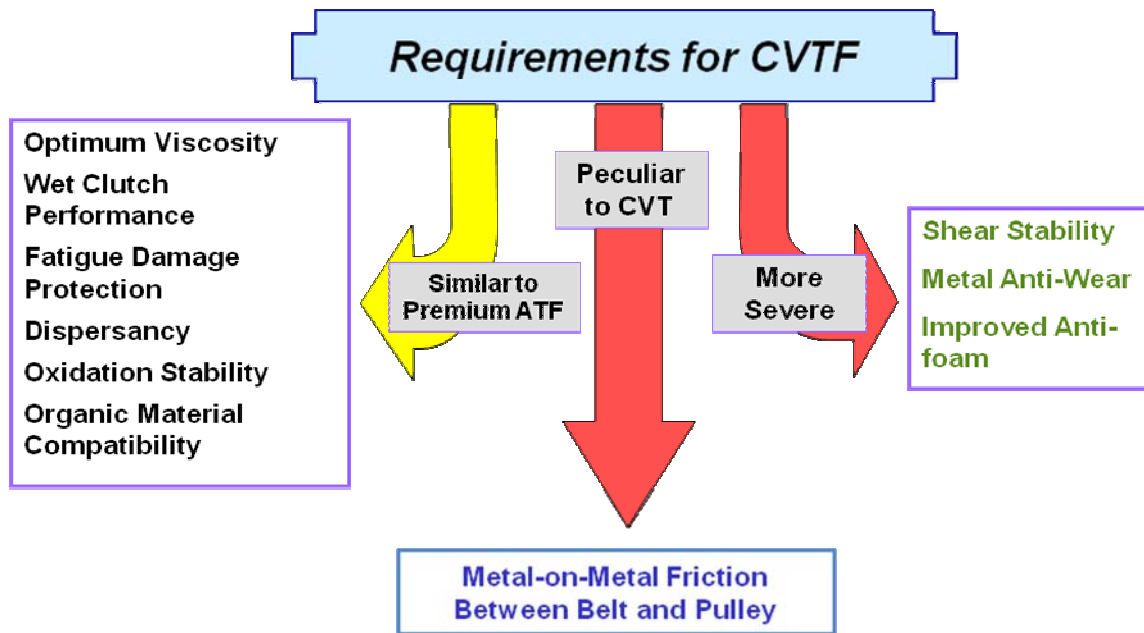


September 15, 2010

To Whom It May Concern;

We have recently received many queries concerning Wolf's Head Automatic Transmission Fluid (ATF) with respect to its claim of its suitability for use in continuously variable transmissions (CVT) whereas Valvoline does not recommend MaxLife ATF for use in CVTs.

Valvoline has real concerns over the suitability of ATFs in CVT applications. CVTs are very different in design to conventional automatic transmissions and generally require the fluid to have greater shear stability, better foam prevention, control of metal-on-metal frictional characteristics, greater wear protection and better anti-shudder performance than ATFs. Our current MaxLife ATF formulation meets many but not all of these requirements and we therefore do not recommend its use in CVTs. Valvoline realizes the benefits to installers of having one product that works in many applications and that is why we were the first to develop a product like MaxLife ATF with its broad range of applications. Valvoline continues to investigate and develop new transmission fluid technologies, but as of yet we have seen nothing we would feel comfortable recommending for both CVTs and conventional automatic transmissions.



Valvoline had Wolf's Head ATF tested against two popular CVT fluids, Nissan NS-2 CVTF and Toyota TC CVTF. The tests have been focused on three areas: shear stability, anti-foam performance and anti-shudder durability. In all three areas Wolf's Head ATF showed inferior performance to these two leading CVT fluids. We also report the data on MaxLife ATF.

Extensive mechanical shearing is present in CVTs, whether they be belt-driven or chain-driven. If the fluid is sheared down in viscosity extensively, it may lose the film thickness and cause significant wear in the unit. Exhibit 1 lists the KRL shear stability of the four fluids - KRL is a tapered roller bearing shear test designed to test fluid performance under severe shearing. It can be seen that Wolf's Head ATF was sheared to the lowest viscosity after 20-hr KRL, and 40-hr (calculated) too, compared to the other two CVT fluids.

Exhibit 1: Shear Stability

	Wolf's Head ATF	Nissan NS-2 CVTF	Toyota TC CVTF	Valvoline MaxLife ATF
KV 100°C	6.64	7.22	7.26	5.95
KV 100°C after 20-hr KRL	5.59	6.49	5.94	5.75
KV 100°C after 40-hr KRL	5.36*	6.25	5.71	5.65

* Calculated based on linear regression.





Foaming could be a severe issue in an enclosed system such as a transmission, as the air bubbles entrained in the fluid are adversely affecting the lubrication, load carrying and wear prevention performances of the fluid. Exhibit 2 lists the foaming properties of the four fluids (*the lower the number the better*). As a benchmark, GM's DEXRON®-VI specification (a published spec) calls for 50/0 max. for all sequences.

Exhibit 2: Foaming

	Wolf's Head ATF	Nissan NS-2 CVTF	Toyota TC CVTF	Valvoline MaxLife ATF
ASTM D892 Seq. I	270/0	20/0	20/0	0/0
ASTM D892 Seq. II	70/0	40/0	60/0	30/0
ASTM D892 Seq. III	230/0	0/0	0/0	10/0
ASTM D6082 Seq. IV	100/0	80/0	80/0	30/0

Anti-shudder characteristics are an important part of CVT and Asian automatic transmission performance. How well a fluid will perform is determined in the JASO M349 test. Exhibit 3 lists the anti-shudder performance of the four fluids run in JASO M349 test using the Dynax D-0512 plates. The longer the fluid performs adequately in this test, the better. Wolf's Head ATF showed similar performance to Nissan NS-2 CVTF, while it is quite inferior to Toyota TC CVTF in this test. As a comparison, Valvoline's MaxLife ATF (tested as blind samples together with Wolf's Head ATF) registered a stunning 288-hour in this test.

Exhibit 3: Anti-Shudder Durability

	Wolf's Head ATF	Nissan NS-2 CVTF	Toyota TC CVTF	Valvoline MaxLife ATF
Hours	96-Hr	96-Hr	144-Hr	288-Hr

Overall, based on the scientific data and our technical judgment, we feel the claim that Wolf's Head ATF could be used in all transmissions including CVT is grossly exaggerating.

Should there be any additional questions, please feel free to call the Valvoline hotline (1-800-TEAM-VAL).

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 Ashland Consumer Markets
 1-800-TEAM-VAL

Note on September 26, 2011:

In May 2011, Wolf's Head introduced a new CVT Fluid while discontinued the coverage for CVT applications by its Universal Synthetic ATF.

