

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

1. 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.
2. 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	<ul style="list-style-type: none"> . . . {Large signal circuits, e.g. final stages}
H02N 2/147	<ul style="list-style-type: none"> {Multi-phase circuits}
H02N 2/16	<ul style="list-style-type: none"> . . using travelling waves {i.e. Rayleigh surface waves}
H02N 2/163	<ul style="list-style-type: none"> . . . {Motors with ring stator}
H02N 2/166	<ul style="list-style-type: none"> . . . {Motors with disc stator}
H02N 2/18	<ul style="list-style-type: none"> . producing electrical output from mechanical input, e.g. generators (for measurement devices G01)
H02N 2/181	<ul style="list-style-type: none"> . . {Circuits; Control arrangements or methods}
H02N 2/183	<ul style="list-style-type: none"> . . {using impacting bodies (high voltage generators in spark lighters F23Q)}
H02N 2/185	<ul style="list-style-type: none"> . . {using fluid streams}
H02N 2/186	<ul style="list-style-type: none"> . . {Vibration harvesters}
H02N 2/188	<ul style="list-style-type: none"> . . . {adapted for resonant operation}
H02N 2/22	<ul style="list-style-type: none"> . {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	<ul style="list-style-type: none"> . {Generators}
H02N 11/004	<ul style="list-style-type: none"> . . {adapted for producing a desired non-sinusoidal waveform}
H02N 11/006	<ul style="list-style-type: none"> . {Motors}
H02N 11/008	<ul style="list-style-type: none"> . {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	<ul style="list-style-type: none"> . by Foucault currents
H02N 15/04	<ul style="list-style-type: none"> . 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