PHILLIPS

Qwik Tech Tips

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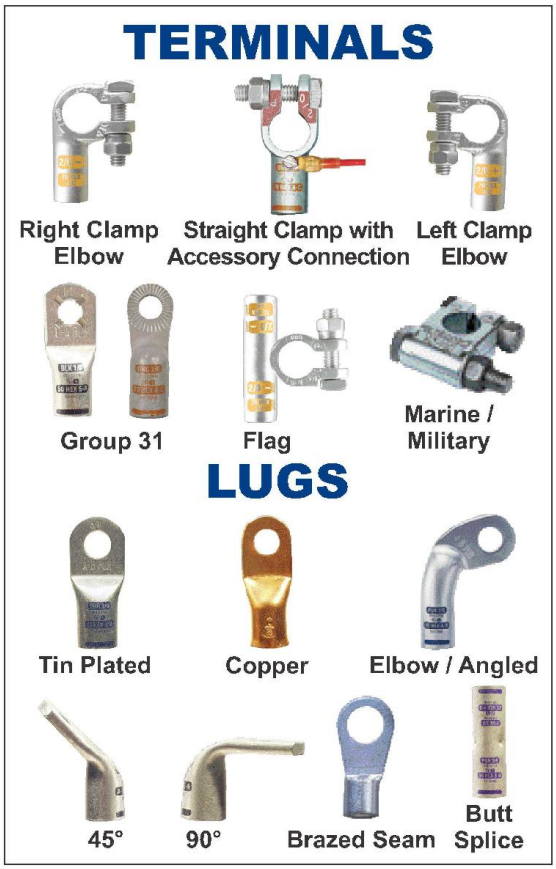
Battery Terminals And Lugs

When building a custom battery cable, there are many types of battery terminals and lugs available on the market today. Since the location of battery posts/studs differ from battery to battery, there are several styles of terminals that allow for a better connection between the post/stud and the battery. They come in a variety of sizes to accommodate different battery cable gauges. Some terminals and lugs are tin plated for corrosion resistance and added conductivity. Most can be used with solder slugs or crimped. Always make sure to confirm that they meet SAE conductivity standards for J163 and J1811.

TERMINALS: Terminals are used to connect the battery cable to the battery. Some examples of battery terminals are as follows:
Clamp: Allows for a snug fit to the battery post. They are available in 3 positions: straight, left elbow and right elbow. Some come with accessory take off connections.
Flag: Joins multiple battery cables together in a series.
Group 31: Group 31 batteries are available as a stud or post type. When dealing with a stud type battery, the best option is to use the non-rotating or locking lugs to keep the lugs in place. This will avoid lose connections and possible charging or starting problems.
Marine and Military: These terminals are designated to meet the special needs of marine and military applications.

LUGS: Lugs are used to connect the battery cables to the solenoid and starter post. There are two types of lugs, copper, and tin plated copper. Copper lugs seem to be the most popular due to cost effectiveness. They can be crimped or soldered. Tin plated copper lugs offer added conductivity and aid with corrosion resistance. Both types come in a variety of different styles:
Standard: Basic lugs for standard use on commercial or electrical equipment. 45°; 90° & left or right angled stud holes are common choices to select from as well as brazed seamed lugs.
Heavy Duty: Has a heavier wall for better durability to be used on applications such as trucks, buses and farm and construction equipment. 45°, 90° & left or right angled stud holes are common choices to select from.
Butt Splices: Used for connecting two battery cables together. This type of connection should be avoided where possible as electrical resistance is created between the two battery cables being connected.



TIPS

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- When choosing lugs, be sure to use the correct size/gauge and hole size for the best connection.
- When choosing terminals, choose a terminal that best suits the application. This will allow you to route your cable for better service access & clearance.
- Butt splices should only be used in emergency situations.
- Brazed seam lugs, although cost effective, are not the best choice as they allow moisture and contaminants to enter the battery cable through the open end. It is suggested to solder dip the end of the exposed battery cable wire to help prevent corrosion when using these types of terminals.

FEATURED PRODUCT

CLEAR-VU™
Bulk Battery Cable

- Easy to see corrosion creeping through your battery cable
- Prevents premature battery, starter and alternator replacement
- Rope-style stranding for flexibility
- Easy to strip
- Superior abrasion resistance
- Flexible from -40°F to 150°F (-40°C to 66°C)
- Meets SAE J1127 SGT specifications

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