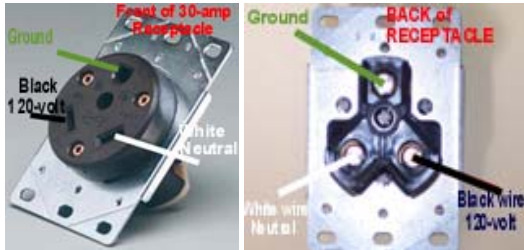


## The 30-amp 120-volt 2 pole 3 wire RV service

The **30-amp service** for an RV is 120-volt with a 3 prong receptacle and a **single 30-amp** dedicated breaker. The 30 AMP is a standard ANSI C73.13, **TT-30P** (plug) / **TT-30R** (receptacle). This designation was made specifically for TRAILERS. Plugs and Receptacles are available at Lowe's, Home Depot, Camping World and Electric Supply houses.



[Click on photos to enlarge.](#)

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The TT-30 is a 30A, 120-volt recreational vehicle standard sometime it is called simply RV 30. Frequently it is confused for a NEMA 10-30 (see below) with disastrous results. Due to the appearance of the TT-30 plug, many people assume that it is to be wired for 240-volt, but this is a 120-volt device.

This service is very simple to wire just follow the color coding for the connections if marked and use the correct size wire.

The BLACK wire or HOT it is connected to the breaker and to the BRASS colored screw if marked. Some receptacles do not have different color screws in that case attach the black wire at 5 o'clock or right hand side when looking at the BACK of the receptacle (or the 7 o'clock frontal position) the WHITE wire or neutral is connected to the silver screw or opposite side of the black wire and to the neutral bar in the panel. The BARE or GREEN wire is connected to the "G" screw or the U shaped prong and to the ground bar in the panel. **ALWAYS test for polarity with a tester before plugging in the RV.**

**The above 30-amp 120-volt service will supply 3,600 watts.**

It is imperative that the Electric Service used for RV's are wired correctly. DO NOT TRUST anyone, yourself, friends, relatives or ANY Professional Electrician. ALWAYS check out all RV Electric Service BEFORE plugging in the first time. The majority of the mistakes and the most damage to the RV's are made with the incorrect installation of the 120-volt 30 amp Service. For some reason people including Electricians just DON'T GET IT when it comes to the 30-amp 120-volt Service. All you need to do is look at the online Forums where RV's were damaged by incorrect installations.

Many times the 30-amp 120-volt Service is confused with the OLD 3 wire 120/240-volt Appliance Service. Even if you purchase the correct TT-30 receptacle it may get wired incorrectly with 2 HOT lines. It is harder to make mistakes with the 50-amp 120/240-volt installation but people do screw things up. As long as all the wires are connected to the correct terminals and everything checks out it will work.

For information on how to test RV Electric Outlets Look at the "**OUTLET TESTING**" page.

For **BASIC HOW to WIRE** a 30-amp Service Click on and Print out the following page and hand it to the person installing it.

### [30-amp 120-volt RV Service](#)

Wire SIZE and voltage Drop calculators (The table is NOT a NEC code just recommendations)


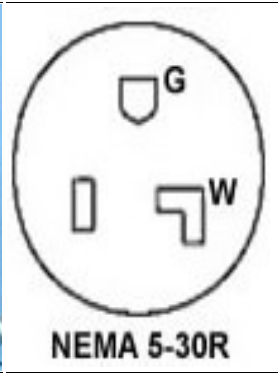




For a 20-amp circuit, use 12-gauge wire. For a 15-amp circuit, you can use 14-gauge wire (in most locales). For a long run, though, you should use the next larger size wire. Here's a quick table for normal situations. Go up a size for more than 100-foot runs, when the cable is in conduit, or ganged with other wires in a place where they can't dissipate heat easily:

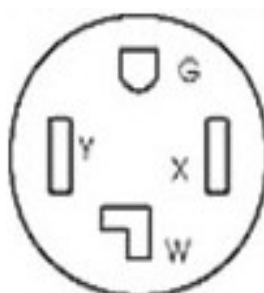
For 120 V	15 amp	20 amp	30 amp	50 amp	100 amp
25 feet	#14	#12	#10	#8	#6
50 feet	#12	#10	#8	#6	#4
100 feet	#10	#8	#6	#4	#1

[Wire Size Calculator](#)

[Voltage Drop Calculator](#)

The following 30-amp Services are also used. Do not confuse any of these with the RV TT-30 Service

	 <p>NEMA 5-30R</p>	<p><b>NEMA 5-30R</b>, 2-pole, 3-wire, grounding, rated 30A 120V.</p> <p>The 5-30 is <i>uncommon</i> but it is available, twist-locking plugs and receptacles are generally used instead for high-current applications.</p> <p>This service is wired the same as the TT-30 RV service. If you run across this all you need to do is replace the 5-30R with a TT-30R.</p>
	 <p>NEMA 6-30R</p>	<p><b>NEMA 6-30R</b>, 2-pole, 3-wire, grounding, 30A 240V. <i>No Neutral.</i></p> <p>Typical uses: welders, large air conditioners (30,000 BTU), kilns, shop machinery, and commercial equipment up to 2HP.</p> <p><b>NOT for RV.</b> For more information check out "WELDER Service" on the left.</p>
	 <p>NEMA 10-30R</p>	<p><b>NEMA 10-30R</b>, 3-pole, 3-wire, non-grounding, rated 30A 120/240V <i>No Ground</i></p> <p>Typically used for older dryers that do not have a ground leg and that require dual voltage: 240V for the heating element and 120V for the controls and drum motor. Frequently confused with the TT-30 service with damaging consequences.</p> <p><b>NOT for RV.</b> For more information check out "APPLIANCE Service" on the left.</p>



**NEMA 14-30R**

**NEMA 14-30R**, 3-pole, 4-wire, grounding, rated 30A 120/240V.

Typically used for newer dryers that have a grounded plug and that require dual voltage: 240V for the heating element and 120V for the drum motor and controls. If you have an older dryer with a non-grounding plug (that is, a 3-blade plug)

This service can be used for your RV as long as you make an adapter. It is 30-amp on each leg or 60-amp total at 120-volt.