

**Knox Elementary School  
2900 Knox School Rd.  
Alliance, Oh 44601  
330-938-4480**

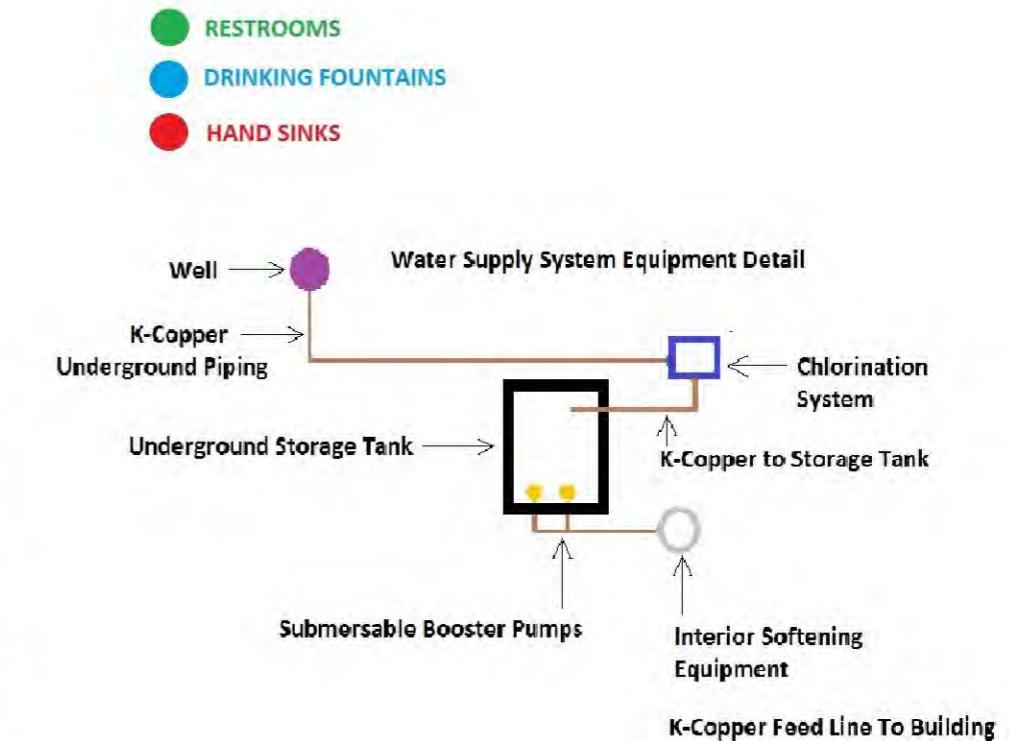
PWS ID: OH1565212

**Building constructed in 2004**

All potable water piping within the structure is copper with soldered fittings. All service lines and internal piping were installed after the 1986 lead ban.

**Per instructions, all internal testable water outlets and fountains have been indicated on the map in addition to a diagram of the well location and service line piping.**

Also included as attachments are the submittals for plumbing fixture and a current version of the SDS sheet for the solder used in the construction project.



**MATERIAL SAFETY DATA SHEET**

CODE: M/L 040

This Material Safety Data Sheet complies with  
the U.S. OSHA Hazard Communication  
Standard, 29 CFR 1910.1200

**PRODUCT:****LENOX® STERLING® LEAD-FREE SOLDER**

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NFPA/HMIS HAZARD CODES:     HEALTH: 1/1     FIRE: 0/0     REACTIVITY: 0/0     SPECIAL: NA

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0 = Minimal     1 = Slight     2 = Moderate     3 = Serious     4 = Severe

**SECTION I**

**MANUFACTURER NAME:** LENOX®  
1690 Lowery Street  
Winston-Salem, NC 27101  
**INFORMATION PHONE:** 336-777-8600

**ISSUE DATE:** October, 2007

**SECTION II HAZARDOUS INGREDIENTS**

<b>INGREDIENT</b>	<b>CAS NO.</b>	<b>US-NIOSH RTECS NO.</b>	<b>US OSHA AL</b>	<b>US OSHA PEL</b>	<b>ACGIH TLV</b>	<b>WT. PERCENT</b>
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper	7440-50-8 (dust) (fume)	GL5325000	NE	1.0mg/m3 0.1mg/m3	1.0mg/m3 0.2mg/m3	4.0 – 5.0
Selenium	7782-49-2	VS7700000	NE	0.2mg/m3	0.2mg/m3	.04 - .2

NE = NONE ESTABLISHED     AL = ACTION LEVEL     PEL = PERMISSIBLE EXPOSURE LIMIT     TLV = THRESHOLD LIMIT VALUE

**SECTION III PHYSICAL DATA**

**APPEARANCE & ODOR (AT NORMAL CONDITIONS):** Solid - silver to silver-gray metallic metal - no odor

**SPECIFIC GRAVITY:** 7.38

**MELTING POINT RANGE (DEGREES F):** 410-418

**BOILING POINT (DEGREES C):** Information not available

**SOLUBILITY IN WATER:** Insoluble

**PH:** Not applicable

**SECTION IV FIRE & EXPLOSION HAZARD DATA**

**FLASH POINT:**

Non-flammable

**FLAMMABLE LIMITS:**

Not applicable

**EXTINGUISHING MEDIA:**

No specific agents recommended

**SPECIAL FIRE FIGHTING PROCEDURES:**

If involved in fire, use full protective clothing and NIOSH/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode. The solid metal form is not a fire hazard. However, it is possible that dust generated from processing operations may present a moderate fire or explosion hazard.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

**SECTION V REACTIVITY DATA**

**STABILITY:**

Stable

**CONDITIONS TO AVOID:**

Not applicable

**INCOMPATIBILITY:**

Chlorine, Turpentine, Magnesium, and Acetylene Gas

**HAZARDOUS DECOMPOSITION PRODUCTS:**

At temperatures above the melting point metal oxide fumes may be evolved.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

## SECTION VI HEALTH HAZARD DATA

**NOTE:** Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in exposure to product components and/or decomposition products, which may present a health hazard.

**ROUTES OF ENTRY:**

Dust/fume inhalation; dust ingestion.

**SYMPTOMS & EFFECTS OF OVEREXPOSURE:**

**Chronic (prolonged)** overexposure to Tin can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.

**Acute (severe short-term)** overexposure to Tin can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to Copper dust/fume can cause irritation of the eyes, nose, throat and skin, and under severe fume overexposure can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:**

Pre-existing conditions of the lungs, Wilson's Disease (genetic trait)  
Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH.

**CARCINOGENITY:**

**EMERGENCY & FIRST AID PROCEDURES:**

**SKIN:**

Normal hygiene and first aid procedures - wash with soap and water. If irritation develops or persists obtain medical attention get medical attention. Flush well with running water to remove particulate. If irritation persists obtain medical attention.

**EYES:**

Remove from exposure. Obtain immediate medical attention. If breathing has stopped, initiate artificial resuscitation.

**ACUTE INHALATION:**

Give water; induce vomiting only in a conscious non-convulsing individual; Obtain immediate medical attention.

**INGESTION:**

## SECTION VII PROTECTION MEASURES

**RESPIRATORY PROTECTION:**

Respiratory protection is required where airborne exposures exceed U.S. OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the U.S. OSHA Respiratory Protection Standard, 29 CFR 1910.134.

**VENTILATION:**

Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice," by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the Permissible Exposure Limits (PEL's) or Threshold Limit Values (TLV's) specified by U.S. OSHA or other local or state regulations.

**PROTECTIVE GLOVES:**

Recommended for prolonged contact/heat.

**EYE PROTECTION:**

Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes. Safety glasses or goggles with face shield are recommended around molten metal.

**OTHER PROTECTIVE EQUIPMENT:**

Safety equipment should be worn as appropriate for the work environment.

**WORK/HYGIENIC PRACTICES:**

Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in product work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and activities, which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimize the generation of fume.

## SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE

### PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:

Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment and domestic animals.

### OTHER PRECAUTIONS:

Special attention is drawn to the requirements of the U.S. OSHA Respirator 1910.134 should airborne exposures exceed the U.S. OSHA PEL. Inadvertent contaminants to product such as moisture, ice, snow, grease or oil can cause an explosion when charged to a molten metal bath or melting furnace (preheating metal will remove moisture from the product).

## SECTION IX SPILL OR LEAK PROCEDURES

### SPILL OR LEAK PROCEDURES:

1. Material in dust form-minimize exposure. Clean up using dustless methods (i.e. HEPA Vacuum). Do not use compressed air.
2. Place in closed labeled containers for recycling or disposal.
3. Keep out of waterways.

**NOTE:** Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

**OTHER PROCEDURES:** For large product users or involving large product quantities, we recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations: also various state and local regulations.)

**WASTE DISPOSAL METHODS:** May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations.

## SECTION X UNITED STATES SARA TITLE III INFORMATION

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to be found in Section II of this Material Safety Data Sheet.

CHEMICAL NAME	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC.313 (*3)	313 CATEGORY (*4)	311-312 CATEGORIES (*5)
Copper	Not Applicable	Not Applicable	YES	Copper	H-1

### -FOOTNOTES-

\*1 = Reportable quantity of extremely hazardous substance, Section 302.

\*2 = Threshold planning quantity, extremely hazardous substance, Section 302.

\*3 = Toxic chemical list, Section 313

\*4 = Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.

\*5 = Hazard category for SARA Section 311/312 reporting:

Health	H-1 = Immediate (ACUTE) Health Hazard H-2 = Delayed (CHRONIC) Health Hazard	Physical	P-3 = Fire Hazard P-4 = Sudden Release of Pressure Hazard P-5 = Reactive Hazard
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## SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

### CHEMICAL NAME    RQ (LBS)

Copper                5000 (\*1)

### -FOOTNOTES-

\*1 = Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24-hour period must be reported to the U.S. National Response Center (800-424-8802). No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

## SECTION XII TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	Non-regulated as shipped
TECHNICAL NAME:	N/A
HAZARD CLASS:	N/A
UN NO.:	N/A
PACKING GROUP:	N/A
EMERGENCY RESPONSE GUIDE NUMBER:	N/A
OTHER:	N/A

## SECTION XIII ADDITIONAL INFORMATION

**VOC CONTENT:** None

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. LENOX® provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.

**Prout Boiler, Heating & Welding, Inc.**  
3124 Temple Street  
Youngstown, Ohio 44510  
Ph: 330.744.0293 Fax: 330.744.0717  
[www.proutbodyler.com](http://www.proutbodyler.com)



## **Project:**

New Knox Elementary School  
Alliance, Ohio

Plumbing Contract

## **Construction Manager:**

URS / O'Brien Kreitzberg

## **Submittal For:**

Plumbing Fixtures

Prout Boiler, Heating & Welding, Inc.	
Ck'd By:	<i>WJP</i>
Date:	July 9, 2004

<b>STEEL VALLEY ENG.</b> 5105 MARKET ST. YOUNGSTOWN, OH 44512 PH: 330-788-2282 - FAX: 330-788-9714	
<input checked="" type="checkbox"/> NO EXCEPTION TAKEN	<input type="checkbox"/> REJECTED
<input type="checkbox"/> REVISE AND RESUBMIT	<input type="checkbox"/> SUBMIT SPECIFIED ITEM
<input type="checkbox"/> MAKE CORRECTIONS NOTED	<input type="checkbox"/>
DATE: <u>7/14/04</u>	BY: <u>AN</u>
CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS/her WORK WITH THAT OF OTHER TRADES; AND THE SATISFACTORY PERFORMANCE OF HIS/her WORK.	



# 4" CENTERSET GOOSENECK

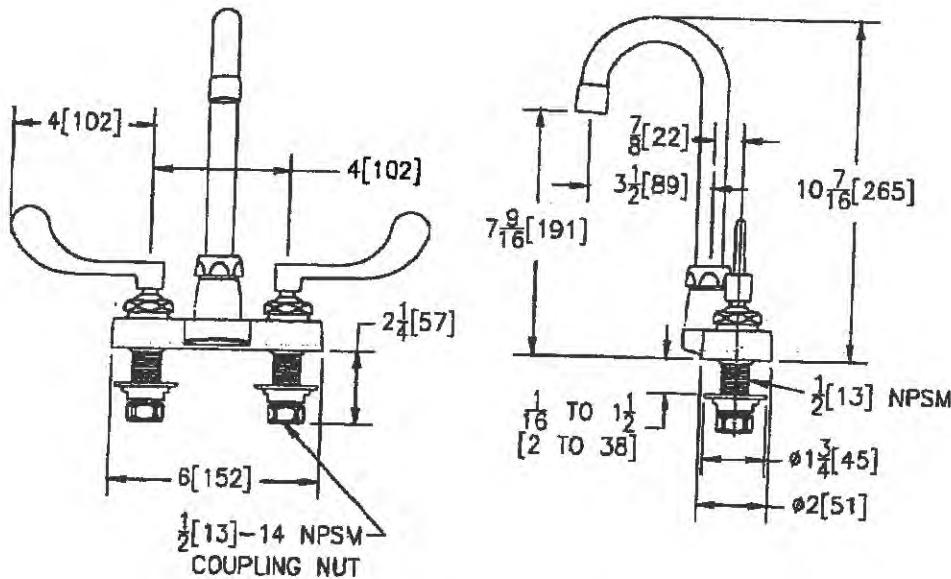
## Z-812A4

TAG P-5



### Engineering Specifications: Zurn AquaSpec® Z-812A4

Polished chrome-plated cast brass faucet body with integral shanks, quarter turn ceramic disc cartridges and a 3-1/2" [89mm] centerline rigid or swing gooseneck spout. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 4" [102mm] vandal-resistant color-coded brass wrist blade handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers.



Note: All dimensions are for reference only. Do not use for pre-plumbing  
**OPTIONAL ACCESSORIES**

Suffix	Description
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
<input checked="" type="checkbox"/> -G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-2F	2.0 GPM [7.6 L] Vandal-Resistant Female Aerator
-3F	0.5 GPM [1.9 L] Vandal-Resistant Female Aerator
-4F	2.0 GPM [7.6 L] Vandal-Resistant Female Laminar Flow
-5F	2.0 GPM [7.6 L] Female Spray Outlet
-14F	2.5 GPM [9.5 L] Vandal-Resistant Female Aerator

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 Phone: 1-716-665-1132 • Fax: 1-716-665-1135 • World Wide Web: [www.zurn.com](http://www.zurn.com)

In Canada: ZURN INDUSTRIES LIMITED • 3544 Nashua Drive • Mississauga, Ontario L4V1L2 • Phone: 905/405-8272 Fax: 905/405-1292

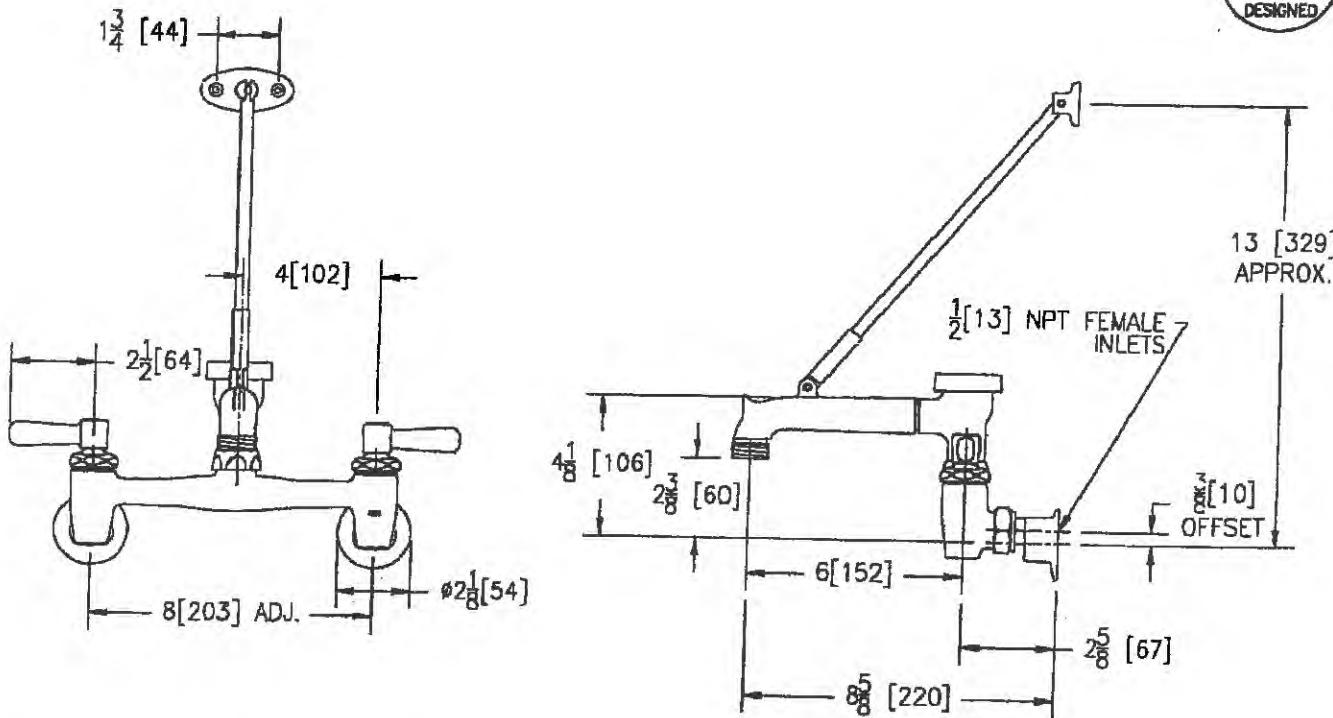


# SINK FAUCET

## Z-843M1-RC

**TAG P-6**

**Engineering Specifications:** Zum AquaSpec® Z-843M1-RC  
 Rough chrome-plated cast brass 8" [203mm] sink faucet with quarter turn ceramic disc cartridges, 3/8" [10mm] short swivel inlets providing adjustable centers from 7-1/4" [184mm] to 8-3/4" [222mm], integral service stops and a 6" [152mm] centerline cast brass spout with chemical resistant vacuum breaker, 3/4" [19mm] hose threaded outlet, pail hook and adjustable wall brace. Unit is furnished with 2-1/2" [64mm] vandal-resistant color-coded brass lever handles.



Note: All dimensions are for reference only. Do not use for pre-plumbing

### OPTIONAL ACCESSORIES

Suffix	Description
-CS	Check Stops
-LSI	2-1/2" [64mm] Long Swivel Inlets
-WHK	Wall Hook
-SH	5' [152cm] Vinyl Hose
-SP	Master Carton (Qty. 6)

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P-7

## BARRIER-FREE VERSACOOLER® II

P8AC, PAC

### Suggested Specification

Model P8AC shall deliver 8.0 gph of 50° F degree water at 90° F ambient and 80° F inlet water. Model PAC is a non-refrigerated drinking fountain and delivers ambient water. Models P8AC and PAC shall include front and side push pads to activate the flow of water. Basin shall be designed to eliminate splashing and standing water. Bubbler shall have flexible guard and operate between 20 and 120 psi. Cabinet finish shall be Sandstone or Greystone powder coated paint on galvanized steel or brushed stainless steel. Cooling system shall use R-134a refrigerant. Shall comply with ANSI A117.1 and ADA. Shall be listed by Underwriters Laboratories, certified to the Air Conditioning and Refrigeration Institute Standard 1010, certified by Canadian Standard Institute and conform to European Union Directives. Shall comply with ANSI/NFS 61.

### Models

- P8AC** Delivers 8.0 gallons of chilled drinking water per hour.
- PAC** A non-refrigerated fountain.

These models satisfies CABO/ANSI A117.1 and these water coolers comply with ADA requirements when properly installed. Models also meet guidelines for children's accessibility providing the floor to orifice height is 30 inches or less and proper clear floor space is provided for parallel approach.

### Standard Features

- Built-in 100 micron strainer stops particles before they enter the waterway
- Waterways Are Lead-Free In Materials & Construction
- Stainless Steel Top
- Flexible Bubbler Guard
- Heavy Duty Galvanized Steel Frame
- High Efficiency Cooling Tank and Coil
- Refrigerant R-134a
- Four Push Pad Activation
- External Stream Height Adjustment

### Finishes

- Standard Cabinet Finish: Sandstone powder coated paint on galvanized steel
- Optional finishes at no additional cost: Greystone powder coated paint on galvanized steel
- Optional finishes at additional cost: Stainless Steel, Regency Bronze, and optional powder coated finishes

### Options (at additional cost)

- Glass Fillers (Factory Installed)
- Push Handle (029603-004)
- Push Back (029603-005)
- Push Down (029603-006)



- Stainless steel bubbler

### Installation

- Prior to roughing consult with local, state, and federal codes for proper mounting height.
- Shipped with complete instructions and wall mounting bracket.
- Removable side and front panels provide easy access for installation.



**ADA Compliant** for both adult or child when properly installed.



Components in these water coolers are lead free as defined by the Safe Drinking Water Act Amendments of 1986, and the Lead Contamination Control Act of 1988.

**Limited 5-Year Warranty** (Continental limits of the United States and Canada only): Five years on the sealed refrigeration system and most component parts. Detailed warranty certificate enclosed with each water cooler; sample available upon request.

**Powder Coated Finish Warranty** (Continental limits of the United States and Canada): Three years on the powder coat finish provided that the water cooler has not been subjected to abuse, misuse, or alteration.

**Export Warranty:** One year on the sealed refrigeration system and most component parts. Four-year replacement contract on sealed refrigeration system. Detailed warranty certificate enclosed with each water cooler; sample copy available upon request.

Models covered by these specifications comply with all known Plumbing Codes. Listed by Underwriters' Laboratories. Certified by Canadian Standards Association, and Certified to Air Conditioning and Refrigeration Institute Standard 1010.



Model	50° F Drinking Water, 90° F Ambient Air Temp*				115 Volts, 60 Hz				Glass Filter Acc. Option	Cabinet Color Option	Net Wt. Approx.
	Rated Capacity GPH	Base Rate GPH	Pre-Cooler	Hot 'N Cold™ Model	Compr. HP	Full Load Amps	Rated Watts				
PBAC**	8.0	8.0	No	No	1/4	4.6	400	Yes	Yes	Yes	59 Lbs.
PAC			Fountain Only					Yes	Yes	Yes	25 Lbs.

\*Air Conditioning and Refrigeration Institute Standard Rating Condition 80° F inlet water temperature.

\*\*Special export models available, operable on 220-240 volts, 50/60 Hz. UL, CSA and ARI certification not applicable.

# OASIS Water Coolers

## BARRIER-FREE SPLIT-LEVEL VERSACOOLER®

P8AMSL, PAMSL

### Suggested Specification

Model P8AMSL shall deliver 8.0 gph of 50° F water at 90° F ambient and 80° F inlet water. Model PAMSL is a non-refrigerated drinking fountain and delivers ambient water. Models P8AMSL and PAMSL shall include a front push pad to activate the flow of water. Basin shall be designed to eliminate splashing and standing water. Bubbler shall have flexible guard and operate between 20 and 120 psi. Cabinet finish shall be Sandstone or Greystone powder coated paint on galvanized steel or brushed stainless steel. Cooling system shall use R-134a refrigerant. Shall comply with ANSI/A117.1 and ADA. Shall be listed by Underwriters Laboratories, certified to the Air Conditioning and Refrigeration Institute Standard 1010, certified by Canadian Standard Institute and conform to European Union Directives. Shall comply with ANSI/NSF 61.

### Models

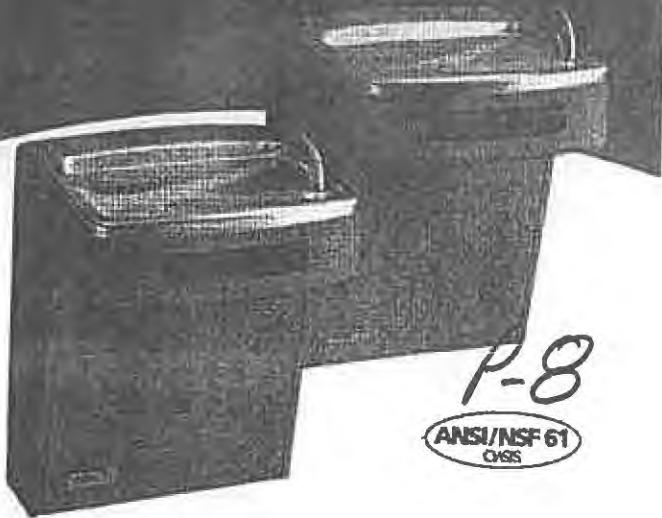
- **P8AMSL** Delivers 8.0 gallons of chilled drinking water per hour. PAMSL A non-refrigerated fountain. These models satisfies CABO/ANSI A117.1 When accessory apron is used on the upper unit, this cooler will comply with ADA guidelines when properly installed. Apron is not required when installed in an alcove or if a wing wall is installed on the right side.

### Standard Features

- Built-in 100 micron strainer stops particles before they enter the waterway
- Waterways Are Lead-Free In Materials & Construction
- Stainless Steel Top
- Flexible Bubbler Guard
- Heavy Duty Galvanized Steel Frame
- High Efficiency Cooling Tank and Coil
- Refrigerant R-134a
- Push Pad Activation.

### Finishes

- Standard Cabinet Finish: Sandstone powder coated paint on galvanized steel
- Optional finishes at no additional cost: Greystone powder coated paint on galvanized steel
- Optional finishes at additional cost: Stainless Steel, Regency Bronze, and optional powder coated finishes



### Options (at additional cost)

- Apron For Upper Unit
- Stainless steel bubbler
- Glass Fillers (Factory Installed)
- Push Handle (029603-004)
- Push Back (029603-005)
- Push Down (029603-006)

### Installation

- Prior to roughing consult with local, state, and federal codes for proper mounting height.
- Shipped with complete instructions and wall mounting bracket.
- Removable side and front panels provide easy access for installation.



### ADA Compliant



Components in these water coolers are lead free as defined by the Safe Drinking Water Act Amendments of 1986, and the Lead Contamination Control Act of 1988.

**Limited 5-Year Warranty (Continental limits of the United States and Canada only):** Five years on the sealed refrigeration system and most component parts. Detailed warranty certificate enclosed with each water cooler; sample available upon request.

**Export Warranty:** One year on the sealed refrigeration system and most component parts. Four-year replacement contract on sealed refrigeration system. Detailed warranty certificate enclosed with each water cooler; sample copy available upon request.

Models covered by these specifications comply with all known Plumbing Codes. Listed by Underwriters' Laboratories. Certified by Canadian Standards Association, and Certified to Air Conditioning and Refrigeration Institute Standard 1010.



Model	50° F Drinking Water 90° F Ambient Air Temp*				115 Volts, 60 Hz				Cabinet Color Option	Net Wt. Approx.
	Rated Capacity GPH	Base Rate GPH	Pre-Cooler	HOT N COLD™ Model	Compr HP	Full Load Amps	Rated Watts	Glass Filter Acc. Option		
P8AMSL	8.0	8.0	No	No	1/4	4.6	400	Yes	Yes	84 Lbs.
PAMSL			Fountain Only					Yes	Yes	60 Lbs.

\*Air Conditioning and Refrigeration Institute Standard Rating Condition 90° F initial water temperature.



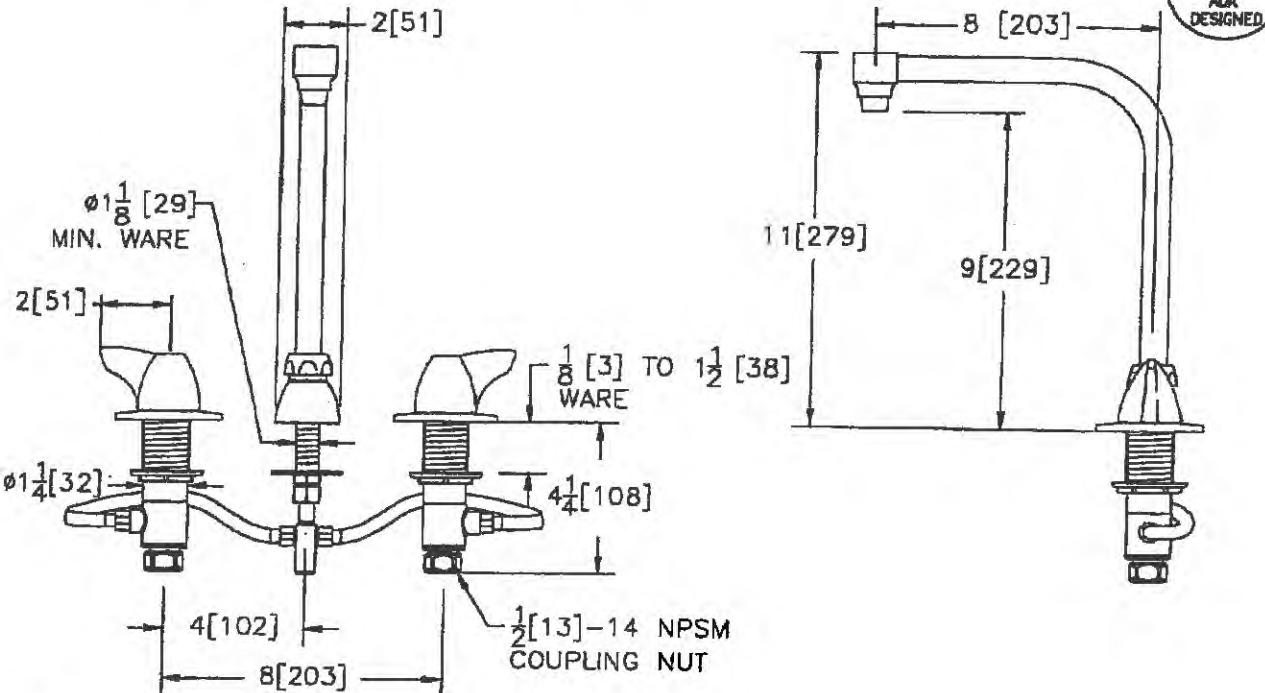
# WIDESPREAD

## Z-831S3

### TAG P-10



**Engineering Specifications:** Zum AquaSpec® Z-831S3  
Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



Note: All dimensions are for reference only. Do not use for pre-plumbing.

#### OPTIONAL ACCESSORIES

Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

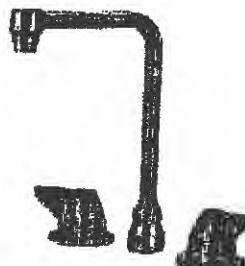
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Phone: 1-716-688-1132 • Fax: 1-716-685-1135 • World Wide Web: [www.zurn.com](http://www.zurn.com)

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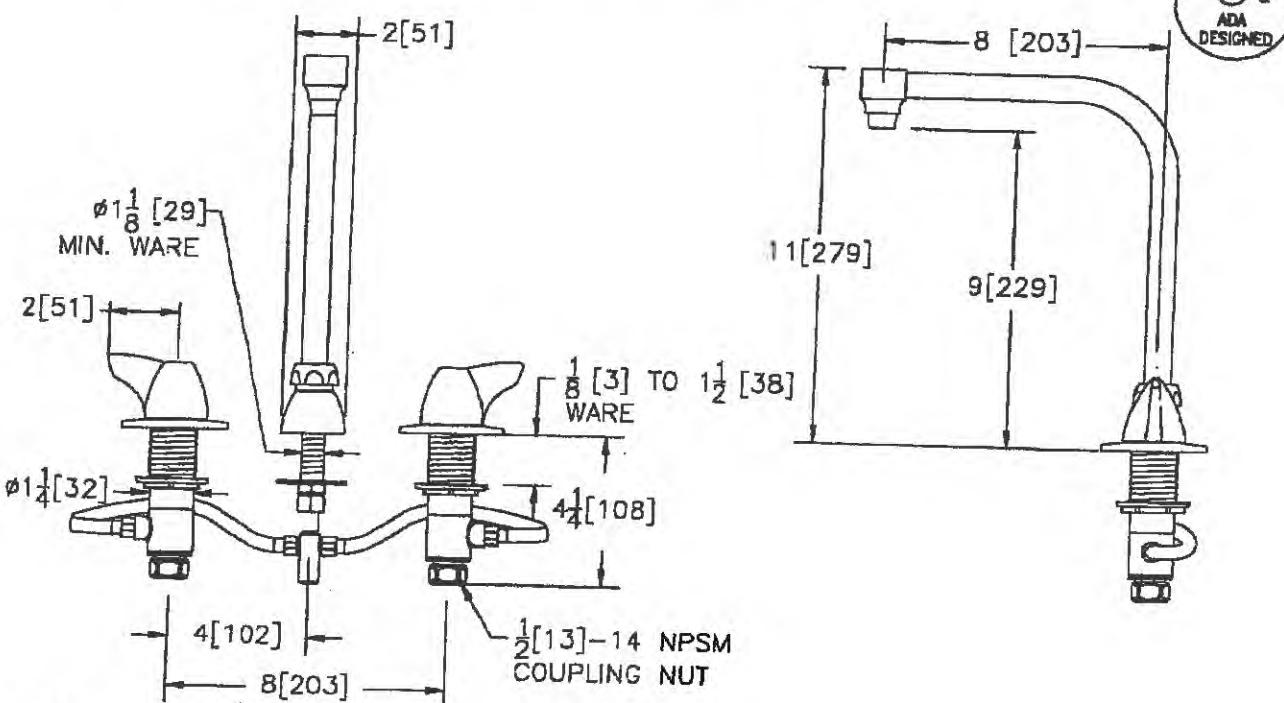


**WIDESPREAD**  
**Z-831S3**  
**TAG P-11**



**Engineering Specifications: Zurn AquaSpec® Z-831S3**

Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" (38mm) thick.



Note: All dimensions are for reference only. Do not use for pre-plumbing

**OPTIONAL ACCESSORIES**

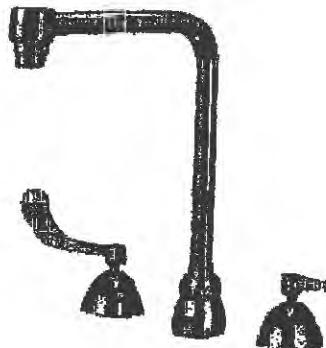
Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hand and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

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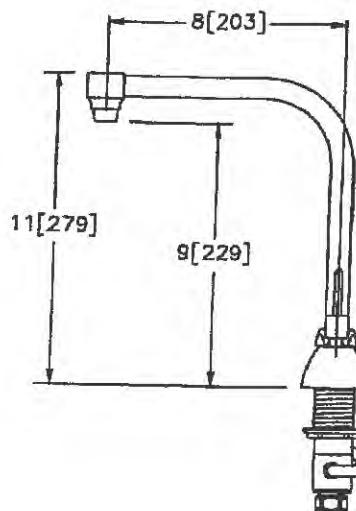
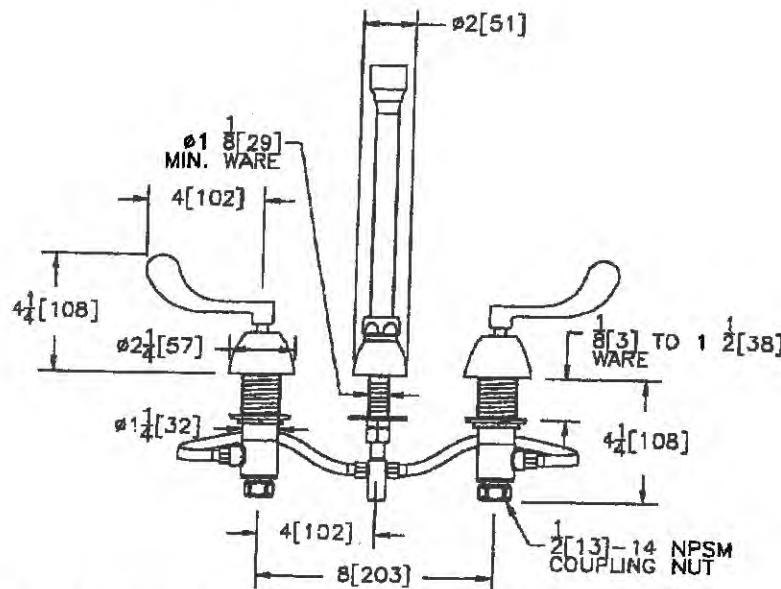
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**WIDESPREAD**  
**Z-831S4**  
**TAG** P-12



**Engineering Specifications:** Zurn AquaSpec® Z-831S4  
 Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], a 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 4" [102mm] vandal-resistant color-coded brass wrist blade handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



Note: All dimensions are for reference only. Do not use for pre-plumbing.

#### OPTIONAL ACCESSORIES

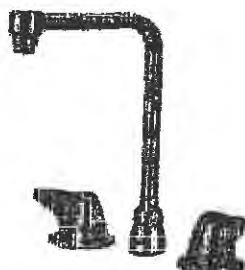
Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow

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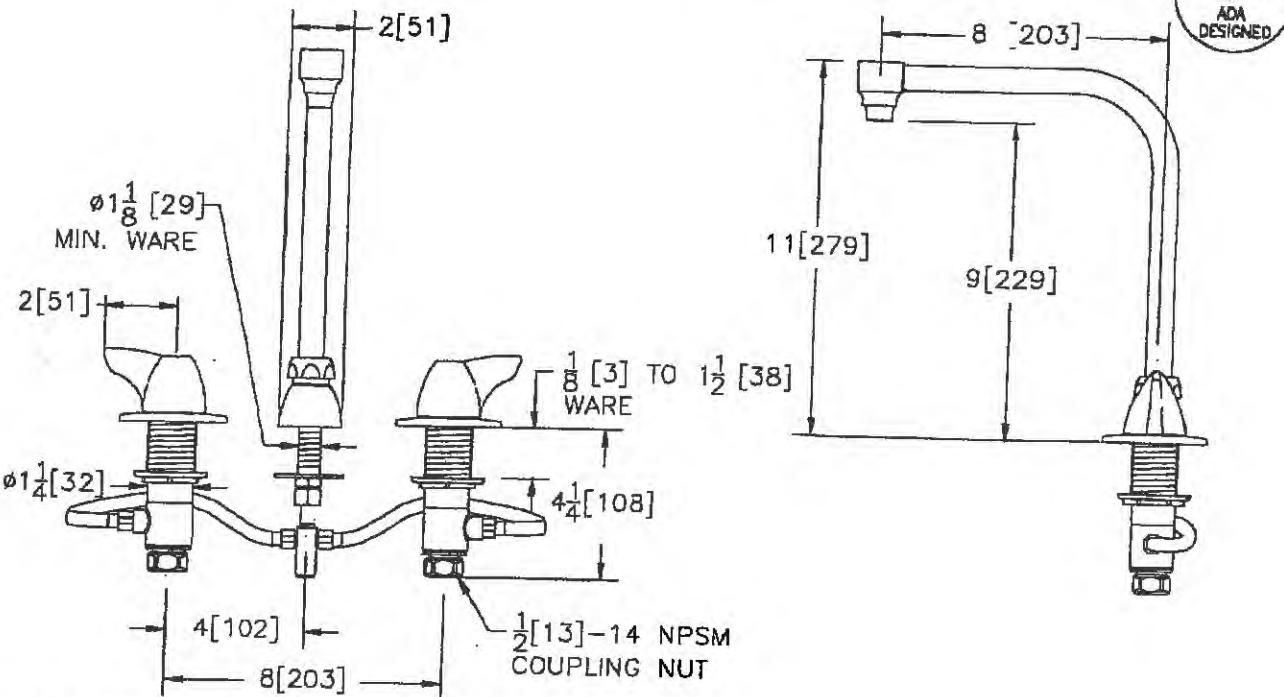


**WIDESPREAD**  
**Z-831S3**  
**TAG P-13**



Engineering Specifications: Zum AquaSpec® Z-831S3

Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



**Note:** All dimensions are for reference only. Do not use for pre-plumbing.

#### **OPTIONAL ACCESSORIES**

Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

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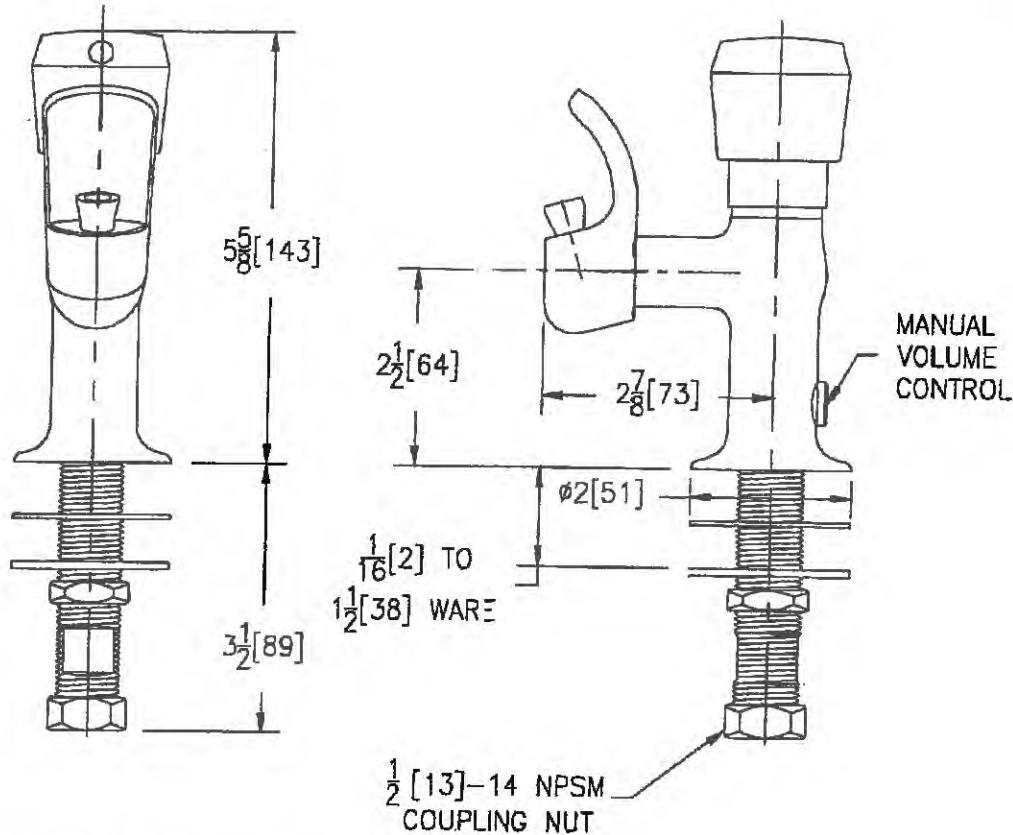
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Rev. B Date: 1/4/01  
Dwg. No. 61328

C.N. No. 86781  
Product No. Z-831S3

**BUBBLER****Z-83600****TAG P-13**

**Engineering Specification: Zum AquaSpec® Z-83600**  
**Polished chrome plated cast brass self-closing bubbler with an angled stream nozzle, a cast brass push handle and a manual volume control.**



*Note: All dimensions are for reference only. Do not use for pre-plumbing.*

#### **OPTIONAL ACCESSORIES**

No Options Required

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## WIDESPREAD

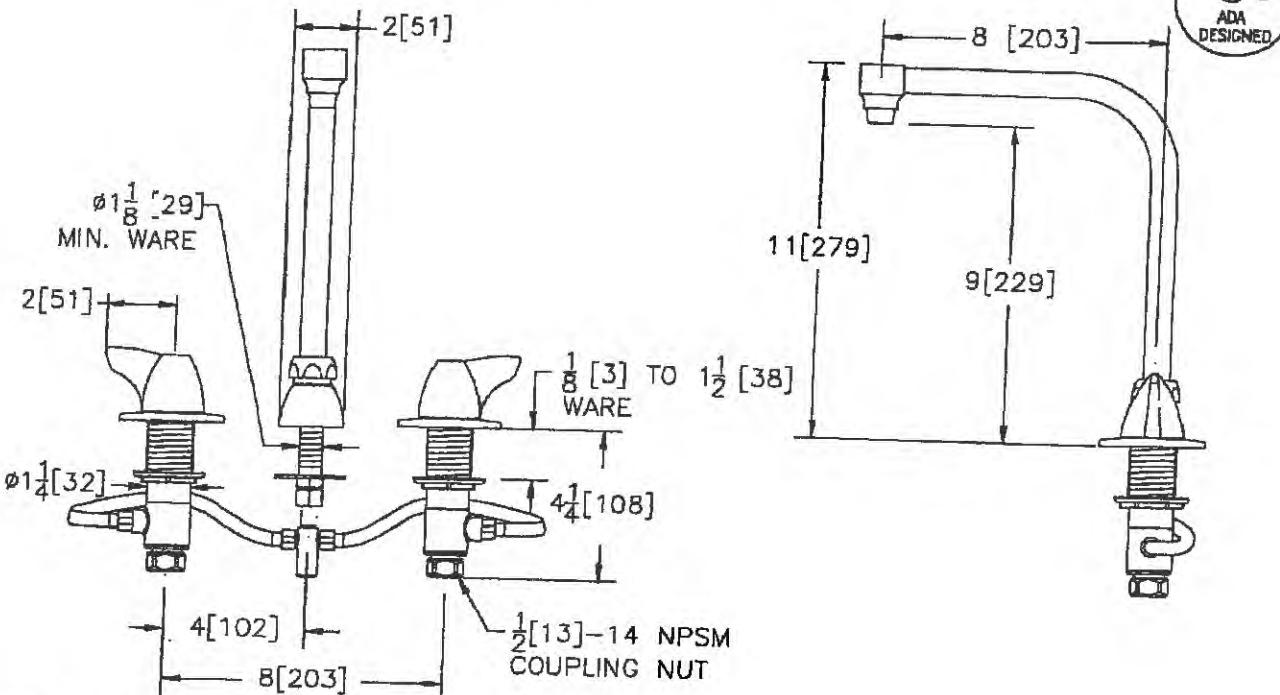
Z-831S3

TAG P-14



## Engineering Specifications: Zurn AquaSpec® Z-831S3

Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSIA112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard laboratory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



Note: All dimensions are for reference only. Do not use for pre-plumbing

## OPTIONAL ACCESSORIES

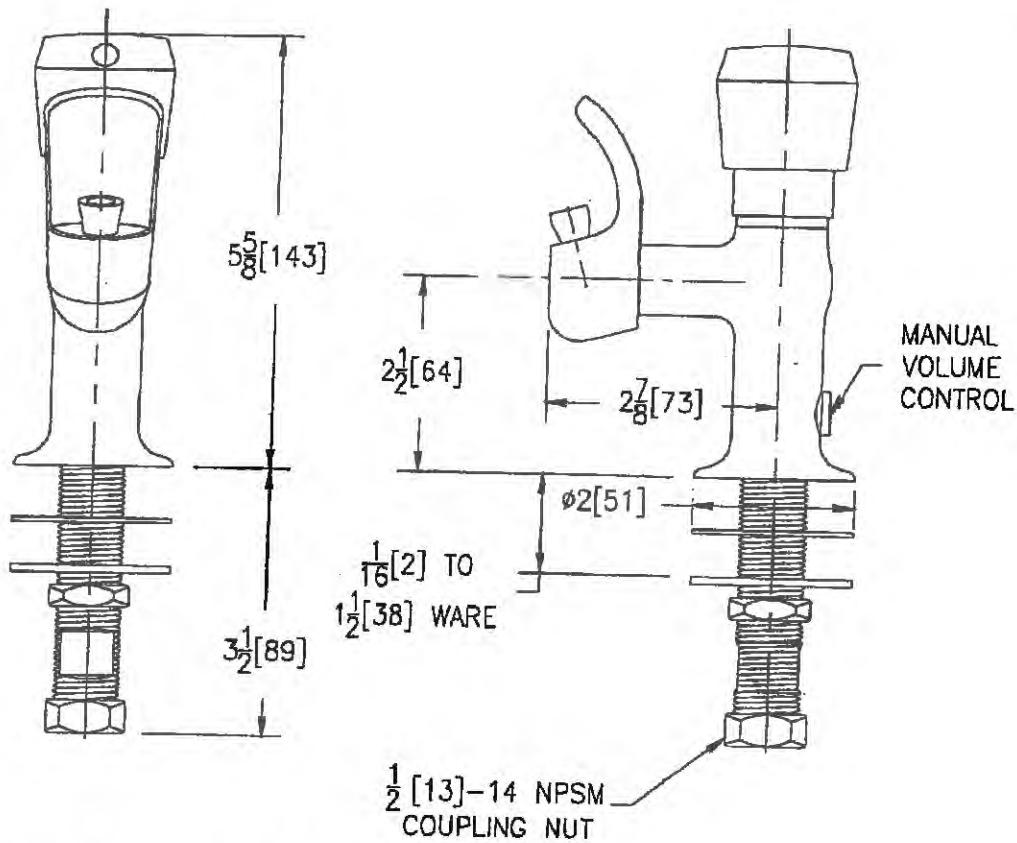
Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

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**BUBBLER**  
**Z-83600**
**TAG P-14**


**Engineering Specification: Zurn AquaSpec® Z-83600**  
 Polished chrome plated cast brass self-closing bubbler with an angled stream nozzle, a cast brass push handle and a manual volume control.



Note: All dimensions are for reference only. Do not use for pre-plumbing

**OPTIONAL ACCESSORIES**

No Options Required

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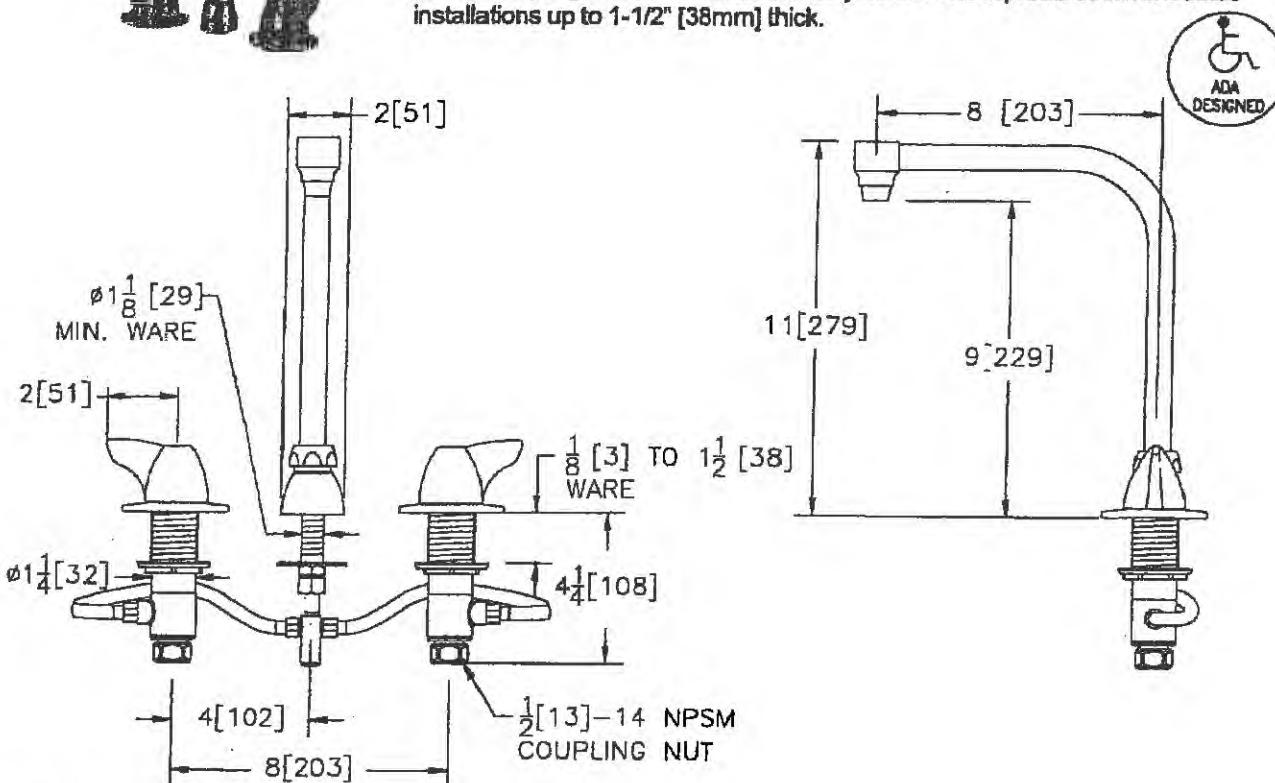
WIDESPREAD

Z-831S3

TAG P-15

**Engineering Specifications: Zurn AquaSpec® Z-831S3**

Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



Note: All dimensions are for reference only. Do not use for pre-plumbing

**OPTIONAL ACCESSORIES**

Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

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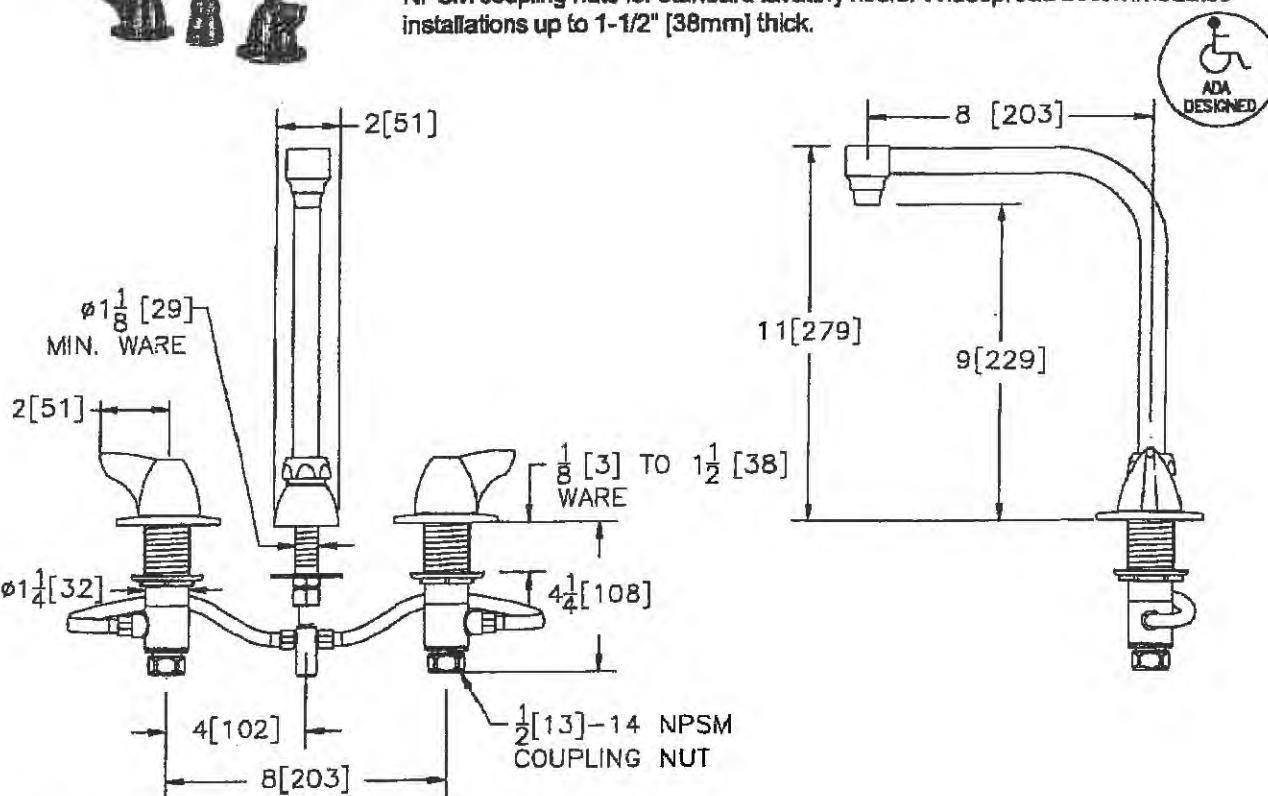
# WIDESPREAD

## Z-831S3

### TAG P-16


**Engineering Specifications:** Zurn AquaSpec® Z-831S3

Polished chrome-plated widespread with adjustable centers from 6" [152mm] to 20" [508mm], an 8" [203mm] bent riser spout and quarter turn ceramic disc cartridges. Unit is furnished with a 2.0 GPM [7.6 L] variable orifice aerator (complying with ANSI A112.18.1 Standard for flow), 2" [51mm] vandal-resistant color-coded brass dome lever handles, mounting hardware and 1/2" [13mm] NPSM coupling nuts for standard lavatory risers. Widespread accommodates installations up to 1-1/2" [38mm] thick.



**Note:** All dimensions are for reference only. Do not use for pre-plumbing

**OPTIONAL ACCESSORIES**

Suffix	Description
-CWO	Cold Water Only
-FC	2.0 GPM [7.6 L] Laminar Flow Control in Base of Spout
-G	1-1/4" [32mm] Grid Strainer Drain
-GH	1-1/4" [32mm] Offset Handicap Grid Drain
-HS	Hose and Spray
-ICT	Inter-connecting Copper Supply Tubes for 8" [203mm] In-line Centers
-P	1-1/4" [32mm] Pop-up Drain
-PT	1-1/4" [32mm] Cast Brass P-Trap with a 7-1/2" [191mm] Long 17-Gauge Wall Bend
-TW	Third Waterway
-2M	2.0 GPM [7.6 L] Vandal-Resistant Male Aerator
-3M	0.5 GPM [1.9 L] Vandal-Resistant Male Aerator
-4M	2.0 GPM [7.6 L] Vandal-Resistant Male Laminar Flow
-5M	2.0 GPM [7.0 L] Male Spray Outlet

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STAINLESS STEEL  
**HAND SINKS**  
**PEDESTAL BASE**



• 7-PS-90 •



7-PS-95



7-PS-99



7-PS-18

Item #: P-18 Qty #: \_\_\_\_\_  
Model #: 7-PS-90  
Project #: \_\_\_\_\_

Keyhole Bracket for  
easier installation  
and greater stability.



#### FEATURES:

One piece Deep Drawn sink bowl design.

Sink bowl is 10" x 14" x 5".

(\*7-PS-18 sink bowl is 14" x 16" x 6 1/2")

All sink bowls have a large liberal radii with a minimum dimension of 2" and are rectangular in design for increased capacity.

Keyhole wall mount bracket.

Stainless steel basket drain 1-1/2" IPS.

Flush-to-wall unit.

"Hands Free" splash mounted gooseneck faucet furnished with aerator.

Foot Pedal Valve for water operation.

Easy removable panel to access hidden plumbing.

#### Specific Features:

7-PS-95 towel dispenser with hinged towel box. Unit uses standard C-fold towels. Liquid Soap dispenser.

7-PS-99 towel dispenser & soap dispenser plus trash receptacle & cabinet storage.

#### CONSTRUCTION:

All TIG welded.

Welded areas blended to match adjacent surfaces and to a satin finish.

Die formed Countertop Edge with a No-Drip offset.

One sheet of stainless steel is used to minimize seams.

#### MATERIAL:

Heavy gauge type 304 series stainless steel.

Wall mounting bracket is galvanized and of offset design.

All fittings are brass / chrome plated unless otherwise indicated.

#### MECHANICAL:

Faucet supply is 1/2" IPS male thread hot and cold.

Single pedal mixing valve with brass & rough chrome plated with built in check valve. Front operated temperature adjustment.

(Contractor on site must connect faucet to foot pedal operated valves.)

**FOR REPLACEMENT FAUCET, DRAINS  
AND ACCESSORIES**

**SEE PAGE A-12**



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smartlab@advancetabco.com



# SERVICE SINK FAUCET

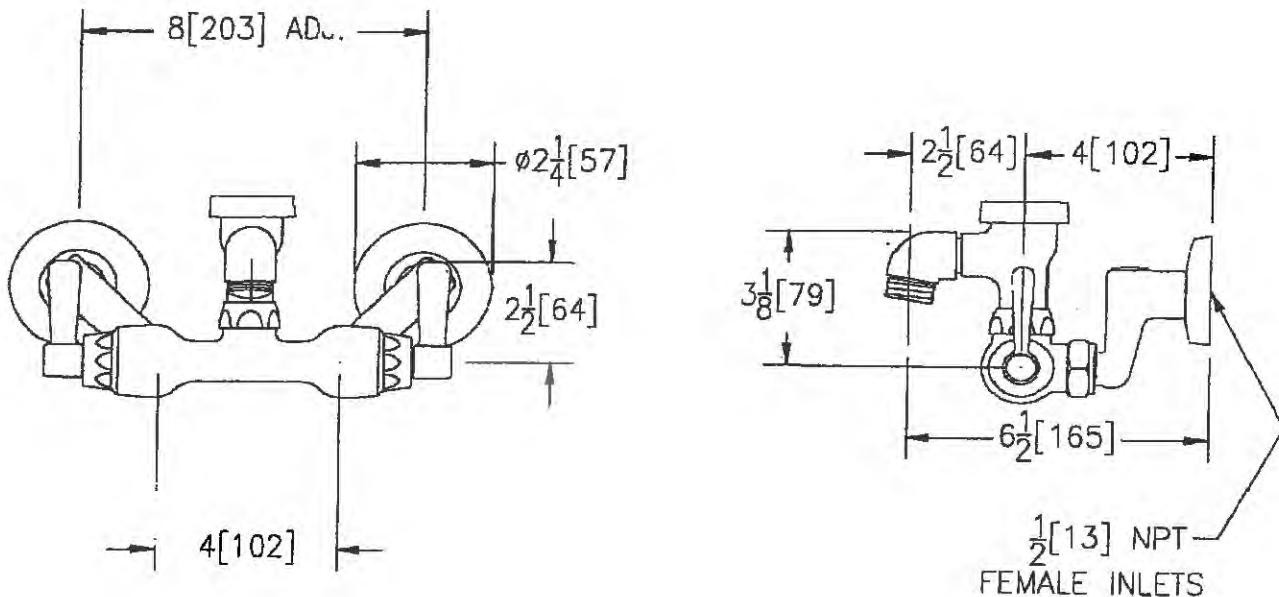
## Z-841L1

**TAG HB-2**



### Engineering Specifications: Zum AquaSpec® Z-841L1

Polished chrome-plated cast brass service sink faucet with quarter turn ceramic disc cartridges, 2-1/2" [64mm] long swivel inlets (with integral stops) providing adjustable centers from 4" [102mm] to 8-3/8" [213mm] and a 2-1/2" [64mm] vacuum breaker spout with an integral 3/4" [19mm] hose-threaded outlet. Unit is provided with 2-1/2" [64mm] vandal-resistant color-coded brass lever handles.



Note: All dimensions are for reference only. Do not use for pre-plumbing

### OPTIONAL ACCESSORIES

Suffix	Description
-SSI	3/8" [10mm] Short Swivel Inlets
-WHK	Wall Hook
-5H	5' [152cm] Vinyl Hose

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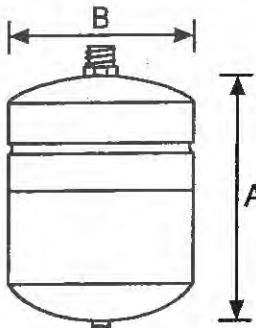
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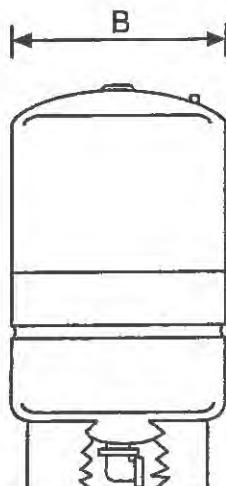
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# THERM-X-TROL®

## Thermal Expansion Absorbers, (Non-ASME) Series



ST-5, ST-12



ST-25V through ST-210V



### In-Line Models

Model No.	Tank Vol.		Max. Accept. Factor	A Height		B Diameter		Sys. Conn.	Ship Wt.	
	Lit.	Gal.		cm	ins.	cm	ins.		kg	lbs.
ST-5	8	2.0	0.45	321	12 <sup>5</sup> / <sub>8</sub>	203	8	3/4	2.3	5
ST-12	17	4.4	0.73	381	15	279	11	3/4	4.0	9

### Stand Models

Model No.	Tank Vol.		Max. Accept. Factor	A Height		B Diameter		Sys. Conn.	Ship Wt.	
	Lit.	Gal.		cm	ins.	cm	ins.		kg	lbs.
ST-25V	39	10.3	1.00	489	19 <sup>1</sup> / <sub>4</sub>	391	15 <sup>3</sup> / <sub>8</sub>	1	10.5	23
ST-30V	53	14.0	0.81	605	23 <sup>7</sup> / <sub>8</sub>	391	15 <sup>3</sup> / <sub>8</sub>	1	11.4	25
ST-42V	76	20.0	0.57	802	31 <sup>5</sup> / <sub>8</sub>	391	15 <sup>3</sup> / <sub>8</sub>	1	15.0	33
ST-60V	129	34.0	1.00	913	29 <sup>5</sup> / <sub>8</sub>	559	22	1 <sup>1</sup> / <sub>4</sub>	28.0	61
ST-80V	167	44.0	0.77	913	36	559	22	1 <sup>1</sup> / <sub>4</sub>	31.0	69
ST-180V	235	62.0	0.55	1186	46 <sup>3</sup> / <sub>4</sub>	559	22	1 <sup>1</sup> / <sub>4</sub>	41.0	92
ST-210V	326	86.0	0.54	1199	47 <sup>1</sup> / <sub>4</sub>	660	26	1 <sup>1</sup> / <sub>4</sub>	56.0	123

### Maximum Operating Conditions

Operating Temperature	200°F (93°C)
Working Pressure	150 PSIG (10.5 kg/cm <sup>2</sup> )

### Specifications

Description	Standard Construction
Standard Factory Pre-charge	40 PSIG (2.8 kg/cm <sup>2</sup> )
System Connection	Brass (ST5,12)
	Stainless Steel (Stand Models)
Diaphragm Material	Butyl
Liner Material	Polypropylene

All dimensions and weights are approximate.

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Location \_\_\_\_\_

Contractor P.O. No. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sales Representative \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Model No. Ordered \_\_\_\_\_

Engineer \_\_\_\_\_

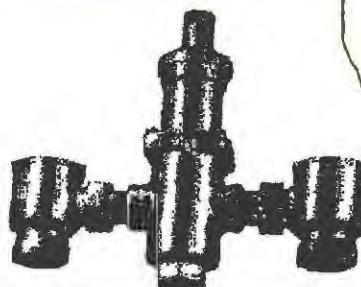
# POWERS

A WATTS INDUSTRIES CO.

## PRODUCT SPECIFICATION

430 Hydroguard Master Mixing Valve  
Models 431, 432, 433, and 434

TAG - TMV



### DESCRIPTION

The Series 430 Hydroguard thermostatically blends hot and cold water to deliver blended water at the desired temperature, quickly compensating for temperature variations due to changes in inlet temperature, pressure or flow, and reduces flow upon water supply failure. The valve is available in three finishes: rough bronze, rough chrome, or polished chrome, and is also available in a variety of sizes, to suit virtually any application.

### FUNCTION

The Series 430 Hydroguard's advanced thermal actuator senses and adjusts the outlet water temperature to variations in temperature and/or pressure. The delivery temperature is adjustable between 40°-160°F when tested according to ASSE 1017.

The dirt and lime resistant poppet and seat design ensures minimal maintenance, while the union inlets allow a variety of piping schemes. Heavy duty combination strainer check-stops, included with each valve, prevent crossover and allow easy shutdown of the unit for removal or servicing, while self-aligning bronze trim and seats prevent binding. Finally, the valve features a tamper-resistant temperature adjustment control.

### SIZING

Table 1, Capacity Tables, present the Hydroguard discharge capacity in gpm and lpm for various pressure differentials (the difference between the lowest inlet pressure and the discharge pressure at the Hydroguard).

Figure 1 (refer to next page), Flow Rate in gpm, graphs the capacities at the pressure differentials shown in Table 1, Capacity Tables.

Table 1 - Capacity Tables

Flow Capacity in US gpm at 50-50 Mixed Ratio

Model	Min. Flow Rate*	Min. Flow to ASSE 1017	Pressure Drop Across Valve in psi							
			5	10	20	30	45	60	75	100
431	0.5 gpm	4.0 gpm	7.5	11.0	16.0	20.0	25.0	29.0	33.0	38.5
432	0.5 gpm	7.0 gpm	15.0	20.0	30.0	36.0	45.0	52.0	58.0	67.0
433	0.5 gpm	10 gpm	24	34	51	64	80	93	105	123
434	0.5 gpm	15 gpm	40	55	82	101	125	146	165	190

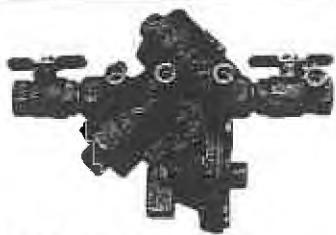
\* Minimum flow when Hydroguard is installed at or near hot water source with recirculated tempered water with continuously operating recirculating pump.

Flow Capacity in lpm at 50-50 Mixed Ratio

Model	Min. Flow Rate*	Min. Flow to ASSE 1017	Pressure Drop Across Valve in kPa							
			34	69	138	207	310	414	517	689
431	1.89 lpm	15 lpm	28.4	41.6	60.4	76.0	94.6	109.8	125.0	145.7
432	1.89 lpm	26 lpm	56.8	76.0	113.5	136.2	170.3	197.0	219.5	253.5
433	1.89 lpm	38 lpm	91	129	193	242	303	352	397	466
434	1.89 lpm	57 lpm	151	208	310	382	473	553	625	719

\* Minimum flow when Hydroguard is installed at or near hot water source with recirculated tempered water with continuously operating recirculating pump.

# SPECIFICATION SUBMITTAL SHEET



## FEATURES

Sizes:  3/4"  1"  1 1/4"  1 1/2"  2"

Maximum working water pressure	175 PSI
Maximum working water temperature	180°F
Hydrostatic test pressure	350 PSI
End connections Threaded	ANSI B1.20.1

## OPTIONS

(Suffixes can be combined)

- with full port QT ball valves (standard)
- L - less ball valves
- U - with union ball valves
- MS - with integral relief valve monitor switch
- P - for reclaimed water systems
- S - with bronze "Y" type strainer
- BMS - with battery operated monitor switch
- FDC - with fire hydrant connection; 2" only
- TCU - with test cocks up
- V - with union swivel elbows
- SE - with street elbows
- RV - with test cocks supplied on the opposite side
- FT - with integral male 45° flare SAE test fitting

## ACCESSORIES

- Air gap (Model AG)
- Repair kit (rubber only)
- Thermal expansion tank (Model WXTP)
- Soft seated check valve (Model 40)
- Shock arrester (Model 1250)
- QT-SET Quick Test Fitting Set

## APPLICATION

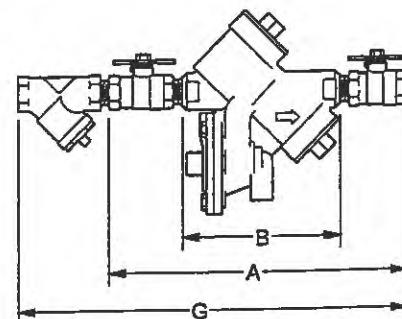
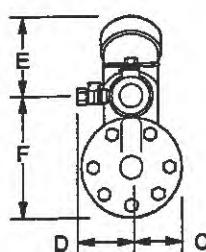
Designed for installation on potable water lines to protect against both backsiphonage and backpressure of contaminated water into the potable water supply. Assembly shall provide protection where a potential health hazard exists.

## STANDARDS COMPLIANCE

- ASSE® Listed 1013
- IAPMO® Listed
- UL® Classified (less shut-off valves or with OS&Y valves)
- C-UL® Classified
- CSA® Certified
- AWWA Compliant C511
- Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California

## MATERIALS

Main valve body	Cast Bronze ASTM B 584
Access covers	Cast Bronze ASTM B 584
Fasteners	Stainless Steel, 300 Series
Elastomers	Silicone (FDAApproved)
Polymers	Buna Nitrile (FDAApproved)
Springs	Noryl™, NSF Listed
	Stainless steel, 300 series



## DIMENSIONS & WEIGHTS (do not include pkg.)

MODEL SIZE	DIMENSIONS (approximate)												WEIGHT								
	A		A UNION BALL VALVES		B LESS BALL VALVES		C		D		E		F		G		LESS BALL VALVES		WITH BALL VALVES		
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg	lbs.	kg	
3/4	20	12	305	14	356	7 3/4	197	2 1/8	54	3	76	3 1/2	89	5	127	15 3/4	400	10	4.5	12	5.5
1	25	13	330	14 1/4	362	7 3/4	197	2 1/8	54	3	76	3 1/2	89	5	127	17 3/4	451	10	4.5	14	6.4
1 1/4	32	17	432	19	483	10 15/16	278	2 3/4	70	3 1/2	89	5	127	6 3/4	171	22	559	22	10	28	12.7
1 1/2	40	17 3/8	441	20	508	10 15/16	278	2 3/4	70	3 1/2	89	5	127	6 3/4	171	23 1/8	587	22	10	28	12.7
2	50	18 1/2	470	21 1/4	540	10 15/16	278	2 3/4	70	3 1/2	89	5	127	6 3/4	171	25 1/2	648	22	10	34	15.4

DOCUMENT #:

BF-975XL(lg)

REVISION:

6/03