

# OWNER'S MANUAL

# CAMBRO® CAMDUCTION® COMPLETE HEAT SYSTEM

This Owner's Manual applies to all of the following product models:

**Model MDSCDC9X5EU24V**

For use with CAMBRO Camduction Base MDSCDB9EU24V



Camduction Charger covered  
by European Patent 2386234.

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## I. Introduction

Congratulations on the purchase of your new Cambro Camduction Complete Heat Charger. Here is a step-by-step guide for proper operation and maintenance. If you have any questions, please contact your Cambro representative or contact Customer Service Department at CEL Germany (49) 7022 90 100 0. All Warranty Service must be performed by a Cambro Authorized Service Technician. Please refer to Warranty Section for coverage and details. Service on Out-of-Warranty repairs MUST be performed by a Qualified Technician or Electrician.

## II. Safety Instructions and Warnings

**IMPORTANT:** Please read ALL instructions prior to first use. Follow all warnings and instructions marked on charger unit and in this manual.

Use only CAMBRO® authorized replacement parts.

For service please contact Cambro Customer Service Department at CEL Germany: (49) 7022 90 100 0. Chargers under warranty must be serviced by a Cambro Authorized Service Agent ONLY to remain under warranty. Please refer to Warranty section in the back of user manual for coverage details.



**WARNING! ELECTRIC SHOCK HAZARD.** Use only supplied cord. Must be installed by a qualified technician and according to local technical requirements.

- **WARNING!** Do NOT use if power cord is frayed or damaged or plug blades are missing, bent or broken.
- **WARNING!** USE only power supply source as indicated on label on back of charger.
- **WARNING!** Connect into properly grounded power source ONLY.
- **CAUTION!** Do NOT use in wet or damp conditions.
- **WARNING!** NEVER place wet Camduction® Base in compartment.

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[www.cambro.com](http://www.cambro.com)

## II. Safety Instructions and Warnings, Con't.

- **CAUTION!** When using a mobile cart to hold the Camduction Charger, the cart should only be moved for cleaning purposes and not used for transporting the Charger.



**WARNING! ELECTRIC SHOCK HAZARD. Keep electrical parts dry. NEVER use in wet or damp locations.**

- **WARNING!** NEVER submerge charger in water or spray water on or near charger.
- **WARNING!** Always UNPLUG or disconnect charger from power source prior to cleaning or service. ALL power MUST be removed and the charger unplugged or disconnected before cleaning the station areas.
- **WARNING!** NEVER steam or pressure clean or hose down charger. May cause electrical shock to operator. NEVER use corrosive cleaners to clean charger. NEVER use a wet cloth to clean shelves or charging stations unless ALL power has been removed and the charger is unplugged or disconnected. We recommend stainless steel cleaner for stainless steel surfaces. DO NOT place anything on top of charger.

## III. Product Specifications

### Single Phase

<b>Charger Models</b>	<b>MDSCDC9X5EU24V</b>
<b>Heats</b>	Camduction Base
<b>Capacity</b>	20 Bases
<b>Phase/Voltage</b>	3/PE AC 380-480V
<b>Amps</b>	16a
<b>Hz</b>	50-60
<b>Cord Length</b>	2 m
<b>Product Dimensions</b>	<b>W</b> 76,2 cm x <b>D</b> 47,9 cm x <b>H</b> 87,9 cm
<b>Product Weight (Empty/Full)</b>	55 kg / 80 kg
<b>Initial Heat Up Time</b>	Approximately 5 minutes
<b>All Indicator Lights</b>	LED

## IV. Set Up and Operating Instructions

1. Place charger on its back and screw in each leg. No tools required.
  2. Prior to use: Set charger on a stable, level surface and adjust legs by rotating the foot of the legs until all four are making contact with surface.
  3. Certified electrician recommended to wire male connector to end of cord and plug into proper outlet. With power supply 3/PE 380-480 volt, 16 amps.
  4. Turn on the power switch located on the side of the charger: All lights will flash.
  5. Load bases into charger, base lights will blink orange when heating (Bases can be loaded prior to turning power on).
  6. Bases heat up in about five (5) minutes, lights turn green indicating ready to use. Takes approximately 5 minutes to bring the core temperature of the base to 100°C. Base rims are cool to the touch.
  7. The light will stay green- until base is removed. If the base stays inserted after heating, a digitally controlled “trickle heating” function ensures that the base keeps its temperature until it is removed. This function prevents cooling down and overheating for the time the base is plugged in.
  8. When the heated base is pulled out, insert a new base in the slot and continue clockwise to the next slot and repeat.
  9. If inserting a recently heated base back into the slot, the light will turn orange and then green indicating the base is ready for use.
- 10. Energy Saving – sleep feature**  
If no base is plugged in or out of the charger for 45 minutes, the charger will automatically switch to energy saving mode. To restart the charger, switch main power OFF and then back ON. The charger will start to heat and slot lights will come on. This is also a great safety feature for nights or weekends when someone forgets to turn off the charger.
- 11. Reliable Service**  
The electronics are made up of 5 independent supply boards, each with a stand-alone power supply and a 4-channel power controller PCB. If one board or PCBs get damaged, the rest of the boards will continue to work. If one slot is damaged, the remaining 19 slots will continue to work. Four slots are controlled per board.
- 12. Worldwide Usage**  
The main supply voltage specification is 3/PE AC 380-480 V (+/-10%) 50-60Hz. This wide voltage range allows the use of the Camduction System almost everywhere in the world: USA, Canada, Australia, Europe, India, and South Africa.
- 13. Preventing Misusage**  
If a base is repeatedly plugged in and out to get it hotter, the built-in temperature sensor recognizes the base's temperature and won't start a new heating cycle. The base is just marked as “ready to use” by the green light on the slot.
14. Even a serious fault caused by hardware/wiring or wrong handling of the charger is non-hazardous for the operator due to the low voltage (24Vdc) of heat energy that is transferred to the bases. Touching the plug contacts with your fingers or a wet cleaning rag while emulating a plugged base will not cause any danger to the operator.

### Defective Bases

- Each slot is individually and continuously monitoring for defective bases. IF the base is defective a red blinking light will appear beside the slot. Replace the defective base with a new base and an orange blinking light will indicate heating.
- In case a base has a short-circuit or poor connection, the electronics will recognize it within seconds and will not heat the base. The charger will not be damaged. A red blinking light will appear next to the base. Replace the base with a new base. The base will heat normally with an orange blinking light, indicating heating.

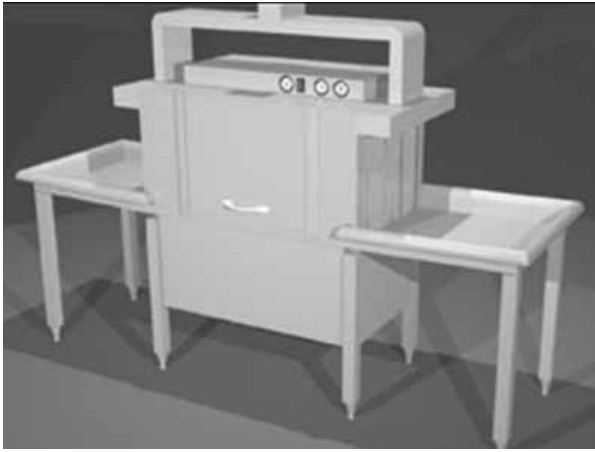
## V. Cleaning and Maintenance



### WARNING! ELECTRIC SHOCK HAZARD

1. Turn off and unplug or disconnect power to charger before performing cleaning or maintenance/service.
2. Use clean cloth to wipe charger compartment shelves.
3. Clean outside of charger with a nonabrasive cloth dampened with a solution of warm water and mild soap or detergent. Or use a commercial stainless steel cleaner, following manufacturer's directions. See Safety Instructions and Warnings for complete details.
4. Before plugging in charger after cleaning, ensure power cord is not frayed, damaged and plug blades are not bent or broken or missing. Replace cord/plug immediately if damaged with approved Cambro® replacement parts only. Call for service.
5. Place base with socket pins facing up for cleaning through dishwasher. Failure to do so may result in bent or damaged pins that will not connect properly into power pin socket.
6. The Camduction® Base is made of two separate parts that are factory assembled: a base and a base rim. When dirt and grime buildup, disassemble and reassemble for cleaning by following the directions on page (4).

## V. Cleaning and Maintenance, Con't.



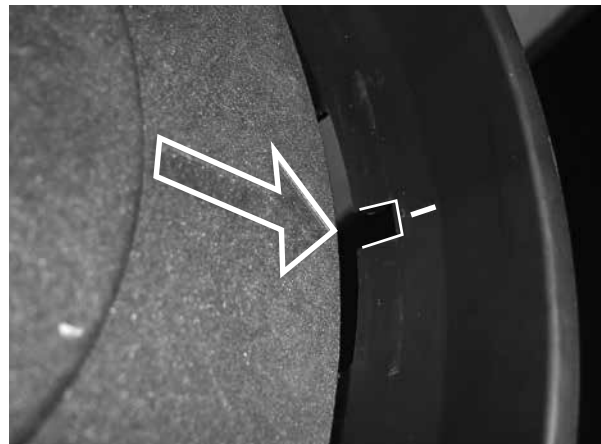
**Step 1:** Before disassembling, run base through high temperature dishwasher or run under hot water. Rim needs to be warm.



**Step 2:** Firmly grasp the base rim on both sides with the arrow on the base facing forward.



**Step 3:** Pull both sides of the base rim out and push the base up from the bottom until it snaps out of the base rim.



**Step 4:** To reassemble, align the arrow on the top of the base with the notch/line on the inside of the base rim. Rim needs to be warm.



**Step 5:** Place the base rim with the base on the edge of a table. Holding the base down with your left hand, pull the base rim out with your right hand in three places as shown above, until the base snaps securely into place.

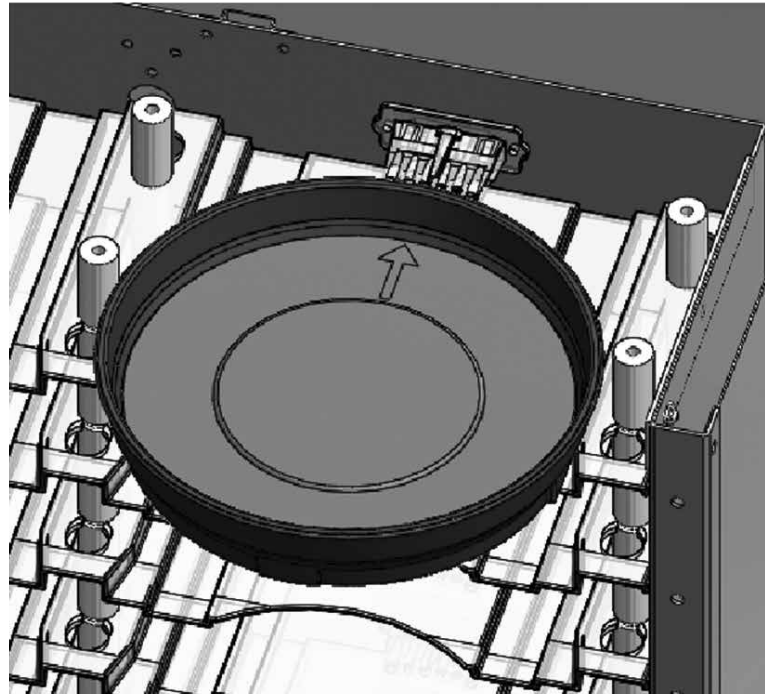


**Step 6:** Turn the base upside down to verify that the base and base rim are assembled together correctly as shown above.

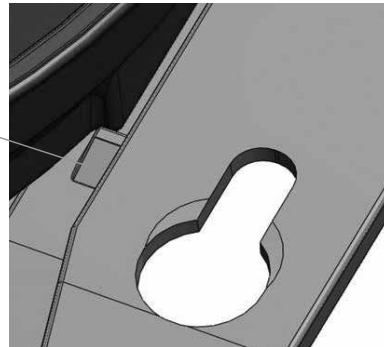
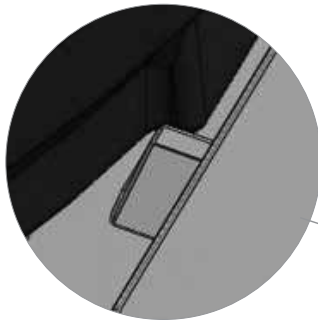
Camduction® Charger and Base



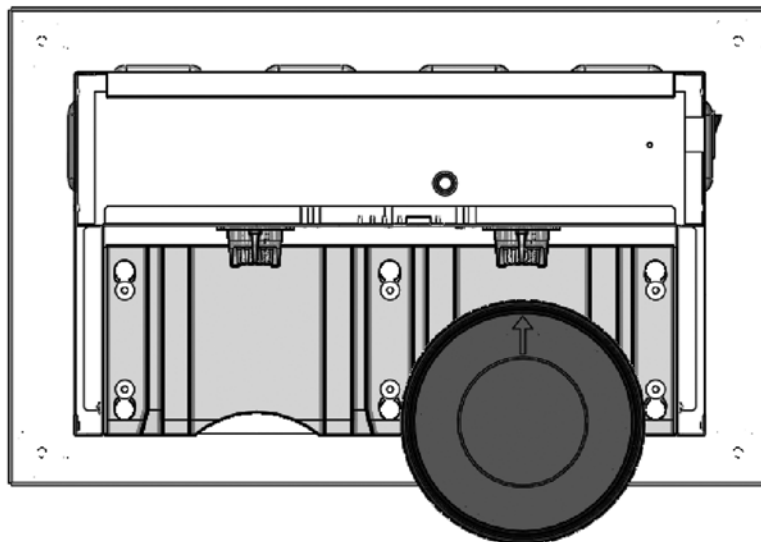
Camduction Base



Base Insertion Side View

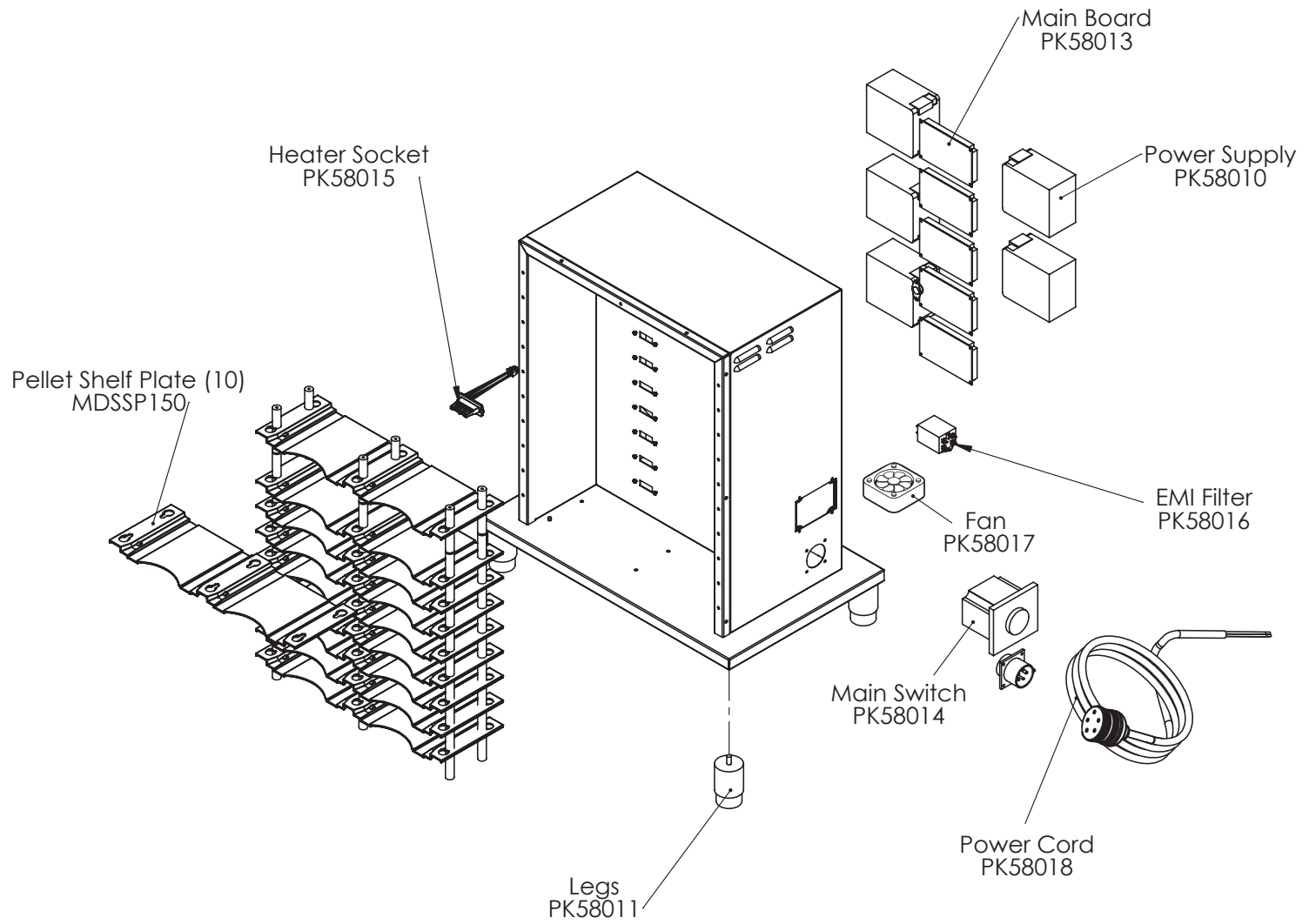


Designed To Stop The Base From Backing Out



Base Insertion Top View

Camduction® Charger Expanded View



## VII. Troubleshooting Guide

Problem	Possible Causes	Possible Solutions
1. Charger is ON. Top indicator light does not turn GREEN.	<ul style="list-style-type: none"> <li>No power source.</li> <li>Power cord not properly connected to live power source.</li> <li>Power cord or plug damaged.</li> </ul>	<ul style="list-style-type: none"> <li>Verify power to the receptacle.</li> <li>Ensure charger is completely plugged into the proper specified live power source.</li> <li>Replace power cord. Call for service.</li> </ul>
2. Power source and cord/plug are verified OK. Power switch is ON. Top indicator light does not turn GREEN.	<ul style="list-style-type: none"> <li>Tripped breaker switch.</li> <li>Defective power switch.</li> </ul>	<ul style="list-style-type: none"> <li>Reset building outlet breaker switch.</li> <li>Reset Charger – turn OFF then back ON.</li> <li>Replace power switch. Call for service.</li> </ul>
3. Charger is ON. Top indicator light is GREEN. Compartment light remains OFF when base is inserted into compartment power pin socket.	<ul style="list-style-type: none"> <li>Base is NOT properly inserted into power pin socket.</li> <li>Compartment power pin socket is NOT working.</li> <li>Charger has switched to POWER SAVING MODE after 45 minutes of NON-USE and has automatically turned OFF power to ALL of the compartment power pin sockets.</li> <li>LED light is not working.</li> </ul>	<ul style="list-style-type: none"> <li>Slide base into same compartment socket pin again.</li> <li>Try same base in another compartment.</li> <li>Turn Charger OFF. Disconnect base from each compartment power pin socket. Turn charger back ON. Wait for top indicator light to turn GREEN dry, room temperature bases into compartments.</li> <li>If a light or lights remain OFF, LED light(s) could be defective and need to be replaced. OR a compartment power pin socket(s) could be defective and needs to be replaced. Call for service.</li> </ul>
4. Compartment LED light is GREEN but base is COLD.	<ul style="list-style-type: none"> <li>Compartment power pin socket is not working.</li> </ul>	<ul style="list-style-type: none"> <li>Slide base into same compartment socket pin again.</li> <li>Try same base in another compartment. If it heats up properly, then replace power pin socket in the malfunctioning compartment. Call for service.</li> <li>If base does not heat up, it's defective and must be replaced.</li> </ul>
5. Base heats up but compartment LED light does not turn RED or GREEN.	<ul style="list-style-type: none"> <li>LED light not connected to board.</li> <li>Defective LED light.</li> </ul>	<ul style="list-style-type: none"> <li>Wire light connection disconnected. Call for service.</li> <li>Replace LED light. Call for service.</li> </ul>
6. Smoke or fumes coming from bases loaded in compartments and charging.	<ul style="list-style-type: none"> <li>Bent or damaged pins are causing ARCING or HIGH HEAT at the pins.</li> </ul>	<ul style="list-style-type: none"> <li>Replace bases if they do not perform correctly or have visible damage. Damaged bases may cause damage to the Charger.</li> <li><b>Do not use bases with damaged pins.</b> Inspect all pins and if damaged, replace base.</li> </ul>

**NOTE:** There are no Owner/Operator serviceable parts located inside the Camduction Complete Heat Charger. Please contact Cambro for ALL service calls.

ALL electrical adjustments or electrical part replacements MUST BE completed by an Authorized Cambro Service Technician.

For service contact Customer Service Department at CEL Germany: (49) 7022 90 100 0.

## VIII. Cambro® Warranty And Product Liability

### LIMITED ORIGINAL COMMERCIAL ELECTRICAL EQUIPMENT WARRANTY FOR CAMDUCTION® COMPLETE HEAT CHARGER ONLY

#### This Warranty is subject to the following conditions and limitations:

1. For International Warranty Claims contact your local Cambro Representative.
2. The Liability of Cambro Manufacturing is limited to the repair or replacement of any part found to be defective. Parts and labor required for preventive maintenance or cleaning are not covered under this warranty.
3. Cambro Manufacturing will bear normal charges incurred in the repair or replacement of a warranted piece of equipment within 80 kilometers of an authorized service agency. Time and travel charges in excess of 80 kilometers will be the responsibility of the person or firm requesting the service. All labor to repair and/or service the warranted unit(s) shall be performed during regular working hours. Overtime premium will be charged to the buyer and is NOT covered by this warranty.
4. Charges incurred by delays or operating restrictions that hinder the service technician's ability to access or perform service to equipment in question are NOT covered by this warranty. This includes Institutional, Correctional, Military, and Marine facilities.
5. Cambro Manufacturing will bear no responsibility or liability for any product(s) which have been mishandled, abused, misapplied, misused, subjected to harsh chemical action, damaged by flood, fire, or other acts of nature, field modified by unauthorized personnel or which have altered or missing serial numbers.
6. Cambro Manufacturing does not recommend or authorize the use of any product(s) in a non-commercial application, including but not limited to residential use. The use or installation of any product(s) in non-commercial applications renders all warranties, express or implied, including the warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, null and void, including any responsibility for damage, costs and legal actions resulting from use or installation of product(s) in any noncommercial setting.
7. Adjustments such as calibrations, leveling, tightening of fasteners or utility connections normally associated with the original installation are the responsibility of the dealer or installer and not that of Cambro Manufacturing. Improper installation includes, but is not limited to, use of inadequate electrical wiring and/or insufficient or improper voltage.
8. Replacement part(s) which are replaced in the field by CAMBRO authorized service technicians ONLY will be warranted for the duration of the equipment warranty or 90 days effective from date of installation, whichever is greater. This warranty is for part(s) cost only and does not include freight or labor charges.
9. This states the exclusive remedy against Cambro Manufacturing relating to the product(s), whether in contract or in tort or under any other legal theory, and whether arising out of warranties, representations, instructions, installations or defects from any cause. Cambro Manufacturing shall not be liable, under any legal theory, for loss of use, revenue or profit, or for substitute use of or performance, or for incidental, indirect, or special or consequential damages or for any other loss or cost of a similar type.
10. THIS WARRANTY AND THE REPRESENTATIONS AND TERMS SET FORTH HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, INCLUDING BUT NOT LIMITED TO, OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE AND CONSTITUTES THE ONLY WARRANTY OF CAMBRO MANUFACTURING WITH RESPECT TO THE PRODUCT(S). CAMBRO MANUFACTURING WARRANTS ITS NEW PRODUCT(S) TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SHIPMENT FROM AUTHORIZED CAMBRO DISTRIBUTION LOCATIONS.

**NOTE:** Cambro Camduction bases have a two (2) year pro-rated warranty from the date of shipment from authorized Cambro distribution locations.

**RETURN POLICY:** Cambro Manufacturing products cannot be returned without prior written factory authorization (**RMA**). The restocking charge is 15% plus any costs required to recondition the equipment. No returns accepted after 90 days from date of invoice. Electrical components returned are subject to inspection prior to credit being issued. Electrical components which have been installed by an operator or non-approved service agent are not returnable for credit.



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