

**SHIPCO<sup>®</sup>**  
**PUMPS**

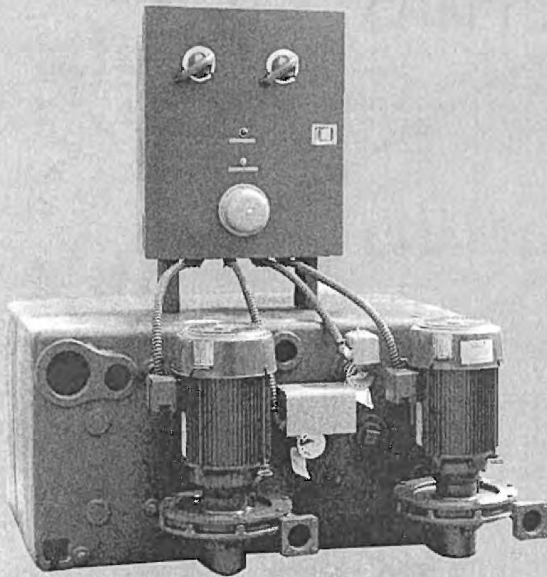
SHIPPENSBURG PUMP CO., INC.  
P.O. BOX 279, SHIPPENSBURG, PA 17257  
PHONE 717-532-7321 • FAX 717-532-7704  
WWW.SHIPCOPUMPS.COM

**PRIDE**

**QUALITY**

**CRAFTSMANSHIP**

**BULLETIN 102**  
*Revised 9/11*



**TYPE DC**

**Durable Condensate Pumps  
with Cast Iron Receivers**

**20 Year Warranty on Receiver  
Against Corrosion Failure**

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.

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

**SHIPCO<sup>®</sup>**  
**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 DC CONDENSATE UNITS

CAP. SQ. FT. EDR	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				
1,000	2	10	1/3	1 or 3	1/3	1 or 3	3/4"	10 DC	10S/15D	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		11 DC		
		20	1/3	1 or 3	1/2	1 or 3		12.0 DC		
		25	1/2	1 or 3	1/2	1 or 3		12.5 DC		
		30	3/4	1 or 3				13 DC		
		40	1	1 or 3				14 DC		
		50	1-1/2	1 or 3				15 DC		
		60	2	1 or 3				16 DC		
		70	3	3				17 DC		
		80	3	3				18 DC		
90	5	3			19 DC					
2,000	3	10	1/3	1 or 3	1/3	1 or 3	3/4"	20 DC	10S/15D	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		21 DC		
		20	1/3	1 or 3	1/2	1 or 3		22.0 DC		
		25	1/2	1 or 3	1/2	1 or 3		22.5 DC		
		30	3/4	1 or 3				23 DC		
		40	1	1 or 3				24 DC		
		50	1-1/2	1 or 3				25 DC		
		60	2	1 or 3				26 DC		
		70	3	3				27 DC		
		80	3	3				28 DC		
90	5	3			29 DC					
4,000	6	10	1/3	1 or 3	1/3	1 or 3	3/4"	40 DC	10S/15D	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		41 DC		
		20	1/3	1 or 3	1/2	1 or 3		42.0 DC		
		25	1/2	1 or 3	1/2	1 or 3		42.5 DC		
		30	3/4	1 or 3				43 DC		
		40	1	1 or 3				44 DC		
		50	1-1/2	1 or 3				45 DC		
		60	2	1 or 3				46 DC		
		70	3	3				47 DC		
		80	3	3				48 DC		
90	5	3			49 DC					
6,000	9	10	1/3	1 or 3	1/3	1 or 3	3/4"	60 DC	10S/15D	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		61 DC		
		20	1/3	1 or 3	1/2	1 or 3		62.0 DC		
		25	1/2	1 or 3	1/2	1 or 3		62.5 DC		
		30	3/4	1 or 3	1-1/2	3		63 DC		
		40	1	1 or 3	3	3		64 DC		
		50	1-1/2	1 or 3				65 DC		
		60	2	1 or 3				66 DC		
		70	3	3				67 DC		
		80	3	3				68 DC		
90	5	3			69 DC					
8,000	12	10	1/3	1 or 3	1/3	1 or 3	3/4"	80 DC	15	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		81 DC		
		20	1/3	1 or 3	1/2	1 or 3		82.0 DC		
		25	1/2	1 or 3	3/4	1 or 3		82.5 DC		
		30	3/4	1 or 3	1-1/2	3		83 DC		
		40	1	1 or 3	3	3		84 DC		
		50	1-1/2	1 or 3				85 DC		
		60	2	1 or 3				86 DC		
		70	3	3				87 DC		
		80	5	3				88 DC		
90	5	3			89 DC					
10,000	15	10	1/3	1 or 3	1/3	1 or 3	3/4"	100 DC	15	Inlet - 2" Inlet Centerline Height Inches 9-1/2"
		15	1/3	1 or 3	1/3	1 or 3		101 DC		
		20	1/3	1 or 3	1/2	1 or 3		102.0 DC		
		25	1/2	1 or 3	3/4	1 or 3		102.5 DC		
		30	3/4	1 or 3	1-1/2	3		103 DC		
		40	1	1 or 3	3	3		104 DC		
		50	1-1/2	1 or 3				105 DC		
		60	3	3				106 DC		
		70	3	3				107 DC		
		80	3	3				108 DC		
90	5	3			109 DC					
12,000	18	10	1/3	1 or 3	1/3	1 or 3	1-1/2"	120 DC	25	Inlet - 2" Inlet Centerline Height Inches 10"
		15	1/3	1 or 3	1/2	1 or 3		121 DC		
		20	1/3	1 or 3	1/2	1 or 3		122.0 DC		
		25	1/2	1 or 3	3/4	1 or 3		122.5 DC		
		30	3/4	1 or 3	1-1/2	3		123 DC		
		40	1-1/2	1 or 3	3	3		124 DC		
		50	2	1 or 3				125 DC		
		60	3	3				126 DC		
		70	3	3				127 DC		
		80	3	3				128 DC		
90	5	3			129 DC					
15,000	22-1/2	10	1/3	1 or 3	1/3	1 or 3	1-1/2"	150 DC	25	Inlet - 2" Inlet Centerline Height Inches 10"
		15	1/3	1 or 3	1/2	1 or 3		151 DC		
		20	1/2	1 or 3	3/4	1 or 3		152.0 DC		
		25	3/4	1 or 3	3/4	1 or 3		152.5 DC		
		30	3/4	1 or 3	1-1/2	3		153 DC		
		40	1-1/2	1 or 3	3	3		154 DC		
		50	2	1 or 3				155 DC		
		60	3	3				156 DC		
		70	3	3				157 DC		
		80	5	3				158 DC		
90	5	3			159 DC					

### TYPE DC CONDENSATE UNITS

CAP. SQ. FT. EDR	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									
20,000	30	10	1/3	1 or 3	1/3	1 or 3	1-1/2"	200 DC	37	Inlet - 3" Inlet Centerline Height Inches 14"					
		15	1/2	1 or 3	1/2	1 or 3		201 DC							
		20	3/4	1 or 3	3/4	1 or 3		202.0 DC							
		25	3/4	1 or 3	3/4	3		202.5 DC							
		30	1	1 or 3	1-1/2	3		203 DC							
		40	1-1/2	1 or 3	3	3		204 DC							
		50	2	1 or 3				205 DC							
		60	3	3				206 DC							
		70	5	3				207 DC							
		80	5	3				208 DC							
90	5	3			209 DC										
25,000	37-1/2	10	1/2	1 or 3	1/2	1 or 3	1-1/2"	250 DC	37	Inlet - 3" Inlet Centerline Height Inches 14"					
		15	1/2	1 or 3	3/4	1 or 3		251 DC							
		20	3/4	1 or 3	3/4	1 or 3		252.0 DC							
		25	1	1 or 3	1	3		252.5 DC							
		30	1-1/2	1 or 3	2	3		253 DC							
		40	2	1 or 3	3	3		254 DC							
		50	3	3				255 DC							
		60	5	3				256 DC							
		70	5	3				257 DC							
		80	5	3				258 DC							
90	5	3			259 DC										
30,000	45	10	3/4	1 or 3	1/2	1 or 3	1-1/2"	300 DC	37	Inlet - 3" Inlet Centerline Height Inches 14"					
		15	3/4	1 or 3	3/4	1 or 3		301 DC							
		20	1	1 or 3	1	1 or 3		302.0 DC							
		25	1-1/2	1 or 3	1-1/2	3		302.5 DC							
		30	1-1/2	1 or 3	2	3		303 DC							
		40	2	1 or 3	3	3		304 DC							
		50	3	3				305 DC							
		60	5	3				306 DC							
		70	5	3				307 DC							
		80	5	3				308 DC							
90	7-1/2	3			309 DC										
40,000	60	10	1	3	1	1 or 3	1-1/2"	400 DC	57	Inlet - 3" Inlet Centerline Height Inches 14"					
		15	1	3	1-1/2	1 or 3		401 DC							
		20	1-1/2	3	1-1/2	1 or 3		402.0 DC							
		25	2	3	2	3		402.5 DC							
		30	2	3	2	3		403 DC							
		40	3	3	3	3		404 DC							
		50	5	3				405 DC							
		60	5	3				406 DC							
		70	7-1/2	3				407 DC							
		80	7-1/2	3				408 DC							
50,000	75	10	1-1/2	3	1-1/2	1 or 3	2"	500 DC	80	Inlet - 4" Inlet Centerline Height Inches 16"					
		15	2	3	2	3		501 DC							
		20	2	3	2	3		502.0 DC							
		25	2	3	2	3		502.5 DC							
		30	3	3	3	3		503 DC							
		40	5	3	3	3		504 DC							
		50	5	3				505 DC							
		60	5	3				506 DC							
		70	7-1/2	3				507 DC							
		80	7-1/2	3				508 DC							
65,000	97-1/2	10	2	1 or 3	1	1 or 3	2"	650 DC	80	Inlet - 4" Inlet Centerline Height Inches 16"					
		15	2	1 or 3	1-1/2	3		651 DC							
		20	2	1 or 3	2	3		652.0 DC							
		25	3	3	2	3		652.5 DC							
		30	3	3	3	3		653 DC							
		40	5	3				654 DC							
		50	5	3				655 DC							
		60	7-1/2	3				656 DC							
		70	10	3				657 DC							
		75,000	112-1/2	10	2	1 or 3		1-1/2			3	2"	750 DC	125	Inlet - 4" Inlet Centerline Height Inches 18"
15	2			1 or 3	2	3	751 DC								
20	3			3	2	3	752.0 DC								
25	3			3	2	3	752.5 DC								
30	3			3	3	3	753 DC								
40	5			3			754 DC								
50	5			3			755 DC								
60	7-1/2			3			756 DC								
100,000	150			10	3	1 or 3	2	3	2-1/2"	1000 DC	125		Inlet - 4" Inlet Centerline Height Inches 18"		
				15	3	1 or 3	2	3		1001 DC					
		20	3	3	3	3	1002 DC								
		25	5	3	5	3	1002.5 DC								
		30	5	3	5	3	1003 DC								
		40	7-1/2	3			1004 DC								
		50	7-1/2	3			1005 DC								
		60	10	3			1006 DC								

NOTE: Units are sized @ 3 times the normal condensing rate. Upon proper application, units can be sized @ 2 times the condensing rate and therefore handle 1 1/2 times the tabled capacity in sq. ft. EDR. This is based upon design and operating experience.

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



### Sizing Condensate Pumps — DC Units

The condensing rate for 1,000 sq. ft. EDR is .5 GPM (see table). The condensate return pumps are sized @ 3 times the condensing rate or 1.5 GPM per 1,000 sq. ft. EDR.

Note: Units are sized @ 3 times the normal condensing rate. Upon proper application, units can be sized @ 2 times the condensing rate and therefore handle 1½ times the tabled capacity in sq. ft. EDR. This is based upon design and operating experience.

**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

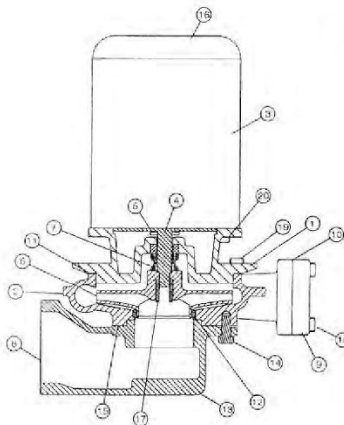


### Receiver Sizing — DC Units

The receivers in this series of units are sized to allow for approximately a one minute 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 rooms as quickly as possible to reduce make-up requirements and heat loss.

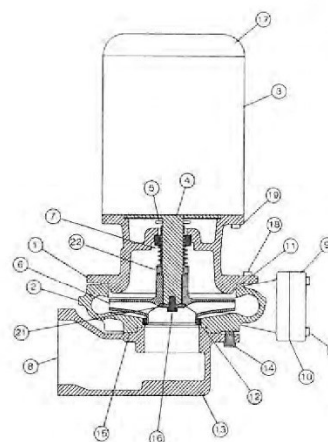
**The Durable Line of Condensate Handling equipment and Boiler Feed Pumps** is constructed with Cast Iron Receivers that provide years of service even with the most aggressive waters.

- Receivers available from 10 gallon to 500 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.
- Pumps have 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.)



**Model D - 56J Frame**

1. Pump Head
2. Pump Case
3. Motor
4. Motor Shaft
5. Water Slinger
6. Impeller
7. Mechanical Seal
8. Pump Suction Gasket
9. Discharge Flange
10. Pump Discharge Gasket
11. Head Gasket
12. Wear Ring
13. Suction Housing
14. Capscrews (Suction Housing to Case)
15. Suction Housing Gasket
16. Drip Cover
17. Impeller Locking Nut
18. Capscrews
19. Capscrews
20. Capscrews



**Model D - JM Frame**

1. Pump Head
2. Pump Case
3. Motor
4. Motor Shaft
5. Water Slinger
6. Impeller
7. Mechanical Seal
8. Pump Suction Gasket
9. Discharge Flange
10. Pump Discharge Gasket
11. Head Gasket
12. Wear Ring
13. Suction Housing
14. Capscrews (Suction Housing to Case)
15. Suction Housing Gasket
16. Impeller Screw
17. Drip Cover
18. Capscrews
19. Capscrews
20. Capscrews
21. Impeller Washer
22. Shaft Sleeve (Mech. Seal)

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## SUGGESTED SPECIFICATIONS SHIPCO® PUMPS TYPE DC OR ECC DUPLEX CONDENSATION PUMPS

### CAPACITY SCHEDULE MUST BE COMPLETED.

Furnish and install according to drawings and manufacturer's instructions the quantity of DC DUPLEX condensation pump(s) as shown on the drawings. Each unit shall consist of (1) cast iron receiver, (2) water pumps, (1) mechanical alternator, electrical controls and accessories.

The condensate receiver shall be manufactured of close-grained cast iron with a 20 year warranty against corrosion failure. The receiver shall be equipped with: (1) externally adjustable 2-pole mechanical alternator, top and bottom shut-off water level gauge with automatic shut-off if glass is broken, dial thermometer, (2) bronze isolation valves between pump and receiver plus a valve in each bleed line installed for maintenance, and (2) lifting eye bolts (on receivers 25 gallon and larger). The receiver size shall be as shown on the drawings.

The centrifugal water pumps shall be flange mounted on the receiver. The pumps shall be close coupled vertical design, and shall have a cast bronze impeller that is bronze fitted to the cast iron pump housing with a renewable bronze wearing ring. The mechanical seal shall be rated for at least 250°F service. The entire pump assembly shall be permanently aligned and dynamically balanced to deliver its full rated capacity. The pump shall be driven by an industry standard motor available "off the shelf." The motor shall have a NEMA standard shaft. The horsepower and electrical characteristics shall be as shown on the drawings.

The pump manufacturer shall furnish, mount on the pump unit, and wire a U.L. labeled NEMA \_\_\_1\_\_\_ control cabinet with hinged door, containing:

- 2 Combination magnetic starters (each having 3 overload relays) with circuit breakers and cover interlock for lock-out tag-out capability
- 2 "Automatic-Off" selector switches
- 2 Momentary contact "Test" push buttons
- 2 Pilot run lights
- 1 Numbered terminal strip
- 1 Removable control mounting plate

Each pump control circuit shall be completely independent of the other. The NEMA \_\_\_1\_\_\_ mechanical alternator shall (1) change the operating sequence automatically after each cycle, (2) provide simultaneous operation under peak load conditions, and (3) operate the second pump automatically, should the active pump or its control fail.

A control circuit transformer for each circuit shall be provided when the motor voltage is three phase. All factory installed wiring shall be numbered for easy identification and the numbers shall coincide with those shown on the wiring diagrams.

The unit shall have a single point power connection.

The entire pump package will be U.L. labeled when a control panel is furnished.

The manufacturer shall furnish a certified pump performance test. The pump manufacturer shall furnish complete elementary and connection wiring diagrams, piping diagrams, and installation and operation instructions.

Manufacturer shall be SHIPCO® PUMPS, P.O. Box 279, Shippensburg, PA 17257.

Capacity Schedule (Required to complete suggested specifications).

### TYPE DC-CONDENSATE PUMPS SCHEDULE:

#### AS SCHEDULED

Catalog No. \_\_\_206\_\_\_ DC

Capacity: \_\_\_30\_\_\_ GPM @ \_\_\_60\_\_\_ PSIG with  
\_\_\_3\_\_\_ HP, \_\_\_3450\_\_\_ RPM, Motor Enclosure \_\_\_ODP\_\_\_

Receiver: \_\_\_37\_\_\_ gallons

Current: \_\_\_3\_\_\_ phase, 60 cycles, \_\_\_460\_\_\_ volts

#### OFFERED AS VALUE ENGINEERING

Catalog No. \_\_\_86\_\_\_ DC

Capacity: \_\_\_12\_\_\_ GPM @ \_\_\_60\_\_\_ PSIG with  
\_\_\_2\_\_\_ HP, \_\_\_3450\_\_\_ RPM, Motor Enclosure \_\_\_ODP\_\_\_

Receiver: \_\_\_15\_\_\_ gallons

Current: \_\_\_3\_\_\_ phase, 60 cycles, \_\_\_460\_\_\_ volts