

# Centpro Engineering Private Limited.



Continuous Tomato  
Juice Concentrator  
CE-TCON

**“BREAK THROUGH TO CONVENTIONAL  
TOMATO JUICE CONCENTRATION METHODS”**

# Tomato Processing Plant

## Unit Operations in Tomato Processing

- **Hot Break System** @4-5°Brix
- **Concentrator** @10-20-28°Brix  
Will be achieved in Continuous output basis in CE-TCON™
- **Paste Processing** @22-28°Brix
- **Ketchup Processing** @32-36°Brix



## Advantages of Tomato juice concentrator over Batch pan evaporation

- Continuous process with constant input and constant output
- Lowest operating cost as compare to batch pan operation
- Easy control on output Brix thus the output rate
- Entire plant operation is carried out under vacuum i.e at lower boiling temperature
- Low steam consumption
- Uniform product quality is maintained
- Original properties of the products are retained
- Chances of overheating of product / instant heating of the product reduces
- Product viscosity, stickiness, flowability will be take care of properly
- Uniform colour of the product is maintained
- Less manual intervention is required for operation

## Economics Aspect based on Steam consumption and its operating cost

- Basis : 2000 Kg Tomato Juice Feeding / Processing
- Operating hours : 1 Hour
- Juice Brix Initial : 4 Brix
- Juice Brix Desired : 20 Brix
- Output : 400 Kg/hr
- Initial Juice temp : 85 Deg.C
- Steam cost :Rs. 1 / Kg ( Assumed – Coal Fuel )
- As per calculations,
- Steam required for Batch Pan is 1660 Kg/Hr
- And Steam required for concentrator is 570 Kg/Hr

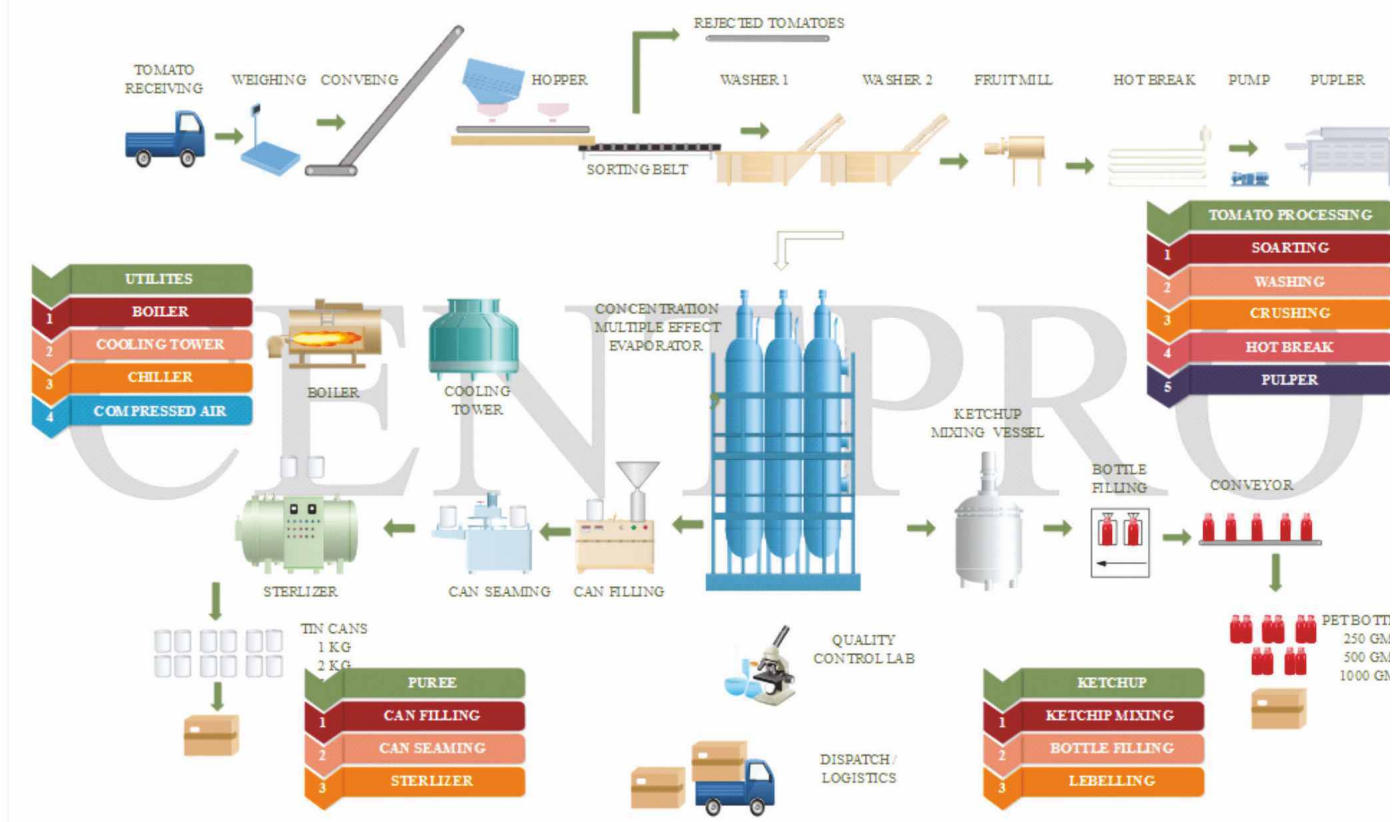
Therefore,

Steam cost for batch Pan to process 2000 Kg/hr of batch is 1660 Rs./Hr

i.e 0.83 Rs./Kg of Feed rate = Rs.830/Ton of feed juice  
And Steam cost for Concentrator to process 2000 Kg/hr of batch is 570 Rs./Hr

i.e 0.29Rs./Kg of Feed rate = Rs.290/Ton of feed juice

# Tomato processing Plant Scheme



## Steam based operating cost (Rs.)

Plant capacity	Continuous Concentrator			Batch Plan			
	Based on juice feed rate	Per Day (Rs.)	Per Month (Rs.) ( 25 Days )	Per Year (Rs.) ( 8 Months )	Per Day (Rs.)	Per Month (Rs.) ( 25 Days )	Per Year (Rs.) ( 8 Months )
10 MT		2,900.00	72,500.00	580,000.00	8,300.00	207,500.00	1,660,000.00
20 MT		5,800.00	145,000.00	1,160,000.00	16,600.00	415,000.00	3,320,000.00
25 MT		7,250.00	181,250.00	1,450,000.00	20,750.00	518,750.00	4,150,000.00
30 MT		8,700.00	217,500.00	1,740,000.00	24,900.00	622,500.00	4,980,000.00
40 MT		11,600.00	290,000.00	2,320,000.00	33,200.00	830,000.00	6,640,000.00
50 MT		14,500.00	362,500.00	2,900,000.00	41,500.00	1,037,500.00	8,300,000.00
75 MT		21,750.00	543,750.00	4,350,000.00	62,250.00	1,556,250.00	12,450,000.00
100 MT		29,000.00	725,000.00	5,800,000.00	83,000.00	2,075,000.00	16,600,000.00
120 MT		34,800.00	870,000.00	6,960,000.00	99,600.00	2,490,000.00	19,920,000.00
150 MT		43,500.00	1,087,500.00	8,700,000.00	124,500.00	3,112,500.00	24,900,000.00
200 MT		58,000.00	1,450,000.00	11,600,000.00	166,000.00	4,150,000.00	33,200,000.00



- The calculations shows the operating cost of the concentrator based on steam is very less as compared to batch pan operation.
- This ultimately will strengthen bottom line by increase in margin of the product.
- Also the concentrator have higher merits then batch pan evaporator.

# Salient feature of the CENTPRO CE-TCON™

- Low capital cost
- Flexibility of operation w.r.t Turn down ratio
- Juice output brix can be maintained from the range of 10 – 20 – 28 Bx
- Good & uniform quality of the product
- LAdequate velocities of product are maintained to avoid fouling over tube surfaces
- Available in Automation and Semi-Automation option– Entire operation of the plant is controlled from one place.
- User friendly. - Less manpower is required for the operation
- Best heat integration techniques are implemented to reduce the steam consumption
- Compact design – Less space is required
- Easy to operation, Maintain and Perform
- Less operational spare required
- Easy to Start, Stop and Cleaning
- Manufactured in SS 304 construction with reputed make hardware



## EPC Company with Below Divisions

- Evaporation
- Distillation
- Process Equipment
- Turnkey Plants



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