

Drill Press Safety



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Mr. Rieger
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Objectives

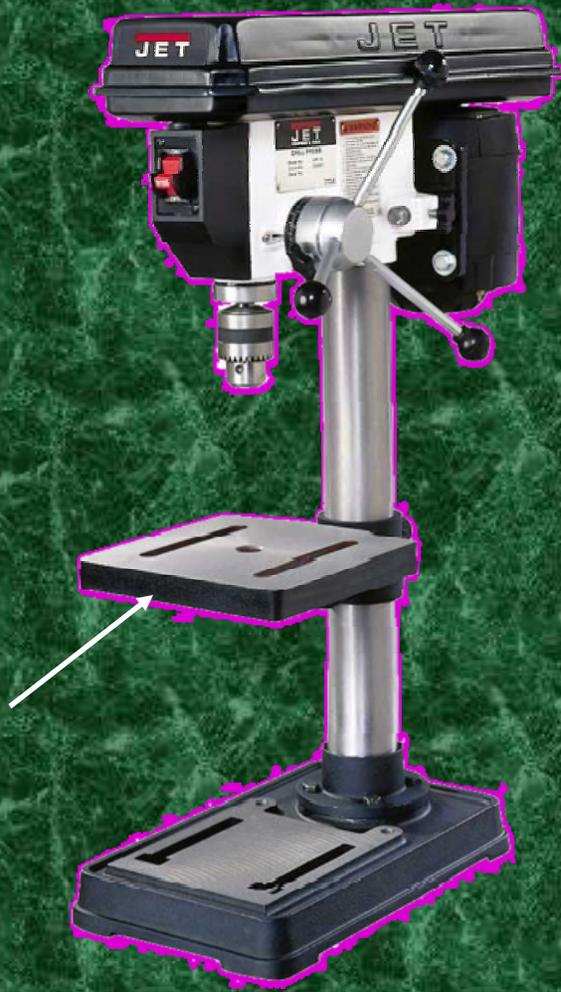
- **Given a diagram of a drill press, students will be able to identify parts of the machine with complete accuracy.**
- **Given the first part of each sentence, students will be able to complete the statement which shows their knowledge of each of the ten drill press safety rules with complete accuracy.**

Parts of the Drill Press



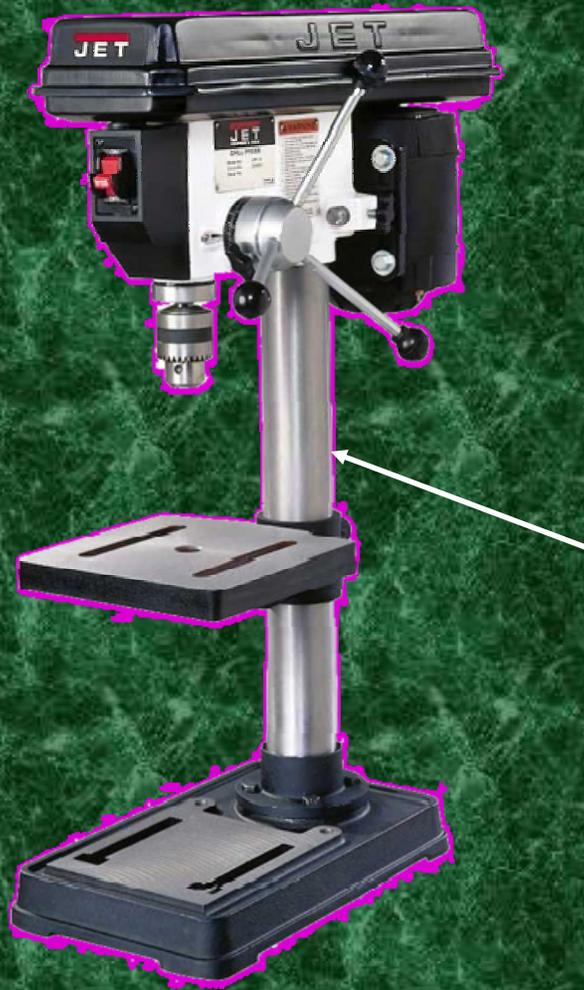
- **On/Off Switch**
 - Most important part to know
 - Newer drill presses will be marked with green and red buttons
 - It should always be found on the same side of the machine that you work on

Parts of the Drill Press



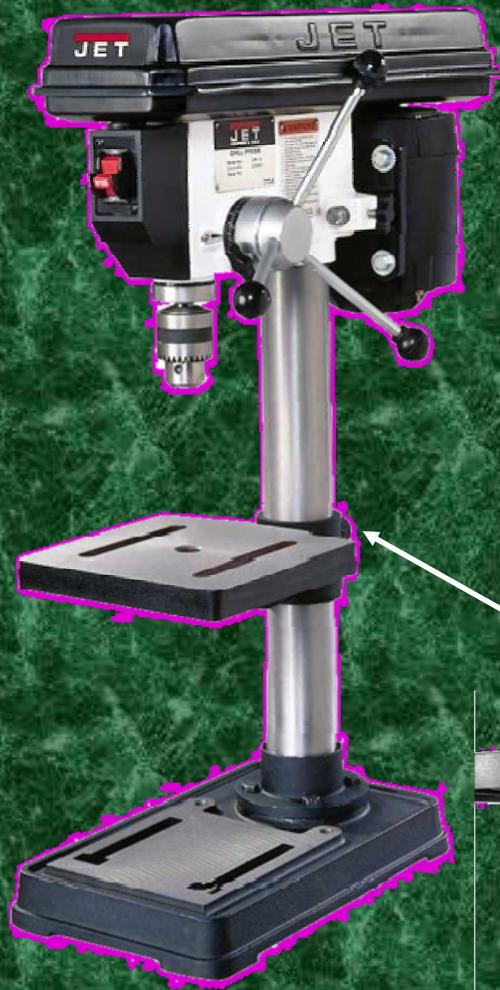
- **Tilting Table**
 - It is a work surface
 - A work piece or jig can be clamped to it
 - It is adjustable for drilling holes at an angle

Parts of the Drill Press

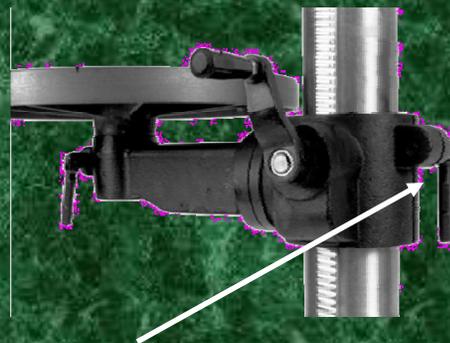


- **Column**
 - It is the support for the machine
 - It allows the table to be mounted at a different height

Parts of the Drill Press



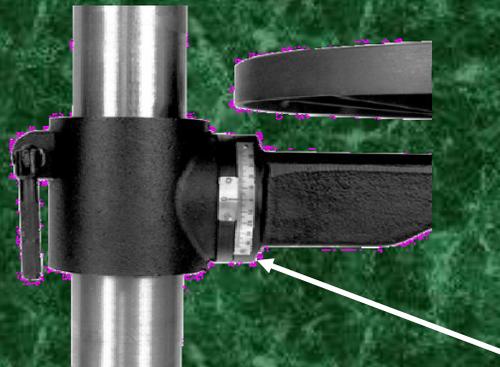
- **Table Locking Clamp or Crank**
 - Locking clamps require manual lifting and lowering of the table before tightening
 - Cranks lift and lower the table by turning a handle that moves on a strip of teeth on the backside of the column



Parts of the Drill Press



- **Index Pin**
 - Allows the adjustment of drill angle by changing the angle of the table
 - There may be a dial that indicates the angle of the table



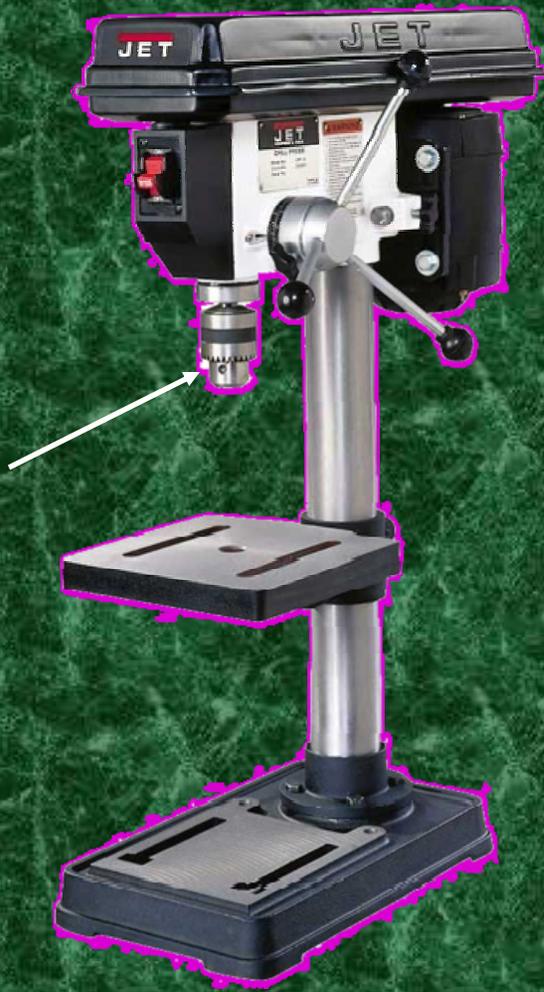
Parts of the Drill Press



- **Safety Guard**

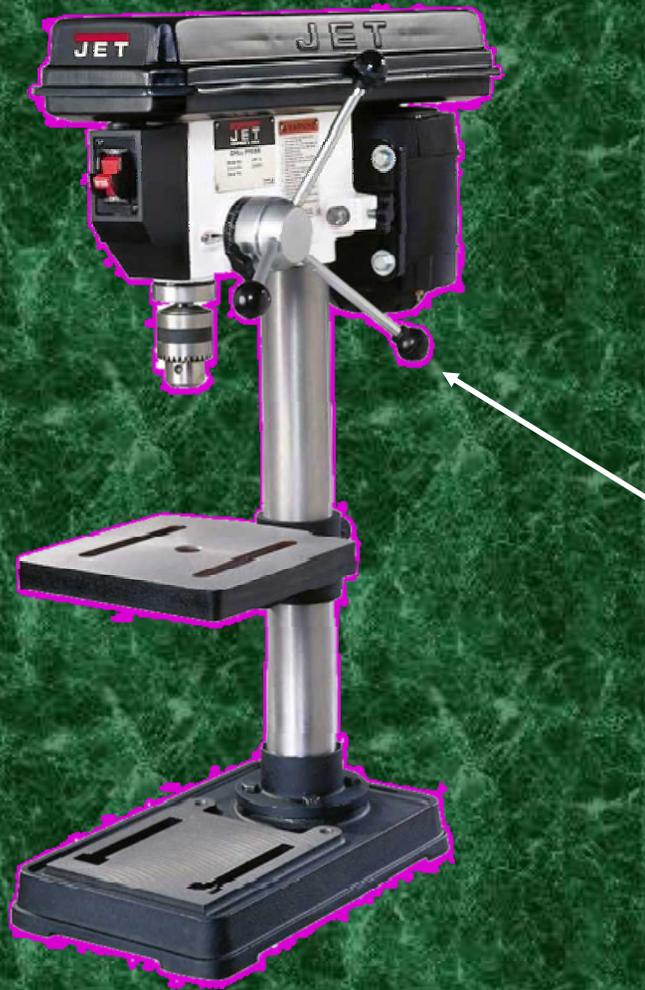
- It provides a shield against belts and pulleys that transfer work from the motor to the drill
- It can be removed for maintenance and cleaning when the machine is turned off

Parts of the Drill Press



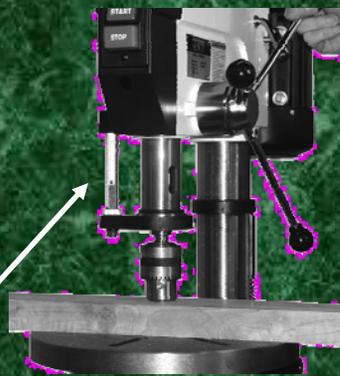
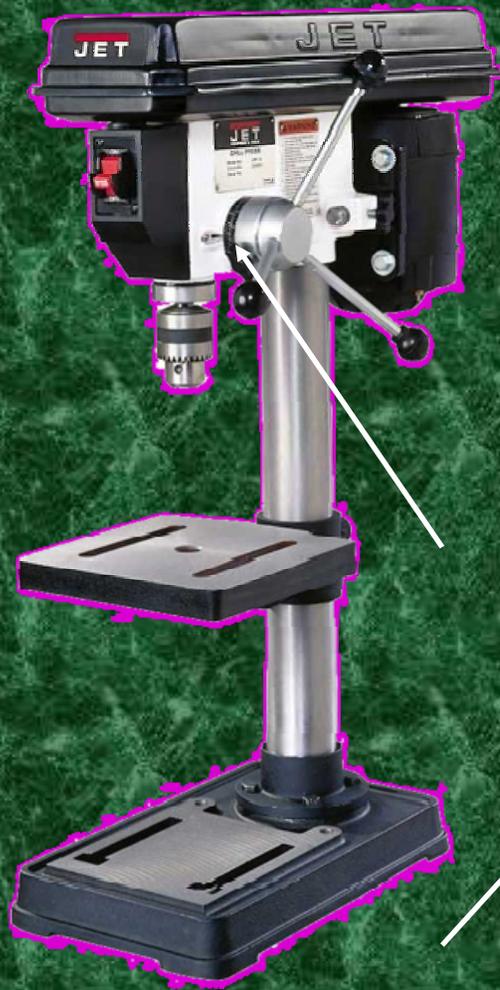
- **Key Chuck**
 - Locks in the desired drill bit type and size with the use of a key
 - In some drill presses, the key chuck can be removed to handle larger drill bits

Parts of the Drill Press



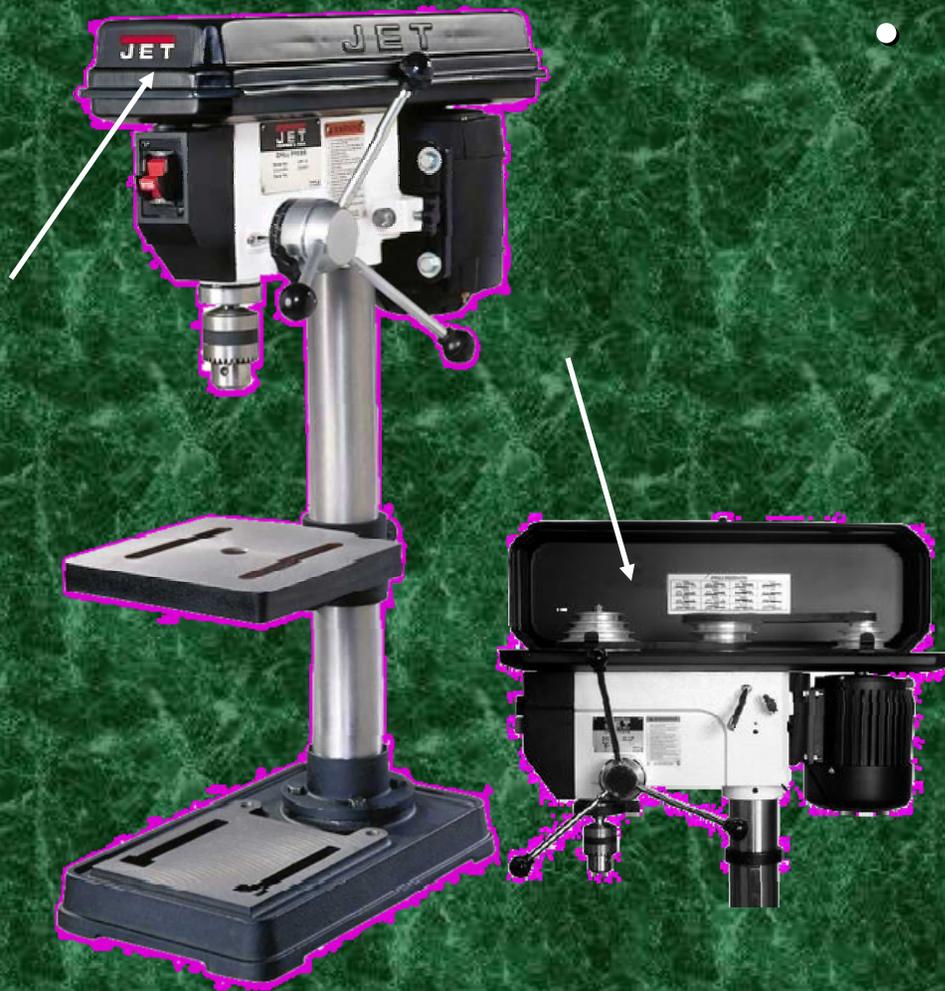
- **Universal Feed Lever**
 - Controls the rate of speed to which the drill bit enters the work piece
 - Rotating it the opposite direction lifts the drill bit back out of the work piece

Parts of the Drill Press



- **Depth Stop or Depth Guide**
 - Depth stops can be adjusted ahead of time to stop the drill bit from going past the desired depth of hole
 - Depth guide requires one to set a starting point and visually watch for the desired depth on a dial

Parts of the Drill Press



- **Speed Adjustment**
 - Some speed adjustments have a dial on the front that changes the speed automatically
 - Some speed adjustments require that the safety guard be removed so that belts can be changed to different pulley ratios

SPINDLE SPEEDS IN R.P.M.			
200	290	350	430
500	580	640	720
800	870	1440	1630
1820	2380	2540	3630

Speed & Pulley Chart

Drill Press Safety Rules

- Check the speed setting to see that it is correct for your work; holes over $\frac{1}{2}$ in. should be bored at the lowest speed.
- Only use a type of bit that is approved by the instructor. Drill bits with feed screws or are excessively long should not be used.
- Mount the bit so that it is secure and to the full depth of the chuck and in the center.
- After mounting the bit, remove the key from the chuck.
- Position the table and feed stroke to avoid having the drill bit strike the table.

Drill Press Safety Rules (cont.)

- The work should be placed on a wood pad when drilling holes all the way through.
- Work that will be used by hand should be center punched.
- Small or irregular shaped pieces should be clamped to the table or held securely in a jig.
- The drill bit will overheat if it is not fed slowly and withdrawn frequently to clear shavings and get air.
- When using jigs or fixtures, always have an instructor inspect it before turning on the power.

Parts of the Drill Press Review



Drill Press Safety Rules Review

- Check the speed setting to see
 - that it is correct for your work; holes over $\frac{1}{2}$ in. should be bored at the lowest speed.
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 - secure and to the full depth of the chuck and in the center.
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 - the key from the chuck.
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Drill Press Safety Rules Review

- The work should be placed on a wood pad when
 - drilling holes all the way through.
- Work that will be used by hand should be
 - center punched.
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 - fed slowly and withdrawn frequently to clear shavings and get air.
- When using jigs or fixtures, always
 - have an instructor inspect it before turning on the power.

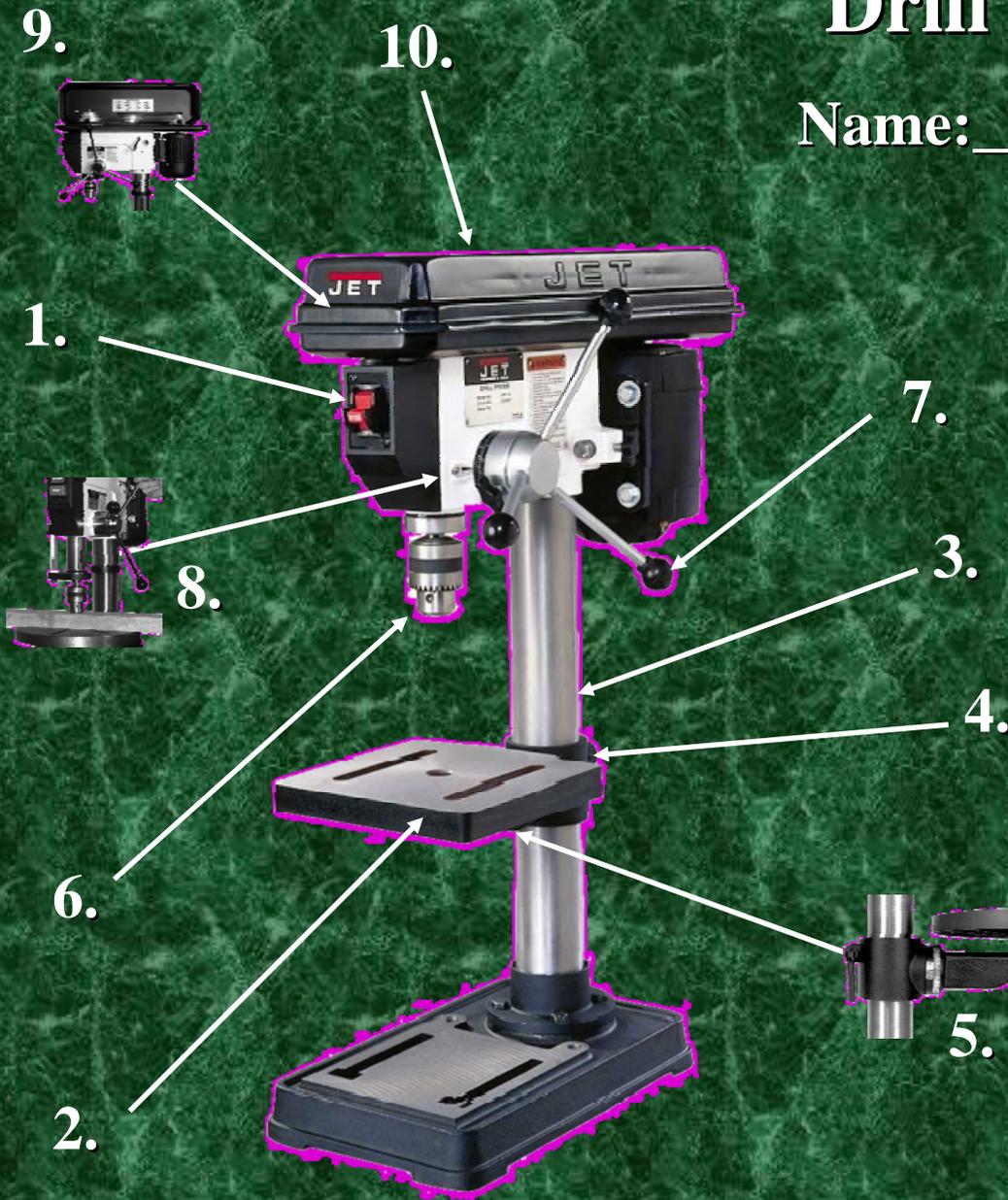
Drill Press Safety



End of Presentation

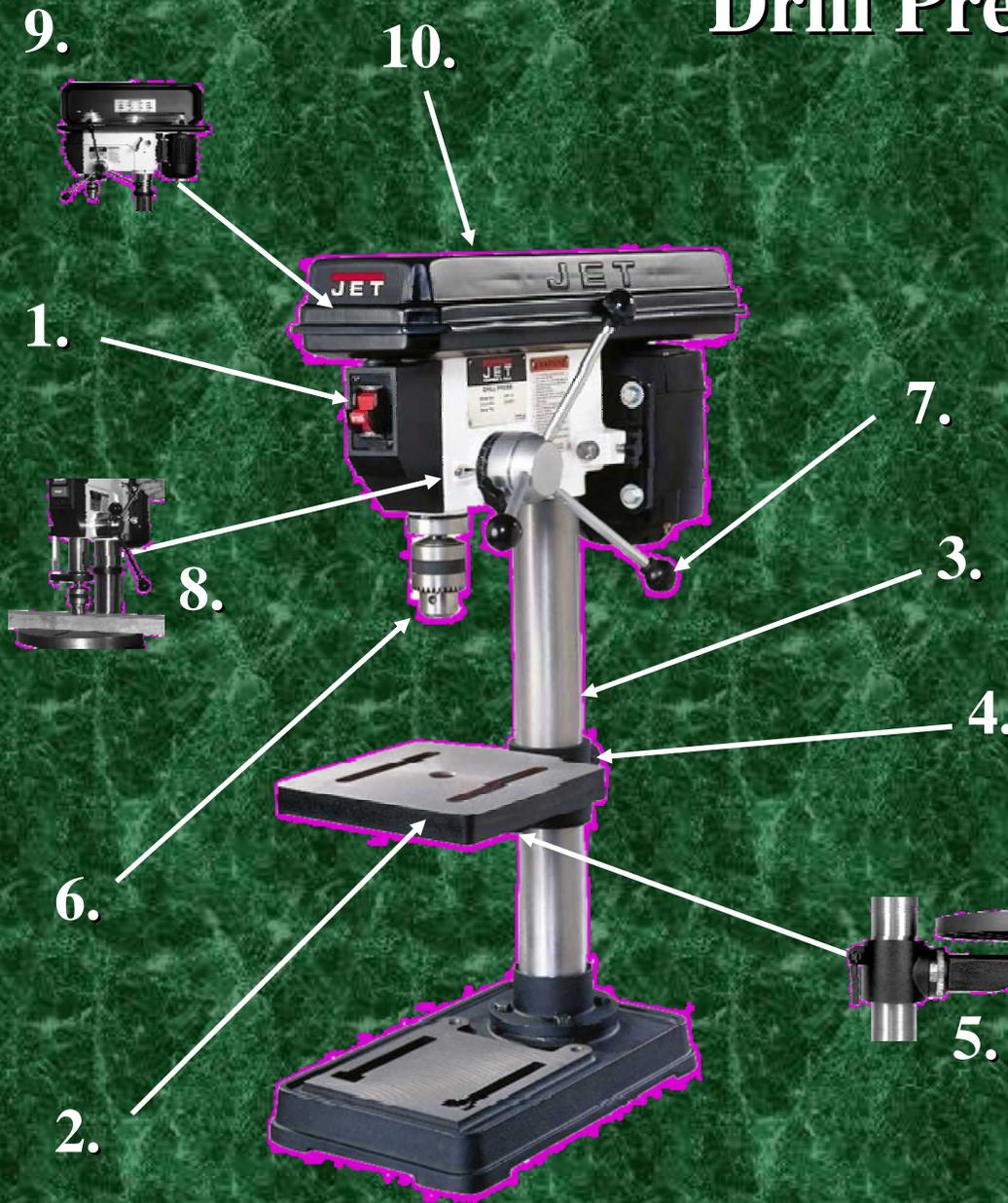
Drill Press Exam- Part 1

Name: _____



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Drill Press Exam- Part 1 Key



1. On/Off Switch
2. Table
3. Column
4. Table Locking Clamp
5. Index Pin
6. Key Chuck
7. Universal Feed Lever
8. Depth Stop
9. Speed Adjustment
10. Safety Guard

Drill Press Exam- Part 2

Name: _____

Complete the sentences so that you demonstrate knowledge of drill press safety rules.

- Check the speed setting to see:

— _____

- Only use a type of bit that is:

— _____

- Mount the bit so that it is:

— _____

- After mounting the bit, remove

— _____

- Position the table and feed stroke to avoid

— _____

Drill Press Exam- Part 2 (cont.)

Name: _____

Complete the sentences so that you demonstrate knowledge of drill press safety rules.

- The work should be placed on a wood pad when

— _____

- Work that will be used by hand should be

— _____

- Small or irregular shaped pieces should be

— _____

- The drill bit will overheat if it is not

— _____

- When using jigs or fixtures, always

— _____

Drill Press Exam- Part 2 Key

- Check the speed setting to see
 - that it is correct for your work; holes over $\frac{1}{2}$ in. should be bored at the lowest speed.
- Only use a type of bit that is
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- Mount the bit so that it is
 - secure and to the full depth of the chuck and in the center.
- After mounting the bit, remove
 - the key from the chuck.
- Position the table and feed stroke to avoid
 - having the drill bit strike the table.

Drill Press Exam Key- Part 2 (cont.)

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 - drilling holes all the way through.
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 - center punched.
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 - clamped to the table or held securely in a jig.
- The drill bit will overheat if it is not
 - fed slowly and withdrawn frequently to clear shavings and get air.
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