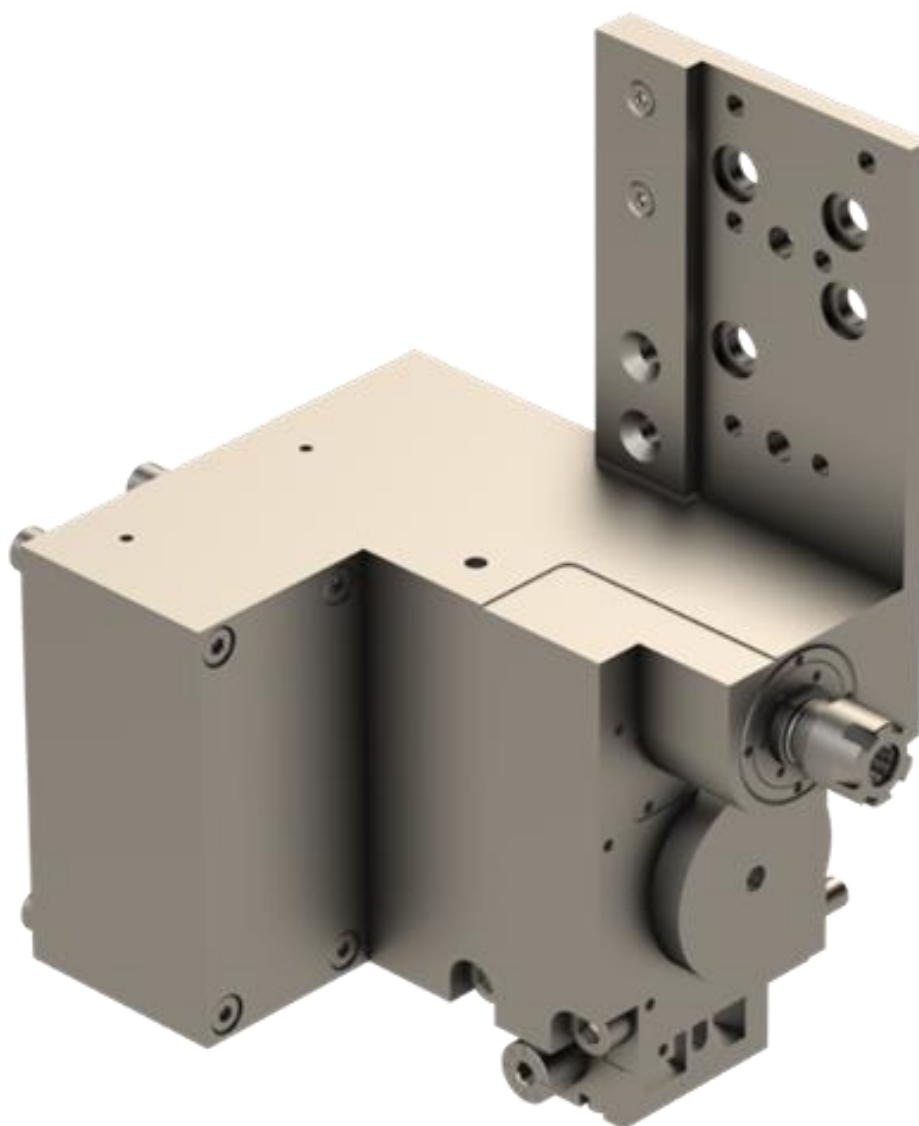


## 0400-BU000-04

# PCM driven base unit for Tsugami P036W



## 0400-BU000-04

### Table des matières

1. Introduction.....	3
1.1. General .....	3
1.2. Tool Holder identification .....	3
2. Security .....	3
2.1. General .....	3
2.2. Instructions .....	3
2.3. Non-PCM Accessoires .....	3
3. General.....	4
3.1. Warranty .....	4
3.2. Transport .....	4
3.3. Running-in.....	4
3.4. Maintenance .....	4
3.5. Greasing.....	4
3.6. Storage.....	4
4. Installation .....	5
4.1. Generals.....	5
4.2. Removing original Tsugami base.....	6
4.3. Pre-installation modification : .....	9
4.4. Dismantling the motor from the original driven base unit .....	10
4.5. Installing the motor to the PCM driven base unit .....	13
4.6. Installing the PCM base unit on the gang tool post.....	18
5. Instructions .....	20
5.1. Generals.....	20
5.2. Tool position.....	21
5.3. Installing modular tool holders.....	22
5.4. Installing modular driven tool holders .....	22
Official address PCM Precision Tooling SA and Authorized Partners .....	24

# 1. Introduction

## 1.1. General

Read this manual carefully before using for the first time !

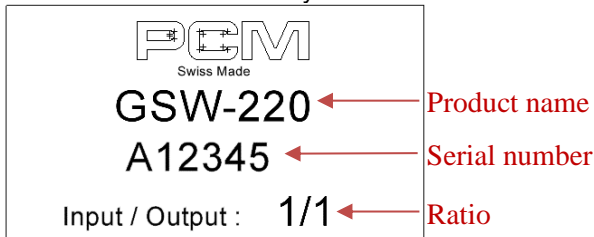
Keep for future reference.

This manual contains important information for the correct use of the tool holder.

The manual is downloadable from :  
<https://www.pcm.ch/en/download>

## 1.2. Tool Holder identification

All PCM Precision Tooling SA tools have a product name and serial number engraved on one side. Additional information may be added.



## 2. Security

All persons using the tool holder must be familiar with the information and recommendations contained in this manual. The person responsible for the product must ensure that all users understand and comply with these instructions.

### 2.1. General

When using and handling the toolholder, always comply with the laws and safety regulations of your country and/or the European Union, as well as the safety and operating instructions of your machine tool manufacturer.

### 2.2. Instructions

PCM Precision Tooling SA accepts no liability for incorrect use of the tool holder and/or machine tool.

Incorrect use are :

- Use of the product by unqualified and/or untrained persons.
- Use of the product without instruction.
- Non-compliance with tightening torques.
- Use outside limits.
- Deactivation of safety systems.
- The product can be opened using tools such as a hexagonal wrench, unless specifically indicated for certain functions.
- Sealed screws (white dot) must not be screwed in or out.



- Modification of the product.
- Use of a product with visible damage or defects.
- Collision due to programming error.
- Use with accessories from other manufacturers without prior agreement from PCM Precision Tooling SA.
- Exposure of the product to corrosive environments.
- Use of compressed air in the direction of the product..



**Warning**

**Incorrect use of the product can result in serious injury and considerable material damage. It is the responsibility of the person responsible for the product to inform the user of potential hazards and how to avoid them.**

### 2.3. Non-PCM Accessoires

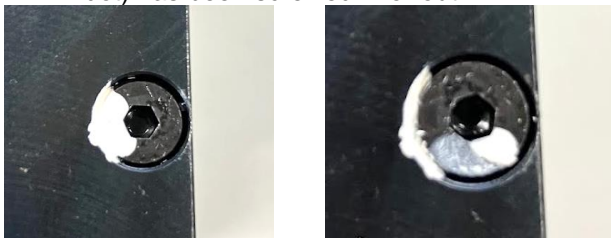
PCM Precision Tooling SA is not responsible for the safety and function of accessories supplied by third parties.

# 3. General

## 3.1. Warranty

The warranty covers all defects caused by faulty design, material or workmanship, in accordance with the following conditions:

- The warranty is valid for 12 months from the date of delivery. Repairs are guaranteed for 6 months after delivery.
- The warranty is void if the conditions of use are not respected.
- The warranty is void if the toolholder has been repaired, dismantled or modified by a person or organization not approved by PCM Precision Tooling SA.
- The warranty is void if the transport conditions are not respected.
- The warranty is void in the event of a collision due to a programming error.
- The warranty is void if a sealed screw (white dot) has been screwed in or out..



- In the event of a defect, use must be discontinued immediately and a complaint sent to PCM Precision Tooling SA.
- All warranty repairs may be subject to verification by PCM Precision Tooling SA.

## 3.2. Transport

Failure to comply with the transport instructions may result in damage to the product, causing serious injury and considerable material damage.

Transport instructions are :

- Transport using suitable means of transport.
- The product must be carefully packed, including screws and tools.
- The product must be secured with filler to prevent shocks.

## 3.3. Running-in

PCM Precision Tooling SA recommends running-in to ensure long product life.

Run the product at 30% of maximum speed for 15 minutes without load.

The product body temperature must not exceed 75°C (167°F) during running-in; direct coolant onto the product if necessary.

## 3.4. Maintenance

Clean the product regularly to maintain high quality and precision.

Use a clean cloth every 24 hours of use to remove chips, oil, coolant ....

Check product rotation by removing it from the machine and turning the spindle several times by hand once a week.



**Warning**

**Using compressed air will damage the product!**

Chips, dirty oil and dust are pushed onto the seals and can enter the product, causing serious damage.

## 3.5. Greasing

Bearings, gears and other rotating parts are greased for life.

PCM Precision Tooling SA products do not need to be greased outside assembly and repair.

## 3.6. Storage

The product must be thoroughly cleaned and lightly lubricated before being stored in a clean, dry place.

Rotate the spindle several times a month to circulate the grease inside, avoid fretting corrosion in the bearings, prevent seals from sticking...

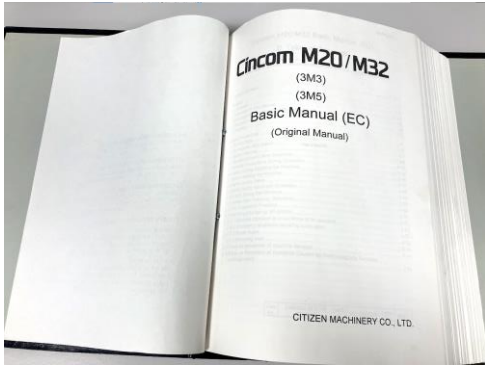
# 4. Installation

## 4.1. Generals



**Warning**

**Follow your machine manufacturer's recommendations!**



Before fitting the tool, always check the product for visual damage or defects, and rotate the spindle to check rotation and play.

If a defect is found, do not use the product and contact PCM Precision Tooling SA or your dealer.



**Warning**

**Never insert a dirty tool holder into the machine!**

Carefully wipe the surfaces of the toolholder with a clean cloth to remove oils, chips, etc.



**Warning**

**High risk of serious injury if cutting tools are not covered or removed!**

Protectors for ER16 collets can be ordered:

SP-TP-03-00: tool length 32 mm.

SP-TP-03-01: tool length 56 mm.

SP-TP-03-02: tool length 80 mm.



**Warning**

**Never use an empty tool holder in the machine, put a plug in the spindle!**

Threadwhirling toolholders are supplied with a special plug. For more information, contact PCM Precision Tooling or your reseller.

All our ER collet toolholders are supplied with a protective plug.

Additional plugs can be ordered:

- 862-019-51-11: ER08
- 862-019-51-12 : ER11
- 862-019-51-13 : ER16
- 862-019-51-14 : ER20
- 862-019-51-15 : ER25
- 862-019-51-16 : ER32





## Warning

The original main block must be replaced with this tool. To adjust the offset, please contact your local TSUGAMI dealer. The motor parameters must be adjusted according to the sheet provided.

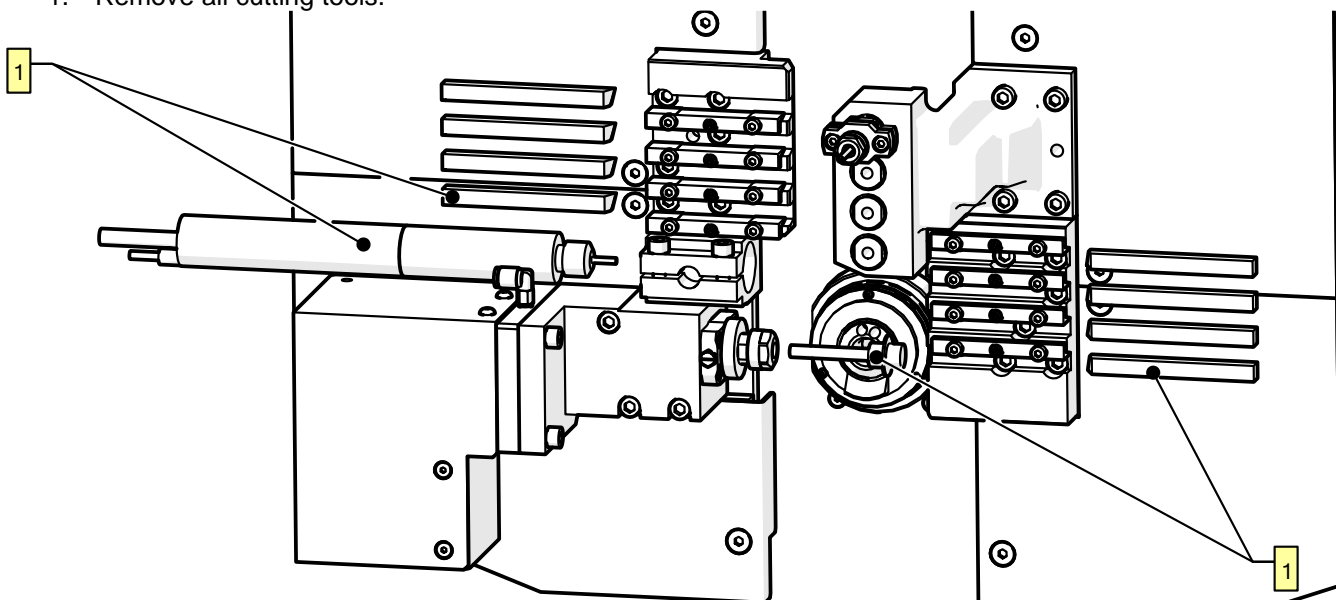
All fixing screws shall be tightened to the torques specified in the table below.

Standard quality: 8.8

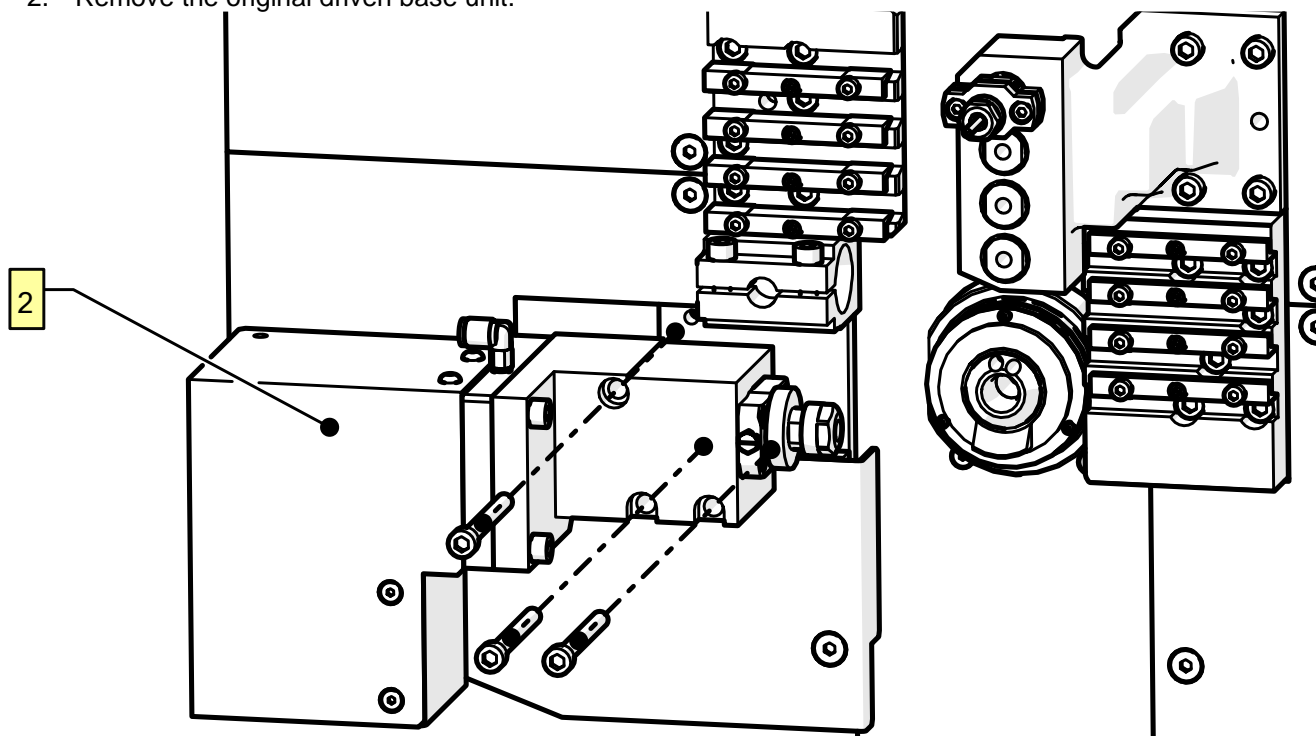
Recommended torque for screws and bolts				
Diameter	Tightening torque [Nm]			
	Class 5.8	Class 8.8	Class 10.9	Class 12.9
M2	0.22	0.35	0.49	0.58
M3	0.77	1.2	1.7	2.1
M4	1.8	2.9	4	4.9
M5	3.6	5.7	8.1	9.7
M6	6.1	9.8	14	17
M8	15	24	33	40

## 4.2. Removing original Tsugami base

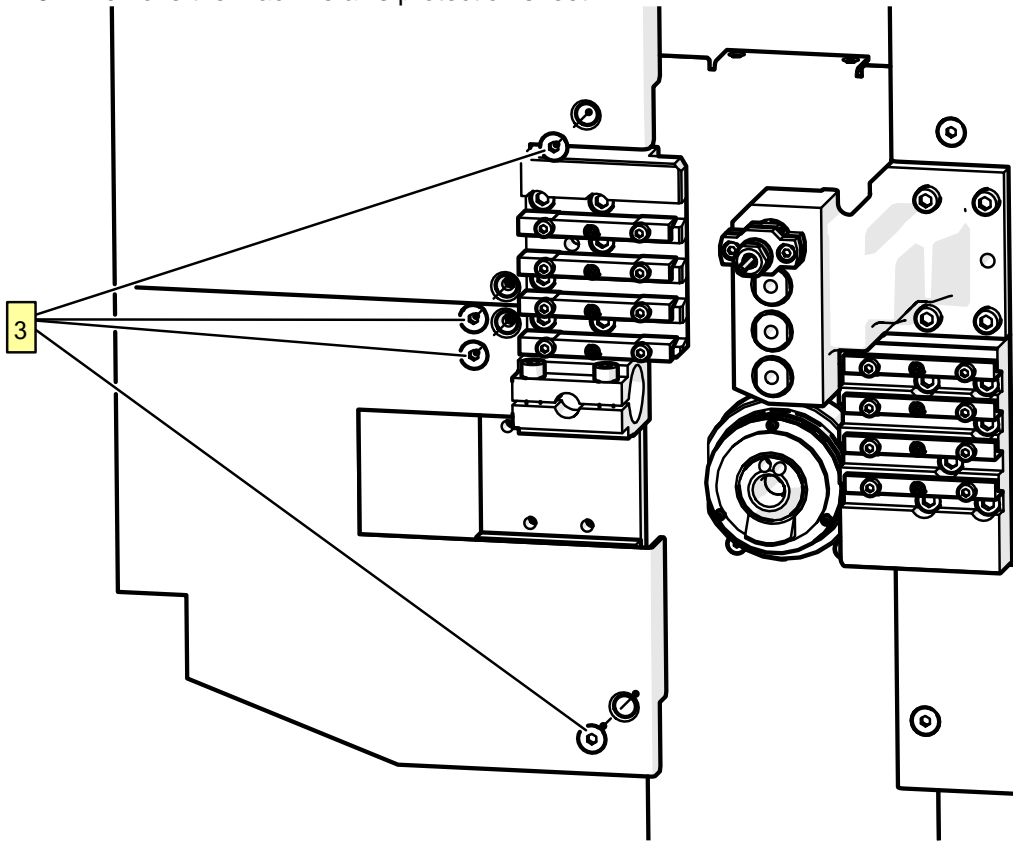
1. Remove all cutting tools.



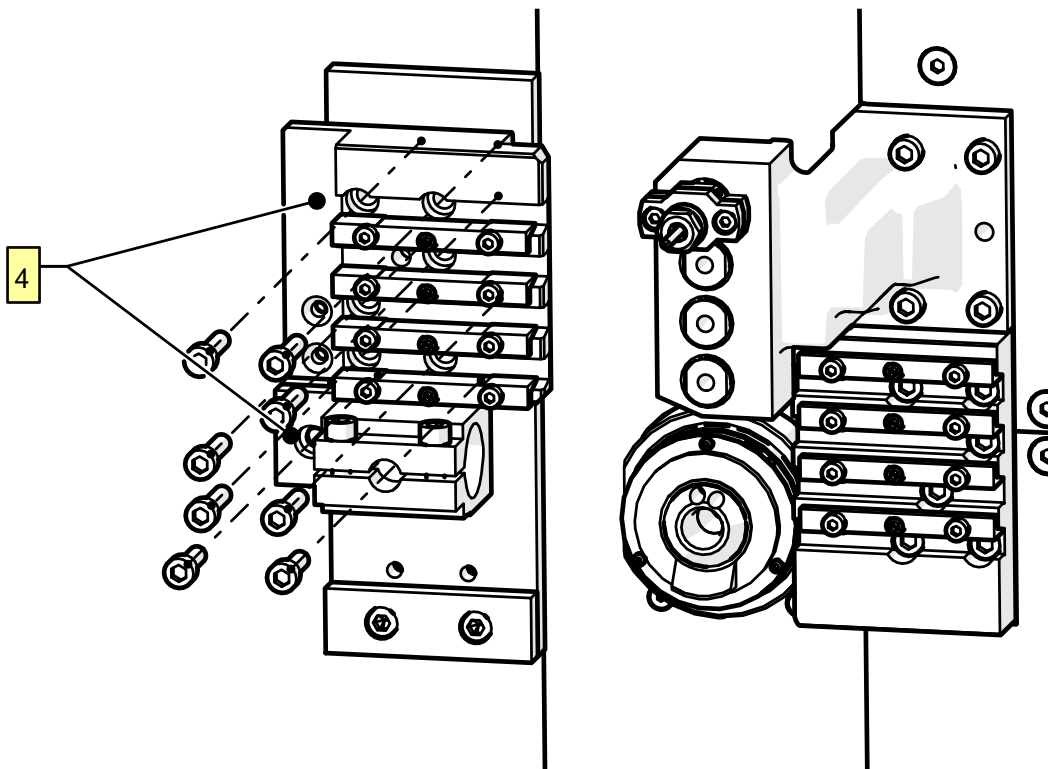
2. Remove the original driven base unit.



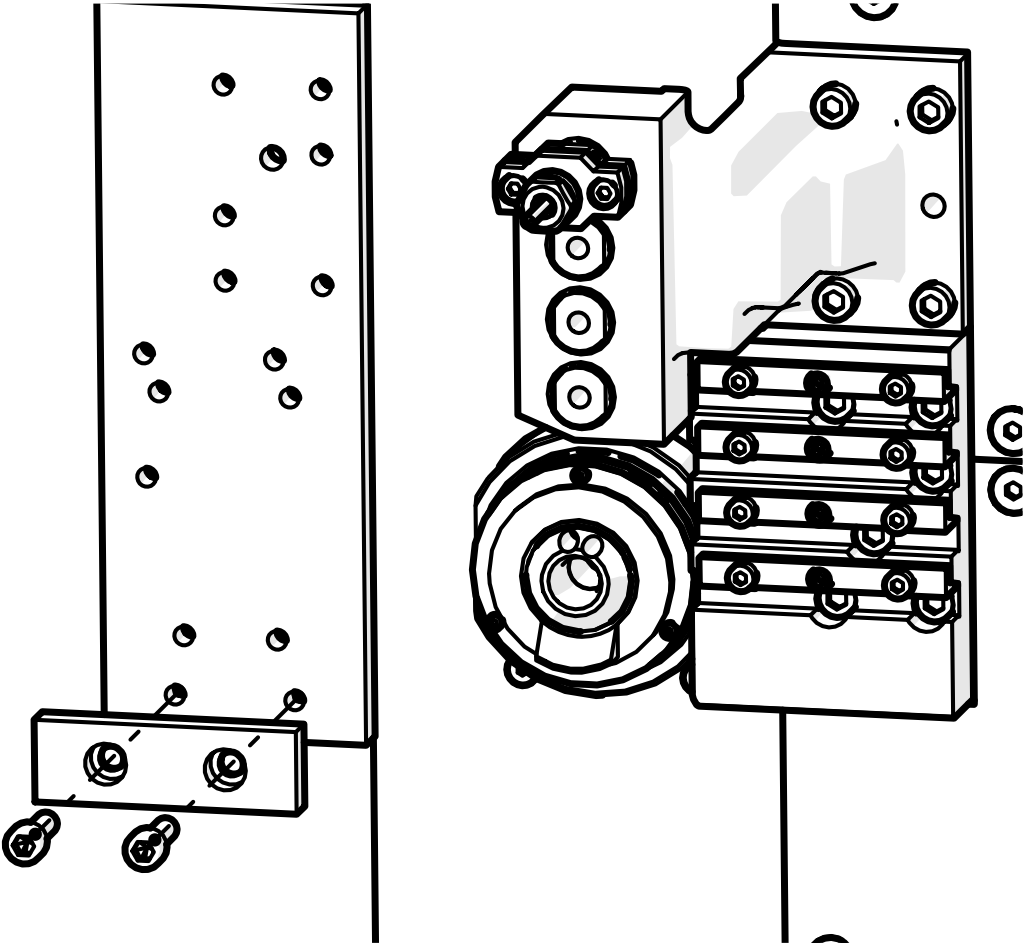
3. Remove the machine axis protection sheet.



4. Remove the tool holder blocs.



5. Remove the lower wedge.





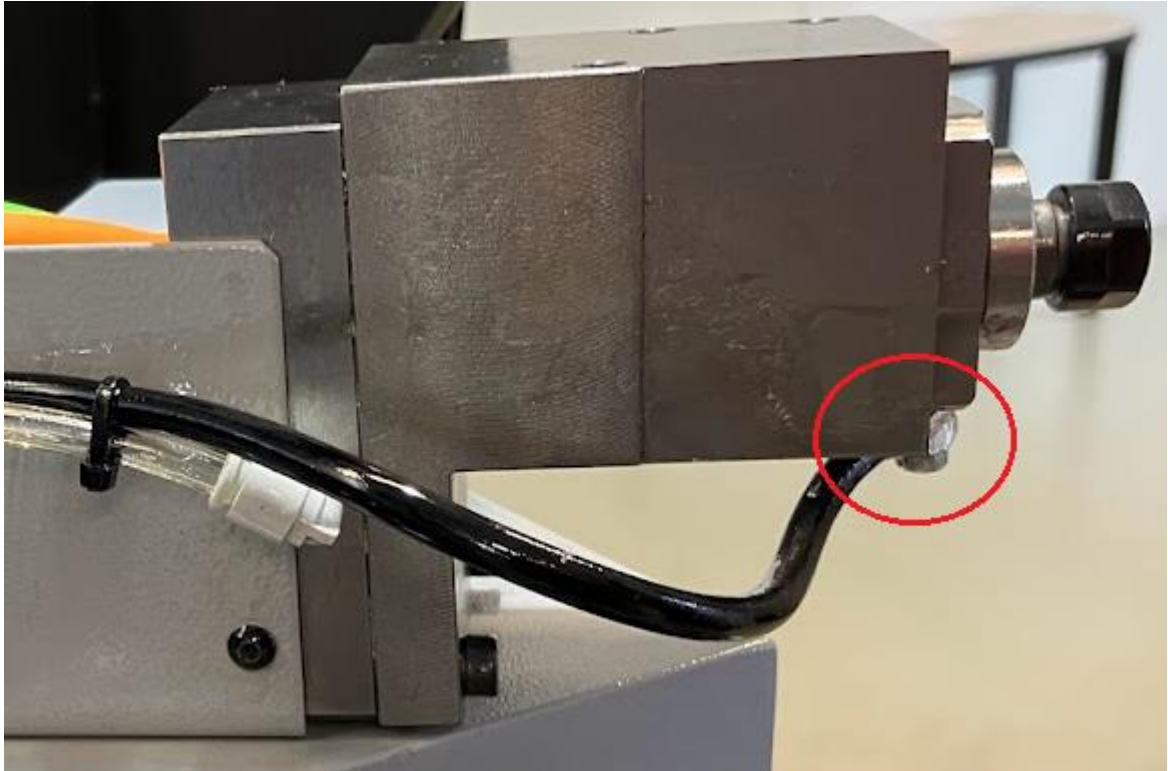
**4.3. Pre-installation modification :**

- 1. Cut 20 mm of the machine base protection sheet before mounting the base unit.

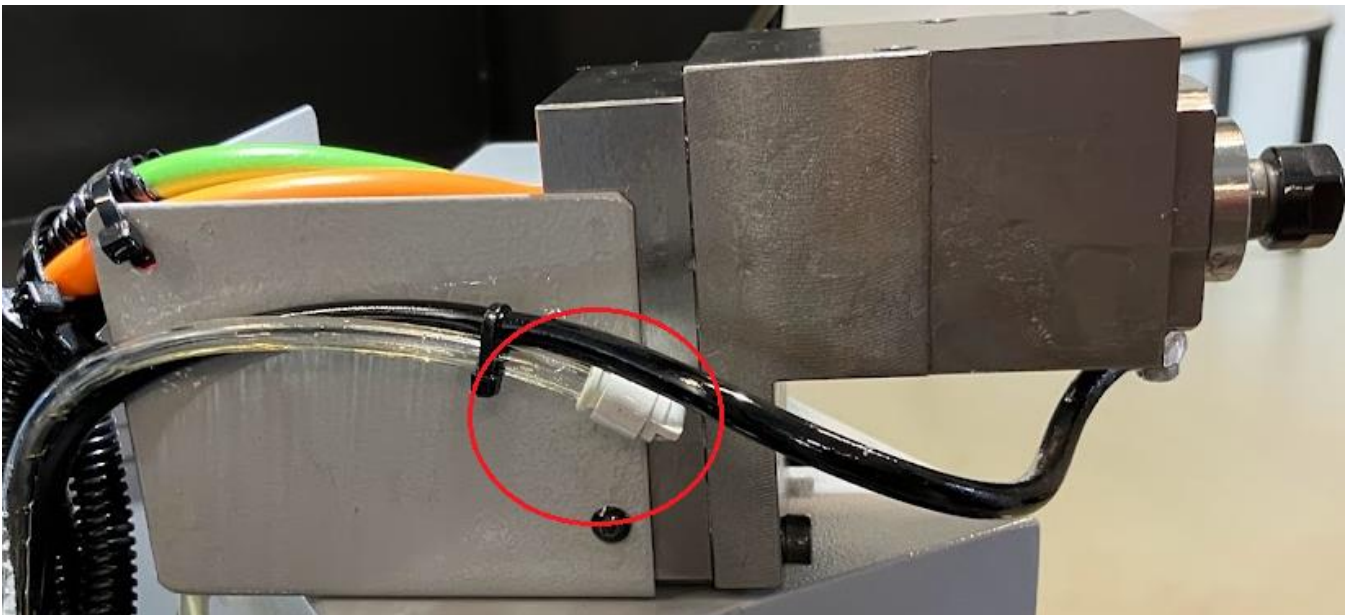


#### 4.4. Dismantling the motor from the original driven base unit

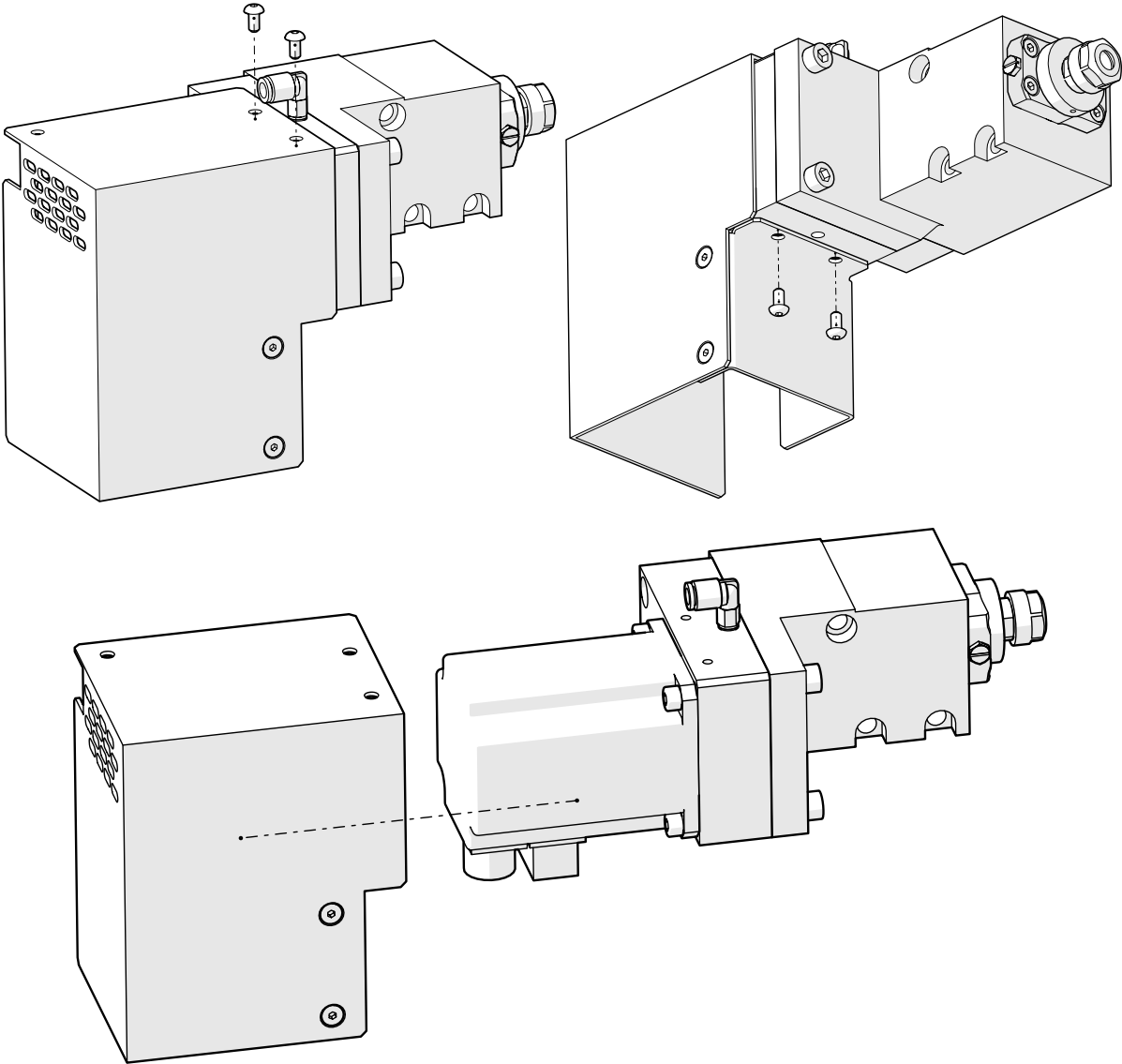
1. Remove the air supply coupler from the original driven unit and keep it for later.



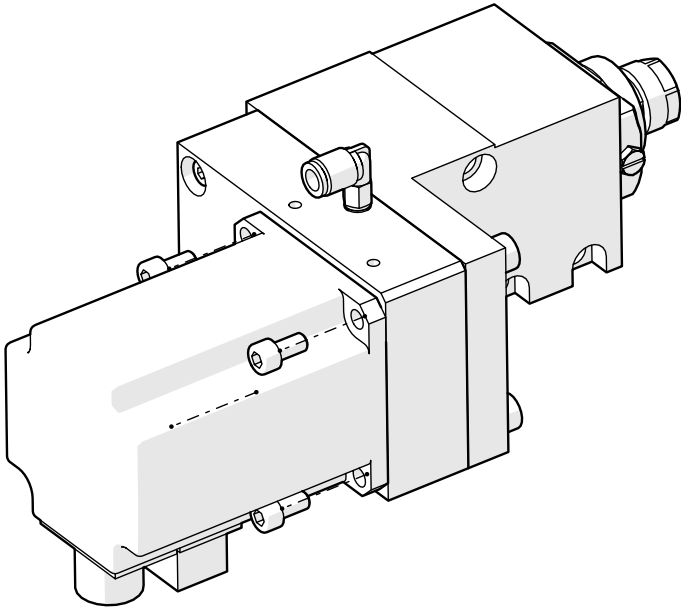
2. Uncouple the lubricant supply hose and fit a plug; it will no longer be used.



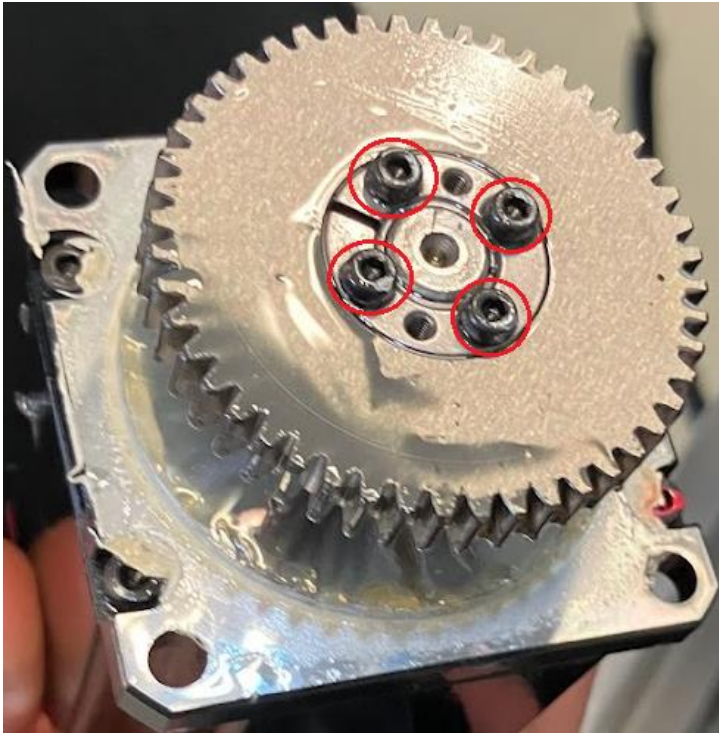
3. Remove the protective sheet from the original driven unit.



4. Remove the motor from the original driven unit.

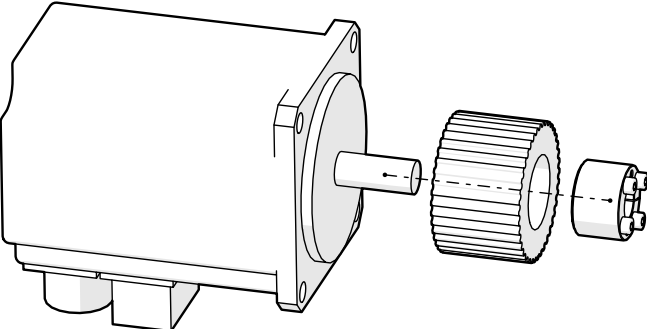


5. Losen the 4 screws of the coupler and remove the gear from the motor.

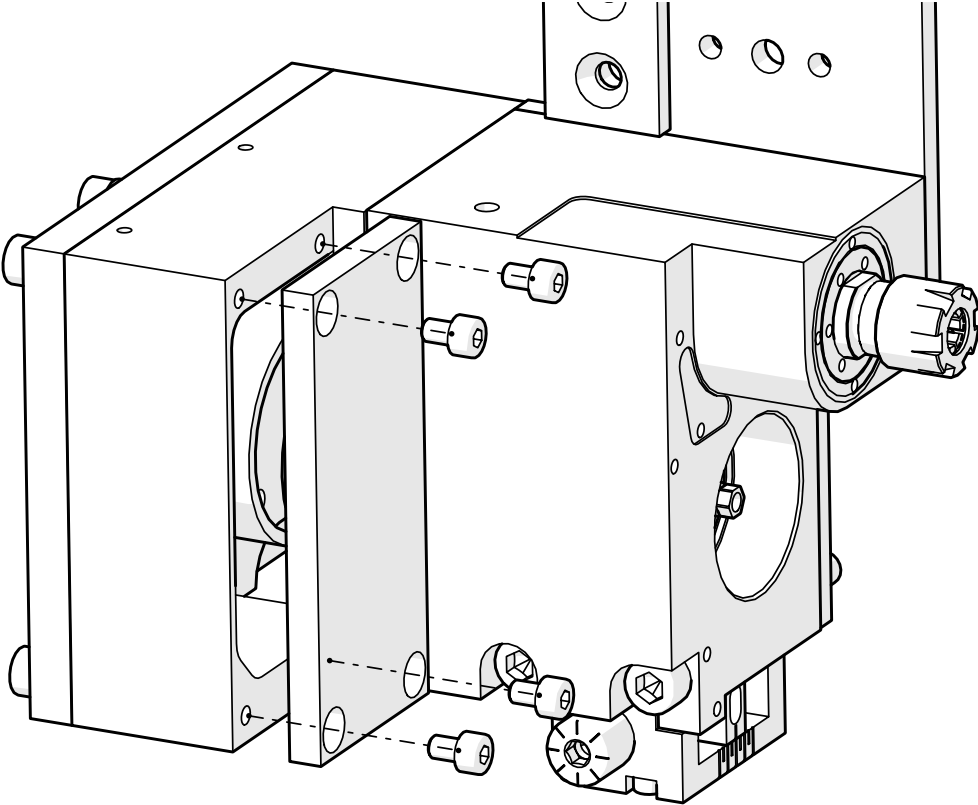


### 4.5. Installing the motor to the PCM driven base unit

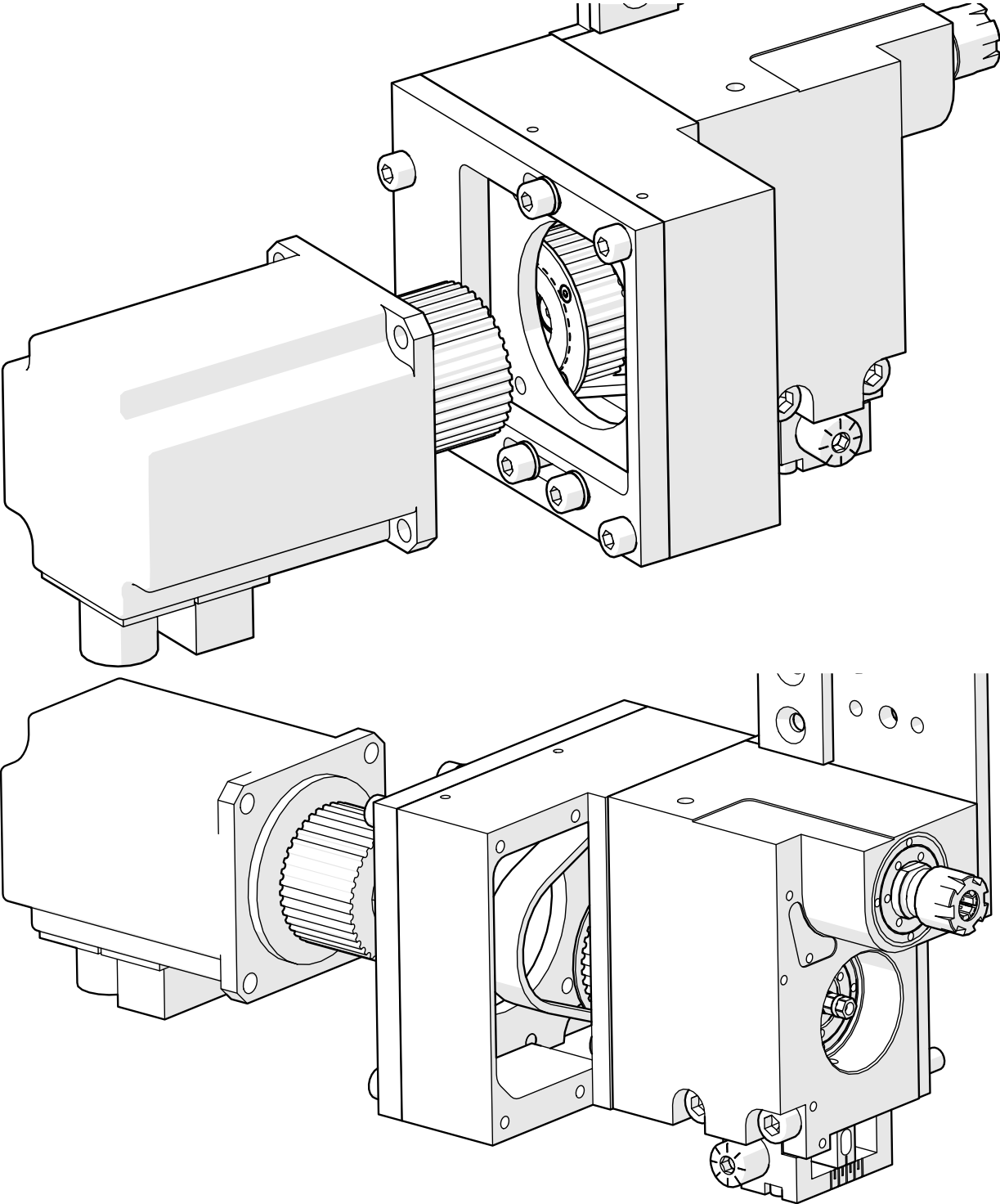
- 1. Put the PCM pulley and the original coupler on the motor and tighten the screws.



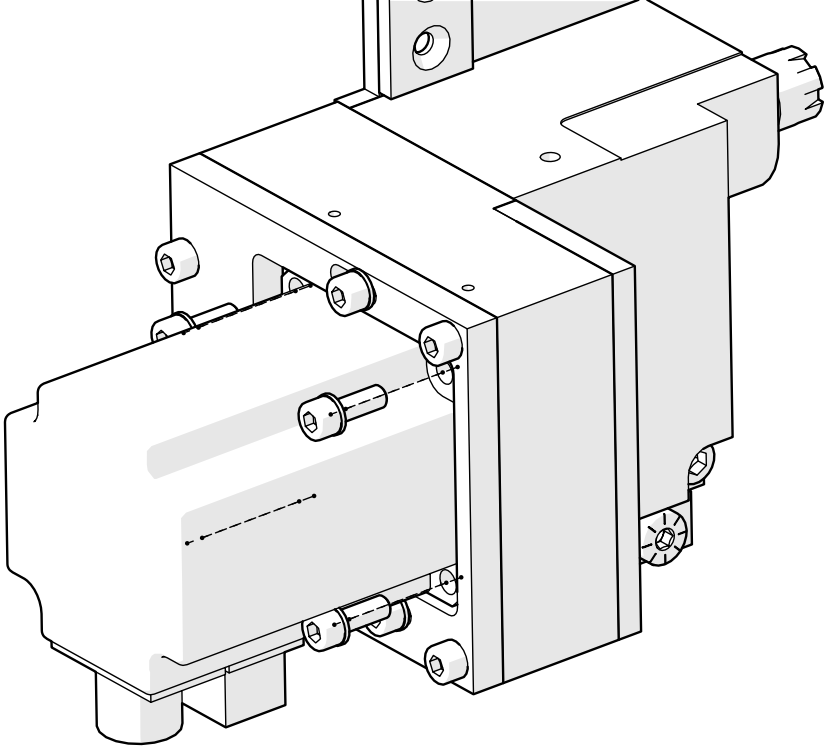
- 2. Remove the belt cover on the PCM base unit.



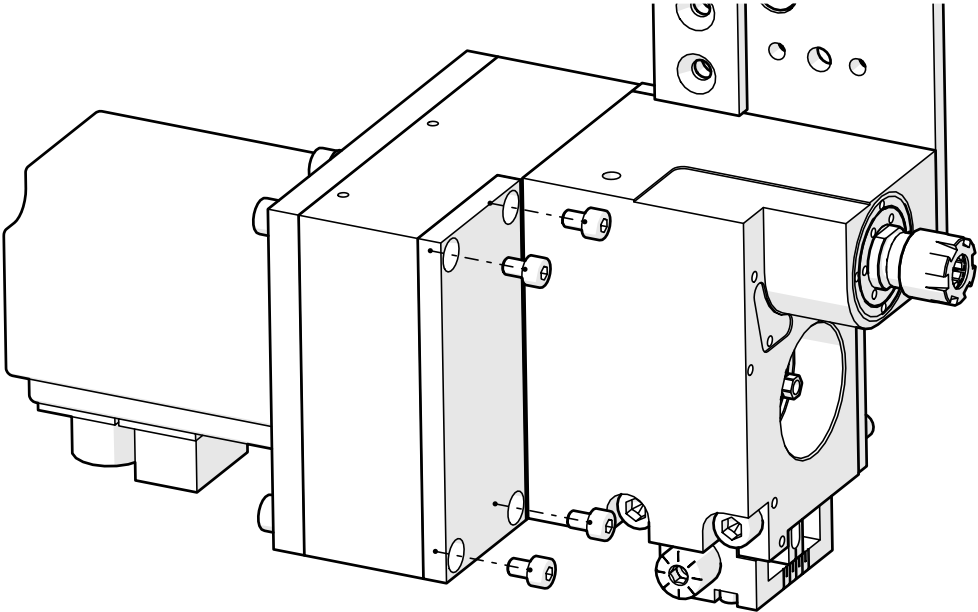
3. Insert the motor in the PCM driven base unit.



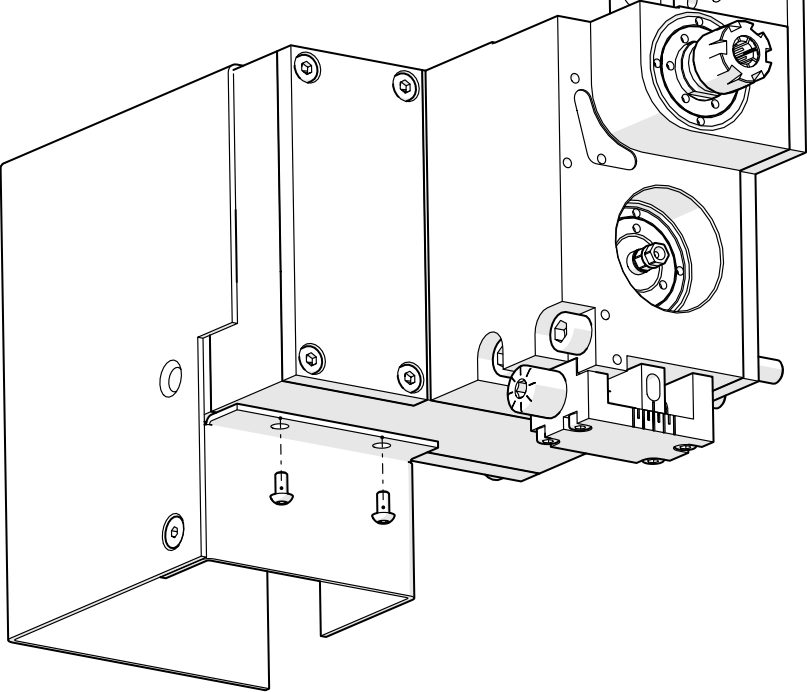
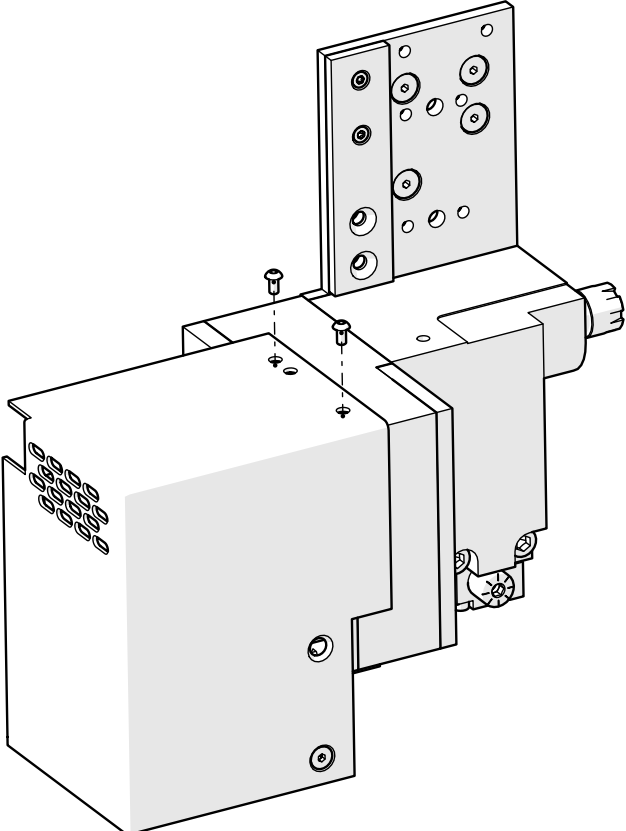
6. Tighten the motor screw on the PCM driven base unit.



7. Replace the belt cover and tighten the screws.

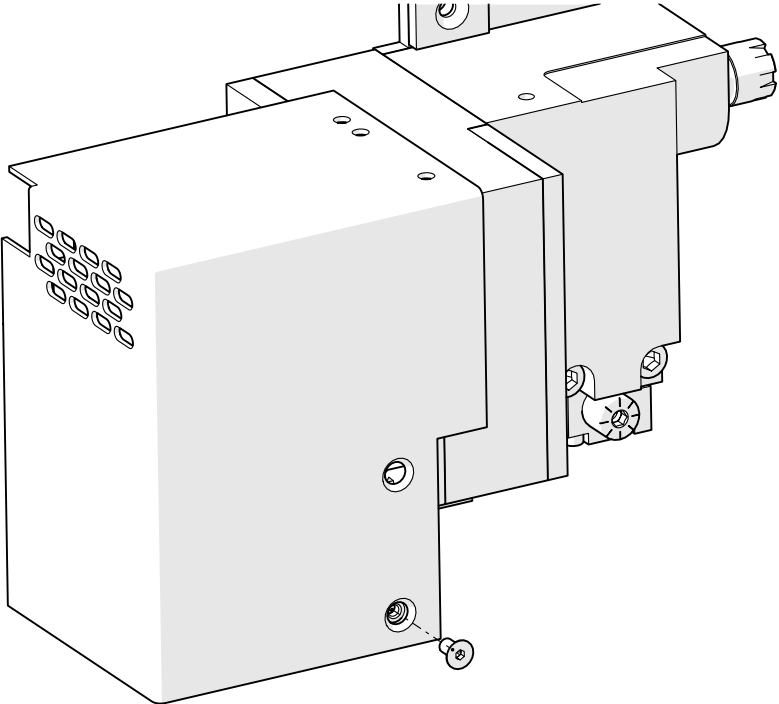


8. Install the protective sheet on the PCM base unit. The smaller protective sheet is replaced by a PCM protective sheet.

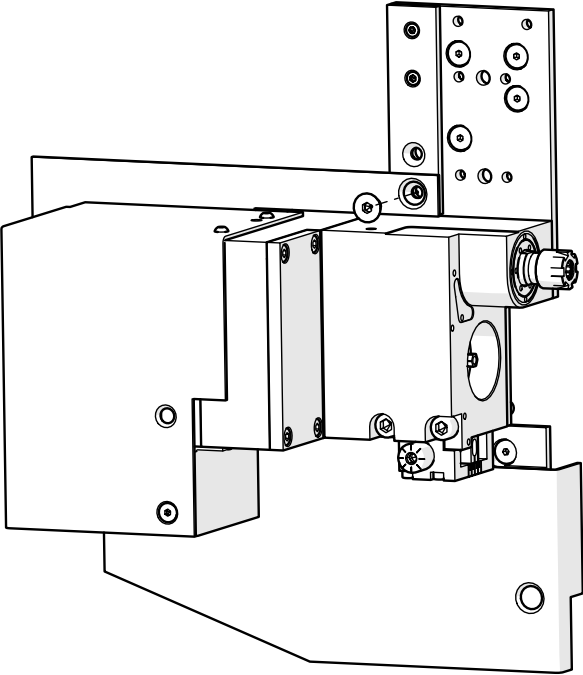




9. Tighten the sheet connection screw between the original sheet and the PCM sheet.

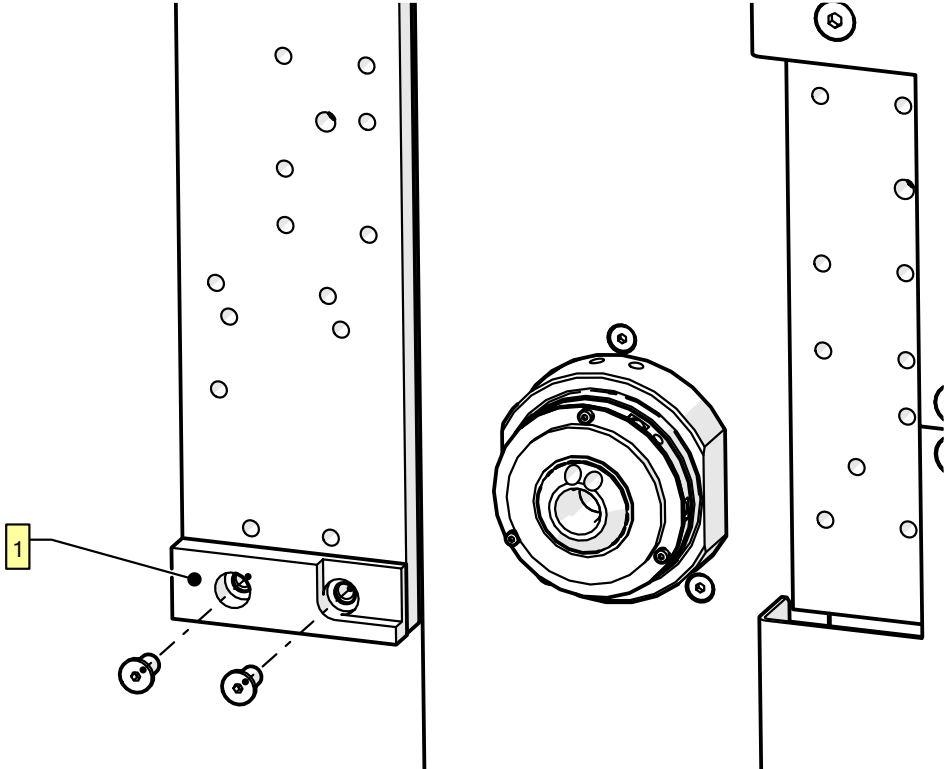


10. Place the PCM machine axis protection sheet before putting the driven unit on the machine.

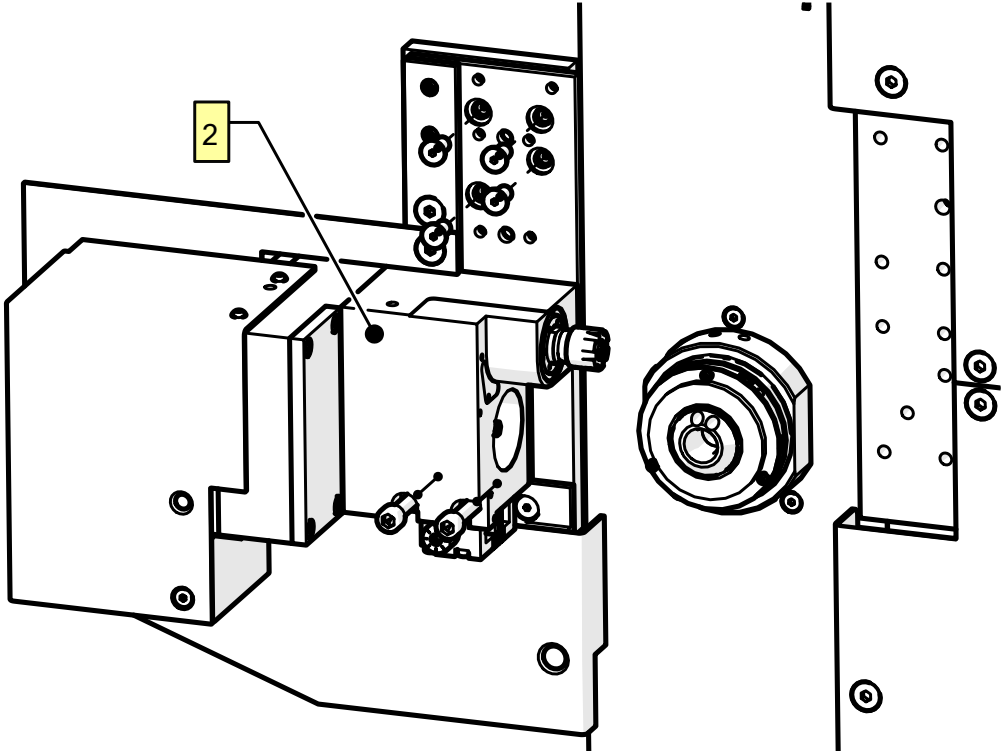


### 4.6. Installing the PCM base unit on the gang tool post

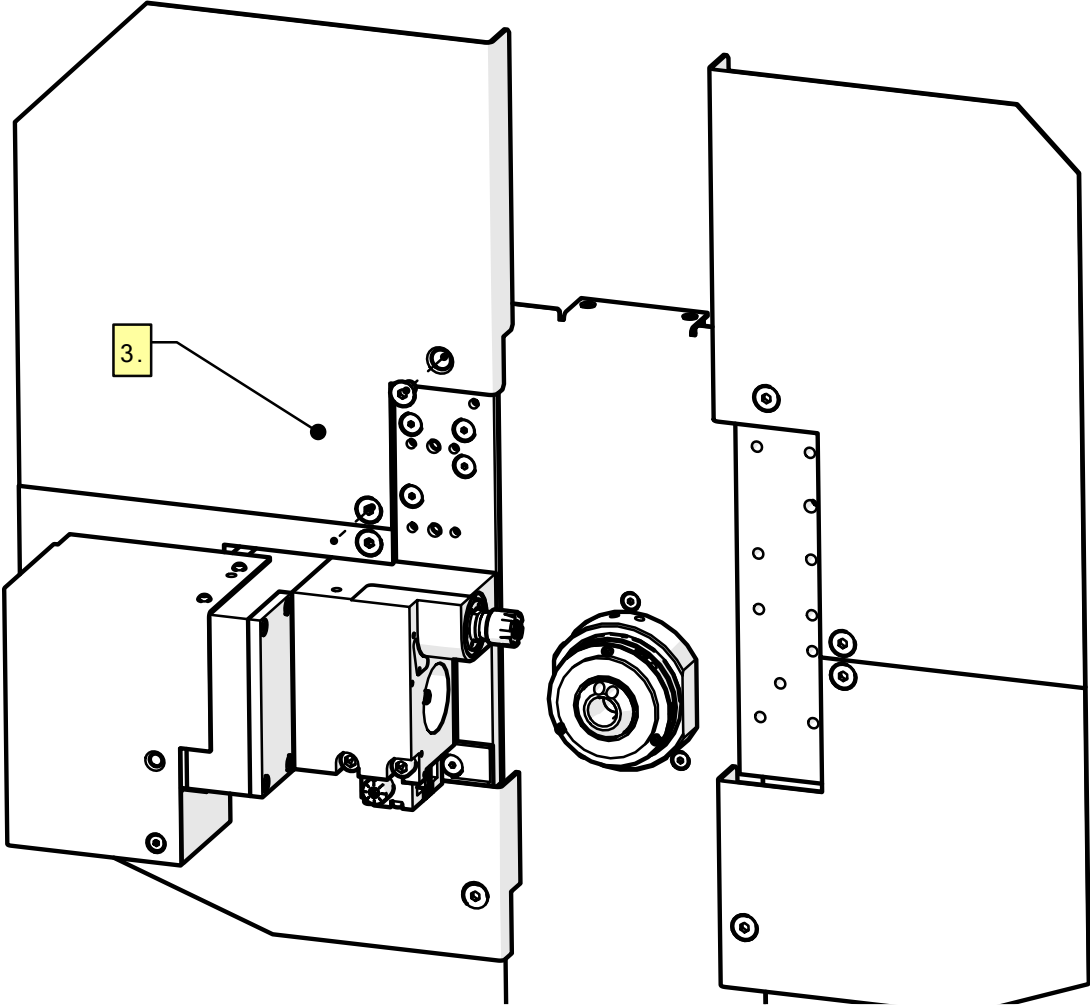
- 1. Install the PCM lower wedge.



- 2. Install the PCM driven unit with the protective sheet (It is not possible to put the sheet afterwards).



3. Install the upper protective sheet.



4. Install the new guide bushing cover.

NO IMAGE

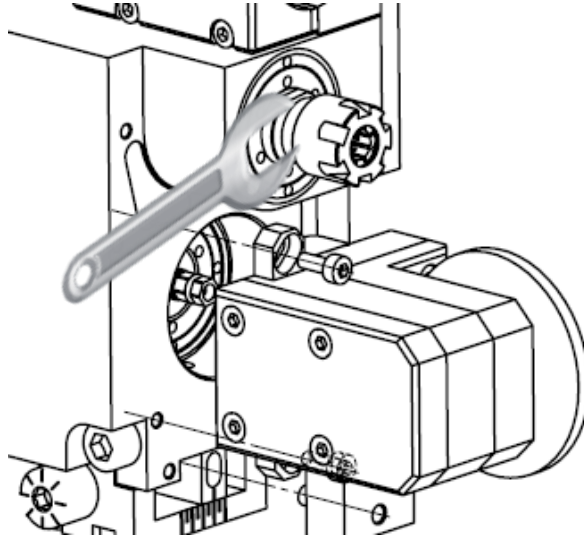
# 5. Instructions

## 5.1. Generals

During the assembly or the dismantling of your cutting tool, block the spindle with the appropriate fork key (SW13).

The difference between the diameter of the chuck and the tool must not exceed 0.4 mm.

Example: Chuck  $\varnothing 9.5$  mm – minimum tool  $\varnothing 9.1$  mm.



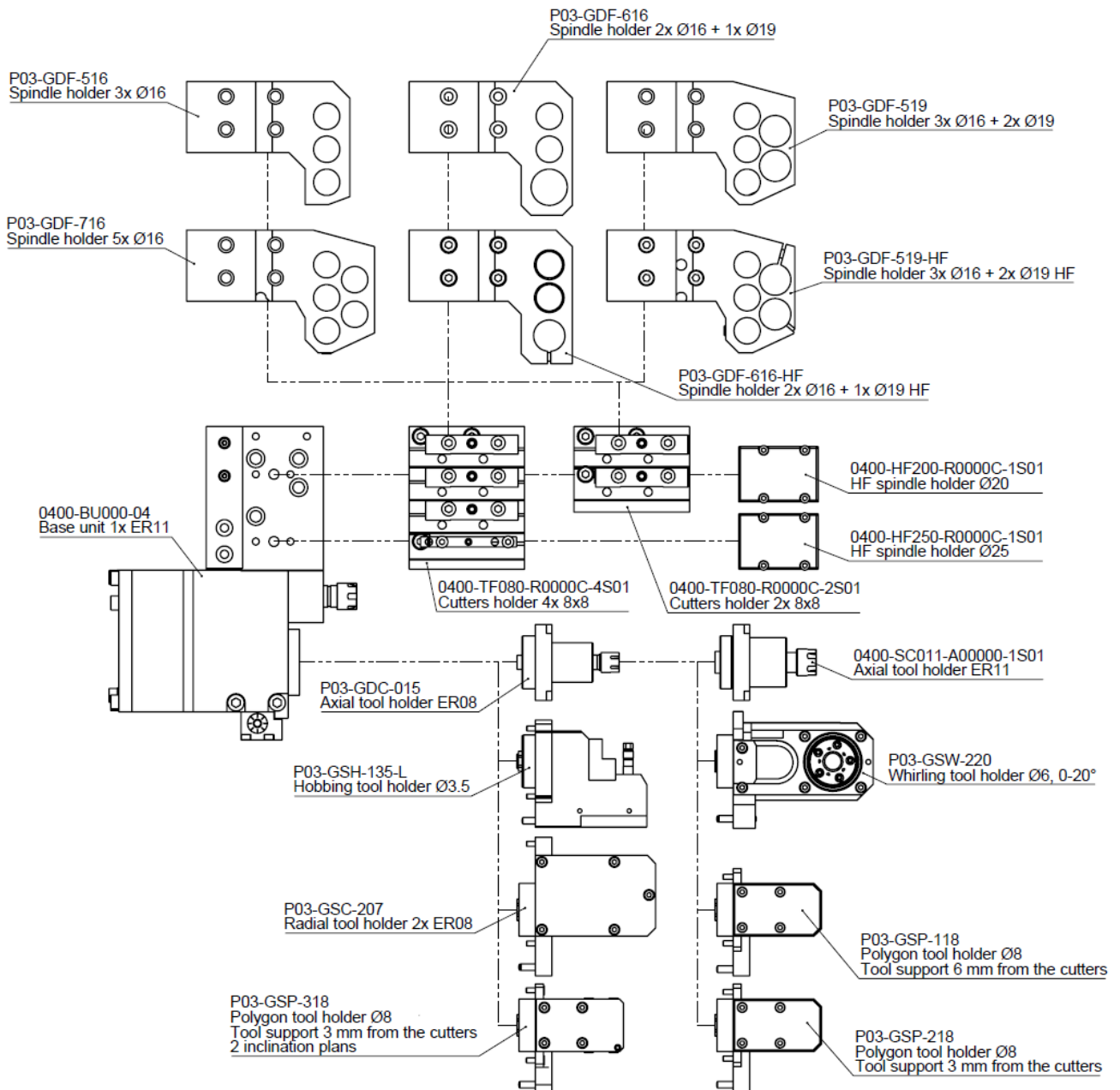
### Warning

- You need to contact your local TSUGAMI dealer to modify the offset of your Swiss turn.
- You need to adjust the motor parameters.
- Never use the tool holder with empty positions, use the supplied protection plugs.

## 5.2. Tool position

Tool No. 01 to No. 4    Modular tool holders.  
 Tool No. 05            ER11 with max. speed of 16'000 RPM.  
 Tool No. 06            Driven modular tool holders.

Optional tool holders (see [www.pcm.ch](http://www.pcm.ch) for news):

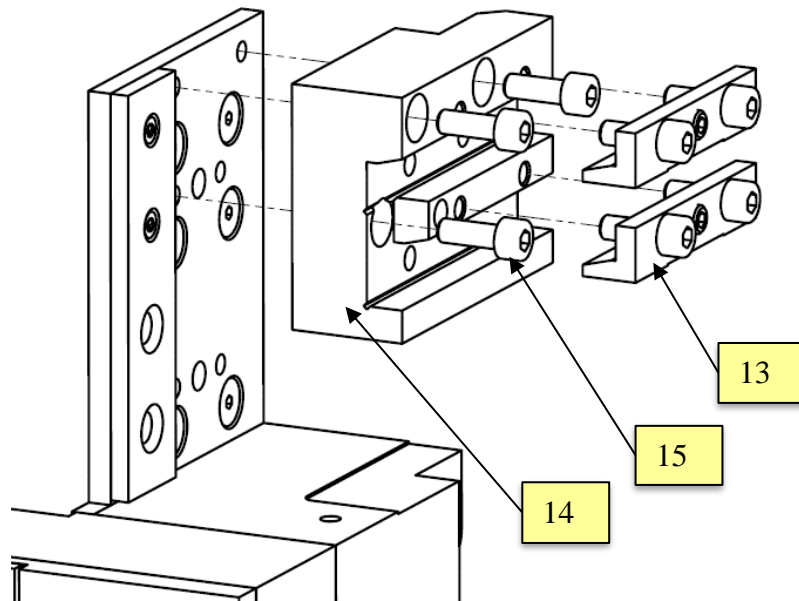


**Warning**

**The sub spindle can be blocked by the radial spindle holder!**

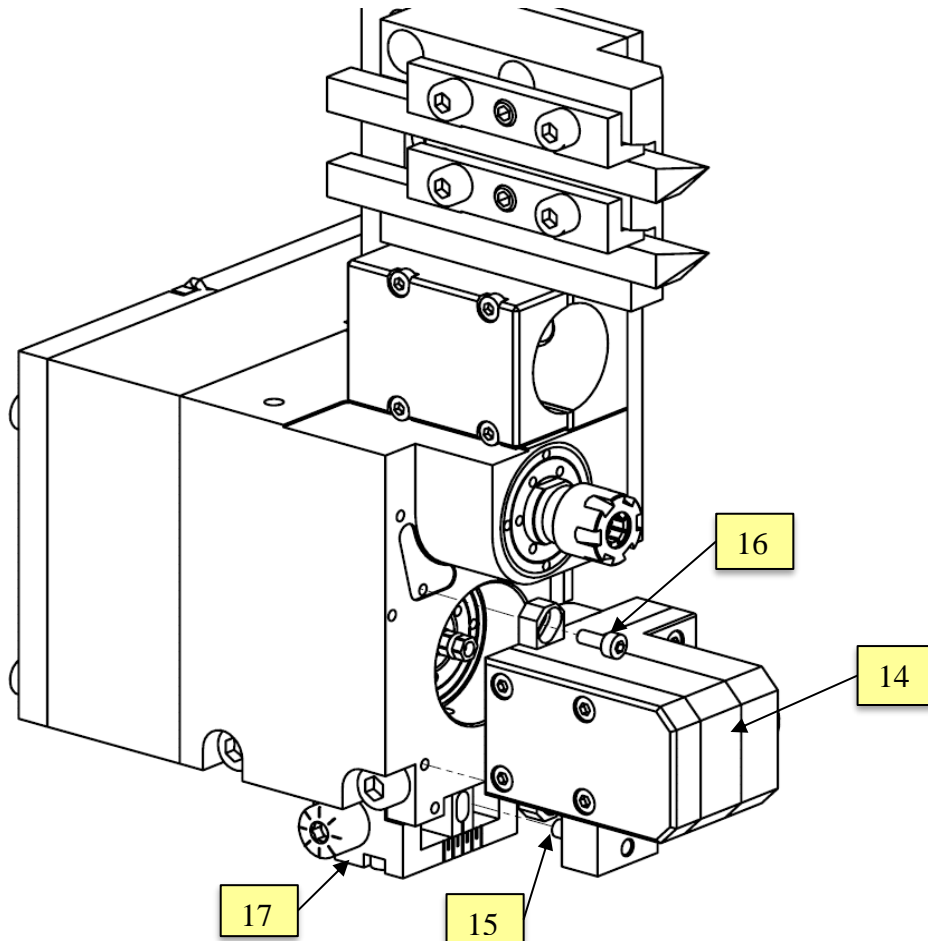
### 5.3. Installing modular tool holders

1. Remove the clamping wedge (13).
2. Place the tool holder (14) on the base unit and tighten the screws (15), then loosen them  $\frac{1}{4}$  turn.
3. Adjust the tool holder with a comparator, we recommend 0.002 mm on the length of the too, the tighten the screws.
4. Replace the clamping wedges (13).



### 5.4. Installing modular driven tool holders

1. Insert the tool holder (14) in the base unit, you may need to rotate a bit the tool holder to align the coupling. Be careful to insert the pin (15) in the adjustment block.
2. Tighten the screws M3 (16) then loosen them  $\frac{1}{4}$  turn, their position and number may vary depending on the modular driven tool holder.
3. Adjust the angle of the tool holder with the adjustment screw (17) then tighten the fixing screws M3 (15).





## 0400-BU000-04

### 6. Contacts



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