

CS 150

Betriebsanleitung
Operating Instructions



Akku-Handcrimpgerät
Battery Crimping Tool

MADE IN GERMANY

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1 Introduction

1.1 Product specification

The battery crimping tool CS 150 is an electric crimping tool for Nelco interchangeable crimping system.

The tool is especially developed for the industrial application. Due to the interchangeable tool heads as well as the crimp die sets of the Nelco crimp system, which can easily be adapted, a wide range of different contacts can be crimped. Adapter, tool heads and die sets can easily be exchanged without any additional tool.

The battery crimping tool CS 150 incorporates an automatic retraction, which returns the ram into its starting position when the maximum force is reached. Furthermore, the tool is equipped with a special brake, which stops the forward motion of the ram/dies when the trigger is released.

The low weight, the small and handy design as well as the ergonomic 2-component housing guarantees a comfortable secure one-hand operation. To simplify operation and gain better access to tight corners and other difficult working areas, the crimping head may be rotated, by hand, 360° relative to the body.

All other applications of the battery crimping tool CS 150 are only permitted with a written permission of the manufacturer. For all unauthorised applications of the battery crimping tool CS 150 the manufacturer cannot be held liable for any resultant damage or injury.

1.2 Conformity



The tool may only be used for the purpose specified in the operating instruction. The manufacturers and suppliers will not be liable for any damages, which may result due to the tool being used for a purpose other than that for which it was intended. **This is done entirely at the user's own risk.**

RoHS Information

The battery crimping tool CS 150 complies with the EU-Guideline 2011/65/EU (RoHS2).

CE

The battery crimping tool CS 150 is CE compliant.

The original declaration of conformity was supplied together with the operating instructions of the battery crimping tool CS 150 in the tool case.

1.3 Dealing with the operating instruction

The operating instruction contains all information concerning operating elements, operation, commissioning and maintenance work as well as technical data.

The operating instruction must be constantly within reach of the battery crimping tool CS 150. Every tool operator must read and understand the operating instruction in order to have safe and efficient production with this piece of equipment.

Nelco declines to accept any liability for damages that are incurred due to the fact that the instructions on the tool or in the operating instruction have been disregarded.

The user is responsible for supplementing the operating instruction with any instructions resulting from current national regulations for accident prevention and protection of the environment.

The German original version is legally binding.

This operating instruction has to be guarded for later use.

2 Safety

2.1 Warning & Safety Precautions in this Operating Instruction

The following warnings and safety related cautionary notices in the individual chapters alert you to various levels of danger:



DANGER

- + Identifies **dangerous voltage and live parts**, which will lead to serious injuries or even death when touching it.
-



DANGER

- + Identifies an **imminent, serious danger**, which, if it is not avoided, will lead to serious injuries or even to death.
-



CAUTION

- + Identifies a **possible danger**, which, if it is not avoided, will lead to serious injuries or even to death.
-



ATTENTION

- + Identifies a **potential dangerous situation**, which, if it is not avoided, can lead to medium or minor injuries or material damages.
-



INFORMATION

- + If this information is not followed, it can lead to a deterioration of the operating procedure.
-

2.2 Safety Precautions

The battery crimping tool CS 150 has been constructed according to state-of-the-art technology and the acknowledged technical safety regulations.

When carrying out jobs such as installation, putting the tool into operation or setting it up, operation, changing the conditions of use and the mode of operation or carrying out maintenance and service jobs, it is important to observe the procedures for switching off the tool described in the operation instruction.

Please observe the national regulations according to the minimum age of the personnel operating the battery crimping tool CS 150. Allowing younger persons access to the tool is strictly prohibited.

- + Do not operate the battery crimping tool CS 150 before having read and understood all operating instructions.
- + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
- + Should the user make any changes to the tool without consulting the manufacturers or the suppliers, the latter will not be liable for any damage that may result.
- + During transport and installation of the tool wear suitable safety shoes.
- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
- + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set is installed and is functioning correctly.

- + Remove the battery of the battery crimping tool CS 150 before mounting or exchanging the adapter, tool head or die set.
- + The battery crimping tool CS 150 is only allowed to be operated with properly mounted Nelco approved adapters, crimp heads and crimp die sets.
- + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
- + In case of a jam of the dies, press the slider for automatic retract.
- + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
- + Use the battery crimping tool CS 150 only with specifically designated battery packs.
- + Recharge only with the charger specified by the manufacturer.
- + Do not expose the charger to rain or humidity.
- + Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the charger. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- + When battery pack is not in use, keep it away from other metal objects like paper, clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- + Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritations or burns.
- + Work with caution.
- + Only one person is allowed to work on or with the tool.
- + Only trained personal are allowed to work on or with the tool.
- + When working with the battery crimping tool CS 150, do not wear loose clothing, jewelry or long, loose hair that can get caught in the mechanism.
- + Use safety gear and always wear eye protection. Safety equipment will reduce personal injuries.
- + Observe the exchange and maintenance intervals strictly.

2.3 Responsibilities

The battery crimping tool CS 150 may only be operated by suitably trained and authorized personnel. The user must clearly define and observe the responsibilities of the personnel for operation, set-up, maintenance and service. It is particularly important to define who is responsible for work on the pneumatic equipment. Such work should only be carried out by specially trained staff.

Should the user make any changes to the tool without consulting the manufacturers or the suppliers, the latter will not be liable for any damage that may result.

The user of the battery crimping tool CS 150 is responsible for making sure that all persons involved in any way, either in the installation or in maintenance of the tool, have been thoroughly trained on the system using the this operating instruction.

The user is also responsible for the training of operators and the instruction must include the following aspects:

- + Purpose of the tool
- + Hazard zones
- + Safety rules and regulations
- + Functionality of the various components of the tool
- + Proper operation of the tool

To assure full familiarization with the system, the training must be conducted in the native language of the operators involved.

Staff qualifications required in conjunction with the use of the battery crimping tool CS 150:	
Installation Set-up Instruction	Technical personnel with language proficiency in either English or German, in addition to the native language of the operator.
Operation	Through qualified personnel trained as indicated above.
Maintenance Service	Technical personnel with proficiency in English or German.

The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators.

2.4 Designed Use

- + Realization of crimp connections up to a cable Ø of 16 mm² (wire end ferrules up to 50 mm²) depending on the terminal design.

The battery crimping tool CS 150 is designed for usage with Nelco approved adapters or tool heads. The adapter/tool head should only be used with the tool heads/dies specified by Nelco. It is only allowed to use the battery crimping tool CS 150 together with the adapter, tool head and die set for the preparation of crimp connections!

2.5 Predictable Misuse

- + Every application which is not mentioned in chapter 2.4 „Designed Use“.

2.6 Hazardous Areas

1. Hazardous Area: Area of interchangeable crimping dies/tool heads
 Person at risk: Operator
 Type of Hazard: Hand Injuries

3 Shipment

3.1 Packing

Upon receipt, unpack the battery crimping tool CS 150 carefully and check that you have received all components against the packing slip, declaration of conformity and operating instructions. We recommend that you retain the packing for further dispatch and for storage.

Dimension:

Length: approx. 410 mm
 Width: approx. 460 mm
 Height: approx. 120 mm

Gross-Weight: approx. 5 kg

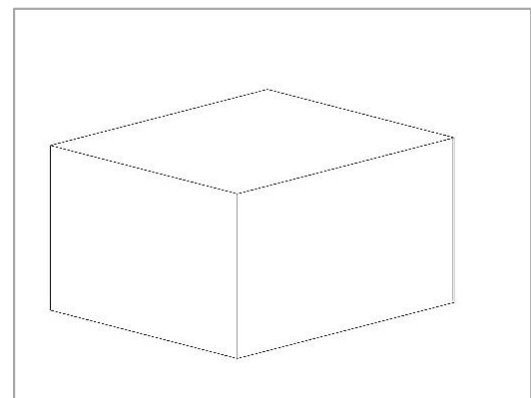


Fig. 3.1

3.2 Packing Contents

1 pc	Battery crimping tool CS 150 with battery (without adapter, tool head and die set)
1 pc	Battery charger
1 pc	Operating instructions
1 pc	Tool case with foam insert
1 pc	Declaration of conformity

4 Technical Description

4.1 Overview Battery Crimping Tool CS 150



Fig. 4.1

Pos.	Description
01	Holding device for adapter or tool head, rotatable 360°
02	Locking pins
03	Trigger
04	LED for illumination of the workplace
05	10.8V Li-Ion battery
06	Unlocking device of the battery
07	Slider for manual retract in case of an error or emergency
08	Service light
09	Battery charge level button
10	Battery charge level
11	Identification plate battery (at the bottom side of the battery)
12	Product seal with serial number (in the housing of the battery bay)

4.2 Tool Identification

Item	Description
01	Tool Type
02	Article Number
03	Serial Number



Fig. 4.2

4.3 Overview Battery Charger

Item	Description
01	Charger connected to power supply and carries voltage!
02	Charger defect
03	Charging process begins
04	Battery fully charged
05	Battery defect
06	Battery too hot or too cold

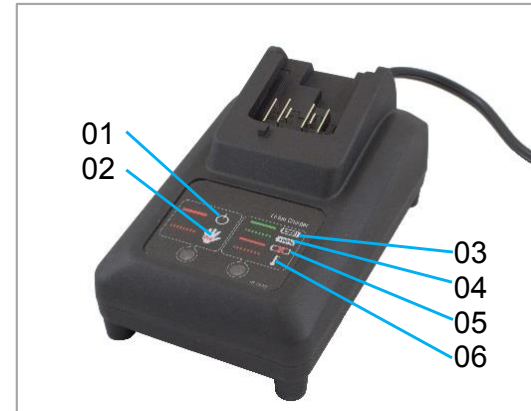


Fig. 4.3

4.4 Technical Data

Dimension:

Length:	90 mm
Width:	64 mm
Height:	270 mm

Weight incl. Battery: approx. 1.3 kg (2.9 lbs)

Crimp Speed	approx. 2 s (depending on the terminal cross section)
Crimp Force	max. 13 kN
Stroke:	approx. 12 mm
Noise level:	70 dB (A) in 1 m distance
Vibrations:	< 2,5 m/s ²
Environmental Temp.:	-10°C – 40°C

Battery:

Battery Capacity:	1.5 Ah, Li-Ion
Battery Charging Time:	40 min.
Battery Voltage:	10.8 V

4.5 Operating Elements

4.5.1 Slider for Manual Retract

In case of jammed jaws caused by operation or handling errors or wrongly placed contact the battery crimping tool CS 150 can be opened as follows:

- + Slide the retract slide **1** in the direction of the battery. The tool opens the jaws.
- + Remove the damaged contact and dispose it.



Fig. 4.4

4.5.2 Tool Head Holding Device

The tool head holding device may be rotated, by hand, 360° relative to the body, offering the operator the possibility to adjust the tool head to a suitable working position.



Fig. 4.5

5 Transport

The weight of the battery crimping tool CS 150 is approx. 1.3 kg (2.9 lbs).



ATTENTION

- + During transport and installation of the tool wear suitable safety shoes.

Store and transport the battery crimping tool CS 150 in the carrying case in order to protect it against damage.

6 Installation

6.1 Battery Charging



DANGER

- + Recharge only with the charger specified by the manufacturer.
- + Do not expose the charger to rain or humidity.
- + Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the charger. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.



DANGER

- + Use the battery crimping tool CS 150 only with specifically designated battery packs.
- + When battery pack is not in use, keep it away from other metal objects like paper, clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- + Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritations or burns.
- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.



CAUTION

- + Do not operate the battery crimping tool CS 150 before having read and understood all operating instructions.
- + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
- + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
- + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set is installed and is functioning correctly.
- + The crimp tool is only allowed to be used with mounted, Nelco approved adapter with tool head or tool head with die set.
- + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
- + Work with caution.
- + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
- + Only one person is allowed to work on or with the battery crimping tool CS 150.
- + Only trained personal are allowed to work on or with the electric Crimping Tool CS 300.

- + Remove the battery from the battery crimping tool CS 150 by pressing the battery unlocking device.
- + Connect the charger to the power supply.
- + Insert the battery into the charger. The battery charging time is approx. 40 min.
- + When the battery is fully charged, remove it and reinsert it into the battery crimping tool CS 150.



The battery crimping tool CS 150 is now ready for use.

Fig. 6.1



INFORMATION

- + Please pay attention that the battery has been removed from the charger, if it is not connected to the power supply. Otherwise the battery will be completely discharged.

6.2

Battery Charge Level

- + Press button **1** to check the charge level of the battery:

100 %	● ● ● ●
75 %	● ● ● ○
50 %	● ● ○ ○
25 %	● ○ ○ ○
0%	○ ○ ○ ○



Fig. 6.2

7 Commissioning

7.1 Available Adapters, Tool Heads and Die Sets

The battery crimping tool CS 150 can be operated with a variety of different tool heads of the series CSE, with a CSE 30 basic tool head together with exchangeable dies (Fig 7.1) as well as with CSV 10 crimp heads with adapter (Fig. 7.2).



Fig. 7.1



Fig. 7.2

Further information on our tool range can be found in our catalogue, on our homepage www.nelco.se. Please contact us if you need any further information.

7.2 Mounting a Tool Head or Adapter on the Tool



DANGER

- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
- + Remove the battery from the battery crimping tool CS 150 before mounting or exchanging the adapter, tool head or die set.



CAUTION

- + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
- + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
- + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set is installed and is functioning correctly.
- + The crimp tool is only allowed to be used with mounted adapter with tool head or tool head with die set.
- + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
- + Work with caution.
- + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
- + Only one person is allowed to work on or with the battery crimping tool CS 150.
- + Only trained personal are allowed to work on or with the electric Crimping Tool CS 300.

- + Before mounting the tool head or adapter, please pay attention that the ram of the tool is in the lowest position. If the ram is in another/wrong position, press the trigger until the ram automatically drives in the lowest position.
- + Pull out the pins **1** of the holding device.
- + Install the CSV 10 adapter on the tool from above.



Mounting of CSV 10 Adapter Fig. 7.3

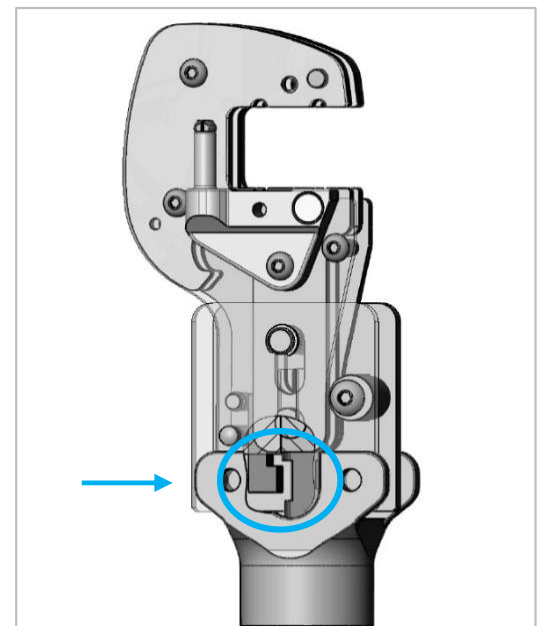
Or:

- + Install the CSE 30 tool head from behind and pay attention that the ram of the tool head engages correctly into the notch of the tool ram (Fig. 7.2)



INFORMATION

- + CSE 30 tool heads can only be mounted if the tool head is opened!
- + The ram of the CSE 30 tool head must engage correctly into the notch of the tool ram (Fig. 7.4).



Mounting of CSE 30 tool head Fig. 7.4

- + After having mounted the adapter / tool head, lock the pins **1** of the holding device.



Fig. 7.5

7.3 Turning on/off of the LED Light for Illumination of the Workplace

7.3.1 Turn on the LED

- + Remove the battery from the battery crimping tool CS 150.
- + Re-insert the battery without pressing the trigger **1**.

The LED **2** lights up during and after the crimping process.

7.3.2 Turn off the LED

- + Remove the battery from the battery crimping tool CS 150.
- + Press the trigger **1** and keep it pressed while inserting the battery.
- + Keep the trigger pressed for some seconds.

The LED **2** is turned off.



Fig. 7.6

8 Normal Operation, Production Cycle



DANGER

- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
 - + Remove the battery from the battery crimping tool before mounting or exchanging the adapter, tool head or die set.
-



CAUTION

- + Do not operate the battery crimping tool CS 150 before having read and understood all operating instructions.
 - + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
 - + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
 - + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set are installed and is functioning correctly.
 - + The crimp tool is only allowed to be used with mounted adapter with tool head or tool head with die set.
 - + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
 - + Work with caution.
 - + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
 - + Only one person is allowed to work on or with the battery crimping tool CS 150.
 - + Only trained personal are allowed to work on or with the battery crimping tool CS 150.
-



INFORMATION

- + If you release the trigger, the crimping process will be interrupted. If you press the trigger again, the crimping process will be continued until its completion.
-

Crimping Process:

1. Insert the crimp contact in the die profile or locator. Please pay attention to the correct profile assignment and to the correct positioning within the crimp profile! If using a locator, close it.
2. Press the trigger until the dies just touch the terminal, holding the contact securely.
3. Insert the wire which is stripped acc. to the specifications and position it for crimping.
4. Press the trigger to start the crimp process.
5. Keep the trigger pressed until the crimp cycle is finished. The jaws will open automatically.
6. Remove crimped contact.

9 Maintenance

9.1 Maintenance Plan



DANGER

- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
 - + Remove the battery from the battery crimping tool before mounting or exchanging the adapter, tool head or die set.
-



CAUTION

- + Observe the exchange and maintenance intervals strictly.
 - + Do not operate the battery crimping tool CS 150 before having read and understood all operating instructions.
 - + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
 - + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
 - + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set is installed and is functioning correctly.
 - + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
 - + Work with caution.
 - + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
 - + Only one person is allowed to work on or with the battery crimping tool CS 150.
-

Regular maintenance and cleaning of the parts which can be reached without opening the battery crimping tool CS 150 will prolong the life of the tool. Do not use rough materials to clean the tool such as wire wool. The battery crimping tool CS 150 and/or tool parts should not be cleaned with compressed air. The crimping tool as well as the tool parts must not be cleaned with hard objects like scrapers, steel wool or similar. Vacuum heavily soiled parts and wear.

9.1.1 Daily

- + Visual inspection of the battery crimping tool CS 150 for damage or leaks.
- + Die sets and tool heads should be cleaned in the profile area and checked for any damage before every use. Lightly lubricate the profiles.

9.1.2 After 10.000 cycles or two years

Repair, maintenance and settings should be done by our service department to guarantee the security and reliability of the tool. Therefore please send the tool to the following address:

Service-Address:

Nelco Contact AB
Bergkällavägen 29
SE-192 79 Sollentuna
Sweden

Telephone: +46 (0)8 754 70 40

Please have the following information ready when you contact service:

- + Tool Type
- + Tool Serial Number



WARNING

- + Do not damage the tool seal (Fig. 4.1. pos.12)! The guarantee expires if the seal is damaged.
-

10 Problem Handling / Service Light



DANGER

- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
 - + Remove the battery from the battery crimping tool before mounting or exchanging the adapter, tool head or die set.
-



CAUTION

- + Do not operate the battery crimping tool CS 150 before having read and understood all operating instructions.
 - + Every tool operator must have read and understood this operating instruction. The safety instructions, warnings and precautions contained in the individual chapters must be strictly observed by all users and operators when working on or with the battery crimping tool CS 150.
 - + The battery crimping tool CS 150 may only be set up and operated in perfect technical condition, observing all the safety regulations and considering any possible dangers.
 - + Before commissioning the tool, it is always important to check whether all safety devices and a Nelco approved adapter, tool head or die set is installed and is functioning correctly.
 - + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
 - + Work with caution.
 - + In cases of a tool malfunction, production must be stopped and the malfunction must be fixed before continuing work with the battery crimping tool CS 150.
 - + Only one person is allowed to work on or with the battery crimping tool CS 150.
-



INFORMATION

- + In case of a blockade of the dies press the slider for manual retract.
-

Service Light	Reason	Remedial Action
Lights up for 20 sec. after the crimping process	+ Battery almost empty	+ Recharge the battery
Flashes 2 times after inserting the battery	+ Self-test	
Flashes for 20 sec. in a frequency of 2Hz after the crimping process		+ Return tool to our service address for inspection and repair.
Flashes for 20 sec. in a frequency of 5 Hz	+ Tool too hot	+ Wait for 15 min until the tool has been cooled down.
Lights up for 20 sec and subsequently flashes for 20 sec. in a frequency of 2 Hz	+ Battery is discharged or defective	+ Return tool to our service address for inspection.

In the event of a problem, our customer service personnel will be able to help you.

Service address:

Nelco Contact AB
 Bergkällavägen 29
 SE-192 79 Sollentuna
 Sweden

Telephone: +46 (0)8 754 70 40

Please have the following information ready when you contact service.

- + Tool Type
- + Tool Serial Number

11 Removal from Service, Demounting, Disassembly,



DANGER

- + Due to the risk of hand or finger injury, never try to reach into the battery crimping tool CS 150 before having assured that the battery has been removed.
 - + Remove the battery from the battery crimping tool before mounting or exchanging the adapter, tool head or die set.
-



CAUTION

- + When working with the battery crimping tool CS 150, do not wear loose clothing, jewellery or long, loose hair that can get caught in the mechanism.
 - + During transport and demounting of the tool, wear suitable safety shoes.
 - + Work with caution.
 - + Only one person is allowed to work on or with the battery crimping tool CS 150.
-

12 Storage

Store and transport the battery crimping tool CS 150 in the carrying case in order to protect it against damage.

13 Disposal

For the disposal of the battery crimping tool CS 150, return the tool to Nelco.