**This Prefunctional Checklist should be completed as part of startup and initial checkout of the equipment in preparation for Functional Performance testing.**

|  |  |
| --- | --- |
| PC: | **23 90 00** |
| **ITEM:** | **Compressor Parallel Rack System** |
| **ID:** |  |
| **AREA SERVED:** |  |

Form Filled Out By:

|  |  |  |
| --- | --- | --- |
|  | Name & Company | Date |
| GC |  |  |
| MC |  |  |
| EC |  |  |
| BC |  |  |
| CC |  |  |
| OR |  |  |
| A/E |  |  |
| CA |  |  |

GC = General Contractor; MC = Mechanical Contractor; EC = Electrical Contractor; RMCS = Refrigerant Management Control System Contractor, OR = Owner Representative; A/E = Architect/Engineer; CA = Commissioning Agent

XX = No Initials Required

# DOCUMENTATION VERIFICATION

Check if OK. Enter note number if deficient.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **GC** | **MC** | **EC** | **RMCS** | **OR** | **A/E** | **CA** |
| Product information submitted |  |  |  |  |  |  |  |
| Shop drawings submitted |  |  |  |  |  |  |  |
| Manufacturer’s installation instructions submitted |  |  |  |  |  |  |  |

# MODEL VERIFICATION

Fill in requested information.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Specified | **Submitted** | **Installed** |
| Brand |  |  |  |
| Model Number |  |  |  |
| Mark No |  |  |  |
| System No |  |  |  |
| Refrigerant Type |  |  |  |
| Capacity |  |  |  |
| FLA |  |  |  |

# INSTALLATION VERIFICATION

This checklist does not take the place of the manufacturer’s recommended checkout and startup procedures or report**.**

Check if OK. Enter Outstanding Item Note number if deficient.

| **No** | **Checks** | **GC** | **MC** | **EC** | **RMCS** | **OR** | **A/E** | **CA** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Unit is in good condition with no damage present |  |  |  |  |  |  |  |
| 2 | Rack is located so that it is accessible from all sides. (A minimum of 36 in. clearance is recommended to provide easy access to components) |  |  |  |  |  |  |  |
| 3 | Rack is setting on vibration isolation pads |  |  |  |  |  |  |  |
| 4 | Compressors are level with each other (15 gauge 3in by 3 in galvanized or stainless steel shims may be used to compensate for uneven floors) |  |  |  |  |  |  |  |
| 5 | Confirm refrigerant piping is supported to minimize vibration |  |  |  |  |  |  |  |
| 6 | Confirm dry nitrogen at low pressure is used during the brazing to prevent the formation of copper oxide. |  |  |  |  |  |  |  |
| 7 | Confirm all joints of like material are brazed using a 15% silver alloy brazing material. (dissimilar metals – use 45% silver solder) |  |  |  |  |  |  |  |
| 8 | Verify liquid lines and suction lines are free to expand and contract independently of each other |  |  |  |  |  |  |  |
| 9 | Confirm piping does not exceed 100 feet without a change of direction or/an offset |  |  |  |  |  |  |  |
| 10 | Confirm there are no 45 degree elbows in the piping system (long radius elbows should be used to reduce line resistance and breakage.) |  |  |  |  |  |  |  |
| 11 | A water seal is installed at the bottom of all suction risers to return oil to the compressors to avoid trapping oil |  |  |  |  |  |  |  |
| 12 | Confirm all suction lines and subcooled liquid lines are insulated |  |  |  |  |  |  |  |
| 13 | A purge valve is located at the highest point of an inverted water seal with at least a 6 in rise at the condenser inlet stub |  |  |  |  |  |  |  |
| 14 | An equalizer line is piped between the parallel rack and the condenser |  |  |  |  |  |  |  |
| 15 | Confirm a check valve allowing flow only to the condenser and a shut off valve downstream of the check valve is supplied and installed |  |  |  |  |  |  |  |
| 16 | Confirm offset and expansion loops are properly sized and installed in the correct location to for expansion and contraction |  |  |  |  |  |  |  |
| 17 | Using an electronic leak detector and dry nitrogen Check each circuit connections and accessories for any leaks. |  |  |  |  |  |  |  |
| 18 | Perform three system evacuations as describe in the manufacture’s start up procedures. (1st two evacuation are to 1500 microns, final to 50 microns) |  |  |  |  |  |  |  |
| 19 | Confirm system has been properly charged |  |  |  |  |  |  |  |

# OUTSTANDING ITEMS

Note outstanding items in table below. Use numbers referenced above.

|  |  |  |
| --- | --- | --- |
| Resolved (Initial / Date) | **Note** | Description |
|  | **1.** |  |
|  | **2.** |  |
|  | **3.** |  |
|  | **4.** |  |
|  | **5.** |  |
|  | **6.** |  |
|  | **7.** |  |
|  | **8.** |  |
|  | **9.** |  |
|  | **10.** |  |

# FIELD NOTES

Fill in as appropriate.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

# SIGN OFF

System / Equipment have been installed in accordance with the Contract Documents and are ready for Functional Testing.

|  |  |  |
| --- | --- | --- |
|  | **Signature** | **Date** |
| **Contractor’s Representative** |  |  |
| **A /E Representative** |  |  |
| **Commissioning Agent** |  |  |
| **Owner’s Representative** |  |  |

##### END OF CHECKLIST