

# EXTRACT FROM OUR DELIVERY PROGRAM



**Gearboxes  
and Drive  
Technology**

**Gears and  
Transmissions**



**Couplings and  
Shrink Disks**



**Sensor  
Systems and  
Accessories**



 **FLOHR**  
INDUSTRIETECHNIK GMBH

Your expert for drive technology!

# COUPLINGS SHAFT-HUB CONNECTIONS

## Frictional connections | Clamping sets



- Safe transmission with torques up to 11.000.000 Nm
- Hydraulic coupling (HYD) to facilitate flexibility in assembly and service
- Industry best economical solution for drive technology
- Optimal clamping element design support (FEM, IT-supported)

## Drum-couplings



- Supreme wear resistance and higher lifetime due to industry best design and layout
- Optimal gear geometry assists with increased torque transmission
- Higher performance with reduced weight
- High precision combined with longer lifetime in product and assembly

## Gear-couplings | Safety couplings



- Compensates for angular, axial, and radial variation
- Distinct product solution with visible wear indication
- Precision and accurate re-engagement of safety couplings with clutch
- Consistent and accurate reset of torque once tripped

## Rigid and flexible standard couplings



- Rigid and flexible couplings for drive technology
- Economical standard executions, customized solutions and adaptations
- DIN couplings and performance-optimized custom designs
- Trading goods in standard execution for low-cost applications

# GEARS

## Spiral bevel gears | Bevel gears



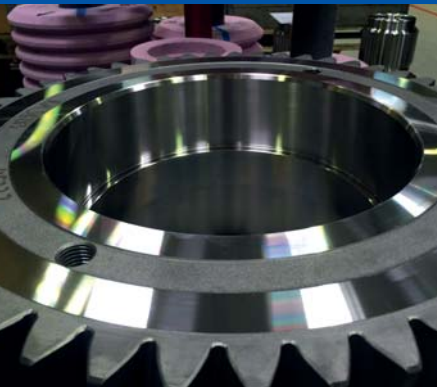
- Palloid/cyclo-palloid-toothed bevel gears
- HPGS-cyclo-palloid (teeth cut hard)
- Grounded spiral bevel gears for increased accuracy
- Conversion of bevel gears to Gleason or Oerlikon
- Bevel gears also with straight cut possible

## Worm gears



- SIMPLEX, DUPLEX execution for optimized adjustable backlash
- Hollow flank worm wheel cut for better load carrying capacity
- Spare parts manufactured according to master wheel or sample
- Economic series production according to DIN or individual production according to specification

## Spur gears



- Grinding of gear flank and outer diameters for highest demands
- All standard gears also cut according to DIN 5480
- Gears ranging from  $\varnothing 20$  –  $\varnothing 4.000$  mm and module 0,5 to 36
- Individual special gears manufactured with 5-axis milling machine
- Grounded for highest precision (inside and outside)

## Special gears



- Straight bevel gears
- Herringbone gears – with web and in free-form geometry
- Module gears
- Special modules and special gears in 5-axis machining process

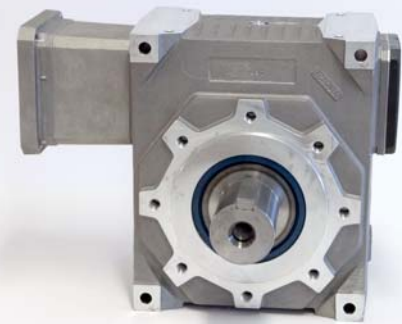
# GEAR TECHNOLOGY

## Bevel Gearboxes | Planetary gearboxes



- HPGS-toothed precision gears for highest accuracy
- Palloid-gearred and lapped design for standard and series gears
- Standard gear ratio with high torque and ratios from 1:1 to 1:6
- Servo-hypoid gearbox with ratio up to 15:1 by axial-displacement

## Worm Gearboxes



- Standard worm gearboxes for optimum efficiency
- DUPLEX gears for low backlash, adjustable gearboxes
- Single- and multi-thread worm gears
- Screw-jack-units and facilities
- Service and preventive maintenance done

## Customized Special Gearboxes | Large-Scale Gearboxes



- Heavy duty gearbox, conveyer gear drives
- Custom/special solutions for all industries
- Planetary gearboxes, right angle-planetary gearboxes
- Test bench gearboxes, power gearboxes
- Gearbox design and development, performance improvement

## Indexing units | Conveyor drives



- Index drives, globoidal/roller gear and parallel tables
- Servo-indexing drives
- Mechanical index drives and custom cams
- Conveyors drive: magnetic or servo-mechanical
- Customized cams

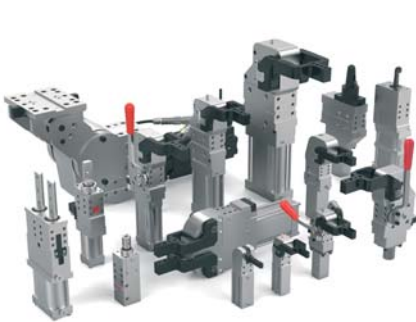
# HIGH PERFORMANCE SOLUTIONS FROM DESTACO CLAMPING TECHNOLOGY AND AUTOMATION

## Manual and pneumatic clamping solutions



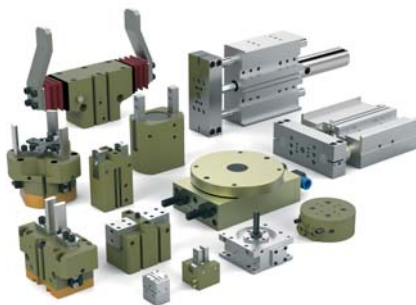
- Hold down clamps
- Push action clamps
- Squeeze action plier clamps
- Pull action latch clamps
- Pneumatic toggle clamps and swing clamps
- Wide program range
- Pneumatic power cylinders
- Long lifetime

## Power Clamps | Pivot units



- Pneumatic power clamps
- Tolerance compensation clamps
- Pin clamps & packages
- Pivot units, pneumatic and electric
- Sealed clamps for welding environments
- High clamping and holding forces
- Long lifetime

## Grippers | Linear slides



- Pneumatic parallel grippers
- Electrical parallel grippers
- Angular grippers – linear slides
- Repetition with high accuracy
- Designed for maximum production uptime

## End effector solutions



- Curved clamp gripper
- Modular high-strength, lightweight aluminium components
- Durable vacuum cups
- Tool changers
- Tooling components
- Vacuum products
- Sheet metal grippers

# SENSOR TECHNOLOGY FROM JOHANNES HÜBNER GIESSEN | ENCODER SYSTEM SOLUTIONS

## Incremental encoders | Absolute encoders | Electronic speed switches



### Speed measurement

- Solid shaft design for flange or foot mounting
- Hollow shaft design up to Ø 150 mm
- HTL, TTL, Sin/Cos, 4 – 20 mA, opt. direct FOC-output

### Position measurement

- Solid shaft design for flange or foot mounting
- Hollow shaft design up to Ø 50 mm
- PROFIBUS, PROFINET, DeviceNet, Ethernet/IP, EtherCAT, SSI, Parallel, 4 – 20 m

### Speed and standstill monitoring

- Solid shaft or hollow shaft design
- Simple configuration and integrated diagnostics
- Switching voltage up to 230 V

## Universal encoder systems | Electronic position switches



### Universal encoder systems

- Speed-, position and error switches
- Bus interfaces
- Simple configuration

### Position monitoring

- Up to 15 switching outputs
- Extremely high positioning and switching accuracy (28 bit)
- Simple configuration and integrated switch tests

## Magnetic encoders | Tacho generators



### Speed and/or position measurement

- Hollow shaft design up to Ø 150 mm
- Wear-free due to bearing-free design
- Incremental, absolut and/or overspeed outputs

### Speed measurement

- Solid shaft design for flange and foot mounting
- hollow shaft design (A4 or hollow shaft type tacho generators)
- High-precision linearity 10 – 500 V / 1000 rpm (0.4 – 100 W)

## Accessories electronic and mechanical



### Signal transmission, processing and diagnostics

- Fiber-optic technology (FOC)
- Signal processing HTL/TTL
- Diagnostics accessories

### Tailor-made encoder assembly

- Torsion resistant couplings
- Screw-in and flange adapter shafts
- Installation with integrated fault exclusion (PL e)

# ROTATIONALLY SYMMETRIC DRIVE ELEMENTS MADE OF CAST IRON

## V-belt pulleys | Flat belt pulleys



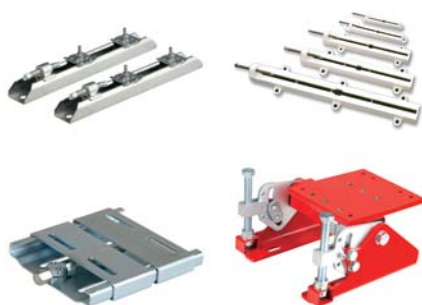
- Belt pulleys made of cast iron up to 6.000 kg and Ø 2.800 mm
- No pattern cost for casting drive pulleys
- Optimized power density through customized design
- Special design and standard pulleys in stock
- TaperLock or standard DIN/ISO versions for all pulleys

## Flywheels | Special pulleys



- Flywheels according to customer specifications without model costs
- Specific design and analysis of the drive pulleys
- Highest balancing quality according to DIN 1940 up to 6.000 kg
- Single source product ready for assembly

## Motor clamping systems | Supplies for drive belts



- Motor slides made of cast iron EN-GJL-200 according to DIN 42923 or in light duty applications
- Motor slide rails of own standard (WEN) for heavy duty drives
- Motor clamping rails made of steel for light drives
- Motor slide base with monoplate and split plate for high flexibility
- Optimum support for economical and safe use

## Drive belts | Power belts



- All industry major V-belt manufacturers available
- Precision design for belt drives
- High performance belts in all profiles and designs
- Optimum design for maximum efficiency and lifetime
- Service and assistance

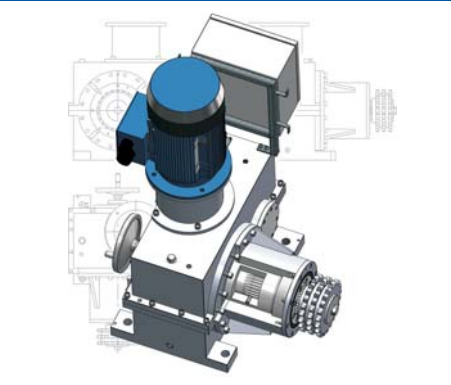
# EXPERTISE | CAPABILITIES

## Mechanical manufacturing works | Static- and dynamic Balancing



- CNC-machining (turning, milling, grinding, etc.) according to customer drawing
- Horizontal balancing machines for handling parts up to 6000 kg and Ø 2.800 mm acc. to DIN 1940
- Grinding (circular, 5-axes) for highest demands
- Inserting grooves conventionally or by wire erosion

## Calculations | Designing



- CAD design of gears and system associated with gears
- Customized designing and calculation of drive elements
- Layouting and engineering of plants for drive technology
- Optimization of all elements in the drive train

## Assembly | Maintenance | Repair



- Efficient gearbox and plant assembly
- Repair also of all other brands
- Maintenance and services of all drive elements
- Damage analysis and indication
- Reliable repair of all types of gearboxes

## For all inquiries – Please contact

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