

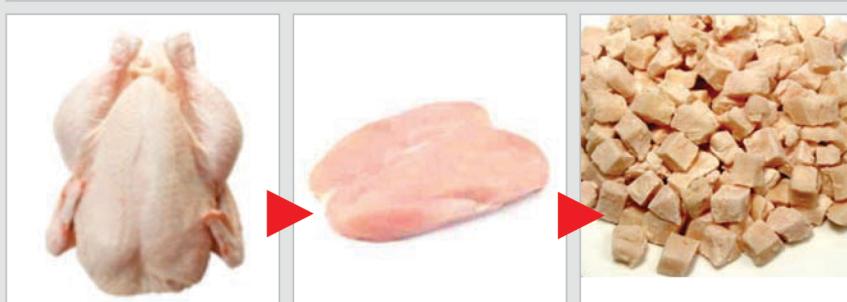
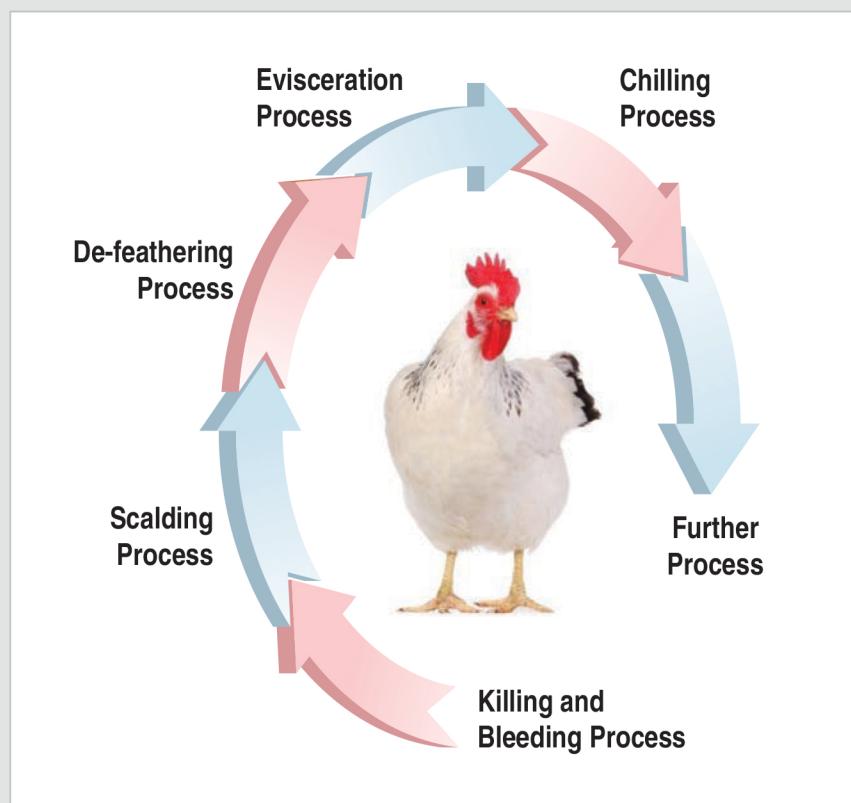


**Setting Quality Standards,
Driven by the Values.**

UPTO
3000
BIRDS
PER
HOUR



SETTING QUALITY STANDARDS,
DRIVEN BY THE VALUES.



FIVE STAR is a new entrant to India's poultry processing machinery manufacturing industry. It believes in the philosophy that the means should justify the ends. It deploys factory automation and other advanced technology to keep pace with the rapidly increasing demand for the poultry products. Engineering's utmost priority is to meet the demands of the Customers with advanced technology, competent staff and commitment. We are into every product that is required in poultry processing. Moreover, we also tender process solution, create carcass care and food safety. We design modern automatic poultry processing plants running up to 3000 birds per hour. Our aim is to manufacture and customize designs to fit customer's location with flexibility. High quality is our identity.

FIVE STAR is adequately equipped with latest and modern poultry processing systems. Above all it cares for the hygiene and, further, ensures cost saving without compromising on standard use of materials. Commitment to the standard use of materials and the expert team of workers have taken Engineering beyond shores. It enjoys the reputation for excellence in engineering, designing and manufacturing.

FIVE STAR generously extends its expertise on technology and remains available to the needs of clients so that they can promptly resolve production problems. Storm sincerely cares for the investment of the Customers. Hence, trains the staff, operators, engineers at the Customers' places so that efficiency and efficacy serve the purpose of the Customers.

stands ready to partner its clients in promoting their poultry business operations.

Maintenance Services

FIVE remains open and available to the needs of the Customers. Whenever, it is requested for maintenance services, it extends its accomplished specialists to draw the best maintenance philosophy. Be it corrective or preventive service/s, it works to optimize the performances. It offers both corrective maintenance services for immediate repairs, as well as scheduled preventive in periodic maintenance contract.

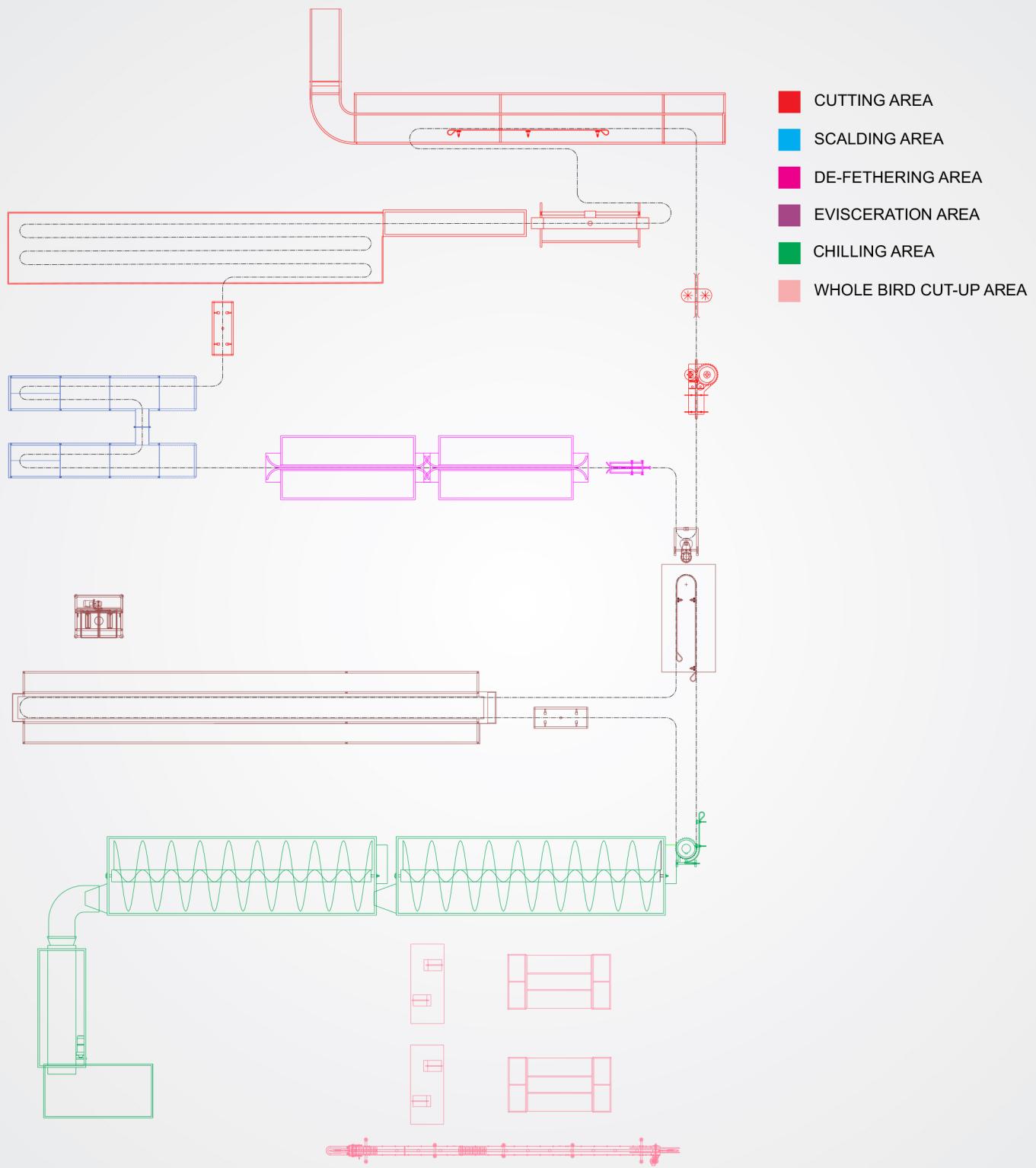
Quality Assurance

Quality always remains the foremost demand of the customers; and Storm loves meeting the demands of the customers while offering finest quality products, which posses longer operation life, better look and high utility. Engineering has employed a team of highly experienced auditors, who supervise the entire manufacturing process. Moreover, it follows the standard rules of manufacturing with various quality checks on the products designed and manufactured. All these endeavors impart an impeccable quality of products



TYPICAL LAYOUT FOR AUTOMATIC 3000 BIRDS PER HOUR PLANT

FIVE STAR always customizes design to put customer's requirements first, to meet the full potential for automation.



Pre-slaughter Preparation of Broilers

Margins on broilers are often very small, hence, it is not without reason that everything must be done to get the birds from the grower to the slaughtering line with minimal losses. After all, every gram of meat counts. Proper management practices are essential, from the shed to the killing line.

The manner, in which the birds are caught and transported to the processing plant, is the first step in its processing. The processes appear very simple but these are very important parts of the poultry processing procedure. Given the crescent capability of the processing plants, each "gram of meat", either wasted or harvested throughout the processing chain can easily account in a year's time for tones of either wasted or harvested saleable meat.

Broilers must be off-feed prior to slaughter to reduce the risk of fecal contamination during processing and evisceration.

Live catching can inflict severe damage to the carcasses. These are mostly hemorrhages and fractures, which are defects that are likely to be salvaged when carcasses undergo sanitary inspection. The carefulness of the live catching operation is critical to the quality of meat ultimately delivered.

Killing Cones

After the birds have been unloaded from the crates, each bird is placed heads-down into funnel-shaped Killing Cones. Normally, a manual plant is not supplied with a stunning device. Birds not stunned before killing will jerk a lot during bleeding. Storm's Killing Cones are suitably large so that when the bird's wings are folded down and inserted, it restrains the bird from flapping its wings or backing out of the cone. Wing flapping can cause hemorrhages in the muscle and broken bones. Special blue lighting will help

keep them calm and reduce flapping and injury. A sharp knife is used to cut the jugular and carotid artery. Some time is given to allow gravity and the heart to pump out the blood which is funneled through a catch tray into a plastic collection drum; it can be used in composting but must not be allowed to drain arbitrarily as it is a wastewater pollutant that contains a lot of organic matter.

Halal / Killing

This is a religious kill-process. The blood vessel in the bird's neck is opened without damaging the windpipe or gullet. In halaal slaughter, only one side of the neck (the carotid arteries and the jugular veins are cut so that the birds bleed slowly to discharge the blood. About 35-50% of the blood comes out, with the rest remaining in the organs. The neck should not be cut-off as feathers become harder to pick; and reduce blood drainage. The esophagus should also not be cut, to prevent microbial contamination from leakage.

Water for Processing

Each operation in a poultry process line uses water and releases wastewater. Water should be of potable quality and meet industry guidelines. For practical purposes, it sets a bacteriological quality (of zero faecal and other coliforms/100ml per sample. Water supply should be chlorinated so that there is a residual concentration of 0.5ppm free chlorine after 20 minutes contact time. It should be supplied at a minimum pressure of 15psi (1 Bar). There should be sufficient water stored for one normal day's production, should there be an interruption of normal water supply. Water consumption may be calculated at 4-5 litres/bird slaughtered.



Killing Cones



Strong Arm with Scalding & De-feathering



Evisceration Table



Scalding Tank

Birds are scalded (immersed in hot water) to loosen the feathers. Heat breaks down the protein holding the feathers in place. Scalding is temperature-sensitive. A hard scald 58.9-64.4 °C (30-75 seconds) is preferred by many, but is more difficult to control; an error will produce a cooked carcass resulting in customer rejection. Soft-scalding, 50.6-54.4 °C (90-120 seconds) is common and safer. The skin remains intact and skin color is retained; picking is more strained.

Scalding increases the body temperature of the carcass that has to be reduced rapidly via the next process which is, chilling. Overflow needs to add fresh water continuously.



Strong Arm & Basket

Killed birds are transferred to a stainless steel basket (varying capacity) suspended through a geared motor from a strong arm bolted onto the wall. The strong arm permits a 180° lateral swing and spring-loaded movement along its vertical axis. The basket has handles on its side for plunging into scalding water. After scalding the strong arm is swung over the de-feathering machine and the basket door is opened by releasing a lever on its side. The carcasses drop into the de-feathering machine for the next process.

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De-boning Table

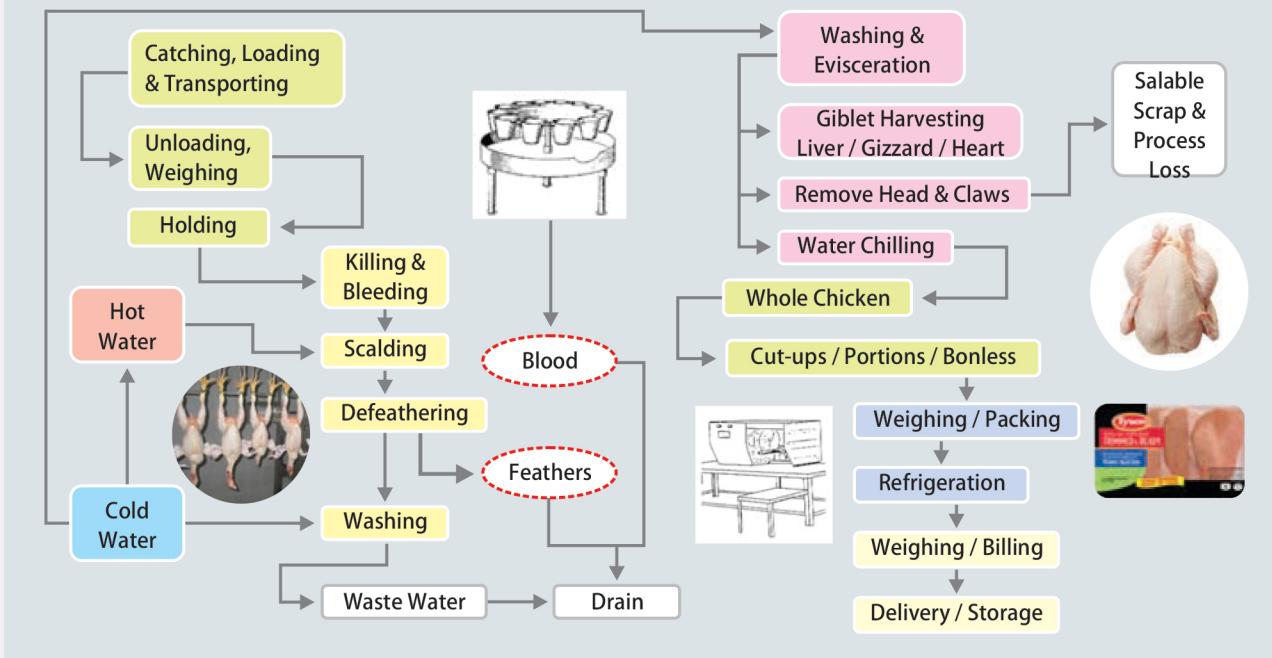


Screw Chiller



Drip Drum

PROCESS FLOW CHART



De-feathering (Picking)

Storm's drum de-feathering (feather picking) machine removes feathers by abrasion; these machines can pick a bird clean in about 30 seconds. The De-feathering fast pluck - 1000 & 1500 GB is a cylindrical machine with rubber fingers mounted in rows along the inner wall of a rotary drum connected by a shaft or belt to a motor through a gearbox.

Quality of the pick is related to the scald. If the scald water is too cool, the feathers will not loosen; if too hot, skin could tear in the picker. If just right, feathers will usually come out easily.

Evisceration Table

Removal of Head, Oil Glands and Claws

After removal of the feathers, the head, oil glands, and claws are removed. The claws are usually cut at the knee-joint.

Manual Evisceration

Evisceration requires cutting around the vent, widening the orifice, and drawing out the organs. Inedible viscera or guts (intestines, esophagus, spleen, and reproductive organs) are removed. The crop also will come out with the guts. The kidneys and lungs usually remain inside as they could remove by vacuum lung suction gun.

Carcass Washing

Carcasses are dropped into tanks (e. g., Sintex 400 Lts.) with water at a temperature of 4 °C. Each one is manually scrubbed, while awaiting evisceration.

Screw Chiller & Water Separator (Drip Drum)

The chilling process is one of several key steps used in poultry processing to ensure the safety and quality of a dressed chicken product. Water is chilled to 4 °C or below in a chilling plant and pumped into the screw chiller from there. De-feathered and eviscerated carcasses are dropped into Storm's screw chiller, where it remains immersed for about 30 minutes to inhibit microbial growth. Chlorine is added to the chiller water to disinfect and sanitize it for safety. Carcasses spun into a drip-drum where excess water is drained out. Chilling enhances shelf-life of a meat product while reducing requirement for a high refrigeration load.

De-skinning, Cut-Ups & Deboning

A processor will offer whole carcasses, skin-on/skin-off, cut-ups and boneless chicken items. In the industry about 50% is sold as parts. Deboned breast and leg are popular products. Manual deboning is done on cones. Incisions are made on the carcass before it can be peeled off its bone(s). Meat should not be deboned for at least 4 hours since rigor mortis is occurring, and cutting/deboning early would toughen the meat. One way to get around this is by deboning today's production tomorrow.

Cut-ups include removal of the wings, legs, and front halves (breast). Whole legs and leg quarters can be cut into thighs and drumsticks by Storm's Better Cut Portioning Machine. Wings can be cut into drumettes (lollipops). Gizzards can be peeled for better value on Storm's Gizzard Peeler.

cares for the hygiene and, further, ensures cost saving without compromising on standard food grade use of materials.