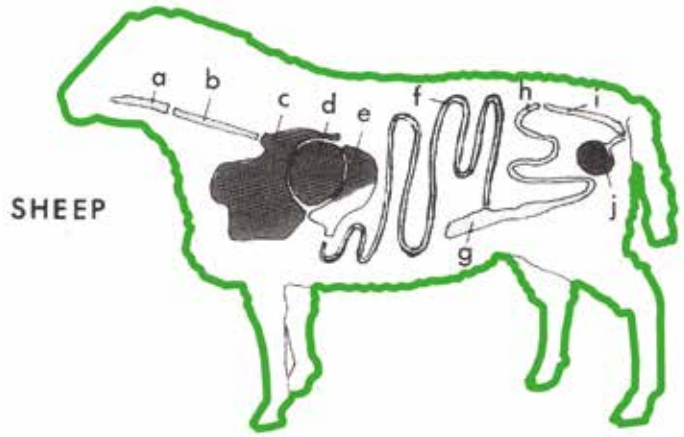
An Introduction

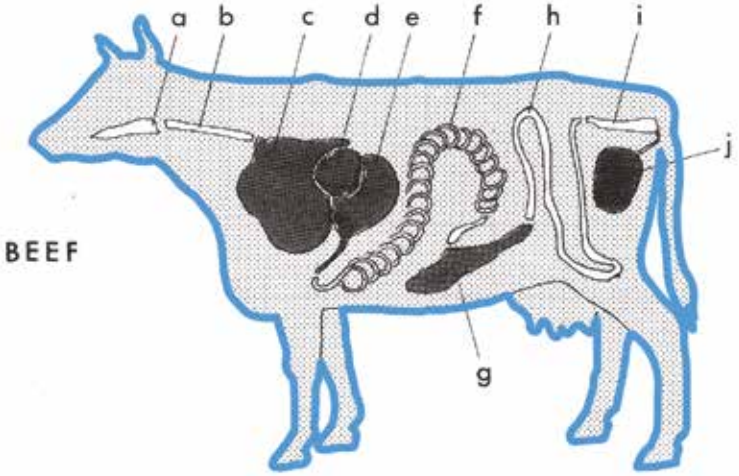
To

SSD

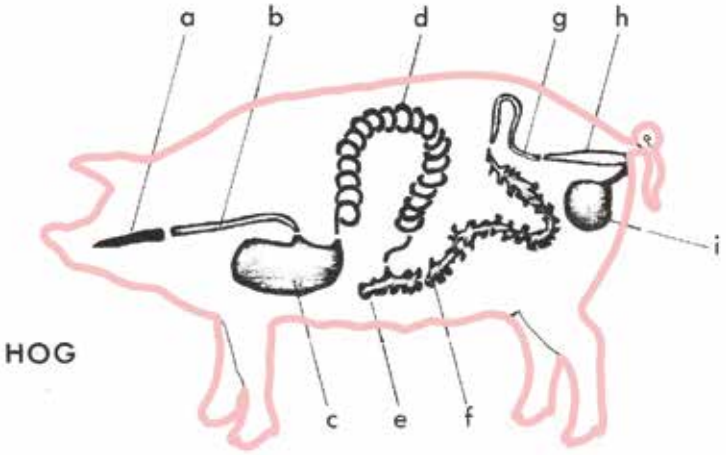
natural casing machinery



a) Tongue
b) Gullet
c) 1st Stomach
d) 2nd Stomach
e) 3rd Stomach
f) Sheep casing 30 metres approx.
g) Bung 1 metre approx. (Capend and Afterend)
h) Middle 2 metres approx.
i) Fatend 50cm
j) Bladder



a) Tongue
b) Weasand 60 cm
c) 1st Stomach
d) 2nd Stomach
e) 3rd Stomach - rennet bag
f) Runner - 30 metres approx.
g) Bung 2 metres (capend and Afterend)
h) Middle 8 metres approx.
i) Fatend 75cm
j) Bladder



a) Tongue
b) Gullet
c) Stomach or Maw
d) Hog Casing - 18 metres approx.
e) Bung - 40cm
f) Chitterling - 2 metres approx.
g) Afterend - 1 metre
h) Fatend - 1 metre approx.
i) Bladder

All Natural Casings

SSD design and manufacture the optimum Stainless Steel casing cleaning machinery for producing the finest natural Hog, Sheep and Beef Casings.

SSD offer the most innovative range of Stainless Steel casing cleaning and By-products processing equipment worldwide with over 50 years experience.

Proven engineering technology enables us to produce the finest equipment to suit the needs of today's processor with speed, quality and reliability. In operation, safety, economy and low noise levels are our main design criteria. Our trusted range of Stainless Steel casing machinery is often supplied with hot or cold water recycling to save up to 75% of water consumption, along with tanks, tables and conveyers etc for the complete Gut room project.

SSD are proud to offer their natural casing machinery with a 2 year manufacturers warranty which also provides service and support worldwide with a next day spare parts network.

SSD

Sausage Skin Development

Animal Gut Cleaning

The **SSD range** of **high quality** gut cleaning systems has been developed for the purpose of evacuating the manure and mucus content from the gut of the hog, sheep, or cattle.

The systems have no other purpose and no attempt should be made to process other products or materials. References to gut mean the small intestine of the animal, gut is also referred to as the casing and runner.

Rubber covered rollers of different hardness diameters and surface design are employed to extrude the manure and mucus content from the gut, the end product being an acceptably clean sausage casing.

Rollers sizes dictate the capacity of the machine and these are supplied in sizes of 400, 600, 800, 1000, 1200, &1500mm Rollers are shrouded with stainless steel guards which afford protection to the operator from accidental contact.

Each machine in a line formation progressively removes the unwanted gut content, each machine a little at a time. During operation the equipment requires a constant Hot Water supply for the stripper crusher machines; the finishing machine requires both hot and cold water.

Water is sprayed onto the rollers during the process to prevent the gut sticking to them. Recycling units (HWR) & (CWR) may be included to recover, recycle and return water to the cleaning machines. A secondary function of the water is that it is caught in the stainless steel holding tanks beneath the machines and is used to soak the casing between stages. The 'soak' assists putrefaction and thus the cleaning process.

The unwanted content of the gut, initially manure and later mucosa will discharge onto the intake tray at the front of each machine. Extruded manure falls to the receiving tray and should be piped to the drainage system. Mucosa, the lining of the gut will also be extruded in the same manner.

Mucosa Heparin Collection

The collection troughs are provided for the purpose of catching the mucosa as it is stripped from the gut and to help prevent the mucosa from contaminating the soak tank water. Discharge points of the mucosa troughs may be to the operator side of the line or to the motor side of the line to suit individual operations. The mucosa may then be piped to the drainage system or to a collection system if the mucosa is to be processed into heparin. Thread, the remnants of the mesenterium and mucosa debris is removed from the gut by the finishing machine; this material may be allowed to accumulate in the tank section beneath the finishing machine and removed when convenient or collected for disposal via a collection chute which would deliver the waste to the motor side of the machine.

The Method of feeding casings into the stripper crusher machines depends on the type of stripper crusher machine employed; machines may be side feed, tongue feed, or automatic feed.

On a side feed machine the casings are as the description of the machine implies fed into the rollers through the side of the machine, tongue feed machines have a feeding tongue at the centre of the rollers over which the gut is placed to introduce it to the rollers. Automatic machines have a stainless steel chain conveyor fitted to transport the gut between machines and into the rollers for processing. Subsequently the automatic system employs the "centre feed" method of cleaning the casings. The speed of the conveyor chains are arranged to provide a predetermined soak time if required and to maintain the line capacity.

Product Quality

To check the quality of the stripped runner a sample should be taken from casing tank or collection barrel, approximately one meter from the end of the runner. When pulled between the forefinger and thumb with a minimum of pressure applied, no manure or mucosa should be present. Line cleaning, each machine in a line progressively removes a little of the mucosa as the runner proceeds through the line. To test the quality of the finished product a sample should be taken from the finished casing tank or collection barrel, the end of the runner should be found and a section of it and with clean water. The appearance should be of a translucent nature with no traces of mucus present; should the casing not be completely clean patches of mucus will be clearly visible as the casing will discolour slightly when and where these occur.

It is most important that the operator who separates the runners from the viscera, or if collected cleaning takes the material from the transport barrel, feeds the runner into the machine at a point as near as possible halfway along the length of the runner and that the slaughter house operator does not cut into the wall of the runner. If the operator feeds the looped runner into the machine after say, 2 or 3 metres has been separated, then the machine will attempt to extrude most of the mucosa through one end of the runner instead of 50% through each end.

The theoretical setting of the pulling rollers of each stripper crusher machine in a line is that they should be adjusted so that an equal amount of mucosa is removed by each machine. This is not however always possible due to a variety of conditions. The function of the crushing roller is to crush the gut and loosen the mucosa ready for evacuation by the pulling roller on the next machine. Crushing rollers like the pulling rollers should be adjusted so that an equal amount of mucosa is loosened and thus removed at the next stage. The crushing roller of the last stripper crusher in line should also be adjusted so that the thread will easily separate after process through this machine.

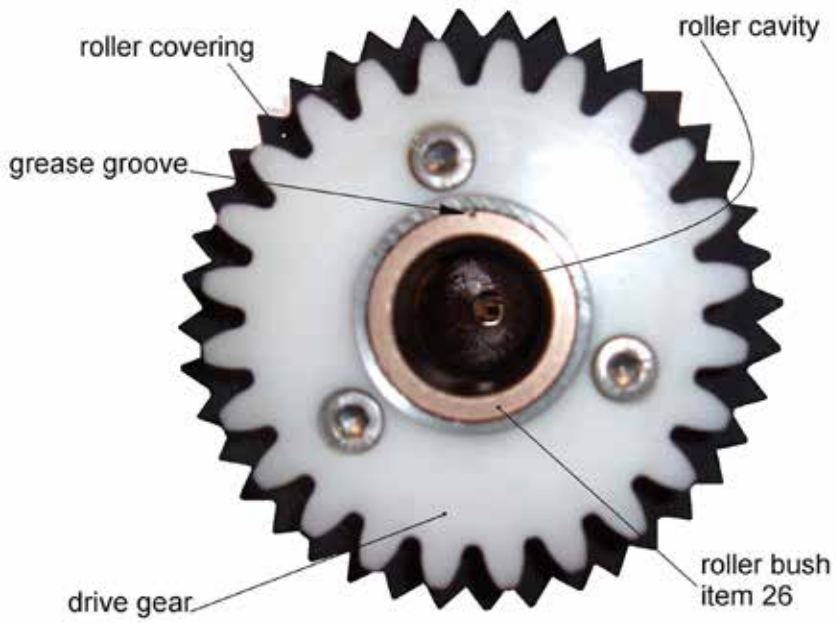
Roller lubrication

Important. Eccentric and concentric roller axle shafts have grease nipples fitted at the exposed end of the shaft, this is to permit the roller cavity to be filled with grease, and provides a reservoir of grease to lubricate the roller bearings.

One or two shots of grease per shift is usually adequate to maintain the reservoir, if however the roller has been removed or replaced then it will be necessary to apply sufficient grease to fully recharge the roller cavity. The roller cavity is full when grease emerges from the gear end of the roller; a groove is present in the back of the rear roller bush item 26 to permit this, the grease groove also provides lubrication for the roller gears. During operation as the temperature of the machine increases the lubrication grease will soak into the porous bronze bearing as part of the lubrication process, therefore it is important to always have a clean supply of grease in the roller cavity.

If rollers are not greased sufficiently rapid wear will occur to the roller bushes and roller shafts and usually this occurs first at the gear end of the rollers thus creating a tapered gap between the rollers resulting in a poorly cleaned casing and rapid gear wear. The illustration below shows typical roller shaft lubrication points as provided on all SSD casing cleaning machines.

The illustration shows a typical roller drive gear and grease cavity



Roller shaft & support plates removed for clarity omitted for clarity.

Cleaning Casing machines

In the interests of **hygiene** and **good house keeping** at the end of each shift the machine or line and its equipment **must be** thoroughly cleaned.

Generally speaking the rollers are self cleaning and will be relatively clean if the machine is allowed to run for 5 minutes, after the last runner has passed through, with the spray pipe left in the 'on' position. After the machine or machines have been switched off, isolate all machines from the electrical supply before attempting to clean the equipment.

The machines should be washed with a mild detergent and a soft brush; care should be taken to ensure that no finished product is present in the tanks or in the vicinity of the machine or line before the detergent is applied.

The residual soap or detergent should be flushed away with warm water at a maximum temperature of 55°C. The inside of the roller guards is cleaned in the same manner. It will be necessary to occasionally remove all of the fixed guards and remove any residual contamination that has accumulated in areas that cannot be washed with a hose. The frequency at which the machines are stripped down for cleaning will be determined to suit individual operations.

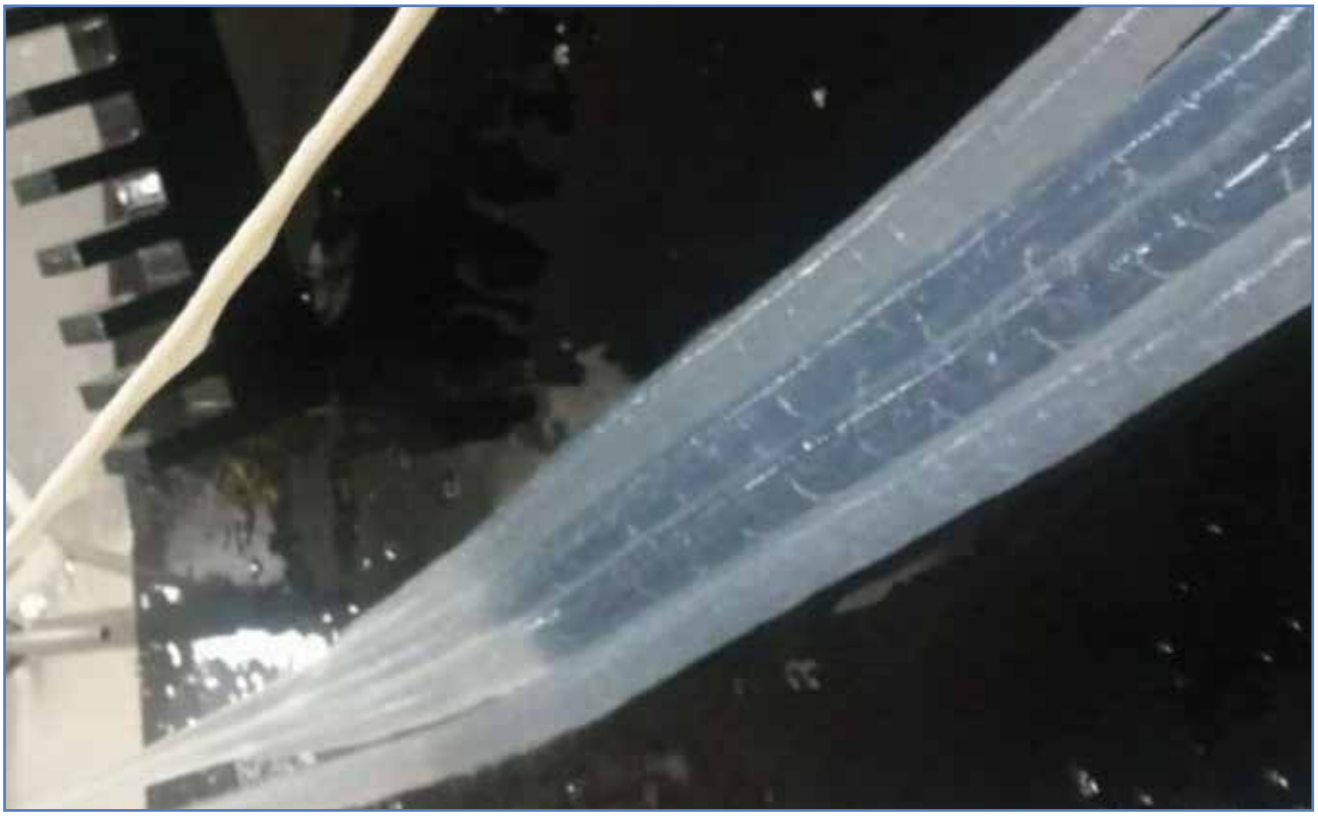
DO NOT use high pressure hoses or steam to clean this equipment; this will cause severe roller damage.

Care of Stainless Steels

Stainless steel was first produced in **Sheffield England in 1913**.

"Stainless" was adopted as a generic name for rust proof steels and now covers an exceptionally wide range and types of corrosion or oxidation resistant steels. Stainless steels are iron alloys with a minimum of 10.5% chromium. The corrosion resistance of Stainless steel arises from a "passive", chromium rich oxide film that forms naturally on the surface of the steel.

www.stainlesssteeldesignsltd.co.uk



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