



SHIPPENSBURG PUMP CO. INC.

P.O. BOX 279, SHIPPENSBURG, PA 17257

PH 717-532-7321 • FAX 717-532-7704

WWW.SHIPCOPUMPS.COM

Pride
Quality
Craftsmanship

BULLETIN 115

Revised 11/19



U.S. Patent #4,932,846

TYPE DUMC
DURABLE UNDERGROUND
MAKE-UP PUMPS
WITH STAINLESS STEEL RECEIVERS

Handles Condensate to 212°F

Capacities up to 400 BHP

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

SHIPCO®
PUMPS equipped with Mechanical Seals rated up to a standard 250°F.
Higher temperature seals and special faces available upon request.

TYPE DUMC BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR HP 3500 RPM ONLY	PHASE	DISCH. SIZE INCHES	CATALOG NO.	REC. SIZE	INLET SIZE AND DISTANCE FROM TOP
55	9	20	1/2	1 or 3	3/4"	9 DUMC-20	30" Dia. x 36" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	3/4	1 or 3		9 DUMC-25		
		30	1	1 or 3		9 DUMC-30		
		40	1-1/2	1 or 3		9 DUMC-40		
		50	2	1 or 3		9 DUMC-50		
		60	3	3		9 DUMC-60		
		70	3	3		9 DUMC-70		
		75	5	3	1-1/2"	9 DUMC-75		
		80	5	3		9 DUMC-80		
		90	7-1/2	3		9 DUMC-90		
		100	7-1/2	3		9 DUMC-100		
80**	12	20	3/4	1 or 3	3/4"	12 DUMC-20	30" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	3/4	1 or 3		12 DUMC-25		
		30	1	1 or 3		12 DUMC-30		
		40	1-1/2	1 or 3		12 DUMC-40		
		50	2	1 or 3		12 DUMC-50		
		60	3	3		12 DUMC-60		
		70	3	3		12 DUMC-70		
		75	5	3	1-1/2"	12 DUMC-75		
		80	5	3		12 DUMC-80		
		90	7-1/2	3		12 DUMC-90		
		100	7-1/2	3		12 DUMC-100		
100	15	20	3/4	1 or 3	3/4"	15 DUMC-20	30" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1	1 or 3		15 DUMC-25		
		30	1	1 or 3		15 DUMC-30		
		40	1-1/2	1 or 3		15 DUMC-40		
		50	2	1 or 3		15 DUMC-50		
		60	3	3		15 DUMC-60		
		70	3	3		15 DUMC-70		
		75	5	3	1-1/2"	15 DUMC-75		
		80	5	3		15 DUMC-80		
		90	7-1/2	3		15 DUMC-90		
		100	7-1/2	3		15 DUMC-100		
125	18	20	3/4	1 or 3	1-1/2"	18 DUMC-20	36" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1	1 or 3		18 DUMC-25		
		30	1	1 or 3		18 DUMC-30		
		40	1-1/2	1 or 3		18 DUMC-40		
		50	2	1 or 3		18 DUMC-50		
		60	3	3		18 DUMC-60		
		70	3	3		18 DUMC-70		
		75	5	3		18 DUMC-75		
		80	5	3		18 DUMC-80		
		90	7-1/2	3		18 DUMC-90		
		100	7-1/2	3		18 DUMC-100		

** 110 Max 24" Deep

TYPE DUMC BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR HP 3500 RPM ONLY	PHASE	DISCH. SIZE INCHES	CATALOG NO.	REC. SIZE	INLET SIZE AND DISTANCE FROM TOP
150	21	20	3/4	1 or 3	1-1/2"	21 DUMC-20	36" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1	1 or 3		21 DUMC-25		
		30	1	1 or 3		21 DUMC-30		
		40	1-1/2	1 or 3		21 DUMC-40		
		50	2	1 or 3		21 DUMC-50		
		60	3	3		21 DUMC-60		
		70	5	3		21 DUMC-70		
		75	5	3		21 DUMC-75		
		80	5	3		21 DUMC-80		
		90	7-1/2	3		21 DUMC-90		
		100	7-1/2	3		21 DUMC-100		
200	30	20	1	1 or 3	1-1/2"	30 DUMC-20	42" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1	1 or 3		30 DUMC-25		
		30	1-1/2	1 or 3		30 DUMC-30		
		40	2	1 or 3		30 DUMC-40		
		50	2	1 or 3		30 DUMC-50		
		60	5	3		30 DUMC-60		
		70	5	3		30 DUMC-70		
		75	5	3		30 DUMC-75		
		80	5	3		30 DUMC-80		
		90	7-1/2	3		30 DUMC-90		
		100	7-1/2	3		30 DUMC-100		
250	35	20	1	1 or 3	1-1/2"	35 DUMC-20	48" Dia. x 48" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1-1/2	1 or 3		35 DUMC-25		
		30	1-1/2	1 or 3		35 DUMC-30		
		40	2	1 or 3		35 DUMC-40		
		50	2	3		35 DUMC-50		
		60	3	3		35 DUMC-60		
		70	5	3		35 DUMC-70		
		75	5	3		35 DUMC-75		
		80	7-1/2	3		35 DUMC-80		
		90	7-1/2	3		35 DUMC-90		
		100	7-1/2	3		35 DUMC-100		
300	42	20	1-1/2	1 or 3	1-1/2"	42 DUMC-20	42" Dia. x 60" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	1-1/2	1 or 3		42 DUMC-25		
		30	1-1/2	1 or 3		42 DUMC-30		
		40	2	1 or 3		42 DUMC-40		
		50	3	3		42 DUMC-50		
		60	5	3		42 DUMC-60		
		70	5	3		42 DUMC-70		
		75	7-1/2	3		42 DUMC-75		
		80	7-1/2	3		42 DUMC-80		
		90	7-1/2	3		42 DUMC-90		
		100	7-1/2	3		42 DUMC-100		

TYPE DUMC BOILER FEED UNITS

BOILER CAP. BHP	PUMP CAP. GPM	PUMP DISCH. PRESS. PSIG	MOTOR HP 3500 RPM ONLY	PHASE	DISCH. SIZE INCHES	CATALOG NO.	REC. SIZE	INLET SIZE AND DISTANCE FROM TOP
400	55	20	2	1 or 3	1-1/2"	55 DUMC-20	48" Dia. x 60" Deep	Inlet - 4" Centerline Dist. Fr. Top 9"
		25	3	1 or 3		55 DUMC-25		
		30	3	1 or 3		55 DUMC-30		
		40	3	3		55 DUMC-40		
		50	5	3		55 DUMC-50		
		60	5	3		55 DUMC-60		
		70	7-1/2	3		55 DUMC-70		
		75	7-1/2	3		55 DUMC-75		
		80	7-1/2	3		55 DUMC-80		
		90	10	3		55 DUMC-90		
		100	10	3		55 DUMC-100		

Flows up to 110 GPM have a 2 1/2" diameter column size. Flows from 111 GPM to 230 GPM have a 3 1/2" diameter column size.

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

SHIPCO® DUMC is furnished with make-up valve for supplying make-up water to the receiver when the pump is controlled by the boiler's level controller. The DUMC is manufactured as either a Simplex or Duplex type unit. The underground receiver is made of stainless steel with inlet opening(s) and is designed so that the pumps rest at ground level. The DUMC is sized for a 10 to 15 minute storage capacity based on boiler evaporation rates. The centrifugal main pump is close coupled to the motor and above the cover plate, making removal very easy and simple without disturbing the cover plate.

The DUMC has submerged propellers and in the first stage the propeller is small fitting within the column which helps conduct the water upward. The propeller shaft and its high temperature patented (U.S. Patent #4,932,846) bearing design is more durable and simpler than most other designs which generally have chronic lower bearing failure. Finally, each unit is fully assembled and tested upon leaving the plant to ensure quality and dependability.

Sizing Boiler Feed Pumps — DUMC 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 — DUMC 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 DUMC Units. This helps, by tempering the make-up water, to reduce thermal shock to the boiler.