

TURN
ADJUST
RAISE
tilt
ROTATE
OPEN
MOVE
SPIN
close

Nidec
—All for dreams



NIDEC MOTORS & ACTUATORS

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A full spectrum of motors for all your automotive applications

6 Product Lines for an optimal Customer service



BRAKING



AUTOMOTIVE CLOSURES



AIRFLOW



AUTOMOTIVE SEAT ADJUSTERS



CUSTOM ACTUATORS



INDUSTRIAL DRIVES



A dedicated team by product line responsible for worldwide development

- ▶ Sales and project team on each continent
- ▶ Higher standardization rate
- ▶ Better knowledge of the market
- ▶ Superior proposals for new developments

BRAKING

*Actuators for ABS/ESP,
Electric Park Brake and Brake-by-Wire*

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ABS

- ▶ Various power classes available (2.0, 2.1, 2.5 etc.)
- ▶ 4-pole design with two or four brushes
- ▶ Reduced length (16%), weight (6%) & shaft diameter
- ▶ Compact design
- ▶ High reliability and high level of standardization

ELECTRIC PARK BRAKE

- ▶ Eliminates the hand brake or foot parking brake in the vehicle
- ▶ Allows for manual or automatic application and release (by means of a console switch)
- ▶ Can be used in static or dynamic stopping applications



Nidec Motors & Actuators continues to innovate by providing the electro-magnetic force required to power a wide range of new technologies.

BRAKE-BY-WIRE

Brushless motors for Electro-Mechanical Braking (Brake-by-Wire)

- ▶ 3 phase brushless motor with 120° trapezoidal commutation (block commutation)
- ▶ Integrated position sensor
- ▶ High efficiency (peak at 85% rpm)
- ▶ Low cogging torque (10 mNm)

AUTOMOTIVE CLOSURES

Motors and controllers for Sunroof, Windowlift, Door and Trunk opening combined with the Anti-Pinch technology

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SUNROOF MOTORS

A new generation of smart motors with the Anti-Pinch function offering a flexible design to meet worldwide customer requirements

- ▶ Modular concept
- ▶ Compact packaging
- ▶ Proven technology
- ▶ Customer specific speed/torque characteristics and interfaces available

POWER CLOSURE MOTORS

A world-class motor for trunk or tailgate power movement (DCK-series)

- ▶ Integrated Hall encoder sensors
- ▶ Improved sealing against dust penetration
- ▶ Lifetime increased due to new brush card design
- ▶ Future developments are directed towards tubular motors with integrated planetary gearboxes to replace gas springs



WINDOWLIFT MOTORS

The smart motor which provides increased passenger safety due to a self-adjusting Anti-Pinch function

- ▶ Compact packaging and customized design
- ▶ Vertical assembly reducing manufacturing time and cost
- ▶ Plastic half shell reducing weight
- ▶ New axial endplay device
- ▶ Optional Anti-Pinch electronics
- ▶ Over lifetime adjustment



AIRFLOW

A wide range of DC Engine Cooling motors to address the major market needs from 50 W to 750 W

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FEATURES

- ▶ Best in class in axial length, power density and RFI/EMC (CISPR 4)
- ▶ Optimized weight (500 W = approx. 1,8 kg)
- ▶ Efficiency up to 75 %

6T

- ▶ Power range: 50 to 150 Watts
- ▶ Diameter: 63 mm
- ▶ 2 Poles



CONVENTIONAL

- ▶ Power range: 50 to 180 Watts
- ▶ Diameter: 82 mm
- ▶ 2 Poles

10 C / 10 N

- ▶ Power range: 100 to 500 Watts
- ▶ Diameter: 100 mm
- ▶ 4 Poles



11 TA

- ▶ Power range: 200 to 750 Watts
- ▶ Diameter: 110 mm
- ▶ 4 Poles

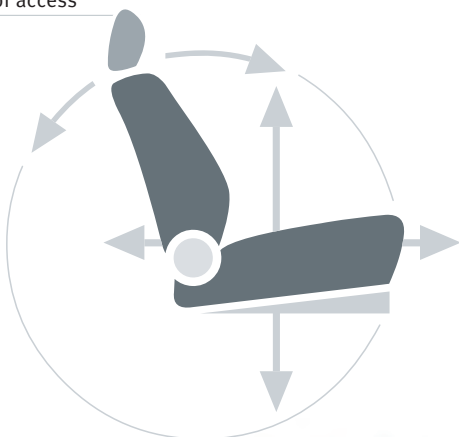
AUTOMOTIVE SEAT ADJUSTERS

*A complete range of reliable Seat motors
to ensure all the major seat adjustment needs*

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MOTOR RANGE

- ▶ Geared motors for recline adjustment
- ▶ Double output shaft for track drives
- ▶ Linear actuators for height and tilt adjustment
- ▶ Dual speed motors for vehicle ease of access



- ▶ Currently developing a new compact DC motor range with lower weight for improved packaging density in the seat



CUSTOM ACTUATORS

Versatile motors for various electrical actuation trends:
transmissions, active steering, clutch actuation & torque management

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ETM



AMT

POWERTRAIN

- ▶ Space saving
- ▶ Sealed design
- ▶ High temperature resistant
- ▶ Vibration resistant
- ▶ Resistant to harsh under floor environment
 - Salt water spray
 - High temperature
- ▶ Dual Hall Effect Sensor
- ▶ Applications:
 - Electric Torque Management (ETM)
 - Automated Manual Transmission (AMT)

COMFORT & CONVENIENCE

- ▶ Allow easy entry and exit from the vehicle
- ▶ Memory function
- ▶ Hall effect sensors
- ▶ Enhance driver's comfort and safety by allowing precise positioning of the steering wheel and the seat belt
- ▶ Applications:
 - Seatbelt adjuster
 - Steering Column adjuster



SEATBELT



STEERING COLUMN

INDUSTRIAL DRIVES

Range of motors for multiple applications: coffee makers, office machines, garage doors, window openers, care aids, roller blinds

Nidec Motors & Actuators industrial offer
– unbeatable in its versatility.



INDUSTRIAL DRIVES

Modified low-voltage DC motors from the automotive sector are the ideal solution for many applications in industry, in the household & in the office equipment sector.

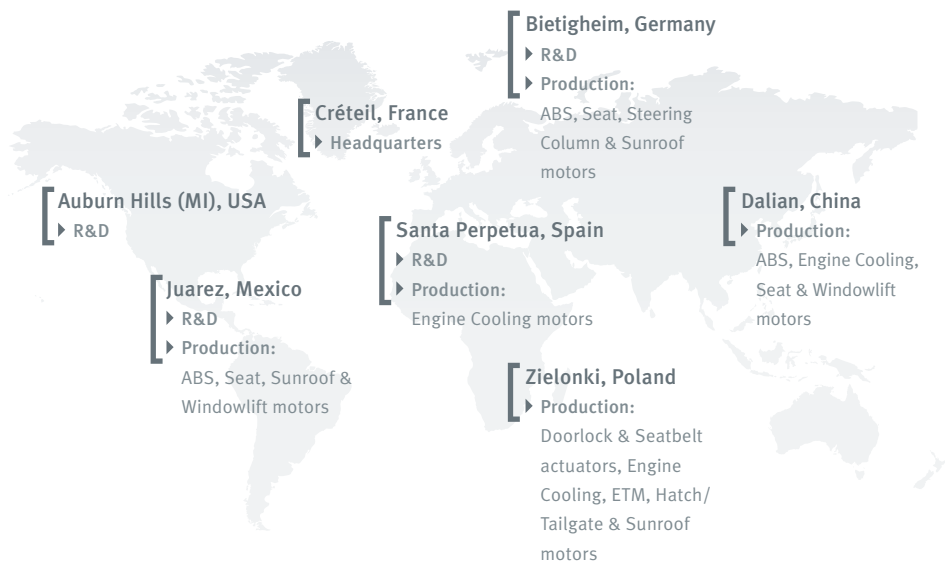
- ▶ Very robust
- ▶ Consistently high quality as a result of high volume series production
- ▶ Excellent value for money

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WORLDWIDE PRESENCE

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