



Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110
Wake Forest, NC 27587
919-569-6704/fax 919-569-6703

August 20, 2019

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 41% savings.

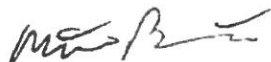
We are requesting a reduction of 20% for the use of low flow fixtures. This will provide an adjusted daily flow of 96 gallons per bedroom per day and a total flow of **480** gallons per day for the proposed 5-bedroom house.

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

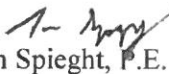
Sincerely,

CENTRAL CAROLINA SOIL CONSULTING PLLC

BATEMAN CIVIL SURVEY COMPANY



Matt Burdette
Environmental Specialist



Tom Speight, P.E.
(seal)



Attachments

Lot 42 Mason Pointe

	Item	Gal/min. or flush	Number of Fixtures	Base Flow From 1982	Percent Water Savings
Bath 2	Tub/Shower Trim	1.75 gal/minute	1	5.5 gal/minute	68%
	Lavatory Faucet	1.2 gal/minute	1	3.0 gal/minute	60%
Powder	Lavatory Faucet	1.2 gal/minute	1	3.0 gal/minute	60%
	Shower Trim	1.75 gal/minute	1	5.5 gal/minute	68%
Master Bath	Lavatory Faucet	1.2 gal/minute	2	3.0 gal/minute	60%
	Tub	Fill & Release	1	Fill & Release	0%
Kitchen	Kitchen Sink Faucet	1.5 gal/minute	1	3.0 gal/minute	50%
	Dishwasher	Whirlpool WDT10PAHZ *3.5 gal/load (Energy Star)	1	10.0 gal/load	65%
Bedroom Bath 5	Tub/Shower Trim	1.75 gal/minute	1	5.5 gal/minute	68%
	Lavatory Faucet	1.2 gal/minute	1	3.0 gal/minute	60%
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 FIXTURES	63%	60%	68%	0%	0%	0%	0%	0.0%	41%
ADJUSTED FLOW (GALLONS)	53	48	38	72	18	18	12	96	355



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
- 1/2" IPS connections
- Includes metal pop-up waste assembly

OPERATION

- Lever style handles
- Maximum handle(s) rotation angle is 90° to full on
- Rotate hot side counterclockwise to open (clockwise to close)
- Rotate cold side clockwise to open (counterclockwise to close)


FLOW

- Water usage is limited to these maximum flow rates as indicated by the corresponding product markings
 - 1.2 gpm max (4.5L/min) at 60 psi
 - 1.5 gpm max (5.7L/min) at 60 psi

CARTRIDGE

- 1234 cartridge design
- Nonmetallic and stainless steel material

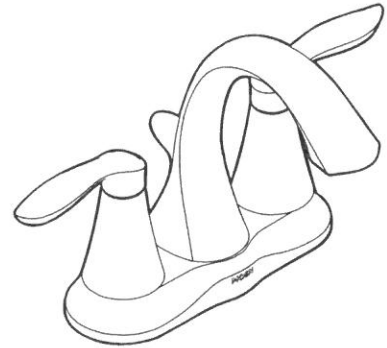
STANDARDS

- Third party certified to WaterSense®, ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- Certified to NSF 61/9 & 372
- Products marked with 1.2 gpm are compliant with California water efficiency regulations
- 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

Specifications



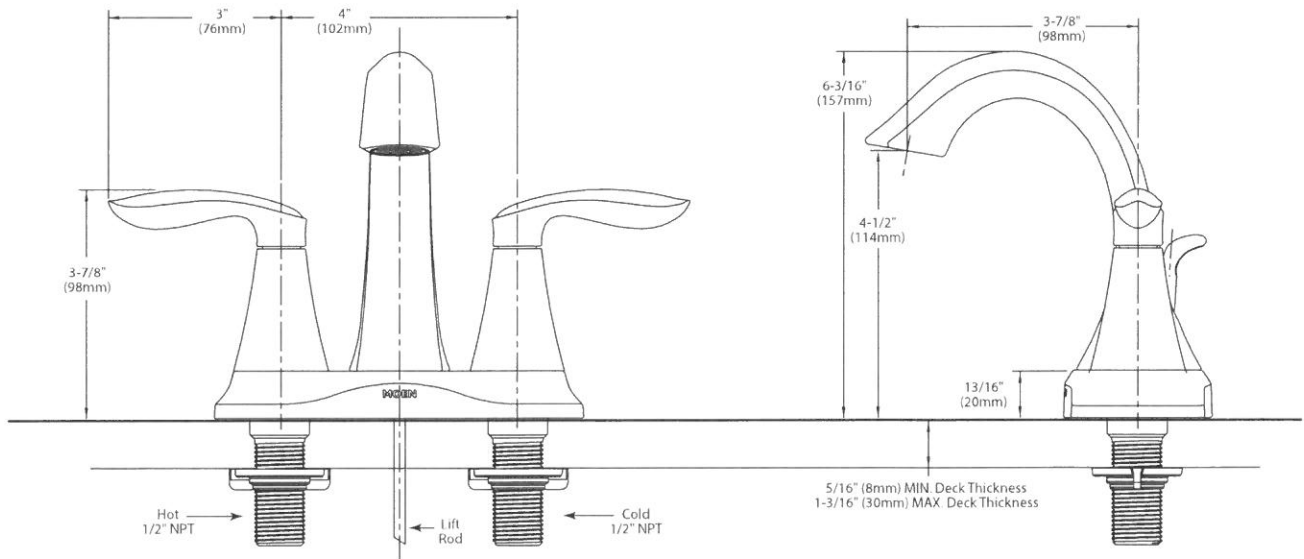
EVA™ 4" Lavatory Faucet with Metal Waste Assembly

Models: 6410 series

Bulk Models: 66410, 66411*
**(Bulk packed 6 per carton),
50/50 waste assembly**

*Includes hot (red) and cold (blue) indicators.

**NOTE: THIS FAUCET IS DESIGNED TO BE
INSTALLED THRU 3 HOLES, 1" MIN. DIA.**



CRITICAL DIMENSIONS

(DO NOT SCALE)



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 waste assembly

OPERATION

- Lever style handles
- Maximum handle(s) rotation angle is 90° to full on
- Rotate hot side counterclockwise to open (clockwise to close)
- Rotate 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

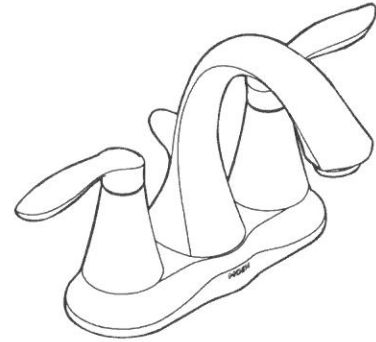
STANDARDS

- Third party certified to WaterSense®, ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- Certified to NSF 61/9 & 372
- 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



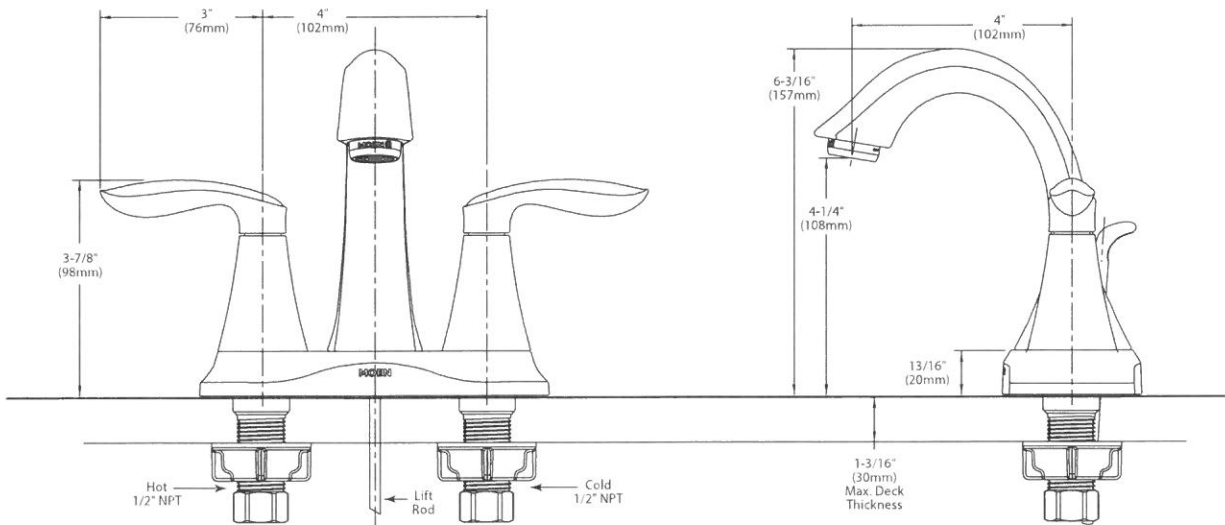
EVA™
4" Lavatory Faucet
with Metal Waste Assembly

Models: 6410 series

Bulk Models: 66410, 66411*
(Bulk packed 6 per carton),
50/50 waste assembly

*Includes hot (red) and cold (blue) indicators.

NOTE: THIS FAUCET IS DESIGNED TO BE INSTALLED THRU 3 HOLES, 1" MIN. DIA.



CRITICAL DIMENSIONS

(DO NOT SCALE)



Buy it for looks. Buy it for life.®

Specifications

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

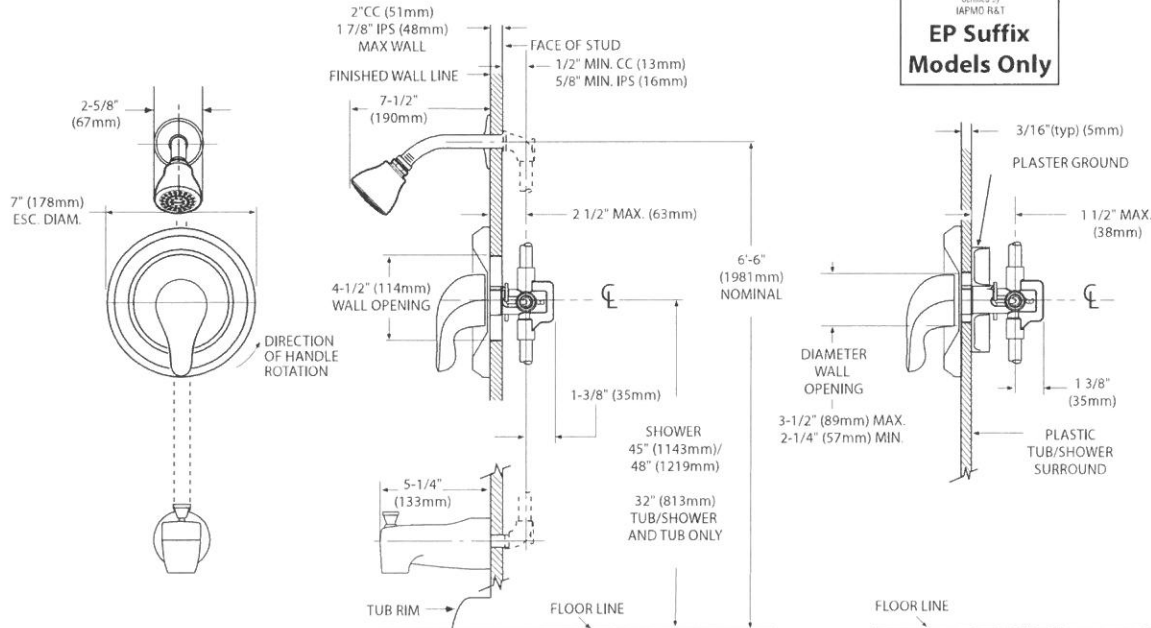
- Lifetime limited warranty against leaks, drips and finish defects to the original consumer purchaser
- 5 year warranty if used in commercial installations



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)

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

FAUCET DESCRIPTION

- Reflex™ pulldown system offers smooth operation, easy movement and secure docking
- Metal construction with various finishes identified by suffix
- Duralock™ quick connect system
- Pullout spray with 68" braided hose
- Flexible supply lines with 3/8" compression fittings
- High arc spout provides height and reach to fill or clean large pots while pull out wand provides the maneuverability for cleaning or rinsing
- 360° rotating spout
- Power Boost™ Spray Technology

OPERATION

- Lever style handle
- Temperature controlled by 100° arc of handle travel
- Operates with less than 5 lbs. of force
- Operates in stream or spray mode in the pullout or retracted position

FLOW

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

CARTRIDGE

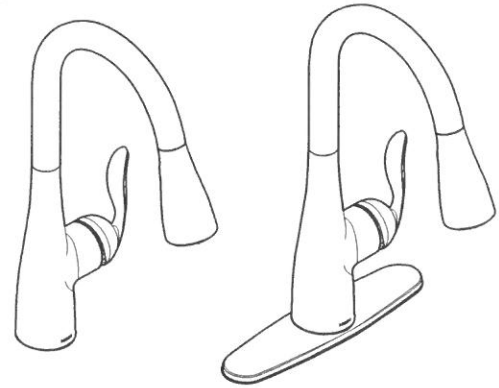
- 1255™ Duralast™ cartridge for Single-Handle Faucets

STANDARDS

- Third party certified to IAPMO Green, ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- Certified to NSF 61/9 & 372
- Meets CalGreen and Georgia SB370 requirements
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- The backflow protection system in the device consists of two independently operating check valves, a primary and a secondary which prevent backflow
- ADA ♿ for lever handle

WARRANTY

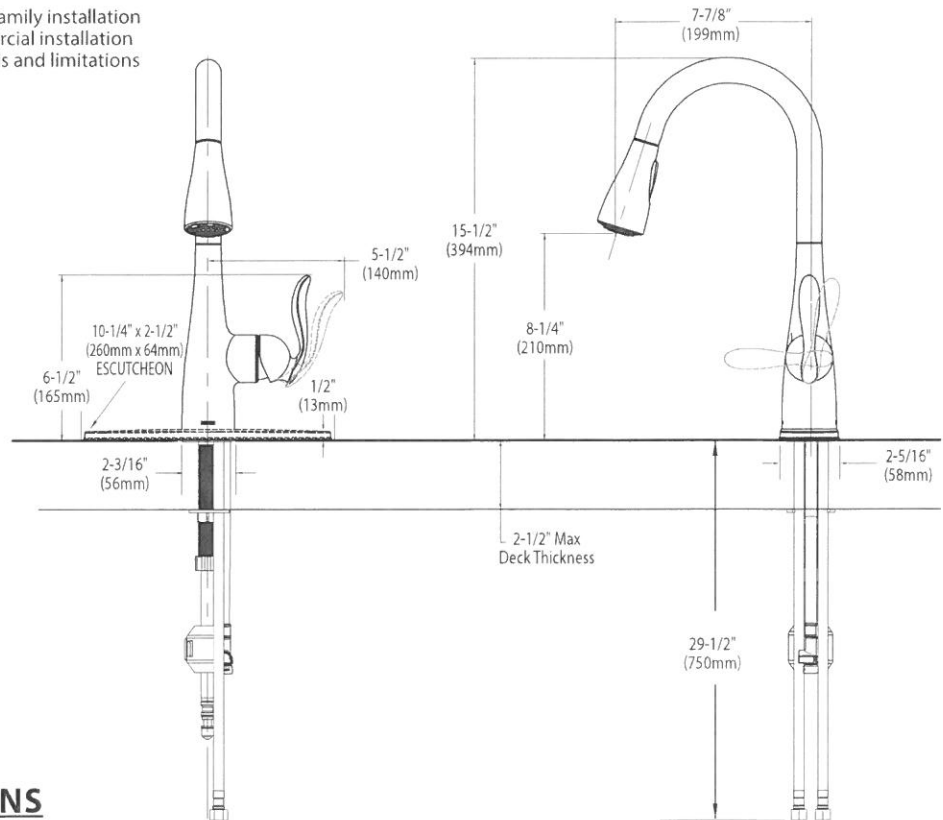
- Lifetime limited warranty against leaks, drips and finish defects to the original homeowner
 - 10 year limited warranty when used in a multifamily installation
 - 5 year limited warranty when used in a commercial installation
- Visit www.moen.com/support for complete details and limitations



ARBOR™
Single Handle High Arc
Pulldown Kitchen Faucet

Models: 7594 series

NOTE: THIS FAUCET IS DESIGNED TO BE INSTALLED THROUGH 1 OR 3 HOLES, 1-1/2" (38mm) MIN. DIA.



CRITICAL DIMENSIONS

(DO NOT SCALE)

TO ORDER PARTS CALL: 1-800-BUY-MOEN
www.moen.com

FAUCET DESCRIPTION

- Reflex™ pulldown system offers smooth operation, easy movement and secure docking
- Metal construction with various finishes identified by suffix
- Quick connect system
- Pullout spray with 68" braided hose
- Flexible supply lines with 3/8" compression fittings
- High arc spout provides height and reach to fill or clean large pots while pull out wand provides the maneuverability for cleaning or rinsing
- 360° rotating spout
- Power clean spray

OPERATION

- Lever style handle
- Temperature controlled by 100° arc of handle travel
- Operates with less than 5 lbs. of force
- Operates in stream or spray mode in the pullout or retracted position
- When filling a vessel outside the sink, the pause feature conveniently stops the flow of water as the wand passes over the counter top


FLOW

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

CARTRIDGE

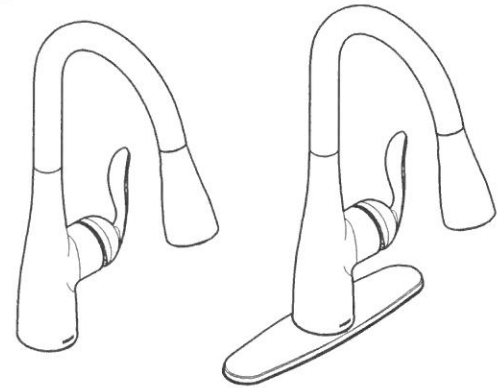
- 1255™ Duralast™ cartridge for Single-Handle Faucets

STANDARDS

- Third party certified to IAPMO Green, ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- Certified to NSF 61/9 & 372
- Meets CalGreen and Georgia SB370 requirements
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- The backflow protection system in the device consists of two independently operating check valves, a primary and a secondary which prevent backflow
- ADA  for lever handle

WARRANTY

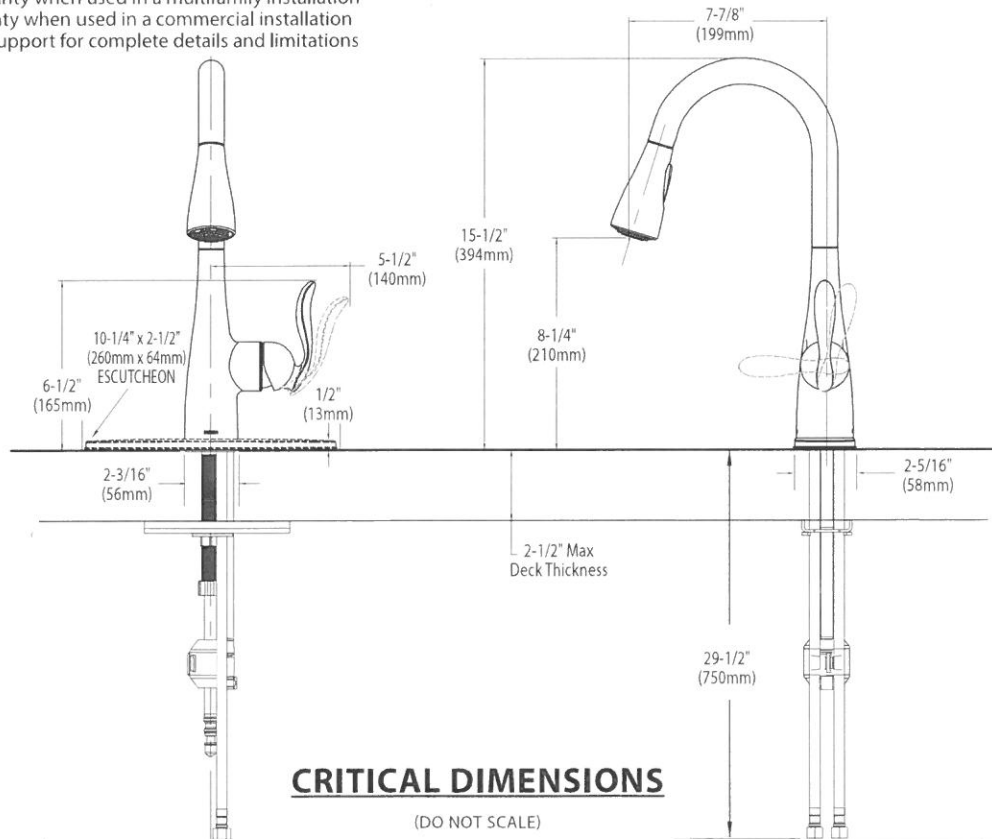
- Lifetime limited warranty against leaks, drips and finish defects to the original homeowner
 - 10 year limited warranty when used in a multifamily installation
 - 5 year limited warranty when used in a commercial installation
- Visit www.moen.com/support for complete details and limitations



ARBOR™
Single Handle High Arc
Pulldown Kitchen Faucet

Models: 7594 series

NOTE: THIS FAUCET IS DESIGNED TO BE INSTALLED THROUGH 1 OR 3 HOLES, 1-1/2" (38mm) MIN. DIA.





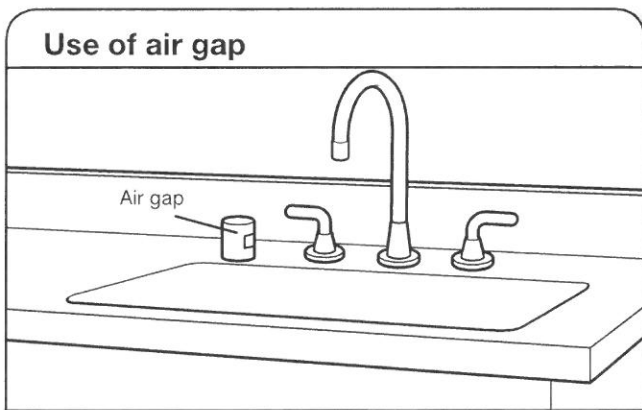
Undercounter Dishwasher

PRODUCT MODEL NUMBERS

WDF110PAB	WDF320PAD	WDT710PAH
WDF111PAB	WDF330PAH	WDT720PAD
WDF120PAF	WDF331PAH	WDT730PAH
WDF121PAF	WDF520PAD	WDT735PAG
WDF130PAH	WDF540PAD	WDT735PAH
WDF131PAH	WDF545PAF	

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:

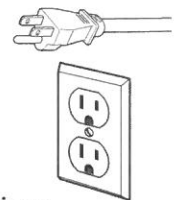
- 120-volt, 60 Hz, AC-only, 15- or 20-amp, fused electrical supply
- Copper wire only
- A maximum of 2 field wiring supply conductors (12 AWG largest size) plus 1 grounding conductor are permitted in the terminal box.

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.

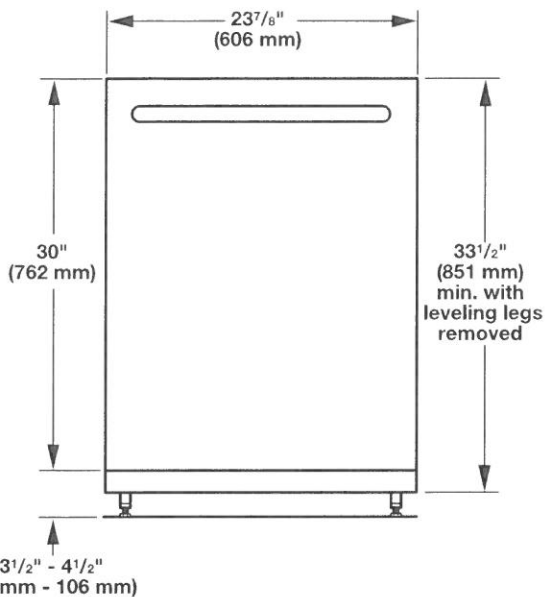


If Connecting Dishwasher with Direct Wiring:

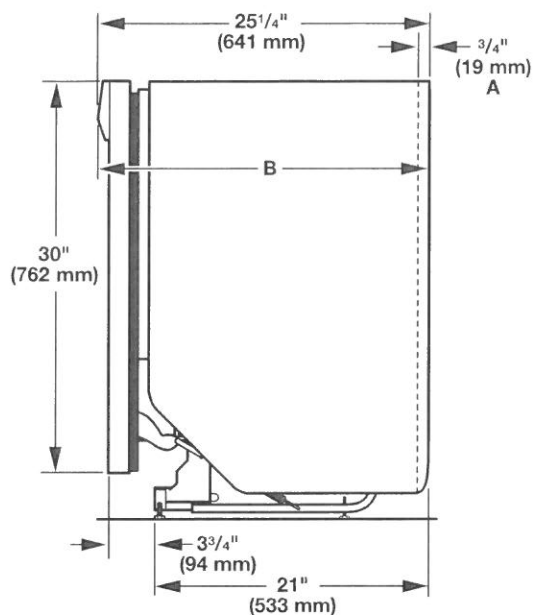
- Use flexible, armored, or nonmetallic sheathed copper wire with grounding wire that meets the wiring requirements for your home and local codes and ordinances.
- Use a UL Listed/CSA Approved metallic strain relief.



PRODUCT AND CABINET OPENING DIMENSIONS

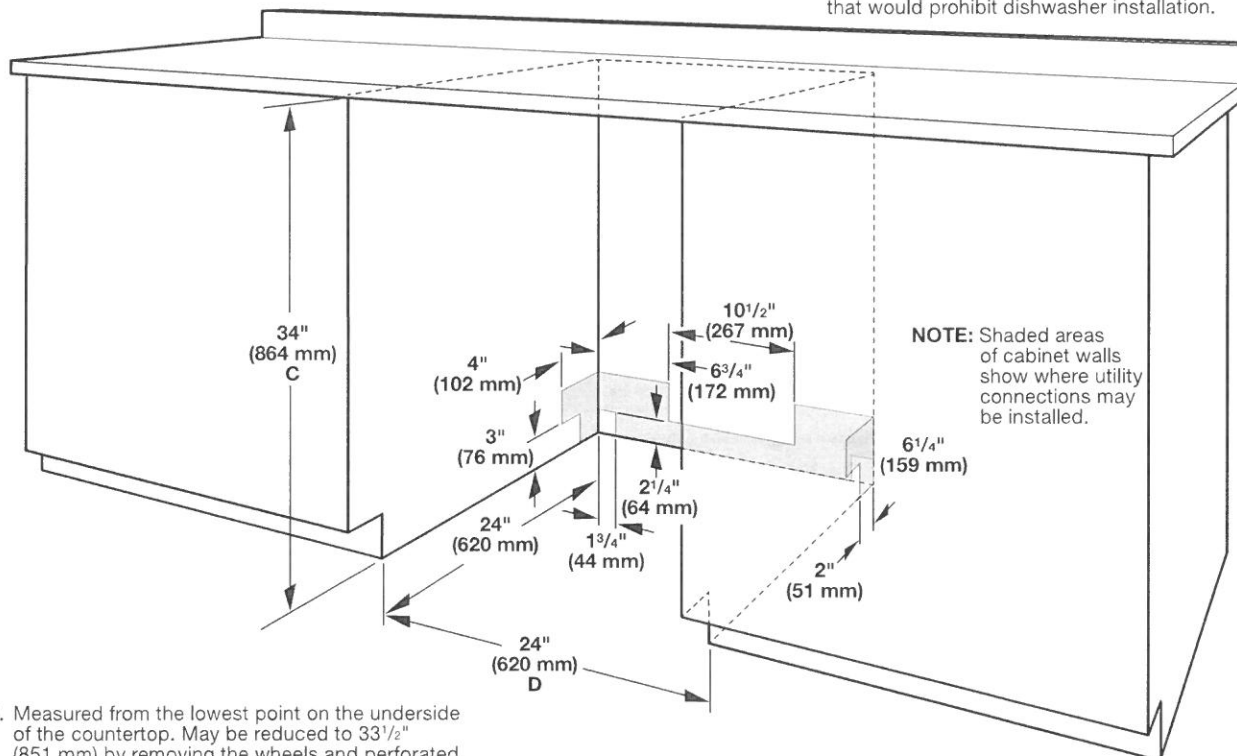


For 4" (100 mm) toe kick, height of cabinet opening is 34 1/2" (863 mm).



- 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 1/2" (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:

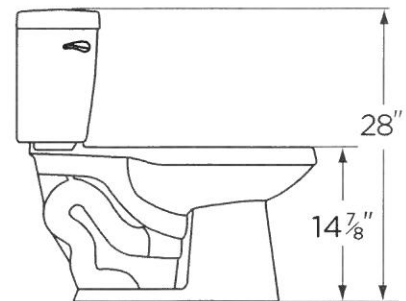
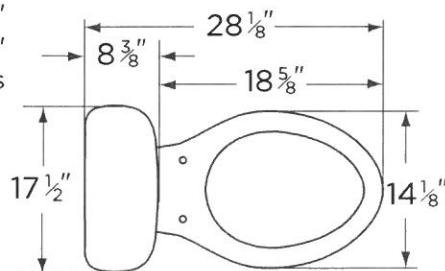
- 1.28 gpf/4.8 Lpf high efficiency two-piece toilet
- Elongated bowl
- Dual-fed siphon jet
- Pilot fill valve
- 3" flush valve
- 2" glazed trapway
- Color matched front tank lever (white only)
- Optional insulated non-sweating tank
- Optional right-handed trip lever
- Available in White, Bone and Biscuit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



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

Dimensions:

- Height28"
- Width 17 1/2"
- Depth28 1/8"
- Rough-in12"
- Water Surface from Rim5 7/8"
- Trapway 2"
- Water Surface 10 7/8" x 7 1/2"
- Water Seal2 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

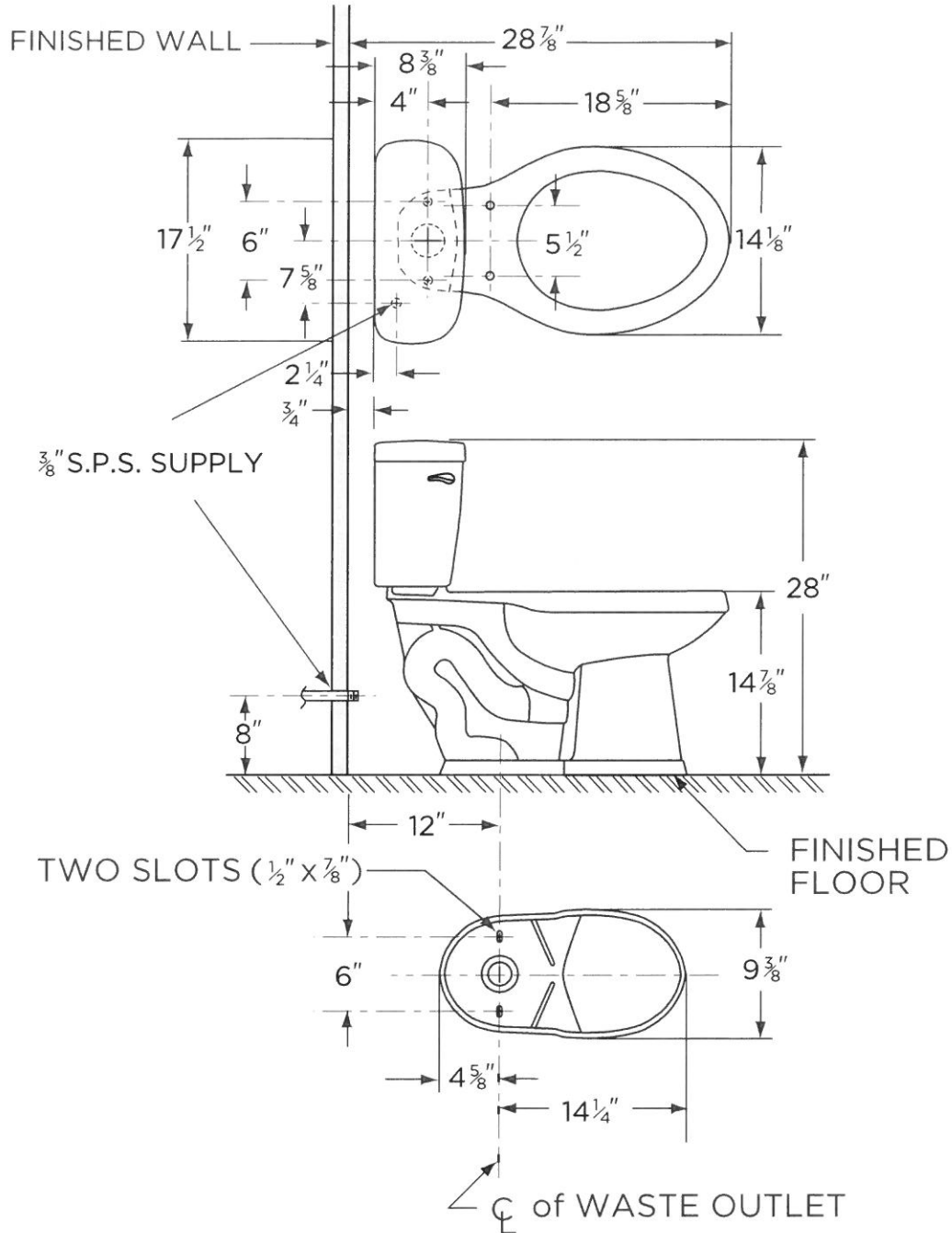
www.gerberonline.com

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.