We are specialists in the field of motion technology, automation and robotics. We build on a high-quality, comprehensive engineering service that requires applications with an emphasis on movement and positioning. Our reputation in business accompanies us in every business meeting and every task.

Typical feature of RAVEO is a responsible approach to work in more than a decade. It has become the cornerstone of our success. We offer components from the world’s leading manufacturers in the field of motion technology. We are more than a business company, our team of engineers transmits our experience with designing drives to our customers applications with respect to the surrounding technology.
Detailed information on individual products, such as manuals, user guides, drawings, 3D models, sample videos, and many other useful informations can be found on our websites.

www.raveo.cz
ELECTROMOTORS

AC motors
- range of performances: 40 W - 200 kW
- single-phase, three-phase power supply
- output flanges: IMB 14, IMB 5
- efficiency classes: IE1, IE2, IE3
- speed: 2 - 4 - 6 - 8 pole design
- accessories:
  - temperature protection - PTO, PTC,
  - incremental encoder TTL, HTL,
  - brake,
  - forced cooling,
  - integrated frequency inverter on the motor

Compact motors
- power range from 6 W to 400 W
- power supply: 1 × 230, 3 × 230, 3 × 400 VAC
- execution:
  - inductive
  - reverse
  - with the brake
  - with brake and clutch
  - with speed control
  - with torque control
  - accessories: speed and moment controller

DC motors
- output range from 5 W to 10 kW
- power supply: 12, 36, 48, 90, 170 VDC
- design with permanent magnets or rare earth magnets
- brushless brush design
- output speed: 1,500-12,000 rpm
- accessories:
  - speed controller
  - brake
  - encoder
  - coverage up to IP6

Servo motors
- power range from 100 W to 20 kW
- power supply: 1x230, 3x400 VAC / 24, 48 VDC
- absolute, incremental encoder
- brake option, single cable design
- output speed: 1,000 - 8,000 rpm
- special design:
  - IP65 Wash Down
  - IP65 Food Wash Down
  - IP67 stainless steel
ATEX motors
- power range from 180 W to 132 kW
- size: 63 - 315
- Ex to EEx d
- zone: 0, 1, 2 - gases and vapors
- zone: 20, 21, 22 - dust
- fireproof FUMEX engines
- power range from 0.75W to 400kW
- size: 80 - 355
- temperature resistance: 200, 400, 600, 842 °C

Electrospindles
- power range: 4 - 30 kW
- output speeds up to 40,000 rpm
- cooling the engine with air or water
- ceramic bearings
- tool clamping interface - ISO 30, HSK 32E, 40E, 63F, 63E
- possibility of encoder installation

Stepper motors
- size: 20, 28, 42, 56, 60, 86, 110
- power supply: 24, 40 - 70 VDC
- feedback feedback:
  - incremental encoder
  - ecodeter resolution up to 32,000 p / r
- output speed: 1 - 3000 rpm
- accessories: brake
- customized engine modifications

Linear motors
- strength: 175 - 5,341 N
- building width: 60 - 280
- iron, non-ferrous core
- positioning accuracy depending on the linear measurement used
- maximum speed 10 m / s
- maximum acceleration 100 m / s²
- to be delivered as a component
- in an integrated design
GEARBOXES

Worm gearboxes
- range of sizes: 26 - 110, 130 - 250
- output torque: 15 - 13720 Nm
- gear ratio: 5 - 3600
- design: aluminum, cast iron
- possible connection:
  - with a gear preload
  - with a second worm gearbox
  - with a planetary gearbox
  - optional accessories

Hexagonal gearboxes
- size range: 402-903, 42-44
- output torque: 5 - 3500 Nm
- gear ratio: 6.18 - 262.96
- design: aluminum, cast iron
- ground, hardened toothing
- dimensionally interchangeable with worm gears up to size 903
- possibility of stainless steel
- optional accessories

Planetary gearboxes
- design: straight, angled
- gear ratio: 3 - 10,000
- output torque: 3 - 15,000 Nm
- clearance in the gearing: 20 - 1 arcmin
- Input speed up to 10,000 rpm
- range of sizes: 40 - 450
- design: aluminum, steel, stainless steel
- connection to any electric motor
- ATEX implementation

Cykloid gearboxes
- execution:
  - straight / angled
  - full / hollow output shaft
- gear ratio: 11 - 284
- output torque: 58 - 44,000 Nm
- up to five times overload
- clearance in gearing: 1 arcmin
- output speed up to 250 rpm
- grease: Molywhite RE00, Vigogrease REO,
  RV oil
Front gearboxes
- size range: 002 - 033, 11 - 14
- output torque: 2 - 3 500 Nm
- gear ratio: 3.7 - 398.3
- design: aluminum, cast iron
- ground, hardened toothing
- optional accessories

Flat gears
- size range: 105 - 196, 92 - 94
- output torque: 50 - 3 200 Nm
- gear ratio: 5.03 - 405.42
- design: aluminum, cast iron
- ground, hardened toothing
- optional accessories

Bevel gearboxes
- size range: 035 - 350
- output torque: 16 - 5,400 Nm
- gear ratio: 1 - 6
- design: L, T, X
- output: shaft, hollow shaft,
- clamping joint
- clearance in gear: 30 - 6 arcmin
- ATEX implementation
- design: cast iron, aluminum, stainless steel

Powerful planetary gearboxes
- design: straight, angled
- gear ratio: 3 - 20,000
- output torque: 514 - 1,300,000 Nm
- attachment: flange, foot
- output: output shaft, hollow shaft
- connection to all conventional electric motors and hydraulic motors
- accessories: DC, AC and hydraulic brakes
LINEAR GUIDE

**Linear guide**
- sizes: 15, 20, 25, 30, 35, 45, 55
- accuracy classes: ± 100 μm to ± 5 μm
- truck design: standard, flanged
- 4 rows of rotating balls in the “O” configuration
- preload: -46 μm to +13 μm
- maximum positioning speed 5 m / s
- maximum acceleration 300 m / s²
- accessories:
  - lubricant reservoir
  - bottom and end seals

**Miniature linear guide**
- sizes: 2, 3, 5, 7, 9, 12, 15
- stainless steel trolley design
- accuracy classes: ± 40 μm to ± 10 μm
- rail design: standard / wide
- preload: -6 μm to +6 μm
- maximum positioning speed 3 m / s
- maximum acceleration 250 m / s²
- accessories:
  - lubricant reservoir
  - bottom and end seals

**Actuators**
- design: AC, DC, servo
- stroke: 50-1,800 mm
- Strength: 95 - 50,000 N
- speed: 2 - 250 mm / s
- rectangular or parallel
- motor connection
- trapezoidal / ball screw
- protection: IP 55 - 67
- ATEX implementation
- accessories:
  - end sensors
  - encoder / potentiometer

**Lifting systems**
- stroke: 50 - 6000 mm
- Strength: 5 - 1 000 kN
- design: static / telescopic screw
- trapezoidal / ball screw
- accessories:
  - end sensors
  - encoder / potentiometer
  - wide range of links
  - elevator system
  - timing gears and shafts
  - safety nuts, bellows
Linear units - belt

- profile size: 30 - 200 mm
- maximum speed 10 m / s
- accuracy: ± 0.1 mm
- Rotary or fixed design
- belt
  - maximum length 6 m without connection
  - (with a rotating belt)
- variants:
  - internal rotating belt
  - outer rotating belt
  - telescopic design
  - ATEX, stainless steel

Linear units - screw

- profile size: 30 - 200 mm
- maximum speed 1 m / s
- accuracy: ± 0.1 mm / 0.025 mm
- ball or trapezoidal screw
- maximum length of 3 m
- variants:
  - drive shaft from both sides of the unit
  - sliding / roller / ball guides
  - telescopic design
  - synchronous positioning of two trolleys

Rack and Pinions

- module: 0.79 - 30
- straight / inclined toothing
- three types of materials: SAE 1141, C45E, 42CrMo4
- length: 0.5 / 1 / 1.25 / 1.5 / 1.75 / 2
- different types of pinwheels
- custom made
- hardened, ground, cemented
- possible surface treatments - phosphating, blackening, nickel plating

Multi-axis linear units

- 2, 3, 4, 5th embodiment
- special versions: ELZU, ELZI with one belt for both axes
- gantry systems up to 12 x 6 m
- high flexibility = tailor-made solutions
- ATEX implementation
## DRIVES

### Frequency converters
- **power range:** 0.4 - 90 kW
- **power supply:** 1x230 VAC, 3x400 VAC
- **control:** scalar, vector
- **removable LED, LCD display**
- **integrated EMI network filter**
- **Built-in braking resistor up to 22 kW**
- **digital and analog inputs / outputs**
- **communication:** PROFIBUS, CANopen, Multi-Ethernet

### Compact motor drives
- **speed control, torque control**
- **speed control:** 90-1,400 rpm
- **power range:** 6 - 180 W
- **power supply:** 1x230 VAC
- **version:** panel / DIN rail
- **display current speed**
- **feedback principle**
- **start / stop ramps**
- **possibility of output of the potentiometer**
- **communication:** RS485, Modbus

### Stepper motor drives
- **control:** pulse, positioning table
- **power supply:** 24, 40 - 70 VDC
- **microstripping up to 0.0072 °**
- **continuous movement from 0.2 rpm**
- **speed control:** 0-3000 rpm
- **communication:** RS485 Modbus, EtherCAT, PROFIBUS, Ethernet, SynqNet

### Servomotor drives
- **power range:** 0.1 - 32 kW
- **power supply:** 1x230 VAC, 3x400 VAC
- **position control, torque, speed**
- **autotuning, internal oscilloscope**
- **request:** pulse, analog, communication
- **2x feedback:** motor + linear transducer
- **communication:** EtherCAT, CANopen, PROFINET, EtherNET / IP, SynqNet
DC motor drives
- power supply: 10 - 30 VDC
- speed control
- for motor voltage: 12, 24, 90 VDC
- current load: 20 - 40 A / 60 - 120 A
- speed control ext. voltage 0-10 V
- or potentiometer 5 - 10 kΩ
- start / stop ramps
- digital inputs / outputs
- current limitation
- thermal overheating protection

BLDC drives
- power range: 30 - 1160 W
- power supply: 1x230 VAC / 20 - 84 VDC
- speed control
- for motor voltage: 24, 36, 48 VDC
- current load: 7 - 20 A / 14 - 40 A
- stable and smooth speed regulation
- ramp settings and direction of rotation
- digital inputs / outputs
- current limitation

Motion controller
- up to 32 synchronized axes
- for position control
- up to 128 axes for coordinated movement
- integrated PLCs
- 64 MB of internal memory
- SD Card slot
- two processors with 800 MHz
- and 1200 MHz
- Integrated I / O: 6 DI, 2 DO (expandable with external I / O)
- communications: EtherCAT, Modbus, TCP / IP, Ethernet IP, Profinet

DC actuators drives
- power range: 120 - 720 W
- power supply: 12 - 48 VDC
- speed control for one / two actuators
- for motor voltage: 12, 24 VDC
- current load: 10 A / 15 A
- synchronizing the operation of two actuators
- parameter setting speed
- and referral
- ramp settings and direction of rotation
- digital inputs / outputs
- current limitation
ACCESSORIES

Shaft couplings
- transmitting torque: up to 5,000 Nm
- shaft diameter of 2 - 100 mm
- types:
  - bellows
  - elastomeric
  - torsionally flexible
  - magnetic
  - security
  - disc
  - fixed links
  - possibility of stainless steel

Connecting rods
- transmission torque: up to 600 Nm
- shaft length up to 6000 mm
- connecting elements:
  - charge with bellows
  - split hub with bellows
  - elastomeric
  - split elastomeric

Encoders for AC motors
- innovative flange design
- compatibility with IEC motors, size 56-225
- scanning engine speed
  - up to 6,000 rpm
  - 1 · 2.048 pulses [A, 90 ° B] per revolution
- two-channel output
- contactless scanning
- coverage up to IP67

Lubricants
- for cycloidal gears:
  - Mollywhite RE00
  - Vigogrease RE0
  - RV oil
- for planetary gears:
  - Nyogel, Multemp
- for conventional gears:
  - Tivela SC320
- for lubrication systems:
  - NGLI II stupň
Smart lubrication systems
- for pinion lubrication, linear guide
- and ball screws
- lubricant volume 400/2,000 cm³
- maximum number of lubrication positions 16/40
- maximum pressure 70 bar
- adjustable lubrication frequency
- accessories:
  - straight / angle couplings
  - PA tubes
  - distributors

Lubricating pinions
- straight, oblique - right, left climb
- module M1 - M12
- number of teeth: 14, 17, 24, 36
- special porous polyurethane material
- straight and angled mounting shafts

Transmission accessories
- output flanges
- output shaft:
  - one-sided, double-sided
  - input shaft
- IEC input flanges, custom
- cruel strut
- feet to the front transmissions
- protective cover

Rotary sensors
- incremental encoders for DC motors
- resolution: 1 - 360 p / r
- one or two-channel design
- rotary end sensors for
  - worm gearboxes
- number of contacts: 2 - 4
- potentiometer option
- cam profiles: 20°, 45°, 90°, 180°
SPECIAL DRIVES

Drive of retort conveyors

- use in thermal engineering for fueling (pellets, chips, coal)
- high torque,
- efficiency, overload
- long service life, low price
- sizes FT105, FT146, FT196
- torque: 40 - 690 Nm
- gear ratio: 5.7 - 397
- flange version / integrated motor

Double worm gearbox

- double worm gearbox
- in a compact design
- higher efficiency and more favorable price
- as opposed to CMM
- gear unit designation RH030 / 050
- torque: 45 - 308 Nm
- gear ratio: 225-1800
- preparation of the shear pin in the output hollow shaft

Drive of spiral conveyors

- economic drive for small spiral conveyors
- high torque, minimum dimensions
- long service life, very low price
- customized modification of DKM compact drive (gear teeth, temperature sensor integration, increase of IP protection, mechanical change of attachment, change of bearings)
- drive designation 8RDGE-25-T / 8GBK180BMH 01
- torque up to 8 N. m, speed 8 rpm
- the mechanical blocking of the output does not cause damage to the gearbox or engine burn

Robot manipulator drive

- precise drive with minimum dimensions with maximum torque
- modification of ACM synchronous motors (magnet winding, dimensions, special thermosensors in the winding)
- the drives fully meet the initial demands for torque, dynamics, protection and durability
Drive for door opening

- low speed, high torque
- moment, special output shaft,
- economic solution
- stepper drive with custom winding, rotor
  and galvanized shafts
- tested above average life,
- continuous product quality control

DC drives to measure

- design and supply of custom-made DC
  motors
- customization of standard DC brush and
  BLDC motors as well as DC synchronous
  servomotors
- DC motor connection with any gearbox,
  encoder, brake or mechanical interface

Birotary units

- spindle mounting at an angle of 50° or 90°
- for spindles with an output of 8.5-18 kW
- mechanical locking in the machining position
- shooting accuracy in both axes 1 arc. min
- max. rotation angle: C + -320°, axis A (B) +
  -185°

Aggregate units

- spindle mounting at an angle of 50° or 90°
- for spindles with an output of 8.5-18 kW
- mechanical locking in the machining position
- shooting accuracy in both axes 1 arc. min
- max. rotation angle: C + -320°, axis A (B) +
  -185°
3D models and visualization
As a standard service for our customers we provide 3D models and proposal of complete solution.

The most comprehensive web
Our website provide a complete overview of all products, services, and activities, which we provide to our customers.

Fairs and exhibition
Every year we participate at well known European fairs, as MSV Fair in Brno and the AMPER Fair.

Professional training
Not only our employees, but we also offer professional training to customers. We provide training for electric motors, transmissions, linear technology or control.
## APPLICATIONS

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## WHY RAVEO

### According to the customer

We will suggest several functional solutions from the point of view of technology as well as prices. Proposal includes selection of individual components, calculations and the possibility to program the drive according to customer ideas.

### Complete stock availability

Modern warehouse and storage areas of 2 400m² are key factors for fast delivery of goods. This is supported by a sophisticated storage system. We also provide stock according to customer needs.

### RAVEO On CUE

The RAVEO On CUE service will provide you fast technical service. We provide to our customers maintenance, repairs or immediate replacement of defective unit.

### Made for our world

Normal human approach and logic are correct. This idea we have been holding since the founding of our company. We’ll always find the way and form of cooperation, to achieve together the desired goal.
REFERENCES