

Removal and Installation of ATE Power Brake

Job No.

42-14

A. General

Models 190 SL, 220 a, 220 S, and 220 SE have ATE Power Brakes as standard equipment with the exception of a few older cars of Models 190 SL and 220 a. Models 180 a, 180 b, and 219 can be equipped with a power brake as an optional extra.

On Models 180 a, 180 b, 219 and on older cars of Models 190 SL and 220 a the ATE Power Brake can also be installed subsequently. The power brake differs for the individual models (see table).

Model	Designation of power brake	Remarks
180 a, 180 b 190, 190 b 219	ATE T 50	Installed as optional equipment
190 SL	ATE T 50	Up to Chassis End No. 65 01956 installed as optional extra, as from Chassis End No. 65 01957 installed as standard equipment.
220 a	ATE T 50	Up to Chassis End No. 55 12999 installed as optional extra, as from Chassis End No. 55 13000 installed as standard equipment.
220 S	ATE T 50	Installed as standard equipment up to Chassis End No. 75 11820
	ATE T 50/12	Installed as standard equipment as from Chassis End No. 75 11821
220 SE	ATE T 50/12	Installed as standard equipment

The two ATE Power Brakes T 50 and T 50/12 differ in length and diameter of the cylinders and pistons (see table).

Power brake model	Overall length mm	Vacuum power cylinder		Hydraulic slave cylinder		Control valve piston	
		in. ϕ	mm ϕ	in. ϕ	mm ϕ	in. ϕ	mm ϕ
ATE T 50	222	6 $\frac{3}{4}$	171.5	1	25.4	$\frac{5}{16}$	7.94
ATE T 50/12	292	6 $\frac{3}{4}$	171.5	$\frac{11}{16}$	17.46	$\frac{3}{8}$	9.52

B. Vacuum Cup in ATE Power Brake

Previous models of ATE Power Brakes T 50 and T 50/12 were equipped with a leather vacuum cup. On recent power brakes plastic vacuum cups have been installed. **For these plastic cups oil lubrication is no longer required.** For this reason power brakes with plastic cups are not equipped with a screw plug on the vacuum power cylinder.

During a transition period a certain number of power brakes with plastic cups had the screw plugs screwed into the vacuum power cylinder from the inside.

C. Testing of ATE Power Brakes

The test values for the individual power brakes are listed in the table below.

Power Brake	Beginning of braking power assistance at control pressure kg/cm ²	Vacuum kg/cm ²	Hydraulic control pressure at brake master cylinder kg/cm ²	Hydraulic servo pressure at power brake kg/cm ²	Braking power multiplication factor
ATE T 50	3.5	0.4	25	47	approx. 2
		0.6	29	55	
		0.8	33	63	
ATE T 50/12	3.0	0.4	13.4	41.5	approx. 3.5
		0.8	18.8	64.5	
		0.8	24	87	

The various tests should be made in accordance with the details given in the ATE Power Brake T 50 servicing instructions published by the firm of Teves.

Power brakes without a screw plug on the vacuum power cylinder have a screw plug for connecting a vacuum tester on the control valve tube connection on the front part of the power brake.