EQUIPMENT START-UP FORM

A single Equipment Start-up Form (FOR-V-030) must be completed for each unit installed on site. All completed Equipment Start-Up Forms must be returned to the Annexair Factory Service department **within 21 days from the date of Start-Up to activate warranty.**

Start-up must be performed by qualified personnel within six (6) months from the date of delivery. If the unit Start-up is scheduled for after six (6) months from the date of delivery, then a Delayed Start-Up Form (FOR-V-025) must be completed within the six (6) months from the date of delivery and returned to the Annexair Factory Service department. The Delayed Start-Up Form is available on Annexair's web site under the Resources & Tools section.

ANNEXAIR FACTORY SERVICE DEPARTMENT

253 De l'Energie St.
St-Germain-de-Grantham, J0C 1K0
Canada

Phone: 1.**819.475.3302** | Toll Free: 1.888.458.3302
Fax: 1.819.475.5892
service@annexair.com

**** Please submit your completed form to Annexair Service Department at service@annexair.com***

Unit Information	Serial #:	Tag #:	Model #:
Project Name			
Address			
Installation Date		**Start-up Date:**	

Start-up Performed by		
Company	Name:	Phone:
Technician	Name:	Phone:
	Signature:	Email:

Component Description	**QTY**	**Component Description**	**QTY**
Supply Fan(s)		Humidifier	
Return Fan(s) or Exhaust Fan(s)		Air Cooled Condensing Unit	
Total Fan VFDs (for supply + return + exhaust)		Water Source Heat Pump (WSHP)	
Heat Wheel(s)		Water Cooled Condensing Unit	
Fixed Plate(s)		Direct Fire Gas Furnace	
Heat Pipe(s)		Outdoor Air Damper	
Chilled Water Coil(s)		Exhaust Air Damper	
Hot Water Coil(s) or IFBW* Coil		Recirculation Damper or Mixing Damper	
Steam Coil(s) or IFBS** Coil		Supply / Return Smoke Dampers	
DX Coil(s)		Outdoor Air Filters	
Reheat Coil(s)		Supply Air - High Efficiency Filters	
Electric Heater		Return Air Filters	
Indirect Gas Furnace(s)		Outdoor Air Hood	
Evaporative Cooler(s)		Exhaust Air Louver	

**IFBW: Integral Face & Bypass Hot Water Coil*
***IFBS: Integral Face & Bypass Steam Coil*

PRE START-UP CHECKLIST

Inspect the unit for the following points as applicable and refer to Annexair Installation Manual prior to Start-Up. Note any deficiencies in the space provided at the end of the report.

GENERAL (SHIPPING & INSTALLATION)	Y	N	N/A
Is the electrical disconnect set to the "Off" position?			
Is the unit damaged or are there any missing parts?			
Does the unit installation location provide adequate clearance for proper operation & maintenance?			
For outdoor units: Has an insulated roof curb been installed with gaskets?			
For modular units: Have all modules been assembled level, square, straight & sealed?			
Has the ductwork been properly connected and complete?			
For outdoor units: Has the outdoor hood been installed, gasketed and caulked?			
Have all shipping brackets for Airflow Fans & Heat Wheels removed?			
Have all obstructive packaging been removed and the inside of the unit is free of debris?			
Have all shipped loose parts been installed? (sensors, hoods, filters)			
Have all clean/new air filters been installed with all clips?			
Are condensate drains properly trapped, installed correctly and filled?			
Are coil(s), fixed plate(s) & heat pipe(s) fin surface damaged? If so straighten with fin comb.			
Are all piping complete, connections tight, leak free and damage free?			
Have all actuators been installed and wired to control panel?			
Have all holes made by the Installing contractor in the casing, floor or partitions been sealed to prevent air and/or water infiltration?			

ELECTRICAL & CONTROL REQUIREMENTS	Y	N	N/A
Does the Main Power supply comply with the unit nameplate specifications?			
Is the Main Power wiring correct and complete as per NEC and applicable local codes?			
Has the unit been properly grounded?			
Have the electrical and control pipe chases been sealed at penetrations?			
Are terminal screws and wires connected and are tight?			
Are field mounted controls and wiring complete?			
Have all fuses properly been installed in their holders?			
Have all temperature sensors been installed?			

AIRFLOW FANS REQUIREMENTS	Y	N	N/A
Are all motor and blower mounting bolts tight?			
Are fan(s) aligned with opening and are free to move on isolators?			
Are fan(s) rotating freely?			
Are fan(s) rotating in the proper direction?			
Are fan motor bearings properly lubricated?			
Check fan thermal overloads on contactors (on airflows with more than 1 motor)			

PRE START-UP CHECKLIST cont'nd

HEAT WHEELS REQUIREMENTS	Y	N	N/A
Are Heat Wheel(s) centered and not tilting?			
Are Heat Wheel(s) rotating freely and in the proper direction?			
Are brush seals tight and engaged?			
Has the Heat Wheel(s) belt tension properly been adjusted?			

SEPARATE ELECTRIC HEATER REQUIREMENTS	Y	N	N/A
Has the electric heater been properly wired at its disconnect?			
Are there any loose connections in the heater junction box and control panel?			

GAS HEAT REQUIREMENTS	Y	N	N/A
Has the gas supply line been properly sized & connected to the unit?			
Have all gas piping joints been properly sealed?			
Has a drip leg been installed near the unit?			
Has a gas leak check been done with a soap solution?			
Is there adequate combustion air?			

FLUID COIL REQUIREMENTS *(Please indicate any particularities for different coils on p.13 - Additional Notes Section)*	Y	N	N/A
Have all the water connections/piping been installed?			
Has the internal water connection pipe chase been sealed at penetration?			
Has the coil freeze-up protection been applied when applicable?			
Has the freezestat sensor been installed when applicable?			
Has the field supplied water valve been installed?			
Has the valve wiring been connected to the unit control panel?			

STEAM COIL REQUIREMENTS	Y	N	N/A
Have all steam connections/piping been installed?			
Has a steam trap been installed?			
Has the field supplied water valve been installed?			
Has the valve wiring been connected to the unit control panel?			
Has the coil freeze-up protection been applied when applicable?			

DX REFRIGERANT REQUIREMENTS	Y	N	N/A
Are refrigerant components and piping in good conditions with no damages?			
Are the refrigerant components and piping leaking refrigerant?			
Has crankcase heater been enabled for 12 to 24-hours prior to start-up?			
For ACCU: Have the factory supplied protective nylon meshes been installed?			
For WSHP: Has the water valve been installed?			
For WSHP: Has the valve wiring been connected to the unit control panel?			
For WSHP: Is the water flowing in the correction direction?			

UNIT POWER LOADS

The following information must be completed during the unit Start-Up. Ensure that the following points have been verified during the unit start-up.

WARNING

Hazardous voltage. Can cause severe injury or death. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

ALL ELECTRICAL CONNECTIONS SHALL BE COPPER WIRES ONLY

DO NOT START the unit if a voltage imbalance of 2% or greater is calculated. Contact local utility for assistance.

Start-up Supply Voltage	Nameplate Voltage	V:	Ø:	Hz:
	Measured Voltage *(Unit off)*	L1 - L2: V	L2 - L3: V	L3 - L1: V

UNIT CONDITIONS START-UP

Complete the following tables as they are applicable for the current unit you are starting. When an item is not applicable, please indicate N/A. Ensure to test the unit during all operating modes.

Airflow Conditions	Design Supply Air	CFM	TSP	HZ
	Design Exhaust Air	CFM	TSP	HZ

Temperature Readings	Outside Air	db: °F	RH:	%
	Supply Air – Heating enable	db: °F	RH:	%
	Supply Air – Cooling enable	db: °F	RH:	%
	Return Air	db: °F	RH:	%
	Exhaust Air	db: °F	RH:	%

Static Pressure		In	Out	Total	in.wg.
	Total Pressure Supply Fan				in.wg.
	Total Pressure Return Fan				in.wg.

DAMPERS

Dampers	Fail (open/close)	ON/OFF	Modulate	Min. opening	End switch setting
Outside air					
Exhaust air					
Mixing					
Wheel bypass					

HEAT WHEEL & VFD START-UP

Heat Wheel 1		HZ:		**Heat Wheel 2**		HZ:	
Run amps	L1:	L2:	L3:	Run amps	L1:	L2:	L3:
Frost Control							
Main Controller:		FreezeStat:		By others:		NONE:	

HOT/CHILL WATER COIL

Description	Temperature In	Temperature Out	GPM

WATER VALVE

Type	2 way	3 way	Fail/open	Invert	direct	0-10V	2-10V
Cool							
Hot							
Reheat							
Heatpump							

ELECTRIC HEATER

Please fill in the following table, in addition, refer to the Heater's manufacturers Start-up Form.

	Manufacturer			**Model #**		
Electric Heater	**Serial #**			**kW**		
Stages	**1**	**2**	**3**	**4**	**5**	**6**
Amps	A	A	A	A	A	A
SAT (^{o}F)	^{o}F	^{o}F	^{o}F	^{o}F	^{o}F	^{o}F
Signal (0-10V)	**0V**	**2.5V**	**5V**	**7.5V**	**10V**	
SAT (^{o}F)	^{o}F	^{o}F	^{o}F	^{o}F	^{o}F	

ANNEXAIR

HM / HD Duct Furnace - Start-up Information and Test Data

Heatco Model No.: _____ Serial No.: _____ Start-up Date: _____

Appliance Mfr.: _____ Model No. _____ Serial No. _____

Start-Up Contractor: _____ Technician: _____ Phone: _____

Type of Gas: _____ Gas Pressure @ Inlet (burners off): _____ " w.c. Supply Voltage @ JB: _____ VAC

Operating Set-up Data	Low Fire	High Fire
Gas Press. @ Train Inlet	_____ " w.c.	_____ " w.c.
Gas Press. @ Burner Manifold	_____ " w.c.	_____ " w.c.
Gas Input Rate	_____ Btuh	_____ Btuh
CO_2 in Flue Gas	_____ %	_____ %
CO in Flue Gas	_____ ppm	_____ ppm
Flue Gas Temp @ Discharge	_____ oF	_____ oF
Temperature Rise	_____ oF	_____ oF

Operation checklist	YES	NO
All gas lines & connections checked for leaks	(☐)	(☐)
Adequate Combustion Air	(☐)	(☐)
Condensate Drain Lines Installed	(☐)	(☐)
Any System deficiencies noted	(☐)	(☐)

Describe: _____

Modulating System Operation: (If applicable)	Analog Signal to SSC30	VDC to Mod Valve	Man. Press.
	Initial Call for heat	_____ VDC	_____ " w.c.
	☐ 0 VDC	_____ VDC	_____ " w.c.
	☐ 5 VDC	_____ VDC	_____ " w.c.
	☐ 10 VDC	_____ VDC	_____ " w.c.

Portion above dotted line must be returned to Heatco Inc., 50 Heatco Court, Cartersville, GA 30120 to activate warranty coverage. Enclose lower portion with Installer / User Manual for future service reference.

Heater Operating Data	Low Fire	High Fire	Gas Type: _____
Gas Press. @ Train Inlet	_____ " w.c.	_____ " w.c.	
Gas Press. @ Burner Manifold	_____ " w.c.	_____ " w.c.	
CO2 in Flue Gas	_____ %	_____ %	
CO in Flue Gas	_____ ppm	_____ ppm	
Flue Gas Temp @ Discharge	_____ oF	_____ oF	
Temperature Rise	_____ oF	_____ oF	

Heater Model No.: _____ Heater Serial No. : _____

Start-Up Date: _____ Name: _____ Phone No.: _____

Enclose this portion with User Information package for future service reference.

HM-HD-SUD-R1 (0909022)

FAN MOTOR & VFD START-UP

Supply or Exhaust Fan # tag																
Terminal Screws and Wire Connections check																
Parameter 1105 modify for max fan speed Hz (green card)																
Drive config match motor specs																
Thermal overload setting	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A
Rotation in VFD and bypass mode	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A
HOA functions for VFD and / or bypass mode	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A	Check	N\A
Abnormal noise or vibration check																
Hertz of operation		**Hz**		**Hz**		**Hz**		**Hz**		**Hz**		**Hz**		**Hz**		**Hz**
Amp draw Motor Ph 1																
Ph 2																
Ph 3																

Condenser Fan # tag								
Abnormal noise or vibration check								
Fan rotation								
Amp draw Motor Ph 1								
Ph 2								
Ph 3								

NOTES

COMPRESSOR START-UP

Complete all relative information pertaining to a specific condensing unit because options can vary. Ensure that the compressor crankcase heater(s) have been energized for 12 to 24 hours prior to calling for cooling.

Circuit #				
Refrigerant charge	**lbs**	**lbs**	**lbs**	**lbs**
Oil Type				
Crankcase heater run time	**hrs**	**hrs**	**hrs**	**hrs**
Terminal Screws and Wire Connections check				
Oil sight glass level				
Oil color abnormal or particles				

Circuit #								
Cooling or Heating								
Hertz of operation	**HZ**	**HZ**	**HZ**	**HZ**	**HZ**	**HZ**	**HZ**	**HZ**
Comp. A run amp Ph 1								
Ph 2								
Ph 3								
Comp. B run amp Ph 1								
Ph 2								
Ph 3								
Suction Pressure - PSI								
Suction Pressure - °F								
Suction line temp - °F								
Suction Superheat - °F								
Discharge Pressure - PSI								
Discharge Pressure - °F								
Discharge line temp - °F								
Discharge superheat - °F								
Liquid line temp – °F								
Sub Cooling Temp - °F								
DX AIR temp IN - °F								
DX AIR temp OUT - °F								
HGRH AIR temp OUT °F								
For ACCU: OA temp °F								
For WSHP: US GPM								
Water temp IN - °F								
Water temp OUT - °F								

ADDITIONAL NOTES

CONTACT INFORMATION

General Contractor	Company Name:	
	Contact Name:	
	Phone:	Email:
Electrical Contractor	Company Name:	
	Contact Name:	
	Phone:	Email:
Controls Contractor	Company Name:	
	Contact Name:	
	Phone:	Email:
Test & Balance Contractor	Company Name:	
	Contact Name:	
	Phone:	Email:
Commissioning Agent	Company Name:	
	Contact Name:	
	Phone:	Email: