

STEFFES CORPORATION

AIR HANDLER – 1/2 HP

For use with Model 5120, 5130, 5140 Comfort Plus Hydronic Heating Systems

The Steffes Air Handler (Item # 1302100) is an optional device used to interface the Comfort Plus Hydronic with a centrally ducted heating or cooling system. The Air Handler includes a plenum assembly, supply air blower, water coil, air filter, wiring harness, and hardware kit.

OPERATION

When the Comfort Plus Hydronic system receives a heat call from the air handler's room thermostat, the primary loop pump (circulator) is energized to circulate water through the heat exchanger. At the same time, the air handler's pump (circulator) and the supply air blower are energized. The pump circulates the hot water through the air handler's water coil and the supply air blower extracts the heat from the water in the coil and delivers it to the appropriate heating zone through the ductwork. When connected directly to the Comfort Plus Hydronic system, the air handler also directs heat lost statically into the living space providing automatic static heat recovery. If used with a heat pump, the air handler has the ability to monitor the outlet air temperature and provide comfort modulation as needed.

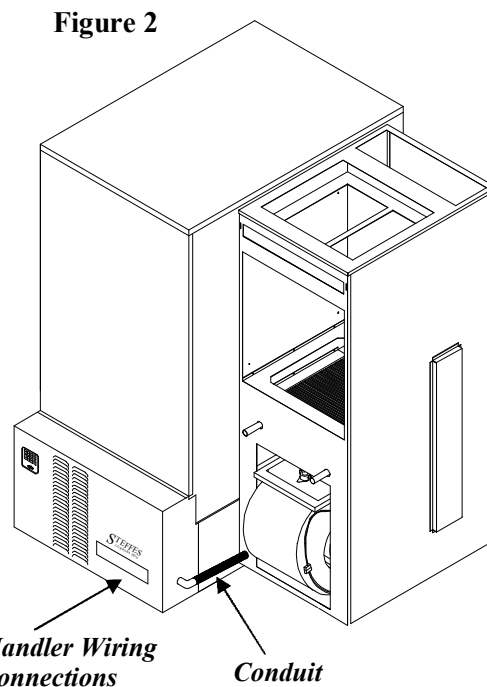
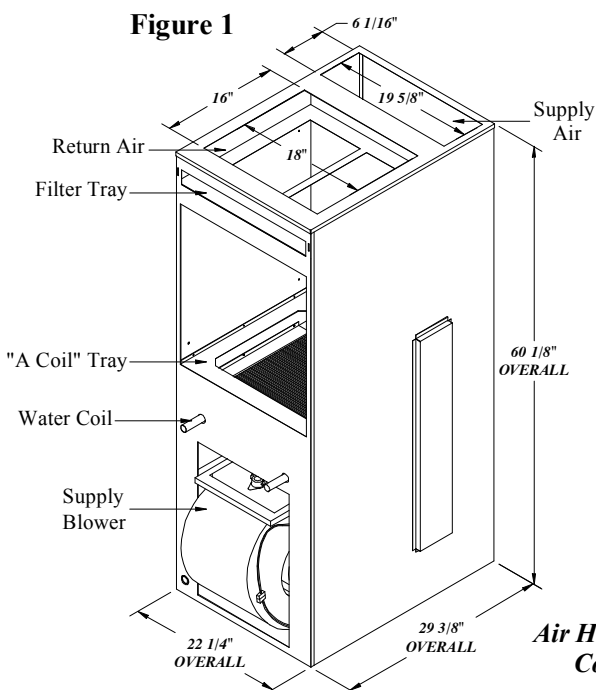
SPECIFICATIONS

Maximum Outlet Temperature	120 degrees Fahrenheit
Maximum Static Pressure	.75 inches H ₂ O
Maximum Water Coil Output	60,000 BTU/hr
Maximum A-Coil Size - Front Access	20"W X 22"H X 21.2"D
Inner Dimensions of A-Coil Area	21.2"W X 24.25"H X 21.2"D
Voltage	240/208 VAC
Wattage	1,130
Supply Air Blower	1/2 HP, 60 HZ

NOTE: If installing a heat pump or air conditioning coil larger than the front access dimensions can accommodate, removal of the filter tray and the top panel may allow the coil to be lowered into place from the top.

INSTALLATION

1. De-energize the Comfort Plus Hydronic system and unbox the Air Handler.
2. Remove the cover from the supply blower opening (Figure 1) of the Air Handler and locate the hardware kit.



WARNING

- Hazardous Voltage:** Risk of electric shock, injury or death. System may be connected to more than one branch circuit. Disconnect power to all circuits before installing or servicing. Equipment must be installed and serviced by a qualified technician.
- High Temperatures:** Risk of personal injury. DO NOT install Air Handler when outer surfaces of the Comfort Plus Hydronic system are hot.

3. Remove coil and filter covers. Then, remove the front panel of the air handler by removing the perimeter screws.
4. During shipping, the water coil is held in place by one screw on the right side panel of the Air Handler. Remove the screw and lower the water coil into place. Secure the water coil with the screws provided in the hardware kit.
5. Attach the Air Handler to the right side of the Comfort Plus Hydronic system using six of the eight 7/8" silver screws provided in the hardware kit. Refer to Figure 2 for placement of the Air Handler in relation to the Comfort Plus Hydronic system.

NOTE: For ease in attaching the Air Handler to the Comfort Plus Hydronic system, align the index holes as shown in Figures 3 and 4.

Figure 3

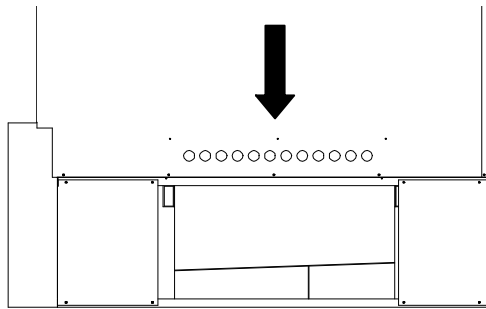
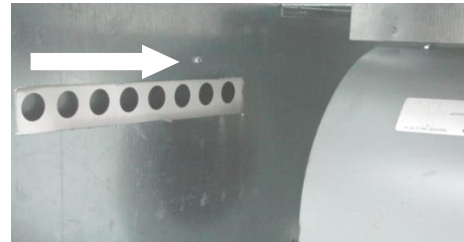


Figure 4

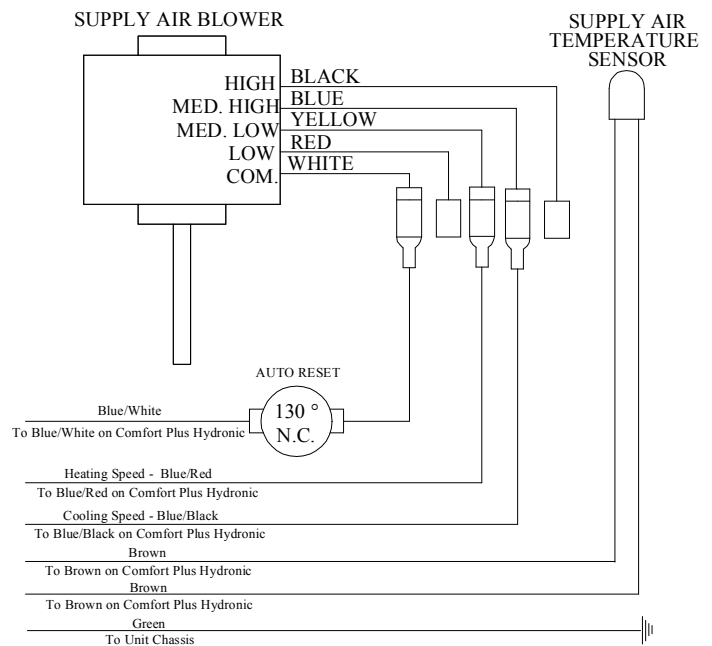


6. Remove the three knockouts on the front panel of the Air Handler and re-attach the front panel.
7. Remove the electrical panel cover of the Comfort Plus Hydronic system and locate the five (5) air handler wires in the lower right side of the electrical compartment.

8. Remove and discard the resistor connecting the two brown wires.
9. Route the wiring harness from the Air Handler to the Comfort Plus Hydronic system through the conduit (Figure 2) provided in the hardware kit.
10. Connect the wires from the Air Handler to the corresponding colored wires from the Comfort Plus Hydronic system. Refer to Air Handler Wiring Diagram (Figure 5) or the Line Voltage Wiring Diagrams in the Comfort Plus Hydronic Owner's and Installer's Manual for more information.


Air Handler Wiring Diagram

Figure 5

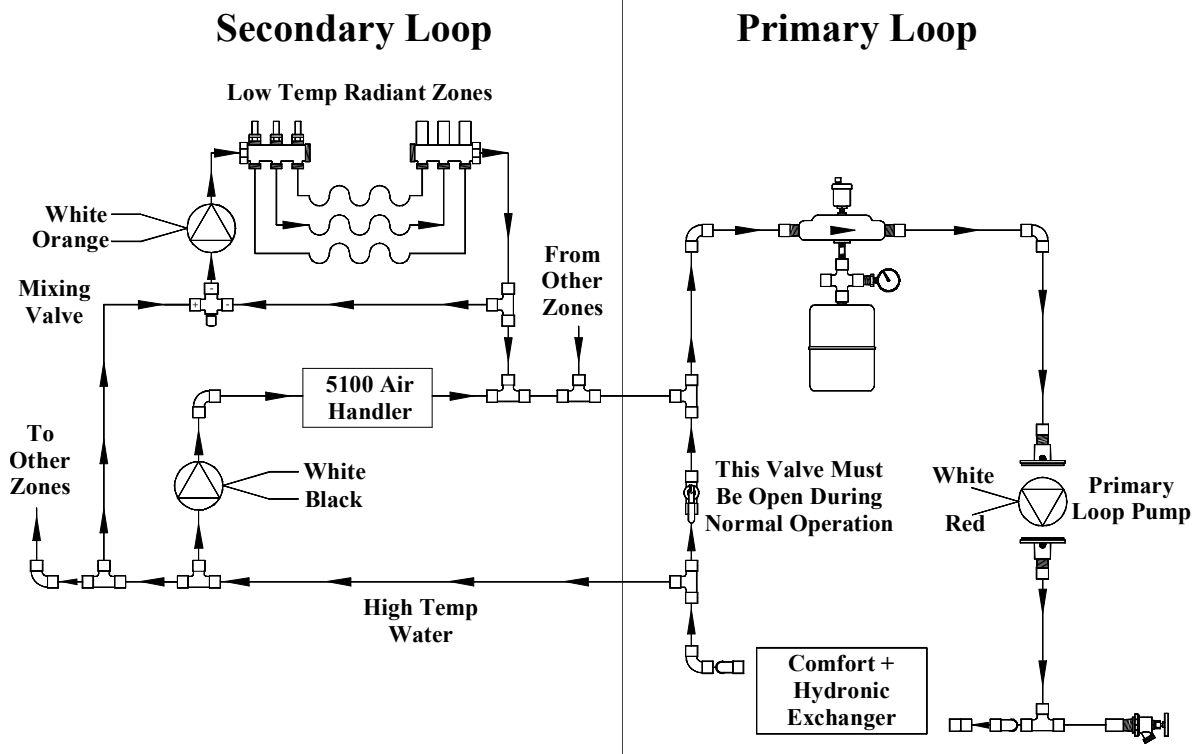


11. Connect the green ground wire (Figure 5) to one of the sheet metal screws that secure the circuit breaker stand off.
12. Installation of the water coil plumbing should be completed in a manner similar to the design shown in Typical System Plumbing Diagram (Figure 6).

- ◆ The Air Handler requires a dedicated pump (circulator) to feed the water coil and provide comfort modulation. Steffes recommends a Grundfos UP15-42F single speed 115VAC pump or equal.
- ◆ When utilizing the Steffes Air Handler, the recommended maximum water temperature (as set in C011) is 180 degrees and the recommended minimum water temperature (as set in C012) is 160 degrees.
- ◆ The pump serving the Air Handler is powered with the black and white wires found in the junction box on the lower left side of the Comfort Plus Hydronic system. Refer to the Plumbing Section of the Comfort Plus Hydronic Owner's and Installer's Manual for more information.
- ◆ It is extremely important to keep the area in front of the Air Handler open for accessing the blower, filter, and coils.

	<p>WARNING Risk of personal injury or property damage. Water temperatures used for the Air Handler may not be acceptable for other heating zones in the installation. It is the responsibility of the installer to ensure that proper tempering devices are in place.</p>
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Typical System Plumbing
Figure 6



NOTE: *It is the responsibility of the installer to prevent involuntary flow of the water to the air handler. Not doing so may cause limit tripping or decreased heat pump efficiency. Use of a check valve, zone valve, etc. may help in this situation.*

13. Use the System Air Delivery Matrix to verify that the supply air blower speed is set correctly for the application.
14. Install the electrical panel cover on the Comfort Plus Hydronic system. Then, install the supply blower cover and the coil covers on the Air Handler.
15. Verify that the filter is in place in the filter tray, install the filter door, and re-energize the Comfort Plus system.

SUPPLY AIR DELIVERY MATRIX

Supply Air Blower Speed	Static Pressure (inches water column)			
	(External static pressure should not exceed .75 inches water column)			
	0.10	0.25	0.50	.75
High (CFM)	N/A	1850	1560	1350
Medium High (CFM)	1800	1780	1470	1240
Medium Low (CFM)	1610	1580	1420	N/A
Low (CFM)	1230	1205	N/A	N/A

MAINTENANCE & CLEANING

The filter in the Air Handler should be replaced on a regular basis and general cleaning of the cabinet should be conducted at the user's discretion. No additional routine maintenance is required with the Air Handler.

If utilizing a heat pump or air conditioner with the Air Handler, follow the manufacturer's cleaning recommendations for those devices.