BRAKE SYSTEM TROUBLE SHOOTING

NOTE — *This is a general trouble shooting guide. Not all steps will apply to all brake systems. When using this guide, locate the condition in column one that corresponds to your problem and determine the possible causes in column two. Match the number of the possible causes with the same number in column three.*

CONDITION	POSSIBLE CAUSE	CORRECTION
► Brake chatter, squeal, squeak	1) Dust on drums/rotors, oil stained linings 2) Weak shoe return spring 3) Drum out of round 4) Excessively worn pads or shoes 5) Uneven rotor surface 6) Excessive lateral rotor runout 7) Excessive wheel bearing play	1) Remove drum/rotor, clean 2) Check, replace springs 3) Turn drum on lathe 4) Replace pads or shoes 5) Check rotor surface in various locations with micrometer 6) Check runout with dial indicator, resurface or replace rotor 7) Readjust or replace bearings
► Excessive pedal travel	1) Excessive rotor runout 2) Brake fluid boil 3) Warped or excessively worn pads or shoes 4) Rear brakes out of adjustment 5) Power brake unit malfunction	1) Check rotor with dial gauge, resurface or replace 2) Drain system, refill with fluid of correct specification 3) Check and replace pads or shoes 4) Adjust shoe to drum clearance 5) Check and either overhaul or replace unit
► Poor brake operation	1) Too long brake lever stroke 2) Brake cable sticking 3) Excessive shoe to drum clearance	1) Readjust brake pedal lever 2) Check brake cable routing and lubricate 3) Check self-adjuster machanism; readjust or replace components
► Shock when pedal applied	1) Brake durm cracked or distorted 2) Uneven brake drum wear 3) Broken return spring	1) Replace drum 2) Resurface drum or replace 3) Replace springs
► Leaks in caliper piston cylinder	1) Damaged or excessively worn caliper piston seal 2) Deep scores or corrosion on surface of cylinder bore	1) Overhaul caliper and install new seals 2) Overhaul caliper and hone (unless not recommended by manufacturer); install new seals
► Rattling in front brakes	1) Pad anti-rattle spring clip broken or missing 2) Excessive clearance between pads and caliper	1) Install new part or reposition existing one 2) Fit caliper with new pads
► Pull when brake applied	1) Incorrect tire pressure 2) Front end out of alignment 3) Unmatched tires 4) Restricted brake lines or hoses	1) Inflate tires evenly as indicated in owners manual 2) Check and align front end 3) Make sure all tires have approximately equal amounts of tred and pressure 4) Inspect for soft hoses or damaged lines. Replace with new hoses or brake tubing

BRAKE SYSTEM TROUBLE SHOOTING (Cont.)

CONDITION	POSSIBLE CAUSE	CORRECTION
► Excessive pedal pressure required	1) Linings coated with brake fluid, oil or grease 2) Entire pad not contacting rotor 3) Scored brake rotors 4) Incorrect pads 5) Seized piston 6) Power brake failing	1) Fit new pads or shoes 2) Replace pads 3) Resurface rotor according to specs. 4) Check pads 5) Overhaul caliper, check piston 6) Check power unit and replace
► Low pedal effect	1) Air in hydraulic system, brakes not properly bled 2) Hydraulic fluid leaking past primary cup in master cylinder 3) Bleeder screw not tight	1) Check for air leaks and bleed hydraulic system 2) Overhaul master cylinder making sure to replace cups 3) Tighten bleeder screw
► Uneven braking	1) Linings contaminated 2) Unmatched disc pads 3) One or more seized pistons 4) Incorrect tire pressure 5) Front wheel out of alignment 6) Brake hose or line clogged 7) Caliper alignment improper	1) Clean or refit with new pads/shoes 2) Ensure all pads on any axle are same quality 3) Overhaul caliper to free piston 4) Inflate tires according to manufacturers recommendations 5) Align front wheels 6) Free restriction 7) Remove and realign caliper
► Brake pedal pulsation	1) Excessive rotor lateral runout 2) Rotor not parallel 3) Wheel bearings out of adjustment 4) Rear drums out of round	1) Check rotor runout with dial gauge 2) Check rotor and replace 3) Adjust 4) Check drums and turn or replace
► Spongy pedal	1) Air in brake system 2) Swollen brake hose(s) 3) Brake fluid boiling point too low 4) Filler cap vent hole plugged	1) Bleed system 2) Replace hose and bleed system 3) Drain, flush and refill with fluid of proper specifications 4) Clean, then bleed system
► Pedal yield under slight pressure	1) Deteriorated check valve 2) External brake fluid leaks 3) Internal leak in master cylinder	1) Replace valve, bleed system 2) Check master cylinder, lines, and wheel cylinders; replace 3) Overhaul master cylinder
► Brake failure or heavy pedal	1) Power unit diaphragm damaged 2) Check valve malfunctioning 3) Defective vacuum hose 4) Twisted air valve and valve rod plunger	1) Check and/or replace diaphragm 2) Replace valve 3) Replace hose 4) Disassemble and repair
► Brakes react slowly	1) Check valve malfunction 2) Vacuum hose blocked or broke 3) Air cleaner clogged or restricted	1) Clean or replace check valve 2) Replace hose 3) Clean or replace air cleaner
► Brake drag or slow return	1) Push rod out of alignment 2) Operating rod out of adjustment 3) Air valve and push rod plunger twisted	1) Disassemble and repair 2) Adjust 3) Adjust