Generators - Small 230v Systems

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

It is important to read this entire leaflet BEFORE using the generator

1. Plan your work and think ahead to make sure you will always be working safely. This leaflet is intended to give you guidance on the safe setting up and operation of a generator that is used to provide temporary power to a small number of items of equipment connected to the generator using a small number of extension cables and distribution boxes.
2. You should also read all of the safety instruction leaflet that came with the generator: this will give you information on how to start and refuel the generator safely.
3. Electricity can be hazardous and must always be used with great care. Because of this, a competent person must take responsibility for the safe use of the generator.
4. Do not forget that careless use of this generator could cause somebody to be injured, or even killed. Take great care when using it, and setting up or dismantling any system. Plan ahead to make sure that you will always have a safe operation.
5. You will need a qualified competent qualified electrician if you plan to make any electrical connections other than with plugs and sockets.
6. If you plan to use the generator to power a circuit or installation that is normally powered by the mains, this must be done by a qualified competent electrician.
7. Never connect a generator to a circuit that is still connected to the public main supply.
8. Do not use the generator in any way that it was not designed for – it will provide an electricity supply at the stated voltage and current only.
9. If you need more power, contact the hire company.

Please keep this leaflet safely as it may be required for future reference

Hire Association Europe
2450 Regents Court
The Crescent
Birmingham Business Park
Solihull B37 7YE

Telephone: 44 (0) 121 380 4600
Fax: 44 (0) 121 333 4109
Email: mail@hae.org.uk
website: www.hae.org.uk

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CHECKLIST GENERATOR

Day1 Day2 Day3

- ☐☐☐ 1. All protective covers and fastenings are tight and in good condition.
- ☐☐☐ 2. Socket outlets are undamaged.
- ☐☐☐ 3. Fuses or circuit breakers are intact and undamaged.
- ☐☐☐ 4. Switches and controls are undamaged and operational.
- ☐☐☐ 5. The generator will not get wet in any way.
- ☐☐☐ 6. There is no risk from engine exhaust fumes.
- ☐☐☐ 7. There is no fire risk.
- ☐☐☐ 8. The generator is on a firm, level surface.
- ☐☐☐ 9. Facilities exist to allow safe refueling of the engine.
- ☐☐☐ 10. The public are kept away from the generator.

DISTRIBUTION CABLES

Day1 Day2 Day3

- ☐☐☐ 11. All distribution cables have heavy-duty protection against damage.
- ☐☐☐ 12. They are undamaged.
- ☐☐☐ 13. They are not in positions where they are likely to get damaged.
- ☐☐☐ 14. Plugs are undamaged and have not been tempered with.

DISTRIBUTION SOCKET CABLES

Day1 Day2 Day3

- ☐☐☐ 15. All protective covers and fastening are tight and in good condition.
- ☐☐☐ 16. Socket outlets are undamaged.
- ☐☐☐ 17. Outlets are not in a position where they are likely to be damaged.
- ☐☐☐ 18. Outlets are sheltered form rain, and will not get wet in any other way.

CONNECTED EQUIPMENT

Day1 Day2 Day3

- ☐☐☐ 19. All connected equipment has correctly wired plugs: green-and-yellow connected to earth, blue connected to neutral and brown connected to live.
- ☐☐☐ 20. Plugs and cables of all connected equipment are in good condition.
- ☐☐☐ 21. The equipment is electrically safe.
- ☐☐☐ 22. The total current drawn does not exceed either individual distribution socket outlets, or the generator total capacity.

SETTING UP

1. Inspect the generator and all equipment thoroughly. Do this before you first use it and before you connect it up on each and every day that you intend to use it. There is a checklist on the last page of this leaflet to help you do this.
2. If you find any problems with the generator or other hire equipment – do not use it. Contact the hire company straight away.
3. Choose the position for your generator carefully.
   - It must not get wet from rain or anything else including hoses and water games that may be found at fetes.
   - It should be on a firm and level surface.
   - Engine exhaust fumes must not build up in any way.
   - The hot exhaust must not cause a fire risk.
4. The public should be kept away from the generator. Put a barrier around it if necessary. Use metal or plastic barriers, not straw bales. If this is not practical, get a responsible person to 'stand guard'.
5. The generator may need to be refueled, so make sure that this can be done safely.
6. All equipment must be protected from damage. This includes cables and distribution boxes. If the hire company have supplied special heavy duty equipment – use it.
7. Do not use lightweight cables that would be easily damaged.
8. Make sure that cables are laid out carefully so that they will not be damaged by vehicles, people walking on them or anything else.
9. Check that the cables do not cause a tripping hazard, especially by emergency exits.
10. Cable reels should be fully unrolled so that they do not overheat.
11. Do not connect several extension cables together to reach a wider area. If you need power in a remote place, hire another generator.
12. Do not try to link two generators together to share a load. This is hazardous and will damage the generators.
13. Do not allow any equipment to be plugged in to the generator or extension cables unless it has been checked for safety. The section headed Electrical connections and the checklist towards the end of this leaflet can help you to do this.
14. The generator may not be suitable for use with some power tools that have electronic speed control, and sensitive electronic equipment such as video recorders, computers, or some public address systems. Check with the hire company before use.
15. Hand-held tools and equipment should be double insulated, marked with a symbol. Do not use earthed tools – those that have an earth wire.
16. Do not overload distribution boxes or the generator by trying to draw too much power.
17. Check the labels on the equipment you plan to plug in: - they should show either current in amps (eg 5A) or power (eg 2 kW). Use the table below to convert from one to another.

Current: amps (A)	1/2	1	2	3	4	5	6
Power: watts (W)	110	230	450	690	920	1150	1380
kilowatts (kW)	1.2	1.4					

Current: amps (A)	7	8	9	10	11	12	13
Power: watts (W)	1610	1840	2070	2300	2630	2760	2990
kilo watts (kW)	1.6	1.8	2.1	2.3	2.6	2.8	3.0

18. The generator's power rating will be shown on its case. The table below shows how a 'kVA' figure relates generally to watts.

Generator: kVA	0.5	1	1.5	2	2.5
equipment: watts (W)	400	800	1200	1600	2000

Generator: kVA	3	3.5	4	4.5	5
equipment: watts (W)	2400	2800	3200	3600	4000

19. The total power of all the equipment should not be more than the generator can supply. Add up the power requirements of all the equipment and check it against your generator's output.

USING THE GENERATOR

1. The safety instruction leaflet that was supplied with the generator gives you important information on how to use the generator safely.
2. Keep a close check on the generator, cables, and all equipment at all times. If you can see any damage to any item, stop the generator before looking closely.
3. Make sure that nobody interferes with the generator or any connected equipment, or does anything that is likely to damage it, or get it wet.
4. Do not let anyone plug any equipment in until you have checked that the plug is wired correctly, and that it will not overload the system.
5. If you have to leave the generator whilst it is running, make sure that a competent person – who knows how to stop it – keeps a check on the system until your return.
6. If the generator or any other hired equipment does not work properly, do not try to repair it. Contact the hire company.

ELECTRICAL CONNECTIONS

1. Only use proper plugs and sockets to make connections to the generator and extension cables. If anything needs wiring in directly, get a competent electrician to do it.
2. Check the wiring connections in the plugs on all equipment (including extension cables) that has not been supplied by the hire company. Incorrect plug wiring could be very hazardous.
3. Do not assume that because the equipment works, and does not give you a shock when plugged in to a domestic system, that it does not need checking now.
4. Remember - green-and-yellow is connected to earth, blue is connected to neutral and brown is connected to live.

REGULAR INSPECTION CHECKLIST

Inspect the generator and all electrical equipment thoroughly, checking each of the points on the list below. You should do this before you start to use it, and at the start of every day until it is dismantled.

Before Starting Work...

Useful Reference Points • www.hae.org.uk/businessguard

Hire Association Europe
2450 Regents Court
The Crescent
Birmingham Business Park
Solihull B37 7YE

Telephone: 44 (0) 121 380 4600
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