COMMISSION AND START UP

System Flushing:

Proper system cleaning and flushing is an important aspect of the commissioning and start up procedure for BULLDOG units. Ensure the system has been flushed properly. This prevents fouling of the unit's heat exchangers. It is common for debris to settle out in areas of the system where there is low flow or low fluid velocity. This causes nuisance alarms as a result of a fouling heat pump. It is necessary to flush these units out as they appear to contain debris build up. This is the responsibility of the contractor and not a heat pump defect.
NOTE: Hydronic coils are not 100% drainable.

System Fluid:

Ensure that system water temperature is within an acceptable range to facilitate start-up (80-120°F) for cooling and (100 – 140°F) for heating.

System Water pH:

System water should have a neutral pH balance of approximately 7.5 which will extend the life of the hoses, heat exchangers, and other water side accessories.

Water Flow Rate:

Open all isolation valves to the unit. Ensure that the entering and leaving fluid temperatures of the BULLDOG unit in operation are acceptable. There is typically an 8 to 12 degree drop or rise in temperature, depending on whether the unit is in cooling or heating. Under extreme conditions, slight variances in the temperature may be noted.

Freeze Protection from Water System:

Ensure that freeze protection is provided for the outdoor portion of the loop water system. Inadequate freeze protection can lead to coil damage.
NOTE: A potential issue may arise during construction where the system fluid loop is drained after being cleaned, flushed and tested. BULLDOG units will not completely drain and may hold fluid in the condenser or heating coil. Extensive damage may result to internal components if the system fluid freezes unless adequate glycol is added.

Remove Air from System Fluid Loop:

Air in the system impairs unit operation and can cause erosion in the system piping.

Air Balancing:

Air balancing of the system should be performed while the unit's fan is operating at high-speed. In order to ensure the fan is operating at high-speed, the unit must be placed into cool mode.

Clean Unit Filters:

Confirm that the unit filters that are being used are clean. This contributes to the proper operation of the unit by ensuring that there is adequate air flow across the coil.

SAFETY NOTE:

In the following part of the procedure it will be necessary to access the areas around the electrical wiring and the circuit board. Do not adjust or remove any board connections or wiring connections to other components without first powering down the unit. Disconnects are usually within reach of the unit. **Exercise caution at all times.**

Fan Rotation

Confirm that the unit filters that are being used are clean. This contributes to the proper operation of the unit by ensuring that there is adequate air flow across the coil
NOTE: This equipment is designed for indoor installation **ONLY.**

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COMMISSION AND START UP

Start-up

To register the unit warranty, proper start-up is required by a factory approved technician. The following items must be recorded and returned to the factory to register the warranty. The factory reserves the right to refuse warranty if these details are not provided.

Start Up Record **Page** ________

Project: ____________________ **Date:** __________ **Tech:** ____________________

Location	________	H EWT	____	C EWT	____	Fan Amps	________
Model No.	________	E EAT	____	O LWT	____	Compr Amps	________
Serial No.	________	A LAT	____	O EAT	____	Cond.Trap	________
Voltage	________	T Valve	☐	L LAT	____	S/R Correct	☐
Remarks				Sight Glass	☐	Fan Rotation	☐
				Belt Tension	☐	Comp Rotation	☐

S/R = Supply and Return

Location	________	H EWT	____	C EWT	____	Fan Amps	________
Model No.	________	E EAT	____	O LWT	____	Compr Amps	________
Serial No.	________	A LAT	____	O EAT	____	Cond.Trap	________
Voltage	________	T Valve	☐	L LAT	____	S/R Correct	☐
Remarks				Sight Glass	☐	Fan Rotation	☐
				Belt Tension	☐	Comp Rotation	☐

S/R = Supply and Return

Location	________	H EWT	____	C EWT	____	Fan Amps	________
Model No.	________	E EAT	____	O LWT	____	Compr Amps	________
Serial No.	________	A LAT	____	O EAT	____	Cond.Trap	________
Voltage	________	T Valve	☐	L LAT	____	S/R Correct	☐
Remarks				Sight Glass	☐	Fan Rotation	☐
				Belt Tension	☐	Comp Rotation	☐

S/R = Supply and Return

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