

MECHANICAL SYMBOLS

EQUIPMENT DESIGNATIONS	
SYMBOL	DESCRIPTION
AHU, X	AIR HANDLING UNIT DESIGNATION
UH, X	UNIT HEATER DESIGNATION
LX	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
TFD	FIRE DAMPER
TFSD	COMBINATION FIRE / SMOKE DAMPER
VD	VOLUME DAMPER
BDD	BACK DRAFT DAMPER
⊠	AUTOMATIC ISOLATION DAMPER
⊠	AUTOMATIC GAS TIGHT ISOLATION DAMPER
⊠	MANUAL GAS TIGHT ISOLATION DAMPER
⊠	⊕
⊠	SMOKE DETECTOR
⊠	FLEXIBLE CONNECTION
⊠	DUCTWORK SOUND LINING
⊠	HORIZONTAL ACCESS DOOR
⊠	VERTICAL ACCESS DOOR
⊠	ELBOW W/ DOUBLE THICKNESS TURNING VANES
⊠	RECTANGULAR BRANCH TAKE OFF
⊠	BELL MOUTH BRANCH TAKE OFF
⊠	ROUND BRANCH TAKE OFF
⊠	ROUND DUCT DROP OFF BOTTOM
⊠	DUCT TRANSITION
⊠	SQUARE TO ROUND TRANSITION
UPDN	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)
⊠	SUPPLY / OUTSIDE AIR DUCT RISER
⊠	RETURN AIR DUCT RISER
⊠	EXHAUST / RELIEF AIR DUCT RISER
⊕	AIR DEVICE TYPE
XX	CFM
⊕	POINT OF CONNECTION
⊕	POINT OF DISCONNECTION

MECHANICAL ABBREVIATIONS

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

#	NUMBER, POUND	HWR	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	IN 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
'	FEET, FOOT	LBS	POUNDS
±	PLUS OR MINUS	LBSHR	POUNDS PER HOUR
≤	LESS THAN OR EQUAL TO	LN	LIQUID NITROGEN
≥	GREATER THAN OR EQUAL TO	LP	LIQUID PROPANE
@	AT	LPQ	LIQUID PETROLEUM GAS
A	COMPRESSED AIR	LPR	LOW PRESSURE STEAM RETURN
AAV	AUTOMATIC AIR VENT	LPS	LOW PRESSURE STEAM SUPPLY
ACV	AUTOMATIC CONTROL VALVE	LV	LABORATORY VENT, LABORATORY VACUUM
AD	ACCESS DOOR, AREA DRAIN	LW	LABORATORY WASTE
AF	ANTIFREEZE	LWT	LEAVING WATER TEMPERATURE
AFF	ABOVE FINISHED FLOOR	MA	MEDICAL AIR
ARG	ARGON GAS	MAV	MEDICAL AIR VENT
ATC	AUTOMATIC TEMPERATURE CONTROL	MAK	MAXIMUM
BAS	BUILDING AUTOMATION SYSTEM	MBH	THOUSAND BTU PER HOUR
BBD	BACKFLOW PREVENTER	MCC	MOTOR CONTROL CENTER
BCWR	BEARING COOLING WATER RETURN	MEQ	MCHANICAL EQUIPMENT
BCWS	BEARING COOLING WATER SUPPLY	MH#	MOTOR HORSEPOWER
BDD	BACKDRAFT DAMPER	MN	MISCELLANEOUS
BFP	BACKFLOW PREVENTER	MISC	MISCELLANEOUS
BHP	BRAKE HORSEPOWER	MO	MOTOR OIL PIPING
BMS	BUILDING MANAGEMENT SYSTEM	MO	MOTOR OPERATED DAMPER
BO	BLOW OFF	MPR	MEDIUM PRESSURE STEAM RETURN
BTU	BRITISH THERMAL UNIT	MPS	MEDIUM PRESSURE STEAM SUPPLY
BTUH	BRITISH THERMAL UNIT PER HOUR	MV	MEDICAL VACUUM
BV	BALANCING VALVE	N	NITROGEN
CA	CONTROL AIR	NA/NA	NOT APPLICABLE
CBD	CONTINUOUS BLOWDOWN	NC	NOISE CRITERIA, NORMALLY CLOSED
CC	CAMPUS CONDENSATE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CCMS	CENTRAL CONTROL AND MONITORING SYSTEM	NG	NATURAL GAS
CD	CONDENSATE DRAIN	NO	NORMALLY OPEN, NITROUS OXIDE
CF	CUMULATIVE FEET PER MINUTE	No	NUMBER
CFM	CUMULATIVE FEET PER MINUTE	NOM	NOMINAL
CH	CHILLED WATER RETURN	NPSH	NET POSITIVE SUCTION HEAD
CH	CHILLED WATER SUPPLY	NPW	NON-POTABLE WATER
CHX	CHILLED WATER HEAT EXCHANGER	O	OXYGEN
CO	CLEANOUT	OA	OUTSIDE AIR
CO ₂	CARBON DIOXIDE	OD	OVERFLOW DRAIN
CS	CLEAN STEAM	OED	OPEN ENDED DUCT
CT	COMBUSTION TURBINE	OF	OVERFLOW
CW	COLD WATER, DOMESTIC CITY WATER	OSLY	OUTSIDE STEM AND YOKE
CWR	CONDENSER WATER RETURN	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
CWS	CONDENSER WATER SUPPLY	PA	PLANT AIR
°C	DEGREE(S) CELSIUS	PC	PUMPED CONDENSATE
D	DEEP, DRAIN WATER	PCHIR	PRIMARY CHILLED WATER RETURN
DB	DECIBEL, DRY BULB	PCHS	PRIMARY CHILLED WATER SUPPLY
DDC	DIRECT DIGITAL CONTROL	PCP	PUMP CONTROL PANEL
DESIG	DESIGNATION	PCR	PUMPED CONDENSATE RECIRCULATION
DHR	DISTRIBUTION HEATING WATER RETURN	PCWR	PROCESS COOLING WATER RETURN
DHS	DISTRIBUTION HEATING WATER SUPPLY	PCWS	PROCESS COOLING WATER SUPPLY
DHW	DOMESTIC HOT WATER RETURN	PD	PRESSURE DROP, PUMP DISCHARGE
DHWS	DOMESTIC HOT WATER SUPPLY	PG	PILLOT GAS
Ø	DIAMETER	PGR	PROCESS GLYCOL WATER RETURN
DIS	DEIONIZED WATER RETURN	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	PV	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
EO	EQUIPMENT, EQUALIZING	RD	REFRIGERANT DISCHARGE
ESP	EXTERNAL STATIC PRESSURE	RDR	ROOF DRAIN
ETCETERA	ETCETERA	RH	RELATIVE HUMIDITY
EVAC	GAS EVACUATION	RHR	REHEAT WATER RETURN
EXT	ENTERING WATER TEMPERATURE	RHS	REHEAT WATER SUPPLY
EXISTING	EXISTING	RI	REMOVE AND REINSTALL
#2FOR	NUMBER 2 FUEL OIL RETURN	RL	REFRIGERANT LIQUID
#2FOS	NUMBER 2 FUEL OIL SUPPLY	ROR	REVERSE OSMOSIS WATER RETURN
#6FOR	NUMBER 6 FUEL OIL RETURN	ROS	REVERSE OSMOSIS WATER SUPPLY
#6FOS	NUMBER 6 FUEL OIL SUPPLY	RPM	REVOLUTIONS PER MINUTE
F	FIRE LINE	RS	REFRIGERANT SUCTION
F&T	FLOAT AND THERMOSTATIC TRAP	RV	RELIEF VENT, REFRIGERANT VENT
FC	FLEXIBLE CONNECTION	RX	REMOVE EXISTING
FCD	FIRE DAMPER, FOUNDATION DRAIN	SA	SUPPLY AIR, SHOCK ARRESTOR
FDR	FLOOR DRAIN	SAN	SANITARY, SOIL, WASTE
FDV	FIRE DEPARTMENT VALVE	SCWR	SECONDARY CHILLED WATER RETURN
FF	FINISHED FLOOR	SCHS	SECONDARY CHILLED WATER SUPPLY
FFE	FINISHED FLOOR ELEVATION	SD	STORM DRAIN, SMOKE DETECTOR
FNF	FNS PER FOOT	SF	SQUARE FOOT
FNF	FNS PER INCH	SHR	SECONDARY HEATING WATER RETURN
FINNCH	FNS PER INCH	SHS	SECONDARY HEATING WATER SUPPLY
FM	FLOWMETER	SL	SOUND LINING
FME	FLOWMETER FITTING	SP	STATIC PRESSURE
FO	FUEL OIL	SPL	SPRINKLER LINE
FOF	FUEL OIL FILL	SQ FT	SQUARE FOOT
FOO	FUEL OIL OVERFLOW	SS	STAINLESS STEEL
FOR	FUEL OIL RETURN	SSUL	SODIUM SULFITE
FOS	FUEL OIL SUPPLY	STDR	STORM DRAIN
FOSUCT	FUEL OIL SUCTION	SW	SOFT WATER
FOT	FUEL OIL TRANSFER	TS	TAMPER SWITCH
FOTP	FUEL OIL TRANSFER PUMP	TSP	TOTAL STATIC PRESSURE
FOV	FUEL OIL VENT	TW	TREATED WATER
FPM	FEET PER MINUTE	TWR	TEMPERED WATER RETURN
FPS	FEET PER SECOND	TWS	TEMPERED WATER SUPPLY
FS	FLOW SWITCH	TYP	TYPICAL
FT	FOOT, FEET	ΔT	TEMPERATURE DIFFERENCE
FW	FEED WATER	UCD	UNDERCUT DOOR
FWR	FEED WATER RECIRCULATION	UL	UNDERWRITERS LABORATORIES
FWS	FEED WATER SUCTION	V	VACUUM, VOLTS
°F	DEGREE(S) FAHRENHEIT	VD	VOLUME DAMPER
G	NATURAL GAS	VENT	VENTILATION
GAL	GALLON, GALLONS	VFD	VARIABLE FREQUENCY DRIVE
GEN	GENERATOR	VPD	VACUUM PUMP DISCHARGE
GHR	GLYCOL HEATING RETURN	VSD	VARIABLE SPEED DRIVE
GHS	GLYCOL HEATING SUPPLY	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	W	WATTS, WIDE
QPM	GALLONS PER MINUTE	WB	WET BULB
GR	AUTOMOTIVE LUBRICATION PIPING	WC	WATER COLUMN
H	HIGH	WG	WATER GAUGE
HB	HOSE BIB	WH	WALL HYDRANT
HED	HOSE END DRAIN VALVE	WWF	WELDED WIRE FABRIC
HP	HORSEPOWER	WWM	WELDED WIRE MESH
HPR	HIGH PRESSURE STEAM RETURN		
HPS	HIGH PRESSURE STEAM SUPPLY		
HR	HEATING WATER RETURN		
HRR	HEAT RECOVERY RETURN		
HRS	HEAT RECOVERY SUPPLY		
HRSQ	HEAT RECOVERY STEAM GENERATOR		
HS	HEATING WATER SUPPLY		
HT	HEIGHT		
HTHR	HIGH TEMPERATURE HEATING WATER RETURN		
HTHS	HIGH TEMPERATURE HEATING WATER SUPPLY		
HW	HOT WATER		

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ARCHITECTURE
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PROGRAM MANAGEMENT



CONSULTANT

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