

SMACNA
HVAC SYSTEMS COMMISSIONING - LEVEL 1

EQUIPMENT PRE-START & START-UP CHECKLIST
SMS 117 - FIRE PUMP SYSTEM

PROJECT: _____ LOCATION: _____ MANUFACTURER: _____	UNIT NO: _____ SERVICE: _____ MODEL: _____
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ITEM	OK	COMMENT
PRE-START-UP INSPECTION		
<i>PHYSICAL INSTALLATION COMPLETE</i>		
- Mounting, Isolators, Components		
- Alignment, Lubrication		
- Pump(s) Rotates Freely		
- Control Panel		
<i>MECHANICAL SERVICE CONNECTIONS</i>		
- Piping & Valves Completed & Tested		
- Valves Positioned For Start-up		
<i>ELECTRICAL SERVICE CONNECTIONS</i>		
- Electrical Connections Completed		
- Disconnect Switch Installed		
- Overload Heaters in Place (Sized Correctly)		
<i>CONTROL SYSTEMS COMPLETE</i>		
- Control System Operational		
- Ready to Start & Run Under Control		
START-UP INSPECTION		
Start-up by Manufacturer's Representative		
Mech. & Elect. Contractors Present		
Pump Rotation Correct (Bump)		
Electrical Interlocks Verified		
Check Valve Tested		
Start/Stop Operation Verified		
Motor Amps - Rated _____ Actual _____		
Motor Volts - Rated _____ Actual _____		
Vibration & Noise Level Acceptable		

GENERAL COMMENTS: _____

PRE-START BY: _____	DATE: _____
START-UP BY: _____	DATE: _____

This appendix is not a mandatory part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at SMACNA or ANSI.

APPENDIX C

LEVEL 2 PRE-START AND START-UP CHECKLISTS

The equipment pre-start and start-up checklists included in this Appendix cover a range of equipment for typical HVAC systems. They are similar to those for Level 1 commissioning but are set up so each item has “checkmark” documentation instead of just categories of items.

These lists may seem excessively detailed; however, experience has shown they can be very useful in documenting problem areas, identifying responsibility, communicating the problem to the responsible party, and serving as follow-up reminders (Section 7.3).

The checklists are generic and generally include a comprehensive list of items, not all of which are

applicable for every project. Therefore, the lists should be used as generic masters, to be revised to suit the needs of specific equipment and systems in specific projects. Some items will not be relevant and should be deleted from the project checklists. Other items may need to be added.

It would be normal for companies offering commissioning services to come up with their own set of master checklists, stored in electronic format, adding to them as variations are encountered with some regularity. These can then be edited for specific projects very quickly and put into project files for printing and distribution.

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SMACNA
HVAC SYSTEMS COMMISSIONING - LEVEL 2

EQUIPMENT PRE-START & START-UP CHECKLIST
SMS201 - AIR HANDLING UNIT - LIQUID HEAT/COOL

PROJECT: _____ LOCATION: _____ MANUFACTURER: _____	UNIT NO: _____ SERVICE: _____ MODEL: _____
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ITEM	OK	COMMENT
<u>PRE-START-UP INSPECTION</u>		
Mountings Checked (Shipping Bolts Removed)		
Vibration Isolators Installed		
Seismic Restraints Installed		
Equipment Guards Installed		
Pulleys Aligned and Belt Tension Correct		
Plenums Clear and Free of Loose Material		
Fans Rotate Freely		
Fans, Motors & Linkages Lubricated		
Fire & Balance Dampers Positioned		
Temporary Start-up Filters Installed		
Electrical Connections Completed		
Disconnect Switch Installed		
Overload Heaters in Place (Sized Correctly)		
Heating Coil Clean and Clear - Piping Complete		
Cooling Coil Clean and Clear - Piping Complete		
Condensate Drains Clear		
Humidifier Section Installation Completed		
Safety Controls Operational		
Building & Fan Room Clean For Start-up		
Duct Cleaning Completed		
Control System Completed (End to End Checks)		
<u>START-UP INSPECTION</u>		
Start-up by Manufacturer's Representative		
Fan Rotation Correct		
Electrical Interlocks Verified		
Fan Status Indicators Verified (Local / Remote)		
Freeze Protection Operational		
Local Air Leakage Acceptable		
Vibration & Noise Level Acceptable		
Motor Amps - Rated _____ Actual _____		
Motor Volts - Rated _____ Actual _____		
Final Operating Filters Installed		
COMMENTS: _____ _____		

PRE-START BY: _____	DATE: _____
START-UP BY: _____	DATE: _____



SMACNA
HVAC SYSTEMS COMMISSIONING - LEVEL 2

EQUIPMENT PRE-START & START-UP CHECKLIST
SMS202 - AIR HANDLING UNIT c/w RETURN FAN - LIQUID
HEAT/COOL

PROJECT: _____ LOCATION: _____ MANUFACTURER: _____	UNIT NO: _____ SERVICE: _____ MODEL: _____
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ITEM	OK	COMMENT
PRE-START-UP INSPECTION		
Mountings Checked (Shipping Bolts Removed)		
Vibration Isolators Installed		
Seismic Restraints Installed		
Equipment Guards Installed		
Pulleys Aligned and Belt Tension Correct		
Plenums Clear and Free of Loose Material		
Fans Rotate Freely		
Fans, Motors & Linkages Lubricated		
Fire & Balance Dampers Positioned		
Temporary Start-up Filters Installed		
Electrical Connections Completed		
Disconnect Switch Installed		
Overload Heaters in Place (Sized Correctly)		
Heating Coil Clean and Clear - Piping Complete		
Cooling Coil Clean and Clear - Piping Complete		
Condensate Drains Clear		
Humidifier Section Installation Completed		
Safety Controls Operational		
Building & Fan Room Clean For Start-up		
Duct Cleaning Completed		
Control System Completed (End to End Checks)		
START-UP INSPECTION		
Start-up by Manufacturer's Representative		
Fan Rotation Correct (Both Fans)		
Electrical Interlocks Verified		
Fan Status Indicators Verified (Local / Remote)		
Freeze Protection Operational		
Local Air Leakage Acceptable		
Vibration & Noise Level Acceptable		
SF Motor Amps - Rated _____ Actual _____		
SF Motor Volts - Rated _____ Actual _____		
RF Motor Amps - Rated _____ Actual _____		
RF Motor Volts - Rated _____ Actual _____		
Final Operating Filters Installed		
COMMENTS: _____ _____ _____		

PRE-START BY: _____ START-UP BY: _____	DATE: _____ DATE: _____
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EQUIPMENT PRE-START & START-UP CHECKLIST

SMS203 - AIR HANDLING UNIT - GAS HEAT

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EQUIPMENT PRE-START & START-UP CHECKLIST

SMS204 - PACKAGED AIR CONDITIONING UNIT



EQUIPMENT PRE-START & START-UP CHECKLIST
SMS205 - PACKAGED AIR CONDITIONING UNIT - GAS HEAT

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EQUIPMENT PRE-START & START-UP CHECKLIST

SMS206 - AIR CONDITIONING UNIT - WATER COOLED



SMACNA
HVAC SYSTEMS COMMISSIONING - LEVEL 2

EQUIPMENT PRE-START & START-UP CHECKLIST
SMS207 - HEAT PUMP UNIT - WATER/COOLED

PROJECT: _____ LOCATION: _____ MANUFACTURER: _____	UNIT NO: _____ SERVICE: _____ MODEL: _____
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ITEM	OK	COMMENT
<u>PRE-START-UP INSPECTION</u>		
Mountings Checked (Shipping Bolts Removed)		
Vibration Isolators Installed		
Seismic Restraints Installed		
Equipment Guards Installed		
Pulleys Aligned and Belt Tension Correct		
Plenums Clear and Free of Loose Material		
Fans Rotate Freely		
Fans, Motors & Linkages Lubricated		
Fire & Balance Dampers Positioned		
Temporary Start-up Filters Installed		
Electrical Connections Completed		
Disconnect Switch Installed		
Overload Heaters in Place (Sized Correctly)		
Piping Complete		
Coil Clean and Clear - Piping Complete		
Condensate Drains Clear & Complete		
Safety Controls Operational		
Building & Fan Room Clean For Start-up		
Duct Cleaning Completed		
Control System Completed (End to End Checks)		
<u>START-UP INSPECTION</u>		
Start-up by Manufacturer's Representative		
Fan Rotation Correct		
Electrical Interlocks Verified		
Fan Status Indicators Verified (Local / Remote)		
Freeze Protection Operational		
Local Air Leakage Acceptable		
Vibration & Noise Level Acceptable		
Motor Amps - Rated _____ Actual _____		
Motor Volts - Rated _____ Actual _____		
Final Operating Filters Installed		
Water Control Valve Operational		
Manufacturer's Start-up Checklists Attached		
COMMENTS: _____		

PRE-START BY: _____	DATE: _____	
START-UP BY: _____	DATE: _____	

