

**Central Carolina Soil Consulting, PLLC**  
1900 South Main Street, Suite 110  
Wake Forest, NC 27587  
919-569-6704/fax 919-569-6703

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May 2, 2018

Harnett County Staff  
Harnett County Environmental Health Department  
307 W Cornelius Harnett Blvd, Lillington, NC 27546  
**RE: Wastewater Daily Flow Calculations**  
Lot 42 Mason Point Subdivision  
88 Old Barn Way  
Fuquay-Varina, Harnett County, North Carolina  
Project #: 2031

Dear Harnett County Staff:

Central Carolina Soil Consulting (CCSC) in conjunction with Bateman Civil Survey Company are proposing wastewater daily flow calculations for a single-family home located at Lot 42 Mason Point Subdivision pursuant to session law 2014-120 and 2013-413. The proposed home will have **5** bedrooms and under the current flow calculations provided in the state rules would have a daily flow of **600** gallons per day. That would be based on 120 gallons per bedroom.

Household flow rates from the 15 NCAC 18A section of the state rules relied on fixture flow rates from 1982, and calculated the flows for common fixtures to established average flows for the purpose of calculating household daily flows and septic system based on those flows. The data for the historic fixture flows was taken from the EPA 2002 Onsite Wastewater Treatment Systems Manual.

The attached spreadsheet contains the flow reducing fixtures for Lot 42 Mason Point Subdivision. The table includes flow rates for the flow reducing fixtures as well as flow rates from the state rules and the percentage of water savings. On average the proposed fixtures provide a 39% savings.

We are requesting a reduction of 20% for the use of low flow fixtures. This will provide an adjusted daily flow of 96 gallons per bedroom per day and a total flow of **480** gallons per day for the proposed 4-bedroom house.

Should you have any questions or comments please contact Matt Burdette at 919-422-2827.

Sincerely,

CENTRAL CAROLINA SOIL CONSULTING PLLC

BATEMAN CIVIL SURVEY COMPANY



Matt Burdette  
Environmental Specialist



Tom Spieght, P.E.  
(seal)

Attachments



Lot 42 Mason Pointe						
	Item		Gal/min. or flush	Number of Fixures	Base Flow From 1982	Percent Water Savings
Bath 2	Tub/Shower Trim	Moen T183ep	1.75 gal/minute	1	5.5 gal/minute	68%
	Lavatory Faucet	Moen 4925	1.5 gal/minute	1	3.0 gal/minute	50%
Powder	Lavatory Faucet	Moen 4925	1.5 gal/minute	1	3.0 gal/minute	50%
Master Bath	Shower Trim	Moen T182ep	1.75 gal/minute	1	5.5 gal/minute	68%
	Lavatory Faucet	Moen 4925	1.5 gal/minute	2	3.0 gal/minute	50%
	Tub	Fill & Release	Fill & Release	1	Fill & Release	0%
Kitchen	Kitchen Sink Faucet	Moen 7430	1.5 gal/minute	1	3.0 gal/minute	50%
	Dishwasher	Whirlpool WDT710PAHZ	*3.5 gal/load (Energy Star)	1	10.0 gal/load	65%
Bedroom Bath 5	Tub/Shower Trim	Moen T183ep	1.75 gal/minute	1	5.5 gal/minute	68%
	Lavatory Faucet	Moen 4925	1.5 gal/minute	1	3.0 gal/minute	50%
Toilets	2, Master, Powder, 5	Gerber 21-912	1.28 gal /flush	4	3.5 gal/minute	63%

FIXTURES	TOILET	FAUCET	SHOWER	LEAK	BATH	OTHER	DISHWASHER	LAUNDRY	TOTALS
PERCENT OF HOUSE HOLD WATER USE	24%	20%	20%	12%	3%	3%	2%	16%	100%
GALLONS PER DAY (600 BASE)	144	120	120	72	18	18	12	96	600
PERCENT OF SAVINGS FROM WATER SAVING FIXURES	63%	50%	68%	0%	0%	0%	0%	0.0%	39%
ADJUSTED FLOW (GALLONS)	53	60	38	72	18	18	12	96	367



Buy it for looks. Buy it for life.®

# Specifications

## DESCRIPTION

- Metal construction with various finishes identified by suffix
- 1/2" IPS connections
- Includes metal pop-up type waste assembly

## OPERATION

- Lever style handles with hot and cold color indicators
- Hot side counterclockwise to open (clockwise to close)
- Cold side clockwise to open (counterclockwise to close)

## FLOW


- Flow is limited to 1.5 gpm max (5.7L/min) at 60 psi, for products made before October 2008 flow is limited to 2.2 gpm max (8.3 L/min)

## CARTRIDGE

- 1224 cartridge design
- Nonmetallic and stainless steel material

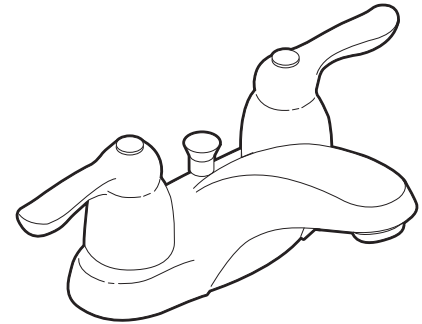
## STANDARDS

- Third party certified to WaterSense,® CSA B125.1, ASME A112.18.1, ANSI A117.1 and all applicable requirements referenced therein.
- Certified to ANSI/NSF 61/9
- Contains no more than 0.25% weighted average lead content
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act

- **ADA**  for lever handles

## WARRANTY

- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations



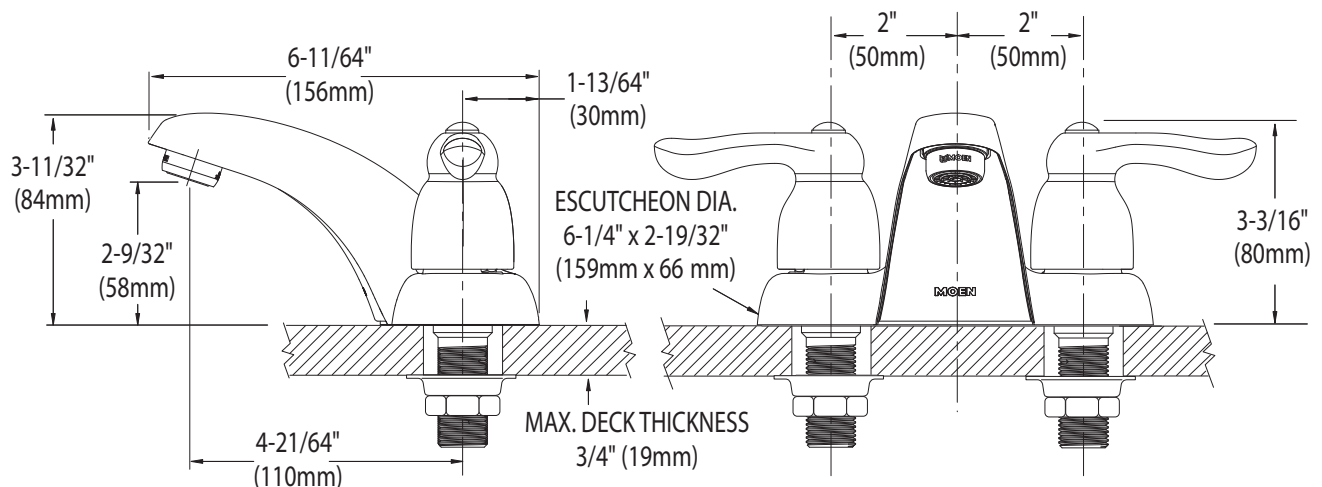
## CHATEAU® Two-Handle Lavatory Faucet

Models: 4925 series

**With 50/50 Waste Assembly  
Bulk Pack (12 per Carton)**

Model: 64925 series

**NOTE:** DESIGNED TO BE INSTALLED THROUGH  
3 - 1" MIN. DIA. HOLES 2" ON CENTER



## CRITICAL DIMENSIONS

(DO NOT SCALE)



Buy it for looks. Buy it for life.®

*There is more than 1 version of this model.  
Page down to identify the version you have.*

**DESCRIPTION**

- Metal construction with various finishes identified by suffix
- Includes non-metallic showerhead, arm, flange and non-metallic diverter tub spout

**OPERATION**

- Handle operates counterclockwise through a 270° arc with off at 6 o'clock and maximum hot at the 9 o'clock position. Shut off in clockwise direction
- Adjustable temperature limit stop to control maximum hot water temperature
- Pressure balancing mechanism maintains selected discharge temperature to ± 3°

**FLOW**

- Showerhead is limited to 2.5 gpm (9.5 L/min) at 80 psi
- EP suffix models are limited to 1.75 gpm (6.6 L/min) at 80 psi
- NH suffix models contain no showerhead

**CARTRIDGE**

- 1222 cartridge design
- Accommodates back to back installations
- Nonmetallic/nonferrous and stainless steel material

**STANDARDS**

- Third party certified to meet ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- EP suffix models are third party certified to WaterSense®

- **ADA** for lever handle

**WARRANTY**

- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations

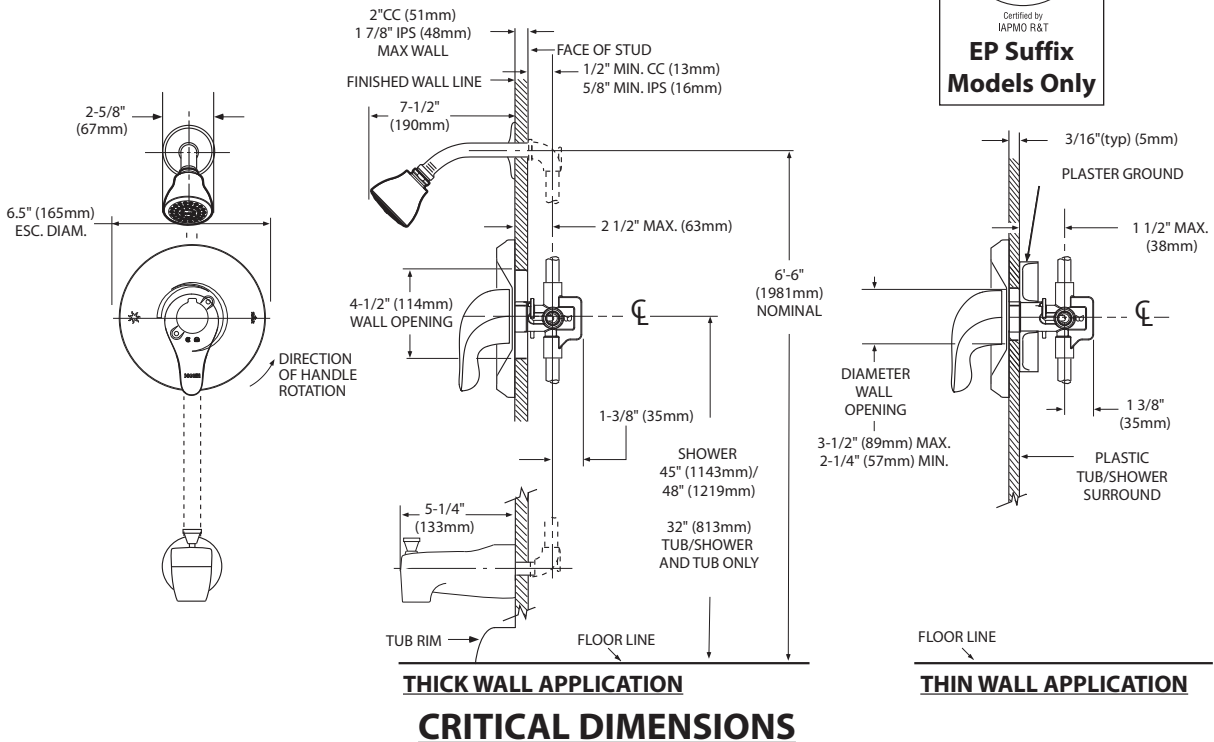
# Specifications



**CHATEAU® POSI-TEMP®  
Single-Handle Tub/Shower Trim Kit**

- Models:** TL181 series - valve trim only  
(Bulk Packed 12 per carton)  
TL182 series - shower trim only  
(Bulk Packed 12 per carton)  
TL183 series - tub/shower trim  
(Bulk Packed 12 per carton)

- Valves:** 62300 series  
2500 series





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- Includes non-metallic showerhead, arm, flange and non-metallic diverter tub spout

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- **ADA** for lever handle

## WARRANTY

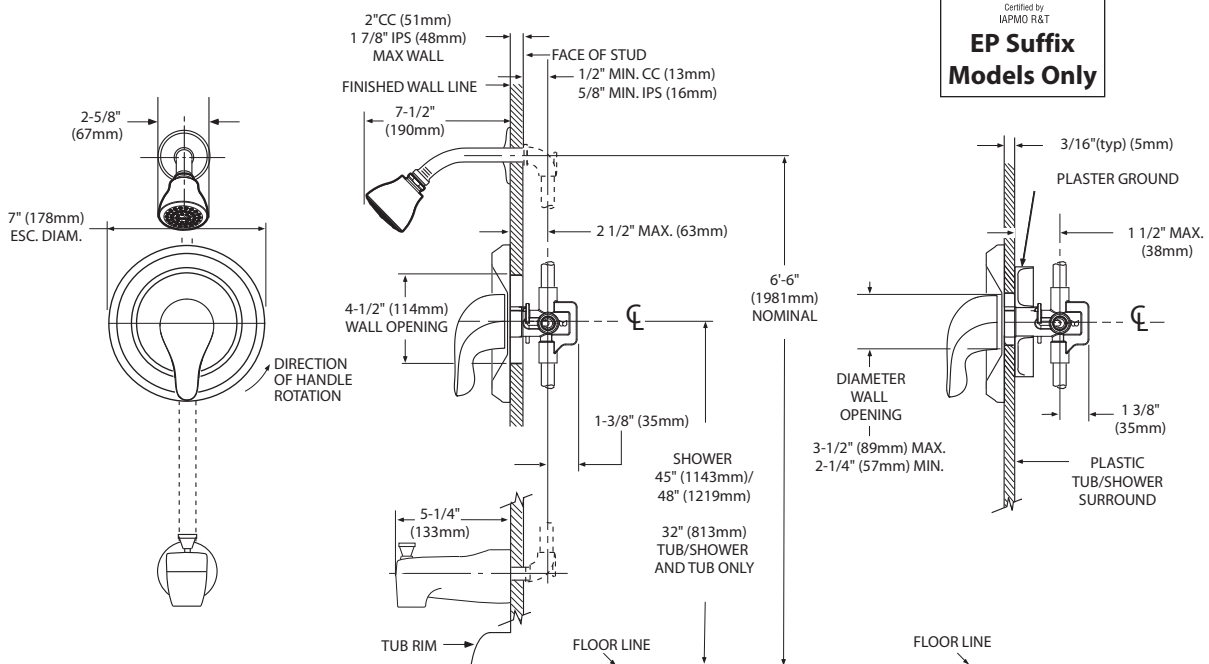
- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations



## CHATEAU® POSI-TEMP® Single-Handle Tub/Shower Trim Kit

- Models:** TL181 series - valve trim only  
(Bulk Packed 12 per carton)  
TL182 series - shower trim only  
(Bulk Packed 12 per carton)  
TL183 series - tub/shower trim  
(Bulk Packed 12 per carton)

- Valves:** 62300 series  
2500 series



## CRITICAL DIMENSIONS

(DO NOT SCALE)



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# Specifications

## FAUCET DESCRIPTION

- Metal construction with various finishes identified by suffix
- Flexible supplies with 3/8" compression fittings
- Includes Protégé side spray with Hydrolock® quick connect system

## OPERATION

- Lever style handle
- Temperature controlled by 180° arc of handle travel
- Will operate with less than 5lbs. of force

## FLOW

- Spout flow is limited to 1.5 gpm (5.7 L/min) at 60 psi

## CARTRIDGE

- 1255™ Duralast™ cartridge

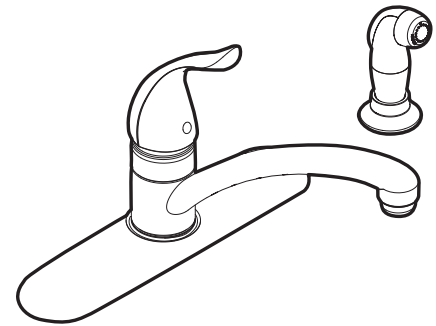
## STANDARDS

- Third party certified to IAPMO Green, ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein including NSF 61/9
- Meets Calgreen and Georgia SB370 requirements
- Contains no more than 0.25% weighted average lead content
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act

- **ADA**  for lever handle

## WARRANTY

- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations

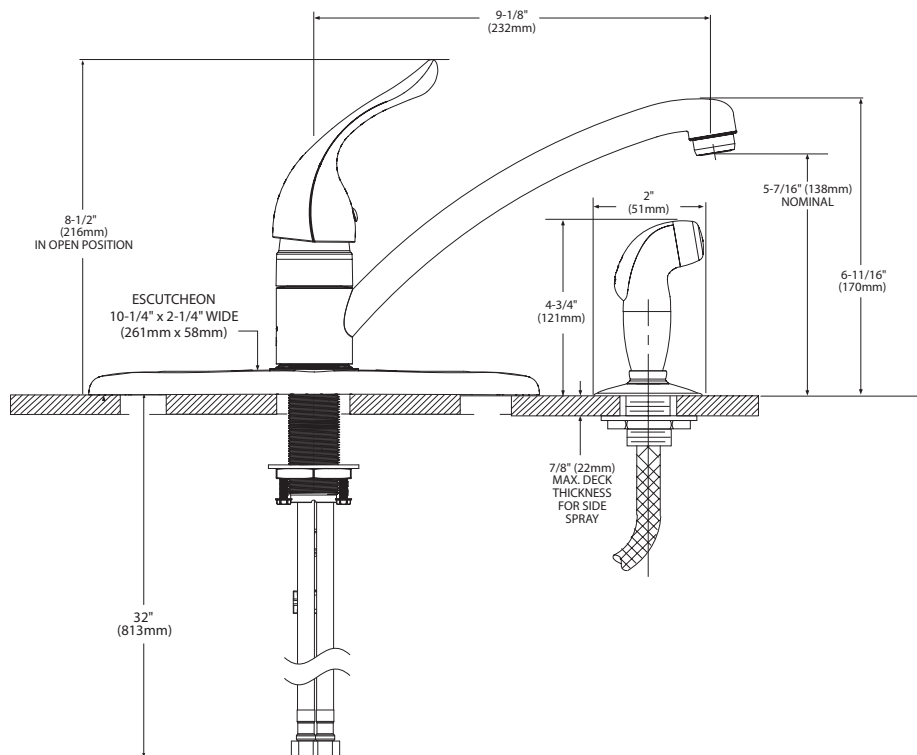


## CHATEAU® Single-Handle Kitchen Faucet

**Models:** 7430 series with spray  
7425 series less spray

**Bulk Model:** 67430 series with spray  
67425 series less spray  
**(bulk packed 12 per carton)**

**NOTE:** DESIGNED TO INSTALL THROUGH  
4 HOLES 1-1/4" (32mm) MIN. DIA. AND 4" (102mm)  
ON CENTER.



## CRITICAL DIMENSIONS

(DO NOT SCALE)

**FOR MORE INFORMATION CALL: 1-800-BUY-MOEN**

**www.moen.com**

Rev. 6/13

Hydrolock® is a registered trademark of COOPER STANDARD AUTOMOTIVE INC.



Buy it for looks. Buy it for life.®

# Specifications

## FAUCET DESCRIPTION

- Metal construction with various finishes identified by suffix
- 1/2" IPS connections will accept standard ball nose connection for 3/8" tubing
- Includes Protégé side spray with Hydrolock® quick connect system

## OPERATION

- Lever style handle
- Temperature controlled by 180° arc of handle travel
- Will operate with less than 5lbs. of force


## FLOW

- Aerator is limited to 2.0 gpm (7.6 L/min) at 60 psi

## CARTRIDGE

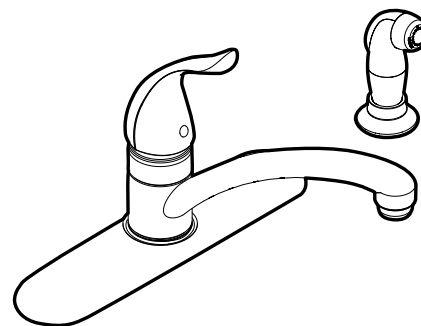
- 1225 cartridge design
- Nonmetallic/nonferrous and stainless steel material

## STANDARDS

- Third party certified to CSA B125.1, ASME A112.18.1, ICC A117.1 and all applicable requirements referenced therein including NSF 61/9
- Contains no more than 0.25% weighted average lead content
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- **ADA**  for lever handle

## WARRANTY

- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations



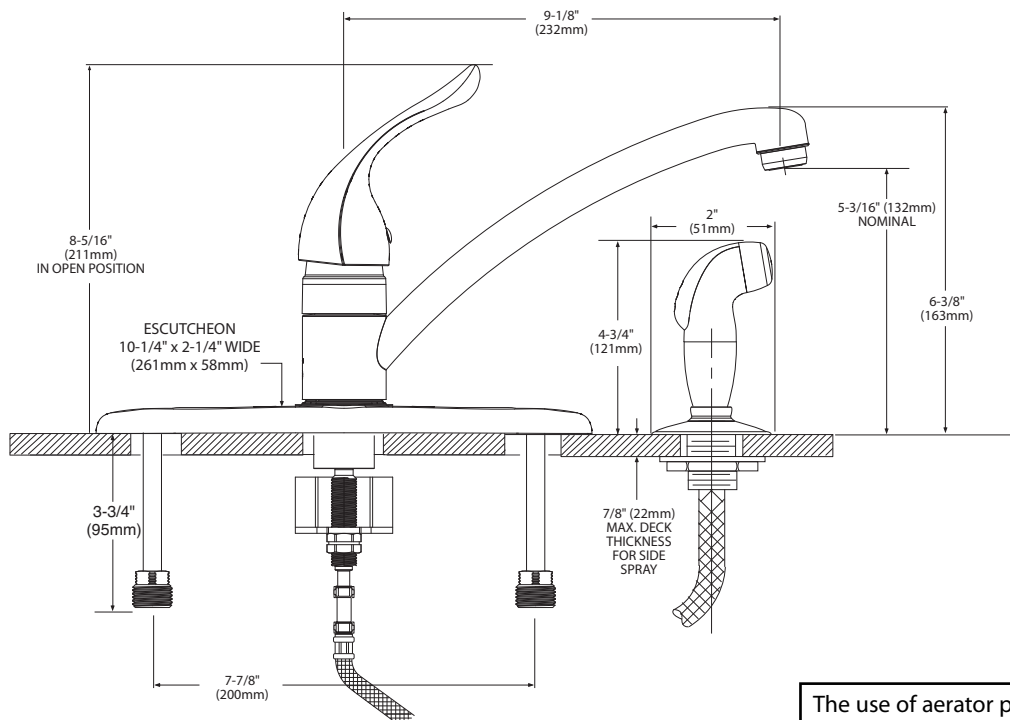
## CHATEAU®

### Single-Handle Kitchen Faucet

**Models:** 7430 series with spray  
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**Bulk Model:** 67430 series with spray  
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**(bulk packed 12 per carton)**

**NOTE:** DESIGNED TO INSTALL THROUGH  
4 HOLES 1-1/4" (32mm) MIN. DIA. AND 4" (102mm)  
ON CENTER.



## CRITICAL DIMENSIONS

(DO NOT SCALE)

The use of aerator part 116711 reduces flow to a maximum of 1.5 gpm (5.7L/min.)





# Undercounter Dishwasher

## PRODUCT MODEL NUMBERS

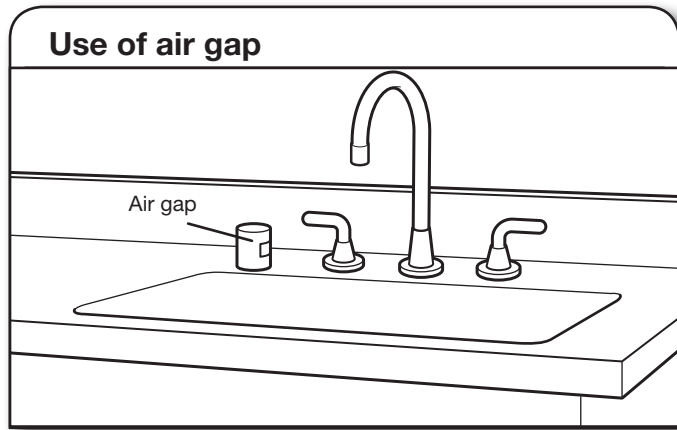
WDF110PAB  
WDF111PAB  
WDF120PAF  
WDF121PAF  
WDF130PAH  
WDF131PAH

WDF320PAD  
WDF330PAH  
WDF331PAH  
WDF520PAD  
WDF540PAD  
WDF545PAF

WDT710PAH  
WDT720PAD  
WDT730PAH  
WDT735PAG  
WDT735PAH

## DRAIN REQUIREMENTS

- A new drain hose is supplied with your dishwasher. If drain hose is not long enough, use a new drain hose with a maximum length of 12 ft (3.7 m) that meets all current AHAM/IAPMO test standards, is resistant to heat and detergent, and fits the 1" (25 mm) drain connector of the dishwasher. See the "Tools and Parts" section at the front of the guide for part details and orders.
- Make sure to connect drain hose to waste tee or disposer inlet above drain trap in house plumbing and 20" (508 mm) minimum above the floor. It is recommended that the drain hose either be looped up and securely fastened to the underside of the counter or be connected to an air gap.
- Make sure to use an air gap if the drain hose is connected to house plumbing lower than 20" (508 mm) above subfloor or floor.



- If required, the air gap should be installed in accordance with the air gap installation instructions. When you are connecting the air gap, a rubber hose (not provided) will be needed to connect to the waste tee or disposer inlet.
- Use 1/2" minimum I.D. drain line fittings.

## WATER SUPPLY REQUIREMENTS

- This dishwasher has a water heating feature and also requires a connection to a hot water supply line.
- A hot water line with 20 to 120 psi (138 to 862 kPa) water pressure can be verified by a licensed plumber.
- 120°F (49°C) water at dishwasher
- 3/8" O.D. copper tubing with compression fitting or flexible braided water supply line. See the "Tools and Parts" section at the front of the guide for part details and orders.

**NOTE:** 1/2" minimum plastic tubing is not recommended.

- A 90° elbow with 3/4" hose connection with rubber washer. See the "Tools and Parts" section at the front of the guide for part details and orders.
- Do not solder within 6" (152 mm) of the water inlet valve.
- If installed in new construction, make sure the house water supply lines have been flushed prior to connecting the dishwasher to remove any debris that may exist in the supply line.

**NOTE:** If replacing an existing dishwasher, it is recommended to install a new water line (see the "Tools and Parts" section at the front of the guide for part details) and drain hose (supplied) with the new dishwasher.

## ELECTRICAL REQUIREMENTS

### You Must Have:

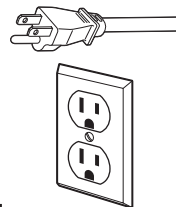
- 120-volt, 60 Hz, AC-only, 15- or 20-amp, fused electrical supply
- Copper wire only
- A maximum of 2 field wiring supply conductors (12 AWG largest size) plus 1 grounding conductor are permitted in the terminal box.

### We Recommend:

- A time-delay fuse or circuit breaker
- A separate circuit

### If Connecting Dishwasher with a Power Cord:

- Use a UL Listed power cord kit marked for use with dishwasher. See the "Tools and Parts" section at the front of the guide for part details and orders.
- Plug into a grounded 3 prong outlet. Outlet must meet all local codes and ordinances.



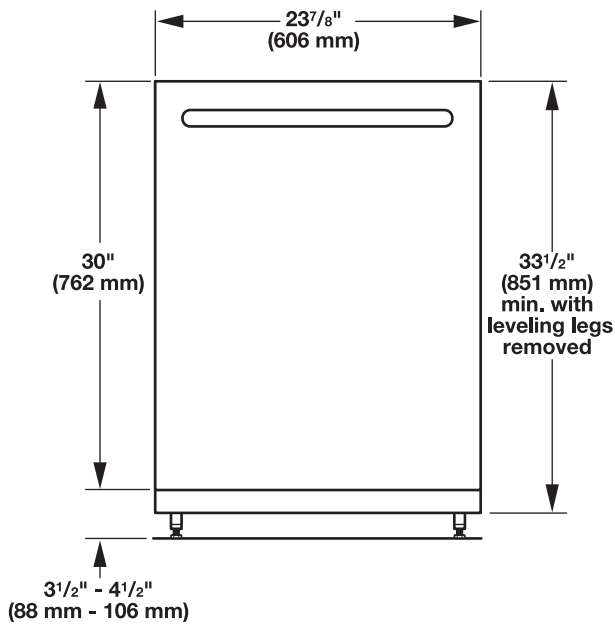
### If Connecting Dishwasher with Direct Wiring:

- Use flexible, armored, or nonmetallic sheathed copper wire with grounding wire that meets the wiring requirements for your home and local codes and ordinances.

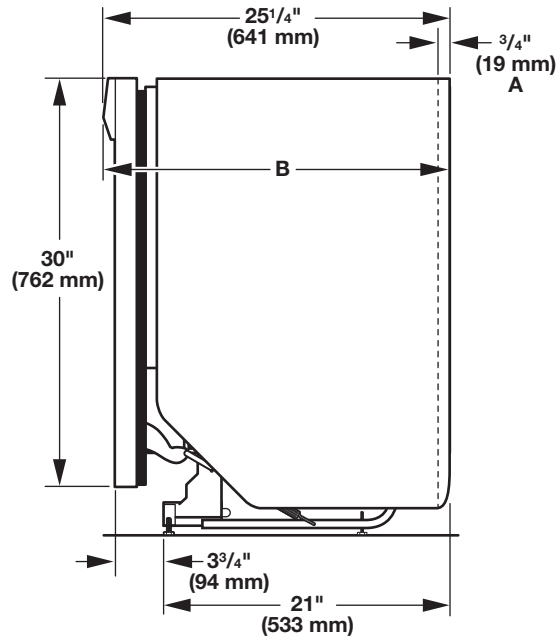


- Use a UL Listed/CSA Approved metallic strain relief.

# PRODUCT AND CABINET OPENING DIMENSIONS

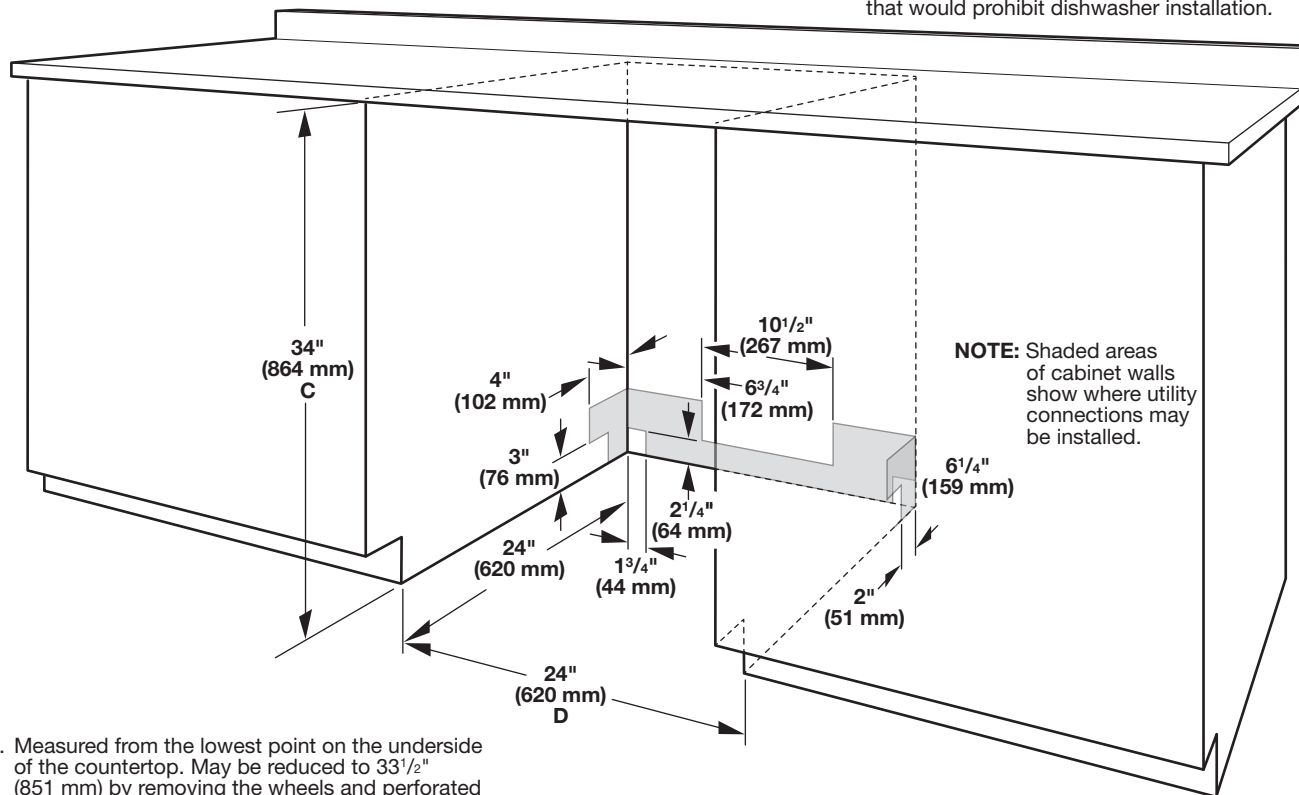


For 4" (100 mm) toe kick, height of cabinet opening is 34<sup>1</sup>/<sub>2</sub>" (863 mm).



- A. Insulation may be compressed (not used on all models).
- B. Door handles may protrude forward of the face of the dishwasher, (varies by model).

Check that all surfaces have no protrusions that would prohibit dishwasher installation.



**NOTE:** Shaded areas of cabinet walls show where utility connections may be installed.

- C. Measured from the lowest point on the underside of the countertop. May be reduced to 33<sup>1</sup>/<sub>2</sub>" (851 mm) by removing the wheels and perforated area of insulation (blanket) on dishwasher.
- D. Minimum, measured from narrowest point of opening.



VITREOUS CHINA

TOILET  
**21-912**

LAVATORIES

TOILETS

BIDETS / URINALS

CAST IRON

# MAXWELL® 1.28 Elongated Toilet

12" Rough-in

### Features:

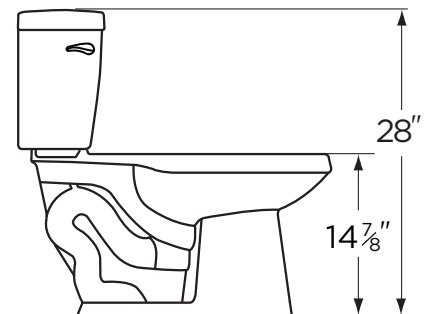
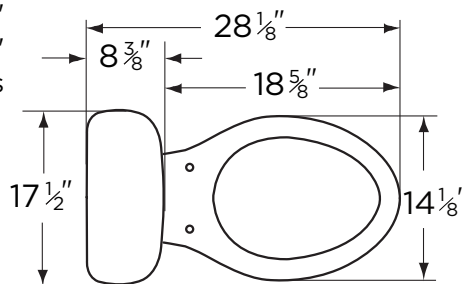
- 1.28 gpf/4.8 Lpf high efficiency two-piece toilet
- Elongated bowl
- Dual-fed siphon jet
- Pilot fill valve
- 3" flush valve
- 2" glazed trapway
- Color matched front tank lever (white only)
- Optional insulated non-sweating tank
- Optional right-handed trip lever
- Available in White, Bone and Biscuit
- 2 bolt caps



**Specifications:** Bowl—#21-962 Elongated Bowl Tank—#28-990  
Seat not included

### Dimensions:

- Height .....28"
- Width ..... 17 1/2"
- Depth ..... 28 1/8"
- Rough-in.....12"
- Water Surface from Rim .....5 7/8"
- Trapway ..... 2"
- Water Surface ..... 10 7/8" x 7 1/2"
- Water Seal .....2 3/8"
- Shipping Weight ..... 79.5 lbs



THIS FIXTURE QUALIFIES ACCORDING TO ASME TEST PROCEDURES AS A HIGH EFFICIENCY WATER CLOSET WITH AN AVERAGE CONSUMPTION OF 1.28 gpf (4.8 Lpf) OR LESS.

HIGH EFFICIENCY TOILET  
**HET**

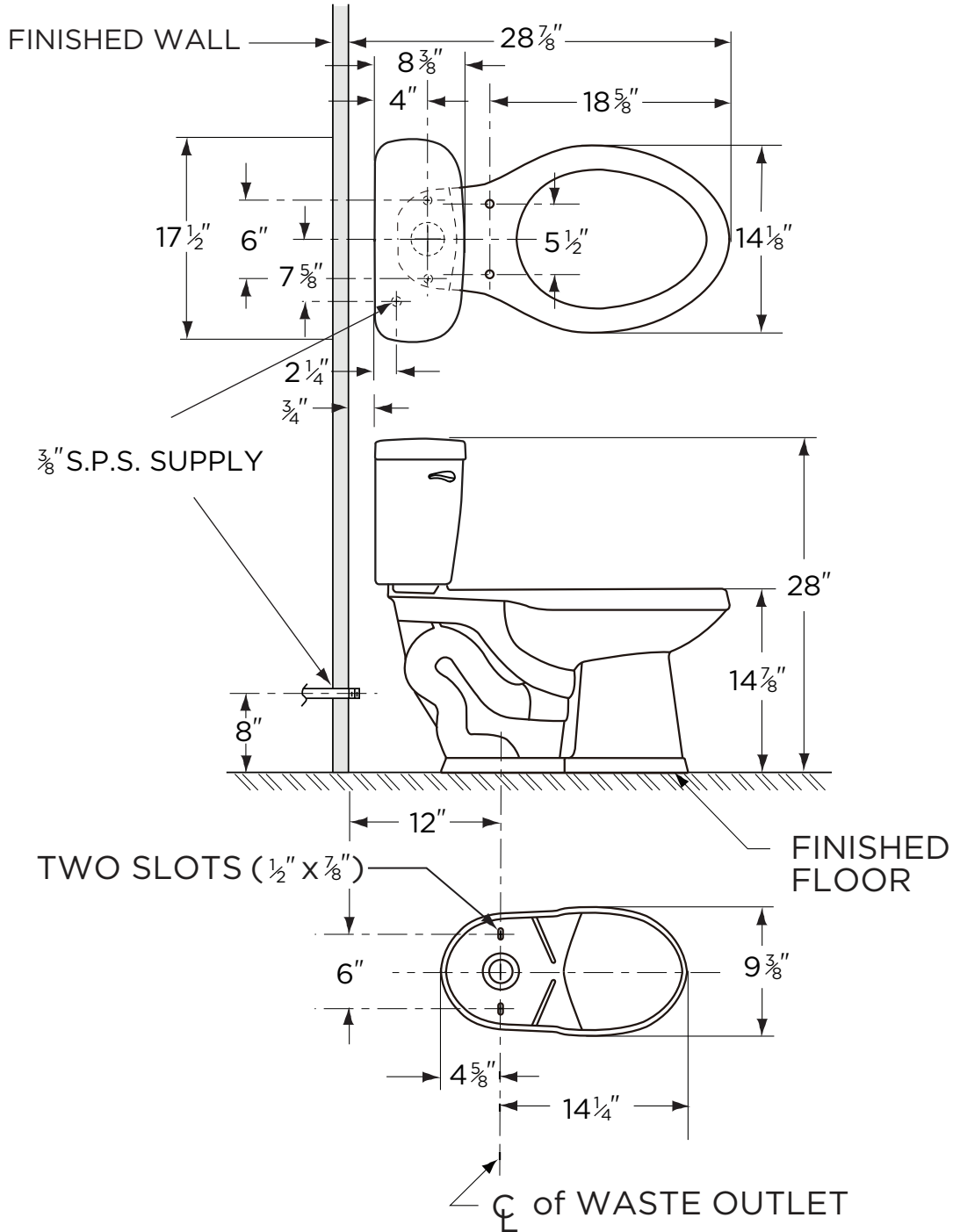
www.gerberonline.com

Job Name	
Date	
Model Specified	
Quantity	
Customer	
Contractor	
Architect/engineer	



1.28 gpf (4.8 Lpf) MAXWELL® 1.28 TOILET

21-912  
Elongated, 12" Rough-in  
(Bowl 21-962 with Tank 28-990)



NOTES:  
All dimensions are in inches.  
Illustrations may not be drawn to scale.

IMPORTANT:  
Dimensions of fixtures are nominal and may vary within the range of tolerances established by ASME Standard A 112.19.2.

THIS FIXTURE QUALIFIES ACCORDING TO ASME TEST PROCEDURES AS A HIGH EFFICIENCY WATER CLOSET WITH AN AVERAGE CONSUMPTION OF 1.28 gpf (4.8 Lpf) OR LESS.