Superior Electric

GUIDE FOR CHOOSING GENERATOR PLUG

What type of plug or receptacle came with my generator? How do I identify the type and know if the replacement I buy will be compatible with my generator? With generous use of technical terms and abbreviations, manufacturers don't make it easy either for customers especially for those who are technically challenged. This guide covers the technical basics that will help you learn about different types of generator plugs and receptacles so you can choose the right one.

Let's start with the basic terms associated with power:

VOLTAGE

Voltage is the intensity or pressure of electricity produced by the power source such as battery, power grid etc. Voltage is measured in Volts and is commonly denoted by the letter V.

Applications by Voltage:

- 110-120 V plugs are generally used for repairing common household appliances, pigtails and extension cords.
- 240 V plugs can deliver higher amounts of electricity and hence are used for heavy duty industrial applications, water pumps and generators.

AMPERAGE & WATTAGE

Amperage is a measure of current, that's how much charge is moving through a component. It's sort of analogous to how much water is flowing through a pipe.* When you're looking to buy a new replacement plug, ensure that it has the same amperage rating as the old plug. This is important because the amperage rating directly contributes towards wattage production. Wattage is the amount of electrical power that your generator or any other electrical appliance consumes. You can figure out the wattage of any electrical appliance by multiplying its voltage with the amperage rating. If you've doubts about the amperage rating of the plug, use the following pointers to determine the rating:

- Amperage = Wattage / Voltage
- Generally plugs are rated between the range of 240 and 1,800 watts for a 120 Volt 15 Amp circuit, the maximum wattage of a 15 Amp circuit is 1,800 watts
- This is based on 120 Volts.

You can compare the amperage rating of your plug to the rating mentioned in the NEMA code written on the replacement plug. As a rule of thumb, if the plug has the same amperage rating it should yield the similar amount of wattage.

*Voltage is more or less a measure of "force" pushing charge through something, it's sort of analogous to the pressure pushing water through the pipe.

American General Tool Group
www.superiorelectric.us TOLL FREE: 1-888-455-8665 Fax: 760-480-0411 Email: sales@americangeneraltools.com

NEMA CODE

When you buy a new plug or receptacle it has a National Electrical Manufacturers Association (NEMA) code on it. These codes were standardized for plugs and receptacles so it becomes easier for consumers to differentiate between variety of configurations of voltages and amperages. NEMA code helps in preventing hazardous combinations of amperage and voltage that can result in short circuits, electrocution, electrical fires and more.

The common plugs are rated for 125 V to 600 V and 15 Amps to 60 Amps. Moreover, they are grouped by single phase or three phase but with common generators we are most concerned with single phase which limits to what extent we really have to know about receptacles and plugs. It's fairly easy to understand the designations.

Example designations:

NEMA 5-15R
NEMA L5-15P
NEMA TT-30

Designation Section	Meaning
NEMA	National Electrical Manufacturers Association
5	the type of prong arrangement
L	Locking prong, no L is a straight prong and plugs can be pulled out easily. TT in this case means travel trailer and is used for RVs
-15 or -30	after the hyphen it is the amperage rating (electricity current)
R or P	R denotes Receptacle / P denotes Plug

COMMON GENERATOR PLUGS

Now, let's take a look at the common plugs that can be used with generators. Commonly, generators give the 20 and 30 Amp ratings and use no less than one locking plug generally a L5, L10, or L14 with a couple for standard duplex plugs. For RV or Travel Trailer applications, some give TT-30 plug.

At the time of purchasing electrical cords and plugs/receptacles, ensure that the rating and type are compatible. It's imperative because a 20 Amp receptacle and a 30 Amp plug won't have precisely the same prong configuration for any NEMA L type.

In single phase, like family unit and common household appliances, and at the 120V/125V and 240V/250V territories you'll be considering the NEMA 1 for 2 prong and NEMA 5, 6, and 10, for 3 prongs and 14 for 4 prong.

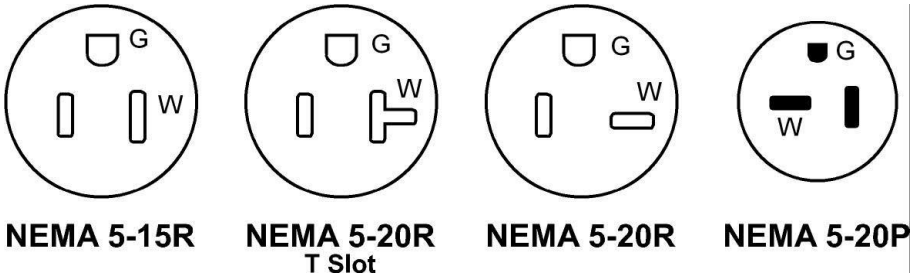
American General Tool Group
www.superiorelectric.us TOLL FREE: 1-888-455-8665 Fax: 760-480-0411 Email: sales@americangeneraltools.com

Duplex Outlet and Plug – Non Locking/Twist (NEMA 5)

Note that the duplex plug is the common 2 or 3 pronged plug that's used extensively in households and these plugs are NEMA 1 (15 Amp only) and NEMA 5 respectively. It is the grounded connector where you have a hot and neutral wire and for a 3 prong an additional ground wire. Most of the times you will discover the 3 prong plug unless you have an electrical structure laid out before 1960 or have particularly manufactured a fitting for 2 prong. Some small appliances are still made to support a 2 prong arrangement but are safely usable in 3 prong outlets.

In AC electrical supply there is not a requirement for small appliances to have a particular hot and neutral lead but the widths numerous 2 prong plugs will have a more extensive width on one prong to keep phase and hot wires reliable and compatible with 3 prongs.

The NEMA 5-15R is the designation utilized for these outlets. Usually your electrical cords and electrical appliances utilize 5-15P.



NEMA 5-20R accommodates a perpendicular prong which resembles a T on the bigger prong and the plug will have the perpendicular prong. The receptacle can be utilized with both 5-15 and 5-20 plugs. Most generators will give the NEMA 5-20 T opening to enable you to utilize 15 and 20 Amp plugs. Despite the fact that you can get 30 and 50 Amp NEMA 5 receptacles and plugs they are not commonly used.

Twist Lock (NEMA L) Receptacle

Different type of L receptacles are used in a range of phases and voltages. Twist lock is an effective solution to prevent the plug from getting pulled out because of vibration or pull on the cord.

Please note that the information below is only for the single phase electrical systems, in the event that you are thinking about 3 phase control, the application and usage would be different.

In the 125V territory the common L types are as follows:

L1-15 is just at this 15 amp rating.

All the lock plugs mentioned below are commonly accessible in 15, 20, and 30 amp ratings albeit some specialty plug and receptacle types can be acquired for higher amp ratings. In most generator styles you can expect that 30 amp ratings to be the maximum.

American General Tool Group
www.superiorelectric.us TOLL FREE: 1-888-455-8665 Fax: 760-480-0411 Email: sales@americangeneraltools.com

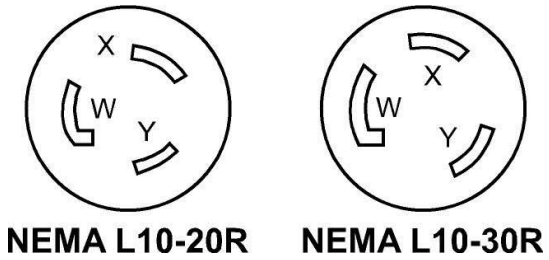
The plugs and receptacles have diverse slot arrangement for each of the amp ratings.

NEMA L5-15R **NEMA L5-20R** **NEMA L5-30R**

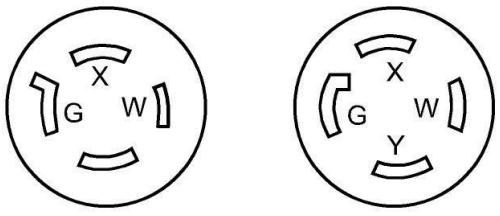
250V:
L6 types are for 250V rating having similar configurations to the L5. Both L5 and L6.

NEMA L6-15R **NEMA L6-20R** **NEMA L6-30R**

Dual 125V / 250V:
L10 and L14 are used for both voltages



NEMA L10-20R **NEMA L10-30R**

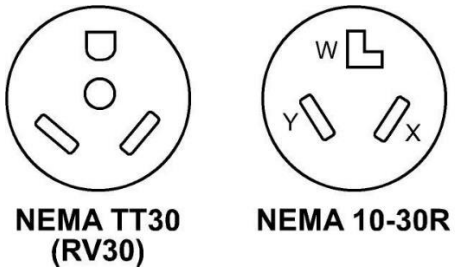


NEMA L14-20R **NEMA L14-30R**

American General Tool Group
www.superiorelectric.us TOLL FREE: 1-888-455-8665 Fax: 760-480-0411 Email: sales@americangeneraltools.com

TT Receptacle

Note that TT also known as RV30 and 10 plugs are often confused and you need to be mindful that you are using the right one.



NEMA TT30 (RV30) **NEMA 10-30R**

SUMMARY

Majority of the plugs and receptacles used on the common range of generators are in the under 10,000 watt range, will be duplex 5-20, with an addition of L14 in either a 20 or 30 amp. If you're looking for feature rich plugs you can also get the TT-30 for RV hookups.

American General Tool Group
www.superiorelectric.us TOLL FREE: 1-888-455-8665 Fax: 760-480-0411 Email: sales@americangeneraltools.com