Ultra23 and Ultra33 boring machines

User manual

Version 3.1.1

Ultra23 and Ultra33 boring machines - User manual

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Editor

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Version 3.1.1

Table of Contents

USINAGE FILIATRAULT:
INNOVATION AT THE SERVICE OF PRODUCTIVITY SINCE 1979

Thank you for choosing one of our machine tools.

Usinage Filiatrault has been designing, developing, manufacturing and assembling boring and facing equipment since 1979. In the early 2000s, the company integrated its range of mobile digital equipment. UF now offers you proven portable digital boring machine and facing head systems, as well as tailor-made equipment that corresponds to the realities encountered on a daily basis and in complex situations in the field.

Relying on solid field expertise and a machining department to guarantee the quality of the parts used, Usinage Filiatrault also has its product development department and its technical drawing service. This business model makes it possible to design leading mobile machining equipment, designed and adapted for the reality of today's operators.

We invite you to visit our website: www.PortableBoring.com. On this site you will discover a range of very high quality boring machines, facing heads and accessories, capable of working in the most hostile environments. You will also discover a company made up of professionals who will be able to advise you thanks to the great expertise they have acquired in the field over all these years.

Go for it! Challenge us!

Version 3.1.1

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Introduction

Version 3.1.1

1 Introduction

1.1 Safety instructions

Operating a machine tool can cause serious injuries. It is important to follow these safety instructions.

Machine tools are supplied with high voltages. There is a risk of electric shock which could cause serious injury or death.

Do not operate a machine tool when the cable sheath is cracked and / or a conductor is bare. Never touch an exposed conductor. Under these conditions, correct defects before operating the machine. Use only equipment in good condition.

Turn off the machine tool when not in use.

Avoid operating a machine tool in a wet area. If you have to do so, use additional safety measures to eliminate the danger.

The power pack uses alternating current, the operator must be insulated from the ground.

Do not do maintenance when the power pack is on or connected to its power source.

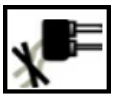
Make sure the power source (electrical outlet or panel) of the power pack is properly grounded.

Make sure electrical cables don't come in contact with you.

Do not touch hot parts with bare hands.

After use, the equipment bscomes very hot. Allow parts to cool before handling.

When handling equipment or accessories after intensive use, use the appropriate tools, wear insulated gloves and clothes that protect you from burns.



When you move a device, disconnect the hydraulic hoses and electrical cables. It will be easier to move, you will not risk tripping over cables and hoses or force unnecessarily because one of them got stuck on an object

Keep clear of moving parts.

Before handling the accessories, make sure the power supply is switched off (zero energy).

When using the UF23 smart remote control, only operate the accessories if the remote control displays the main page, so the hydraulic pump is not running and the accessories cannot move.

For UP22 type power units, turn the main switch OFF.

Welding produces smoke and gases.

Inhaling them can damage your health. Wear a mask and make sure there is adequate ventilation.

Be careful.

When welding, sparks could reach you and intense light could damage your eyes.

Wear a welding face shield. The tint of the window will reduce the amount of light that reaches your eyes.

Make sure it meets the standards.

Sparks from welding can cause a fire or explosion.

Keep all flammable materials at least 35 feet (10,7m) away from welding. Where this is not possible, cover them with fireproof tarps.

Do not weld if sparks can ignite the material.

Be advised that sparks can make their way through the small openings to flammables.

Look around and be prepared to extinguish a fire with a fire extinguisher within reach.

Do not weld where the atmosphere contains flammable dust, vapor or gas.

Wear fire retardant clothing. Wear leather gloves.

Remove all combustible material from your pockets, including a lighter.

Once the task is completed, inspect the area to ensure that no spark remains.

Make sure you meet the standards of the industry.

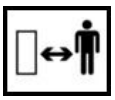
You are working with equipment that can be quite heavy.

Wear safety boots to protect your feet properly

When machining, dust or pieces of metal could reach you.

Wear a protective mask that meets the standards.

Machine tools are very noisy. Protect your ears from the noise.



Your device has a remote control. Keep your distance to avoid the risk of injury and draw a security perimeter.

Carefully read all the manuals.

Use only original replacement parts.

Perform maintenance and routine work according to the instructions and manuals and respect the rules and standards.

1.2 Symbols

Symbols are used to help you navigate in this document. The symbol tells w hat kind of information is in the paragraph next to it.

 Information to note

 Warning, take care to do or not to do an action, w hat an action implies

 Tip or trick to better use the equipment

1.3 Specifications

Characteristic	Ultra23	Ultra33
Weight	54 lbs / 24.54 kg	74 lbs / 33.63 kg
Continuous run, standard feed screw	13.75" / 35 cm	13.75" / 35 cm
Continuous run, optional feed screw	21.75" / 55 cm	21.75" / 55 cm
Feed speed modes	In/MIN and IN/REV	In/MIN and In/REV
Variable feed speed	0 - 13.7"/min / 0 - 34.8cm/min	0 - 13.7"/min / 0 - 34.8 cm/min
Feed JOG, 4 presets	0 - 13.7"/min / 0 - 34.8cm/min	0 - 13.7"/min / 0 - 34.8 cm/min
Fast feed, up to	0 - 13.7"/min / 0 - 34.8 cm/min	0 - 13.7"/min / 0 - 34.8 cm/min
Rotation speed	20 - 462 RPM	20 - 231 RPM
Rotation JOG	20 - 462 RPM	20 - 231 RPM
Standard machining Ø	2 1/4" - 16" / 5.71 cm / 40.64 cm	4" - 36" / 10.16 cm 76.2 cm
Optional machining Ø	16" - 24" / 40.64 cm - 60.96 cm	
Welding Ø, standard lance	1.5" - 16" / 3.81 cm - 40.64 cm	3" - 24" / 7.62 cm - 60.96 cm
Welding Ø, optional lance	16" - 24" / 40.64 cm - 60.96 cm	16" - 36" / 40.64 cm - 91.44 cm
Maximum torque	4000 in-lbf / 451 N-m	8000 in-lbf / 903 N-m
Maximum pressure	2000 psi	2000 psi

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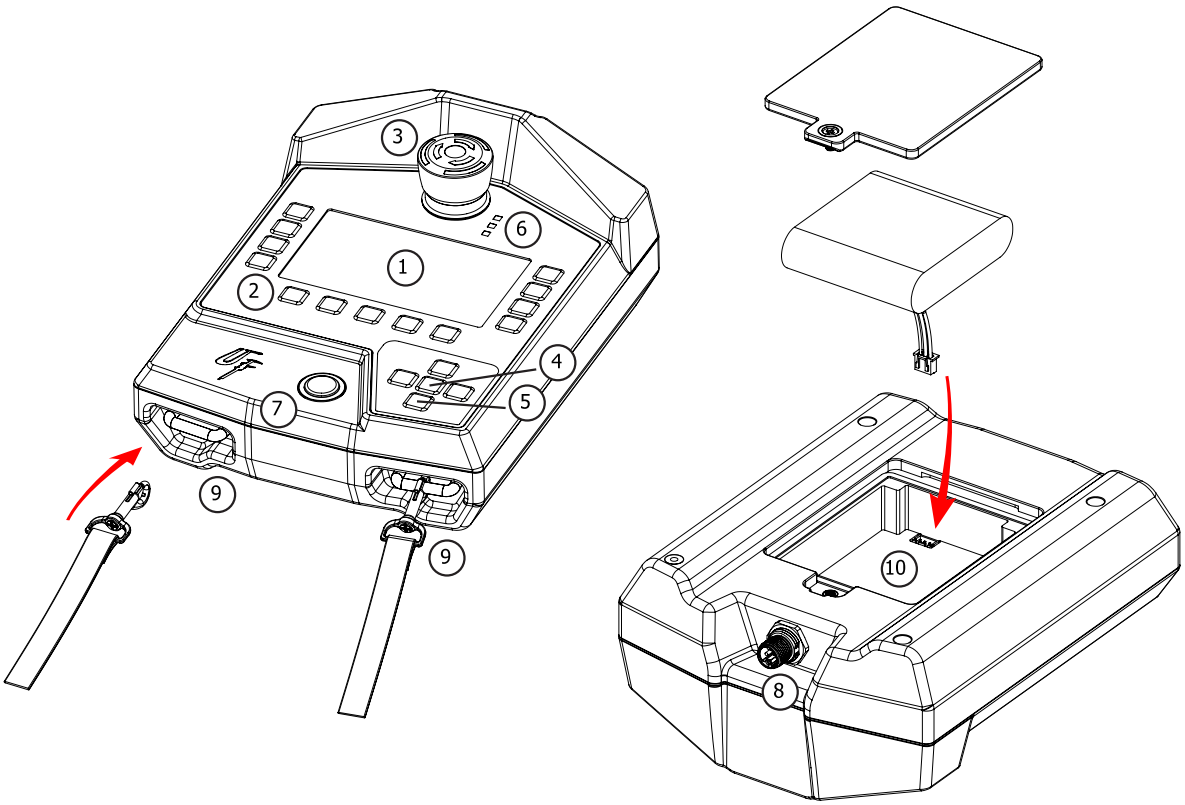
Section II

Interface overview

Version 3.1.1

2 Interface overview



(1) Color touchscreen.
(2) Function buttons.
(3) Emergency button.
(4) Central button used for configuration.
(5) Directional pad used for jog operations.
(6) Status lights (red = emergency, amber = communication link, green = device is running).
(7) ON/OFF switch.
(8) Connector for recharging the battery as well as establishing a direct connection with the power unit.
(9) Strap attachment. Not available on latest remote control.
(10) Battery compartment.

2.1 Startup

The remote control starts by turning the switch to ON. The remote control initializes and displays the Usinage Filiatrault logo.

Start screen

The next step in the boot process is the automatic search for the last known power unit or the last known facing head. Then the remote control will establish a connection with the device. When the boot process is complete, the remote will bring up the main screen according to the device type (UPCTRL or TSN).

If the last known power unit or the last known facing head is not found or already associated with another remote control, the remote control will bring up the communication lost screen below. At this point, it will be possible to proceed to the pairing process with the power unit or the facing head. This procedure is described in the pairing section.

Communication Lost screen

- The **INFO** button allows you to display the remote control specifications.

2.2 Pairing

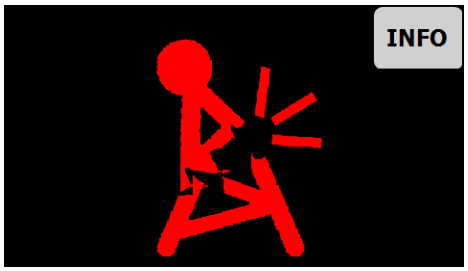
This section describes the pairing instructions for the standalone mode, the combined mode as well as the wired mode. Here are all the possible scenarios.

- Standalone mode with the power unit.
- Standalone mode with the facing head.
- Combined mode with the power unit and the facing head.
- Wired mode with the power unit.

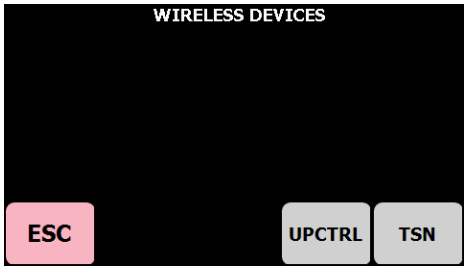
2.2.1 Standalone mode with the UPCTRL

This section describes the pairing procedure between the remote control and the power unit. On power up, the remote control will automatically pair with the previous decice. If the remote control was not already paired, the communication screen should come up on the display. At this point you will be able to proceed to the pairing process.

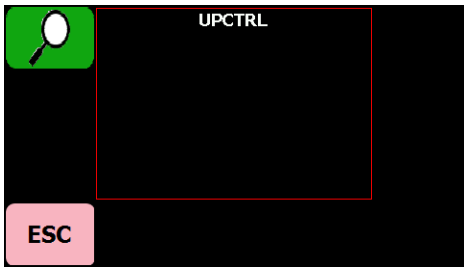
From this screen, press any function buttons or press anywhere on the screen. This will bring up the wireless device selection screen below.



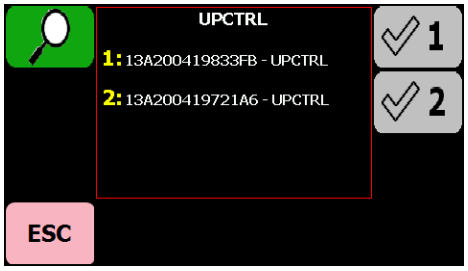
Select the power unit device type by pressing the "**UPCTRL**" button. This will bring up the device scan screen.



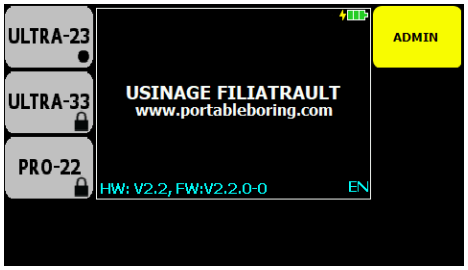
Press the magnifying glass button to start the searching process. Wait until the search is complete. During the search, the magnifying button turns grey and the screen shows status message. If no device is found, it still possible to start the searching procedure again.



Once the search is complete, the screen shows a list of power unit(s) found. Select the desired unit by pressing the numbered button on the right of the screen. The check symbols on the button turns green during the pairing. If the check symbol goes back to grey, it means that the pairing procedure failed. You can press the numbered button again to restart the procedure.



Once the pairing procedure is successfully completed, the main screen will show up. You will find more information on the main screen in this section.



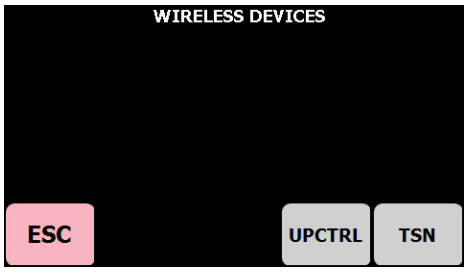
2.2.2 Standalone mode with the TSN

This section describes the pairing procedure between the remote control and the facing unit. If the facing unit has been previously paired in combined mode, you will need to proceed to a factory reset procedure before pairing.

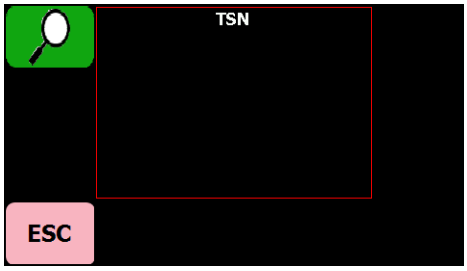
On power up, the remote control will automatically pair with the previous device. If the remote control was not already paired, the communication screen should come up on the display. At this point you will be able to proceed to the pairing process.

From this screen, press any function buttons or press anywhere on the screen. This will bring up the wireless device selection screen below.

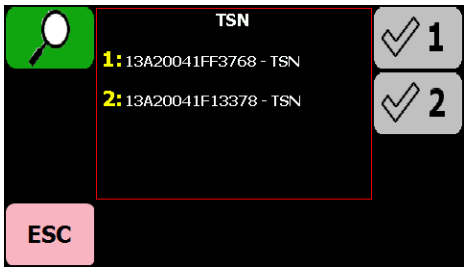
Select the power unit device type by pressing the "**TSN**" button. This will bring up the device scan screen.



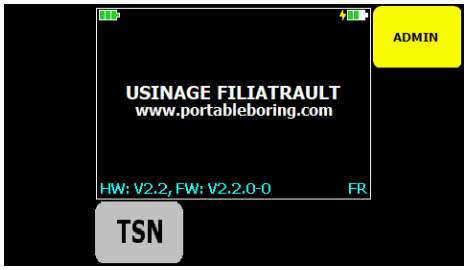
Press the magnifying glass button to start the searching process. Wait until the search is complete. During the search, the magnifying button turns grey and the screen shows status message. If no device is found, it still possible to start the searching procedure again.



Once the search is complete, the screen shows a list of facing unit(s) found. Select the desired unit by pressing the numbered button on the right of the screen. The check symbols on the button turns green during the pairing. If the check symbol goes back to grey, it means that the pairing procedure failed. You can press the numbered button again to restart the procedure.



Once the pairing procedure is successfully completed, the main screen will show up. You will find more information on the main screen in this section.

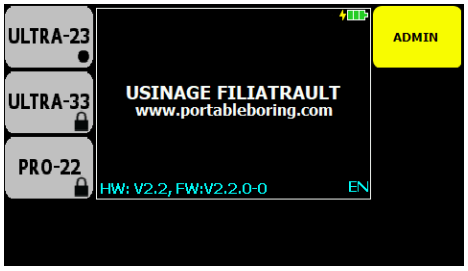


2.2.3 Combined mode with the UPCTRL and the TSN

This section describes the pairing procedure in combined mode which consists of pairing the remote control with a power unit and facing head simultaneously.

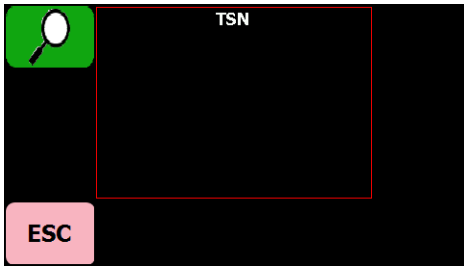
The first step is to pair the remote control with the power unit. If it is not done yet, follow these instructions under this section. The next step is to pair the facing head following the instructions below.

From the power unit main screen, select the appropriate boring head. In this example, the "**ULTRA-23**" is selected.

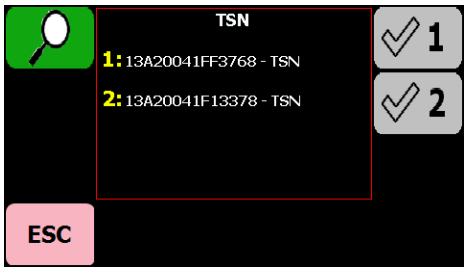


Press on the "**TSN**" button. This will bring up the device scan screen.

Press the magnifying glass button to start the searching process. Wait until the search is complete. During the search, the magnifying button turns grey and the screen shows status message. If no device is found, it still possible to start the searching procedure again.



Once the search is complete, the screen shows a list of facing unit(s) found. Select the desired unit by pressing the numbered button on the right of the screen. The check symbols on the button turns green during the pairing. If the check symbol goes back to grey, it means that the pairing procedure failed. You can press the numbered button again to restart the procedure.



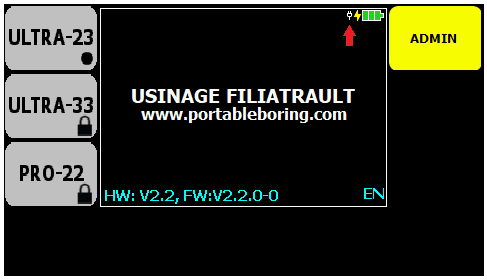
Once the pairing procedure is successfully completed, the communication link icon will show up on the "**TSN**" button. The facing features will be available for machining.

2.2.4 Wired mode with the UPCTRL

This section describes detailed instructions to connect the remote control directly to the power unit without any wireless communication.

Configuration

1. Connect the communication/charging cable on the back of the remote control (8) and the back of the power unit.
2. First, turn on the power unit then turn on the remote control.
3. You should see the wired communication icon on the top left of the screen.



Here are the steps to go back in the wireless mode.

1. Turn off the remote control.
2. Disconnect the communication/charging cable from the remote control.
3. Turn on the remote control.

If the remote control has already been paired previously, it will automatically reconnect with the power unit. Otherwise you can perform a pairing process.

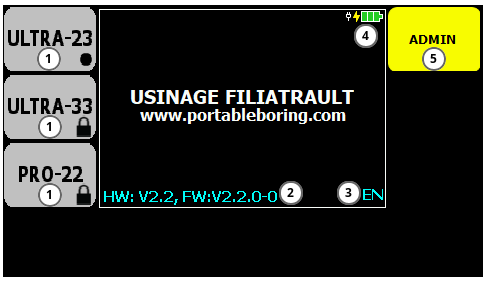
Notes

- The wired mode takes priority over wireless mode.
- The wired connection is automatically detected by the power unit when the remote control is turned on.
- The power unit can automatically switch between wired and wireless mode.
- Once the remote control is in wired or wireless mode, it will remains in this mode until restarted.
- It is not possible to pair 2 remote control (wired and wireless) simultaneously.
- The remote control can work without battery in wired connection mode.

2.3 Main screen

The main screen is displayed once pairing is successfully completed.

Power unit main screen (standalone mode)

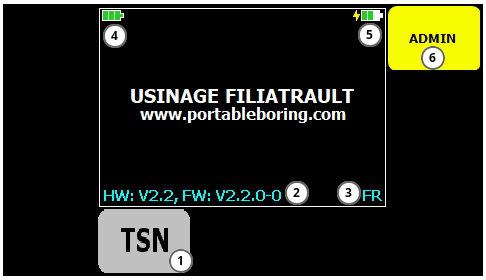


Power unit main screen

(1) Access to boring machine: Ultra23 / Ultra33 and Pro-22. Select the one that will be used.
(2) The remote control hardware and firmware version.
(3) The actual display language.
(4) The battery level of the remote control. The charging indicator. The wired connection mode indicator.
(5) Factory settings. Reserved for administrator user only.

- The black dot on the "**ULTRA-23**" button indicates the current boring selection.

Facing head unit main screen (standalone mode)



Facing unit main screen

(1) Access to the facing functions.
(2) The remote control hardware and firmware version.
(3) The display language.
(4) Battery level of the facing unit
(5) The battery level of the remote control. The charging indicator.
(6) Factory settings. Reserved for administrator user only.

Global configuration access

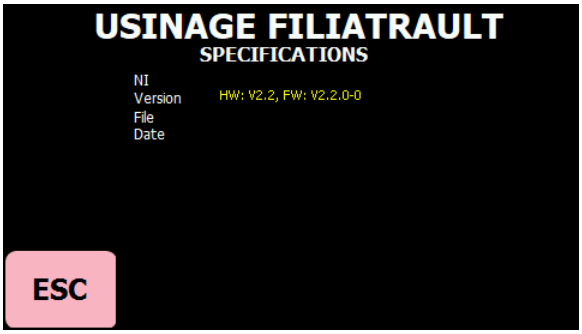
- Press the central button of the remote control to have access to the global configuration parameters.
- Press again on the central button to display the remote control specifications.

- Some boring machines may not be available. You will need a password to unlock them. Depending on your purchases, the boring machine models are made available at the factory. *Contact Usinage Filiatrault for more information.*
- Access of the boring machines may be protected by an user password.

2.4 Specifications

This screen shows the remote control specifications. These specifications contain the following information:

- Serial number.
- Hardware and firmware version.
- firmware release date.



Remote control specifications

Showing specifications screen

- From the main screen, press twice on the central button of the remote control to display the specifications.
- Or by pressing the "**INFO**" button from the communication lost screen.

Hiding specification screen

Press on the "**ESC**" button to go back from the previous screen.

2.5 General parameters

The remote control has certain general parameters that are configurable by a user and others that are configurable by an administrator only.

- The parameters of the user level are modified on the screen User Global Configuration.

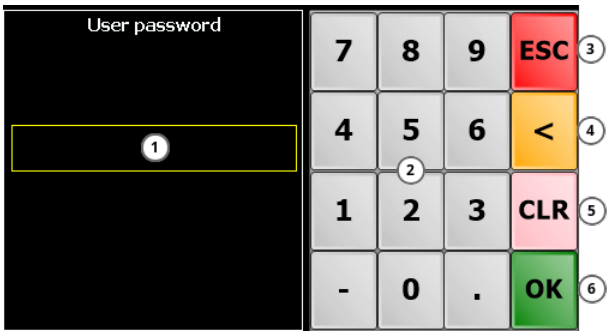
2.5.1 Password entry

A password may be requested in order to have access to certain system features,

The remote control uses several numeric passwords:

- A changeable user password to protect access to machining. The default user password is **0000**.
- A non-changeable administrator password that is programmed at the factory.
- A factory-programmed password to unlock access to the boring machine Ultra-33.
- A factory-programmed password to unlock access to the boring machine Pro-22.

The image below shows an example of password entry. The screen title will vary depending on the type of password requested.

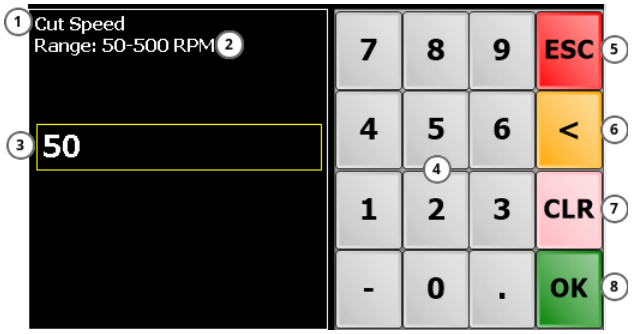


Password entry

(1) Password input box.
(2) Numeric keypad.
(3) Return to the previous screen discarding any changes.
(4) Backspace.
(5) Clear the entry.
(6) Confirm the new entry.

2.5.2 Parameter entry

This section presents the general entry of all the speed and distance parameters of the system.

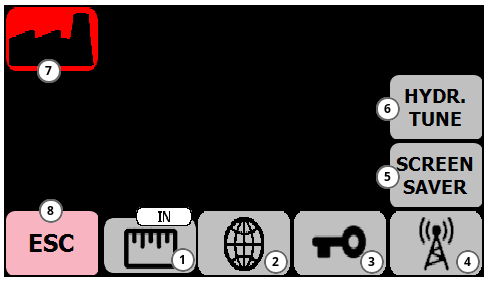


(1) Parameter type.
(2) Parameter range.
(3) Value of the current parameter and entry of the new value.
(5) Return to the previous screen discarding any changes.
(6) Backspace.
(7) Clear the entry.
(8) Confirm the new entry.

- An error message will be displayed if the parameter is out of range.

2.5.3 User Configuration

Entering the user password may be necessary in order to access the global configuration window.



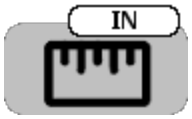
The global user configuration screen provides access to these functions:

(1) Measurement Unit - Allows switching between different units of measure. (Imperial and Metric)
(2) Display language - Allows changing the display language.
(3) Password - Allows the user to change the password to control access to the boring machines.
(4) Wireless communication - Allows the configuration of wireless communication.
(5) Screensaver - Allows control of the delay before the screen backlight is turned off.
(6) Function is not available yet.
(7) Reset Settings - Reset settings to default factory.
(8) Go back to the previous screen.

Showing the user configuration screen

- From the main screen, press the central button of the remote control.

2.5.3.1 Measurement unit



This function allows measurement unit configuration.

Here is a list of measurement units available for the user.

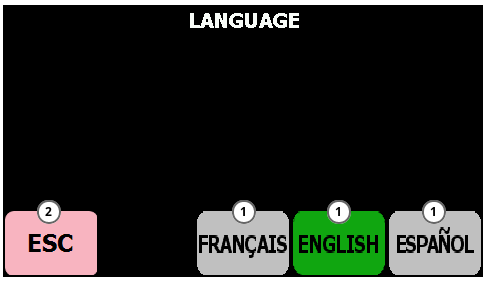
- imperial (IN)
- metric (CM)
- metric (MM)

- The button allows switching from one unit to another.
- The bubble above the button indicates the selected unit.
- The change is immediate and saved in memory.

2.5.3.2 Display language

This function allows language configuration.

The supported languages are French, English, and Spanish.



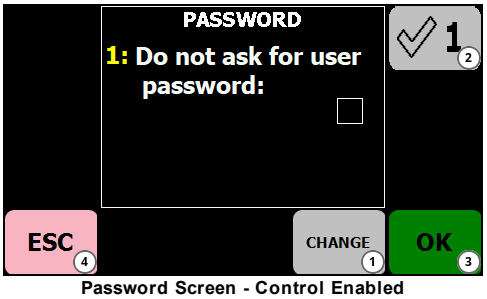
(1) Language selection. The currently selected language is displayed in green.
(2) Back to the previous screen.

- The main screen displays an abbreviation of the chosen language.: **FR** (French), **EN** (English), **ES** (Spanish)
- The change is immediate and saved in memory.

2.5.3.3 Password

This funtion allows user password configuration.

The user password is absolutely necessary in order to access the password configuration.



Password Screen - Control Enabled

The password screen provides access to these functions:

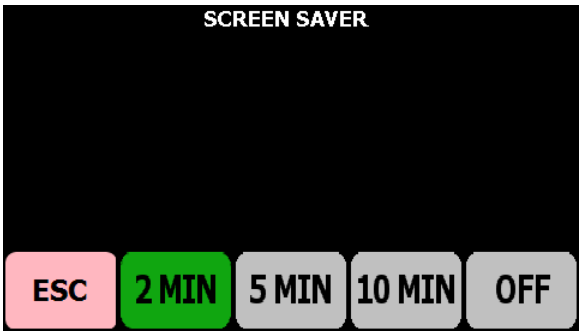
(1) Allows changing the user password. The old user password is required in order to proceed with the change.
(2) Allows toggling between Enable and Disable the use of the password to control access to the boring machines.
(3) Apply changes and save to memory.
(4) Go back to the previous screen without saving the changes.

- If the password is lost, it will be possible to recover the system by restoring the default settings.

2.5.3.4 Screensaver

This function allows screen saver configuration.

To extend the battery life, it is possible to set a delay of inactivity after which the screen turns off. Turning off the backlight extends the remote control's usage time. The available delays before turning off are 2, 5, 10 minutes, or OFF (always remains on). Press the "**ESC**" button to go back.



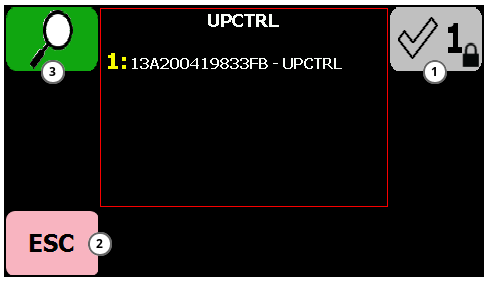
(1) Idle Time Selection Screen

- The currently selected delay is displayed in green.
- The delay change is immediate and saved in memory.
- The screen backlight turns off after 2, 5, or 10 minutes of inactivity depending on the selection.
- Press a remote control key to exit standby. The pressed key will have no effect other than to exit standby.

2.5.3.5 Wireless communication

This function allows to view or change the current wireless configuration.

This screen shows the current pairing of the remote control with the power unit or the standalone facing head. From this screen, it is possible to proceed with a new pairing.



(1) Disconnect or reconnect with the current power unit or facing machine.
(2) Go back to the previous screen.
(3) Search for power unit(s) or facing machine(s).

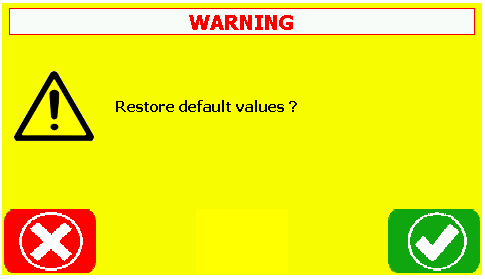
Please refer to this section for the detailed pairing procedure.

- The padlock icon on button 1 indicates that the remote control is paired with the power unit or the facing machine.
- Disconnecting from the power unit or facing machine followed by pressing the "**ESC**" button will result in a loss of communication. After this loss of communication, it will still be possible to pair again.

2.5.3.6 Reset parameters to factory default

This function allows you to initialize the factory default parameters of the paired device (power unit or facing head unit).

When restoring default parameters, the user will be asked to confirm their choice. Press the **GREEN** button to confirm or the **RED** button to cancel.



WARNING: Restoring to default parameters is irreversible.

It is also possible to restore default settings using the home button on the power unit and the user button on the facing machine. Follow the procedure below.

Power Unit

1. Hold the home button on the front of the power unit controller for at least 5 seconds.
2. Release the home button.
3. If the procedure was successful, you should see "FACTORY RESET..." message on the power unit screen. If not, restart the procedure.

Facing machine (TSN)

1. Hold the user button for at least 5 seconds.
2. Release the user button.
3. If the procedure was successful, you will see the amber led blinks 3 times. If not, restart the procedure.

WARNING: It is mandatory to perform the factory reset procedure on the TSN when wanted to pair to another remote control.

Ultra23 and Ultra33 boring machines - User manual

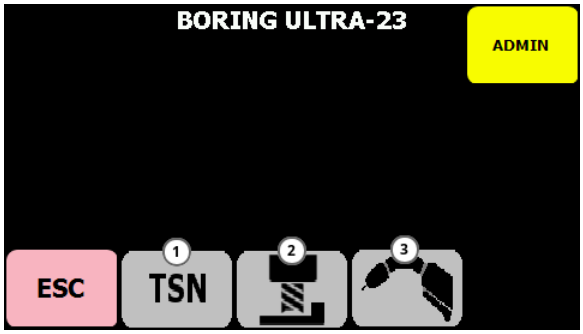
Ultra family boring machines

Version 3.1.1

3 Ultra family boring machines

ULTRA-23 ULTRA-33

3.1 Overview



Boring machine ULTRA-23 screen

Boring machine ULTRA-33 screen

(1) Digital facing head (TSN) - To activate the machining mode with the possibility of using a TSN.
(2) Machining - Allows the use of the boring machine to bore.
(3) Welding, reloading.

This section describes the use of the TTSF with the ULTRA-23 and ULTRA-33 boring machines. The difference between these two pieces of equipment lies only in the cutting speeds, the gearbox having a higher gear reduction ratio in order to provide a suitable torque/speed ratio. These two boring machines are configured and used in the same way. They can be used for machining with or without a TSN or welding. For machining use, the two motors (hydraulic and electric) of the boring machine are used for the cut and the feed. A TSN can be attached to the unit to provide facing or grooving tasks. For welding tasks, only the electric motor of the boring machine is used.

Ultra23 and Ultra33 boring machines - User manual

Machining with the Ultra family

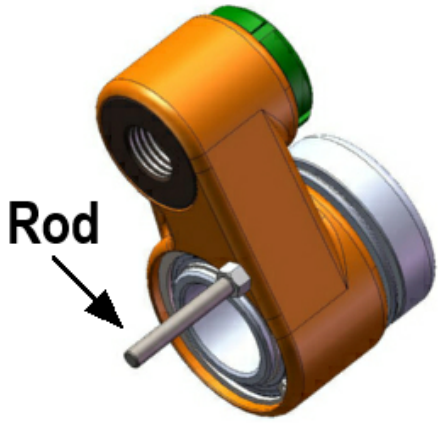
Version 3.1.1

4 Machining with the Ultra family

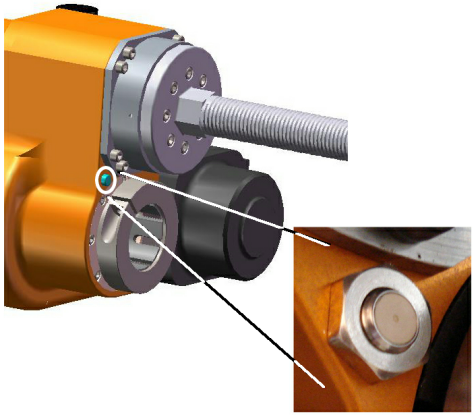
For Ultra23 and Ultra33 boring machine tools.

4.1 Automatic stop at end of travel

When the feeder moves towards the boring machine, a system automatically stops the movement at the end of travel.



A rod is attached to the feeder



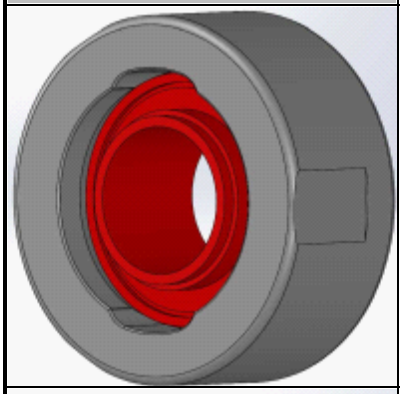
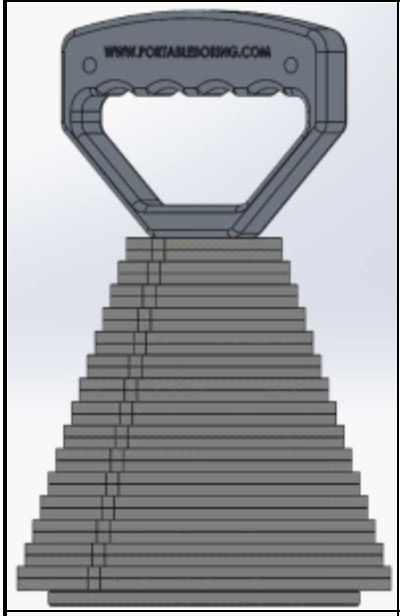
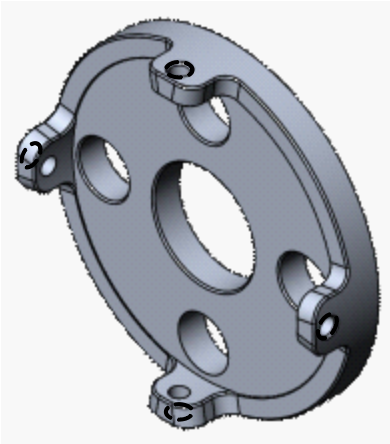
Limit switch

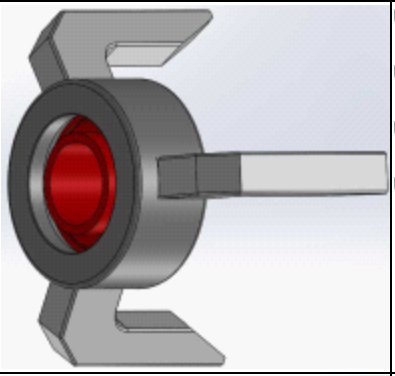
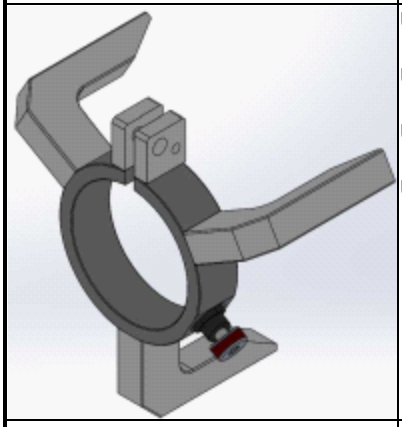
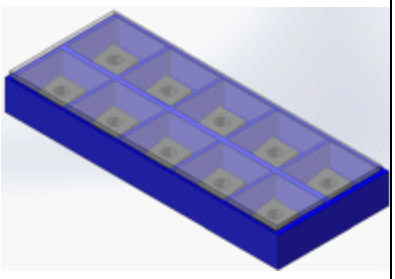
When the rod comes close to the detector, the advance is stopped immediately, preventing the risk of equipment breakage.

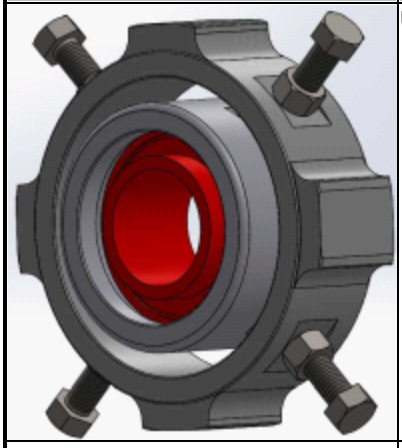
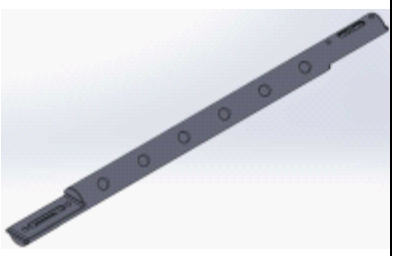
During machining tasks, the rod must be installed as shown above.

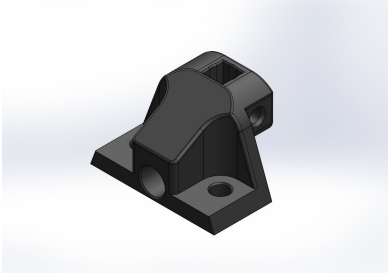
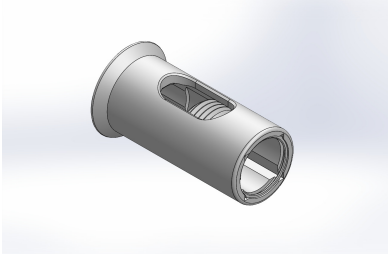
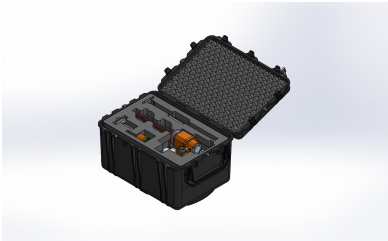
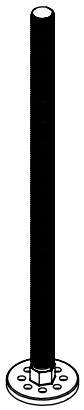
When the boring machine is operated vertically, it is possible that metal filings are projected on the detector, which will cause the shutdown.

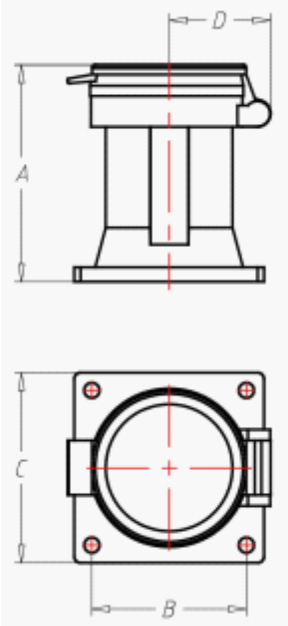
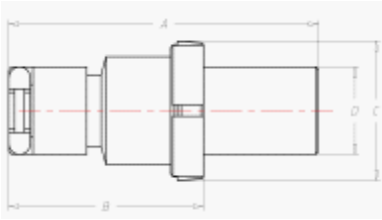
4.2 Machining accessories and consumables

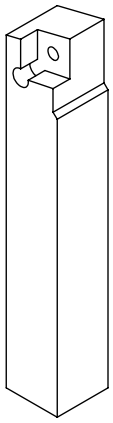
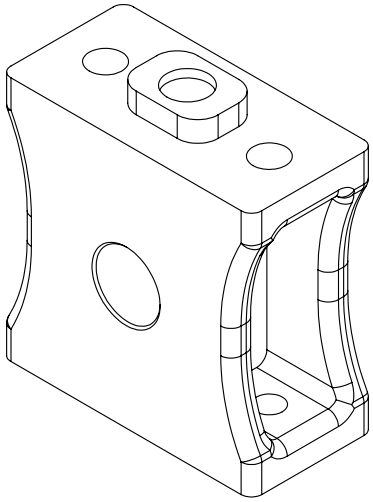
Accessories	Part number	Type	Description
	UF004-23-00		BEARING CAGE ASSEMBLY 2"
	UF073-00-00 UF073-00-01		BAR ALIGNMENT PLATE KIT 2" IMPERIAL BAR ALIGNMENT PLATE KIT 2" METRIC
	UF073-03-01B		ADJUSTABLE BAR ALIGNMENT 6" PLATE 2" AND 1 9/16"

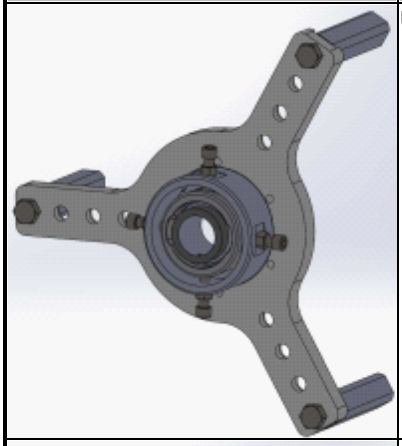
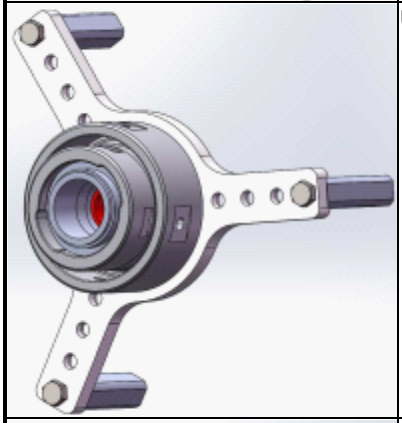
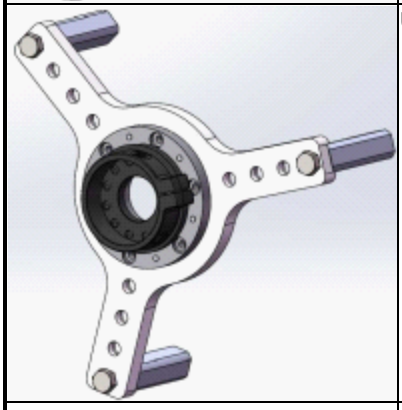
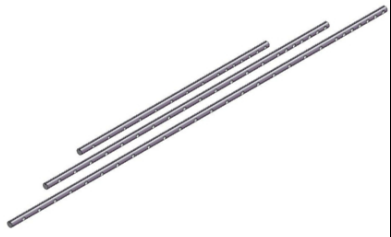
Accessories	Part number	Type	Description
	UF027-200-00		TOOL HOLDER CUTTING HEAD ASSEMPLY 2"
	UF004-21-00 UF004-24-00 UF024-22-00 UF004-30-00		BAR SUPPORT 2" X 5" BAR SUPPORT 2" X 7" BAR SUPPORT 2" X 9" BAR SUPPORT 2" X 12"
	UF011-03-00 UF011-02-00 UF011-01-00 UF011-04-00		MACHINE SUPPORT ULTRA 23 5" MACHINE SUPPORT ULTRA 23 7 1/2" MACHINE SUPPORT ULTRA 23 9" MACHINE SUPPORT ULTRA 23 12"
	UFA010-06-00		CUTTING TOOLS

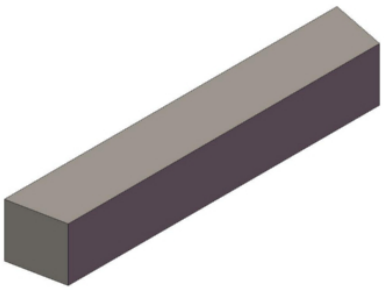
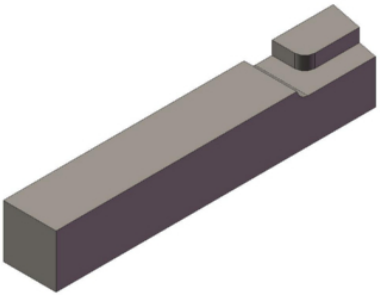
Accessories	Part number	Type	Description
	UF004-25-00		ADJUSTABLE BAR SUPPORT 2"
	UF006-01B-01-00		QUICK ATTACH BAR SECTION ASSEMBLY
	UF006-01B-07-00 UF006-01B-08-00		SHORT MALE BIT ASSEMBLY LONG MALE BIT ASSEMBLY
	UF006-01B-04 UF006-01B-05		SHORT FEMALE BIT ASSEMBLY LONG FEMALE BIT ASSEMBLY

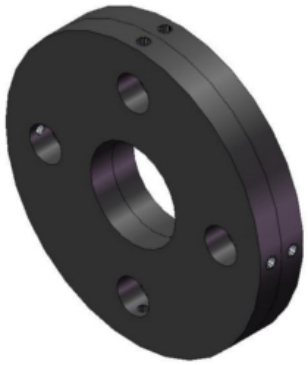
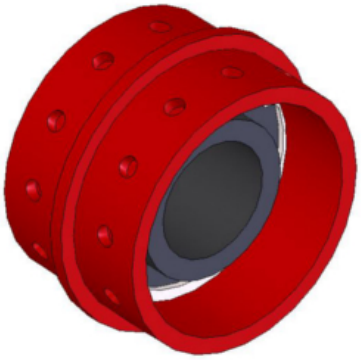
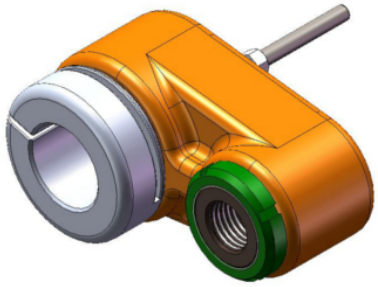
Accessories	Part number	Type	Description
	UF027-02-04B UF027-02-05B UF027-02-06B UF027-02-07B		TOOL HOLDER EXTENSION 1 15/16" TOOL HOLDER EXTENSION 4 15/16" TOOL HOLDER EXTENSION 2 15/16" TOOL HOLDER EXTENSION 3 15/16"
	UF027-03B-03 UF027-03B-01 UF027-03D-01 UF027-03D-02 UF027-03D-03		ADJUSTABLE TOOL HOLDER 1/2" X 1 9/16" LG. ADJUSTABLE TOOL HOLDER 1/2" X 2 3/4" LG. ADJUSTABLE TOOL HOLDER 1/2" X 1 3/4" LG. ADJUSTABLE TOOL HOLDER 1/2" X 2 7/16" LG. ADJUSTABLE TOOL HOLDER 1/2" X 1 1/8" LG.
	UF024-1650		ULTRA 23 STORAGE CASE
	UF024-000-05-01 UF024-000-05-02		14" FEED SCREW ULTRA 23-33 24" FEED SCREW ULTRA 23-33

Accessories	Part number	Type	Description
	ADR6034		RECEPTACLE (For welding station, at the customer's choice depending on the desired model)
	ACP6034BC		CONNECTOR (For welding station, at the customer's choice depending on the desired model)
	UF005-30A-00		MOTORIZED CART

Accessories	Part number	Type	Description
	UFA010-03-01p		PELLET SUPPORT 1/2" X 4"
	UFA0011-05NC-37536		THREADED ROD 3/8-NC GR5 X 36"
	UF027-01-04 UF027-01-05 UF027-01-01		TOOL HOLDER EXTENSION 3" TOOL HOLDER EXTENSION 5" TOOL HOLDER EXTENSION 8" (For all the Ultra family)

Accessories	Part number	Type	Description
	UF004-10-00A		2" SPIDER TYPE 3 LEGS LARGE DIAMETER ADJUSTABLE BAR SUPPORT
	UF004-10-00B		2" SPIDER TYPE 3 LEGS LARGE DIAMETER FIXED BAR SUPPORT
	UF004-10-00C		ULTRA 23 LARGE DIAMETER SPIDER TYPE 3 LEGS MACHINE SUPPORT
	UF006-02-01 UF006-02-02 UF006-02-03	Accessory	48" LENGTH 2" DIAMETER CUTTING BAR 72" LENGTH 2" DIAMETER CUTTING BAR 96" LENGTH 2" DIAMETER CUTTING BAR

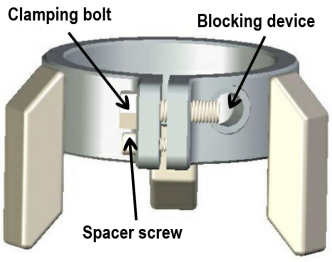
Accessories	Part number	Type	Description
	10100	Consumable	HSS 0.5" x 3.5" KNIFE
	10102	Consumable	CARBOLOY 0.5" x 3.5" KNIFE
	101118	Consumable	PELLET SCREW
		Consumable Tool holder	Adjustment bottle

Accessories	Part number	Type	Description
		Accessory	TX15/4.0 KEY
	300104		2 ULTRA 23 LARGE DIAMETER PLATES
	UF004-231-00	Machining Welding	HEAD BEARING CAGE ASSEMBLY 2"
	UF024-239-00	Machining Welding	ULTRA 23 FEED DEVICE

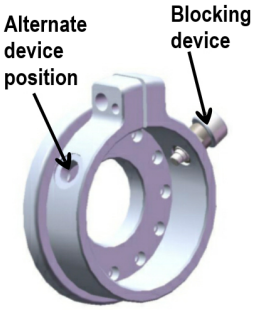
Accessories	Part number	Type	Description
	UF024-003-01	Machining Welding	ULTRA 23 FEED DEVICE FEED RING
	10451 10450 10452	Machining Welding	3/16" HEX KEY 1/4" HEX KEY 5/16" HEX KEY
	10453	Machining Welding	3/4" KEY

4.3 Note on attaching the boring machine

The machine support and the fixing plate have 3 bolts:



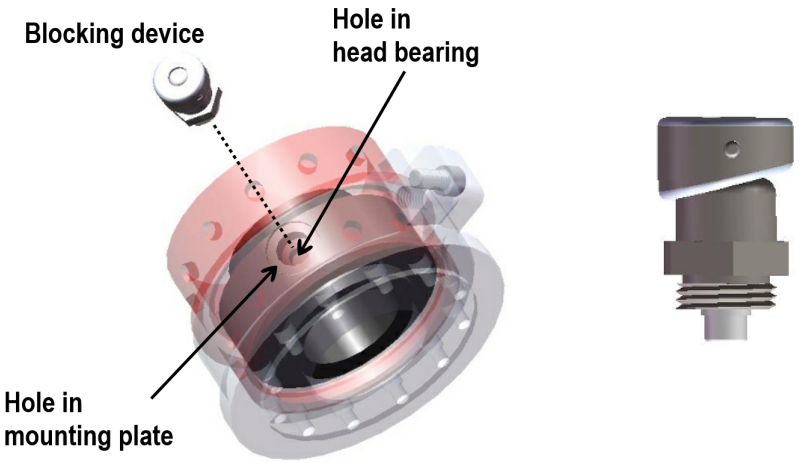
100291 Ultra23 machine support



100273 head bearing fixing plate

Location of the fixing plate

- the clamping bolt allow s the support or plate to be securely tightened to the head bearing;
- the locking device provides a stronger and safer assembly;
- the spacer screw is used to separate the support or the plate to remove them more easily.
-



The tip of the locking device, show n on the right, fits into a hole in the head bearing cage.
Each half-turn of the head of the device pulls the tip in or out.

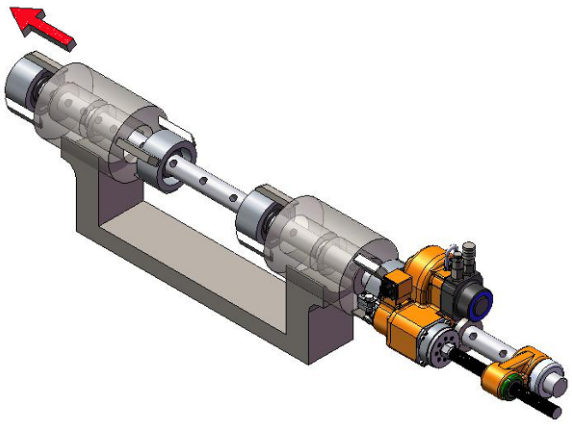
Take care to unscrew the clamping screw before tightening the bolt, otherw ise you may mistakenly believe that the bracket or plate is tight on the head bearing.

Make sure the locking device is inserted in the head bearing cage. If this is not the case, there is a risk of injury and breakage.

4.4 Mounting on the part to be repaired

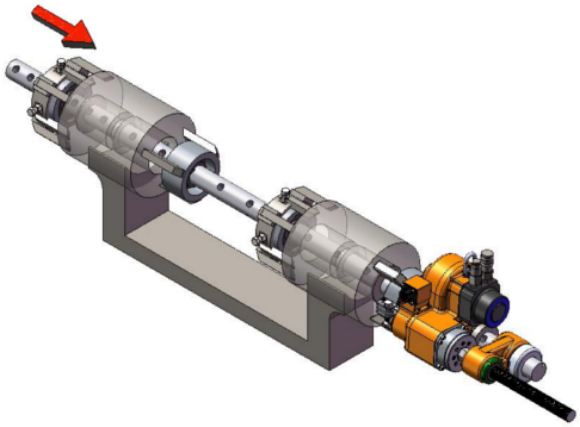
Machining direction

It is possible to machine in two directions



In this configuration, the boring machine 'pushes' the knife because the feeder is moving towards the boring machine. The knife moves in the direction of the arrow.

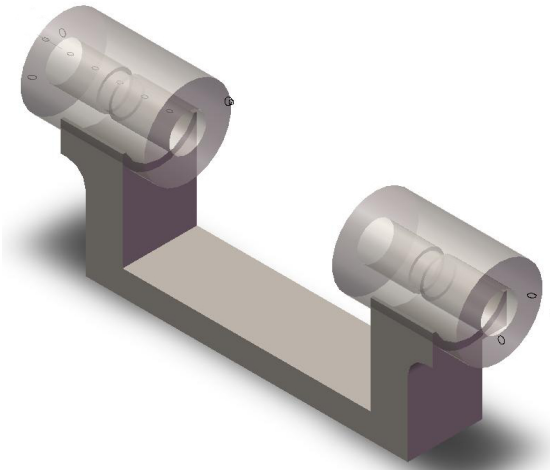
Note that here we use fixed bar supports. This is possible when alignment plates do not float much in the part to be repaired.



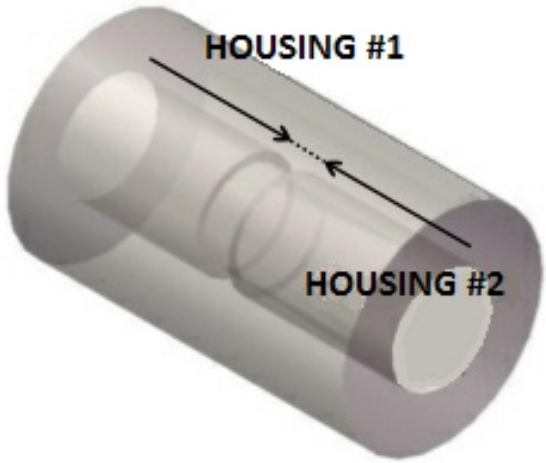
In this second configuration, the boring machine pulls the knife because the feeder moves away from the boring machine. The knife moves in the direction of the arrow.

Here we use adjustable bar supports because with fixed bar supports it would be difficult to center the cutting bar in the part to be repaired.

The example below shows the part to be repaired, it has two tubes to be rebuilt.



Part to be repaired

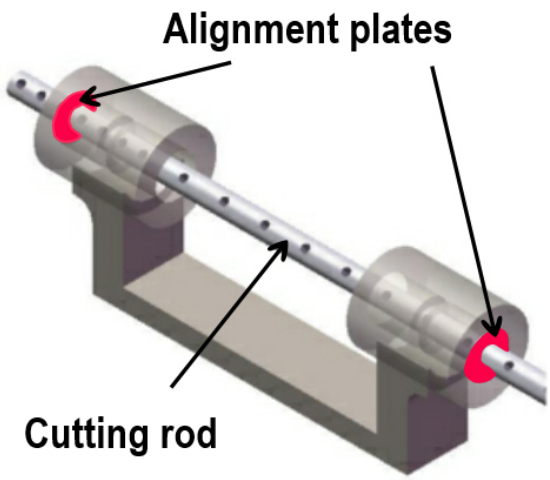


Each tube must be machined in two ways because in the center a zone must not be bored. Boring is done in the directions indicated.

As there are two tubes each with an exclusion zone, it will take a total of four machining ranges.

Procedure when using fixed supports

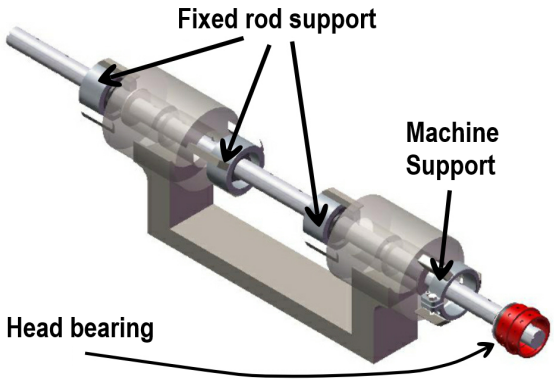
1- Insert alignment plates



First insert an alignment plate at each end of the equipment, they will be used for a first approximate centering of the cutterbar.

Then insert the cut bar into the two alignment plates.

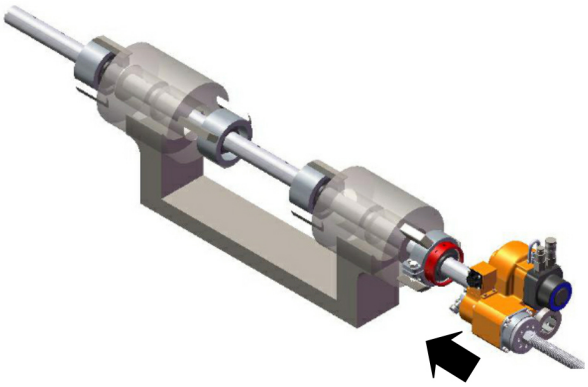
2- Insert fixed support and machine support



1. At the end opposite the boring machine, slide a fixed bar support and weld it.
2. Insert a head bearing into a machine support and secure it firmly with the clamping bolt and locking device as described in the **Note on attaching the boring machine**.
3. Slide the machine support onto the cut bar and weld it in place.
4. Pull out the cut bar so that you can slide two other fixed bar supports and push the bar all the way[1].
5. Weld the two fixed bar supports.
6. Remove the alignment plates.

[1] Alternatively you could have inserted the other two bar supports in the previous step.

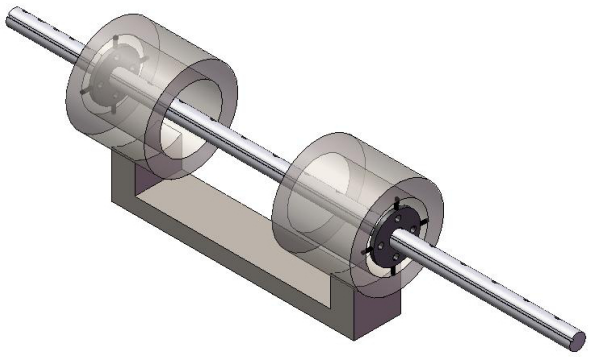
3- Fixing the boring machine on the part to be repaired



1. Make sure the mounting plate on the boring machine is loose.
2. Slide the boring machine onto the cut bar.
3. Align the holes in the mounting plate with the holes in the head bearing.
4. Tighten the clamping device on the mounting plate to the head bearing cage, as shown in **Note on attaching the boring machine**.
5. Tighten the clamping bolt on the mounting plate.
6. Make sure the head bearing is secure on both sides.

Use of large diameter alignment plate

These plates have four screw s to adjust their position in the part to be repaired.

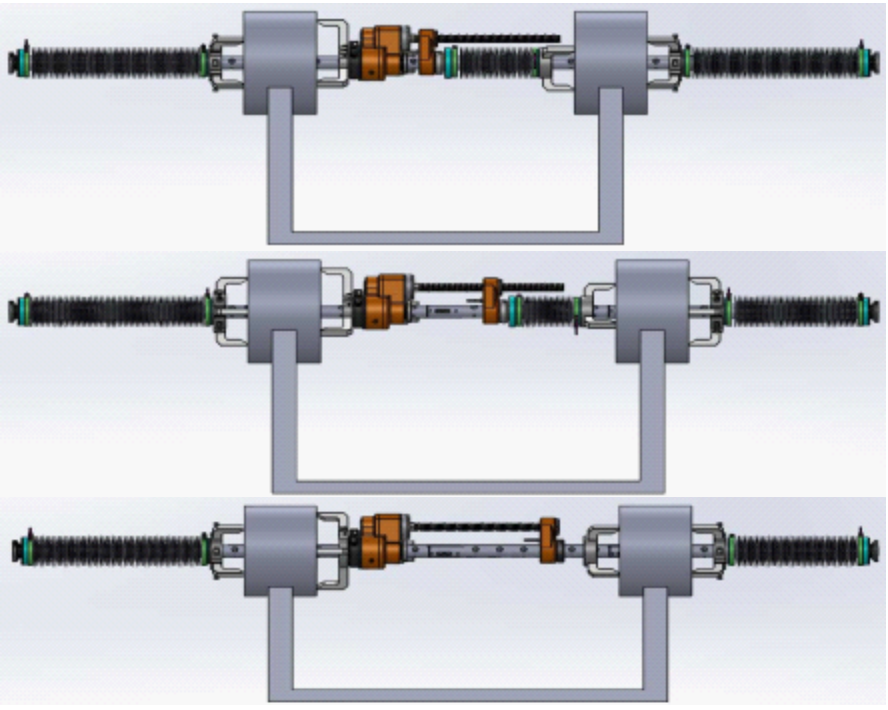


4.5 Bar protectors

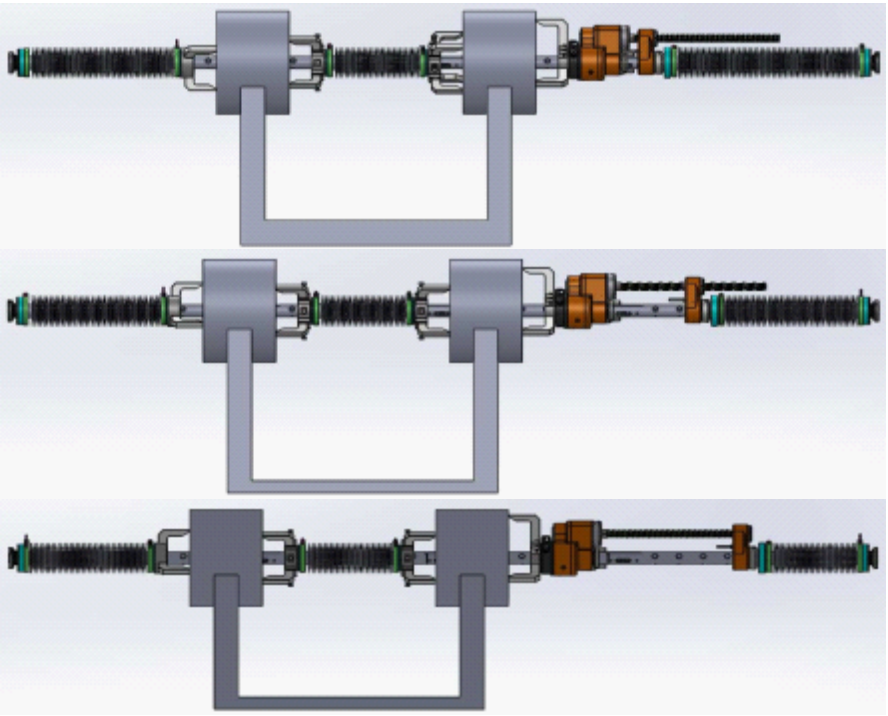
Inserting the bar protectors

1. Install the bar protectors so as to cover the entire bar.

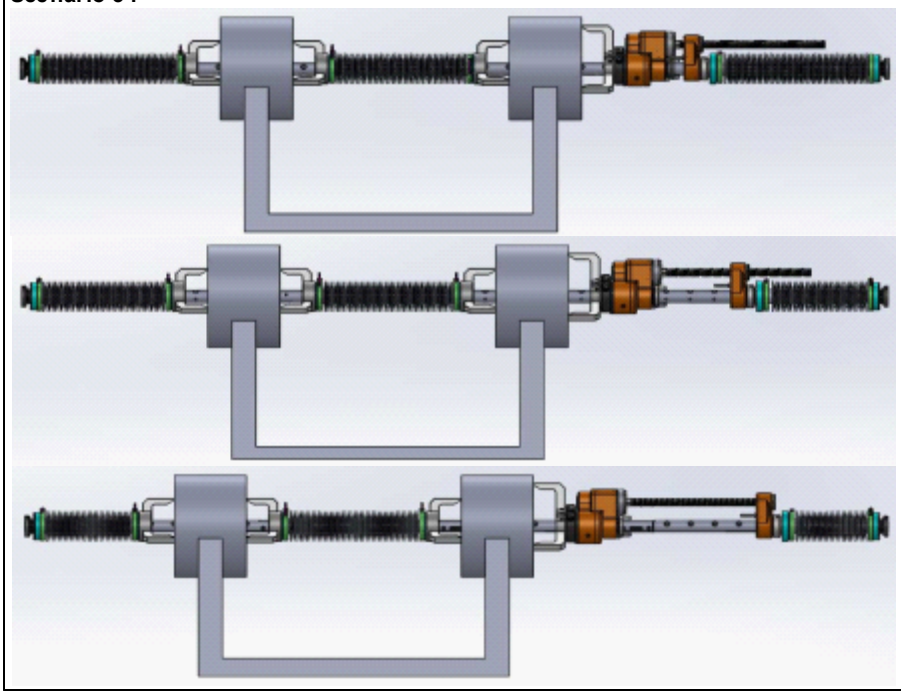
Scenario 1 :

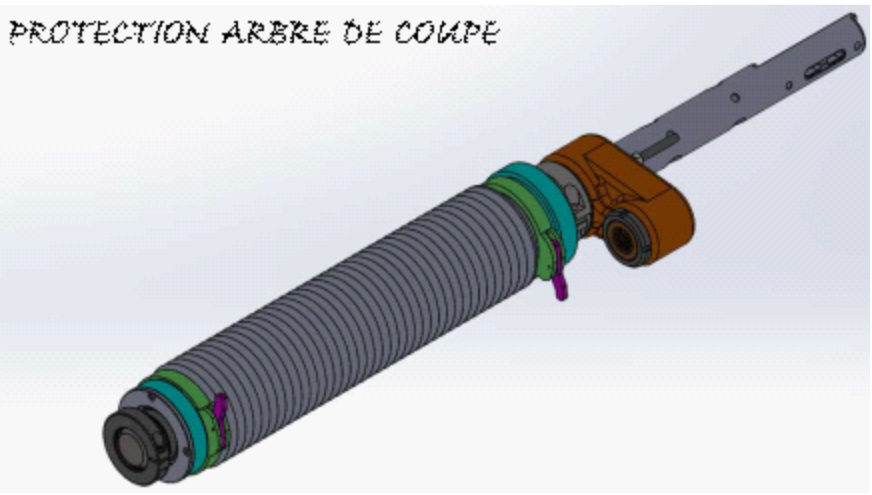


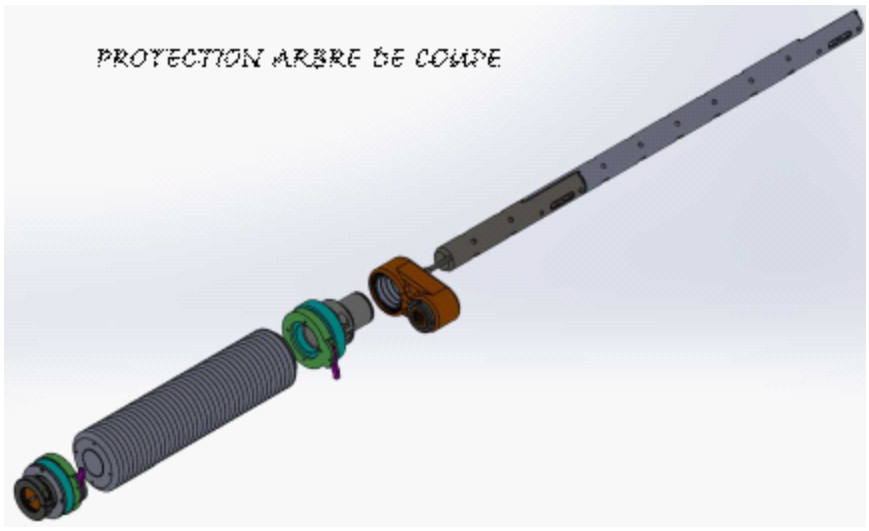
Scenario 2 :

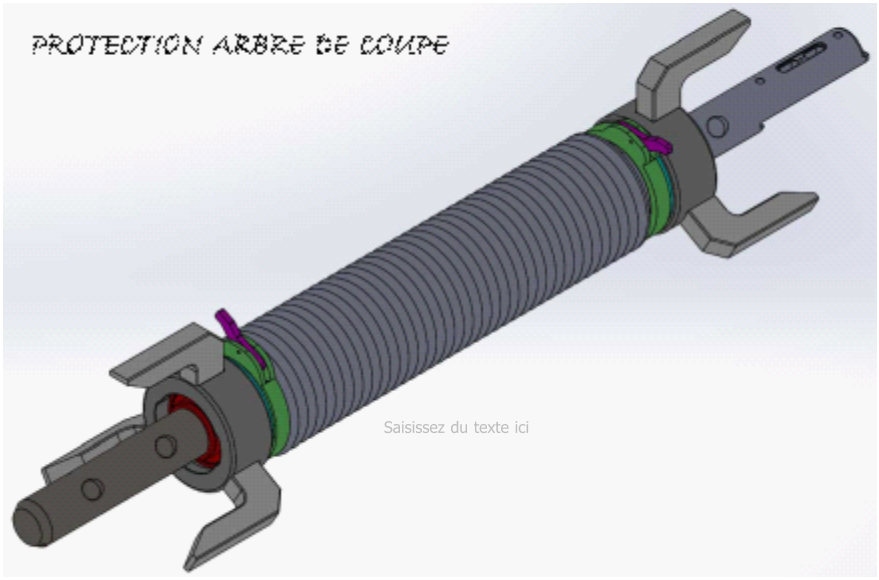


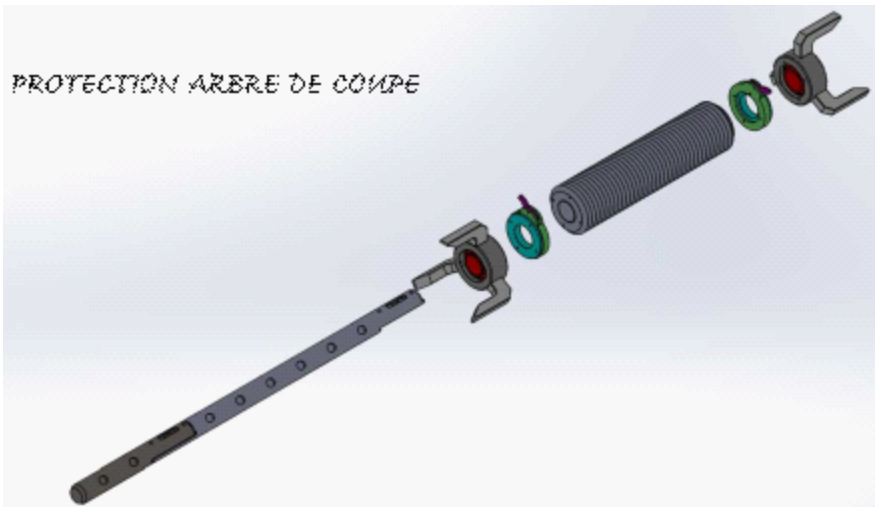
Scenario 3 :

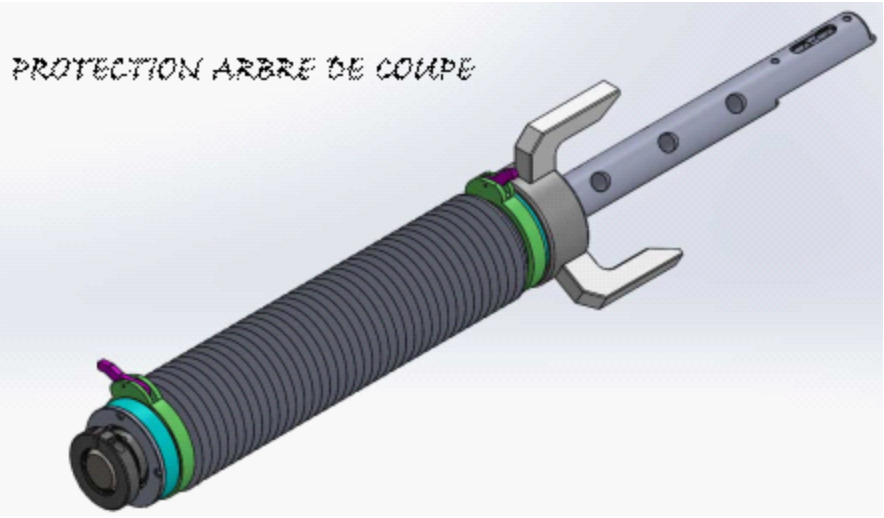


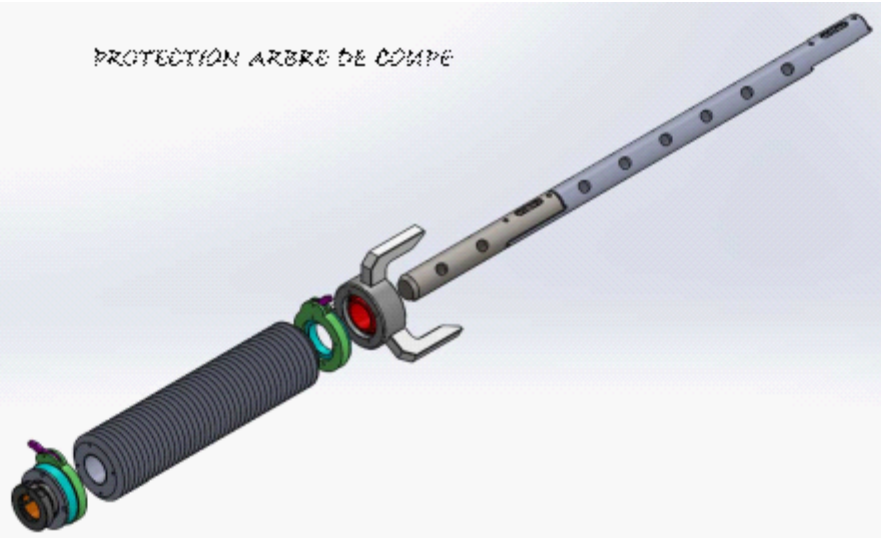


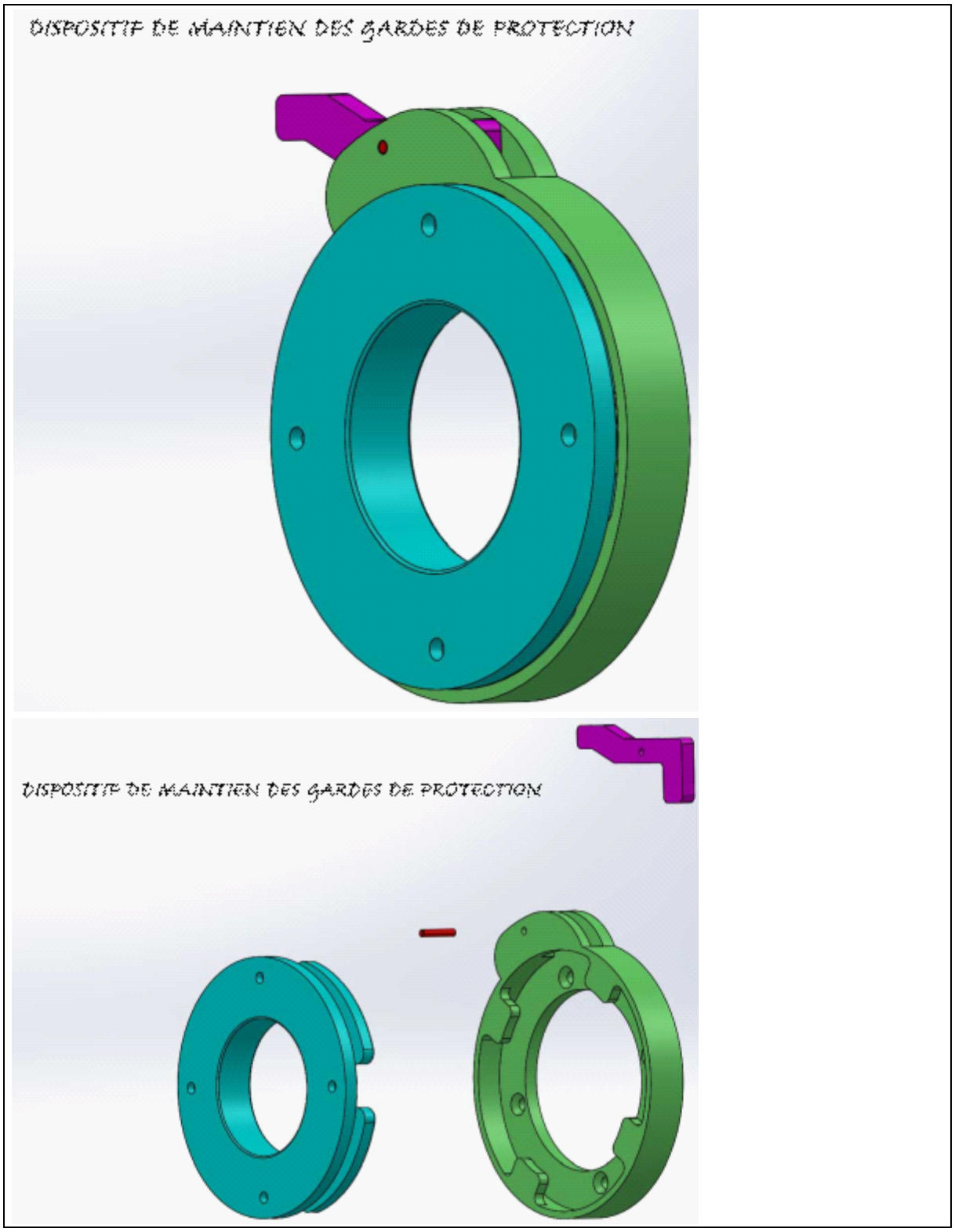


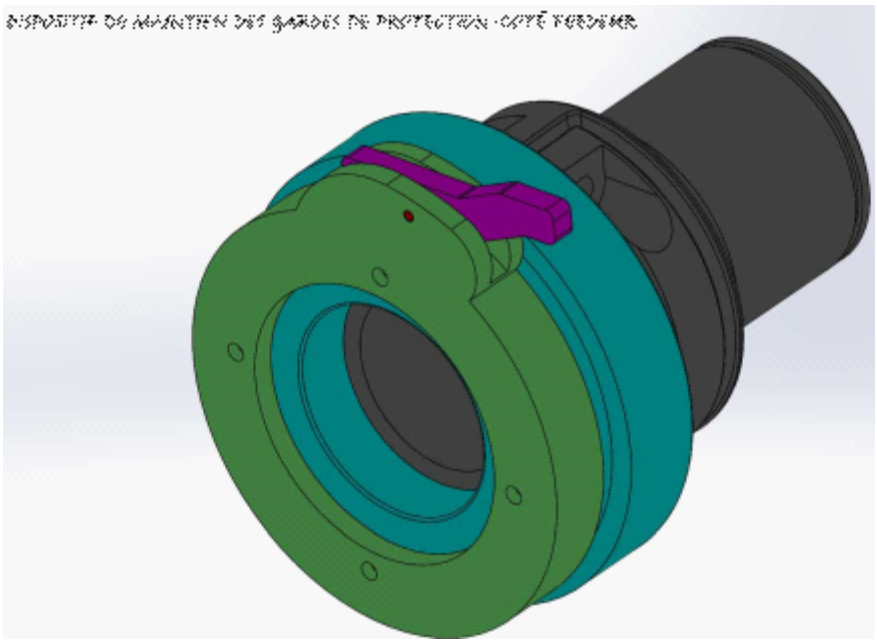


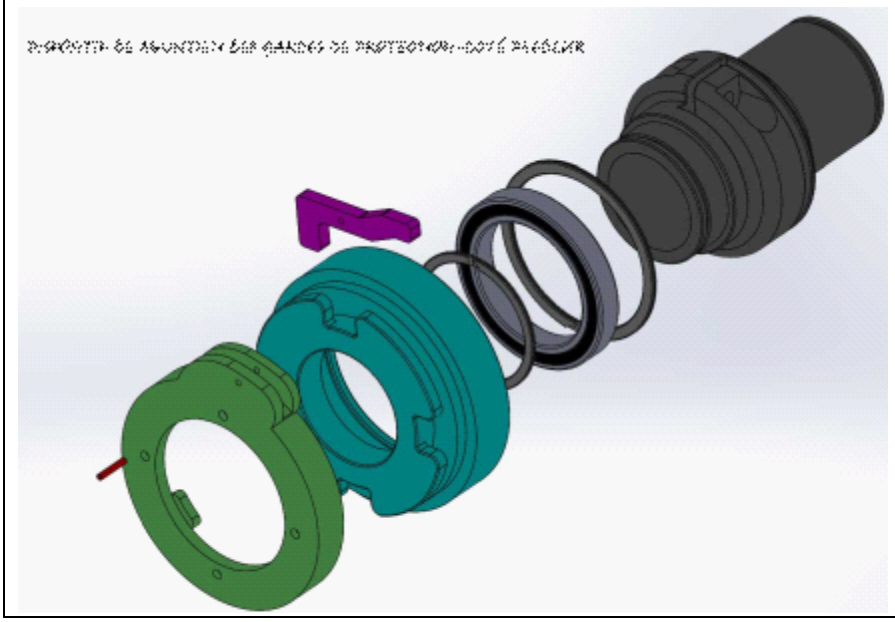










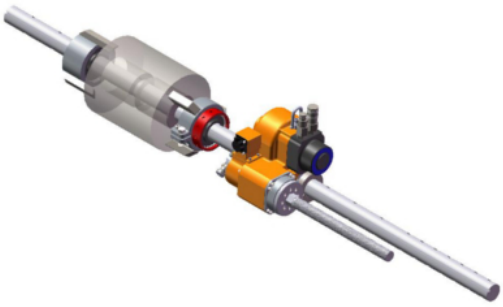


4.6 Assembly of accessories

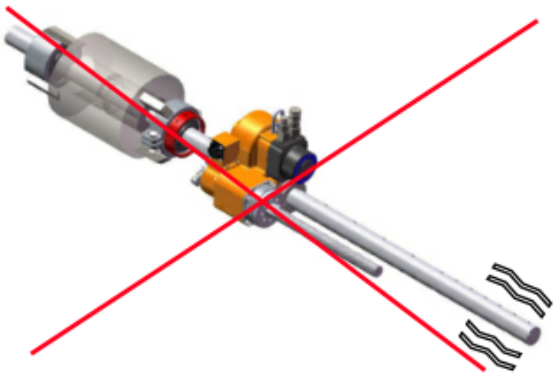
For your safety, assemble the accessories on the boring machine w hile it is not connected to the energy group.

It is important to use the shortest cut bar possible for the work to be done.

Choosing a cut bar too long increases the risk of injury. At high speed, there may be a hammering at the end of the bar.



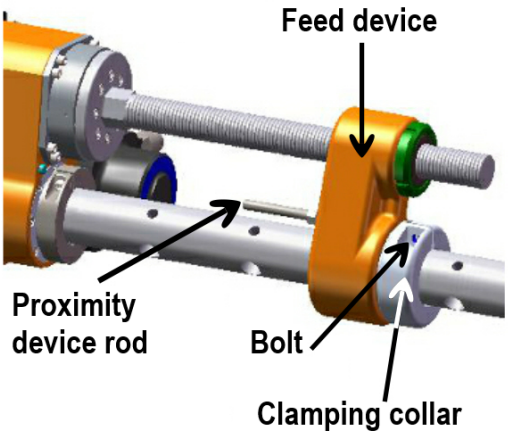
The cut bar is a little long, but the surplus is balanced at both ends



To avoid, the excess length of the bar is not balanced at both ends.

Make sure the rod of the proximity device is in place.

Move the feeder closer to the feed screw , first sliding it over the cut bar if it exceeds the feed screw .



Use the remote control to bring the feeder to the proper place to start the job.

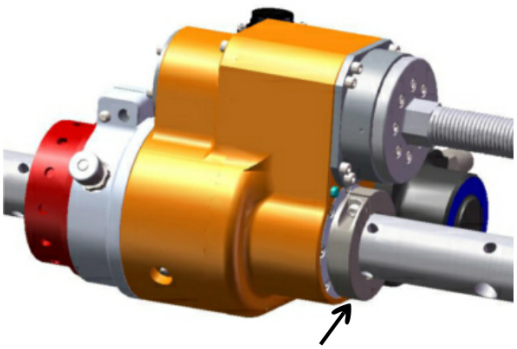
Then tighten the bolt on the clamping collar.

Depending on the cutting diameter required, you w ill use a knife on a bottle or on a cutting head.

Using a knife on bottle

Use the remote control to move the cut bar to clear the hole w here the knife w ill be attached.

Slightly tighten the stabilizer screw on the cut bar to avoid jolts. This is especially important when the boring machine is installed vertically.

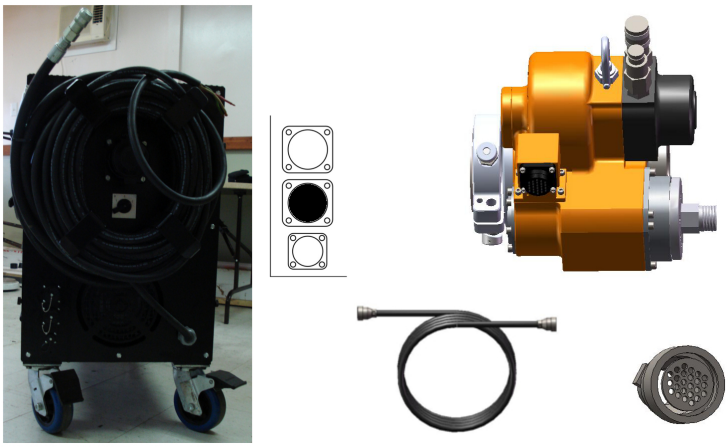


Stabilizing collar

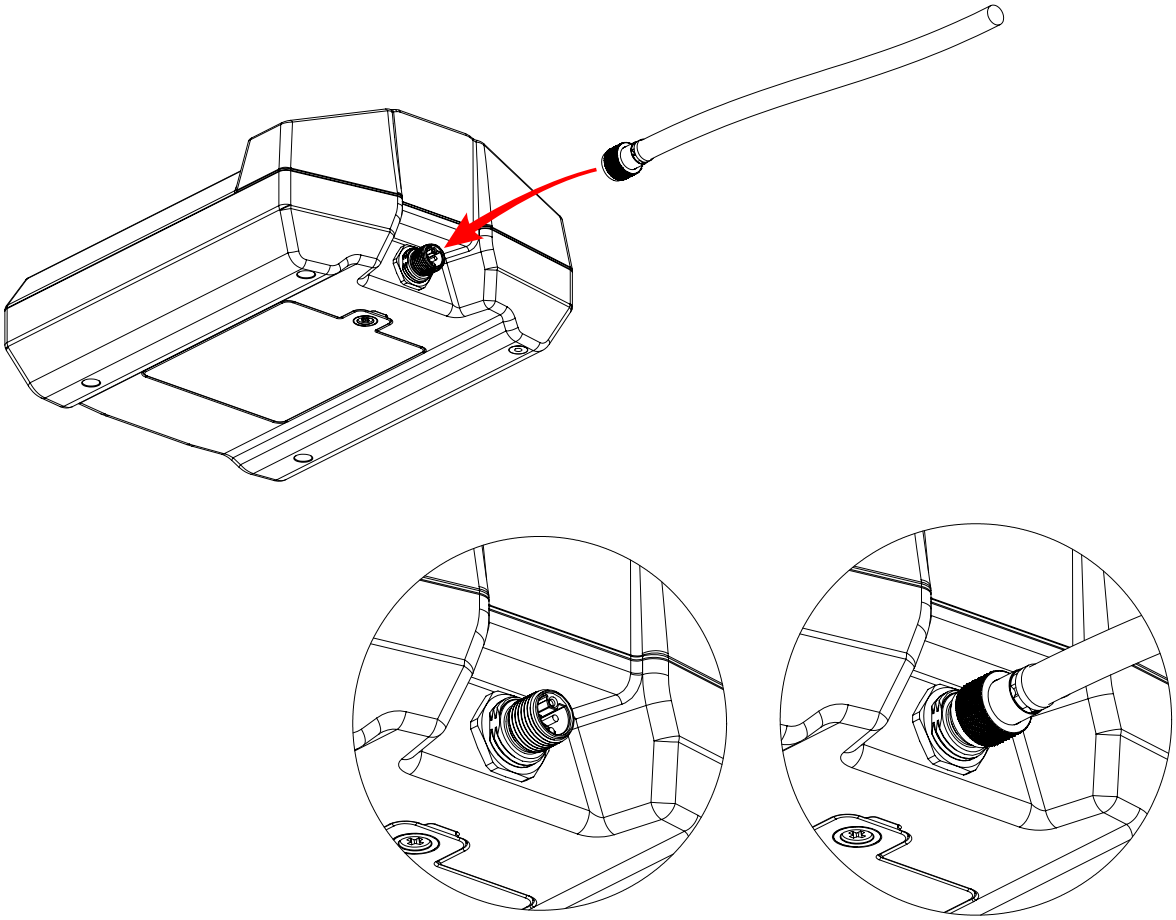
4.7 Connecting the boring machine

Set the power group switch to OFF. It is located on the door of the electronic panel:

Connect the boring machine to the energy group:



Then connect the remote control to the energy group if you want to use it in wired mode:



Finally, connect the hydraulic hoses to the boring machine.

If the energy group has just been connected to the electrical panel, a phase detection module will ensure that the pump motor starts in the appropriate direction for all new connections.

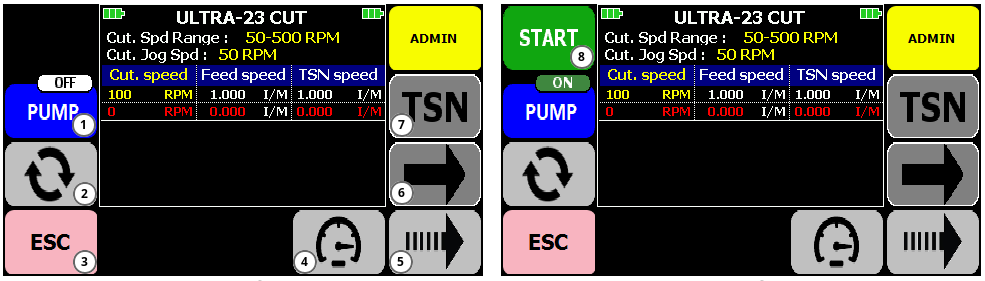
4.8 Machining

The machining function offers the possibility to perform machining on up to three axis.

- An axis of rotation controlled by a hydraulic motor.
- An optional axis for the lateral movement controlled by a servo-motor.
- An optional axis for resurfacing.

4.8.1 Cut

This function allows control of the boring machine's hydraulic motor.



Pump OFF

Pump ON

Cut running

The cutting screen provides access to these functions:

(1) Control of the hydraulic pump.
(2) Direction of rotation.
(3) Back to boring screen (Ultra-23, Ultra-33).
(4) Access to speed configuration screen.
(5) Access to jog speed configuration screen.
(6) Navigate to the feed screen.
(7) Navigate to the facing screen. The button is visible only if the facing head is connected in combined mode.
(8) Cut start/stop. The button is visible only if the hydraulic pump is running.

The cutting screen displays these information:

(9) Cutting speed range (minimum-maximum).
(10) The selected jog speed.
(11) Requested speed parameters. Cutting speed, feed speed, and facing speed.
(12) Actual live speed parameters. Cutting speed, feed speed, and facing speed.
(13) PRF for the TSN.
(14) PRF for the feed axis.

Status

Some buttons may change state depending on operations. See the tables below .

Feed button status


Feed is stopped.


Feed is running.


Feed is not running and the limit is reached.


Feed is running and the limit is reached.

TSN button status

Facing unit is stopped.

Facing unit is running.

Facing unit reaches the home limit.

Facing unit reaches the max limit.

Hydraulic pump button status

The hydraulic pump is stopped.

The hydraulic pump is running.

The hydraulic pump is stopped and the oil temperature has reached the pre-alarm threshold.

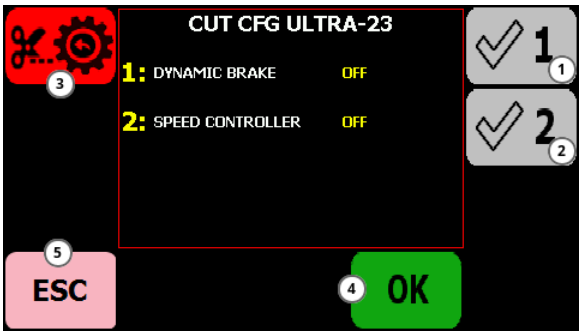
The hydraulic pump is running and the oil temperature has reached the pre-alarm threshold.

- If the speed controller is disabled, no actual speed w ill be displayed. Instead it w ill display "**OPEN**"
- Returning to the previous screen cancels any ongoing machining operations.
- Stopping the cutting cancels any ongoing machining operations.
- Turning off the hydraulic pump cancels any ongoing machining operations.

4.8.1.1 Parameters

User configuration for cutting parameters.

- Press the central button on the remote control from the cutting screen to access parameters.



User cut settings screen

(1) Activation/Deactivation of the dynamic brake.
(2) Activation/Deactivation of the cutting speed controller.
(3) Reset cutting parameters to default values.
(4) Confirm and save cutting parameters to memory.
(5) Go back to the previous screen without saving the changes.

1 : DYNAMIC BRAKES

Due to mechanical stresses, it is possible that the hydraulic valve controlling the engine does not stop properly, thus leaving the engine of the cut running very slowly. Dynamic braking is activated to cancel this undesirable effect. The effect of dynamic braking is to give a short cut pulse in the opposite direction which will have the effect of placing the hydraulic valve in the neutral position.

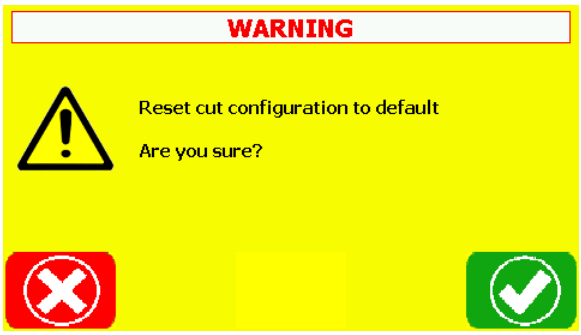
2 : SPEED CONTROLLER

The speed controller monitors the cut speed and adjust the oil flow to the theoretical value to compensate for the slowing down or speeding up of the cut. These slowdowns can be caused by a variation in load, a variation in metal cutting thickness, the wear of the cutting tools, a variation in the temperature of the oil or a variation in the hardness of the raw material. Turning off this option will remove the cut speed precision. It will also disable the IN/REV machining option.

Reset to default

This function resets the cut parameters to their default values.

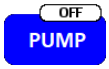
When restoring default parameters, the user will be asked to confirm their choice. Press the **GREEN** button to confirm or the **RED** button to cancel.



WARNING: Restoring to default parameters is irreversible.

4.8.1.2 Hydraulic

This function allows to control the hydraulic pump.



Status: The hydraulic pump is stopped. The **START** button on the cutting screen won't be visible.
Action: Press the button to start the hydraulic pump.
Reaction: The hydraulic pump starts and the **START** button on the cutting screen becomes visible.

Status: The hydraulic pump is running.
Action: Press the button to stop the hydraulic pump.
Reaction: The pump stops as well as the machining in progress.

Hydraulic pump alarm

- The hydraulic pump button turns red if the oil temperature reaches the pre-alarm threshold of 90 degrees. However, the system still remains functional.

WARNING: The system will shutdown if oil temperature reaches more than 100 degrees.

4.8.1.3 Start/Stop

This function allows to control the cutting motor.

Status: The cutting is stopped.
Action: Press the button to start cutting motor.
Reaction: The cut starts at the requested speed.

Status: The cut is running.
Action: Press the button to stop cutting motor.
Reaction: The cut stops as well as the machining in progress.

- The **START** button is not visible if the hydraulic pump is not running.

4.8.1.4 Direction of rotation

This function allows the configuration of the rotation direction.

Cutting is stopped

Status: The cut is set to rotate clockwise.
Action: Press the button to change the rotation direction.
Reaction: The configuration switches counterclockwise.

Status: The cut is set to rotate counterclockwise.
Action: Press the button to change the rotation direction.
Reaction: The configuration switches clockwise.

Cutting is running

Status: Clockwise or counterclockwise.
Action: Press the button to change the rotation direction.
Reaction: Alert message. The user must confirm the cancellation of the ongoing machining.

- It is impossible to change the direction of rotation once it is running unless if the user cancels the machining in progress.

4.8.1.5 Speed

This function allows changing the cutting speed. Press on the button and select the desired speed described in the parameter entry screen.

When cutting is in progress, it is possible to increase or decrease the cutting speed with the up and down arrows on the remote control. An asterisk "*" will be added beside the desired cutting speed in all machining screens.

 Increase speed of 10 RPM.

 Decrease speed of 10 RPM.

- It is allowed to change the speed while cutting and/or machining is in progress.
- Following the change in cutting speed, the feed speed will automatically adjust if distance/revolution (IN/REV) mode is active.

WARNING: The cutting speed will have an impact on the feed speed if the speed management is configured in distance/revolution (IN/REV). In this mode, the feed speed is automatically recalculated based on the cutting speed. The cutting speed range will also be adjusted according to the feed speed configuration.

4.8.1.6 Jog selection

This function allows changing the jog speed configuration.

Jog speed selection screen

To select a defined jog speed:

They are 4 default settings available to choose from.

1. Press on any checked buttons on the left to select the desired jog speed.
2. Press on the "**OK**" button to confirm the selection.

To edit default jog speed:

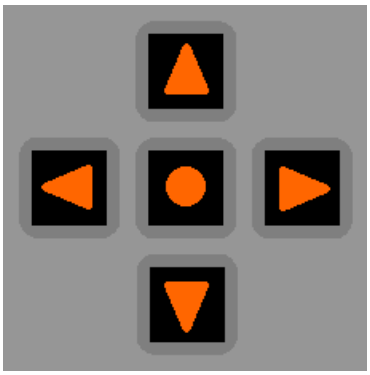
The 4 default jog settings can be modified by the user.

1. Press on any edit buttons on the right of the screen.
2. From the parameter entry screen, select the desired speed.
3. Press on the "**OK**" button to confirm the changes.

- Pressing the "**ESC**" button returns to the previous screen without saving the changes.

4.8.1.7 Jogging

The cutting jog allows you to temporarily start and stop the cut to adjust the motor position. Jog is operated using the arrows on the remote control. There are two jog modes. Pulse jog and continuous jog.



 Starts pulse jog or continuous jog clockwise.

 Starts pulse jog or continuous jog counterclockwise.

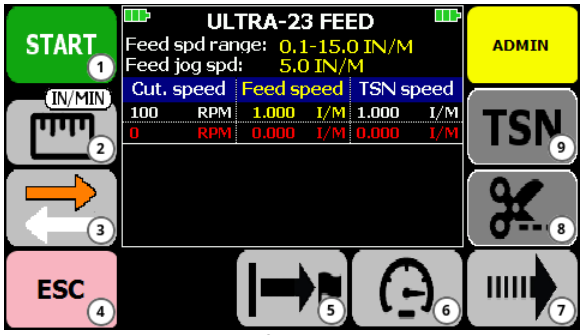
 Used for feed jog.

 Used for feed jog.

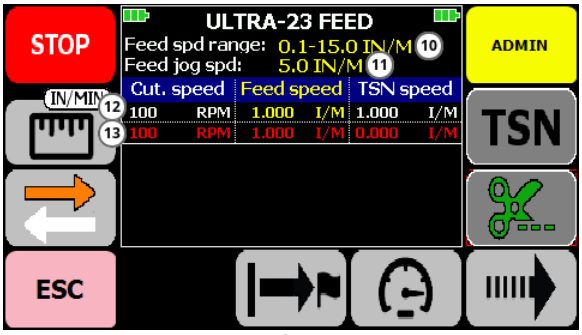
- Pulse jog involves momentarily pressing the arrow buttons.
- Continuous jog consists of pressing and holding the arrow buttons then releasing the buttons.

4.8.2 Feed

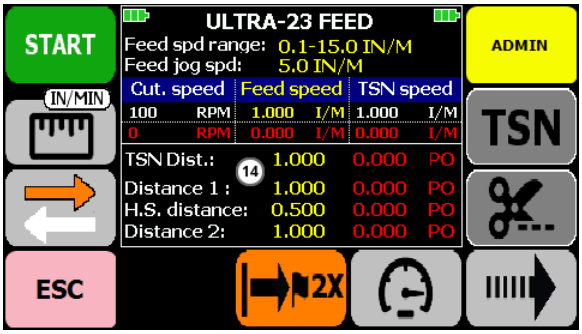
The feed screen allow s control of the boring machine's electric motor.



Base feed screen



Running feed screen



feed screen with AVP

The Feed screen provides access to these functions:

(1) Feed start/stop
(2) Feed speed management configuration.
(3) Feed direction configuration.
(4) Back to the previous screen (cut screen).
(5) Access to PRF configuration screen.
(6) Access to speed configuration screen.
(7) Access to jog speed configuration screen.
(8) Navigate to the cut screen.
(9) Navigate to the facing screen.

The Feed screen displays this information:

(10) Feed speed range (minimum-maximum)
(11) Selected jog speed.
(12) The requested cutting speed, feed speed as w ell as the facing speed.
(13) The actual cutting speed, feed speed as w ell as the facing speed.
(14) The programmed feed (PRF) parameters if applicable.

Status

Some buttons may change status depending on operations. See the tables below.

TSN button status

Facing unit is stopped.

Facing unit is running.

Facing unit reaches the home limit.

Facing unit reaches the max limit.

Cut button status


Cut is stopped.


Cut is running.

Feed direction button status


Feed reaches the home limit.


Feed reaches the home limit.

Jogging direction button status


Jogging is in normal direction.


Jogging is in reverse direction.

PRF status


Refer to the programmed feed (PRF) for all possible statuses.

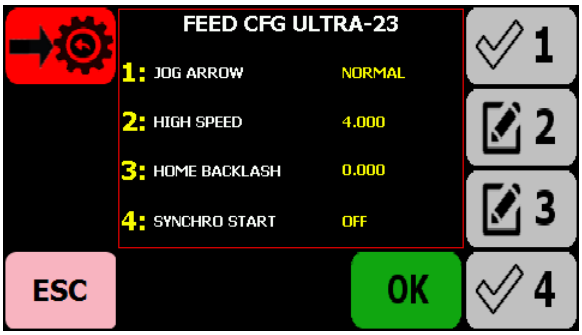
- If the speed controller is disabled, no actual speed will be displayed. Instead it will display "**OPEN**"
- The cutting must be running to be able to start the feed.
- Stopping the feed does not stop the cutting nor the facing if active.

WARNING: The normal movement of the feed (away from the boring machine) **IS NOT PROTECTED** by a limit switch! There is a tripping hazard if the equipment being moved by the Feed comes to the end of the feed screw.

4.8.2.1 Parameters

User configuration for feed parameters.

- Press the center button on the remote control from the feed screen to access parameters.

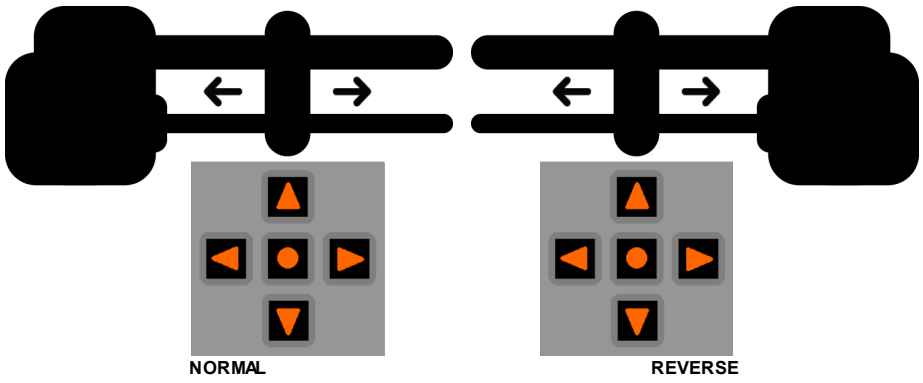


User Feed Setup Screen

1 : JOG ARROWS

The direction of the jog arrows (left and right) can be reversed depending on the user's location in relation to the boring machine.

- It is also possible to reverse the jog arrows direction configuration in the Feed Jog Speed screen.



NORMAL REVERSE

Jog arrows	Feed screen	Left arrow	Right arrow
NORMAL		Moving to the boring machine.	Moving away from the boring machine.
REVERSE		Moving away from the boring machine.	Moving to the boring machine.

2 : HIGH SPEED

High speed configuration used for:

- Movement speed between the 2 distances of a PRF.
- Movement speed when returning to initial position during a PRF.

3 : HOME BACKLASH

Due to mechanical stress, it is possible that there is play in the feed drive mechanism. This play can be compensated by specifying a value for this parameter in order to return to the starting position with better precision.

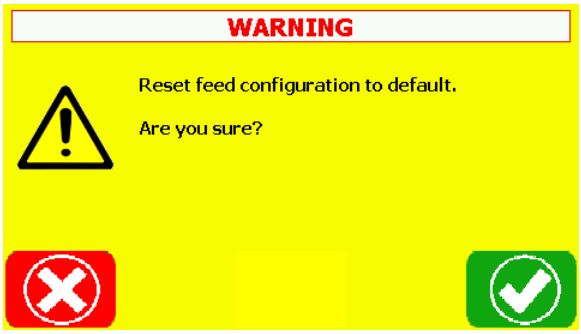
4 : SYNCHRO START

This option allows staring/stopping the feed and facing simultaneously.

Reset to default

This function resets the feed parameters to their default values.

When restoring default parameters, the user will be asked to confirm their choice. Press the **GREEN** button to confirm and the **RED** button to cancel.



WARNING: Restoring to default parameters is irreversible.

4.8.2.2 Start/Stop

This function allows to control the feed operations such as manual machining or when PRF is configured.

START **Status:** The feed is stopped.
Action: Press the button to start the feed motor.
Reaction: The feed starts at the requested speed. If the cut is not running, a confirmation will be requested to start the pump and or the cutting motor.

STOP **Status:** The feed is running.
Action: Press the button to stop the feed motor.
Reaction: Pause on the ongoing machining.

- The START button is not visible if the hydraulic pump is not running.
- The machining can be paused and resumed during the PRF machining.

4.8.2.3 Speed management

This function allows the configuration of the speed management.

The feed speed can be managed in two modes: distance per minute IN/MIN or distance per revolution IN/REV. Simply press the button to toggle between modes.

Distance per minute:

In this mode, the feed speed is independent of the cuttings speed. Both speeds can be configured individually.

Distance per revolution:

In this mode, the feed speed is automatically adjusted to the cutting speed.

- These modes also applied for CM and MM units.
- The actual running speed of the feed is always displayed in IN/MIN.
- The distance per revolution mode is not available if the speed controller is deactivated.

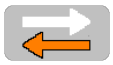
WARNING: The cutting speed will have an impact on the feed speed if the speed management is configured in IN/REV. In this mode, the feed speed is automatically recalculated based on the cutting speed. The cutting speed range will also be adjusted according to the feed speed configuration.

4.8.2.4 Direction

This function allows to configure the feed direction.

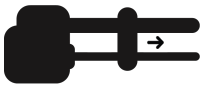
Feed direction configuration

Status: The feed direction is clockwise.
Action: Press the button to toggle the feed direction.
Reaction: The feed direction changes to counter-clockwise.



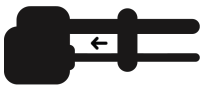
Status: The feed direction is counter-clockwise.
Action: Press the button to toggle the feed direction.
Reaction: The feed direction changes to clockwise.

Boring head movement direction.



Clockwise

Moving away from the boring head.



Counter-clockwise

Or approaching the boring machine.

Home limit

Home limit is reached.

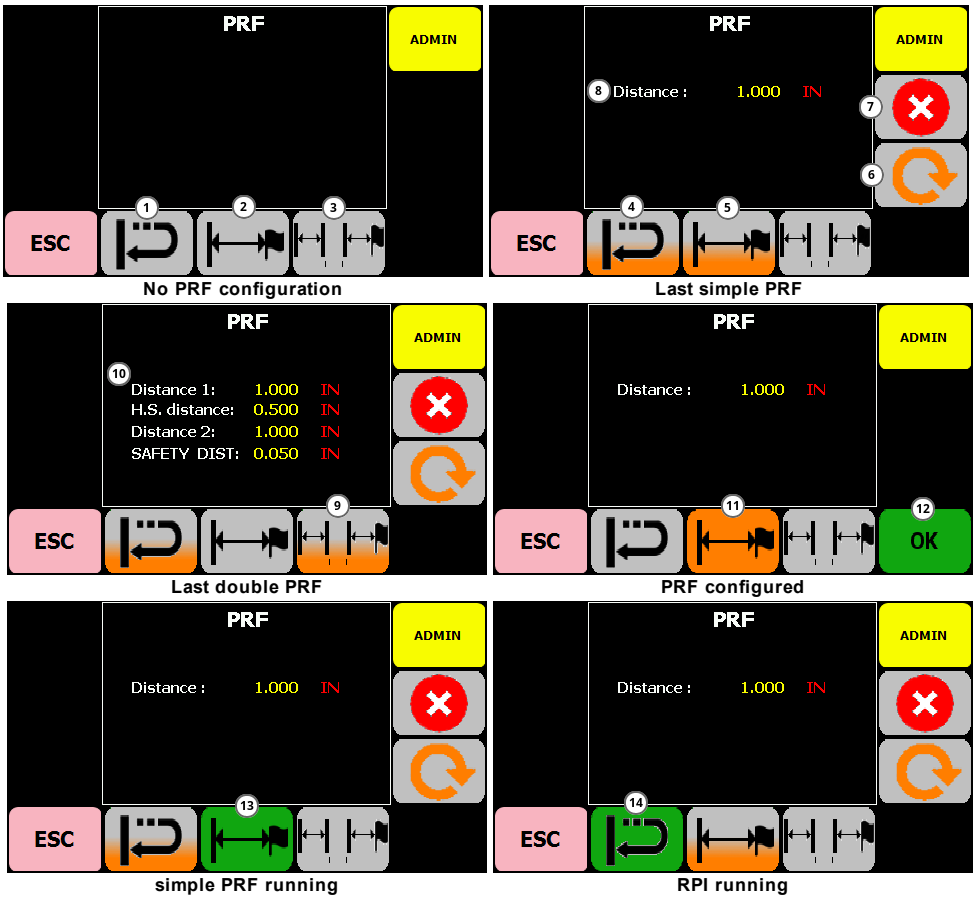
- The feed direction can be toggled while the machining is in progress except if the PRF is configured.
- A red dot will appear on the feed direction button if the home limit is reached.

4.8.2.5 Programmed feed

This function allows you to configure the programmed feed (PRF).

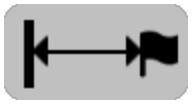
It is possible to move the feed to a predetermined distance from a given speed and stop once this distance is reached.

Screens

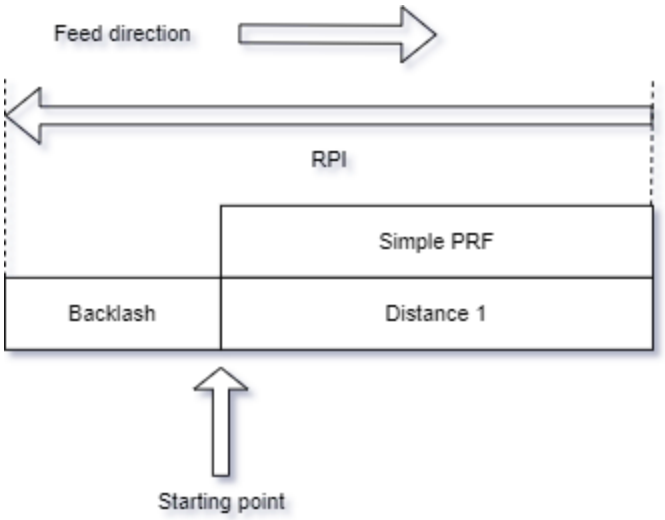


(1) Return to initial position is disabled. Press the button to activate it.
(2) Simple PRF is inactive. Press the button to configure it.
(3) Double PRF is inactive. Press the button to configure it.
(4) The return to the initial position is configured.
(5) The simple PRF is configured. Press the button to reconfigure it.
(6) Reconfigures the PRF with the previous one.
(7) Deletes the PRF already configured and aborts the current PRF if running.
(8) Simple PRF distance or last known distance.
(9) The double PRF is configured. Press the button to reconfigure it.
(10) Double PRF parameters or last known parameters.
(11) Simple PRF is activated.
(12) Confirm and save any PRF changes.
(13) PRF is currently running.
(14) The return to the initial position is in progress.

Simple PRF



The simple PRF is made up of a single distance to be covered, optionally followed by a RPI. It is also possible to configure the backlash parameter in order to overcome mechanical constraints.



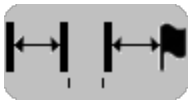
Simple PRF diagram

Simple PRF configuration steps:

1. Press the simple PRF button.
2. Enter the distance.
3. Press the return to initial position button if required.
4. Press the OK button to confirm and save the programmed feed parameters.

- Pressing the "**ESC**" button returns to the previous screen without saving the changes.

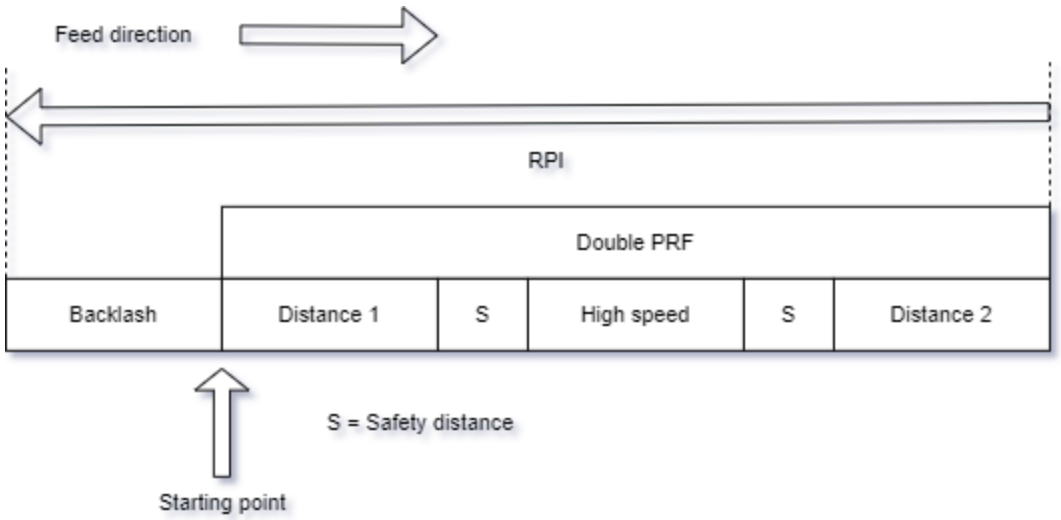
Double PRF



The double PRF is made up of three distances to be covered, optionally followed by a RPI. A security gap may be introduced in the execution of the PRF. The safety gap will increase distances 1 and 2, and decrease the high speed distance by double.

For example: If distance 1 and 2 = 1.000in, high speed distance = 0.250in and safety gap = 0.050in then the distances traveled will be 1.050 for distance 1 and 2 and will be 0.150 for distance high speed.

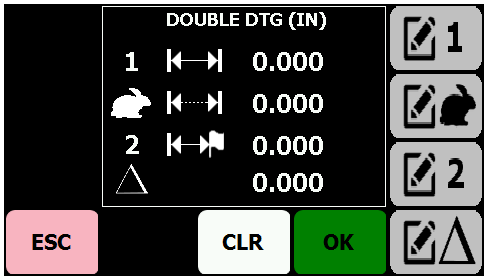
It is also possible to configure the backlash parameter in order to overcome mechanical constraints.



Double PRF diagram

Double PRF configuration steps:

1. Press the double PRF button to display the setup screen below.



Double AVP parameters

(1) Distance 1.
(2) High speed distance.
(3) Distance 2.
(4) Safety distance.

2. Enter distance 1 and 2 as well as the high speed distance.
3. Enter the safety gap parameter (optional).
4. Press the OK button to confirm and save the settings.
5. On the PRF configuration screen, press the return to initial position (RPI) button if required.
6. Press the OK button to confirm and save the programmed feed parameters.

- Pressing the "**ESC**" button returns to the previous screen without saving the changes.

Status

Some buttons may change status depending on PRF operations. The status is visible on the feed screen and PRF screen. See the tables below.

PRF button status


PRF is inactive.


Simple PRF is configured.


Double PRF is configured.


Simple PRF is configured with return to the initial position.


Double PRF is configured with return to the initial position.


Simple PRF is running.


Double PRF is running.


Simple PRF is running and the return to initial position is standby.


Double PRF is running and the return to initial position is standby.


Simple PRF is complete and the return to initial position is running.


Double PRF is complete and the return to initial position is running.

Notes

- The RPI speed uses the HIGH SPEED parameter setting.
- It is possible to add or remove the RPI option while the PRF is running.
- Any changes in the parameter configuration while PRF is running aborts the current operation.
- It is possible to pause and resume PRF by pressing the stop/start button.
- It is not possible to change the feed direction when PRF is running.
- It is possible to change the feed speed while PRF is running.

4.8.2.6 Speed

This function allows changing the feed speed.

Press on the button and select the desired speed described in the parameter entry screen.

- The actual running feed speed is always displayed in IN/MIN.
- The new feed speed is immediately applied if machining is in progress.
- The user will have to confirm the selection if the speed is too high.

WARNING: The cutting speed will have an impact on the feed speed if the speed management is configured in IN/REV. In this mode, the feed speed is automatically recalculated based on the cutting speed. The cutting speed range will also be adjusted according to the feed speed configuration.

4.8.2.7 Jog Selection

This function allows changing the jog speed configuration.

Jog speed selection screen

To select a defined jog speed:

They are 4 default settings available to choose from.

1. Press on any checked button on the left to select the desired jogging speed.
2. Press on the "**OK**" button to confirm the selection.

To edit default jog speed:

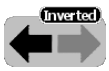
The 4 default jog settings can be modified by the user.

1. Press on any edit button on the right of the screen.
2. From the parameter entry screen, select the desired speed.
3. Press on the "**OK**" button to confirm the changes.

To change the jog direction:

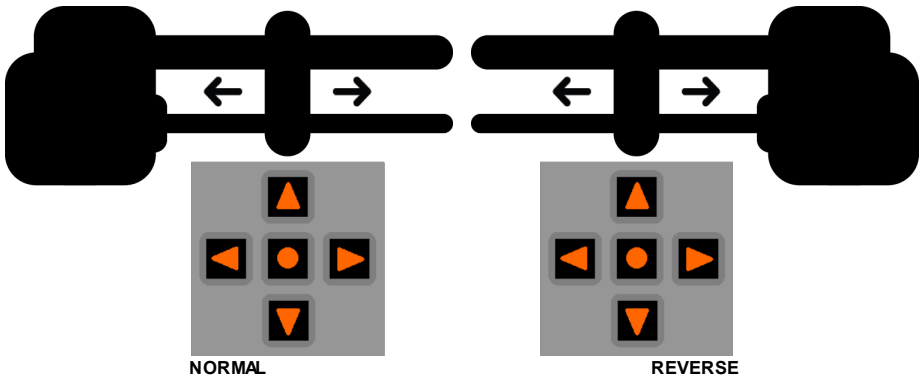
1. Press on the jog direction button on the bottom of the screen.
4. Press on the "**OK**" button to confirm the changes.

Status: The jog direction is in normal direction
Action: Press the button to change the jog direction.
Reaction: The jog direction switch to reversed.



Status: The jog direction is in reversed direction
Action: Press the button to change the jog direction.
Reaction: The jog direction switch to normal.

The button indicates the current state of operation of the jog arrows. The direction of the jog arrows (left and right) can be reversed depending on the user's location in relation to the boring machine.

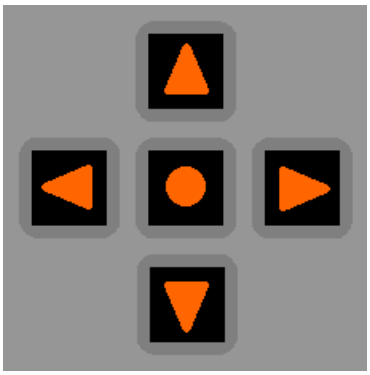


Feed screen	Jog arrows	Left arrow	Right arrow
	NORMAL	Moving to the boring machine	Moving away from the boring machine
	REVERSE	Moving away from the boring machine	Moving to the boring machine

- It is also possible to change the feed jog direction by changing the "**JOG ARROW**" parameter in the feed parameters screen.
- Pressing the "**ESC**" button discards any changes.

4.8.2.8 Jogging

The feed jog allows you to temporarily start and stop the feed motor. Jog is operated using the arrows on the remote control. There are two jog modes. Pulse jog and continuous jog.



 Used for cut jog.

 Used for cut jog.

 Starts pulse jog or continuous jog to the boring machine.

 Starts pulse jog or continuous jog away from the boring machine.

- Pulse jog involves momentarily pressing the arrow buttons.
- Continuous jog consists of pressing and holding the arrow buttons then releasing the buttons.

WARNING: Any jogging operation cancels the current machining in progress.

4.9 Digital facing head (TSN)

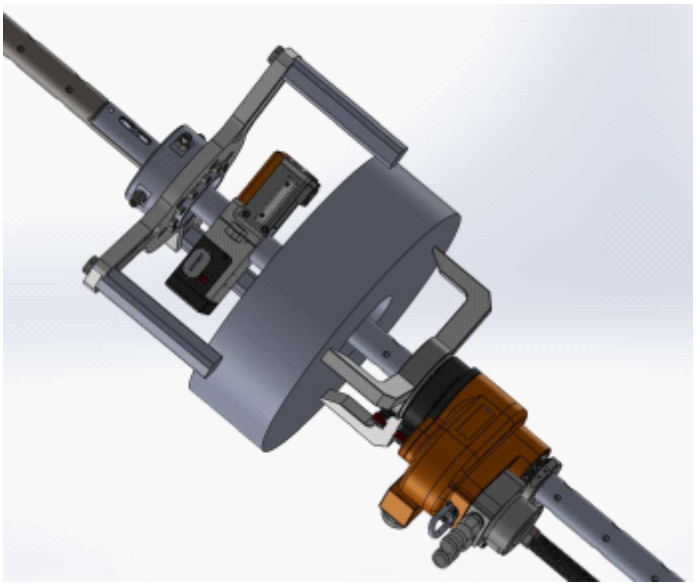
Machining uses a boring machine w hich offers up to three axis of milling:

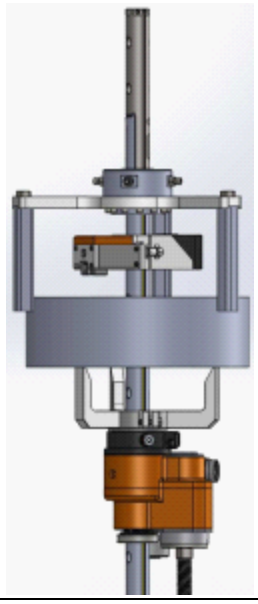
- An axis of rotation controlled by a hydraulic motor.
- An optional axis for the lateral movement controlled by a servo-motor.
- An optional axis for resurfacing.

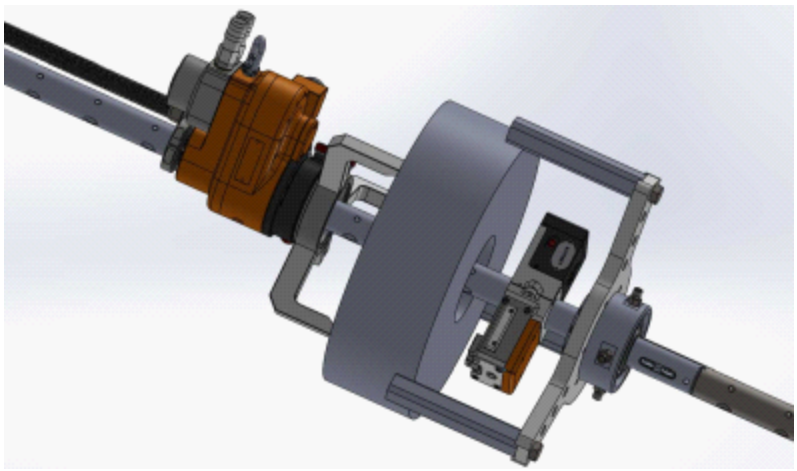
- The TSN connects to a w ireless remote control in standalone or combined mode.
- Refer to this section for pairing instructions.

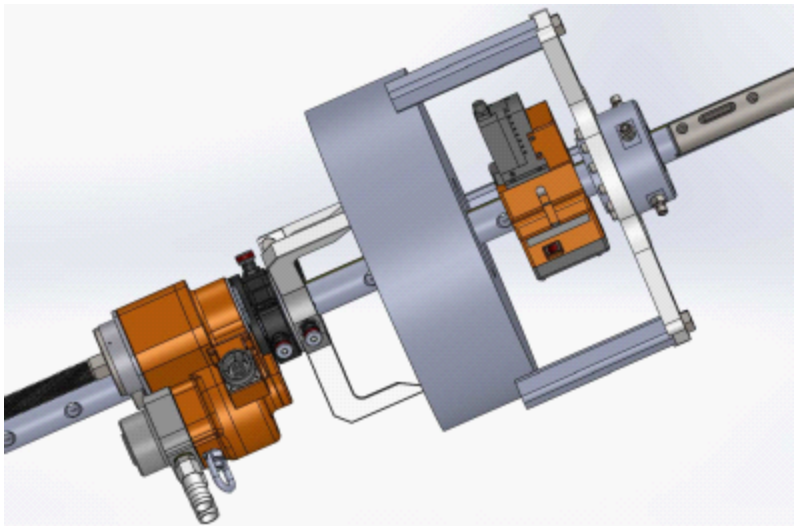
4.9.1 Installation

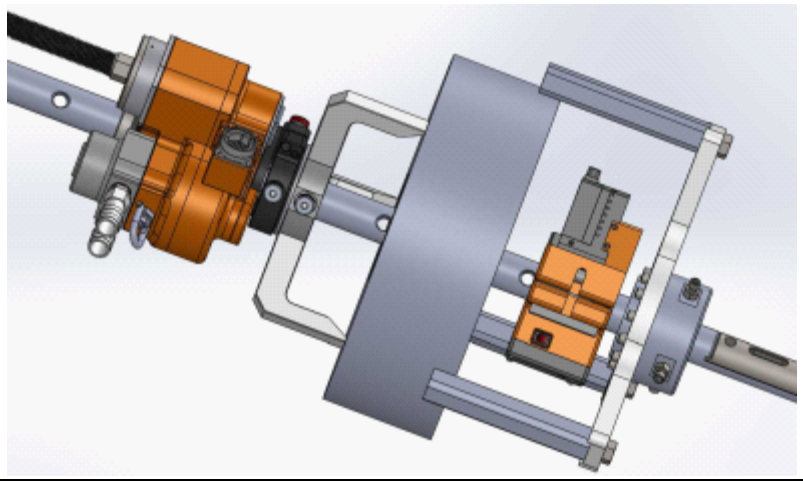
The standard facing head can be installed anyw here on the cutting rod.

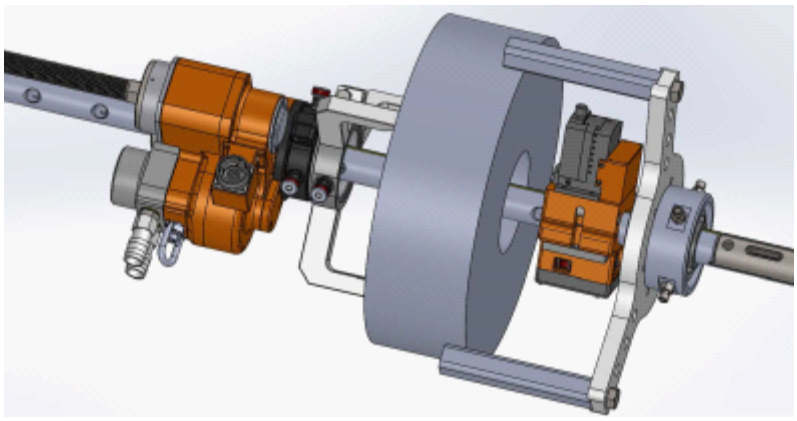


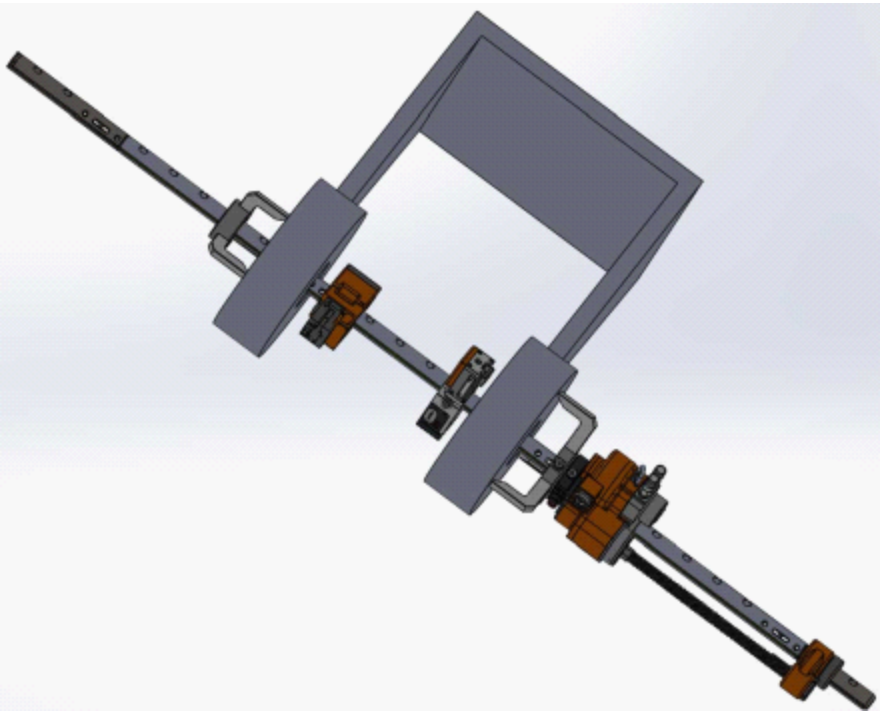


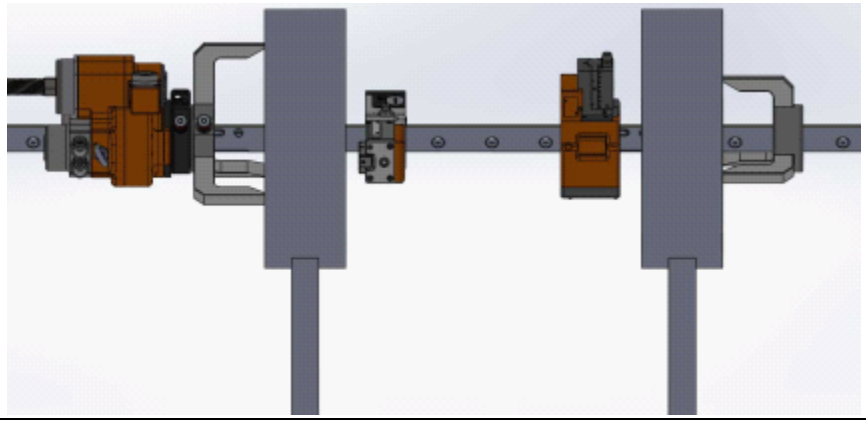


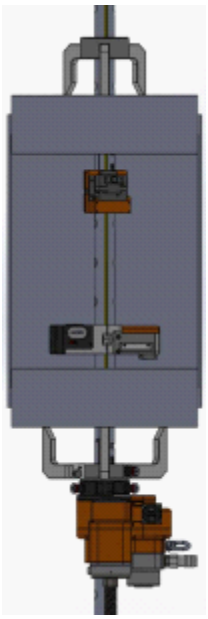


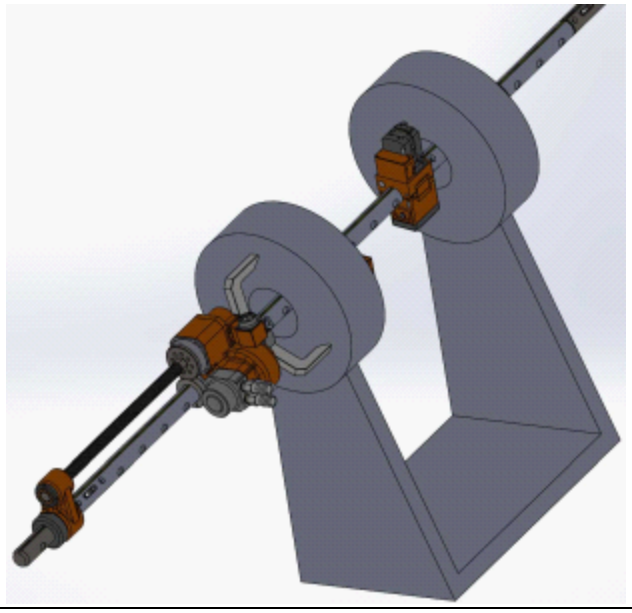


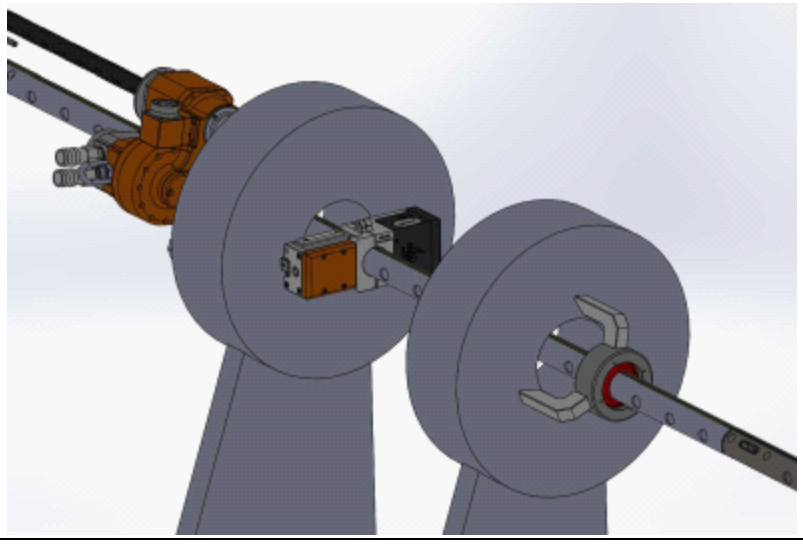






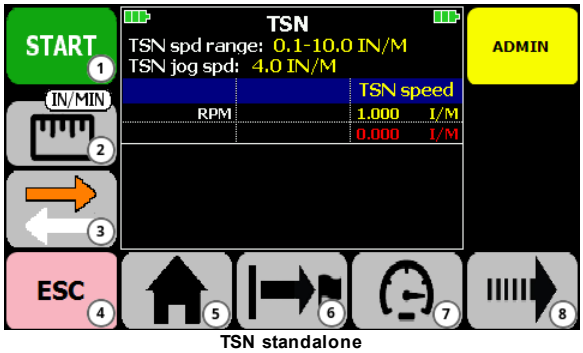




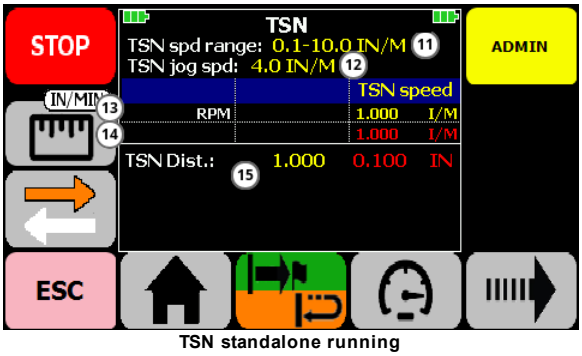


4.9.2 TSN

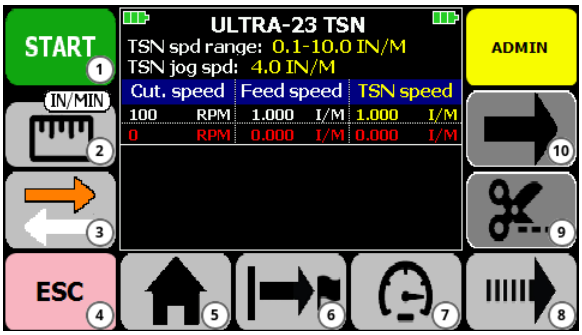
The TSN screen allows to control the third axis.



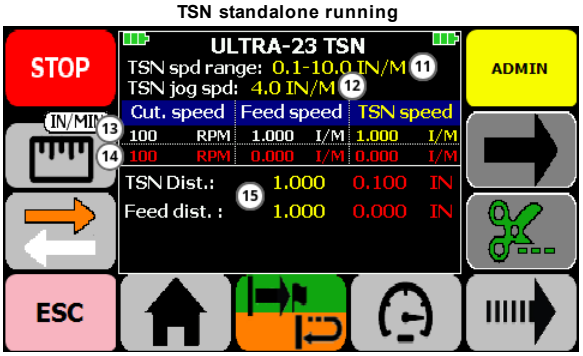
TSN standalone



TSN standalone running



TSN combined



TSN combined running

The TSN screen provides access to these functions:

(1) TSN start/stop
(2) TSN speed management configuration.
(3) TSN direction configuration.
(4) Back to the previous screen.
(5) Homing feature.
(6) Access to PRF configuration screen.
(7) Access to speed configuration screen.
(8) Access to jog speed configuration screen.
(9) Navigate to the cut screen.
(10) Navigate to the feed screen.

The Feed screen displays this information:

(11) Feed speed range (minimum-maximum)
(12) Selected jog speed.
(13) The requested cutting speed, feed speed as well as the facing speed.
(14) The actual cutting speed, feed speed as well as the facing speed.
(15) The programmed feed (PRF) parameters if applicable.

Status

Some buttons may change status depending on operations. See the tables below .

Feed button status


Feed is stopped.


Feed is running.


Feed is not running and the limit is reached.


Feed is running and the limit is reached.

Cut button status


Cut is stopped.


Cut is running.

TSN direction button status


TSN reaches the home limit.


TSN reaches the home limit.


TSN reaches the max limit.


TSN reaches the max limit.

Jogging direction button status


Jogging is in normal direction.


Jogging is in reverse direction.

PRF status


Refer to the programmed feed (PRF) for all possible statuses.

Homing


Homing is deactivated.


Homing is configured.


Homing is running.


TSN reaches the home limit.

- There is no cutting and feed axis w hen the TSN is connected in standalone.
- The cutting must be running to be able to start the TSN. (Combined mode only)

4.9.2.1 Parameters

User configuration for the TSN parameters.

- Press the center button on the remote control from the TSN screen to access parameters.

User TSN Setup Screen

1 : HOME BACKLASH

Due to mechanical stress, it is possible that there is play in the feed drive mechanism. This play can be compensated by specifying a value for this parameter in order to return to the starting position w ith better precision.

2 : HIGH SPEED

High speed configuration used for:

- Return to initial position.
- Movement speed w hen returning to initial position during a PRF.

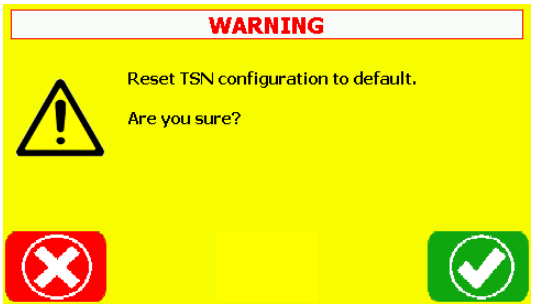
4 : SYNCHRO START

This option allow s staring/stopping the feed and facing simultaneously.

Reset to default

This function resets the TSN parameters to their default values.

When restoring default parameters, the user will be asked to confirm their choice. Press the **GREEN** button to confirm or the **RED** button to cancel.



WARNING: Restoring to default parameters is irreversible.

4.9.2.2 Start/Stop

This function allows to control the TSN operations such as manual machining, homing and when PRF is configured.

START **Status:** The TSN is stopped.
Action: Press the button to start the TSN.
Reaction: The TSN starts at the requested speed.

STOP **Status:** The TSN is running.
Action: Press the button to stop the TSN.
Reaction: Pause on the ongoing machining.

- In combined mode, If the cut is not running, a confirmation will be requested to start the pump and or the cutting motor.
- It is not possible to activate homing and PRF at the same time.
- The machining can be paused and resumed during the PRF machining.

4.9.2.3 Speed management

This function allows the configuration of the speed management.

The TSN speed can be managed in two modes: distance per minute IN/MIN or distance per revolution IN/REV. Simply press the button to toggle between modes.

Distance per minute:

In this mode, the TSN speed is independent of the cuttings speed. Both speeds can be configured individually.

Distance per revolution:

In this mode, the TSN speed is automatically adjusted to the cutting speed.

- These modes also applied for CM and MM units.
- The actual running speed of the TSN is always displayed in IN/MIN.
- The distance per revolution mode is not available if the speed controller is deactivated.

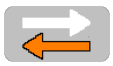
WARNING: The cutting speed will have an impact on the TSN speed if the speed management is configured in IN/REV. In this mode, the TSN speed is automatically recalculated based on the cutting speed. The cutting speed range will also be adjusted according to the TSN speed configuration.

4.9.2.4 Direction

This function allows to configure the tsn direction.

Feed direction configuration

Status: The TSN direction is configured to move to the max position.
Action: Press the button to toggle the TSN direction.
Reaction: The TSN direction will be configured to move to the home position.



Status: The TSN direction is configured to move to the home position.
Action: Press the button to toggle the TSN direction.
Reaction: The TSN direction will be configured to move to the max position.

- The feed direction can be toggled while the machining is in progress except if programmed feed (PRF) is configured.
- It is not possible to change TSN direction while homing operation is in progress.
- A red dot will appear on the feed direction button if the home or max limit are reached.

4.9.2.5 Homing

This function allows the TSN to position itself to the home position.

Procedure for homing:

1. Press on the home button until it turns amber.
2. Press on the start button and wait until it returns to the home position.

Status

 Homing is deactivated.

 Homing is configured.

 Homing is running.

 TSN reaches the home limit.

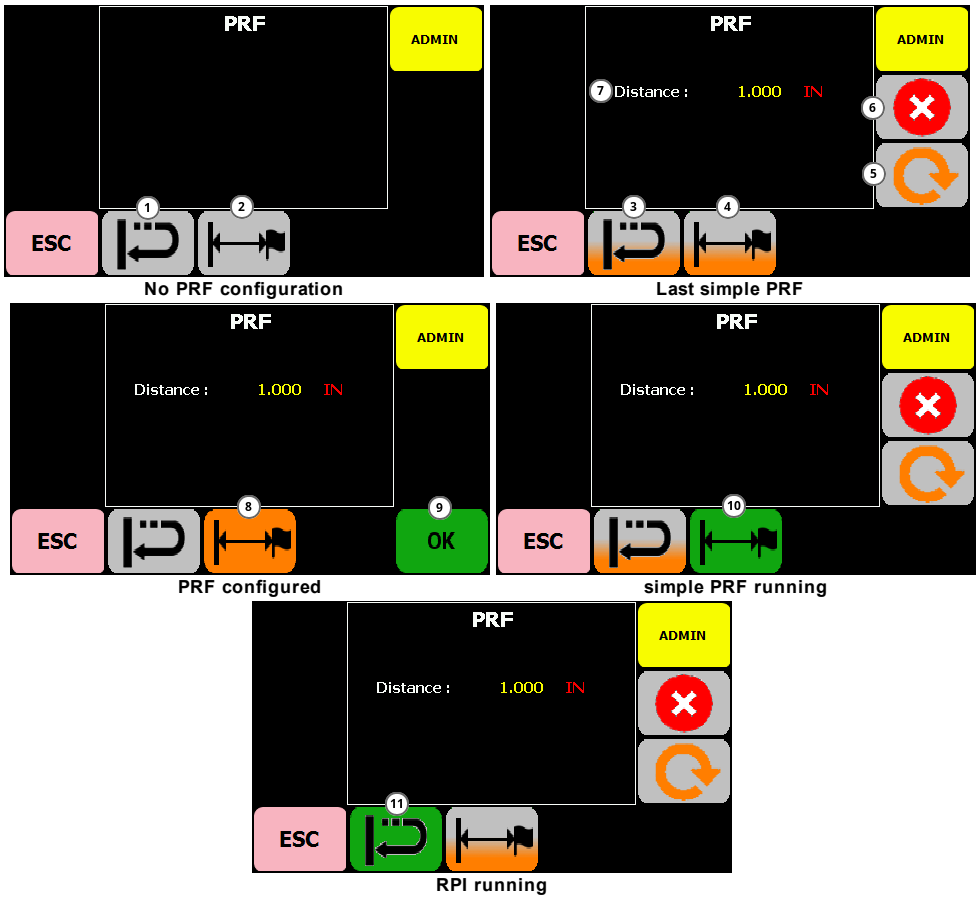
- It is not possible to change TSN direction while homing operation is in progress.
- It is not possible to configured PRF while homing operation is in progress.
- It is possible to cancel the homing operation by pressing the stop or the home button.
- The homing speed uses the HIGH SPEED parameter setting.

4.9.2.6 Programmed feed

This function allows you to configure the programmed feed (PRF).

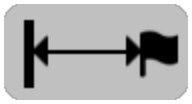
It is possible to move the TSN to a predetermined distance from a given speed and stop once this distance is reached.

Screens

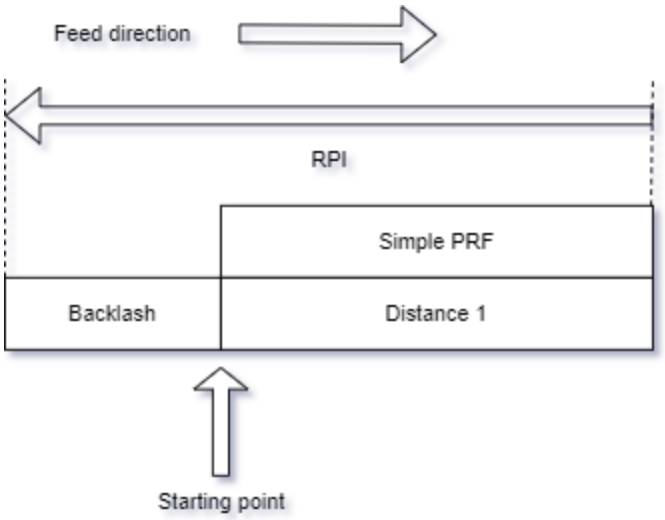


(1) Return to initial position is disabled. Press the button to activate it.
(2) Simple PRF is inactive. Press the button to configure it.
(3) The return to the initial position is configured.
(4) The simple PRF is configured. Press the button to reconfigure it.
(5) Reconfigures the PRF with the previous one.
(6) Deletes the PRF already configured and aborts the current PRF if running.
(7) Simple PRF distance or last known distance.
(8) Simple PRF is activated.
(9) Confirm and save any PRF changes.
(10) PRF is currently running.
(11) The return to the initial position is in progress.

Simple PRF



The simple PRF is made up of a single distance to be covered, optionally followed by a RPI. It is also possible to configure the backlash parameter in order to overcome mechanical constraints.



Simple PRF diagram

Simple PRF configuration steps:

1. Press the simple PRF button.
2. Enter the distance.
3. Press the return to initial position button if required.
4. Press the OK button to confirm and save the programmed feed parameters.

- Pressing the "**ESC**" button returns to the previous screen without saving the changes.

Status

Some buttons may change status depending on PRF operations. The status is visible on the feed screen and PRF screen. See the tables below.

PRF button status


PRF is inactive.


Simple PRF is configured.


Simple PRF is configured with return to the initial position.


Simple PRF is running.


Simple PRF is running and the return to initial position is standby.


Simple PRF is complete and the return to initial position is running.

Notes

- The RPI speed uses the HIGH SPEED parameter setting.
- It is possible to add or remove the RPI option while the PRF is running.
- Any changes in the parameter configuration while PRF is running aborts the current operation.
- It is possible to pause and resume PRF by pressing the stop/start button.
- It is not possible to change the TSN direction when PRF is running.
- It is not possible to perform homing procedure while PRF is running.
- It is possible to change the TSN speed while PRF is running.
- In combined mode, the feed RPI operation has priority over TSN RPI operation.

4.9.2.7 Speed

This function allows changing the TSN speed.

Press on the button and select the desired speed described in the parameter entry screen.

- The actual running TSN speed is always displayed in IN/MIN.
- The new TSN speed is immediately applied if machining is in progress.
- The user will have to confirm the selection if the speed is too high.

WARNING: The cutting speed will have an impact on the TSN speed if the speed management is configured in IN/REV. In this mode, the TSN speed is automatically recalculated based on the cutting speed. The cutting speed range will also be adjusted according to the TSN speed configuration.

4.9.2.8 Jog selection

This function allows changing the jog speed configuration.

Jog speed selection screen

To select a defined jog speed:

They are 4 default settings available to choose from.

1. Press on any checked button on the left to select the desired jogging speed.
2. Press on the "**OK**" button to confirm the selection.

To edit default jog speed:

The 4 default jog settings can be modified by the user.

1. Press on any edit button on the right of the screen.
2. From the parameter entry screen, select the desired speed.
3. Press on the "**OK**" button to confirm the changes.

To change the jog direction:

1. Press on the jog direction button on the bottom of the screen.
4. Press on the "**OK**" button to confirm the changes.

Status: The jog direction is in normal direction
Action: Press the button to change the jog direction.
Reaction: The jog direction switch to reversed.

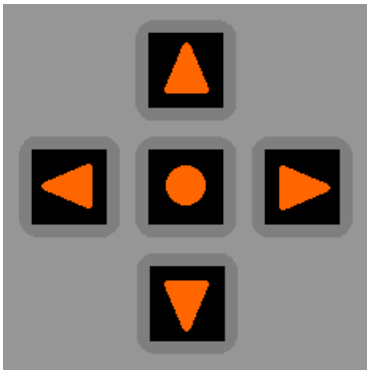
Status: The jog direction is in reversed direction
Action: Press the button to change the jog direction.
Reaction: The jog direction switch to normal.

TSN screen	Jog arrows	Up arrow	Down arrow
	NORMAL	Moving to the max position.	Moving to the home position.
	REVERSE	Moving to the home position.	Moving to the max position.

- Pressing the "**ESC**" button discards any changes.

4.9.2.9 Jogging

The TSN jog allows you to temporarily start and stop the TSN to adjust the motor position. Jog is operated using the arrows on the remote control. There are two jog modes. Pulse jog and continuous jog.



 Starts pulse jog or continuous jog to max position.

 Starts pulse jog or continuous jog to home position.

 Used for feed jog.

 Used for feed jog.

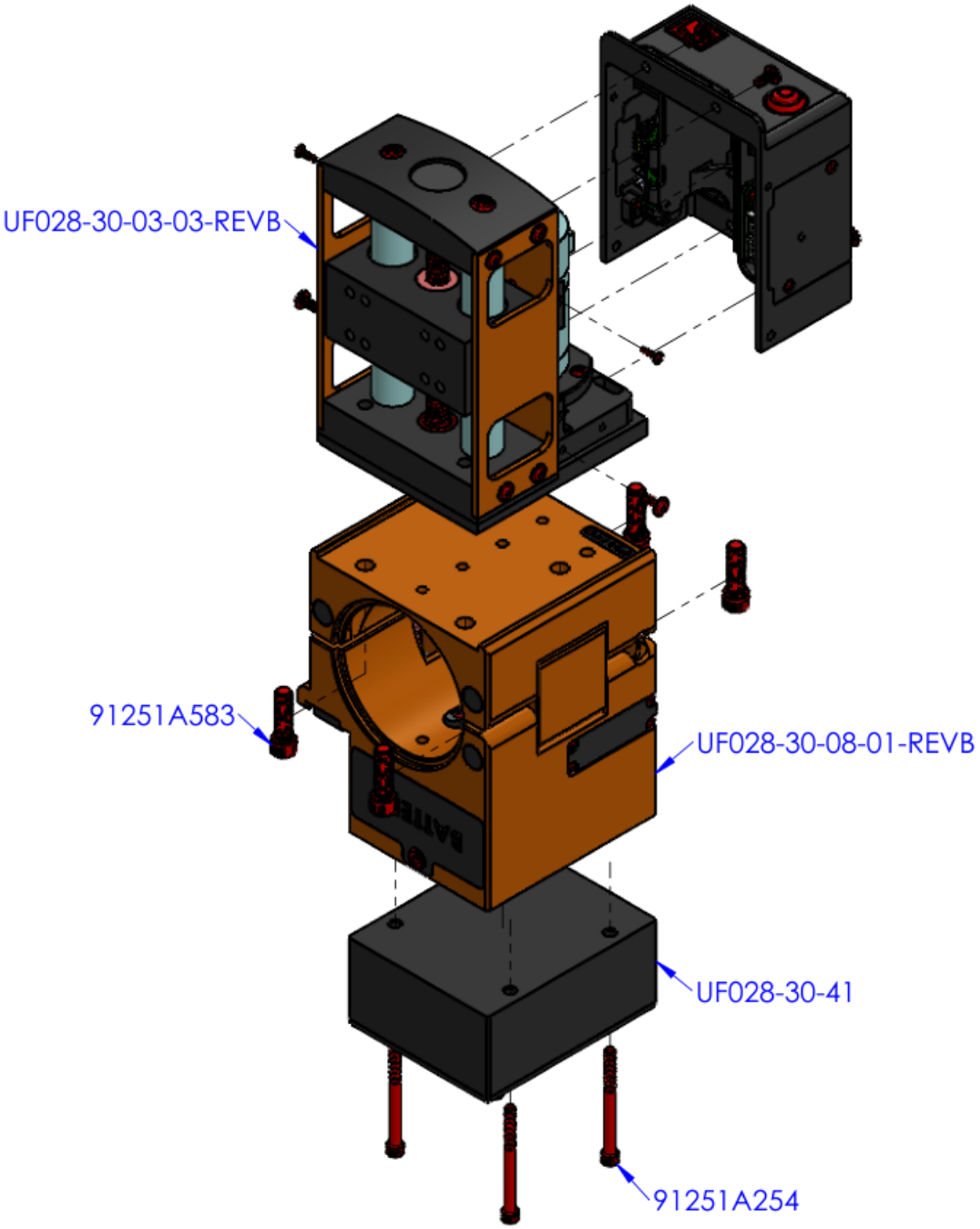
- Pulse jog involves momentarily pressing the arrow buttons.
- Continuous jog consists of pressing and holding the arrow buttons then releasing the buttons.

4.9.3 Troubleshooting Guide

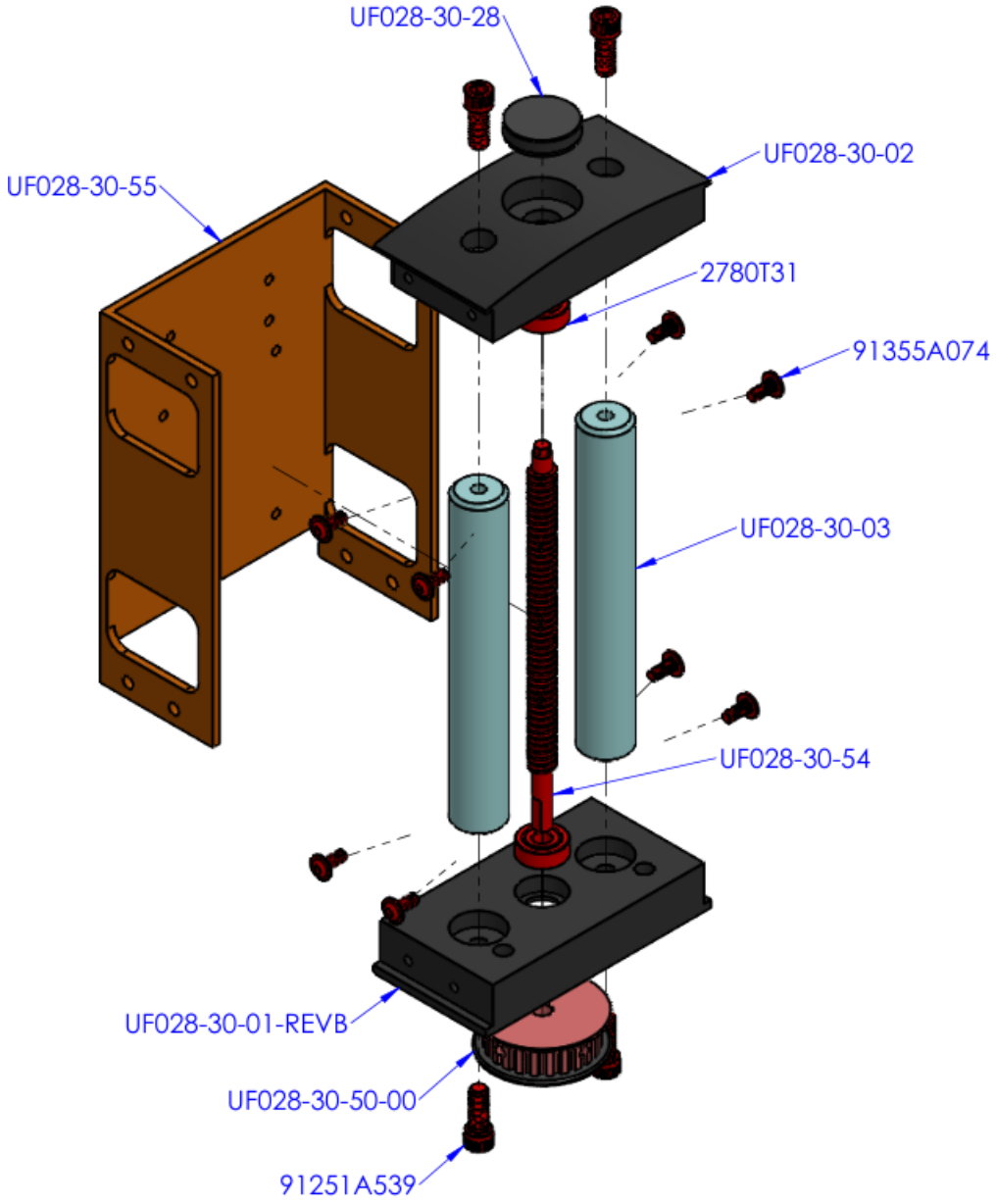
Trouble	Possible causes	Corrective action

4.9.4 Spare parts list

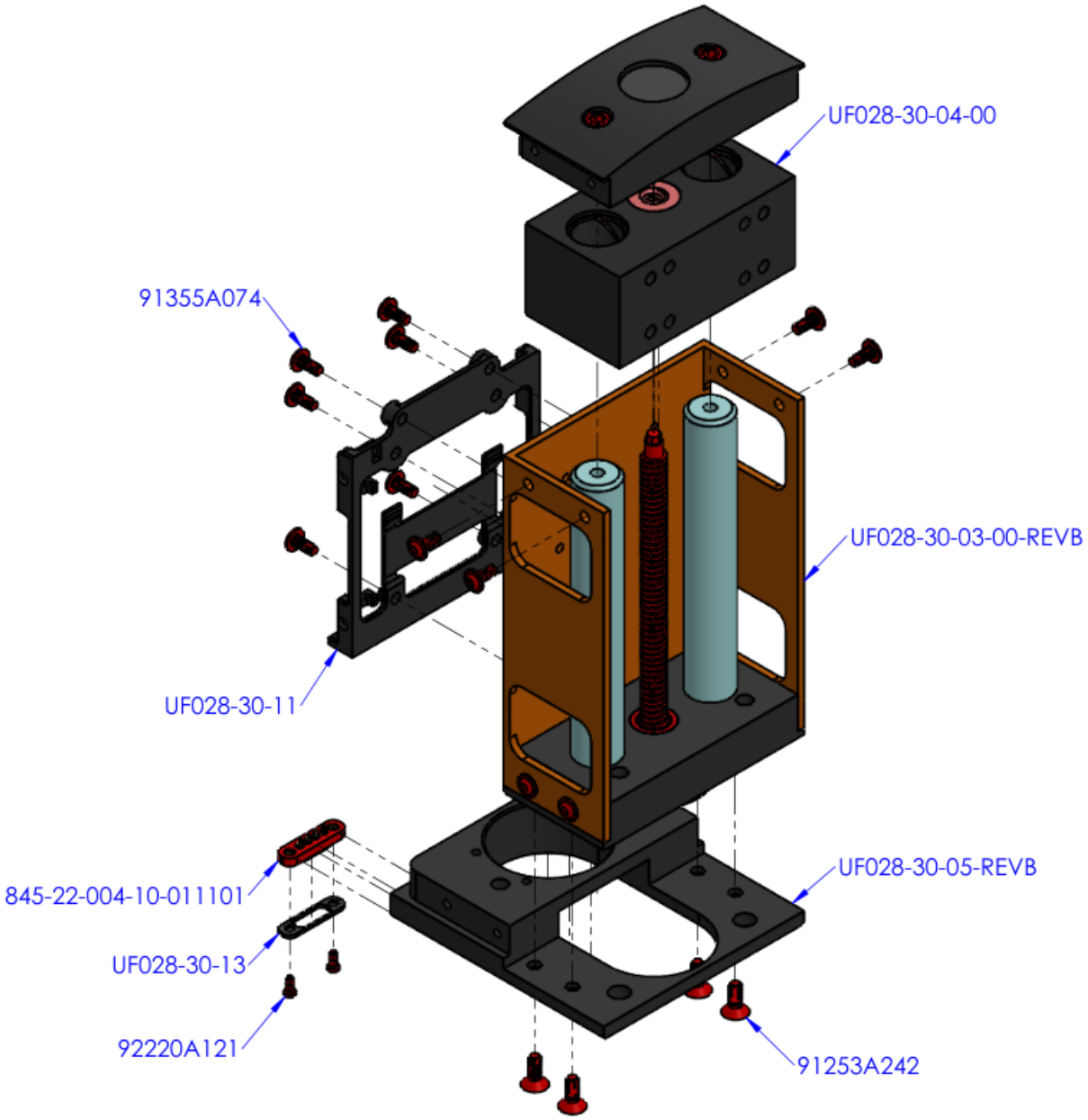
4.9.4.1 TSN-3000-REVB



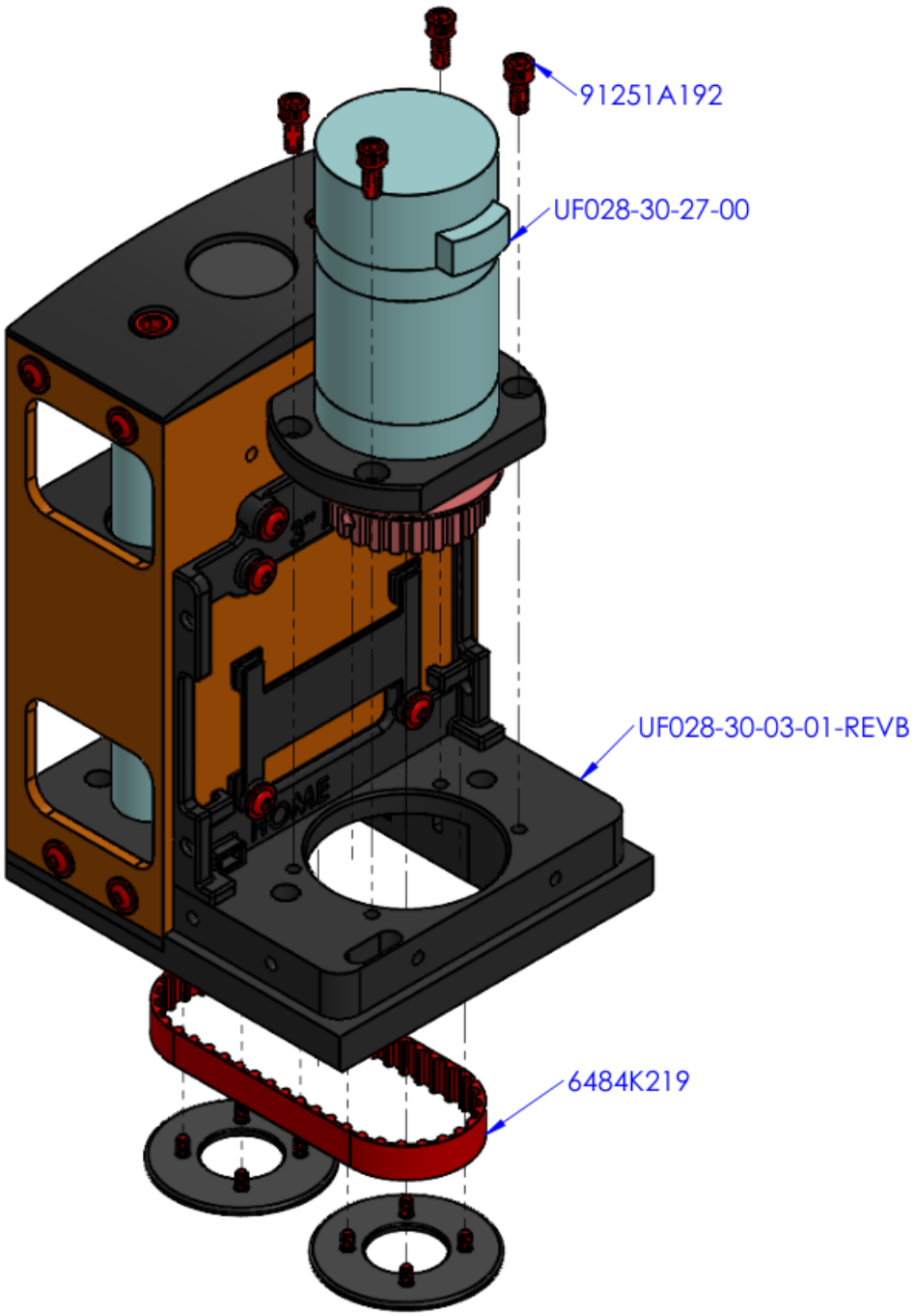
Part Number	Description	Qty
UF028-30-08-01-REVB	TSN collar assembly (REVB)	1
UF028-30-03-03-REVB 3"	Sliding module assembly (REVB)	1
UF028-30-41	8 pounds counterw eight	1
91251A254	SHCS #10-24NC X 2 1/4"LG.	4
91251A583	SHCS 5/16"-18NC X 1"LG.	4



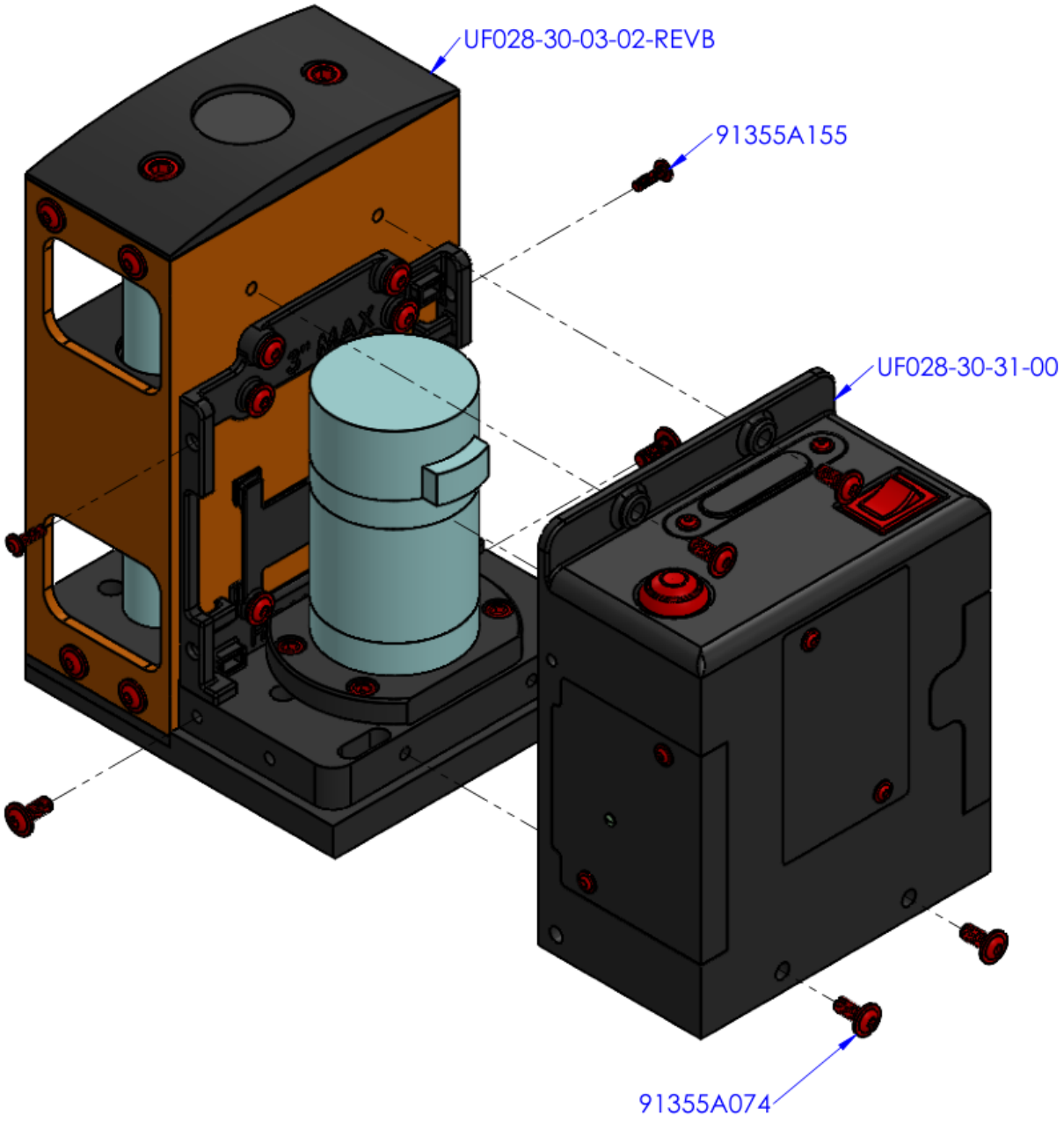
Part Number	Description	Qty
UF028-30-55	3" Guard slide module	1
UF028-30-01-REVB	Sliding base (REVB)	1
UF028-30-03	Sliding holder rod 3"	2
UF028-30-02	Top slide module	1
2780T31	BEARING 1602-2Z	2
UF028-30-54	Lead screw (3 inch travel)	1
UF028-30-50-00	Timing belt pulley 1/4" drive	1
91355A074	FBHS #8-32NC X 3/8"	8
91251A539	SHCS 1/4"-20NC X 5/8"	4
UF028-30-28	Top slide cap	1



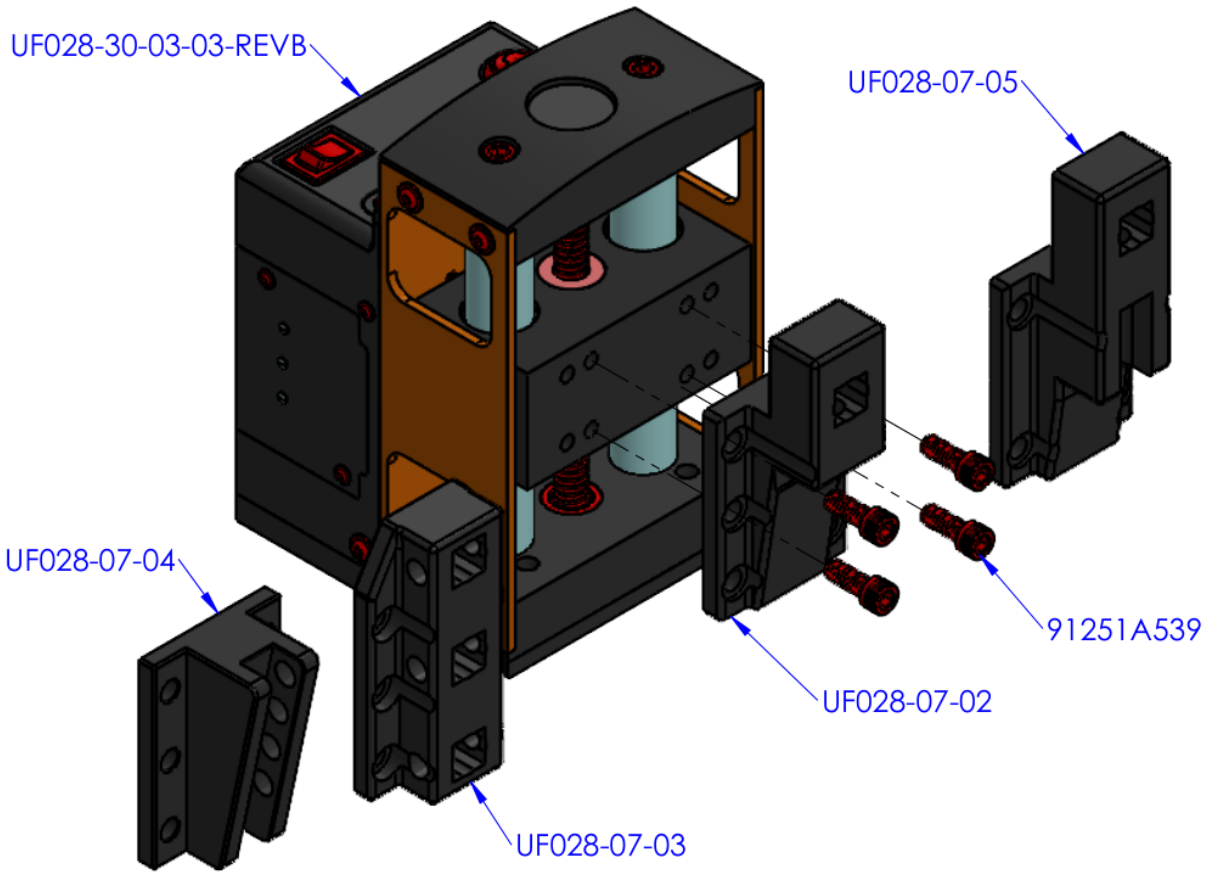
Part Number	Description	Qty
UF028-30-05-REVB	Sliding motor mount (REVB)	1
UF028-30-03-00-REVB	3" Sliding module (REVB)	1
91253A242	HDFHS #10-24UNC X 1/2"LG.	4
UF028-30-04-00	Mobil tool holder	1
UF028-30-11	Limit sensor support	1
91355A074	FBHS #8-32NC X 3/8"	6
845-22-004-10-011101	Spring-loaded connector 4 pins (male)	1
UF028-30-13	Shim omniball (thin)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	2



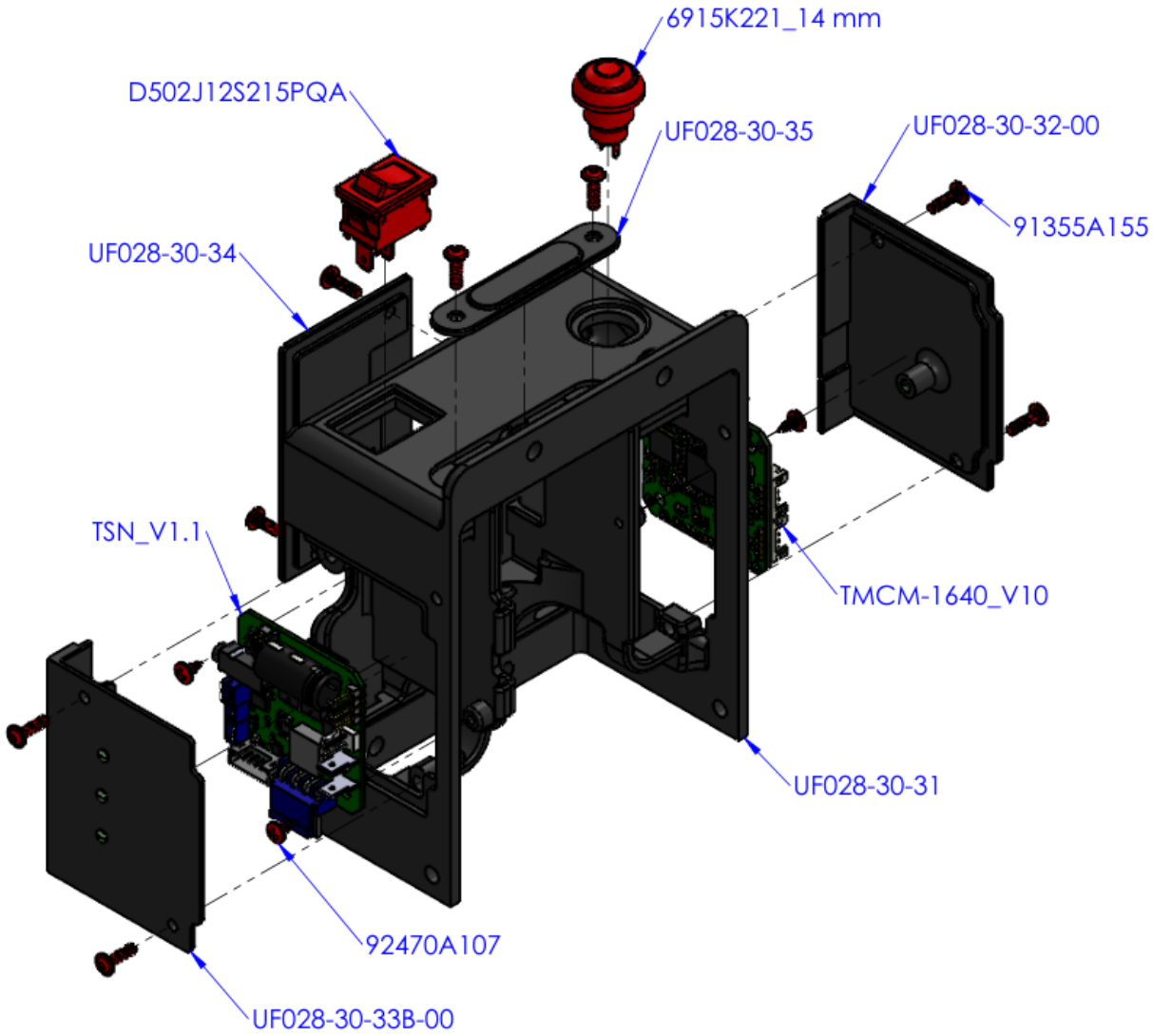
Part Number	Description	Qty
UF028-30-03-01-REVB	3" Sliding module w ith support (REVB)	1
UF028-30-27-00	Motor and reducer assembly	1
91251A192	SHCS #8-32NC X 3/8"LG.	4
6484K219	90XL037 timing belt	1



Part Number	Description	Qty
UF028-30-03-02-REVB	3" Motorization assembly (REVB)	1
UF028-30-31-00	3" Electrical control box	1
91355A074	FBHS #8-32NC X 3/8"	6
91355A155	FBHS #4-40UNC X 3/8"	2

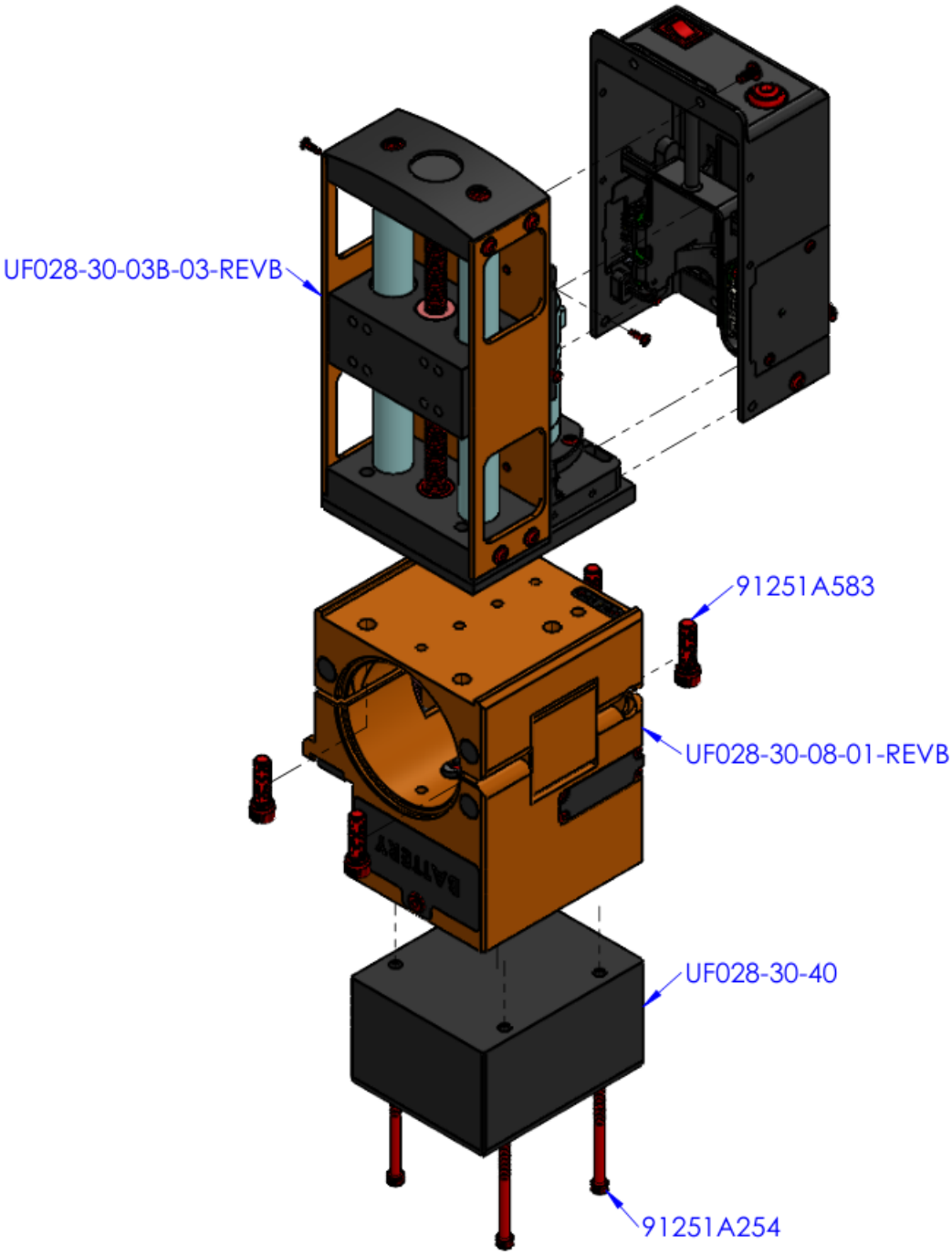


Part Number	Description	Qty
UF028-30-03-03-REVB	3" sliding module assembly (REVB)	1
UF028-07-02	raised tool holder	1
91251A539	SHCS 1/4"-20NC X 5/8"	4
UF028-07-03	Tool holder 3 positions (straight)	1
UF028-07-04	inclined tool holder	1
UF028-07-05	Elongated raised tool holder	1

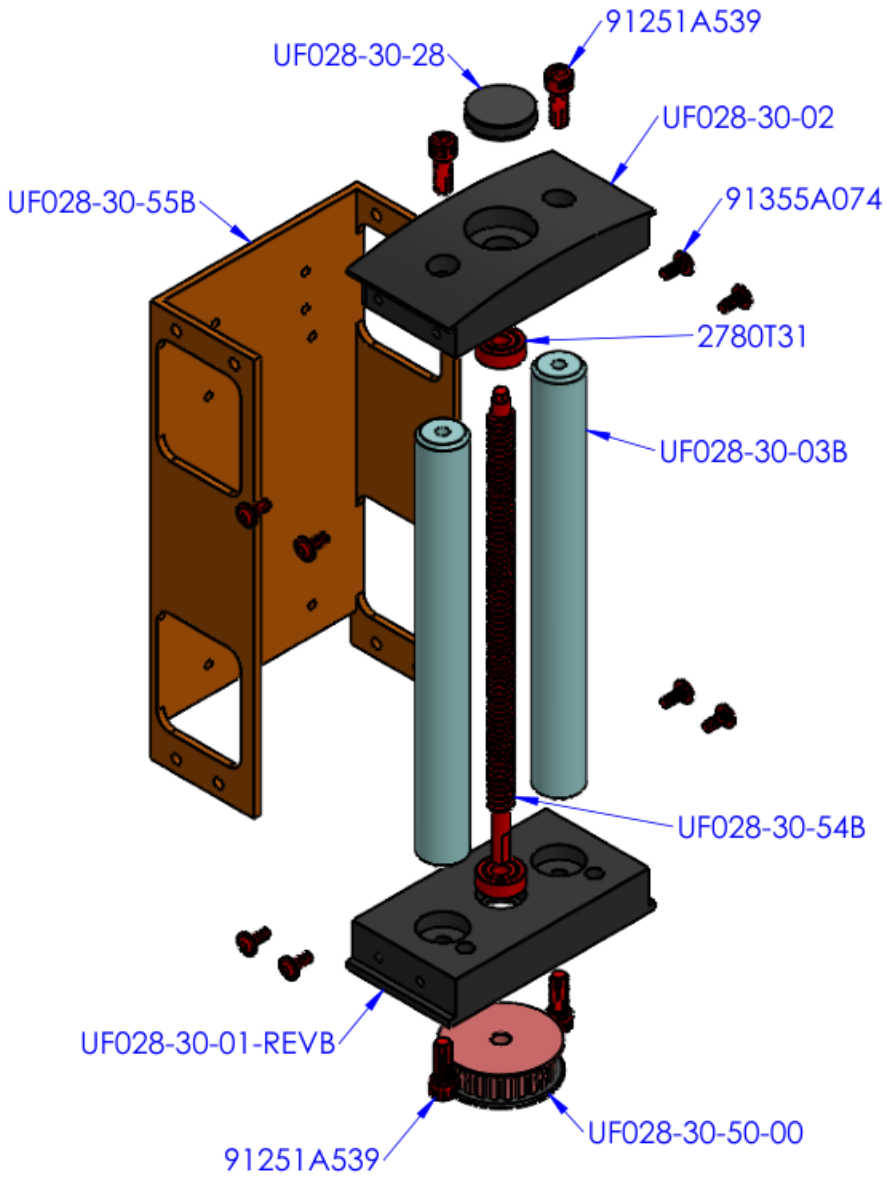


Part Number	Description	Qty
UF028-30-31	3" Electrical control box	1
UF028-30-34	Back access panel	1
UF028-30-35	Antenna access panel	1
D502J12S215PQA	Rocker switch	1
6915K221_14 mm	User push button	1
TSN_V1.1	TSN control board UF V1.1	1
TMCM-1640_V10	Motor control board	1
92470A107	Phillips rounded head screw #4 X 1/4"	4
91355A155	FBHS #4-40UNC X 3/8"	8
UF028-30-32-00	Motor control access panel	1
UF028-30-33B-00	TSN control access panel	1

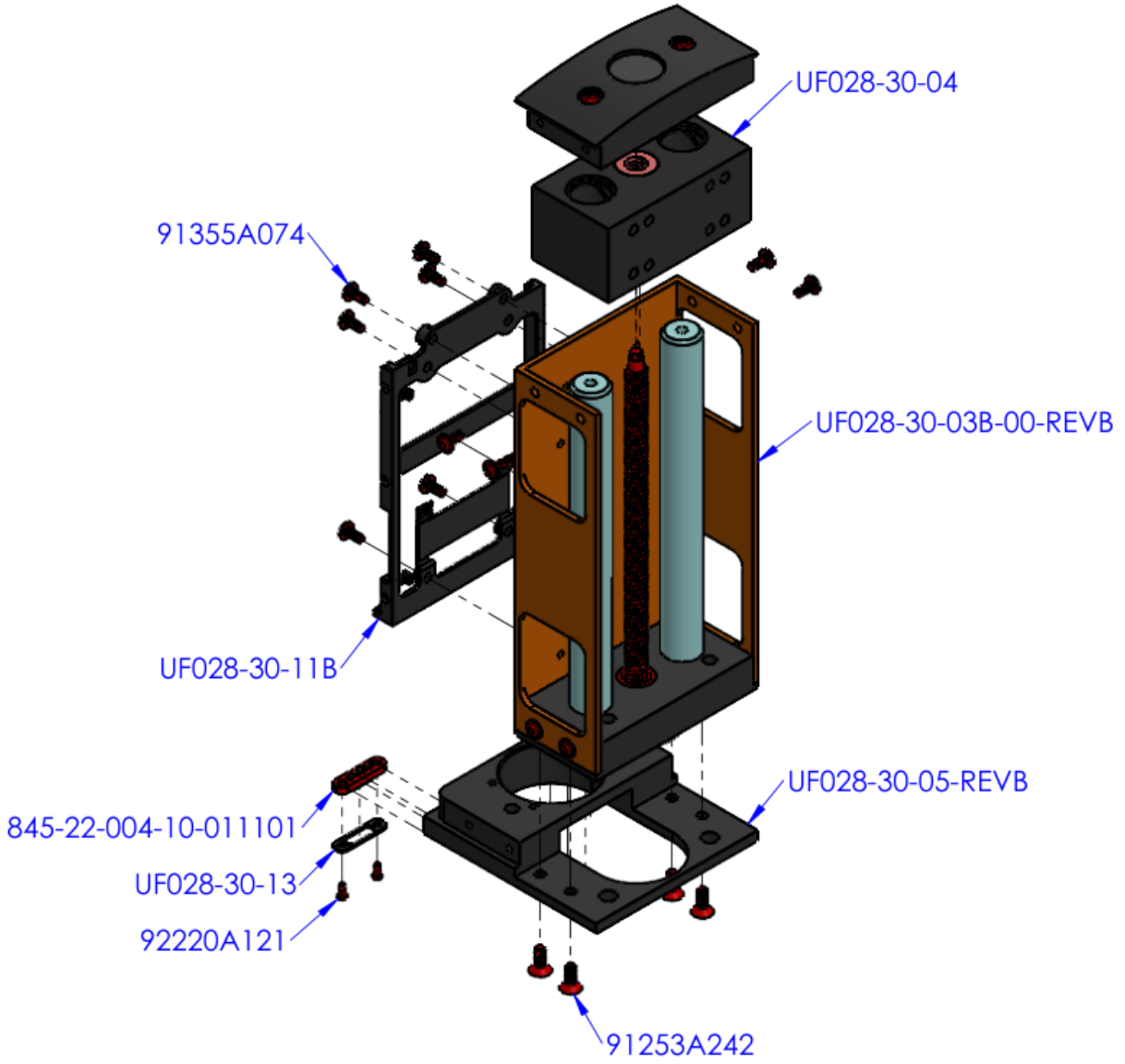
4.9.4.2 TSN-5000-REVB



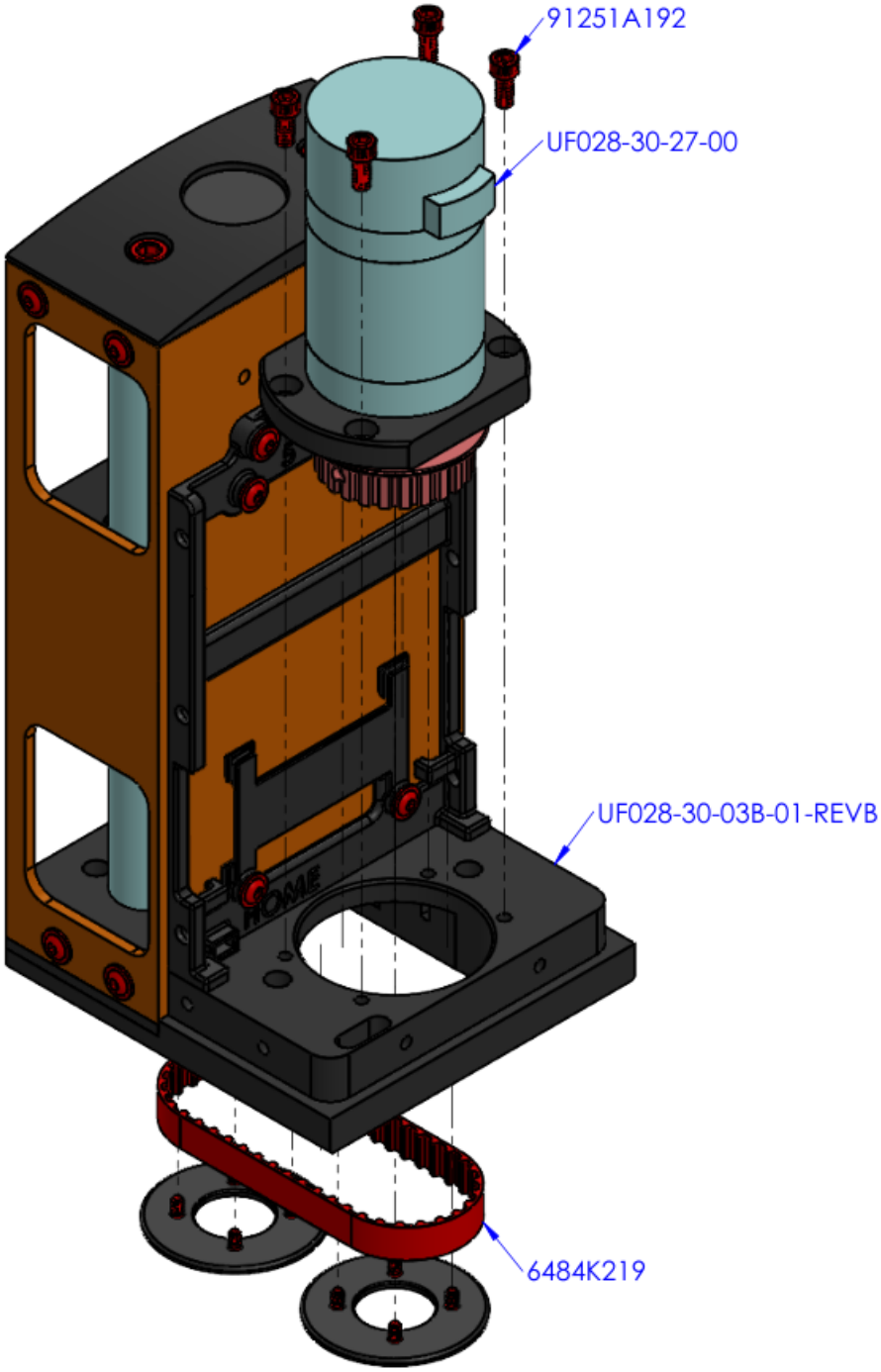
Part number	Description	qty
UF028-30-08-01-REVB	TSN collar assembly (REVB)	1
UF028-30-03B-03-REVB	5" Sliding module assembly (REVB)	1
UF028-30-40	10 pounds counterw eight.	1
91251A254	SHCS #10-24NC X 2 1/4"LG.	4
91251A583	SHCS 5/16"-18NC X 1"LG.	4



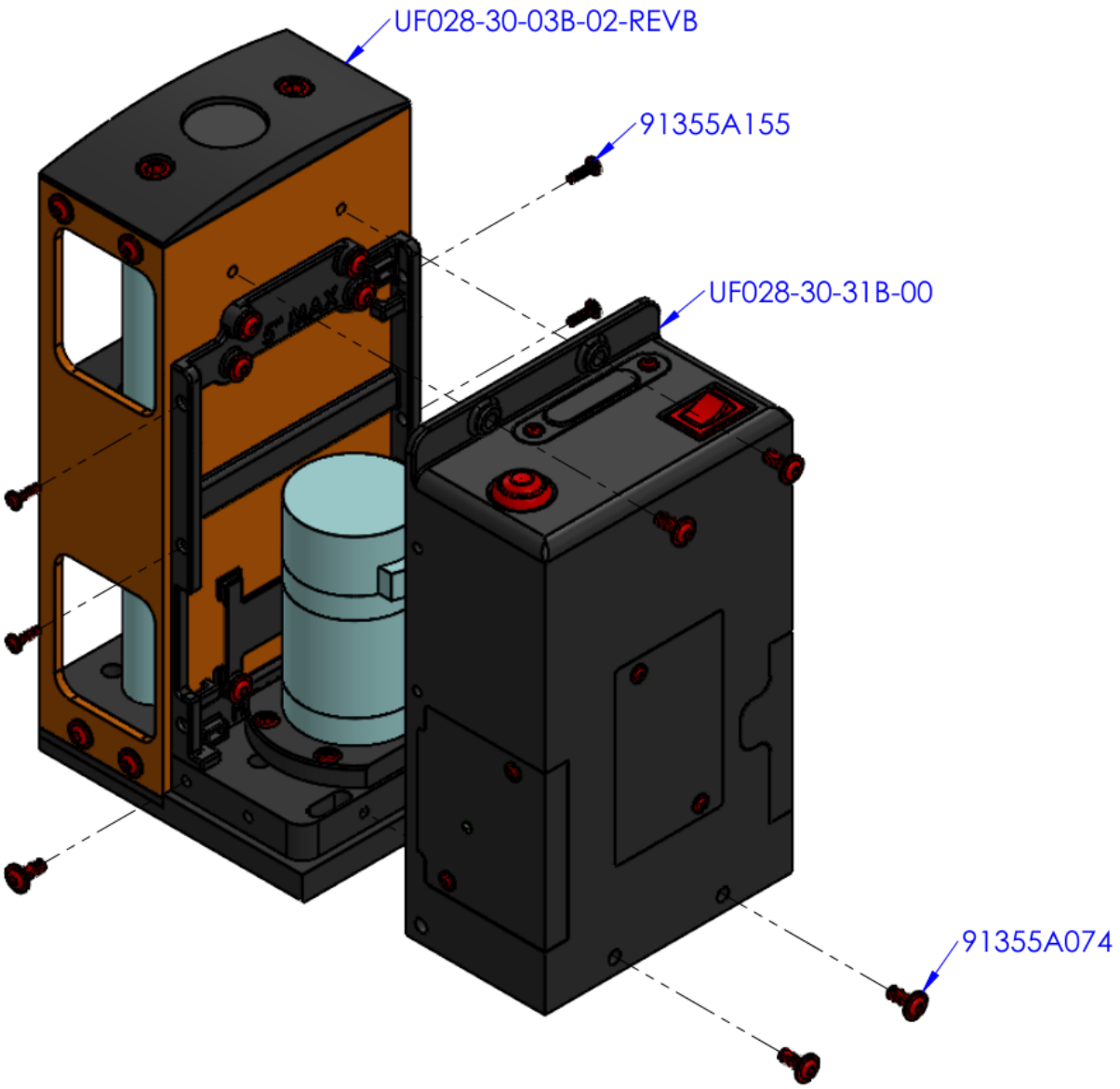
Part Number	Description	Qty
UF028-30-54B	Lead screw (5 inch travel)	1
2780T31	bearing 1602-2Z	2
UF028-30-01-REVB	Sliding base (REVB)	1
UF028-30-03B	Sliding holder rod 5"	2
91251A539	SHCS 1/4"-20NC X 5/8"	4
UF028-30-02	Top slide module	1
UF028-30-28	Top slide cap	1
UF028-30-50-00	Timing belt pulley 1/4" drive	1
UF028-30-55B	Guard	1
91355A074	FBHS #8-32NC X 3/8"	8



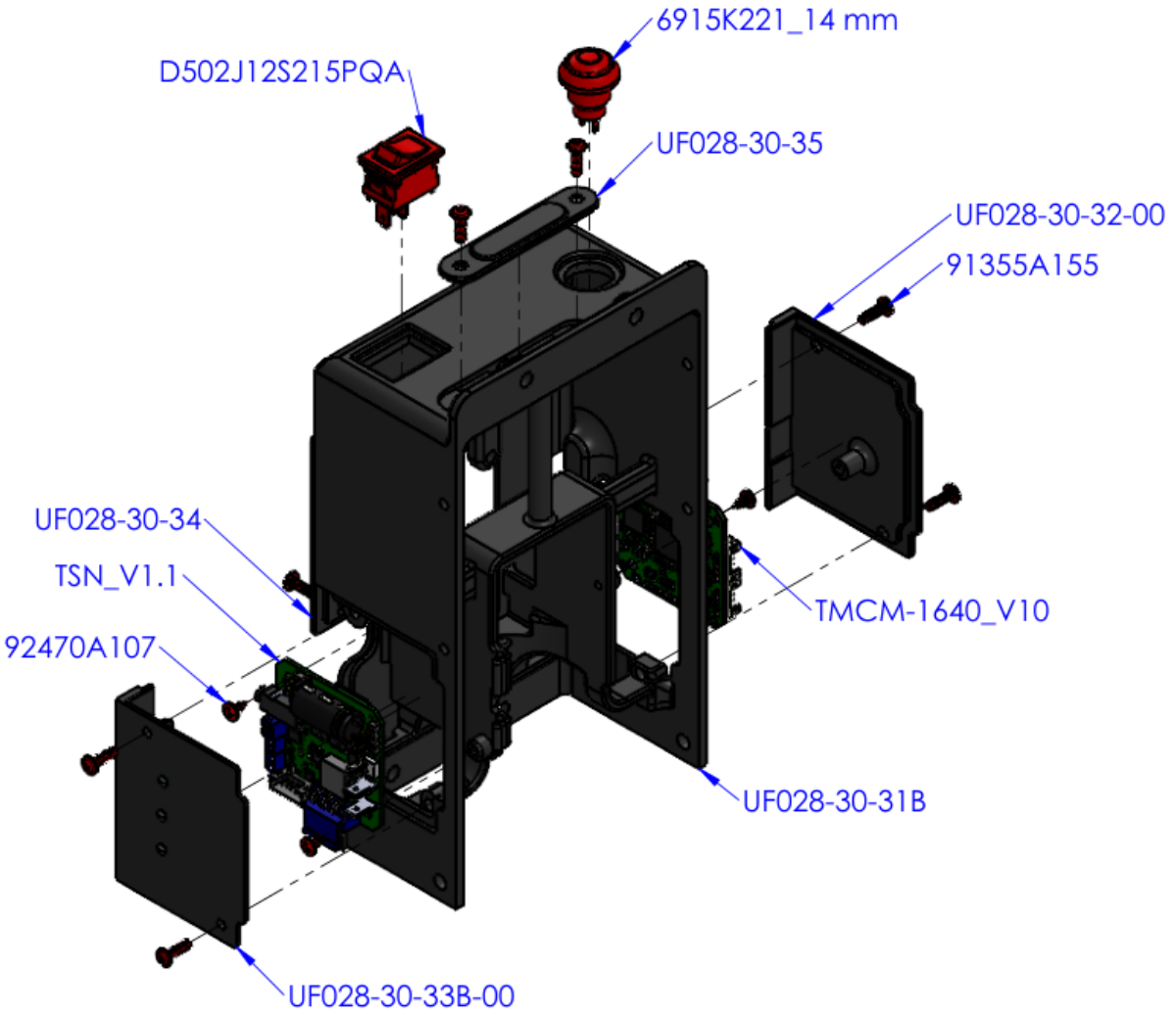
Part Number	Description	Qty
UF028-30-05-REVB	Sliding motor mount (REVB)	1
UF028-30-03B-00-REVB	5" Sliding module (REVB)	1
91253A242	HDFHS #10-24UNC X 1/2"LG.	4
UF028-30-04-00	Mobil tool holder	1
UF028-30-11B	Limit sensor support	1
91355A074	FBHS #8-32NC X 3/8"	6
845-22-004-10-011101	Spring-loaded connector 4 pins (male)	1
UF028-30-13	Shim omniball (thin)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	2



Part Number	Description	Qty
UF028-30-03B-01-REVB	5" Sliding module w ith support (REVB)	1
UF028-30-27-00	Motor and reducer assembly	1
91251A192	SHCS #8-32NC X 3/8"LG.	4
6484K219	90XL037 timing belt	1

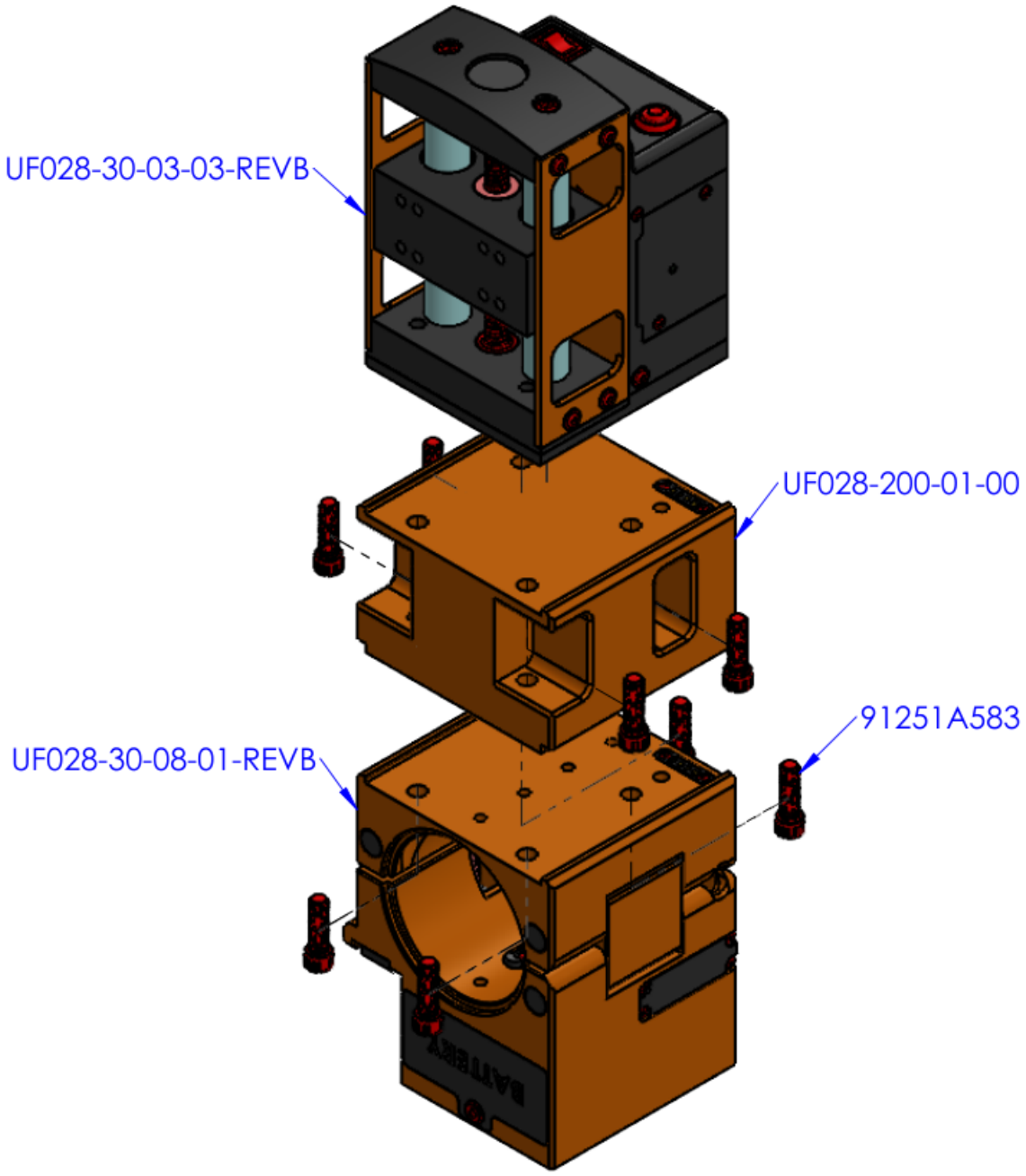


Part Number	Description	Qty
UF028-30-03B-02-REVB	5" Motorization assembly (REVB)	1
UF028-30-31B-00	5" Electrical control box	1
91355A074	FBHS #8-32NC X 3/8"	6
91355A155	FBHS #4-40UNC X 3/8"	4

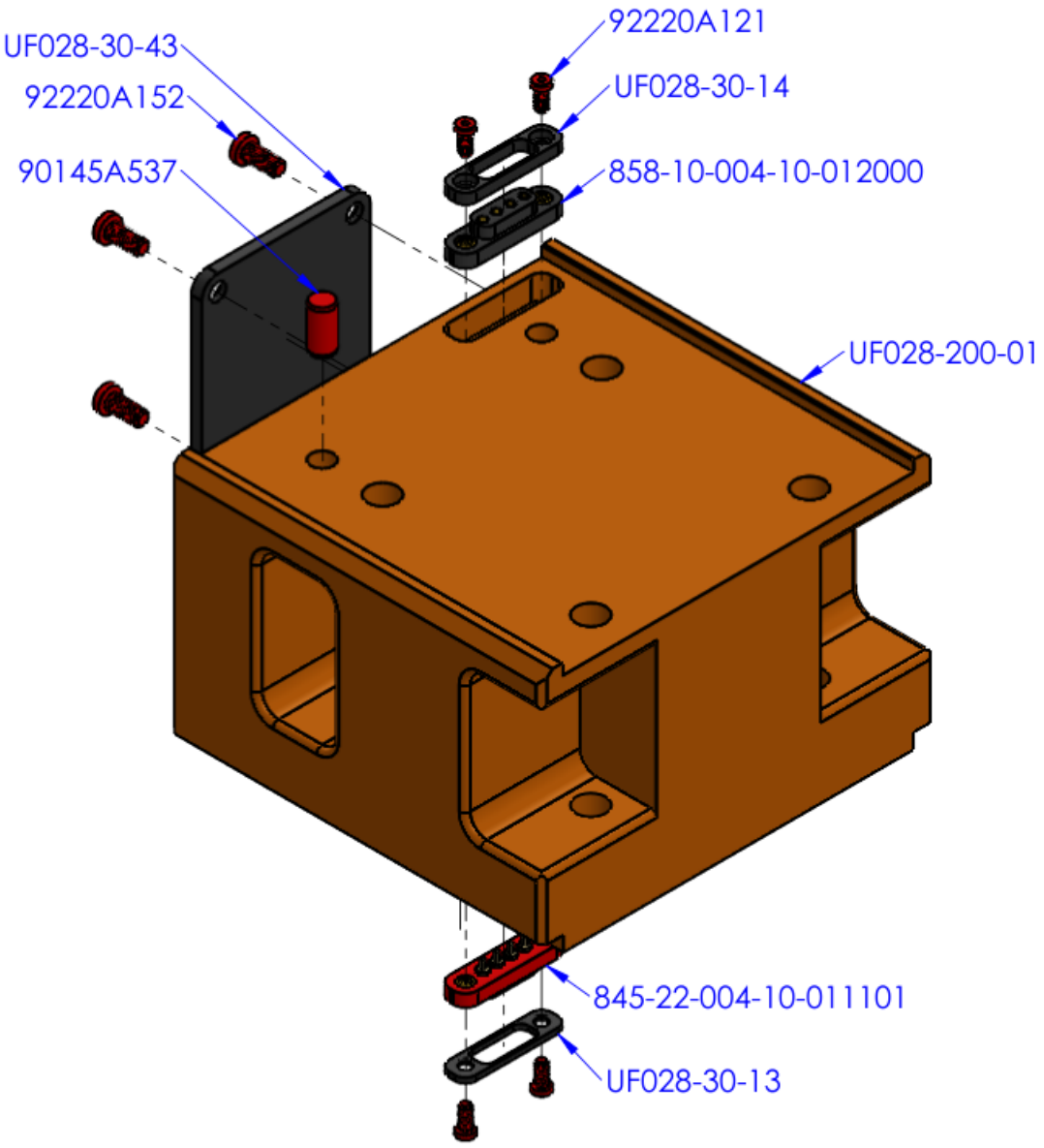


Part Number	Description	Qty
UF028-30-31B	5" Electrical control box	1
UF028-30-34	Back access panel	1
UF028-30-35	Antenna access panel	1
D502J12S215PQA	Rocker switch	1
6915K221_14 mm	User push button	1
TSN_V1.1	TSN control board UF V1.1	1
TMCM-1640_V10	Motor control board	1
92470A107	Phillips rounded head screw #4 X 1/4"	4
91355A155	FBHS #4-40UNC X 3/8"	8
UF028-30-32-00	Motor control access panel	1
UF028-30-33B-00	TSN control access panel	1

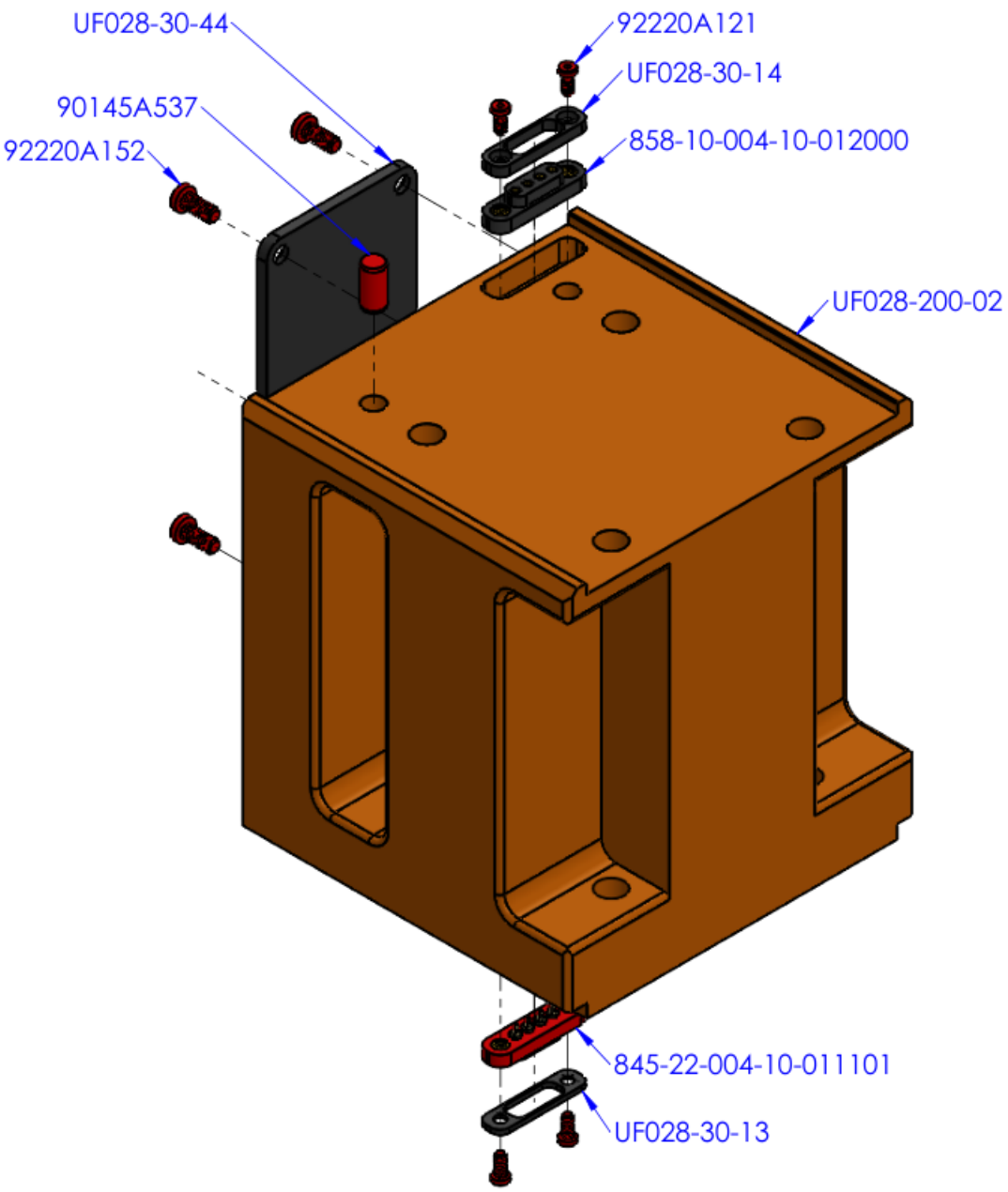
4.9.4.3 Common parts



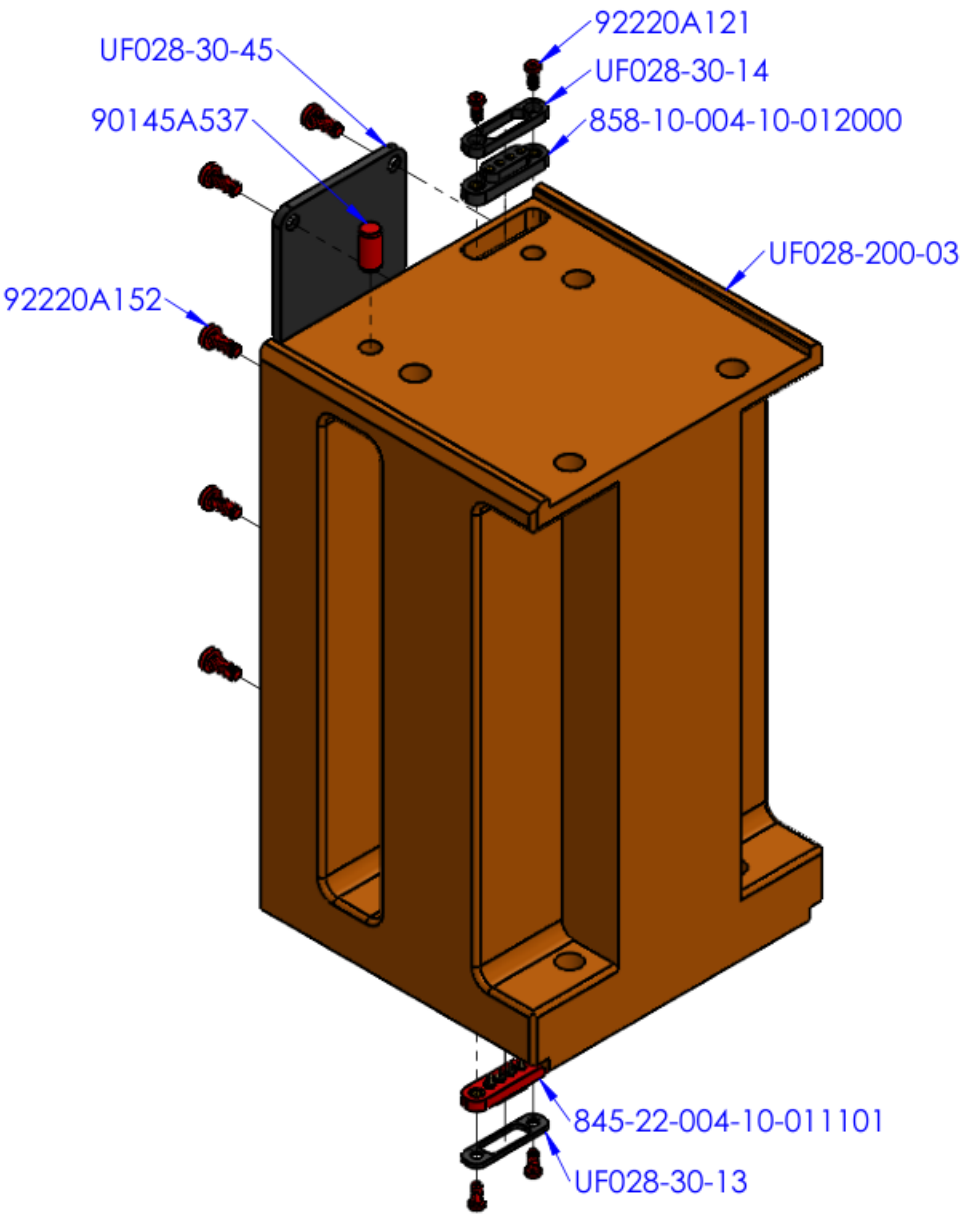
Part number	Description	qty
UF028-30-08-01-REVB	TSN collar assembly (REVB)	1
UF028-200-01-00	2 3/4" Extension	1
UF028-30-03-03-REVB	3" Sliding module assembly (REVB)	1
91251A583	SHCS 5/16"-18NC X 1"LG.	8



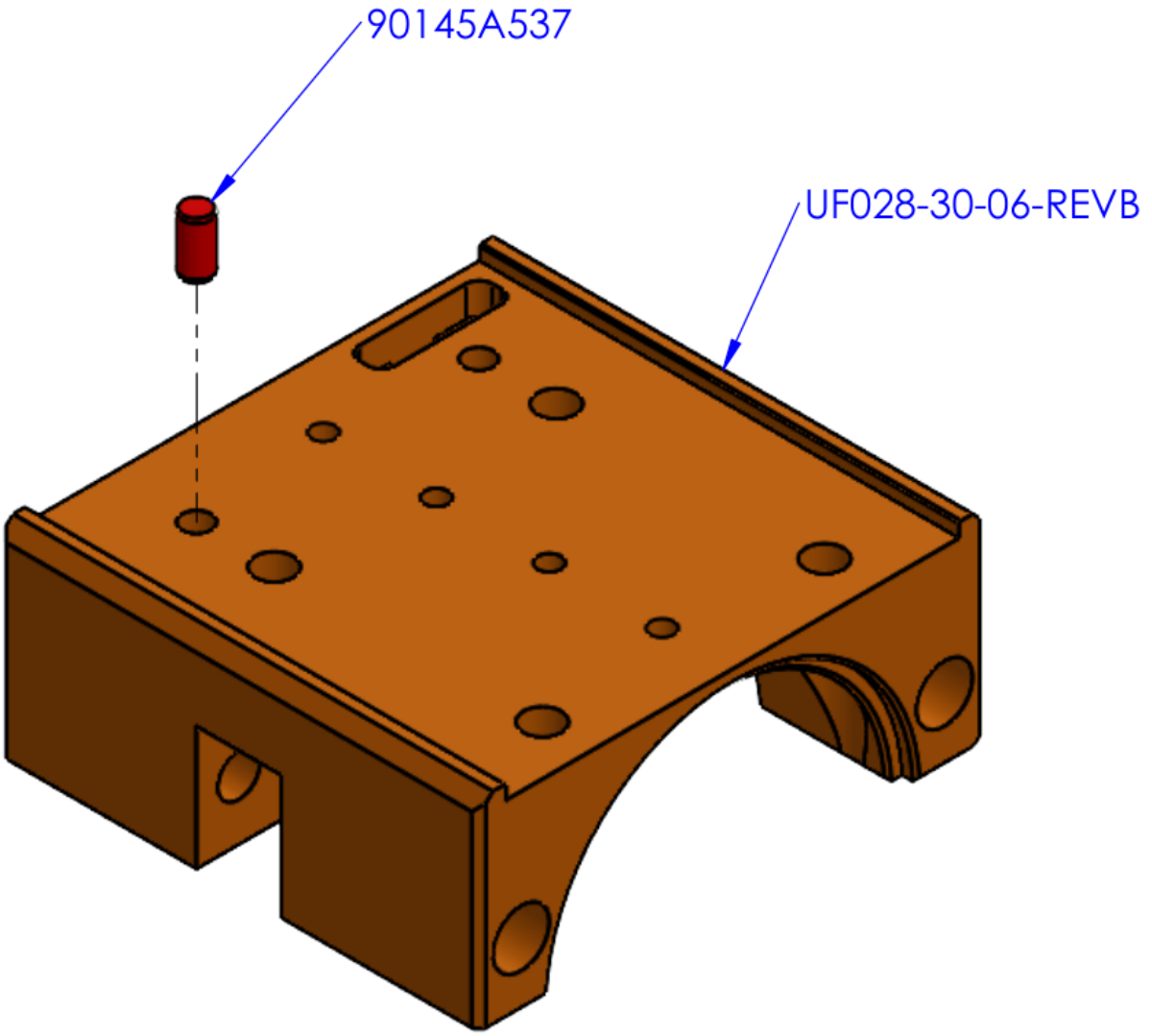
Part number	Description	qty
UF028-200-01	2 3/4" Extension	1
UF028-30-43	Wiring access panel	1
90145A537	Dow el pin 1/4" X 1/2"	1
858-10-004-10-012000	Spring-loaded connector 4 pins (female)	1
845-22-004-10-011101	Spring-loaded connector 4 pins (male)	1
UF028-30-13	Shim omniball (thin)	1
UF028-30-14	Shim omniball (female)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	4
92220A152	LPSHS #8-32NC X 3/8" LG.	4



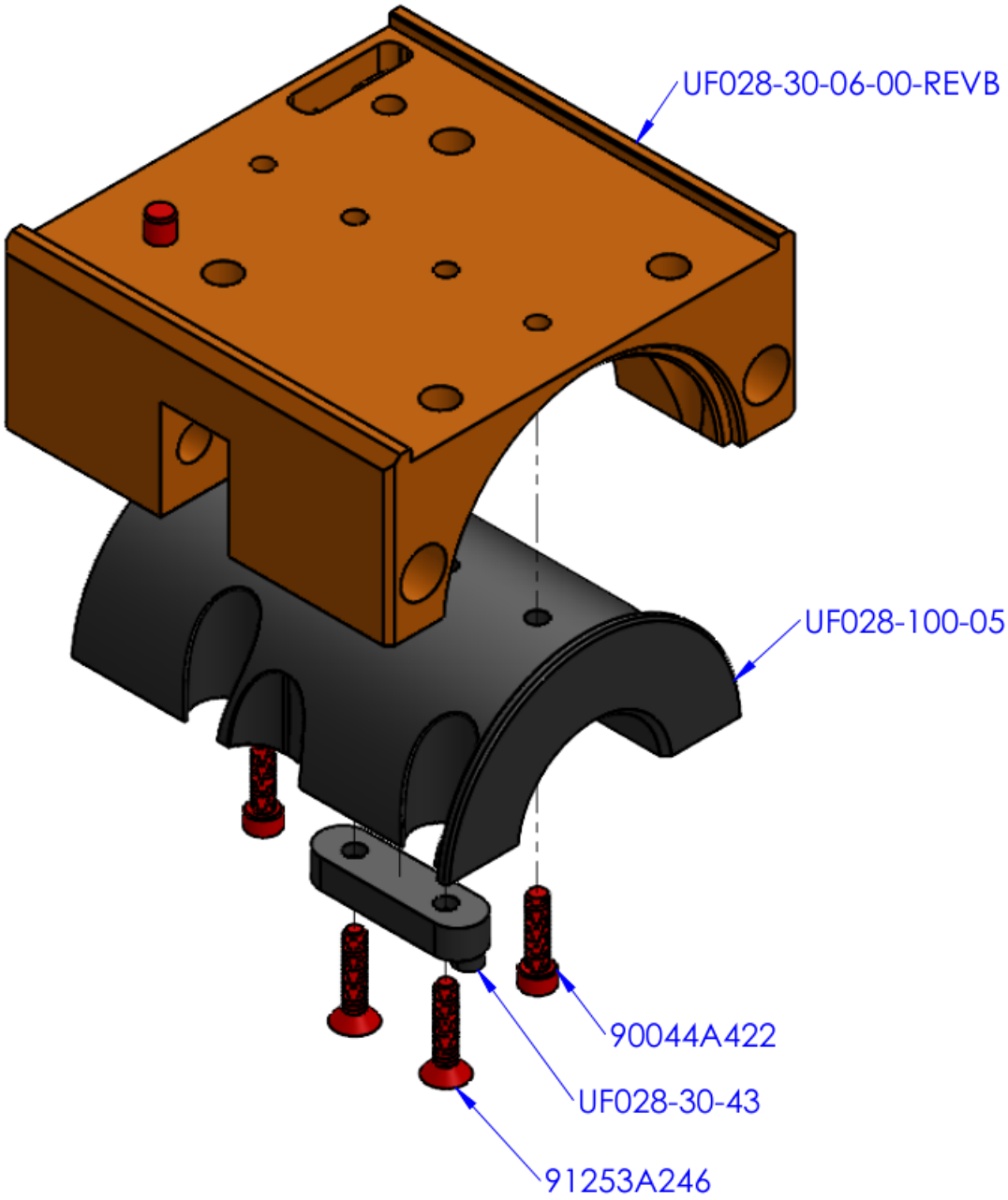
Part number	Description	qty
UF028-200-02	4 3/4" Extension	1
UF028-30-44	Wiring access panel	1
90145A537	Dow el pin 1/4" X 1/2"	1
858-10-004-10-012000	Spring-loaded connector 4 pins (female)	1
845-22-004-10-011101	Spring-loaded connector 4 pins (male)	1
UF028-30-13	Shim omniball (thin)	1
UF028-30-14	Shim omniball (female)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	4
92220A152	LPSHS #8-32NC X 3/8" LG.	6



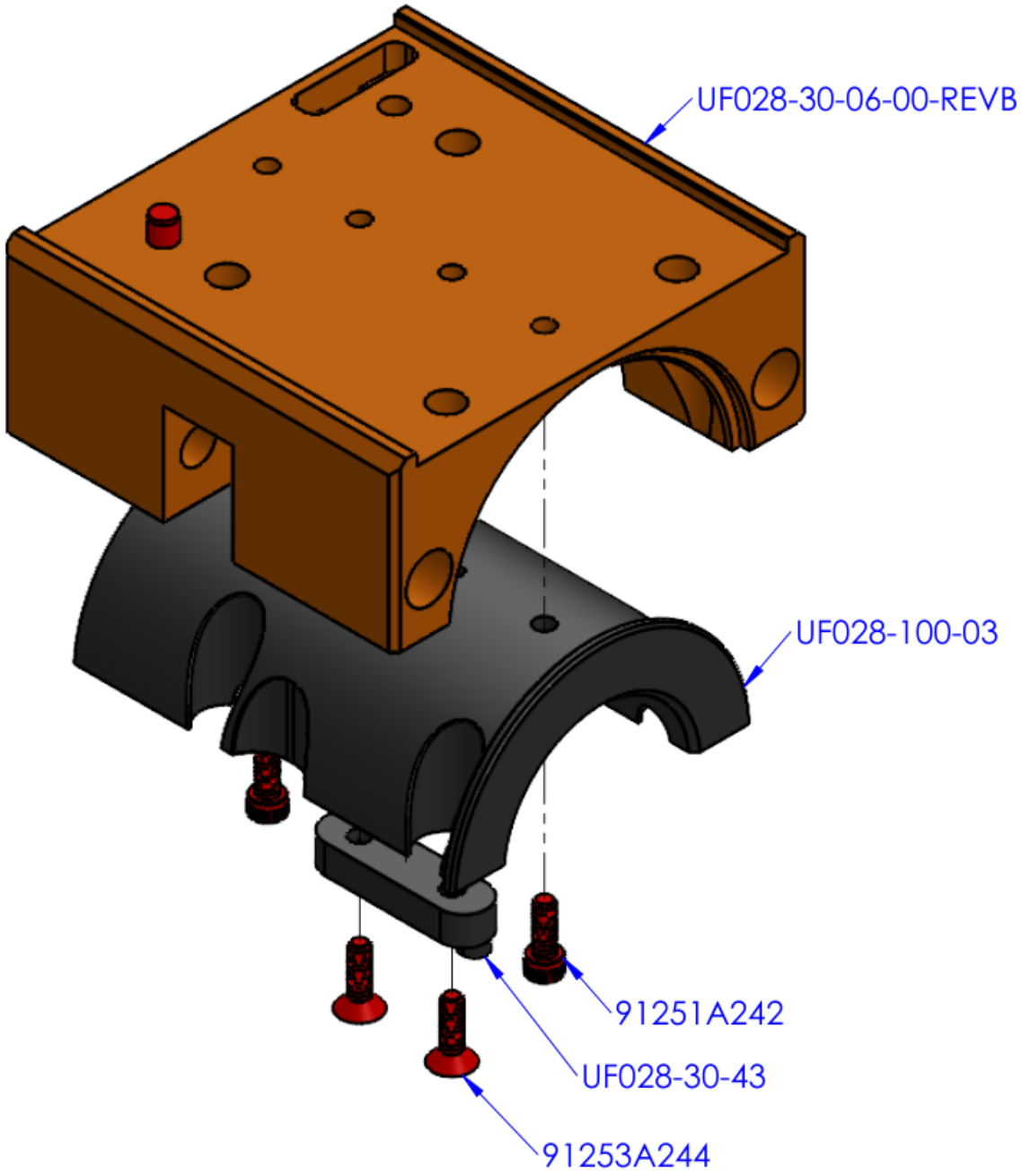
Part number	Description	qty
UF028-200-03	7 1/2" Extension	1
UF028-30-45	Wiring access panel	1
90145A537	Dow el pin 1/4" X 1/2"	1
858-10-004-10-012000	Spring-loaded connector 4 pins (female)	1
845-22-004-10-011101	Spring-loaded connector 4 pins (male)	1
UF028-30-13	Shim omniball (thin)	1
UF028-30-14	Shim omniball (female)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	4
92220A152	LPSHS #8-32NC X 3/8" LG.	8



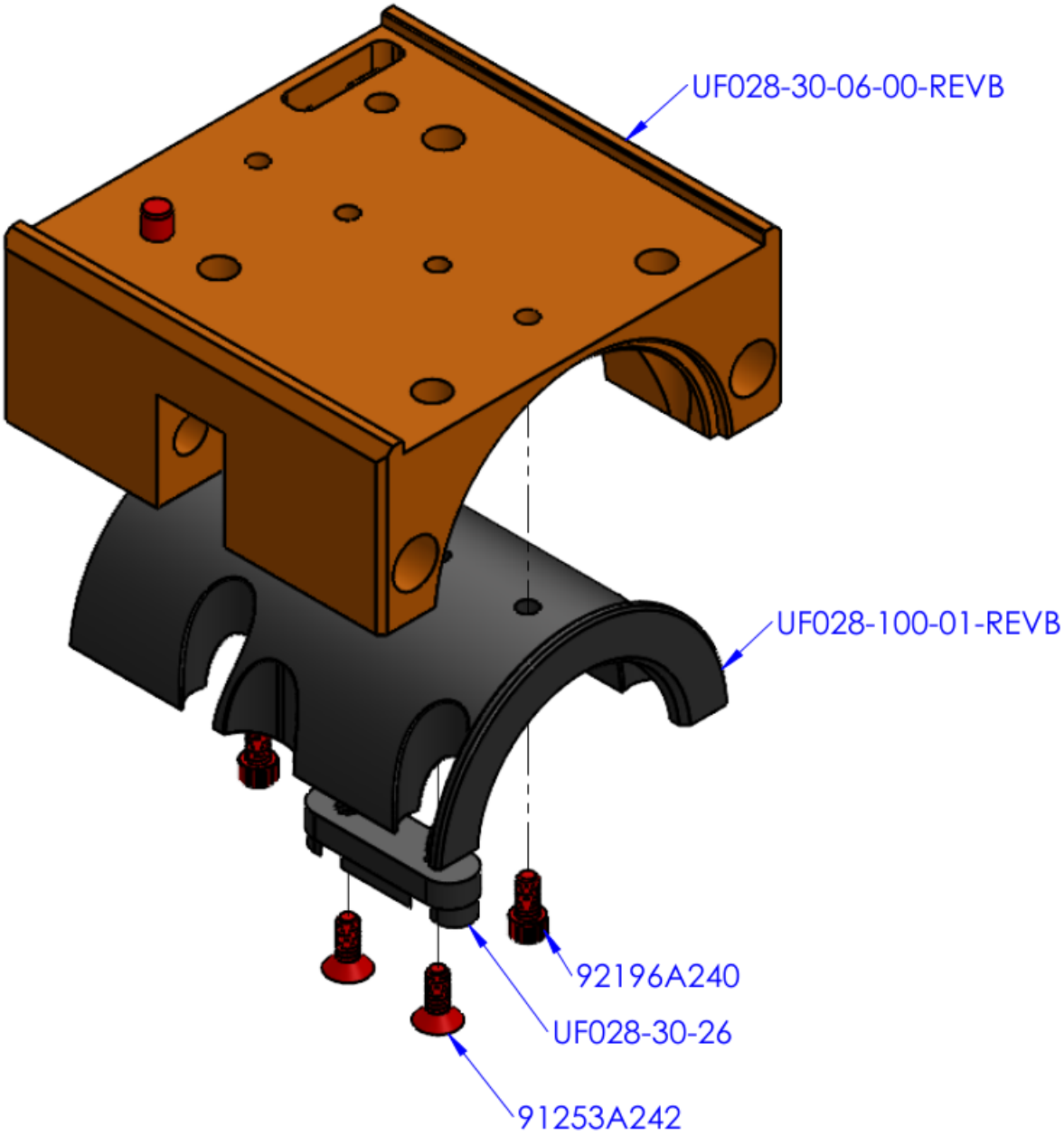
Part number	Description	qty
UF028-30-06-REVB	Upper collar (REVB)	1
90145A537	DOWEL PIN 1/4" X 1/2"	1



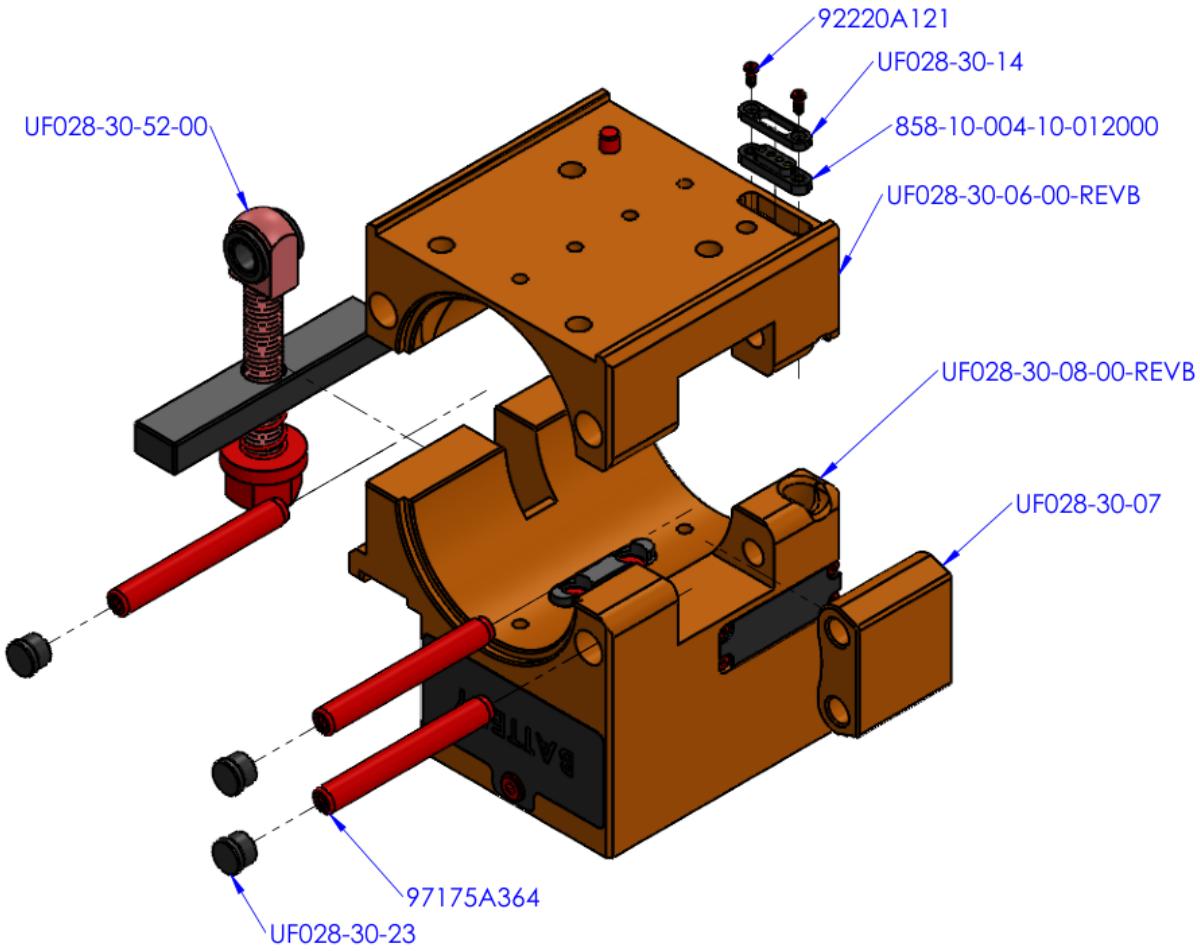
Part number	Description	qty
UF028-30-06-00-REVB	Upper collar section	1
UF028-100-05	Upper sleeve 1 9/16"	1
UF028-30-43	Locked key 2" / 1 9/16"	1
91253A246	SHCS #10-24NC X 7/8" LG.	2
90044A422	SHCS #10-24NC X 11/16" LG.	2



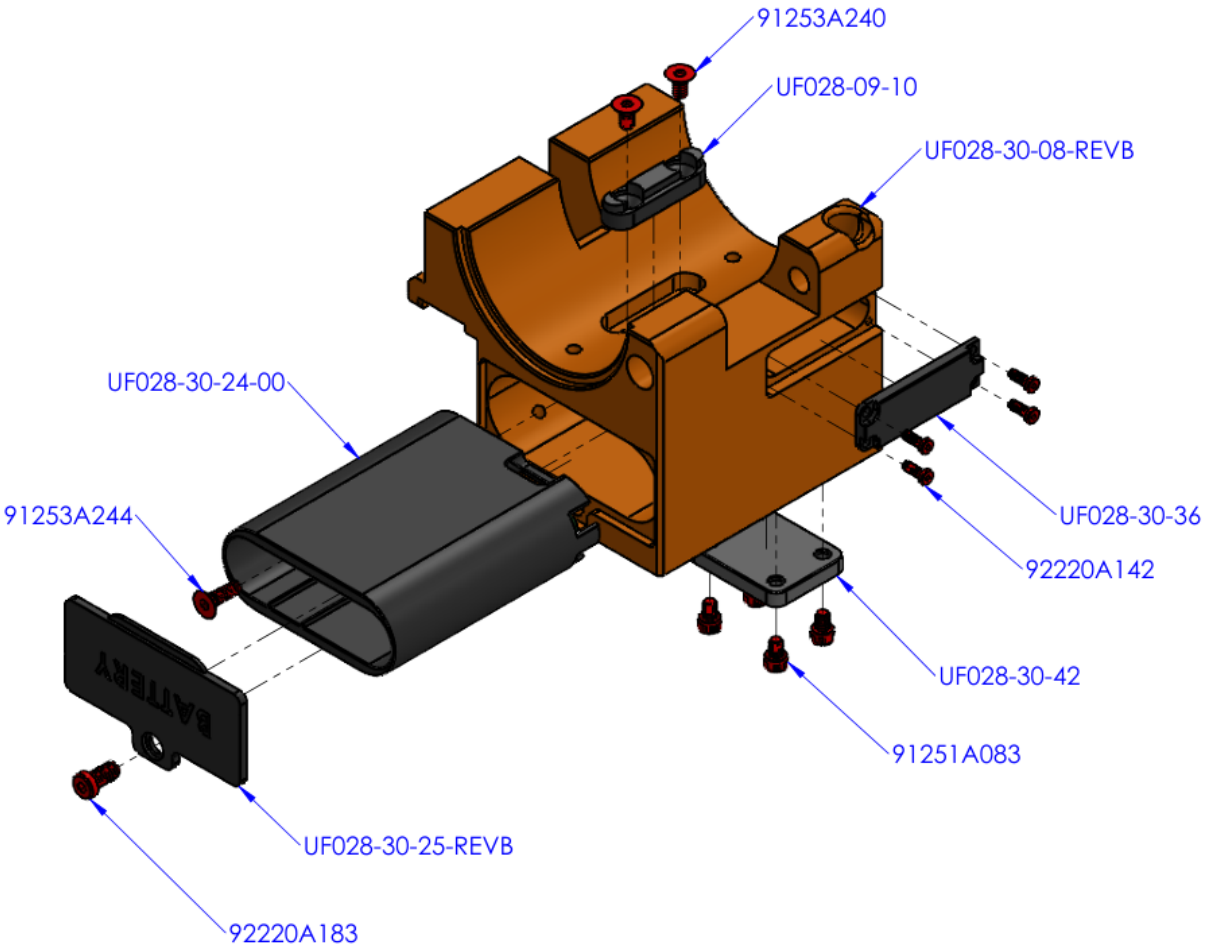
Part number	Description	qty
UF028-30-06-00-REVB	Upper collar section	1
UF028-100-03	Upper sleeve 2"	1
UF028-30-43	Locked key 2" / 1 9/16"	1
91253A244	HDFHS #10-24NC X 5/8" LG.	2
91251A242	SHCS #10-24NC X 1/2"	2



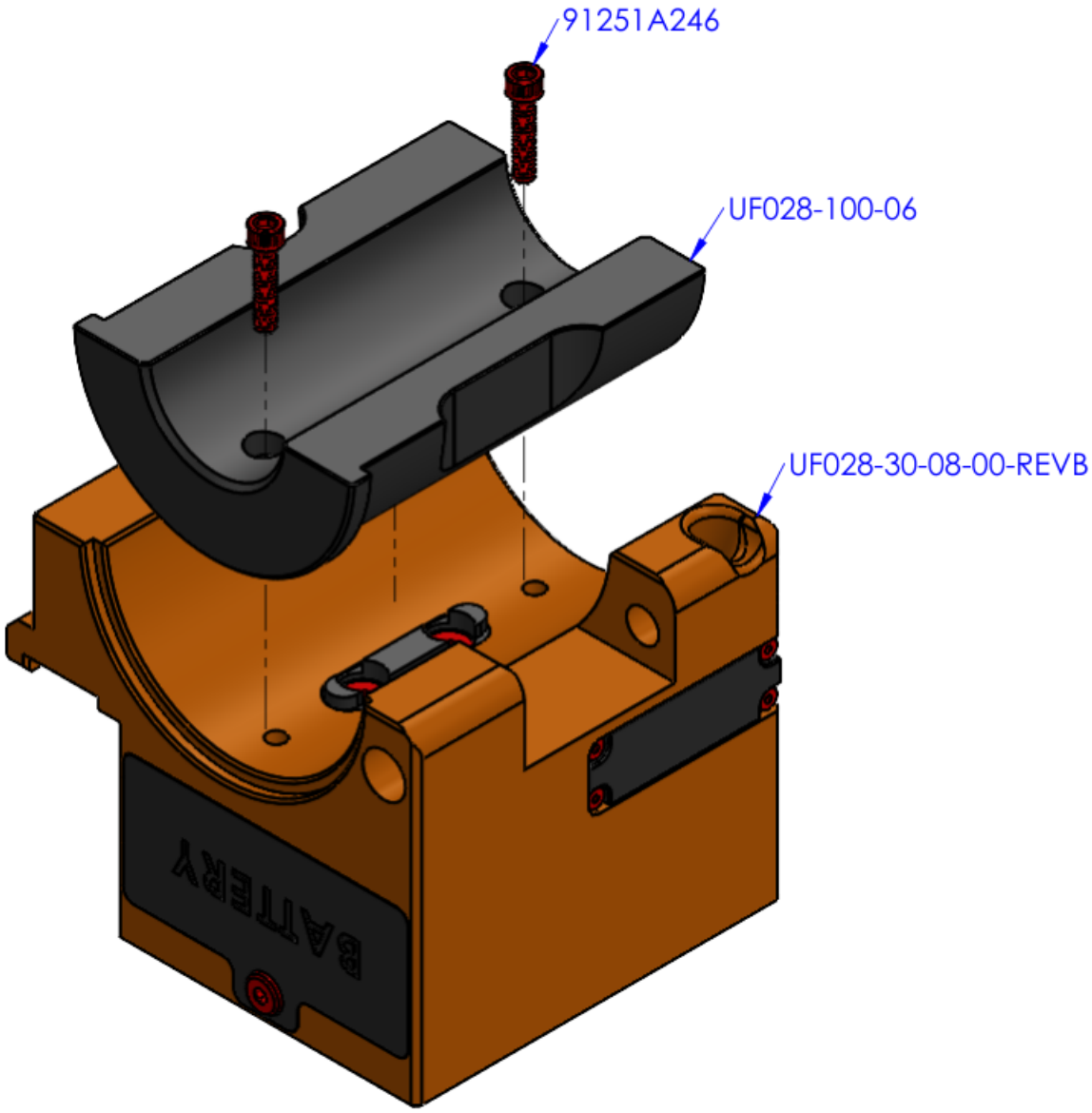
Part number	Description	qty
UF028-30-06-00-REVB	Upper collar section	1
UF028-100-01-REVB	Upper sleeve 2 1/4"	1
UF028-30-26	Locked key 2-1 1/4" (Climax)	1
91253A242	HDFHS #10-24UNC X 1/2"LG.	2
92196A240	SHCS #10-24 X 3/8"LG.	2



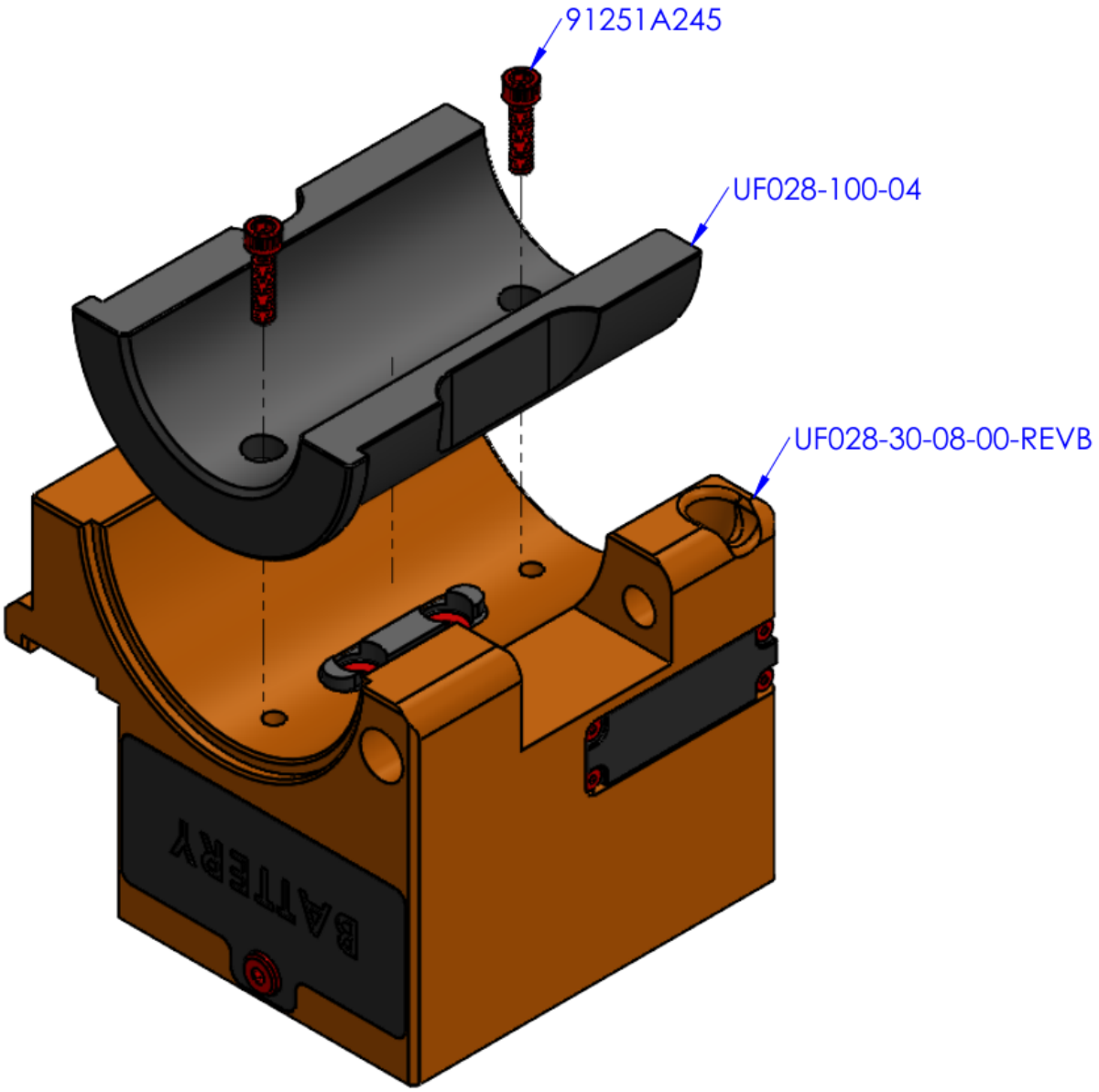
Part number	Description	qty
UF028-30-08-00-REVB	Low er collar section (REVB)	1
UF028-30-07	Collar hinge	1
97175A364	Pull out dow el pin 3/8" X 3"LG.	3
UF028-30-06-00-REVB	Upper collar section (REVB)	1
UF028-30-52-00	Collar lock	1
UF028-30-23	Dow ell pin cap	3
858-10-004-10-012000	Spring-loaded connector 4 pins (female)	1
UF028-30-14	Shim omniball (female)	1
92220A121	SHCS #4-40 X 3/8LG. (low head)	2



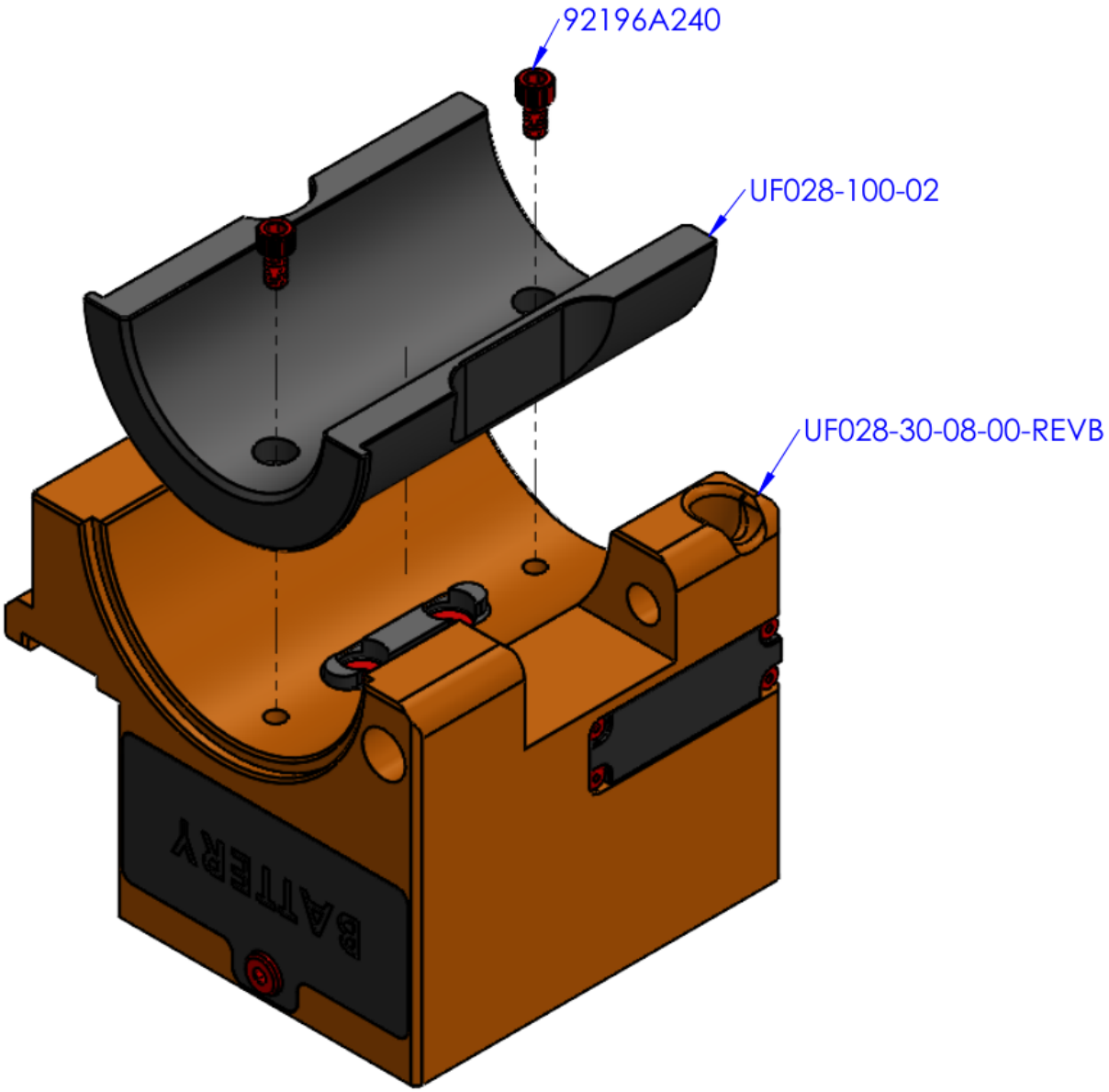
Part number	Description	qty
UF028-30-08-REVB	Low er collar section (REVB)	1
UF028-30-25-REVB	Battery access panel (REVB)	1
UF028-09-10	Locked key 3"	1
91253A240	HDFHS #10-24 X 3/8"LG.	2
UF028-30-36	Wire access panel	1
UF028-30-24-00	D92054 TSN battery case	1
91253A244	HDFHS #10-24NC X 5/8"LG.	1
92220A1421	LPSHS #6-32NC X 3/8"LG.	4
92220A183	LPSHS 1/4"-20NC X 1/2"LG.	1
UF028-30-42	Battery PCB access panel	1
91251A083	SHCS #10-24NC X 1/4"LG.	4



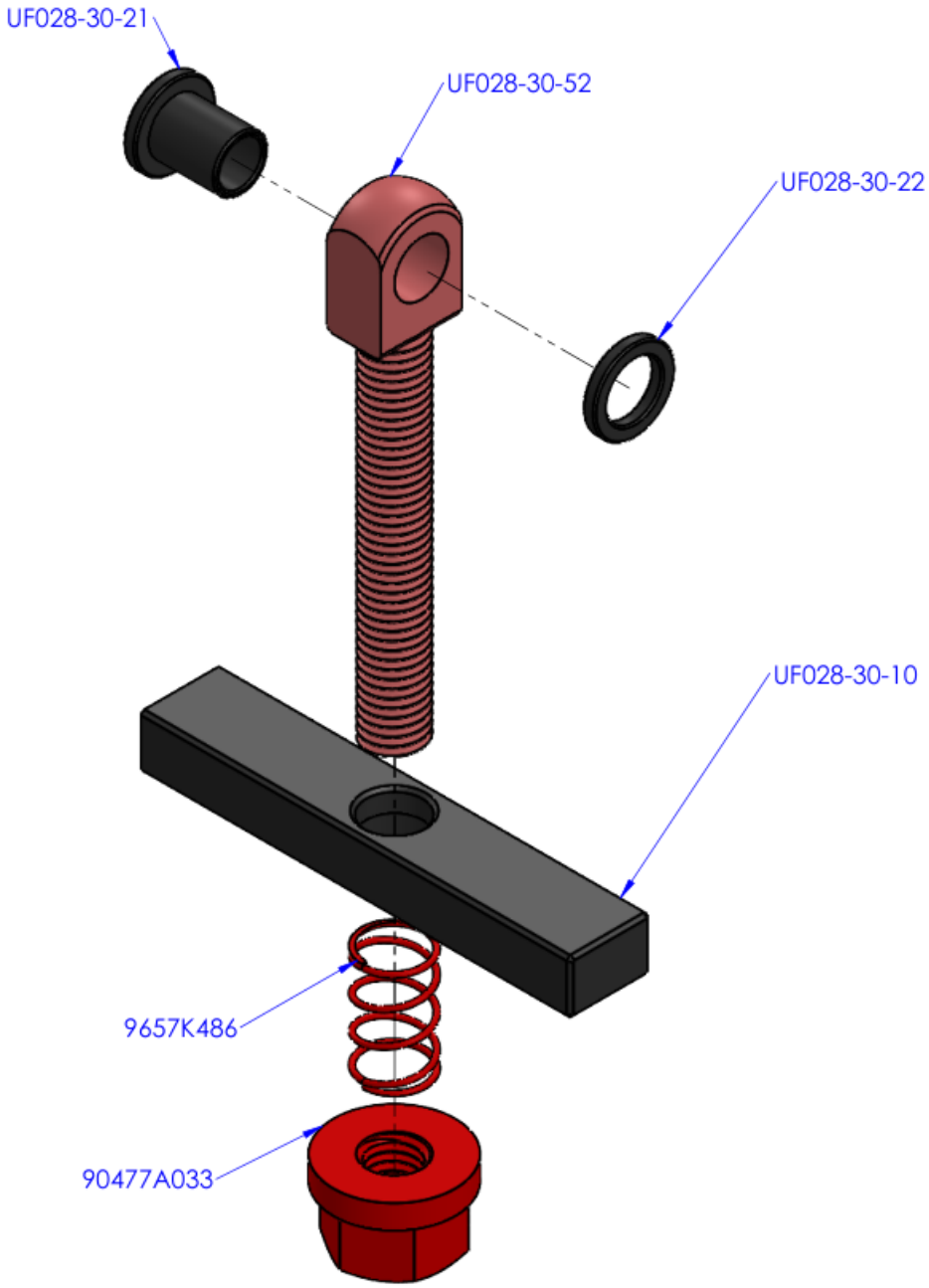
Part number	Description	qty
UF028-30-08-00-REVB	Lower collar section (REVB)	1
UF028-100-06	Lower sleeve 1 9/16"	1
91251A246	SHCS #10-24NC X 7/8" LG.	2



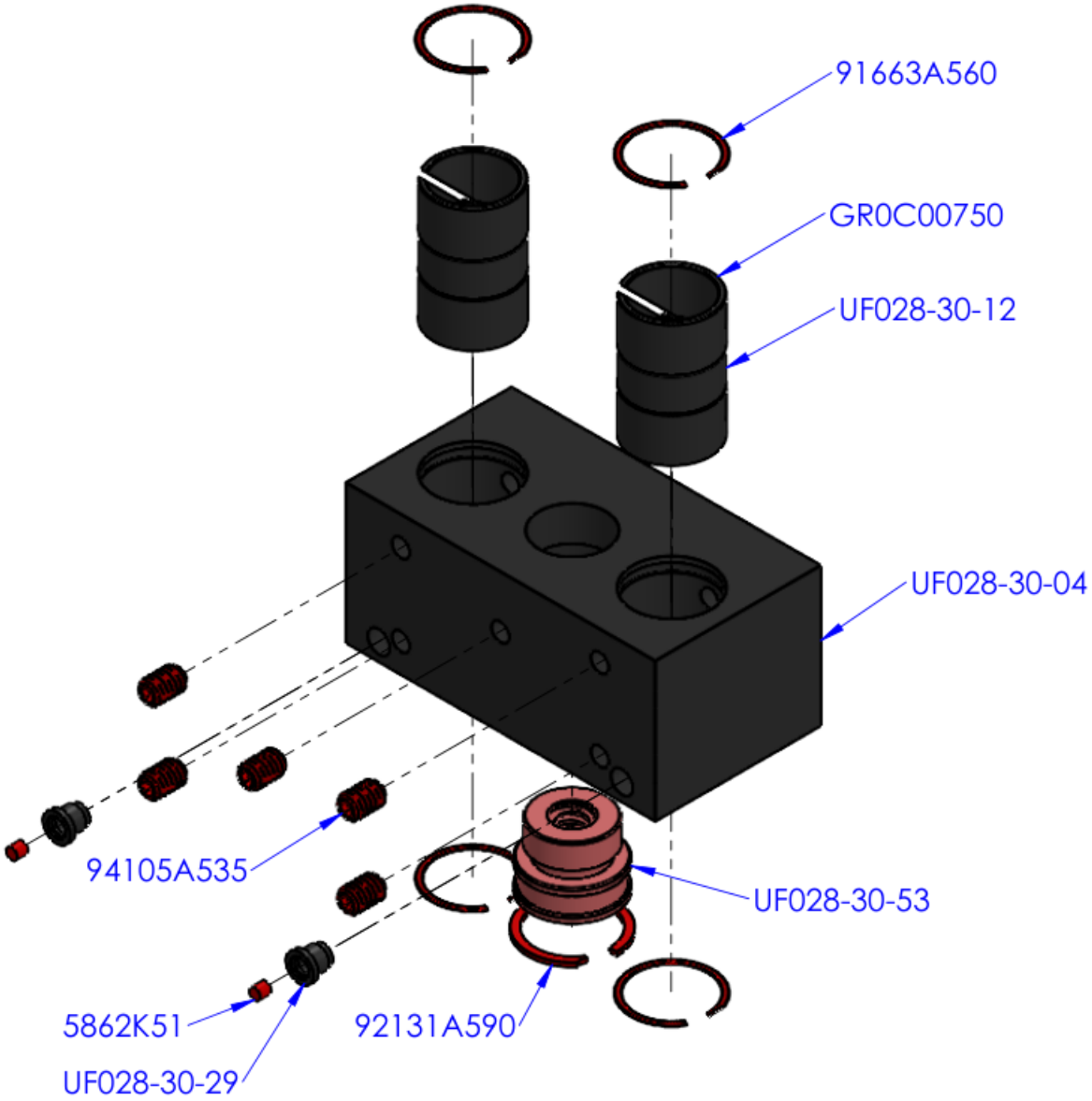
Part number	Description	qty
UF028-30-08-00-REVB	Lower collar section (REVB)	1
UF028-100-04	Lower sleeve 2"	1
91251A245	SHCS #10-24NC X 3/4" LG.	2



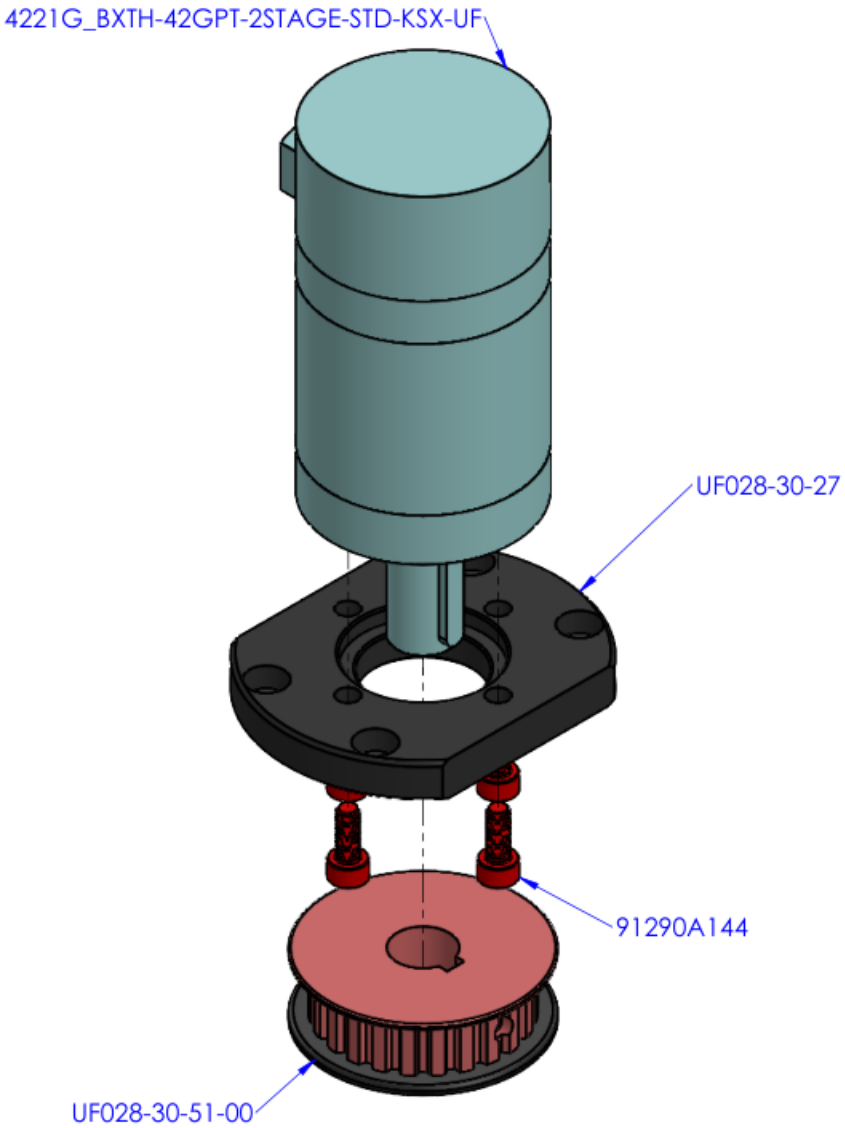
Part number	Description	qty
UF028-30-08-00-REVB	Lower collar section (REVB)	1
UF028-100-02	Lower sleeve 2 1/4"	1
92196A240	SHCS #10-24 X 3/8"LG.	2



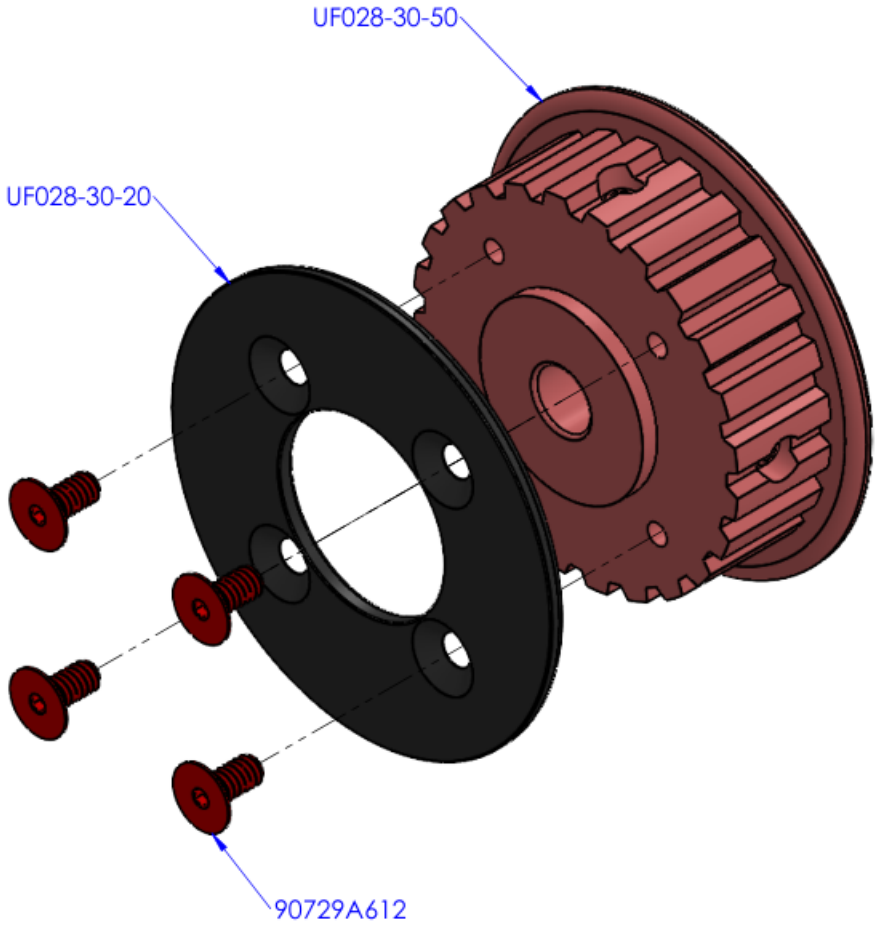
Part number	Description	qty
UF028-30-21	Hinge bushing -01	1
UF028-30-52	Fl. shoulder rod end bolt 1/2"-13UNC	1
UF028-30-22	Hinge bushing -02	1
90477A033	Rotating flange nut 1/2"-13UNC	1
9657K486	Lock spring	1
UF028-30-10	Lock plate	1



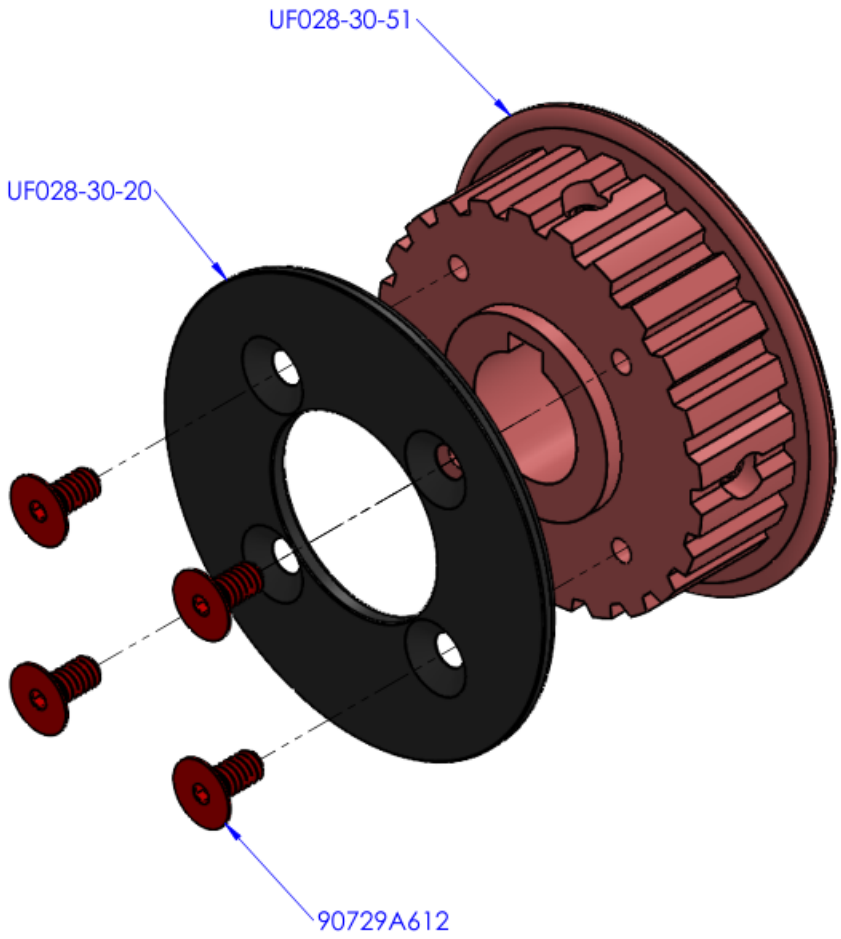
Part number	Description	qty
UF028-30-04	Moving block	1
GR0C00750	SLYDRING 7/8"X3/4"X1/2"	4
91663A560	Internal spiral ring 7/8"	4
UF028-30-53	Lead screw nut 3/8"-10TPI ACME	1
94105A535	FTSS 1/4"-20UNC X 3/8"LG.	5
UF028-30-12	Spacer 7/8"X3/4"X1/2"	2
92131A590	Internal spiral ring 24mm	1
UF028-30-29	Magnet support 1/8" X 1/8"	2
5862K51	Neodymium magnet 1/8" X 1/8"LG.	2



Part number	Description	qty
4221G_BXTH-42GPT-2STAGE-STD-KSX-UF	TSN motor and reducer	1
UF028-30-27	Motor support	1
91290A144	SHCS M4X0.7 X 10MM	4
UF028-30-51-00	Timing belt pulley 12MM drive	1



Part number	Description	qty
UF028-30-50	Pulley 3/8XL-24T-SW1/4	1
UF028-30-20	Cap	1
90729A612	HDFHS #4-40UNC X 1/4"LG.	4



Part number	Description	qty
UF028-30-51	Pulley 3/8XL-24T-SK12	1
UF028-30-20	Cap	1
90729A612	HDFHS #4-40UNC X 1/4"LG.	4

Version 3.1.1

Ultra23 and Ultra33 boring machines - User manual

Troubleshooting Guide

Version 3.1.1

5 Troubleshooting Guide

Trouble	Possible causes	Corrective action
A noise comes from inside the boring machine when it is operating.	Lack of lubricant.	Grease the boring machine using the alometer.
The hydraulic speed of the boring machine keeps increasing gradually.	Encoder reading problem. Example: The theoretical value requested is 250rpm. Speed management increases the quantity of oil sent to the engine to reach the theoretical value requested.	Disable speed management to allow the operator to work outside of management in order to complete the work in progress and have the encoder repaired later.
The limit reached message appears but the drive device is not near the boring machine.	Metal filings cover the sensor on the body of the boring machine. The boring machine cable is loose. The boring machine cable is defective.	Clean the sensor. Check that the connectors on both ends are screwed securely in place. Replace the cable.
Abnormal pump noise.	Cavitation, oil level too low.	Add oil.
The hydraulic motor does not turn.	The phase switch is in the wrong position. A power phase has been lost.	Immediately stop the hydraulic system, turn the power unit OFF and change the position of the phase switch. Connect the three power phases.
Hydraulic system failure	The contactor does not engage. The overload relay has tripped.	Check that the contactor output has activated and change the contactor if necessary. Turn off the power to manually test the contactor action. Reset the overload relay and have the motor checked if the fault persists.
Error message **UPCTRL not connected**. Description : The remote control does not communicate with the UPCTRL of the power and control unit.	Cause : The power and control unit is turned off. Cause : The remote control is not paired with the UPCTRL of the power and control unit. Cause : The remote control was powered BEFORE the power and control unit. Cause : The distance between the remote control and the UPCTRL is too great. Cause : None of the previous solutions have any effect.	Solution : Power the power and control unit. Solution : Pair the remote control with the UPCTRL. Solution : Turn off and power the remote control. Always power the power unit first and the remote control second. Solution : The distance between the two must be less than 10 meters. Solution : Turn off and power on in this order: 1) the power and control unit and 2) the remote control.
Error message **Boring machine not connected**. Description : The boring machine does not appear to be connected to the power and control unit.	Cause : The cable is not connected or is connected incorrectly. Cause : The cable is defective.	Solution : 1) Turn off the power and control unit. 2) Connect and secure the “Panel” end of the cable to the power and control unit. 3) Connect and secure the other end to the boring machine. 4) Power the power and control unit. Note : Use only the 24-connector cable designed for this purpose. Solution : Change the cable and follow the steps in the previous solution.

Error message **No hydraulics**. Description : The hydraulic system does not appear to be w orking.	Cause : The contactor does not engage.	Solution : Check that the contactor is supplied w ith pow er, that the run command goes to the contactor and change the contactor if necessary.
Error message **No ELMO**. Description : The ELMO controller does not appear to be w orking.	Cause : The ELMO controller is not pow ered.	Solution : Check that the ELMO is receiving pow er voltage. Check that the ELMO receives 24V control.
Error message **Hydraulics not functional** Description : The hydraulic system appears to be non-functional and is required to Cut.	Cause : Hydraulic pump relay did not activate.	Solution : Exit Machining (ESC) and come back.

Major errors

Message	Possible causes	Corrective action
LIMIT REACHED STOPPING FEED		
HIGH PRESSURE SYSTEM SHUTDOWN		
READ ERROR CHECK BLUE CABLE		
CHECK BORING MACHINE CABLE		
EMERGENCY STOP ACTIVATED		
FAILURE OF HYDRAULIC SYSTEM		
MAXIMUM SPEED OF THE SERVO IS REACHED...		
NO RN1300 CHECK RED CABLE		

Version 3.1.1

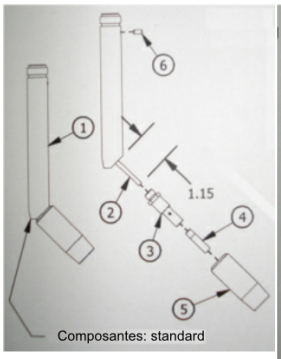
Ultra23 and Ultra33 boring machines - User manual

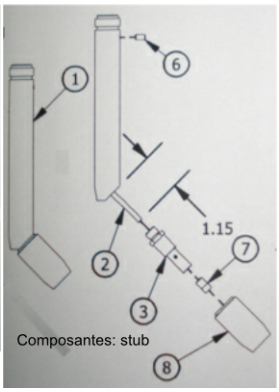
Spare parts list

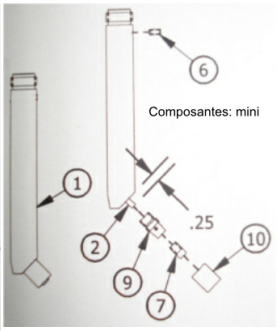
Version 3.1.1

6 Spare parts list

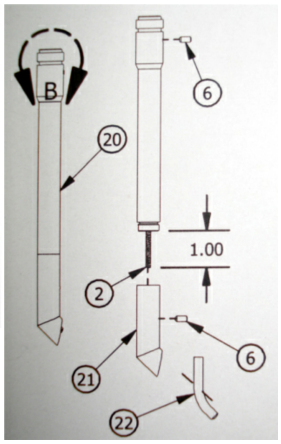
Standard torches



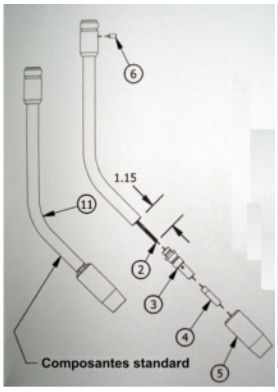


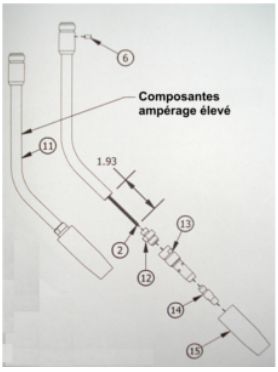


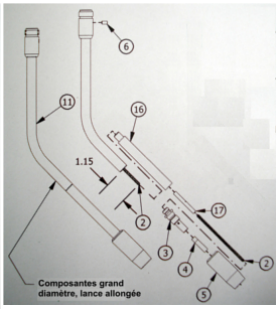
Micro torch

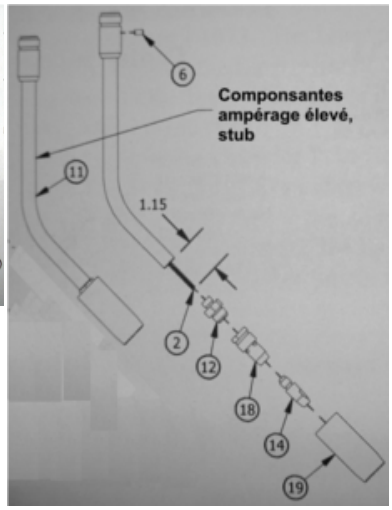


Large diameter torches









Item	Part #	Description
1	10200	Standard modular gun
2	10201	Liner (cut to the required length)
3	10202	Standard diffuser
4	10203	Standrad tip (0.30/.8 mm)
	10204	Standrad tip (0.35/.9 mm)
	10205	Standrad tip (0.45/1.2 mm)
5	10206	Standard nozzle
6	10207	Pressure screw
7	10208	Stub tip (0.30/.8 mm)
	10209	Stub tip (0.35/.9 mm)
	10210	Stub tip (0.45/1.2 mm)
8	10211	Stub nozzle
9	10212	Mini diffuser
10	10213	Brass nozzle
	10214	Ceramic nozzle

Item	Part #	Description
11	10215	Large diameter gun
12	10216	High amperage adapter
13	10217	Standard high amperage diffuser
14	10218	High amperage tip (.035/.9 mm)
	10219	High amperage tip (.045/1.2 mm)
15	10220	Standard high amperage nozzle
16	10221	Gun extension tube
17	10222	Liner coupling
18	10223	Stub diffuser
19	10224	Stub nozzle
20	10225	Micro gun
21	10226	Micro gun nozzle
22	10227	Micro gun tip

Procedure for changing liner 10201

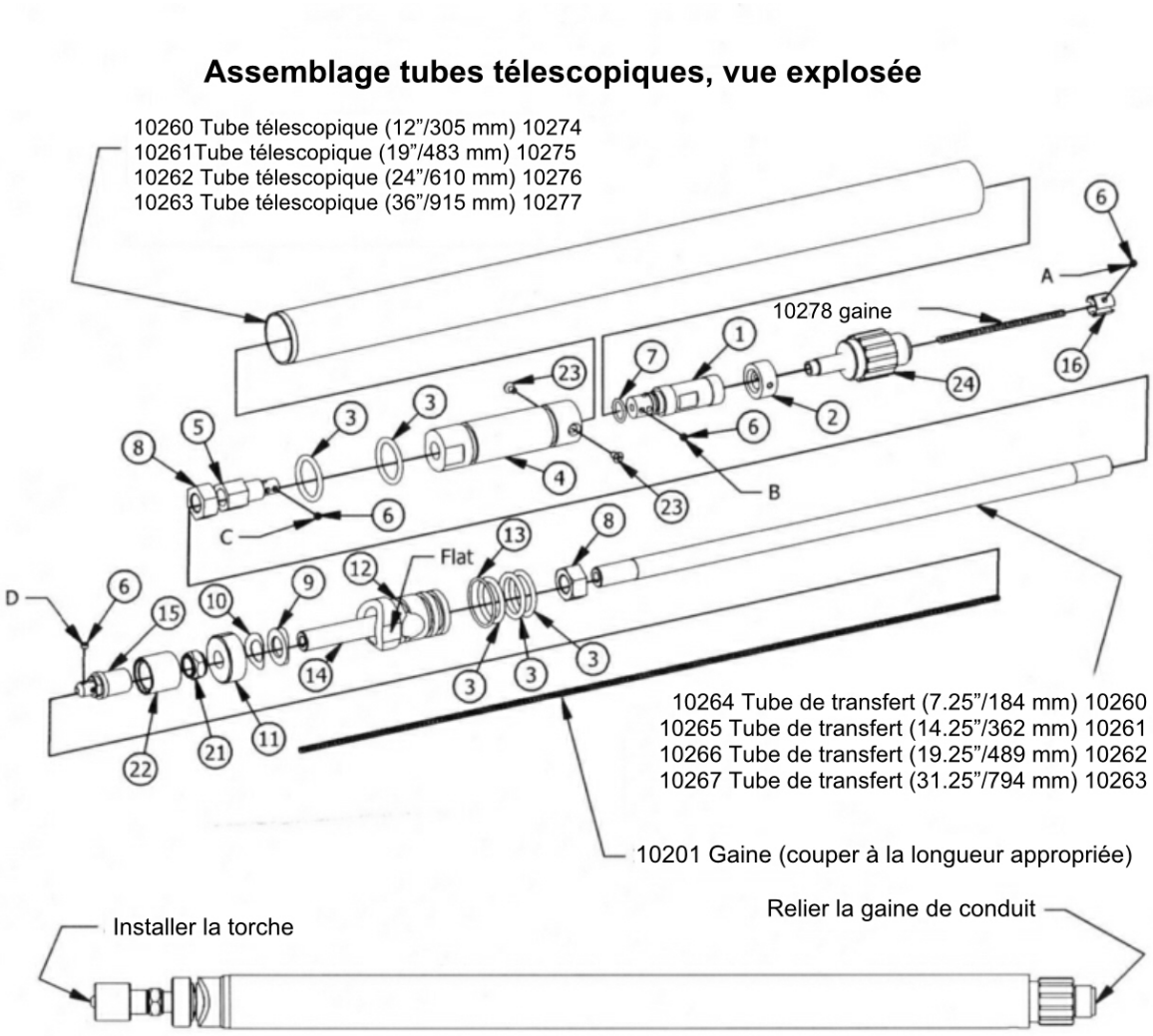
1. Perform steps 1 and 2 of the procedure for liner 10278
2. Grasp the telescoping tube and the weld gun accessory components that protrude from the gun side, then remove the internal components of the telescoping tube.

NOTE 4: Rotate the internal components using an adjustable wrench on part UF-12749 as previously described in NOTE 1.

3. Remove part 10243 from part 10244 by unscrewing it using the flat parts.
4. Loosen clamp screws C and D, and remove liner 10201.
5. Replace the liner with one of the same length and diameter, ensuring that when the tightening screws are tightened, the ends of the liner do not protrude.

NOTE 5: It is best to have the liner slightly recessed by approximately .02"/.5 mm, rather than overhanging, particularly at the end of part 0002.

6. Repeat the steps in reverse order to complete the installation.



Procedure for changing liner 10232

1. Loosen set screw 10245 from conduit coupler 10268.
2. Remove the retaining screw from the Euro-connector 0001 liner.
3. Remove the 10322 liner from the Euro-connector by grasping the brass end.
4. Do the reverse procedure to install a new liner
5. Cut off the excess liner at part 10268. Keep the rest of the liner in order to change the liner 10278 if necessary.

Procedure for changing liner 10278

1. Insert a Phillips screw driver through the small hole near the end of the telescoping tube and remove the two set screws. You will have to rotate the internal assembly so that the screws are facing the holes: to do this use an adjustable wrench on the flat part of part 10251 (12).

NOTE 1: Always rotate part 10251 (12) clockwise relative to the telescopic tube when viewed from the end connected to the weld gun.

2. Grasp part 10259 and remove from the telescopic tube. Parts 10240, 10241, 10255, 10278, 10246 and screws will be included.

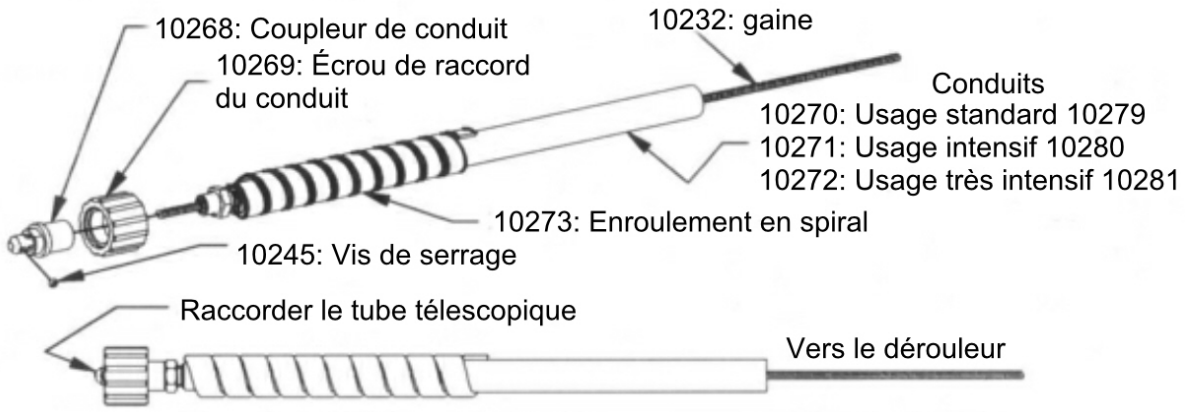
NOTE 2: Take care to ensure that part 10240 remains clean.

3. Loosen the clamp screws B.

4. Liner 10278 and its anchor 10255 can now be slid out of part 10259.
5. Loosen clamp screw A and remove conduit anchor 10255.
6. Insert a liner of the same length and diameter as 10255. and do steps 1 to 4 in reverse.

NOTE 3: Make sure the ends of the liner are flush with adjacent parts, or slightly recessed, particularly concerning the end of part 10240.

Assemblage bout de conduit, vue explosée



Parts not identified on the drawings on the previous page.

Item	Part #	Description
1	10240	Power connector rotator
2	10241	Rotator retaining collar
3	10242	O-ring (qty 5)
4	10243	Power connector receptacle
5	10244	Power connector TT adaptor
6	10245	4 mm pressure screw (qty 4)
7	10246	Sealing O-ring
8	10247	Locknut (qty 2)
9	10248	Inner washer
10	10249	Wavy washer
11	10250	Gun pivot nut
12	10251	Gun pivot body
13	10252	Sealing O-ring
14	10253	Pivot stud
15	10254	Gun adapter
16	10255	Liner anchoring
21	10256	12mm locknut
22	10257	Gun connection nut
23	10258	Flat head screw (qty 2)
24	10259	Rotator junction

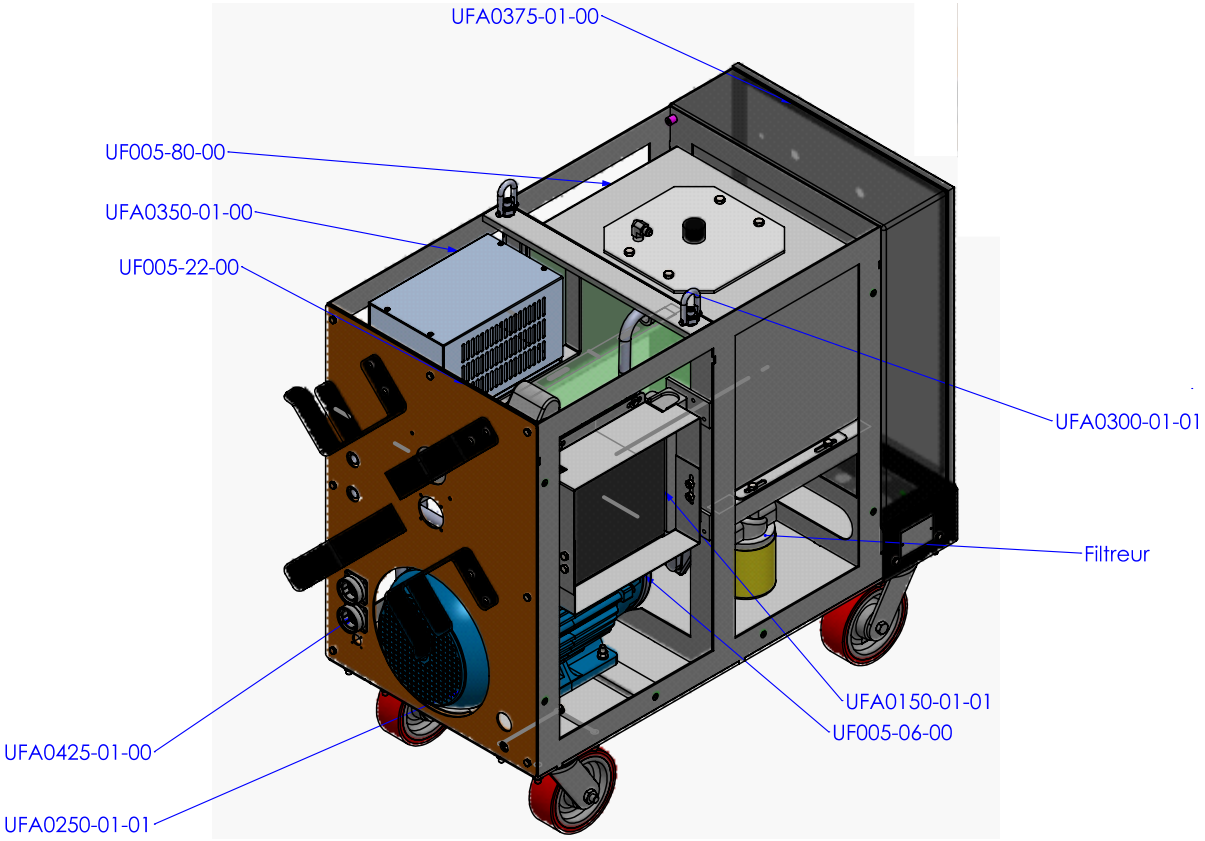
6.1 Electrical panel

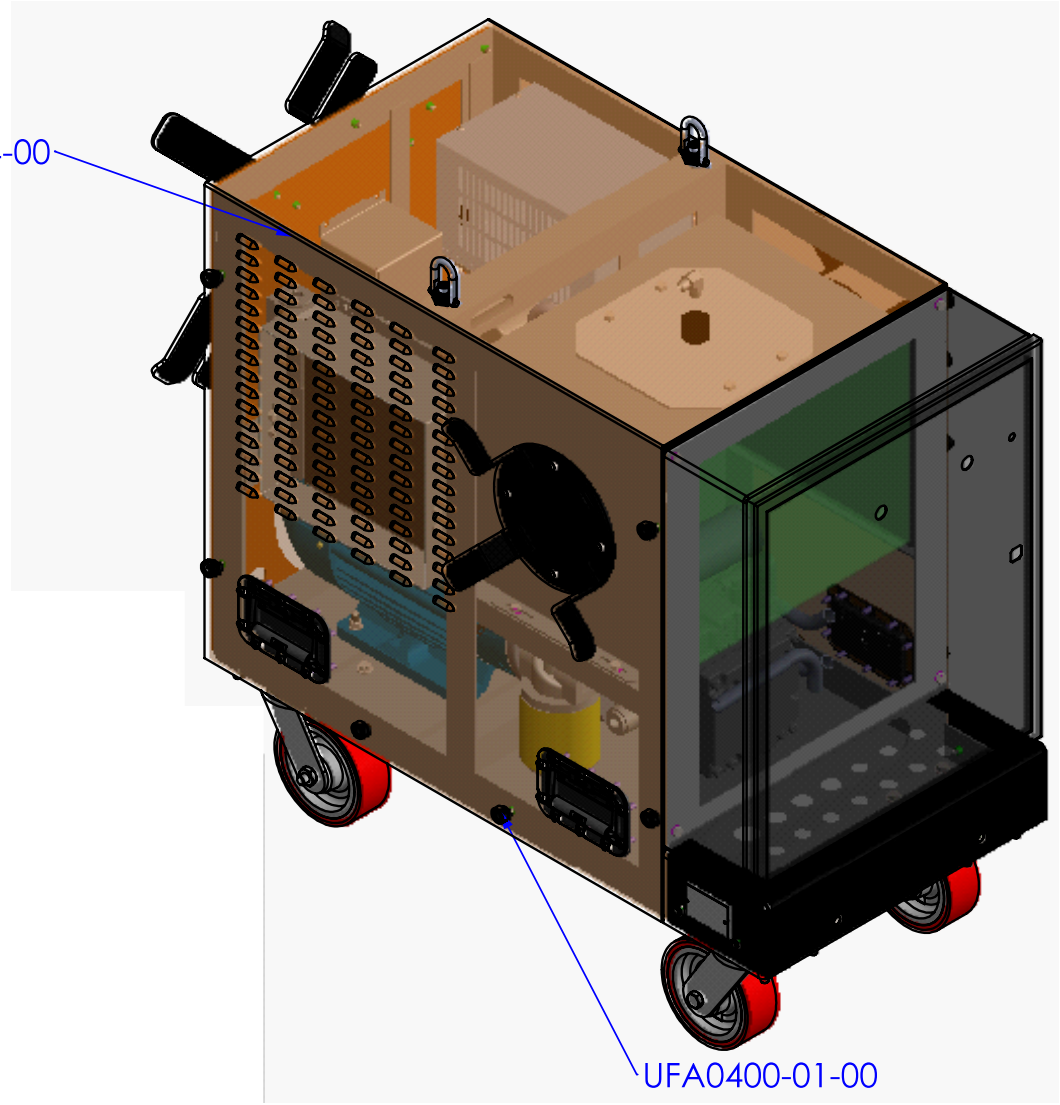
6.1.1 400V

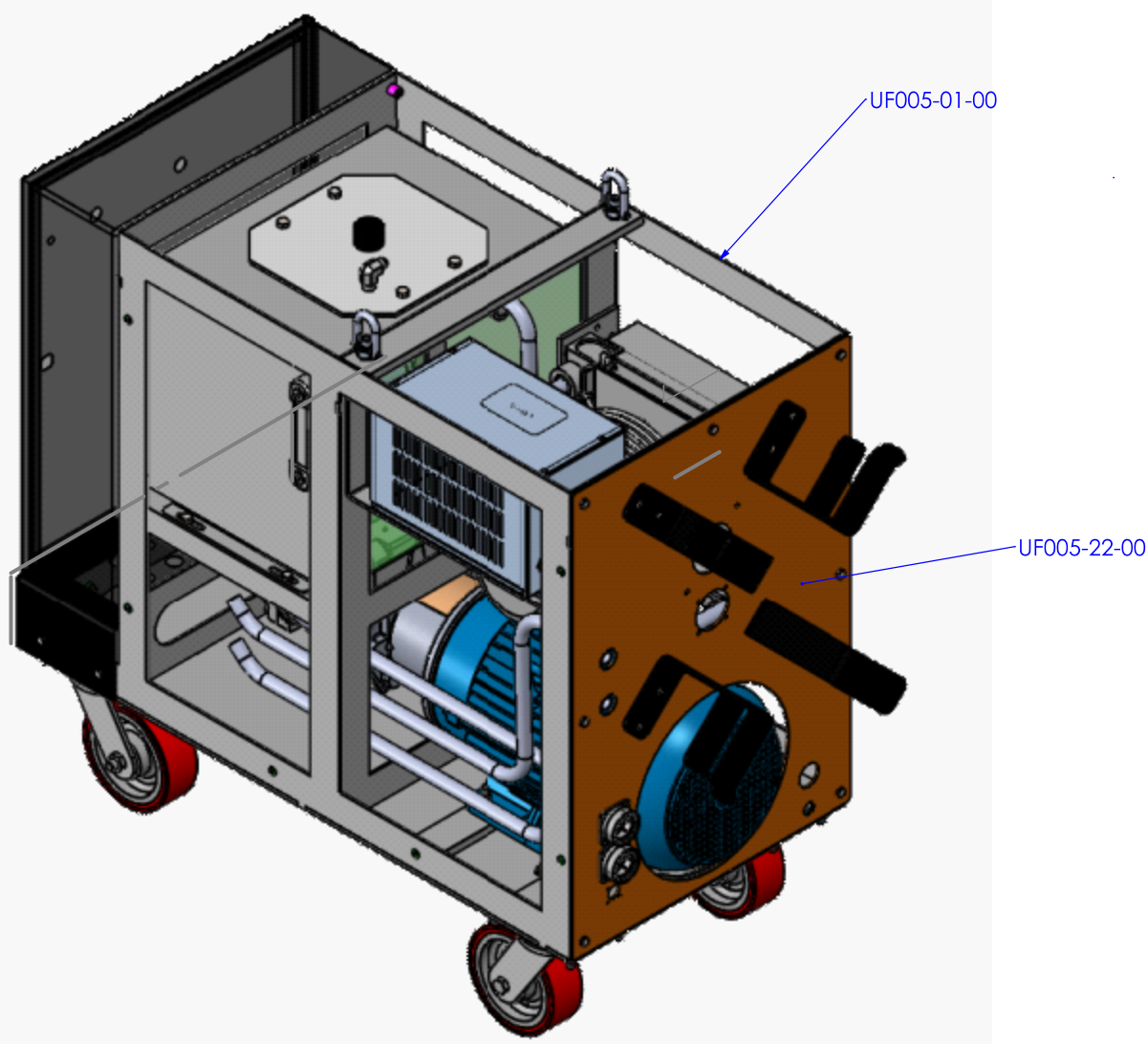
6.1.2 480V

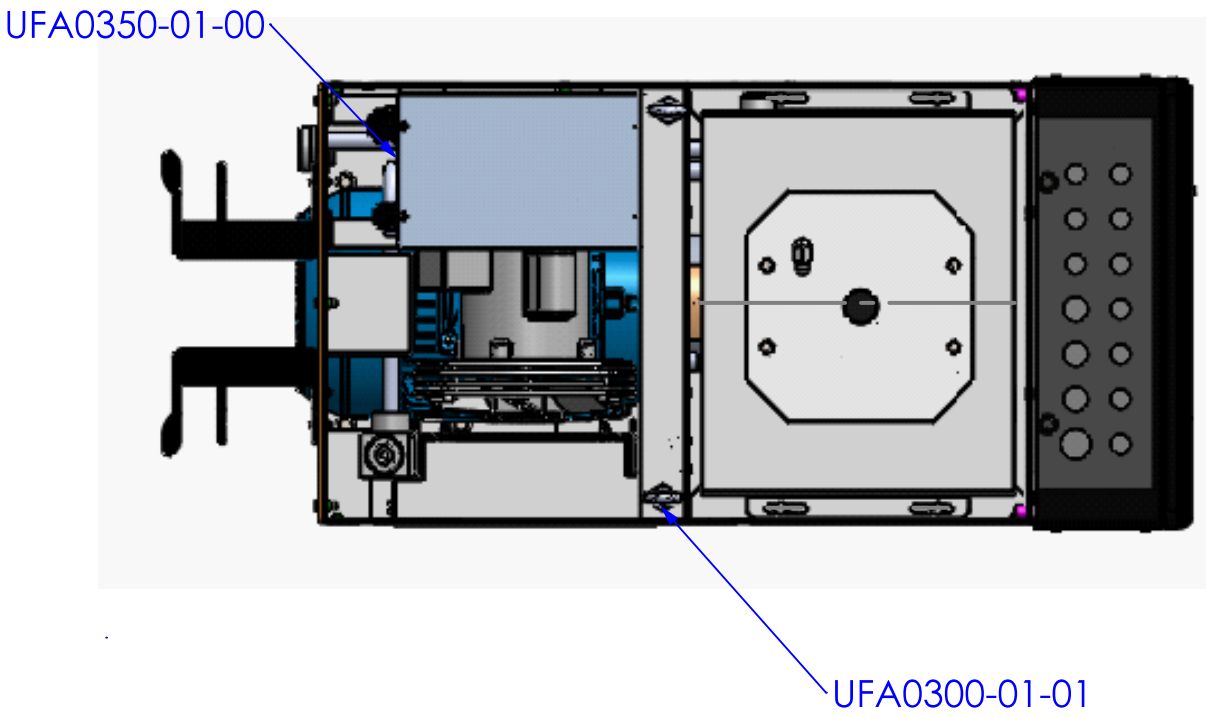
6.1.3 600V

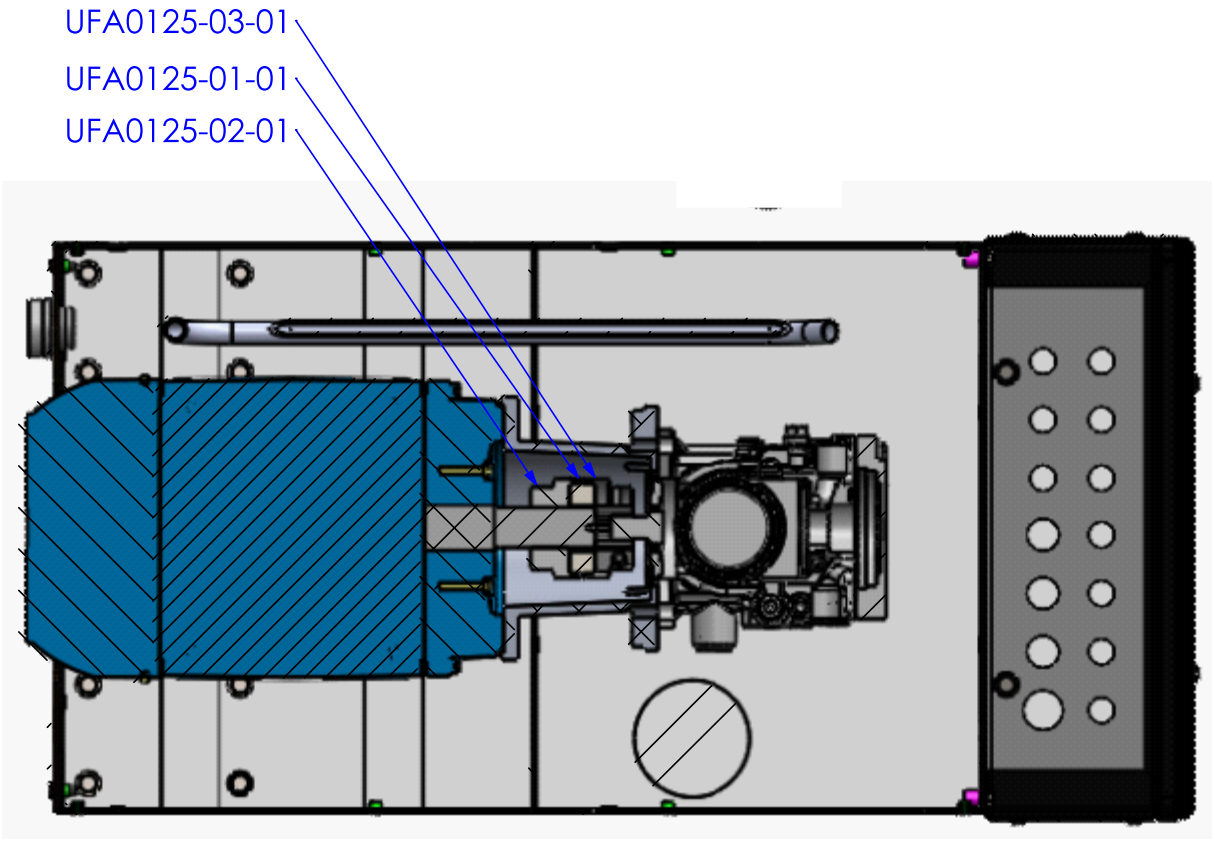
6.2 Hydraulic

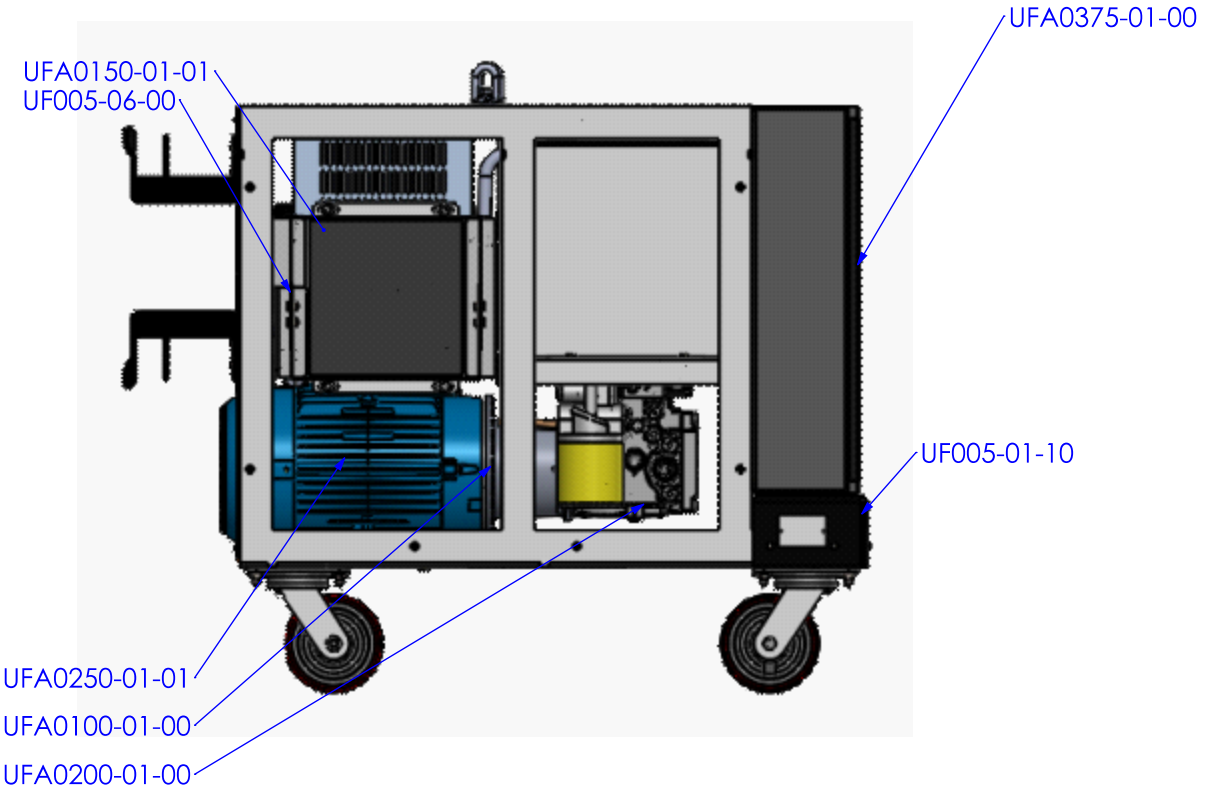


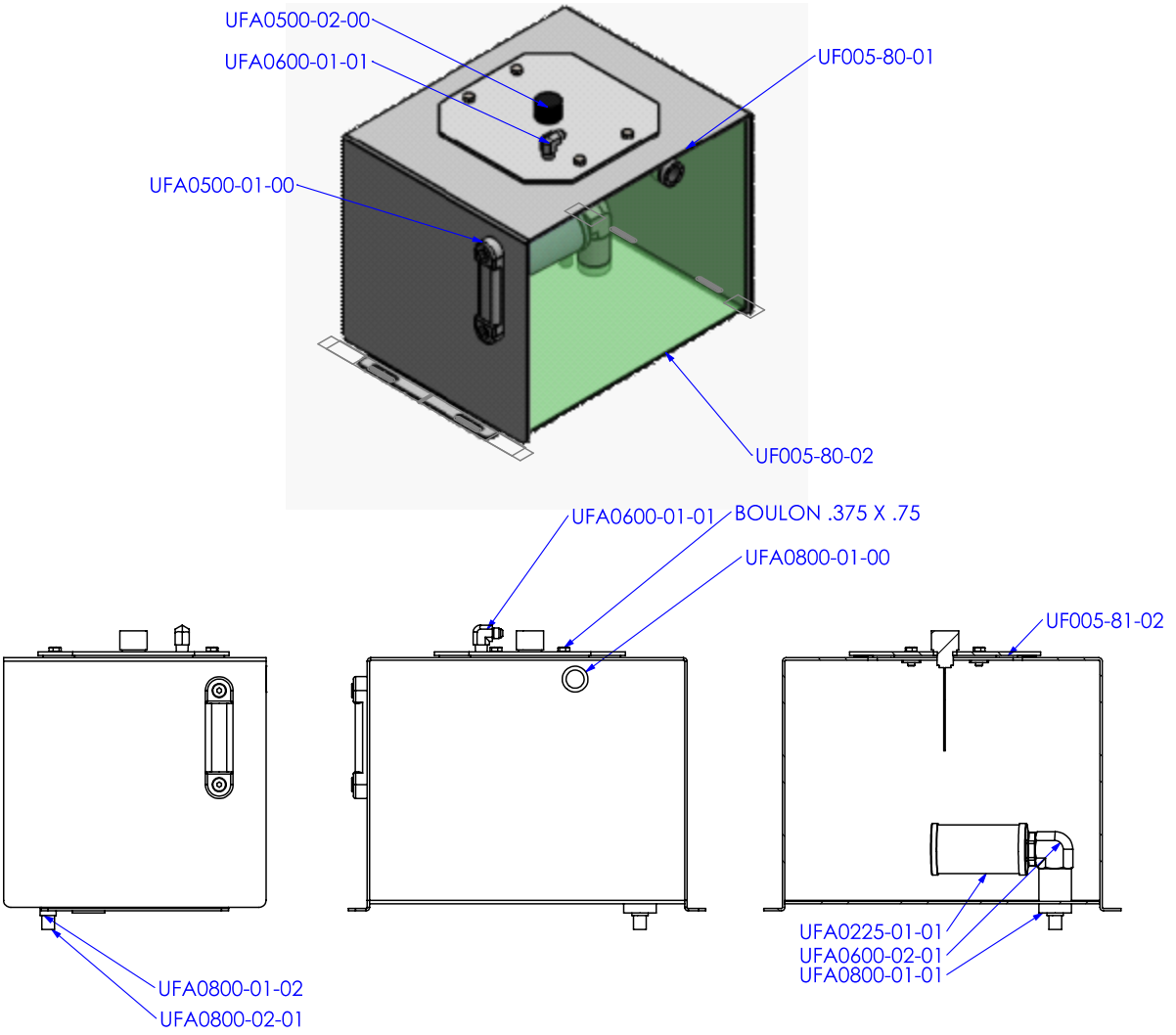












UF005-01-00	MAIN FRAME ASSEMBLY
UF005-01-10	KICK FOLDING
UF005-06-00	RADIATOR AIR INTAKE ASSEMBLY
UF005-04-00	HOOD ASSEMBLY
UF005-22-00	BACK PLATE ASSEMBLY
UF005-80-00	HYDRAULIC TANK ASSEMBLY
UF005-80-01	UPPER HYDRAULIC TANK FOLDING
UF005-80-02	HYDRAULIC TANK FOLDING
UF005-81-02	HYDRAULIC TANK COVER ASSEMBLY
UFA0100-01-00	BELL HOUSING
UFA0125-01-01	URETHANE SPACER
UFA0125-02-01	HALF-COUPLING
UFA0125-03-01	SPLINED HALF-COUPLING
UFA0150-01-01 (specify 240V/400V/480V/600V)	RADIATOR
UFA0200-01-00	HYDRAULIC PUMP
UFA0225-01-01	1" HYDRAULIC STRAINER PIPE
UFA0250-01-01 (specify 240V/400V/480V/600V)	215T ELECTRIC MOTOR
UFA0300-01-01	LIFTING RING
UFA0350-01-00 (specify 240V/400V/480V/600V)	TRANSFORMER
UFA0375-01-00	ELECTRICAL BOX
UFA0400-01-00	1/4-20 X 1 THUMB KNOB

UFA0425-01-00	24 PIN RECEPTACLE CONNECTOR
UFA0500-01-00	OIL LEVEL GAUGE
UFA0500-02-00	M22X1.5 OIL LEVEL CAP
UFA0600-01-01	3/8 NPT SAE 3/8 MALE 90° HYDRAULIC ELBOW
UFA0600-02-01	MALE MALE NPT 1" 90° HYDRAULIC ELBOW
UFA0800-01-00	.75 NPT HALF RING
UFA0800-01-01	1 NPT HALF RING
UFA0800-01-02	.75 NPT HALF RING
UFA0800-02-01	3/8" NPT X 1.25" NIPPLE

Ultra23 and Ultra33 boring machines - User manual

Section VII

Preventive maintenance

Version 3.1.1

7 Preventive maintenance

Regularly grease the boring machine. The recommended grease is Prolab AF300.

When the boring machine is not in use, store it in its case.

When the equipment is not in use, install the plugs on the electrical connectors, the energy group, the boring machine and the remote control.

Ultra23 and Ultra33 boring machines - User manual

Glossary

Version 3.1.1

8 Glossary

Terms	Definition
TTSF	Wireless remote control.
UPCTRL	Hydraulic pow er unit.
TSN	Numeric facing head unit.
Pairing	The action of establishing a communication link betw een 2 devices.
PRF	Programmable feed is a function allow ing machining to a specific length automatically.
RPI	Return to initial position.

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