

# Operation Manual

for medical chucks type:

**KeyLess**

**Ergon-Grip**

**ReLock**

**KeyLock**

## Content

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<b>1</b>	<b>General information</b>	<b>3</b>
	1.1 Introduction	3
	1.2 Copyright	3
<b>2</b>	<b>Safety</b>	<b>4</b>
	2.1 Warning signs	4
	2.2 Proper use	4
	2.3 General advice	4
	2.4 Special dangers and risks	4
<b>3</b>	<b>Description</b>	
	3.1 Basic types and function	5
	3.2 Profile of the chuck design	6
	3.3 Article numbers	7
	3.4 Release torque and maximum operating speed	8
	3.5 Materials and lubricants used	8
<b>4</b>	<b>Delivery, packaging and storage</b>	<b>9</b>
	4.1 Delivery and packaging	9
	4.2 Storage	9
<b>5</b>	<b>Assembly, disassembly</b>	<b>10</b>
	5.1 Assembly to the shaft drive	10
	5.2 The interfaces	10
	5.3 Clamping with KeyLess- and ERGON-chucks	11
	5.4 Clamping with ReLock-chucks	12
	5.5 Clamping with KeyLock-chucks	12
<b>6</b>	<b>Operation and repair of malfunctions</b>	<b>13</b>
	6.1 Report of malfunctions	13
	6.2 FAQ	13
<b>7</b>	<b>Maintenance, disposal</b>	<b>14</b>
	7.1 Maintenance	14
	7.2 Disposal	14

## **1 General information**

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### **1.1 Introduction**

Everybody involved in the operation of the chuck has to read, understand and adhere to the operation manual. We do not take any liability for damages and process failures due to not observing the operation manual.

In the interest of further development we reserve the right for changes which are seen as appropriate to improve the efficiency and safety of the tool without changing the main characteristics.

### **1.2 Copyright**

The copyright for this operation manual stays with ALBRECHT Präzision GmbH & Co. KG. It is not permitted to use or publish this operation manual – completely or in parts - without our consent. For all technical questions please contact the Albrecht company or one of our service addresses.

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## 2 Safety

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### 2.1 Warning signs



With this warning sign we have marked special information in this operation manual concerning the failure free function of this chuck and the safety of the patient and the operator.

### 2.2 . Proper use

The medical chucks from ALBRECHT Präzision GmbH & Co. KG are for surgical invasive operations only. They are destined for clamping of metallic tools with cylindrical shafts. Other technically possible use is not part of this manual and the according risk analysis.

### 2.3. General advice

Everybody handling these chucks has to have read and understood this operation manual. They must have the necessary technical and medical knowledge.

### 2.4. Special dangers and risks

Once the surface of the chuck gets in touch with the organic tissue of patients there is always the risk of contamination and infection when operators or third parties touch the chuck directly. Therefore, please do handle the chuck only with suitable protective cloths and gloves!  
Do sterilize the chuck before use according to medical regulations.

Make sure of the following before use to guarantee a successful clinical operation:

- The chuck is fixed on the drive shaft.
- The tool is securely clamped with the minimum depth, see chapter 3.3.
- The tool works with sufficient run-out.

## 3 Description

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### 3.1 The basic types and their function



#### KeyLess

- the ergonomic self-tightening system allows for a quick operation without key,
- subtly knurled surfaces, electropolished,
- round edges,
- all parts hardened,
- checking for functioning and precision is done in accordance with standard ISO 10888,
- through hole,
- permanent markings, stamped,
- for **clockwise rotation**.



#### Ergon

- the ergonomic self-tightening system allows for a quick operation without key,
- smooth electropolished surfaces reduce the risk for contamination and corrosion,
- ducts and all contact surfaces are ground,
- checking for functioning and precision is done in accordance with standard ISO 10888,
- through hole,
- permanent markings, stamped,
- for **clockwise rotation**
- also available as flushable version with flushing pin, European Patent Nr. 1972287.



#### ReLock

- the ergonomic self-tightening system allows for a quick operation without key,
- the reversing lock prevents an accidental opening during surgery,
- smooth electropolished surfaces reduce the risk for contamination and corrosion,
- ducts and all contact surfaces are ground ,
- opening of the reversing lock by pulling the clamping ring,
- checking for functioning and precision is done in accordance with standard ISO 10888,
- through hole,
- permanent markings, stamped,
- for **clockwise rotation**

### 3 Description



#### ReLock with manual grip

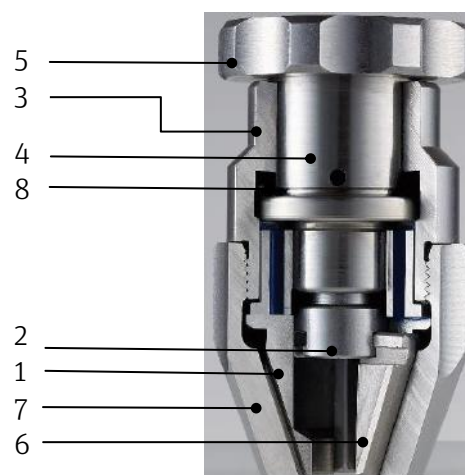


#### KeyLock

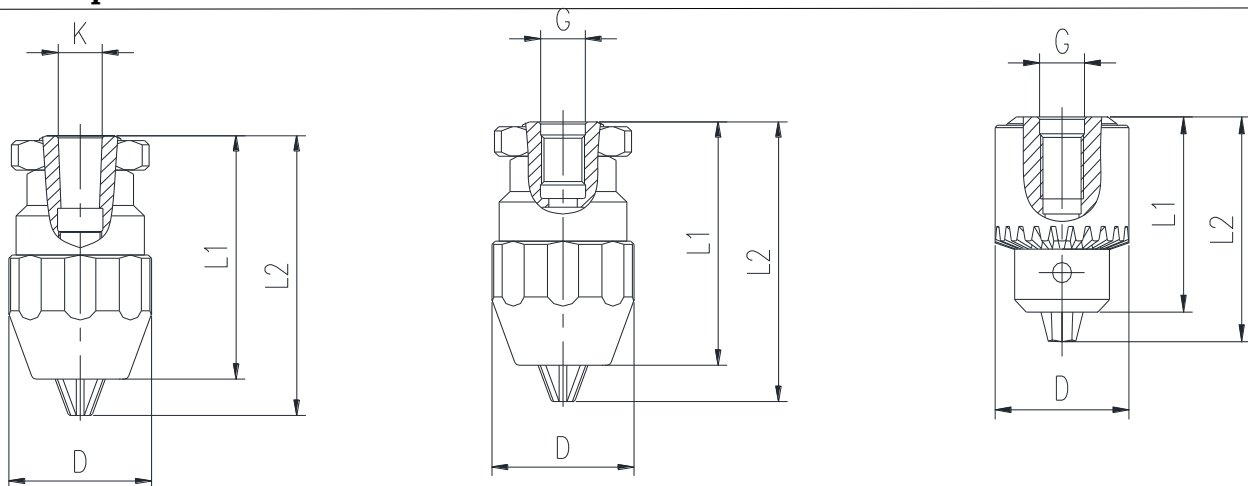
- key-type chuck,
- large clamping range,
- tothing compatible to Jacobs,
- round soft edges,
- through hole,
- for clockwise and anti-clockwise operation.

#### 3.2 Chuck design

- 1 Jaw guide
- 2 spindle
- 3 shell
- 4 body
- 5 collar grip
- 6 set of jaws
- 7 hood
- 8 set of balls



### 3 Description



Picture a) sketch for chapter 3.3

### 3.3 List of article numbers, dimensions, minimum clamping depths

Type	Article number	Clamping range [mm]	Taper (K/G)	Diameter [mm] (D)	Length 1 [mm] (L1)	Length 2 - ca. [mm] (L2)	Through hole, bore-Ø [mm]	Weight [kg]	Interface	min. Clamping depth [mm] ((length of jaw))
KeyLess	100 N015 B06 0	0,2-1,5	B6 / J0	19	35	37	1,8	0,05	DIN ISO 239	11,5
KeyLess	100 N030 G02 0	0,2-3	3/8"-24	24	46,5	50	2,5	0,1	UNF	14
KeyLess	100 N030 J01 0	0,2-3	J1	24	46,5	50	2,5	0,1	DIN ISO 239	14
KeyLess	100 N050 G02 0	0,6-7,4	3/8"-24	30	56	64	5,3	0,2	UNF	17,5
Keyless	100 N050 G02 3	0,6-7,4	3/8"-24	30	56	64	5,3	0,2	UNF	17,5
Keyless	100 N050 G02 4	0,6-7,4	3/8"-24	30	56	64	5,3	0,2	UNF	17,5
KeyLess	100 N050 J01 0	0,6-7,4	J1	30	56	64	5,3	0,2	DIN ISO 239	17,5
Ergon	100 N030 G02 1	0,2-3	3/8"-24	25,5	46,5	50	2,5	0,1	UNF	14
Ergon	100 N030 G02 2	0,2-3	3/8"-24	25,5	46,5	50	2,5	0,1	UNF	14
Ergon	100 N030 J01 1	0,2-3	J1	25,5	46,5	50	2,5	0,1	DIN ISO 239	14
Ergon	100 N050 G02 1	0,6-7,4	3/8"-24	31,5	56	64	5,3	0,2	UNF	17,5
Ergon	100 N050 G02 2	0,6-7,4	3/8"-24	31,5	56	64	5,3	0,2	UNF	17,5
Ergon	100 N050 J01 1	0,6-7,4	J1	31,5	56	64	5,3	0,2	DIN ISO 239	17,5
Ergon	100 N050 J01 2	0,6-7,4	J1	31,5	56	64	5,3	0,2	DIN ISO 239	17,5
ReLock	100 N050 G02 L	0,6-7,4	3/8"-24	31,5	68	76	5,3	0,3	UNF	17,5
KeyLock	400 N040 G01 0	0,3-4,0	5/16"-24	22	30,4	37,8	5,5	0,04	UNF	12
KeyLock	400 N074 G02 0	0,6-7,4	3/8"-24	28	40,5	50	7,5	0,1	UNF	14

### 3 Description

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#### 3.4 Release torque and maximum operating speed

<b>Release torque</b>	<b>[Nm]</b>	<b>speed [1/min]</b>
100 N050 ...	1,5	1000

With manual clamping, cylindrical shaft, wood twist drill with a diameter  $\varnothing$  6 m (10 times drilling in ash wood, 50 mm)

#### **Max. operating speed**

(Centrifugal force test in accordance with EN ISO 15641:2001 Pkt. 5.4.2)

<b>article</b>	<b>taper</b>	<b>cyl. shaft</b>	<b>max. speed [1/min]</b>
100 N015 ...	B6/J0	$\varnothing$ 1,5	19000
100 N030 ...	J1	$\varnothing$ 3	17000
100 N050 ...	J1	$\varnothing$ 5	14000

#### 3.5 Materials and lubricants used

The materials used are in accordance with regulation 93/42/EWG.  
The chucks are made of stainless steel according to standard ISO 7153-1.

In order to help assembling the balls a small amount of grease MOBILGREASE FM 222 is introduced into the gear. This grease is a mix and contains less than 1% Titandioxid and less than 5% Calciumsalt.  
The initial boiling point is  $> 371^{\circ}$  C. The flashpoint is  $249^{\circ}$  C.



## 4 Delivery, packaging and storage

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### 4.1 Delivery and packaging

The chucks are delivered to the manufacturer of the final device packed individually in plastic boxes, not sterile.

Any further terms for handling, sterilization and final packaging have to be part of the sales contract with the manufacturer of the final device.

In case of wrong number, wrong article or defective tools please get in touch with:

**Albrecht Präzision GmbH & Co.KG**

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D-73249 Wernau

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**Fax: +49 (0) 7153 3006 11**

**Email: [info@albrecht-germany.com](mailto:info@albrecht-germany.com)**

### 4.2 Storage

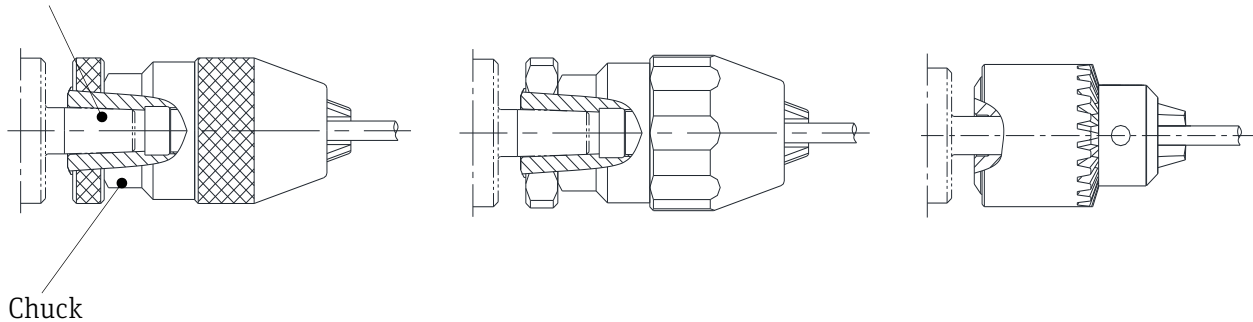
Please store the chucks under dry conditions at room temperature. They should not be in contact with corrosive materials for a longer period of time.

## 5 Assembly, disassembly

### 5.1 Assembly to the shaft drive

Assembly of the chuck to the shaft drive will be done by the manufacturer of the device.  
Depending on the type of taper this will be done by the inner cones or screw fitting of the threads.

Shaft drive customer



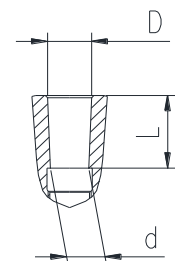
Sketch a) assembly of shaft drive (customer) and chuck (schematic sketch)

### 5.2 The interfaces

- Inner taper, DIN ISO 239

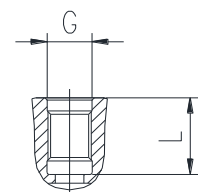
B-Konus	DØ	dØ	L
B 6	6,350	5,85	10,0

J-Konus (Jacobs)	DØ	dØ	L
J 0	6,350	5,802	11,112
J 1	9,754	8,469	16,669



- UNF-thread ANSI B1.1

size G	bore-Ø	angle	gear	L min.
3/8"-24	8,4	1,058	24	15,5
5/16"-24	6,9	1,058	24	13

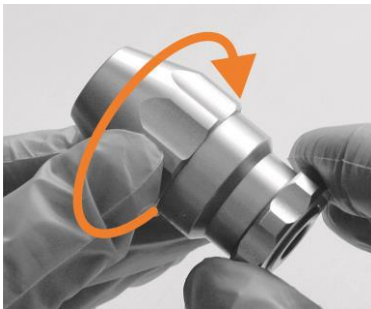


## 5 Assembly, disassembly

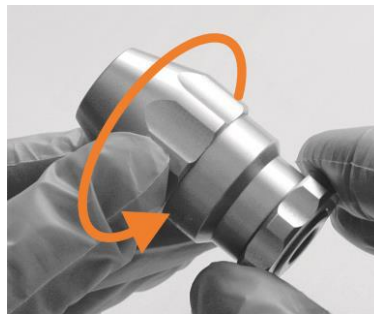
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### 5.3 Clamping with KeyLess- and ERGON-chucks

1. Check chuck (function, damage, contamination)
2. Open chuck – see pic. a)
3. Insert tool shaft (concentric, observe the minimum clamping depth)
4. Hand-tighten chuck – see pic. b)
5. Check for correct function (safe fit, minimum clamping depth and run-out)



Pic. a) open chuck



Pic. b) close chuck



**Check the safe fit and good run-out before use – see chapter 3.3.**

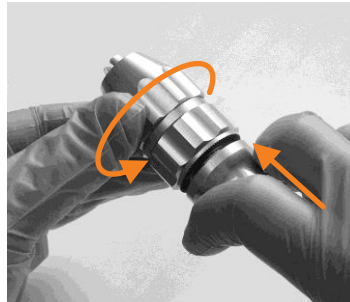
## 5 Assembly. disassembly

### 5.4 Clamping with ReLock-chuck

1. Check chuck (function, damage, contamination)
2. Open chuck, open reversing lock – see pic. c)
3. Insert tool shaft (concentric, observe the minimum clamping depth)
4. Hand-tighten chuck, let safety ring click into place – see pic. d)
5. Check for correct function (safe fit, minimum clamping depth and run-out)



Pic. c) open chuck



Pic. d) close chuck



Check the safe fit and good run-out before use – see chapter 3.3.

### 5.4 Clamping with KeyLock-chuck

1. Check chuck (function, damage, contamination)
2. Open chuck – see pic. e)
3. Insert tool shaft (concentric, observe the minimum clamping depth)
4. Hand-tighten chuck – see pic. f)
5. Check for correct function (safe fit, minimum clamping depth and run-out)



Pic. e) open chuck



Pic. f) close chuck



Check the safe fit and good run-out before use – see chapter 3.3

## 6 Report of malfunctions, FAQ

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### 6.1 Report of malfunctions



Please exchange the malfunctioning chuck against a functioning chuck in cases where an incorrigible fault has occurred.

Please always inform ALBRECHT PRÄZISION GmbH & Co. KG accordingly

Email:           support@albrecht-germany.com  
Phone:           +49 7153 30 06-0

### 6.2 FAQ

Cause	Repair
Insufficient run-out of the tool during operation.	Please check the concentric clamping of the tool shaft.
Insufficient run-out of the tool during operation	Please check the clamping depth – see table in chapter 3.3.
The tool does not fit safely.	Check insertion depth and clamping force.
The tool cannot be clamped.	Please check whether the tool fits the clamping range – see table in chapter 3.3.
The chuck cannot be opened manually.	In cases where the chuck can only be opened with tools there is the risk of damaging the ergonomic surfaces and the forming of burrs. These might destroy the hygienic gloves and lead to contamination.

## 7 Maintenance, disposal

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### 7.1 Maintenance

The medical chucks are maintenance free.

The chucks have to be checked for contamination and correct function during the time of their use. In cases of malfunction or damages the chuck has to be disposed of.

### 7.2 Disposal

The medical chucks are made of stainless steel. They can be disposed of in accordance with the hygienic and clinical regulations regarding disposal and recycling.



**After a surgical invasive operation an infection with germs is possible when in contact with the chuck. Therefore, a sufficient sterilization is necessary before passing on the chuck to a third party for disposal.**