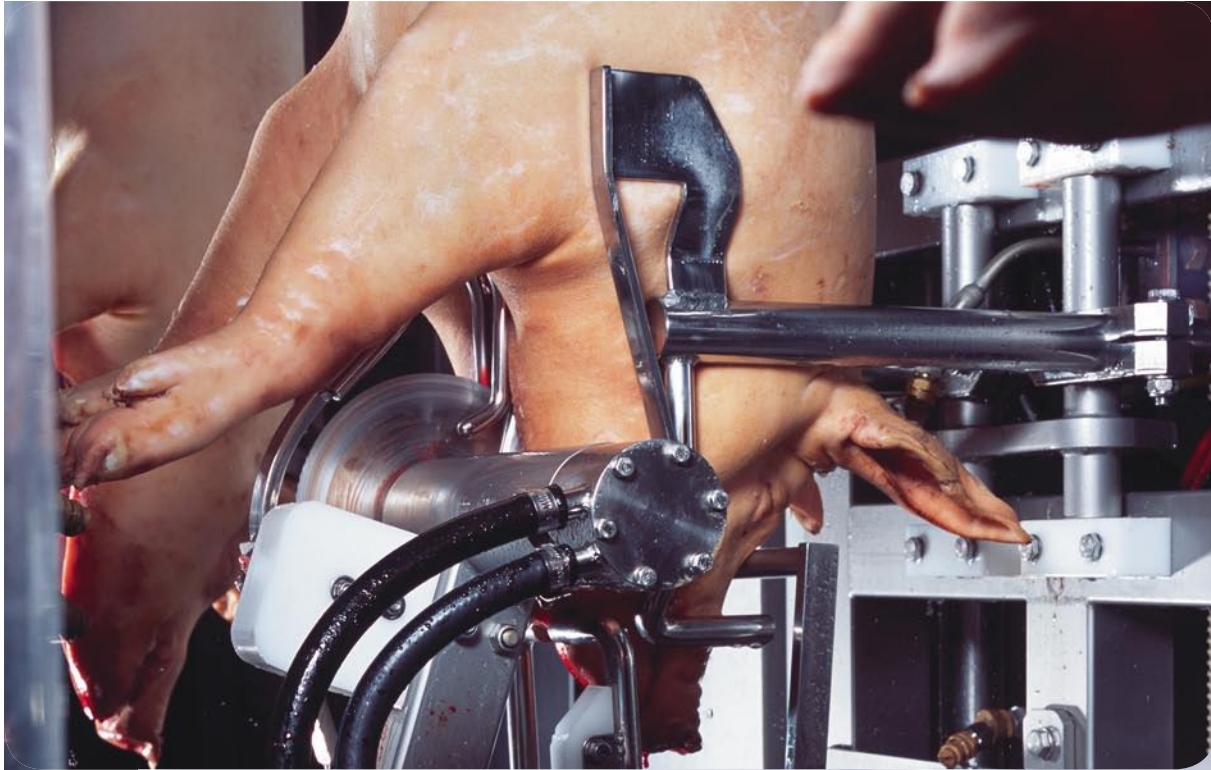


## Throat Opening, Bung Dropping and Ham Splitting - for Slaughterpigs



### PROCESS DESCRIPTION

Throat Opening, Bung Dropping and Ham Splitting is an example of the ability of SFK Systems and partners to develop innovative and productive robot solutions capable of handling anatomic natural variation in pig dimensions.

The advantage of the SFK Systems robot concept is that the pig is fully restrained during the process, compared to a dynamic process where the slaughter hog never is stationary during the process. The fixation ensures equal uniform processing and high level of quality of all slaughtered pigs.

Furthermore, we stress that SFK Systems robot concept DOES NOT require the main conveyor to be stopped as we use a pneumatically operated feeding and discharge system, bringing the pig into the robot for processing and discharging after the process on the same carriers of the main conveyor.

In one automated working process the stick wound of the pig is opened, and at the same time the bung is dropped, the hams are separated and the pubic bone is opened.

### WORKING PROCESS:

1. The length of the pig is determined by an infra-red light curtain.
2. The feeding and discharge system guides the pig into the robot.
3. A transfer of measurement data takes place from the measuring stations ensuring the robot tools are set at the correct starting position.
4. To ensure a uniform process the pig is fixed in the robot.
5. Based on the correctly placed stick wound, a pneumatic mandrel cuts in an upward move and opens the neck region of the pig.
6. The mandrel of the rectum drill seeks the rectum opening of the pig. With this as the centre the drilling of the bung will commence. During the drilling process any excess manure is sucked out from the intestine through the mandrel. The excess manure is collected in a vacuum holding tank placed away from the slaughter line.
7. After the drilling of the bung, a pneumatic circular knife will separate the hams and cut through the pubic bone.
8. The mandrel and the cylindrical drill arrangement are disinfected using a 7% lactic acid solution.
9. All tools and other machine parts which are in contact with the pig are rinsed in cold and hot water prior to accepting a new pig into the machine.
10. Throat Opening, Bung Dropping and Ham Splitting has now completed the first phase of the opening process and the pig is returned back on the conveyor drop finger by means of the feeding and discharge system.



#### ADVANTAGES

- The Siemens operator's panel allows easy operation and trouble-shooting. SFK software interfaces to all types of surveillance systems.
- All robots have similar operator's panels and all measuring values are transferred to the other robots in the slaughter line.
- The control system allows coupling to administration system (ERP)
- To minimize the noise level of the killing floor as much as possible the hydraulic station of the robot is placed externally.

#### HYGIENE

- Throat Opening, Bung Dropping and Ham Splitting is manufactured in stainless steel to resist the aggressive environment found in the killing floor.
- Throat Opening, Bung Dropping and Ham Splitting conforms to the strictest rules regarding Health and Safety Standards.
- After each operation the tools return to the cleaning position for a cold – warm – cold rinsing to eliminate the transfer of bacteria.

#### SAFTY

- The robot is designed to meet the strictest hygiene demands by providing easy access for effective cleaning.
- A special cleaning key prevents the robot from operating during cleaning.

#### PRE-CONDITIONS

- In order to process the individual pig the length from gambrel point to snout must not exceed the interval 1.5 mtr. – 2.0 mtr. (Upon request it is possible to change the standards).
- The pig must not have had diseases such as hernia, abscess etc.
- Pigs outside the specified length, or pigs which for some reason should not be processed, pass through the robot without being processed.

#### LEGAL PRE-CONDITIONS

- Throat Opening, Bung Dropping and Ham Splitting is CE marked and meets the demands laid down in the HACCP regulation.



#### SPECIFICATIONS:

Capacity:	360 pigs/hour
Length:	2900 mm
Width:	2600 mm
Motor hydraulic system:	18,5 kW
Heating cartridge:	1 kW
Fan – oil cooler:	0.25 kW
Circulation pump:	1,5 kW
Voltage:	3x400V, 50 Hz
Control Voltage:	24 V DC
Degree of protection:	IP 65
Noise level:	82 dB (A)

#### REQUIREMENTS:

Compressed air:	7 bar, 150 l/pig
Air requirements:	Pure, dry and free from oil
Water (cold) 12-15 bar:	10°C, 4 l/pig
Water (cold) 3 bar:	10°C, 1-1,5 l/pig
Water (warm) 3 bar:	40°C, 3 bar, 0.3 l/pig
Water (hot) 3 bar:	82°C, 4 l/pig
Vacuum capacity:	200 mbar (80 m3/hour)
Suction	

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