

Title (en)
Ink jet nozzle head

Title (de)
Tintenstrahldüsenkopf

Title (fr)
Tête à buse à jet d'encre

Publication
EP 0931654 A1 19990728 (EN)

Application
EP 99200091 A 19990112

Priority
• EP 99200091 A 19990112
• EP 98200190 A 19980123

Abstract (en)
Ink jet nozzle head comprising: means (12) defining a nozzle (16) and an ink channel (18) connected to said nozzle, a diaphragm (20) covering at least a portion of said ink channel (18), actuator means (24) capable of deflecting the diaphragm, and bump means (32) arranged for concentrating the force of the actuator means that is applied to the diaphragm, characterized in that the diaphragm (20) has at least two layers (28, 30), and the bump means (32) form a spacer intervening between these two layers. <IMAGE>

IPC 1-7
B41J 2/14; **B41J 2/16**

IPC 8 full level
B41J 2/14 (2006.01); **B41J 2/16** (2006.01)

CPC (source: EP)
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Citation (applicant)
• EP 0718102 A2 19960626 - SHARP KK [JP]
• EP 0402172 A1 19901212 - SHARP KK [JP]
• EP 0819524 A1 19980121 - OCE TECH BV [NL]

Citation (search report)
• [XA] EP 0713774 A2 19960529 - SHARP KK [JP]
• [A] EP 0783965 A2 19970716 - NEC CORP [JP]
• [A] US 4383264 A 19830510 - LEWIS ARTHUR M
• [A] US 4364070 A 19821214 - MATSUDA YASUMASA, et al
• [A] EP 0563603 A2 19931006 - SEIKO EPSON CORP [JP]
• [XA] PATENT ABSTRACTS OF JAPAN vol. 097, no. 011 28 November 1997 (1997-11-28)
• [X] PATENT ABSTRACTS OF JAPAN vol. 098, no. 001 30 January 1998 (1998-01-30)
• [A] PATENT ABSTRACTS OF JAPAN vol. 098, no. 002 30 January 1998 (1998-01-30)

Cited by
WO2019043340A1; WO03070467A3

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