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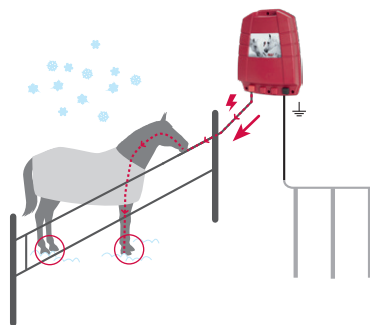
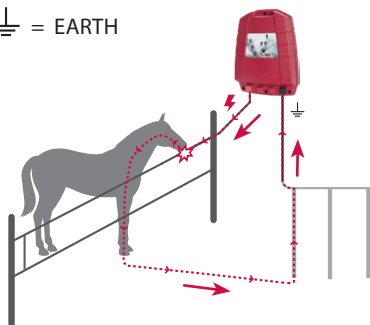
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WINTER FENCING GUIDE

⚡ = SHOCK

⏏ = EARTH



In an electric fence, a shock occurs when an animal touches the electrified fence, electricity passes through the animal into the ground and through the ground and earthing rods back to the energiser.

Snow, ice and frozen soil are good insulators. In winter, the flow of electricity is interrupted by the insulating snow and ice and no shock occurs.

THIS IS HOW AN ELECTRIFIED FENCE WORKS

Kesällä In summer and in good fencing conditions, earth conducts electricity well.

When an animal touches the electrified fence, electricity passes through the animal into the ground and through the ground back to the energiser, giving the animal a shock on the way.

If the electrical path between the animal and the ground is interrupted for some reason, the animal will not receive a shock, even if the energiser functions in the manner intended.

SNOW INTERRUPTS ELECTRIC CURRENT

Snow, ice and frozen soil are good insulators. In winter, electricity cannot pass from the animal's feet into the ground through the snow and ice, and the animal does not receive a shock when it touches the fence. Thus, even if the energiser functions flawlessly, the flow of electricity is interrupted by the insulating snow and ice.

A functional winter fence is implemented by providing a separate return path for electricity in the form of, for example, a) two-wire fence, or b) winter fence tape.

⚡ Did you know?

The flow of electricity between the animal and the ground can also be interrupted in summer, in very dry conditions or on rocky terrain.

Under such circumstances, a fence built in compliance with the winter fencing instructions is a functional solution.





Snow, winter coats, and thick blankets are good insulators. In case of an electrified fence implemented in the normal manner, even if an animal leans on the fence, there will be no shock, since electricity cannot return to the energiser through the soil.

WHAT TO CONSIDER WHEN BUILDING A WINTER FENCE

There are many things to consider when building a functional winter fence. Winter is a challenging time for fencing, since alike the snow, ice and frozen ground, the animals' thick winter coats and blankets act as efficient insulators.

The snow, sleet and ice sticking to the fence tapes easily cause sagging and stretching of the tapes. Therefore, in case of winter fences, Olli Shockteq designated products intended particularly for year-round use should be preferred as fence tapes.

Snow brings its own challenges to the fence height as well: In snowy winters, the snow can significantly raise the bottom of the fence, thereby lowering the height of the fence.

To achieve a functional winter fence, in addition to electrification of the fence, other season-related special requirements must be considered.



When building a winter fence, remember to:

1. Make the fence high enough even for snowy winters.
2. Provide a separate return path for electricity to the energiser.
3. When required, clean the fence tapes from snow.
4. Build the fence so that the lowest wire can easily be disconnected from the energiser when covered by snow.



METHOD A

TWO-WIRE FENCE

HOW DOES A TWO-WIRE FENCE OPERATE?

In a two-wire fence, a separate return path is provided for electricity to the energiser using a separate earthing conductor (in other words, the second fence wire).

In a two-wire fence, instead of a single fence wire, the fence wire strands are implemented using two wires: One of them is for electricity supply (shock wire) and the other takes care of earthing (return wire). The animal is given an electric shock if both of the wires are touched at the same time.



In a two-wire fence, a shock occurs when an animal touches the shock and return wire at the same time. Electricity passes through the animal from one wire to the other and back to the energiser through the return wire.



Important!

Always place the shock wire and return wire of a two-wire fence so close to each other that the animal's head cannot get stuck between the wires under any circumstances.

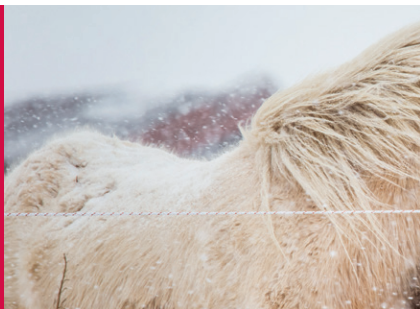
Furthermore, make sure the shock and return wires cannot contact each other, even if they are suppressed by snow.

In a two-wire fence, there may be several fence wire strands in the normal manner, and not all strands need to have a return wire. However, if there is an insulating layer of snow on the ground, the animal will only receive a shock if it touches the shock wire and the return wire at the same time.



Tip!

We recommend using earthing rods with two-wire fences as well. In such a case, the fence will function as a normal fence, and if there is no insulating snow or ice layer, touching any of the shock wires will result in a shock.

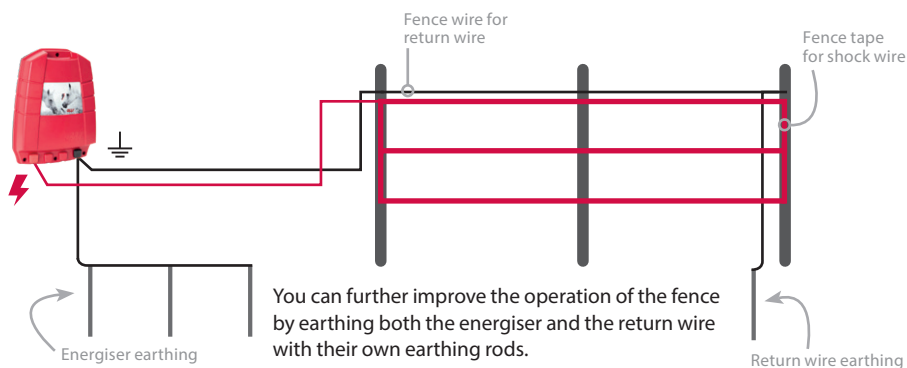


CHOOSING FENCE CONDUCTORS FOR A TWO-WIRE FENCE

In a two-wire fence, use of Olli's Winter Fence Tape is not required – instead, normal fence wires, ropes, or fence tapes intended for year-round use can be utilised as fence conductors. For example, you can choose a fence tape for the shock conductor and use a thin 3mm fence wire as the return wire, which is less susceptible to adherence of snow and sleet as compared to the wide tape.

BUILDING A TWO-WIRE FENCE

1. Build the fence in the normal manner, using the fence wire, rope, or tape intended for year-round use of your choice as the shock wire.
2. Connect the shock wire to the red shock terminal of the energiser designated by the lightning symbol using the fence connector cable supplied with the energiser.
3. Install the return wire approx. 5–10cm above the shock wire. There is no need to insulate the return wire from the ground, so it can also be attached directly to the fence post. However, use of insulators facilitates tightening the wire, if required. Connect the return wire to the earthing terminal of the energiser.
4. Note that the shock and return wires must be so close to each other that the animal's head cannot get stuck between them under any circumstances.
5. Tighten the shock and return wires properly, since they may not contact each other even if covered by heavy snow. A contact will result in a short circuit, which can drop the fence voltage and cause sparking detrimental to the fence wires. Fence tapes can be kept taut using the Olli fence tape tensioner, for example; it can also be added to an existing fence and used for tape tensioning whenever required.
6. **Important!** If a return wire following a gate has no connection to the energiser's earthing terminal, also take care of the continuity of the earthing route by making a passage underneath the gate using Olli high voltage cable. For examples, see the last pages of this Guide.
7. If you would like for each fence tape strand to give a shock also if there is an insulating layer of snow or ice on the ground, install a return wire to each fence tape strand. In such cases, link the return wire strands to each other and connect to the energiser's black earthing terminal using a fence connector cable or a fence wire, for example.



Tip!

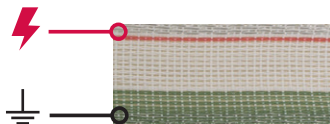
Upgrade your current fence to a two-wire fence! By adding return wire to your existing electrified fence, you can ensure uninterrupted flow of electricity in winter, regardless of snow, ice and frozen ground, as well as in dry or rocky conditions.

METHOD B

WINTER FENCE TAPE

HOW DOES WINTER FENCE TAPE WORK?

The 40mm wide winter fence tape has two separate wire bundles, one for shock and the other one for earthing. The animal receives a shock if it touches both wire bundles simultaneously.



BUILDING A FENCE USING WINTER FENCE TAPE

You can either use winter fence tape in all winter fence strands or use it in a single strand only.

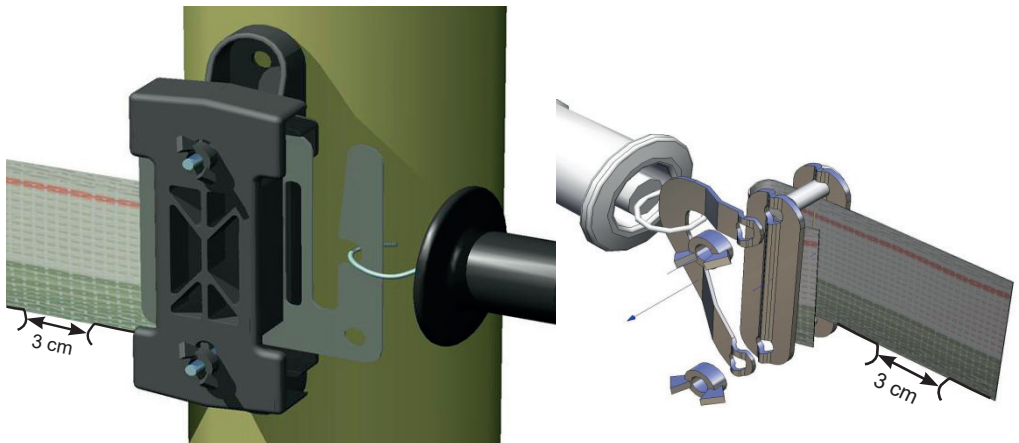
1. The easiest way for electrification of the winter fence is by using the winter fence tape fence connector cable included in the Olli accessory set for winter fence tape. The wire bundle marked with red colour running in the white part of the winter fence tape is to be connected to the shock terminal of the energiser designated by the lightning symbol and the wire bundle running in the green part of the tape to the energiser's black earthing terminal.
2. If your fence includes several strands made of winter fence tape, connect them to each other using the winter fence tape connector cable. The Olli accessory set for winter fence tape also includes two connector cables.
3. If your fence includes both winter fence tape strands and strands implemented using regular fence wires, tapes, or ropes, link them in the normal manner and connect to the energiser's shock terminal.
4. **Important!** At gate locations, cut and remove metal conductors (not plastic tape) in the green part of the winter fence tape to the extent of approx. 3cm before the metal connectors (e.g., fence tape gate insulator or fence tape gate handle), so that the connector does not short circuit the winter fence tape's shock and earth wire bundles. If this happens, the fence will not work.
5. **Important!** If an earthing conductor following a gate has no connection to the energiser's earthing terminal, also take care of the continuity of the earthing route by making a passage underneath the gate using Olli high voltage cable. For examples, see the last pages of this Guide.
6. Make sure the energiser is properly earthed using earthing rods (1–6 pcs.).
7. When testing the fence voltage with a fence voltage tester, instead of inserting the tester's earthing rod into the ground in the regular manner, place it in contact with the wire bundle in the green part of the winter fence tape and place the sensor on top of the tester in contact with the winter fence tape wire bundle marked in red. Depending on the energiser and the length of the fence, the reading should be at least 2,000V. Normally, the reading should exceed 4,000V, if the fence has been built correctly.



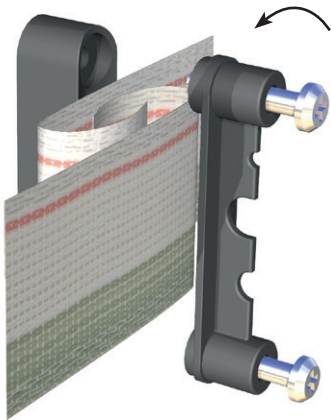
Earthing is worth the effort

A fence assembled using winter fence tape should also be earthed properly. Depending on the length of the fence and the power of the energiser, 1–6 earthing rods are usually needed. There cannot be too many earthing rods; better have some extra than too few.





Fence not working? The most common reason for failure in fences assembled using winter fence tape is a **short circuit caused by metal parts of connectors**. At gate locations, cut and remove metal conductors in the green part of the winter fence tape to the extent of approx. 3cm before any metal connectors, so that the connector does not short circuit the winter fence tape's shock and earth wire bundles. If this happens, the fence will not work. **Note!** Do not cut the plastic tape. Otherwise, the tape's durability will suffer.

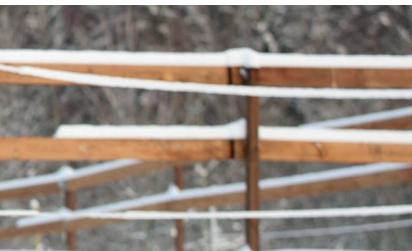
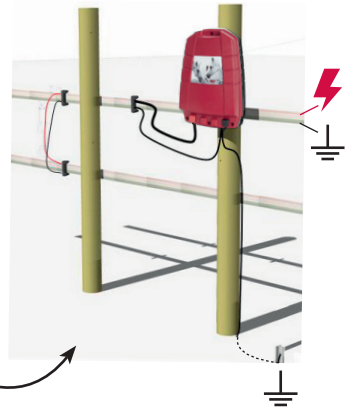


Winter fence tape extension

If winter fence tape needs extension, use the plastic Duo insulator. Make sure the wire bundles of tapes are aligned.

Winter fence tape electrification

Connect the energiser to the fence using the fence connector cable intended for winter fence tape and link the winter fence tape strands to each other with the winter fence tape connector cable.



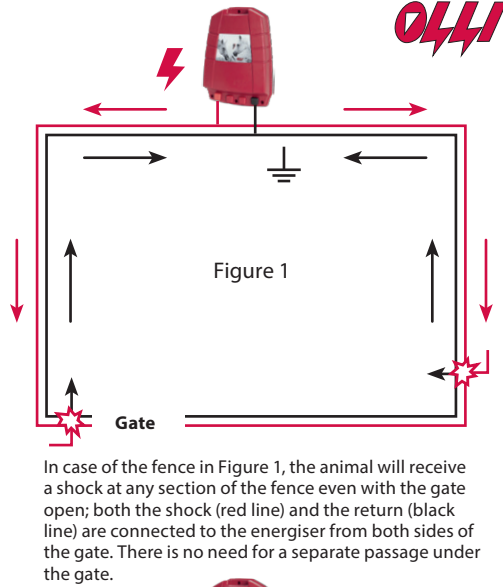
Remember to clean fence tapes

Fence tapes should be cleaned regularly, since snow and ice covering the fence tape also have an insulating effect. In addition, snow, sleet and ice sticking to fence tapes easily cause sagging and stretching of the tapes.

MAKE SURE THE SUPPLY AND RETURN PATHS ARE UNINTERRUPTED AT GATE LOCATIONS AS WELL

The supply and return paths of a fence can also be interrupted at gate locations. In such cases, the problem can be solved by making a passage underneath the gate using Olli high voltage cable.

The cable must be buried deep enough to prevent damages caused by animals trampling on it even if the soil has softened due to heavy or prolonged rainfall.



In Figure 2, the fence section between the gates marked with yellow dashed line is problematic in terms of electricity flow. In order for the animal to receive a shock at this section also if both gates are open, both the shock and return wires must be passed underneath the gate (Figure 3). Making the passage under one of the gates is sufficient.

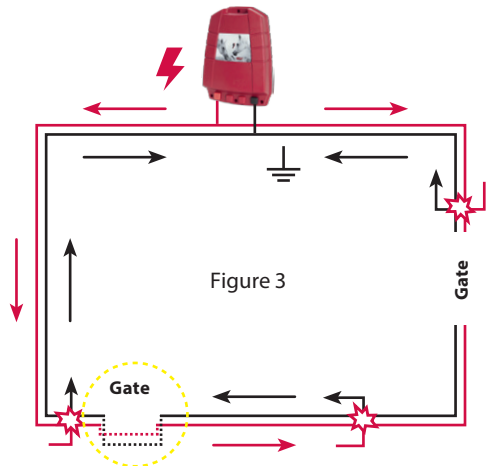
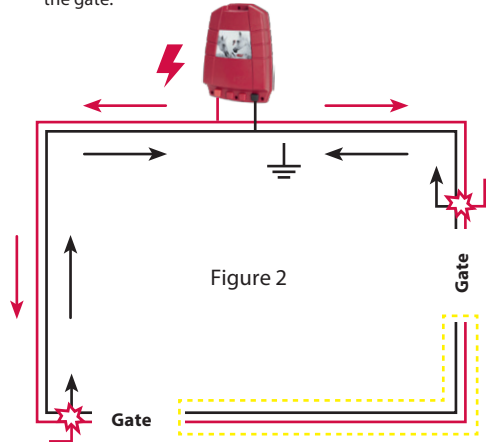
Note that even if the shock wire would continue in the gate, the return path still requires passing underneath the gate. Therefore, it is reasonable to do the digging work for both cables at the same time.

Gate tip!

Now you can decide whether you want the gate to be electrified only when closed or also while open and you pass through it with the animal.

If the gate is not electrified while open, this facilitates passing through it, for example, with horses stressed because of the electric fence.

Such a gate can be conveniently implemented using the flexible Olli rope gate, for example. If you attach the rope gate's first end to its own, separate insulator, which is not connected to the shock wire at all, the gate is supplied from the handle side and is electrified only when closed.



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