

## Operating Manual for Guhring hydraulic chucks (manual operation)

### D Sicherheitshinweis

#### ACHTUNG

Lesen Sie die Montageanleitung sorgfältig und beachten Sie alle Anweisungen. Sie enthält wichtige Hinweise für die Montage, die Sicherheit und die Wartung des Gerätes.

Bewahren Sie die Anleitung an einem sicheren Ort auf und legen Sie sie dem Gerät bei, wenn dieses von anderen Personen benutzt wird.

Die Anleitung zum Download finden Sie unter:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>



### GB Safety note

#### ATTENTION

Read the assembly instructions carefully and follow the procedures. They include important notes regarding the assembly, the safety and the maintenance of the equipment.

Keep the instructions in a safe location and place them near the equipment when it is being used by others.

Instructions to download can be found here:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>



### F Consigne de sécurité

#### ATTENTION

Nous vous demandons de bien vouloir lire attentivement la notice de montage et de prendre toutes les instructions de service en considération. Elle contient de nombreuses recommandations très importantes pour le montage, pour la sécurité et pour l'entretien de l'élément de serrage.

Gardez précieusement cette notice de montage dans un endroit sûr, ou bien avec l'élément, afin de pouvoir la transmettre aux utilisateurs considérés.

Vous pouvez télécharger cette notice de montage sous:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>



### P Nota de segurança

#### ATENÇÃO

Leia as instruções de montagem com cuidado e siga os procedimentos. Eles incluem notas importantes relativas à montagem, a segurança e a manutenção do equipamento.

Mantenha as instruções em um local seguro e colocá-los perto do equipamento quando ele está sendo usado por outras pessoas.

Instruções para download pode ser encontrada aqui:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>



### E Nota de seguridad

#### Atención

Leer detenidamente las instrucciones de montaje y tener en cuenta todas las indicaciones. Incluyen indicaciones muy importantes para el montaje, la seguridad y el mantenimiento del aparato.

Guarde las instrucciones en un lugar seguro y adjúntelas al aparato si se utiliza por otras personas.

Estas instrucciones se las puede descargar en:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>



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### (RCH) 安全说明

#### 注意!

请仔细阅读安装说明并注意所有操作指导。其中包含了关于仪器设备安装，安全指南及保养维护的所有重要信息。请将该说明书妥善保存，当他人需要使用仪器设备时，请将该说明书一并提供。



该说明书的下载连接为：

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>

### (J) 安全取扱説明書

#### 注意

慎重に組み立て取扱説明書を読み、手順に従ってください。それらは、組立時の、安全性や機器のメンテナンスに関する重要な注意事項が記載されています。安全な場所で取扱説明書を保管してください、また他の人によって使用される場合は、これらの説明書をその機器の近くに配置してください。



ダウンロードする手順については、ここで見つけることができます：

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>

### (ROK) 안전 사항

#### 주의

조립 설명서를 주의 깊게 읽고 모든 지시 사항을 따라 주십시오. 그 내용들은 제품의 조립, 안전, 유지에 관해 중요한 정보를 포함하고 있습니다. 설명서를 안전한 곳에 보관 하시고, 다른 사람에게 의해 사용될 시에 제품에 함께 위치하도록 하십시오.



사용 설명서는 아래 주소에서 다운받으실 수 있습니다:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>

### (RUS) Указание по технике безопасности

#### внимание

Внимательно изучите инструкцию по сборке и соблюдайте все, приведённые в ней, указания. Она содержит важные указания по сборке, мерам безопасности и техническому обслуживанию устройства.

Храните инструкцию в надёжном месте и прикладывайте её к устройству, если оно будет использоваться другим лицом.



Инструкция в электронном виде находится по адресу:

<http://www.guehring.de/Download/Assembly and operating instructions Clamping devices and shrink technology>

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## Operating Manual for Guhring hydraulic chucks (manual operation)

### Dear Customer,

Thank you for choosing this Guhring product. Please follow our assembly and operating instructions carefully, as this will not only save you time but is also the best way to avoid errors. Additional technical data is provided on the appropriate pages of our current catalogue GM 300. Should you have any queries or complaints, our staff are always ready to provide telephone assistance. We feel sure that if you follow our instructions, this Guhring product will give you full satisfaction.

Yours faithfully,  
Gühring KG

### 1. Safety



#### 1.1. Sign explanation

##### CAUTION

If this sign is used in connection with a signal word, the failure to comply with our specifications can lead to personal injury.

**ATTENTION** If this sign is used, improper handling can endanger people and objects.

#### 1.2. Proper use

Guhring hydraulic chucks are suitable for clamping symmetrical rotary tools. See chapter 3.1 for suitable shank types.

This product may only ever be applied within the limits of its technical specifications (see chapter 3, chart of technical data).

Appropriate use also includes compliance with the conditions the manufacturer has specified for commissioning, assembly, operation, environment and maintenance. Using the system with disregard to even a minor specification will be deemed inappropriate use. The manufacturer assumes no liability for any injury or damage resulting from inappropriate use.

#### 1.3. Safety instructions

**Please follow the following safety instructions to ensure correct application!**

##### CAUTION

If our tools are used during rotation, safety guards as per EEC Machine Guide Line § 1.4.2.2. B have to be installed.



##### CAUTION

When changing the tools there is a risk of injury through sharp edges and contours. Wear suitable protective gloves when changing tools.

**ATTENTION** The clamping of the tools and the fitting of the hydraulic chuck to the machine must always be carried out by technically skilled personnel that has completely read and understood the operating manual.

**ATTENTION** If the minimum clamping depth is not respected, the tool may break and the accuracy can't be maintained.

**ATTENTION** Before initial use, after appr. 100 tool changes or every 3 months the clamping force should be checked by using our SENSO 3000 clamping force measuring instrument (Guhring no. 4038) or by a clamping force test with a carbide proofing arbor and a torque wrench. If the clamping force is not sufficient, the hydraulic chuck should no longer be used and be returned to Guhring for repair.



##### Note:

SENSO 3000, carbide proofing arbor and torque wrench do not belong to the scope of delivery and have to be ordered separately (see current GM 300 catalogue).

**ATTENTION** When clamping, the clamping screw must always be turned to the stop with a hexagonal key.

**ATTENTION** Additional bores, threads or attachments which are not offered as an accessory by Guhring, may only be used with the written consent of Guhring.

**ATTENTION** Do **not** remove the protective resin seal on the ventilation screw of the hydraulic system.

**ATTENTION** During application do not exceed the technical data values (see table chapter 3).

## Operating Manual for Guhring hydraulic chucks (manual operation)

### Basic rules

- When changing tools wear protective gloves to prevent the risk of cuts.
- Hold the tool firmly when loosening the tool clamping to prevent it falling down and becoming damaged or damaging the workpiece.
- Observe the maximum tool dimensions.
- Hydraulic chucks are not shrink fit chucks! Hydraulic chucks must never be heated up with an induction coil for example.
- With every operation observe the maximum permissible cutting speed and feed rate values.





### 2. Warranty

The warranty period is **12 months** after delivery date ex-works assuming appropriate use and observing the recommended operating and maintenance instructions.

### 3. Chart of technical data

For shank- Ø  in mm	max. RPM in min <sup>-1</sup>		Permissible transferrable torque (shank- minimum-dimension h6, oiled shank) in Nm	Minimum clamping depth of the tool  in mm	max. adjust. range l <sub>3</sub>  in mm	Admissible radial force F on the toolholder at an overhang length of 50 mm  in N	Operating temperatur e  in °C	Max. coolant pressure  in bar
	L1 up to 125 mm	L1 over 125 mm						
Ø 3 h <sub>6</sub>	50 000	30 000	2.5	27	7	25	20 - 50	80
Ø 4 h <sub>6</sub>	50 000	30 000	6	27	7	40	20 - 50	80
Ø 5 h <sub>6</sub>	50 000	30 000	10	27	7	65	20 - 50	80
Ø 6 h <sub>6</sub>	50 000	30 000	16	27	10	225	20 - 50	80
Ø 8 h <sub>6</sub>	50 000	30 000	26	27	10	370	20 - 50	80
Ø 10 h <sub>6</sub>	50 000	30 000	50	31	10	540	20 - 50	80
Ø 12 h <sub>6</sub>	50 000	30 000	82	36	10	650	20 - 50	80
Ø 14 h <sub>6</sub>	50 000	30 000	125	36	10	900	20 - 50	80
Ø 16 h <sub>6</sub>	50 000	30 000	190	39	10	1410	20 - 50	80
Ø 18 h <sub>6</sub>	50 000	30 000	275	39	10	1580	20 - 50	80
Ø 20 h <sub>6</sub>	50 000	30 000	310	41	10	1860	20 - 50	80
Ø 25 h <sub>6</sub>	25 000	20 000	520	47	10	4400	20 - 50	80
Ø 32 h <sub>6</sub>	25 000	20 000	770	51	10	6500	20 - 50	80

### 3.1. Applicable shank types

DIN 6535  DIN 1835-1	Direct clamping		Clamping with the assistance of a reduction bush   #4368/69
	Ø 6- 20 mm	Ø 25- 32 mm	
 Form HA	✓	✓	✓
 Form HB/ E	✓	✗	✓
 Form HE/ E	✗	✗	✓
Concentricity ( )	≤ 0.003 mm		≤ 0.005 mm

## Operating Manual for Guhring hydraulic chucks (manual operation)

### 4. Operation

Illustration 1

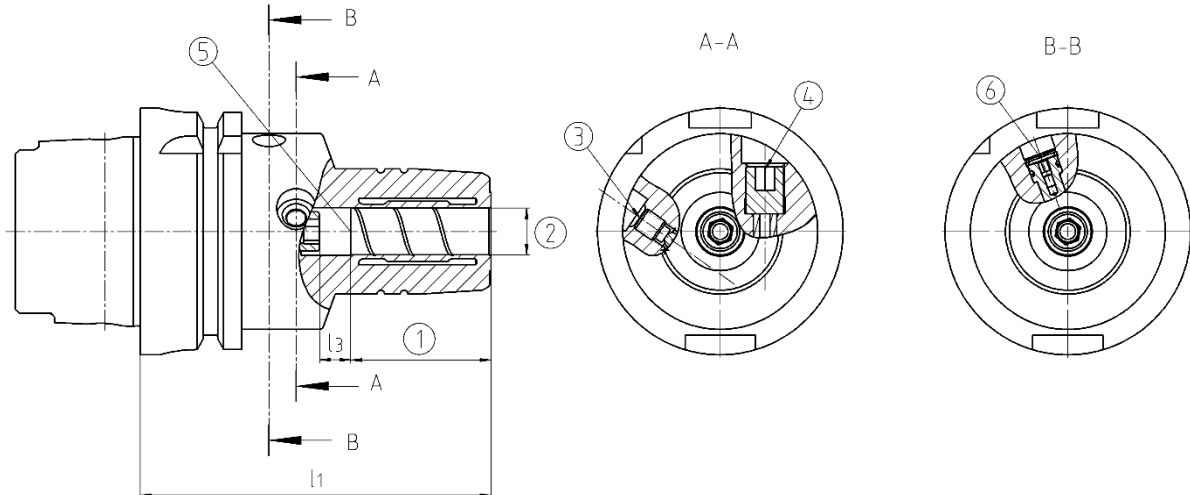
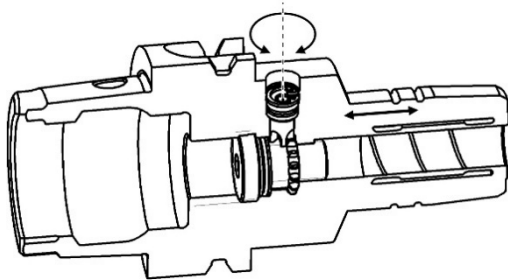


Illustration 2



- ① Min. clamping depth of the tool
- ② Clamping diameter
- ③ Vent screw, sealed
- ④ Actuating screw #4221 SW 6 / SW 5 / SW 4
- ⑤ Length adjustment screw
- ⑥ Actuation screw size 2.5 for chucks with radial length adjustment

Cross sections of Guhring expansion toolholders with radial length adjustment..

#### 4.1. Clamping

1. Ensure the tool shank is burr- and contamination-free.
2. Insert the tool into the chuck to the minimum clamping depth (see table, chapter 3).



**Note:** Insert the tool vertically into the hydraulic chuck.

3. During the clamping procedure, the clamping screw (4) must always be turned **by hand** to the noticeable stop. We recommend not to exceed a torque figure of 10 Nm.



**Note:** Only actuate the clamping screw (4) with the supplied hexagonal key #4912. i. e. for size SW 4 Guhring no. #4912 4,600 apply reinforced hexagonal clamping key SW4/6.

**ATTENTION** The clamping screw (4) must not be actuated with a power screwdriver!

**ATTENTION** **Never** clamp the hydraulic chuck **without a tool**. Failure to observe this damages the clamping system.

4. When unclamping loosen the clamping screw (4) until the clamping pressure is released. Dependant on clamping-Ø appr. 3-6 rotations of the key are required.

**ATTENTION** The clamping screw (4) is not secured against falling out.

#### 4.2. Length adjustment »radial« (see ill. 1, cross section B – B and ill. 2)

1. Insert the supplied hexagonal clamping key #4912 2,509 into the actuating screw (6).
2. Rotate the actuation screw ant-clockwise /clockwise to adjust the length setting screw (5) to the correct dimension.

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**ATTENTION** The maximum torque for the actuating screw (6) must not exceed 3 Nm. Only use the supplied hexagonal clamping key #4912.

### 4.3. Length adjustment »axial«

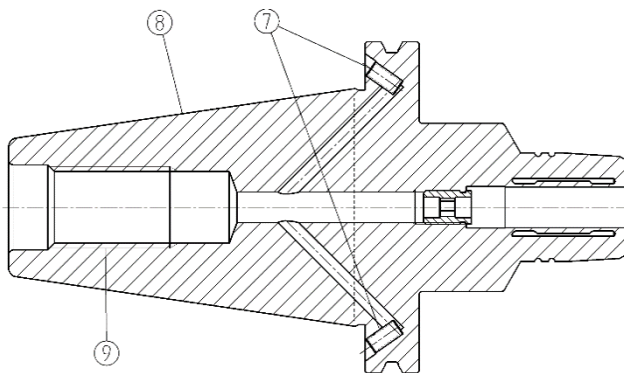
1. The length setting screw (5) is actuated via the clamping diameter bore (2) or the taper holder with the assistance of an hexagonal clamping key #4912.



**Note:** Do not actuate the length setting screw if the tool is clamped.

### 5. Modification of a steep taper DIN ISO 7388 form AD/ JD to form AF/JF

#### I Illustration 3



- ⑦ Locking screws  
SK DIN ISO 7388 form AF
- ⑧ Steep taper / machine interface
- ⑨ Holder thread for tightening bolt

1. Remove both locking screws (7) on the steep taper (8) (see fig. 3).
2. Ensure the coolant bores are free from adhesive residue (if necessary remove adhesive residue).
3. Screw the tightening bolt #4926 (sealed for coolant delivery via the collar) for form AF into the holder thread for tightening bolt (9) of the steep taper (8). For form JF use the tightening bolt #4927 or #4928.

**Note:** The conversion from form AF/JF to form AD/JD is carried out in reverse sequence applying a for form AD suitable tightening bolt #4925 (central bore). For form JD apply tightening bolt #4927 or #4928.



4. During assembly both locking screws (7) must be glued into the steep taper (8) (see fig. 3) again to ensure they are secured against loosening and are coolant proof.

### 6. Care, Storage and Maintenance

1. We recommend to regularly clean the clamping surfaces at every tool change with a solvent containing cleaning agent to maintain the clamping force and clamping accuracy. Suitable cleaning arbors (Guhring no.. 4918) for Ø 6 and 32 mm are available separately (see current GM 300-catalogue).



**Note:** When handling solvent containing cleaning agents observe the safety and environmental regulations of the manufacturer.

2. We recommend to regularly lubricate the clamping screw (4) with copper paste.
3. At cleaning temperatures above 50°C up to max. 80°C the clamping pressure of the hydraulic chuck must first be released at the clamping screw (4).
4. Before storage, the entire surface of the hydraulic chuck should be lightly oiled.
5. Always stock the hydraulic chuck in unclamped position.

Basically, repair work should always be carried out by Guhring. If you should carry out repairs yourself or have it done by a third party the warranty shall be deemed null and void