

Kreon ACE Arm

User's manual



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Summary

1	INTRODUCTION.....	5
1.1	WHAT IS IT?	5
1.2	CONTENTS.....	5
2	HARDWARE INSTALLATION	6
2.1	FIXING THE ARM	6
2.2	PLUGGING THE ARM.....	6
2.3	MOUNTING A PROBE	7
2.4	MOUNTING A SCANNER	7
3	SOFTWARE INSTALLATION.....	8
3.1	DRIVER INSTALLATION	8
3.2	SWITCHING THE ARM ON/OFF	8
3.3	CONFIGURING THE ARM	8
3.4	CONFIGURATION IN KREON APPLICATIONS	8
4	TROUBLESHOOTING	9
4.1	INCORRECT DATA ACQUISITION.....	9
4.2	UNABLE TO CONNECT TO THE ARM	9
4.3	UNABLE TO SCAN	9

1 INTRODUCTION

1.1 WHAT IS IT?

The Kreon ACE arm is a high-precision coordinate measuring device able to tell the position and orientation of 3D-measurement devices mounted at the tip of the arm. It may be used for probing, by mounting a hard probe or touch-trigger probe at the tip of the arm, or for scanning, by mounting a Kreon 3D laser scanner.

1.2 CONTENTS

The suitcase contains:

- The ACE arm;
- A power supply and a cord adapted to your country;
- A base plate with Brunson attachment (or magnetic base in option);
- A kit of certificates;
- A USB cable;
- A CD with software and arm calibration;
- A small suitcase with accessories:
 - o 1 PAA1 with ball 6mm probe;
 - o 1 S10 Renishaw key;
 - o 1 flat key (12mm);
 - o 1 Allen key (6mm);
 - o 1 stylus tool;
 - o 1 tool for probe calibration (bar with conical hole + datum sphere);
 - o 1 set of screws.



The arm has a battery inside and is equipped for Wi-Fi connection.



2 HARDWARE INSTALLATION

2.1 FIXING THE ARM

Make sure that the base plate (or the magnetic base or tripod) is well fix on the working plane.

Then put the arm on the base and screw the nut hard with the provided 12mm key.



2.2 PLUGGING THE ARM

Plug the power supply on the round connector on the right of the back panel. The arm can operate on battery power for approximately eight hours.

Plug the USB cable on the arm (left side of the back panel) and the other extremity of the cable on the computer. The arm also supports Wi-Fi connection, which will be used if the USB cable is not plugged.

The third connector is used with Kreon scanners (Zephyr II or Solano).



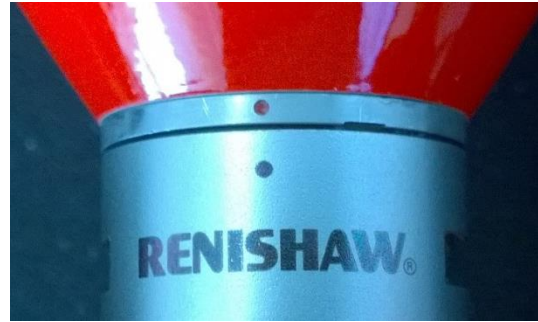
Ensure that the arm is turned off before connecting or disconnecting the cables.



2.3 MOUNTING A PROBE

The arm tip is equipped with a Renishaw Multiwire interface. The probe is made of three components: a Renishaw PAA1, an M8-M4 adaptor and a 6mm ruby ball stylus.

To mount the probe, approach the PAA1 at the tip of the arm until contact, make sure that the two marking dots are aligned (red dot on the arm and black dot on the PAA1). Then, lock the PAA1 with the S10 key.

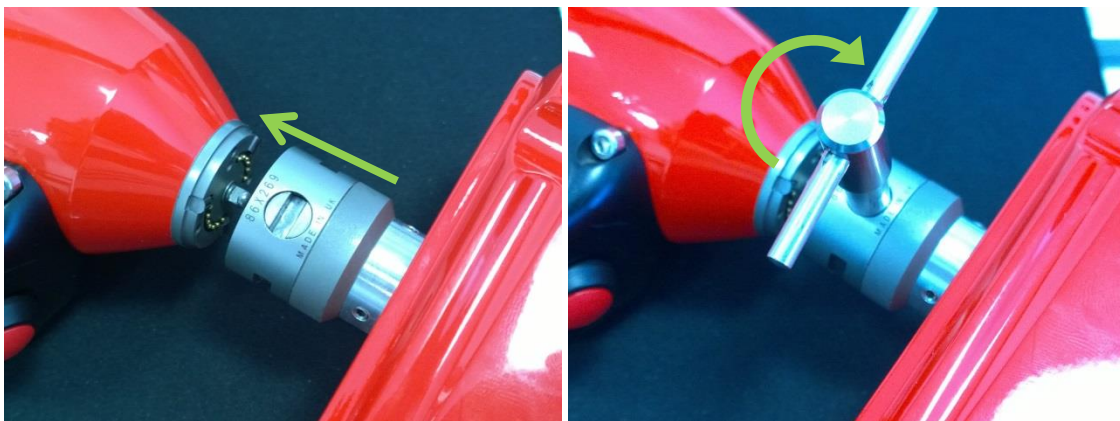


2.4 MOUNTING A SCANNER

To mount a scanner on the arm it is the same as the above procedure for the probe. The scanner must be equipped with a Multiwire interface.

⚠ Ensure that the arm is turned off before mounting or removing the scanner.

Approach the scanner at the tip of the arm until contact; make sure the two marking dots are aligned. Then lock the scanner with the S10 key.



3 SOFTWARE INSTALLATION

3.1 DRIVER INSTALLATION

Before installing the driver, make sure you have Administrator rights on the computer.

Insert the installation disk inside the CD-ROM drive, then browse the disk to find the KreonArm Install folder (x64 or x86 depending the Operating system). Then run "KreonArm * Install *.exe".

The driver includes the KreonArm Wizard program; so, please refer to the KreonArm Wizard documentation for details on the installation procedure.

3.2 SWITCHING THE ARM ON/OFF

To switch ON the arm, push the button on the base of the arm, a green ring should light ON.

If the power supply is not plugged, the arm will use automatically its battery.

If the USB cable is not plugged, and if the computer is equipped with a Wi-Fi adaptor, and the wireless network named as the arm serial number (for example ACE-0001) is visible, the connection will be automatically made when connecting to the arm (not possible in Windows XP).

To switch OFF the arm, push the power button for at least three seconds then release it when the green ring is blinking.

3.3 CONFIGURING THE ARM

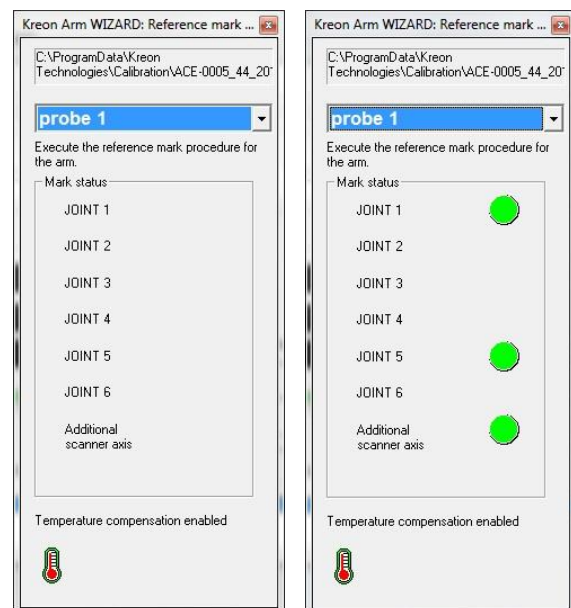
After turning ON the arm, the arm is in an unknown state. In the application software, at the first connection to the arm, the Reference window opens.

This window shows the status of all the axes of the arm; so it is necessary here to perform the "reset" procedure of the arm. Select the desired profile depending on the probe (or scanner) mounted on the arm (in the illustration, it is "probe 1").

The profiles are configurable with the Kreon Arm WIZARD (cf. its documentation).

Manipulate the arm to let it find its Zero marks for each axis. When one axis is OK, a green dot appears; and, when all are OK the window will close automatically.

At any time, it is possible to change the profile using the green KreonArm icon in the system tray (at the bottom right of the screen).



The probes can be calibrated inside the Kreon Arm WIZARD and then selected inside Polygonia or plug-ins by defining a "Factory calibrated" probe (refer to the "Probe Calibration" section in the "KreonArm Wizard" documentation).

3.4 CONFIGURATION IN KREON APPLICATIONS

To use the Kreon ACE arm in Polygonia or with plug-ins, there are some parameters to set.

First, select the machine "KreonArm.par". Please note that, in some applications, it may be necessary to select a scanner calibration file, first. When using the arm for probing only, any scanner calibration file will be fine.

Second, select the calibration file of the arm (*.tab) in the "Arm properties" window.

Then calibrate the probe or the scanner, check this in the "Probe Calibration" and/or "Scanner Positioning" documentations.

4 TROUBLESHOOTING

4.1 INCORRECT DATA ACQUISITION

Problem: The acquired data (probed or scanned points) seem to be incorrect.

Solution 1: Check that you selected the proper arm calibration TAB file. If the arm has already been recalibrated, make sure that you are using the latest version of the calibration file.

Solution 2: Check that you selected the correct profile in the Probe Management window.

Solution 3: Check that the arm is firmly attached to the workbench or tripod and that the whole workspace is stable.

Solution 4: Try recalibrating the probe or the scanner until the result (standard deviation) is within the specifications of the arm.

Solution 5: An arm recalibration might be necessary. Please contact your reseller or directly Kreon Technologies Technical Support (techsupport@kreon3d.com).

4.2 UNABLE TO CONNECT TO THE ARM

Problem: The arm is switched on but I can't connect to the arm.

Solution 1: If the arm is supposed to be connected by USB, check the USB connection. Also check that it is correctly detected as "KREON Technologies Measuring Arm (USB)" in windows Device Manager. If not, then install the latest KreonArm driver and, during installation, accept installing the USB driver. You may also try connecting the arm to another USB port.

Solution 2: If the arm is supposed to be connected by Wifi (i.e. if the USB cable is willingly unplugged), check that the Wifi adapter is enabled on your computer and that the ad-hoc Wifi network named "ACE_xxxx" is visible (xxxx is the serial number of the arm). Note that in Windows 8.1 the network may be invisible and yet operational.

4.3 UNABLE TO SCAN

Problem: When I try to start scanning by pressing an arm button, the arm goes back to pause immediately.

Solution 1: Check in the Probe Management window that the selected profile is "Scanner" (not "Probe" or "Factory calibration").

Solution 2: For scanners with a controller box (ECU), check that the "trigger" cable that goes from the arm to the ECU is plugged correctly.