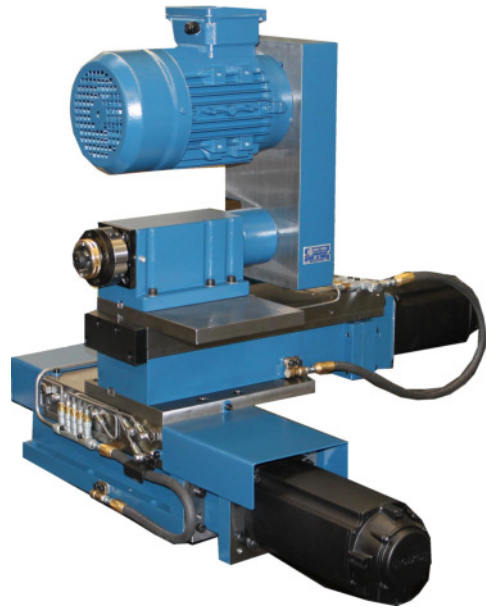
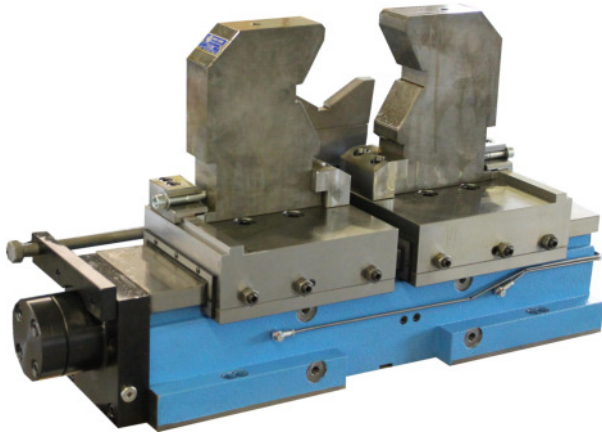




# HAGEN & GOEBEL

Over 85 years of competence  
in machine tool construction



## Product program

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**More than 85 years expertise  
in mechanical engineering**



**HAGEN & GOEBEL**



### **Who we are**

Hagen & Goebel in Soest (Germany) is a manufacturer of components and machines for metal cutting. We offer individually modified solutions based on an extensive product range of standard components and machines.

Our specialty are components and machines for machining internal threads and for machining with rotating tools, also for heavy-duty machining.

### **Our experience ...**

Hagen & Goebel has been building machine tools for over 85 years.

Suppliers and OEMs from the automotive industry, metal ware manufacturers, foundries and the electronics industry are among our customers as well as special machine builders and automation technology companies.

It all started in the 1930s with threading machines and equipment for battery production. In the meantime, a large number of standard components, machine solutions and special machines for metalworking have become part of our product range. Even today, Hagen & Goebel specializes in the production of complete machines and components for special applications in both standard and customized versions.

### **Your requirements**

Whether for drilling, milling, sawing, grinding or tapping (or forming), we have the right components or machines for every application in your production.

You want e.g. edit long parts? Do you need suitable processing units or clamping technology? Do you need a high-performance machine that is individually tailored to your manufacturing task?

### **Your benefits**

Your individual requirements are our challenges.

Our decades of experience flow into the constant further development of our diverse products, which are characterized by high quality and productivity, long service life and low maintenance.

You optimize your production with our components and machines.

### **You're looking for**

Are you a manufacturer of mass parts for the automotive or electrical industry and need highly productive machines?

Are you active in automation or special machine construction and need clamping technology and / or machining components?

Are you a manufacturer of production lines and need suitable processing machines for integration into your line?

**Then you are right with us. You can find more about our products in this brochure.**

**Hagen & Goebel Werkzeugmaschinen GmbH**

**www.hagengoebel.de - info@hagengoebel.de - Phone 0049 - 2921 - 590160**

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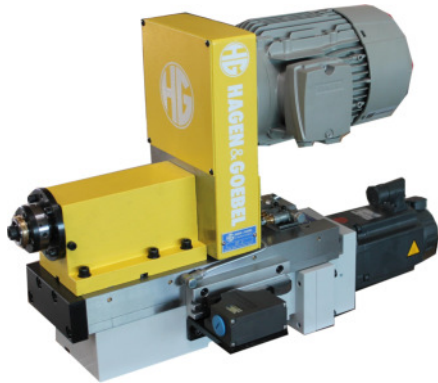
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- CNC-Flat grinding machine type HS1-4000 38



## Spindle- and Slideway Units (Standard design)

### Spindle Unit type BF2 fixed on Slideway Unit type H60 / W60



#### Spindle Unit type BF2

Motor: 3 phases motor 0,18 - 1,1KW, Servo motor  
Spindle nose: MT3, SK30, HSK-C size 32  
Spindle speed: at about 375-6.000rpm., 12.000rpm (Servo)

#### Slideway Unit type H60 / W60

Force system: hydro-pneumatic, hydraulic  
Axial force: 1.500N at 7bar, 3.000N at 15bar(hydr.)  
Stroke: max. 80, 110, 160mm  
Rapid speed: 6.000 mm<sup>3</sup>/min (W60), 4.000 mm<sup>3</sup>/min (H60)  
Work speed: at about 20-2.000 mm<sup>3</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite (H60)  
High precision roller guideway (W60)  
Limit switch: 2, 3, 4 Limits

### Spindle Unit type BF3 fixed on Slideway Unit type H75 / W75 / H100



#### Spindle Unit type BF3

Motor: 3 phases motor 0,55-2,2KW, Servo motor  
Spindle nose: MT3, SK30, SK40, HSK-C size 40 or size 50  
Spindel speed: at about 375-6.000 rpm, 12.000rpm (Servo)  
Specials: Gearbox with ratio 1:2,5 or 1:4 into slower

#### Slideway Unit type H75 / W75 / H100

Force system: hydro pneumatic, hydraulic, ballscrew  
Axial force: 2.300N at 7bar (H75/W75),  
4.000N at 7bar (H100),  
5.000N at 25bar (hydraulic)  
at about 5.000N (ballscrew)  
Stroke: max. 80, 110, 160mm  
Rapid speed: 4.000 mm<sup>3</sup>/min (H75, H100), 6.000 mm<sup>3</sup>/min (W75)  
15.000mm<sup>3</sup>/min (ballscrew)  
Work speed: 20-2.000 mm<sup>3</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite (H75/H100)  
High precision roller guideway (W75)  
Limit switch: 2, 3, 4 Limits

### Spindle Unit type BF3breit (suitable Slideway Unit look at type BF4)



#### Spindle Unit type BF3breit

Motor: 3 phases motor 1,5-4,0KW, Servo motor  
Spindle nose: SK30, HSK-C Gr.40 or Gr.50  
Spindel speed: at about 375-6.000rpm, 12.000rpm (Servo)  
Specials: pneumatic tool unclamp system

## Spindle- and Slideway Unit (Standard design)

### Spindle Unit type BF4 fixed on Slideway Unit type H160/H200



#### Spindle Unit type BF4

Motor: 3 phases motor 2,2-5,5KW, Servo motor  
Spindle nose: SK40, HSK-C(A) size 50 or size 63  
Spindel speed: at about 375-6.000rpm, 12.000rpm (Servo)  
Specials: Gearbox with ratio 1:2,5 or 1:4 into slower, inner coolant system, pneumatic tool unclamp system

#### Slideway Unit type H160 / H200

Force system: hydro-pneumatic, hydraulic, ballscrew  
Axial force: 4.000 up to 11.000N at 7bar, 12.000N at 60bar (hydr.), 12.000N (ballscrew)  
Stroke: max. 100, 150, 200, 300, 400, 600mm  
Rapid speed: 4.000<sup>mm</sup>/min, at about 15.000<sup>mm</sup>/min(ballscrew)  
Work speed: 40-400<sup>mm</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite, adjustable  
Limit switch: 2, 3, 4 Limits  
Slide wideness: H160 at about 160mm, H200 at about 200mm

### Spindle Unit type BF4breit (suitable Slideway Unit look at type H242 / H300)



#### Spindle Unit type BF4breit

Motor: 3 phases motor 3,0-7,5KW, Servo motor  
Spindle nose: SK40, HSK-C(A) size 63  
Spindel speed: at about 375-6.000rpm, 8.000rpm (Servo)  
Specials: hydraulic tool unclamp system, inner coolant system

### Spindle Unit type BF5 fixed on Slideway Unit type H300/H350



#### Spindle Unit type BF5

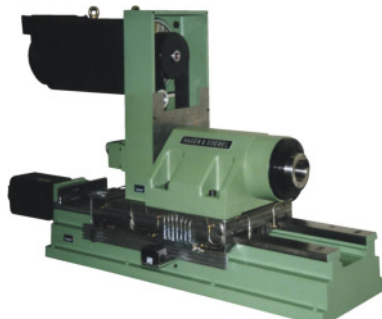
Motor: 3 phases motor 4,0-15,0KW, Servo motor  
Spindlenose: SK50, HSK-C(A) size 80 or size 100  
Spindel speed: at about 375-6.000rpm, 8.000rpm (Servo)  
Specials: Gearbox with ratio 1:2,5 or 1:4,33 into slower, inner coolant system, hydraulic tool unclamp system

#### Slideway Unit type H300 / H350

Force system: hydro-pneumatic, hydraulic, ballscrew  
Axial force: 5.500N at 7bar, 12.000N at 60bar (hydr.), at about 15.000N (ballscrew)  
Stroke: max. 200, 400, 600, up to at about 4.000mm  
Rapid speed: 4.000<sup>mm</sup>/min, at about 15.000<sup>mm</sup>/min(ballscrew)  
Work speed: 40 - 400<sup>mm</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite, adjustable  
Limit switch: 2, 3, 4 Limits  
Slide wideness: H300 at about 300mm, H350 at about 350mm  
Specials: Guideway covers, central lubrication

## Spindle- and Slideway Unit (Standard design)

### Spindle Unit type BF5breit fixed on Slideway Unit type H400



#### Spindle Unit type BF5breit

Motor: 3 phases motor 7,5-18,5KW, Servo motor  
Spindle nose: SK50, HSK-C(A) size 100  
Spindel speed: at about 375-6.000 rpm, 8.000 rpm (Servo)  
Specials: Gearbox 1: 4,875 into slower, inner coolant system, hydraulic tool unclamp system



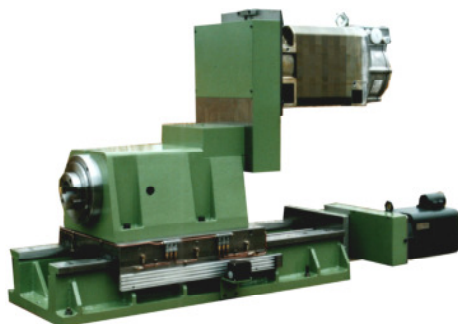
#### Slideway Unit type H400

Force system: hydro-pneumatic, hydraulic, ballscrew  
Axial force: 5.500N at 7bar, 23.000N at 60bar (hydr.), at about 15.000N (ballscrew)  
Stroke: max. 200, 400, 600, 800 up to 4.000mm  
Rapid speed: 4.000<sup>mm</sup>/min, at about 15.000<sup>mm</sup>/min (ballscrew)  
Work speed: 40-400<sup>mm</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite, adjustable  
Limit switch: 2, 3, 4 Limits  
Slide wideness: at about 400mm  
Specials: Guideway covers, central lubrication

### Spindle Unit type BF6 fixed on Slideway Unit type H400/H480

#### Spindle Unit type BF6

Motor: 3 phases motor 15-30KW, Servo motor 50KW  
Spindle nose: SK50, HSK-C(A) size 100  
Spindel speed: at about 375-6.000rpm  
Specials: Gearbox 1:2,5 1:4,33 into slower,  
Inner coolant system,  
Hydraulic tool unclamp system



#### Slideway Unit type H400 / H480

Force system: hydro-pneumatic, hydraulic, ballscrew  
Axial force: 5.500N at 7bar, 23.000 – 50.000N at 60bar (hydr.), at about 18.000N (ballscrew)  
Stroke: max. 200, 400, 600, 800 up to 4.000mm  
Rapid speed: 4.000<sup>mm</sup>/min, at about 15.000<sup>mm</sup>/min (ballscrew)  
Work speed: 40-400<sup>mm</sup>/min, free adjustable  
Guideway: Flat guideway with Turcite, adjustable  
Limit switch: 2, 3, 4 Limits  
Slide wideness: H400 at about 400mm, H480 at about 480mm  
Specials: Guideway covers, central lubrication

## Face Turn Unit (samples)

### Assembly of Face Turn Unit type PSE3Z



#### **Spindle Unit type BF 3**

Motor: 3 phases motor 0,55 - 2,2KW, Servo motor  
Spindel speed: at about 375-6.000 rpm  
Spindle nose: SK30, Flange mounting according to specifications  
Cross-feed: by hydro-pneumatic adjustment with Z75/20  
Face turn head: max. diameter at about 80mm

#### **Slideway Unit H75 / W75 / H100**

Force system: Hydro-pneumatic, hydraulic, ballscrew  
Stroke: max. 80, 110, 160mm  
Guideway: Flat guideway with Turcite (H75/H100)  
High precision roller guideway (W75)

### Assembly of Face Turn Unit type PSE4



#### **Spindle Unit type BF 4**

Motor: 3 phases motor 1,5 - 5,5KW, Servo motor  
Spindel speed: at about 90-6.000rpm  
Gearbox: Gear transmission 1:2,5 or 1:4 into slower  
Spindle nose: SK40, Flange mounting according to specifications  
Cross-feed: by mechanical adjustment (ballscrew) and NC-Servo-Motor  
Face turn head: max. diameter at about 120mm

#### **Slideway Unit type H160 / H200**

Force system: Hydro-pneumatic, hydraulic, ballscrew  
Stroke: max. 100, 150, 200, 300, 400, 600mm  
Guideway: Flat guideway with Turcite

### Assembly of face turn Unit type PSE5



#### **Spindle Unit type BF5**

Motor: 3 phases motor 4,0 - 11KW, Servo motor  
Spindle speed: at about 90-6.000rpm  
Gearbox: Gear transmission 1:2,5 or 1:4 into slower  
Spindle nose: SK50, Flange mounting according to specifications  
Cross-feed: by mechanical adjustment (ballscrew) and NC-Servo-Motor  
Face turn head: max. diameter at about 160mm

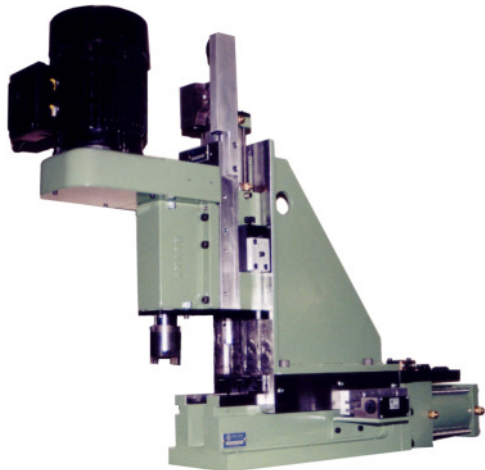
#### **Slideway Unit type H300 / H350**

Force system: Hydro-pneumatic, hydraulic, ballscrew  
Stroke: max. 100, 150, 200, 300, 400, 600mm  
Guideway: Flat guideway with Turcite



## Spindle- and Slideway Unit (Samples for special design)

Vertical boring- and milling Unit type BF2 – H60 – H160 (HG-764)



**Assembly:**

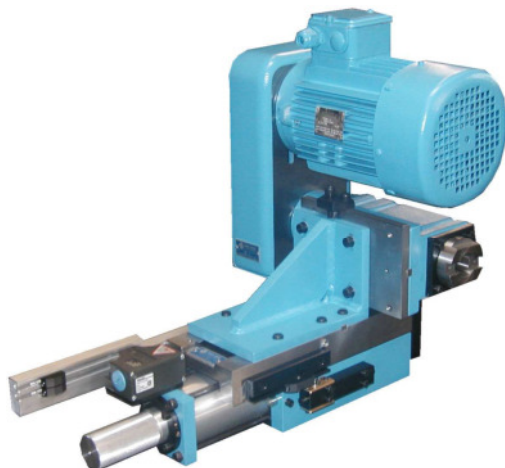
Spindle Unit type BF2

Hydro-pneumatic slideway Unit type H60 (W60)

Vertical frame in heavy welding design including  
manual height adjustment

Hydro-pneumatic slideway Unit type H160

Machining Unit type BF3-H75/80 for sawing or milling  
with adjustable, vertical frame (HG-826)



**Assembly:**

Spindle Unit type BF3

Vertical frame in heavy welding design including  
manual height adjustment

Slideway Unit type H75 (W75)

Spindle Unit type BF3hochtourig for spindle speed up to 20.000 rpm (HG828)



**Assembly:**

Spindle Unit type BF3b with standard 3 phases motor  
4 KW

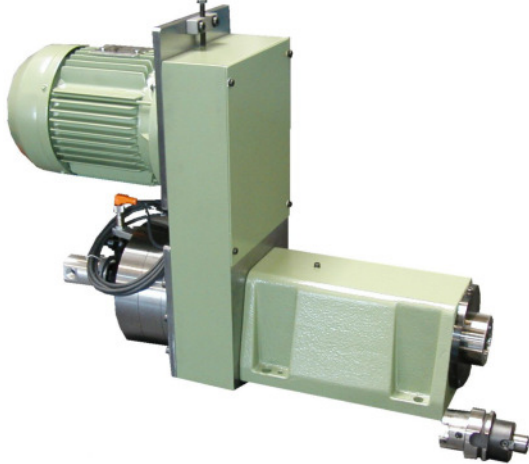
Spindle speed 10.000 rpm at 50Hz

max. allowed 20.000 rpm (at 100Hz)

Collet chuck seat type ER25

## Spindle- and Slideway Unit (Samples for special design)

Spindle Unit HSK-A size 63 with pneumatic tool unclamp system (HG-829)



**Assembly:**

Spindle Unit type BF4

Tool fixture HSK-A size 63

Pneumatic unclamp system

Inner coolant system (TSC)

Horizontal boring- and – milling Unit type BF4 – H200 – H300 (HG-806)



**Assembly:**

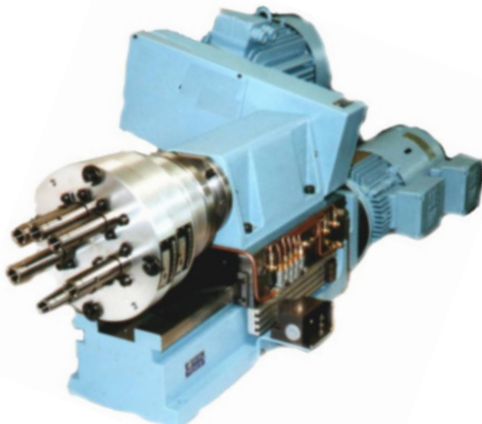
Spindle Unit type BF4

Slideway Unit type H200 with ballscrew

Vertical frame in heavy welding design

Slideway Unit H300 with ballscrew

Boring Unit with multispindle head type BF4-MSK – H200



**Assembly:**

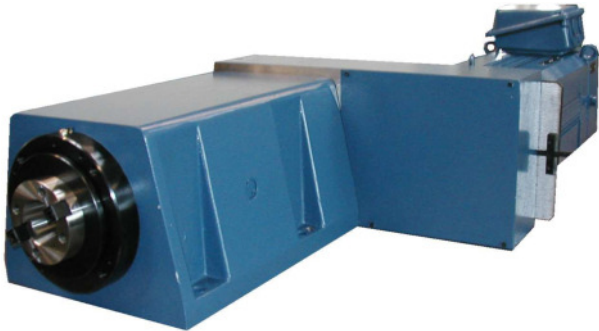
Spindle Unit type BF4

Multispindle head with 6 spindles

Slideway Unit type H200 with ballscrew

## Spindle- and Slideway Unit (Samples for special design)

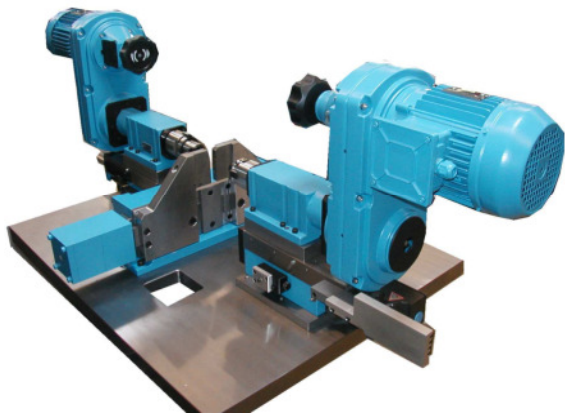
High performance spindle Unit type BF6 for milling and grinding (HG-833)



**Assembly:**

- Spindle Unit type BF 6 with NC-Servo motor
- SK-50 with hydraulic unclamp system
- Inner coolant system (TSC)

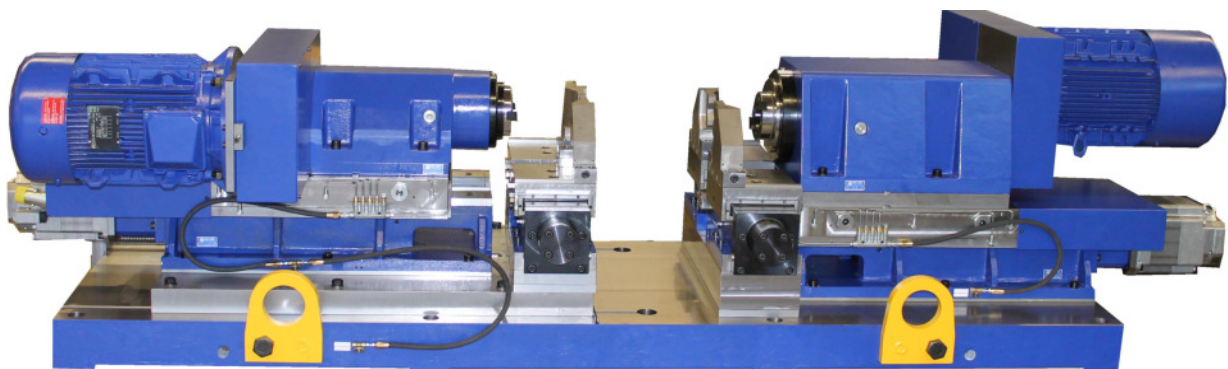
Set of components for two sides endmachining (HG-817)



**Assembly:**

- 2\* Spindle Unit type BF3
- 2\* Slideway Unit type H75
- 1\* Centric vice, pneumatic working type Pz130
- 1\* Basic metal sheet with adapters

Set of components for two sides endmachining, heavy cutting (HG-860)



**Assembly:**

- 1\* Machining Unit type BF5b-H400, Motor power 15KW, NC-Ballscrew force system
- 1\* Machining Unit type BF6-H400, Motor power 18,5KW, NC-Ballscrew force system
- 2\* Centric vice type Pz330Hy, hydraulic working, with special jaws
- 1\* Set adapter plates incl. manual sliding device of the "loose side"
- 1\* Mounting plate at about 3.000 \* 800 \* 120mm with fixing options for special machine

## Spindle- and Slideway Unit (Samples for special design)

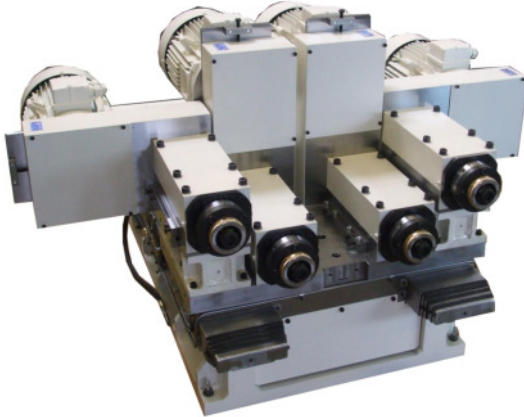
**Machining Unit type BF5breit – H300 ready to fix on an machines portal (HG-869)**



**Assembly:**

- 1\* Spindle Unit type BF5b in special design
- 1\* Slideway Unit type H300 with NC-Ballscrew force system
- 1\* Intermediate plate with milled directional grooves
- SK-50 with hydraulic unclamp system
- NC-Motor with power at about 15KW

**Machining Unit type BF4 Quad – H630/me/200-EE (HG-872)**



**Assembly:**

- 4\* Spindle Unit type BF4, each with 5,5KW and HSK-C size 63
- 1\* Slideway Unit type H630 with NC-Ballscrew force system
- 1\* Set of adaptation parts for height and distance adjustment of the spindles according to the customer's specifications

**Universal, horizontal table-, boring and centering machine type UT-1 (HG-867)**



**Assembly:**

- Mounting area for clamping devices at about 500mm \* 200mm
- Centrally located T-slot running in the axial
- Body console with linear guideway
- Manual feed device via hand lever
- Stroke length max. 80mm readable on scale
- Spindle Unit BF 2, three-phase brake motor 0.75 KW
- Spindle nose MT-3
- Belt drive with step belt pulleys
- Spindle speed at about n = 600 - 900 - 1.420 rpm
- Swiveling chip protection with electrical query

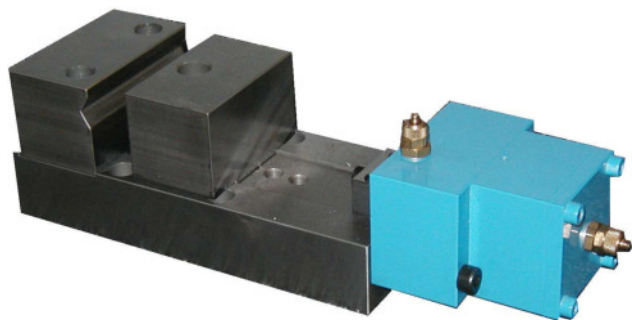
**also available**

- Type **UT-2** with motor power 1,5KW
- Type **UT-3** with motor power 3,0KW
- Type **UT-4** with motor power 5,5KW

## Pneumatic Vices

### **Pneumatic Vice with one fixed jaw and one movable jaw**

**Advantages:** Guaranteed, automatic clamping in series production. Fast and safe clamping with constant clamping force. Universal use for drilling, milling, reaming and thread cutting.  
**Adjustment:** The clamping paths are set by moving the movable jaw.

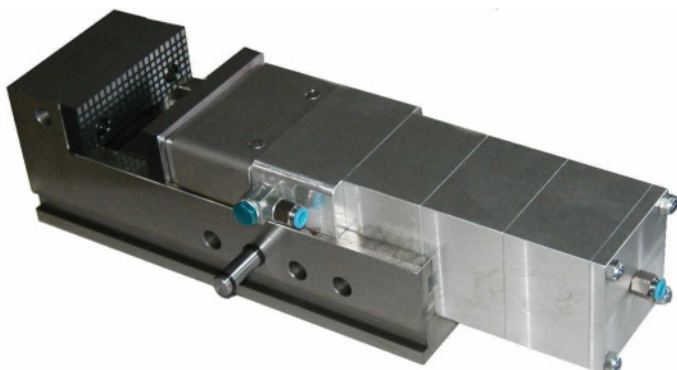


#### **Vice type SO80-M50..**

Stroke of jaw: max. 20mm  
Wideness of jaw: 80mm  
Clamp diameter: up to 80mm  
Clamp force: 1.100, 2.200, 3.300, 4.400N  
at 7bar (depending on the equipment)

#### **Vice type SO100-M90../SO150-M90..**

Stroke of jaw: max. 20mm  
Wideness of jaw: SO100 = 100mm  
SO150 = 150mm  
Clamp diameter: up to 120mm  
Clamp force: 3.500, 7.000, 10.500N  
at 7bar (depending on the equipment)

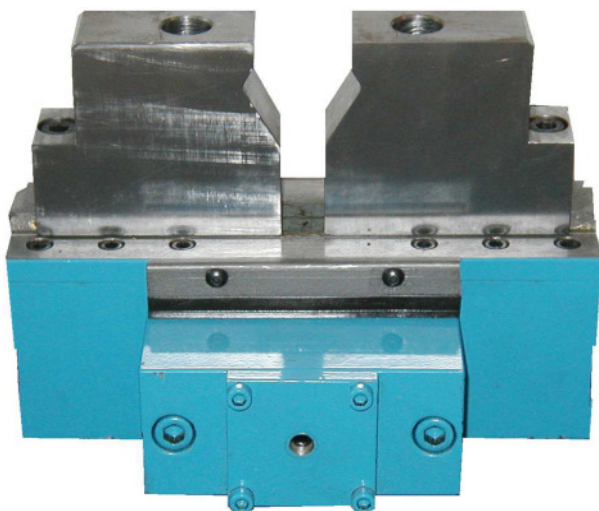


#### **Vice type SO100/2-M63..**

Stroke of jaw: max. 30mm  
Wideness of jaw: 100mm  
Clamp diameter: up to 105mm  
Clamp force: 1.650, 3.300, 4.950, 6.600N  
at 7bar (depending on the equipment)

**Options:** Prismatic jaws  
Oversize jaws 125mm  
Step jaws, Pendulum jaws  
with pull-down effect

### **Pneumatic Centering Vices type PZ with centering accuracy +/- 0.05mm**



#### **Centering Vice type PZ80-M50..**

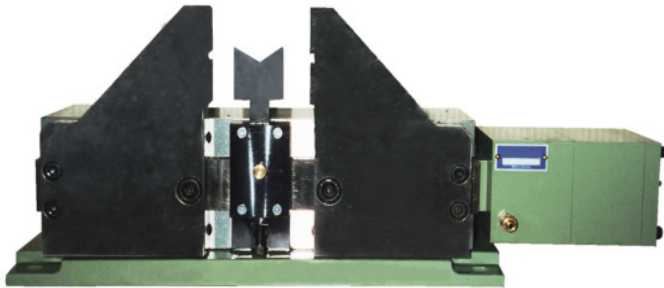
Stroke of jaw: 9 mm (force stroke 5mm)  
Clamp diameter: Ø 5,0 up to 80,0mm  
(by change of jaws)  
Clamp force: 2.200, 4.400, 6.600, 8.800,  
11.000N at 7bar  
(depending on the equipment)

#### **Centering Vice type PZ100-M75..**

Stroke of jaw: 18 mm (force stroke 8mm)  
Clamp diameter: Ø 5,0 up to 100,0mm  
(by change of jaws)  
Clamp force: 5.000, 10.000, 15.000,  
20.000, 25.000N at 7bar  
(depending on the equipment)

**Options:** Hydraulic system  
18.000N at 25 bar

## Pneumatic and hydraulic centering Vices



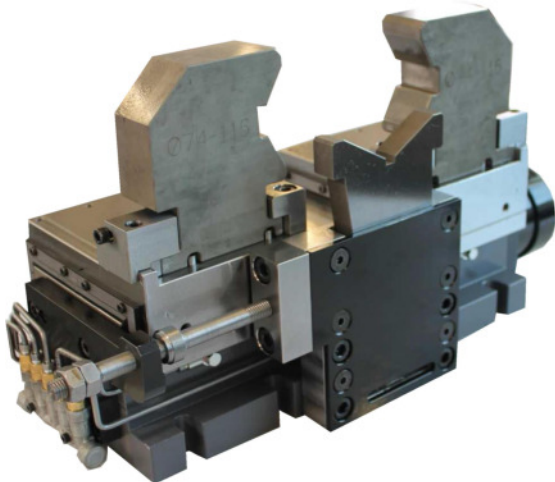
### **Centering Vice type PZ130-M90..**

Stroke of jaw: 25mm (option 30 or 35mm)

Clamp diameter: Ø 6,0 up to 130,0mm  
(by change of jaws)

Clamp force: 3.500, 7.000, 10.500,  
14.000 N at 7bar  
(depending on the  
equipment)

Options: Hydraulic system  
12.500N at 80 bar (Hy50)  
12.500N at 35 bar (Hy75)



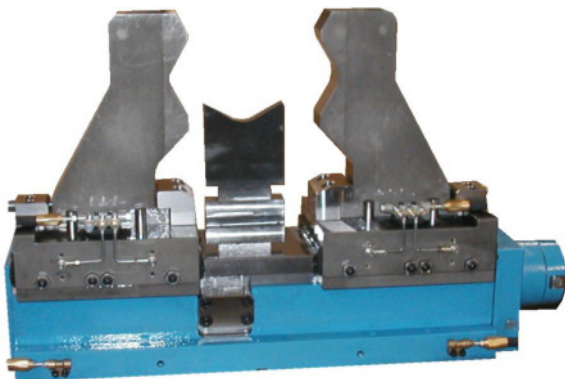
### **Centering Vice type PZ250Hy**

Stroke of jaw: 40 mm

Clamp diameter: Ø 25 up to 250mm  
(by change of jaws)

Clamp force: max. 25.000 N at 150bar

Jaws:  
Ø 25 - 74mm  
Ø 74 - 115mm  
Ø 115 - 152mm  
Ø 152 - 185mm  
Ø 185 - 215mm  
Ø 215 - 242mm  
Ø 242 - 250mm



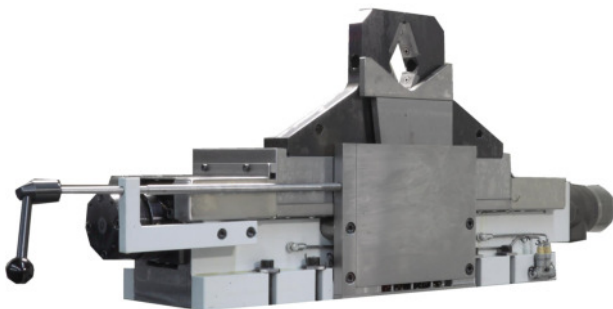
### **Centering Vice type PZ330Hy**

Stroke of jaw: 68 mm

Clamp diameter: Ø 50 up to 330mm  
(by change of jaws)

Clamp force: max. 25.000 N at 150bar

Jaws:  
Ø 50 -120mm  
Ø 120-170mm  
Ø 170-225mm  
Ø 220-280mm  
Ø 270-330mm



### **Centering Vice type PZ330TS**

Principle of operation:

The movement and clamping force generating  
via a hydraulic motor and a trapezoidal  
threaded spindle.

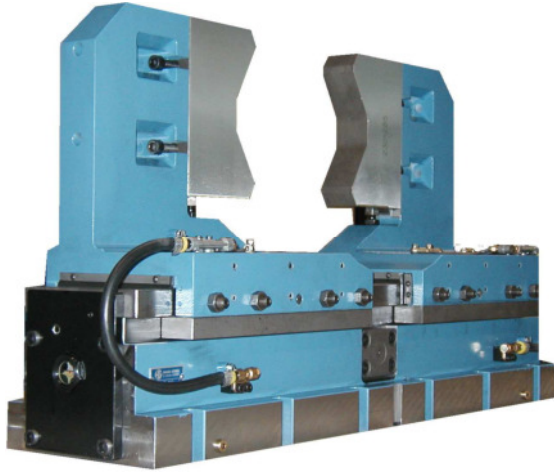
Stroke of jaw: 115 mm

Clamp diameter: Ø 20mm - Ø 330mm  
(by change of jaws)

Clamp force: max. 20.000 N at 95bar

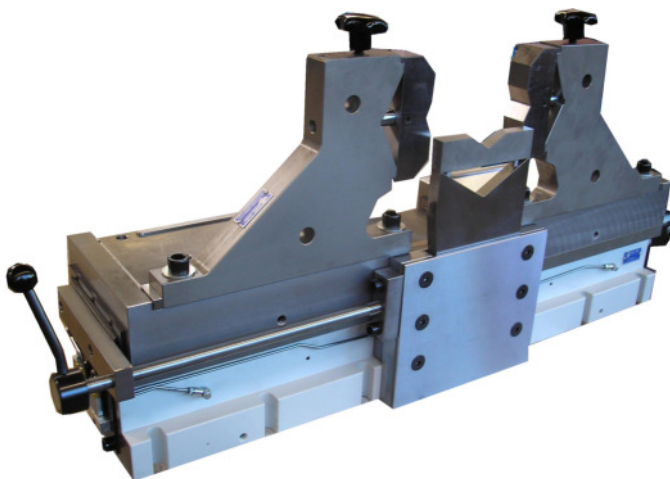
Jaws:  
Ø 20-80mm  
Ø 80-250mm  
Ø 250-330mm

## Hydraulic centering Vices and Shaft Pre-Seat



### **Centering Vice type PZ400Hy**

Stroke of jaw: 68 mm  
Clamp diameter: Ø 100 up to 400mm  
(by change of jaws)  
Clamp force: max. 37.500 N at 165bar  
Jaws:  
Ø 25 - 50mm  
Ø 50 - 100mm  
Ø 100 - 170mm  
Ø 170 - 230mm  
Ø 230 - 285mm  
Ø 285 - 335mm  
Ø 335 - 375mm  
Ø 375 - 400mm

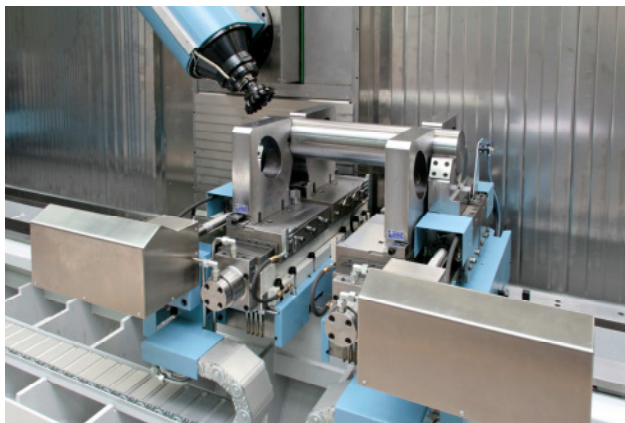


### **Centering Vice type PZ440Hy**

Stroke of jaw: 85 mm  
Clamp diameter: Ø 50 up to 440mm  
(by change of jaws)  
Clamp force: max. 37.500 N at 165bar  
Jaws:  
Ø 25 - 50mm  
Ø 50 - 135mm  
Ø 135 - 250mm  
Ø 250 - 360mm  
Ø 360 - 400mm

### **Centering Vice type PZ500Hy**

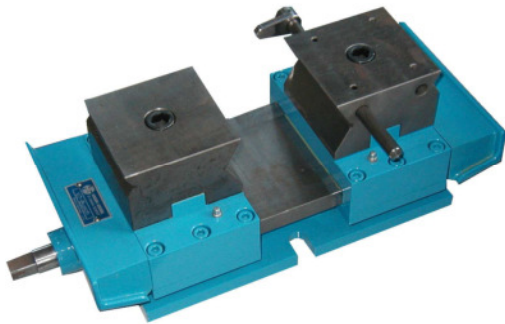
Clamp diameter: Ø 50 up to 660mm  
(by change of jaws)  
Clamp force: max. 37.500 N at 165bar  
Jaws: According to application or  
customer request



### **Adjustable electro-mechanical or manual Shaft Pre-Seat**

The shaft support is used for automatic height adjustment and workpiece support of different shaft diameters before they are clamped centrally in a centering vice.  
This preliminary edition was specially developed for heavy workpieces where the standard primer edition is not possible.

**Highly precise centering Vices with centering accuracy of  
+/- 0.01mm and the possibility of correcting the clamping center**



**Manual centering vice type V2 and V6**

Clamp force: at about 12.000N

**Centering vice type V2**

Clamp diameter: Ø 12 up to 100mm  
Ø 12 up to 40mm small prism  
Ø 30 up to 100mm large prism  
Ø 90 up to 140mm special jaws

**Centering vice type V6**

Clamp diameter: Ø 20 up to 150mm  
Ø 20 up to 60mm small prism  
Ø 55 up to 150mm large prism  
Ø 150 up to 200mm special jaws



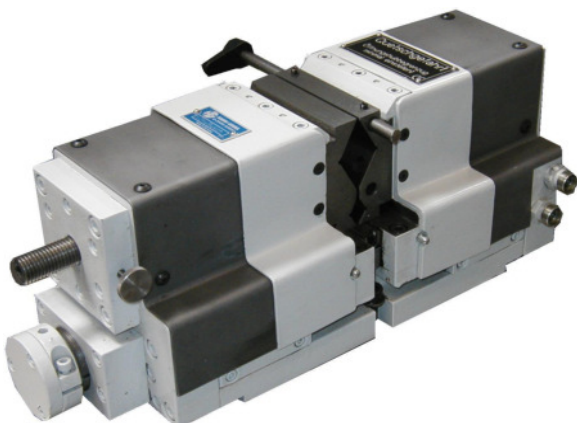
**Manual centering vices type V2/P and V6/P  
(for variable center height)**

**Centering vice type V2/P**

Clamp diameter: Ø 70 up to 250mm  
Center height: 135-210mm

**Centering vice type V6/P**

Clamp diameter: Ø 125 up to 350mm  
Center height: 175-275mm



**Hydraulic centering vice type V2Hy and V6Hy**

**Centering Vice type V2Hy**

Clamp diameter: Ø 12 up to 100mm  
Ø 12 up to 40mm small prism  
Ø 30 up to 100mm large prism  
Clamp force: at about 9.000N  
Operating pressure: hydraulic 34bar

**Centering Vice type V6Hy**

Clamp diameter: Ø 20 up to 150mm  
Ø 20 up to 60mm small prism  
Ø 55 up to 150mm large prism  
Clamp force: at about 15.000N  
Operating pressure: hydraulic 34bar

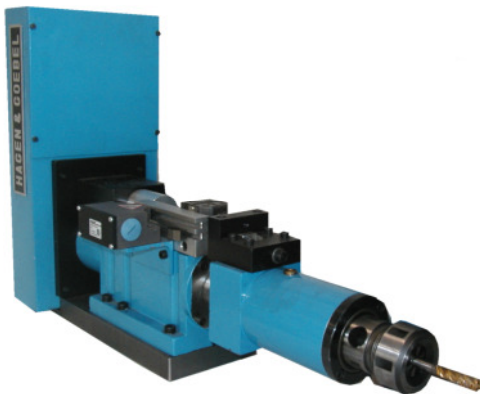


## Tapping Unit type G..

### Leadscrew controlled Tapping Units type G6/50 – G30/80

The "G" series is characterized by a simple but very solid construction. A three-phase brake motor drives both the spindle and the cartridge, which is easily accessible from above, via a belt system. The leadscrew guide is designed with a ratio of 1: 2 to slow. This results in advantages on the one hand, lower wear due to lower speeds on the leadscrew and, on the other hand, a 2 times coarser pitch of the leadscrew. Even with very small thread pitches, the leadscrew therefore still has a very robust thread.

The basic version of the threaded Units G6/50 - G30/80 is protected against overloading by a safety device. Mechanical torque control can be implemented as an option and protects against tool breakage in e.g. blunt tool or small core hole.



#### **Tapping Unit type G6/50**

Motor: Brake motor 0,25-0,55KW  
Tool holder: Collet, Adjusting sleeve  
Spindle speed: max. 1000 rpm  
Stroke: max. 50mm  
Tap size: in Steel max. M6

#### **Tapping Unit type G10/50**

Motor: Brake motor 0,55-1,1KW  
Tool holder: Collet, Adjusting sleeve  
Spindle speed: max. 1000 rpm  
Stroke: max. 50mm  
Tap size: in Steel max. M10



#### **Tapping Unit type G16/50**

Motor: Brake motor 1,1-2,2KW  
Tool holder: Collet, Adjusting sleeve  
Spindle speed: max. 800 rpm  
Stroke: max. 50mm  
Tap size: in Steel max. M16

#### **Tapping Unit type G20/50**

Motor: Brake motor 1,5-2,2KW  
Tool holder: Collet, Adjusting sleeve  
Spindle speed: max. 800 rpm  
Stroke: max. 50mm  
Tap size: in Steel max. M20

#### **Tapping Unit type G30/80**

Motor: Brake motor 2,2-4,0KW  
Tool holder: Collet, Adjusting sleeve  
Spindle speed: max. 400 rpm  
Stroke: max. 80mm  
Tap size: in Steel max. M30

## High-Performance Tapping Unit type GE..

The high-performance tapping Units of the "GE" type are driven by a high-performance brake motor or a servo motor. An intermediate gear enables high spindle speeds. A massive, but weight-optimized design reduces flywheel masses and thus ensures short switchover times and high cycle rates in continuous operation. The leadscrew guides are translated up to 1: 4 depending on the size. The mechanical torque protection in the tool holders in connection with the overrun protection protects against tool breakage and ensures a consistently high quality with maximum effectiveness.

### **Leadscrew controlled High-Performance Tapping Unit type GE 6/7**



Tap size: Thread forming or cutting max. 1 \* M6 in Steel or correspondingly many smaller threads  
Motor: High-performance brake motor,  
Power: 0,37 KW / 0,50 KW / 0,90 KW / Servo motor  
Spindle speed: up to 5.600 rpm  
Stroke q'ty: max. 140 strokes / min.  
Leadscrew: Running in an oil bath with ratio i= 1:4 into slower speed

### **Leadscrew controlled High-Performance Tapping type GE 16 / 22 -2 (Version 2)**



#### **Tapping Unit type GE 16 – 2**

Tap size: Thread forming or cutting max. 1\*M16 in Steel or correspondingly many smaller threads  
Motor: High-performance brake motor  
Power: 2,2 KW – 4,0 KW / Servo motor  
Spindle speed: up to 2.800 rpm  
Spindle nose: short cone B18

#### **Tapping Unit type GE 22 – 2**

Tap size: Thread forming or cutting max. 1\*M22 in Steel or correspondingly many smaller threads  
Motor: High-performance brake motor,  
Power: 4,0 KW – 6,3 KW / 15 KW Servo motor  
Spindle speed: up to 1.800 rpm  
Spindle nose: Short cone B22

### **Leadscrew controlled high-performance tapping type GE 8 – GE 42 (Version 1)**



#### **Type GE 8 / GE 16 / GE 22 / GE 36 / GE 42**

Tap size: up to M42 in Steel (depends on the Unit size)  
Motor: 0,5 KW – 6,3 KW / 15 KW Servo motor  
Spindle nose: Short cone B16 - B24  
Spindle speed: up to 4.500 rpm (depends on the Unit size)

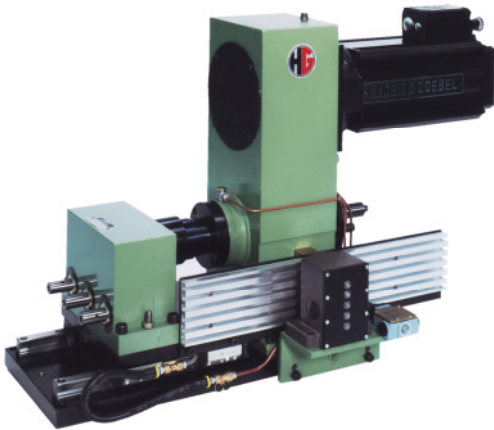
The technical data correspond to our standard tapping machines of the types HG-8E to HG-42E

## Single and multi-spindle Tapping Unit type GE .. NM-CNC

The series of high-performance tapping Units GE .. NM-CNC were specially developed for high-speed tapping and forming with cutting speeds of up to 60 - 100 m/min. High allowed torques between 50 Nm and 640 Nm and the high-precision leadscrew system in conjunction with an NC drive motor ensure maximum productivity.

The special design in conjunction with specially designed for use case designed multi-spindle heads, the thread sets to virtually any work piece or each object to be adjusted. The tapping Unit for vertical use is also equipped with a pneumatic counterbalance to protect the leadscrew system. Due to the massive and very durable design, this type of tapping Unit is designed for a production volume of several million threads per year.

### High-Performance Tapping Unit in horizontal design



- Type of Unit: Multispindle tapping Unit with servo spindle motor and torque of 50 Nm – 640Nm
- Stroke: 120 mm – 250 mm
- Spindle speed: Stepless adjustable, programmable forward and retract from 500 up to 3.000 rpm (depending on the design)
- Multispindle head: Specific drilling pattern, mounted on recirculating ball bearings
- Stroke system: by leadscrew and leadnut

### High-Performance Tapping Unit in vertical design



- Type of machine: Multispindle tapping Unit with servo spindle motor and torque of 50 Nm – 640Nm designed for vertical use
- Stroke: 120 mm – 250 mm
- Spindle speed: Stepless adjustable, programmable forward and retract from 500 up to 3.000 rpm (depending on the design)
- Multispindle head: Specific drilling pattern, mounted on recirculating ball bearings
- Stroke system: by leadscrew and leadnut
- Specials: Pneumatic weight compensation for vertical installation

## Broaching machines

### Advantages for the customer:

- Strong design
- Modern, user-friendly controls
- Long tool life thanks to patented detailed solutions
- Particularly user-friendly and economical
- Design, manufacture, assembly and service in the Soest plant
- Extensive range of additional equipment

### Patents and property rights:

- Wedge control for broaching hub grooves
- Conical collets
- Better force distribution in the tool by simultaneous pressing and pulling
- Lifting movement by planetary roller spindles (with high forces)
- Tool cover for the targeted removal of chips



### Design type ECO

**Type:** R6ECO  
Broaching force (t): 6  
Tool length (mm): 1.350

### Vertical operation

**Type:** R6 / R10  
Speed (m/min): 1-9  
Broaching force (t): 6 / 10  
Tool length (mm): 1.350 / 1.600 / 2.000

**Type:** R8S / R12S / R16S  
Speed (m/min): 1-12  
Broaching force (t): 8 / 12 / 16  
Tool length (mm): 1.350 / 1.600

**Type:** R8XS / R12XS / R16XS  
Speed (m/min): 1-30  
Broaching force (t): 8 / 12 / 16  
Tool length (mm): 1.350 / 1.600

### Functioning lift table

**Type:** R12H / R16H / R24H  
Speed (m/min): 1-12  
Broaching force (t): 12 / 16 / 24  
Tool length (mm): 1.350 / 1.600 / 2.000

**Type:** R12XH / R16XH / R24XH  
Speed (m/min): 1-30  
Broaching force (t): 12 / 16 / 24  
Tool length (mm): 1.350 / 1.600 / 2.000

### Opposite moving

**Type:** R12G / R16G  
Peculiarity: especially for hard broaching  
Speed (m/min): 1-60  
Broaching force (t): 12 / 16  
Tool length (mm): 1.350 / 1.600



## Hagen & Goebel Tailstock



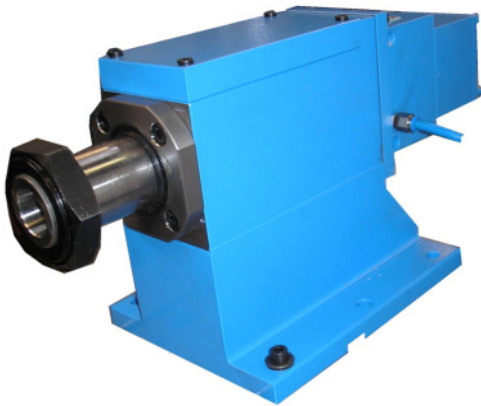
### **Manual Tailstock**

Size, available:  
Movement:  
Stroke (standard):

MT3, MT4, MT5, MT6  
Manual  
50mm (MK3+MK4),  
60mm (MK5+MK6)

Center height:  
Options:

160mm  
Intermediate plate, special strokes,  
modified center height, special  
designs



### **Pneumatic Tailstock**

Size, available:  
Movement:

MT3, MT4, MT5, MT6  
Pneumatic by H&G „Multi-Cylinder“  
Type M50 (MT3),  
M75 (MT4+MT5+MT6)

Axial force:

Depending on the version 1.000N to  
11.400N at 7bar

Stroke (standard):  
Center height:

50mm, up to 150mm possible (option)  
160mm

Quill:

Provide forcing nut in the area of the  
center of the punch

Options:

Intermediate plate, special strokes,  
limit switch (direct travel request),  
special center height, special designs  
on request



### **Hydraulic Tailstock**

Size, available:  
Movement:  
Axial force:

MT3, MT4, MT5, MT6  
Hydraulic by H&G hydraulic cylinder  
Depending on the version and system  
pressure, for example 20kN at 100bar  
(MT5), 70kN at 90bar (MT6)

Stroke (standard):  
Center height:

50mm, up to 150mm possible (option)  
160mm

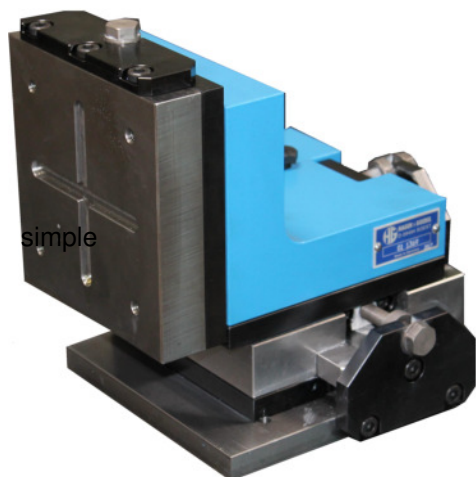
Quill:

Provide forcing nut in the area of the  
center of the punch

Options:

Intermediate plate, special strokes,  
limit switch (direct travel request),  
special center height, special designs  
on request

## Hagen & Goebel - Special designs (examples)



### Manual adjustable 3-axis angular Slideway

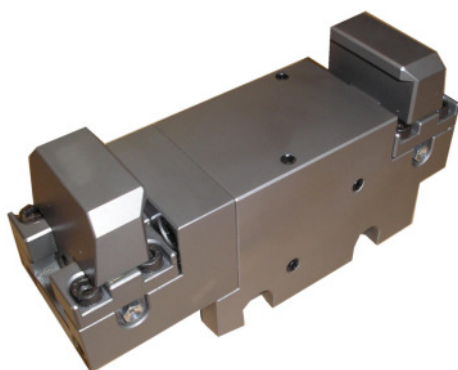
Movement: Manual via fine adjustment spindles  
 Guide system: Massive flat guide  
 Stroke: 37/37/37mm (X/Y/Z) alternatively  
 60/60/37mm (X/Y/Z)  
 Options: Cross groove and screw thread for  
 fixation of machining components



### KSE 6070 – Heavy-Duty swing clamp with lifting Cylinder and clamping Device

Heavy duty swing clamp, hydraulically operated  
 Operating pressure: max. 140 bar  
 Clamping force: max. 20 kN  
 (with 96mm clamping arm length)  
 Swivel range: 110 degrees  
 Total stroke: 58 mm  
 Option: Clamping iron with exchangeable  
 pressure piece

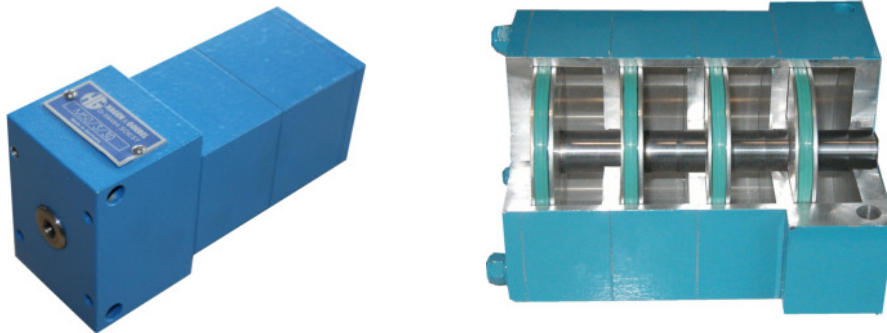
Lifting cylinder with clamping, hydraulic operated  
 Operating pressure: max. 250 bar  
 Lifting capacity: max. 6.5 kN  
 Axial load: max. clamped 7.0 kN  
 Option: Support with pressure piece



### Special clamping system 2-finger parallel Gripper, pneumatic working

Clamping, force: 400N loosening, 670N closing (6bar)  
 Operating pressure: 6 bar  
 Special features: - housing, gripper fingers and guides in  
 high-quality steel  
 - finger guides and gripping surfaces  
 hardened and grinded  
 Holding force: In case of pressure drop: F = min. 150 N  
 (close)  
 Number of strokes: The spring used is for a number of max.  
 10,000.00 strokes designed.

## Hagen & Goebel – Multi-Cylinder



High clamping forces are often required to securely clamp workpieces in machines and devices. Because of the limited space due to small machine rooms and also closely located processing stations, hydraulically actuated cylinders or pneumatic cylinders with hydraulic pressure intensifiers are usually used, which are usually only a compromise.

In order to be able to offer the optimal solution, the Hagen & Goebel company developed a modular system consisting of cylinders with piston diameters of 40-125mm and staggered stroke lengths in the standard range of 5-100mm, which can usually be obtained within a week at most from a correspondingly large commission warehouse.

To generate the axial forces of up to 54,000 N at 6 bar, only a corresponding number (up to 8) of pneumatic cells are screwed onto one another. By simply adding or removing cells, higher or lower axial forces can be generated.

To minimize the operating costs in relation to the compressed air consumption, 2 types of pneumatic cells were developed, which are used in the cylinders. The so-called add-on cell serves as a power amplifier and is only pressurized with compressed air when the power is required. On the one hand, the basic cell (double-acting cylinder) has the task of providing the axial force during the power stroke and, on the other hand, it is also intended to move all of the attached add-on cells back to the starting position.

This sophisticated system saves around 40% compressed air in a 6-cell cylinder compared to standard cylinders. Another possibility of saving is the dismantling of cells if less tension is required.

<b>Axial force (N):</b>						
<b>Basic cell</b>	<b>M40</b>	<b>M50</b>	<b>M63</b>	<b>M75</b>	<b>M90</b>	<b>M125</b>
6 bar	650	1.100	1.650	2.400	3.500	7.000
10 bar	1.150	1.850	2.900	4.150	6.000	11.900
<b>Add-on cell</b>						
6 bar	600	950	1.550	2.300	3.400	6.700
10 bar	1.050	1.650	2.750	4.000	5.850	11.400

<b>Piston rod Ø</b>	16mm	20mm	20mm	20mm	20mm	30mm
<b>Piston Ø</b>	40mm	50mm	63mm	75mm	90mm	125mm
Stroke 5mm	X	X	X	X	X	X
12mm	X	X	X	X	X	X
20mm	X	X	X	X	X	X
30mm	X	X	X	X	X	X
40mm	O	O	O	O	O	O
50mm	X	X	X	X	X	X
60mm	-	O	O	O	O	O
70mm	-	O	O	O	O	O
80mm	-	-	O	O	O	O
100mm	-	-	-	-	O	O
<b>Available from stock</b>	<b>X</b>					
<b>Delivery time on request</b>	<b>O</b>					
<b>Special design</b>	<b>-</b>					

## Multi-Cylinder - Special types

### H&G Multi-Cylinder with „Position-Transmitter“



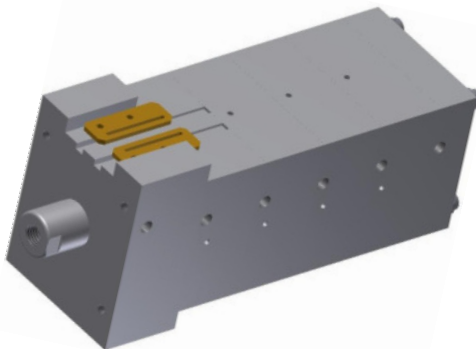
By equipping the H&G Multi-Cylinder series with a position transmitter, it is now possible to directly and electronically record the position of the piston of the basic cell.

Description of the function (extract from Festo leaflet)  
The type SMAT-8E is a robust magnetic measuring system which, regardless of the drive used, provides a standardized analog current and voltage signal in the detection range of 50 mm via a M8x1 connector. The transmitter can therefore be connected directly to the analog input of a programmable logic controller. The piston position of the pneumatic cylinder can now be detected without contact and the travel distance can be measured between any set switching points.



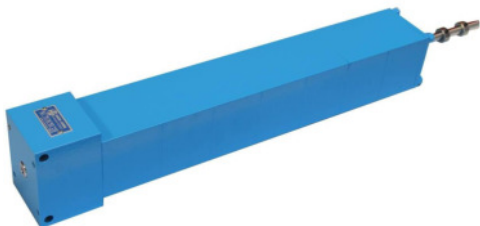
### H&G Multi-Cylinder as a pull Cylinder

H&G multi-cylinders are usually designed as axial pressure cylinders.  
Should it require the application are also available in these cylinders move execution.



### H & G Multi-Cylinder for high cycle rates

By completely equipping the H&G Multi-Cylinder series with several basic cells, it is possible to significantly reduce the cycle time.



### H & G Multi-Cylinder with shift rod and cam

By equipping the H&G Multi-Cylinder series with a continuous shift rod with 2 displaceable cams, it is possible to determine the actual position of the cylinder by means of a commercially available cam switch.



## High-Performance Tapping Machines

### Tapping Machines type HG-6 and HG-10 with "double friction clutch"

In this series, two counter-rotating pulleys are driven by a continuously running drive motor. The right and left movement of the spindle is ensured by pulling or releasing the operating lever. Thanks to functionality similar to a coupling on a car, very sensitive tapping, even of the smallest thread (up to M1), is possible. A cutting of threads into thin and soft material is prevented by using the leadscrew guide device. The speed is adjusted by turning a belt. This series can be operated with and without a leadscrew.



#### **Tapping Machine type HG-6**

Cutting size: M1 - M6 in Steel  
M1 - M8 in Cast iron  
M1 - M10 in Brass and light metal

Spindle speed: 710 - 1.800rpm  
(355 - 1.800rpm, option)

Motor power: 0,37KW

Spindle stroke: 32mm

Options: Pneumatic activating  
Several outreaches  
Machine light, LED  
Multispindle head  
Leadscrew  
Tapping chucks  
Box base design



#### **Tapping Machine type HG-10**

Cutting size: M3 - M10 in Steel  
M3 - M16 in Cast iron  
M3 - M18 in Brass and light metal

Spindle speed: 200 - 1.000rpm (or 120 - 600rpm)

Motor power: 0,55 / 1,2KW

Spindle stroke: 80mm

Options: Pneumatic activating  
Food switch  
Several outreaches  
Machine light, LED  
Multispindle head  
Leadscrew  
Tapping chucks  
Box base- / pillar- / table design

## High-Performance Tapping Machines

### Tapping Machines type HG-8E up to HG-42E and HG-22Servo

In this series, a high-performance brake motor (or servo motor) specifies the direction of rotation of the spindle. This drives a 9 speed variable belt transmission to the drive side of a transmission. The gear ratio within the gearbox ensures an output speed within a spindle speed range that has been agreed before delivery.

With servo drives, the spindle speed can be set on a display without changing pulleys. Cutting threads into any material is prevented by using the leadscrew guide system.

**Options:**

Two-hand operation, foot switch, various outreaches, LED machine light, multi-spindle head, leadscrews, central lubrication, tapping chucks, box base or table version, flow coolant and minimum quantity lubrication systems, additional axial cooling fans for short-stroke operation and high cycle frequency.

**Strokes per hour (max.):** HG-8E - 2.000    HG-16E - 1.600    HG-22E/Servo - 1.200    HG-42E - 800



**Tapping Machine type HG-8E**

Cutting size:            M3 - M8 in Steel  
                                  M3 - M10 in Cast iron  
                                  M3 - M12 in Brass and light metal

Spindle speed:        a) 710 – 4.500rpm  
                                  b) 450 – 2.800rpm  
                                  c) 280 – 1.800rpm  
                                  d) 180 – 1.120rpm  
                                  e) 112 – 710rpm

Motor power:            0,5 / 0,95 / 1,55KW

Spindle stroke:        60 mm



**Tapping Machine type HG-16E**

Cutting size:            M4 - M16 in Steel  
                                  M4 - M20 in Cast iron  
                                  M4 - M22 in Brass and light metal

Spindle speed:        a) 450 - 2.800rpm  
                                  b) 280 - 1.800rpm  
                                  c) 180 - 1.120rpm  
                                  d) 112 - 710rpm  
                                  e) 56 - 355rpm

Motor power:            2,2KW

Spindle stroke:        80 mm (110+160mm, option)

## High-Performance Tapping Machines



### **Tapping Machine type HG-22E**

Cutting size: M6 - M22 in Steel  
M6 - M27 in Cast iron  
M6 - M33 in Brass and light metal

Spindle speed: a) 112 – 710rpm  
b) 180 – 1.120rpm  
c) 280 – 1.800rpm  
d) 56 – 355rpm

Motor power: 3,0 / 4,0 / 6,3KW

Spindle stroke: 80 mm (110+160mm, option)

Options: Two hand activating  
Food switch  
Several outreaches  
Machine light, LED  
Multispindle head  
Leadscrew  
Lubrication systems  
Tapping chucks  
Box base- / pillar- / table design



### **Tapping Machine type HG-22Servo**

#### **Advantages compared to the "E" series with brake motor**

- 2-forward and 2-reverse spindle speeds can be set separately on the display
- Significantly higher efficiency thanks to motor power of 15KW and possible stroke frequency
- Work piece counter, total number of pieces of the machine and resettable daily piece counter
- Easy integration of multi-spindle heads
- Compact design, easy internal transport with a pallet truck or forklift possible

Cutting size: M6 - M22 in Steel  
M6 - M27 in Cast iron  
M6 - M33 in Brass and light metal

Spindle speed: stepless up to 1.800rpm

Motor power: at about 15,0KW (at 100% running)

Options: Two hand activating  
Food switch  
Several outreaches  
Machine light, LED  
Multispindle head  
Leadscrew  
Lubrication systems  
Tapping chucks  
Box base- / pillar- / table design

## High-Performance Tapping Machines



### **Tapping machine type HG-42E / Servo**

Cutting size:	M8 - M42 in Steel M8 - M48 in Cast iron M8 - M60 in Brass and light metal
Spindle speed:	a) 56 – 355rpm b) 28 – 180rpm c) 112 – 710rpm d) 18 – 112rpm e) by servo motor, stepless after request
Motor power:	4,0 / 6,3KW und 15KW (Servo)
Options:	Two hand activating Foot switch Several outreaches Machine light, LED Multispindle head Leadscrew Lubrication systems Tapping chucks Box base- / pillar- / table design Special frames according to specifications

## Special machine solutions for highly efficient tap production



Round table machine with tapping machine HG-16E or HG-22E, multi-spindle head and special devices, designed for automatic loading and unloading by a handling robot in a manufacturing cell.

## CNC Workpiece end processing Machine type E1S

**Workpieces:**  
**Machining:**  
**CNC control:**

E.g. Pipes or rods of any length  
Drilling, countersinking, chamfering, face  
Spindle motor adjustable via frequency converter feed axis  
controllable via CNC path control based on Siemens S7 with  
screen and H&G machine program  
- no CNC programming knowledge necessary -

**Additional equipment:** E.g. Chip conveyor, internal coolant supply, interface for loading  
systems, automatic loading door and much more



### CNC End Processing Machine type E1S-160CNC

Power spindle motor: 2,2 KW  
Tool holder: HSK-C size 50  
Speed range: of your choice, stepless  
Feed axis: by NC servo motor, stroke 160mm  
Vice: Centering vice type PZ80 / PZ100  
Pneumatic actuation  
Clamping diameter max. 100mm



### CNC End Processing Machine type E1S-150CNC

Power spindle motor: 4,0 KW  
Tool holder: HSK-C size 50  
Speed range: of your choice, stepless  
Feed axis: by NC servo motor, stroke 150mm  
Vice: Centering vice type PZ100 / PZ130  
Pneumatic or hydraulic actuation  
Clamping diameter max. 130mm



### CNC End Processing Machine type E1S-200CNC

Power spindle motor: 7,5 KW  
Tool holder: HSK-C size 63  
Speed range: of your choice, stepless  
Feed axis: by NC servo motor, stroke 200mm  
Vice: Centering vice type PZ130 / PZ250  
Hydraulic actuation  
Clamping diameter max. 250mm

### CNC End Processing Machine type E1S-300CNC

Power spindle motor: 15,0 KW  
Tool holder: HSK-C size 100  
Speed range: of your choice, stepless  
Feed axis: by NC servo motor, stroke 300mm  
Vice: Centering vice type PZ330 / PZ400  
Hydraulic actuation  
Clamping diameter max. 400mm

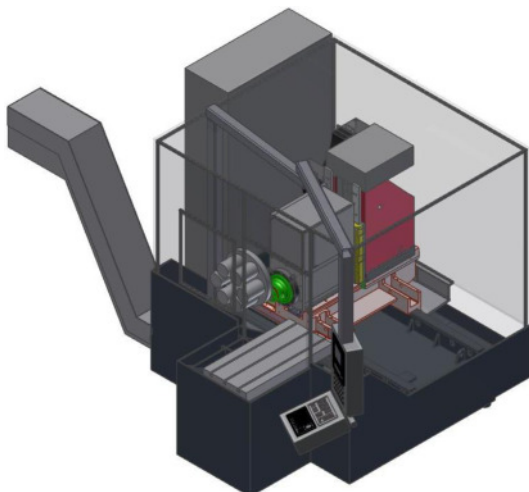
## CNC Flange and end processing Machines

<b>Workpieces:</b>	E.g. pipes, rods or profiles of any length
<b>Machining:</b>	Drilling, countersinking, chamfering, face, thread milling, cutting, contours, radial grooves
<b>CNC control:</b>	Siemens type 840 Dsl
<b>Additional equipment:</b>	E.g. automatic tool change magazines, automatic clamping systems, chip conveyor, internal coolant supply, interface for loading systems, automatic loading door and much more.



### **CNC End Processing Machine type FEB 3-150**

<b>Power spindle motor:</b>	4,1 KW, by option 5,7 KW
<b>Tool holder:</b>	HSK-C / HSK-A size 63
<b>Speed range:</b>	50 - 6.000rpm, stepless
<b>Feed axis:</b>	X/Y/Z by NC servo motor, each axis 150mm
<b>Vice:</b>	2* centric Vice type V2 Manual actuation Clamping diameter 12-100mm



### **CNC Horizontal Milling Center type HFC-4**

<b>Power spindle motor:</b>	20 KW
<b>Tool holder:</b>	HSK-A size 63
<b>Speed range:</b>	50 - 9.000rpm, stepless
<b>Feed axis:</b>	X/Y/Z by NC servo motor, each axis 300mm
<b>Vice:</b>	2* centric Vice type V2 Manual actuation Clamping diameter 12-100mm

## Vertical CNC Machining Center system "Busch"

The CNC machining centers, "Busch" system, are designed for the economical machining of high-precision keyways. Because of their high rigidity, these machines are also used for machining cubic parts and are able to perform milling, drilling and threading operations in a highly efficient manner.



### **CNC (Keyway) Milling Machine type CNC NF1**

CNC control:	Siemens type 840 Dsl
Power spindle motor:	3,6KW
Tool holder:	SK 40 (DIN69871/DIN69872)
Speed range:	40-6.000rpm (9.000 option), stepless
Feed axis, stroke:	X = 700mm (4.000 / 10.000) Y = 150mm Z = 150mm
Tool magazine:	driven by NC servo motor Pick-up, 8 tools
Coolant system:	At about 150 Liter, flow coolant, pump capacity at about 40L/min
Workpiece fixture:	High precision by centric vices "Busch" type V2 + V6, V2hy + V6hy (hydraulic)
Specials:	Special programs for the production of parallel keyways

### **CNC Boring and Milling Machine type CNC FB1**



CNC control:	Siemens Typ 840 Dsl
Power spindle motor:	8,3KW
Tool holder:	SK 40 (DIN69871/DIN69872)
Speed range:	40-4.000 rpm (3.000, 6.000), stepless
Feed axis, stroke:	X = 1.000mm (up to 4.000) Y = 300mm Z = 200mm
Tool magazine:	driven by NC servo motor Pick-up, 8 tools
Clamping surface, table:	Width 300 mm (or 400) Length 1.300 mm (up to 4.300)
Coolant system:	At about .140 Liter, flow coolant, pump capacity at about 40L/min (coolant) 100L/min (chip flushing)
Workpiece fixture:	High precision by centric Vices "Busch" type V2 + V6, V2hy + V6hy (hydraulic)
Specials:	Special programs for the production of parallel keyways V2hy + V6hy

## Special articles for Keyway Milling Machines

### Hagen & Goebel - Keyway Position Checking Device



This measuring device enables precise control of the central position of a parallel keyway and the checking of the parallelism of long grooves to the shaft axis.

**Benefits:**

- Check the parallel keyways directly in the machine.
- Easy determination of the position of the groove.
- Avoiding series of rejects and thus high costs.
- Measuring accuracy +/- 0.01 mm, with calibrated micrometer

**Size 1**

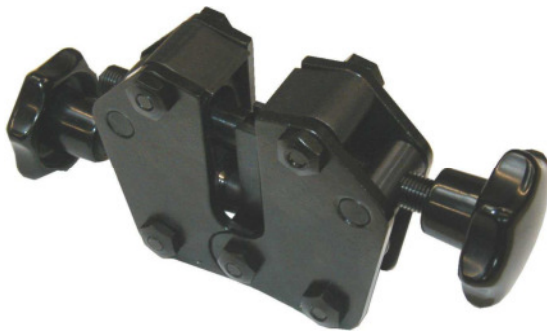
Measuring range: Ø Shaft 12 up to 120 mm  
Groove width 5 to 32 mm

**Size 2**

Measuring range: Ø Shaft 100 up to 260 mm  
Groove width 28 to 63 mm

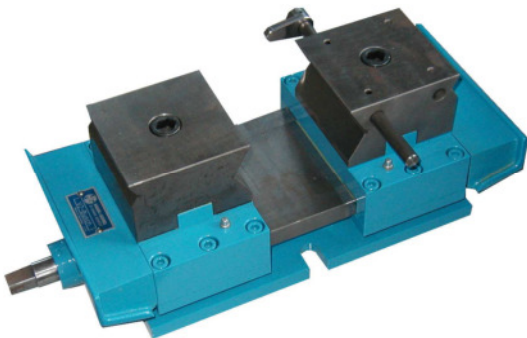
**Size 3**

Measuring range: Ø Shaft 260 up to 400 mm  
Groove width 63 to 90 mm



### Hagen & Goebel - Key Drawer "0" - 35mm

The key drawer is a precision tool. Wedges from "0" to 35mm width are easily pulled out without damaging the wedge or shaft.

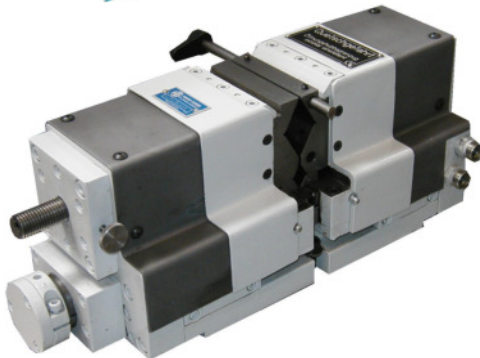


### Hagen & Goebel - High-Precision Vices

Operation: manual / hydraulic  
Clamping range (diameter):  
V2 12-100mm (140)  
V6 20-150mm (200)  
V2Hy 12-100mm  
V6Hy 20-150mm

Jaw width:  
V2 und V2Hy, 100mm  
V6 und V6Hy, 140mm

Centering accuracy: +/- 0,01mm  
Specials: The clamping center can be corrected (adjusted) by +/- 1.5mm





## Special Machines - Vertical Round Table Machines

### Vertical multispindle Tapping Machine with CNC-control (HG-818)



- Workpieces: Regarding customers request  
Structure: Machine frame, massive welded construction  
3 \* CNC-controlled machining unit type GE40  
Nm-CNC, each with a multi-spindle head  
round table with indexing table Ø 900mm  
Workpiece-specific device  
Coolant system / minimum quantity lubrication  
Chip pan, inserted from the front  
Light beam sensor to secure the operator  
Pneumatic and electrical system  
Machine housing according UVV and CE
- Control: Siemens Typ 840 Dsl with three work channels  
Procedure: Place the workpiece loosely in the device  
Start is automatic  
Automatic process, here max. 21 taps in  
different sizes  
Remove workpiece manually
- Cycle time: 4-6 seconds

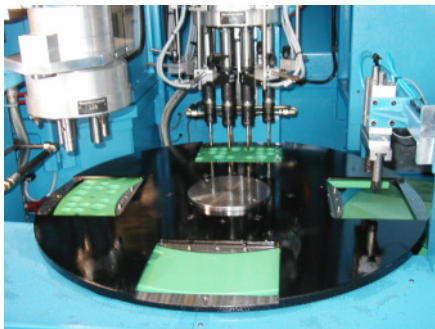
### Multispindle Tapping Machine with In-Process Measuring and Drop Dispenser System (HG-824)



- Workpieces: Metal sheet with flanged holes for tap size M8  
Structure: Machine frame, massive welded construction  
2\* tapping machine HG-22Servo each with  
15 KW and integrated multispindel head  
Round table with indexing table Ø 810mm  
Workpiece-specific device  
Withdrawal device including discharge device  
for faulty workpieces  
Coolant system "drop dispenser"  
Chip pan, inserted from the front  
Light beam sensor to secure the operator  
Pneumatic and electrical system  
Housing according to UVV and CE
- Monitoring: In-Process measuring system "Artis" using  
torque sensors on each spindle
- Control: Siemens type S7  
Procedure: Insert 2 workpieces loosely into the device  
Start is automatic  
Automatic process, 8 taps M8 formed  
Workpiece is removed automatically
- Cycle time: 4-6 seconds

## Special Machines - Vertical Round Table Machines

### High-Performance countersinking and threading Machine with In-Process measurement and 4 stations rotary indexing table and drag plate (HG-839)



- Workpieces: Fine blanking part (exhaust flange) with punched core holes for M8 thread
- Structure: Machine frame, massive welded construction  
 1 \* countersink unit with built-on multi-spindle head for chamfering the core holes  
 1 \* threading machine HG-22Servo with 15 KW and assembled multi-spindle head  
 Round table with drag plate Ø 800mm  
 Workpiece-specific device  
 Failure opening including discharge device for faulty workpieces  
 Coolant system "flow coolant" or "minimum quantities"  
 Light beam sensor to secure the operator  
 Pneumatic and electrical system  
 Machine housing according UVV and CE
- Monitoring: In-Process measuring system "Artis" using torque sensors on each spindle
- Control: Siemens type S7
- Procedure: Insert 2 workpieces loosely into the device  
 Start is automatic  
 Automatic process, 6 taps M8 formed  
 Workpiece is removed automatically
- Cycle time: 6 seconds

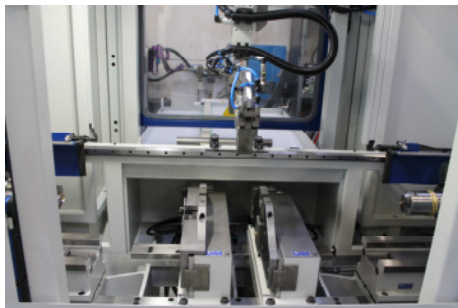
### High-Performance reaming, deburring, grinding Machine with In-Process measurement and 6-station rotary indexing table (HG-840)



- Workpieces: Fine blanking part (gear component) with hardness of 63 HRC
- Structure: Machine frame, massive welded construction  
 1 \* HM - friction unit, two-spindle to create the fitting holes Ø 12 E8  
 1 \* automatic measuring system for measuring the actual bore dimensions  
 1 \* deburring unit for deburring on both sides  
 1 \* grinding unit 2 spindle for polishing defined bevels on the workpiece  
 Automatic unloading including the removal of faulty workpieces  
 Round table 6\*60 degrees with indexing table  
 Workpiece-specific device  
 Coolant system "flow coolant"  
 Light beam sensor to secure the operator  
 Pneumatic and electrical system  
 Housing according to UVV and CE
- Control: Siemens type S7
- Procedure: Place 2 workpieces in the device  
 Start is automatic, automatic process,  
 Automatic removal
- Cycle time: 10-12 seconds

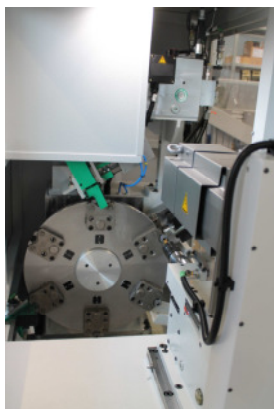
## Special Machines - Horizontal Machining

### **2-sided End Processing Machine including Siemens CNC control type 840 Dsl and automatic loading and unloading System (HG-865)**



- Workpieces: Forgings with Ø max. 45mm, lengths approx. 290 to 700mm
- Machine control: Siemens CNC type 840Dsl
- Substructure: Solid and strongly stiffened
- Feed axes: Driven by NC drive motor, each with 400mm stroke (Z)
- Main spindle: HSK - spindle unit with NC drive motor, power approx. 9.5KW
- Centric vices: Hydraulic, clamping force 25kN with symmetric jaws
- Loading and Unloading: Mounted on a walking beam system, Workpiece grippers and workpiece Storage for 25 workpieces, movable
- Cooling system: High pressure cooling system with internal coolant supply (through spindle nose) and normal coolant supply
- Other equipment: Protective housing and completely enclosed work space  
Chip guidance systems and chip conveyor  
Documentation according to CE

### **High Performance Threading Machine with Automatic Loading and Unloading, CNC-Control and In-Process Measuring System (HG-876)**



- Workpieces: Cold-formed parts with core hole for M12\*1.5 tap forming
- Control: Siemens CNC type 840 Dsl
- Structure: Machine frame, massive welded construction  
6-station rotary table, electromechanically operated, with fixed division 6x 60 °, incl. table with 6 workpiece holders (customer-specific), Pitch circle Ø approx. 500 mm  
High-Performance tapping unit type GE 16-2 with cartridge control and servo drive  
Flow coolant system  
Machine housing according to UVV and CE
- Monitoring: In-Process measuring system "Nordmann" with monitoring of the spindle motor torque
- Loading: Automatically via part-specific loading system
- Unloading: Automatically with removal of error parts
- Process: Workpiece from grid box poured into bunker of the loading system  
Loading system feeds the workpiece to the machine in a position-oriented manner  
Start is automatic  
Automatic thread forming process  
Automatic unloading / discharge
- Cycle time: Depending on the tap depth

## Special Machines - Horizontal Machining

### Horizontal Machining Center type HFC-4 with Swivel Bridge for 4-sided Processing of long Workpieces (HG-853)



- Machine control: Siemens CNC type 840Dsl
- Substructure: Solid and strongly stiffened
- Feed axes: Driven by NC drive motor, stroke 2200/500/500mm (X/Y/Z)
- Main spindle: HSK – built-in spindle with up to 30KW and spindle speed up to 12.000rpm
- Swivel axis: Via NC rotary table type RT15-520 (face plate Ø 520mm) with workpiece clamping bridge and solid counter bearing
- Devices: Workpiece specific devices with two hydraulically operated centering vices V6-Hy and two H&G heavy swing clamps
- Tool magazine: "Pick-Up" - tool magazine with 8 tool places
- Workpiece size: approx. 1.650 \* 600mm
- Other equipment: Protective housing with completely encapsulated work area, automatic loading door above the clamping bridge, chip control systems, chip conveyor and "Profibus" interface

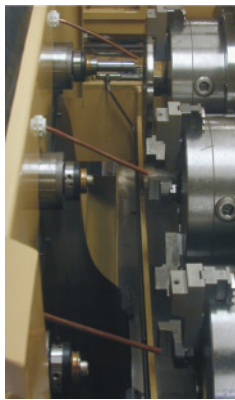
### End Processing Machine for Setting Down and Chamfering with "Guehring" hard metal End Processing Heads (HG-844)



- Workpieces: Special pipes in various diameters and shapes from cooling system construction
- Construction: Machine bed in tubular frame design with solid construction plates for attachments  
1 \* hydraulic drilling unit BF5-H300 with HSK-C size. 80, 7.5 KW and max. stroke 300mm, spindle speed freely adjustable up to 4,000 rpm.  
Customized mounting plate, 1,000 \* 1,000mm with T-slot grid (spacing 70mm),  
Alternatively equipment with manually adjustable clamping device with centering vice V2, minimum quantity coolant system
- Control: Siemens S7 with functional control panel and Frequency regulator, Heidenhain length scale with display and control system of the feed axis
- Other: Protective housing to protect the operating personnel from chips and emissions, made in special version for customer-specific requirements  
Lateral set-up door for easy changing of tools and setting up the machine

## Special Machines - Special Applications

### Multi-Spindle Horizontal Drilling Machine with CNC-Control (HG-815)



- Workpieces: Tempered, round steel discs  
Function: Drill any number of  $\varnothing$  0.7-5.0mm holes using a solid carbide tool  
Structure: Substructure, massive welded construction  
3 \* motor spindles type MS-08 (up to 30,000 rpm) built on CNC-controlled X and Z axes  
al chucks on manually swiveling, hydraulically  
Clampable machine table  
Coolant system / minimum quantity lubrication  
Chip conveyor, inserted laterally  
Pneumatic and electrical system  
Machine housing according to UVV and CE  
Control: Siemens type 840 Dsl  
Procedure: Insert workpieces loosely in the chuck, clamp,  
Swivel machine table into horizontal position  
and lock  
Close the hood and press the start button  
Freely programmable drilling cycles are  
processed automatically  
Swivel the machine table into a vertical  
position  
Remove workpieces

### 2 Stations Drilling and Threading Machine for Frontal Drilling and Tapping (HG-831)



- Workpieces: Aluminum profiles 40 \* 40 (30 \* 40) \* 500mm  
Function: Create core hole and thread on the face  
Construction: Machine bed in tubular frame design with solid  
construction plates for components  
Customer-specific workpiece holders with  
length stop in the vice  
1 hydropneumatic drilling unit BF3-H75, SK30  
holder, 1.5KW and max. Stroke 80mm  
1 tapping unit G10 / 50, thread stroke 50mm  
with pneumatic rapid traverse slide, 80mm  
2 pneumatic vices SO-80 with max. clamping  
force of 2200N each at 7bar  
Minimum quantity lubrication system with  
2 nozzles  
Control: Siemens S7 with functional control panel and  
one cycle start button for each station  
Other: Encapsulation of the machine to protect the  
operating personnel from chips and emissions  
Additional door in the front area, secured by  
switches, for the safe loading and unloading of  
short workpieces  
Chip pan below the machine, very accessible  
lateral set-up door for easy changing of tools  
and setting up the machine

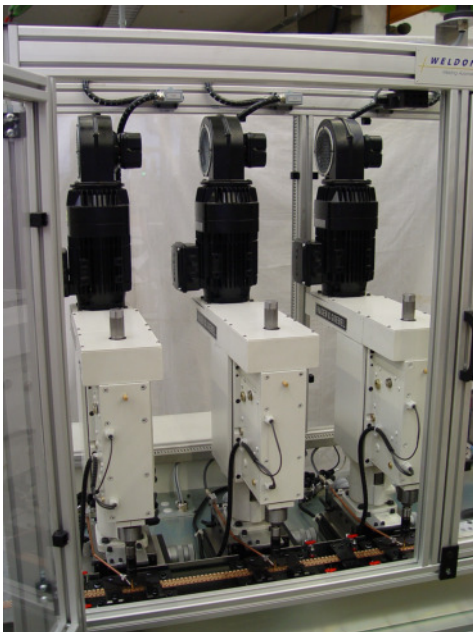
## Special Machines - Special Applications

### High-Performance Automatic Tapping Machine with Cycle Belt (HG-711)



Workpiece: Stamped part, lock carrier (automotive industry)  
Machine type: HG-22 servo in special design  
Construction: Tapping machine HG-22Servo with three-phase servo drive 15KW, 12-spindle cardan shaft drilling head with quick-change chucks and inserts, automatic cycle with 24 carrier plates (2 plates per plate for right and left execution) 6 cycle positions for manual loading on the right and left, automatic ejection of the workpieces into separate containers  
Complete protective cover  
Machining: 12 \* M6 thread forms, 4 workpieces per cycle  
Output: 4.100 pieces per hour

### Special Machine with 3 High-Performance Tapping Units GE-6/7 each built on a own Column (HG-822)



Workpiece: Stamped electrical contact parts (strip material)  
Area of application: High-speed thread forming  
Performance: Depending on the drive power and thread size up to 140 cycles per min.  
Output: In this application with 3 \* formed threads M4 in brass, 90 cycles per minute

## CNC Surface Grinding Machine type HS1 - 4000

- Workpieces:** - slim workpieces with maximum dimensions 400 x 4.000mm
- Advantages:** - the table surface can be loaded from the front and is easily accessible  
- fixed clamping table and a moving processing station  
- overall length of the machine kept very small despite the large X stroke  
- the X stroke can be divided into 2 work areas (shuttle operation)  
- short workpieces can be clamped and unclamped during machining
- Features:** - solid and highly stiffened machine bed  
- machining axes containing high-precision roller guides  
- high-precision, large-sized bearing of the grinding spindle  
- machining axes (Y / Z) executed with direct measuring system
- CNC control:** - Siemens type 840 Dsl
- other equipment:** - automatic adjustment device for grinding wheel including target dimension transfer in the control of the Y-axis



Dimensions grinding wheel:	Diameter 500mm Width 100mm
Table clamping surface:	400 x 4.000mm
Motor power spindle motor:	30KW (at 100% running time)
Speed range:	Infinitely approx. 30-3,000rpm
Stroke feed axes:	X / Y / Z by NC servo motor, 5.000 / 400 / 400mm
Speed X, Y, Z (max.):	24m/min
Coolant system:	Capacity 1.000liter Pump delivery rate 100l/min
Weight (approx.):	18.000KG
Dimensions (approx.):	8.100 x 3.400 x 2.650mm (L x W x H)





# HAGEN & GOEBEL

## Quality

## Made in Germany

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01.2023

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