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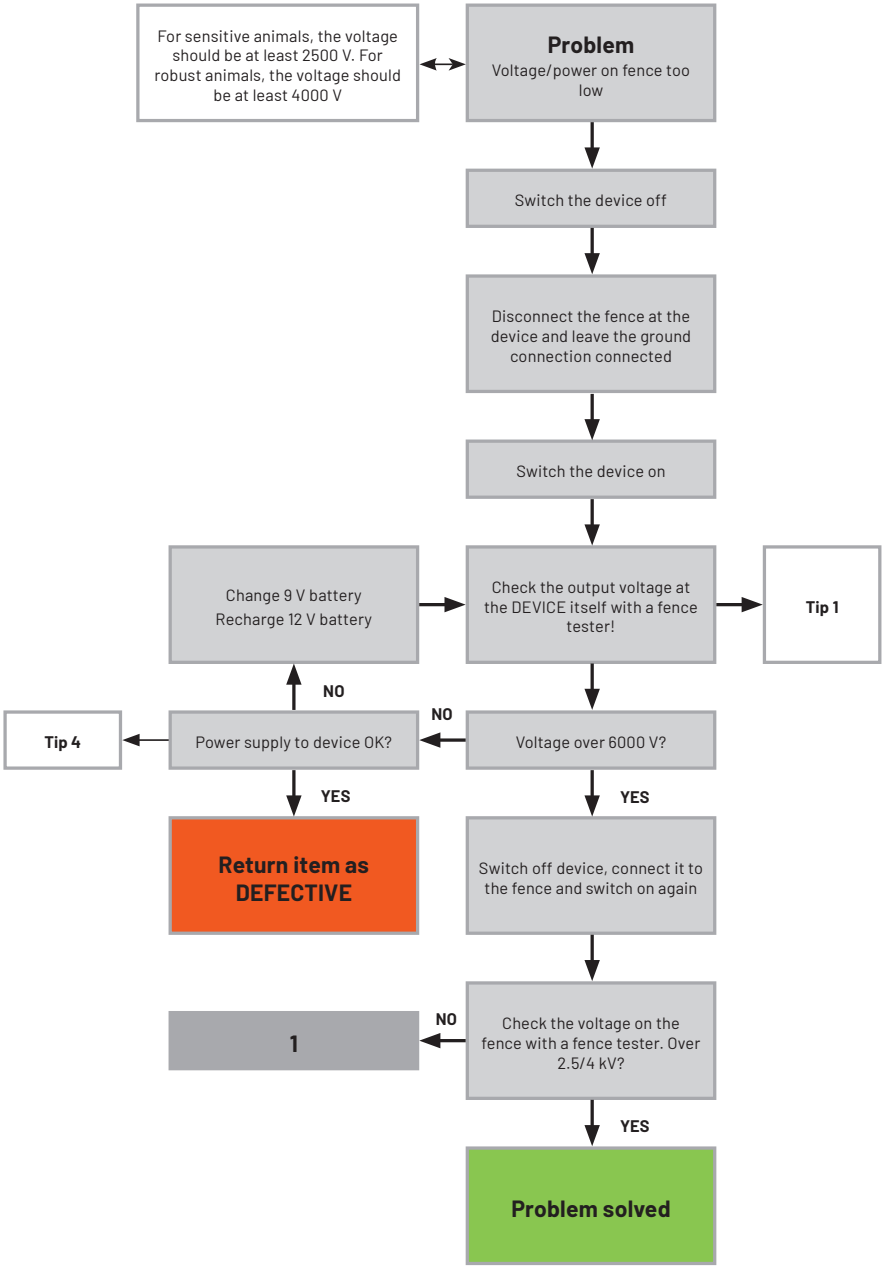
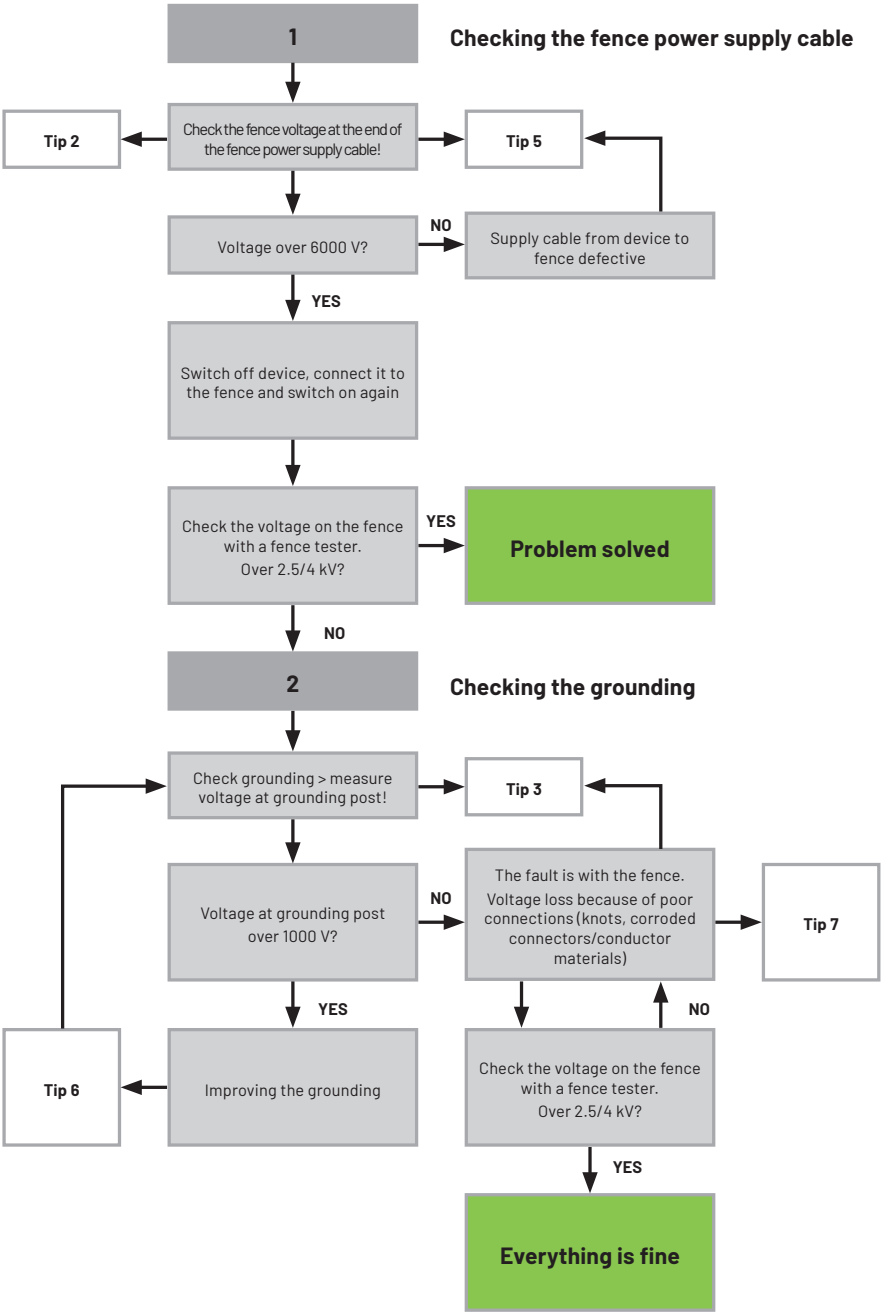
TROUBLESHOOTING DIAGRAM



FENCE LEAD AND GROUNDING CHECK



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TROUBLESHOOTING TIPS FROM OUR EXPERTS

TIP 1: TEST THE ENERGISER (FIG. 1)

1. Remove the nuts from the fence and ground terminals.
2. Hold the grounding rod of a fence tester against the energiser's ground terminal.
3. Now touch the fence tester against the energiser's fence terminal. You should have the voltage over 6000 V. Measurements should only be done with 2-pole fence testers (with an earth rod). Do not use 1-pole fence testers!

TIP 2: CHECK FENCE SUPPLY LINE

1. Switch off the energiser.
2. Disconnect the fence connection cable from the fence.
3. Switch the energiser on again and measure on the fence connection cable directly (here the voltage should be almost identical to the voltage directly on the energiser).

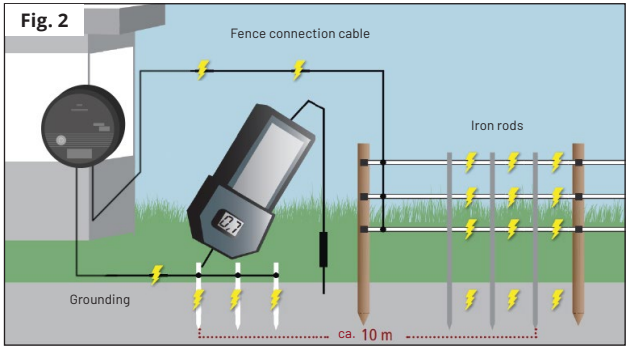
TIP 3: CHECK GROUNDING (FIG. 2)

How do I measure the voltage directly on the earth rod?

1. Short-circuit the fence wire to the ground at a distance of approx. 10m from the grounding (e.g. using the iron rods).
2. Now put the fence tester grounding rod between the 2 points and measure the voltage directly on the grounding rods (the voltage should not exceed 1000V). If there is already voltage on the grounding without grounding rods, this must be improved.

Fig. 1

Fig. 2



TIP 4: POWER SUPPLY

1. 9V energisers: battery voltage should be between 4 – 9 V.
2. 12V energisers: battery voltage should be above 11.4 V. Under 11 V deep discharge possible.
3. 230V energisers: energisers must blink, if necessary try on another power outlet (no blinking = defective).

DO NOT USE INVERTERS WITH 230V DEVICES!

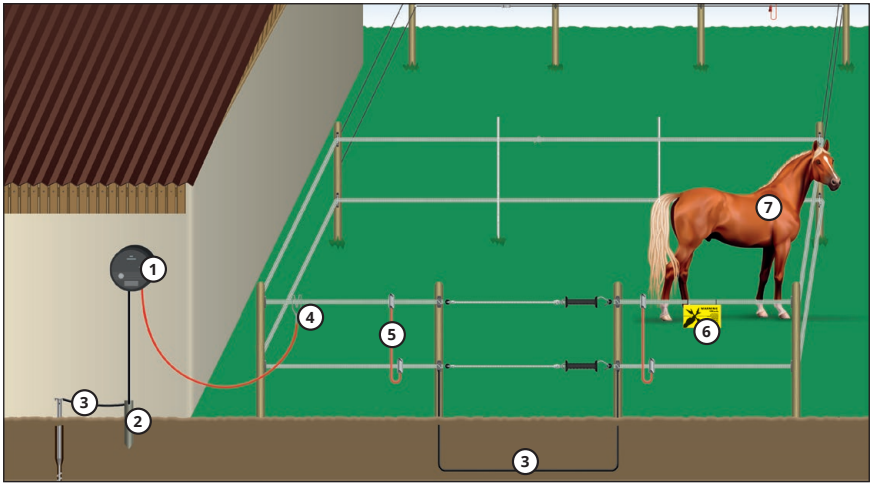
TIP 5: FENCE CONNECTION

1. For underground installation we would recommend Art. 32611/32612 (protective tubing is recommended).
2. Surface laid cables should be protected from sharp edges. If possible, use insulators to prevent arcing.
3. Fence supply lines should only be laid with high voltage resistant cables. Only high voltage cables should be used for the fence supply line (approval only up to 500V).

TIP 6: IMPROVE GROUNDING

1. Drive the earth rods into damp soil at least 1 m deep and 10 m away from the building.
2. If necessary, add more rods at a distance of at least 3 m between them and connect them together. Earth rods must be non-rusting, which means they are either stainless steel or galvanised.

TIP 7: TYPICAL LAYOUT OF AN ELECTRIC FENCE SYSTEM



1. ENERGISER

It supplies power to the fence system. The correct choice of device depends on the total fence length, animal species to be fenced in or out and available power supply options. There are 9 V battery energisers, 12V rechargeable battery energisers and mains energisers.

2. GROUNDING ROD / EARTHING

The basic requirement for a functional electric fence, optimal fence voltage and fence security is good grounding. The ideal distance between grounding rods is 3 m and they should be pushed as deep as possible into the ground. In accordance to VDE, fence and house grounding must be at least 10m apart.

Info

Ground rods must be rust-resistant. In dry conditions, watering the grounding rods to improve the grounding and to have sufficient voltage at the fence often helps. As standard, 1-1.5m long rods are used.

3. HIGH VOLTAGE CABLE

This cable is multi-purpose. It is used, among other things, to connect the energiser to the grounding rod or connecting several rods together. In addition, high-voltage cables are used to pass electricity close to the ground or underground.

NOTICE

Only single core (high-voltage suitable) cables may be used and never commercially available 3-core household cables (NYM cables). To prevent damage from stones, rodents, etc, you can pass the cable through a garden hose or similar.

4. FENCE CONNECTION CABLE

This cable is used to connect the energiser to the electric fence. A high voltage insulated cable is recommended for this purpose. The connection can be made directly from the energiser to the fence or with a lightning protection device or fence switch in-between..

Info

Depending on the type of the conductor material, there are prefabricated cables with eyelets or connectors at the ends for quick and easy installation.

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5. CONNECTION CABLE

Connection cables are used to carry voltage to all conductor rows of the electric fence system. This allows two or three rows to be connected together and distribute the current.

Info

Depending on the length of the fence, it is recommended to install connecting cables every 200 - 400m.

6. WARNING SIGNS

The signposting of electric fences is mandatory in public areas. The signs must be clearly visible and attached to the fence approx. every 50 - 100 m. Check with your local authority the distance required in your area.

Info

Warning signs are available in different languages.

7. ANIMAL

As soon as the animal touches the conductor material, the circuit is closed and the animal receives an unpleasant but harmless electric shock.

Info

Depending on the animal species, different demands are placed on the electric fence system. Get advice to find out which products are suitable for your purposes.

FAQ

- **Must an electric fence loop back to the beginning?**
  No, because the circuit is closed by contact of animals or vegetation over the ground.
- **Can I connect several fences to the same energiser?**
  Yes, if the energiser is strong enough.
- **Can I connect two electric fencers to one electric fence?**
  ABSOLUTELY NOT, under no circumstances, as this can have a fatal outcome.
- **Why should vegetation on the fence be avoided?**
  Any leakage, either through vegetation (e.g. grass, branches) or damaged insulators, whereby the current is discharged directly into the ground, leads to the loss of voltage on the fence.

TROUBLESHOOTING

Fault/Problem	Solution
Power leakage or short-circuit of fenceconnection	• Do not use any conventional cables for the fence connection. We recommend the use of a high voltage cable.
Fence voltage insufficient	• Fence too long. Reduce the area or use a more powerful energiser.
Poor grounding	• Check whether the grounding rod is corroded. Replace corroded grounding rods. • Check whether the cables/connections are intact. Replace defective parts.
Voltage loss/leakage from the fence	• Remove vegetation from the fence (by mowing or pruning). • Check whether the insulators are defective (recognisable by „clicking" and, possibly, sparking of insulators). Replace defective and weather-worn insulators. • Check whether the conductor material is touching the ground (e.g. as a result of breakage, insufficient mechanical tension). Repair the fencing. Use only special connection pieces and tighten the conductor material. • Check whether the conductor material possesses any undesirable properties (thin conductor, high resistance). Use high-quality conductor material with low resistance and large diameter. Ensure that the conductor material has high-quality wiring. • Make sure that the conductor material is not connected using tied knots, and that the connection is adequate. Use suitable special connection pieces for the conductor material.