

ECLA**EUROPEAN 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.

H02N1/00**Electrostatic generators or motors using a solid moving electrostatic charge carrier**

H02N1/00B

- . [N: Electrostatic motors]

H02N1/00B1

- . . [N: in which a body is moved along a path due to interaction with an electric field travelling along the path] [N9706] [C9905]

H02N1/00B2

- . . [N: of the gap-closing type ([H02N1/00B1](#) takes precedence)] [N9706]

H02N1/00B2C

- . . . [N: Laterally driven motors, e.g. of the comb-drive type] [N9905]

H02N1/04

- . Friction generators

H02N1/06

- . Influence generators

H02N1/08

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

H02N1/10

- . . with non-conductive charge carrier

H02N1/12

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

H02N2/00**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 [H01L41/00](#)) [N1111]**

[N: **WARNING** [N1111]

This group is not complete pending reorganisation; see provisionally also [H01L41/00](#)]

H02N2/00B

- . [N: producing non-specific motion; Details common to machines covered by [H02N2/02](#) to [H02N2/16](#)] [N1111]

H02N2/00B2

- . . [N: Driving devices, e.g. vibrators] [N1111]

H02N2/00B2B

- . . . [N: using only bending modes] [N1111]

H02N2/00B2D	. . . [N: using only longitudinal or radial modes] [N1111]
H02N2/00B2D2 [N: using combined longitudinal modes] [N1111]
H02N2/00B2F	. . . [N: using longitudinal or radial modes combined with bending modes] [N1111]
H02N2/00B2F2 [N: Cylindrical vibrators] [N1111]
H02N2/00B2F4 [N: Rectangular vibrators] [N1111]
H02N2/00B2H	. . . [N: using longitudinal or radial modes combined with torsion or shear modes] [N1111]
H02N2/00B4	. . [N: Mechanical details, e.g. housings (casings for dynamo-electric machines H02K5/00)] [N1111]
H02N2/00B4B	. . . [N: Supports for driving or driven bodies; Means for pressing driving body against driven body] [N1111]
H02N2/00B4B2 [N: Elastic elements, e.g. springs (in general F16F1/00)] [N1111]
H02N2/00B4F	. . . [N: Friction interface (friction linings F16D69/00)] [N1111]
H02N2/00B4F2 [N: Materials] [N1111]
H02N2/00B6	. . [N: Electrical details, e.g. drive or control circuits or methods] [N1111]
H02N2/00B6F	. . . [N: Means for controlling vibration frequency or phase, e.g. for resonance tracking] [N1111]
H02N2/00B6L	. . . [N: Leads; Wiring arrangements] [N1111]
H02N2/00B8	. . [N: Thermal details, e.g. cooling means] [N1111]
H02N2/00C	. [N: producing combined linear and rotary motion, e.g. multi-direction positioners] [N1111]
H02N2/02	. producing linear motion, e.g. actuators; Linear positioners; [N: Linear motors] [N1111]
H02N2/02B	. . [N: using intermittent driving, e.g. step motors, piezoelectric motors] [N1112]
H02N2/02B2	. . . [N: Inchworm motors] [N1112]
H02N2/02B4	. . . [N: Inertial sliding motors] [N1112]
H02N2/02D	. . [N: by pressing one or more vibrators against the driven body] [N1112]
H02N2/02M	. . [N: along multiple or arbitrary translation directions, e.g. XYZ stages] [N1111]
H02N2/04	. . Constructional details [N1111]
H02N2/04B	. . . [N: Mechanical transmission means, e.g. for stroke amplification] [N1111]
H02N2/04B2 [N: for conversion into rotary motion] [N1111]
H02N2/06	. . Drive circuits; Control arrangements [N: or methods] [N1111]
H02N2/06B	. . . [N: Small signal circuits; Means for controlling position or derived quantities, e.g. for removing hysteresis] [N1111]
H02N2/06D	. . . [N: Large signal circuits, e.g. final stages] [N1111]
H02N2/06D2 [N: generating drive pulses] [N1111]
H02N2/08	. . using travelling waves [N: i.e. Rayleigh surface waves] [N1111]
H02N2/10	. producing rotary motion, e.g. rotary motors [N1111]
H02N2/10B	. . [N: using intermittent driving, e.g. step motors] [N1112]
H02N2/10D	. . [N: by pressing one or more vibrators against the rotor] [N1112]
H02N2/10F	. . [N: Cycloid or wobble motors; Harmonic traction motors] [N1112]
H02N2/10H	. . [N: Langevin motors] [N1112]
H02N2/10M	. . [N: around multiple axes of rotation, e.g. spherical rotor motors] [N1111]

H02N2/12	. . Constructional details [N1111]
H02N2/12B	. . . [N: Mechanical transmission means, e.g. for gearing] [N1111]
H02N2/12B2 [N: for conversion into linear motion] [N1111]
H02N2/14	. . Drive circuits; Control arrangements [N: or methods] [N1111]
H02N2/14B	. . . [N: Small signal circuits; Means for controlling position or derived quantities, e.g. speed, torque, starting, stopping, reversing] [N1111]
H02N2/14D	. . . [N: Large signal circuits, e.g. final stages] [N1111]
H02N2/14D2 [N: Multi-phase circuits] [N1111]
H02N2/16	. . using travelling waves [N: i.e. Rayleigh surface waves] [N1111]
H02N2/16B	. . . [N: Motors with ring stator] [N1111]
H02N2/16D	. . . [N: Motors with disc stator] [N1111]
H02N2/18	. producing electrical output from mechanical input, e.g. generators (for measurement devices G01) [N1111]
H02N2/18B	. . [N: Circuits; Control arrangements or methods] [N1111]
H02N2/18D	. . [N: using impacting bodies (high voltage generators in spark lighters F23Q)] [N1111]
H02N2/18F	. . [N: using fluid streams] [N1111]
H02N2/18V	. . [N: Vibration harvesters] [N1111]
H02N2/18V2	. . . [N: adapted for resonant operation] [N1111]
H02N2/22	. [N: Methods relating to manufacturing, e.g. assembling, calibration] [N1111]
H02N3/00	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 H01J45/00)
H02N6/00	Generators in which light radiation is directly converted into electrical energy (solar cells or assemblies thereof H01L25/00, H01L31/00)
H02N10/00	Electric motors using thermal effects [N: (motors using expansion or contraction of bodies due to heating or cooling F03G7/06)] [C9706]
H02N11/00	Generators or motors not provided for elsewhere; Alleged perpetua mobilia obtained by electric or magnetic means (by hydrostatic pressure F03B17/04; [N: by mechanical means F03G7/10;] by dynamo-electric means, [N: including arrangements of permanent magnets interacting with other permanent magnets,] H02K53/00) [C0911]
H02N11/00B	. [N: Generators]
H02N11/00B2	. . [N: adapted for producing a desired non-sinusoidal waveform]
H02N11/00C	. [N: Motors]
H02N11/00D	. [N: Alleged electric or magnetic perpetua mobilia]
H02N13/00	Clutches or holding devices using electrostatic attraction, e.g. using Johnson-Rahbek effect

H02N15/00

Holding or levitation devices using magnetic attraction or repulsion, not otherwise provided for ([electric or magnetic devices for holding work on machine tools B23Q3/15](#); [\[N: monorail vehicle propulsion or suspension B60L13/00\]](#); sliding or levitation devices for railway systems [B61B13/08](#); material handling devices associated with conveyers incorporating devices with electrostatic or magnetic grippers [B65G47/92](#); separating thin or filamentary articles from piles using magnetic force [B65H3/16](#); delivering thin or filamentary articles from magnetic holders by air blast or suction [B65H29/24](#); bearings using magnetic or electric supporting means [F16C32/04](#); relieving bearing loads using magnetic means [F16C39/06](#); magnets [H01F7/00](#); dynamo-electric clutches or brakes [H02K49/00](#); [\[N: electric furnaces with simultaneous levitation and heating H05B6/32\]](#))

H02N15/02

- . by Foucault currents

H02N15/04

- . Repulsion by the Meissner effect ([superconductors or hyperconductors in general H01L39/00](#))

H02N99/00

Subject matter not provided for in other groups of this subclass [\[N0704\]](#)