

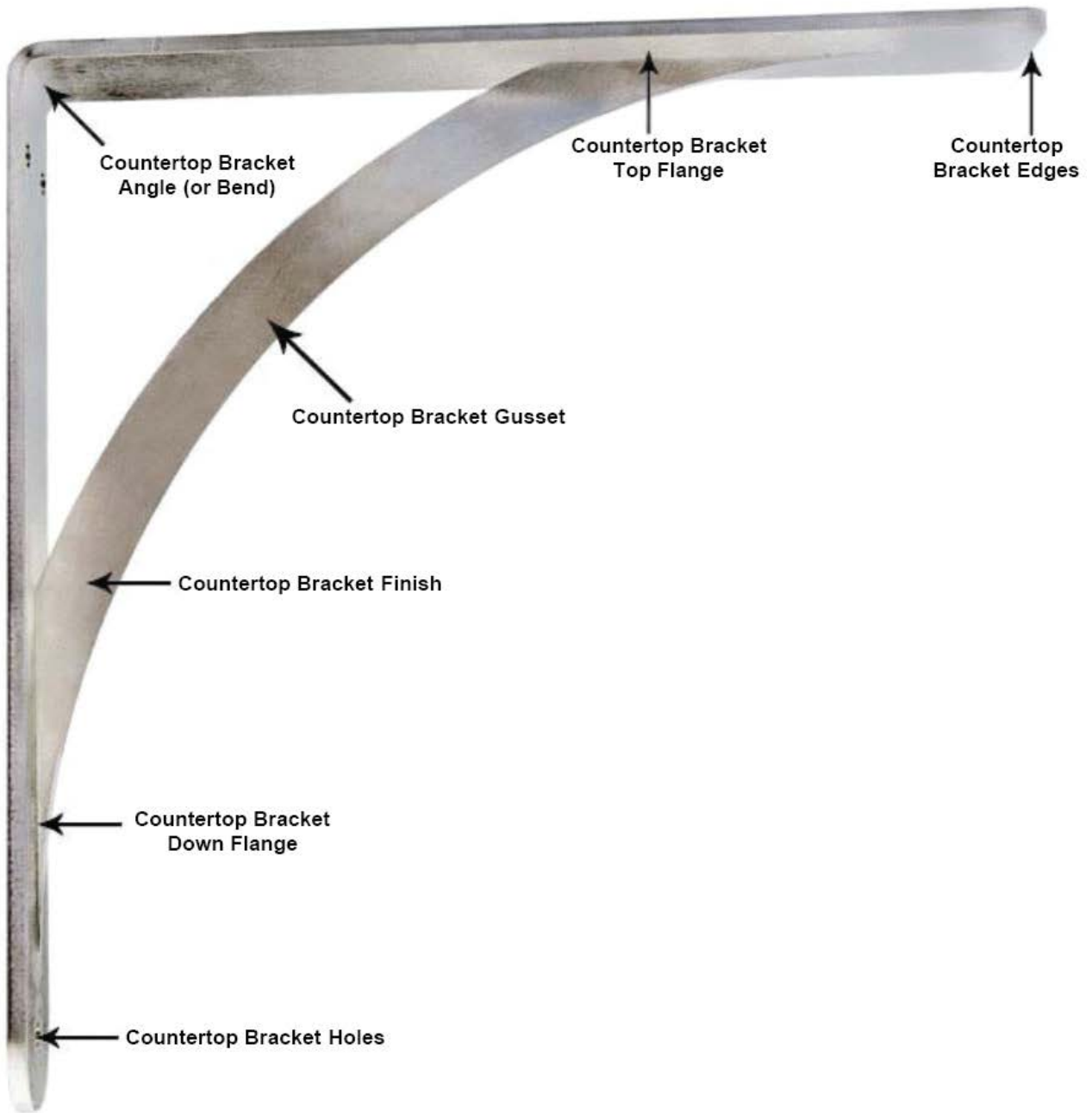
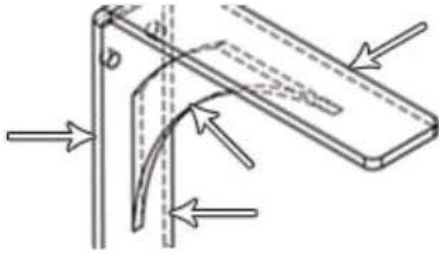
# STEEL COUNTERTOP SUPPORT BRACKETS: TECHNICAL INFORMATION

## TABLE OF CONTENTS

Anatomy of a Countertop Bracket .....	1
Bath Counter Design .....	2
Beam Deflection Calculator .....	3
Do's and Don'ts of Countertop Supports .....	5
Outwater Bracket Design .....	6
Countertop Bracket Design Standards .....	7
Countertop Bracket Installation Guide.....	8
Kitchen Countertop Design .....	9
Screw and Bolt Guide .....	10
Countertop Application Types .....	12
Using Countertop Brackets Outdoors .....	14



# ANATOMY OF A COUNTERTOP BRACKET



# BATH COUNTER DESIGN

Thank you for viewing our bath counter design resource area. Architectural Products by Outwater produces the highest quality metal counter support brackets in the kitchen and bath market. As innovators in the area of bath counter support, Outwater also wants to make your whole bath counter project easier.



Our bath counter design resource area gives some bath design recommendations related to counter design and installation. These recommendations are based on bath design specifications listed within the National Kitchen and Bath Association's bath planning guidelines with access standards found at [www.nkba.org](http://www.nkba.org).

These bath counter design recommendations are provided as helpful information in your bath counter planning. All local and state codes as well as national laws relating to bath counter design should be checked to ensure your plans meet specified requirements. In specific instances where weight bearing is an issue we suggest consulting with a design engineer on site. Outwater makes no warranty with respect to the information provided.

Nor does Outwater assume any liability related to the use of such information.

## BATH CLEAR SPACE

It is recommended that 30" clearance should be provided between all bath fixtures, counter or obstacle from edge to edge. For access standards a minimum clear floor space of 30" x 48" is recommended at each bath fixture.

Seating area should be planned for at the lavatory. This seating area should have at least 36" wide x 27" high x 8" deep clearance. Refer to the **NKBA Bath Planning Guidelines** for more information.

## BATH LAVATORY PLACEMENT

**Single Bath Lavatory Configuration:** A minimum distance of 20" is recommended between the centerline of the bath lavatory and other fixtures or obstacles. For more information visit **NKBA Bath Planning Guidelines**.

**Double Bath Lavatory Configuration:** A minimum distance of 36" is recommended between the centerlines of two lavatories and 20" from any obstacles to the centerline of either lavatory. Check out the **NKBA Bath Planning Guidelines** for more information.

## BATH LAVATORY HEIGHT

The recommended height for a bath lavatory ranges from 32" to 43". Refer to the **NKBA Bath Planning Guidelines** for more information.

## BATH COUNTER EDGES

Bath counter edges should be clipped or rounded. For more information visit the **NKBA Bath Planning Guidelines**.

For a complete review of all kitchen and bath planning guidelines with access standards visit **National Kitchen and Bath Association (NKBA)**.

# BATH DEFLECTION CALCULATOR

Engineers know a lot of useful stuff and our engineers put together this thing called a Beam Deflection Calculator. We call it "The Calculator to Determine How Much Weight is Needed to Bend a Piece of Steel in Half." Basically this is what our Beam Deflection Calculator does - it tells you how much a specific piece of steel might bend under a specific weight.

Keep in mind that due to the way the calculator works it ONLY applied to brackets such as our New York and New Jersey where there is no gusset (a cross brace... take a look at the bracket anatomy page for more details on gussets). Our gusset countertop brackets will NOT bend in normal granite countertop applications and the equation to figure out any deflection on our gusseted brackets would be "redonkulous".

We like to keep the level of "Distributed Load" deflection on any of our brackets to less than .1 inches. So whenever we make suggestions on an application we determine to use a number of brackets that will prevent any deflection in normal distributed load to under the width of 2 stacked dimes. That is small.

---

*We've confined all the engineering jargon to this bottom part of the page. Take a look if you want and at your own risk...*

---

## ASSUMPTIONS:

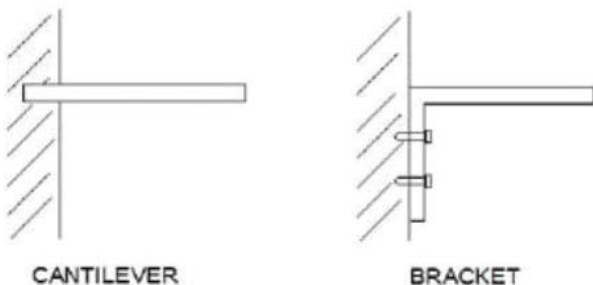
**1) The bracket will be supporting the entire weight of the countertop.** In most applications, the countertop is overhung, with the main body of granite being supported by a knee wall or cabinet. When this is the case, the rigidity of the granite provides extra support so that the bracket is only supporting a fraction of the overhung weight.

**2) The bracket is ungusseted.** A gusset adds significant strength to the bracket, but makes the calculations much more complex. This calculator is not a good indicator of the strength of a gusseted bracket.

**3) The bracket has no holes in the top.** Holes weaken the bracket slightly but this is nearly always a negligible difference.

## SIMPLIFICATIONS:

**1) The bracket is treated as a cantilevered beam.** The difference between a bracket and a cantilevered beam is shown below. Because of this simplification, this calculator does not account for any bending that may take place on the vertical leg.



## EQUATIONS EXPLAINED:

The equations used in this calculator are given below.

Distributed load deflection = 
$$\frac{Wl^3}{8EI}$$

# BATH DEFLECTION CALCULATOR

Point load deflection =  $\frac{WL^3}{3EI}$

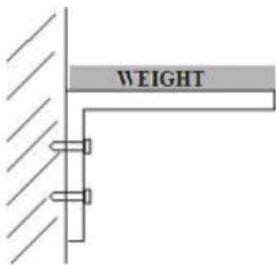
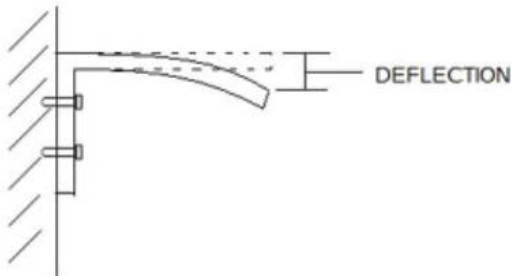
- **E** = Modulus of Elasticity (in pounds per square inch)
- **I** = Moment of Inertia (in inches<sup>4</sup>)
- **W** = Loads (in pounds)
- **L** = The length of the bracket (in inches)

## DEFLECTION:

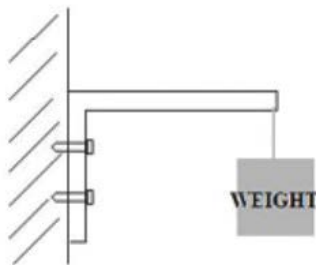
The deflection indicates how far the furthest edge of the bracket will go down under the applied weight. There are 2 deflections calculated, depending on where the weight is.

1) **Distributed Load:** This is the value that is of concern in most applications. This is when the weight (entered in "Load" above) is spread out over the entire length of the bracket.

2) **Point Load at End:** This assumes that all of the weight (entered in "Load" above) is at the very tip of the bracket.



DISTRIBUTED LOAD



POINT LOAD

# DO'S AND DON'TS OF COUNTERTOP SUPPORTS

## DO'S OF COUNTERTOP SUPPORTS

- Make sure that your supporting structure is sufficient for holding your countertop and supporting brackets or corbels.
- Use a countertop support that extends to within 4 inches of the edge of your countertop.
- Fasten your supports to the most substantial supporting members available.
- Consult with a design engineer in custom support applications.
- Use fasteners that are substantial enough to hold your corbels to the supporting members.
- Use adhesive or fasteners to attach your countertop to the supporting brackets and structure.
- Carefully plan out your countertops before beginning the process of obtaining materials and supports.
- Enjoy many memories around a beautifully designed and supported countertop.

## DON'TS OF COUNTERTOP SUPPORTS

- Risk damaging your countertops by leaving overhangs greater than 4 inches unsupported.
- Wait until the last minute to purchase your countertop supports.
- Risk damage to your countertops by using a bracket that is not strong enough to support them.
- Neglect planning your countertop layout and support.
- Fasten your countertop supports to weak supporting structure and expect them to hold up your counter.
- Use wimpy fasteners to attach your support brackets to your structure members.
- Leave raw steel brackets unpainted as they will rust over time.
- Use aluminum or thin gauge brackets to support your countertops.

# OUTWATER BRACKET DESIGN

Outwater applies its many years of expertise and knowledge in the design of our countertop supports. We have selected the best materials and manufacturing processes to ensure that a finished Outwater bracket is suitable to hold up your beautiful countertop.

Outwater countertop brackets are designed for heavy loads. In all instances our countertop braces are designed with maximum support in mind in order to provide you with a durable bracket. Although our brackets are the heaviest in the industry, our talented designers make the beast into a beauty that will enhance even the finest kitchen and bath.

## GENERAL DESIGN STANDARDS FOR OUTWATER COUNTERTOP BRACKETS

**\*\*NOTE: Based upon bracket style specifics and/or application requirements these standards may not apply to some brackets within the Outwater inventory. For particular design characteristics refer to the product page for the bracket design. All dimensional information for the brackets can be found of the drawing assigned to the part.**

Standards are used in designing and manufacturing all Outwater countertop brackets. The following is a listing of these standards:

<b>Quality Certification:</b>	All parts are manufactured to ISO 9001: 2008 standards
<b>Country of Production:</b>	The United States of America
<b>Material Used:</b>	304 Stainless Steel 1008 Cold Rolled Steel (Raw)
<b>Material Thickness:</b>	1/4" - Generally 2x thicker than brackets found in hardware retailers
<b>Holes Specification:</b>	Straight holes to accommodate 1/4" screws or bolts
<b>Bracket Width:</b>	2" flange width All corners radius (curved) to avoid sharp points

At Outwater we take pride in producing the highest quality products in the market. If ever you have an issue with defects or a problem with one of our brackets please let us know.

# COUNTERTOP BRACKET DESIGN STANDARDS

Outwater designs and produces solid steel countertop support brackets. Our brackets, while sleek and beautiful are designed to hold the weight required in a countertop application. In designing and producing the Outwater line of countertop support brackets, we have established standards related to the design of a countertop bracket.

Below are the referenced standards in countertop support bracket designs. Outwater suggests that in instances where weight capacity is an issue that a design engineer be consulted on site to discuss the application. All local, state and federal codes and laws should be reviewed to ensure compliance with stated requirements.

## RECOMMENDED COUNTERTOP BRACKET DESIGN STANDARDS

### **Countertop Support Material:**

All recommendations here assume a material of A36 steel. If a weaker material is used, it is recommended that concessions be made in terms of size or number of supports to account for the weaker material.

### **Countertop Support Thickness:**

All weight bearing countertop support brackets are recommended to be made to a minimum thickness of 7 gauge (.1793") in the gusseted configuration and 1/4" thickness in the non-gusseted configuration. To view the anatomy of a countertop bracket see page 2.

### **Countertop Support Width:**

Countertop brackets actively supporting a countertop application may vary significantly in design and specifications. However; it is recommended that the supporting flange directly under the countertop surface be no less than 1.5" in width.

### **Countertop Support Flange Length:**

It is recommended that the countertop support bracket selected for a particular application have a top flange length (flange directly under the countertop surface) that extends to within 4" of the end of the counter.

It is also recommended that the top flange not extend past twice the length of the down flange (flange extending down the support structure in a standard countertop bracket configuration). In instances where additional support is being added along the top flange length, such as an application using cabinet strap brackets, would be exceptions to this recommendation.

### **Countertop Support Holes:**



Holes cut or drilled into the countertop support bracket may or may not be countersunk. Regardless of treatment of holes, the diameter of the hole placed in a countertop support bracket should be determined in such a manner to provide for an adequate sized fastener to be able to be used for fixing the countertop support to the support structure. Holes in countertop brackets should not exceed 2/3 of the size of the flange width in which they are placed. Holes should not be drilled in a position on the flange as to interfere with the outer edge of the support bracket or cause significant weakness in the flange material to tear away from the fastener.

Distances between holes on down flanges of countertop brackets attached to the support structures should not exceed 12". A minimum of 2 holes is recommended in any supporting flange of a countertop bracket attached to the support structure. Holes may or may not be placed in the top flange based upon application.

**\*\* While Outwater provides this information as a helpful guideline for recommendations of countertop support bracket design, it is not intended to be engineering documentation. When designing a countertop support for a specific application, Outwater highly suggests consulting a design engineering professional.**



# COUNTERTOP BRACKETS INSTALLATION GUIDE

Every successful countertop installation begins with good planning and action. Do not wait until the last minute to order your countertop supports, fasteners, or adhesives for installation. Make sure that all aspects of the support substructure are considered and discussed to insure that your countertop installation will be smooth and that your countertop support products will be sufficient.

When ordering a bracket or corbel for your countertop installation, keep in mind that a supporting bracket must be sufficiently supported by an adequate fastening system and structure such as a stud wall or reinforced cabinet backing. Installation of a heavy duty countertop corbel on a weak support structure will result in failure of the total system. This is why it is important to consider and consult with a design engineer when necessary, all aspects of the countertop installation.

**Choice of Fastener System** - When choosing a fastener system for your countertop bracket installation make sure that the diameter of the screw or bolts selected will fit with the hole diameters placed in the bracket for installation (example: a ¼" diameter lag screw will require a hole diameter greater than .25"). We suggest that you use a screw size that is one "step" down in measurement from the hole size on your countertop brackets. The length of the fasteners used in installation is not standardized. We suggest using a screw or bolt that is 2" to 2.5" long.

Another aspect of the installation fastener system is the adhesive used to bind the brackets to the base of the countertop. There are a number of great products in the market and they can be found at your local hardware or large hardware retailers. Use an adhesive that is formulated for the heavy duty countertop application for best results.

Outwater's brackets come standard with holes in the top flange of the bracket that will go under the counter. In instances where the brackets will be adhered directly to a granite counter we suggest only using adhesives and not drilling in the countertop.

Drilling during installation can weaken the stone or possibly crack the counter. If you will be installing into a substructure or a "drillable" counter material, use of the holes in the top flange will strengthen the installation mount.

Outwater provides a fastener system.

**Mounting of Countertop Brackets** - In installations of granite countertops supported on islands and bar tops the countertop supports should extend to 4" from the end or edge of the counter. Each span should be supported at every stud location available and not to exceed 18" for a New Jersey countertop style bracket and 30" on a gusseted style (Idaho countertop support) with granite up to 2" thick.

**For example:** A 16" wide x 96" long x 1" thick open granite bar top will use the following Outwater brackets: 6 pieces of 12" New Jersey brackets or a like sized gusseted bracket. The brackets will each be mounted to a stud (stud mounted from shelf to floor) with three ¼" diameter lag screws. If the installation is mounted into concrete masonry then it is important to use concrete bolt anchors or stud anchors. Adhesive may be used on the vertical support flange of the bracket to provide added strength to the fastener system in the installation.



As a general guideline countertops that are mounted to the wall or have no support other than the brackets are a heavy loading installation for brackets. In instances where the bracket is supporting the entire load of the countertop, gusset brackets must be used.

\* Non-gusset brackets have a 750 lb. load rating.

**Note:** It is important to insure that the fastener is tied into the support structure (stud, block or other structure) as close to the centerline of the support member to provide for the best possible support.

\* **Finishing of Countertop Supports** - In some instances a raw steel countertop bracket is purchased for an installation. Brackets made of raw steel (cold rolled steel or CRS) will rust over time. It is important to finish off these brackets with a paint coating. You can choose to prime and paint the bracket on location. Most hardware stores or paint retailers will have paint that can be used on metals in their selection. If you desire to have pre-finished brackets for your installation Outwater can provide these services for a charge. (Minimums apply, please inquire).

# COUNTERTOP BRACKET DESIGN STANDARDS

Thank you for visiting our kitchen countertop design resources area. Outwater is the manufacturer of the highest quality metal kitchen countertop support brackets and corbels on the market. As innovators in the area of kitchen countertop support, Outwater also concentrates on how to make your whole kitchen countertop project easier.



Our bath counter design resource area gives some bath design recommendations related to counter design and installation. These recommendations are based on bath design specifications listed within the National Kitchen and Bath Association's bath planning guidelines with access standards found at [www.nkba.org](http://www.nkba.org). Our kitchen countertop design resource area gives some specific kitchen design recommendations specifically related to countertop design and installation.

These kitchen countertop design recommendations are provided as helpful information in your kitchen countertop planning. All local and state codes as well as national laws relating to kitchen countertop design should be checked to ensure your plans meet specified requirements. In specific instances where weight bearing is an issue we suggest consulting with a design engineer on site. Outwater makes no warranty with respect to the information provided. Nor does Outwater assume any liability related to the used of such information.

## KITCHEN COUNTERTOP SEATING CLEARANCE

Recommended Seating Clearance			
Countertop Height	Knee Space Per Seat	Knee Space Clearance	Practical Application
30" High Countertops	24" wide x 18" deep	18" Clear	Wall Mounted Countertop
36" High Countertops	24" wide x 15" deep	15" Clear	Island Serving Area
42" High Countertops	24" wide x 12" deep	12" Clear	Elevated Countertop

In addition to these kitchen countertop seating area clearances, the recommended access standards for kitchen countertop seating range from 28" minimum to 34" maximum height with 30" minimum to 36" maximum width and 19" depth. For more information visit the **NKBA Kitchen Planning Guidelines**.

### Kitchen Countertop Spacing

The following are recommended kitchen countertop spacing minimums:

Total Countertop Frontage: 158" (total linear inches of kitchen countertop provided in kitchen plan)

Countertop Depth: 24" (minimum depth of kitchen countertop front to back)

Countertop Clearance: 15" (space provided between kitchen counter surface and any structure - cabinet, appliances, etc. - above the countertop)

Kitchen countertop access standards recommended that at least two work counter height should be offered in a planned kitchen. Heights should range from 28" to 36" and 36" to 45" above kitchen floor. For more information visit the **NKBA Kitchen Planning Guidelines**.

### Kitchen Countertop Edges

Kitchen countertop edges should be clipped or rounded. For more information visit the **NKBA Kitchen Planning Guidelines**.

For a complete review of all kitchen planning guidelines with access standards visit **National Kitchen and Bath Association (NKBA)**.

# SCREW AND BOLT GUIDE

A screw by definition is not a bolt. A bolt passes through a hole of a larger diameter than its thread and is held in place by a nut or similar device. It is not designed to be turned. A screw is a shaft with a helical groove. The thread essentially mates with the helix in the material it is turned through. The screw may be used with a part that has a mating helix already placed in the material (called a tapped hole) or may be a self tapping screw which creates the helix as it is turned in the material.

The glossary below gives you the basic information on various types of screws and bolts:

- A hex cap screw has a protruding hexagonal head, designed to be driven by a spanner or wrench.
- A socket cap screw has a hexagonal recessed drive, usually with a cylindrical head, but can also be found with a rounded button head or a countersunk flat head.
- Wood and chipboard screws have a tapered shaft. A hole of about the diameter of the shaft, but less than the diameter of the thread, is often drilled into the wood; screws can be driven into undrilled wood, but there is a risk of splitting the work piece. Chipboard is less likely to split. A hole can be drilled in brick, concrete, or other hard materials, and a wall plug inserted; a wood screw can then be driven into the plug.
- Lag screw, lag bolt or coach screw refers to a large wood screw with a head, square or hexagonal, driven by a wrench rather than a screwdriver.
- A machine screw has a cylindrical shaft, threaded its entire length, and fits into a nut or a tapped hole.
- Self-tapping screws or thread cutting screws have sharp threads that cut into a material such as sheet metal or plastic. They are sometimes notched at the tip to aid in chip removal during thread cutting.
- A self-drilling screw is similar to a self-tapping screw, but has a drill-shaped point to cut through the material without prior drilling.
- Thread rolling screws have a lobed (usually triangular) cross section. They form threads by pushing outwards during installation. They may have tapping threads or machine threads.
- A drywall screw is a specialized self-tapping screw designed to bind drywall to wood or metal studs, but it has proven to be a versatile construction fastener.
- A set screw, used to prevent loosening due to vibration, is available with thumb screw, square head, hex head (inset socket) and most commonly, headless (a grub screw in UK parlance, designed to be inserted flush with or below the surface of the work piece). Alternatively defined to be a screw whose thread reaches the head (if any), as opposed to a bolt.
- Dowel screw is a wood screw with two pointed ends and no head, used for making hidden joints between two pieces of wood.
- A stud is similar to a bolt but without the head. Studs are threaded on both ends. In some cases the entire length of the stud is threaded, while in other cases there will be an unthreaded section in the middle. It may be anchored in concrete, for example, with only the threads on one end exposed. (See also: screw anchor, wedge anchor.)
- An eye bolt is used for attaching cable to a surface.
- A carriage bolt or coach bolt has a domed or countersunk head, and the shaft is topped by a short square section under the head. The rib neck carriage bolt has several longitudinal ribs instead of the square section, to grip into a metal part being fixed.

## MACHINE SCREW SIZING

Machine screws are described as 0-80, 2-56, 3-48, 4-40, 5-40, 6-32, 8-32, 10-32, 10-24, etc. up to size 16. The first number can be translated to a diameter, the second is the number of threads per inch. There is a coarse thread and a fine thread for each size, the fine thread being preferred in thin materials or when its slightly greater strength is desired.

The numbering system follows a roughly logarithmic series where an increase in each screw number size approximately doubles the tensile strength of the screw and is given by  $\text{Dia} = (\#N \times .013'') + .060''$ . Using this formula a #5 screw has a major diameter of .125" (1/8"), a #10 screw has a diameter of .190" (or 3/16" in practical terms), etc.

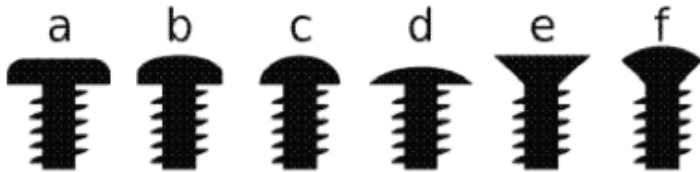
The formula applies for screw thread numbers #0 and higher, but does NOT apply to smaller unified miniature screw thread series. Typically screws smaller than size #0 are supplied in the Unified Miniature Series. The formula for number sizes smaller than size #0 is given by  $\text{Dia} = .060'' - (\# \text{zerosize} \times .013)$ . So a #00 screw is .047" dia. #000 is .034" dia. etc.

The number series of machine screws once included odd numbers (7, 9, etc.) and extended up to #16 or more. Standardization efforts in the late 19th and the early part of the 20th century reduced the range of sizes considerably.

Now, it is less common to see machine screws larger than #14, or odd number sizes other than #1, #3 and #5. Even though #14 and #16 screws are still available, they are not as common as sizes #0 thru #12.

Sizes 1/4" diameter and larger are designated as 1/4"-20, 1/4"-28, etc. the first number giving the diameter in inches and the second number being threads per inch. Most thread sizes are available in UNC or UC (Unified Coarse Thread, example 1/4"-20) or UNF (example 1/4"-28 UNF or UF)

## SCREW HEAD SHAPES



(a) PAN, (b) BUTTON, (c) ROUND, (d) TRUSS, (e) FLAT, (f) OVAL

- Pan Head: A low disc with chamfered outer edge.
- Button or Dome Head: Cylindrical with a rounded top.
- Round Head: Dome-shaped, commonly used for machine screws.
- Truss Head: Lower-profile dome designed to prevent tampering.
- Flat Head or Countersunk: Conical with flat outer face and tapering inner face allowing it to sink into the material
- Oval or Raised Head: Countersunk with a rounded top.
- Bugle Head: Similar to countersunk but there is a smooth progression from the shaft to the angle of the head, similar to the bell of a bugle.
- Cheese Head: Disc with cylindrical outer edge, height approximately half the head diameter.
- Fillister Head: Cylindrical but with a slightly convex top surface.
- Socket Head Cylindrical, relatively high, with different types of sockets (hex, square, torx, etc.)
- Mirror Screw Head: Countersunk head with a tapped hole to receive a separate screw-in chrome-plated cover, used for attaching mirrors.
- Headless (Set or Grub Screw): Has either a socket or slot in one end for driving.

# COUNTERTOP APPLICATION TYPES

## CABINET SUPPORTED COUNTERTOP



The cabinet supported countertop is the most common application used with countertops. When a countertop is supported by a cabinet island or row of cabinets the floor to counter structure of the cabinets gives the countertop the best possible support. In these applications it is unnecessary to support an overhang of under 4 inches (by cabinet industry standards).

If your countertop has an overhang of over 4 inches from the edge of the cabinet, stress fracture is possible on your counters under point load situations. Owners choosing not to support overhangs of greater than 4 inches run the risk that a crack or fracture may occur in the countertop over time or do to a significant load event. Even overhangs of under 4 inches can succumb to heavy point load pressure but the chances of fracture greatly increase the further your overhang is extended.

Outwater uses the cabinet industry standard when suggesting supports for countertop overhangs. We recommend that the owner purchase a bracket that extends to within 4" of the end of their countertops. This will decrease the likelihood of point load fracture and increase the resistance to deflection.

## ELEVATED BAR COUNTERTOP



The elevated bar countertop is generally supported by a knee wall (also called pony wall or stud wall). The knee wall can be of varying heights but it is made out of 2 x 4 wood or metal studs and generally covered with sheetrock or paneling. The knee wall will extend a specified distance about a base countertop below and form a backsplash on the interior edge of your cabinet support countertops.

To create the elevated bar countertop a solid or tile surface is placed on top of the knee wall and will generally extend past the edges of the top of the knee wall on both sides.

The distance that it overhangs the top of the knee wall is determined by the owner or contractor but in most instances the bar top edge will be 1 to 2 inches past the edge of the wall on the interior side of the countertop (extending over the base counter below), it will be support by 4 inches by the top of the knee wall and will extend a distance equal to the remaining width of the slab on the other side of the wall. The larger side is most often used for eating or serving.

It is important to understand that applications that involve a supporting wall that is not a 2 x 4 inch stud thickness are special circumstances and the owner should make sure that the supporting structure is significant enough to support the weight of the counter. Brackets attached to a weak wall will not support a countertop.

## FLOATING BAR COUNTERTOP



The floating bar countertop application is similar to the elevated bar countertop application in that the supported bar is elevated above a base countertop. However, this application differs from the elevated bar in that entire floating bar is supported entirely by the brackets.

In the floating bar countertop application a counter is elevated over the top of a base counter by using brackets that mount to the back of the support structure under the base counter and extend above the base countertop to a determined height. Because the floating countertop application requires that the entire weight of the counter is borne by

brackets it is important that the owner use a sturdy support that can handle the load.. Brackets used in the floating countertop application tend to be larger and therefore more expensive than those used in other applications.

It is vital that the owner or contractor make sure that the support structure to which the countertop bracket will be attached is strong and secure. A floating countertop application requires excellent stability. Adding furring or wood bracing to the supporting structure can create additional support.

Most floating counters are used in commercial reception areas or serving bars.

## WALL MOUNTED BAR COUNTERTOP



The wall mounted bar countertop is another application where the full weight of the counter is supported entirely on the brackets holding up the countertop. These types of mounts may also be called shelves or mantles.

In the wall mounted application the countertop bar is mounted to a full or half wall so that the back edge of the counter is butted up against the wall. The supporting brackets are placed under the counter to hold the countertop up. The wall provides no support to the countertop.

It is very important that the brackets in a wall mount bar application are fastened directly to the wood studs or supporting members in the wall. Brackets that are fastened to the sheetrock or fascia on the wall will tear out of the wall when the load of the counter is placed on them. Outwater recommends the use of gusseted (brackets with a cross brace between the supporting flanges) brackets in a wall mount counter application.

## USING COUNTERTOP BRACKETS OUTDOORS

Well there is nothing like being in the great outdoors, particularly with a full kitchen including gorgeous countertops. It is a popular, and may we add healthy, trend in new building and renovating to include an outdoor entertainment area complete with kitchen, grill, and prep/serving areas. These outdoor kitchens often include outstanding granite and hard solid surface countertops and these countertops often require support for serving and seating areas built into the layout.

What should be used to support outdoor kitchen countertop overhang areas? With a specialty application such as outdoor kitchens we would like to make some suggestions that may help in determining the right support for your outdoor countertops.

### CONSIDER YOUR ENVIRONMENT

If your outdoor kitchen plans include using metal support brackets you will always want to use either a finished steel or stainless steel support. Finishes can range from paint to plating to galvanizing. Please note that plating and galvanizing is often done in such a manner as to leave a very industrial looking kitchen countertop support. In outdoor kitchen areas where the finished kitchen will be mostly covered it is more economical to go with a painted steel countertop support. However, the brushed stainless support matches a grille really nicely!

If your outdoor kitchen application is in a coastal region or in a region where temperature variance is high and extreme, we would recommend using a stainless steel countertop support bracket. This is particularly true if your outdoor kitchen countertop is directly exposed to the outdoor elements.

### CONSIDER WHAT YOU ARE SUPPORTING



No matter what metal bracket you decide on it is important to note that in most instances outdoor kitchen plans include stone countertop surfaces due to their durability. Whenever supporting stone use a countertop support bracket that will support heavy load.

Over time the weather and elements will effect the performance of any materials. Some materials breakdown faster than others. If you are planning an outdoor kitchen remember that an investment in steel countertop support brackets will payoff because of the long lasting durability and resilience of steel. There is a lot riding on the support of your outdoor kitchen countertops.

### CONSIDER OUTWATER

Outwater offers the widest line of designer style countertop support brackets. We have revolutionized the countertop support industry with sleek, euro-style metal brackets that provide unmatched countertop support. If you are considering an outdoor kitchen addition on your new construction or renovation, contact Outwater and get just the right kitchen countertop bracket to enhance and support.