



CPE SYSTEMS INC



CB+114MD

PORTABLE PUMP ASSEMBLY



The CB+ is a re-designed C-series centrifugal pump with an internal mechanical seal. It maintains the reliability and durability of the C-series pump, while adding the advantages of an internal seal. This seal allows for the product to lubricate the seal fully during use and for the CIP process to completely sanitize the seal. This pump is designed for small to medium sized applications.

DESIGN

The internal seal allows for easy cleaning, prevents pooling on the seal, and permits greater seal pressure with less leaking. CPE CB+ pumps have the unique High-Clean cartridge seal; the seal is encased making it more sanitary and less prone to breakage. The CB+114 features the same collar and threaded impeller nut as the C+ pump. The collar clamps down evenly on all sides of the drive shaft, preventing the minor wobble that can occur from set screwed shafts. The threaded impeller nut fully secures the impeller in place, replacing the impeller pin of the c-series. Two specialized gaskets are used to seal the shaft and to allow a CIP procedure to clean behind the impeller. Together, the collar and bolted impeller reduce rattling at lower speeds. These design features make the CB+ uniquely capable for CIP and product transfer applications.

FEATURES

- 1 ½" X 1 ½" Tri-Clamp connections
- Stainless steel washdown motor
- 316L stainless steel construction
- 304 stainless steel adapter
- Internal mechanical seal

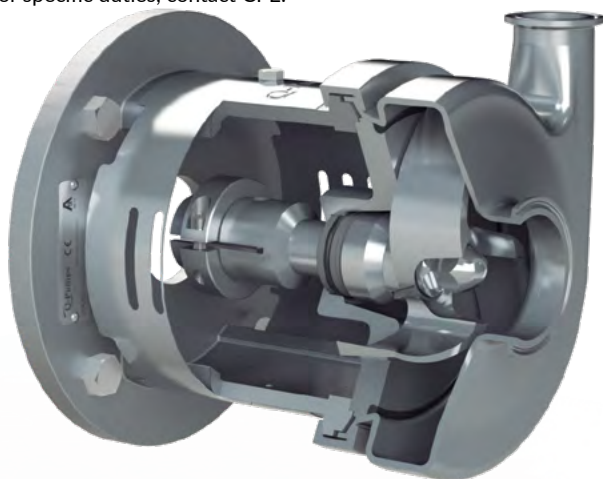


Figure 1: High-Clean Seal

HORSEPOWER

Horsepower	*Max. Flow rate	*Shut Off Head
1 HP	75 GPM	65 ft
1.5 HP	100 GPM	75 ft
2 HP	125 GPM	75 ft
3 HP	150 GPM	75 ft

* For specific duties, contact CPE.



TECHNICAL SPECIFICATIONS

Materials	
Parts in Contact With Product:	316L Stainless Steel
Other Steel Parts:	304 Stainless Steel
Gaskets in Contact With Product:	EPDM (Buna & Viton Optional)
Weight Without Motor:	12 lbs
Mechanical Seal	
Rotary Seal:	Carbon or Silicon Carbide
Stationary Seal:	Stainless Steel or Ceramic/Silicon Carbide
External Surface Finish:	Bright Polish
Internal Surface Finish:	32 RA
Connection Type:	Tri-Clamp
Connection Size:	1.5" x 1.5"
Max. Impeller Diameter:	4"
Motor	
Type:	S.S Premium Efficiency
Motor Frame Size:	NEMA 56C C-Face
Speeds:	1750 & 3450 RPM
Operating Limits	
Nominal Pressure:	10 bar (145 PSI)
Temperature Range:	14°F (-10°C) - 248°F (120°C)
Maximum Flow:	150 GPM (90 m³/h)
Maximum Differential Head:	75 ft (23 m)
Maximum Speed:	3500RPM - 60Hz
Viscosity:	1200 cPs
Optimum Operating System	
Flow:	150 GPM
Head:	75 ft
Approvals	
Certification:	3A- Authorization #1537, 02-11 (centrifugal pumps) for CIP



Variable Speed Controller

The Lenze i550 Protec is our new inverter series in the ½ HP to 20 HP range. The slim and sleek casing is also extremely durable, featuring both impact resistance and IP66 washdown protection. A micro USB interface is provided for more efficient programming. This user-friendly VFD is programmable and has scalable functionality. This trustworthy and powerful VFD can be implemented into your operations with ease. The i550 can be controlled by the keypad, a potentiometer, or a remote control (the remote control is available at additional cost). Our portable pump assemblies feature this VFD to achieve optimal efficiency.

FEATURES

- IP66 (NEMA 4X) approved; it is both dust and water resistant.
- Equipped with a Micro USB interface for programming and diagnostics.
- Full onboard PID programming for interfacing with flow meters, level controls, pressure sensors, and can/bottle fillers.
- The i550 Protec has a sensorless vector control for synchronous motors.
- Equipped with multiple digital and analog inputs for remote control and safety interlocks.
- Compatible with our wireless remote controls, pressure switches, and run dry protection.
- Equipped with a potentiometer.



TECHNICAL SPECIFICATIONS

Horsepower:	1 to 2 HP
1Ø/3Ø Input:	1Ø 115/230 VAC ; 3Ø 230/460 VAC
3Ø Output:	208-230/460 VAC
Ambient Temperature:	-22°F - 131°F (-30°C - 55°C)
Standard IO:	5x digital input, 1x digital output, 2x analog input, 1x analog output
Communication Networks: (optional)	CANopen, Modbus RTU, Modbus TCP, IO-Link, EtherCAT, EtherNet/IP, PROFINET
Approvals:	CE, UL, CSA, EAC, RoHS

Pump Cart



Custom designed for the craft food and beverage industry, this is our smallest pump cart, built for pumps up to 2 HP. This cart is tilt draining, maneuverable, and has a small footprint. The knockdown cart handle is removable, creating a compact cart that can be easily stored or wheeled into tight spaces. All parts are hand welded in Canada for quality assurance and durability.

Frame:	16 ga stainless steel square tube with foot
Handle:	16 ga stainless steel square tube
Platform:	14 ga Stainless steel AISI 304 Pre-drilled to fit 56 and 143 NEMA frame
Axle:	1/2 ga Stainless steel rod axle
Wheels:	2" x 5" non marking neoprene wheels



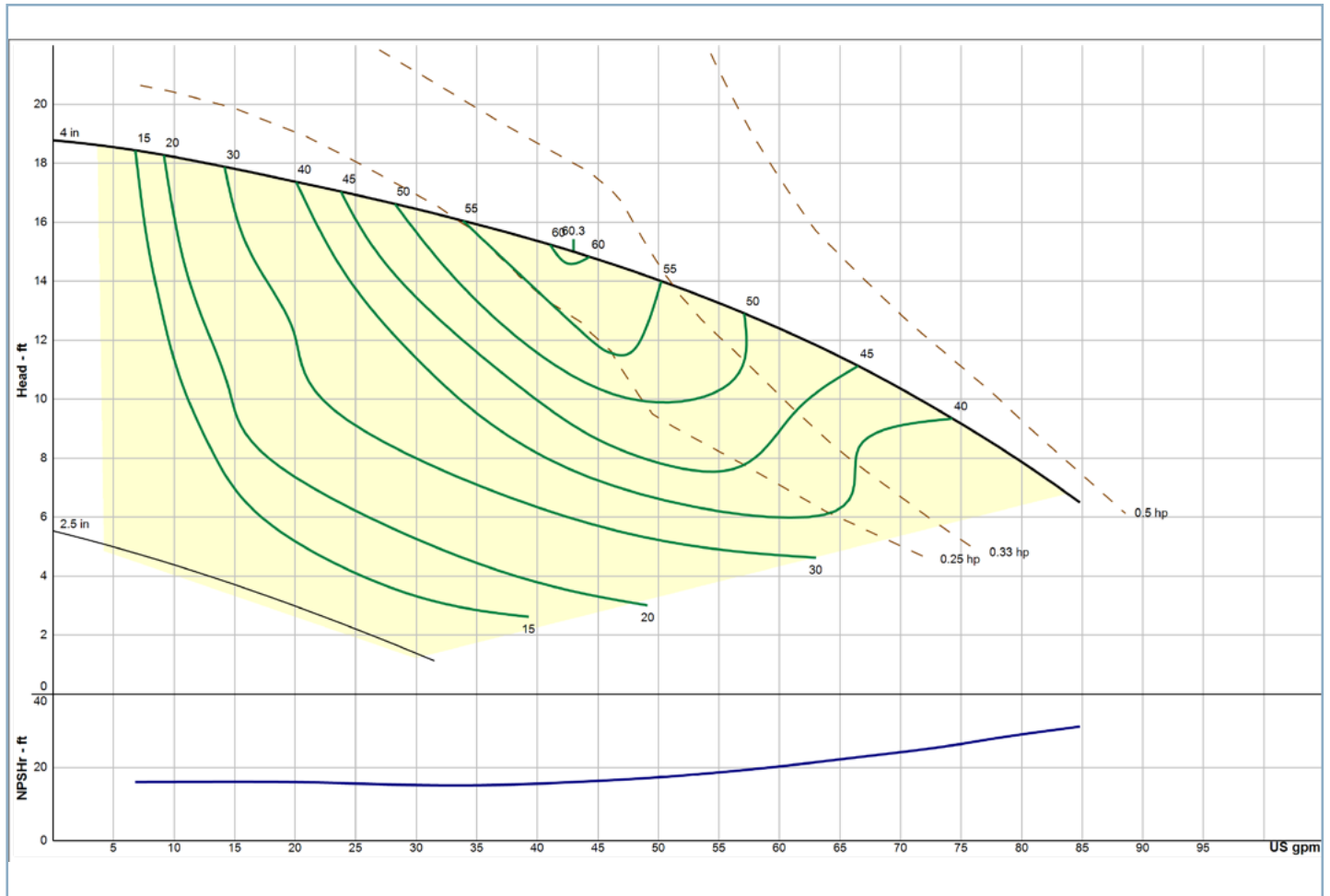
Capacity Curves

MODEL: CB+114

Frequency: 60hz

RPM: 1750

Size: 1.5" x 1.5" x 4"





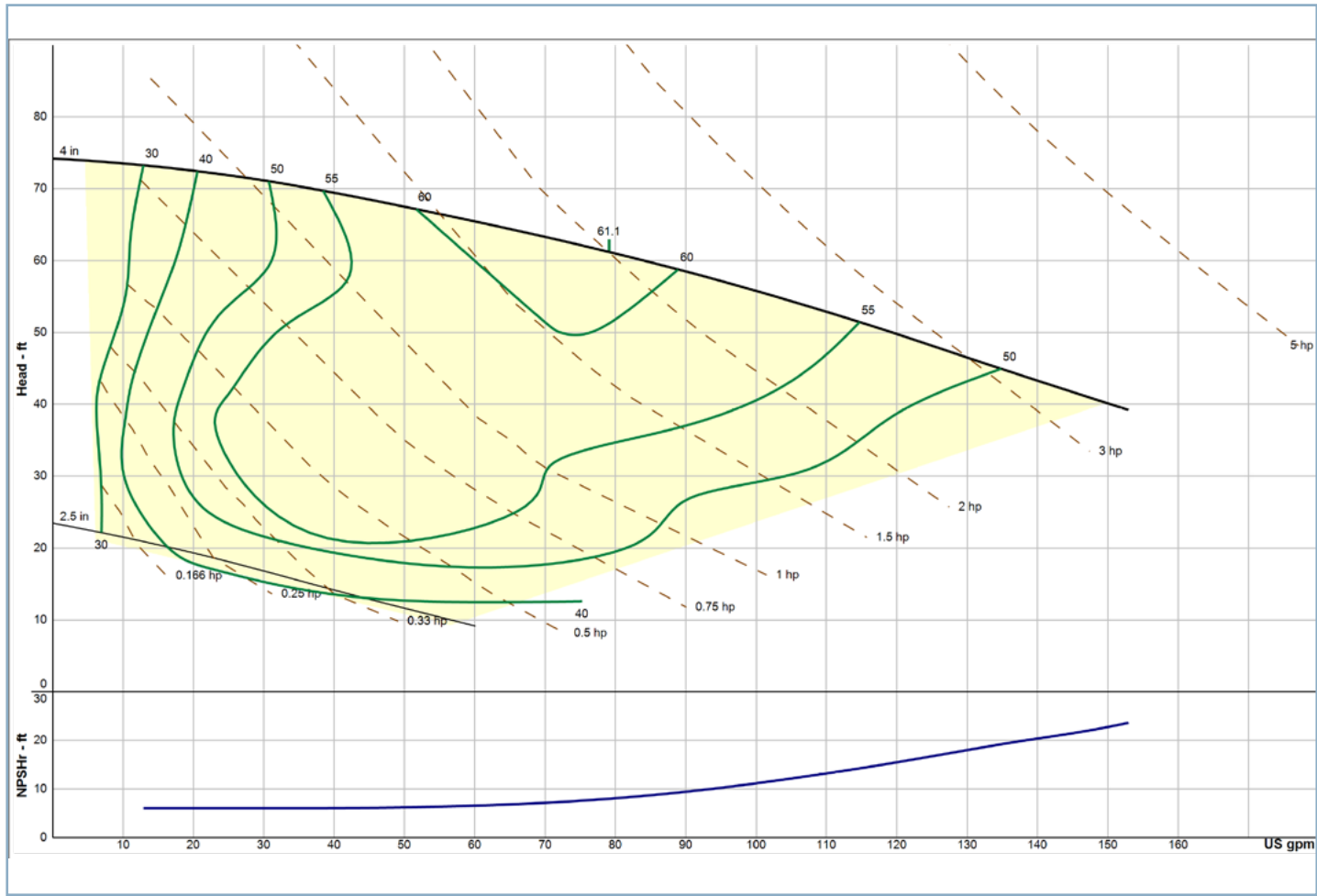
Capacity Curves

MODEL: CB+114

Frequency: 60hz

RPM: 3500

Size: 1.5" x 1.5" x 4"



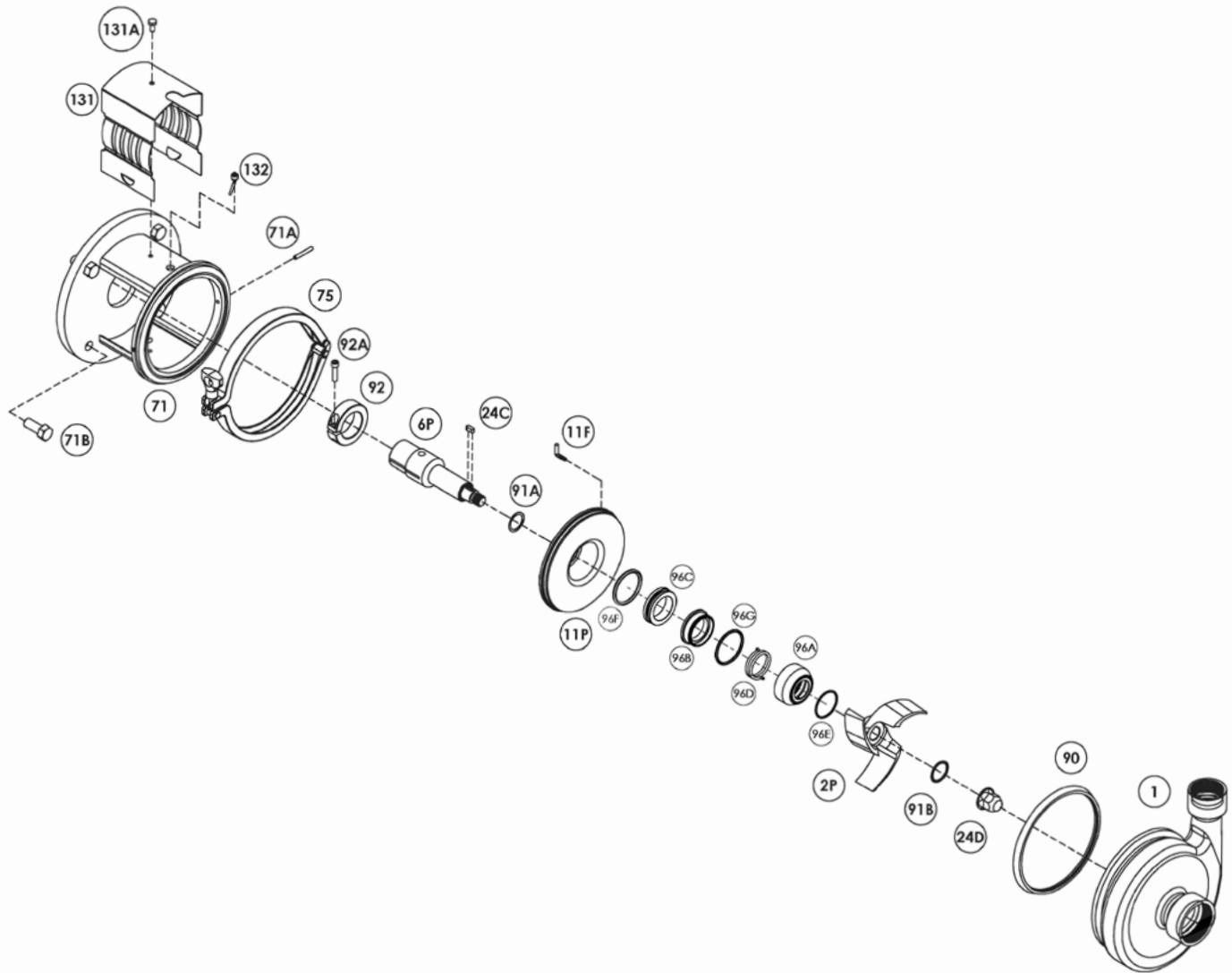


Viscosity and Specific Gravity Table

Product	Specific Gravity	Viscosity
Acetic Acid		
5%	1.01	
10%	1.01	31.7 SSU @ 59°F
50%	1.06	33.0 SSU @ 59°F
80%	1.08	35.0 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	0.93-0.98	15,000 SSU @ 55°F
Butter	0.93-0.98	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
Cream (sweet)	1 0.99 0.99	73 SSU 140 SSU 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
Honey	1.3	1250-1425 SSU @ 100°F
Ice Cream Mix	1.15	1050 SSU @ 46°F
Lard	0.96	287 SSU @ 100°F
Linseed Oil	0.92 - 0.94	143 SSU @ 100°F 93 SSU @ 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 SSU @ 68°F
Molasses		
A. First	1.4 - 1.46	1,300 - 23,500 SSU @ 100°F 700 - 8,160 SSU @ 130°F
B. Second	1.43 - 1.48	6,536 - 61,180 SSU @ 100°F 3058 - 15,294 SSU @ 130°F
C. Blackstrap	1.46 - 1.49	12,190 - 23,500 SSU @ 100°F
Mustard	1	17,000 SSU @ 85°F
Olive Oil	0.91 - 0.92	200 SSU @ 100°F
Peanut Butter	1.2	77,400 SSU @ 110-140°F
Sesame Seed Oil	0.92	184 SSU @ 100°F 110 SSU @ 130°F
Soy Bean Oil	0.91	500 SSU @ 44°F
Tomato Paste	1.14	60M-80M SSU 21M SSU Approx.
Water	1	31 SSU @ 68°F

Figure 5: Expanded View



Part #	Part Name
1.	Casing
90.	Casing Gasket
24D.	Impeller Nut
91B.	Front Gasket
2P.	Impeller
96E.	Rotary Holder O-Ring
96A.	Rotary Holder
96D.	Internal Rotary Spring
96G.	Internal Rotary Face O-Ring
96B.	Internal Rotary Face
96C.	Static Face

Part #	Part Name
96F.	Stactic Face Back O-RIng
11P.	Backplate
11F.	Backplate Pin
91A.	Back Gasket
24C.	Shaft Key
6P.	Stub Shaft
92.	Drive Collar
92A.	Drive Collar Bolt
75.	Clamp
71.	Adapter
71A.	Adapter Pin

Part #	Part Name
71B.	Adapter Mounting Screws
132.	Water Cascade Assembly
131.	Seal Guard Assembly
131A.	Set Screw