

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, piezoelectric 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 6/00		Generators in which light radiation is directly converted into electrical energy (solar cells or assemblies thereof H01L 25/00, H01L 31/00)
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