SERVICE BULLETIN

M1450 **2020-09-22**

M1450: MILWAUKEE-EIGHT EQUIPPED VEHICLES - LOSS OF POWER OR HIGH ENGINE BRAKING

Reason for Revision

Refer to Table 1.

Table 1. Document History

Date	Revision Description
2017-07-05	Initial release
2017-07-07	Updated **Purpose for Service Bulletin**
2017-07-21	Updated **Required Dealer Action**, **Dealer Inventory Instructions** and **Extra information**
2017-07-25	Added **Credit Procedure** and **Return Parts**
2017-10-18	Updated **Required Dealer Action**
2017-10-24	Change **Title**
	Updated **Purpose for Service Bulletin**, **Required Dealer Action** and **Extra Information**
	Added **Required Dealer Action > Install**
2017-11-15	Change **Title**
	Updated **Purpose for Service Bulletin**, **Motorcycles Affected**, **Part numbers:**Table 2, **Dealer Inventory Instructions**, **Extra Information**, **Credit Procedure:**Table 3, **Credit Procedure: Old Table 4**
	Added **Credit Procedure:**Table 4
2018 -08-21	Updated **Part Numbers:**Table 2, **Required Dealer Action**, **Required Dealer Action > If engine damage is not observed**, **Extra information**
	Added **Credit Procedure:** Table 5
2019-03-28	Updated Purpose for Service Bulletin, Motorcycles Affected, Required Dealer Action, Extra information, Credit Procedure: Reimbursement of Oil Pump Replacement : Table 3, **Old Table 4** and Table 4
	Removed Credit Procedure: Reimbursement of Oil Pump Replacement : Old Table 6
2019-05-30	Updated Required Dealer Action
	Added Required Dealer Action : Figure 1
2019-08-20	Updated Part Numbers : Table 2, Dealer Inventory Instructions, Extra informationCredit Procedure: Reimbursement of Oil Pump Replacement : **Old Table 4** and Table 4
2020-09-22	Removed Extra information : Old Steps 1 & 2, Credit Procedure: Reimbursement of Oil Pump Replacement : **Old Table 4**

Purpose for Service Bulletin

2017 - 2019 model motorcycles equipped with a Milwaukee-Eight™ engine can experience a condition known as sumping during extended periods at high rpm or under heavy engine load.

Sumping is when an excessive amount of oil is suspended in the engine crankcase and the flywheel must travel through the oil, resulting in loss of power or a high degree of engine braking and potential engine component damage with extended use under these conditions.

This bulletin provides the diagnostic procedure for determining if sumping is occurring.

Motorcycles Affected

This information applies to all 2017 - 2019 Touring, CVO, Trike, Touring Police and 2018 - 2019 Softail model motorcycles with a Milwaukee-Eight engine.

Markets Affected

All markets are affected.

Part Numbers

Refer to Table 2.

Table 2. Part Numbers

Current Part No.	Item Description	New Part No.
62400121, 62400143, 62400178	OIL PUMP ASSY, OIL	62400247(1)
62400124, 62400146, 62400182	OIL PUMP ASSY, WATER	62400248(1)
62400125, 62400206	OIL PUMP COVER ASSY	62400245
(1) When ordering oil pump assembly (Part No. 62400247 or 62400248) the oil pump cover (Part No. 62400245) comes as part of the assembly.		

Required Dealer Action

Verify that sumping symptoms are present:

1. Confirm that the customer is experiencing loss of power or high intensity engine braking during extended high Revolutions Per Minute (rpm) use.

NOTE

In the interest of preserving customer safety and satisfaction, always check for outstanding recalls whenever any motorcycle is brought into your dealership for either maintenance or service.

ROUTING	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	WARRANTY PROCESS MANAGER	LEAD TECHNICIAN	TECHNICIAN NO. 1	TECHNICIAN NO. 2	TECHNICIAN NO. 3	RETURN THIS TO
INITIAL HERE									

2. Perform an oil level hot check to verify that the engine oil has not been over-filled or that oil level is low with no apparent signs of leakage. See the service manual.

    a. Operate the engine at idle for 2 min.

    b. Stop the engine.

    c. Check engine oil level immediately.

    d. Remove excess oil or add oil, if necessary.

3. *NOTE*

Sumping is more detectable at warmer oil temperatures.

    Take the vehicle for a test ride and operate the engine to normal operating temperature (Bulk Oil Tank Temperature).

    Temperature: 93–121 °C (200–250 °F)

4. Connect oil pressure gauge. See the service manual.

5. Record oil pressure at:

    a. 850 rpm (Idle): Ideal pressure is 103.4–172.4 kPa (15–25 psi).

    b. 3,000 rpm: Ideal pressure is 275.8–344.7 kPa (40–50 psi).

6. Oil pressure is:

    a. **Within ideal pressures:** Go to Step 7

    b. **Low oil pressure:** Check for a stuck pressure relief valve or a restriction at oil pump pick up.

    c. **High oil pressure:** Check for a pinched oil line or a blockage after oil pump.

7. Place vehicle in an upright position.

    a. With the vehicle at operating temperature, allow vehicle to idle in an upright position for 45–60 s.

8. Stop the engine. Remove the Crankshaft Position (CKP) sensor within one minute.

    a. Inspect the CKP sensor for signs of plastic blistering or sensor head doming by comparing to a known good part.

    b. Replace as needed.

9. Measure amount of oil drained from the sensor opening.

    a. **Less than** 177.4 ml (6 fl oz): Go to Step 10.

    b. **Greater than** 177.4 ml (6 fl oz): Go to Step 11.

10. The condition is not caused by sumping.

    a. Explore other causes (fuel, timing, intake and so on).

11. The condition is likely caused by sumping.

    a. Verify that oil lines to cylinder heads are not plugged or restricted.

    b. Verify the crankcase scavenge O-ring is in place and undamaged.

    c. Verify there is no obstruction or loose part in the oil pump scavenge passage.

    d. Verify the oil pump bypass valve can be moved and is not stuck closed or sticking partially down the bore.

    e. Remove breather bolts and breather lines to verify they are free and clear without blockages. This includes both the hoses inside the air cleaner as well as the breather bolts.

NOTE

Use caution with the addition of thread sealant on breather bolts. Excess sealant added during service or P&A install can lead to a plugged passage.

    f. Verify breather umbrella valve is sealing properly. Should allow air to exit the engine but not allow air back into the engine. if it is not sealing, replace the breather assembly.

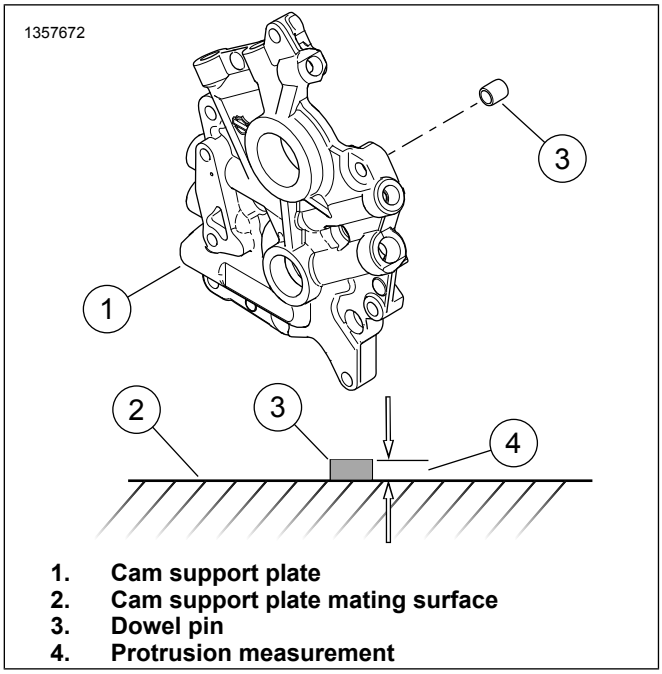
    g. Verify cylinder and piston integrity (scuffing, scoring, oil rings present) and check that ring end gaps are not aligned.

    h. Verify operation of the flywheel and connecting rods. Connecting rod bearings that require more than light force to separate may require additional service. Refer to TA0023.

    i. A reduction in piston jet assembly screw torque is expected after operation due to gasket compression. Unless piston jet assembly is visibly loose, the piston jet assembly gasket is mis-installed or the gasket or a screw is missing, the piston jet assembly joint will not cause sumping. Tighten piston jet assembly.

    Torque: 3.1–3.7 N·m (27–33 **in-lbs**)

    j. See Figure 1. Verify that the protrusion (4) of the dowel pin (3) on the cam support plate (1) is equal to or less than 3.3 mm (0.130 in).



1. Cam support plate
2. Cam support plate mating surface
3. Dowel pin
4. Protrusion measurement

Figure 1. Cam Support Plate Dowel Pin Measurement

If engine damage is observed: Contact regional Technical Service.

If engine damage is not observed: Install **new** oil pump and oil pump cover (Refer to Table 2.) then assemble engine and file the appropriate warranty claim. Refer to the applicable table, Table 3, Table 4 or Table 5.

Install

1. Install cam support plate. See the service manual.

Dealer Inventory Instructions

Use oil pump (Part No. 62400247 or 62400248) for engines that are exhibiting sumping.

Extra information

1. When performing an oil pump repair on an Original Equipment (OE) 2017 - 2019 Milwaukee-Eight equipped motorcycle, a new pump assembly is recommended. Order the new pump through the regular part ordering process.
2. For OE applications exhibiting this condition where an oil pump has been installed. Refer to Table 4.
3. New oil pumps installed for OE installations are reimbursed at cost. Refer to Table 4.

Credit Procedure: Reimbursement of Oil Pump Replacement

Reference this bulletin in the Event Notes/Comments of claim.

Table 3. Kits Registered to SWR

ITEM	DATA
Claim Type	PNA / Standard claim
Problem Part Number	Screamin' Eagle Stage III or IV Kit registered to VIN
Quantity	Leave Blank
Primary Labor Code	8865
Time	12.8 h
Customer Concern Code	3102
Condition Code	9106
Replacement part number	New oil pump and necessary miscellaneous parts. Refer to Table 2.

Table 4. OEM Credit Table - Diagnostics, Replace Oil Pump, Reassemble

ITEM	DATA
Claim Type	MC / Standard Claim
Problem Part Number	Part number that caused failure.
Quantity	Leave Blank
Labor Code[(1)]	3348
Time	12.8 h
Customer Concern Code	3102
Condition Code	9106
Replacement part number	62400247 or 62400248 and necessary miscellaneous parts. Refer to Table 2.
(1) Download may be required.	

After receiving an authorization from Technical Services to replace the Shortblock. Refer to Table 5.

Table 5. Shortblock Replacement Credit Table

ITEM	DATA
Claim Type	PNA / Standard Claim
Problem Part Number	Stage 3 or Stage 4 kit registered to the Vehicle Identification Number (VIN)
Quantity	1
Primary Labor Code	Leave Blank
Event Detail Labor Code	8888
Time	11.2 h
Customer Concern Code	3102
Condition Code	9106
Additional Parts	New oil pump, shortblock, gaskets and fluids

Bulletin number M1450 must be entered into the comments section of the claim.

Return Parts

Hold all claimed parts for 60 d from date of credit issued for possible field inspection and/or request to return to factory. After 60 d, destroy and discard the parts.