

JM Semi Automatic Poultry Processing Systems

Capacities ranging from

250 to 2.000 birds per hour

JM Poultry manufactures NEW processing equipment for capacities ranging from 250 up to 6.000 birds per hour, either by semi or fully automatic systems. However, we recognize the need for small traditional slaughterers and small semi automatic processors to make the next step to efficient and modern processing methods. We therefore like to give an example of how a small capacity plant looks like, with a description of the process flow and its equipment. This page shows a typical set-up for a semi automatic plant with a capacity of 250 to 2.000 birds per hour.

NOTE: some plants may even choose to have a higher capacity with a semi-automatic system. This is usually the case in countries where the labour force is readily available and relatively cheap. In the most extreme cases, there are processing plants in some countries that are running at plant capacities of 10.000 birds per hour, but with multiple lines.

Arrival Area

The crates with broilers are transported to the hanging area, where the broilers are hung in the shackles on the overhead conveyor. One person can hang approximately 1.000 birds per hour (bph).

Killing & Defeathering Area

After hanging the birds, they will be transported to the electrical waterbath stunner to tranquilize the birds before killing either by hand (HALAL) or by an automatic killer. In case of HALAL processing, a stunner may be left out, although most of the Halal processors do use a stunner.

The blood is collected in a bleeding trough. Bleeding time is approx. 120 to 150 seconds. Prior to defeathering (or plucking), the birds are immersed in a scalding tank, which features strong agitation pumps to ensure that the birds are always drawn downwards. Depending on whether the final product is fresh or frozen, the birds can be scalded at a temperature of 52 degrees Celsius for 3.25 minutes (for fresh products) or at 60 - 62 degrees Celsius for 2 - 2.5 minutes (for frozen products).

After the scalding tank, the birds will go through an automatic de-feathering machine. This machine consists of 2 or 3 opposing rows with rotating discs with rubber picking fingers, which gently, but efficiently, remove the feathers. An automatic head-remover or a person with a pneumatic neckcutter or a knife will remove the head.

Evisceration Area

In a separate evisceration area, the vents are first removed with a ventcutting pistol. Opening is done with the use of a knife. Now several persons will use an eviscerating spoon to remove the intestines, gizzard, heart and liver. At the evisceration trough, the heart, liver and gizzard are separated from the intestines for further cleaning.

The gizzards will be moved to an inspection table, where the gizzard lining will be removed without a set of rolling peelers. The remaining lungs will be removed with a lung-sucking pistol, which runs on vacuum. After this process, the birds continue through a birdwasher, which sprays the outside of the bird with clean water.

Chilling, Weighing, Packing & Refrigeration

In the Chilling Area, the birds will be chilled down from 37 degrees to approx. 4 degrees Celsius. This is to pro-long the shelf-live of the product. A coldwater aggregate and /or ice making machine in combination with the screwchiller is necessary to obtain these outlet temperature(s). After chilling, the birds can be weighed manually or automatically in different weight classes, before they are either packed in crates or individual plastic bags. Packing is done manually with packing funnels or with a semi-automatic bird bagging machine. The final product can then be frozen in a blastfreezer at -40 degrees Celsius and stored in a cold store with a temperature of -20 degrees Celsius, or it can be transported directly to the market in refrigeration trucks. Offal and watertreatment facilities will take care of any environmental regulations.

Note: This is only an example of a semi automatic line with a capacity of 2.000 birds per hour. Each customer has his/her own specifications and therefore most processing lines differ in design. If you wish to receive a detailed quotation, please do not hesitate to contact us at sales@jm-poultry.com