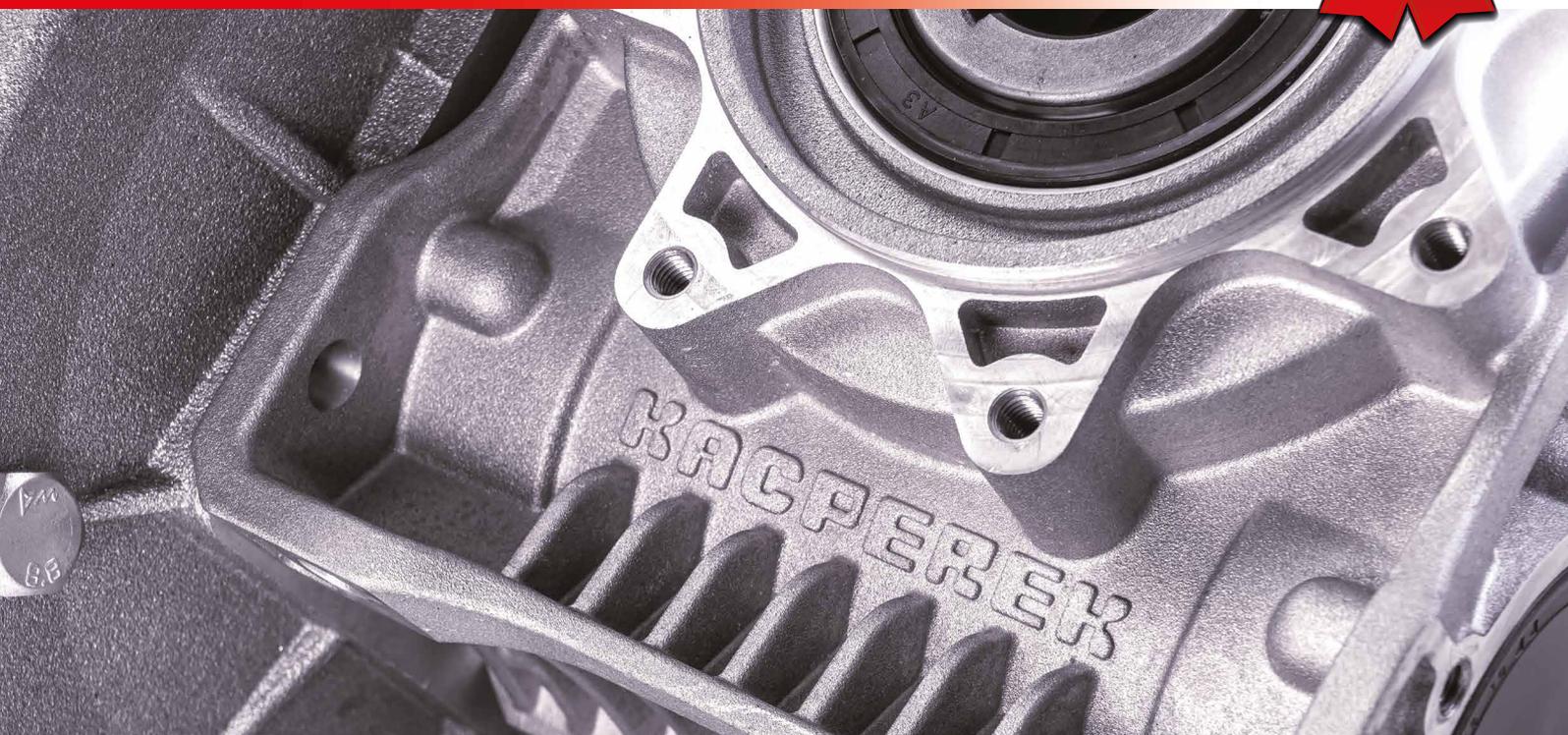




KACPEREK

drive technology



POLISH PRODUCER OF GEARBOXES * 40 YEARS OF EXPERIENCE



QUALIFIED STAFF

TECHNICAL AND CONSTRUCTION ADVISORY



MODERN MACHINERY PARK



ADVANCED QUALITY CONTROL SYSTEMS



HIGH QUALITY AND MODERN DESIGN OF DRIVES



MANY POSSIBLE VARIANTS OF GEARBOX



SPARE PARTS AND ACCESSORIES AVAILABLE ON STOCK

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MRP SCREW JACKS

MRP/SO – rotating screw

- compressive/tensile force (static) up to 10t
- maximum screw length 3m
- arbitrary travel speed max. 2.6m/min.
- availability of spare parts

NSF

EX

Screw jack is based on a reinforced design of worm gear, into whose output hole a trapezoidal or ball screw is screwed. The gear set in motion rotates the screw, and the nut, which cannot rotate, moves along its axis.

BEARING MOUNTING

- ensures collinearity and proper support of the screw
- design with ball bearing



BELLOW COVER

- additional option
- made of nylon PVC
- covers the screw and protects the thread against dirt and moisture

MOTOR CONNECTION

available connection with:

- three-phase or single-phase motor
- DC motor
- servomotor



TRAPEZOIDAL NUT

- made of bronze, steel, other materials on request
- cylindrical or flanged design
- flange nut and safety nut



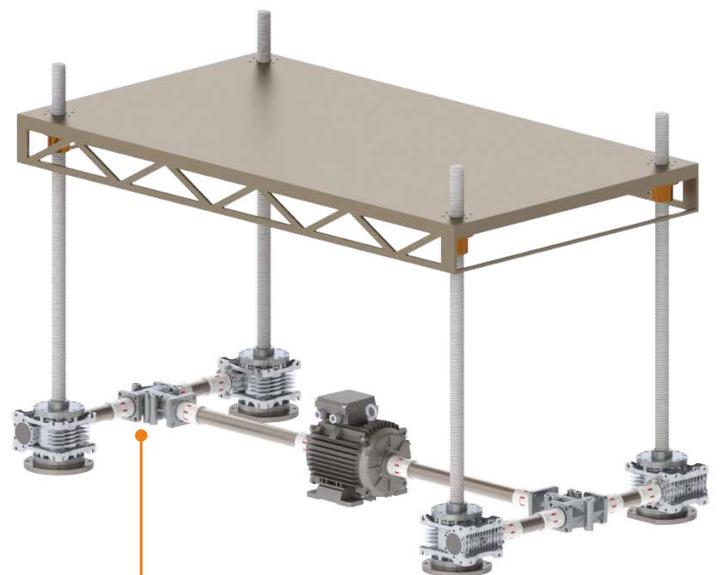
- can be used to check the thread wear condition for safe and failure-free operation of the jack

MOUNTING FLANGE

used to make the mounting of jack to the device easier

Using a rotation screw jack connected with a servo drive ensures precision, accuracy and repeatability of nut positioning. The screw jacks can be connected with each other to build for example: column elevators, loading platforms, elevators, etc. Trapezoidal screws ensure static self-locking of the whole set.

In a column elevator the screw jack works with the screw directed vertically downward. A tensioned screw cannot be buckled and is able to carry much higher loads than when it is compressed.



In the loading platform the drive is transmitted through shafts and bevel gears to four screw jacks. Bronze trapezoidal nuts are fixed to the platform and the whole system moves linearly along the rotating screws.

MRP SCREW JACKS

MRP/SP – travelling screw

- compressive/tensile force (static) up to 10t
- maximum screw length 3m
- arbitrary travel speed max. 2.6m/min.
- availability of spare parts

NSF

EX

The screw jack with traveling screw is based on a reinforced worm gear, in the output hole of which a trapezoidal thread is cut. A screw is screwed into the output hole. During the operation of the screw jack the trapezoidal screw moves linearly, along its axis, in a direction that depends on the direction of rotation of the motor. On one side the screw can have a rod end, fixing flange or fork. The other side of the screw has a slider, which is used to block the rotation of the screw and allow it to traverse freely. The operating range of the screw jack can be controlled using the inductive sensors.

SELF-LOCKING TRAPEZOIDAL SCREW

- made of steel C45
- optional screw made of stainless steel

INCREMENTAL AND ABSOLUTE ENCODERS

possibility of mounting a flange encoder between gear and motor or one with special adapter

INDUCTIVE SENSORS

- they set stroke of the screw
- versions: PNP/NO NC, other special versions

ACCESSORIES

- rod end
- fork
- fixing flange



SCREW JACK WITH INPUT SHAFT

drive can be transmitted by connected input shafts of two or more screw jacks

PILOT COVER

- ensures safety
- blocks the rotation of the screw
- enables installation of sensors



The version of the screw jack with travelling screw allows for installation of inductive sensors in the pilot cover, which set the stroke of the screw. This solution works well in all kinds of presses, gate valves, elevators, lifts etc.

The drive controls the opening of the grain gate. The end positions are controlled by inductive sensors. In addition, the bellow cover protects the screw from dust.



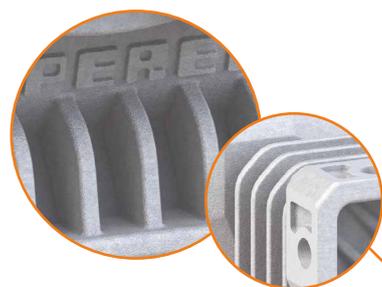
The screw jacks operate in the horizontal plane, are driven by a single motor and connected by a connecting shaft. They regulate the clearance of the press.

MR SERIES WORM GEARBOXES

- torques from 5Nm to 4400Nm
- ratios from 7.5 to 118 on single stage
- power range from 0.06kW to 45kW
- diameters of output holes and shafts from $\varnothing 11$ to $\varnothing 80$
- possible modifications and customizations
- offered in cast iron and aluminum housings
- spare parts available on stock

HOUSING

housing finning ensuring effective heat abstraction



WORMSHAFT

types of worm shafts:

SINGLE-SIDED:

- hollow input shaft
- input shaft



DOUBLE-SIDED:

- double-sided input hollow shaft
- input hollow shaft on one side, input shaft on the other side
- double-sided input shaft



MOTOR FLANGES

wide range of motor flanges



possible filling with food-grade oil

NSF

EXECUTION OF ATEX II3D II3G EX

EX

DIE CASTINGS
ensures high aesthetics of the gearmotor



WORM WHEEL

standard:

- tin bronze rim
- cast-iron hub

optional hub:

- made of bronze or steel
- with trapezoidal thread



ACCESSORIES

wide range of accessories:

- single- and double-sided output shafts



- mounting flanges



- torque arms



SEALS

- high-quality seals with additional dust lip
- optional Viton® seals



BEARINGS

- high-quality ball bearings enable transfer of high radial loads
- optionally, in case of high axial forces, tapered roller bearings can be mounted on the worm wheel



MACHINING

KACPEREK company has more than 40 years of experience in the production of drives and gear elements.

Well-equipped machine park and qualified staff allow us to make unusual and complex details including: worm shafts, worm gears, gear wheels, shafts, flanges, covers, and other elements.

We make them on the basis of used parts of machines and devices or customer documentation.

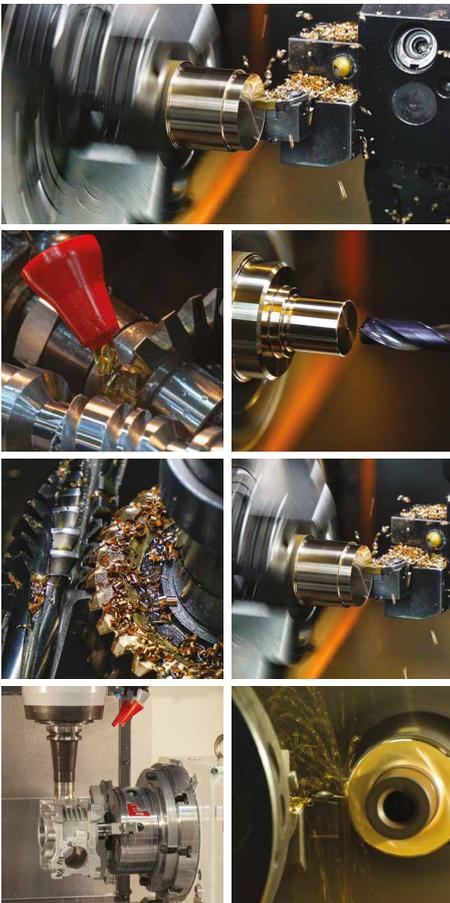
We machine elements using our own or materials provided by the client.

We are able to make single units, as well as batch production in small or larger series.

We machine materials such as steel, cast iron, aluminum, bronze and plastics.



WE OFFER:



CNC TURNING

up to a diameter of 350mm and a length of 1000mm



CNC MILLING

up to a dimension of 800x500x500mm



CYLINDRICAL GRINDING

up to a diameter of 150mm and a length of 500mm



MILLING AND GRINDING OF WORMSHAFT'S THREAD



MILLING OF WORM WHEEL TEETH



DRILLING AND TAPPING



SLOTING AND BROACHING

H SERIES GEARBOXES

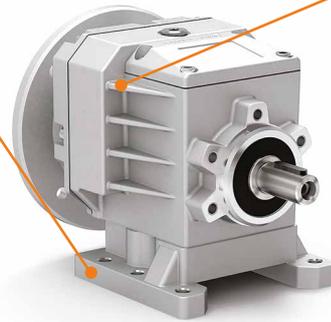
- torques from 20Nm to 4600Nm
- ratios from 1.3 to 821 in one housing
- power range from 0.06kW to 55kW
- diameters of output holes and shafts from $\varnothing 11$ to $\varnothing 70$
- mounting that allows for free replacement of gearboxes from other producers
- fast delivery
- spare parts available on stock



MOUNTING FEET

- many types of feet of different thickness and distance between fixing holes
- fully interchangeable with gearboxes from other producers
- special feet made of sheet metal plate can be delivered

COAXIAL HM



- housing finning ensuring effective heat abstraction
- die casting ensuring high aesthetics of the gearmotor



TOOTHED WHEELS



cylindrical and bevel wheels are made with the highest precision, are hardened and grinded, what guarantees durability and quiet operation

ACCESSORIES

wide range of accessories:

- single- and double-sided output shafts



- mounting flanges



- torque arms



HELICAL BEVEL HS



DRIVE

possibility to connect with:

- electric motors AC/DC, servomotors, hydraulic and pneumatic motors
- mechanical or hydrostatic variators
- couplings and flange brakes

SEALS

- high-quality seals with additional dust lip
- optional Viton® seals

BEARINGS

- high-quality ball bearings enable transferring high radial loads
- optionally tapered roller bearings can be mounted on the worm wheel in case of high axial forces



SHAFT MOUNTED HR

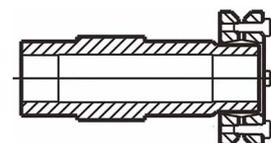


PARALLEL SHAFT HP



OUTPUT HOLLOW SHAFT

- has a neck for retaining ring groove for easier assembly and disassembly of the output shaft
- stainless steel possible
- various diameters, also in inches
- option with clamping ring available



can be made in ATEX version to operate in explosive atmospheres ATEX II3GD and II2GD

EX

STAINLESS DRIVES

CLEAN-GEARTECH

- available in explosion-proof version
- protection level allowing washing with hot water (up to 80°C) under high pressure (up to 100bar)
- possible filling with food-grade oil

EX

NSF

IP69K

- two series of stainless steel gears adapted to work in corrosive conditions
- dedicated to operate in food, cosmetics, pharmaceutical, chemical industries
- smooth surface of the housing without finning ensures easy cleaning and prevents adhesion of dirt
- torques range from 8Nm to 650Nm

SEALS

twin Viton® seals with stainless steel 316L shield ensuring IP69K protection level



ACCESSORIES

all accessories made of 316L stainless steel

- torque arm
- feet
- flange
- output shaft with special step to protect seal lips from damage during cleaning
- additional cover of the shaft/hole sealed by an additional o-ring



D SERIES

gears in aluminum housing, smooth surface of the housing without finning



SURFACE PROTECTION VARIANTS

standard aluminum housing for easy maintenance



NTT coating nickel-plated surface - providing resistance to water and moisture

painted surface - providing resistance to medium aggressive environments



MOTOR FLANGES

full interchangeability of flanges for servomotors and flanges of IEC and NEMA C standards

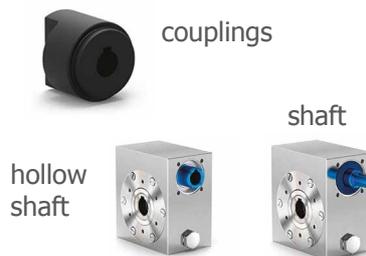


I SERIES

gears in 304 stainless steel housing



INPUT SHAFT VARIANTS



N SERIES

gears in 316L stainless steel housing



STAINLESS STEEL ELECTRIC MOTORS



motor shaft made of AISI 420 steel

PTC sensor



anti-condensation heater



- two types of stainless motors:
 - aluminum with Hi-Cleaning coating
 - made of stainless steel 316L
- resistant to aggressive cleansers
- power range from 0.12kW to 3kW
- 2,4,6 poles
- B14/B5 flange versions and B3 feet versions
- IE3 and IE4 efficiency class
- IP69K protection level
- lack of fan prevents dust stirring, and airtight design ensures the highest hygienic standards
- smooth surface for easy cleaning



AUTOMATICS

- technical consultations
- programming
- customization of control cabinets
- selection of automation elements with the function of: power supply, control, protection, system operation optimization
- designing of automated drive systems

QUALITY AND ELECTRICITY SAVINGS

***lower energy consumption = lower costs**

- filters and chokes used to protect frequency and voltage of the current from grid interference
- capacitors
- regulators and analyzers
- compensators of reactive energy
- power and overvoltage limiters
- star-delta system to reduce starting current



AUTOMATION ELEMENTS

TRANSMITTERS

- time transmitter (delay)
- supervisory voltage controllers
- interface transmitters
- direct and alternating current transmitters
- transmitters with signaling LEDs
- voltage indicators



SENSORS

- position and motion control
- proximity (inductive, magnetic, optical)
- capacitive (tank level control)
- heat (temperature measurement)



CONTROLLERS AND PANELS

they collect input data and convert it into output signals that control drives

INVERTERS

frequency converters for speed regulation of electric motor

- control of motor operation
- extension of motor life



ACCESSORIES FOR INVERTERS

- brake modules
- brake resistors
- potentiometers
- motor speed controllers
- converters
- panel loaders
- power feeders
- indicators



ELECTRICAL SYSTEMS

components of the electrical cabinet necessary to control the drive system

- contactors
- minicontactors
- motor switches
- air circuit breakers
- modular apparatus



COMPLETE ELECTRICAL CABINETS



CUSTOMIZED ASSEMBLY

ELECTRIC MOTORS

- power range from 0.06kW
- PTC thermal protection from mechanical size 80
- insulation class F
- covered bearings
- protection class IP55, others on request
- aluminum housing up to frame size 180
- cast iron housing above frame size 180

SOFTSTARTS

used to reduce the current surge when starting electrical devices



ENCODERS

motion control sensors used for:

- rotation speed measurement of the drive
- precise control of device position



MOTOR SWITCHES

electromagnetic switches to switch off the motor in case of a voltage drop or blackout

SPARE PARTS

- feet (can be fixed on one of the three sides of the housing)
- flanges
- feet (front) covers
- fan covers
- fans

SAFE OPERATION

- PTC thermistors in the windings
- protection class IP55
- insulation class F

DIRECT CURRENT MOTORS (DC)

- smaller size of the motor with higher power
- easy control of the rotation speed with voltage changes



ALTERNATING CURRENT MOTORS (AC)



FLANGED



ON FEET

SERVOMOTORS



THREE-PHASE AND SINGLE-PHASE MOTORS

BRAKE MOTORS

- DC and AC brakes
- allows for mechanical locking of motor operation
- brake release allows for manual release of the brake at a standstill



FORCED COOLING FAN MOTORS

- possibility of assembling the additional cooling on the motor:
- for operation of the motor with inverters
 - independent cooling system protects a motor against overheating during operation at low speed



MOTORS WITH INVERTER

mounting the inverter on the motor is a compact solution without the need for additional control cabinets, because the inverter:

- is provided with cooling
- is resistant to contamination and damp



EXPLOSION-PROOF MOTORS

ATEX design

REPLACEMENTS FOR POPULAR DRIVES

- worm gearboxes TM and TC series
- drives for central heating furnace feeders
- pre-stage helical gears PZ
- mechanical variators TW

ACCESSORIES

wide range of accessories:

- single and double output shafts



- mounting flanges



- torque arms



WORM GEARBOXES

TM



RAL9020

TC



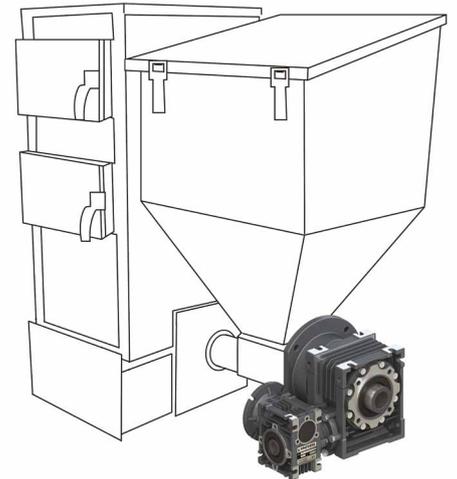
RAL7024

- torques range from 30m to 2100m
- ratios from 5 to 100 on single stage
- motor powers from 0.06kW to 18.5kW
- diameters of output holes and shafts from $\varnothing 11$ to $\varnothing 50$
- replacement for the gearboxes NMRV type
- worm gear rim made of tin bronze
- offered in aluminum and cast iron housings

DRIVES FOR CENTRAL HEATING FURNACE FEEDERS

gearedmotor used for driving central heating furnace feeders:

- supply voltage 230V, 50Hz
- rated torque 90Nm
- total gear ratio 1200
- output rotation speed 1,17 1/min
- motor power 0.12kW or 0.18kW
- motor rotation speed 1400 1/min
- safety pin S-Zn 5x50 DIN 94
- other versions on request



usually used as pre-stage gear to connect with worm gear



PZ PRE-STAGE HELICAL GEARS



connection of pre-stage helical gear with a worm gear allows for:

- obtaining high efficiency of the application
- high gear ratios, even up to 300
- IEC flanges available from 63 to 90

stepless friction gears for regulation of rotation speed of the motor

- power range from 0.12kW to 7.5kW
- IEC flanges available from 63 to 132

TW VARIATORS



handwheel allows precise regulating of required output speed

compact aluminum or cast iron housing

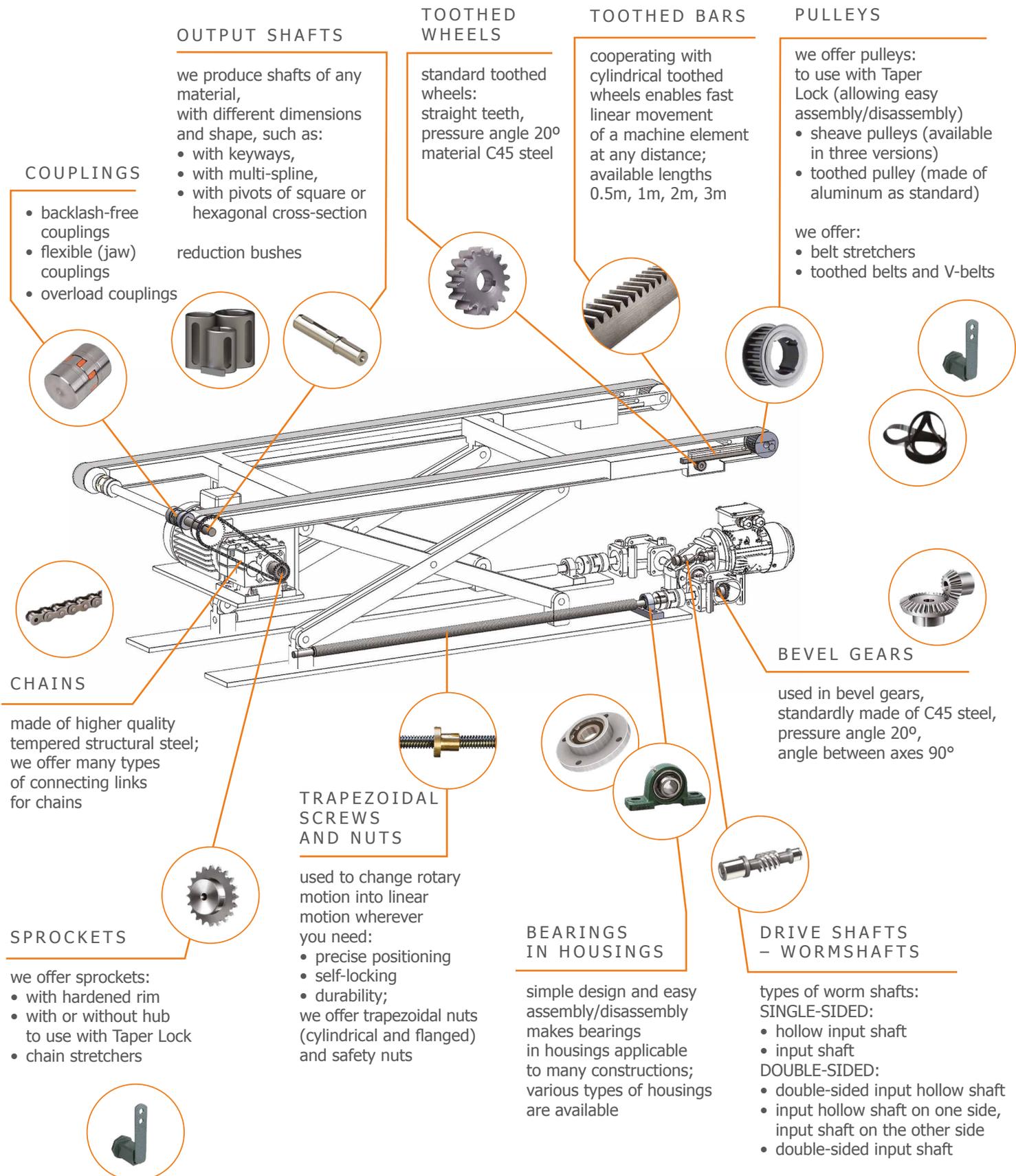
flange mounting

TRANSMISSION ELEMENTS

Customized elements can be made based on data supplied by the client (individual offer)

Our full offer of transmission elements is presented on the website: www.kacperk.pl

SAMPLE MODEL OF THE DEVICE ILLUSTRATING THE USE OF VARIOUS TYPES OF DRIVES AND TRANSMISSION ELEMENTS AVAILABLE IN OUR OFFER





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**WIDE
APPLICATION
OF OUR DRIVES**

AGRICULTURE



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