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Newton County – R.L. Cousins Center

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Matt Davis
davisplumbingco@yahoo.com

22-0000 Plumbing O&M

Operations & Maintenance

For

RL COUSINS CMNTY P1- COVINGTON

Submitted by:

Matt Davis

Operations Manuals Prepared by:

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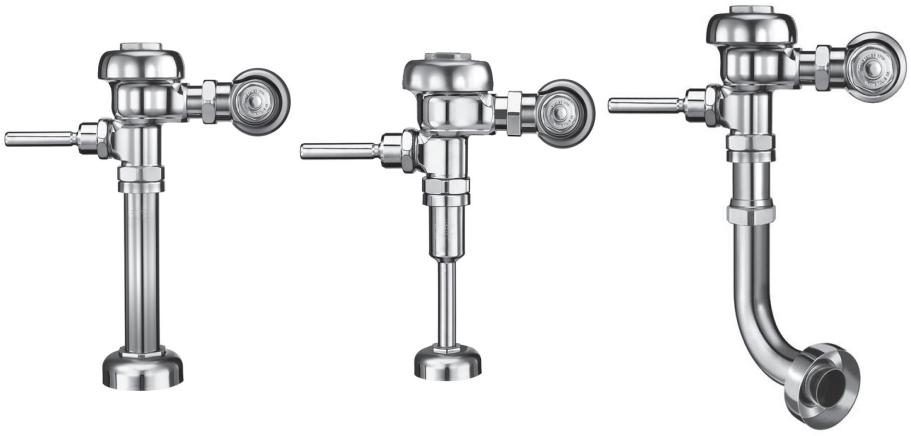
SLOAN®

Code No. 0816312
Rev. 2 (04/14)

INSTALLATION INSTRUCTIONS FOR EXPOSED REGAL® XL WATER CLOSET AND URINAL FLUSHOMETERS



Closet Flushometer
1½" (38 mm) Top Spud
MODELS 110/111,
113, 115 & 116

Closet Flushometer
1½" (38 mm) Back Spud
MODEL 120 & 122

Service Sink Flushometer
1½" (38 mm) Top Spud
MODEL 117

Urinal Flushometer
1¼" (32 mm) Top Spud
MODEL 180

Urinal Flushometer
¾" (19 mm) Top Spud
MODEL 186

Squat Toilet Flushometer
1½" (38 mm) Back Spud
MODEL 137

PRIOR TO INSTALLATION

Before you install the Regal XL flushometer, be sure the items listed below are installed. Also, refer to the rough-in diagrams on the next page.

- Closet or urinal fixture
- Drain line
- Water supply line

IMPORTANT:

- **INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.**
- **FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.**

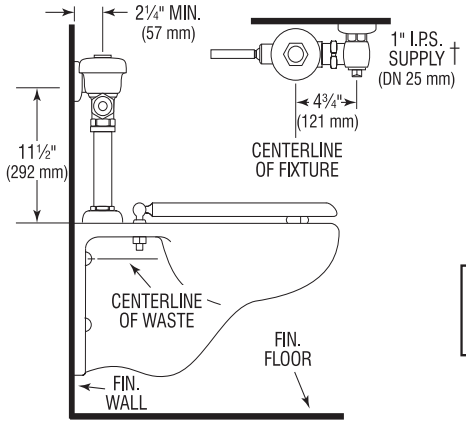
Sloan's flushometers are designed to operate with 10 to 100 psi (69 to 689 kPa) of water pressure. **THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED.** Consult fixture manufacturer for minimum pressure requirements. Most Low Consumption water closets (1.6 gpf/6.0 Lpf) require a minimum flowing pressure of 25 psi (172 kPa).

TOOLS REQUIRED FOR INSTALLATION

- Straight blade screwdriver
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench

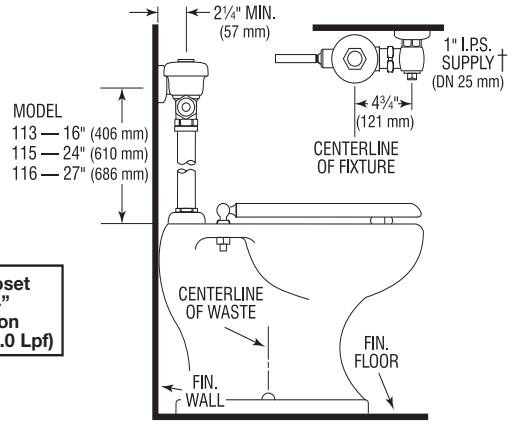
VALVE ROUGH-INS

MODELS 110/111

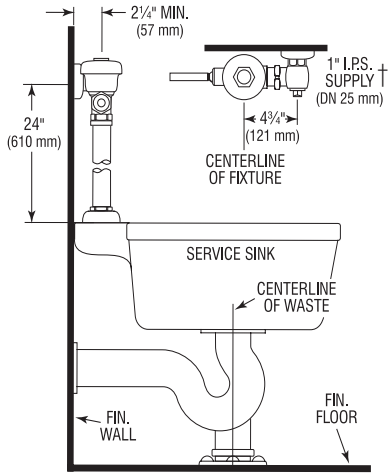


NOTE: Water Closet Valves with "-2.4" Model Designation deliver 2.4 gpf (9.0 Lpf)

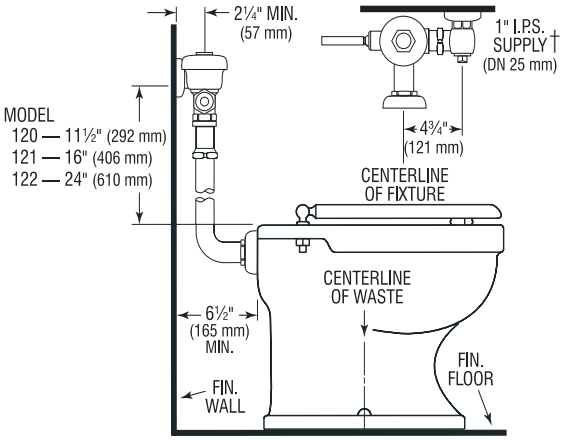
MODELS 113, 115 & 116



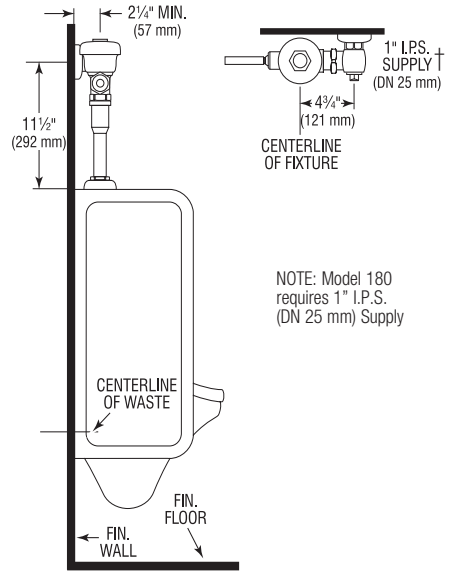
MODEL 117



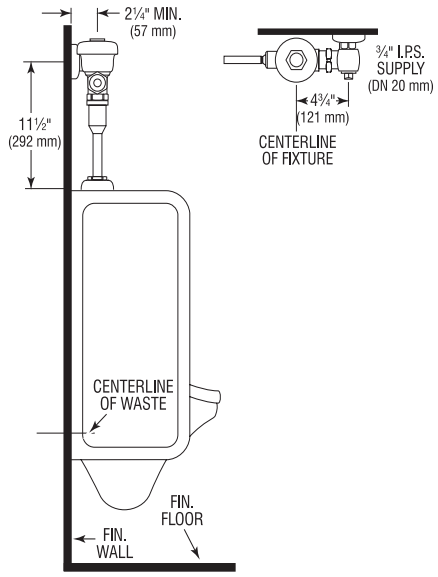
MODELS 120/122



MODEL 180



MODEL 186



† 1" Control Stop is available with Whitworth Thread

IMPORTANT NOTES:

- When mounted on an ADA accessible bowl, the rough-in to the supply inlet should be no higher than 37½" or the handle will exceed maximum height allowances under ADA guidelines.
- New ADAAG Guidelines allow for Split or Offset Grab Bars, check with local authorities or reference section 604.5.2 of ADAAG.

!!! IMPORTANT !!!
WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!

!!! IMPORTANT !!!
PROTECT THE FINISH OF SLOAN'S FLUSHOMETERS — DO NOT USE TOOTHED TOOLS TO INSTALL OR SERVICE THESE VALVES. USE A SLOAN A-50 Super-Wrench™, Sloan A-109 PLIER WRENCH OR SMOOTH JAWED SPUD WRENCH TO SECURE ALL COUPLINGS. SEE "CARE AND CLEANING" SECTION.

!!! IMPORTANT !!!
THIS PRODUCT CONTAINS MECHANICAL AND/OR ELECTRICAL COMPONENTS THAT ARE SUBJECT TO NORMAL WEAR. THESE COMPONENTS SHOULD BE CHECKED ON A REGULAR BASIS AND REPLACED AS NEEDED TO MAINTAIN THE VALVE'S PERFORMANCE.

!!! IMPORTANT !!!
NEVER OPEN CONTROL STOP TO WHERE THE FLOW FROM THE VALVE EXCEEDS THE FLOW CAPABILITY OF THE FIXTURE. IN THE EVENT OF A VALVE FAILURE, THE FIXTURE MUST BE ABLE TO ACCOMMODATE A CONTINUOUS FLOW FROM THE VALVE.

!!! IMPORTANT !!!
LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.

Please take the time to read this manual to ensure proper product installation and longevity. Also, please visit our website to download our most recent documentation for this product.

If you have questions about how to install your Flushometer, consult your local Sloan Representative or call Sloan Technical Support at:

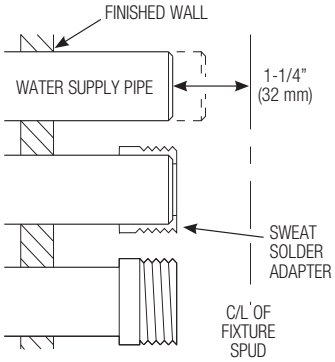
1-888-SLOAN-14 (1-888-756-2614)

1 - INSTALL SWEAT SOLDER ADAPTER (ONLY IF YOUR SUPPLY PIPE DOES NOT HAVE A MALE THREAD)

A Measure from finished wall to C/L of Fixture Spud. Cut pipe 1¼" (32 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.

B Slide Threaded Adapter fully onto pipe.

C Sweat solder the Adapter to pipe.

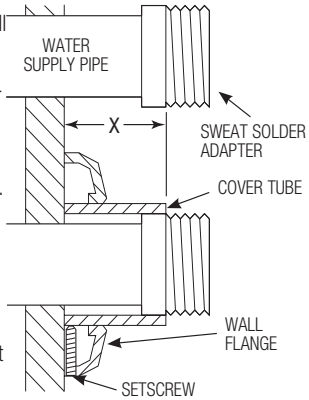


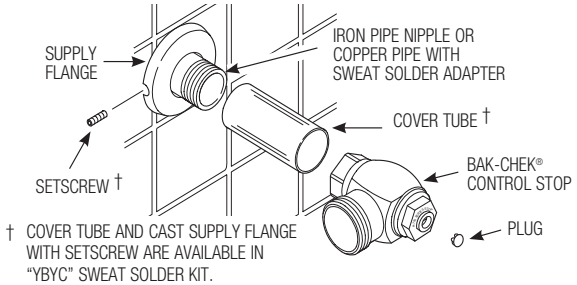
2 - INSTALL COVER TUBE, WALL FLANGE AND CONTROL STOP TO SUPPLY PIPE AND INSTALL VACUUM BREAKER FLUSH CONNECTION

A Measure from finished wall to first thread of adapter or threaded supply pipe (dimension "X"). Cut cover tube to this length.

B Slide cover tube over pipe. Slide wall flange over cover tube until against wall.

C Thread Control Stop onto pipe. Tighten with a wrench making sure outlet is positioned as required.

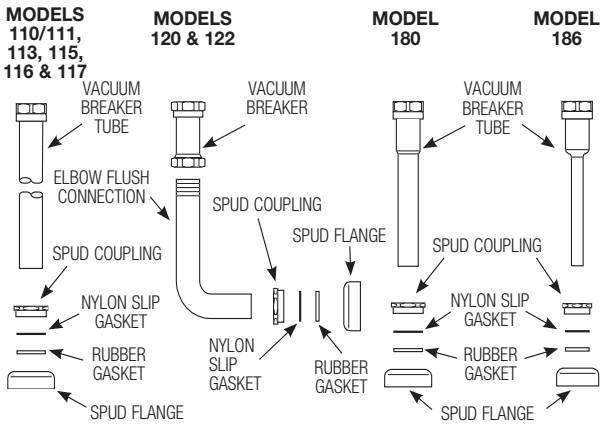




† COVER TUBE AND CAST SUPPLY FLANGE WITH SETSCREW ARE AVAILABLE IN "YBYC" SWEAT SOLDER KIT.

D Tighten setscrew with a 1/16" hex wrench. **DO NOT** install vandal resistant plug at this time.

E Slide spud coupling, nylon slip gasket, rubber gasket and spud flange over vacuum breaker tube.



F Insert Tube into Fixture Spud.

G Hand tighten Spud Coupling onto Fixture Spud.

3 - INSTALL FLUSHOMETER AND HANDLE ASSEMBLY

NOTE

For high efficiency urinal flushometers (0.5, 0.25 and 0.125 gpf), it is necessary to first insert the flow control component into the tailpiece assembly. See the H1015A flow control kit and separate instructions for details on how to install.

A Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.

B Align Flushometer directly above the Vacuum Breaker Flush Connection by sliding the Flushometer Body IN or OUT as needed. Tighten Vacuum Breaker Coupling by hand.

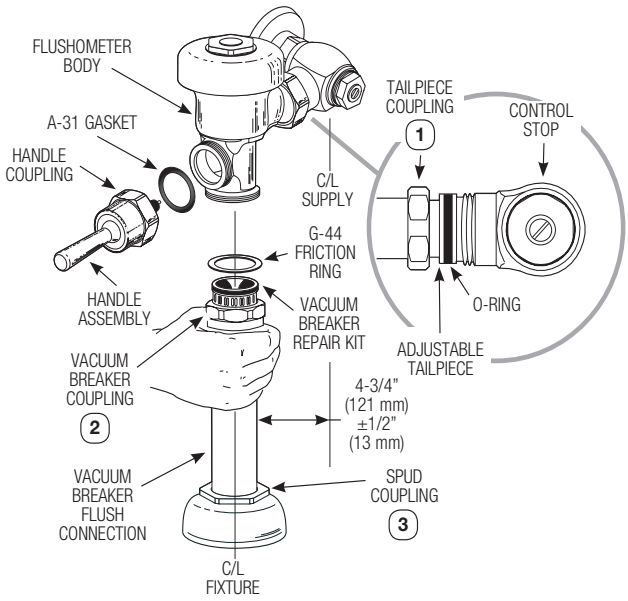
NOTE

Maximum adjustment of the Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop).

If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

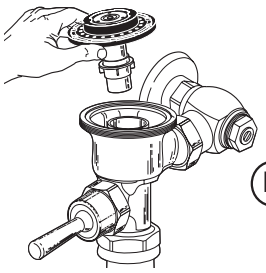
C Align Flushometer Body. Using a wrench, securely tighten couplings in the order given: (1) Tailpiece Coupling, (2) Vacuum Breaker Coupling and (3) Spud Coupling.

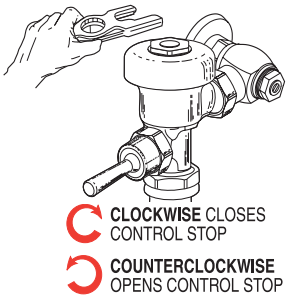
D Install the red A-31 Handle Gasket on the Handle Assembly. Insert the ADA Handle Assembly (B-73-A) into the Handle opening in the Flushometer Body. Securely tighten the Handle coupling with a wrench.



4 - FLUSH OUT SUPPLY LINE

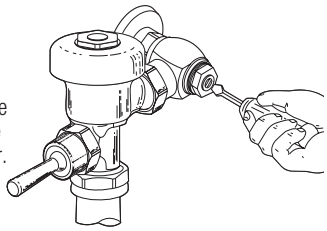
A Make sure Control Stop is CLOSED and remove Flushometer Outer Cover.

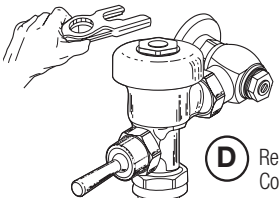




B Remove Inside Cover and lift out Inside Parts Assembly.

C Reinstall Outside and Inside Cover wrench tight. Open Control Stop to flush supply line. Close Control Stop and remove Outside and Inside Cover.



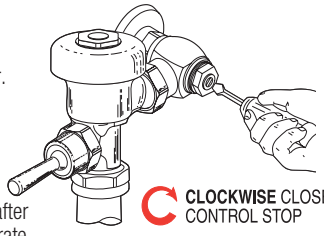


D Reinstall Inside Parts Assembly, Inside Cover and Outside Cover wrench tight.

5 - ADJUST CONTROL STOP AND INSTALL PLUG

A Open control stop COUNTERCLOCKWISE one FULL turn from closed position.

B Activate flushometer.



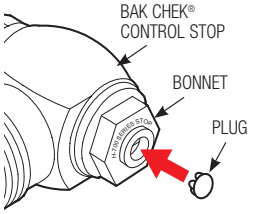
C Adjust control stop after each flush until the rate of flow delivered properly cleanses the fixture.

!!! IMPORTANT !!!

Sloan's flushometers are engineered for quiet operation. Excessive water flow creates noise, while too little water flow may not satisfy the needs of the fixture. Proper adjustment is made when the plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

D Install plug into the control stop by pressing into bonnet.



CARE AND CLEANING

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, protect the Flushometer from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

TROUBLESHOOTING GUIDE

I. Flushometer does not function (no flush).

A. Control stop or main valve is closed. Open control stop or main valve.
B. Handle assembly is damaged. Replace handle (B-32-A or B-73-A) or install handle repair kit (B-50-A).
C. Relief valve is damaged. Replace inside parts kit.

2. Volume of water is not sufficient to siphon fixture.

A. Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
B. Urinal flushometer parts inside a closet flushometer. Replace inside urinal parts with proper closet flushometer parts.
C. Low consumption flushometer installed on a non-low consumption fixture. Replace A-41-A inside parts kit with A-38-A water saver kit.
D. Water saver kit installed in old, non-water saver bowl. Position refill head A-170 so that SIDE 1 is in the UP position.
E. Inadequate volume or pressure at supply.
- If no gauges are available to properly measure supply pressure or volume of water at the flushometer, then remove the relief valve from the inside parts kit, reassemble the flushometer and open the control stop. If the fixture siphons, more water volume is required. If a 3.5 gpf inside parts kit is installed in the flushometer, then first flip the refill head (under the diaphragm) to obtain a 4.5 gpf volume. If this volume is still inadequate, remove the flow ring from the guide to obtain a 6.5 gpf kit. If additional flow is still required, try a low pressure guide kit A-175-A (#0301104). **IMPORTANT — LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**
- If fixture does not siphon or if a low consumption fixture is installed, or if the above steps do not prove satisfactory, steps must be taken to increase the pressure and/or supply.

3. Flushometer closes off immediately.

A. Damaged diaphragm. Replace inside parts kit to correct problem.
B. Enlarged by-pass orifice from corrosion or damage. Install inside parts kit to correct problem and update flushometer.

4. Length of flush is too short (short flush).

A. Diaphragm assembly and guide assembly are not hand-tight. Screw the two assemblies hand-tight.
B. Enlarged by-pass orifice from corrosion or damage. Install NEW Inside parts kit to correct problem and update flushometer.
C. A-19-AU (Black) urinal relief valve in closet flushometer. Replace relief valve with A-19-AC (White) closet relief valve.
D. A-41-A low consumption kit installed in non-low consumption fixture. Replace with proper Inside Parts Kit.
E. Handle assembly is damaged. Replace handle (B-32-A or B-73-A) or install handle repair kit (B-50-A).

5. Length of flush is too long (long flushing) or fails to close off.

A. Relief valve (A-19-A) is not seating properly or by-pass orifice is clogged because of foreign material, or by-pass orifice is closed by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly.
NOTE: SIZE OF THE ORIFICE IN THE BY-PASS IS OF UTMOST IMPORTANCE FOR THE PROPER METERING OF WATER INTO THE UPPER CHAMBER OF THE FLUSHOMETER. DO NOT ENLARGE OR DAMAGE THIS ORIFICE. REPLACE INSIDE KIT IF CLEANING DOES NOT CORRECT PROBLEM.
B. Line pressure has dropped and is not sufficient to force Relief Valve to seat. Shut off all control stops until pressure has been restored, then open them again.
C. A-19-AC (White) closet Relief Valve has been used in a 1 or 1½ gpf Urinal. Replace with A-19-AU (Black) Relief Valve.
D. Inside cover is cracked or damaged. Replace the Inside Cover (A-71).

6. Chattering noise is heard during flush.

A. Inside Cover is damaged. Replace Inside Cover (A-71).
B. A-156-A Segment diaphragm has been installed upside-down. Reposition the Segment diaphragm properly (see markings on the Diaphragm).

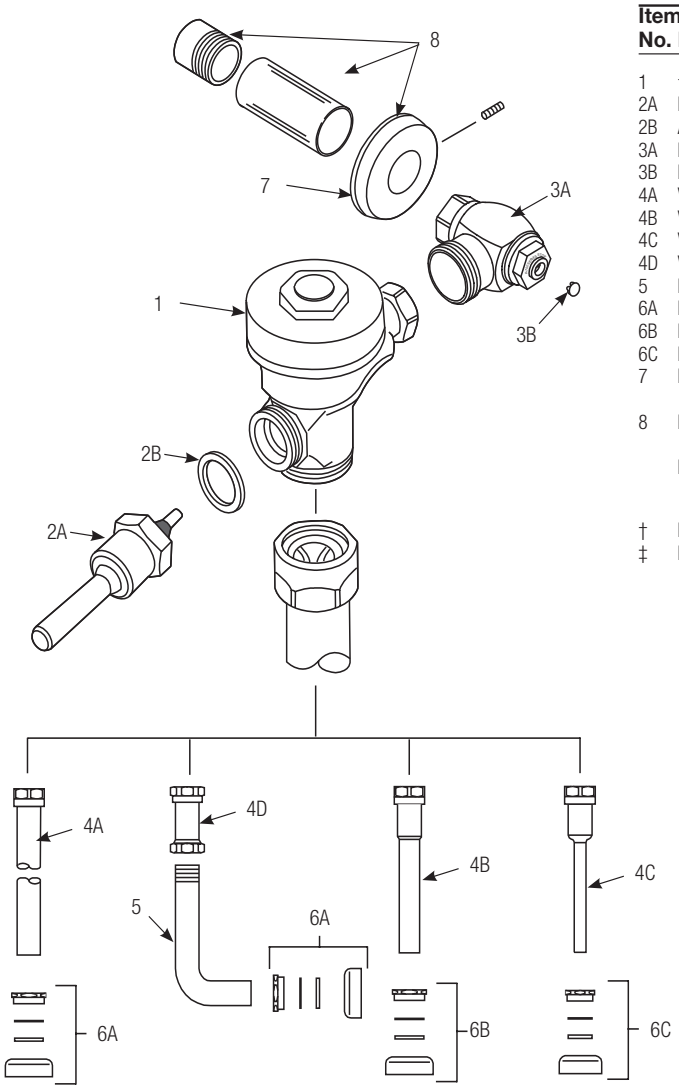
7. Handle Leaks.

A. B-39 Handle Seal is worn or damaged. Install new B-39 Seal.
NOTE: The B-39 Seal will easily slide onto the B-40 Bushing when wet.
B. Handle gasket has been omitted. Install Handle gasket (A-31) or Sloan handle repair kit (B-50-A).
C. Valve handle bushing is worn. Replace handle repair kit (B-50-A).

When further assistance is required, please contact Sloan Technical Support at:

1-888-SLOAN-14 (1-888-756-2614)
or visit us online at:
www.sloanvalve.com

PARTS LIST



Item No.	Part No.	Description
1	†	Valve Assembly
2A	B-73-A	ADA Compliant Handle Assembly
2B	A-31	Handle Gasket
3A	H-790-A	Bak-Chek® Control Stop
3B	H-528	Control Stop Bonnet Plug
4A	V-500-AA	1½" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly ‡
4B	V-500-AA	1¼" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly
4C	V-500-AA	¾" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly
4D	V-500-A	Vacuum Breaker Assembly
5	F-109	1½" (38 mm) Elbow Flush Connection ‡
6A	F-56-A	1½" (38 mm) Spud Coupling Assembly
6B	F-57-A	1¼" (32 mm) Spud Coupling Assembly
6C	F-58-A	¾" (19 mm) Spud Coupling Assembly
7	F-7	Supply Flange (Supplied when Valve is Not Ordered with Sweat Solder Kit)
8	H-633-AA	1" (25 mm) Sweat Solder Kit and Cast Wall Flange with Setscrew
	H-636-AA	¾" (19 mm) Sweat Solder Kit and Cast Wall Flange with Setscrew

† Part number varies with valve model variation; consult factory
‡ Length varies with valve model variation; consult factory

NOTE: The information contained in this document is subject to change without notice.

SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
Ph: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com

Code No: 0816312 – Rev. 2 (04/14)

VENDOR PART	VENDOR	DESCRIPTION	PAGE
8413F05	Moen	M-Dura One Handle Lavatory Faucet - Chrome	12

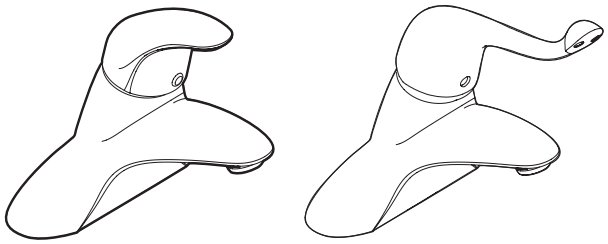
MOEN®
COMMERCIAL

INS962B - 6/05

ONE-HANDLE LAVATORY FAUCET
MODELS 8413, 8416 Series

MEZCLADORA MONOMANDO PARA LAVABO
MODELOS 8413, 8416 Series

ROBINET DE LAVABO À UNE POIGNÉE
MODÈLES 8413, 8416



English

HELP LINE

STOP **Please do not return this product to the store.**

If you need installation assistance, replacement parts or have questions regarding our warranty, please call our Product Consultants at:
U.S.: 1-800-289-6636
Monday - Friday 8:00 a.m. to 8:00 p.m. EST
Saturday 8:00 a.m. to 6:30 p.m. EST
Or e-mail us at:
moenwebmail@moen.com
Be sure to visit our website at
www.moen.com
Canada 1-800-465-6130
Monday - Friday 7:30 a.m. to 5:00 p.m. EST
Or e-mail us at: **cantsd@moen.com**
Be sure to visit our website at
www.moen.com

When ordering parts, specify finishes.

CAUTION — TIPS FOR REMOVAL OF OLD FAUCET: Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

CARE INSTRUCTIONS
To preserve the finish on the metallic parts of your Moen faucet, apply non-abrasive wax, such as car wax. Any cleaners should be rinsed off immediately. Mild abrasives are acceptable on Platinum and LifeShine® finishes.

Español

LÍNEA DE AYUDA

ALTO **Por favor no devuelva este producto a la tienda.**

Si necesita ayuda para la instalación, piezas de repuesto o tiene alguna pregunta relacionada con nuestra garantía, por favor llame a nuestros asesores de producto al:
En la República Mexicana:
01-800-718-4345
Lunes a viernes de 8:00 a.m.
a 6:00 p.m. hora Central
O envíenos un correo electrónico a:
tcoronado@moen.com.mx
Visite nuestra página de Internet:
www.moen.com.mx

Cuando ordene piezas, por favor especifique los acabados.

PRECAUCIÓN – CONSEJOS PARA CAMBIAR LA LLAVE MEZCLADORA.
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

INSTRUCCIONES DE CUIDADO
Para conservar el acabado que cubre las partes metálicas de su llave mezcladora Moen, aplique cera que no sea abrasiva, como una cera para autos. Si usa algún tipo de limpiador, deberá enjuagarlo inmediatamente. Los abrasivos suaves son aceptables en acabados Platinum y LifeShine®.

Français

SERVICE À LA CLIENTÈLE

ARRÊT **Prière de ne pas retourner ce produit au magasin.**

Pour obtenir de l'aide pour l'installation, le remplacement de pièces ou pour toute question concernant notre garantie, appeler un de nos spécialistes des produits :
Toronto : (905) 829-3400
Ailleurs au Canada: 1 800 465-6130
7 h 30 à 17 h HNE
Ou par courriel à l'adresse :
cantsd@moen.com
Visitez notre site web à l'adresse
www.moen.com

Spécifier le ou les finis dans la commande.

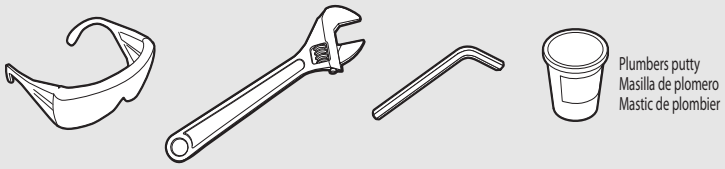
ATTENTION — SUGGESTIONS POUR ENLEVER L'ANCIEN ROBINET:
Toujours COUPER l'alimentation en eau avant d'enlever l'ancien robinet ou de démonter la soupape. Ouvrir la poignée du robinet pour libérer la pression d'eau et pour s'assurer que l'alimentation en eau a bien été coupée.

DIRECTIVES D'ENTRETIEN
Pour préserver le fini des pièces métalliques du robinet Moen, appliquer une cire non abrasive comme une cire à voiture. Rincer immédiatement le robinet après l'avoir nettoyé avec un agent nettoyant. Les finis Platinum et LifeShine® peuvent être nettoyés à l'aide de produits abrasifs doux.

HELPFUL TOOLS
For safety and ease of faucet replacement, Moen recommends the use of these helpful tools.

HERRAMIENTAS ÚTILES
Para que el cambio de la llave sea fácil y seguro, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES
Par mesure de sécurité et pour faciliter l'installation, Moen suggère l'utilisation des outils suivants.



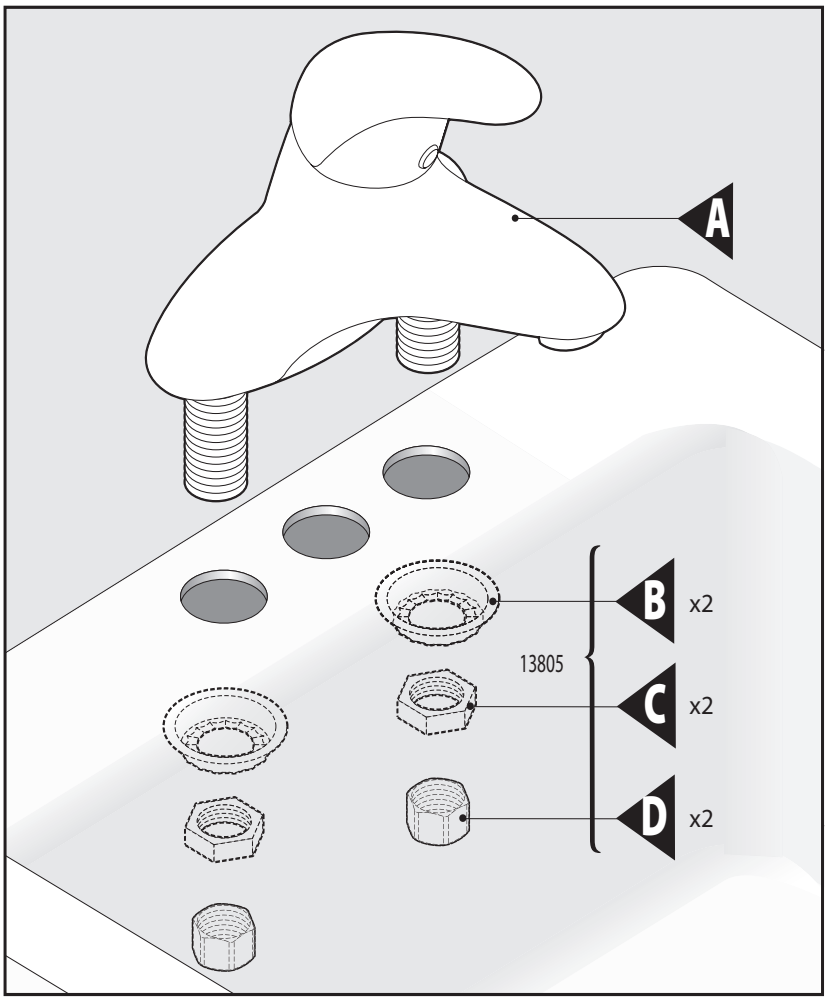
Plumbers putty
Masilla de plomero
Mastic de plombier

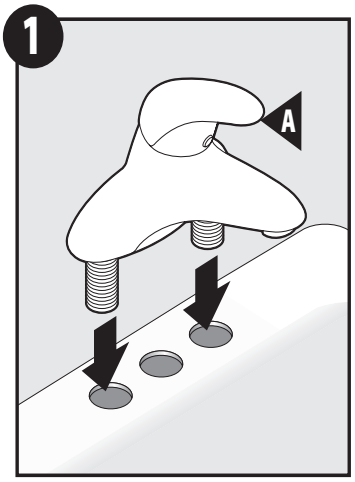
Complies with ASME A112.18.1M and CSA B125

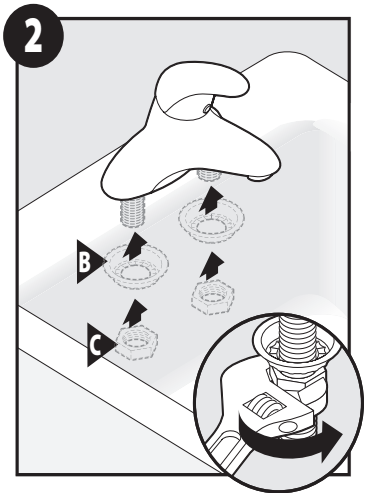
Cumple con las normas A112.18.1M de ASME y B125 de CSA

Conforme à ASME A112.18.1M et CSA B125

MOEN
COMMERCIAL







Consumer Information

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- Always run the water for a few seconds prior to use for drinking or cooking.
- Use only cold water for drinking or cooking.
- If you are concerned about lead in your water, have your water tested by a certified laboratory in your area.

Información al consumidor

Las llaves mezcladoras fabricadas con aleaciones de cobre con plomo pueden arrojar pequeñas cantidades de plomo al agua que queda en contacto con el bronce, las cuales son mayores cuando la llave está nueva. Los siguientes pasos le ayudarán a reducir la posible exposición al plomo originada por las llaves y otras piezas del sistema de plomería.

- Deje correr el agua durante unos segundos antes de usarla para beber o cocinar.
- Utilice sólo agua fría para beber o cocinar.
- Si está preocupado por la cantidad de plomo que pudiera haber en el agua, llévela a examinar a algún laboratorio local certificado.

Renseignements pour les consommateurs

Les robinets fabriqués à partir d'alliages de laiton et de plomb pourraient ajouter de petites quantités de plomb à l'eau si celle-ci était stagnante et qu'elle touchait au laiton. La quantité de plomb ajoutée par tout robinet est plus élevée lorsque le robinet est nouveau. Les directives suivantes peuvent aider à réduire l'exposition au plomb provenant du robinet et d'autres parties de la tuyauterie :

- Toujours faire couler l'eau pendant quelques secondes avant de s'en servir pour boire ou cuire.
- Utiliser uniquement de l'eau froide pour boire ou cuire.
- Si la quantité de plomb dans votre eau vous inquiète, la faire tester par un laboratoire local certifié.

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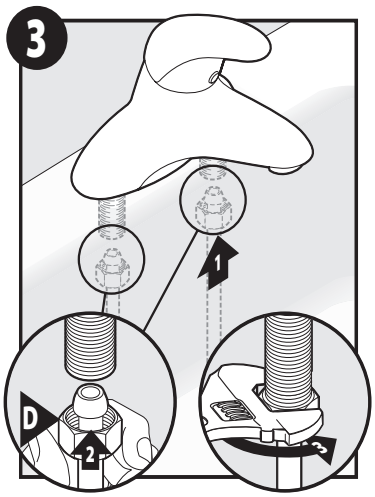
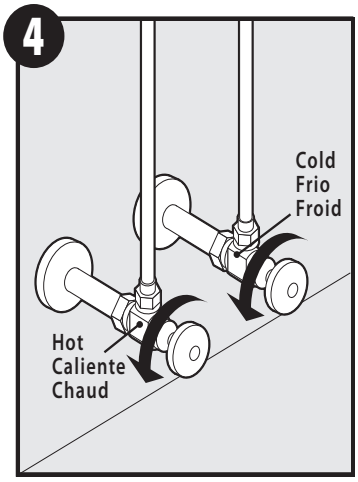




Moen Lifetime Limited Warranty

Moen products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the "Warranty Period" for homeowners), that this faucet will be leak- and drip-free during normal use and all parts and finishes of this faucet will be free from defects in material and manufacturing workmanship. All other purchasers (including purchasers for industrial, commercial and business use) are warranted for a period of 5 years from the original date of purchase (the "Warranty Period" for non-homeowners).

If this faucet should ever develop a leak or drip during the Warranty Period, Moen will FREE OF CHARGE provide the parts necessary to put the faucet back in good working condition and will replace FREE OF CHARGE any part or finish that proves defective in material and manufacturing workmanship, under normal installation, use and service. Replacement parts may be obtained by calling 1-800-289-6636 (Canada 1-800-465-6130), or by writing to the address shown. Proof of purchase (original sales receipt) from the original consumer purchaser must accompany all warranty claims. Defects or damage caused by the use of other than genuine Moen parts is not covered by this warranty. This warranty is applicable only to faucets purchased after December, 1995 and shall be effective from the date of purchase as shown on purchaser's receipt.

This warranty is extensive in that it covers replacement of all defective parts and finishes. However, damage due to installation error, product abuse, product misuse, or use of cleaners containing abrasives, alcohol or other organic solvents, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, nor for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address below. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen le otorga Garantía limitada de por vida

Los productos Moen son fabricados bajo las más estrictas normas de calidad y mano de obra. Moen le garantiza al comprador original que durante el tiempo que la tenga su casa (el "periodo de garantía", para los propietarios), esta llave no tendrá ni goteras ni fugas durante el uso normal, y que todas las piezas y acabados estarán libres de defectos en material y mano de obra. Asimismo, a todos nuestros otros consumidores (industriales, comerciales y empresariales), les otorgamos 5 años de garantía a partir de la fecha original de compra (el "periodo de garantía" para usos no domésticos).

Si en esta llave mezcladora se llegara a producir alguna fuga o gotera durante el periodo de garantía, Moen le proporcionará SIN COSTO ALGUNO las piezas necesarias para que vuelva a funcionar en perfectas condiciones y reemplazará también SIN COSTO para usted, cualquier pieza o acabado que pudiera tener algún defecto en la fabricación o mano de obra, bajo condiciones normales de instalación, uso y servicio. Las piezas de repuesto se pueden obtener llamando en la República Mexicana al 01-800-718-4345 o si escribe en la dirección que aparece aquí. Para que el comprador original pueda hacer efectiva la garantía, cualquier reclamación deberá ir acompañada por el comprobante de compra (nota de venta original). La garantía no cubre los defectos o daños causados por el uso de otras partes que no sean piezas originales Moen. Esta garantía es aplicable sólo para las llaves compradas después de diciembre de 1995, y entrará en vigencia a partir de la fecha que aparece en la nota de compra.

Esta garantía es amplia en el sentido que cubre el reemplazo de todas las partes y acabados defectuosos. Sin embargo, se excluyen de esta garantía los daños causados por un error de instalación, abuso del producto, mal uso del mismo, o uso de limpiadores que contengan abrasivos, alcohol u otros solventes orgánicos, ya sea por parte del contratista, compañía de servicio o usted mismo. Moen no se hace tampoco responsable por los gastos de mano de obra ni por los daños incurridos en la instalación, reparación o sustitución, ni por ningún daño indirecto, directo o consecuente, ni por pérdidas, lesiones o costos de alguna otra índole relacionados con esta llave. A menos que lo estipule la ley, esta garantía reemplaza y excluye cualquier otra garantía y condiciones, ya sea expresas o implícitas, establecidas por la ley o de otra manera, incluyendo sin restricción aquellas en que el producto se encuentra en condiciones aptas para la venta o se adecúa al uso específico para el cual fue adquirido.

Algunos estados, provincias y naciones no permiten la exclusión o limitación de los daños incidentales o consecuentes, de modo que las limitaciones o exclusiones mencionadas pueden no ser aplicables a usted. Esta garantía le otorga derechos legales específicos y usted puede también tener otros derechos que cambian de un estado a otro o de una provincia o nación a otra. Moen lo asesorará en el procedimiento a seguir para hacer válida esta garantía. Sencillamente escriba a Moen Incorporated utilizando la dirección que aparece a continuación. Explique el tipo de defecto e incluya comprobantes de compra, su nombre, dirección, código de área y número de teléfono.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila
Mexico 25900

Garantie à vie limitée de Moen

Les produits Moen sont fabriqués selon les normes les plus élevées de qualité et de main-d'oeuvre. Moen garantit à l'acheteur original, tant qu'il sera propriétaire de la maison (la «période de garantie» des propriétaires), que ce robinet sera libre de toute fuite pendant son usage normal et qu'aucune pièce et qu'aucun fini de ce robinet ne présenteront de défaut de matériel et de main-d'oeuvre en usine. Tous les autres achats (y compris les achats à des fins industrielles, commerciales et d'affaires) sont garantis pendant cinq (5) ans à compter de la date d'achat originale (période de garantie commerciale).

Si ce robinet fuit ou dégoutte durant la période de garantie, Moen s'engage à fournir GRATUITEMENT les pièces de rechange requises pour remettre le robinet en état de fonctionnement ainsi qu'à remplacer GRATUITEMENT toute pièce ou tout fini dont le matériel, la fabrication ou la main-d'oeuvre, lors de l'installation, de l'usage et du service habituels, s'avèrent défectueux. On peut obtenir les pièces de rechange en composant le 1 800 465-6130 ou en écrivant à l'adresse indiquée ci-dessous. Le reçu de vente original de l'acheteur initial du robinet doit accompagner toute réclamation. Les défauts ou les dommages causés par l'utilisation de pièces non fournies par Moen ne sont pas couverts par cette garantie. Cette garantie s'applique uniquement aux robinets achetés après décembre 1995 et entre en vigueur à compter de la date d'achat indiquée sur le reçu de caisse du client.

Cette garantie s'étend aussi au remplacement de toute pièce ou de tout fini défectueux. Cependant, sont exclus de cette garantie, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit, l'utilisation de produits de nettoyage contenant des agents abrasifs, de l'alcool ou des solvants organiques, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur. Moen décline toute responsabilité quant aux frais de main-d'oeuvre et aux dommages causés durant l'installation, la réparation ou le remplacement, et aux dommages, pertes, blessures ou coûts, indirects ou consécutifs, connexes à ce robinet. Sauf lorsque la loi le stipule, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient indiquées expressément ou non, obligatoires ou autres, y compris, sans restriction, celles qui visent la commercialisation ou l'aptitude d'utilisation.

Certains pays, états ou provinces ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Les limitations ou les exclusions précitées ne s'appliqueraient pas dans ces cas. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'état, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen inc. à l'adresse indiquée ci-dessous, pour expliquer le défaut, d'inclure une preuve d'achat, d'inscrire son nom, son adresse ainsi que son indicatif régional et son numéro de téléphone.

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7

INS962B - 6/05
Printed in China

MOEN
Buy it for looks. Buy it for life.®

Installation Instructions
Manuel d'installation
Directives d'installation

INS1293 - 4/06

English

HELP LINE

STOP Please do not return this product to the store.

If you need installation assistance, replacement parts or have questions regarding our warranty, please call our Product Consultants at:
U.S.: 1-800-289-6636
Monday - Friday 8:00 a.m. to 8:00 p.m. EST
Saturday 8:00 a.m. to 6:30 p.m. EST
Or e-mail us at:
moenwebmail@moen.com
Be sure to visit our website at www.moen.com
Canada 1-800-465-6130
Monday - Friday 7:30 a.m. to 5:00 p.m. EST
Or e-mail us at: cantsd@moen.com
Be sure to visit our website at www.moen.com

Español

LÍNEA DE AYUDA

STOP Por favor no devuelva este producto a la tienda.

Si necesita ayuda para la instalación, piezas de repuesto o tiene alguna pregunta relacionada con nuestra garantía, por favor llame a nuestros asesores de producto al:
En la República Mexicana:
01-800-718-4345
Lunes a viernes de 8:00 a.m. a 6:00 p.m. hora Central
O envíenos un correo electrónico a:
tcoronado@moen.com.mx
Visite nuestra página de Internet:
www.moen.com.mx

Français

SERVICE À LA CLIENTÈLE

STOP Prière de ne pas retourner ce produit au magasin.

Pour obtenir de l'aide pour l'installation, le remplacement de pièces ou pour toute question concemant notre garantie, appeler un de nos spécialistes des produits:
Toronto: (905) 829-3400
Ailleurs au Canada: 1-800-465-6130
7 h 30 à 17 h HNE
Ou par courriel à l'adresse:
cantsd@moen.com
Visitez notre site web à l'adresse
www.moen.com

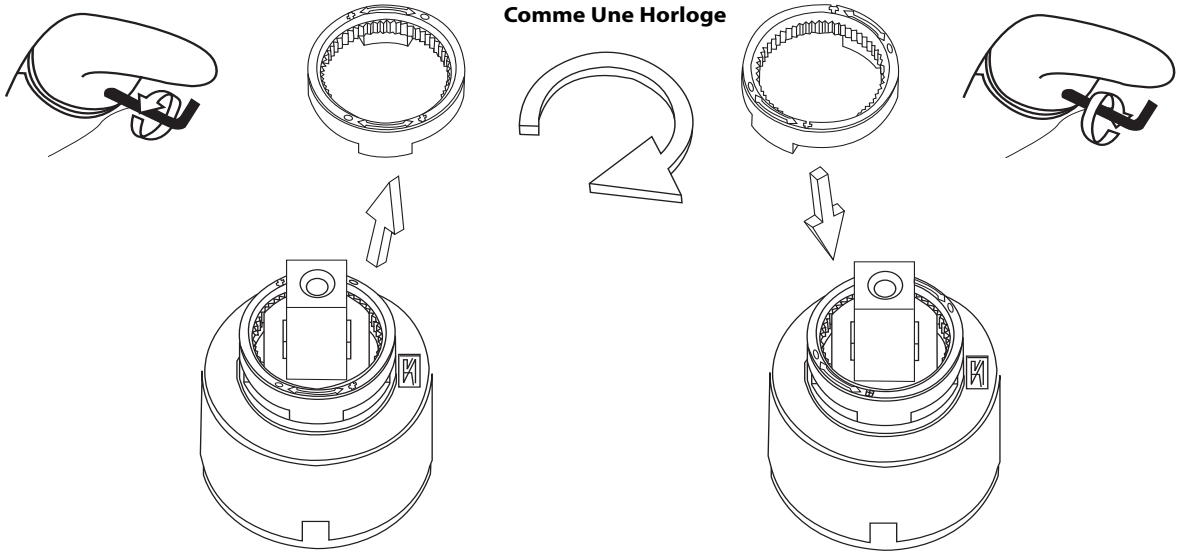
1. Remove Handle
Quite Manija
Enlevez Poignée

2. Remove Ring
Quite Anillo
Enlevez L'Anneau

3. Rotate Ring Clockwise
Rote El Anillo A La Derecha
Tournez L'anneau Comme Une Horloge

4. Replace Ring
Substituya El Anillo
Remplacez L'Annea

5. Replace Handle
Substituya Manija
Remplacez Poignée



CAUTION —TIPS FOR REMOVAL OF OLD CARTRIDGE:
Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

PRECAUCIÓN- CONSEJOS PARA RETIRAR EL CARTUCHO USADO:
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

ATTENTION —SUGGESTIONS ENLEVER L'ANCIENNE
Toujours couper l'alimentation eau avant d'enlever ou démonter le robinet. robinet pour libérer la d'eau et pour s'assurer l'alimentation en eau a bien été coupée.

VENDOR PART	VENDOR	DESCRIPTION	PAGE
8413F05	Moen	M-Dura One Handle Lavatory Faucet - Chrome	18

MOEN®
COMMERCIAL

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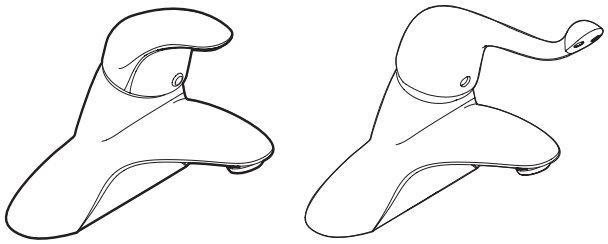
ONE-HANDLE LAVATORY FAUCET
MODELS 8413, 8416 Series

MEZCLADORA MONOMANDO PARA LAVABO
MODELOS 8413, 8416 Series

ROBINET DE LAVABO À UNE POIGNÉE
MODÈLES 8413, 8416



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Or e-mail us at:
moenwebmail@moen.com
Be sure to visit our website at
www.moen.com
Canada 1-800-465-6130
Monday - Friday 7:30 a.m. to 5:00 p.m. EST
Or e-mail us at: **cantsd@moen.com**
Be sure to visit our website at
www.moen.com

When ordering parts, specify finishes.

CAUTION — TIPS FOR REMOVAL OF OLD FAUCET: Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

CARE INSTRUCTIONS
To preserve the finish on the metallic parts of your Moen faucet, apply non-abrasive wax, such as car wax. Any cleaners should be rinsed off immediately. Mild abrasives are acceptable on Platinum and LifeShine® finishes.

Español

LÍNEA DE AYUDA

ALTO **Por favor no devuelva este producto a la tienda.**

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01-800-718-4345
Lunes a viernes de 8:00 a.m.
a 6:00 p.m. hora Central
O envíenos un correo electrónico a:
tcoronado@moen.com.mx
Visite nuestra página de Internet:
www.moen.com.mx

Cuando ordene piezas, por favor especifique los acabados.

PRECAUCIÓN – CONSEJOS PARA CAMBIAR LA LLAVE MEZCLADORA.
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

INSTRUCCIONES DE CUIDADO
Para conservar el acabado que cubre las partes metálicas de su llave mezcladora Moen, aplique cera que no sea abrasiva, como una cera para autos. Si usa algún tipo de limpiador, deberá enjuagarlo inmediatamente. Los abrasivos suaves son aceptables en acabados Platinum y LifeShine®.

Français

SERVICE À LA CLIENTÈLE

ARRÊT **Prière de ne pas retourner ce produit au magasin.**

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7 h 30 à 17 h HNE
Ou par courriel à l'adresse :
cantsd@moen.com
Visitez notre site web à l'adresse
www.moen.com

Spécifier le ou les finis dans la commande.

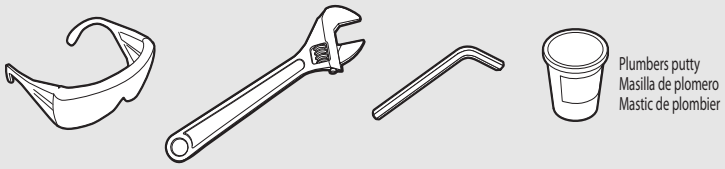
ATTENTION — SUGGESTIONS POUR ENLEVER L'ANCIEN ROBINET:
Toujours COUPER l'alimentation en eau avant d'enlever l'ancien robinet ou de démonter la soupape. Ouvrir la poignée du robinet pour libérer la pression d'eau et pour s'assurer que l'alimentation en eau a bien été coupée.

DIRECTIVES D'ENTRETIEN
Pour préserver le fini des pièces métalliques du robinet Moen, appliquer une cire non abrasive comme une cire à voiture. Rincer immédiatement le robinet après l'avoir nettoyé avec un agent nettoyant. Les finis Platinum et LifeShine® peuvent être nettoyés à l'aide de produits abrasifs doux.

HELPFUL TOOLS
For safety and ease of faucet replacement, Moen recommends the use of these helpful tools.

HERRAMIENTAS ÚTILES
Para que el cambio de la llave sea fácil y seguro, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES
Par mesure de sécurité et pour faciliter l'installation, Moen suggère l'utilisation des outils suivants.



Plumbers putty
Masilla de plomero
Mastic de plombier

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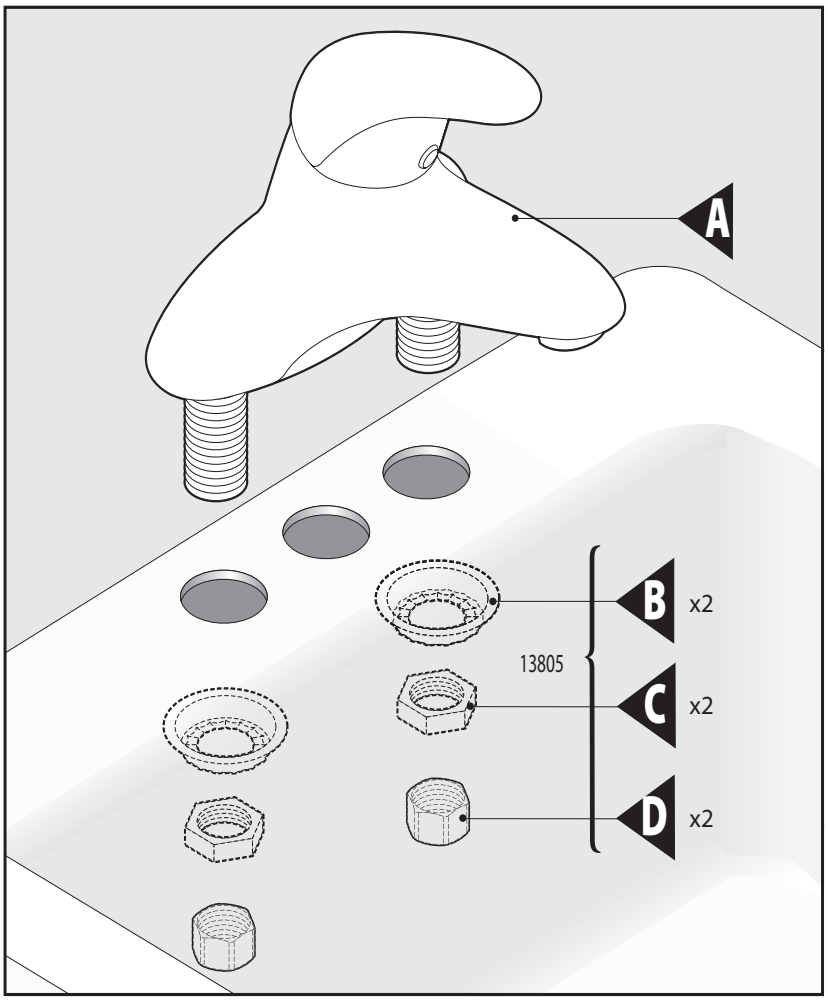
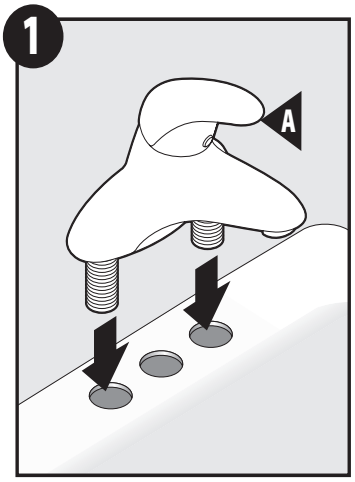
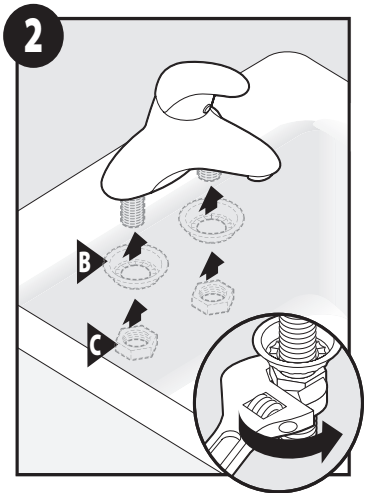
MOEN COMMERCIAL







Consumer Information

Faucets made of leaded brass alloys may contribute small amounts of lead to water that is allowed to stand in contact with the brass. The amount of lead contributed by any faucet is highest when the faucet is new. The following steps may reduce potential exposure to lead from faucets and other parts of the plumbing system:

- Always run the water for a few seconds prior to use for drinking or cooking.
- Use only cold water for drinking or cooking.
- If you are concerned about lead in your water, have your water tested by a certified laboratory in your area.

Información al consumidor

Las llaves mezcladoras fabricadas con aleaciones de cobre con plomo pueden arrojar pequeñas cantidades de plomo al agua que queda en contacto con el bronce, las cuales son mayores cuando la llave está nueva. Los siguientes pasos le ayudarán a reducir la posible exposición al plomo originada por las llaves y otras piezas del sistema de plomería.

- Deje correr el agua durante unos segundos antes de usarla para beber o cocinar.
- Utilice sólo agua fría para beber o cocinar.
- Si está preocupado por la cantidad de plomo que pudiera haber en el agua, llévela a examinar a algún laboratorio local certificado.

Renseignements pour les consommateurs

Les robinets fabriqués à partir d'alliages de laiton et de plomb pourraient ajouter de petites quantités de plomb à l'eau si celle-ci était stagnante et qu'elle touchait au laiton. La quantité de plomb ajoutée par tout robinet est plus élevée lorsque le robinet est nouveau. Les directives suivantes peuvent aider à réduire l'exposition au plomb provenant du robinet et d'autres parties de la tuyauterie :

- Toujours faire couler l'eau pendant quelques secondes avant de s'en servir pour boire ou cuire.
- Utiliser uniquement de l'eau froide pour boire ou cuire.
- Si la quantité de plomb dans votre eau vous inquiète, la faire tester par un laboratoire local certifié.

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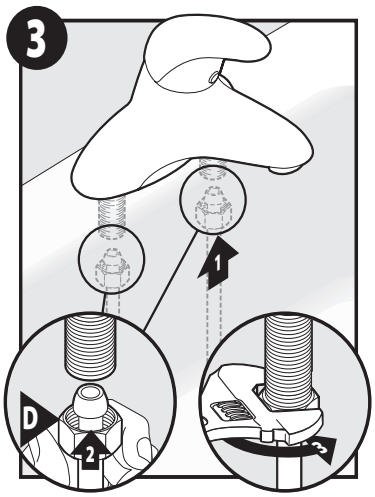
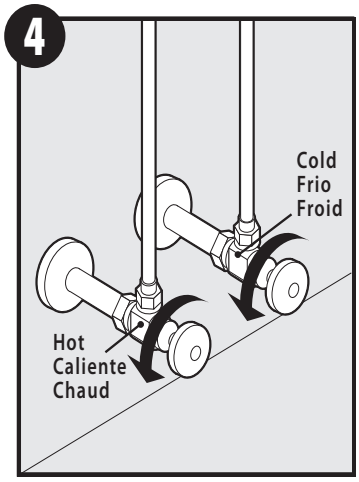




Moen Lifetime Limited Warranty

Moen products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the "Warranty Period" for homeowners), that this faucet will be leak- and drip-free during normal use and all parts and finishes of this faucet will be free from defects in material and manufacturing workmanship. All other purchasers (including purchasers for industrial, commercial and business use) are warranted for a period of 5 years from the original date of purchase (the "Warranty Period" for non-homeowners).

If this faucet should ever develop a leak or drip during the Warranty Period, Moen will FREE OF CHARGE provide the parts necessary to put the faucet back in good working condition and will replace FREE OF CHARGE any part or finish that proves defective in material and manufacturing workmanship, under normal installation, use and service. Replacement parts may be obtained by calling 1-800-289-6636 (Canada 1-800-465-6130), or by writing to the address shown. Proof of purchase (original sales receipt) from the original consumer purchaser must accompany all warranty claims. Defects or damage caused by the use of other than genuine Moen parts is not covered by this warranty. This warranty is applicable only to faucets purchased after December, 1995 and shall be effective from the date of purchase as shown on purchaser's receipt.

This warranty is extensive in that it covers replacement of all defective parts and finishes. However, damage due to installation error, product abuse, product misuse, or use of cleaners containing abrasives, alcohol or other organic solvents, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, nor for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address below. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen le otorga Garantía limitada de por vida

Los productos Moen son fabricados bajo las más estrictas normas de calidad y mano de obra. Moen le garantiza al comprador original que durante el tiempo que la tenga su casa (el "periodo de garantía", para los propietarios), esta llave no tendrá ni goteras ni fugas durante el uso normal, y que todas las piezas y acabados estarán libres de defectos en material y mano de obra. Asimismo, a todos nuestros otros consumidores (industriales, comerciales y empresariales), les otorgamos 5 años de garantía a partir de la fecha original de compra (el "periodo de garantía" para usos no domésticos).

Si en esta llave mezcladora se llegara a producir alguna fuga o gotera durante el periodo de garantía, Moen le proporcionará SIN COSTO ALGUNO las piezas necesarias para que vuelva a funcionar en perfectas condiciones y reemplazará también SIN COSTO para usted, cualquier pieza o acabado que pudiera tener algún defecto en la fabricación o mano de obra, bajo condiciones normales de instalación, uso y servicio. Las piezas de repuesto se pueden obtener llamando en la República Mexicana al 01-800-718-4345 o si escribe en la dirección que aparece aquí. Para que el comprador original pueda hacer efectiva la garantía, cualquier reclamación deberá ir acompañada por el comprobante de compra (nota de venta original). La garantía no cubre los defectos o daños causados por el uso de otras partes que no sean piezas originales Moen. Esta garantía es aplicable sólo para las llaves compradas después de diciembre de 1995, y entrará en vigencia a partir de la fecha que aparece en la nota de compra.

Esta garantía es amplia en el sentido que cubre el reemplazo de todas las partes y acabados defectuosos. Sin embargo, se excluyen de esta garantía los daños causados por un error de instalación, abuso del producto, mal uso del mismo, o uso de limpiadores que contengan abrasivos, alcohol u otros solventes orgánicos, ya sea por parte del contratista, compañía de servicio o usted mismo. Moen no se hace tampoco responsable por los gastos de mano de obra ni por los daños incurridos en la instalación, reparación o sustitución, ni por ningún daño indirecto, directo o consecuente, ni por pérdidas, lesiones o costos de alguna otra índole relacionados con esta llave. A menos que lo estipule la ley, esta garantía reemplaza y excluye cualquier otra garantía y condiciones, ya sea expresas o implícitas, establecidas por la ley o de otra manera, incluyendo sin restricción aquellas en que el producto se encuentra en condiciones aptas para la venta o se adecúa al uso específico para el cual fue adquirido.

Algunos estados, provincias y naciones no permiten la exclusión o limitación de los daños incidentales o consecuentes, de modo que las limitaciones o exclusiones mencionadas pueden no ser aplicables a usted. Esta garantía le otorga derechos legales específicos y usted puede también tener otros derechos que cambian de un estado a otro o de una provincia o nación a otra. Moen lo asesorará en el procedimiento a seguir para hacer válida esta garantía. Sencillamente escriba a Moen Incorporated utilizando la dirección que aparece a continuación. Explique el tipo de defecto e incluya comprobantes de compra, su nombre, dirección, código de área y número de teléfono.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila
Mexico 25900

Garantie à vie limitée de Moen

Les produits Moen sont fabriqués selon les normes les plus élevées de qualité et de main-d'oeuvre. Moen garantit à l'acheteur original, tant qu'il sera propriétaire de la maison (la «période de garantie» des propriétaires), que ce robinet sera libre de toute fuite pendant son usage normal et qu'aucune pièce et qu'aucun fini de ce robinet ne présenteront de défaut de matériel et de main-d'oeuvre en usine. Tous les autres achats (y compris les achats à des fins industrielles, commerciales et d'affaires) sont garantis pendant cinq (5) ans à compter de la date d'achat originale (période de garantie commerciale).

Si ce robinet fuit ou dégoutte durant la période de garantie, Moen s'engage à fournir GRATUITEMENT les pièces de rechange requises pour remettre le robinet en état de fonctionnement ainsi qu'à remplacer GRATUITEMENT toute pièce ou tout fini dont le matériel, la fabrication ou la main-d'oeuvre, lors de l'installation, de l'usage et du service habituels, s'avèrent défectueux. On peut obtenir les pièces de rechange en composant le 1 800 465-6130 ou en écrivant à l'adresse indiquée ci-dessous. Le reçu de vente original de l'acheteur initial du robinet doit accompagner toute réclamation. Les défauts ou les dommages causés par l'utilisation de pièces non fournies par Moen ne sont pas couverts par cette garantie. Cette garantie s'applique uniquement aux robinets achetés après décembre 1995 et entre en vigueur à compter de la date d'achat indiquée sur le reçu de caisse du client.

Cette garantie s'étend aussi au remplacement de toute pièce ou de tout fini défectueux. Cependant, sont exclus de cette garantie, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit, l'utilisation de produits de nettoyage contenant des agents abrasifs, de l'alcool ou des solvants organiques, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur. Moen décline toute responsabilité quant aux frais de main-d'oeuvre et aux dommages causés durant l'installation, la réparation ou le remplacement, et aux dommages, pertes, blessures ou coûts, indirects ou consécutifs, connexes à ce robinet. Sauf lorsque la loi le stipule, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient indiquées expressément ou non, obligatoires ou autres, y compris, sans restriction, celles qui visent la commercialisation ou l'aptitude d'utilisation.

Certains pays, états ou provinces ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Les limitations ou les exclusions précitées ne s'appliqueraient pas dans ces cas. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'état, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen inc. à l'adresse indiquée ci-dessous, pour expliquer le défaut, d'inclure une preuve d'achat, d'inscrire son nom, son adresse ainsi que son indicatif régional et son numéro de téléphone.

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7

INS962B - 6/05
Printed in China

MOEN
Buy it for looks. Buy it for life.®

Installation Instructions
Manuel d'installation
Directives d'installation

INS1293 - 4/06

English

HELP LINE

STOP Please do not return this product to the store.

If you need installation assistance, replacement parts or have questions regarding our warranty, please call our Product Consultants at:
U.S.: 1-800-289-6636
Monday - Friday 8:00 a.m. to 8:00 p.m. EST
Saturday 8:00 a.m. to 6:30 p.m. EST
Or e-mail us at:
moenwebmail@moen.com
Be sure to visit our website at www.moen.com
Canada 1-800-465-6130
Monday - Friday 7:30 a.m. to 5:00 p.m. EST
Or e-mail us at: cantsd@moen.com
Be sure to visit our website at www.moen.com

Español

LÍNEA DE AYUDA

STOP Por favor no devuelva este producto a la tienda.

Si necesita ayuda para la instalación, piezas de repuesto o tiene alguna pregunta relacionada con nuestra garantía, por favor llame a nuestros asesores de producto al:
En la República Mexicana:
01-800-718-4345
Lunes a viernes de 8:00 a.m. a 6:00 p.m. hora Central
O envíenos un correo electrónico a:
tcoronado@moen.com.mx
Visite nuestra página de Internet:
www.moen.com.mx

Français

SERVICE À LA CLIENTÈLE

STOP Prière de ne pas retourner ce produit au magasin.

Pour obtenir de l'aide pour l'installation, le remplacement de pièces ou pour toute question concemant notre garantie, appeler un de nos spécialistes des produits:
Toronto: (905) 829-3400
Ailleurs au Canada: 1-800-465-6130
7 h 30 à 17 h HNE
Ou par courriel à l'adresse:
cantsd@moen.com
Visitez notre site web à l'adresse
www.moen.com

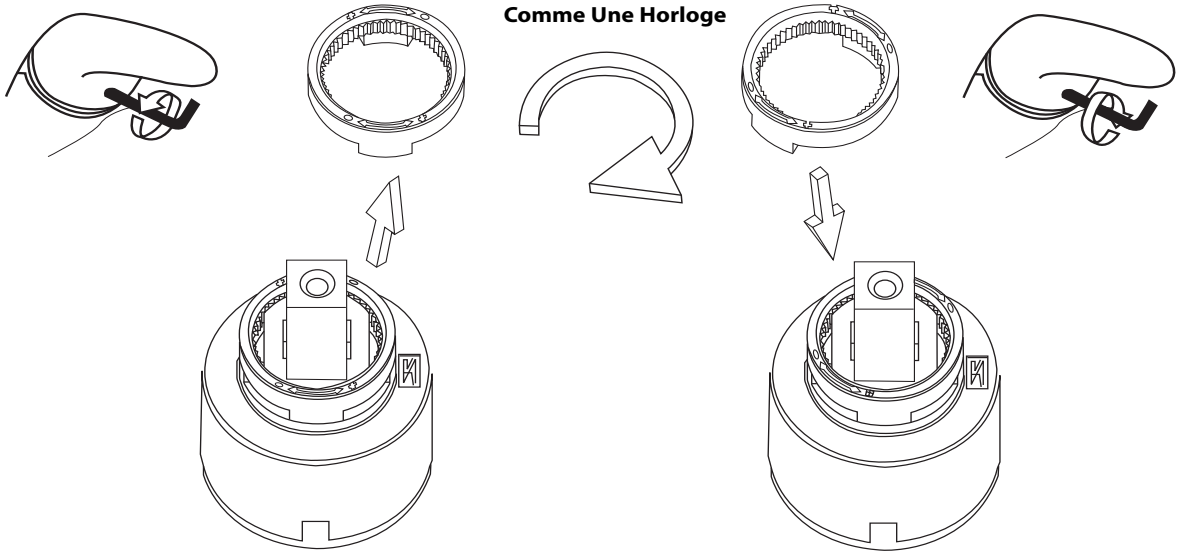
1. Remove Handle
Quite Manija
Enlevez Poignée

2. Remove Ring
Quite Anillo
Enlevez L'Anneau

3. Rotate Ring Clockwise
Rote El Anillo A La Derecha
Tournez L'anneau Comme Une Horloge

4. Replace Ring
Substituya El Anillo
Remplacez L'Annea

5. Replace Handle
Substituya Manija
Remplacez Poignée



⚠ CAUTION —TIPS FOR REMOVAL OF OLD CARTRIDGE:
Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

⚠ PRECAUCIÓN- CONSEJOS PARA RETIRAR EL CARTUCHO USADO:
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

⚠ ATTENTION —SUGGESTIONS ENLEVER L'ANCIENNE
Toujours couper l'alimentation eau avant d'enlever ou démonter le robinet. robinet pour libérer la d'eau et pour s'assurer l'alimentation en eau a bien été coupée.

VENDOR PART	VENDOR	DESCRIPTION	PAGE
7594C	Moen	Arbor One Handle Pull Down Kitchen Faucet - Chrome	24

MOEN®

INS10634E - 10/19

PLEASE CONTACT MOEN FIRST
For Installation Help, Missing or Replacement Parts

(USA)
1-800-BUY-MOEN (1-800-289-6636)
WWW.MOEN.COM

(Canada)
1-800-465-6130
WWW.MOEN.CA

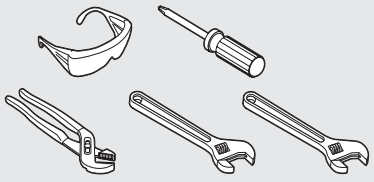
POR FAVOR, CONTÁCTESE PRIMERO CON MOEN
Para obtener ayuda de instalación, piezas faltantes o de recambio
011 52 (800) 718-4345
WWW.MOEN.COM.MX

VEUILLEZ D'ABORD CONTACTER MOEN
En cas de problèmes avec l'installation, ou pour obtenir toute pièce manquante ou de rechange
1-800-465-6130
WWW.MOEN.CA

HELPFUL TOOLS
For safety and ease of faucet replacement, Moen recommends the use of these helpful tools.

HERRAMIENTAS ÚTILES
Para que el cambio de la llave sea fácil y seguro, Moen le recomienda usar estas útiles herramientas.

OUTILS UTILES
Par mesure de sécurité et pour faciliter l'installation, Moen suggère l'utilisation des outils suivants.



CAUTION — TIPS FOR REMOVAL OF OLD FAUCET:
Always turn water supply OFF before removing existing faucet or disassembling the valve. Open faucet handle to relieve water pressure and ensure that complete water shut-off has been accomplished.

PRECAUCIÓN — CONSEJOS PARA CAMBIAR LA LLAVE MEZCLADORA:
Siempre CIERRE la toma de agua antes de quitar la llave existente o desmontar la válvula. Abra la llave para liberar la presión, y asegúrese de que esté bien cerrada el agua.

ATTENTION — SUGGESTIONS POUR ENLEVER L'ANCIEN ROBINET:
Toujours couper l'alimentation en eau avant d'enlever ou de démonter le robinet. Ouvrir le robinet pour libérer la pression d'eau et pour s'assurer que l'alimentation en eau a bien été coupée.

Icon Legend/Leyenda de Iconos/ Légende des icônes

Above sink
Encima del lavabo
Au-dessus de l'évier

Below sink
Debajo del fregadero
Sous l'évier

SINGLE HANDLE PULLDOWN KITCHEN FAUCET

MEZCLADORA MONOMANDO EXTENSIBLE PARA COCINA

ROBINET DE CUISINE À BEC RÉTRACTABLE ET POIGNÉE UNIQUE

Image is for Reference only
(Style varies by model)
La imagen es sólo como referencia
(El estilo varía por el modelo)
L'illustration n'est offerte qu'à titre indicatif seulement
(Le style varie selon le modèle)

Record Purchased Model Number:
Registre el Número de Modelo adquirido:
Inscrire le numéro du modèle acheté :

_____

(Save instruction sheet for future reference)
(Guarde la hoja de instrucciones para futura referencia)
(Conserver ces directives pour consultation ultérieure)

Register Online:
Regístrese en línea:
S'enregistrer en ligne :
www.moen.com/product-registration

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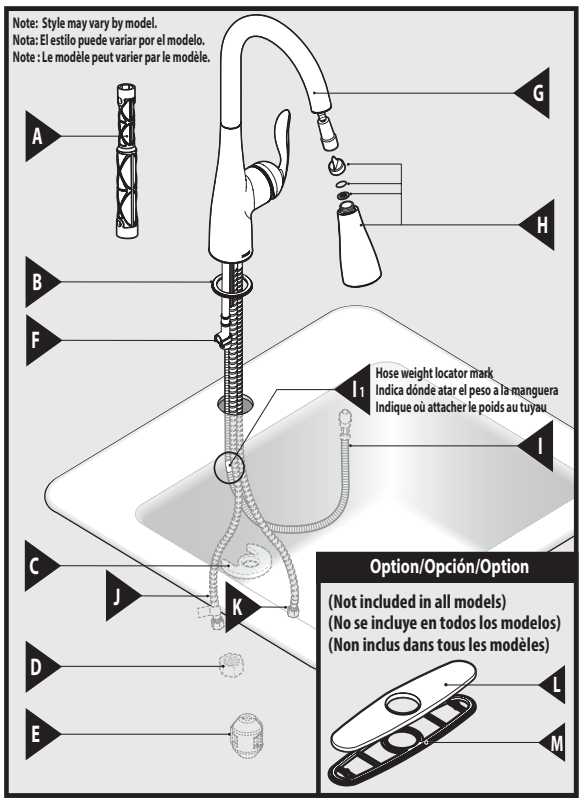


Parts List

A. Installation Tool
B. Deck Gasket
C. Mounting Washer
D. Mounting Nut
E. Hose Weight
F. Outlet Hose
G. Faucet Body
H. Spray Wand
I. Pulldown Hose
I1. Pulldown Hose Weight Indicator Mark
J. Supply Hose Hot
K. Supply Hose Cold
L. Deck Plate
M. Deck Plate Gasket

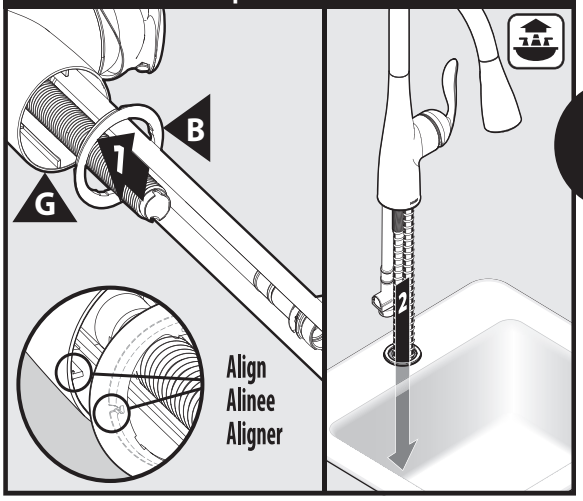
Lista de piezas

A. Herramienta de instalación
B. Empaque de cubierta
C. Arandela de montaje
D. Tuerca de montaje
E. Peso de manguera
F. Manguera de salida
G. Cuerpo de la mezcladora
H. Varilla rociadora
I. Manguera retráctil
I1. Marca de ubicación del peso de la manguera retráctil
J. Manguera de suministro caliente
K. Manguera de suministro fría
L. Placa de cubierta
M. Empaque de la placa de cubierta

Liste des pièces

A. Outil d'installation
B. Joint d'étanchéité
C. Rondelle de montage
D. Écrou de fixation
E. Poids du tuyau
F. Tuyau de sortie
G. Corps du robinet
H. Bec de pulvérisation
I. Tuyau de raccord du bec rétractable
I1. Marque de l'indicateur de poids du tuyau de bec rétractable
J. Chaud tuyau d'alimentation
K. Froid tuyau d'alimentation
L. Plaque de comptoir
M. Joint d'étanchéité de la plaque de comptoir

1A 1 Hole Option / Opción de 1 agujero / Option à 1 ouverture



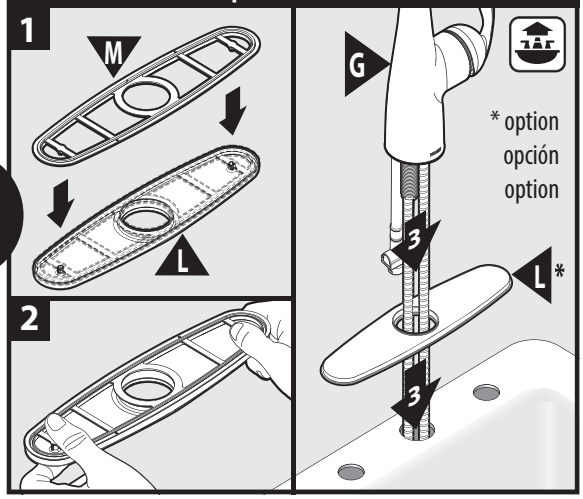
For Single Hole Applications:
1. Place Deck Gasket **(B)** onto base of Faucet Body **(G)** aligning ribs on faucet (if present) to slots on Deck Gasket.
2. Place into sink hole. **NOTE:** Install with handle on right side only.

Para aplicaciones de 1 agujero:
1. Coloque el empaque de cubierta **(B)** en la base del cuerpo de la mezcladora **(G)** alineando las nervaduras de la mezcladora (si las hay) con las ranuras en el empaque de cubierta
2. Coloque en el agujero del fregadero. **NOTA:** Instale con el monomando en el lado derecho solamente.

Pour installation sur plaque à 1 ouverture :
1. Placer le joint d'étanchéité **(B)** sur la base du corps du robinet **(G)** en alignant les rainures du robinet (le cas échéant) sur les fentes du joint d'étanchéité de la plaque de comptoir.
2. Placer dans le trou de l'évier. **REMARQUE :** Installez avec la poignée sur le côté droit seulement.

or
o
ou

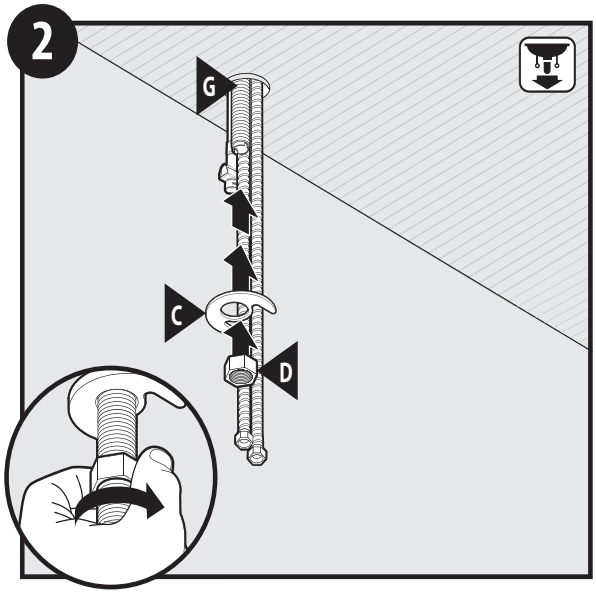
1B 3 Hole Option / Opción de 3 agujeros / Option à 3 ouvertures



For 3 Hole Applications:
1. Place Deck Plate Gasket **(M)**onto Deck Plate **(L)**
2. Firmly snap Deck Plate Gasket onto Deck Plate.
3. Place Deck Plate on mounting surface and install Faucet Body **(G)** in hole on sink.

Para aplicaciones de 3 agujeros:
1. Coloque el empaque de la placa de cubierta **(M)**sobre la placa de cubierta **(L)** .
2. Presione con firmeza el empaque de la placa de cubierta sobre la placa de cubierta.
3. Coloque la placa de cubierta sobre la superficie de montaje e instale el cuerpo de la mezcladora **(G)** en el agujero en el fregadero.

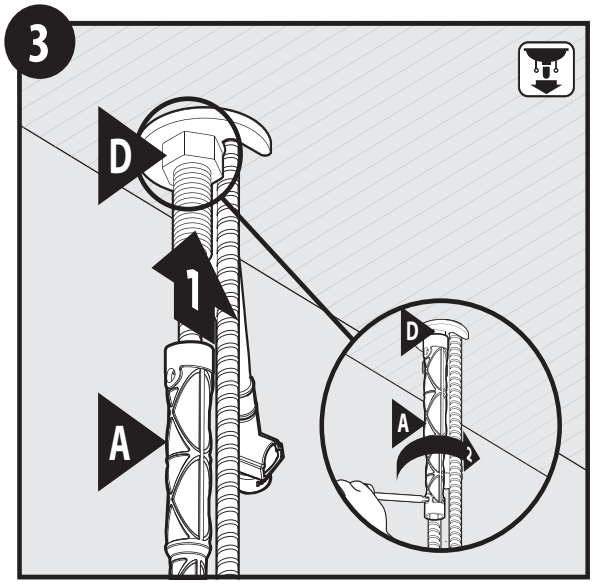
Pour les installations sur 3 ouvertures :
1. Placer le joint d'étanchéité de la plaque de comptoir **(M)**sur la plaque de comptoir **(L)** .
2. Bien enclencher le joint d'étanchéité de la plaque de comptoir sur la plaque de comptoir.
3. Placer la plaque de comptoir sur la surface de montage et installer le corps du robinet **(G)** dans le trou prévu sur l'évier.



Slide Mounting Washer **(C)** up onto Faucet Body **(G)** under sink and secure with Mounting Nut **(D)**.

Deslice la arandela de montaje **(C)** hacia arriba sobre el cuerpo de la mezcladora **(G)** debajo del fregadero y asegure con la tuerca de montaje **(D)**.

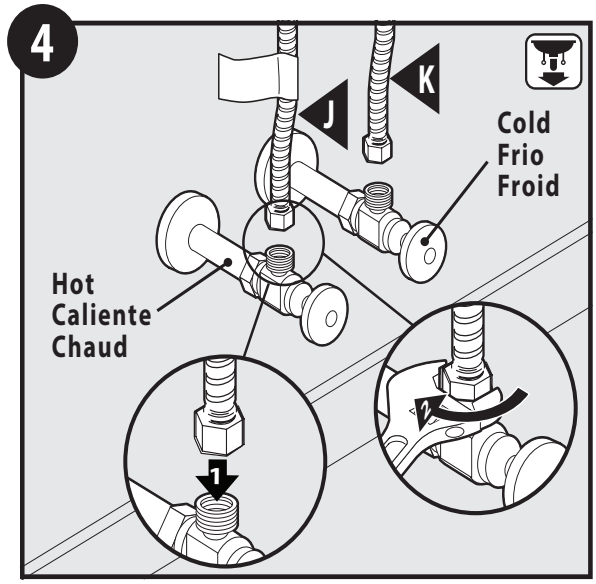
Sous l'évier, faire glisser la rondelle de montage **(C)**, vers le haut sur le corps du robinet **(G)** et fixer le tout à l'aide de l'écrou de montage **(D)**.



Tighten Mounting Nut **(D)** with Installation Tool **(A)**. Use screwdriver through hole in Installation Tool **(A)** to tighten firmly.

Apriete la tuerca de montaje **(D)** con la herramienta de instalación **(A)**. Utilice un destornillador a través del agujero en la herramienta de instalación **(A)** para apretar firmemente.

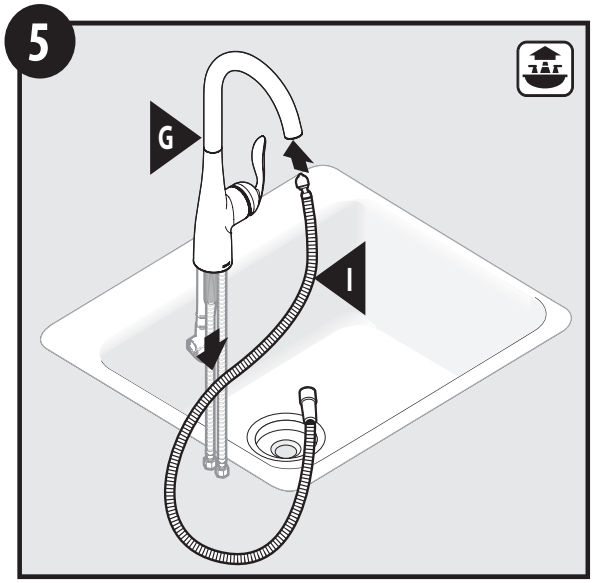
Serrer l'écrou de montage **(D)** avec l'outil d'installation **(A)**. Utiliser un tournevis dans le trou de l'outil d'installation **(A)** pour serrer fermement.



1. Attach flexible lines **(J and K)** to shutoff valves.
2. Tighten with wrench until secure.

1. Conecte las líneas flexibles **(J y K)** a las válvulas de cierre.
2. Apriete con una pinza hasta que queden firmes.

1. Raccorder les conduites flexibles **(J et K)** aux robinets d'arrêt.
2. Serrer à l'aide d'une clé jusqu'à ce que le tout soit bien fixé.



Insert small end of Pulldown Hose **(I)** into spout and feed through Faucet Body **(G)**.

Inserte el extremo pequeño de la manguera retráctil **(I)** en el surtidor y aliméntela a través del cuerpo de la mezcladora **(G)**.

Insérer la petite extrémité du tuyau rétractable **(I)** dans le bec et la faire glisser dans le corps du robinet **(G)**.

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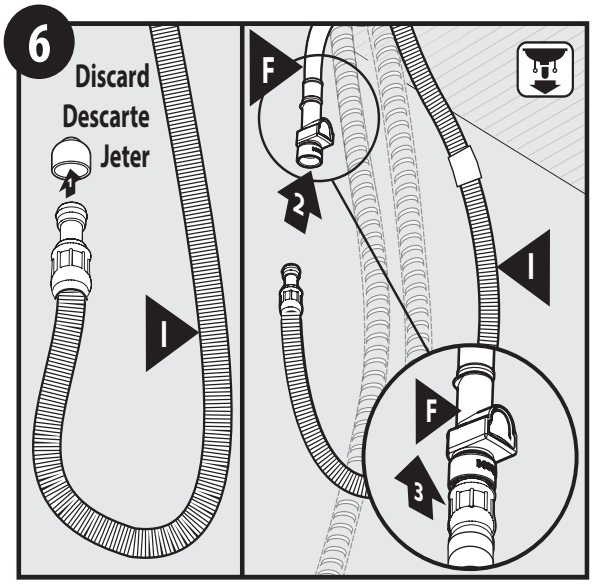
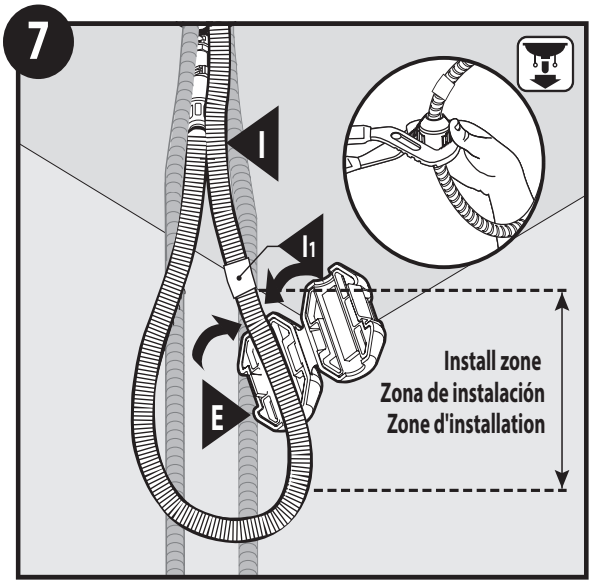


Remove and discard plastic cap from end of Pullout Hose **(I)**. Insert hose into end of Quick Connect Adapter **(F)**. Push until a "click" is heard. Tug downward to test engagement.

Retire y descarte la tapa plástica del extremo de la manguera retráctil **(I)**. Inserte la manguera en el extremo del adaptador de conexión rápida **(F)**. Empuje hasta oír un clic. Tire hacia abajo para verificar que esté enganchada.

Enlever et jeter le capuchon en plastique de l'extrémité du tuyau rétractable **(I)**. Insérer le tuyau dans l'extrémité de l'adaptateur de raccord rapide **(F)**. Pousser jusqu'au déclic. Tirer vers le bas pour tester l'enclenchement.

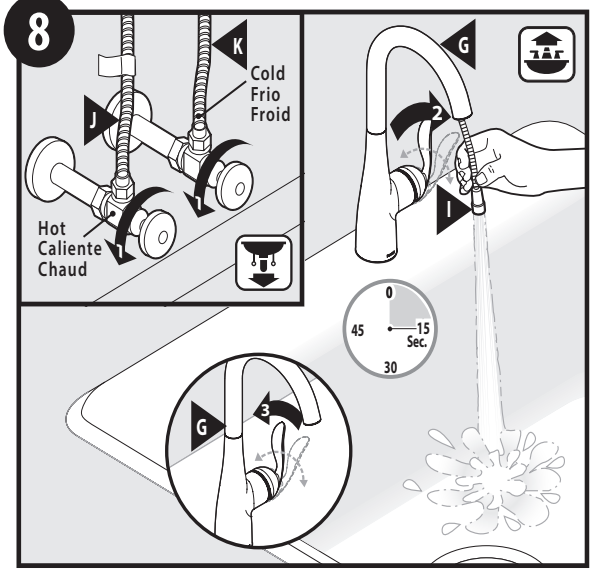


IMPORTANT - Locate Hose Weight Locator Mark **(I_1)** on Pulldown Hose **(I)**. Install Hose Weight **(E)** just above start of loop curvature in hose on the same side of hose as locator mark. Channel Locks may be useful to securely clamp Hose Weight **(E)**.

IMPORTANTE - Ubique la marca de ubicación del peso de la manguera **(I_1)** en la manguera retráctil **(I)**. Instale el peso de la manguera **(E)** justo encima del comienzo de la curva del lazo de la manguera del mismo lado de la marca de ubicación. Puede ser útil una pinza ajustable para apretar con firmeza el peso de la manguera **(E)**.

IMPORTANT - Trouver la marque de l'indicateur du poids du tuyau **(I_1)** sur le tuyau rétractable **(I)**. Installer le poids du tuyau **(E)** juste au-dessus d'où commence la courbure de la boucle du tuyau, du même côté que la marque de l'indicateur sur le tuyau. On peut utiliser une pince multiprise pour bien serrer le poids du tuyau **(E)** .

Flushing / Limpieza / Rincer



1. Turn on Hot **(J)** and Cold **(K)** water supply.
2. Hold Pulldown Hose **(I)** and turn on Faucet **(G)**, allow water to run for 15 seconds.
3. Turn off Faucet **(G)**.

1. Abra el suministro de agua caliente **(J)** y fría **(K)**.
2. Sostenga la manguera retráctil **(I)** y abra la mezcladora **(G)**; deje correr el agua durante 15 segundos.
3. Cierre la mezcladora **(G)**.

1. Ouvrir les conduites d'alimentation d'eau froide **(K)** et d'eau chaude **(J)** .
2. Tenir le tuyau rétractable **(I)** et ouvrir le robinet **(G)**. Laisser couler l'eau pendant 15 secondes.
3. Fermer le robinet **(G)**.

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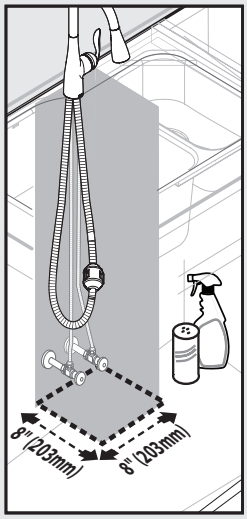
⚠ IMPORTANT FOR INSTALLATION / IMPORTANTE PARA LA INSTALACIÓN / NOTE IMPORTANTE POUR L'INSTALLATION

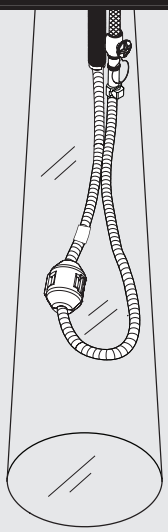
ATTENTION / ATENCIÓN / MISE EN GARDE



For the best performance of your new pulldown faucet, Moen recommends the following:
- Maintain 8"x8" clear area for the hose and weight to travel, free of any moveable items including (bottles, cleaning supplies, etc.). See Illustration.
- If non-moveable pipes or other fixtures are interfering, consider repositioning the weight higher on the hose.
- Periodically check to be sure no obstructions have entered this clear zone.

Para obtener el mayor rendimiento de su nueva mezcladora retráctil, Moen recomienda lo siguiente:
- Mantenga un espacio de 20 cm x 20 cm para el movimiento de la manguera y peso, libre de objetos movibles como botellas, material de limpieza, etc. Vea la ilustración.
- Si existen elementos no movibles u otros elementos fijos que interfieren, es probable que deba colocar el peso más arriba en la manguera.
- Observe periódicamente para cerciorarse que no hayan entrado obstrucciones en este espacio libre.

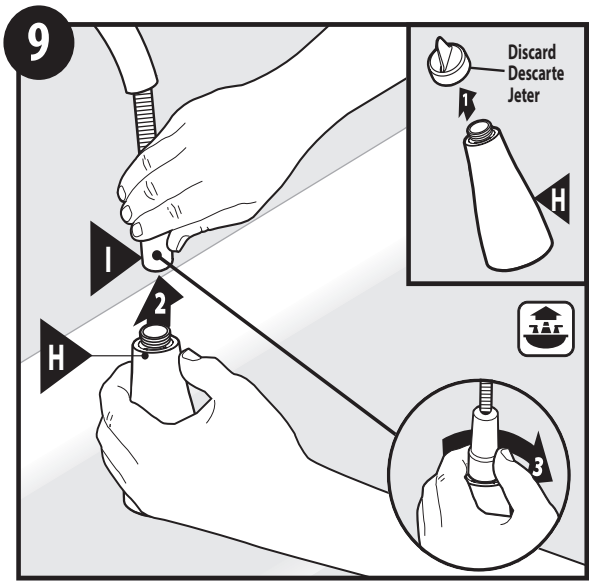
Pour vous permettre d'obtenir le meilleur rendement de votre nouveau robinet à bec rétractable, Moen fait la recommandation suivante:
- Garder un espace de 8 x 8 po libre de toute obstruction, pour permettre au tuyau et au poids de se déplacer librement sans risquer de heurter d'objets susceptibles d'être renversés, y compris des bouteilles, des fournitures de nettoyage, etc. Voir l'illustration.
- Si des tuyaux non amovibles ou autres se trouvent dans la trajectoire du tuyau, envisager de repositionner le poids en le plaçant plus haut sur le tuyau.
- De temps à autre, vérifier qu'il n'y a aucun objet obstruant cette zone.



To enhance the performance of your pulldown or pullout wand, Moen offers the **159060** Hose Guide to isolate the hose from plumbing lines and other items under the kitchen sink. Call our Product Consultants at **800-289-6636** or visit www.moen.com to order part **#159060.**

Para mejorar el rendimiento de su manguera o varilla retráctil, Moen ofrece la guía de la manguera **159060** para aislar la manguera de las tuberías y otros elementos bajo el fregadero de la cocina. Llame a nuestros asesores de productos en **800-289-6636** o visite www.moen.com pedir pieza # **159060**.

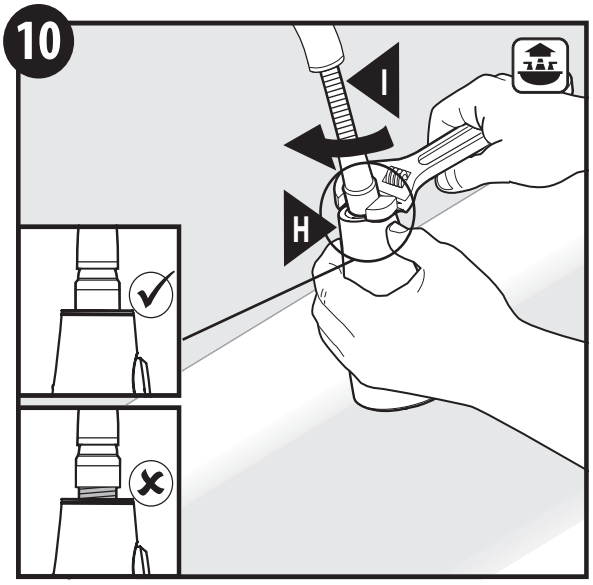
Pour améliorer le rendement de votre bec rétractable ou bec de pulvérisation, Moen offre le guide-tuyau **159060** pour isoler le tuyau des conduites de plomberie et d'autres articles sous l'évier de cuisine. Appeler nos spécialistes des produits au **1-800-289-6636** ou visiter www.moen.com pour commander la pièce no **159060**.



1. Remove protective cap from Spray Wand **(H)**.
2. Attach Spray Wand **(H)** to Pulldown Hose **(I)**.
3. Finger tighten.

1. Retire la tapa protectora de la varilla rociadora **(H)**.
2. Conecte la varilla rociadora **(H)** a la manguera retráctil (I).
3. Apriete con los dedos.

1. Enlever le capuchon protecteur du bec de pulvérisation **(H)**.
2. Fixer le bec de pulvérisation **(H)** sur le tuyau rétractable **(I)**.
3. Serrer à la main.



Tighten Pulldown Hose **(I)**, flush with Spray Wand **(H)**. Do not overtighten.

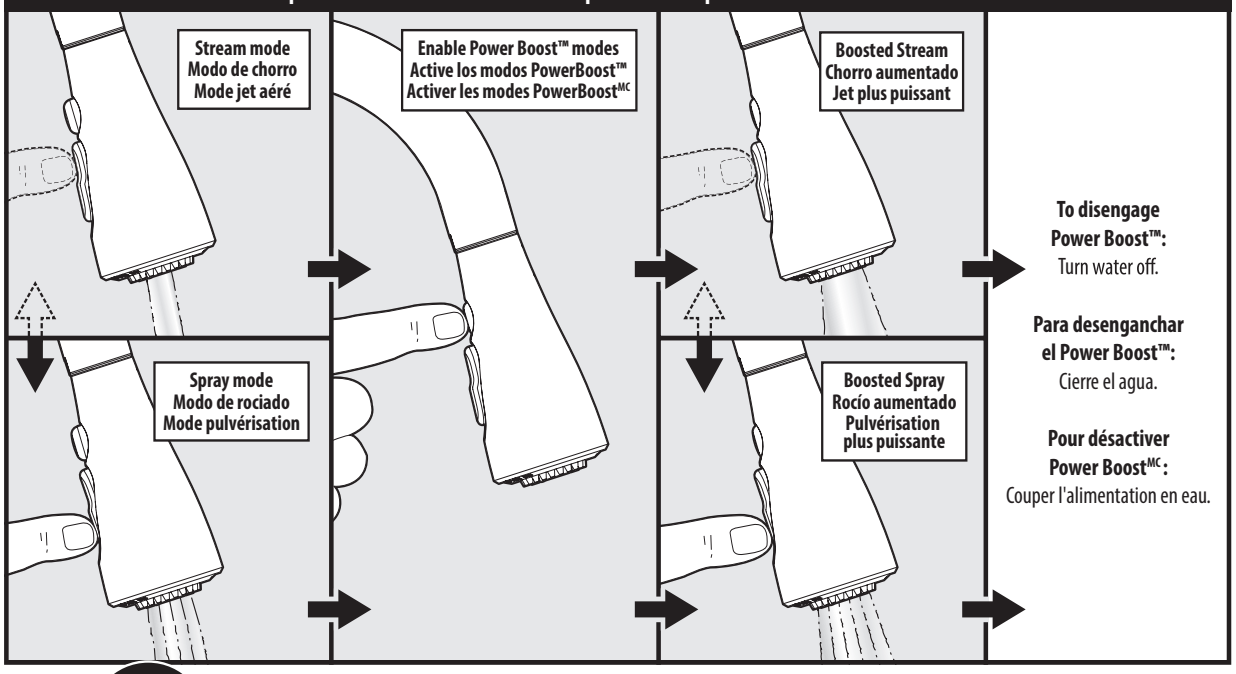
Apriete la manguera retráctil **(I)** a ras con la varilla rociadora **(H)**. No apriete demasiado.

Serrer le tuyau de pulvérisation **(I)**, rincer à l'aide du bec de pulvérisation **(H)**. Ne pas trop serrer.

MOEN®

11A

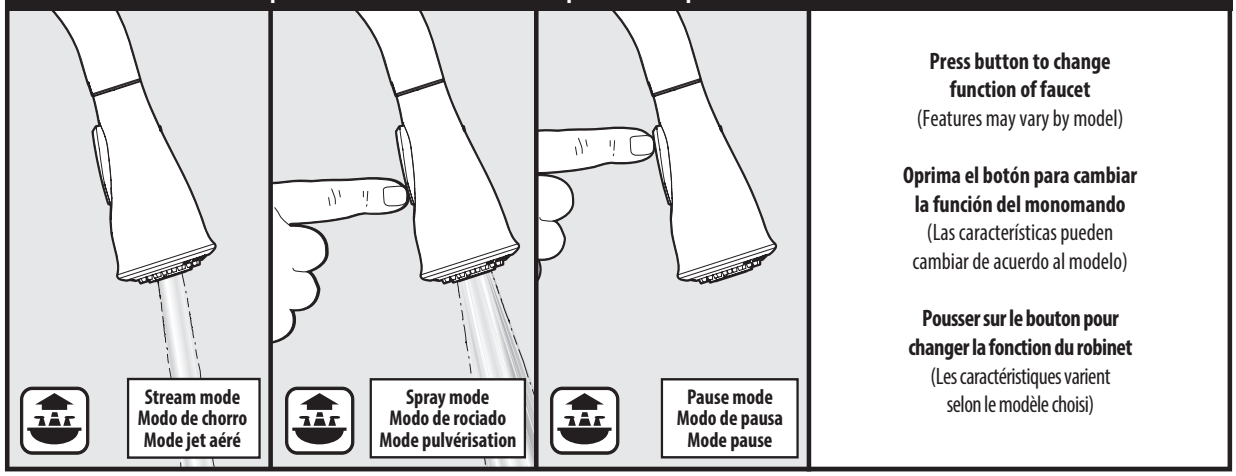
Spray wand operation features for models with Power Boost™
Características de operación de la varilla rociadora para modelos con Power Boost™
Caractéristiques de fonctionnement du bec de pulvérisation pour les modèles dotés de Power Boost™



or
o
ou

11B

Spray wand operation features for models without Power Boost™
Características de operación de la varilla rociadora para modelos sin Power Boost™
Caractéristiques de fonctionnement du bec de pulvérisation pour les modèles non dotés de Power Boost™



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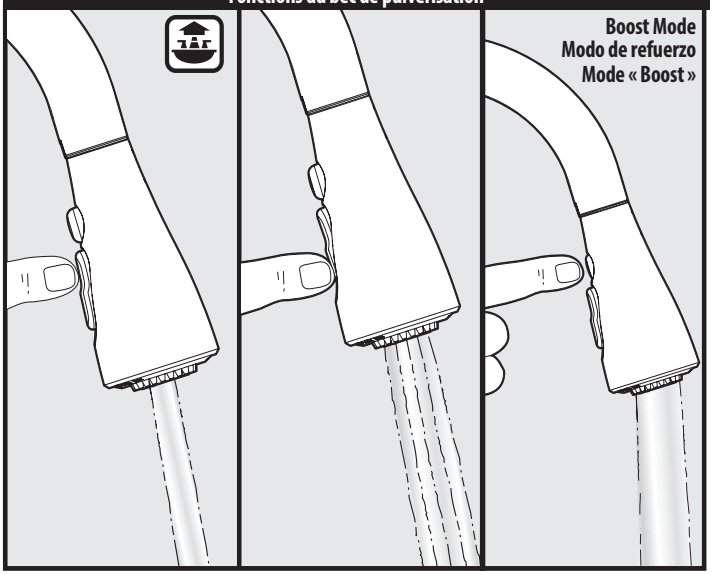
Spray Wand Functions
Funciones de la varilla rociadora
Fonctions du bec de pulvérisation

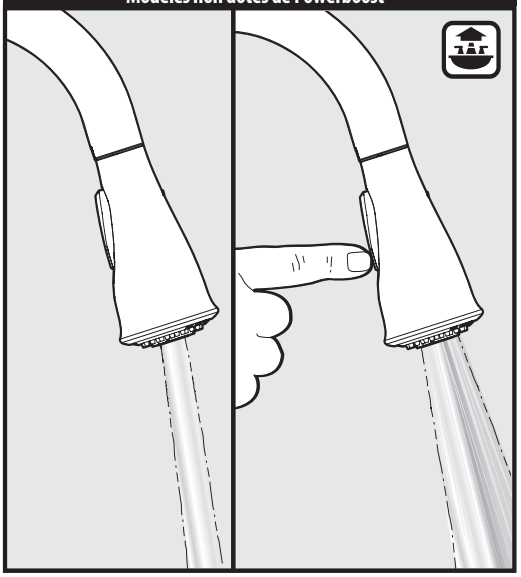


Check operation of spray wand. Turn on faucet, spray wand should be in stream mode. Push and release button on spray wand. The spray wand should change to spray mode. To enter PowerBoost™ mode, press top button. To exit the boost mode, turn off the faucet. **Note:** The spray wand will remain in the last used mode, once faucet is turned off. Manually choose your desired spray setting as faucet is turned back on.

Controle la operación de la varilla rociadora. Abra la mezcladora, la varilla rociadora debe estar en modo de flujo. Empuje y suelte el botón en la varilla rociadora. La varilla rociadora debe cambiar a modo de rocío. Para entrar en modo PowerboostTM, presione el botón superior. Para salir de modo reforzado, cierre la mezcladora. **Nota:** La varilla rociadora permanecerá en el último modo usado una vez que se apague la mezcladora. Elija manualmente la configuración de rociado deseada al encender nuevamente la mezcladora.

Vérifier le fonctionnement du bec de pulvérisation. Ouvrir le robinet, le bec de pulvérisation devrait être en mode jet aéré. Appuyer puis relâcher le bouton sur le bec de pulvérisation. Le bec de pulvérisation devait aller au mode de pulvérisation. Pour aller au mode PowerboostTM, appuyer sur le bouton supérieur. Pour quitter le mode « boost », fermer le robinet. **Remarque :** Le bec de pulvérisation restera dans le dernier mode utilisé, une fois le robinet fermé. Choisissez manuellement le réglage de pulvérisation souhaité lorsque le robinet est rouvert.

Models Without Powerboost™
Modelos sin Powerboost™
Modèles non dotés de Powerboost™

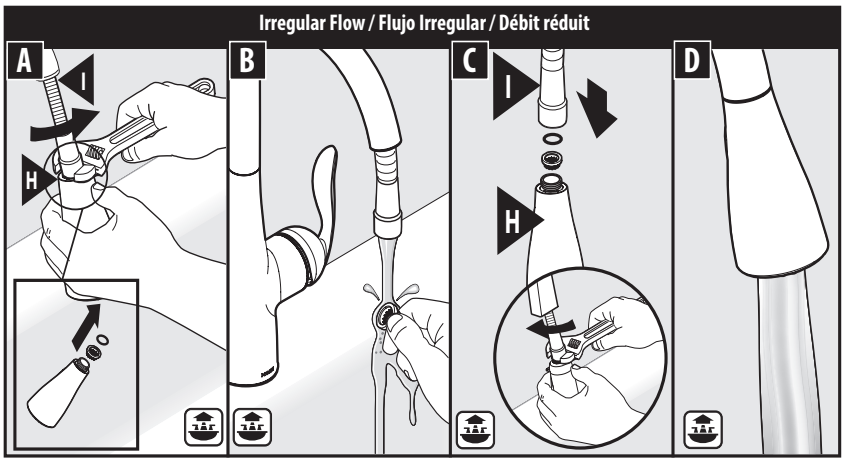


Check operation of spray wand. Turn on faucet, spray wand should be in stream mode. Push and release button on spray wand. The spray wand should change to spray mode. To switch back to stream mode, turn handle off and on again.

Controle la operación de la varilla rociadora. Abra la mezcladora, la varilla rociadora debe estar en modo de flujo. Empuje y suelte el botón en la varilla rociadora. La varilla rociadora debe cambiar a modo de rocío. Para volver al modo de flujo, apague el monomando y vuelva a abrirlo.

Vérifier le fonctionnement du bec de pulvérisation. Ouvrir le robinet, le bec de pulvérisation devrait être en mode jet aéré. Appuyer puis relâcher le bouton sur le bec de pulvérisation. Le bec de pulvérisation devait aller au mode de pulvérisation. Pour retourner au mode jet aéré, fermer et ouvrir à nouveau le robinet.

Cleaning Instructions	Instrucciones para la limpieza	Directives de nettoyage
Spot Resist™ Stainless and Spot Resist™ Brushed Nickel Finishes: Moen recommends cleaning the Spot Resist finish with a mild soap, rinsing thoroughly with warm water and drying with a clean, soft cloth. Never use cleaners containing abrasives (including abrasive sponges or steel wool), ammonia, bleach or sodium hypochlorite, organic solvents (e.g. alcohols) or other harsh chemicals (e.g. lime scale removers) to clean the Spot Resist finish, as they may damage the finish. Failure to comply with these cleaning instructions may void Moen's warranty.	**Acabados en níquel cepillado Spot Resist™ y acero inoxidable Spot Resist™:** Moen recomienda limpiar el acabado Spot Resist con un jabón suave, enjuagarlo cuidadosamente con agua tibia y secarlo con un paño limpio y suave. Nunca utilice limpiadores que contengan sustancias abrasivas (incluyendo las esponjas abrasivas o la lana de acero), amoníaco, blanqueadores o hipoclorito sódico, solventes orgánicos (por ejemplo alcoholes) u otros productos químicos fuertes (por ejemplo removedores de calcio y sarro) para limpiar el acabado Spot Resist, ya que pueden dañarlo. La inobservancia de estas instrucciones de limpieza podría anular la garantía de Moen.	**Fini inoxydable Spot Resist™ et fini nickel brossé Spot Resist™:** Moen recommande de nettoyer le fini Spot Resist avec du savon doux puis de rincer soigneusement à l'eau tiède avant d'essuyer avec un chiffon doux propre. Ne jamais utiliser de produits de nettoyage contenant des abrasifs (y compris éponges abrasives ou laine de verre), ammoniaque, eau de javel ou hypochlorite de sodium, solvants organiques (par ex. alcool) ou autres produits chimiques durs (par ex. produits pour enlever le tartre) pour nettoyer le fini Spot Resist car ils peuvent endommager le fini. Ne pas respecter ces instructions sur le nettoyage peut annuler la garantie de Moen.



A.
Unscrew Pulldown Hose **(I)** from Spray Wand **(H)** and remove screen and o-ring.

Desenrosque la manguera retráctil **(I)** de la varilla rociadora **(H)** y retire el filtro y el anillo de caucho.

Dévisser le tuyau rétractable **(I)** du bec de pulvérisation **(H)** et enlever le filtre et le joint torique.

B.
Rinse debris from screen.

Enjuague los residuos del filtro.

Rincer le filtre pour en retirer tous les débris.

C.
Reinstall screen and o-ring as shown. Thread Pulldown Hose **(I)** onto Spray Wand **(H)** and tighten.

Vuelva a instalar el filtro y el anillo de caucho como se muestra. Enrosque la manguera extensible **(I)** en la varilla rociadora **(H)** y apriete.

Réinstaller le filtre et le joint torique comme indiqué. Visser le tuyau rétractable **(I)** sur le bec de pulvérisation **(H)** et serrer.

D.
Re-check water flow.

Vuelva a revisar el flujo de agua.

Vérifier de nouveau le débit de l'eau.

Moen Limited Lifetime Warranty

Moen products have been manufactured under the highest standards of quality and workmanship. Moen warrants to the original consumer purchaser for as long as the original consumer purchaser owns their home (the "Warranty Period" for homeowners), that this faucet will be leak- and drip-free during normal use and all parts and finishes of this faucet will be free from defects in material and manufacturing workmanship. All other purchasers (including purchasers for industrial, commercial and business use) are warranted for a period of 5 years from the original date of purchase (the "Warranty Period" for non-homeowners).

If this faucet should ever develop a leak or drip during the Warranty Period, Moen will FREE OF CHARGE provide the parts necessary to put the faucet back in good working condition and will replace FREE OF CHARGE any part or finish that proves defective in material and manufac-turing workmanship, under normal installation, use and service. Replacement parts may be obtained by calling 1-800-289-6636 (Canada 1-800-465-6130), or by writing to the address shown. Proof of purchase (original sales receipt) from the original consumer purchaser must accompany all warranty claims. Defects or damage caused by the use of other than genuine Moen parts is not covered by this warranty. This warranty is applicable only to faucets purchased after December, 1995 and shall be effective from the date of purchase as shown on purchaser's receipt.

This warranty is extensive in that it covers replacement of all defective parts and finishes. However, damage due to installation error, product abuse, product misuse, or use of cleaners containing abrasives, alcohol or other organic solvents, whether performed by a contractor, service company, or yourself, are excluded from this warranty. Moen will not be responsible for labor charges and/or damage incurred in installation, repair or replacement, nor for any indirect, incidental or consequential damages, losses, injury or costs of any nature relating to this faucet. Except as provided by law, this warranty is in lieu of and excludes all other warranties, conditions and guarantees, whether expressed or implied, statutory or otherwise, including without restriction those of merchantability or of fitness for use.

Some states, provinces and nations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, nation to nation. Moen will advise you of the procedure to follow in making warranty claims. Simply write to Moen Incorporated using the address below. Explain the defect and include proof of purchase and your name, address, area code and telephone number.

Moen le otorga Garantía limitada de por vida

Los productos Moen son fabricados bajo las más estrictas normas de calidad y mano de obra. Moen le garantiza al comprador original que durante el tiempo que la tenga su casa (el "periodo de garantía", para los propietarios), esta llave no tendrá ni goteras ni fugas durante el uso normal, y que todas las piezas y acabados estarán libres de defectos en material y mano de obra. Asimismo, a todos nuestros otros consumidores (industriales, comerciales y empresariales), les otorgamos 5 años de garantía a partir de la fecha original de compra (el "periodo de garantía" para usos no domésticos).

Si en esta llave mezcladora se llegara a producir alguna fuga o gotera durante el periodo de garantía, Moen le proporcionará SIN COSTO ALGUNO las piezas necesarias para que vuelva a funcionar en perfectas condiciones y reemplazará también SIN COSTO para usted, cualquier pieza o acabado que pudiera tener algún defecto en la fabricación o mano de obra, bajo condiciones normales de instalación, uso y servicio. Las piezas de repuesto se pueden obtener llamando en la República Mexicana al 01-800-718-4345 o si escribe en la dirección que aparece aquí. Para que el comprador original pueda hacer efectiva la garantía, cualquier reclamación deberá ir acompañada por el comprobante de compra (nota de venta original). La garantía no cubre los defectos o daños causados por el uso de otras partes que no sean piezas originales Moen. Esta garantía es aplicable sólo para las llaves compradas después de diciembre de 1995, y entrará en vigencia a partir de la fecha que aparece en la nota de compra.

Esta garantía es amplia en el sentido que cubre el reemplazo de todas las partes y acabados defectuosos. Sin embargo, se excluyen de esta garantía los daños causados por un error de instalación, abuso del producto, mal uso del mismo, o uso de limpiadores que contengan abrasivos, alcohol u otros solventes orgánicos, ya sea por parte del contratista, compañía de servicio o usted mismo. Moen no se hace tampoco responsable por los gastos de mano de obra ni por los daños incurridos en la instalación, reparación o sustitución, ni por ningún daño indirecto, directo o consecuente, ni por pérdidas, lesiones o costos de alguna otra índole relacionados con esta llave. A menos que lo estipule la ley, esta garantía reemplaza y excluye cualquier otra garantía y condiciones, ya sea expresas o implícitas, establecidas por la ley o de otra manera, incluyendo sin restricción aquellas en que el producto se encuentra en condiciones aptas para la venta o se adecúa al uso específico para el cual fue adquirido.

Algunos estados, provincias y naciones no permiten la exclusión o limitación de los daños incidentales o consecuentes, de modo que las limitaciones o exclusiones mencionadas pueden no ser aplicables a usted. Esta garantía le otorga derechos legales específicos y usted puede también tener otros derechos que cambian de un estado a otro o de una provincia o nación a otra. Moen lo asesorará en el procedimiento a seguir para hacer válida esta garantía. Sencillamente escriba a Moen Incorporated utilizando la dirección que aparece a continuación. Explique el tipo de defecto e incluya comprobantes de compra, su nombre, dirección, código de área y número de teléfono.

Garantie à vie limitée de Moen

Les produits Moen sont fabriqués selon les normes les plus élevées de qualité et de main-d'œuvre. Moen garantit à l'acheteur original, tant qu'il sera propriétaire de la maison (la « période de garantie » des propriétaires), que ce robinet sera libre de toute fuite pendant son usage normal et qu'aucune pièce et qu'aucun fini de ce robinet ne présenteront de défaut de matériel et de main-d'œuvre en usine. Tous les autres achats (y compris les achats à des fins industrielles, commerciales et d'affaires) sont garantis pendant cinq (5) ans à compter de la date d'achat originale (période de garantie commerciale).

Si ce robinet fuit ou dégoutte durant la période de garantie, Moen s'engage à fournir GRATUITEMENT les pièces de rechange requises pour remettre le robinet en état de fonctionnement ainsi qu'à remplacer GRATUITEMENT toute pièce ou tout fini dont le matériel, la fabrication ou la main-d'œuvre, lors de l'installation, de l'usage et du service habituels, s'avèrent défectueux. On peut obtenir les pièces de rechange en composant le 1-800-465-6130 ou en écrivant à l'adresse indiquée ci-dessous. Le reçu de vente original de l'acheteur initial du robinet doit accompagner toute réclamation. Les défauts ou les dommages causés par l'utilisation de pièces non fournies par Moen ne sont pas couverts par cette garantie. Cette garantie s'applique uniquement aux robinets achetés après décembre 1995 et entre en vigueur à compter de la date d'achat indiquée sur le reçu de caisse du client.

Cette garantie s'étend aussi au remplacement de toute pièce ou de tout fini défectueux. Cependant, sont exclus de cette garantie, les dommages causés par une erreur d'installation, un abus du produit, une mauvaise utilisation du produit, l'utilisation de produits de nettoyage contenant des agents abrasifs, de l'alcool ou des solvants organiques, qu'ils soient utilisés par un entrepreneur, une entreprise de service ou le consommateur. Moen décline toute responsabilité quant aux frais de main-d'œuvre et aux dommages causés durant l'installation, la réparation ou le remplacement, et aux dommages, pertes, blessures ou coûts, indirects ou consécutifs, connexes à ce robinet. Sauf lorsque la loi le stipule, cette garantie remplace et exclut toutes les autres garanties et conditions, qu'elles soient indiquées expressément ou non, obligatoires ou autres, y compris, sans restriction, celles qui visent la commercialisation ou l'aptitude d'utilisation.

Certains pays, états ou provinces ne permettent aucune exclusion, ni limitation suite aux dommages indirects ou consécutifs. Les limitations ou les exclusions précitées ne s'appliqueraient pas dans ces cas. Cette garantie accorde des droits juridiques et il est possible que d'autres droits soient applicables selon l'état, la province ou le pays. Moen avisera le consommateur de la procédure à suivre pour soumettre une réclamation. Il suffit d'écrire à Moen inc. à l'adresse indiquée ci-dessous, pour expliquer le défaut, d'inclure une preuve d'achat, d'inscrire son nom, son adresse ainsi que son indicatif régional et son numéro de téléphone.

Moen Incorporated
25300 Al Moen Drive
North Olmsted, Ohio 44070-8022
U.S.A.

Moen de Mexico, S.A. de C.V.
Carretera Saltillo-Monterrey KM 14.7
Ramos Arizpe, Coahuila
Mexico 25900

Moen Inc.
2816 Bristol Circle
Oakville, Ontario L6H 5S7
Canada

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VENDOR PART	VENDOR	DESCRIPTION	PAGE
T-10-VB	Stern Williams	Service Sink Fitting With Adjustable Wall Brace	....

VENDOR PART	VENDOR	DESCRIPTION	PAGE
CM-15L/277	Chronomite Laboratories, Inc.	Instant-flow C-micro - Low Activation	34

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO WATER HEATER

INSTALLATION AND OPERATION INSTRUCTIONS (LOW ACTIVATION MODELS)

TABLE OF CONTENTS

REQUIRED ITEMS FOR INSTALLATION NOT SUPPLIED

- Electrical Junction Supply Box
- Electrical Supply Conduit
- Electrical Supply Wire
- Dual Outlet Angle Stop
- 3/8” Flex Hose or 3/8” O.D. Tubing (2)
- Carpenters Level
- Flat Head Screwdriver
- Phillips Head Screwdriver

3100-004-001
04/22

COMPLIES WITH STANDARDS

CALGreen

Federal Public Law 111-380 (No Lead)

Intertek 5001365

Member of MORRIS GROUP INTERNATIONAL

CHRONOMITE
Instantaneous Water Heaters
17451 Hurley St.
City of Industry, CA
91744 U.S.A.
Phone 800-447-4962
626-937-4270
www.chronomite.com

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

IMPORTANT

Before installation of heater, review electrical requirements needed for model of heater selected.

INCOMING WATER TEMPERATURE INCREASE						
MODEL	VOLTAGE	ACTIVATION	.35 GPM [1.3 LPM]	0.5 GPM [1.9 LPM]	1.00 GPM [3.8 LPM]	1.50 GPM [5.7 LPM]
CM-12L	110/120	0.20 GPM [0.75 LPM]	28°F [16°C]	20°F [11°C]	-	-
CM-12L	208	0.20 GPM [0.75 LPM]	49°F [27°C]	34°F [19°C]	-	-
CM-12L	220/240	0.20 GPM [0.75 LPM]	56°F [31°C]	39°F [22°C]	20°F [11°C]	-
CM-12L	277	0.20 GPM [0.75 LPM]	65°F [36°C]	45°F [25°C]	23°F [13°C]	-
CM-15L	110/120	0.20 GPM [0.75 LPM]	35°F [19°C]	25°F [14°C]	-	-
CM-15L	208	0.20 GPM [0.75 LPM]	61°F [34°C]	43°F [24°C]	21°F [12°C]	-
CM-15L	220/240	0.20 GPM [0.75 LPM]	70°F [39°C]	49°F [27°C]	25°F [14°C]	-
CM-15L	277	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	110/120	0.20 GPM [0.75 LPM]	47°F [26°C]	33°F [18°C]	-	-
CM-20L	208	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	66°F [37°C]	33°F [18°C]	22°F [11°C]
CM-20L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	76°F [42°C]	38°F [21°C]	25°F [14°C]
CM-30L	110/120	0.20 GPM [0.75 LPM]	70°F [40°C]	49°F [27°C]	25°F [14°C]	-
CM-30L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	85°F [45°C]	43°F [24°C]	28°F [16°C]
CM-30L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	49°F [27°C]	33°F [18°C]
CM-30L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	66°F [34°C]	44°F [23°C]
CM-40L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	76°F [42°C]	50°F [28°C]

MICROPROCESSOR LIMITS TEMPERATURE INCREASE ACCORDING TO FACTORY SET TEMPERATURE

TABLE 1											
MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE		MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE	
				INTERMITTENT DUTY	CONTINUOUS DUTY					INTERMITTENT DUTY	CONTINUOUS DUTY
CM-12L	1440	110/120	12	15	15	CM-20L	4800	220/240	20	20	30
CM-12L	2500	208	12	15	15	CM-20L	5540	277	20	20	30
CM-12L	2880	220/240	12	15	15	CM-30L	3600	110/120	30	30	40
CM-12L	3320	277	12	15	15	CM-30L	6240	208	30	30	40
CM-15L	1800	110/120	15	15	20	CM-30L	7200	220/240	30	30	40
CM-15L	3120	208	15	15	20	CM-30L	8310	277	30	30	40
CM-15L	3600	220/240	15	15	20	CM-40L	8320	208	40	40	50
CM-15L	4150	277	15	15	20	CM-40L	9600	220/240	40	40	50
CM-20L	2400	110/120	20	20	30	CM-40L	11080	277	40	40	50
CM-20L	4160	208	20	20	30						

NOTE: BEFORE INSTALLATION, COMPARE ELECTRICAL NEEDED FOR THE MODEL OF HEATER SELECTED.

INSTANT-FLOW®C- MICRO SPECIFICATIONS:

DIMENSIONS:	6-1/4" [159 mm] X 9-5/8" [244 mm] X 2-3/4" [70 mm]
WEIGHT:	5 LBS. [2.27 Kg]
MATERIALS:	ALUMINUM HOUSING, CELCON WATERWAYS, NICHROME PARTS
COLOR:	WHITE
PIPE FITTINGS:	3/8" COMPRESSION
OPERATING PRESSURE RATING:	25 PSI [172 kPa] MINIMUM, 80 PSI [551.6 kPa] MAXIMUM
MAXIMUM PRESSURE RATING:	150 PSI [1034.2 kPa] NO PRESSURE RELIEF VALVE NEEDED UNLESS REQUIRED BY LOCAL CODES.
MAXIMUM OPERATING TEMP:	160°F [71°C]
MINIMUM OPERATING FLOW RATE:	0.20 GPM [0.76 LPM]
LISTINGS:	UL, HUD, IAPMO, UPC, ETL-c

Since 1966

Electric Tankless Water Heaters

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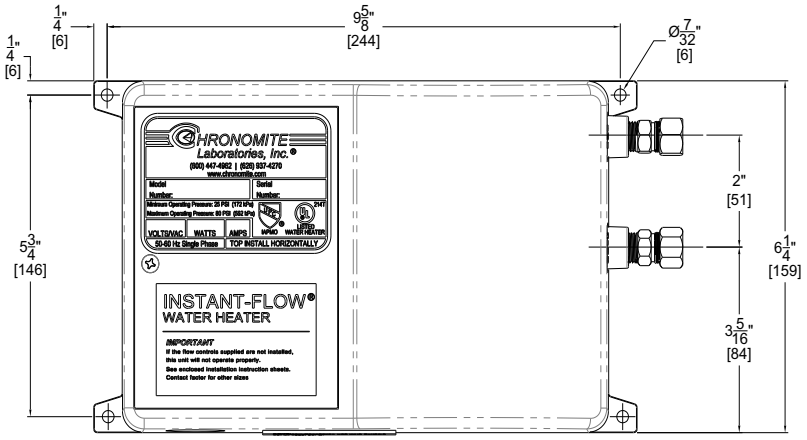
INSTANT-FLOW® C-MICRO SPECIFICATIONS

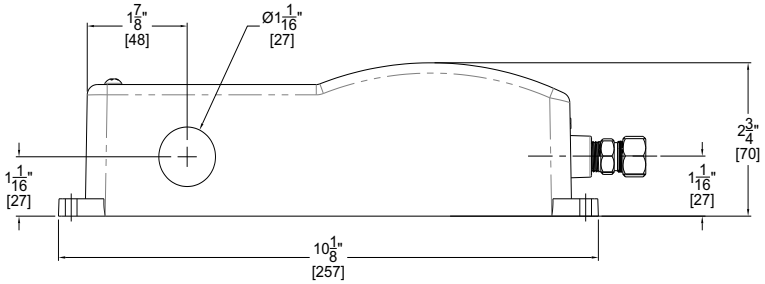
(LOW ACTIVATION MODELS) **(cont.)**

FACTORY SET TEMPERATURES:
104°F [40°C]
110°F [43.3°C]
120°F [48.9°C]
Other temperature settings are available upon request up to160°F [71°C]. Temperature settings are not field adjustable. 110°F [43.3°C] / 120°F [48.9°C] settings are recommended with cold water mixing faucets.

HOW INSTANT-FLOW® C-MICRO WORKS
The engineered plastic case houses a series of ingeniously designed coils that instantly heat water as it flows through the vessel. A unique power switch automatically applies electrical current to the coils when hot water is requested. The electrical current is not applied when the water is not in use. The microprocessor is internally preset at the factory to maintain a constant output temperature with varying flow rates.

INSTANT-FLOW® C-MICRO DIMENSIONAL DATA





INSTANT-FLOW® C-MICRO INSTALLATION

CAUTION

A) Turn off the circuit breaker to avoid dangerous electrical shocks.
B) Turn off the water supply.
C) Do not apply heat to inlet or outlet fittings on heater. Do not solder direct.
D) Flush supply line of all foreign material such as pipe dope, pipe chips, solder, sand, etc. before making up supply connections after working on water piping.

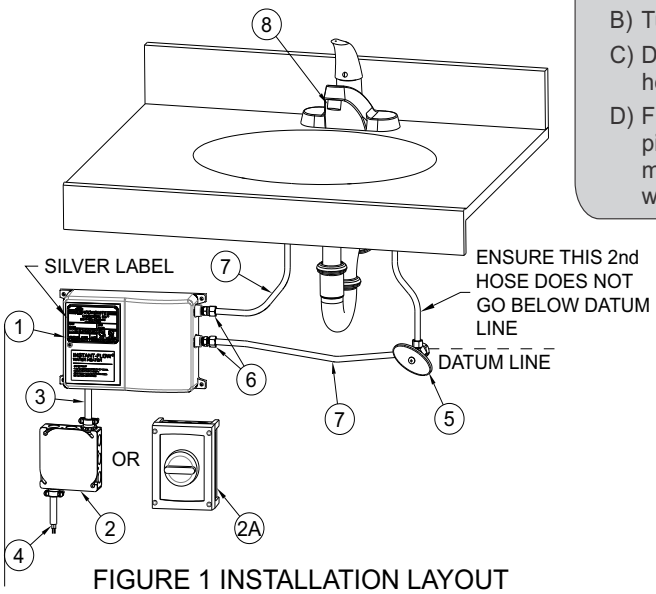


FIGURE 1 INSTALLATION LAYOUT

1. Chronomite Instant-Flow C-Micro See page 2 for selection
2. Electrical Junction Supply Box (optional)
2A. 2095-1 Disconnect Switch (optional)
3. Electrical Supply Conduit
4. Electrical Supply Wire
5. Dual outlet stop 3/8” Comp Outlet Connections
6. Fittings (supplied) 3/8” Comp x 1/4” NPT
7. Faucet Supply Inlet Hoses 3/8” NPS
8. Flow Control (supplied) Dual Threads 15/16” Male and 55/64” Female

HEATER INSTALLATION:

1. Remove cover off of Water Heater. Attach conduit to the conduit connection punching. Then feed wires. Do not attach wiring.
2. Mount unit horizontally against the wall so the silver label reads correctly (See Figure 1). Use level to ensure unit is level and mount with four screws through the flanges located on each corner using molly anchors or fasteners.
3. Connect plumbing. Use female 1/4” NPT or hose with 3/8” compression at cold water inlet and hot water outlet to 3/8” compression faucet inlet connections (See Figure 1). **DO NOT APPLY HEAT TO THESE FITTINGS.**
4. Run water through the unit to expel all air bubbles. Cycle hot side of faucet 10 times to assist in removing air bubbles. Check for leaks at all fitting joints. If no leaks proceed to electrical installation.

CAUTION: HEATING ELEMENTS MAY BURN OUT IF UNIT IS NOT MOUNTED HORIZONTALLY

ELECTRICAL INSTALLATION:

1. Connect power supply wires appropriately sized and protected by circuit breaker to the input terminals on the heater (hard wired) as shown in the Figure 2 wiring diagram.
2. Refer to Table 1 above on Page 2 for the voltage and amperage of the supply power.
3. Ensure each wire L2/N, G, L1 are connected to the respective terminals. Only connect to rated voltage on nameplate.
4. Ensure water inlet valve to heater is fully open. Do not throttle inlet
5. Turn on circuit breaker. Turn on water flow to exceed activation point listed in chart 2. The unit is almost ready for use. Shut off circuit breaker.
6. Check for leaks at all fitting joints and also inside heater.
7. Install cover. Turn on circuit breaker. Unit is now ready for use.
8. Local plumbing and electrical codes must be followed in this installation of water heater and the accessories.

NOTES:

1. Failure to comply with code requirements voids the warranty.
2. Failure to install faucet flow control as shown on (Figure 3 page 6) may cause unsatisfactory operation of the heater.

INSTANT-FLOW® C-MICRO INSTALLATION (cont.)

IMPORTANT

The manufacturer of this water heater will not be liable for any damages due to the failure to follow these installation and operation instructions.

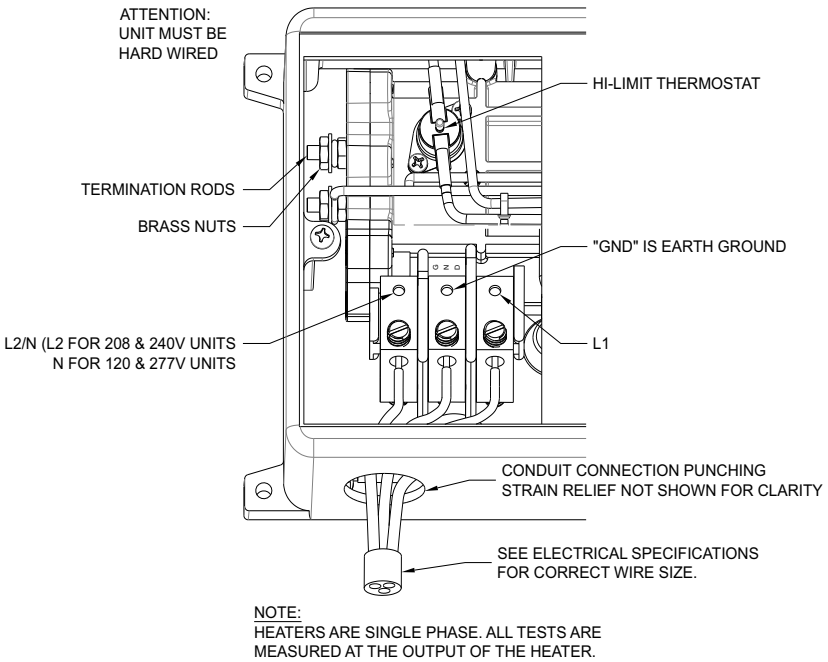


FIGURE 2 WIRING CONNECTION

NOTICE

Air in the heater may cause the elements to burn out. If the water lines are drained, allowing air into the heater, be sure to follow the following start-up procedure:

START UP PROCEDURE:

1. Turn off electrical supply - open circuit breaker
2. Turn on water supply. Cycle hot side of faucet 10 times to assist in removing air bubbles.
3. Expel all air from lines and heater. Check for leaks at all fittings, joints and at water heater.
4. Turn on electrical power supply - close circuit breaker.

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Electric Tankless Water Heaters

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INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

OPERATION INSTRUCTIONS:

- Turn the hot water fixture to activate the Flow Switch. The Flow Switch activates at 0.20 gallons per minute (GPM) [0.76 LPM] and deactivates at 0.18 gallons per minute (GPM) [0.68 LPM].
- If you increase the flow rate of the water above the KW capacity, the water temperature will become cooler. Cold water can always be mixed just as with a conventional system if using a two handle faucet. Select the appropriate Flow Control.
- Once you decrease the hot water flow rate to 0.18 GPM [0.68 LPM] the unit will deactivate. It is not advisable to operate the heater at 0.18 GPM [0.68 LPM] hot water flow rate.

NOTES:

1. Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.
2. Prior to shutting off water valves for servicing, winterization, etc, always disconnect power from unit 1st.
3. Unit is intended to heat water only, and does not provide a means of cooling if inlet temperature exceeds set point temperature of heater.

OPTIONS:

- PA 765 ABS Housing (P)
- Satin Finish Stainless Steel Housing (SS)
- High Polish Finish Stainless Steel (SSP)
- Pressure & Temp. Relief Valve Assembly (TP)
- 1/2" Male NPT (NPT08)
- Disconnect Switch, Rotary 40A - Lockable Nema 4X (2095-1)

FLOW CONTROLS:

You may want to install the supplied Flow Control in your design. This high-quality control makes the water heating system operate more effectively, as well as save water. The supplied GPM [LPM] Flow Control assures that the flow rate will not exceed GPM [LPM], however, less water can always be used. Consumer can mix the cold water as with a conventional system.

FACTORY SET TEMPERATURES		
104°F	***110°F	***120°F

Notes:	
*	Other Temperature Settings are available upon request up to 140°F
**	Temperature Settings are not Field Adjustable
***	110°F / 120°F Temperature Settings are not recommended w ith metering / sensor faucets (cold w ater mix needed)

NOTICE

•Flow Controls are adaptable to other thread configurations. Please call factory if adapter is needed.

FLOW CONTROL SPECIFICATIONS

MATERIAL: Chrome Plated, Brass Housing.
THREADING: DUAL threads 15/16" Male
55/64" Female

NOTE: Flow Controls are adaptable to other thread configurations. Vandal resistant models are available. Please call factory If adapter or vandal resistant model is needed.

FLOW CONTROL MODELS CHART			
KW	ACCESSORY PACKAGE	≥ 45 PSI	< 45 PSI
1.2 - 5.4	AP-6-P	L412-0.35-NP 0.35 GPM SPRAY	L412-0.5-NP 0.5 GPM SPRAY

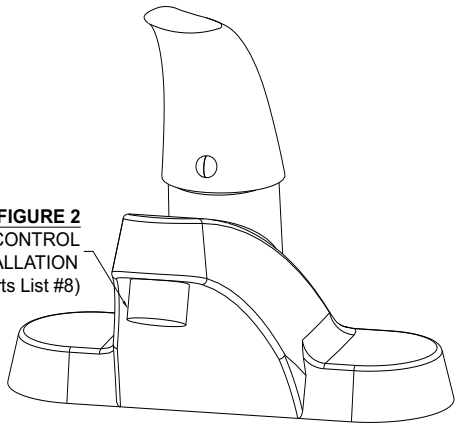


FIGURE 2
FLOW CONTROL INSTALLATION
(See Parts List #8)

IMPORTANT

Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.

INSTANT-FLOW® C-MICRO TEMPERATURE ADJUSTMENT POTENTIOMETER (ADJ) OPTION

The potentiometer allows the factory preset temperature of the heater to be changed in the field. The potentiometer will adjust water temperature between 104°F and 125°F provided the wattage of the heater selected is capable of producing the temperature increase at the requested flow rate. See Table 1 temperature chart for each model to determine the temperature range of the heater installed. Adjustment knob is ¾ turn from minimum to maximum setting. Do not use a screwdriver to adjust the knob.

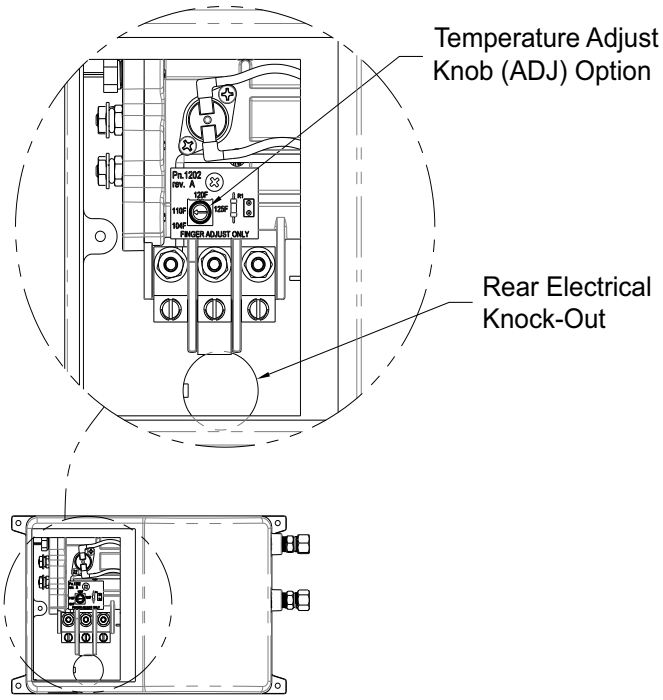
When using the potentiometer please use the following operation instructions:

To increase temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.

To decrease water temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments counter-clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.



Since 1966

Electric Tankless Water Heaters

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INSTANT-FLOW® C-MICRO TROUBLESHOOTING GUIDE

TROUBLESHOOTING GUIDE

Your Instant-Flow C-MICRO water heater has no internal user serviceable parts and should be returned to the factory for repair or replacement. Please contact factory for return authorization. If after following the Installation Instructions, your Instant-Flow C-MICRO does not heat water in accordance with this literature, please check the following:

1. **Low Power** – Verify your voltage by using a voltage meter. You should obtain your reading off the two outside terminals located on the heater. Compare the reading against the voltage specified in the Installation Instructions. The center terminal is always the earth ground. The hot and neutral legs, in the case of 110 V heaters, are attached on the two outside terminals.

2. **Low Voltage** – The percentage of reduction in voltage will result in a like reduction in temperature increase.

3. **Check Low Amperage Draw** – Check amperage draw using an Amperage Probe. Please compare your results with the Installation Instructions (Table 1) to determine if the heater is operating correctly.

4. **Length of Pipe** - Length of pipe run will affect the temperature increase. The heater should be mounted no more than 12-18 inches [305mm-457mm] from the point of use.

5. **Check shut off valve.** Check shut-off valve and make sure valve is open 100% to allow full water pressure and flow to the heater.

6. **High-Limit Thermostat -** Shut off power on breaker. Remove cover. Push in reset button on module. Refer to Figure 2 for location. Reinstall cover. Turn on breaker. If problem persists, contact factory.

7. **Heater Element -** Shut off power on circuit breaker. Remove cover. Measure element resistance by using an ohmmeter or multi-meter. Obtain your reading off of termination rods with brass nuts on each heater module. Refer to Figure 2 for location. This reading should be between 6 and 30 ohms for each element.

8. **Check Flow Rate** – Controlling flow rate is essential to insure proper temperature increase. In the case of the low flow rate heater it is mandatory that the flow control be attached to the end of the faucet. Check your flow rate to insure proper operation of the heater. Low Flow Rate Models require 0.20 GPM (0.76 LPM) to activate.

9. **Installation** – Heater must be installed in a horizontal position. The silver label will then be located in the upper left corner as you face the heater.

10. **Water Supply** – Do not throttle water supply to inlet of Instant-Flow C-MICRO. Operating conditions shall not exceed specification on page 2.

11. **Freezing** – Instant-Flow C-MICRO heaters must be drained and stored if installed in a location subject to freezing. Disconnect the inlet/outlet compression fittings and blow air through one side of the heater to assist draining. Failure to completely remove water from the unit will result in freezing and cracking.

12. **Problems?**- Call our toll-free hotline 800-447-4962 or 626-937-4270

WARNING

- This water heater is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the water heater by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the water heater.
- The water resistivity must not be less than 1100 OHM-CM.
- The water heater must be earth grounded.
- The water heater is not to be installed in locations where freezing can occur.

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

Instantaneous Water Heaters

MAIL ADDRESS
P.O. BOX 3527
CITY OF INDUSTRY, CA 91744 U.S.A.

PHYSICAL ADDRESS
17451 HURLEY STREET
CITY OF INDUSTRY, CA 91744 U.S.A.

TOLL FREE 800-447-4962 • **LOCA**L 626-937-4270
FAX 626-937-4279 • **WEB** www.chronomite.com

WARRANTY INFORMATION

Your Instant-Flow C-Micro water heater has been engineered and built to the highest quality standards and is backed by a full, factory warranty. Every Instant-Flow C-MICRO water heater is guaranteed to be free from defects in material and workmanship for a period of (1) year from the date of purchase. The above warranty applies to original purchaser if unit is installed per Chronomite Laboratories, Inc.'s Installation Instructions. Chronomite Laboratories, Inc. will repair or exchange parts at the factory at no cost. This warranty is limited to repairing or replacing said products which prove to be defective upon factory inspection, F.O.B. City of Industry, California.

EXCLUSION OF COVERAGE FROM THIS LIMITED WARRANTY:

1. Chronomite is not liable under this limited warranty or otherwise if the water heater has not been installed or maintained in accordance with Chronomite's printed instructions or installed with improper installation materials. In addition, the water heater or any of its component parts have been subject to misuse, neglect, alteration or accident and the water heater has not been installed in accordance with the applicable local plumbing and or building codes and/or regulations.
2. Chronomite is not liable under this warranty if the water heater has not been continuously supplied with potable water or the water inlet temperature is above Chronomite's recommended maximum temperature. In addition, water heater experiences any water pressure or flow interruptions, normal operation inlet water pressure is outside of the published specification (UPC 2009), or exposed to any condition that causes the heater to turn on before the air is purged from the heater also known as "dry fire."
3. Chronomite is not liable if the water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning or circumstances beyond Chronomite's control, or has been used for other than the intended purpose.

If violation occurs from the stated exclusions of coverage from this limited warranty or thereafter; owner, and not Chronomite or its agent/representative, is liable for and shall pay for all field charges, labor, water heater, damage or other expenses incurred in the repair or replacement of the water heater.

VENDOR PART	VENDOR	DESCRIPTION	PAGE
CM-15L/277	Chronomite Laboratories, Inc.	Instant-flow C-micro - Low Activation	44

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO WATER HEATER

INSTALLATION AND OPERATION INSTRUCTIONS (LOW ACTIVATION MODELS)

TABLE OF CONTENTS

REQUIRED ITEMS FOR INSTALLATION NOT SUPPLIED

- Electrical Junction Supply Box
- Electrical Supply Conduit
- Electrical Supply Wire
- Dual Outlet Angle Stop
- 3/8” Flex Hose or 3/8” O.D. Tubing (2)
- Carpenters Level
- Flat Head Screwdriver
- Phillips Head Screwdriver

3100-004-001
04/22

COMPLIES WITH STANDARDS

CALGreen

Federal Public Law 111-380 (No Lead)

Intertek 5001365

Member of MORRIS GROUP INTERNATIONAL

CHRONOMITE
Instantaneous Water Heaters
17451 Hurley St.
City of Industry, CA
91744 U.S.A.
Phone 800-447-4962
626-937-4270
www.chronomite.com

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

IMPORTANT

Before installation of heater, review electrical requirements needed for model of heater selected.

INCOMING WATER TEMPERATURE INCREASE						
MODEL	VOLTAGE	ACTIVATION	.35 GPM [1.3 LPM]	0.5 GPM [1.9 LPM]	1.00 GPM [3.8 LPM]	1.50 GPM [5.7 LPM]
CM-12L	110/120	0.20 GPM [0.75 LPM]	28°F [16°C]	20°F [11°C]	-	-
CM-12L	208	0.20 GPM [0.75 LPM]	49°F [27°C]	34°F [19°C]	-	-
CM-12L	220/240	0.20 GPM [0.75 LPM]	56°F [31°C]	39°F [22°C]	20°F [11°C]	-
CM-12L	277	0.20 GPM [0.75 LPM]	65°F [36°C]	45°F [25°C]	23°F [13°C]	-
CM-15L	110/120	0.20 GPM [0.75 LPM]	35°F [19°C]	25°F [14°C]	-	-
CM-15L	208	0.20 GPM [0.75 LPM]	61°F [34°C]	43°F [24°C]	21°F [12°C]	-
CM-15L	220/240	0.20 GPM [0.75 LPM]	70°F [39°C]	49°F [27°C]	25°F [14°C]	-
CM-15L	277	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	110/120	0.20 GPM [0.75 LPM]	47°F [26°C]	33°F [18°C]	-	-
CM-20L	208	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	66°F [37°C]	33°F [18°C]	22°F [11°C]
CM-20L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	76°F [42°C]	38°F [21°C]	25°F [14°C]
CM-30L	110/120	0.20 GPM [0.75 LPM]	70°F [40°C]	49°F [27°C]	25°F [14°C]	-
CM-30L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	85°F [45°C]	43°F [24°C]	28°F [16°C]
CM-30L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	49°F [27°C]	33°F [18°C]
CM-30L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	66°F [34°C]	44°F [23°C]
CM-40L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	76°F [42°C]	50°F [28°C]

MICROPROCESSOR LIMITS TEMPERATURE INCREASE ACCORDING TO FACTORY SET TEMPERATURE

TABLE 1											
MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE		MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE	
				INTERMITTENT DUTY	CONTINUOUS DUTY					INTERMITTENT DUTY	CONTINUOUS DUTY
CM-12L	1440	110/120	12	15	15	CM-20L	4800	220/240	20	20	30
CM-12L	2500	208	12	15	15	CM-20L	5540	277	20	20	30
CM-12L	2880	220/240	12	15	15	CM-30L	3600	110/120	30	30	40
CM-12L	3320	277	12	15	15	CM-30L	6240	208	30	30	40
CM-15L	1800	110/120	15	15	20	CM-30L	7200	220/240	30	30	40
CM-15L	3120	208	15	15	20	CM-30L	8310	277	30	30	40
CM-15L	3600	220/240	15	15	20	CM-40L	8320	208	40	40	50
CM-15L	4150	277	15	15	20	CM-40L	9600	220/240	40	40	50
CM-20L	2400	110/120	20	20	30	CM-40L	11080	277	40	40	50
CM-20L	4160	208	20	20	30						

NOTE: BEFORE INSTALLATION, COMPARE ELECTRICAL NEEDED FOR THE MODEL OF HEATER SELECTED.

INSTANT-FLOW®C- MICRO SPECIFICATIONS:

DIMENSIONS:	6-1/4" [159 mm] X 9-5/8" [244 mm] X 2-3/4" [70 mm]
WEIGHT:	5 LBS. [2.27 Kg]
MATERIALS:	ALUMINUM HOUSING, CELCON WATERWAYS, NICHROME PARTS
COLOR:	WHITE
PIPE FITTINGS:	3/8" COMPRESSION
OPERATING PRESSURE RATING:	25 PSI [172 kPa] MINIMUM, 80 PSI [551.6 kPa] MAXIMUM
MAXIMUM PRESSURE RATING:	150 PSI [1034.2 kPa] NO PRESSURE RELIEF VALVE NEEDED UNLESS REQUIRED BY LOCAL CODES.
MAXIMUM OPERATING TEMP:	160°F [71°C]
MINIMUM OPERATING FLOW RATE:	0.20 GPM [0.76 LPM]
LISTINGS:	UL, HUD, IAPMO, UPC, ETL-c

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

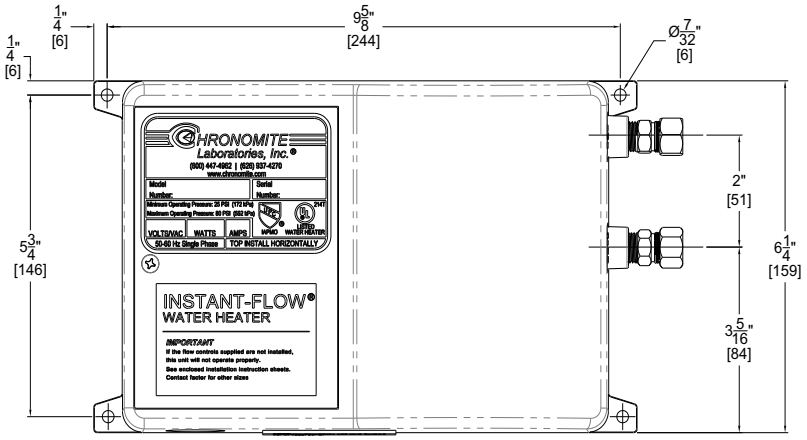
INSTANT-FLOW® C-MICRO SPECIFICATIONS

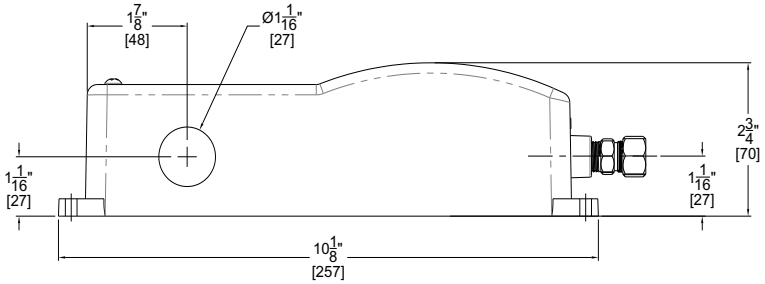
(LOW ACTIVATION MODELS) **(cont.)**

FACTORY SET TEMPERATURES:
104°F [40°C]
110°F [43.3°C]
120°F [48.9°C]
Other temperature settings are available upon request up to160°F [71°C]. Temperature settings are not field adjustable. 110°F [43.3°C] / 120°F [48.9°C] settings are recommended with cold water mixing faucets.

HOW INSTANT-FLOW® C-MICRO WORKS
The engineered plastic case houses a series of ingeniously designed coils that instantly heat water as it flows through the vessel. A unique power switch automatically applies electrical current to the coils when hot water is requested. The electrical current is not applied when the water is not in use. The microprocessor is internally preset at the factory to maintain a constant output temperature with varying flow rates.

INSTANT-FLOW® C-MICRO DIMENSIONAL DATA





INSTANT-FLOW® C-MICRO INSTALLATION

CAUTION

A) Turn off the circuit breaker to avoid dangerous electrical shocks.
B) Turn off the water supply.
C) Do not apply heat to inlet or outlet fittings on heater. Do not solder direct.
D) Flush supply line of all foreign material such as pipe dope, pipe chips, solder, sand, etc. before making up supply connections after working on water piping.

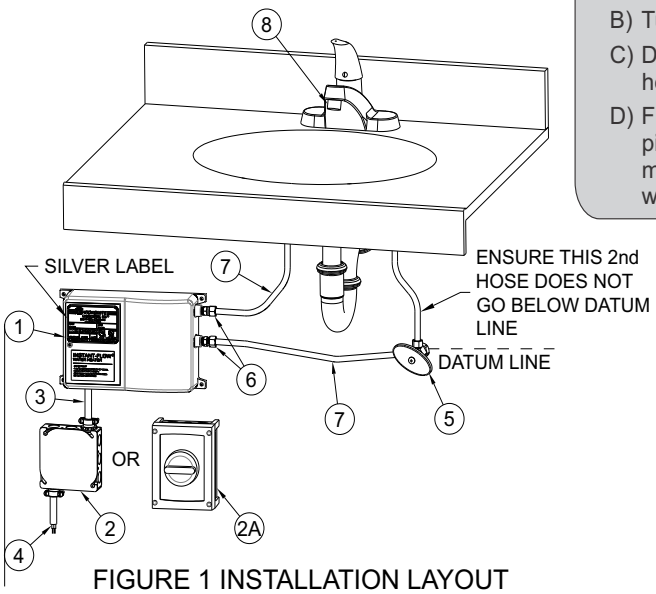


FIGURE 1 INSTALLATION LAYOUT

1. Chronomite Instant-Flow C-Micro See page 2 for selection
2. Electrical Junction Supply Box (optional)
2A. 2095-1 Disconnect Switch (optional)
3. Electrical Supply Conduit
4. Electrical Supply Wire
5. Dual outlet stop 3/8” Comp Outlet Connections
6. Fittings (supplied) 3/8” Comp x 1/4” NPT
7. Faucet Supply Inlet Hoses 3/8” NPS
8. Flow Control (supplied) Dual Threads 15/16” Male and 55/64” Female

HEATER INSTALLATION:

1. Remove cover off of Water Heater. Attach conduit to the conduit connection punching. Then feed wires. Do not attach wiring.
2. Mount unit horizontally against the wall so the silver label reads correctly (See Figure 1). Use level to ensure unit is level and mount with four screws through the flanges located on each corner using molly anchors or fasteners.
3. Connect plumbing. Use female 1/4” NPT or hose with 3/8” compression at cold water inlet and hot water outlet to 3/8” compression faucet inlet connections (See Figure 1). **DO NOT APPLY HEAT TO THESE FITTINGS.**
4. Run water through the unit to expel all air bubbles. Cycle hot side of faucet 10 times to assist in removing air bubbles. Check for leaks at all fitting joints. If no leaks proceed to electrical installation.

CAUTION: HEATING ELEMENTS MAY BURN OUT IF UNIT IS NOT MOUNTED HORIZONTALLY

ELECTRICAL INSTALLATION:

1. Connect power supply wires appropriately sized and protected by circuit breaker to the input terminals on the heater (hard wired) as shown in the Figure 2 wiring diagram.
2. Refer to Table 1 above on Page 2 for the voltage and amperage of the supply power.
3. Ensure each wire L2/N, G, L1 are connected to the respective terminals. Only connect to rated voltage on nameplate.
4. Ensure water inlet valve to heater is fully open. Do not throttle inlet
5. Turn on circuit breaker. Turn on water flow to exceed activation point listed in chart 2. The unit is almost ready for use. Shut off circuit breaker.
6. Check for leaks at all fitting joints and also inside heater.
7. Install cover. Turn on circuit breaker. Unit is now ready for use.
8. Local plumbing and electrical codes must be followed in this installation of water heater and the accessories.

NOTES:

1. Failure to comply with code requirements voids the warranty.
2. Failure to install faucet flow control as shown on (Figure 3 page 6) may cause unsatisfactory operation of the heater.

INSTANT-FLOW® C-MICRO INSTALLATION (cont.)

IMPORTANT

The manufacturer of this water heater will not be liable for any damages due to the failure to follow these installation and operation instructions.

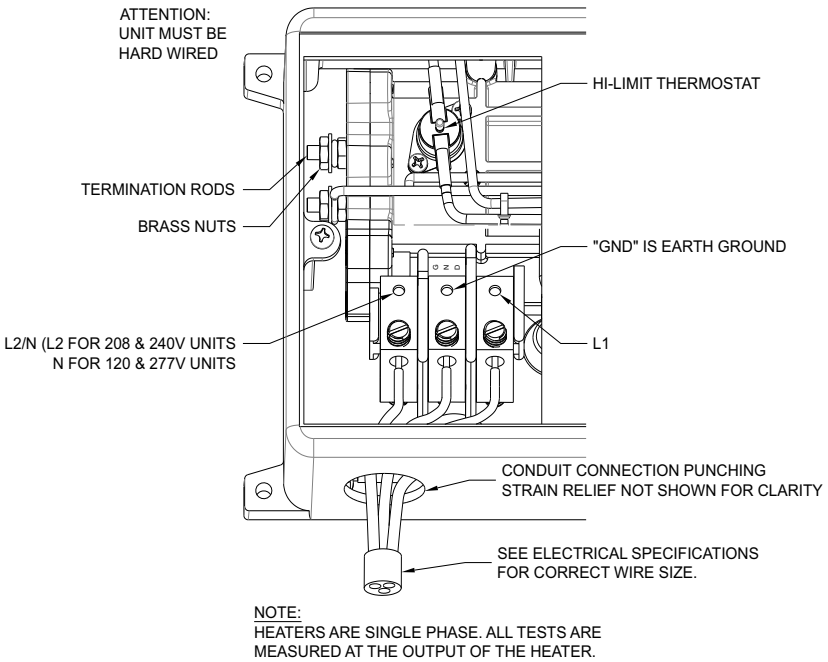


FIGURE 2 WIRING CONNECTION

NOTICE

Air in the heater may cause the elements to burn out. If the water lines are drained, allowing air into the heater, be sure to follow the following start-up procedure:

START UP PROCEDURE:

1. Turn off electrical supply - open circuit breaker
2. Turn on water supply. Cycle hot side of faucet 10 times to assist in removing air bubbles.
3. Expel all air from lines and heater. Check for leaks at all fittings, joints and at water heater.
4. Turn on electrical power supply - close circuit breaker.

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Electric Tankless Water Heaters

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INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

OPERATION INSTRUCTIONS:

- Turn the hot water fixture to activate the Flow Switch. The Flow Switch activates at 0.20 gallons per minute (GPM) [0.76 LPM] and deactivates at 0.18 gallons per minute (GPM) [0.68 LPM].
- If you increase the flow rate of the water above the KW capacity, the water temperature will become cooler. Cold water can always be mixed just as with a conventional system if using a two handle faucet. Select the appropriate Flow Control.
- Once you decrease the hot water flow rate to 0.18 GPM [0.68 LPM] the unit will deactivate. It is not advisable to operate the heater at 0.18 GPM [0.68 LPM] hot water flow rate.

NOTES:

1. Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.
2. Prior to shutting off water valves for servicing, winterization, etc, always disconnect power from unit 1st.
3. Unit is intended to heat water only, and does not provide a means of cooling if inlet temperature exceeds set point temperature of heater.

OPTIONS:

- PA 765 ABS Housing (P)
- Satin Finish Stainless Steel Housing (SS)
- High Polish Finish Stainless Steel (SSP)
- Pressure & Temp. Relief Valve Assembly (TP)
- 1/2" Male NPT (NPT08)
- Disconnect Switch, Rotary 40A - Lockable Nema 4X (2095-1)

FLOW CONTROLS:

You may want to install the supplied Flow Control in your design. This high-quality control makes the water heating system operate more effectively, as well as save water. The supplied GPM [LPM] Flow Control assures that the flow rate will not exceed GPM [LPM], however, less water can always be used. Consumer can mix the cold water as with a conventional system.

FACTORY SET TEMPERATURES		
104°F	***110°F	***120°F

Notes:	
*	Other Temperature Settings are available upon request up to 140°F
**	Temperature Settings are not Field Adjustable
***	110°F / 120°F Temperature Settings are not recommended w ith metering / sensor faucets (cold w ater mix needed)

NOTICE

•Flow Controls are adaptable to other thread configurations. Please call factory if adapter is needed.

FLOW CONTROL SPECIFICATIONS

MATERIAL: Chrome Plated, Brass Housing.
THREADING: DUAL threads 15/16" Male
55/64" Female

NOTE: Flow Controls are adaptable to other thread configurations. Vandal resistant models are available. Please call factory If adapter or vandal resistant model is needed.

FLOW CONTROL MODELS CHART			
KW	ACCESSORY PACKAGE	≥ 45 PSI	< 45 PSI
1.2 - 5.4	AP-6-P	L412-0.35-NP 0.35 GPM SPRAY	L412-0.5-NP 0.5 GPM SPRAY

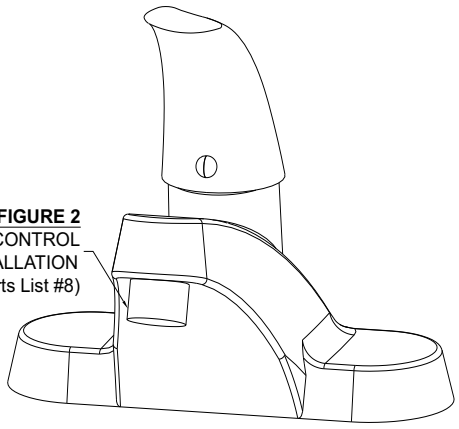


FIGURE 2
FLOW CONTROL INSTALLATION
(See Parts List #8)

IMPORTANT

Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.

INSTANT-FLOW® C-MICRO TEMPERATURE ADJUSTMENT POTENTIOMETER (ADJ) OPTION

The potentiometer allows the factory preset temperature of the heater to be changed in the field. The potentiometer will adjust water temperature between 104°F and 125°F provided the wattage of the heater selected is capable of producing the temperature increase at the requested flow rate. See Table 1 temperature chart for each model to determine the temperature range of the heater installed. Adjustment knob is ¾ turn from minimum to maximum setting. Do not use a screwdriver to adjust the knob.

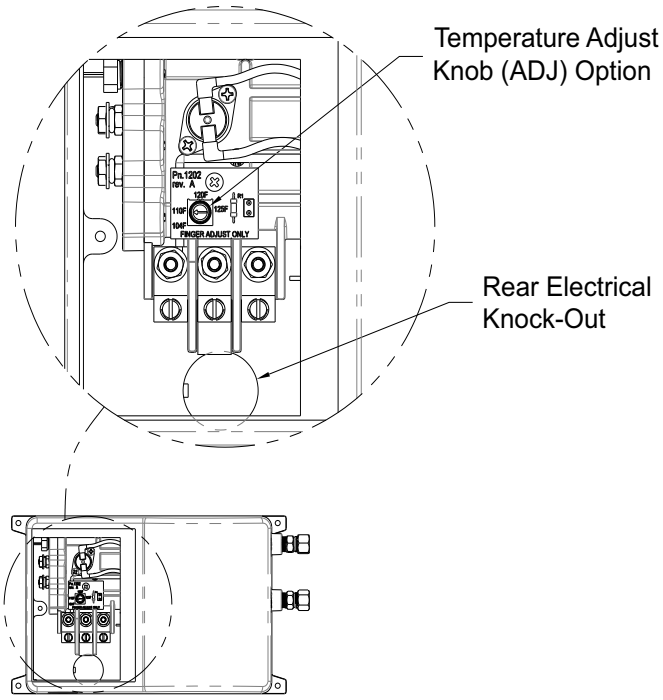
When using the potentiometer please use the following operation instructions:

To increase temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.

To decrease water temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments counter-clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.



Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO TROUBLESHOOTING GUIDE

TROUBLESHOOTING GUIDE

Your Instant-Flow C-MICRO water heater has no internal user serviceable parts and should be returned to the factory for repair or replacement. Please contact factory for return authorization. If after following the Installation Instructions, your Instant-Flow C-MICRO does not heat water in accordance with this literature, please check the following:

1. **Low Power** – Verify your voltage by using a voltage meter. You should obtain your reading off the two outside terminals located on the heater. Compare the reading against the voltage specified in the Installation Instructions. The center terminal is always the earth ground. The hot and neutral legs, in the case of 110 V heaters, are attached on the two outside terminals.

2. **Low Voltage** – The percentage of reduction in voltage will result in a like reduction in temperature increase.

3. **Check Low Amperage Draw** – Check amperage draw using an Amperage Probe. Please compare your results with the Installation Instructions (Table 1) to determine if the heater is operating correctly.

4. **Length of Pipe** - Length of pipe run will affect the temperature increase. The heater should be mounted no more than 12-18 inches [305mm-457mm] from the point of use.

5. **Check shut off valve.** Check shut-off valve and make sure valve is open 100% to allow full water pressure and flow to the heater.

6. **High-Limit Thermostat -** Shut off power on breaker. Remove cover. Push in reset button on module. Refer to Figure 2 for location. Reinstall cover. Turn on breaker. If problem persists, contact factory.

7. **Heater Element -** Shut off power on circuit breaker. Remove cover. Measure element resistance by using an ohmmeter or multi-meter. Obtain your reading off of termination rods with brass nuts on each heater module. Refer to Figure 2 for location. This reading should be between 6 and 30 ohms for each element.

8. **Check Flow Rate** – Controlling flow rate is essential to insure proper temperature increase. In the case of the low flow rate heater it is mandatory that the flow control be attached to the end of the faucet. Check your flow rate to insure proper operation of the heater. Low Flow Rate Models require 0.20 GPM (0.76 LPM) to activate.

9. **Installation** – Heater must be installed in a horizontal position. The silver label will then be located in the upper left corner as you face the heater.

10. **Water Supply** – Do not throttle water supply to inlet of Instant-Flow C-MICRO. Operating conditions shall not exceed specification on page 2.

11. **Freezing** – Instant-Flow C-MICRO heaters must be drained and stored if installed in a location subject to freezing. Disconnect the inlet/outlet compression fittings and blow air through one side of the heater to assist draining. Failure to completely remove water from the unit will result in freezing and cracking.

12. **Problems?**- Call our toll-free hotline 800-447-4962 or 626-937-4270

WARNING

- This water heater is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the water heater by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the water heater.
- The water resistivity must not be less than 1100 OHM-CM.
- The water heater must be earth grounded.
- The water heater is not to be installed in locations where freezing can occur.

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

Instantaneous Water Heaters

MAIL ADDRESS
P.O. BOX 3527
CITY OF INDUSTRY, CA 91744 U.S.A.

PHYSICAL ADDRESS
17451 HURLEY STREET
CITY OF INDUSTRY, CA 91744 U.S.A.

TOLL FREE 800-447-4962 • **LOCA**L 626-937-4270
FAX 626-937-4279 • **WEB** www.chronomite.com

WARRANTY INFORMATION

Your Instant-Flow C-Micro water heater has been engineered and built to the highest quality standards and is backed by a full, factory warranty. Every Instant-Flow C-MICRO water heater is guaranteed to be free from defects in material and workmanship for a period of (1) year from the date of purchase. The above warranty applies to original purchaser if unit is installed per Chronomite Laboratories, Inc.'s Installation Instructions. Chronomite Laboratories, Inc. will repair or exchange parts at the factory at no cost. This warranty is limited to repairing or replacing said products which prove to be defective upon factory inspection, F.O.B. City of Industry, California.

EXCLUSION OF COVERAGE FROM THIS LIMITED WARRANTY:

1. Chronomite is not liable under this limited warranty or otherwise if the water heater has not been installed or maintained in accordance with Chronomite's printed instructions or installed with improper installation materials. In addition, the water heater or any of its component parts have been subject to misuse, neglect, alteration or accident and the water heater has not been installed in accordance with the applicable local plumbing and or building codes and/or regulations.
2. Chronomite is not liable under this warranty if the water heater has not been continuously supplied with potable water or the water inlet temperature is above Chronomite's recommended maximum temperature. In addition, water heater experiences any water pressure or flow interruptions, normal operation inlet water pressure is outside of the published specification (UPC 2009), or exposed to any condition that causes the heater to turn on before the air is purged from the heater also known as "dry fire."
3. Chronomite is not liable if the water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning or circumstances beyond Chronomite's control, or has been used for other than the intended purpose.

If violation occurs from the stated exclusions of coverage from this limited warranty or thereafter; owner, and not Chronomite or its agent/representative, is liable for and shall pay for all field charges, labor, water heater, damage or other expenses incurred in the repair or replacement of the water heater.

VENDOR PART	VENDOR	DESCRIPTION	PAGE
CM-40L/277	Chronomite Laboratories, Inc.	Instant-flow C-micro - Low Activation Electric Tankless Water Heater - Point Of Use	54

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO WATER HEATER

INSTALLATION AND OPERATION INSTRUCTIONS (LOW ACTIVATION MODELS)

TABLE OF CONTENTS

REQUIRED ITEMS FOR INSTALLATION NOT SUPPLIED

- Electrical Junction Supply Box
- Electrical Supply Conduit
- Electrical Supply Wire
- Dual Outlet Angle Stop
- 3/8” Flex Hose or 3/8” O.D. Tubing (2)
- Carpenters Level
- Flat Head Screwdriver
- Phillips Head Screwdriver

3100-004-001
03/19

COMPLIES WITH STANDARDS

CALGreen

Federal Public Law 111-380 (No Lead)

Intertek 5001365

Member of MORRIS GROUP INTERNATIONAL

CHRONOMITE
Instantaneous Water Heaters
17451 Hurley St.
City of Industry, CA
91744 U.S.A.
Phone 800-447-4962
626-937-4270
www.chronomite.com

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

IMPORTANT

Before installation of heater, review electrical requirements needed for model of heater selected.

INCOMING WATER TEMPERATURE INCREASE						
MODEL	VOLTAGE	ACTIVATION	.35 GPM [1.3 LPM]	0.5 GPM [1.9 LPM]	1.00 GPM [3.8 LPM]	1.50 GPM [5.7 LPM]
CM-12L	110/120	0.20 GPM [0.75 LPM]	28°F [16°C]	20°F [11°C]	-	-
CM-12L	208	0.20 GPM [0.75 LPM]	49°F [27°C]	34°F [19°C]	-	-
CM-12L	220/240	0.20 GPM [0.75 LPM]	56°F [31°C]	39°F [22°C]	20°F [11°C]	-
CM-12L	277	0.20 GPM [0.75 LPM]	65°F [36°C]	45°F [25°C]	23°F [13°C]	-
CM-15L	110/120	0.20 GPM [0.75 LPM]	35°F [19°C]	25°F [14°C]	-	-
CM-15L	208	0.20 GPM [0.75 LPM]	61°F [34°C]	43°F [24°C]	21°F [12°C]	-
CM-15L	220/240	0.20 GPM [0.75 LPM]	70°F [39°C]	49°F [27°C]	25°F [14°C]	-
CM-15L	277	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	110/120	0.20 GPM [0.75 LPM]	47°F [26°C]	33°F [18°C]	-	-
CM-20L	208	0.20 GPM [0.75 LPM]	81°F [45°C]	57°F [32°C]	28°F [16°C]	-
CM-20L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	66°F [37°C]	33°F [18°C]	22°F [11°C]
CM-20L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	76°F [42°C]	38°F [21°C]	25°F [14°C]
CM-30L	110/120	0.20 GPM [0.75 LPM]	70°F [40°C]	49°F [27°C]	25°F [14°C]	-
CM-30L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	85°F [45°C]	43°F [24°C]	28°F [16°C]
CM-30L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	49°F [27°C]	33°F [18°C]
CM-30L	277	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	208	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	57°F [32°C]	38°F [21°C]
CM-40L	220/240	0.20 GPM [0.75 LPM]	90+°F [50+°C]	90+°F [50+°C]	66°F [34°C]	44°F [23°C]

MICROPROCESSOR LIMITS TEMPERATURE INCREASE ACCORDING TO FACTORY SET TEMPERATURE

TABLE 1											
MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE		MODEL	WATTAGE	VOLTAGE	AMPS	BREAKER SIZE	
				INTERMITTENT DUTY	CONTINUOUS DUTY					INTERMITTENT DUTY	CONTINUOUS DUTY
CM-12L	1440	110/120	12	15	15	CM-20L	4160	208	20	20	30
CM-12L	2500	208	12	15	15	CM-20L	4800	220/240	20	20	30
CM-12L	2880	220/240	12	15	15	CM-20L	5540	277	20	20	30
CM-12L	3320	277	12	15	15	CM-30L	3600	110/120	30	30	40
CM-15L	1800	110/120	15	15	20	CM-30L	6240	208	30	30	40
CM-15L	3120	208	15	15	20	CM-30L	7200	220/240	30	30	40
CM-15L	3600	220/240	15	15	20	CM-30L	8310	277	30	30	40
CM-15L	4150	277	15	15	20	CM-40L	8320	208	40	40	50
CM-20L	2400	110/120	20	20	30	CM-40L	9600	220/240	40	40	50

NOTE: BEFORE INSTALLATION, COMPARE ELECTRICAL NEEDED FOR THE MODEL OF HEATER SELECTED.

INSTANT-FLOW®C- MICRO SPECIFICATIONS:

DIMENSIONS:	6-1/4" [159 mm] X 9-5/8" [244 mm] X 2-3/4" [70 mm]
WEIGHT:	5 LBS. [2.27 Kg]
MATERIALS:	ALUMINUM HOUSING, CELCON WATERWAYS, NICHROME PARTS
COLOR:	WHITE
PIPE FITTINGS:	3/8" COMPRESSION
OPERATING PRESSURE RATING:	25 PSI [172 kPa] MINIMUM, 80 PSI [551.6 kPa] MAXIMUM
MAXIMUM PRESSURE RATING:	150 PSI [1034.2 kPa] NO PRESSURE RELIEF VALVE NEEDED UNLESS REQUIRED BY LOCAL CODES.
MAXIMUM OPERATING TEMP:	160°F [71°C]
MINIMUM OPERATING FLOW RATE:	0.20 GPM [0.76 LPM]
LISTINGS:	UL, HUD, IAPMO, UPC, ETL-c

Since 1966

Electric Tankless Water Heaters

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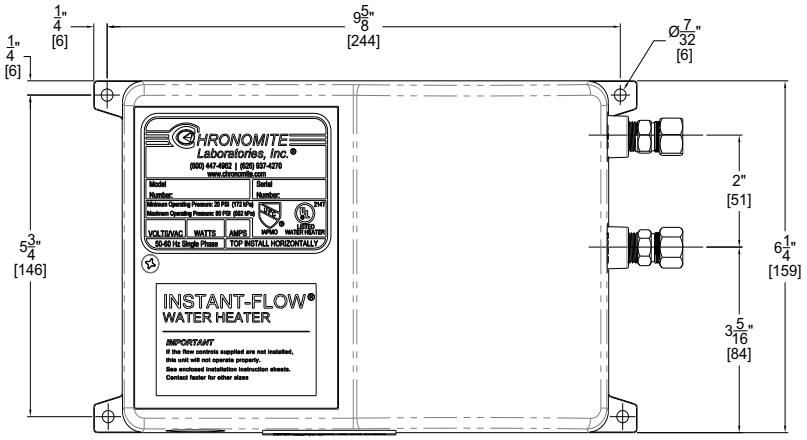
INSTANT-FLOW® C-MICRO SPECIFICATIONS

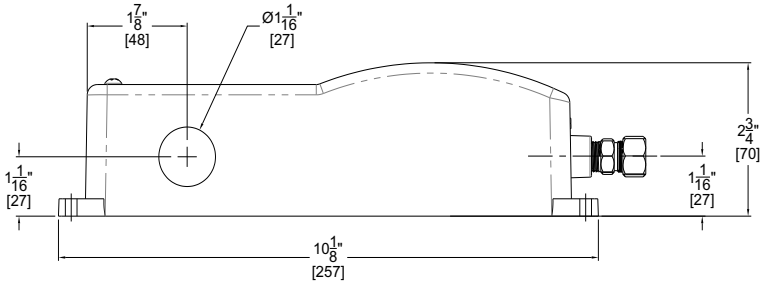
(LOW ACTIVATION MODELS) **(cont.)**

FACTORY SET TEMPERATURES:
104°F [40°C]
110°F [43.3°C]
120°F [48.9°C]
Other temperature settings are available upon request up to160°F [71°C]. Temperature settings are not field adjustable. 110°F [43.3°C] / 120°F [48.9°C] settings are recommended with cold water mixing faucets.

HOW INSTANT-FLOW® C-MICRO WORKS
The engineered plastic case houses a series of ingeniously designed coils that instantly heat water as it flows through the vessel. A unique power switch automatically applies electrical current to the coils when hot water is requested. The electrical current is not applied when the water is not in use. The microprocessor is internally preset at the factory to maintain a constant output temperature with varying flow rates.

INSTANT-FLOW® C-MICRO DIMENSIONAL DATA





INSTANT-FLOW® C-MICRO INSTALLATION

CAUTION

A) Turn off the circuit breaker to avoid dangerous electrical shocks.

B) Turn off the water supply.

C) Do not apply heat to inlet or outlet fittings on heater. Do not solder direct.

D) Flush supply line of all foreign material such as pipe dope, pipe chips, solder, sand, etc. before making up supply connections after working on water piping.

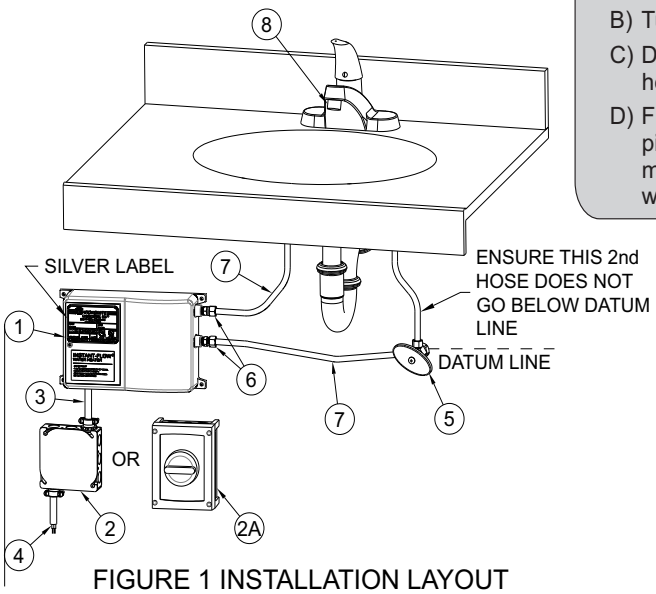


FIGURE 1 INSTALLATION LAYOUT

1. Chronomite Instant-Flow C-Micro See page 2 for selection
2. Electrical Junction Supply Box (optional)
2A. 2095-1 Disconnect Switch (optional)
3. Electrical Supply Conduit
4. Electrical Supply Wire
5. Dual outlet stop 3/8” Comp Outlet Connections
6. Fittings (supplied) 3/8” Comp x 1/4” NPT
7. Faucet Supply Inlet Hoses 3/8” NPS
8. Flow Control (supplied) Dual Threads 15/16” Male and 55/64” Female

HEATER INSTALLATION:

1. Remove cover off of Water Heater. Attach conduit to the conduit connection punching. Then feed wires. Do not attach wiring.
2. Mount unit horizontally against the wall so the silver label reads correctly (See Figure 1). Use level to ensure unit is level and mount with four screws through the flanges located on each corner using molly anchors or fasteners.
3. Connect plumbing. Use female 1/4” NPT or hose with 3/8” compression at cold water inlet and hot water outlet to 3/8” compression faucet inlet connections (See Figure 1). **DO NOT APPLY HEAT TO THESE FITTINGS.**
4. Run water through the unit to expel all air bubbles. Cycle hot side of faucet 10 times to assist in removing air bubbles. Check for leaks at all fitting joints. If no leaks proceed to electrical installation.

CAUTION: HEATING ELEMENTS MAY BURN OUT IF UNIT IS NOT MOUNTED HORIZONTALLY

ELECTRICAL INSTALLATION:

1. Connect power supply wires appropriately sized and protected by circuit breaker to the input terminals on the heater (hard wired) as shown in the Figure 2 wiring diagram.
2. Refer to Table 1 above on Page 2 for the voltage and amperage of the supply power.
3. Ensure each wire L2/N, G, L1 are connected to the respective terminals. Only connect to rated voltage on nameplate.
4. Ensure water inlet valve to heater is fully open. Do not throttle inlet
5. Turn on circuit breaker. Turn on water flow to exceed activation point listed in chart 2. The unit is almost ready for use. Shut off circuit breaker.
6. Check for leaks at all fitting joints and also inside heater.
7. Install cover. Turn on circuit breaker. Unit is now ready for use.
8. Local plumbing and electrical codes must be followed in this installation of water heater and the accessories.

NOTES:

1. Failure to comply with code requirements voids the warranty.
2. Failure to install faucet flow control as shown on (Figure 3 page 6) may cause unsatisfactory operation of the heater.

INSTANT-FLOW® C-MICRO INSTALLATION (cont.)

IMPORTANT

The manufacturer of this water heater will not be liable for any damages due to the failure to follow these installation and operation instructions.

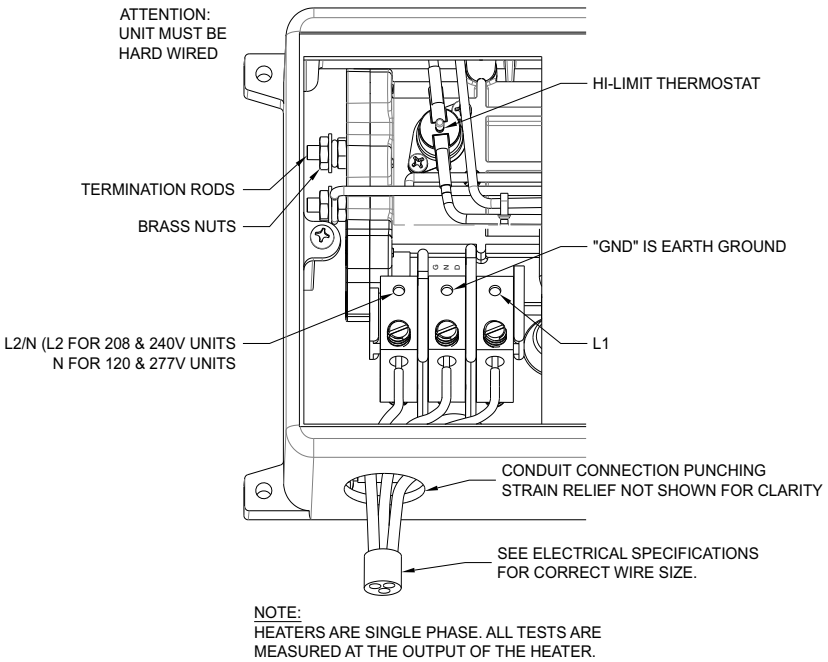


FIGURE 2 WIRING CONNECTION

NOTICE

Air in the heater may cause the elements to burn out. If the water lines are drained, allowing air into the heater, be sure to follow the following start-up procedure:

START UP PROCEDURE:

1. Turn off electrical supply - open circuit breaker
2. Turn on water supply. Cycle hot side of faucet 10 times to assist in removing air bubbles.
3. Expel all air from lines and heater. Check for leaks at all fittings, joints and at water heater.
4. Turn on electrical power supply - close circuit breaker.

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO SPECIFICATIONS
(LOW ACTIVATION MODELS)

OPERATION INSTRUCTIONS:

- Turn the hot water fixture to activate the Flow Switch. The Flow Switch activates at 0.20 gallons per minute (GPM) [0.76 LPM] and deactivates at 0.18 gallons per minute (GPM) [0.68 LPM].
- If you increase the flow rate of the water above the KW capacity, the water temperature will become cooler. Cold water can always be mixed just as with a conventional system if using a two handle faucet. Select the appropriate Flow Control.
- Once you decrease the hot water flow rate to 0.18 GPM [0.68 LPM] the unit will deactivate. It is not advisable to operate the heater at 0.18 GPM [0.68 LPM] hot water flow rate.

NOTES:

1. Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.
2. Prior to shutting off water valves for servicing, winterization, etc, always disconnect power from unit 1st.
3. Unit is intended to heat water only, and does not provide a means of cooling if inlet temperature exceeds set point temperature of heater.

OPTIONS:

- PA 765 ABS Housing (P)
- Satin Finish Stainless Steel Housing (SS)
- High Polish Finish Stainless Steel (SSP)
- Pressure & Temp. Relief Valve Assembly (TP)
- 1/2" Male NPT (NPT08)
- Disconnect Switch, Rotary 40A - Lockable Nema 4X (2095-1)

FLOW CONTROLS:

You may want to install the supplied Flow Control in your design. This high-quality control makes the water heating system operate more effectively, as well as save water. The supplied GPM [LPM] Flow Control assures that the flow rate will not exceed GPM [LPM], however, less water can always be used. Consumer can mix the cold water as with a conventional system.

FACTORY SET TEMPERATURES		
104°F	***110°F	***120°F

Notes:	
*	Other Temperature Settings are available upon request up to 140°F
**	Temperature Settings are not Field Adjustable
***	110°F / 120°F Temperature Settings are not recommended w ith metering / sensor faucets (cold w ater mix needed)

NOTICE

•Flow Controls are adaptable to other thread configurations. Please call factory if adapter is needed.

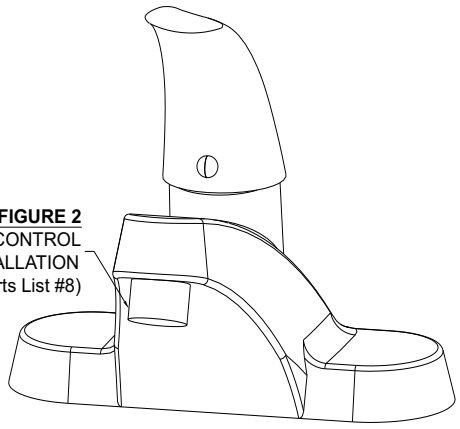


FIGURE 2
FLOW CONTROL INSTALLATION
(See Parts List #8)

FLOW CONTROL SPECIFICATIONS

MATERIAL: Chrome Plated, Brass Housing.
THREADING: DUAL threads 15/16" Male
55/64" Female

NOTE: Flow Controls are adaptable to other thread configurations. Vandal resistant models are available. Please call factory If adapter or vandal resistant model is needed.

FLOW CONTROL MODELS CHART			
KW	ACCESSORY PACKAGE	≥ 45 PSI	< 45 PSI
1.2 - 5.4	AP-6-P	L412-0.35-NP 0.35 GPM SPRAY	L412-0.5-NP 0.5 GPM SPRAY

IMPORTANT

Periodically inspect (4 times a year) the supply lines, connections and heater for any moisture, corrosion or other potential preventable problems.

INSTANT-FLOW® C-MICRO TEMPERATURE ADJUSTMENT POTENTIOMETER (ADJ) OPTION

The potentiometer allows the factory preset temperature of the heater to be changed in the field. The potentiometer will adjust water temperature between 104°F and 125°F provided the wattage of the heater selected is capable of producing the temperature increase at the requested flow rate. See Table 1 temperature chart for each model to determine the temperature range of the heater installed. Adjustment knob is ¾ turn from minimum to maximum setting. Do not use a screwdriver to adjust the knob.

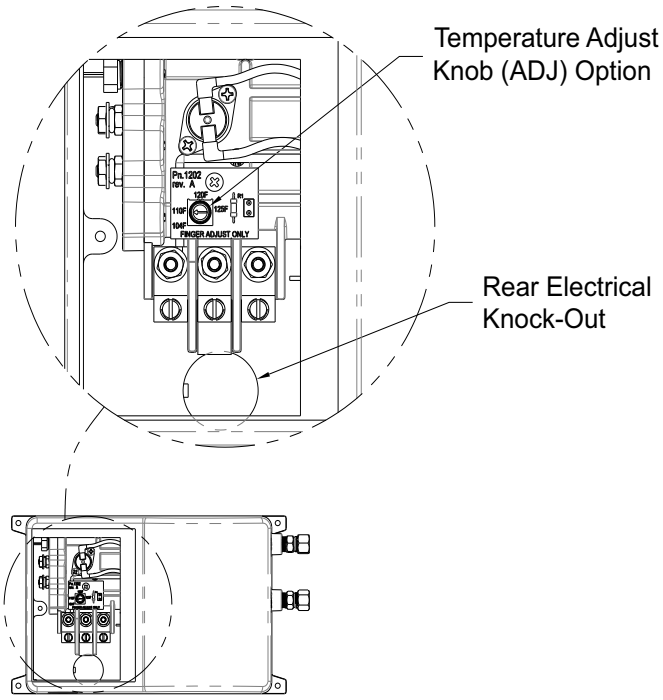
When using the potentiometer please use the following operation instructions:

To increase temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.

To decrease water temperature:

a. Turn off power to heater.
b. Using a screwdriver, remove access cover
c. Turn knob by hand in small increments counter-clockwise to match desired temperature
d. Board is marked with 104°F, 110°F, and 120°F
e. Install access cover
f. Turn on power to heater.



Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

INSTANT-FLOW® C-MICRO TROUBLESHOOTING GUIDE

TROUBLESHOOTING GUIDE

Your Instant-Flow C-MICRO water heater has no internal user serviceable parts and should be returned to the factory for repair or replacement. Please contact factory for return authorization. If after following the Installation Instructions, your Instant-Flow C-MICRO does not heat water in accordance with this literature, please check the following:

1. **Low Power** – Verify your voltage by using a voltage meter. You should obtain your reading off the two outside terminals located on the heater. Compare the reading against the voltage specified in the Installation Instructions. The center terminal is always the earth ground. The hot and neutral legs, in the case of 110 V heaters, are attached on the two outside terminals.

2. **Low Voltage** – The percentage of reduction in voltage will result in a like reduction in temperature increase.

3. **Check Low Amperage Draw** – Check amperage draw using an Amperage Probe. Please compare your results with the Installation Instructions (Table 1) to determine if the heater is operating correctly.

4. **Length of Pipe** - Length of pipe run will affect the temperature increase. The heater should be mounted no more than 12-18 inches [305mm-457mm] from the point of use.

5. **Check shut off valve.** Check shut-off valve and make sure valve is open 100% to allow full water pressure and flow to the heater.

6. **High-Limit Thermostat -** Shut off power on breaker. Remove cover. Push in reset button on module. Refer to Figure 2 for location. Reinstall cover. Turn on breaker. If problem persists, contact factory.

7. **Heater Element -** Shut off power on circuit breaker. Remove cover. Measure element resistance by using an ohmmeter or multi-meter. Obtain your reading off of termination rods with brass nuts on each heater module. Refer to Figure 2 for location. This reading should be between 6 and 30 ohms for each element.

8. **Check Flow Rate** – Controlling flow rate is essential to insure proper temperature increase. In the case of the low flow rate heater it is mandatory that the flow control be attached to the end of the faucet. Check your flow rate to insure proper operation of the heater. Low Flow Rate Models require 0.20 GPM (0.76 LPM) to activate.

9. **Installation** – Heater must be installed in a horizontal position. The silver label will then be located in the upper left corner as you face the heater.

10. **Water Supply** – Do not throttle water supply to inlet of Instant-Flow C-MICRO. Operating conditions shall not exceed specification on page 2.

11. **Freezing** – Instant-Flow C-MICRO heaters must be drained and stored if installed in a location subject to freezing. Disconnect the inlet/outlet compression fittings and blow air through one side of the heater to assist draining. Failure to completely remove water from the unit will result in freezing and cracking.

12. **Problems?**- Call our toll-free hotline 800-447-4962 or 626-937-4270

WARNING

- This water heater is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the water heater by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the water heater.
- The water resistivity must not be less than 1100 OHM-CM.
- The water heater must be earth grounded.
- The water heater is not to be installed in locations where freezing can occur.

Since 1966

Electric Tankless Water Heaters

Chronomite Laboratories is a Member of Morris Group International™

Instantaneous Water Heaters

MAIL ADDRESS
P.O. BOX 3527
CITY OF INDUSTRY, CA 91744 U.S.A.

PHYSICAL ADDRESS
17451 HURLEY STREET
CITY OF INDUSTRY, CA 91744 U.S.A.

TOLL FREE 800-447-4962 • **LOCA**L 626-937-4270
FAX 626-937-4279 • **WEB** www.chronomite.com

WARRANTY INFORMATION

Your Instant-Flow C-Micro water heater has been engineered and built to the highest quality standards and is backed by a full, factory warranty. Every Instant-Flow C-MICRO water heater is guaranteed to be free from defects in material and workmanship for a period of (1) year from the date of purchase. The above warranty applies to original purchaser if unit is installed per Chronomite Laboratories, Inc.'s Installation Instructions. Chronomite Laboratories, Inc. will repair or exchange parts at the factory at no cost. This warranty is limited to repairing or replacing said products which prove to be defective upon factory inspection, F.O.B. City of Industry, California.

EXCLUSION OF COVERAGE FROM THIS LIMITED WARRANTY:

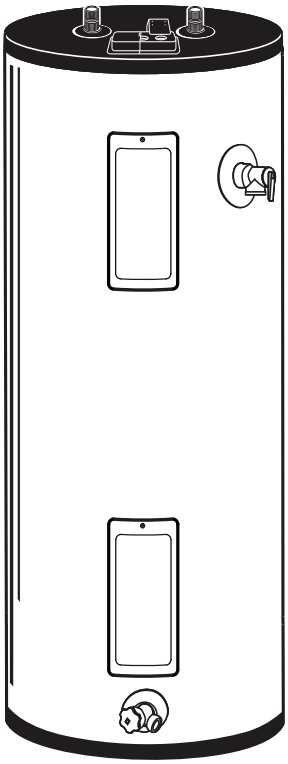
1. Chronomite is not liable under this limited warranty or otherwise if the water heater has not been installed or maintained in accordance with Chronomite's printed instructions or installed with improper installation materials. In addition, the water heater or any of its component parts have been subject to misuse, neglect, alteration or accident and the water heater has not been installed in accordance with the applicable local plumbing and or building codes and/or regulations.
2. Chronomite is not liable under this warranty if the water heater has not been continuously supplied with potable water or the water inlet temperature is above Chronomite's recommended maximum temperature. In addition, water heater experiences any water pressure or flow interruptions, normal operation inlet water pressure is outside of the published specification (UPC 2009), or exposed to any condition that causes the heater to turn on before the air is purged from the heater also known as "dry fire."
3. Chronomite is not liable if the water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning or circumstances beyond Chronomite's control, or has been used for other than the intended purpose.

If violation occurs from the stated exclusions of coverage from this limited warranty or thereafter; owner, and not Chronomite or its agent/representative, is liable for and shall pay for all field charges, labor, water heater, damage or other expenses incurred in the repair or replacement of the water heater.

VENDOR PART	VENDOR	DESCRIPTION	PAGE
EN640DORT9	State Water Heaters	Proline 40 Gallon Electric Water Heater	64

Installation Instructions and Use & Care Guide

Residential Electric Water Heater



Read this manual and the labels on the water heater before you install, operate, or service it. If you have difficulty following the directions, or aren't sure you can safely and properly do any of this work yourself:

- Call your local plumbing supplies store to have this water heater installed. Professional Installation is available for this product and the work is guaranteed.
- Schedule an appointment with a qualified person to install your water heater. Call our Technical Assistance Hotline which is listed on the water heater's warranty sheet. We can help you with installation, operations, troubleshooting, or maintenance. Before you call, write down the model and serial number from the water heater's data plate.

Incorrect installation, operation, or service can damage the water heater, your house and other property, and present risks including fire, scalding, electric shock, and explosion, causing serious injury or death.

AHRI Certification® applies to residential electric water heaters with rated capacities of 20 to 120 gallon and input ratings of 12 kw or less.

Table of Contents..... Page

LOW LEAD CONTENT

AHRI CERTIFIED® www.ahridirectory.org

Keep this manual in the pocket on heater for future reference whenever maintenance, adjustment or service is required.

Retain your original receipt as proof of purchase.

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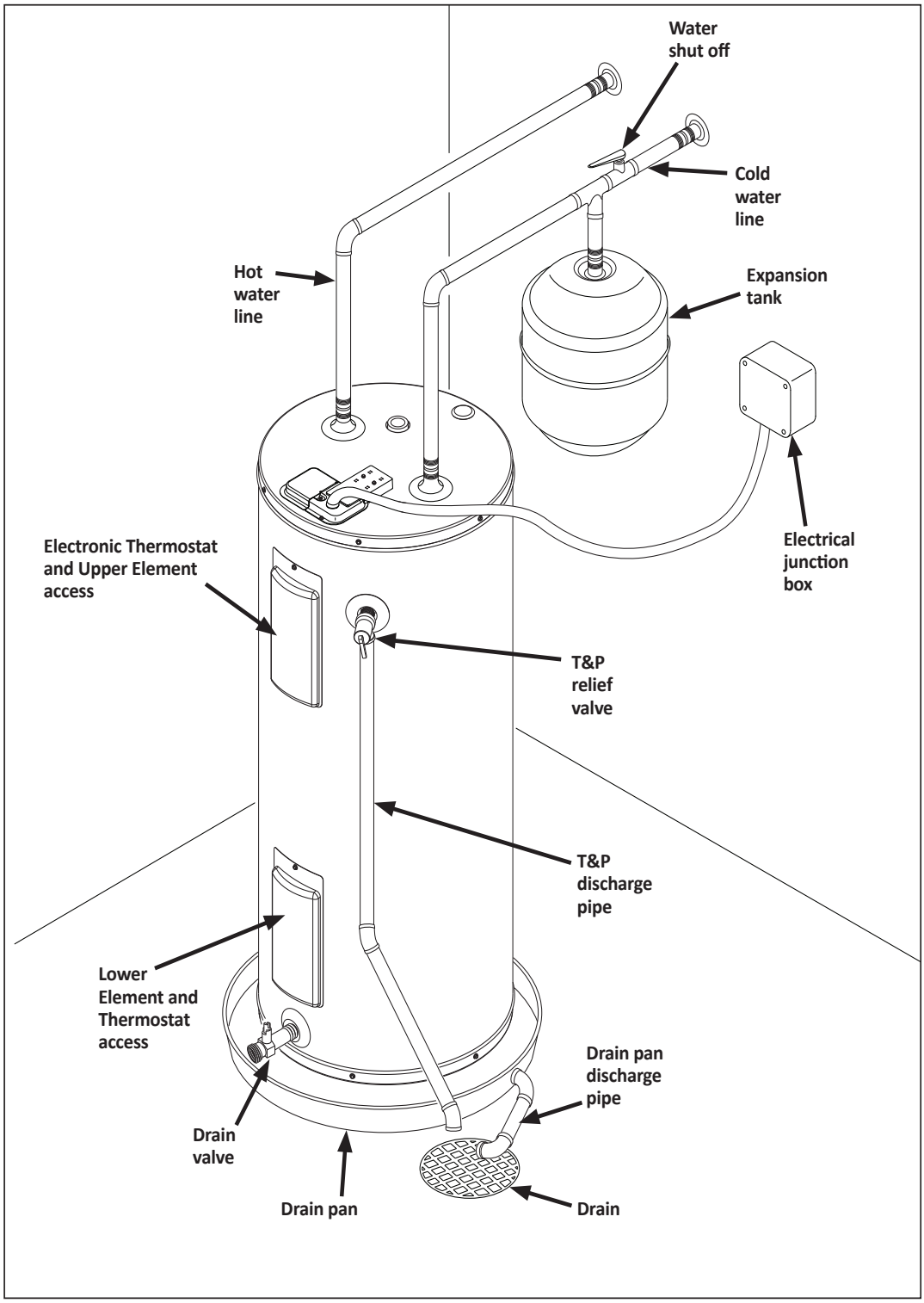
July 2018

COMPLETED INSTALLATION (TYPICAL)



IMPORTANT SAFETY INFORMATION

Read and follow all safety messages and instructions in this manual.

This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible property damage, serious injury or death. Do not remove any permanent instructions, labels, or the data plate from either the outside of the water heater or on the inside of the access panels. Keep this manual near the water heater.

DANGER	**DANGER indicates hazardous situation that, if not avoided, will result in death or serious injury.**
WARNING	**WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.**
CAUTION	**CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.**
NOTICE	**NOTICE indicates practices not related to physical injury.**

This product is certified to comply with a maximum weighted average of 0.25% lead content as required in some areas.

Important information to keep

Fill out this section and keep this manual in the pocket of the water heater for reference.

Date Puchased:

Model number:

Serial number:

Maintenance performed:*	Date:

*Drain and flush tank and remove and inspect anode rod after first six months of operation and at least annually thereafter. Operate the Temperature and Pressure Relief Valve (T&P) annually and inspect T&P valve every 2-4 years (see the label on the T&P valve for maintenance schedule). If no label is attached to the T&P Relief Valve, follow the instructions in the T&P Relief Valve Maintenance section of this manual. See the Maintenance section for more information about maintaining this water heater.

SAFETY

IMPORTANT SAFETY INFORMATION

To reduce the risk of property damage, serious injury or death, read and follow the precautions below, all labels on the water heater, and the safety messages and instructions throughout this manual.

RISKS DURING INSTALLATION AND MAINTENANCE

Electric Shock Risk

Contact with the electrical parts in the junction box and behind the access doors can result in severe injury or death from electrical shock:

- Disconnect power by opening the circuit breaker or removing the fuses before installing or servicing.
- Use a non-contact circuit tester to confirm that power is off before working on or near any electrical parts.
- Replace the junction box cover and access doors after servicing.

Lifting Risk

⚠ **WARNING!** The water heater is heavy. Follow these precautions to reduce the risk of property damage, injuries from lifting or impact injuries from dropping the water heater.

- Use at least two people to lift the water heater.
- Be sure you both have a good grip before lifting.
- Use an appliance dolly or hand truck to move the water heater.

RISKS DURING OPERATION

Scalding Risk

This water heater can make water hot enough to cause severe burns instantly, resulting in severe injury or death.

Feel water before bathing or showering. To reduce the risk of scalding, install Thermostatic Mixing Valves (temperature limiting valves) at each point-of-use. These valves automatically mix hot and cold water to limit the temperature at the tap. Mixing valves are available from local hardware stores. Follow manufacturer's instructions for installation and adjustment of the valves.

The thermostat(s) on this water heater have been factory set to approximately 120°F to reduce the risk of scalding. Higher temperatures increase the risk of scalding, but even at 120°F, hot water can scald. If you choose a higher temperature, Thermostatic Mixing Valves located at each point-of-use are particularly important to help avoid scalding.

Temperature	Time to Produce a Serious Burn
120°F (49°C)	More than 5 minutes
125°F (52°C)	1½ to 2 minutes
130°F (54°C)	About 30 seconds
135°F (57°C)	About 10 seconds
140°F (60°C)	Less than 5 seconds
145°F (63°C)	Less than 3 seconds
150°F (66°C)	About 1½ seconds
155°F (68°C)	About 1 second

For information about changing the factory thermostat setting(s), refer to the "Adjusting Temperature" section in this manual ("Step 10" on page 15).

Even if you set the water heater thermostat(s) to a low setting, higher temperatures may occur in certain circumstances:

In some cases, repeated small draws of water can cause the hot and cold water in the tank to "stack" in layers. If this happens, the water can be as much as thirty degrees hotter than the thermostat setting. This temperature variation is the result of your usage pattern and is not a malfunction.

Water temperature will be hotter if someone adjusted the thermostat(s) to a higher setting.

Problems with the thermostat(s), or other malfunctions may result in higher than expected water temperatures.

If the water heater is in a hot environment, the water in the tank can become as hot as the surrounding air, regardless of the thermostat setting.

If the water supplied to the water heater is pre-heated (for example, by a solar system) the temperature in the tank may be higher than the water heater's thermostat setting.

To reduce the risk of unusually hot water reaching the fixtures in the house, install Thermostatic Mixing Valves at each point-of-use.

If anyone in your home is at particular risk of scalding (for example, the elderly, children, or people with disabilities) or if there is a local code or state law requiring a certain water temperature

at the hot water tap, then these precautions are particularly important.

According to a national standard American Society of Santiary Engineering (ASSE 1070) and most local plumbing codes, the water heater's thermostat should not be used as the sole means to regulate water temperature and avoid scalds.

Properly adjusted Thermostatic Mixing Valves installed at each point-of-use allow you to set the tank temperature to a higher setting without increasing risk of scalds. A higher temperature setting allows the tank to provide much more hot water and can help provide proper water temperatures for appliances such as dishwashers and washing machines. Higher tank temperatures (140°F) also kill bacteria that cause a condition known as "smelly water" and can reduce the levels of bacteria that cause water-borne diseases.

Water Contamination Risk

Do not use chemicals that could contaminate the potable water supply. Do not use piping that has been treated with chromates, boiler seal, or other chemicals.

Fire Risk

To reduce the risk of a fire that could destroy your home and seriously injure or kill people:

- Do not store things that can burn easily such as paper or clothes next to the water heater.
- Be sure the junction box cover and the access door covers are in place. These covers keep debris from entering and potentially being ignited, and help keep any internal fires from spreading.
- Keep the water heater from becoming wet. Immediately shut the water heater off and have it inspected by a qualified person if you find that the wiring, thermostat(s) or surrounding insulation have been exposed to water in any way (e.g., leaks from plumbing, leaks from the water heater itself can damage property and could cause a fire risk). If the water heater is subjected to flood conditions or the thermostat(s) have been submerged in water, the entire water heater must be replaced.
- Make electrical connections proprly, according to the instructions on page 14. Use 10 gauge solid copper wire. Use a UL listed or CSA approved strain relief. Connect ground wire to green ground screw.

Explosion Risk

High temperatures and pressures in the water heater tank can cause an explosion resulting in property damage, serious injury or death. A new Temperature and Pressure (T&P) Relief Valve is included with your water heater to reduce risk of explosion by discharging hot water. Additional temperature and pressure protective equipment may be required by local codes.

A nationally recognized testing laboratory maintains periodic inspection of the valve production process and certifies that it meets the requirements for Relief Valves for Hot Water Supply Systems, ANSI Z21.22. The T&P Relief Valve's relief pressure must not exceed the working pressure rating of the water heater as stated on the rating plate.

Maintain the T&P Relief Valve properly. Follow the maintenance instructions provided by the manufacturer of the T&P Relief Valve (label attached to T&P Relief Valve). If no label is attached to the T&P Relief Valve, follow the instructions in the T&P Relief Valve Maintenance section of this manual.

An explosion could occur if the T&P Relief Valve or discharge pipe is blocked. Do not cap or plug the T&P Relief Valve or discharge pipe.

Fire and Explosion Risk if Hot Water is Not Used for Two Weeks or More

⚠ CAUTION! Hydrogen gas builds up in a hot water system when it is not used for a long period (two weeks or more). Hydrogen gas is extremely flammable. If the hot water system has not been used for two weeks or more, open a hot water faucet for several minutes at the kitchen sink before using any electrical appliances connected to the hot water system. Do not smoke or have an open flame or other ignition source near the faucet while it is open.

GETTING STARTED

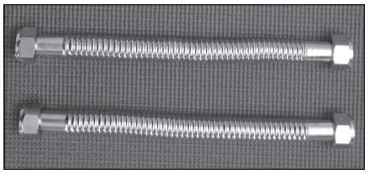


Figure 1 - Flexible connectors use compression fittings and do not require soldering.

Figure 2 - Use a non-contact circuit tester to insure that the power is off before you work on a circuit.

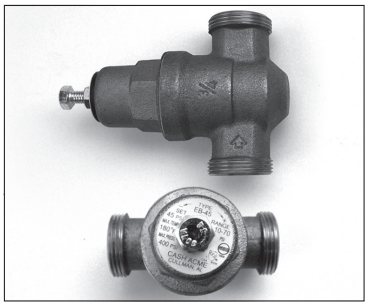


Figure 3 - Install a Pressure Reducing Valve set to 50 to 60 PSI.

1 Review all of the instructions before you begin work.

If you aren't sure that you can safely and properly do this work yourself, call your local hardware store to arrange for Professional Installation (you may also call a qualified person of your choice, such as a licensed plumber or electrician, to have the work done). Improper installation can damage the water heater, your home and other property, and can present risks of serious injury or death.

2 Check with your local and state authorities for any local or state codes that apply to your area. In the absence of local and state codes, follow National Fire Protection Association (NFPA-70) and the current editions of the National Electric Code (NEC) and the International Plumbing Code (IPC). The instructions in this manual comply with national codes, but the installer is responsible for complying with local codes.

Massachusetts code requires this water heater to be installed in accordance with Massachusetts 248-CMR 2.00 and 248-CMR 5.00: State Plumbing Code. Other local and state authorities may have similar requirements or other codes applicable to the installation of this water heater.

3 Before you start, be sure you have, and know how to use, the following tools and supplies:

- Plumbing tools and supplies appropriate for the type of water pipes in your home
- Threaded connectors (figure 1) for the cold and hot water pipes
    - For homes plumbed with plastic pipe, use threaded connectors suitable for the specific type of plastic pipe used: CPVC and PEX (cross-linked polyethylene). Do not use PVC pipe.
    - For homes with copper pipes, you may purchase connector kits with compression fittings that don't require soldering (figure 1). Compression fittings are easier to install than soldering copper pipes.
- Thread sealant tape or pipe joint compound approved for potable water
- Tools to make the electrical connections (for example, screwdrivers, wire strippers)
- Non-Contact circuit tester to check for power (figure 2)
- Water Pressure Gauge (see next page, figure 4)

Recommended Accessories:

- Suitable drain pan (see page 8, figure 6)
- Automatic leak detection and shut-off device
- Pressure Reducing Valve (figure 3)
- Thermal Expansion Tank (see next page, figure 5)
- Point-of-use Thermostatic Mixing Valves (see page 8, figure 7) ■

INSTALLATION

Follow these steps for proper installation:

Step 1:

Verify that your home is equipped and up-to-date for proper operation

Installing a new water heater is the perfect time to examine your home's plumbing system and make sure the system is up to current code standards. There have likely been plumbing code changes since the old water heater was installed. We recommend installing the following accessories and any other needed changes to bring your home up to the latest code requirements.

Use the checklist below and inspect your home. Install any devices you need to comply with codes and assure that your new water heater performs at its best. Check with your local plumbing official for more information.

Water pressure

We recommend checking your home's water pressure with a pressure gauge (figure 4). Most codes allow a maximum incoming water pressure of 80 psi. We recommend a working pressure no higher than 50-60 psi.

HOW: Purchase an inexpensive water pressure gauge available at your local hardware store. Connect the Water Pressure Gauge to an outside faucet and measure the maximum water pressure experienced throughout the day (highest water pressures often occur at night).

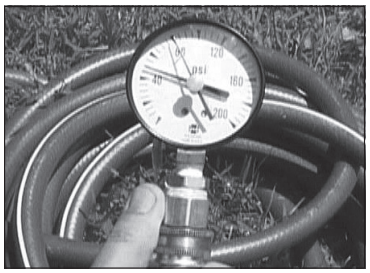


Figure 4 - Use a Water Pressure Gauge to make sure your home's water pressure is not too high.

To limit your home's water pressure: Locate your home's Pressure Reducing Valve (PRV) on the main incoming (cold) water supply line and adjust the water pressure control to between 50 and 60 psi. If your home does not have a Pressure Reducing Valve, install a PRV on the home's main water supply line and set it to between 50 and 60 psi. Pressure Reducing Valves are available at local hardware store.

BACKGROUND: Over the years, many utilities have increased water supply pressures so they can serve more homes. In some homes today, pressures exceed 100 psi. High water pressures can damage water heaters, causing premature leaks. If you have replaced toilet valves, had a water heater leak, or had to repair appliances connected to the plumbing system, pay particular attention to your home's water pressure. When purshasing a PRV, make sure the PRV has a built-in bypass.

Water pressure increase caused by thermal expansion

Verify that you have a properly sized Thermal Expansion Tank (figure 5). We recommend installing an expansion tank if your home does not have one. Codes require a properly pressurized, properly sized Thermal Expansion Tank in almost all homes. (See photo on inside front cover.)

Figure 5 - A Thermal Expansion Tank helps protect the home's plumbing system from pressure spikes.

HOW: Connect the Thermal Expansion Tank (available at your local hardware store) to the cold water supply line near the water heater. The expansion tank contains a bladder and an air charge. To work properly, the Thermal Expansion Tank must be sized according to the water heater's tank capacity and pressurized to match the home's incoming water pressure. Refer to the installation instructions provided with the Thermal Expansion Tank for installation details.

INSTALLATION

BACKGROUND: Water expands when heated, and the increased volume of water must have a place to go, or thermal expansion will cause large increases in water pressure (despite the use of a Pressure Reducing Valve on the home's main water supply line). The Safe Drinking Water Act of 1974 requires the use of backflow preventers and check valves to restrict water from your home reentering the public water system. Backflow preventers are often installed in water meters and may not be readily visible. As a result, most all plumbing systems today are now "closed," and almost all homes now need a Thermal Expansion Tank.

A Thermal Expansion Tank is a practical and inexpensive way to help avoid damage to the water heater, washing machine, dishwasher, ice maker and even toilet valves. If your toilet occasionally runs for no apparent reason (usually briefly at night), that may be due to thermal expansion increasing the water pressure temporarily.

Water pipe and tank leaks

Leaks from plumbing pipes or from the water heater itself can damage property and could cause a fire risk.

- Install an automatic leak detection and shutoff device (available in hardware stores). These devices can detect water leaks and can shut off the water heater's water supply if a leak occurs.

- Install a suitable drain pan (available in stores) under the water heater (figure 6) to catch condensation or leaks in the piping connections or tank. Most codes require and we recommend installing the water heater in a drain pan that is piped to an adequate drain. The drain pan must be at least two inches wider than the diameter of the water heater. Install the drain pan so the water level would be limited to a maximum depth of 1-3/4".

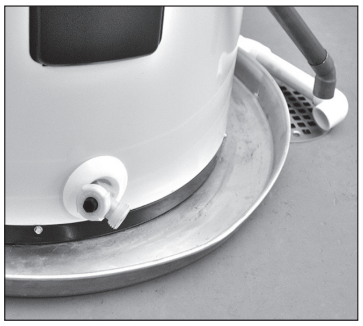


Figure 6 - A suitable drain pan piped to an adequate drain can help protect flooring from leaks and drips.

Water temperature regulation

Install Thermostatic Mixing Valves (figure 7) to regulate the temperature of the water supplied to each point-of-use (for example, kitchen sink, bathroom sink, bath, shower). Consult the valve manufacturer's instructions or a qualified person.

Figure 7 - Thermostatic Mixing Valves installed at each point-of-use can help prevent scalding.

⚠ **WARNING! Even if the water heater thermostat is set to a relatively low temperature, hot water can scald. Install Thermostatic Mixing Valves at each point-of-use to reduce the risk of scalding (see page 4).**

BACKGROUND: A Thermostatic Mixing Valve, installed at each point-of-use, mixes hot water from the water heater with cold water to more precisely regulate the temperature of hot water supplied to fixtures. If you aren't sure if your plumbing system is equipped with properly installed and adjusted Thermostatic Mixing Valves at each point where hot water is used, contact a qualified person for more information. ■

Step 2:

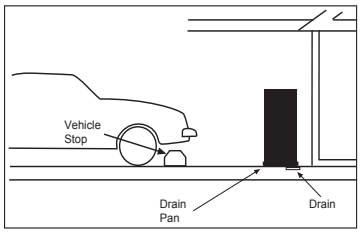
Verify that the location is appropriate

Before installing your water heater, ensure that:

1. The water heater will be:
   - Installed indoors close to the center of the plumbing system.
   - In a suitable drain pan piped to an adequate floor drain or external to the building (See page 8, figure 6).
   - In an area that will not freeze
   - In an area that is suitable for installing the water heater vertically
2. The location has adequate space (clearances) for periodic servicing.
3. The floor can support the weight of a full water heater.
4. Your area is not prone to earthquakes. If it is, use special straps as required by local building codes.

NOTICE: The state of California requires bracing, anchoring, or strapping the water heater to avoid its moving during an earthquake. Contact local utilities for code requirements in your area, visit http://www.dsa.dgs.ca.gov, or call 1-916-445-8100 and request instructions. Other locations may have similar requirements. Check with your local and state authorities.

5. The location is not prone to physical damage by vehicles, flooding, or other risks.



In a garage, install a vehicle stop to avoid water heater damage.

6. Avoid locations such as attics, upper floors, or where a leak might damage the structure or furnishings. Due to the normal corrosive action of water, the tank will eventually leak. To minimize property damage from leaks, inspect and maintain your water heater in accordance with this manual's instructions. Install a suitable drain pan under the water heater piped to an adequate drain. Inspect the drain pan, pipes, and surrounding area regularly and fix any leaks found. Drain pans are available in local hardware stores. Leaks are frequently in the plumbing system itself and not the water heater.

Step 3:

Removing the old water heater

1. Read each installation step and decide if you have the necessary skills to install the water heater. Only proceed if you can safely perform the work. If you are not comfortable, have a qualified person perform the installation.
2. Locate the water heater's circuit breaker and turn it OFF (or remove the circuit's fuses).
3. On the old water heater, remove the electrical junction box access panel. Using a non-contact circuit tester, check the wiring to make certain the power is OFF.

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock.

4. Disconnect the electrical wires.
5. Open a hot water faucet and let the hot water run until it is cool (This may take 10 minutes or longer).

Let the hot water run until it is cool.

⚠ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

6. Connect a garden hose to the drain valve and place the other end of the hose in a drain, outside, or a bucket. (Note that sediment in the bottom of the tank may clog the valve and prevent it from draining. If you can't get the

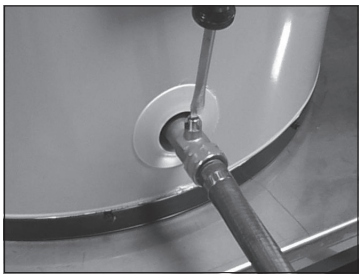
INSTALLATION

INSTALLATION

tank to drain, contact a qualified person.)

7 Turn the cold water supply valve OFF.

8 Open the drain valve on the water heater.



Draining the old water heater.

9 Also open a hot water faucet to help the water in the tank drain faster.

10 When the tank is empty, disconnect the Temperature & Pressure (T&P) Relief Valve discharge pipe. You may be able to reuse the discharge pipe, but do not

Removing the T&P Relief Valve discharge pipe.

reuse the old T&P Relief Valve. A new T&P Relief Valve comes installed on your water heater (or on some models, is in the carton with the water heater).

11 Disconnect the water pipes. Many water pipes are connected by a threaded union which can be disconnected with wrenches. If you must cut the water pipes, cut the pipes close to the water heater's inlet and outlet connections, leaving the water pipes as long as possible. If necessary, you can make them shorter later when you install the new water heater.

12 Remove the old water heater.

⚠ **WARNING! Use two or more people to remove or install water heater. Failure to do so can result in back or other injury.**

Step 4:

Installing the new water heater

1 Completely read all instructions before beginning. If you are not sure you can complete the installation, DO NOT RETURN THIS UNIT TO THE STORE. Seek assistance from any of the following sources:

- Professional Installation is available for this product and the work is guaranteed. Call your local hardware store to have this water heater installed.
- Schedule an appointment with a qualified person to install your water heater.
- Call our Technical Assistance Hotline which is listed on the water heater's warranty sheet.

2 Install a suitable drain pan that is piped to an adequate drain.

3 Set the water heater in place taking care not to damage the drain pan.

NOTICE: Most codes require setting the water heater in a suitable drain pan piped to an adequate drain. The drain pan helps avoid property damage which may occur from condensation or leaks in the piping connections or tank. The drain pan must be at least two inches wider than the diameter of the water heater. Install the drain pan so the water level is limited to a maximum depth of 1-3/4".

4 Verify that the water heater is set in place properly. Check that:

- The T&P Relief Valve will not be in contact with any electrical parts.
- There is adequate space to install the T&P Relief Valve discharge pipe and that it can be piped to a separate drain (and not into the drain pan).
- There is adequate access and space around the water heater for future maintenance.

DO NOT CONNECT ELECTRICAL WIRING UNTIL YOU ARE INSTRUCTED TO DO SO.

NOTICE: Connecting electrical power to the tank before it is completely full of water (water must run FULL STREAM from a hot water tap for a full three minutes) will cause the upper heating element to burn out.

Step 5:

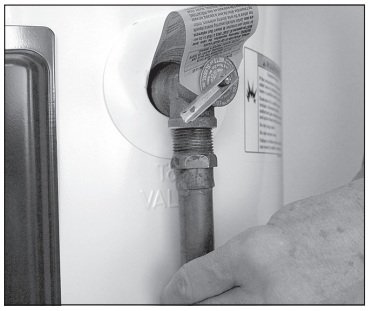
Connect the Temperature and Pressure (T&P) Relief Valve/Pipe

Most T&P Relief Valves are pre-installed at the factory. In some cases, they are shipped in the carton and must be installed in the opening marked and provided for this purpose and according to local codes.

⚠ WARNING! To avoid serious injury or death from explosion, install a T&P Relief Valve according to the following instructions:

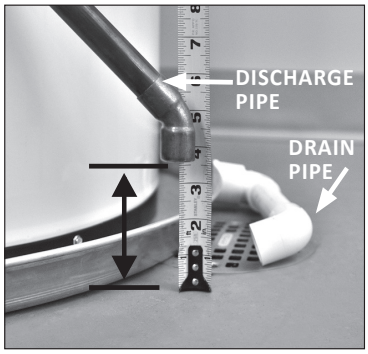
1 If your water heater does not have a factory installed T&P Relief Valve, install the new T&P Relief Valve that came with your water heater. Do not reuse an old T&P Relief Valve. Install a T&P Relief Valve discharge pipe according to local codes and the following guidelines:

- The discharge pipe should be at least 3/4" inside diameter and sloped for proper drainage. Install it to allow complete drainage of both the T&P Relief Valve and the discharge pipe.
- The discharge pipe must withstand 250°F (121°C) without distortion. Use only copper or CPVC pipe. Do not use any other type of pipe, such as PVC, iron, flexible plastic pipe, or any type of hose.



The T&P Relief Valve discharge pipe must be installed properly and piped to an adequate drain.

- Terminate the discharge pipe a maximum of six inches above a floor drain or outside the building. Do not drain the discharge pipe into the drain pan; instead pipe it separately to an adequate drain. In cold climates, terminate the discharge pipe inside the building to an adequate drain. Outside drains could freeze and obstruct the drain line. Protect the drain from freezing.



The end of the T&P Relief Valve discharge pipe must stop no more than six inches above a floor drain or outside.

- Do not place any valve or other restriction between the tank and T&P Relief Valve. Do not cap, block, plug, or insert any valve between the T&P Relief Valve and the end of the discharge pipe. Do not insert or install any reducer in the discharge pipe.

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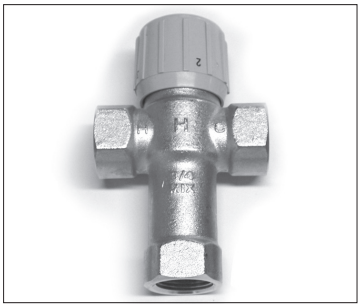
Step 6:

Install shutoff and tempering valves

1 If one is not already installed, install a manual shutoff valve in the cold water line that supplies the water heater. Install the shutoff valve near the water heater so that it is readily accessible. Only use valves that are compatible with potable water. Use only full-flow ball or gate valves. Other types of valves may cause excessive restriction to the water flow.

2 Install a Thermostatic Mixing Valve at each point-of-use (for example, kitchen sink, bathroom sink, bath, shower). Consult the valve manufacturer's instructions or a qualified person.



Install Thermostatic Mixing Valves at each point where hot water will be used.

⚠ WARNING! Even if the water heater's thermostat(s) are set to a relatively low temperature, hot water can scald. Install Thermostatic Mixing Valves at each point-of-use to reduce the risk of scalding. (See page 4.)

3 For water heaters that are fed by a solar water heating system (or any other pre-heating system), always install a Thermostatic Mixing Valve or other temperature limiting device in the inlet water supply line to limit water supply inlet temperature to 120°F. Solar water heating systems can supply water with temperatures exceeding 170°F and may result in water heater malfunction.

⚠ WARNING! Hot water provided by solar heating systems can cause severe burns instantly, resulting in severe injury or death (see page 4).

Step 7:

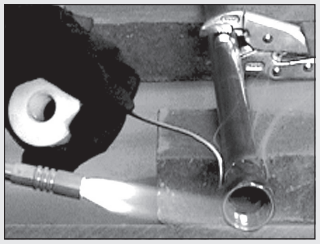
1 Connect the water supply

Determine the type of water pipes in your home. Most homes use copper water pipes, but some use CPVC or cross-linked polyethylene (PEX). Use fittings appropriate for the type of pipe in your home. Do not use iron or PVC pipe – they are not suitable for potable water.

2 Connect the cold water supply using 3/4 inch National Pipe Thread "NPT" to the fitting marked "C" (COLD). For ease of removing the water heater for service or replacement, connect the water pipes with a coupling called a union. We recommend using a dielectric-type union (available at local hardware stores). Dielectric unions can help prevent corrosion caused by tiny electric currents common in copper water pipes and can help extend the life of the water heater.

IF YOU HAVE COPPER PIPES:

If your home has copper water pipes, you can solder the water pipe connections or use compression fittings which don't require soldering. Compression fittings are easier to install than soldering pipe. Check with local plumbing officials to determine what types of pipe materials are suitable for your location. Do not use lead-based solder.



NOTICE: Do not solder pipes while they are attached to the water heater. The water heater's inlet and outlet connections contain non-metallic parts which could be damaged. The proper way to connect the water heater to copper water pipes is as follows:

- Solder a short length of pipe (about a foot or so) to a threaded adapter using only 95/5 tin-antimony or equivalent solder. Attach the threaded adapters to the water heater's connections (using thread sealant tape or pipe joint compound). Connect the home's water pipes by soldering, keeping the connections at the water heater cool with wet rags.

NOTICE: Most water heater models contain energy saving heat traps in the inlet and outlet connections to avoid the circulation of hot water within the pipes. Do not remove the heat traps.

3 Connect the hot water supply using 3/4 inch NPT to the fitting marked "H" (HOT). Follow the same connection guidelines as for the cold water supply.

4 Install insulation (or heat tape) on the water pipes especially if the indoor installation area is subject to freezing temperatures. Insulating the hot water pipes can increase energy efficiency.

5 Double check to make sure the hot and cold water pipes are connected to the correct hot and cold water fittings on the water heater.

6 If needed, install (or adjust) the home's Pressure Reducing Valve to 50-60 psi and install a Thermal Expansion Tank.

A Pressure Reducing Valve is required if your home's water pressure is above 80 psi.

The Thermal Expansion Tank should be pressurized with air, to match the home's incoming water pressure.

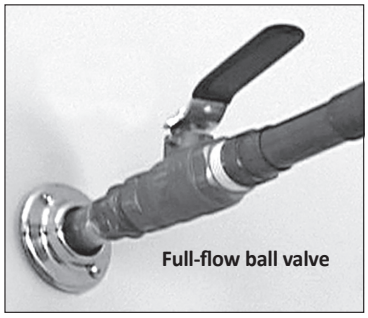
Step 8:

Verify connections and completely fill tank

To remove air from the tank and allow the tank to fill completely with water, follow these steps:

1 Remove the aerator at the nearest hot water faucet. This allows any debris in the tank or plumbing system to be washed out.

2 Turn the cold water supply back on.



Fully open the cold water supply valve.

3 Open a hot water faucet and allow the water to run until it flows with a full stream.

4 **Let the water run full stream for three full minutes.**

5 Close the hot water faucet and replace the aerator.

6 Check inlet and outlet connections and water pipes for leaks. Dry all pipes so that any drips or leaks will be apparent. Repair any leaks. Almost all leaks occur at connections and are not a tank leak.

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NOTICE: The tank must be completely empty of air and full of water before connecting electrical power to avoid "Dry Firing." Dry Firing may result in the upper element burning out. This is a common installation mistake. After you make the water connections, but before you connect the electrical power, open a hot water faucet and let the water run full until all the air is removed. Let the "hot" water run full for three minutes or longer before connecting any electrical wires. A Dry Fired upper heating element is an installation error and is not covered under warranty.

If Dry Firing occurs, replace the upper heating element according to the instructions on page 26.

Step 9:

Make electrical connections

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock.

NOTICE: Do not turn electrical power on unless you are sure all of the air is out of the tank and the tank is completely full of water. If power is applied before the tank is completely full of water, the upper element will burn out (Dry Fire).

1. Be sure the electrical power to the water heater is turned OFF at the circuit breaker panel (or remove the circuit's fuses).

2. Using a non-contact circuit tester, check the wiring to make certain the power is OFF.

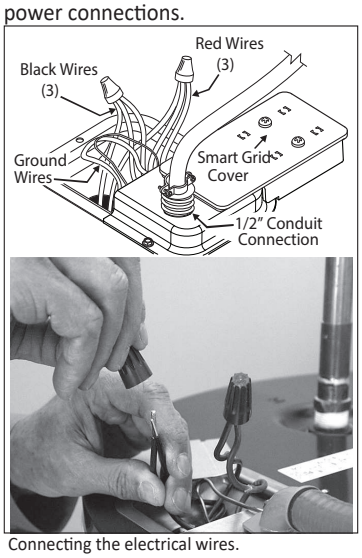
3. Check the water heater's data plate and ensure that the home's voltage, wiring size (ampacity) and circuit breaker rating and type are correct for this water heater. Refer to the wiring diagram located on the water heater for the correct electrical connections. Ensure that wire sizes, type, and connections comply with all applicable local codes. In the absence of local codes, follow NFPA-70 and the current edition of the National Electric Code (NEC).

4. Remove the cover on the electrical junction box on the top of the water heater.

The water heater's electrical requirements can be determined from the data plate.

5. Install wiring in an approved conduit (if required by local codes). Use a UL listed or CSA approved strain relief to secure the electrical wiring to the water heater.

6. Connect the ground wire to the green ground screw. Connect the home's two power wires to the water heater's four power wires (black to black, red to red). Use suitable wire nuts or other approved means to make the power connections.



Connecting the electrical wires.

7 Replace the junction box cover and secure with the screws provided.

⚠ WARNING! Be sure cover is secured to reduce the risk of fire and electric shock.

Step 10:

Adjusting the Temperature

With the installation steps completed, you may adjust the water heater's temperature setting if desired.

1 Set the thermostat(s) to desired temperature. The thermostat(s) on this water heater have been factory set to approximately 120°F to reduce the risk of scald injury. You may wish to set a higher temperature to provide hot water for automatic dishwashers or laundry machines, to provide more hot water capacity, and to reduce bacterial growth. Higher tank temperatures (140° F) kill bacteria that cause a condition known as "smelly water" and can reduce the levels of bacteria that cause water-borne diseases.

⚠ WARNING! Higher temperatures increase the risk of scalding, but even at 120°F, hot water can scald (see page 4).

If you increase the water heater's temperature setting, install Thermostatic Mixing Valve(s) at each point-of-use to reduce the risk of scalding.

Adjust Thermostatic Mixing Valves at each point-of-use to 120°F or lower.

To adjust the water heater's thermostat:

- Be sure the electrical power to the water heater is turned OFF at the circuit breaker panel (or remove the circuit's fuses).

⚠ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock. Check wires with a circuit tester to make sure power is off.

- Remove the upper and lower access panels and fold away the insulation.
- Turn the water temperature dial clockwise (>>) to increase the temperature, or counter clockwise (<<) to decrease the temperature. Adjust thermostat to the desire temperature set-point.

NOTE: Your water heater has only one thermostat, it is located behind the upper access panel.

- Fold the insulation back in place and replace the access panels.

⚠ WARNING! Be sure panels are secured to reduce the risk of fire and electric shock.

2 Turn the electric power back on.

3 Wait for the water to heat up. It may take several hours for a tank of cold water to heat up. If you have no hot water after two hours, refer to the Troubleshooting Section (see page 21).

⚠ WARNING! If you have increased the temperature setting and the Thermostatic Mixing Valves are not set properly (or not installed) you could scald yourself while checking the temperature.

4 Check water temperature at several points of use in your home (for example, bathtub faucet, shower, or lavatory sink) and adjust the Thermostatic Mixing Valves as needed. If you aren't sure how to adjust the Thermostatic Mixing Valve settings, or aren't sure if you have Thermostatic Mixing Valves, contact a qualified person.

INSTALLATION

Step 11:

Operation

The water heater is now ready for normal operation. To keep your water heater working safely and efficiently and extend its life, perform maintenance according to the schedule on page 25.

Vacation

To save energy, lower the temperature setting on the thermostat(s) if you plan to be gone for an extended time. Follow the instructions in Step 10 for adjusting the thermostat to a lower temperature setting before you leave and to properly raise the temperature setting when you return.

⚠ CAUTION! Hydrogen gas builds up in a hot water system when it is not used for a long period (two weeks or more). Hydrogen gas is extremely flammable. If the hot water system has not been used for two weeks or more, open a hot water faucet for several minutes at the kitchen sink before using any electrical appliances connected to the hot water system. Do not smoke or have an open flame or other ignition source near the faucet while it is open.

Need Assistance?

Call our Technical Assistance Hotline which is listed on the water heater's warranty sheet.
We can help you with installation, operation, troubleshooting, or maintenance.
Before you call, write down the model and serial number from the water heater's data plate.

INSTALLATION

The Electronic Thermostat

IMPORTANT: The Grid Communication Adaptor must be removed before attempting to access the thermostat. NOTE: for the Electronic Thermostat (ET) changes to remain in effect the Grid Communication Adaptor must not be reconnected, also read the "Risks During Operation" under the "Important Safety Information" section. If the instructions are not clear, contact a qualified service technician.

Water Temperature Adjustment

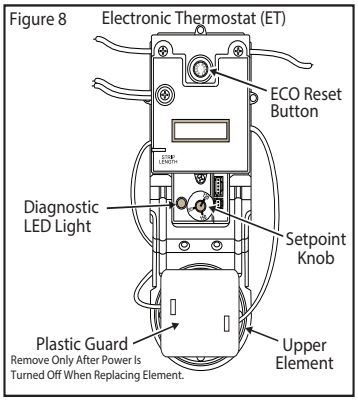
The Grid Communication Adaptor is intended to serve as the primary interface for operating the water heater; however, the Electronic Thermostat (ET) may control the water heater in the absence of the Grid Communication Adaptor. The Electronic Thermostat consists of an electronics box that contains a low voltage power supply, the thermostat set point knob, relays to switch between the upper and lower heating elements, one control thermistor, a connector for the lower element control thermistor, microelectronics to convert the thermistor signals and perform switching and other logic functions, and a connector to tie the Electronic Thermostat (ET) to the Grid Communication Adaptor located on the top of the water heater. The majority of the self-diagnostics are located in the Electronic Thermostat (ET), including the dry-fire protection intelligence. The thermostat circuit is designed so that when the upper heating element calls for heat, the power is directed to that element even if the lower element is also calling for heat.

Diagnostic LED Light

The Green/Red LED light indicates the status of the electronic thermostat (See Figure 8).

⚠ WARNING! Electrical Shock Hazard
Do not remove the plastic guard from over wiring.
Do not touch electrical wiring.
Failure to do so can result in death or electrical shock.

Figure 8 Electronic Thermostat (ET)



• Green LED will signal normal operation. The green LED will blink 2 times per second to indicate that power is applied to the upper heating element and at a faster rate (4 times per second) to indicate that the lower heating element is powered.

• Red LED will flash error codes. If a fault is detected by the electronic thermostat, the LED light indicator will use the red LED to indicate the fault detected. The flash code sequence is to consist of 1/2 second flashes of the red LED each separated by a 1/2 second off period.

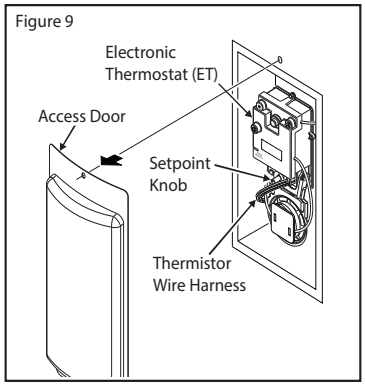
The number of flashes indicates the fault code number.
(See diagnostic code chart section in this manual).

After the last 1/2 second "on" period, the LED will remain off until a total of 5 seconds has elapsed for the fault indication cycle (there is a 5 seconds delay before the fault flash pattern repeats).

After the 5 seconds are completed, the fault indication cycle is repeated starting with the first 1/2 second-flash. The flash sequence will be repeated as long as the fault remains. Only one fault can be declared at a time. NOTE: the green LED is turned off when a fault code is being displayed, even though the heater may be operating in limp mode with an element on. See diagnostic code chart section in this manual.

Adjust the thermostat to the desired temperature setting using the "Setpoint Knob". NOTE: If the system diagnostic yields any codes, reference the Diagnostic Code section in this manual.

Figure 9



⚠ WARNING! Electrical Shock Hazard
Do not remove the plastic guard from over wiring.
Do not touch electrical wiring.
Failure to do so can result in death or electrical shock.

INSTALLATION

Smart Grid Technology

The electric Smart Grid will enable significant improvements in electric power reliability and quality through reduction of peak power demand, while providing consumers the knowledge and ability to manage their energy consumption and utility costs.

According to the Department of Energy (DOE), since 1982 the growth in peak electricity demand has exceeded power transmission growth. This has caused more frequent blackouts and service interruptions, as well as an increase in the costly reserve capacity the power grid requires to meet higher peak demands. The increased demand for electrical power across the nation has also led to higher peak utility costs.

Smart appliances are one way to help mitigate this problem. By using advanced digital communication technologies, smart appliances will be able to communicate with local power company or home energy management systems, and react accordingly to save energy and money. For example, during peak demand periods the water heater may pause or delay its power consumption and thus reduce the load on the smart utility grid. Additionally, smart appliances will also communicate with consumers to let them know how much energy they are consuming. This will eventually allow consumers to control their appliances, manage energy usage, and to ultimately save money.

Smart Grid Control (Where Available)

Where available, Grid Communication Adaptors may be supplied by the local power company or purchased from leading retailers. Please contact your local power company for more information.

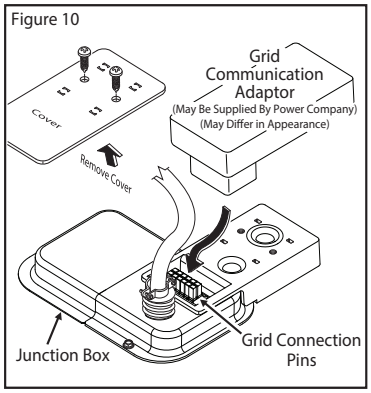
To activate Smart Grid Control, remove the cover over the grid connection pins and plug in the grid communication adaptor. See Figure 10. NOTE: use only approved grid communication adaptors. This will enable the power company to communicate the peak demand periods for the water heater's power usage.

After this connection has been made, this will enable and allow acceptance of the power company communication of grid management requests. Unplugging will disable this feature and will allow the water heater to ignore grid management requests.

NOTE: Smart Grid will be disabled when the Grid Communication Adaptor is disconnected from the junction box wiring harness.

⚠ WARNING! Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

Figure 10



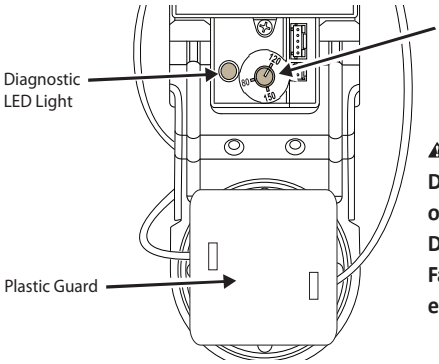
Smart Grid Connection

DIAGNOSTIC CODE CHART Electronic Thermostat (ET)

IMPORTANT: Before attempting to adjust the thermostat, read the "Adjusting The Temperature" section page 15.

The Electronic Thermostat (ET) is designed so that it may control the water heater without the Grid Communication Adaptor being operated, see page 17.

If the instructions are not clear, contact a qualified service technician.



⚠ WARNING! Electrical Shock Hazard
Do not remove the plastic guard from over wiring.
Do not touch electrical wiring.
Failure to do so can result in death or electrical shock.

(ET) DIAGNOSTIC LED	INDICATES	CORRECTIVE ACTION*
LIGHT ON (Green Flash)	Normal operation.	None
NO LIGHT	No electrical power to control board or diagnostic LED light burned out.	1. Check for blown fuses or tripped breaker. 2. If diagnostic LED light is burned out, replace Electronic Thermostat (ET).
1 FLASH (Red)	Dry-fire, electrical power on with the tank not completely full of water.	1. Turn off electrical power at breaker, add water. 2. Turn on electrical power at breaker. 3. See "Routine Maintenance" on page 25.
2 FLASHES (Red)	Water temperature exceeded high limit.	1. Turn off electrical power at the breaker. 2. Press the reset button (see Figure 8). 3. Turn on electrical power at breaker. 4. If error returns call a service technician for assistance.
3 FLASHES (Red)	Upper thermistor sensor failure. (Note: Upper thermistor sensor is part of the ET)	1. Turn off electrical power at the breaker. 2. Replace Electronic Thermostat (ET). 3. Turn on electrical power at breaker.
4 FLASHES (Red)	Upper element circuit failure. (Note: Lower element is still operable)	1. Turn off electrical power at the breaker. 2. Check element circuits for resistance of 5-25 ohms (replace if required). 3. Check wires at elements and Electronic Thermostat (ET) for damage. If this 4 flashes condition continues, replace Electronic Thermostat (ET). 4. Turn on electrical power at breaker.
5 FLASHES (Red)	Lower element circuit failure. (Note: Upper element is still operable)	1. Turn off electrical power at the breaker. 2. Check element circuits for resistance of 5-25 ohms (replace if required). 3. Check wires at elements and Electronic Thermostat (ET) for damage. If this 5 flashes condition continues, replace Electronic Thermostat (ET). 4. Turn on electrical power at breaker.
6 FLASHES (Red)	Electronic Thermostat (ET) failure (Internal processor).	1. Turn off electrical power at the breaker. Now turn on electrical power to see if error clears. If error has not cleared, replace Electronic Thermostat (ET). 2. Turn on electrical power at breaker.
7 FLASHES (Red)	Lower thermistor sensor failure.	1. Turn off electrical power at the breaker. 2. Check electrical connections at Electronic Thermostat (ET). 3. Replace Lower Thermistor Sensor. 4. Turn on electrical power at breaker.
8 FLASHES (Red)	Electronic Thermostat (ET) error	1. Turn off electrical power. 2. Check wiring at Electronic Thermostat (ET) for damage. 3. Turn on electrical power at breaker. 4. If this code flashes condition continues, replace the Electronic Thermostat (ET).

(ET) DIAGNOSTIC LED	INDICATES	CORRECTIVE ACTION*
9, 10, 11 or 12 FLASHES (Red)	Electronic Thermostat (ET) error	1. Turn off electrical power. 2. Check wiring at Electronic Thermostat (ET) for damage. 3. Turn on electrical power at breaker. 4. If this code flashes condition continues, replace the Electronic Thermostat (ET).

*These instructions are brief and intended as guidance for a qualified person. If you lack the necessary skills to perform these procedures call our Technical Assistance Hotline which is listed on the water heater's warranty sheet.

TROUBLESHOOTING

⚠ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock.

⚠ WARNING! When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

No Hot Water

The most likely reasons for an electric water heater to produce NO hot water are:

- No electric power—a common problem with new installations
- Burned out upper element (Dry Fired) — a common problem with new installations
- Tripped Energy Cut Off (red button on upper thermostat)
- The water heater's inlet and outlet connections are reversed (usually only in new installations)
- Broken upper thermostat (or wiring)
- A leak in the hot water side of the plumbing system that exceeds the water heater's heating capacity and makes it appear that the water heater is producing little to no hot water

Follow these steps to diagnose and correct common electrical problems:

1 **Check the electric power to the water heater.** No hot water is often caused by a problem with the home's electrical wiring or circuit breakers. You'll need a non-contact circuit tester. Follow these guidelines:

- Locate the water heater's circuit breaker and turn it off (or remove the circuit's fuses).
- Locate the electrical junction box on top of the water heater and remove the cover.
- Identify the two power wires. The power wires are usually black/black or black/red—the green or copper wire is the ground wire.

Use a non-contact circuit tester to check for electrical power.

- Turn the circuit breaker back on (or install the fuses) and check the power on both incoming power wires using a non-contact circuit tester.
- Turn the power off and replace the cover on the electrical junction box.

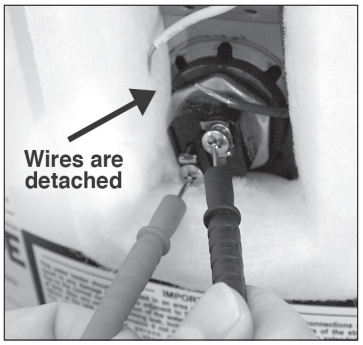
If the water heater is not getting power, contact a qualified person to have your home's wiring or circuit breakers checked.

2 **Check the upper heating element.** If the water heater is getting electrical power, check to see if the upper heating element has burned out. If the upper element is burned out, you'll have no hot water. To check the upper element, you'll need a multimeter capable of reading resistance.

- Turn the power OFF at the circuit breaker or remove fuses.
- Remove the upper access panel.
- Remove the insulation to access the upper thermostat and heating element.

3 **Check the top two screws of the upper thermostat using a non-contact circuit tester and confirm that power is off (screw terminals 1 and 3 in photo on next page).**

- With the electrical power off, remove the two power wires from the upper heating element.



Use a multimeter to check the resistance of the upper heating element.

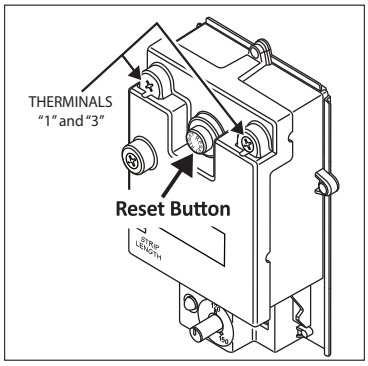
4 **Check the resistance of the upper heating element using a multimeter.** Measure the resistance between the two screw terminals on the upper heating element. A good element will have a resistance ranging between 5 and 25 Ohms. If the resistance is:

Outside this range. Replace the element (see the Routine Maintenance section on page 26). On a new water heater, a burned out upper heating element is almost always caused by turning the power on before the tank was completely full of water (Dry Fire). (See Step 8 in the Installation section.)

Within this range. Reattach the power wires, making sure the wires are in good condition and the connections are clean and tight. Next, check the following:

TROUBLESHOOTING

5 Check/Reset Energy Cut Off (ECO) Button.



Energy Cut Off (ECO) button

The Energy Cut Off (ECO) shuts off power to the water heater's elements if the temperature of the water in the tank gets too hot. If the ECO has tripped, you'll have no hot water. A tripped ECO can usually be reset, but you should have a qualified person investigate the cause of the overheating and repair the problem. Do not turn the power back on until the cause of the overheating has been identified and repaired.

To check the Energy Cut Off (ECO)

- Turn off the power to the water heater.

⚠ WARNING! Working near an energized circuit can result in severe injury or death from electrical shock. Check power wires in the electrical junction box with a non-contact circuit tester to make sure power is off.

- Press the red ECO reset button (see photo above).
- The ECO was tripped if you hear a click when it is reset. In most cases, a tripped ECO indicates that the tank overheated due to a problem with one of the elements or thermostats—have a qualified person check the upper and lower elements and thermostats and replace if necessary.
- The ECO was not tripped if you didn't hear a click. In that case, the upper thermostat should be checked by a qualified person.
- Replace the insulation and the upper access panel.

WARNING! Be sure all covers are secured to reduce the risk of fire and electric shock.

Insufficient Hot Water or Slow Hot Water Recovery

⚠ WARNING! Because of the increased risk from scalding, if you set the water heater's thermostat(s) higher than 120°F, Thermostatic Mixing Valves at each point-of-use are particularly important (see page 4).

If the hot water is simply not warm enough, there are several possible causes:

- Faulty Thermostatic Mixing Valve in a faucet or shower control (check other faucets in the house for hot water)
- One (or both) of the thermostats set too low
- Water heater's capacity too small (or usage too high)
- Reversed plumbing connections or melted dip tube (usually found soon after new installation)
- Plumbing leak
- Bad lower heating element (or lower thermostat)
- Low supply voltage

Thermostatic Mixing Valves. If the hot water is simply not warm enough, make sure the faucet you are checking doesn't have a defective Thermostatic Mixing Valve. Many shower controls now have built-in mixing valves. If these devices fail, they can reduce the amount of hot water the shower or faucet delivers even though there is plenty of hot water in the tank. Always check the water temperature at several faucets to make sure the problem is not in a faucet or shower control.

Thermostats set too low. If the water temperature at several faucets is too cool, adjust the thermostat(s) according to the instructions in Step 10 of the Installation section of this manual.

Undersized water heater. If your water heater runs out of hot water too quickly, it may be too small for your needs. If the water heater is old, consider replacing it with a larger model. If the water heater is in good condition, you may be able to meet your family's hot water needs with the existing water heater by installing Thermostatic Mixing Valves at each point-of-use and then turning the thermostat(s) to a higher setting. See page 15, step 10.

You can also reduce your home's hot water needs by washing clothes in cold water, installing flow restrictors on shower heads, repairing leaky faucets, and taking other conservation steps.

Reversed connections or melted dip tube. Check the hot and cold connections and make sure your home's hot water pipe is connected to the hot water outlet on the water heater. Usually, reversed connections are found soon after the installation of a new unit. If copper pipes were soldered while they were attached to the water heater, the dip tube may have melted. The dip tube is a long plastic tube inside the tank attached to the cold water inlet. If the dip tube has melted, it can be replaced by removing the cold water inlet connection, removing the old dip tube and installing a new one.

Plumbing leak. Even a small leak in the hot water side of the home's plumbing system can make it appear that the water heater is producing little to no hot water. Locate and repair the leak.

Lower heating element not working. If the lower heating element (or, more

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rarely, the lower thermostat) is not working, you will have some hot water but not as much as before. Because the lower element does most of the work, the lower element usually wears out before the upper element. Replace the lower element and/or thermostat if necessary (see page 26-27).

Temperature Too High

If the water temperature is too hot:

- Install or adjust the Thermostatic Mixing Valves for each point-of-use (see manufacturer's instructions), or
- Adjust the thermostat(s) on the water heater (see Step 10 in the installation section of this manual).

A nonfunctioning thermostat or a shorted heating element can cause extremely hot water. If the Temperature and Pressure Relief Valve (T&P Valve) releases large amounts of very hot water, it is likely due to a shorted heating element, or more rarely a nonfunctioning thermostat, or the thermostat does not fit snuggly against the tank. Very high water temperatures can also cause the Energy Cut Off (ECO) to trip (see page 27). Turn power off until this problem is fixed.

Low Water Pressure

Check both the cold and hot water at a sink to determine if the lower pressure is only on the hot water side. If both hot and cold faucets have low pressure, call your local water utility. If the low pressure is only on the hot water side, the primary causes of this are:

- Melted heat traps or dip tube. Soldering copper pipes while they are connected to the water heater can melt the heat traps inside the hot and cold water connections or the dip tube (cold water side). Melted heat traps or a melted dip tube can restrict the flow of hot water. If that's the case, replace the heat traps or dip tube.
- Partially closed supply valve. Open the water heater's supply valve fully.

Drips from T&P Relief Valve Discharge Pipe

A small amount of water dripping from the Temperature and Pressure (T&P) Relief Valve usually means the home's water pressure is too high or you need a properly sized and pressurized Thermal Expansion Tank. Refer to Step 1 in the Installation section of this manual for more information. A large amount of hot water coming from the T&P discharge pipe may be due to the tank overheating.

⚠ WARNING! Do not cap or plug the T&P relief valve or discharge pipe, and do not operate the water heater without a functioning T&P Relief Valve - this could cause an explosion.

Water pressure too high. High water pressure can cause the T&P Relief Valve to drip. Install a Pressure Reducing Valve (PRV) on the main cold water supply line. Adjust the PRV to between 50 and 60 psi.

Thermal Expansion Tank. Install a Thermal Expansion Tank. If a Thermal Expansion Tank is already installed and the T&P Relief Valve discharge pipe drips, the Thermal Expansion Tank may be pressurized to the wrong pressure or the internal bladder may be defective. Refer to the instructions that came with the Thermal Expansion Tank for more information.

Debris. In rare cases, debris can stick inside the T&P Relief Valve preventing the valve from seating fully. In that case, the T&P Relief Valve discharge pipe will drip. You may be able to clear debris from the T&P Relief Valve by manually operating the valve, allowing small quantities of water to flush out the debris. Refer to the T&P Relief Maintenance section of this manual.

⚠ WARNING! When manually operating the temperature-pressure relief valve, make sure that no one is in front of or around the discharge outlet. The water may be extremely hot and could cause severe burns. Also ensure that the water discharge will not cause property damage.

If the water pressure is between 50 and 60 psi, a Thermal Expansion Tank is installed and properly pressurized, and the valve has been cleared of any debris, and it still drips, the valve may be broken—have a qualified person replace the T&P relief valve.

Water Odor

Harmless bacteria normally present in tap water can multiply in water heaters and give off a "rotten egg" smell. Although eliminating the bacteria that causes "smelly water" with a Chlorination system is the only sure treatment, in some cases, the standard anode rod that came with your water heater can be replaced with a special zinc anode rod which may help reduce or eliminate the odor. Contact a qualified person.

NOTE: To protect the tank, an anode rod must be installed in the water heater at all times or the warranty is void.

In cases where the "rotten egg" smell is pronounced, you can raise the tank temperature to 140°F in order to reduce bacteria growth in the tank.

⚠ WARNING! Because higher temperatures increase the risk of scalding, if you set the thermostat(s) higher than 120°F, Thermostatic Mixing Valves at each point-of-use are particularly important (see page 4). ■

MAINTENANCE

Routine Maintenance

Routine maintenance will help your water heater last longer and work more efficiently. If you can't perform these routine maintenance tasks yourself, contact a qualified person.

Water Heater Maintenance

After the first six months, drain and flush the water heater and inspect the anode rod. Depending on the hardness of your water, repeat this process at least annually, or more frequently if needed. From time to time you may need to replace a heating element or a thermostat. All three maintenance tasks are described below.

Draining and Flushing the Water Heater

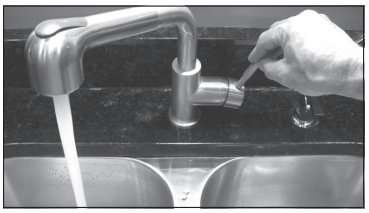
Tap water contains minerals that can form lime deposits on heating elements or sediment in the bottom of the tank. The amount of lime deposits or sediment depends on the hardness of your tap water. The rate at which sediment builds up depends on water quality and hardness in your area, the temperature settings, and other variables. We recommend draining and flushing the water heater after the first six months of operation to determine the amount of sediment build up. Draining sediment extends the life of the tank, heating elements, and drain valves.

- In areas with very hard water, remove and check the heating elements whenever you drain the tank. If you have heavy lime deposits on heating elements, you will need to replace them more often.
- Sediment may form large masses that can prevent the tank from draining. Have a qualified person use a de-liming agent suitable for potable water to remove the sediment buildup.
- In most cases, it is easier and cheaper to replace lime-encrusted elements than trying to remove heavy lime deposits.

To drain and flush the tank:

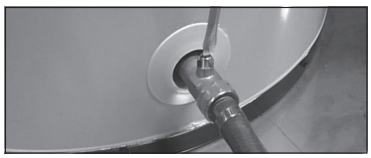
1. Locate the water heater's circuit breaker and turn it OFF (or remove the circuit's fuses).

2. Open a hot water faucet and let the hot water run until it is cool.



⚠ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

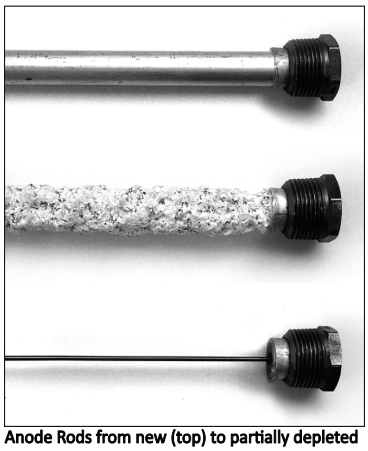
3. Connect a garden hose to the drain valve and place the other end of the hose in a drain, outside, or in buckets.
4. Turn the cold water supply valve OFF.
5. Open the drain valve on the water heater.



6. Open a hot water faucet to help the water in the tank drain faster.

NOTICE: DO NOT turn electrical power back on unless the tank is completely full of water.

7. Remove and inspect the anode rod (see Repair Parts Illustration on back cover for location of the anode rod). Replace the anode rod if it is depleted. Turn power off. Run hot water until it's cool. Turn cold water supply valve off. Open a hot water faucet to depressurize tank. Locate and remove the black plastic cover marked "Anode Rod". Use a "key hole" saw or similar tool to remove the foam insulation covering the anode rod. Once the anode rod is exposed, use a 11/16" socket wrench with an extension to remove it. Inspect the anode rod and replace if depleted. Apply Thread sealant tape or pipe joint compound and reinstall the anode rod tightly. It is not necessary to replace the foam removed to access the anode. Turn cold water supply valve on. When hot water runs full, close hot water faucet. Check for leaks and repair if necessary. Turn power on.



Anode Rods from new (top) to partially depleted (middle) to fully depleted stage (bottom)

Anode Rod. The anode rod is a sacrificial metal rod that helps reduce corrosion and premature failure (leaks) in the tank. The anode rod is a consumable item. Inspect the anode rod after the first six months of operation when you drain and

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flush the tank. Replace the anode rod if it is substantially worn out or depleted. Thereafter, inspect the anode rod annually or more frequently if needed. If you use a water softener, your anode rod will deplete faster than normal. Inspect the anode rod more frequently, replacing the anode rod as needed. Obtain new anode rods from your local hardware stores or have a qualified person replace it. (Anode rods are a consumable item and are not covered under warranty).

8 If the sediment was present when the tank was drained, flush the tank by opening the cold water supply valve and letting the water run until no more sediment drains from the tank. Close the drain valve when you are done.

NOTICE: Do not turn power back on until the tank is completely full of water. For complete instructions on filling the tank, follow Step 8 in the Installation section.

9 Refill the tank by opening the cold water supply valve. Make sure a hot water faucet is open and the drain valve is closed. Allow the hot water to run full for at least three minutes to make sure the tank has all the air removed and is completely full of water. Failure to perform this step can cause the upper heating element to burn out. Once you are certain the tank is completely full of water, close the hot water faucet.

10 Restore power to the water heater. It may take two hours for the tank to heat up.

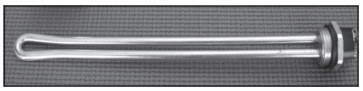
Replacing the Heating Element

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock. Turn power off. Check wires with a non-contact circuit tester to make sure power is off. When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

If you are not comfortable replacing a heating element or thermostat yourself, have this work done by a qualified person. To replace the heating element, you'll need the following tools and supplies:

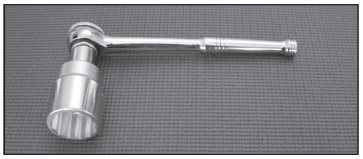
Non-Contact Circuit Tester

- Always turn power OFF and check the power wires with a non-contact circuit tester before working on the water heater.



Heating Element (with gasket)

- Check your water heater's data plate for the correct wattage and voltage. Heating elements are available at most hardware stores.



Element Wrench

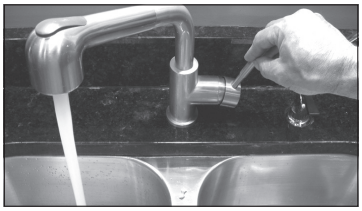
- Some regular sockets (1 1/2 inch) may work, but regular sockets are often beveled and may slip. Inexpensive element wrenches are available at local hardware stores.
- Garden hose to drain the tank
- Hand dishwashing soap to lubricate the gasket
- A clean cloth to clean the threaded opening
- A flat blade and a Phillips screwdriver

Steps for Replacing the Heating Element:

1 Turn the power OFF at the circuit breaker or remove fuses.

2 Open the electrical junction box on top of the water heater. Using a non-contact circuit tester, check the power wires to make certain the power is OFF.

3 Open a hot water faucet and let the hot water run until it is cool.



⚠ WARNING! Be sure the water runs cool before draining the tank to reduce the risk of scalding.

4 Connect a garden hose to the drain valve and place the other end of the hose in a drain or outside (or use buckets). Turn OFF the cold water valve that supplies the water heater. Open the drain valve on the water heater. Opening a hot water faucet will help the tank drain faster.

5 Remove the upper or lower access panel on the water heater, and then fold back the insulation and remove the plastic element/thermostat cover.

6 With the tank drained and power off, remove the power wires from the element you intend to replace.

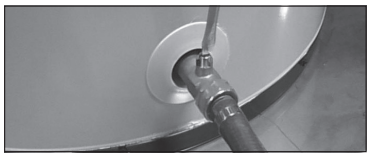
7 Remove the bad element using an element wrench.

8 Make sure the new element is the correct replacement by referring to the water heater's data plate for voltage and wattage information.

9 Clean the threads in the tank opening with a rag. Insert the new element equipped with a rubber gasket. NOTE: Use a drop of hand dishwashing liquid to lubricate the gasket to help avoid damaging the gasket as it is being tightened. Tighten with an element wrench.

NOTICE: Do not turn power back on until the tank is completely full of water. For complete instructions on filling the tank, follow Step 8 in the Installation section.

10 Refill the tank by opening the cold water supply valve. Make sure a hot water faucet is open and the drain valve is closed. Allow the hot water to run full for at least three minutes to make sure the tank has all the air removed and is completely full of water. Failure to perform this step can cause the upper heating element to burn out. Once you are certain the tank is completely full of water, close the hot water faucet.



11 Check the newly installed element for leaks. If a leak is present, tighten the element until the leak stops. If you cannot stop the leak, drain the tank and remove the element. Inspect the gasket for damage. If the gasket is damaged, replace the gasket and re-install the element.

12 Once the element is successfully installed and there are no leaks, replace the power wires, thermostat cover, insulation, and access panel. Make sure all wire connections are tight. Replace the cover on the electrical junction box.

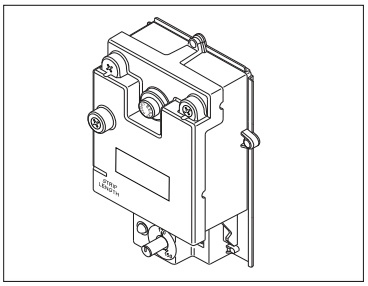
13 Restore power to the water heater. It may take two hours for the tank to heat up.

Replacing the Thermostat

⚠ WARNING! Working on an energized circuit can result in severe injury or death from electrical shock. Turn power off. Check wires with a non-contact circuit tester to make sure power is off. When you are finished, be sure all covers are secured to reduce the risk of fire and electric shock.

To replace the thermostat, you'll need the following tools and supplies:

- A non-contact circuit tester. Always turn power OFF and check with a non-contact circuit tester before working on the water heater.



- A replacement thermostat (available at hardware stores). Take the old thermostat to the store to ensure the replacement thermostat is correct.
- A business card to check the gap between the thermostat and the tank
- Tape and a permanent marker to mark the wires
- A flat blade and a Phillips screwdriver

Steps for Replacing the Thermostat:

1 Turn the power OFF at the circuit breaker or remove fuses.

NOTICE: It is not necessary to drain the tank to replace a thermostat.

2 Open the electrical junction box on top of the water heater. Using a non-contact circuit tester, check the power wires to make certain the power is OFF.

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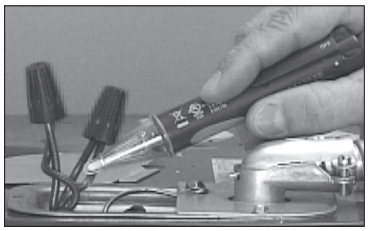

3 Remove the upper or lower access panel on the water heater and carefully fold back the insulation and plastic element/thermostat cover.

4 Make sure the replacement thermostat matches the original thermostat.

5 Mark the wires with tape so you'll know how to put them back on.

6 Disconnect the wires from the bad thermostat and remove the thermostat from the metal mounting clip.

7 Install the new thermostat in the metal mounting clip.

8 Make sure the new thermostat fits snuggly against the tank. You should NOT be able to slip a business card between the thermostat and the tank. If you can, bend the thermostat mounting clip until the thermostat fits tightly against the tank.

9 Attach the wires following the wiring diagram on the water heater's label. Make sure all wire connections are tight.

10 Replace the plastic element/thermostat cover, insulation, and access panel.

11 Replace the cover on the electrical junction box.

12 Restore power to the water heater. It may take two hours for the tank to heat up.

T&P Relief Valve Maintenance

Read and follow the operating and annual maintenance instructions provided by the manufacturer of the T&P Relief Valve (yellow label attached to T&P Relief Valve). If no label is attached to the T&P Relief Valve, follow the instructions in this section. Minerals in the water can form deposits that cause the valve to stick or create blocked passages, making the T&P Relief Valve inoperative. Follow these guidelines:

- At least annually, operate the T&P Relief Valve manually to ensure the waterways are clear and the valve mechanism moves freely (above). Before operating the valve manually, check that it will discharge in a place for secure disposal. If water does not flow freely from the end of the discharge pipe, turn OFF the power to the water heater. Call a qualified person to determine the cause.

⚠ WARNING! Hot water will be released. Before operating the T&P relief valve manually, check that it will discharge in a safe place. If water does not flow freely from the end of the discharge pipe, turn the power to the water heater OFF. Call a qualified person to determine the cause.

- At least every five years, have a qualified person inspect the T&P Relief Valve and discharge pipe. Damage caused by corrosive water conditions, mineral deposits, or other problems can only be determined when a qualified person removes and inspects the valve and its components.
- Note that a dripping T&P Relief Valve is usually caused by the home's water pressure being too high or the lack of a Thermal Expansion Tank. If your T&P Relief Valve drips, see page 24. ■

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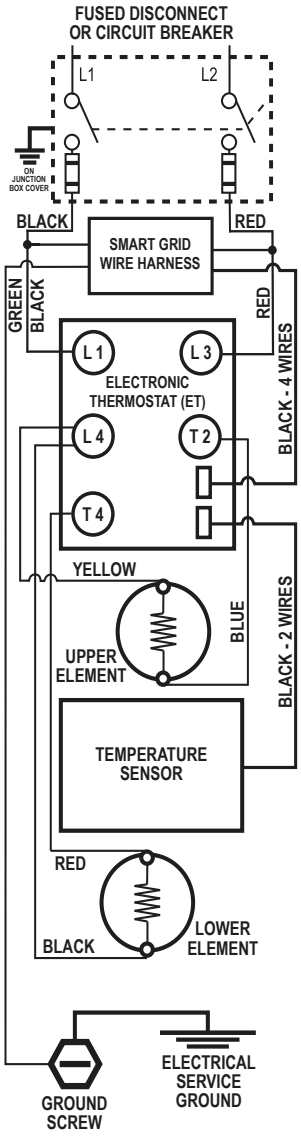
DIAGRAMS

Thermostat Wiring Diagram



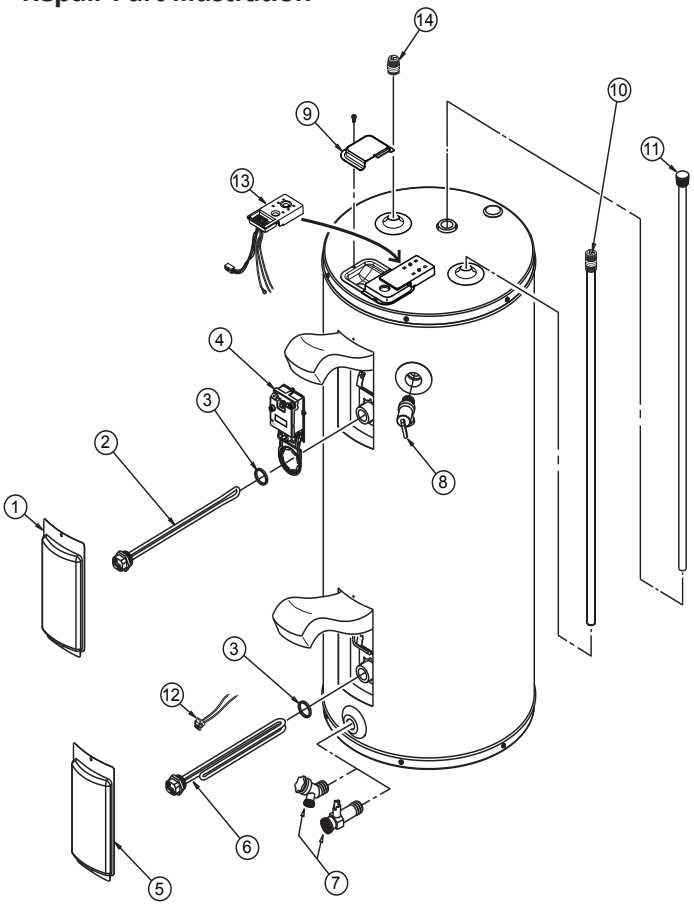
100263189

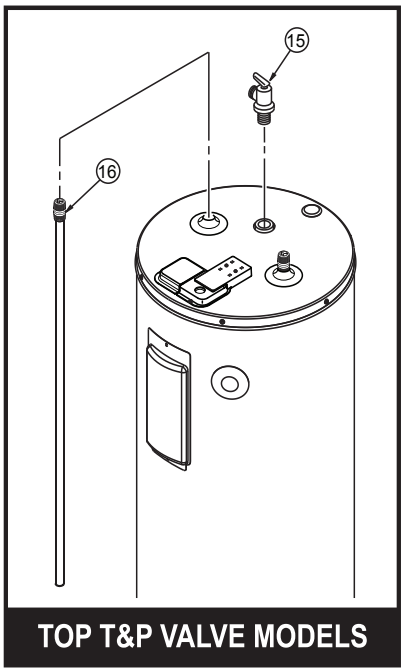
BRANCH CIRCUIT SIZING GUIDE Based on N.E.C. NFPA NO. 70 - 1999						
WATT LOAD	Recommend Over Current Protection Rating			Copper Wire Size AWG Based on N.E.C. Table 310-16 (60°C)		
	120 V	208 V	240 V	120 V	208 V	240 V
1500*	15	15	15	12	14	14
2000	20	15	15	10	14	14
2500	30	15	15	10	14	14
3000	30	20	15	8	12	12
3500	-	20	20	-	10	12
4000	-	25	20	-	10	10
4500	-	30	25	-	10	10
5000	-	30	30	-	10	10
5500	-		30	-		10

* **Wattages less than 1500 may be wired 14 gage with a maximum 15 amp protection.**

REPAIR PARTS

Repair Part Illustration





Repair Parts

Repair parts may be ordered through your plumber, local distributor, home improvement center, or by calling Technical Assistance Hotline which is listed on the water heater's warranty sheet. When ordering repair parts, always give the following information:

1. Model, serial and product number
2. Item number
3. Parts description

Repair Parts List

Legend

■ Special anode rod (See page 25)

▲ Temperature and Pressure Relief Valve is required, but may not be factory installed.

ITEM No.	PARTS DESCRIPTION
1	ACCESS DOOR
2	UPPER ELEMENT ▲
3	ELEMENT GASKET
4	ELECTRONIC THERMOSTAT (ET)
5	ACCESS DOOR
6	LOWER ELEMENT ▲
7	DRAIN VALVE
8	TEMPERATURE AND PRESSURE RELIEF VALVE ■
9	JUNCTION BOX COVER
10	DIP TUBE (INCLUDES NIPPLE AND HEAT TRAP)
11	ANODE ROD ◆
12	THERMISTOR SENSOR
13	SMART GRID WIRE HARNESS ASSEMBLY
14	HEAT TRAP
15	TOP TEMPERATURE AND PRESSURE RELIEF VALVE
16	HEAT TRAP/ANODE ROD COMBINATION ◆