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HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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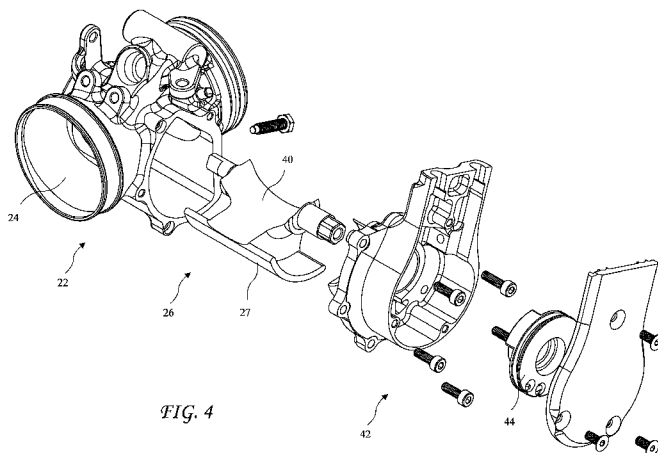
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(54) Title: THROTTLE BODY WITH OFFSET AXIS DRUM VALVE



(57) Abstract: An improved throttle body (20) includes an offset axis drum valve (26) and shaped throat (58). The offset axis and shaped throat (58) provide gradual initial opening for better throttle control and the drum valve (26) includes a lower face (40) matching the profile of the air path (24) through the throttle body (20) when rotated to a fully open throttle position, providing an optimal flow at full throttle. The offset axis drum (26) further includes a slightly decreasing radius. As the drum (26) opens, the surface (27) of the drum (26) retreats from the throttle body wall (31) providing clearance for dusty environments and reducing tolerances for reduced manufacturing cost. A fuel injector pocket (32) position provides a spray pattern (52) aligned with an initial air flow as the throttle body (20) opens providing better mixing at part throttle. The throttle body (20) further creates a cavity (30) under the drum (26) in the closed position providing an increased volume in the intake tract which improves throttle response.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/043111**A. CLASSIFICATION OF SUBJECT MATTER****F02D 9/10(2006.01)i, F02D 9/02(2006.01)i, F16K 1/16(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F02D 9/10; F02M 9/08; F16K 1/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: throttle valve, drum valve, offset, narrowed wall, reduced air flow

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 06047950 A (PONTOPPIDAN, M. et al.) 11 April 2000 See fig.1 and column5, line16 - column6, line20.	1,3,4,11
Y	See fig.1 and column5, line16 - column6, line20.	5-7,9,10
Y	US 04783286 A (LEE, TIEN-CHU) 08 November 1988 See abstract, column 2 lines12-31 and figure 2.	5-7,9,10
A	JP 2009-180144 A (KEIHIN CORP.) 13 August 2009 See abstract and figures 1, 9.	1-15
A	US 04526729 A (BRAUN, A. J. et al.) 02 July 1985 See abstract and figures 1,13	1-15

 Further documents are listed in the continuation of Box C. See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 06047950 A	11.04.2000	CN 1086219 C CN 1202951 A CN 1202951 C0 EP 0862687 A1 EP 0862687 A1 EP 0862687 B1 US 06047950 A WO 97-19264 A1	12.06.2002 23.12.1998 23.12.1998 09.09.1998 25.08.1999 01.09.1999 11.04.2000 29.05.1997
US 04783286 A	08.11.1988	None	
JP 2009-180144 A	13.08.2009	None	
US 04526729 A	02.07.1985	None	