

CPC**COOPERATIVE PATENT CLASSIFICATION****H02N****ELECTRIC MACHINES NOT OTHERWISE PROVIDED FOR****NOTE**

This subclass covers:

- electrostatic generators, motors, clutches, or holding devices;
- other non-dynamo-electric generators or motors;
- holding or levitation devices using magnetic attraction or repulsion;
- arrangements for starting, regulating, braking, or otherwise controlling such machines unless in conjoint operation with a second machine.

Specific provision for generators, motors, or other means for converting between electric and other forms of energy also exists in other subclasses, e.g. in subclasses [H01L](#), [H01M](#), [H02K](#), [H04R](#).

H02N 1/00

Electrostatic generators or motors using a solid moving electrostatic charge carrier

H02N 1/002

. {Electrostatic motors}

H02N 1/004

.. {in which a body is moved along a path due to interaction with an electric field travelling along the path}

H02N 1/006

.. {of the gap-closing type ([H02N 1/004](#) takes precedence)}

H02N 1/008

... {Laterally driven motors, e.g. of the comb-drive type}

H02N 1/04

. Friction generators

H02N 1/06

. Influence generators

H02N 1/08

.. with conductive charge carrier, i.e. capacitor machines

H02N 1/10

.. with non-conductive charge carrier

H02N 1/12

... in the form of a conveyer belt, e.g. van de Graaff machine

H02N 2/00

Electric machines in general using piezo-electric effect, electrostriction or magnetostriction (generating mechanical vibrations in general [B06B](#); piezo-electric, electrostrictive or magnetostrictive devices in general [H01L 41/00](#))

WARNING

This group is not complete pending reorganisation; see provisionally also [H01L 41/00](#)

H02N 2/0005

. {producing non-specific motion; Details common to machines covered by [H02N 2/02](#) to [H02N 2/16](#)}

H02N 2/001

.. {Driving devices, e.g. vibrators}

H02N 2/0015	...	{using only bending modes}
H02N 2/002	...	{using only longitudinal or radial modes}
H02N 2/0025	....	{using combined longitudinal modes}
H02N 2/003	...	{using longitudinal or radial modes combined with bending modes}
H02N 2/0035	....	{Cylindrical vibrators}
H02N 2/004	....	{Rectangular vibrators}
H02N 2/0045	...	{using longitudinal or radial modes combined with torsion or shear modes}
H02N 2/005	..	{Mechanical details, e.g. housings (casings for dynamo-electric machines H02K 5/00)}
H02N 2/0055	...	{Supports for driving or driven bodies; Means for pressing driving body against driven body}
H02N 2/006	....	{Elastic elements, e.g. springs (in general F16F 1/00)}
H02N 2/0065	...	{Friction interface (friction linings F16D 69/00)}
H02N 2/007	....	{Materials}
H02N 2/0075	..	{Electrical details, e.g. drive or control circuits or methods}
H02N 2/008	...	{Means for controlling vibration frequency or phase, e.g. for resonance tracking}
H02N 2/0085	...	{Leads; Wiring arrangements}
H02N 2/009	..	{Thermal details, e.g. cooling means}
H02N 2/0095	.	{producing combined linear and rotary motion, e.g. multi-direction positioners}
H02N 2/02	.	producing linear motion, e.g. actuators; Linear positioners; { Linear motors}
H02N 2/021	..	{using intermittent driving, e.g. step motors, piezoeleg motors }
H02N 2/023	...	{Inchworm motors}
H02N 2/025	...	{Inertial sliding motors}
H02N 2/026	..	{by pressing one or more vibrators against the driven body}
H02N 2/028	..	{along multiple or arbitrary translation directions, e.g. XYZ stages}
H02N 2/04	..	Constructional details
H02N 2/043	...	{Mechanical transmission means, e.g. for stroke amplification}
H02N 2/046	....	{for conversion into rotary motion}
H02N 2/06	..	Drive circuits; Control arrangements { or methods}
H02N 2/062	...	{Small signal circuits; Means for controlling position or derived quantities, e.g. for removing hysteresis}
H02N 2/065	...	{Large signal circuits, e.g. final stages}
H02N 2/067	....	{generating drive pulses}
H02N 2/08	..	using travelling waves { i.e. Rayleigh surface waves}
H02N 2/10	.	producing rotary motion, e.g. rotary motors
H02N 2/101	..	{using intermittent driving, e.g. step motors}
H02N 2/103	..	{by pressing one or more vibrators against the rotor}
H02N 2/105	..	{Cycloid or wobble motors; Harmonic traction motors}
H02N 2/106	..	{Langevin motors}
H02N 2/108	..	{around multiple axes of rotation, e.g. spherical rotor motors}
H02N 2/12	..	Constructional details

H02N 2/123	... {Mechanical transmission means, e.g. for gearing}
H02N 2/126	.... {for conversion into linear motion}
H02N 2/14	.. Drive circuits; Control arrangements { or methods}
H02N 2/142	... {Small signal circuits; Means for controlling position or derived quantities, e.g. speed, torque, starting, stopping, reversing}
H02N 2/145	... {Large signal circuits, e.g. final stages}
H02N 2/147	.... {Multi-phase circuits}
H02N 2/16	.. using travelling waves { i.e. Rayleigh surface waves}
H02N 2/163	... {Motors with ring stator}
H02N 2/166	... {Motors with disc stator}
H02N 2/18	. producing electrical output from mechanical input, e.g. generators (for measurement devices G01)
H02N 2/181	.. {Circuits; Control arrangements or methods}
H02N 2/183	.. {using impacting bodies (high voltage generators in spark lighters F23Q)}
H02N 2/185	.. {using fluid streams}
H02N 2/186	.. {Vibration harvesters}
H02N 2/188	... {adapted for resonant operation}
H02N 2/22	. {Methods relating to manufacturing, e.g. assembling, calibration}
H02N 3/00	Generators in which thermal or kinetic energy is converted into electrical energy by ionisation of a fluid and removal of the charge therefrom (discharge tubes functioning as thermionic generators H01J 45/00)
H02N 10/00	Electric motors using thermal effects {(motors using expansion or contraction of bodies due to heating or cooling F03G 7/06)}
H02N 11/00	Generators or motors not provided for elsewhere; Alleged perpetua mobilia obtained by electric or magnetic means (by hydrostatic pressure F03B 17/04 ; { by mechanical means F03G 7/10 ; } by dynamo-electric means, { including arrangements of permanent magnets interacting with other permanent magnets, } H02K 53/00)
H02N 11/002	. {Generators}
H02N 11/004	.. {adapted for producing a desired non-sinusoidal waveform}
H02N 11/006	. {Motors}
H02N 11/008	. {Alleged electric or magnetic perpetua mobilia}
H02N 13/00	Clutches or holding devices using electrostatic attraction, e.g. using Johnson-Rahbek effect

H02N 15/00

Holding or levitation devices using magnetic attraction or repulsion, not otherwise provided for (electric or magnetic devices for holding work on machine tools [B23Q 3/15](#); {monorail vehicle propulsion or suspension [B60L 13/00](#)}; sliding or levitation devices for railway systems [B61B 13/08](#); material handling devices associated with conveyers incorporating devices with electrostatic or magnetic grippers [B65G 47/92](#); separating thin or filamentary articles from piles using magnetic force [B65H 3/16](#); delivering thin or filamentary articles from magnetic holders by air blast or suction [B65H 29/24](#); bearings using magnetic or electric supporting means [F16C 32/04](#); relieving bearing loads using magnetic means [F16C 39/06](#); magnets [H01F 7/00](#); dynamo-electric clutches or brakes [H02K 49/00](#); {electric furnaces with simultaneous levitation and heating [H05B 6/32](#)})

H02N 15/02

- by Foucault currents

H02N 15/04

- Repulsion by the Meissner effect (superconductors or hyperconductors in general [H01L 39/00](#))

H02N 99/00

Subject matter not provided for in other groups of this subclass