

# Original version of assembly instructions



For	Components			
Spieth clamping sleeve (precision clamping sleeve)	AK 8.12	AL 8.12	AK 55.80	AL 55.80
	AK 10.15	AL 10.15	AK 60.85	AL 60.85
	AK 12.18	AL 12.18	AK 63.88	AL 63.88
	AK 14.20	AL 14.20	AK 65.90	AL 65.90
	AK 15.22	AL 15.22	AK 70.100	AL 70.100
	AK 16.22	AL 16.22	AK 75.105	AL 75.105
	AK 18.25	AL 18.25	AK 80.110	AL 80.110
	AK 20.32	AL 20.32	AK 85.115	AL 85.115
Series	AK 22.35	AL 22.35	AK 90.120	AL 90.120
	AK 25.37	AL 25.37	AK 95.125	AL 95.125
AK/AL	AK 28.40	AL 28.40	AK 100.130	AL 100.130
	AK 30.42	AL 30.42	AK 110.140	AL 110.140
	AK 32.48	AL 32.48	AK 120.150	AL 120.150
	AK 35.52	AL 35.52	AK 125.155	AL 125.155
	AK 40.56	AL 40.56	AK 130.160	AL 130.160
	AK 45.68	AL 45.68	AK 140.170	AL 140.170
	AK 50.72	AL 50.72	AK 150.180	AL 150.180

The Assembly Instructions are also available for download at [www.spieth-me.de](http://www.spieth-me.de).  
In case of any questions, please contact Spieth-Maschinenelemente GmbH & Co. KG directly.

**Legal:**

SPIETH-MASCHINENELEMENTE GmbH & Co. KG, Alleenstraße 41, D - 73730 Esslingen  
Fon +49 711 930730 0 - Fax +49 711 930730 7  
Email: [info@spieth-me.de](mailto:info@spieth-me.de) - Web: [www.spieth-me.de](http://www.spieth-me.de)  
KG: Sitz Esslingen, AG Stuttgart HRA 210689  
PhG: Spieth-Beteiligungs-GmbH, Sitz Esslingen, AG Stuttgart HRB 210636  
Geschäftsführer: Dipl.-Ing. Alexander Hund

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See
	Successive document: N/A	<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>

## Assembly instructions for Spieth clamping sets

### Table of Contents

Assembly instructions for Spieth clamping sets .....		2
Table of Contents .....		2
1 Information about Spieth Clamping Sleeves .....		3
1.1 General information .....		3
1.2 Safety notices .....		3
2 Description of Spieth Clamping Sleeves .....		4
2.1 Structure .....		4
3 Assembling Spieth Clamping Sleeves .....		4
3.1 Preparing for assembly .....		4
3.2 Ambience .....		5
3.3 Automated operation .....		5
3.4 Assembly process .....		6
4 Disassembling Spieth Clamping Sleeves .....		7
5 Maintenance and servicing of Spieth clamping sleeves .....		7

## 1 Information about Spieth Clamping Sleeves

### 1.1 General information

Spieth clamping sleeves are precision parts and require careful handling. Follow the information in these assembly instructions and the operating instructions. Failing to comply with them may significantly impact functionality and service life.

Only initiate clamping if borehole and outer surfaces of the clamping sleeve are fully covered by the connecting components. It can be tolerated if the clamping sleeves protrude by a maximum value a (see design guide). Otherwise, damage such as ductile deformation may occur on the clamping sleeve and render it unusable.

Spieth-Maschinenelemente GmbH & Co. KG assumes no liability for damage from improper handling, incorrect installation, or unauthorised structural changes.

### 1.2 Safety notices

Spieth clamping sleeves are intended for use with friction-locked shaft-hub connections. Please follow all relevant safety notices.

**Caution!**

Any work carried out with or on the clamping sleeve needs to follow the "safety first" guideline!

During operation, keep your hands away from the working area of the clamping sleeve!

Prior to any assembly work, switch off all machine drives!

Secure the machine against accidental power-up!

Prior to commissioning the machine, install all safety devices!

Only expert personnel are allowed to perform assembly work on Spieth clamping sleeves. Using Spieth clamping sleeves is only admissible according to specifications. Spieth-Maschinenelemente GmbH & Co. KG assumes no liability for violations of the operating instructions or safety notices. This also applies to incorrectly interpreting or circulating these notices and to incorrect assembly or maintenance.

The clamping sleeves described here are state of the art at the time these assembly instructions are printed. Subject to changes based on evolved technologies.

For international deliveries, follow the safety regulations applicable in the target country.

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See
	Successive document: N/A	<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>

## 2 Description of Spieth Clamping Sleeves

### 2.1 Structure

Spieth clamping sleeve

Identifying features  
(for original Spieth clamping sleeves)

- \_\_\_\_ Spieth logo
- \_\_\_\_ Name
- \_\_\_\_ Batch number

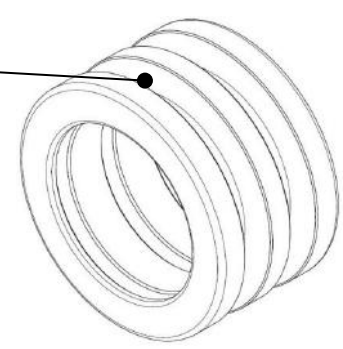


Fig. 1: Schematic representation similar to Spieth AK/AL series clamping sleeves

Spieth AK/AL series clamping sleeves have been designed for use on shafts with h5-tolerance zone. The clamping sleeve has been designed for external clamping initiation starting from the housing. In contrast to tapered clamping sets, the one-piece cylindrical clamping sleeve has no joints and can therefore achieve a high degree of precision. Using connecting components to initiate axial clamping achieves a uniform lateral contraction thanks to the base body's special geometry. This results in a simple, safe, and rigid centering effect.

## 3 Assembling Spieth Clamping Sleeves

### 3.1 Preparing for assembly

Remove Spieth clamping sleeves from their packaging right before assembly. As hand perspiration can cause corrosion, ensure to keep your hands dry and clean and/or to always wear protective gloves for assembly.

Please note:  
For environmental reasons, please comply with applicable statutory regulations and guidelines when disposing of packaging materials.

In case of damage to packaging components, check the clamping sleeves for damage and remove any contamination.

The preservative used is compatible with all conventional machine oils. If in doubt, check the preservative's compatibility.

For an optimum mode of action of Spieth clamping sleeves, remove the thin wax-like film of preservative from the contact surfaces using a lint-free cloth. Directly afterwards, use machine oil without friction-reducing additives to lightly oil the component and protect it from corrosion.

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See
	Successive document: N/A	<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>

### 3.2 Ambience

During assembly, ensure that...

- the assembly location is free from dust and clean,
- the components have no contact with corrosive media,
- foreign bodies such as sand, sawdust, fluff, etc. are kept away from the component,
- metal filings (in particular from machining tools such as files, etc.) are kept away from the component.

**Caution!**

Contamination can significantly impact the functionality and service life of Spieth clamping sleeves.

For best results, use a suitable, enclosed space for assembly and proceed swiftly. If this is not possible, make sure to protect the components from ambient contamination and from damage.

### 3.3 Automated operation

In automatic mode using, e.g., hydraulic actuation, the system's actual values may deviate from the table values because of a number of different parameters. For this application scenario, we strongly recommend that you verify the force or torque values required. In this application, care must be taken to ensure that the installation is completely free of axial clearance. To prevent fatigue failure and due to fretting corrosion risk, tension the clamping sleeve at a high clock frequency with a max. force of  $0.75 \times F_{max}$ .

Please see the relevant assembly instructions, available at [www.spieth-me.de](http://www.spieth-me.de), for more information on assembly.

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See	
	Successive document: N/A		<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact	
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>	

### 3.4 Assembly process

Essentially, assembly is a 3-step process:

- 1. Cleaning and oiling
- 2. Joining
- 3. Clamping initiation

For an optimum mode of action of Spieth clamping sleeves, perform all three assembly steps in the specified order.

**Caution!**

Spieth clamping sleeves require friction-controlled clamping. The clamping force cannot be applied in relation to the clamping path. To avoid premature jamming, ensure you have a "free" functional path "C" (see design guide).

**Caution!**

Initiate clamping only if borehole and outer surface of the clamping sleeve are fully covered by the connecting components and/or project within admissible limits (see design guide).

Otherwise, damage such as plastic deformation may occur on the clamping sleeve and render it unusable.

In such a case, Spieth-Maschinenelemente GmbH und Co. KG assumes no liability or warranty.

Use only the following assembly process for assembling Spieth AK/AL series clamping sleeves:

#### 3.4.1 Cleaning and oiling:

For optimum application, carefully clean clamping sleeve, shaft and hub borehole and lightly dab them with conventional fluid machine oil without friction-reducing additives.

#### 3.4.2 Joining:

Join clamping sleeve and connecting components without applying too much force to ensure that the clamping set contact surfaces are fully covered.

#### 3.4.3 Clamping initiation:

Initiate clamping force. Tension Spieth clamping sleeves only if borehole and outer surface of the clamping sleeve are fully covered by shaft and hub and/or project within admissible limits (see design guide).

**Please note:**

The AK series clamping sleeves are available as low-thrust models; their transmittable torques and axial forces are, however, only up to 0.5 times the table values (see design guide).

Following specified assembly, Spieth clamping sleeves are ready for use immediately.

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See
	Successive document: N/A	<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>

## 4 Disassembling Spieth Clamping Sleeves

If handled correctly, Spieth clamping sleeves can be reused several times. Undo the cylindrical clamping sleeve to return it into its original shape.

In case you used a Spieth clamping sleeve to friction-lock a shaft and a hub, due to the adjustments made you can only reconnect these two components after they have been disassembled.

To disassemble, proceed in reverse assembly order.

- 1. Release the clamping force.
- 2. The clamping sleeve relaxes and resumes its original shape. All the parts are once again freely movable. Due to the many possible ways of initiating the clamping force, this description can only be formulated in general terms.

To enable later reuse, clean, preserve, and store Spieth clamping sleeves correctly. Prior to reuse, proceed as detailed in Section "Preparing for assembly" ff.

If non-original Spieth spare parts are used, Spieth-Maschinenelemente GmbH & Co. KG assumes no liability or warranty.

## 5 Maintenance and servicing of Spieth clamping sleeves

Spieth clamping sleeves are low-maintenance. If used as intended, Spieth clamping sleeves provide permanently precise pretensioning and positioning of the bearing on a spindle shaft.

We recommend periodic visual inspections of the clamping sleeves for potential damage.

Follow general safety notices when using Spieth clamping sleeves.

**Caution!**

Never touch actively rotating components. Take protective measures against accidental contact.

If you notice irregularities with the Spieth clamping sleeves during operation, immediately switch off the machine's drive.

©Spieth Proprietary notice ISO 16016	Previous document: ma-akl-en1604	See
	Successive document: N/A	<a href="http://www.spieth-me.de/english/service-download/catalogue-instructions/">www.spieth-me.de/english/service-download/catalogue-instructions/</a>
	Created: 27 Apr 2018/Fd	For any questions, requests or suggestions, please contact
	Checked: 27 Apr 2018/Ax	<a href="mailto:info@spieth-me.de">info@spieth-me.de</a>