Title (en)

Method for detecting and controlling the dynamic unbalance in a drum of a washing machine and washing machine that uses such method

Title (de)

Verfahren zur Detektion und zur Kontrolle einer dynamischen Unwucht in der Trommel einer Waschmaschine und Waschmaschine zur Durchführung dieses Verfahrens

Title (fr)

Procédé pour détecter et contrôler le balourd dynamique d'un tambour de machine à laver et machine à laver utilisant un tel procédé

Publication

EP 1167609 B2 20070912 (EN)

Application

EP 00113885 A 20000630

Priority

EP 00113885 A 20000630

Abstract (en)

[origin: EP1167609A1] A washing machine comprises accelerometers or optical means which are directed along a direction that is sensitive to the effect of a load which is dynamically unbalanced. Such direction is preferably a direction parallel to the axis of rotation of the drum. <IMAGE>

IPC 8 full level

D06F 37/20 (2006.01); **D06F 33/48** (2020.01); **D06F 34/16** (2020.01)

CPC (source: EP US)

D06F 33/48 (2020.02 - EP US); **D06F 34/16** (2020.02 - EP US); D06F 2103/26 (2020.02 - EP US)

Citation (opposition)

Opponent :

- EP 1154064 A2 20011114 - WHIRLPOOL CO [US]
- JP H06233890 A 19940823 - MATSUSHITA ELECTRIC IND CO LTD
- US 5561993 A 19961008 - ELGERSMA MICHAEL R [US], et al
- JP H10174797 A 19980630 - SHARP KK
- DE 3938822 A1 19910529 - MIELE & CIE [DE]
- DIN ISO 1925: 1996-11
- "Direct and Indirect Out-of-Balance Detection for Future Generation Washing Maschines" by C. Lemaire; presented at: 1999 Appliance Manufacturer Conference & Expo, September 27-29, Opryland, Nashville, TN
- "Modeling and Experimental Assessment of Suspension Dynamics of a Horizontal-Axis Washing Maschine", Türkay et al., Journal of Vibration and Acoustics, Transactions of the ASME, ASME, New York, Vol. 120, April 1998, p. 534-543
- data sheet of the sensor disclosed in "Direct and Indirect Out-of-Balance Detection for Future Generation Washing Machines" ADXL202/ADXL210 of Analog Devices, 1999

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DE102008055090A1; EP1857583A1; CN102959153A; DE102009028508A1; CN102439215A; EP1607729A1; FR2910498A1; US2012017646A1; RU2470101C2; DE102013226371A1; DE102011089624A1; EP3392389A4; RU2469139C2; EA015851B1; DE102011084267A1; EP2322706A3; EP1882769A1; CN114941230A; US2012131753A1; CN102575407A; EP2470706A4; EP2666899A1; DE102018210562A1; US9080276B2; US8756956B2; DE102008021598A1; CN108570788A; CN114144551A; WO2011163528A3; WO2006052106A1; WO2010026246A1; WO2010133511A1; WO2011025313A1; WO2008101549A1; WO2008148844A3; US11976403B2; EP1696070A1; EP2287379A1; EP2692929A4; CN111434831A; US8932369B2; US10266982B2; US10697108B2; WO2008012032A1; WO2015091721A1; US7581272B2; US7603877B2; US7735173B2; EP2527511A1; US8631526B2; EP3819417B1

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

EP 1167609 A1 20020102; **EP 1167609 B1 20040915**; **EP 1167609 B2 20070912**; DE 60013791 D1 20041021; DE 60013791 T2 20050929; DE 60013791 T3 20080124; ES 2226663 T3 20050401; ES 2226663 T5 20080216

DOCDB simple family (application)

EP 00113885 A 20000630; DE 60013791 T 20000630; ES 00113885 T 20000630