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AB BL26C-10D

AB BL26C-10D Brazed Plate Heat Exchanger User Manual

Model: BL26C-10D

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your AB BL26C-10D Brazed Plate Heat Exchanger. This unit is designed for efficient heat transfer in various water-to-water applications.

The BL26C-10D model features 10 brazed plates, measuring 5 inches by 12 inches, with 1 1/4 inch MPT connections. It is constructed from high-quality 316L stainless steel, brazed with 99.9% copper, ensuring durability, resistance to leakage, and the ability to withstand high pressure and temperature.





Figure 1: Front view of the AB BL26C-10D Braze Plate Heat Exchanger, displaying its specifications label.

2. PRODUCT SPECIFICATIONS

Specification	Detail
Manufacturer	AB
Model Number	BL26C-10D

Part Number	BL26C-10D
Item Weight	7.39 pounds
Product Dimensions	12 x 5 x 1.25 inches
Number of Plates	10
Material	99.9% Copper, Stainless Steel 316L
Connection Type	1 1/4" MPT (Male Pipe Thread)
Max. Operating Pressure	435 PSI
Max. Operating Temperature	482°F
BTU Capacity	110,000 - 280,000 BTU/hr (application dependent)

316 Stainless Steel, Copper Brazed

1. Elegant Appearance
2. Rust Resistance
3. Smooth Thread for Installation

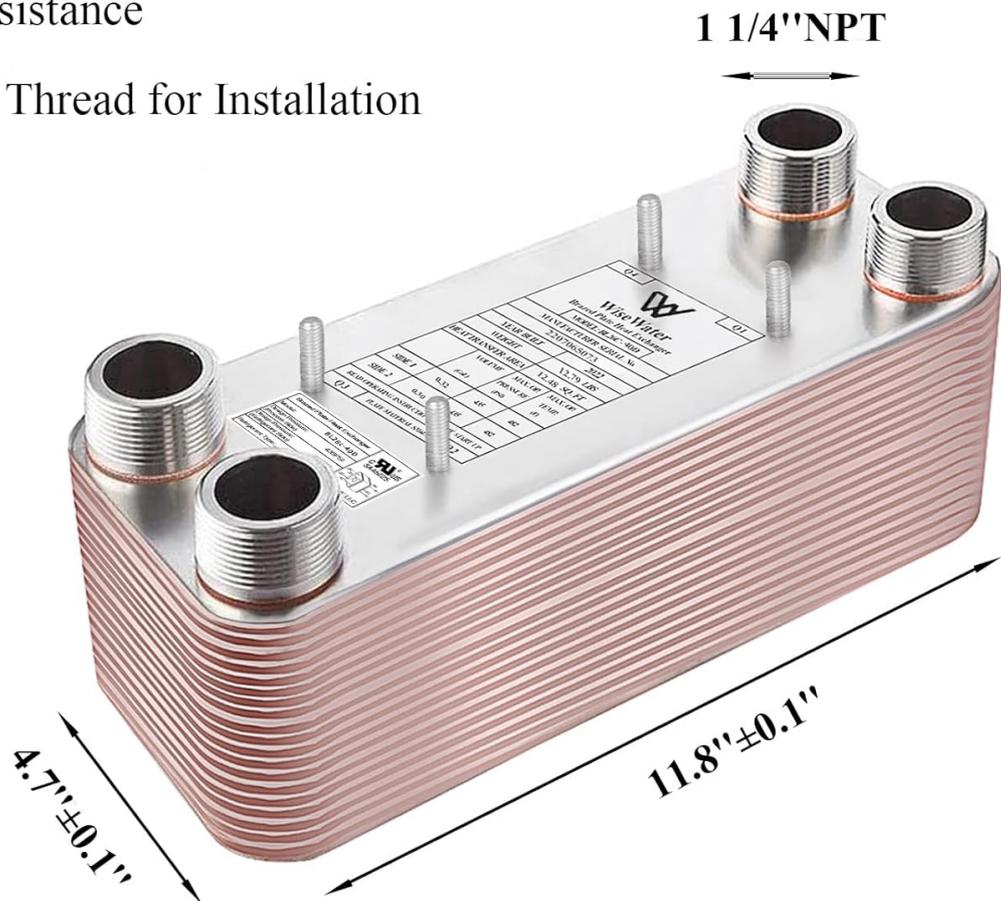


Figure 2: Detailed view of the heat exchanger showing dimensions and connection threads.

3. APPLICATIONS

The AB BL26C-10D Brazed Plate Heat Exchanger is versatile and suitable for a wide range of heat transfer applications, including but not limited to:

- Domestic Water Heating
- Floor Heating Systems
- Snow Melting Systems
- District or Zone Heating Systems
- Outdoor Wood Furnaces
- Hydraulic and Lube Oil Coolers
- Radiator Heating
- Hydronic Heating
- Solar Heating Systems
- Wood Boiler Systems
- Homebrew Chillers
- HVAC Heating & Cooling

Multiple Applications

-  • Homebrew Chiller
-  • Water Heating
-  • Central Heating
-  • Floor Heating
-  • Driveway Snow Melting
-  • Radiator Heating
-  • Solar Heating
-  • HVAC Heating & Cooling



Figure 3: Visual representation of multiple applications for the heat exchanger.

4. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of your heat exchanger. Due to the specialized nature of hydronic systems, professional installation by a qualified technician is highly recommended.

4.1. Connection Points

The heat exchanger features 1 1/4 inch MPT (Male Pipe Thread) connections. Ensure all connections are properly sealed to prevent leaks. The smooth thread design facilitates an easy and flexible hookup.

4.2. Flow Direction

For optimal heat transfer, fluids should typically flow in a counter-current direction. Consult the port labels (Q1, Q2, Q3, Q4) on the unit and your system design for correct fluid routing.

4.3. System Sizing

Refer to the Hydronic Duty Tables provided by the manufacturer for appropriate sizing based on your specific application (e.g., domestic hot water, floor heating, snow melting) and desired BTU output. These tables provide guidance on boiler flow, system flow, and kBtu/hr for various models.

SKU		Domestic hot water heating: Boiler water 180F-150F; Pipe water 40F-140F									
Specification		BL26C-10	BL26C-20	BL26C-30	BL26C-40	BL26C-50	BL26C-60	BL26C-70	BL26C-80	BL26C-90	
Boiler flow GPM		10	15	17	24	28	41	55	60	69	—
System flow GPM		4	5	5	7	8	12	16	18	20	—
kBtu/hr		200	251	251	357	401	601	802	902	1002	—
Min. Operating Temp.		-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F	—
Max. Operating Temp.		482F	482F	482F	482F	482F	482F	482F	482F	482F	—
Design Pressure:		435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	—
Test Pressure:		653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	—

SKU		Floor Heating: Boiler water 180F-150F; System water 100F-130F									
Specification		BL26C-10	BL26C-20	BL26C-30	BL26C-40	BL26C-50	BL26C-60	BL26C-70	BL26C-80	BL26C-90	BL26C-100
Boiler flow GPM		7	11	22.4	26.2	33	36	40	43	55	69
System flow GPM		7	11	22.4	26.2	33	36	40	43	55	69
kBtu/hr		104	163	333	389	490	535	594	639	817	1025
Min. Operating Temp.		-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F
Max. Operating Temp.		482F	482F	482F	482F	482F	482F	482F	482F	482F	482F
Design Pressure:		435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI
Test Pressure:		653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI

SKU		Snow melting heating: Boiler water 180F-150F; Water/glycol-50% 110F-140F									
Specification		BL26C-10	BL26C-20	BL26C-30	BL26C-40	BL26C-50	BL26C-60	BL26C-70	BL26C-80		
Boiler flow GPM		10	11	17	24	31	34	38	48		
System flow GPM		11	12	19	27	34	38	42	53		
kBtu/hr		145	159	251	357	449	502	555	701		
Min. Operating Temp.		-256F	-256F	-256F	-256F	-256F	-256F	-256F	-256F		
Max. Operating Temp.		482F	482F	482F	482F	482F	482F	482F	482F		
Design Pressure:		435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI	435PSI		
Test Pressure:		653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI	653PSI		



Figure 4: Hydronic Duty Table for BL26C models, assisting with system sizing.

5. OPERATING PRINCIPLES

The brazed plate heat exchanger facilitates efficient heat transfer between two fluids without direct mixing. Hot fluid enters one set of channels, and cold fluid enters an alternating set of channels. Heat is transferred across the thin, corrugated stainless steel plates.

5.1. Heat Exchange Mechanism

The unit utilizes an asymmetric fish bone plate design. This design creates strong turbulences within the fluid flow, which significantly enhances the heat transfer performance and efficiency. A heat recovery rate of over 90% can be achieved.

Heat Exchanger Principle

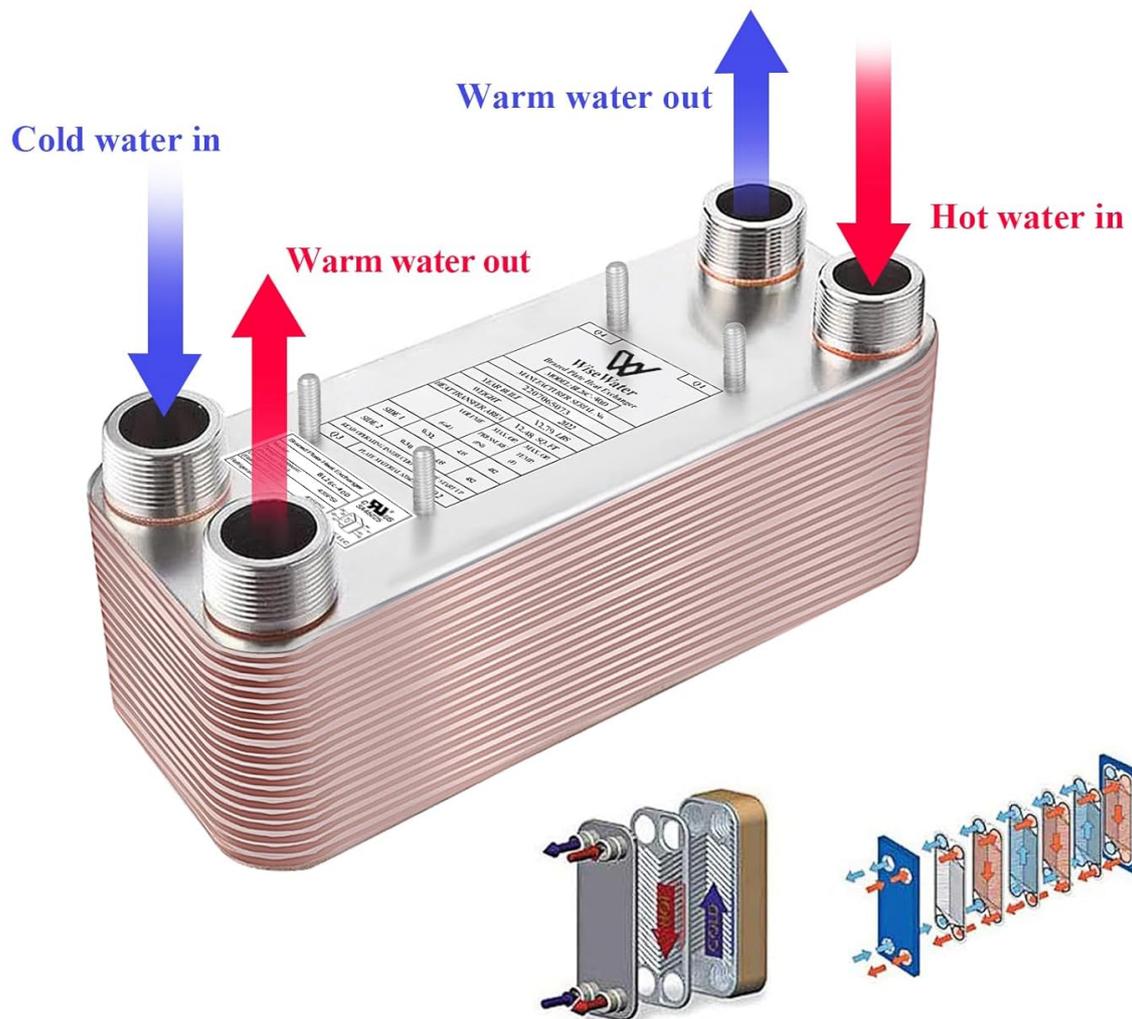


Figure 5: Diagram illustrating the heat exchange principle.

Video 1: An animated demonstration of the internal workings and heat transfer process within a 316L Stainless Steel Plate Heat Exchanger.

6. MAINTENANCE

Brazed plate heat exchangers are generally low-maintenance devices due to their robust construction and sealed design. However, periodic checks are recommended to ensure continued optimal performance.

- **Visual Inspection:** Regularly inspect the exterior of the unit for any signs of external leakage, corrosion, or physical damage.
- **Pressure Monitoring:** Monitor system pressures to ensure they remain within the specified operating limits (Max. 435 PSI).
- **Temperature Monitoring:** Verify that operating temperatures do not exceed the maximum specified temperature (Max. 482°F).
- **Fluid Quality:** Maintain good fluid quality in both circuits to prevent fouling or scaling, which can reduce efficiency over time.
- **Cleaning:** If a significant drop in performance is observed, chemical cleaning may be necessary. Consult a professional for appropriate cleaning procedures to avoid damaging the unit.

7. TROUBLESHOOTING

This section provides general guidance for common issues. For complex problems, contact a qualified technician.

Problem	Possible Cause	Solution
Reduced Heat Transfer Efficiency	<ul style="list-style-type: none">• Insufficient flow rate in one or both circuits• Fouling or scaling inside the heat exchanger• Air trapped in the system• Incorrect fluid temperatures	<ul style="list-style-type: none">• Check pump operation and flow rates• Consider chemical cleaning (professional service recommended)• Bleed air from the system• Verify boiler/heat source output and system design temperatures
External Leaks	<ul style="list-style-type: none">• Loose pipe connections• Damaged brazing (rare)	<ul style="list-style-type: none">• Tighten pipe connections (do not overtighten)• Inspect for visible damage; if brazing is compromised, unit replacement may be necessary
Unusual Noises	<ul style="list-style-type: none">• Air in the system• Pump cavitation• Vibrations from connected piping	<ul style="list-style-type: none">• Bleed air from the system• Check pump for proper operation and sizing• Secure piping to reduce vibrations

8. WARRANTY AND SUPPORT

Your AB BL26C-10D Brazed Plate Heat Exchanger comes with a **1-year warranty** covering manufacturer defects. We are committed to providing 100% satisfaction service and premium quality products.

If you encounter any issues or have questions regarding your product, please contact the seller or manufacturer directly for assistance. Ensure you have your model number (BL26C-10D) and purchase details available when contacting support.