

INDEX PAGE

Drill Press Overview	2
Types of Drill Press	3
Drill Press Accessories	4
Drill Press Tools	6
Drill Press Stands	8
Top 10 Drill Press Manufacturers	9
Top 10 Discount Drill Press	11
Buying Used Drill Press	13
Drill Press Installation Guide	14
Troubleshooting A Drill Press	15
Maintenance Tips For Drill Press	16
Top Drill Press Resources	17

DRILL PRESS OVERVIEW

Want to drill precisely spaced holes or boring to exact depths, the best option is to go for a Drill Press. A drill press also referred to as pedestal drill, pillar drill, or bench drill is a fixed drill that can be mounted either on a stand or bolted to the floor or workbench. This press consists of a base, column (or pillar), table, spindle (or quill), and drill head, that is driven by an induction motor.

Drill presses are most commonly used for miscellaneous workshop tasks such as sanding, honing or polishing, by mounting sanding drums, honing wheels and various other rotating accessories in the chuck.

The size of a drill press is usually measured in terms of swing. Another capacity consideration is stroke, or quill stroke, that finds how deep you can drill.

Depending on your requirements, you can think of a radial drill press or a magnetic drill press.

In comparison to a hand-held drill, a drill press has a number of advantages:

- requires less effort to drill the workpiece. Movement of the chuck and spindle is controlled by a lever working on a rack and pinion.
- table allows a vise or clamp to position and lock the work in place making it more secure.
- spindle angle is fixed according to table, allowing holes to be drilled accurately and repetitively.

TYPES OF DRILL PRESS

Drill Press is considered to be the base in the arsenal of woodworkers, carpenters, and machinists. The time when accuracy is the most important aspect, the professionals tend to go for a **drill press**. This may be either a vertical drill that is fixed to a tabletop, workbench, or to the floor. It is also referred to as a bench drill, that is capable of drilling accurately spaced holes at specific depths, widths and straightness.

Bench top drill presses - are attached directly to a workbench or on their own stands. Their small size offers a good option for small sized shops. It has a stationary drill with a platform to hold the piece that is to be drilled and a hand crank to lower the drill bit down to said piece that sits on top of a work bench. These are around 24 inches tall.

Floor-model drill presses - possess powerful motors, different attachments/accessories and greater material handling options rather than the bench-tops. Its versatility makes the floor models a best option for serious DIY and commercial shops. It features a rugged cast iron design with a ground steel column for lasting drilling accuracy in metal, wood or plastic. The head castings feature a permanently lubricated ball bearing spindle assembly, using four heavy duty ball bearings mounted in an enclosed quill for extended life.

Portable drill presses - is the best option for those who do not function with a wood shop. It yields least power, and is suitable for small jobs and travel. This drill press is best suited for drilling a perfectly perpendicular hole. It is really, a challenging job. The best option is to buy an accessory that will turn your hand drill into a portable drill press.

Radial drill presses - is convenient to use on large and heavy work or where many holes are to be drilled since the work does not have to be readjusted for each hole. It has a movable spindle that can be adjusted according to the type of job. It provides power feed on the spindle, as well as an automatic mechanism to raise or lower the radial arm. The wheel head, situated on the radial arm, can also be traversed along the arm, so that the machine can be used easily, and provides versatility. These are generally equipped with a trunion table or tilting table, giving the operator the ability to drill intersecting or angular holes in one setup.

DRILL PRESS ACCESSORIES

Accessories that come along the drill press, are the attachments which enable to improve and enhance the performance and accuracy of the drill press. There are various types of [drill press accessories](#) available as per your requirement and needs. Following are some of the accessories along with their uses:

Drill Press Milling Machinist Vise

This is used to hold the work material stable for precision milling in wood and plastic. It works best in X-Y movement in both directions with speed and accuracy and does not wobble at all.

Drill Offset Attachment

This is used to drill in those places, where you could never reach before and enables to rotate the drill chuck a full 360°. It fits best in 3/8" and larger drill chucks.

Drill Press Laser

This column-mounted accessory is used to deliver pinpoint accuracy for all drilling operations. It has two lasers project crossing beams that guarantee precise drill bit placement, and a unit that mounts to a variety of bench and stationary drill presses

Centering Bit

This is used to increase the accuracy of the drill press or router and speed up the alignment and tricky set-ups. Precision machined bit finds the exact centerpoint of routers and drill presses for more accurate cuts and drilling.

Drill Press Lever Clamps

This provides a quick, strong hold-down on the drill press table. A mounting bolt passes through the table and is secured with a large ring nut. The small clamp opens to 1-11/16", large to 3-1/2".

Mortising Attachment

This consists of a square chisel with a drill bit built inside it and requires an additional attachment just above the chuck to hold the chisel. It helps to cut square or rectangular holes for mortises.

Quick Set Hold Down Large Foot

This hard rubber foot pad is used to provide more surface area to hold the work piece. It has 1 ½ " long 5/16" stud with 16 threads per inch. The hold down pad is 2 3/8" x 1 5/8" with V-grooves for holding round stock.

Drill Press Tool Tray

This the best and essential accessory for any drill press. It can be easily attached to any drill press column from 1 3/4" to 3 5/8". This has built in holes for the drill bits ranging in size from 3/32" to 1/2" .

Drill Press Table

This is designed to fit virtually in any drill press. It has a unique post knob to T-track attachment system the table can be moved easily, until you find yourself comfortable. It measures approximately 15" x 24" and is laminated on both the top and the bottom to prevent any kind of warping and to keep the top flat.

Drill Press Dust Collector

This is one of the handiest accessories ever for the drill press, that helps to keep the shop clean. It is an essential accessory, if the drill press is used to a drum sand. It fits in most all standard table and floor model Drill Presses.

DRILL PRESS TOOLS

Drill presses, also called Drilling machines, cut holes in metal with a twist drill. They also use a variety of other cutting [drill press tools](#) to perform the following basic hole-machining operations:

- (1) Reaming
- (2) Counter boring
- (3) Countersinking,
- (4) Tapping internal threads with the use of a tapping attachment
- (5) Boring

Reaming Tool

The accuracy of a drilled hole is to about two thousandths of an inch in diameter. If one requires greater precision for slip fits or interference fits, then a reaming tool must be used. A tool that is used in machining, to make the existing holes more accurate dimensionally and to improve the surface finish. It is used either as a hand tool or in the spindle of machine tools such as milling machines or drill presses.

The straight flutes of a reaming tool cannot drill a hole. For using a reaming tool, drill a hole slightly undersize to start, and then drive the reamer down with a constant, slow speed. It constitutes of modular design with replaceable cutting head, and easy to change while still in the machine tool spindle.

Counter boring Tool

Counter boring is the process of enlarging the entrance of a hole with the help of a counterbore, or any other tool with a specific diameter and depth. It provides a square shoulder so that a cap screw or bolt head may adjust above or below the surface. These are available in a variety of sizes and styles.

A counterboring tool includes a central body, a proximal mounting flange and a distal end, longitudinal lands and straight flutes between the lands.

Countersinking Tool

Countersinking is the technique of making a taper or cone shape surface at the entrance of a hole in order to adjust the head of a flat head screw, aviation rivet or other similar fastener sit flush or below a surface. This cone shape is done with the help of a countersink. A countersinking tool comprises of a holder with at least two removable cutting inserts for countersinking relatively large holes. The holder has a locating recess and a seating surface for each insert, and is cut away at various parts to facilitate the countersinking operation.

Tapping Attachment

Usually, when tapping is done on a drill press, then there must be some way to back the tap out of the hole. Most of the radial drills are equipped with a reversing spindle. Upright and sensitive drill presses are not generally equipped with spindle reversing capabilities, thus a special attachment for this operation is required.

Tapping Attachment is available in various sizes covering tapping capacity from 2 mm to 30 mm. It is suitable to use on every vertical Drilling Machine or Machines with rotating Non-Reversing Spindles.

Boring Tool

A boring tool is a modular tool, consisting of a basic holder, adapter and a cutting unit in the form of a cartridge, slide or fine boring unit. It is radially adjustable within a specific diameter range. These tools offer the highest cutting speeds and material removal rates available.

DRILL PRESS STANDS

Usually, a small metal table is provided with the drill press, yet it is not obviously designed for woodworking. Sometimes, it becomes too small, hard to clamp onto, and does not work well with a fence. So, you can select any one of the following drill press stands according to your requirement:

Wooden Table Stand

A wooden table can be used as a drill press stand. It covers the metal drill press, and provides sufficient support for long pieces. It is made up of two layers, and is quite rigid. The top layer has a removable center piece. It can be replaced by sliding it out, after its continuous use. It has an adjustable fence, to position quickly and accurately. For this, it has been provided with slides along with two T-shaped slots in the table, and a simple toilet bolts lock it in place. The base and fence are made from $\frac{3}{4}$ inch thick plywood, whereas the tabletop and inserts are $\frac{1}{4}$ inch hardboard. It is found easily at home centers and hardware stores.

Horizontal Portable Roller Stand

This is designed to be used as portable feed stands for use in front of saws, drill presses, shears and other machinery. It is constructed of heavy-duty steel, still is lightweight, so as to move easily from one workstation to another. It is provided with a manual hand crank, so as to make easy height adjustment and locking screw secures column in place. This horizontal Roller Stand includes one 14" W roller, and can be assembled easily.

Aluminum Stand

Aluminum Drill Stand is a versatile and lightweight drill stand. This possesses a combined base plate for vacuum or anchoring. The stand has a practical handle and can be tilted from 0° to 45° for angle drilling.

TOP 10 DRILL PRESS MANUFACTURERS

There are several leading manufacturers of drill press including:

Craftsmen

One of the most popular and leading tool brand and all tools, equipment and accessories of America, that combine rugged durability, consistent performance and inspired innovation. It has manufactured many innovative products for the professionals and homeowners.

Champion

Most popular manufacturer that eases the work of journeymen and professional craftsmen. These are of the highest quality and reliability, and are most affordable and functional drill presses available.

Delta

Provides quality woodworking tools and products assisting the job of journeymen and professional craftsmen. The drill presses manufacturers are of the highest grade, quality and reliability. It has been the leaders in the respective categories of stationary and bench top woodworking equipment and portable woodworking power tools.

Grizzly

All these drill presses are manufactured to resist the most demanding jobs. Offers the performance and power that pros expect without the hefty price tag that they don't need.

Hitachi

Founded in 1910, is one of the leading manufacturers of drill presses. They have built such drill presses that match to the highest standard to ensure the quality and accuracy of the finished work-piece is what the professional user demands.

Jet

A brand associated with WMH Tool Group. The manufacturing of these drill presses needed countless hours of research, design, engineering and manufacturing from around the world. All of these are supported with one of the best warranties in the business and backed with after the sale service.

Milwaukee

Leading manufacturer and marketer of heavy duty, portable electric power tools and accessories for professional users world wide since 1924.

Powermatic

Founded in 1921 and is one of the leading manufacturers of Drill Presses and accessories. Each of the drill press is manufactured according to the highest standard to ensure that the quality and accuracy of the finished work-piece is what the professional user demands.

Rockwell

A part of the Positec Group of companies, that have been designing, engineering and manufacturing power tools since 1994. Offers performance and power in a cheap way.

Wilton

A brand associated with WMH tool group, that started production of quality woodworking tools and products since 1981. Manufactures such tools and accessories that eases the work of journeymen and professional craftsmen easier.

TOP 10 DISCOUNT DRILL PRESS

DELTA DP300L 12-Inch TwinLaser Crosshair Drill Press - Is one of the most popular bench top drill press. It appears as a basic benchtop drill press, but is loaded with features seen on high end machines. The Twin laser pod is completely adjustable and the red crosshair light guides the bit contact point. It possess a 1/3 HP 120V motor, that provides smooth performance and is reliable. The table is tilted to assist angled drilling if required. Speed can be changed easily.

Milwaukee 4270-20 9 Amp Compact Electromagnetic Drill Press - Is one of the most popular magnetic drill press. It possess a 1 1/4 Inch Motor and No. 3 Morse Taper and the Jancy Slugger 19040 Holemaker Portable Magnetic Drill. This features a 9.0 amp, 1.1 HP motor, two-coil magnet, two button control panel, and two position for feed handle. It is a great portable drill press capable of drilling up to 1 1/2 inch diameter holes through 2" thick steel with annular cutters.

Grizzly G7944 - Is one of the most popular stationary drill press. It possess 12 speed, 14" floor drill press that is heavy duty. This is powered by a 3/4 HP, 110V, single phase motor. The range of speeds vary from 140 RPMs up to 3050 RPM with small increments in between. With a spindle travel of 3 1/4 ", it is quite versatile.

JET JDP-17MF - Is a 16 1/2 inch drill press has a 13 3/4" table tilting 45 degrees right and left. The 3/4 HP motor provides up 16 speeds from 200 to 3630 RPM. Made of cast-iron and heavy-gauge steel components, is quite solidly constructed and very sturdy, although some questions related to accuracy occur. This possess two features as the positive depth stop on the left side, quickly adjusts and locks in place via three nuts, and the built-in lamp, a nice touch that other competitors do not offer.

Wilton 2500 15-Inch Floor Drill Press - This features a Cast Iron head and has a large 1 7/8 quill that provides greater accuracy. The head casting possesses a permanently lubricated ball bearing spindle assembly, using four heavy-duty ball bearings mounted in an enclosed quill for extended life. It has a massive T-slotted work table and a column is 2 7/8 made up of ground steel for maximum head and table support. It comes with a 5/8" drill chuck and arbor.

Palmgren 80172 3/4 Horsepower 17-Inch Floor Drill Press - Is best suited for use in shops or production applications where precision drilling is needed. It has a rigid, stable construction along with precision machining for accurate performance. The large induction motor enables drilling in tough materials like cast iron and steel. Designed with HP: $\frac{3}{4}$ Spindle Travel: 5" Column Dia.: 3.16" Table (L x W): 12" x 12" Speed Range: 240 - 3080 RPM Quill Dia.: 2.59".

Rikon 30-200 13-Inch Floor Drill Press - Features solid cast-iron handles, rack and pinion system, locking depth stop with gauge, safety toggle switch, powerful induction motors and a speed selection chart. It is built with a rugged cast iron base, cast iron head and tilting table. This possess a powerful, efficient and smooth operation, that is ideal for both hobbyist and professional users.

Craftsman Professional 22901 Drill Press - Is a 17-inch drill press, having a single-arm quill handle, that enables easy presetting and repetitive drilling operation. Has a state-of-the-art column mounted on laser attachment that delivers pinpoint accuracy. It features 4-7/8 inches of quill stroke capacity power, 16 spindle, $\frac{3}{4}$ hp 115/230-volt motor, with large cast iron table for expandable work support, column-mounted laser, adjustable work lamp, and push button industrial style switch.

Cummins Industrial Tools 5 Speed - Bench Top Drill Press - An essential instrument to be in every workshop. Has 5 quick-change speed settings, a long quill for mortising and an adjustable table that tilts left and right, for an angled drilling operation. The drilling depth is adjustable, stopping the quill positively. Construction is quite sturdy, with 11 in. x 7 in. base, and $\frac{1}{2}$ Horsepower, Power of 60 Hz, 120 V, 2.4 amperes.

Hitachi B13F 10 inch Drill Press - Most popular drill press, that is built to the highest standard. It incorporates 5 speeds with laser sighting for more accurate drilling. Its swing is 10 inches, 5 inches from the center of the drill chuck to column. Produces very accurate and precise results.

BUYING USED DRILL PRESS

Sometimes, it happens, that one cannot afford to buy a brand new hand drill press, so there is always an option of buying a second hand drill press. The only thing is that you have to be careful while buying the product. You have to check the product and all the accessories that come along with it.

In the market, drill presses are available with variable power, attachments and sizes. These offer certain **handy tips** that would help you to choose the right path in selecting the best-used drill press.

The first step, is to make sure that the drill press works effortlessly without any hiccups, it makes precision holes and look out for the maximum power that is made by the motor.

The secondly step, is if you want to drill through tougher material, then select a drill press with higher horsepower. Usually, drill presses have horsepower from $\frac{1}{4}$ to 1 horsepower.

The third step, is to try drilling holes before finalizing the product , and also take care that the drill press does not unreasonably heat up or stops rapidly while working.

Check for if any warranty is still left on the drill press, the more the better and the less the more you should bargain.

On searching, you can find factory reconditioned drill presses that are available from different brands, this can be an exciting basis of getting used drill press and if you have no ideas or clues and you are in confusion, then you can consult with an expert or a professional in selling with such tools to make up your final choice.

DRILL PRESS INSTALLATION GUIDE

Following steps are to be followed while installing a drill press:

- Assemble the column, and place it on the base and align the holes in column support with holes in base.
- Secure the column with the bolts provided.
- Install table, slide it onto the column and lock with clamping lever. And attach the head to the column.
- Carefully put the head assembly over column and slide it onto column into position. Align head frame with table and base. Fix set screws into right side of head to lock head into position then tighten.
- Install the feeding handles
- Screw the knobs to the feeding handles, and each feeding handles into the hub of pinion shaft.
- Attach the chuck
- Slide table up and secure it approximately 75mm from the tip of the spindle.
- Slide short end of arbor into chuck. Place long end inside spindle.
- Open chuck jaws completely by turning chuck key anticlockwise to the end, and put a piece of scrap wood on the table to protect chuck nose.
- Pull feeding handle down pressing the chuck against the scrap wood until arbor is secure on the spindle.

TROUBLESHOOTING A DRILL PRESS

Learn how to [troubleshoot a drill press](#):-

TROUBLE	PROBABLE CAUSE	REMEDY
Noisy Operation	Incorrect Belt Tension	Adjust Tension
	Dry spindle	Remove spindle/quill assembly lubricate
	Loose Pulley	Tighten Pulley
	Loose Belt	Adjust Belt Tension
	Bad Bearing	Replace Bearing
Excessive Drill Wobble	Loose Chuck	Tighten by pressing chuck down by table
	Bad Chuck	Replace Chuck
	Worn Spindle Shaft or Bearing	Replace Spindle Shaft or Bearing
Motor won't Start	Power Supply	Check Power Cord
	Motor Connection	Check Motor Connection
	Switch Connections	Check switch Connection
	Motor windings burned	Replace Motor
	Bad switch	Replace switch
Drill binds in work piece	Excessive pressure on feed handle	Apply less pressure
	Loose belt	Check belt tension
	Loose drill	Tighten drill with key
	Speed too fast	Change speed
Drill burns or smokes	Incorrect speed Slow down RPM	Refer to speed chart
	Chips are not discharging	Clean drill
	Dull drill or not cut properly for material	Check sharpness and taper
	Needs lubrication	Use lubrication while drilling
	Feeds pressure wrong	Apply less pressure
Table difficult to raise	Needs lubrication	Lubricate with light oil
	Bent rack	Straighten rack
	Table lock tightened	Loosen clamp

MAINTENANCE TIPS FOR DRILL PRESS

Not much **maintenance** has to be done to keep the drill press in fine working condition, but if some adjustments have to be made according to the requirements, then you have to follow the guidelines explained below:

- Spindle side-play can be minimized by adjusting the locknut located on the left side of the motor unit 1-1/2 inches behind the spindle and towards the bottom of the motor unit. While moving the feed handle up and down, tighten the lock nut until the play is minimized, but not so tight so as to restrict free movement of the spindle. The spindle should return by itself to the full up position.
- The tension of the drive belt can be managed by removing the top cover and then loosening the two nuts on both sides of the motor pulley. The motor position is adjusted and the nuts are tightened, in such a way that the moderate finger pressure against the belt causes it to deflect 3/16" to 1/4". Excessive belt tension may damage the bearings.
- Spindle has to be oiled frequently at the factory, and then remember to periodically wipe off oil that makes its way down the spindle.

TOP DRILL PRESS RESOURCES

Check for the following resources list that would help you to know all about top drill press.

www.galtech.com

www.lowes.com/

www.rockler.com/

www.amazon.com

www.toolprice.com

shopping.aol.com

www.coasteltools.com/

shopping.msn.com

www.sawdustmaking.com/

www.nextag.com

www.benchttopdrillpressosx.co.cc

www.old-woodworking-tools.net/

www.cnczone.com

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