

HILTI

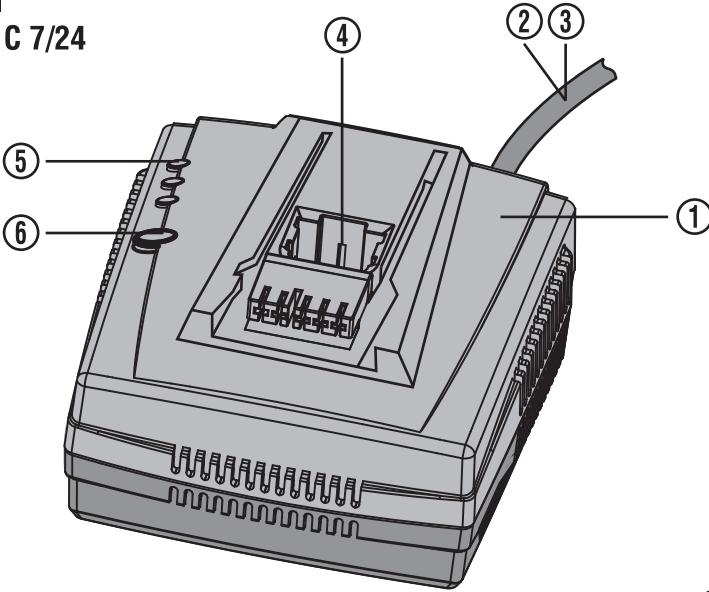
C7/24, C7/36-ACS

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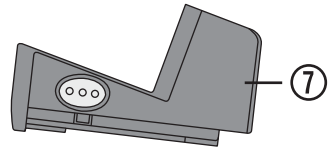


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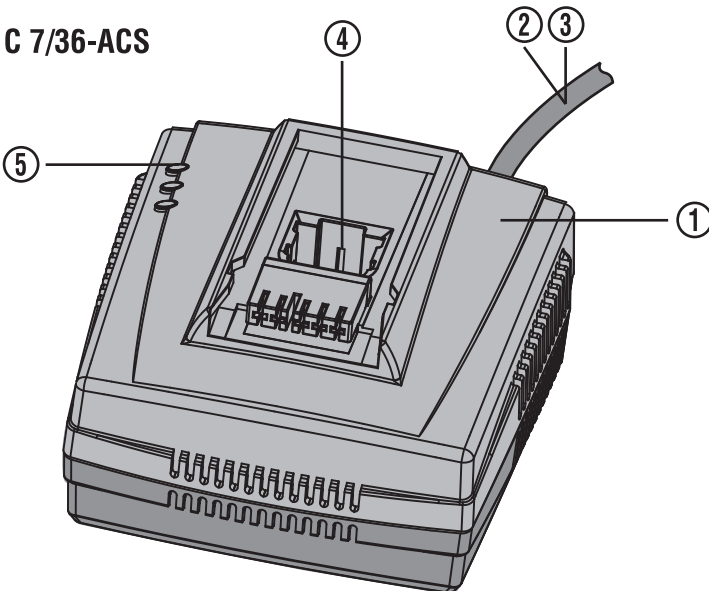
C 7/24

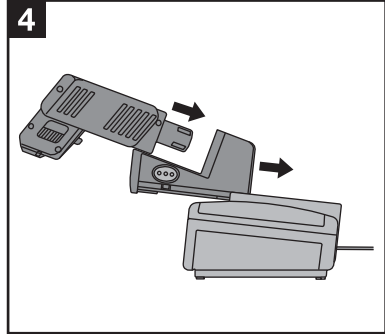
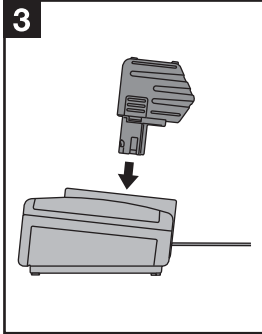
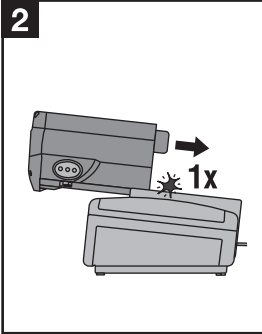


CA 7/36



C 7/36-ACS

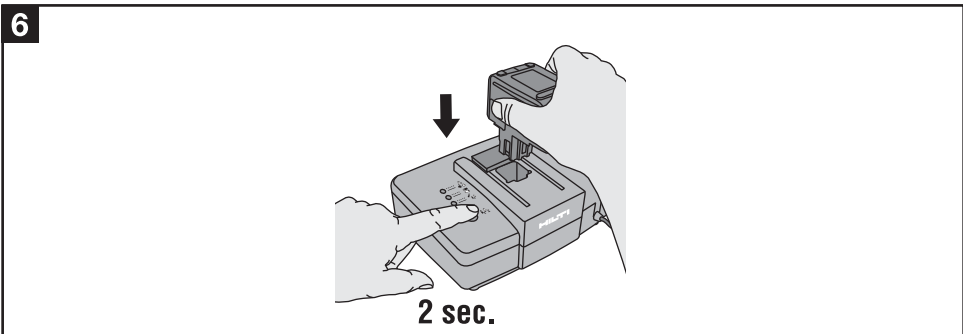




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C 7/24 **C 7/36-ACS**

Refresh **Auto Refresh**



ORIGINAL OPERATING INSTRUCTIONS

C 7/24 and C 7/36-ACS chargers

It is essential that the operating instructions are read before the appliance is operated for the first time.

Always keep these operating instructions together with the appliance.

Ensure that the operating instructions are with the appliance when it is given to other persons.

Operating controls and component parts **1**

- ① C 7/24 and C 7/36-ACS chargers
- ② Supply cord
- ③ Plug
- ④ Battery compartment
- ⑤ Indicator lamps
- ⑥ "Refresh" button (only C 7/24)
- ⑦ CA 7/36 adaptor for BP 12, BP 40, BP 72 and RB 10*

* Only the charger is supplied.
Batteries and adaptors are available as accessories.

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1. General information

1.1 Signal words and their meaning

-CAUTION-

Used to draw attention to a potentially dangerous situation which could lead to minor personal injury or damage to the equipment or other property.

-NOTE-

Used to draw attention to an instruction or other useful information.

1.2 Pictograms

Warning signs



General warning



Warning: electricity



Warning: caustic substances

Alert sign



"Alert sign" in addition to CE mark.

Mandatory for all radio appliances to which special regulations or restrictions apply somewhere in Europe.

Symbols



Read the operating instructions before use



Do not dispose of batteries with general refuse.



Return waste material for recycling

1 These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.

In these operating instructions, the designation "appliance" refers to the C 7/24 and C 7/36-ACS chargers.

Location of identification data on the appliance

The type designation and serial number can be found on the rating plate on the appliance. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: _____

Serial no.: _____

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2. Description

The charger is designed for charging Hilti batteries with a nominal voltage of 7.2 – 36 volts (C 7/36-ACS charger) or 7.2 – 24 volts (C 7/24 charger).

Items supplied

- C 7/24 standard charger
- or
- C 7/36-ACS top charger
- Operating instructions


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Voltage	Designation	Battery type	Charging time with C7/24	Charging time with C7/36-ACS	Examples of tools using this battery
9.6 V	SFB 105	NiMH	45 min.	30 min.	SF 100-A, SB 10, HIT-BD 2000
9.6 V	SBP 10	NiCd	30 min.	20 min.	SF 100-A, SB 10, HIT-BD 2000
9.6 V	RB 10	NiCd	20 min.	15 min.	FS 10 Ferrosan (with adaptor)
12 V	SFB 125	NiMH	45 min.	30 min.	SF 120-A, SF 12
12 V	SBP 12	NiCd	30 min.	20 min.	SF 120-A, SB 12
12 V	SFB 121	NiCd	30 min.	20 min.	SF 121-A
12 V	SFB 126	NiMH	45 min.	30 min.	SF 121-A
12 V	BP 12	NiCd	20 min.	15 min.	TCI 12 (with adaptor)
15.6 V	SFB 150	NiCd	30 min.	20 min.	SF 150-A
15.6 V	SFB 155	NiMH	45 min.	45 min.	SF 150-A
18 V	SFB 180	NiCd	34 min.	20 min.	SF 4000-A, SF 180-A
18 V	SFB 185	NiMH	51 min.	45 min.	SF 4000-A, SF 180-A
24 V	B24/2.0	NiCd	48 min.	20 min.	UH 240-A, TE 2-A, WSR 650-A
24 V	B24/2.4	NiCd	48 min.	24 min.	UH 240-A, TE 2-A, WSR 650 A
24 V	B24/3.0	NiMH	72 min.	30 min.	UH 240-A, TE 2-A, WSR 650-A
24 V	BP 40, BP 72	NiCd	41–72 min.	20–36 min.	TE 5-A (with adaptor)
36 V	BP 6-86	NiCd	–	34 min.	TE 6-A (only C 7/36-ACS!)
36 V	B 36/2.4	NiCd	–	34 min.	TE 6-A (only C 7/36-ACS!)

3. Accessories

CA 7/36 adaptor for BP 12, BP 40, BP 72 and RB 10

4. Technical data

Charger	C 7/24	C 7/36-ACS
Refresh function	Manual refresh function ("Refresh" button)*	Automatic refresh function ("Refresh" function)*
Cooling	By convection	Active cooling system
Mains voltage	100–127 V and 220–240 V	100–127 V and 220–240 V
Mains frequency	50/60 Hz	50/60 Hz
Battery types	NiCd, NiMH	NiCd, NiMH
Output voltage	7.2 – 24 V	7.2 – 36 V
Output power	90 W	200 W
Charging times	See table in section 2.	
Weight	Approx. 1.0 kg	approx. 1.0 kg
Supply cord length	Approx. 2 m	approx. 2 m
Dimensions (L×B×H)	170×165×88 mm	170×165×88 mm
Charging control	Electronic charging control (microcontroller)	
Protection class	Electrical protection class II (double insulated) 	

Right of technical changes reserved

* See section 7.3 for further information.

5. Safety precautions

5.1 Basic information concerning safety

In addition to the information relevant to safety given in each of the sections of these operating instructions, the following points must be strictly observed at all times. Read all instructions! Failure to observe the following instructions may lead to a risk of electric shock, fire and/or serious personal injury.

5.2 Correct use



- The appliance is designed to charge Hilti batteries with a nominal voltage of 7.2 – 36 volts (C 7/36-ACS charger) or 7.2 – 24 volts (C 7/24 charger).
- Use the appliance to charge Hilti batteries listed in these operating instructions only.
- The appliance must not be used in areas where there is a risk of explosion.
- Manipulation or modification of the appliance is not permissible.
- Do not render any safety devices ineffective and do not remove any information or warning plates.
- Do not use the appliance if the plug pins are bent or damaged (do not use force when plugging in).
- Follow the instructions concerning care and maintenance.
- The appliance and its ancillary equipment may present hazards when used incorrectly by untrained personnel or not as directed.
- The C 7/36-ACS features radio interference suppression and is thus intended for use worldwide and in EU and EFTA countries in particular.

5.3 Take the necessary precautions to make the workplace safe



- Ensure that the workplace is well lit.
- Keep the working area tidy. Objects which could cause injury should be removed from the working area. Untidiness at the workplace may lead to accidents.
- Keep children away from the appliance. Do not permit other persons to touch the appliance or its extension cord.

5.4 General safety precautions



- Use the correct appliance for the job. Do not use the appliance for purposes for which it was not designed. Use it only as directed and when in faultless condition.
- Take the surrounding conditions into account. Do not

expose the appliance to rain or snow and do not use it in damp or wet areas. Do not use the appliance where there is a risk of fire or explosion.

- Appliances should be stored in a secure place when not in use. When not in use, the appliance should be stored in a dry place, locked up or out of reach of children.
- **This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- **Children must be instructed not to play with the appliance.**

5.4.1 Electrical hazards



- Protect yourself from electric shocks. Avoid body contact with earthed objects, e.g. pipes and radiators.
- Check the condition of the supply cord at regular intervals and have it replaced by a trained electrical specialist if found to be damaged. Check the condition of extension cords at regular intervals and replace these if damaged.
- Check the condition of the appliance including the supply cord and extension cord as well as the plug connections. Do not operate the appliance if damage is found, if the appliance is not complete or if its controls cannot be operated faultlessly.
- Do not cover the appliance. Keep the ventilation slots free.
- Do not touch the supply cord in the event of it suffering damage while working. Disconnect the supply cord plug from the socket.
- The appliance should be repaired by a trained electrical specialist (Hilti service center), using original Hilti spare parts. Failure to observe this point may result in a risk of accident to the user.
- Do not use the supply cord for purposes for which it was not intended. Never carry the appliance by the supply cord. Do not unplug the appliance by pulling the supply cord.
- Do not expose the supply cord to heat, oil or sharp edges.
- When working outdoors, use only extension cords approved and correspondingly marked as suitable for outdoor use.
- Avoid using extension cords with multiple sockets and simultaneous operation of several tools or appliances.
- Never operate the appliance when it is dirty or wet. Dust or dampness on the surface of the appliance make it difficult to hold and, under unfavorable conditions, may lead to electric shocks.

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- Ensure that the outer surface of the battery is clean and dry before inserting the battery in the appropriate charger for charging.
- Avoid short-circuiting the battery. A short circuit may present a fire hazard.
- Avoid touching the contacts.
- Use only the batteries listed in these operating instructions.
- Batteries must be disposed of correctly and safely on reaching the end of their life.
- **When not in use, keep the battery and the charger away from paper clips, coins, keys, nails, screws or other small metal objects that could cause a short circuit at the battery terminals or the charging contacts.** A short circuit at the battery terminals or charging contacts could result in personal injury (burns) or fire.

5.4.2 Liquids



Caustic liquids may leak from defective batteries. Avoid contact with these liquids. In the event of contact with the skin, wash the area affected with soap and plenty of water. Should the liquid come into contact with the eyes, flush the eyes with water immediately and subsequently consult a doctor.

5.5 Requirements to be met by users

- The appliance is intended for professional use.
- The appliance may be operated, serviced and repaired only by authorized, trained personnel. This personnel must be informed of any special hazards that may be encountered.
- Stay alert.

6. Before use



- The electric supply voltage must comply with the specification given on the rating plate.

6.1 Operate the charger only at a suitable place

- The charger should be operated only at a dry, clean, cool place but where it is protected from frost.
- The charger must be able to give off heat during the charging operation. Accordingly, ensure that the ventilation slots remain unobstructed.
- Accordingly, remove the charger from the toolbox.
- Do not operate the charger inside a closed container.

6.2 Switching on the charger

- Plug the supply cord into the electric socket.

-NOTE-

All 3 indicator lamps light briefly while the self-test is being carried out. Subsequently, only the green lamp should light.

The green lamp blinks if the self-test was unsuccessful. Should the green lamp continue to blink after the supply cord has been unplugged and then reconnected to the mains supply, the charger should be returned to a Hilti service center for repair.

7. Operation

7.1 Inserting the battery 2 3 4

Insert the battery in the appropriate compartment or interface, depending on the type of Hilti battery to be charged.

Please use the Hilti CA 7/36 adaptor when charging BP 40, BP 72, RB 10 and BP 12, batteries (not supplied with the charger). Ensure that the shape of the battery terminal section and the adaptor correspond.

The charging procedure starts automatically after the battery has been fully inserted in the charger.

-NOTE-

The battery will not suffer damage even when left in the charger for long periods (with the charger in operation).

-CAUTION-

The charger is designed for use with the Hilti batteries listed. Charging other batteries is not permissible as this

may result in personal injury or serious damage to the battery.

Corrosive liquids may leak from defective batteries. Avoid contact with such liquids.

7.2 Indicators 5

Green lamp	lights constantly	The charger is connected to the mains supply and is ready for use.
	blinks	A malfunction in the charger or battery was detected during the self-test.
Red lamp	lights constantly	The battery is being charged.
	blinks	Battery charging is complete.

Yellow lamp	lights constantly	The battery is being charged in refresh mode (see section 7.3).
	blinks	The battery is too cold (< 0°C) or too warm (> 60°C). Charging does not start. Charging begins automatically (incl. refresh mode, if applicable) as soon as battery temperature is within the specified range.

7.3 Refresh mode

The individual cells of a battery are subject to self-discharge. With older batteries, some of the cells may lose their charge more quickly than others. As conventional chargers switch off when the first cells have reached full charge, the other partly-charged cells never receive the full charge. The user becomes aware of this effect in the form of inadequate battery capacity. This effect can be eliminated by charging the battery in refresh mode.

7.3.1 C 7/24 6

Start charging in refresh mode by pressing and holding your finger on the "Refresh" button as the battery is inserted into the charger. Release the button when the yellow lamp lights (constantly). The yellow lamp lights as long as charging in refresh mode is taking place.

The battery should be conditioned by charging in refresh mode at regular intervals, after approx. every 30–50 standard charging cycles, but not more than once a month, as frequent refreshing may weaken the battery. Conditioning the battery by charging in refresh mode is, so to speak, a kind of "training" for the battery. Just as excessive training can be harmful to the human body,

use of refresh mode too frequently may also weaken the battery.

7.3.2 C 7/36-ACS

The function described above is controlled automatically by the C 7/36-ACS charger. Charging in refresh mode starts automatically, according to battery type, when necessary. When a new battery is charged for the first time, refresh mode is activated immediately in order to ensure that the battery cells "form" correctly. If charging in refresh mode is interrupted, the charger begins charging in refresh mode when the next charging cycle is started.

-NOTE-

Regular charging in refresh mode ensures maximum battery performance and long battery life.

The normal charging time may vary (increase) depending on the state of the battery.

7.4 Battery

A new battery must be charged in normal mode (without refresh function) for at least 12–24 hours or charged once in refresh mode before being used for the first time in order to ensure that the cells can "form" optimally. Never use a battery until it becomes fully discharged. Recharge the battery as soon as its performance drops noticeably. When a battery is drained until totally discharged, the cells that become discharged first are damaged by the current still being drawn from the other cells.

-NOTE-

- **At low temperatures**, battery performance drops. Batteries should be stored at room temperature when not in use.
- **At high temperatures**, batteries suffer damage. Never charge or store batteries where they are exposed to the heat of the sun, e.g. at a window or behind a motor vehicle windscreen, or on top of a radiator etc.

8. Care and maintenance

Unplug the supply cord from the mains socket.

8.1 Care of the appliance

CAUTION

Always keep the grip surfaces of the appliance free from oil and grease. Do not use cleaning agents which contain silicone.

The outer casing of the appliance is made from impact-resistant plastic.

Never operate the appliance when the ventilation slots are blocked. Clean the ventilation slots carefully using a dry brush. Do not permit foreign objects to enter the interior of the appliance. Clean the outside of the appliance at regular intervals with a slightly damp cloth. Do not use a spray, steam pressure cleaning equipment or running water for cleaning. This may negatively affect the electrical safety of the appliance.

8.2 Maintenance

WARNING

Repairs to electrical parts and replacement of the supply cord may be carried out only by trained electrical specialists.

Check all external parts of the appliance for damage at regular intervals and check that all controls operate faultlessly. Do not operate the appliance when parts are damaged or when the controls do not function correctly. If necessary, the appliance should be repaired by Hilti Service.

8.3 Care of the battery

- Keep the electrical contacts free from dust, oil and grease. If necessary, use a clean cloth to clean the contact surfaces.

- In the event of battery capacity dropping below an acceptable level after a long period of use, we recommend that the battery is returned to Hilti for a diagnostic check.

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9. Disposal

-CAUTION-

The following may occur if the equipment is disposed of incorrectly:

- Toxic fumes, which may present a health hazard, are released when plastic parts are burned.
- Batteries may leak when damaged or heated significantly, resulting in poisoning, burns, acid burns or environmental pollution.
- Incorrect disposal may permit unauthorized persons to use the equipment in ways other than as directed. In doing so, they may injure themselves or third parties, or cause environmental pollution.



Most of the materials from which Hilti appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old appliances for recycling. Please ask your Hilti customer service department or Hilti sales representative for further information.



Dispose of batteries in accordance with national regulations or return them to Hilti for disposal.



Only for EU countries

Do not dispose of electric tools together with household waste material!

In observance of European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

10. Manufacturer's warranty – tools

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular,

Hilti is not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.

For repair or replacement, send tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments and oral or written agreements concerning warranties.

11. EC declaration of conformity (original)

Designation:	Battery charger
Type:	C 7/24 or C 7/36-ACS
Year of design:	2003

We declare, on our sole responsibility, that this product complies with the following standards or standardisation documents: 2006/95/EG, 2004/108/EG, EN 60335-1, EN 60335-2-29, EN ISO 12100, 2011/65/EU.

The C 7/36-ACS also complies with the following standards or standardization documents: 1999/5/EG, EN 300330, EN 301489.

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