Nutrunners

Valid from Serial No. B-00000-000000 to C-99999-999999.

Models:

CP8603 PACK 36V 2.5AH	6151570380
CP8603C PACK 36V 2.5AH	6151570390
CP8603CQ PACK 36V 2.5AH	6151570400
CP8603TC PACK 36V 2.5AH	6151570410
CP8603 BARE TOOL	6151571250
CP8603C BARE TOOL	6151570880
CP8603CQ BARE TOOL	6151570890
CP8603TC BARE TOOL	6151570900
CP8609 PACK 36V 2.5AH	6151571120
CP8609C PACK 36V 2.5AH	6151571130
CP8609CQ PACK 36V 2.5AH	6151571140
CP8609TC PACK 36V 2.5AH	6151571150
CP8609 BARE TOOL	6151571160
CP8609C BARE TOOL	6151571170
CP8609CQ BARE TOOL	6151571180
CP8609TC BARE TOOL	6151571190
CP8613 PACK 36V 2.5AH	6151570000
CP8613C PACK 36V 2.5AH	6151570010
CP8613CQ PACK 36V 2.5AH	6151570020
CP8613TC PACK 36V 2.5AH	6151570670
CP8613 BARE TOOL	6151570210
CP8613C BARE TOOL	6151570220
CP8613CQ BARE TOOL	6151570230
CP8613TC BARE TOOL	6151570840
CP8613 WOB PACK 36V 2.5AH	6151570340
CP8613C WOB PACK 36V 2.5AH	6151570350
CP8613CQ WOB PACK 36V 2.5AH	6151570360
CP8613TC WOB PACK 36V 2.5AH	6151570710
CP8626 PACK 36V 2.5AH	6151570030
CP8626C PACK 36V 2.5AH	6151570040
CP8626CQ PACK 36V 2.5AH	6151570050
CP8626TC PACK 36V 2.5AH	6151570680
CP8626 BARE TOOL	6151570240
CP8626C BARE TOOL	6151570250
CP8626CQ BARE TOOL	6151570260
CP8626TC BARE TOOL	6151570850
CP8641 PACK 36V 2.5AH	6151570060
CP8641C PACK 36V 2.5AH	6151570070
CP8641CQ PACK 36V 2.5AH	6151570080
CP8641TC PACK 36V 2.5AH	6151570690
CP8641 BARE TOOL	6151570270
CP8641C BARE TOOL	6151570280
CP8641CQ BARE TOOL	6151570290
CP8641TC BARE TOOL	6151570860
CP8681 PACK 36V 2.5AH	6151570090
CP8681C PACK 36V 2.5AH	6151570190
CP8681CQ PACK 36V 2.5AH	6151570200
CP8681TC PACK 36V 2.5AH	6151570700
CP8681 BARE TOOL	6151570300
CP8681C BARE TOOL	6151570310
CP8681CQ BARE TOOL	6151570320
CP8681TC BARE TOOL	6151570870

Content

General information

WARNING Risk of Property Damage or Severe Injury

Ensure that you read, understand, and follow all instructions before operating the tool. Failure to follow all the instructions may result in electric shock, fire, property damage and/or severe bodily injury.

- Read all safety Information delivered together with the different parts of the system.
- Read all product Instructions for installation, operation and maintenance of the different parts of the system.
- Read all locally legislated safety regulations regarding the system and parts thereof.
- Save all safety information and instructions for future reference.

Website

Log in to Chicago Pneumatic: www.cp.com. You can find information concerning our products, accessories, spare parts and published matters on our website.

Torque range

	Supermin	Min	**Nominal**	Max
CP8603	35 N.m 25 Ft.lb	70 N.m 50 Ft.lb	**260 N.m** **190 Ft.lb**	325 N.m 240 Ft.lb
CP8609	65 N.m 48 Ft.lb	250 N.m 185 Ft.lb	**720 N.m** **530 Ft.lb**	900 N.m 665 Ft.lb
CP8613	75 N.m 55 Ft.lb	300 N.m 220 Ft.lb	**1040 N.m** **770 Ft.lb**	1300 N.m 960 Ft.lb
CP8626	175 N.m 130 Ft.lb	700 N.m 520 Ft.lb	**2080 N.m** **1530 Ft.lb**	2600 N.m 1910 Ft.lb
CP8641	250 N.m 185 Ft.lb	1000 N.m 740 Ft.lb	**3280 N.m** **2420 Ft.lb**	4100 N.m 3020 Ft.lb
CP8681	500 N.m 370 Ft.lb	2000 N.m 1470 Ft.lb	**6480 N.m** **4780 Ft.lb**	8100 N.m 5970 Ft.lb

► Accuracy: We calibrate our tools to ensure an accuracy of ±4% (6 sigma) based on a hard joint at a 15° angle at nominal torque. This accuracy is guaranteed only at the nominal torque value.

Licenses

Nutrunners can have different license levels, chosen by the user when purchasing the tool. Licenses determine the information and parameters available through wireless communication and the features accessible on the tool.

	SA	C	CQ	TC
Performance				
Digital OLED display	X	X	X	X
Automatic release reaction arm	X	X	X	X
Torque tightening	X	X	X	X
Safety				
Double safety button (second start safety trigger)	X	X	X	X
Tool lock & finder		X	X	X
Connectivity				
CPLinQ		X	X	X
Tool maintenance				
Tool status follow-up management		X	X	X
Operation alert		X	X	X
Maintenance timeline		X	X	X
Job control				
Angle tightening		X	X	X
P-Set library		X	X	X
Counting sequence			X	X
Report				
Tightening report			X	X
Process control				
Torque Check				X

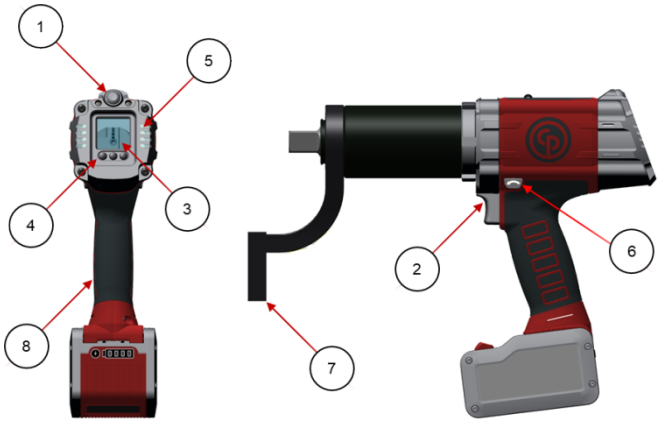
SA = Standalone
C = Connected
CQ = Connected Quality
TC = Torque Check

CPLinQ

To activate your features for “Connected”, “Connected Quality” and “Toque Check” versions, download the CPLinQ application to your device and connect your tool to the app.

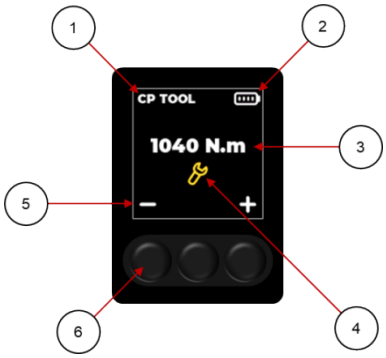
For Chinese users using android phone, download the .apk file from website www.cp86.com or here:

Product description



1. Second trigger
2. Principal trigger
3. Display screen
4. Settings buttons
5. Reporting LEDs
6. Forward/Reverse button
7. Reaction bar
8. Handle (gripping surface)

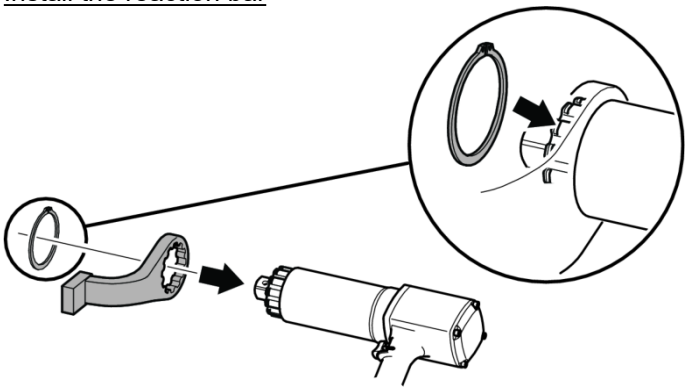
Operating the tool



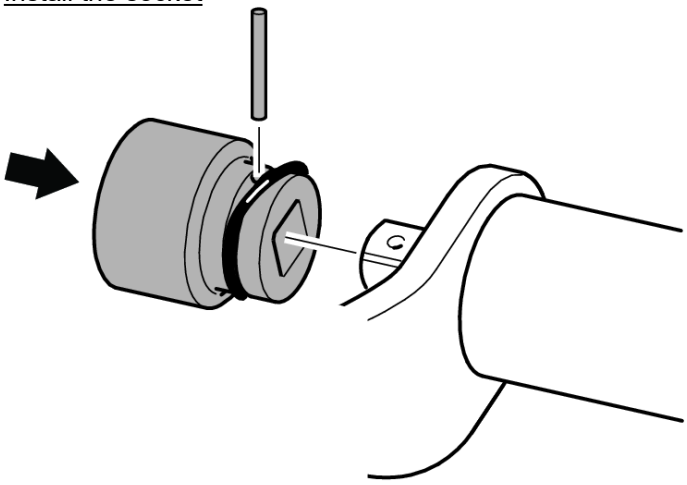
1. Tool name
2. Battery level
3. Target torque
4. Application
5. Action for the buttons
6. Buttons (x3)

Installation instruction

Install the reaction bar



Install the socket



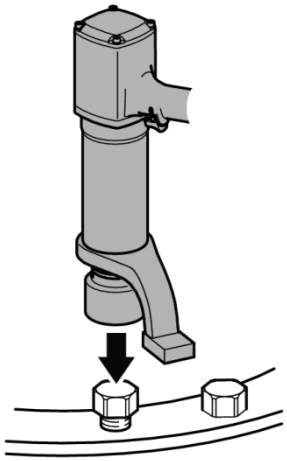
Tool power supply

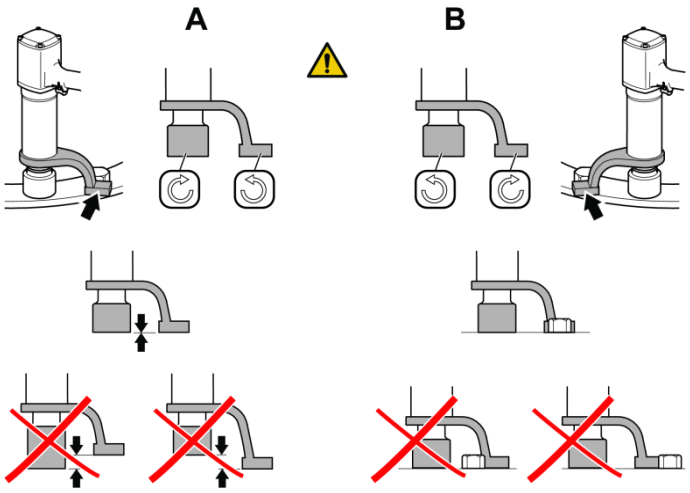
On delivery, the battery CP36XP25 (8940176068) is in deep sleep mode. To wake up the batteries remove white protective sticker and plug the battery to CP charger CP18-36CH (8940176069). To get more information on the battery charger, refer to the product information: 8940176811. To get more information on the battery pack, refer to the product information: 8940176810.

Insert the battery (insert the battery firmly, not slowly)

Remove the battery

Operating instruction





Starting the tool.
Fit the tool with a suitable socket.
Set the appropriate program on the tool.
Hold the tool by means of the handle, place the reaction bar on a suitable reaction point and apply to the fastener to be tightened.

WARNING Risk of Injury

As the reaction force increases in proportion to the tightening torque, there is a risk of severe bodily injury of the operator because of unexpected behavior of the tool.
► Make sure that the tool is in perfect working order.

WARNING Risk of Burns

The motor may heat up during heavy duty cycles.
► Wear gloves.

WARNING Crushing Hazard

Do a check of the rotational direction of the tool before start! A start in an unexpected rotational direction can cause bodily injury or property damage.
► Make sure that the rotational direction of the tool is correct before starting the tool.
► Keep your hands away from the reaction bar while the tool is used.
► Press triggers to start the tool.

Position

Forward and reverse position

Forward mode when the thread type is *right*.
Reverse mode when the thread type is *left*.

Forward mode when the thread type is *left*.
Reverse mode when the thread type is *right*.

Neutral position

In neutral position, you have this message on the display.

Access to tool menus

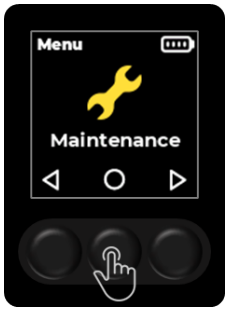
To enter the menu, press the central button for 2-3 seconds.

To scroll through the menu, press the right (or left) button.

To return to the main page, press the central button when you're in the "Back" screen.

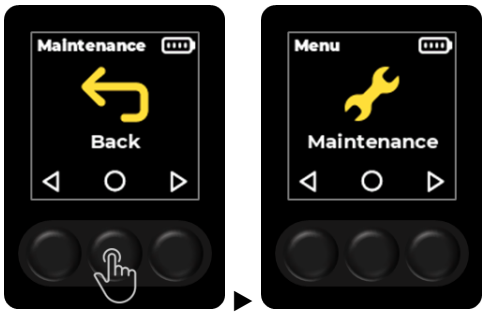
Maintenance menu (without thresholds)

To enter the maintenance menu, press the central button when you're in this screen.



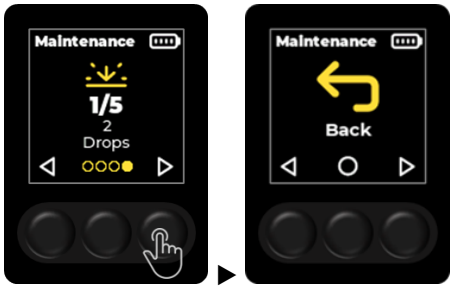
To scroll through the menu, press the right (or left) button. Values are the global counter for tool.

To return to the main page, press the central button when you're in the "Back" screen.



Maintenance menu (with thresholds)

When maintenance thresholds are set using the mobile app, they become visible in the menus.



Explanation of the display:

1. Partial counter
2. Global counter
3. Threshold set in the mobile application
4. Variable

Tool infos menu

To enter the tool information menu, press the central button when you're in this screen.

To scroll through the menu, press the right (or left) button.

To return to the main page, press the central button when you're in the "Back" screen.

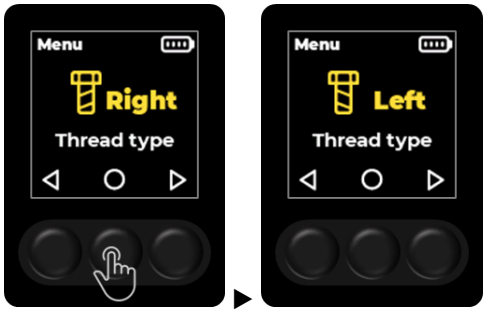
Select unit menu

To change the unit, press the central button when you're in this screen.

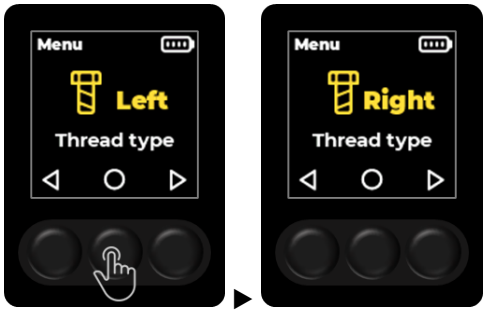
Or

Thread type menu

To change the thread type, press the central button when you're in this screen.



Or



Torque mode

To reduce target torque, in forward mode, press the left button

To increase target torque, in forward mode, press the right button.

At the end of the tightening process, the actual torque achieved will be shown on the tool’s display.

In reverse mode, the maximum torque is automatically selected.

Torque mode (Below Minimum Torque)

When you set a target torque below the tool's minimum torque, an icon appears to indicate that you are outside the acceptable operating range for the tool.

Here is an example with the CP8613 tool, which has a torque range from 300 N.m to 1300 N.m. Therefore, if you set a torque below 300 N.m, an icon will alert you that you are outside the tool's acceptable range.

When you set a target torque below the tool's minimum torque, the value displayed on the screen after tightening will be the target torque, not the actual torque applied.

Torque check mode (TC tools)

For tools with the TC version, torque check tightening is available. To activate it, press the center button several times until the screen below (highlighted in green) appears.

To return to torque tightening mode, press the center button several times until the screen below (highlighted in green) appears.

Angle mode (C, CQ and TC tools)

For tools with version C and above, angle tightening is available. To activate it, press the center button several times until the screen below (highlighted in green) appears.

↑ This screen, ↑
only for TC version.

To return to torque tightening mode, press the center button several times until the screen below (highlighted in green) appears.

Torque Angle mode (C, CQ and TC tools)

For tools with version C and above, torque angle tightening is available. To activate it, press the center button several times until the screen below (highlighted in green) appears.

To decrease the torque, press the left button.

To increase the torque, press the right button.

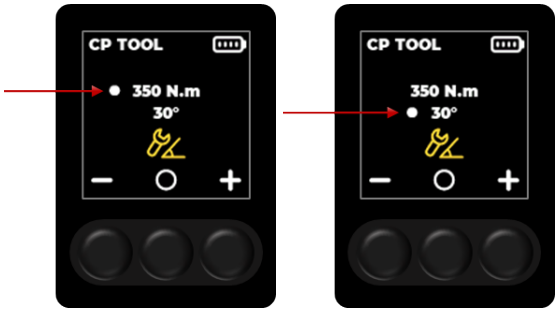
Press the center button to adjust the angle. If the dot is in front of angle, the “+” and “–” buttons allow you to adjust the angle.

To decrease the angle, press the left button.

To increase the angle, press the right button.

The tool will not be able to perform the selected angle if the torque exceeds the tool’s maximum torque.

Explanation of the display:



- If the dot is in front of torque, the “+” and “–” buttons allow you to adjust the torque.
- If the dot is in front of angle, the “+” and “–” buttons allow you to adjust the angle.

Calibration menu

For tool calibration or any other servicing operations, please refer to your local service center. These operations should be performed by an authorized repair center. We recommend calibrating the tool once a year.

> In production, calibration is done at nominal torque, and the torque test bench is set for a hard joint (15°).

To access calibration mode, the tool must be in open setup and set to its nominal torque.

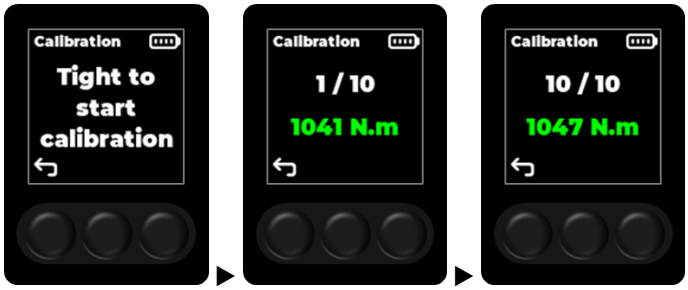
To enter the menu, press the central button for 2-3 seconds.

To enter the tool information menu, press the central button when you're in this screen.

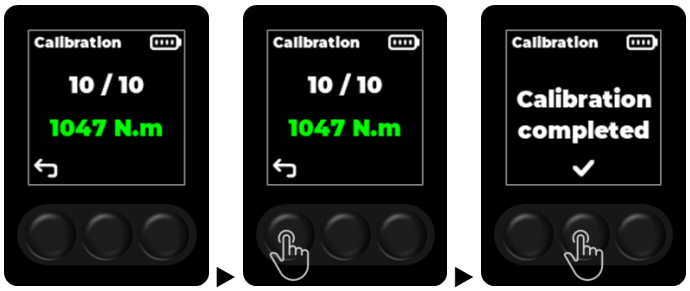
Validate the target torque:

Set the desired number of tightenings and confirm. In production, calibration is performed with 10 tightenings.

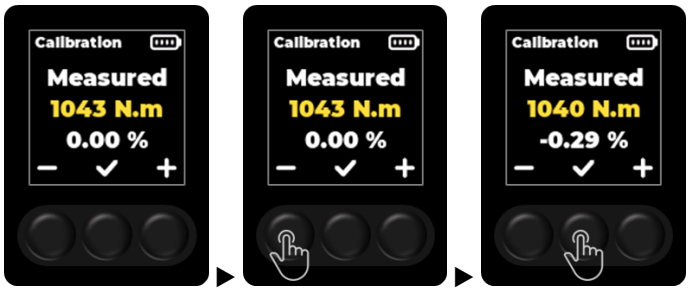
Press the triggers to start the calibration.



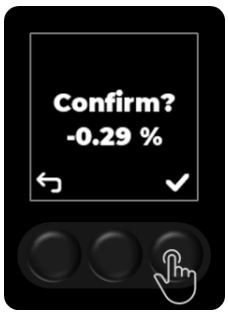
Press the left button to display the result and validate.



Press the right or the left button to adjust the result until it matches the set torque, then validate.



Confirm.



Well done, your tool is now calibrated.

Troubleshooting

Description: the "Drop Maintenance" message appears when the tool detects that the number of drops exceeds the defined threshold. The message is displayed once when the drop count surpasses the threshold set in the maintenance menu. If no threshold is defined, the message does not appear. Solution: adjusting the threshold below the current drop count will not re-trigger the message if it was already shown. Check the tool for damage or wear caused by drops. Perform maintenance as recommended. Set an appropriate drop threshold in the maintenance menu. **Default threshold: 5.**

Description: the "Forward Maintenance" message appears when the number of forward tightening operations exceeds the set threshold. The "Reverse Maintenance" message appears when the number of reverse tightening operations exceeds the set threshold. The message is displayed once when the operation count surpasses the defined threshold in the maintenance menu. If no threshold is defined, the message does not appear. Solution: check the tool's condition and perform maintenance if necessary. Set an appropriate threshold in the maintenance menu. **Default threshold: 1000.**

Description: the "Operating Time Maintenance" message appears when the tool's operating time exceeds the set threshold. The message is displayed once when the operating time surpasses the defined threshold in the maintenance menu. If no threshold is defined, the message does not appear. Solution: inspect the tool for wear and perform maintenance if necessary. Set an appropriate threshold in the maintenance menu. **Default threshold: 3600s.**

Description: one of the triggers has been released during tightening. Torque or angle achieved is shown. Flashing between the two screens. Solution: maintain both triggers until end of tightening.

Description: the "Battery Temperature" and "Tool Temperature" messages appears when the tool detects abnormal temperatures in the motor, drive, or battery.

- Motor temperature is out of range (0.5°C to 77.5°C).
- Drive temperature is out of range (0.5°C to 70°C).
- Battery temperature is out of range (0°C to 65°C).

Solution: cool down the tool.

Description: the "Limited Torque" message appears when the tool detects that it cannot reach the upper torque limit without risking overload or excessive power draw. The message appears at start-up if the tool predicts a torque overload. The message also appears during tightening if the target torque requires more than 60A of power. Solution: check if the torque setting is appropriate for the application. Reduce the target torque to avoid overload.

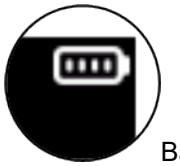
Description: the "Rehit Detected" message appears on CP86XX tools when the nut turns too little during tightening (less than 3°). The bolt was already tightened before starting the operation. Solution: check if the bolt was previously tightened.

Description: the "Drive Error" message appears when the tool detects a hardware issue. A malfunction in the drive system or internal components. Solution: turn off the tool and restart it.

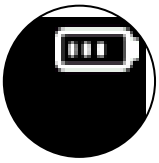
Description: the "Fan Issue" message appears when the tool detects that the fan is not rotating as expected. The fan is stuck or obstructed. Solution: check the fan for any obstructions or damage.

Description: the "Recording Error" message appears when the tool cannot read or detects corruption in its memory. Tightening results will not be saved until the issue is resolved. Tightening operations are blocked until the message disappears. (before firmware version 2.11, it was the "Flash Error" or “Memory Error” message). Solution: contact your local service center.

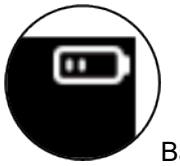
Description: the "Low Battery" message appears when the battery charge is below 25%. Solution: replace the battery with a fully charged one. Charge the low battery immediately to prevent deep discharge.



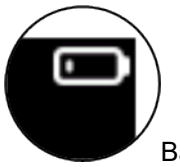
Battery level: 76% < 100%.



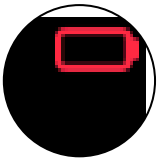
Battery level: 51% < 75%.



Battery level: 26% < 50%.



Battery level: 0% < 25%.



Battery level: 0% < 10%.

Description: the "Lock" message appears when the tool in locked. Solution: use the CPLinQ mobile application to unlock the tool. When the tool receives a “Tightening lock” message over Bluetooth, the information on the screen turns gray to indicate to the user he cannot tight. In this mode, the trigger has no action. All other functions are available.

Description: the "Battery Error" message appears when the tool is unable to communicate with the battery. Verify that you are using the correct battery (8940176068). Solution: inspect the pins on both the battery connector and the tool connector for damage or debris.

Description: the "Trigger Order" message appears when the triggers are used in the wrong order. Solution: press and hold the second trigger (1). Then, press and hold the main trigger (2) until the end of the tightening.

Description: this icon appears when Favorite 1 is not available. The tool is in Favorite mode without a defined PSet. Solution: define at least one PSet or switch the tool back to Open Setup mode using the CPLinQ mobile application.

Description: the "Tool Overload" message appears when the tool is overloaded due to too much current during the tightening process. Solution: contact your local service center.

Service & maintenance

Overhaul and preventive maintenance are recommended at regular intervals. Maintenance should only be performed by qualified personnel. Information about our products, accessories, spare parts, exploded views, and published documents can be found on our website: www.cp.com.

Using spare parts other than those originally supplied by the manufacturer may lead to decreased performance, increased maintenance requirements, higher vibration levels, and the full cancellation of the manufacturer's liability.

► CP86 Maintenance: Service your tools at least once a year or after 50,000 tightenings for CP8603 and CP8609, and 5,000 tightenings for CP8613, CP8626, CP8641 and CP8681.

- Maintenance guide: 6159990050
- CP-Service instructions: 6159991410
- Safety information: 6159925520
- Exploded views:
  - CP8609: 6159991810
  - CP8603: 6159990940
  - CP8613: 6159990010
  - CP8626: 6159990020
  - CP8641: 6159990030
  - CP8681: 6159990040

FAQ

What should I do if the CP86 tool doesn't start?
- Check if the battery is awake (insert the battery into the charger briefly to wake it up).
- Verify the battery charge level.
- Press both triggers simultaneously to reset the boot.
- If the issue persists, contact your CP representative for support.

What does "Safety Reset" mean on my CP86?
- This message indicates that the tool overheated due to high torque demand or extended tightening cycles.
- Allow the tool to cool down for 5–10 minutes.
- Review your application to ensure it fits the tool's specifications.
- If the message appears frequently, contact your CP representative.

My CP86 tool is overheating; is this normal?
- A slight increase in temperature is normal after several consecutive tightening operations. However, overheating may occur if the tool is used improperly.

Solutions:
- Avoid elastic tightening. The tool is designed as a finisher. Use it for firm tightening operations, between 15° and 30°.
- Do not use the tool for approach operations. Avoid using the tool to bring the nut or bolt into contact.
- Reduce the intensity or duration of tightening cycles.
- Allow the tool to cool down between intensive uses.
- If the tool overheats to the point of stopping, check that your application complies with the tool's specifications.

When does the fan activate?
- The fan activates automatically:
    - When a tightening operation starts.
    - If the motor or drive temperature exceeds 40°C.

When does the fan stop?
- The fan stops only when the temperature drops below 40°C.

What should I do if a fan error message appears?
- CP86 tools have a fan that monitors rotation speed.
- If the fan is blocked or not spinning correctly, an error message is displayed. In this case:
    - Check if the fan is obstructed.
    - Restart the tool after clearing any obstruction.
    - If the issue persists, contact your CP representative.

Why does the fan keep running after tightening?
- The fan may remain active to cool the motor and drive components.
- This is normal and prevents overheating.

Does the fan prevent the tool from entering sleep mode?
- Yes, while the fan is active, the tool cannot enter low-power mode. Priority is given to cooling the components.

What is CPLinQ?
- CPLinQ is a mobile application used to connect, configure, and monitor CP86 tools (C, CQ and TC).
- It provides access to detailed information about the tool, allows customization of settings, and offers advanced features like sequence management and results tracking (depending on the license).

How do I connect my tool to CPLinQ?
- Ensure that Bluetooth is activated on your mobile device.
- Open the CPLinQ app and follow the connection steps to pair your tool with your phone.
- If the connection fails:
    - Verify that the tool is powered on.
    - Restart both the tool and your phone.
    - Try connecting using another device.

What should I do if CPLinQ does not detect my tool?
- Check that Bluetooth is enabled on your phone.
- Ensure the tool is within range and powered on.
- Restart or reinstall the CPLinQ app and try again.
- If the issue persists, contact your CP representative.

Does CPLinQ support multiple tools?
- Yes, CPLinQ can manage multiple tools. Each tool must be paired and configured individually.

Is CPLinQ compatible with all mobile devices?
- CPLinQ is compatible with most iOS and Android devices. Ensure your operating system is up to date and supports Bluetooth connectivity.

How do I update my CP86 tool?
- Contact your CP customer center.

Annexe I – Speed profile

A tightening operation includes 4 main phases:

1. Acceleration – the gearbox starts turning.
2. Approach – the tool gets close to the target (torque or angle).
3. Tightening – the tool reaches the target.
4. Stopping – the tool stops after reaching the target.

We separate phases 2 and 3 because reducing speed just before reaching the target significantly improves tightening accuracy. The point where the tool switches from approach to tightening is called the Approach to Tightening Threshold. It's based on a percentage of the target torque.

There are different speed settings:
1. Approach Speed
2. Tightening Speed
3. Loosening Speed

📝 Depending on the tool model and operation, these speeds and the threshold can vary.
After 1 minute of continuous tightening, the speed may automatically reduce from 100% to 50%.

Nutrunner's speeds and transition threshold during a **torque operation**.

	Approach speed Motor / Square (rpm)	Tightening speed Motor / Square (rpm)	Approach to Tightening Threshold [% of the target]
CP8603	4900 / 20,77	2450 / 10,39	50%
CP8609	8500 / 12,45	4000 / 5,86	70%
CP8613	9300 / 9,97	4900 / 5,25	75%
CP8626	9300 / 4,67	4900 / 2,47	75%
CP8641	9300 / 2,77	4900 / 1,46	75%
CP8681	9300 / 1,2	4900 / 0,63	75%

Nutrunner's speeds and transition threshold during an **angle operation**.

	Approach speed Motor / Square (rpm)	Tightening speed Motor / Square (rpm)	Approach to Tightening Threshold [% of the target]
CP8603	2450 / 10,39	2450 / 10,39	Not applicable
CP8609	4000 / 5,86	4000 / 5,86	Not applicable
CP8613	9300 / 9,97	4900 / 5,25	75%
CP8626	9300 / 4,67	4900 / 2,47	75%
CP8641	9300 / 2,77	4900 / 1,46	75%
CP8681	9300 / 1,20	4900 / 0,63	75%

Nutrunner's **torque check** speeds and transition threshold.

	Approach speed Motor / Square (rpm)	Torque check speed Motor / Square (rpm)	Torque threshold for approach to torque check
CP8603	650 / 2,76	650 / 2,76	Not applicable
CP8609	3000 / 4,39	980 / 1,44	15%
CP8613	4000 / 4,29	980 / 1,05	15%
CP8626	4900 / 2,47	980 / 0,49	38%
CP8641	4900 / 1,46	980 / 0,29	19%
CP8681	4900 / 0,63	980 / 0,13	38%

Nutrunner's **Loosening** speed.

	Loosening speed Motor / Square (rpm)
CP8603	4900 / 20,77
CP8609	8500 / 12,45
CP8613	9300 / 9,97
CP8626	9300 / 4,67
CP8641	9300 / 2,77
CP8681	9300 / 1,2

Annexe II – Angle profile

The gearbox behaves like a spring: the higher the applied torque, the more it compresses.

This compression causes a difference between the angle measured at the motor and the actual output angle at the nut. It is therefore necessary to take this torque-dependent compression into account when measuring the angle.

The first angle measurement is taken when the torque exceeds:

- 75% of the super-min torque for a Torque or Torque Check operation.
- 100% of the super-min torque for an Angle operation.

	Supermin	75%	100%
CP8603	**35 N.m**	26 N.m	35 N.m
CP8609	**65 N.m**	49 N.m	65 N.m
CP8613	**75 N.m**	56 N.m	75 N.m
CP8626	**175 N.m**	131 N.m	175 N.m
CP8641	**250 N.m**	188 N.m	250 N.m
CP8681	**500 N.m**	375 N.m	500 N.m

	Supermin	75%	100%
CP8603	**25 Ft.lb**	19 Ft.lb	25 Ft.lb
CP8609	**48 Ft.lb**	36 Ft.lb	48 Ft.lb
CP8613	**55 Ft.lb**	41 Ft.lb	55 Ft.lb
CP8626	**130 Ft.lb**	98 Ft.lb	130 Ft.lb
CP8641	**185 Ft.lb**	139 Ft.lb	185 Ft.lb
CP8681	**370 Ft.lb**	278 Ft.lb	370 Ft.lb