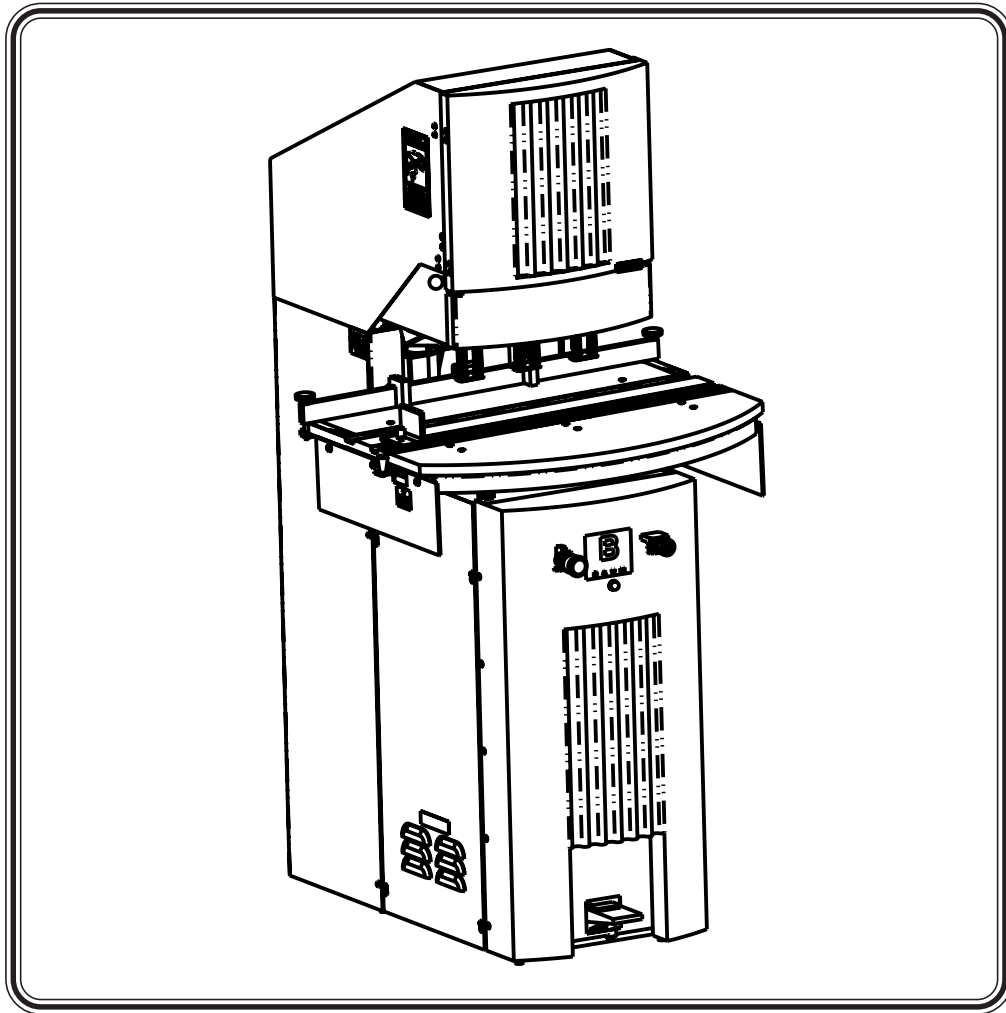


# D3 DRILL



## INSTRUCTION & PARTS MANUAL

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**WARNING**

- Do not operate this machine without all guarding in place.
- Do not make adjustments or perform maintenance on this machine with power on.
- Keep the machine and the work area clean and free of spills to prevent accidents.
- Be sure to replace any safety decals that may have been detached for any reason.

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## D3 PAPER DRILL

Your new D3 Paper Drill has been designed to provide you with years of useful service, provided it is installed, maintained and operated according to the instructions contained in this manual.

The D3 Paper Drill has the capability for three drill heads, and is available with a moveable table. Drill bits are available in sizes ranging from 1/8" to 1/2" in diameter.

## SAFETY INSTRUCTIONS

All guards, warning labels, lubrication and caution tags were placed on this machine for your safety. Take time to become familiar with all of them. These items must not be removed from this machine.

The operation and maintenance of this machine should be clearly understood. Besides exercising standard safety practices, operators, maintenance personnel and any other personnel involved with this drill, should be specifically instructed on proper maintenance and safe operation of this machine.

All safety mechanisms are provided for your protection and must not be altered.

### WARNING

Do not operate this machine without all guards in place.

Do not make any adjustments or perform any maintenance on this machine with power on.

Keep the machine and the work area clean and free of spills, to prevent accidents.

Be certain to replace any safety decals that may have been detached for any reason.

## INSTALLATION INSTRUCTIONS

This machine is shipped inside a protective wood frame. The following parts are packaged inside the machine at the factory:

Waste Can	Wood Blocks
Back gage Bar	Drill Sharpener
Back gage Blocks	Side Gage
Tools	Instruction Manual

Carefully remove the wood frame and look in waste can covers to find these items. Back gage is located inside of door on left side of Drill. Be sure to check off the parts received against the packing list. Examine the machine carefully for any physical signs of shipping damage.

The machine is fastened to the skid with two bands. Carefully remove the two bands. Remove the drill from the skid by lifting between the 2 x 4's that the drill is sitting on. On the bottom of the drill are four leveling screws, use these screws to level the machine.

## BACK GAGE INSTALLATION

Place the back gage bar at the rear of the table top. Insert the two clamp knobs through the clearance holes provided in the bar. Screw the clamps onto the bottom of the threaded rod that extends from the clamp knobs. Place the two back gage blocks on the bar so that the thumbscrews are pointing toward the rear of the machine. Set the bar using the scales on the right and left sides of the table.

## SIDE GAGE INSTALLATION

Slide the side gage assembly into the T-slot provided in the table top. Slide the side gage to a location desired on the table scale and tighten the knob by hand.

## WASTE CAN INSTALLATION

Slide the waste can into the opening in the side of the drill.

## TOOLS

A convenient accessories drawer has been provided under the top guard.

## HYDRAULIC SYSTEM

Checking the hydraulic oil level in the reservoir is done by removing the Fill Cap. The return line hose may remain connected. The oil level must be just below the fitting that the Fill Cap fits into. Do not overfill.

The hydraulic system has a flow control valve, which regulates the speed that the drill bits descend through the paper. Turning the flow control knob clockwise increases the speed of the descent. Turning the knob counter-clockwise will slow down the descent of the drill bits.

When using drill bits with a diameter under 1/4", it is recommended to slow down the descent of the bits, decreasing the probability of bits breaking and clogging.

## ELECTRICAL SYSTEM

Check the serial number tag on the top of the head casting (next to tensioner) for voltage/phase/hertz and amperage required. This tag also lists the time delay fuse amperage and the wire size for the supply conductor.

## STARTING

Two electric motors provide the power for this machine; one is for the hydraulic power system and the other is for the spindle. The electric motor for the hydraulic system drives a hydraulic pump that creates the force to push the drill heads down. The spindle motor drives the drill head spindles through a set of belts and pulleys.

The two motors are started by pushing the start button.

Both motors are turned off by a red mushroom stop pushbutton located on the left side of the panel. This is a safety feature that stops the entire machine.

## WARNING

This machine is equipped with a safety interlock system which prevents the spindle motor from being started when the hinged top cover is opened, and automatically turns the spindle motor off if the cover is opened after the spindle motor is turned on. This safety feature is provided to prevent accidental contact with moving parts. This feature must not be altered or tampered with.

## OPERATION

- A) Open the hinged top cover.
- B) Insert the drill bits into the drill head spindles.
- C) Make sure that the retainer on the spindle is down over the horseshoe lock washer.
- D) The left edge of the drill head needs to be lined up with the scale behind the drill heads.
- E) To move the drill heads, first loosen the belt tensioner by loosening the handle on top. Second, loosen the handle on the drill head to be moved, then slide the drill head to the desired location and tighten the handle. Then, using the ratchet on the belt tensioner, rotate the belt tensioner counter clockwise until the belt is tight. Then tighten the handle on top.

**Caution: Make sure the belt is seated on each pulley while tightening**

F) If bits seem to stall when drilling, the belt may need to be tighter.

G) For adjusting the depth of the drill bits, rotate the brass knurled knob on the drill head. The proper drill bit depth is a slight indentation into the wood block.

H) For drilling one or two holes you must remove the bits from the other heads.

**You cannot remove drill heads.**

I) If the table on the D3 drill is moveable. The template supplied with the drill has three locking positions; center, max. left, and max. right.

J) To move the table, push down the handle on the left side of the table, once you start moving the table, release the handle and it will fall into the next position in the template.

## **DRILL HEAD AND BIT TIPS**

### **1. KEEP DRILLS SHARPENED**

A dull drill bit can be a major cause of drill bit breakage. Sharpening and cleanliness help prolong bit life. Imperfections in drilling indicate dull drills. A dirty drill bit will clog and will cause pressure build up that can split or break the drill bit. Clean the drill bits of all chips after each use and apply a light film of oil to the inside and outside. When drilling coated stock, the chips frequently are compacted into slugs inside the drill bit, it is important that the drills be cleaned out immediately before the drill cools or the slugs will become a solid mass that will cause the drills to break the next time they are used.

### **2. LUBRICATE DRILLS**

Use the drill lubricant sticks that are provided with your drill to assure better chip passage and to avoid overheating of the drills. Touch the side of the drill bit near the cutting edge with the end of the lubricant stick. Try to coat the inside of the bit as well. Squeaking, slight burning or smoking is a common sign that lubrication is needed.

### **3. SET THE DRILLS CORRECTLY**

Do not cut too deeply into the wood blocks. The drills should just touch the block enough to make an impression and cleanly drill through the bottom sheet. Do not set the drills deeper into the blocks after drilling, move the blocks or flip them over or turn them end for end to get a new cutting surface. The use of chipboard (cardboard) below the lift when drilling can sometimes improve the hole quality.

### **4. CHECK BELTS**

Loose belts can slip and cause overheating of drills. Tighten if necessary, but be careful not to over tighten.

### **5. CHECK FOR RUNOUT OR WOBBLE**

Drill head spindles that are worn or bent as a result of mis-adjustment can cause drill breakage. Have the spindles replaced immediately.

### **6. INSPECT DRILL SHARPENER**

Check the cutting edges of the carbide cutting tool for nicks and sharpness. Don't let the drill drop on the cutting tool or the cutting edge will be damaged on the tool. Use gentle pressure when sharpening. Too much pressure will spread the mouth of the drill, causing breakage. only a few turns will sharpen the drill.

## **7. USE DRILL EXTENSIONS**

Drill extensions help chips flow up into the spindle and out of the ejection slot. There are two sizes of extensions: one extension fits 1/8" through 5/32" drills; one extension fits 3/16", 7/32", and 1/4" drills. The larger diameter drills do not need extensions. Extensions help prevent drill breakage, especially when drilling coated stock.

## **8. REMOVE DRILLS FROM HEADS WHEN FINISHED**

Depending upon atmospheric conditions, if the drills are left in the spindles overnight or for the weekend, they may rust. If this occurs, they will be extremely difficult to remove.

## SPECIFICATIONS

### ELECTRICAL:

Motors: 1 hp pump  
1 hp spindle

Available in: 208-220V/1 phase/60 hz at 25 amps  
208-220V/1 phase/50 hz at 25 amps

Electrical safety interlock that prevents spindles from rotating when hinged cover is raised.

One stop button turns off the entire machine.

Indicator light is provided that tells the operator when a motor is overloaded.

Motor contactors have automatic reset feature.

### HYRAULIC:

2.25 gpm pump at 1725 rpm

1 gallon reservoir

Preset relief valve protects system

**Oil:** Anti-wear hydraulic oil  
Mobil DTE 24  
Mobil DTE 25  
Mobil DTE 26  
Energol HLP-32  
Energol HLP-46

### MAINTENANCE CHECK LIST

**Daily:** 1. Sharpen drill bits  
2. Lubricate drill bits

**Monthly:** 1. Check hydraulic reservoir oil level

**Yearly:** 1. Change hydraulic reservoir oil

### DRILLING:

Maximum number of drilling heads: 3

Drill bit sizes available: 1/8" to 1/2"

Max drilling capacity: 3 heads with 3/8" drill bits - 2" max.  
The number of 1/2" bits that can be used will vary due to many variables including: paper types, lift size, drill descent, speed, etc.

Vertical drill bit adjustment in drill heads: 5/16"

Maximum center to center distance of heads: 11"

Minimum center to center distance of heads: 2.0"

Maximum distance from center of drill to back gage: 5.83"

Maximum distance between holes: 25.25" (MT)

Maximum distance between holes: 10.00" (ST)

Min. distance between holes (MT): Adjustable stops: .50"

Min. distance between holes (ST): 2.00"

Floor space required for drill: 43" x 49"

Machine height: 67"

Shipping weight (approximate): 630 lbs.

### VALUE ADDED STANDARD FEATURES:

Hand drill sharpener and sharpening stone

Tool and accessories drawer

No tools needed for removing heads from the drill

"Drill Ease" drill bit lubricant sticks

Enclosed waste chute eliminates excessive chips on the floor

Large capacity, and easily removable waste can

Safety interlock hinged cover stops rotation when cover is up

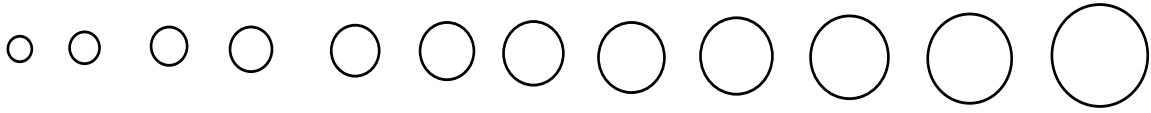
4 wood blocks

2 retainer clips

3 drill bit extensions

1 tool kit

**ACTUAL DRILL SIZES**



DIAMETER: INCHES/(METRIC)

1/8"	5/32"	3/32"	7/32"	1/4"	9/32"	5/16"	11/32"	3/8"	13/32"	7/16"	1/2"
3-1mm	4mm	5mm	5-5mm	6mm	7mm	8mm	9mm	9-5mm	10mm	11mm	12-5mm

CAPACITY: INCHES/(METRIC)

1"	1-1/8"	1-1/2"	1-3/4"	2"	2"	2"	2"	2"	2"	2"	2"
25mm	25mm	35mm	40mm	50mm	50mm	50mm	50mm	50mm	50mm	50mm	50mm

## TROUBLESHOOTING

### PROBLEM

1) Drill heads  
won't come down

### POSSIBLE SOLUTIONS

- a) Check motor rotation of drive shaft with arrow on motor. Switch two wires of the incoming electrical cable to correct rotation.
- b) Relief valve may need adjusting. Contact the Baum Dealer where you purchased your D3 drill for assistance.

2) Spindles stall

- a) Dull drills, sharpen or replace
- b) Check for low voltage
- c) Check for belt drive tightness
- d) Check for plugged drill bits

3) Drill head won't  
come back up

- a) Check for broken lift springs. Contact the Baum Dealer where you purchased your D3 drill for assistance.
- b) Oil guide shafts and pry up head

4) Insufficient  
hydraulic pressure

- a) Check oil level
- b) Check voltage
- c) Check relief valve. Contact the Baum Dealer where you purchased the D3 drill for assistance.

5) Frequent drill  
bit breakage

- a) Dull drills; sharpen. Or replace
- b) Use drill extensions
- c) Cutting too deep in wood blocks, reset properly
- d) Excessive wobble of bits, replace spindles
- e) Drill less stock height (covered stock)
- f) Clean out drill bits after end of each use.