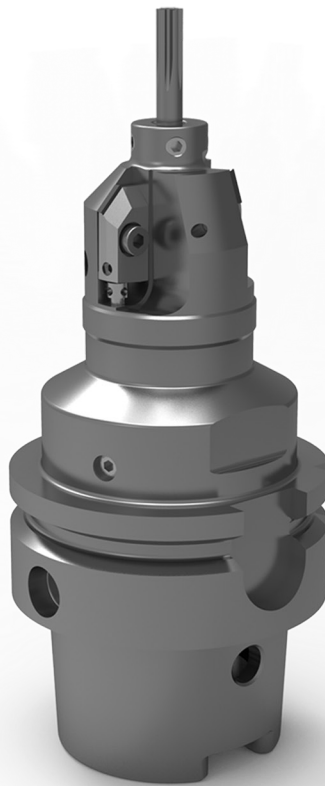


Assembly and Adjustment Instructions for tools with the adjustable GP100 clamping component

Translation of the original operating instructions

Version: 11/2017



The document was prepared by Gühring KG.

All rights on this documentation, in particular the right of copying, distributing and translating the document remain with Gühring KG, also for the case of the registration of patent rights. No part of this document may be reproduced or be processed, copied or distributed with electronic media without prior written approval from Gühring KG.



CONTENTS

1	Information About these Instructions	3
1.1	Read the Operating Instructions	3
1.2	Explanation of the General Icons	3
1.3	Representation of Requirements and Work Instructions	4
1.3.1	Requirements	4
1.3.2	Work Instructions with Fixed Sequence	4
2	Identification of the Tool	4
2.1	Tool Identification	4
2.2	Manufacturer Specifications	4
3	Tool Description, Specifications	5
3.1	Tool Description	5
3.2	Intended Use	5
3.3	Improper Use	5
3.4	Specifications	5
4	Basic Safety Instructions	6
5	Installing and Adjusting the Clamping Component	6
5.1	Initial Safety Notes	6
5.2	General Information	6
5.3	Designation of the Individual Parts	7
5.4	Installing the Clamping Component	7
5.5	Adjusting the Clamping Component	12



1 Information About these Instructions

1.1 Read the Operating Instructions

Use and handling of the tool described below do not come naturally and are not self-explanatory. They are therefore explained by the accompanying technical documentation.

The instructions help you to use the tool as intended, properly, effectively and safely. You should therefore read the chapters below attentively and thoroughly. If necessary, keep looking up facts that are essential for your operations.

Request new operating instructions if parts of them are lost or damaged. Always keep the operating instructions at an accessible place in the vicinity of the tool.



Important information in the enclosed "General Safety Instructions" document

The safety instructions that are necessary for handling the tool can be found in the brief version of the "General Safety Instructions" that are enclosed with the tool.

Ensure that you read and observe this document.

Residual risks

The documents inform and warn you of residual risks for which the risk mitigation by design and protective measures takes no or no complete effect.

1.2 Explanation of the General Icons

Icon	Explanation
	Important information This icon indicates important additional information.
	Information about the machine documentation This icon refers to other parts of the documentation that must particularly or additionally be observed (for example in supplier instructions, etc.).

Tab. 1: General icons



1.3 Representation of Requirements and Work Instructions

1.3.1 Requirements

Requirements that are obligatory for the execution of an activity on the tool have a checkbox next to them in the text.

Typical requirement

...

The thread is coated with mounting lubricant

1.3.2 Work Instructions with Fixed Sequence

Many activities on the tool require the steps to be taken in a fixed sequence.

These steps have work instructions with consecutive numbering assigned. Work instructions also contain intermediate results and final results. Intermediate results show sequences that are not carried out by the user. They are identified by an arrowhead ▶. End results show the end of the action. They are identified by a tick ✓.

The sequence of the work operations is compulsory. Observing the work instructions is obligatory.

Typical work instructions with fixed sequence

1. Switch on the machine at the main switch
 - ▶ The machine controller starts up
2. Start the software
 - ▶ The software starts and the following menu appears:
 - ✓ Machine and software are ready for operation

2 Identification of the Tool

2.1 Tool Identification

Tool designation: Tools with the adjustable GP100 clamping component

Part number / SAP no.: See Chapter 3.4 Specifications

Year of manufacture: 2017

2.2 Manufacturer Specifications

Headquarters:

Gühring KG
Herderstr. 50-54
72458 Albstadt
Germany

Phone +49 7431 17-0
Fax +49 7431 17-21279
E-mail info@guehring.de
Internet www.guehring.de



3 Tool Description, Specifications

3.1 Tool Description

The adjustable GP1100 clamping component is a part of the tool, and thus not a stand-alone tool. It is installed and used on a tool carrier.

3.2 Intended Use

Tools with the adjustable GP100 clamping component are intended to be used in CNC-controlled machines or machining centres. Use the tool only on machines that are in a proper technical state. Since only optical measurement is allowed for tools with CBN tips, you must ensure that an optical measuring / adjusting unit is available. Tools with the adjustable GP100 clamping component are only suitable for fine machining (radial cutting depth < 1.5 mm) or for valve ring and guide machining. Depending on the installed indexable insert, you can machine sintered material, aluminium and steel.

3.3 Improper Use

Tools with the adjustable GP100 clamping component are not intended to be used in manually operated machine tools. Tools with PCD or CBN tips must not be measured mechanically. Tools with the adjustable GP100 clamping component are not suitable for machining with a cutting depth > 1.5 mm.

3.4 Specifications

Designation	Mat. no.	Specifications	Spanner size
Clamping screw	400128801	M3x8 - 12.9	AF 2.5
Washer	400150971	Outside Ø: 5.5 mm Inside Ø: 3.3 mm	
Length adjustment screw	400150975	M3x6	AF 1.5
Angle adjustment screw	400150970	M3x7	AF 1.5
Indexable insert	7730 - 7741	Cutting material PCBN	

Tab. 2: Specifications



Emission values Important information

While the tool does not cause any emission, the machine in which the tool is used does. Always observe the operating instructions of the machine!



4 Basic Safety Instructions



Important information in the enclosed "General Safety Instructions" document

The safety instructions necessary for handling the tool can be found in the document "General Safety Instructions". Use the QR code or the link in the brief instructions that are enclosed with the tool to retrieve and download the General Safety Instructions.

Please get in touch with your contact at Gühring if you do not have access to the Internet or require an additional hard copy of the General Safety Instructions.

Gühring KG will send you a hard copy of the document.

Please ensure that you read and heed the document "General Safety Instructions" and its brief version.

5 Installing and Adjusting the Clamping Component

5.1 Initial Safety Notes



Important information for your safety

You are responsible!

Always take note and observe the safety instructions in the document "General Safety Instructions" and the locally valid safety instructions.

5.2 General Information

The following information is important for the general handling of the tool:

- The angle to the centre axis is machined by 0.5° smaller than the related nominal dimension, and has a positioning travel of $+1^\circ$
- The possible axial clamping claw adjustment is ± 0.2 mm off the nominal dimension
- The tools are adjusted when they are delivered
- Check the adjustment before you use the tools for the first time



5.3 Designation of the Individual Parts

To have a clear definition of the individual parts, we use the following exploded views to designate them:

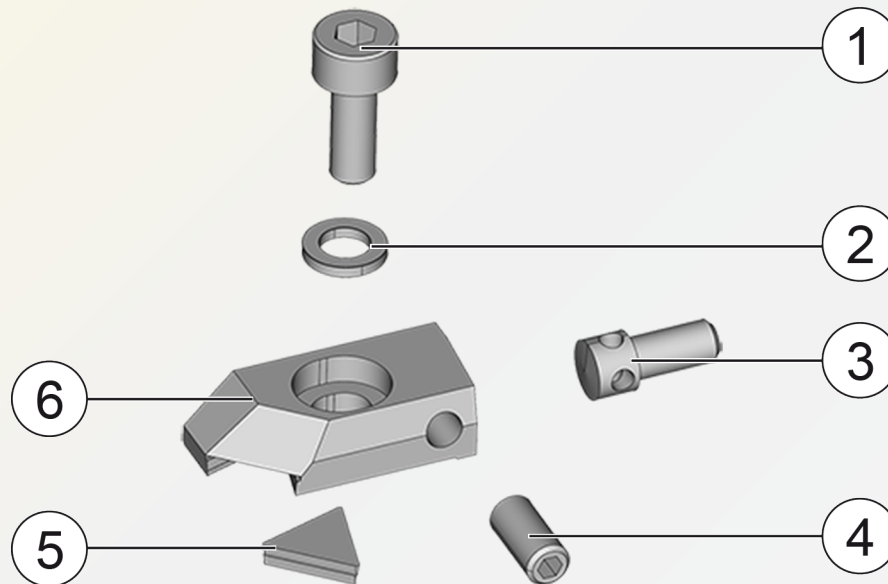


Fig. 1: Exploded view of the tools with the adjustable GP100 clamping component

1	Clamping screw	3	Length adjustment screw	5	Indexable insert
2	Washer	4	Angle adjustment screw	6	Clamping claw

5.4 Installing the Clamping Component

The clamping component has already been installed when it is delivered. If you want to adjust previously installed clamping components, skip this step and start with Chapter 5.5 "Adjusting the clamping component".

Use the following procedure to change the indexable insert:

Requirements:

- New indexable insert / unused side of installed indexable insert
- Cleaning agent
- Tool carrier with clamping claw
- Hexagon socket wrench (2.5 mm)
- Tool drawing (customer drawing)
- Hexagon socket wrench (1.5 mm)
- Torque wrench with matching hexagon socket wrench (2.5 mm)



1. Using the hexagon socket wrench (1.5 mm), loosen the angle adjustment screw (4) and the length adjustment screw (3) on the clamping claw (6) by half a turn.

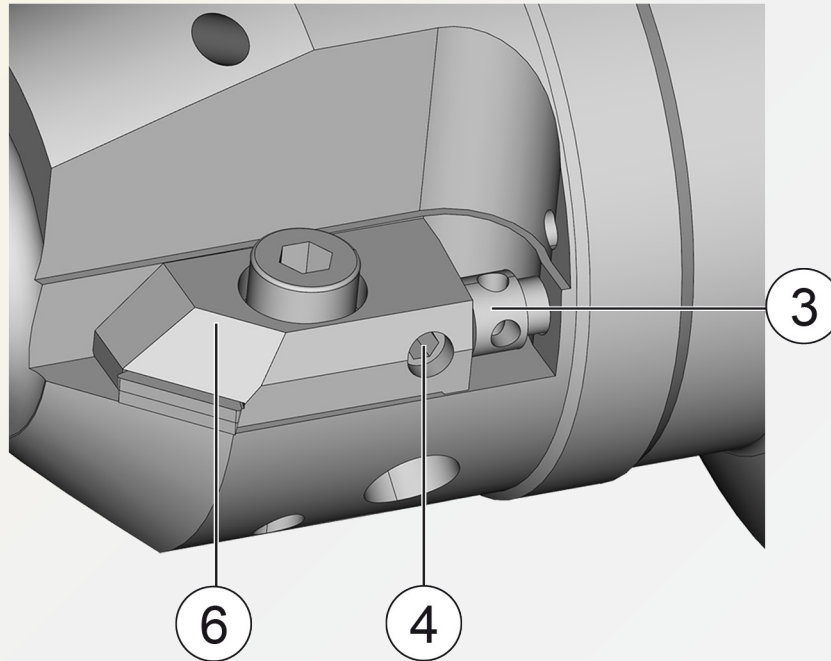


Fig. 2: Loosening angle adjustment screw and length adjustment screw

2. Loosen the clamping screw (1) with the hexagon socket wrench (2.5 mm).

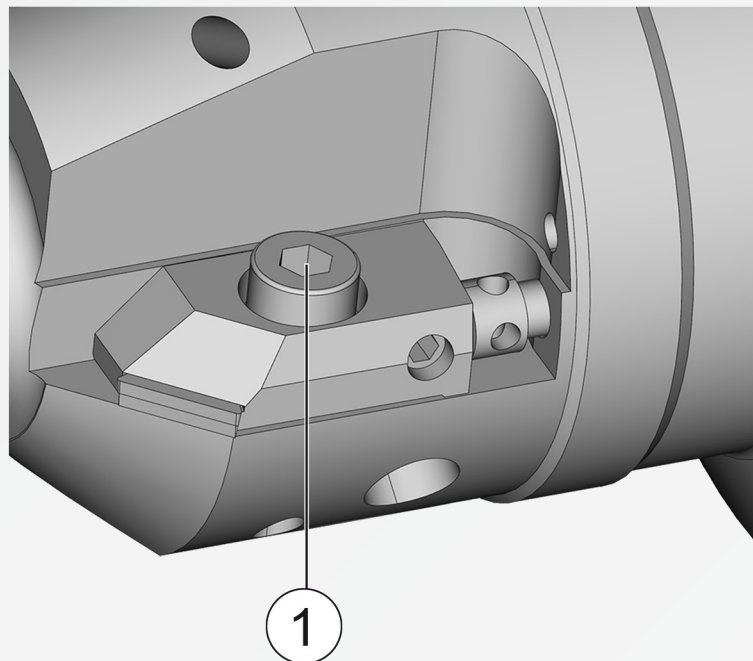


Fig. 3: Loosening the clamping screw



3. Remove the clamping screw (1) and the washer (2). Remove the clamping claw (6) with the indexable insert (5) from the tool carrier.

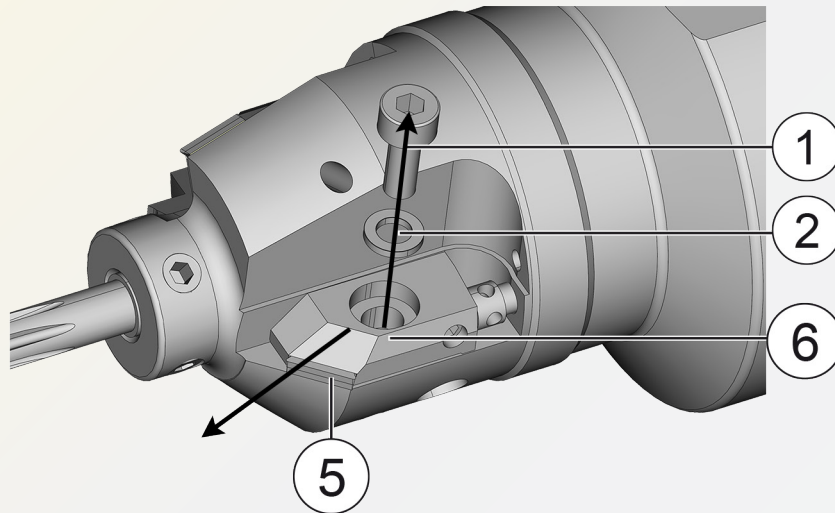


Fig. 4: Removing clamping screw and washer

4. Remove the indexable insert (5) from the clamping claw (6).

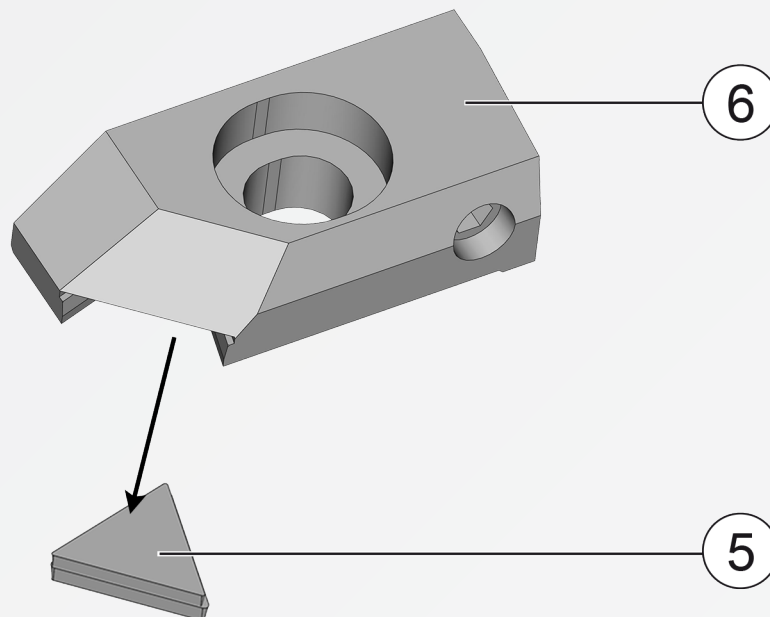


Fig. 5: Removing the indexable insert



5. Clean all parts and oil the clamping screw thread lightly.
6. Rotate the unused side (cutting edge) of the indexable insert (5) to the front, or replace the indexable insert (5) with a new one.
Check the clamping claw (6), the angle adjustment screw (4), the clamping screw (1) and the washer (2) for wear. Replace if necessary.
7. Reinstall the indexable insert (5) into the clamping claw (6).

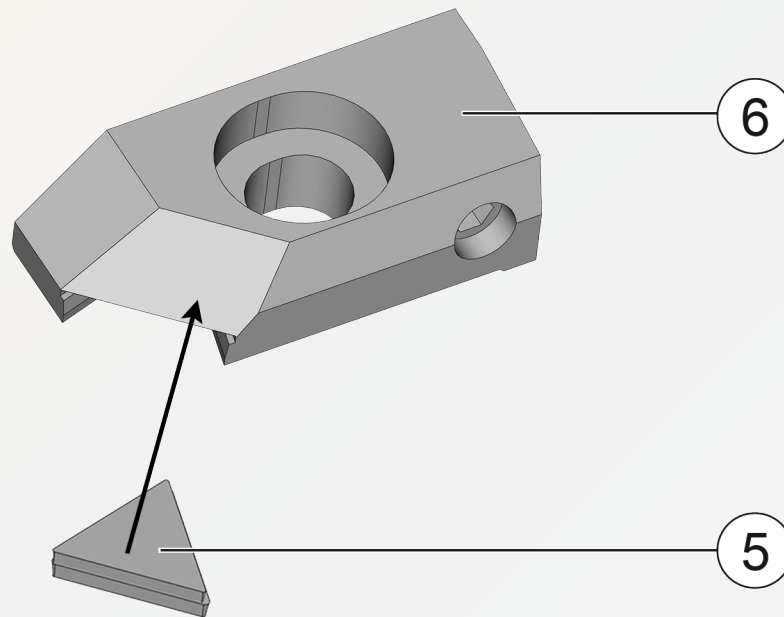


Fig. 6: Installing the indexable insert

8. Secure clamping claw (6) and indexable insert with your fingers on the tool carrier. Install the clamping screw (1) and the washer (2).

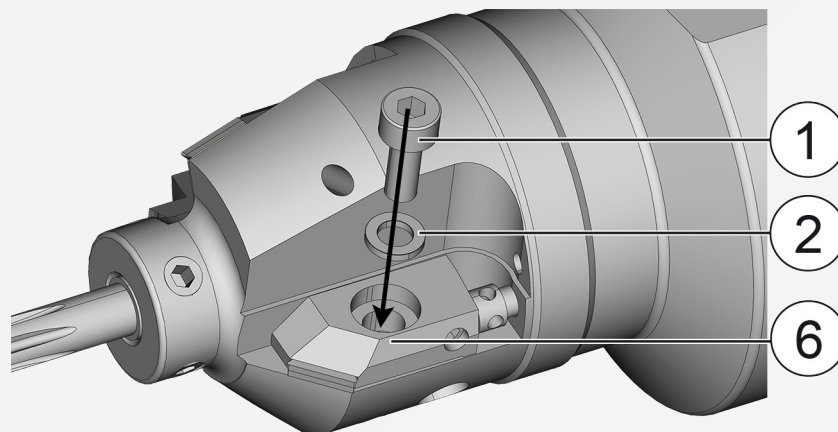


Fig. 7: Securing clamping claw with clamping screw and washer



9. Press clamping claw (6) and indexable insert (5) with your thumb and index in the direction of the arrow to bring the clamping claw in contact with the edge of the tool carrier (7) and/or a length adjustment screw (3).

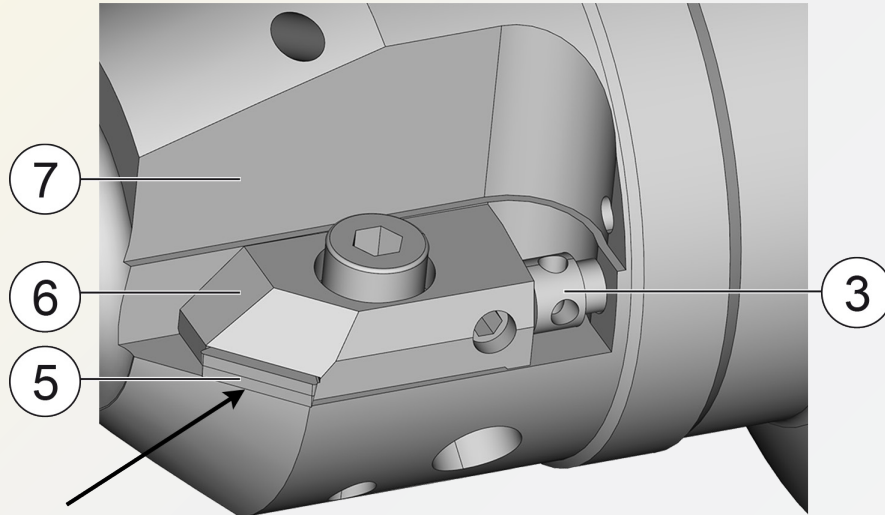


Fig. 8: Pressing on clamping claw and indexable insert

10. Lightly tighten the clamping screw (1) (approximately 20 Ncm). Use a torque wrench for this process.

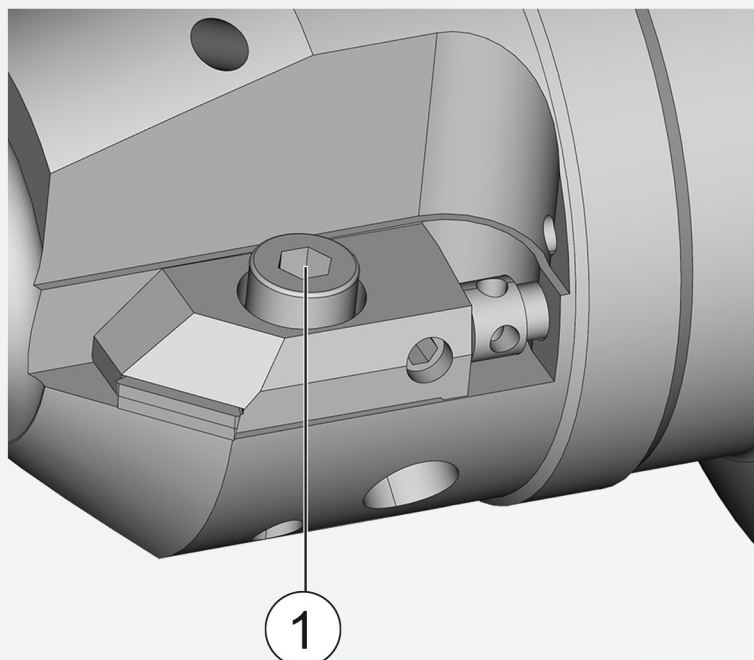


Fig. 9: Tightening the clamping screw

- ✓ The installation of the clamping component is completed.



5.5 Adjusting the Clamping Component

Requirements:

- ☑ Chapter 5.4 "Installing the Clamping Component" has been completed.
- ☑ Optical measuring instrument*
- ☑ Hexagon socket wrench (AF 1.5)
- ☑ Torque wrench with matching hexagon socket wrench (2.5 mm)
- ☑ Tool drawing (customer drawing)

*Upon request, Gühring KG offers you an optical measuring instrument for your purpose.

Use the following procedure to adjust the clamping component:

1. Using the angle adjustment screw (4), adjust the angle of the indexable insert to 0.1° before the nominal dimension. To do this, turn the angle adjustment screw (4) with a hexagon wrench (1.5 mm) clockwise until the indexable insert is at 0.1° before the nominal dimension.

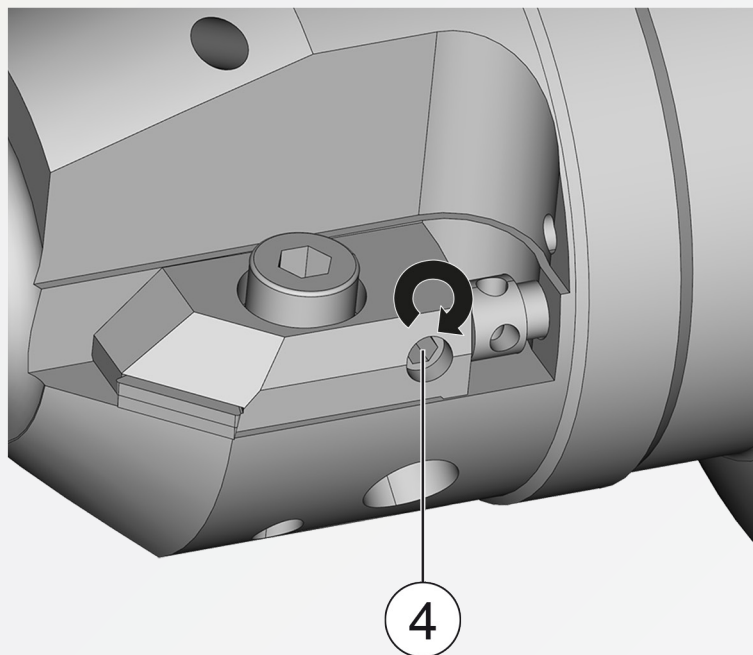


Fig. 10: Adjusting the angle with the angle adjustment screw to 0.1° before nominal dimension

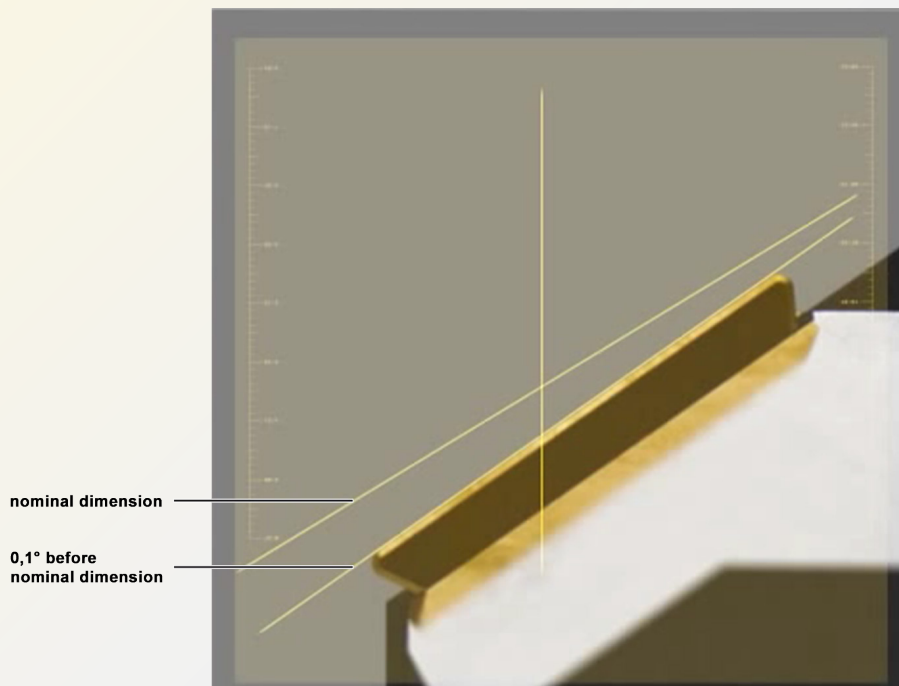


Fig. 11: Indexable insert adjusted to 0.1° before the nominal dimension
(Note: The figure is not true to scale. It is only a schematic representation.)

2. Adjust the indexable insert axially to 0.05 mm before the nominal dimension. To do this, set the crosshairs on the gauge diameter (see customer drawing). Next, turn the length adjustment screw (3) with a hexagon wrench (1.5 mm) anti-clockwise until the indexable insert is axially 0.05 mm before the nominal dimension.

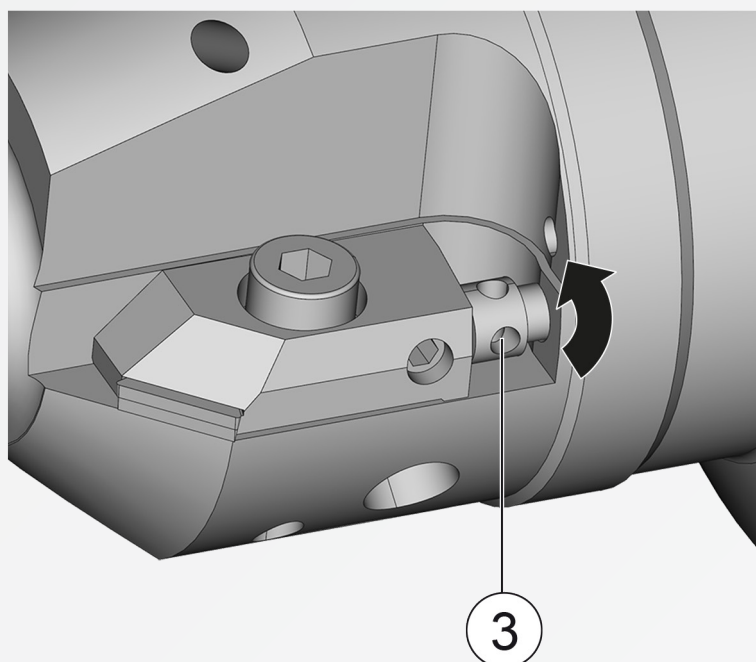


Fig. 12: Adjusting the indexable insert with the length adjustment screw to 0.05 mm before the nominal dimension

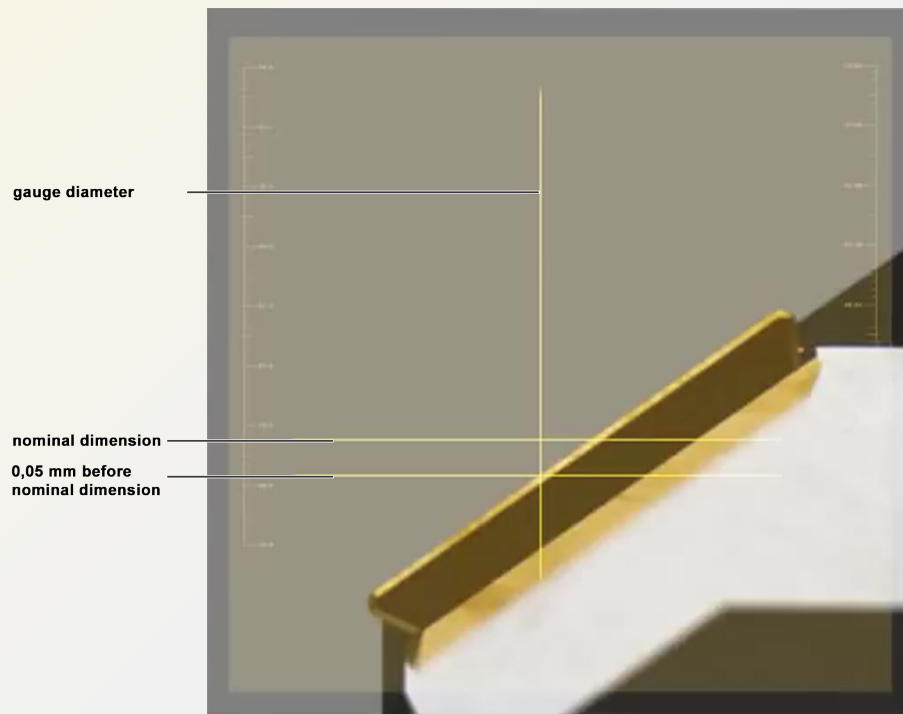


Fig. 13: Indexable insert adjusted to 0.05 mm before the nominal dimension
(Note: The figure is not true to scale. It is only a schematic representation.)

3. Tighten the clamping screw (1) with 134 Ncm. Use a torque wrench for this process.

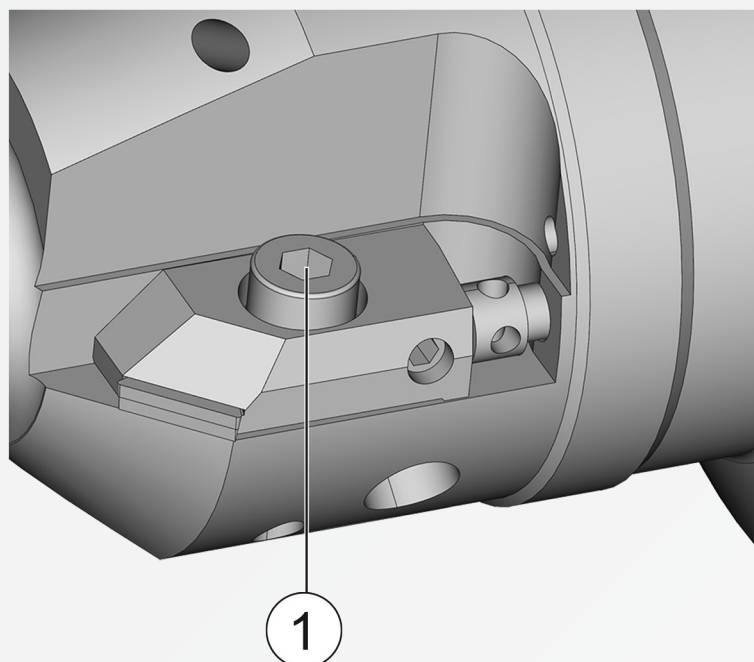


Fig. 14: Tightening the clamping screw



- Using the angle adjustment screw (4), adjust the angle of the indexable insert to nominal dimension. To do this, turn the angle adjustment screw (4) with a hexagon wrench (1.5 mm) clockwise until the indexable insert is at the nominal dimension.

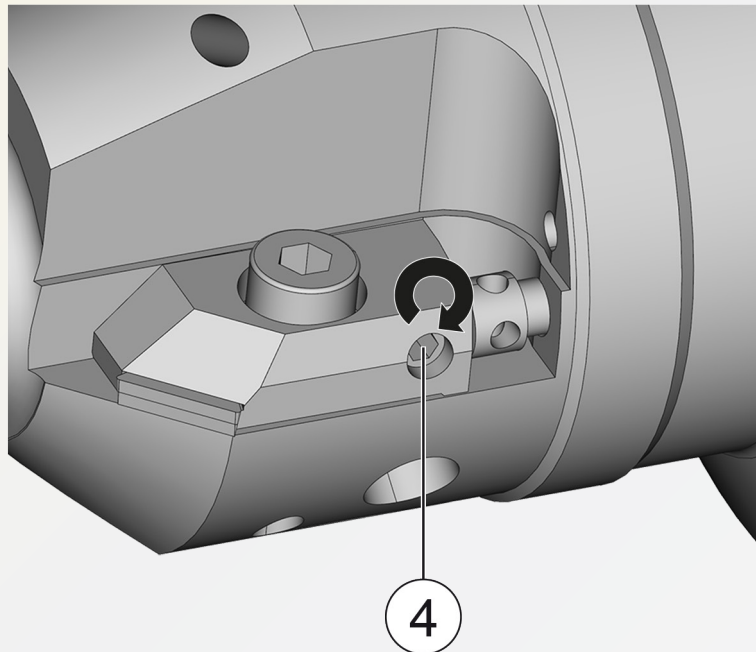


Fig. 15: Adjusting the angle with the angle adjustment screw the nominal dimension

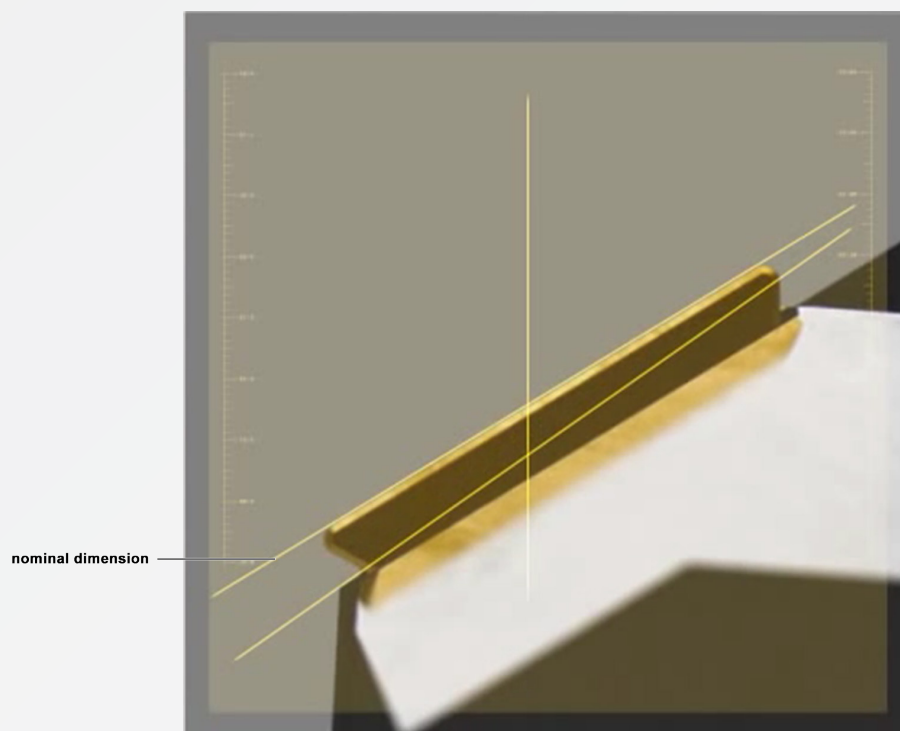


Fig. 16: Indexable insert adjusted to nominal dimension
(Note: The figure is not true to scale. It is only a schematic representation.)



5. Adjust the indexable insert axially to the nominal dimension. Set the crosshairs on the gauge diameter (see customer drawing). Next, turn the length adjustment screw (3) with a hexagon wrench (1.5 mm) anti-clockwise until the indexable insert is on the nominal dimension.

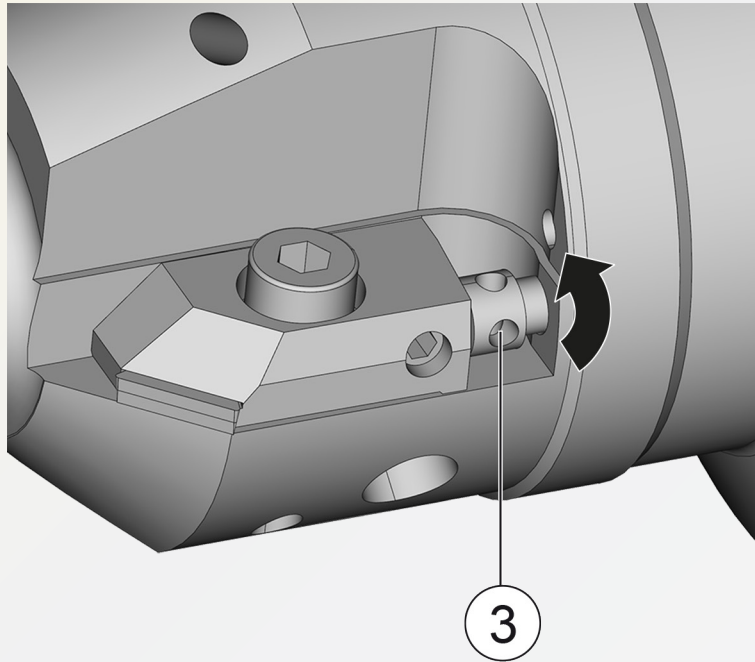


Fig. 17: Adjusting the indexable insert with the length adjustment screw axially to the nominal dimension

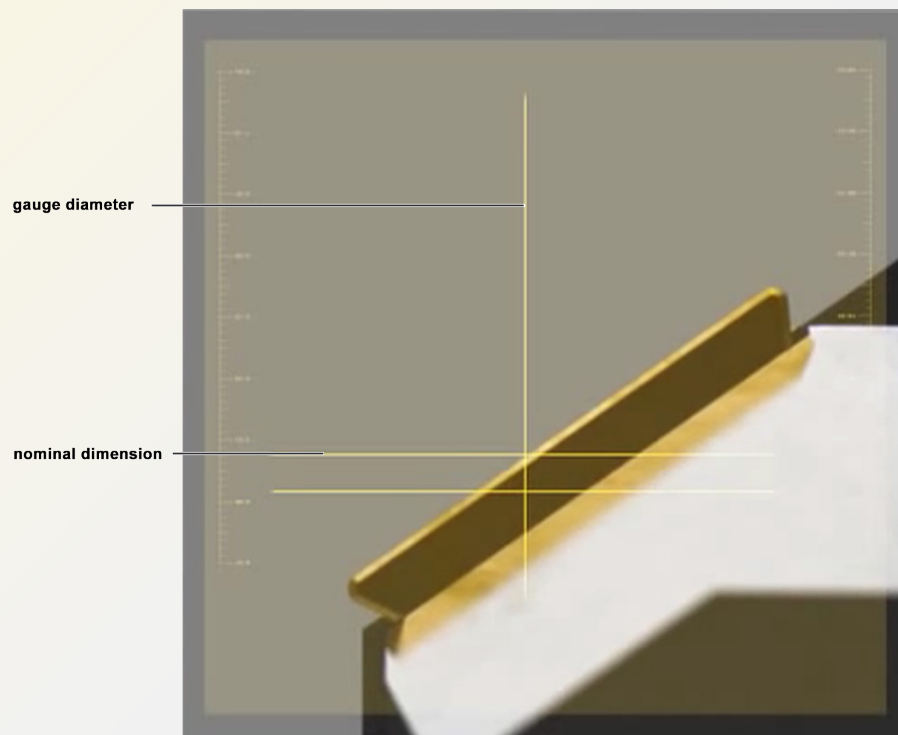


Fig. 18: Indexable insert axially adjusted to nominal dimension
(Note: The figure is not true to scale. It is only a schematic representation.)



Important information:

If the nominal dimension (axially or angle) is exceeded, go back to Chapter 5.4 "Installing the Clamping Component" and repeat steps 1, ... 2 and 9 ... 10.

Steps 3 ... 8 (removing and installing the clamping component) can be skipped in this case.

- ✓ The indexable insert is adjusted and the tool is ready for operation.