
Installation, Operation, and Maintenance Manual

Coramix Series Q2 Series/Q-Pumps QIM Series



Danger

Read this manual before unpackaging and installing the equipment. Failing to do so can result in serious injury, and/or damage to the equipment.

Notes:

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Introduction

Equipment Description:

The Coramix Q2 series is an inline high shear mixer, or shear pump which produces excellent emulsions, dispersions, blends, and similar mixing results with a wide variety of products. Options for different stators include holes or slots, in various sizes of openings. The design of the mixer meets design criteria for hygienic process equipment according to EHEDG, 3A Sanitary Standards, and ASME.

Mixer Construction:

The Coramix Q2 series is a close coupled mixer design, which means that the drive shaft is directly mounted to the motor shaft, it is directly built off the motor frame and shaft. The mixer's drive shaft is mounted to the motor shaft, by sliding over it, and then is compressed to the motor shaft with a collar. The rotor is mounted on the driving shaft, and rotates within the stator, having only a small clearance between the two. The mixer housing is mounted to a adapter, which bolts to the motor flange. A single mechanical seal provides sealing between the stationary and rotating parts.

Mixing Tools:

The standard mixing tool provided with the Q2 series of mixers has a rotor (impeller) and stator that is a cylinder with either holes or slots, of varying widths.

Operating Limits:

Maximum Pressure Mechanical Seal..... 75 psi (5.3 bar)
Maximum Temperature..... FKM: 250°F (120°C), TFE/P: 320°F (160°C), FFKM: 320°F (160°C)

Standard Features and Options:

Standard features and options are provided below (other options available upon request):

Feature	Standard	Options
Mixing Tool	Type 1H: 1/3" (3mm) holes	Type 1S: 1/8" (3mm) slots Other larger slots and holes on request
Inlet and Outlet	Sanitary Clamp	ANSI 150# NPT
Materials of Construction Product contact: Non-contact:	316 stainless steel 304 stainless steel	NA NA
Dynamic Seal	Single Mechanical: QBVMG	QQVMG
O-rings	FKM	EPDM, FFKM, Others upon request
Motor: prem. eff., inv. duty Frame Voltage Construction Classification	Footed, C-Face 208-230/460 Painted Alum. or carbon steel Class I Division 2	IEC D-Flange Upon request Stainless steel (IP66) Class I, Division 1, Groups C&D
Base Frame	None	Base Plate, Mobile Cart (both 304 SS)

Safety

READ AND UNDERSTAND THIS MANUAL PRIOR TO INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT

Coramix recommends users of our equipment follow the latest Industrial Safety Standards. At a minimum, these should include the industrial safety requirements established by:

1. Occupational Safety and Health Administration (OSHA), Title 29 of the CFR Section 1910.212- General Requirements for all Machines
2. National Fire Protection Association, ANSI/NFPA 79
ANSI/NFPA 79- Electrical Standards for Industrial Machinery
3. National Electrical Code, ANSI/NFPA 70
ANSI/NFPA 70- National Electrical Code
ANSI/NFPA 70E- Electrical Safety Requirement for Employee Workplaces
4. American National Standards Institute, Section B11

Attention: Servicing energized industrial equipment can be hazardous. Severe injury or death can result from electrical shock, burn, or unintended actuation of controlled equipment. Recommended practice is to disconnect and lockout industrial equipment from power sources, and release stored energy, if present. Refer to the National Fire Protection Association Standard No. NFPA70E, Part II and (as applicable) OSHA rules for Control of Hazardous Energy Sources (Lockout-Tagout) and OSHA Electrical Safety Related Work Practices, including procedural requirements for:

- Lockout-tagout
- Personnel qualifications and training requirements
- When it is not feasible to de-energize and lockout-tagout electrical circuits and equipment before working on or near exposed circuit parts

Locking and Interlocking Devices: These devices should be checked for proper working condition and capability of performing their intended functions. Make replacements only with the original manufacturer's renewal parts or kits. Adjust or repair in accordance with the manufacturer's instructions.

Replacement Equipment: Use only replacement parts and devices recommended by the manufacturer to maintain the integrity of the equipment. Make sure the parts are properly matched to the equipment series, model, serial number, and revision level of the equipment.

Warnings and cautions are provided in this manual to help avoid serious injury and/or possible damage to equipment:



Danger

DANGER indicates a hazardous situation which, if not avoided, could result in serious injury or death.



Caution

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice

NOTICE indicates information considered important but not directly hazard related (e.g. security, hygiene, equipment or property damage).

Receiving the Equipment and Warranty

Shipping Damage or Loss:

After receiving the mixer, visually inspect for damage or loss. If equipment is damaged or lost in transit, file a claim at once with the delivering carrier. The carrier has signed the Bill of Lading acknowledging that the shipment has been received in good condition. Coramix is not responsible for the collection of claims or replacement of materials due to transit shortages or damages

Warranty:

Seller warrants its products to be free from defect in materials and workmanship for a period of one (1) year from the date of shipment. This warranty shall not apply to products which require repair or replacement due to normal wear and tear or to products which are subjected to accident, misuse or improper maintenance. This warranty extends only to the original Buyer. Products manufactured by others but furnished by Seller are exempted from this warranty and are limited to the original manufacturer's warranty.

Seller's sole obligation under this warranty shall be to repair or replace any products that Seller determines, in its discretion, to be defective. Seller reserves the right either to inspect the products in the field or to request their prepaid return to Seller. Seller shall not be responsible for any transportation charges, duty, taxes, freight, labor or other costs. The cost of removing and/or installing products which have been repaired or replaced shall be at Buyer's expense.

Seller expressly disclaims all other warranties, express or implied, including without limitation any warranty of merchantability of fitness for a particular purpose. The foregoing sets forth Seller's entire and exclusive liability, and Buyer's exclusive and sole remedy, for any claim of damages in connection with the sale of products. In no event shall Seller be liable for any special consequential incidental or indirect damages (including without limitation attorney's fees and expenses), nor shall Seller be liable for any loss of profit or material arising out of or relating to the sale or operation of the products based on contract, tort (including negligence), strict liability or otherwise.

Warranty Claims:

Warranty claims must have a Returned Goods Authorization (RGA) from the Seller before returns will be accepted.

Claims for shortages or other errors, exclusive of transit shortages or damages, must be made in writing to Seller within ten (10) days after delivery. Failure to give such notice shall constitute acceptance and waiver of all such claims by Buyer. Claims must be emailed to sales@Coramix.com

Installation



Danger

Read this manual before unpackaging and installing the equipment. Failing to do so can result in serious injury, and/or damage to the equipment.

Installation Drawing:

Due to the various sizes and options that can change the dimensions of the mixers, a specific installation drawing will be provided for the mixer that was purchased. The drawing will be provided prior to shipment, and may be sent earlier upon request.

Unpacking:

Remove all crating, strapping, and plastic wrap. If the unit is mounted to a pallet or skid, remove any wood blocks and screws that are holding the equipment in place. Remove any protective caps from inlet, outlet, and fittings.

Lifting:

The mixer should only be lifted by using the eyebolt that is provided on the motor, or with appropriately rated straps, if no eyebolt is provided with the motor. The strapping should be placed around the motor and the lantern of the mixer, to provide two points of lift for stability.



Danger

Do not place any part of your body below the mixer while it is being lifted. Keep hands and fingers away from mixer as it is being lowered into position. Appropriate safety gear should be worn at all times, including a hard hat, and protective shoes.

Mixer Location:

The following considerations should be addressed when determining a location for the installation of your mixer.

- Locate mixer as near as practical to the liquid supply.
- Keep supply piping short and straight to keep mixer supplied with liquid and prevent damaging cavitation.
- Mixer should be accessible for service and inspection during operation.
- Motor must be protected from flooding.

Mounting the Mixer:

If supplied without a base, the mixer can be secured to the floor using a grouted pad, and with bolts secured to the pad. The mixer must be leveled to ensure proper operation. If a base was supplied with the mixer, it may be set directly on the floor, and leveled.

Process Connections:

The following considerations should be addressed when determining supply/discharge piping and valve installation of your mixer:

- Connections to the inlet and outlet of the mixer should be made using piping or hose that is rated for the same, or greater, pressure and temperature that the mixer is rated for.
- The inlet and outlet piping should be properly supported, and not apply any load on the mixer.
- The housing of the mixer can be rotated every 90 degrees to allow the outlet flange to be positioned in four different locations, the standard position is 0 degrees, or in the vertical position, pointing up.
- Keep the supply line as short and straight as possible and use as few elbows, valves or other types of restriction as possible, also avoid up and down rises which will trap air.
- It is recommended the size of the piping be at least one pipe size larger than the largest of the connections sizes on the mixer inlet.
- Be certain all joints in the suction line are well sealed to prevent air leaks.
- The inlet piping should have at least eight diameters of straight piping going to the inlet of the mixer.
- The mixer should also be properly isolated from excessive vibration or loads created by thermal expansion in piping, it is recommended that the mixer be isolated by using flexible connectors at the inlet and outlet.
- If a reducer is connected to inlet, use eccentric type to prevent problems due to trapped air, with the straight side on top.
- Placing valves at the inlet and outlet will allow the mixer to be isolated so that if maintenance is required, the lines do not have to be completely drained.



Notice

Do not install any system throttling valves or similar devices to control flow rate in the supply line. Restriction in the supply line may cause cavitation and mixer damage.

- Any system throttling valves or similar devices to control flow rate must be installed in the discharge line.
- If the connections on the mixer are sanitary clamp flanges, it is recommended to use a heavy-duty sanitary clamp, and gasket, that are rated for the maximum pressure that the mixer is rated for. If the mixer is supplied with ANSI flanges, then use the fasteners as dictated by ASME standards for flanged connections.

Electrical Connections:

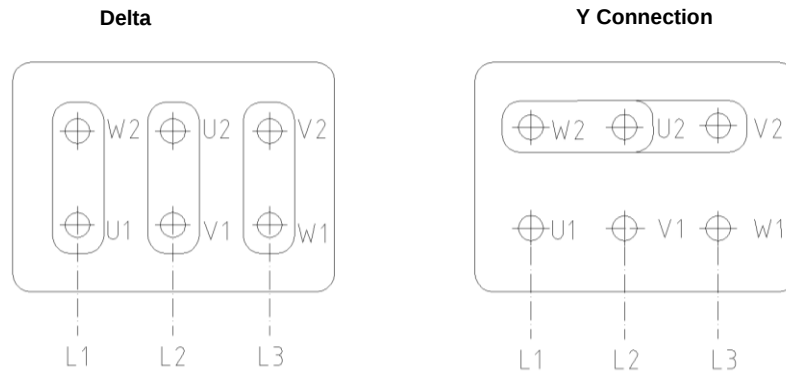


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To avoid electrocution, ALL electrical installation should be done by a registered Electrician, following Industry Safety Standards. All power must be OFF and LOCKED OUT during installation.

Read motor manufacturer's instructions before making installation. Check motor nameplate to be sure motor is compatible with electrical supply and all wiring, switches, starters. Make sure all overload protections are correctly sized. Wiring and conduit should be installed according to electrical codes. The mixer should be properly grounded, a grounding lug is located on the foot of the motor for motors that are classified.

The connections shown in the figure below are the two common three phase power connections. Please compare these with those in the terminal box on the motor. Wire the motor according to the diagram provided by the motor manufacturer.



Start Up, Operation and Shutdown

Before Starting the Machine:

Clean the mixer and piping, including all product contact parts prior to first operation. The mixer and piping should be thoroughly cleaned of any materials which could have accumulated during installation.



Danger

To prevent an accidental start-up the power source should be locked out using your lock and key.

Bump Test:

The direction of rotation must be determined before starting the mixer. If the direction is incorrect, it is possible that components will come loose, and damage the mixer. First fluid must be supplied to the mixer, either by filling it with water, or opening the supply valve to allow product to fill the mixer housing.



Danger

The mixer must be filled with fluid prior to starting it. Ensure that there is sufficient fluid to cover the entire seal, and completely fill the mixer housing, or damage will occur to the mixer.

To determine the direction of rotation, momentarily start the motor so it causes it to rotate but does not actually start. Visually inspect the direction of rotation of the shaft at the fan end of the motor, or in the lantern where the seal is located. The direction of rotation must be in the direction that is indicated on the arrow label that is on top of the motor. If the direction is incorrect, reverse leads, and repeat the test. Alternatively, the direction may be changed by the direction setting, if a variable frequency drive is utilized. See the manufacturer's manual for instructions.



Notice

The direction of rotation must be determined before starting the mixer. If the direction is incorrect, it is possible that components will come loose, and damage the mixer.

Preliminary Test Run:

The mixer should be tested using a preliminary run with the materials that will be pumped. DO NOT run the mixer at this time to produce final product. Certain fluid properties can overload the motor, such as viscosity, specific gravity, and rheological properties (eg. shear thickening). Operate the mixer under process conditions and check motor amp draw versus nameplate full load rating. If amp draw exceeds motor rating, try reducing the flow rate, or reducing the speed, if the motor amps are still above the rated amps, a motor change is required. If process conditions and/or the liquid changes, such as higher viscosity or higher specific gravity, recheck motor amp draw.

Starting the Mixer:

The following is the procedure for starting the mixer:

- Prime the mixer by flooding the mixer housing with liquid BEFORE starting the mixer
- Start the motor and check rotation of motor to make sure it's the same as the arrow on the motor
- Check the mixer to see that liquid is flowing and that all piping connections and seals are leak free
- Make sure that the mixer is not operating against a closed discharge. Continued operation against a closed discharge will heat liquid to boiling and lead to mixer damage
- Inspect all connections, and the sealing area for leaks, and correct as required
- If there is excessive vibration, noise or heat, shut down the mixer immediately and contact Coramix's service department at 910-225-4080

A small amount of leakage will occur behind the seal, this is normal. Initially it will be slightly higher until the seal faces seat themselves. Once the seal faces are seated, the leakage will reduce to a small drip, the frequency of the drips is dependent on the operating pressure, as well as the fluid properties.

Cleaning:

The following considerations should be addressed when manually cleaning your mixer.

- Do not use toxic and/or flammable solvents.
- Lock out electrical power and shut off all air prior to cleaning equipment.
- Keep electrical panel covers closed and power off when washing equipment.
- Never attempt cleaning equipment while it is operating.
- Wear proper protective clothing.
- Cleaning-In-Place (CIP) When performing CIP do the following:
 - ✓ Make certain that all connections in cleaning circuit are properly applied and tight to avoid contact with hot water or cleaning solutions.
 - ✓ When cleaning cycle is controlled from remote or automated cleaning center, establish safe procedures to avoid automatic start-up while servicing equipment in the circuit.

Maintenance and Repair

Routine Maintenance:

The Coramix mixers offer a robust design, that requires very little routine maintenance.

Motor: motor maintenance requirements are specific to the motor manufacturer and model. Please refer to the manufacturer's maintenance guidelines provided in the motor manual, or information provided on the motor manufacturer's website.

Dynamic Seals: the seal of a mixer is considered a wear component, but with proper operation, and cleaning, dynamic seals can provide a long life of trouble-free operation. The life of the seal often depends on the products that are being processed, and the operating conditions. Products that are self-lubricating and have no abrasives will provide for the longest seal longevity. In most cases, the mixer should never be run without fluid in the mixer. *Single Mechanical* seals should never be run dry, doing so will cause immediate seal failure, and possible damage to other components of the mixer



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To prevent an accidental start-up the power source should be locked out using your lock and key.

Cleaning: After completing production operations, the mixer should always be thoroughly cleaned, according to the necessary cleaning protocols. Never leave product in the mixer after completion of production, the fluid could solidify, or solids could permeate the seal's contact faces, causing immediate damage upon start up.

Dynamic Seal Inspection and Replacement:

The area that has the most potential for problems for any mixer or rotating fluid machine is the dynamic seal. A small amount of leakage is common and can result in small amounts of fluid dripping from the rear of the seal area. The seal area should be checked routinely and monitored to determine if the seal is leaking excessively or has been damaged. It is recommended that the seal area be visually inspected after starting the mixer, and then checked again after running for at least an hour.

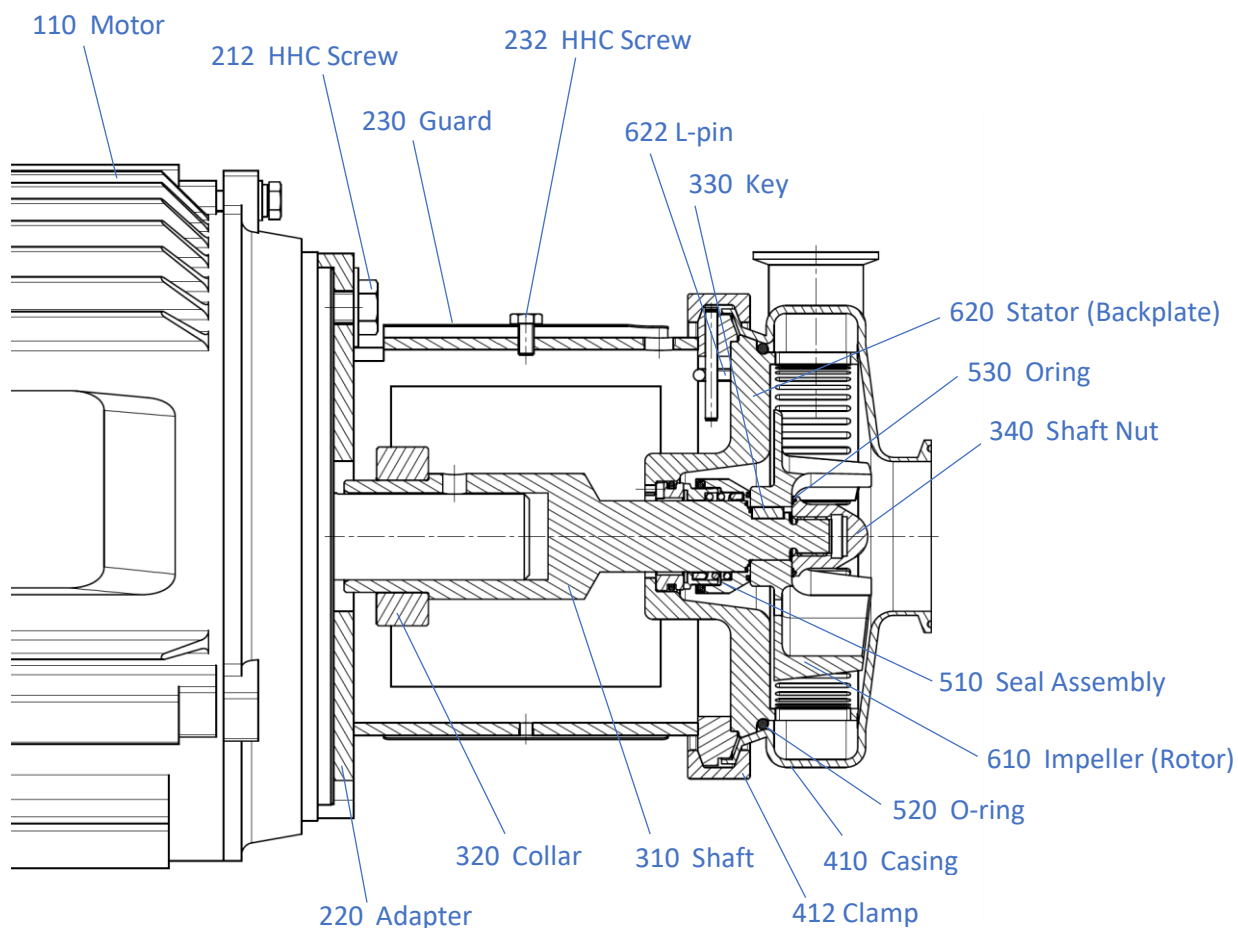
If the mixer was operating incorrectly, or if the product is causing excessive wear of the seal, then an increase in fluid leakage will become apparent. If leakage becomes excessive, the seal will need to be replaced.

The next sections provide guidelines on removal and installation of the seal.

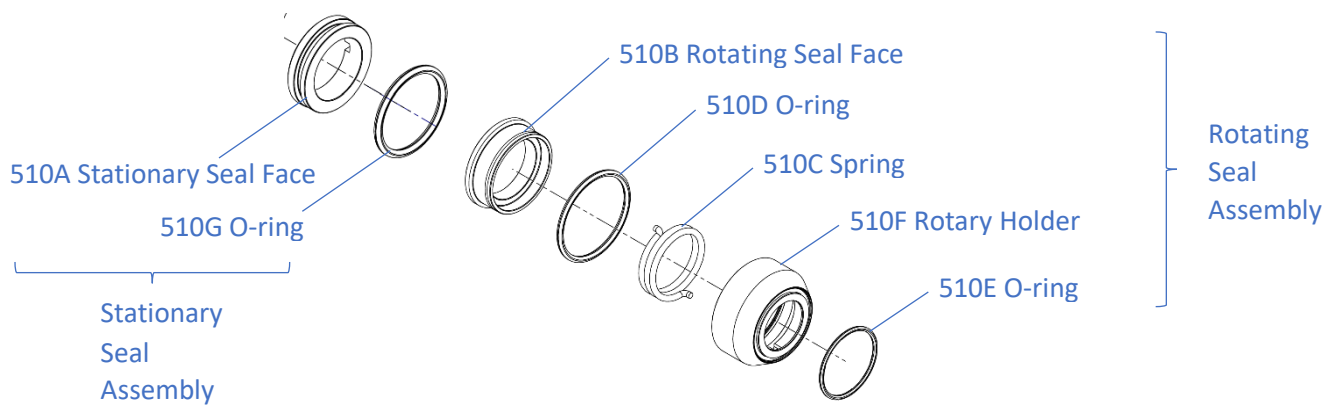
Parts Description:

The Coramix Q2 mixers have the same general construction for all sizes and options. On the following page is a cross-section view, which provides the item numbers for the various components. Although there may be differences between the image below and the mixer you have purchased, the parts locations and assembly are the same. To determine the specific part numbers for the mixer that was purchased, please reference the detailed parts lists located in Appendix A.

Assembly Drawing



Mechanical Seal Assembly Drawing



Disassembly Instructions:



Danger

To prevent an accidental start-up the power source should be locked out using your lock and key.

Isolate the mixer from the product, for both the inlet and outlet.

Recommended tools:

1. Adjustable torque wrench, 10-50 ft-lb (13-70 N-m)
2. 6" extension
3. Socket Set (imperial), also metric if motor is IEC
4. Hex driver set (imperial)
5. Steel rod, 3/8" dia. X 6" long (minimum)
6. Level
7. Pliers
8. Silicone Oil or O-ring Lubricant (Food Grade if FDA facility)
9. Silicone Grease (Food Grade if FDA facility)

Note: Disconnect power and lock out power. If piped, shut valves at inlet and outlet of the mixer, and disconnect the supply and discharge lines to the mixer.

1. Remove the guard bolt (232) and the guard (230)



2. Unscrew the butterfly nut on the clamp (422), by turning counter-clockwise, and remove the clamp and housing (410). If the casing (410) cannot be removed by hand, use two plastic pry bars to pry the edges of the casing (410), and release it from the stator (620). The o-ring (520) should also be removed.



3. To remove the shaft nut (340), you must hold the shaft by placing a 3/8" rod (or similar) into the hole located on the side of the shaft (310). To remove the shaft nut (340), first retain the shaft (310) by placing a piece of 3/8" dowel rod or screwdriver into the hole on the shaft (310). This will prevent the shaft from rotating while removing the shaft nut (340).



4. Turning clockwise, remove the shaft nut (340). The shaft nut gasket (530) will either be on the shaft nut (340), or the impeller (610), remove it (Note: Q2L and Q20 models have an oring on the nut)



5. Remove the impeller (610) by pulling away from the mixer. The key (330) will sometimes fall out when the impeller is removed, if it does not, slight push in on the seal assembly (510) with one hand, and remove the key with your other hand.



6. To remove the stator (620), and the stationary seal, turn the stator clockwise a quarter of a turn, or until you feel it come loose. While holding the seal assembly with one hand, slowly pull the stator and seal assembly off of the shaft, being very careful not to allow the seal assembly to fall out of the stator. Place the rotating seal assembly on a clean surface, with the seal face facing up, note that even a slight scratch on the seal face will make it unusable.



7. To remove the shaft (310), you must first loosen the socket head bolt on the collar (320). Once they it sufficiently loosened, slide the shrink disc (320) off the shaft (310). Now pull the shaft (310) away from the motor to remove it. If the shaft (310) cannot be pulled off by hand, tap on the shaft area closest to the motor (110) in several locations, and then try to remove the shaft (310). If the shaft (310) still will not pull off by hand, then use two pry bars placed between the base of the shaft and the motor housing and pry the shaft away from the motor (110) to remove it.



8. The adapter (220) can be removed by removing the bolts (212) and pulling the assembly off the motor (110). If replacing the motor (110), proceed to the assembly instructions below.



Assembly Instructions:



Danger

To prevent an accidental start-up the power source should be locked out using your lock and key.

Isolate the mixer from the product, for both the inlet and outlet.

Recommended tools:

Adjustable torque wrench, 10-50 ft-lb (13-70 N-m)

1. 6" extension
2. Socket Set (imperial), also metric if motor is IEC
3. Hex driver set (imperial)
4. Steel rod, 3/8" dia. X 6" long (minimum)
5. Level
6. Pliers
7. Silicone Oil or O-ring Lubricant (Food Grade if FDA facility)
8. Silicone Grease (Food Grade if FDA facility)

Note: All bolts and nuts should be torqued to the value that is required for the given size of the bolt or nut. These values can be found in Appendix C. The size of the bolt or nut is indicated in the parts list that is located in Appendix A.

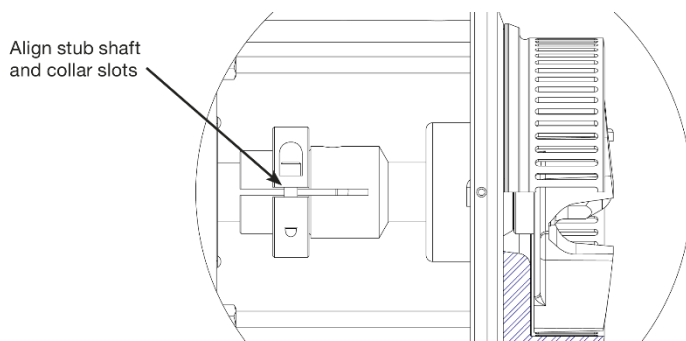
1. Mount the adapter (220) onto the motor (110) by sliding the assembly over the flange that is on the motor (110), aligning the holes of the assembly, with the holes on the motor face. Now install the bolts (212). Torque the bolts as specified below.



Chart 1 – Torque values for tightening the adapter screws

Torque ft-lb	Models NEMA	Models IEC
20	Frame 56 to 14	Frame 80 to 90
55	Frame 18 to 25	Frame 110 to 160
70	Frame 28	Frame 180
110	Frame 32 to 36	Frame 200 to 225

2. Slide the collar (320) over the shaft (310) and tighten socket head bolt just enough so it holds the collar seated against the shoulder, and with the slots of the shaft and collar aligned as shown below. Note that if it is tightened too much, the shaft will not slide onto the motor shaft. Then slide the shaft (310) and collar (320) over the shaft of the motor (110), on some models the shaft and collar will need to be angled until the collar clears the pins on the adapter. Do not tighten at this time.

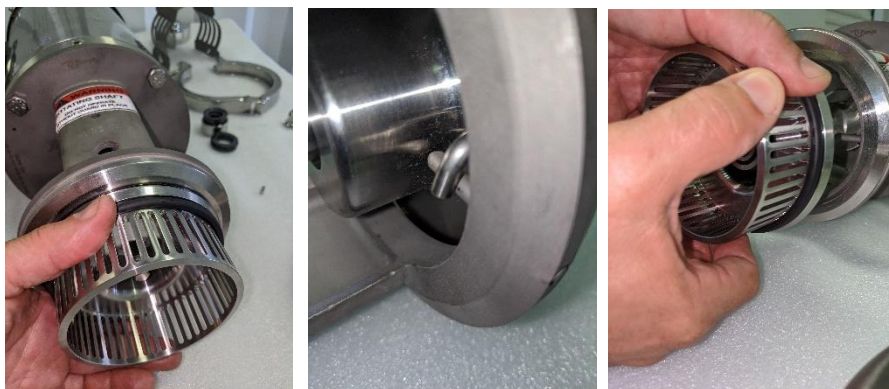


3. If you are not replacing the stator (620) or the seal assembly (510), go to step 6 below.
4. If you are not installing a new stator (620), also referred to as backplate, the L-pins will already be adjusted, go to the step. If you are replacing stator and not the seal assembly, you will need to push the stationary seal face and o-ring out of the old stator (620). Using your fingers, press the seal face out of the stator from the back, working around and rotating the stator so that it gradually forces the seal out. If the seal will not come out by hand, use a small plastic prybar or something similar to try to wedge a gap between the stator and the seal face. Be very cautious when using any tools on the seal faces, they are very brittle, and will crack very easily. Also remember to never use tools on the smooth face of the seal faces, even a slight scratch will make the seal unusable. Also remove the o-ring (550) from the old stator and install it on the new stator.



Now the L-pins can be adjusted. When looking at the back of the stator, the L-pins should be threaded into the stator until only a couple of threads are exposed, and both L-pins are facing towards the clockwise direction. Holding the stator (620) so the L-pins are in the back, and at the 12 and 6 o'clock positions, insert the stator (620) into the adapter (220) until it stops. Now turn the stator (620) counter-clockwise until it stops. Look to see if the L-pins are seated properly against the pins inside of

the adapter. If they are not, adjust them by either threading or unthreading them. If they cannot seat properly, then you may need to bend them in or out as needed using pliers to bend them. Once they are seated properly, move the stator in and out from the adapter to see if there is any movement on either side. If it is loose, remove the stator and bend the pin inwards on the loose side, or both if both sides are loose. Once the stator fits snugly against the adapter with the pins holding it, remove the stator and go to the next step.



5. Now you will need to install the stationary seal face and o-ring into the stator (620). If it is a new seal, the seals are supplied partially assembled, so the o-ring will already be in the stationary seal face as shown below. Use your finger to apply a light coat of oil to the area will the seal face seats. Place the stator on a smooth hard surface. Align the slot on the seal face with the pin located inside of the stator and place the seal face inside the stator bore with the smooth surface facing up. With clean hands or using a clean cloth to protect the seal face, press the seal face into the stator until you feel it seat against the back surface. Turn the stator over and inspect the seal face to see if it is completely seated, and there is no uneven spacing between the seal face and the stator, as shown below.

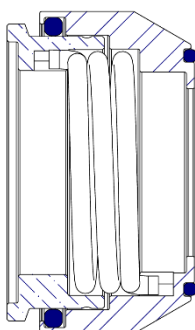


6. Install the stator (620), with the seal face and o-ring installed, onto the adapter (220) by sliding it on the seat of the adapter until it stops. Then rotate the stator counter-clockwise until it seats.

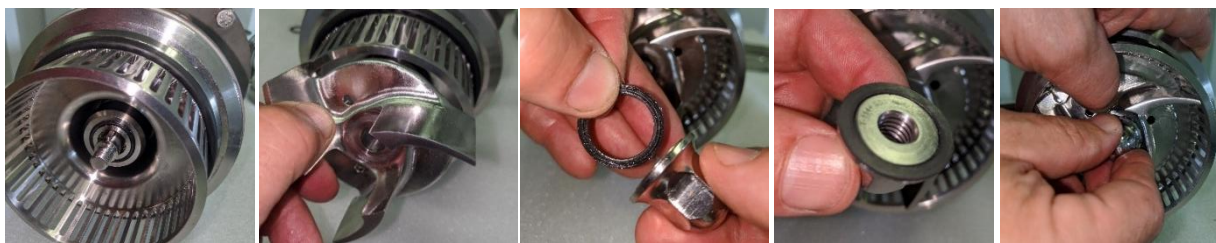


Push in and out on the stator to make sure that it is not loose. If it is loose, refer to step 4 on adjusting L-pins. The space between the stator and the motor adapter should be uniform around the entire circumference, an uneven space indicates that the stator is not seated properly.

7. Now the shaft (310) needs to be positioned and tightened onto the motor shaft (110). Pull the shaft out, away from the motor until it stops. Insert the rotary seal assembly onto the shaft, this consists of the assembly shown below.



8. Now install the key (330), making sure the key is seated properly in the keyway on the shaft. Then slide the impeller (610) onto the shaft, while holding the shaft in place. Prepare the shaft nut (340) and shaft nut gasket (530) for installation, by placing a few drops of food grade grease into the gasket groove, and placing the gasket into the groove, run a finger along the gasket to ensure it is properly seated into the groove. Note that the smooth side of the gasket should be facing out and visible, as in the picture. Thread the shaft nut (340) onto the end of the shaft, while pushing in on the impeller to compress the seal.



9. Secure the shaft using the 3/8" rod, by inserting it into the hole on the shaft. Use the torque wrench and socket to torque the nut while holding the shaft in place with the 3/8" rod, torque the shaft nut (340) to 25 ft-lb (34 N-m) for model Q21, and 40 ft-lb (54 N-m) for all other models.



10. Now move the shaft assembly back towards the motor until the end of the impeller blades are flush with the end of the stator (620). Feel the ends of each blade, and make sure that none are extending beyond the end of the stator. Usually there is one that is slightly longer than the others, make sure it is flush. You will need to hold the impeller in position, or clamp it in place using an adjustable clamp. Tighten the collar hex head screw to the torque specified in the table below, according to the motor size.

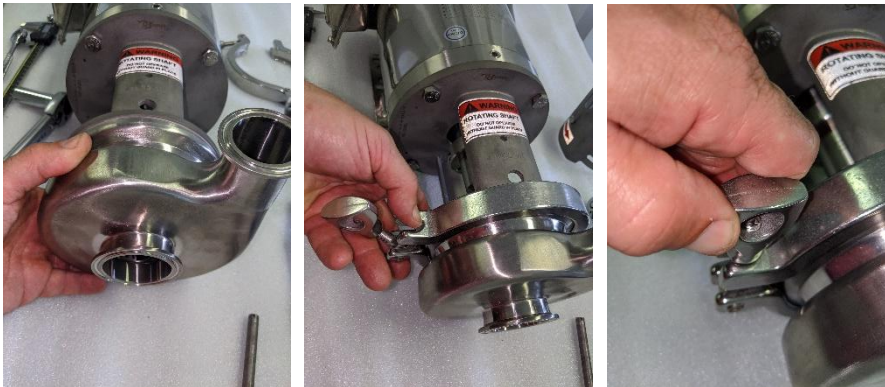


Torque ft-lb	NEMA Frame	IEC Frame
13	56 - 18	80 - 112
30	21 - 25	132 - 160
35	28 - 32	180 - 225

11. Now install the guard (230) by placing the tabs inside the bottom cross support of the adapter (210), and the pushing down on the top of it while threading the guard screw (232) into the adapter (210). Fully tighten the screw using either a wrench or socket wrench.



12. Now install the casing (410) by holding it in position, while placing the clamp (412) around the beveled edge. Making sure that the clamp is seated evenly all along the beveled rim, tight the butterfly nut until the clamp has pulled the parts together and the stator is sealed against the stator o-ring. *Note that the position of the discharge is shown as vertically upward, this may also be positioned downward, horizontally left or right, or at an angled position. A level can be used to align the flange horizontally or vertically.*



Ordering Spare Parts and Spare Parts Kits:

- Please provide the parts numbers for the items you require, along with quantity of each item.
- The part numbers can be found in the parts list located in Appendix A.
- Obtaining pricing, confirming availability, and placing orders can be done by either emailing (sales@coramix.com) or calling (910-225-4080).
- Shipping costs and any applicable sales taxes will be added to the cost of the purchased items.
- Urgent orders should be confirmed by calling, and please let us know the type of shipping you require (next morning, next day, two day, etc.).
- Shipping cost may be handled by the customer by providing the shipping company name and account number.

Factory Service:

Coramix mixers are designed so that they can be serviced and repaired by anyone who does not have strong mechanical skills. The mixer can be disassembled and assembled with simple hand tools. When repairing a mixer, feel free to contact Coramix with any questions if you are unsure on how to do something, you can contact us by either emailing (service@coramix.com) or calling (910-803-1818). In the event that your company cannot attempt repairs, there are two options:

1. The mixer may be shipped to Coramix. The mixer will be evaluated to determine the extent of the repairs, and an estimate for the parts and labor will be provided, along with the estimated time to repair. Please note that it is an estimate, and the actual total cost will be determined after the repairs have been made. Return shipping costs will be added to the cost of the repairs, and payment must be made prior to shipment.
2. A Coramix service technician can repair the mixer at your facility. Once scheduled, travel expenses and an estimated travel time expense must be paid in advance. Once the technician is onsite, the mixer will be evaluated to determine the extent of the repairs, and an estimate for the parts and labor will be provided, along with the estimated time to repair.

Appendices



Appendix A – Parts Lists

POS	DESCRIPTION	QTY	PART NUMBERS			
			Q21/QIM-214	Q22/QIM-316	Q23/QIM-318	Q24/QIM-428
110	MOTOR	1	5 HP, 3600 RPM	10 HP, 3600 RPM	30 HP, 3600 RPM	40 HP, 3600 RPM
212	HHC SCREW NEMA	4	THI-1/2X1	THI-1/2X1	THI-1/2X1	THI-5/8X1-1/2
	HHC SCREW IEC		THI-M12X35	THI-M14X40	THI-M14X40	THI-M18X60
218	NUT IEC		TCA-SS-M12	TCA-SS-M14	TCA-SS-M14	TCA-SS-M18
220	ADAPTER NEMA	1	ADI-114-18	ADI-216-21	ADI-218/328-28TSC	ADI-328-32TSC
	ADAPTER IEC		ADI-114-100B14	ADI-216-132B5	ADI-218/328-160B5	ADI-328-200B5
230	GUARD	1	GUI-216-18+	GUI-216-21+	GUI-328-28+	GUI-328-32+
232	HHC SCREW	1	THI-1/4X1/2	THI-1/4X1/2	THI-1/4X1/2	THI-1/4X1/2
310	SHAFT NEMA	1	PF-114-18+	PF-216-21+	PF-218/328-32TSC+	PF-328/428-32TSC+
	SHAFT IEC		PF-114-100/112+	PF-216-132+	PF-218/328-160+	PF-328/428-200+
320	COLLAR	1	COP-18	COP-21	COP-D28TSC	COP-28TC/32TSC
322	SHC SCREW	1	TAG-1/4NFX3/4	TAG-1/4NFX3/4	TCA-SS-3/4	TCA-SS-3/4
330	KEY	1	CF-114	CF-216	CF-218/328	CF-218/328
340	SHAFT NUT	1	T-114+	T-216+	T-218+	T-218+
410	CASING, CLAMP	1	CA-214-M	CA-316-M	CA-318-M	CA-428-M
	CASING, FLANGED		CA-214-F	CA-316-F	CA-318-F	CA-428-F
	CASING, NPT		CA-214-S	CA-316-S	CA-318-S	CA-428-S
412	CLAMP		AB-114	AB-216	AB-218/328	AB-218/328
510	SEAL ASSEMBLY, BQVG	1	KI-114-CS-V	KI-216-CS-V	KI-328-CS-V	KI-328-CS-V
	SEAL ASSEMBLY, QQVG		KI-114-SS-V	KI-216-SS-V	KI-328-SS-V	KI-328-SS-V
520	O-RING, FKM	1	V70343	V70359	V70368	V70368
530	GASKET, FKM	1	EIP-1030-V	EIP-1280-V	EIP-1530-V	EIP-1530-V
610	IMPELLER	1	IM-114Q	IM-216Q	IM-218Q	IM-328Q
620	STATOR, 01	1	TP-114-BM01	TP-216-BM01	TP-218-BM01	TP-328-BM01
	STATOR, 10		TP-114-BM10	TP-216-BM10	TP-218-BM10	TP-328-BM10
	L-PIN	2	ES-TP-C	ES-TP	ES-TP	ES-TP
SEAL COMPONENTS						
510A	STATIONARY SEAL FACE	1	SIS-114-SF-S	SIS-216-SF-S	SIS-328-SF-S	SIS-328-SF-S
510B	ROTATING SEAL FACE, CARBON	1	SIS-114-IRF-C	SIS-216-IRF-C	SIS-328-IRF-C	SIS-328-IRF-C
	ROTATING SEAL FACE, SILICON CARBIDE		SIS-114-IRF-S	SIS-216-IRF-S	SIS-328-IRF-S	SIS-328-IRF-S
510C	SPRING	1	SIS-114-IS	SIS-216-IS	SIS-328-IS	SIS-328-IS
510D	O-RING, FKM	1	V70122	V70129	V70135	V70135
510E	O-RING, FKM	1	V70020	V70025	V70031	V70031
510F	ROTARY HOLDER	1	SIS-114-RH	SIS-216-RH	SIS-328-RH	SIS-328-RH
510G	O-RING, FKM	1	OR-VI-216	V75222	V75225	V75225

Appendix B

Installation Drawing

Model:

Serial Number:

Appendix C

Torque Specifications

Metric Stainless Steel Fasteners:

Bolt Dia (mm)	Torque (N-m)	
	Dry	Lubricated
3	1.0	0.9
4	2.6	2.3
5	5.1	4.6
6	8.7	7.8
8	21.2	19.1
10	42	38
12	73	66
14	118	106
16	180	162
18	258	232
20	370	333
22	485	437
24	603	543