

Title (en)  
Internal combustion engine

Title (de)  
Brennkraftmaschine

Title (fr)  
Moteur à combustion interne

Publication  
**EP 1336725 A2 20030820 (EN)**

Application  
**EP 03011023 A 20000607**

Priority  
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• JP 15892899 A 19990607  
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Abstract (en)  
A valve driving apparatus using a direct driving type valve lifter is disposed between a cam (803) and a valve (105,117,118,217,317,417,517,617,717,807), said apparatus comprising: a guide hole (123,213,313,413,513,613,713,806) and a direct driving type valve lifter (101,214,314,414,514,614,714,811) including a tappet portion (103,216,316,416,516,616,716,813), and a guide portion (104,215,315,415,515,615,715,812) having one end portion coupled to said tappet portion and housed within said guide hole so as to slide freely therein to the axial direction of said poppet valve in an interlocked manner; wherein a diameter (r) of said guide portion is formed to be smaller than a diameter (R) of said tappet portion; characterized in that said valve lifter (101,214,314,414,514,614,714,811) is inclined in a direction perpendicular to a rotational axis of the cam relative to the head bolt (109) for securing the cylinder head; and said valve lifter is arranged so as to be adjacent to the head bolt in a planar view. <IMAGE>

IPC 1-7  
**F01L 1/14**

IPC 8 full level  
**F01L 1/00** (2006.01); **F01L 1/14** (2006.01); **F01M 9/10** (2006.01)

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Citation (applicant)  
JP H10331709 A 19981215 - SUZUKI MOTOR CO

Cited by  
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**EP 1059423 A2 20001213**; **EP 1059423 A3 20010314**; **EP 1059423 B1 20040331**; CN 1128922 C 20031126; CN 1276467 A 20001213; CN 1312382 C 20070425; CN 1515787 A 20040728; DE 60009386 D1 20040506; DE 60009386 T2 20050310; EP 1336725 A2 20030820; EP 1336725 A3 20031112; KR 100466882 B1 20050124; KR 20020071490 A 20020912; MY 141693 A 20100615; TW 445342 B 20010711

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