Types of Screwdrivers

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Manufacturers develop new types of screws all the time, which means that there are dozens of different types of screwdrivers. It is good to know that the average homeowner should keep only a couple of varieties on hand. We will look at each type of screwdriver in this post in detail.

In order for you to gain a broad vision, Linquip provides you with a wealth of information about screwdrivers. You can learn about screwdrivers right now so that you can do your job more efficiently. Our "**Tools and Instruments**" page explains what Linquip can do for you according to your intended use.

Having trouble choosing a screwdriver for your application? Linquip offers a wide range of **Tools and Instruments Products**, and you can find the right tool for your application. Using Linquip's online form, you can get quotes from multiple **Tools and Instruments Suppliers and Companies** within just a short period of time.

Screwdrivers, which can be manual or powered, are tools used to screw and unscrew screws. Their shafts are tough steel to withstand twisting and bending. This article provides a breakdown of the different types of screwdrivers, so you can decide which ones you need in your toolbox.

A Brief Overview of Screwdriver

A screwdriver is a tool used to drive screws, either manually or power-driven. The typical screwdriver has a handle, a shaft, and a tip, which is inserted into the screw head before turning the handle. Several workplaces and homes have replaced this type of screwdriver with a more versatile and modern tool, a power drill, because it is faster, easier, and also drills holes.

To resist bending or twisting, shafts are often made of tough steel. Tips may be hardened for durability, coated with a dark tip coating for enhanced visual contrast, or ridged or treated to provide extra traction.

Its handle is normally constructed of wood, metal, or plastic and is usually hexagonal, square, or oval in shape, so it holds the tool firmly and prevents it from rolling. A few manual screwdrivers come with interchangeable tips which fit into sockets on the shaft of the screwdriver and are either magnetically or mechanically held in place.

They usually have a hollow handle that contains different types and sizes of tips, as well as a ratchet mechanism that allows multiple full turns without moving either the tip or the user's hand.

Various screwdrivers are classified by their tips, which are shaped to fit the driving surfaces on their corresponding screw heads. To use a screwdriver correctly, the tip of the screwdriver must contact the heads of screws of the same size and type.

Parts of a screwdriver (Reference: **themachinedesign.com**)

Handle

Throughout history, screwdriver handles have changed in material and developed in variety for a variety of different applications. Generally, the handle is shaped to prevent rolling on flat surfaces as well as to improve grip comfort. Handles are commonly made of hard plastics such as cellulose acetate and rubber and covered in soft materials to enhance grip, such as thermoplastic rubber.

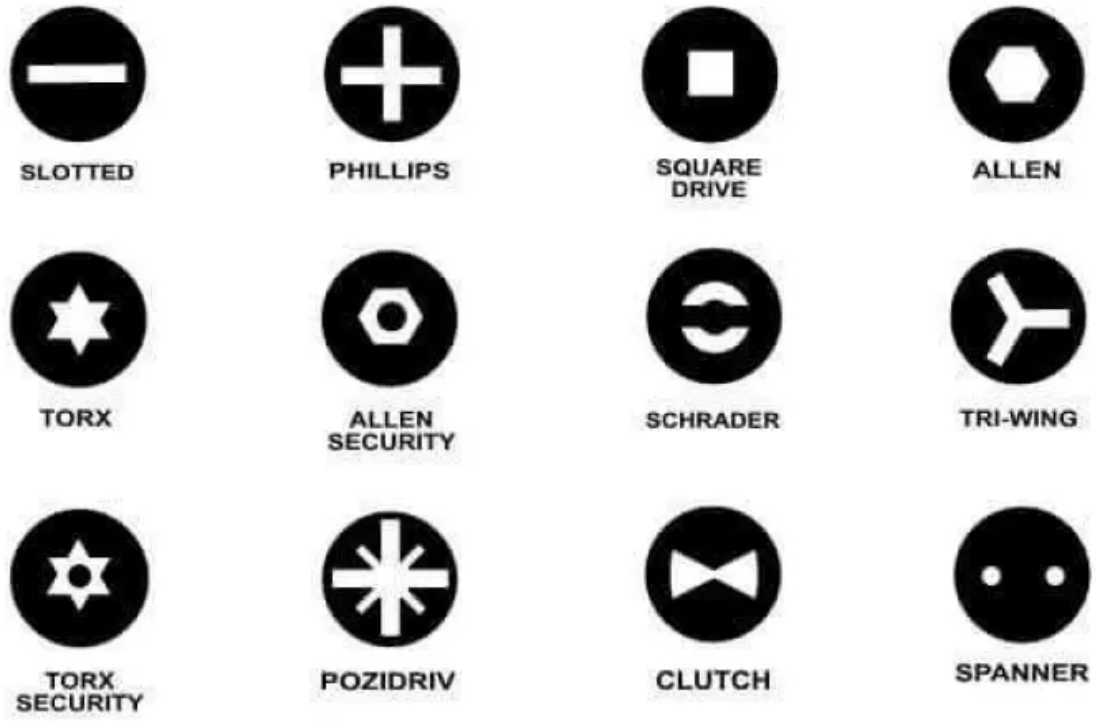
Shaft or Shank

The shaft or shank is often made of solid steel to prevent bending or twisting deformation when applying force to a screwdriver. As the shaft is generally rounded or hexagonal, it can be used to apply more torque with a spanner or wrench. It has a different coloration and material from the drive tip and can be interchangeable.

Drive Tip or Bit

Drive tips are either integrated into the shank if they are not removable, or they can be interchangeable parts like drill bits. A cordless drill can serve as an electric screwdriver for this purpose.

Generally, screwdrivers are classified by their drive tip shape, which corresponds to the type of screw head being used. Other screwdriver types are intended for specific applications or industries.



Types of screwdriver heads (Reference: **52.0.170.206**)

Flat Head or Slotted Head

The flat-head screwdriver consists of a wedge-shaped flat tip for tightening or loosening screws with straight and linear notches on their heads. It is one of the most commonly used tools in the mechanical field.

This is available in every shape, with a handle connected to a steel shaft flattened at the tip into a wedge shape.

There are still many uses for flat head screws, including furniture construction, cabinetry, and some electrical applications, even though they aren't widely used in residential construction anymore.

They are used for ratcheting screwdrivers and drills, and their sizes are indicated by both the tip size and the steel shank length. Tip sizes range from fractions of millimeters (small enough to tighten eyeglass screws) to an inch or larger (fit for industrial screws).

Phillips

A Phillips screw, which has a plus on its head, is widely used in construction and woodworking. It's also called a crosshead screwdriver because its X-shaped blade fits snugly into the head cavity, providing better traction when tightening or loosening screws.

Originally used with power tools, electronic standards are also set.

Screwdrivers work well when only one or two screws need to be installed, but construction projects use a lot of screws. For optimal efficiency, consider using a power drill with replaceable Phillips bits.

It is useful for building and remodeling, especially drywall installation. This screwdriver with a power cord is specifically designed to install Phillips drywall screws. Pre-setting the screw depth in Philips screwdrivers eliminates the possibility of under or over-inserting drywall screws.

The screwdriver can be placed deeper into the screw head without the blade sliding out sideways. It is intentional for these drivers to slip out of the screw head when a certain torque is reached.

Pozidriv

After Phillips's patent expired, GKN Screws and Fasteners created Pozidriv, also known as Pozidrive. This is an improved version of Phillips drive.

The purpose of this device is to prevent cam-out in Phillips screwdrivers. Cam-out occurs when the torque of the screwdriver exceeds the limit of the drive recess.

The Pozidriv drive is designed like a Phillips drive-style self-centering drive. The main features include increased torque without cam-out, as well as better contact between the drive and fastener head recess, thereby making it less likely for the drive to slip.

Because Pozidriv screws are self-centering, they are still extremely popular in manufacturing. They can be used like Phillips screws but are easily accessible.

As well as being strong and efficient, the handle is designed to rotate quickly in low-torque applications for a more comfortable grip and better performance.

Storage of the screwdrivers can be easily accomplished with their packaged design.

Frearson or Reed and Prince

This screwdriver looks similar to Phillips at first glance, but it has some important differences. A Frearson tip has a sharp point, while a Phillips tip has a rounded tip and an angle closer to a 45-degree angle than a Phillips. Because of its shape, the Frearson screwdriver can be used with a single drive and provides higher torque than a Phillips.

Its primary use is in nautical equipment where precision and fewer tools are needed. By using it, common problems like bit shattering and premature wear are avoided. It is common to use insert bits with bit holders for power tools because they are economical, flexible, and provide magnetic hold of fasteners. The bit is placed directly in the chuck of the power tool.

The ergonomic acetate handle is impervious to most solvents and chemicals, providing maximum grip and reducing slippage. The blades are made of high-strength alloy steel.

This handle is color-coded to make tip identification easy. It meets ANSI standards.

Torx

Torx screws are the most popular choice of builders and serious DIYers. They have a 6-point recessed star tip and come in sizes ranging from 0.031″ to 0.81″, and are distinguished by T numbers.

Power drill users like Torx screws because they resist slippage when inserted with power. T15 and T25 are the most commonly used sizes; however, it is available in every size.

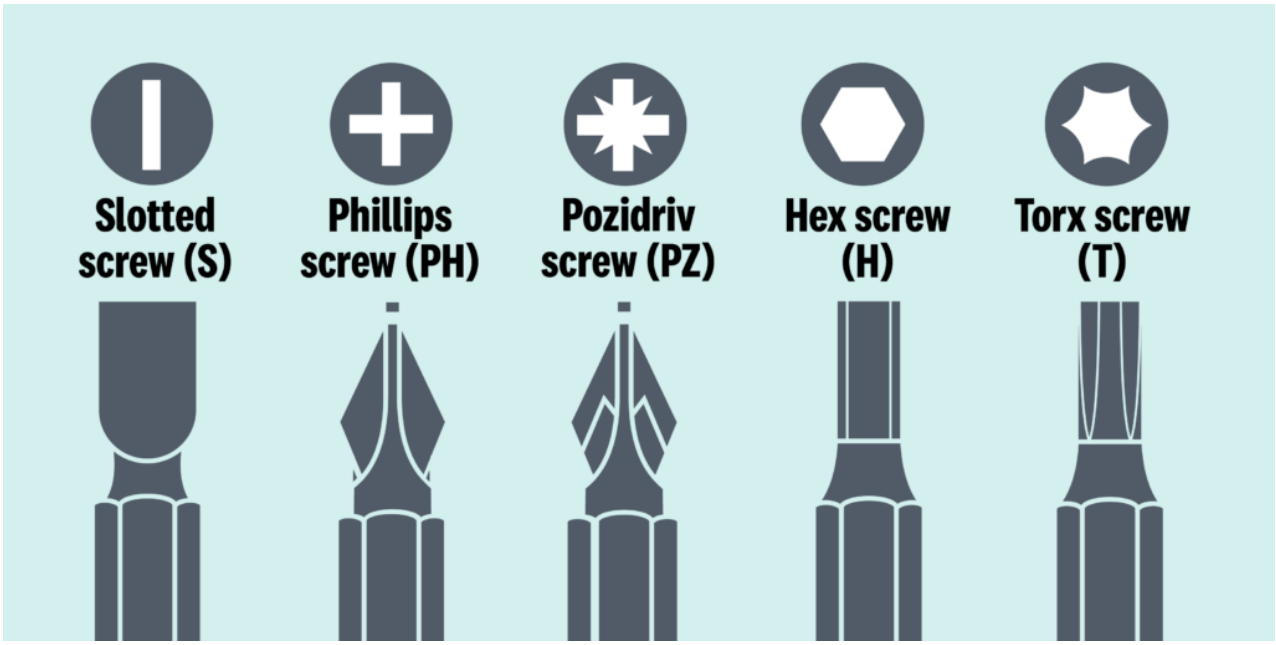
There are many uses for Torx screws, including structural framing, finishing work, and even wood-to-concrete fastening. The magnetic bits help to keep the screws in place on the drill tip.

Hex or Hexagon

There are screwdrivers and bits for hex-head screws ranging from 0.03″ to 3/8″ in size. Screws with a hex head are commonly found on doorknobs, towel bars, and mechanical assemblies. In this design, there is a tapered square-tipped screwdriver inserted into a matching square recess on the screw.

An Allen screwdriver or hex key screwdriver is needed to tighten or loosen it. An Allen-type screwdriver is shaped like an L, or a T. Allen bits can be used with ratcheting screwdrivers and drills as well.

When installing small fixtures like towel bars, it is essential to have a variety of tip sizes available on the market. Compared to conventional slotted screws and screwdrivers, it would provide a firmer hold and reduce slippage.



A schematic comparison between the most known screwdrivers (Reference: **which.co.uk**)

Robertson or Square

The square screwdriver is also called the Robertson screwdriver, after a Canadian inventor.

There is a slight taper at the end of Robertson screwdrivers and a square tip on them. They are popular in Canada, where the tool originated, because of the tapered end, which makes it easier to insert a screw and keep it on the tooltip without holding it. They are often used with furniture and auto repair.

They were first used by Ford Motor Company for industrial purposes, as they speed up production, minimize damage, and are highly reliable. Americans and Canadians are very familiar with them, whereas, in Europe, they are less common.

The handle has an integral flange which provides a better twist-resistant blade anchor.

Clutch Head or Bow Tie

The design of clutch head screws has changed in the last few years. The slots resemble bow ties, while the older version had a circular recess in the middle. They are used in recreational vehicles and the automotive industry.

These heads will provide better torque and are designed with slotted drives that have one-way screwing capabilities. You cannot easily remove them.

They are usually found in places with infrequent maintenance, such as bus stations or prisons. They have helical-cut steel gears that have been heat-treated to provide a long service life.

Hex Socket

In mechanical industries, socket drivers are very useful since they have a socket rather than a blade and tip, thus acting as socket wrenches. A hex socket is useful when reaching recessed bolts.

It takes more space to turn a socket wrench since its handle runs parallel to the bolt's embedded surface.

Hex sockets have a straight shank and handle, which allows them to be used for low-torque applications but can also be used with a normal ratchet plus socket set for larger applications.

Hex sockets require an Allen key, hexagonal key, or hex screwdriver to drive them. Hex screwdrivers have a hexagonal tip used to drive screws, bolts, and nuts.

A wide range of hex screwdrivers is available in standard and metric sizes, making it easy to loosen and tighten hex nuts, bolts, and screws.

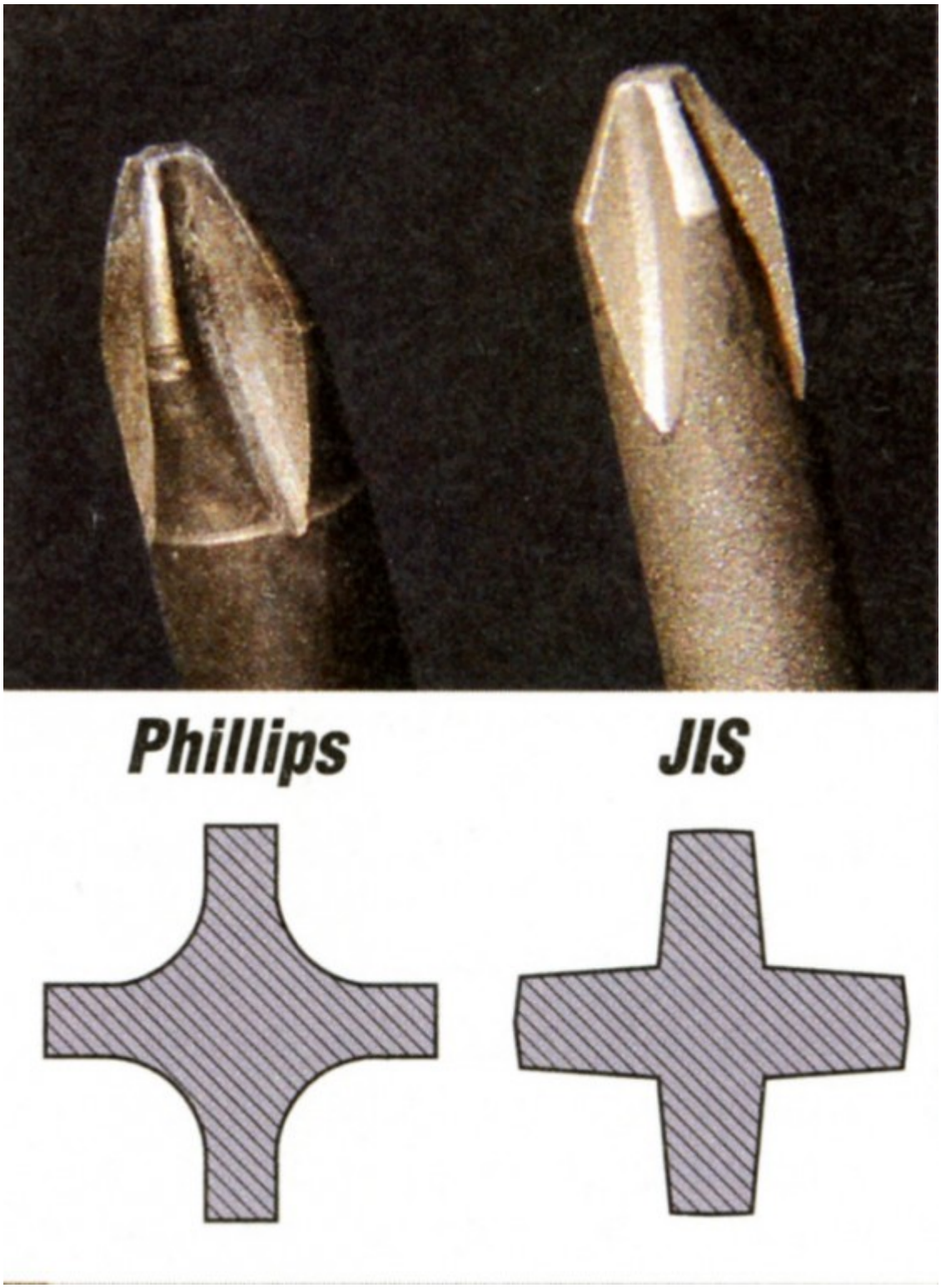
Metals such as aluminum, brass, copper, and steel can be used to make hex nuts, bolts, and screws.

JIS (Japanese Industrial Standard)

A JIS driver is one of the most popular types and is used most often in your toolbox when fastening cross-point screws. This type of driver does not have any “cam-outs” or damaged screws like many other types.

With its self-centering design, this screwdriver was superior to Phillips screwdrivers in that operators could engage its tip quickly and easily into screw heads.

With the Japanese industrial standard, tool and screw engagements are quick and self-centering, giving the operator control over torque and overtightening rather than the screw’s head.



JIS vs. Philips (Reference: **goldwingdocs.com**)

Bolster

Below the handle of a bolster screwdriver is a type of nut which is welded to the top of the shaft. In order to loosen a screw that is stuck to a surface, you can exert extra torque by turning the welded nut with your wrench, allowing the tool to exert the maximum amount of pressure.

Spanner

Spanners are also known as Snake-Eyes screwdrivers, pig-nose screwdrivers, and drilled head screwdrivers, different terms from the British term wrench.

Unlike normal screwdrivers, these special screwdrivers have two prongs, much like a barbecue fork, which are used to remove flat-head screws with two tiny depressions around the head. It is, therefore, impossible to remove these kinds of screws without the help of a spanner.

Maintenance workers usually use these screwdrivers in bus terminals, elevators, restrooms, and subways since they are quite secure. M4 to M12 spanners are available.

Multipurpose Screwdriver

A hexagonal hole is located at the end of the shank of the multipurpose screwdriver, allowing it to fit various drivers on both sides, with drivers or based on the application. For those with only basic needs, they are a very popular toolset because they offer more versatility and space efficiency.

Offset

In offset screwdrivers, a flat blade is also present, but no handle is provided. Both ends of the shank are turned at 90 degrees, and bits are made at both ends. This offset screwdriver is useful in narrow or slanting spaces where regular flat screwdrivers cannot be used.

Offset screwdriver (Reference: **csunitec.com**)

Insulated

These screwdrivers are commonly known as safety screwdrivers because they are constructed of non-conductive materials such as rubber.

VDE

Designed with safety in mind, VDE screwdrivers are also tested and certified by an international organization to ensure they meet the necessary safety standards.

Torque Screwdrivers

It is not to be confused with Torx, but a torque wrench is a screwdriver that applies a certain torque that is not excessive. Torque screwdrivers have a torque-limiting clutch that limits how much force can be applied beyond a certain limit. They are ideal for tightening screws efficiently without causing damage to the material they are fastening.

Electric

Electric screwdrivers don't require you to use your hands to apply torque to the screw. Electric screwdrivers can also be referred to as power screwdrivers or screw guns, and they can quickly and easily get the job done.

Battery Operated

This tool could be used by amateurs, DIY enthusiasts, computer repair experts, electricians, appliance repair technicians, as well as professionals.

As a lightweight device with a powerful LED light, it can be used for tasks that other similar devices can't reach. It can, for example, remove and fix screws in computers without having to disassemble them.

When there is little space between the floor and the working area, and you need to lie underneath an object, this tool is ideal.

It's not ideal for heavy-duty driving or drilling, but it's great for driving light screws. The torque is strong even at the lowest setting, and the device works fine until the battery runs out.

Corded

Typically, corded screwdrivers are not popular since they require an electrical connection. However, corded screwdrivers have a constant supply of power and are extremely effective.

Cordless

Since these screwdrivers are equipped with a rechargeable battery, they offer the advantages of both electric and battery-powered screwdrivers. As a result, cordless screwdrivers become bulkier and heavier, and as the battery wears out, they lose torque as well.

Magnetic

The magnetic tip of magnetic screwdrivers holds the screw in place to make it easier to put or remove the screw. The magnetic tips of manual screwdrivers are becoming more and more common.

Small electronics companies can use it to place screws in hard-to-reach places. The screws stick to your screwdriver. You can magnetize your existing screwdriver with a rare earth magnet instead, so you don't need to buy new sets of magnetic-tipped screwdrivers.

Magnetic screwdriver (Reference: **bobvila.com**)

Jeweler's Screwdriver

A jeweler's screwdriver is a precision device used for working the tiny screws in pocket watches and eyeglasses. Most jewelers' screwdrivers are Phillips screws, but there are also slotted screwdrivers available.

Ratchet

Ratchet screwdrivers enable you to apply torque in only one direction. When the torque is applied in the opposite direction, the ratchet disengages, which allows for free rotation.

The user of this screwdriver can hold the screwdriver in his or her hands while rotating the wrist until the maximum twist is reached, then leave the driver's head in the screw and then twist it backward.

It is extremely useful for projects where it is difficult to remove the screwdriver and then find the screw head again.

Tri-Wing

The tri-wing screwdriver's tip resembles a pinwheel. The tri-wing screwdriver is used for screws that have triangular sockets with three wings. Since these screws have such an unusual slot, they are difficult to remove without the screwdriver.

These screwdrivers were originally designed for use in aerospace engineering, but now they are widely used in home electronics. Although they are more expensive and less readily available than other types of screwdrivers, they are capable of tightening to extremely high torque values, which is their biggest advantage.

There are three sizes of tri-wing drivers.

Tri-Angle

These screwdrivers, also called TAs, have a triangle-shaped tip for fitting into triangular depressions on screw heads. Many industries use it, including toys, electronics, and appliances, to increase security.

TA screws can also be driven with a hex screwdriver, so tri-angle screwdrivers are not commonly found in DIY or home tool kits.

Tri-Point

Tri-point drivers, also known as three-prong drivers or Y-tip drivers, come with three blades arranged in a Y shape at a 120-degree angle on the tip. These screwdrivers are incredibly popular with electronics manufacturers. In their phones, gaming systems, and other devices, tech giants like Nintendo and Apple use them.

Additionally, tri-point screwdrivers can also solve the problem of compatibility between tri-angle screwdrivers and hex screwdrivers. Using a tri-point screwdriver is the only way to work with tri-point screws.