



## Steam Vac Classic

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NTM/and others

### User and installation guide

Steam Vac Classic, a proven steam vacuum suction tool for improved slaughter hygiene on pork, beef and sheep.

- Removes fat lumps, tallow, bone fragments, hair, faecal and soiled carcass spots
- Easy, ergonomic and hygienic to use
- Cleans large area
- Reduction of bacteria
- Improved microbial and visual quality

#### Technical data

- Scraper blade                      Stainless steel
  - Total suction width 60 mm
- Handle                                Polyamid, PA – thermoplast
- Clip                                    Stainless steel
  - Vacuum connection Ø 32 mm
  - Steam connection     Ø 10 mm
- Total weight                        463 gram
- Patent WO2009/138083A1



#### Installation advice and dimensioning

DMRI has prepared general guidelines for the use of Steam Vac Classic and connections to steam and vacuum. If further assistance is required concerning specific facility specifications, DMRI offers consultancy within specifications, dimensioning, connections to steam and vacuum supply, commissioning, approvals, training and control according to individual customer demands.

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#### User manual

The Steam Vac Classic tool is developed for steam vacuum suction of warm carcasses. It is especially well suited for removal of fat lumps and bone fragments with the metal blade. It also removes contamination as an alternative to removal by knife and hands.

After connection and correct setting of steam and vacuum, the tool is used on contaminated areas to be treated. The tool is moved repeatedly over the contamination until it is removed.

A short term reversible product discoloration is normal. Prolonged suction of an area may lead to irreversible product discoloration. By normal use, discoloration will rarely occur after chilling of the product.

If the tool is blocked by fat or tissue, this can be removed by air pressure with a pneumatic pistol.

### ***Replacement of scraper blade***

If the stainless steel scraper blade needs replacement, follow the procedure described below:

1. After turning off the steam and vacuum supply, the tool is disconnected by removing the bracket split
2. Remove the scraper blade carefully with a pair of pliers
3. Clean the handle
4. If there is dirt around or inside the steam holes, use air pressure or a thin metal needle for removal
5. The new scraper blade is carefully pressed into place by hand
6. Connect the tool to the clip, and secure the connection by inserting the split
7. You can now start working again

### **Cleaning procedures**

#### *Cleaning during processing*

The steam and vacuum supply to the steel scraper blade touching the product keeps it continually sanitized. The tool may need periodically cleaning, depending on use. It can be cleaned with lukewarm water (approx. 42 °C) during breaks. At the same time, a check for free passage in the head and handle should be made. If they are blocked, they should be cleaned by air pressure with a pneumatic pistol. If the scraper blade is worn, it must be replaced.

#### *Cleaning after processing*

Every day after processing the handle should be cleaned as described below.

1. Disconnect the handle by the bracket split
2. Use lukewarm water (approx. 42 °C) for cleaning inside and outside. The inside is cleaned by flushing the handle as well as the inside of the scraper blade
3. Separate the tool
4. Check for free passage in the steam channels and for wear on scraper blade. If steam channels are blocked, they should be cleaned by a pneumatic pistol or a metal needle. Worn down scraper blades should be replaced
5. Place the handle and scraper blade in an upright position in a dish washer and wash using a standard program at approx. 60 - 70 °C. Standard programs should include pre-rinsing, soap wash and

after-rinsing. The washing temperature depends on the soap used, being either an alkali or acid based soap. The amount of soap to be used is described in the soap product sheet

6. The handle and scraper blade are dried at room temperature
7. Assemble the tool. Ensure that the scraper blade is carefully pressed into place by hand
8. Connect the handle to steam and vacuum by the bracket split

In case of dried up contaminations on the handle; soak handle or scraper blade in soap water. Use a 0.5 - 1 % soap concentration or as prescribed in the product sheet for the soap product. Duration of soaking depends on degree of contaminations. After soaking, place all parts in the dishwasher as described above.

Note!! It is important to soak the equipment in a soap solution and not in a detergent, as the soap will dissolve the contamination!!!

### ***Guidelines for installation***

The Steam Vac Classic tool is to be connected to the purchasing parties' own existing or for the purpose newly installed supplies of steam and vacuum. As use and set up of the system will vary between different slaughter lines, only general recommendations are given for the installation.

DMRI offers further consultancy within specifications, dimensioning, connections to steam and vacuum supply, commissioning, approvals, training and control according to individual customer demands.

#### *Connection and installing of tool*

Steam supplied to the Steam Vac Classic tool must be of a quality suited for direct contact with food.

The steam and vacuum hose must be tightened securely on the stainless steel clips with hose clips, and connected to the handle with the split prior to opening the supply of steam and vacuum.

Hoses should be mounted and hung in such a way that they do not touch the treated object during steam vacuuming regardless of the tool being used or at rest. Furthermore, the hose should be mounted in a manner that allows free movement for the operator performing other tasks.

A fork may be useful for leaving the tool when at rest. The fork should be placed in a way that prevents the steam fan from reaching products, the operator, or other bypassing operators in the area. An example of a fork is shown below (in this case the Tubular-5 tool, but a similar fork can be made).



#### *General guidelines for setup of vacuum and steam supply*

Depending on the setup, the number of Steam Vac tools used, distances and adjustment, the installations may vary in specification.

Based on tests with one tool, the consumption of steam is estimated to approx. 10 - 20 kg steam/water/hour/tool. In some plants, steam is already available. When using an electric steam generator, an energy consumption of approx. 7 - 10 kWh is expected. A vacuum pump system with separator providing 5 - 15 kPa is also needed and will require an additional energy consumption of approx. 4 - 6 kWh. 3

Vacuum pump type and size will depend on demand and distance between pump and handle, for example a rotary lobe blower with a nominal motor rating of 0.75 to 11 KW. That size of pump is more than sufficient; and it can be placed far away from the handle and still maintain vacuum. Side channel blowers can be used, but care should be taken to avoid water pockets in the vacuum hoses.

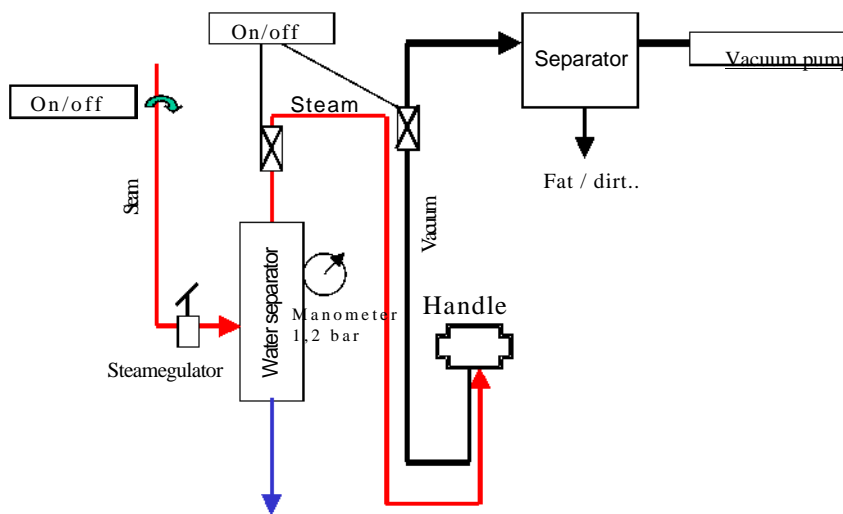
In the attached diagram, the needed components for a full system are shown in a general design. DMRI offers further consultancy within dimensioning and specifies individual solutions according to individual customer demands.

Needed general components are:

- Classic handle
- Vacuum pump and valve
- Separator tank (any sealed container, in which fat, dirt etc. can be separated from the airflow)
- Water separator
- Steam supply, valve and manometer

Condensate

*Principal diagram for connecting the tool to steam and vacuum supply*



### **How to adjust the steam and vacuum supply to a standard user setting**

Individual systems may need slightly different adjustments to become optimal. In the following, a general simple procedure is given to adjust to a standard setting with attractive results.

1. Turn off the vacuum, by closing the connection from the handle to the vacuum pump and water separator

2. Adjust the steam pressure to approx. 1.2 bar on the outlet from the water separator (and pressure regulator)
3. Open the connection (ball check valve) between the water separator and the Steam Vac Classic handle - until there is a plume of steam "reaching" approx. 1 meter from the scraper blade
4. Open the connection to the vacuum pump (ball check valve) until the plume of steam reaches approx. 2 cm from the scraper blade
5. Now try to operate the Steam Vac Classic handle on the product to be treated

The method mentioned above is a basic setting. More vacuum can be needed. In that case, the amount of steam has to be increased as well.

#### **EC Declaration of a partly completed machinery and safety evaluation**

Steam Vac Classic is designed to become a part of a complete machine with connected steam and vacuum. As a partly completed machine it is declared to be constructed according to announcement No. 621 of 25 June 2008 that implements Directive 2006/42/EC.

Risk evaluation is conducted according to ISO 14121-1. The risk profile is acceptable with a low probability of scalding by the operator unintentionally directing the steam fan towards own body or other operators nearby. The above mentioned partly completed machinery may not be taken into use before the machine into which it is being built or to which purpose it must be used for conform to any relevant regulations.

#### **Declaration of compliance EC 1935/2004 - Material into contact with food**

Materials used for manufacturing the Steam Vac Classic are intended to come into contact with food in compliance with regulations No. 1935/2004 EC.

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