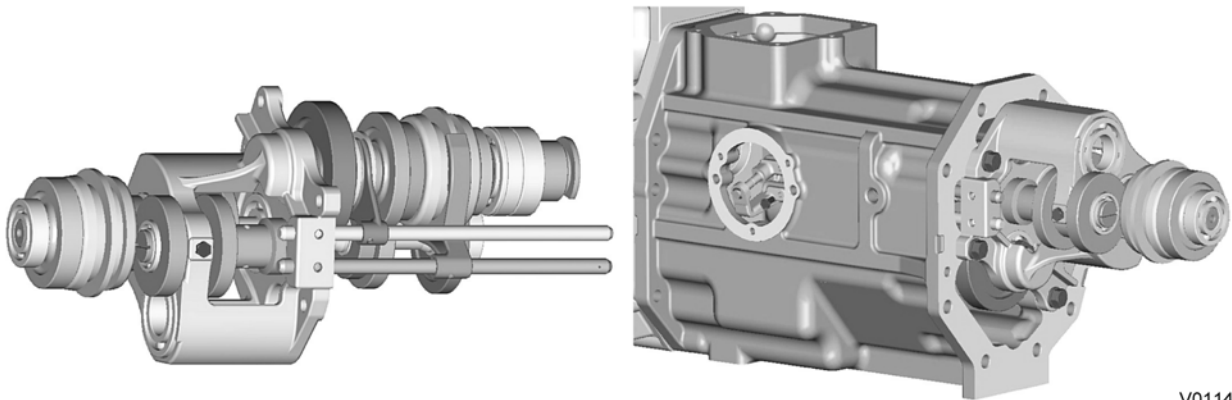
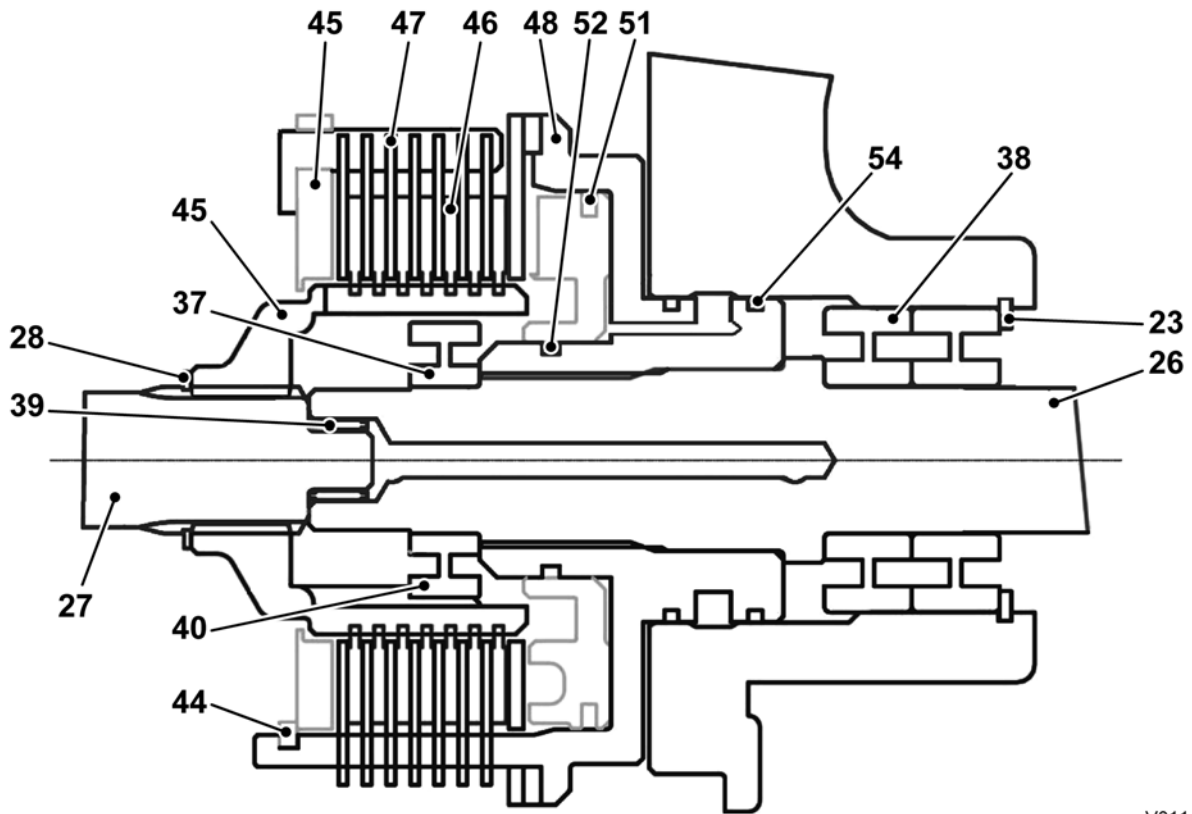


Fig 34. Revers Metal Sub-assembly

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## PTO Clutch

### Disassembly



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Fig 35.

**Note:** Disassembly of the PTO clutch assembly must be done in a clean, dust-free area.

- |                        |                   |
|------------------------|-------------------|
| 37 Roller ball bearing | 47 Driven plate   |
| 38 Roller ball bearing | 48 Piston         |
| 39 Needle bearing      | 51 Seal           |
| 40 Roller ball bearing | 52 Seal ring      |
| 44 Snap ring           | 53 Cover assembly |
| 45 Back-up plate       | 54 Seal ring      |
| 46 Disc assembly       |                   |

**Note:** When installing the PTO clutch assembly, apply a thin coat of grease to the seal rings taking care are not to damage them.

- 1 Pull out the PTO drive shaft rearwards.
- 2 Pull out the PTO drive gear forwards.
- 3 Remove the snap ring **44**, and remove the back-up plate **45**, disc assembly **46** and the driving plates. → Fig 35. (□ F-35).
- 4 While holding the return spring compressed with a special tool, remove snap ring.
- 5 Disassemble into separate parts the piston **48**, return spring, brake disc and the cover assembly **53**.

## Inspection

### Cover Assembly

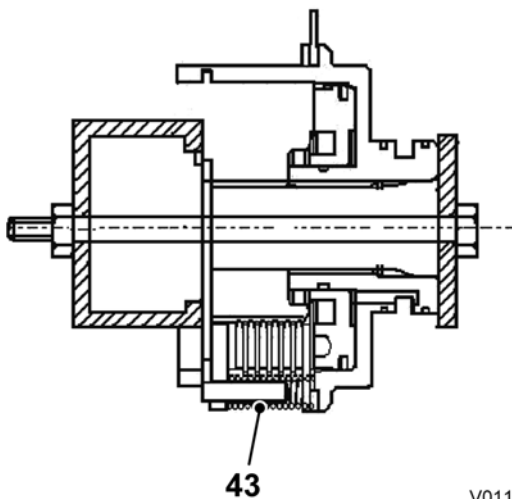
Replace a cover assembly which has a damaged or worn sliding surface. If there is any damage to the cover assembly and the piston seal ring, these parts should also be replaced

### Disc Assembly

If the thickness of a disc assembly **43** exceeds the usable limit → [Table 16.](#) (□ [F-36](#)), or the combined width of the disc assembly and driven plate is less than 28.8mm (1.13 in), replace both the disc assembly and the driven plate. → [Fig 36.](#) (□ [F-36](#)).

**Table 16.**

Inspection Items	Specified values	Usable limit
Disc thickness	2.6 +/- 0.1 mm (0.102 in)	2.4 mm (0.094 in)
Surface flatness	-	0.2 mm (0.008 in)



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**Fig 36.**

### Driven Plate

Inspect the driven plate for deformation and burning. A seriously damaged or worn plate should be replaced. Inspect the plate for thickness and surface flatness. If the thickness or surface flatness is outside the useable limits given in → [Table 17.](#) (□ [F-36](#)), replace the driven plate.

**Table 17.**

Inspection Items	Specified values	Usable limit
Plate thickness	1.6 +/- 0.05 mm (6 off)	1.5 mm
Surface flatness	-	0.15 mm

### Brake Disc

Inspect the brake disc for deformation and burning. A seriously damaged or worn brake disc should be replaced. Inspect the brake disc for thickness and surface flatness. If the thickness or surface flatness is outside the useable limits given in → [Table 18.](#) (□ [F-36](#)), replace the driven plate.

**Table 18.**

Inspection Items	Specified values	Usable limit
Disc thickness	3.0 +/- 0.1 mm (0.118 in)	2.7 mm (0.11 in)
Surface flatness	-	0.2 mm (0.007 in)

If the combined thickness of the return plate and the brake disc deviates from the value given → [Table 19.](#) (□ [F-36](#)), replace both parts.

**Table 19.**

Inspection Items	Specified values	Usable limit
Combined thickness of return plate and brake disc	5.5 +/- 0.16 mm (0.217 in)	5.1 mm (0.2 in)

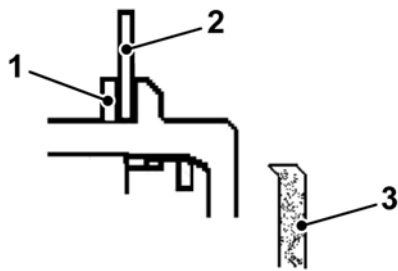
Inspect all other parts of the assembly for wear and replace if necessary.

**Note:** The two seal rings must be replaced as a pair.

## Reassembly

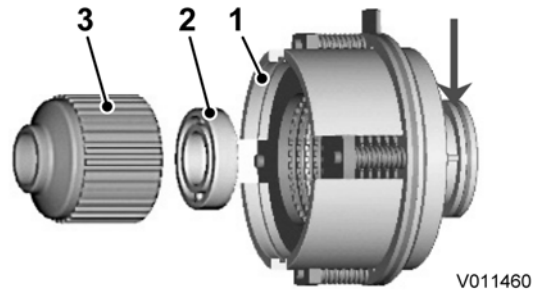
Reassemble the parts in reverse order of disassembly taking note of the following:

- 1 Wash each part before assembly.
- 2 Apply multi-purpose grease to needle bearings before assembly.
- 3 Check for smooth rotation of gears after installation.
- 4 Make sure all snap rings are seated correctly in their grooves.
- 5 When installing sealing rings, apply fresh oil before assembly and install them carefully to avoid damage.
- 6 Install the return plate 1 with the press-processed side 3 facing towards the brake disc 2. → [Fig 37.](#) (□ F-37).



**Fig 37.**

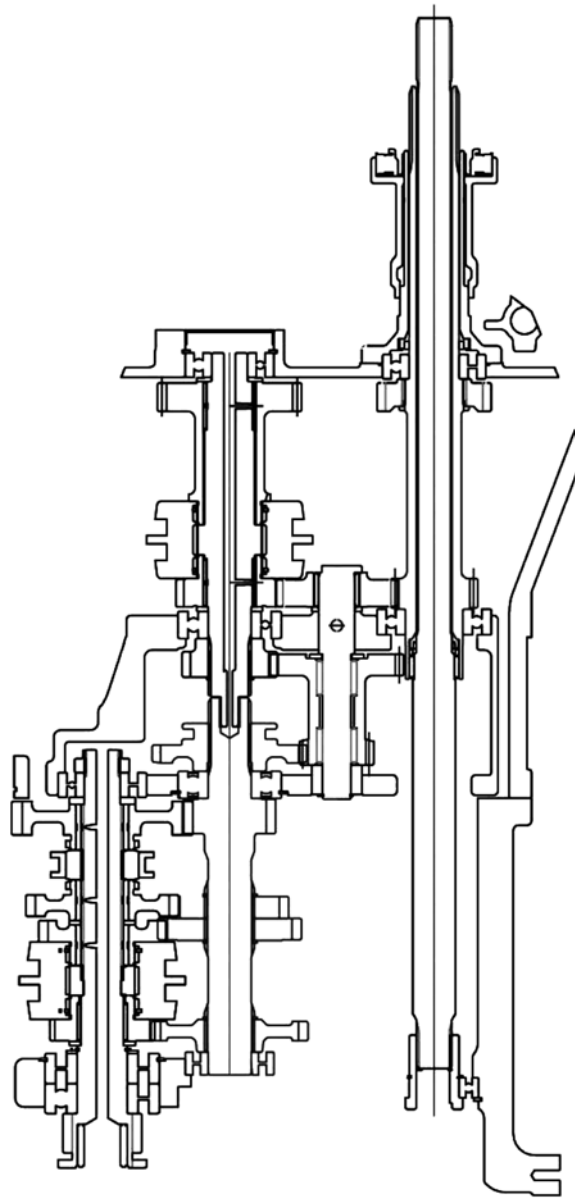
- 7 When installing the return spring, use a special tool; the snap ring should be securely seated in the groove.
- 8 When pushing the roller ball bearings into the gear, only push on their outer races.
- 9 Install the snap ring in correct direction.
- 10 After reassembly, lock the PTO clutch and check that the gear turns smoothly. → [Fig 38.](#) (□ F-37).



**Fig 38.**

- 1 PTO clutch assembly
- 2 Ball bearing
- 3 PTO hub

**Main, Sub, and 4WD Change Gears**



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**Fig 39. Synchromesh Transmission**