



# CPE C216 MD CENTRIFUGAL PUMP ASSEMBLY (3 - 5 HP)

FOR CRAFT FOOD AND BEVERAGE INDUSTRIES



**CPE SYSTEMS  
INCORPORATED**

**PUMPS**

-

**HOSES**

-

**HEAT EXCHANGERS**

-

**FLOW METERS**

-

**GASKETS**

-

**VALVES**

-

**FITTINGS**

-

**THERMOMETERS**

-

**PORTABLE SYSTEMS**

-

**AND MORE**

## Technical Specifications



### Materials

Parts in contact w/ product:	Stainless steel AISI 316L
Other steel parts:	Stainless steel AISI 304
Gaskets in contact w/ product:	EPDM

### Mechanical seal

Rotary Seal:	Carbon or Silicon carbide (SiC)
Stationary Seal:	SS, SiC or Ceramic,
Gaskets:	EPDM
Surface finish:	Bright polish
Motor:	S.S Premium Efficiency Nema C Face

### Operating limits

Nominal pressure:	10 bar 145 PSI
Temperature range:	14 °F to 248 °F 284 °F (SIP, max. 30 min.)

Maximum flow:	100 m <sup>3</sup> /h 150US GPM
Maximum differential head:	21 m 75 ft
Maximum speed:	3500 rpm

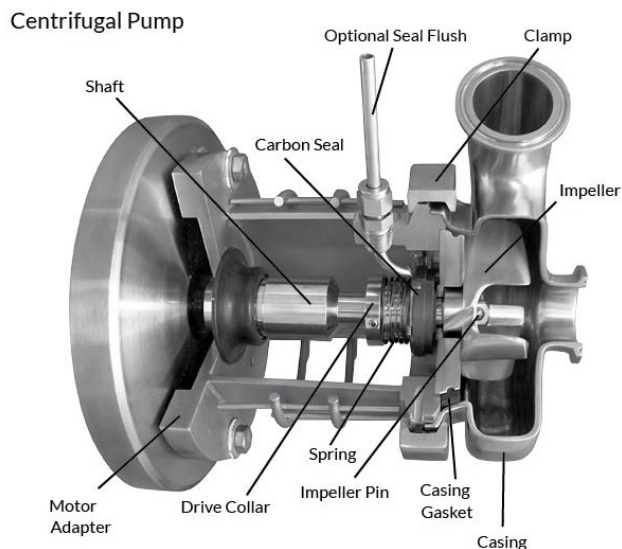
C-series (Close Coupled) Centrifugal Pumps are the most common pumps used in Craft Breweries. Our C-Series is made in North America, 3A approved and provides high capacity at a low price. They feature heavy duty stainless steel construction with a stainless steel washdown motor that make cleaning easier and if well maintained, will last a lifetime. These pumps will give you years of excellent service and when needed, replacement parts are interchangeable with most major brands of sanitary C-series pumps.



HorsePower	Flow Rate	Head
3 HP	150 GPM	70 ft.
5 HP	200 GPM	100 ft.

## Port Connection

Come standard with M Tri-Clamp style connections, but we can provide any connection style possible. Including Acme Bevel Seat Thread, NPT, Flanged or Weld.



Model	Inlet Opt.	Outlet Opt.	Max Impeller
C100	1 1/2"	1"	3.68"
C114	1 1/2" - 2"	1 1/2"	4"
C216	2"	1 1/2"	6"
C218	2" - 3"	1 1/2"	8"
C328	3" - 4"	2"	8"



## Variable Speed Controller



Our AC VFD Drives contain Sensorless Flux Vector Compensation with Static-Auto-Tune. This provides excellent speed regulation from zero to full load over a wide frequency range. These drives provide auto energy savings at light loads and smooth motor torque operation.

Horsepower	3 to 5 HP
1Ø Input	115/230 VAC, 50/60 Hz
3Ø Output	230 VAC, 50/60 Hz
Enclosure	Diecast Aluminum NEMA IV
Dimensions approx.	9.8" X 7.6" X 7.3"

- Die-Cast Aluminum Enclosure with hinged cover
- Powerful 200% Starting Torque
- Digital Display with LED Status Indicators
- Sensorless Flux Vector Control
- Electronic Inrush Current Limit (EICLTM) Protection
- Run/Fault Relay Output Contacts
- Built-in Potentiometer
- Holding Torque at Zero Speed in "Stop" mode
- Undervoltage and Overvoltage Protection
- Short Circuit Protection, phase to phase
- Ride-Through momentary power loss
- Regeneration eliminates tripping



SMV NEMA 4/4X (IP65) inverter drives offer sophisticated auto-tuning, fast torque response with impressive low-speed operation. Brought to us by Lenze AC Tech these VFD's are designed for motor applications where dynamic speed and torque control is demanded.

Horsepower	3 HP to 15 HP
3Ø Output	230/460 VAC up to 4.0kW/15HP
Enclosure	NEMA-4X/IP-65
Dimensions approx.	9.8" X 7.6" X 7.3"

- Superior Performance over 3HP
- Modes of Operation:
- V/Hz (Constant and Variable)
- Enhanced V/Hz (Constant and Variable)
- Vector Speed Control with 60:1 Speed Range
- Vector Torque Control
- Dynamic Torque Response
- Sophisticated Auto-tuning (Motor Calibration)
- Impressive Low Speed Operation
- Sequencer with 16 Programmable segments
- Delayed start/stop
- Over 65K repeat cycles

## Heavy Duty Pump Cart



Custom designed for the craft food and beverage industry, our heavy duty pump carts are built for pumps up to 5HP. These carts are ergonomic, tilt draining and have easy maneuverability. All parts hand welded in Canada for quality assurance and durability.

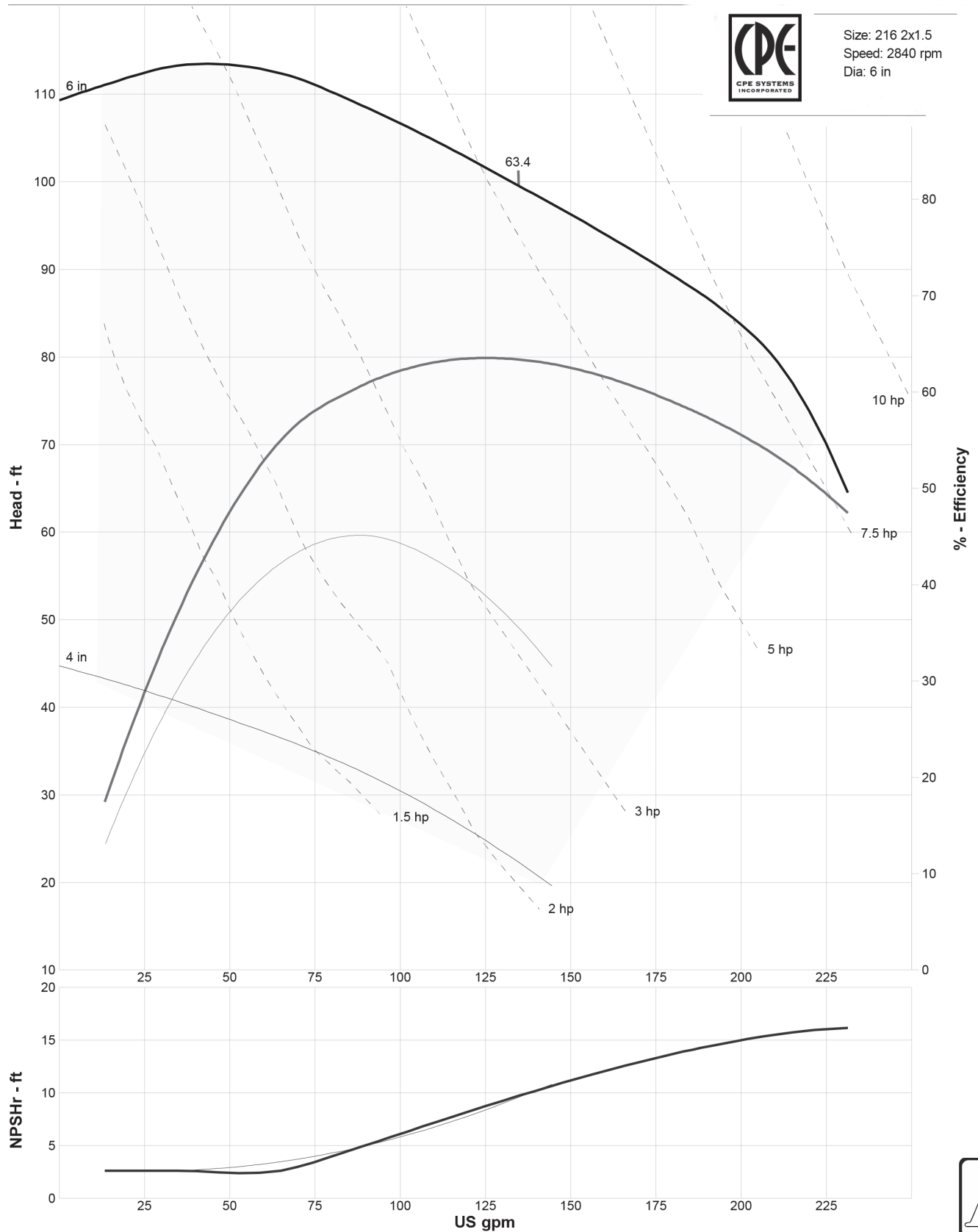
### Material

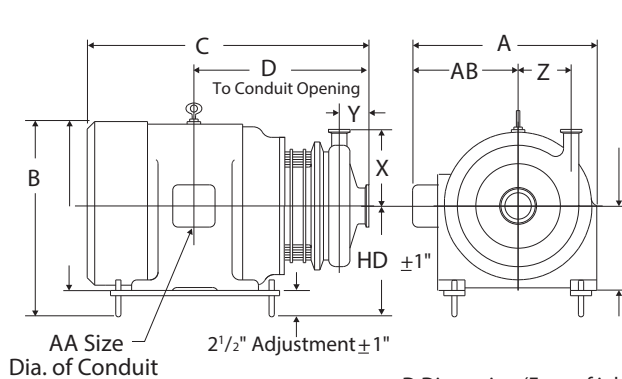
Frame	1 1/2" 16 ga stainless steel tube
Handle	1 1/2" 16 ga stainless steel tube
Platform	14 ga stainless steel AISI 304
Axle	1/2 ga stainless steel rod axle
Wheels	8" non rusting foam filled tires
Footprint	19"L x 19"W x 38"H



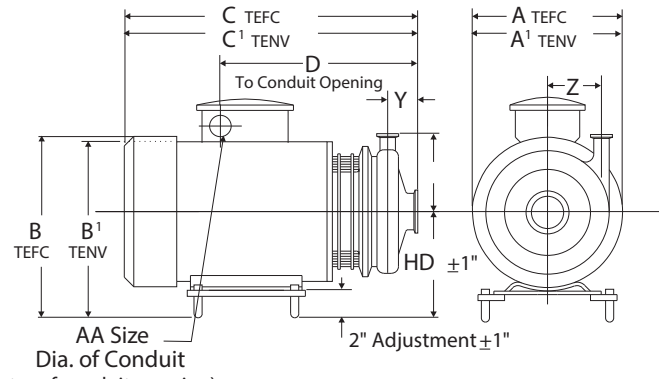
# Pump Capacity Curves

\*Based on water at 70°F (22°C)





180 to 360 Frame Motors



56 to 140 Frame Motors

## Pump and Motor Dimensions with "Easy-Clean" Totally Enclosed Motors

Pump Model	Frame	A	A'	B	B'	C*	C'*	C**	C'**	D*	D**	HD	AA	AB
C114	FF56C	7 <sup>9/32</sup>	6 <sup>1/2</sup>	9 <sup>1/8</sup>	8 <sup>3/4</sup>	21 <sup>1/4</sup>	20 <sup>9/16</sup>	21 <sup>1/2</sup>	20 <sup>13/16</sup>	17 <sup>3/16</sup>	17 <sup>7/16</sup>	5 <sup>1/2</sup>	1 <sup>1/2</sup>	—
	184TC	11 <sup>7/8</sup>		11 <sup>11/16</sup>		21 <sup>1/8</sup>		21 <sup>3/8</sup>		13 <sup>13/16</sup>	14 <sup>1/16</sup>	7	3/4	7 <sup>3/16</sup>
C216	FF56C	7 <sup>9/32</sup>	6 <sup>1/2</sup>	9 <sup>1/8</sup>	8 <sup>3/4</sup>	21 <sup>3/8</sup>	20 <sup>3/4</sup>	21 <sup>5/8</sup>	21	17 <sup>5/16</sup>	17 <sup>9/16</sup>	5 <sup>1/2</sup>	1 <sup>1/2</sup>	—
	184TC	11 <sup>7/8</sup>		11 <sup>11/16</sup>		21 <sup>7/8</sup>		21 <sup>1/8</sup>		14 <sup>9/16</sup>	14 <sup>13/16</sup>	7	3/4	7 <sup>3/16</sup>
	215TC	14 <sup>1/2</sup>		13 <sup>3/16</sup>		25 <sup>9/16</sup>		25 <sup>13/16</sup>		16 <sup>11/16</sup>	16 <sup>15/16</sup>	7 <sup>3/4</sup>	1	9 <sup>1/16</sup>
	256TC	16 <sup>7/16</sup>		15 <sup>1/4</sup>		29 <sup>15/16</sup>		30 <sup>3/16</sup>		18 <sup>11/16</sup>	18 <sup>15/16</sup>	8 <sup>3/4</sup>	1 <sup>1/4</sup>	10
C218	FF140TC	7 <sup>9/32</sup>	6 <sup>1/2</sup>	9 <sup>1/8</sup>	8 <sup>3/4</sup>	22	21	22 <sup>1/4</sup>	21 <sup>1/4</sup>	17 <sup>19/32</sup>	17 <sup>27/32</sup>	5 <sup>1/2</sup>	1 <sup>1/2</sup>	—
	184TC	11 <sup>7/8</sup>		11 <sup>11/16</sup>		22 <sup>1/4</sup>		22 <sup>1/2</sup>		14 <sup>15/16</sup>	15 <sup>3/16</sup>	7	3/4	7 <sup>3/16</sup>
	215TC	14 <sup>1/2</sup>		13 <sup>3/16</sup>		25 <sup>13/16</sup>		26 <sup>1/16</sup>		16 <sup>15/16</sup>	17 <sup>3/16</sup>	7 <sup>3/4</sup>	1	9 <sup>1/16</sup>
	256TC	16 <sup>7/16</sup>		15 <sup>1/4</sup>		31 <sup>1/16</sup>		31 <sup>5/16</sup>		19 <sup>13/16</sup>	20 <sup>1/16</sup>	8 <sup>3/4</sup>	1 <sup>1/4</sup>	10
	284TC	19 <sup>5/16</sup>		16 <sup>3/4</sup>		32		32 <sup>1/4</sup>		20 <sup>3/16</sup>	20 <sup>7/16</sup>	9 <sup>1/2</sup>	1 <sup>1/2</sup>	12 <sup>1/16</sup>
C328	FF140TC	7 <sup>9/32</sup>	6 <sup>1/2</sup>	9 <sup>1/8</sup>	8 <sup>3/4</sup>	22 <sup>5/8</sup>	21 <sup>5/8</sup>	23 <sup>1/8</sup>	22 <sup>1/8</sup>	18 <sup>7/32</sup>	18 <sup>23/32</sup>	5 <sup>1/2</sup>	1 <sup>1/2</sup>	—
	184TC	11 <sup>7/8</sup>		11 <sup>11/16</sup>		22 <sup>3/4</sup>		23 <sup>1/4</sup>		15 <sup>7/16</sup>	15 <sup>15/16</sup>	7	3/4	7 <sup>3/16</sup>
	215TC	14 <sup>1/2</sup>		13 <sup>3/16</sup>		26 <sup>5/16</sup>		26 <sup>13/16</sup>		17 <sup>7/16</sup>	17 <sup>15/16</sup>	7 <sup>3/4</sup>	1	9 <sup>1/16</sup>
	256TC	16 <sup>7/16</sup>		15 <sup>1/4</sup>		31 <sup>11/16</sup>		32 <sup>3/16</sup>		20 <sup>7/16</sup>	20 <sup>15/16</sup>	8 <sup>3/4</sup>	1 <sup>1/4</sup>	10
	284TC	19 <sup>5/16</sup>		16 <sup>3/4</sup>		32 <sup>5/8</sup>		33 <sup>1/8</sup>		20 <sup>13/16</sup>	21 <sup>5/16</sup>	9 <sup>1/2</sup>	1 <sup>1/2</sup>	12 <sup>1/16</sup>
	286TC	19 <sup>5/16</sup>		16 <sup>3/4</sup>		34 <sup>3/8</sup>		34 <sup>7/8</sup>		21 <sup>13/16</sup>	22 <sup>5/16</sup>	9 <sup>1/2</sup>	1 <sup>1/2</sup>	12 <sup>1/16</sup>

\* With Tri-Clamp connections.

\*\* With threaded bevel seat connections.

Dimensions are approximate and for guidance only. On application where exact dimensions are required, request a certified print from Tri-Clover.

NOTES: 1—Dimensions for single phase #140 frame motors longer.

--These dimensions are for pumps using standard "C" Flange Motors.

--Tri-Flo C Series pumps will not accept TSC Frame Motors.



## Viscosity and Specific Gravity Table

Product	Specific Gravity	Viscosity
Acetic Acid		
5%	1.01	
10%	1.01	31.7 SSU @ 59°F
50%	1.06	33 SSU @ 59°F
80%	1.08	35 SSU @ 59°F
Animal Fat	0.9	130 SSU @ 115°F
		50 SSU @ 200°F
Barbecue Sauce	1.05	11,500 SSU @ 40-75°F
Beer	1.02	32 SSU @ 68°F
Blood - Animal	.93-.98	15,000 SSU @ 55°F
Butter	.93-.98	15,000 SSU @ 55°F
		440 SSU @ 90°F
		220 SSU @ 115°F
Coconut Oil	0.92	125 SSU @ 106°F
Corn Oil	0.92	135 SSU @ 130°F
		54 SSU @ 212°F
Corn Starch Solutions		
22 Baume	1.18	150 SSu @ 70°F
		130 SSU @ 100°F
24 Baume	1.2	600 SSU @ 70°F
		440 SSU @ 100°F
25 Baume	1.21	1400 SSU @ 70°F
		800 SSU @ 100°F
Cottage Cheese	1.02	4,300 SSU
Dressing		
Cream (Sweet)	1	73 SSU
	.99	140 SSU
	.99	215 SSU
Egg Yolk	1.12	21,500 @ 35°F
Gelatin	1.01	1,380 - 2,580 SSU
		@ 160°F
Glucose	1.35 - 1.44	35M - 100M SSU
		@ 100°F
		4M - 11M @ 150°F

Product	Specific Gravity	Viscosity
Honey	1.3	1250 - 1425
		SSU @ 100°F
Ice Cream Mix	1.15	1050 SSU @ 46°F
Lard	0.96	287 @ 100°F
Linseed Oil	.92-.94	143 @ 100°F
		93 @ 130°F
Malt Syrup	1.41	85,400 SSU @ 77°F
Maple Syrup	1.37	2,000 SSU @ 68°F
Margarine	0.93	13,900
		SSU @ 84°F
Milk	1.02 - 1.05	31.5 @ 68°F
Molasses		
A. First	1.4 - 1.46	1300 - 23,500 SSU
		@ 100°F
		700 - 8160 SSU
		@ 130°F
B. Second	1.43 - 1.48	6535 - 61,180 SSU
		@ 100°F
		3058 - 15294 SSU
		@ 130°F
C. Blackstrap	1.46 - 1.49	12,190 - 255M
		@ 100°F
Mustard	1	17,000 SSU
		@ 85°F
Olive Oil	.91 - .92	200 SSU
		@ 100°F
Peanut Butter	1.2	77,400 SSU @
		110 - 140°F
Sesame Seed Oil	0.92	184 SSU @ 100°F
		110 @ 130°F
Soy Bean Oil	0.91	500 SSU @ 44°F
Tomato Paste	1.14	60M - 80 M SSU
		21M SSU approx.
Water	1	31 SSU @ 68°F