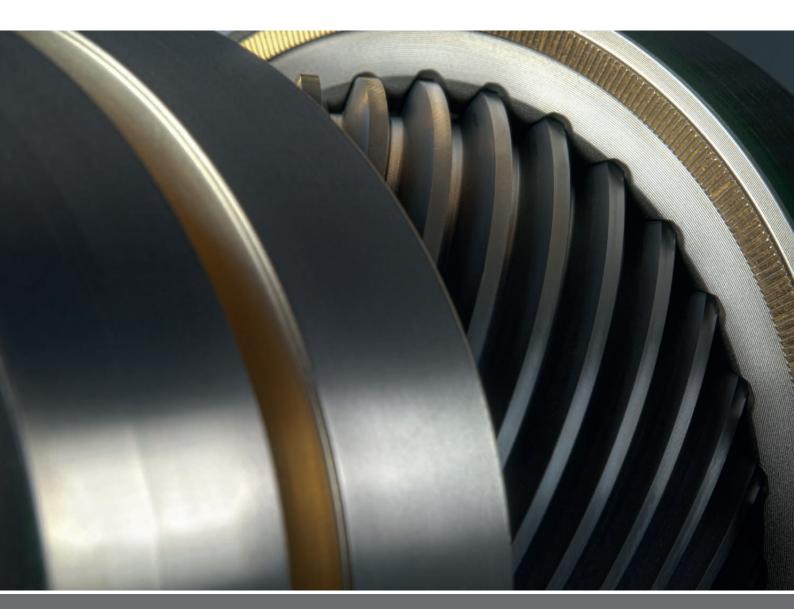


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www.hks-partner.com

## Location I Wächtersbach



HKS Dreh-Antriebe GmbH<sup>®</sup> Leipziger Straße 53-55 63607 Wächtersbach-Aufenau fon: +49 6053 6163 - 0 fax: +49 6053 6163 - 639 e-mail: info@hks-partner.com

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## Location II Wächtersbach

JUDEL

1

HKS Dreh-Antriebe GmbH<sup>®</sup> In den Pflanzenländern 9-11 63607 Wächtersbach-Aufenau fon: +49 6053 6163 - 0 fax: +49 6053 6163 - 639 e-mail: info@hks-partner.com

Heizung

## Location Neukirch

IKS

HKS Dreh-Antriebe GmbH<sup>®</sup> Bönnigheimer Ring 23 01904 Neukirch / Lausitz fon: +49 35951 3490 - 0 fax: +49 35951 3490 - 49 e-mail: info@hks-partner.com



### Family business

### Pioneering spirit and new challenges

Over four decades ago, the HKS Dreh-Antriebe GmbH was founded and is now a globally active family-owned company based on three production sites in Germany, with over 200 employees, sales partners worldwide and an export share of more than 50 percent.

Founded in 1970, the mechanical engineering company develops, designs, manufactures and distributes hydraulic rotary actuators for instance for construction machinery, vehicle construction, mining, mobile hydraulics and marine technology as well as many other industries. Through innovative product policy and a steady expansion, HKS Dreh-Antriebe GmbH has been recording healthy and stable growth for years. Together with her father Günter Höhn, Lena Resch is the managing director of the company, which is specialized in individual customer inquiries and a nearly one hundred percent production depth.

On 1 October 2016, Daniel Hecker took up the position of Commercial Director at HKS Dreh-Antriebe GmbH in Wächtersbach and now manages the company alongside Günter Höhn and his daughter, Lena Resch.

Mr. Hecker's responsibilities cover the commercial side of the business and he is therefore head of the finance, human resources, marketing and IT departments.

A new managing director is also to be appointed to head the company's technical departments from February of next year and, with Mr Hecker, to further expand the entrepreneurial and organisational operations of HKS Dreh-Antriebe GmbH.

To ensure that all of these responsibilities are approached with the best prospects of success and can be met, the two Managing Directors Höhn and Resch will initially provide their support on an interim basis until the end of 2017 and then hand over the reins to the new management. Then father and daughter will relinquish direct management of the family business to take on the superior role of shareholders and, collaborating closely and in an advisory role, will also continue to be responsible for the company's future strategies.



### Always an idea ahead

In addition to our standard products, we can provide individual solutions to meet your demands. We can develop the innovative HKS rotary actuator for you to suit based on a precise analysis of your requirements. We employ an experienced team of technicians and development engineers to soak up all the inspiration and to translate this into an optimum design to meet your needs. They work closely together with you as the client. The result of this cooperation is the completed rotary actuator with the applications you specifically require. We are delighted to meet your challenges and to do so with passionate enthusiasm.

### Milestones



### ESTABLISHMENT AUFENAU

Company Walter Höhn GmbH in Frankfurt/ Main is founded and moves 1973 to Wächtersbach-Aufenau

### ETABLISHMENT NEUKIRCH HKS Dreh-Antriebe

GmbH & Co KG in Neukirch/Lausitz is established

### **NEW SEGMENT**

New product segment "Construction Technology" launched successfully

### **ROTARY ACTUATORS**

Production of the first rotary actuator and first site expansion in Wächtersbach-Aufenau

### HEADQUARTER

Construction of new production hall with 2000m<sup>2</sup>, offices and social rooms with over 800m<sup>2</sup>



### **COMPANY SITES**

HKS produces to date on premises with totally 7.200m<sup>2</sup> at three company sites in Germany

### MERGER

All operative parts are now summed up under HKS Dreh-Antriebe GmbH



### **NEW BRAND**

Establishment of the brand twoCON for manufacturing of medical training devices

### **EXTENSION**

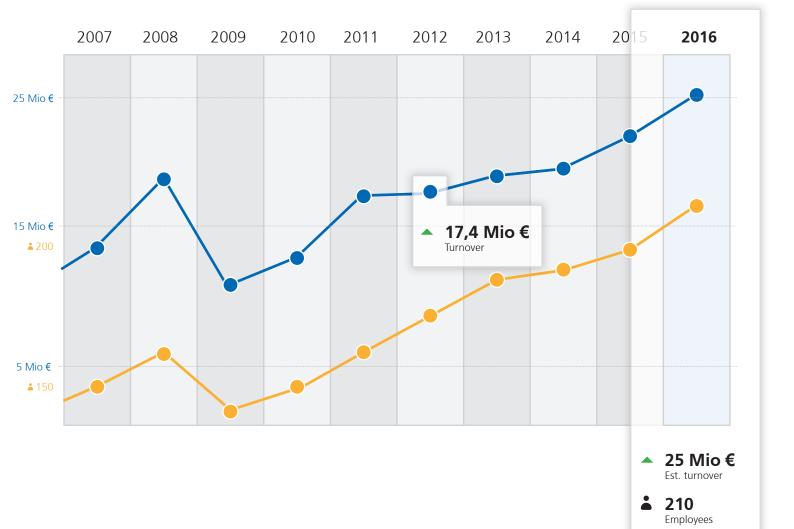
New company site with own inhouse Design and Sales Department for the actuators

### TURNOVER

Turnover in the Construction Technology increases contineously and reaches 36%

## The path towards the future

An important principle for HKS was, is and will be to continue to grow. The values of the family enterprise: reliability, confidence, cooperation, highest quality, technical and personal development form the basis of steady growth.





The current generation of products described here represents perfect technology, which has developed from permanent development.

### I-DA-H

The newest generation of the HKS rotary actuator was presented in March 2011. Operating pressure up to 250 bar, torque up to 100,000 Nm, surface hardened, latest sealing technology, small installation size, precise control system. This is the future.



### TiltRotator

The HKS TiltRotator was presented at bauma 2010. Using it, attachments on excavators can be tilted and endlessly rotated at the same time. Thus threedimensional positioning permits unexpected operative ranges for your attachments. This leads to markedly higher profitability.



### twoCON

Training of two muscle groups conveyed in a movement, providing a full-body health training without limit to age or fitness. Two concentric: The two-CON devices offer what the name already suggests. Thanks to isodynamic resistance system that perfectly simulates the resistance behavior of water, an exercise of the muscle groups is implemented so that no acidity, and thus no muscles, can occur.

The heart of the device is a resistance-type sensor of the HKS Dreh-Antriebe GmbH, which is continuously adjustable and thus a gentle workout for any age, in rehabilitation and gym.

## Transparency creates confidence

### Proceeding together

We create clarification from the first contact. You can experience our competence, where and how we develop, manufacture, assemble and test the service we offer after delivery. You will sense something else also at HKS. Our employees derive pleasure from the challenge and the manufacture of rotary actuators. The result of this is partnerships in existence for over 45 years.

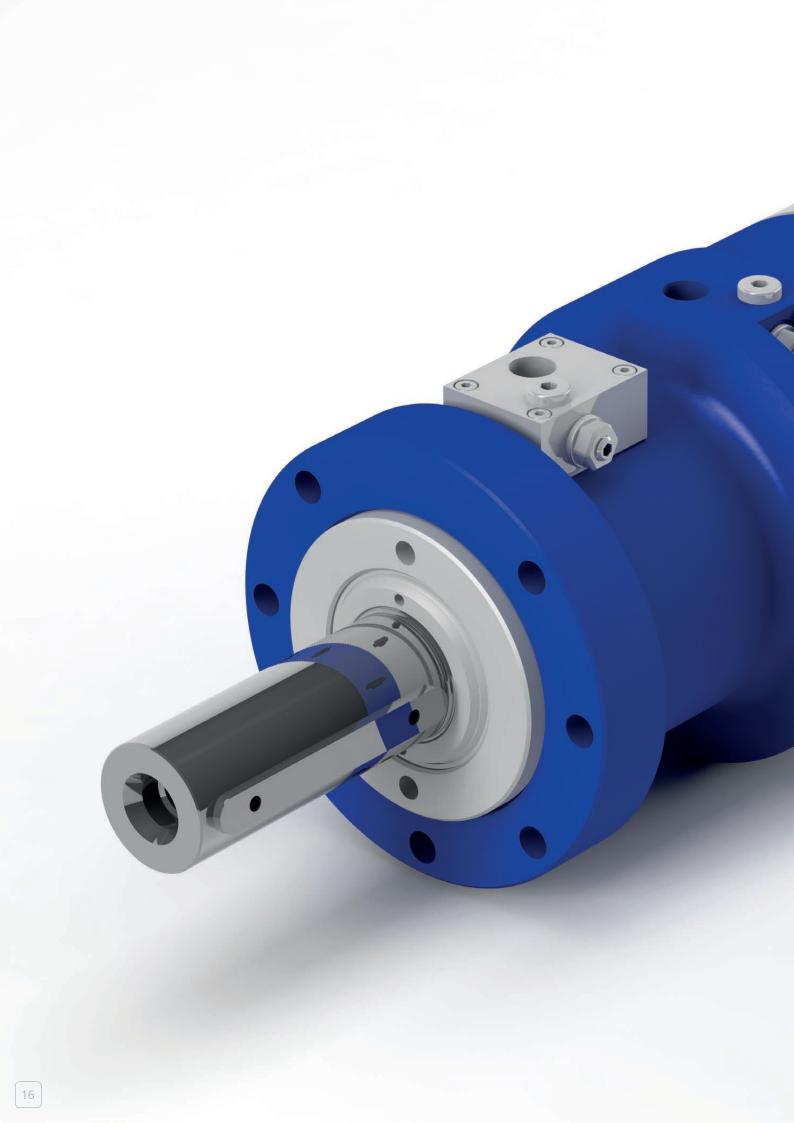
### Convince yourself

For HKS words and actions belong together. You will experience this on a visit to Wächtersbach and Neukirch. You will find considerably more than 60 production machines in a manufacturing area of over 5,000 m<sup>2</sup>, most of which are CNC-controlled. Naturally they are produced by first class manufacturers. Our employees have perfect mastery of the production machines. The foundation for this is continuous employee training and further education. This way we live permanent further development. The numerous apprentices we train like to remain at HKS. This ensures quality – also for the future.



### 30 years of optimum solutions for you

Equipped with the latest hardware and software, our highly qualified designers develop efficient HKS products for you. At the same time partnership, exchange at the highest technical level, and teamwork are important cornerstones. The excellent HKS products only come about in cooperation with you as our client, and of course also with our technical client support team experienced in practice.





## We turn the world for you

### We position you best

HKS products operate permanently and with precision wherever rotation and tiliting, precision acceleration, braking, positioning and stopping are required. "Made in Germany" represents the top demand made on us and is simultaneously the standard by which we measure our products. We can provide any type of special product in our design department manned by an experienced and dynamic team and will be delighted to do so in joint project work with you, our client. We can satisfy your demands to the optimum.

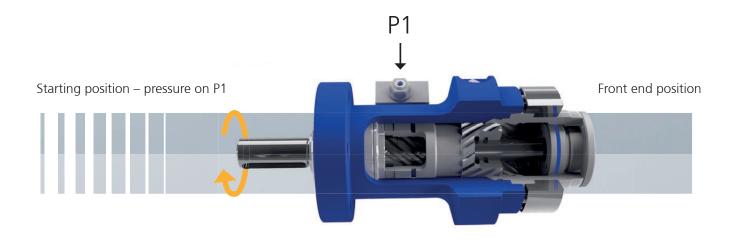
This also includes producing a prototype. We take innovation for granted – which is to your advantage, because this way with HKS products you always have state of the art at your fingertips. We provide top quality, since we produce almost 100% on the spot. This applies equally to all HKS rotary actuators, rotary lift combinations, vane or rack and pinion actuators, in both series and special production.

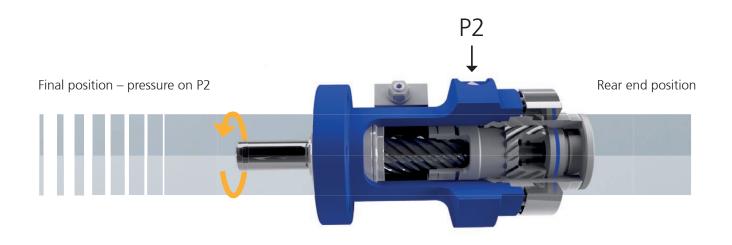
### Why us?

You as the client are the absolute focal point for whom we create efficient solutions. We manufacture hydraulic rotary actuators precisely according to your requirements with a torque of up to 350,000 Nm and angles of rotation up to 1,500°. We manufacture both single and series production and this for more than 45 years.

## Principle

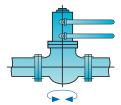
When pressure is applied at P1, the drive shaft turns from its basic position towards the left (anticlockwise). If pressure is then applied at P2 once the drive shaft has reached its final position, the drive shaft then turns back to its starting position (clockwise). The direction of rotation can be changed in a special-purpose model if required.



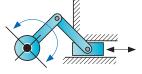


HKS rotary actuators are used wherever big loads are tilted or turning movements involving high torque are required. They are easy to control and only need a small mounting space, despite the huge power realised.

## Typical applications



Valves, flaps, ball valves, fittings



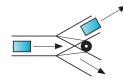
Crank drives



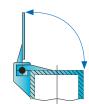
Swivelling table



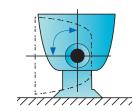
Doors, gates, mechanical devices



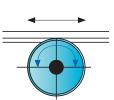
Conveyors



Lid operation



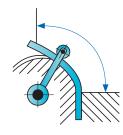
Container tipper



Linear transport

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Drilling appliances, mining gear, tunnel drilling machines



Pipe and plate bending machines



Tool changers

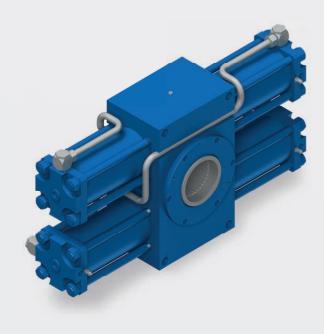


Mixers

# Functional principles









### Helical principle

Any intermediate angle of rotation can be started and maintained using a helical actuator. This can be designed extremely flexibly as regards its external dimensions, so that limiting building space needs can be fulfilled for. Very different requirements for rotational movements with high torque can be met using numerous options, such as angle adjustment, cushioning and the possibility of mounting sensor technology. A multiple contradirectional helical gear forms the basis for this design. The linear movement of the piston is transformed into an integrated rotational movement through the helical gear. The rotational movement increases the longer the piston's linear path is. While the principle is simple, however, in order to give the rotary actuators their function and their reliability, precision close to the limits of the possible is demanded during manufacture. The mechanical angle of rotation cycle can be reduced to less than 10 angular minutes. These rotary actuators are used in tool machines, working platforms, vehicle construction, waste disposal vehicles, side and rear loaders, tunnel advance working machines and construction machinery.

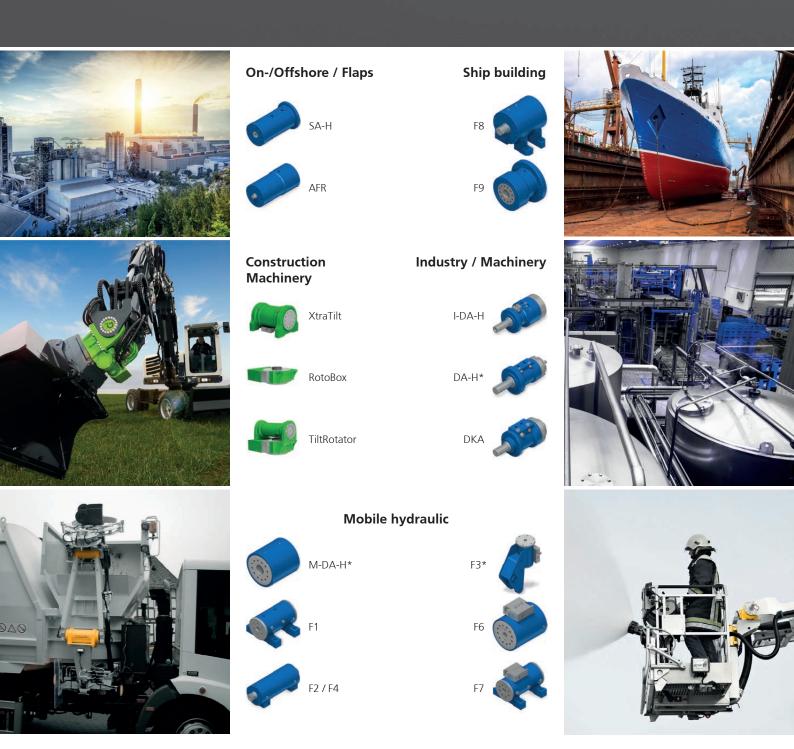
### Rack and pinion principle

The rack and pinion actuator is ideal for the highest demands on torque. It permits extensive swivelling where there is restricted building room in an axial direction. Additional options are as numerous as for the helical principle. The rack and pinion actuator requires considerably larger dimensions compared with the rotary vane motor to transfer two torques of equal size. This is created and transferred through a rack and pinion piston located diagonally to the propelling tappet developed with a pinion. The lateral forces arising from the teeth and affecting the back of the piston opposite are counterbalanced hydraulically or supported by rolling bearings depending on design. This rotary actuator is particularly suitable for high torque. Actuators operating on this principle are used in cement factories, in the tyre industry, in power stations, in the steel industry and in rudder movement, for example.

### Vane principle

We recommend vane actuators where there is extremely high endurance with high rotational speeds and a constant control of movement without the need to maintain the load in a particular position. The particular feature the rotary vane actuator has is the segments firmly arranged within it, the socalled vanes. A vane segment is firmly attached to the housing, the piston segment is firmly attached to the primary shaft. The rotary vane actuator permits the design to be very compact. Here the pivoting angle is between a maximum of 270° to 300°. This actuator is used in tool machines, robotics and for handling containers, for instance.

## Product overview







### Mining / Heavy Duty



Power Plant







### Handling / Automation

DHK-H-ZV





### Med. Training Devices



Robotic / Manipulators

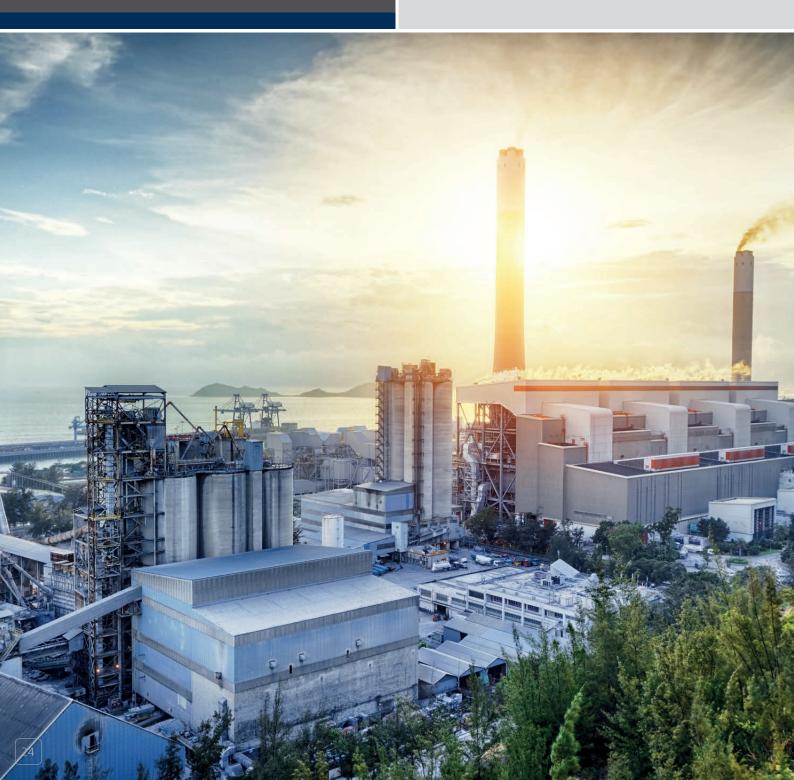






## On-/Offshore Flaps

We have developed the rotary actuators presented here, which have proven their worth through many years of use, especially for fittings, butterfly valves and ball valves. The highest safety and quality demands as well as longevity and precision are typical features of HKS rotary actuators. Our strengths also include ATEX, DIN standards or special customised solutions.







## SA-H1

Working Pressure up to 210 bar
Torque up to 250,000 Nm
Angle of Rotation up to $90^{\circ} \pm 1$
Temperature range: -10°C to 75°C
Protection cat: IP 65 / IP 68
ISO 5211 Flange and additional standard and
special flanges possible
Certification: ATEX, SIL2
Emergency operation
Low maintenance

## SA-H2

Working Pressure up to 210 bar
Torque up to 250,000 Nm
Angle of Rotation up to 360°
Special angle possible
Additional standard and special flanges possible
Certification: ATEX, SIL2
Low maintenance
Protection cat: IP 65 / IP 68
Hollow Shaft squars
Hollow Shaft double
Hollow Shaft 1 feather key slot
Hollow Shaft 2 feather key slots



## AFR

Working Pressure up to 210 bar
Opening moment up to 38,000 Nm
Closing moment up to 7,000 Nm
Spring Return
Special angle possible
Additional standard and special flanges possible
Certification: ATEX, SIL2
Low maintenance
Protection cat: IP 65 / IP 68
Emergency operation

## Ship building

Extremely durable, low maintenance and very few servicing cycles



### F8

Working Pressure up to 210 bar
Torque up to 8,000 Nm
Angle of Rotation up to 180°
Small installation space
Double sided shaft
Simple assembly
Foot fixing



Working Pressure up to 210 bar
Torque up to 20,000 Nm
Angle of Rotation up to 360°
Bending Moment up to 100,000 Nm
Maximum axial and radial force
Simple assembly
Can take over arrangement of bearings



## Industry / Machinery



Further optional accessories. Exactly made to measure.

- Drive shaft with KW profile to DIN ISO 14 standards
- > Drive shaft with second drive cog
- Drive shaft and mounting flange can be designed to customer specifications
- Angular adjustment across the entire rotation area
- > Limit switch facility
- > Rotation angle query
- > Any intermediate rotation angle can be supplied

- > Rotation range over 360°
- > Resistant to freshwater and seawater
- > Outboard bearing for high radial forces
- > Direction of rotation changeable
- > Pneumatic version available
- > Aluminium housing available
- In accordance with ATEX product guideline 94/9/ EG
- > Other special-purpose designs available



## I-DA-H

Working Pressure up to 250 barTorque up to 250.000 NmAngle of Rotation up to 1.080°Special Angle of Rotation up to 1.500°All sliding surfaces are surface-hardenedAny intermediate rotation angle possibleAngular adjustment as standardImproved end position cushioning (as standard)Stepless adjustment of the shaft position



### DA-H/AL

Working Pressure up to 210 bar Torque up to 250.000 Nm Angle of Rotation up to 360° Special Angle of Rotation up to 1.500° High-strength aluminium housing Marked weight reduction compared with steel housing



### DKA

Working Pressure up to 100 bar
Torque up to 5.380 Nm
Angle of Rotation up to 360°
Rapid load change
High torque
Continuous primary shaft
Adjustable shaft position

### Construction Machinery

### NO LIMITS TO INDIVIDUALITY

Each application is different and requires different tools as well. For this purpose, HKS has the largest market range of turning and swiveling tools, which ideally covers every application. Whether only simple pivoting or rotating, or both at once.

We develop, design and produce according to your ideas and thus achieve the best for you and your excavator.





## XtraTilt

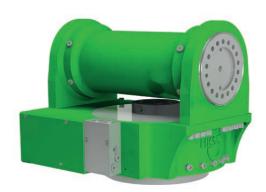
Standard rotating angles: 100°/140°/180° Holding torque of up to 165,000 Nm Working Pressure up to 250 bar 54 models for 18 sizes for a carrier device weight of up to 100 t Further tilting weights available upon request

## RotoBox

Torque up to 12,000 Nm Up to 8 rotations per minute Working Pressure up to 175 bar In 7 models for a carrier device weight

of up to 55 t.





## TiltRotator

- Standard tilt angle of 2 x 55° (even higher on request)
- Holding torque of up to 90,000 Nm
- Torque up to 43,000Nm
- In 10 models for a carrier device weight

of up to 55 t.

Up to 8 rotations per minute

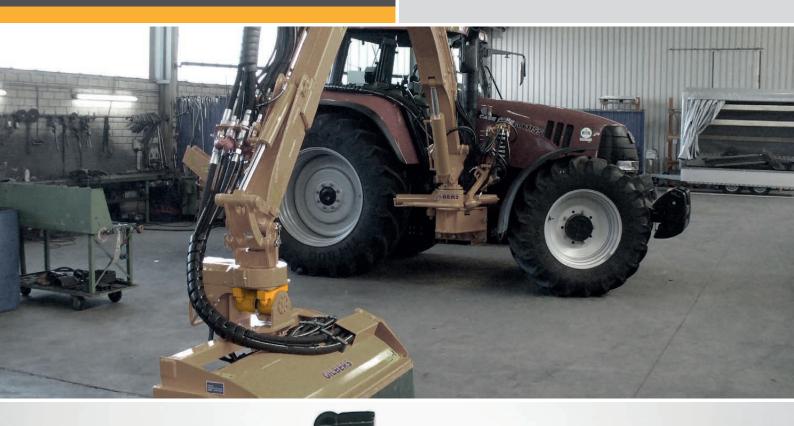
Modular system design

Adapter board compatible with all quick couplers Dipperstick connection individually adapted for all

carrier devices

## Mobile hydraulic

Rotary Actuators are used in the various application fields worldwide. Even the vehicle technology together with the mobile hydraulics sector is that multi-faceted that the segmentation reaches imense diversification. In any case you will have a wide range for decision amongst the HKS product portfolio.





## M-DA-H / AL

Working Pressure up to 210 bar

Torque up to 4,800 Nm

Angle of Rotation up to 360°

Transitional drilling for conduits or cables

Economical alternative for short and slow load change

Simple connection and fitting

High-strength aluminium housing

Marked weight reduction compared with steel housing

### F1

Working Pressure up to 210 bar Torque up to 8.000 Nm Angle of Rotation up to 360° Simple Foot Mounting High load suspension Simplest connection and fitting



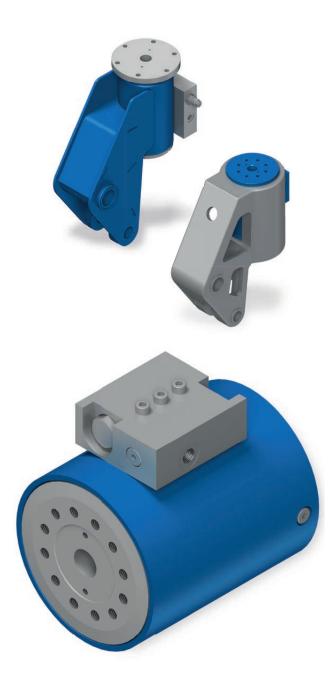
## F2 / F4

Working Pressure up to 210 bar	
Torque up to 30,000 Nm	
Angle of Rotation up to 360°	
Simplest Foot Mounting	
Double sided shaft	
Small diameter	
High load suspension	
High load change	

## Mobile hydraulic

The highest safety criteria are adhered to through appropriate material and special load holding valve technology.



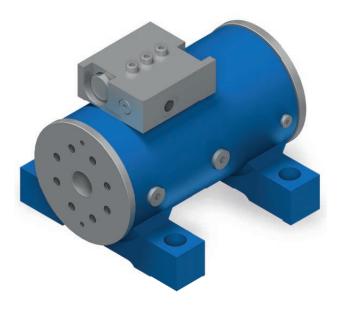


## F3 / AL

Working Pressure up to 210 bar
Torque up to 5.000 Nm
Angle of Rotation up to 360°
Load holding valve optional
Direct bolting to the arm
High-strength aluminium housing
Marked weight reduction compared with steel housing

## F6

Working Pressure up to 210 bar
Torque up to 4.800 Nm
Angle of Rotation up to 360°
With load holding valve
Transitional drilling for conduits or cables
Economical alternative for short and slow load
change
Simple connection and fitting

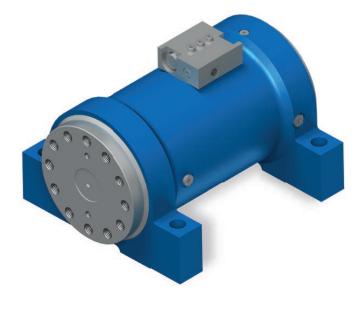


### F7

Working Pressure up to 210 bar
Torque up to 8.000 Nm
Angle of Rotation up to 360°
With load holding valve
Simplest foot fixing
High load suspension
Simplest connection and fitting

## Mining / Heavy Duty

The M-DA-H series of rotary actuators with the F5/ F10 have been primarily designed for mobile use. Based on coarse thread technology, we have designed a compact solution with a maximum working pressure of 210 bar and up to 83,000 Nm of torque. These types of drive system are ideally suitable for applications that require high holding torque. The well-thought-out design and compact construction complete the positive overall picture. The use of highquality materials guarantees maximum longevity.



### F5



## F10

Working Pressure up to 210 bar
Torque up to 83,600 Nm
Angle of Rotation up to 360°
Fixing flange
Output flange
Load holding valve
High load suspension



Further suitable rotary actuator for this branch: I-DA-H

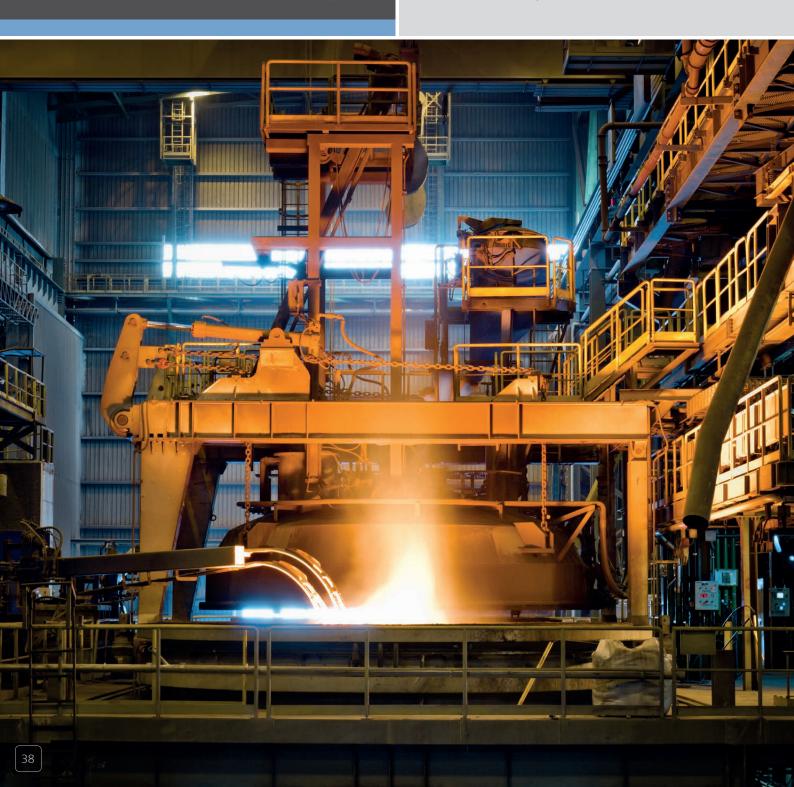


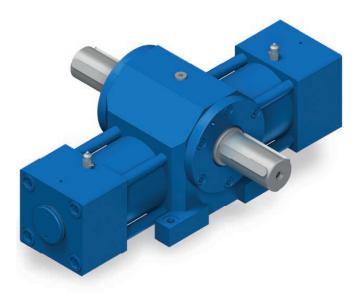
#### Power Plant

#### Rack and Pinion Rotary Actuators for highest demands on torque

The rack and pinion actuator is ideal for the highest demands on torque. It permits extensive swivelling where there is restricted building room in an axial direction. Additional options are as numerous as for the helical principle. The rack and pinion actuator requires considerably larger dimensions compared with the rotary vane motor to transfer two torques of equal size.

Actuators operating on this principle are used in cement factories, in the tyre industry, in power stations, in the steel industry and in rudder movement.

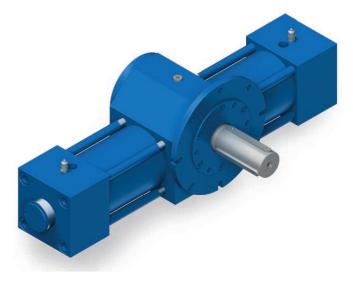


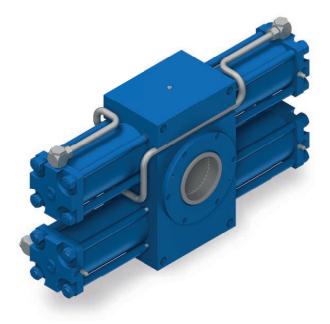


### DEK

Working Pressure up to 210 bar
Torque up to 40,000 Nm
Angle of Rotation up to 720°
Foot Mounting
Front Mounting
Maximum torque
Short axial overall length
Very short angle play
Extremely study

## DEK1





#### DZK

Working Pressure up to 250 bar Torque up to 350,000 Nm Angle of Rotation up to 360° Foot Mounting Front Mounting

# Handling / Automation

#### Compact turning and lifting unit

The rotary-lift combination or Hub swivel unit is a combination of hydraulic or pneumatic actuator and lifting cylinder. This can be controlled synchronously or asynchronously. So the DHK drives can respond flexibly to your requirements. Various attachments, queries or valves can be integrated to the DHK drives specifically tune for your needs.

Our rotary actuators may be used throughout industry, e.g. in construction machines, machine tools, bending machines, mining, agricultural and packaging machines, transfer lines, handling technology, automotive and ventilation technology,



#### DHK-H-ZH

Working Pressure up to 210 bar Torque up to 14,700 Nm Standard angle of Rotation up to 360° Stroke up to 1,200 mm Lift Force up to 360,000 N Tractive Force up to 180,000 N



## DHK-H-ZV

Working Pressure up to 160 bar
Torque up to 16.000 Nm
Standard angle of Rotation up to 360°
Stroke up to 700 mm
Lift Force up to 150,000 N
Tractive Force up to 110,000 N





#### Robotic / Manipulator

The requirements for the implementation of vane actuators are decided depending on the application and the respective environmental condition. Our employees will find the right solution for your requirements from the diverse HKS product portfolio. It is irrelevant in which environment or under what conditions the rotary actuator will be implemented, it is specially adapted to your requirement. Please find the following advantages for vane actuators:

- Extremely long maintenance intervals and service life due to robust design and quality materials
- High positioning accuracy corresponding to the electric servomotor



#### HDK

Rotation angle up to 270 °

Rated torque @ 210 bar up to 83,600 Nm

Max. Bending moment mounting on flange 1 up to 125,000 Nm

Max. Bending moment mounting on flange 1 + 2 up to 460,000 Nm



#### HPSD

Working Pressure up to 140 bar Torque up to 16,800 Nm Angle of Rotation up to 270° Maximum endurance Fast tilt and fast tilting times



LDK

Betriebsdruck max. 300 bar Angle of Rotation up to 270° Torque up to 76,800 Nm Maximum endurance Fast tilt and fast tilting times



#### MP

Working Pressure up to 69 bar
Torque up to 11,565 Nm
Angle of Rotation up to 280°
Very small and light
Variable shafts





#### HS

Working Pressure up to 210 bar Torque up to 4,577 Nm Angle of Rotation up to 280° Very small and light Variable shafts



#### SP

Betriebsdruck max. 300 bar Angle of Rotation up to 270° Torque up to 10,400 Nm Variable fixing possible (foot, flange) Aluminium or steel versions



### Solid Shaft

Working Pressure up to 210 bar

Torque up to 40,000 Nm

Angle of Rotation up to 280°

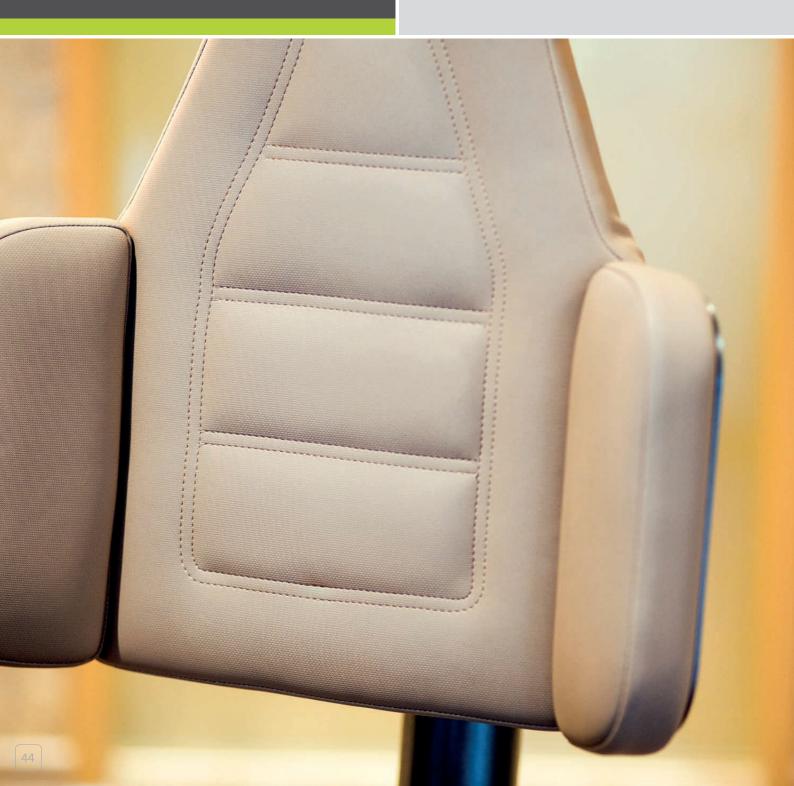
Maximum endurance

Fast tilt and fast tilting times



Thanks to the isodynamic resistance system the resistance behavior of water is perfectly simulated. Training of the muscle groups is implemented an a way that no hyperacidity, meaning no muscle soreness will appear.

Network and RFID card-based with user-specific software and customizable design. The cost-efficient training device meets the highest requirements.







Abdominal and Dorsum Trainer



Chest and Dorsum Stabilization



Thorax-Rotation



Bizeps-Trizeps-Training



Rowing / Chest Press



Lat and Shoulder Press



Hamstrings / Quadriceps

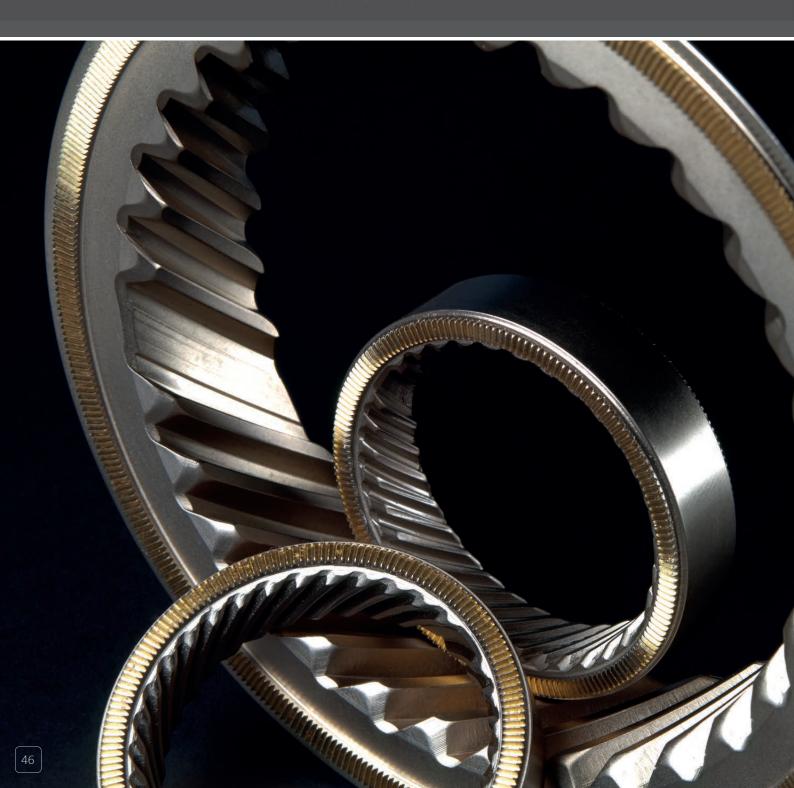


Squat Trainer

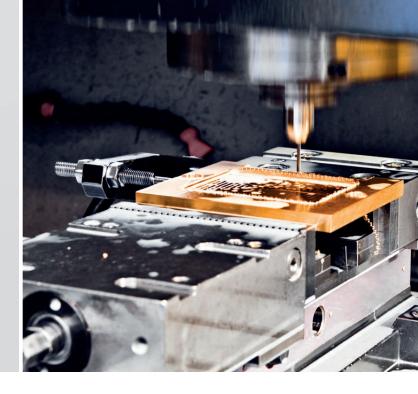


Adduction / Abduction

# Component production



We produce everything from an individual part to assemblies to the end product precisely and reliably according to your information and drawings.



#### Our production methods

- > Turning on a lathe
- > Milling
- > Gear tooth forming
- › Grinding
- Honing

- Broaching
- > Splicing
- > Grooving
- > Surface finishing

#### Our products

- Drive wheelsPrimary shafts
- > Bevel gears
- V-belt pulleys
- Spline shafts
- > Chain wheels
- > Running wheels

- > Pinion shafts
- > Worm wheels
- Worm shafts
- > Helical gears
- › Gearwheels
- > Crown gears
- > Toothed racks

Additional offerings

- > Individual and series production
- Full or part production
- Sample production
- > Manufacture of prototypes
- > Assembly fitting
- > Design and consulting services

# Quickfinder

Construction

Helical rotary actuator

#### We can do much more!

Are you unable to find your application? Not a problem. Challenge us. Our technical customer consultants will support you competently, together with our design, so that your ideas can be successfully implemented.

	XtraTilt	RotoBox	TiltRotator	H-DA-H	DA-H	DKA	M-DA-H	F1	F2	F4
Page	30	30	30	28	28	28	32	32	32	32
Demolition and scrapping off technology	•			•	•					
Butterfly valves										
Work platforms		•	•	•	•		•	•		
Fittings										
Automotive industry				•	•	•				
Shovels and other attachments	•	•	•							
Construction machines	•	•	•	•	•		•			
Mining machines	•	•	•	•	•		•			
Concrete spray machines				•	•		•			
Bending machines				•	•					
Container cranes										
Printing presses				•	•					
Vehicle assemblies				•	•				•	
Vehicle construction				•	•				•	•
Automotive technology				•	•				•	
Forestry business	•	•	•				•	•		
Foundry		•		•	•					
Grinding technology				•	•	•				
Handling technology				•	•					
Municipal vehicles	•	•	•	•	•		•	•	•	
Crane construction (marine and mobile)				•	•					
Agricultural machinery	•	•	•	•	•		•	•	•	•
Food and butchering industry				•	•					
Ventilation technology				•	•	•				
Machine construction	•	•	•	•	•	•	•	•	•	•
Mining, drilling machines	•	•	•	•	•		•	•		
Mixing technology				•	•					
Assembly lines				•	•	•				
Waste disposal vehicles				•	•					•
Onshore and offshore				•	•					
Pharmaceutical industry				•	•					
Test bench				•	•					
Refineries										
Tyre industry				•	•					
Robotics				•	-					
Ship building				•		•	•	•		
Ship cranes				•	•		•	•		
Ship rudder adjustment				•	•					
Spreaders				•	•					
Steel industry				_						
Textile machines						•				
Transfer lines		•		•	•	•				
		•		•	•		_			
Tunnel driving machines				•	•		•			
Entertainment industry	•	•		_		•				
Packaging machines				•	•	•				
Traction pile-driving				•	•					•

Helical rotary actuator											Rack	and p actuato	vinion pr	Rotary lift combination		Hydraulic cylinder	Vane rotary actuator								
F3	F6	F7	F5	F10	F8	F9	SA-H	AFR	M-DA-H-AL	F3-AL	DA-H-AL	DEK	DEK1	DZK	DHK-H-ZV	DHK-H-ZH	ΗZ	HPSD	SS	MP	HS	HDK	SDK	SP	
34	34	34	36	36	26	26	24	24	32	34	28	38	38	38	40	40	40	42	42	42	42	42	42	42	
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Project			Pe	son respons	ible					
Description of application										
Requirement/number of pieces				Rec	quirement	per ye	ar/poten	itial		
Preferred delivery date					•		•			
Mass moment of inertia [kgm²]				Alig	gnment e	rrors po	ossible	🗆 Yes		lo
Max. axial load [N]				Exte	ernal bea	rings?	🗆 Yes	5 🗆 N	0	
Max. radial load [N]										
Bending moment [Nm]										
Required torque [Nm]				Hol	ding torc	ue [Nr	n]			
Leverage length [mm]					ss [Kg]					
Angle of rotation [°]				Rot	ation spe	ed [°/s	ec]			
Max. mechanical backlash [°]				Pos	itioning a	ccurac	y [°]			
Cycle frequency [rotations/time]				Life	expecta	псу	🗆 Year	S		
End stop 🛛 external 🗌 internal (act	uator)						🗆 Load	ling chai	nges	
Mounting position	🗆 verti	cal								
Working pressure [bar]										
Flow rate [ltr/Min]	Min		Max		Norm	al				
Hydraulic fluid	Dotrolo	um-based		Synthetic			01			
Temperature of the hydraulic fluid [°C]	Min	um-based	Mari	Synthetic			Oth	iers		
Ambient temperature [°C]	Min		Max							
	IVIII		Max							
Options										
Load-holding valve	n cushi	ioning	🗆 Angular	adjustmen	it 🗆 Ca	amshaf	t			
Position request Type [inductive, rota										
iype inidicate, iota	ry cricou	ci, etc.j								
Torque transmission via										
🗆 Pivot shaft 🛛 Hollow shaft 🗆 Sp	line sh	aft 🗆 F	lange 🗆 O <sup>.</sup>	hers						
Spec. requirements for weight/dimensic Please include sketch or drawing)	ons									
Rotary-lift combinations										
Minimum lifting force [N]				Mir	nimum pu	ulling fo	orce [N]			
Max. radial load on piston rod [N]					x. stroke					




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