SM ENGINEERING

ABOUT US

M/s S M Engineering India is one of pioneering organisation in field of dairy processing machinery & milk processing plant. refrigeration system /cold room, juice & beverages tranky project and also food std FSSI complete line. Harshal Patel and Shani Rathod was the founder of this Gujarat based company.

S M Engineering is heading by technocrat **Harshal Patel**, **Shani Rathod** and team. The company has a well-equipped in-house production unit with state-of-the-art machinery.

Speciality of **S M Engineering** is quality control of each manufacturing line equipment manufacturing with **ISO standard testing facility** . Top rated design team create The sanitary and cost-efficient equipment with high standard safety. Installation and commissioning team practicing workmen ship of plant that can be durable and maintainable for long term and smooth to operation . Continuous Research and development department with well establish facility.

S M Engineering has proud for high-quality equipment and supplies that can be used by number of esteem origination in India and overseas.

RAW MILK RECEPTION DOCK (RMRD)

- WEIGHING BOWL WITH WEIGHING SCALE

250 ltr and 500 ltr and

- DUMP TANK 250 ltr, 500 ltr, 1000ltr, 2000 ltr

The raw milk reception dock (RMRD) is the primary intake point of liquid milk entry in dairy / chilling centres. It is specifically meant for the reception of milk brought in cans from village milk collection centres located over a wide area.

RAW MILK STORAGE

Bulk Milk Cooler 250 ltr, 500 ltr, 1000 ltr, 2000 ltr, 3000ltr , 5000 ltr Bulk milk cooling tank is a large storage tank for cooling and holding milk at a low temp. till it gets transported. The BMC is made of stainless steel and used every day to store the raw milk onthe farm in good condition.

200 ltr, 300 ltr , 500 ltr BMC

vertical cylindricaland squire with refrigeration system

1000 LTR AND 2000 LTR BMC U SHAPE TYPE

-3000 LTR AND 5000 LTR BMC

MILK CHILLER

MILK PLATE CHILLER

Milk plate Chiller helps to maintain the quality of milk received in the Dairy/ Chilling Centre it is chilled to 4°C by milk chiller.

The chiller consists of stainless-steel plates. Chilling is done by flowing milk from one side and chilled water from other side of the plates.

MILK PASTEURISATION

To increase milk safety for the consumer and increase keeping quality of milk and milk products by destroying spoilage causing microorganisms and enzymes that contribute to the reduced quality and shelf life of milk.
Pasteurization can be done as a batch or a continuous process.

BATCH MILK PASTEURISER

A Batch / Vat pasteuriser is a temp-controlled, closed vat.
The milk is pumped into the vat, heated to the appropriate temp. and held at same temp.
For the fixed time and then cooled. The cooled milk is then pumped out of the vat, for packaging or product making.

HIGH TEMP SHORT TIME (HTST)

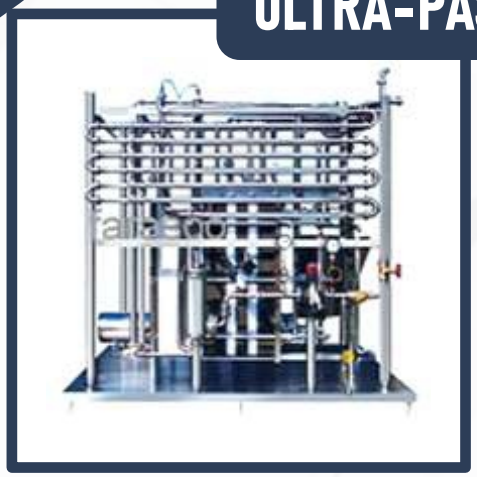
Plate Heat Exchanger
Plate Heat Exchanger (PHE)- In continuous process the milk is pumped from the raw milk tanks to continuous pasteurization system.
The milk continuously flows from the tank through a series of thin plates that heat up the milk to fixed temp and further cooled to low temp.
The milk flow system is set to make sure that the milk is thoroughly pasteurised, if not returned to balance tank.

THERMIZATION

Thermization involves heating milk at temperatures of around 63–65 °C for 15 seconds, while pasteurization involves heating milk at 71 °C for 15 seconds or at 63 °C for 30 minutes.
Thermization is used to extend the keeping quality of raw milk when it cannot be immediately used in other products, such as cheese.

Thermization can also be used to extend the storage life of fermented milk products by inactivating microorganisms in the product.

ULTRA-PASTEURIZATION (UP)



This is the type of pasteurization that we most commonly see on cartons of milk, half-and-half and heavy cream. It produces a product that has a stable shelf life of up to two months!
The UP method requires that the milk be held at 138°C for 2 seconds.
Most commercial milk brands use this form of pasteurization since it is the quickest and cheapest.

MILK HOMOGENIZER

Milk Homogenizer capacity 200 lph -10000 lph

Homogenization is a process that gives milk its rich, white colour and smooth texture.
Milk that has not been homogenized contains a layer of cream that rises to the top of a glass.

The homogenization process involves reducing the size of the fat globules to 0.2 – 2 microns size which are dispersed evenly throughout the milk.

CREAM SEPRATOR

Cream Separator is machine used for separating and removing cream from whole milk; The separator consists of a centrifuge in the form of a rapidly revolving bowl containing a set of disks mounted on a spindle situated underneath the milk supply tank.

As milk enters the bowl at the top, it is distributed to the disks through a series of openings, having speed of approx. 6,000 to 8,000 rpm, the heavier skim milk is thrown to the outer edge of the bowl and led off through an opening.

The cream concentrates in the centre portion and moves to the cream outlet.

The most efficient separators leave less than 0.01 percent fat in the skim milk.

Milk Storage Tanks – Horizontal & Vertical (Silo)

Horizontal Milk Tanks

- Tanks for milk reception belong to the storage category like raw milk tank, Processed Milk tanks, different types of milk storage tanks and vary in sizes from 500 to 20,000 litres.

• Silo tanks for milk reception belong to the storage category and used for Collection and reception of milk.
They vary in size from 15,000 to about 1,50,000 litres and are made of stainless steel.

BUTTER MAKING MACHINE

Butter Churn capacity 100 ltr -2000 ltr

Butter is defined is a fat concentrate product obtained by churning, cream, gathering fat into a compact mass and working it. Butter is made exclusively from milk or cream with or without common salt and colouring matter and contains not less than 80% fat. In butter, fat is present in continuous phase and water is present in dispersed phase. This phenomenon is known as phase inversion.

GHEE MAKING MACHINE

GHEE KETTLE

The Ghee is prepared b fermenting whole milk to curd, churning the curd to butter and boiling down the latter to ghee.

YOGURT MAKING MACHINE

Yogurt is a fermented milk product that contains the characteristic bacterial cultures. The main ingredient in yogurt is milk. The type of milk used depends on the type of yogurt – whole milk for full fat yogurt, low fat milk for low-fat yogurt, and skim milk for non-fat yogurt.

PANEER MAKING MACHINE

PANEER VAT

Paneer is a fresh cheese common made by curdling milk with a vegetable-derived acid, such as lemon juice.
Paneer is prepared by adding citric acid to hot milk to separate the curds from the whey. The curds are drained in muslin or cheese cloth and the excess water is pressed out.

The resulting paneer is dipped in chilled water for 2–3 hours to improve its texture and appearance. From this point, the preparation of Paneer diverges based on its use and regional tradition.

PANEER PRESS

MOC – SS304
Pneumatic type single station, double station and four station

MAVA KATTLE

LPG FIRE MAVA KETTLE

Any type of fuel may be used as wood, Diesel or LPG fired. Automatic Khoya Making Machine ensures convenient and hassle free operations. Keeping in mind divergent demands of the clients, the automatic Khoa Making Machines are available in various models as stationary and tilting type for fast production.

STEAM OPERATED MAV A KETTLE

GHEE CLARIFIER

Ghee from the settling tank is fed through the inlet placed at the top of ghee clarifier. Separation of the ghee residue from the ghee takes place in a solid wall bowl, under the Ghee from the settling tank is fed through the inlet placed at the top of ghee clarifier. Separation of the ghee residue from the ghee takes place in a solid wall bowl, under the influence of centrifugal force. The residue thus separated is collected in the sludge space of the bowl and clarified ghee flows through the clarifier outlet.

STERILISATION

STERILISER

The sterilization is the process of heating to a high temperature (more than 100°C) for specific time to kill almost all bacteria. The sterilized milk can be stored at room temperature for a long period of time.
The sterilization of milk has the following characteristics. Temperature more than 100°C is used in the process. No chilling is required for storage. Excellent storage life at room temperature. High operating pressure is employed to prevent milk from

ICE CREAM PLANT 200 KG -500 KG PER BATCH

MILK PLANT CLEANING

CIP SYSTEM

Clean-in-place (CIP) is a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly.
Industries that rely heavily on CIP are those requiring high levels of hygiene, includes dairy, beverage, brewing, processed foods, pharmaceutical & cosmetics. The benefit to industries that use CIP is that the cleaning is faster, less labour-intensive, and more repeatable, and poses less of a chemical exposure risk.

CERATE WASHER AUTOMATIC

UTILITY CHILLING PLANT

- **Ice bank type (IBT) capacity 2000 Ltr 15000 ltr**

·Freon base refrigeration system with IBT tank and electrical control panel
Ibt tank made up of stainless steel, cast iron and GI and insulation by puff sheet.
·Instant chilling plant Glycol base air cool and water cool capacity 5 tr – 60 tr

Air cool chiller capacity 5 tr -60 tr

Air -cooled chillers use air to cool the refrigerant in the condenser.

- **Water Cool Chiller Capacity 5 Tr -60 Tr**

Water-cooled chillers use water to cool the refrigerant in the condenser. They are efficient because they condense depending on the ambient temperature bulb temperature, which is lower than the ambient dry bulb temperature

COLD STORAGE

A cold storage unit incorporates a refrigeration system to maintain the desired room environment for the commodities to be stored

BOILERS

BOILER

A boiler or steam generator is a device used to create steam by applying heat energy to water. A pressure vessel that provides a heat transfer surface (generally a set of tubes) between the combustion products and the water. A boiler is usually integrated into a system with many components. Boilers are used to produce steam..

HOT WATER GENERATOR

It is the efficient and cost-effective way to generate hot water instantly. Hot Water Generator can be pressurized or non-pressurized depending on the required temperature of water. Hot water generator uses this principle to heat water above 100°C by applying pressure on the water without changing its liquid state.

Features

·Custom units built to order with capacities up to 5,000 gallons.
·Meets or exceed thermal efficiency and/or standby loss
·Available in space saving vertically or horizontally models.

Heating Options for Hot Water Generators

·Liquid Fuels – Light oil / Heavy oil
·Gaseous fuels – LPG or CNG
·Solid Fuels – Coal or Wood or Briquettes
·Electrical operation – Element heaters or Electrodes

Advantages of Hot Water Generators

·Fully automatic unit
·Trouble free operation
·Outside the purview of IBR.
·High system efficiency
·The minimum site works and ease of installation.

Can operate on the variety of fuels as per local availability

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