

Dear customer,

Congratulations!

You have chosen the best product we know how to make with our 30 years of experience and passion for precision.

Please follow the instructions in this manual to avoid mistakes and save time.

In case you need further information or you have further requests we will be glad to be at your disposal.

With best regards,

Your GRIP GmbH

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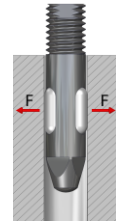
## GI Internal Gripper

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## 1 Operation

Image 1

The internal gripper (GI) dips into boreholes, increases his outer diameter when pressure is applied by expansion of the silicone membrane and thus frictionally hold against the bore wall. When pressure is switched off, the silicone membrane self-draws back into the grippers interior by its elastic behavior.



## 2 Safety

### 2.1 Symbol



This symbol indicates possible hazards to persons or the GI Internal Gripper.

### 2.2 Intended use

The GI Internal Gripper is used as tool for robot-supported handling of work pieces with bores. The unit may only be used in the context of its technical specifications. The requirements of the applicable instructions must be considered and adhered to.

### 2.3 Environmental and operating conditions

Use the GI internal gripper only within the application parameters defined in the technical specifications, otherwise no warranty can be accepted. Exceptions to this rule are special developments designed specifically for the respective conditions. The warranty is 24 months from date of delivery.

### 2.4 Safety indication

Dangers may arise from the unit, if:

- the product is not installed or inserted properly,
- the system is not used for its intended purpose,
- the safety and installation notes are not observed.

Everyone who is responsible for assembly, commissioning and maintenance must read and understand the complete operating instructions. Improper use, which affects the function and operational safety of the GI Internal Gripper, is prohibited.

#### Practical use of the internal grippers



#### NOTICE!

The internal grippers may only be filled with pressure in a bore in order to prevent the wear of the membrane. The bore must not have a crossway bore, grooves, shoulders, ridges or something similar, that the membrane experiences a uniform counterforce and is not damaged.



#### CAUTION!

When using the internal grippers outside the operating conditions, protect your eyes with safety glasses.



#### NOTICE!

The internal grippers may only be operated, if the machine in which the unit is installed, complies with the relevant provisions of the Machinery Directive 2006-42-EC

### 3 Warranty

If the product is used as intended in 1-shift operation the warranty is valid for 24 months from the ex-works delivery date under observance the mandatory maintenance and lubrication intervals and the given operating conditions. Generally parts touching the work piece and wear parts are not part of the warranty. Wear parts are listed in chapter 8.1. The unit is considered to be defective if its basic function "gripping" is no longer functioning.

### 4 Scope of delivery

- GI as painted in image 2.

### 5 Technical Data

Behold technical data sheets: TD-GI005-EN, TD-GI006-EN, TD-GI007-EN, TD-GI008-EN, TD-GI009-EN, TD-GI010-EN, TD-GI011-EN, TD-GI012-EN, TD-GI013-EN, TD-GI014-EN, TD-GI015-EN, TD-GI016-EN, TD-GI017-EN, TD-GI018-EN, TD-GI019-EN, TD-GI020-EN

### 6 Assembly

For assembly, the internal grippers have a metric external thread.

For the compressed air connection, they also have an internal bore into which either a compressed air nipple can be screwed or which is directly supplied with compressed air via the mounting bore.

## 7 Maintenance and care

For the gripper there are no periodicity of maintenance provided. The unit is maintenance-free.

### Membrane changes

If the membrane (hose) must be replaced, the GI as described in section 7.1 is to dismantle. The faulty membrane has to be removed, and it is necessary to check whether the o-rings are still in their intended position and are free from damage. The new membrane is easy to lubricate and insert into the sleeve.

### 7.1 Disassembly of the GI

(behold image 3)

1. Remove the GI and disconnect it from the compressed air supply.
2. Unscrew the sleeve completely (pos. 1).
3. Remove the tube (membrane, pos. 3).
4. Clean all parts thoroughly. Inspect for wear and defects.
5. Lubricate all mating surfaces.

For assembly, reverse the order.

### 7.2 Torque specifications

M6 – 8,5 Nm; M8 – 20,6 Nm; M10 – 41 Nm; M12 – 71 Nm

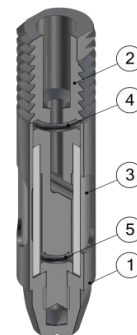
### 7.3 Compressed air connection

Requirements for compressed air according to ISO 8573-1: 6 4 4.

## 8 Parts list

Pos.	Description	Quantity
1	Hull	1
2	Mandrel	1
3	Tube	1
4	O-ring 1	1
5	O-ring 2	1

Image 2



### 8.1 Spare and wear parts, depending on size

Pos.	Description	Order-No.
3	Replacement tube	EG-GI...-S

9 Exploded view

Image 3

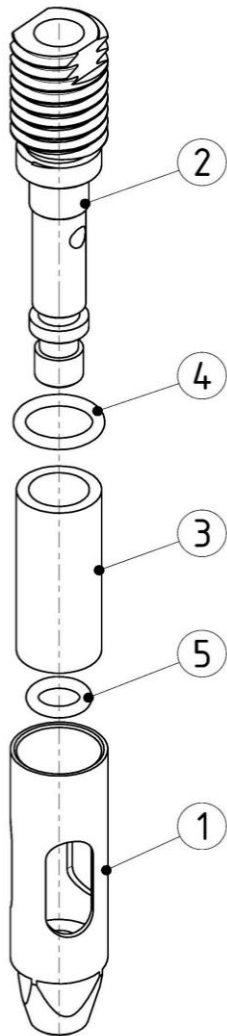


Image 4



**10 EC - Declaration of incorporation**

according to the Machinery Directive 2006/42/EC, annex II B

The producer / distributor GRIP GmbH Handhabungstechnik  
Alter Hellweg 70  
D-44379 Dortmund, Germany

hereby declares that the following products

**Product designation:** Internal gripper (GI)

**Functional description:** Gripper with expanding membrane for the force-fitting gripping of work pieces with bores

**Type designation:** G-GI005 to 020

The provisions of the above-mentioned directives- including their effective amendments- comply with the time of the declaration.

He further states that the following essential requirements of the Machinery Directive 2006/42/EC were applied and observed:  
annex I, numerics: 1.1.2; 1.1.3; 1.1.5; 1.3.2; 1.7.4

He further states that the specific technical documentation has been drawn up in accordance with annex VII, Part B.

The following harmonized standard has been applied:

EN ISO 12100-1 Safety of Machinery- Basic concepts, general principles for design- Part 1:  
Basic terminology and methodology (ISO 12100-1:2010)

EN ISO 12100-2 Safety of Machinery- Basic concepts, general principles for design- Part 2:  
Technical principles (ISO 12100-2:2010)

In the case of reasoned requests, the specific documents shall be sent to the national authorities as follows: Post

The product mentioned above may only be put into operation if it has been established applicable that the unit, into which the above-mentioned product is to be incorporated, complies with the provisions of the Machinery Directive 2006/42 / EC.

Authorized representative: Dipl.-Ing. (FH) Hasan Canti

Location: Dortmund  
Date: 21.04.2021



Dipl.-Ing. (FH) Hasan Canti  
Executive Director