

# Trouble Shooting Hints for the Brake System

**Job No.**

**42 — 16**

Fault	Source of trouble	Remedy
Brake pedal meets with no resistance, and is soft and spongy	<ul style="list-style-type: none"> <li>a) Air in the brake system</li> <li>b) Not enough brake fluid in the fluid reservoir</li> </ul>	<ul style="list-style-type: none"> <li>a) Bleed brake system</li> <li>b) Top up the brake fluid and bleed the system</li> </ul>
Brake system is bled, but brake pedal goes right down to the toeboard without producing any braking action	<ul style="list-style-type: none"> <li>a) Check valve in master cylinder damaged</li> <li>b) Valve seat dirty</li> <li>c) Leaky brake line</li> <li>d) Damaged or unserviceable cup in master cylinder or wheel cylinder</li> </ul>	<ul style="list-style-type: none"> <li>a) Replace check valve</li> <li>b) Clean valve seat and if necessary replace brake master cylinder</li> <li>c) Seal or replace brake line</li> <li>d) Replace unserviceable cups</li> </ul>
Brake action only after brake pedal pumping, although check valve has been replaced and brake system bled	Fatigue of pressure spring in brake master cylinder	Replace pressure spring
Brake pedal travel excessive although brake system is bled	<ul style="list-style-type: none"> <li>a) Automatic adjusting mechanism too weak Brake shoe is pulled inward by the return spring beyond the permissible clearance</li> <li>b) Excessive clearance of automatic adjustment</li> </ul>	<ul style="list-style-type: none"> <li>a) Check automatic adjustment (see Job No. 42 — 10)</li> <li>b) Check clearance between adjusting sleeve and bolt of automatic adjustment (see Job No. 42 — 10). Check bolt of automatic adjustment to see whether it is firmly seated in the brake anchor plate</li> </ul>
Brakes heat up when car is traveling or fail to release	<ul style="list-style-type: none"> <li>a) Compensating port in brake master cylinder plugged</li> <li>b) Clearance between push rod and piston of brake master cylinder too small</li> </ul>	<ul style="list-style-type: none"> <li>a) Clean compensating port with Cleaning Tool 136 589 25 61</li> <li>b) Readjust brake pedal free play (see Job No. 42 — 3)</li> </ul>

Fault	Source of trouble	Remedy
	c) Brake shoe return springs too weak or broken d) Hand brake cable sticking e) Brake shoes sticking on anchor pin f) Piston of one of the brake wheel cylinders sticking g) Shoe-to-drum clearance too small h) Brake lever pressure strut at rear wheel brakes too long i) Rubber parts swollen by use of unsuitable liquids	c) Install new return springs d) Free up hand brake cable e) Free up brake shoes on anchor pin and adjust end play of brake shoes (see Job Nos. 42—8 and 42—9) f) Repair brake wheel cylinder (see Job No. 42—7) or replace g) Bolt of the automatic adjustment is bent. Replace bolt. Measure clearance at the brake shoes (see Job Nos. 42—8, 42—9, and 42—10) h) File out the forked recess of the pressure strut i) Drain the brake system, dismantle and clean the whole brake system as specified. Replace all rubber parts including the brake hoses and the stop light switch. Fill brake system with ATE original brake fluid.
With ATE Power Brake T 50 installed in the vehicle		
	k) Rubber parts swollen by use of unsuitable liquids l) Vacuum piston of power brake T 50 fails to return to its end position or sticks m) Ball valve (75) in slave cylinder piston is not lifted from its seat (see Fig. 42—0/14)	k) In addition to cleaning and replacing all rubber parts as outlined under i), also replace the rubber parts of the power brake T 50 or replace the whole power brake l) Check leather cup (32), spring (27), push rod (28), and vacuum cylinder (49) and replace damaged parts (Job No. 42—0/14) m) Check slave cylinder piston (25) for fluid passage in both directions in this released position and if necessary replace piston (see Fig. 42—0/14)

Fault	Source of trouble	Remedy
Unsatisfactory braking action despite hard pressure	a) Brake linings oily or greasy	a) Seal rear axle shaft or wheel hub. Replace brake linings or exchange brake shoes
	b) Brake linings charred	b) Replace brake shoes
With ATE Power Brake installed in the vehicle		
	Vacuum failure due to	
	c) Collapsed, restricted or loose vacuum hose or loose hollow screw	c) Check vacuum hose and if necessary replace. Tighten hollow screw <b>Note:</b> Only copper gaskets should be used for the hollow screw. <b>Fiber gaskets on older power brakes should be replaced by copper gaskets</b>
	d) Leaking control valve	d) Replace valve cover (12) (see Figure 42 — 0/14)
	e) Low vacuum although vacuum system is in order	e) Check engine and if necessary recondition valves
	f) Leaky ball valve in slave cylinder of power brake	f) Replace piston of slave cylinder
	g) Vacuum piston sticking (see Figure 42 — 0/14)	g) Replace power brake; under certain circumstances it may be sufficient to replace the vacuum cylinder
Brakes dragging on one side	a) Bad wear-pattern of brake linings	a) Recondition brake shoes
	b) Excessive diameter of the brake shoes of one brake	b) Recondition brake shoes and chamfer as specified
	c) Brake drums out-of-round or scored	c) Re-surface brake drums, if necessary replace brake drums. Under certain circumstances, the brake drums of the individual wheels can be switched
	d) Excessive difference between the diameters of the individual brake drums	d) Re-surface brake drums to ensure equal inside diameter. If necessary, replace drums

Fault	Source of trouble	Remedy
Brakes dragging on one side	<ul style="list-style-type: none"> <li>e) Brake linings oily or greasy</li> <li>f) One brake shoe sticking on anchor pin</li> <li>g) Wheel cylinder pistons sticking</li> <li>h) Moisture in one brake</li> <li>i) Automatic adjustment not functioning properly</li> </ul>	<ul style="list-style-type: none"> <li>e) Seal rear axle shaft or wheel hub. Replace brake linings or brake shoes on both sides of the axle</li> <li>f) Free up brake shoe on anchor pin and correct end play (see Job Nos. 42 — 8 and 42 — 9)</li> <li>g) Check wheel cylinders and if necessary, repair</li> <li>h) Brake hard several times</li> <li>i) Check automatic adjustment and repair</li> </ul>
Squeaking brakes	<ul style="list-style-type: none"> <li>a) Faulty contact of front brake shoes with contact plate of brake anchor plate</li> <li>b) Excessive clearance between brake shoe eye and fixing screw</li> <li>c) Bad wear-pattern of the linings or charred lining surface</li> <li>d) Much abrasive dust in the brake</li> </ul>	<ul style="list-style-type: none"> <li>a) Straighten contact plates (see Job No. 42 — 8)</li> <li>b) Remove clearance by installing a shim of the required size (see Job No. 42 — 8) <b>Note:</b> The front wheel brakes are more liable to squeak than the rear wheel brakes. Particular care should therefore be given to this operation on the front wheel brakes</li> <li>c) Recondition brake linings (see Job No. 42 — 11). If necessary, exchange brake shoes</li> <li>d) Thoroughly clean brake with compressed air</li> </ul>
Rattling Brakes	<ul style="list-style-type: none"> <li>a) Excessive out-of-roundness of rear brake drums</li> <li>b) Excessive variation in wall thickness of rear brake drums</li> </ul>	<ul style="list-style-type: none"> <li>a) Check out-of-roundness of the brake drums by means of a dial gage. Out-of-roundness must not be in excess of 0.05 mm. If necessary, recondition the brake drums (see Job No. 42 — 12)</li> <li>b) Replace brake drums. The maximum admissible variation in wall thickness is 1 mm.</li> </ul>

Fault	Source of trouble	Remedy
	c) Bad wear-pattern of brake linings d) Rear shock absorbers unequal in effect e) Rear axle suspension defective f) Excessive wheel rim wobble	c) Recondition brake linings d) Replace rear shock absorbers e) Check rear axle suspension and if necessary, repair f) Check wheel rims and if necessary, replace
Fluid reservoir needs frequent replenishing with brake fluid	a) Leakage in hydraulics system b) Brake master cylinder leaking c) Brake wheel cylinder leaking	a) Check all lines, hoses, and unions for leaks. When doing this, press down brake pedal firmly and hold in position with pedal jack b) Check brake master cylinder and if necessary, replace secondary cup. Use only three-lipped secondary cups c) Check brake cylinder and if necessary, replace cups
With ATE Power Brake T 50 installed in the vehicle		
	d) Leaking cups on control valve piston e) Leaking cup on the push rod of the vacuum piston	d) Replace complete control valve piston. <b>Use only control valve pistons with two cups</b> e) Replace cup <b>Note:</b> If there is a leak in the hydraulic part of the ATE Power Brake, brake fluid is drawn into the engine through the vacuum hose. <b>Caution:</b> Brake fluid is incompatible with engine oil. In such cases the engine oil must be changed and the engine must be thoroughly flushed out before new oil is put in