

Assembly and installation of all electrical parts and equipment must be performed by a qualified licensed electrician according to local, state and federal electrical codes. NEMA, UL, and other safety certifications are voided by use of non-compliant parts. For the safety of all personnel, the effective control of equipment and the protection of electrical system and components, a qualified electrician is required. The following is intended as an overview to assembly for the qualified licensed electrician.

Assembly

Extension cord end sets are designed for use with 12 AWG SEOOW wire rated for outdoor use in wet conditions. These cord sets provide "quick release" weather resistant electrical connections to enable safe, efficient installation, operation and maintenance of the electrical system. The electrical connections must be made by a licensed qualified electrician to ensure the safe and effective use of the design and features provided by the manufacturer.

General Instructions

Unpack all items and compare items received with items listed as shipped on the packing list.

The three (3) general starter types are "**Basic**", "**Kit**" and "**Plug n Play**".

1. The **Basic** starter is shipped as configured from the factory and may require modification to accommodate large wire connectors (e.g. CGBs and/or strain relief hardware).
2. The starter **Kit** has two (2) prepared holes for 3/4" CGBs and also includes a load side whip prepared on both ends. See the following wiring sequence information related to warranty coverage and rotation.

Whips

One end (the rubber boot weather resistant end) is gender specific and only compatible with the opposite gender of the equipment to which it is intended to attach.

The other end is prepared for ease of use by the electrician with a ground lead terminated with a ring lug and wires cut to length ready to connect to the starter terminals.

3. The **Plug n Play** starter includes both the line-side and load-side whips.

Wiring

The default color code sequence typically used is: X-L1-Black, Y-L2-Red, Z-L3-White (if applicable). This sequence is intended **ONLY AS A GUIDE**. By consistently coordinating all component wiring sequences with the site power source, proper motor direction will result. **PROPER MOTOR ROTATION DIRECTION IS CRITICAL!** Motors run in the wrong direction can result in any or all of the following: electrical hazard, equipment damage, complete mechanical and electrical failure and/or reduced service life.

ALWAYS have the ELECTRICIAN "bump-test" FOR PROPER MOTOR ROTATION PRIOR TO OPERATION!!

Warranty is voided if equipment is operated in reverse direction.

All three configurations (**BASIC**, **KIT** and **PLUG n Play**) include a set of extension cord ends with compatible outdoor weather resistant electrical connections.

NOTE: Interchanging incompatible parts, substituting and/or using different /other manufacturers' parts and components is not recommended. Doing so can easily compromise safety, control and equipment protection and is done entirely at the installer/end-user's own risk!

Locate Packing list and verify inventory received as compared to Parts required.

Kit & Plug n Play Starter: Whip (load-side) assembly

Figure 1 shows completed whip (load side) installation with CGB, lock nut and wire paths.

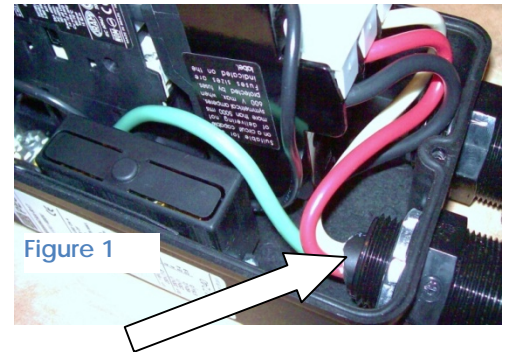


Figure 2a

Figure 2a - **Install** appropriate CGBs (two -3/4" CGBs supplied with Kit and Plug n Play) with lock nuts into the prepared holes and **tighten nuts securely**.



Insert whip end (Figure 2b) with the exposed wires through the strain relief end of the CGB, passing completely through the CGB until the outer SEOW jacket is **flush with the threaded end** of the CGB (see arrow Figure 1). Insert wires into terminals and tighten all wire connections.

Standard factory default connections for 3 phase power male plug/female connectors - colored wire - heater terminal are as follows:

- X-Black-Line 1,
- Y-Red-Line 2,
- Z-White-Line 3

Figure 2b

Connect wires inside starter to heater terminals as follows:

Figure 3.

Wiring configuration (e.g. three (3) phase 480volt)

- "G" on plug "Green" wire Ground lug terminal in starter
- " X" on plug "Black" wire "Line 1" terminal on heater
- "Y" on plug "Red" wire "Line 2" terminal on heater
- "Z" on plug "White" wire "Line 3" terminal on heater



Figure 3

Figure 4.

Plug n Play Starter: Whips (load-side) & (line-side) assembly

Repeat load side whip assembly procedure described above connecting wire ends to line-side of starter terminals with same sequence (e.g. X-Black-Line 1, Y-Red-Line 2, Z-White-Line 3).

load side line side



Figure 4

GENDER DEPENDENT CONNECTIONS:

Male plug with Male Boot



Figure 5

Female connector with Female Boot



Figure 6



Figure 7

COMPLETED STARTERS



Figure 8

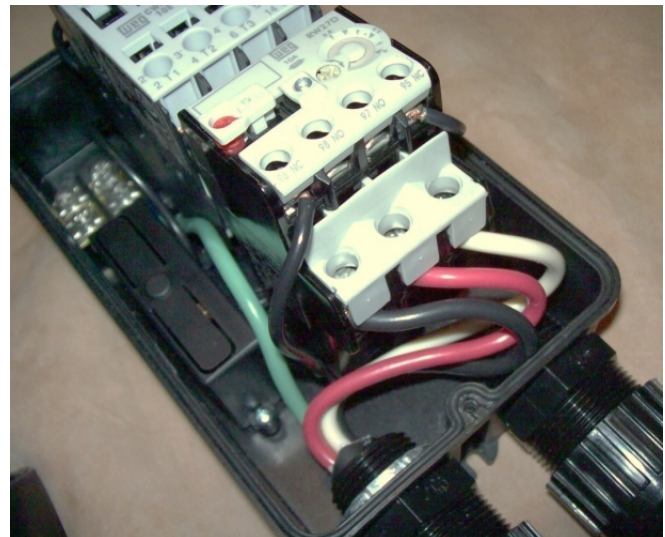


Figure 9

Starters shown in Figures 8 and 9 have "Whip-Load" installed. Starters are now ready for the site power supply connection using standard electrical hardware or a Plug n Play "Whip-Line".