

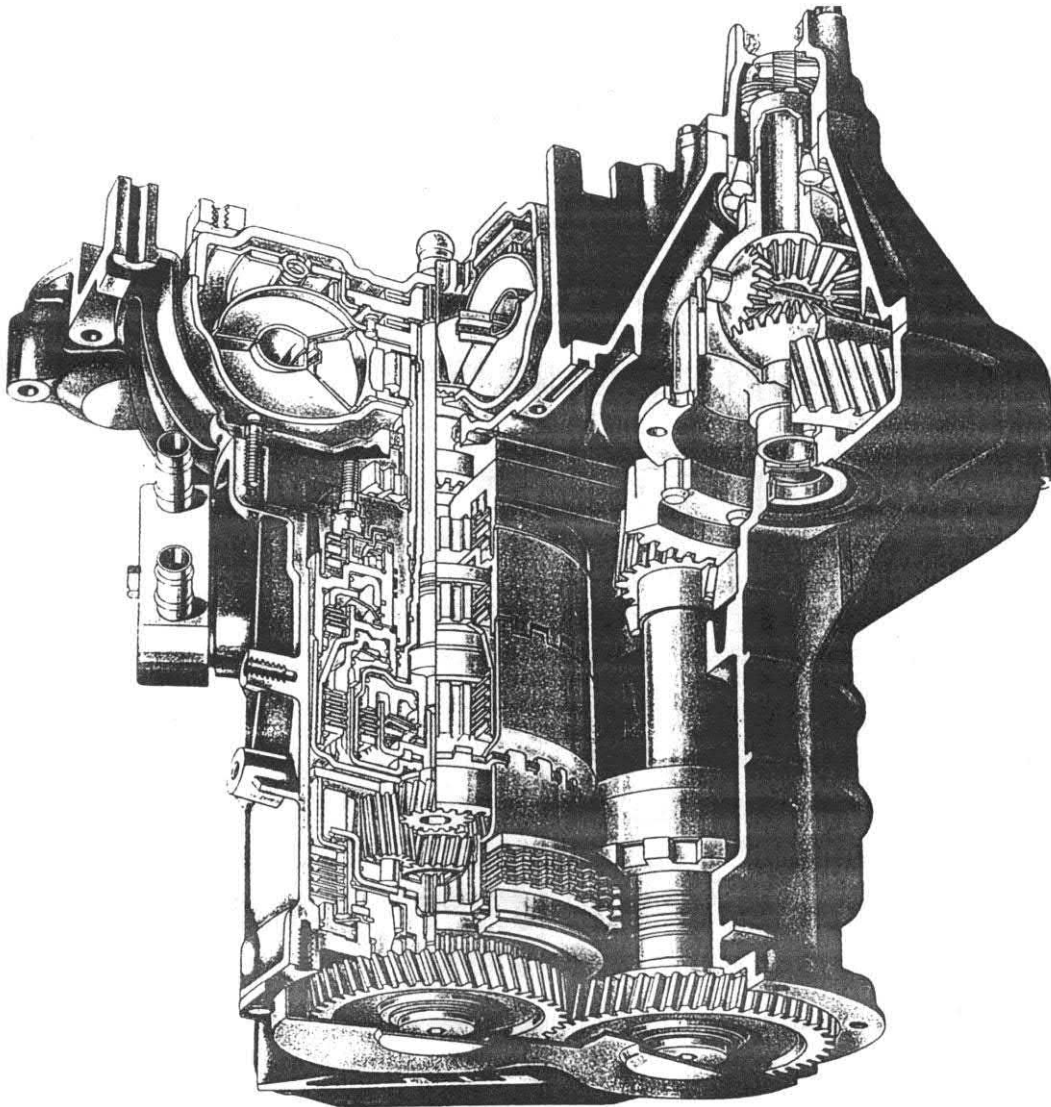
# Index

FORWORD .....	1
1、Automatic transmission (A/T) assembly description .....	2
1.1、4HP14 A/T assembly explode view .....	2
1.2、Transmission Power transfer schematic .....	3
1.3、Adjusting automatic transmission clearance .....	4
1.3.1、Adjusting shift shaft clearance .....	4
1.3.2、Adjusting output gear clearance .....	5
1.3.2.1、Adjusting main rear output gear clearance .....	5
1.3.2.2、Adjusting driven shaft clearance .....	8
1.3.3、Adjusting clutch A clearance .....	11
1.3.4、Adjusting central seat clearance .....	12
1.3.5、Adjusting differential pretension .....	14
1.3.6、Adjusting brake band pretension .....	16
1.3.7、Adjusting throttle cable .....	17
1.4、Special tool .....	18
1.5、Transmission bolt tighten torque .....	30
1.6、General inspection of transmission .....	31
2、Disassembling automatic transmission .....	32
2.1、Disassembling assembly .....	32
2.2、Removing band brake C .....	43
2.3、Removing brake D .....	44
2.4、Removing central seat, brake C and oil pump .....	45
2.5、Removing clutch B and 2nd gear one-way overrun clutch .....	48
2.6、Removing clutch A .....	49
2.7、Removing clutch E .....	51
2.8、Removing output shaft and 1st gear one-way overrun clutch .....	52
2.9、Removing governor and speedmeter .....	54
2.10、Removing transmission case and parking system .....	58
3、Assembling automatic transmission .....	64
3.1、Installing transmission case and parking system .....	64
3.2、Installing band brake C' .....	74
3.3、Installing brake D and 1st gear one-way overrun clutch .....	78
3.4、Installing governor and driven shaft .....	82
3.5、Installing planetary gear mechanism and main sub rear output gear .....	86
3.6、Installing input shaft and clutch E assembly .....	93
3.7、Installing clutch A assembly .....	96
3.8、Installing clutch B and 2 <sup>nd</sup> gear one-way overrun clutch .....	100
3.9、Installing central seat, oil pump and brake C assembly .....	103
3.10、Installing differential and converter housing .....	109
3.11 Installing speedmeter .....	112
3.12 Installing control valve plate and torque converter .....	115

Appendix

## 1、 4HP14 A/T assembly discription

### 1.1、 4HP14 A/T assembly explode view



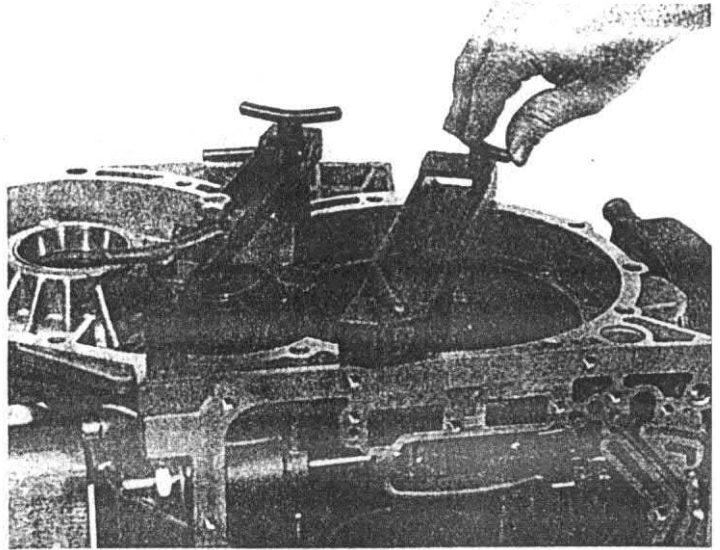
84 003

### 1.3.2、Rear output gear clearance adjustment

#### 1.3.2.1、Main sub output gear clearance adjustment

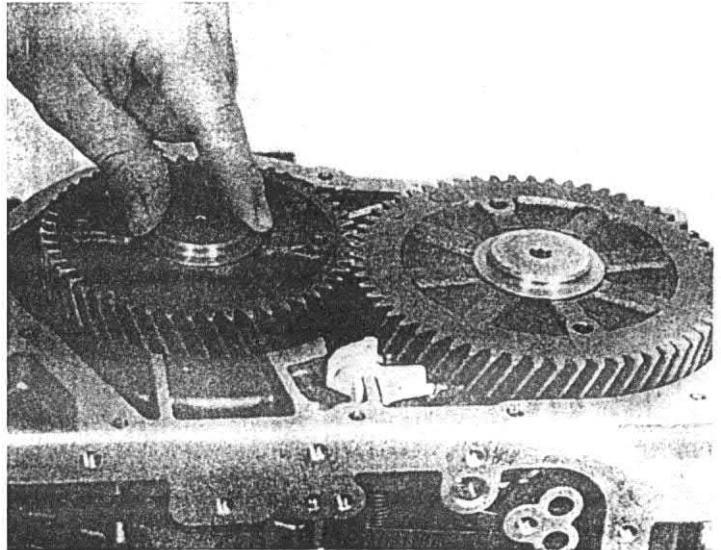
Hold driven shaft and output shaft with mounting bracket 5P 96 000 288 and 5P 95 000 289.

Turn over the transmission body by 180°.



84 004

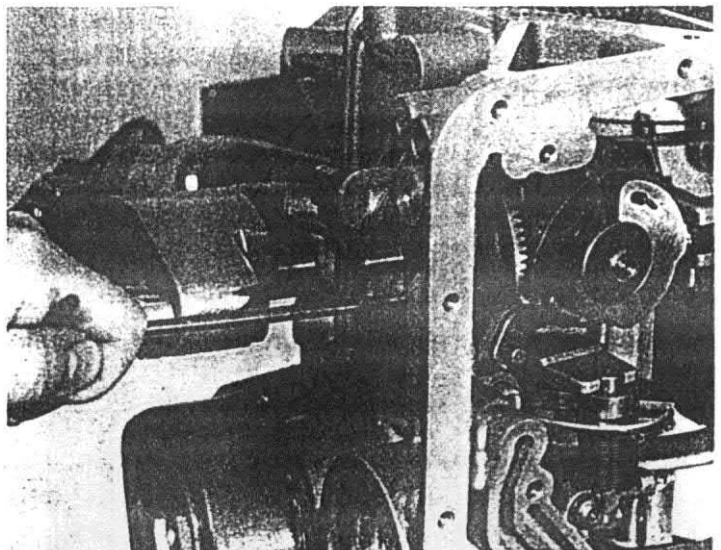
Install main rear output gear and mounting bolts.  
Install 1.75 mm thickness washer on driven shaft and then install sub rear output gear and mounting bolts.



84 005

Install parking mechanism and retain gear shifter arm on position with adjusting pin 5P 95 000 285.

NOTE: Keeping brake rotor downward (because the brake rotor may move outside), then install parking plunger.



### 1.3.6、 Brake band C pretension

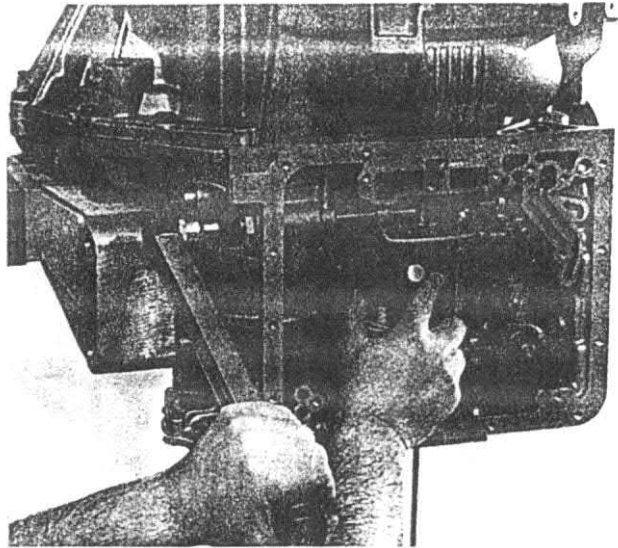
84 032

Apply lubricant on locating rod of brake band,  
Adjusting bolt tighten torque is 10Nm.

Tool: 6# socket spanner

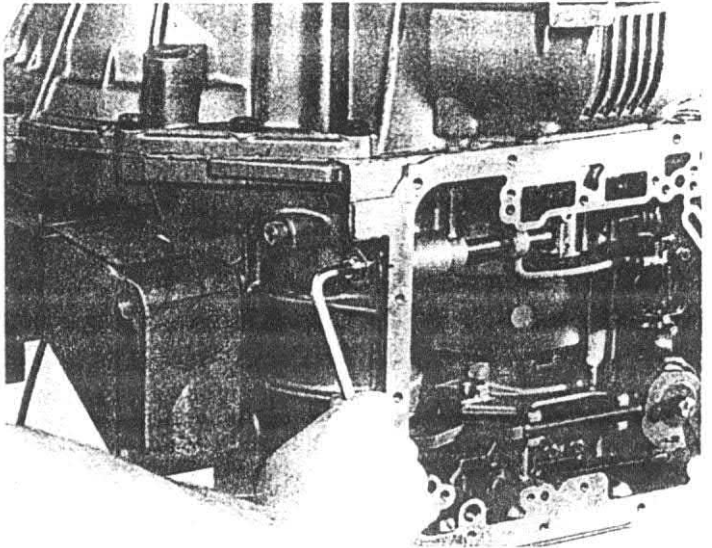
NOTE:

While tightening the brake band, place the  
locating rod to proper installation position.



84 033

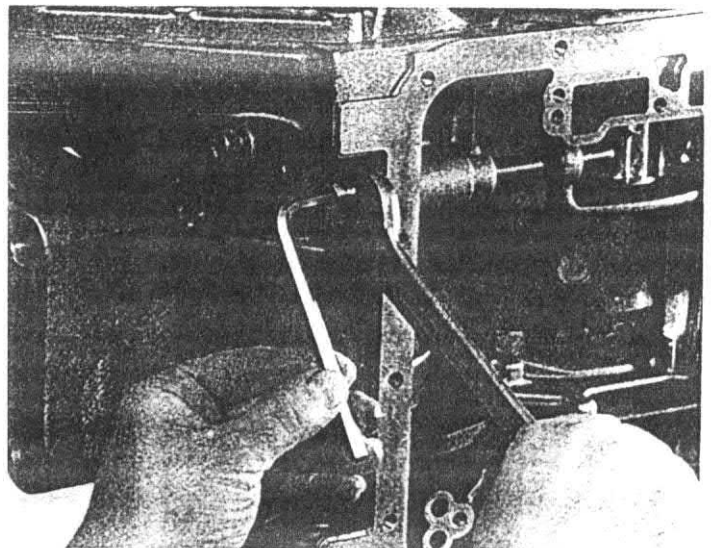
Make marks on bolts and housing, then turn the  
adjusting bolt counterclockwise (about 3mm).


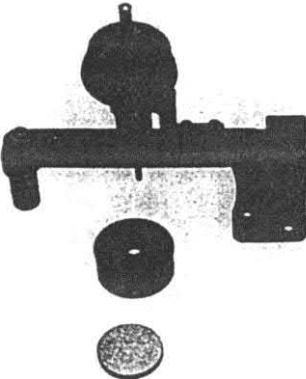
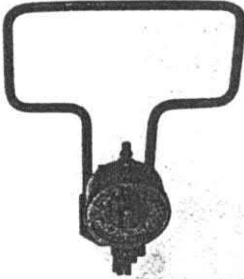


84 034

Tighten locking nut to 80 Nm.

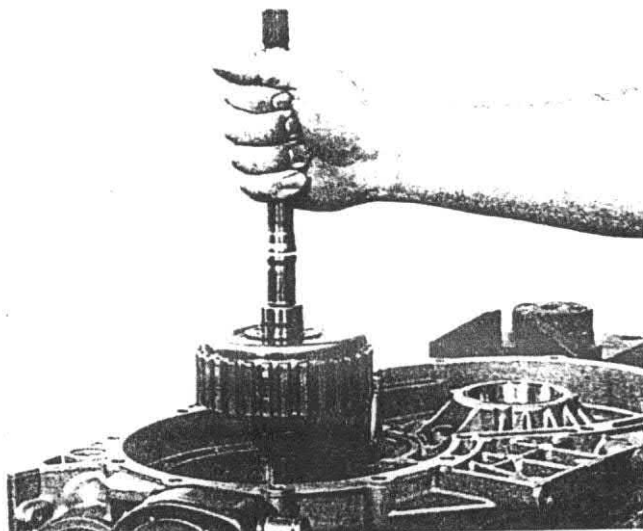
Tool is 23# cotter spanner.



No.	Figure	Code and Application
31	<p data-bbox="230 281 329 312">84278</p> 	<p data-bbox="962 422 1279 499">Shaft shaft position adjuster 5P 95 001 285.</p>
32	<p data-bbox="202 818 301 849">84280</p> 	<p data-bbox="962 1009 1307 1085">Output gear clearance test tool 5P 01 001 518.</p>
33	<p data-bbox="212 1425 311 1456">84279</p> 	<p data-bbox="962 1593 1307 1670">Middle seat clearance test tool 5P 01 001 415.</p>

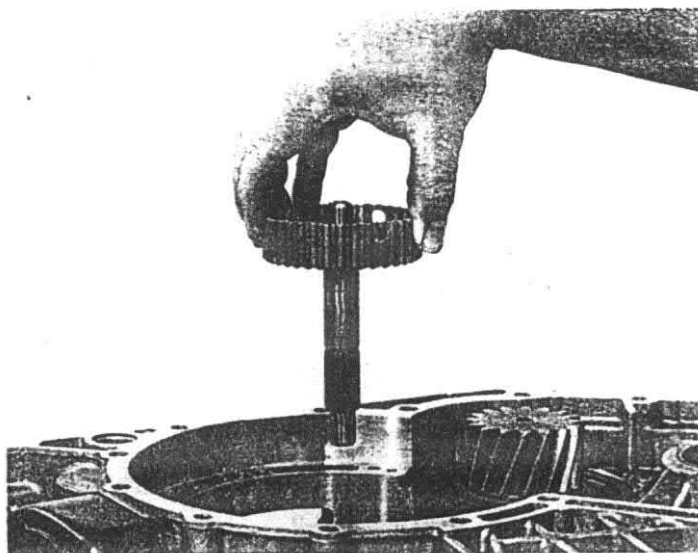
Remove clutch E and input shaft.

84 048



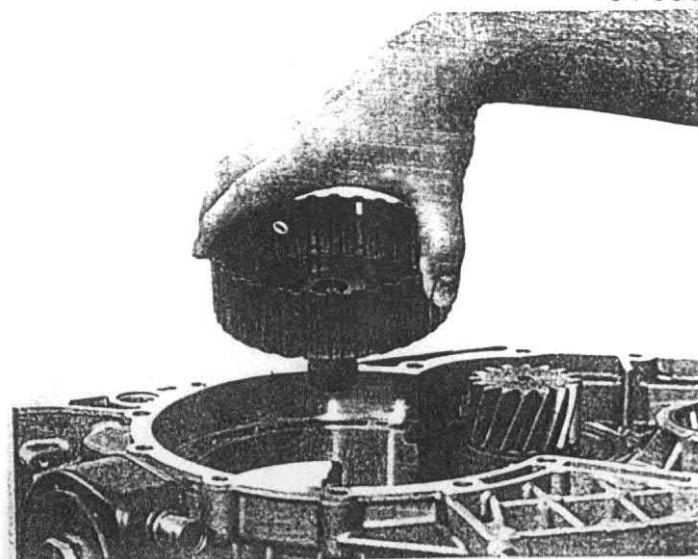
84 049

Remove center shaft, clutch E support and thrust bearing together.



84 050

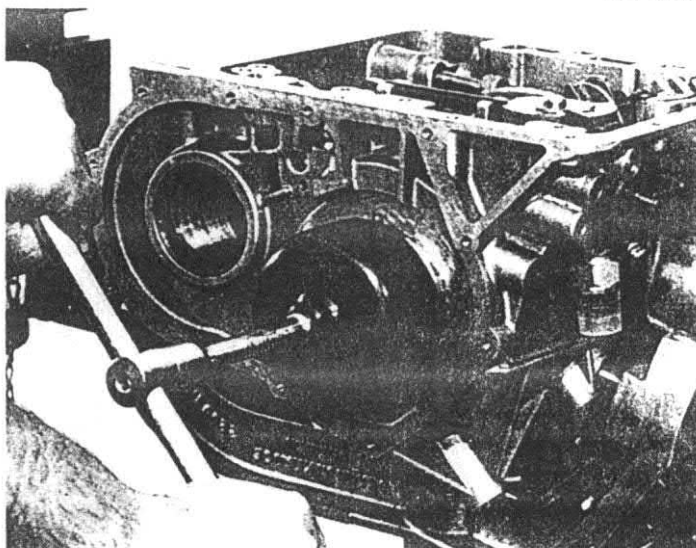
Remove sun gear shaft, clutch A support and thrust bearing as an assembly.



Turn over the transmission by 90°, remove protect plate.

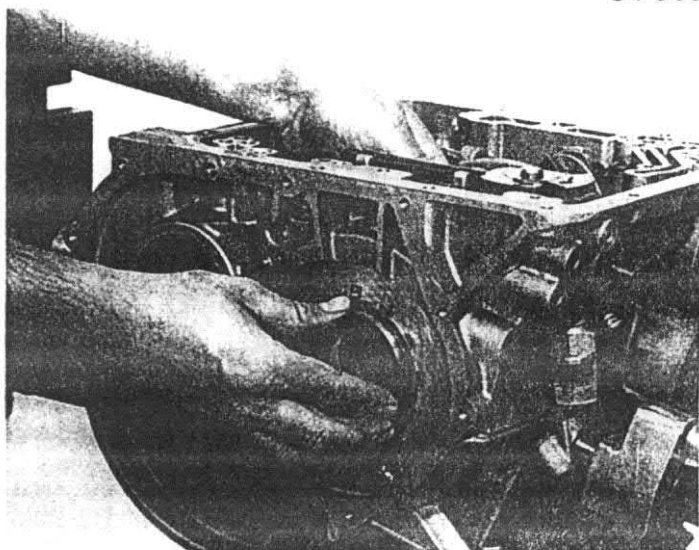
Using removing/installing socket 5 x 46 000 155 remove groove nut.

84 068

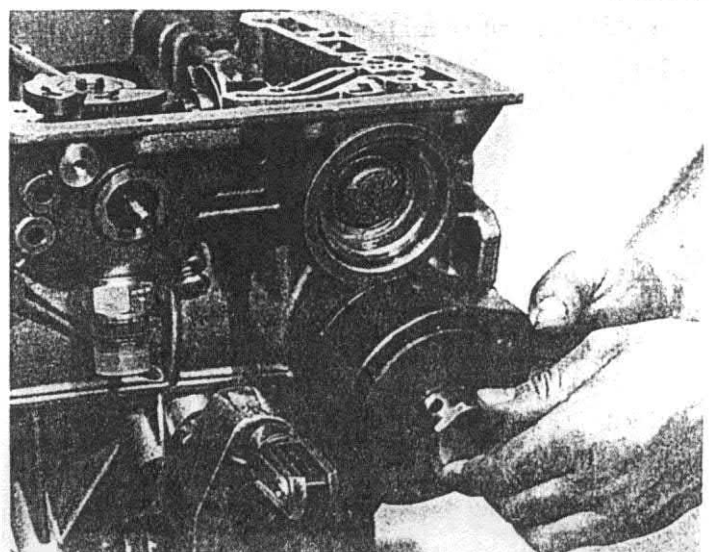


84 069

Remove 1st gear one-way overrunning clutch.



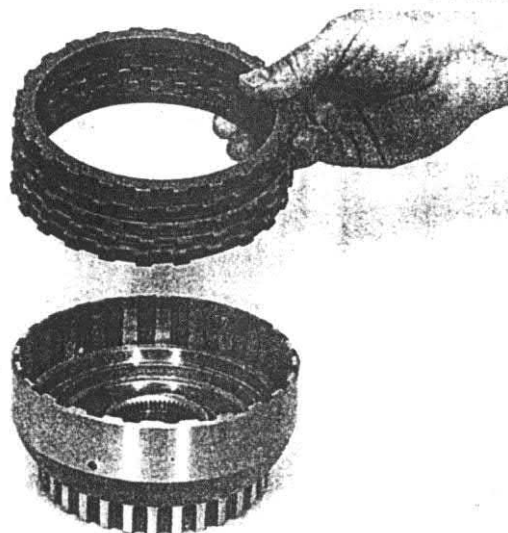
84 070





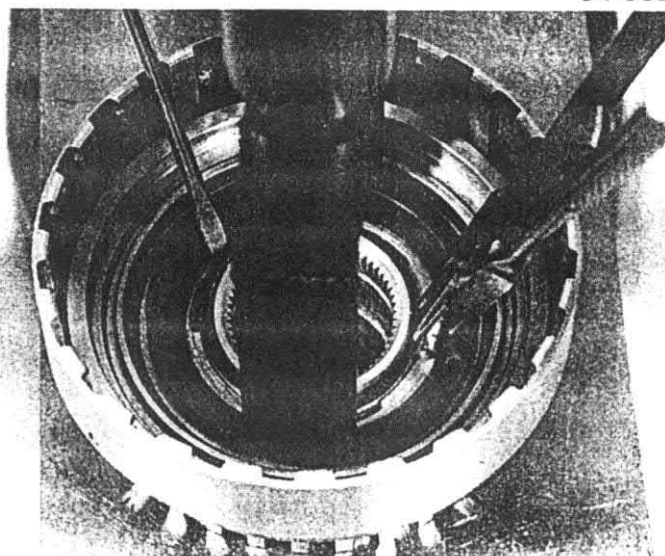
Remove the snap ring, clutch A assembly and diaphragm spring in order.

84 091



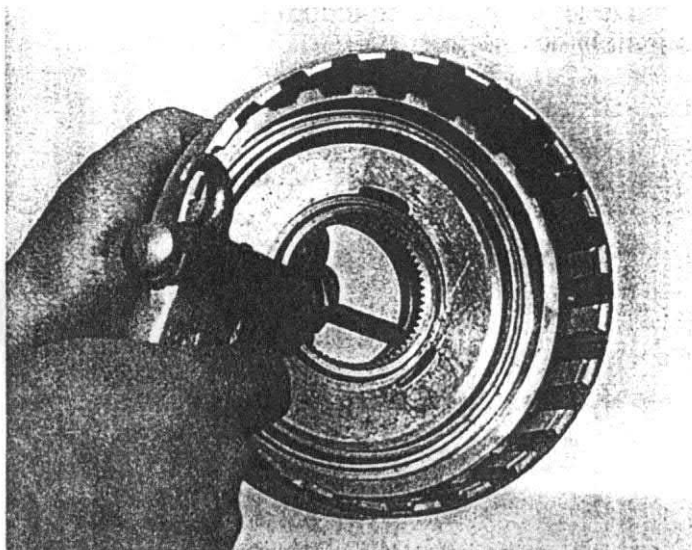
Using special tool 5 x 46 000 167 press piston with flow guiding flange, then remove snap ring with appropriate tool.

84 092



Insert air gun from oil inlet, remove piston, washer and shim spring using HP gas.

84 093

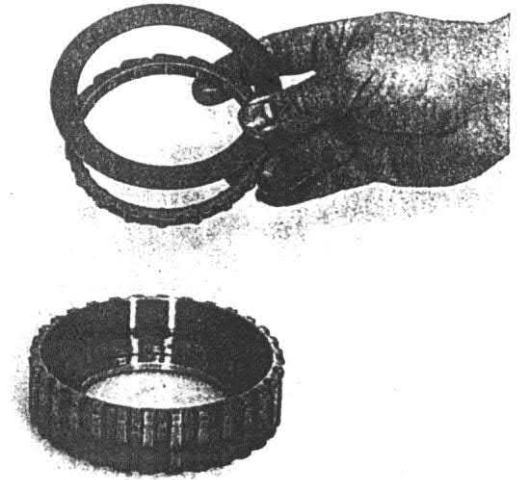




As shown on figure, one-way overrun clutch can be thoroughly disassembled:

Clutch inner ring, outer gear ring and free wheel.

84 103



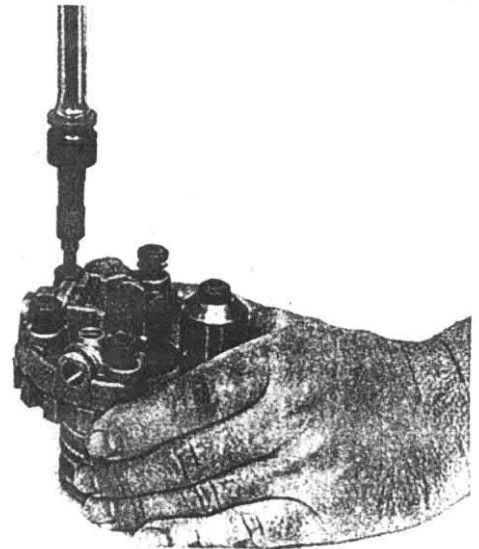
84 104

## 2.9、 Removing governor and speedometer

Loosen four mounting bolts and separate the governor case from the hub sleeve.

### NOTE:

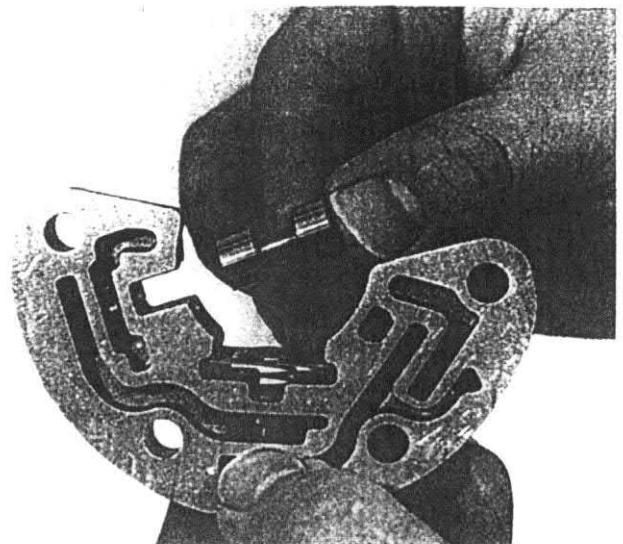
If the case is scratched or damaged, replace a new one.



84 105

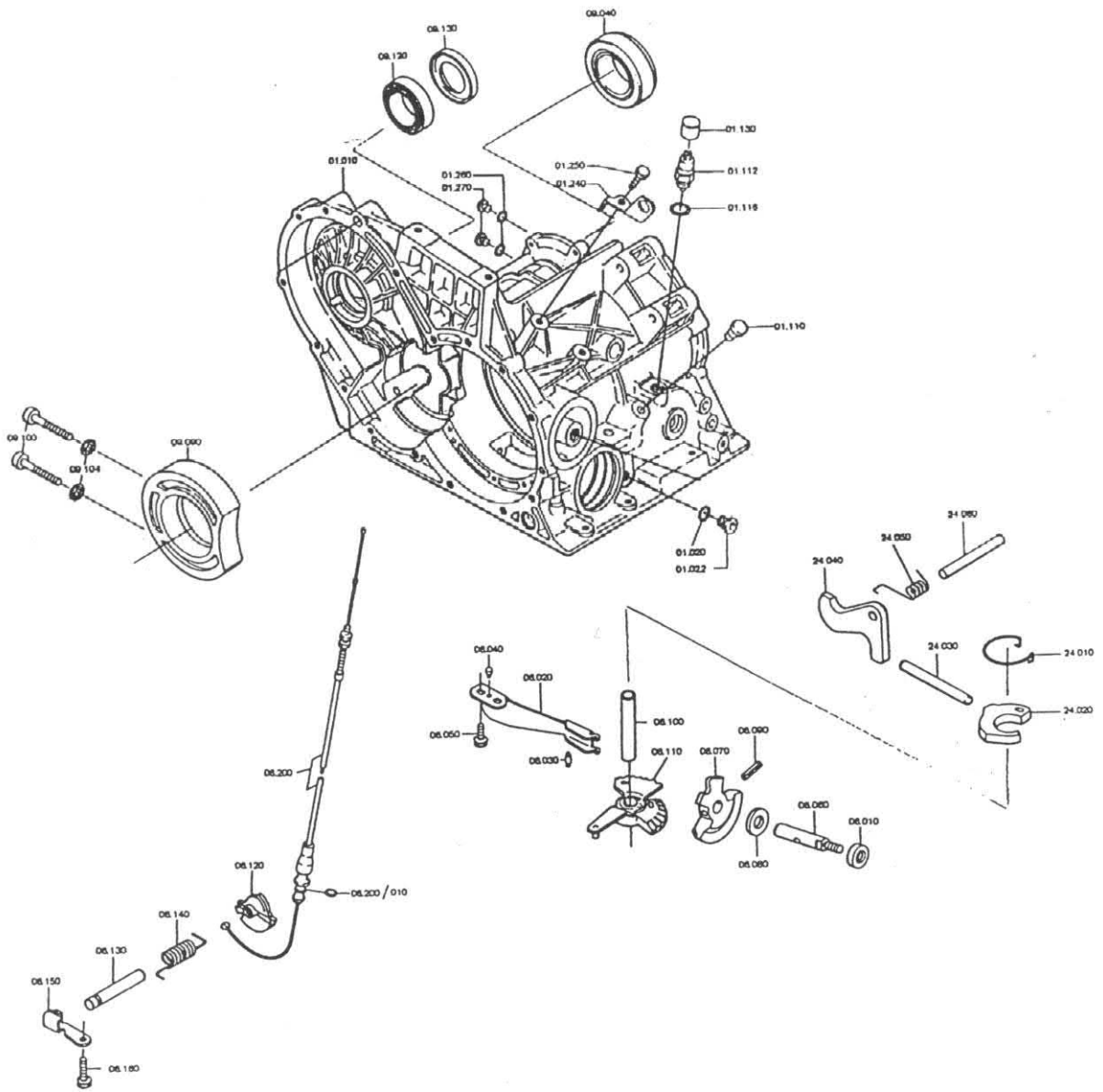
### 1、 Remove the first piston

Take out locking piece, and remove piston 1 off housing.



### 3、Assembling

#### 3.1、Assembling transmission housing and parking system.



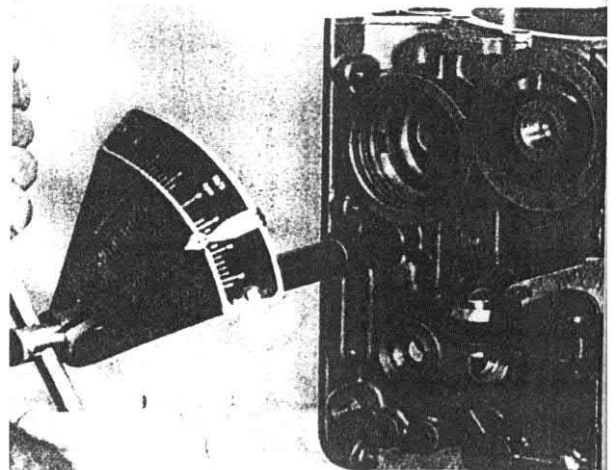
If necessary, install lug 01 250, and fix with hex bolts.

Tool: 13# socket

Torque: 23Nm

When assembling bolts, use new sealing washer.

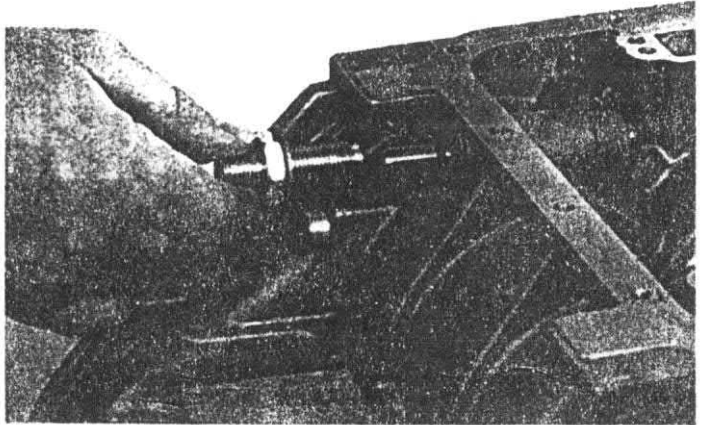
84 132



Insert plunger into the housing, with O-ring end facing outward for sealing.

84 158

Install adjusting blot 31 350, washer 31 360, and adjusting nut 31 370, and screw bolt into housing half or so.



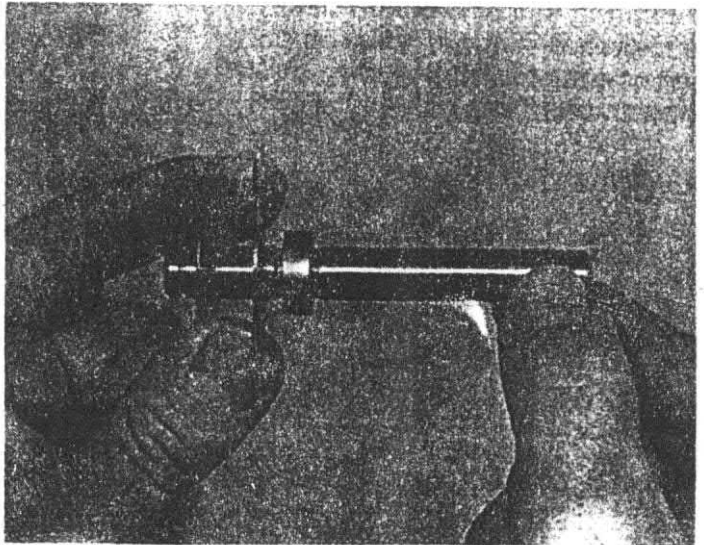
Installing piston C'

84 159

Place washer 31 400 (thick) on piston plunger 31 390, then install elastic washer 31 404 (thin).

NOTE:

Both washers are of U shape. When installing, concave side face each other, and move them to the piston shoulder.



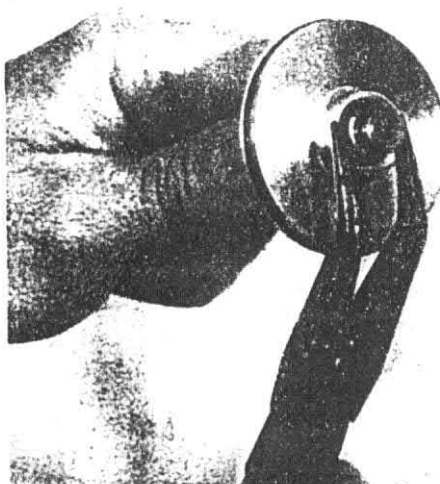
Install new O-ring 31 420 on the brake band piston.

84 160

Install brake band piston on piston rod.

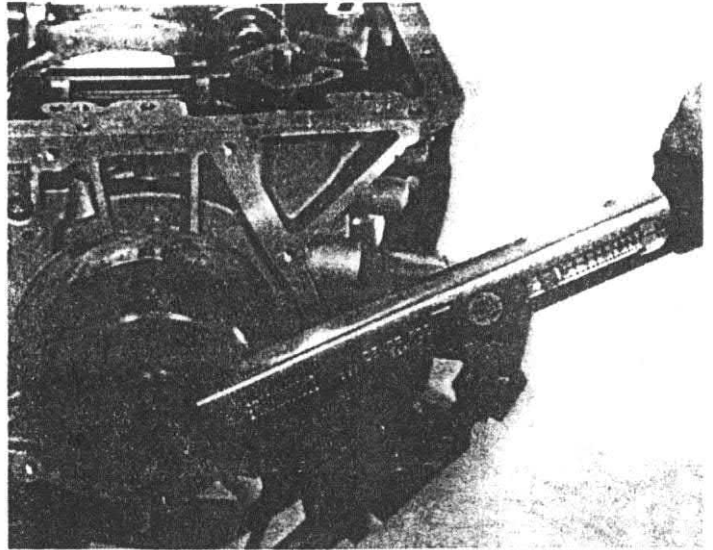
NOTE:

Piston flange must be at safety snap ring 31 450 side.



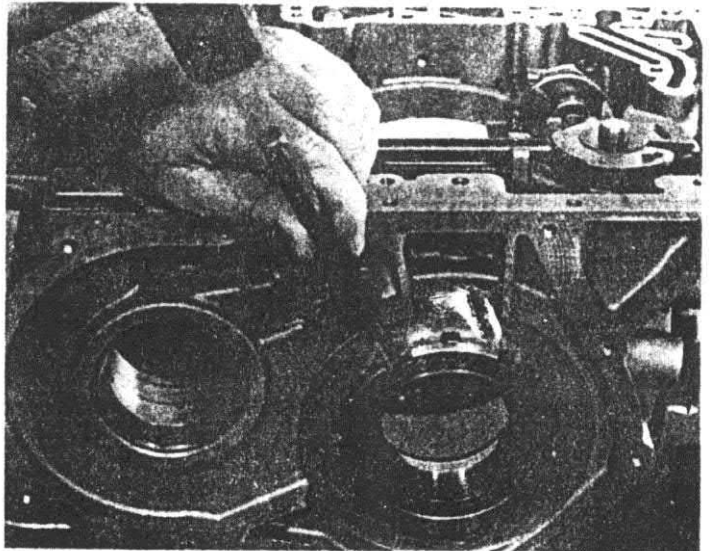
Install safety ring 17 190 (tooth type of thin steel ring) and grooved nut 17 200, and tighten grooved nut with socket spanner 5×46 000 155.  
Torque: 50Nm

84 174



As shown on figure, using appropriate drift, tamp tooth ring into groove on grooved nut, enhancing locking.

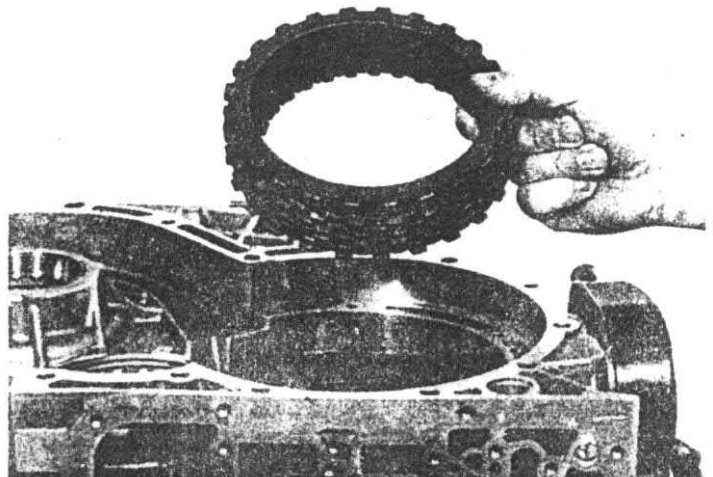
84 175



Turn over housing by 90 °C , check clutch operating condition. Clockwise turn clutch, confirm clutch can turn smoothly.

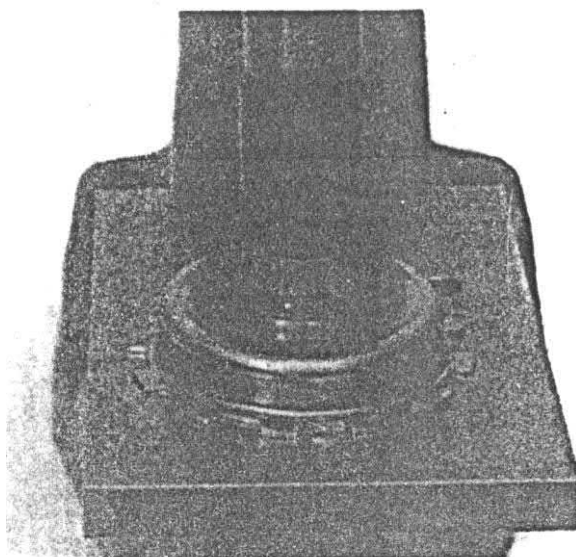
Assembling brake D assembly. Install sheet steel 17 050 first, and then install friction plate 17 060, alternately install, and install retainer ring 17 070, and then fix with the snap ring 17 080.

84 176



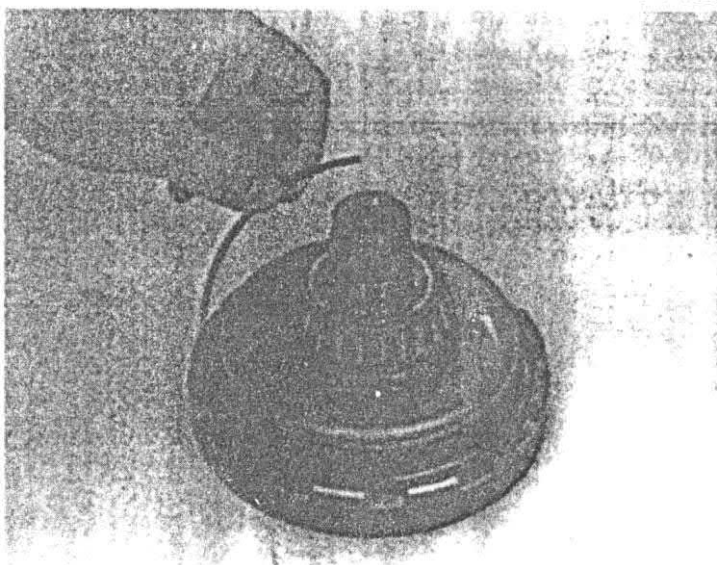
84184

Press rolling bearing inner race 14 050 into output shaft 14 010 with installing socket 5×46 000 300.



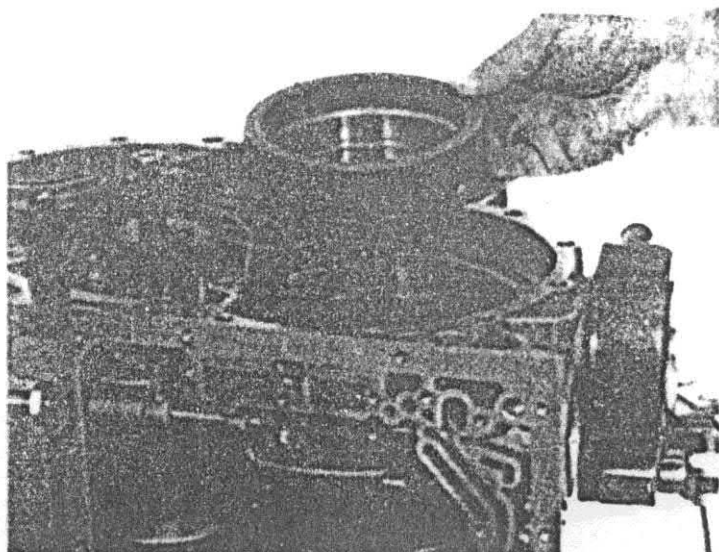
Connect output shaft with front gear ring 32 040, and fix with snap ring 32 050.

84 186



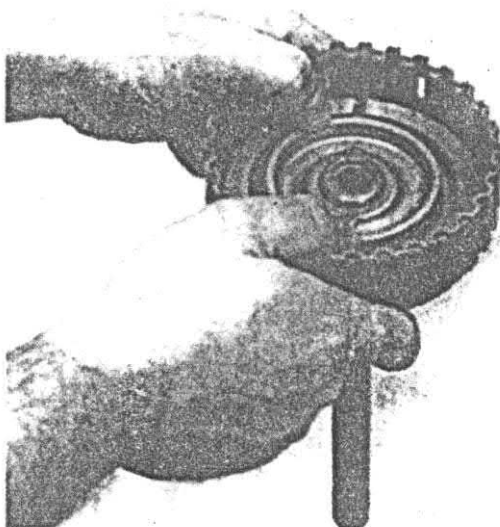
84 187

Install output shaft and front gear ring into the housing.



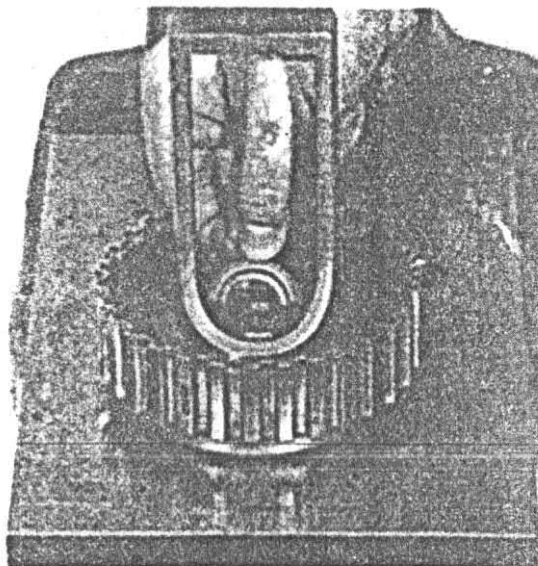
Press piston E into the cylinder body of engine input shaft 30 010.

84 201



Install two U washers 30 080 on the top of the piston with installing tool 5×46 000 148, and fix with snap ring 30 090.

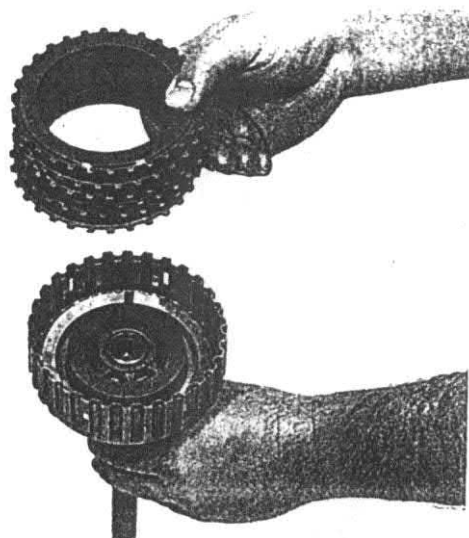
84 202



Install the whole clutch E assembly.

Install outer teeth steel sheet 30 100, and then install inner teeth friction plate 30 110, and install alternately.

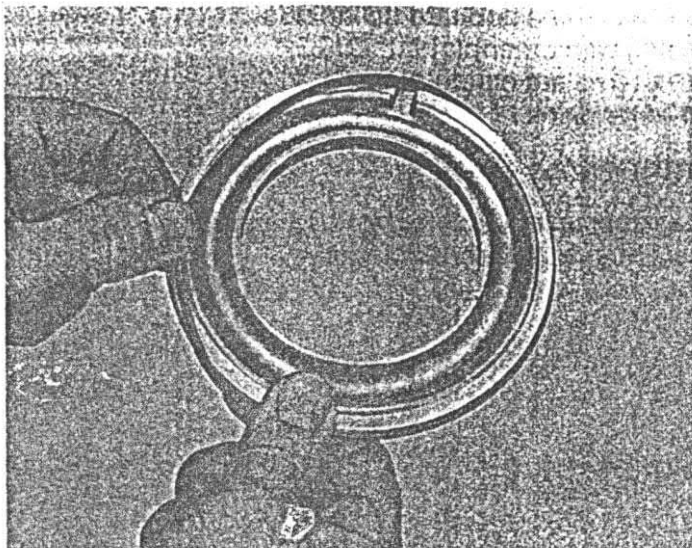
84 096





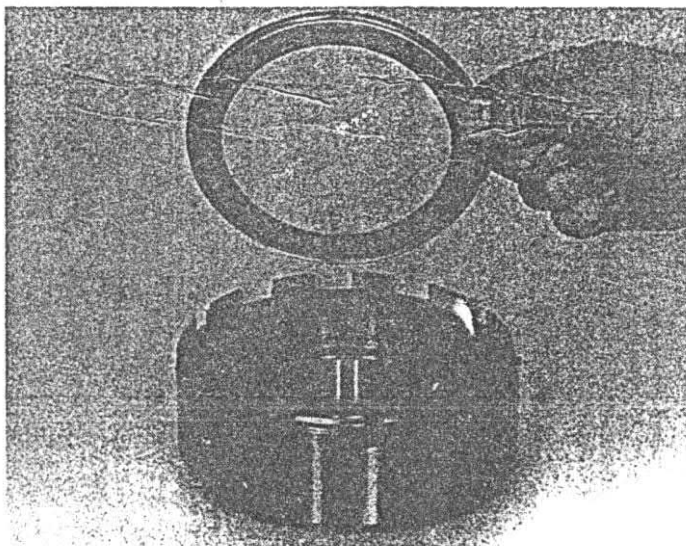
84 213

Install lubricated O-ring 31 230 into piston B 31 210.



84 214

Install piston B into the clutch drum and install one pressure ring on the piston.



84 215

Install diaphragm spring 31 290 with special tool and install thrust washer 31 302 and retainer ring 31 300.

