

**TEST METHOD D6121  
L-37 Load Evaluation**

**VERSION**

**CONDUCTED FOR:**

|  |  |
|--|--|
|  | <b>V</b> = Valid   |
|  | <b>I</b> = Invalid   |
|  | <b>N</b> = Results cannot be interpreted(Refer to comment section) |

|  |                                    |
|--|------------------------------------|
|  | <b>NR</b> = Non-Reference Test Oil |
|  | <b>RO</b> = Reference Oil Result   |

|                              |  |                             |  |
|------------------------------|--|-----------------------------|--|
| <b>Test Number</b>           |  |                             |  |
| Test Stand:                  |  | Stand Run Number:           |  |
| Date Completed:              |  | Time Completed:             |  |
| Oil Code:                    |  |                             |  |
| Formulation/Stand Code:      |  |                             |  |
| Alternate Codes:             |  |                             |  |
| Test Hardware <sup>A</sup> : |  | Test Version <sup>B</sup> : |  |

In my opinion this test \_\_\_\_\_ been conducted in a valid manner in accordance with Test Method D6121 and the appropriate amendments through the information letter system. The remarks included in this report describe the anomalies associated with this test.

<sup>A</sup> Nonlubrited or Lubrited

<sup>B</sup> Standard or Canadian

Submitted By: \_\_\_\_\_

\_\_\_\_\_ Testing Laboratory

\_\_\_\_\_ Signature

\_\_\_\_\_ Typed Name

\_\_\_\_\_ Title

\_\_\_\_\_ Section

**TEST METHOD D6121**  
**L-37**  
**Form 1**  
**Test Result Summary Sheet**

| Oil Test                                      |                      |                  |              |
|---|----------------------|------------------|--------------|
| Lab:  | Stand:               | Stand Run :      |              |
| Start Date:                                   | Date Completed:      | EOT Time:        | Test Length: |
| TMC Oil Code:                                 | Laboratory Oil Code: | Viscosity Grade: |              |
| Oil Code:                                     |                      |                  |              |
| Formulation Stand Code:                       |                      |                  |              |
| Latest Information Letter Test Was Run Under: |                      |                  |              |
| Test Hardware:                                |                      | Test Version:    |              |
| Pinion Batch:                                 |                      | Ring Batch:      |              |

| Last Reference Oil Calibrating Stand Information - Fill Out For Non-reference Oil Tests Only |            |               |                 |
|--|------------|---------------|-----------------|
| Stand:   | Stand Run: | TMC Oil Code: | Date Completed: |
| Pinion Batch:  |            | Ring Batch:   |                 |
| Test Hardware:   |            | Test Version: |                 |

|                                     | Ring Gear Results |          |         |                  |         |
|-------------------------------------|-------------------|----------|---------|------------------|---------|
|                                     | Wear              | Rippling | Ridging | Pitting/Spalling | Scoring |
| Original Merit Results <sup>C</sup> |                   |          |         |                  |         |
| Transformed Results                 |                   |          |         |                  |         |
| Correction Factor                   |                   |          |         |                  |         |
| Corrected Transformed Results       |                   |          |         |                  |         |
| Severity Adjustment <sup>A</sup>    |                   |          |         |                  |         |
| Final Transformed Results           |                   |          |         |                  |         |
| Final Merit Results                 |                   |          |         |                  |         |

|                                       | Pinion Gear Results |          |         |                  |         |
|---------------------------------------|---------------------|----------|---------|------------------|---------|
|                                       | Wear                | Rippling | Ridging | Pitting/Spalling | Scoring |
| Original Merit Results <sup>B,C</sup> |                     |          |         |                  |         |
| Transformed Results                   |                     |          |         |                  |         |
| Correction Factor                     |                     |          |         |                  |         |
| Corrected Transformed Results         |                     |          |         |                  |         |
| Severity Adjustment <sup>A</sup>      |                     |          |         |                  |         |
| Final Transformed Results             |                     |          |         |                  |         |
| Final Merit Results                   |                     |          |         |                  |         |

<sup>A</sup> AT THE PRESENT TIME THERE ARE NO SEVERITY ADJUSTMENTS

<sup>B</sup> WITH ANY APPLICABLE EXCLUSIONS APPLIED

<sup>C</sup> IF TOOTH BREAKAGE OCCURS, LEAVE RESULTS BLANK AND REPORT IN COMMENT SECTION



**TEST METHOD D6121**

**L-37**

**Form 3**

**Operational Summary Sheet**

|           |               |            |
|-----------|---------------|------------|
| Lab:      | Stand :       | Stand Run: |
| Oil Code: | Test Version: |            |

| <b>Pinion Torque Checks – Full Axle Assembly</b> |              |             |
|--|--------------|-------------|
|  | <b>Break</b> | <b>Turn</b> |
| Before Test (lbf-in.)                            |              |             |
| After Test - hot (lbf-in.)                       |              |             |
| After Test - cool (lbf-in.)                      |              |             |

| <b>Backlash Measurements</b>              |          |          |          |                                    |                |                |                |
|---|----------|----------|----------|------------------------------------|----------------|----------------|----------------|
| <b>Laboratory's Position Measurements</b> |          |          |          |                                    |                |                |                |
|   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b>                           | <b>Minimum</b> | <b>Maximum</b> | <b>Average</b> |
| Before Test (in.)                         |          |          |          |                                    |                |                |                |
| After Test (in.)                          |          |          |          |                                    |                |                |                |
| Difference (in.)                          |          |          |          |                                    |                |                |                |
| <b>Manufacturer's Measurements</b>        |          |          |          |                                    |                |                |                |
| <b>Manufacturer's Specification</b>       |          |          |          | <b>Manufacturer's Measurements</b> |                |                |                |
| 0.004 – 0.012 (in.)                       |          |          |          |                                    |                |                |                |

| <b>General Operating Conditions</b> |                |                |                |              |
|-------------------------------------|----------------|----------------|----------------|--------------|
| <b>Gear Conditioning Phase:</b>     | <b>Start</b>   | <b>Finish</b>  | <b>Average</b> | <b>Total</b> |
| 1. Time (hh:mm)                     |                |                |                |              |
| Time (mmmm)                         |                |                |                |              |
|                                     | <b>Maximum</b> | <b>Minimum</b> | <b>Average</b> |              |
| 2. Gear-lubricant Temperature (°F)  |                |                |                |              |
| 3. Dyno Torque 1 (lbf-ft)           |                |                |                |              |
| Dyno Torque 2 (lbf-ft)              |                |                |                |              |
| 4. Dyno Speed 1 (r/min)             |                |                |                |              |
| Dyno Speed 2 (r/min)                |                |                |                |              |
| <b>Gear Testing Phase:</b>          |                |                |                |              |
| 1. Time (hh:mm)                     |                |                |                |              |
| Time (mmmm)                         |                |                |                |              |
|                                     | <b>Maximum</b> | <b>Minimum</b> | <b>Average</b> |              |
| 2. Gear-lubricant Temperature (°F)  |                |                |                |              |
| 3. Dyno Torque 1 (lbf-ft)           |                |                |                |              |
| Dyno Torque 2 (lbf-ft)              |                |                |                |              |
| 4. Dyno Speed 1 (r/min)             |                |                |                |              |
| Dyno Speed 2 (r/min)                |                |                |                |              |







**TEST METHOD D6121**  
**L-37**  
**Form 5**  
**Operational Validity Summary**

|                |        |               |
|----------------|--------|---------------|
| Lab:           | Stand: | Stand Run:    |
| Oil Code:      |        |               |
| Test Hardware: |        | Test Version: |

| <b>Controlled<br/>Parameter</b> | <b>Gear Conditioning</b>   |                            |                                      | <b>Gear Testing</b>        |                            |                                      |
|---------------------------------|----------------------------|----------------------------|--------------------------------------|----------------------------|----------------------------|--------------------------------------|
|                                 | <b>Allowable<br/>% Out</b> | <b>This Test<br/>% Out</b> | <b>Actual<br/>Time Out<br/>min:s</b> | <b>Allowable<br/>% Out</b> | <b>This Test<br/>% Out</b> | <b>Actual<br/>Time Out<br/>min:s</b> |
| Gear Oil Temperature            | 5                          |                            |                                      | 5                          |                            |                                      |
| Wheel Speed                     | 5                          |                            |                                      | 5                          |                            |                                      |
| Wheel Speed 2                   | 5                          |                            |                                      | 5                          |                            |                                      |
| Dyno Load                       | 5                          |                            |                                      | 5                          |                            |                                      |
| Dyno Load 2                     | 5                          |                            |                                      | 5                          |                            |                                      |