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Coding Information

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Title: PSI 8.8L Exhaust Manifold Reuse Guidelines

Applies To: PSI 8.8L engines

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

07/17/2024 - Updated part numbers based on feedback received.
09/29/2023 - Initial Article Release

DESCRIPTION

This document will guide the user through the exhaust manifold inspection process and cover the change in the exhaust manifold installation procedure to prevent damage due to thermal expansion. This procedure should be performed anytime the exhaust manifold is removed for any reason.

This document supersedes the latest instructions on exhaust manifold installation procedures in the latest PSI 8.8L Engine Service Manual. The exhaust manifold inspection procedure detailed in this document is the same as found in the latest PSI 8.8L Engine Service Manual.

SYMPTOM(s)

- Not applicable

SPECIAL TOOL(s) / SOFTWARE

- Not applicable.

SERVICE PARTS INFORMATION

NOTE: KIT, PSI EXHAUST MANIFOLD HARDWARE with part number 2523396C91 includes eight (8) BOLT HEX FLANG M8X50 (part number 1874070C2), eight (8) SPACER, BOLT EXHAUST MANIFOLD (part number 1886503C1) and sixteen (16) WASHER HDW (part number 2519572C2). The included part numbers are referenced in the table for the possibility of individually ordering each included part.

NOTE: GASKET, EXHAUST MANIFOLD with part number PSI33500014 is **not** included in KIT, PSI EXHAUST MANIFOLD HARDWARE (part number 2524496C91) and will have to be ordered individually.


NOTE: MANIFOLD, EXHAUST with part number 2518479C1 should only be replaced if during the inspection procedure exhaust manifold is outside tolerances or if it is more cost-efficient to replace the exhaust manifold than to resurface.


Kit Description	Part Number	Quantity Required	Notes
KIT, PSI EXHAUST MANIFOLD HARDWARE	2524496C91	1	Kit includes bolts, spacers, and washers listed below
<i>BOLT HEX FLANG M8X50</i>	<i>1874070C2</i>	8	Included in kit 2524496C91
<i>SPACER, BOLT EXHAUST MANIFOLD</i>	<i>1886503C1</i>	8	Included in kit 2524496C91
<i>WASHER, HDW</i>	<i>2519572C2</i>	16	Included in kit 2524496C91
GASKET, EXHAUST MANIFOLD	PSI33500014	1	Not included in kit 2524496C91
MANIFOLD, EXHAUST	2518479C1	1	The manifold is the same for the left and right


DIAGNOSTIC STEP(s)

- Not applicable.

REPAIR STEP(s)

 WARNING:
To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

 WARNING:
To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

 WARNING:
To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.



WARNING:

To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.



WARNING:

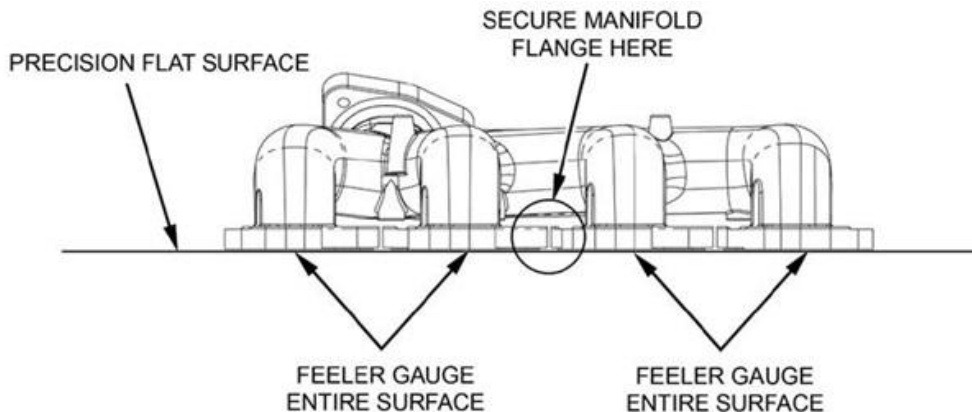
To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

REMOVAL PROCEDURE:

1. Steps for removal are unchanged and published in the service manual. See the service portal for the latest PSI 8.8L Engine Service Manual.

INSPECTION PROCEDURE:

1. Inspect the manifold for any damage or cracks. If damage or cracks are found, replace the exhaust manifold.
2. Remove all gasket material, carbon buildup, and/or other foreign material from the exhaust manifold sealing surface.
3. Using a precision flat bar or plate (must be the length of the manifold runner), secure the manifold on the two middle runner flanges as indicated in the illustration below.



NOTE: The next step will measure the flatness of each individual runner compared to itself. Once that is done, the next measurements will be comparing the measurements of all (4) manifold runners.

4. Using a feeler gauge, measure the flatness under each surface individually. Maximum tolerance across each individual runner mounting surface is a 0.004" (inch) gap per runner.
5. Using a feeler gauge, measure the flatness of each runner compared to the other 3 runners. Maximum tolerance across all runner mounting surfaces (4 total) is 0.010" (inch) gap.

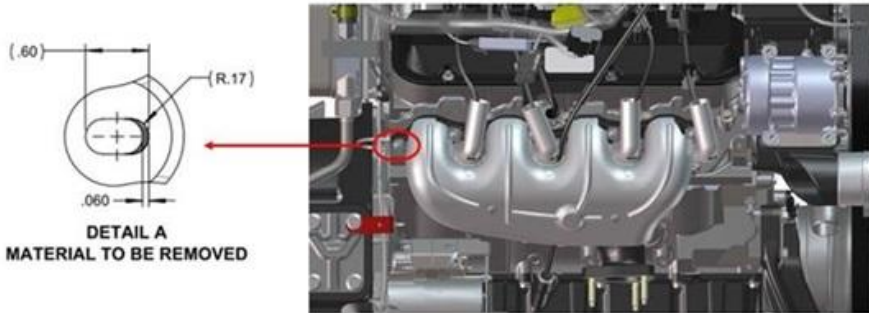
NOTE: If flatness exceeds the allowable tolerance, resurface the manifold mating flanges. The resurfacing operation should maintain the tolerances while removing a maximum of 0.020" (inch) in flange depth. The surface finish of the machined face should be 125 microinches.

NOTE: In cases where you do not have a machine that can resurface the manifolds at your repair facility, you should find a suitable local facility to which you can subcontract the resurfacing work to.

NOTE: In no case should the rework/resurface claim cost exceed the replacement cost of the exhaust manifold.

INSTALLATION PROCEDURE:

1. Measure the most forward (on left engine side manifold), or most rear (on right engine side manifold) bolt hole to ensure it is slotted to 0.60" (inches). If found to be under 0.60" (inches), remove material towards the manifold side, refer to the illustration below.



2. Replace the exhaust manifold gasket and assemble using the new suggested mounting hardware referenced under the section "service parts information". Mounting hardware includes longer bolts, spacers, and washers to provide extra protection against thermal expansion.

1. Use KIT, PSI EXHAUST MANIFOLD HARDWARE (part number 2524496C91) - kit includes parts below:
 1. Use eight (8) 50mm bolt, part number 1874070C2 - BOLT HEX FLANGE M8 X 50.
 2. Use eight (8) of 10mm spacer, part number 1886503C1 - SPACER, BOLT EXHAUST MANIFOLD
 3. Use sixteen (16) flat washers on each end of the spacer, two (2) per bolt, part number 2519572C2 - WASHER, HDW

Ensure the spark plug wires do not interfere with the bolts and the spacers.

NOTE: One (1) shorter manifold bolt will have to be reused/replaced on the right engine side manifold due to dipstick interference.

NOTE: Spark plug wires should not be replaced unless they are damaged or defective.

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

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