Introduction

This standard shall serve as the basis for all work executed on the Harvard Medical School (HMS) infrastructure systems.

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1.0 Asset Inventory

1.1 All Assets identified in Maximo shall be identified in-field with a unique identification tag/sticker.

1.2 All Asset Tags shall display the asset ID in both QR code & readable text format.

1.3 Where applicable, Asset tag will make reference to component being served

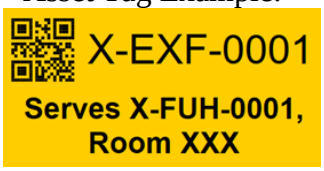
1.4 Asset Tags must/shall be applied directly to the equipment wherever possible, and shall not be applied to disconnects or other nearby structures. This ensures the Asset Tag will remain identification will remain with the asset when equipment is demolished or relocated to another location.

1.5 Equipment concealed above ceilings or behind access hatches shall have a second Asset Tag affixed to the ceiling grid or hatch to indicate it's concealed location.

1.6 "Hanger" tags shall be utilized wherever there is no adequate surface on the equipment to affix an adhesive Asset Tag onto.

1.7 Standard size asset tags shall be printed using the primary asset label printer. Asset Tags requiring additional sizes or configurations shall be provided by the HMS Asset Manager as needed.

1.8 Asset Tag Example:





1.8 Asset Label Standards

Convention:

X – SYS – TYP - ####

X= Building Letter Location
SYS = System (optional)
TYP = Asset Type
= Asset Number

System	Description
HHW	Heating Hot Water
CHW	Chilled Water
STM	Steam
NG	Natural Gas
PCW	Potable Cold Water
PHW	Potable Hot Water
NPHW	Non-Potable Hot Water
NPCW	Non-Potable Cold Water
RODI	High Purity Water
TW	Tower Water
PSW	Process Water
HRW	Heat Recovery
FPW	Fire Protection Water
C02	CO2
STC	Steam Condensate
VAC	Vacuum
CA	Compressed Air
SAN	Sanitary
STRM	Storm
FPA	Fire Protection Agent
CDW	Condensor Water
PIP	Pipe

2.0 Electrical Equipment

2.1 In accordance with the labelling convention, the following electrical equipment shall be labeled:

- Electrical panels
- Switchboards
- transformers
- Switchgear
- Building Automation panels
- Meters
- Transfer Switches

- Emergency Power Generators
- Conduit ≥ 2.5 inches
- Emergency Lighting Battery packs
- Electrical Breakers of ≥ 440v

2.2 Power outlets shall reference the circuit number on the faceplate. The corresponding breaker panel schedule shall reference the circuit number and shall be located inside the panel box door.

2.3 Emergency power outlets shall use a red colored faceplate and display the circuit number.

3.0 Fire Equipment

3.1 Hand held extinguishers shall have asset labels affixed directly to the device, not the cabinet or the surrounding wall. Wall mounted signs above the extinguisher shall be visible from either direction – Grainger item 480Z, 6" x 8.5"35



3.2 The following components shall be labeled;

- Pumps
- Tanks
- Strainers
- Building/floor level isolation valves
- Electrical panels
- Signal repeaters.

4.0 Piping and Components

4.1 Pipe Marker Guide

Pipe labels in the U.S. should loosely conform to ANSI / ASME joint standard A13.1.In addition to specifying colors for pipe labels, the code specifies standards for label size and placement.

4.2 Materials

All pipe labels shall be a UV resistant indoor/outdoor vinyl

4.3 Pipe Marking Color

Pipe labels shall indicate both the contents of the pipe and the direction of flow. Flow direction shal be indicated by arrows at one or both ends. The pipe contents shall be identified using both text and standardized color scheme.

See Appendix 1

4.4 Pipe marker size chart

Pipe diameter shall determine the appropriate label and text sizes, as shown in the following table.

Outside Pipe Diameter (including insulation)		Minimum Length of Label Color Field		Minimum Letter Height	
Inches	mm	Inches	mm	Inches	mm
.75–1.25*	19–32	8	203	.5	13
1.5–2	38–51	8	203	.75	19
2.5–6	64–152	12	305	1.25	32
8–10	203–254	24	610	2.5	64
>10	>254	24	610	2.5	64

4.5 Pipe Label Components

Required Items

- System Name
- Flow Direction Arrows visible on both ends within a single space
- Text :"Configuration Controlled System DO NOT ALTER HMS Facilities"
- Two Barcodes and Asset Numbers visible on both ends within a single space

See Sample Appendix 2

4.6 Pipe Label Placement

Proper label placement shall be positioned on the pipes as follows for ease of readability and identification of contents.

- On the lower side of the pipe if the employee has to look up to the pipe,
- On the upper side of the pipe if the employee has to look down towards the pipe, or
- Directly facing the employee if on the same level as the pipe (see Illustration 1).

Labels shall be installed or affixed near valves, piping branches, where a change in direction occurs, on entry/re-entry points through walls or floors, and on straight segments with spacing between labels which allows for easy identification approximately every 25-50 feet (see Illustration 2).

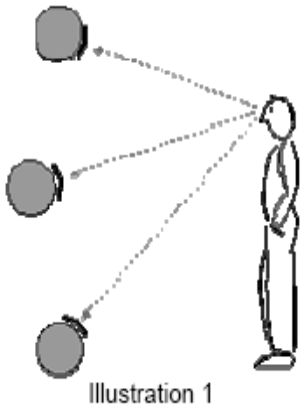


Illustration 1



Illustration 2

5.0 Fume hoods w/Exhaust Fans

5.1 Fume hoods shall be labeled by their individual asset and reference the associated exhaust fan asset ID.

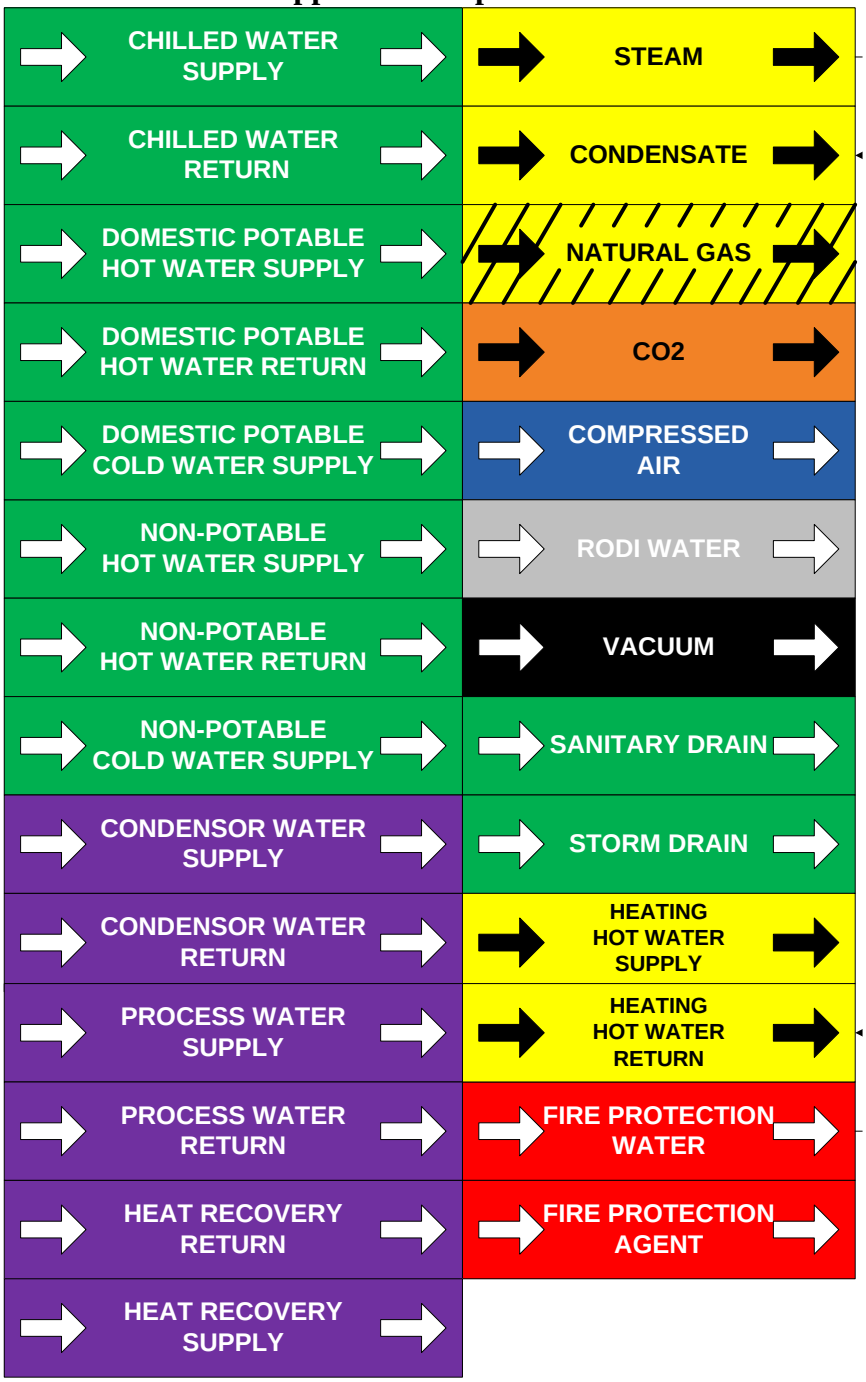
5.2 Exhaust fans shall be labeled by the individual asset and reference the associated Fume Hood asset ID

6.0 Mechanical equipment

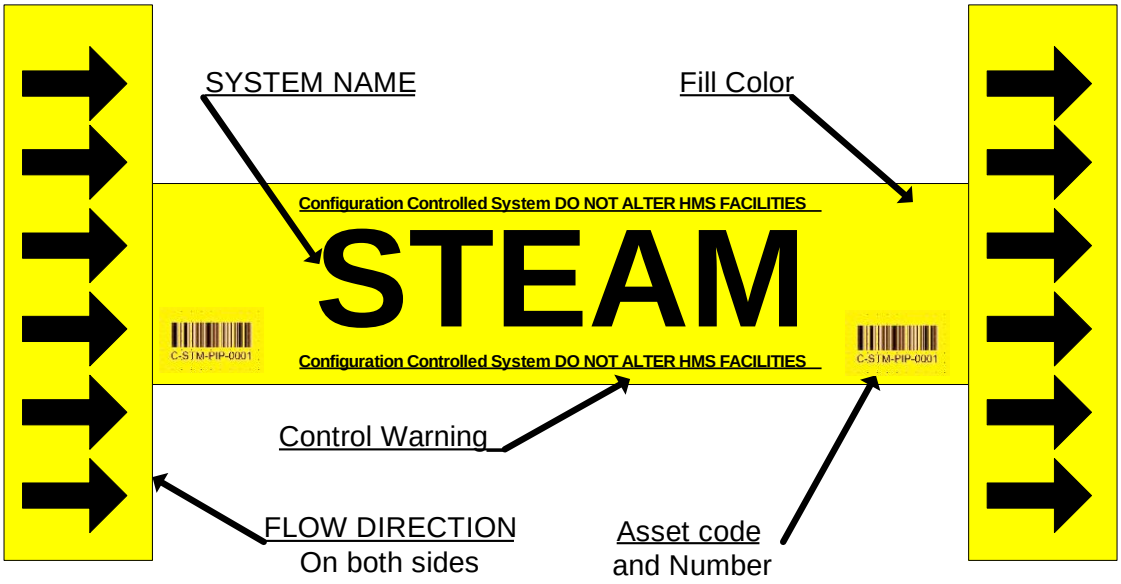
6.1 Air supply and exhaust equipment shall include the individual asset ID (not simply #1 or #2) and where possible a reference to the area served.

6.2 Pumps, valves, skids, steam traps, panels, VFDs, MCCs shall be labeled and reference component ID served

Appendix 1: Pipe Label



Appendix 2: Pipe Label Sample



Appendix 3 Pipe Change Decision Flow Chart

