

**Emergency booster start "Hybrid Starter"** 

User's Manual

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Magneti Marelli After Market Parts and Services S.p.A. have developed this manual with particular attention, however, they shall not assume any responsibility for any errors or omissions in diagrams, drawings, compliance with O.E. codes, etc. and reserve the right to make changes to its content without obligation of prior notice. Comments, signaling inaccuracies and any other suggestions from users are particularly welcome, as they will improve the next revision of the manual.

## **Warranty Terms and Conditions**

#### LIABILITY

The customer is responsible for using the equipment supplied by MAGNETI MARELLI AFTER MARKET PARTS & SERVICES S.p.A. (hereafter referred to as MMAM) and sold by the distributor. Customer releases MMAM and distributor from liability for any damage caused by improper use of the products and services sold by the distributor and purchased by the customer, resulting from the use of such products not in accordance with the recommendations and sequence of operations indicated in the software and manuals. The customer is required to use all the data and information obtained from MMAM or from the distributor, either directly or through programs and user manuals, knowing that they may be incomplete and should be used as a complement to customer's own professional skills.

#### **WARRANTY**

Upon receipt of the product the customer is required to check whether the product is intact and shall notify in writing any irregularities or defects within 15 days of the date of receipt indicated on the shipping document. The distributor provides a warranty for manufacturing defects and irregularities identified and recognized by the MMAM service network in the period of 24 months from the date of sale. On the basis of such a guarantee, authorized service centers are required to restore the proper functioning of the product through free replacement or repair of defective parts. The warranty does not cover defects and abnormalities caused by: a) the improper use or maintenance of the product or its incorrect or improper adjustment; b) the use of software, interface, components or consumables not provided by the official service network and sales network of MMAM; c) unauthorized improper modification or use, d) use of products in the environment exceeding the parameters specified for the product; e) improper preparation or maintenance of work environment. All repairs performed under warranty, unless otherwise agreed in writing or arranged directly with service technicians, shall be carried out at the MMAM headquarters or an authorized MMAM service center. The warranty does not cover damages caused during transport or due to bursting of the packaging of parts sent in for repair due of inadequate packaging by the Customer. Unless written agreements provide otherwise, the cost of shipping the product to be repaired from the Customer's location to the service center and / or the costs of deployment of workers or employees of MMAM Customer Service Centre shall be paid by the Customer.

## Warning!

Before using the equipment, read the instructions carefully and store them carefully. Using not genuine accessories may result in equipment damage or injury to persons. Do not immerse the device in water and / or other liquids. Do not use near flammable liquids and / or materials not secured in the appropriate containers, nor in an explosive gas atmosphere. Do not use near open flames or temperatures outside the range of operating temperatures. Wear proper clothing, goggles and gloves to assure protection while working near the battery.



## IMPORTANT SAFETY INFORMATION

Before using the equipment, read the instructions carefully and store them carefully.

- 1. Using not genuine accessories may result in equipment damage or injury to persons.
- 2. Do not charge HYBRID STARTER if the charger cable and / or plug are damaged. Immediately replace these items.
- 3. HYBRID STARTER can be used to the maximum of its performance in any weather conditions (rain, snow, heat or cold), however make sure to carefully follow the instructions contained herein.
- 4. Do not immerse HYBRID STARTER in water and / or other liquids.
- 5. Do not use HYBRID STARTER near flammable liquids and / or materials not secured in the appropriate containers, nor in an explosive gas atmosphere.
- 6. Do not use HYBRID STARTER near open flames or temperatures outside the range of operating temperatures.
- 7. If HYBRID STARTER was exposed to a strong impact or has been damaged in any way, it should be checked by a qualified technician.
- 8. Wear proper clothing, goggles and gloves to assure protection while working near the battery.

## **TECHNICAL DATA SHEET**

TECHNICAL SPECIFICATIONS	HYBRID STARTER
Operating voltage	12 V
Start-up current	4500 A
Life span (*)	1,000,000 cycles
The first charging, AC adapter supplied	30 min
Charging time, AC adapter supplied	5 min
Fast charging (*)	15 - 60 seconds
Automatic	charger
Charging voltage	230 V AC
Charging power	12 V - 1.5 Ah
Max. charging voltage	14.9 V
Overvoltage	protection
Clamps	insulated
Cable diameter	25 mm2 Length 45 cm
Weight	4.5 kg
Dimensions:	H31 cm x L27.5 cm x P13.5 cm
Recommended use	Light commercial vehicles
Average use in vehicles with a battery	0-140 Ah
Operating temperature	-40°C / +70°C
Impact protection housing	PPL

<sup>(\*)</sup> Calculated for 50%.discharge rate.

HYBRID STARTER battery produces inrush current during the first seconds of the initial starting. Charging control button with illuminated indicators enables checking the internal charge status. To perform a full check, press the "TEST" button for 10 seconds (5 LEDS LIGHTED = FULL CHARGE).

# **Active safety**

- 1. Type C clamps, both positive and negative, are mounted in appropriate seats (patented) equipped with copper cable grip and rubber covering, which guarantee maximum safety.
- 2. The guide grooves block the cables preventing dangerous overhangs and cable soiling.
- 3. HYBRID STARTER with its dry battery is protected against electrolyte leakage. It can be stored and / or used in any position.

<sup>(\*\*)</sup> Connect directly to a charged battery of a running vehicle and / or to a 30 A workshop battery charger.

## Instructions for use

#### **FIRST CHARGE**

This must be done using the supplied charger by inserting a special plug into the cigarette lighter socket. The charger is fully charged within 2-5 minutes.

#### **WARNING!:**

Lighter connector should be used solely to charge HYBRID STARTER. It cannot be used as an external power supply.

### **QUICK CHARGING USING WORKSHOP CHARGER (NOT INCLUDED)**

- 1. Protect your eyes against possible unforeseen events.
- 2. Attach the red clamps (+) to the positive terminal of the charger, and the black clamps (-) to the ground.
- 3. Switch on the charger and wait until it stops generating the current (1-2 minutes).
- 4. To perform a full check, press the "TEST" button for 10 seconds (5 LEDS LIGHTED = FULL CHARGE).
- 5. Switch off the charger.
- 6. Immediately place the clamps back into their seats on the side of the device.

#### **OUICK CHARGING WITH ROAD ASSISTANCE VEHICLE**

- 1. Protect your eyes against possible unforeseen events.
- 2. Attach the red clamps (+) to the positive terminal of the battery you want to charge, and the black clamps (-) to ground the motor (chassis). Make sure that the two cables do not come into contact with fans, belts or other moving parts.
- 3. When starting the engine stay away from the battery.
- 4. After the engine is has started, to perform a full check, press the "TEST" button for 10 seconds (5 LEDS LIGHTED = FULL CHARGE).
- 5. Immediately place the clamps back into their seats on the side of the device.
- 6. Switch off the engine.

### **USING FOR EMERGENCY STARTING**

- 1. Check the battery charge and charge if the status is DISCHARGED.
- 2. Protect your eyes against possible unforeseen events.
- 3. Attach the red clamps (+) to the positive terminal of the battery you want to charge, and the black clamps (-) to ground the motor (chassis). Make sure that the two cables do not come into contact with fans, belts or other moving parts.
- 4. When starting the engine stay away from the battery.
- 5. Immediately place the clamps back into their seats on the side of the device.

#### NOTE!

If the engine does not start first time, do not repeat attempts. HYBRID STARTER should be left connected to the battery of the vehicle to be repaired for at least 1 minute and / or perform the FAST CHARGE WITH ROAD ASSISTANCE VEHICLE before trying to start the engine again.

## **DISPOSAL**

This product may contain substances that can be harmful to the environment and human health if not disposed of properly. For this reason, we provide you with the following information to prevent the release of such substances and to improve the use of natural resources. Electrical and electronic equipment should not be disposed of with regular household waste but must be taken to selective waste collection centers for proper processing. The crossed-out rubbish bin symbol on the product reminds that proper disposal of the product after its service life is required. In this way you can avoid the harmful consequences for the environment and human health substances contained in such products be processed inappropriately or their elements be misused. In addition, we contribute to the recovery, recycling and disposal of many of the materials contained in such products. For this purpose, manufacturers and distributors of electrical and electronic equipment organize appropriate systems for collection and disposal of such equipment. At the end of service life of the product, please contact your dealer for information on waste disposal. Disposal of the product other than described above is subject to the sanctions provided for under national laws applicable in the country where the product is disposed of. Moreover, we recommend that you also take other measures to protect the environment, such as recycling of internal and external packaging in which the product is shipped. With your help, we can reduce the amount of natural resources used to produce electrical and electronic equipment, minimize the use of landfills for the disposal of products and improve the quality of life by preventing disposing of potentially hazardous substances into the environment.

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