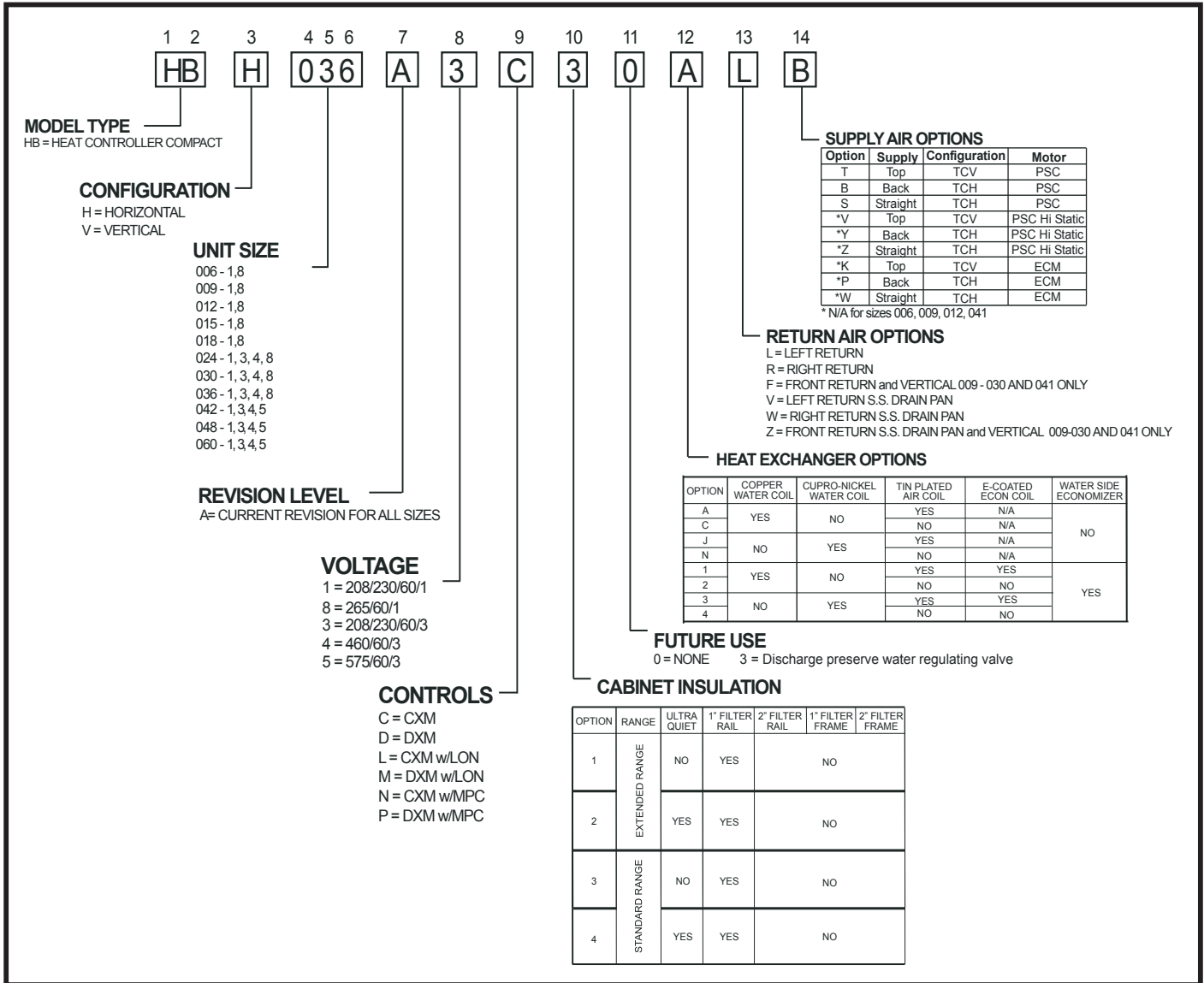


### Model Nomenclature - General Overview



Note: Above model nomenclature is a general reference. Consult individual engineering guides for detailed information.

## General Information

### Safety

Warnings, cautions, and notices appear throughout this manual. Read these items carefully before attempting any installation, service, or troubleshooting of the equipment.

**DANGER:** Indicates an immediate hazardous situation, which if not avoided will result in death or serious injury. DANGER labels on unit access panels must be observed.

**WARNING:** Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation or an unsafe practice, which if not avoided could result in minor or moderate injury or product or property damage.

**NOTICE:** Notification of installation, operation, or maintenance information, which is important, but which is not hazard-related.

<b>⚠ WARNING! ⚠</b>
<p><b>WARNING!</b> The Service Manual should be read and understood before attempting to service refrigerant circuits with HFC-410A.</p>
<b>⚠ WARNING! ⚠</b>
<p><b>WARNING!</b> To avoid the release of refrigerant into the atmosphere, the refrigerant circuit of this unit must be serviced only by technicians who meet local, state, and federal proficiency requirements.</p>
<b>⚠ CAUTION! ⚠</b>
<p><b>CAUTION!</b> To avoid equipment damage, DO NOT use these units as a source of heating or cooling during the construction process. The mechanical components and filters will quickly become clogged with construction dirt and debris, which may cause system damage.</p>
<b>⚠ WARNING! ⚠</b>
<p><b>WARNING!</b> The installation of water-source heat pumps and all associated components, parts, and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.</p>

<b>⚠ WARNING! ⚠</b>
<p><b>WARNING!</b> All refrigerant discharged from this unit must be recovered WITHOUT EXCEPTION. Technicians must follow industry accepted guidelines and all local, state, and federal statutes for the recovery and disposal of refrigerants. If a compressor is removed from this unit, refrigerant circuit oil will remain in the compressor. To avoid leakage of compressor oil, refrigerant lines of the compressor must be sealed after it is removed.</p>

**Inspection -** Upon receipt of the equipment, carefully check the shipment against the bill of lading. Make sure all units have been received. Inspect the packaging of each unit, and inspect each unit for damage. Ensure that the carrier makes proper notation of any shortages or damage on all copies of the freight bill and completes a common carrier inspection report. Concealed damage not discovered during unloading must be reported to the carrier within 15 days of receipt of shipment. If not filed within 15 days, the freight company can deny the claim without recourse.

**Note:** It is the responsibility of the purchaser to file all necessary claims with the carrier. Notify your equipment supplier of all damage within fifteen (15) days of shipment.

**Storage -** Equipment should be stored in its original packaging in a clean, dry area. Store units in an upright position at all times. Stack units a maximum of 3 units high.

**Unit Protection -** Cover units on the job site with either the original packaging or an equivalent protective covering. Cap the open ends of pipes stored on the job site. In areas where painting, plastering, and/or spraying has not been completed, all due precautions must be taken to avoid physical damage to the units and contamination by foreign material. Physical damage and contamination may prevent proper start-up and may result in costly equipment clean-up.

Examine all pipes, fittings, and valves before installing any of the system components. Remove any dirt or debris found in or on these components.

**Pre-Installation** - Installation, Operation, and Maintenance instructions are provided with each unit. Horizontal equipment is designed for installation above false ceiling or in a ceiling plenum. Other unit configurations are typically installed in a mechanical room. The installation site chosen should include adequate service clearance around the unit. Before unit start-up, read all manuals and become familiar with the unit and its operation. Thoroughly check the system before operation.

**Prepare units for installation as follows:**

1. Compare the electrical data on the unit nameplate with ordering and shipping information to verify that the correct unit has been shipped.
2. Keep the cabinet covered with the original packaging until installation is complete and all plastering, painting, etc. is finished.
3. Verify refrigerant tubing is free of kinks or dents and that it does not touch other unit components.
4. Inspect all electrical connections. Connections must be clean and tight at the terminals.
5. Remove any blower support packaging (water-to-air units only).
6. Loosen compressor bolts and remove compressor bracket on HB sizes 06, 09, and 12 units equipped with compressor **spring** vibration isolation until the compressor rides freely on the springs. Remove shipping restraints. (No action is required for compressors with rubber grommets.)
7. Some airflow patterns are field convertible (horizontal units only). Locate the airflow conversion section of this IOM.
8. Locate and verify any hot water generator (HWG), hanger, or other accessory kit located in the compressor section or blower section.

**⚠ CAUTION! ⚠**

**CAUTION!** All three phase scroll compressors must have direction of rotation verified at start-up. Verification is achieved by checking compressor Amp draw. Amp draw will be substantially lower compared to nameplate values. Additionally, reverse rotation results in an elevated sound level compared to correct rotation. Reverse rotation will result in compressor internal overload trip within several minutes. Verify compressor type before proceeding.

**⚠ CAUTION! ⚠**

**CAUTION!** DO NOT store or install units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce performance, reliability, and service life. Always move and store units in an upright position. Tilting units on their sides may cause equipment damage.

**⚠ CAUTION! ⚠**

**CAUTION!** CUT HAZARD - Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing heat pumps.

**NOTICE!** Failure to remove shipping brackets from spring-mounted compressors will cause excessive noise, and could cause component failure due to added vibration.

## Unit Physical Data

### HB Series (60 Hz)

HB Series	006	009	012	015	018	024	030	036	041	042	048	060
Compressor (1 Each)	Rotary					Scroll						
Factory Charge HFC-410A (oz)	17	18.5	23	32	43	40	47	50	70	70	74	82
<b>ECM Fan Motor &amp; Blower</b>												
Blower Wheel Size (Dia x w)	N/A	N/A	N/A	9x7	9x7	9x7	9x7	9x8	N/A	9x8	10x10	11x10
<b>PSC Fan Motor &amp; Blower</b>												
Fan Motor Type/Speeds	PSC/3	PSC/3	PSC-3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3
Blower Wheel Size (Dia x w)	5x5	5x5	6x5	8x7	8x7	9x7	9x7	9x8	9x8	9x8	10x10	11x10
<b>Water Connection Size</b>												
FPT	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"
Coax Volume (gallons)	0.123	0.143	0.167	0.286	0.450	0.286	0.323	0.323	0.890	0.890	0.738	0.939
<b>Vertical</b>												
Air Coil Dimensions (H x W)	10x15	10x15	10x15	20x17.25	20x17.25	20x17.25	20x17.25	24x21.75	20x17.25	24x21.76	24x28.25	24x28.25
Filter Standard - 1" Throwaway	10x18	10x18	10x18	20x20	20x20	20x20	20x20	24x24	20x20	24x24	1-14x24, 1-18x24	1-14x24, 1-18x24
Weight - Operating (lbs.)	103	105	114	153	158	189	197	203	210	218	263	278
Weight - Packaged (lbs.)	113	115	124	158	163	194	202	209	217	224	270	285
<b>Horizontal</b>												
Air Coil Dimensions (H x W)	10x15	10x15	10x15	16x22	16x22	16x22	16x22	20x25	N/A	20x25	20x35	20x35
Filter Standard - 1" Throwaway	10x18	10x18	10x18	16x25	16x25	18x25	18x25	20x28 or 2-20x14	N/A	20x28 or 2-20x14	1-20x24, 1-20x14	1-20x24, 1-20x14
Weight - Operating (lbs.)	103	105	114	153	158	174	182	203	<b>N/A</b>	218	263	278
Weight - Packaged (lbs.)	113	115	124	158	163	179	187	209	<b>N/A</b>	224	270	285

**Notes:**

All units have TXV expansion device, and 1/2" & 3/4" electrical knockouts.

FPT = Female Pipe Thread

Condensate Drain Connection is 3/4" FPT.

575 volt fan motors are two speed.

Models 006, 009, 012 compressor are mounted on springs. Installer must loosen bolts and remove shipping bracket.

Unit Maximum Water Working Pressure	Max Pressure PSIG [kPa]
Base Unit	500 [3447]
WSE Option	300 [2068]