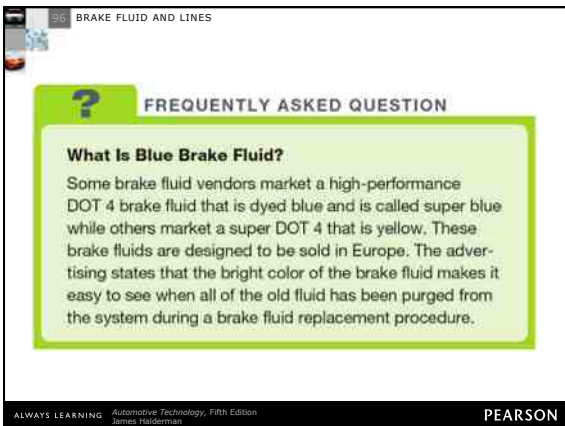


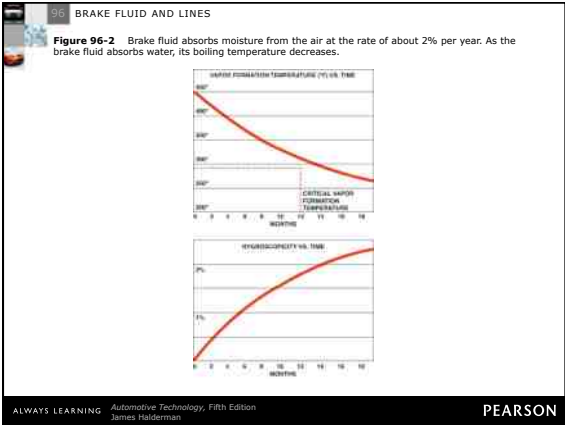
Figure 96-1 Brake fluid can absorb moisture from the air even through plastic, so many experts recommend that brake fluid be purchased in metal containers, if possible.

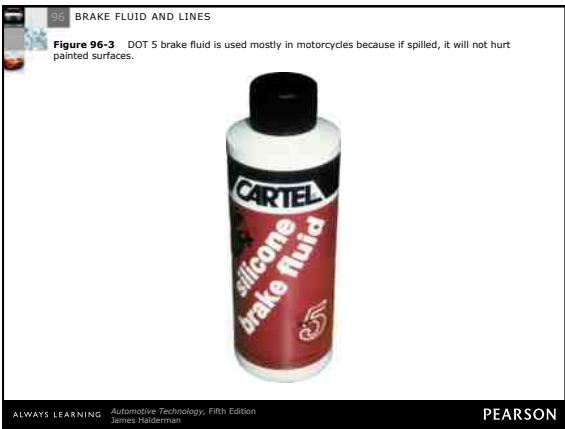


? FREQUENTLY ASKED QUESTION

What Is Blue Brake Fluid?

Some brake fluid vendors market a high-performance DOT 4 brake fluid that is dyed blue and is called super blue while others market a super DOT 4 that is yellow. These brake fluids are designed to be sold in Europe. The advertising states that the bright color of the brake fluid makes it easy to see when all of the old fluid has been purged from the system during a brake fluid replacement procedure.













96 BRAKE FLUID AND LINES

REAL WORLD FIX

The Pike's Peak Brake Inspection.

All vehicles must stop about halfway down Pike's Peak Mountain in Colorado (14,110 ft [4,300 m]) for a "brake inspection." When this author stopped at the inspection station, a uniformed inspector simply looked at the right front wheel and waved us on. I pulled over and asked the inspector what he was checking. He said that when fringes and drums/rotors get hot, the vehicle loses brake effectiveness. But if the brake fluid boils, the vehicle loses its brakes entirely. The inspector was listening for boiling brake fluid at the front wheel and feeling for heat about 1 ft (30 cm) from the wheel. The inspector used an infrared pyrometer to measure the front wheel brakes and if the brakes were too hot to continue, you would be instructed to pull over and wait for the brakes to cool. The inspector recommended placing the transmission into a lower gear, which uses the engine to slow the vehicle during the descent without having to rely entirely on the brakes.

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CHART 96-1 Notice that if a rubber is OK to use for brake fluid it is not OK to use for oil or grease.

NAME	ABBREVIATIONS	OK	NOT OK	USES
Oxydine propylene diene (developed in 1965)	EPDM, EPDM, EPDM	Brake fluid, silicone fluids	Petroleum fluids	Most brake system seals and parts
Olyrene, butadiene (developed in 1920s)	SBR, BRUN S, GR	Brake fluid, silicone fluids, acetone	Petroleum fluids	Some drum brake seals, O-rings
Nitrile (acrylonitrile-butadiene rubber)	NBR, BUTEN N	Petroleum fluids, ethylene glycol (antifreeze)	Brake fluid	Engine seals, O-rings
Norprene	CR	Hydrocarbons (kerosene, #12 and #1 kerosene), petroleum fluids	Brake fluids	Retainer, O-rings
Polycrylate	ACM	Petroleum fluids, automatic transmission fluids	Brake fluids	Automatic transmission and engine seals
Viton (fluoroelastomer)	FVM	Petroleum fluids	Brake fluid, 170c refrigerant	Engine seals, fuel system parts
Natural rubber	NR	Water, brake fluid	Petroleum fluids	None

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Figure 96-6 The master cylinder piston seals are usually constructed from EPDM rubber, and the diaphragm of the vacuum power brake booster is usually made from SBR.

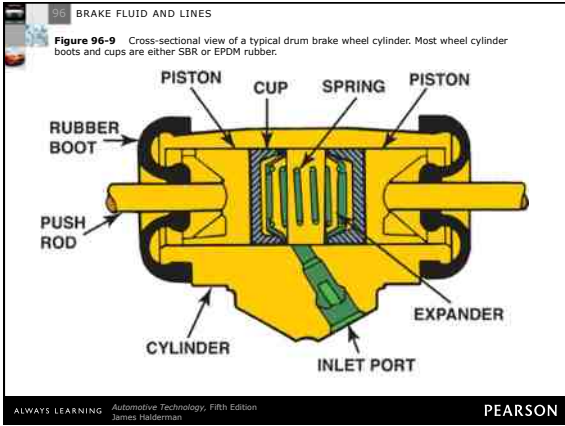
DRUM

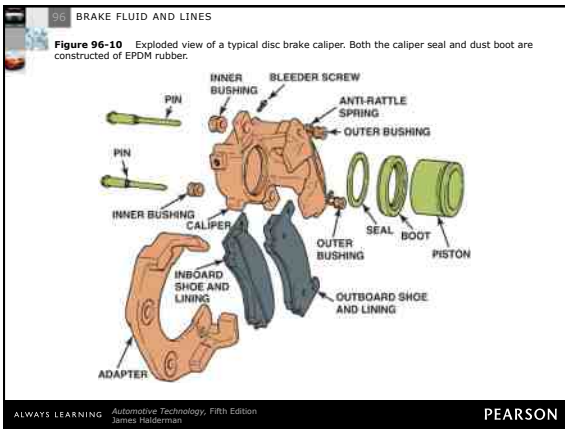
DIAPHRAGM

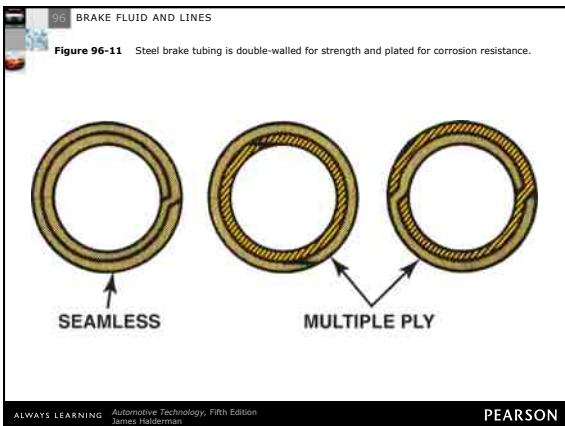
PUSHROD (TO MASTER CYLINDER PISTON)

PUSHROD (FROM BRAKE PEDAL)

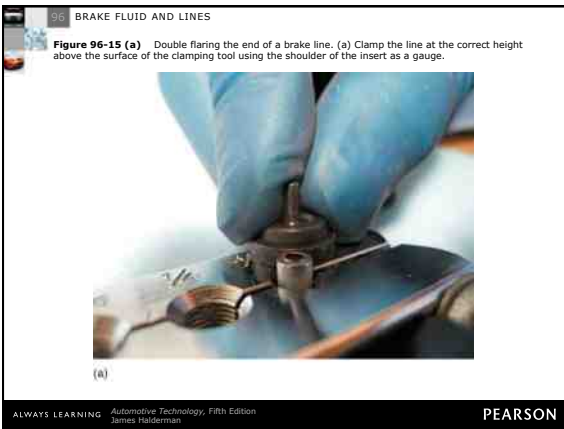
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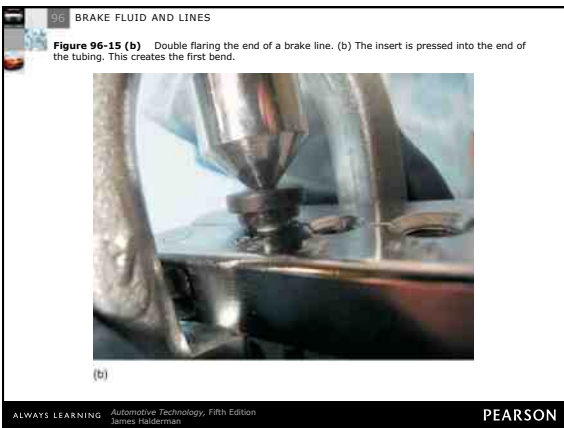






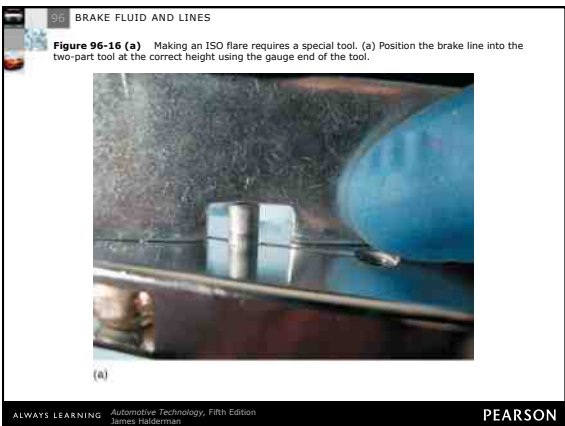




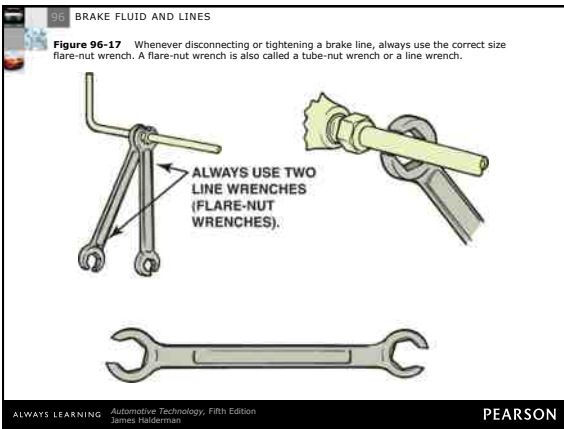


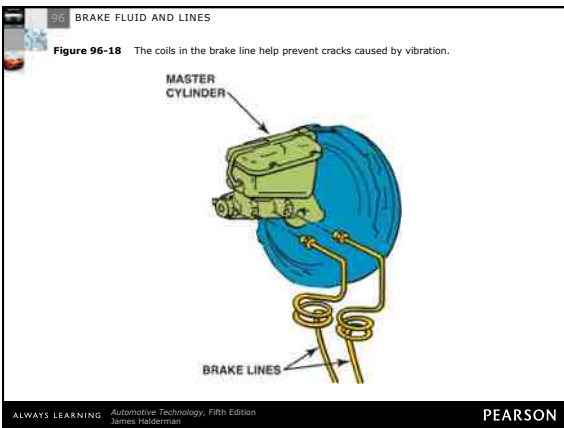






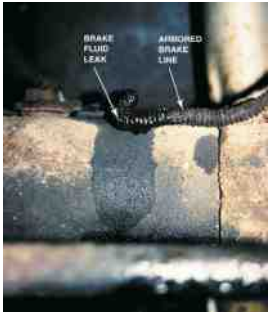






96 BRAKE FLUID AND LINES

Figure 96-19 Armored brake line is usually used in the location where the line may be exposed to rock or road debris damage. Even armored brake line can leak and a visual inspection is an important part of any brake service.



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96 BRAKE FLUID AND LINES

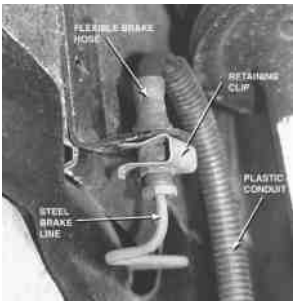
Figure 96-20 A tube bender being used to bend a brake line.



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96 BRAKE FLUID AND LINES

Figure 96-21 Flexible brake hoses are used between the frame or body of the vehicle and the wheel brakes. Because of suspension and/or steering movement, these flexible brake lines must be strong enough to handle high brake fluid pressures, yet remain flexible. Note that this flexible brake hose is further protected against road debris with a plastic conduit covering.



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