STANDARD

ANSI/ASHRAE Standard 134-2005 (RA 2014)
(Reaffirmation of ANSI/ASHRAE Standard 134-2005)

Graphic Symbols for Heating, Ventilating, Air-Conditioning, and Refrigerating Systems

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Includes Web-based access to DraWinG (*.dwg) files of the graphic symbols used in the standard. (Requires applicable CAD package to view.)

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NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE Web site at www.ashrae.org/technology.

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(This foreword is not 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 ASHRAE or ANSI.)

FOREWORD

This standard provides a comprehensive set of symbols for use in drawings and other documents relating to the design of heating, ventilating, air-conditioning, and refrigerating (HVAC&R) systems. The symbols are intended to be usable in both the manual and automatic (CAD system) creation of drawings.

To develop this standard, the project committee surveyed symbols solicited from governments, standards organizations, and consultants from around the world. While the committee found general agreement in some areas of symbol usage and symbolic practice, it discovered wide variation in others. This standard therefore intends to establish a common symbol language for use in HVAC&R drawings, thereby facilitating the understanding of these documents and making them accessible to a wider variety of users. It is anticipated that as the use and understanding of these symbols increase, the accuracy and efficiency with which engineering drawings are translated into actual systems will also increase.

This standard is intended for international use. The text, fonts associated with a symbol, and description box in the tables should be translated into the language of the standard. The filename alpha character should not be changed. The use of I-P (inch-pound) or SI (Standard International) metric units should be used where dual units are shown in the text or with a symbol.

This is a reaffirmation of Standard 134-2005. This standard was prepared under the auspices of ASHRAE. It may be used, in whole or in part, by an association or government agency with due credit to ASHRAE. Adherence is strictly on a voluntary basis and merely in the interests of obtaining uniform guidelines throughout the industry. This version of the reaffirmation has no changes.

Online access is provided to the DraWinG (.dwg) files of the graphic symbols used in the standard. To download, visit www.ashrae.org/Standard134_DWG. An applicable CAD program is required to view the files.*

1. PURPOSE

The purpose of this standard is to define graphic symbols for heating, ventilating, air-conditioning and refrigerating systems.

2. SCOPE

2.1 This standard covers graphic symbols for heating, ventilating, air-conditioning, and refrigerating systems and equipment, including related controls.

2.2 This standard identifies graphic symbols by name, configuration, and description.

2.3 The graphic symbols in this standard are intended for use in manual drawings and drawings produced by computer-aided drafting (CAD).

3. DEFINITIONS

3.1 Definitions of terms used in this standard may be found in *ASHRAE Terminology of Heating, Ventilation, Air Conditioning, and Refrigeration*.[1]

3.2 Additional terms used in this standard but not found in *ASHRAE Terminology* are defined in this section.

accessories (controls): equipment such as air compressors, air line dryers, compressed air filters, and indicating devices (pressure and temperature) to facilitate monitoring of control system activity.

auxiliary devices (controls): equipment such as relays and switches to manipulate signals.

filename: an alphanumeric designation assigned to each symbol for ease in referencing.

tag: an acronym or abbreviation for identifying equipment.

ACU:	air-conditioning unit
AD:	access door
AHU:	air-handling unit
AP:	access panel
AS:	air separator
CAV:	constant air volume terminal
CC:	cooling coil
CH:	chiller
CP:	condensate pump
CSG:	clean steam generator
CUH:	cabinet unit heater
EAHU:	exhaust air-handling unit
EAV:	exhaust air valve
EFC	evaporative fan cooler
ET:	expansion tank
EX:	exhaust fan
F:	air filter
FCU:	fan coil unit
FT:	flash tank or fin tube
FTR:	finned tube radiation
H:	humidifier
HC:	heating coil
HRC:	heat recovery unit
HVU:	heating and ventilating unit
HX:	heat exchanger
P:	pump
PRV:	pressure reducing valve
RAF:	return air fan
RHC:	reheat coil
SA:	sound attenuator (trap)
SAV:	supply air valve

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SC: steam coil
SF: supply fan
SRV safety relief valve
UH: unit heater
VAV: variable air volume terminal unit
VFD: variable frequency (speed) drive

4. SYMBOLS

4.1 General

4.1.1 Each symbol is listed along with a description and filename, such as A15910.XXX for ductwork accessories, where XXX is a sequential number. The filename, which is for referencing purposes, generally follows the Construction Specification Institute (CSI) numbering system, with the prefix A for air side, P for piping, C for controls, and E for equipment. A complete list of symbol filename categories is provided as follows:

LIST OF SYMBOL TABLES WITH FILENAMES

Airside Symbols					
	Table 1-1		Rectangular Duct		A15891.XXX
	Table 1-2		Round Duct		A15892.XXX
	Table 1-3		Flat Oval Duct		A15893.XXX
	Table 1-4		Rectangular Fittings		A15894.XXX
	Table 1-5		Double Wall Rectangular Fittings		A15895.XXX
	Table 1-6		Round/Flat Oval Fittings		A15896.XXX
	Table 1-7		Double Wall Round/Flat Oval Fittings		A15897.XXX
	Table 1-8		Ductwork Accessories		A15910.XXX, A15920.XXX
	Table 1-9		Air Terminal Units		A15930.XXX
	Table 1-10		Air Outlets and Inlets		A15940.XXX
	Table 1-11		Miscellaneous		A15890.XXX, A15940.XXX
Piping Symbols					
	Table 2-1		Linecodes		P15010.XXX, P15411.XXX, P15420.XXX, P15481.XXX, P15484.XXX, P15488.XXX, P15512.XXX, P15520.XXX, P15535.XXX
	Table 2-2		Pipe Joints		P15055.XXX
	Table 2-3		Valves		P15100.XXX
	Table 2-4		Manual Valve Actuators		P15100.XXX
	Table 2-5		Pipe Fittings		P15055.XXX
	Table 2-6		Accessories		P15055.XXX, P15121.XXX, P15140.XXX, P15420.XXX, P15515.XXX
Control Symbols					
	Table 3-1		Thermostats & Controllers		C15970.XXX
	Table 3-2		Sensors & Transmitters		C15972.XXX
	Table 3-3		Actuators		C15974.XXX
	Table 3-4		Auxiliary Devices		C15960.XXX
	Table 3-5		Accessories		C15964.XXX
	Table 3-6		Lines		C15986.XXX
Equipment Symbols					
	Table 4		Equipment Symbols		E15540.XXX, E15680.XXX, E15710.XXX, E15755.XXX, E15790.XXX, E15810.XXX, E15830.XXX, E15860.XXX, E15865.XXX, E15885.XXX, E15910.XXX, E15560.XXX, E15855.XXX