

BRAKES

Problem Solvers



BRAKE PROBLEM	CAUSE	CURE
Excessive brake pedal travel	<ol style="list-style-type: none"> 1. Brakes need adjusting or replacement 2. Air in system 3. Faulty master cylinder 4. Leaking or contaminated fluid 	<ol style="list-style-type: none"> 1. Adjust or renew brake shoes. 2. Bleed hydraulic system. 3. Fit new master cylinder. 4. Bleed hydraulic system.
Brake fade	<ol style="list-style-type: none"> 1. Incorrect pad or lining material 2. Old or contaminated fluid 3. Excessive use of brakes or car overloaded 	<ol style="list-style-type: none"> 1. Fit new pads or shoes. 2. Renew brake fluid. 3. Check vehicle load.
Spongy brake pedal	<ol style="list-style-type: none"> 1. Air in hydraulic system 2. Shoes badly lined or distorted 3. Faulty hydraulic cylinder 	<ol style="list-style-type: none"> 1. Bleed system. 2. Fit new pads or shoes. 3. Check hydraulic circuit.
Brake pedal too hard	<ol style="list-style-type: none"> 1. Seized wheel cylinder or caliper piston 2. Glazed friction material 	<ol style="list-style-type: none"> 1. Replace seized component. 2. Fit new shoes/pads.
Brake pedal requires pumping or loss of pedal	<ol style="list-style-type: none"> 1. Brakes wrongly adjusted 2. Air in hydraulic system 3. Fluid leak from component or brake pipe 4. Loss of fluid from master cylinder 	<ol style="list-style-type: none"> 1. Adjust brakes. 2. Bleed system. 3. Check hydraulic circuit and replace parts as necessary. 4. Check hydraulic circuit and replace parts as necessary.
Brakes grab when applied	<ol style="list-style-type: none"> 1. Contaminated friction material 2. Wrong linings fitted 3. Scored drums or discs 	<ol style="list-style-type: none"> 1. Replace (don't clean) pads or shoes. 2. Replace (don't clean) pads or shoes. 3. Fit new drum or disc.
Brake squeal	<ol style="list-style-type: none"> 1. Worn retaining pins (disc) 2. Faulty damping shims or shoe retaining clips 3. Dust in drum 4. Loose backplate or caliper 	<ol style="list-style-type: none"> 1. Fit new pins. 2. Fit new shims or clips. 3. Remove dust from drums and shoe. 4. Tighten caliper or backplate.
Brake Shudder	<ol style="list-style-type: none"> 1. No clearance at master cylinder operating rod 2. Shoe tension springs either broken or weak 3. Wheel cylinder or caliper piston seizing 4. Faulty self-adjusting mechanism 5. Seized handbrake mechanism 	<ol style="list-style-type: none"> 1. Adjust rod if possible. 2. Replace tension springs. 3. Fit new caliper or cylinder. 4. Check mechanism. 5. Check handbrake operation.
Brake pull to one side only	<ol style="list-style-type: none"> 1. Contaminated friction material on one side (grease, oil or brake fluid) 2. Loose backplate 3. Seized cylinder 4. Faulty suspension or steering 	<ol style="list-style-type: none"> 1. Replace shoes/pads all round 2. Tighten backplate. 3. Replace seized cylinder 4. Check suspension and steering.
Handbrake ineffective	<ol style="list-style-type: none"> 1. Worn rear shoes or pads 2. Brakes require adjusting 3. Faulty handbrake linkage 4. Cable or rod requires adjustment 	<ol style="list-style-type: none"> 1. Fit new pads/shoes 2. Adjust brakes. 3. Check linkage and operating mechanism. 4. Adjust cable or rod.
Servo (where fitted) late in operation	<ol style="list-style-type: none"> 1. Blocked filter 2. Bad vacuum sealing or restricted air inlet 	<ol style="list-style-type: none"> 1. Clean or replace filter. 2. Tighten vacuum hose connections and check hoses

BRAKE PROBLEM		CAUSE		CURE
Loss of servo action when braking heavily	1.	Air leak in servo-vacuum low	1.	Either overhaul servo or replace.
Loss of fluid (Servo only)	1.	Seal failure	1.	Replace or overhaul servo
	2.	Scored Servo bores	2.	Replace or overhaul servo
	3.	Damaged or corroded pipes	3.	Inspect and fit new pipes

ENGINE Problem Solvers



When listening to the engine noise like the tappets, etc. this can be done using the handle from the car jack as a listening rod. Great care should be taken when listening to the noise in the area of the fan and pulleys i.e. generator bearings etc. Best to listen in the different areas BEFORE something goes wrong, so you will know the different sound, or if yours is already sick, the sound of a friend's.

ENGINE PROBLEM	CAUSE	CURE
Lack of compression	<ol style="list-style-type: none"> 1. Faulty valve seat, excessive wear in stem or guide. 2. Faulty head gasket. 3. Worn pistons, rings and bores. 	<ol style="list-style-type: none"> 1. Recut seat and valve, fit new guide and valve. 2. Fit new gasket or reface head. 3. Either fit new rings, or if badly worn, fit new pistons and rings, and have block rebored.
Piston slap	<ol style="list-style-type: none"> 1. As #3 above. 	<ol style="list-style-type: none"> 1. As #3 above.
Smoke from exhaust Lack of power	<ol style="list-style-type: none"> 1. As above. 2. Blocked crankcase breather. 	<ol style="list-style-type: none"> 1. As above. 2. Check breathing apparatus.
Noisy tappet (with correct clearance)	<ol style="list-style-type: none"> 1. Wear in rocker pad face and / or rocker sleeve and shaft (OHV). 2. Worn cam follower (OHC). 	<ol style="list-style-type: none"> 1. Reface pad surface, replace rockers or shaft (OHV). 2. Fit new followers (OHC).
Big-end knock	<ol style="list-style-type: none"> 1. Wear between big-end shell and crankcase. Wrong torque on bolts. 	<ol style="list-style-type: none"> 1. Depending on wear, fit new shells, regrind crankshaft and check torque.
Mains rumble	<ol style="list-style-type: none"> 1. Wear between main bearing shells and crankshaft. 	<ol style="list-style-type: none"> 1. As above.
Cam follower tap	<ol style="list-style-type: none"> 1. Camshaft worn or follower dished. 	<ol style="list-style-type: none"> 1. Examine and replace followers or camshaft. Or both.
Knocking when clutch depressed. Movement at crank pulley	<ol style="list-style-type: none"> 1. Excessive crankshaft end-float. Wear between crank and thrust washer. 	<ol style="list-style-type: none"> 1. Fit new thrust washers and recheck clearance.
Clattering from front of engine	<ol style="list-style-type: none"> 1. Excessive or slack timing chain, worn chain tensioner. 	<ol style="list-style-type: none"> 1. Fit new chain and tensioner. Adjust chain where necessary.
Small-end or gudgeon pin knock	<ol style="list-style-type: none"> 1. Excessive wear between gudgeon pin and con-rod. 	<ol style="list-style-type: none"> 1. Fit new bush to con-rod.
Lack of oil pressure	<ol style="list-style-type: none"> 1. Excessive wear in crankshaft journals. 2. Faulty oil pump. 3. Blocked oil pick-up strainer. 4. Faulty pressure-relief valve. 5. Blocked oil filter. 6. Lack of oil. 	<ol style="list-style-type: none"> 1. Overhaul engine. 2. Fit new pump. 3. Clean pick-up. 4. Fit new relief valve. 5. Fit new filter. 6. Install fresh oil.
Oil leaks	<ol style="list-style-type: none"> 1. Sump gaskets or packings. 2. Front and rear crankshaft oil seal. 3. Rocker or camshaft gasket. 4. Oil filter. 	<ol style="list-style-type: none"> 1. Fit new gaskets. 2. Fit new seals. 3. Fit new gasket. 4. Check filter seal.
Lack of power (engine in good condition)	<ol style="list-style-type: none"> 1. Faulty ignition timing. Faulty sparking plugs, points or condenser. Wrong valve clearance. 	<ol style="list-style-type: none"> 1. Tune engine.

STEERING Problem Solvers



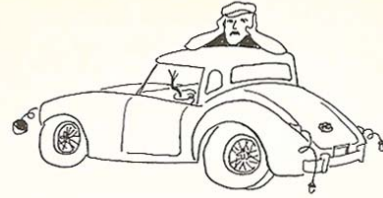
STEERING PROBLEM	CAUSE	CURE
Steering feels stiff	<ol style="list-style-type: none"> 1. Low tyre pressures 2. Incorrect wheel alignment 3. Stiff track rod ends 4. Steering box/rack needs adjustment. 	<ol style="list-style-type: none"> 1. Correct tyre pressures. 2. Correct wheel alignment. 3. Check and replace if necessary. 4. Adjust if necessary.
Steering wheel shake	<ol style="list-style-type: none"> 1. Wheels and tires need balancing 2. Tyre pressures incorrect 3. Incorrect wheel alignment 4. Wheel hub nut loose 5. Wheel bearings damaged 6. Front suspension distorted 7. Steering box/rack needs adjustment. 8. Shock absorbers faulty 	<ol style="list-style-type: none"> 1. Balance as necessary. rectify 2. Correct. 3. Correct alignment.. 4. Adjust wheel bearings. 5. Replace wheel bearings. 6. Check, repair or replace. 7. Adjust as necessary. 8. Check and rectify.
Steering pulls to one side	<ol style="list-style-type: none"> 1. Uneven tyre pressure 2. Wheel alignment incorrect 3. Wheel bearings worn or damaged 4. Brakes improperly adjusted 5. Shock absorbers faulty 6. Suspension distorted 7. Steering box/rack worn 	<ol style="list-style-type: none"> 1. Correct 2. Correct. 3. Replace and adjust. 4. Adjust brakes. 5. Check and rectify. 6. Check and rectify. 7. Adjust or replace.
Wheel tramp	<ol style="list-style-type: none"> 1. Over-inflated tyres 2. Unbalanced tyre and wheel 3. Defective shock absorber 4. Defective tyre 	<ol style="list-style-type: none"> 1. Correct pressure. 2. Check and balance if necessary. 3. Check and rectify. 4. Repair or replace.
Abnormal tire wear	<ol style="list-style-type: none"> 1. Incorrect tire pressure 2. Incorrect wheel alignment 3. Excessive wheel bearing play 4. Improper driving 	<ol style="list-style-type: none"> 1. Check pressures. 2. Check wheel alignment. 3. Adjust wheel bearings. 4. Avoid sharp turning at high speeds, rapid starting and braking, etc.
Tyre noises	<ol style="list-style-type: none"> 1. Improper tyre inflation 2. Incorrect wheel alignment 	<ol style="list-style-type: none"> 1. Correct tyre pressures. 2. Correct wheel alignment.

FUEL Problem Solvers



FUEL PROBLEM	CAUSE	CURE
Flooding	<ol style="list-style-type: none"> 1. Improper seating or damaged float needle valve or seat 2. Incorrect float level 3. Fuel pump has excessive pressure 	<ol style="list-style-type: none"> 1. Check and replace parts as necessary. 2. Adjust float level. 3. Check fuel pump.
Excessive fuel consumption	<ol style="list-style-type: none"> 1. Engine out of tune 2. Float level too high 3. Loose plug or jet 4. Defective gasket 5. Fuel leaks at pipes or connections 6. Choke valve operates improperly 7. Obstructed air bleed 	<ol style="list-style-type: none"> 1. Tune engine. 2. Adjust float level. 3. Tighten plug or jet. 4. Replace gaskets. 5. Trace leak and rectify. 6. Check choke valve. 7. Check and clear.
Stalling	<ol style="list-style-type: none"> 1. Main jet obstructed 2. Incorrect throttle opening 3. Slow-running adjustment incorrect 4. Slow-running fuel jet blocked 5. Incorrect float level 	<ol style="list-style-type: none"> 1. Clean main jet. 2. Adjust throttle. 3. Adjust slow-running. 4. Clean jet. 5. Adjust float level .
Poor acceleration	<ol style="list-style-type: none"> 1. Defective accelerator pump (if fitted) 2. Float level too low 3. Incorrect throttle opening 4. Defective accelerator linkage 5. Blocked pump jet 	<ol style="list-style-type: none"> 1. Overhaul pump. 2. Adjust float level. 3. Adjust throttle. 4. Adjust accelerator linkage . 5. Clean pump jet.
Spitting	<ol style="list-style-type: none"> 1. Lean mixture 2. Dirty carburettor 3. Clogged fuel pipes 4. Manifold draws secondary air 	<ol style="list-style-type: none"> 1. Clean and adjust carburettor . 2. Clean carburettor. 3. Clean or replace pipes. 4. Tighten or replace gasket.
Insufficient fuel supply	<ol style="list-style-type: none"> 1. Clogged carburettor 2. Clogged fuel pipe 3. Dirty fuel 4. Air in fuel system 5. Defective fuel pump 6. Clogged fuel filter 	<ol style="list-style-type: none"> 1. Dismantle and clean carburettor. 2. Clean fuel pipe. 3. Clean fuel tank. 4. Check connections and tighten. 5. Repair or replace fuel pump. 6. Clean or replace filter .
Loss of fuel delivery	<ol style="list-style-type: none"> 1. Pump faulty (electric) 2. Slotted body screws loose 3. Diaphragm cracked 4. Loose fuel pipe connections 5. Defective valves 6. Cracked fuel pipes 	<ol style="list-style-type: none"> 1. Replace pump. 2. Tighten body screws. 3. Overhaul fuel pump. 4. Tighten fuel pipe connections. 5. Replace valves. 6. Replace fuel pipes.
Noisy pump	<ol style="list-style-type: none"> 1. Loose pump mounting 2. Worn or defective rocker arm (if manual) 3. Broken rocker arm spring (if manual) 	<ol style="list-style-type: none"> 1. Tighten mounting bolts. 2. Replace rocker arm. 3. Replace spring.

ELECTRICAL Problem Solvers



ELECTRICAL PROBLEM	CAUSE	CURE
STARTER		
Starter doesn't turn (lights dim)	<ol style="list-style-type: none"> 1. Battery flat or worn out 2. Bad connection in battery circuit. 	<ol style="list-style-type: none"> 1. Charge or fit new battery. 2. Check all feed and earth connections
Starter doesn't turn (lights stay bright)	<ol style="list-style-type: none"> 1. Faulty ignition switch 2. Broken starter circuit 	<ol style="list-style-type: none"> 1. Check switch. 2. Check starter circuit.
Solenoid switch "chatters"	<ol style="list-style-type: none"> 1. Flat battery 	<ol style="list-style-type: none"> 1. Charge or replace battery.
Starter just spins	<ol style="list-style-type: none"> 1. Bendix gear sticking 	<ol style="list-style-type: none"> 1. Remove starter and clean or replace Bendix gear.
CHARGING CIRCUIT		
Low or no charge rate	<ol style="list-style-type: none"> 1. Broken or slipping drive belt 2. Poor connections on or faulty alternator/generator 	<ol style="list-style-type: none"> Fit new belt. Check and replace alternator/generator.
LIGHTING CIRCUIT		
No lights (or very dim)	<ol style="list-style-type: none"> 1. Flat or faulty battery, bad battery connections 	<ol style="list-style-type: none"> 1. Check battery and connections
Side and rear lights inoperative although stoplights and flashers work	<ol style="list-style-type: none"> 1. Fuse blown 	<ol style="list-style-type: none"> 1. Fit correct value fuse.
One lamp fails	<ol style="list-style-type: none"> 1. Blown bulb 2. Poor bulb contact 3. Bad earth connection 4. Broken feed 	<ol style="list-style-type: none"> 1. Fit new bulb. 2. Check connections. 3. Check connection. 4. Check feed.
Flasher warning bulb stays on or flashers twice as fast	<ol style="list-style-type: none"> 1. Faulty bulb or connection on front or rear of offending side 	<ol style="list-style-type: none"> 1. Fit new bulb, make good connection.
Lights dim when idling or at low speed	<ol style="list-style-type: none"> 1. Loose drive belt 2. Flat battery 3. Faulty charging circuit 	<ol style="list-style-type: none"> 1. Tighten belt. 2. Check charge output and battery. 3. Check charge output and battery.
One dim light	<ol style="list-style-type: none"> 1. Blackened bulb 2. Bad earth 3. Tarnished reflector 	<ol style="list-style-type: none"> 1. Fit new bulb or sealed-beam. 2. Check earth connections. 3. Fit new bulb or sealed-beam.
WINDSCREEN WIPERS		
Wipers do not work	<ol style="list-style-type: none"> 1. Blown fuse 2. Poor connection 3. Faulty switch 4. Faulty motor 	<ol style="list-style-type: none"> 1. Fit fuse 2. Check connections. 3. Check switch. 4. Remove and examine motor.
Motor operates slowly	<ol style="list-style-type: none"> 1. Excessive resistance in circuit or wiper drive 2. Worn brushes 	<ol style="list-style-type: none"> 1. Check wiper circuit. 2. Remove motor and check brushes

CLUTCH Problem Solvers



CLUTCH PROBLEM	CAUSE	CURE
Clutch slips	<ol style="list-style-type: none"> 1. Clutch facing worn 2. Clutch facing contaminated 3. Warped clutch cover or pressure plate 4. Incorrect adjustment (if adjustable) 	<ol style="list-style-type: none"> 1. Replace clutch assembly. 2. Replace clutch assembly. 3. Replace clutch assembly 4. Adjust clutch.
Clutch drags	<ol style="list-style-type: none"> 1. Faulty clutch hydraulics (if hydraulic) 2. Faulty clutch adjustment (if adjustable) 3. Clutch disc warped 4. Clutch hub splines worn or rusty 5. Diaphragm worn or mal-adjusted 	<ol style="list-style-type: none"> 1. Overhaul or replace clutch hydraulics. 2. Adjust clutch.. 3. Replace clutch disc. 4. Replace or lubricate clutch. 5. Replace pressure plate.
Clutch chatter	<ol style="list-style-type: none"> 1. Faulty pressure plate 2. Faulty clutch disc 3. Loose or worn engine mounting 	<ol style="list-style-type: none"> 1. Replace pressure plate. 2. Replace clutch disc. 3. Replace mounting.
Clutch noise	<ol style="list-style-type: none"> 1. Insufficient grease on bearing sleeve 2. Clutch installed incorrectly 	<ol style="list-style-type: none"> 1. Lubricate 2. Check installation.
Clutch noise (pedal down)	<ol style="list-style-type: none"> 1. Faulty release bearing 	<ol style="list-style-type: none"> 1. Replace bearing.
Clutch noise (pedal on the way up)	<ol style="list-style-type: none"> 1. Damaged or worn pilot bearing 	<ol style="list-style-type: none"> 1. Fit new bearing.
Clutch grabs	<ol style="list-style-type: none"> 1. Contaminated clutch lining 2. Clutch worn or loose rivets 3. Clutch splines worn or rusted 4. Warped flywheel or pressure plate 5. Loose mountings on engine or power unit 	<ol style="list-style-type: none"> 1. Replace clutch. 2. Replace clutch. 3. Clean or replace. 4. Repair or replace. 5. Tighten or replace .

COOLING Problem Solvers



COOLING PROBLEM	CAUSE	CURE
Overheating	1. Inoperative thermostat	1. Replace thermostat.
	2. Radiator fin choked with mud , leaves, etc.	2. Clean out air passage
	3. Incorrect ignition and valve timing	3. Tune engine.
	4. Dirty oil and sludge in engine	4. Change engine oil and filter.
	5. Inoperative water pump	5. Replace (or check electrical) .
	6. Loose fan belt	6. Adjust tension.
	7. Restricted radiator	7. Flush radiator
	8. Inaccurate temperature gauge	8. Replace temperature gauge.
	9. Impurity in water	9. Use soft, clean water.
Loss of coolant	1. Leaking radiator hose(s)	1. Replace.
	2. Damaged radiator	2. Repair or replace radiator.
	3. Leak at heater connection or plug	3. Repair or replace
	4. Damaged cylinder head gasket	4. Replace gasket. Check engine oil and refill as necessary
	5. Cracked cylinder block.	5. Replace cylinder block. Check engine oil in crankcase for mixing with water.
	6. Cracked cylinder head.	6. Replace cylinder head.
	7. Loose cylinder head bolts	7. Tighten cylinder head bolts.
Overcooling	1. Inoperative thermostat	1. Replace thermostat.
	2. Inaccurate temperature gauge	2. Replace temperature gauge
Poor circulation	1. Restriction in system	1. Check hoses for crimping .Clear the system of rust and sludge.
	2. Insufficient coolant	2. Replenish .
	3. Inoperative water pump	3. Replace water pump.
	4. Loose fan belt	4. Adjust fan belt.
	5. Inoperative thermostat	5. Replace thermostat.
Corrosion	1. Excessive impurity in water	1. Use soft, clean water.
	2. Infrequent flushing and draining	2. Flush thoroughly at least twice a year.

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