



CPE SYSTEMS INC



QIM+214

TECHNICAL SPECIFICATIONS



The QIM+214 is an inline centrifugal mixer designed for applications where product must be homogenized or disintegrated while it is being pumped. Its functionality allows it to be used for powder mixing, flavor addition, emulsifying, solids disintegration, dissolution, and homogenization. Its modular design allows a C+ or CB+ pump to be converted into a QIM+ inline mixer with an addition kit, and the QIM+ to be configured as a QDB+ Dry Blender. Interchangeable stators allow it to be adapted to the product and type of solids being processed.

DESIGN

Clamped Casing: A clamp assembly secures the casing to the adapter, allowing easy removal and 360° discharge positioning. In the lower horizontal position, the casing is self-draining.

Impeller & Shaft Design: The mixer is close coupled to a standard 2-pole motor. Its impeller mounts on a stub shaft that is fixed to the motor shaft by a shaft collar, and it is trimmed to a specific diameter for QIM+ service.

Stator Options: Three interchangeable stator designs are available, each in three opening sizes. Straight radial slots integrate powders and eliminate lumps, small radial holes create emulsions, and large radial holes cut soft solids into smaller particles.

Seal Design: A balanced single internal mechanical seal is self-lubricated by the pumped fluid, and its balanced design withstands overpressure and water hammer. Seal faces are available in SiC/SiC or SiC/Carbon, with EPDM or Viton elastomers.

Hygienic Design: Designed for CIP and COP cleaning, the mixer is currently being certified under 3-A Sanitary Standard 36-01 for Inline Rotor-Stator Mixers.

Dry Blender Configuration: Adding a work table and cone converts the QIM+ into a QDB+ Dry Blender. Its ball valve allows larger solids to pass through without clogging.

FEATURES

- 3-A certification in process (Standard 36-01)
- Three interchangeable stator designs in nine sizes
- Balanced, self-lubricated internal mechanical seal
- SiC/SiC mechanical seal faces (standard)
- Stub shaft with shaft collar
- Convertible from a C+ or CB+ pump with an addition kit
- Convertible into a QDB+ Dry Blender
- Low power consumption
- High flow rates
- Suitable for recirculation applications



TECHNICAL SPECIFICATIONS

Materials	
Parts in contact with product:	316L Stainless Steel
Other steel parts:	304 Stainless Steel
Gaskets in contact with product:	EPDM (standard) Viton (special order)
Mechanical Seal	
Seal Type:	Single mechanical internal seal
Rotary Seal:	Silicon Carbide
Stationary Seal:	Silicon Carbide (standard) Carbon (special order)
Internal Surface Finish:	Ra ≤ 32
Connection Type:	Tri-Clamp
Connection Size:	2" x 1 1/2"
Motor	
Type:	S.S Premium Efficiency
Speeds:	3500 RPM @ 60 Hz
Operating Limits	
Temperature Range:	Up to 248°F (120°C)
Maximum Flow:	420 GPM
Maximum Differential Head:	196 ft
Viscosity:	0 to 600 cP
Powder Suction Rate (QDB+ configuration):	5,688 lb/hr (2,580 kg/hr)
Approvals	
Certification	3-A Sanitary Standard 36-01, Inline Rotor-Stator Mixers



The QIM+214 is available as a pump and motor or as a portable pump assembly. The portable pump assembly includes a VFD, cart, cord, and plug. The portable assembly comes fully programmed and has more voltage options than the pump and motor.

PORTABLE ASSEMBLY COMPONENTS:

- QIM+214 Pump
- Stainless Steel Washdown Motor
- Lenze i550 protec VFD with potentiometer
- Stainless Steel Pump Cart
- Electrical cord and Plug of Choice

PUMP AND MOTOR COMPONENTS:

- QIM+214 Pump
- Stainless Steel Washdown Motor

Motor



STAINLESS STEEL WASHDOWN MOTOR:

- Totally Enclosed Fan Cooled (TEFC)
- Construction Material: 304 Stainless Steel
- NEMA C-Face
- IP69 Rated
- Encapsulated Windings
- Stainless Steel Shaft and Key

Portable Assembly Options

Horsepower	Available Motor	Cart	Available Voltages
3 HP	Stainless Steel Washdown Motor	Medium Duty Cart	230 volt single phase 230 volt three phase 460 volt three phase 575 volt three phase
5 HP	Stainless Steel Washdown Motor	Medium Duty Cart	230 volt three phase 460 volt three phase 575 volt three phase



LENZE Variable Frequency Drive

The Lenze i550 protec is our new inverter series in the ½ HP to 20 HP range. The series is available in 115, 230, 460, and 575 volt, 60 Hz, with 1 phase and 3 phase input. Voltage and phase options for each portable assembly depend on the model and motor horsepower. 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, the included potentiometer, or a remote control (the remote control is available at additional cost). Our portable mixer and blender assemblies feature this VFD, allowing the speed to be adjusted to suit the product and process.

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:	3 to 5 HP
1Ø/3Ø Input:	1Ø 230 VAC, 50/60 Hz 3Ø 230/460/575 VAC, 50/60 Hz
3Ø Output:	208-230/460/575 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, 1x relay output
Communication Networks:	CANopen, Modbus RTU, Modbus TCP, IO-Link, EtherCAT, EtherNet/IP, PROFINET
Approvals:	CE, UL, CSA, EAC, RoHS

Medium Duty Cart



Custom designed for the craft food and beverage industry, this is our smallest pump cart, built for pumps 3 to 5 HP. This cart is aerodynamic, tilt draining, maneuverable, and has a small footprint. All parts are hand welded in Canada for quality assurance and durability.

Frame:	16 ga stainless steel round tube with foot
Handle:	16 ga stainless steel round tube
Platform:	11 ga stainless steel AISI 304 Pre-drilled to fit 184 and 213 NEMA frames
Axle:	½" stainless steel rod axle
Wheels:	8" Duraflex rubber wheels

The QIM+ Series inline mixers are available with three stator designs: straight radial slots, small radial holes, and large radial holes. Each design comes in three opening sizes, so the stator can be matched to the product being processed. The stators are interchangeable, allowing a single mixer to handle a wide range of products and processes.

Available Stators



STRAIGHT RADIAL SLOTS:

- **Type No. / Opening Size:**
 - Type 1 (1/8")
 - Type 2 (3/16")
 - Type 3 (1/4")
- **Suggested Application:** Powder mixing and lump disintegration
- **Typical Products:** Fine powders such as sugar and flour, milk hydration



SMALL RADIAL HOLES

- **Type No. / Opening Size:**
 - Type 10 (1/8")
 - Type 11 (3/16")
 - Type 12 (1/4")
- **Suggested Application:** Emulsification
- **Typical Products:** Oils, creams, colorants, aromas, mayonnaise



LARGE RADIAL HOLES:

- **Type No. / Opening Size:**
 - Type 13 (3/8")
 - Type 14 (5/8")
 - Type 15 (7/8")
- **Suggested Application:** Chopping soft solids into smaller particles
- **Typical Products:** Fruits, chilies, beans

Applications

The QIM+ pairs a semi-open impeller with a perforated stator. The impeller blades turn at high speed with a minimal clearance from the stator's perforated outer ring, without touching it. As product flows radially through the openings, this creates a shear effect that mixes, emulsifies, or breaks down the product.

Category	Typical Uses
Processes:	Powder mixing, flavor addition, emulsifying, solids disintegration, dissolution, homogenization
Food:	Pastas, sauces, dressings, purees, pulps, puddings, jellies, confectionery
Dairy:	Ice creams, ice cream mix
Brewing & Beverage:	Hop shearing during dry hopping; mixing powders, flavorings, purees, or syrups into beer; brine and glucose solutions; syrups; yeast
Personal Care:	Cosmetics, creams



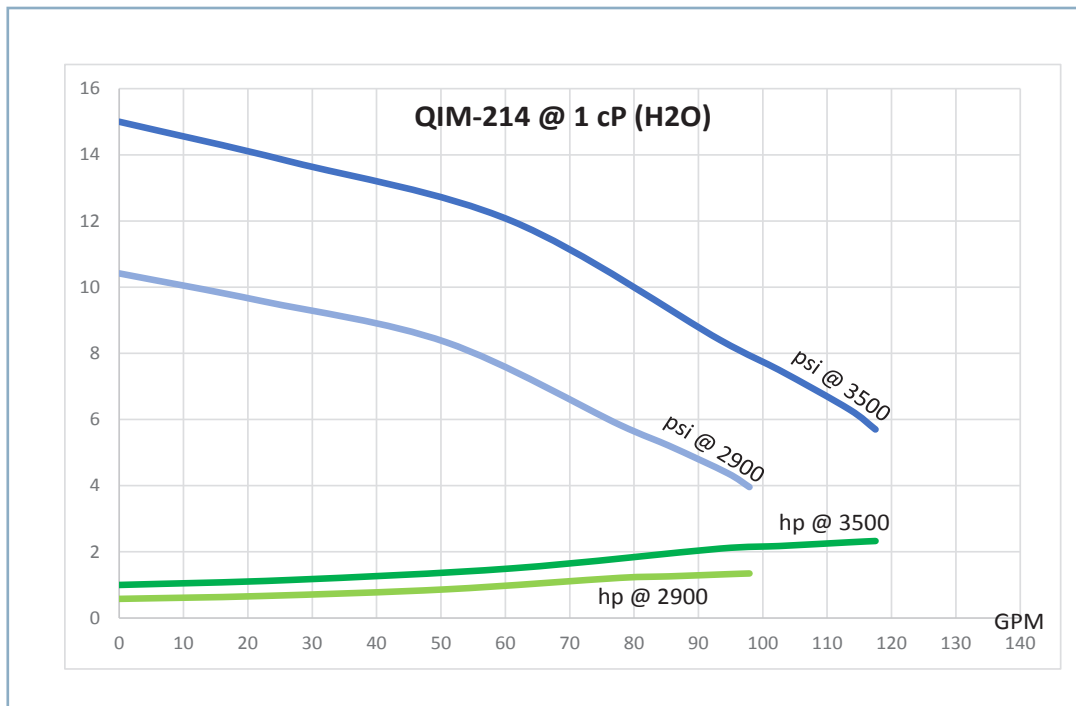
Capacity Curves

MODEL: QIM+214

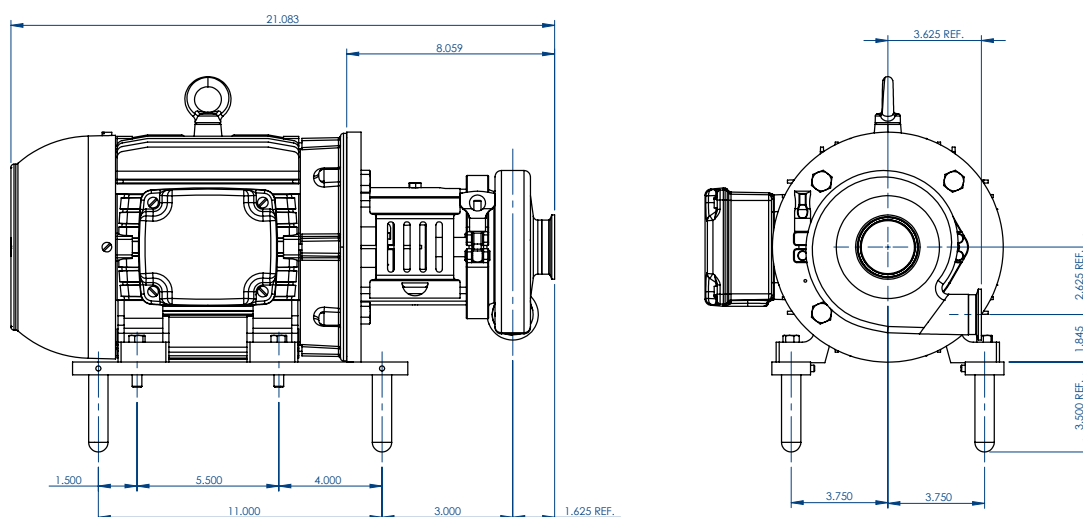
Frequency: 60 Hz & 50 Hz

RPM: 3500 & 2900

Size: 2" x 1.5"



Dimensions



Exploded view



This exploded view diagram illustrates the assembly of a motor. The components are labeled as follows:

- Motor Housing and Base:** 1 (Motor), 25 (Base), 24D (Base Flange), 90A (Base Flange), 91B (Base Flange), 96 (Shaft Seal), 96H (Shaft Seal), 11A (Shaft Seal), 11F (Shaft Seal), 24C (Shaft Seal), 92 (Shaft Seal), 75 (Shaft Seal), 71C (Shaft Seal), 71B (Shaft Seal), 71 (Shaft Seal), 71A (Shaft Seal).
- Motor Frame and Mounting:** 133 (Motor Frame), 131 (Motor Frame), 209B (Motor Frame), 209 (Motor Frame), 207 (Motor Frame), 209A (Motor Frame), M (Motor Mounting), 131 (Motor Mounting).
- Motor Assembly:** 133 (Motor Assembly), 131 (Motor Assembly), 209B (Motor Assembly), 209 (Motor Assembly), 207 (Motor Assembly), 209A (Motor Assembly), M (Motor Assembly), 131 (Motor Assembly).
- Motor Components:** 96F (Motor Component), 96C (Motor Component), 96G (Motor Component), 96B (Motor Component), 96D (Motor Component), 96A (Motor Component), 96E (Motor Component).

Part #	Part Name
96E.	Rotary holder O-ring
96F.	Static single seal O-ring
96G.	Rotary single seal O-ring
96H.	Seal pin
96I.	Rotary double seal face
96J.	Double seal spring
96K.	Rotary double seal O-ring
96L.	Double seal rotary holder
96M.	Set screw
96N.	Static double seal face
131.	Guard
133.	Hexagonal screw
207.	Leg
209.	Bracket
209A.	Hexagonal screw
209B.	Hexagonal screw