

Time for a tune-up?

When you take your car into the shop for a "complete tune-up" a service generally required every 30,000 miles or every two or three year, what services should be included? This question, often controversial even among the automotive service trade, is addressed in a recent newsletter of the Professional Master Technician's Association.

Electronic ignition, computerized engine controls and electronic fuel injection have eliminated many of the adjustments that once were part of a traditional tune-up. So most technicians probably would say a tuneup on most cars today is a preventive maintenance service or an engine performance check.

One of the main reasons people bring their vehicles in to their mechanics for a tune-up is because they are experiencing some kind of "driveability" problem: starting, stalling, hesitation on acceleration, poor gas mileage or lack of power. These symptoms seldom are cured with a new set of spark plugs or a few turns of the screwdriver. On today's complex engines a comprehensive performance check is in order.

Another item that should be included is an emissions check, now mandatory in 35 states. Most mechanics check the operation of basic emission control components, but an actual emissions check at the tailpipe is essential to accurate diagnosis.

The following are 21 items that should be included in a complete tune-up, according to the professionals. The list may vary according to the vehicle and/or shop providing the service, but it's a handy reference for owners seeking quality service.

1. Replace spark plugs.

2. Replace distributor rotor.

3. Check distributor cap and replace it if necessary.

4. Check ignition timing and adjust if necessary.

5. Check ignition performance (firing voltage/ignition patterns).

6. Check ignition wires and replace if necessary.

7. Check ignition idle speed and adjust if necessary. 8. Check choke mechanism (on engines

with carburetors).

9. Clean fuel injectors.

10. Check compression and/or power balance (to identify bad injectors as well as compression problems).

11. Check manifold intake vacuum to reveal exhaust restrictions.

12. Check battery and charging voltage. 13. Check exhaust emissions to verify fuel mixture, ignition performance and emission controls performance.

14. Check vehicle computer for presence of

any trouble codes.

15. Install new air filter. 16. Replace the fuel filter(s).

17. Replace PCV (positive crankcase ventilation) valve. 18. Check all emissions control compo-

nents. 19. Check all vital fluids, including engine

oil, transmission fluid, coolant, brake and power steering fluid.

20. Check all belts and hoses.

21. Check safety items such as lights, windshield wipers, tires, horn, etc.

Signs to look for in your transmission

Most people know that a transmission has something to do with moving the wheels of an automobile.

They also know that a malfunctioning transmission can cost a lot of money. In fact, consumers paid more than \$10 billion for transmission repairs last year.

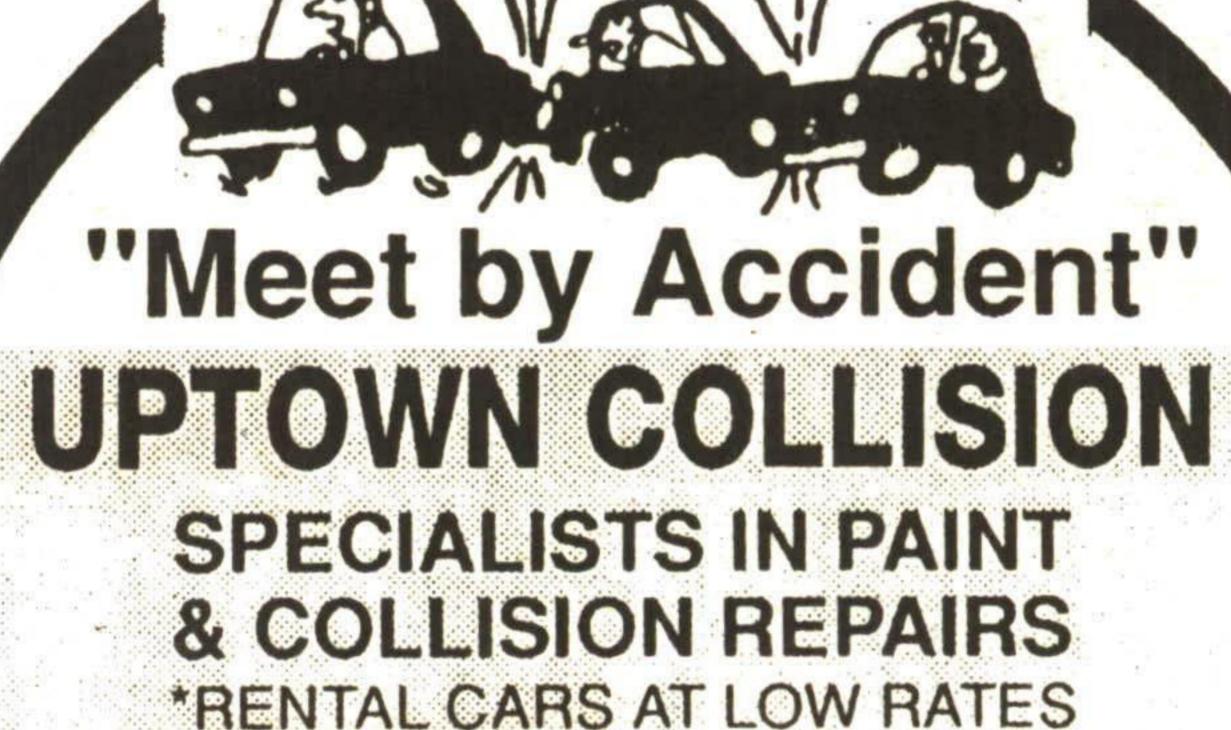
Though the inner workings of a transmission may be complicated, keeping it in good health does not require secret technical knowledge. So says Bill Schultz, vice president of technical services at AAMCO Transmissions, Inc., the world's largest

chain of transmission specialists.

Signs of transmission trouble are easy to identify if you know what to look for, Schultz says. "Pay attention to how your car shifts. If your transmission fails to shift smoothly, or it delays or slips shifting gears, that's a sign of trouble," he says.

Other problem signs include puddles under the vehicle which indicate a leak; an engine that overheats; a vehicle that makes unusual noises, such as a grinding noise in any gear or a banging noise when the vehicle comes to a stop.

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