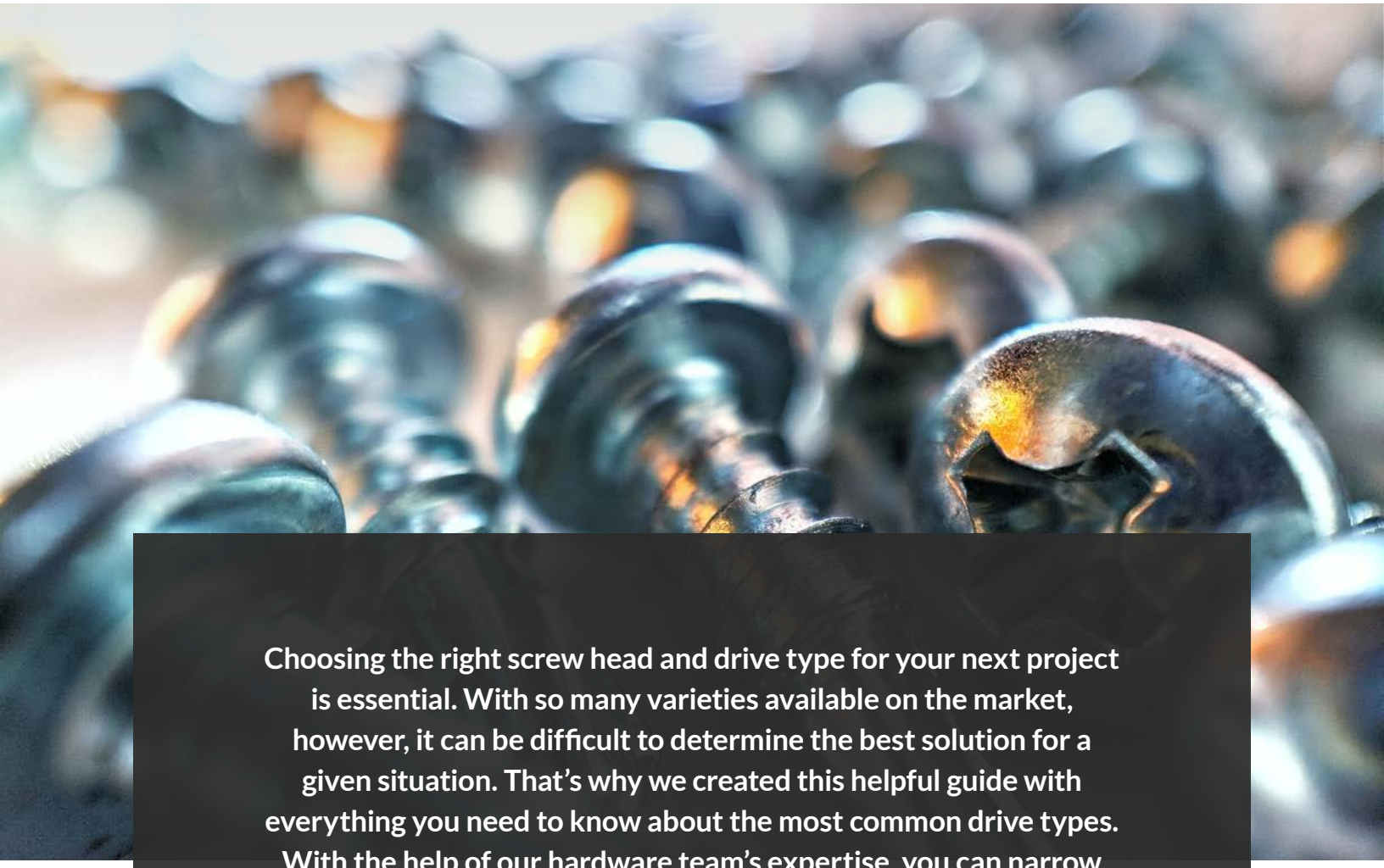
CONFUSED ABOUT WHICH SCREW DRIVE STYLE TO CHOOSE?

Don’t lose your head!

APM HEXSEAL
Sealing Specialists



Choosing the right screw head and drive type for your next project is essential. With so many varieties available on the market, however, it can be difficult to determine the best solution for a given situation. That's why we created this helpful guide with everything you need to know about the most common drive types. With the help of our hardware team's expertise, you can narrow down the options and select the best head and drive styles for your application.

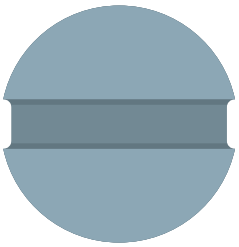
In this eBook, we're going to talk about these drives and their typical applications, as well as how APM Hexseal Screws & Drives can provide the hardware you need. Read on for more details about each drive type and the scenarios they suit best.

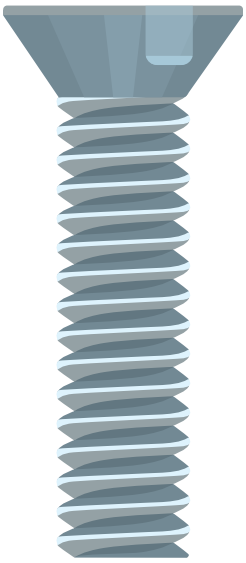
SLOTTED DRIVE

Slotted drives feature a simple design, with just one slot across the head. This design has a long history and may be one of the first drive types ever made, but it's mostly limited to being used with a manual driver. As mechanical tools become more powerful, they start to generate too much torque to be held in place by a single slot. The tool typically loses its hold within the slot and may damage or strip the head, rendering it useless. Slotted drives are also commonly referred to as flat heads.

Applications

Slotted drives have historically had an extensive range of applications and can still be found in use today. One of the most common applications is in light fixtures and light switches or socket plates. Another important application is in military applications that require simple designs. Drives that operate in dirty or extreme conditions can accumulate a lot of dirt or on equipment that requires frequent manual tightening. Thanks to their simple design, slotted drives are easy to clean and reuse.





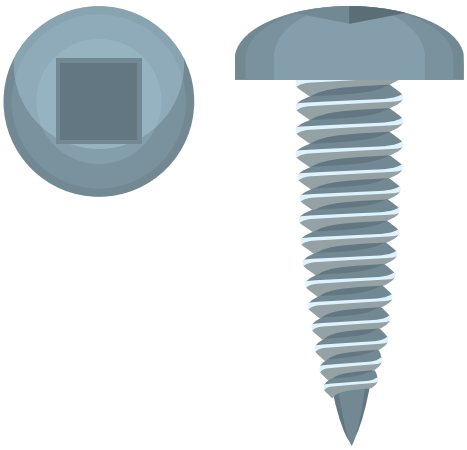
ROBERTSON DRIVE (SQUARE DRIVE)

Peter Robertson, a traveling salesman, invented and began selling his Robertson drives around 1906. He advertised them as replacements to slotted drives because they were simple to use but also removed many of the complications of slotted drives.

Also known as square drives or socket heads, these screws have a square recession centered on the head. This position centers the screwdriver, distributing the force more evenly and reducing the risk of the tool slipping out while tightening. This enables users to apply more force while operating the screwdriver without damaging the head.

Applications

Throughout the start of the 20th century, Henry Ford used Robertson's square drive screws to assemble Model T Fords. A story told within the automotive sector infers that the efficiency of the square drive screws reduced the manufacturing time of each Model T by as much as two hours.



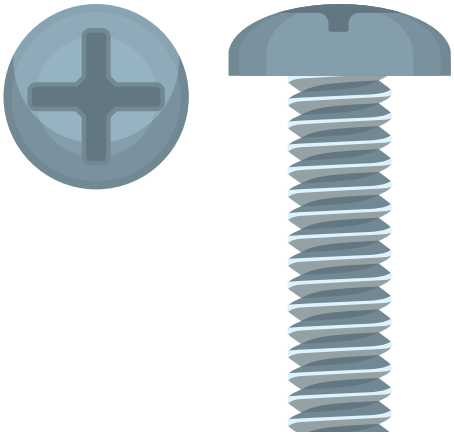
PHILLIPS DRIVE (CROSS RECESSED DRIVE)

Phillips drives were invented around the same time as Robertson drives, and they became much more popular over time. The head features a recession in the shape of a plus sign that corresponding drivers fit snugly into. This design improved the grip of the driver and significantly reduced slippage. The recession is deepest at the intersection of the two points, which pushes the driver deeper into position if it tries to shift.

Phillips drives were traditionally called cross recessed drives through much of the 20th century while the patent still applied. Today, this type of drive is still commonly referred to as either cross recessed or Phillips.

Applications

Phillips drives have countless uses spanning industrial, commercial, and consumer applications. Phillips drives are universally applicable and extremely popular because they solve almost every problem with the original slotted drive design. There is minimal risk of head breakage or the driver popping or sliding out. The only common problem with Phillips drives is the risk of overtightening, which may cause damage to, or strip, the head.



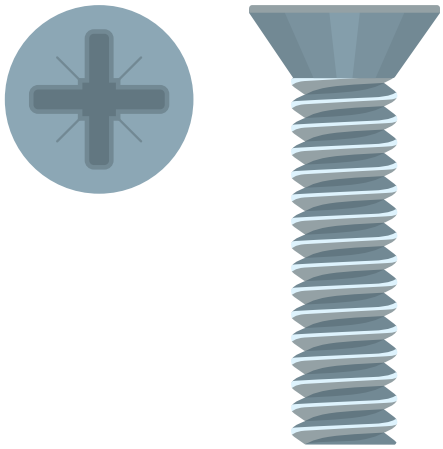
POZIDRIV DRIVE

Pozidriv drives are a variation on the classic Phillips design. In addition to the cross-shaped recession, it has another, lighter cross shape rotated 45° to provide additional grip and further reduces the risk of slippage thanks to the additional points of contact. The corresponding driver has matching flutes higher along its shaft so the tip can fit into the main recession while the additional flutes lock its depth of position into place.

This additional design element solves the cam-out problem common with Phillips drives. Cam-out is a specific type of slippage that happens when power tools generate too much torque, causing the driver to slip out of the drive recess.

Applications

Pozidriv drives are common in Europe, but aren't as popular in the United States. A Phillips driver can still operate Pozidriv drives, just without the additional grip provided by the additional contact points. The reverse, however, is not always true if the Phillips drive recess is too deep and the Pozidriv's additional flutes hit the metal surface too early.



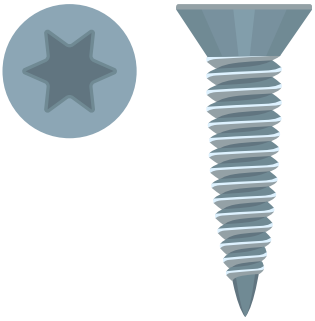
SIX-LOBE DRIVE (HEXALOBULAR)

Like the name implies, six-lobe drives have six recessions flaring out from the center point. They look similar to Phillips drives, but with six lobes instead of four. This departure from the standard four lobes protects the drive from casual tampering. Some specialized six-lobe drives also have a pin in the center of the drive's recession. Turning these drives requires a driver with a corresponding hole, which makes the drives tamper-resistant. While it doesn't make them fully tamper-proof, the special drive head adds a greater degree of difficulty that deters most tampering attempts.

These drives were originally called Torx-type until the design patent expired, and are also known as hexalobular drives in Europe.

Applications

These drives are commonly used for outdoor equipment, outdoor machinery, automobiles, and outdoor constructions such as decks and porches. These drives can protect valuable materials or equipment that is stored outside because they help deter unauthorized access.

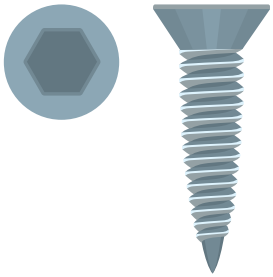


HEX RECESS TYPE

These drives have a recessed hexagonal shape. They look similar to six-lobe drives, but have the hexagon recession entirely filled out. These drives are less tamper-resistant and, as with Phillips drives, can be easily overtightened.

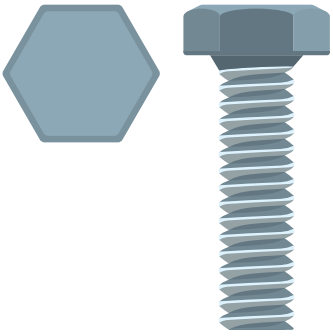
Applications

These drives are commonly found in flat-pack furniture kits.



EXTERNAL HEX TYPE

This type of drive has a protruding hexagonal shape on the head which is gripped by a recessed driver. It's easy to grip, tighten, and untighten, and operators can generate significant torque with either manual or powered tools.



APM HEXSEAL SCREWS & DRIVES

While there are hundreds of unique drive variations available on the market, it's important to find a drive type that is both commonly available and advantageous for your application. APM Hexseal specializes in slotted type, cross-recessed type, and six-lobe drives. Our six-lobe drives offer the pin variation for extra security and tamper resistance. Our team can also design and fabricate specialized drive types for larger custom orders.

The advantages of choosing APM Hexseal Screws & Drives include:

Cold Heading

We use a cold heading process that maintains the integrity of the hardware and is more cost effective than machining. Our hardware is unique because our products are designed and manufactured with a custom-designed groove up under the head of the screw.

Materials:

We use 18-8 stainless steel to produce our hardware. Upon request, we can use other alloys with greater rust resistance to suit harsher application environments.

Secondary Services

We offer a variety of secondary services, including black oxide finishing. This finish gives screws a matte, black look that makes them blend into backgrounds and substrates for a higher aesthetic appeal. We also offer various locking options, such as pellets and nylon or high temperature patches.

UL Recognized:

We supply UL-recognized hardware. UL recognition guarantees that the components within a larger machine or piece of equipment comply with UL standards. Adherence to these standards keeps machinery and workers safe.

For more information about screws and drives or for suggestions on the appropriate solutions for your next project, Ask the Experts at APM Hexseal.

LEARN MORE

Since 1947, we've been the leader in developing and manufacturing sealing solutions that prolong the life of sensitive electronic and mechanical components and systems in hostile environments. We offer a wide variety of elastomeric covers and sealing hardware, including a complete line of reusable, self sealing fasteners and sealing washers.

From self sealing boots and fasteners in a wide array of elastomer options, to a full design and manufacturing team ready for custom engineered sealing solutions, we have what you need to maximize performance from every component. To learn more about our offerings and capabilities, contact us today and let us help you find the perfect sealing solution. Ask the Experts at APM Hexseal!

EVER BETTER.

CONTACT US | RESOURCE LIBRARY | BLOG

APM HEXSEAL
Sealing Specialists

44 Honeck Street, Englewood, NJ 07631 U.S.A.
Toll Free : 800.498.9034
Email : info@apmhexseal.com
www.apmhexseal.com