

**Variable Speed Misting Pump
Totally Enclosed Direct Drive**

MODEL

60100-HDE-1PH-230VFD



SAFETY, GENERAL INFORMATION, ELECTRICAL

DEFINITIONS

WARNING CAN cause DEATH, SEVERE INJURY or substantial property damage.

CAUTION WILL or CAN cause MINOR INJURY or property damage.

GENERAL SAFETY PRECAUTIONS

WARNING HIGH VOLTAGE

The voltage of the frequency converter is dangerous whenever it is connected to mains. Incorrect installation of the motor or frequency converter may cause damage to the equipment, serious injury or death. Consequently, it is essential to comply with the instructions in this manual as well as local and national rules and safety regulations.

WARNING HAZARDOUS VOLTAGE. Can cause serious injury or death. Disconnect power before removing pump cover. Pump must be connected to properly grounded circuit. See grounding instructions in manual. Do not operate pump in wet conditions.

MOVING PARTS. Can cause serious injury. Do not operate with cover removed. Pump may start automatically. Disconnect power before servicing. Lockout/Tag out machine.

HOT SURFACES. Can cause serious injury. Do not touch. Allow to cool before servicing.

HIGH PRESSURE WATER. Bypassing, modifying or removing safety/relief valves can cause serious injury or death. Do not bypass, modify or remove safety/relief valves. If a leak should occur shut unit off before attempting to tighten any fittings or tube repairs. Do not change any pressure settings. Maximum pressure is 1000 PSI / 70 Bar

CAUTION RISK OF LEAKING or BURSTING. Use only suitable tubing and fittings acceptable for pressure of not less than the maximum allowable working pressure of the pump. Remove water from lines during winter months to prevent freezing damage to tubing.

CAUTION : Install pump in a suitable place to prevent property damage in the event a leak should occur.

INSTALLING ELECTRICAL WIRING (ELECTRIC MOTOR UNITS)

WARNING: Electrical installation and service should be performed by a qualified electrician who is familiar with all applicable local, state and federal laws and regulations.

GENERAL. The motor rating, as shown on the motor nameplate, and the power supply must have compatible voltage, phase and hertz characteristics.

WIRE SIZE. The electrical wiring between the power supply and electric motor varies according to motor horsepower and other factors. Install adequately sized power leads to protect against excessive voltage drop during start-up. Refer to the National Electric Code (NEC) for information on selecting the proper wire size and securing electrical connections. If you connect additional electrical equipment to the same circuit, consider the total electrical load when selecting the proper wire size. **DO NOT USE UNDERSIZE WIRE.**



Technical Specifications

Type	Variable Speed Misting Pump
HP	75 HP
Voltage	208/220/230-1 Single Phase Input
Pump	Cat Pump 2SF109ELS
Electric Motor	3 Phase 208/230 TEFC 1750 RPM
Amps AC	8.4/4.2
Hertz	60
Power Cord	6 ft 20 amp
Flow	.10 – 1.0 GPM
Variable Speed Drive	Danfoss Micro Drive Pre Programmed
Pressure Transducer	1000 PSI 4-20 ma
Operating Pressure	1000 PSI / 70 Bar
Nozzle Capacity	Number of Nozzles x Nozzle Flow Rate = GPM/LPM
Inlet Connection	3/4 FGHT
Outlet Connection	3/8" MNPT
Length	28"
Height	13"
Width	15-1/2"
Weight	225 lb. / 102 kg
Duty	Continuous, With Thermally Protected Motor
Pump Enclosure Finish	Powder Coated Gray
Dual Filter	5-Micron Pre Filter & 1 Micron Post Filter
Oil Reservoir Capacity	11.83 oz. / .35 l Pre Filled
Design	Totally Enclosed, Fan Cooled Enclosure with all components integrated
Application	Misting, Fogging, Humidification, Greenhouse, Dust Suppression
Features	Low Pump RPM Reduces Internal Wear, Lower Operating Temperature Reduces Maintenance Requirements
Includes	Oil



OPERATING INSTRUCTIONS

GENERAL OPERATION

The variable speed misting pump is an electric motor, driven by a variable frequency drive. The pressure is controlled by the pressure transducer sending a signal to the VFD to maintain a constant pressure. The VFD includes electronic thermal motor protection against overload and short circuit protection on motor terminals.

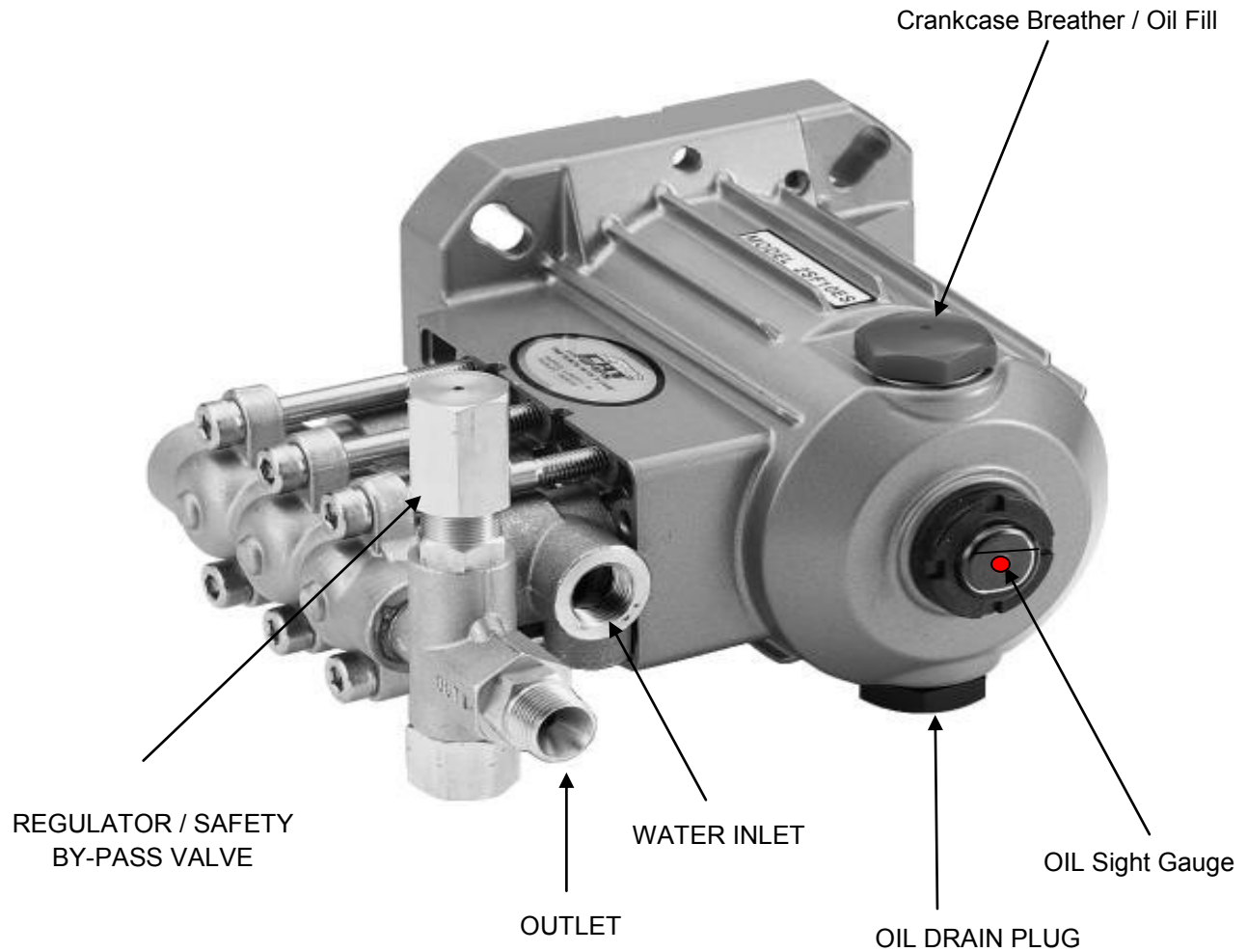
It is a totally self contained package mounted in a totally enclosed housing with all components integrated. This pump is ideal for operating multiple zones. The pump is designed to operate in ambient temperatures up to 122 F (50 C) \

Safety of operation is provided as the pump will shut down if low water pressure is detected or electrical overload conditions should occur to protect the pump and motor.

The pump can start automatically with an optional flow switch. By integrating optional solenoid valves or manual ball valves. When the valve opens the normally open switch closes and the pump starts and maintains the proper speed.

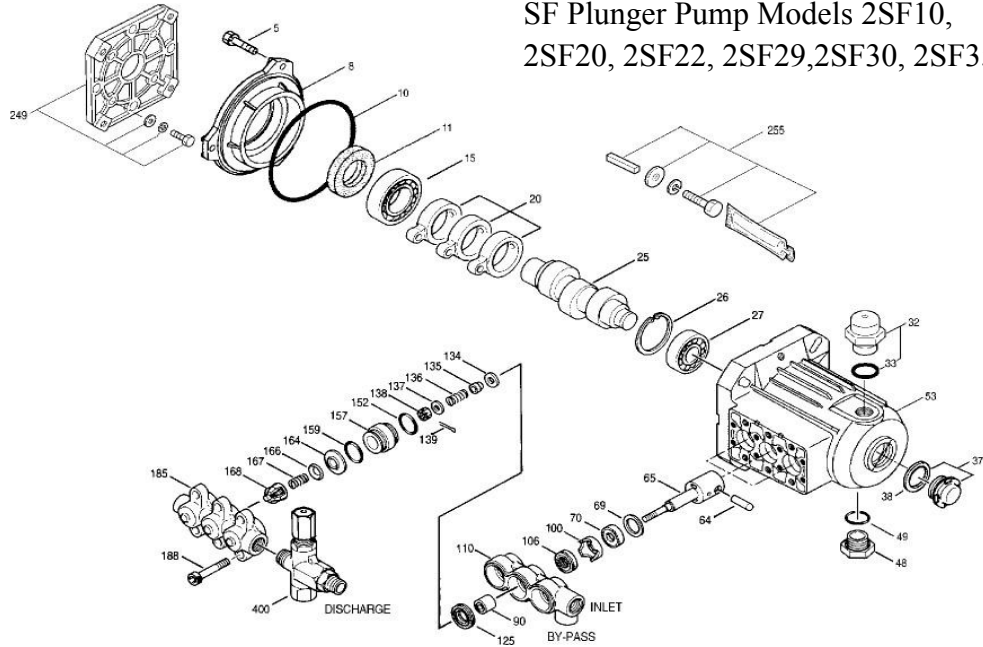


PUMP MAINTENANCE 2SF10 CAT PUMP



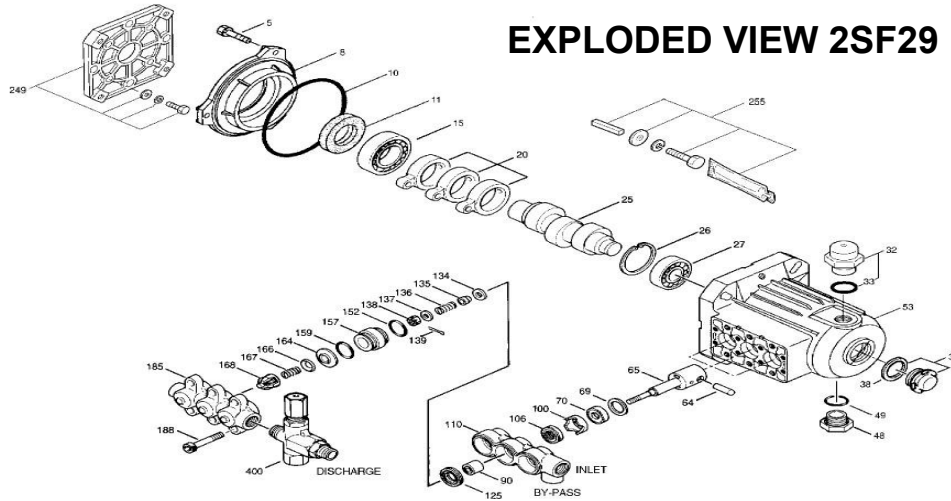
Proper Oil level slightly above red dot.
Change Oil every 500 Hrs. of operation
Use Aero Mist part # 57025 ISO 68 Pump Oil 21 oz..
Crankcase Capacity: 11.83 oz. (.35l)
Pump Parts Explode

SF Plunger Pump Models 2SF10,
2SF20, 2SF22, 2SF29, 2SF30, 2SF35



Item	P/N	MATL	Description	Model Used	QTY
136	44872	S	Spring, Inlet Valve	All Models	3
137	88575	S	Washer, Conical (M6)	All Models	3
138	27000	S	Nut, Slotted (M6)	All Models	3
139	14158	S	Cotter pin (M1.6x10)	All Models	3
152	26089	NBR	O-Ring, Adapter, Inner - 80D	All Models	3
	11377	FPM	O-Ring, Adapter, Inner - 80D	All Models	3
	46647	EPDM	O-Ring, Adapter, Inner - 80D	All Models	3
157	44878	BB	Discharge Valve Adapter	All Models except 29ELS	3
	45430	BB	Discharge Valve Adapter	29ELS	3
159	26089	NBR	O-Ring, Adapter, Outer - 80D	All Models	3
	11377	FPM	O-Ring, Adapter, Outer - 80D All Models	All Models	3
	46647	EPDM	O-Ring, Adapter, Outer - 80D All Models	All Models	3
164	44881	S	Seat	All Models	3
166	43723	S	Valve	All Models	3
167	541062	S	Spring	All Models	3
168	44565	PVDF	Retainer, Spring	All Models	3
185	44879	BB	Manifold, Discharge	All Models	1
188	126762	STCPR	Screw, HSH (M8x75)	All Models	6
249	30520	—	Assy, Adapter Mount, Gas	30GS, 35GS	1
255	30517	STZPR	Assy, Bolt Mount	All Models	1
283	990394	—	Kit, Oil Drain (Not Shown)	All Models	1
285	80228	STL	Screw (M8-1.25x80) (Not Shown)	All Models	2
300	34053	NBR	Kit, Seal (Includes: 106, 125, 139, 152, 159)	All Models	1
	33953	HT	Kit Seal-Hi-Temp (Includes: 106, 125, 134, 139, 152, 159)	All Models	1
	33453	FPM	Kit, Seal (Includes: 106, 125, 139, 152, 159)	All Models	1
	30536	EPDM	Kit, Seal (Includes: 106, 125, 139, 152, 159)	All Models	1
310	34052	NBR	Kit, Valve (Includes: 152, 159, 164, 166, 167, 168)	All Models	1
311	34668	NBR	Kit, Inlet Valve (Includes: 134-137, 139, 152, 159)	All Models	1
352	44050	STZP	Tool, Oil Gauge Removal	All Models	1
400	7500S	BB	Unloader, Regulating	All Models	1
—	36086	—	Assembly, Pulsator	All Models	1
—	6575	—	Plunger Pump Service DVD	All Models	1
—	6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic	All Models	1
			(Fill to specified crankcase capacity prior to start-up)	All Models	

EXPLODED VIEW 2SF29



Item	P/N	MATL	Description	Model Used	QTY	Item	P/N	MATL	Description	Model Used	QTY
5	549360	STCPR	Screw, HH (M6x 14)	All Models	3	136	44872	S	Spring, Inlet Valve	All Models	3
8	547153	AL	Cover, Bearing, Inner [3/03]	All Models	1	137	88575	S	Washer, Conical (M6)	All Models	3
10	14041	NBR	O-Ring, Bearing Cover - 70D [3/03]	All Models	1	138	27000	S	Nut, Slotted (M6)	All Models	3
11	55337	NBR	Seal, Oil [3/03]	All Models	1	139	14158	S	Cotter pin (M1.6x10)	All Models	3
15	14488	STL	Bearing, Ball, Inner	All Models	1	152	26089	NBR	O-Ring, Adapter, Inner - 80D	All Models	3
20	547046	TNM	Rod, Connecting	All Models	3	11377	FPM	O-Ring, Adapter, Inner - 80D	All Models	3	
25	543135	FCM	Crankshaft, 3450 RPM, 5/8", 1.7mm	10ES	1	46647	EPDM	O-Ring, Adapter, Inner - 80D	All Models	3	
	46109	FCM	Crankshaft, 3450 RPM, 5/8", 3.1mm	20ES	1	157	44878	BB	Discharge Valve Adapter	All Models except 29ELS	3
	46074	FCM	Crankshaft, 3450 RPM, 3/4", 3.35mm	22GS	1		45430	BB	Discharge Valve Adapter	29ELS	3
	44929	FCM	Crankshaft, 3450 RPM, 5/8", 3.35mm	22ES	1	159	26089	NBR	O-Ring, Adapter, Outer - 80D	All Models	3
	546334	FCM	Crankshaft, 3450 RPM, 3/4", 4.8mm	30GS	1	11377	FPM	O-Ring, Adapter, Outer - 80D All Models	All Models	3	
	44931	FCM	Crankshaft, 3450 RPM, 5/8", 4.5mm	30ES	1	46647	EPDM	O-Ring, Adapter, Outer - 80D All Models	All Models	3	
	45096	FCM	Crankshaft, 3450 RPM, 5/8", 5.6mm	35ES	1	164	44881	S	Seat	All Models	3
	46017	FCM	Crankshaft, 3450 RPM, 3/4", 5.6mm	35GS	1	166	43723	S	Valve	All Models	3
	45160	FCM	Crankshaft, 1725 RPM, 5/8", 6.3mm	22ELS	1	167	541062	S	Spring	All Models	3
	45426	FCM	Crankshaft, 1725 RPM, 5/8", 8.5mm	29ELS	1	168	44565	PVDF	Retainer, Spring	All Models	3
26	12385	STL	Ring, Retaining	All Models	1	185	44879	BB	Manifold, Discharge	All Models	1
27	15710	STL	Bearing, Ball, Outer	All Models	1	188	126762	STCPR	Screw, HSH (M8x75)	All Models	6
32	547961	RTP	Cap, Oil Filler w/O-Ring	All Models	1	249	30520	—	Assy, Adapter Mount, Gas	30GS, 35GS	1
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	All Models	1	255	30517	STZPR	Assy, Bolt Mount	All Models	1
37	92241	—	Gauge, Bubble Oil w/Gasket - 80D	All Models	1	283	990394	—	Kit, Oil Drain (Not Shown)	All Models	1
38	44428	NBR	Gasket, Flat Flex., Oil Gauge - 80D	All Models	1	285	80228	STL	Screw (M8-1.25x80) (Not Shown)	All Models	2
48	44842	NY	Plug, Drain (1/2" NPT)	All Models	1	300	34053	NBR	Kit, Seal (Includes: 106,125,139,152, 159)	All Models	1
49	14179	NBR	O-Ring, Drain Plug - 70D	All Models	1		33953	HT	Kit Seal-Hi-Temp (Includes: 106,125,134,139,152,159)	All Models	1
53	547285	AL	Crankcase [3/03] (See Tech Bulletin 092)	All Models	1		33453	FPM	Kit, Seal (Includes: 106,125,139,152, 159)	All Models	1
64	16948	CM	Pin, Crosshead	All Models	3		30536	EPDM	Kit, Seal (Includes: 106,125,139,152, 159)	All Models	1
65	44865	SCP	Rod, Plunger All Models except 29ELS		3	310	34052	NBR	Kit, Valve (Includes: 152,159,164,166,167,168)	All Models	1
	45427	SZZ	Rod, Plunger	29ELS	3	311	34668	NBR	Kit, Inlet Valve (Includes: 134-137,139,152,159)	All Models	1
69	126259	STCPR	Washer (M24)	All Models	3	352	44050	STZP	Tool, Oil Gauge Removal	All Models	1
70	25461	NBR	Seal, Oil	All Models	3	400	7500S	BB	Unloader, Regulating	All Models	1
90	45847	CC	Plunger (M18x14) All Models except 29ELS		3		36086	—	Assembly, Pulsator	All Models	1
	45429	CC	Plunger (M18x16)	29ELS	3		6575	—	Plunger Pump Service DVD	All Models	1
100	44869	PVDF	Retainer, Seal	All Models	3		6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic	All Models	1
106	44876	NBR	Seal, LPS w/S-Spg Seal, LPS w/SS-Spg	All Models	3						
	545192	FPM	Seal, LPS w/SS-Spg	All Models	3						
	546507	EPDM	Seal, LPS w/SS-Spg	All Models	3						
110	44874	BB	Manifold, Inlet	All Models	1						
125	43245	SNG	Seal, HPS w/S	All Models	3						
	46652	HT*	Seal, HPS "Hi-Temp" 2-Pc w/S-Support	All Models	3						
134	45854	S	Valve, Inlet	All Models	3						
	33873	NY	Valve, Inlet, Hi-Temp	All Models	3						
135	549520	S	Spacer, Inlet	All Models	3						





LIMITED WARRANTY ON AERO MIST, INC., PUMPS AND OTHER AERO MIST, INC., PRODUCTS

AERO MIST, INC., as a manufacturer shall warrant manufactured misting components, excluding nozzles, to be free of defects in workmanship for one (1) year to the original purchaser, and each new direct drive pump or other product of its own manufacture, for a period of one (1) year and pulley pumps for period of two (2) years from the date of shipment from the factory, to be free from defects in material and workmanship under normal use and service. "Normal use and service" means not to operate in excess of recommended maximum speeds, pressures, temperatures (140 F) or handling fluids not compatible with component materials. This warranty does not apply to any pump or other product which has been repaired or altered to affect the performance or reliability of the pump or other product.

Neither this warranty nor any implied warranty applies to damage or harm caused by any or all of the following:

1. freight damage
2. damage from freezing or cavitation, by accident, fire, natural disaster, chemicals, improper installation, or unusual characteristics of water supply, such as mineral and calcium buildup.
3. damage caused by parts and/or accessories or components not obtained from or approved by AERO MIST, INC.
4. any consequential or incidental damages, other than injury to the person arising from the use of any pump or other product manufactured by AERO MIST, INC., except in states that do not allow the exclusion or limitation

of incidental or consequential damage.

5. damage due to misapplication and/or misuse. The use of a solution greater than 140 F or a fluid with pH less than 7 or greater than 9 could be a misapplication of our pumps.

CONSULT FACTORY for specific material compatibility recommendations for applications outside of this pH range. Numerous coating choices for aluminum and Stainless Steel components as well as various elastomer choices are available at extra cost.

6. normal wear of moving parts or components affected by moving parts.
7. USE WITH FLAMMABLE MATERIALS IS ABSOLUTELY FORBIDDEN!

The liability of AERO MIST, INC., under the foregoing warranty is limited to the repair or replacement (at AERO MIST, INC.'s option) without charge for labor or materials of any parts upon return of the entire pump or other product or of the particular part to the AERO MIST, INC., factory within the warranty period, at the sole expense of the purchaser, which part shall upon examination appear to AERO MIST, INC.'s satisfaction to have been defective in material or workmanship.

AERO MIST, INC., expressly warrants its pumps and other products as above stated. There are no other express warranties. Any implied warranties, including implied warranty of merchantability or of fitness for a particular purpose, are limited in duration to one year from the date of purchase by the original purchaser except in states that do not allow time limitations on implied warranties. There is no implied warranty of fitness for a particular purpose or merchantability when this product is put to an industrial, commercial or rental use.

No person including any dealer or representative of AERO MIST, INC., is authorized to make any representation or warranty concerning AERO MIST, INC., products on behalf of AERO MIST, INC., or to assume for AERO MIST, INC., the obligations contained in the warranty. AERO MIST, INC., reserves the right to install the same upon its existing products or products then in process or manufacture.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.

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