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PRIDE

QUALITY

CRAFTSMANSHIP

BULLETIN 133
Revised 9/11

TYPE DMS

**Durable Make-up
 Steel Receiver
 Boiler Feed Units**

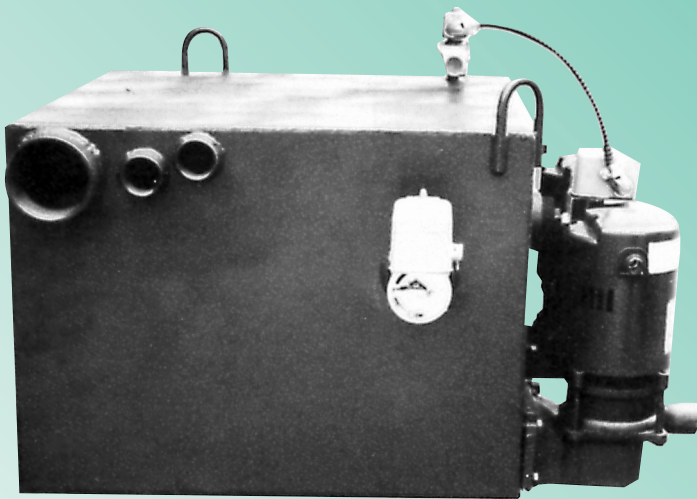
**NOTE: If unit used as a surge tank,
 pumps should run continuously.**

Capacities up to 300 BHP.

Condensate Temperature of unit is generally around 200°F.

Temperature is a function of pump NPSH and elevation above sea level.

Certain pumping points have NPSH requirements of 2 feet and therefore can handle 210°F.



SHIPCO[®]
PUMPS are equipped with Mechanical Seals rated for temperatures up to 250°F as standard.
 Higher temperature seals and special faces available upon request.

TYPE DMS BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR 3500 RPM		MOTOR 1750 RPM		DISCH. SIZE INCHES	CATALOG NO.	REC. CAP. GALS.	INLET SIZE AND INLET HEIGHT IN.
			HP	PHASE	HP	PHASE				
20	3	20	1/3	1 or 3	1/2	1 or 3	3/4"	3 DMS-20	21	Inlet - 2" Inlet Centerline Height Inches 14"
		25	1/2	1 or 3	1/2	1 or 3		3 DMS-25		
		30	3/4	1 or 3	1-1/2	3		3 DMS-30		
		40	1	1 or 3	3	3		3 DMS-40		
		50	1-1/2	1 or 3				3 DMS-50		
		60	2	1 or 3				3 DMS-60		
		70	3	3				3 DMS-70		
		75	3	3				3 DMS-75		
		80	3	3				3 DMS-80		
		90	5	3				3 DMS-90		
		100	5	3				3 DMS-100		
		110	7-1/2	3				3 DMS-110		
		120	10	3				3 DMS-120		
		130	10	3				3 DMS-130		
		140	10	3				3 DMS-140		
		150	15	3				3 DMS-150		
160	15	3			3 DMS-160					
40	6	20	1/3	1 or 3	1/2	1 or 3	3/4"	6 DMS-20	35	Inlet - 3" Inlet Centerline Height Inches 18"
		25	1/2	1 or 3	1/2	1 or 3		6 DMS-25		
		30	3/4	1 or 3	1-1/2	3		6 DMS-30		
		40	1	1 or 3	3	3		6 DMS-40		
		50	1-1/2	1 or 3				6 DMS-50		
		60	2	1 or 3				6 DMS-60		
		70	3	3				6 DMS-70		
		75	3	3				6 DMS-75		
		80	3	3				6 DMS-80		
		90	5	3				6 DMS-90		
		100	5	3				6 DMS-100		
		110	7-1/2	3				6 DMS-110		
		120	10	3				6 DMS-120		
		130	10	3				6 DMS-130		
		140	10	3				6 DMS-140		
		150	15	3				6 DMS-150		
160	15	3			6 DMS-160					
55	9	20	1/3	1 or 3	1/2	1 or 3	3/4"	9 DMS-20	45	Inlet - 3" Inlet Centerline Height Inches 16"
		25	1/2	1 or 3	1/2	1 or 3		9 DMS-25		
		30	3/4	1 or 3	1-1/2	3		9 DMS-30		
		40	1	1 or 3	3	3		9 DMS-40		
		50	1-1/2	1 or 3				9 DMS-50		
		60	2	1 or 3				9 DMS-60		
		70	3	3				9 DMS-70		
		75	3	3				9 DMS-75		
		80	3	3				9 DMS-80		
		90	5	3				9 DMS-90		
		100	5	3				9 DMS-100		
		110	7-1/2	3				9 DMS-110		
		120	10	3				9 DMS-120		
		130	10	3				9 DMS-130		
		140	10	3				9 DMS-140		
		150	15	3				9 DMS-150		
160	15	3			9 DMS-160					
80	12	20	1/3	1 or 3	1/2	1 or 3	3/4"	12 DMS-20	60	Inlet - 3" Inlet Centerline Height Inches 20"
		25	1/2	1 or 3	3/4	1 or 3		12 DMS-25		
		30	3/4	1 or 3	1-1/2	3		12 DMS-30		
		40	1	1 or 3	3	3		12 DMS-40		
		50	1-1/2	1 or 3				12 DMS-50		
		60	2	1 or 3				12 DMS-60		
		70	3	3				12 DMS-70		
		75	3	3				12 DMS-75		
		80	3	3				12 DMS-80		
		90	5	3				12 DMS-90		
		100	5	3				12 DMS-100		
		110	7-1/2	3				12 DMS-110		
		120	10	3				12 DMS-120		
		130	10	3				12 DMS-130		
		140	10	3				12 DMS-140		
		150	15	3				12 DMS-150		
160	15	3			12 DMS-160					

TYPE DMS BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR 3500 RPM		MOTOR 1750 RPM		DISCH. SIZE INCHES	CATALOG NO.	REC. CAP. GALS.	INLET SIZE AND INLET HEIGHT IN.
			HP	PHASE	HP	PHASE				
100	15	20	1/3	1 or 3	1/2	1 or 3	3/4"	15 DMS-20	81	Inlet - 4" Inlet Centerline Height Inches 19"
		25	1/2	1 or 3	3/4	1 or 3		15 DMS-25		
		30	3/4	1 or 3	1-1/2	3		15 DMS-30		
		40	1	1 or 3	3	3		15 DMS-40		
		50	1-1/2	1 or 3				15 DMS-50		
		60	3	3				15 DMS-60		
		70	3	3				15 DMS-70		
		75	3	3				15 DMS-75		
		80	3	3				15 DMS-80		
		90	5	3				15 DMS-90		
		100	5	3				15 DMS-100		
		110	7-1/2	3				15 DMS-110		
		120	10	3				15 DMS-120		
		130	10	3				15 DMS-130		
		140	10	3				15 DMS-140		
		150	15	3				15 DMS-150		
160	15	3			15 DMS-160					
125	18	20	1/3	1 or 3	1/2	1 or 3	1-1/2"	18 DMS-20	81	Inlet - 4" Inlet Centerline Height Inches 19"
		25	1/2	1 or 3	3/4	1 or 3		18 DMS-25		
		30	3/4	1 or 3	1-1/2	3		18 DMS-30		
		40	1-1/2	1 or 3	3	3		18 DMS-40		
		50	2	1 or 3				18 DMS-50		
		60	3	3				18 DMS-60		
		70	3	3				18 DMS-70		
		75	3	3				18 DMS-75		
		80	3	3				18 DMS-80		
		90	5	3				18 DMS-90		
		100	5	3				18 DMS-100		
		110	7-1/2	3				18 DMS-110		
		120	10	3				18 DMS-120		
		130	10	3				18 DMS-130		
		140	10	3				18 DMS-140		
		150	15	3				18 DMS-150		
160	15	3			18 DMS-160					
150	21	20	1/2	1 or 3	3/4	1 or 3	1-1/2"	21 DMS-20	128	Inlet - 4" Inlet Centerline Height Inches 30"
		25	3/4	1 or 3	3/4	1 or 3		21 DMS-25		
		30	3/4	1 or 3	1-1/2	3		21 DMS-30		
		40	1-1/2	1 or 3	3	3		21 DMS-40		
		50	2	1 or 3				21 DMS-50		
		60	3	3				21 DMS-60		
		70	3	3				21 DMS-70		
		75	3	3				21 DMS-75		
		80	5	3				21 DMS-80		
		90	5	3				21 DMS-90		
		100	5	3				21 DMS-100		
		110	7-1/2	3				21 DMS-110		
		120	10	3				21 DMS-120		
		130	10	3				21 DMS-130		
		140	15	3				21 DMS-140		
		150	15	3				21 DMS-150		
160	15	3			21 DMS-160					
200	30	20	3/4	1 or 3	3/4	1 or 3	1-1/2"	30 DMS-20	128	Inlet - 4" Inlet Centerline Height Inches 30"
		25	3/4	1 or 3	3/4	3		30 DMS-25		
		30	1	1 or 3	1-1/2	3		30 DMS-30		
		40	1-1/2	1 or 3	3	3		30 DMS-40		
		50	2	1 or 3				30 DMS-50		
		60	3	3				30 DMS-60		
		70	5	3				30 DMS-70		
		75	5	3				30 DMS-75		
		80	5	3				30 DMS-80		
		90	5	3				30 DMS-90		
		100	5	3				30 DMS-100		
		110	10	3				30 DMS-110		
		120	10	3				30 DMS-120		
		130	10	3				30 DMS-130		
		140	15	3				30 DMS-140		
		150	15	3				30 DMS-150		
160	15	3			30 DMS-160					

TYPE DMS BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR 3500 RPM		MOTOR 1750 RPM		DISCH. SIZE INCHES	CATALOG NO.	REC. CAP. GALS.	INLET SIZE AND INLET HEIGHT IN.
			HP	PHASE	HP	PHASE				
250	35	20	3/4	1 or 3	3/4	1 or 3	1-1/2"	35 DMS-20	168	Inlet -4" Inlet Centerline Height Inches 27"
		25	1	1 or 3	1	3		35 DMS-25		
		30	1-1/2	1 or 3	2	3		35 DMS-30		
		40	2	1 or 3	3	3		35 DMS-40		
		50	3	1 or 3		3		35 DMS-50		
		60	5	3				35 DMS-60		
		70	5	3				35 DMS-70		
		75	5	3				35 DMS-75		
		80	5	3				35 DMS-80		
		90	5	3				35 DMS-90		
		100	5	3				35 DMS-100		
		110	10	3				35 DMS-110		
		120	10	3				35 DMS-120		
		130	15	3				35 DMS-130		
		140	15	3				35 DMS-140		
		150	15	3				35 DMS-150		
160	15	3			35 DMS-160					
300	42	20	1	1 or 3	1	1 or 3	1-1/2"	42 DMS-20	235	Inlet - 4" Inlet Centerline Height Inches 39"
		25	1-1/2	1 or 3	1-1/2	3		42 DMS-25		
		30	1-1/2	1 or 3	2	3		42 DMS-30		
		40	2	1 or 3	3	3		42 DMS-40		
		50	3	1 or 3				42 DMS-50		
		60	5	3				42 DMS-60		
		70	5	3				42 DMS-70		
		75	5	3				42 DMS-75		
		80	5	3				42 DMS-80		
		90	5	3				42 DMS-90		
		100	7-1/2	3				42 DMS-100		
		110	10	3				42 DMS-110		
		120	10	3				42 DMS-120		
		130	15	3				42 DMS-130		
		140	15	3				42 DMS-140		
		150	15	3				42 DMS-150		
160	15	3			42 DMS-160					

Charted units are a representation of the typical systems and sizes used. Higher pump pressures and larger pump capacities are available.

Sizing Boiler Feed Pumps — DMS Units

34.5 lbs. per hour of water evaporated at 212°F at sea level equals (1) Boiler Horsepower.

$$\frac{34.5 \text{ lbs.}}{60 \text{ min.}} \times \frac{1 \text{ gallon}}{8.34 \text{ lbs.}} = .069 \text{ gallon per minute}$$

The evaporation rate of 1 boiler horsepower is .069 gallons per minute. The feed pump input rate is sized at a rate of 170% to 200% of the maximum steaming rate of the boiler. This method of sizing helps to balance the boiler conditions and reduce thermal shock to the boiler. Thermal shock is caused by oversizing the feed pumps.

Table of 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

Receiver Sizing — DMS Units

The receivers in this series of units are sized to allow for approximately a 10-minute system lag time. The lag time of the system is the time from which the steam evaporated at the boiler, travels to the radiation device, condenses to water and

returns to the boiler. This is adequate for most small systems. (Larger multi-building systems, the receiver is sized for a 15-minute lag time.)

Boiler required make-up water is added to the receiver on DMS Units. This helps, by tempering the make-up water, reduce thermal shock to the boiler.

The Durable Line of Boiler Feed Pumps is constructed with Steel Receivers that provide years of service. Receivers are constructed of heavy gauge steel.

- Receivers available from 21-gallon to 235-gallon capacity.
- Centrifugal Pumps designed for many years of dependable service with low maintenance.
- Pumps are bronze fitted to resist corrosion and prevent seizing.
- Bronze impellers are cast one piece construction trimmed and balanced to design capacities.
- Pump has no internal bearings. (Motor bearings—refer to motor manufacturer's instructions.)
- Units are available in most popular voltages.
- Control panels (optional) are available and can be factory mounted and wired to NEMA and J.I.C. specifications. (Note: Magnetic Starters should be provided for all three phase motors.)