



# Operating Instructions and Parts Manual 20" Electronic Variable Speed Drill Press

Models: JDP-20EVS-110, JDP-20EVST-230,-460



JDP-20EVST-230 shown

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## 1.0 IMPORTANT SAFETY INSTRUCTIONS

- Misuse of this machine can cause serious injury.
- For safety, machine must be set up, used and serviced properly.
- Read, understand and follow instructions in the Operating Instructions and Parts Manual which was shipped with your machine.

### When setting up machine:

- Always avoid using machine in damp or poorly lighted work areas.
- Always be sure the machine support is securely anchored to the floor or the work bench.

### When using machine:

- Always wear safety glasses with side shields (See ANSI Z87.1)
- Never wear loose clothing or jewelry.
- Never overreach—you may slip and fall.

### When servicing machine:

- Always disconnect the machine from its electrical supply while servicing.
- Always follow instructions in Operating Instructions and Parts Manual when changing accessory tools or parts.
- Never modify the machine without consulting JET.

### You—the stationary power tool user—hold the key to safety.

Read and follow these simple rules for best results and full benefits from your machine. Used properly, JET machinery is among the best in design and safety. However, any machine used improperly can be rendered inefficient and unsafe. It is absolutely mandatory that those who use our products be properly trained in how to use them correctly. They should read and understand the Operating Instructions and Parts Manual as well as all labels affixed to the machine. Failure to follow all of these warnings can cause serious injuries.

## 1.1 Machinery general safety warnings

1. Always wear protective eye wear when operating machinery. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection.
2. Wear proper apparel. No loose clothing or jewelry which can get caught in moving parts. Rubber soled footwear is recommended for best footing.
3. Do not overreach. Failure to maintain proper working position can cause you to fall into the machine or cause your clothing to get caught, pulling you into the machine.
4. Keep guards in place and in proper working order. Do not operate the machine with guards removed.
5. Avoid dangerous working environments. Do not use stationary machine tools in wet or damp locations. Keep work areas clean and well lit.
6. Avoid accidental starts by being sure the start switch is "OFF" before plugging in the machine.
7. Never leave the machine running while unattended. Machine shall be shut off whenever it is not in operation.
8. Disconnect electrical power before servicing. Whenever changing accessories or general maintenance is done on the machine, electrical power to the machine must be disconnected before work is done.
9. Maintain all machine tools with care. Follow all maintenance instructions for lubricating and the changing of accessories. No attempt shall be made to modify or have makeshift repairs done to the machine. This not only voids the warranty but also renders the machine unsafe.
10. Machinery must be anchored to the floor.
11. Secure work. Use clamps or a vise to hold work, when practical. It is safer than using your hands and it frees both hands to operate the machine.
12. Never brush away chips while the machine is in operation.
13. Keep work area clean. Cluttered areas invite accidents.
14. Remove adjusting keys and wrenches before turning machine on.

15. Use the right tool. Don't force a tool or attachment to do a job for which it was not designed.
16. Use only recommended accessories and follow manufacturer's instructions pertaining to them.
17. Keep hands in sight and clear of all moving parts and cutting surfaces.
18. All visitors should be kept at a safe distance from the work area. Make workshop completely safe by using padlocks, master switches, or by removing starter keys.
19. Know the tool you are using — its application, limitations, and potential hazards.

**⚠ WARNING:** This product can expose you to chemicals including lead and cadmium which are known to the State of California to cause cancer and birth defects or other reproductive harm, and phthalates which are known to the State of California to cause birth defects or other reproductive harm. For more information go to <http://www.p65warnings.ca.gov>.

**⚠ WARNING:** Some dust, fumes and gases created by power sanding, sawing, grinding, drilling, welding and other construction activities contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead based paint
- crystalline silica from bricks, cement and other masonry products
- arsenic and chromium from chemically treated lumber

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as dust masks that are specifically designed to filter out microscopic particles. For more information go to <http://www.p65warnings.ca.gov/> and <http://www.p65warnings.ca.gov/wood>.

**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 possible machine damage.

**⚠ WARNING**

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

**1.2 General electrical cautions**

This drill press should be grounded in accordance with the National Electrical Code and local codes and ordinances. This work should be done by a qualified electrician. The saw must be grounded to protect the user from electrical shock.

**Wire sizes**

**Caution:** For circuits which are far away from the electrical service box, the wire size must be increased in order to deliver ample voltage to the motor. To minimize power losses and to prevent motor overheating and burnout, the use of wire sizes for branch circuits or electrical extension cords according to Table 1 (sect. 6.3) is recommended.

### 1.3 Safety instructions for drill presses

1. All work shall be secured using either clamps or a vise to the drill press table. It is unsafe to use your hands to hold any workpiece being drilled.
2. Drill press head and table shall be securely locked to the column before operating the drill press. This must always be checked prior to starting the machine.
3. Always use the correct tooling. Tooling shall always be maintained and properly sharpened. All tooling must be run at the proper speeds and feeds as they apply to the job. Use only recommended accessories and follow those manufacturer's instructions pertaining to them. Tooling shall not be forced in to any work piece but fed according to the proper specifications. Failure to follow these instructions will not only ruin the tooling as well as the machine, but can cause serious injury.
4. Never brush away any chips while the machine is in operation. All clean up should be done when the machine is stopped.
5. Keep hands in sight. Do not put hands or fingers around, on, or below any rotating cutting tools. Leather safety gloves should be used when handling any sharp objects or cutting tools. See Figure A.
6. Always wear protective eye wear when operating, servicing or adjusting machinery. Eyewear shall be impact resistant, protective safety glasses with side shields complying with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection. Figure B.
7. When drilling in material which causes dust, a dust mask shall be worn. See Figure C.
8. Avoid contact with coolant, especially guarding the eyes.
9. Non-slip footwear and safety shoes are recommended. See Figure D.
10. Wear ear protectors (plugs or muffs) during extended periods of operation. See Figure E.

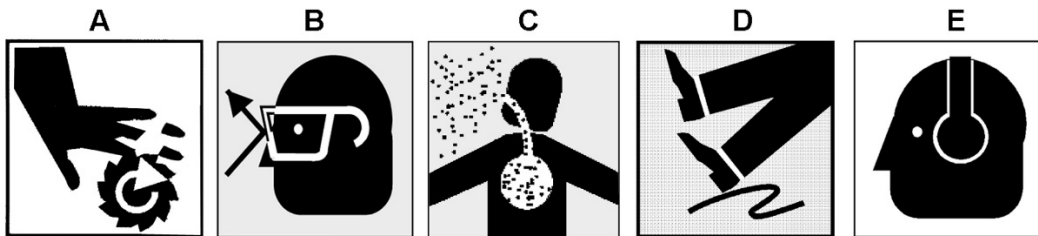


Figure 1-1

## SAVE THESE INSTRUCTIONS

## 2.0 About this manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a JET Model JDP-20EVS series 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.

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](http://www.jettools.com).

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

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

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## 4.0 Specifications

Model number .....	<b>JDP-20EVS-110</b> .....	<b>JDP-20EVST-230</b> .....	<b>JDP-20EVST-460</b>
Stock number .....	354220.....	354225.....	354226

### Motor and Electricals:

Motor type .....	TEFC induction.....	TEFC induction.....	TEFC induction.....
Horsepower .....	2 HP (1.5kW).....	2 HP (1.5kW).....	2 HP (1.5kW)
Phase .....	3.....	3.....	3
Voltage .....	230 V.....	230 V.....	460 V
Cycle.....	60Hz.....	60Hz.....	60Hz
Listed FLA (full load amps) .....	6.....	6.....	3
Motor speed.....	1720.....	1720.....	1720
Inverter .....	economic type, 115V, 1PH.....	MS300, 230V, 1PH.....	MS300, 460V, 3PH
Power input requirements .....	<b>115V, 1 phase</b> .....	<b>230V, 1 phase</b> .....	<b>460V, 3 phase</b>
Starting amps.....	9.2 A.....	6.5A.....	3.3A
Running amps (no load) .....	1.7 A.....	1A.....	1A
Power cable .....	3x14AWG, 6 ft.....	14AWG, 6 ft.....	14AWG, 6 ft.
Power plug.....	120V.....	not provided.....	not provided
Recommended circuit and fuse/breaker size <sup>1</sup> .....	15.....	15.....	15
Sound emission without load <sup>2</sup> .....	70 dB.....	70 dB.....	70 dB
Coolant pump .....	1/8HP 115V 1PH.....	1/8HP 230V 1PH.....	1/8HP 460V 3PH

### Capacities:

Drilling capacity, cast iron .....	1-1/2 in.....	1-1/2 in.....	1-1/2 in.
Drilling capacity, mild steel.....	1-3/8 in.....	1-3/8 in.....	1-3/8 in.
Tapping capacity, cast iron .....	n/a.....	7/8 in.....	7/8 in.
Tapping capacity, mild steel.....	n/a.....	3/4 in.....	3/4 in.
Spindle to table maximum distance .....	30-1/4 in.....	30-1/4 in.....	30-1/4 in.
Spindle to base maximum distance .....	44-1/2 in.....	44-1/2 in.....	44-1/2 in.
Spindle to column maximum distance .....	10-7/16 in. (265mm).....	10-7/16 in. (265mm).....	10-7/16 in. (265mm)
Coolant capacity .....	2 gal. (9L).....	2 gal. (9L).....	2 gal. (9L)

### Spindle:

Spindle taper .....	MT-3.....	MT-3.....	MT-3
Spindle speed .....	variable.....	variable.....	variable
Spindle speed range .....	65-540/245-2000.....	65-540/245-2000.....	65-540/245-2000
Spindle travel .....	6 in. (152.4 mm).....	6 in. (152.4 mm).....	6 in. (152.4 mm)
Gear reduction .....	48/35T.....	48/35T.....	48/35T
Rotation .....	fwd/rev.....	fwd/rev.....	fwd/rev

### Table and Column:

Table size .....	22 x 18-3/4 in. (559 x 476 mm).....	22 x 18-3/4 in. (559 x 476 mm).....	22 x 18-3/4 in. (559 x 476 mm)
Table working surface .....	18-1/8 x 14-3/4 in. (460 x 375 mm).....	18-1/8 x 14-3/4 in. (460 x 375 mm).....	18-1/8 x 14-3/4 in. (460 x 375 mm)
Table travel			
Without rack adjustment .....	15 in. (381mm).....	15 in. (381mm).....	15 in. (381mm)
Maximum travel with rack adjustment.....	20 in. (508mm).....	20 in. (508mm).....	20 in. (508mm)
T-slot number .....	3.....	3.....	3
T-slot size .....	5/8 in. (16mm).....	5/8 in. (16mm).....	5/8 in. (16mm)
T-slot centers .....	7-7/16 in. (189mm).....	7-7/16 in. (189mm).....	7-7/16 in. (189mm)
Table weight capacity .....	154 lb. (70kg).....	154 lb. (70kg).....	154 lb. (70kg)
Column diameter .....	4-1/2 in. (114mm).....	4-1/2 in. (114mm).....	4-1/2 in. (114mm)

### Base:

Base size .....	27 x 19 in. (686 x 483mm).....	27 x 19 in. (686 x 483mm).....	27 x 19 in. (686 x 483mm)
Base working surface.....	14-3/4 x 11-13/16 in. (375 x 300mm).....	14-3/4 x 11-13/16 in. (375 x 300mm).....	14-3/4 x 11-13/16 in. (375 x 300mm)
T-slot number .....	2.....	2.....	2
T-slot size .....	5/8 in. (16mm).....	5/8 in. (16mm).....	5/8 in. (16mm)

### Main materials:

Head .....	cast iron, steel cover.....	cast iron, steel cover.....	cast iron, steel cover
Table and Base.....	cast iron.....	cast iron.....	cast iron
Spindle and Quill.....	steel.....	steel.....	steel
Column .....	steel.....	steel.....	steel

**Dimensions:**

Assembled machine dimensions (LxWxH).....38-3/16 x 27-5/32 x 79-1/2 in. (970 x 690 x 2020mm) .....  
Shipping crate dimensions (LxWxH)..... 37 x 25.5 x75 in. (939 x 648 x1905mm).....

**Weights:**

Net weight.....723 lb(328 kg).....723 lb(328 kg)..... 723 lb(328 kg)  
Shipping weight .....781 lb (355 kg).....781 lb (355 kg) ..... 781 lb (355 kg)

<sup>1</sup> Subject to local and national electrical codes.

<sup>2</sup> 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.

L = length, W = width, H = height

n/a = not applicable

The above specifications were current at the time this manual was published, 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.

### 4.1 Mounting hole centers (all models)

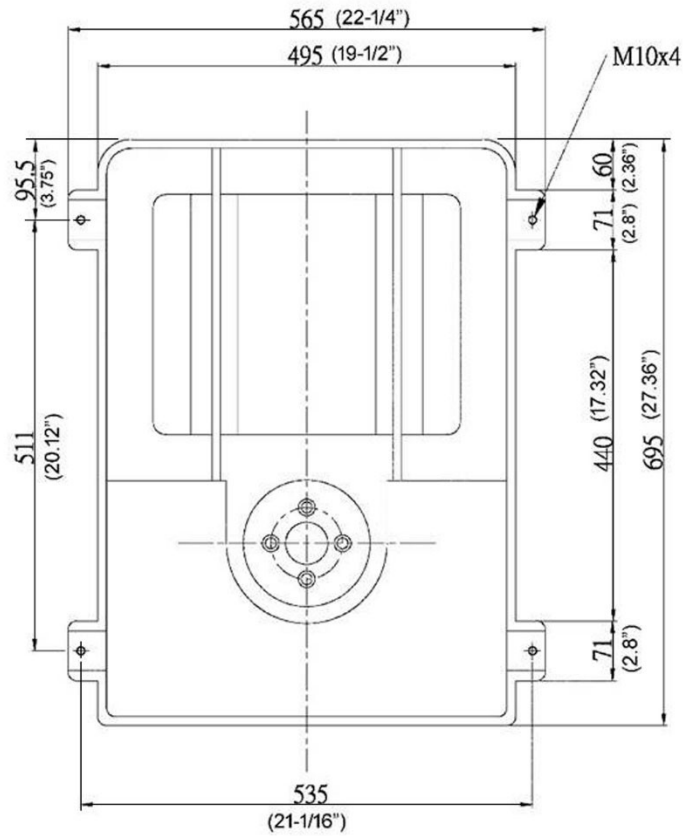


Figure 4-1: machine base mounting

## 5.0 Set-Up and Assembly

Inspect contents of crate for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until drill press is assembled and running properly.

Remove any fasteners holding drill press to pallet. Lift drill press with forklift or hoist with straps. (Note: Lifting point is beneath head and next to column.) Make sure coolant hose, handles, etc. are clear of forks or straps when lifting. **Lifting equipment must be properly rated for weight of drill press.**

Locate the machine on a solid, level floor, preferably concrete. Area should have good overhead lighting and ventilation. (Refer to OSHA regulations for specific information about using drill presses in industrial environments.) The drill press should be level and rest solidly on floor. Place shims below base as needed to achieve level.

Exposed metal surfaces have been given a protective coating. Remove this with a soft cloth and a cleaner-degreaser or kerosene. Do not use gasoline, paint thinner or acetone, as these may damage painted surfaces. Do not use an abrasive pad, as it may scratch polished surfaces.

Coat all machined surfaces with a light coat of oil to inhibit rust.

### 5.1 Securing base

It is highly recommended that the drill press be secured to floor. The base of the drill press has four mounting slots; see Figure 4-1. When securing base to floor, apply even torque to the fasteners to prevent distortion of base.

### 5.2 Raising head

The drill press head is lowered on the column for crating and transportation. Before operating drill press, head must be raised to operational level, as follows.

1. Cut a 2x4 approximately 16-inches in length.
2. Loosen head locking nut (A, Figure 5-1) by turning counterclockwise with provided socket wrench.
3. Grasp head and turn it slightly from side to side to loosen the rust prevention solution on column.
4. Loosen table lock by placing handle on crankshaft (see A, Figure 8-2) and rotating handle counterclockwise.
5. Raise table by placing handle on crankshaft (B or C, Figure 8-2) and rotating clockwise. Place 2x4 vertically between table and head, as close to column as possible. CAUTION: Do not place 2x4 under lock collar (B, Figure 5-1).

6. Continue raising head and 2x4 until head bore and column are flush. Use a ladder to observe column through top of pulley cover.

**⚠WARNING** Do not raise head any farther or it may fall from column. Failure to comply may result in serious injury.

7. Securely tighten head locking nut (A, Figure 5-1). This will secure head until lock collar can be positioned. The 2x4 can now be safely removed.
8. Loosen two set screws on lock collar (B), and slide lock collar until it is flush with head. Securely tighten both set screws.

**⚠WARNING** Never loosen head locking nut (A) without supporting the head.

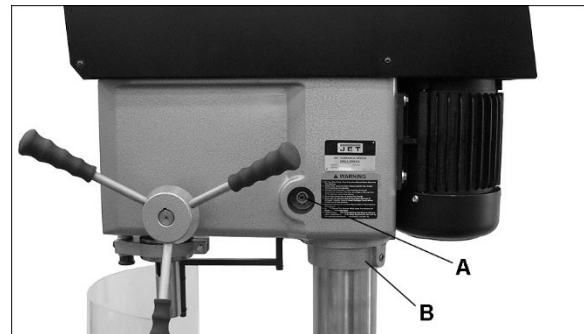


Figure 5-1

## 6.0 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.

The **JDP-20EVS-110** Drill Press is pre-wired for 1-phase, 115-volt. It is provided with an electrical plug. See sect. 6.2.

The **JDP-20EVST-230** is pre-wired for 1-phase, 230-volt. It is not provided with an electrical plug; you may either attach a proper UL-listed plug, or “hardwire” the machine directly to a service panel. The machine cannot be run on 3-phase power (230-volt). sect. 6.2

The **JDP-20EVST-460** is pre-wired for 3-phase, 460-volt only. It is not provided with an electrical plug; you may either attach a proper UL-listed plug, or “hardwire” the machine directly to a service panel. See sect. 6.2.

### 6.1 Electrical box access

Push latch button and rotate latch counterclockwise to open. Use the provided key to lock the electrical box to prevent unauthorized entry.



## 6.2 GROUNDING INSTRUCTIONS

This tool 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. If the machine is supplied with an electrical plug, the plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**⚠️ WARNING** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

The conductor with insulation having an outer surface 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.

Repair or replace damaged or worn cord immediately.

If the drill press is to be hard-wired to a panel, make sure a disconnect is available for the operator. During hard-wiring of the machine, make sure the fuses have been removed or the breakers have been tripped in the circuit to which the drill press will be connected. ALWAYS FOLLOW PROPER LOCK-OUT/TAG-OUT PROCEDURES.

Model **JDP-20EVST-230** (1-Phase) is pre-wired for *230 volt only*. The machine only runs on 1-Phase power by hooking up the ground, L1 and L2 wires, as explained below.

Model **JDP-20EVS-460** (3-Phase) is pre-wired for *460 volt only*.

To wire the drill press:

If using a power cord, strip back the cord until about 3 to 4 inches of the lead wires are exposed. Slide a grommet onto the cord to be installed later in electrical box hole, to prevent stress to power cord.

1. Bring the lead wires through hole in machine's electrical box and connect as follows (refer to Figure 6-1):
2. If your incoming power is **single phase**, connect the two leads to L1 and L2, and the green ground wire to the grounding screw.
3. If your incoming power is **three phase**, connect the three leads to L1, L2 and L3, and the green ground wire to the grounding screw.

Make sure incoming current matches power requirements of the drill. When machine is connected properly, spindle turns clockwise in a conventional drilling rotation. If spindle does not turn clockwise, disconnect drill from power supply and reverse any two of the three power leads (except green ground wire).

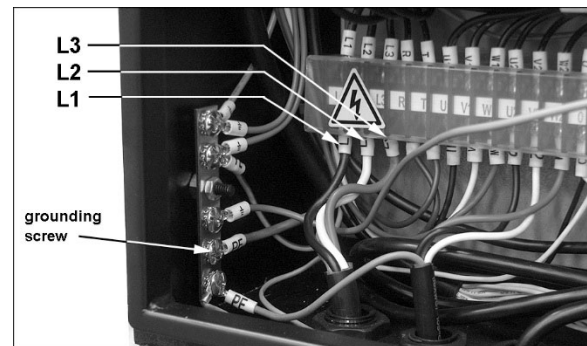


Figure 6-1: shows three-phase connection

## 6.3 Extension cords

The use of extension cords is discouraged; try to position equipment within reach of power source. If an extension cord becomes necessary, be sure it is heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

Table 1 shows recommended size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Ampere Rating		Volts	Total length of cord in feet			
More Than	Not More Than		25	50	100	150
		120	25	50	100	150
		240	50	100	200	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: extension cord recommendations

## 7.0 Operating controls

The front panel (Figure 7-1) contains all the controls required to operate the drill press. The A.C. inverter in the electrical box does not require any programming, it is pre-programmed from the factory. **Do not attempt to change inverter settings.** Use only the controls on the front panel. If you suspect a problem with the inverter or its settings, contact JET technical service at 1-800-274-6848.

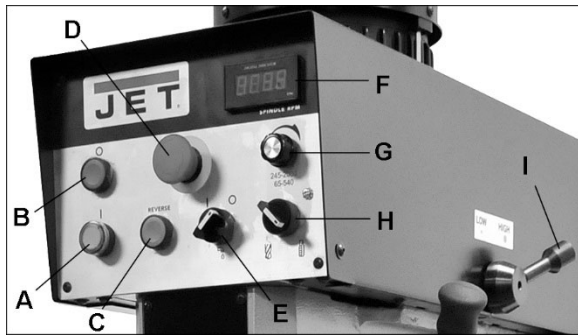


Figure 7-1: controls (JDP-20EVST-230 shown)

**Spindle On (A):** Starts drive motor. To stop motor, press button again (toggles on and off).

**Spindle off (B):** Stops spindle rotation. (NOTE: Other functions such as coolant pump will continue to operate.)

**Reverse spindle (C):** Functional only in tapping mode. If tapping is interrupted, press this button to reverse tap from workpiece.

**E-Stop (D):** Emergency stop button shuts down all drill press functions. To reset, turn E-stop button clockwise until it disengages.

**Coolant pump (E):** Starts and stops coolant pump circulation.

**LED Display (F):** Shows spindle RPM selected by speed control knob.

**Speed control (G):** Selects spindle speed based upon range set by speed shift lever.

**Drill mode (H):** Selects drill or tap mode (JDP-20EVST models only).

**Speed shift lever (I):** Selects high or low speed range. See sect. 4.0 for ranges.

**CAUTION** Spindle must be stopped before attempting to adjust speed shift lever. Failure to comply may damage speed adjustment mechanism.

NOTE: The Electronic Variable Speed unit is designed to shut down, to prevent harm to the system, in the event of overloading the spindle. Make sure the Speed Control knob and the High-Low Handle are in the matching ranges for the work being done. Drilling large holes requires High-Low Handle to be in 'Low' mode and Speed Control Knob to be selecting a speed that is high enough to power the large bit.

## 8.0 Adjustments

### 8.1 Depth stop

The drilling depth indicator (Figure 8-1) can be set for depths up to 6 inches (152.4 mm).

#### 8.1.1 For drilling (all models)

Set switch to drill mode.

Before starting motor, set end of drill against surface into which hole is to be drilled. Zero out indicator by turning knurled knob (J). Lock indicator setting at zero by tightening knob (K). Start motor and drill hole until indicator line reaches desired depth.

#### 8.1.2 For tapping (JDP-20EVST models)

Set depth stop in same manner as above. When quill is advanced, upper limit switch will be released for tapping. When lower limit switch is triggered, spindle will reverse rotation direction.

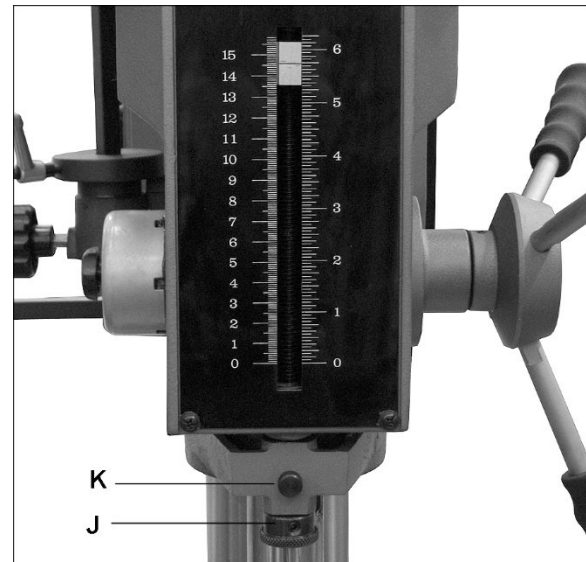


Figure 8-1: depth indicator

### 8.2 Table adjustment

The table can be raised or lowered to accommodate workpiece height. Place hand crank on shaft (A, Figure 8-1) and turn to loosen table lock. Then use hand crank on shaft B or C to raise or lower table. Lock table in position using shaft A.

If drill press base is to be used for securing workpiece, loosen table (A) and swing it around column and out of the way. Retighten table.

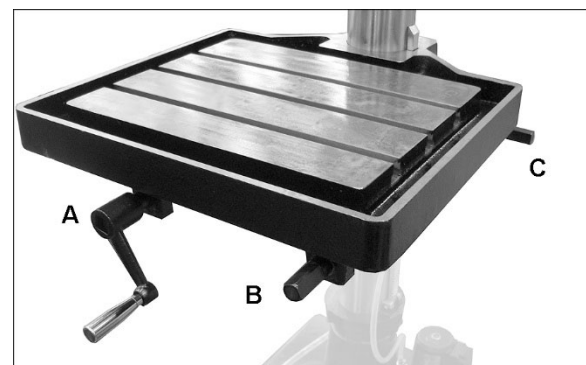


Figure 8-2: table adjustments

### 8.3 Tool installation and removal

1. Disconnect machine from power source.
2. Thoroughly clean inside of spindle with a soft dry cloth. Also clean any taper or arbor to be used in the spindle. If these are not kept clean, taper or arbor will not “seat” properly in spindle and may drop out unexpectedly.
3. Place protective piece of scrap wood on table.
4. Raise table to approximately 8 to 10 inches below spindle.
5. Insert MT3 tool into spindle.
6. Lower spindle using side handle, and seat tool against the wood.

To remove a tool:

1. Disconnect machine from power source.
2. Lower spindle to expose slots in spindle wall.
3. Insert drift key into spindle slots and tap gently until drill bit or chuck arbor loosens. Hold tool with one hand (use glove or rag if needed) while tapping to prevent tool from falling and being damaged.

### 8.4 Speed pickup adjustment (all models)

Refer to exploded view, *sect. 12.3.2*.

1. Loosen screws securing speed pickup (ref. 68A) to plate (ref. 69A).
2. Adjust speed pickup gap to approximately 1/8-inch. Re-tighten screws.
3. Operate drill press to verify that speed readout is operating correctly.

### 8.5 Spindle return spring adjustment

The spindle return is preset by the manufacturer and should not need adjustment. If future attention is ever required, proceed as follows:

1. Do NOT remove spring cap (D, Figure 8-3).
2. Loosen screws (E) just enough to rotate spring cap past pin (F) and engage pin into next notch.
3. Rotate spring cap clockwise to decrease spring tension. Rotate spring cap counter-clockwise to increase spring tension.
4. Re-tighten both screws (E).

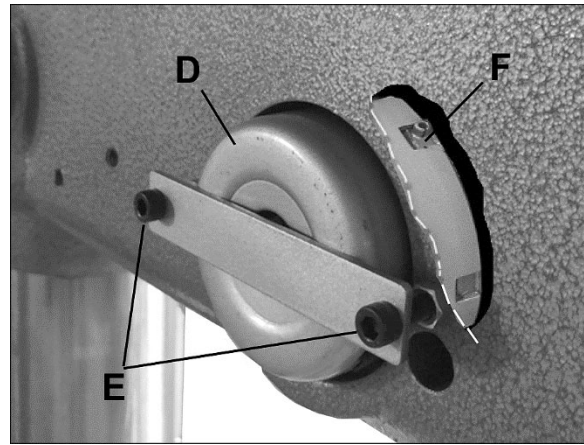


Figure 8-3

### 8.6 Coolant pump

The coolant system should be filled with 2 gallons of a cutting coolant. Fill by pouring coolant into base of machine. Add coolant in the same manner when coolant is low. To drain coolant, remove hex cap screw located on lower backside of base. Follow all coolant manufacturer's instructions for safety, mixing and disposal.

Make sure drain hose has good, tight connection into table and that coolant flows into base.

Make sure hose leaving pump and entering ball valve has good, tight connections.

The flexible nozzle enables user to adjust coolant for each job. One ball valve controls coolant flow to nozzle.

## 9.0 Operation

### 9.1 Operating precautions

The following operating and safety precautions must be observed in order to avoid harm to operator or damage to drill press.

1. Head assembly must be locked to column so the thrust produced by drilling will not force the head assembly up the column.
2. Work table must be locked to column so it will not be forced down the column.
3. Be sure belt is tightened to proper tension.
4. Do NOT start to drill workpiece until making certain workpiece is held down securely.
5. MAKE SURE DRIVE MOTOR IS RUNNING BEFORE turning speed shift lever (I, Figure 7-1) in either direction.
6. Point of operation protection is required for maximum safety. This remains the responsibility of the user/purchaser since conditions differ between jobs.
7. Make sure the drill is secured in the spindle or chuck before attempting to use the drill press.
8. Make sure spindle taper is clean and free of burrs, scoring, and galling to assure maximum gripping.

## 9.2 Drilling recommendations

### 9.2.1 Drilling speeds

The speed of a drill is usually measured in terms of the rate at which the outer periphery of the tool moves in relation to the work being drilled. The common term for this is Surface Feet per Minute (SFM). The relationship of SFM is expressed in the following formulas:

$$\text{SFM} = 0.26 \times \text{rpm} \times \text{Drill Diameter (in inches)}$$

$$\text{RPM} = 3.8 \times \frac{\text{SFM}}{\text{Drill diameter (in inches)}}$$

In general, the higher the speed the shorter the drill life. Operating at the low end of the speed range for a particular material will result in longer life. The most efficient speed for drill operation depends upon many variables:

1. Composition and hardness of material.
2. Depth of hole.
3. Efficiency of cutting fluid.
4. Type and condition of drilling machine.
5. Desired quality of hole.
6. Difficulty of set-up.

### 9.2.2 Drilling feed

The feed of a drill is governed by size of tool and the material drilled. Because feed rate partially determines rate of production and also is a factor in tool life, it should be chosen carefully for each job. In general, the most effective feeds will be found in the following ranges:

Diameter of Drill (inches)	Feed per Revolution (inches)
Under 1/8	0.001 to 0.002
1/8 to 1/4	0.002 to 0.004
1/4 to 1/2	0.004 to 0.007
1/2 to 5/8	0.007 to 0.015

Table 2

### 9.2.3 Excessive speed/feed indicators

A drill that splits up the web is evidence of too much feed or insufficient tip clearance at the center as a result of improper grinding. The rapid wearing away of the extreme outer corners of cutting edges indicates that speed is too high. A drill chipping or breaking out at the cutting edges indicates that either feed is too heavy or drill has been ground with too much tip clearance.

### 9.2.4 Speeds for high speed steel drills

Material	Speed (SFPM)
Alloy Steel — 300 to 400 Brinell	20-30
Stainless Steel	30-40
Automotive Steel Forgings	40-50
Tool Steel, 1.2C	50-60
Steel, .4C to .5C	70-80
Mild Machinery Steel, .2C to .3C	80-110
Hard Chilled Cast Iron	30-40
Medium Hard Cast Iron	70-100
Soft Cast Iron	100-150
Malleable Iron	80-90
High Nickel Steel or Monel	40-50
High Tensile Bronze	70-150
Ordinary Brass and Bronze	200-300
Aluminum and its Alloys	200-300
Magnesium and its Alloys	250-400
Slate, Marble, and Stone	15-25
Plastics and similar materials (Bakelite)	100-150
Wood	300-400
Titanium Alloys	10-25
Titanium Alloy Sheet	50-60

Note: In cases where carbon steel drills are applicable, the drill should be run at speeds of 40 to 50 percent of those given above.

Table 3

## 10.0 User-maintenance

### 10.1 Drive belt replacement

**⚠WARNING** Disconnect electrical power to drill press to avoid possibility of inadvertent operation and exposure to potentially lethal voltage levels.

1. Disconnect electrical power by setting drill press circuit breaker to OFF.
2. Loosen set screw and remove high/low shift lever.
3. Remove screws and take off pulley cover.
4. Disconnect electrical wiring from motor junction box, and remove motor.
5. Remove used belt. Install replacement belt.
6. Install motor and connect electrical wiring (refer to *Wiring Diagram* section for wiring details).
7. Install pulley cover and secure with screws.
8. Set the drill press circuit breaker ON.
9. Operate drill press to verify correct operation.

### 10.2 Motor replacement

**⚠WARNING** Disconnect electrical power to drill press to avoid possibility of inadvertent operation and exposure to potentially lethal voltage levels.

1. Disconnect electrical power by setting drill press circuit breaker to OFF.

2. Follow steps under sect. 12.1 to remove drive motor.

### 10.3 Lubrication

See Table 4 for lubrication points and frequency.

Oil fill tube:

- a. Periodically check oil level in sight gauge (A, Figure 10-1).
- b. If level is below centerline of sight gauge, add oil.
- c. To add oil, remove oil fill tube cover plate. Pull fill tube out of hole in head cover (B).
- d. Add oil to bring oil level up to centerline of sight gauge.
- e. Put end of fill tube back through hole in head cover. Install fill tube cover and secure with two screws.

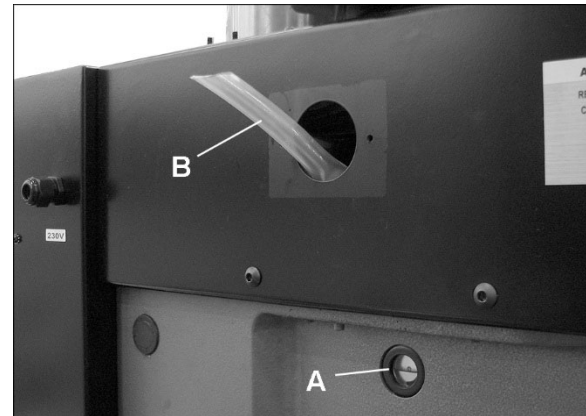


Figure 10-1

Lubrication points		
Location	Type	Frequency
Splines on spindle shaft (access through hole atop pulley cover)	#2 lithium based tube grease	Monthly
Quill and column	Machine tool oil	Daily
Lift rack	20W non-detergent oil	Weekly (clean rack with kerosene before lubricating)
Table lift	Gear grease	Twice yearly (clean and regrease)
Oil fill tube (behind plate on left side of drill head; see Figure 10-1)	Mobil DTE Heavy Medium	Change after initial 6 months, then annually thereafter. Capacity = 1 quart. Drain plug is located in cutaway section on underside of head.

Table 4

## 11.0 Troubleshooting JDP-20EVS series Drill Presses

Trouble	Probable Cause	Remedy
Spindle does not turn.	Motor overload protector tripped.	Press motor overload reset button.
	Circuit breaker tripped.	Reset circuit breaker.
	Branch circuit breaker tripped or fuse blown.	Reset branch circuit breaker/replace fuse.
	Open wire in switch circuit.	Repair open circuit.
	Defective switch.	Replace switch.
	Broken drive belt.	Replace drive belt.
Spindle noisy.	Damaged spindle bearings.	Replace bearings.
	Worn spline.	Replace spline.
Drill stalls.	Worn drive belt.	Check condition of belt. Replace if glazed or slipping on pulleys.
	Excessive feed rate for size of drill and material being drilled. No cutting fluid or improper cutting fluid.	Reduce feed pressure or use cutting fluid. Use correct cutting fluid.
Poorly drilled holes.	Drill dull.	Sharpen drill.
	Lack of rigidity in hold-down method.	Check that all T-slot hold-downs are tight and that table-lock and drill head bolts are tight.
	Speed too fast for material and drill size.	Check spindle speed recommendations. Reduce speed if necessary.
	Feed too fast for material and drill size.	Reduce feed rate.
	No or improper cutting fluid or coolant being used.	Use cutting fluid, or change to proper fluid or coolant for material being drilled.
	Improperly ground drill bit.	Check for proper angles and reliefs. Regrind to proper geometry.
Motor overheating.	Electrical circuit fault.	Check current draw in circuit. Make sure current draw is the same as rating on motor plate.
	Oversize drill.	Reduce drill size.
	Excessive feed.	Reduce feed rate.
	No cutting fluid, or wrong fluid.	Use correct cutting fluid for the material and drill.
Table cannot be raised.	Lack of lubrication.	Lubricate.
No speed readout.	Speed pickup out of adjustment or failed.	Adjust gap between speed pickup and post spindle pulley. If there is no readout on the LED speed indicator after adjusting the gap, replace the speed pickup.

Table 5

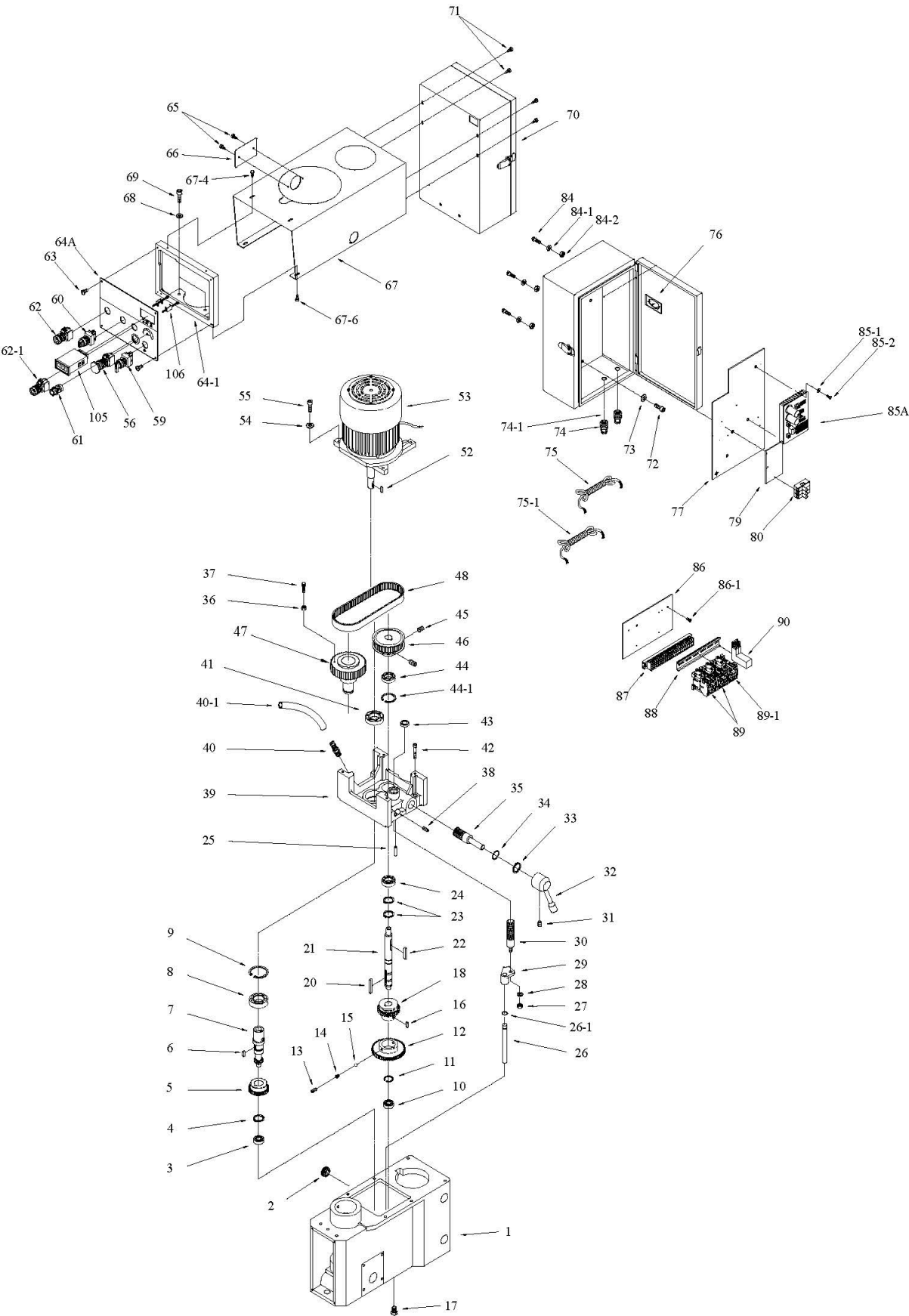
## 12.0 Replacement Parts

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.

Non-proprietary parts, such as fasteners, can be found at local hardware stores, or may be ordered from JET.

Some parts are shown for reference only, and may not be available individually.

# 12.1.1 JDP-20EVS-110 Top Head Assembly – Exploded View



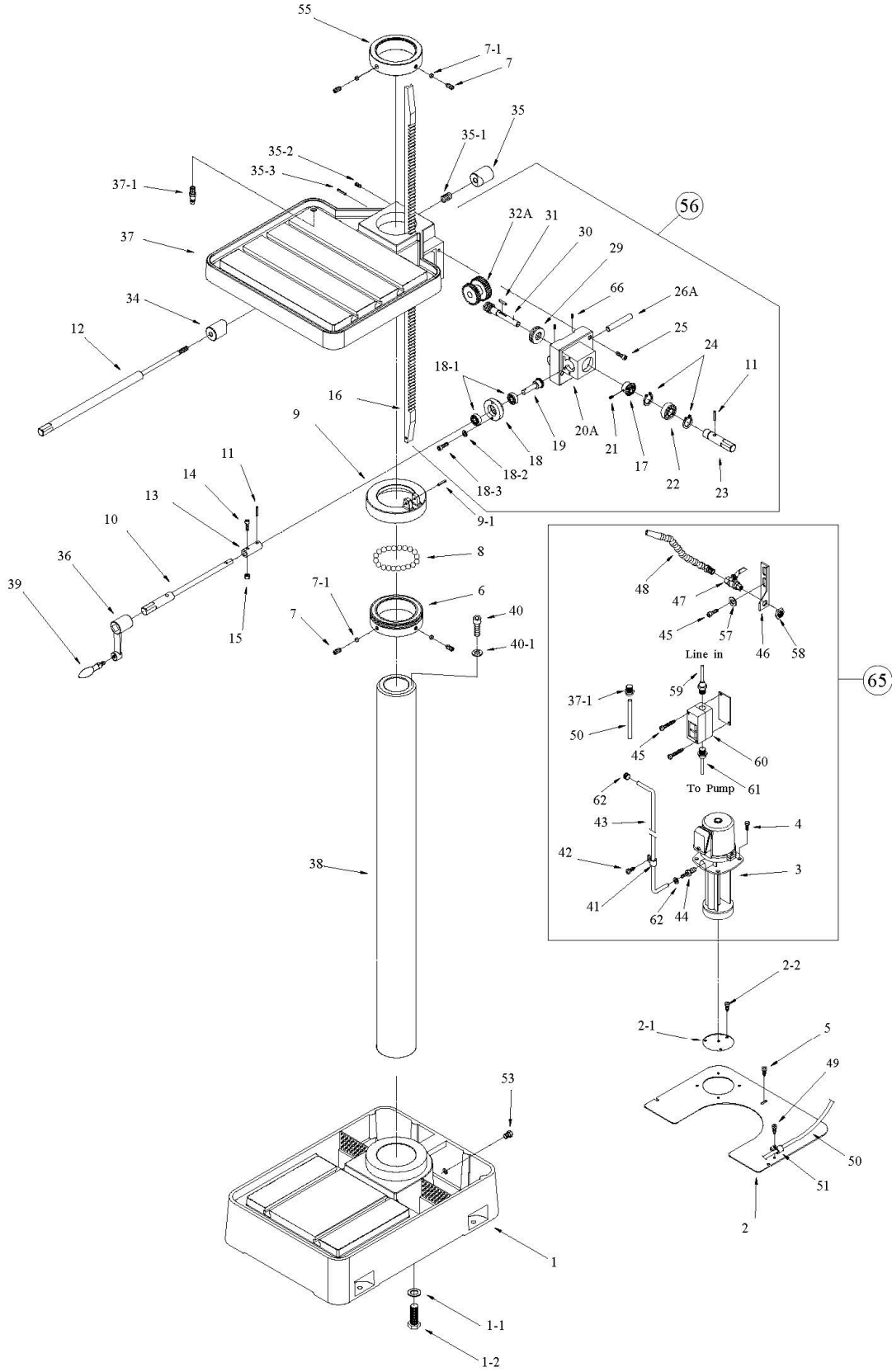


## 12.1.2 JDP-20EVS-110 Top Head Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1	J-5517332ACG	Head Casting		1
2	5510142	Oil Window		1
3	5510143	Ball Bearing		1
4	5510144	Retaining Ring		1
5	5510145	Gear	32T	1
6	5510146	Key		1
7	5510147	Drive Shaft	13T	1
8	5510148	Ball Bearing		1
9	5510149	Retaining Ring		1
10	5510150	Ball Bearing		1
11	5510151	Retaining Ring		1
12	5510153	Gear	55T	1
13	5510152	Set Screw		1
14	5510155	Spring		1
15	5510154	Steel Ball		1
16	5510159	Key		1
17	5517333	Drain Plug	3/8 NPT	1
18	5510158	Gear	18T	1
20	5510160	Key		1
21	5510161	Mid Shaft		1
22	5510162	Key		1
23	5510163	Retaining Ring		2
24	5510164	Ball Bearing		1
25	5510165	Pin		1
26	5510166	Bar		1
26-1	5517334	Ring		1
27	5510167	Hex Nut		1
28	5510168	Spring Washer		1
29	5510169	Speed Change Block		1
30	5510170	Gear Bar		1
31	5510171	Set Screw		1
32	5517335	Speed Lever		1
33	5517336	Retaining Ring		1
34	5510173	Oil Seal		1
35	5510177	Gear Shaft	18T	1
36	5517337	Hex Nut		1
37	5517338	Cap Screw		1
38	5510178	Set Screw		1
39	5517339	Gearbox Top Cover		1
40	5510180	Oil Fill Fitting		1
40-1	5517340	Fill Tube		1
41	5510181	Oil Seal		1
42	5510182	Bolt		1
43	5510183	Oil Seal		1
44	5510184	Oil Seal		1
44-1	5517341	Retaining Ring		1
45	5510185	Set Screw		1
46	5510186	Drive Pulley		1
47	5517342N	Spindle Pulley with Driving Sleeve	48T	1
48	5517343	Belt	720x8	1
52	5510192	Key		1
53	J-5517349	Motor	2HP, 3PH, 220V	1
54	5510194	Washer		4
55	5510195	Screw		4
56	5510204	E-stop Switch		1
59	5510199	Pump Selector Switch		1
60	5510200	Forward/Reverse Switch		1
61	5510196	Speed Control Potentiometer		1
62	5510202	Green Pushbutton Switch		1
62-1	JDP20EVS110-62-1	Power Light		1
63	5510206	Screw		4
64A	JDP20EVS110-64A	Control Panel		1

Index No.	Part No.	Description	Size	Qty
64-1	5517352	Plate Bracket		1
65	5510209	Pan Head Screw		2
66	5510210	Oil Filler Cover		1
67	J-5517353N	Pulley Cover		1
67-4	5510215	Pan Head Screw		2
67-6	5517357	Screw		2
68	5510216	Spring Washer		2
69	5510217	Screw		2
70	J-5517359	Enclosure (w/door & latch, lock & key)		1
	J-5517359-70-1	Keys for Enclosure (set of 2)		1
71	5510219	Screw		4
72	5510220	Bolt		4
73	5517360	Washer		4
74	5510222	Cable Relief		1
74-1	5517361	Cable Relief		1
75	5510223	Electric Cable (to power)	3x14AWG 300V	1
75-1	5517362	Electric Cable (to work light)	3x16AWG 300V	1
76	5510224	Window Cover		1
77	5517363	Component Mounting Panel		1
79	5510227	Insulation Board		1
80	5510228	Fuse Block		1
84	5517366	Cap Screw		4
84-1	5517367	Lock Washer		4
84-2	5517368	Hex Nut		4
85A	JDP20EVS-110/85A	PC Board		1
85-1	5517371	Flat Washer		4
85-2	5517372	Screw		4
86	5517373	Sub-Panel		1
86-1	5517374	Screw		4
87	5510235	Terminal Block		1
88	5517375	Mounting Rail		1
89	5510237	Contact		2
89-1	JDP20EVS-110/POR	Pump Overload Relay		1
90	5510240	Relay		2
105	JDP20EVST-105	LED Display	110V	1
106	5513683	Cap Screw		2
	LM000227	ID/Warning Label, JDP-20EVS-110 (not shown)		1
	JET-113	JET Logo (not shown)	113x47mm	1

# 12.2.1 JDP-20EVS-110 Table and Base Assembly – Exploded View

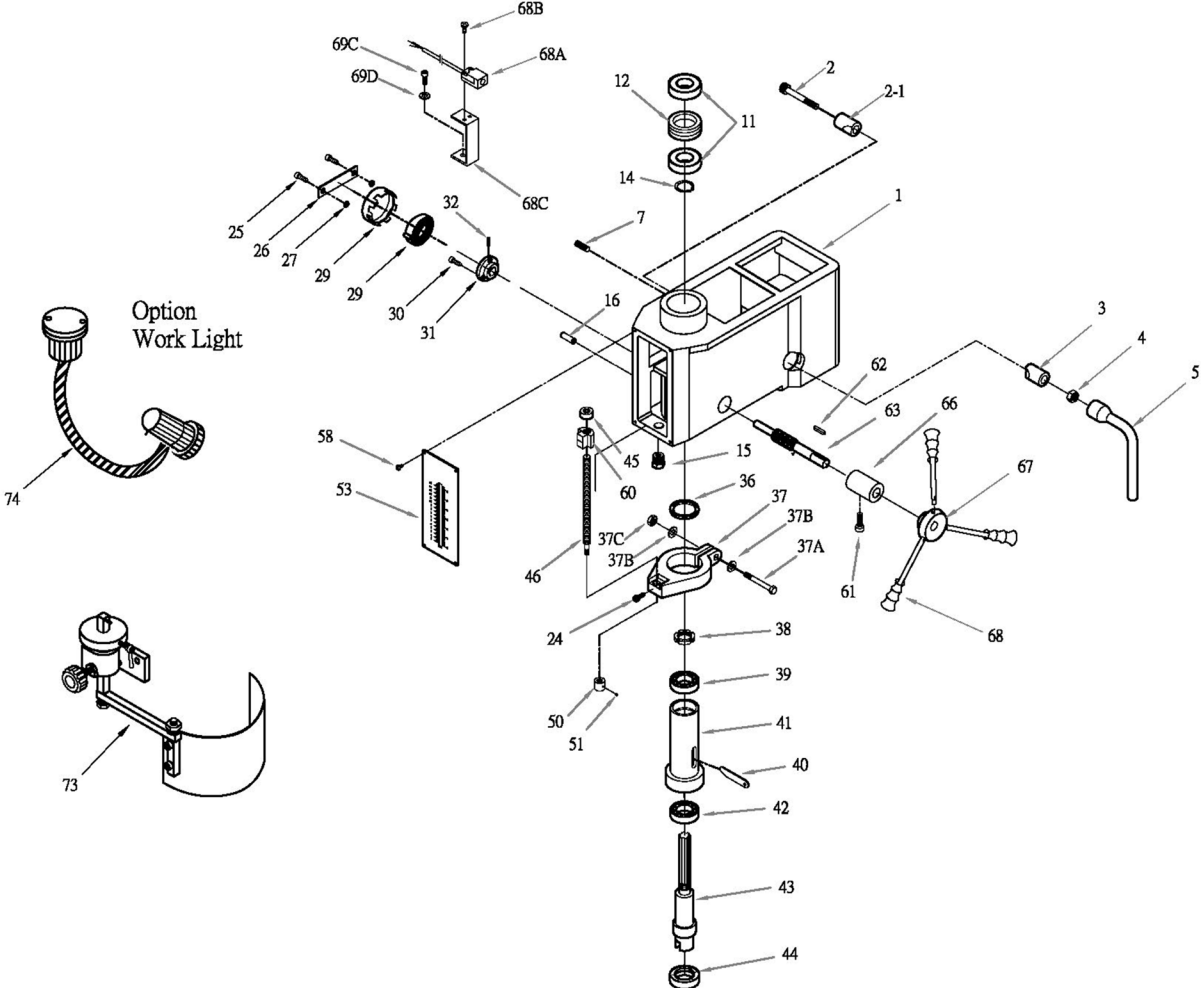


## 12.2.2 JDP-20EVS-110 Table and Base Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1	J-5510288A	Base		1
	J-5510288AN	Base (s/n 20040313 and higher)		1
1-1	TS-0720111	Lock Washer	1/2"	10
1-2	TS-0070031	Hex Cap Screw	1/2" x 1-1/2"	10
2	J-5510289	Coolant Cover Plate		1
2-1	5518263	Small Cover		1
2-2	20EVS-C4	Screw w/Washer	1/4"	3
3	5510456	Coolant Pump	115V/230V, 1P	1
4	TS-1482011	Hex Bolt	M6x10	4
5	5517388	Pan Head Screw		3
6	5510293A	Ball Seat		1
7	5510294	Set Screw	3/8"	4
7-1	5517389	Brass Block		4
8	5510295	Ball Bearing	3/8"	38
9	J-5510296A	Lock Ring		1
9-1	5517390	Pin	M4	1
10	5516859	Table Raiser Shaft		1
11	5510298	Spring Pin	4x20	1
12	5516858	Table Clamp Shaft		1
13	5516860	Table Raiser Coupling		1
14	5510300	Socket Head Screw		1
15	TS-0561011	Nut	1/4"	1
16	5510302	Rack		1
17	5514663	Large Bevel Gear		1
18	5517391	Bearing Housing		1
18-1	BB-6202ZZ	Ball Bearing	6202ZZ	2
18-2	TS-0720071	Washer	1/4"	2
18-3	TS-1482041	Cap Screw	M6x20	2
19	5510304	Small Bevel Gear		2
20A	J-5510305A	Bracket Cover		1
21	TS-0267041	Set Screw	1/4"x3/8"	1
22	BB-6005ZZ	Ball Bearing	6005zz	1
23	5510308	Shaft		1
24	5510309	C-Ring	S25	2
25	TS-1504071	Hex Socket Cap Screw	M8x35	3
26A	5510311A	Shaft		1
29	BB-51102	Bearing	51102	1
30	5510315	Table Raise Worm		1
31	5510316	Key	4x4x20	1
32A	5510317A	Worm Gear Assembly		1
34	5510319	Front Cam Lock		1
35	5510320	Rear Cam Lock		1
35-1	5517396	Spring		1
35-2	TS-1523071	Set Screw	M6x25	1
35-3	5517398	Pin	5x25	2
36	J-5510321	Table Raise Crank		2
37	JDP20VST-37	Table		1
37-1	5517399	Hose Coupler (Return)	1/2"	1
38	5510323A	Column		1
	5510323AN	Column (s/n 20040313 and higher)		1
39	5510324	Table Raise Handle		1
40	TS-1503021	Socket Head Cap Screw		1
40-1	TS-1550041	Flat Washer		1
43	5510328	Clear Vinyl Hose	3/8"	1
44	5510329	Hose Coupler (Supply)	3/8"	1
45	5512112	Socket Head Cap Screw	#10-32 x 1"	4
46	5510331	Mounting Bracket		1
47	5510332	Valve		1
48	5510333	Flexible Nozzle		1
49	5517400	Pan Head Screw		1
50	5517401	Clear Vinyl Hose	1/2"	1
51	5517402	Hose Clamp		1
53	5517404	Drain Plug	3/8 NPT	1

Index No.	Part No.	Description	Size	Qty
55	J-5517406	Rack Collar		1
56	5513932	Table Raiser Assembly		1
57	9057451	Flat Washer	#10	2
58	5517488	Hex Nut	1/2"	1
59	5517489	Power Cord		1
60	5517490	Switch Assembly		1
61	5517491	Pump Cord	1 Phase	1
62	5517493	Hose Clamp, Rad. Type		2
65	5512104	Coolant System Complete	1/8 HP, 115V, 1 Phase	1
66	TS-1522021	Socket Set Screw	M5 x8	2
	J2221-SBCA	Support Bearing Collar Assembly (includes #6,7,7-1,8,9,9-1)		1

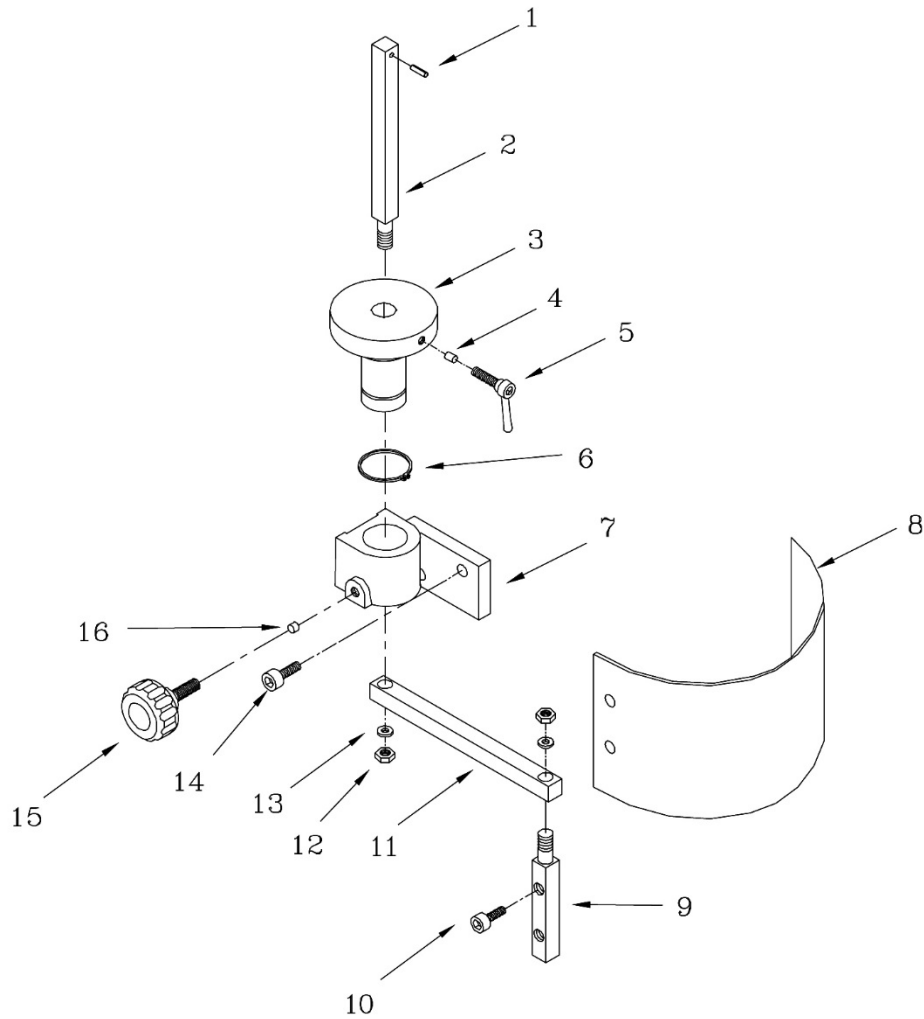
### 12.3.1 Spindle Components (all models) – Exploded View



### 12.3.2 Spindle Components (all models) – Parts List

Index No.	Part No.	Description	Size	Qty
1	J-5517332ACG	Head Casting		1
2	JDP20VS-LH41	Hex. Shoulder Bolt		1
2-1	JDP20VS-LH42	Bushing		1
3	5510319	Front Cam Lock	44.4mm	1
4	5510250	Hex Nut		1
5	5510251	Hex Head Wrench		1
7	5510252	Set Screw		1
8	5517379	External Tooth Washer		1
11	5510254	Ball Bearing		2
12	5510255	Spacer		1
14	5510256	C-Ring		1
15	5510258	Set Screw		1
16	5510259	Roll Pin		1
24	5510261	Socket Head Screw		1
25	TS-1482041	Hex Cap Screw	M6x20	2
26	JDP20EVS-26	Plate		1
27	TS-1540041	Nut	M6	1
28	5510263	Container (includes #29)		1
29	5510263	Return Spring		1
30	5510265	Socket Head Screw	3/16x1/2	3
31	5510266	Spring Seat		1
32	5510267	Spring Pin		1
36	5513770	Rubber Washer		1
37	J-5513771G	Quill Band		1
	J-5513771GN	Quill Band (S/n:19100257 and higher)		1
37A	5517380	Hex Shoulder Bolt		1
37B	5517381	Flat Washer		2
37C	5517382	Hex Nut		1
38	5513772	Lock Nut		2
39	5513773	Ball Bearing		1
40	5513774	Drift Pin		1
41	5510268	Quill		1
42	5510269	Ball Bearing		1
43	5510270	Spindle		1
44	5510271	Oil Seal		1
45	5510272	Nut		1
46	5510273	Depth Rod		1
50	5510276	Retainer		1
51	TS-1523011	Set Screw	M6x6	1
53	5510278	Depth Scale		1
58	5510279	Round Head Cap Screw		4
60	5510280	Key		1
61	TS-1503071	Socket Head Screw		1
62	5510282	Key		1
63	JDP20VS-LH08	Feed Shaft		1
66	JDP20VS-LH07	Feed Shaft Seat		1
67	J-5510285G	Hub		1
68	5510286-RHA	Rubber Handle Assembly		3
68A	5513515	Magnetic Pickup		1
68B	5513687	Pan Head Screw		2
68C	JDP20EVS-68C	Sensor Plate		1
69C	5513689	Cap Screw		1
69D	5517385	Flat Washer		1
73	32106A	Safety Shield Assembly		1
74	JDP20VST-WL	Work Light	input 110V	1

### 12.4.1 Safety Shield Assembly (all models) – Exploded View

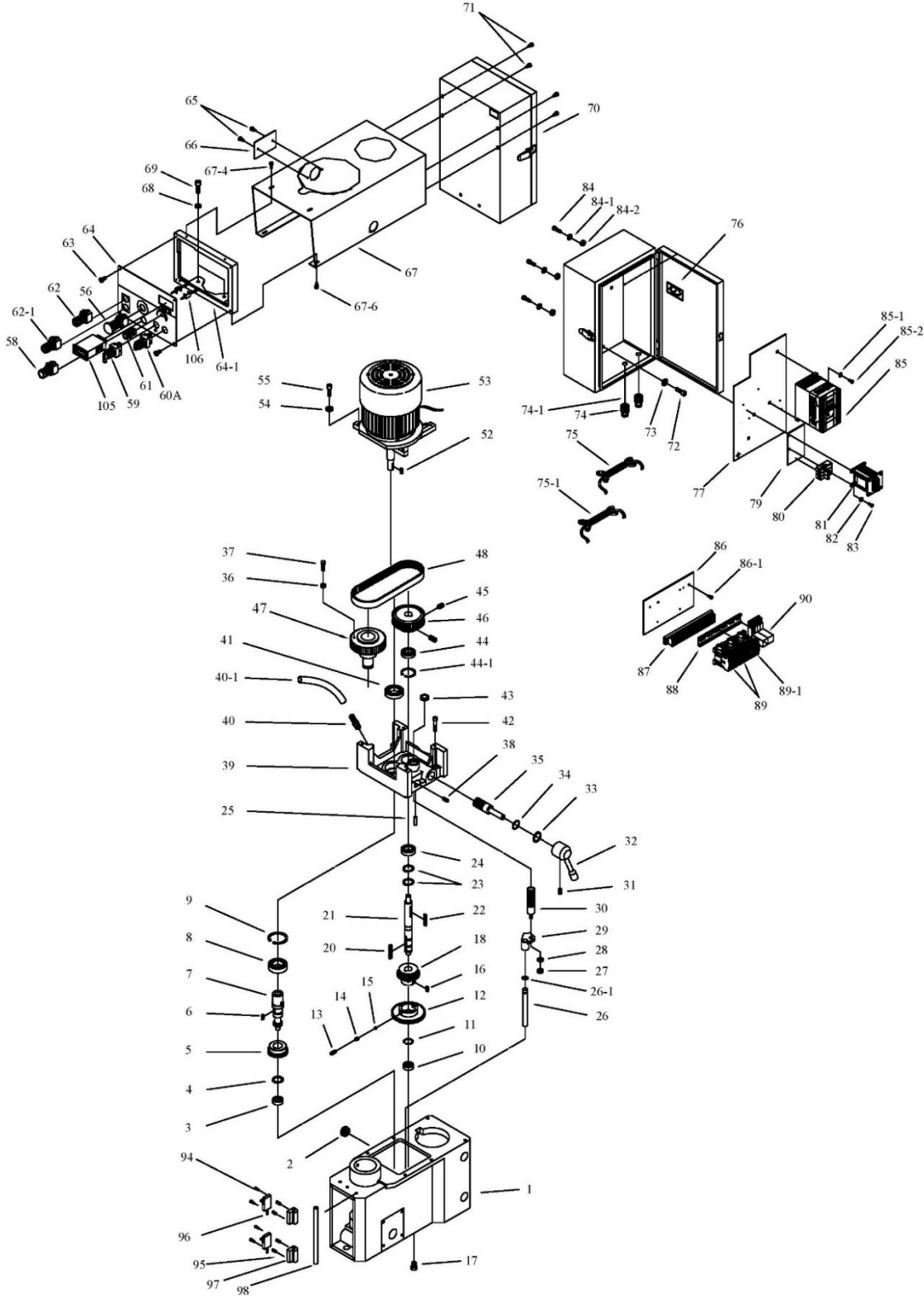


### 12.4.2 Safety Shield Assembly (all models) – Parts List

Index No.	Part No.	Description	Size	Qty
.....	32106A.....	Safety Shield Assembly (includes #1 thru 16).....		1
1.....	6293347.....	Spring Pin.....	3x16.....	1
2.....	32106A-2.....	Support Bracket Bar.....		1
3.....	32106A-3.....	Bushing.....		1
4.....	32106A-4.....	Spacer.....		1
5.....	32106A-5.....	Lock Handle.....	M6x20.....	1
6.....	32106A-6.....	C-Clip.....	S30.....	1
7.....	32106A-7.....	Bracket.....		1
8.....	32106A-8.....	Safety Shield.....	530x210mm.....	1
9.....	32106A-9.....	Lower Bracket Bar.....		1
10.....	TS-1504021.....	Hex Socket Head Cap Screw.....	M8x12.....	1
11.....	32106A-11.....	Support Arm.....		1
12.....	TS-0640091.....	Hex Nut.....	3/8".....	1
13.....	TS-0720091.....	Spring Washer.....	3/8".....	1
14.....	TS-1504041.....	Hex Socket Head Cap Screw.....	M8x20.....	1
15.....	32106A-16.....	Lock Bolt with Knob.....	M8.....	1
16.....	32106A-17.....	Spacer.....		1



### 12.5.1 JDP-20EVST-230/460 Top Head Assembly – Exploded View

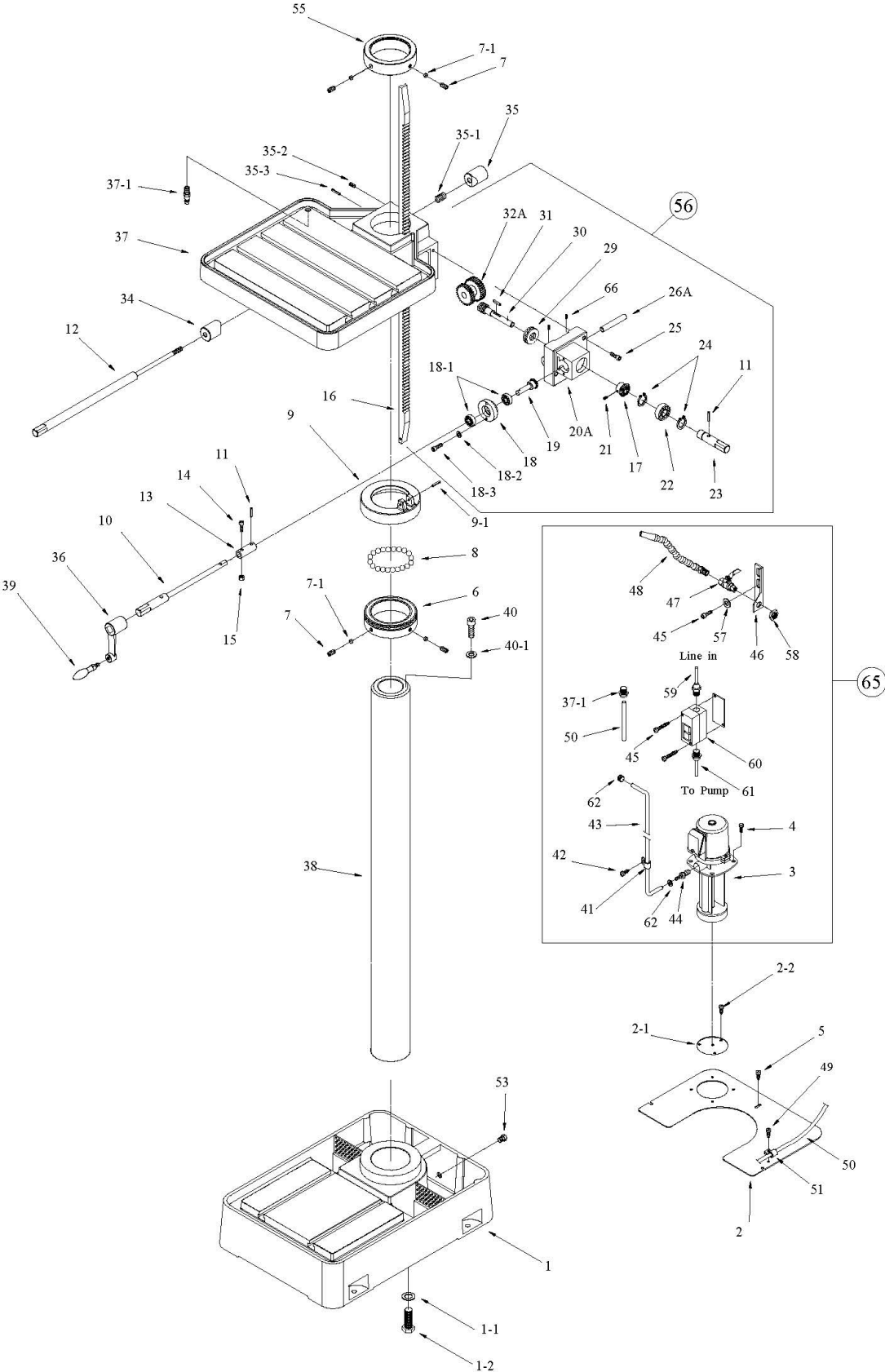


## 12.5.2 JDP-20EVST-230/460 Top Head Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1	J-5517332ACG	Head Casting		1
2	5510142	Oil Window		1
3	5510143	Ball Bearing		1
4	5510144	Retaining Ring		1
5	5510145	Gear	32T	1
6	5510146	Key		1
7	5510147	Drive Shaft	13T	1
8	5510148	Ball Bearing		1
9	5510149	Retaining Ring		1
10	5510150	Ball Bearing		1
11	5510151	Retaining Ring		1
12	5510153	Gear	55T	1
13	5510152	Set Screw		1
14	5510155	Spring		1
15	5510154	Steel Ball		1
16	5510159	Key		1
17	5517333	Drain Plug	3/8 NPT	1
18	5510158	Gear	18T	1
20	5510160	Key		1
21	5510161	Mid Shaft		1
22	5510162	Key		1
23	5510163	Retaining Ring		2
24	5510164	Ball Bearing		1
25	5510165	Pin		1
26	5510166	Bar		1
26-1	5517334	Ring		1
27	5510167	Hex Nut		1
28	5510168	Spring Washer		1
29	5510169	Speed Change Block		1
30	5510170	Gear Bar		1
31	5510171	Set Screw		1
32	5517335	Speed Lever		1
33	5517336	Retaining Ring		1
34	5510173	Oil Seal		1
35	5510177	Gear Shaft	18T	1
36	5517337	Hex Nut		1
37	5517338	Cap Screw		1
38	5510178	Set Screw		1
39	5517339	Gearbox Top Cover		1
40	5510180	Oil Fill Fitting		1
40-1	5517340	Fill Tube		1
41	5510181	Oil Seal		1
42	5510182	Bolt		1
43	5510183	Oil Seal		1
44	5510184	Oil Seal		1
44-1	5517341	Retaining Ring		1
45	5510185	Set Screw		1
46	5510186	Drive Pulley		1
47	5517342N	Spindle Pulley with Driving Sleeve	48T	1
48	5517343	Belt	720x8	1
52	5510192	Key		1
53	J-5517349	Motor	2HP, 3PH, 230V	1
	J-5517350	Motor	2HP, 3PH, 460V	1
54	5510194	Washer		4
55	5510195	Screw		4
56	5510204	E-stop Switch		1
58	5510200	Forward/Reverse Switch		1
59	5510199	Pump Selector Switch		1
60A	20EVS-T57	Tapping/ Drill Switch		1
61	5510196	Speed Control Potentiometer		1
62	20EVS-T61	Stop Switch		1
62-1	5510202	Green Pushbutton Switch		1

Index No.	Part No.	Description	Size	Qty
63	5510206	Screw		4
64	JDP20EVST-64	Control Panel		1
64-1	5517352	Plate Bracket		1
65	5510209	Pan Head Screw		2
66	5510210	Oil Filler Cover		1
67	J-5517353N	Pulley Cover (s/n 1910257 and higher)		1
67-4	5510215	Pan Head Screw		2
67-6	5517357	Screw		2
68	5510216	Spring Washer		2
69	5510217	Screw		2
70	J-5517359	Enclosure (w/door & latch, lock & key)		1
	J-5517359-70-1	Keys for Enclosure (set of 2)		1
	JDP20EVS-70-2	Enclosure Door Only ( S/n: 21010398 and Higher)		1
71	5510219	Screw		4
72	5510220	Bolt		4
73	5517360	Washer		4
74	5510222	Cable Relief		1
74-1	5517361	Cable Relief		1
75	5510223	Electric Cable (to power)	14AWG 600V	1
75-1	5517362	Electric Cable (to work light)	3x16AWG	1
76	5510224	Window Cover		1
77	5517363	Component Mounting Panel		1
79	5510227	Insulation Board		1
80	5510228	Fuse Block		1
81	JDP-20EVST-81	Transformer	460V	1
8	JDP-20EVST-81-1	Transformer	230V	1
82	5517364	Washer		4
83	5517365	Pan Head Screw		4
84	5517366	Cap Screw		4
84-1	5517367	Lock Washer		4
84-2	5517368	Hex Nut		4
85	5510233-1/3	Delta Inverter, M-type	220V, 1/3PH	1
	5517370	Delta Inverter, M-type	440V, 3PH	1
	JDP20EVS-85-1	Delta Inverter, MS300 ( S/n:21010398 and higher)	220V, 1PH	1
	JDP20EVS-85-3	Delta Inverter, MS300( S/n:21010398 and higher)	440V, 3PH	1
85-1	5517371	Flat Washer		4
85-2	5517372	Screw		4
86	5517373	Sub-Panel		1
86-1	5517374	Screw		4
87	5510235	Terminal Block		1
88	5517375	Mounting Rail		1
89	5510237	Contactors		2
89-1	JDP20EVST-89-1	overload Switch		1
90	5510240	Relay		2
94	5510242	Screw		2
95	5510243	Screw		2
96	5510244	Microswitch		2
97	5510245	Microswitch Bracket		2
98	5510246	Microswitch Support Rod		1
105	JDP20EVST-105	LED Display	110V	1
106	5513683	Cap Screw		2
	LM000241	ID/Warning Label, JDP-20EVST-230 (not shown)		1
	LM000242	ID/Warning Label, JDP-20EVST-460 (not shown)		1
	JET-113	JET Logo (not shown)	113x47mm	1

12.6.1 JDP-20EVST-230/460 Base and Table Assembly – Exploded View



## 12.6.2 JDP-20EVST-230/460 Base and Table Assembly – Parts List

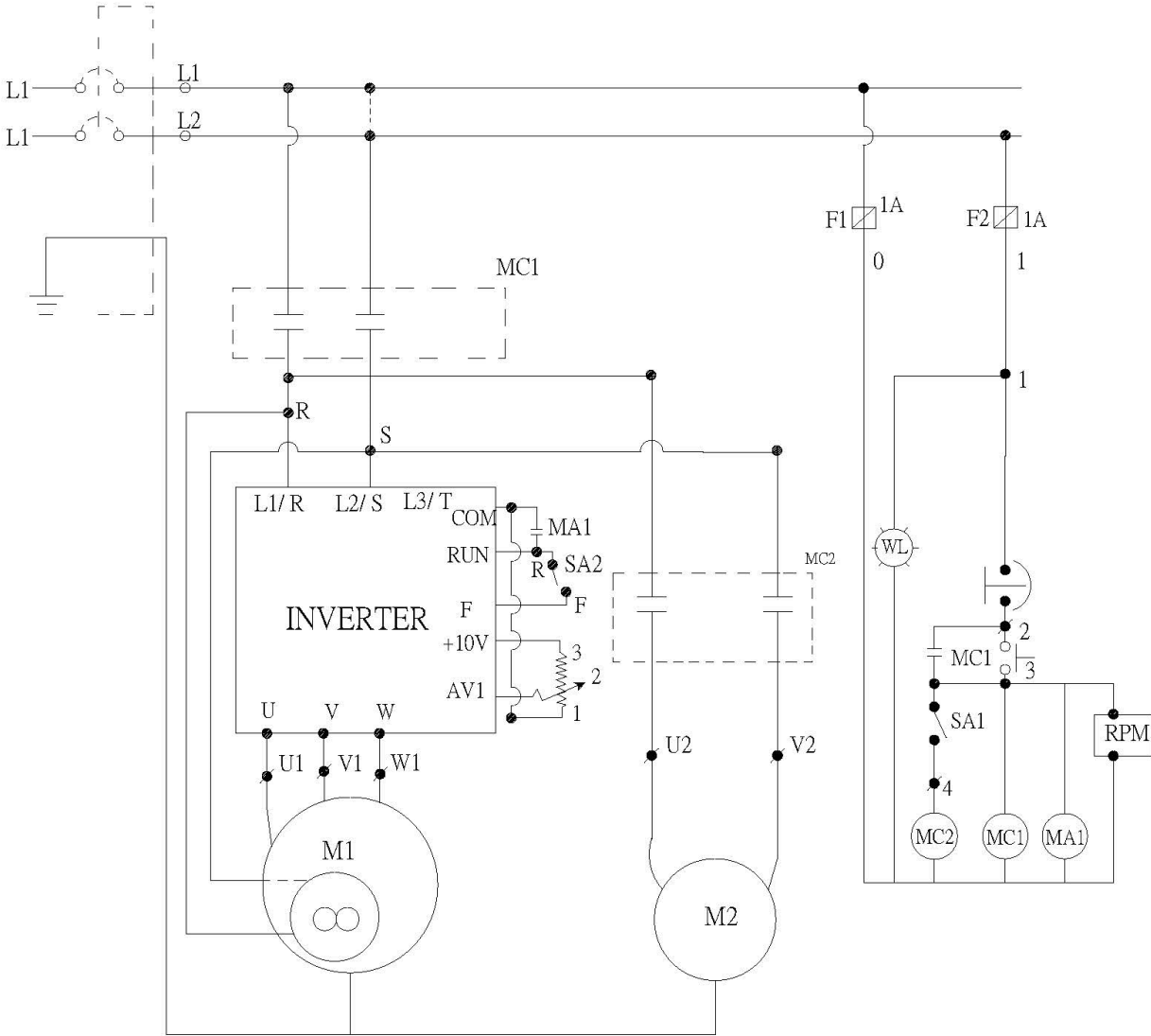
Index No.	Part No.	Description	Size	Qty
1	J-5510288A	Base		1
	J-5510288AN	Base (s/n: 20040313 and higher)		1
1-1	TS-0720111	Lock Washer	1/2"	6
1-2	TS-0070031	Hex Cap Screw	1/2" x 1-1/2"	6
2	J-5510289	Coolant Cover Plate		1
2-1	5518263	Small Cover		1
2-2	20EVS-C4	Screw w/Washer	1/4"	3
3	5510456	Coolant Pump	115V/230V, 1P	1
	5512103	Coolant Pump	220/440V, 3P	1
4	TS-1482011	Hex Bolt	M6x10	4
5	5517388	Pan Head Screw		3
6	5510293A	Ball Seat		1
7	5510294	Set Screw	3/8"	4
7-1	5517389	Brass Block		4
8	5510295	Ball Bearing	3/8"	38
9	J-5510296A	Lock Ring		1
9-1	5517390	Pin	M4	1
10	5516859	Table Raiser Shaft		1
11	5510298	Spring Pin	4x20	1
12	5516858	Table Clamp Shaft		1
13	5516860	Table Raiser Coupling		1
14	5510300	Socket Head Screw		1
15	TS-0561011	Nut	1/4"	1
16	5510302	Rack		1
17	5514663	Large Bevel Gear		1
18	5517391	Bearing Housing		1
18-1	BB-6202ZZ	Ball Bearing	6202ZZ	2
18-2	TS-0720071	Washer	1/4"	2
18-3	TS-1482041	Hex Cap Screw	M6x20	2
19	5510304	Small Bevel Gear		2
20A	J-5510305A	Bracket Cover		1
21	TS-0267041	Set Screw	1/4"x3/8"	1
22	BB-6005ZZ	Ball Bearing	6005zz	1
23	5510308	Shaft		1
24	5510309	C-Ring	S25	2
25	TS-1504071	Hex Socket Cap Screw	M8x35	3
26A	5510311A	Shaft		1
29	BB-51102	Bearing	51102	1
30	5510315	Table Raise Worm		1
31	5510316	Key	4x4x20	1
32A	5510317A	Worm Gear Assembly		1
34	5510319	Front Cam Lock		1
35	5510320	Rear Cam Lock		1
35-1	5517396	Spring		1
35-2	TS-1523071	Set Screw	M6x25	1
35-3	5517398	Pin	5x25	2
36	J-5510321	Table Raise Crank		2
37	JDP20VST-37	Table	3-Slot	1
37-1	5517399	Hose Coupler (Return)	1/2"	1
38	5510323A	Column		1
	5510323AN	Column (s/n: 20040313 and higher)		1
39	5510324	Table Raise Handle		1
40	TS-1503021	Socket Head Cap Screw		1
40-1	TS-1550041	Flat Washer		1
43	5510328	Clear Vinyl Hose	3/8"	1
44	5510329	Hose Coupler (Supply)	3/8"	1
45	5512112	Socket Head Cap Screw	#10-32 x 1"	4
46	5510331	Mounting Bracket		1
47	5510332	Valve		1
48	5510333	Flexible Nozzle		1
49	5517400	Pan Head Screw		1
50	5517401	Clear Vinyl Hose	1/2"	1
51	5517402	Hose Clamp		1

Index No.	Part No.	Description	Size	Qty
53	5517404	Drain Plug	3/8 NPT	1
55	J-5517406	Rack Collar		1
56	5513932	Table Raiser Assembly		1
57	9057451	Flat Washer	#10	2
58	5517488	Hex Nut	1/2"	1
59	5517489	Power Cord		1
60	5517490	Switch Assembly		1
61	5517491	Pump Cord	1 Phase	1
	5517492	Pump Cord	3 Phase	1
62	5517493	Hose Clamp, Rad. Type		2
65	5512104	Coolant System Complete (1/8 HP, 115/230V, 1 Phase)		1
	5508071	Coolant System Complete (1/8 HP, 230/460V, 3 Phase)		1
66	TS-1522021	Socket Set Screw	M5x8	2
	J2221-SBCA	Support Bearing Collar Assembly (includes #6,7,7-1,8,9,9-1)		1

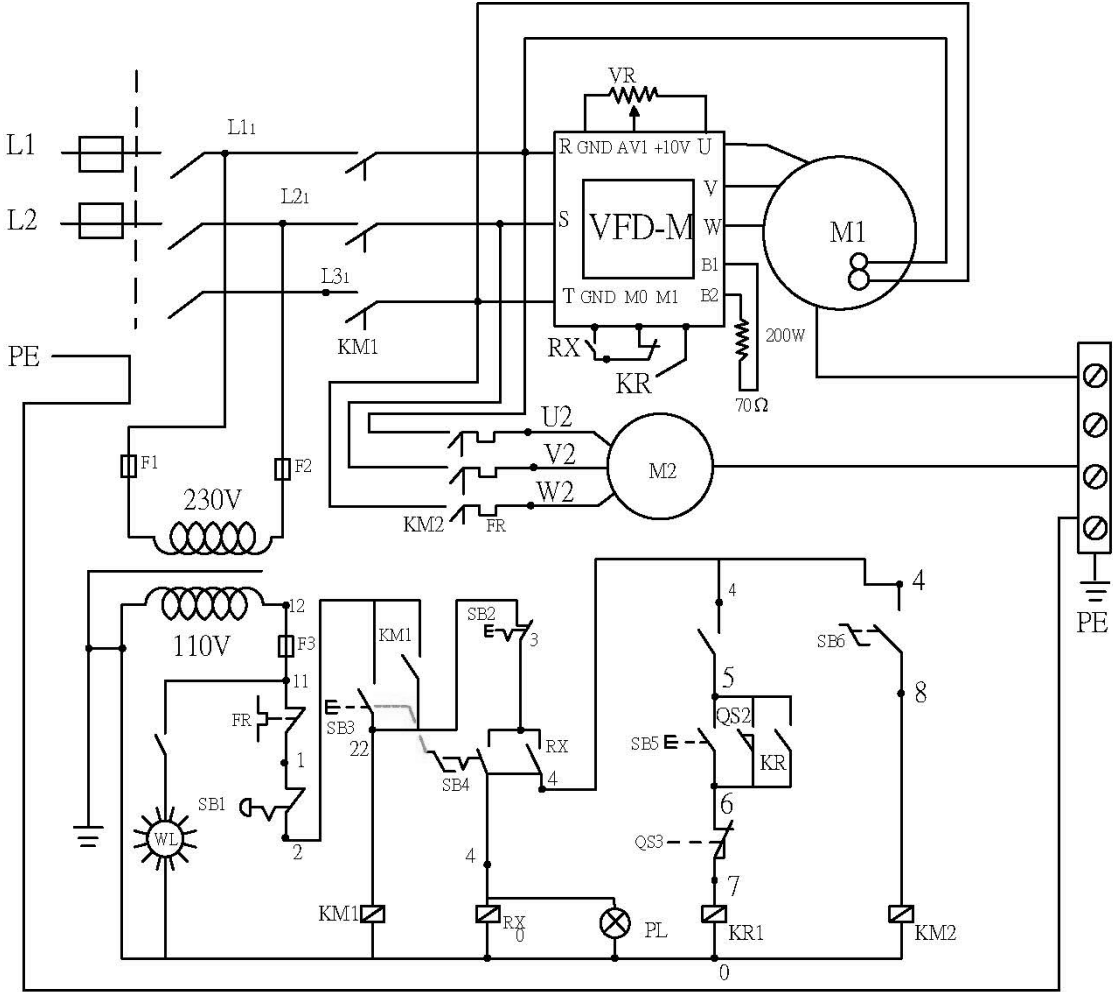
# 13.0 Electrical connections

These diagrams are also affixed inside electrical cabinet door. In case of discrepancy, diagram inside electrical cabinet takes precedence.

## 13.1 JDP-20EVS-110 wiring diagram



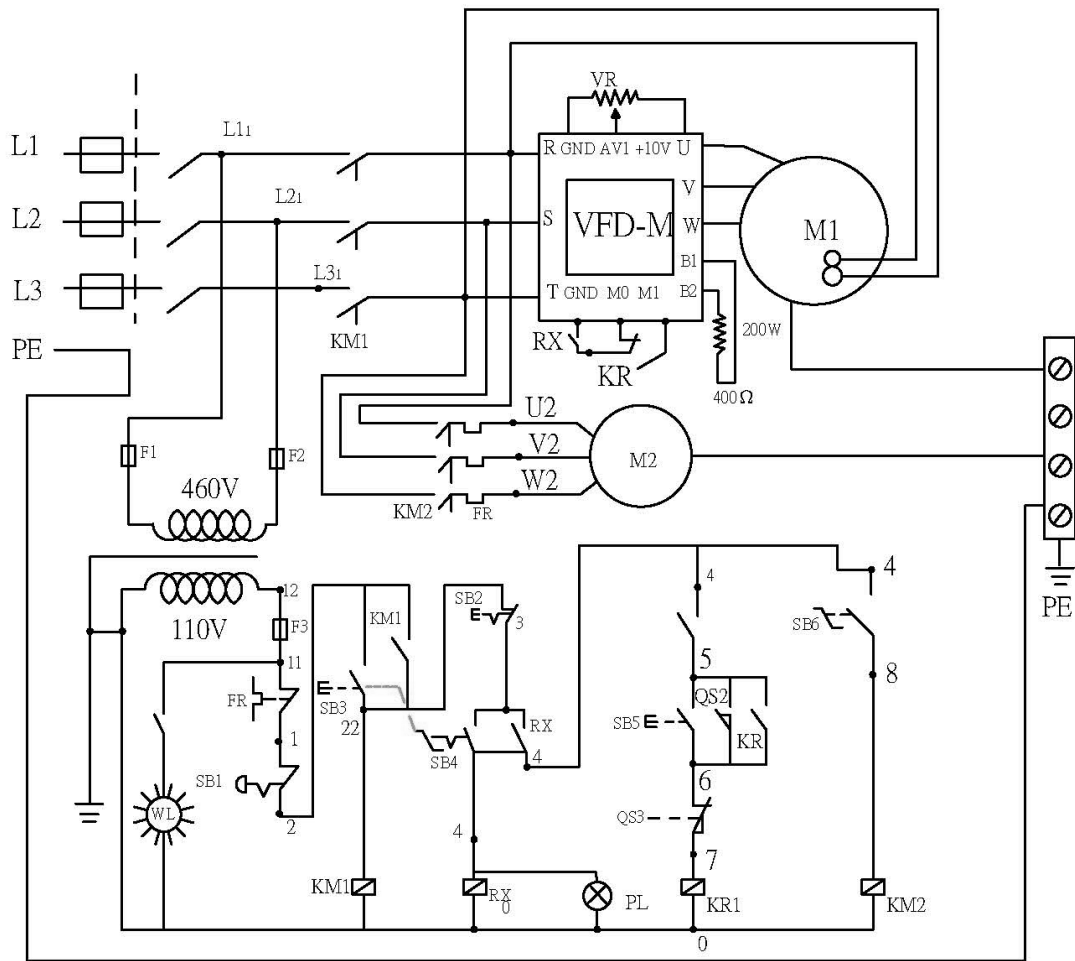
### 13.2 JDP-20EVST-230 wiring diagram



L1	L2	L3	R	T	U1	V1	W1	U2	V2	W2	0	1	2	22	3	4	5	6	7	8	9	C	V	+10V
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### 13.3 JDP-20EVST-460 wiring diagram



L1	L2	L3	R	T	U1	V1	W1	U2	V2	W2	0	1	2	22	3	4	5	6	7	8	9	C	V	+10V
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# 14.0 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. Use of these machines in the processing of metal, plastics, or other materials outside recommended guidelines may void the warranty. The exceptions are acrylics and other natural items that are made specifically for wood turning.

### 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.

JET SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

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### Product Listing with Warranty Period

90 Days – Parts; Consumable items
1 Year – Motors; Machine Accessories
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; Air Tools

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