

# Clarke®



## CORDLESS IMPACT WRENCH

MODEL NO: CIR450C

PART NO: 4500633

## OPERATING & MAINTENANCE INSTRUCTIONS

GC0415

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## **INTRODUCTION**

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Thank you for purchasing this CLARKE Impact Wrench.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

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## **GUARANTEE**

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This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission. This guarantee does not effect your statutory rights.

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## **ENVIRONMENTAL PROTECTION**

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Do not dispose of this product with general household waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of according to the laws governing Waste Electrical and Electronic Equipment.

Through the purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE. In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

### **BATTERY DISPOSAL**

Dispose of old batteries in accordance with local authority regulations. Do not incinerate or crush, as this will increase the risk of explosion and contamination. If the battery contents come into contact with skin or the eyes, rinse with clean water for several minutes and seek medical advice immediately afterwards.

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# SAFETY PRECAUTIONS

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## WORK ENVIRONMENT

1. Keep the work area clean and tidy.
2. Dress appropriately - do not wear loose clothing or jewellery. Tie long hair out of the way.
3. Keep children and visitors away - do not let children handle the wrench.
4. DO NOT use in damp or wet conditions. Keep the work area well lit. Do not use where a risk of fire or explosion is present.
5. Although the impact wrench may be used outdoors, DO NOT leave it exposed to the elements. Avoid direct sunlight, direct heat, rain/moisture etc.
6. Always keep body and clothing dry. Never work in damp area without adequate insulation against electric shock.
7. Do not fit the wrench to a stand or clamping device that may damage it.

## GENERAL USE

1. This product vibrates during use. Vibration may be harmful to your hands or arms. Stop using the machine if discomfort, a tingling feeling or pain occurs and seek medical advice before resuming use.
2. ALWAYS use ear defenders.
3. ALWAYS stay alert and use common sense - do not use this product when you are tired or under the influence of alcohol or medication.
4. ALWAYS ensure that the socket is correctly installed before switching on.
5. ALWAYS only use sockets which are specified for impact wrench use.
6. ALWAYS ensure the workpiece is firmly secured leaving both hands free to control the impact wrench.
7. ALWAYS store this product in a dry, secure place out of reach of children or untrained users.
8. ALWAYS keep all equipment dry especially the battery & battery charger.
9. ALWAYS keep metal objects such as coins, keys, nails or other small metal objects which could make a connection from one terminal to another, away from the battery cartridge. A short circuit across the terminals could cause sparks, burns or start a fire.
10. ALWAYS ensure the machine has stopped before putting it down after use.

11. ALWAYS set the forward/reverse Switch-bar to neutral when changing bits or when the machine is not required for immediate use. This will avoid accidental starting.
12. ALWAYS check for any damage or any condition that could affect its operation. Any damaged part should be properly repaired.
13. NEVER force or misuse the machine. It will do a better and safer job at the rate for which it was designed.
14. NEVER use this product if it is defective / operating abnormally.
15. NEVER carry the machine with your finger on the trigger.
16. NEVER abuse the mains cable of the battery charger. Never yank the cable to disconnect it from the socket. Keep the cable away from sharp edges/hot surfaces.
17. NEVER over-reach. Keep proper footing and balance at all times.
18. NEVER use this product for any other purpose than that described in this booklet.
19. NEVER carry out any alterations or modifications to this product.
20. NEVER attempt to wipe the machine clean with solvents. Wipe plastic parts with a soft cloth, slightly dampened with soapy water.
21. NEVER attempt any repairs yourself. If you have a problem with this product contact your local CLARKE dealer.

## **IMPACT WRENCH SAFETY INSTRUCTIONS**

1. ALWAYS use the impact wrench in the manner and for the functions described in these instructions.
2. ALWAYS ensure the machine is not moving with the switchbar in the centre position when changing sockets etc. Use only Impact Wrench sockets....DO NOT use standard sockets.
3. ALWAYS finish tightening wheel nuts or engine parts with a torque wrench or suitable spanner to the correct torque as recommended by the vehicle manufacturer.
4. ALWAYS avoid excessive use of the wrench. When tightening a nut or bolt, never allow the wrench to impact more than 8 times - to avoid over tightening - 3 to 4 impacts is normally sufficient.
5. ALWAYS use outdoor extension leads if working outdoors. Always use an approved cable extension suitable for the power rating of the battery charger (see specifications), the conductor size should also be at least the same size or larger than that on the charger. When using a cable reel, always unwind the cable completely.

Please keep these instructions in a safe place for future reference.

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## **ELECTRICAL CONNECTIONS**

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This product is provided with a 13 amp, 230 volt (50Hz), BS 1363 plug, for connection to a standard, domestic electrical supply. Should the plug need changing at any time, ensure that a plug of identical specification is used.

The battery charger for this appliance is of double insulated design

No earth conductor is provided. The two wires in the mains lead should be wired up in accordance with the following colour code:

Blue -- Neutral

Brown -- Live

Connect the BROWN coloured cord to the plug terminal marked a letter "L"

Connect the BLUE coloured cord to the plug terminal marked a letter "N"

If the battery charger for this appliance is fitted with a plug which is moulded on to the electric cable (i.e. non-rewireable) please note:

1. The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
2. Never use the plug without the fuse cover fitted.
3. Should you wish to replace the fuse cover, ensure that the correct replacement is used (as indicated by marking or colour code).
4. Replacement fuse covers can be obtained from your local Clarke dealer or most electrical stockists.

### **FUSE RATING**

The fuse in the plug must be replaced with one of the same rating and this replacement must be ASTA approved to BS1362.

If in any doubt, consult a qualified electrician. DO NOT attempt any electrical repairs yourself.

### **CABLE EXTENSION**

Do not use an extension longer than 10 metres and one where the conductors, are less than 1.5mm<sup>2</sup>.





If used outdoors, ensure the extension cable is designed for outdoor use.

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## SAFETY SYMBOLS

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The full technical specification of the battery charger is printed on a label on the charger. The meanings of the markings and symbols are shown below.

	Class II appliance which does not need an earth connection.
	For indoor use only.
	Read the manual before operating this product.
	Falls under the Waste Electrical & Electronic Equipment directive (WEEE).

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## COMPONENT INVENTORY

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The CIR450 is a professional, cordless impact wrench which is rechargeable using the mains power adaptor.

Upon receipt, unpack and lay out the components, checking against the following list. Any damage or deficiency should be reported to your CLARKE dealer immediately.

1. 24V Impact Wrench with 1.7 Ah battery pack
2. Battery-charging unit
3. Side handle
4. Moulded tool-case

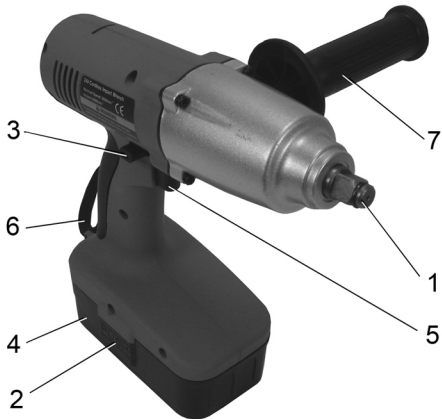
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## COMPONENT IDENTIFICATION

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1. 1/2" Square Socket Drive
2. Battery Release Button
3. Forward/Reverse Switch-bar
4. Battery Pack
5. Trigger
6. Wrist Strap
7. Hand Grip

**NOTE:** The CIR450C charger is not compatible with the earlier CIR450/450B battery.



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## BATTERY CHARGING

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1. The new battery pack will require charging before use.
2. Squeeze the battery release buttons on either side of the battery pack and pull gently down to disengage the battery pack from the machine as in Fig 1.
3. Plug the charger into a 230v (mains) power supply and switch ON.
4. Insert the battery pack into the battery charger, as shown in Fig 2, noting that it will only fit one way.
  - The green POWER ON light will illuminate to show the unit is connected to the mains supply.
5. Press the "SET" button and the green light will turn off ,the RED charging light will illuminate and charging will begin.



FIG 1

- If charging does not take place, ensure all connections are clean and free of grease etc.
- If the red charging light will not stay on for more than a few moments, the battery pack is likely to be defective and it must be replaced with a new one.
- When charging is complete (typically after about 1/2 hour), the RED charging light goes off and the green light turns back on. The battery pack can be considered charged and be removed. The charging time will be dependant upon the initial state of the batteries.
- When charging a new battery pack it may initially not accept full charge. This is common & does not indicate a fault. It can be recharged fully after it has been discharged a couple of times.



6. After charging, switch off and unplug the charger from the power supply.
7. Remove the battery pack from the charger and slide it back into the machine until it clips into place.

The battery pack should slide in easily. If the battery pack is not to be fitted immediately, ensure that the metal contacts are protected so as to avoid the possibility of a short circuit which would cause damage.

Remember to avoid extremes of heat or cold when charging. Avoid temperatures outside the range of **Minimum 4°C /Maximum 50°C**. Avoid placing batteries in direct strong sunlight or other heat source.

**NOTE:** *Ni-Cad batteries as used in Clarke cordless power tools should be given a full charge when first supplied new. Maximum battery performance will be achieved after approximately 5 complete charge/discharge cycles.*

**NOTE:** *The battery should be fully discharged before recharging in order to achieve its optimum performance. Constant topping up after only a small amount of charge has been used will, in effect, reduce its capacity.*



Nickel cadmium batteries will slowly lose their power whilst in storage. If they become fully discharged, do not leave the batteries in this state for any length of time.

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## OPERATION

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CAUTION: ALWAYS BE SURE THAT THE TOOL IS SWITCHED OFF BEFORE ATTACHING OR REMOVING A SOCKET. ALWAYS TAKE CARE TO USE THE CORRECT SIZE SOCKET FOR BOLTS AND NUTS. AN INCORRECT SOCKET WILL CAUSE DAMAGE TO THE BOLT OR NUT.

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1. Align the chosen socket and simply push it onto the anvil. Use only ½" square drive impact sockets as listed on page 14.
2. Squeeze the trigger to start the machine. Release the trigger to stop.
3. To run the impact wrench in reverse, push the switch-bar through the drive unit as shown in Fig 3. The direction of rotation is shown on the end face of the switch-bar.
  - The 3-position switch bar controls forward or reverse direction of rotation. Select the appropriate position ONLY when the machine is STATIONARY. Do not move the switch-bar when the spindle is moving. When the switch-bar is in the central position the trigger is locked.
4. Always check the direction of rotation before operation.
5. Turn off the machine as soon as the impact sound is heard.

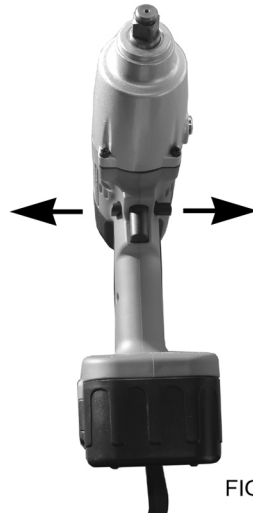


FIG 3

Note: As the battery becomes discharged, the power available will drop. Operating the machine at low speed will cause a reduction in torque.

6. After use, recharge the battery pack as shown on pages 8-9. Avoid leaving your batteries in a discharged state.

## LOOSENING A WHEEL NUT

1. Remove any wheel trim, before selecting the appropriate socket and placing firmly on the square drive of the wrench.
2. With the FORWARD/NEUTRAL/REVERSE switchbar in the REVERSE running position, and holding the wrench firmly in BOTH HANDS, pull the trigger. The

nut will be impacted repeatedly until it is loosened. **IMPORTANT!** Release the trigger immediately the nut begins to loosen.

3. Jack up the vehicle according to the vehicle handbook so that the wheel is clear of the ground, then proceed to fully undo the wheel nuts.



**WARNING: ENSURE THAT THE CORRECT SOCKET IS BEING USED FOR THE NUTS ON YOUR PARTICULAR VEHICLE. AN INCORRECT SOCKET SIZE IS LIKELY TO DAMAGE THE HEADS OF THE BOLTS/NUTS.**

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## TIGHTENING A NUT

1. Start the nut by hand, ensuring it is not cross threaded, then with the appropriate socket installed on the wrench, place it on the nut.
2. With the FORWARD/NEUTRAL/REVERSE switch-bar in the clockwise (FORWARD) running position, and holding the wrench firmly in BOTH HANDS, pull the trigger.
3. Run each nut up in turn until it is 'nipped' up only - do not tighten. When all nuts are nipped up, tighten progressively by pulling the trigger fully and allowing the action to operate for 3 to 4 impacts **only** to prevent overtightening.
4. ALWAYS finish tightening with a torque wrench. The weight of the vehicle will need to be placed on the wheel to prevent it from rotating while the nuts are tightened. Ensure the final torque applied to the nuts meets the vehicle manufacturer's recommendations.

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## RECHARGING

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Recharge the battery pack following each period of use as described on pages 7-8.

1. Check that the red CHARGING light illuminates and remains on during the charging process.
2. If the red CHARGING light goes out almost straight away after repeating this procedure a couple of times, although the green POWER ON light is lit, the battery pack should be replaced with a new one.
3. The charging light should remain on for about 1 hour, after which, the battery cartridge may be removed and used.
4. After charging, remove the charger from the power supply.
5. For maximum battery life, we recommend that you maintain the battery in a fully charged state at all times.

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## **MAINTENANCE**

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Ensure all fixings remain tight to ensure the machine is in safe working condition.

All bearings etc, in this machine are lubricated with a sufficient amount of high grade lubricant for the machines lifetime under normal operating conditions, therefore no further lubrication is required.

Refer to your CLARKE dealer if internal maintenance is required.

Check the battery charger power cable to ensure it is free from cracks, bare wires etc.

Avoid using solvents when cleaning plastic parts, most plastics are susceptible to damage from the various types of commercial solvents. Keep the unit clean by wiping with a dry cloth. DO NOT use solvents as a cleaning agent.

Your Clarke Impact Wrench has been designed to give long and trouble free service. If, however, having followed the instructions in this booklet carefully, you encounter problems, take the unit to your local Clarke dealer.

## **STORAGE**

Make sure that the machine is stored in a clean, dry place, out of reach of children when not in use.

Always store the machine and its charger in the case supplied.

## PARTS LIST

No	Description
1	Screw
2	Spring Gasket
3	Nose Housing
4	Front Bearing
5	Rubber Gasket
6	Shim
7	Spindle
8	Screw
9	Airtight Gasket
10	Steel Ball
11	Impact Block
12	Steel ball
13	Gasket
14	Spring
15	Gasket
16	Baffle
17	Bearing

No	Description
18	Shaft
19	Gear Housing
20	Gear Ring
21	Planetary Gear
22	Gasket
23	Motor Gear
24	Screw
25	Gasket
26	Motor
27	Switching Bar
28	Trigger
29	Battery Cartridge
30	Housing (L/H)
31	Wrist Strap
32	Face Plate
33	Housing (R/H)
34	Screw

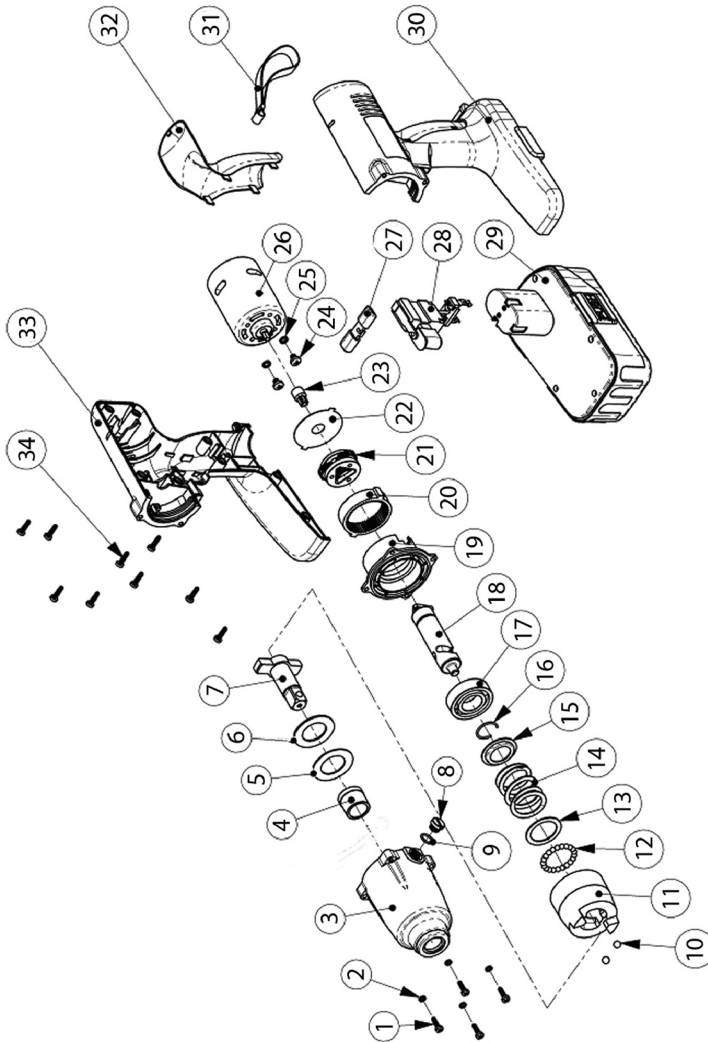
Battery charger (not shown) is available separately.

A wide range of accessories is available from your nearest CLARKE dealer, for further information, contact your nearest dealer, or telephone CLARKE International Sales department on 01992 565300.

Suitable impact wrench compatible socket sets include the following:

3110437	CAT37B	11 piece 1/2"square drive(metric)
1800310	CIS12/17	17 piece 1/2"square drive(metric/AF)
1800305	CIS9/32	32 piece 3/8" & 1/2"square drive (metric/AF)
1800345	CIS12/7M	7 piece 1/2"square drive universal joint (metric)
1800350	CIS12/7MD	7 piece 1/2"square drive universal joint (deep) metric
1800355	CIS12/6H	6 piece 1/2"square drive hex key set (metric)
1800360	CIS12/6S	7 piece 1/2"square drive TRX-Star

# COMPONENT PARTS



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## SPECIFICATION

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FEATURE	SPECIFICATION
Weight	3.44 kg
Dimensions (L x W x H)	254 x 97 x 262 mm
No-Load Speed	2000 rpm nominal
Max tightening torque	450 Nm
Impacts/minute	2600
Input voltage	230V/50Hz
Output voltage	24V DC
Battery Type	Nickel Cadmium
Battery pack capacity	1.7 Amp/hr
Sound pressure level	88 dB LpA
Sound power level	99 dB LWA
Guaranteed sound power	101.0 dB LWA
Vibration Level	13.48 m/s <sub>2</sub>

Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice.

# DECLARATION OF CONFORMITY



**Clarke**<sup>®</sup>  
**INTERNATIONAL**

Hemnal Street, Epping, Essex CM16 4LG

## DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

2004/108/EC *Electromagnetic Compatibility Directive.*

2006/42/EC *Machinery Directive.*

2006/95/EC *Low Voltage Equipment Directive.*

2011/65/EU *Restriction of Hazardous substances.*

The following standards have been applied to the product(s):

*BS EN 60745-1:2009+A11:2010, BS EN 60745-2-2:2010, BS EN 60335-1:2012,*

*BS EN 60335-2-29:2004+A2:2010, BS EN 55014-1:2006+A1:2009+A2:2011,*

*BS EN 55014-2:1997+A1:2001+A2:2008, BS EN 61000-3-3:2008,*

*BS EN 61000-3-2:2006+A1:2009+A2:2009, BS EN 62233:2008.*

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2005

**Product Description:** Impact Wrench (Cordless)

**Model number(s):** CIR450C

**Serial / Batch Number:** N/A

**Date of Issue:** 10-04-2015

**Signed:**

  
.....  
J.A. Clarke  
Managing Director

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