



FiveStar® Universal Fast Charger Stand (P/N 10065552, 10065555) Operating Instructions

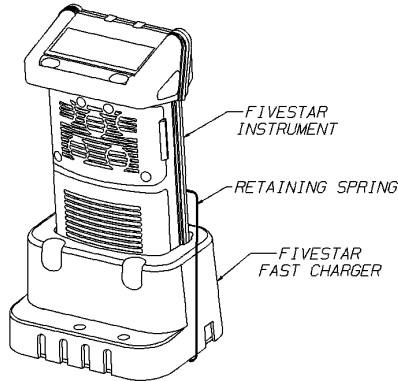


Figure 1. FiveStar Instrument and Universal Fast Charger

The FiveStar Fast Charger Kit is designed for use with:

- Nickel metal hydride (NiMH) Battery Packs, including those labeled:
 - "CHARGE ONLY WITH NIMH CHARGER (WITH FAN, STAND P/N 10008898, KIT P/N 10018894)"
- Nickel cadmium (NiCd) Battery Packs.

This charging system is designed for charging both FiveStar NiMH and NiCd Battery Packs.

The Universal Fast Charger Stand requires a Power Supply (P/N 710774 for North America and P/N 10013426 for Europe).

⚠ CAUTION

Use only the recommended power supply; use of other wall adapters can damage the Charger and Battery Pack.

Only charge batteries in ambient temperatures between 32 and 104°F (0 and 40°C). Otherwise, permanent damage to the batteries may result.

1. Insert the Power Supply jack tip into the jack receptacle on the side of the Fast Charger Stand.
2. Plug the provided Power Supply into a standard wall outlet.
 - If Temperature exceeds maximum, the Charge Mode light turns amber (see TABLE and FIGURE 2) and charging is disabled.

Status Light Indications

LIGHT	LEFT LIGHT CHARGE MODE	RIGHT LIGHT BATTERY TYPE
FLASHING RED	Slow charge	
RED	Fast charge	NiMH
GREEN	Topping/maintenance charge	NiCd
AMBER	Excessive temperature	

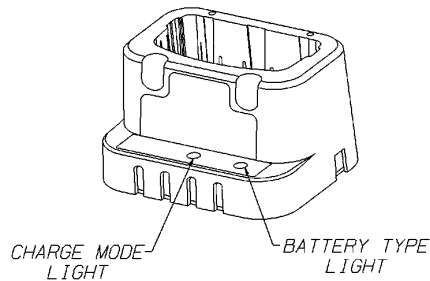


Figure 2. Charge Stand

Charging FiveStar Instrument

1. Turn the instrument OFF.
2. Insert instrument into the Charge Stand (FIGURE 1). The Fast Charger then proceeds through the following charge modes:

Soft Start Mode

- Mode light turns green for 10 seconds as system performs internal calibration.
- Battery Type Light turns red for NiMH or green for NiCd battery pack.
- If the battery pack is over-discharged, fast charging cannot be performed properly. The charger detects this state and enters slow charge mode until battery pack can withstand fast charge.
- Mode Light flashes red.

Fast Charge Mode

- Mode Light turns solid red.
- Fast charge mode lasts up to approximately four hours, depending on the amount of discharge.

Topping Charge Mode

- As battery nears full charge, the Fast Charger changes over to a Topping Charge mode.
- Charge Mode light turns green.
- Topping charge lasts about four hours.

Maintenance Charge Mode

- The instruments or battery packs may be left on charge indefinitely without adverse effects to the battery packs.
- Charge Mode light remains green.

Charging a Battery Pack Separately from the Instrument

1. Insert the battery pack (with the six gold contacts facing downward) into the Charge Stand by sliding the curved top of the Battery Pack down the front side of the Charger (FIGURE 3).
2. Snap the Retaining Spring into place over the Battery Pack (FIGURE 3) to ensure full Charger-to-Battery Pack contact.

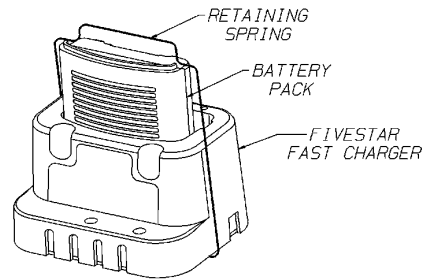


Figure 3. Battery Pack

CAUTION

The retaining spring ensures that all contacts are properly mated between Battery Pack and Charger. Charging the Battery Pack separately from the instrument, without snapping the retaining spring into place, can cause the Battery Pack to be over-charged or damaged.

System Diagnostics

- If Charge Mode Light turns amber, the Charger is detecting excessive temperature. Charging is disabled until temperature returns to normal; it then continues in maintenance mode until battery is removed.
- NiMH charging is indicated by the Battery Type light showing red.
- NiCd charging is indicated by the Battery Type light showing green.
- If the Charge Mode light does not indicate proper charge progress, or if the Battery Type light does not indicate the proper battery pack, reseal the instrument/pack within the Charger. If this does not solve the problem, the instrument/pack may still not be making proper contact (contacts may be dirty). Try cleaning the contacts on the battery pack. If this does not correct the problem, the Charger **may be** inoperative.
- For repair, send both the Charger and Power Supply to:
 - **MSA Instrument Division
Service Department
1000 Cranberry Woods Drive
Cranberry Township, PA
16066-5296 (1-800-MSA-INST).**