

OPERATION MANUAL



PEDESTAL DRILLING MACHINE

Model. PD-28V

Order Code D158

EDITION No : PD-28V-1

DATE OF ISSUE : 06/2023

MACHINE DETAILS

MACHINE	PEDESTAL DRILLING MACHINE
MODEL NO.	PD-28V
SERIAL NO.	
DATE OF MANF.	

DISTRIBUTED BY



NOTE:
This manual is only for your reference. At the time of the compiling of this manual every effort to be exact with the instructions, specifications, drawings, and photographs of the machine was taken. Owing to the continuous improvement of the HAFCO METALMASTER machine, changes may be made at any time without obligation or notice. Please ensure the local voltage is the same as listed on the specification plate before operating any electric machine.

SAFETY SYMBOLS

The purpose of safety symbols is to attract your attention to possible hazardous conditions

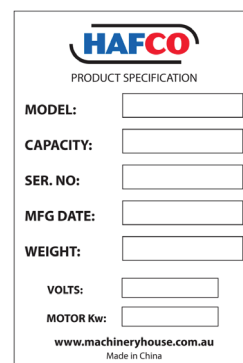
WARNING *Indicates a potentially hazardous situation causing injury or death*

CAUTION *Indicates an alert against unsafe practices.*

Note: Used to alert the user to useful information

NOTE:
In order to see the type and model of the machine, please see the specification plate. Usually found on the back of the machine. See example (Fig.1)

Fig. 1



CONTENTS

1.1 Specification.....	4
1.2 Accessories Included.....	4
1.3 Dimensions.....	5
1.4 Identification.....	6
2. SAFETY REQUIREMENTS	
2.1 General Metalworking Machine Safety.....	7
2.2 Specific Safety For Drill Press.....	10
3. POWER	
3.1 Electrical Installation.....	11
3.2 Full Load Current Rating.....	11
4. SETUP	
4.1 Unpacking.....	12
4.2 Clean Up.....	12
4.3 Site Preparation.....	12
4.4 Lifting Instructions.....	12
4.5 Anchoring To The Floor.....	13
4.6 Machine Leveling.....	13
4.7 Assembly.....	14
4.8 Drill Chuck Assembly.....	17
5. OPERATION	
5.1 Controls.....	18
5.2 Test Run.....	20
5.3 Speed Selection.....	21
5.4 Operation Procedure.....	22
5.5 Removing Drill Chuck.....	22
6. MAINTENANCE	
6.1 Schedule.....	23
6.2 Troubleshooting.....	24
6.3 Hand Feed Spring Tension.....	25
Spare Parts.....	26
Risk Assessment.....	32

1.1 SPECIFICATION

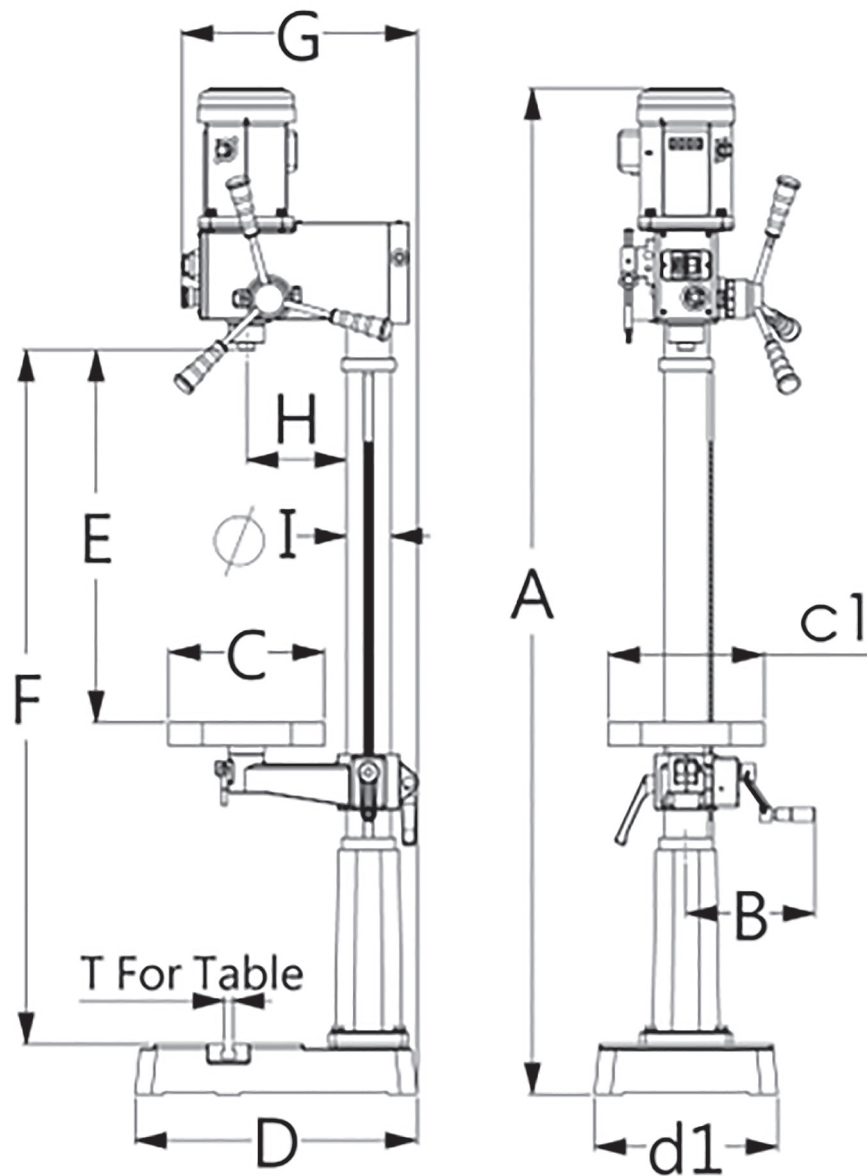
Order Code	D158
MODEL	PD-28V
Drilling Capacity (mm)	16
Spindle Taper (MT)	2
Spindle Travel (mm)	90
Throat Depth (mm)	180
Quill Diameter (mm)	47
Column Diameter (mm)	80
Spindle To Table (mm)	700
Spindle To Base (mm)	1270
Table (Type)	Square
Table Size (mm)	280 x 280
T-Slot Size (mm)	12
Spindle Speed Steps (No.)	Variable
Spindle Speed Range (rpm)	200 ~ 2400
Motor Power (kW / hp)	0.75 / 1
Voltage / Amperage (V / amp)	240 / 10
Full Height (mm)	1840
Nett Weight (kg)	95

1.2 ACCESSORIES INCLUDED

13mm Keyless Drill Chuck
 2mt Drill Chuck Arbor
 Instruction Manual



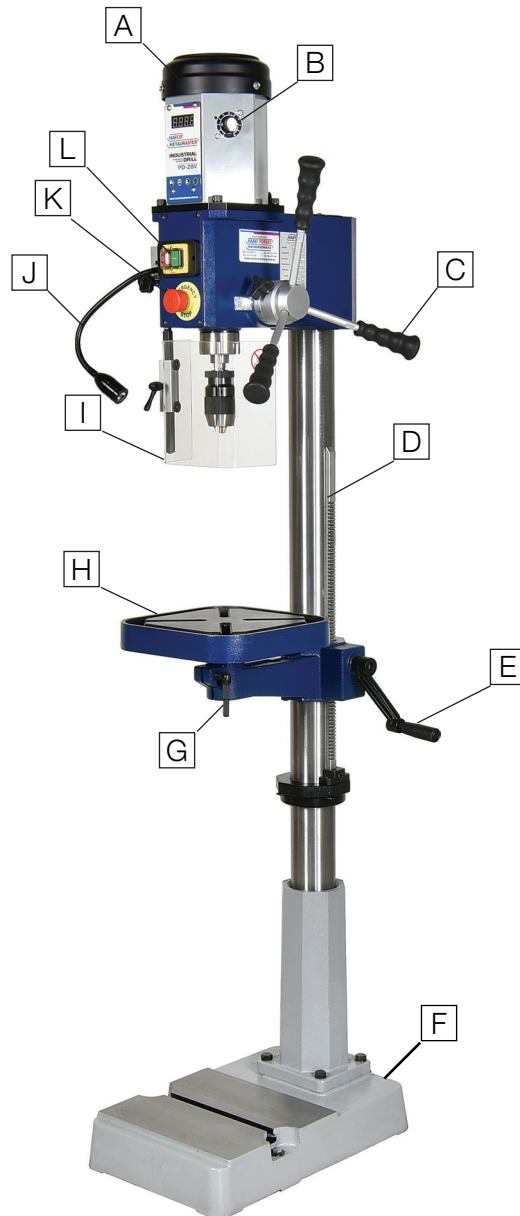
1.3 MACHINE DIMENSIONS



Dimensions (mm)	
A	1840
B	269
C	C=280 × c1=280
D	D=500 × d1=330
E	700
F	1270
G	430
H	180
I	∅80
T	12

1.4 IDENTIFICATION

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



A	Motor	G	Table Swivel Clamp
B	Variable Speed Control	H	Table
C	Feed Handles	I	Drill Safety Shield
D	Column	J	Light
E	Raise / Lower Table Crank	K	Emergency Stop Button
F	Base	L	ON / OFF Buttons

2. SAFETY REQUIREMENTS

2.1 GENERAL METALWORKING MACHINE SAFETY

DO NOT use this machine unless you have read this manual or have been instructed in the safe use and operation of this machine.



WARNING

This manual provides safety instructions on the proper setup, operation, maintenance, and service of this machine. Save this manual, refer to it often, and use it to instruct other operators. Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes, but is not limited to proper installation in a safe environment, personnel training and authorization to use, proper inspection and maintenance, manual availability and comprehension, of the application of the safety devices, integrity, and the use of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



- ✓ Always wear safety glasses or goggles.
- ✓ Wear appropriate safety footwear.
- ✓ Wear respiratory protection where required.
- ✓ Gloves should never be worn while operating the machine, and only worn when handling the workpiece.
- ✓ Wear hearing protection in areas > 85 dBA. If you have trouble hearing someone speak from one metre (three feet) away, the noise level from the machine may be hazardous.
- ✓ DISCONNECTION THE MACHINE FROM POWER when making adjustments or servicing.
- ✓ Check and adjust all safety devices before each job.
- ✓ Ensure that guards are in position and in good working condition before operating.
- ✓ Ensure that all stationary equipment is anchored securely to the floor.
- ✓ Ensure all machines have a start/stop button within easy reach of the operator.
- ✓ Each machine should have only one operator at a time. However, everyone should know how to stop the machine in an emergency.

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

- ✓ Ensure that keys and adjusting wrenches have been removed from the machine before turning on the power. Appropriate storage for tooling should be provided.
- ✓ Ensure that all cutting tools and blades are clean and sharp. They should be able to cut freely without being forced.
- ✓ Stop the machine before measuring, cleaning or making any adjustments.
- ✓ Wait until the machine has stopped running to clear cuttings with a vacuum, brush or rake.
- ✓ Keep hands away from the cutting head and all moving parts.
- ✓ Avoid awkward operations and hand positions. A sudden slip could cause the hand to move into the cutting tool or blade.
- ✓ Return all portable tooling to their proper storage place after use.
- ✓ Clean all tools after use.
- ✓ Keep work area clean. Floors should be level and have a non-slip surface.
- ✓ Use good lighting so that the work piece, cutting blades, and machine controls can be seen clearly. Position any shade lighting sources so that they do not cause any glare or reflections.
- ✓ Obtain first aid immediately for all injuries.
- ✓ Understand that the health and fire hazards can vary from material to material.
- ✓ Clean machines and the surrounding area when the operation is finished.
- ✓ Use proper lock out procedures when servicing or cleaning the machines or power tools.

DO NOT

- ✗ Do not distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- ✗ Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewellery that can be come entangled in moving parts. Confine long hair.
- ✗ Do not handle cuttings by hand because they are very sharp. Do not free a stalled cutter without turning the power off first. Do not clean hands with cutting fluids.
- ✗ Do not use rags or wear gloves near moving parts of machines.
- ✗ Do not use compressed air to blow debris from machines or to clean dirt from clothes.
- ✗ Do not force the machine. It will do the job safer and better at the rate for which it was designed.



WARNING.

Before operating any machine, take time to read and understand all safety signs and symbols. If not understood seek explanation from your supervisor.

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

HAZARDS ASSOCIATED WITH MACHINES include, but are not limited to:

- Being struck by ejected parts of the machinery
- Being struck by material ejected from the machinery
- Contact or entanglement with the machinery
- Contact or entanglement with any material in motion

HEALTH HAZARDS (other than physical injury caused by moving parts)

- Chemicals hazards that can irritate, burn, or pass through the skin
- Airborne items that can be inhaled, such as oil mist, metal fumes, solvents, and dust
- Heat, noise, and vibration
- Ionizing or non-ionizing radiation (X-ray, lasers, etc.)
- Biological contamination and waste
- Soft tissue injuries (for example, to the hands, arms, shoulders, back, or neck) resulting from repetitive motion, awkward posture, extended lifting, and pressure grip)

OTHER HAZARDS

- Slips and falls from and around machinery during maintenance
- Unstable equipment that is not secured against falling over
- Safe access to/from machines (access, egress)
- Fire or explosion
- Pressure injection injuries from the release of fluids and gases under high pressure
- Electrical Hazards, such as electrocution from faulty or ungrounded electrical components
- Environment in which the machine is used (in a machine shop, or in a work site)



WARNING!

Machines are safeguarded to protect the operator from injury or death with the placement of guards. Machines must not be operated with the guards removed or damaged.



WARNING!

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, the machine until the information is understood.

2.2 SPECIFIC SAFETY FOR DRILL PRESS

DO NOT use this machine unless you have been instructed in its safe use and operation and have read and understood this manual



Safety glasses must be worn at all times in work areas



Long and loose hair must be contained.



Gloves must not be worn when using this machine.



Sturdy footwear must be worn at all times in work areas



Close fitting/protective clothing must be worn



Rings and jewellery must not be worn.

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Locate and ensure you are familiar with all machine operations and controls.
- ✓ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ✓ Check workspaces and walkways to ensure no slip/trip hazards are present.
- ✓ Ensure the chuck key (if used) has been removed from the drill chuck.
- ✓ Follow correct clamping procedures to ensure work is secure.
- ✓ Erect a barricade if the job obstructs the walkway.
- ✓ Adjust the spindle speed to suit drill or cutter diameter.

OPERATIONAL SAFETY CHECKS

- ✓ Before making adjustments or before cleaning swarf accumulations, switch off and bring the spindle to a stop.
- ✓ Feed downwards at a sufficient rate to keep the drill cutting.
- ✓ Feed with care as the drill breaks through the underside of the work.
- ✓ Use a safe working posture.

ENDING OPERATIONS AND CLEANING UP

- ✓ Switch off the machine when work completed.
- ✓ Leave the machine in a safe, clean and tidy state.

DON'T

- ✗ Do not use faulty equipment. Immediately report suspect equipment.
- ✗ Never leave the machine running unattended.
- ✗ Do not hold the item being drilled with your hands. Use a clamp.

POTENTIAL HAZARDS AND INJURIES

- | | |
|--|---|
| <input type="checkbox"/> Hair/clothing getting caught in moving machine parts. | <input type="checkbox"/> Eye injuries. |
| <input type="checkbox"/> Flying swarf and chips. | <input type="checkbox"/> Sharp edges and burrs. |

CAUTION

It is impossible to cover all possible hazards Every workshop environment is different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.

3. POWER SUPPLY

3.1 ELECTRICAL INSTALLATION

Place the machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure there is access to a means of disconnecting the power source. The electrical circuit must meet the requirements for 240V.

NOTE : The use of an extension cord is not recommended as it may decrease the life of electrical components on your machine.

ELECTRICAL REQUIREMENTS

Nominal Voltage.....	240V
Cycle.....	50 Hz
Phase.....	Single Phase
Power Supply Circuit.....	10 Amps
Full Load Current.....	5.0 Amps

(Full load current rating is also on the specification plate on the motor.)

3.2 FULL-LOAD CURRENT RATING

The full-load current rating is the amperage a machine draws when running at 100% of the output power. Where machines have more than one motor, the full load current is the amperage drawn by the largest motor or a total of all the motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating for these machine at 240V is 5.0 Amps

It should be noted that the full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating and if the machine is overloaded for a long period of time, damage, overheating, or fire may be caused to the motor and circuitry.

This is especially true if connected to an undersized circuit or a long extension lead. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements.



4 SET-UP

4.1 UNPACKING

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. If items are damaged, please contact your distributor.

NOTE: Save all the packaging materials until you are completely satisfied with the machine and have resolved any issues with the distributor, or the shipping agent.

When unpacking, check the packing list to make sure that all parts shown are included. If any parts are missing or broken, please contact your distributor.

4.2 CLEAN - UP

The unpainted surfaces of the machine have been coated with a waxy oil to protect them from corrosion during shipment. Remove the protective coating with a solvent cleaner or a citrus based degreaser.

Optimum performance from your machine will be achieved when you clean all moving parts or sliding contact surfaces that are coated with rust prevented products.

It is advised to avoid chlorine based solvents, such as acetone or brake parts cleaner, as they will damage painted surfaces and strip metal should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

4.3 SITE PREPARATION

When selecting the site for the machine, consider the largest size of workpiece that will be processed through the machine and provide enough space around the machine for operating the machine safely. Consideration should be given to the installation of auxiliary equipment. Leave enough space around the machine to open or remove doors/covers as required for the maintenance and service as described in this manual.

It is recommended that the machine is anchored to the floor to prevent tipping or shifting. It also reduces vibration that may occur during operation.

4.4 LIFTING INSTRUCTIONS



WARNING

This machine is extremely heavy. Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate.



On the day that the machine arrives, make sure that a forklift or lifting device, with sufficient capacity is available to unload the machine from the vehicle. Ensure access to the chosen site is clear and that doors and ceilings are sufficiently high and wide enough to receive the machine.

LIFTING POINT

When lifting the machine only certified lifting slings should be used. Ensure that when lifting, the machine does not tip over. Check that the lifting slings do not interfere with the parts of the machine that may be damaged. (Fig.4.1)



FIG. 4.1

4.5 ANCHORING TO THE FLOOR

The machine is best mounted on a concrete slab. Masonry anchors with bolts are the best way to anchor machinery, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. (Fig. 4.2)

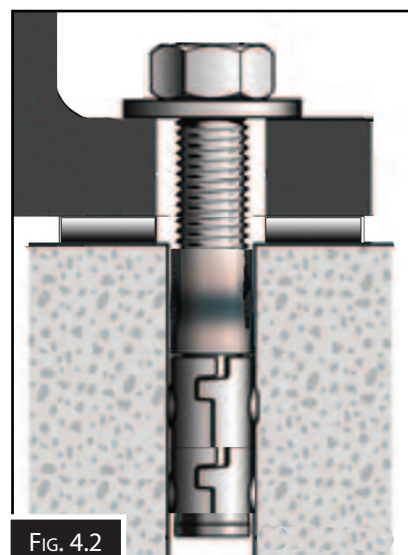



FIG. 4.2



CAUTION

Do not install the machine in areas that are wet, cluttered, or have poor lighting.

4.6 MACHINE LEVELLING

To set your machine up so that it operates to optimum performance, apply the following procedure:
 After your machine has been anchored to a concrete slab floor, it then needs to be levelled. Loosen the hold down bolts and place a level on the surface of the working table. Metal shims need to be placed under corner of the base of the machine until level. Once level then tighten the hold down bolts. (Fig. 4.3).

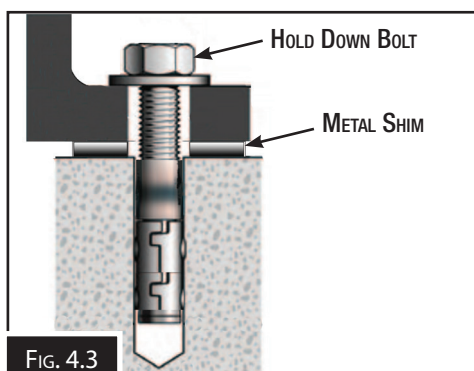


FIG. 4.3



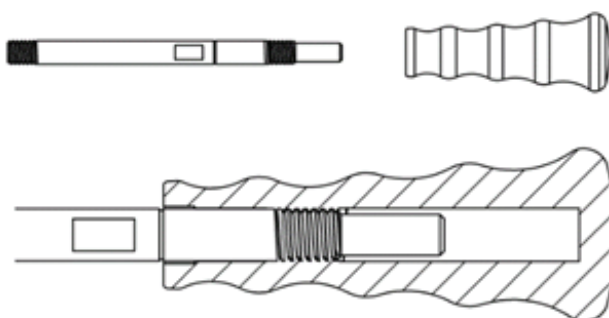
CAUTION

The machine must not rest on supports other than those defined in Fig. 4.3

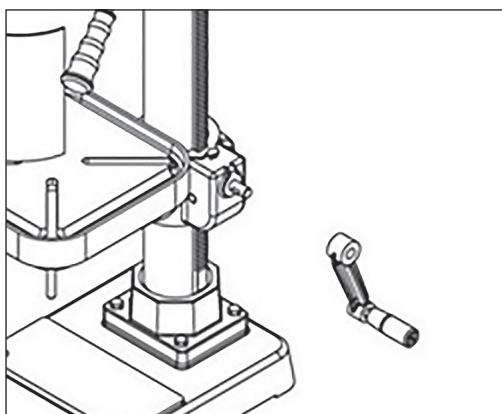
4.7 ASSEMBLY

The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly.

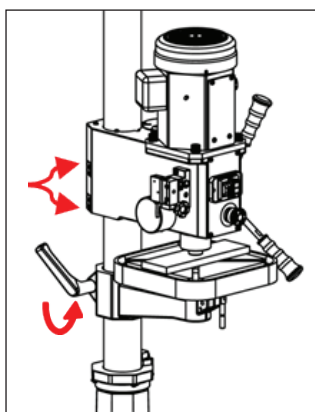
1. Thread the feed handles into the spindle hub.



2. Install the crank handle over the pinion shaft. Line up the setscrew with the flat part of the pinion shaft and tighten the setscrew in the crank handle.

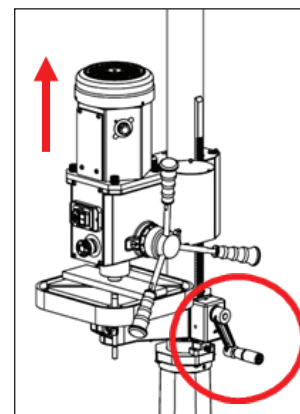


3. Use the table lift function to raise the machine head to a fixed point

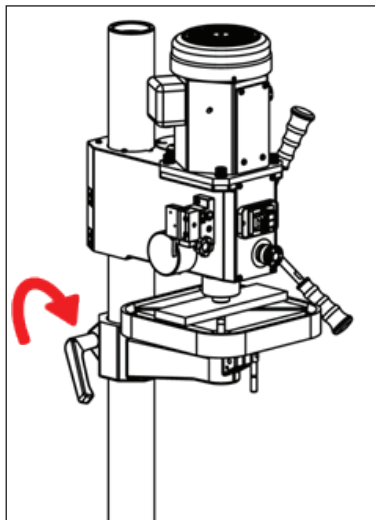
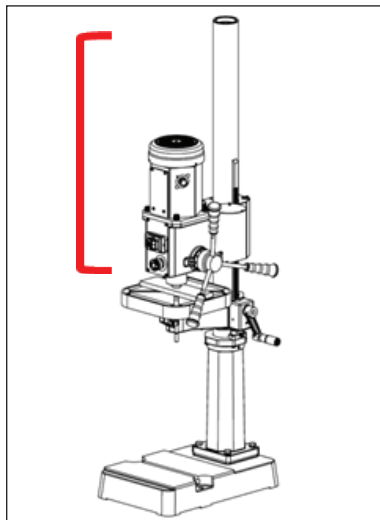


1. Loosen the fixing screw and fix the handle as shown

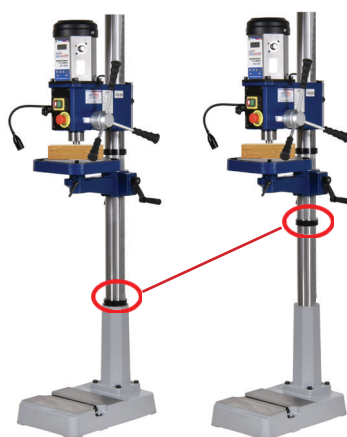
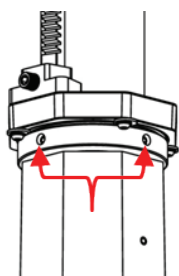
2. Turn the handle to raise the table and machine head.



3. Raise the machine head as shown in the pictures below. When in position, lock the table clamp.



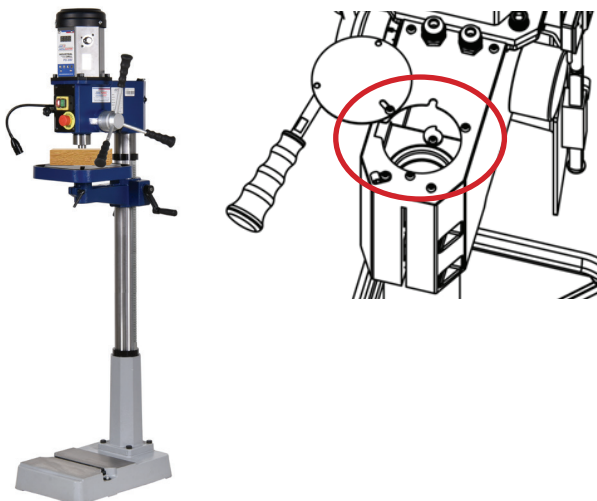
4. With the table clamped, loosen the two screws in the stop ring at the bottom of the rack using a 5mm hex key and then raise the rack by rotating the table lift handle. Move the stop screw up and tighten the two screws to secure the stop ring.
5. Once the rack has been moved and secured, release the table clamp and use the table to raise the head by turning the table lift handle.



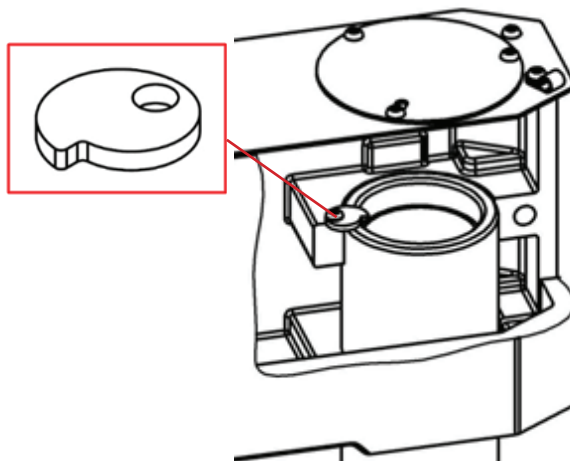
WARNING

Serious injury could occur if you connect machine to power before completing the setup process. DO NOT connect to power until all assembly and adjusting processes are complete.

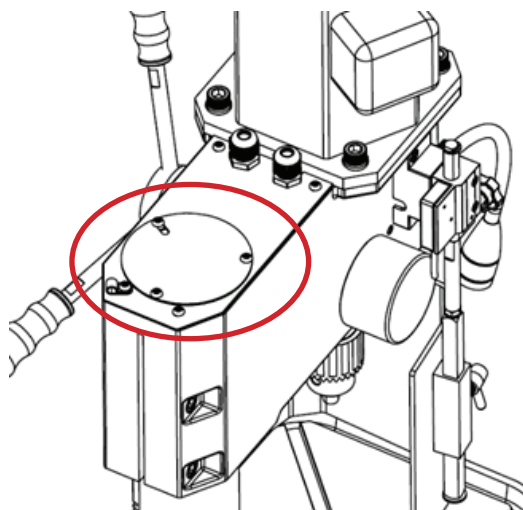
- Repeat steps to raise the head until it is just above the top of the column tube clamping fixture inside the head.



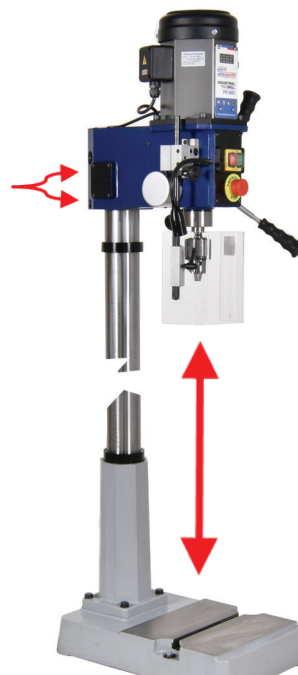
- Loosen and rotate the head of the safety washer so that the washer will sit on the column tube and lock. Then lower the head until the safety washer sits on the column tube.



- Place the iron cover plate onto the top of the head and secure with the three screws.



- Align the center of the spindle with the center of the base, and then tighten the screws of the machine head, as shown below



4.8 DRILL CHUCK ASSEMBLY

1. Use mineral spirits to thoroughly clean the drill chuck, arbor, and spindle taper and dry all surfaces before assembly. Follow all safety warnings on the container of the mineral spirits. Failure to clean the mating surfaces may cause the tapered fit to loosen during operation, resulting in separation and an unsafe condition.



2. Place the drill chuck face down on soft wood. The arbor has a short taper and a long taper. Place the short taper into the socket in the back of the drill chuck and tap it with a soft face hammer.
3. Slide the arbor into the spindle socket while slowly rotating the drill chuck. The socket has a rectangular pocket where the tang fits. (the driving flat portion of the arbor)



WARNING!

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, the machine until the information is understood.

5. OPERATION

This machine may perform many types of operations that are beyond the scope of this manual. Many of these operations may be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. If at any time you are experiencing difficulties performing any operation, stop using the machine!

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced operator before performing any unfamiliar operations. Above all, **your safety should come first!**

5.1 CONTROLS

The purpose of this control overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, and the machine controls and what they do. It also helps the operator to understand if they are discussed later in this manual.

NOTE: DO NOT start the machine until all of the setup instructions have been performed. Operating a machine that is not setup may result in malfunction or unexpected results that can lead to serious injury, death or damage to the machine or property.



FIG. 5.1

- A. ON/OFF Switch:** Switches the spindle ON and OFF
- B. Emergency Stop Button:** When pressed cuts all power to the machine and remains cut until reset.
- C. Speed Control Dial:** The speed of the spindle is increased or decreased when the dial is turned.
- D. Speed Digital Display:** Displays the speed of the spindle in R.P.M

5.1 CONTROLS Cont.

To prevent unwanted penetration of the work piece, the feeding depth stop can be set.

TO SET THE DEPTH STOP.

1. Using the spindle handles, wind the spindle down until you have reached the depth that is required.
2. Whilst holding the spindle handles at the depth required, loosen the graduation scale lock knob and rotate until the scale comes to a stop. (Fig. 5.2)
3. Tighten the lock knob and check the depth.



FIG. 5.2

ADJUSTING THE WORK TABLE POSITION

1. To raise or lower the table, first release the table clamp (A) the clamp handle.
2. Then the table can then swing to the right or left to the desired position. The table can also be raised or lowered with the table crank (C) (Fig. 5.3)
3. When in position tighten the clamp handle (A).
4. The table can also be swivelled by releasing the table swivel lock (B)
5. When in position tighten the table swivel handle (B).

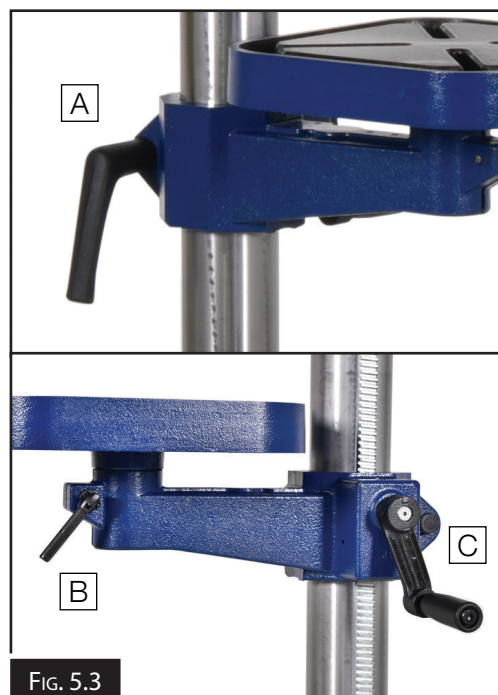


FIG. 5.3



WARNING

The machine is the sole responsibility of the owner for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training, proper inspection and maintenance, manual availability and comprehension. The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

5.2 TEST RUN

Once assembly is complete, test run the machine to ensure it is properly connected to the power and safety components are functioning correctly. Check that the direction of the motor is correct and make sure that the machine rotates in the correct direction.

If the direction is incorrect, isolate the machine and have the electrician make changes to the wiring. If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The Troubleshooting table in the Maintenance section of this manual may be able to help. If the problem persists then contact your dealers service technician.

TO TEST RUN THE MACHINE:

1. Connect the machine to the power supply.
2. Make sure that the manual has been read and that the safety instructions at the beginning of the manual are understood. Make sure the machine has been setup correctly
3. Make sure all tools and objects used during set up have been cleared away from the machine.
4. Turn the machine ON.
5. Make sure that the machine is travelling in the correct direction.
6. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.
7. Any strange or unusual noises should be investigated and corrected before operating the machine again. Always disconnect the machine from power supply when investigating or correcting potential problems. The troubleshooting chart in the maintenance section may be helpful in rectifying a problem.

TESTING THE EMERGENCY STOP BUTTON

Make sure that the emergency button is working correctly

1. Twist the top of the Emergency Stop button to ensure that it is in the raised position.
2. Start the machine and then press the emergency stop button. The machine should stop and the power should be cut off. If the machine cannot be started then the emergency stop is working correctly. To reset the Emergency Stop twist the red top until it pops up. (Fig. 5.4)
3. The machine should now work again.













FIG. 5.4

5.3 SPEED SELECTION

The drill press speed is crucial for various reasons. One of it is overheating. As a result of it, the bit might be damaged.

Overheating can occur if you drill too quickly, resulting in burn marks on the wood or metal discoloration. If you drill too slowly, the drill will not cut cleanly into the material but will instead break off flakes which will give you a poor quality end result.

Open the pulley case and check if the spindle speed (R.P.M.) is correct for your job.

Drill m/m	Material									
	Cast Iron		Steel		Iron		Aluminium		Alloy Copper	
										
ø2	4780	2390	1275	635	3980	1910	7960	3980	4460	2230
ø3	3185	1590	850	425	2650	1275	5310	2655	2970	1485
ø4	2390	1195	640	320	1990	955	3980	1990	2230	1115
ø5	1910	955	510	255	1590	765	3185	1590	1785	890
ø6	1590	795	425	210	1330	640	2655	1330	1485	745
ø7	1365	680	365	180	1140	545	2275	1140	1275	635
ø8	1195	600	320	160	995	480	1990	995	1115	555
ø9	1060	530	285	140	885	425	1770	885	990	495
ø10	955	480	255	125	800	380	1590	800	890	445
ø11	870	435	230	115	725	350	1450	725	910	405
ø12	795	400	210	105	665	320	1330	665	745	370
ø13	735	365	195	100	610	295	1225	610	685	340
ø14	680	340	180	90	570	270	1135	570	635	320
ø15	640	320	170	85	530	255	1060	530	600	300
ø16	600	300	160	80	500	240	995	500	560	280
ø17	560	280	150	75	470	225	935	470	525	260
ø18	530	265	140	70	440	210	885	440	495	250
ø19	500	250	135	67	420	200	835	420	470	235
ø20	480	240	130	65	400	190	795	400	445	225
ø25	380	190	100	50	320	155	640	320	355	180
ø30	320	160	85	45	265	130	530	265	300	150
ø40	240	120	65	30	200	95	400	200	225	110

NOTE: The speeds listed above are only a recommendation and may vary due to other conditions

Once you have selected the type of drill bit, find the diameter size you need. Next to that drill size, you will find what drill press speed to use.

Once you have selected the speed open the pulley guard and find the spindle speed closest to the speed required.

5.4 OPERATION PROCEEDURE

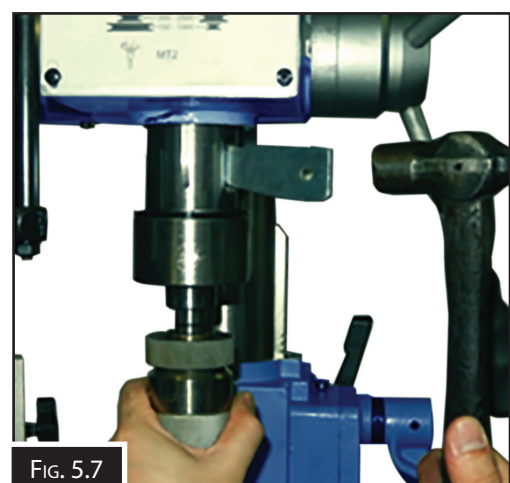
USING THE T-SLOTS

1. T-slots have been provided in the worktable and also in the base which are used to secure the workpiece or holding devices. The T-slots suit 12mm Clamp kit. (Not included)



5.5 REMOVING THE DRILL CHUCK

1. UNPLUG THE DRILL PRESS FROM THE POWER!
2. Rotate the spindle handles until the drift-key slot is exposed in the side of the quill.
3. Loosen the depth lock knob and rotate the hub clockwise until it stops.
4. Tighten the depth lock knob. The quill should not return up into the head casting.
5. Rotate the spindle until the inner drift-key slot is aligned with the outer slot. (Fig. 5.6) You will see through the spindle when the slot is properly aligned.
6. Insert the drift key into the drift-key slot.
7. Tap the drift key with a hammer or rubber mallet, as shown in (Fig. 5.7), until the chuck releases.
8. Hold a downfeed handle with one hand, and loosen the lock knob with the other hand.
9. Carefully retract the quill into the headstock.
10. Don't extend the spindle stroke too long to avoid the spindle being damaged.



6 MAINTENANCE

It is very important that regular maintenance of the equipment is carried out. The operators need to follow the daily maintenance procedures.

For optimum performance from this machine, the maintenance schedule listed below should be followed.

To reduce the risk of injury and for proper machine operation, if any of the items below are observed then, switch the machine OFF and immediately, disconnect it from power, and fix the problem before continuing operations.

6.1 SCHEDULE

Daily Maintenance

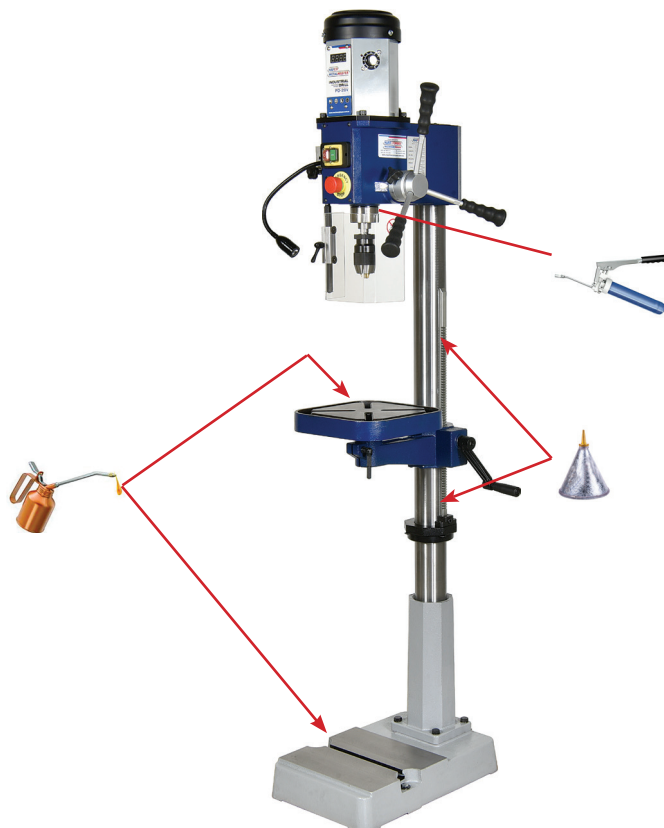
- Clean off swarf and dirt buildup.
- Clean and lubricate the drill press
- Lubricate with light oil all exposed machined surfaces.

Monthly Check

- V-belt tension, damage, or wear.
- Clean/vacuum dirt buildup from inside cabinet and off the motor.

Annually

- Check the electrical components for any damage
- Do a visual inspection to check for cracks or breaks in the frame.
- The plug and lead should also be looked at. Look for any damage or signs of discoloration.



6.2 TROUBLESHOOTING

Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts then follow the procedure in beginning of the spare parts section or if additional help with a procedure is required, then contact your distributor.

Note: Make sure you have the model of the machine, serial number, and manufacture date before calling.

Sympton	Possible Solution
Drill jams in work piece and spindle shaft stops	<ol style="list-style-type: none"> 1. Push emergency button 2. Turn off the power 3. Use hand to turn the spindle shaft counter clockwise. Let the tool withdraw from the working piece. 4. Remove the chips in the hole. 5. Turn on the power again. 6. Adopt a slow feed in normal condition then recover to normal feed.
Cutting liquid in abnormal condition and can not supply the adequate quantity.	<ol style="list-style-type: none"> 1. Check if the pump is running or not 2. Check if the hose is leaking or not.
Spindle is slipping	<ol style="list-style-type: none"> 1. Check the belt tension condition 2. If belt tension is too loose, adjust the belt shifter, otherwise change the damaged belt.
Motor does not work	<ol style="list-style-type: none"> 1. Check the power and switch 2. Check if the power cable is damaged or if cable is broken, change it directly.
Noisey Spindle shaft	<ol style="list-style-type: none"> 1. Check bearing 2. Check V – belt, if over tensioned it will cause a noise.
Drill runs out	<ol style="list-style-type: none"> 1. Check chuck condition 2. Make sure the drill is properly fixed in the chuck.

FAULT CODE INFORMATION

The motor is fitted with overload protection.

If the machine automatically stops, an error code will be displayed on the LED display.

Fault Code	Fault Description	Corrective Action
E-01	Exceed FOC protection current	Contact your distributor to arrange service
E-02	Three-phase short circuit (short circuit protection)	Contact your distributor to arrange service.
E-03	Over-voltage protection	
E-04	Low voltage protection	
E-05	Hall signal error	<ol style="list-style-type: none"> 1. Turn the machine off. 2. Restart the machine. 3. If the LED display is using the same Error code contact your nearest distributor
E-06	The motor will not run for 5 seconds	<ol style="list-style-type: none"> 1. Inspect the fan cover to ensure the vents are clean. 2. Turn off the machine and let cool down for approximately 30 minutes before restarting.
E-07	Motor temperature is too high	
E-08	Heat sink temperature is too high	<ol style="list-style-type: none"> 1. Turn the machine off. 2. Restart the machine. 3. If the LED display is using the same Error code contact your nearest distributor
E-09	Abnormal current bias	
E-10	Motor out of step	
E-11	Wrong version	
E-12	MCU does not anticipate downtime	

6.3 HAND FEED SPRING TENSION

The feed shaft return spring is adjusted at the factory; however, during the life of the drill press you may need to adjust the feed shaft return spring so the feed shaft return pressure is correct.

(Warning: Switch off power and remove plug from power source outlet before maintenance) To adjust the feed shaft spring tension:

1. Remove the cover panel to access the spring assembly. (Fig. 6.1)
2. Wipe off any oil on the spring lock cover so it does not slip in your fingers when you hold the cover from spinning (Fig. 6.2).
3. While holding the spring lock cover against the side of the head stock so the cover stays splined with the locking lug; loosen the jam nut and loosen the cover nut approximately 6mm (Fig. 6.3).
4. Put on heavy leather gloves to protect your hands from possible lacerations if the spring uncoils during the next step (Fig. 6.4).
5. Pull the cover outward just enough to disengage the spring-cover lock slot from the locking lug.

Note: It is important to keep a good grip during this step. Letting go of the cover will cause the spring to rapidly uncoil.

6. Rotate the cover counterclockwise to increase spring tension, or let the cover slowly unwind in the clockwise direction to reduce spring tension.
7. Engage the next available spring-cover lock slot with the locking lug and hold the spring lock cover tightly against the side of the headstock.
8. Snug the cover nut against the spring cover just until the nut stops, and then back off the nut approximately 1/3 turn, or just enough so there is no binding at the end of the spindle travel.
9. Hold the cover nut and tighten the jam nut against the cover nut.



SPARE PARTS SECTION

PEDESTAL DRILLING MACHINE

Model. PD-28V

Order Code D158

EDITION No : PD-28V-1
DATE OF ISSUE : 06/2023

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at any time without notification.

HOW TO ORDER SPARE PARTS

1. Have your machines model number, serial number & date of manufacture on hand, these can be found on the specification plate mounted on the machine
2. A scanned copy of your parts list/diagram with required spare part/s identified.

NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

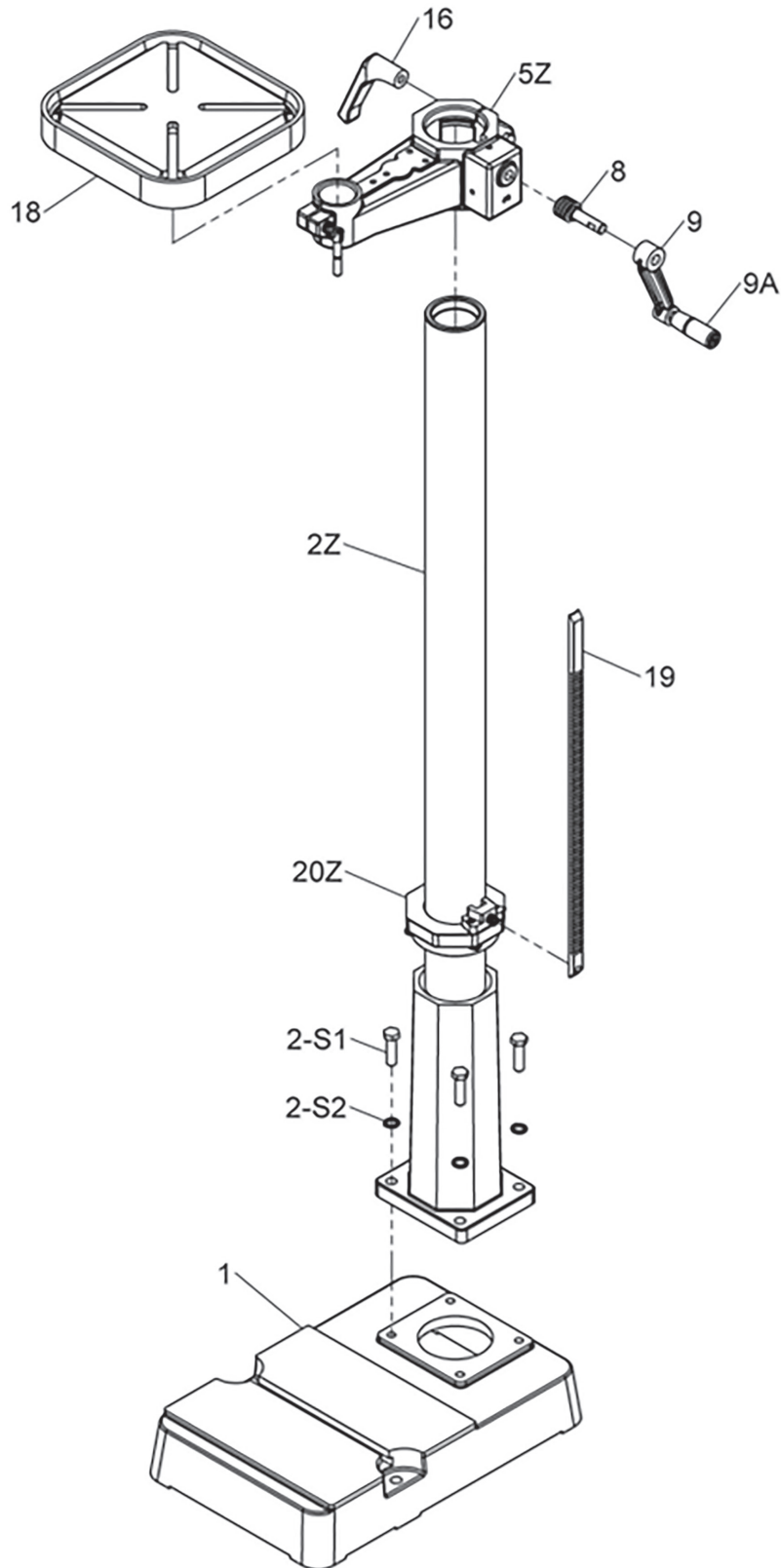
3. Go to www.machineryhouse.com.au/contactus and fill out the inquiry form attaching a copy of scanned parts list.



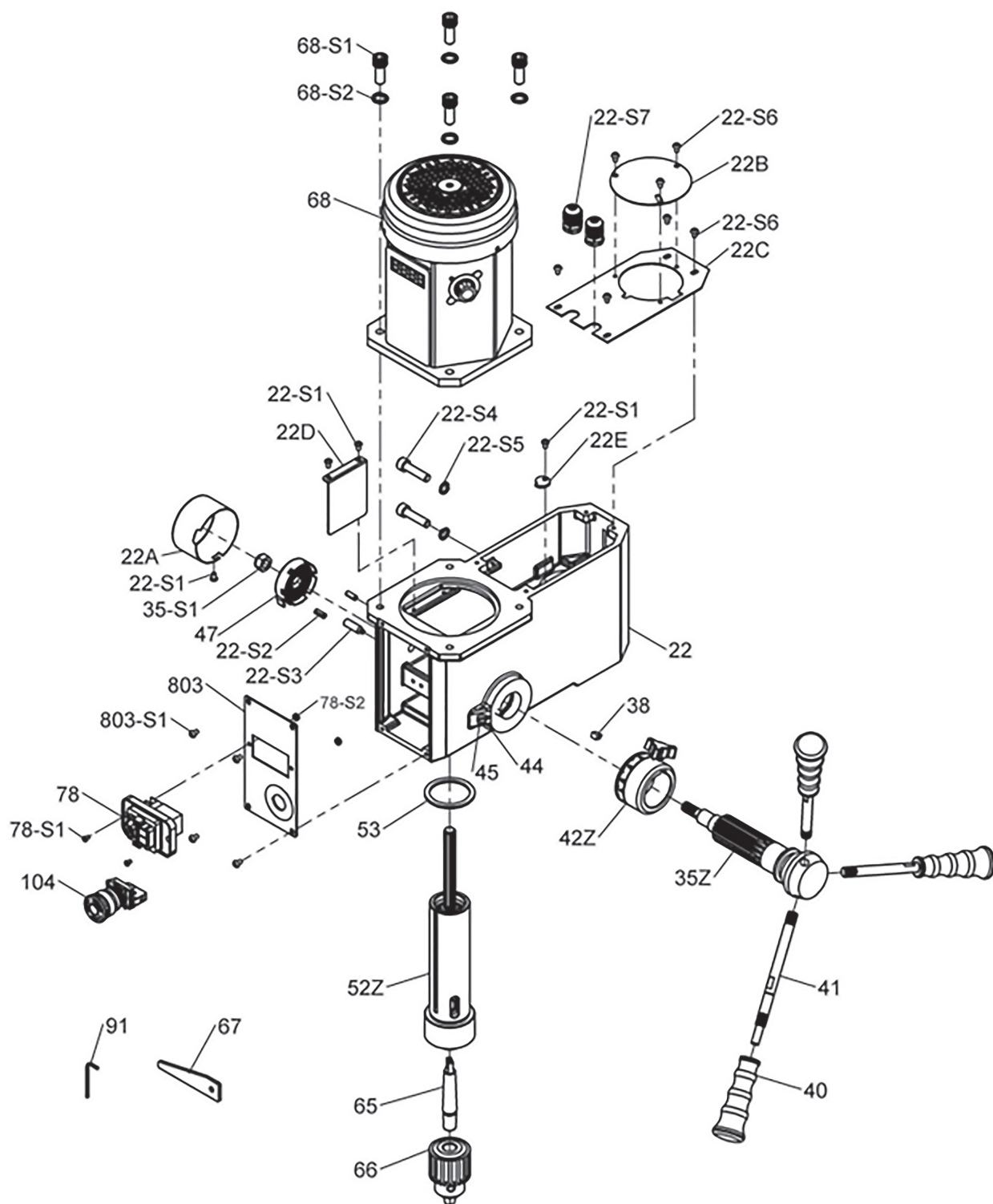
WARNING

Always disconnect the power to the machine before servicing or doing maintenance to the machine.

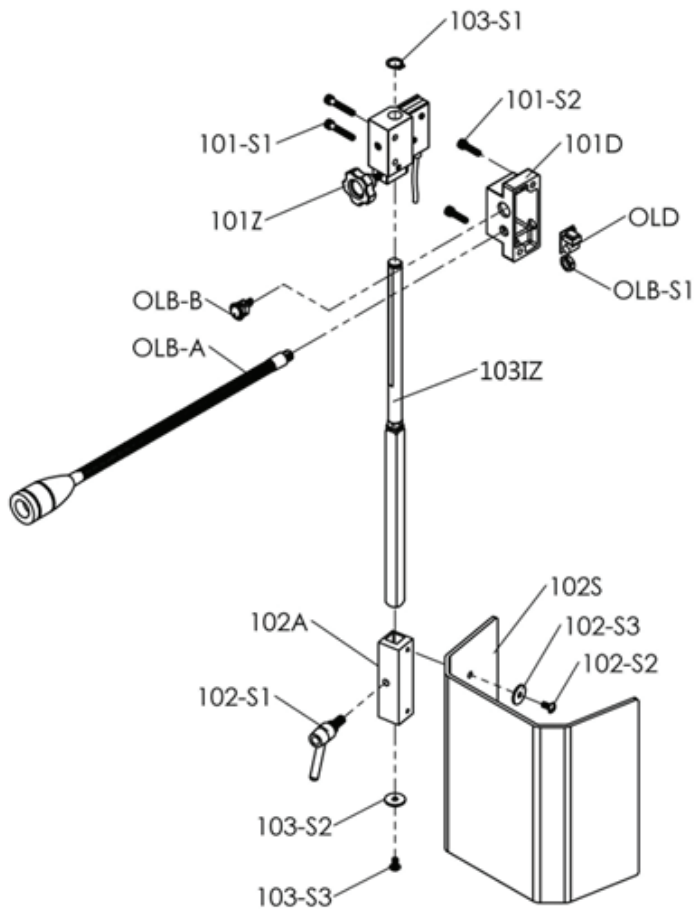
PD-28V SPARE PARTS DIAGRAM



PD-28V SPARE PARTS DIAGRAM

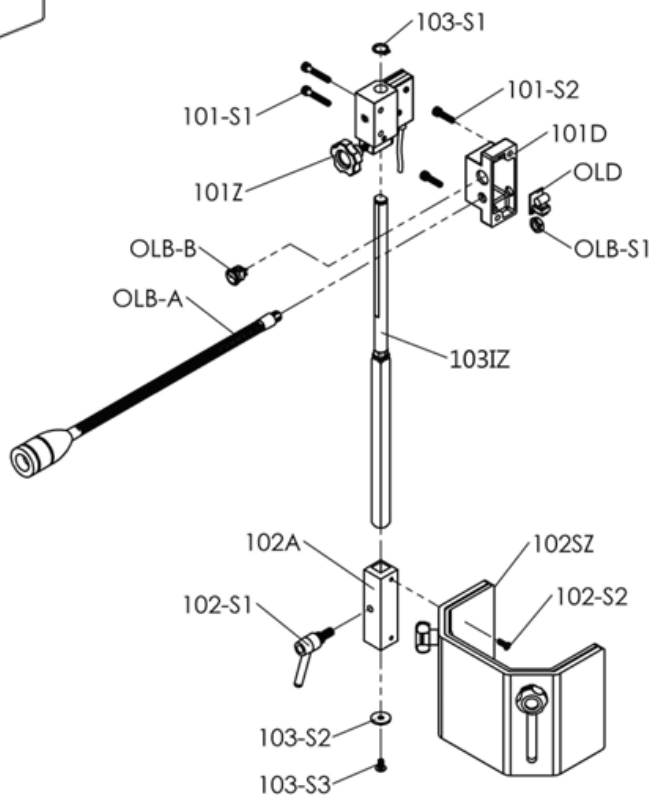


PD-28V SPARE PARTS DIAGRAM



SAFETY GUARD(TELESCOPIC+LED)

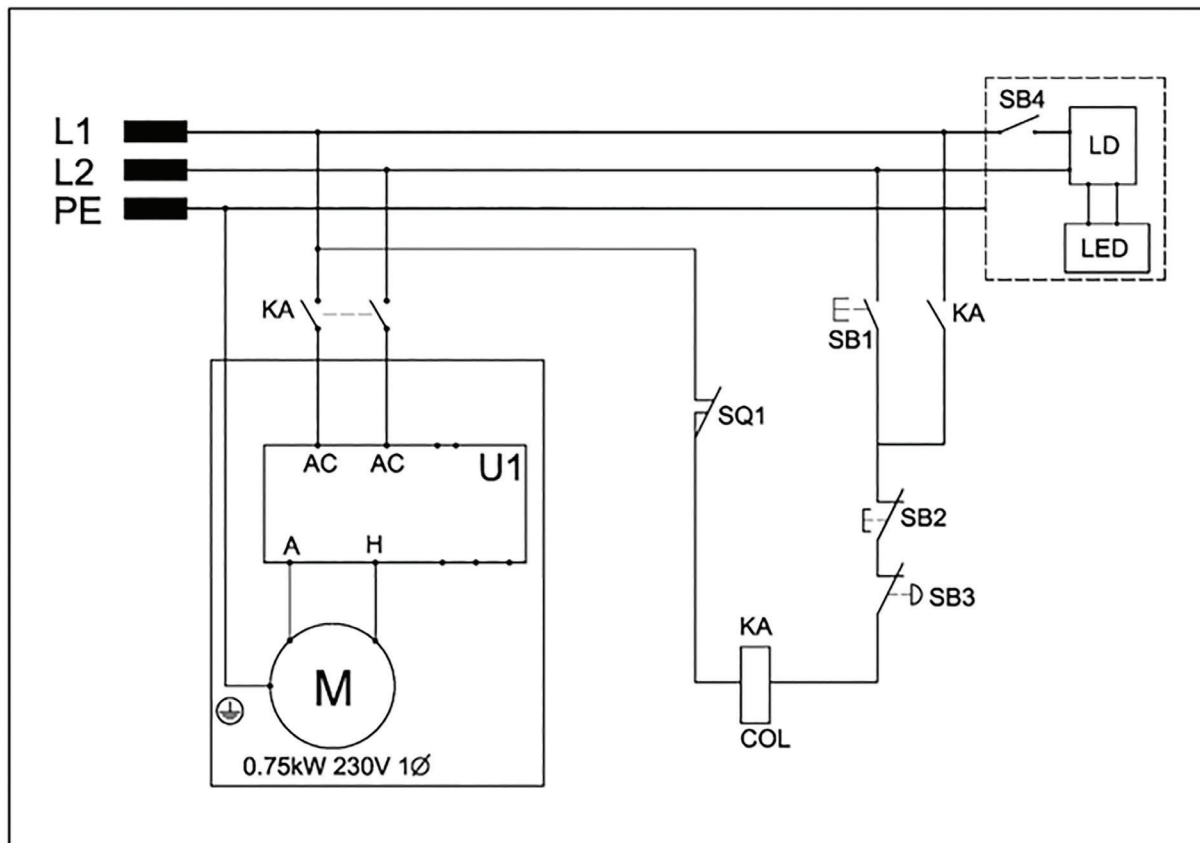
190-S1 SAFETY GUARD(LED)0."



No.	Description	No.	Description
1	Base	78-S1	Screw
2Z	Column Set	78-S2	Hex Nut
2-S1	Bolt	91	Hex Wrench
2-S2	Spring Washer	101D	Micro Switch Base
5Z	Table Bracket Set	101Z	Micro Switch Bracket Set
8	Worm Gear	101-S1	Screw
9	Table Handle	101-S2	Screw
9A	Handle Bolt	102S	Safety Guard
16	Clamp Handle	102SZ	Safety Guard Set
18	Table	102A	Safety Guard Slide
19	Rack	102-S1	Lead Bolt
20Z	Column Bearing Collar	102-S2	Screw
22	Head Body	102-S3	Washer
22A	Feed Shift Cover	103IZ	Bracket Rod Set
22B	Head Body Cover	103-S1	C-Ring
22C	Head Body Cover	103-S2	Washer
22D	Baffle Board	103-S3	Screw
22E	Safety Washer	104	Emergency Stop Switch
22-S1	Screw	803	Switch Cover
22-S2	Pin	803-S1	Screw
22-S3	Set Screw	OLB-A	LED Work Lamp
22-S4	Screw	OLB-B	LED Work Lamp Switch
22-S5	Spring Washer	OLB-S1	Hex Nut
22-S6	Screw	OLD	LED Driver
22-S7	Cable Fixing Head		
35Z	Feed Shaft Set		
35-S1	Hex Nut		
38	Key		
40	Feed Handle		
41	Grip		
42Z	Scale Ring Set		
44	Scale		
45	Rivet		
47	Spring Cap		
52Z	Quill Set		
53	Rubber Washer		
65	Taper Arbor(Optional)		
66	Drill Chuck(Optional)		
67	Drill Shifter		
68	Motor		
68-S1	Screw		
68-S2	Spring Washer		
78	NVR Switch		

NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

ELECTRICAL DIAGRAM



Part No.	Component/Object	Type	Technical Data	PCS	Part No.
M	Motor	PD-28V Series	BLDC 230V / 1PH / 0.75kW	1	68
U1	Motor Controller		DC 230V 1.2kW		
SB1	Push Button ON	KJD12	AC 220V~240V / 16A	1	78
SB2	Push Button OFF				
SB3	Emergency Stop	A2-RPR01R	AC 240V / 3A	1	104
SB4	LED Work Lamp Switch	QLB-RS15B	AC 250V / 3A	1	OLB-B
LD	LED Driver	QLD-3W220	85-265V	1	OLD
LED	LED Work Lamp	QLB-345	3W/3.4V	1	OLB-A
SQ1	Micro Switch	VM5-00N	250V 5A	1	101-Z



WARNING!

*Electricity is dangerous and could cause death
All electrical work must be carried out by a qualified electrician.*