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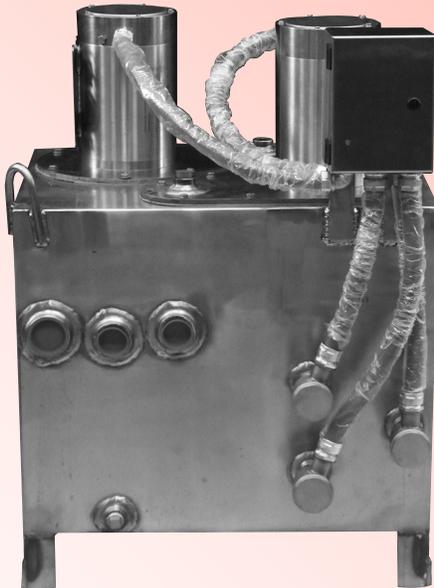
Pride

Quality

Craftsmanship

BULLETIN 178

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DSSF

TYPE DSSF

DAIRY SERVICE

ALL STAINLESS STEEL EXTERIOR UNITS

LOW INLET CONDENSATE PUMP

or

TYPE DSSF-212

FOR 212°F CONDENSATE

SHIPCO[®]
PUMPS equipped with Mechanical Seals rated up to a standard 250°F.

Consult Performance Curves for Temperature Rating.

Customized Receivers Available Upon Request.

U.S. Patent #4,932,846

TYPE DSSF CONDENSATE UNITS

CAP. SQ. FT	PUMP CAP GPM	PUMP DISCH PSIG	3500 RPM MOTOR HP	DISCH. SIZE INCHES	SIMPLEX CATALOG NO.	DUPLEX CATALOG NO.	REC. SIZE GALS	INLET SIZE INCHES
6,000	9	10	3/4	3/4"	90 DSSF	90 DSSFD	16 Simplex or 22 Duplex	2"
		15	3/4		91 DSSF	91 DSSFD		
		20	3/4		92 DSSF	92 DSSFD		
		25	3/4		92.5 DSSF	92.5 DSSFD		
		30	1		93 DSSF	93 DSSFD		
		40	1-1/2		94 DSSF	94 DSSFD		
		50	1-1/2		95 DSSF	95 DSSFD		
		60	3		96 DSSF	96 DSSFD		
		70	3		97 DSSF	97 DSSFD		
		80	5		98 DSSF	98 DSSFD		
		90	7-1/2		99 DSSF	99 DSSFD		
8,000	12	10	3/4	3/4"	120 DSSF	120 DSSFD	16 Simplex or 22 Duplex	2"
		15	3/4		121 DSSF	121 DSSFD		
		20	3/4		122 DSSF	122 DSSFD		
		25	3/4		122.5 DSSF	122.5 DSSFD		
		30	1		123 DSSF	123 DSSFD		
		40	1-1/2		124 DSSF	124 DSSFD		
		50	1-1/2		125 DSSF	125 DSSFD		
		60	3		126 DSSF	126 DSSFD		
		70	3		127 DSSF	127 DSSFD		
		80	5		128 DSSF	128 DSSFD		
		90	7-1/2		129 DSSF	129 DSSFD		
10,000	15	10	3/4	3/4"	150 DSSF	150 DSSFD	16 Simplex or 22 Duplex	2"
		15	3/4		151 DSSF	151 DSSFD		
		20	3/4		152 DSSF	152 DSSFD		
		25	3/4		152.5 DSSF	152.5 DSSFD		
		30	1		153 DSSF	153 DSSFD		
		40	1-1/2		154 DSSF	154 DSSFD		
		50	2		155 DSSF	155 DSSFD		
		60	3		156 DSSF	156 DSSFD		
		70	3		157 DSSF	157 DSSFD		
		80	5		158 DSSF	158 DSSFD		
		90	7-1/2		159 DSSF	159 DSSFD		
12,000	18	10	3/4	1-1/2"	180 DSSF	180 DSSFD	22	2"
		15	3/4		181 DSSF	181 DSSFD		
		20	3/4		182 DSSF	182 DSSFD		
		25	1		182.5 DSSF	182.5 DSSFD		
		30	1		183 DSSF	183 DSSFD		
		40	1-1/2		184 DSSF	184 DSSFD		
		50	2		185 DSSF	185 DSSFD		
		60	3		186 DSSF	186 DSSFD		
		70	3		187 DSSF	187 DSSFD		
		80	5		188 DSSF	188 DSSFD		
		90	7-1/2		189 DSSF	189 DSSFD		
15,000	22-1/2	10	3/4	1-1/2"	220 DSSF	220 DSSFD	22	2"
		15	3/4		221 DSSF	221 DSSFD		
		20	3/4		222 DSSF	222 DSSFD		
		25	1		222.5 DSSF	222.5 DSSFD		
		30	1		223 DSSF	223 DSSFD		
		40	1-1/2		224 DSSF	224 DSSFD		
		50	2		225 DSSF	225 DSSFD		
		60	3		226 DSSF	226 DSSFD		
		70	5		227 DSSF	227 DSSFD		
		80	5		228 DSSF	228 DSSFD		
		90	7-1/2		229 DSSF	229 DSSFD		
20,000	30	10	3/4	1-1/2"	300 DSSF	300 DSSFD	34	2"
		15	3/4		301 DSSF	301 DSSFD		
		20	1		302 DSSF	302 DSSFD		
		25	1		302.5 DSSF	302.5 DSSFD		
		30	1-1/2		303 DSSF	303 DSSFD		
		40	1-1/2		304 DSSF	304 DSSFD		
		50	2		305 DSSF	305 DSSFD		
		60	5		306 DSSF	306 DSSFD		
		70	5		307 DSSF	307 DSSFD		
		80	5		308 DSSF	308 DSSFD		
		90	7-1/2		309 DSSF	309 DSSFD		

Consult factory for higher discharge flows and higher discharge pressures.

TYPE DSSF CONDENSATE UNITS

CAP. SQ. FT	PUMP CAP GPM	PUMP DISCH PSIG	3500 RPM MOTOR HP	DISCH. SIZE INCHES	SIMPLEX CATALOG NO.	DUPLEX CATALOG NO.	REC. SIZE GALS	INLET SIZE INCHES
25,000	37-1/2	10	3/4	1-1/2"	370 DSSF	370 DSSFD	34	2"
		15	1		371 DSSF	371 DSSFD		
		20	1		372 DSSF	372 DSSFD		
		25	1		372.5 DSSF	372.5 DSSFD		
		30	1-1/2		373 DSSF	373 DSSFD		
		40	2		374 DSSF	374 DSSFD		
		50	3		375 DSSF	375 DSSFD		
		60	5		376 DSSF	376 DSSFD		
		70	5		377 DSSF	377 DSSFD		
		80	5		378 DSSF	378 DSSFD		
		90	7-1/2	379 DSSF	379 DSSFD			
30,000	45	10	1	1-1/2"	450 DSSF	450 DSSFD	50	3"
		15	1		451 DSSF	451 DSSFD		
		20	1		452 DSSF	452 DSSFD		
		25	1-1/2		452.5 DSSF	452.5 DSSFD		
		30	1-1/2		453 DSSF	453 DSSFD		
		40	2		454 DSSF	454 DSSFD		
		50	3		455 DSSF	455 DSSFD		
		60	5		456 DSSF	456 DSSFD		
		70	5		457 DSSF	457 DSSFD		
		80	7-1/2		458 DSSF	458 DSSFD		
		90	7-1/2	459 DSSF	459 DSSFD			
40,000	60	10	1-1/2	1-1/2"	600 DSSF	600 DSSFD	68	3"
		15	1-1/2		601 DSSF	601 DSSFD		
		20	1-1/2		602 DSSF	602 DSSFD		
		25	2		602.5 DSSF	602.5 DSSFD		
		30	2		603 DSSF	603 DSSFD		
		40	3		604 DSSF	604 DSSFD		
		50	5		605 DSSF	605 DSSFD		
		60	5		606 DSSF	606 DSSFD		
		70	7-1/2		607 DSSF	607 DSSFD		
		80	7-1/2		608 DSSF	608 DSSFD		
		90	10	609 DSSF	609 DSSFD			
50,000	75	10	3	2"	750 DSSF	750 DSSFD	80	3"
		15	3		751 DSSF	751 DSSFD		
		20	3		752 DSSF	752 DSSFD		
		25	3		752.5 DSSF	752.5 DSSFD		
		30	3		753 DSSF	753 DSSFD		
		40	5		754 DSSF	754 DSSFD		
		50	5		755 DSSF	755 DSSFD		
		60	5		756 DSSF	756 DSSFD		
		70	7-1/2		757 DSSF	757 DSSFD		
		80	10		758 DSSF	758 DSSFD		
		90	10	759 DSSF	759 DSSFD			
65,000	97-1/2	10	3	2"	970 DSSF	970 DSSFD	80	3"
		15	3		971 DSSF	971 DSSFD		
		20	3		972 DSSF	972 DSSFD		
		25	3		972.5 DSSF	972.5 DSSFD		
		30	5		973 DSSF	973 DSSFD		
		40	5		974 DSSF	974 DSSFD		
		50	7-1/2		975 DSSF	975 DSSFD		
		60	10		976 DSSF	976 DSSFD		
		70	10		977 DSSF	977 DSSFD		
		80	10		978 DSSF	978 DSSFD		
		90	10	979 DSSF	979 DSSFD			
75,000	112-1/2	10	3	2"	1120 DSSF	1120 DSSFD	128	3"
		15	3		1121 DSSF	1121 DSSFD		
		20	3		1122 DSSF	1122 DSSFD		
		25	3		1122.5 DSSF	1122.5 DSSFD		
		30	5		1123 DSSF	1123 DSSFD		
		40	5		1124 DSSF	1124 DSSFD		
		50	7-1/2		1125 DSSF	1125 DSSFD		
		60	10		1126 DSSF	1126 DSSFD		
		70	10		1127 DSSF	1127 DSSFD		
		80	10		1128 DSSF	1128 DSSFD		
		90	10	1129 DSSF	1129 DSSFD			

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DSSF UNIT DESCRIPTION

Type DSSF and DSSF-212 is made for the food and dairy industry with 4" stainless steel legs to facilitate cleaning underneath the unit. Everything that is exposed to the outside elements is made of stainless steel and can be cleaned and hosed down. The motor is a stainless steel wash down motor as standard.

MODIFIED MODEL U PUMP FEATURES

The Heart of the Unit is the Modified Model U Pump that we call a UF (U.S. Patent #4,932,846) shortened to fit the height of the receiver. The pump is mounted on top of the tank and excellent for limited floor space areas where a pump mounted on the side of the tank takes up too much floor space. It eliminates the need for a suction isolation valve(s) since you can just unbolt and lift the pump out of the tank. The pumps can have 2 feet of NPSH capabilities based on curve and can handle condensate at temperatures up to 210°F at sea level with steel model or 212°F with DSSF-212 type.

All units come with a Shipco® PLC and a continuous level and temperature transmitter for pump control, receiver set points and building automation communication via BacNet or ModBus.

Pump Head and Case are made of close-grained cast iron.

Impeller is cast bronze, enclosed vane, precision balanced, and trimmed to meet the design conditions for smooth durable operation.

Case Wearing Ring is bronze and easily renewable to keep the pump at peak performance.

Motors are stainless steel with heavy duty ball bearing design.

Water Safety Slinger is Buna N for high temperature resistance and installed to help prevent water from entering the motor from seal leakage.

Discharge Companion Flange allows the pump removal and eliminates the need for additional unions.

Propeller Shaft is 316 Stainless Steel.

Rubber Bearing Assembly (US Patent #4,932,846).

Standard Mechanical Seal is EPR with a ceramic seat rated for 250°F. Other seals are available upon request up to 300°F.

Standard Suction Column is black steel. 304 and 316 are available upon request.

Propeller is 400 Series Stainless.

UNIT ACCESSORIES

These units can be fitted with any of the following accessories:

Stainless Steel Basket Inlet Strainers are a recommended feature of the units. The large dirt pocket and vertical self-cleaning screens help prevent unnecessary wear and problems with the pumps.

Stainless Steel Gauge Glass Assembly provides a quick check of receiver water level and has automatic stops if the glass is broken.

Stainless Steel Dial Thermometer provides a quick check of condensate temperature.

Stainless Steel Discharge Pressure Gauges provide a quick check of the pump operation at design conditions.

Shipco® PLC with a color screen and BacNet or ModBus capabilities.

All units are completely assembled, piped, wired, and individually tested before shipment. Testing includes a complete hydrostatic test for leaks, electrical tests for controls and accessories, and performance test for pumps at design conditions. After testing, the units are packaged for shipment.

When a control panel is added, the complete package unit bears a UL stamp.

ENGINEERING SELECTION DATA

Receiver Sizing – DSSF and DSSF-212 Units

The receivers in this series of units are sized to allow for approximately one minute net storage capacity (where practical). The condensate return pumps need to run for approximately a one minute period to prolong the life of the motors in intermittent operation. The condensate is returned to the boiler room as quickly as possible to reduce make-up requirements and heat loss.

Condensate Pump Sizing – DSSF and DSSF-212 Units

The condensing rate for 1,000 sq. ft. EDR is .5 GPM (see table). The type DSSF Condensate return pumps are sized at twice (2 times) the normal condensing rate or 1.0 GPM per 1,000 sq. ft. EDR. The low NPSH requirements and minimal capacity loss of centrifugal pumps from normal wear has shown from experience to provide more than adequate pump capacity.

Table — Values of Heat and Power

	GPM	BTU	Lbs/Hr	Sq. Ft. EDR
1 Boiler Horsepower	.069	33,475	34.5	139.4
1,000 sq. ft. EDR	.50	240,000	247.3	1,000