

How to select the right Generator:

Power outages can leave a home without power for lighting, cooking, refrigeration, heating, and pumping water. Portable generators can provide substitute power. However, the generator must be properly sized to start and run the desired appliance(s).

The first step in selecting a generator is to determine the power requirements. To avoid under sizing the generator, all starting loads of the equipment connected to the generator must be determined. Be sure the generator you have selected is large enough to handle your present load and anticipated future needs.

Follow these steps when determining your generator requirements:

1. Locate the wattage of the tool and/or appliance(s) you want to run. This can be found either on its identification plate or in the Owner's Manual. If the wattage is not shown, but amps and volts are given, the following formula applies:

AMPS X VOLTS = WATTS

To determined kilowatts (kW) use the following formula:

1,000 WATTS = 1 KILOWATT (Example: 2,000 watts/1,000 = 2.0 kW)

2. Motor-driven tools and appliances may be listed in horsepower, which must be converted to watts. Motors can require as much as 4 times as much power to start as they do to run. If the running wattage of a motor is 400, then the starting wattage needed will be approximately 1600. The following table gives typical motor starting wattages for electrical motors.

Chart 1: Motor Starting Requirements

	A	Approximate Starting Watts Required					
Motor HP Rating	Approx. Running Watts	Universal Motors	Repulsion Induction Motors	Capacitor Motors	Split Phase Motors		
1/8	275	400	600	850	1200		
1/4	400	500	850	1050	1700		
1/3	450	600	975	1350	1950		
1/2	600	750	1300	1800	2600		
3/4	850	1000	1900	2600	*		
1	1000	1250	2300	3000	*		
1 1/2	1600	*	3200	4200	*		
2	2000	*	3900	5100	*		
3	3000	*	5200	6800	*		
5	4800	*	7500	9800	*		

*Motors of higher horsepower are not used in this classification

Note: These charts are to be used only as a guide. Motor starting has many variables to accurately predict size consistently. For more information contact your local Subaru Equipment Dealer or Robin America.

Chart 2: Approximate Wattage Requirements

APPLIANCES/ TOOL	Approximate Running Wattage Requirements	Approximate Wattage Required for Starting		
Microwave 750W	750	800		
Coffee Maker	1750	0		
Clothes Dryer Electric	5750	1800		
Washing Machine	750	2300		
Refrigerator	700	2200		
Lights	Actual on Bulb	0		
Television - Color	300	0		
Electric skillet	1500	0		
Dehumidifier	400	0		
Computer - Desktop	700	0		
Furnace Fan, (gas or fuel oil furnace)				
1/8 Horsepower	300	500		
1/4 Horsepower	600	1000		
1/2 Horsepower	875	2350		
VCR	50	0		

APPLIANCES/ TOOLS	Approximate Running Wattage Requirements	Approximate Wattage Required for Starting		
Central Air				
10,000 BTU	1500	2200		
24,000 BTU	3800	5000		
32,000BTU	5000	6500		
Room Air Conditioner 10,000 BTU	1500	2200		
Sump Pump 1/2 HP	1050	2150		
Well Pump - 1/2 HP	1000	2100		
Circular Saw 7 1/4"	1400	2300		
Chain Saw 2 HP	1100	0		
Air Compressor - Portable	1200	1500		
Hand Drill 1/2"	600	0		
Drill 1/2"	600	900		
Battery Charger 15 amp	500	700		
Electric Welder 200 amp AC	9000	0		

Note: This chart lists average power requirements. Your particular tool or appliance may require more or less than the listed wattage.

3. Add all of the nameplate wattages, or use the above charts to determined the properly sized generator for your needs. If you are uncertain or you want to have additional power for future requirements add 10% to your totals.

	LOAD IN WATTS			MAXIMUM ALLOWABLE CABLE LENGTH (FEET)							
Extention Cord Length	Current In Amps	120 Volts	240 Volts	#4 Wire	#6 Wire	#8 Wire	#10 Wire	#12 Wire	#14 Wire	#16 Wire	#18 Wire
	2.5	300	600	-	-	-	1000	600	375	250	150
	5	600	1200	-	-	-	500	300	200	125	75
	7.5	900	1800	-	-	-	330	200	125	80	50
	10	1200	2400	-	625	400	250	150	100	50	35
	15	1800	3600	650	400	265	165	100	50		
	20	2400	4800	500	300	200	125	80			
	25	3000	6000	400	250	150	100				
	30	3600	7200	325	200	125					
	35	4200	8400	275	175	100					
	40	4800	9600	250	150						
	45	5400	10,800	220							
	50	6000	12,000	300]						

CHART 3: Insulated Copper Wire Size

Chart 3 is a guide for selecting the proper size of insulated cooper wire when extension cables are used. Subaru recommends the use of outdoor rated U.L. cable, recognized type SJTW-A.