

# Finding the Right Generator

Be sure the generator you select is large enough to handle your requirements and anticipated needs.

To determine the right size generator, add up the total watts of all lights, appliances, tools or other equipment to be connected to the generator.

Check the nameplates to determine wattage. If wattage is not shown but amps and volts are given, the following simple formula may be used:  
**Amps x Volts = Watts**  
 (Ex. 12.5 Amps x 120 Volts = 1500 Watts)

To determine kilowatts (kW), use the following formula:  
**1000 Watts = 1 Kilowatt**  
 (Ex. 1500 Watts/1000 Watts = 1.5 kW)

Charts 1, 2, and 3 will help you select the proper size generator. If watts and/or amps are not given and only the horsepower is shown, use Chart 3 to determine the starting and running watts.

Chart 4 is a guide for selecting the proper size of insulated copper wire when extension cords are used. We recommend the use of outdoor-rated (UL) cable, recognized type SJTW-A.

**CHART 1: HOME APPLICATIONS – APPROXIMATE WATTAGE REQUIREMENTS**

| EQUIPMENT                     | WATTAGE      |
|-------------------------------|--------------|
| Air conditioners (10,000 BTU) | 2000 - 3000  |
| Blankets, electric            | 150          |
| Broilers                      | 1400         |
| Clothes dryer, electric       | 5000 - 10000 |
| Coffee makers                 | 850          |
| Dishwashers                   | 1500 - 2500  |
| Fans, attic                   | 375          |
| Fans, furnace                 | 800 - 1200   |
| Fans, window                  | 200          |
| Freezers, food                | 300 - 500    |
| Heaters, radiant              | 1300         |
| Hot plates                    | 1250         |
| Refrigerators/freezers        | 600 - 2000   |
| Sump pumps                    | 400 - 3000   |
| Toasters                      | 1100 - 1700  |
| TVs                           | 100 - 350    |
| Water heaters                 | 3000 - 4500  |
| Water pumps                   | 1000 - 3000  |

**CHART 2: PORTABLE ELECTRIC TOOLS – APPROXIMATE WATTAGE REQUIREMENTS**

| EQUIPMENT                  | WATTAGE/HORSEPOWER    | EQUIPMENT                | WATTAGE/HORSEPOWER |
|----------------------------|-----------------------|--------------------------|--------------------|
| Blowers, electric          | ½ - 3.0-HP            | Pump, electric           | ½-HP and up        |
| Compressors                | ¼ - 3.0-HP            | Routers                  | 900 - 1100-watts   |
| Concrete vibrators, ¼-HP   | 840-watts             | Sanders, belt            | 600 - 1500-watts   |
| Concrete vibrators, 1.0-HP | 1080-watts            | Sanders, disc            | 1200-watts         |
| Concrete vibrators, 2.0-HP | 1560-watts            | Sanders, orbital         | 250-watts          |
| Concrete vibrators, 3.0-HP | 2400-watts            | Saws, chain              | 800 - 1500-watts   |
| Drain cleaners             | 250-watts             | Saws, circular, 6-inch   | 1000 - 2500-watts  |
| Drills, ¼-inch             | 250 - 600-watts       | Saws, cutoff             | 2500-watts         |
| Drills, ⅜-inch             | 300 - 600-watts       | Saws, jig                | 200 - 800-watts    |
| Drills, ½-inch             | 350 - 1200-watts      | Saws, masonry            | 2.0 - 5.0-HP       |
| Drills, 1-inch             | 1000-watts            | Saws, radial arm         | 1.0 - 5.0-HP       |
| Grinders, bench            | ¼ - 1.0-HP            | Saws, table              | 1.0 - 3.0-HP       |
| Grinders, portable         | 1000 - 2500-watts     | Screwdrivers             | 550-watts          |
| Hammers, demolition        | 1260-watts            | Shears, metal-cutting    | 750-watts          |
| Hammers, rotary            | 1200-watts            | Wrenches, impact, ½-inch | 600-watts          |
| Heaters, space             | ¼ - 2.0-HP            | Wrenches, impact, ¾-inch | 720-watts          |
| Lights                     | Check wattage on bulb | Wrenches, impact, 1-inch | 1200-watts         |

**CHART 3: MOTOR STARTING REQUIREMENTS**

| MOTOR (HP) | WATTS REQUIRED TO START MOTOR |                     |           |             |
|------------|-------------------------------|---------------------|-----------|-------------|
|            | RUNNING WATTS                 | REPULSION INDUCTION | CAPACITOR | SPLIT PHASE |
| 1/8        | 275                           | 600                 | 850       | 1200        |
| 1/6        | 275                           | 600                 | 850       | 2050        |
| 1/4        | 400                           | 850                 | 1050      | 2400        |
| 1/3        | 450                           | 975                 | 1350      | 2700        |
| 1/2        | 600                           | 1300                | 1800      | 3600        |
| 3/4        | 850                           | 1900                | 2600      | –           |
| 1          | 1100                          | 2500                | 3300      | –           |

**CHART 4: INSULATED COPPER WIRE SIZE**

| CURRENT IN AMPS | LOAD IN WATTS |        |         |         |         |          |          |          |          |          |
|-----------------|---------------|--------|---------|---------|---------|----------|----------|----------|----------|----------|
|                 | @ 120V        | @ 240V | #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      |
| 5.0             | 600           | 1200   | –       | –       | –       | 500      | 300      | 200      | 125      | 75       |
| 7.5             | 900           | 1800   | –       | –       | –       | 330      | 200      | 125      | 80       | 50       |
| 10.0            | 1200          | 2400   | –       | 625     | 400     | 250      | 150      | 100      | 50       | 35       |
| 15.0            | 1800          | 3600   | 650     | 400     | 265     | 165      | 100      | 50       | –        | –        |
| 20.0            | 2400          | 4800   | 500     | 300     | 200     | 125      | 80       | –        | –        | –        |
| 25.0            | 3000          | 6000   | 400     | 250     | 150     | 100      | –        | –        | –        | –        |
| 30.0            | 3600          | 7200   | 325     | 200     | 125     | –        | –        | –        | –        | –        |
| 35.0            | 4200          | 8400   | 275     | 175     | 100     | –        | –        | –        | –        | –        |
| 40.0            | 4800          | 9600   | 250     | 150     | –       | –        | –        | –        | –        | –        |
| 45.0            | 5400          | 10800  | 225     | –       | –       | –        | –        | –        | –        | –        |
| 50.0            | 6000          | 12000  | 200     | –       | –       | –        | –        | –        | –        | –        |