| WORLDWIDE ENGINEERING STANDARDS | Test Procedure | GMW15643 |
|---|---|---|

# Oil Loss Transmission Breather

## 1 Scope

**Note:** Nothing in this standard supersedes applicable laws and regulations.

**Note:** In the event of conflict between the English and domestic language, the English language shall take precedence.

**1.1 Purpose.** Investigation of oil lost through transmission housing breather during extreme driving situations.

**1.2 Foreword.** This test has formally been known as VET018.

**1.3 Applicability.** This procedure is applicable for testing all FWD, AWD and RWD transmission.

## 2 References

**Note:** Only the latest approved standards are applicable unless otherwise specified.

**2.1 External Standards/Specifications.**

None

**2.2 GM Standards/Specifications.**

None

## 3 Resources

**3.1 Facilities.** The test facilities and equipment shall be operable and shall have a valid calibration level.

**3.1.1** Proving ground with appropriate Skid Pad and Hill section with 12 % and 30 % grade (or highest grade available).

**3.1.2** Secured track to allow accelerations and stand still.

**3.2 Equipment.**

**3.2.1** Sensors for transmission oil temperature and ambient temperature.

**3.2.2** Attached tachometer and speedometer.

**3.2.3** Writing materials.

**3.3 Test Vehicle/Test Piece.**

**3.3.1** Transmission, assembled according to specification.

**3.3.2** The engine type and the vehicle equipment must correspond to the release.

**3.4 Test Time.**

| | |
|---|---|
| Calendar time: | 3 days |
| Technician/ Mechanical/hours | 9 hours |
| Preparation/documentation/hours: | 3 hours |

**3.5 Test Required Information.** Possible sources are:

- SOR
- VTS (Vehicle Technical Specifications)
- SSTS (Sub System Technical Specifications)
- ADV Plan
- VCRI
- Application engineer
- Development Groups
- Drawings

**3.6 Personnel/Skills.** Not applicable.

## 4 Procedure

**4.1 Preparation.**

**4.1.1** Vehicle weight is not relevant. Use vehicle without payload for the test performance.

**4.1.2** Check fuel, engine oil, cooling fluid and transmission oil level.

**4.1.3** Raise tire pressure to 0.2 bar above specified value.

**4.1.3** Drive until transmission oil temperature reaches +80 °C minimum.

**4.1.4** Check breather concerning pollution caused by oil and clean area if necessary.

**4.1.5** Record values of test performance according to Appendix A.

**4.2 Conditions.**

**4.2.1 Environmental Conditions.** The test shall be performed on a dry surface.



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**4.2.2 Test Conditions.** Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

**4.3 Instructions.** After entering the Skid Pad:

**4.3.1 Driving in 1st Gear.**

**4.3.1.1** Drive in 1st gear four (4) rounds forward in clockwise direction with engine speed of 200 $min^{-1}$ below redline. Radius of circle is 50 m.

**4.3.1.2** Drive in 1st first gear four (4) rounds forward in anti-clockwise direction with engine speed of 200 $min^{-1}$ below redline. Radius of circle is 50 m.

**4.3.2 Driving in Reverse Gear.**

**4.3.2.1** Drive three (3) rounds reverse in clockwise direction with maximum transversal acceleration and perform a full braking at the end of each round. Radius of circle is 50 m.

**4.3.2.2** Drive three rounds reverse in anti-clockwise direction with maximum transversal acceleration and perform a full braking at the end of each round, Radius of circle 50 m.

**4.3.3 Driving Uphill on 12 % Grade.**

**4.3.3.1** Drive up the hill with 12 % grade in 1st gear three (3) times with $n_{Max}$.

**4.3.3.2** Drive up the hill with 12 % grade in reverse gear three (3) times with $n_{Max}$.

**4.3.4 Driving Uphill on 30 % Grade.**

**4.3.4.1** Drive up the hill with 30 % grade, or next lower grade available/performable, in 1st gear three (3) times with $n_{Max}$.

**4.3.4.2** Drive up the hill with 30 % grade, or highest available grade, in reverse gear three (3) times with $n_{Max}$.

## 5 Data

**5.1 Calculations.** Not applicable.

**5.2 Interpretation of Results.** The program shall be performed with two (2) transmissions. The requirements are fulfilled if targets in the SSTS / VTS are met.

**5.3 Test Documentation.** Record the following data (the Test Engineer may require additional data):

1. Oil temperature
2. Ambient temperature
3. Engine type / engine km.

## 6 Safety

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, corporate rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

## 7 Notes

**7.1 Glossary.** Not applicable.

**7.2 Acronyms, Abbreviations, and Symbols.** Not applicable.

## 8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Test to GMW15643

## 9 Release and Revisions

This standard was originated in July 2007. It was first approved by GM Powertrain in May 2011. It was first published in May 2011.

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|---|---|---|
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