

CAUTION



To avoid damaging the vehicles electric and electronic components, the earths of any wiring harness near the weld area must be disconnected.

Position the earth of the welding machine as close as possible to the weld area (see **Bolted connection for earth: Fitting**) (MR 400, 40H, Bolted connections).

Locate the earths located near to the weld area [Earths on body: List and location of components](#) .

3)SPECIAL NOTES ON MATING

CAUTION



If the mating faces of the parts to be welded are not accessible, use a GMAW plug weld in place of the original electrical resistance weld [Connections by arc welding under shielding gas: Description](#) (MR 400, 40C, Gas metal arc welded connections (GMAW)).



Repair-40x09x16x02-02x49-1-4-1.xml



XSL version : 3.02 du 22/07/11

OUTPUT SHAFT: STRIPPING - REBUILDING



Note, one or more warnings are present in this procedure



Special tooling required

DC4 gearbox internal renovation kit	Bvi. 1956
DC4 gearbox internal renovation	RSM. 9306

WARNING

 To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

■ [\(see 23A. Automatic gearbox , Automatic gearbox: Precautions for the repair\) ,](#)

■ [Vehicle: Precautions for the repair .](#)

STRIPPING

1. STRIPPING PREPARATION OPERATION

 Remove:

■ the automatic gearbox [Automatic gearbox: Removal - Refitting](#) ,

■ the automatic gearbox wiring [Automatic gearbox wiring: Removal - Refitting](#) ,

■ the speed sensors [Speed sensor: Removal - Refitting](#) ,

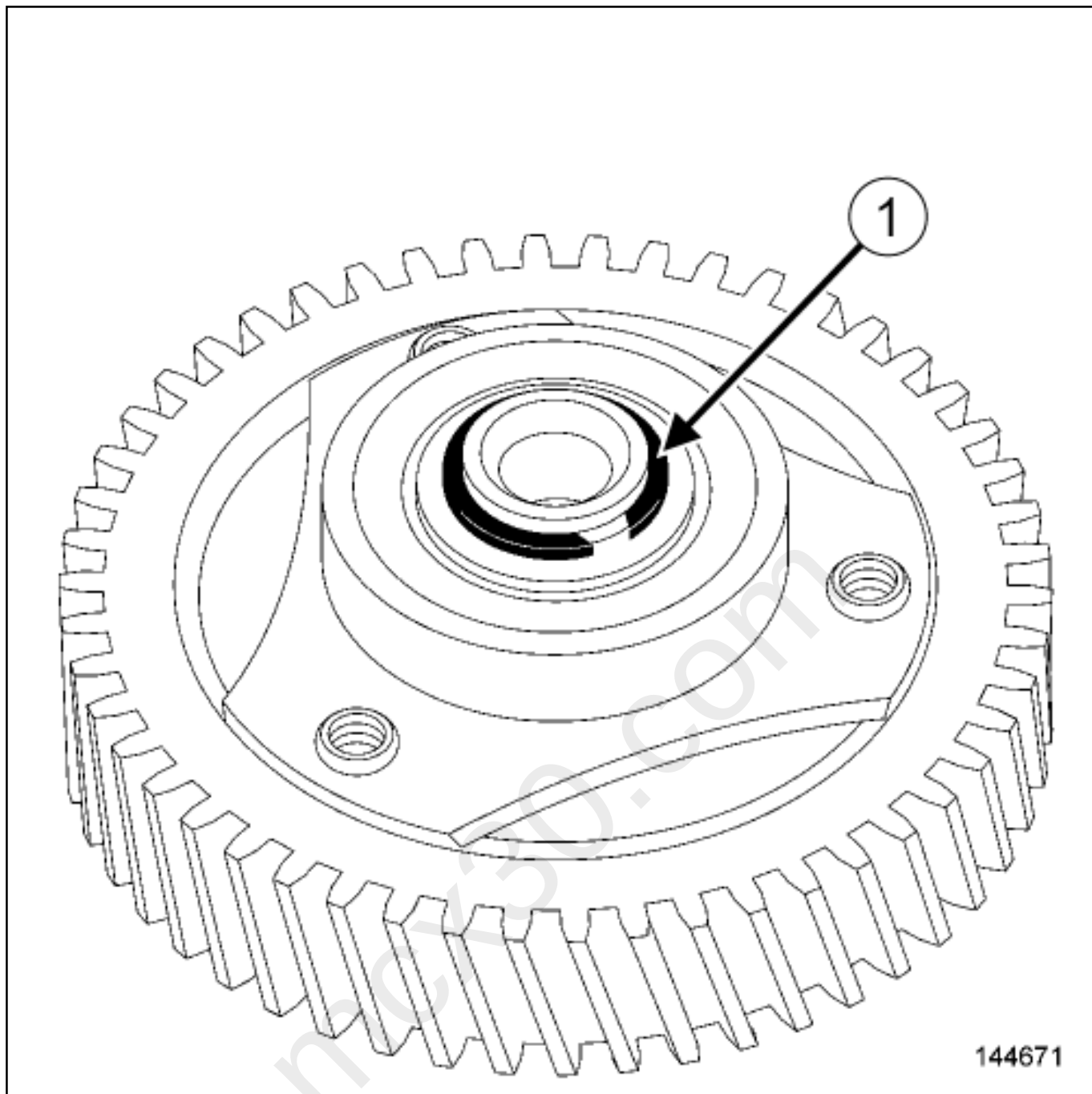
■ the gear engaged sensor [Gear engaged sensor: Removal - Refitting](#) ,

■ the automatic transmission computer [Automatic gearbox computer : Removal - Refitting](#) ,

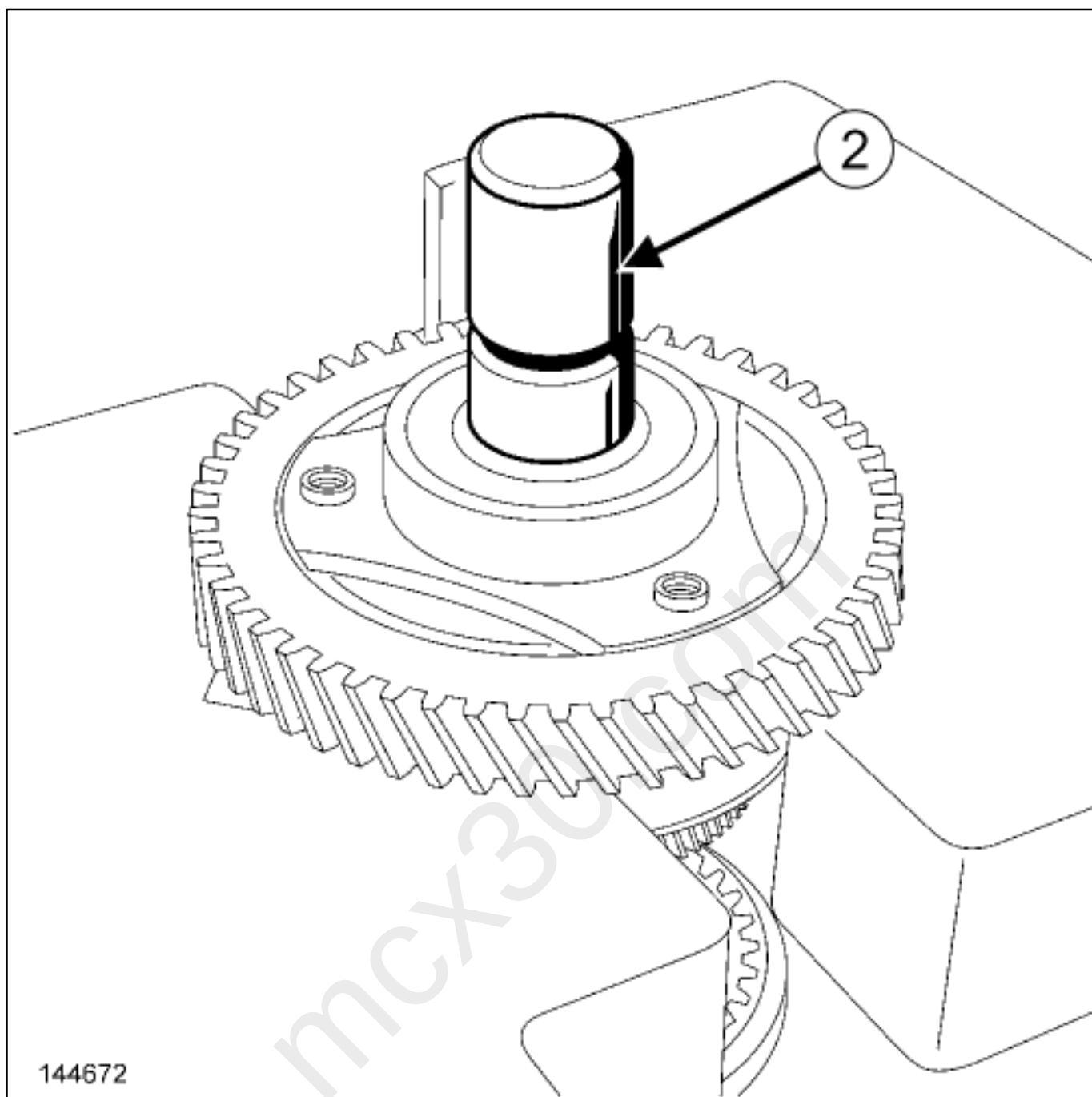
- the clutch pressure plate [Clutch: Removal - Refitting](#) ,
- the clutch actuator motors [Clutch actuator motor: Removal - Refitting](#) ,
- the clutch thrust bearing [Clutch thrust bearing: Removal - Refitting](#) ,
- the clutch forks [Clutch fork: Removal - Refitting](#) ,
- the input shaft lip seal [Input shaft lip seal: Removal - Refitting](#) ,
- the clutch housing [\(see 23A, Automatic gearbox , Clutch housing: Removal - Refitting\)](#) ,
- the input shaft bearing on the clutch housing [\(see 23A, Automatic gearbox , Clutch housing bearing: Removal - Refitting\)](#) ,
- the gearbox shafts [\(see 23A, Automatic gearbox , Gearbox shaft: Removal - Refitting\)](#) .

2. STRIPPING OPERATION FOR PART CONCERNED

1- STRIPPING THE 1ST, 5TH, 6TH AND 2ND GEARS FROM THE SHAFT:



Remove the clip(1) using snap ring pliers.

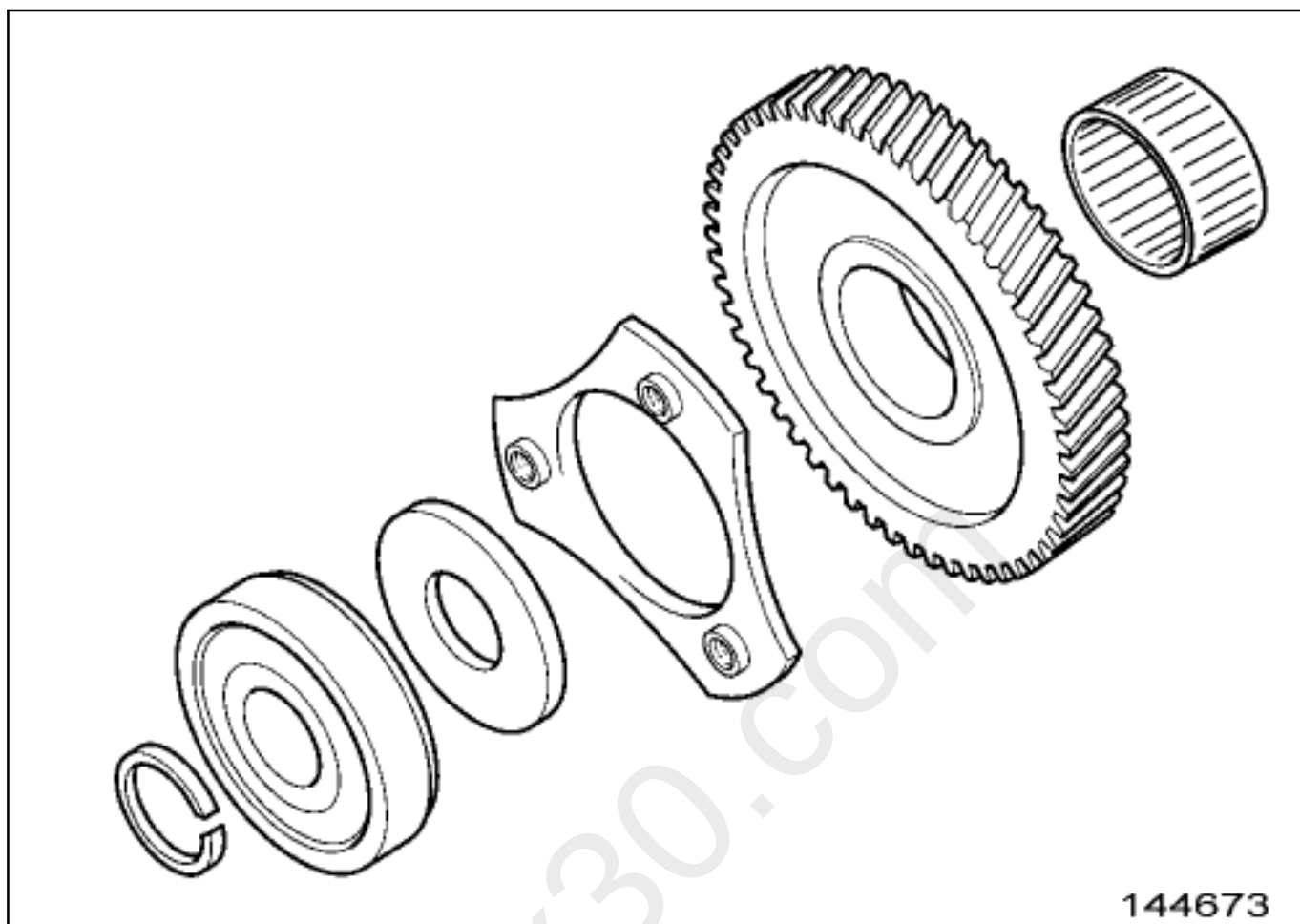


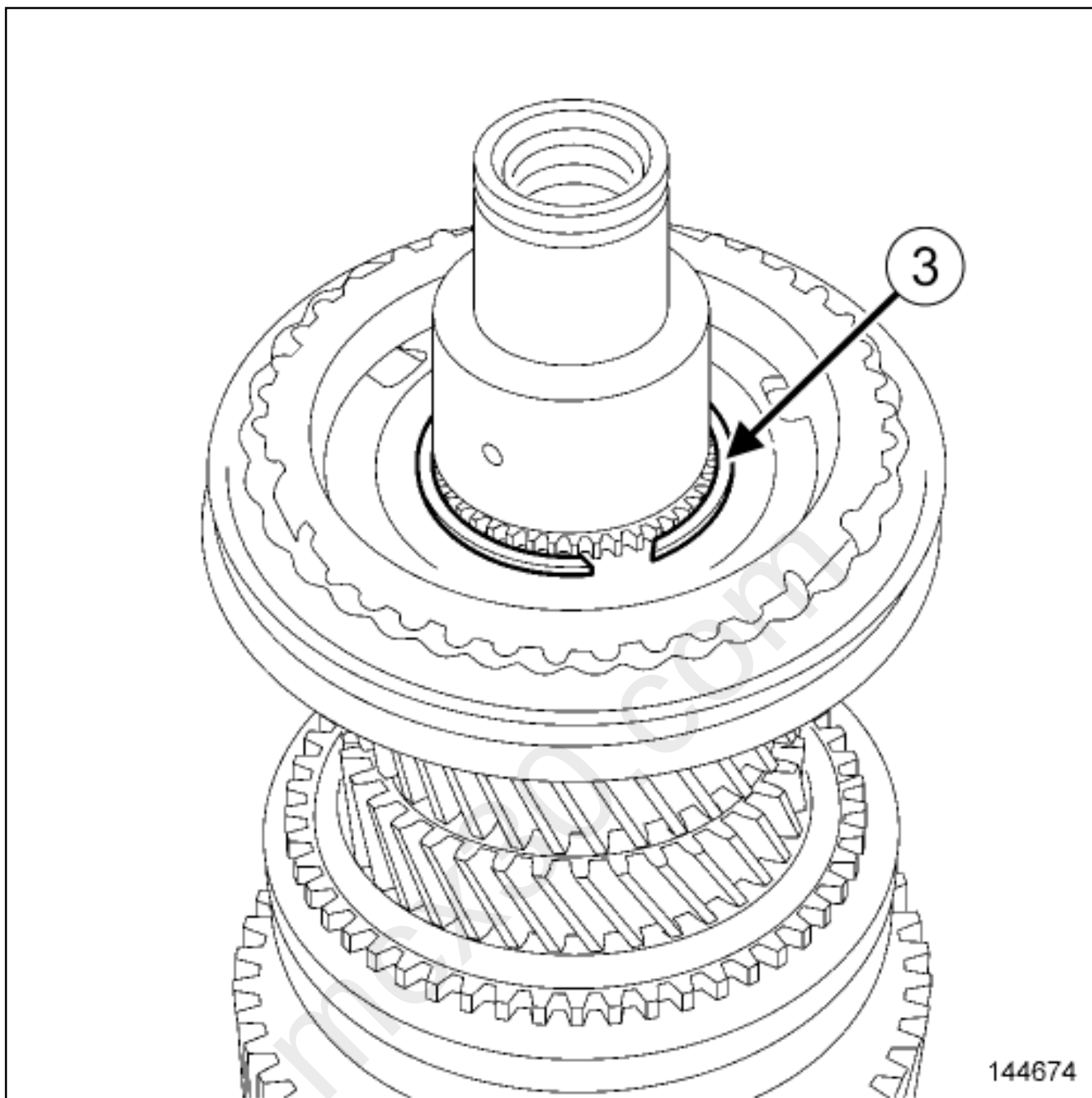
Fit the gearbox shaft on a press using the 1st gear pinion as support.

Press the gearbox shaft pin using the tool DC4 gearbox internal renovation kit (Bvi. 1956) E (2).

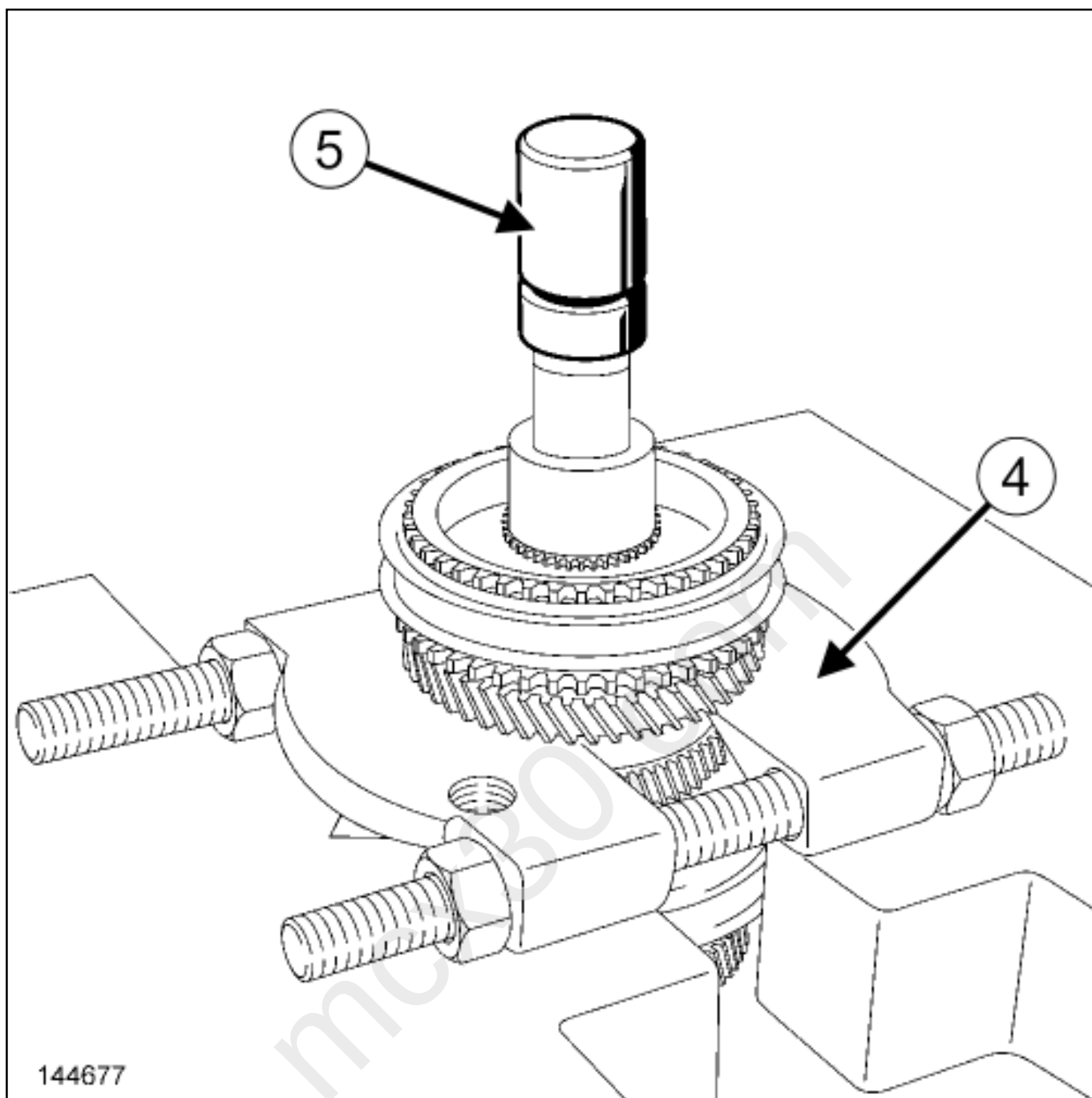
Remove the 1st gear pinion.

STACK AFTER REMOVAL OF THE 1ST GEAR PINION





Remove the clip(3) using snap ring pliers.

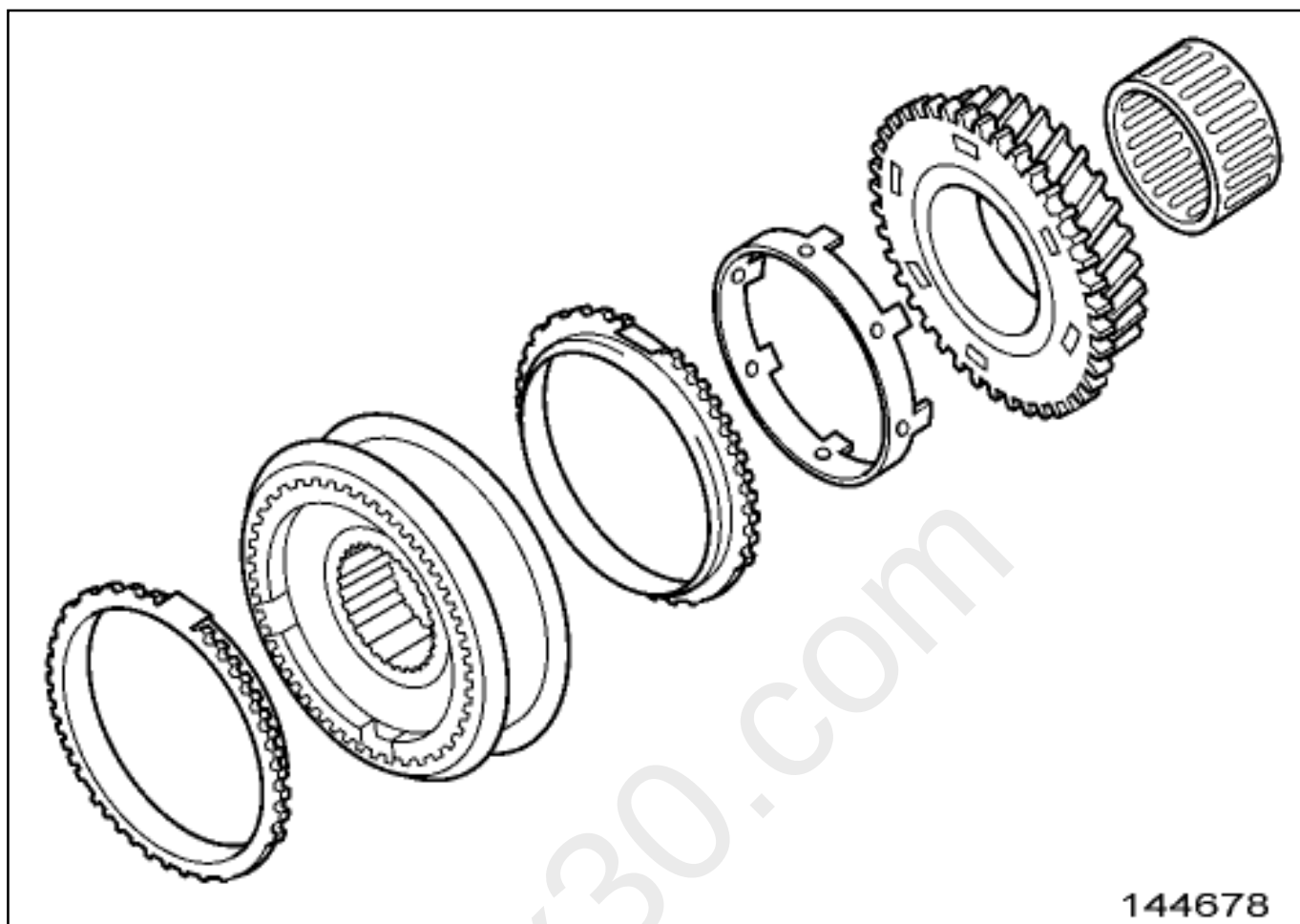


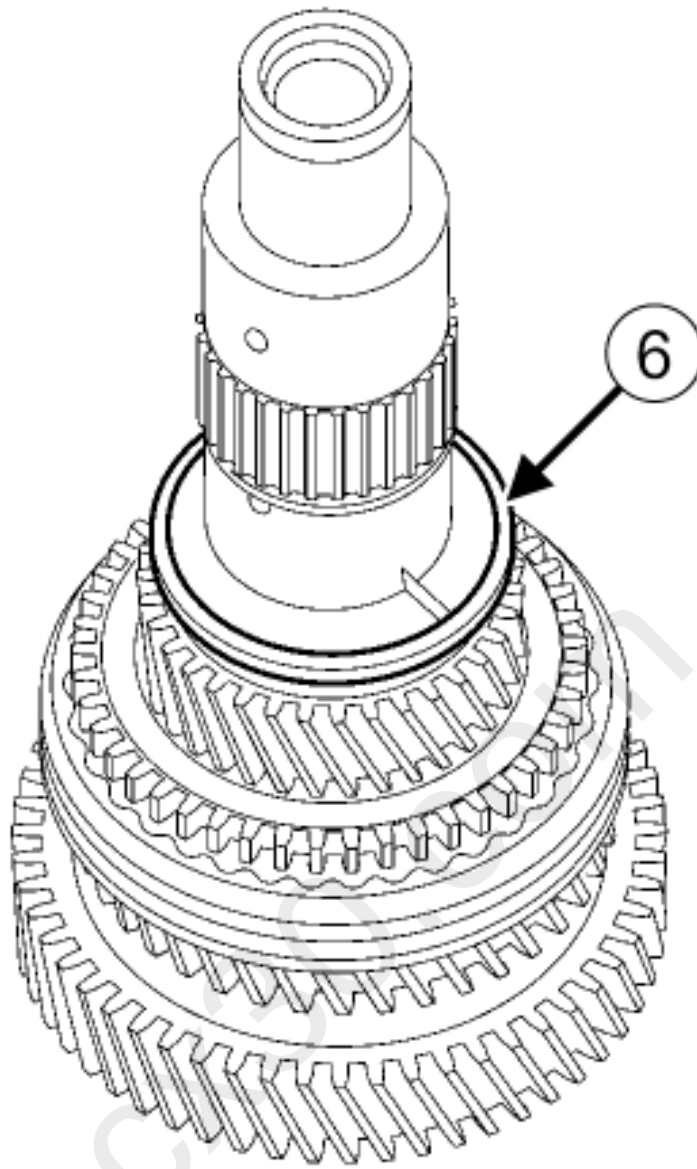
Fit a separator(4) under the 5th gear pinion and above the locking washer of the 6th gear pinion.

Press the gearbox shaft pin using the toolDC4 gearbox internal renovation kit(Bvi. 1956) E (5) .

Remove the 5th gear pinion.

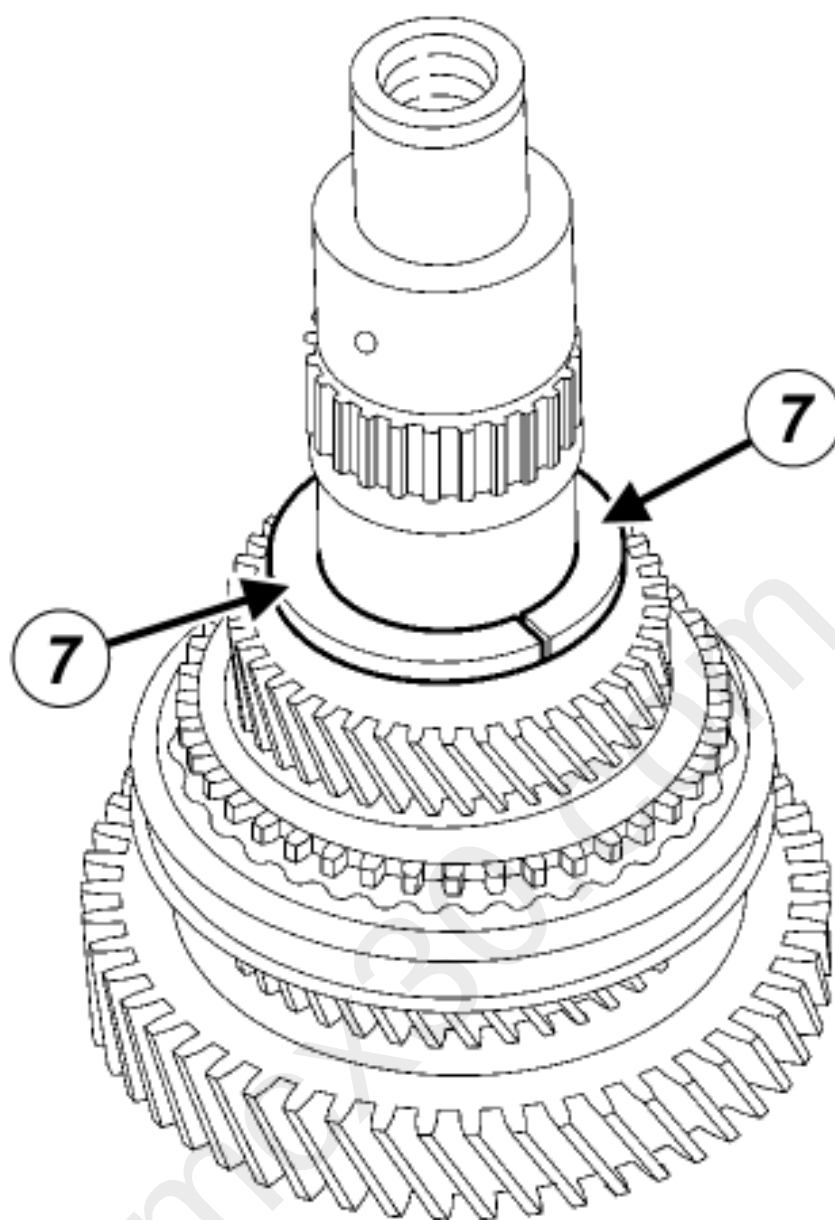
STACK AFTER REMOVAL OF THE 5TH GEAR PINION





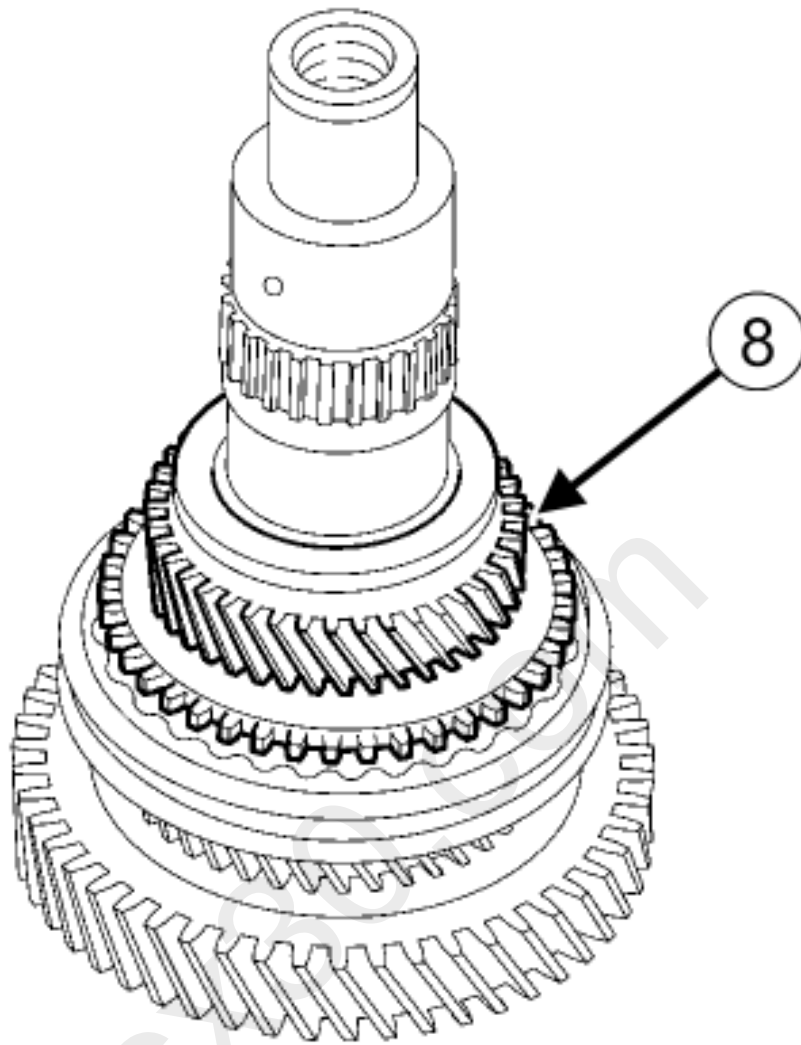
144679

Remove the locking washer(6) from the 6th gear pinion.



144681

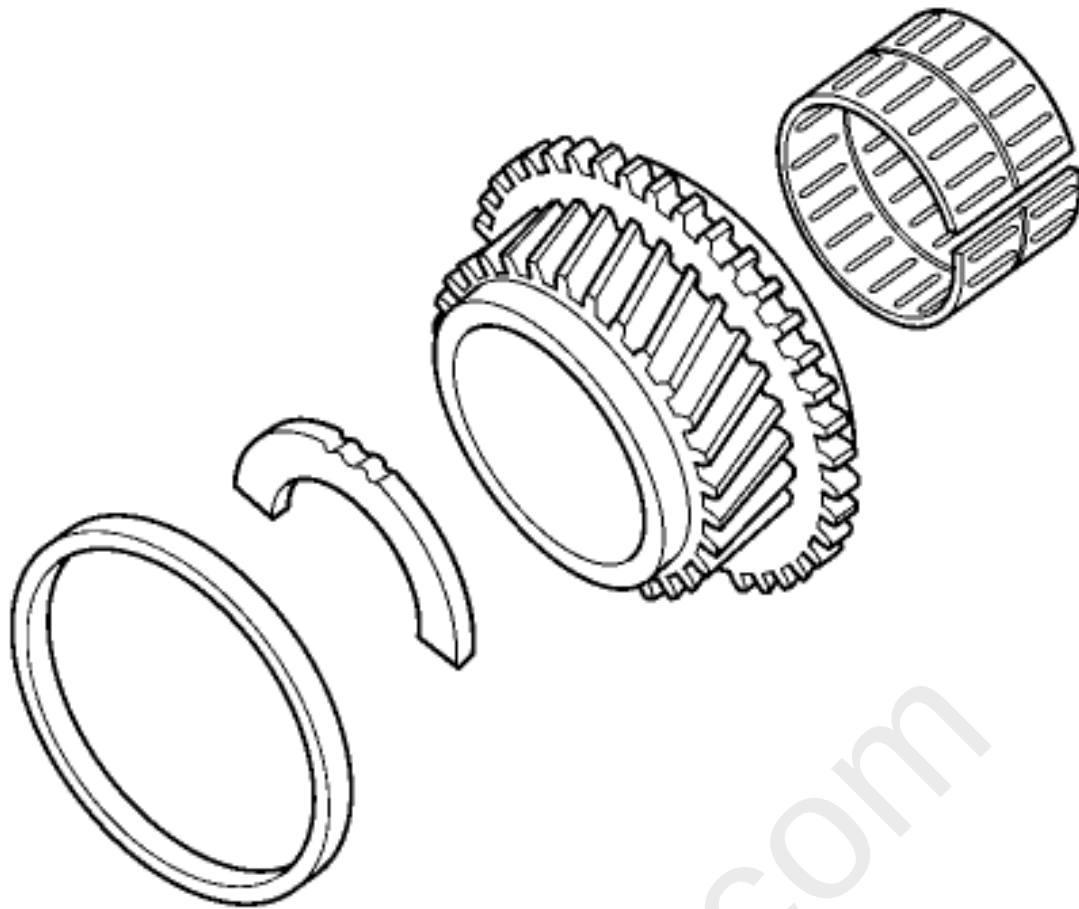
Remove the half-shells(7) from the 6th gear pinion.



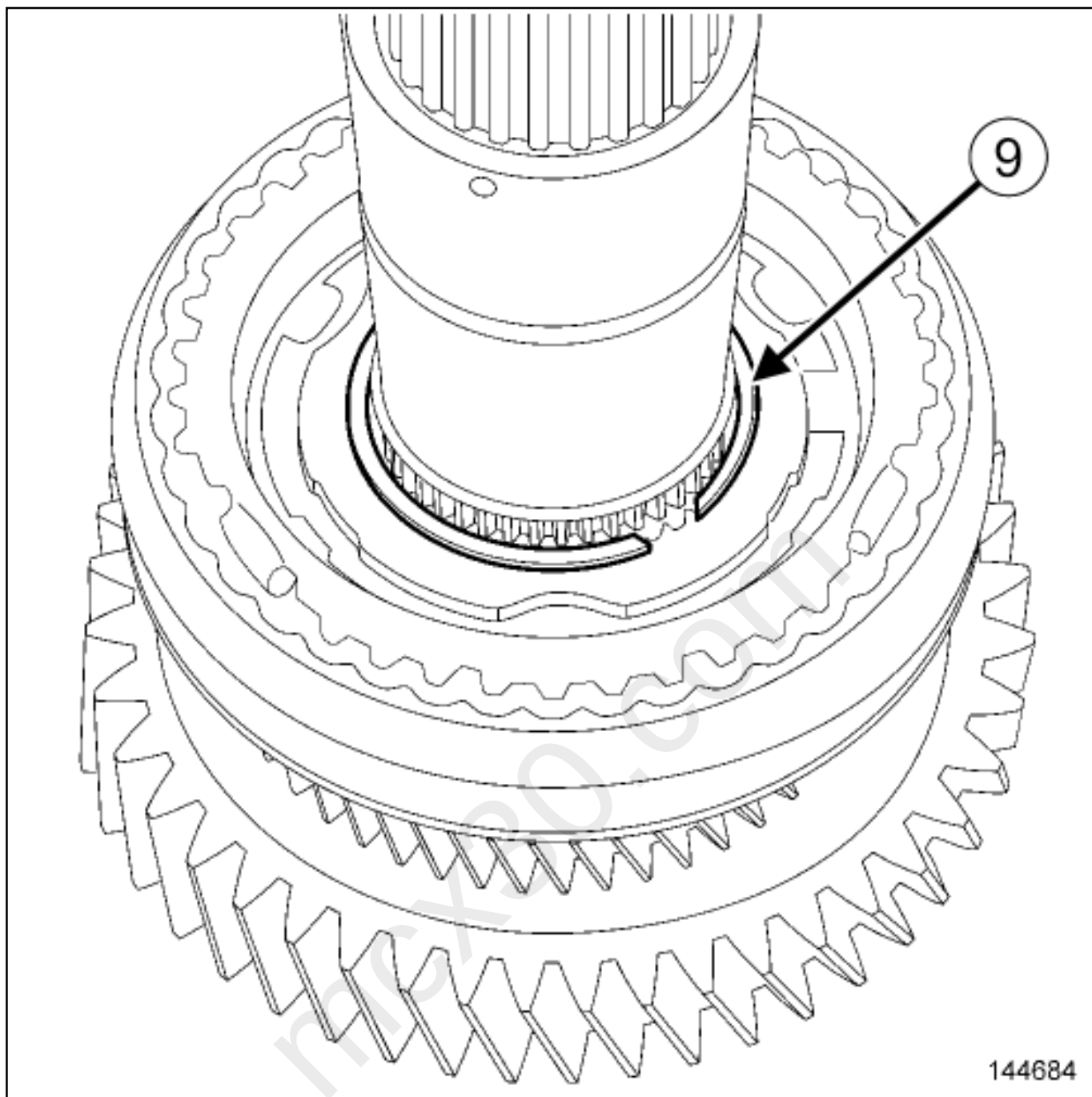
144682

Remove the 6th gear pinion(8) .

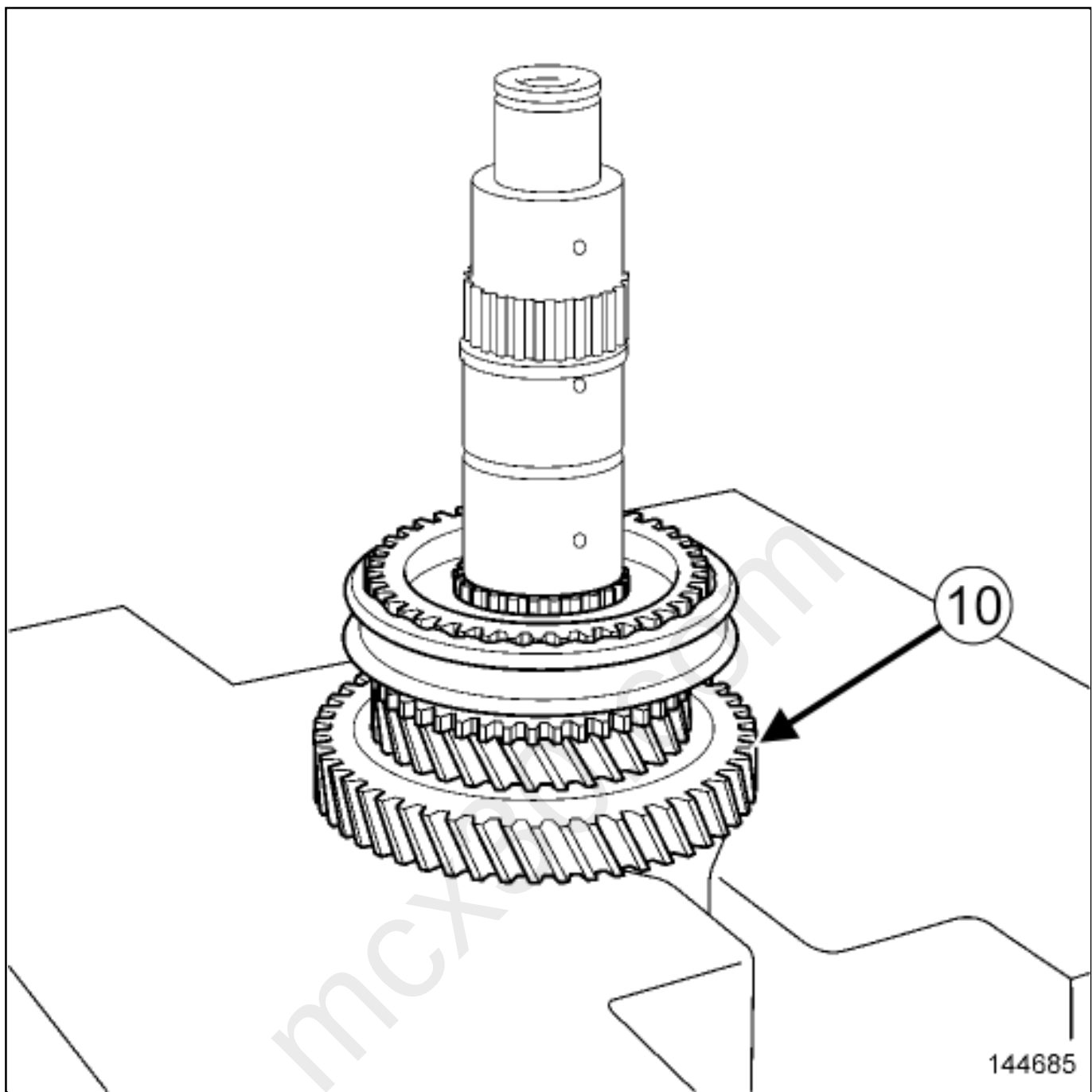
STACK AFTER REMOVAL OF THE 6THGEAR PINION



144683



Remove the clip(9) using snap ring pliers.

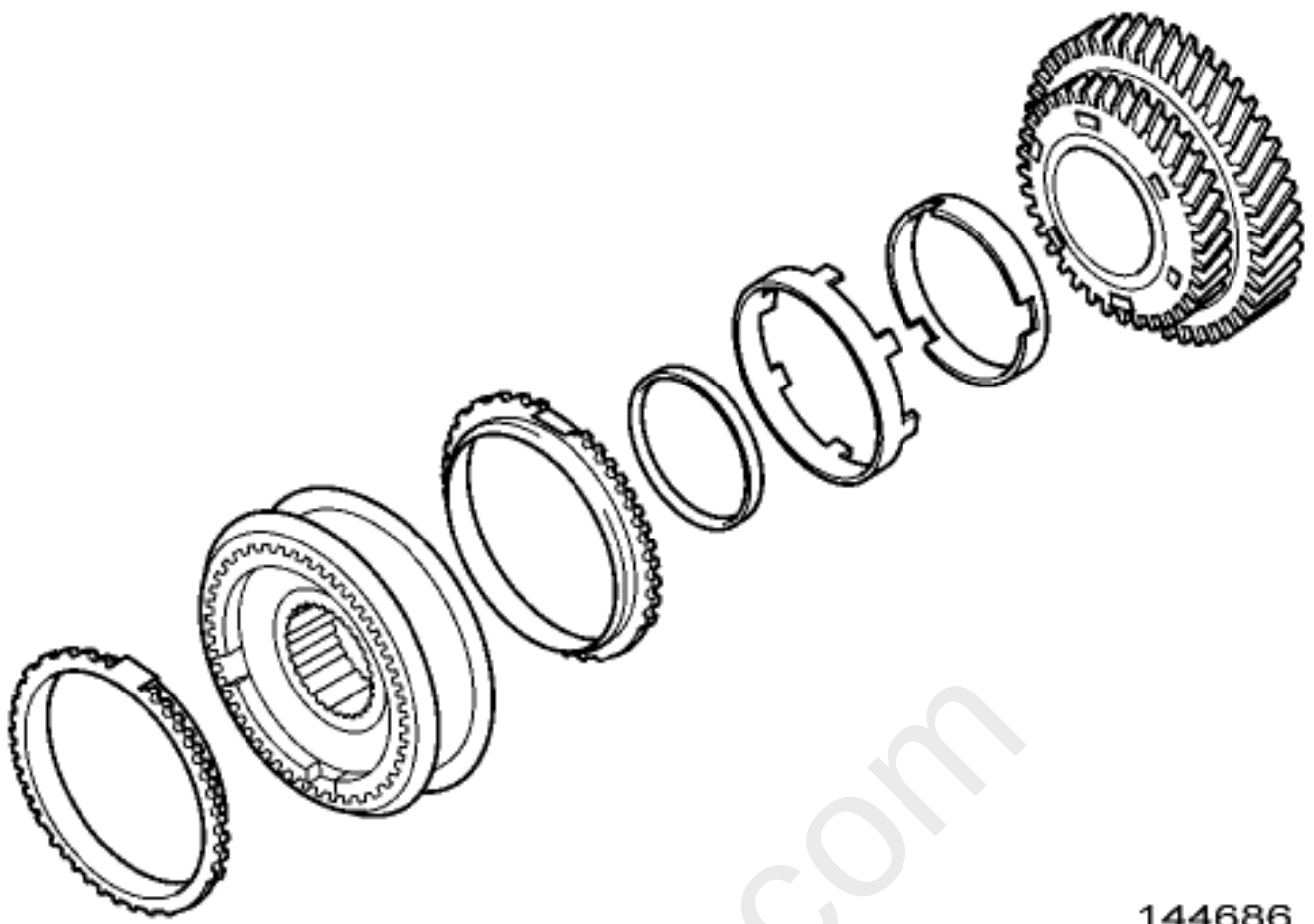


Fit the gearbox shaft on a press using the 2nd gear pinion for support(10) .

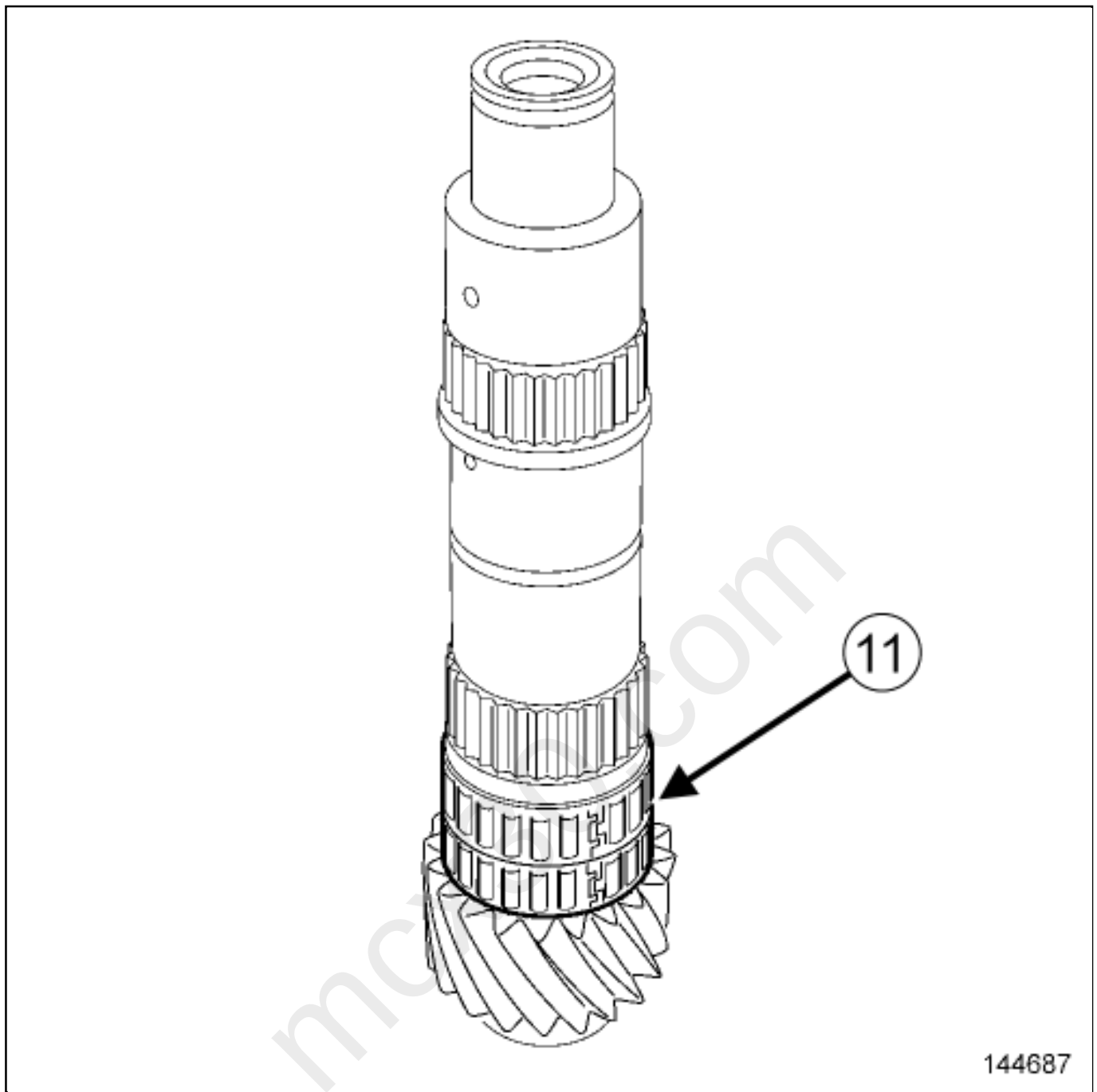
Press the gearbox shaft pin.

Remove the 2nd gear pinion.

STACK AFTER REMOVAL OF THE 2ND GEAR PINION



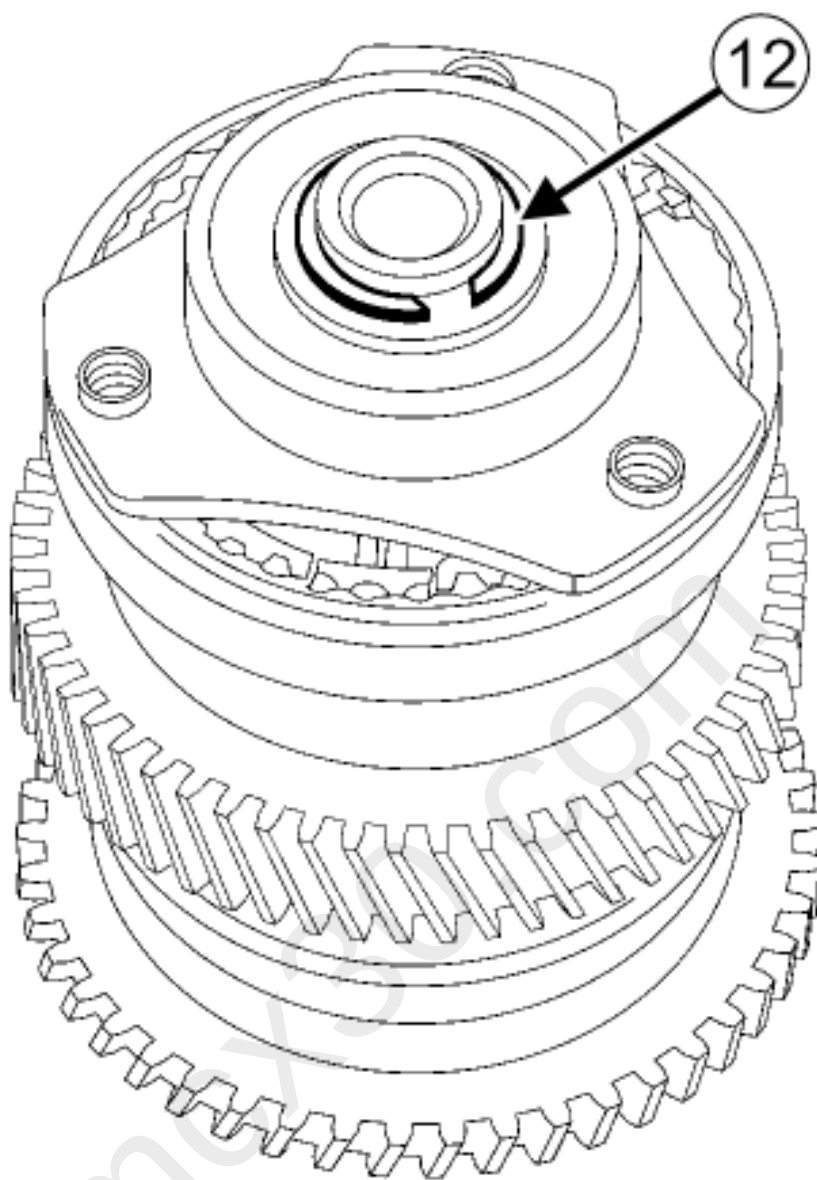
144686



144687

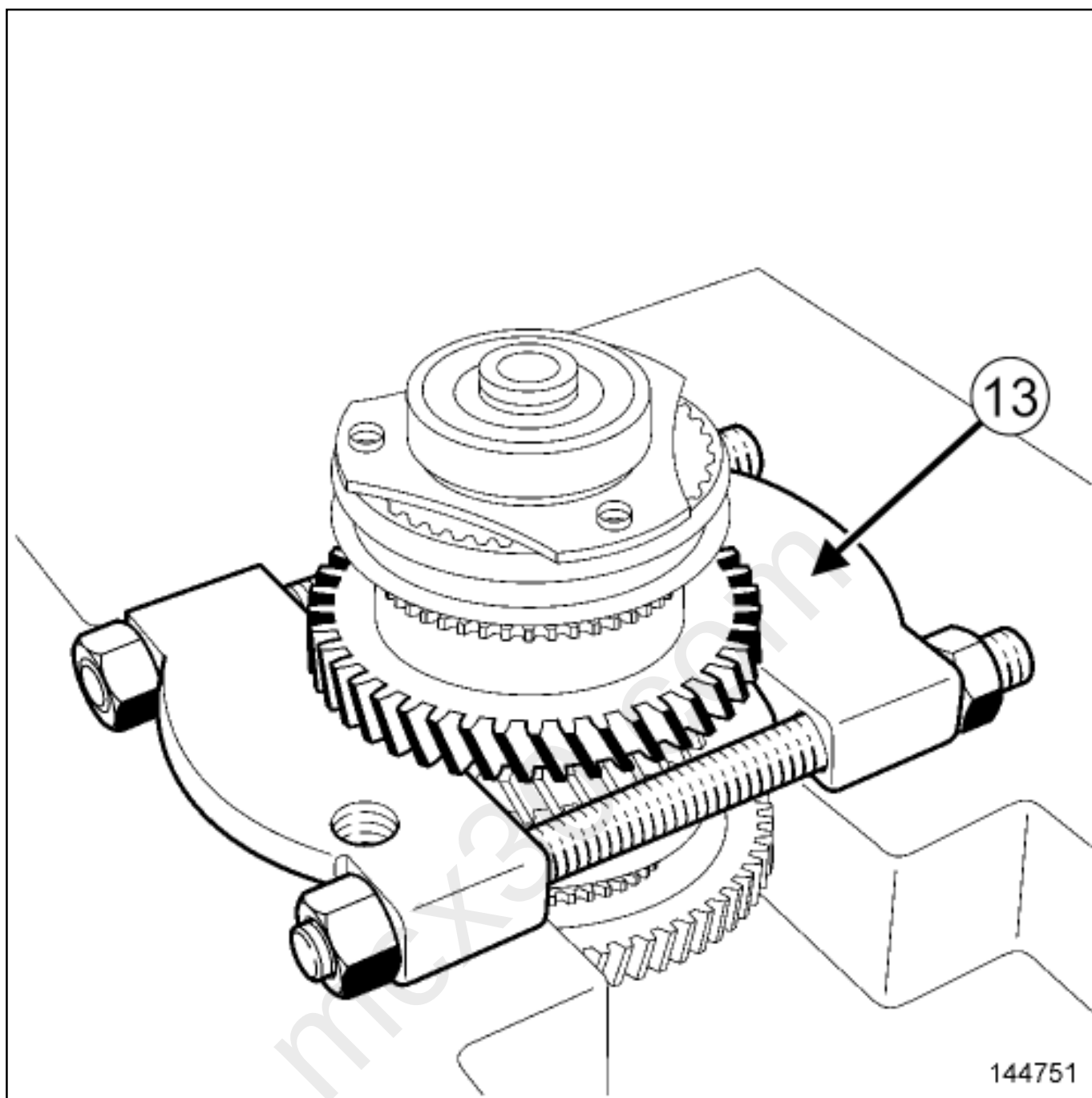
Remove the 2nd gear pinion bearing from the gearbox shaft.

2- STRIPPING THE 3RDGEAR, 4THGEAR AND REVERSE GEAR FROM THE SHAFT:

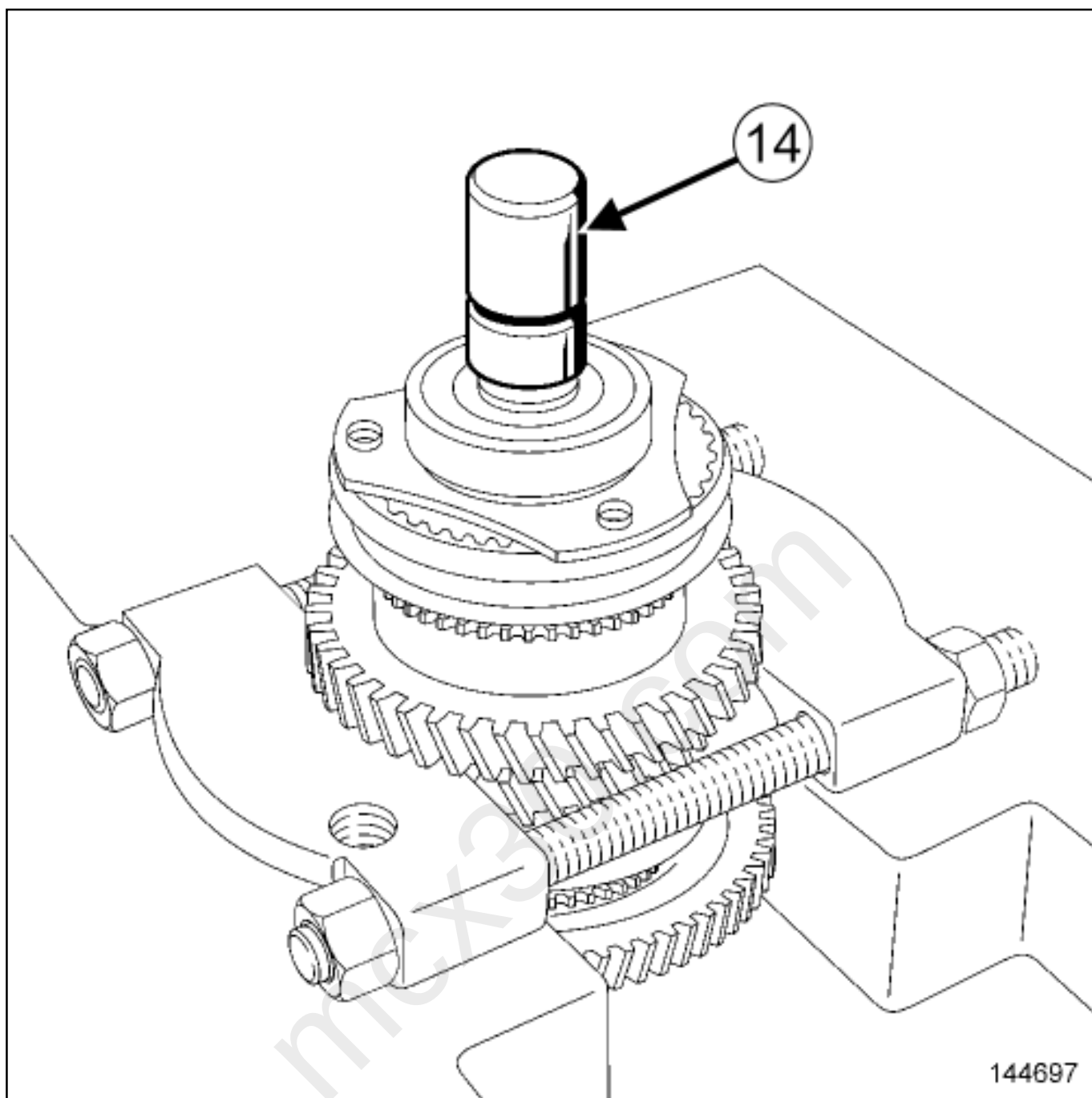


144696

Remove the clip(12) using snap ring pliers.



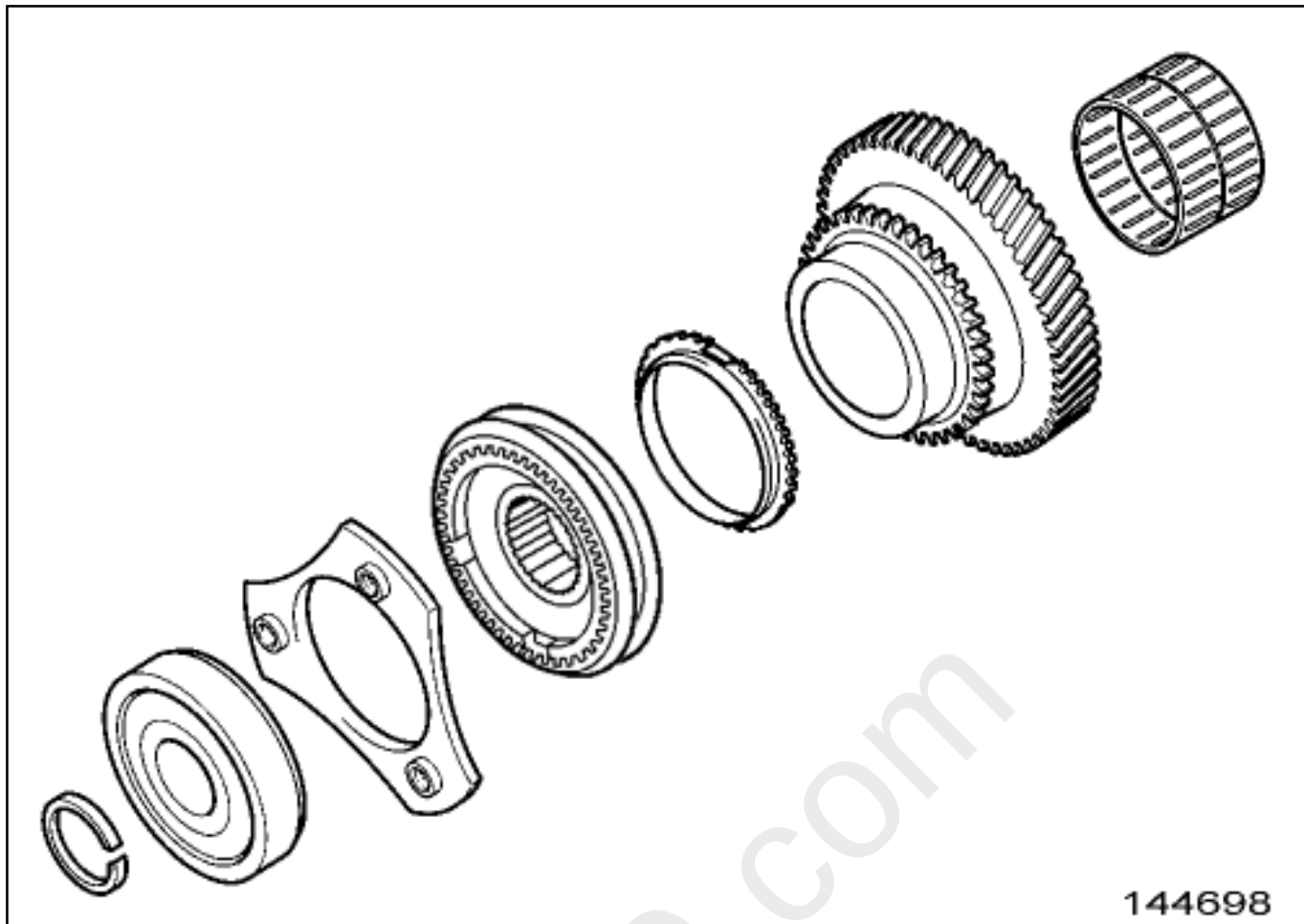
Fit a separator(13) under the 3rd gear pinion.

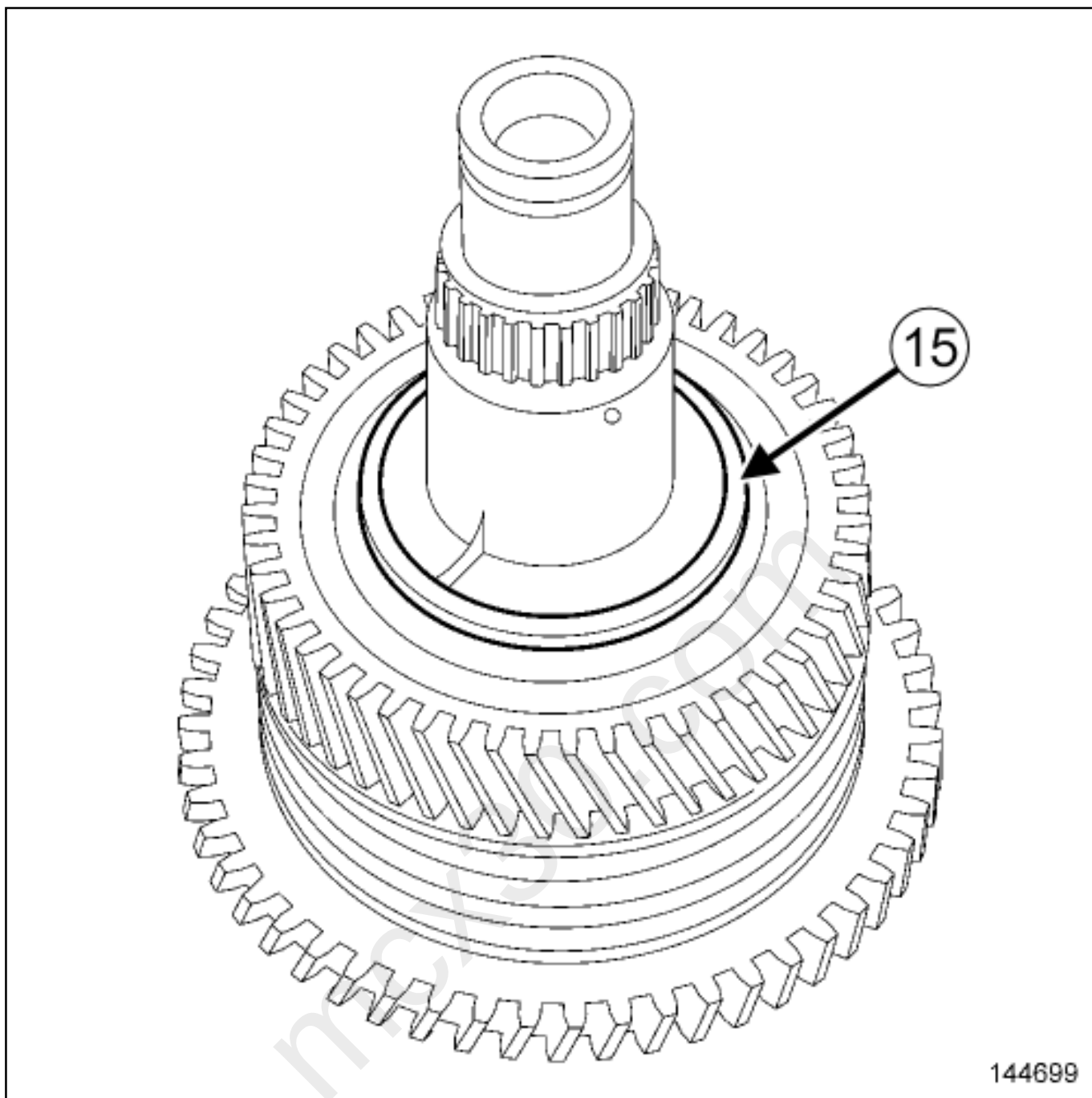


Press the gearbox shaft pin using the tool DC4 gearbox internal renovation kit (Bvi. 1956) E (14) .

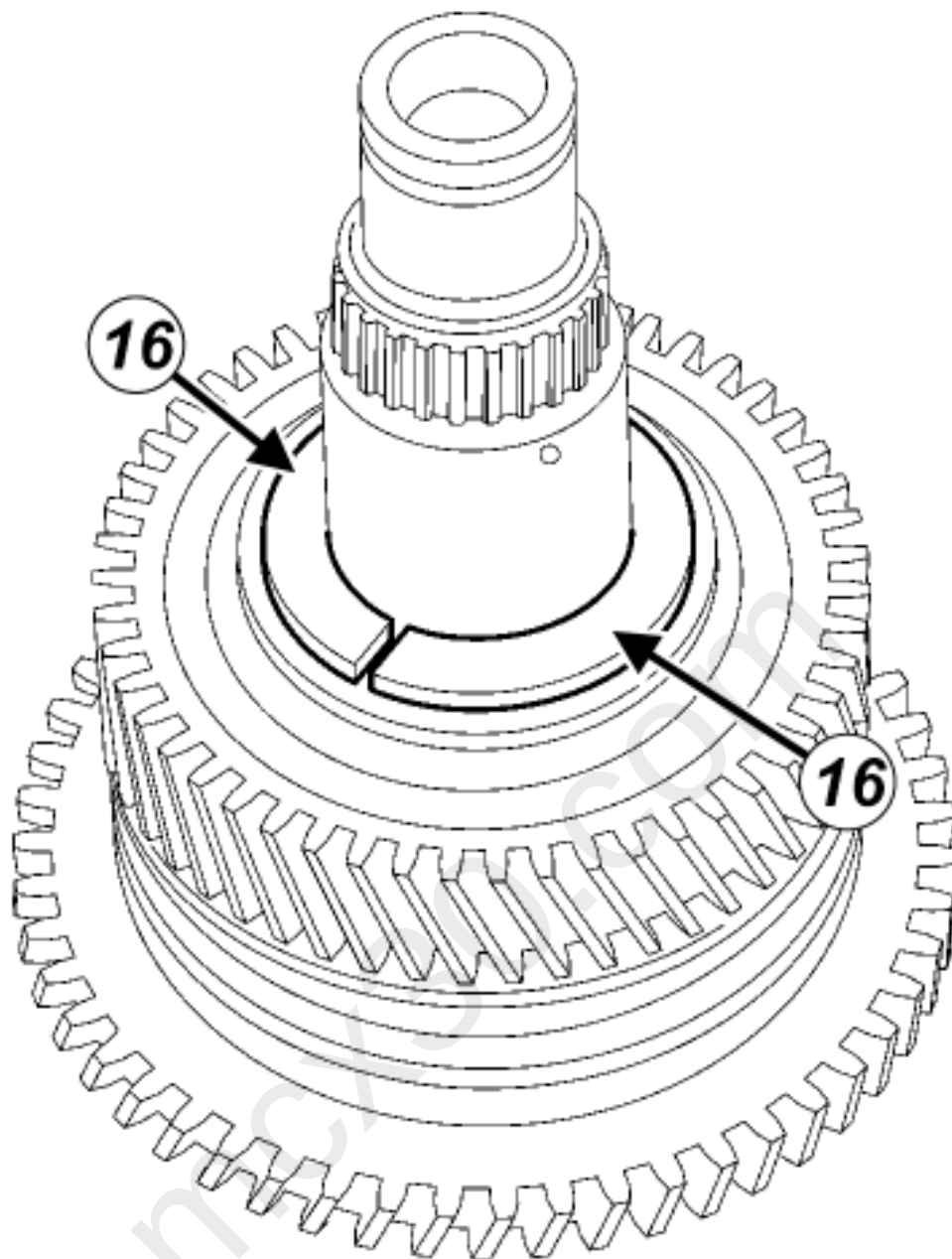
Remove the 3rd gear pinion.

STACK AFTER REMOVING THE 3RD GEAR PINION





Remove the locking washer(15) from the 4th gear pinion.



144700

Remove:

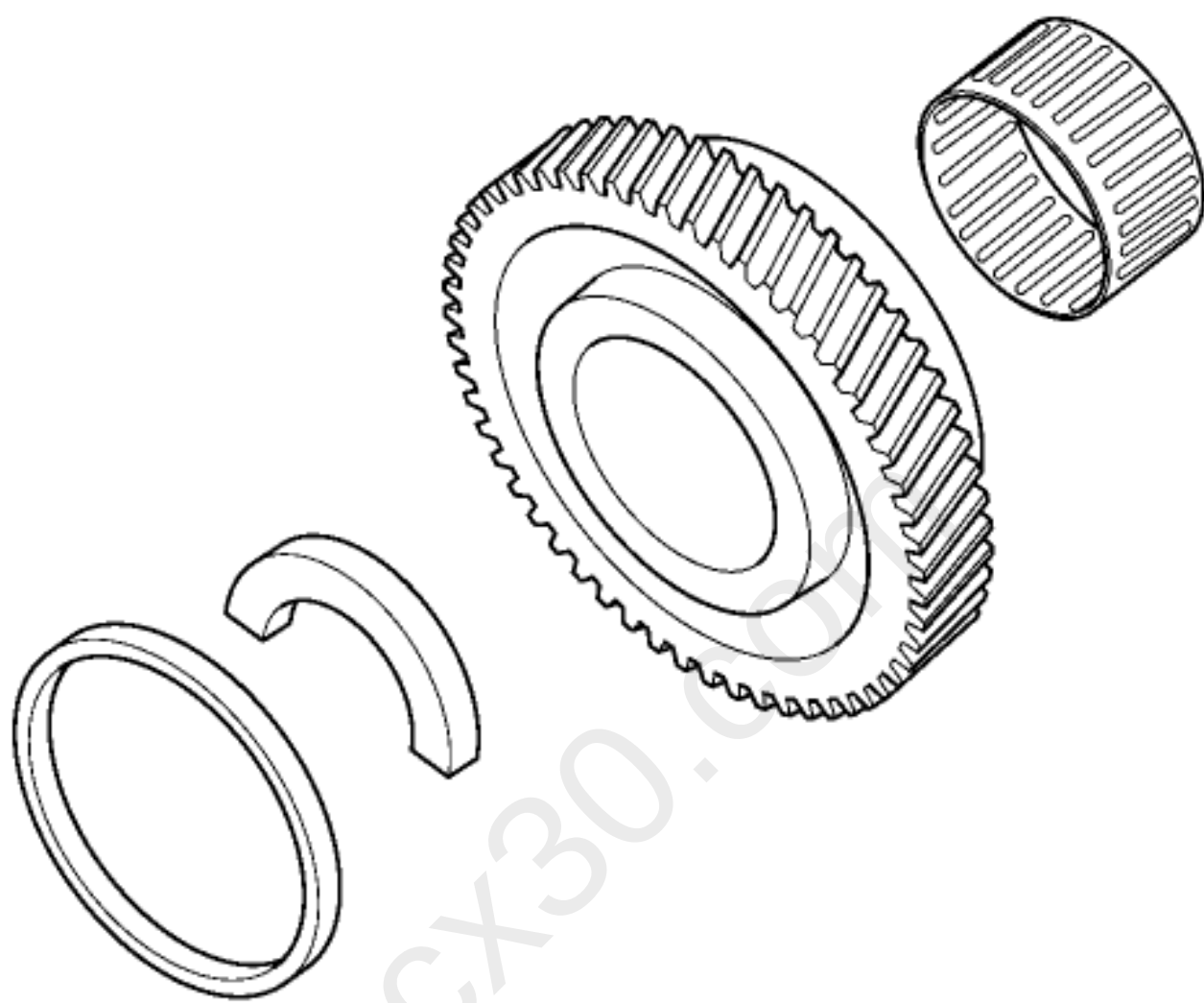


the half-shells(16) of the 4thgear pinion,

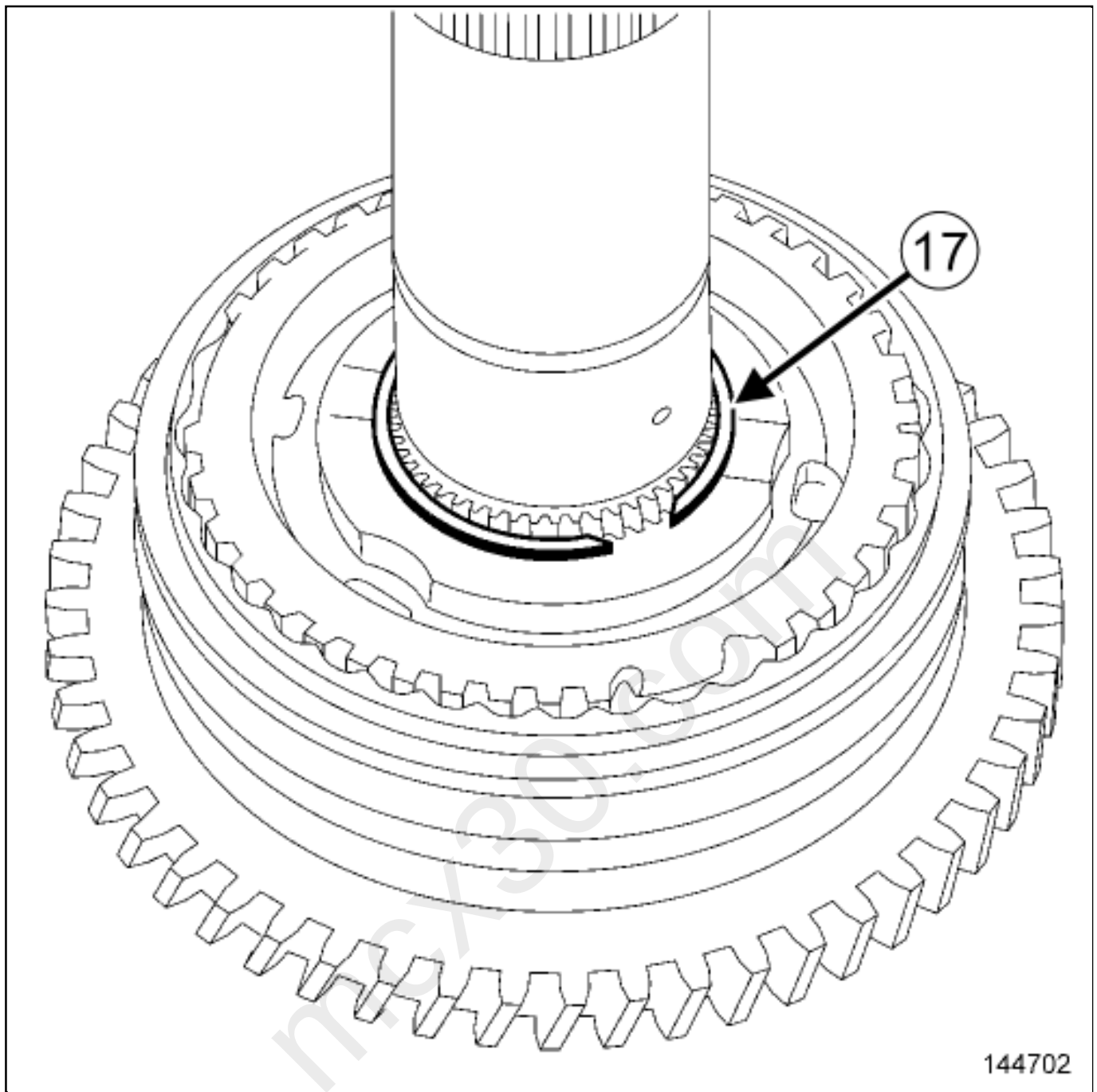


the 4thgear pinion.

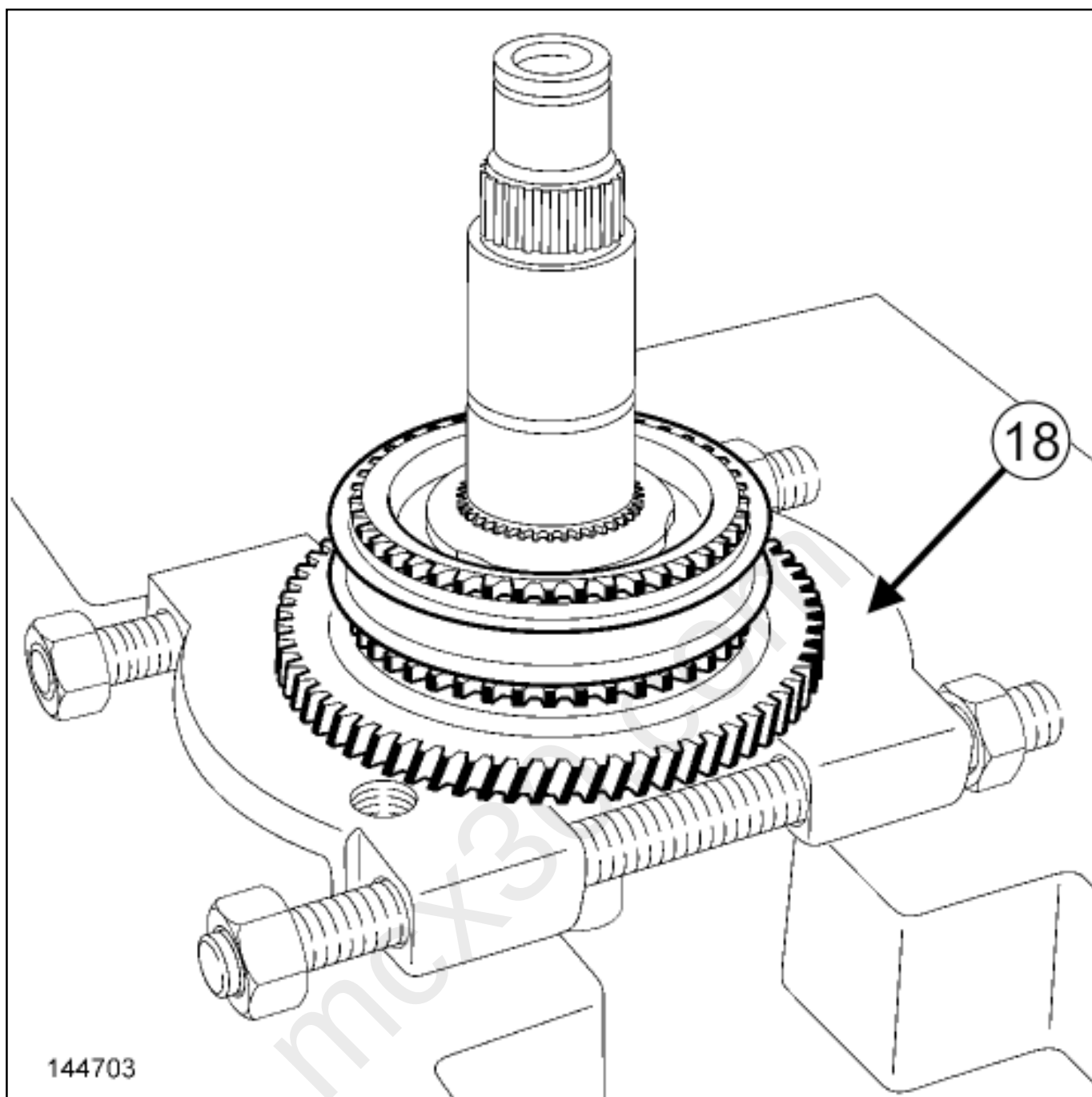
STACK AFTER REMOVAL OF THE 4THGEAR PINION



144701



Remove the clip(17) using snap ring pliers.

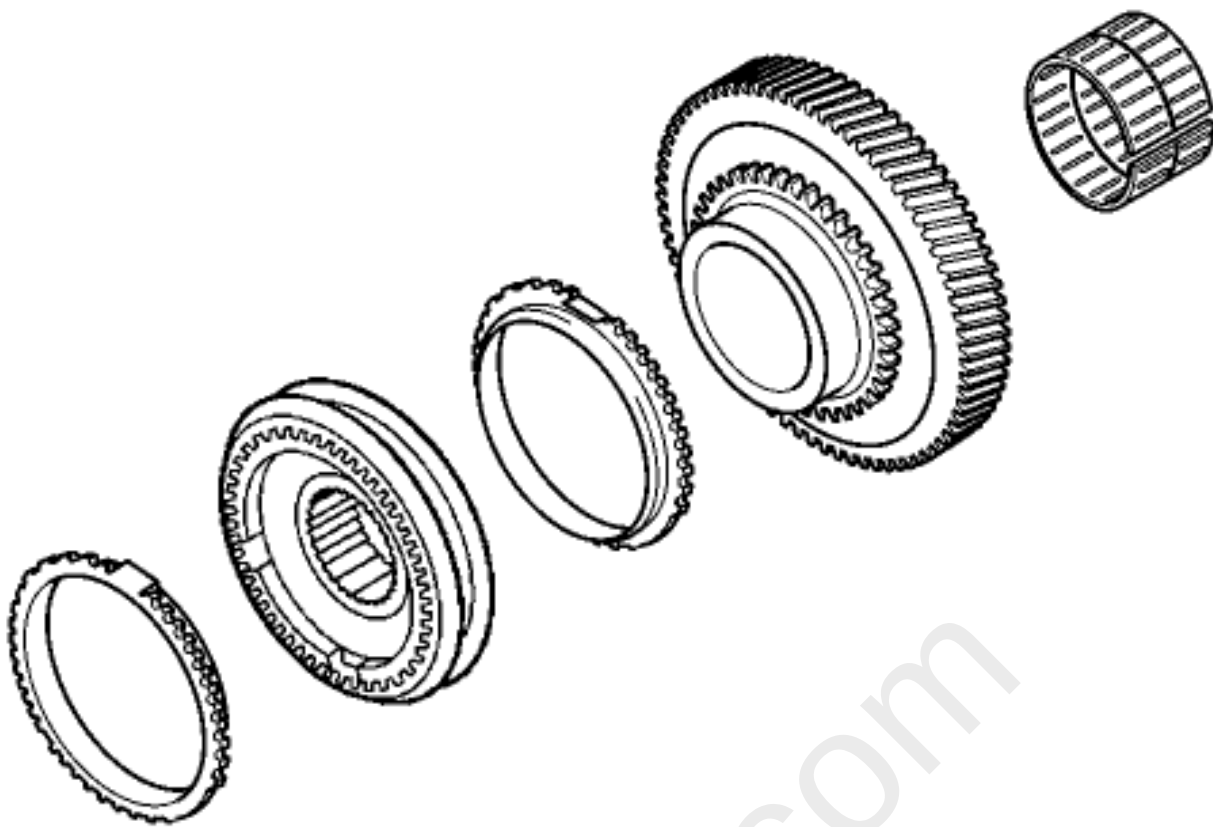


Fit a separator(18) under the reverse gear pinion.

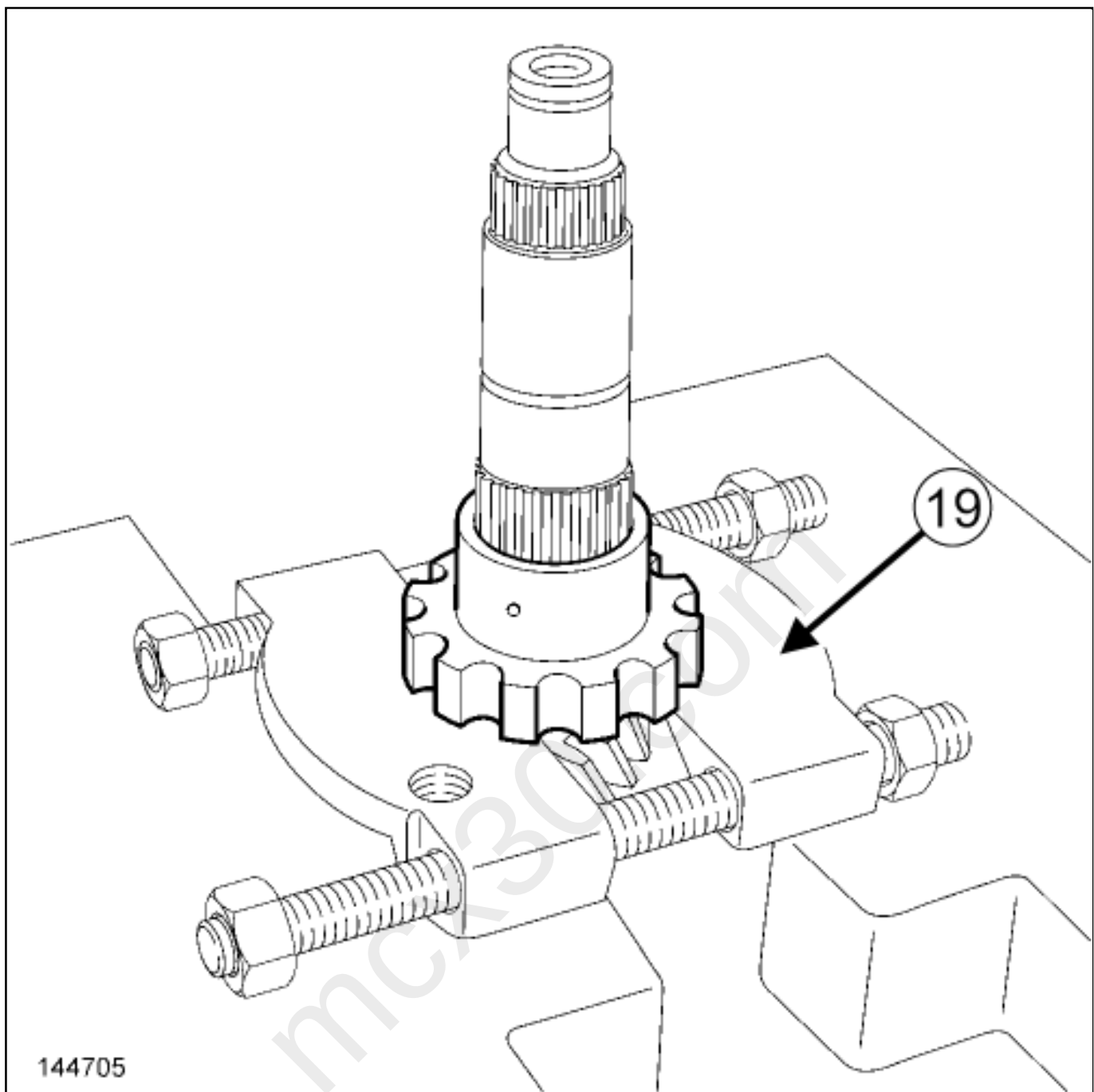
Press the gearbox shaft pin.

Remove the reverse gear pinion.

STACK AFTER REMOVING THE REVERSE GEAR PINION



144704

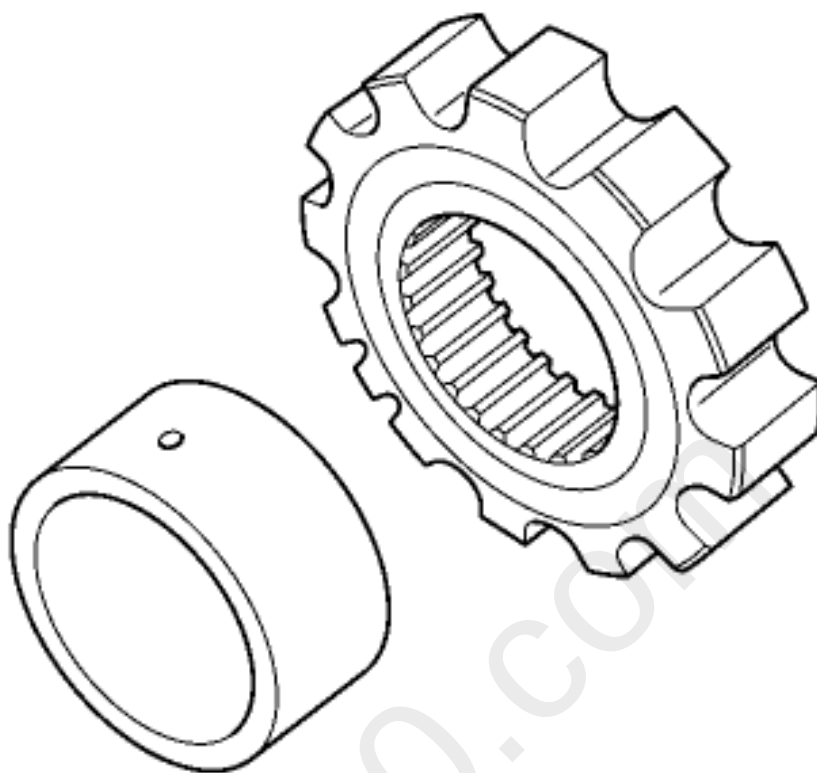


Fit a separator(19) under the parking gear wheel.

Press the gearbox shaft pin.

Remove the parking gear wheel.

STACK AFTER REMOVING THE PARKING GEAR WHEEL



144706

REBUILDING

1. REBUILDING PREPARATION OPERATION



Clean all the removed parts [Vehicle: Parts and consumables for the repair](#) (04B, Consumables - Products).



Always replace:



the bearings,



the stop clips,



the damaged parts.

2. REBUILDING OPERATION FOR PART CONCERNED



CAUTION

Failure to adhere to the following procedure may damage the gearbox.

Note:



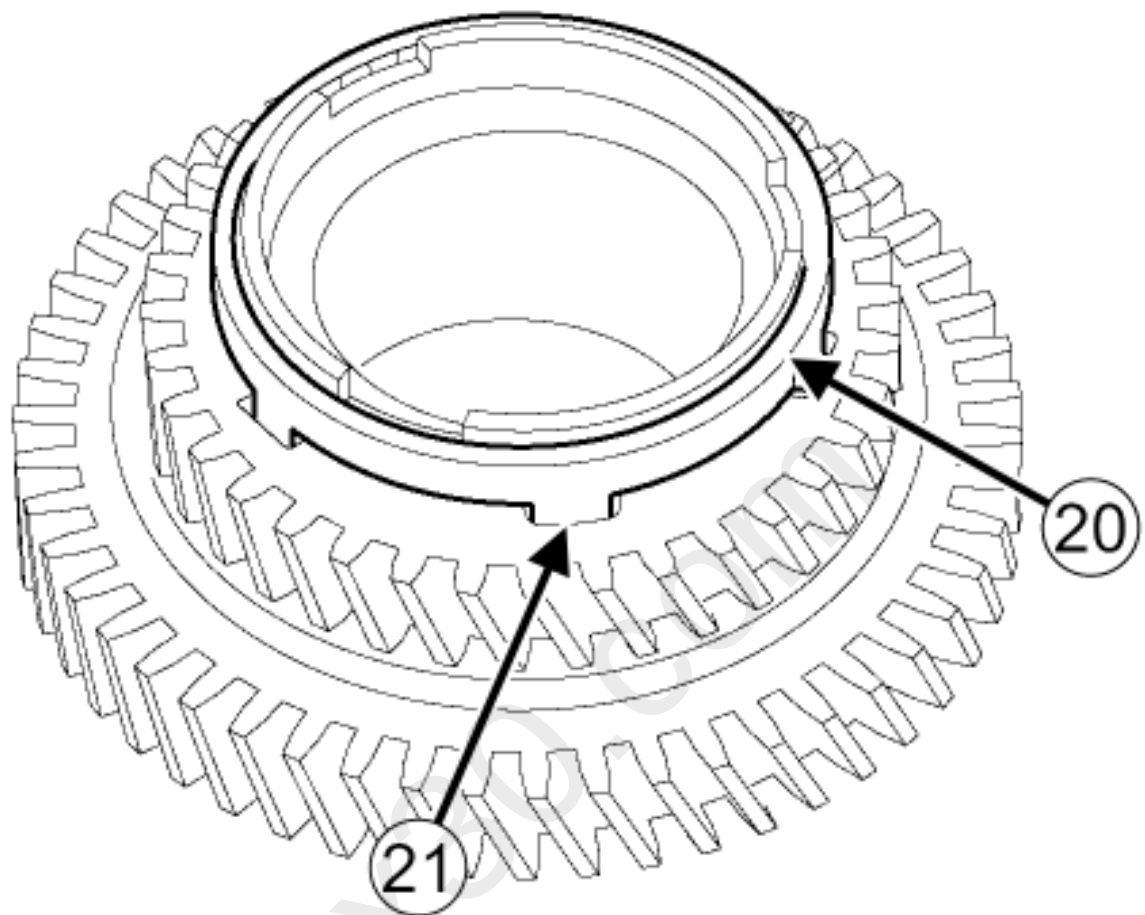
Particular attention must be paid when refitting shafts.

Stacking and pressing may require the presence of two operators in order to hold the part and press it at the same time so that it is inserted in the shaft in the optimum manner.

1- REBUILDING 1ST, 5TH, 6TH AND 2ND GEARS ON THE SHAFT:



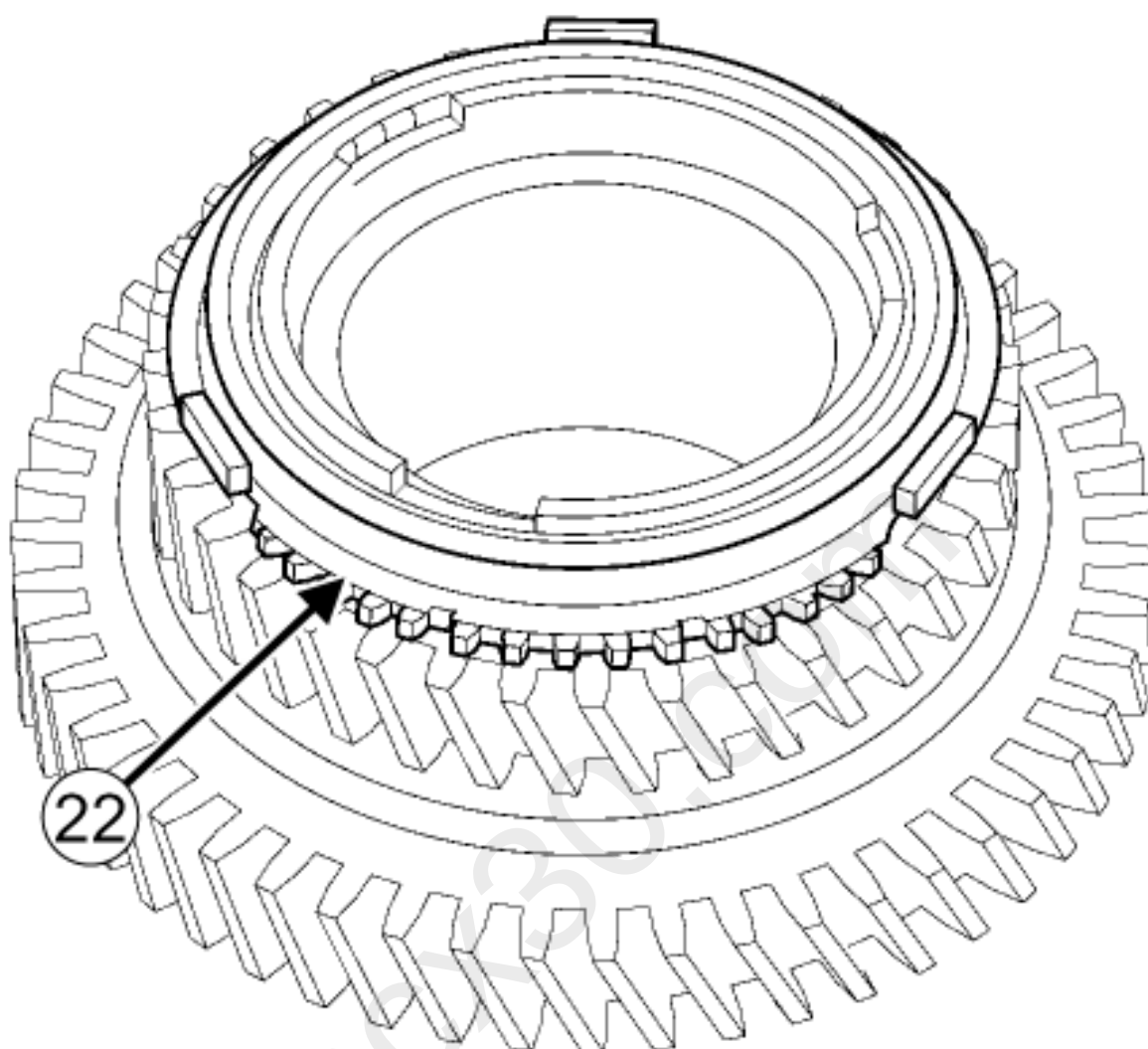
Refit a new 2nd gear pinion bearing on the gearbox shaft.



144688

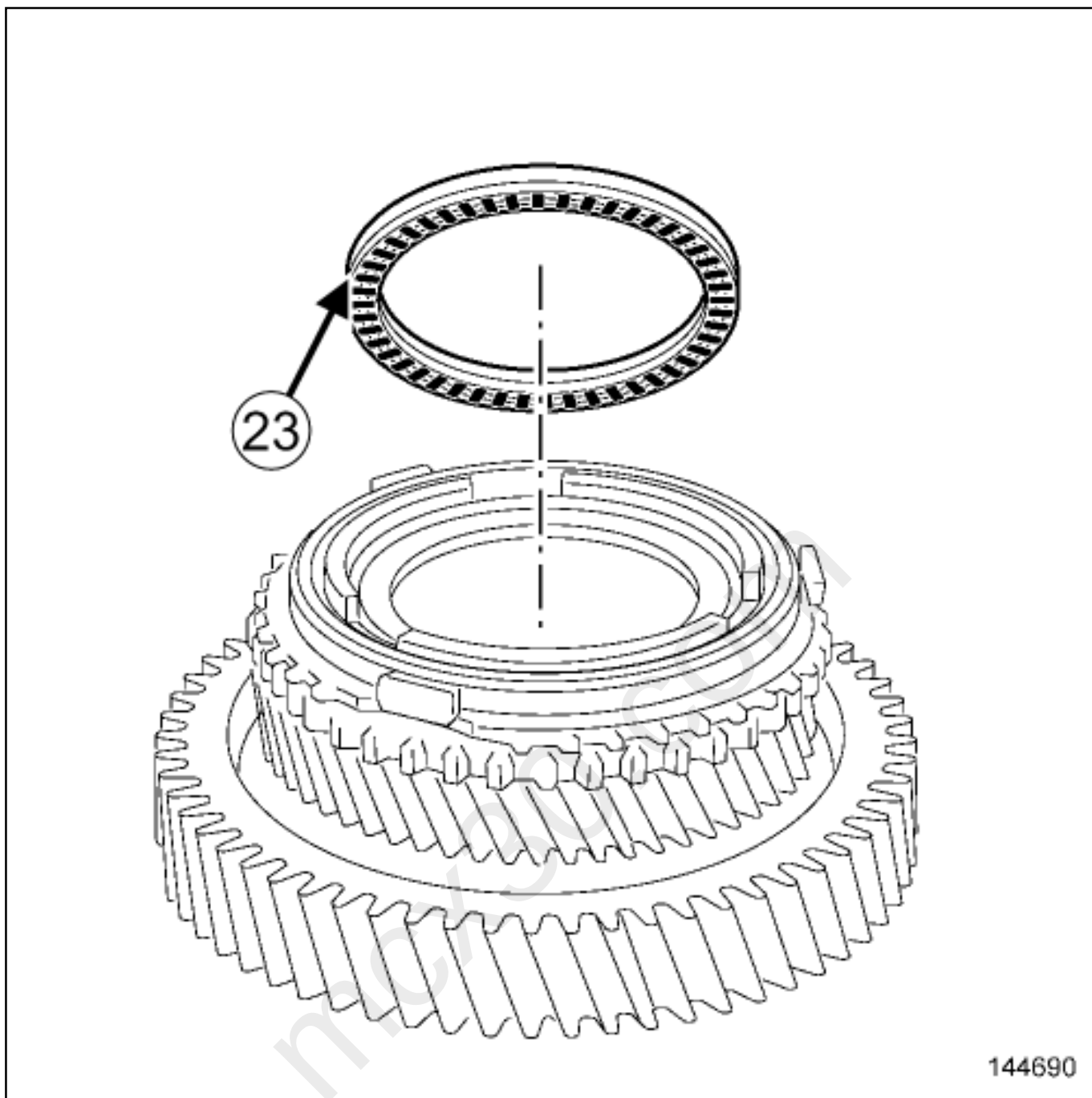


Refit the synchroniser rings(20) on the 2nd gear pinion and ensure that they are properly inserted in the lugs(21) .



144689

Refit the synchroniser ring(22) on the 2nd gear pinion.

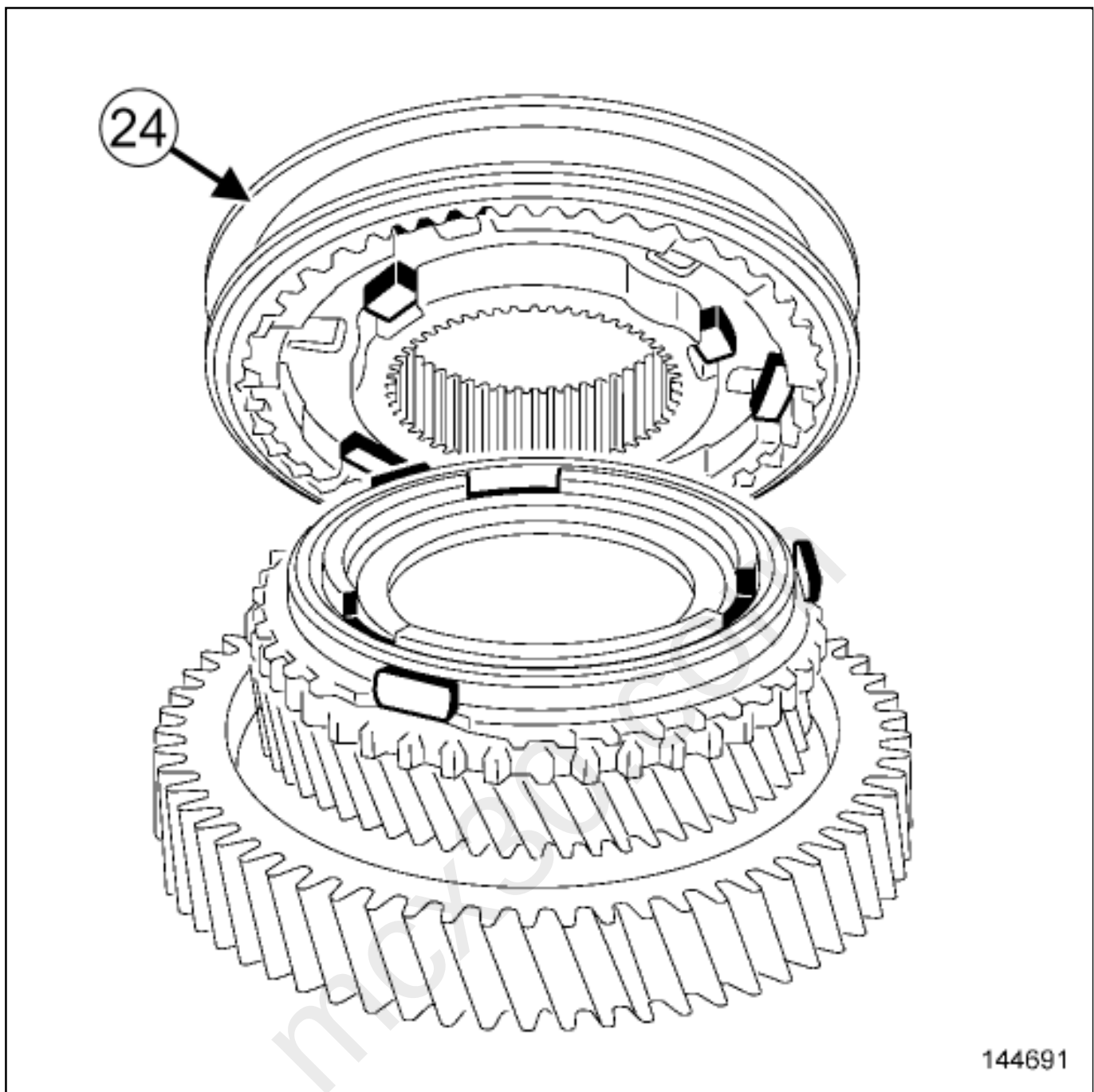


Refit the needle bearing(23) .



Note:

The needles must be on the mating face of the 2nd gear pinion.



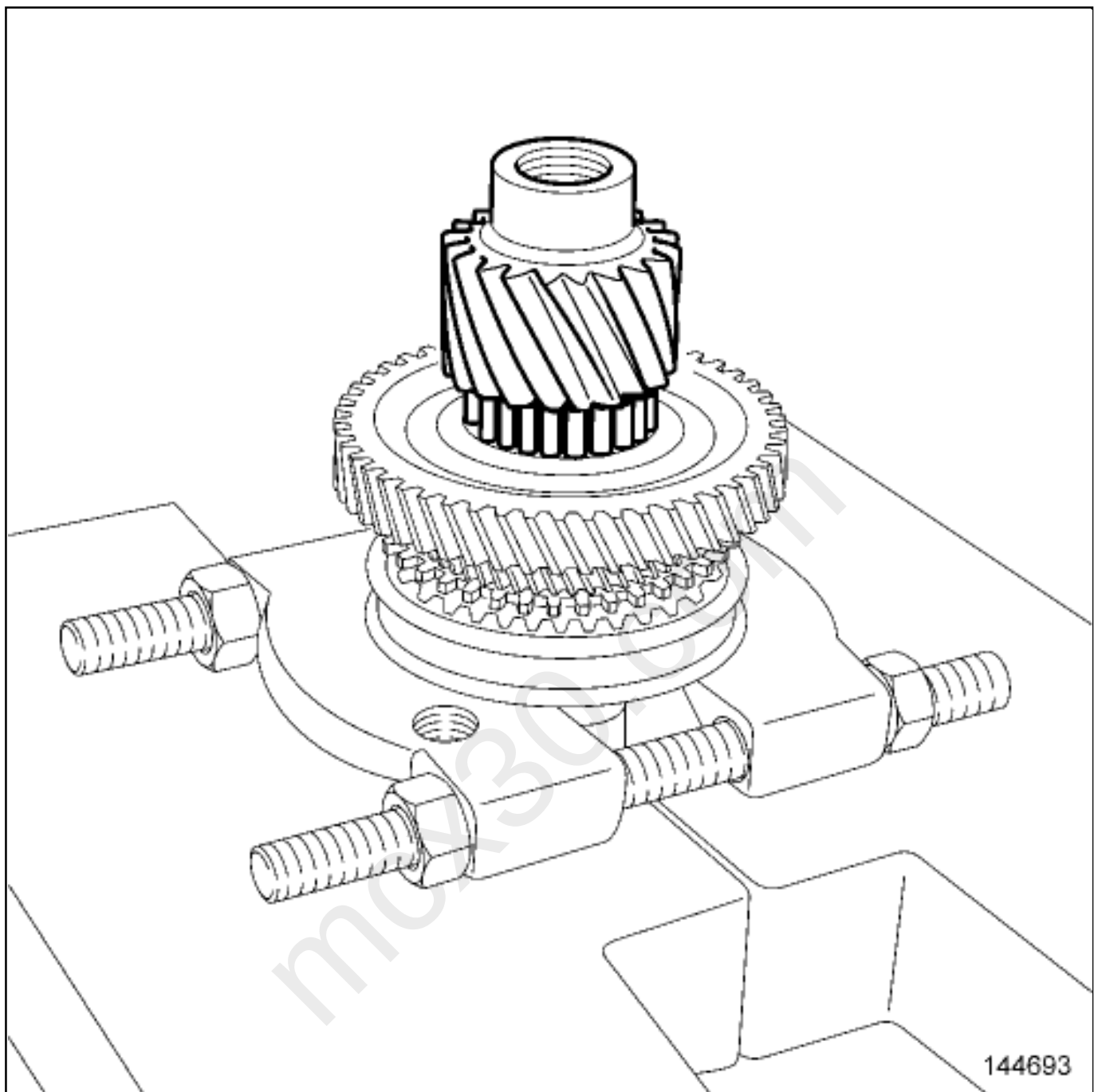
Refit the synchroniser hub(24) .



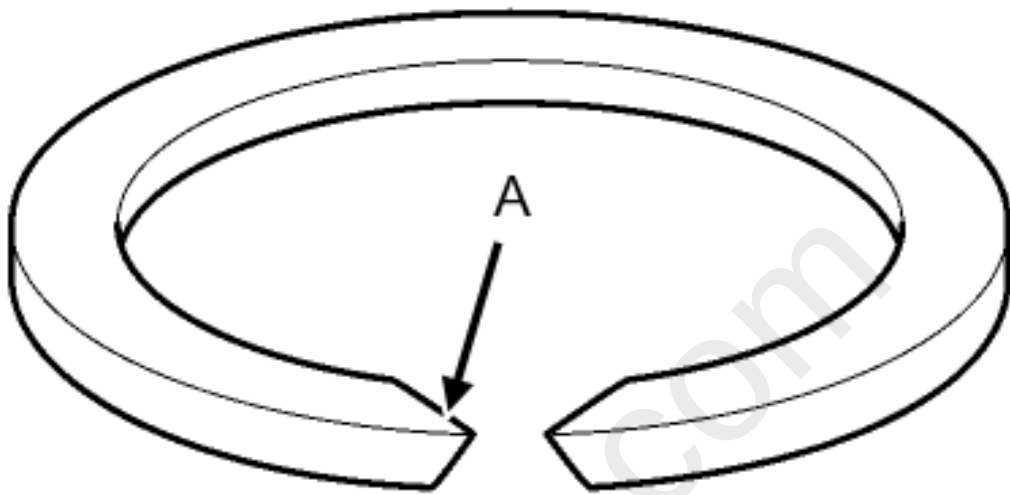
Note:

Rotate the synchroniser hub so that all the lugs are inserted correctly.

Fit the 2nd gear pinion assembly on the gearbox shaft.



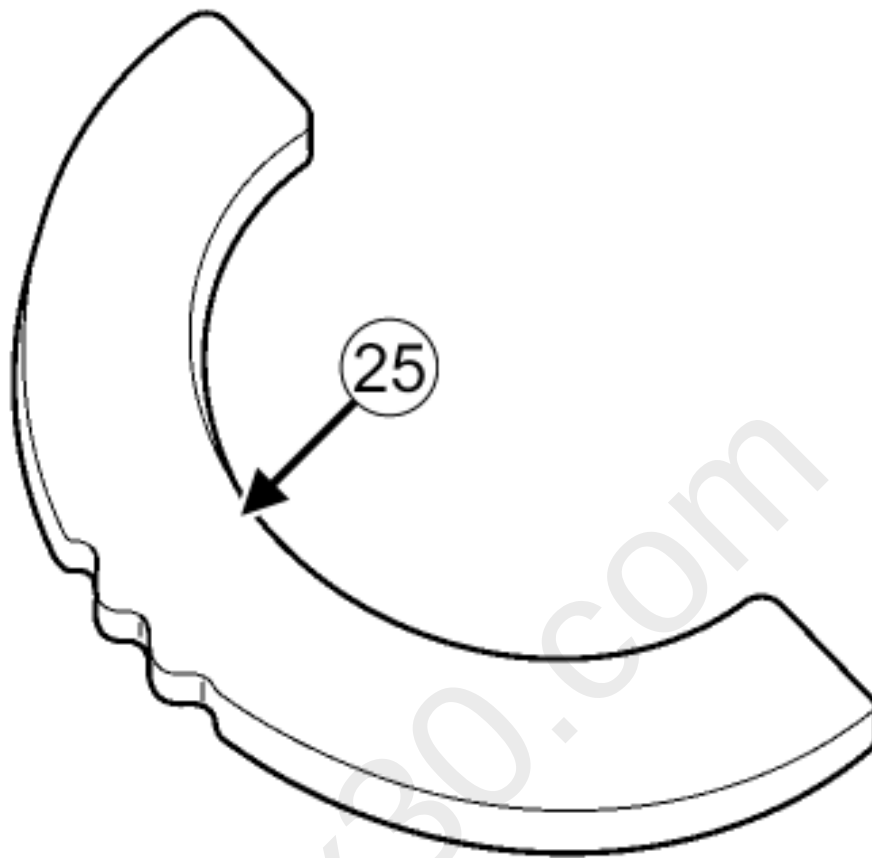
Press the gearbox shaft.



144675

Refit:

- a new clip using snap ring pliers, ensuring that the pointed section of the clip(A) faces upwards,
- a new 6th gear pinion bearing,
- the 6th gear pinion.



144680

Refit:



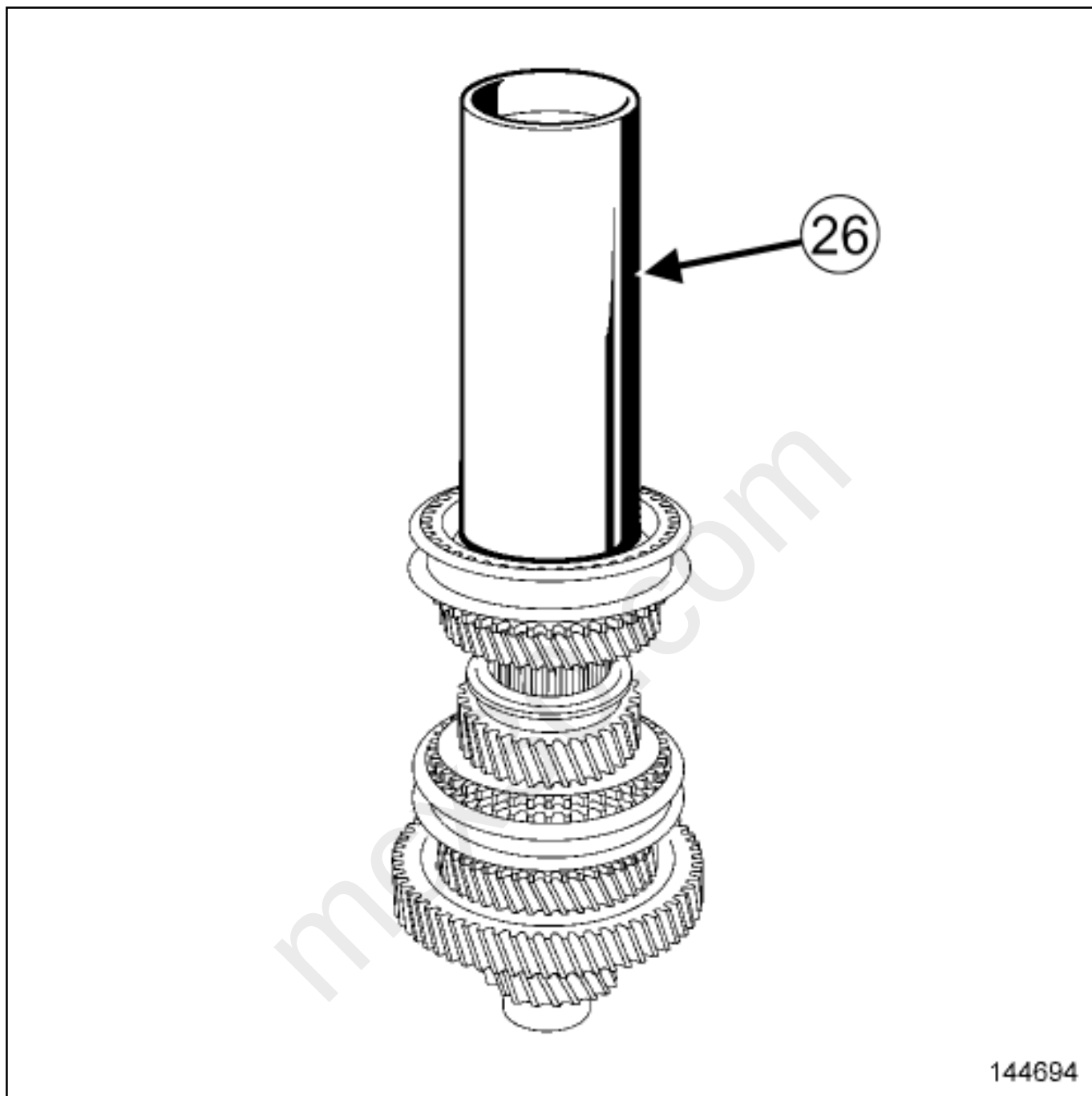
the half-shells of the 6thgear pinion(25) ,



the locking washer of the 6thgear pinion.

Refit a 5th gear pinion bearing on the 5th gear pinion.

Fit the 5th gear pinion and the synchroniser hub on the gearbox shaft, paying attention to the lugs.

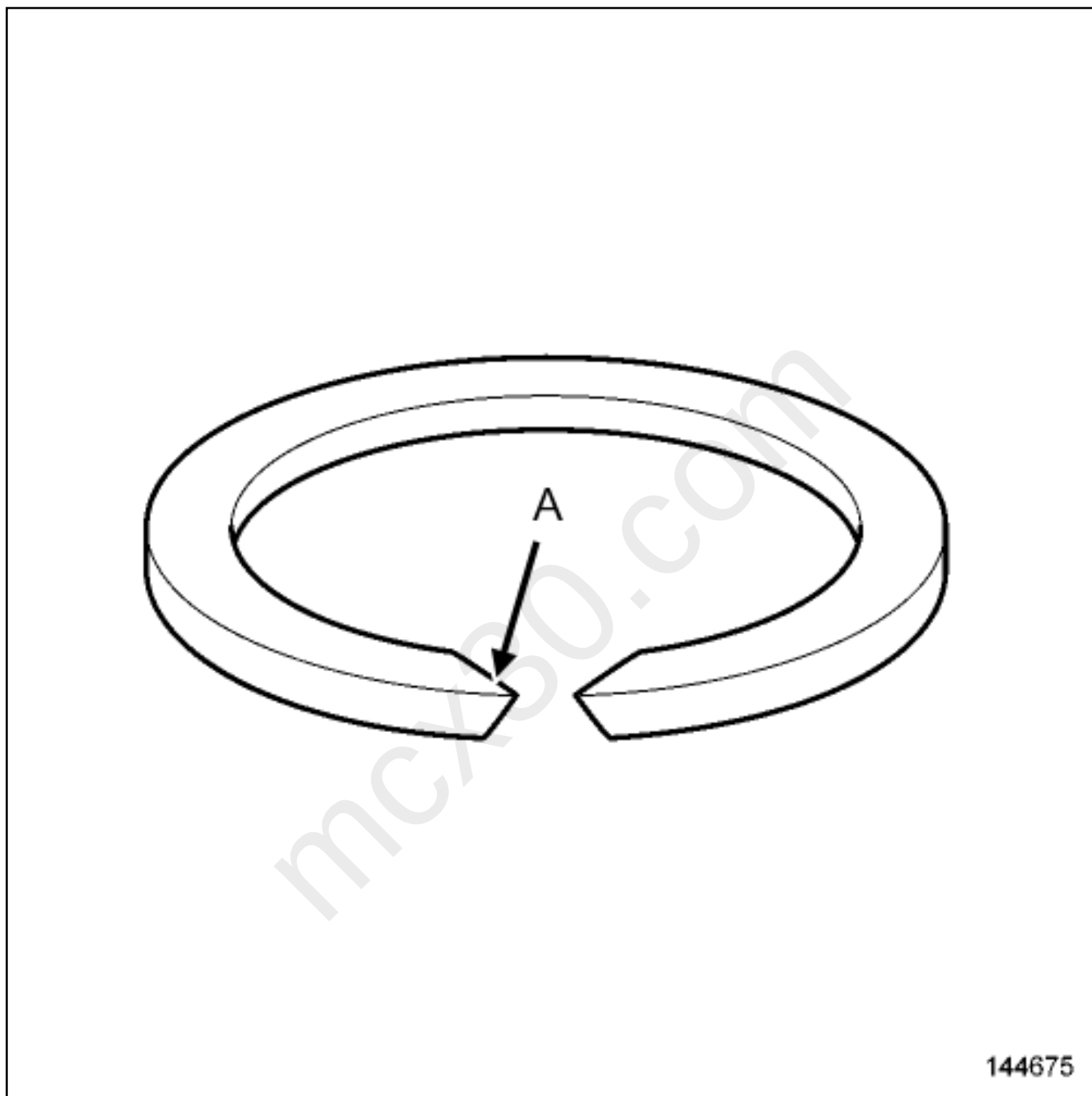


Note:



Keep the "5th gear pinion - synchroniser hub" assembly facing upwards when pressing.

Refit the 5th gear pinion using a press and the toolDC4 gearbox internal renovation kit(Bvi. 1956)
A (26) .



Refit:



a new clip using snap ring pliers, ensuring that the pointed section of the clip(A) faces upwards,



a new 1st gear pinion bearing on the 1st gear pinion,

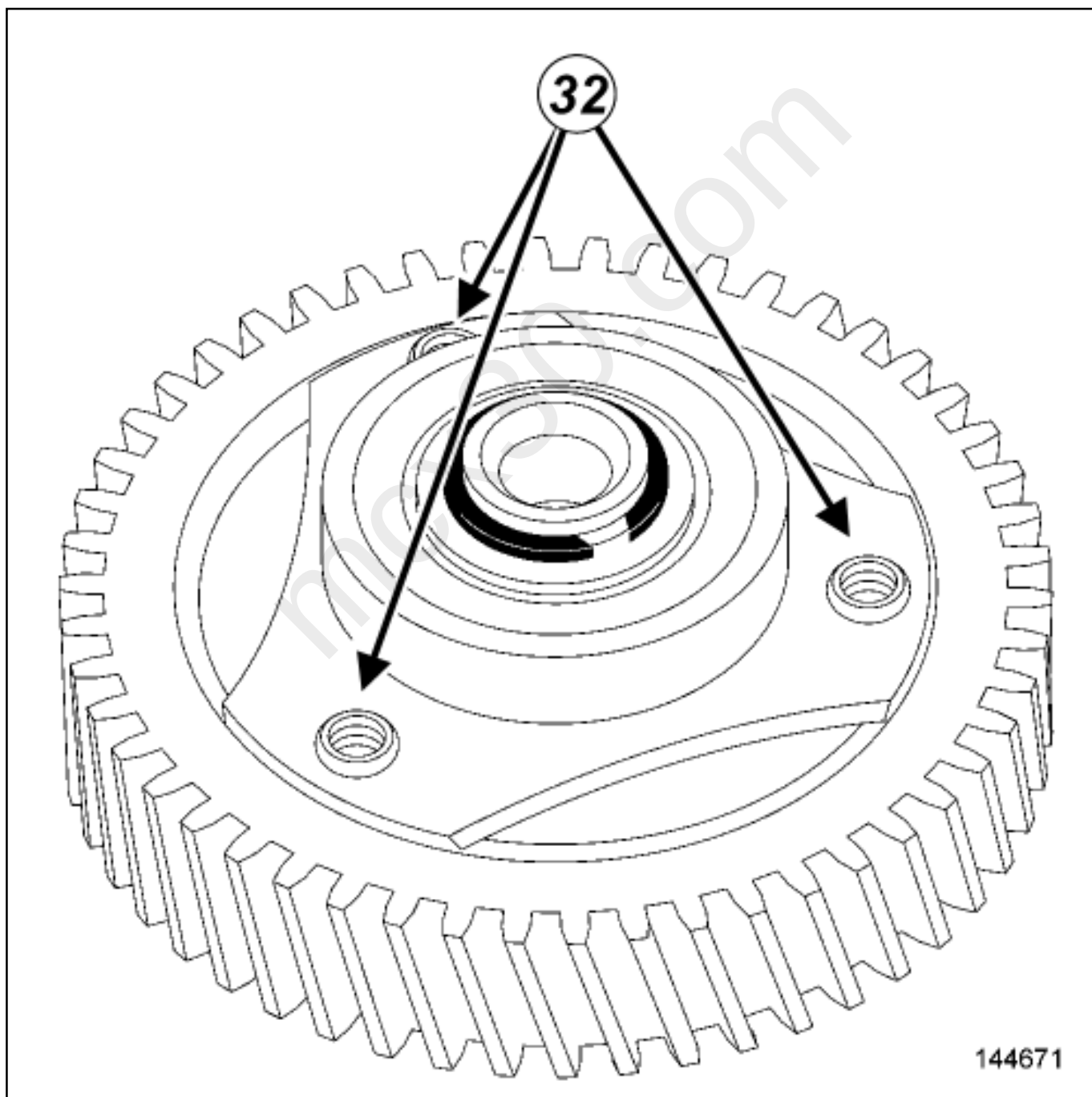
the 1st gear pinion,

the calibration washer.

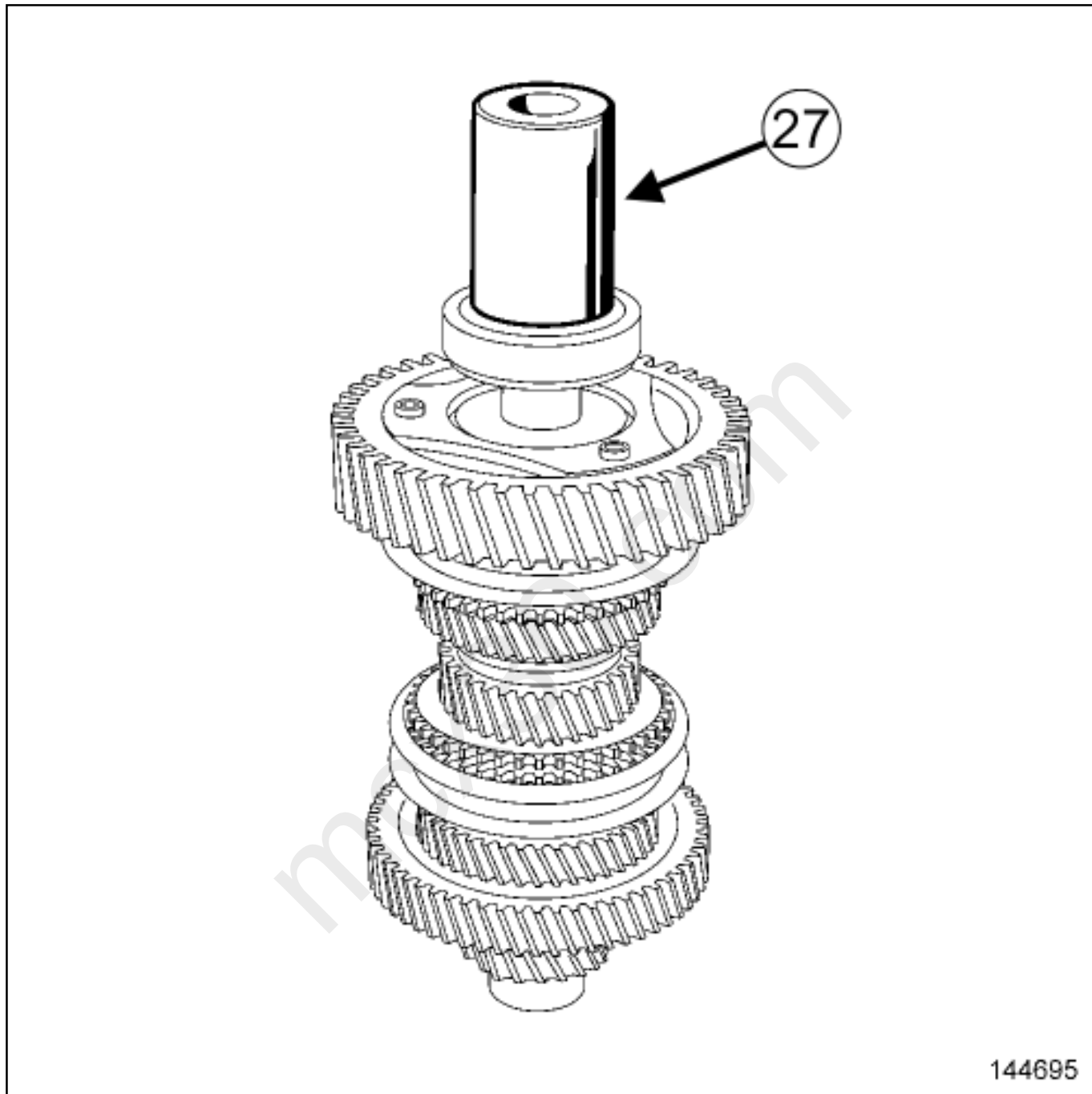


Note:

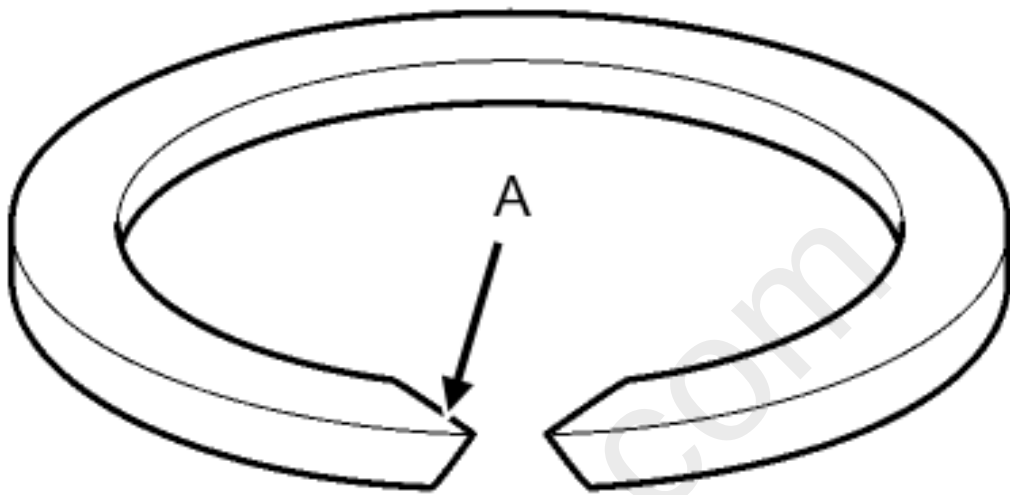
Pay attention to the direction of fitting of the retaining plate.



Refit the retaining plate with the convex part of the three threads opposite the 1st gear pinion.



Refit a new gearbox shaft bearing using a press and the toolDC4 gearbox internal renovation kit (Bvi. 1956) D (27) .

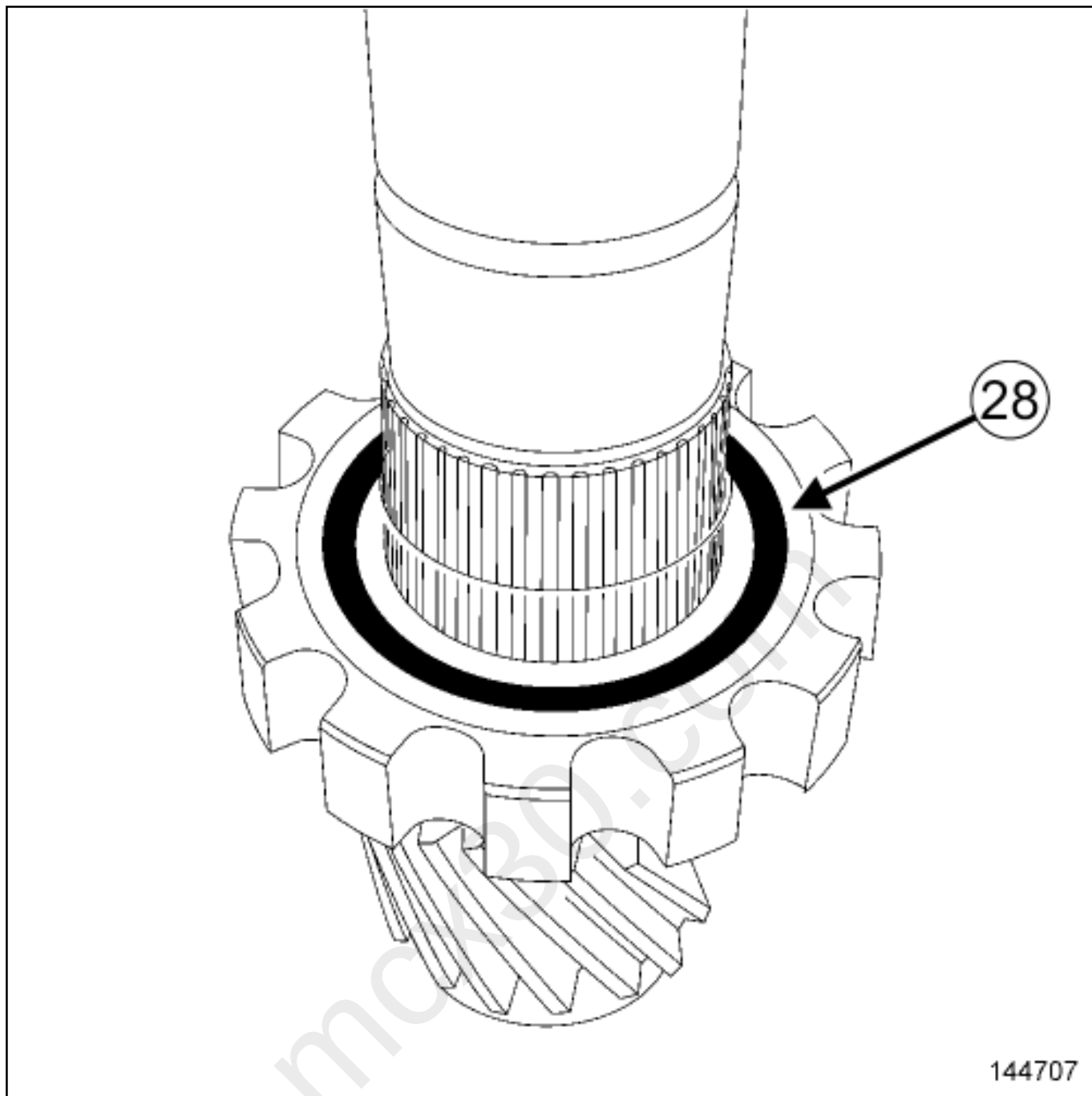


144675

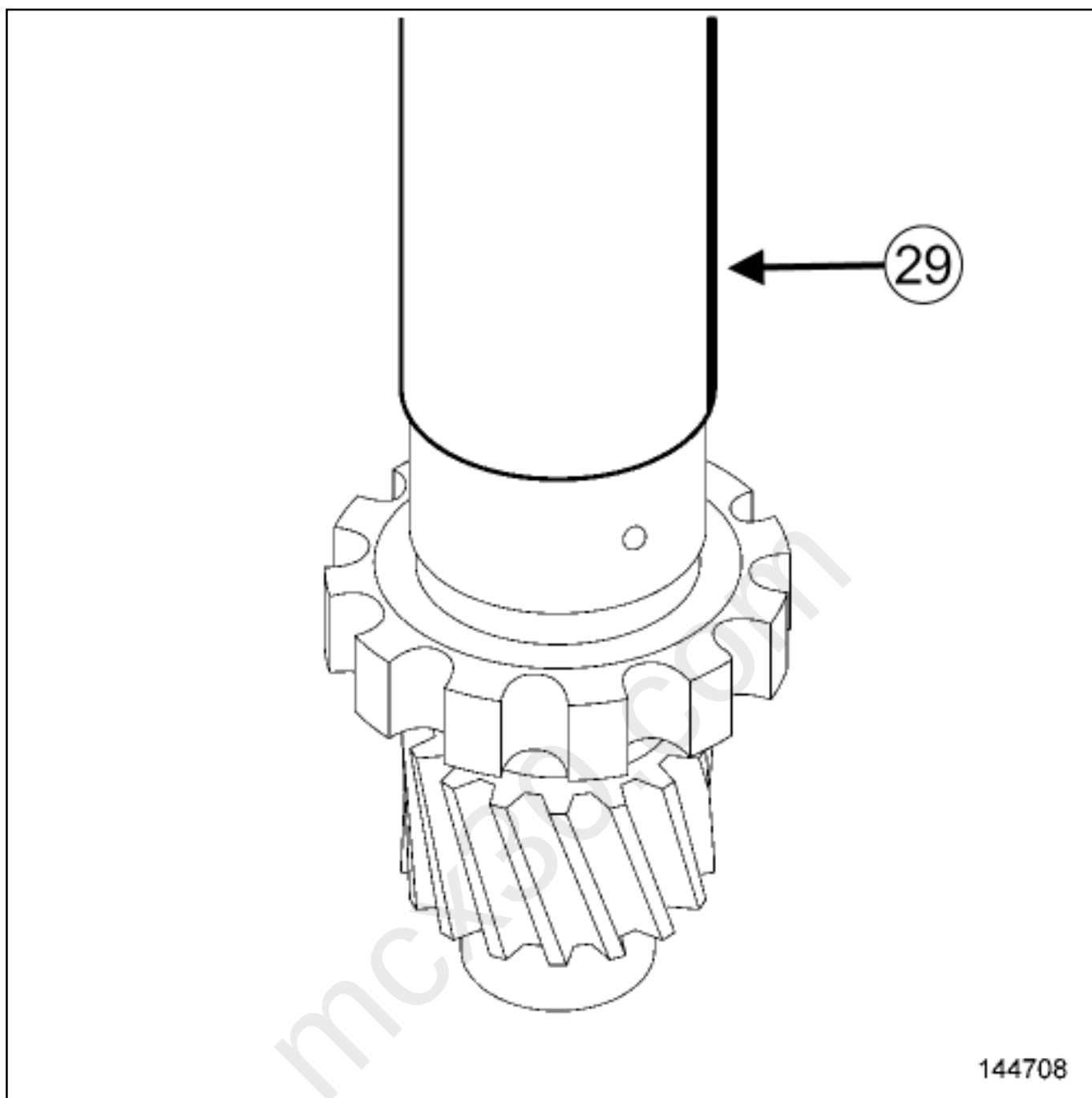


Refit a new clip using snap ring pliers ensuring that the pointed section of the clip(A) faces upwards.

2- REBUILDING THE SHAFT WITH 3RD, 4TH AND REVERSE GEARS:



Fit the parking gear wheel on the gearbox shaft, positioning the neck(28) upwards.



144708

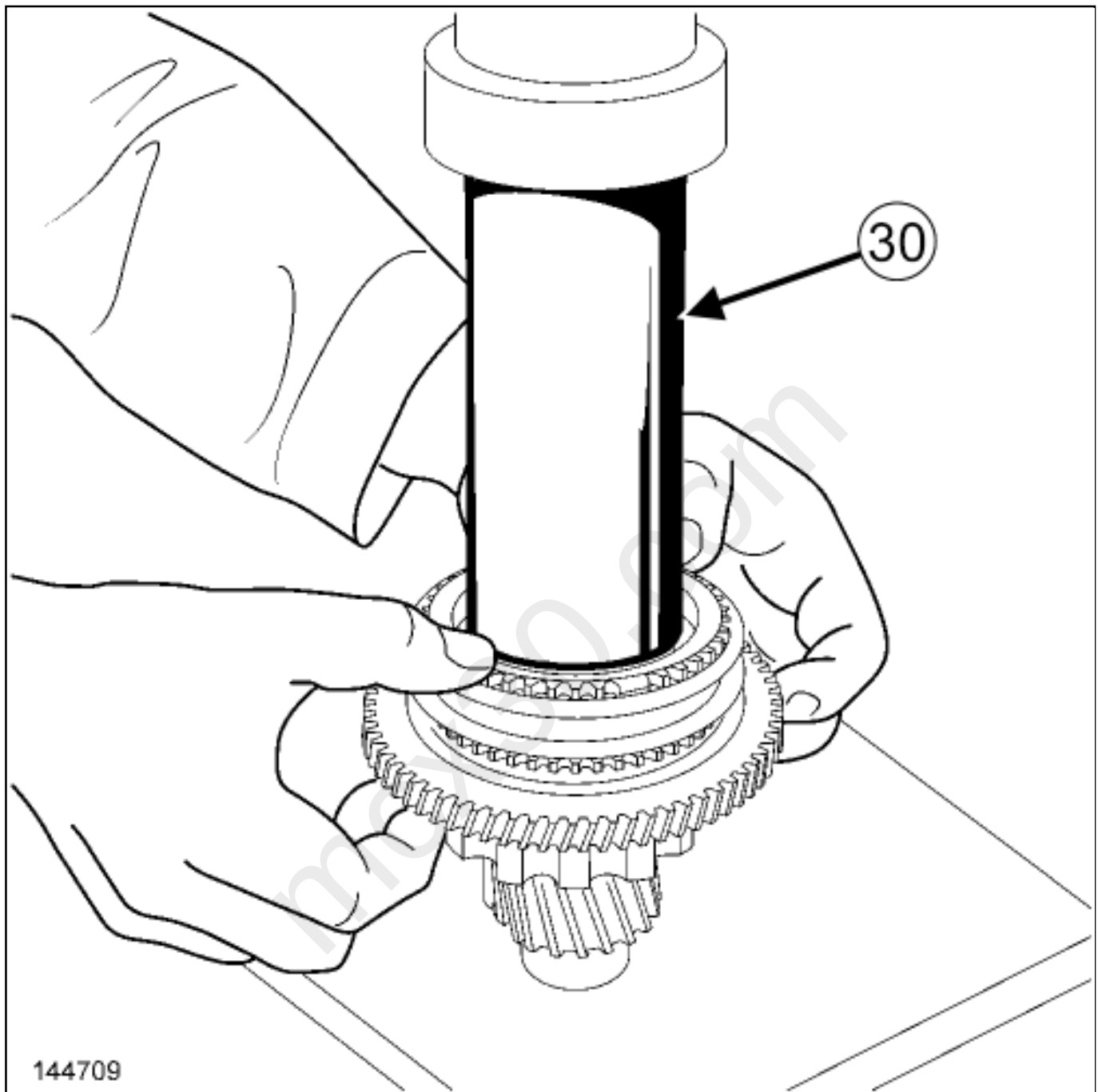


Refit the needle bearing ring of the reverse gear pinion using a press and the tool DC4 gearbox internal renovation kit (Bvi. 1956) A (29) .



Refit a new reverse gear pinion bearing on the reverse gear pinion.

Fit the reverse gear pinion and the synchroniser hub on the gearbox shaft, paying attention to the lugs.



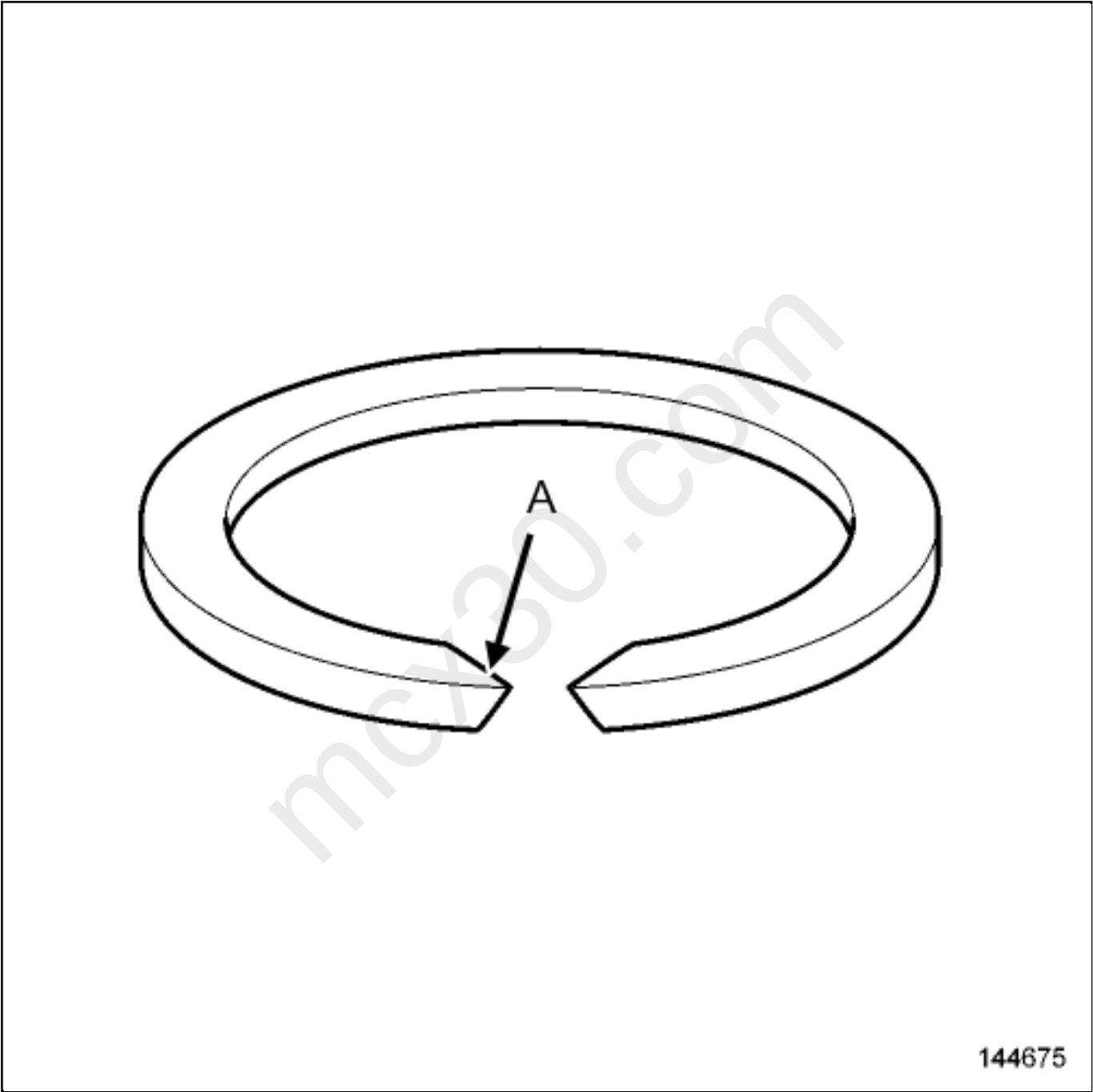
Note:



Keep the "reverse gear pinion - synchroniser hub" assembly facing upwards during pressing.



Refit the reverse gear pinion using a press and the toolDC4 gearbox internal renovation kit([Bvi. 1956](#)) A (30) .



Refit a new clip using snap ring pliers ensuring that the pointed section of the clip([A](#)) faces upwards.



Refit:



a new 4thgear pinion bearing on the 4thgear pinion,



the 4thgear pinion,



the half-shells of the 4thgear pinion,



the locking washer of the 4thgear pinion,

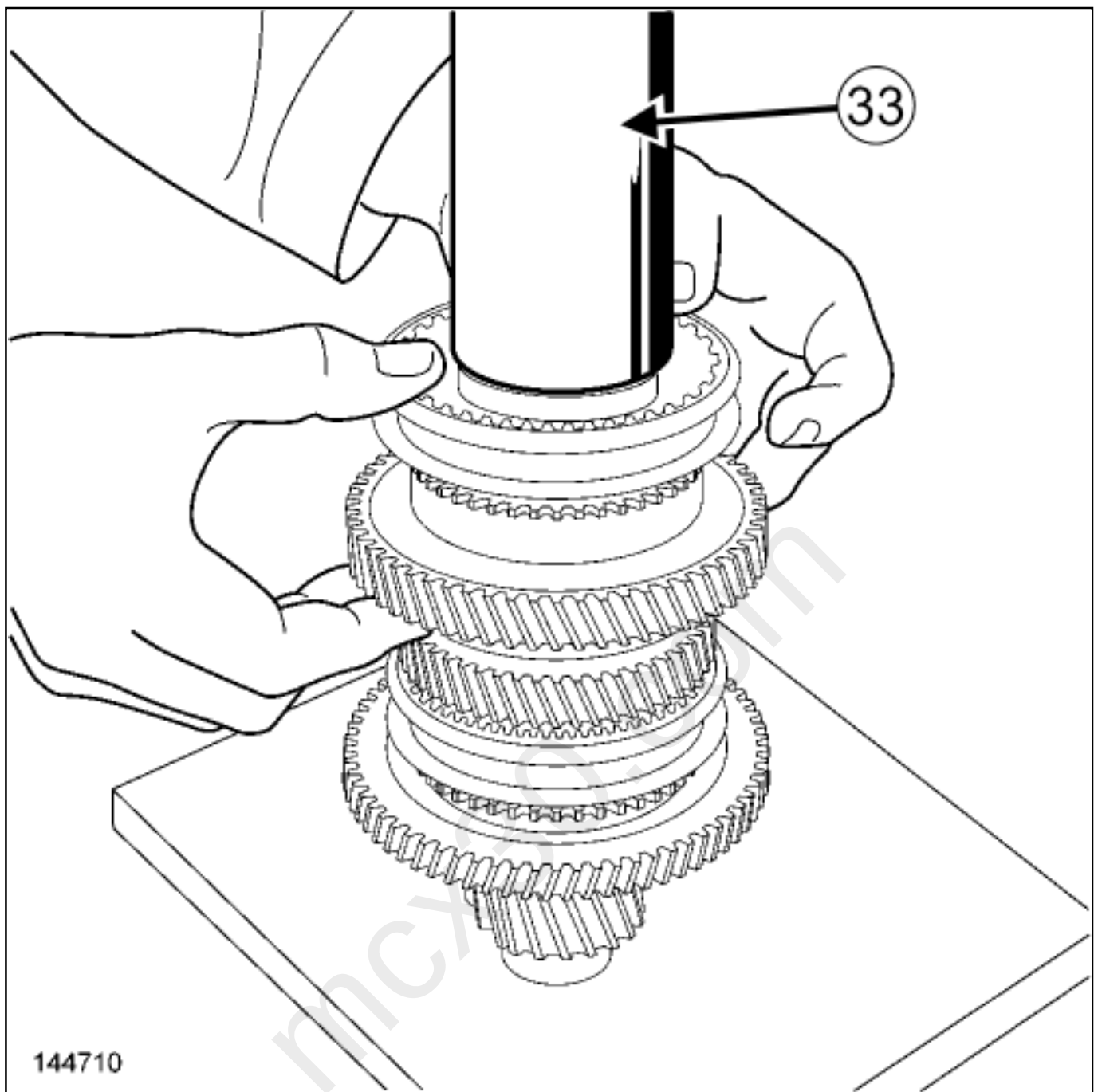


a new 3rdgear pinion bearing on the 3rdgear pinion,



the 3rdgear pinion.

Fit the 3rdgear pinion and the synchroniser hub on the gearbox shaft, paying attention to the lugs.



Note:



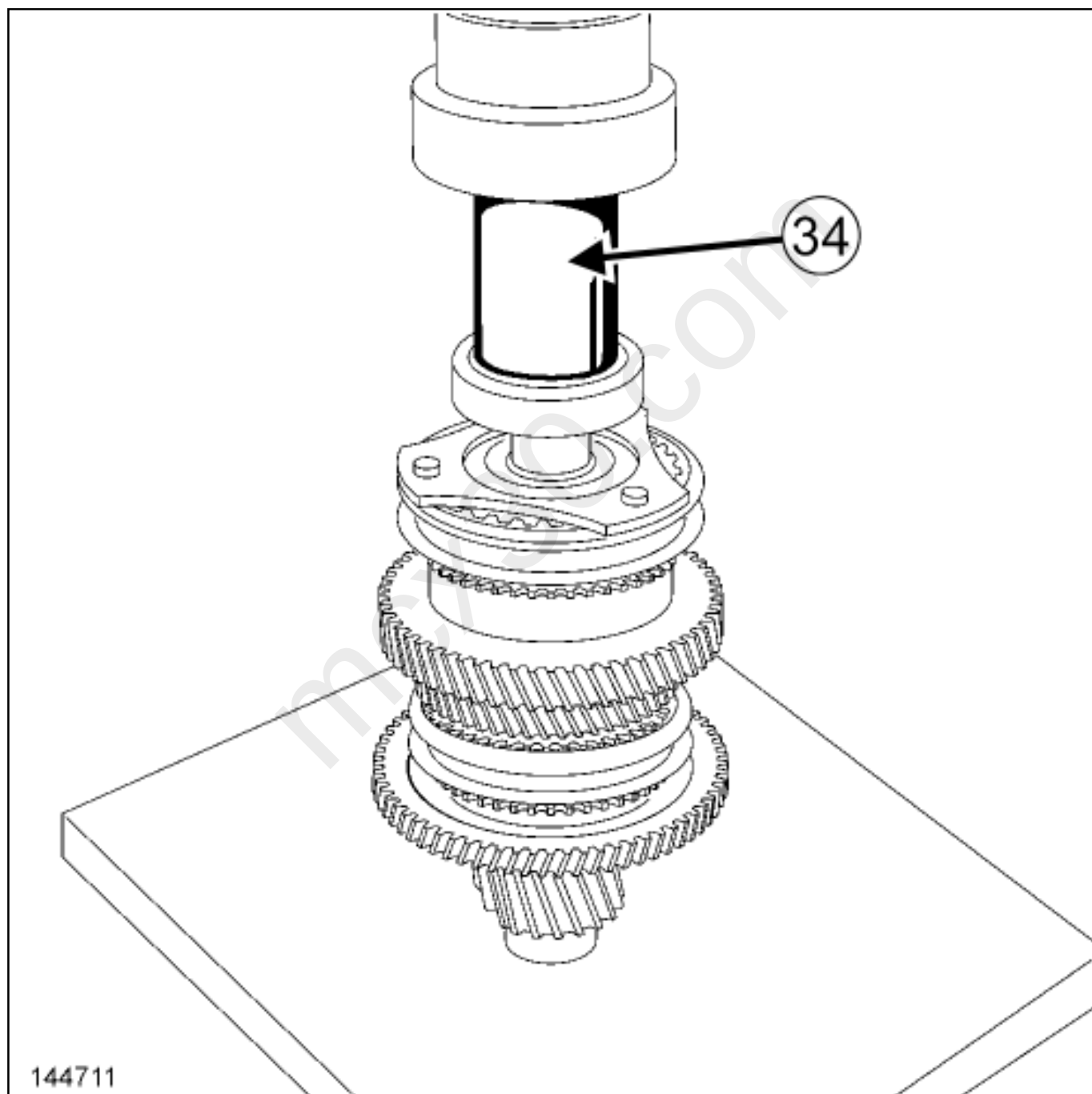
Keep the "3rd gear pinion - synchroniser hub" assembly facing upwards when pressing.



Refit the 3rd gear pinion and the synchroniser hub using a press and the toolDC4 gearbox internal renovation kit(Bvi. 1956) A (33) .

Refit the retaining plate with the convex part of the three threads opposite the 3rd gear pinion.

Fit the new gearbox shaft bearing.

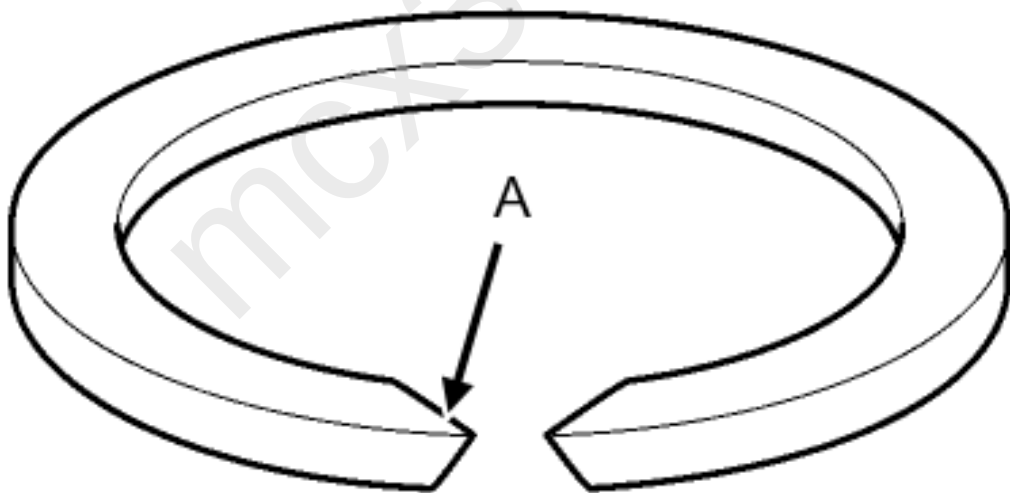




Refit the new gearbox shaft bearing using a press and the toolDC4 gearbox internal renovation kit (Bvi. 1956) D (34) .



Refit the new gearbox shaft bearing using a press and the toolDC4 gearbox internal renovation kit (RSM. 9306) D (34) .



144675