Manual Index

BARNES®

INSTALLATION & OPERATION MANUAL

Condensate Pumps

Model BC-15

Model BC-20S
with Pilot Duty High Water Dry Contact

IMPORTANT! ***Read all instructions in this manual before operating pump. As a result of Crane Pumps & Systems, Inc., constant product improvement program, product changes may occur. As such Crane Pumps & Systems reserves the right to change product without prior written notification.***

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Submersible Wastewater Pump Association SWPA MEMBER

Form No. 135782M-Rev. A

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IMPORTANT! **Prior to installation, record Model, Serial Number and Code Number from the pump nameplate for future reference.**

MODEL _____

SERIAL _____

CODE_____

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SAFETY FIRST!

Please Read This Before Installing Or Operating Pump.
This information is provided for **SAFETY and to PREVENT EQUIPMENT PROBLEMS**. To help recognize this information, observe the following symbols:

IMPORTANT! Warns about hazards that can result in personal injury or Indicates factors concerned with assembly, installation, operation, or maintenance which could result in damage to the machine or equipment if ignored.

CAUTION ! Warns about hazards that can or will cause minor personal injury or property damage if ignored. Used with symbols below.

WARNING ! Warns about hazards that can or will cause serious personal injury, death, or major property damage if ignored. Used with symbols below.

Hazardous fluids can cause fire or explosions, burns or death could result.

Extremely hot - Severe burns can occur on contact.

Biohazard can cause serious personal injury.

Hazardous fluids can Hazardous pressure, eruptions or explosions could cause personal injury or property damage.

Rotating machinery Amputation or severe laceration can result.

Hazardous voltage can shock, burn or cause death.

Only qualified personnel should install, operate and repair pump. Any wiring of pumps should be performed by a qualified electrician.

WARNING ! - To reduce risk of electrical shock, pumps and control panels must be properly grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances.

WARNING! - To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing. Lock out power and tag.

WARNING! Operation against a closed discharge valve will cause premature bearing and seal failure on any pump, and on end suction and self priming pump the heat build may cause the generation of steam with resulting dangerous pressures. It is recommended that a high case temperature switch or pressure relief valve be installed on the pump body.

CAUTION ! Never operate a pump with a plug-in type power cord without a ground fault circuit interrupter.

CAUTION! Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.

WARNING! - **DO NOT** pump hazardous materials (flammable, caustic, etc.) unless the pump is specifically designed and designated to handle them.

Do not block or restrict discharge hose, as discharge hose may whip under pressure.

WARNING! - DO NOT wear loose clothing that may become entangled in the impeller or other moving parts.

WARNING! - Keep clear of suction and discharge openings. **DO NOT** insert fingers in pump with power connected.

Always wear eye protection when working on pumps.

Make sure lifting handles are securely fastened each time before lifting. **DO NOT** operate pump without safety devices in place. Always replace safety devices that have been removed during service or repair. Secure the pump in its operating position so it can not tip over, fall or slide.

DO NOT exceed manufacturers recommendation for maximum performance, as this could cause the motor to overheat.

DO NOT remove cord and strain relief. Do not connect conduit to pump.

WARNING! Cable should be protected at all times to avoid punctures, cut, bruises and abrasions - inspect frequently. Never handle connected power cords with wet hands.

WARNING! To reduce risk of electrical shock, all wiring and junction connections should be made per the NEC or CEC and applicable state or province and local codes. Requirements may vary depending on usage and location.

WARNING! Submersible Pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common.

WARNING! Products Returned Must Be Cleaned, Sanitized, Or Decontaminated As Necessary Prior To Shipment, To Insure That Employees Will Not Be Exposed To Health Hazards In Handling Said Material. All Applicable Laws And Regulations Shall Apply.

Bronze/brass and bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems. Lead is known to cause cancer and birth defects or other reproductive harm. Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For non-leaded copper alloy materials of construction, please contact factory.

IMPORTANT! - Crane Pumps & Systems, Inc. is not responsible for losses, injury, or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.

A) General Information - All Models:

Before installation, read the following instructions carefully. Closely following these instructions will eliminate potential operating problems, assuring years of trouble-free service.

***WARNING!* Risk of electric shock.**

The pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle. Always disconnect the pump from the power source before handling or making adjustments. Always wear rubber boots when servicing in wet areas. Make sure the pump power source is a separately fused grounded 3-wire type receptable of 15-amp capacity. **DO NOT REMOVE GROUND PRONG OR PLUG. DO NOT USE AN EXTENSION CORD.** Check to make sure installation is in accordance with the National Electric Code and all applicable local codes. Installation and servicing are to be conducted by qualified personnel.

CAUTION!

- DO NOT pump flammable liquids
- DO NOT use around explosive materials
- DO NOT handle unit with wet hands or while standing in water
- DO NOT connect to any voltage other than that listed on the nameplate
- DO NOT use in water over 150°F
- DO NOT modify the pump in any way
- DO NOT expose pump or discharge to freezing temperatures

B) Installation of the Pump:

1. Select a location that is level and below the condensate pan drain. The unit may be mounted on a wall by using the mounting tabs on the tank, which are 10-9/16” apart. A condensate neutralizer may be required by some codes to keep condensate pH in an acceptable range for discharge into drains.
2. Connect the drain pan to one of the 3 intake holes. Use vinyl tubing, PVC, or any other suitable material. Be sure the tubing or pipe extends into the inlet of the tank by at least 1”. The discharge connection to the check valve may be made with 3/8” vinyl tubing secured by a hose clamp (not included), or the barb may be removed by sawing so that threaded fittings may be attached. The thread is 1/4” NPT. Connect the pipe or the discharge hose to the discharge of the pump. HAND-TIGHTEN ONLY. Over-tightening may cause the pump housing to crack. Once the discharge tubing has been extended to the required height it should be slanted downward, if possible, to assist in drainage. NOTE: For best results, do not extend discharge tubing beyond 12’ vertically for the BC-15 and 17’ for the BC-20S (Refer to performance chart).
3. The High Water switch leads (Model BC-20S only) should be connected to a class 2 low voltage circuit (not to exceed 30 volts). Using this feature may prevent damage from condensation overflowing if the discharge becomes blocked or if the pump fails. The leads may be connected in series with the low voltage thermostat circuit so as to shut down the heating/air-conditioning system if the water level in the pump tank rises beyond normal, or they may be connected to an external alarm.
4. To provide maximum mounting positions the tank cover may be removed and rotated 180° so that the check valve will be on the opposite side of the unit. To remove the lid from the tank, insert a screwdriver in the slot and pry the tank outward, while lifting the lid. After removing and rotating, be sure the lid snaps back into place firmly.
5. When all mounting and water connections are secure, connect the unit to an electrical supply.
6. To ensure proper installation, test the unit by adding water to the tank until the pump activates. Be sure the water discharges properly. Finally, check the connections for leakage and proper discharge pipe routing.

C) Troubleshooting:

WARNING! Always disconnect the pump from its power source before handling. This guide is designed to help identify reasons for potential operating problems. It is not a service guide. Dismantling the pump voids the warranty. Servicing the pump other than simple cleaning of pump inlet or impeller should be referred to the factory or its authorized service centers. **NOTE: The manufacturer assumes no responsibilty for damage or injury due to disassembly in the field.**

Troubleshooting		
Problem	**Solution**	
Pump does not run or hum	Line circuit breaker may be off, tripped or loose. Have a certified electrician check fuse or breaker.	
	Water level in tank may be too low to activate switch. Add more water to tank.	
	Plug on power cord may not be making contact in receptacle. Check security and connection.	
	Float may be obstructed. Make sure float is free and not interfering with the inlet pipe or any other obstruction.	
	Consult factory.	
Pump runs or hums but does not deliver water	Check valve may be installed incorrectly or is defective. Check to make sure its installed properly.	
	Examine discharge tubing for any kinks or blockages. Also, be certain that intake tubing or pipe is not obstructed.	
	Discharge line may be blocked or frozen. Check to see if like passes through cold areas or is blocked.	
	Vertical lift is beyond pumps capability. See chart below for your pump's maximum lift capability.	
	Inlet of pump is plugged or the impeller is jammed. Remove the pump screen and clean inlet and impeller.	
***NOTE*: At the pump's maximum lift there will be no flow.**		
Model: BC-15 BC-20S	**Max. Recommended Lift:** 12' 17'	**Max. Lift:** 15" 20"
Pump runs and removes water but does not shut off	Float is stuck in the 'on' position. Check to make sure the float is free to move up and down without obstruction.	
	Switch is defective. Consult factory.	
Pump runs but delivers very little water	Vertical lift is approaching the pump's maximum lift capaabilty. Refer to the above maximum lift chart.	
	Pump's inlet is partially blocked. Check to make sure the inlet is clear of debris.	
	Discharge line is partially blocked. Check line for blockage.	
	Check valve is not opening all the way. Check for defective or blocked check valve.	
Circuit breaker trips or fuse blows when pump starts	Fuse or breaker size is too small. A 15-amp breaker should be used.	
	Other major appliances are on the same circuit. Pump should be on its own circuit.	
	Pump is connected to an extension cord or wiring is inadequate. Have a certified electrician check for proper wiring.	
	Defective motor or switch. Consult factory.	

Table A

D) Maintenance:

All pumps are designed and manufactured to ensure long, trouble-free service. However, if the pump is used in a dirty environment or is pumping something other than clear condensate water, the tank should be removed and cleaned periodically with soap and water.

Pump models have sealed permanently lubricated bearings and required no additional lubrication. Pour enough water into the tank to activate the pump periodically when not normally in use.

If unit is mounted in an unheated area that is exposed to temperatures below freezing, the unit and lines must be drained to prevent damage to the pump.

BARNES® BARNES® PRESSURE SYSTEMS CROWN

burks® WEINMAN® DEMING® PROSSER®

Limited 24 Month Warranty

Crane Pumps & Systems warrants that products of our manufacture will be free of defects in material and workmanship under normal use and service for twenty-four (24) months after manufacture date, when installed and maintained in accordance with our instructions.This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, F.O.B. POINT OF MANUFACTURE OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.** Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on a product manufactured by us, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. **RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSES AND EVALUATIONS WE CONDUCT WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.**

This warranty shall not apply when damage is caused by (a) improper installation, (b) improper voltage (c) lightning (d) excessive sand or other abrasive material (e) scale or corrosion build-up due to excessive chemical content. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and\or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. **UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO TRAVEL EXPENSES, RENTED EQUIPMENT, OUTSIDE CONTRACTOR FEES, UNAUTHORIZED REPAIR SHOP EXPENSES, LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND\OR WORKMANSHIP AND\OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE**.

No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

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IMPORTANT!
WARRANTY REGISTRATION

Your product is covered by the enclosed Warranty.
To complete the Warranty Registration Form go to:

http://www.cranepumps.com/ProductRegistration/

If you have a claim under the provision of the warranty, contact your local Crane Pumps & Systems, Inc. Distributor.

RETURNED GOODS
RETURN OF MERCHANDISE REQUIRES A "RETURNED GOODS AUTHORIZATION".
CONTACT YOUR LOCAL CRANE PUMPS & SYSTEMS, INC. DISTRIBUTOR.

Products Returned <u>Must</u> Be Cleaned, Sanitized, Or Decontaminated As Necessary Prior To Shipment, To Insure That Employees Will Not Be Exposed To Health Hazards In Handling Said Material. All Applicable Laws And Regulations Shall Apply.