

MSA Evolution[®] 5000 Series Universal Charger Installation

Operation

Getting Started

The Evolution 5000 Series Universal Charger must be correctly installed before use. Read all installation instructions thoroughly before starting actual installation.

⚠ WARNING

Carefully follow all instructions provided with this charger. This charger will perform as designed only if installed, used, and maintained properly; otherwise, it may fail to operate properly and result in serious personal injury or death.

Use eyewear or face protection to avoid eye injury during installation; failure to do so may result in serious personal injury.

What you will need:

- Electric drill
- #7 (.201) drill bit, 9/32 (0.281) drill bit
- 1/4-20 tap
- #2 Phillips head screwdriver
- Stainless steel 1/4- 20 bolts (4)
- 5-amp in-line fuse
- Master ON/OFF switch
- Strain relief bushing for power supply cable
- Installation hardware kit (provided).

Installation Guidelines

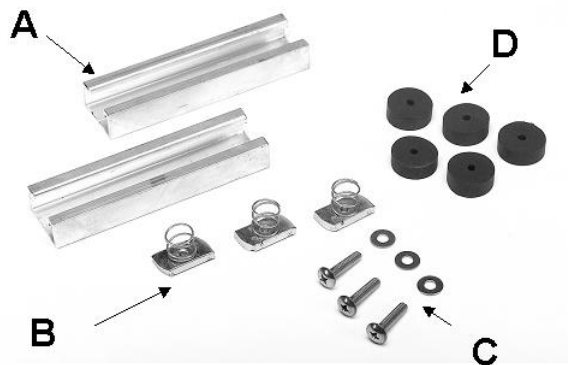


Figure 1.

Select a large flat surface area for mounting that allows easy access for Evolution 5000 Series TIC storage and adequate cable length for electrical connections. Take care to install the charger in an area protected from direct water spray and extreme temperature conditions.

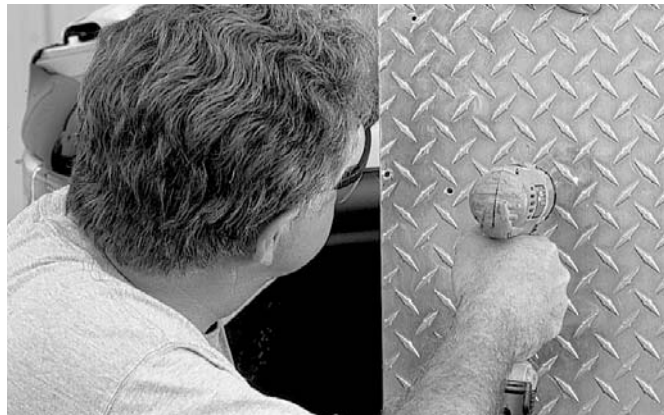


Figure 2.

Mounting Hanging Channels, Charger Housing, and Non-Charging Mounting Bracket

1. Drill two holes in both Unistrut channels (A in FIGURE 1), using a 9/32 (.281) drill.
 - Drill mounting holes, 1-1/2 inches in from outside edges of channels.
2. Place top channel on the cab wall, approximately four inches away from overhead obstructions.
3. Using a Unistrut channel as a template, drill two holes into cab wall with a #7 (.201) drill.
4. Tap both holes for 1/4-20 mounting bolts.
5. Position bottom channel on cab wall, 6-1/2 inches away from center of top channel.
6. Repeat steps 3 and 4 to mount bottom channel.
7. Bolt both channels in-place with stainless steel 1/4-20 bolts.

Mounting the Universal Charger or Non-Charging Mounting Bracket to Channels



Figure 3.

1. Slide Unistrut spring nut (B in FIGURE 1) into channel and rotate 90° to seat nut in channel V-groove. One nut is required for the top channel and two for the bottom channel.

- Place the stainless steel bolts (C in FIGURE 1) through the mounting holes molded into the charger.
- Place the neoprene rubber washer (D in FIGURE 1) over the bolt, align bolt with spring nut and tighten.

NOTE: If mounting the charger vertically, add a second neoprene washer to each of the bottom two bolts.

Electrical Connections

NOTE: Electrical installation is not needed if installing only the non-charging mounting bracket.

Power Requirements

The 5000 Series Universal Charger can consume enough current to eventually fully drain the vehicle's battery, if the vehicle stands for longer than a 12-hour period without supplemental battery charging.

Therefore, it is recommended that the charger be installed using any master ON/OFF switch where power comes directly from the battery, supplemental charger or connected to AC power via a shoreline when the vehicle is stored.

Electrical Specifications	
INPUT VOLTAGE RANGE	12.5 to 26.0 VDC (Fused at source)
INPUT CURRENT	Less than 2.0 Amps DC
NORMAL BATTERY CHARGE TIME	2.5 Hours

Installation

- Connect the positive lead (red) on the prepared wire end of the power supply line to a fused, in-line connection with a master switch. Connect to the switched side of ignition or power source.
- Connect the negative lead (black) of power supply line to a confirmed ground.
- With power source ON, confirm that the power LED light is GREEN. If any other result occurs, see "Troubleshooting Guidelines" in the "Maintenance, Troubleshooting and Service" section of this manual.

Troubleshooting The 5000 Series Universal Charger

Troubleshooting Guidelines	
SYMPTOM	PROBLEM/SOLUTION
NO LEDS LIT	Check power connections. Is power available?
	Is the positive power lead connected to the positive terminal?
	External in-line fuse blown. Replace fuse. Internal fuse blown. Replace fuse.
POWER LED STATUS IS GREEN AND CAMERA BATTERY LED DOES NOT LIGHT WHEN CAMERA IS PLACED IN CHARGER	No batteries installed in the camera. Verify that there are good batteries in the camera.
	Bad connection to the camera. Make sure charger contacts are clean and unbent. A small amount of contact cleaner, such as WD-40 can be used to clean charger and camera charging contacts. Reseat firmly to ensure connection.
POWER LED STATUS IS GREEN AND EXTERNAL BATTERY LED DOES NOT LIGHT WHEN BATTERY IS PLACED IN CHARGER	Inspect battery contacts for dirt, corrosion or damage. Clean contacts or replace battery. Inspect the contacts of the battery charger. Verify they are clean, unbent, and move down and spring back.
BATTERIES DO NOT FULLY CHARGE	Out of operating temperature range. Check that temperature of environment and /or batteries is within recommended operating range.
	Power source is noisy. Ensure power hookup cable is connected to a clean source without excessive voltage spikes.

NOTE: The Universal Charger will only charge the spare battery and the battery in the actual Thermal Imaging Camera. Batteries used in the Transmitter and the Video Capture device will not be charged by the Universal Charger.

⚠ WARNING

It is possible that charge can be terminated abnormally. While this condition is rare, it can occur because of external in-band noise that may reach the charger electronics. In the unlikely event that charge is falsely terminated because of noise, the battery may not fully charge. Always use the camera battery gauge as an indicator of battery condition.

⚠ CAUTION

Do not use solvents or paint thinners to clean the Thermal Imager; otherwise, the protective case may become degraded.