



# Model 22060CC 2.5" Close-Coupled Pump Manual



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(262)-909-0013



## Thank you for purchasing a US-FIP product!

This manual contains installation, operation, cleaning and repair instructions, with parts lists, for your US-FIP Pump.

**READ THIS MANUAL** carefully to learn how to service the US-FIP Pump. Failure to do so could result in personal injury or equipment damage.

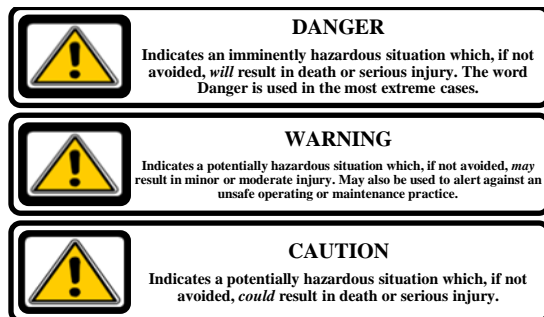
### SAFETY:

Safety is very important!

**DO NOT attempt to modify any US-FIP product.** To do so could create unsafe conditions and void all warranties.

**DO NOT place any US-FIP product in an application where general product service ratings are exceeded.**

The following DANGER, WARNING, AND CAUTION signs and their meanings are used within these instructions.



Safety labels are placed on every US-FIP product. Do not remove any labeling on any US-FIP product. Immediately replace any label that is missing.

### UNPACKING EQUIPMENT

When unpacking your equipment, inspect all contents for damage that may have occurred during shipping. Report any damage to the carrier.

## FLUID CONTACT MATERIALS

304 Stainless Steel, EPDM, Carbon Graphite

## OPERATING INSTRUCTIONS



### Proper Impeller Care

- Keep dry running to a minimum.
- Use 10' of suction hose of the same diameter as the pump connection or larger.
- If the pump makes a "ticking" noise, Slow Down! - Your impeller is suffering.
- **Rinse your pump thoroughly with water.**
- Never leave anything in the pump besides water.

Use **ONLY** food grade silicone lubricants

Any questions please call (262)-909-0013

**Installation** – Your US-FIP Pump head may be rotated to any position. The rotation of your US-FIP Pump shaft determines the inlet and outlet ports (refer to the dimensional drawing).

The pump is normally assembled at the factory for counterclockwise rotation when looking at the front. If counterclockwise rotation is required, your US-FIP pump has reverse capability on the variable frequency drive that is facilitated by your remote transmitter.

**Drive** – Your US-FIP Pump is mounted directly to the motor.

**Speeds** – Your US-FIP Pump is operable from 100-1200 RPM. For longer pump life, operate at the lowest possible speed. Low speeds are also required for viscous fluids.

**Self-Priming** – Your US-FIP Pump is capable of priming at low or high speed. For vertical dry lifts of 10 feet, a minimum of 30 HZ is required. The pump will lift up to 22 feet when wet. The suction lines must be air tight for self-priming operations and must be less than or equal to the pump port size and less than 10ft long.

**Running Dry** – This pump relies on the pumped fluid for impeller and seal lubrication. Do not

Use **ONLY** food grade silicone lubricants



**WARNING**  
Relieve pressure and remove all fluid from the US-FIP pump prior to disassembly.



**WARNING**  
Remove power prior to servicing to prevent unintended start of the pump.

run dry for more than 30 seconds. Running the pump without liquid will damage the impeller.

**Compatibility** – Neutralize all corrosive cleaning solutions after each use or at the end of each day to prolong pump life. Leave nothing in the pump other than water.

**Temperatures** – The operating temperature range of this pump is 40° to 180° F (7° to 80° C). Hi-Temp

**Cleaning** – All parts have been expertly manufactured and polished—handle all parts with care.

If acidic cleaners are used, be sure to rinse the pump thoroughly after each application.

**NOTE: The US-FIP is not designed for clean-in-place operations and must be disassembled for proper cleaning.**

**Impeller Torque** – The torque required to initiate rotation of a new impeller in a dry pump body is:

Forward: 10.2 pounds force – feet

Reverse: 18.8 pounds force – feet

These values may vary slightly due to manufacturing tolerances.

**Spare Parts** – To avoid costly downtime, keep a spare US-FIP impeller, seal kit and o-rings on hand.

## SERVICE INSTRUCTIONS

### GENERAL

The US-FIP Pump is relatively maintenance free, requiring normal cleaning and inspection to ensure optimum performance. Inspect the impeller and all seals for cuts or abrasions and inspect seal faces for nicks and cracks. Replace worn or damaged parts as necessary.

### REPAIR INFORMATION

Repair of the US-FIP Pump is normally accomplished by replacing defective parts. The only moving parts are the impeller, the pump and motor shafts, and the seal. For repair or replacement of the drive motor, refer to the motor manufacturer. Refer to the Parts List for replacement data for the US-FIP Pump parts. See the US-FIP Pump Disassembly section below for replacement instructions.

#### Inspection

Remove only the front housing clamp and front cover to expose the impeller within the body.

Remove only the rear housing clamp and body with the impeller contained therein for inspection/replacement of the seal.

#### Disassembly

1. Remove the front housing clamp (1) and front cover (2) with o-ring (3). Remove the o-ring from front cover and inspect for wear/damage.
2. Remove the rear housing clamp (1) and slide the pump housing (5), with impeller (4), from the shaft (10). Remove the impeller from the body and inspect for wear/damage
3. Remove back plate (6) with o-ring (3) by rotating counter-clockwise to disengage the retaining studs.



**CAUTION**  
The seal spring will push the back plate forward when free of the retaining studs.

4. Remove the o-ring from the back plate and inspect for wear/damage. Remove the seal seat (7b).
5. Remove the seal face (7c) with o-ring (7d). Remove the o-ring from the seal face. Remove the wave spring (8) and inspect. Remove the seal collar (9) from



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the shaft being careful not to mar or damage the shaft finish.

- Remove the four bolts from the motor adapter and remove the adapter from the motor. (11)
- Loosen the pump shaft set screws and remove the pump shaft from the motor shaft.

**Assembly**

- Carefully slide the pump shaft (10) over the motor shaft, with the shaft key in place. Make sure that the pump shaft bottoms out onto the motor shaft. Tighten the shaft set screws.
- Place the motor adapter (11) onto the motor and secure with 4 bolts.

Mechanical Seal:

- The seal seat (7b) has a lapped surface on one side and a rubber surface on the opposite side. Carefully insert the seal seat into the back plate with the lapped surface facing out, away from the back plate.
- Slide the stainless steel seal collar (9) **TO THE BASE** (bottom) of the shaft being careful not to mar or damage the shaft finish. Tighten both set screws with a 3/32 Allen wrench. Place the wave spring (8) over the seal collar. Fit a new o-ring into the ID of the stainless steel seal face (7c). Place the stainless steel seal face onto the shaft and **ALIGN THE SLOTS WITH THE SET SCREWS**. The wave spring (8) will compress into the seal face (7c).

**DO NOT LUBRICATE SEAL!**



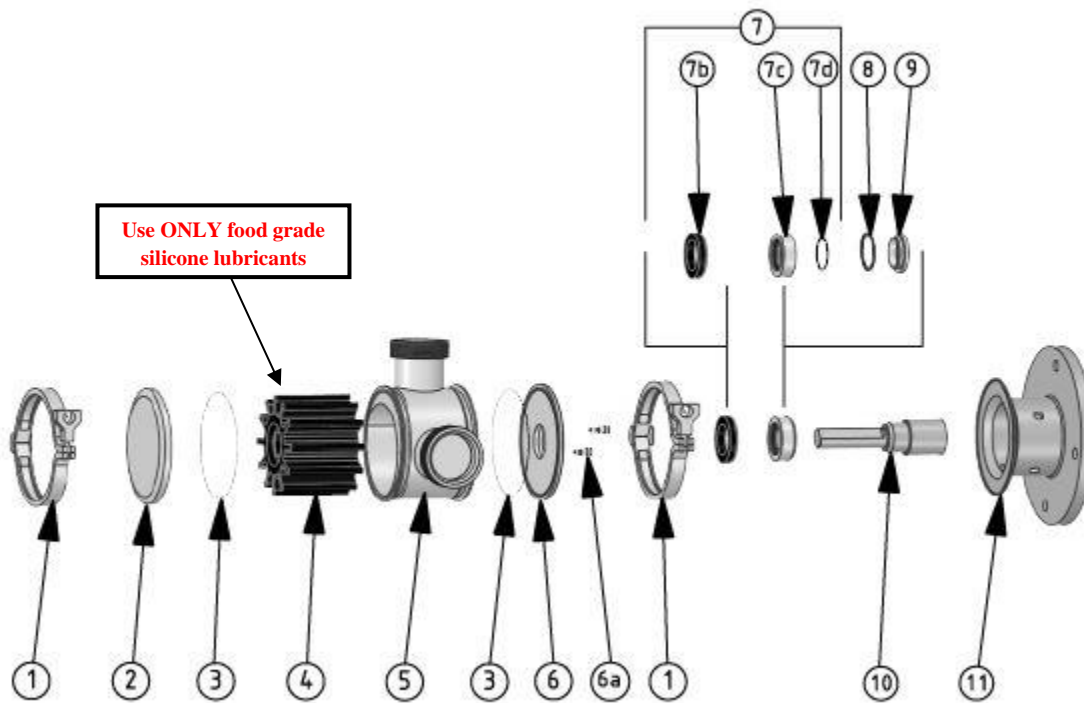
Pump Head

- Place a new o-ring (3) into the groove on the back plate; align the retaining studs with the slots in the bearing frame, push and rotate clockwise into place.
- Lubricate a new impeller (4) and rotate into the pump housing (5) until the impeller is about 1/2 way into the housing. With the impeller still sticking out of the top of this housing. Align the bottom of the pump housing with the back plate and secure with a housing clamp. Continue to rotate the impeller into the housing until seated.

Clockwise Rotation – Rotate the impeller into the pump housing with blades bending counterclockwise.

Counterclockwise Rotation - Rotate the impeller into the pump housing with blades bending clockwise.

- Place a new o-ring (3) into the groove on the front cover (2). Place the front cover onto the pump housing and secure with a housing clamp (1).



## Parts List

(See exploded view)

	<b>Part #</b>	<b>Description</b>
1	US21909-0000	Housing clamp
2	US22007-0000	Front Cover
3	US92000-1213-EPM	Housing O-ring (2)
4	US8500-0005E	2.5" EPDM Impeller
5	US22004-5002	Pump Casing
6	US21937-0000	Back Plate
6a	US21937-1000	Back Plate Shoulder Screws (2)
7b	US22644-1001	Carbon Seal Seat
7c	US22644-2101	Driven SS Seal Face
7d	US22644-3200-EPM	Seal Face O-Ring
8	US22644-3300	Wave Spring
9	US22644-3101	Locking Rotating Seal Collar
10	060-006-304-180	Shaft
11	060-071-304-180	Motor Adapter
	US22644-6001	Driven Mechanical Seal Kit (7,8,9)



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