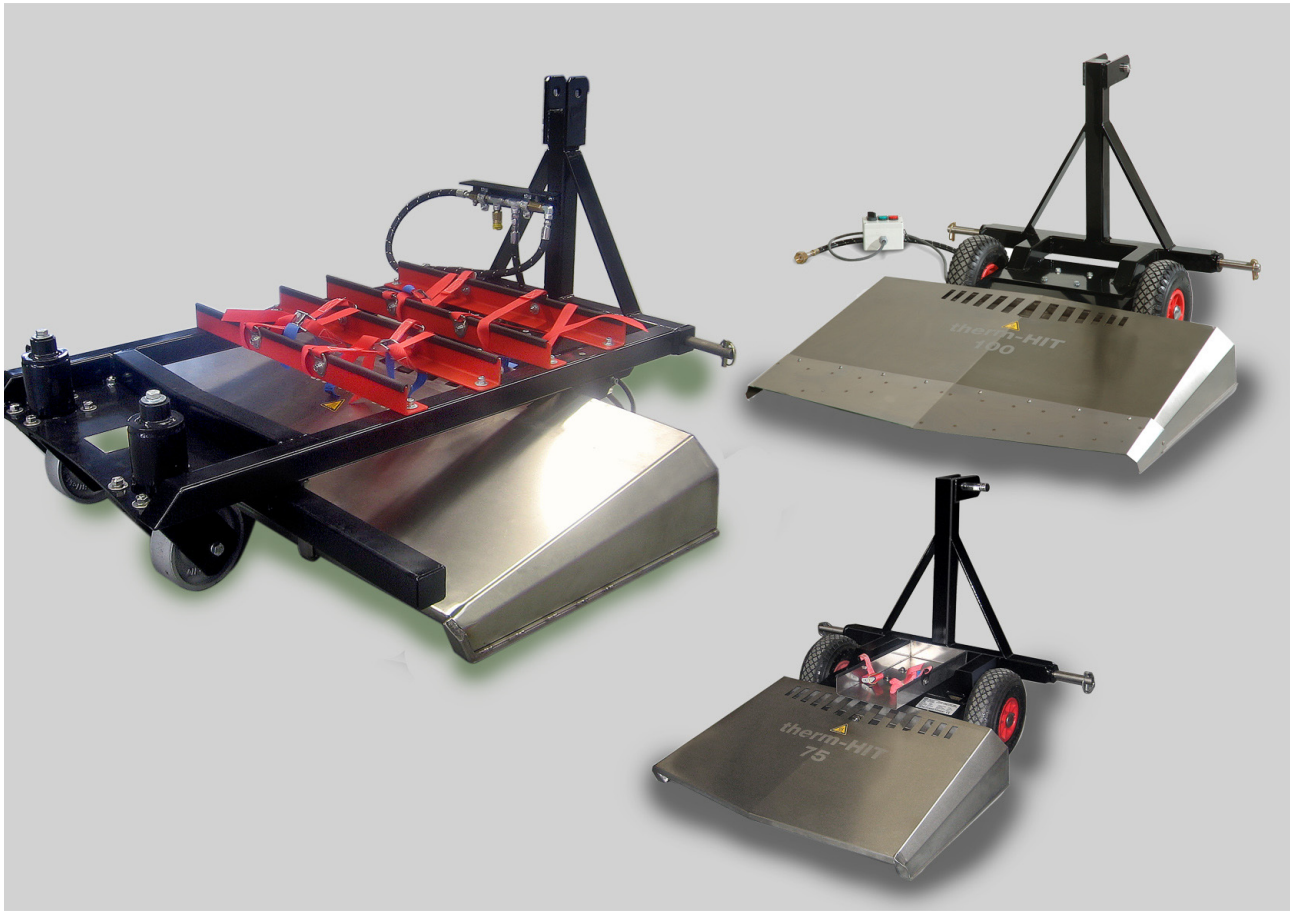
User instructions

HOAF thermHIT® 75M/100M/ 125M



HOAF Infrared Technology
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands
Tel.: +31 541 530 400
support@hoaf.nl
www.hoaf.nl

Note! At the back of this user manual, there is a warranty certificate.
In order to obtain a one-year warranty for the *HOAF thermHIT® 75M/100M/125M* you have to return the certificate within 2 weeks of the purchasing date.

Edition	Date	Version
1	February 13th, 2017	1.0

Preface

These operating instructions contain information about the safe use and maintenance of the *HOAF thermHIT® 75M/100M/125M*.

Read these operating instructions carefully before using the *HOAF thermHIT® 75M/100M/125M*. This is the only way to ensure optimum safety. The *HOAF thermHIT® 75M/100M/125M* may only be used by sufficiently qualified personnel.

Keep these operating instructions with the *HOAF thermHIT® 75M/100M/125M*!

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1 Introduction

This chapter contains general information on the HOAF thermHIT® 75M/100M/125M and these operating instructions.

Optimum safety can only be guaranteed after you have carefully read this user manual before using the HOAF thermHIT® 75M/100M/125M. The HOAF thermHIT® 75M/100M/125M may only be used by sufficiently qualified personnel.

1.1 Related documents

In addition to these user instructions, the following documents accompany the *HOAF thermHIT® 75M/100M/125M*:

- CE declaration.

This is included in the Appendix 4 of this user manual.

1.2 Manufacturer

The *HOAF thermHIT® 75M/100M/125M* was manufactured by:

HOAF Infrared Technology
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands

Tel.: +31 541 530 400
Fax: +31 541 530 600

Should you have any questions or problems, please contact your dealer or *HOAF Infrared Technology*.

1.3 Machine identification / CE mark

The machine identification plates of the *HOAF thermHIT® 75M/100M/125M* are displayed below.

HOAF Infrared Technology B.V.
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands
Tel. +31 (0)541-530400
Internet: www.hoaf.nl

HOAF therm-HIT 75M
Infraplus weedcontrolller

Gas power	: 85 kW	Gas consumption	: 6 kg/h
Gas type	: Propane	Ignition	: 1.5 VDC
Gas pressure	: 1.5 bar	Serial number	:
Gas supply	: Vapor take-off	Year of manufact.	:
Category	: I_3P	Norm	: DIN 3372-4

NOT FOR INDOOR USE CE

Fig. 1-1: Machine identification plate HOAF thermHIT® 75M

HOAF Infrared Technology B.V.
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands
Tel. +31 (0)541-530400
Internet: www.hoaf.nl

HOAF therm-HIT 100M
Infraplus weedcontrolller

Gas power	: 113 kW	Gas consumption	: 8 kg/h
Gas type	: Propane	Ignition	: 1.5 VDC
Gas pressure	: 1.5 bar	Serial number	:
Gas supply	: Vapor take-off	Year of manufact.	:
Category	: I_3P	Norm	: DIN 3372-4

NOT FOR INDOOR USE CE

Fig. 1-2: Machine identification plate HOAF thermHIT® 100M

HOAF Infrared Technology B.V.
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands
Tel. +31 (0)541-530400
Internet: www.hoaf.nl

HOAF therm-HIT 125M
Infraplus weedcontrolller

Gas power	: 138 kW	Gas consumption	: 10 kg/h
Gas type	: Propane	Ignition	: 1.5 VDC
Gas pressure	: 1.5 bar	Serial number	:
Gas supply	: Vapor take-off	Year of manufact.	:
Category	: I_3P	Norm	: DIN 3372-4

NOT FOR INDOOR USE CE

Fig. 1-3: Machine identification plate HOAF thermHIT® 125M

The *HOAF thermHIT® 75M/100M/125M* has a CE marking. This means that the *HOAF thermHIT® 75M/100M/125M* satisfies the fundamental health and safety requirements of the European Community.

1.4 Warranty

The manufacturer's warranty for the *HOAF thermHIT® 75M/100M/125M* is 12 months on parts and repair costs*. This warranty is only valid if the *HOAF thermHIT® 75M/100M/125M* is used according to the specifications and if the use and maintenance instructions are observed.

The guarantee for the *HOAF thermHIT® 75M/100M/125M* is void in the following cases:

- The installation is not used properly
- Insufficient maintenance
- The installation is not maintained properly
- Changes are made without the manufacturer's prior approval

* Subject to evaluation by *HOAF Infrared Technology*.

1.5 Copyright

1.6 Liability

The manufacturer of the *HOAF thermHIT® 75M/100M/125M* is not liable for unsafe situations, accidents and damage resulting from:

- Ignoring warnings or instructions stated on the *HOAF thermHIT® 75M/100M/125M* or in these operating instructions.
- The *HOAF thermHIT® 75M/100M/125M* being used for other applications or under other conditions than stated in these Operating Instructions.
- Any changes being made to the *HOAF thermHIT® 75M/100M/125M*. This includes the use of other replacement parts.
- Insufficient maintenance.

The manufacturer cannot be held liable for consequential damage such as damage to products, interrupted operations, reduced output etc., resulting from machine malfunction.

2 Safety

This chapter describes the safety rules regarding the HOAF thermHIT® 75M/100M/125M. Please carefully read this chapter before using the HOAF thermHIT® 75M/100M/125M or carrying out maintenance to it.

2.1 Safety symbols used in these User Instructions

The following symbols are used in this user manual:

A tip on how a task can be carried out more efficiently.

Draws attention to possible problems.

Risk of damaging the HOAF thermHIT® 75M/100M/125M if the instructions are not followed carefully.

Risk of serious injury to the user if the instructions are not followed carefully.

2.2 Symbols on the *HOAF thermHIT® 75M/100M/125M*

The following symbols are found on the *HOAF thermHIT® 75M/100M/125M*:

'High temperature' on parts that may be hot.

2.3 Operation

The HOAF thermHIT® 75M/100M/125M may only be used by qualified personnel.

The safety instructions in these User Instructions must be observed. Failing to observe these instructions may lead to unacceptable risks!

The user must be aware of the full contents of this User Instructions.

2.4 Maintenance

The HOAF thermHIT® 75M/100M/125M may only be maintained by qualified personnel.

The safety instructions in these User Instructions must be observed. Failing to observe these instructions may lead to unacceptable risks.

The maintenance engineer must be aware of the full contents of these User Instructions.

2.5 Safety instructions

The *HOAF thermHIT® 75M/100M/125M* meets the basic safety and health requirements stated in the relevant directives of the European Community. However, improper or careless use can create dangerous situations.

Beware of dangerous situations.

The HOAF thermHIT® 75M/100M/125M is solely intended for use with propane in liquid phase (liquid intake). Do not use gas bottles for gas supply (gas intake)!

Never use the HOAF thermHIT® 75M/100M/125M with butane gas!

The HOAF thermHIT® 75M/100M/125M should only be used on a paved surface.

It is never permitted to fire the HOAF thermHIT® 75M/100M/125M by means of matches or a lighter.

It is not permitted to smoke anywhere in the vicinity of the HOAF thermHIT® 75M/100M/125M.

Keep the HOAF thermHIT® 75M/100M/125M and the gas bottles away from (open) fire.

2.5.1 Influence of wind

Be careful if there is a strong wind blowing. Wind may seriously affect the flames. In that case:

- Flames may be stifled underneath the burner housing.
  Sometimes, the burner must be turned up in order to avoid the flames from being stifled.
- The flames underneath the burner housing may be blown out.
  In that case, the work must be stopped immediately because this will endanger the surroundings.

If there is too much wind, stop working with the HOAF thermHIT® 75M/100M/125M.

2.5.2 Safety, general

Observe the following general safety instructions:

- Pay attention to loose clothing and hair.
- Keep your hands away from dangerous or hot parts of *HOAF thermHIT® 75M/100M/125M*.
- The burner box is extremely hot during and immediately after use. Wait until the burner box has sufficiently cooled down before lifting or transporting the *HOAF thermHIT® 75M/100M/125M* or carrying out maintenance to it.
- Only use the *HOAF thermHIT® 75M/100M/125M* in the open air.
- Do not use the *HOAF thermHIT® 75M/100M/125M* on flammable, dry crops.
- Remove any flammable waste, such as paper and plastic, from the terrain before starting the *HOAF thermHIT® 75M/100M/125M*.
- The *HOAF thermHIT® 75M/100M/125M* may not be used in the vicinity of explosive gases, vapours or other hazardous substances.
- Do not burn for more than 5 seconds in the same spot, to avoid damage to the soil and overheating of the *HOAF thermHIT® 75M/100M/125M*.
- During ignition, make sure that non-operating personnel keeps a distance of at least 3 metres from the *HOAF thermHIT® 75M/100M/125M*.
- Switch off the *HOAF thermHIT® 75M/100M/125M* if you leave the vicinity of *HOAF thermHIT® 75M/100M/125M*.
- Immediately cut off the gas supply when you stop using the *HOAF thermHIT® 75M/100M/125M*.
- Replace any defective safety provisions before restarting the *HOAF thermHIT® 75M/100M/125M*.
- Fire extinguisher:
  - A filled fire extinguisher must at all times be present near the *HOAF thermHIT® 75M/100M/125M*.
  - The fire extinguisher near the *HOAF thermHIT® 75M/100M/125M* should always be in good condition. Read the instructions on the fire extinguisher.

- A fire extinguisher that has been used, must be replaced immediately.

- Safety measures may never be switched off.
- If, during use of the *HOAF thermHIT® 75M/100M/125M*, a part gets damaged, immediately shut off the gas bottle. Any damaged part must be replaced before further use.
- Maintenance on the *HOAF thermHIT® 75M/100M/125M* must be carried out be trained fitters.
- Make sure to shut off the gas bottle before carrying out any maintenance work.
- It is not permitted to make any modifications to *HOAF thermHIT® 75M/100M/125M* without prior written permission by the manufacturer.
- The connection to the gas bottle must be checked every day that you use the *HOAF thermHIT® 75M/100M/125M*.
- The gas pipes and connections have to be checked for leakages every year.

2.5.3 Safety in case of a burner with propane bottles

Propane is a pure and environmentally friendly fuel. The *HOAF thermHIT® 75M/100M/125M* will almost completely burn it up into carbon dioxide and water. If the *HOAF thermHIT® 75M/100M/125M* is operated correctly, use of the *HOAF thermHIT® 75M/100M/125M* is completely safe. However, always take the following precautions:

- Propane becomes explosive when mixed with air. Therefore, *HOAF thermHIT® 75M/100M/125M* must be treated with great care. Should you observe any damage to the gas supply, immediately switch off the *HOAF thermHIT® 75M/100M/125M*. Do not start using the *HOAF thermHIT® 75M/100M/125M* until all damage has been repaired by professionals.
- Propane is heavier than air and will therefore accumulate in lower situated cavities or basements. Therefore, do not store *HOAF thermHIT® 75M/100M/125M* over channel shafts, etc. Always store the *HOAF thermHIT® 75M/100M/125M* in a well-ventilated room and never in a basement.
- Carefully observe the instructions of your gas supplier concerning storage, transport and the filling of propane bottles.
- Only fill the propane bottles in the open air, using equipment provided by your gas supplier. It is absolutely forbidden to smoke or have open fire nearby during filling.
- Fill the propane bottles up to a maximum of 80%.
- Always keep the fire extinguisher at hand.

2.6 Safety devices

The *HOAF thermHIT® 75M/100M/125M* is equipped with the following safety devices:

1. Protective cover burners
   To prevent damage to the components on the underside of the burner, the burner is provided with a protective cover. In order to prevent gas accumulating in the burner when the pressure relief valve is triggered, this protective cover is provided with ventilation holes. The protection plate can be easily disassembled for maintenance or repair.
2. Ionisation protection
   After the burner has been ignited, the spark plug will 'sense' whether there is a flame present by means of an ionisation protection. If a flame is no longer present, the automatic firing device will automatically attempt to ignite the burner for five seconds. If the spark plug still does not 'sense' a flame, the automatic firing device will go into failure. The red indicator on the operating cabinet will light up.

3 Installation

Read this chapter carefully before making the HOAF thermHIT® 75M/100M/125M ready for use.

3.1 Unpacking and inspection

Strictly observe the following instructions while unpacking and installing the HOAF thermHIT® 75M/100M/125M!

Make sure none of the packaging material remains in the HOAF thermHIT® 75M/100M/125M. They may cause a fire hazard!

At the delivery, the packaging of the *HOAF thermHIT® 75M/100M/125M* consists of one box.

1. **Check** the packaging for damage.
   Contact your dealer if there is any damage.
2. If the packaging is not damaged; **unpack** the *HOAF thermHIT® 75M/100M/125M*.
3. The *HOAF thermHIT® 75M/100M/125M* is ready for use after you have installed a gas bottle. See the next section.

3.2 Making the unit ready for use

For background information concerning the different types of gas bottles, please refer to hoofdstuk 6 - 'Gasflessen'.

The HOAF thermHIT® 75M/100M/125M can be supplied with mounting materials for many different tool carriers. Follow the instructions supplied with the mounting hardware to mount the tool carrier.

3.2.1 Positioning the gas bottle

A standard gas bottle of propane for LIQUID INTAKE is required. Proceed as follows to position the gas bottle:

1. **Position** the gas bottle in the bottle container.
   The bottle container is mounted on the frame.

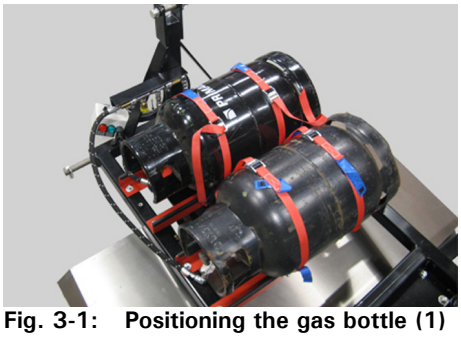


Fig. 3-1: Positioning the gas bottle (1)

2. **Check** to make sure the hose connection is present and undamaged before connecting the gas bottle.

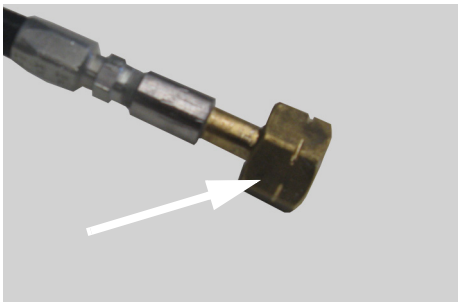


Fig. 3-2: Positioning the gas bottle (2)

3. **Check** to make sure the sealing ring is present in the connection and that it is undamaged. **Replace** the sealing ring if necessary.

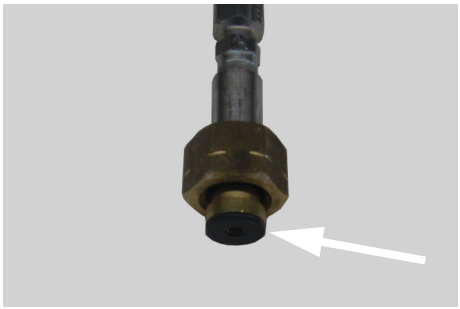


Fig. 3-3: Positioning the gas bottle (3)

4. **Connect** the gas hose to the gas bottle. Tighten the nut with a wrench.

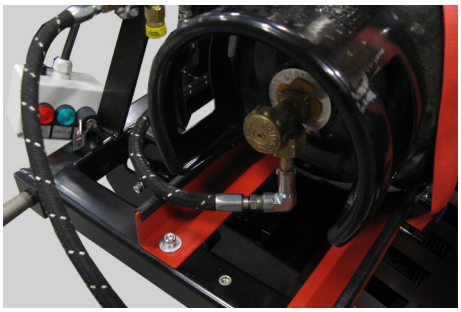


Fig. 3-4: Positioning the gas bottle (4)

Note! The gas connection has a counter-clockwise thread!

Do not over tighten! This may damage the connection.

Do not connect a gas bottle if the necessary sealing ring is missing.

5. **Check** the coupling for leakage Method:
   - **Turn** the gas valve to open it and put the hose under pressure.
   - **Close** the gas valve of the gas bottle.
   - **Spray** leak-detection spray onto the connection.
   - **Observe** to see whether any gas bubbles are forming.
   - **Repeat** this procedure each time you connect a gas bottle to the *HOAF thermHIT® 100M*.
   - If no gas bubbles form, the connection is correctly installed.

The *HOAF thermHIT® 100M* is now ready for use.

The HOAF thermHIT® 75M/100M/125M is solely intended for use with propane in liquid phase (liquid intake). Do not use gas bottles for gas supply (gas intake)!

Never use the HOAF thermHIT® 75M/100M/125M with butane gas!

Keep gas bottles away from the hot gases that are spread by the burners.

Let your gas supplier advise you about the use and storage of gas bottles.

3.2.2 Connecting the operating cabinet

1. **Install** the operating cabinet within reach of the driver. Although the operating cabinet is splash proof, it may not be exposed to rain.
2. If an internal battery is used, **check** that the internal battery provides enough power.
3. **Check** to make sure that the key switch on the operating cabinet has been switched off (0).

Fig. 3-5: Connecting the operating cabinet

4. **Install** a fuse holder with fuse in the plus wire.
   The capacity of the required fuse is found in Appendix 1 - 'Specifications'.
5. **Connect** the brown and the blue wire, the plus and minus wire respectively, to the plus and minus terminal of the vehicle's battery. The wires are provided with PLUS and MINUS indications.

Take care not to mix up the plus and minus wires when connecting to the battery.

Note! The HOAF thermHIT® 75M/100M/125M may only be connected to 12V DC batteries.

Note! Keep the operating cabinet dry. Although each operating cabinet is splash proof, the electrical components may be damaged by moisture. Make sure operating cabinets are covered during rain!

4 Description

This chapter describes the parts and the functioning of the HOAF thermHIT® 75M/100M/125M.

4.1 Function

The function of the *HOAF thermHIT® 75M/100M/125M* is to solve weed problems on roads, pavements, paths and other paved or semi-paved surfaces.

At a speed of 5 kilometres per hour, you can treat approximately 3750 m^2 with the *HOAF thermHIT® 75M*, 5000 m^2 with the *HOAF thermHIT® 100M* and 6250 m^2 with the *HOAF thermHIT® 125M*.

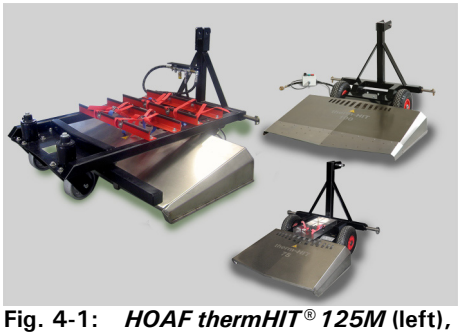


Fig. 4-1: *HOAF thermHIT® 125M* (left), *HOAF thermHIT® 100M* (top right), *HOAF thermHIT® 75M* (bottom right)

The *HOAF thermHIT® 75M/100M/125M* is provided with burners for:

- A direct transfer from flame to plants and soil.
- A heat-resistant wire mesh provided under the burner will glow so that infrared radiation is emitted.

Fig. 4-2: Burners

4.2 Use of the *HOAF thermHIT® 75M/100M/125M*

4.2.1 Weed killing method

The use of the *HOAF thermHIT® 75M/100M/125M* is based on the Infraplus® System, developed by *HOAF Infrared Technology*. This system makes use of infrared radiation heat in combination with more focused flame heat and a hot air stream. The heat for this Infraplus® System is generated by burners that were specially developed for this purpose. The principle of the Infraplus® System is comparable to the effect of sunshine. After all, sunshine also consists to an important extent of infrared radiation.

By exposing the weed seed to intensive infrared radiation for a short moment, the proteins coagulate. This will cause the walls of the moisture cells to expand, which will make the plants wither. This process is reinforced by the powerful hot air stream coming from the burner. Thanks to the combination of infrared radiation and hot air, the natural withering process is achieved in a very short time. In addition to this, the Infraplus® System also removes the germinating power of the seeds in the soil. This slows down regrowth.

Even though the infrared radiation barely penetrates the soil, and cannot cause soil damage, the root system of the weeds is exhausted after a few treatments, and will die. The withering process of the root system means regrowth is slowed down further and further, and the period between two treatments will increase.

4.2.2 Functioning

If the key switch is put to ’1’ on the operating cabinet, the gas flow at the burners is ignited by a spark plug.

You can see the spark plug in the picture.

Fig. 4-3: Ignition

Take care not to bend the spark plug when cleaning the HOAF thermHIT® 75M/100M/125M .

The *HOAF thermHIT® 75M/100M/125M* incorporates a bleed valve that is activated when the pressure increases too much in the system.

4.2.3 Vaporiser

In order to make the liquid gas from the gas cylinder gaseous, a vaporiser is wound around the fifth and sixth burner head of the *HOAF thermHIT® 75M/100M/125M*.

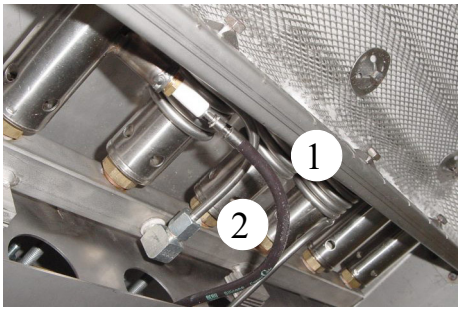


Fig. 4-4: Vaporiser

1. Vaporiser.
2. Cable of the spark plug.

4.3 Overview of the *HOAF thermHIT® 75M/100M/125M*

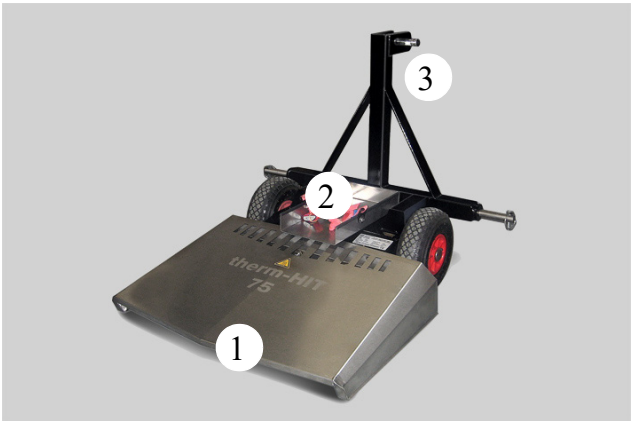


Fig. 4-5: HOAF thermHIT® 75M

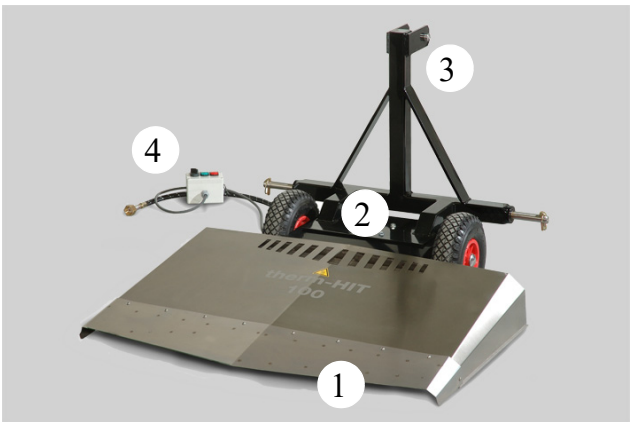


Fig. 4-6: HOAF thermHIT® 100M

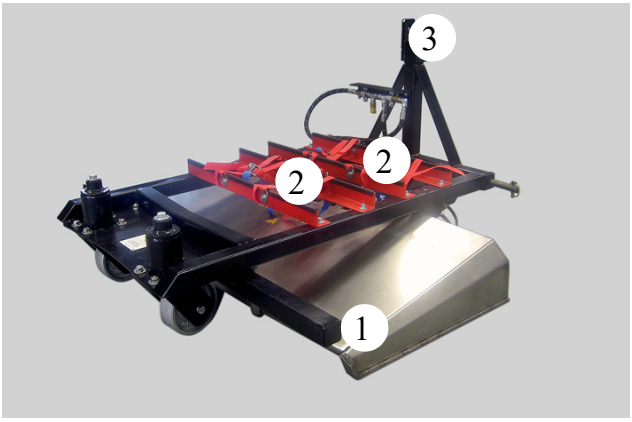


Fig. 4-7: HOAF thermHIT® 125M

1. The burner hood with the burners on the underside.
2. Gas bottle container.
3. Three-point suspension.
4. Operating cabinet.

4.4 Operating components

1. Key switch gas supply.
   By means of the key switch, the gas supply can be activated.
2. Indicator light burner.
   Lights up when the burner is on.
3. Indicator light burner.
   Lights up when the burner is faulty.

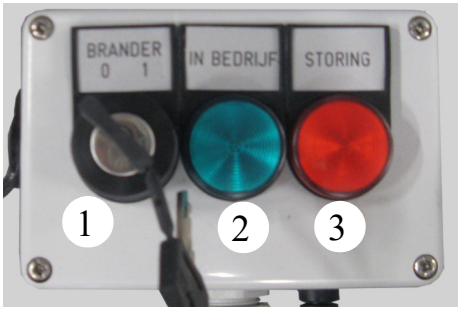


Fig. 4-8: Operating components

4.5 Air guide cap (option)

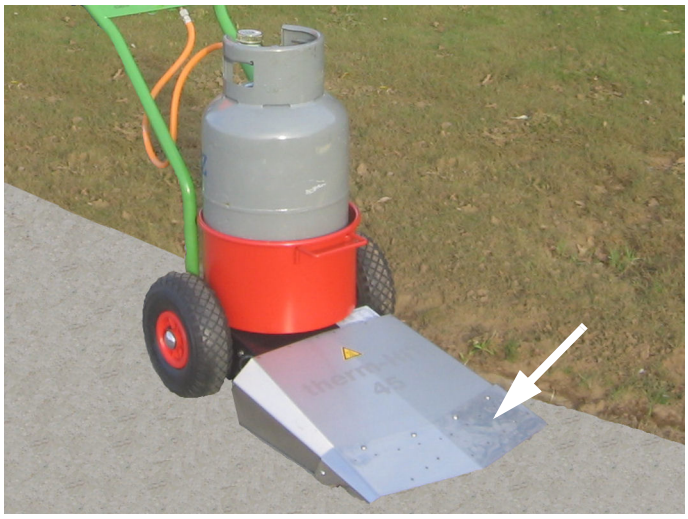


Fig. 4-9: Air guide cap (option)

The *HOAF thermHIT® 75M* and *HOAF thermHIT® 100M* can be provided with an air guide cap. This provision is placed at the front of the burner cap. The air guide cap ensures that the outlet of hot air at the front of the burner cap to a large extent flows out to the right. This makes it possible to treat weeds around obstacles and in gutters on the right side of the burner.

The outflow of hot air is reduced on the left side of the burner so that weeds can also be treated close to lawn edges and hedges.

5 Operation

This chapter describes how the HOAF thermHIT® 75M/100M/125M is operated.

5.1 Important

- Only use the *HOAF thermHIT® 75M/100M/125M* in the open air.
- Do not use the *HOAF thermHIT® 75M/100M/125M* in extremely rainy and windy circumstances; the results will be substantially worse than under dry and calm weather conditions.
- Do not use the *HOAF thermHIT® 75M/100M/125M* on flammable, dry crops.
- In order to avoid damage to the soil, you have to start driving the *HOAF thermHIT® 75M/100M/125M* immediately upon firing it up.
- Drive the *HOAF thermHIT® 75M/100M/125M* slowly enough to heat the weeds, but not so slowly that they catch fire. The working speed depends on the type and the density of the weeds that are to be treated and the weather conditions.
- It is not the objective to burn the weeds. It is only necessary to heat up the weeds to a temperature of approximately 70°C, causing the plant to dry out. You can use a finger pressure test to determine whether the treatment was sufficient (see section 5.2.3).
- Do not burn for more than 5 seconds in the same spot, to avoid damage to the soil and overheating of the burner.

5.2 General

5.2.1 Types of weeds

Most grasses, annual or bi-annual plants and young plants of perennial weeds can be destroyed in two to three treatments. A few grasses and permanent plants such as plantain, redshank and clover may require up to six treatments.

Deep-rooting plants such as dandelions, thistle, sorrel and couch grass may be able to use nutrient reserves in their root stocks or peg roots to resurface again after six treatments, and must therefore be treated intensively during two to three growth periods.

About 65% of the seed above ground is damaged to such an extent that it will no longer germinate. The preventative effect of every Infraplus® treatment is the partial cause for a sustained reduction of the weeds.

5.2.2 Determining the moment of the treatment

In order to determine the most appropriate moment for treatment, the surface that is to be treated must be carefully considered, in addition to the weather conditions and the growth power of the plants.

Particularly during the first year of treatment, the time intervals between repeats must be as short as necessary to hardly give the weeds a chance to recover. The quicker you can "starve" a plant, the sooner you get (nearly) clean surfaces.

Newly laid or refurbished terrains must be treated as soon as weeds become visible (1-3 cm high), as the young new plants are extremely vulnerable and therefore easy to destroy. A final treatment towards the end of autumn also has a very positive effect. This means the plants weakened further, at a time of limited growth.

Note! Never carry out a treatment in places with leaves!

5.2.3 Finger pressure test

The working speed is strongly determined by the nature and density of the weeds and the weather conditions. It is useful to carry out a finger pressure test from time to time during treatment, and to determine the results.

You take the leaf from a weed between your thumb and index finger, and apply a light pressure.

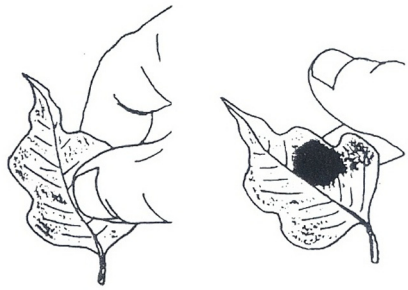


Fig. 5-1: Finger pressure test

- If a dark green stain becomes visible, and the area you applied pressure on feels wet, the plant has been reached effectively, and the working speed has been chosen correctly. In addition to this, the plant is visibly weaker.
- If there is no dark green discolouration, the machine was driven too fast.
- If the weeds are blackened or charred, the machine was driven to slowly.

5.2.4 Influence of wind

Be careful if there is a strong wind blowing. Wind may seriously affect the flames. In that case:

- Flames may be stifled underneath the burner housing.
  Sometimes, the burner must be turned up in order to avoid the flames from being stifled.
- The flames underneath the burner housing may be blown out.
  In that case, the work must be stopped immediately because this will endanger the surroundings.

If there is too much wind, stop working with the HOAF thermHIT® 75M/100M/125M.

5.3 Start-up

1. Check to make sure there is no dirt or leaves in the burners or underneath the machine.
2. **Check** whether the key switch is in the '0' position.
3. **Check** the connection of the operating cabinet on the battery and on the *HOAF thermHIT® 75M/100M/125M*.
4. **Check** the suspension of the *HOAF thermHIT® 75M/100M/125M* to the tractor.
5. **Check** the gas hose and couplings between the gas supply and the burner unit.
6. **Open** the gas valve of the gas bottle.
7. **Check** the gas connection for leakages. Method: Spray some leak-detection spray onto the hose and the connection nuts. If any gas bubbles show up, there is a leak. If that is the case, close the gas valve and remove the hose. Check the hose on the inside for dirt and check the sealing ring. Repeat the check by means of the leak-detection spray.
8. **Suspend** the *HOAF thermHIT® 75M/100M/125M* just above the ground.
9. **Start** the tool carrier.
10. **Turn** the key switch to '1'.
    The gas supply is opened, the burners ignite. The ignited burner burns clearly audible.

    If this is not the case, no ignition will have taken place.

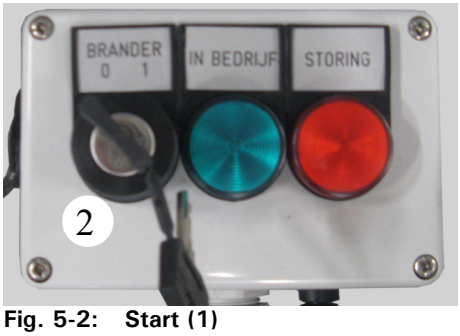


Fig. 5-2: Start (1)

Fig. 5-3: Start (2)

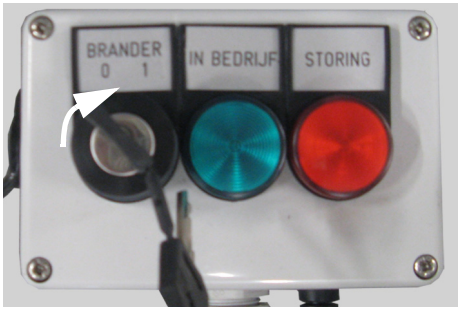


Fig. 5-4: Start (3)

⚠ ***Warning! If, after two attempts, no ignition has taken place, you have to wait at least <u>1 minute</u> before making another attempt.***

⚠ ***Start immediately with driving.***

5.4 Driving

After ignition, start driving immediately, in order to avoid fire and damage to the soil.

The burner hood of the *HOAF thermHIT® 75M/100M/125M* must be moved along the ground during use. There has to be a distance of approximately 2 cm between the ground and sliding carriages of the *HOAF thermHIT® 75M/100M/125M*. The sliding carriages are there to protect the burner hood from minor unevenness on the ground.

In order to prevent heat loss, the *HOAF thermHIT® 75M/100M/125M* must be moved along close to the ground. Drive slowly. The final result depends on:

- Distance of the burners to the vegetation
- Speed
- Type of vegetation
- Density of the vegetation
- Weather conditions during and after the treatment
- Humidity
- Etc.

5.5 Stopping

1. **Turn** the key switch to '0'.
2. **Let** the residual gas burn.
   The burner is faltering.
3. **Stop** the tool carrier.

Never leave the machine unattended.

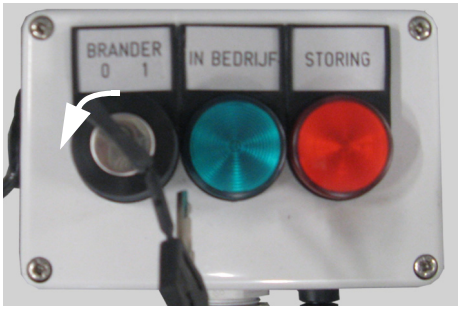


Fig. 5-5: Stopping

5.6 Switch off

1. **Turn** the key switch to '0'.
2. Wait until the gas hose is empty and the burners extinguish.
   The burner is faltering.
3. **Stop** the tool carrier.

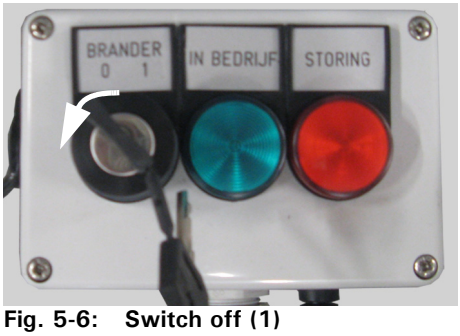


Fig. 5-6: Switch off (1)

4. **Close** the gas bottle.

Careful! Allow the HOAF thermHIT® 75M/100M/125M to cool before you leave the HOAF thermHIT® 75M/100M/125M near flammable materials!

Fig. 5-7: Switch off (2)

5.7 Charging the battery

A battery is present in the device that provides the required voltage for the ignition, and opening of the gas valve of the *HOAF thermHIT® 75M/100M/125M*. The capacity is chosen so that it can provide the device with the required voltage for 1 day. After each working day, the battery needs to be recharged so that the *HOAF thermHIT® 75M/100M/125M* can be used immediately and without any problems the next day.

If the battery is empty, the burners will not ignite. However, failure to ignite the burners can have several causes:

- The gas bottle is empty.
- The gas valves are not open.
- The burners are clogged with dirt.
- The spark plug is damaged or bent.

Check the above points if you have recharged the battery and it still not ignites.

Position the battery charger in the control panel. The control panel is provided on the side with a connector plug in which a battery charger can be connected. A separate appropriate battery charger is included for this purpose.

Fig. 5-8: Charging the battery

Although the HOAF thermHIT® 75M/100M/125M is supplied with a charged battery, the battery may have run out by the storage period. We therefore recommend to always charge the battery before first use.

When charging the battery, only use a charger supplied or approved by HOAF Infrared Technology !

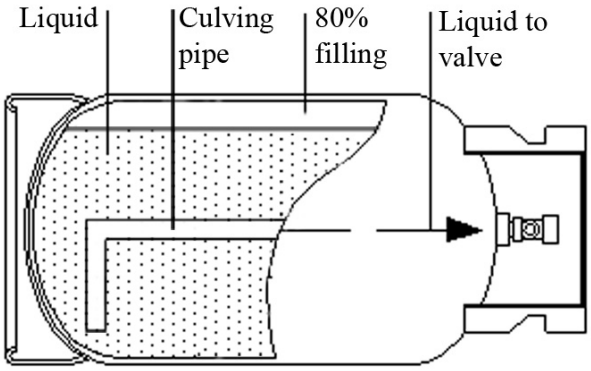
6 Gas bottles

This chapter describes which gas bottles are to be used with the HOAF thermHIT® 75M/100M/125M.

6.1 Gas bottles to be used

The image below shows the types of gas bottles that are allowed in the Netherlands:

- Gas bottle with PROPANE in LIQUID phase (liquid intake)
- May only be used in HORIZONTAL position.



The HOAF thermHIT® 75M/100M/125M is solely intended for use with propane in liquid phase (liquid intake). Do not use gas bottles for gas supply (gas intake)!

Never use the HOAF thermHIT® 75M/100M/125M with butane gas!

Keep gas bottles away from the hot gases that are spread by the burners.

Let your gas supplier advise you about the use and storage of gas bottles.

7 Troubleshooting

This chapter provides information about solving possible problems.

7.1 Safety

Users are only allowed to perform the actions described below.

Maintenance and service activities must only be carried out by properly qualified personnel.

Always observe the safety instructions mentioned elsewhere in these User Instructions!

Always close the gas valves before checking the bottom of the HOAF thermHIT® 75M/100M/125M or carrying out any work.

7.2 Overview of problems

1. **Search** the overview below for the problem that may apply in your situation.
2. Next, use the problem's number to **search** the table following it to find a way to solve the problem.

1. Nothing is happening.
2. Gas is flowing (I can hear the solenoid valve opening) but the spark plug is not sparking.
3. I can hear the spark plug sparking, but the burner is not igniting.
4. The *HOAF thermHIT® 75M/100M/125M* is ignited, but the burners do not run over.
5. The *HOAF thermHIT® 75M/100M/125M* is ignited, but goes off after a few seconds.
6. The *HOAF thermHIT® 75M/100M/125M* is not burning evenly.
7. The *HOAF thermHIT® 75M/100M/125M* turns on and off.

Problem	Action
1. Nothing is happening.	**1.** Check that the 12 VDC power supply is present on the device. If the power supply is present: • Check that the battery is empty. • Check the battery to see if it is defective. • Check the fuse in the operating cabinet to see if it is defective. **2.** Check whether the ignition key is in the position 'I'. **3.** Check the automatic firing device. **4.** If no solution can be found, please contact the dealer.
2. Gas is flowing (I can hear the solenoid valve opening) but the spark plug is not sparking.	**1.** Check the distance between the tip of the spark plug and the outer wall of the burner opening - this should be approximately 3-4 mm. ***Note! Close the gas valve and turn the key switch to '0' before you check this distance.*** **2.** Check the spark plug cable for damage. **3.** Check the connection of the spark plug cable with the spark plug. **4.** Check the connection of the automatic firing device with the spark plug cable. **5.** Check the spark plug Method: • Check the porcelain to see if it is broken. • Replace the spark plug with a new one. **6.** If no solution can be found, please contact the dealer.

Problem	Action
3. I can hear the spark plug sparking, but the burner is not igniting.	**1.** Check that the gas valve is open. **2.** Check that the bottle is empty. **3.** Check the distance between the tip of the spark plug and the outer wall of the burner opening - this should be approximately 3-4 mm. ***Note! Close the gas valve and turn the key switch to '0' before you check this distance.*** **4.** Close the gas valve and check that there is no dirt under the *HOAF thermHIT® 75M/100M/125M* at the burners. Make sure the nozzles are "open". **5.** Check that the *HOAF thermHIT® 75M/100M/125M* is in the lowest (horizontal) position. In this position, the ignition operates in the best possible way. **6.** If no solution can be found, please contact the dealer.
4. The *HOAF thermHIT® 75M/100M/125M* is ignited, but the burners do not run over.	**1.** Close the gas valve and check that there is no dirt under the *HOAF thermHIT® 75M/100M/125M* at the burners. Make sure the nozzles are "open". **2.** If no solution can be found, please contact the dealer.

Problem	Action
5. The *HOAF thermHIT® 75M/100M/125M* is ignited, but goes off after a few seconds. or.. 6. The *HOAF thermHIT® 75M/100M/125M* is not burning evenly. or.. 7. The *HOAF thermHIT® 75M/100M/125M* turns on and off.	***Note! After ignition, the tip of the spark plug "feels" if the flame is present. A perfect connection between the spark plug and the automatic firing device is a prerequisite for the operation of the device. The ionisation flow should be able to reach the automatic firing device uninterruptedly.*** **1.** Check that there is enough gas present in the gas bottle. **2.** Check that the correct gas is used (no butane!). **3.** Check that the bottle is used. (for *HOAF thermHIT® 75M/100M/125M*: liquid intake). **4.** Check that the tip of the spark plug is in the middle of the flame during burning. Method: • Light the burner, lift the burner and look at least 2 meters behind the burner if the tip of the spark plug is in the middle of the flame. **5.** Close the gas valve and check that there is no dirt under the *HOAF thermHIT® 75M/100M/125M* at the burners. **6.** Make sure the nozzles are "open". Method: • Ignite the burner, lift the burner and look at least 2 meters behind the burner if all burners smoothly burn. **7.** Check that the voltage is 12 VDC. If not, the battery is empty and it must be recharged. If the battery after charging still does not deliver the required voltage, then the battery must be replaced **8.** Check the electrical wiring for loose wires and/or damage. **9.** Check the spark plug cable for damage. **10.** Check the connection of the spark plug cable with the spark plug. **11.** Check the connection of the automatic firing device with the spark plug cable. **12.** Replace the automatic firing device with a new one. **13.** If no solution can be found, please contact the dealer.

7.3 Checks for service technicians

If there are faults which can not be solved by carrying out the instructions as stated in chapter 7 'Troubleshooting', then check the following:

The checking activities described in this section may only be carried out by properly trained service mechanics.

1. Check that the burner is not polluted.
   Method:
   - Visually **inspect** and clean if necessary.
   - **Ignite** the burner if possible.
   - **Lift** the burner housing and check that all the burners regularly burn.

Make sure to keep sufficient distance when you look under the HOAF thermHIT® 75M/100M/ 125M .

Warning! The burners may only be ignited in the open air.

2. **Check** that the tip of the spark plug is in the middle of the flame during the process. See section 8.1 'Spark plug' for details regarding the position and distance.
3. **Check** that the power cable of the spark plug is undamaged.
4. **Check** that the connection between the spark plug and the power cable is good.
5. **Check** the electrical wiring for loose contacts or damage.

8 Settings

This chapter describes the different settings of the HOAF thermHIT® 75M/100M/125M.

8.1 Spark plug

The distance between the tip of the spark plug and the side of the burner head - this should be approximately 3 to 4 mm. The correct setting is shown in the figure below.

Fig. 8-1: Spark plug

Take care not to bend the spark plug when cleaning the HOAF thermHIT® 75M/100M/125M.

9 Maintenance

This chapter provides information about the maintenance of the HOAF thermHIT® 75M/100M/125M.

9.1 Safety during maintenance

The HOAF thermHIT® 75M/100M/125M may only be maintained by sufficiently qualified personnel.

Make sure the gas valves of the gas bottles are closed.

Always observe the safety instructions mentioned elsewhere in these User Instructions!

9.2 Daily maintenance before and after use

1. **Remove** any plant remains from in and around the burner hood. Make sure the *HOAF thermHIT® 75M/100M/125M* has cooled down sufficiently before removing these.

Use a dry cloth to clean the HOAF thermHIT® 75M/100M/125M.

2. **Check** the gas pipes and couplings visually for damage, and use leak-detection spray to check for leaks.

9.3 Annual maintenance

The following maintenance work must be carried out by your dealer once a year, before the start of the season.

The HOAF thermHIT® 75M/100M/125M may only be maintained by sufficiently qualified personnel

Make sure the gas valves of the gas bottles are closed.

Always observe the safety instructions mentioned elsewhere in these User Instructions!

1. **Clean** all burners. Remove soot and dirt.
2. **Check** the gas hoses and connections for leakage.
3. **Check** the spark plug connections.
4. **Check** the condition and the position of the spark plug.
5. **Check** all electrical connections.
6. **Check** the correct functioning of all burners.
7. **Check** the wheel bearings, lubricate if required.

10 Transport and storage

This chapter provides information on the transport of the HOAF thermHIT® 75M/100M/125M.

10.1 Transport

Be careful when transporting the HOAF thermHIT® 75M/100M/125M .

Note! Allow the burner to cool first, before hoisting and/or transporting.

10.2 Storage

1. Always remove the gas bottle from the *HOAF thermHIT® 75M/100M/125M* when not in use for extended periods. Store the gas bottle in the appropriate place (regulations).
2. Remove the battery.

Allow the HOAF thermHIT® 75M/100M/125M to cool before storing it.

11 Disposing of the machine

This chapter contains instructions concerning the disposing of the HOAF thermHIT® 75M/100M/125M.

11.1 Environmental aspects

Disposing of the *HOAF thermHIT® 75M/100M/125M* is to be done according to the laws and regulations of the country where the *HOAF thermHIT® 75M/100M/125M* is used.

Think, for example, about the environmentally friendly way to recycle or dispose of:

- Electronics
- Battery

Annex 1 Specifications

This Appendix describes the technical information regarding the HOAF thermHIT® 75M/100M/125M.

A1.1 Technical information *HOAF thermHIT® 75M*

Gas	Type	:	propane	
	Gas supply	:	gas bottles / tank (liquid intake)	
	Gas pressure	:	1.5	bar
	Gas consumption per hour	:	max. 6.0	kg
	Power	:	85	kW
	Temperature average	:	approx. 1000°C	
Ignition		:	Battery	
Inspection	Safety	:	CE	
	Gas technical inspection	:	DIN 3372-4 and DGP approved	
Weight	*HOAF thermHIT® 75M*	:	40	kg
Dimensions	Working width	:	750	mm
Performances	At maximum power	:	max. 3750 m^2 at a working speed of 5 km/h	

A1.2 Technical information *HOAF thermHIT® 100M*

Gas	Type	:	propane	
	Gas supply	:	gas bottles / tank (liquid intake)	
	Gas pressure	:	1.5	bar
	Gas consumption per hour	:	max. 8.0	kg
	Power	:	113	kW
	Temperature average	:	approx. 1000°C	
Ignition		:	Battery	
Inspection	Safety	:	CE	
	Gas technical inspection	:	DIN 3372-4 and DGP approved	
Weight	*HOAF thermHIT® 100M*	:	50	kg
Dimensions	Working width	:	1050	mm
	Content gas bottle	:	10.5	kg
Performances	At maximum power	:	max. 5000 m^2 at a working speed of 5 km/h	

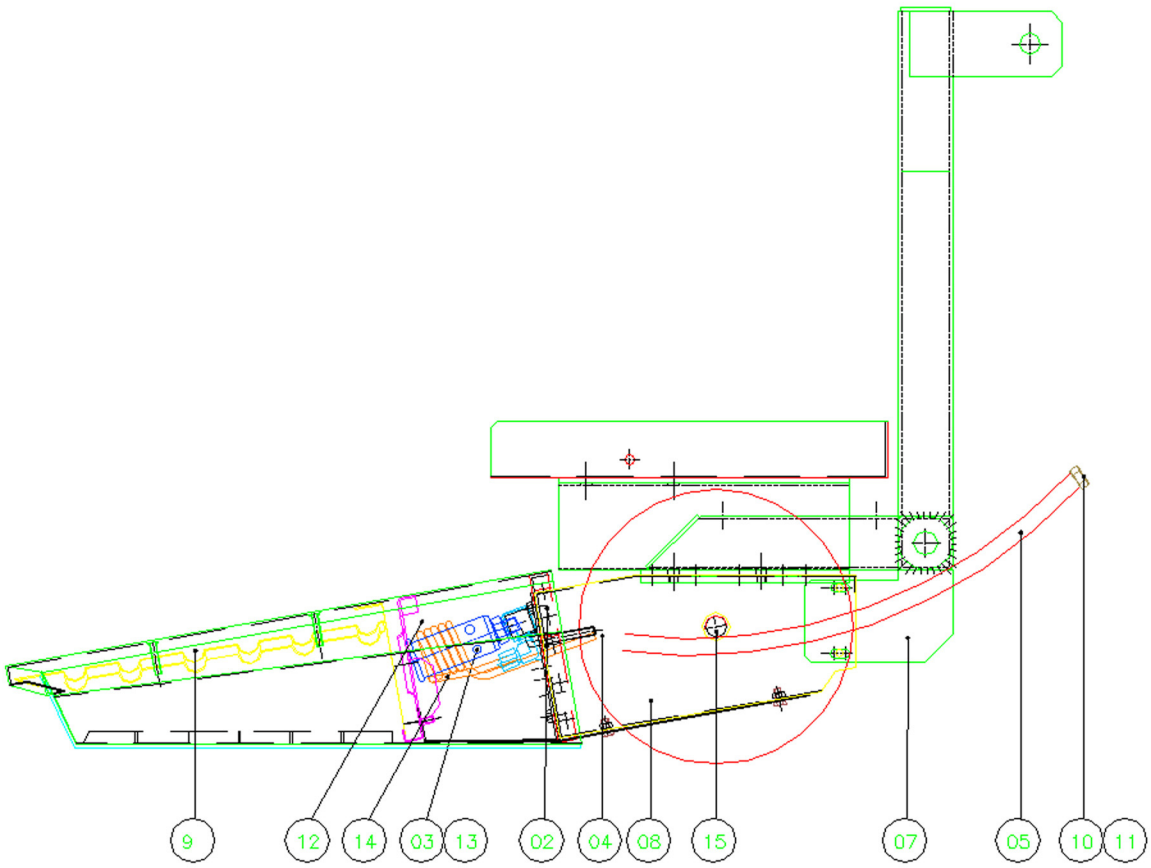
A1.3 Technical information *HOAF thermHIT® 125M*

Gas	Type	:	propane
	Gas supply	:	gas bottles / tank (liquid intake)
	Gas pressure	:	1.5 bar
	Gas consumption per hour	:	max. 10.0 kg
	Power	:	1.4 kW
	Temperature average	:	approx. 1000°C
Ignition		:	Battery
Inspection	Safety	:	CE
	Gas technical inspection	:	DIN 3372-4 and DGP approved
Weight	*HOAF thermHIT® 125M*	:	65 kg
Dimensions	Working width	:	1250 mm
Performances	At maximum power	:	max. 6250 m^2 at a working speed of 5 km/h

Annex 2 Drawings

A2.1 Spare parts list *HOAF thermHIT® 75M/100M*

Overview drawing spare parts

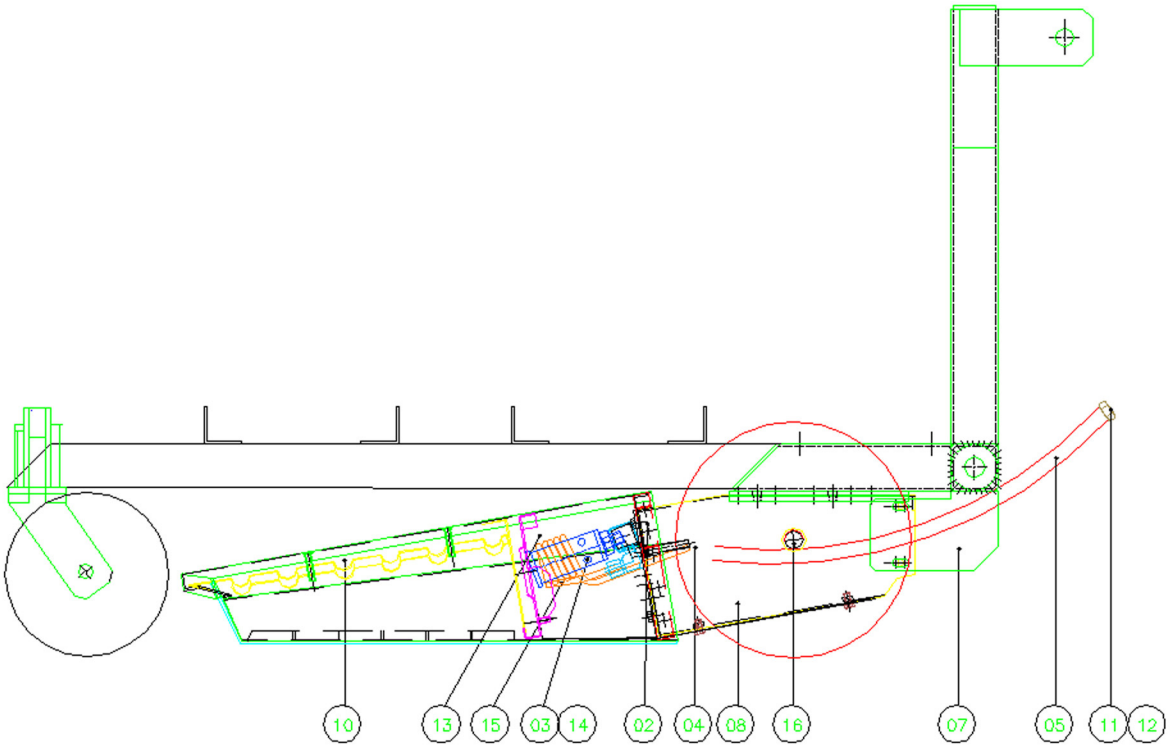


List spare parts

Number	Description	Part code
1	BATTERY	90007774
2	SPARK-PLUG CABLE	20000045
3	BURNER HEAD	20000076
4	PRESSURE REGULATOR ADJUSTED	20000072
5	FLEXIBLE CONNECTION HOSE	20000036
6	OPERATING CABINET	20000218
7	AUTOMATIC FIRING DEVICE	90007980
8	GAS VALVE ELECTRICAL	90007912
9	INSULATION PACKAGE	
10	PLASTIC RING GAS CONNECTION	
12	SPARK PLUG	20000040
13	IGNITION BURNER HEAD	20000075
14	VAPORISER *HOAF thermHIT® 75M* VAPORISER *HOAF thermHIT® 100M*	90008236 90008251
15	WHEEL *HOAF thermHIT® 75M/100M/125M* WITH CAP	90029940 + 90000396
	IGNITION BURNER HEAD	20000074

A2.2 Spare parts list *HOAF thermHIT® 125M*

Overview drawing spare parts



List spare parts

Number	Description	Part code
1	BATTERY	90007774
2	SPARK-PLUG CABLE	20000045
3	BURNER HEAD	20000076
4	PRESSURE REGULATOR ADJUSTED	20000072
5	FLEXIBLE CONNECTION HOSE	20000036
7	AUTOMATIC FIRING DEVICE	90007980
8	GAS VALVE ELECTRICAL	90007912
10	INSULATION PACKAGE	
11	PLASTIC RING GAS CONNECTION 18x12x2	90026202
13	SPARK PLUG	20000040
14	IGNITION BURNER HEAD	20000075
15	VAPORISER *HOAF thermHIT® 125M*	90008251
16	WHEEL *HOAF thermHIT® 75M/100M/125M* WITH CAP	90029940 + 90000396
	IGNITION BURNER HEAD	20000074

Annex 3 Quality control

Quality is very important at *HOAF Infrared Technology*. This is why *HOAF Infrared Technology* has its products checked extensively, by qualified personnel.

HOAF Infrared Technology declares that your *HOAF thermHIT® 75M/100M/125M* has been checked for its quality and has been approved.

HOAF Infrared Technology advises you to send the warranty form fully completed. You can find it in Appendix A5 *HOAF Infrared Technology* gives a 12 month guarantee on your *HOAF thermHIT® 75M/100M/125M*. See section 1.4 for more information.

CONTROL FORM *HOAF THERMHIT® 75M/100M/125M*

Date:

Inspector:

Signature Inspector

Machine identification plate

Annex 4 CE Declaration

This Appendix contains the CE declaration of conformity of the HOAF thermHIT® 75M/ 100M/125M.

EC-declaration of conformity (Directive 2004/108/EC)

Manufacturer,

HOAF Infrared Technology
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands

Declares fully under own responsibility that the equipment specified in this declaration complies with the conditions as defined in:

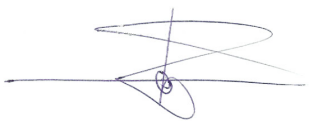
the EMC DIRECTIVE2004/108/EC;

and the standards:

NEN-EN 60204-1	: Electrical equipment of machines
NEN-EN 61000-6-4	: EMC-emission
NEN-EN 61000-6-2	: EMC-immunity

Name of the machine	: HOAF thermHIT®
Type	: 75M / 100M / 125M

Oldenzaal, Date	: 25-04-2012
Name	: B.H. Nieuwe Weme
Function	: General Director



Warranty certificate HOAF thermHIT® 75M/100M/125M

Purchase date :

Dealer
- Name :
- Place :
- Country :

Customer
- Name :
- Street address :
- Postcode :
- Place :
- Country :

Signature dealer Signature customer

Fill in the certificate, cut it out of the operating instructions, fold it in two and staple the ends together. The address is already printed on the back of this form; all you need to do is put on a stamp.

Place stamp here

HOAF Infrared Technology
Münsterstraat 14
7575 ED Oldenzaal
The Netherlands