Waukesha Cherry-Burrell
A United Dominion Company

Process Technology
Bullet 9939 12-99

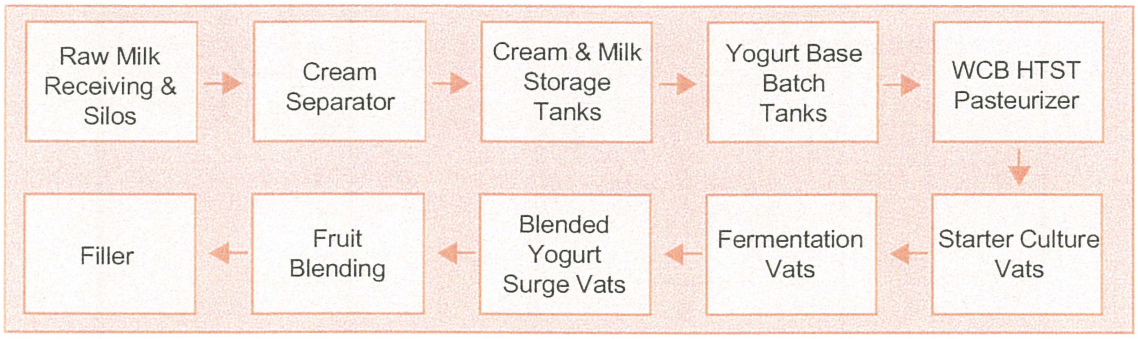
YOGURT PROCESSING

PROCESS DESCRIPTION:

Raw milk is received from tank trucks, cooled and stored in silo tanks. The raw milk is separated into cream and skim milk fractions, then blended to the correct butter fat concentration for the specific recipe. Dry ingredients are added to complete the yogurt base batching process. The yogurt base is pasteurized in a WCB pasteurizer to remove any microorganisms that could spoil the product. A portion of the base is sent to tanks where starter culture is incubated.

For cup set yogurt, the starter culture is added to the yogurt base and warmed in a WCB plate heat exchanger while being pumped to the cup filler. The yogurt is fermented and cooled in the cups. For blended yogurt, the starter culture is added to the base in fermentation vats. It is fermented for the proper time and then cooled in a WCB plate heat exchanger cooler while being transferred to surge vats by a Waukesha positive displacement pump. The yogurt is then continuously blended with aseptically stored fruit metered by a Waukesha positive displacement pump and sent to the filler.

BLOCK DIAGRAM:



PROCESS SYSTEM FEATURES:

- Fully sterilizable starter culture and fermentation vats guarantee a culture free of undesirable organisms.
- HTST pasteurizer has extended hold tube for proper treatment of yogurt base.
- Any tank or section can be CIP cleaned without interfering with production in other equipment.
- Flexibility to make multiple types of yogurt with minimum equipment.
- Various control system configurations (manual to fully automatic) available to meet operating requirements.
- CIP operations are completely automated.
- Fully automatic control systems allow minimum number of operators and ensure repeatable product quality.

EQUIPMENT REQUIRED:

- Miscellaneous tanks and processing vats
- Cream separator
- WCB HTST pasteurizer
- WCB homogenizer
- WCB plate heat exchangers
- Waukesha positive displacement pumps
- WCB centrifugal pumps
- Miscellaneous valves
- Control system
- CIP system

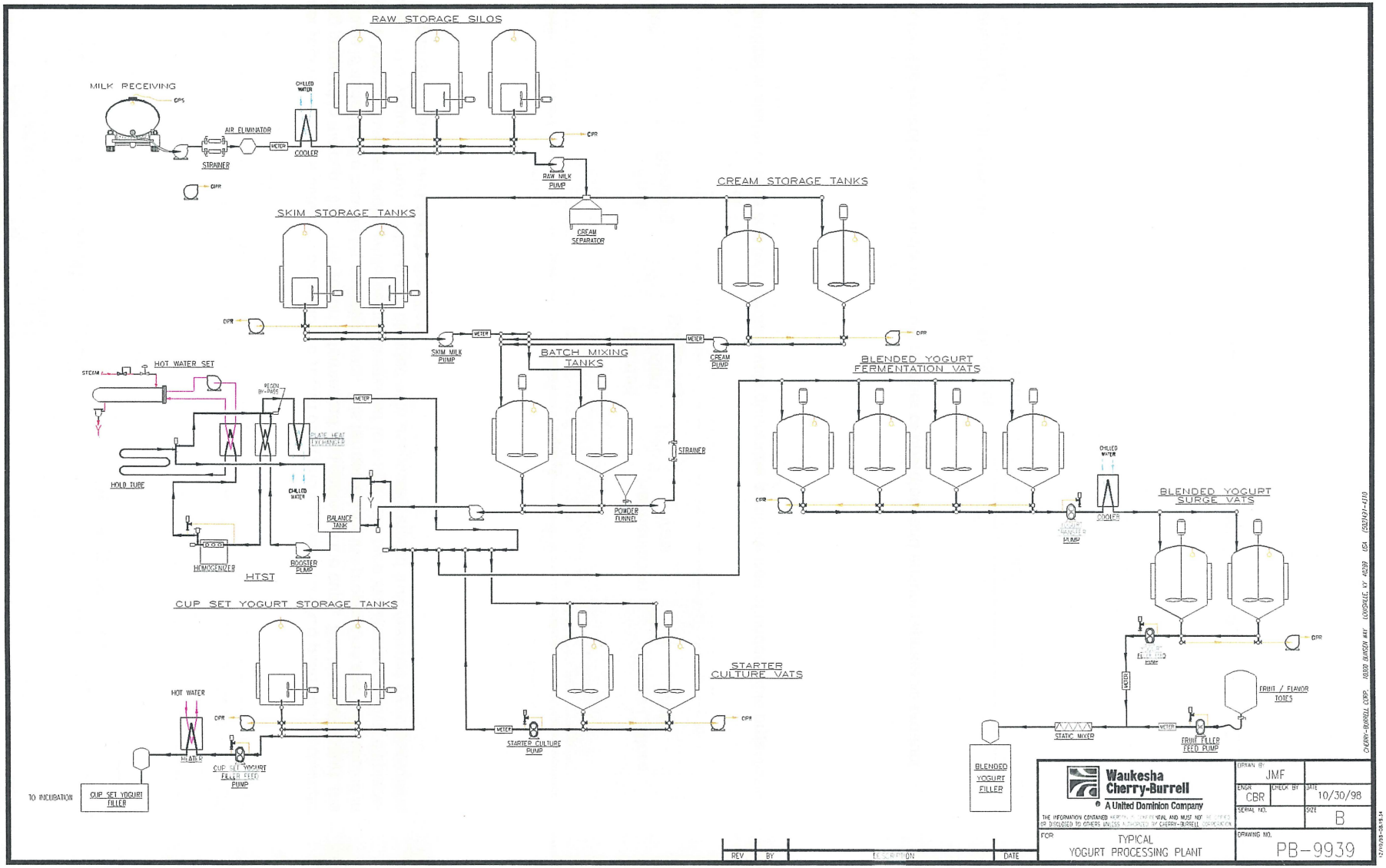
PROCESS PARAMETERS:

- Capacities: up to 300,000 lb/day (150 MT/day)
- Products: any combination of cup set, blended and other varieties

INFORMATION REQUIRED FOR QUOTATION:

- Products _____
- Receiving and filling flow rates _____
- HTST product flow rate _____
- Base viscosity _____
- Base specific gravity _____
- Desired product holding temperature _____
- Desired holding time _____
- Fermentation parameters _____
- Desired fill temperatures _____
- Fruit addition source and feed ratio _____
- Electrical service available _____
- Steam service available _____
- Cooling media service available _____

Yogurt


RAW STORAGE SILOS
MILK RECEIVING
CPS
AIR ELIMINATOR
METER
STRAINER
CHILLED WATER
COOLER
CIP
RAW MILK PUMP
CREAM STORAGE TANKS
SKIM STORAGE TANKS
CREAM SEPARATOR
SKIM MILK PUMP
CREAM PUMP
BATCH MIXING TANKS
BLENDED YOGURT FERMENTATION VATS
HOT WATER SET
STEAM
REGEN BY-PASS
PLATE HEAT EXCHANGER
HOLD TUBE
BALANCE TANK
HOMOGENIZER
BOOSTER PUMP
HTST
POWDER FUNNEL
STRAINER
BLENDED YOGURT SURGE VATS
COOLER
STATIC MIXER
FRUIT / FLAVOR TOTES
FRUIT FILLER FEED PUMP
BLENDED YOGURT FILLER
CUP SET YOGURT STORAGE TANKS
HOT WATER
HEATER
CUP SET YOGURT FILLER FEED PUMP
TO INCUBATION
CUP SET YOGURT FILLER
STARTER CULTURE VATS
STARTER CULTURE PUMP
REV
BY
DESCRIPTION
DATE
Waukesha Cherry-Burrell
A United Dominion Company
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FOR
TYPICAL
YOGURT PROCESSING PLANT
DRAWN BY JMF
ENGR CBR
CHECK BY
DATE 10/30/98
SERIAL NO.
SIZE B
DRAWING NO. PB-9939
CHERRY-BURRELL CORP. 10600 BUNSEN WAY LOUISVILLE, KY 40299 USA (502)491-4100