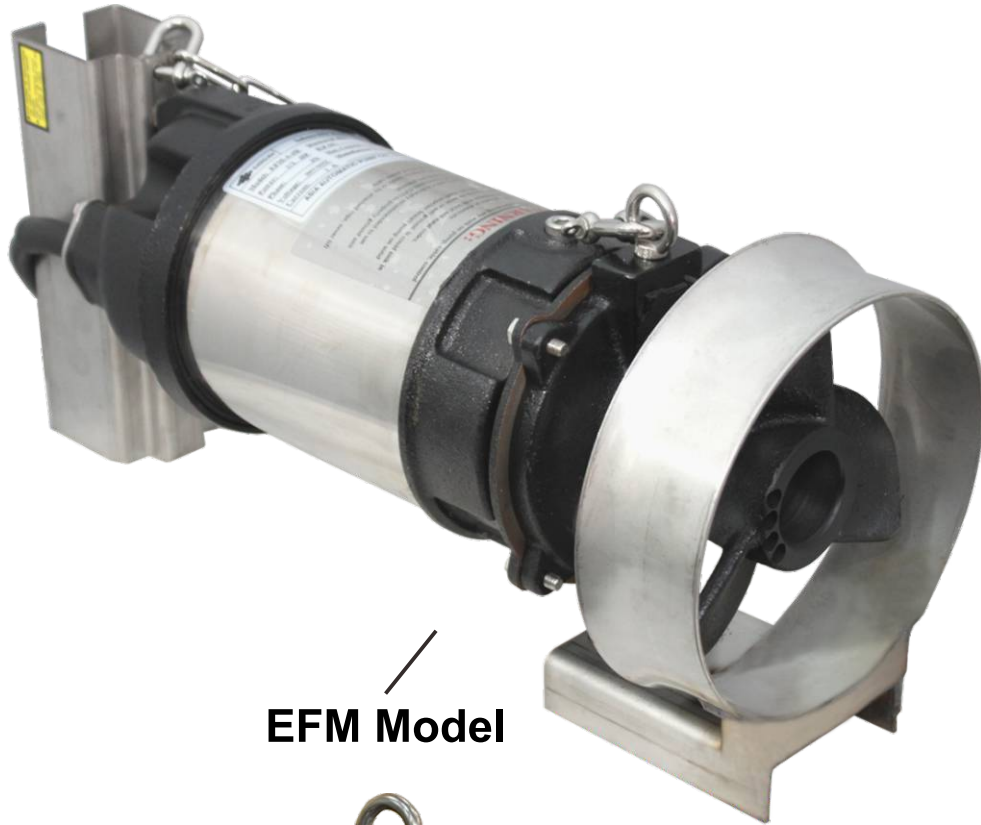




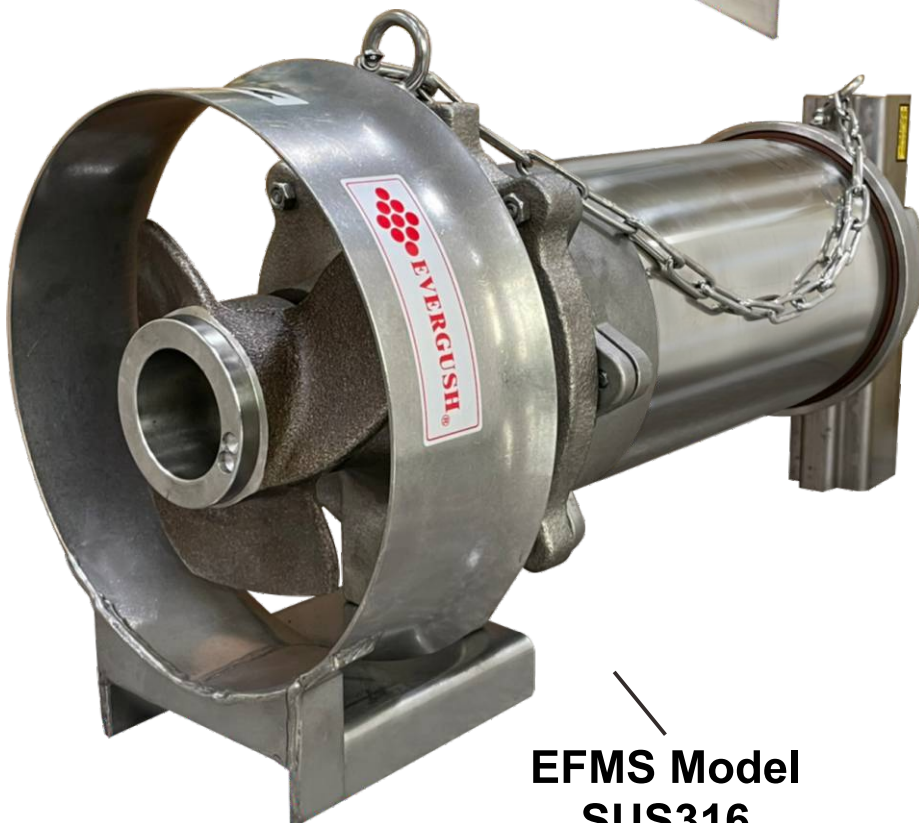
Instruction Manual

Submersible Mixer

MODEL—EFM/EFMS



EFM Model



**EFMS Model
SUS316**

Asia Automatic Pump Co.,Ltd
MADE IN TAIWAN

Introduction

Check the following points upon receipt of your mixer set:

- Is the mixer exactly what you ordered? Check nameplate. It is especially important that you check whether the mixer is to be used with 50 or 60 Hz.
- Has any damage occurred during shipment? Are any bolts or nuts loose?
- Have all necessary accessories been supplied? (For a list of standard accessories see Construction.)

We recommend that you keep a spare one on hand in case of emergencies. Keep this instruction manual in a place for future reference.

Installation

1. Check the following before beginning installation.

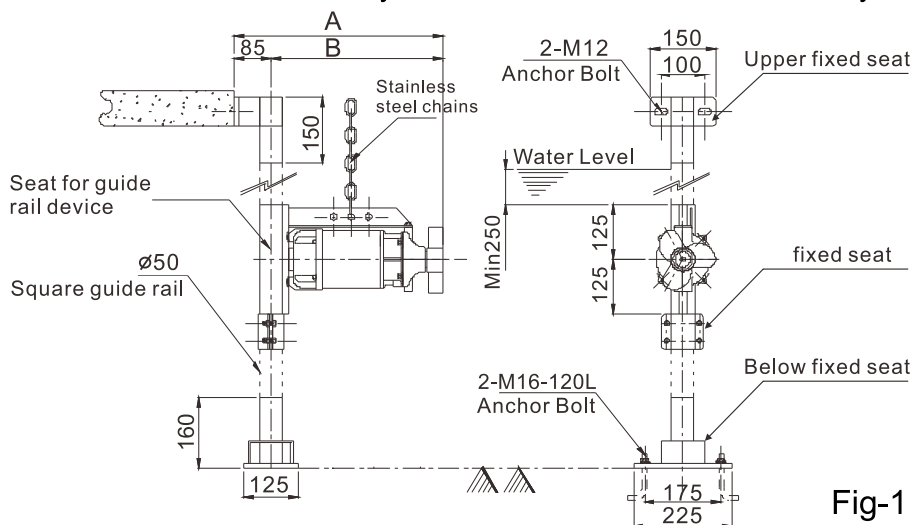
Insulation resistance measurement:

With the motor and cable (excluding the power supply cable) immersed in water, use a Megger to measure the insulation resistance between ground and each phase of the motor, and again between each phase of the motor. The Megger should indicate an insulation resistance of not less than 20mega ohms. While making the measurement, keep the power supply cable off the ground.

2. Installation-

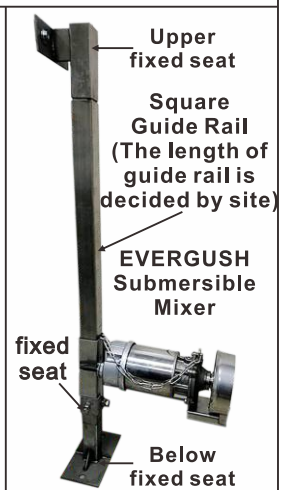
QDC— Refer to Fig-1

- (1) Lift the mixer using a chain fall or hoist and insert sliding portion of Q.D.C. into guide rail or insert sliding portion of Q.D.C. or sliding guide into guide pipe
- (2) During installation, proceed very carefully and take every precaution to prevent the unit and the mixer from being dropped. Mixer should not be inclined in excess of values shown in the table at right when raising or lowering.
- (3) **WARNING :** When lifting or lowering the mixer, the motor cable should never be pulled. Proceed carefully so that this cable is not cut or in any way damaged.

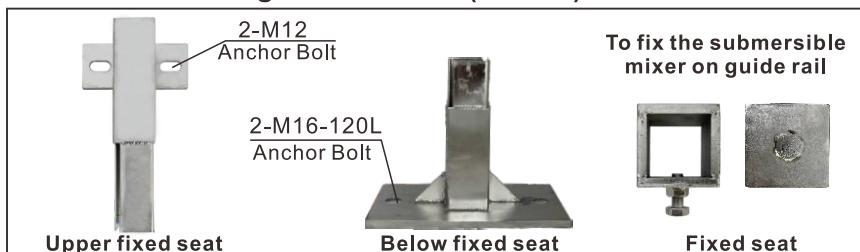


For easy maintenance and safety

OPTIONAL-
Q.D.C.



Quick Discharge Connection(Q.D.C.)=Guide Rail Device



Model	Model	Output		Pole	Capacity	Flow Speed	Dimensions(mm)		N.Weight
		KW	HP				A	B	
EFM-05T	EFMS-05T	0.37	0.5	4	108	1.78	480	395	16
EFM-10T	EFMS-10T	0.75	1	4	192	2.02	510	425	18
EFM-20T	EFMS-20T	1.50	2	4	270	2.50	632	567	40
EFM-30T	EFMS-30T	2.20	3	4	408	3.50	652	587	43

●Model EFMS is SUS316 Submersible Mixer

Operation

1. Before starting the mixer

- (1) After completing installation, measure the insulation resistance again as described in Installation.
- (2) Check water level.

If the mixer is operated continuously for an extended period of time in a dry condition or at the lowest water level, the motor protector will be activated. Constant repetition of this action will shorten mixer service life. Do not start the mixer again in such a situation until after the motor has completely cooled.

2. Test operation ?

- (1) Turn the operating switch on and off a couple of times to check for normal mixer start.
- (2) Next, check direction of rotation. If discharge volume is low or unusual sounds are heard when the mixer is operating, rotation has been reversed. When this happens, reverse two of the wires.

Maintenance

Check water volume, output, voltage, current and other specifications. Unusual readings may indicate. Refer to Troubleshooting and correct as soon as possible.

1. Parts that will need to be replaced

Replace the appropriate part when the following conditions are apparent.

Replaceable part	Mechanical seal	Oil filler plug gasket	Lubricating oil	O-ring
Replacement guide	Whenever oil in mechanical seal chamber is clouded	Whenever oil is replaced or inspected	Whenever clouded or dirty	Whenever mixer is overhauled
Frequency	Annually	A half yearly	A half yearly	Annually

Note: above replacement schedule is based on normal operating conditions.

Motoroutput Part	0.37kw	0.75kw	1.5kw	2.2kw
Mechanical seal	12ψ		25ψ	
Oil seal	16ψx 26ψx 5 t		25ψx 44ψx 6 t	
Oil filler plug gasket	(Inner diameter) x (outer diameter) x (thickness) =8.5ψx 13ψx 0.8 t PE washer			
Lubricating oil (turbine oil #32)	150 cc		550 cc	

Troubleshooting

Trouble	Cause	Remedy
Does not start. Starts, but immediately stops.	(1) Power failure (2) Large discrepancy between power source and voltage (3) Significant drop in voltage (4) Motor phase malfunction (5) Electric circuit connection faulty (6) Faulty connection of control circuit (7) Fuse blown (8) Faulty magnetic switch (9) Water is not at level indicated (10) Short circuit breaker is functioning (11) Foreign matter clogging mixer (12) Motor burned out (13) Motor bearing broken	(1)~(3) Contact electric power company and devise counter-measures (4) Inspect electric circuit (5) Correct wiring (6) Inspect connections and magnetic switch (7) Replace with correct type of fuse (8) Replace with correct one (9) Raise water level (10) Repair location of short circuit (11) Remove foreign matter (12) Repair or replace (13) Repair or replace
Operates, but stops after a while.	(1) Prolonged dry operation has activated motor protector and caused mixer to stop (2) High liquid temperature has activated motor protector and caused mixer to stop (3) Reverse rotation ! WARNING :	(1) Raise stop water level (2) Lower liquid temperature (3) Correct rotation
Does not mixer. Inadequate volume.	(1) Reverse rotation (2) Significant drop in voltage (3) Operating a 60Hz mixer on 50Hz (4) Discharge nozzle is clogged (5) Too deep submerged (6) Foreign matter clogging mixer (7) Worn impeller	(1) Correct rotation (see Operation) (2) Contact electric power company and devise counter-measures (3) Check nameplate (4) Clean it (5) Recalculate and adjust (6) Remove foreign matter (7) Replace impeller
Over current	(1) Unbalanced current and voltage (2) Significant voltage drop (3) Motor phase malfunction (4) Operating 50Hz mixer on 60Hz (5) Reverse rotation ! WARNING : (6) Foreign matter clogging mixer (7) Motor bearing is worn or damaged	(1) Contact electric power company and devise counter-measure (2) Contact electric power company and devise counter-measure (3) Inspect connections and magnetic switch (4) Check nameplate (5) Correct rotation (see Operation2) (6) Remove foreign matter (7) Replace bearing
Mixer vibrates; excessive operating noise.	(1) Reverse rotation (2) Mixer clogged with foreign matter	(1) Correct rotation (2) Disassemble and remove foreign matter

