A.D.U.

Advanced Drilling Unit

EN

User manual

6159920010_01_EN ● 12/2017

Desoutter Industrial Tools

WARNING
To reduce the risk of injury, before using or servicing tool, read and understand the following information as well as separately provided safety instructions (Item number: 6159922500).
Save all warnings and instructions for future reference.

Find more information and your SETI-TEC contacts on:

www.seti-tec.com

Table of contents

1 - General

1.1 - Scope of delivery

Thank you for purchasing a SETI-TEC advanced drilling unit "ADU".

This product has been tested and validated following to our internal procedures on our site before delivery.

Any use of modification of it outside the scope of use specified in this document cancels the guarantee agreement and responsibility of SETI-TEC for any equipment damage and for damage caused.

Any modification must be validated by the manufacturer.

1.2 - Warranty

Contact the SETI-TEC sales representative within your area to claim a product.

Warranty will be approved only if the product has been installed, operated and overhauled according to the operating instructions.

1.3 - Customer service

To ensure efficient and reliable operation of your product, it is recommended that regular servicing is carried out by your service provider.

Address	SETI-TEC 12 rue Lech Walesa ZI Pariest - Le Séquoia 77185 LOGNES FRANCE
After Sales Service	Contact the SETI-TEC sales representative within your area to claim a product.

2 - Safety signs and symbols

Danger!
Imminent danger to life or risk of severe personal injury.
To reduce risk of injury, everyone using, installing, repairing, maintaining, changing accessories on, or working near this tool must read and understand the safety instructions before performing any such task.
Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury.

Danger!
Risk of crushing hands.

Danger
Cutting risk.
Beware of risks relevant to automatic movements of mobile parts.

Caution
Risk of material or environment damage.

Mandatory
The operator must be equipped with personal protective equipment such as goggles and safety shoes.

For information.

3 - Certifications and statements

3.1 - Statement of use

This product is designed for drilling holes in various metals and composites.

No other use permitted.

For professional use only.

3.2 - Copyright

Use only authorized parts.

Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability.

3.3 - EC declaration of conformity

CE Contact your SETI-TEC representative to get more information.

3.4 - Noise and vibration

	Vibration level : According to ISO-20643	**≤ 2.5 m/s²**
	Noise level (Lpm). According to ISO15744 (SCD 267 02)	**≤ 80 dB**

ahd, ah	Vibration levels.
K / KpA = KWA = 3 dB	Uncertainty.
LpA	Sound pressure level.
LWA	Sound power level.

All values are current as of the date of this publication.

For the latest information please visit: www.seti-tec.com.

These declared values were obtained by laboratory type testing in accordance with the stated standards and are suitable for comparison with the declared values of other tools tested in accordance with the same standards.

These declared values are not adequate for use in risk assessments and values measured in individual work places may be higher.

The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, the workpiece and the workstation design, as well as upon the exposure time and the physical condition of the user.

We, SETI-TEC, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

This tool may cause hand-arm vibration syndrome if its use is not adequately managed.

An EU guide to managing hand-arm vibration can be found by accessing http://www.pneurop.eu/index.php and selecting 'Tools' then 'Legislation'.

We recommend a programme of health surveillance to detect early symptoms which may relate to noise or vibration exposure, so that management procedures can be modified to help prevent future impairment.

3.5 - WEEE and RoHS

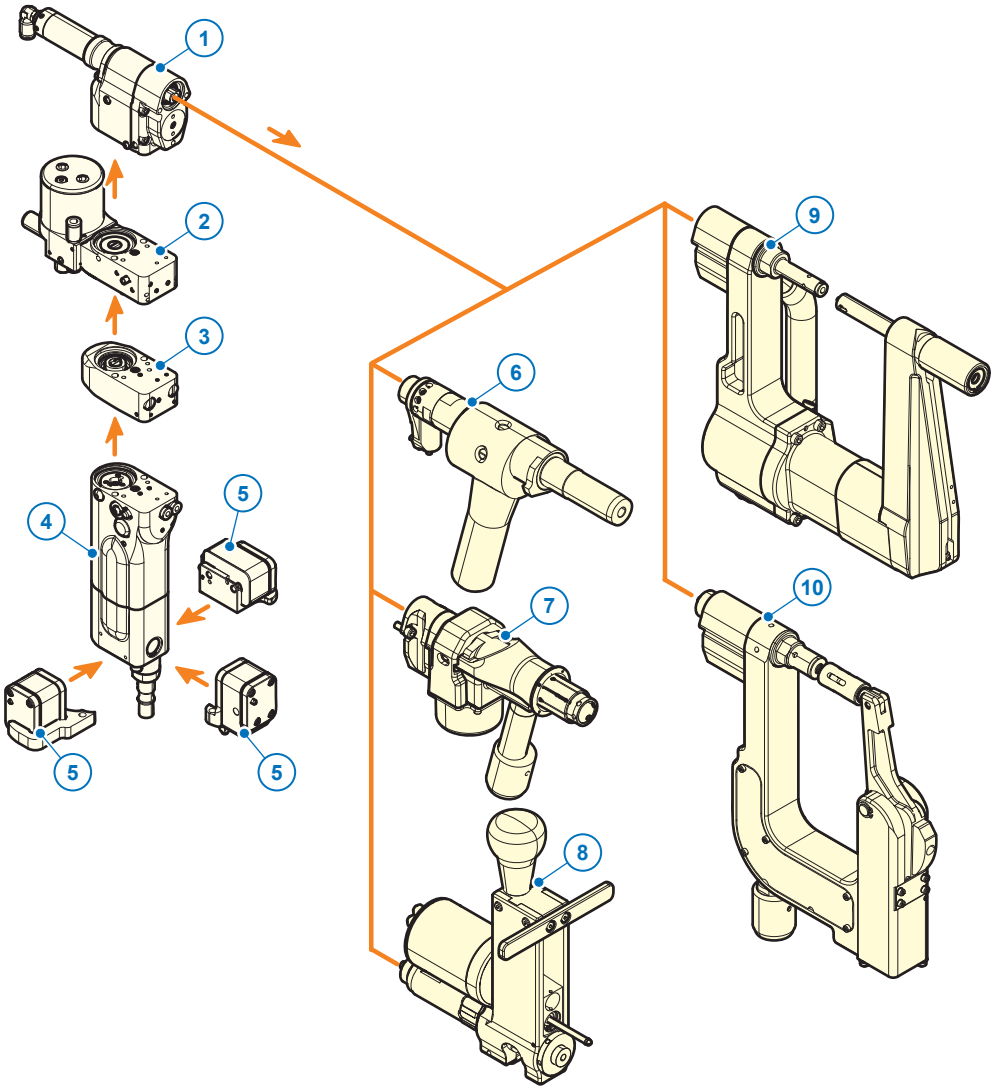
According to Directive 2012-19-CE concerning Waste Electrical and Electronic Equipment (WEEE), this product must be recycled.

Contact your SETI-TEC representative or consult the website "www.seti-tec.com" to find out where you can recycle this product.

4 - Description

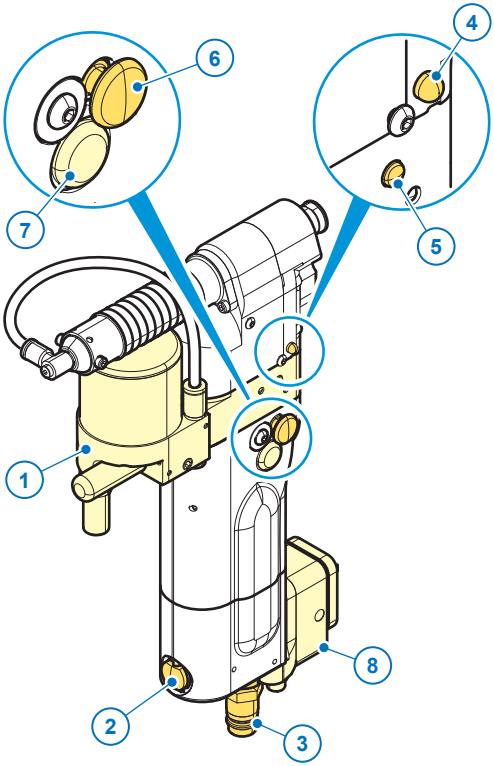
4.1 - Machine

4.1.1 - Modular concept



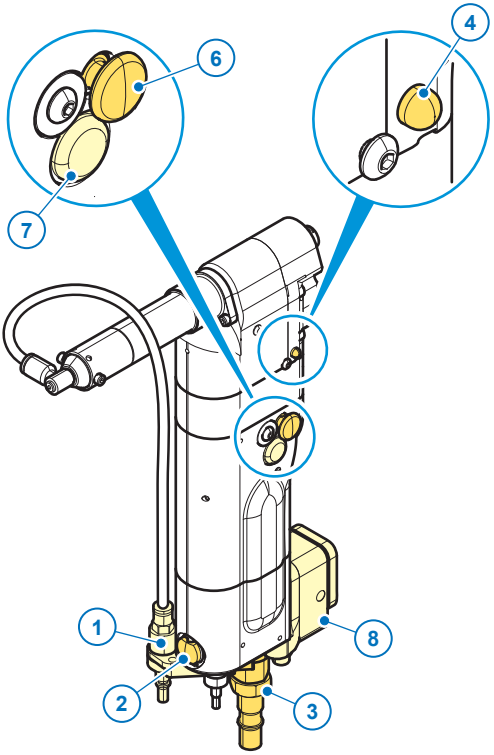
1 Head
2 On-board lubrication - Option
3 2nd stage gearbox
4 Motor - Integrated turbine
5 Cycle counter - Option
6 ¼ turn bayonet
7 Concentric collet
8 Template foot
9 J Clamping
10 C Clamping

4.1.2 - With on-board lubrication



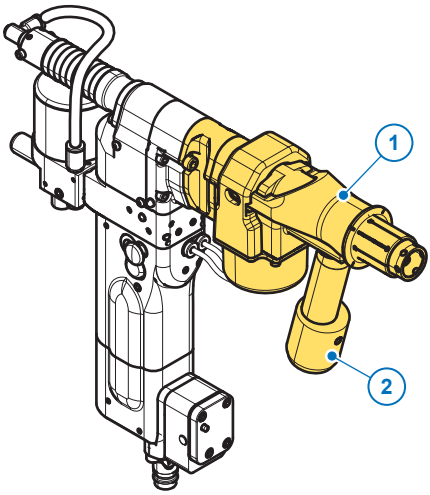
1 On-board lubrication
2 Manual emergency stop button
3 Air inlet
4 Spindle retraction button
5 Priming lubrication button
6 Clamping button
7 Cycle start
8 Cycle counter - Option

4.1.3 - Without on-board lubrication



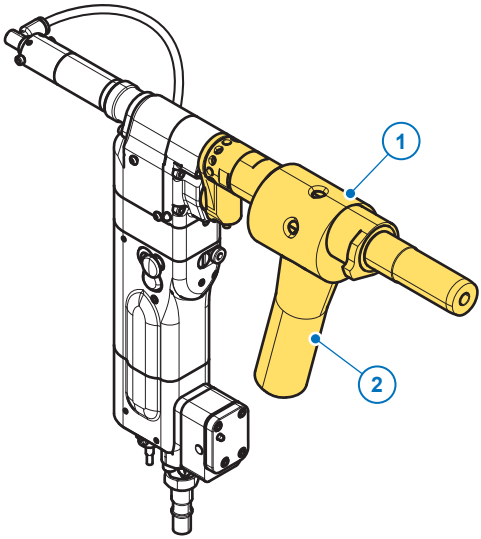
1 Lubrication inlet
2 Manual emergency stop button
3 Air inlet
4 Spindle retraction button
6 Clamping button
7 Cycle start
8 Cycle counter - Option

4.1.4 - Concentric collet



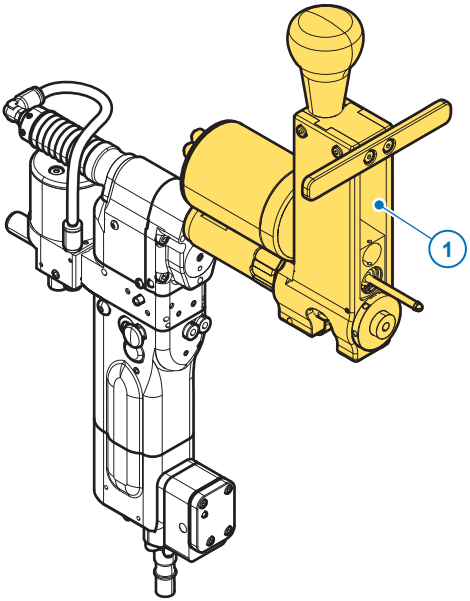
1 Concentric collet
2 Vacuum for chip extraction

4.1.5 - ¼ turn bayonet



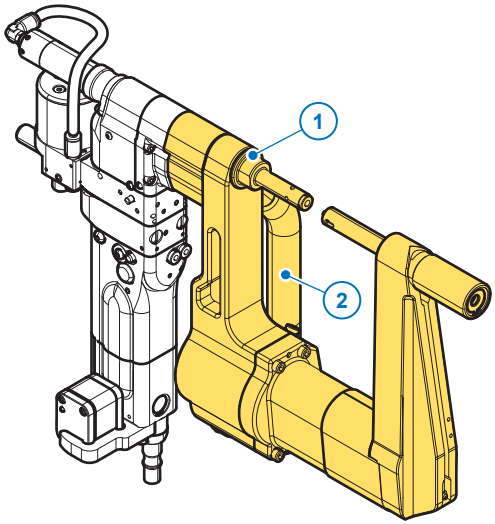
1 Bayonet (1/4 turn)
2 Vacuum for chip extraction

4.1.6 - Template foot



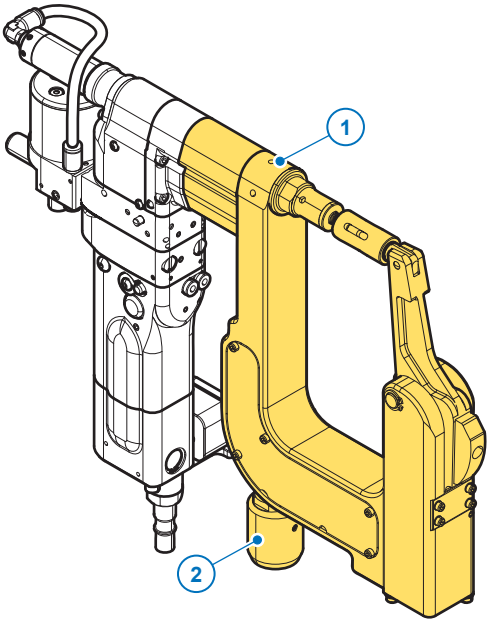
1 Template foot

4.1.7 - J Clamping



1 J Clamping
2 Vacuum for chip extraction

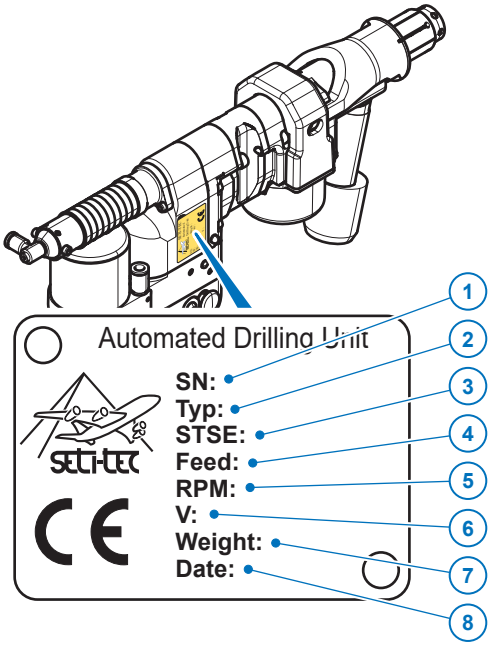
4.1.8 - C Clamping



1 C Clamping
2 Vacuum for chip extraction

4.2 - Identification

The nameplate identifying the machine is located on the side of the control buttons.



1	**SN**	Serial number
2	**Typ**	Machine type
3	**STSE**	Machine code
4	**Feed**	Feed rate
5	**RPM**	Rotation speed
6	**V**	Vibratory
7	**Weight**	Weight of the machine
8	**Date**	Manufacturing date (dd/mm/yy)

4.3 - Technical data

		Type of motor	
	Unit	**ST1200**	**ST2200**
Power	W	2100	2100
	HP	2.082	2.082
Air hose Min.	mm	8	11
	in.	0.5	0.5

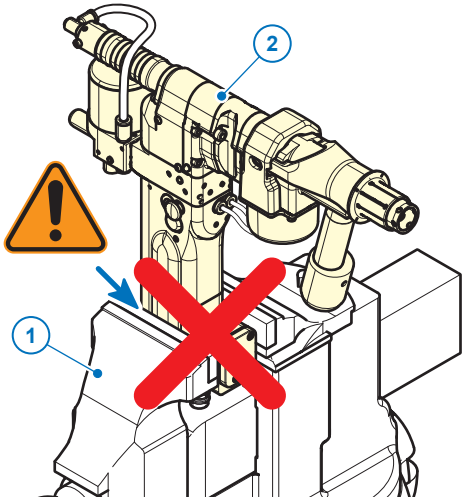
5 - Installation

5.1 - Recommendations – tips

5.1.1 - Safety first

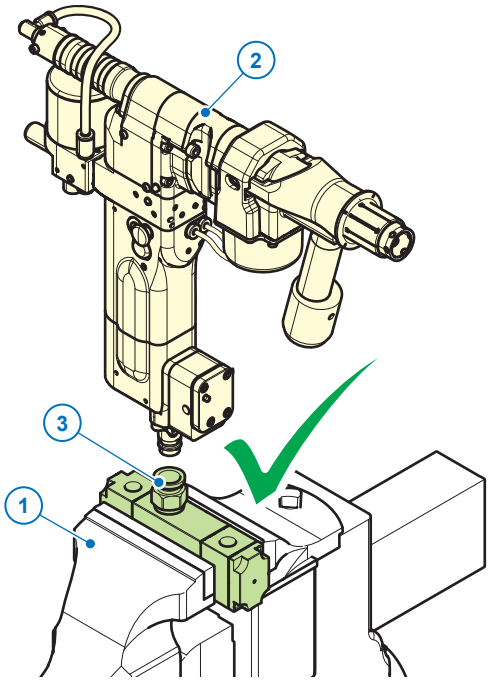
- Never work on the ADU if not disconnected from the air supply.
- Be careful to rotating and sliding parts of the ADU (especially when connecting it to the air network).
- Be careful with cutting tools which are very sharp.
- The use of personal protective equipment (PPE) is recommended.
- Please service the ADU on a clean workbench.
- Wear gloves to avoid personal injury.

5.1.2 - Generalities



1 Vice
2 ADU

Never use a vice to hold the tool.

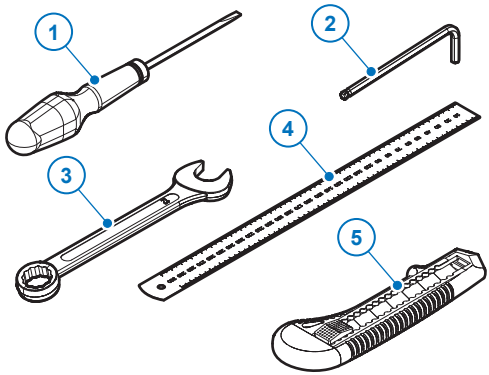


1 Vice
2 ADU
3 Support

If necessary use a support (3) that allows to hold the ADU (2) thanks to the air inlet coupling.

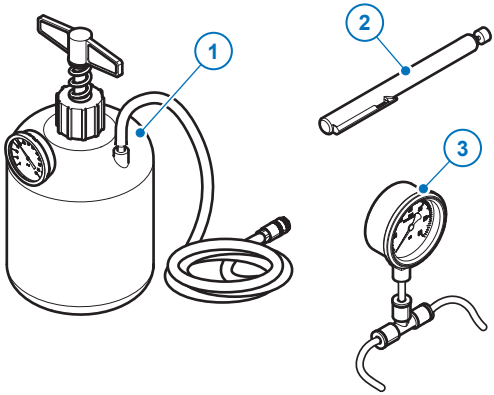
5.1.3 - Necessary tools

5.1.3.1 - Standard tools



1 Screwdriver
2 Allen key
3 Flat wrench (8, 10 27, 28mm)
4 Graduated steel rule
5 Cutter

5.1.3.2 - Specific tools



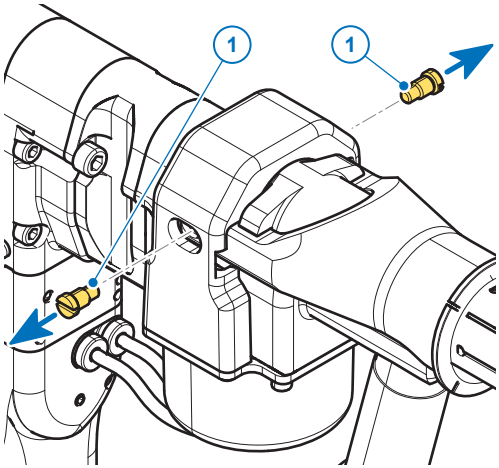
1 Lubricant refilling pump - ST054000040
2 Magnetic pen - ST054076209
3 Equipped pressure gauge - ST054066303

5.2 - Tool installation and setting

5.2.1 - Concentric collet

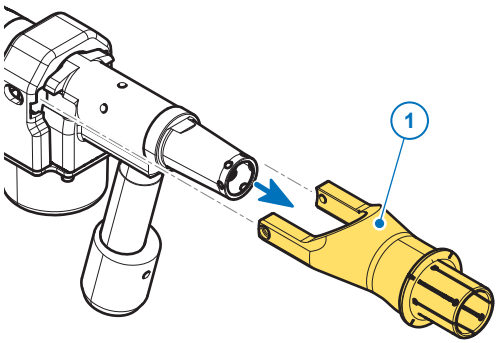
5.2.1.1 - Remove and install cutting tool

In order to change cutting tool you need to stop the spindle in advance position and remove the air power supply.



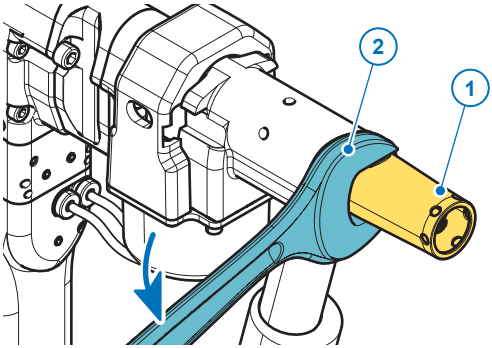
1 Screw

- Remove the 2 lateral screws (1) with a screwdriver.



1 Concentric collet holder

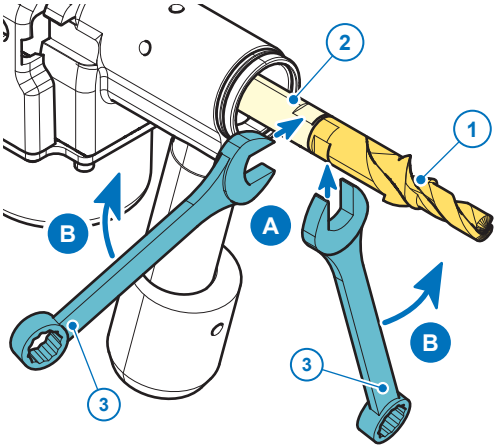
- Remove the concentric collet holder (1) from the tool.



1 Bush
2 Spanner

- Remove the bush (1) using a spanner (2).

The bush (1) thread is :
- Right Hand (RH) thread for countersink type concentric collet.
- Left Hand (LH) thread for drill only type concentric collet.
  - ST1200:
    RH back guided.
    LH front guided.
  - ST2200:
    LH: front / back guided.



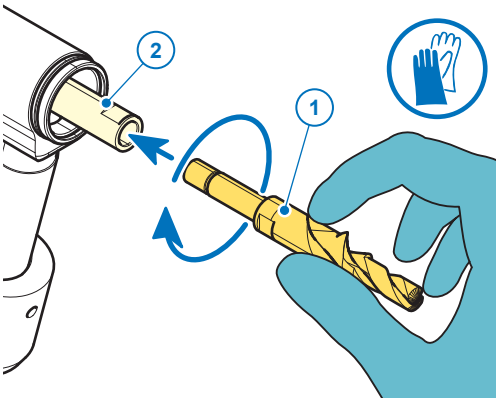
1 Cutting tool
2 Spindle
3 Spanner

Danger!
Careful with sharp cutting edges.

Use gloves to handle the cutting tool.

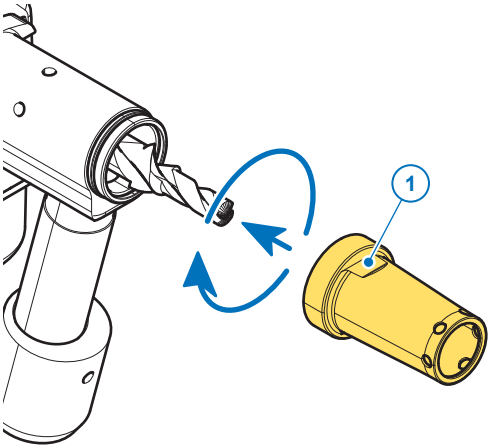
- Unlock and remove the cutting tool (1) from the spindle (2) using 2 spanners (3).

In some cases, it is necessary to increase the stroke of the spindle to access to the flats of the spindle and the cutting tool.



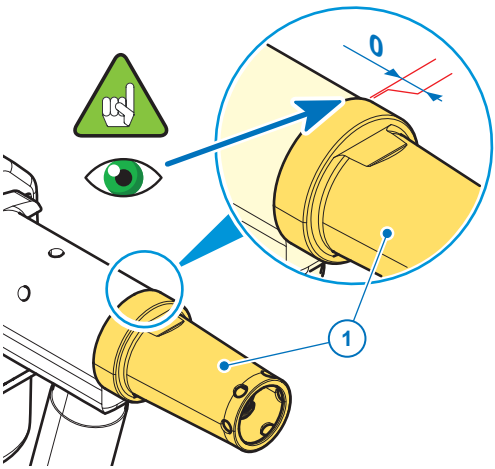
1 Cutting tool
2 Spindle

- Place by hand new cutting tool (1) on spindle (2).



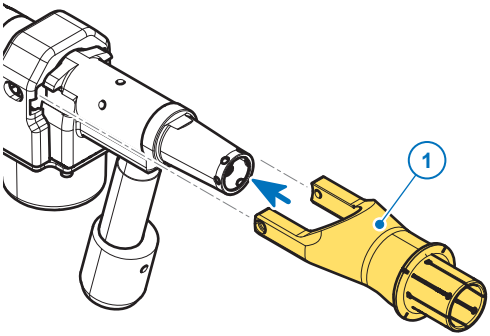
1 Bush

- Place the bush (1) in position.



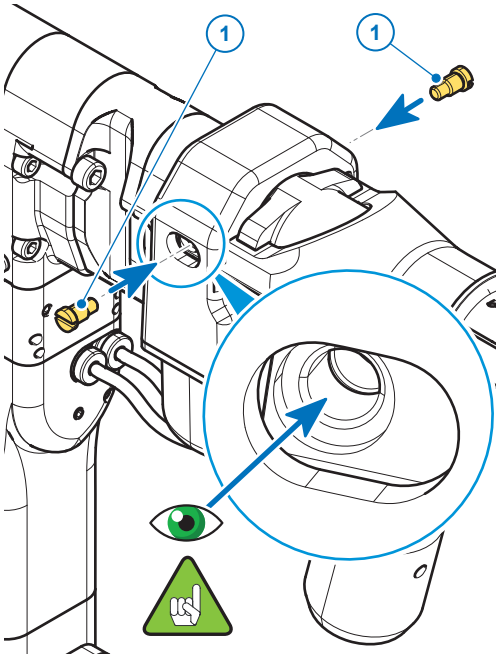
1 **Bush**

On re-assembly, make sure there's no clearance.



1 **Concentric collet holder**

- Place the concentric collet holder (1) in position.



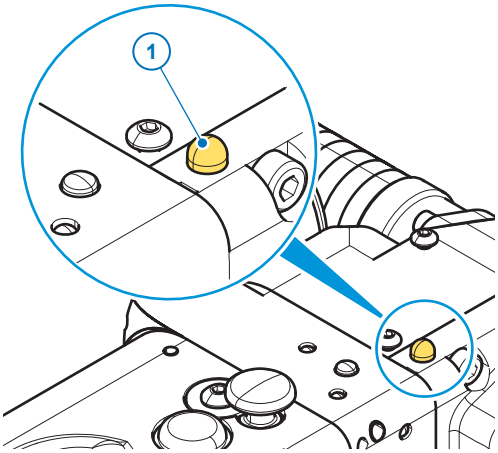
1 **Screw**

- Tighten firmly the 2 lateral screws (1) with a screwdriver.

Making sure that the slots in the piston are lined up to receive lateral screws.

If your machine is equipped with a lubrication system, test it.

For the in-board lubrication system, refer to chapter 5.4.6 on page 40.



1 Spindle retraction button

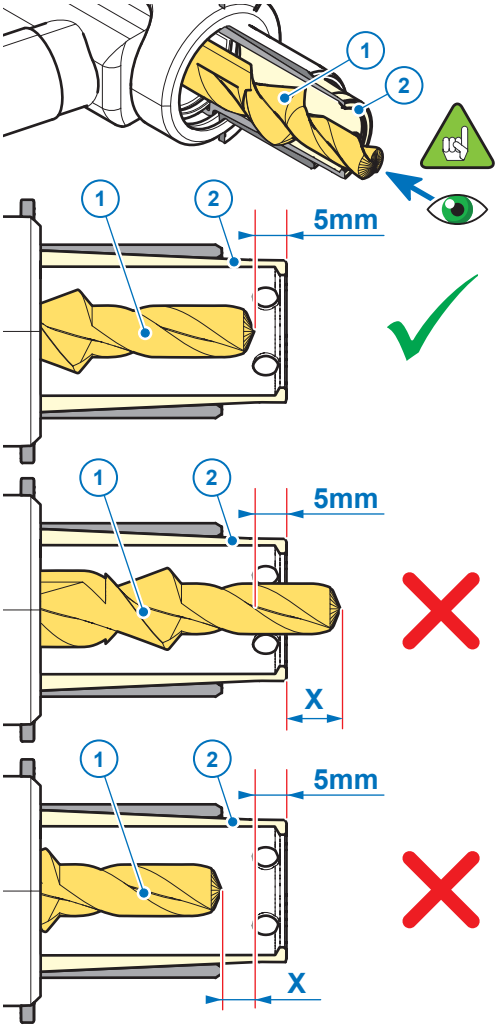
- Press the spindle retraction button (1).

The spindle retracts and the tool is ready for operating.

5.2.1.2 - Set cutting tool position

Measure the position of the cutting tool

After reassembling the concentric collet holder, measure the position of the cutting tool.



1 Cutting tool
2 Concentric collet

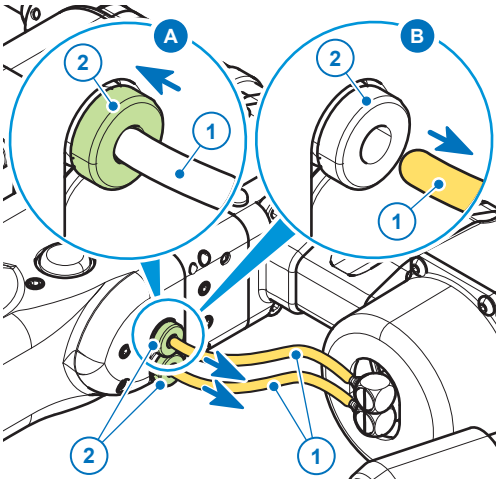
The cutting tool (1) must be 5 mm inside the concentric collet (2).

If not, set the cutting tool position.

Cycle to tool 4 or 5 times to make sure of spindle position.

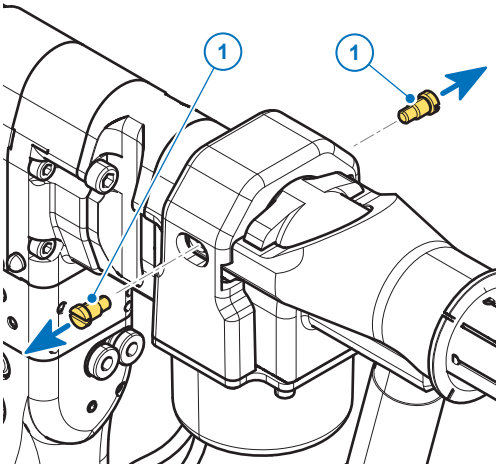
Set the cutting tool position

- Note the measure (X) to set the cutting tool position.
- Run a cycle to extend the spindle at its maximum stroke.
- Press the manual emergency stop button to remove the cutting tool (See chapter 5.2.1.1).
- Remove the power air supply.



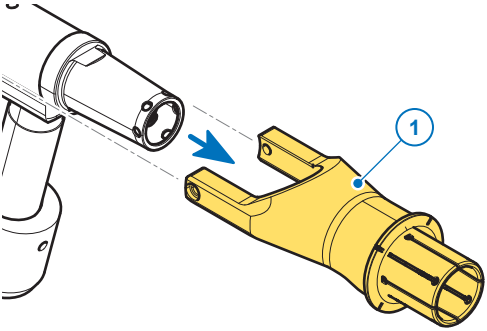
1 Pipe
2 Coupling ring

- Push on coupling ring (2).
- Unplug the 2 pipes (1) of the pneumatic cylinder from the turbine module.



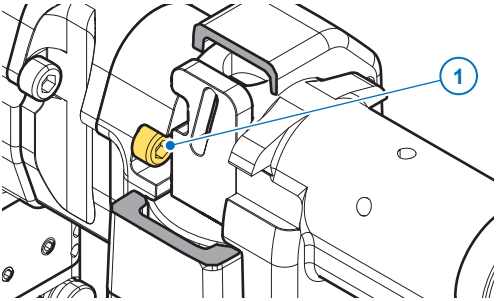
1 Screw

- Remove the 2 lateral screws (1) with a screwdriver.



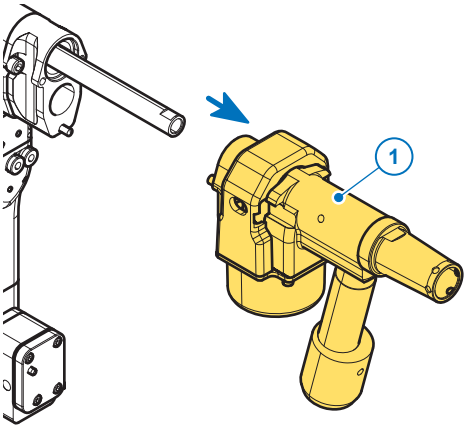
1 Concentric collet holder

- Remove the concentric collet holder (1) from the tool.



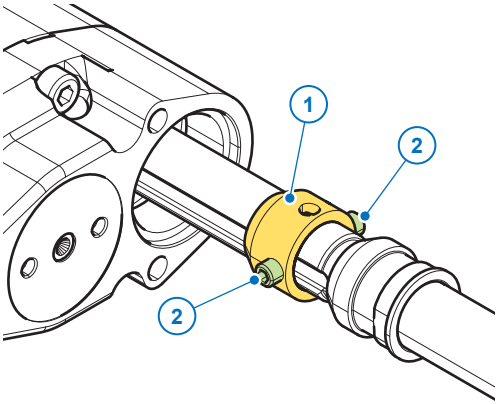
1 Screw

- Using an hex key, untighten the 2 screws (1).



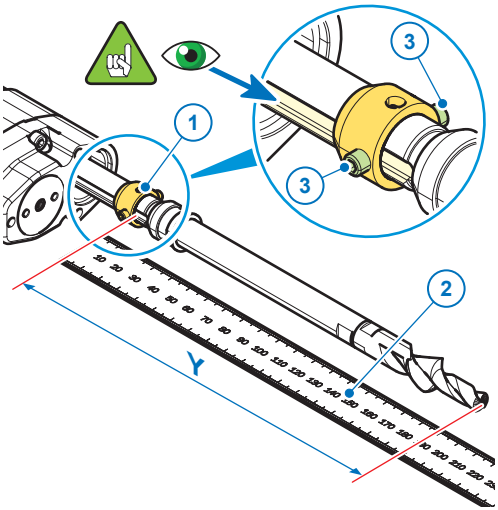
1 Pneumatic cylinder

- Remove the pneumatic cylinder (1).



1 Mechanical stop
2 Set screw

- Using an hex key, unlock the mechanical stop (1) (2 set screws (2) diametrically opposed).



1 Mechanical stop
2 Graduated steel rule
3 Set screw

- Replace the cutting tool to measure the Y dimension.
- Using a graduated steel rule (2), turn clockwise or counter-clockwise the mechanical stop (1) to get the right position of the cutting tool (5 mm inside the mandrel).

- Turn clockwise to get out the cutting tool.
- Turn counterclockwise to retract the cutting tool.

- Using the 2 set screws diametrically opposed and a hex key, lock the mechanical stop.

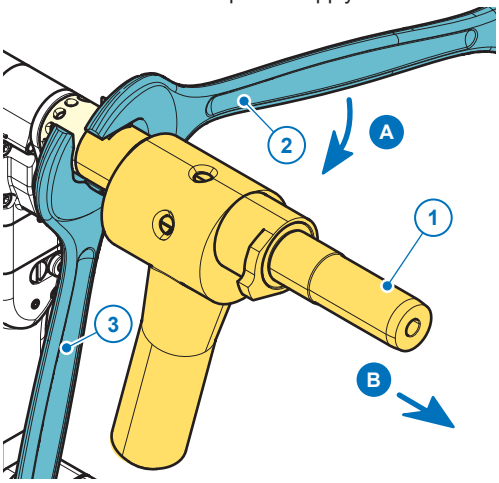
Make sure that both set screws (3) are installed in the spindle grooves.

- Reassemble the ADU and run a cycle to check the tool position.

5.2.2 - ¼ turn (bayonet)

5.2.2.1 - Remove and install cutting tool

In order to change cutting tool you need to stop the spindle in advance position and remove the air power supply.

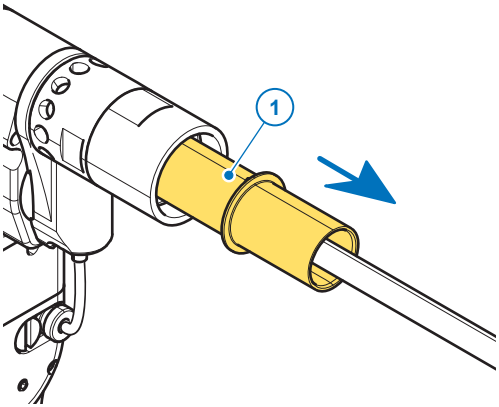


1 Bushing
2 Spanner 27mm
3 Spanner 28 mm

Danger!
Careful with sharp cutting edges.

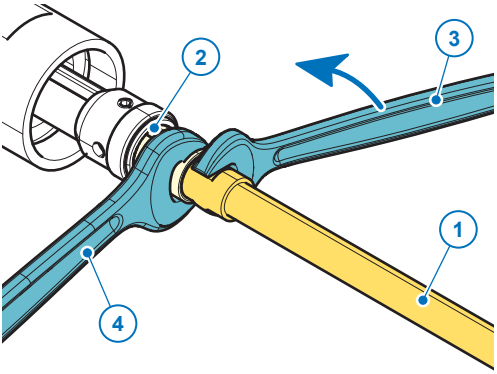
Use gloves to handle the cutting tool.

- Unlock and remove the bushing (1) using 2 spanners (2-3).



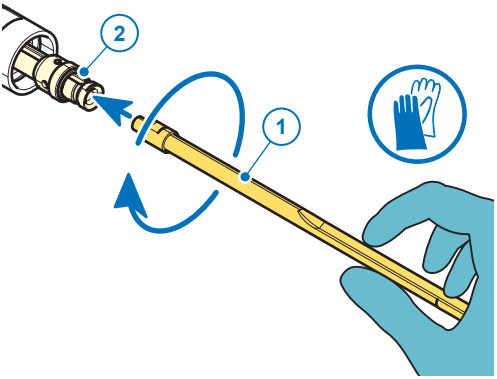
1 Spacer

- Remove the spacer (1).



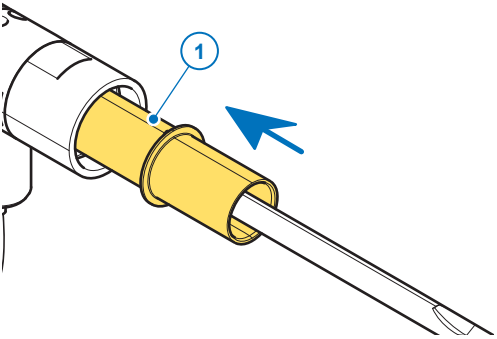
1 Cutting tool
2 Spindle
3 Spanner 8mm
4 Spanner 10mm

- Unlock and remove the cutting tool (1) from the spindle (2) using 2 spanners (3-4).



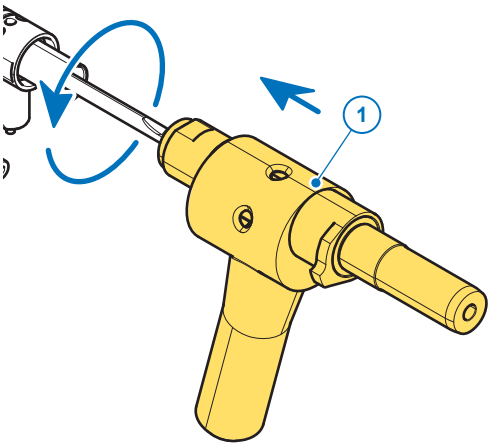
1 Cutting tool
2 Spindle

- Place by hand new cutting tool (1) on spindle (2).



1 Spacer

- Place the spacer (1) in position.



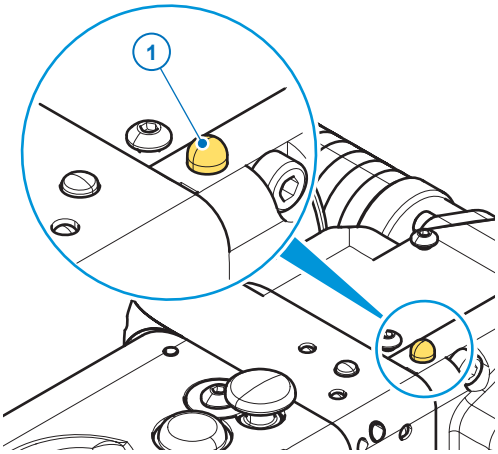
1 **Bushing**

- Place the bushing (1) in position.

Left hand thread.

If your machine is equipped with a lubrication system, test it.

For the in-board lubrication system, refer to chapter 5.4.6 on page 40.



1 **Spindle retraction button**

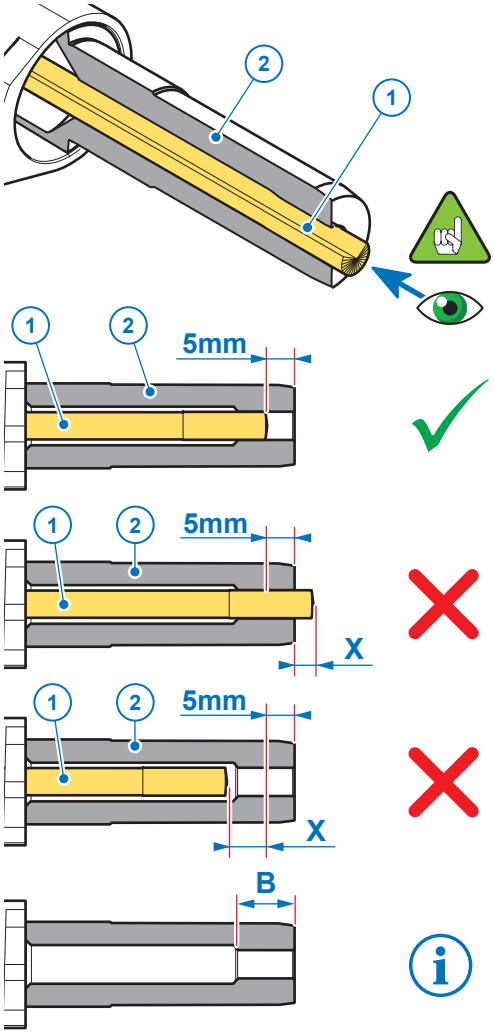
- Press the spindle retraction button (1).

The spindle retracts and the tool is ready for operating.

5.2.2.2 - Set cutting tool position

Measure the position of the cutting tool

After reassembling the bushing, measure the position of the cutting tool.

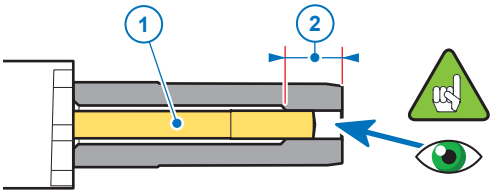


1 **Cutting tool**
2 **Bushing**

The cutting tool (1) must be positioned at 5mm from the end of the drilling centering guide.

If not, set the cutting tool position.

Guidance length (B) is equal to 2 times the diameter of the drilling hole.

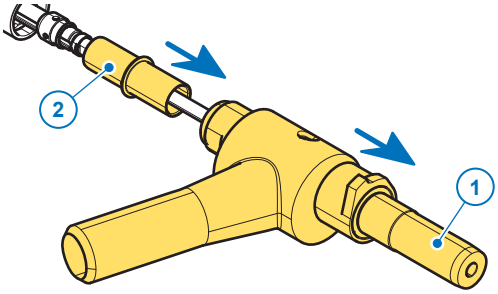


1 Cutting tool
2 Guidance

For front guided make sure the cutting tool (1) is into the guidance (2).

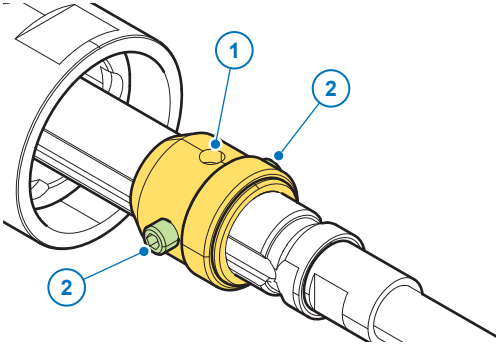
Set the cutting tool position

- Note the measure (X) to set the cutting tool position.
- Run a cycle to extend the spindle at its maximum stroke.
- Press the manual emergency stop button to stop the drilling machine.
- Remove the power air supply.



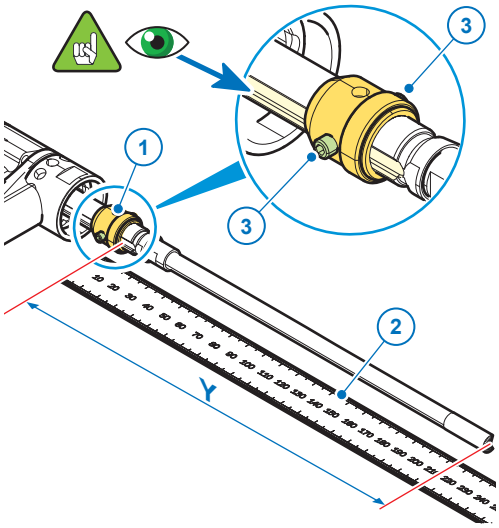
1 Bushing
2 Spacer

- Remove the bushing (1).
- Remove the spacer (2).



1 Mechanical stop
2 Set screw

- Using an hex key, unlock the mechanical stop (1) (2 set screws (2) diametrically opposed).



1 Mechanical stop
2 Graduated steel rule
3 Set screw

- Using a graduated steel rule (2), turn clockwise or counter-clockwise the mechanical stop (1) to get the right position of the cutting tool.

- Turn clockwise to get out the cutting tool.
- Turn counterclockwise to retract the cutting tool.

- Using the 2 set screws diametrically opposed and a hex key, lock the mechanical stop (1).

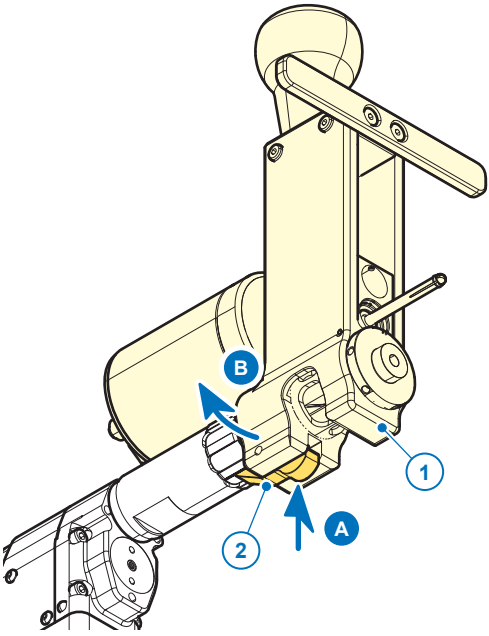
Make sure that both set screws (3) are installed in the spindle grooves.

- Reassemble the ADU and run a cycle to check the tool position.

5.2.3 - Template foot

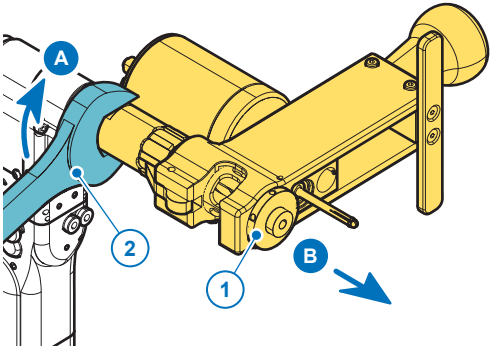
5.2.3.1 - Remove and install cutting tool

In order to change cutting tool you need to stop the spindle in advance position and remove the air power supply.



1 Template foot
2 Button

- Push on the button (2), then rotate the template foot (1).

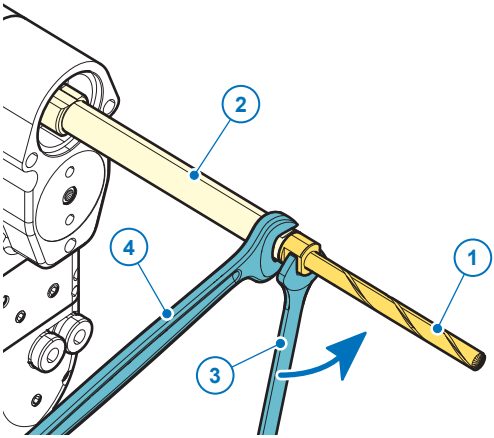


1 Template foot
2 Spanner 24 mm

Danger!
Careful with sharp cutting edges.

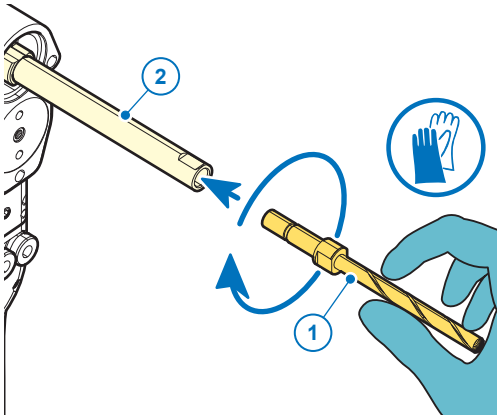
Use gloves to handle the cutting tool.

- Unlock and remove the template foot (1) using spanner (2).



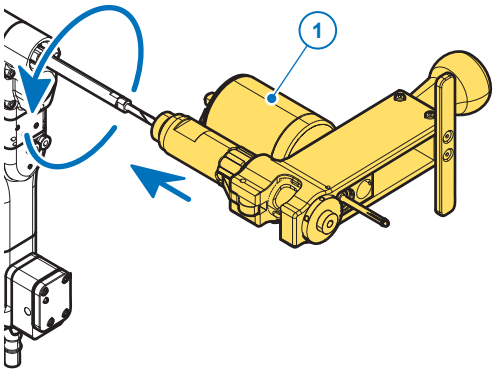
1 Cutting tool
2 Spindle
3 Spanner 7mm
4 Spanner 8mm

- Unlock and remove the cutting tool (1) from the spindle (2) using 2 spanners (3-4).



1 Cutting tool
2 Spindle

- Place by hand new cutting tool (1) on spindle (2).



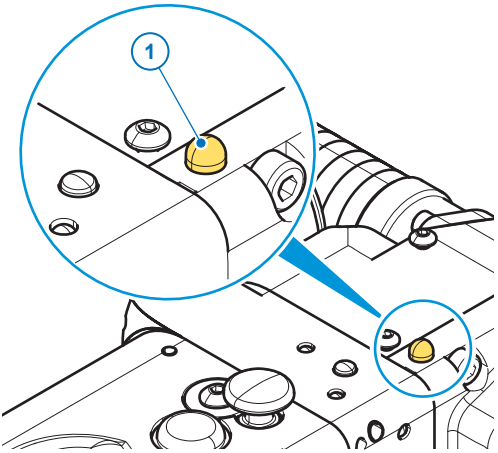
1 Template foot

- Place and lock the template foot (1) in position.

Left hand thread.

If your machine is equipped with a lubrication system, test it.

For the in-board lubrication system, refer to chapter 5.4.6 on page 40.



1 Spindle retraction button

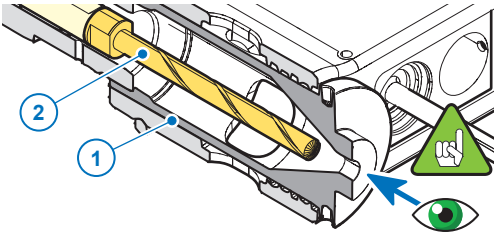
- Press the spindle retraction button (1).

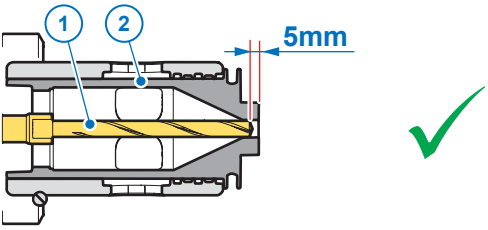
The spindle retracts and the tool is ready for operating.

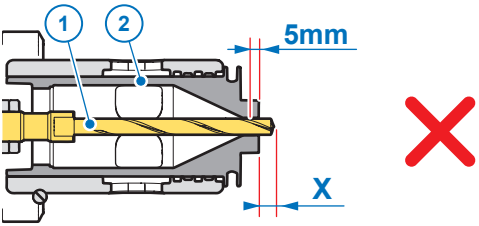
5.2.3.2 - Set cutting tool position

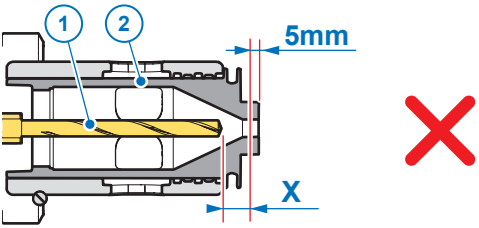
Measure the position of the cutting tool

After reassembling the template foot, measure the position of the cutting tool.





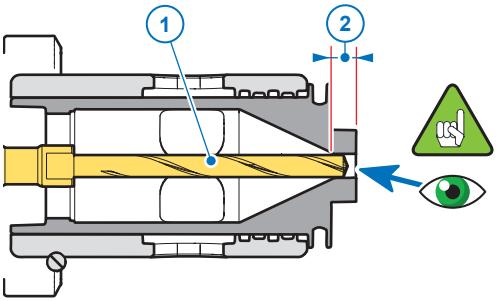




1 **Cutting tool**
2 **Bushing**

The cutting tool (1) must be positioned at 5mm from the end of the drilling centering guide.

If not, set the cutting tool position.

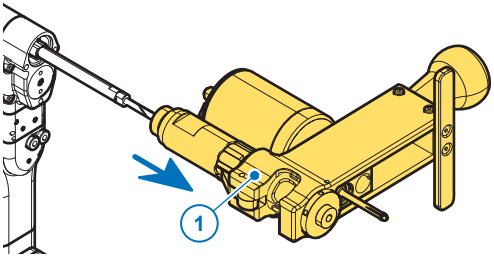


1 **Cutting tool**
2 **Guidance**

For front guided make sure the cutting tool (1) is into the guidance (2).

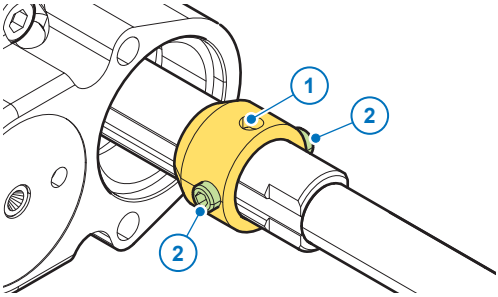
Set the cutting tool position

- Note the measure (X) to set the cutting tool position.
- Run a cycle to extend the spindle at its maximum stroke.
- Press the manual emergency stop button to stop the drilling machine.
- Remove the power air supply.



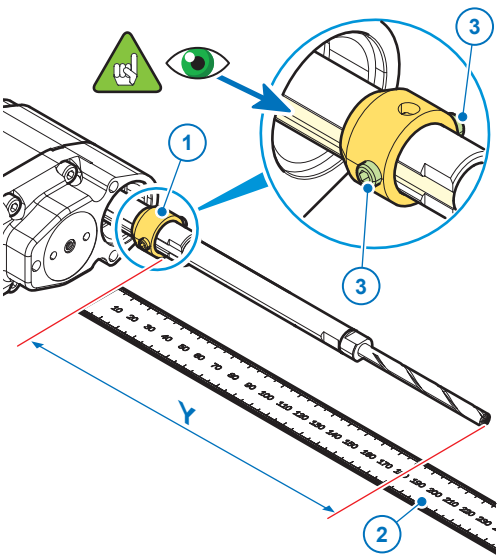
1 **Template foot**

- Remove the template foot (1).



1 **Mechanical stop**
2 **Set screw**

- Using an hex key, unlock the mechanical stop (1) (2 set screws (2) diametrically opposed).



1 **Mechanical stop**
2 **Graduated steel rule**
3 **Set screw**

- Using a graduated steel rule (2), turn clockwise or counter-clockwise the mechanical stop (1) to get the right position of the cutting tool.

- Turn clockwise to get out the cutting tool.
- Turn counterclockwise to retract the cutting tool.

- Using the 2 set screws diametrically opposed and a hex key, lock the mechanical stop (1).

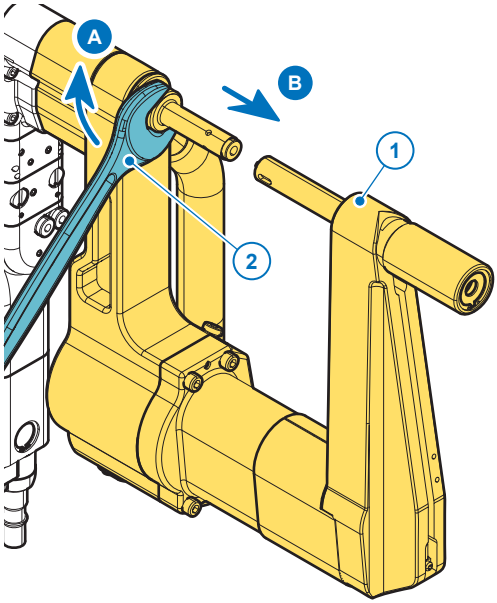
Make sure that both set screws (3) are installed in the spindle grooves.

- Reassemble the ADU and run a cycle to check the tool position.

5.2.4 - J Clamping

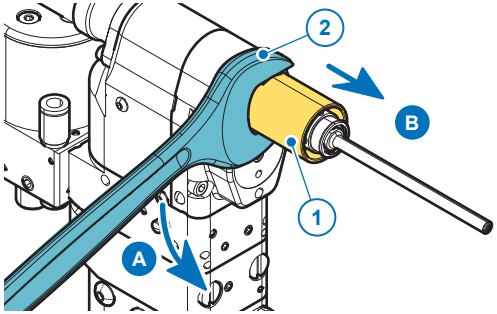
5.2.4.1 - Remove and install cutting tool

In order to change cutting tool you need to stop the spindle in advance position and remove the air power supply.



1 **J Clamping**
2 **Spanner 20 mm**

- Unlock and remove the J Clamping (1) using spanner (2).

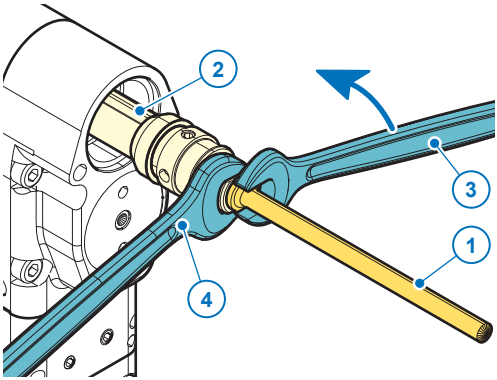


1 **Spacer**
2 **Spanner 22 mm**

Danger!
Careful with sharp cutting edges.

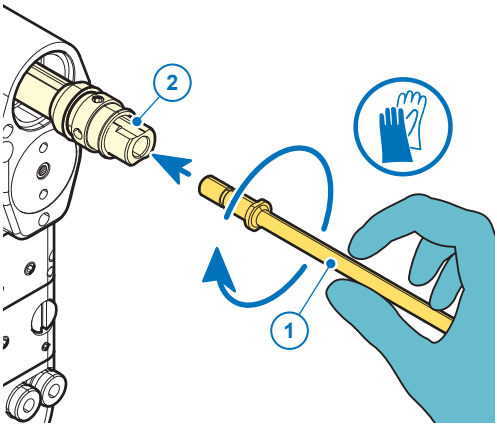
Use gloves to handle the cutting tool.

- Unlock and remove the spacer (1) using spanner (2).



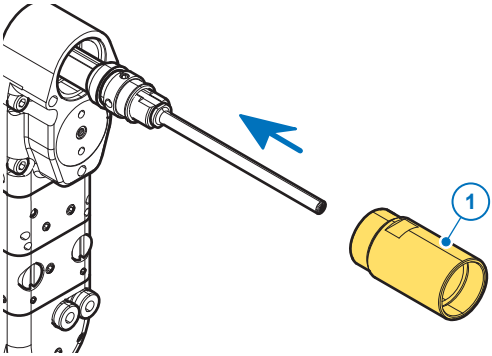
1 Cutting tool
2 Spindle
3 Spanner 8 mm
4 Spanner 9 mm

- Unlock and remove the cutting tool (1) from the spindle (2) using 2 spanners (3-4).



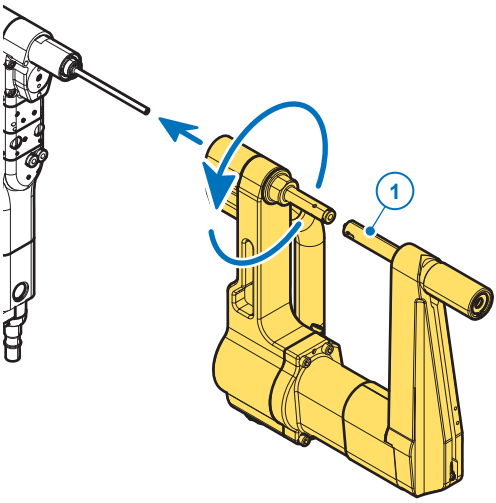
1 Cutting tool
2 Spindle

- Place by hand new cutting tool (1) on spindle (2).



1 Spacer

- Place the spacer (1) in position.



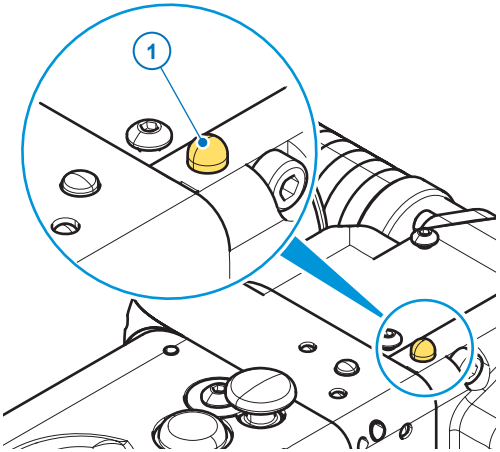
1 J Clamping

- Place the J Clamping (1) in position.

Left hand thread.

If your machine is equipped with a lubrication system, test it.

For the in-board lubrication system, refer to chapter 5.4.6 on page 40.



1 Spindle retraction button

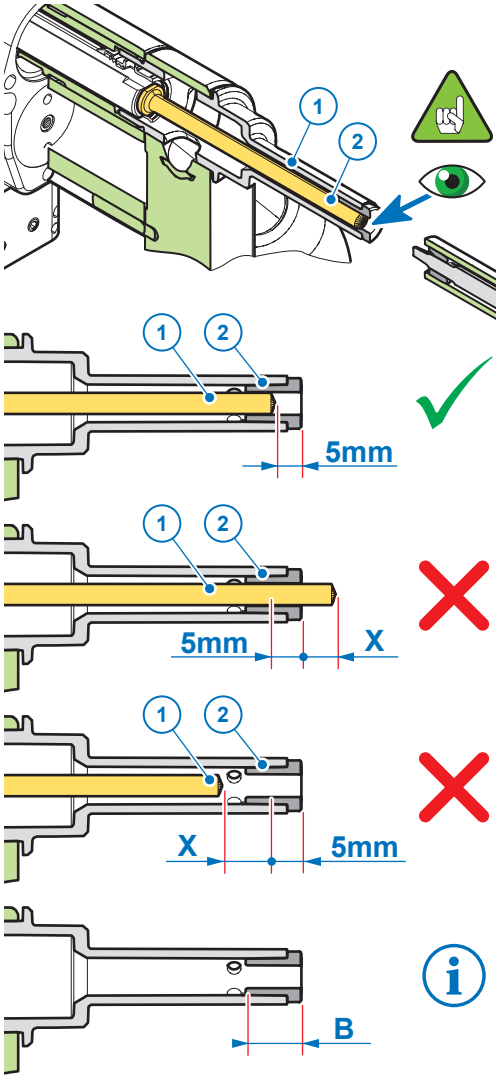
- Press the spindle retraction button (1).

The spindle retracts and the tool is ready for operating.

5.2.4.2 - Set cutting tool position

Measure the position of the cutting tool

After reassembling the template foot, measure the position of the cutting tool.

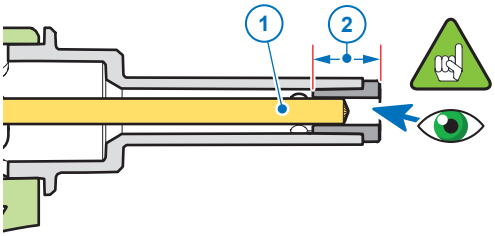


1 Cutting tool
2 Bushing

The cutting tool (1) must be positioned at 5mm from the end of the drilling centering guide.

If not, set the cutting tool position.

Guidance length (B) is equal to 2 times the diameter of the drilling hole.

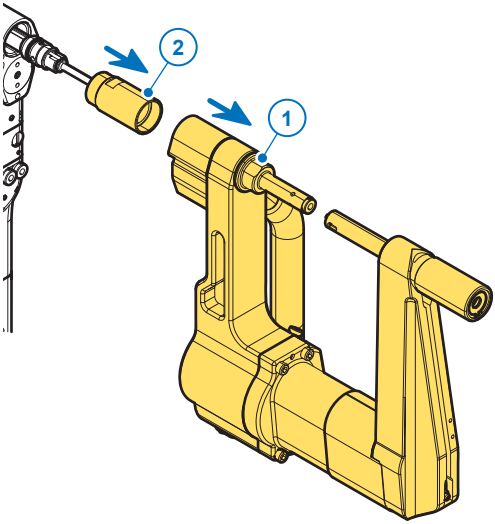


1 Cutting tool
2 Guidance

For front guided make sure the cutting tool (1) is into the guidance (2).

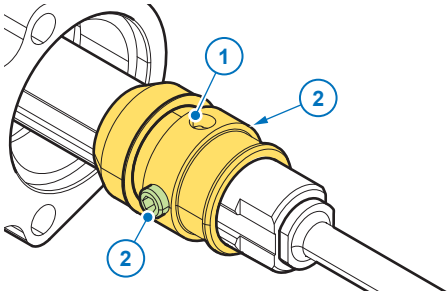
Set the cutting tool position

- Note the measure (X) to set the cutting tool position.
- Run a cycle to extend the spindle at its maximum stroke.
- Press the manual emergency stop button to stop the drilling machine.
- Remove the power air supply.



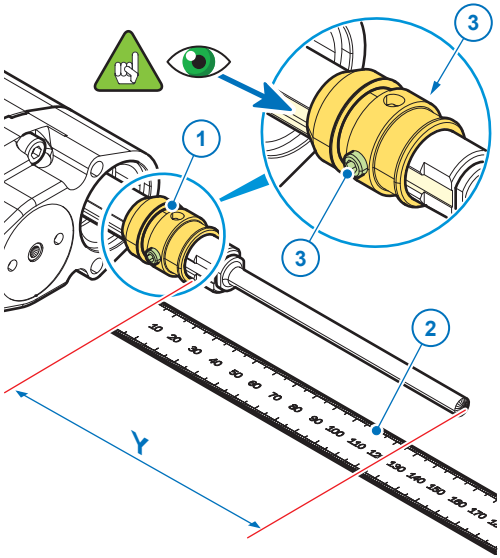
1 J Clamping
2 Spacer

- Remove the J Clamping (1).
- Remove the spacer (2).



1 Mechanical stop
2 Set screw

- Using an hex key, unlock the mechanical stop (1) (2 set screws (2) diametrically opposed).



1 Mechanical stop
2 Graduated steel rule
3 Set screw

- Using a graduated steel rule (2), turn clockwise or counter-clockwise the mechanical stop (1) to get the right position of the cutting tool.

- Turn clockwise to get out the cutting tool.
- Turn counterclockwise to retract the cutting tool.

- Using the 2 set screws diametrically opposed and a hex key, lock the mechanical stop (1).

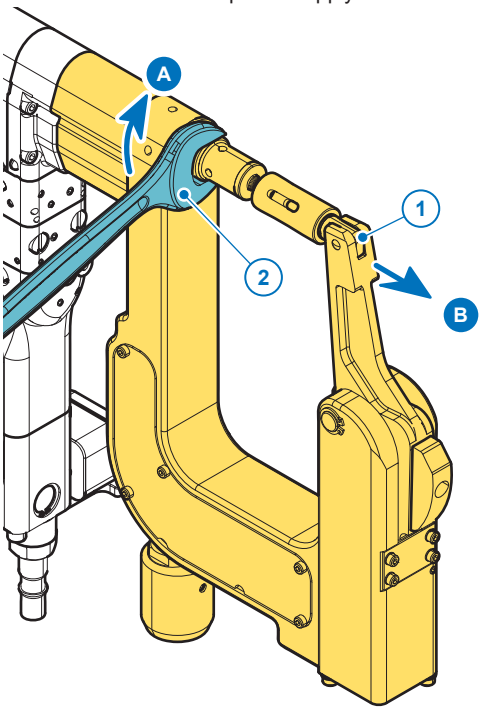
Make sure that both set screws (3) are installed in the spindle grooves.

- Reassemble the ADU and run a cycle to check the tool position.

5.2.5 - C Clamping

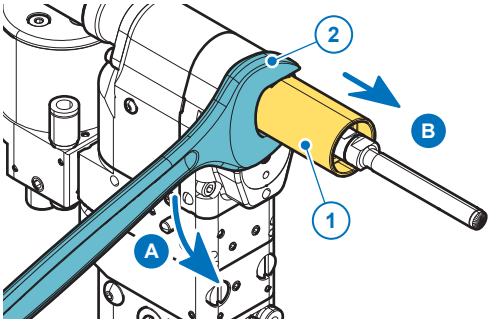
5.2.5.1 - Remove and install cutting tool

In order to change cutting tool you need to stop the spindle in advance position and remove the air power supply.



1 C Clamping
2 Spanner 20 mm

- Unlock and remove the C Clamping (1) using spanner (2).

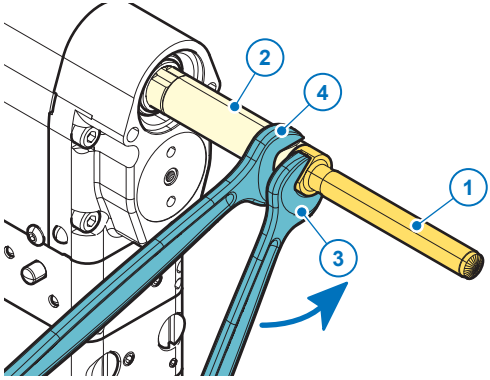


1 Spacer
2 Spanner 22 mm

Danger!
Careful with sharp cutting edges.

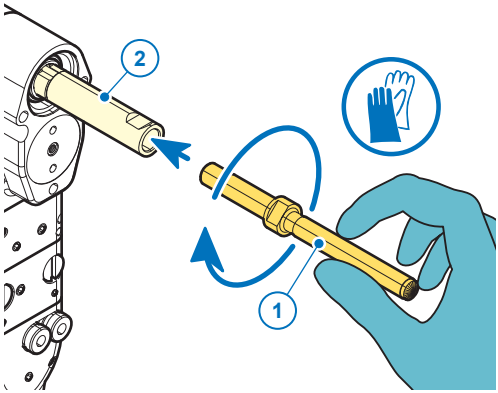
Use gloves to handle the cutting tool.

- Unlock and remove the spacer (1) using spanner (2).



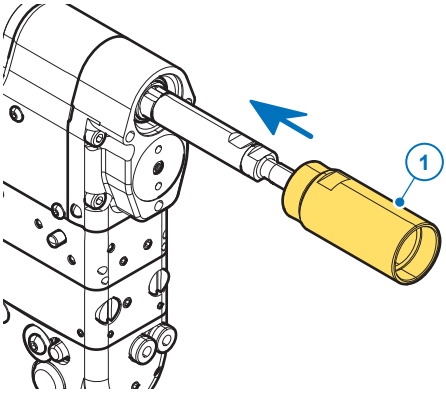
1 Cutting tool
2 Spindle
3 Spanner 9 mm
4 Spanner 10 mm

- Unlock and remove the cutting tool (1) from the spindle (2) using 2 spanners (3-4).



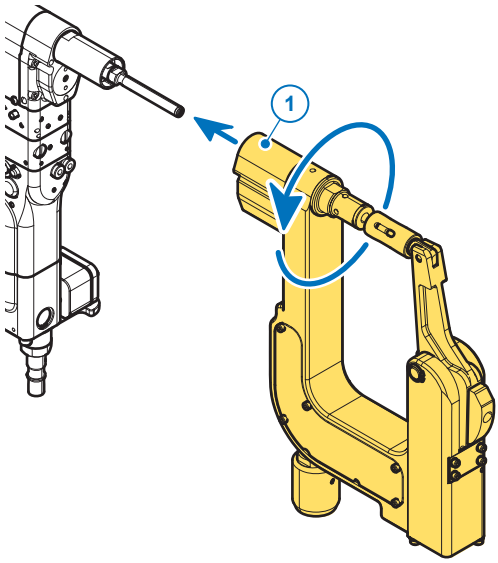
1 Cutting tool
2 Spindle

- Place by hand new cutting tool (1) on spindle (2).



1 **Spacer**

- Place the spacer (1) in position.



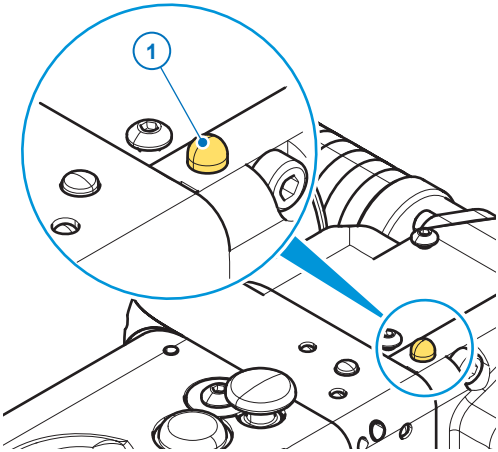
1 **C Clamping**

- Place the C Clamping (1) in position.

Left hand thread.

If your machine is equipped with a lubrication system, test it.

For the in-board lubrication system, refer to chapter 5.4.6 on page 40.



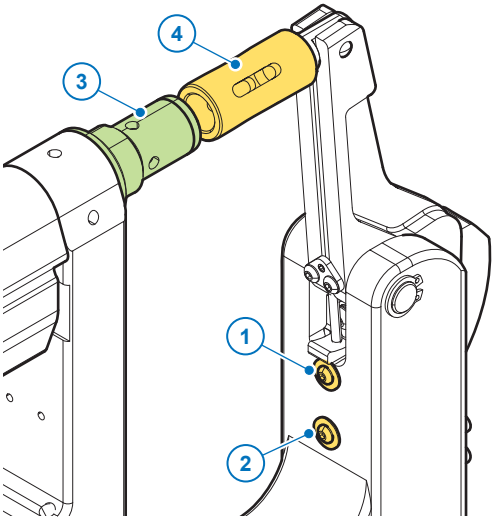
1 **Spindle retraction button**

- Press the spindle retraction button (1).

The spindle retracts and the tool is ready for operating.

5.2.5.2 - Orientation of the clamp drill bushing

Check that the spindle is retracted to make this adjustment.



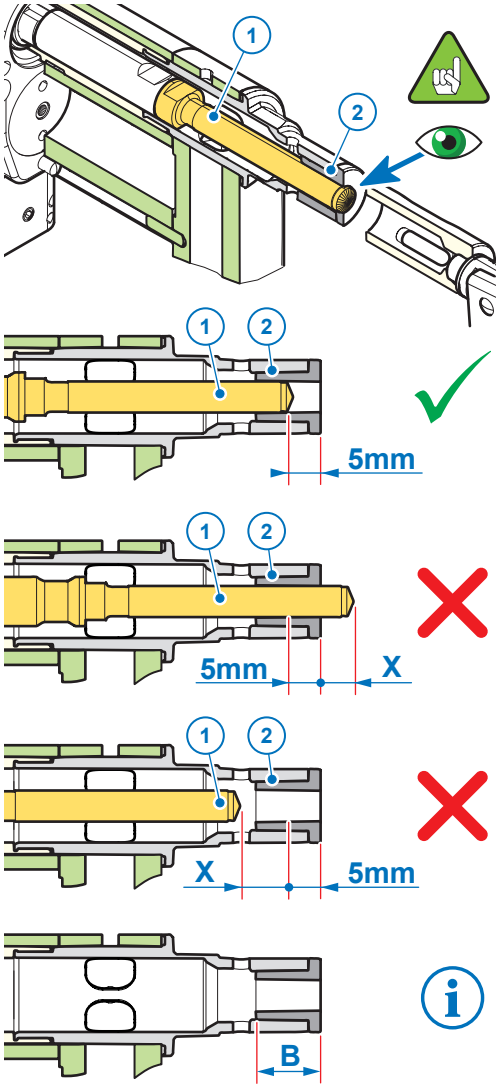
1 Set screw
2 Set screw
3 Drill bushing
4 Clamp drill bushing

- Loosen set screws (1) and (2).
- Between the drill bushing (3) and the clamp drill bushing (4), place a stack of adjusting shims corresponding to the thickness of the material to be drill.
- Press the clamp against this stack.
- Tighten the adjusting screws (1) and (2).
- Open the clamp and remove the stack.

5.2.5.3 - Set cutting tool position

Measure the position of the cutting tool

After reassembling the template foot, measure the position of the cutting tool.

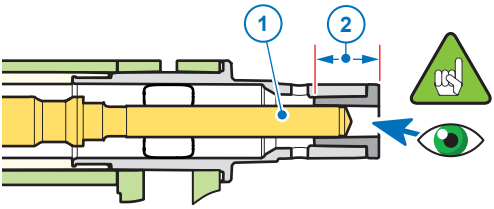


1 Cutting tool
2 Bushing

The cutting tool (1) must be positioned at 5mm from the end of the drilling centering guide.

If not, set the cutting tool position.

Guidance length (B) is equal to 2 times the diameter of the drilling hole.

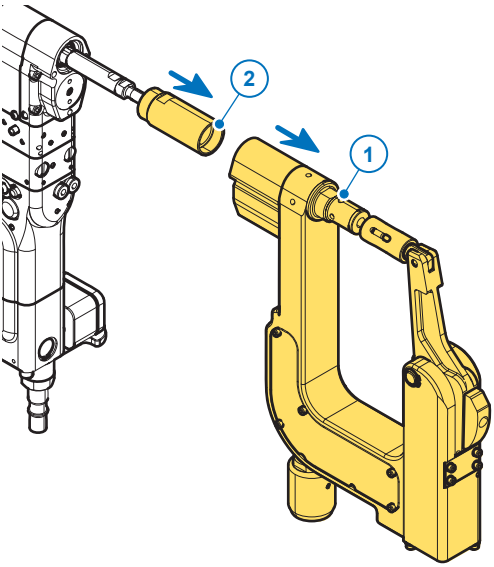


1 Cutting tool
2 Guidance

For front guided make sure the cutting tool (1) is into the guidance (2).

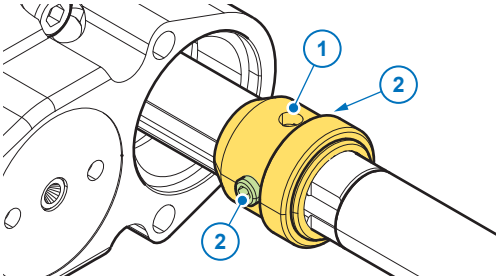
Set the cutting tool position

- Note the measure (X) to set the cutting tool position.
- Run a cycle to extend the spindle at its maximum stroke.
- Press the manual emergency stop button to stop the drilling machine.
- Remove the power air supply.



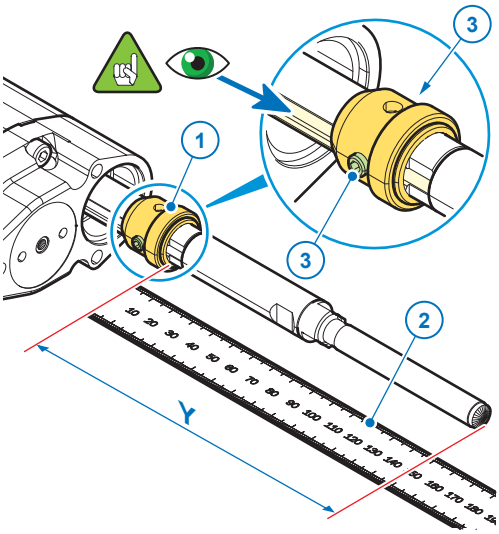
1 C Clamping
2 Spacer

- Remove the C Clamping (1).
- Remove the spacer (2).



1 Mechanical stop
2 Set screw

- Using an hex key, unlock the mechanical stop (1) (2 set screws (2) diametrically opposed).



1 Mechanical stop
2 Graduated steel rule
3 Set screw

- Using a graduated steel rule (2), turn clockwise or counter-clockwise the mechanical stop (1) to get the right position of the cutting tool.

- Turn clockwise to get out the cutting tool.
- Turn counterclockwise to retract the cutting tool.

- Using the 2 set screws diametrically opposed and a hex key, lock the mechanical stop (1).

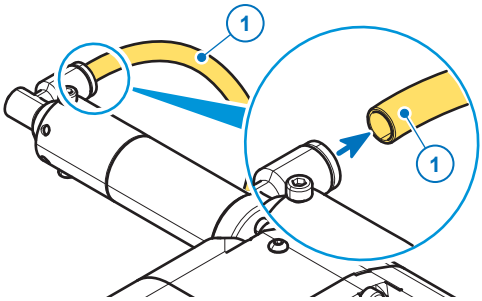
Make sure that both set screws (3) are installed in the spindle grooves.

- Reassemble the ADU and run a cycle to check the tool position.

5.3 - Set stroke

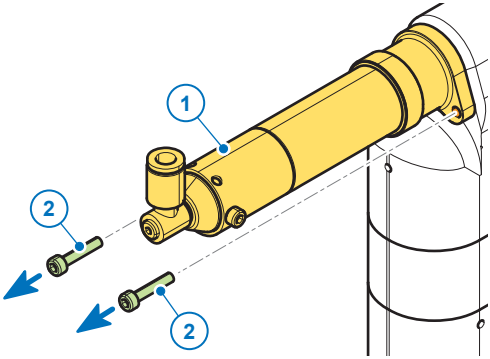
For countersinking, the stroke can be adjusted thanks to a micrometric stop for an accurate setting. For drilling only, a more basic system is used.

5.3.1 - Millimetric stop



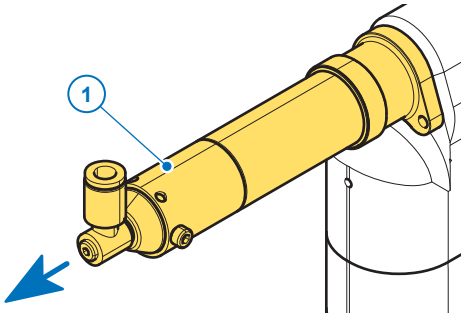
1 **Lubricant pipe**

- Unplug lubricant pipe (1).



1 **Spindle cover**
2 **Screw**

- Unscrew the 2 screws (2).

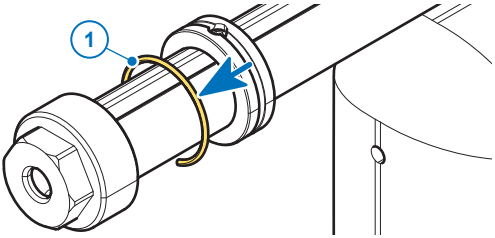


1 **Spindle cover**

- Remove the spindle cover (1).

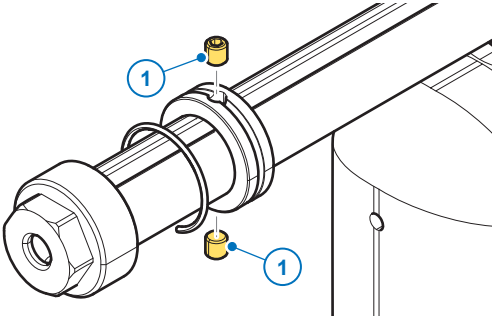
To know how much exactly you should increase or decrease the stroke, a first hole must be made and measured.

Then according to the measure, the stroke must be set like this:



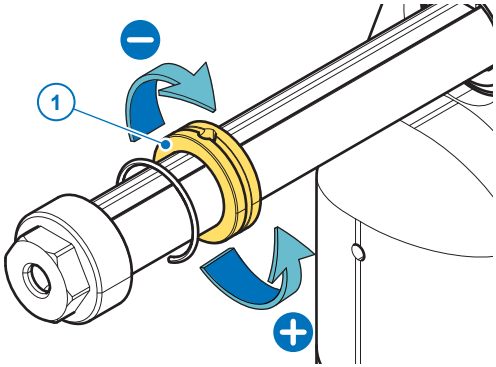
1 **Snap ring**

- Lift the snap ring (1) with a flat screwdriver.



1 **Set screw**

- Remove the 2 set screws (1) with an Allen key.

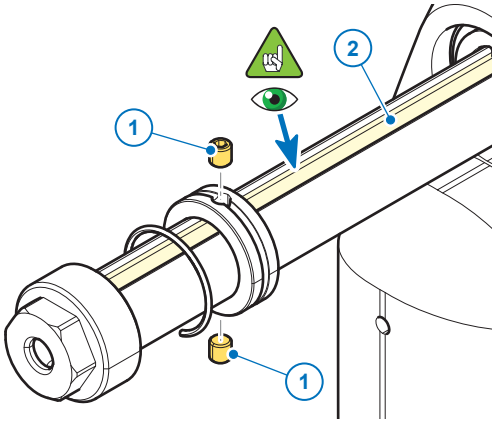


1 **Stroke limiter**

- Turn clockwise or counter-clockwise the stroke limiter (1).

Left hand thread.
- Clockwise: to decrease stroke.
- Counterclockwise: to increase stroke.

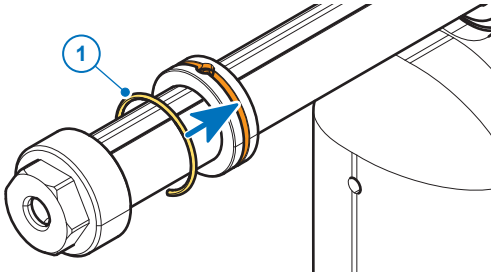
Be careful.
Too important stroke can lead to damaging either the cutting tool or spindle on the nose equipment (refer to the STSE assembly drawing).



1 **Set screw**
2 **Groove**

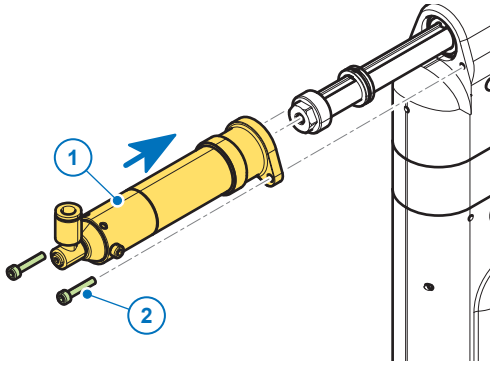
- Put the 2 set screws (1) back and tighten them firmly with an Allen key.

Make sure that the set screws (1) are in the groove and not on the spindle thread.



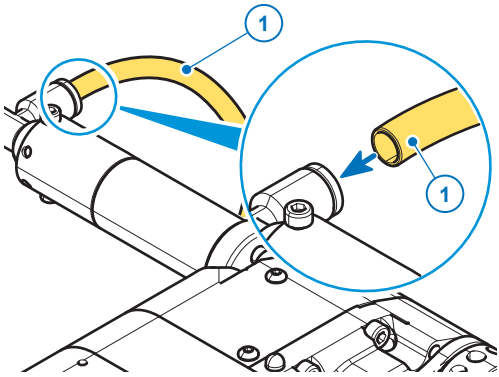
1 **Snap ring**

- Put the snap ring (1) back in its groove using a flat screwdriver.



1 **Spindle cover**
2 **Screw**

- Place spindle cover (1) back in position.
- Tighten the 2 screws (2).

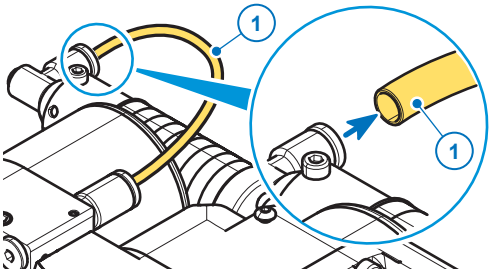


1 **Lubricant pipe**

- Plug lubricant pipe (1) on top of the spindle cover.
- Plug the drilling machine to the air supply and run a cycle to check the setting.

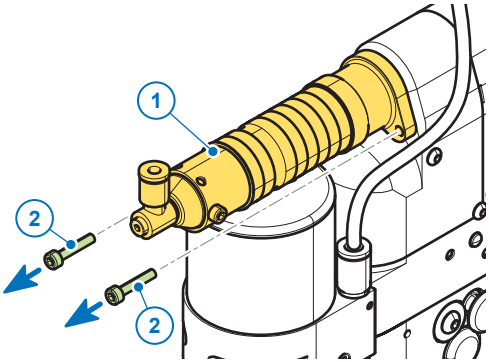
5.3.2 - Micrometric stop

Example with a lubrication option.



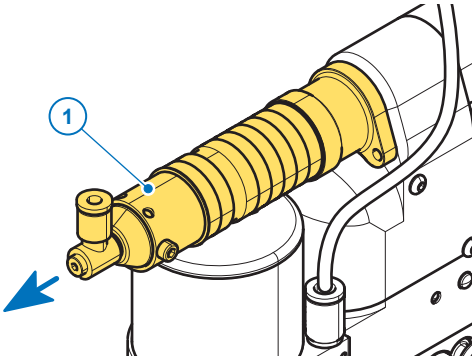
1 **Lubricant pipe**

- Unplug lubricant pipe (1).



1 **Spindle cover**
2 **Screw**

- Unscrew the 2 screws (2).

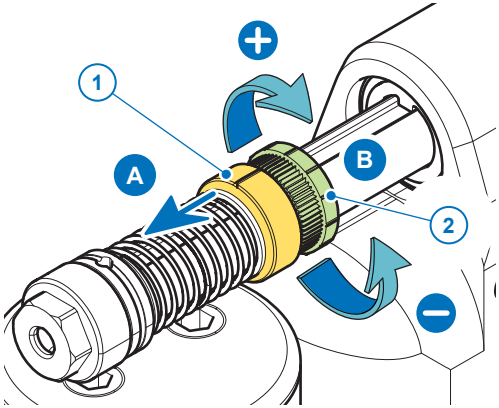


1 **Spindle cover**

- Remove the spindle cover (1).

To know how much exactly you should increase or decrease the stroke, a first hole must be made and measured.

Then according to the measure, the stroke must be set like this:



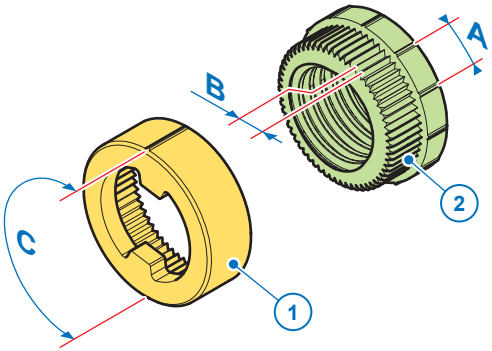
1 **Cover**
2 **Stroke limiter**

- Lift the cover (1).
- Turn clockwise or counter-clockwise the stroke limiter (2).

Left hand thread.
- Clockwise: to decrease stroke.
- Counterclockwise: to increase stroke.

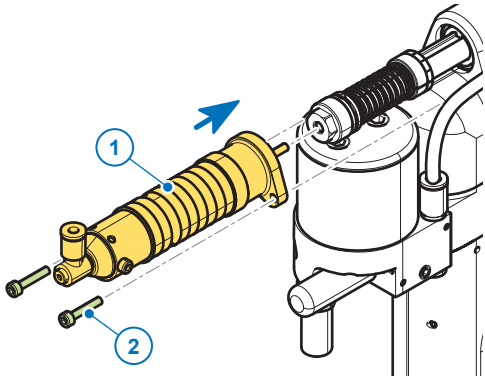
Be careful.

Too important stroke can lead to damaging the bearing inside the concentric collet equipment (refer to the STSE assembly drawing stroke).



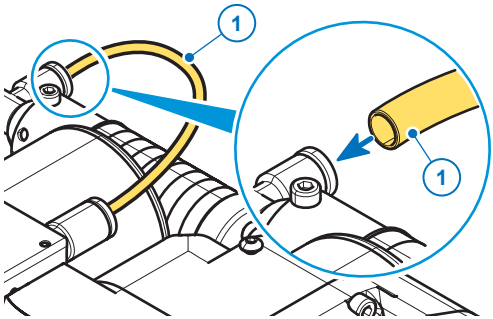
1 Cover
2 Stroke limiter

Stroke adjustment - ST1200 family -		
Thread pitch		1.5 mm / 360°
A	Between 2 marks	0.125 mm
B	Between 2 teeths	0.025 mm
C	Between 2 marks	0.75 mm



1 Spindle cover
2 Screw

- Place spindle cover (1) back in position.
- Tighten the 2 screws (2).

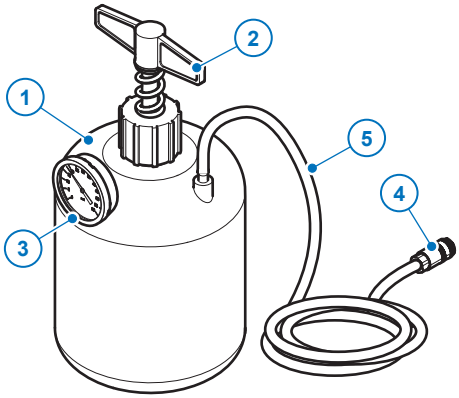


1 Lubricant pipe

- Plug lubricant pipe (1) on top of the spindle cover.
- Plug the drilling machine to the air supply and run a cycle to check the setting.

5.4 - Lubrication (Option)

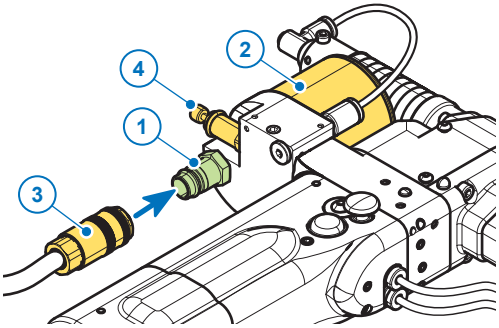
5.4.1 - Fill the oil tank



1 Lubricant refilling pump
2 Handle
3 Manometer
4 Quick release coupling
5 Hose

In order to fill or drain the tank, you need the dedicated lubricant refilling pump (1).

- Handle (2): to increase pressure between 3 and 4 bar.
- Manometer (3): to read the pressure.
- Hose (5): Air bubbles will not cause any filling problem.



1 Oil inlet
2 ADU Tank
3 Quick release coupling (of the refilling pump)
4 Pressure regulator

Make sure the pressure regulator (4) is locked.

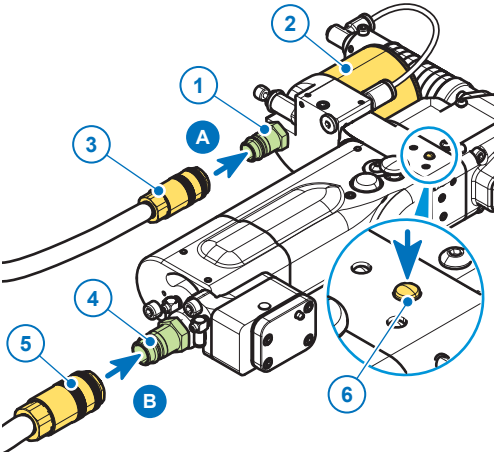
Tank (2) is empty.

- Connect the quick release coupling of the refilling pump to the oil inlet (1) of the tool.

As the pressure within the pump is higher than the one within the ADU tank (2), it fills itself automatically.

- When the ADU tank is filled, disconnect the lubricant refilling pump.

5.4.2 - Drain the oil tank



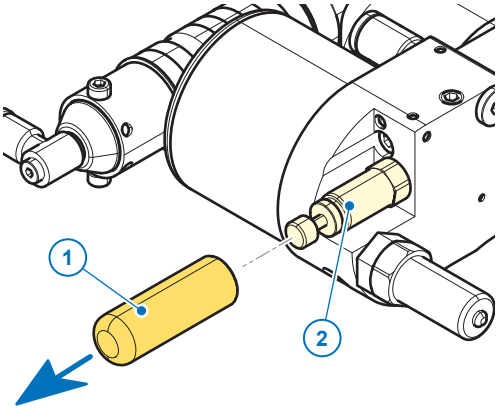
1 Oil inlet
2 Tank
3 Quick release coupling (of the refilling pump)
4 Air inlet
5 Air quick release coupling
6 Lubrication test button

- Connect the ADU to the air supply.
- Connect the refilling pump to the tank with 0 pressure in tank.
- Press the lubrication test button (6).

As the pressure within the ADU tank is higher than the one within the pump, it empties itself automatically (keep pressing the lubrication test button (6)).

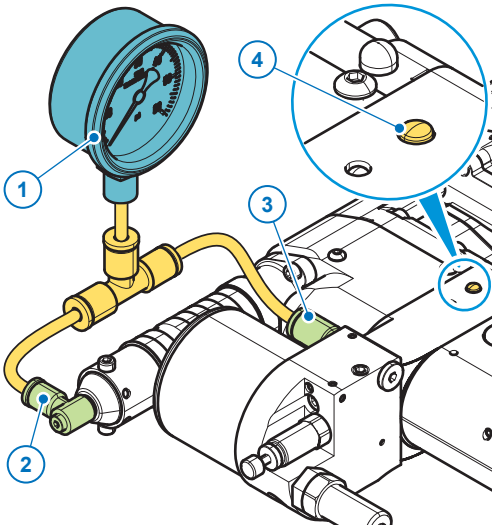
5.4.3 - Adjust air pressure

The ADU must be equipped with its cutting tool.



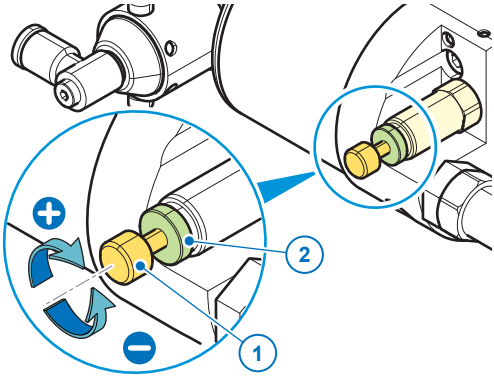
1 Cap
2 Air pressure regulator

- Remove the air pressure regulator cap.



1 Pressure gauge
2 Spindle housing
3 Exit tube
4 Lubrication button

- Connect a pressure gauge (1) (0-5 bar / 0-73 PSI) between the spindle cover (2) and lubrication module (3).
- Plug the tool to the air supply.
- Press the lubrication button (4) and check the pressure.



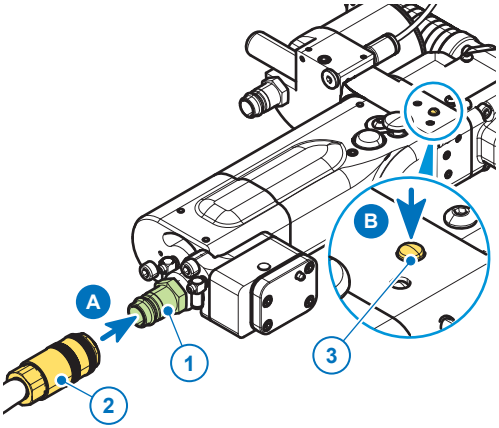
1 Air pressure regulator
2 Locking nut

- Unlock the locking nut (2).
- Tighten or untighten the air pressure regulator (1) to increase or decrease air pressure (screw to increase the pressure).
- When the adjustment is done, tighten lightly the locking nut (2).

The pressure must be below 4 bars.

5.4.4 - Check lubrication

Before drilling any hole, check that the lubrication works well.



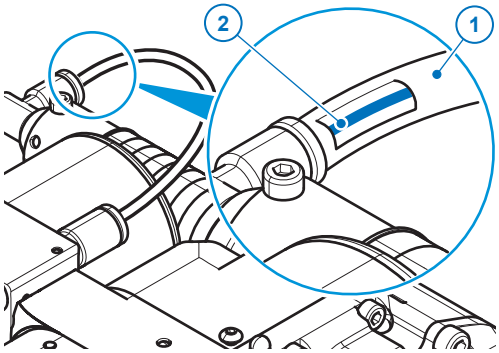
1 Air inlet
2 Air quick release coupling
3 Lubrication test button

- Plug the tool to the air supply (1).
- Press on the lubrication test button (3).
- Put a sheet of paper in front of the cutting tool to see how lubrication works.

5.4.5 - Adjust oil flow

To perfectly adjust the oil flow, the ADU must be equipped with its cutting tool.

Oil flow depends on the diameter of the capillary tube which is inside the lubricant pipe.



1 Lubricant pipe
2 Example of blue strip

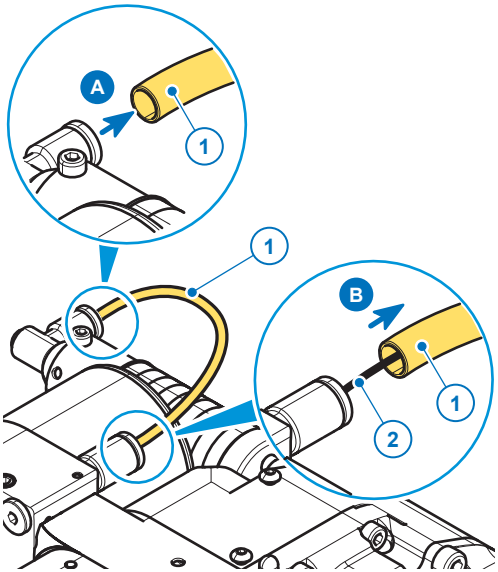
There are 3 different sizes of capillary tubes.

Color of strip	Through hole diameter
Orange	0.50 mm
No color	0.38 mm
Blue	0.25 mm

Bigger diameter of through hole means more flow.

Length of the capillary tube is important: Shorter capillary tube means more flow.

Depending on the lubricant used and the oil flow desired, you can either change the capillary tube or cut it shorter.



1 Lubricant pipe
2 Capillary tube

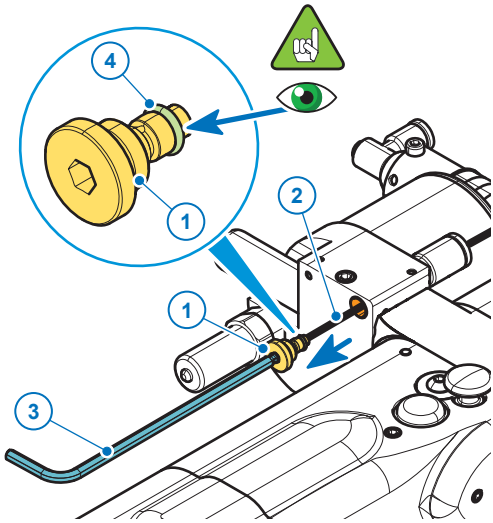
- Unplug lubricant pipe (1) from the top of the spindle cover and then from the lubrication module.
- To adjust the flow finely, cut the capillary tube in steps of 5 mm.

If the capillary tube has been cut too short (too important flow), there is no other option than replacing it.

Example of flow according to the diameter and the length of capillary tube:

Capillary Ø (mm)	Length (mm)	Time (min.)	Volume (ml)
0.25	175	5	7.1
0.25	155	5	8.35

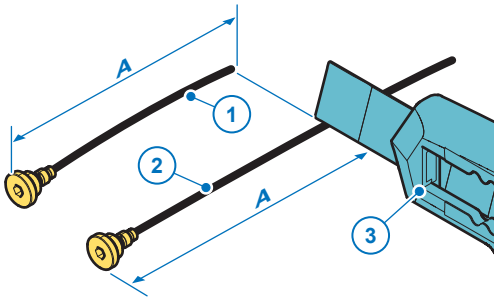
5.4.5.1 - Replacing capillary



1 Cap
2 Capillary tube
3 Allen key
4 O-ring

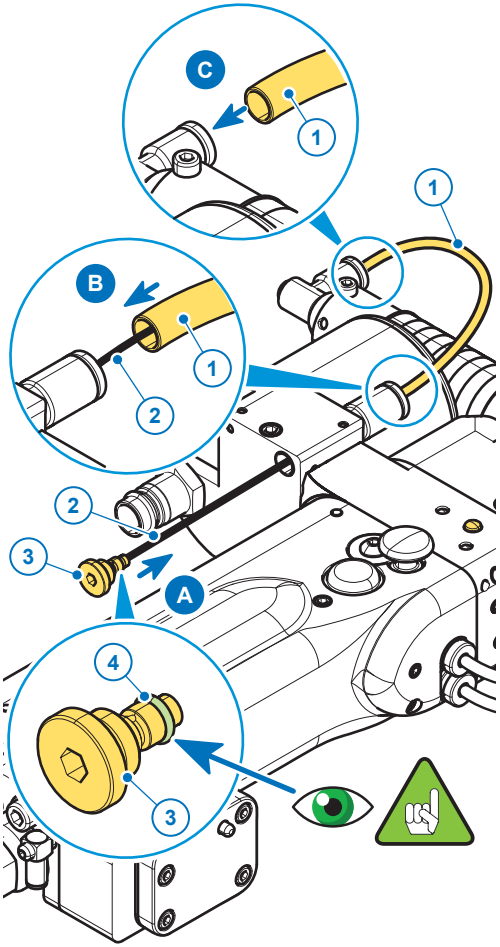
- Remove cap (1) and capillary tube (2) using an Allen key (3).

Make sure the small O-ring (4) is in place.



1 Old capillary tube
2 New capillary tube
3 Cutter

- If you want to replace the capillary tube by a similar one (same diameter, same length), position the old capillary tube (1) beside the new capillary tube (2) and cut the new one to the similar length with a cutter.
- Discard old capillary tube.



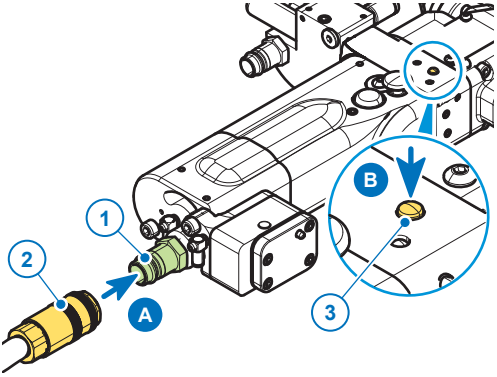
1 Lubricant pipe
2 Capillary tube
3 Cap
4 O-ring

- Install new cap (1) and capillary tube (2) using an Allen key.
- Plug back the lubricant pipe on lubrication module then on top of spindle cover.

Make sure the small O-ring (4) is in place at the right position on the cap (3).

5.4.6 - Lubrication test after tool mounting

Before testing the lubrication, make sure that the tank contains oil and that the system is correctly adjusted (pressure and flow).

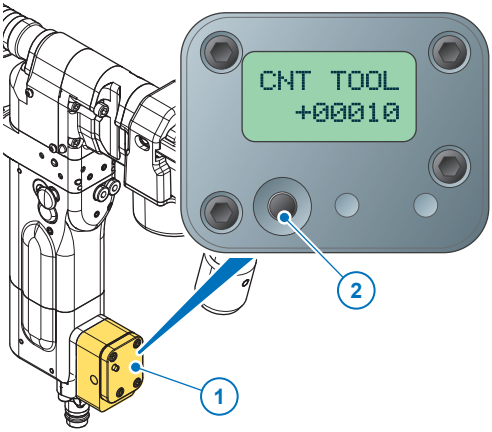


1 Air inlet
2 Air quick release coupling
3 Lubrication test button

- Connect your ADU to the air network.
- Put a paper sheet in front of the cutting tool.
- Press on the lubrication test button (3) to bring lubricant till the end of the cutting tool.
- Check that oil has been sprayed onto the sheet of paper.

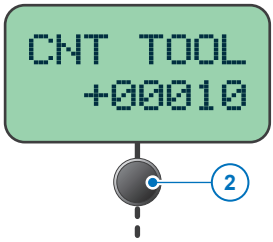
5.5 - Cycle counter (Option)

5.5.1 - Reading (User mode)



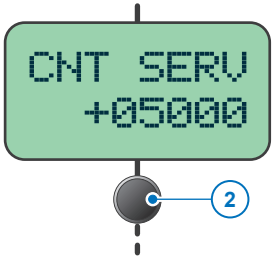
1 Cycle counter
2 Button (SW L)

- Press the button (2) to display parameters.



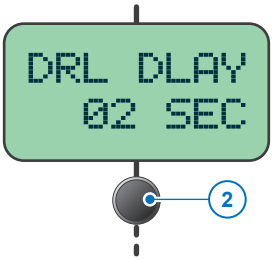
CNT TOOL: Numbers of drillings with the cutting tool.

- Press the button (2) to display the next parameter.



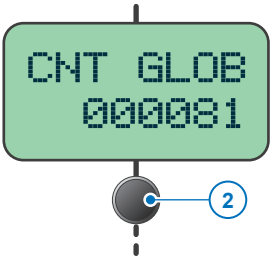
CNT SERV: Numbers of drillings made by the ADU (for maintenance).

- Press the button (2) to display the next parameter.



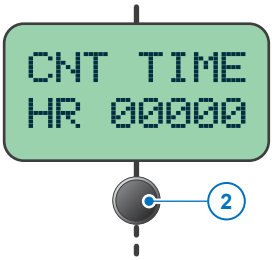
DRL DLAY: Time limits for detection of drillings.

- Press the button (2) to display the next parameter.



CNT GLOB: Total of drillings with the ADU.

- Press the button (2) to display the next parameter.

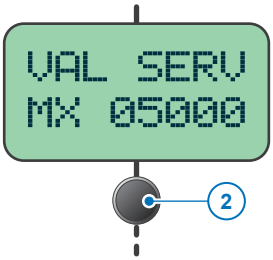


CNT TIME: Number of drilling machine hours.

- Press the button (2) to display the next parameter.

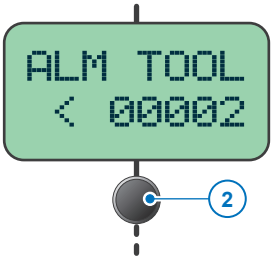
VAL TOOL MX: Programmed values of maximum drillings with cutting tool.

- Press the button (2) to display the next parameter.



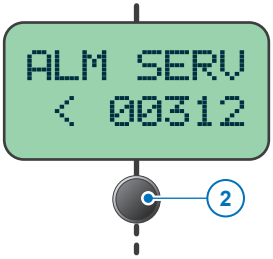
VAL SERV MX: Programmed values of maximum drillings with ADU before maintenance.

- Press the button (2) to display the next parameter.



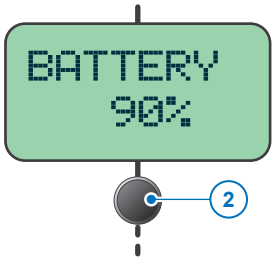
ALM TOOL: Alarm value, 6% of the numbers programmed for tool.

- Press the button (2) to display the next parameter.



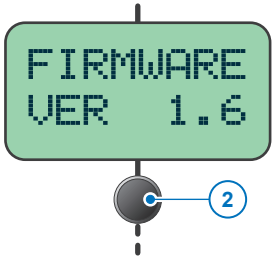
ALM SERV: Alarm value, 6% of the numbers programmed for the ADU maintenance.

- Press the button (2) to display the next parameter.



BATTERY: Battery voltage level (in %)

- Press the button (2) to display the next parameter.

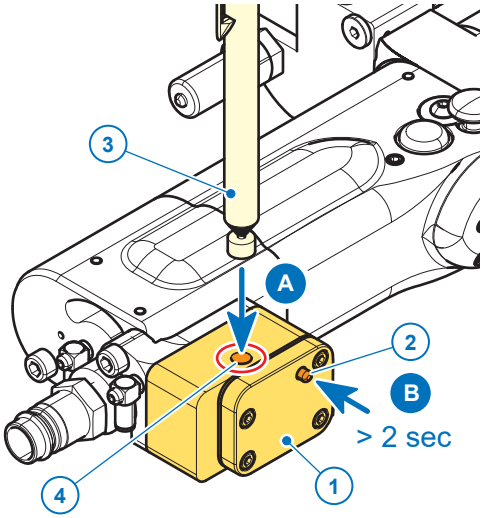


FIRMWARE VER: Firmware version.

- Press the button (2) to display the first parameter.

5.5.2 - Parametring (super user mode)

5.5.2.1 - Super user mode

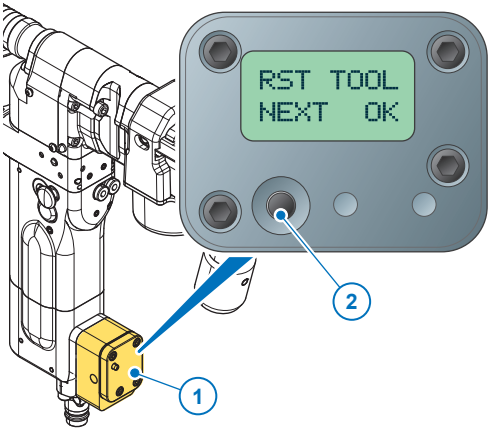


1 Cycle counter
2 Button (SW L)
3 Magnetic pen
4 Dedicated recess

To activate super user mode:

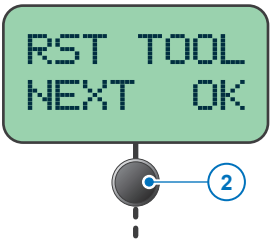
- Position the magnetic pen (3) on its location (4) on the side of the cycle counter (1).
- Press the button (2) during 2 seconds.

5.5.2.2 - Parameters



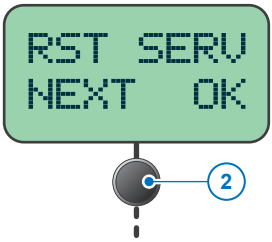
1 Cycle counter
2 Button (SW L)

- Press the button (2) to display parameters.



RST TOOL: Reset the counter CNT TOOL and clear alarms.

- Press the button (2) to display the next parameter.



RST SERV: Reset the counter CNT SERV and clear alarms.

- Press the button (2) to display the next parameter.

PRG TOOL: Programming value VAL TOOL MX for CNT TOOL.

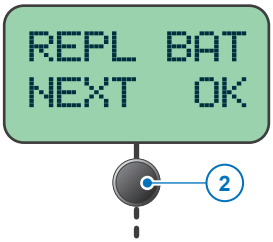
- Press the button (2) to display the next parameter.

PRG SERV: Programming value VAL TOOL MX for CNT SERV.

- Press the button (2) to display the next parameter.

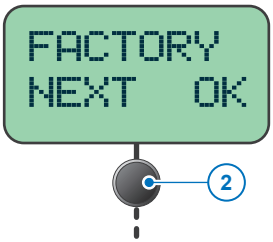
PRG DLAY: Programming DRL DLAY.

- Press the button (2) to display the next parameter.



REPL BAT: To safeguard the counter before battery replacement.

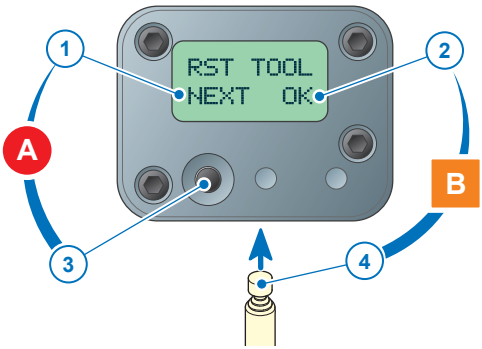
- Press the button (2) to display the next parameter.



FACTORY: Factory user mode.

- Press the button (2) to display the first parameter.

5.5.2.3 - Generalities

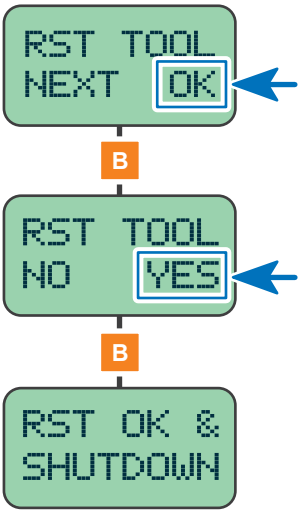


1 Left option
2 Right option
3 Button (SW L)
4 Magnetic pen

When there are 2 options :

- Left option (1) is selected by the pressing the button (3).
- Right option (2) is selected with the magnetic pen (4).

5.5.2.4 - Reset the counter CNT TOOL and clear alarms

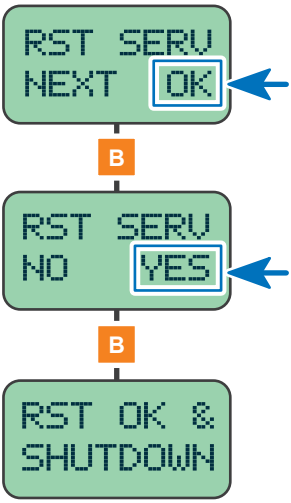


- Enter the reset tool menu [RST TOOL] by selecting OK with the magnetic pen.
- Confirm that you want to reset tool by selecting [YES] with the magnetic pen or cancel by pressing the button [NO].

The reset has been done.

The counter goes back to standby mode.

5.5.2.5 - Reset the counter CNT SERV and clear alarms

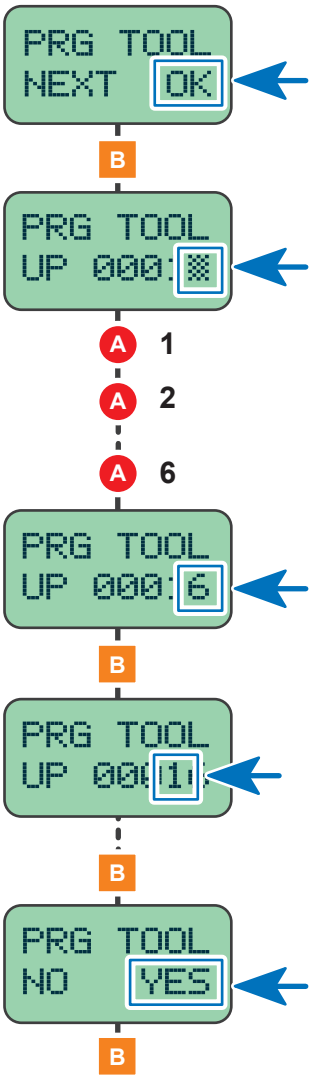


- Enter the reset service menu [RST SERV] by selecting OK with the magnetic pen.
- Confirm that you want to reset service by selecting [YES] with the magnetic pen or cancel by pressing the button [NO].

The reset has been done.

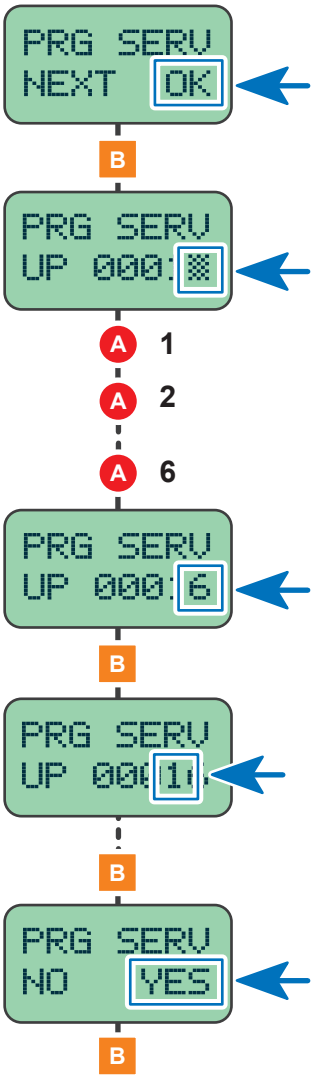
The counter goes back to standby mode.

5.5.2.6 - Programming value VAL TOOL MX for CNT TOOL



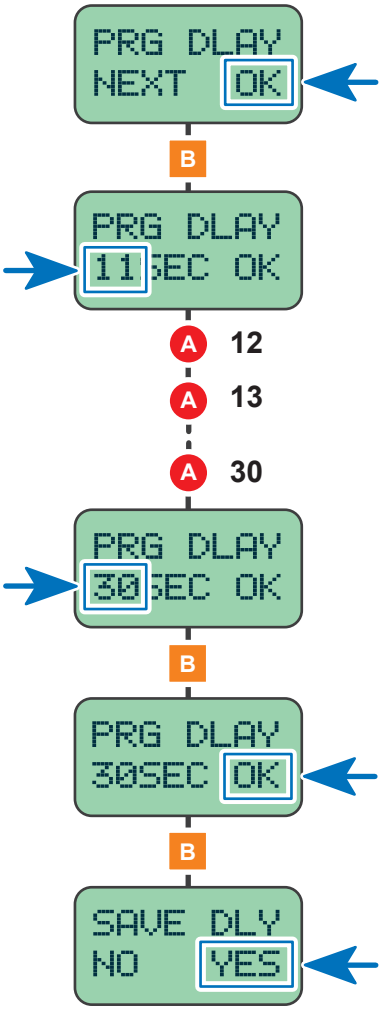
- Enter the programming tool menu [PRG TOOL] by selecting OK with the magnetic pen.
- Increment the blinking digit by pressing the button.
- Place the cursor on the next digit with the magnetic pen.
- When the last digit is reached, validate the value with the magnetic pen.
- Confirm that you want to change program's value with the magnetic pen [YES] or cancel with the button [NO].

5.5.2.7 - Programming value VAL TOOL MX for CNT SERV



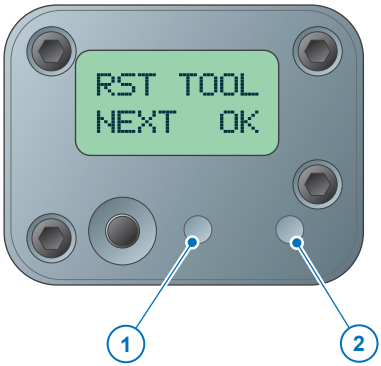
- Enter the programming service menu [PRG SERV] by selecting OK with the magnetic pen.
- Increment the blinking digit by pressing the button.
- Place the cursor on the next digit with the magnetic pen.
- When the last digit is reached, validate the value with the magnetic pen.
- Confirm that you want to change program's value with the magnetic pen [YES] or cancel with the button [NO].

5.5.2.8 - Programming DRL DLAY



- Enter the programming DLAY menu [PRG DLAY] by selecting OK with the magnetic pen.
- Increment the delay from 1 to 30 seconds by pressing the button (step of 1 second).
- Validate the value with the magnetic pen.
- Confirm that you want to change the delay value with the magnetic pen [YES] or cancel with the button [NO].

5.5.3 - Alarms



1 LED 1
2 LED 2

LED 1 Green	LED 2 Yellow	LED 2 Red	Signification
X			Drilling detected.
X	X		Warning concerning a less than 6% for ALM TOOL or ALM SERV during a drilling.
X		X	The limits of CNT TOOL or CNT SERV are exceeded during a drilling.
X	X	X	Low battery during a drilling.
	X		Warning concerning a less than 6% for ALM TOOL or SERV.
		X	The limits of CNT TOOL or CNT SERV are exceeded.
	X	X	Low battery.
		X	Replacement battery needed.

(**X**) : Flashing LED.

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