

Fig. 43-175. Pressing in bearing

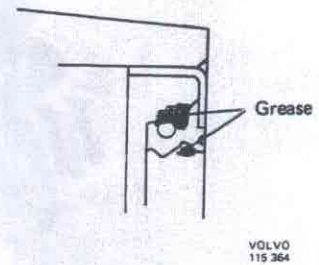


Fig. 43-178. Placing grease

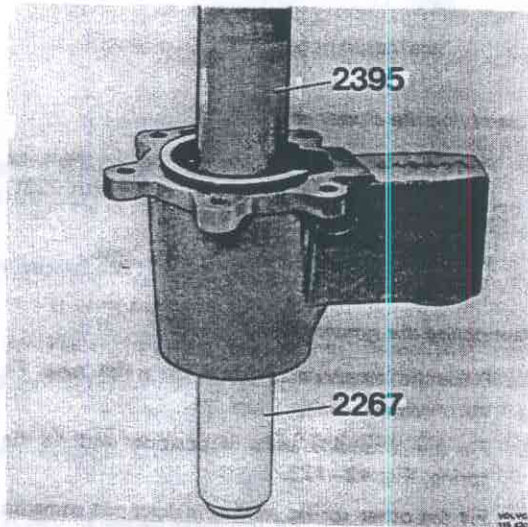


Fig. 43-176. Pressing in output shaft

Assembling the control mechanism

1. Fit the inner circlip (thickness 2.0 mm = 0.08") in position in the housing. Press in the bearing with 2267, Fig. 43-175.
2. Press in the output shaft. Use 2395 and place 2267 as a counterhold under the bearing, Fig. 43-176.
3. Fit the outer circlip. Circlips are available in thicknesses of 1.9 and 2.0 mm (0.076 and 0.080"), and use the circlip which gives the smallest clearance. Note that the opening of the circlip should be placed at the oil channel in the housing, Fig. 43-177.
4. Coat the contact surface for the seal in the housing with sealing agent.

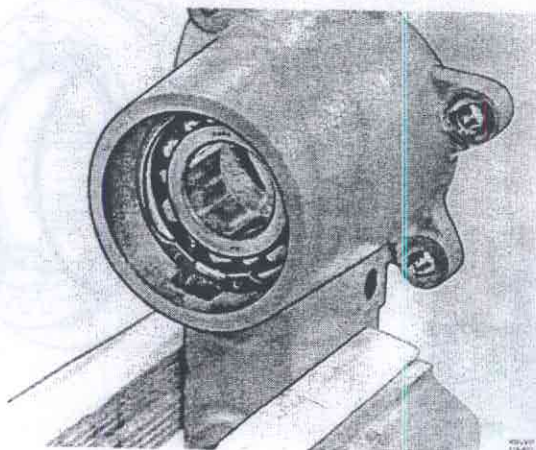


Fig. 43-177. Rear bearings circlip

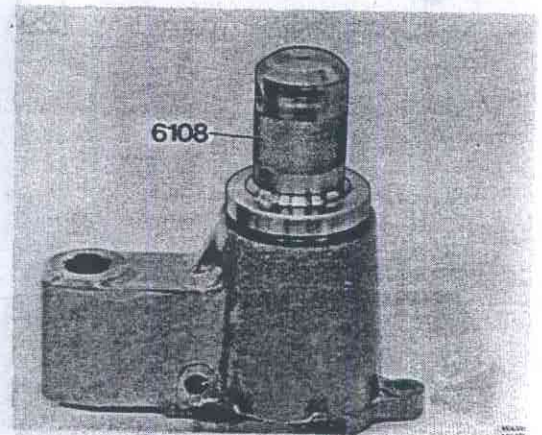


Fig. 43-179. Pressing in seal

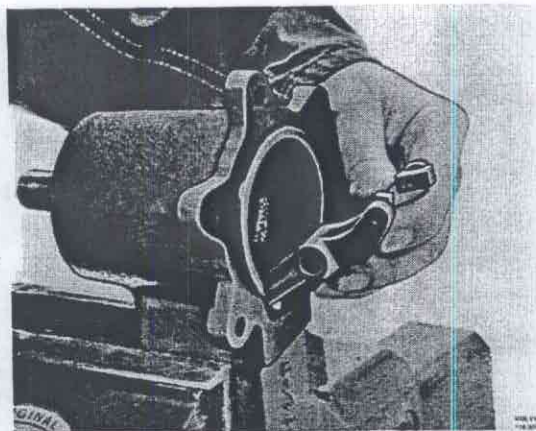


Fig. 43-180. Fitting selector fork

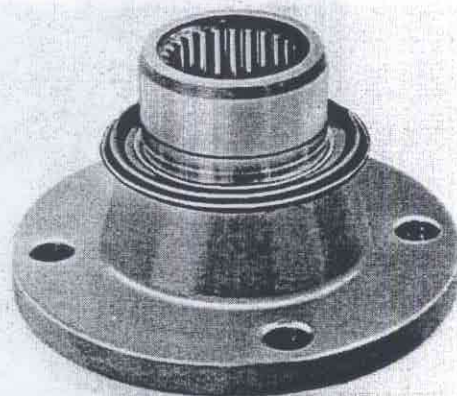


Fig. 43-182. Flange seal

5. Fill about a fourth of the space between the sealing lips and the space between the spring on the reverse side of the sealing lip with grease, Fig. 43-178. Press the seal into the housing with 6108, Fig. 43-179.
6. Secure the control mechanism in a vice. Fig. 43-180.
7. Fit the pins in the selector fork and place the fork and flange in the housing, Fig. 43-181. Coat the shaft holding the selector fork with sealing agent and drive it into the housing.
8. Place the bottom of the control cylinder and the copper washer on the holed nut. Tighten the cylinder to the control mechanism.
9. Fit a new seal on the flange, see Fig. 43-182, and grease the flange wear surface.
10. Pull on the flange with 1845, see Fig. 43-183. Remove 1845 and fit counterhold 2837, see Fig. 43-184. Fit the flange nut and tighten it to a torque of 100–120 Nm (10–12 kpm = 72–87 lbftf).

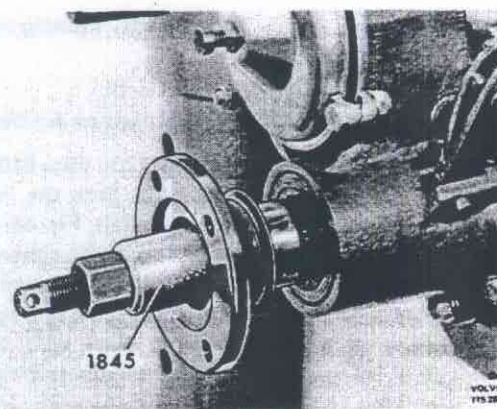


Fig. 43-183. Pressing on flange

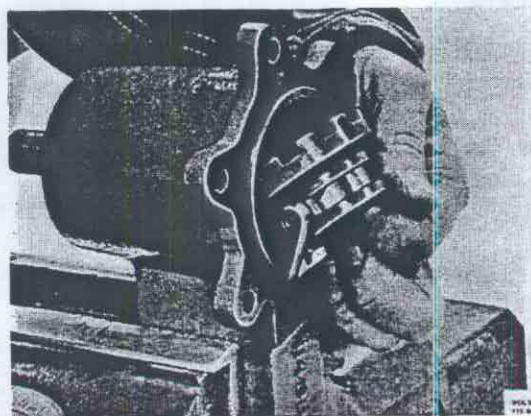


Fig. 43-181. Fitting flange

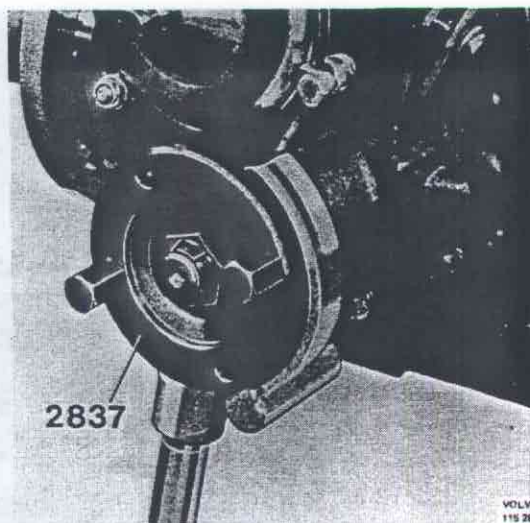


Fig. 43-184. Fitting counterhold

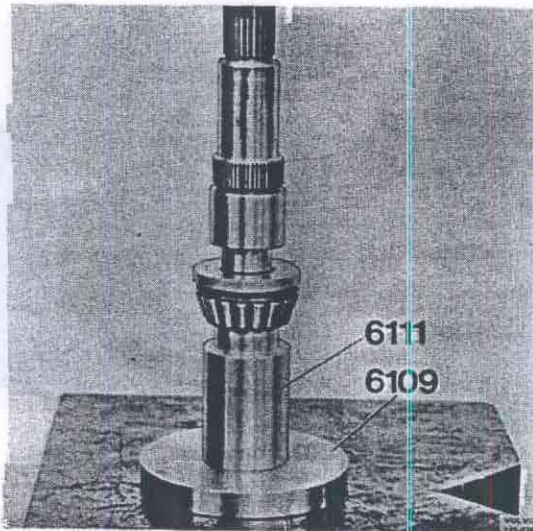


Fig. 43-185. Pressing on bearing

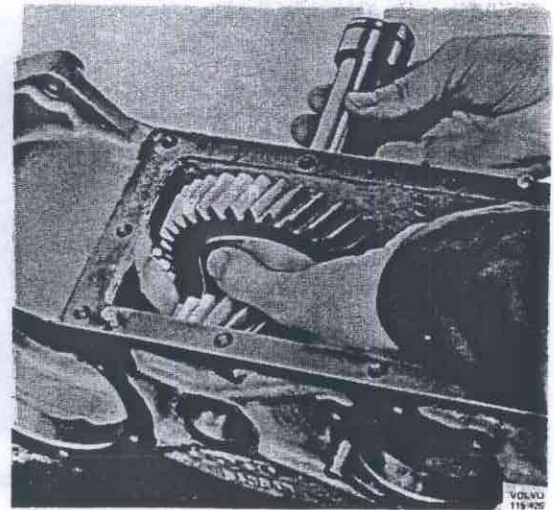


Fig. 43-187. Fitting intermediate gear shaft

Assembling other parts on auxiliary gearbox

1. Place drift 6111 in plate 6109 and place them on the press table. Press the inner race and washer on the output shaft, Fig. 43-185.

Fit the circlip for the cluster gear bearing in the housing. The circlip should be fitted with the dished side facing the bearing. Place the auxiliary gearbox in a press with the rear end resting against the press table. Press in the cluster gear with 2291, Fig. 43-186. Note that the bearing

will lie about 8 mm (5/16") outside the face of the housing before the circlip is inserted.

2. Place the intermediate gear in the auxiliary gearbox, fit a new O-ring on the intermediate gear shaft and screw it tight in the guide sleeve, Fig. 43-187. Press in the shaft and remove the sleeve, Fig. 43-188.
3. Turn the auxiliary gearbox and fit a new O-ring on the shaft. Fit the washer and nut.
4. Oil the needle bearing for the output shaft low-speed gear and place it on the gear. Place the synchronizing unit with gears in the auxiliary gearbox, Fig. 43-189.

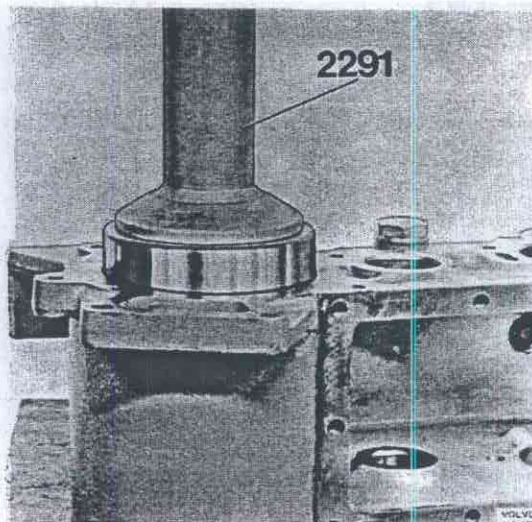


Fig. 43-186. Pressing in cluster gear

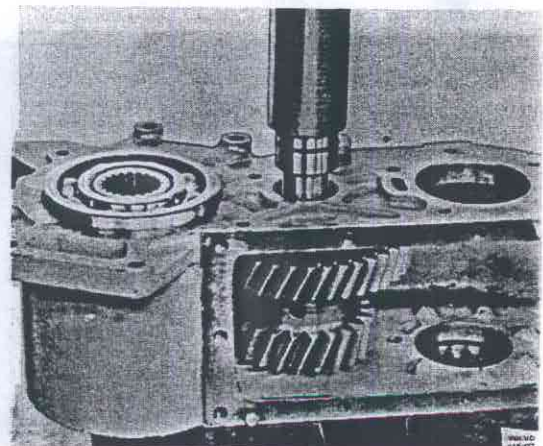


Fig. 43-188. Pressing in intermediate gear shaft

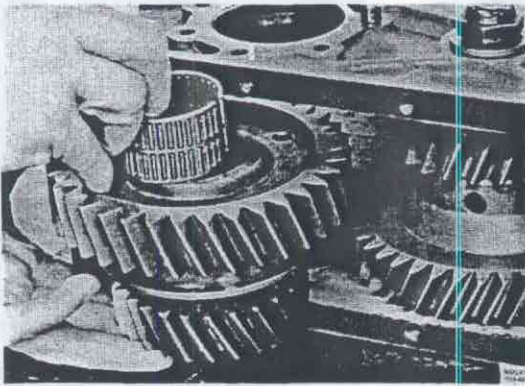


Fig. 43-189. Placing gears in aux. gearbox

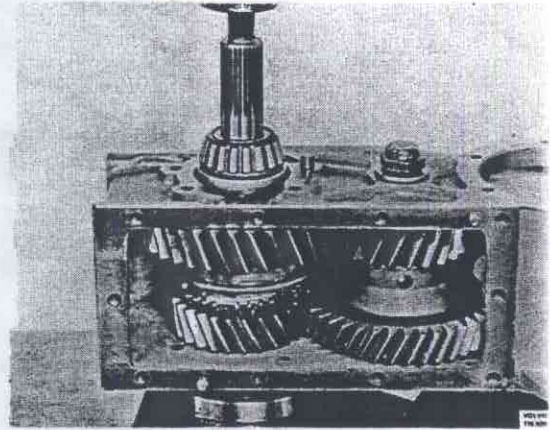


Fig. 43-191. Pressing in output shaft

5. Fit the drift 6110 in the plate 6109 and place them on the press table. Place the auxiliary gearbox on the drift, with the synchronizing hub resting against the drift, Fig. 43-190. Support under the box so that it is horizontal.
6. Fit the output shaft, rotate the shaft so that the lands on the shaft enter the hub. Press in the shaft, Fig. 43-191.
7. Remove the auxiliary gearbox. Replace the drift with 6111 and fit the ring 6122 on the drift. Turn the auxiliary gearbox and place it on the drift with ring 6122 resting against the rear bearing inner race, Fig. 43-192. Support under the auxiliary gearbox.
8. Check to make sure the synchronizing cone for the high speed is properly fitted in the hub. Fit the needle bearing inner race on the shaft and press it in with 6110, Fig. 43-193. Oil the

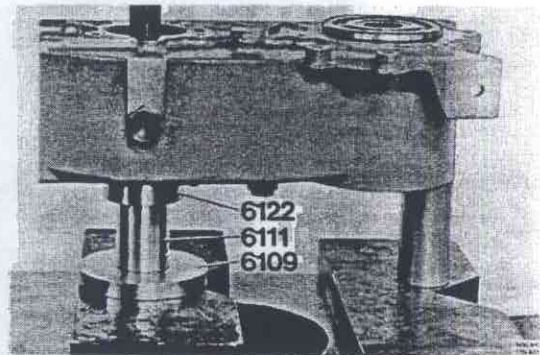


Fig. 43-192. Placing aux. gearbox

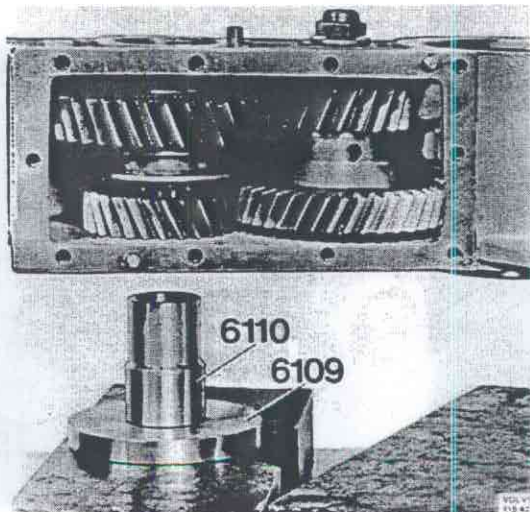


Fig. 43-190. Placing aux. gearbox on counterhold

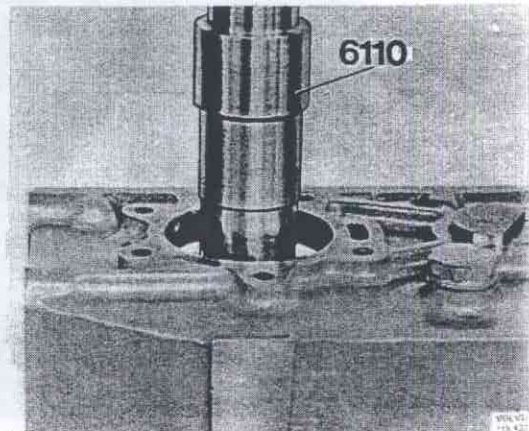


Fig. 43-193. Pressing on inner race

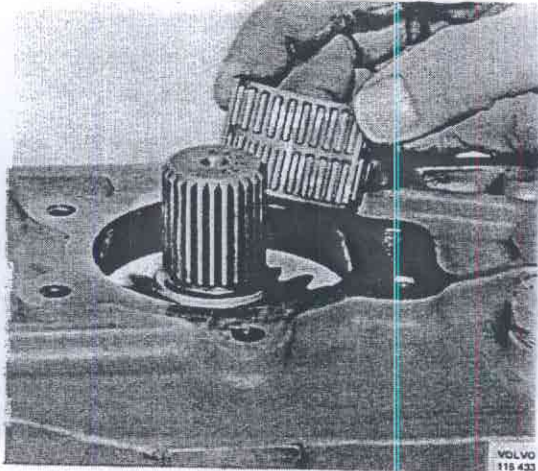


Fig. 43-194. Fitting needle bearings

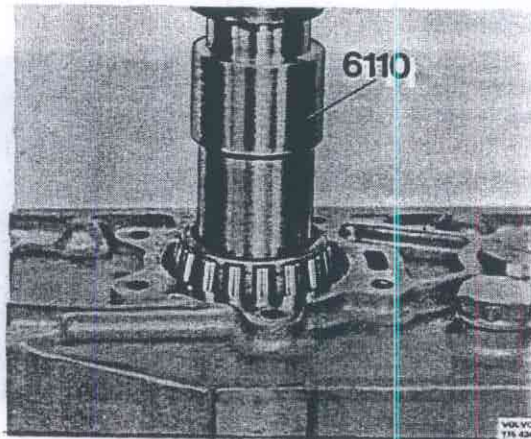


Fig. 43-195. Pressing on inner race

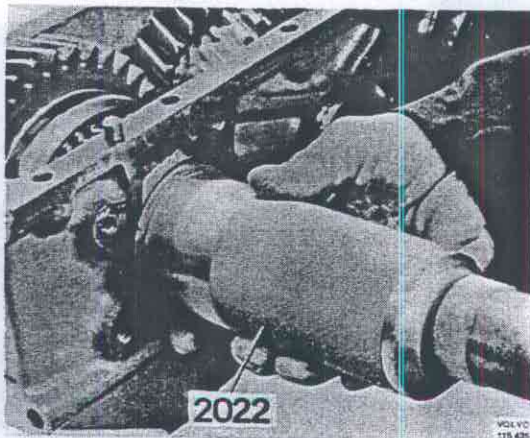


Fig. 43-196. Driving in outer race

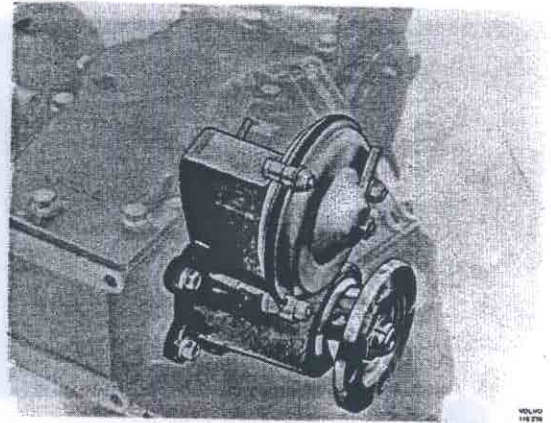


Fig. 43-197. Fitting control mechanism

needle bearings and fit them in position, Fig. 43-194.

9. Fit the axial washer and the front bearing inner race on the shaft, with the inner bevel of the washer facing upwards. Press them on with 6110, Fig. 43-195.
Fix the auxiliary gearbox in fixture 6140.

10. Drive in the outer race for the output shaft front bearing with 2022, Fig. 43-196. The race should lie about 2 mm (0.08") on the inside of the housing.

11. Coat the control mechanism contact surface with sealing agent and fit it securely in the auxiliary gearbox, see Fig. 43-197. Tighten the bolts to a torque of 20-25 Nm (2.0-2.5 kpm = 14-18 lbftf).

The engagement of the control mechanism should always be checked. See under "Adjusting the control mechanism".

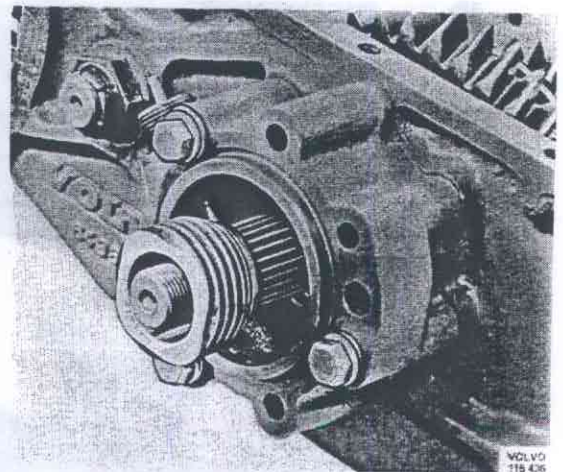


Fig. 43-198. Fitting rear housing half

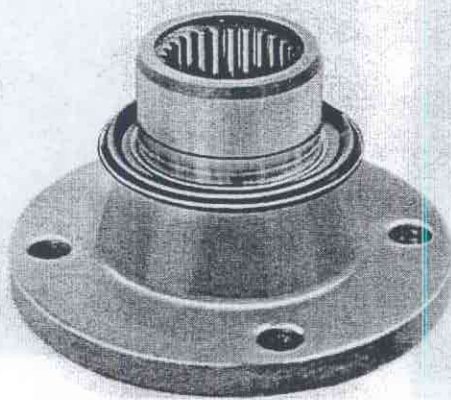


Fig. 43-199. Flange seal

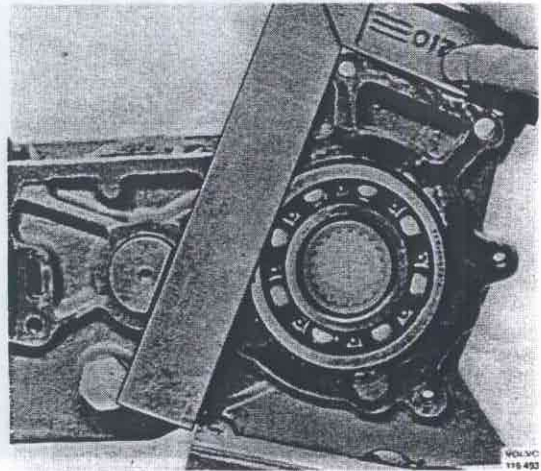


Fig. 43-201. Adjusting shaft

12. Place shims in the rear housing (use those shims removed during disassembling less one shim). Place the outer race in the housing. Fix the housing in position with the three bolts, using double washers under the bolts, Fig. 43-198.
13. Fit the speedometer pinion with the tapered part facing the rear bearing, Fig. 43-198. Fit a new seal on the flange, Fig. 43-199. Pull on the flange with 1845, Fig. 43-200. Coat the sealing lip with grease. Remove the press tool and tighten up the nut. Tighten the nut to a torque of 100–120 Nm (10–12 kpm = 72–87 lbftf).
14. Remove the auxiliary gearbox from the press and place it in a vice. Rotate the intermediate gear shaft so that the stop lug is at an angle of about 90° in relation to the connection face against the

gearbox, Fig. 43-201. Tighten the nut for the shaft to a torque of 100–120 Nm (10–12 kpm = 72–87 lbftf).

Rotate the output shaft. Check the shaft's axial clearance with a dial indicator, Fig. 43-202. Place the point of the indicator against the shaft pin. The axial clearance may be $+0.08$ (+0.0032") $+0.03$ mm (+0.0012"). The difference between the obtained and permitted measurement is the measurement for the number of shims requires. Shims are available in the following sizes: 0.1, 0.15, 0.35 and 0.50 mm (0.004, 0.006, 0.014 and 0.020").

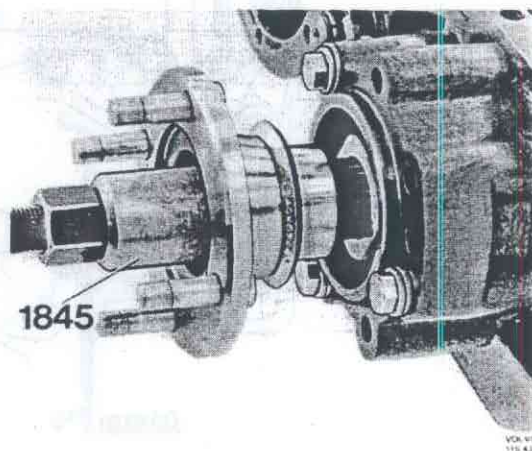


Fig. 43-200. Pressing on flange

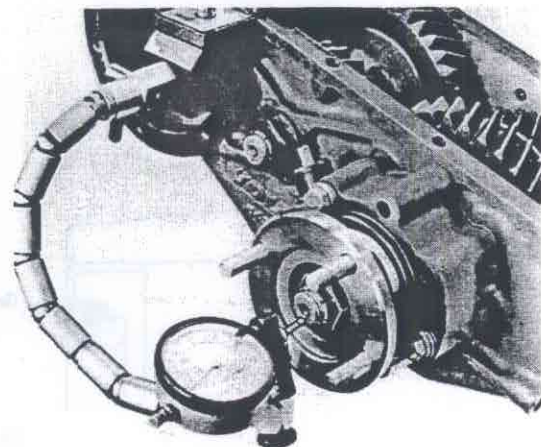


Fig. 43-202. Checking axial clearance

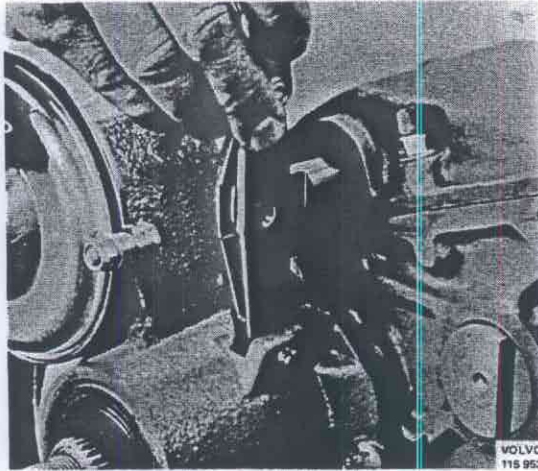


Fig. 43-203. Placing the lever

16. Remove the indicator and remove the rear flange with 2261. Remove the rear cover and the shims. If the lever has been removed, fit it according to Fig. 43-203.
17. Coat the sealing ring seat in the rear housing with sealing agent. Fill 1/4 of the space between the seal lips with grease, Fig. 43-204. Fit the seal on drift 6108 and drive the seal into the housing, Fig. 43-205. Remove the drift and grease the seal slide surfaces.
18. Coat the contact surface of the housing with sealing agent. Place the correct number of shims according to point 15 in the housing and fix the housing on the auxiliary gearbox.
19. Fit the backing plate for the propeller shaft brake. Fit a new seal on the flange and grease it. Pull on the flange and fit the nut and tighten it to a torque of 280-300 Nm (28-30 kmp = 202-217 lbftf).

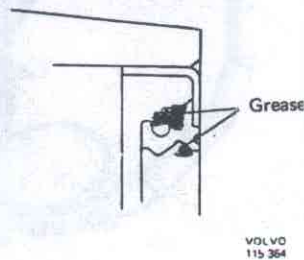


Fig. 43-204. Placing grease



Fig. 43-205. Driving in seal

20. Coat the contact surface on the selector shaft with sealing agent and fix the shaft on the auxiliary gearbox.

Adjusting the control mechanism

When adjusting the control mechanism the cover as well as the washer and diaphragm must be removed from the control cylinder.

1. Pull the pull rod so that the flange is in full mesh with the output shaft. Screw in the pull rod nut so that it is a bit on the inside of the holded nut. Fit the inner washer for the diaphragm on the rod. Press the washer against the holed nut. When the pull rod is pulled back and forth there should

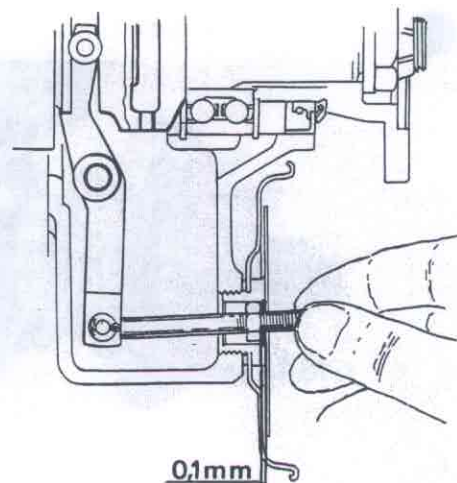


Fig. 43-206. Checking clearance

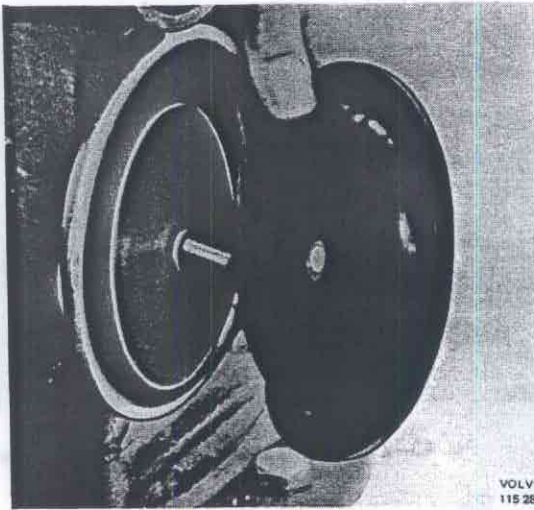
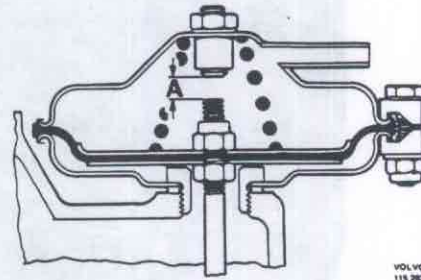


Fig. 43-207. Fitting diaphragm



A = 5 3/10 turns (8 mm)

Fig. 43-209. Screw in cover

be a clearance of about 0.1 mm (0.004"). If necessary, adjust so that the correct clearance is obtained, Fig. 43-206.

2. Fit the diaphragm and place the spacer washer in the centre of the diaphragm, Fig. 43-207. Fit on the outer washer and the lock nut. Hold the diaphragm and washer when tightening up the nut.
3. Fit the thrust spring, Fig. 43-208, and the cover. Fit the clamp bolts for the cover and make sure that they are distributed evenly round the cover.
4. Release the lock nut securing the bolt in the cover, Fig. 43-209. Screw the bolt to the bottom. Unscrew the bolt 5 3/10 turns (approx. 8 mm = 0.32") Tighten up the lock nut.



Fig. 43-208. Fitting spring and cover

Installing the auxiliary gearbox

Special tools: 2837, 6128, 6136

1. Place the auxiliary gearbox on the gearbox jack, Fig. 43-210. Check that the sleeve for the gearbox output shaft can easily be pushed back and forth in the auxiliary gearbox gear cluster. If the sleeve is stiff, the lands must be ground with carborundum. Remove the sleeve.
2. Push the auxiliary gearbox on the jack in under the vehicle. Coat the surface of the auxiliary gearbox which is in contact with the standard gearbox with sealing agent. Jack up and fit the auxiliary gearbox to the gearbox. Fit the nuts round the auxiliary gearbox connection flange.

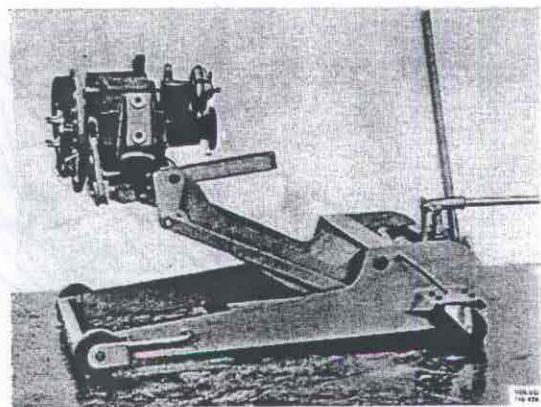


Fig. 43-210. Gearbox placed on jack