

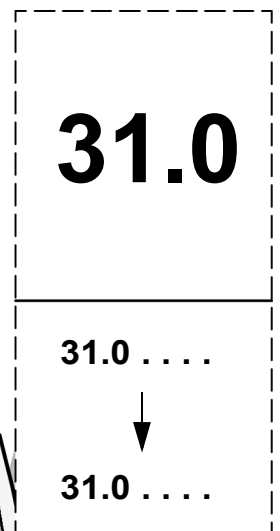
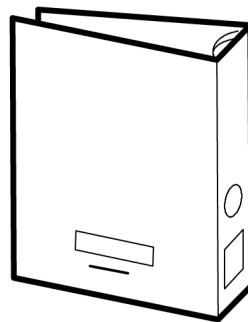
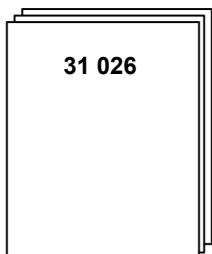
# 31 026 - GB - 02/2005

CLUTCH - 235DTR - 267DTR - 280DTR

RANGE	FAMILY	VARIANT
RENAULT MASCOTT DXi	-	-
RENAULT MASCOTT dCi		12915



The above information may change in the course of time. Only the "Consult" section of the workshop manuals repertory in standard N° 10320 serves as reference.



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**CONTENTS**

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**Generalities** ..... **A-1 → 5**

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**Technical data** ..... **B-1 → 2**

— Consumable products ..... B1-3 → 3

— Tightening torques ..... B2-1 → 9

---

**Tools** ..... **C-1 → 6**

---

**Clutch mechanism** ..... **D-1 → 4**

— Thrust release bearing ..... D1-4 → 4

— Mechanism ..... D2-1 → 2

— Flywheel ..... D3-1 → 2

— Operating fork ..... D4-1 → 1

---

**Clutch control** ..... **E-1 → 1**

— Master / slave cylinder ..... E1-3 → 3

**GENERALITIES**

## APPLICABILITY

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Warnings				31/03/2003	A-3
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Conventional symbols				23/05/2002	A-4
RENAULT MASCOTT dCi			12915	01/10/2001			

## Warnings

In this document, safety instructions are symbolized as follows:



**DANGER! NON-OBSERVANCE OF THE PROCEDURE DESCRIBED OR LACK OF CARE OR ATTENTION, RISK CAUSING SERIOUS INJURY OR EVEN DEATH.**



**WARNING! Any different or inappropriate working method risks causing damage to the product.**








*NOTE! Draws attention to particular or important points of the method.*













**Comply without fail with the regulations in force relative to the recovery and treatment of used parts and waste.**

## Conventional symbols









### Fitting

	Tighten to torque (Nm) (left-hand thread)		Tighten by indicated value
	Tighten to torque (Nm) (right-hand thread)		Loosen by indicated value
	Tightening torque with lubricated threaded hardware		










### Dimensioning

	Tightening		... Greater than or equal to ...
	Equal to		Wear limit
	... Less than ...		Machining limit or dimension
	... Greater than ...		Maximum out-of-true
	... Less than or equal to ...		Maximum parallelism error



















### Repair

	Force to be exerted in the direction shown (hammer - press)		Smear or coat (see "Consumables" table)
	Heat or cool: Temperature in degrees Celsius (e.g. + 80 °C)		Fill to level (see "Technical Data" and "Consumables" table)
	Weld bead		Grease or oil (see "Consumables" table)
	Repair time - Heating time		Mark - Assemble according to marking

**Adjustment**

	Rotating friction torque		Turn anti-clockwise
	Turn in alternate directions		Turn anti-clockwise (the figure shows the number of turns)
	Turn clockwise		Turn clockwise (the figure shows the number of turns)
	Place in contact		Move in the direction shown
	Dimension to be assured (mm)		

**Various information**

	Exhaust - Outlet		Operation with a sequence
	Intake - Inlet		Involves
	Weight in kg (example: 275 kg)		Return to numbered operation - Connected with numbered operation
	Depending on versions or options		Withdraw - Delete
	Wrong		Direction of disassembly (the arrow shows the direction)
	Correct		Direction of assembly (the arrow shows the direction)
	Injection		... to ...
	Repair dimension		Inspect - Check condition of part
	Part to be replaced		Danger for persons, vehicle or equipment





**TECHNICAL DATA**

## APPLICABILITY

## Consumable products

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Grease				22/02/2002	B1-3
RENAULT MASCOTT dCi			12915	01/10/2001			

## Tightening torques

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Definitions				27/02/2003	B2-1
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Standard nut and bolt tightening torques table				06/06/2003	B2-2
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT dCi		Detailed view	12915+ 122BU/56	01/10/2001		17/07/2003	B2-3
RENAULT MASCOTT dCi		Detailed view	12915+150DF+ 12206+ 09902/08/10	01/10/2001		25/08/2003	B2-4
RENAULT MASCOTT dCi		Detailed view	12915+150DF+ 122AE/BQ+ 09907/08/09/10	01/10/2001		25/08/2003	B2-5
RENAULT MASCOTT dCi		Detailed view	12915+122AE+ 150DE+ 09907/08/09	01/10/2001		25/08/2003	B2-6
RENAULT MASCOTT dCi		Detailed view	12915+ 150DE/DF+ 12203/AE/BQ+ 09902	01/10/2001		25/08/2003	B2-7
RENAULT MASCOTT DXi	54A	Detailed view	25532+12244+ 150FP			25/08/2003	B2-8
RENAULT MASCOTT DXi		Detailed view	25533/34+ 12244/BJ+ 150FP/FQ			13/01/2005	B2-9

**Consumable products****Grease**

	RAM	Lithium soap grease NLGI 2 with molybdenum bisulphide
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## Tightening torques

### Definitions

There are several types of tightening:

- Tightening to torque (in **Nm**)
- Tightening to angle (in °)
- Tightening to torque-angle (in **Nm + °**)

Torques given in **Nm** are nominal torques (average value calculated on the basis of the minimum torque and the maximum torque).

The tightening precision class defines the tolerance of this torque in percent as a function of the nominal torque applied.

### Tightening precision classes:

- **Class I:** Special threaded hardware (tolerances  $\pm 10\%$  of the final torque).
- **Class II:** Reserved for precise tightening (tolerance  $\pm 10\%$  of the nominal torque).
- **Class III:** Reserved for normal standard tightening (tolerance  $\pm 20\%$  of the nominal torque)

For standard threaded hardware indicated in the table below, use tightening class **III**.

For other torques, see the following page(s).



***"FIH" type (Nylstop) locknuts must be replaced whenever removed. "DRH" type (oval) locknuts can be re-used. If locknuts (DRH, FIH or other) are re-used, make absolutely certain that the screw-thread of the bolt protrudes least two threads above the top edge of the nut.***

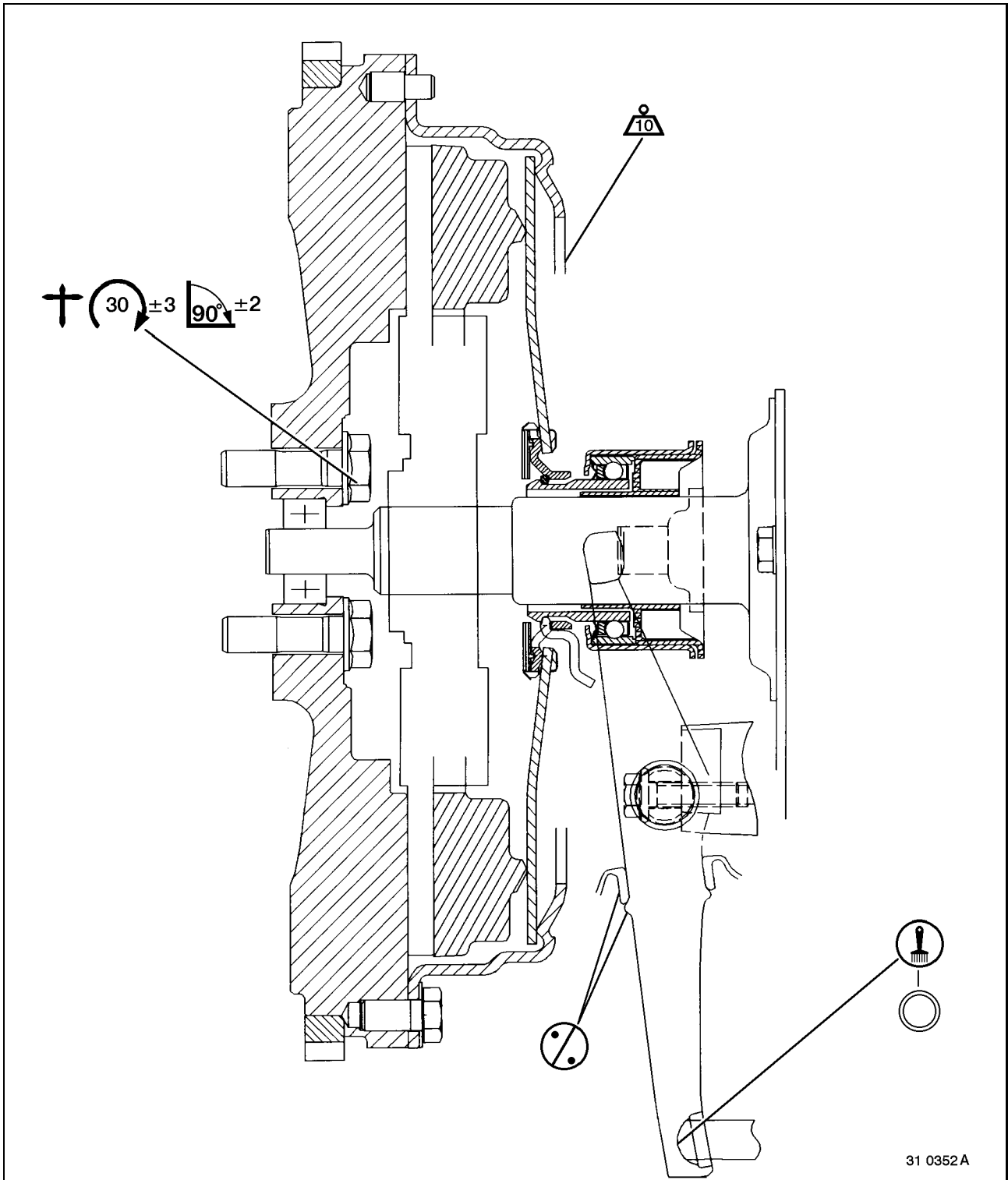
## Standard nut and bolt tightening torques table



The tightening torque values given in the table are based on standard 01.50.4002 and apply to new nuts and bolts fitted dry and re-used nuts and bolts with oil applied to the screw-threads. If any nuts and bolts are replaced, it is absolutely essential to use nuts and bolts recommended by the RENAULT TRUCKS Spare Parts Department (coefficient of friction in compliance with standard 01.50.4002).

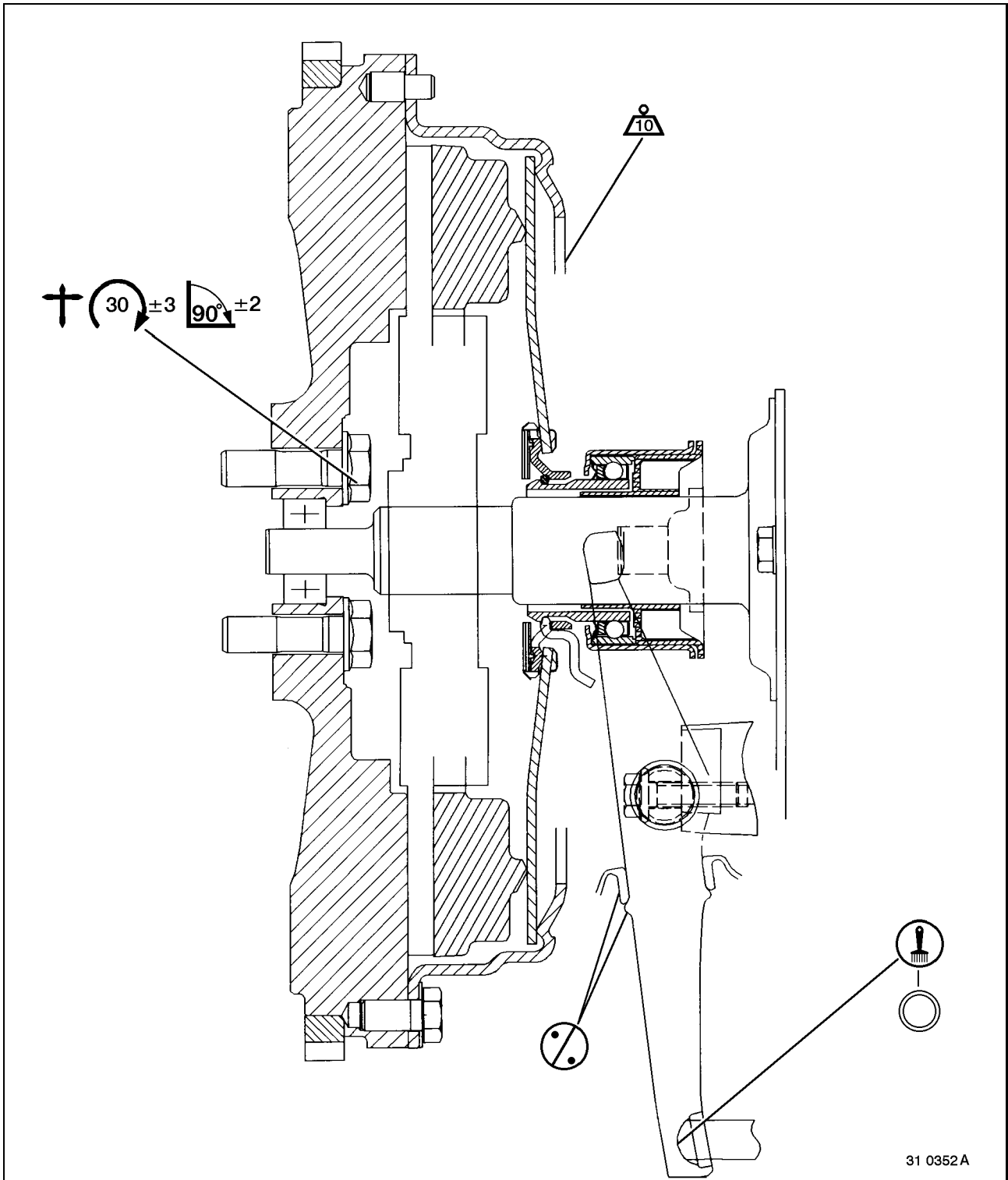
Tightening torque values in Nm for conventional "metric system" threaded hardware based on standard 01.50.4002 (H: normal and HE: with flange)		
Diameter and pitch of nuts and bolts	Quality class III	
	Quality class 8.8	Quality class 10.9
6 x 1.00	7.5 ± 1.5	11 ± 2.2
7 x 1.00	15 ± 3	20 ± 4
8 x 1.00	20 ± 4	30 ± 6
8 x 1.25	20 ± 4	27 ± 5.4
10 x 1.00	40 ± 8	60 ± 12
10 x 1.25	40 ± 8	60 ± 12
10 x 1.50	40 ± 8	50 ± 10
12 x 1.25	70 ± 14	100 ± 20
12 x 1.50	65 ± 13	95 ± 19
12 x 1.75	60 ± 12	90 ± 18
14 x 1.50	105 ± 21	155 ± 31
14 x 2.00	100 ± 20	145 ± 29
16 x 1.50	160 ± 32	220 ± 44
16 x 2.00	150 ± 30	220 ± 44
18 x 1.50	240 ± 48	340 ± 68
18 x 2.50	210 ± 42	310 ± 62
20 x 1.50	330 ± 66	480 ± 96
20 x 2.50	300 ± 60	435 ± 87
22 x 1.50	450 ± 90	650 ± 130
22 x 2.50	410 ± 82	595 ± 119
24 x 2.00	560 ± 112	820 ± 164
24 x 3.00	510 ± 102	750 ± 150

Detailed view



Engine	Clutch	Gearbox
8140 - 43K/43N	VALEO 267 DTR	ZF 6S.300

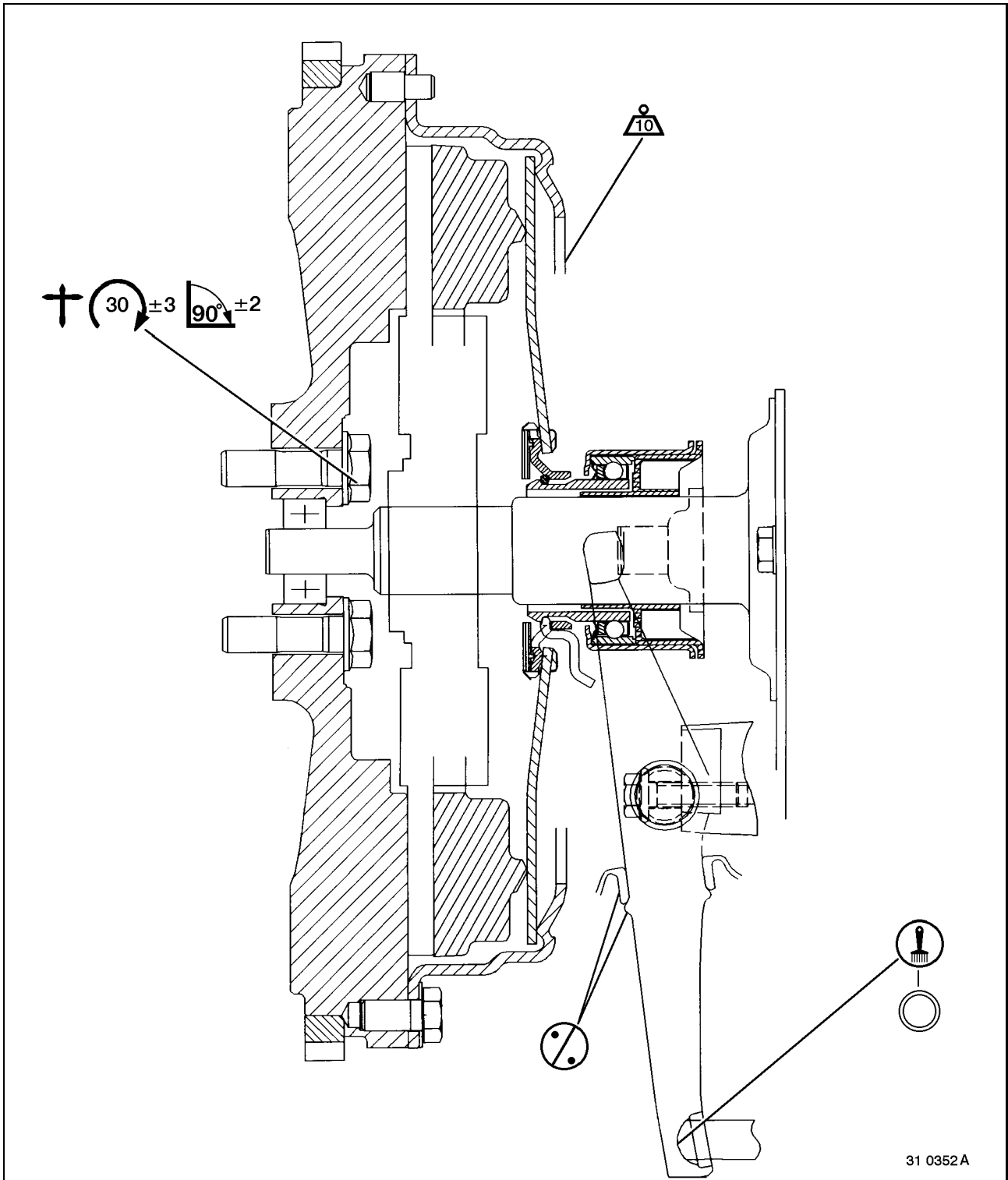
Detailed view



Engine	Clutch	Gearbox
8140 - 43S	VALEO 267 DTR	ZF 6S.300

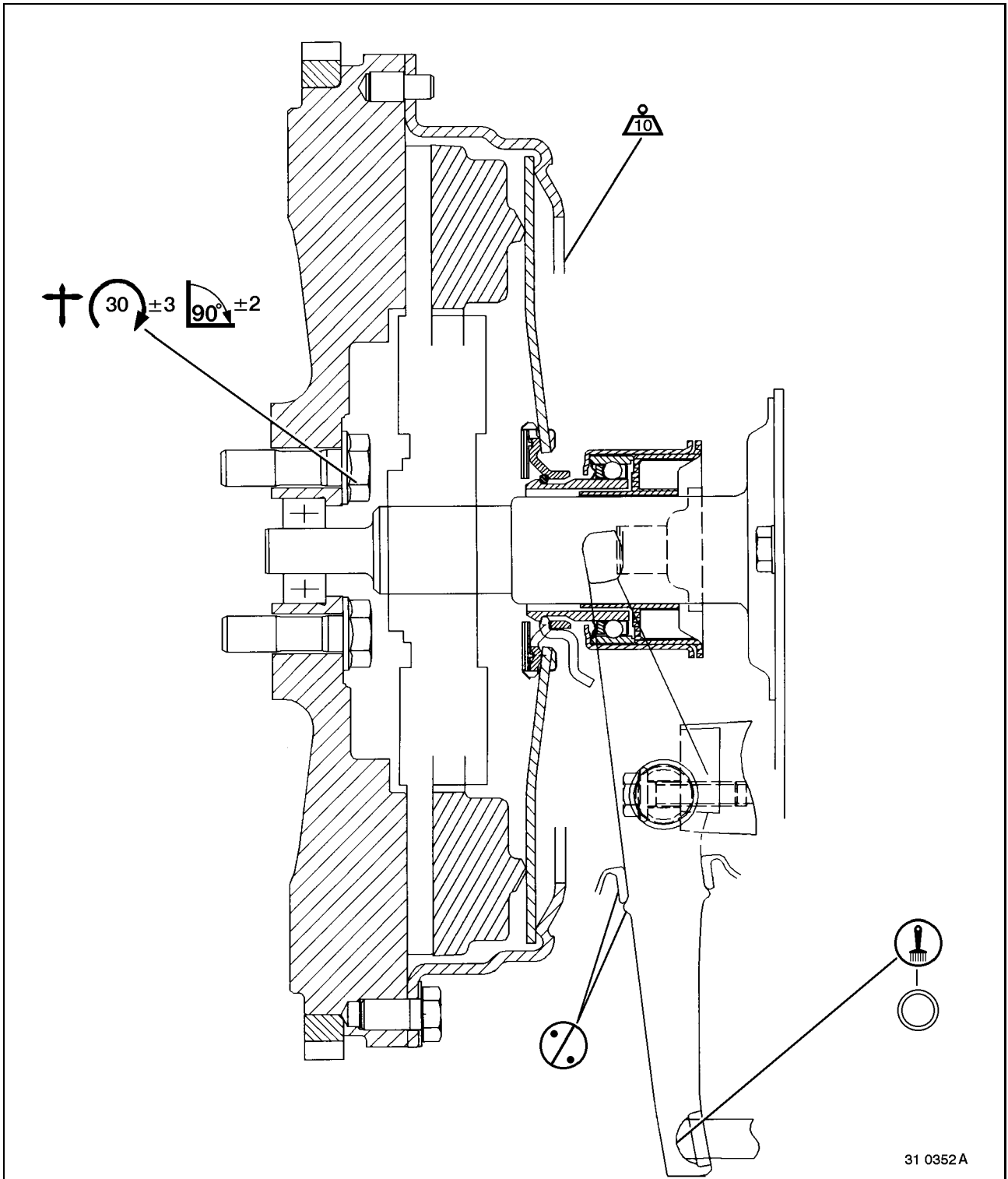


Detailed view



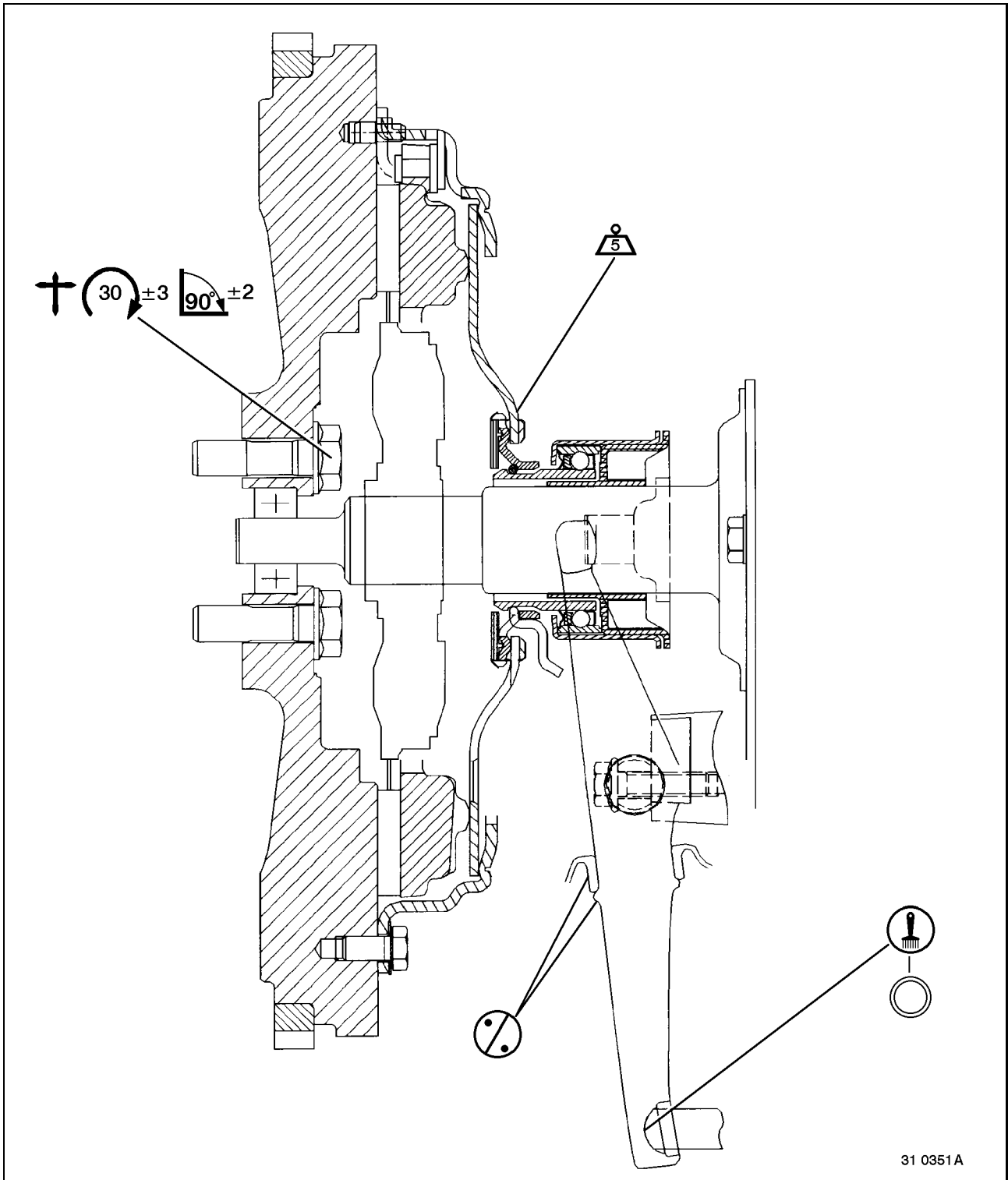
Engine	Clutch	Gearbox
8140 - 43B/43C	VALEO 267 DTR	ZF 6S.300

Detailed view



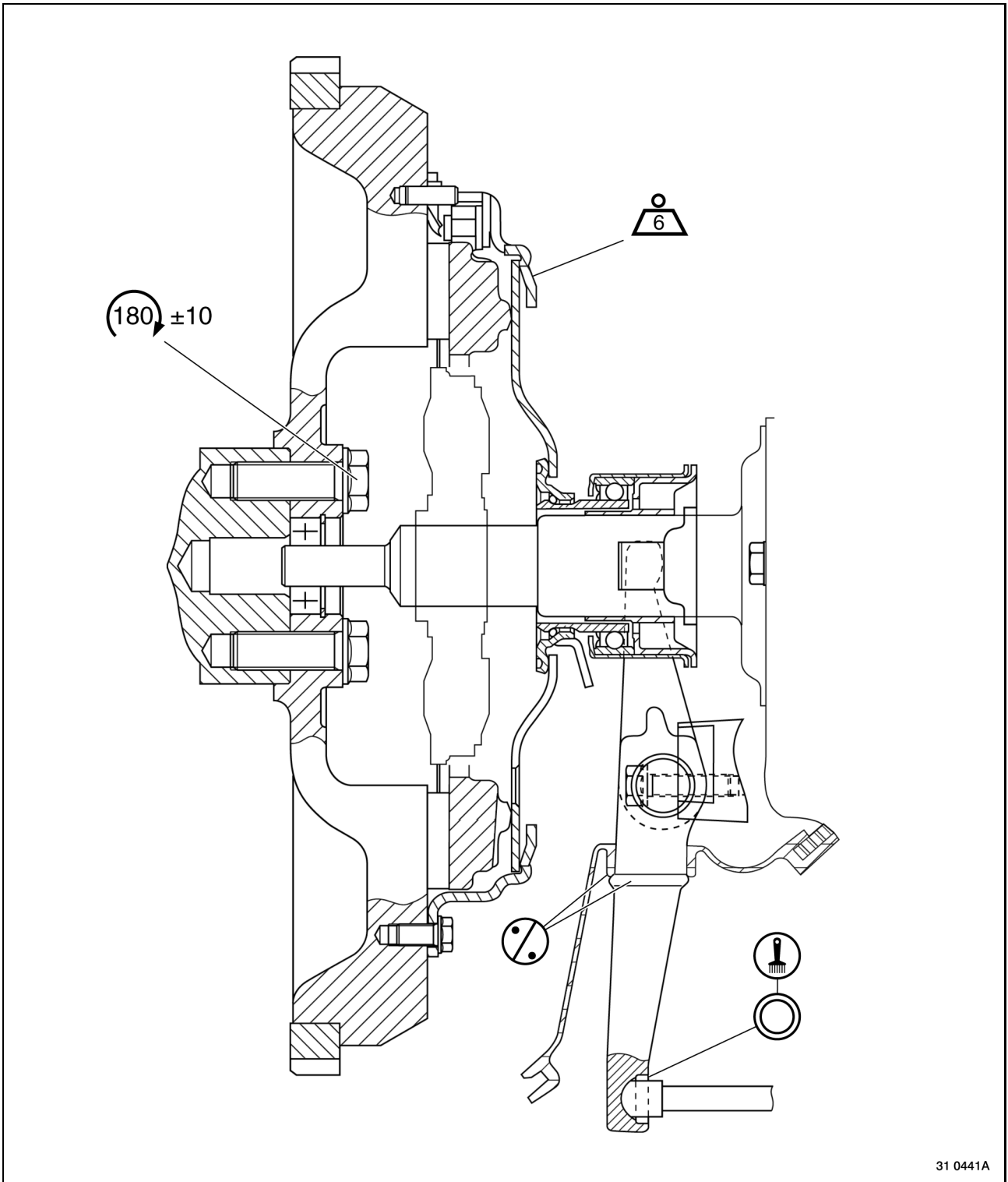
Engine	Clutch	Gearbox
8140 - 43C	VALEO 267 DTR	ZF 5S.200

Detailed view



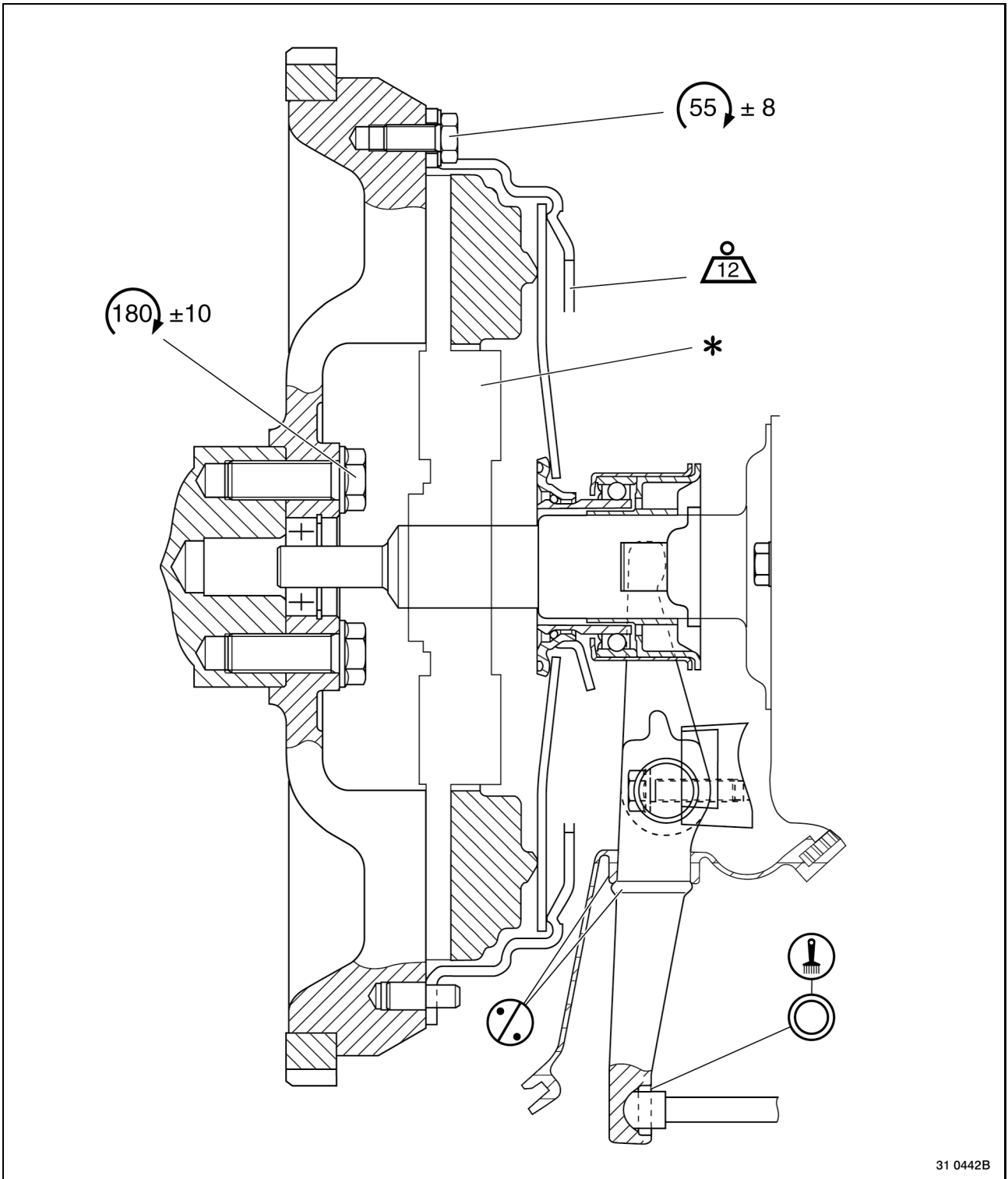
Engine	Clutch	Gearbox
8140 - 63/43B/43C	VALEO 235 DTR	ZF 5S.200 ZF 6S.300

Detailed view



Engine	Clutch	Gearbox
ZD3A 600	235 DTR	ZF 5S.270

Detailed view



31 0442B

Engine	Clutch	Gearbox
ZD3A 600 ZD3A 604	* VALEO 280 DTR+ clutch plate dia.+ friction $\varnothing$ 267 VALEO 280 DTR	ZF S5.270 ZF S6.350



**TOOLS**

**APPLICABILITY**

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Generalities				12/12/2001	C-3
RENAULT MASCOTT dCi			12915	01/10/2001			



## Generalities

RENAULT TRUCKS divide tools into three categories:

- **General-purpose tools:** proprietary tools.
  - **50 00 26 .... reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department).
  - **4-figure reference number** (tools classified by RENAULT TRUCKS but available from the supplier).
- **Special tools:** specifically created tools distributed by the RENAULT TRUCKS Spare Parts Department.
- **Locally manufactured tools:** these tools are classified differently according to their degree of sophistication:
  - **4-figure reference number** (represented by a drawing): tools that are simple to make without need for special qualification.
  - **50 00 26 .... reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department): a certain amount of skill is needed to make these tools.

**Three levels (or echelons)** determine their assignment:

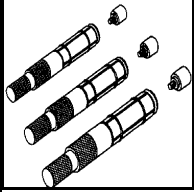
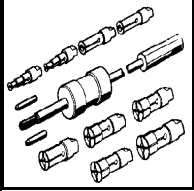
- **Level 1:** tools for servicing, maintenance and minor tasks.
- **Level 2:** tools for major repairs.
- **Level 3:** tools for refurbishment.



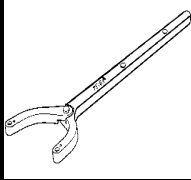
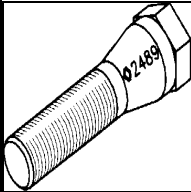
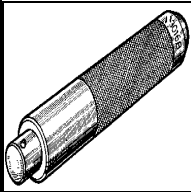
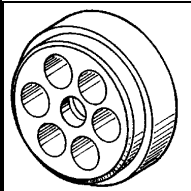
*Proprietary tools mentioned in this manual do not appear in the tools list.  
These tools are identified in the standard tools manual (MO) by a 4-figure number.*

## LIST OF TOOLS

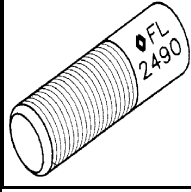
## General-purpose tools

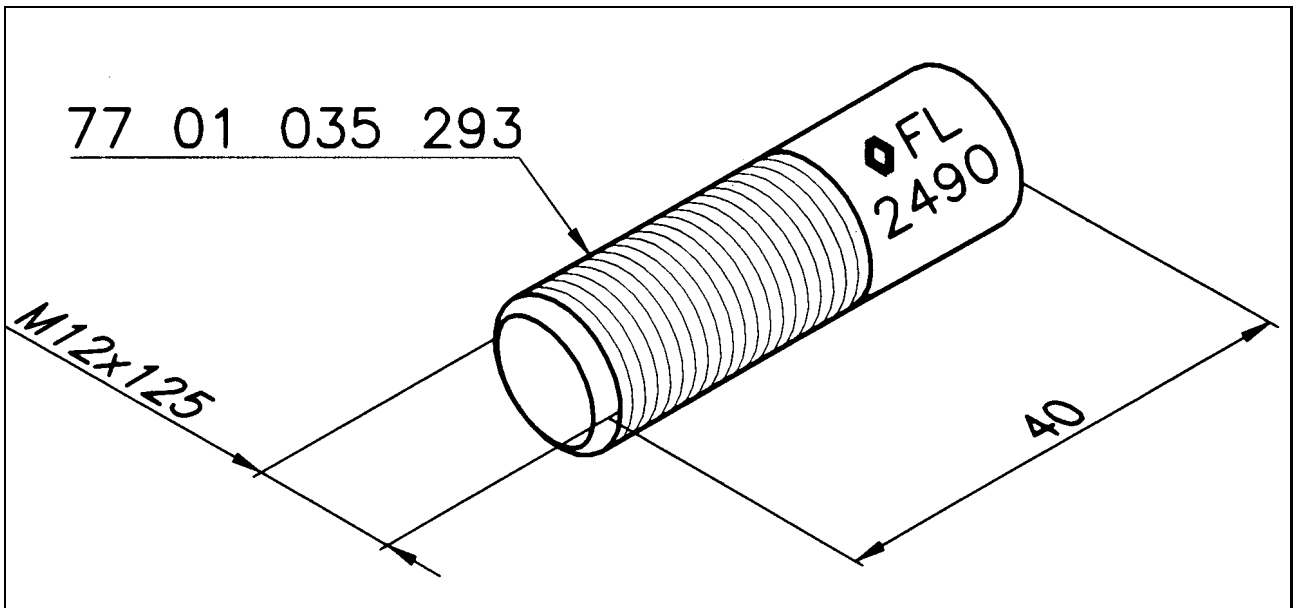
Illustration	RENAULT TRUCKS Ref.	Designation	Manufacturer reference	Manufacturer code	Level	Qty
	5000262437	Clutch centring tool			1	1
	5000260978	Puller			1	1

## Special Tools

Illustration	RENAULT TRUCKS Ref.	Designation	Manufacturer reference	Manufacturer code	Level	Qty
	5000269134	Holding wrench			1	1
	5000262489	Centring tool			1	1
	5000263016	Handle			1	1
	5000262363	Set of pushers			1	1

## Locally manufactured tools

Illustration	RENAULT TRUCKS Ref.	Designation	Manufacturer reference	Manufacturer code	Level	Qty
	2490	Guide			1	1



**CLUTCH MECHANISM**

## APPLICABILITY

## Thrust release bearing

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Removal				11/03/2002	D1-4
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Fitting				11/03/2002	D1-4
RENAULT MASCOTT dCi			12915	01/10/2001			

## Mechanism

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Removal				11/03/2002	D2-1
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Inspection				26/08/2003	D2-1
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Fitting				11/03/2002	D2-2
RENAULT MASCOTT dCi			12915	01/10/2001			

## Flywheel

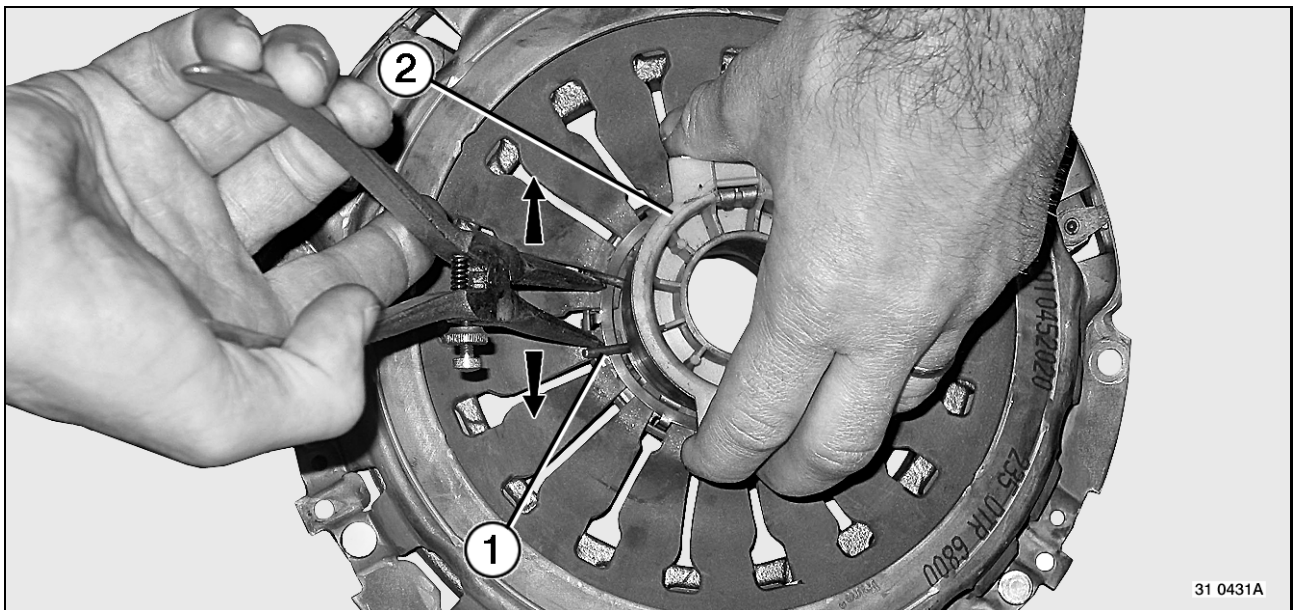
Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Inspection				11/03/2002	D3-1
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT dCi		Removal/fitting	12915	01/10/2001		11/03/2002	D3-1
RENAULT MASCOTT DXi		Removal/fitting				27/01/2005	D3-2
RENAULT MASCOTT dCi			12915	01/10/2001			

## Operating fork

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Removal / Fitting				27/01/2005	D4-1
RENAULT MASCOTT dCi			12915	01/10/2001			

## Thrust release bearing

### Removal



The thrust release bearing retaining ring is opened out after the gearbox has been removed.  
The thrust release bearing remains on the mechanism.  
Using circlip pliers, open out the retaining ring (1) to remove the clutchthrust release bearing (2).

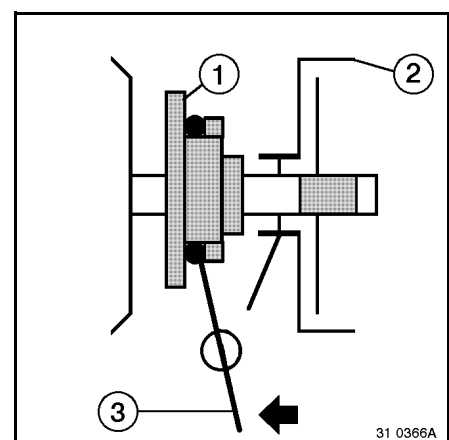
### Fitting

Remove dust from the bearing-carrier carrier and from the thrust release bearing.  
Do not use any degreasing product.  
Install the thrust release bearing to the bearing-carrier carrier.

Fitting the gearbox.

Move operating fork (3) rearwards to lock thrust release bearing (1) to the clutch mechanism (2).

Move operating fork (3) forwards to check correct locking of thrust release bearing (1).





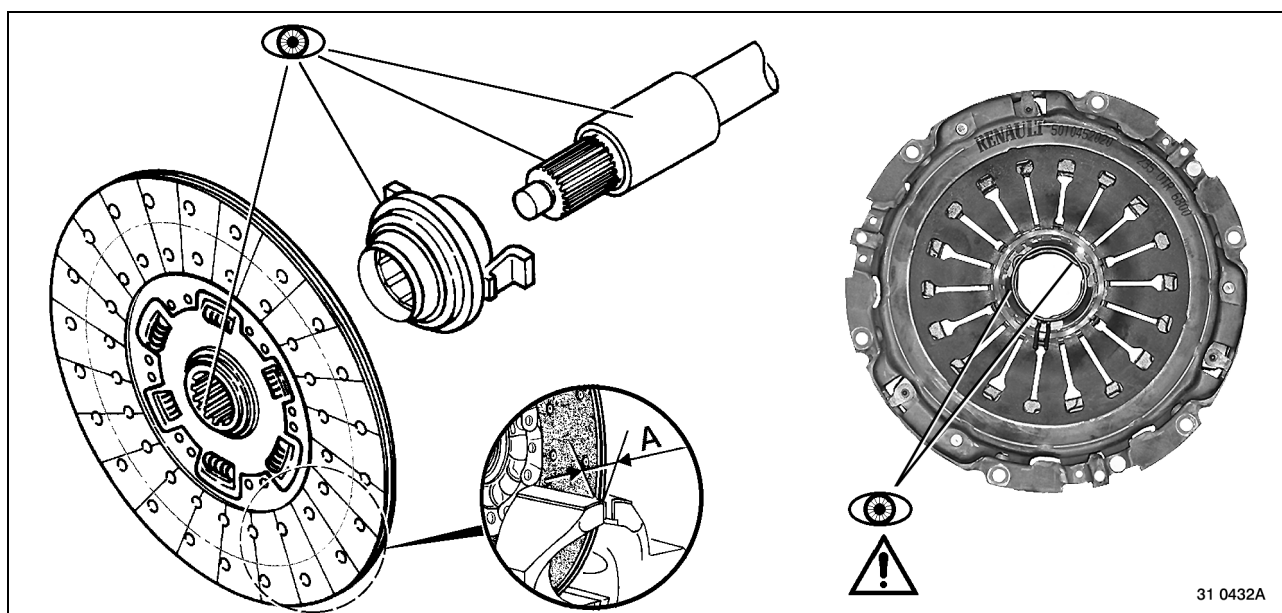
## Mechanism

### Removal

Loosen the nuts and bolts securing the mechanism progressively and in diametrically opposed sequence to avoid placing any strain on the clutch.

Remove clutch mechanism.

### Inspection



31 0432A

#### Inspection of the centre plate

- Change centre plates with broken, torn, burnt or greasy linings.
- Inspect the linings for wear.
- Check the condition of the hub and gearbox shaft splines.
- Check the condition of the centre plate springs.

#### Inspection of the mechanism

- Check that the pressure plate does not present any cracks.
- Check the tips of the diaphragm for wear.
- Check the diaphragm fulcrum rings for wear.
- Check that driving lugs are neither blued, distorted nor torn apart.
- Check the thrust bearing retaining ring for wear and distortion.

#### Inspection of the thrust release bearing

- Check that the thrust release bearing is not seized.
- Check the contact surface of the retaining ring.
- Check the plastic sleeve for wear.



*Never dip the thrust release bearing in degreasing product or spray any on it.*

#### Inspection of the thrust release bearing carrier

- If the thrust release bearing carrier presents signs of wear or seizure, replace it.

Mechanism	Lining thickness min. dimension A (mm)	Pressure plate Taper C (mm)
235 DTR	4.7	-
267 DTR	5.2	-
280 DTR	5.5	-

## Fitting

### Upon assembly

- Remove dust from the clutch casing.
- Degrease the flywheel friction track.
- Install the centre plate, using a centring tool, ensuring that it is fitted the right way round.
- Progressively tighten the diametrically opposed setscrews at the recommended tightening torque (see page B-2-2), (the diaphragm spring should gradually sink in).
- Ensure that the centring tool slides freely in the hub of the centre plate.
- Ensure that the height of the diaphragm spring fingers is constant.
- Depending on the clutch type, ensure that the height of the diaphragm spring fingers is constant.

Use tool **2437**.

**Nickel-plated:** shiny colour.



**Do not grease the splines.**

## Flywheel

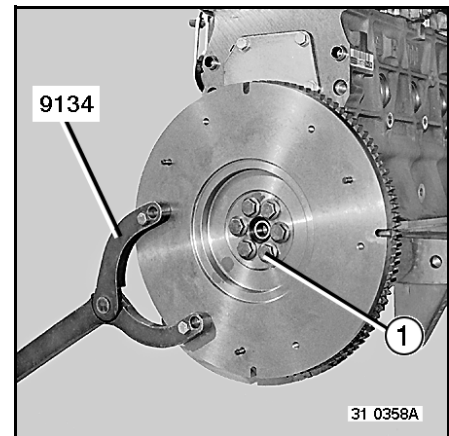
### Inspection

#### Inspection of the flywheel To inspect the flywheel

- Check for oil leaks at the rear of the engine and at the front of the gearbox.
- Check the surface condition of the flywheel (cracks, significant distortion, friction track wear).
- Check the condition of the pilot bearing or guide ring.

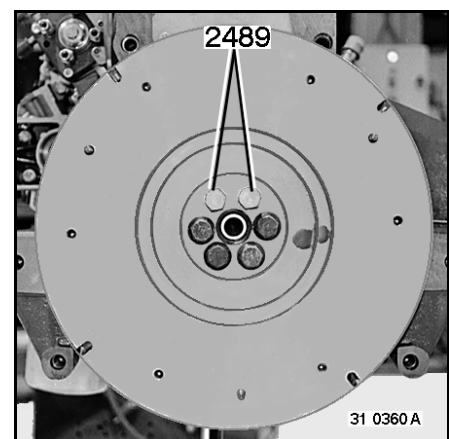
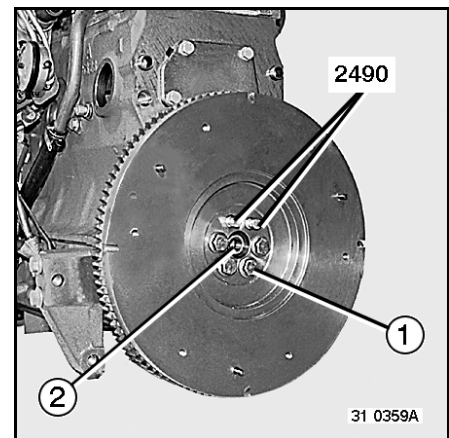
### Removal/fitting

Loosen setscrews.  
Use tool **9134**.



#### Precautions for removal/fitting of the engine flywheel:

- Remove dust from the flywheel.
- Take out two setscrews **(1)** and replace them with tool **2490**.
- Remove the other setscrews **(1)**.
- Remove the flywheel.
- Replace the bearing **(2)**, if necessary. Use tool **0978**
- When fitting the flywheel, use tool **2490** to install it.
- Screw up the setscrews **(1)** without tightening.
- Mount tool **2489** in place of tool **2490** and tighten to centre the flywheel.
- Tighten the setscrews **(1)** to the recommended torque (see page(s) B-2-3 - B-2-4 - B-2-5 - B-2-6 - B-2-7).
- Withdraw tool **2489**, fit two setscrews and tighten to torque.



## Removal/fitting

### Removal

Remove pilot bearing (1).

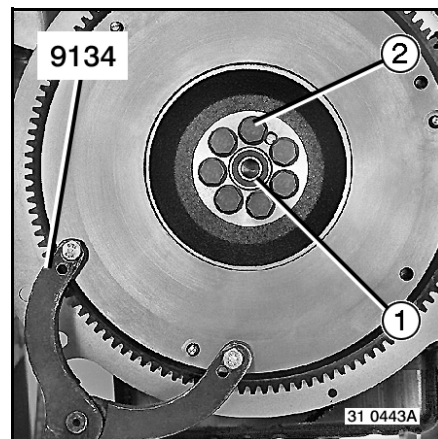
Use tool **0978**.

Loosen setscrews (2).

Use tool **9134**.

Remove bolts (2).

Remove flywheel.



### Fitting

To fit, proceed in the reverse sequence to removal.

### Flywheel setscrews

Progressively tighten the setscrews, in diametrically opposed sequence, to the recommended tightening torque. See pages B-2-8, B-2-9.

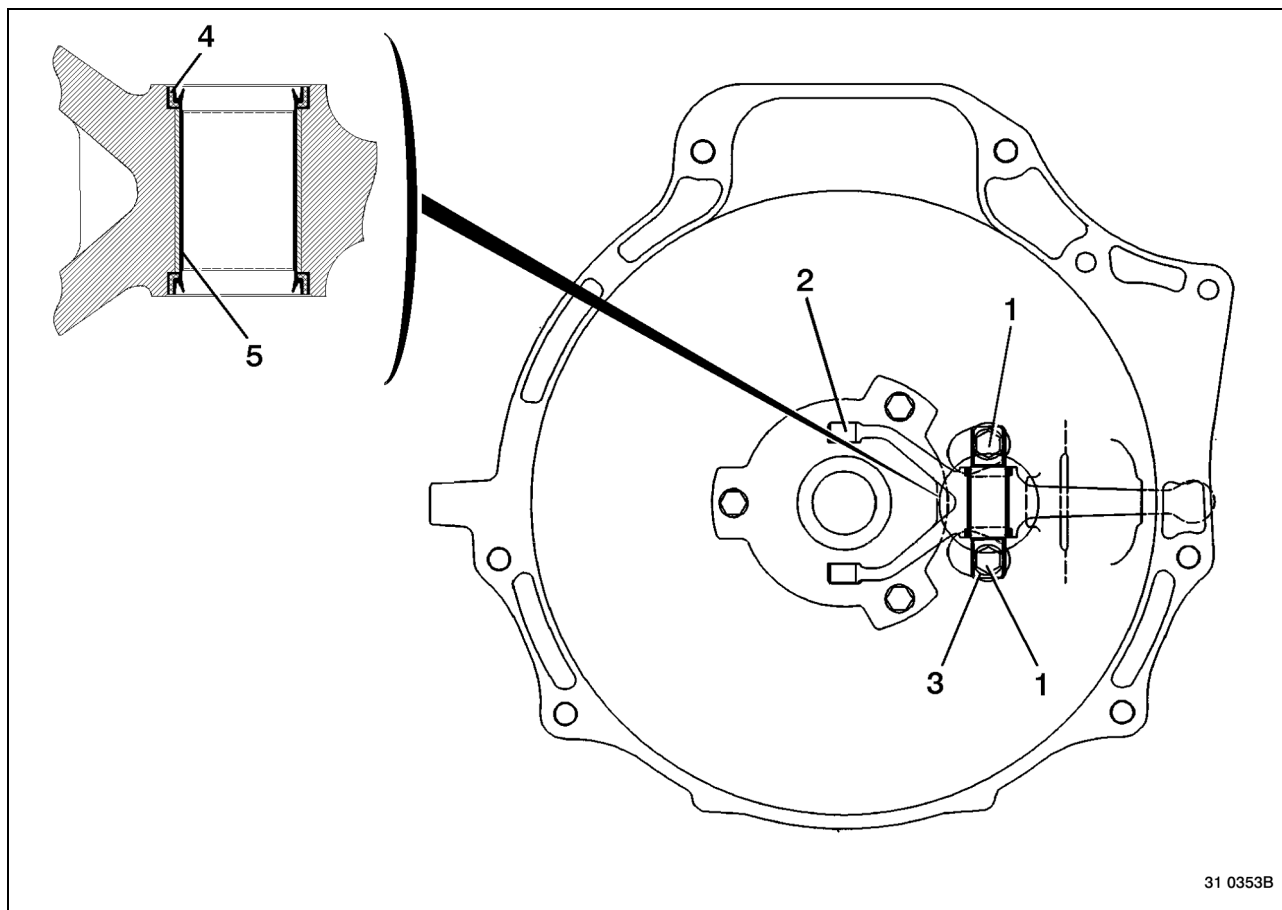
Fit pilot bearing (1).

Use tool **3016 + 2363**

## Operating fork

### Removal / Fitting

#### Removal



The item numbers indicated in the drawing on page correspond to the **sequence of disassembly**.  
Remove the tube (5).  
Use a suitable tube.

#### Fitting

To fit, proceed in the reverse sequence to removal.



**CLUTCH CONTROL**

## APPLICABILITY

## Master / slave cylinder

Range	Family	Title	Variant	Applicability date		Updating	Page N°
				Start	End		
RENAULT MASCOTT DXi		Generalities				29/08/2003	E1-3
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Removal/fitting				12/03/2002	E1-3
RENAULT MASCOTT dCi			12915	01/10/2001			
RENAULT MASCOTT DXi		Inspection				12/03/2002	E1-3
RENAULT MASCOTT dCi			12915	01/10/2001			



## Master / slave cylinder

### Generalities

Manufacturer's reference number	RENAULT TRUCKS reference number	Setting (see page)
FT FA FP 641 A CD	50 10 245 965	E-1-3
XFT FA FP 1027 ACD	50 10 545 148	E-1-3
FT FA FP 642 A CD	50 10 245 742	E-1-3
XFT FA FP 1029 ACD	50 10 545 387	E-1-3

### Removal/fitting

The clutch release control (master/slave cylinder) is not provided with an adjustment feature.

Before proceeding with replacement of the master cylinder/slave cylinder unit, it is recommended to immobilize the clutch pedal (risk of damage to the slave cylinder).

Assemble the slave cylinder to the gearbox while ensuring that the push-rod is properly in place in the operating fork.

Release the clutch pedal, then fully depress it.

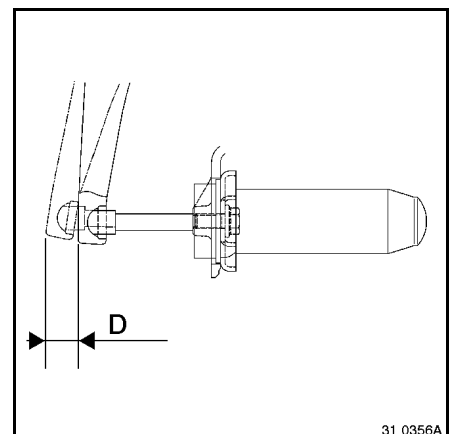
Slowly bring the pedal to the "engaged" position. Wait for 10 seconds. The control is operational.



*The master cylinder and the slave cylinder form an assembly. It is not possible to separate these components or bleed the hydraulic circuit.*

### Inspection

Measure the movement of the push-rod to check the effective slave cylinder travel **D = 12→14 mm**.



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