



Factory of Tooling and Chucks



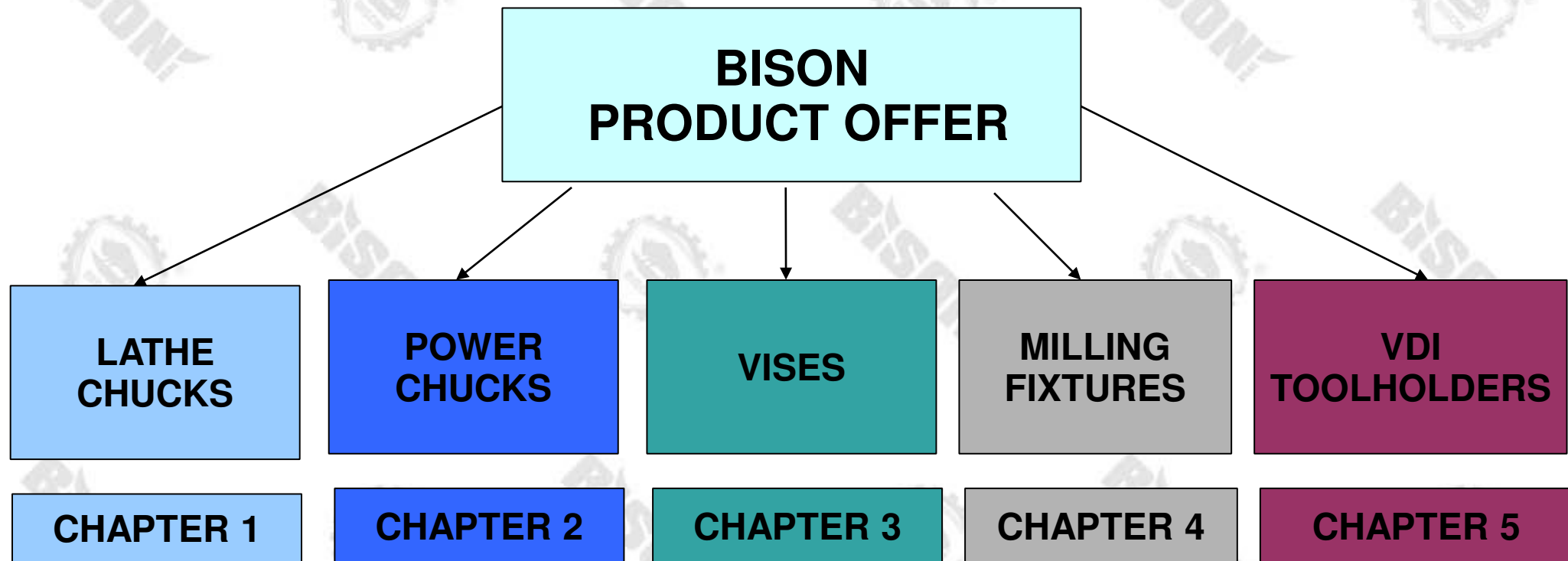
DISCOVER THE NEW BISON

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BISON ORIGINALS EMPOWERED BY PRECISION







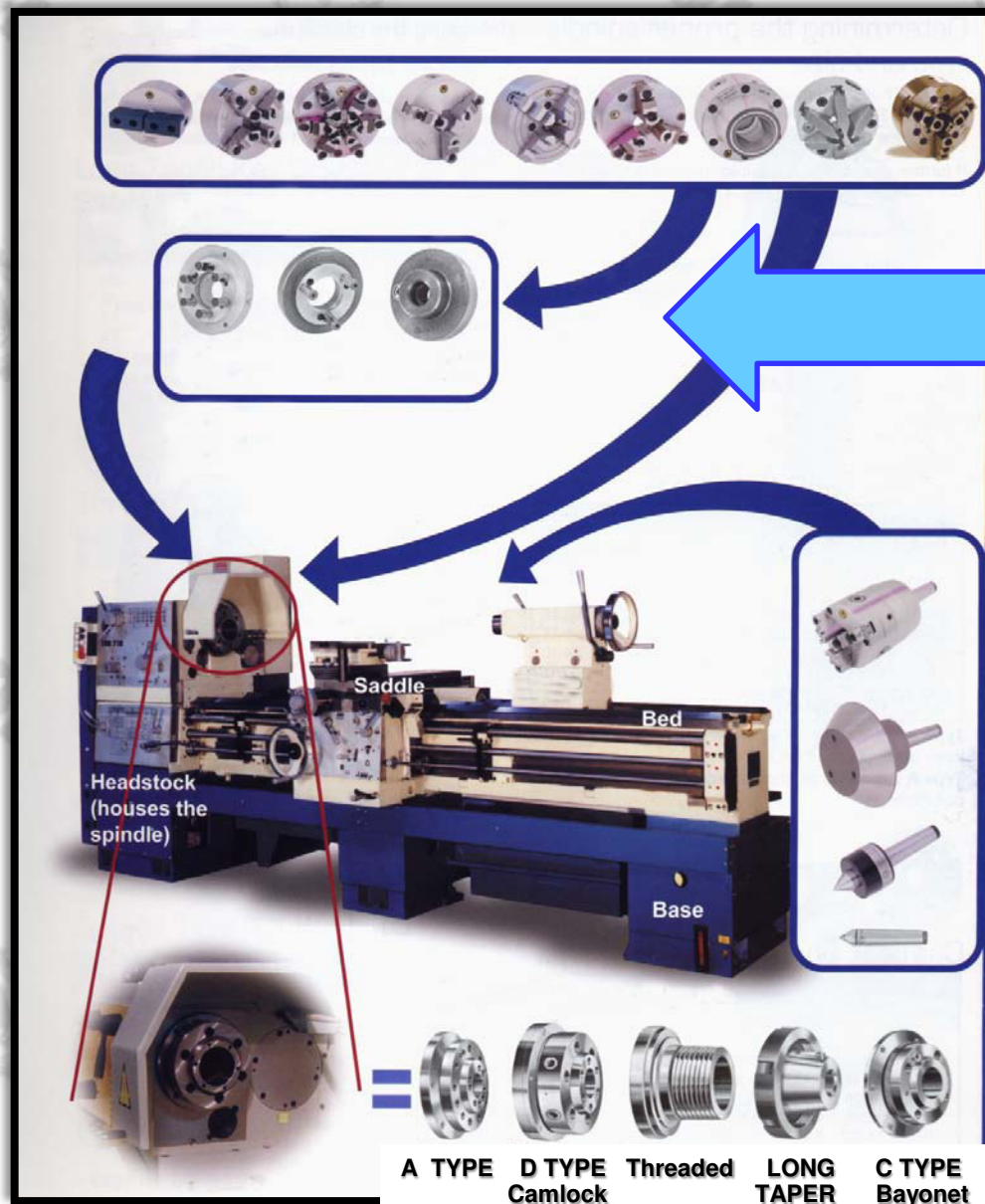
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# LATHE CHUCKS

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# LATHE MACHINE (conventional)



LATHE CHUCKS (Manual)

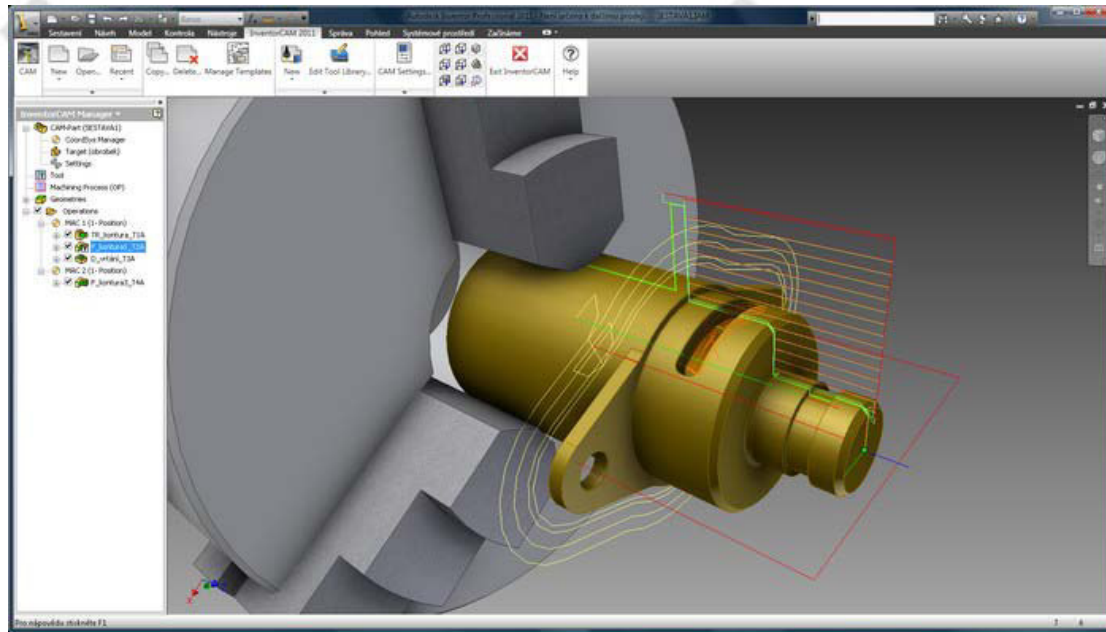
ADAPTORS

TAILSTOCK ACCESSORIES

SPINDLE NOSES

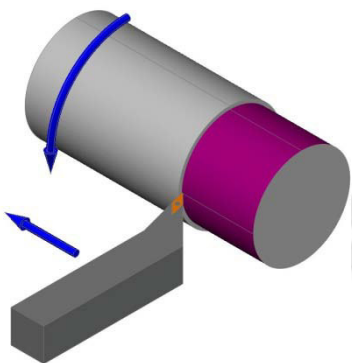
A TYPE D TYPE Threaded LONG TAPER C TYPE Bayonet  
Camlock



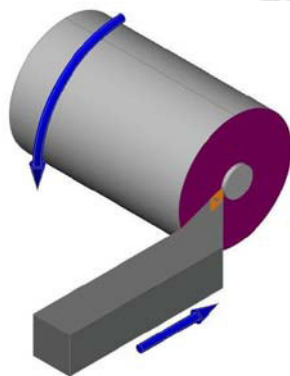


Lathe chuck  
is intended  
for holding part  
(workpiece)  
during machining

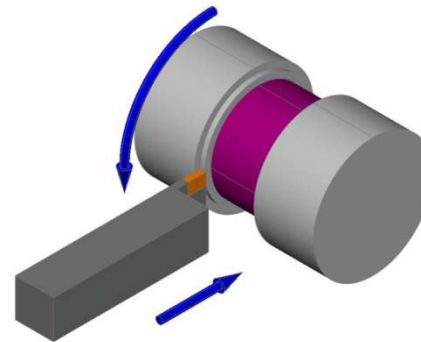
## TURNING OPERATIONS



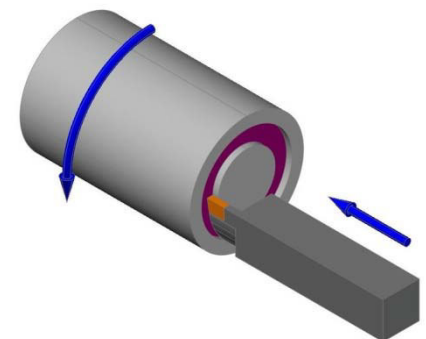
**External  
turning**



**Facing**



**Grooving**



**Face  
grooving**

# REAL APPLICATIONS







**Machining**



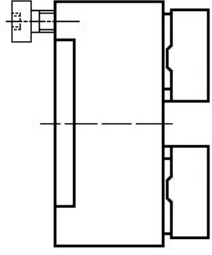
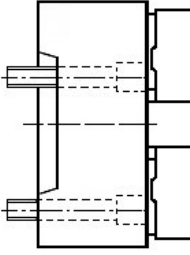
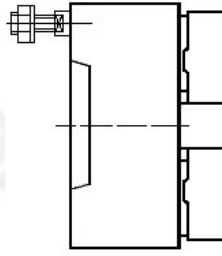
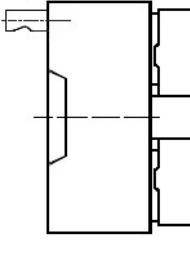
**AFTER**

# Lathe Chucks – Available Types - most common

<b>Self-centering scroll chucks</b>	
<b>Independent chucks</b>	
<b>Combination chucks (Wescott)</b>	
<b>Others</b>	







# Lathe chucks – Available Mount Types

Plain Back (Flat Back, Cylindrical Mount)	DIN 6350	
Type A	DIN 55026 A1 A2	
Type C	DIN 55027 (Bayonet)	
Type D	DIN 55029 (Camlock)	

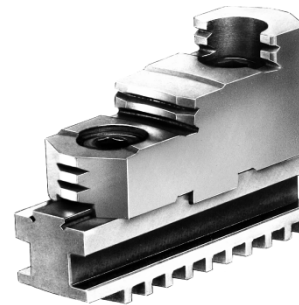
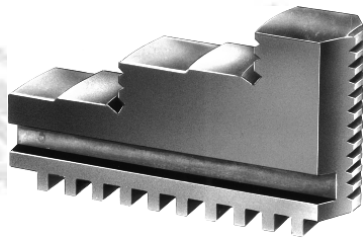


# Lathe Chucks – Available Types

Criteria:	
Material of chuck body	<ul style="list-style-type: none"> <li>• Cast iron</li> <li>• Steel (forged or cast)</li> </ul>
Number of jaws	<ul style="list-style-type: none"> <li>• 2 – jaw </li> <li>• 3 – jaw </li> <li>• 4 – jaw </li> <li>• 6 – jaw </li> </ul>
Centering accuracy	<ul style="list-style-type: none"> <li>• Standard</li> <li>• Precision</li> </ul>

# Lathe Chucks – Available Types

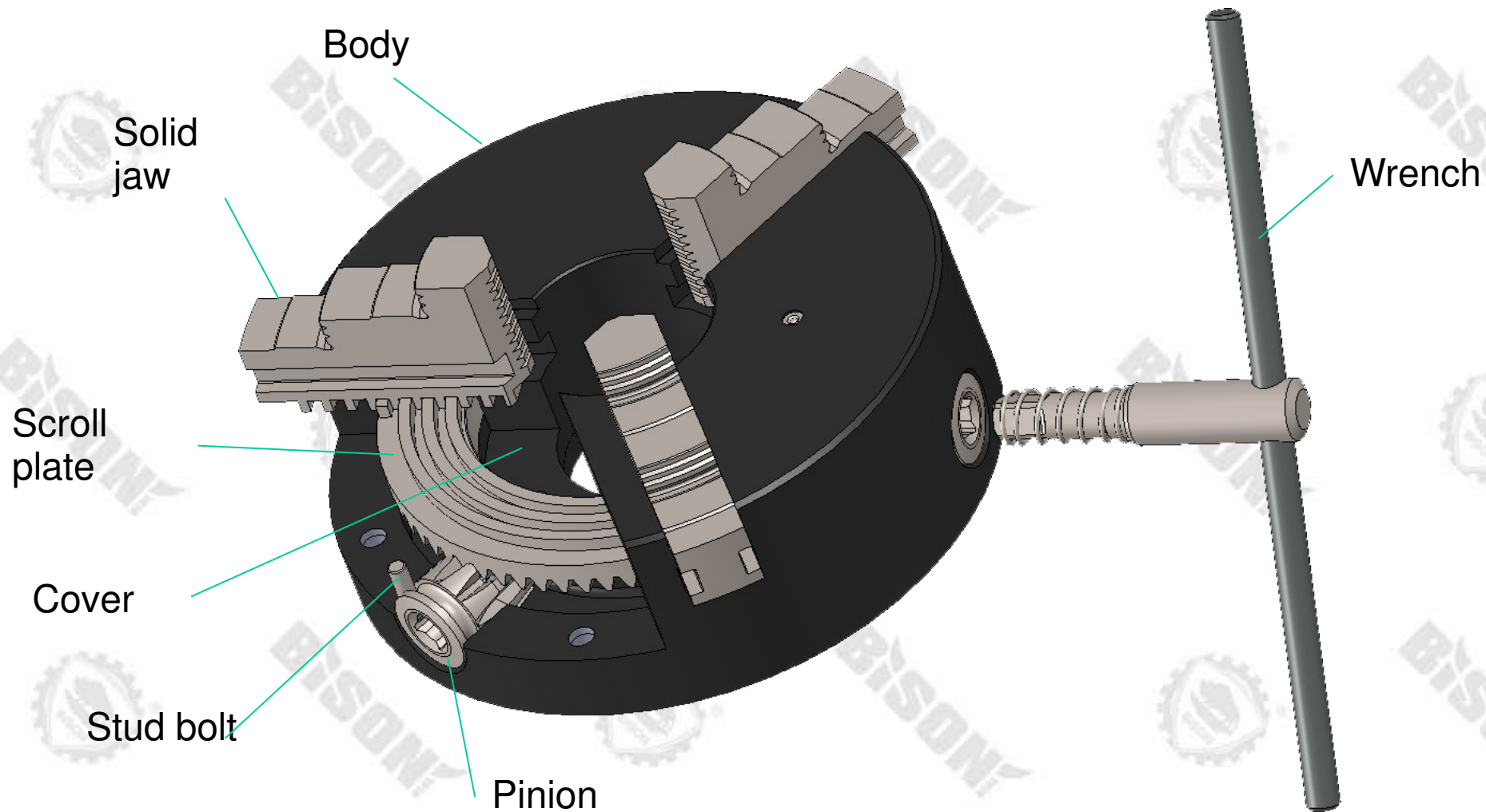
**SOLID JAWS**



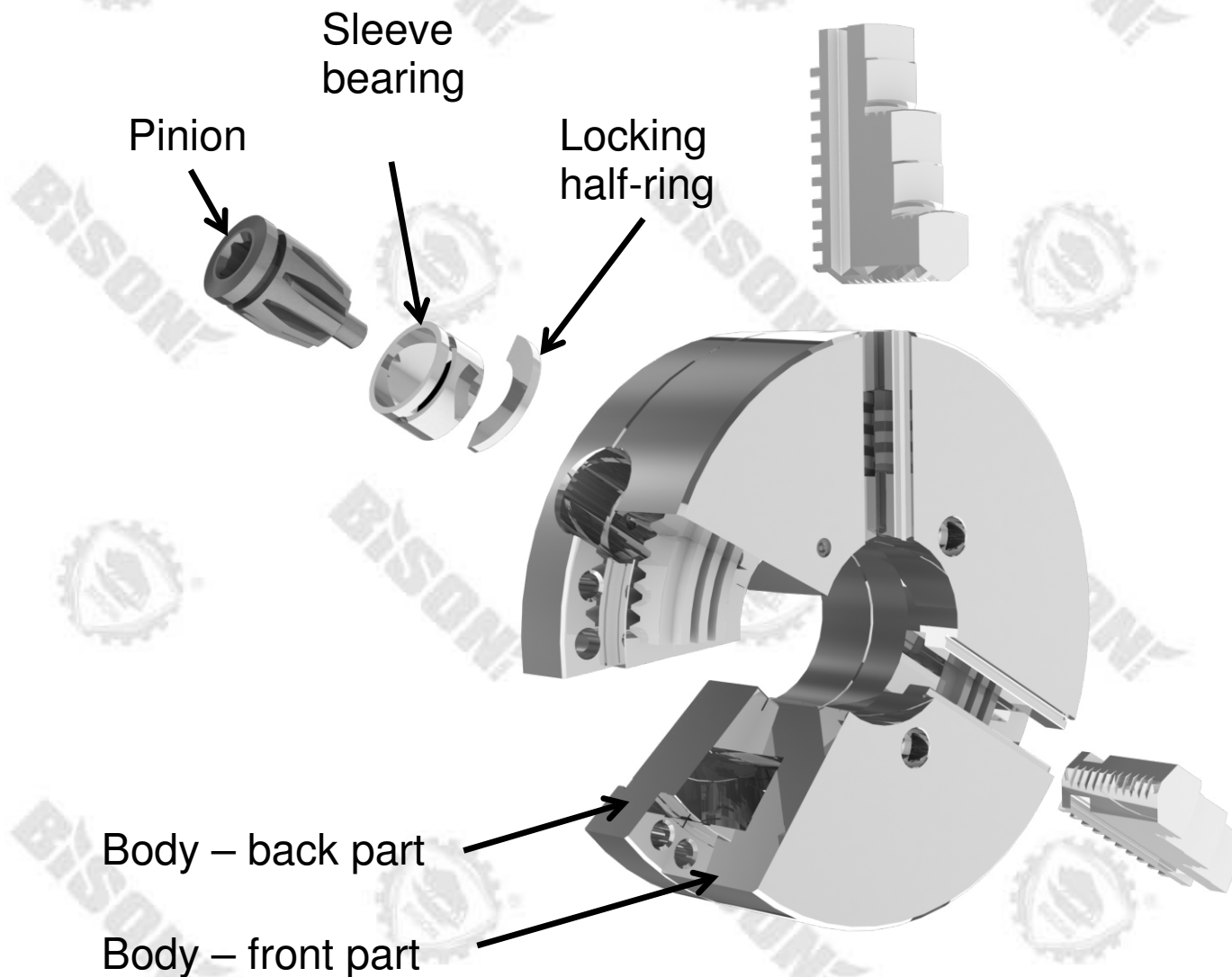
**2-PIECE JAWS  
REVERSIBLE**



# Self-centering chuck (cast iron body)

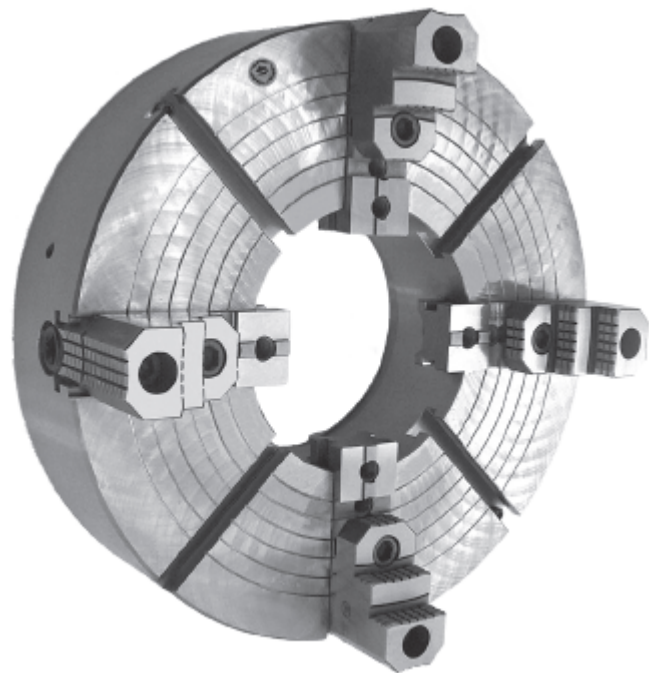
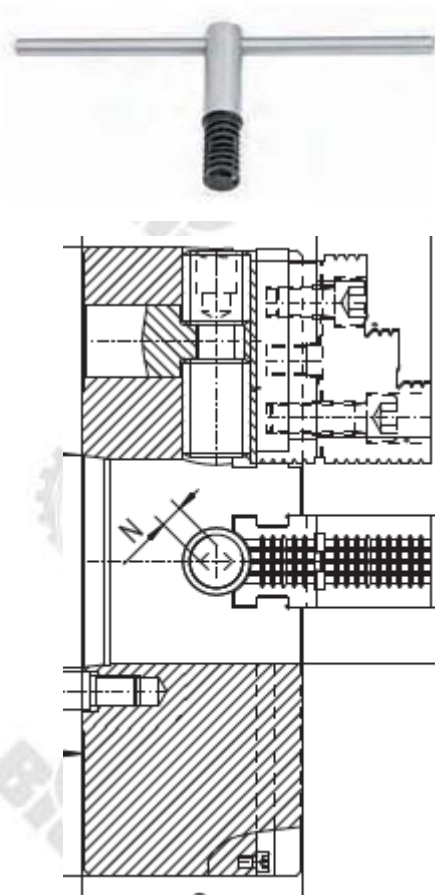


# Self-centering chuck (steel body)

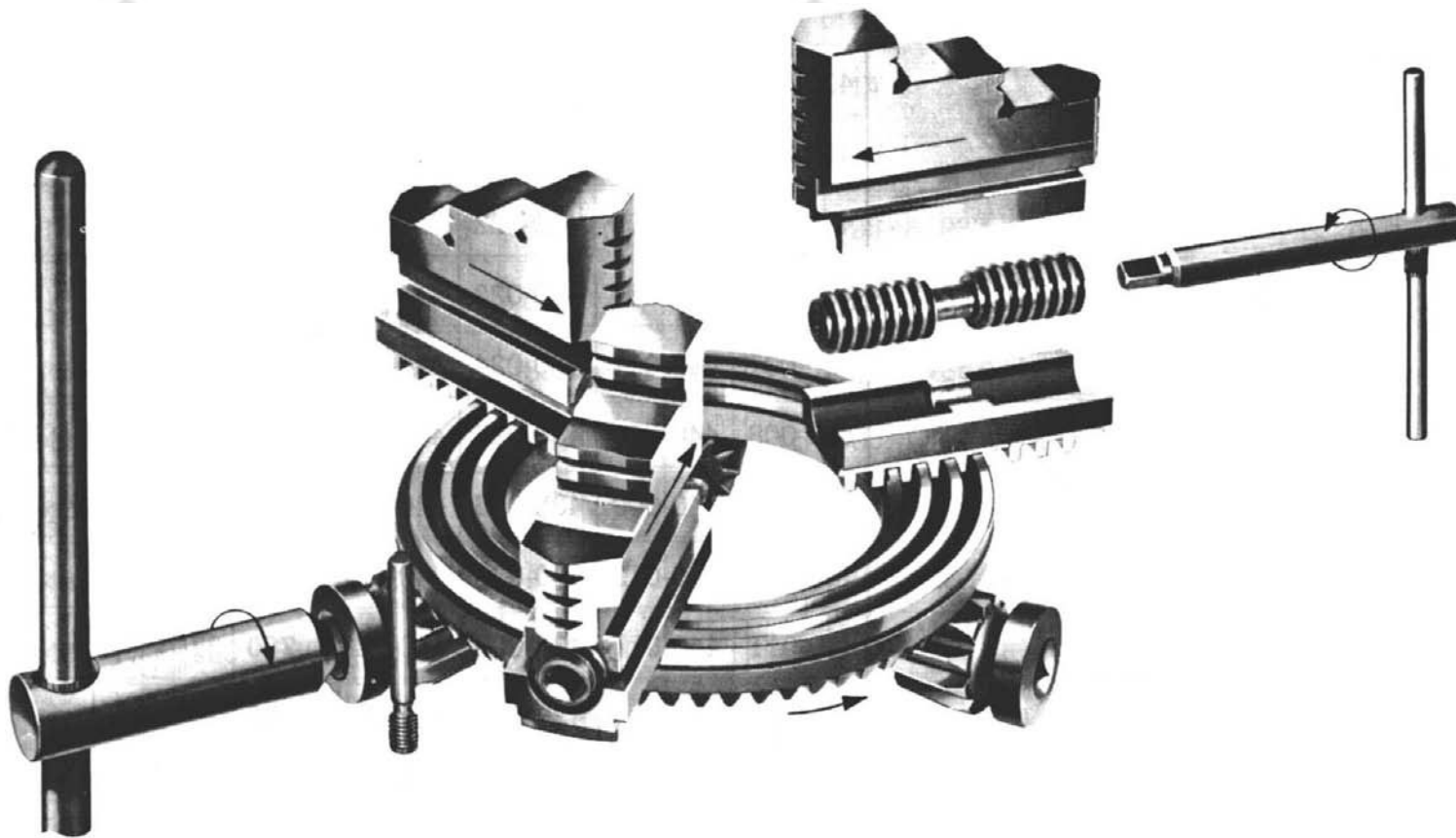




# Independent chuck

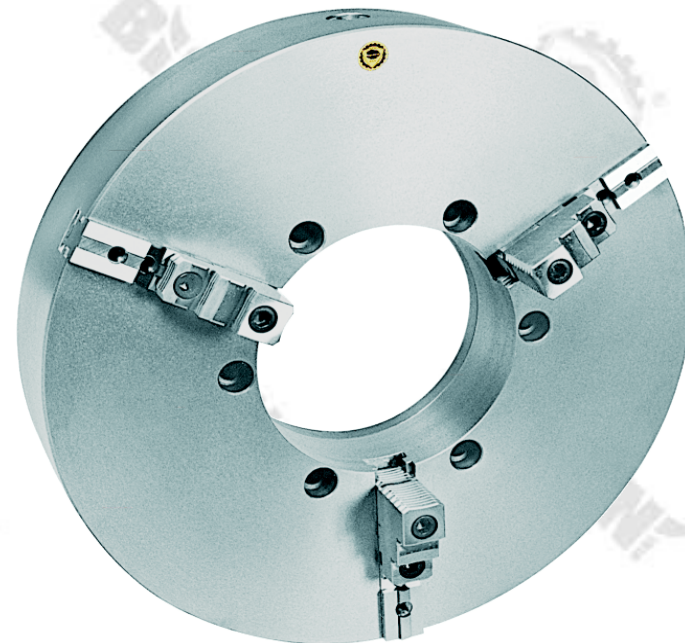


# Combination chuck self-centering and independent jaw adjustment



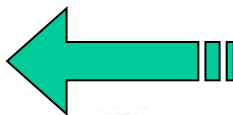
## „BISON” SELF-CENTERING SCROLL CHUCKS

**CHUCK SIZES:**  
49 – 1000 [ mm ]



## „BISON” INDEPENDENT CHUCKS

**CHUCK SIZES:**  
85 – 1250 [ mm ]



# MATERIALS

## ***MANUAL CHUCK BODY:***

### **1) Cast iron – Grey**

Polish Standard	– ZL 250
European Standard	– EN-GJL-250
DIN Standard	– GG25

### **2) Steel (forged) – structural steel, carbon**

Polish Standard	– 45 or 55
European Standard	– C45 or C55
DIN Standard	– 1.0503 or 1.0535

### **3) Cast steel**

Polish Standard	– LII500
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*Classification differs in each country*



# MATERIALS

## **HARD JAWS:**

***Carburizing steel, alloy steel, manganium-chromium-titanium***

Polish Standard – 18HGT

Not classified in European and DIN standards

## ***PINIONS, SCROLL PLATES:***

***Carburizing steel, alloy steel, manganium-chromium***

Polish Standard – 16HG

European Standard – 16MnCr5

DIN Standard – 16MnCr5

***SOFT JAWS:*** structural carbon steel, – 45 (same as for manual chuck bodies)

**POWER CHUCK BODY:** 18HGT

## LATHE CHUCKS ENGINEERING DATA

CHUCK SIZE

CENTERING  
ACCURACY

SPINDLE NOSE  
ACCURACY

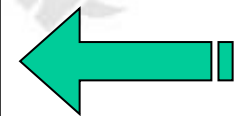
GRIPPING  
RANGES

TOTAL GRIPPING  
FORCE

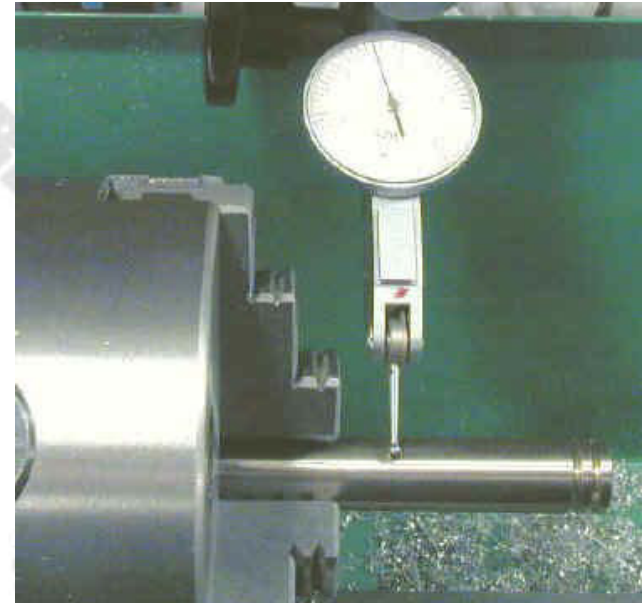
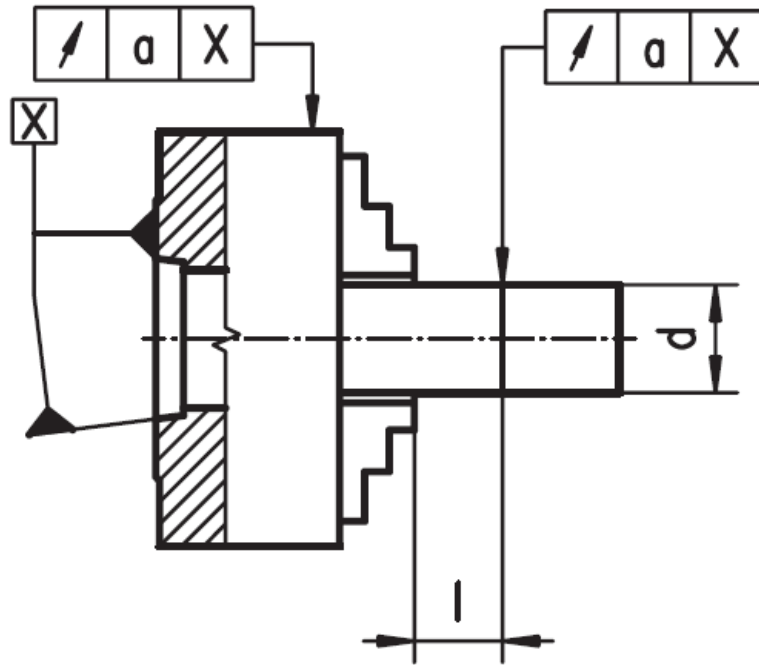
**SHOULD NOT  
EXCEED  
0.005 MM**

MAXIMUM  
PERMISSIBLE  
SPEEDS

VALUE OF  
BALANCING  
FOR CHUCKS



# CENTERING ACCURACY



## BISON SCROLL CHUCKS

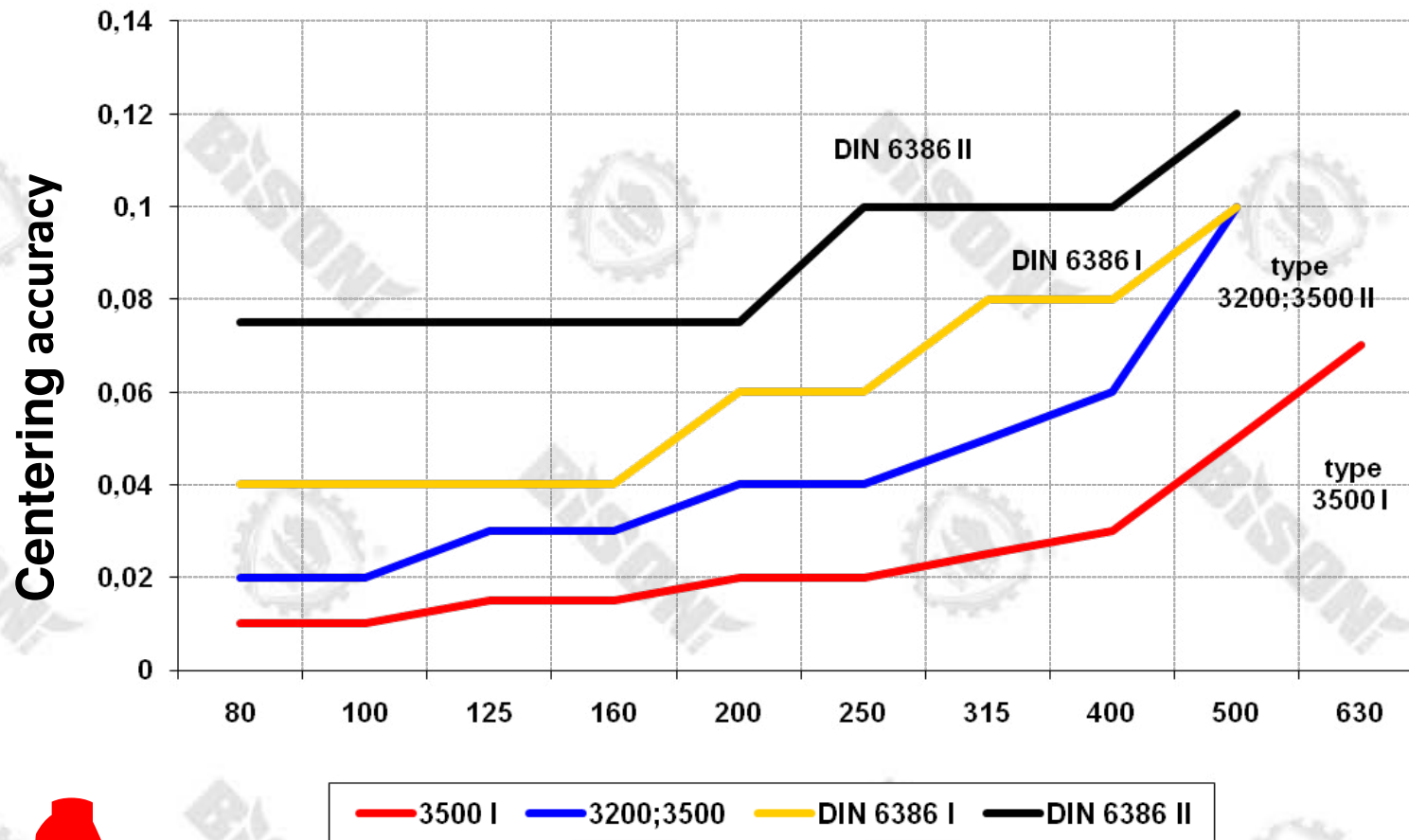
**STEEL BODY CHUCKS**  
available with

- STANDARD ACCURACY (old 3500-II) (new 3500)
- PRECISION ACCURACY (3500-I)

**CAST IRON BODY CHUCKS**  
available only with

- STANDARD ACCURACY

## Centering accuracy of standard and precision chucks according to DIN standards.



Both our standard and precision line fall below the required DIN standards.



## LATHE CHUCKS

### CENTERING ACCURACY [ mm ]

#### CHUCK SIZE:

1. 80 mm
2. 100 mm
3. 125 mm
4. 160 mm
5. 200 mm
6. 250 mm
7. 315 mm
8. 400 mm
9. 500 mm

#### CENTERING ACCURACY:

1. 0,020 mm
2. 0,020 mm
3. 0,030 mm
4. 0,030 mm
5. 0,040 mm
6. 0,040 mm
7. 0,050 mm
8. 0,050 mm
9. 0,100 mm

#### CENTERING ACCURACY:

1. 0,010 mm
2. 0,010 mm
3. 0,015 mm
4. 0,015 mm
5. 0,020 mm
6. 0,020 mm
7. 0,025 mm
8. 0,025 mm
9. 0,070 mm

#### CENTERING ACCURACY:

1. 0,075 mm
2. 0,075 mm
3. 0,075 mm
4. 0,075 mm
5. 0,075 mm
6. 0,100 mm
7. 0,100 mm
8. 0,100 mm
9. 0,120 mm

#### CENTERING ACCURACY:

1. 0,040 mm
2. 0,040 mm
3. 0,040 mm
4. 0,040 mm
5. 0,060 mm
6. 0,060 mm
7. 0,080 mm
8. 0,080 mm
9. 0,100 mm

**BISON  
STANDARD  
CHUCKS**

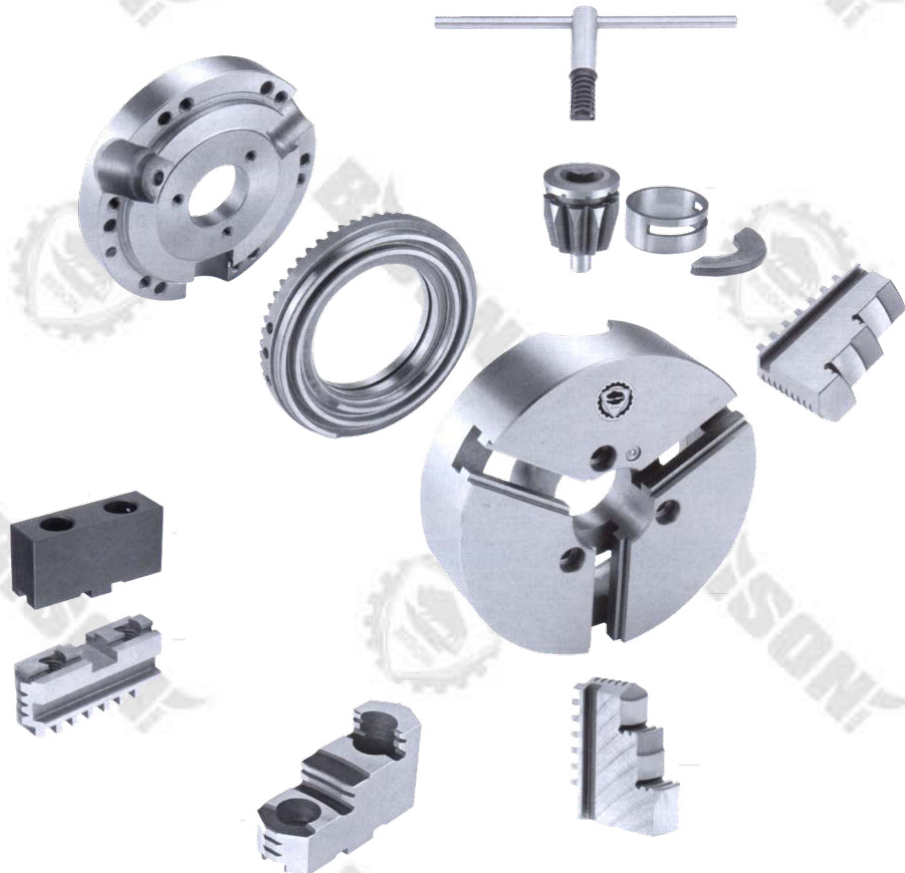
**BISON  
PRECISION  
CHUCKS**

**DIN 6386  
STANDARD  
CHUCKS**

**DIN 6386  
PRECISION  
CHUCKS**

## 3 JAW SCROLL CHUCKS

### STEEL BODY



**STEEL BODY CHUCKS AVAILABLE IN**

- STANDARD EXECUTION**
- PRECISION EXECUTION**

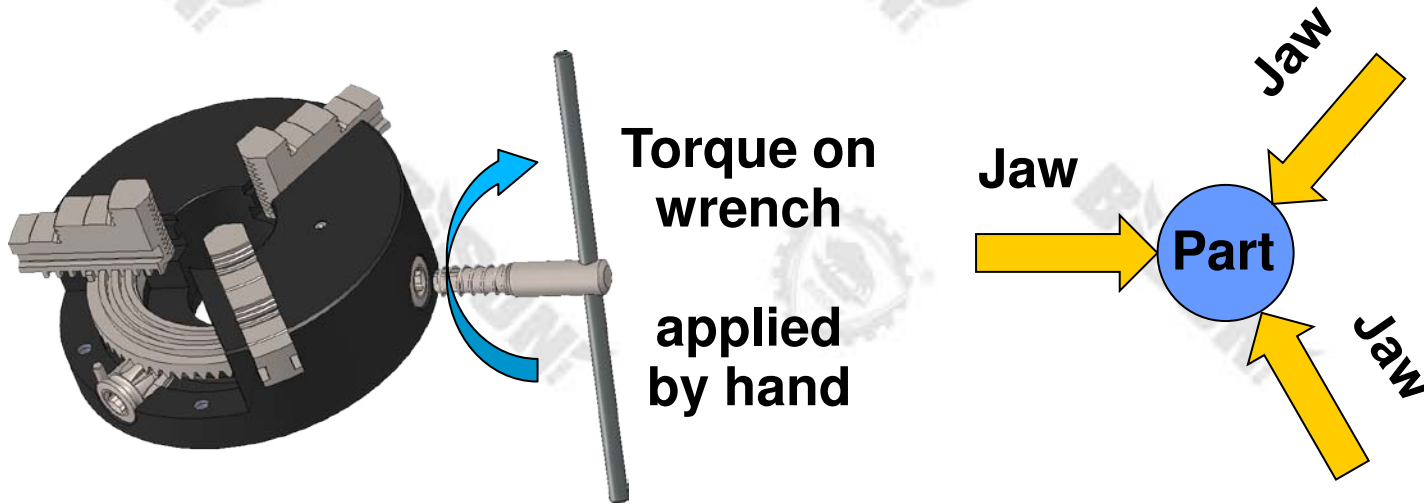
### CAST IRON BODY



**CAST IRON BODY CHUCKS**

- AVAILABLE ONLY IN**
- STANDARD EXECUTION**

## TOTAL GRIPPING FORCE



TOTAL GRIPPING FORCE FOR CHUCKS TYPE 3100, 3200, 3500, 3600, 3700, 3800

Chuck size	80	100	125	160	200	250	315	400	500	630	800	915	1000
Torque on wrench [Nm]	35	50	75	120	160	180	200	280	360	460	500	500	500
Total gripping force [daN]	1000	1700	2400	3100 2400*	3700 2900*	4600 3600*	5500 4400*	6500 4900*	7200	8000	9000	9000	9000
* for 3100													

The **HIGHER** centering accuracy – the **SMALLER** gripping force.



# BISON Coding Template

Chuck Type: x x x x – Size

For example: 3 5 0 4 – 250

First digit indicates type of chuck

**3 – Scroll chucks:**

**3204; 3504; 3214 ....**

**4 – Independent and Combination chucks:**

**4304; 4505; 4605 ....**



For example: **3** **5** **0** **4** – 250

Second digit: number of jaws and material of body:

In scroll chucks

**3****2**04 – 3 jaw /cast iron body

**3****5**04 – 3 jaw /steel body

**3****6**04 – 4 jaw /cast iron body

**3****7**04 – 4 jaw /steel body

**3****9**11 – Collet chucks

In independent and Combination chucks

**4****3**04 – Independent

**4****5**05 – 3 jaw /cast iron body

**4****6**05 – 4 jaw /cast iron body

**4****7**05 – 3 jaw /steel body

**4****8**05 – 4 jaw /steel body

For example: **3** **5** **0** **4** – 250

Third digit indicates type of mounting:

- 3204** – Plain back mount - DIN 6350
- 3274** – Plain back - Front mounting - DIN 6350
- 3214** – Type A mount - DIN 55026
- 3234** – Type C mount - DIN 55027 (BAYONET)
- 3244** – Type D mount - DIN 55029 (CAMLOCK)
- 3254** – Type L mount – LONG TAPER (L0, L00, L1, L2)
- 3264** – Fine adjustment mount (super precision)
- 3284** – Threaded mount – DIN 800

For example: **3 5 0 4 – 250**

Fourth digit indicates:

- a) type of jaws – in scroll chucks
- b) type of jaws and material of chuck body in independent chucks

**Scroll chucks**

**3244 – Solid jaws**

**3245 – 2-pcs jaws**

**Independent chucks**

**4342 – Solid jaws / cast steel body**

**4343 – 2-pcs jaws/ cast steel body**

**4344 – Solid jaws / cast iron body**

**4345 – 2-pcs jaws/ cast iron body**

## 3 jaw scroll lathe chuck, cast iron body, plain back



Type 3204  
Solid jaws

Standard accessories:

- ☐ Outside solid jaws
- ☐ Inside solid jaws
- ☐ Wrench
- ☐ Mounting screws

Type 3205  
2-pcs jaws

Standard accessories:

- ☐ Hard top jaws
- ☐ Master jaws



Front  
Mounting  
Type 3274  
(solid jaws)

Type 3275  
(2-pcs jaws)



## 3 jaw scroll lathe chuck, steel body, plain back

Type 3504

Solid jaws, accuracy - **Standard**



Standard accessories:

- ☐ Outside solid jaws
- ☐ Inside solid jaws
- ☐ Wrench
- ☐ Mounting screws

Type 3504-I

Solid jaws, accuracy - **Precision**

## 3 jaw scroll lathe chuck, steel body, plain back

Type 3505

2-pcs jaws, accuracy - **Standard**



Standard accessories:

- ☐ Master jaws
- ☐ Hard top jaws
- ☐ Wrench
- ☐ Mounting screws

Type 3505-I

2-pcs jaws, accuracy - **Precision**

## 4 jaw scroll lathe chuck, cast iron body, plain back



**TYPE 3604**  
Solid jaws

Standard accessories:

- ☐ Outside solid jaws
- ☐ Inside solid jaws
- ☐ Wrench
- ☐ Mounting screws

Standard accessories:

- ☐ Hard top jaws
- ☐ Master jaws

**TYPE 3605**  
2-pcs jaws



## 4 jaw scroll lathe chuck, steel body, plain back

TYPE 3704  
Solid jaws



Standard accessories:

- ☐ Outside solid jaws
- ☐ Inside solid jaws
- ☐ Wrench
- ☐ Mounting screws

TYPE 3705  
2-pcs jaws





## 6 jaw scroll lathe chuck, plain back, cast iron

**TYPE 3804**  
Solid jaws



**TYPE 3805**  
2-pcs jaws



**Clamping thin-walled parts or tubes**

## 6 jaw scroll lathe chuck, plain back, steel body

**TYPE 3806**  
Solid jaws



**TYPE 3807**  
2-pcs jaws



# 2 jaw scroll cast iron body lathe chuck



Type 3105  
Plain Back Mount

- ☐ Clamping square or rectangular parts
- ☐ Clamping irregular shaped components

Standard accessories:

- ☐ 2-pcs soft jaws
- ☐ Wrench
- ☐ Mounting screws

## Self-centering and independent jaw travel chucks Combination chucks (Wescott)



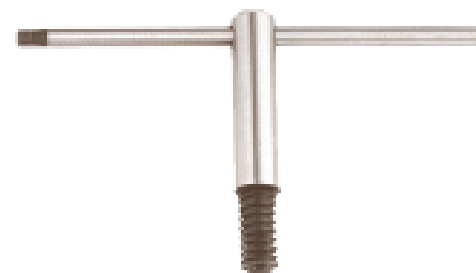
Body	3 jaw	4 jaw
Cast iron	4505	4605
Steel	4705	4805

Standard accessories :

- ☐ Hard solid jaws
- ☐ Wrench (2 square ends)
- ☐ Mounting screws

Available sizes: 200 – 630mm

For 4605 type – also 125 and 160mm





## Applications of combination chucks



After setting the first part with independent jaw travel option:

- ☐ **Clamping next parts is performed with self-centering option maintaining pre-set positions of each jaw**

## Self-centering wedge bar chuck - RHU



**Available sizes:**  
 $\varnothing 125 \div \varnothing 315$

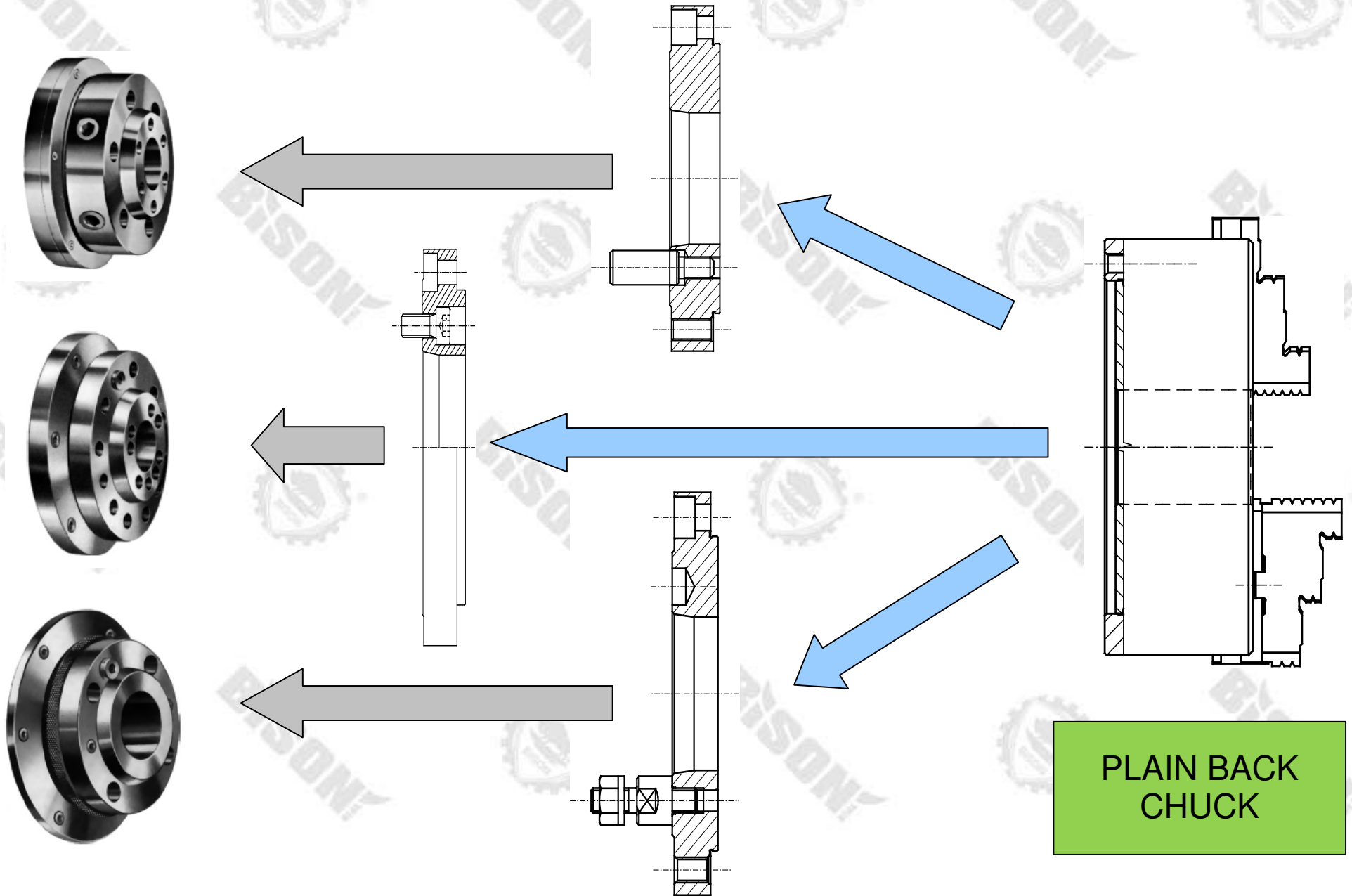
**Standard accessories:**

- ☐ Hard solid jaws
- ☐ Wrench
- ☐ Mounting screws

- **Steel body**
- **Self-centering clamping**
- **Jaw locking system**
- **Maintained accuracy and repeatability**
- **Superb gripping force**



## Adaptors - Backplates



# Adapter plates for DIN 55026 – Spindle nose Type A



**Available sizes:**  
 $\text{Ø}100 \div \text{Ø} 630$

**Available tapers:**  
**A3 up to A15**

## **BISON Type 8210**

Fully machined – on spindle and chuck ends  
(1 mm of excess material on chuck end)

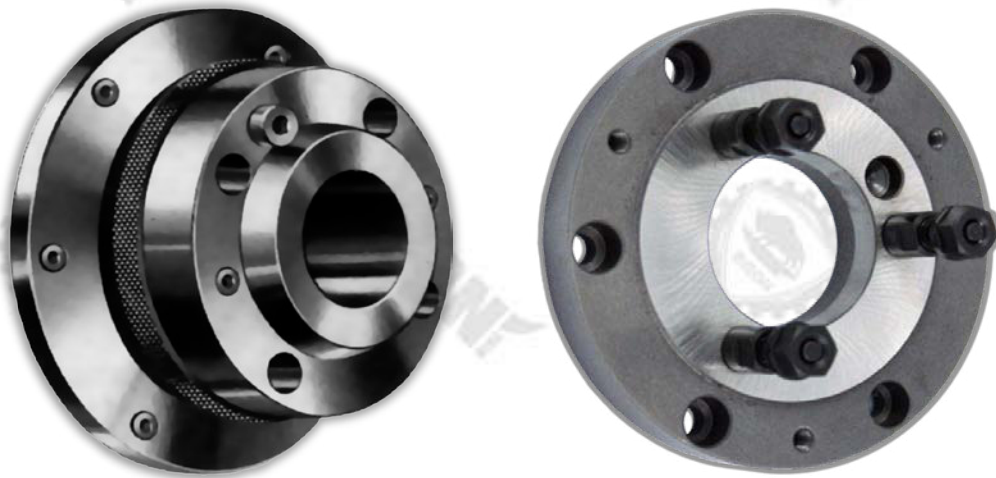
## **BISON Type 8210-X**

Fully finished – on spindle and chuck ends  
(no excess material on chuck end)

Additional set of threaded holes for front mounting chucks



# Adapter plates for DIN 55027 – Spindle nose Type C



**Available sizes:**  
**Ø100 ÷ Ø 630**

**Available tapers:**  
**C3 up to C15**

## **BISON Type 8230**

Fully machined – on spindle and chuck ends  
(1 mm of excess material on chuck end)

## **BISON Type 8230-X**

Fully finished – on spindle and chuck ends  
(no excess material on chuck end)

Additional set of threaded holes for front mounting chucks

# Adapter plates for DIN 55029 – Spindle nose Type D



**Available sizes:**

**$\varnothing 100 \div \varnothing 630$**

**Available tapers:**

**D3 up to D15**

## **BISON Type 8240**

Fully machined – on spindle and chuck ends  
(1 mm of excess material on chuck end)

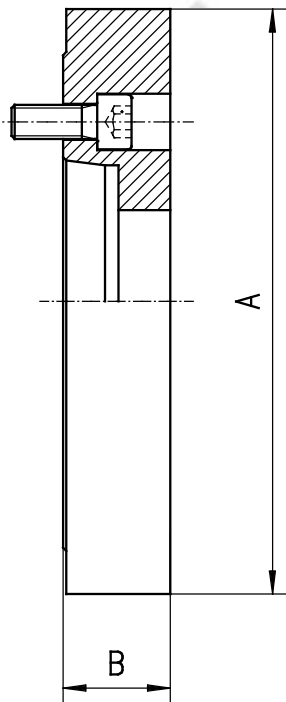
## **BISON Type 8240-X**

Fully finished – on spindle and chuck ends  
(no excess material on chuck end)

Additional set of threaded holes for front mounting chucks

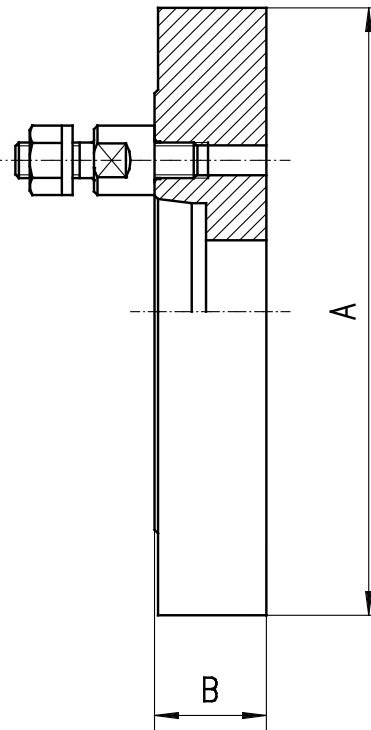
# SEMI-FINISHED Adapter plates

**TYPE 8212**



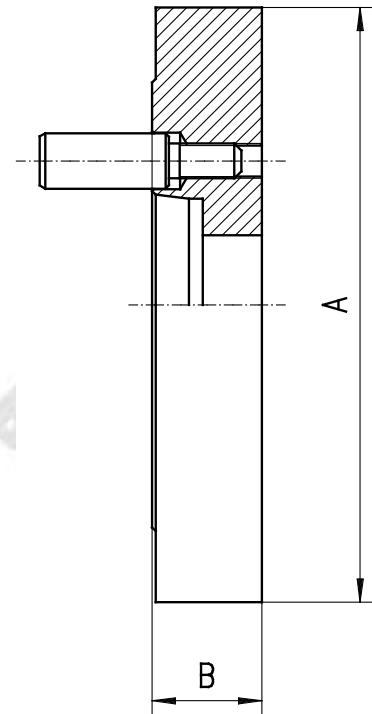
DIN 55026

**TYPE 8232**



DIN 55027

**TYPE 8242**



DIN 55029

**Semi-finished adaptors may be offered for  
independent 4-jaw chucks**

## 3 JAW self-centering scroll chucks with fine adjustment steel body – SET-TRU



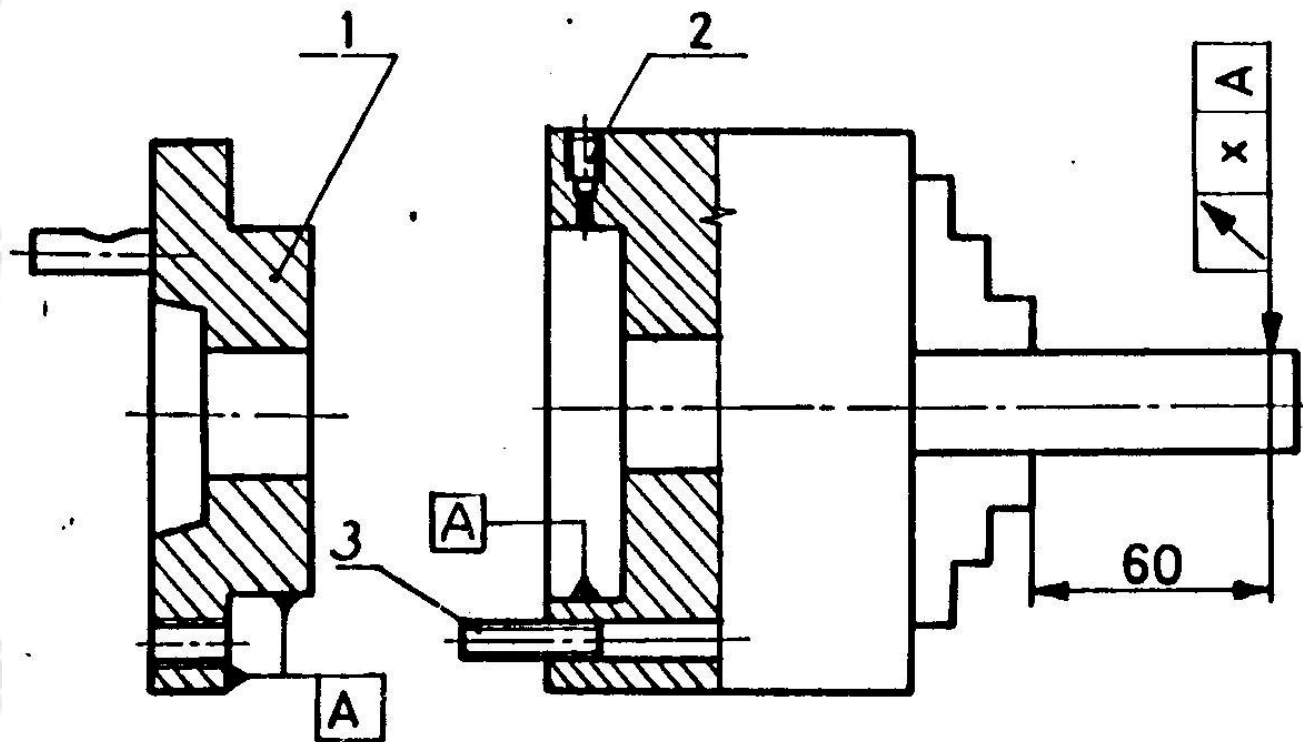
Chuck type	
3564	Solid jaws
3565	2-piece jaws

Standard accessories:

- ☐ Outside/Inside solid jaws
- ☐ Master/ Hard top jaws
- ☐ Wrench
- ☐ Mounting screws



## Chucks with fine adjustment mounting – super precision



1. Adapter plate
2. Adjusting screw
3. Mounting bolt

Adjusting accuracy – 0,005mm  
Repeatability – 0,015mm

## 6 JAW Self-centering scroll chucks with fine adjustment steel body



### Chuck type

3864

Solid jaws

3865

2-piece jaws

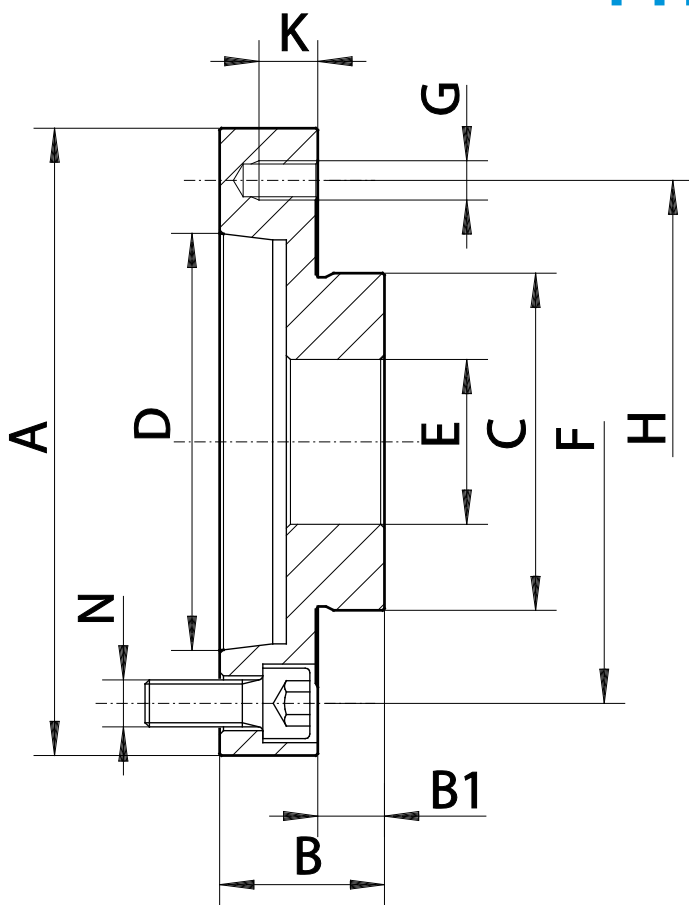
Standard accessories:

- ☐ Outside solid jaws
- ☐ Inside solid jaws
- ☐ Wrench
- ☐ Mounting Screws

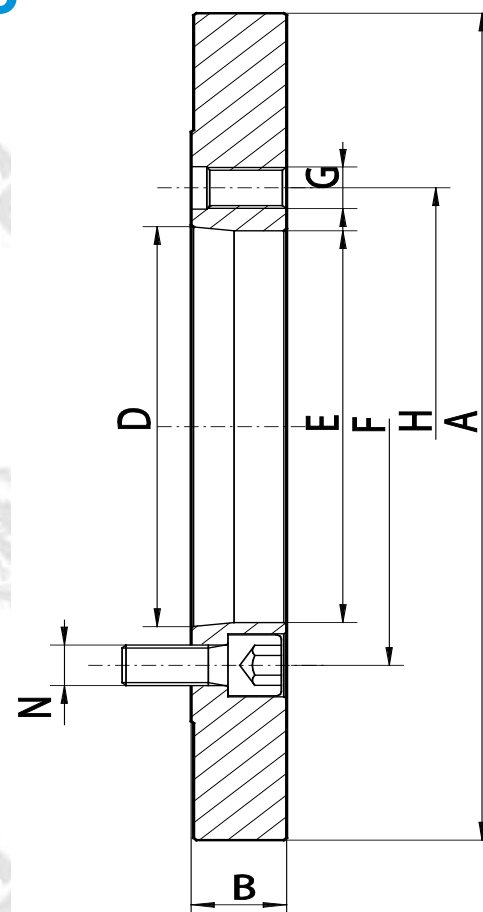
**Application: clamping thin-walled parts or tubes**

# Fully machined adapter plates for chucks with fine adjustment For spindle noses – type A (DIN 55026)

## TYPE - 8215



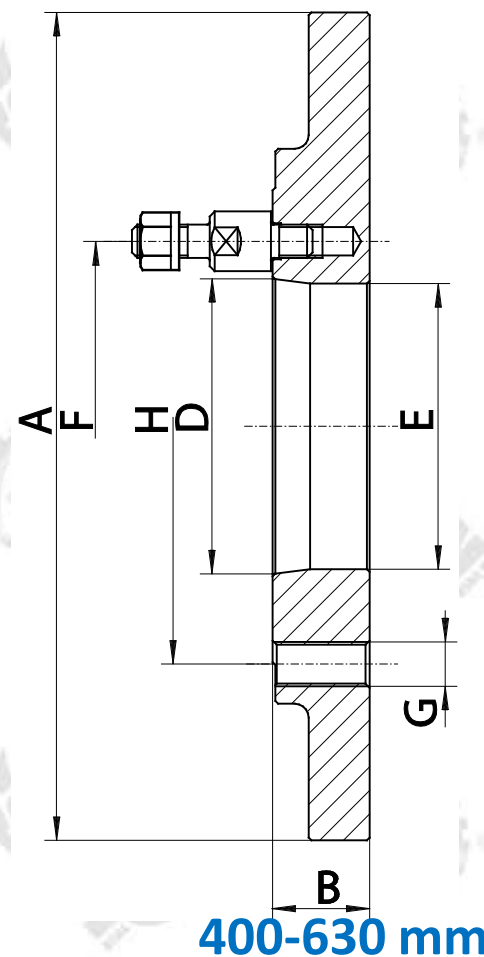
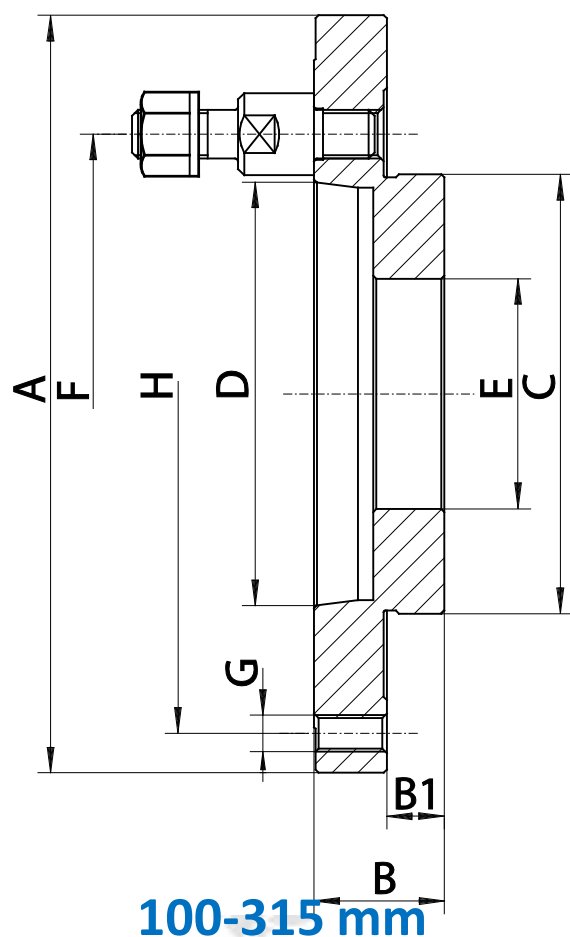
100-315 mm



400-630 mm

# Fully machined adapter plates for chucks with fine adjustment For spindle noses – type C (BAYONET) – DIN 55027

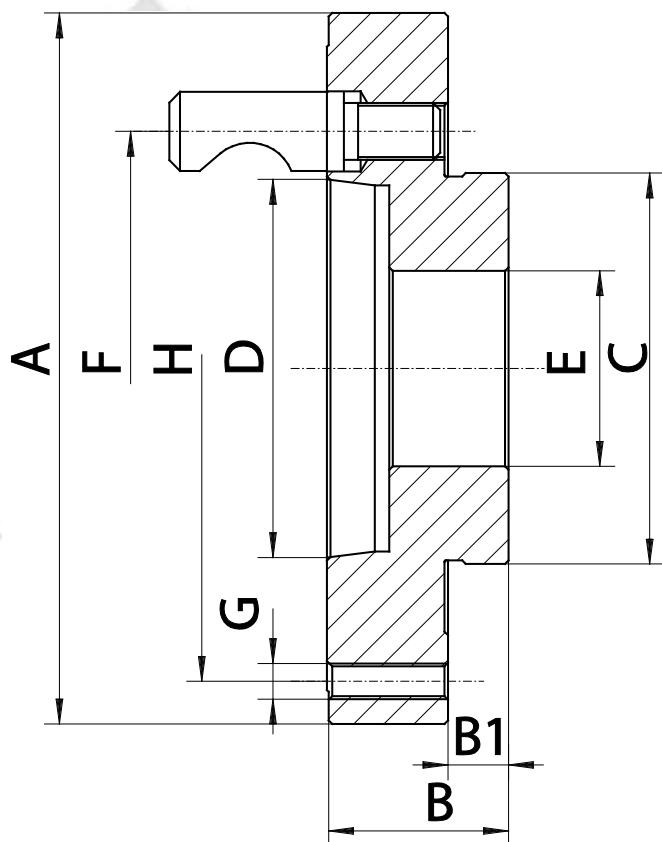
## TYPE - 8235



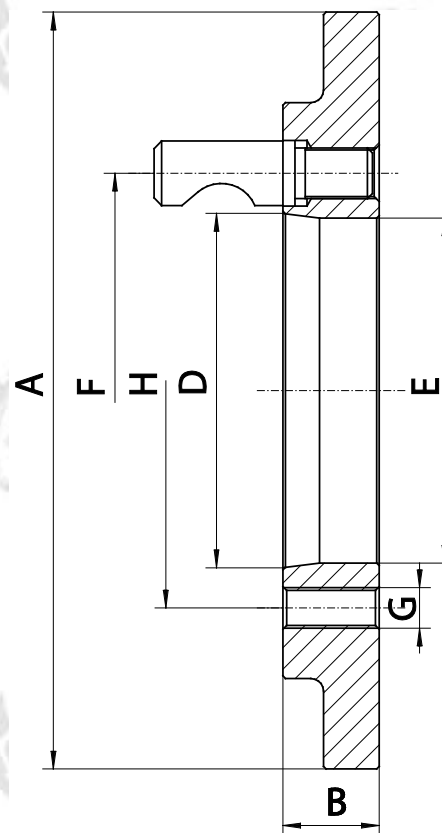


# Fully machined adapter plates for chucks with fine adjustment Spindle nose – type D (CAMLOCK)

## TYPE - 8245



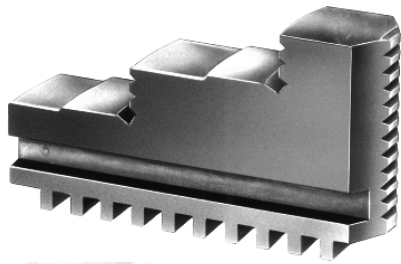
100-315 mm



400-630 mm

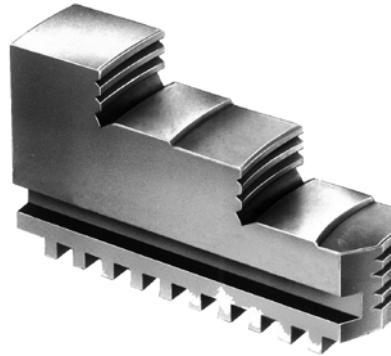
# Spare parts - Jaws

**SJZ**



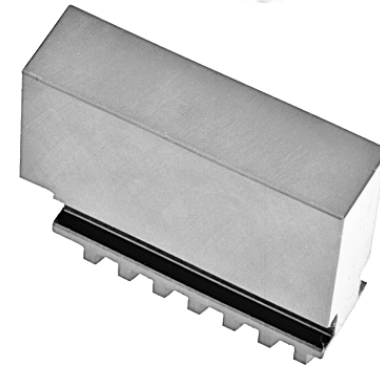
Hard outside  
solid jaws

**SJW**



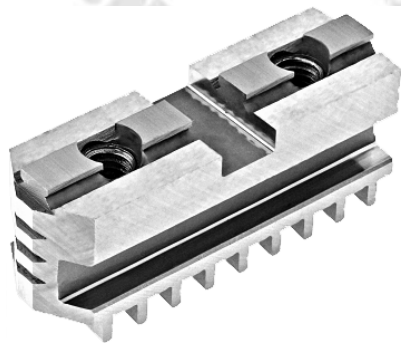
Hard inside  
solid jaws

**SJM**



Soft solid jaws

**SP**



Master jaws

**SGT**



Hard top jaws

**SGM**



Soft top jaws

# SPARE PARTS - Pinions

**Steel body  
chucks**

**Cast iron body  
chucks**

**Pinion**



**Sleeve  
bearing**

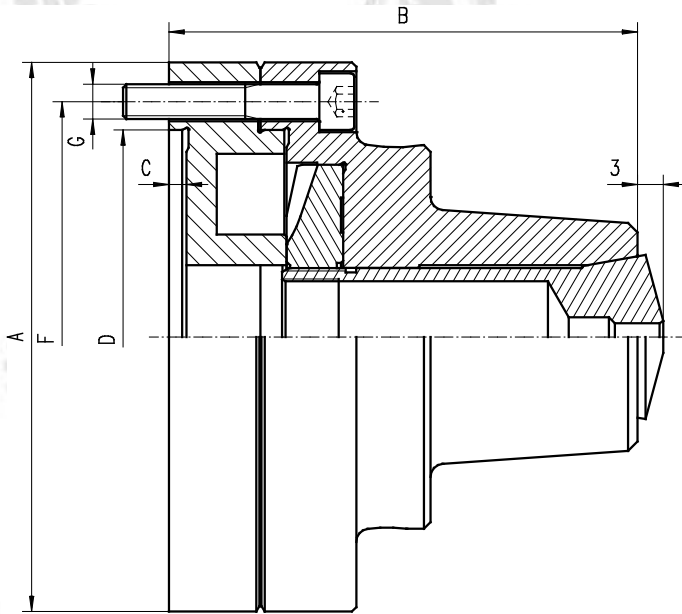
**Locking  
half-ring**

**Pinion**

**Stud bolt**



# Collet chuck – Type 3911-125



Collet 5C

- ☐ Higher rotational speeds
  - scroll chuck 125mm – 4800 rpm
  - collet chuck 125mm – 6000 rpm
- ☐ Better clamping accuracy
- ☐ Better gripping – collet clamps the part on overall diameter

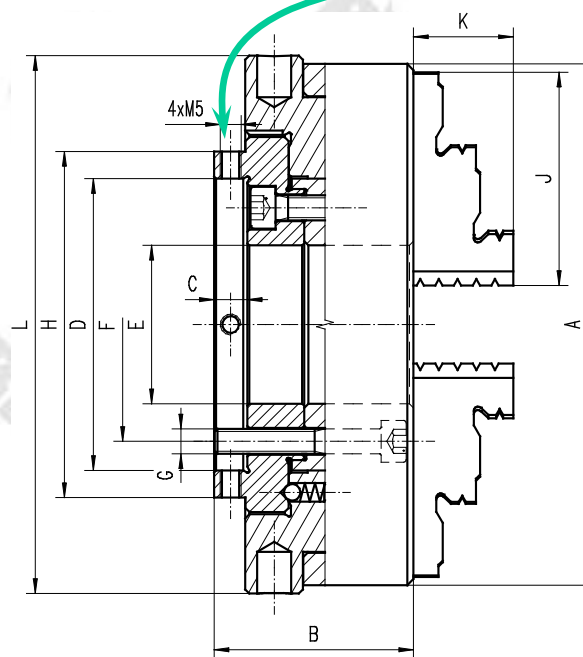
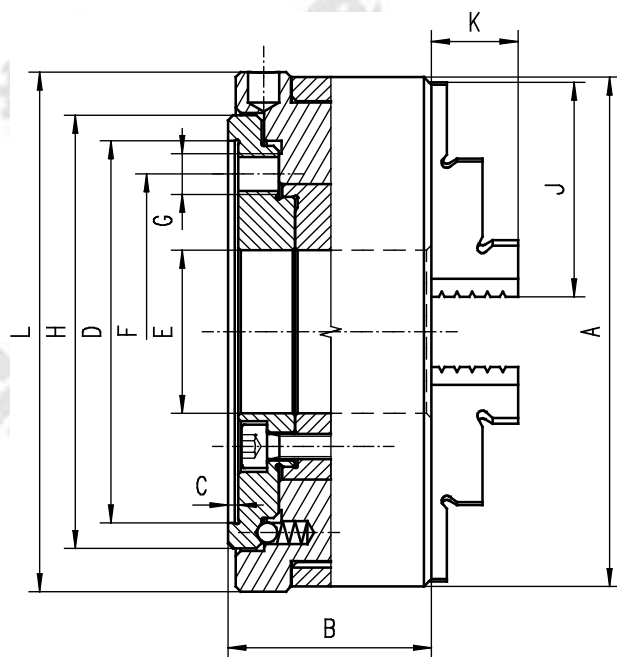




# 3 jaw scroll cast iron body lathe chuck Type 3266 - QUICK CLAMP

**SIZES 80mm – 100mm**

**SIZES 125mm – 160mm  
WITH ADJUSTING SCREWS**



- Quick clamping by means of back ring
- Easy detail positioning with one hand
- Accurate adjustment using 4 screws (125-160mm)

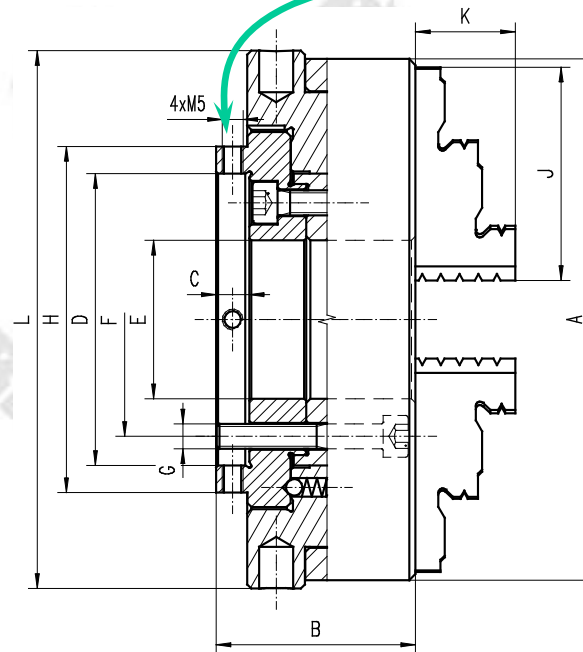
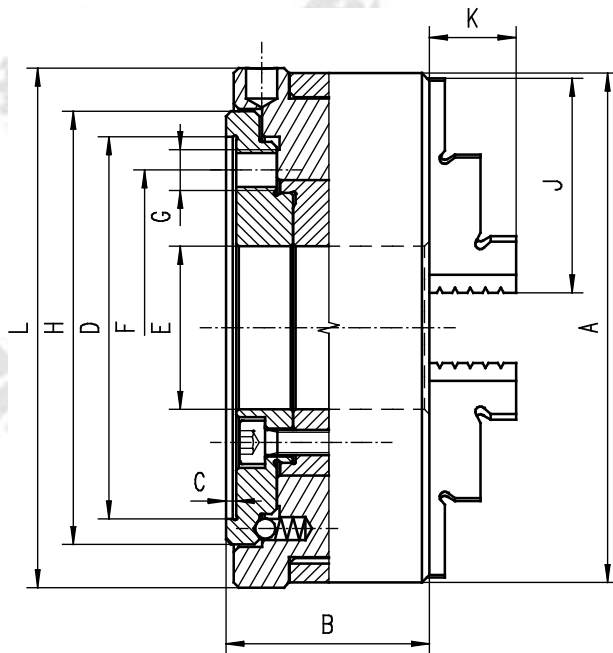
## Standard Accessories:

- Outside solid jaws
- Operating lever
- Mounting screws

# 3 jaw scroll cast iron body lathe chuck Type 3866 - QUICK CLAMP

**SIZES 80mm – 100mm**

**SIZES 125mm – 160mm  
WITH ADJUSTING SCREWS**



- Quick clamping by means of back ring
- Easy detail positioning with one hand

- Accurate adjustment using 4 screws (125-160mm)

**For sharpening drills**

# Lathe chucks with Morse taper

**MOUNTED IN MACHINE  
TAILSTOCK**

**APPLICATION:  
FOR GRIPPING LONG PARTS**

**instead of**

**SUPPORTING BY TYPICAL  
CENTER**

- **Ball bearing body**
- **Threaded taper end (AE) or  
flat taper end (BE)**

**Available sizes: 80 – 160mm**



**Type – 9154  
Solid jaws**

**Type – 9155  
2-pcs jaws**

# Other chucks with Morse taper



**Type – 9164 or 9165  
Fine Adjustment Chuck**

**Applications:**  
Operations requiring  
higher precision

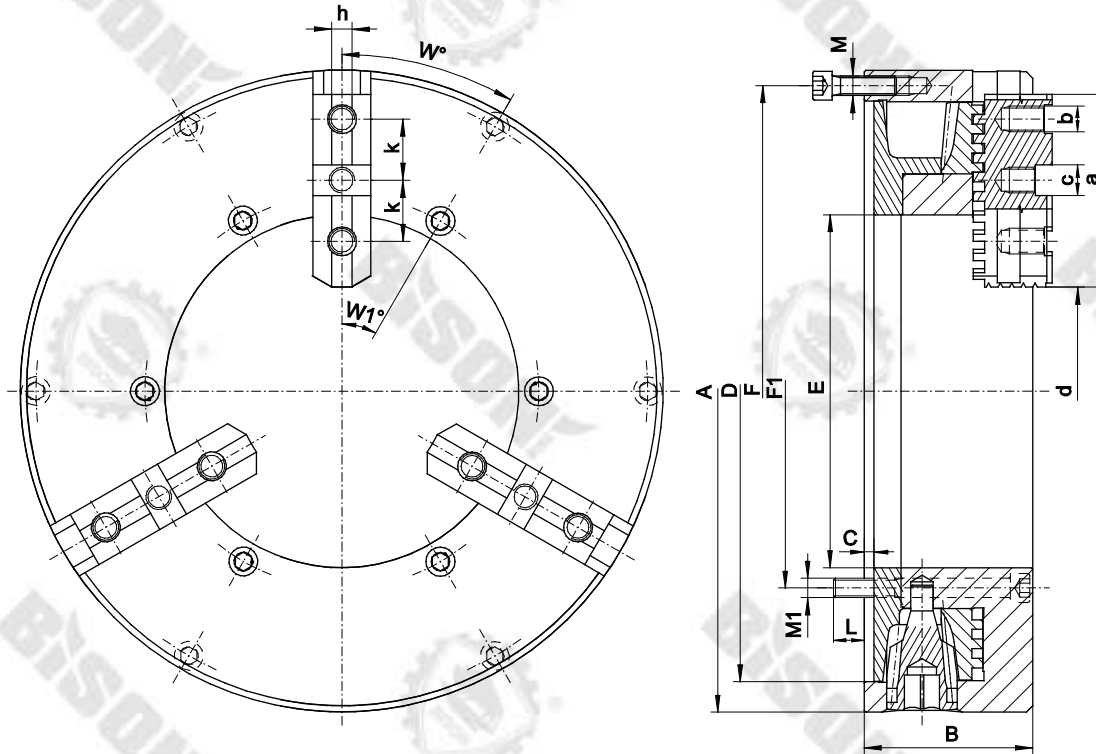


**Type – 9186 or 9187  
Indexing Option**

**Applications:**  
Milling operations  
Basic divisions: 2, 3, 4, 6, 12, 24

**Available sizes: 80 – 160mm**

# Lathe chuck – type 3295 with large through hole, for pipe machining



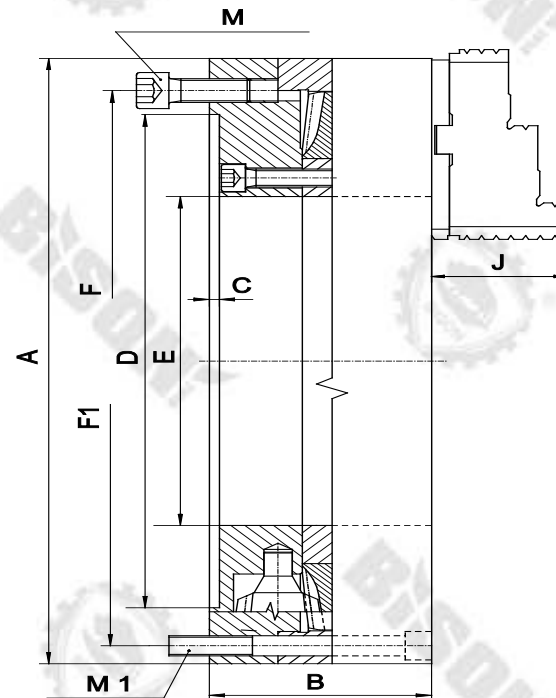
- ☐ 400 – 800 mm diameters
- ☐ Cast iron body
- ☐ Large through-hole
- ☐ Designed for gripping long pipes during machining for conventional and specialized machine-tools

## Standard accessories :

- ☐ Master jaws
- ☐ Soft top jaws
- ☐ Wrench
- ☐ Mounting screws



# Lathe chuck – type 3597 with large through hole, for pipe machining



- ☐ 315 – 800 mm diameters
- ☐ Steel body
- ☐ Large through-hole
- ☐ Designed for gripping long pipes during machining for conventional and specialized machine-tools
- ☐ High gripping force

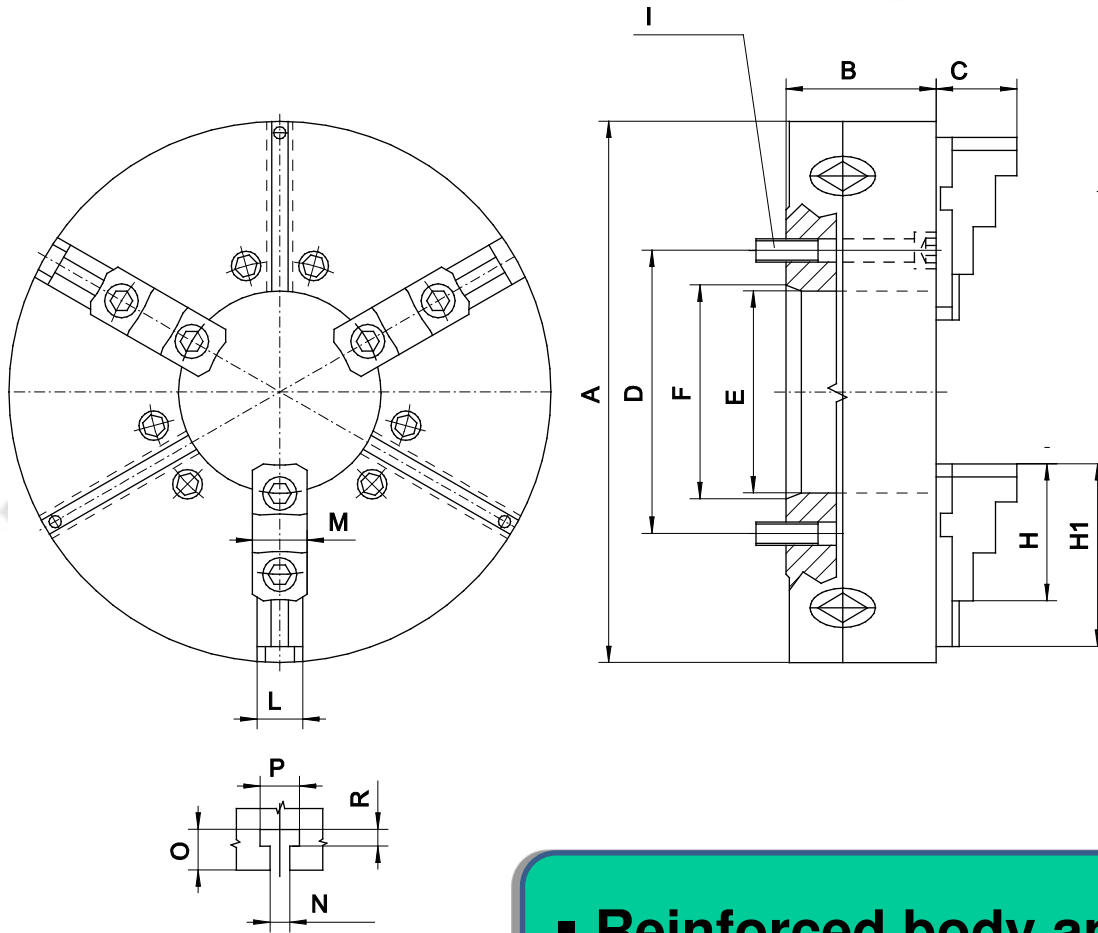
## Standard accessories :

- ☐ Hard 2-piece jaw
- ☐ Wrench
- ☐ Mounting screws

# Lathe chuck 3515 HD

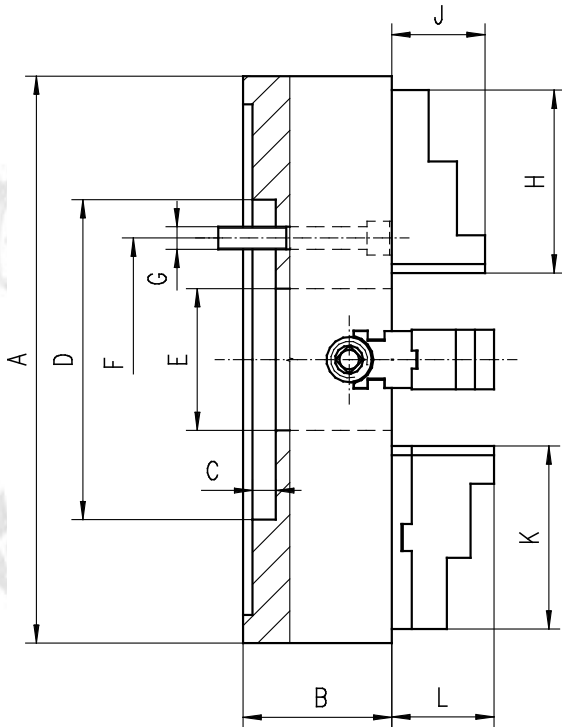
with large through hole, for pipe machining  
**HEAVY DUTY**

**OIL COUNTRY**



- Reinforced body and stronger jaws
- Withstand higher cutting forces
- Serrations on jaw gripping surfaces

# Independent chucks



Available with

- Cast iron body
- Steel body

Standard accessories:

- ☐ Hard solid jaws
- ☐ Wrench
- ☐ Mounting screws

## Applications of Independent chucks

☐ Clamping rough tubes or long bars



☐ Clamping rectangular or square parts



☐ Clamping parts with irregular shape

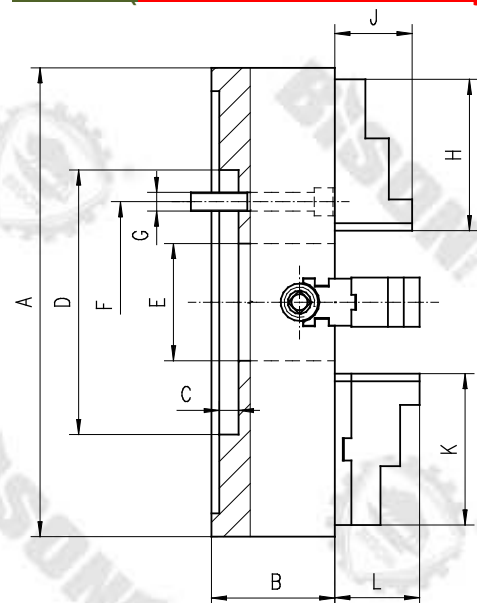




# Independent chucks – Available Types

4302

4304 (85-160 steel body)



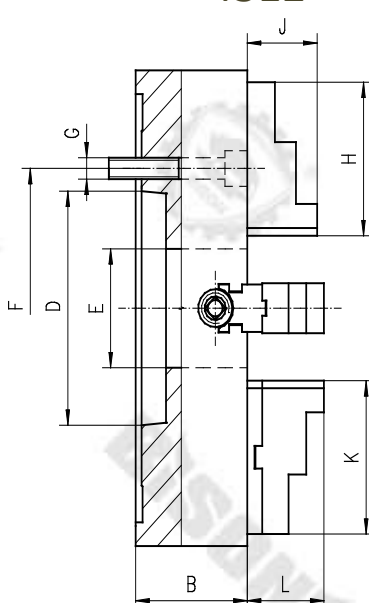
4303

4305

Plain back mount

4314

4312



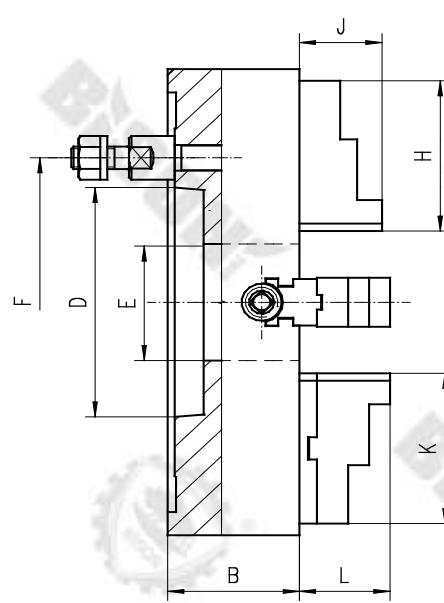
4315

4313

Type A mount  
DIN 55026

4334

4332



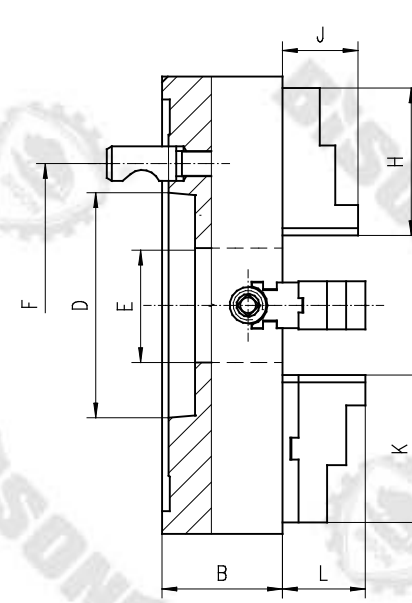
4335

4333

Type C mount  
DIN 55027

4344

4332



4345

4343

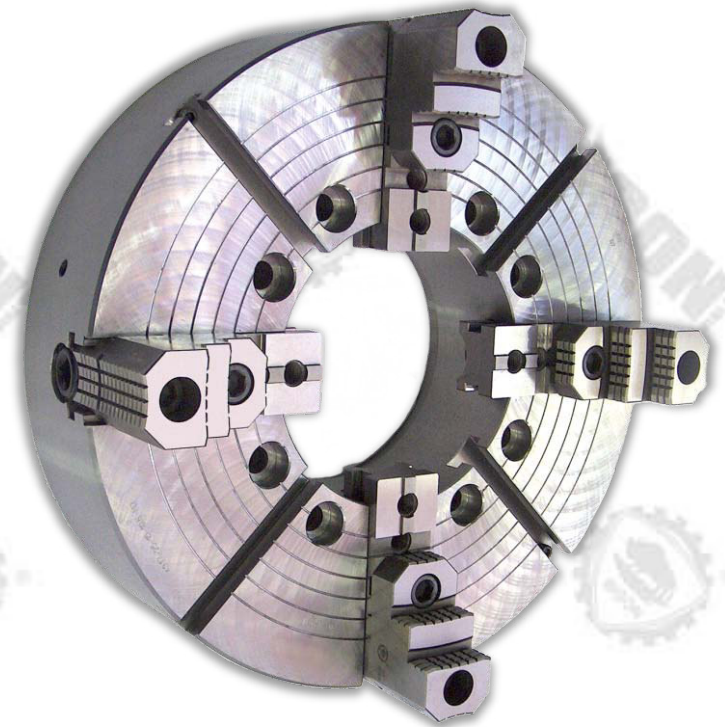
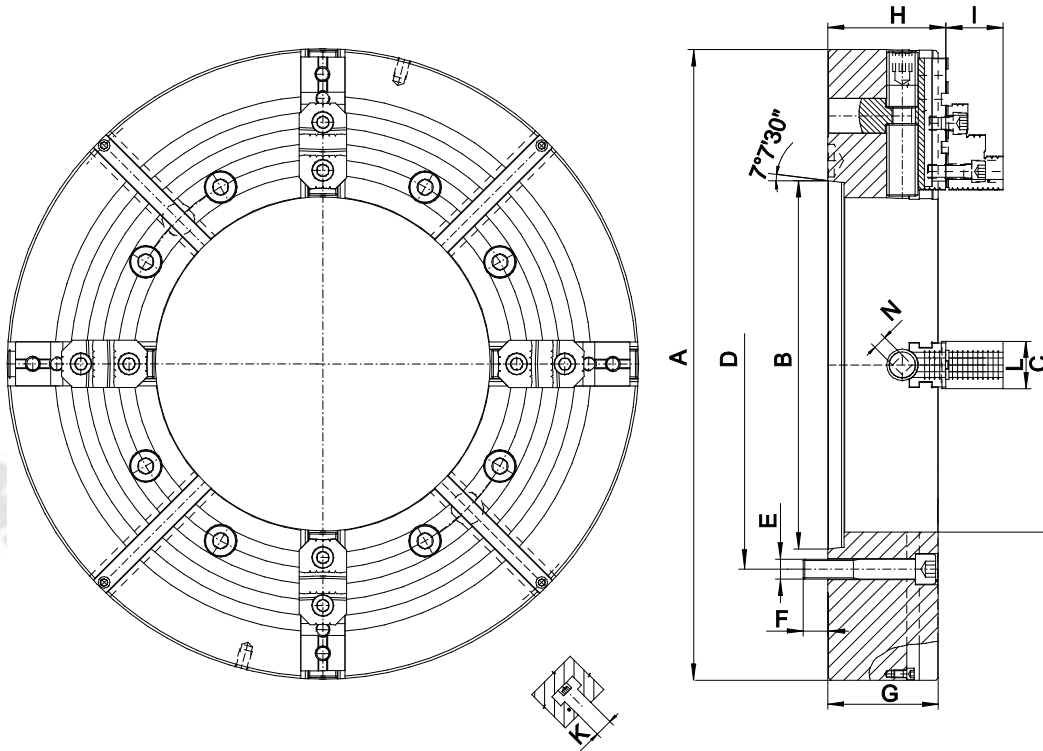
Type D mount  
DIN 55029

**Types in red** - Cast iron body  
**Types in black** - Cast steel body



# Heavy duty independent chuck 4317 HD

415 – 1250mm

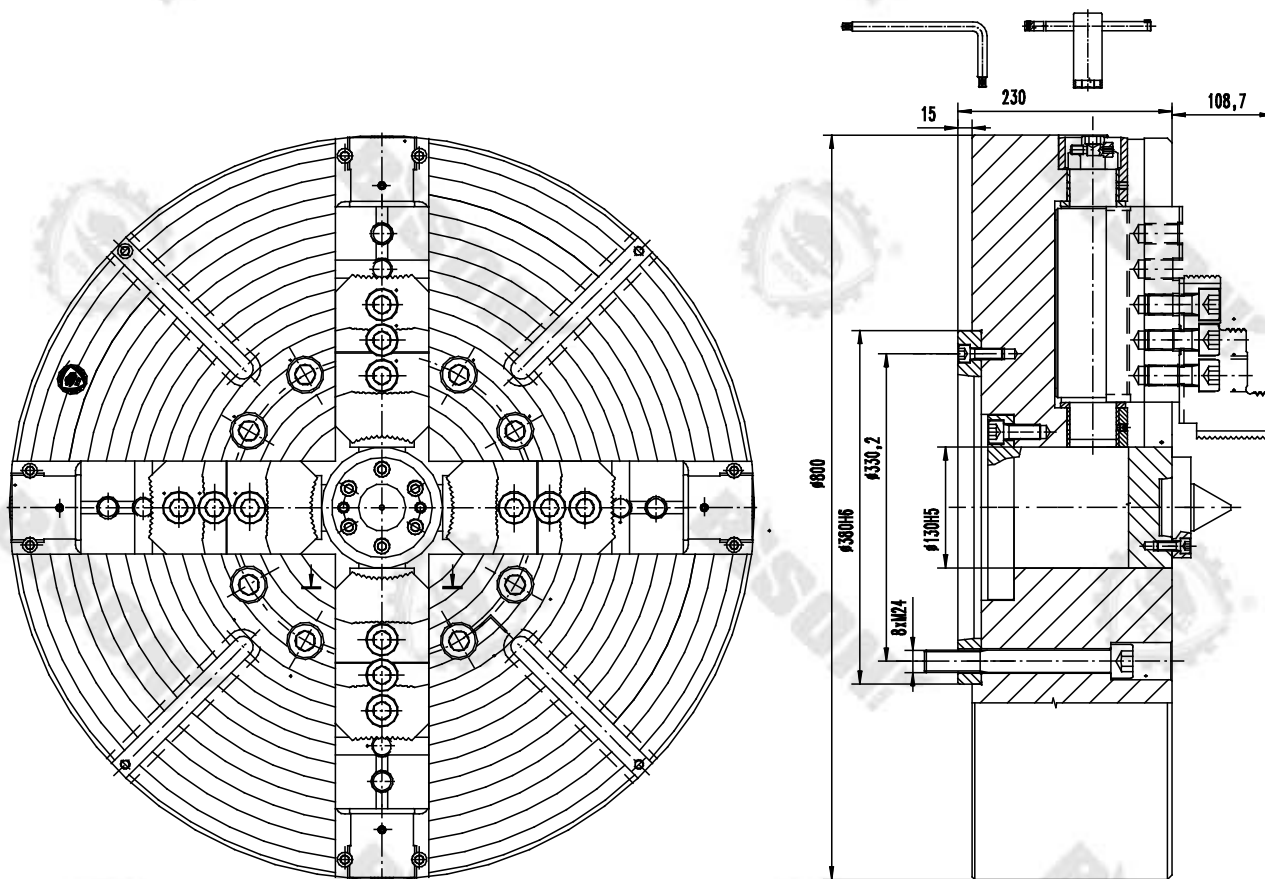


- Clamping very long workpieces
- Reinforced steel body
- High gripping force
- 1 set of hard top solid jaws

**OIL COUNTRY**

# Independent chuck with power screws

This precision chuck is designed for gripping long pipes during heavy-duty machining for conventional and specialized machine-tools.

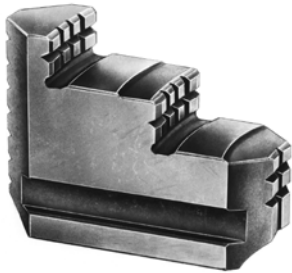


**OIL COUNTRY**

-  **Clamping force**  
 20 000 daN for 800mm  
 25 000 daN for 1000mm
- Able to machine very long workpieces
  - reinforced steel body
  - High gripping force
  - 1 set of hard top solid jaws

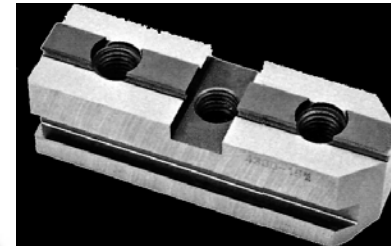
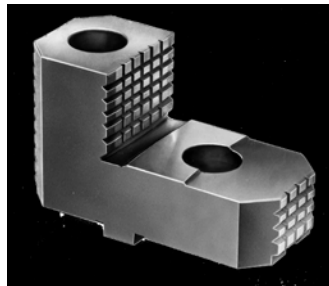
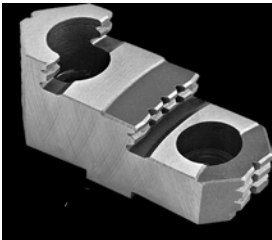
# Spare parts - Jaws

## Solid reversible jaws



Hard top jaws

Hard master jaws



200 – 800mm

915 – 1250mm

**Operating screw**



**Safety wrench**



**Thrust  
bearing**

