



Tetra Pak® Cheese Vat HCV-S & HCV-H

Machine for transforming milk and additives into curd and whey



Highlights

- Dual outlets permit complete emptying and reduce the slope towards the outlets
- Gentle uniform cook with hot water or steam surface targeting a maximum cook rate of 1-degree F/ 0.55-degree C per minute for hot water and 1.5 degrees F/ 0.83-degrees C per minute for steam
- Proven performance of sanitation and avoidance of product loss with our patented low-cost sanitary seal, which only requires one seal per shaft
- Efficient agitation in cut or stir at minimal rpm speeds to produce a balanced curd to whey ratio and maximize yield
- The counter rotating horizontal dual shaft design coupled with the rennet injection system distributes the rennet uniformly and quickly into the milk

Application

Tetra Pak® Cheese Vat HCV-S & HCV-H are used for converting milk into curds and whey, in a batch process, for all cheese types. The vats have been proven to work with higher total solids in cheese milk.

Working principle

This is a configurable vat for converting milk into curds and whey, in a batch process. First, milk and culture enter the vat via a filling port. Rennet is then introduced into the milk by a series of spray nozzles along the length of the vat's roof. The rennet is quickly and efficiently mixed into the cheese milk. The mixture is allowed to set, then cut by counter-rotating knife blades. After it has been cut, the curd is cooked as it is stirred by counter-rotating agitators which keeps the curd well dispersed while operating at relatively low speeds. The vat's stirring and cutting parameters are both determined by a programmable control center. Prior to pump-out whey can be pre-drawn through an outlet port, or with an optional top-mounted pre-draw system. Then the remaining contents are pumped out to downstream processes. Heating takes place via steam or hot water and is also very precisely controlled to ensure minimal fat losses. The length of the vat can be extended to obtain different capacities.

Main components

- Dual horizontal cylindrical body with dished ends
- Slope of the vat of ½" per foot
- Hot water heating jacket on body sides and dished ends, steam heating jacket on body sides and bottom
- Dual shaft counter rotation with leak detect
- CIP sprays and manifold complete with leak detect valves to control cleaning of tank internal seals and bearings
- Each shaft includes blade panels for cutting and stirring
- Internal lighting
- Sanitary air vent
- Temperature fitting and sensor
- Pre-draw connection at customer specified level
- Two end located curd and whey outlets
- Frequency controlled gear motor coupled to dual secondary gear reducers to drive each shaft
- Rennet nozzles with local header
- Coagulite fitting with O-ring and plug

Control system

The Tetra Pak® Cheese Vat HCV-S & HCV-H are fully automated, requiring little or no operator intervention. Available control systems include either Allen Bradley or Siemens.

Options, Mechanical

- Prewired operator panel and low voltage panel
- Prewired VFD panel
- Vat internal access ladder
- Vat specialty maintenance tools
- Vat man retrieval system
- Coagulation sensor
- Top mounted predraw whey sieve
- Non-standard outlet height
- Non-standard voltage and frequency
- Blades to match existing vats
- HCV-S Condensate collector with hanger

Options, Automation

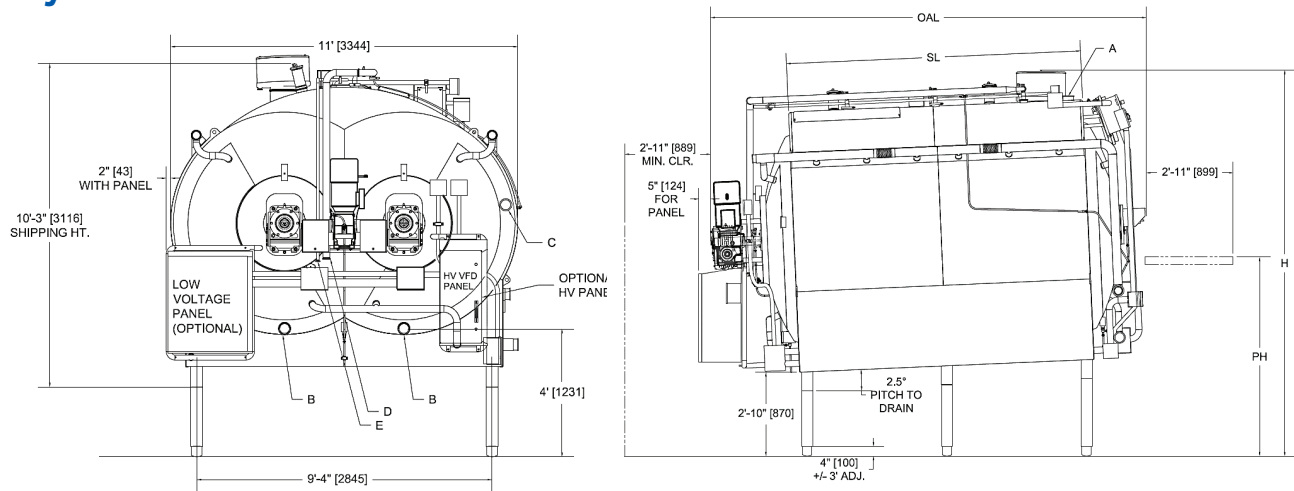
- I/O Communication (hardwired communication).
- Operator panel and machine manuals in non-English language

Technical Data

Model	Tetra Pak® Cheese Vat HCV 30	Tetra Pak® Cheese Vat HCV 35	Tetra Pak® Cheese Vat HCV 40	Tetra Pak® Cheese Vat HCV 45	Tetra Pak® Cheese Vat HCV 50	Tetra Pak® Cheese Vat HCV 55	Tetra Pak® Cheese Vat HCV 60
Steam Consumption*	1,540 lbs/hr 700 kg/hr	1,800 lbs/hr 820 kg/hr	2,050 lbs/hr 930 kg/hr	2,310 lbs/hr 1,050 kg/hr	2,570 lbs/hr 1,170 kg/hr	2,830 lbs/hr 1,280 kg/hr	3,090 lbs/hr 1,400 kg/hr
Compressed Air Consumption	3 CFM at 90 PSIG minimum 85 L/min at 6.2 bar minimum						
Power Requirements	10 HP 7.45 kW						
CIP Flow Rate	100 GPM @ 25 PSIG 0.38 m³/min @ 1.7 bar	140 GPM @ 25 PSIG 0.53 m³/min @ 1.7 bar			180 GPM @ 25 PSIG 0.68 m³/min @ 1.7 bar		

* Data based on 0.87-degree F/ 0.48-degrees C per minute cook rate and nominal fill. For steam and hot water vats.

Layout of Tetra Pak® Cheese Vat HCV-H



Piping Connections

Location	Description	Size
A	Milk Inlet *	4"/ 101.6 mm TC
B	Curd Outlet (2 Places)	4"/ 101.6 mm TC
C	Whey Outlet (Predraw)	4"/ 101.6 mm TC
D	CIP Supply	2.5"/ 63.5 mm TC
E	Rennet Supply	1"/ 25.4 mm TC
	Heating Water Supply/ Return	4"/ 101.6 mm

*2.5" and 3" sizes also available

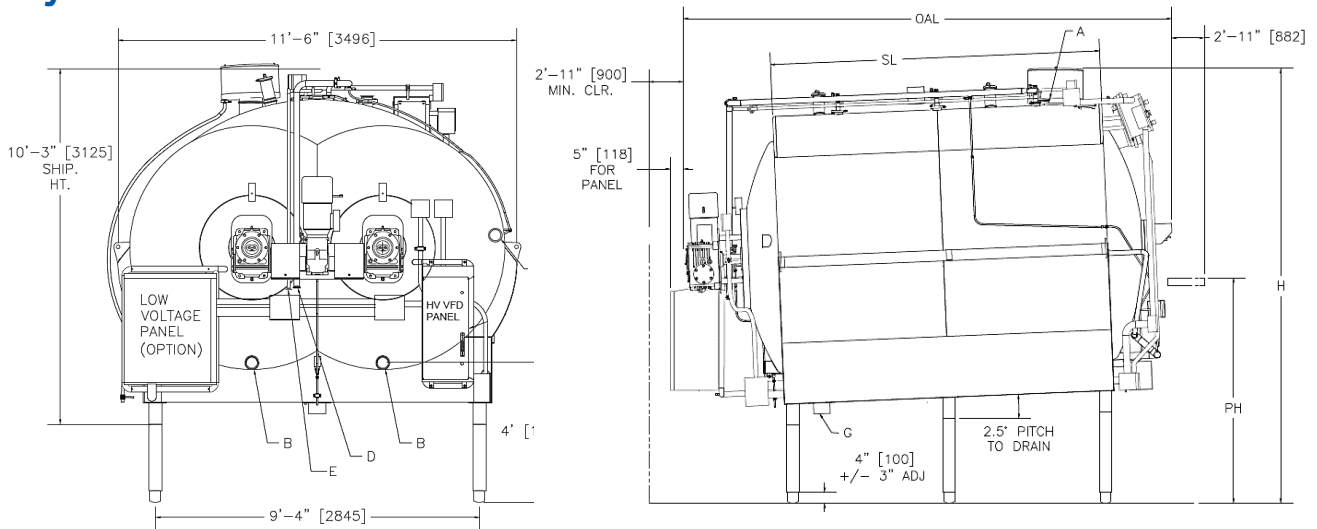
Dimensions and Capacities of Tetra Pak® Cheese Vat HCV-H

Model	NOMINAL CAP.	MAX CAP.		O.A. L Overall Length	S.L. Side Length	H* Height	P.H.* Platform Height	Empty Weight
HCV-H 30	30,000 lbs 13,608 kg	33,440 lbs 15,168 kg	14,720 L 3,889 gal	12'-3" 3,734 mm	7'-6" 2,286 mm	13'-1" 3,988 mm	6'-8" 2,032 mm	7,800 lbs 3,538 kg
HCV-H 35	35,000 lbs 15,876 kg	38,450 lbs 17,441 kg	16,920 L 4,470 gal	13'-6" 4,115 mm	8'-9" 2,667 mm	13'-1 1/2" 4,001 mm	6'-8" 2,032 mm	8,200 lbs 3,719 kg
HCV-H 40	40,000 lbs 18,144 kg	43,050 lbs 19,527 kg	18,950 L 5,006 gal	14'-10" 4,521 mm	10'-0" 3,048 mm	13'-2" 4,013 mm	6'-9" 2,057 mm	8,900 lbs 4,037 kg
HCV-H 45	45,000 lbs 20,412 kg	51,460 lbs 23,342 kg	22,650 L 5,983 gal	16'-9" 5,105 mm	12'-0" 3,658 mm	13'-2 1/2" 4,026 mm	6'-10" 2,083 mm	9,600 lbs 4,354 kg
HCV-H 50	50,000 lbs 22,680 kg	55,170 lbs 25,025 kg	24,280 L 6,414 gal	17'-9" 5,410 mm	13'-0" 3,962 mm	13'-3 1/2" 4,051 mm	6'-11" 2,108 mm	10,000 lbs 4,536 kg
HCV-H 55	55,000 lbs 24,948 kg	62,390 lbs 28,300 kg	27,460 L 7,254 gal	19'-9" 6,020 mm	15'-0" 4,572 mm	13'-5" 4,089 mm	7'-0" 2,134 mm	10,800 lbs 4,899 kg
HCV-H 60	60,000 lbs 27,216 kg	72,000 lbs 32,659 kg	31,690 L 8,372 gal	22'-0" 6,706 mm	17'-3" 5,258 mm	13'-7" 4,140 mm	7'-2" 2,184 mm	11,800 lbs 5,352 kg

*At 48" outlet height.

Capacity in pounds calculated using a density of 8.6 lbs/gallon.

Layout of Tetra Pak® Cheese Vat HCV-S



Piping Connections

Location	Description	Size
A	Milk Inlet *	4"/ 101.6 mm TC
B	Curd Outlet (2 Places)	4"/ 101.6 mm TC
C	Whey Outlet (Predraw)	4"/ 101.6 mm TC
D	CIP Supply	2.5"/ 63.5 mm TC
E	Rennet Supply	1"/ 25.4 mm TC
G	Condensate Return	6"/ 152.4 mm OD
	Steam Supply	2"/ 50.8 mm NPT

*2.5" and 3" sizes also available

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