
Installation, Operation and Maintenance Manual



Stancor™ SEW Series Pumps



Safety Guidelines

This instruction manual provides you with the information required to safely own and operate your product. Retain these instructions for future reference.

The product you have purchased is of the highest quality workmanship and material and has been engineered to give you long and reliable service.

This product has been carefully tested, inspected, and packaged to ensure safe delivery and operation. Please examine your item(s) carefully to ensure that no damage occurred during shipment.

If damage has occurred, please contact the place of purchase. They will assist you in replacement or repair, if required.

READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE, OR SERVICE YOUR PRODUCT.
KNOW THE PRODUCT'S APPLICATION, LIMITATIONS, AND POTENTIAL HAZARDS. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!



WARNING: RISK OF ELECTRIC SHOCK.

To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding type receptacle.

When a pump is in a basin, etc., do not touch motor, pipes or water until unit is unplugged or shut off. If your installation has water or moisture present, do not touch wet area until all power has been turned off. If shut-off box is not accessible, call the electric company to shut off service to the location, or call your local fire department for instructions. Failure to follow this warning can result in fatal electrical shock.

The flexible jacketed cord assembly mounted to the pump must not be modified in any way, with the exception of shortening the cord to fit into a control panel. Any splice between the pump and the control panel must be made within a junction box and mounted outside of the basin and comply with the National Electrical Code. Do not use the power cord for lifting the pump.

The pump motor is equipped with an automatic resetting thermal protector and may restart unexpectedly. Protector tripping is an indication of motor overloading as a result of operating the pump at low heads (low discharge restriction), excessively high or low voltage, inadequate wiring, incorrect motor connections, or a defective motor or pump.

For a submersible well pump:

Reduced risk of electric shock during operation of this pump requires the provision of acceptable grounding:

When the means of connection to the supply-connection box is other than grounded metal conduit, ground the pump back to the service by connecting a copper conductor, at least the size of the circuit conductors supplying the pump, to the grounding screw provided within the wiring compartment.

This pump is provided with a means for grounding. To reduce the risk of electric shock from contact with adjacent metal parts, bond supply box to the pump-motor-grounding means and to all metal parts accessible at the well head, including metal discharge pipes, metal well casing, and similar parts, by means of:

- An equipment-grounding conductor at least the size of the well-cable conductors or the equivalent, that runs down the well with the well cable and
- A clamp, a weld, or both when required, secured to the equipment-grounding lead, the equipment-grounding terminal, or the grounding conductor on the pump housing.
- The equipment-grounding lead, when one is provided, is the conductor that has an outer surface of insulation that is green with or without one or more yellow stripes.

For a cord and plug-connected pump:

Risk of electric shock - This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a proper grounded, grounding type receptacle.

When use as a fountain pump, to reduce the risk of electric shock, use only on portable self-contained fountains no larger than 5 feet in any dimension. Read all instructions and Safety Guidelines thoroughly. Failure to follow the guidelines and instructions could result in serious bodily injury and/or property damage.

DO NOT USE TO PUMP FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. FAILURE TO FOLLOW THIS WARNING CAN RESULT IN PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.

During normal operation, this pump is immersed in water. Also, during rainstorms, water may be present in the surrounding area of the pump.

Caution must be used to prevent bodily injury when working near the pump. Electrical power should be disconnected prior to touching, servicing or repairing the pump.

Do not run the pump in a dry basin. If the pump is run in a dry basin, the surface temperature of the pump will rise to a high level. This high temperature could cause skin burns if the pump is touched and will cause serious damage to your pump.

Do not install in locations classified as hazardous in accordance with the National Electrical Code, ANSI/NFPA 70.

Do not remove cord and strain relief. Do not connect conduit to pump.

Instruction Manual

2.5" & 3" Full-Passage Submersible Pump

SEW DN65/80 SERIES

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Introduction

Check the following points upon receipt of your pump:

- > Is the pump exactly what you ordered? **Check nameplate.** It is especially important that you check whether the pump 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 pump on hand in case of emergencies.

Keep this instruction manual in a place for future reference.

Specifications

Check the nameplate for your pump's head, discharge volume, speed (R.P.M), motor voltage and current.

Other specifications are noted in the chart below.

Item		Specifications		
Liquid handled	Type	Sewage, wastewater, miscellaneous drain water		
	Temperature	Non-Automation	1.5~3 HP	0~40°C (32~104°F)
		Automation	1.5~2 HP	0~40°C (32~104°F)
Materials	Casing	FC 200		
	Impeller	FC 200		
	Shaft	SUS410 stainless steel		
Motor type		Dry type submersible motor		
Shaft seal lubrication oil		Turbine No.32 ISO VG-32		
Maximum water depth		10m (33ft)		

Installation

1. Check the following before beginning installation.

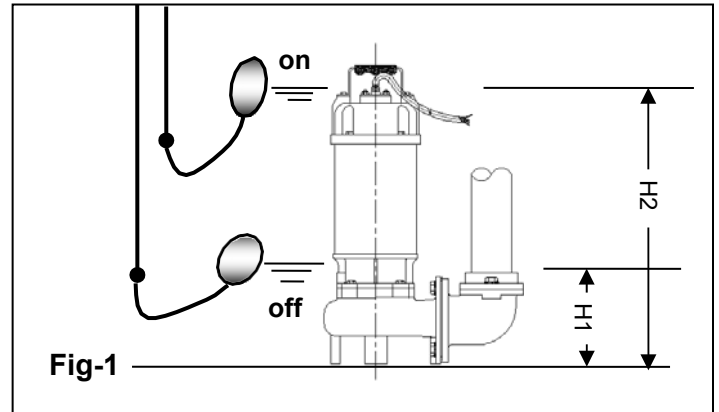
Insulation resistance measurement:

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.

We recommend that an auxiliary pump be kept on hand in case of emergency.

2. Installation

1. **! WARNING:** Under no circumstances should cable be pulled while the pump is being transported or installed. Attach a chain or rope to the grip and install the pump.
2. This pump must not be installed on its side or operated a dry condition. Ensure that it is installed upright on a secure base.
3. Install the pump at a location in the tank where there is the least turbulence.
4. If there is a flow of liquid inside the tank, support the piping where appropriate.
5. Install piping so that air will not be entrapped. If piping must be installed in such a way that air pockets are unavoidable, install an air release valve wherever such air pockets are most likely to develop.
6. Do not permit end of discharge piping to be submerged, as backflow will result when the pump is shut down.
7. **! WARNING:** Non-automatic pumps do not have an automatic operating system. Do not operate the pump for a long time with the water level near the lowest water level(H1) as shown in Fig.1, as the automatic cut-off switch incorporated inside the motor will be activated.
8. To avoid dry operation, install an automatic operating system so that this will not happen, as shown in Fig.2 and maintain a safe operating water level.



H1: Lowest water level (Motor flange)
H2: Operating water level
 This must be above the top of the motor

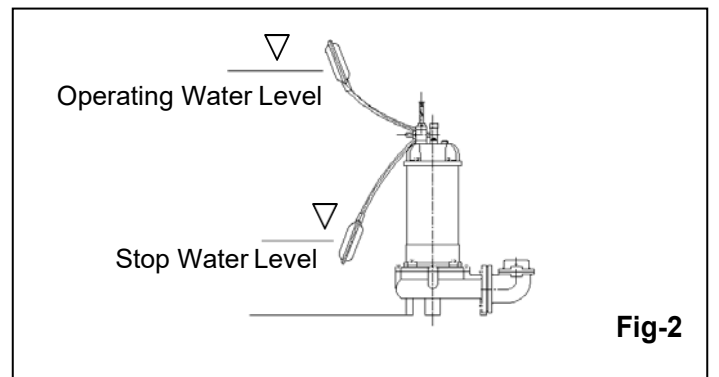


Fig-2

Electrical wiring

1. Wiring

- A. Wire as indicated for the appropriate start system as shown in **Fig-3**.
- B. Loose connections will stop the pump. Make sure all electrical connections secure.
2. Cable
- C. **! WARNING:** Never let the end of the cable contact water.
- D. If the cable is extended, do not immerse the splice in water.
- E. Fasten the cable to the discharge piping with tape or vinyl strips.
- F. Install the cable so that it will not overheat. Overheating caused by coiling the cable and exposing it to direct sunlight.
3. Grounding
 As shown in **Fig-4** ground the green wire (label E). Under no circumstances should the green wire be connected to the power supply.
4. **! WARNING:** Use short circuit breakers to prevent danger of electrical shock.

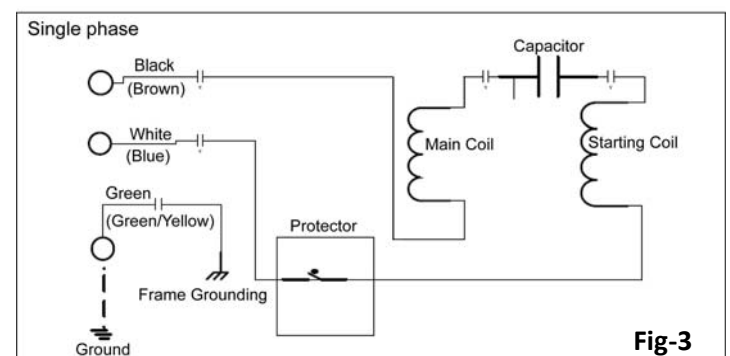


Fig-3

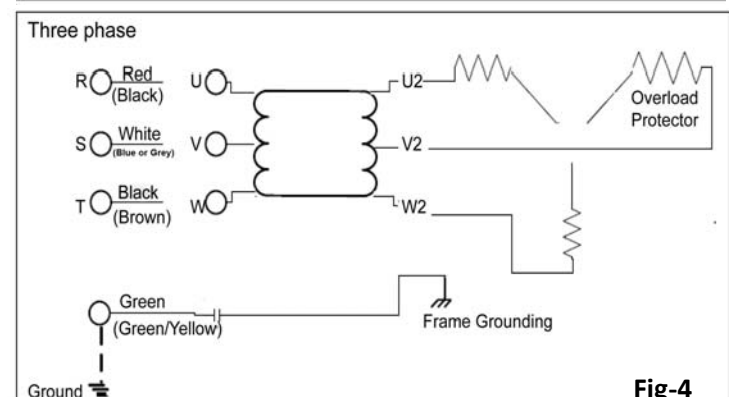


Fig-4

Operation

1. Before starting the pump

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

If the pump 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 pump service life. Do not start the pump again in such a situation until after the motor has completely cooled.

2. Test operation....

Non-automatic pump

Automatic pump

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

Maintenance

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

1. Daily inspections

Check current and ammeter fluctuation daily. If ammeter fluctuation is great, even though within the limits of pump rating, foreign matter may be clogging the pump. If the quantity of liquid discharged falls suddenly, foreign matter may be blocking the suction inlet.

2. Regular inspections

Monthly inspections

Measure the insulation resistance. The value should be more than 1M ohm. If resistance starts to fall rapidly even with an initial indication of over 1M ohm, this may be an indication of trouble and repair work is required.

Annual inspections

To prolong the service life of the mechanical seal by replacing the oil in the mechanical seal chamber once a year. Water mixed the oil or cloudy textures are indications of a defective mechanical seal requiring replacement. When replacing the oil, lay the pump on its side with filler plug on top. Inject suitable amount turbine oil No.32 (ISO VG-32)

Inspections at 3-5year intervals

Conduct an overhaul of the pump. These intervals will preclude the possibility of future trouble.

3. Parts that will need to be replaced

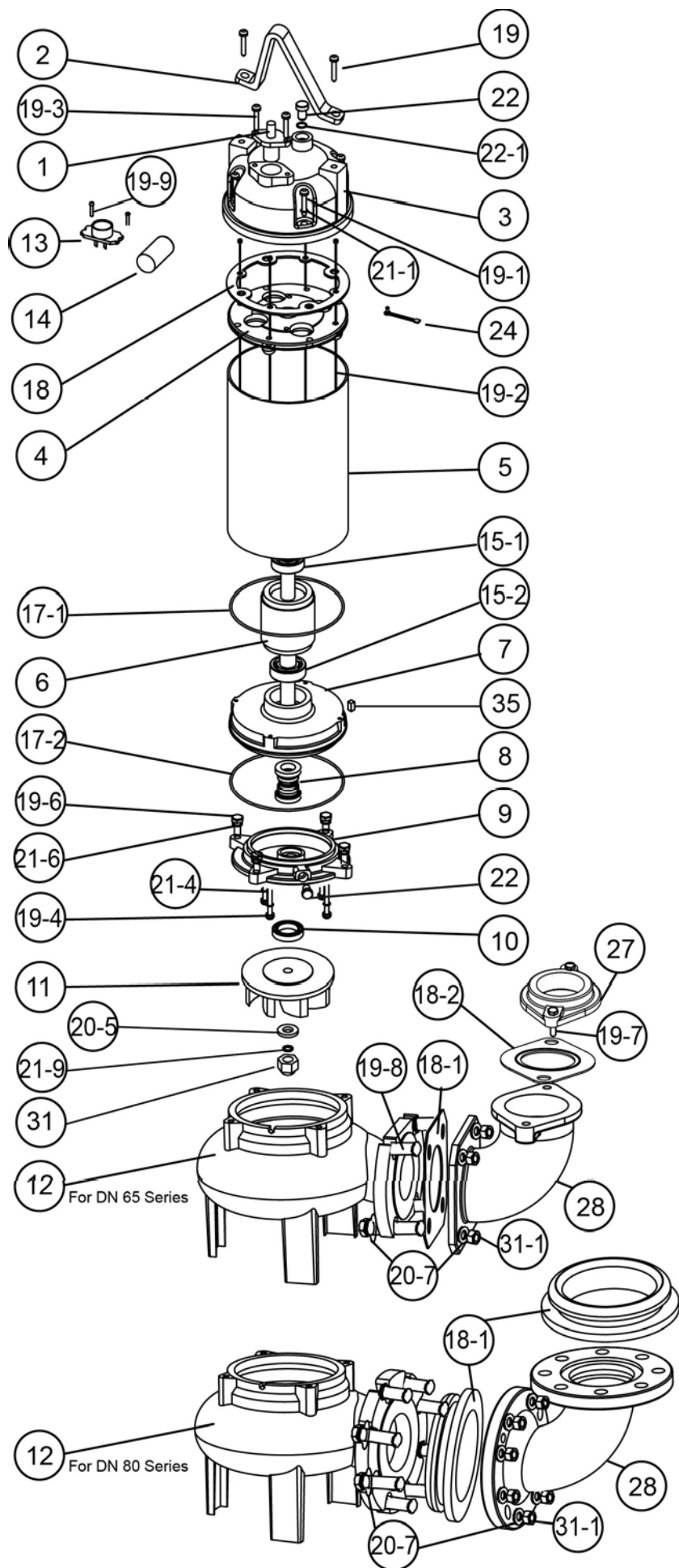
Replace the appropriate part when the following conditions are apparent.

Replaceable part	Mechanical seal	Oil filler plug O-ring	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 pump is overhauled
Frequency	Annually	A half yearly	A half yearly	Annually












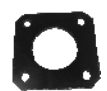







Note: above replacement schedule is based on normal operating conditions.

Motor output	1.5HP	2HP	3HP
Mechanical seal	15Ø		
Oil seal	15Øx 24Øx 7 t		
Oil filler plug O-ring	(Inner diameter) x (outer diameter) x (thickness) = 7.52Øx14.5Øx3.53 t		
Lubricating oil (turbine oil #32)	280 cc		

Construction

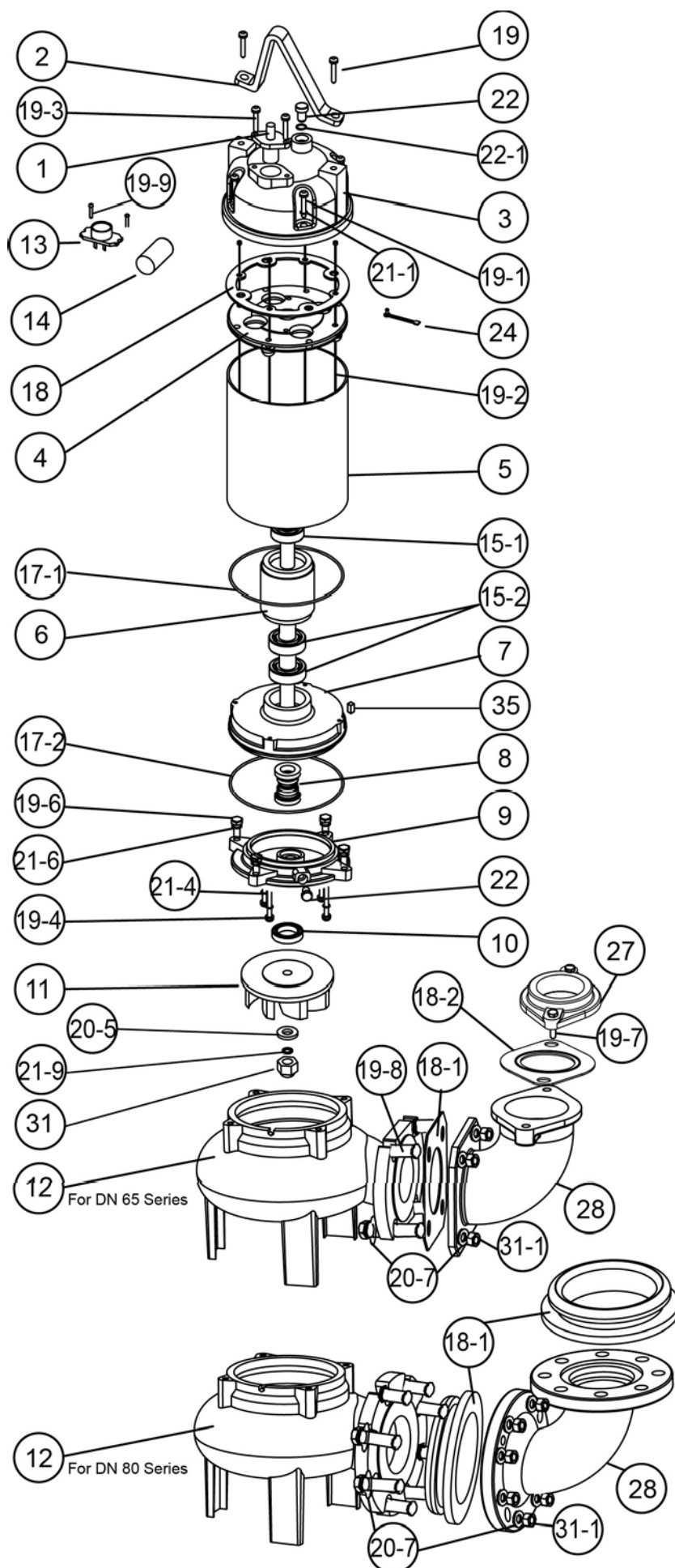


SEW DN 1.5~2HP




















NO	Name	Mtrl	Photo	NO	Name	Mtrl	Photo
2	Handle	SS41		12	Pump Casing (DN65)	FC 200	
3	Motor Cover	FC 200		12	Pump Casing (DN80)	FC 200	
4	Bracket	FC 200		15	Bearings		
5	Motor Housing +Stator	SUS 304		17	O-rings	NBR	
6	Shaft with Rotor	SUS 410		18	Gasket	NBR	
7	Oil Chamber	FC 200		18-1	Elbow Gasket	NBR	
8	Double Mech. Seal	CA/CE + SIC/SIC		18-2	Flange Packing	NBR	
9	Seal Housing	FC 200		27	Flange	FC 200	
10	Oil Seal	NBR		28	Elbow	FC 200	
11	Impeller	FC 200					

NO	Name	Mtrl	NO	Name	Mtrl
1	Cable	H07RN-F/ SJTOW/STOW	20-5	Washer	SUS 304
13	Protector (3 Phase)		20-7	Washer	SUS 304
14	Capacitor (1 Phase)		21-1	Spring Washer	SUS 304
19	Screw	SUS 304	21-4	Washer with O-ring	SUS 304+NBR
19-1	Screw	SUS 304	21-6	Spring Washer	SUS 304
19-2	Long Screw of motor	Steel	21-9	Spring Washer	SUS 304
19-3	Screw	SUS 304	22	Oil Filler Plug	SUS 304
19-4	Screw	SUS 304	22-1	O-ring of Oil Filler Plug	NBR
19-6	Screw	SUS 304	24	Wire and Screw	SUS 304
19-7	Screw	SUS 304	31	Nut of impeller	SUS 304
19-8	Screw	SUS 304	31-1	Nut of Elbow	SUS 304
19-9	Screw	SUS 304	35	Key	SUS 304

Construction



SEW DN 3HP

NO	Name	Mtrl	Photo	NO	Name	Mtrl	Photo
2	Handle	SS41		12	Pump Casing (DN65)	FC 200	
3	Motor Cover	FC 200		12	Pump Casing (DN80)	FC 200	
4	Bracket	FC 200		15	Bearings		
5	Motor Housing +Stator	SUS 304		17	O-rings	NBR	
6	Shaft with Rotor	SUS 410		18	Gasket	NBR	
7	Oil Chamber	FC 200		18-1	Elbow Gasket	NBR	
8	Double Mech. Seal	CA/CE + SIC/SIC		18-2	Flange Packing	NBR	
9	Seal Housing	FC 200		27	Flange	FC 200	
10	Oil Seal	NBR		28	Elbow	FC 200	
11	Impeller	FC 200					

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19	Screw	SUS 304	21-4	Washer with O-ring	SUS 304+NBR
19-1	Screw	SUS 304	21-6	Spring Washer	SUS 304
19-2	Long Screw of motor	Steel	21-9	Spring Washer	SUS 304
19-3	Screw	SUS 304	22	Oil Filler Plug	SUS 304
19-4	Screw	SUS 304	22-1	O-ring of Oil Filler Plug	NBR
19-6	Screw	SUS 304	24	Wire and Screw	SUS 304
19-7	Screw	SUS 304	31	Nut of impeller	SUS 304
19-8	Screw	SUS 304	31-1	Nut of Elbow	SUS 304
19-9	Screw	SUS 304	35	Key	SUS 304

Disassembly and Assembly

1. Disassembly-

When disassembling pump, have a piece of cardboard or wooden board ready to place the different parts on as you work. Do not pile parts on top of each other. They should be laid out neatly in rows. The “O” ring and gasket cannot be used again once they are removed. Have replacement parts ready. Disassemble in the following order, referring to the sectional view.

Be sure to cut off power source before disassembly.

- (1) Remove pump casing bolts, raise the motor section and remove pump casing.
- (2) Remove shaft head bolt and impeller.
- (3) Remove oil filler plug and drain lubricating oil.
- (4) Remove intermediate casing bolts and oil chamber.
(Remember that any lubricating oil remaining in the mechanical seal chamber will flow out.)
- (5) Carefully remove mechanical seal, beware of not to scratch sliding surface of motor shaft.

2. Assembly-


Re-assemble in reverse order of disassembly.

Be careful of the following points.

- (a) During re-assembly, rotate the impeller by hand and check for smooth rotation. If rotation is not smooth, perform steps-(3) through -(5) again.
- (b) Upon completion of re-assembly step -(1) rotate the impeller by hand from the suction inlet and check that it rotates smoothly without touching the suction cover before operating the pump.

Please order “O” rings, packing, shaft seals and other parts from your dealer.

Nameplate format

**STANCOR**
Pump & Control Solutions

MODEL		OUTLET	mm
OUTPUT	HP	PHASE	ϕ
VOLTAGE	V	F.L.A.	A
HEAD	FT	CYCLE	Hz
CAPACITY	GPM	R.P.M.	rpm
SERIAL. NO.			

Troubleshooting

Trouble	Cause	Remedy
Does not start. Starts, but immediately stops.	(1) Power failure	(1) ~ (3) Contact electric power company and devise counter-measures
	(2) Large discrepancy between power source and voltage	
	(3) Significant drop in voltage	
	(4) Motor phase malfunction	(4) Inspect electric circuit
	(5) Electric circuit connection faulty	(5) Correct wiring
	(6) Faulty connection of control circuit	(6) Inspect connections and magnetic coil
	(7) Fuses is blown	(7) Check circuit then replace fuse
	(8) Faulty magnetic switch	(8) Replace with correct one
	(9) Water is not at level indicated by Float	(9) Raise water level
	(10) Float is not in appropriate level	(10) Adjust the position of float
	(11) Float is not effective	(11) Repair or replace
	(12) Short circuit breaker is functioning	(12) Repair location of short circuit
	(13) Foreign matter clogging pump	(13) Remove foreign matter
	(14) Motor burned out	(14) Repair or replace
	(15) Motor bearing broken	(15) Repair or replace
Operates, but stops after a while.	(1) Prolonged dry operation has activated motor protector and caused pump to stop	(1) Raise water level to C.W. L
	(2) High liquid temperature has activated motor protector and caused pump to stop	(2) Lower liquid temperature
	(3) Reverse rotation	(3) Correct rotation
Does not pump. Inadequate volume.	(1) Reverse rotation	(1) Correct rotation (see Operation)
	(2) Significant drop in voltage	(2) Contact electric power company
	(3) Operating a 60Hz pump with 50Hz	(3) Check nameplate
	(4) Discharge head is high	(4) Recalculate and adjust
	(5) Large piping loss	(5) Recalculate and adjust
	(6) Low operating water level causes air suction	(6) Raise water level or lower pump
	(7) Leaking from discharge piping	(7) Inspect, repair
	(8) Clogging of discharge piping	(8) Remove foreign matter
	(9) Foreign matter in suction inlet	(9) Remove foreign matter
	(10) Foreign matter clogging pump	(10) Remove foreign matter
	(11) Worn impeller	(11) Replace impeller
Over current	(1) Unbalanced current and voltage	(1) Contact electric power company
	(2) Significant voltage drop	(2) Contact electric power company and devise countermeasure
	(3) Motor phase malfunction	(3) Inspect connections and magnetic switch
	(4) Operating 50Hz pump on 60Hz	(4) Check nameplate
	(5) Reverse rotation	(5) Correct rotation
	(6) Low head. Excessive volume of water	(6) Replace pump with high head pump
	(7) Foreign matter clogging pump	(7) Remove foreign matter
	(8) Motor bearing is worn out or damaged	(8) Replace bearing
Pump vibrates; excessive operating noise.	(1) Reverse rotation	(1) Correct rotation
	(2) Pump clogged with foreign matter	(2) Disassemble and remove foreign matter
	(3) Piping resonates	(3) Improve piping
	(4) Strainer is closed too far	(4) Open strainer

Notes