

about its longitudinal reference axis inside the washing tub 101. It is understood that electric motor 2 may be directly associated with the shaft of the revolving drum 104 or may be mechanically coupled to revolving drum by means of a belt/pulley system or similar mechanical means (not shown).

5            Preferably, the electric motor 2 is a three-phase motor, but is not limited thereto. In other words, it should be understood that the present invention is not limited to a three-phase motor 2 but it could be any kind of multi-phases motor, such as bi-phase or poly-phases motor, or similar motor. Preferably, the electric motor 2 may be a permanent magnet motor or an induction motor or any other similar motor.

10           With reference to Figures 2 and 3, the laundry-treating machine 1 furthermore comprises an inverter-based apparatus 1, which is configured to control the electric motor 2 according to control methods disclosed hereinafter.

             According to a first embodiment of the present invention, the inverter-based apparatus 1 is schematically illustrated in Figure 3, and comprises an input stage 4, an  
15 inverter 5 and a motor controller stage 6.

             According to the first embodiment illustrated in Figure 3, the input stage 4 comprises a rectifier unit configured to convert an alternating voltage AC, received in input from a power supply system 8, to a rectified DC voltage to be provided in input to the inverter 5. The input stage 4 may comprise, for example, a full-bridge diode  
20 rectifier having inputs coupled to AC mains lines of the power supply system 8 for receiving AC mains lines currents and AC mains voltage, and outputs connected to the inverter 5. It is understood that both power supply system 8 and input stage 4 depend on the kind of inverter and motor to be controlled. For example, power supply system 8 and input stage 4 may be three-phases, or multi-phases, or similar.

25           According to the first embodiment illustrated in Figure 3, the inverter 5 is configured to convert the DC voltage to AC voltage. The inverter 5 may be provided with a plurality of switching units (not illustrated), which are controlled by the motor controller stage 6 in order to generate and modulate an AC voltage to be fed to the motor 2. In the exemplary embodiment, the inverter 5 comprises inputs connected to  
30 outputs of the input stage 4 to receive the DC voltage and outputs connected to the