



DIAGNOSIS AND TESTING

Fluid Analysis

COLOR	ODOR	CAUSE/ACTION
Dark Brown, no particles present	Burned smell	Overheated fluid - service transmission
Black or very Dark Brown, particles present	Strong burned smell	Friction materials from clutches. may need trans overhaul or replacement
Foamy - normal color	Normal	Overfilled or underfilled - fluid aerated

Note that a large amount of friction material in the pan or on the filter screen may indicate the need to replace the transmission. Simply servicing the transmission invites future problems as the fresh additives can break loose varnish and other residue and cause problems in the valve body.

Normally the torque converter is not drained or serviced. Regular fluid changes keep the additive strength high enough to cope with the several quarts of used fluid in the transmission when it is serviced.

The only practical method of cleaning the torque converter is through specialized flushing equipment at a commercial transmission shop. Never flush a ZF converter with solvent or other cleaning fluids - use only clean ATF. The chemicals in most solvents will damage the bonded lining of the torque converter clutch.