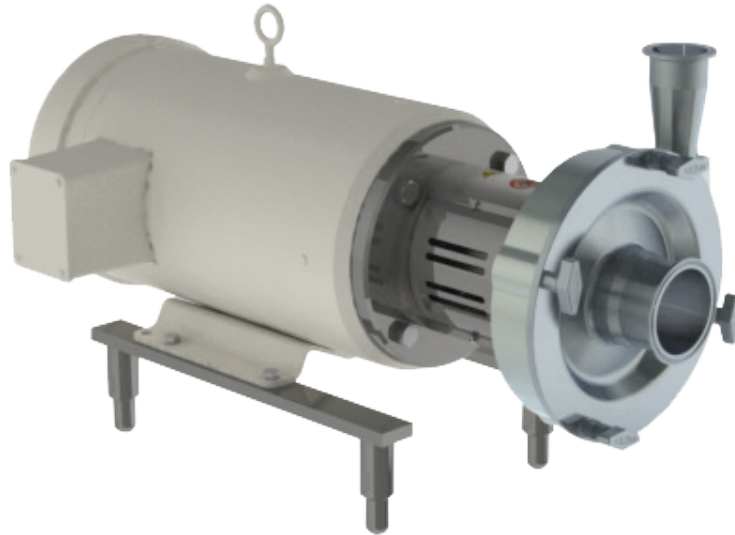


Instruction & Operation Manual

ExD Series Centrifugal Pump



Read and understand this manual prior to installing, operating or servicing this equipment



The Right Connection®

July 2018

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Safety Information

The following DANGER, WARNING and CAUTION signs are contained in this manual.

To avoid serious injury and/or possible damage to equipment, pay attention to these messages.

Hazards or unsafe practices which could result in severe personal injury or death.



The word DANGER is used in the most extreme cases.



Hazards or unsafe practices which could result in minor or moderate injury.
May also be used to alert against an unsafe operating or maintenance practice.



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

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.

Safety labels are placed on every pump. Do not remove any labeling on any ExD Series pump. Replace any label that is missing.

DO NOT modify any Dixon Sanitary product. Non-factory modifications could create hazardous conditions and voids all warranties. DO NOT attempt to use a Dixon Sanitary product in any application that exceeds the product rating.

Care of Stainless Steel

The stainless steel components in Dixon Sanitary equipment are machined, welded and assembled by skilled craftsmen using manufacturing methods that preserve the corrosion-resistant quality of the stainless steel.

Retention of corrosion-resistant qualities under processing conditions requires regular attention to the precautions listed below.



1. Regularly check all electrical devices connected to the equipment for stray currents caused by improper grounding, damaged insulation or other defects. Corrosion: Pitting often occurs when stray currents come in contact with moist stainless steel.
2. Never leave rubber mats, fittings, wrenches, etc. in contact with stainless steel. Corrosion: Pitting or galvanic action. Objects retard complete drying, preventing air from reforming the protective oxide film. Galvanic corrosion occurs when two dissimilar metals touch when wet.
3. Immediately rinse equipment after use with warm water until the rinse water is clear. Clean the equipment (manual or CIP) as soon as possible after rinsing. Corrosion: discoloration, deposits, pitting. Product deposits often cause pitting beneath the particles.
4. Use only recommended cleaning compounds. Purchase chemicals from reputable and responsible chemical manufacturers familiar with stainless steel processing equipment, they continuously check the effects of their products on stainless steel.
5. Use cleaning chemicals exactly as specified by the manufacturer. Do not use excessive concentrations, temperatures or exposure times. Corrosion: Pitting, discoloration, stress cracks. Permanent damage often occurs from excessive chemical concentrations, temperatures or exposure times.
6. For manual cleaning, use only soft non-metallic brushes, sponges or pads. Brush with the grain on polished surfaces, avoid scratching the surface. Corrosion: Pitting, scratches. Metal brushes or sponges will scratch the surface and promote corrosion over a period of time. Metal particles allowed to remain on a stainless steel surface will cause pitting.
7. Use chemical bactericides exactly as prescribed by the chemical manufacturer in concurrence with local health authority. Use the lowest permissible concentration, temperature and exposure time possible. Flush immediately after bacterial treatment. In no case should the solution be in contact with stainless steel more than 20 minutes. Corrosion: Protective film destroyed. Chlorine and other halogen bactericides can destroy the protective film. A few degrees increase in temperature greatly increases chemical activity and accelerates corrosion.
8. Regularly inspect the joints in pipelines. Be sure all connections are tight fitting without binding. Corrosion: Crevice corrosion. Small crevices caused by improperly seated gaskets will promote crevice corrosion. Stainless steel under stress will develop stress cracking especially in the presence of bactericides containing chlorine.
9. Regularly inspect equipment for surface corrosion (i.e. pitting deposits, stress cracks, etc.). If deposit or color corrosion is detected, remove it immediately using mild scouring powder and detergents. Rinse thoroughly and allow to air dry. Review production and cleaning procedures to determine the cause. Note: If corrosion is not removed, the protective film cannot be restored and corrosion will continue at an accelerated rate.

Introduction

This manual contains installation, operation, cleaning, repair instructions, model numbering structure and parts list for the Dixon ExD Series centrifugal pump.

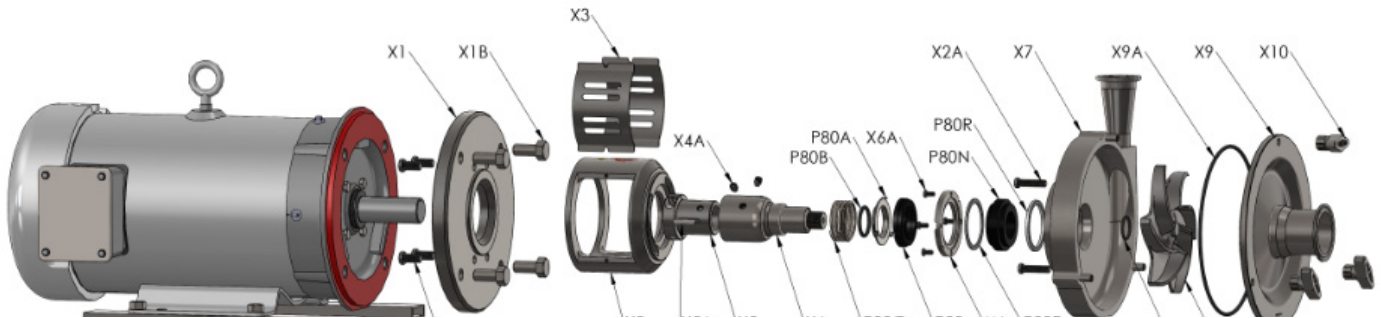
The Dixon ExD Series centrifugal pump is made up of two sections: the pump components (wet end) and the motor. The pump is mounted to the motor with a stainless steel adapter and is coupled to the motor shaft with a stainless steel shaft sleeve and stub shaft. The pump impeller on the ExD series centrifugal pump is threaded directly on to the pump stub shaft.

The casing of the ExD series centrifugal pump is a non-volute style casing that connects directly to the adapter. The design of the casing and adapter features unique characteristics that allow the pump casing discharge outlet to be rotated to various positions without disassembling the pump.

The motors used on the ExD series centrifugal pump are standard NEMA C-Face motors available as total enclosed fan cooled (TEFC) or totally enclosed not ventilated (TENV) depending on the motor size. Other special motor options are available upon request.

An adjustable leg kit is an option for mounting to the motor and is designed to meet sanitary requirements. This configuration simplifies the installation and ease of leveling.

Bill of Materials



Key No.	Description
X1	adapter to motor flange
X1A	adapter bolts
X1B	motor bolts and lock washers
X2	adapter
X2A	adapter casing bolts
X3	guard with bolts
X4	stub shaft
X4A	stub shaft set screws
X5	shaft sleeve with bolts
X5A	shaft sleeve key
X6	seal gland
X6A	seal gland bolts
X7	pump casing
X8	impeller
X8A	impeller O-ring
X9	pump cover
X9A	cover/casing O-ring
X10	cover wing nuts

DG Seal

Key No.	Description
P80	rotary seal
P80A	seal cup
P80B	seal O-ring
P80C	seal spring
P80P	outboard gasket
P80N	seal seat
P80R	inboard gasket

Technical Information

Materials of Construction

- pump casing: 316L stainless steel
- impeller: CF3M (316L) stainless steel
- pump cover: 316L stainless steel
- stub shaft: 316L stainless steel
- rotary seal: silicon carbide, tungsten carbide, or carbon
- stationary seal: silicon carbide, ceramic, or tungsten carbide
- elastomers: FKM (standard), Buna, EPDM (other options available, contact Dixon Sanitary)
- non-product contact components: 304 stainless steel
- finish: 32R_s sanitary finish (other finishes available, contact Dixon Sanitary)
- connections: clamp (other connections available, contact Dixon Sanitary)

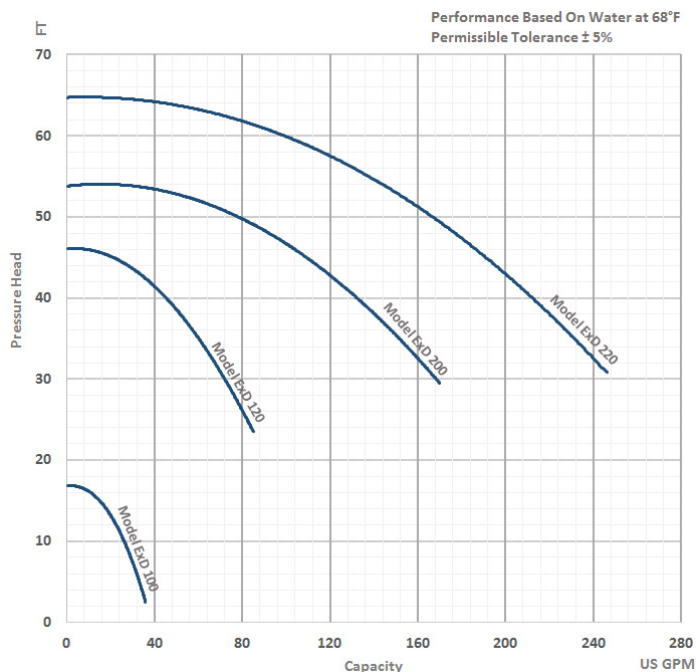
Performance Characteristics

- nominal capacity: 500 GPM
- maximum head: 225 Feet
- temperature range: **32°F to 212°F (0°C to 100°C)** (consult Dixon Sanitary for higher temperatures)
- viscosity range: 0-500cP (consult Dixon Sanitary for higher viscosities)
- nominal speed: up to 3500 RPM – 60 Hz

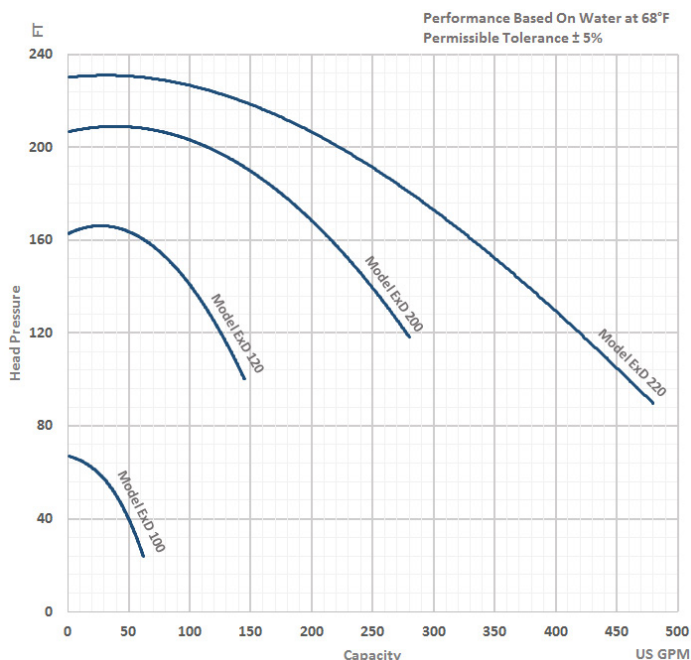
Motor Information

- Dixon ExD Series centrifugal pumps use standard NEMA TENV/TEFC C-face electric motors
- motors are available in a variety of different options including washdown, explosion proof, premium efficiency, general purpose and severe duty
- voltage & frequency options:
 - 1 Phase, 60Hz, 115/230VAC (1750 RPM & 3500 RPM)
 - 3 Phase, 60Hz, 208-230/460 VAC (1750 RPM & 3500 RPM)
 - 3 Phase, 60Hz, 575 VAC (1750 RPM & 3500 RPM)
 - 3 Phase, 50Hz, 208-220/380 VAC (1450 RPM & 2900 RPM)
- Motor performance curves available upon request.

1750 RPM

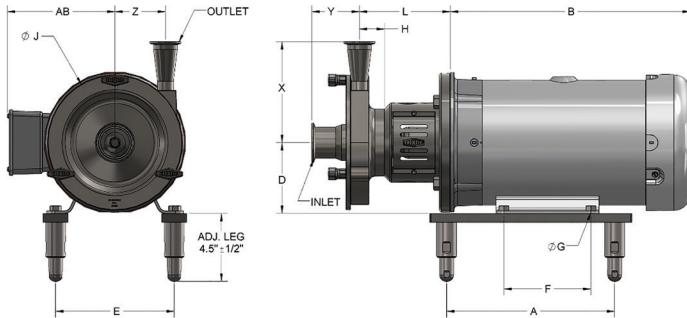


3500 RPM



Dimensions

All dimensions are given in inches



Pump Model	Connection Sizes	
	Inlet	Outlet
EXD 100	1.00	1.00
EXD 110	1.50	1.00
EXD 120	2.00	1.50
EXD 130	2.50	1.50
EXD 200	2.50	2.00
EXD 210	3.00	2.00
EXD 220	3.00	2.50
EXD 230	4.00	2.50

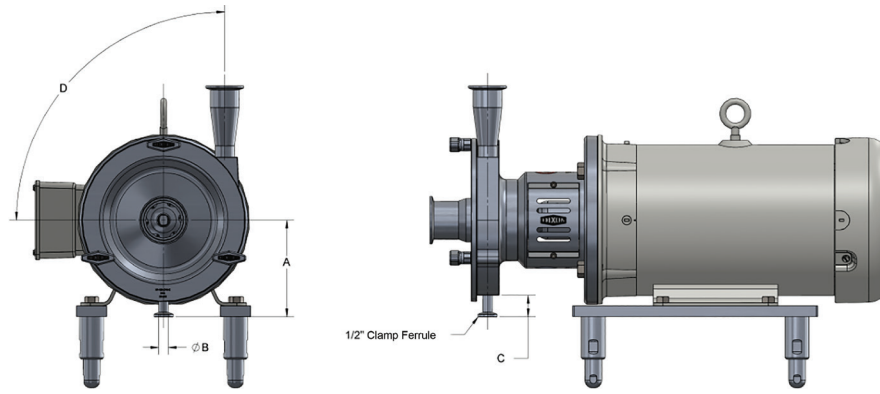
Pump Model	Motor Frame Size	Dimensions In Inches														
		A	AA (Conduit Size)	AB	B	D	E	F	ØG	H	ØJ	L	X	Y	Z	
ExD 100 ExD 110	56C	8.50	0.50	5.00	**	3.50	4.88	3.00	0.34	1.51	5.95	5.44	4.20	2.16	2.00	
	143/145TC	9.50	0.75	5.25		4.50	7.50	4.50								0.41
	182/184TC	10.63	0.75	5.88												
ExD 120 ExD 130	56C	8.50	0.50	5.00	**	3.50	4.88	3.00	0.34	1.60	8.50	5.75	6.38	3.00	3.20	
	143/145TC	9.50	0.75	5.25		4.50	7.50	4.50								0.41
	182/184TC	10.63	0.75	5.88												
ExD 200 ExD 210	182/184TC	10.63	0.75	5.88	**	4.50	7.50	4.50	0.41	1.84	9.94	7.63	7.62	3.34	3.50	
	213/215TC	13.88	1.00	7.38		5.25	8.50	5.50								0.53
	254/256TC	18.00	1.00	9.63												
ExD 220 ExD 230	182/184TC	10.63	0.75	5.88	**	4.50	7.50	4.50	0.41	1.96	10.51	7.75	8.25	3.13	3.63	
	213/215TC	13.88	1.00	7.38		5.25	8.50	5.50								0.53
	254/256TC	18.00	1.00	9.63												

** Contact Dixon Sanitary for detailed drawing.

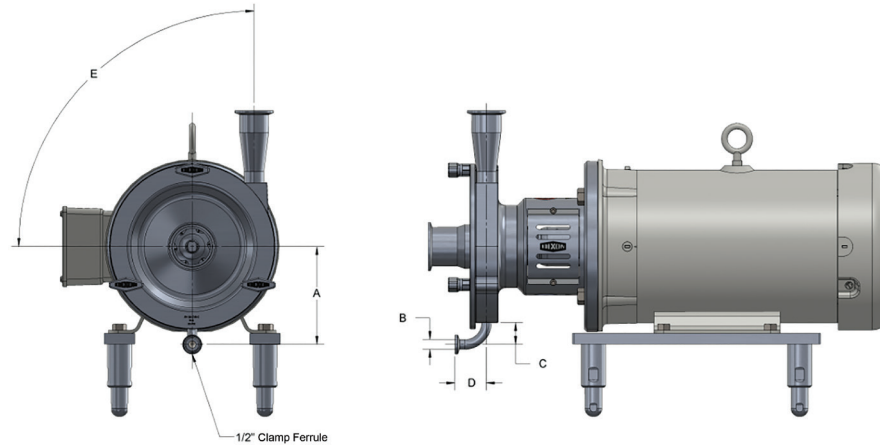
- all dimensions are given in inches
- all dimensions given are for guidance only

Dimensions

All dimensions are given in inches



Pump Model	Casing Drain Option	Dimensions In Inches			
		A	ØB	C	D
ExD 100/110	Option A	3.71	0.50	1.13	45°
	Option J				90°
ExD 120/130	Option A	5.06	0.50	1.13	45°
	Option J				90°
ExD 200/210	Option A	5.70	0.50	1.13	45°
	Option J				90°
ExD 220/230	Option A	5.98	0.50	1.13	45°
	Option J				90°



Pump Model	Casing Drain Option	Dimensions In Inches				
		A	B	C	D	E
ExD 100/110	Option D	3.71	0.50	1.13	1.63	90°
	Option K					45°
ExD 120/130	Option D	5.06	0.50	1.13	1.63	90°
	Option K					45°
ExD 200/210	Option D	5.70	0.50	1.13	1.63	90°
	Option K					45°
ExD 220/230	Option D	5.98	0.50	1.13	1.63	90°
	Option K					45°

Installation

Unpacking

- Carefully unpack all parts of the pump and inspect for damages that may have occurred during shipment. Report any damages to the carrier immediately.
- The ports on the pump are protected with a plastic cover. If any covers are missing or damaged, inspect the ports on the pump thoroughly for any damage.

Tools Needed

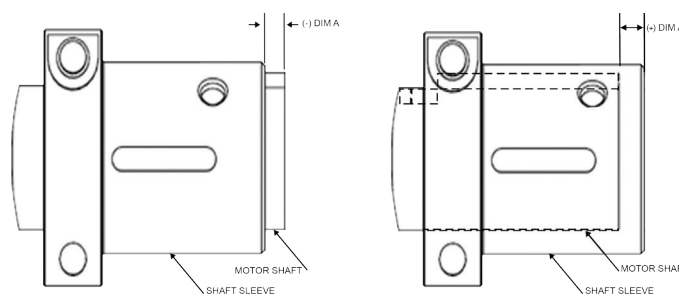
Key No.	Part Number	Description	Pump Models	Tools
X1A	X1A-100-FAB	100 series flange to adapter bolts	ExD 100 - 110	3/16" allen or hex
			ExD 120 - 130	
			ExD 200 - 210	
			ExD 220 - 230	
X1B	X1B-100-FMB56	100 series flange to motor bolts and lock washers 56C to 140TC frame	ExD 100 - 110	9/16" wrench
			ExD 120 - 130	
	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	ExD 200 - 210	3/4" wrench
			ExD 220 - 230	
X2A	X2A-100-ACB	100 series adapter to casing bolts	ExD 100 - 110	5/32" allen or hex
			ExD 120 - 130	
	X2A-200-ACB	200 series adapter to casing bolts	ExD 200 - 210	3/16" allen or hex
			ExD 220 - 230	
X4A	X4A-100-DPSS	100 series shaft dog point set screw	ExD 100 - 110	5/32" allen or hex
			ExD 120 - 130	
	X4-200-DPSS	200 series shaft dog point set screw	ExD 200 - 210	3/16" allen or hex
			ExD 220 - 230	
X5	X5-100-SL56 to X5-100-SL18	100 series shaft sleeve w/bolts for 56C to 180TC frame	ExD 100 - 110	TP45 torx plus driver
			ExD 120 - 130	
	X5-200-SL18 to X5-200-SL25	200 series shaft sleeve w/bolts for 180TC to 250TC frame	ExD 200 - 210	TP50 torx plus driver
			ExD 220 - 230	
X6A	X6A-100-SGB	100 series seal gland bolt	ExD 100 - 110	3/32" allen or hex
			ExD 120 - 130	
	X6A-200-SGB	200 series seal gland bolt	ExD 200 - 210	1/8" allen or hex
			ExD 220 - 230	
X7	X7-100-CASE-C to X7-120-CASE-C	100-120 series pump casing with clamp outlet (cover studs)	ExD 100 - 110	5/32" allen or hex
			ExD 120 - 130	
	X7-200-CASE-C to X7-220-CASE-C	200-220 series pump casing with clamp outlet (cover studs)	ExD 200 - 210	3/16" allen or hex
			ExD 220 - 230	
X10	X10-100-WN	100 series cover wing nuts	ExD 100 - 110	adjustable wrench
			ExD 120 - 130	
	X10-200-WN	200 series cover wing nuts	ExD 200 - 210	
			ExD 220 - 230	
N/A	N/A	general hand tools	ExD 100 - 230	soft mallet phillips driver O-ring pick liquid thread locker Vernier caliper

Assembly

See page 4 for exploded view.

1. Attach item (X1) motor flange to item (X2) adapter using the (4) socket head cap screws item (X1A). Ensure that the drain hole in the bottom of the adapter (X2) and the drain slot in the back of the motor flange (X1) are facing the same direction.
2. Setting the shaft sleeve:
 - a. Make sure that the motor shaft key (X5A) is removed from the motor prior to installing the shaft sleeve item (X5).
 - b. Slide the shaft sleeve (X5) on to the motor shaft with the shaft sleeve oriented such that the shaft sleeve bolts are closest to the motor.
 - c. Tighten the shaft sleeve bolts until there is a slight resistance to movement between the shaft sleeve (X5) and the motor shaft. The shaft sleeve (X5) should be able to be moved by hand, but still hold its position if your hand is removed.
 - d. Using a Vernier caliper set the shaft sleeve (X5) in place on the motor shaft using the table listed below.

Pump Model	Motor Frame Size	DIM A	(+/-)
ExD 100	56C	0.385	+
ExD 110	143TC to 145TC	0.243	+
ExD 120 ExD 130	56C	0.355	+
	143TC to 145TC	0.209	+
ExD 200 ExD 210	182TC to 184TC	0.264	-
	182TC to 184TC	0.506	+
	213TC to 215TC	0.000	
ExD 220 ExD 230	254TC to 256TC	0.627	-
	182TC to 184TC	0.479	+
	213TC to 215TC	0.024	-
	254TC to 256TC	0.654	-



- e. Once the shaft sleeve (X5) is set at the proper dimension, tighten the shaft sleeve bolts according to the torque value listed in the recommended torque value chart listed in this manual (Page 11). Recheck the position of the shaft sleeve to ensure that it did not move while tightening the shaft sleeve bolts.
3. Install the stub shaft:
 - a. Install the stub shaft (X4) on the shaft sleeve (X5) making sure the keyways of the stub shaft engage properly with the keys on the shaft sleeve.
 - b. Ensure that the set screws on the stub shaft are properly aligned with the two counter bores on the stub shaft sleeve.
 - c. Tighten stub shaft socket head set screws.
4. Install the adapter assembly (X1 & X2) from step 1 to the motor using the (4) adapter bolts. Apply liquid thread locker to the (4) adapter bolts. Ensure that the adapter drain hole is facing down toward the ground.
5. Install the rotating seal/spring/cup assembly:
 - a. Place the seal spring (P80C) over the stub shaft (X4) and ensure that the seal spring is sitting completely flat on the bottom face of the stub shaft.
 - b. Place the seal O-ring (P80B) into the back of the rotating seal (P80).
 - c. Place the rotating seal (P80) and seal O-ring (P80B) assembly securely onto the seal cup (P80A) making sure to line up the notches in the rotating seal with protruding tabs of the seal cup.
 - d. Slide the rotating seal (P80)/seal O-ring (P80B)/seal cup (P80A) assembly onto the stub shaft (X4) just until the bottom face of the seal cup touches the seal spring (P80C).
 - e. Rotate the seal assembly while keeping the stub shaft (X4) stationary until the slot in the bottom of the seal cup (P80A) is aligned with the stub shaft seal pin that extrudes from the stub shaft.

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Assembly

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6. Install the stationary seal assembly:
 - a. Install the stationary inboard gasket (P80R) into the bottom of the pump casing (X7) stationary seal cavity. Ensure that the gasket is sitting flat and it centered properly by the slight counter bore in the bottom of the seal cavity.
 - b. Place the stationary seal (P80N) on top of the inboard stationary gasket (P80R).
 - c. Place the stationary outboard gasket (P80P) on top of the stationary seal.
 - d. Place the seal ring gland (X6) on top of the stationary outboard gasket (P80P) so that the part number on the seal ring gland is facing up.
 - e. Apply liquid thread locker to the seal ring gland bolts (X6A) and thread the bolts through the seal ring gland and into the pump casing (X7).
 - f. Tighten the seal ring gland bolts (X6A) in a star pattern according to the recommended torque value chart given in this manual.
7. Attach the pump casing to the adapter:
 - a. Lower the pump casing (X7) onto the pump adapter (X2) compressing the rotating seal assembly as you lower the casing.
 - b. Press down on the casing (X7) making sure that casing is sitting firmly against the adapter (X2).
 - c. Thread the adapter-casing bolts (X2A) through the adapter slots and into the threaded holes on the back of the pump casing (X7). Note: apply liquid thread locker to the bolts.
 - d. Thread the adapter-casing bolts (X2A) in until finger tight. Adjust the position of the casing by rotating until the desired position is reached.
 - e. Tighten the adapter casing-bolts (X2A) evenly and torque to the value given in the recommended torque value chart given in this manual.
8. Attach the impeller to the stub shaft:
 - a. Apply food grade lubricant to the impeller O-ring (X8A) and place the O-ring in the O-ring groove of the stub shaft (X4).
 - b. Thread the impeller (X8) onto the pump stub shaft (X4). Tighten the impeller until you feel it bottom out against the stub shaft (X4). Note: place an Allen wrench in the leak detection hole on the base of the stub shaft (X4) to lock against the adapter (X2) while tightening the impeller.
9. Install the front cover onto the casing:
 - a. Apply food grade lubricant to the front cover O-ring (X9A) and place the O-ring into the O-ring groove of the front cover (X9).
 - b. Place the front cover (X9) onto the pump casing (X7).
 - c. Install the front cover wing nuts (X10) onto the threaded casing studs. If the stud is damaged in any way, it can be replaced with a standard cup point set screw ($\frac{9}{16}$ -18 x $1\frac{1}{4}$ for all 100 series models and $\frac{3}{8}$ -16 x $1\frac{1}{4}$ for all 200 series models).
 - d. Tighten the front cover wing nuts (X10) evenly using a wrench on the flats of the wing nuts.
 - e. Rotate the pump stub shaft (X4) to ensure that you do not hear any metal to metal contact of the impeller with the front cover. If there is contact, disassemble and recheck the setting of the stub shaft sleeve (X5).
10. Install the adapter guards:
 - a. Using the provided guard bolts, attached the two safety guards (X3) to the adapter (X2) and tighten securely.

Assembly

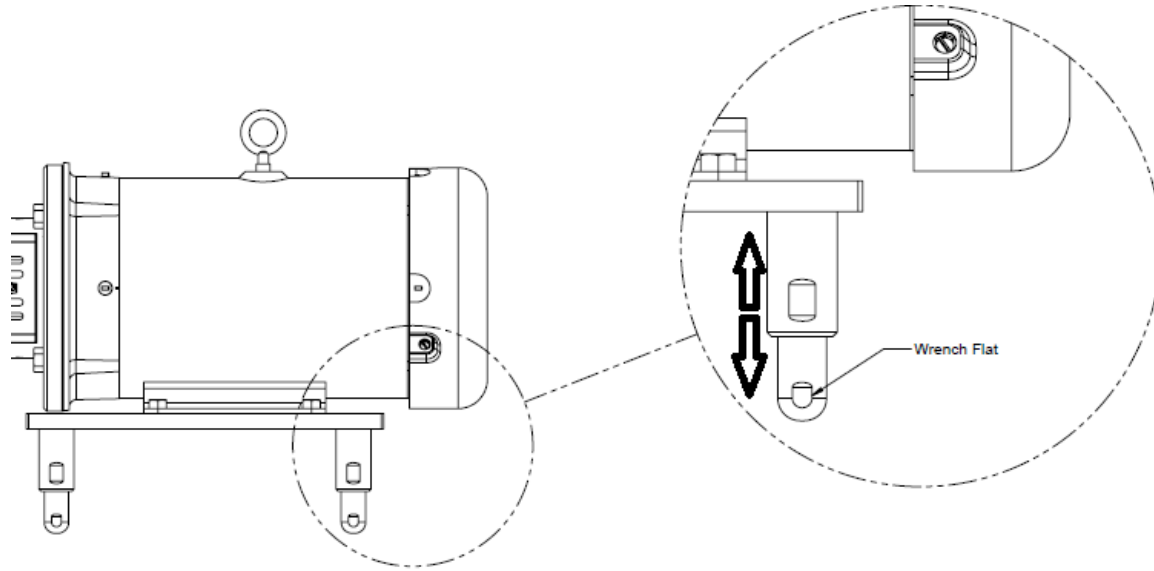
Recommended Torque Values

Key No.	Part Number	Description	Pump Models	Torque Value	
X1A	X1A-100-FAB	100 series flange to adapter bolts	ExD 100 - 110	20 ft.-lbs.	28 N-m
			ExD 120 - 130		
			ExD 200 - 210		
			ExD 220 - 230		
X1B	X1B-100-FMB56	100 series flange to motor bolts and lock washers 56C to 140TC frame	ExD 100 - 110	20 ft.-lbs.	28 N-m
	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	ExD 120 - 130	50 ft.-lbs.	68 N-m
			ExD 200 - 210		
			ExD 220 - 230		
X2A	X2A-100-ACB	100 series adapter to casing bolts	ExD 100 - 110	12 ft.-lbs.	17 N-m
	X2A-200-ACB	200 series adapter to casing bolts	ExD 120 - 130	20 ft.-lbs.	28 N-m
			ExD 200 - 210		
			ExD 220 - 230		
X4A	X4A-100-DPSS	100 series shaft dog point set screw	ExD 100 - 110	11 ft.-lbs.	15 N-m
	X4-200-DPSS	200 series shaft dog point set screw	ExD 120 - 130	20 ft.-lbs.	28 N-m
			ExD 200 - 210		
			ExD 220 - 230		
X5	X5-100-SL56 to X5-100-SL18	100 series shaft sleeve with bolts for 56C to 180TC frame	ExD 100 - 110	24 ft.-lbs.	33 N-m
	X5-200-SL18 to X5-200-SL25	200 series shaft sleeve with bolts for 180TC to 250TC frame	ExD 120 - 130	45 ft.-lbs	61 N-m
			ExD 200 - 210		
			ExD 220 - 230		
X6A	X6A-100-SGB	100 series seal gland bolt	ExD 100 - 110	3 ft.-lbs	4 N-m
	X6A-200-SGB	200 series seal gland bolt	ExD 120 - 130	6 ft.-lbs.	8 N-m
			ExD 200 - 210		
			ExD 220 - 230		

Installation

Optional Leg Kit Installation and Leveling

The pump can be easily leveled by installing the optional leg kit. Using an adjustable wrench, fit the wrench to the wrench flat shown in the diagram below. When viewed from the top, turn the wrench in a counter-clockwise direction to lower the leg, or clockwise direction to raise the leg.



Location

- Pump will perform at its best when located as close as possible to the liquid supply.
- Supply piping should be short and straight to ensure the pump has an adequate supply of liquid to it at all times.
- The pump should be located in an area where it is easy to inspect and do preventative maintenance or repair.

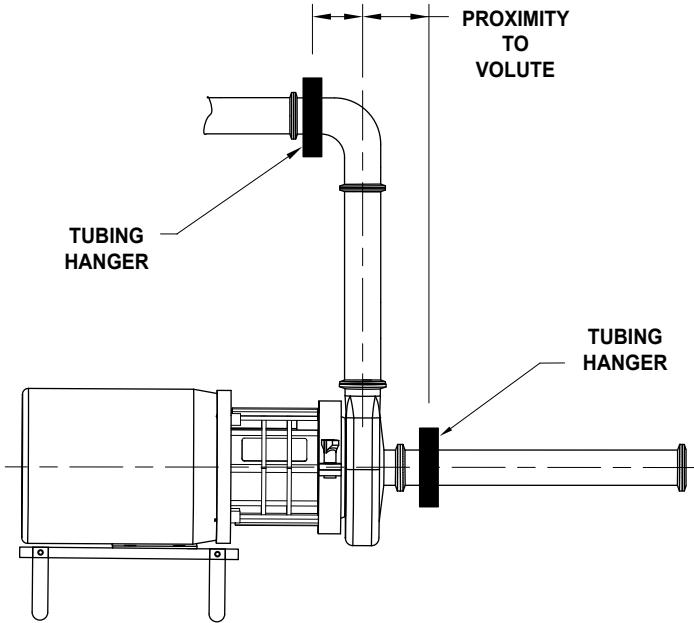
Installation

Piping: General Guidelines



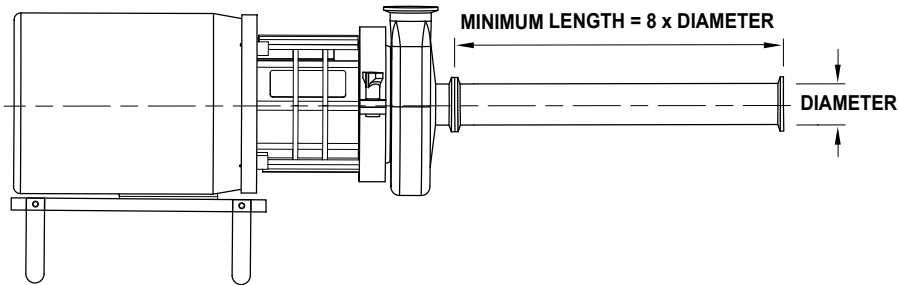
Improper piping can lead to a number of problems with pump performance which could lead to increased maintenance costs.

- Ensure piping is independently supported at both the suction and discharge ports of the pump. (see the diagram at right)
- Piping must be properly aligned to prevent any strain on pump casing.
- Try to have as few bends as possible in all piping.



Piping: Suction Guidelines

- Make sure line sizes used are equal to or larger than suction side (supply side) port connections on the pump.
- Suction side needs to be as short and straight as possible. Any restrictions will affect the NPSHa. Adequate NPSHa must be ensured.
- Maintain a straight length of pipe at a minimum of 8 x diameters long at the pump inlet. (see the diagram below)

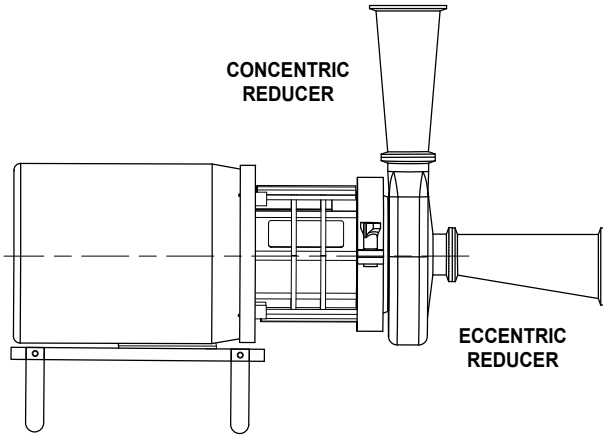


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Installation

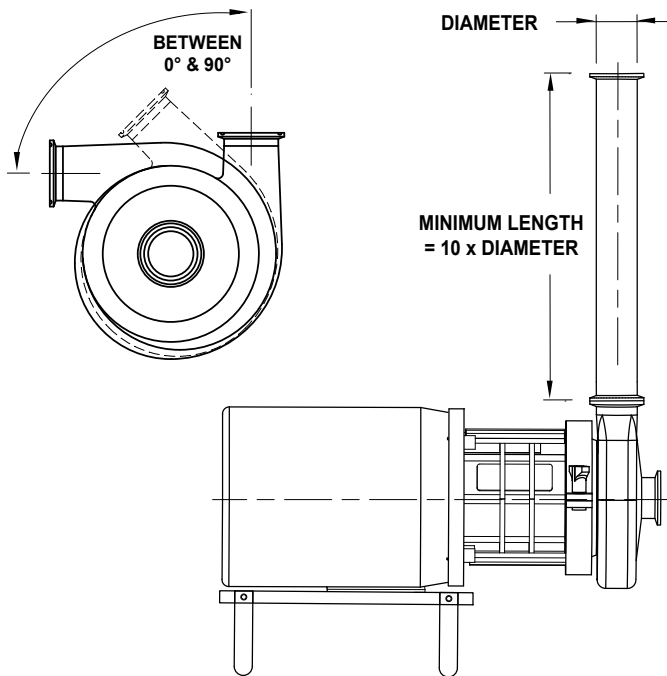
Piping: Suction Guidelines

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- To prevent air leaks, ensure all joints in suction line are well sealed.
- Use an eccentric reducer with straight side up to prevent air pockets from forming which will result in a decrease in pump efficiency. (see the diagram at left)
- To prevent a high point in the suction line resulting in an air pocket being formed affecting proper pump performance, horizontal suction pipes must have a gradual rise to the pump.

Piping: Discharge Guidelines

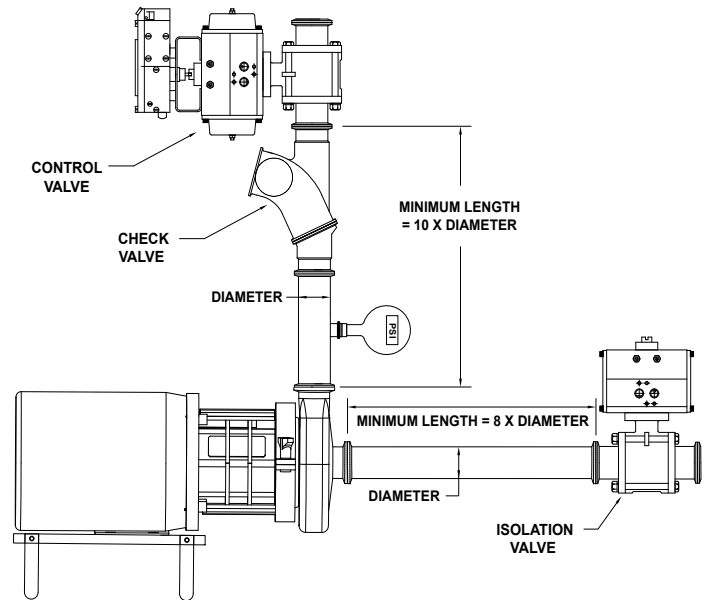


- Discharge side should be short and direct. Use a minimal number of restrictions. (see the diagram to the right)
- Vertical or top horizontal pump discharge position is preferred. (see the diagram at the left)
- While increasing the discharge side line size is recommended, please note:
 - > Using too large of a line size may lead to motor overload and cavitation.
 - > Using a smaller than recommend line size will increase the pump head but lower the flow.
- Types of reducers to use:
 - > If vertical discharge – concentric
 - > If horizontal discharge – eccentric with straight side down

Installation

Piping: Valve Location

- An isolation valve should be installed at both the suction and discharge sides of the pump. This will allow you to remove the pump for preventative maintenance or repair without the need to drain your system.
(see the diagram to the right)
- If pump is not in a flooded suction condition, install either a foot valve or system check valve to ensure pump casing is flooded for priming.
- In order to provide pump flow rate control, a control valve should be installed in the discharge piping to prevent motor overload.

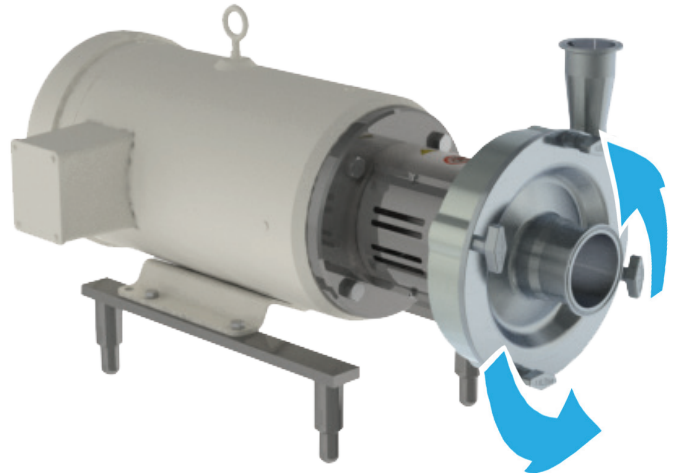


Electrical

WARNING

All power must be off and locked out during the installation process.
Only registered electricians should do the electrical installation.

- Follow motor manufacturer's installation procedures.
- Verify motor nameplate data is compatible with existing electrical supply.
- Verify pump rotation. An arrow sticker is supplied with every pump to show correct pump rotation. If the arrow stickers are missing, contact Dixon Sanitary for a replacement.
- Correct rotation is counter clockwise when facing pump inlet connection.



Operation

Priming the Pump



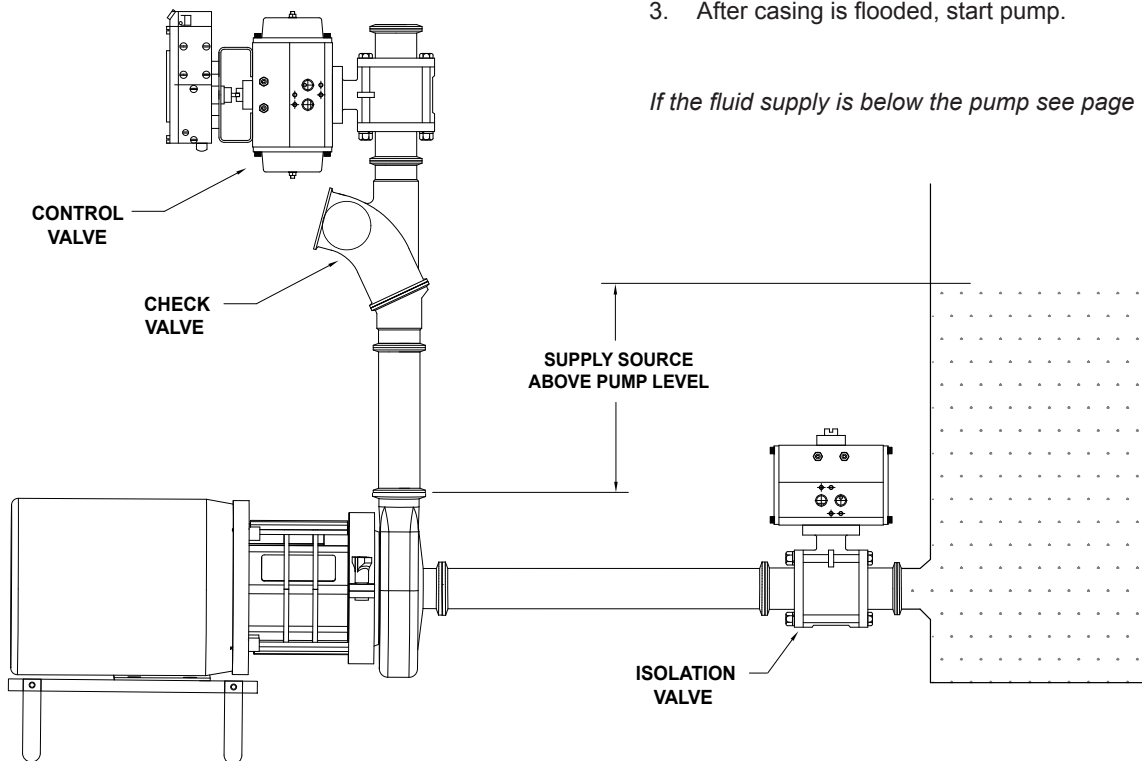
To avoid damage to the pump, the pump casing must be flooded with liquid BEFORE starting the pump.

Note: This is not a self priming pump. Other means must be installed to prime the pump.

Fluid supply above the pump:

1. Open supply line isolation valve.
2. Vent any entrapped air by opening the discharge valve.
3. After casing is flooded, start pump.

If the fluid supply is below the pump see page 17.



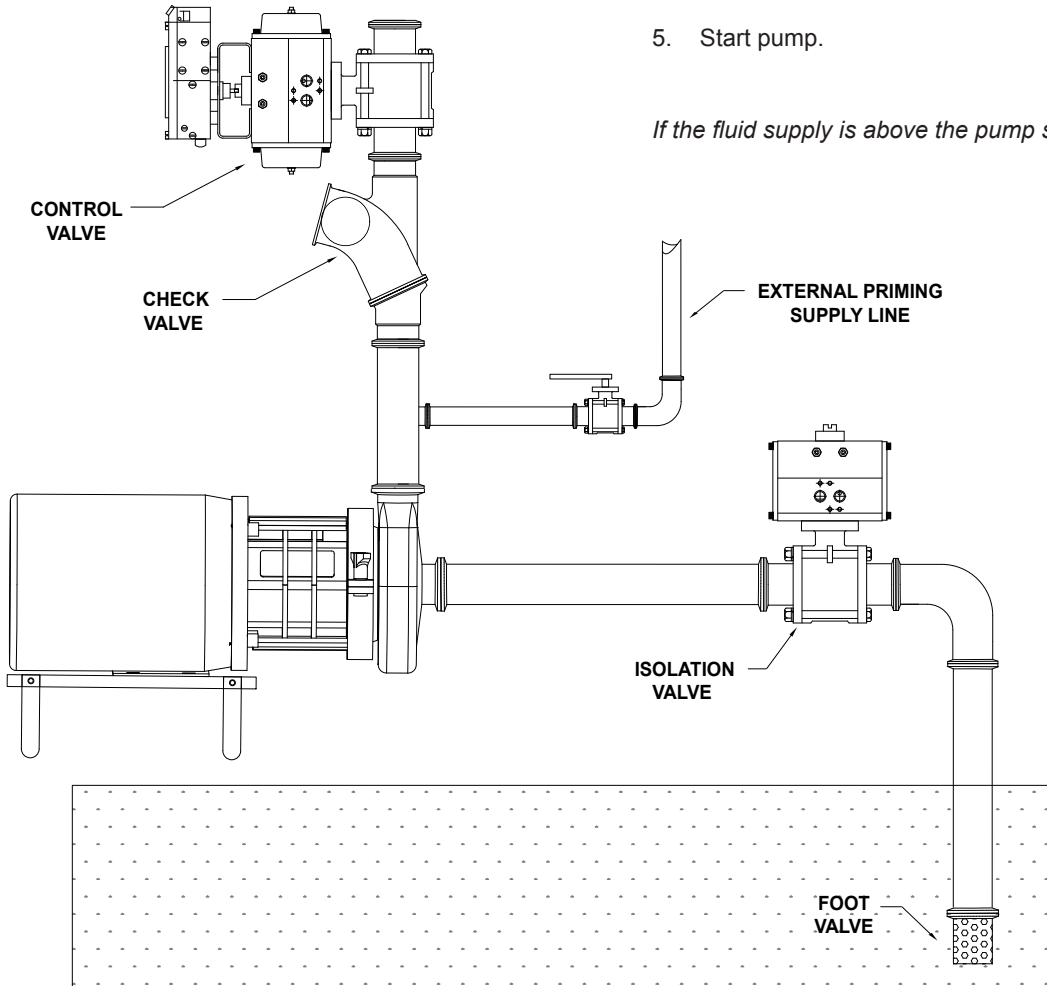
Operation

Priming the Pump

Fluid supply below the pump:

1. Close discharge valve and open air vents.
2. Open valve in external priming supply line. Close once liquid flows from vent valves.
3. Close vent valves.
4. Turn off priming supply line.
5. Start pump.

If the fluid supply is above the pump see page 16.



Note: It is recommended to use a foot/check valve system to keep the pump primed. Otherwise the pump must be primed before each operation.

Operation

Starting the Pump

1. Ensure pump suction is flooded using either method as explained in the previous priming section.
2. Check for any closed valves or obstructions in the suction and discharge lines.
3. Start the motor.
4. Verify liquid is flowing and there is no piping connection or mechanical seal leaks.
5. Adjust throttling valve on discharge line to desired flow.

Stopping the Pump

1. Shut off power to motor.
2. Suction and discharge valves are to be shut off.
3. Be advised the pump does not act as a shut off valve. The liquid will flow freely though the pump.

Recommended Maintenance

Preventative maintenance will increase the life of your pump. Documentation of any maintenance will help to diagnose potential problems and help in determining solutions.

Pump Casing and Impeller

1. Inspect the pump casing and impeller for any signs of possible wear.
2. Replace any stainless components if they show any sign of damage.
3. Inspect the pump casing and impeller frequently if in a severe duty application.

Gaskets and O-rings

All gaskets and O-rings should be inspected when the pump is undergoing routine maintenance. If the pump is in a severe duty application, the soft good components (gaskets and O-rings) should be inspected more frequently. Any soft good component that shows signs of degradation e.g. cut, swelling or other mechanical breakdown should be replaced immediately. In the case of impeller O-ring failure, the threads and surfaces of the stub shaft and impeller should be cleaned with a wire brush in a bath of cleaning solution (acid detergents or simple alkaline soda type detergents). The components should then be rinsed thoroughly with water.

Mechanical Seals

1. Inspect seals on a regular basis for any signs of leakage or damage. Replace any components that show signs of damage.
2. In severe applications visually check seal components daily for any signs of leakage or damage. In these severe applications, replace seal components as often as is required by the application.

See troubleshooting guide on pages 22-23, for possible solutions.

Recommended Maintenance

Motor Maintenance

Proper motor maintenance is a critical part of maintaining the entire motor/pump assembly. If the motor is not properly maintained, the potential failure of the motor's mechanical components can transmit to the pump and possibly cause issues with sealing and general pump operation.

NEMA Frame Size	Rated Speed (RPM)			
	3600	1800	1200	900
Up to 210	5500 hrs.	12000 hrs.	18000 hrs.	22000 hrs.
Over 210 to 280	3600 hrs.	9500 hrs.	15000 hrs.	18000 hrs.
Over 280 to 360	2200 hrs.	7400 hrs.	12000 hrs.	15000 hrs.

* Relubrication intervals are for ball bearings.

** For motors operating at speeds greater than 3600 RPM, contact motor manufacturer for relubrication recommendations.

Severity of Service	Hours per day of Operation	Ambient Temperature maximum	Atmospheric Contamination
Standard	8	104°F (40°C)	clean, little corrosion
Severe	16 Plus	122°F (50°C)	moderate dirt, corrosion
Extreme	16 Plus	> 122°F (50°C)* or Class H Insulation	severe dirt, abrasive dust, corrosion, heavy shock or vibration
Low Temperature		<-21°F (-29°C)**	

* Special high temperature grease is recommended (Dow Corning DC44).

** Special low temperature grease is recommended (Aeroshell 7).

Note: Different grease types are generally incompatible and should not be mixed. Mixing different types can cause lubricant and bearing failure. Thoroughly clean bearing and cavity before changing grease type.

NEMA Frame Size	Volume of Grease per Bearing	
	Inches ³	Teaspoon
56C to 143/145TC	0.15	0.5
143/145TC	0.20	0.8
182/184TC	0.30	1.0
213/215TC	0.60	2.0
254/256TC	0.70	2.5
284/286TSC	1.20	3.9

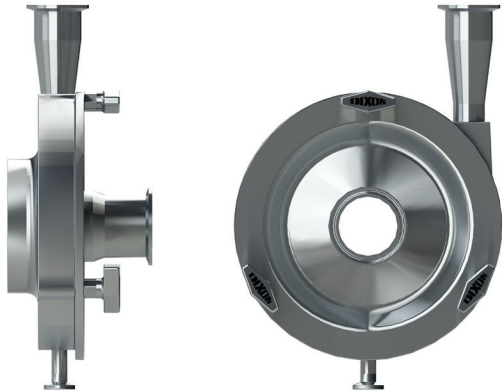
Disassembly

1. Remove the adapter guards:
 - a. Remove the guard screws using a phillips screwdriver, remove the two safety guards (X3) attached to the adapter.
2. Remove the front cover from the casing:
 - a. Remove the front cover wing nuts (X10) using an adjustable wrench.
 - b. Remove the front cover O-ring (X9A) from the front cover using a pick tool if necessary.
3. Remove the impeller from the stub shaft:
 - a. Remove the impeller (X8) from the pump stub shaft (X4) by tapping the impeller vanes with a soft mallet in a counter-clockwise direction. Note: place an Allen wrench in the leak detection hole on the base of the stub shaft (X4) to lock against the adapter (X2) while loosening the impeller.
 - b. Remove the impeller O-ring (X8A) from the stub shaft (X4) using a pick tool if necessary.
4. Remove the pump casing from the adapter:
 - a. Remove the adapter casing-bolts (X2A) using an allen wrench listed in the required tools chart.
 - b. Lift the pump casing (X7) from the pump adapter (X2).
5. Remove the stationary seal assembly:
 - a. Remove the seal ring gland bolts in a star pattern using the allen tool listed in the required tools chart.
 - b. Remove the seal ring gland (X6).
 - c. Remove the stationary outboard gasket (P80P).
 - d. Remove the stationary seal (P80N).
 - e. Remove the stationary inboard gasket (P80R) from the bottom of the pump casing (X7) stationary seal cavity. Use a pick tool if necessary.
6. Remove the rotating seal/spring/cup assembly:
 - a. Remove the rotating seal (P80), seal O-ring (P80B) and the seal cup (P80A) from the shaft (X4).
 - b. Inspect the shaft (X4) for any potential damage.
7. Loosen the (4) adapter bolts from the motor using a box wrench listed in the required tools chart and remove the adapter assembly (X1 & X2) from the motor.
8. Remove (X1) motor flange from (X2) adapter using an allen tool listed in the required tools chart to remove the (4) socket head cap screws (X1A).
9. Remove the stub shaft:
 - a. Remove the set screws on the stub shaft using the allen tool listed in the required tools chart.
 - b. Remove the stub shaft (X4) from the shaft sleeve (X5).
10. Remove the shaft sleeve:
 - a. Loosen the shaft sleeve bolts using the Torx driver listed in the required tools chart. Slide the shaft sleeve (X5) off of the motor shaft.
 - b. If the shaft sleeve (X5) is resisting removal from the motor shaft, tap the shaft sleeve with a mallet to remove.

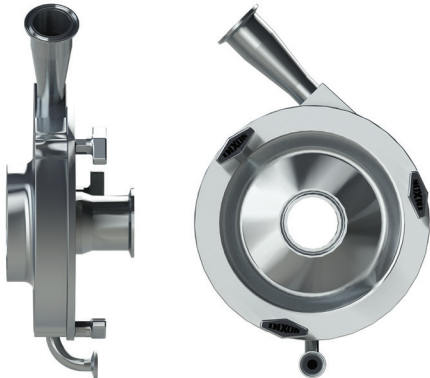
Casing Drain Options



Drain Option A



Drain Option J



Drain Option K



Drain Option D



Drain Option J Shown with Diaphragm Valve



Drain Option D Shown with Diaphragm Valve

Note: All drain options are available with a diaphragm valve as an option. Specifications for the valve need to be provided at time of request.

Troubleshooting

Dixon Sanitary ExD Series pumps are manufactured and inspected to meet sanitary standards. Occasional problems may arise. The following guide will help determine the possible cause and offer suggestions on corrections to maximize the performance of your pump. In case of any electric motors issues, contact the motor manufacturer directly. If you have any questions or concerns in regards to your ExD Series pump, we encourage you to contact Dixon Sanitary.

Problem	Possible Cause	Suggested Action
Excessive Vibration/Pump Is Noisy	Pump not level	Inspect installation of pump and level properly.
	Non-supported piping	Verify piping support follows recommendations in installation portion of this manual.
	Not enough or no fluid reaching the pump	Inspect pump to verify there is no blockage. Inspect suction line and shorten or enlarge line size.
	Insufficient NPSH (Net Positive Suction Head) available	Increase line size and reduce number of obstructions on the pump suction side.
	Impeller and/or shaft worn	Inspect the shaft and impeller and if damaged, replace parts.
	Shaft loose or bent	Inspect shaft for wear and tighten if needed. Replace shaft if bent.
	Impeller out of balance	Inspect impeller for abnormal wear. If wear or damage is localized, replace impeller.
	Foreign material in pump	Remove any foreign material causing blockage and inspect parts for damage.
	Air entrainment	Adjust system as needed to remove any air from the fluid before it reaches the pump inlet.
	Motor bearings worn	Replace motor as needed.
Rapid Seal Wear	Improper installation of mechanical seal	See installation section of the manual. Replace any worn or damaged parts.
	Dry running	Replace damaged seals and ensure that there is always fluid in the pump casing during operation.
	Abrasive product	Contact Dixon Sanitary.
	Shaft loose or bent	Inspect shaft for wear and tighten if needed. Replace shaft if bent.
	Water hammer	Correct system to prevent any quick starts or stops in fluid flow.
	Improper seal selection	Contact Dixon Sanitary.
Pump Leaks	Bad connection at inlet/outlet	Inspect for missing union gaskets, loose connections or damaged ports. Replace worn gaskets and tighten loose connections. Repair damaged ports.
	Front cover wing nuts loose	Tighten front cover wing nuts per the assembly section of this manual.
	Impeller O-ring damaged	Inspect and replace worn or damaged O-ring.
	Seal not installed correctly	Reassemble seal per the assembly section of the manual. Replace any worn or damaged parts.
	Seal faces worn or damaged	Resurface or replace seals.
Pump Not Delivering Fluid	Pump not primed	Adjust system so that the pump casing is completely flooded.
	Suction lift too high	Lower the level of the pump or raise the level of the supply fluid.
	Air pocket in suction line	Adjust line to eliminate formation of air pocket. Install air relief valve on suction side of the pump.

Troubleshooting

Problem	Possible Cause	Suggested Action
Pump Not Delivering Enough Capacity	System head is higher than design head	Reconfigure the system as to decrease the system head.
	Pump is running in the wrong direction	Reverse any two leads on the motor electrical connection.
	Speed too slow	Ensure motor connections are correct and if using a VFD check the frequency limit.
	Excessive air in fluid	Make necessary adjustments in the system to ensure air is removed before material reaches the pump.
	Wrong impeller diameter was selected	Contact Dixon Sanitary.
	Product is more viscous than initially thought	Contact Dixon Sanitary.
Pump Delivering Too Much Capacity	System head is lower than the design head	Decrease the line size or use throttling valve on the pump discharge to increase the system head.
	Wrong impeller diameter was selected	Contact Dixon Sanitary.
Impeller Rubbing On Casing/ Front Cover	Shaft sleeve was not set properly	Check shaft sleeve and reset to proper position as given in the assembly section of this manual. Be sure to follow the recommend bolt torque values for the sleeve.
Impeller Damaged	Foreign material in pump	Replace impeller.
	Cavitation	Evaluate system to ensure adequate NPSHa based on the pumps performance curve.
Motor Overload/Excessive Power Consumption	Discharge is too high	Contact Dixon Sanitary.
	Impeller is binding	Inspect pump and check for any damage, misalignment or interference. Replace any damaged or worn parts.
	Seal is binding	Inspect pump and replace any damaged or worn parts.
	System head is too low	Decrease the line size or use throttling valve on the pump discharge to increase the system head.
	Liquid has higher specific gravity or is more viscous than initially thought	Contact Dixon Sanitary.
	Electrical supply, voltage or frequency incorrect	Check electrical connections and replace motor if necessary.
	Defective motor	Contact motor manufacturer for possible warranty or repair. Replace if needed.
Any Other Issues		Contact Dixon Sanitary.

Model and Part Numbers

Pump Models

Fluid End



DIXON SANITARY EXD CENTRIFUGAL PUMP

Model No.
 100 – 1" x 1"
 110 – 1½" x 1"
 120 – 2" x 1½"
 130 – 2½" x 1½"
 200 – 2½" x 2"
 210 – 3" x 2"
 220 – 3" x 2½"
 230 – 4" x 2½"

Inlet/Outlet Connection
 C – Clamp x Clamp
 B – Butt weld x Butt weld

Elastomer
 B – Buna
 E – EPDM/EPDM
 V – FKM

Seal Type
 1 - Single Mechanical SC/C
 2 - Single Mechanical TC/TC
 3 - Single Mechanical CER/C
 4 - Single Mechanical SC/SC

Motor Type
 Contact Dixon Sanitary for motor options.

Electrical
 A – 1 Ph/60 Hz/115/230V
 B – 3 Ph/60 Hz/208-230/460V
 C – 3 Ph/60 Hz/575V
 D – 3 Ph/50 Hz/190/380V
 E – 3 Ph/50 Hz/380/460V
 F – 3 Ph/50 Hz/220/380/440V
 G – 3 Ph/50 Hz/220/380/415V

Impeller Key

Model No.	100/110	200/210	120/130	220/230
A -	4.0	7.0	6.0	7.3
B -	3.8	6.6	5.8	6.9
C -	3.6	6.2	5.6	6.5
D -	3.4	5.8	5.4	6.0
E -	3.2	5.4	5.2	5.6
F -	3.0	5.2	5.0	5.2
G -	2.8	4.8	4.8	4.8
H -	--	--	4.6	--
I -	--	--	4.4	--
J -	--	--	4.7	--
K -	--	--	4.9	--

Frame Size
 A – 56C
 B – 143-145TC
 C – 182/184TC
 D – 213/215TC
 E – 254/256TC

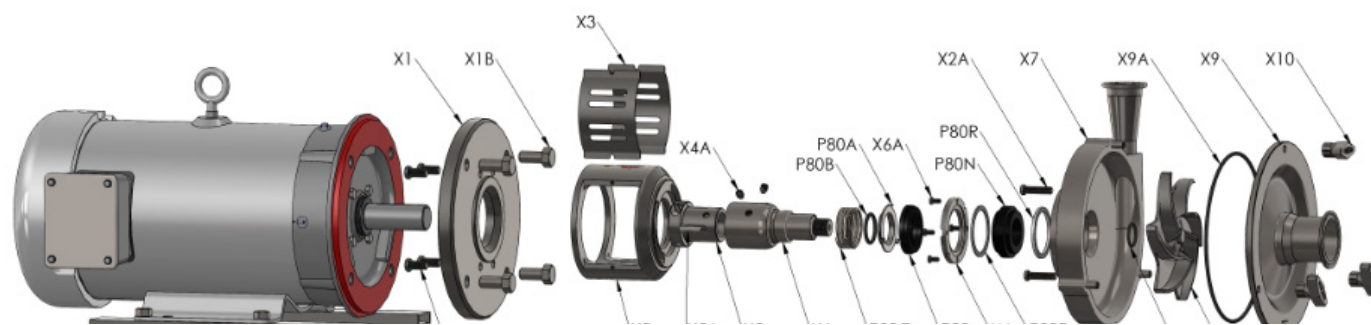
Options
 A – Drain A
 D – Drain D
 J – Drain J
 K – Drain K
 N – None

Motor Power & Speed (HP RPM)

01 – 1/3	1750
02 – 1/2	1750
03 – 3/4	1750
04 – 1	1750
05 – 1½	1750
06 – 2	1750
07 – 3	1750
08 – 5	1750
09 – 7½	1750
10 – 10	1750
11 – 15	1750
12 – 20	1750
13 – 25	1750
14 – 30	1750
15 – 40	1750
16 – 50	1750
17 – 60	1750
18 – 1/3	3500
19 – 1/2	3500
20 – 3/4	3500
21 – 1	3500
22 – 1½	3500
23 – 2	3500
24 – 3	3500
25 – 5	3500
26 – 7½	3500
27 – 10	3500
28 – 15	3500
29 – 20	3500
30 – 25	3500
31 – 30	3500
32 – 40	3500
33 – 50	3500
34 – 60	3500

- Fluid end includes all parts required to assemble to your motor.
- Specify adjustable leg kits at time of order. Leg kits will be shipped to match the frame size of motor as specified by model number. Leg kits will not be assembled.
- Please note, if there are options that are not listed above, please contact Dixon Sanitary for availability and pricing.

Model and Part Numbers



ExD 100 / ExD 110

Key No.	Part Number	Description	QTY/Assembly
X1 *	X1-100-5614AMF	100 series adapter to motor flange 56C and 143TC to 145TC	1
	X1-100-18AMF	100 series adapter to motor flange 182TC to 184TC	1
X1A	X1A-100-FAB	100 series flange to adapter bolts	4
X1B *	X1B-100-FMB56	100 series flange to motor bolts and lock washers 56TC to 140TC frame	4
	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	4
X2	X2-100-ADP	100 series adapter	1
X2A	X2A-100-ACB	100 series adapter to casing bolts	2
X3	X3-100-GRD	100 series guard set with bolts	1
X4	X4-100-SH	100 series stub shaft	1
X4A	X4A-100-DPSS	100 series shaft dog point set screw	2
X5 *	X5-100-SL56	100 series shaft sleeve with bolts for 56C frame	1
	X5-100-SL14	100 series shaft sleeve with bolts for 143TC to 145TC frame	1
	X5-100-SL18	100 series shaft sleeve with bolts for 182TC to 184TC frame	1
X5A	X5A-100-SKEY	100 series shaft sleeve key	2
X6	X6-100-SG	100 series seal gland	1
X6A	X6A-100-SGB	100 series seal gland bolt	4
P80 *	P80-216CS	carbon rotary seal	1
	P80-216SC	silicon carbide rotary seal	1
	P80-216TC	tungsten carbide rotary seal	1
P80A	P80A-216CP	seal cup	1
P80B *	P80B-216SOE	seal O-ring EPDM	1
	P80B-216SOV	seal O-ring FKM	1
	P80B-216SOB	seal O-ring Buna	1
P80C	P80C-216SG	seal spring	1
P80P	P80P-216OG	stationary outboard gasket	1
P80N *	P80N-216SC	stationary seal silicon carbide	1
	P80N-216CER	stationary seal ceramic	1
	P80N-216TC	stationary seal tungsten carbide	1
P80R	P80R-216IG	stationary inboard gasket	1
X7	X7-100-CASE-C	100-110 series pump casing with clamp outlet	1
X8	X8-100-A400	100-110 series impeller 4" max diameter	1
	X8-100-AXXXX	100-110 series trimmed impeller	1
X8A *	X8A-100-IORE	100 series impeller O-ring EPDM	1
	X8A-100-IORV	100 series impeller O-ring FKM	1
	X8A-100-IORB	100 series impeller O-ring Buna	1
X9 *	X9-100-CVR-C	100 series pump cover with clamp inlet 1"	1
	X9-110-CVR-C	110 series pump cover with clamp inlet 1½"	1
X9A *	X9A-100-COR-E	100-110 series cover/casing O-ring, EPDM	1
	X9A-100-COR-V	100-110 series cover/casing O-ring, FKM	1
	X9A-100-COR-B	100-110 series cover/casing O-ring, Buna	1
X10	X10-100-WN	cover wing nuts	3

* Denotes variable parts

Model and Part Numbers

ExD 120 / ExD 130

Key No.	Part Number	Description	QTY/Assembly
X1 *	X1-100-5614AMF	100 series adapter to motor flange 56C and 143TC to 145TC	1
	X1-100-18AMF	100 series adapter to motor flange 182TC to 184TC	1
X1A	X1A-100-FAB	100 series flange to adapter bolts	4
X1B *	X1B-100-FMB56	100 series flange to motor bolts and lock washers 56TC to 140TC frame	4
	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	4
X2	X2-100-ADP	100 series adapter	1
X2A	X2A-100-ACB	100 series adapter to casing bolts	2
X3	X3-100-GRD	100 series guard set with bolts	1
X4	X4-100-SH	100 series stub shaft	1
X4A	X4A-100-DPSS	100 series shaft dog point set screw	2
X5 *	X5-100-SL56	100 series shaft sleeve with bolts for 56C frame	1
	X5-100-SL14	100 series shaft sleeve with bolts for 143TC to 145TC frame	1
	X5-100-SL18	100 series shaft sleeve with bolts for 182TC to 184TC frame	1
X5A	X5A-100-SKEY	100 series shaft sleeve key	2
X6	X6-100-SG	100 series seal gland	1
X6A	X6A-100-SGB	100 series seal gland bolt	4
P80 *	P80-216CS	carbon rotary seal	1
	P80-216SC	silicon carbide rotary seal	1
	P80-216TC	tungsten carbide rotary seal	1
P80A	P80A-216CP	seal cup	1
P80B *	P80B-216SOE	seal O-ring EPDM	1
	P80B-216SOV	seal O-ring FKM	1
	P80B-216SOB	seal O-ring Buna	1
P80C	P80C-216SG	seal spring	1
P80P	P80P-216OG	stationary outboard gasket	1
P80N *	P80N-216SC	stationary seal silicon carbide	1
	P80N-216CER	stationary seal ceramic carbide	1
	P80N-216TC	stationary seal tungsten carbide	1
P80R	P80R-216IG	stationary inboard gasket	1
X7	X7-120-CASE-C	120-130 series pump casing with clamp outlet	1
X8	X8-120-A600	120-130 series impeller 6" max diameter	1
	X8-120-AXXXX	120-130 series trimmed impeller	1
X8A	X8A-100-IORE	100 series impeller O-ring EPDM	1
X8A	X8A-100-IORV	100 series impeller O-ring FKM	1
X8A	X8A-100-IORB	100 series impeller O-ring Buna	1
X9 *	X9-120-CVR-C	120 series pump cover with clamp inlet 2"	1
	X9-130-CVR-C	130 series pump cover with clamp inlet 2½"	1
X9A *	X9A-120-COR-E	120-130 series cover/casing O-ring, EPDM	1
	X9A-120-COR-V	120-130 series cover/casing O-ring, FKM	1
	X9A-120-COR-B	120-130 series cover/casing O-ring, Buna	1
X10	X10-100-WN	cover wing nuts	3

* Denotes variable parts

Casing Drain Options: ExD 100, ExD 110, ExD 120, ExD 130

Key No.	Part Number	Description	QTY/Assembly
X7	X7-100-CASE-C-A	EXD 100-110 pump casing with clamp outlet, Drain A	1
	X7-100-CASE-C-D	EXD 100-110 pump casing with clamp outlet, Drain D	1
	X7-100-CASE-C-J	EXD 100-110 pump casing with clamp outlet, Drain J	1
	X7-100-CASE-C-K	EXD 100-110 pump casing with clamp outlet, Drain K	1
	X7-120-CASE-C-A	EXD 120-130 pump casing with clamp outlet, Drain A	1
	X7-120-CASE-C-D	EXD 120-130 pump casing with clamp outlet, Drain D	1
	X7-120-CASE-C-J	EXD 120-130 pump casing with clamp outlet, Drain J	1
	X7-120-CASE-C-K	EXD 120-130 pump casing with clamp outlet, Drain K	1

Model and Part Numbers

ExD 200 / ExD 210

Key No.	Part Number	Description	QTY/Assembly
X1	X1-200-1825AMF	200 series adapter to motor flange 182TC to 184TC to 254TC to 256TC	1
X1A	X1A-100-FAB	100 series flange to adapter bolts	4
X1B *	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	4
X2	X2-200-ADP	200 series adapter	1
X2A	X2A-200-ACB	200 series adapter to casing bolts	2
X3	X3-200-GRD	200 series guard set with bolts	2
X4	X4-200-SH	200 series stub shaft	1
X4A	X4-200-DPSS	200 series shaft dog point set screw	2
X5 *	X5-200-SL18	200 series shaft sleeve with bolts for 182TC to 184TC frame	1
	X5-200-SL21	200 series shaft sleeve with bolts for 213TC to 215TC frame	1
	X5-200-SL25	200 series shaft sleeve with bolts for 254TC to 256TC frame	1
X5A	X5A-200-SKEY	200 series shaft sleeve key	2
X6	X6-200-SG	200 series seal gland	1
X6A	X6A-200-SGB	200 series seal gland bolt	4
P80 *	P80-218BCS	carbon rotary seal	1
	P80-218BSC	silicon carbide rotary seal	1
	P80-218BTC	tungsten carbide rotary seal	1
P80A	P80A-218BCP	seal cup	1
P80B *	P80B-218BSOE	seal O-ring EPDM	1
	P80B-218BSOV	seal O-ring FKM	1
	P80B-218BSOB	seal O-ring Buna	1
P80C	P80C-218BSG	seal spring	1
P80P	P80P-218BOG	stationary outboard gasket	1
P80N *	P80N-218BSC	stationary seal silicon carbide	1
	P80N-218BCER	stationary seal ceramic	1
	P80N-218BTC	stationary seal tungsten carbide	1
P80R	P80R-218BIG	stationary inboard gasket	1
X7	X7-200-CASE-C	200-210 series pump casing with clamp outlet	1
X8	X8-200-A700	200-210 series impeller 7" max diameter	1
	X8-200-AXXXX	200-210 series trimmed impeller	1
X8A *	X8A-200-IORE	200 series impeller O-ring EPDM	1
	X8A-200-IORV	200 series impeller O-ring FKM	1
	X8A-200-IORB	200 series impeller O-ring Buna	1
X9	X9-200-CVR-C	200 series pump cover with clamp inlet 2½"	1
	X9-210-CVR-C	210 series pump cover with clamp inlet 3"	1
X9A *	X9A-200-COR-E	200-210 series cover/casing O-ring, EPDM	1
	X9A-200-COR-V	200-210 series cover/casing O-ring, FKM	1
	X9A-200-COR-B	200-210 series cover/casing O-ring, Buna	1
X10	X10-200-WN	200 series cover wing nuts	4

Model and Part Numbers

ExD 220 / ExD 230

Key No.	Part Number	Description	QTY/Assembly
X1	X1-200-1825AMF	200 series adapter to motor flange 182TC to 184TC to 254TC to 256TC	1
X1A	X1A-100-FAB	100 series flange to adapter bolts	4
X1B *	X1B-100-FMB18	100 series flange to motor bolts and lock washers 180TC to 250TC frame	4
X2	X2-200-ADP	200 series adapter	1
X2A	X2A-200-ACB	200 series adapter to casing bolts	2
X3	X3-200-GRD	200 series guard with bolts	2
X4	X4-200-SH	200 series stub shaft	1
X4A	X4-200-DPSS	200 series shaft dog point set screw	2
X5 *	X5-200-SL18	200 series shaft sleeve with bolts for 182TC to 184TC frame	1
	X5-200-SL21	200 series shaft sleeve with bolts for 213TC to 215TC frame	1
	X5-200-SL25	200 series shaft sleeve with bolts for 254TC to 256TC frame	1
X5A	X5A-200-SKEY	200 series shaft sleeve key	2
X6	X6-200-SG	200 series seal gland	1
X6A	X6A-200-SGB	200 series seal gland bolt	4
P80 *	P80-218BCS	carbon rotary seal	1
	P80-218BSC	silicon carbide rotary seal	1
P80A	P80A-218BCP	seal cup	1
P80B *	P80B-218BSOE	seal O-ring EPDM	1
	P80B-218BSOV	seal O-ring FKM	1
	P80B-218BSOB	seal O-ring Buna	1
P80C	P80C-218BSG	seal spring	1
P80P	P80P-218BOG	stationary outboard gasket	1
P80N *	P80N-218BSC	stationary seal silicon carbide	1
	P80N-218BCER	stationary seal ceramic	1
	P80N-218BTC	stationary seal tungsten carbide	1
P80R	P80R-218BIG	stationary inboard gasket	1
X7	X7-220-CASE-C	220-230 series pump casing with clamp outlet	1
X8	X8-220-A725	220-230 series impeller 7¼" max diameter	1
	X8-220-AXXX	220-230 series trimmed impeller	1
X8A *	X8A-200-IORE	200 series impeller O-ring EPDM	1
	X8A-200-IORV	200 series impeller O-ring FKM	1
	X8A-200-IORB	200 series impeller O-ring Buna	1
X9	X9-220-CVR-C	220 series pump cover with clamp inlet 3"	1
	X9-230-CVR-C	230 series pump cover with clamp inlet 4"	1
X9A *	X9A-220-COR-E	220-230 series cover/casing O-ring, EPDM	1
	X9A-220-COR-V	220-230 series cover/casing O-ring, FKM	1
	X9A-220-COR-B	220-230 series cover/casing O-ring, Buna	1
X10	X10-200-WN	200 series cover wing nuts	4

* Denotes variable parts

Casing Drain Options - ExD 200, ExD 210, ExD 220, ExD 230

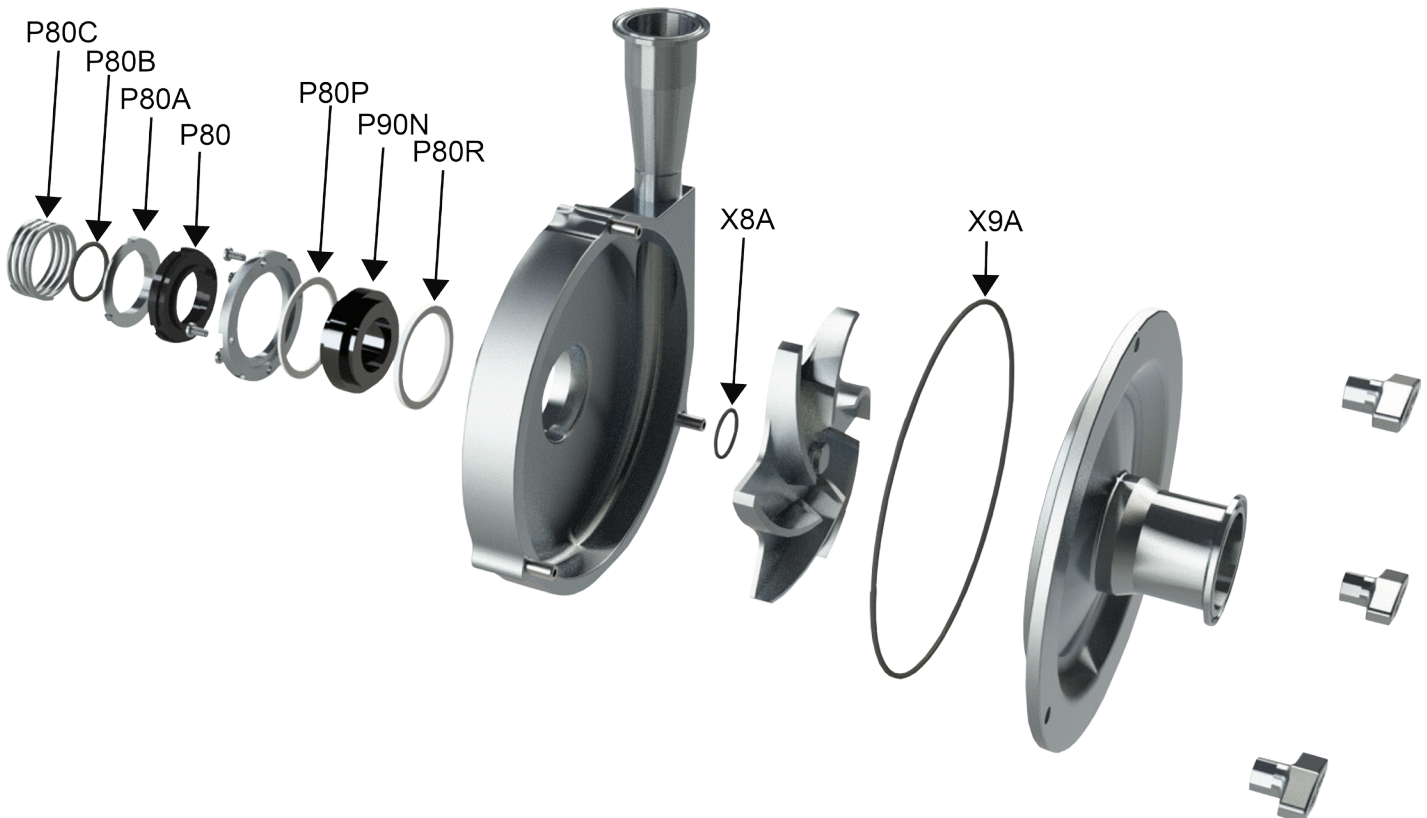
Key No.	Part Number	Description	QTY/Assembly
X7	X7-200-CASE-C-A	EXD 200-210 pump casing with clamp outlet, Drain A	1
	X7-200-CASE-C-D	EXD 200-210 pump casing with clamp outlet, Drain D	1
	X7-200-CASE-C-J	EXD 200-210 pump casing with clamp outlet, Drain J	1
	X7-200-CASE-C-K	EXD 200-210 pump casing with clamp outlet, Drain K	1
	X7-220-CASE-C-A	EXD 220-230 pump casing with clamp outlet, Drain A	1
	X7-220-CASE-C-D	EXD 220-230 pump casing with clamp outlet, Drain D	1
	X7-220-CASE-C-J	EXD 220-230 pump casing with clamp outlet, Drain J	1
	X7-220-CASE-C-K	EXD 220-230 pump casing with clamp outlet, Drain K	1

Repair Kits

ExD Series Repair Kits

- 1 - Rotary Seal (P80)
- 1 - Seal Cup (P80A)
- 1 - Seal O-ring (P80B)
- 1 - Seal Spring (P80C)
- 1 - Seal Seat (P80N)
- 1 - Outboard Gasket (P90)
- 1 - Inboard Gasket (P80R)
- 1 - Impeller O-ring (X8A)
- 1 - Casing/Cover O-ring (X9A)

Model Number	Elastomer	Ceramic/Carbon	SC/Carbon	SC/SC	TC/TC
ExD 100 ExD 110	FKM	PRK-EXD100VCC-1	PRK-EXD100VSC-1	PRK-EXD100VSS-1	PRK-EXD100VTC-1
	Buna	PRK-EXD100BCC-1	PRK-EXD100BSC-1	PRK-EXD100BSS-1	PRK-EXD100BTC-1
	EPDM	PRK-EXD100ECC-1	PRK-EXD100ESC-1	PRK-EXD100ESS-1	PRK-EXD100ETC-1
ExD 120 ExD 130	FKM	PRK-EXD120VCC-1	PRK-EXD120VSC-1	PRK-EXD120VSS-1	PRK-EXD120VTC-1
	Buna	PRK-EXD120BCC-1	PRK-EXD120BSC-1	PRK-EXD120BSS-1	PRK-EXD120BTC-1
	EPDM	PRK-EXD120ECC-1	PRK-EXD120ESC-1	PRK-EXD120ESS-1	PRK-EXD120ETC-1
ExD 20 ExD 210	FKM	PRK-EXD200VCC-1	PRK-EXD200VSC-1	PRK-EXD200VSS-1	PRK-EXD200VTC-1
	Buna	PRK-EXD200BCC-1	PRK-EXD200BSC-1	PRK-EXD200BSS-1	PRK-EXD200BTC-1
	EPDM	PRK-EXD200ECC-1	PRK-EXD200ESC-1	PRK-EXD200ESS-1	PRK-EXD200ETC-1
ExD 220 ExD 230	FKM	PRK-EXD220VCC-1	PRK-EXD220VSC-1	PRK-EXD220VSS-1	PRK-EXD220VTC-1
	Buna	PRK-EXD220BCC-1	PRK-EXD220BSC-1	PRK-EXD220BSS-1	PRK-EXD220BTC-1
	EPDM	PRK-EXD220ECC-1	PRK-EXD220ESC-1	PRK-EXD220ESS-1	PRK-EXD220ETC-1



Limited Warranty

Dixon Sanitary (herein called "Dixon") warrants the products described herein, and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

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Some products and sizes may be discontinued when stock is depleted, or may require a minimum quantity for ordering.

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Dixon, founded in 1916, is a premier manufacturer and supplier of hose couplings, valves, dry-disconnects, swivels, and other fluid transfer and control products. The company's global reach includes a wide range of products for numerous industries including petroleum exploration, refining, transportation, chemical processing, food & beverage, steel, fire protection, construction, mining and manufacturing. Dixon's strategic objective is to create solutions that make products safer, leak-free, longer lasting, and always available.



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