

Title (en)
An engine and exhaust manifold assembly

Title (de)
Motor- und Abgaskrümmernanordnung

Title (fr)
Moteur et ensemble de tubulure d'échappement

Publication
EP 2075429 A1 20090701 (EN)

Application
EP 08169335 A 20081118

Priority
GB 0723055 A 20071126

Abstract (en)
An exhaust manifold 17 is secured to a cylinder head 11 by bolts 25 that cooperate with a mounting flange 19 that is divided into discrete flange sections 19A, 19B, 19C and 19D by a number of gaps 31 located between exhaust ports 14 of the engine so that for each exhaust port 14 there is a separate flange section 19A, 19B, 19C and 19D. Between each bolt 25 and the respective flange section 19A, 19B, 19C and 19D two types of tubular spacer 37, 39 are used, the first type 37 being a plain tubular spacer and the second type 39 being a dual function spacer which has an offset lug 43 which extends into and fills the gap 31. The dual function spacers 39 are manufactured so that each lug 43 is an easy push fit into the respective gap 31. In use, when the exhaust manifold 17 cools, the lugs 43 prevent contraction at the flange 19 while other parts of the manifold 17 can deform elastically.

IPC 8 full level
F01N 13/10 (2010.01); **F01N 13/18** (2010.01)

CPC (source: EP)
F01N 13/10 (2013.01); **F01N 13/1805** (2013.01); **F01N 13/1811** (2013.01); **F01N 13/1855** (2013.01); **F01N 2450/24** (2013.01)

Citation (applicant)
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Citation (search report)
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• [DA] US 6327854 B1 20011211 - BONNY PIERRE [DE], et al
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DE FR GB

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