

Title (en)  
Valve assembly for an injection valve and injection valve

Title (de)  
Ventilanordnung für ein Einspritzventil und Einspritzventil

Title (fr)  
Ensemble de soupape pour soupape d'injection et soupape d'injection

Publication  
**EP 2378106 A1 20111019 (EN)**

Application  
**EP 10003908 A 20100413**

Priority  
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Abstract (en)  
The invention concerns a valve assembly (11) for an injection valve (10), comprising a valve body (12) including a central longitudinal axis (L), the valve body (12) comprising a cavity (18) with a fluid inlet portion (42) and a fluid outlet portion (40), a valve needle (20) axially movable in the cavity (18), the valve needle (20) preventing a fluid flow through the fluid outlet portion (40) in a closing position and releasing the fluid flow through the fluid outlet portion (40) in further positions, and an electro-magnetic actuator unit (36) being designed to actuate the valve needle (20), the electro-magnetic actuator unit (36) comprising an armature (22) axially movable in the cavity (18). The valve body (12) has a stop surface (48) facing the fluid outlet portion (40) and facing the armature (22). The stop surface (48) is designed to act as a stop for the armature (22) in its position furthest away from the fluid outlet portion (40). The stop surface (48) is a plasma nitrided surface.

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Citation (search report)  
• [XY] DE 4421947 A1 19950614 - BOSCH GMBH ROBERT [DE]  
• [E] DE 102008053310 A1 20100429 - VACUUMSCHMELZE GMBH & CO KG [DE]  
• [IY] JP 2003328894 A 20031119 - HITACHI UNISIA AUTOMOTIVE LTD  
• [Y] DE 102008000559 A1 20080925 - DENSO CORP [JP]

Cited by  
EP3153697A1; WO2015110199A1; EP2602476A1; WO2013083626A1; US10094348B2; DE102017218267A1; WO2019072793A1;  
DE102017218267B4

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