

13. Using circlip pliers fully compress the circlip (24) in the bore and carefully lift out the circlip. **Take great care not to damage the bore**, damage may lead to a brake failure.
14. Release the compression tool when the piston spring will push out the washer followed by the output piston. Discard the output piston.

### To reassemble

Refitting is the reverse of the removal sequence, but attention must be given to the following:—

- (i) All seals must be renewed and lubricated with new Girling Brake Fluid; lubricate the bores and pistons with Girling Red Rubber Grease.
- (ii) Fit a new output piston as the piston rod seal can only be fitted during manufacture. Confirm that the taper seal has the larger diameter nearer the reduced end of the piston.
- (iii) Fit the spring to the output piston, feed into the bore, spring first, followed by the washer. Hold in position with the compression tool, clipping the tool under the mounting flange of the body.
- (iv) Fit the circlip. Ensure that it does not foul the side of the bore and fits snugly into its groove; **this operation must be unhurried and the circlip pliers must be secure on the circlip**. Damage to the bore can result in brake failure. Remove the compression tool from the body.
- (v) Fit the nylon spacer (23) into the bore, large end first, followed by the gland seal, (22) lip end first, and finally fit the bearing bush (21).
- (vi) Fit the control piston to the bore so that the transverse hole aligns with the hole in the valve chest. Fit end plug (8).
- (vii) It is unlikely that the two nylon valves (20 and 30) will need renewing. When it is necessary their faces should be lapped on a piece of glass using a fine lapping paste to ensure they are airtight. Fit the valves and "T" lever complete so that the horseshoe spring location above the air valve (30) is away from the two securing screws inside the valve chest. It will be necessary to compress the end plug (8) to locate the end of the "T" lever in the control piston. Fit "horseshoe" spring and valve retainer.
- (viii) Fit a new rubber grommet in the flange of the vacuum cylinder (17) and locate a new gasket on the mounting face of the body.
- (ix) Fit the vacuum cylinder and clamping plate with the centre hole of the cylinder over the protruding bearing bush (21). At the same time enter the transfer pipe into the grommet. Ensure that there will be space over the grommet for the passage of air when the end cover is fitted. Leave the three bolts slack.
- (x) Remove the sponge rubber backing ring (2) from the piston flange and fit the new one from the service kit. Smear the special lubricant, supplied in the kit, on the leather seal (3) of the piston.
- (xi) Smear the piston rod with Girling Red Rubber Grease and with the return spring in front offer up the assembly to the vacuum cylinder.
- (xii) Position the vacuum piston and return spring inside the cylinder and push it down through the full stroke several times to align the cylinder with the bearing bush. Remove the piston and return spring and tighten the three set bolts, taking care not to move the vacuum cylinder on the flange. If the cylinder is displaced it can cause the brakes to "hang-on".
- (xiii) Replace the piston assembly and then position the end cover with a new gasket on top of the piston and press down, taking care that the piston rod (15) enters the bearing bush.
- (xiv) Secure the end cover with the nuts and screws.

### TESTING

A number of simple tests can be made when the servo unit is installed in the car which give some useful information, the only piece of equipment required is a  $\frac{3}{8}$  in.  $\times$  24 U.N.F. pipe union to fit into the hydraulic inlet port. These tests will assist, in diagnosis and proving after servicing, but they are not exhaustive and cannot equal the standard of testing in the factory with specially designed equipment. So if a servo gives cause for doubt it is always best to replace it with a factory tested unit.

IT IS ASSUMED THAT ANY FAULT CONNECTED WITH THE BRAKE SYSTEM, SUCH AS FLUID CONTAMINATION, LACK OF ADJUSTMENT, AIR IN THE HYDRAULIC SYSTEM, FLUID LEAKS, ETC., HAVE BEEN RECOGNISED AND ELIMINATED.