

Title (en)
DRUM WASHING MACHINE

Title (de)
TROMMELWASCHMASCHINE

Title (fr)
MACHINE A LAVER A TAMBOUR

Publication
EP 1548169 A4 20060816 (EN)

Application
EP 03765335 A 20030718

Priority
• JP 0309215 W 20030718
• JP 2002212788 A 20020722

Abstract (en)
[origin: EP1548169A1] The balance of the laundry sticking to an inner peripheral surface of a drum of a drum washing machine having a drum rotating on a substantially horizontal axis is adjusted before spin-drying. A brushless DC motor is adopted for a drum drive motor. The motor current is separated into a d-axis current and a q-axis current to carry out speed control by vector control for controlling these currents independently. Before spin-drying, the rotating speed is increased (S1) up to a speed at which the laundry sticks firmly to the inner peripheral surface of the drum. Then, the machine enters the rotating speed slow-down operation mode (S2) in which the rotating speed is gradually decreased. The balance of the laundry inside the drum is judged to be proper during the speed slow-down, the rotating speed is increased to enter a spin-drying mode (S8). The balance of the laundry inside the drum is judged on the basis of the fluctuation width of the q-axis current. <IMAGE>

IPC 1-7
D06F 33/02

IPC 8 full level
D06F 33/40 (2020.01); **D06F 35/00** (2006.01); **D06F 37/20** (2006.01); **H05B 37/02** (2006.01); **D06F 33/48** (2020.01)

CPC (source: EP US)
D06F 33/40 (2020.02 - EP US); **D06F 33/48** (2020.02 - EP US); **D06F 2103/24** (2020.02 - EP US); **D06F 2103/26** (2020.02 - EP US);
D06F 2103/46 (2020.02 - EP US); **D06F 2105/52** (2020.02 - EP US); **D06F 2105/54** (2020.02 - EP US); **D06F 2105/62** (2020.02 - EP US)

Citation (search report)
• [X] WO 0028128 A1 20000518 - ELECTROLUX ZANUSSI ELETTRODOME [IT], et al
• [A] EP 0732436 A1 19960918 - WHIRLPOOL EUROP [NL]
• [A] EP 1167610 A2 20020102 - WHIRLPOOL CO [US]
• [A] DE 19748366 A1 19990506 - AEG HAUSGERAETE GMBH [DE]
• [PA] EP 1265351 A2 20021211 - TOSHIBA KK [JP]
• [A] US 5677606 A 19971014 - OTAKE KEIZO [JP]
• [A] US 5181398 A 19930126 - TANAKA TETSUKAZU [JP], et al
• See references of WO 2004009899A1

Cited by
CN111118813A; EP2063011A1; CN102341538A; EA019472B1; US8679198B2; US9096964B2; WO2010100030A1; US8938835B2;
US7490490B2; WO2023111968A1

Designated contracting state (EPC)
DE FR GB IT

DOCDB simple family (publication)
EP 1548169 A1 20050629; EP 1548169 A4 20060816; EP 1548169 B1 20100303; CN 1671907 A 20050921; CN 1671907 B 20100623;
DE 60331566 D1 20100415; JP 2004049631 A 20040219; JP 4194312 B2 20081210; KR 100690118 B1 20070308;
KR 20050027121 A 20050317; TW 200403373 A 20040301; TW I278547 B 20070411; WO 2004009899 A1 20040129

DOCDB simple family (application)
EP 03765335 A 20030718; CN 03817555 A 20030718; DE 60331566 T 20030718; JP 0309215 W 20030718; JP 2002212788 A 20020722;
KR 20057001144 A 20050121; TW 92105801 A 20030317