

**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](#) .

**Guidance heading:****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 <a href="#">H02K 5/00</a> ) }
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 <a href="#">F16F 1/00</a> ) }
H02N 2/0065	... { Friction interface (friction linings <a href="#">F16D 69/00</a> ) }
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 <a href="#">G01</a> )
H02N 2/181	.. { Circuits; Control arrangements or methods }
H02N 2/183	.. { using impacting bodies (high voltage generators in spark lighters <a href="#">F23Q</a> ) }
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 }
<b>H02N 3/00</b>	<b>Generators in which thermal or kinetic energy is converted into electrical energy by ionisation of a fluid and removal of the charge therefrom</b> (discharge tubes functioning as thermionic generators <a href="#">H01J 45/00</a> )
<b>H02N 6/00</b>	<b>Generators in which light radiation is directly converted into electrical energy</b> (solar cells or assemblies thereof <a href="#">H01L 25/00</a> , <a href="#">H01L 31/00</a> )
<b>H02N 10/00</b>	<b>Electric motors using thermal effects</b> { (motors using expansion or contraction of bodies due to heating or cooling <a href="#">F03G 7/06</a> ) }
<b>H02N 11/00</b>	<b>Generators or motors not provided for elsewhere; Alleged perpetua mobilia obtained by electric or magnetic means</b> (by hydrostatic pressure <a href="#">F03B 17/04</a> ; { by mechanical means <a href="#">F03G 7/10</a> ; } by dynamo-electric means, { including arrangements of permanent magnets interacting with other permanent magnets, } <a href="#">H02K 53/00</a> )
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 }
<b>H02N 13/00</b>	<b>Clutches or holding devices using electrostatic attraction, e.g. using Johnson-Rahbek effect</b>

**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**