



## **Technical Bulletin / Safety Alert**

**Unique ID No:** DES2014-TBSA-02

**Rev:** 0

(This document supersedes all previous versions of DES2014-TBSA-02)

**Subject:** MDR074246DES Inlet Manifold Flametrap Housing Fasteners

**Date:** 11<sup>th</sup> September 2014

**Applicable to:** ALL VLI JUG-A-0 UL/UV Machines with MDR074246DES and MDR074246DES-1

**Note:** Minimum PPE required to carry out any inspections contained in this TBSA shall be protective clothing & footwear, safety glasses, hearing protection & any site specific requirements. A JSA or equivalent should be carried out prior to performing these tasks.

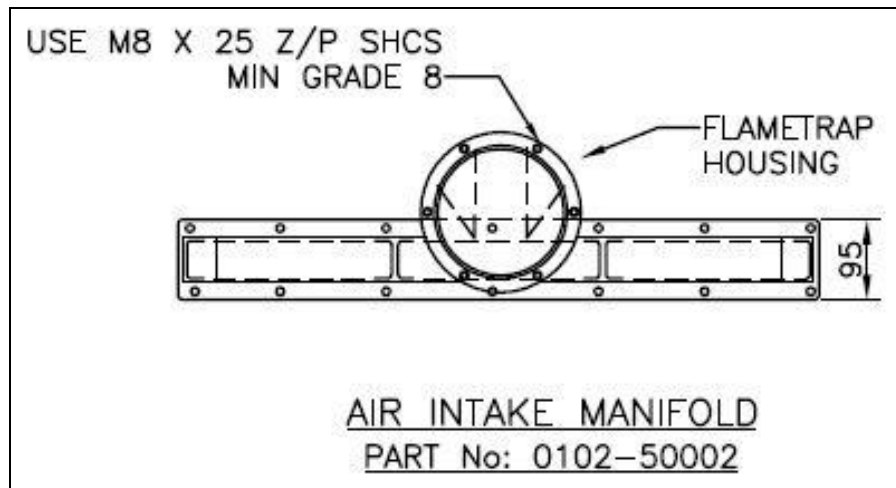
### **Introduction:**

With regards to the design registered diesel engine systems covered under MDR074246DES and MDR074246DES-1, VLI has received a request to clarify the fastener requirements for the inlet flametrap housing on the inlet manifold (0102-50002).

This TBSA provides a description of the issue and clarification of requirements.

## Investigation Results:

The relevant design registration drawing JHDES-101 Revision C identifies the required fasteners as “M8 X 25 Z/P SHCS Min Grade 8”, refer Figure 1, which are normally installed to blind threaded holes in the inlet manifold flametrap element housing flange.



**Figure 1: Excerpt from design registration drawing JHDES-101 Revision C with the intake flametrap housing fasteners identified.**

The MDR074246DES diesel engine system can be installed with either a belt driven supercharger (commonly referred to as a V2) or a gear driven supercharger (commonly referred to as a V3), each having a different inlet ducting configuration as shown in Figures 2 and 3 respectively.

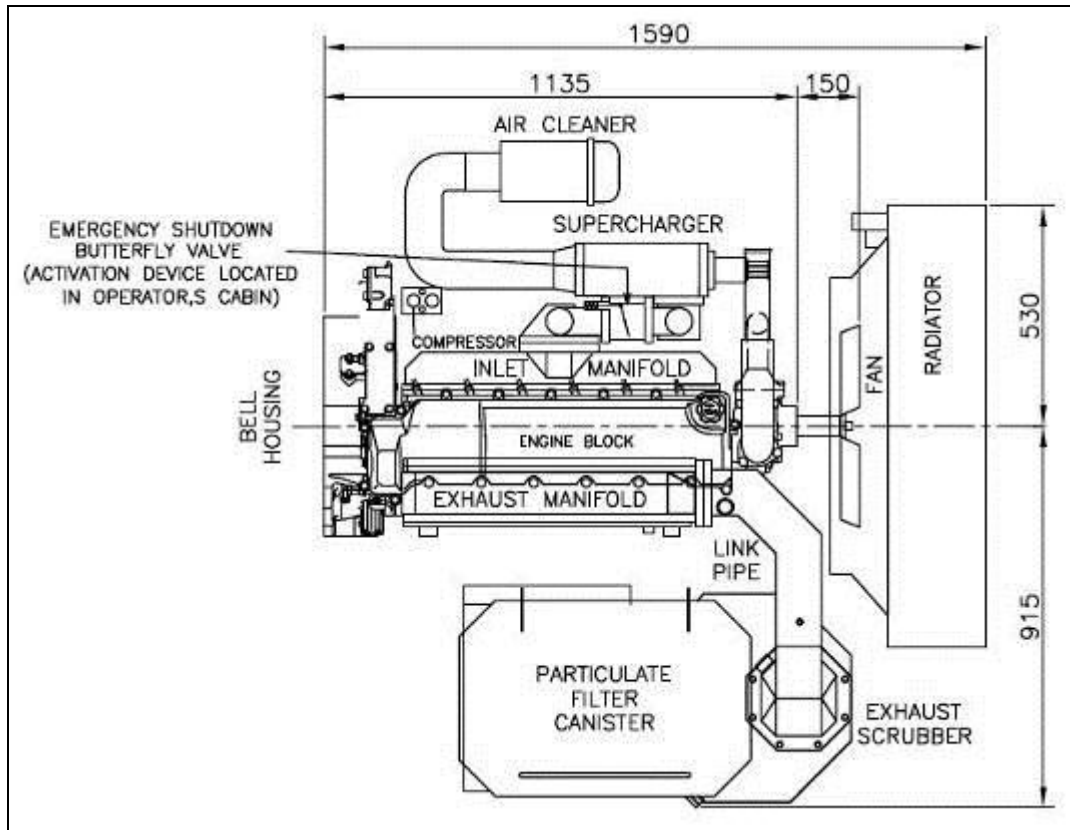
VLI wishes to highlight that the fixed connection between the inlet manifold flametrap housing and the inlet flametrap adaptor (0102-50003 on V2 installations or 0102-50163 on V3 installations) is not a flamepath, however both inlet configurations have completed testing to the requirements of AS3584.2:2008.

The fastener requirements specified on the design registration drawing JHDES-101 Rev C, as shown in Figure 1, are accurate for the V3 supercharger installation.

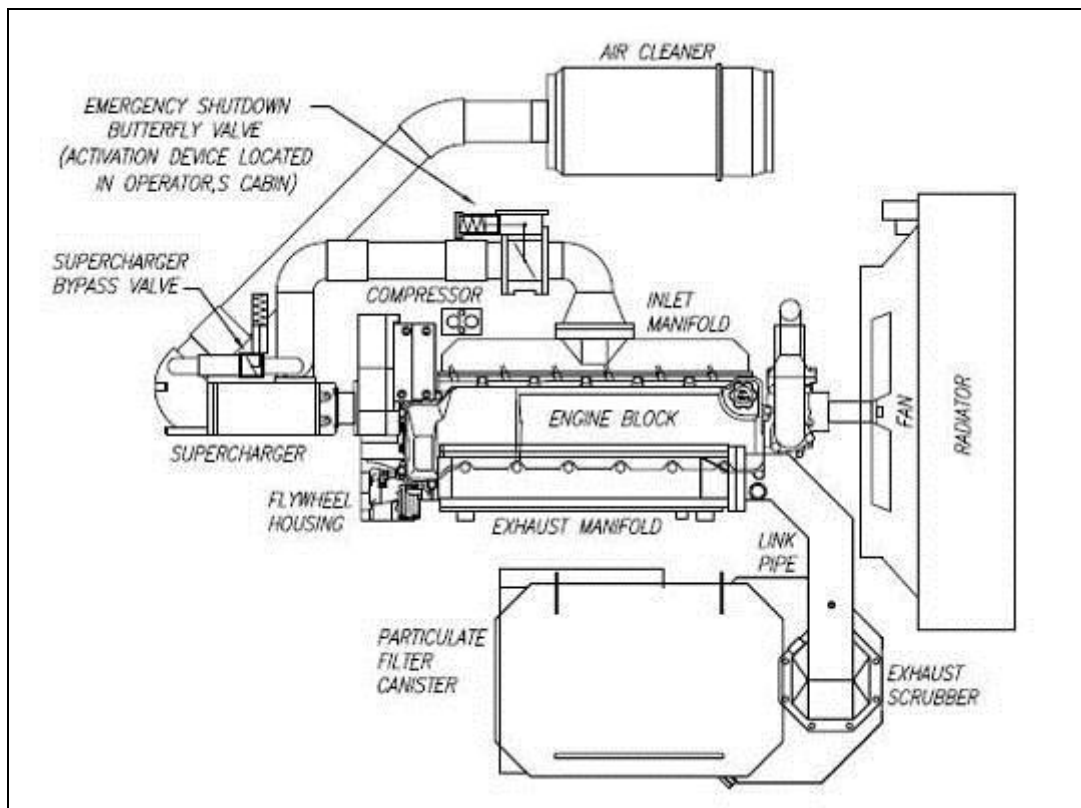
The inlet ducting configuration of the belt driven supercharger installation (V2) results in limited fastener access at the 11 o'clock position (as viewed in Figure 1), and therefore the use of a through bolt with a nut and washer in this location is required.

In some cases replacement inlet manifolds installed to gear driven supercharger installations (V3) have also contained the through hole and the through bolt fastener is used, see Figure 4 for an example.

VLI can confirm that the use of a through bolt at this location on any MDR074246DES or MDR074246DES-1 inlet manifold flametrap housing fixed connection is acceptable, and recommends the use of SAE Grade 8 (or ISO Grade 10.9) fastener components as a minimum.



**Figure 2: Representation of a belt driven supercharger installation (commonly referred to as a V2)**



**Figure 3: Representation of a gear driven supercharger installation (commonly referred to as a V3)**



**Figure 4: Photograph showing an example of the use of a through bolt fastener (as installed to a V3 engine configuration).**

VLI intends to revise the design registration drawing JHDES-101 Rev C to reflect the abovementioned information and provide further clarification on this issue. VLI will release a further TBSA on completion and release of the design registration drawing revision.

**Conclusion:**

VLI confirms the use of a through bolt at the 11 o'clock position on any MDR074246DES or MDR074246DES-1 inlet manifold inlet flametrap housing fixed connection is acceptable, and recommends the use of SAE Grade 8 (or ISO Grade 10.9) fastener components as a minimum.

**Recommendations:**

Where relevant to specific equipment with MDR074246DES & MDR074246DES-1 installations, it is recommended this TBSA be filed in the equipment plant safety file with the original design registration drawings and documents, to be referred to when completing mechanical Code D inspections, until such time as revised design registration drawings are issued.

Please ensure this document is circulated to all relevant personnel within your organization. Should you have any further queries please contact your VLI Representative.

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