

MECHANICAL SYMBOLS

EQUIPMENT DESIGNATIONS	
SYMBOL	DESCRIPTION
AHU, X UH, X L, X	AIR HANDLING UNIT DESIGNATION UNIT HEATER DESIGNATION LOUVER DESIGNATION
(H)	HUMIDITY SENSOR
(T)	TEMPERATURE SENSOR
(C)	CARBON DIOXIDE SENSOR
(S)	DUCT SMOKE DETECTOR
(K)	SMOKE DETECTOR (IONIZATION)
(A)	AIR FLOW
(100 CFM)	TRANSFER AIR FLOW (CFM INDICATED)
(DL)	DOOR LOUVER
(UCD)	UNDERCUT DOOR
(S)	SUPPLY AIR DIFFUSER
(R)	RETURN AIR GRILLE
(E)	EXHAUST AIR GRILLE
(C)	CIRCULAR AIR DIFFUSER
(M)	AIRFLOW MONITORING DEVICE
(S)	STATIC PRESSURE SENSING STATION
(FD)	FIRE DAMPER
(B)	COMBINATION FIRE / SMOKE DAMPER
(VD)	VOLUME DAMPER
(BDD)	BACK DRAFT DAMPER
(I)	AUTOMATIC ISOLATION DAMPER
(G)	AUTOMATIC GAS TIGHT ISOLATION DAMPER
(M)	MANUAL GAS TIGHT ISOLATION DAMPER
(S)	SMOKE DETECTOR
(S)	SMOKE DETECTOR
(F)	FLEXIBLE CONNECTION
(D)	DUCTWORK W/ SOUNDING
(H)	HORIZONTAL ACCESS DOOR
(V)	VERTICAL ACCESS DOOR
(D)	ELBOW W/ DOUBLE THICKNESS TURNING VANES
(R)	RECTANGULAR BRANCH TAKE-OFF
(B)	BELL MOUTH BRANCH TAKE-OFF
(R)	ROUND BRANCH TAKE-OFF
(O)	ROUND DUCT DROP-OFF BOTTOM
(T)	DUCT TRANSITION
(S)	SQUARE TO ROUND TRANSITION
(U/D)	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)
(S)	SUPPLY / OUTSIDE AIR DUCT RISER
(R)	RETURN AIR DUCT RISER
(S)	EXHAUST / RELIEF AIR DUCT RISER
(R)	ROUND RISE
(W)	ALL WELDED VEHICLE EXHAUST DUCT CONNECTION
(M)	MAINTENANCE ACCESS AREA
(M)	TERMINAL UNIT
(M)	MAINTENANCE ACCESS AREA
(M)	TERMINAL UNIT WITH REHEAT COIL
(M)	MAINTENANCE ACCESS AREA
(M)	TERMINAL UNIT W/ ATTENUATOR AND REHEAT COIL
(M)	MAINTENANCE ACCESS AREA
(M)	EXHAUST TERMINAL UNIT
(X)	SUPPLY AIR VOLUME TERMINAL UNIT IDENTIFIER
(X)	EXHAUST AIR TERMINAL UNIT IDENTIFIER
(X)	AIR DEVICE TYPE
(X)	AIR DEVICE IDENTIFIER

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MECHANICAL ABBREVIATIONS

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

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
#	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	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	LBSHR	POUNDS PER HOUR
≤	LESS THAN OR EQUAL TO	LN	LIQUID NITROGEN
≥	GREATER THAN OR EQUAL TO	LP	LIQUID PROPANE
@	AT	LPG	LIQUID PETROLEUM GAS
A	COMPRESSED AIR	LPR	LOW PRESSURE STEAM TRAP
AAV	AUTOMATIC AIR VENT	LPS	LOW PRESSURE STEAM TRAP
ACV	AUTOMATIC CONTROL VALVE	LV	LABORATORY VENT
AD	ACCESS DOOR, AREA DRAIN	LW	LABORATORY WASTE
AF	ANTIFREEZE	LWT	LEAVING WATER TEMPERATURE
AFF	ABOVE FINISHED FLOOR	MA	MEDICAL AIR
AR	ARGON GAS	MAY	MAY VENT
ATC	AUTOMATIC TEMPERATURE CONTROL	MB	MOTOR BRUSH
BAS	BUILDING AUTOMATION SYSTEM	MCM	MOTOR CONTROL CENTER
BBD	BOILER BLOWDOWN	ME	MECHANICAL EQUIPMENT
BCWR	BEARING COOLING WATER RETURN	MH	MILLI
BCWS	BEARING COOLING WATER SUPPLY	MIN	MINUTE
BDD	BACKDRAFT DAMPER	MISC	MISCELLANEOUS
BFP	BACKFLOW PREVENTER	MO	MOTOR OIL PIPING
BHP	BRAKE HORSEPOWER	MOD	MOTOR OPERATED DAMPER
BMS	BUILDING MANAGEMENT SYSTEM	MPS	MEDIUM PRESSURE STEAM RETURN
BO	BLOW OFF	MPS	MEDIUM PRESSURE STEAM SUPPLY
BTU	BRITISH THERMAL UNIT	MV	MEDICAL VACUUM
BTUH	BRITISH THERMAL UNIT PER HOUR	N	NITROGEN
BV	BALANCING VALVE	NA, N/A	NOT APPLICABLE
CA	CONTROL	NC	NOISE CRITERIA, NORMALLY CLOSED
CD	CONTINUOUS BLOWDOWN	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CE	CAMPUS COMPUTE	NG	NATURAL GAS
CC	CENTRAL CONTROL AND MONITORING SYSTEM	NO	NORMALLY OPEN, NITROUS OXIDE
CD	CONDENSATE DRAIN	No	NUMBER
CFM	CUBIC FEET PER MINUTE	NOM	NOMINAL
CHL	CHILLER	NPSH	NET POSITIVE SUCTION HEAD
CHR	CHILLED WATER RETURN	NPW	NON POTABLE WATER
CHS	CHILLED WATER SUPPLY	O	OXYGEN
CHX	CHILLED WATER HEAT EXCHANGER	OA	OUTSIDE AIR
CLEANOUT	CLEANOUT	OD	OVERFLOW DRAIN
CO2	CARBON DIOXIDE	OED	OPEN ENDED DUCT
CS	CLEAN STEAM	OF	OVERFLOW
CT	COMBUSTION TURBINE	OS&Y	OUTSIDE STEM AND YOKE
CW	COLD WATER, DOMESTIC CITY WATER	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
CWR	CONDENSER WATER RETURN	PA	PLANT AIR
CWS	CONDENSER WATER SUPPLY	PC	PUMPED CONDENSATE
°C	DEGREE(S) CELSIUS	PCHR	PRIMARY CHILLED WATER RETURN
D	DEEP DRAIN WATER	PCHS	PRIMARY CHILLED WATER SUPPLY
DB	DECEASED, DRY BUILD	PCP	PUMP CONTROL PANEL
DDC	DIRECT DIGITAL CONTROL	PCR	PUMPED CONDENSATE RECIRCULATION
DESIG	DESIGNATION	PCWR	PROCESS COOLING WATER RETURN
DHR	DISTRIBUTION HEATING WATER RETURN	PCWS	PROCESS COOLING WATER SUPPLY
DHS	DISTRIBUTION HEATING WATER SUPPLY	PD	PRESSURE DROP, PUMP DISCHARGE
DHWR	DOMESTIC HOT WATER RETURN	PG	PILOT GAS
DHWS	DOMESTIC HOT WATER SUPPLY	PH	PHASE
DIA, Ø	DIAMETER	PHR	PRIMARY HEATING RETURN
DIR	DEIONIZED WATER RETURN	PHS	PRIMARY HEATING SUPPLY
DIS	DEIONIZED WATER SUPPLY	PV	POST INDICATING VALVE
DL	DOOR LOUVER	PHV	POUNDS PER HOUR
DN	DOWN	PHV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
DSP	DRY SPRINKLER PIPE	PSI	POUNDS PER SQUARE INCH
DTR	DUAL TEMPERATURE RETURN	PSIG	POUNDS PER SQUARE INCH GAUGE
DTS	DUAL TEMPERATURE SUPPLY	PW	POTABLE WATER
DW	DISTILLED WATER	RA	RETURN AIR, RELIEF AIR
EA	EXHAUST AIR	RAF	RETURN AIR FAN
EAT	ENTERING AIR TEMPERATURE	RD	REFRIGERANT DISCHARGE
ED	EQUIPMENT DRAIN	RDR	ROOF DRAIN
EJ	EXPANSION JOINT	RH	RELATIVE HUMIDITY
ELEV	ELEVATION	RHR	REHEAT WATER RETURN
EMS	ENERGY MANAGEMENT SYSTEM	RHS	REHEAT WATER SUPPLY
EO	EQUIPMENT EQUALIZING	RI	REMOVE AND REINSTALL
ESP	EXTERNAL STATIC PRESSURE	RL	REFRIGERANT LIQUID
ETC	ETCETERA	ROR	REVERSE OSMOSIS WATER RETURN
EVAC	GAS EVACUATION	ROS	REVERSE OSMOSIS WATER SUPPLY
EWT	ENTERING WATER TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
EX	EXISTING	RS	REFRIGERANT SUCTION
#2FOR	NUMBER 2 FUEL OIL RETURN	RV	REMOVE EXISTING
#2FOS	NUMBER 2 FUEL OIL SUPPLY	SA	SUPPLY AIR, SHOCK ARRESTOR
#6FOR	NUMBER 6 FUEL OIL RETURN	SAN	SANITARY, SOIL, WASTE
#6FOS	NUMBER 6 FUEL OIL SUPPLY	SCHR	SECONDARY CHILLED WATER RETURN
F	FIRE LINE	SCHS	SECONDARY CHILLED WATER SUPPLY
F&T	FLOAT AND THERMOSTATIC TRAP	SD	STORM DRAIN, SMOKE DETECTOR
FC	FLEXIBLE CONNECTION	SF	SQUARE FOOT
FD	FIRE DAMPER, FOUNDATION DRAIN	SHR	SECONDARY HEATING WATER RETURN
FDR	FLOOR DRAIN	SHS	SECONDARY HEATING WATER SUPPLY
FDV	FIRE DEPARTMENT VALVE	SL	SOUND LINING
FF	FINISHED FLOOR	SP	STATIC PRESSURE
FE	FINISHED ELEVATION	SPR	SPRINKLER LINE
FINFT	FINS PER FOOT	SQ FT	SQUARE FOOT
FININCH	FINS PER INCH	SS	STAINLESS STEEL
FM	FLOWMETER	SSUL	SODIUM SULFITE
FMF	FLOWMETER FITTING	STDR	STORM DRAIN
FO	FUEL OIL	SW	SOFT WATER
FOF	FUEL OIL FILL	TS	TAMPER SWITCH
FOO	FUEL OIL OVERFLOW	TSP	TOTAL STATIC PRESSURE
FOR	FUEL OIL RETURN	TW	TREATED WATER
FOS	FUEL OIL SUPPLY	TWR	TEMPERED WATER RETURN
FOSUCT	FUEL OIL SUCTION	TWS	TEMPERED WATER SUPPLY
FOT	FUEL OIL TRANSFER	TYP	TYPICAL
FOTP	FUEL OIL TRANSFER PUMP	ΔT	TEMPERATURE DIFFERENCE
FOV	FUEL OIL VENT	UCD	UNDERCUT DOOR
FPM	FEET PER MINUTE	UL	UNDERWRITERS LABORATORIES
FPS	FEET PER SECOND	V	VACUUM, VOLTS
FS	FLOW SWITCH	VD	VOLUME DAMPER
FT	FOOT, FEET	VENT	VENTILATION
FW	FEED WATER	VFD	VARIABLE FREQUENCY DRIVE
FWR	FEED WATER RECIRCULATION	VPD	VACUUM PUMP DISCHARGE
FWS	FEED WATER SUCTION	VSD	VARIABLE SPEED DRIVE
°F	DEGREE(S) FAHRENHEIT	VTR	VENT THROUGH ROOF
G	NATURAL GAS	W	WATTS, WIDE
GAL	GALLON, GALLONS	WB	WET BULB
GEN	GENERATOR	WC	WATER COLUMN
GHR	GLYCOL HEATING RETURN	WG	WATER GAUGE
GHS	GLYCOL HEATING SUPPLY	WH	WALL HYDRANT
GPH	GALLONS PER HOUR	WWF	WELDED WIRE FABRIC
QPM	GALLONS PER MINUTE	WWM	WELDED WIRE MESH
GR	AUTOMOTIVE LUBRICATION PIPING		
H	HIGH		
HB	HOSE BB		
HED	HOSE END DRAIN VALVE		
HP	HORSEPOWER		
HPR	HIGH PRESSURE STEAM RETURN		
HPS	HIGH PRESSURE STEAM SUPPLY		
HR	HEATING WATER RETURN		
HRS	HEAT RECOVERY RETURN		
HRSQ	HEAT RECOVERY SUPPLY		
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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404-576-0256
404-576-0967 fax
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DRAWING TITLE
MECHANICAL NOTES,
SYMBOLS AND
ABBREVIATIONS

PROFESSIONAL SEAL
STANLEY LOVE
REGISTERED PROFESSIONAL ENGINEER
DANIEL NOTO

CONSULTANT
mfEngineering
888 HARRISON DRIVE SUITE 725
ATLANTA, GA 30328 478-915-0228

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