Operating Instructions and Parts Manual
20-Inch Smart Drill Press
Model JDP-20S

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Part No. M-JT1-2060
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1.0 Table of Contents

Section **Page**

2.0 **Safety Warnings**

1. Read and understand the entire owner's manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with these warnings may cause serious injury.
3. Replace the warning labels if they become obscured or removed.
4. This drill press is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a drill press, do not use until proper training and knowledge have been obtained.
5. Do not use this drill press for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. The drill press should be placed in a dry area, with a level floor and good lighting. Provide enough space around drill press to allow for operations and any adjustments or servicing.
7. To prevent the drill press from tipping over, secure the base to the floor. If you can't secure to the floor, secure the base to a piece of plywood large enough to prevent tipping from side to side and front to back. The plywood base should be a minimum of 3/4" thick.
8. Do not install this machine on a mobile base. A mobile base can cause a tip-over hazard that will damage the machine and could result in injury to the user or people nearby.
9. Always wear approved safety glasses/face shields while using this drill press. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
10. Before operating this drill press, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do not wear gloves.
11. Wear ear protectors (plugs or muffs) during extended periods of operation.
12. Do not operate this machine while tired or under the influence of drugs, alcohol, or any medication.
13. Make certain the Main Power Switch is in the OFF position before connecting the machine to the electrical power supply.
14. Make certain the machine is properly grounded.
15. Make all machine adjustments or maintenance with the machine unplugged from the electrical power source.
16. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
17. Do not start the drill press while the cutting tool is in contact with the workpiece.
18. Before drilling, secure workpiece firmly against table and make sure table is locked.
19. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. Provide adequate space surrounding work area and non-glare, overhead lighting.
21. Keep the floor around the machine clean and free of scrap material, oil, and grease.
22. Keep visitors a safe distance from the work area. Keep children away.
23. Make your workshop child proof with padlocks, master switches or by removing starter keys.
24. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
25. Maintain a balanced stance at all times so that you do not fall into the bit or other moving parts. Do not overreach or use excessive force to perform any machine operation.
26. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.
27. Do not use this machine for drilling hardened steel, such as high carbon steel, tool steel, high hardness metal parts, or stainless steel. The table will not accommodate a cooling system needed to drill these metals. The steel settings in the user interface are appropriate for medium to low carbon steel.
28. Use recommended accessories. Improper accessories may be hazardous.

29. Maintain tools with care. Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
30. Turn off the machine before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
31. Do not stand on the machine. Serious injury could occur if the machine tips over.
32. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
33. Remove loose items and unnecessary work pieces from the area before starting the machine.
34. Don't use in dangerous environment. Don't use power tools in damp or wet location or expose them to rain. Keep work area well lighted.

Familiarize yourself with the following safety notices used in this manual:

⚠CAUTION This means that if precautions are not heeded, it may result in minor injury and/or machine damage.

⚠WARNING This means that if precautions are not heeded, it may result in serious or fatal injury.

⚠DANGER This means that if precautions are not heeded, it will result in serious or fatal injury.

3.0 About This Manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a JET JDP-20S 20" Smart Drill Press. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

This manual is not intended to be an exhaustive guide to drill press operational methods, use of jigs or after-market accessories, choice of bits or wood stock, etc. Additional knowledge can be obtained from experienced users or trade articles. Whatever accepted methods are used, always make personal safety a priority.

If there are questions or comments, please contact your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

Register your product using the mail-in card provided or register online:

www.jettools.com/product-registration

To quickly reach the product registration webpage, scan the QR code below.

⚠WARNING Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

4.0 Quick Start Guide

Follow the instructions in this Quick Start Guide to assemble and operate the Smart Drill Press quickly. Follow all safety information in *Section 2.0 Safety Warnings*. Read and understand this entire owner's manual for detailed information on setup and assembly, electrical connections, adjustments, operating controls, using touch screen control panel, operation, maintenance, and troubleshooting.

⚠WARNING

Do not connect drill press to electrical power source until machine has been fully assembled.

4.1 Assembly and Electrical Connection

Follow the instructions in *Sections 6.0 Setup and Assembly,* and *7.0 Electrical Connections* provide in this manual.

4.2 Quick Start Operation

For in-depth information on operating this machine, follow the instructions in *Sections 9.0 Operating Control, 10.0 Using Touch Screen Control Panel,* and *11.0 Operation*.

Power the Machine On:

Locate the Main Power Switch on the right side of the power head. Move the switch to the ON position. The JET logo will appear on the Touch Screen Control Panel and the Home Screen will appear.

Figure 4-1: Main Power Switch

Figure 4-2: Home Screen

Front Panel Controls:

Figure 4-3: Front Panel Controls

Spindle RPM Adjustment Knob:

For quick spindle speed adjustment, use the Spindle RPM Adjustment Knob. Turn the knob counterclockwise to decrease the spindle RPM. Turn the knob clockwise to increase the spindle RPM. The spindle RPM is displayed on the Home Screen as shown in Figure 4-4.

NOTE: The spindle RPM can be adjusted in either 10-RPM increments or 100-RPM increments. Press the adjustment knob to toggle between the two before turning the knob to adjust the spindle RPM.

Home Screen Overview:

The Home Screen contains many interactive touch-controls and informational graphics. See *Section 10.1 Touch Screen Control Panel Overview* and *Section 10.2 Touch Screen Control Panel Functions* for in-depth menu operations.

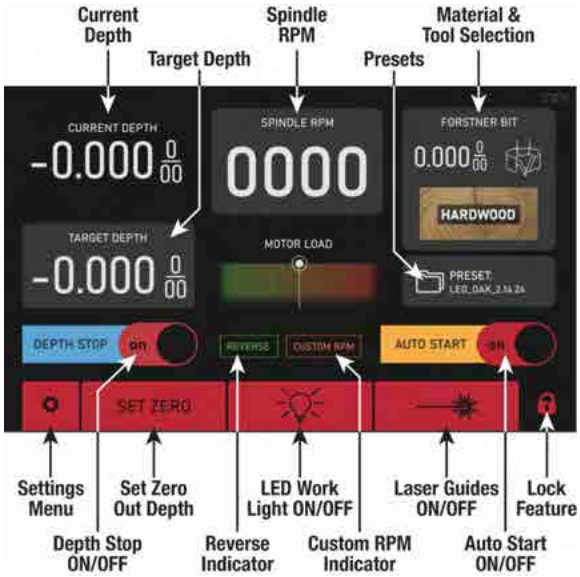


Figure 4-4: Home Screen

Select Material and Tool:

1. Touch the Material & Tool Selection area in the upper right corner of the Home Screen.

Figure 4-5: Material & Tool Selection

2. In the Material & Tool Selection menu, choose the material, the tool, and the tool diameter. The recommended spindle RPM will display on the right side of the screen. Touch CONFIRM.

Figure 4-6: Material & Tool Selection Menu

Position Material and Start Spindle Rotation:

1. Secure your workpiece on the table. Press the green Start Button under the Touch Screen Control Panel on the front of the power head. The spindle will start rotating.

Figure 4-7: Green Start Button

Drill and Monitor:

1. Using the down-feed handles, slowly lower the spindle to drill. Monitor the process and adjust as needed.

Figure 4-8: Down-Feed Handles

Stop Spindle Rotation:

When drilling operation is completed, raise the down-feed handles. Press the red Stop Button to stop the spindle rotation.

Figure 4-9: Red Stop Button

4.3 Additional Quick Start Information

Settings Menu:

Choose various system and machine settings using the Settings Menu. See *Section 10.2.1 Settings Menu.*

Custom Presets:

You may save up to 15 custom presets from the Material & Tool selections. See *Section 10.2.3 Preset Library.*

Adjusting Spindle RPM:

You can manually adjust the spindle RPM by either using the Touch Screen Control Panel or the Spindle RPM Adjustment Knob on the front of the power head. See *Section 10.2.4 Spindle RPM.*

5.0 **Specifications**

Model Number	JDP-20S
Stock Number	JT1-2060

Motor and Electricals:

Motor Type	BLDC
Horsepower	1.5 HP
Phase	Single
Voltage	120/240V
Cycle	60Hz
Listed Full Load Amps (at 3000 RPM)	120V: 13 A / 240V: 6.5 A
Starting Amps (at 3000 RPM)	120V: 1.76 A / 240V: 1.48 A
Starting Amps (at 150 RPM)	120V: 0.36 A / 240V: 0.64 A
Running Amps (at 3000 RPM)	120V: 1.66 A / 240V: 1.08 A
Running Amps (at 150 RPM)	120V: 0.35 A / 240V: 0.61 A
Power Transfer	Motor Direct Drive
On/Off Switch	Push Button with Safety Key, Paddle Stop
Spindle RPM	Continuously Variable 150 to 3000 RPM
Power Cord	14 AWG, 6.5 ft. (198cm)
Power Plug Installed	115V, 15A with ground
Recommended Circuit Size [1]	20A
Sound Emission [2]	80dB at 39" (1m) without load
Laser System	Class II

Electronics:

Touch Screen	5" Capacitive LCD Touch Screen

Head and Capacities:

Swing [3]	20" (508mm)
Chuck Style and Shank Capacity	Keyed, 5/8" (16mm)
Chuck Arbor Taper	MT-2 to JT-3
Spindle Taper	MT-2
Spindle Travel, Maximum	6" (152 mm)
Spindle Travel Per One Revolution of Handle	6" (152 mm)
Quill Diameter	2.6" (66 mm)
Number of Spindle Speeds	Continuously Variable
Maximum No-Load Speed Range	150 to 3000 RPM
Maximum Spindle to Table Distance	27.63" (702 mm)
Maximum Spindle to Base Distance	46.45" (1180 mm)
Maximum Chuck to Table Distance	24" (610 mm)
Minimum Chuck to Table Distance	1.5" (35 mm)
Maximum Chuck to Base Distance	42.9" (1090 mm)
Work Lamp	Integrated LED
Depth Stop Type	6", Mechanical Hard Stop

Materials:

Head	Cast Iron
Table	Precision-Ground Cast Iron
Table Insert	MDF
Column	Steel
Base	Cast Iron

Table:

Table Size	20.24" L x 13.94" W (514 x 354 mm)
Table Slots (4)	3-1/8"L x 5/8" W (79 x 15 mm)
Table T-Slots (2)	3/8" W x 5/8" D (9 x 15 mm)
Distance Between T-Slots (centers)	8-7/16" (317 mm)
Table Tilt	90 deg. L and R
Table Rotation Around Column	360 deg.
Table Elevating System	Worm Gear with Rack
Table Insert	3.74" x 3.74" (95 x 95 mm)
Recommended Maximum Weight on Table	66 lb. (30 kg)

Base and Column:

Base Size	23.8” L x 15.9” W (604 x 404 mm)
Base Working Surface	11.42” L x 12.6” W (290 x 320 mm)
Base Slots (2)	5/8” W x 7-7/8” L (15 x 200 mm)
Distance Between Base Slots (centers)	5-5/16” (135 mm)
Column Diameter	3.35” (85 mm)

Dimensions and Weights:

Overall Dimensions, Assembled	24” L x 25.5” W x 71.5” H (602 x 646 x 1804 mm)
Shipping Dimensions	58.66” L x 30.31” W x 17.72” H (1490 x 770 x 450 mm)
Net Weight (approximate)	218.46 lb (99.3kg)
Shipping Weight (approximate)	275 lb (125kg)

L = length; W = width; H = height

[1] Subject to local and national electrical codes.

[2] The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

[3] Swing is twice the distance from column to spindle center (i.e., the maximum diameter of workpiece that can be drilled to its center).

5.1 **Base Mounting Holes**

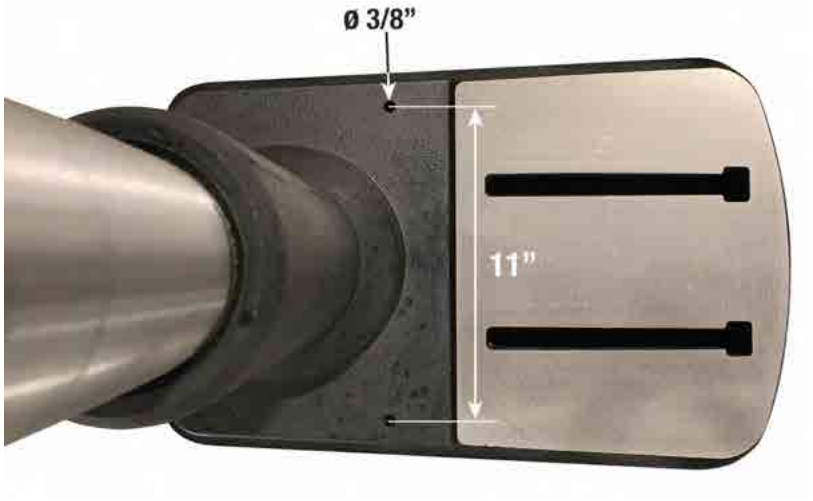


Figure 5-1: Base Mounting Holes

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

6.0 Setup and Assembly

⚠WARNING

Read and understand all assembly instructions before attempting assembly. Failure to comply may cause serious injury.

6.1 Unpacking

Separate all parts from the packing material. Check each part against *Section 6.2 Shipping Contents* and make certain that all items are accounted for before assembly. Report any shortages or shipping damage to your JET distributor. Retain the Styrofoam packing sections (1-5) as they will be used when assembling this machine. After assembly, discard.

Exposed metal surfaces have been factory-coated with a protectant. Remove this with a soft rag moistened with a light solvent, such as kerosene or WD-40®. Do not use an abrasive pad, and do not use gasoline, paint thinner, or acetone. They will damage plastic components and painted surfaces.

After assembly, exposed metal surfaces on the drill press should be periodically coated with a light application of paste wax or another rust-protectant.

6.2 Shipping Contents

Refer to Figure 6-1.

1 Headstock Assembly – A
1 Column Assembly – B
1 Base – C
1 Table and Table Bracket Assembly – D
1 Worktable Rack – E
1 Rack Ring – F
1 Worm Shaft – G
1 Table Elevating Crank Handle – H
1 Lock Handle – I
1 Drift Key – J
1 Chuck Key Seat – K
1 M6 x 12 Pan Head Screw – L
4 M10 x 45 Socket Head Cap Screws with Lock Washers and Flat Washers – M
4 Hex Wrenches (3, 5, 6, & 8mm) – N
1 Chuck – O
1 Chuck Key – P
1 Arbor – Q
1 Down-Feed Handles – R
1 USB Adaptor – S
1 Owner's manual (not shown)
1 Warranty card (not shown)

6.3 Additional Tools Required for Assembly (not provided)

• Rubber mallet (or hammer and wood block)
• Cross-point (Phillips) screwdriver

Figure 6-1: Contents of Shipping Container

6.4 Location

Locate the drill press in a dry area, with a level floor and good lighting. Provide enough space around drill press to allow for operations and any adjustments or servicing.

To prevent the drill press from tipping over, secure the base to the floor. If you can't secure to the floor, secure the base to a piece of plywood large enough to prevent tipping from side to side and front to back. The plywood base should be a minimum of 3/4" thick.

Do not install this machine on a mobile base. A mobile base can cause a tip-over hazard that will damage the machine and could result in injury to the user or people nearby.

6.5 **Assembly**

⚠WARNING

Do not connect drill press to electrical power source until machine has been fully assembled.

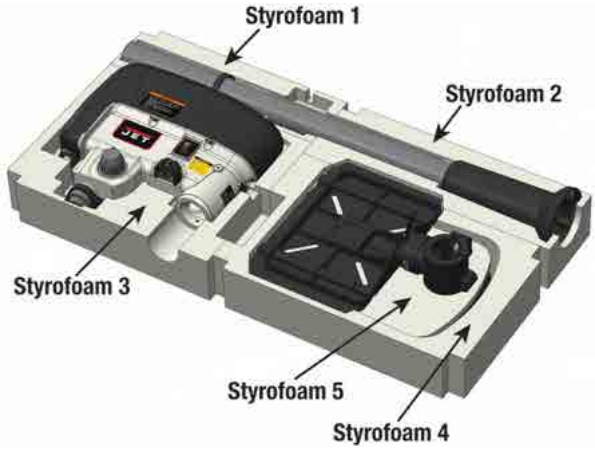


Figure 6-2: Styrofoam Packing Sections

Step 1: Install the Column Assembly to Base

1. Remove the rack ring (F) and rack (E) from the column assembly (B) (see Figure 6-3).

Figure 6-3: Remove Rack Ring and Rack

2. Lay the column assembly down on Styrofoam section 2 as shown in Figure 6-4. Make sure the column base flange is hanging off, but near the edge of the Styrofoam.
3. Align the mounting holes in the base (C) with the mounting holes in the column base flange. Place one lock washer and one flat washer on each of four M10 x 45 socket head cap screws (M). Insert and tighten the four M10 x 45 socket head cap screws using an 8mm hex wrench. See Figure 6-4.

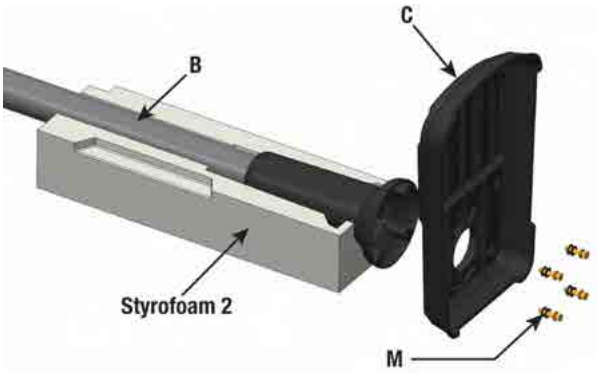


Figure 6-4: Mounting Base

Step 2: Install the Worm Gear and Rack to Table Bracket

1. Install the worm shaft (G) through the hole in the table bracket (see Figure 6-5). Make sure it meshes with the gear in the table bracket.

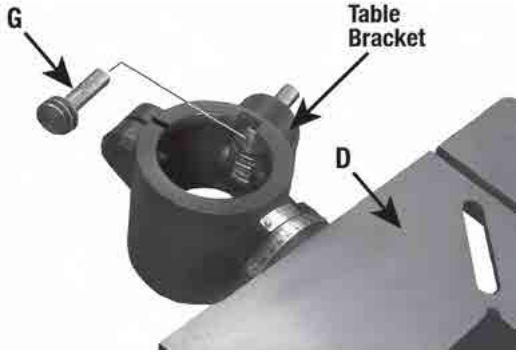


Figure 6-5: Install Worm Shaft

2. Insert the worktable rack (E, Shipping Contents) into the slot in the table bracket. Make sure the longer flat portion of the rack is on the headstock side of the table bracket and short flat portion is on the base side of the bracket. Make sure the teeth of the rack align with the teeth of the gear in the table bracket.
3. Place the table/rack assembly onto Styrofoam 1 as shown in Figure 6-6.

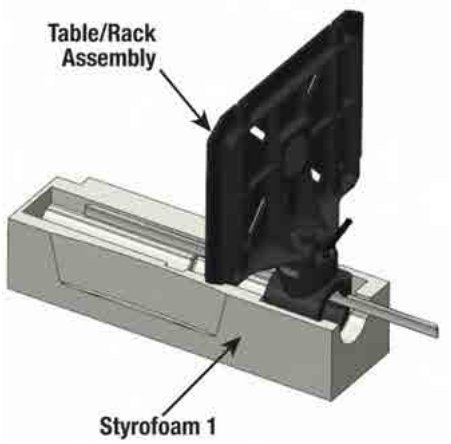


Figure 6-6: Table/Rack Assembly in Styrofoam 1

Step 3: Install the Table/Rack Assembly to Column/Base Assembly

1. Position and align the table/rack assembly with the column/base assembly as shown in Figure 6-7.

Figure 6-7

2. Slide the table/rack assembly down the column until the lower end of the rack seats in the lip of the column foot.
3. Stand the column/base assembly upright.
4. Place the rack ring (F) over the top of the column and slide it down over the top end of the rack. Tighten the 3mm set screw to secure the rack ring in place. See Figure 6-8.

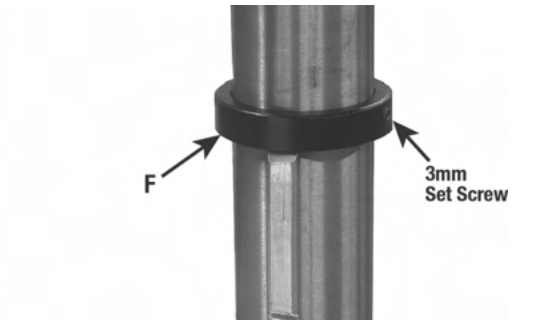


Figure 6-8

5. Install the table elevating crank handle (H) to the worm shaft using the 3mm hex wrench. Install the lock handle (I) to the table bracket. See Figure 6-9.

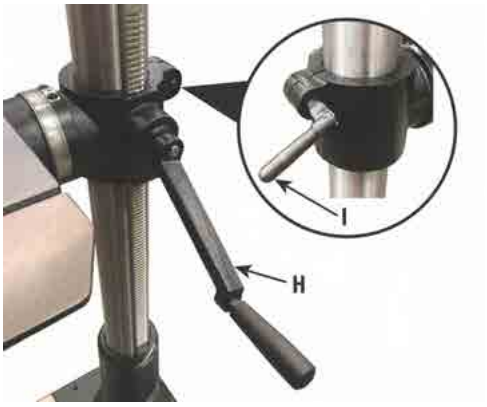


Figure 6-9

6. Crank the table to the highest position and tighten the lock handle.

Step 4: Install the Headstock to the Column Base

1. Lay the table/column assembly down on Styrofoam 2, as shown in Figure 6-10.
2. Place the headstock (A) in Styrofoam 3 with the control panel facing up, as shown in Figure 6-10.

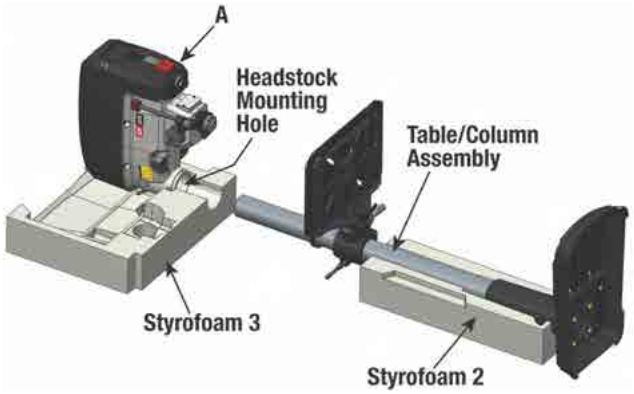


Figure 6-10

3. Align the headstock mounting hole with the column top. Move the top of the column into the headstock mounting hole while supporting the headstock position. Make sure the headstock remains vertically aligned with the base. Secure the headstock assembly to the column by tightening the two set screws on the left side of the headstock using a 5mm hex wrench.
4. Carefully stand the machine upright.

Step 5: Final Installation Steps

1. Install the three down-feed handles (R) into the hub by screwing them in completely (see Figure 6-11).

Figure 6-11

2. Attach the chuck key seat (K) to the rack ring as shown in Figure 6-12.

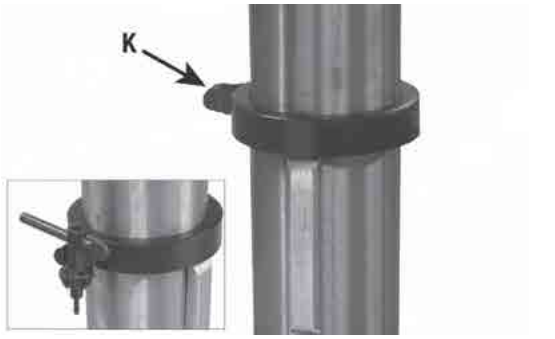


Figure 6-12

3. Thoroughly clean spindle, arbor (Q), and chuck (O) (Figure 6-13) with a soft rag and solvent, such as mineral spirits.

   Important: These three pieces must be free of any rust protection, or lubricant. Any grease or residue in these areas can cause the pieces to separate, creating a safety hazard and potential damage to the tool.

4. Lower the table out of the way of the spindle area.

5. Slide arbor (Q) up into spindle. Turn the arbor as you push it, until the tang engages the slot in the spindle.

6. Push chuck (O) onto arbor.

7. Twist the chuck to completely retract the chuck jaws if they are exposed.

8. Use a rubber mallet or a steel hammer against a wood block to sharply tap the bottom of the chuck (two or three times) to seat the chuck/arbor assembly.

⚠CAUTION **Do not use a steel-faced hammer directly against the chuck. Damage to the chuck could occur.**

Figure 6-13

6.6 Chuck Key Storage

The chuck key can be stored in the chuck key seat on the rack ring (see Figure 6-12).

7.0 Electrical Connections

⚠WARNING

Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.

Before connecting to power source, be sure Main Power Switch is in *OFF* position and the safety key is removed (see *Section 9.1.1 Safety Key*).

This machine should be connected to a dedicated 20-amp circuit with a 20-amp circuit breaker or time-delay fuse marked "D". **Local codes take precedence over recommendations.**

7.1 Grounding Instructions

This machine must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation that is green, with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

⚠WARNING

Check with a qualified electrician or service person if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded. Failure to comply may cause serious or fatal injury.

For 115V Operation

This machine is manufactured for use on a 115V circuit. You must use a grounded outlet that matches the machine's electrical cord plug, as shown in Figure 7-1.

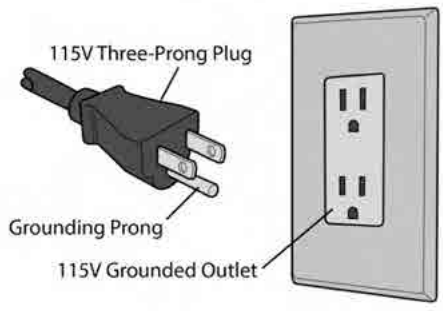


Figure 7-1: 115V Connection

If the outlet is not a properly grounded three-pole receptacle, do not use a temporary adaptor. Have a properly grounded three-pole receptacle installed by a qualified electrician.

For 230V Operation

This machine can accept either a 115V or 230V supply power. The machine will automatically compensate for the supply power voltage used. To convert this machine to 230V operation, you only need to replace the 115V power cable with a 230V power cable (not supplied). You must use a grounded outlet that matches the 230V power cable plug, as shown in Figure 7-2.

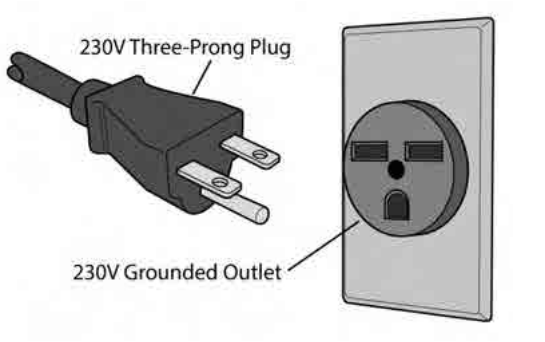


Figure 7-2: 230V Connection

7.2 Extension Cords

The use of extension cords is discouraged. If possible, position your machine within reach of the power supply. If an extension cord becomes necessary, use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

Do not use a damaged or worn extension cord. Repair or replace before use.

Use Table 1 as a general guide in choosing the correct size cord. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Recommended Gauges (AWG) of Extension Cords

Amp Rating		Volts	Total length of cord in feet			
More Than	Not More Than	120 240	25 50	50 100	100 200	150 300
			AWG			
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

Table 1

8.0 Adjustments

8.1 Tools Needed for Adjustments

- 24mm Hex wrench
- Rubber mallet

8.2 Table Movement

8.2.1 Table Raising and Lowering

Refer to Figure 8-1.

Loosen column lock handle (A). Turn table elevating crank handle (B) to raise or lower table along column rack (C). Re-tighten lock handle (A) before attempting to drill.

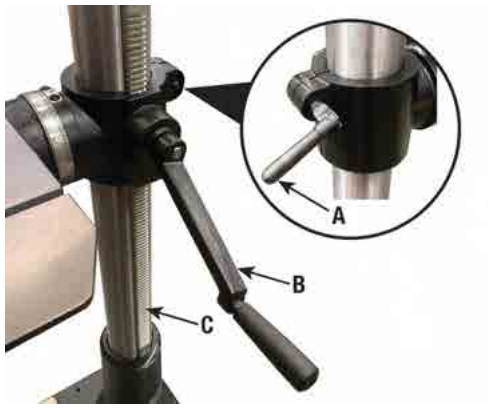


Figure 8-1

8.2.2 Table Repositioning

Refer to Figure 8-1.

When drilling into a long workpiece, swing table out of the way and use drill press base as your table. Slots in the base can be used to mount work holding devices.

1. Loosen column lock handle (A).
2. Swing table around the column. If rack (C) tends to bind, you will need to nudge the top or bottom end of the rack around the column while swinging table.
3. Tighten column lock handle (A).

8.2.3 Table Tilting

Refer to Figure 8-2.

1. Loosen hex cap screw (E) with 24mm hex wrench.
2. When the table is in the normal (flat) 0° angle, there is a tab the alignment pin engages. Disengage the alignment pin by turning the alignment pin handle (D) counterclockwise until the pin clears the tab.
3. Tilt the table to the desired angle. Use the angle scale to determine the angle.
4. Tighten hex cap screw (E).

5. The alignment pin only works at 0°. At other angles, the alignment pin will remain disengaged. When the table is returned to 0°, engage the alignment pin by turning the alignment pin handle (D) clockwise.

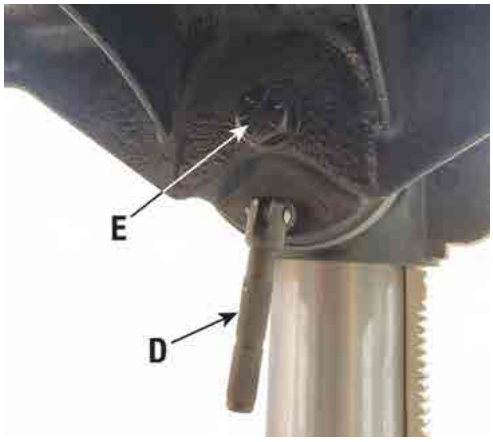


Figure 8-2

8.3 Table Insert Leveling

Refer to Figure 8-3.

The insert should be flush with the table surface:

1. Remove the two screws beneath table insert (F).
2. Loosen any of the nuts (G). Using a hex wrench, rotate the screws (H) as needed until the insert is level with the table surface.

   TIP: A straight edge clamped to the table and across the insert will facilitate correct leveling during this procedure.
3. Tighten all four nuts (G).
4. The two screws (F) may be reinstalled, if desired, to retain insert in position.

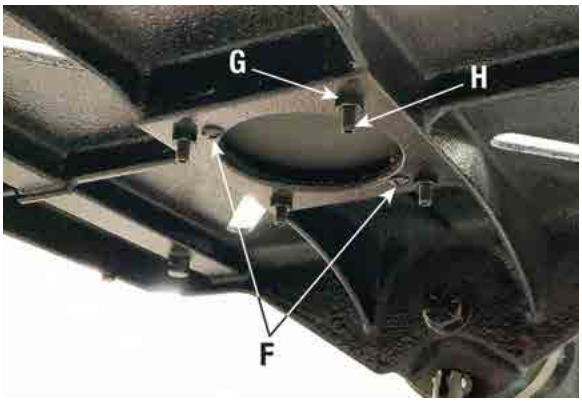


Figure 8-3

8.4 Table Slots

The table has four through-slots and two T-slots, for attaching clamps, fence, or other accessories.

8.5 Chuck and Arbor Removal

Refer to Figure 8-4.

1. Disconnect machine from power source.
2. Lower the table to clear the chuck area.
4. Lower quill assembly with the down-feed handles to expose slot. Rotate spindle by hand to align the slot in the spindle with the slot in the quill.
5. Insert drift key (J) into the aligned slots and tap lightly with a rubber mallet. The chuck and arbor assembly should fall from the spindle.

⚠CAUTION **Prepare to catch the chuck and arbor as it drops. Striking the floor could damage tool.**

Figure 8-4

8.6 Installing Bits

The chuck accepts bits with a 5/8” or smaller shank.

1. Insert bit (not provided) into chuck jaws with about 1” insertion. When using a small bit, do not insert it so far that the jaws touch the flutes of the bit.
2. Make sure bit is centered in chuck before tightening chuck.
3. Turn chuck key clockwise to tighten chuck jaws. See Figure 8-5. NOTE: Insert chuck key into each of the three holes in the chuck and tighten to ensure tightness of each jaw.
4. The chuck key has a spring-loaded pin to prevent it being left in the chuck. However, always check the area and clear away any tools before starting the drill press.
5. Turn chuck key counterclockwise to loosen chuck jaws and remove bit.

Figure 8-5

8.7 Depth Stop

The depth stop is used for repetitive drilling of holes of identical depth.

The depth stop can be set manually using the mechanical depth stop on the left side of the machine or digitally using the Touch Screen Control Panel.

8.7.1 Mechanical Depth Stop

Mechanical depth stop can be established by one of two procedures:

Mechanical Depth Stop Method #1:

Refer to Figures 8-6 through 8-9.

1. Press quick release button (K) on upper quick nut (L) and move nut to the top of the depth stop gauge. Press quick release button on lower quick nut (M) and move nut to the bottom of the depth stop gauge.

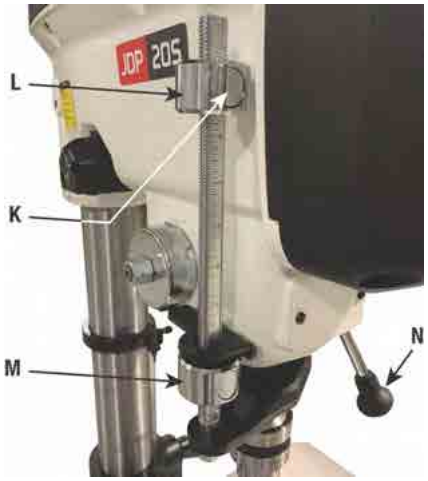


Figure 8-6

2. Use down-feed handles (N) to lower the bit until it just contacts the top surface of workpiece, as shown in Figure 8-7.

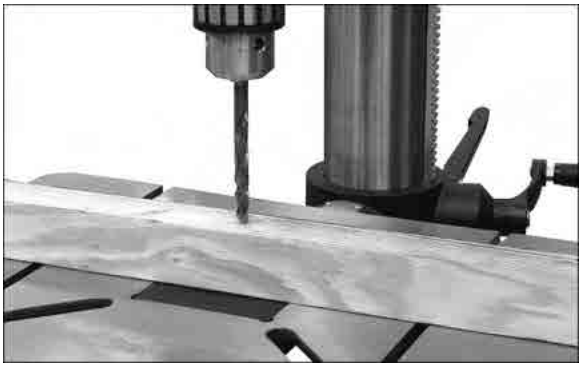


Figure 8-7

3. Hold down-feed handle in position and press the quick release button on the lower quick nut and move the nut up against the bottom of the depth stop bracket (O). Rotate the quick nut to fine tune the position. This sets the workpiece surface as your zero reference point.

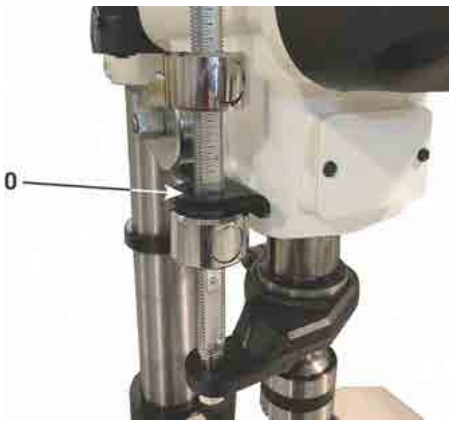


Figure 8-8

4. Move workpiece out from under bit and rotate down-feed handle to lower bit until depth stop gauge (P) reads your desired depth.

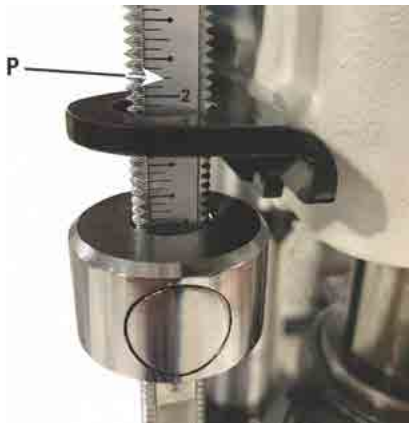


Figure 8-9

5. Hold down-feed handle in this position and press the quick release button on the upper quick nut and move it down against the top of the depth stop bracket (O). Rotate the quick nut to fine tune the position.

6. The bit can now be repeatedly lowered to the pre-set depth using the down-feed handles.

7. To release the depth stop, press the quick release buttons on the upper and lower quick nuts and move them up and down, respectively.

Mechanical Depth Stop Method #2:

Refer to Figures 8-10 and 8-11.

1. Mark the desired depth of cut on the side of the workpiece as shown in Figure 8-10.
2. Use down-feed handle to lower the bit to the mark.
3. Hold down-feed handle in this position and press the quick release button (Q) on the upper quick nut and move it down against the top of the depth stop bracket (R). Rotate the quick nut to fine tune the position.
4. The bit can now be repeatedly lowered to the pre-set depth using the down-feed handles.
5. To release the depth stop, press the quick release buttons on the upper quick nut and move the nut up.

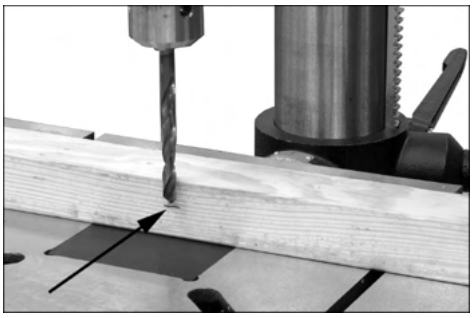


Figure 8-10

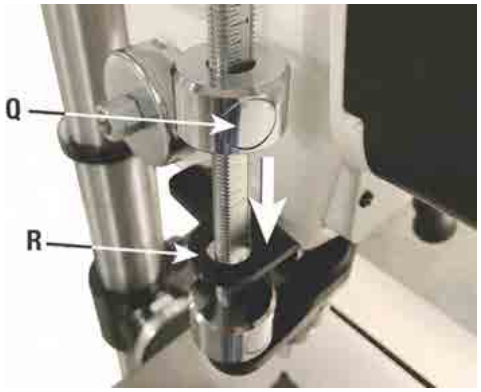


Figure 8-11

NOTE: Method #2 allows rapid, fine adjustment to the setting, as follows:

If the depth setting is found to be too shallow or too deep, rotate the upper quick nut counterclockwise to adjust the nut higher on the depth stop gauge or clockwise to adjust the nut lower.

8.7.2 Digital Depth Stop

To set up depth stop functions using the Touch Screen Control Panel, follow the steps in *Section 10.2.5 Digital Depth Stop*.

8.8 Laser Adjustment

Refer to Figures 8-12 through 8-15.

⚠WARNING

Do not look directly into the laser beam or view it directly with optical instruments. See Figure 8-12.

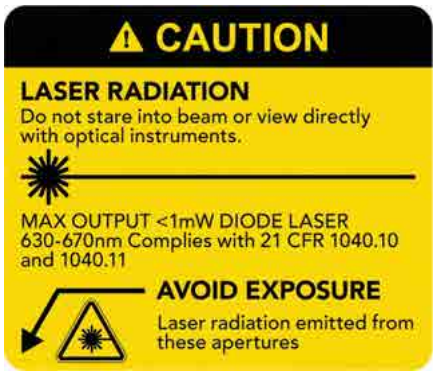


Figure 8-12

The laser guide assembly is installed and pre-set at the factory. Before operating the drill press, check the laser guide alignment and adjust if needed. Periodically checked alignment, as long-term machine vibration may cause it to become misaligned.

1. Position table at the horizontal (zero degrees on scale).
2. Insert a small drill bit into the chuck.
3. Place a scrap board flat on the table. Do not allow board to move from this position. Use clamps to secure it if needed. With the machine off, bring the bit down until it leaves a slight perforation in the board; then raise it back up.

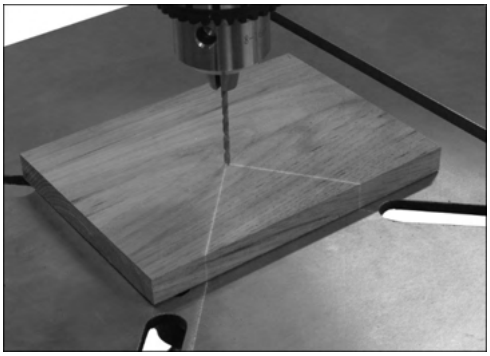


Figure 8-13

4. Move Main Power Switch to the ON position. On the Touch Screen Control Panel, touch the Laser ON/OFF button at the bottom right of the Home Screen. The button will turn red when the laser is activated.

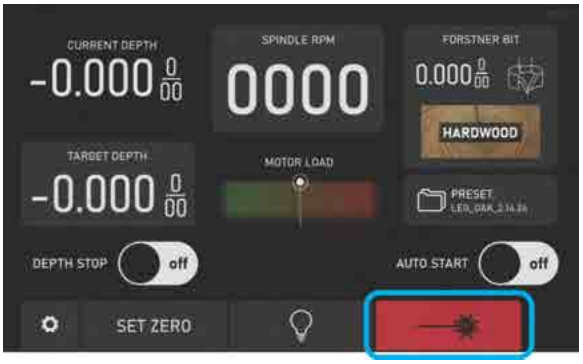


Figure 8-14

5. Use a 3mm hex wrench to adjust the right-side and left-side lasers. Adjust until the laser lines form a crosshair over the perforation in the board.

Figure 8-15

The laser is now calibrated properly, and your hole center marks can be centered under the laser crosshair for accurate drilling.

NOTE: The lasers are designed for use with twist drill bits. They will not be effective for wider tools, such as Forstner bits or sanding drums.

9.0 Operating Controls

9.1 Main Power Switch

The Main Power Switch is located on the right side of the power head. To power machine on, move switch up to ON position. To turn machine off, move switch down to OFF position.

Figure 9-1

9.1.1 Safety Key

The Main Power Switch has a safety key. The safety key can be removed when the Main Power Switch is in the OFF position. With the safety key removed, the Main Power Switch cannot be moved to the ON position.

Figure 9-2

9.2 Front Panel Controls

Figure 9-3 shows the front panel controls.

Figure 9-3

9.2.1 Green Start Push Button

After moving the Main Power Switch to the ON position. The Start Button will light up green. Press the Start Button. If Auto Start is off, the spindle will start turning. If Auto Start is on, the spindle will start turning when the spindle is lowered.

9.2.2 Red Stop Push Button

Press the red Stop Button to stop the spindle rotation if Auto Start is off or anytime and emergency stop is needed. If Auto Start is on, the spindle will stop turning when the spindle is raised.

9.2.3 Spindle RPM Adjustment Knob

The spindle RPM can be adjusted using the Touch Screen Control Panel or the Spindle RPM Adjustment Knob. Using the Spindle RPM Adjustment Knob allows for quick spindle speed adjustments. Turn the knob counterclockwise to decrease the spindle RPM. Turn the knob clockwise to increase the spindle RPM. The spindle RPM is displayed on the Home Screen as shown in Figure 9-4.

NOTE: The spindle RPM can be adjusted in either 10-RPM increments or 100-RPM increments. Press the adjustment knob to toggle between the two before turning the knob to adjust the spindle RPM.

NOTE: The spindle RPM will display in green when it matches the recommended spindle RPM for the material, tool, and tool diameter chosen in the Material & Tool Selection Menu. The spindle RPM will display in white (as shown in Figure 9-4) when another value is manually chosen. When using a custom spindle RPM, the “CUSTOM RPM” indicator icon appears on the Home Screen.

Figure 9-4

9.2.4 Touch Screen Control Panel

The Touch Screen Control Panel allows for complete control of the JDP-20S Smart Drill Press. See *Section 10.0 Using Touch Screen Control Panel* for in-depth functions and operating instructions.

10.0 Using Touch Screen Control Panel

Nearly every function and setting for this drill press is controlled using the Touch Screen Control Panel.

10.1 Touch Screen Control Panel Overview

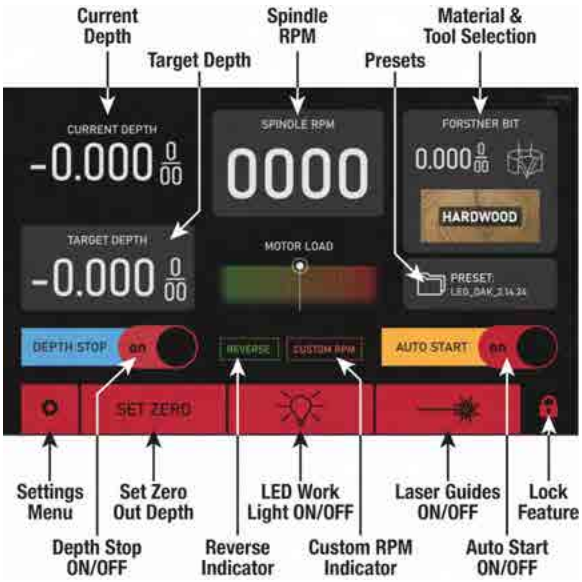


Figure 10-1

Current Depth: Displays the current spindle depth. The zero depth point can be changed using the SET ZERO button.

Target Depth: Displays current target depth when the depth stop ON/OFF button is turned on. Touch to input depth stop target depth.

Depth Stop ON/OFF: Displays if digital depth stop is on or off. Touch to turn on and off. When on, the words “DEPTH STOP” will flash blue.

Spindle RPM: Displays current spindle speed. Touch to adjust spindle RPM. Spindle RPM can also be adjusted using the Spindle RPM Adjustment Knob (see *Section 9.2.3 Spindle RPM Adjustment Knob*).

Motor Load Meter: This meter is in the center of the Touch Screen Control Panel. It monitors the machine load for optimal performance. If the motor load is high (right side of meter), adjust settings to bring the meter back towards the center or lower load areas.

Reverse: Appears if *Reverse Spindle Rotation* is turned on in the settings menu.

Custom RPM: Appears when user is not using the recommended RPM.

Material & Tool Selection: Displays current material and tool selection. Touch to select the material, tool, and tool diameter you are using. The recommended spindle RPM will be displayed and set. Choose from 7 different material types and 22 different tool types.

Presets: Save up to 15 custom presets for quick access to specific settings.

Auto Start ON/OFF: Displays if auto start is on or off. Touch to turn on and off. When on, the words “AUTO START” will flash yellow.

Settings Menu: Touch to enter the setting menu to set desired options or update firmware.

Set Zero Out Depth: Touch to reset the spindle depth to zero.

LED Work Light ON/OFF: Touch to turn LED work light on and off. When on, the button will be red and the LED work light will be on.

Laser Guides ON/OFF: Touch to turn laser guides on and off. When on, the button will be red and the laser guides will appear on the table or workpiece.

Lock Feature: The padlock icon appears when *Enable Security Pin* is turned on in the settings menu.

10.2 Touch Screen Control Panel Functions

10.2.1 Settings Menu

Touch the Settings Menu button in the lower left corner of the Home Screen to access the OPTIONS menu.

Figure 10-2

The OPTIONS menu contains options for the following machine settings:

Spindle Auto Start: Turn Spindle Auto Start on and off. The Auto Start feature allows the spindle to start turning automatically. After pressing the green Start Button, begin lowering the spindle using the down-feed handles. The spindle will automatically start turning. When raising the spindle, the spindle will automatically stop turning when the spindle nears the top.

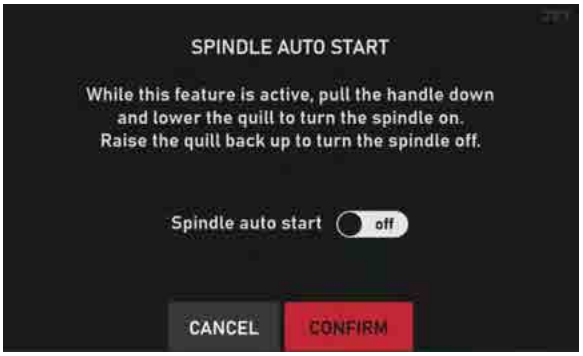


Figure 10-3

Depth Stop: Choose from four different depth stop behaviors. When DEPTH STOP is turned on (on the Home Screen), these settings determine how the spindle behaves when the target depth is reached. The four depth stop behaviors are:

- Stop
- Reverse to top
- Reverse 2 seconds then stop
- Reverse 4 seconds then stop

Figure 10-4

Depth Stop Increasing / Decreasing: Choose increasing or decreasing depth stop values.

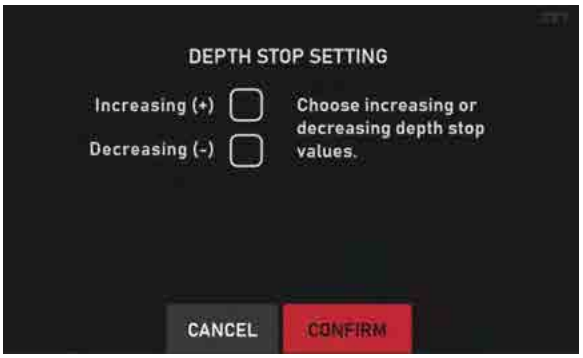


Figure 10-5

Calibration: Instructions for fine-tuning the drill touch depth stop calibration.

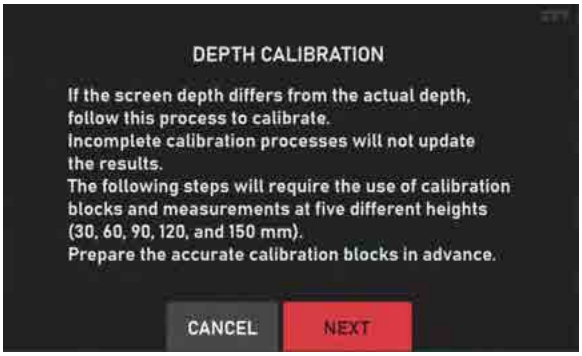


Figure 10-6

Reverse Spindle Rotation: Turn Reverse Spindle Rotation on and off. Standard spindle rotation is clockwise when viewed from above. When this is turned on, the spindle will rotate counterclockwise.

Figure 10-7

Sound: Turn system sounds and touch sound effects on and off.

Figure 10-8

Sleep: Choose from six different system sleep settings. If a sleep timer is chosen, the drill press will enter standby mode when the machine is idle for the specified time. The six setting are:

- No sleep timer
- 5 minutes
- 15 minutes
- 30 minutes
- 1 hour
- 2 hours

Figure 10-9

Brightness Adjustment: Set the touch screen brightness level that best suits the user and environment.

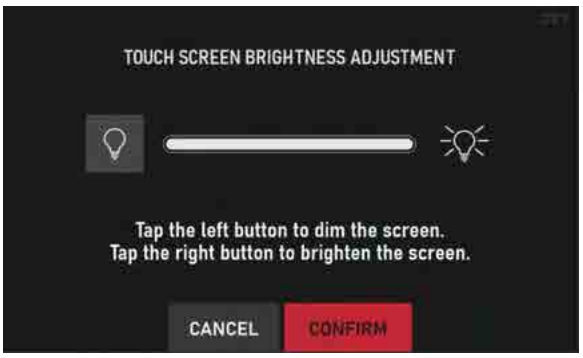


Figure 10-10

Default Units: Choose from four different measurement settings. The four settings are:

- Inches (decimals & fractions)
- Inches (decimals)
- Inches (fractions)
- Millimeters

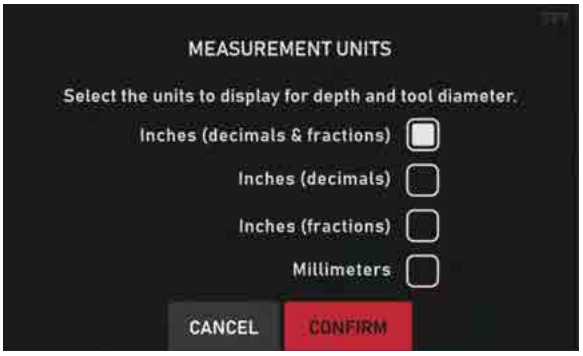


Figure 10-11

Security PIN: The Security PIN feature allows the machine admin to enable or disable the Security PIN feature and to change a current Security PIN passcode. A Security PIN helps prevent unauthorized use of the machine. See *Section 10.2.8 Security PIN Feature* for instructions on using this feature.

Figure 10-12

Firmware: Update the system firmware or reset to factory settings. This screen will tell what system versions and motor driver version is currently installed.

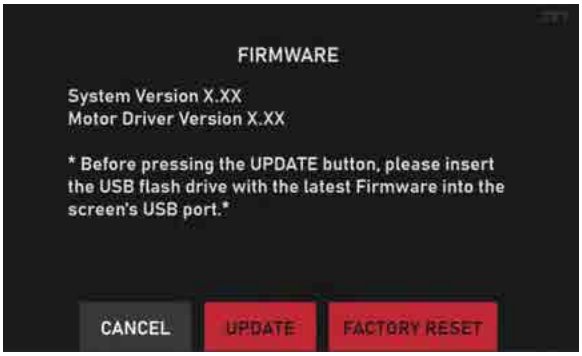


Figure 10-13

To Update Firmware:

1. Go to www.jettools.com and navigate to the product landing page for the JDP-20S. There will be a link that allows you to download the latest firmware.
2. Load the latest firmware to a USB flash drive.
3. Attach the USB flash drive to the supplied USB adaptor (S in Shipping Contents).
4. Insert USB flash drive/adaptor into USB port on left side of the power head (see Figure 10-14).
5. Touch the UPDATE button on the firmware screen. Do not turn off or disconnect the machine from power source while update is in progress.
6. When the firmware update is complete, the touchscreen will restart.

Figure 10-14

To Return Machine to Factory Settings:

1. Touch FACTORY RESET button on firmware screen.
2. On the FIRMWARE FACTORY RESET screen, touch and hold your finger on CONFIRM for five seconds.

10.2.2 Material & Tool Selection

⚠CAUTION

Do not use this machine for drilling hardened steel, such as high carbon steel, tool steel, high hardness metal parts, or stainless steel. The table will not accommodate a cooling system needed to drill these metals. The steel settings in the user interface are appropriate for medium to low carbon steel.

The Material & Tool Selection area allows you to optimize the machines operation according to the material type and tool type and size.

1. Touch the Material & Tool Selection area in the upper right corner of the Home Screen.

Figure 10-15

2. In the Material & Tool Selection menu, choose from 7 material options and 22 tool options. In the MATERIAL selection and TOOL TYPE selection sections, the choices are on a vertical roll. Move the options up or down to select the desired option.

Figure 10-16

3. You can switch between inches and millimeters using the DIMENSIONS switch in the lower right of screen. After selecting a dimensions preference, touch the TOOL DIAMETER section to specify the diameter of the tool you are using.

Figure 10-17

4. Key in the tool diameter using the keypad screen. Touch CONFIRM when finished to return to the Material & Tool Selection menu.

Figure 10-18

5. With the tool diameter confirmed, the Material & Tool Selection menu will display the selected tool diameter and the recommended spindle RPM.

   If this is a setting you will use often, you can save this as a preset. Touch SAVE AS PRESET. For detailed instructions on presets, see *Section 10.2.3 Preset Library*.

Figure 10-19

6. Touch CONFIRM to return to the Home Screen. The Material & Tool Selection area will display the specifications you entered. The Spindle RPM area will display the recommended spindle speed in green.

   To select a custom spindle RPM, see *Section 10.2.4 Spindle RPM.*

Figure 10-20

10.2.3 **Preset Library**

The Preset Library allows you to save up to 15 custom presets. With presets, you can quickly choose the material and tool setups you use most often.

To Save a Preset:

1. Touch the Material & Tool Selection area in the upper right corner of the Home Screen.
2. After making your selections (see *Section 10.2.2 Material & Tool Selection*), touch SAVE AS PRESET on the bottom of the screen.

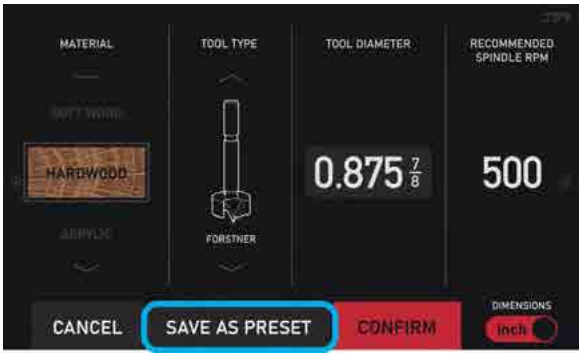


Figure 10-21

3. Enter the desired custom preset name and touch CONFIRM.

Figure 10-22

4. The next screen will ask you to confirm the preset. Touch CONFIRM. Next you will see a screen confirming the preset was made. Touch OK.

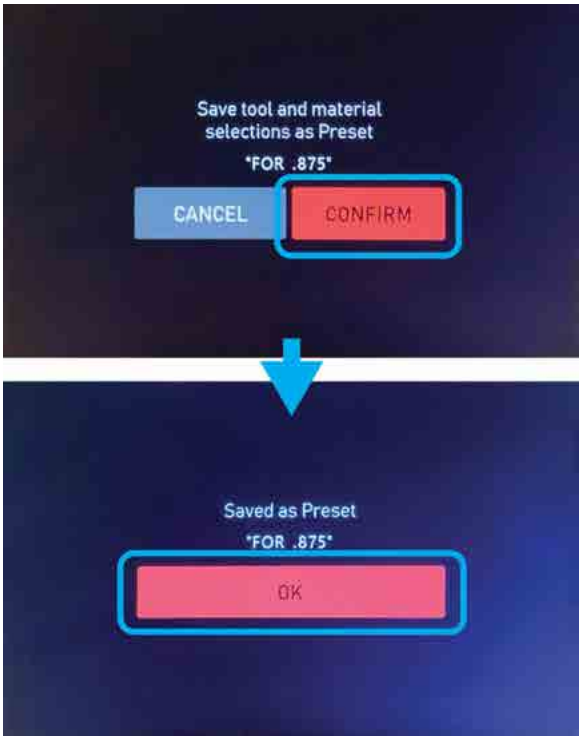


Figure 10-23

To Select a Preset:

1. Touch the PRESET area on the right side of the Home Screen to enter the Preset Library.

Figure 10-24

2. In the Preset Library, the left side panel shows the current machine settings. The created presets are shown to the right. Scroll through created presets to select the desired preset.

Figure 10-25

3. When you touch the desired preset, that preset will show in the current machine settings on the left side of the screen. Touch SELECT to confirm the preset selection and return to the Home Screen.

Figure 10-26

10.2.4 Spindle RPM

The Spindle RPM is displayed in the top center of the Home Screen. You may choose a custom spindle RPM. You can either adjust the speed using the touch screen or by turning the Spindle RPM Adjustment Knob on the front of the power head.

NOTE: The Spindle RPM will display in green when it matches the recommended spindle RPM for the material, tool, and tool diameter chosen in the Material & Tool Selection Menu. The spindle RPM will display in white when another value is manually chosen. When using a custom spindle RPM, the CUSTOM RPM indicator icon appears on the Home Screen.

Using Touch Screen:

1. On the Home Screen, touch the Spindle RPM area. Using the keypad, select a new spindle speed. Touch CONFIRM to return to the Home Screen. The custom spindle speed will display in white.

Figure 10-27

Using Spindle RPM Knob:

1. On the front of the machine power head, turn the Spindle RPM Adjustment Knob clockwise to increase the spindle speed and counterclockwise to decrease the spindle speed. You will see the spindle RPM value change on the Home Screen as you turn the knob. The custom spindle speed will display in white.

   NOTE: The spindle RPM can be adjusted in either 10-RPM increments or 100-RPM increments. Press the adjustment knob to toggle between the two before turning the knob to adjust the spindle RPM.

Figure 10-28

10.2.5 Digital Depth Stop

Depth stop functions and operation can be set up using the Touch Screen Control Panel.

Digital Depth Stop Behavior

NOTE: Before performing the digital depth stop steps in Method #1 and Method #2, set the depth stop behavior in Settings. This will determine how the spindle behaves when the target depth is reached.

1. Touch the Settings button in the lower left corner of the Home Screen.

Figure 10-29

2. On the OPTIONS screen, touch the Depth Stop button.

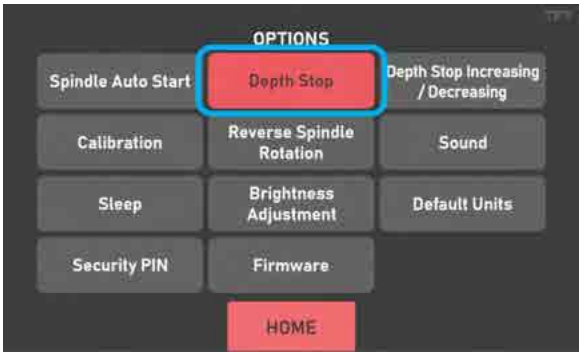


Figure 10-30

3. On the DEPTH STOP BEHAVIOR screen, select the desired option and touch CONFIRM. You will return to the OPTIONS screen. Touch HOME to return to the Home Screen.

Figure 10-31

Digital Depth Stop Method #1:

Refer to 10-32 through 10-36.

1. Touch the DEPTH STOP on/off button in the lower left of Home Screen to turn on. When on, the words DEPTH STOP will flash blue.

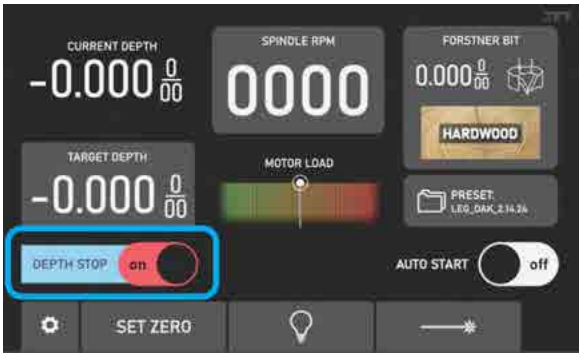


Figure 10-32

2. Use down-feed handles to lower the bit until it just contacts the top surface of workpiece, as shown in Figure 10-33.

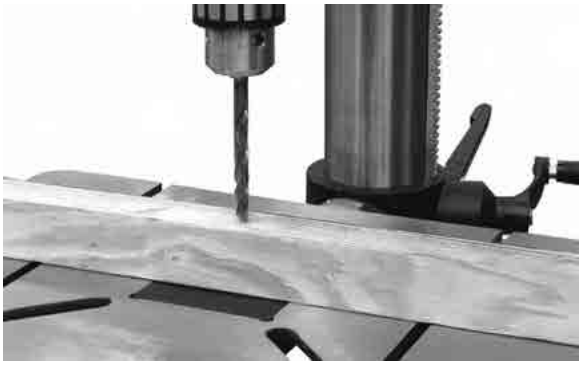


Figure 10-33

3. Hold down-feed handle in position and touch SET ZERO button on lower bar of Home Screen. This sets the workpiece surface as your zero reference point. NOTE: After touching the SET ZERO button, continue holding the down-feed handle in position for at least 0.5 second.

Figure 10-34

NOTE: While setting the zero point, it may be easier to raise the lower quick nut on the mechanical depth stop to the bottom of the depth stop bracket. This will hold the spindle in place while you set the target depth on the touch screen. After the zero point is set, move the lower quick nut down to not interfere with the spindle movement.

4. Raise the spindle and release the down-feed handle.

5. Touch TARGET DEPTH area on Home Screen and key in your desire depth of cut. Touch CONFIRM to set the depth and return to the Home Screen.

Figure 10-35

6. Press the green Start Button on the front of the headstock. If Auto Start is off, the spindle will start rotating. If Auto Start is on, the spindle will start rotating when you start lowering the spindle.

Figure 10-36

7. Lower the spindle using the down-feed handle. When the drill bit approaches the target depth, the machine will start beeping. The beeping will become faster as you near the target depth. When target depth is reached, the beeping will become a solid tone and the spindle will behave according to the setting made in Step 3 of *Digital Depth Stop Behavior.*

8. To stop using the Depth Stop feature, touch the DEPTH STOP button to turn off.

Digital Depth Stop Method #2:

Refer to Figures 10-37 through 10-40.

1. Touch the DEPTH STOP on/off button in the lower left of Home Screen to turn on. When on, the words DEPTH STOP will flash blue.

Figure 10-37

2. Mark the desired depth of cut on the side of the workpiece.

3. Use down-feed handles to lower the bit to the mark as shown in Figure 10-38.

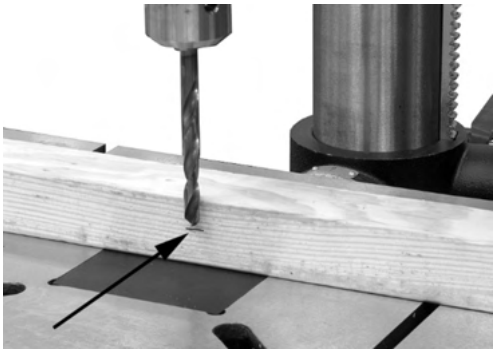


Figure 10-38

4. Note the spindle depth shown in the CURRENT DEPTH area in the upper left corner of the Home Screen. Raise and release the down-feed handle and touch TARGET DEPTH area on Home Screen. Key in the spindle depth that was shown on the CURRENT DEPTH readout. Touch CONFIRM to set the target depth and return to the Home Screen.

Figure 10-39

5. The bit can now be repeatedly lowered to the pre-set depth using the down-feed handles.
6. Press the green Start Button on the front of the headstock to start the spindle rotation.

Figure 10-40

7. Lower the spindle using the down-feed handle. When the drill bit approaches the target depth, the machine will start beeping. The beeping will become faster as you near the target depth. When target depth is reached, the beeping will become a solid tone and the spindle will behave according to the setting made in Step 3 of *Digital Depth Stop Behavior.*
8. To release the depth stop, touch the “DEPTH STOP” on/off button to turn it off.

10.2.6 **Auto Start**

The Auto Start feature allows the spindle to start turning automatically when the spindle is lowered. When raising the spindle, the spindle will stop turning when the spindle nears the top.

Follow the steps below to use the Auto Start feature.

1. Touch the AUTO START on/off button in the lower right of the Home Screen to turn on. When on, the words AUTO START will flash yellow.
2. To stop using the Auto Start feature, touch the AUTO START button to turn off.

Figure 10-41

10.2.7 **Set Spindle/Bit Zero Point**

Setting the spindle zero point is needed when using features like Digital Depth Stop.

Follow the steps below to set the spindle/bit zero point.

1. Use down-feed handles to lower the spindle/bit the desired distance. The spindle depth will be shown in the CURRENT DEPTH area of the Home Screen.

Figure 10-42

2. Hold down-feed handle in position and touch SET ZERO button on lower bar of Home Screen. NOTE: After touching the SET ZERO button, continue holding the down-feed handle in position for at least 0.5 second.

Figure 10-43

NOTE: While setting the zero point, it may be easier to raise the lower quick nut on the mechanical depth stop to the bottom of the depth stop bracket. This will hold the spindle in place while you set the target depth on the touch screen. After the zero point is set, move the lower quick nut down to not interfere with the spindle movement.

3. Raise the spindle and release the down-feed handle.

10.2.8 Security PIN Feature

You can set up a security PIN for this machine. This gives an added layer of safety and security, allowing approved users to activate the machine. With this feature enabled, when the machine is first powered on, the security PIN screen will appear. The correct PIN must be entered for the machine to be operational.

Activate and Set Up the Security PIN

1. Touch the Settings Menu button in the lower left corner of the Home Screen to access the OPTIONS menu.

Figure 10-44

2. Touch Security PIN in the lower left corner of OPTIONS screen.

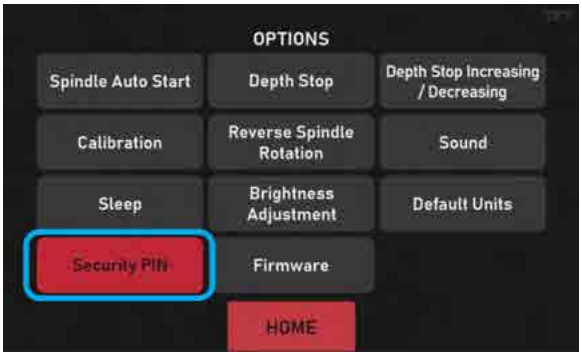


Figure 10-45

3. Touch the Enable Security PIN button to turn on and touch CONFIRM.

Figure 10-46

4. On the SET UP NEW SECURITY PIN screen, key in your chosen four-digit PIN and touch CONFIRM.

5. Re-enter the PIN and touch CONFIRM. Touch OK on the confirmation screen. The security PIN is now set up. When you return to the Home Screen, you will see a padlock icon in the lower right corner.

Figure 10-47

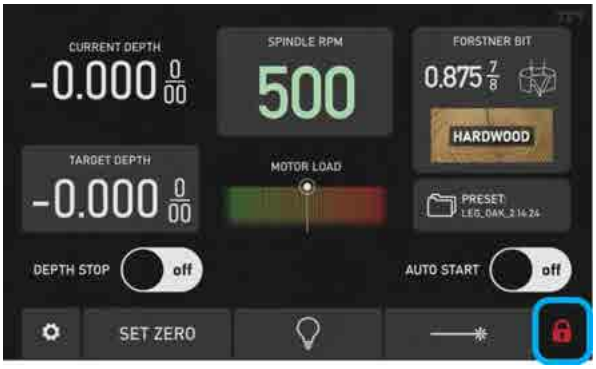


Figure 10-48

Change the Security PIN

1. To change the security PIN, touch the Settings Menu button in the lower left corner of the Home Screen to access the OPTIONS menu.

Figure 10-49

2. Touch Security PIN in the lower left corner of OPTIONS screen.

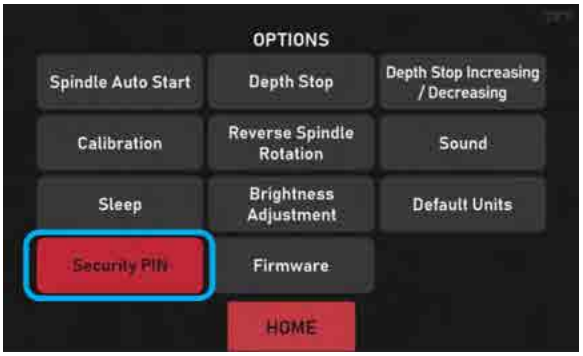


Figure 10-50

3. To change the PIN, touch CHANGE SECURITY PIN at the bottom.

Figure 10-51

4. Enter the current security PIN and touch CONFIRM. Enter the new PIN and touch CONFIRM and re-enter the new PIN and touch CONFIRM again. Touch OK on the confirmation screen.

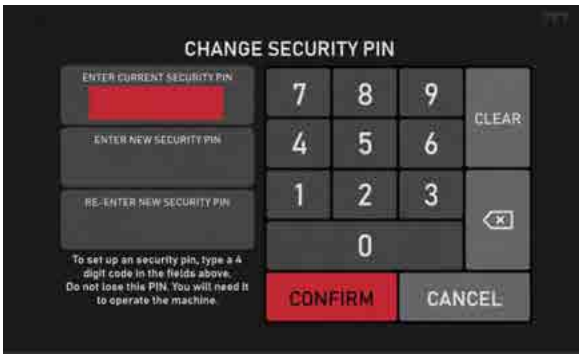


Figure 10-52

Turn the Security PIN Feature Off

1. To turn this feature off, touch the Settings Menu button in the lower left corner of the Home Screen to access the OPTIONS menu.

Figure 10-53

2. Touch Security PIN button in the lower left of the OPTIONS screen.

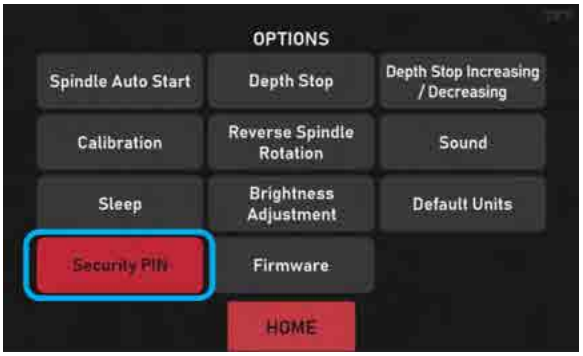


Figure 10-54

3. Touch the Enable Security PIN button to turn off. Touch CONFIRM.

Figure 10-55

4. Enter the security PIN and touch CONFIRM.

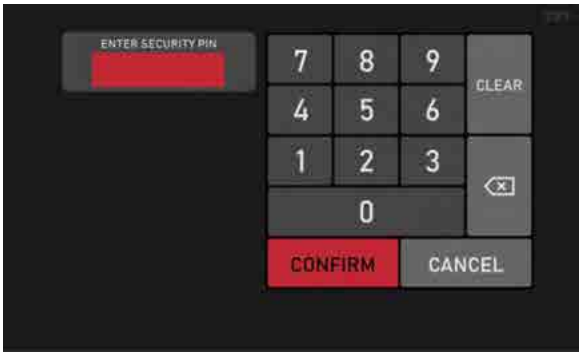


Figure 10-56

10.2.9 LED Work Light and Laser Guides

This machine has an integrated LED work light that provides a clean, white light to the table. There are also crosshair laser guides to assist in aligning the workpiece with the center point of the machine tool.

LED Work Light ON/OFF: Touch the LED Work Light ON/OFF Button to turn LED work light on and off. When on, the button will be red, and the light will be on.

Laser Guides ON/OFF: Touch the Laser Guides ON/OFF Button to turn laser guides on and off. When on, the button will be red and the laser guides will appear on the table or workpiece.

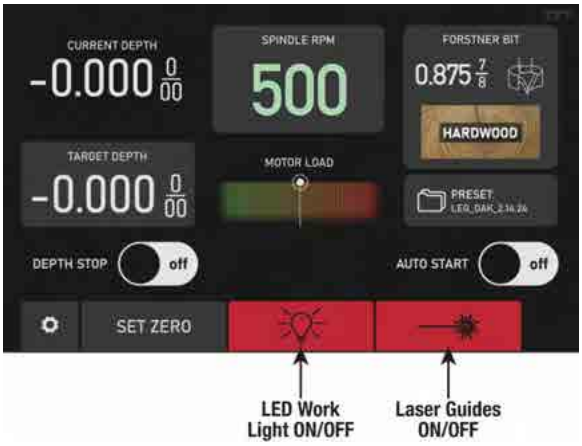


Figure 10-57

11.0 Operation

⚠WARNING

If power to the drill press is interrupted, the machine will restart immediately once power is restored, unless the red Stop Button has been pushed or the Main Power Switch is set to the OFF position.

11.1 Work Piece Positioning

⚠WARNING

Whenever possible, use clamps or work hold-downs to secure the work piece to the table.

Always secure the work piece to prevent it being torn from the operator's hand. Do not use the column as a workstop. Instead, use holding devices such as clamps. When using the table in tilted position, make sure the table is securely tightened and the work piece is clamped sufficiently.

For through-boring, remove the table insert and position table so that the bit will go through the center hole of the table.

To minimize tear-out, and achieve clean, splinter-free holes, place a piece of scrap wood on the table below the work piece.

Perform operations with a minimum extension of the quill. Adjust table height rather than using excessive quill travel.

Feed bit into the material with only enough force to allow the bit to work. Feeding too slowly may cause burning of the work piece. Feeding too quickly may cause the motor to slow and/or the bit to break.

11.2 General Inspection

Before each operation of your JDP-20S Smart Drill Press, make a habit of checking that all locking handles, set screws, bolts, etc., are tight on the table and head. Confirm that the drill bit is securely inserted inside the chuck jaws.

Clear all items, such as tools and rags, away from machine.

Before attempting regular work, get the feel of the drill press by practicing on scrap material. For best results, always use sharp bits, and proper spindle speeds and feed rates.

11.3 Spindle Speeds

There are several factors which determine the best speed to use in any drill press operation, such as kind of material being worked, size of hole, type of drill, and quality of cut desired.

A general rule of thumb is, the smaller the drill, the greater the required RPMs. And the speed should be faster for soft materials and slower for hard materials.

Use the recommended spindle RPM as designated by the Material & Tool Selection Menu of the Touch Screen Control Panel. See *Section 10.2.2 Material & Tool Selection*. If a custom spindle RPM is desired, make sure the speed provides proper performance with respect to the workpiece material, the tool, and the tool diameter. To select a custom spindle RPM, see *Section 10.2.4 Spindle RPM*.

11.4 Basic Operation Procedure

Sections *8.0 Adjustments, 9.0 Operating Controls,* and *10.0 Using Touch Screen Control Panel* provide in-depth instructions for adjusting and operating this machine. Read and understand those sections before operating this machine. Below are the basic operation steps for using the JDP-20S Smart Drill Press.

1. Move the Main Power Switch (located on the right side of the power head) to the ON position. Wait for the Touch Screen Control Panel to fully power up and display the Home Screen.

Figure 11-1

2. Touch the Material & Tool Selection area in the upper right corner of the Home Screen.

Figure 11-2

3. Select the workpiece material, the tool, and the tool diameter. The recommended spindle RPM will be calculated and displayed on the left side of the screen.

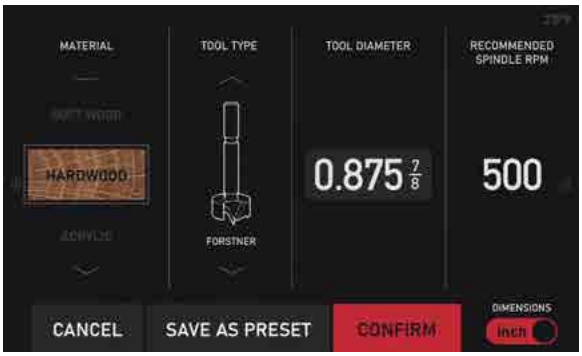


Figure 11-3

4. Touch CONFIRM and your selections will be displayed in the Maintenance & Tool Selection area on the Home Screen. The recommended spindle RPM will be shown in green in the Spindle RPM area.

Figure 11-4

5. Make any custom settings needed using the Touch Screen Control Panel. Ensure all setting are correct before drilling.

6. If needed, turn on the LED Work Light and the Laser Guides.

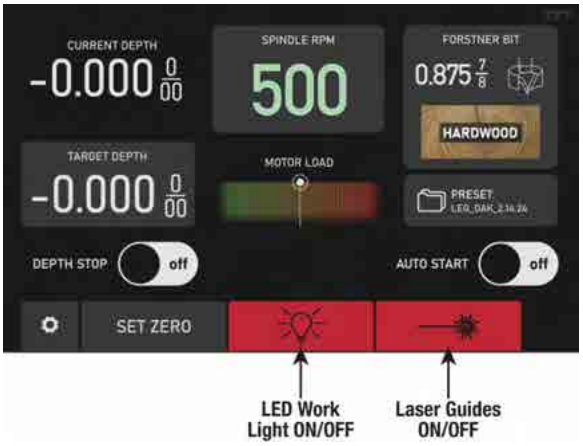


Figure 11-5

7. Secure your workpiece on the table. Press the green Start Button under the Touch Screen Control Panel on the front of the power head. If Auto Start is off, the spindle will start rotating.

   If Auto Start is on, the spindle will start turning automatically when the spindle is lowered.

Figure 11-6

8. Using the down-feed handles, slowly lower the spindle to drill. Monitor the process and adjust as needed.

9. When drilling operation is completed, raise the down-feed handles. If Auto Start is off, press the red Stop Button to stop the spindle rotation. If Auto Start is on, the spindle will stop turning when the spindle is raised.

Figure 11-7

10. When the machine is not in use, move the Main Power Switch to the OFF position.

12.0 **Maintenance**

⚠WARNING

Unplug machine from electrical power source before performing maintenance. Failure to do so may cause serious injury.

After each use, clean sawdust from the table with a brush or compressed air (do not use your hands).

Periodically apply a light film of oil to the quill and column. This will reduce wear, prevent rust and assure ease of operation.

Apply #2 tube grease to the worm gear and rack, the table elevation mechanism, the splines (grooves) in the spindle, and the teeth of the quill.

Check that bolts are tight and electrical cords are in good condition.

Bearings on the drill press are self-contained and permanently lubricated; no further lubrication is needed.

Periodically blow out any dust from the fan cover of the motor.

Exposed metal surfaces of table and base should be kept clean and free of rust. Protective sprays or paste wax are available from most hardware stores. Note: Avoid wax that contains silicone or other synthetic ingredients; these materials can find their way into lumber and make staining and finishing difficult.

The quill return spring should receive SAE 20 oil once yearly. Apply the oil beneath the spring housing (D, Figure 12-1) using a squirt can.

Periodically check for firmware updates. When an update is needed, follow the instructions under *"To Update Firmware"* in *Section 10.2.1 Settings Menu*.

12.1 **Return Spring**

⚠WARNING

Wear gloves to protect hands and fingers from possible injury from return spring.

The tension of the return spring, which raises the spindle after drilling, has been pre-set by the manufacturer. No further adjustment should be attempted unless necessary. Should spindle retraction weaken after long-term use of the drill press, tighten the spring tension as follows.

1. Disconnect machine from power source.
2. Loosen jam nut (A) and loosen inner nut (B) a small amount. **IMPORTANT: Do not remove the hex nuts.** The nuts should be backed off just enough to allow the spring housing (C) to be disengaged from the pin on the head casting.
3. Slightly pull out the spring housing (C) while firmly holding it. **IMPORTANT: Do not allow the spring housing to turn freely in your hand or the spring will unwind.**
4. Rotate spring housing until tab (D) on the spring retainer engages the next notch in spring housing. Rotate coil spring housing counterclockwise to increase spring tension, clockwise to decrease.
5. Push spring housing back in. Make sure it has re-engaged with the pin before releasing your grip on the housing.
6. Tighten inner nut (B) until it makes very light contact with the spring housing. Do not overtighten the inner nut, as it may cause binding of the pinion shaft.
7. Hold the inner nut with a wrench to prevent further movement, while tightening the jam nut (A) against the inner nut.

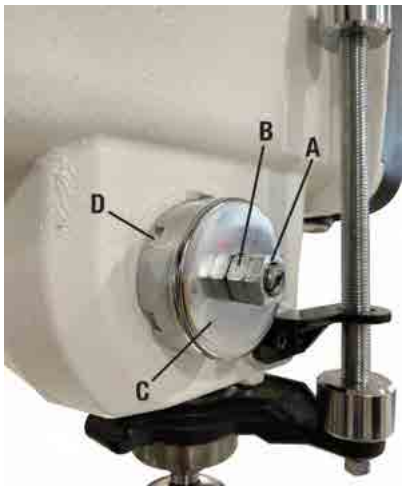


Figure 12-1

13.0 **Troubleshooting**

Tables 2 & 3

Trouble	Probable Cause	Remedy
Main Power Switch moved to ON position, but machine will not power up.	Not connected to electrical power.	Check electrical plug connection.
	Fuse blown, or circuit breaker tripped.	Replace fuse, or reset circuit breaker.
	Cord damaged.	Replace cord.
	Main Power Switch malfunction.	Have switch tested and replaced if needed.
Main Power Switch will not move to ON position.	Safety key removed.	Install safety key.
Drill press does not come up to speed.	Extension cord too light or too long.	Replace with adequate size and length cord.
	Low current.	Contact a qualified electrician.
	Motor malfunction.	Have motor tested by a qualified service center. Repair or replace as necessary.
Motor stalls.	Overfeeding the bit.	Lower bit more slowly.
	Dull bit.	Sharpen or replace bit.
	Motor not reaching running speed.	Have motor tested by a qualified service center.
	Motor malfunction.	Have motor tested by a qualified service center. Repair or replace as necessary.
Noisy Operation.	Excessive vibration.	Tighten any loose parts. Drill press should sit evenly on level floor. Secure drill press to floor or plywood base.
	Dry spindle.	Lubricate spindle.
	Noisy motor.	Check motor bearings or for loose motor fan.
Wood splinters on underside of work piece.	No backing board used.	Place scrap board beneath work piece to prevent splintering.
Drill or tool heats up or burns work piece.	Excessive speed.	Reduce speed.
	Chips not clearing from hole or bit.	Retract drill bit frequently to remove chips.
	Dull drill bit.	Resharpen, or replace drill bit.
	Feeding bit too slowly.	Increase feed rate.
Drill bit wanders.	Bit sharpened incorrectly.	Resharpen bit correctly.
	Bent drill bit.	Replace bit.
	Bit or chuck not installed properly.	Reinstall chuck and arbor or bit.
Drill bit binds in work piece.	Work piece pinching the bit.	Support or clamp work piece.
	Excessive feed rate.	Lower bit more slowly into workpiece.
	Speed setting too low for workpiece.	Use recommended spindle RPM designated in Material & Tool menu.
	Chuck jaws not tight.	Tighten chuck jaws.
Chuck won't remain in spindle.	Grease or dirt on spindle or chuck tapers.	Clean tapers thoroughly.

Error Codes

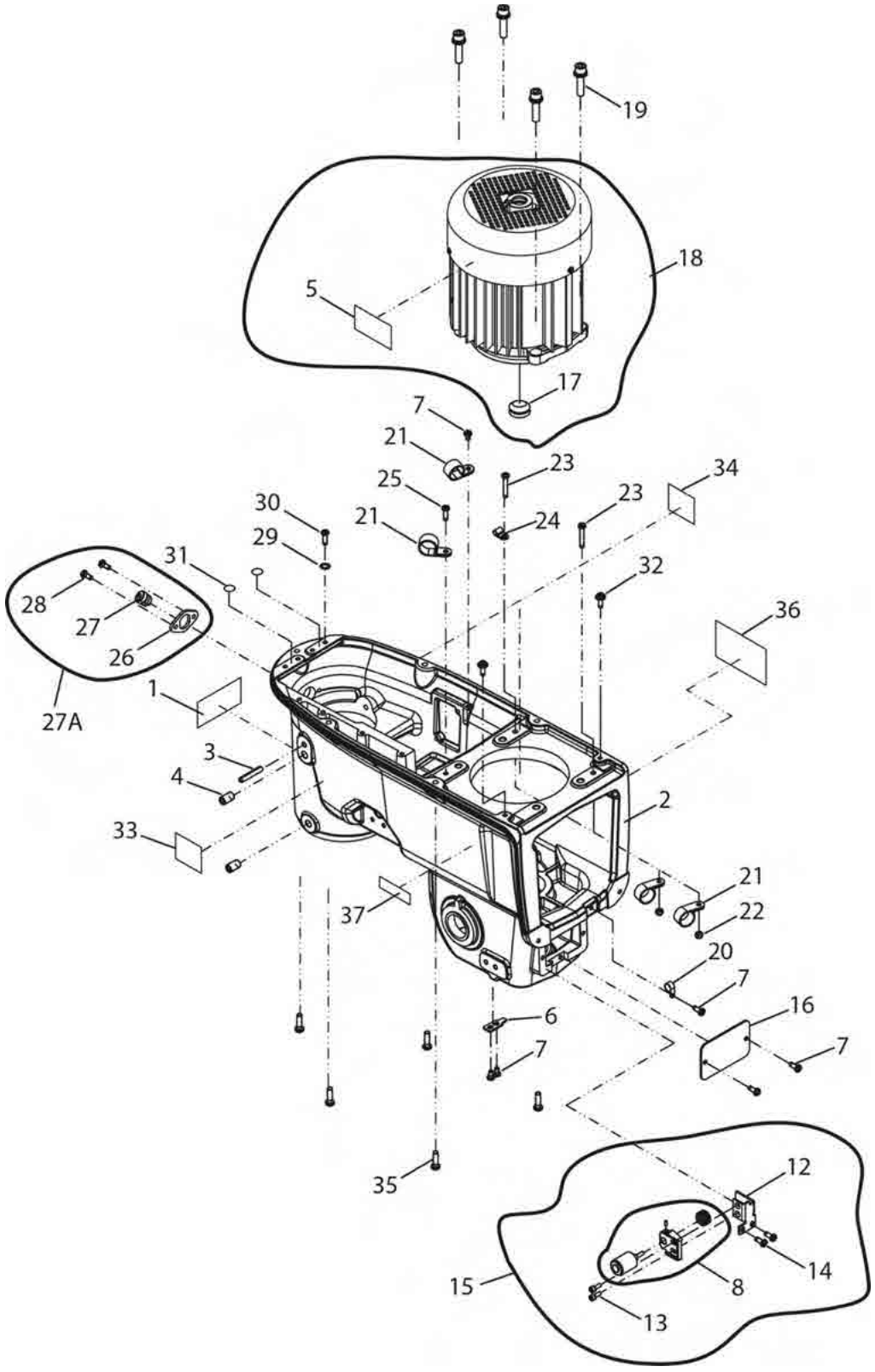
This touch screen can display several error codes along with corrective actions. The two problems below would not appear on the screen due to problems with the screen itself.

Error Code	Error Source	Probable Cause	Remedy
0101	Screen connection issue.	Check that screen cable is fully connected to the controller.	Check that both ends of cable are fully connected. Touch OK button. Press off button to clear error code, then press green button to restart machine.
----	Touch screen is black.	Touch screen power supply voltage is too low.	Check that both ends of cable are fully connected.
		Screen damaged.	Replace touch screen.

14.0 **Replacement Parts**

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday, 8:00 a.m. to 5:00 p.m. CST. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

14.1.1 **JDP-20S Headstock Assembly – Exploded View**

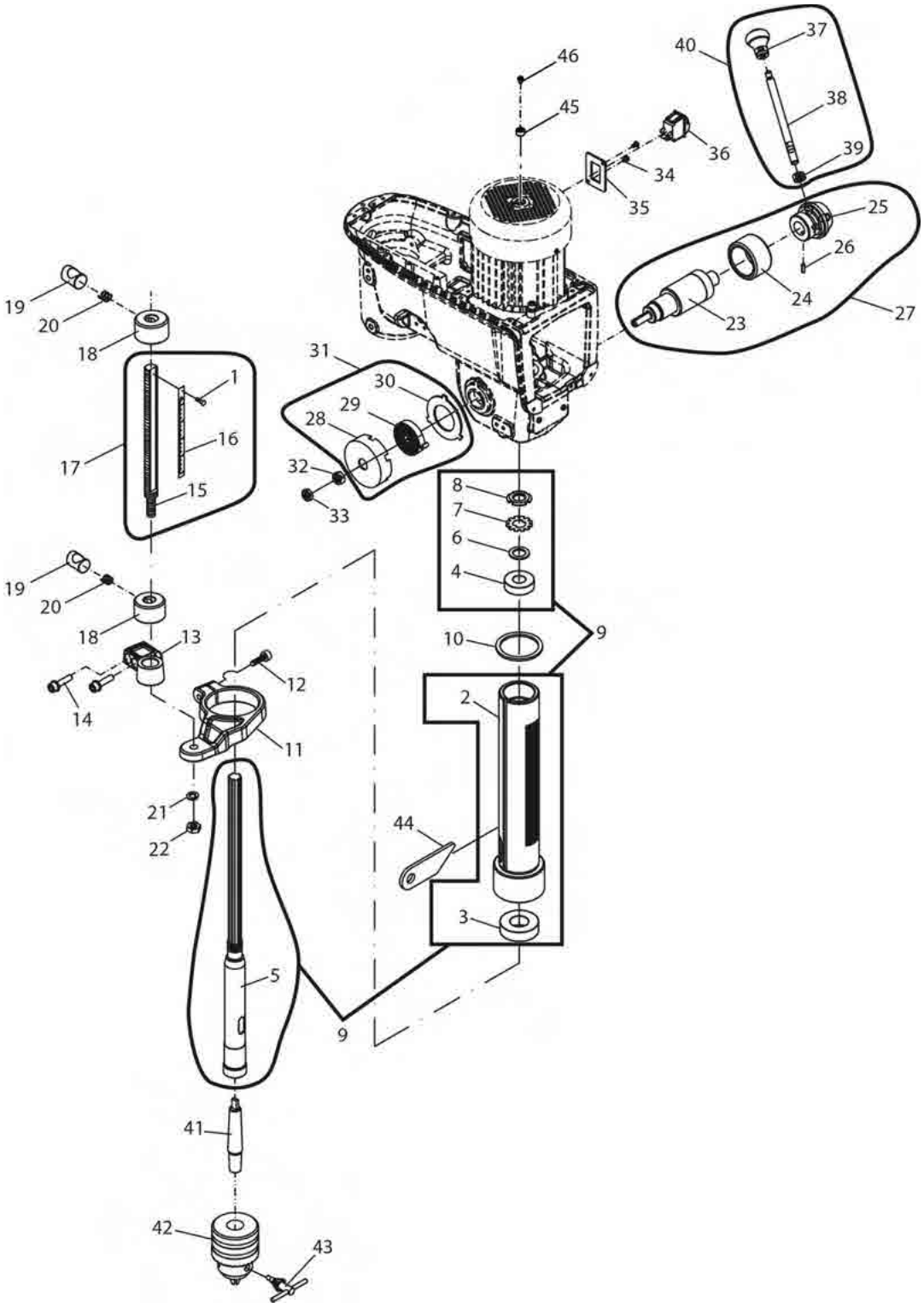


14.1.2 **JDP-20S Headstock Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	**	I.D Label		1
2	**	Headstock		1
3	**	Spring Pin	Dia. 6mm x 45	2
4	TS-1525031	Set Screw	M10x16	2
5	JT1-2210	Motor Label		1
6	JT1-2211	Quill Seat Plate		1
7	TS-1533032	Pan Head Screw	M5x8	12
8	JT1-2212	Depth Sensor Kit		1
12	JT1-2213	Bracket		1
13	TS-1501041	Socket Head Cap Screw	M4x12	8
	TS-2361041	Lock Washer	M4	8
14	TS-1533042	Pan Head Screw	M5x12	2
	TS-2361051	Lock Washer	M5	2
15	JT1-2214	Depth Sensor Assy (Includes Index #8, #12 thru #14)		1
16	**	Cover		1
17	JT1-2215	Rubber Collar		1
18	JT1-2216	Motor (Includes Index #5 and #17)		1
	JT1-2217	Motor Fan		1
	JT1-2218	Motor Fan Cover		1
19	TS-1504071	Socket Head Cap Screw	M8x35	4
	TS-2361081	Lock Washer	M8	4
	TS-1550061	Flat Washer	M8	4
20	JT1-2219	Wiring Clamp	5/16"	1
21	JT1-2220	Wiring Clamp	3/4"	4
22	TS-1541011	Nylon Nut	M5	2
23	TS-2285352	Pan Head Screw	M5x35	2
24	JT1-2221	Wiring Clamp	1/2"	1
25	TS-1533042	Pan Head Screw	M5x12	3
26	**	Plate		1
27A	JT1-2222	Strain Relief Kit (Includes Index #26 thru 28)		1
27	JDP20S-127	Strain Relief		1
28	TS-2245122	Socket Head Button Screw	M5x12	2
29	TS-0733041	External Tooth Lock Washer	1/4"	4
30	TS-1533032	Pan Head Screw	M5x8	4
31	JT1-2223	Grounding Label		2
32	TS-1533032	Pan Head Screw	M5x10	2
33	JT1-2224	Laser Warning Label, Left		1
34	JT1-2225	Laser Warning Label, Right		1
35	TS-2246202	Socket Head Button Screw	M6x20	5
36	JT1-2226	JET Logo		1
37	JT1-2227	Model Decal		1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.3 **JDP-20S Spindle Assembly – Exploded View**

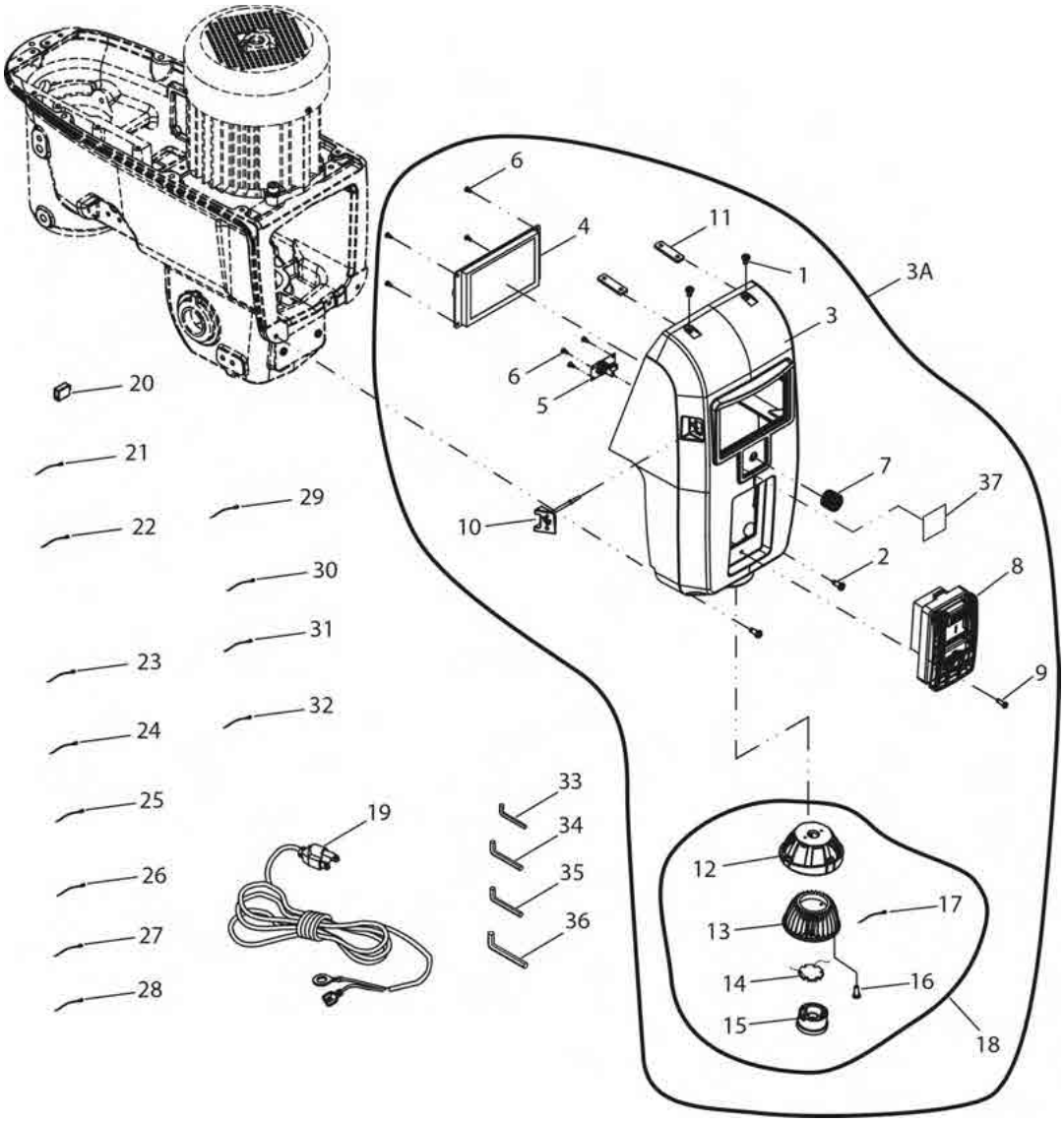


14.1.4 **JDP-20S Spindle Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	PM2800-037	Rivet	Dia. 2.3-5	6
2	**	Quill		1
3	BB-6205LLU	Ball Bearing	6205LLU	1
4	BB-6203LLU	Ball Bearing	6203LLU	1
5	JT1-2228	Spindle		1
6	PM2800-132	Washer	D=17.5 T=2	1
7	PM2800-131	Nut Lock		1
8	PM2800-130	Spindle Nut		1
9	JT1-2229	Spindle Assembly (Includes Index #2 thru #8)		1
10	PM2800-134	Rubber Washer	Dia. 52, T=3mm	1
11	PM2800B-064	Collar		1
12	TS-1504051	Socket Head Cap Screw	M8x25	1
13	PM2800B-097	Plunge Housing		1
14	TS-1503061	Socket Head Cap Screw	M6x25	2
	TS-2361061	Lock Washer	M6	2
15	PM2800B-096	Stop Bolt		1
16	PM2800B-095	Depth Scale		1
17	PM2800B-099	Depth Stop Bolt and Scale Assy (Includes Index#1,#15,#16)		1
18	PM2800B-101	Stop Nut		2
19	PM2800B-102	Adjusting Nut		2
20	PM2800B-107	Spring		2
21	TS-2361101	Lock Washer	M10	1
22	TS-1540071	Hex Nut	M10-1.5P	1
23	**	Feed Shaft		1
24	PM2800B-117	Ring		1
25	PM2800B-116	Hub		1
26	**	Spring Pin	Dia.5x20mm	1
27	JT1-2230	Feed Shaft Assembly (Includes Index#23 thru #26)		1
28	PM2800B-018	Spring Cap		1
29	PM2800B-019	Coil Spring		1
30	PM2800B-020	Spring Retainer		1
31	PM2800B-021	Coil Spring Assy (Includes Index #28 thru #30)		1
32	TS-0561052	Hex Nut	1/2-20UNF T=10	1
33	TS-0561052	Hex Nut	1/2-20UNF T=6.5	1
34	TS-1533032	Pan Head Screw	M5x8	12
35	**	Switch Plate		1
36	JT1-2232	Rocker Switch		1
	JT1-2231	Key for Rocker Switch		1
37	**	Handle Grip		3
38	**	Handle		3
39	TS-1540081	Hex Nut	M12 T=10	3
40	PM2800-164	Handle Assembly (Includes Index #37 thru #39)		1
41	PM2800-140	Arbor	MT2*JT3	1
	JDP17-211	Chuck Assembly (Includes Index #42 and #43)		
42	JDP17-092	Keyed Chuck	RJ3-16L	1
43	JDP17-091	Chuck Key	16(5/8")	1
44	PM2800-136	Drift Key		1
45	JT1-2301	PTFE Bushing		1
46	TS-1502031	Socket Head Cap Screw	M5x12	1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.5 **JDP-20S Front Control Panel Assembly – Exploded View**

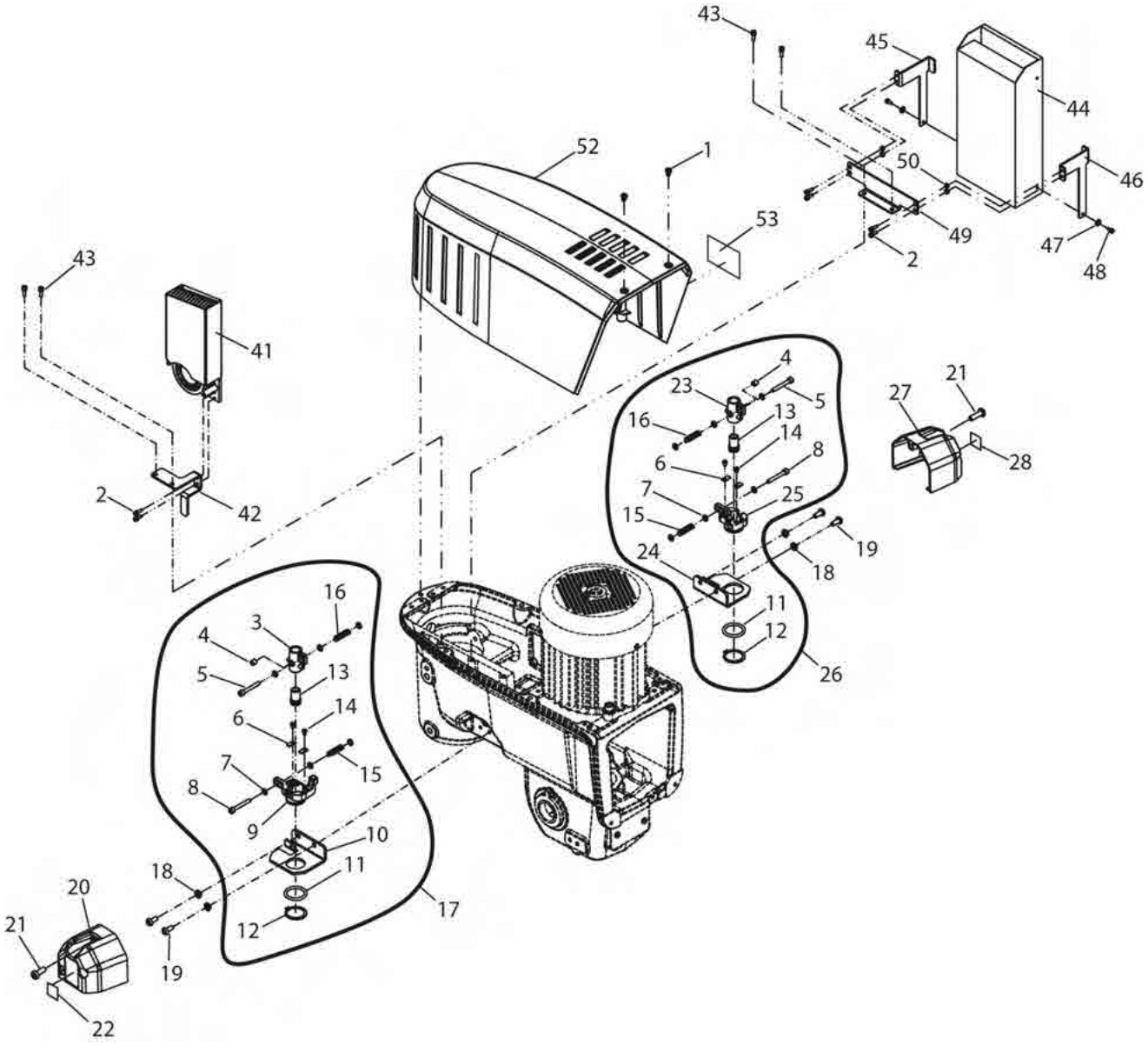


14.1.6 **JDP-20S Front Control Panel Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	TS-1534041	Pan Head Screw	M5x8	12
2	TS-2285121	Pan Head Screw	M5x12	3
3A	JT1-2233	Front Control Panel Assembly (Includes Index #3 thru #10,#18,#37)		1
3	JT1-2234	Front Control Panel		1
4	JT1-2235	Touch Screen	5 inch	1
5	JT1-2236	Speed Encoder		1
6	TS-2283061	Machine Screw	M3x6	7
7	JT1-2237	Speed Knob		1
8	JT1-2238	Paddle Switch		1
	JWBS15-143BSK	Safety Key for Paddle Switch		1
9	TS-2284121	Machine Screw	M4x12	1
10	JT1-2239	USB Dustproof Plug		1
11	JT1-2240	Plate		2
12	PM2800B-127	LED Seat		1
13	PM2800B-128	Heat Sink		1
14	PM2800B-129	LED Assembly		1
15	PM2800B-130	Lens Assembly		1
16	TS-2283102	Machine Screw	M2x10	2
17	PM2800B-124	Lead Wire Assembly, circuit board to rear light		1
18	PM2800B-122	Lamp Assembly		1
19	JT1-2241	Power Cable		1
20	JT1-2242	USB Adaptor		1
21	JT1-2243	LED Wiring		1
22	JT1-2244	Ground Wiring, Controller to Ground	14AWG,	1
23	JT1-2245	DC 380V Power wiring, PFC to Controller	16AWG,	1
24	JT1-2246	15V Wiring, PFC to Controller	24AWGx2C	1
25	JT1-2247	PFC Signal Wiring		1
26	JT1-2248	Touch Screen Signal Wiring, Touch Screen to Controller		1
27	JT1-2249	Laser Wiring (Controller to Laser Kit)		2
28	JT1-2250	Wiring, Rocker Switch to PFC	14Awg	1
29	JT1-2251	Grounding Wiring, PFC	400mm	1
30	JT1-2252	Cable, Paddle Switch to Controller		1
31	JT1-2253	Cable, Depth Sensor to Controller		1
32	JT1-2254	5V Wiring, PFC to Controller		1
33	TS-152704	Allen Wrench	3mm-57	1
34	TS-152706	Allen Wrench	5mm-70	1
35	TS-152707	Allen Wrench	6mm-83	1
36	TS-227D081	Allen Wrench	8mm-95	1
37	JT1-2255	Speed Encoder Label		1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.7 **JDP-20S Electrical Parts Assembly – Exploded View**

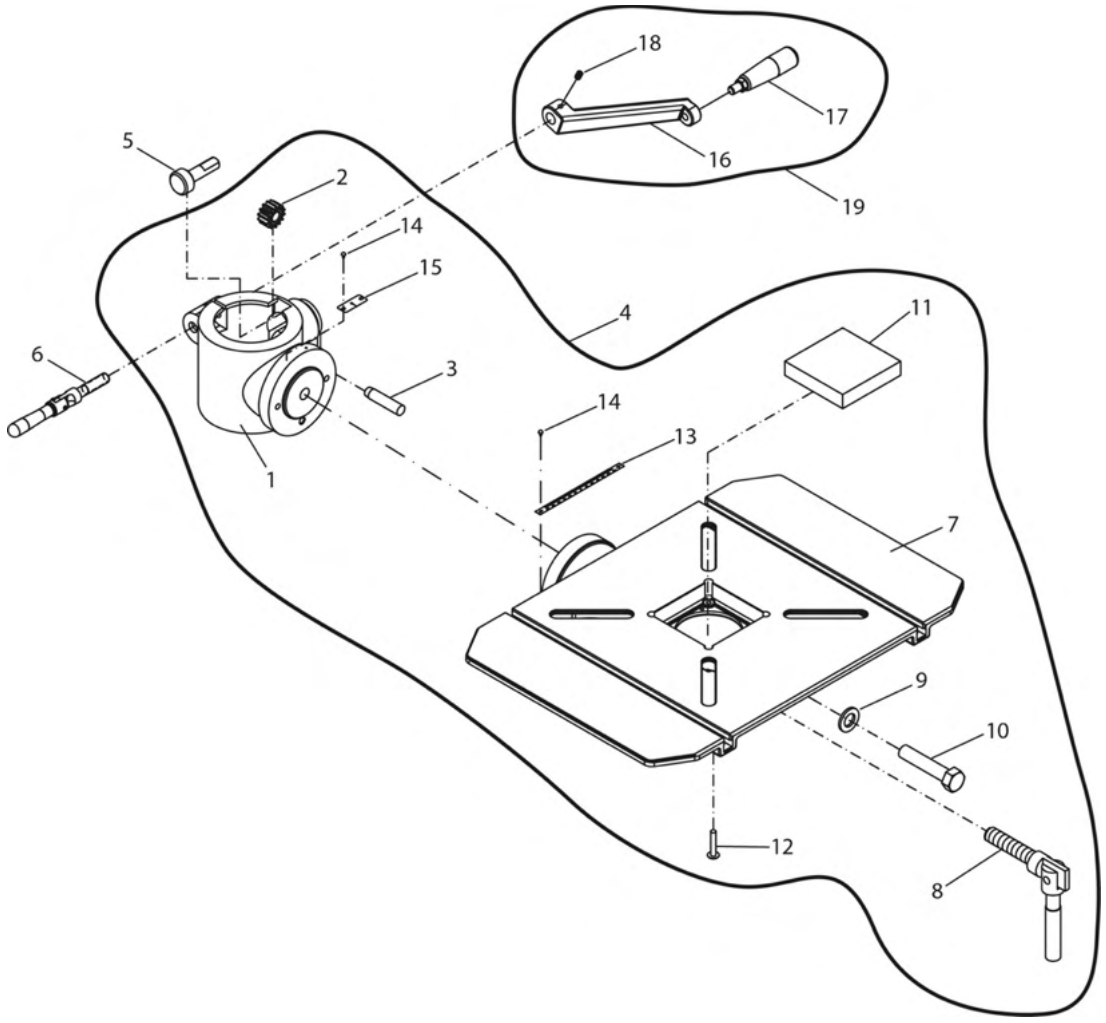


14.1.8 **JDP-20S Electrical Parts Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	TS-1533032	Pan Head Screw	M5x8	12
2	TS-1501041	Socket Head Cap Screw	M4x12	8
3	PM2800B-146	Laser Axle Seat, Left		1
4	TS-1523011	Slotted Set Screw	M6x6	2
5	TS-1501081	Socket Head Cap Screw	M4x30	2
6	PM2800B-142	Pad		4
7	TS-1550021	Flat Washer	M4	12
8	TS-1501081	Socket Head Cap Screw	M4x30	2
9	PM2800B-139	Laser Plunge Housing, Left		1
10	PM2800B-135	Laser Plunge Bracket, Left		1
11	PM2800B-136	O-Ring	AS-120	2
12	PM2800-154	C-Ring	A-25	2
13	PM2800B-132	Laser Module		2
14	PM2800B-109	Phillips Pan Hd. Tapping Screw	M3x6	4
15	PM2800B-134	Spring		2
16	PM2800B-131	Spring		2
17	PM2800B-143	Laser Assembly, Left (Includes Index #3 thru #16)		1
18	TS-2361051	Spring Washer	M5	4
19	TS-1502031	Socket Head Cap Screw	M5x12	4
20	JT1-2256	Guard (Includes Index #20 & #22)		1
21	TS-2245252	Socket Head Button Screw	M5x25	2
22	JT1-2258	Laser Label, Left		1
23	PM2800B-213	Laser Axle Seat, Right		1
24	PM2800B-215	Laser Plunge Bracket, Right		1
25	PM2800B-214	Laser Plunge Housing, Right		1
26	PM2800B-216	Laser Assy, Right(Includes Index #4 thru#8,#11thru#16,#23 thru#25)		1
27	JT1-2257	Guard (Includes Index #27 & #28)		1
28	JT1-2259	Laser Label, Right		1
41	JT1-2260	Controller Assembly		1
42	JT1-2261	Bracket		1
43	TS-1502041	Socket Head Cap Screw	M5x16	4
44	JT1-2262	PFC Power Supply		1
	JT1-2278	Power Supply Fuse (not shown)	20A, 250V	1
	JT1-2279	Fuse Dust Cover (not shown)		1
45	JT1-2263	Fasten Plate, Left		1
46	JT1-2264	Fasten Plate, Right		1
47	TS-1550021	Flat Washer	M4	2
48	TS-1501021	Socket Head Cap Screw	M4x8	2
49	JT1-2265	Bracket		1
50	TS-1540021	Hex Nut	M4	4
52	JT1-2266	Upper Cover (Includes Index #52 & #53)		1
53	JT1-2267	Warning Label		1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.9 **JDP-20S Table Assembly – Exploded View**

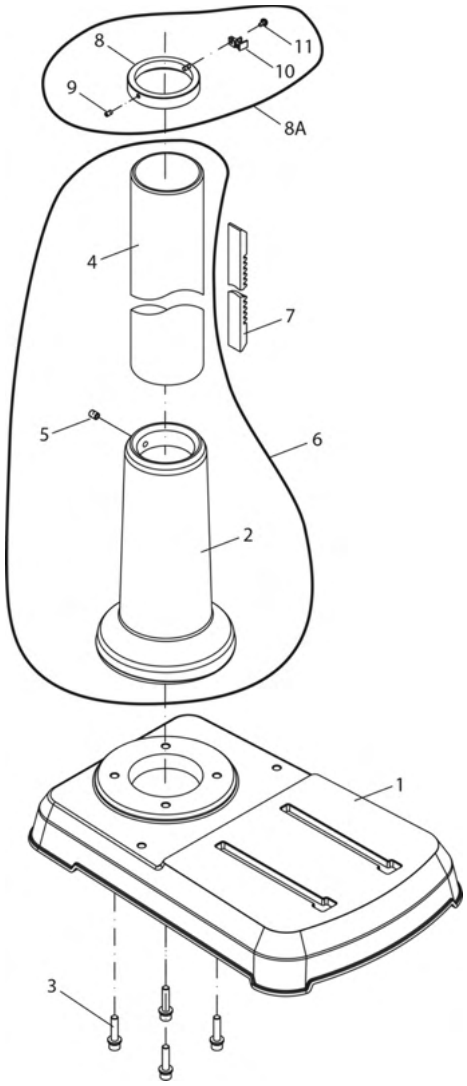


14.1.10 **JDP-20S Table Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	**	Table Bracket		1
2	PM2800-060	Gear		1
3	PM2800B-036	Gear Shaft		1
4	JT1-2268	Table Assembly (Includes Index #1# thru #3, #7thru #15)		1
5	JT1-2269	Worm		1
6	JT1-2270	Column Lock Handle		1
7	**	Work Table		1
8	JT1-2271	Clamp Handle		1
9	TS-0680081	Washer	5/8”	1
10	**	Hex Bolt	5/8”-11x3"	1
11	PM2800B-056	Table Insert	95x95x18.5mm	1
12	PM2800B-054	Phillips Truss Hd. Tapping Screw	M4x25	2
13	JT1-2272	Tilt Angle Scale		1
14	PM2800-037	Rivet	Dia. 2.3x5	6
15	PM2800-063	Centering Scale		1
16	PM2800-064	Crank Arm		1
17	PM2800-065	Crank Arm Handle		1
18	TS-1523031	Set Screw	M6x10	1
19	JT1-2273	Crank Arm Handle Assy (Includes Index #16 thru #18)		1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.11 **JDP-20S Column and Base Assembly – Exploded View**



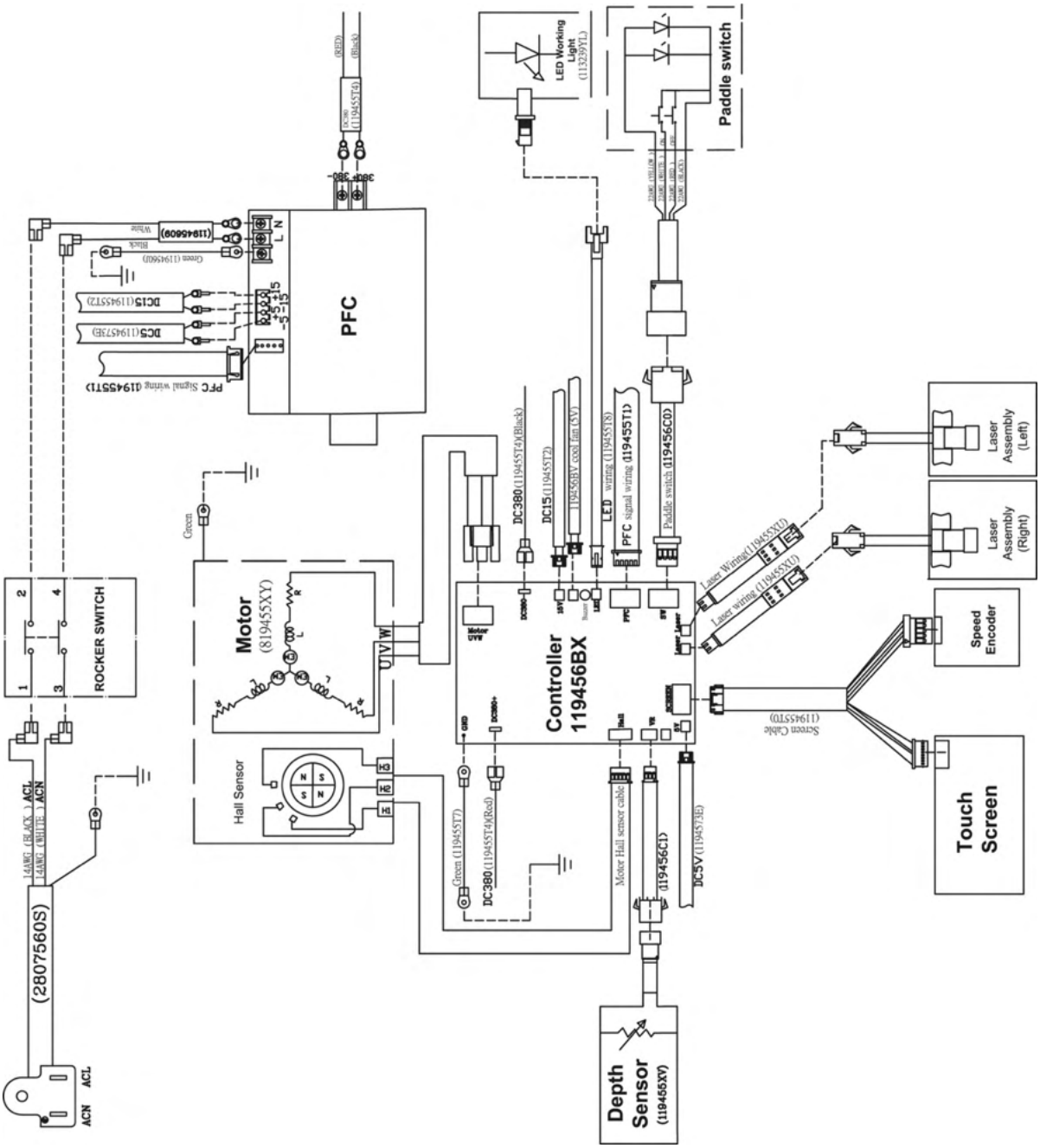
14.1.12 **JDP-20S Column and Base Assembly – Parts List**

Index No.	Part No.	Description	Size	Qty.
1	JT1-2274	Base		1
2	**	Column Base		1
3	TS-1505071	Socket Head Cap Screw	M10x45	4
	JT9-5051911	Flat Washer	M10	4
	TS-2361101	Spring Washer	M10	4
4	**	Column		1
5	TS-1525021	Set Screw	M10x12	1
6	**	Column Holder Kit (Includes Index #2#, #4, #5)		1
7	JT1-2275	Rack		1
8A	JT1-2276	Rack Ring Assembly (Includes Index #8 thru #11)		1
8	**	Rack Ring		1
9	TS-2276081	Set Screw	M6x8	1
10	**	Key Chuck Holder		1
11	TS-1534042	Pan Head Screw	M6x12	1

** Some parts are shown for reference only and may not be available individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

15.0 **Wiring Diagram**

1 Phase, 115V



16.0 **Warranty and Service**

JET® warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

Warranty Period
The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90-day limited warranty against manufacturer's defects.

Who is Covered
This warranty covers only the initial purchaser of the product from the date of delivery.

What is Covered
This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. JET woodworking machinery is designed to be used with Wood. This machine can be used with a wider range of materials paired with specific tools and tool sizes. This information is specified in the touch screen user interface. Use of this machine in processing materials not specified in the user interface guidelines and/or the use of tools, or tool sizes not specified in the user interface guidelines may void the warranty.

Warranty Limitations
Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

How to Get Technical Support
Please contact Technical Service by calling 1-800-274-6846. **Please note that you will be asked to provide proof of initial purchase when calling.** If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

More Information
JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

How State Law Applies
This warranty gives you specific legal rights, subject to applicable state law.

Limitations on This Warranty
JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
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Product Listing with Warranty Period

90 Days – Parts; Consumable items; Light-Duty Air Tools
1 Year – Motors; Machine Accessories; Heavy-Duty Air Tools; Pro-Duty Air Tools
2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories; Woodworking Machinery used for industrial or commercial purposes
5 Year – Woodworking Machinery
Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools

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