

*Quality People. Building Solutions.*

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**Date:** 11/9/2023

**Return Request:** 11/19/2023

**Project:** UCA Snow – Fine Arts Center

**Supplier:** Comfort Systems USA (Arkansas), Inc.

**Manufacturer:** MSI

**Submittal:** HVAC Identification

**Submittal Number:** 23 05 53-01

**Drawing # and Installation:** Mechanical Drawings

**ARCHITECT**

H+N Architects  
1009 Main Street  
Conway, AR 72032  
501-327-7525

**ENGINEER**

Pettit & Pettit  
201 E. Markham St. #400  
Little Rock, AR 72201  
501-374-3731

**GENERAL CONTRACTOR**

Wagner General Contractors  
600 W. Race Ave.  
Searcy, AR 72143  
501-203-0704

**MECHANICAL SUBCONTRACTOR**

Comfort Systems USA (Arkansas), Inc.  
9924 Landers Rd.  
N. Little Rock, AR 72117  
501-834-3320

Notes:

**CSUSA PROJECT NO.**

**23-2020**

[chowell@comfortar.com](mailto:chowell@comfortar.com)



# MS-970 COILED PIPE MARKERS

## Technical Data



### Description

MS-970 coiled plastic pipe markers are designed to identify piping in a wide variety of indoor environments. They stay in place on pipes due to the memory of the coiling process and therefore, do not rely on a pressure-sensitive adhesive. No preparation of the pipe surface is required for application, so installation time is reduced compared to conventional stick-on marker systems. Legends are sub-surface printed so they are protected by a layer of plastic.

All MS-970 pipe markers are manufactured using material which has been independently tested and meets the requirements of UL-94 classification V-0 for self-extinguishing materials.

Complies with ASME A13.1 standard for pipe identification with regard to color, letter height and marker size. Custom color combinations are also available.

### Physical and Chemical Characteristics

<b>Base Material for MS-970:</b>	20 mil .020" (0.508 mm) vinyl service
<b>Service Temperature:</b>	+40°F through 160°F (4° C thru 71°C)
<b>Water Resistance:</b>	Excellent
<b>Chemical Resistance:</b>	Alkalis; Mildew: Good
<b>Outdoor Durability:</b>	Recommended indoor use only
<b>Mounting:</b>	Coiling holds tight to pipe. Larger coils have sealing strip. Oversized coils have nylon strapping
<b>Finish:</b>	Gloss surface
<b>Text Height:</b>	Various. Sized to meet ASME A13.1

### Marker Sizes and Letter Heights

Pipe Diameter	Style Marker	Marker Width	Character Height	Marker Type
1/4" – 3/8"	TM	3"	1/4"	COIL-ON
1/2" – 1"	A	8"	1/2"	COIL-ON
1-1/8" – 2-1/4"	B	8"	3/4"	COIL-ON
2-3/8" – 3-1/4"	C	12"	1-1/4"	COIL-ON
3-3/8" – 4-1/2"	D	12"	1-1/4"	COIL-ON
4-5/8" – 5-7/8"	E	12"	1-1/4"	COIL-ON
6" – 7-7/8"	FC	12"	1-1/4"	COIL-ON
6" – 7-7/8"	F	12"	1-1/4"	STRAP-ON
8" – 10"	G	24"	2-1/2"	STRAP-ON
Over 10"	H	32"	3-1/2"	STRAP-ON

\*Pipe outside diameter including insulation





# MS-970 COILED PIPE MARKERS

Technical Data

## Designation of Colors (ASME A13.1-2015 & ANSI Z535-2017)

Designation of Colors — ASME A13.1-2015 & ANSI Z535-2017 Standards		
Classification	Color Scheme	
<b>Defined Applications</b>		
Fire quenching liquids	White text on red	Sample
Toxic and corrosive fluids	Black text on orange	Sample
Flammable fluids	Black text on yellow	Sample
Combustible fluids	White text on brown	Sample
Potable, cooling, boiler feed and other water	White text on green	Sample
Compressed air	White text on blue	Sample
<b>Undefined Applications</b>		
Defined by user	White text on purple	Sample
Defined by user	Black text on white	Sample
Defined by user	White text on gray	Sample
Defined by user	White text on black	Sample

## Designation of Colors (ANSI/ASME A13.1-1996)

Designation of Colors — ANSI/ASME A13.1-1996 Standards		
Classification	Color Scheme	
<b>Materials Inherently Hazardous</b>		
Flammable or Explosive, Chemically Active or Toxic, Extreme Temperature or Pressures, Radioactive	Black text on yellow	Sample
<b>Materials Inherently Low Hazard</b>		
Liquid or Liquid Admixture (non-hazardous materials)	White text on green	Sample
Gas or Gaseous Admixture (non-hazardous materials)	White text on blue	Sample
<b>Fire Quenching Materials</b>		
Water, Foam, CO2, Halon, etc.	White text on red	Sample

Information on physical and chemical characteristics is based on tests we believe to be reliable. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material for their specific application.

Revised on 6/26/20





# MS-264 ENGRAVED PLASTIC TAGS

## Technical Data

### Description

MS-264 tags are ideal for marking electrical equipment and control panels. Engraved information clearly shows against the background color. Letter size will be adjusted to fit available space or specification requirement. Standard tag construction is 2 ply 1/16" thick.

Although MS-264 is not a thermoset plastic (phenolic) as designated by ASTM-D709 it is a fire-retardant polymer specifically designed as a safer, formaldehyde and phenol free, alternative to phenolic. MS-264 is non-flammable, UL 94 VO rated, electrically non-conductive, and insulative. Tags are also RoHS compliant, halogen free and PVC free.



### Physical and Chemical Characteristics

<b>Standard Material:</b>	2-ply (two laminated layers of engraving plastic)	
<b>Optional Material:</b>	3-ply (three laminated layers of engraving plastic)	
<b>Standard Thickness:</b>	1/16" (1.6 mm)	
<b>Optional Thickness:</b>	1/8" (3.2 mm)	
<b>Service Temperature:</b>	-20°F through 175°F (-29°C through 79°C)	
<b>Outdoor Durability:</b>	Indoor use only	
<b>Finish:</b>	Matte finish with beveled edges	
<b>Mounting:</b>	Adhesive backing and/or holes: 3/16" (4.8 mm) default diameter)	
<b>Standard Colors:</b> (Non-standard colors available upon request)	<input type="checkbox"/> BLACK (WHITE text) <input type="checkbox"/> GREEN (WHITE text) <input type="checkbox"/> RED (WHITE text) <input type="checkbox"/> BLUE (WHITE text)	<input type="checkbox"/> WHITE (BLACK text) <input type="checkbox"/> YELLOW (BLACK text) <input type="checkbox"/> ORANGE (BLACK text)
<b>Text Height:</b>	Sized to fit within tag boundary or comply with specified height	

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Created June 14, 2019





# ENGRAVED PLASTIC TAGS

## Technical Data

### WARNING

**ELECTRICAL SHOCK HAZARD  
DO NOT TOUCH TERMINALS.  
TERMINALS ON BOTH LINE AND  
LOAD SIDES MAY BE ENERGIZED  
IN THE OPEN POSITION.**

**DC VOLTAGE IS ALWAYS PRESENT  
WHEN SOLAR MODULES ARE EXPOSED  
TO SUNLIGHT**

### Description

Equipment and Valve identification tags are engraved in standard 1/16" or optional 1/8" non-glare finish. Mounting holes or adhesive backing is available. Standard material is 2-ply with 3-ply available.

Engraved information clearly shows against background. Letter size will be adjusted to fit available space or specification requirements. Several stock colors are available with other colors available upon request.

Engraved Plastic tags are non-conductive, insulative, RoHS compliant, halogen free and PVC free.

### Physical and Chemical Characteristics

<b>Base Material for Engraved Plastic:</b>	Micro-surface Impact Acrylic	
<b>Total Thickness:</b>	Standard: 1/16" (1.6 mm); Also available: 1/8" (3.2 mm)	
<b>Service Temperature:</b>	-20°F through 175°F (-29°C through 80°C)	
<b>Water Resistance:</b>	Excellent	
<b>Outdoor Durability:</b>	5 years minimum	
<b>UV Resistance:</b>	Excellent; UV stable; resists yellowing and hazing	
<b>Storage Stability:</b>	5 years minimum	
<b>Chemical Resistance: (Intermittent Surface Contact)</b>	Water Excellent; 10% Caustic Excellent; Methanol Excellent; 38% Hydrochloric Acid Excellent; Fuel Oil Excellent; 5% Acetic Acid Excellent	
<b>Finish:</b>	Non-glare finish with beveled edges (parallel edges available)	
<b>Mounting:</b>	Adhesive back, holes, other mounting options	
<b>Standard Colors: (Non-standard colors available upon request)</b>	<input type="checkbox"/> BLACK (WHITE text) <input type="checkbox"/> GREEN (WHITE text) <input type="checkbox"/> RED (WHITE text) <input type="checkbox"/> BLUE (WHITE text)	<input type="checkbox"/> BROWN (WHITE text) <input type="checkbox"/> WHITE (BLACK text) <input type="checkbox"/> YELLOW (BLACK text) <input type="checkbox"/> ORANGE (WHITE text)
<b>Typical Sizes (H x W):</b>	<input type="checkbox"/> 1.5" (38 mm) diameter <input type="checkbox"/> 1.5" x 1.5" (38 x 38 mm) <input type="checkbox"/> 1" x 3" (25 x 76 mm) <input type="checkbox"/> 2" x 4" (51 x 102 mm) <input type="checkbox"/> 4" x 8" (102 x 203 mm)	<input type="checkbox"/> 2" (51 mm) diameter <input type="checkbox"/> 2" x 2" (51 x 51 mm) <input type="checkbox"/> 2" x 3" (51 x 76 mm) <input type="checkbox"/> 3" x 6" (76 x 152 mm) <input type="checkbox"/> Other (specify: H x W)
<b>Text Height:</b>	Sized to fit within tag boundary or comply with specified height	

Information on physical and chemical characteristics is based on tests we believe to be reliable. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material for their specific application.

Updated on 2/13/2020





# LASER ENGRAVED BRASS TAGS

## Technical Data



### Description

Brass valve tags are available as 1-1/2" or 2" diameter round or square with one 3/16" hole. Laser engraved tags have high contrast text making it easy to read. Due to the chemical reaction during the engraving process, the text becomes part of the tag and will not flake off or fade. Other sizes and shapes are available upon request. These tags are available with or without hole(s). Hole location and size must be specified.

A variety of fasteners are available including Brass "S" hooks, #16 jack chain, and brass bead chain. Other attachment methods are available upon request.

### Physical and Chemical Characteristics

<b>Standard Material:</b>	Brass	
<b>Standard Thickness:</b>	20 Gauge (0.032"/0.812 mm thick)	
<b>Optional Thickness:</b>	Available upon request	
<b>Service Temperature:</b>	-40°F through 500°F (-40°C through 260°C)	
<b>Standard Colors:</b>	High contrast text on Brass background	
<b>Non-standard Colors:</b>	n/a	
<b>Mounting:</b>	Adhesive backing and/or holes; Ø3/16" (Ø4,8 mm) default diameter	
<b>Finish:</b>	Standard finish, brushed finish available	
<b>Text Height:</b>	1/4" service indicator on top line	
<b>Available Characters:</b>	1/8" Text , # / \ " - . ' ° ( ) A thru Z – all upper case & 0 thru 9 1/4" Text , # / \ " - . ' ° A thru Z – all upper case & 0 thru 9 1/2" Numbers 0 thru 9	
<b>Typical Sizes:</b>	<input type="checkbox"/> 1" x 3" (25 x 76 mm) <input type="checkbox"/> 1.5" (38 mm) diameter <input type="checkbox"/> 1.5" x 1.5" (38 x 38 mm) <input type="checkbox"/> 2" (51 mm) diameter <input type="checkbox"/> 2" x 2" (51 x 51 mm)	<input type="checkbox"/> 2" x 4" (51 x 102 mm) <input type="checkbox"/> 2" x 6" (51 x 152 mm) <input type="checkbox"/> 4" x 6" (102 x 152 mm) <input type="checkbox"/> Other (specify: H x W)

*Information on physical and chemical characteristics is based on tests we believe to be reliable. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material for their specific application.*

Revised on 10/14/2019





Marking Services Incorporated

## BRASS BEAD CHAIN

### Technical Data



#### Description

Our #6 Solid Brass Bead Chain is supplied 100 pieces per box. It is a flexible solid brass chain and provided in 4.5" (114 mm) lengths with a locking link on the end of the chain. The diameter of the chain is 1/8" with a tensile strength of 20 lbs. and approximately 70 balls per foot.

The chain is ideal for use in non-caustic environments and can be linked together to accommodate large valves.

MSI Part Number: 15765

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Created on 6/17/2010

8265 N. Faulkner Road, Milwaukee, WI 53224

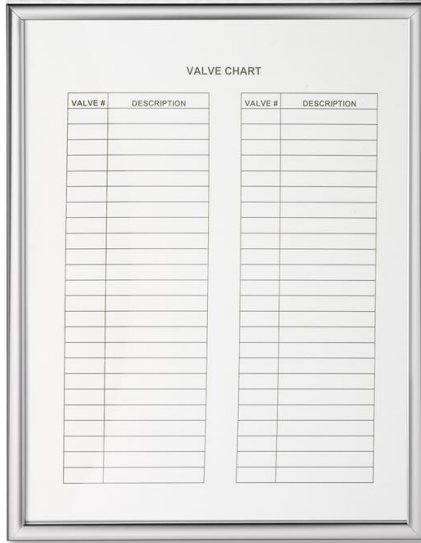
Ph: 800.234.0135 | Email: [sales@markserv.com](mailto:sales@markserv.com) | Website: [www.markserv.com](http://www.markserv.com)





# VALVE CHART FRAME

## Technical Data



### Description

Valve Chart Frame is designed to hold 8-1/2" x 11" (216 mm x 279 mm) valve charts. Plastic lens included. Glass lens is available upon request. Glass lens is glazing quality B, Class 1, Type I, ASTM C 1036, 2.5 mm single thickness. Frames are natural finish anodized extruded aluminum. Wall mountable.

MSI Part Number: 15790

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Revised on 10/23/2019







## CEILING TACKS

### Technical Data



#### Description

Standard .875" diameter domed head ceiling tacks are ideal for marking the location of valves, dampers, booster coils and controllers above acoustical ceiling tiles. Tacks are steel with baked enamel coating. Simply push tack into ceiling tile or insulation near closest access point.

#### Available Stock Colors

- Orange
- Black
- Green
- Red
- Blue
- White
- Yellow

\*Additional colors available upon request.

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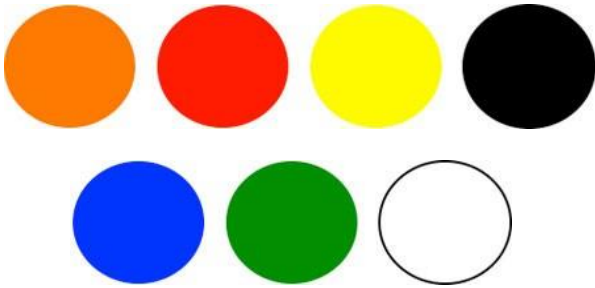
Updated on 8/6/2020





# MS-900 SELF-ADHESIVE CEILING MARKERS

## Technical Data



### Description

MS-900 Self-Adhesive Ceiling Markers are ideal for marking the location of valves, dampers, booster coils and controllers above acoustical ceiling tiles.

### Physical and Chemical Characteristics

<b>Film:</b>	.0032" (0.0812 mm) thick material
<b>Adhesive:</b>	Permanent pressure-sensitive acrylic
<b>Service Temperature:</b>	-50°F to +180°F (-45°C to 82°C)
<b>Application Temperature:</b>	+50°F (10°C)
<b>Water Resistance:</b>	Excellent
<b>Chemical Resistance:</b>	Resistant to mild acids, alkalis and salts
<b>Expected Outdoor Durability:</b>	Five years when properly applied
<b>Storage Durability:</b>	Two years when stored at +73°F (22°C) and 50% relative humidity
<b>Available Sizes:</b>	<input type="checkbox"/> 3/4" (19 mm) <input type="checkbox"/> 7/8" (22.22 mm)
<b>Available Stock Colors: (Additional colors available upon request)</b>	<input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Black <input type="checkbox"/> Blue <input type="checkbox"/> Green <input type="checkbox"/> White

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Revised on 10/22/2019

