

Unit V - Topic 3

HANDLING AND MAINTENANCE OF TOOLS AND CORE EQUIPMENT

Band saw

In most meat shops and meat cutting operations, band saws are used to facilitate the **breaking of carcasses**. In meat processing operations, band saws can also be helpful for **cutting of frozen meats**. Band saws are available as table and floor models and are made of stainless steel (Fig. 403). The band saw blade moves mainly inside the body (Fig. 404) by rolling over two large wheels. Only a small portion of the rotating blade is exposed just above the band saw table on which the material to be cut is moved.

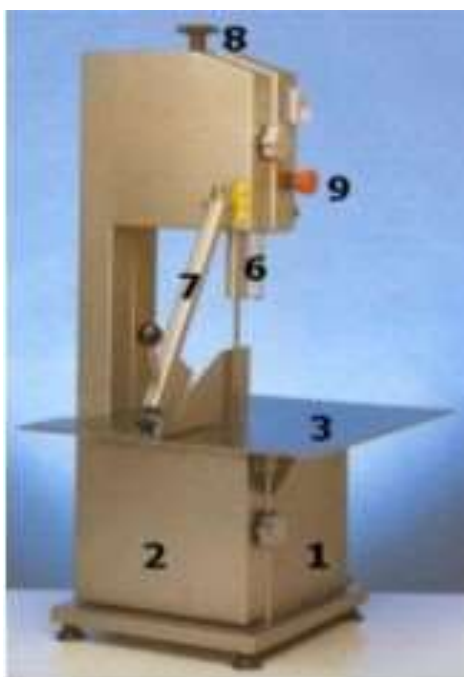


Fig. 403: Band saw closed
1 – stainless steel body
2 – stainless steel door 3 – stainless steel table 7 – safety cutting handle



Fig. 404: Band saw open
4 – adjustable tensioning wheel
5 – drive wheel (connected to motor) 6 – band saw blade guide
8 – tensioning knob
9 – emergency switch

Installation:

After being positioned at its designated place and levelled, the band saw must be assembled carefully.

The body door (Fig. 404) (2) is opened and the band saw blade is pushed over the two wheels with the cutting teeth facing the door opening and fitted into the guide. By adjusting the upper wheel (4) with the tensioning knob (8), the tension of the blade is corrected to allow for a firm grip between wheels and blade. The band saw must be connected properly to the electrical power supply line. Care must be taken that the band saw blade rotates in the right direction, with the blade moving downwards at the exposed portion. The materials to be cut will be kept firmly on the table in this direction only (3).

During cutting operations, the material to be cut must always be moved on the table by using the safety cutting handle (7). The band saw must be cleaned frequently and disinfected at the end of daily operations. First the door is opened and the tensioner of the band saw blade released. The blade is taken out of the machine and cleaned separately and must be stored in a dry and safe place. All meat, bone and fat particles which have accumulated inside the space where the blade circulates must be removed and the machine cleaned thoroughly. The door should be kept open to avoid corrosion due to moisture.

Smokehouse

Simple smokehouses (Fig. 37, 41) do not require much maintenance. Care must be taken that the **sawdust tray** and **ash collector** are emptied and cleaned frequently. The **smoke sticks** and **ceiling of the smokehouse** must be kept free of tar to avoid unwanted tar-spots on the smoked products. The built-in exhaust opening, often equipped with a blower, must be cleaned frequently to avoid tar dripping onto the products.

More sophisticated smoking chambers follow various designs and can be equipped with a variety of additional fixtures and appliances. They need to be handled, cleaned and maintained according to the handbook provided by the supplier. For details on technical systems see pages 24, 25.

Equipment for personnel

The provision of hygienic equipment and personal protective equipments essential to prevent contamination of meat and meat products through contact with clothes, shoes or direct contact with hands or breath (see also chapter on Meat Processing Hygiene page 339). Some appliances and protective clothes, boots etc. also serve to protect **workers** from accidents.

Hygienic equipment and materials:

Protective clothing (Fig. 405) – To avoid contamination of workplaces, materials and products from street clothes, workers have to wear clean protective clothing. Either one-piece overalls or two piece sets are recommended as they cover the complete body. In some workplaces only overcoats are used with the disadvantage that the trousers/skirt is not covered.

Head gear (Fig. 405) – Human hair on equipment, materials and products must be avoided. Caps and/or hairnets are used to cover and contain hair.

Gloves – In meat processing, staff are encouraged to wear latex gloves to avoid direct contact of materials and products with hands. This is of special importance during packaging, when also mouth protection is recommended to avoid contamination of fresh and processed products (Fig 461, 462).

Gum (rubber) or plastic boots (Fig. 405) – These boots are used to protect staff in meat operations from moisture. The sole design facilitates a firm grip on slippery surfaces. For easy detection of dirt, boots are usually white.

Plastic aprons (Fig. 406) – This type of apron is used to protect workers and their working clothes from moisture, meat and fat. Plastic aprons should be long enough to overlap the boots, thus allowing splash water to rinse off.



Fig. 405: Basic protective clothes: gum or plastic boots, white overall, hairnet



Fig. 406: Plastic apron

Appliances for safety reasons:

Safety aprons – Almost 50% of all injuries (Fig. 407) in meat operations are caused by knives. Most of these occur during deboning

when the knife is moved towards the body. To avoid such injuries, special safety aprons should be used, covering the front of the body. Safety aprons can consist of a tight mesh of stainless steel rings or overlapping aluminium chips. To avoid unnecessary meat and fat settlements in the mesh, the safety apron is worn under a plastic apron (Fig. 409).



Fig. 407: Risk of severe injuries without the glove



Fig. 408: Safety helmet made of hard plastic, with easy to clean inside



Fig. 409: Protective appliances: anti-cut glove and apron (should be worn under the plastic apron to avoid contact with meat and fat pieces)

Safety gloves – To avoid injuries to the hand handling the meat material during deboning and cutting, a safety glove is highly recommended for this hand. These gloves are made of a tight mesh of small stainless steel rings and should be chosen long enough to also cover the wrist. To avoid unnecessary meat and fat residues in the mesh, the glove can be covered with a latex glove (Fig. 407).

Safety helmets – In workplaces where there is a risk of objects falling, staff are encouraged to wear safety helmets made of firm plastic. Helmets are strongly recommended in slaughter lines, below overhead rails and in storerooms with high shelves (Fig. 408).

Small tools



Fig. 410: Knife scabbard, made of stainless steel sheet, two-piece design for easy cleaning



**Fig. 411: Burger moulders:
Design 1: plastic device with simple kitchen compacter
Design 2: food-grade aluminium former with integrated compacter**



Fig. 412: Manual funnels for stuffing of larger calibre sausages, made of food-grade aluminium



Fig. 413: Various stainless steel containers (from left to right): Meat loaf moulders, large calibre sausage shaper, ham mould block, ham mould oval



Fig. 414: Ham moulds of different shapes



Fig. 415: Meat loaf moulds

