



DTB

Date: September 27, 2005
Order No.: P-B-00.00/80a
Supersedes: P-B-00.00/80 dated July 29, 2005
Group: 00

Revision: *Damage Code Updated for First Visit Scenario*

SUBJECT: **Models 171.454/456**
Models 211.056/087/256/287
Increased Engine Oil Consumption

If you receive customer reports in the above model vehicles regarding increased oil consumption based on the below repeated oil level messages in the instrument cluster, the cause may be due to incomplete engine break-in process

- **Add 1 Quart Oil When next Refueling** (Model 211 until production date 06/2005)
- **Check Engine Oil Level When Next Refueling** (Models 171 as of production start up and 211 as of production date 06/2005)

i **Note:** The M272 is equipped with an oil level switch. Therefore no values relating to oil consumption can be read out using SDS.

Based on customer's information, if the oil consumption is less than 0.50 quart/1000 miles or 2000 miles/quart, no further measures are necessary. If oil consumption is greater than 0.50 quart/1000 miles or 2000 miles/quart, perform oil consumption measurement by weight as follows.

1. Check engine for external oil loss; e.g., oil leaks.
2. Pre-condition the engine of the vehicle by completing the break-in process of the engine as follows:
 - a. Check the oil level and correct level if necessary.
 - b. Drive the vehicle for 1 hour under high load and high engine speed (between 4,000 and 6,000 rpm) appropriate on the local conditions and circumstances.
 - c. Vary the engine speeds during the road test.

i **Note:** If possible perform this test on interstate type roads where speeds of 55 – 65 mph can be obtained and use the appropriate transmission gears to maintain engine speed of 4000 to 6000 rpm.

This bulletin has been created and maintained in accordance with MBUSA-SLP S423QH001, Document and Data Control, and MBUSA-SLP S424HH001, Control of Quality Records.

3. Oil consumption measuring drive:

- a. Prepare oil consumption measuring drive according to the attached work instructions (reference page 4)
- b. Measuring drive should be performed by customer until the oil level warning reappears in the instrument cluster.
- c. Determine oil consumption as per work instructions (reference page 4) and document calculation on the attached test sheet (reference page 5).

i **Note:** Customer should maintain his or her driving style during the entire measuring drive.

4. Limits And Engine Repair Criteria:

- a. If mileage is less than 3000 miles and at the same time the measured oil consumption is less than 750 miles/quart, adjust oil level to MAX and continue to observe oil consumption up to mileage reading of 6500 miles.
- b. If mileage is greater than 3000 miles and less than 6500 miles and the measured oil consumption is greater than 800 miles/quart; e.g. 700 miles/quart, replace valve stem seals on all valves.
- c. If mileage is greater than 6500 miles and the measured oil consumption is greater than 2000 miles/quart; e.g. 1700 miles/quart, replace valve stem seals on all valves
- d. If mileage is greater than 6500 miles, oil consumption is greater than 2000 miles/quart; e.g. 1700 miles/quart and all the valve stem seals have already been replaced, replace the engine.

i **Note:** Oil consumption of up to 2000 miles/quart is considered to be OK.

i **Note:** Do not replace any engines which have not gone through an oil consumption measuring drive. The filled out test sheet (reference page 5) must be enclosed with any returned engine. Any claims submitted that have not followed the above procedures or do not have full documentation will be denied.

i **Note:** The following allowable labor operations should be used when submitting a warranty claim for this repair.

In Case of Warranty

- Operation:** Engine, check for oil leak(s)/loss (01-1010)
 Engine oil level, correct (00-6000)
 Oil consumption test drive, perform (18-1010)
 Flex. service plus – oil/filter change, perform (00-1212)
 Valve seals (all), replace (05-3510)
 Engine with auto. trans., R&R (01-2800)
 Engine – exchange, (engine w/ auto. trans. removed) (01-4015)
 Engine with manual trans., R&R (01-2400)
 Engine – exchange, (engine w/ man. trans. removed) (01-4011)

Damage Code	Operation Number	Time (hrs.)	Model Indicator (s)
First Visit Scenario			
00001 70	01 1010	0.3 hrs.	00
	00 6000	0.1 hrs.	00
	18 1010	1.1 hrs. *	X1, X3, T7, T8, U6, U7
	00 1212	0.3 hrs. 0.4 hrs.	X1, X3 T7, T8, U6, U7
Return Visit Scenario			
05205 04	00 1212	0.3 hrs.	X1, X3
		0.4 hrs.	T7, T8, U6, U7
If Necessary	05 3510	11.0 hrs.	T7, T8, U6, U7
		0.0 hrs.	X1, X3
	OR		
	01 2800	5.7 hrs.	T7, U6
		12.1 hrs.	T8, U7
		5.9 hrs.	X1, X3
	01 4015	2.3 hrs.	X1, X3
		2.1 hrs.	T7, T8, U6, U7
	OR		
	01 2400	5.6 hrs.	X1, X3
	01 4011	0.0 hrs.	X1, X3

*Maximum allowed time with a separate time punch

M272 Oil Consumption Measurement By Weighing Method

Preparation:

Equipment Requirement:

- Scales with 0.01 lb. accuracy.
- Oil Container with 10-liter capacity (Oil drain pan with spout as oil container for this purpose is recommended)
- Stop watch

Procedure:

Weigh Engine Oil (At Start of Oil Consumption Measuring Drive)

1. After pre-conditioning the engine to operating temperature (90 deg C coolant temperature), raise vehicle on lifting platform.
2. Weigh the empty and clean oil container as "TARE".
3. Open oil filter cap and pull out oil filter.
4. Remove engine lower encapsulation and open oil drain plug.
5. Allow engine to drain into the oil container for 15 minutes.
6. Place the container with drained oil on scales and weigh.
7. Adjust the weight of the oil in the container to 14.95 lbs.; e.g. if "TARE" = 2.55 lbs fill up the container with oil up to the combine weight of 17.50 lbs. (14.95 lbs. + 2.55 lbs.)
8. Pour the engine oil back into the engine.
9. Re-install back the oil filter and oil filler cap.
10. Record the weight of the oil in pounds as **m1** and the mileage odometer reading of the vehicle as **s1**. Have the customer perform the oil consumption measuring drive.

Weigh Engine Oil (At End of Oil Consumption Measuring Drive)

11. Customer arrives at workshop after oil level warning message is displayed in the instrument cluster.
12. Lift vehicle on lifting platform with engine at operating temperature (90 deg C coolant temp.).
13. Weigh empty oil container in pounds as "TARE".
14. Open oil filler cap and pull out oil filter.
15. Remove under engine encapsulation and open oil drain plug.
16. Allow engine to drain into the oil container for 15 minutes.
17. Place the container with drained oil on scales and record combined weigh in lbs. as **M**.
18. Record weigh of drained oil in pounds as **m2**; i.e., **m2 = M – "TARE"**.
19. Calculate oil consumption as described in test sheet (reference page 5).

M272 OIL CONSUMPTION TEST SHEET

Dealer: _____ Dealer
Code: _____

VIN: _____
Date: _____

Name of Tester: _____

1. Check external oil loss:[] OK
2. Oil Consumption Measuring Drive Data:

Weight (**m1**) of engine oil in system at start of measuring drive**14.95** [lbs]
Mileage reading (**s1**) at start of measuring drive [mi]
Weight (**m2**) of engine oil drained after measuring drive [lbs]
Mileage reading (**s2**) at end of measuring drive [mi]

Miles driven = **s = s2 - s1** [mi]
Weight of oil consumed during measuring drive = **m = m1 - m2** [lbs]
Constant **k = 1/1.76** lbs/quart = **0.568** quart/lb.

3. Oil Consumption = (**s**) / (**m x k**) = (**s**) / (**m x 0.568**) =... [miles/quart]

NOTE: Oil consumption of 2000 miles/quart or better is OK.