

MECHANICAL SYMBOLS

EQUIPMENT DESIGNATIONS	
SYMBOL	DESCRIPTION
AHU-X	AIR HANDLING UNIT DESIGNATION
UH-X	UNIT HEATER DESIGNATION
L-X	LOUVER DESIGNATION

DUCTWORK SYMBOLS	
SYMBOL	DESCRIPTION
⊙	HUMIDITY SENSOR
⊕	TEMPERATURE SENSOR
⊖	CARBON DIOXIDE SENSOR
⊕	DUCT SMOKE DETECTOR
⊖	SMOKE DETECTOR (IONIZATION)
→	AIR FLOW
→100 CFM	TRANSFER AIR FLOW (CFM INDICATED)
DL	DOOR LOUVER
UCD	UNDERCUT DOOR
⊗	SUPPLY AIR DIFFUSER
⊙	RETURN AIR GRILLE
⊗	EXHAUST AIR GRILLE
⊙	CIRCULAR AIR DIFFUSER
⊕	AIRFLOW MONITORING DEVICE
⊖	STATIC PRESSURE SENSING STATION
FD	FIRE DAMPER
FS	COMBINATION FIRE / SMOKE DAMPER
VD	VOLUME DAMPER
CCMS	CENTRAL CONTROL AND MONITORING SYSTEM
BDD	BACK DRAFT DAMPER
CFM	AUTOMATIC ISOLATION DAMPER
CFM	AUTOMATIC GAS TIGHT ISOLATION DAMPER
CFM	MANUAL GAS TIGHT ISOLATION DAMPER
SM	SMOKE DAMPER
CW	COLD WATER, DOMESTIC CITY WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
°C	DEGREE(S) CELSIUS
D	DEEP DRAIN WATER
DDC	DIRECT DIGITAL CONTROL
DESIG	DESIGNATION
DHR	DISTRIBUTION HEATING WATER RETURN
DHS	DISTRIBUTION HEATING WATER SUPPLY
DHWR	DOMESTIC HOT WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DIA, Ø	DIAMETER
DR	DEIONIZED WATER RETURN
DIS	DEIONIZED WATER SUPPLY
DL	DOOR LOUVER
DN	DOWN
DSP	DRY SPRINKLER PIPE
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
DW	DISTILLED WATER
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ED	EQUIPMENT DRAIN
EJ	EXPANSION JOINT
ELEV	ELEVATION
EMS	ENERGY MANAGEMENT SYSTEM
EQ	EQUIPMENT, EQUALIZING
ESP	EXTERNAL STATIC PRESSURE
ETC	ETCETERA
EVAC	GAS EVACUATION
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
#FOR	NUMBER 2 FUEL OIL RETURN
#FOS	NUMBER 2 FUEL OIL SUPPLY
#FOR	NUMBER 6 FUEL OIL RETURN
#FOS	NUMBER 6 FUEL OIL SUPPLY
F	FIRE LINE
F&T	FLOAT AND THERMOSTATIC TRAP
FC	FIRE DAMPER, FOUNDATION DRAIN
FDR	FLOOR DRAIN
FV	FIRE DEPARTMENT VALVE
FF	FINISHED FLOOR
FTE	FINISHED FLOOR ELEVATION
FN/FT	FINS PER FOOT
FN/INCH	FINS PER INCH
FM	FLOWMETER
FMF	FLOWMETER FITTING
FO	FUEL OIL
FOF	FUEL OIL FILL
FOO	FUEL OIL OVERFLOW
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOSUCT	FUEL OIL SUCTION
FOT	FUEL OIL TRANSFER
FOTP	FUEL OIL TRANSFER PUMP
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FOOT, FEET
FW	FEED WATER
FWR	FEED WATER RECIRCULATION
FWS	FEED WATER SUCTION
F	DEGREE(S) FAHRENHEIT
G	NATURAL GAS
GAL	GALLON, GALLONS
GEN	GENERATOR
GHR	GLYCOL HEATING RETURN
GHS	GLYCOL HEATING SUPPLY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	AUTOMOTIVE LUBRICATION PIPING
H	HIGH
HB	HOSE BIB
HED	HOSE END DRAIN VALVE
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HR	HEATING WATER RETURN
HRR	HEAT RECOVERY RETURN
HRS	HEAT RECOVERY SUPPLY
HRSO	HEAT RECOVERY STEAM GENERATOR
HS	HEATING WATER SUPPLY
HT	HEIGHT
HTHR	HIGH TEMPERATURE HEATING WATER RETURN
HHS	HIGH TEMPERATURE HEATING WATER SUPPLY
HW	HOT WATER

MECHANICAL ABBREVIATIONS

NOTE: THIS IS A STANDARD ABBREVIATION LIST. SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.

#	NUMBER, POUND	#	HOT WATER RECIRCULATION
\$	DOLLAR	HZ	HERTZ
%	PERCENT	IA	INSTRUMENT AIR
&	AND	ICW	INDUSTRIAL COLD WATER
+	PLUS	IHR	INDUSTRIAL HOT WATER RECIRCULATION
-	MINUS	IHW	INDUSTRIAL HOT WATER
/	DIVIDE BY, PER	IN	INCH, INCHES
<	LESS THAN	INV EL	INVERT ELEVATION
=	EQUALS, EQUAL TO	KW	KILOWATTS
>	GREATER THAN	L	LONG, LENGTH
x	MULTIPLY BY, BY	LA	LABORATORY AIR
x"	INCHES, INCH	LAT	LEAVING AIR TEMPERATURE
x'	FEET, FOOT	LBS	POUNDS
±	PLUS OR MINUS	LBS/HR	POUNDS PER HOUR
≤	LESS THAN OR EQUAL TO	LN	LIQUID NITROGEN
≥	GREATER THAN OR EQUAL TO	LP	LIQUID PROPANE
AT	COMPRESSED AIR	LPG	LIQUID PETROLEUM GAS
A	AUTOMATIC AIR VENT	LPR	LOW PRESSURE STEAM RETURN
ACV	AUTOMATIC CONTROL VALVE	LPS	LOW PRESSURE STEAM SUPPLY
AD	ACCESS DOOR, AREA DRAIN	LV	LABORATORY VACUUM
AF	ANTIFREEZE	LW	LABORATORY WASTE
AFF	ABOVE FINISHED FLOOR	LWT	LEAVING WATER TEMPERATURE
ARG	ARGON GAS	MA	MANUAL AIR
ATC	AUTOMATIC TEMPERATURE CONTROL	MAV	MANUAL AIR
BAS	BUILDING AUTOMATION SYSTEM	MAX	MAXIMUM
BBD	BACKFLOW PREVENTER	MCH	THOUSAND BRITISH THERMAL UNITS PER HOUR
BCWR	BEARING COOLING WATER RETURN	MCC	MOTOR CONTROL CENTER
BCWS	BEARING COOLING WATER SUPPLY	MEQ	METROLOGICAL EQUIPMENT
BDD	BACKDRAFT DAMPER	MH	MINOR
BFP	BACKFLOW PREVENTER	MIN	MINIMUM
BHP	BRIKE HORSEPOWER	MIS	MISCELLANEOUS
BMS	BUILDING MANAGEMENT SYSTEM	MO	MOTOR OIL PIPING
BO	BLOW OFF	MOD	MOTOR OPERATED DAMPER
BTU	BRITISH THERMAL UNIT	MPS	MEDIUM PRESSURE STEAM RETURN
BTUH	BRITISH THERMAL UNIT PER HOUR	MPS	MEDIUM PRESSURE STEAM SUPPLY
BV	BALANCING VALVE	MV	MEDICAL VACUUM
CA	CONTROL AIR	N	NITROGEN
CB	CONTINUOUS BLOWDOWN	NA, N/A	NOT APPLICABLE
CC	CAMPUS CONDENSATE	NC	NOISE CRITERIA, NORMALLY CLOSED
CCMS	CENTRAL CONTROL AND MONITORING SYSTEM	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CD	CONDENSATE DRAIN	NG	NATURAL GAS
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPEN, NITROUS OXIDE
CFM	CUBIC FEET PER MINUTE	No	NUMBER
CHL	CHILLED WATER RETURN	NOM	NOMINAL
CHS	CHILLED WATER SUPPLY	NP	NET POSITIVE SUCTION HEAD
CHX	CHILLED WATER HEAT EXCHANGER	NPW	NON-POTABLE WATER
CLEANOUT	CLEANOUT	O	OXYGEN
CO2	CARBON DIOXIDE	OA	OUTSIDE AIR
CS	CLEAN STEAM	OD	OVERFLOW DRAIN
CT	COMBUSTION TURBINE	OED	OPEN ENDED DUCT
CW	COLD WATER, DOMESTIC CITY WATER	OF	OVERFLOW
CWR	CONDENSER WATER RETURN	OSSAY	OUTSIDE STEM AND YOKE
CWS	CONDENSER WATER SUPPLY	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
°C	DEGREE(S) CELSIUS	PA	PLANT AIR
D	DEEP DRAIN WATER	PC	PUMPED CONDENSATE
DDC	DIRECT DIGITAL CONTROL	PCHR	PRIMARY CHILLED WATER RETURN
DESIG	DESIGNATION	PCHS	PRIMARY CHILLED WATER SUPPLY
DHR	DISTRIBUTION HEATING WATER RETURN	PCP	PUMP CONTROL PANEL
DHS	DISTRIBUTION HEATING WATER SUPPLY	PCR	PUMPED CONDENSATE RECIRCULATION
DHWR	DOMESTIC HOT WATER RETURN	PCWR	PROCESS COOLING WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY	PCWS	PROCESS COOLING WATER SUPPLY
DIA, Ø	DIAMETER	PD	PRESSURE DROP, PUMP DISCHARGE
DR	DEIONIZED WATER RETURN	PG	PILOT GAS
DIS	DEIONIZED WATER SUPPLY	PGR	PROCESS GLYCOL WATER RETURN
DL	DOOR LOUVER	PGS	PROCESS GLYCOL WATER SUPPLY
DN	DOWN	PH	PHASE
DSP	DRY SPRINKLER PIPE	PHR	PRIMARY HEATING RETURN
DTR	DUAL TEMPERATURE RETURN	PHS	PRIMARY HEATING SUPPLY
DTS	DUAL TEMPERATURE SUPPLY	PIV	POST INDICATING VALVE
DW	DISTILLED WATER	PPH	POUNDS PER HOUR
EA	EXHAUST AIR	PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
EAT	ENTERING AIR TEMPERATURE	PSI	POUNDS PER SQUARE INCH
ED	EQUIPMENT DRAIN	PSIG	POUNDS PER SQUARE INCH GAUGE
EJ	EXPANSION JOINT	PW	POTABLE WATER
ELEV	ELEVATION	RA	RETURN AIR, RELIEF AIR
EMS	ENERGY MANAGEMENT SYSTEM	RAF	RETURN AIR FAN
EQ	EQUIPMENT, EQUALIZING	RD	REFRIGERANT DISCHARGE
ESP	EXTERNAL STATIC PRESSURE	RDR	ROOF DRAIN
ETC	ETCETERA	RH	RELATIVE HUMIDITY
EVAC	GAS EVACUATION	RHR	REHEAT WATER RETURN
EWT	ENTERING WATER TEMPERATURE	RHS	REHEAT WATER SUPPLY
EX	EXISTING	RI	REMOVE AND REINSTALL
#FOR	NUMBER 2 FUEL OIL RETURN	RL	REFRIGERANT LIQUID
#FOS	NUMBER 2 FUEL OIL SUPPLY	ROR	REVERSE OSMOSIS WATER RETURN
#FOR	NUMBER 6 FUEL OIL RETURN	ROS	REVERSE OSMOSIS WATER SUPPLY
#FOS	NUMBER 6 FUEL OIL SUPPLY	RFM	REVOLUTIONS PER MINUTE
F	FIRE LINE	RS	REFRIGERANT SUCTION
F&T	FLOAT AND THERMOSTATIC TRAP	RV	RELIEF VENT, REFRIGERANT VENT
FC	FIRE DAMPER, FOUNDATION DRAIN	RX	REMOVE EXISTING
FDR	FLOOR DRAIN	SA	SUPPLY AIR, SHOCK ARRESTOR
FV	FIRE DEPARTMENT VALVE	SAN	SANITARY, SOIL, WASTE
FF	FINISHED FLOOR	SCHR	SECONDARY CHILLED WATER RETURN
FTE	FINISHED FLOOR ELEVATION	SCHS	SECONDARY CHILLED WATER SUPPLY
FN/FT	FINS PER FOOT	SD	STORM DRAIN, SMOKE DETECTOR
FN/INCH	FINS PER INCH	SF	SQUARE FOOT
FM	FLOWMETER	SHR	SECONDARY HEATING WATER RETURN
FMF	FLOWMETER FITTING	SHS	SECONDARY HEATING WATER SUPPLY
FO	FUEL OIL	SL	SOUND LINING
FOF	FUEL OIL FILL	SP	STATIC PRESSURE
FOO	FUEL OIL OVERFLOW	SPR	SPRINKLER LINE
FOR	FUEL OIL RETURN	SQ FT	SQUARE FOOT
FOS	FUEL OIL SUPPLY	SS	STAINLESS STEEL
FOSUCT	FUEL OIL SUCTION	SSUL	SODIUM SULFITE
FOT	FUEL OIL TRANSFER	STD	STORM DRAIN
FOTP	FUEL OIL TRANSFER PUMP	SW	SOFT WATER
FOV	FUEL OIL VENT	TS	TAMPER SWITCH
FPM	FEET PER MINUTE	TSP	TOTAL STATIC PRESSURE
FPS	FEET PER SECOND	TW	TREATED WATER
FS	FLOW SWITCH	TWR	TEMPERED WATER RETURN
FT	FOOT, FEET	TWS	TEMPERED WATER SUPPLY
FW	FEED WATER	TYP	TYPICAL
FWR	FEED WATER RECIRCULATION	ΔT	TEMPERATURE DIFFERENCE
FWS	FEED WATER SUCTION	UCD	UNDERCUT DOOR
F	DEGREE(S) FAHRENHEIT	UL	UNDERWRITERS LABORATORIES
G	NATURAL GAS	V	VACUUM, VOLTS
GAL	GALLON, GALLONS	VD	VOLUME DAMPER
GEN	GENERATOR	VENT	VENTILATION
GHR	GLYCOL HEATING RETURN	VFD	VARIABLE FREQUENCY DRIVE
GHS	GLYCOL HEATING SUPPLY	VPD	VACUUM PUMP DISCHARGE
GPH	GALLONS PER HOUR	VSD	VARIABLE SPEED DRIVE
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
GR	AUTOMOTIVE LUBRICATION PIPING	W	WATTS, WIDE
H	HIGH	WB	WET BULB
HB	HOSE BIB	WC	WATER COLUMN
HED	HOSE END DRAIN VALVE	WG	WATER GAUGE
HP	HORSEPOWER	WH	WALL HYDRANT
HPR	HIGH PRESSURE STEAM RETURN	WWF	WELDED WIRE FABRIC
HPS	HIGH PRESSURE STEAM SUPPLY	WWM	WELDED WIRE MESH
HR	HEATING WATER RETURN		
HRR	HEAT RECOVERY RETURN		
HRS	HEAT RECOVERY SUPPLY		
HRSO	HEAT RECOVERY STEAM GENERATOR		
HS	HEATING WATER SUPPLY		
HT	HEIGHT		
HTHR	HIGH TEMPERATURE HEATING WATER RETURN		
HHS	HIGH TEMPERATURE HEATING WATER SUPPLY		
HW	HOT WATER		

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DRAWING TITLE
MECHANICAL NOTES,
SYMBOLS AND
ABBREVIATIONS



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