

**Table 1-1 Standard Plumbing and Piping Symbols**

Symbol	Description	Abbreviation
————— SD —————	Storm drain, rainwater drain	SD, ST
————— SSD —————	Subsoil drain, footing drain	SSD
————— SS —————	Soil, waste, or sanitary sewer	S, W, SAN, SS
-----	Vent	V
————— AW —————	Acid waste	AW
----- AV -----	Acid vent	AV
————— D —————	Indirect drain	D
————— PD —————	Pump discharge line	PD
————— - —————	Cold water	CW
————— - - —————	Hot water supply (140°F) <sup>a</sup>	HW
————— - - - —————	Hot water recirculating (140°F) <sup>a</sup>	HWR
————— TW —————	Tempered hot water (temp. °F) <sup>b</sup>	TEMP. HW, TW
————— TWR —————	Tempered hot water recirculating (temp. °F) <sup>b</sup>	TEMP. HWR, TWR
————— DWS —————	(Chilled) drinking water supply	DWS
————— DWR —————	(Chilled) drinking water recirculating	DWR
————— SW —————	Soft water	SW
————— CD —————	Condensate drain	CD
————— DI —————	Distilled water	DI
————— DE —————	Deionized water	DE

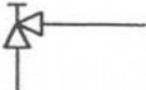
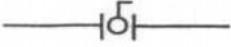
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(Table 1-1 continued)

Symbol	Description	Abbreviation
———— CWS ————	Chilled water supply	CWS
———— CWR ————	Chilled water return	CWR
———— LS ————	Lawn sprinkler supply	LS
———— F ————	Fire protection water supply	F
———— G ————	Gas—low-pressure	G
———— MG ————	Gas—medium-pressure	MG
———— HG ————	Gas—high-pressure	HG
- - - - - GV - - - - -	Gas vent	GV
———— FOS ————	Fuel oil supply	FOS
———— FOR ————	Fuel oil return	FOR
- - - - - FOV - - - - -	Fuel oil vent	FOV
———— LO ————	Lubricating oil	LO
- - - - - LOV - - - - -	Lubricating oil vent	LOV
———— WO ————	Waste oil	WO
- - - - - WOV - - - - -	Waste oil vent	WOV
———— OX ————	Oxygen	OX
———— LOX ————	Liquid oxygen	LOX
———— A ————	Compressed air <sup>c</sup>	A
———— X#A ————	Compressed air—X# <sup>c</sup>	X#A
———— MA ————	Medical compressed air	MA
———— LA ————	Laboratory compressed air	LA
———— HHWS ————	(Heating) hot water supply	HHWS
———— HHWR ————	(Heating) hot water return	HHWR
———— V ————	Vacuum	VAC

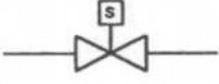
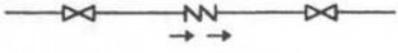
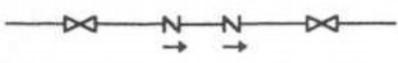
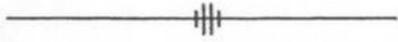
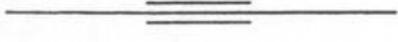
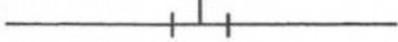
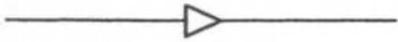
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(Table 1-1 continued)

Symbol	Description	Abbreviation
———— MV —————	Medical vacuum	MV
———— SV —————	Surgical vacuum	SV
———— LV —————	Laboratory vacuum	LV
———— N —————	Nitrogen	N
———— N <sub>2</sub> O —————	Nitrous oxide	N <sub>2</sub> O
———— CO <sub>2</sub> —————	Carbon dioxide	CO <sub>2</sub>
———— WVC —————	Wet vacuum cleaning	WVC
———— DVC —————	Dry vacuum cleaning	DVC
———— LPS —————	Low-pressure steam supply	LPS
----- LPC -----	Low-pressure condensate	LPC
———— MPS —————	Medium-pressure steam supply	MPS
----- MPC -----	Medium-pressure condensate	MPC
———— HPS —————	High-pressure steam supply	HPS
----- HPC -----	High-pressure condensate	HPC
----- ATV -----	Atmospheric vent (steam or hot vapor)	ATV
	Gate valve	GV
	Globe valve	GLV
	Angle valve	AV
	Ball valve	BV
	Butterfly valve	BFV
	Gas cock, gas stop	
	Balancing valve (specify type)	BLV
	Check valve	CV
	Plug valve	PV

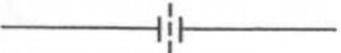
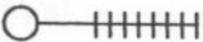
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Symbol	Description	Abbreviation
	Solenoid valve	
	Motor-operated valve (specify type)	
	Pressure-reducing valve	PRV
	Pressure-relief valve	RV
	Temperature-pressure-relief valve	TPV
	Reduced zone backflow preventer	RZBP
	Double-check backflow preventer	DCBP
	Hose bibb	HB
	Recessed-box hose bibb or wall hydrant	WH
	Valve in yard box (valve type symbol as required for valve use)	YB
	Union (screwed)	
	Union (flanged)	
	Strainer (specify type)	
	Pipe anchor	PA
	Pipe guide	
	Expansion joint	EJ
	Flexible connector	FC
	Tee	
	Concentric reducer	
	Eccentric reducer	

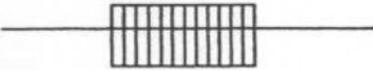
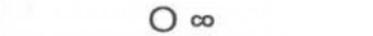
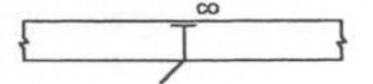
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(Table 1-1 continued)

Symbol	Description	Abbreviation
	Aquastat	
	Flow switch	FS
	Pressure switch	PS
	Water hammer arrester	WHA
	Pressure gauge with gauge cock	PG
	Thermometer (specify type)	
	Automatic air vent	AAV
	Valve in riser (type as specified or noted)	
	Riser down (elbow)	
	Riser up (elbow)	
	Air chamber	AC
	Rise or drop	
	Branch-top connection	
	Branch-bottom connection	
	Branch-side connection	
	Cap on end of pipe	
	Flow indicator for stationary meter (orifice)	
	Flow indicator for portable meter (specify flow rate)	
	Upright fire sprinkler head	
	Fire hose rack	FHR

(Continued)

(Table 1-1 continued)

Symbol	Description	Abbreviation
	Fire hose cabinet (surface-mounted)	FHC
	Fire hose cabinet (recessed)	FHC
	Cleanout plug	CO
	Floor cleanout	FCO
	Wall cleanout	WCO
	Yard cleanout or cleanout to grade	CO
	Drain (all types) (specify)	D
	Pitch down or up—in direction of arrow	
	Flow—in direction of arrow	
	Point of connect	POC
	Outlet (specify type)	
	Steam trap (all types)	
	Floor drain with p-trap	FD

<sup>a</sup>Hot water (140°F) and hot water return (140°F). Use for normal hot water distribution system, usually but not necessarily (140°F). Change temperature designation if required.

<sup>b</sup>Hot water (temp. °F) and hot water return (temp. °F). Use for any domestic hot water system (e.g., tempered or sanitizing) required in addition to the normal system (see note "a" above). Insert system supply temperature where "temp." is indicated.

<sup>c</sup>Compressed air and compressed air X#. Use pressure designations (X#) when compressed air is to be distributed at more than one pressure.

**Table 1-2 Standard Fire Protection Piping Symbols**

Referent (Synonym)	Symbol	Comments
<b>Water supply and distribution symbols</b>		
<i>Mains, pipe</i>		
Riser		
<i>Hydrants</i>		
Public hydrant, two hose outlets		Indicate size, <sup>a</sup> type of thread or connection.
Public hydrant, two hose outlets, and pumper connection		Indicate size, <sup>a</sup> type of thread or connection.
Wall hydrant, two hose outlets		Indicate size, <sup>a</sup> type of thread or connection.
<i>Fire department connections</i>		
Siamese fire department connection		Specify type, size, and angle.
Free-standing siamese fire department connection		Sidewalk or pit type, specify size.
<i>Fire pumps</i>		
Fire pump		Free-standing. Specify number and sizes of outlets.
Test header		Wall
<b>Symbols for control panels</b>		
Control panel		Basic shape.
(a)		Fire alarm control panel
<b>Symbols for fire extinguishing systems</b>		
<i>Symbols for various types of extinguishing systems<sup>b</sup></i>		
<i>Supplementary symbols</i>		
Fully sprinklered space		
Partially sprinklered space		
Nonsprinklered space		

(Continued)

(Table 1-2 continued)

Referent (Synonym)	Symbol	Comments
<i>Symbols for fire sprinkler heads</i>		
Upright sprinkler <sup>c</sup>		
Pendent sprinkler <sup>c, d</sup>		
Upright sprinkler, nipped up <sup>c</sup>		
Pendent sprinkler, on drop nipple <sup>c, d</sup>		
Sidewall sprinkler <sup>c</sup>		
<i>Symbols for piping, valves, control devices, and hangers.<sup>e</sup></i>		
Pipe hanger		This symbol is a diagonal stroke imposed on the pipe that it supports.
Alarm check valve		Specify size, direction of flow.
Dry pipe valve		Specify size.
Deluge valve		Specify size and type.
Preaction valve		Specify size and type.
<i>Symbols for portable fire extinguishers</i>		
Portable fire extinguisher		Basic shape.
<i>Symbols for firefighting equipment</i>		
Hose station, dry standpipe		
Hose station, changed standpipe		

Source: National Fire Protection Association (NFPA), Standard 170.

<sup>a</sup>Symbol element can be utilized in any combination to fit the type of hydrant.

<sup>b</sup>These symbols are intended for use in identifying the type of system installed to protect an area within a building.

<sup>c</sup>Temperature rating of sprinkler and other characteristics can be shown via legends where a limited number of an individual type of sprinkler is called for by the design.

<sup>d</sup>Can notate "DP" on drawing and/or in specifications where dry pendent sprinklers are employed.

<sup>e</sup>See also NFPA Standard 170, Section 5-4, for related symbols.