

# INSTRUCTION MANUAL



## INDUSTRIAL PEDESTAL DRILL

**Model. PD-28**

240V Order Code D160

EDITION No : PD-28 -1

DATE OF ISSUE : 11/2023

**MACHINE DETAILS**

<b>MACHINE</b>	INDUSTRIAL PEDESTAL DRILL
<b>MODEL NO.</b>	PD-28
<b>SERIAL NO.</b>	
<b>DATE OF MANF.</b>	

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)*

**HAFCO METALMASTER**

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**PRODUCT SPECIFICATIONS**

Model: PD-28	Voltage: 240V/50Hz	
Capacity: 23mm	Motor: 0.75 kW	
Nett Weight: 98kg	FLC:7A	
MFG Date:		

Serial No:

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Imported by <a href="http://www.machineryhouse.com.au">www.machineryhouse.com.au</a>	Made in Taiwan <a href="http://www.machineryhouse.co.nz">www.machineryhouse.co.nz</a>
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FIG.1

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## 1.1 SPECIFICATION

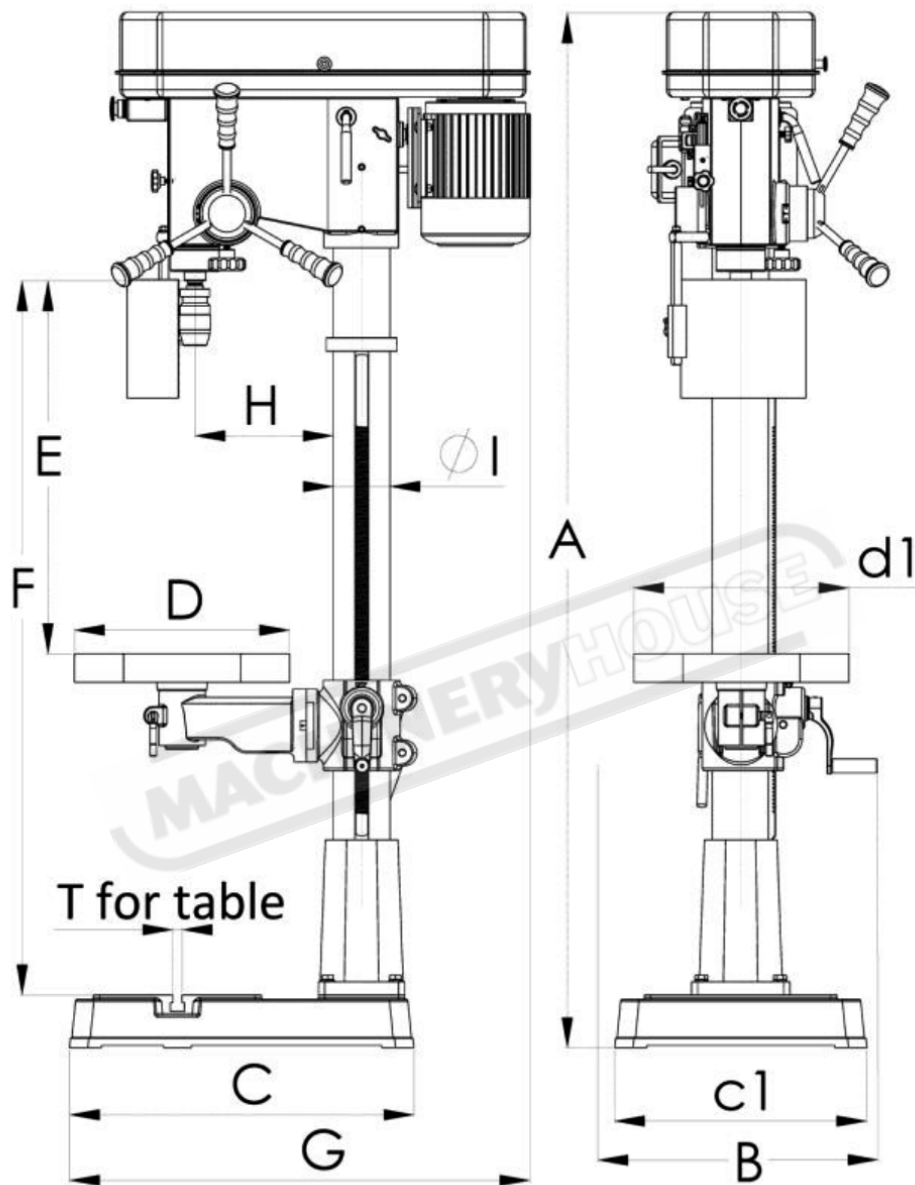
Order Code	D160
<b>MODEL</b>	<b>PD-28</b>
Type	Pedestal
Duty Type	Industrial Duty
Drilling Diameter Capacity (mm)	Ø 23
Spindle Taper	2MT
Spindle Travel (mm)	83
Throat Depth (mm)	185
Quill Diameter (mm)	47
Collar Diameter (mm)	65
Column Diameter (mm)	80
Spindle To Table (mm)	645
Spindle To Base (mm)	1180
Table Size (mm)	285 x 285
Spindle Speed Steps (No.)	12
Spindle Speed Range (rpm)	300 ~ 2360
Drive Belts (Section)	A
Motor Power (kW / hp)	0.75 / 1
Voltage / Amperage (V / A)	240 / 10
Overall Height (mm)	1710
Nett Weight (kg)	98

## 1.2 ACCESSORIES INCLUDED

16mm Drill chuck & arbor  
 Chuck key to suit  
 Drill drift



**1.3 DIMENSIONS**



<b>PD-28</b>			
<b>A</b>	1710	<b>F</b>	1280
<b>B</b>	472	<b>G</b>	640
<b>C</b>	C=500 × c1=330	<b>H</b>	180
<b>D</b>	D × d1=280	<b>I</b>	∅80
<b>E</b>	750	<b>T</b>	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.



<b>A</b>	Belt Guard	<b>I</b>	Emergency Stop Button
<b>B</b>	ON/OFF Switch	<b>J</b>	Safety Guard Clamp
<b>C</b>	Table Lock Handle	<b>K</b>	Spindle
<b>D</b>	Column	<b>L</b>	Clear Safety Guard
<b>E</b>	Base	<b>M</b>	Motor
<b>F</b>	Pivot Lock Handle	<b>N</b>	Motor Locking Lever
<b>G</b>	Square Table	<b>O</b>	Depth Stop Clamp
<b>H</b>	Down Feed Handle	<b>P</b>	Table Elevation Crank

## 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.
- ✓ DISCONNECT 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.
- ✓ Ensure there is enough room around the machine to do the job safely.
- ✓ Obtain first aid immediately for all injuries.
- ✓ Understand that the health and fire hazards can vary from material to material. Make sure all appropriate precautions are taken.
- ✓ 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 become 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!**

*People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.*

**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 machine to a complete 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 as every workshop environment is different. The guides above should 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
Full Load Current.....	7 amps
Cycle.....	50 Hz
Phase.....	Single Phase

(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 machines can be found on the motor specification plate. 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.



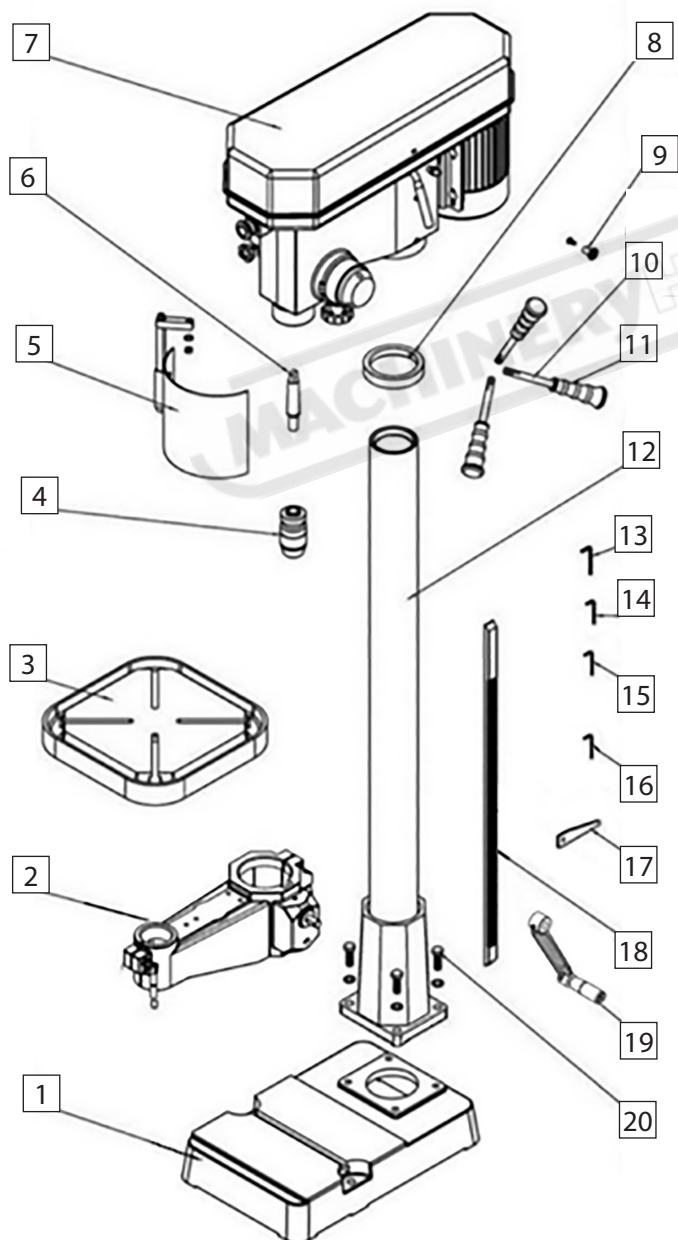
**4 SETUP**

**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 the your distributor.



No.	Description	Qty.
1	Base	1
2	Table Support Assembly	1
3	Table	1
4	Chuck	1
5	Chuck Guard	1
6	Drill Chuck	1
7	Headstock Assembly	1
8	Column Ring	1
9	Pully Cover Knob	1
10	Grip	3
11	Feed Handle	3
12	Column	1
13	3mm Hex Wrench	1
14	4mm Hex Wrench	1
15	5mm Hex Wrench	1
16	6mm Hex Wrench	1
17	Drill Drift	1
18	Table Rack	1
19	Table Lower/Raise Crank	1
20	Hex Bolt	4

### 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

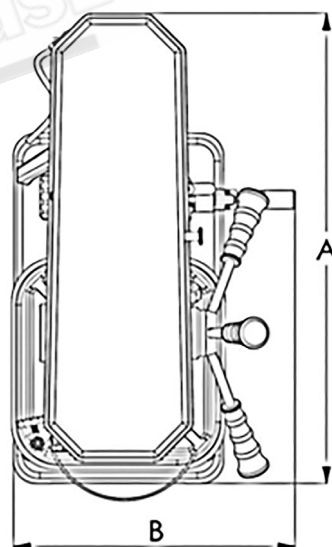
When selecting the site for the machine, consider the largest size of workpiece that will be processed through the machine and provide enough space around the machine for operating the machine safely. Consideration should be given to the installation of auxiliary equipment. Leave enough space around 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.

#### FOOTPRINT

Minimum working clearances required

- A     670mm
- B     390mm



### 4.4 LIFTING INSTRUCTIONS



#### **WARNING**

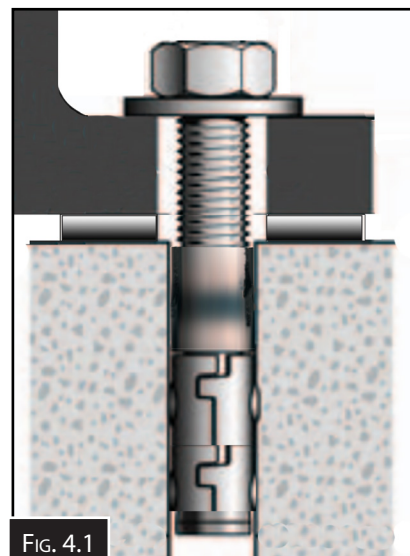
*This machine is extremely heavy. Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate.*



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.

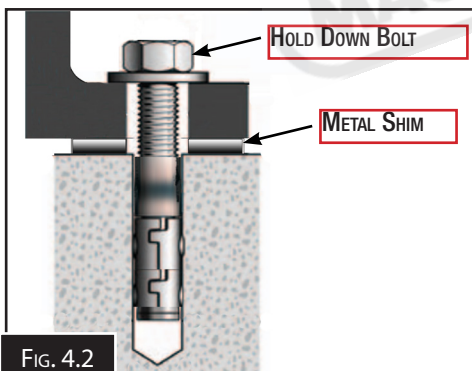
### 4.5 ANCHORING TO THE FLOOR

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. 4.1)



### 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. 4.2).





**CAUTION**

*The machine must not rest on supports other than those defined in Fig. 4.2*



**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.*

**4.7 ASSEMBLY**

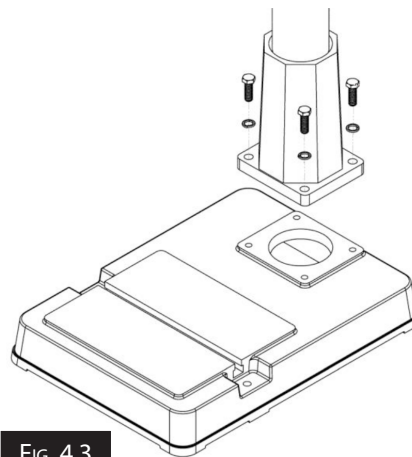
The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly.

**COLUMN AND BASE**

The column must be secured on the base to properly assemble the drill press.

To secure the column to the base:

1. Place the column on the base and align the mounting holes.
2. Using a 19mm spanner secure the column to the base with the four hex bolts and spring washers, (Fig. 4.3)



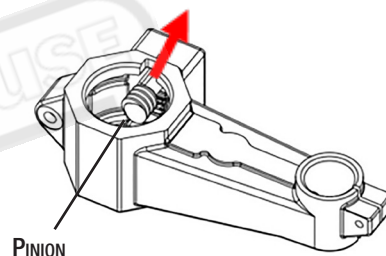
**FIG. 4.3**

**TABLE SUPPORT**

The table support must be installed as described to properly assemble the drill press.

To install the table support:

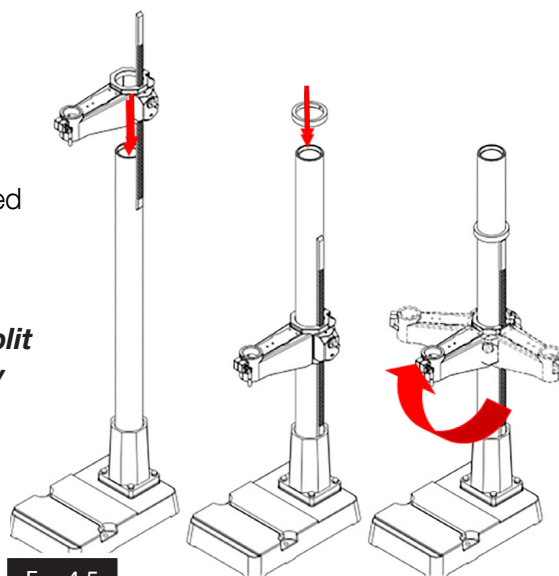
1. Check to make sure the pinion is inserted into the table support, with the pinion and gear teeth meshed together. (Fig,4,4)
2. Take note to the top of the rack, as shown to ensure that it is installed with the correct end facing up.



**FIG. 4.4**

3. Place the rack inside of the table support assembly, mesh it together with the pinion, and slide the table support/rack assembly over the column. (Fig. 4.5)
4. Slide the column ring over the column with the beveled edge facing down and fit the beveled edge of the column ring over the rack, and tighten the set screw.

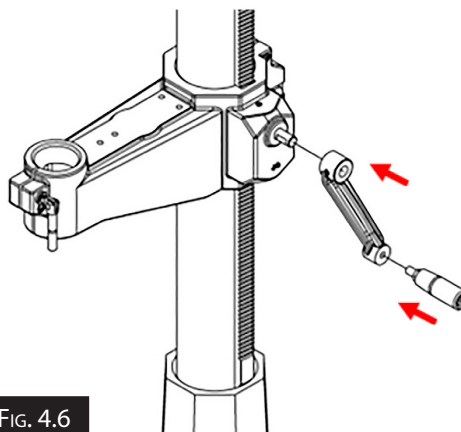
**Note: Do not over-tighten the set screw as it may split the column ring. Make sure the rack is seated firmly in the lower ring.**



**FIG. 4.5**

**4.7 ASSEMBLY Cont.**

5. Install the crank lever over the pinion shaft, and tighten the setscrew in the crank handle against the flat part of the pinion shaft. (Fig.4.6)
6. Insert the table shaft into the table support assembly. Tighten the small locking lever to secure the table in the table support assembly
7. The headstock must be mounted on the column/base assembly before the drill press can be operated. Loosen the two set screws on the right side of the headstock enough so they are flush with the inside pocket of the headstock. (Fig.4.7)



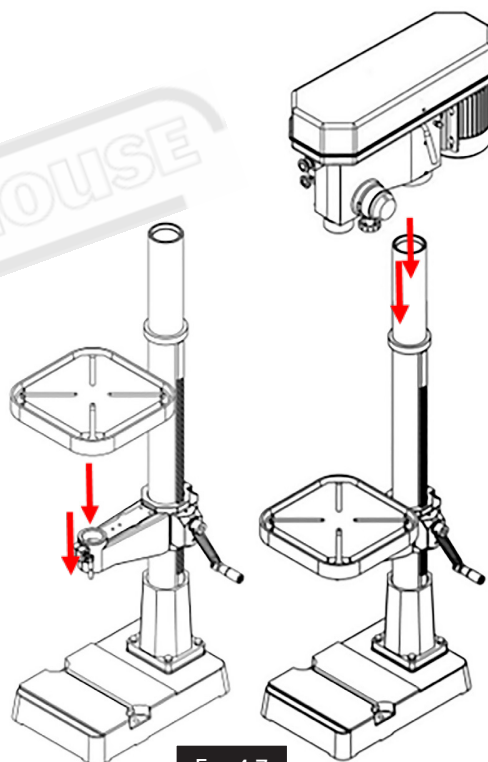
**FIG. 4.6**

With the help of an assistant, lift the headstock assembly above the column, and gently slide it down the column as far as it will go.

**NOTE: Moving and installing the headstock is a two-person job.**

**2 PERSON LIFT**  
OR MECHANICAL AID

**WARNING**  
*Parts of this machine are heavy. You must have assistance when moving or lifting these parts*



**FIG. 4.7**

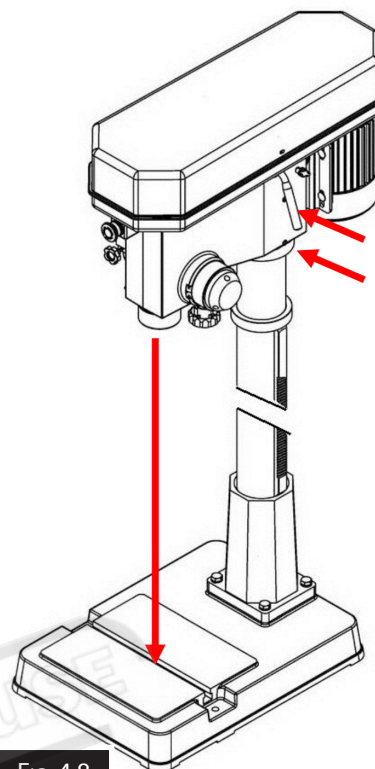
**WARNING**  
*Serious injury could occur if you connect machine to power before completing the setup process. DO NOT connect to power until all assembly and adjusting processes are complete*

**4.7 ASSEMBLY Cont.**

9. Suspend a plum bob from the center of the headstock spindle. The headstock should sit directly over the centre of the base as indicated with the plum bob. (Fig. 4.8)
10. Tighten the two headstock setscrews to the column, as shown. (Fig. 4.9)

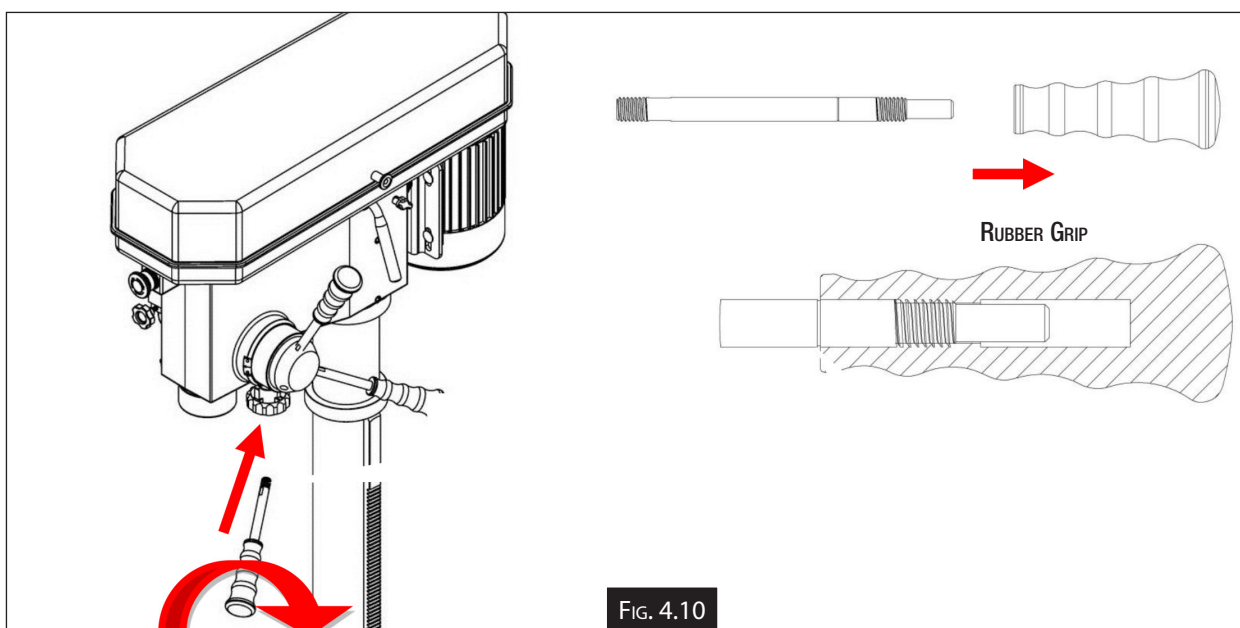


**FIG. 4.9**



**FIG. 4.8**

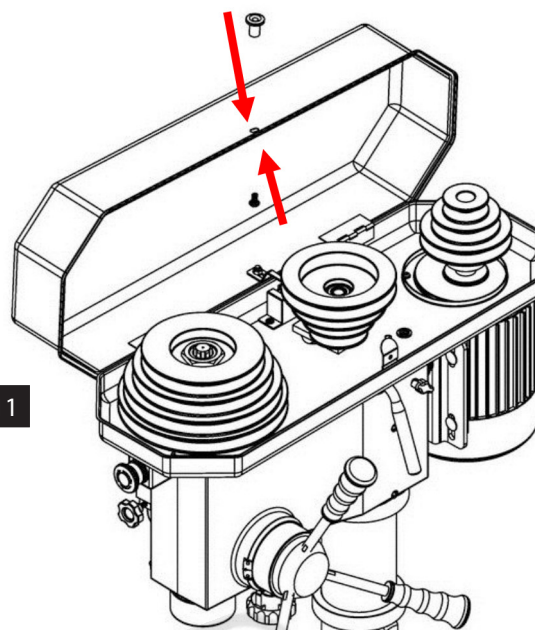
11. The downfeed handles must be installed to operate the drill press.  
To install the downfeed handles:  
Thread the handles into the spindle hub, as shown below, and tighten. (Fig. 4.10)



**FIG. 4.10**

**4.7 ASSEMBLY Cont.**

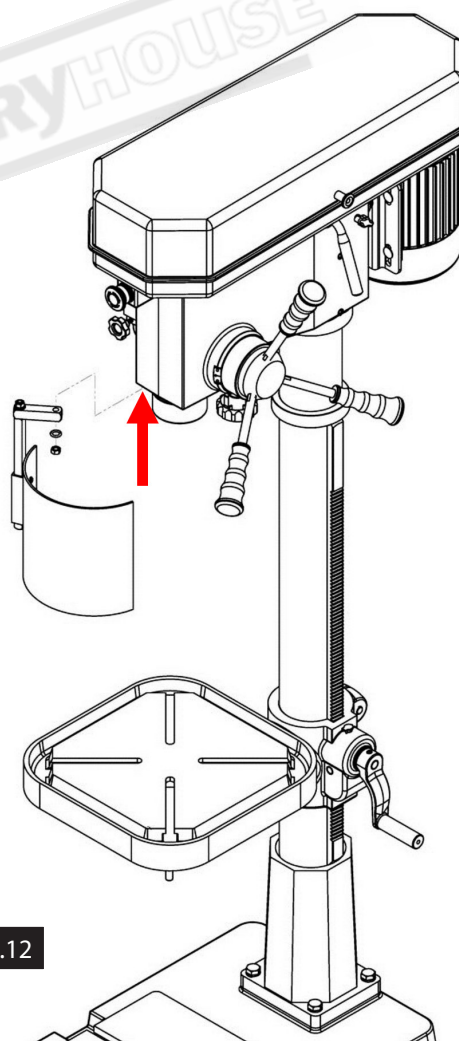
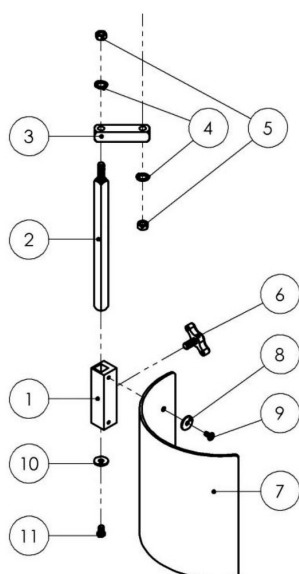
- 12. Install the belt cover knob in its place (Fig. 4.11)
  
- 13. Fit the chuck guard to the head stock from the parts list below. (Fig. 4.12)



**FIG. 4.11**

**CHUCK GUARD**

		<b>QTY</b>
<b>1</b>	Safety Guard Slide	1
<b>2</b>	Lower Bracket Rod	1
<b>3</b>	Support Arm	1
<b>4</b>	Spring Washer	2
<b>5</b>	Hex Nut	2
<b>6</b>	Lead Bolt	1
<b>7</b>	Safety Guard	1
<b>8</b>	Washer	2
<b>9</b>	Screw	2
<b>10</b>	Washer	1
<b>11</b>	Screw	1



**FIG. 4.12**

**4.7 ASSEMBLY Cont.**

**DRILL CHUCK ASSEMBLE**

1. The drill chuck attaches to the spindle by means of an arbor. Matching tapers on the arbor and the inside of the chuck create a semi-permanent assembly when properly joined.



2. Use mineral spirits to thoroughly clean the drill chuck, arbor, and spindle sockets 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. (Fig. 4.14)



**FIG. 4.14**

3. Place the drill chuck face down on a workbench. 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 rubber or wooden mallet, as shown below. (Fig. 4.15)



**FIG. 4.15**

## 5. OPERATION

### 5.1 CONTROL PANEL

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 correctly may result in malfunction or unexpected results that can lead to serious injury, death or damage to the machine or property.**

PD-28 240V



ON/OFF SWITCH



EMERGENCY SWITCH



## 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. 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.5.1)
3. The machine should now work again.



FIG. 5.1

## 5.2 TEST RUN Cont.

### TESTING THE CHUCK GUARD MICRO SWITCH

Make sure that the micro switch on the chuck guard is working correctly

1. Close the chuck guard and while it is closed, start the machine. The machine should run. (Fig. 5.2)
2. Stop the machine with the ON/OFF button and when the machine has come to a complete stop, open the chuck guard.
3. With the chuck guard open, press the ON button. The machine should not work.
4. Close the chuck guard and try to start the drill press with the ON button. The machine should now start.



FIG. 5.2



### 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.*

### TESTING THE BELT GUARD MICRO SWITCH

Make sure that the micro switch on the belt guard is working correctly

1. Close the belt guard and while it is closed, start the machine. The machine should run. (Fig. 5.3)
2. Stop the machine with the ON/OFF button and when the machine has come to a complete stop, open the belt guard.
3. With the belt guard is open press the ON button. The machine should not work.
4. Close the belt guard and try to start the drill press with the ON button. The machine should now start.



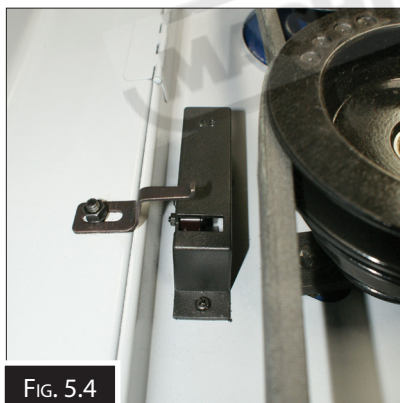
FIG. 5.3

**5.3 OPERATION PROCEEDURE**

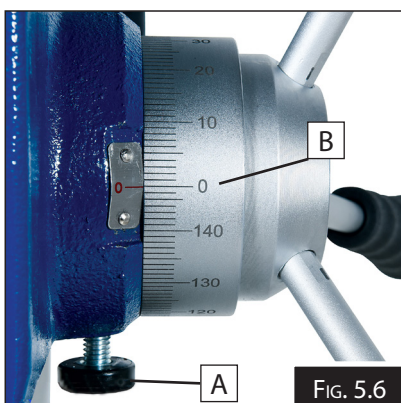
1. T-slots have been provided in the worktable and also in the base which are used to secure the workpiece or holding devices. The T-slots suit 12mm Clamp kit. (Not included)



2. The pulley guard is fitted with a safety micro switch that prevents the machine from operating if the pulley cover is opened during normal operation. (Fig. 5.4)
3. The drill chuck safety guard must be in the closed position for the drill to operate. The micro switch on the safety guard controls the operation of the drilling machine and prevents the machine from operating when in the open position. (Fig. 5.5)



4. Setting the depth stop



To prevent the drill penetrating too far into the workpiece, the the depth stop can be set. This can be set after the distance between the end of tool and top surface of the work piece is measured. (Fig. 5.6)

Setting of feeding depth











1. Loosen knob A.
2. Turn scaled ring B to desired feeding depth.
3. Lock knob A.

**5.4 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.

<b>Material</b>										
<b>Drill m/m</b>	<b>Cast Iron</b>		<b>Steel</b>		<b>Iron</b>		<b>Aluminium</b>		<b>Alloy Copper</b>	
										
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.

**5.5 CHANGING SPEEDS**

When speed change is required. Loosen the lock bolt on both side of headstock. (A in Fig. 5.7)

Pull the belt handle (B in Fig. 5.7) to allow the belts repositioning and then move the belts to the correct pulley position to acquire desired speed.

See following speed chart for reference.

**BELT SPECIFICATION**

Spindle A-25 / Motor A26 Total 2 Belts



FIG. 5.7

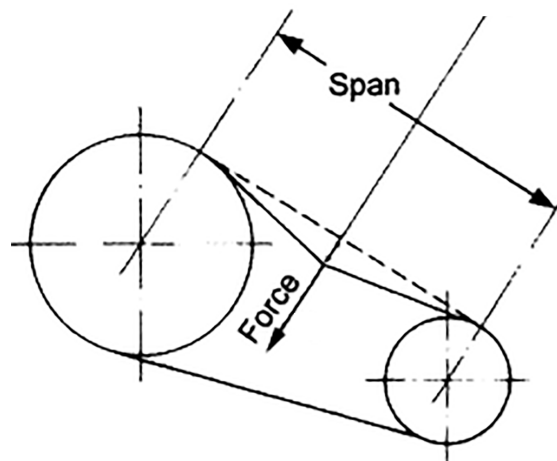
<b>DE = 300</b>	<b>AF = 1130</b>
<b>CE = 390</b>	<b>BG = 1200</b>
<b>DF = 450</b>	<b>CH = 1340</b>
<b>BE = 550</b>	<b>AG = 1730</b>
<b>CF = 620</b>	<b>BH = 1860</b>
<b>DG = 720</b>	<b>AH = 2360</b>

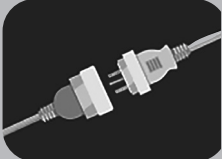


**BELT TENSION**

Once the belts have been moved to the desired position make sure that the belts are tensioned correctly.

Deflection force = 16mm per metre





**WARNING**

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

**5.6 REMOVING DRILL CHUCK**

The arbor of a drill chuck is specially tapered to fit very tightly into the identical taper in the spindle of the drill press. The mating tapers on the chuck arbor and the spindle are the sole method of retaining the drill chuck in the spindle of the machine.

**TO REMOVE THE DRILL CHUCK**

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY
2. Rotate the spindle handles until the drift-key slot is exposed in the side of the quill. (Fig. 5.8)  
Only extend the spindle just enough to clear the slot.
3. Loosen the lock knob and rotate the hub clockwise until it stops. (Fig. 5.9)
4. Tighten the 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, as shown (Fig. 5.8).  
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, as shown. (Fig. 5.10) 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.



FIG. 5.8

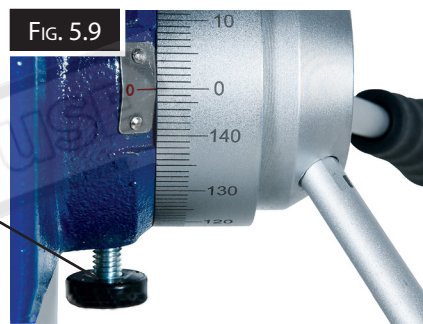


FIG. 5.9



FIG. 5.10



**CAUTION**

*Before attempting this feature, disconnect the machine from the power supply to avoid injury to the operator from accidental startup or damage to the machine*

## 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.

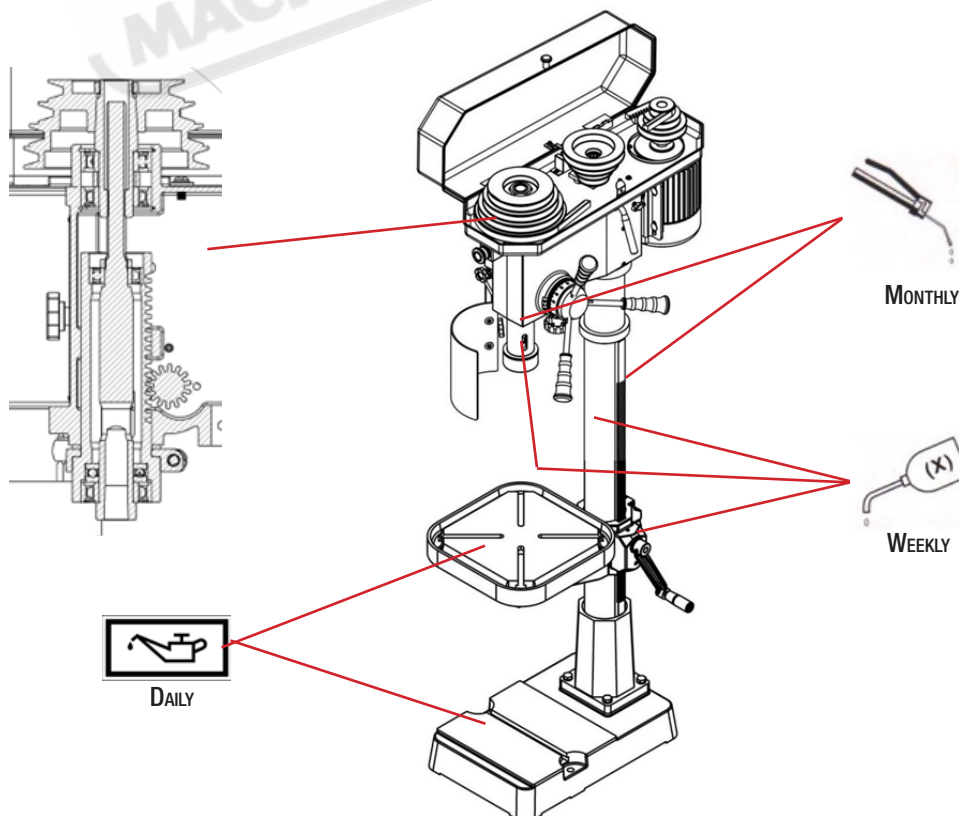
#### Monthly Check

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

#### Annually

- Remove the cover and check the belt and pulleys for good condition.
- 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.

### LUBRICATION



## 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.

Symptom	Possible Solution
Drill jams in work piece and spindle shaft stops	<ol style="list-style-type: none"> <li>1. Push emergency button</li> <li>2. Turn off the power</li> <li>3. Use hand to turn the spindle shaft counter clockwise. Let the tool withdraw from the working piece.</li> <li>4. Remove the chips in the hole.</li> <li>5. Turn on the power again.</li> <li>6. Adopt a slow feed in normal condition then recover to normal feed.</li> </ol>
Bad surface finish	<ol style="list-style-type: none"> <li>1. The cutting speed is too slow. Increase the cutting speed.</li> <li>2. The feed is too high. Reduce the feed.</li> </ol>
Spindle is slipping	<ol style="list-style-type: none"> <li>1. Check the belt tension condition</li> <li>2. If belt tension is too loose, adjust the belt shifter, otherwise change the damaged belt.</li> </ol>
Motor does not work	<ol style="list-style-type: none"> <li>1. Check the power and switch</li> <li>2. Check if the power cable is damaged or if cable is broken, change it directly.</li> <li>3. Check that the belt guard has been closed and the micro switch is closed.</li> <li>4. Check that the chuck guard has been closed and the micro switch is closed</li> </ol>
Noisy Spindle shaft	<ol style="list-style-type: none"> <li>1. Check bearing</li> <li>2. Check V – belt, if over tensioned it will cause a noise.</li> </ol>
Drill runs out	<ol style="list-style-type: none"> <li>1. Check chuck condition</li> <li>2. Make sure the drill is properly fixed in the chuck.</li> </ol>

## 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.

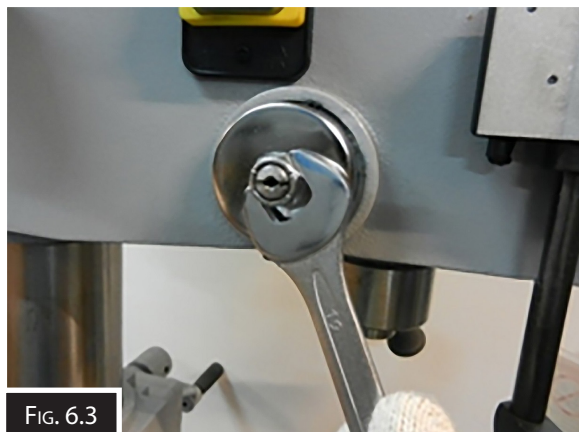
**(Warning: Switch off power and remove plug from power source outlet before maintenance) To adjust the feed shaft spring tension:**

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).

### 6.3 HAND FEED SPRING TENSION Cont.

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

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.
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 complete spindle travel.
9. Hold the cover nut and tighten the jam nut against the cover nut.



## SPARE PARTS SECTION

# INDUSTRIAL PEDESTAL DRILL

## Model. PD-28

240V Order Code D160

EDITION No : PD-28 -1

DATE OF ISSUE : 11/2023

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

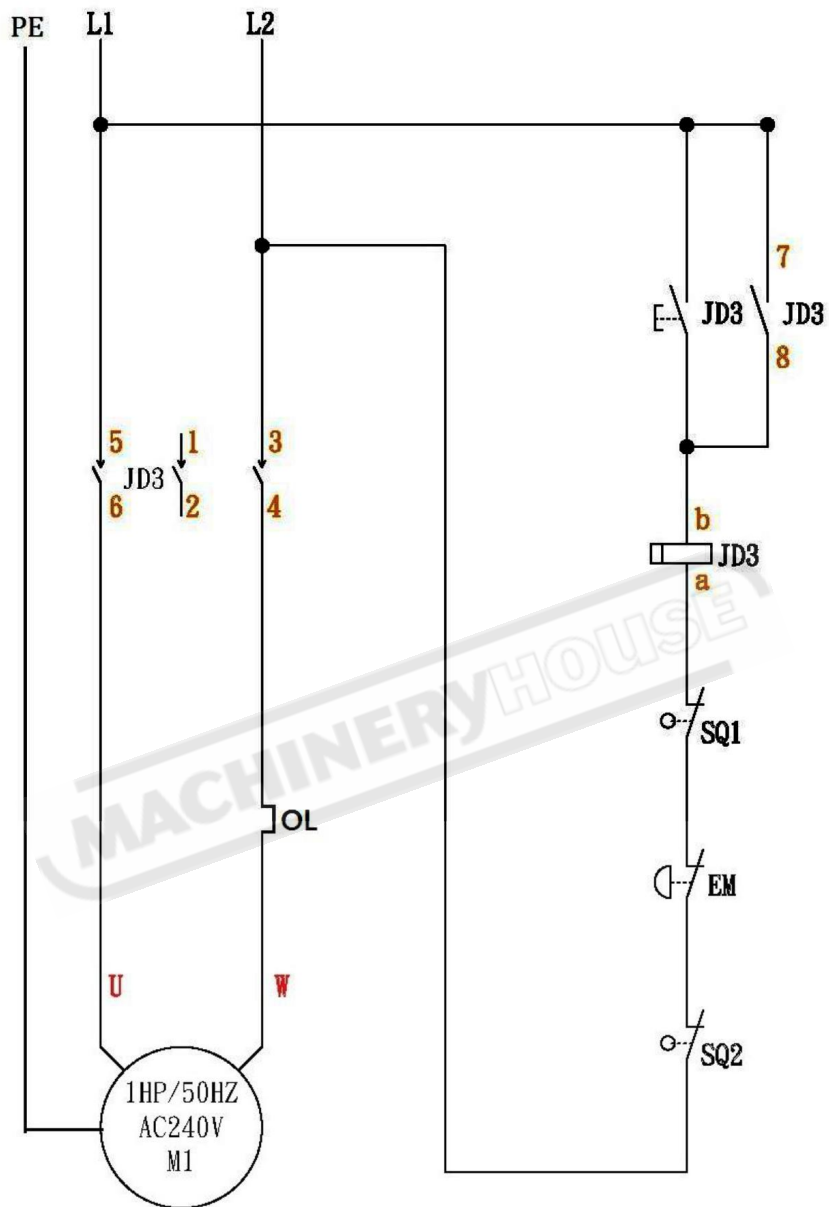
3. Go to [www.machineryhouse.com.au/contactus](http://www.machineryhouse.com.au/contactus) and fill out the inquiry form attaching a copy of scanned parts list.



## 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.*

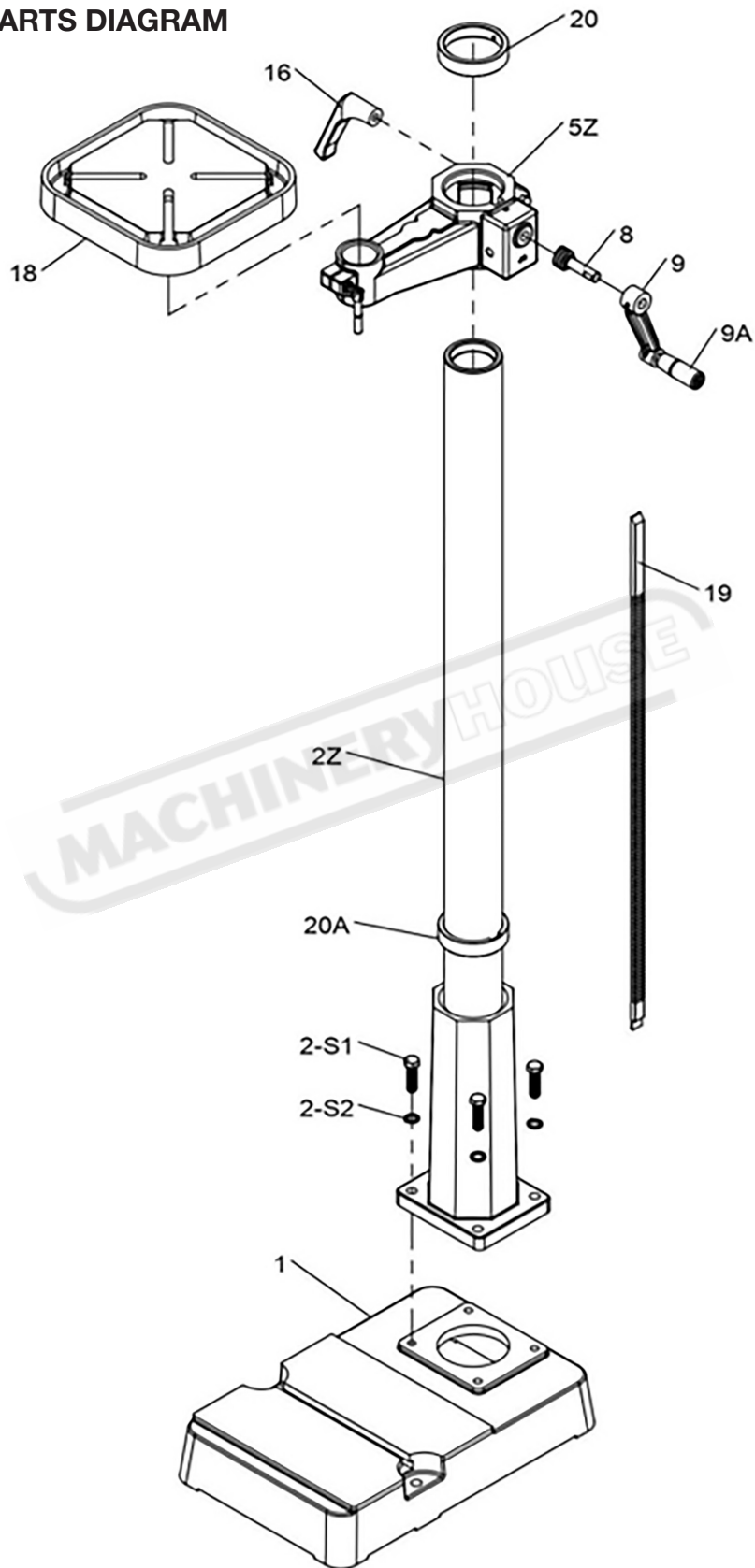
**PD-28 ELECTRICAL DIAGRAM**



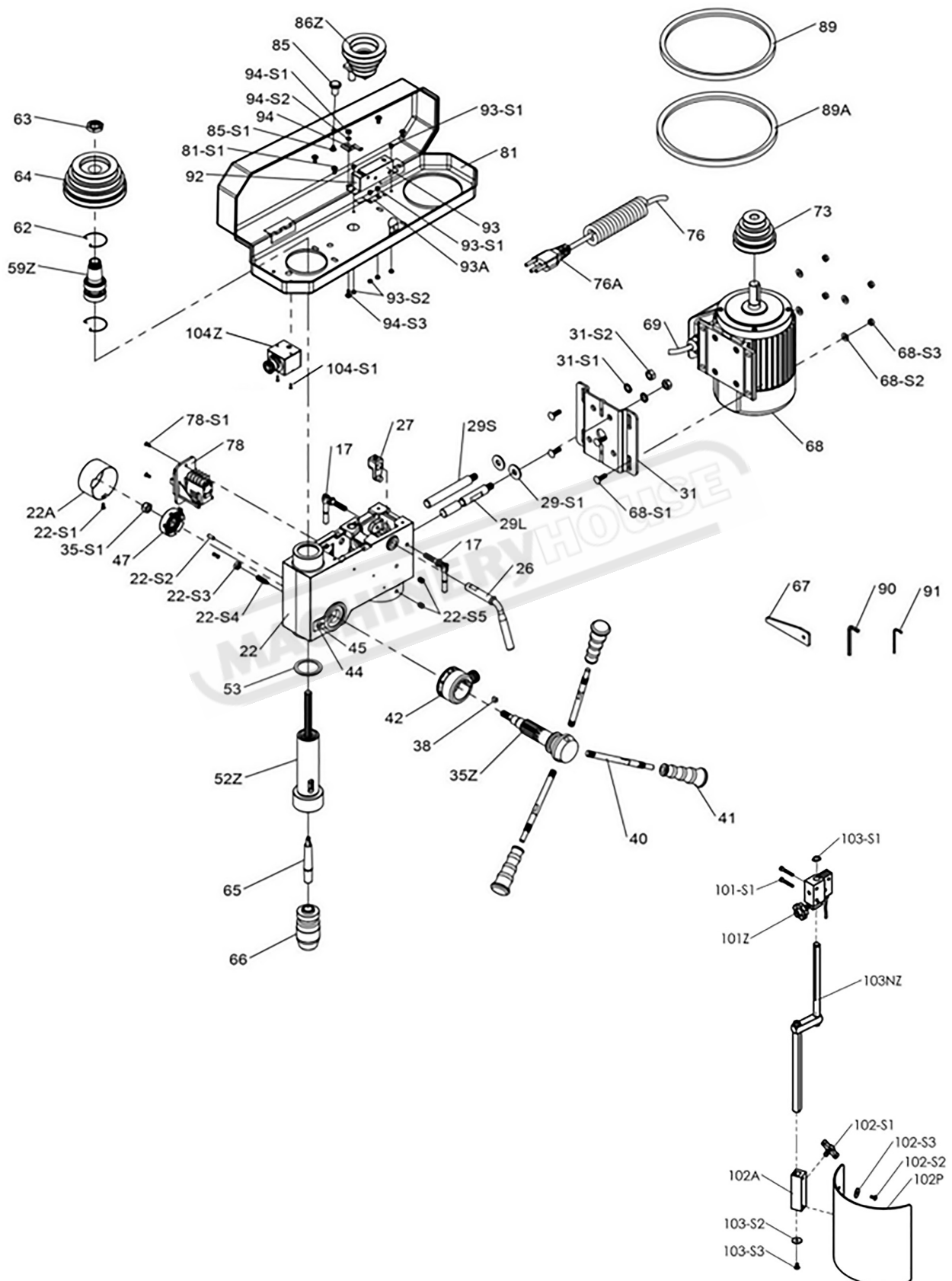
**PD-28 ELECTRICAL PARTS LIST**

Part No.	Component/Object	Type/Model	Ratings/Technical Data	Pcs
M1	Motor	PD-28	1HP/240V 50Hz/1PH	1
JD3	Contact Relay	JD3	AC 230V 16A	1
SQ1	Limit Switch	VM5-00N	5A/250S	1
SQ2	Chuck Guard Micro Switch	VM5-00N	5A/250S	1
EM	Emergency Stop	ALEPB25-1/C	INCAC 250V, 3A	1
OL	Overload Relay	88 Series	AC250V,10A	1

**PD-28 SPARE PARTS DIAGRAM**



**PD-28 PARTS DIAGRAM**



**PD-35/PD-35B SPARE PARTS LIST**

1	Base	47	Spring Cap
2Z	Column Set	52Z	Quill Set
2-S1	Bolt	53	Rubber Washer
2-S2	Spring Washer	59Z	Spindle Sleeve Set
5Z	Table Bracket Set	62	Snap Ring
8	Worm Gear	63	Pulley Nut
9	Table Handle	64	Spindle Pulley
9A	Handle Bolt	65	Taper Arbor (Option)
15	Indicator	66	Drill Chuck (Option)
16	Clamp Handle	67	Drill Shifter
17	Lead Bolt	68	Motor
18	Table	68-S1	Bolt
19	Rack	68-S2	Washer
20	Rack Ring	68-S3	Hex Nut
20A	Rack Ring	69	Motor Wire
22	Head Body	73	Motor Pulley
22A	Spring Protection Cover	76	Wire
22-S1	Screw	76A	Wire Plug
22-S2	Pin	78	NVR Switch(PD-28/35)
22-S3	Hex Nut	78	Cam Switch(PD-35B)
22-S4	Screw	78-S1	Screw
22-S5	Screw	78-S2	Washer
22-S6	Lead Bolt	79	Switch Cover
26	Shifter Bar	79-S1	Screw
27	Shifter	81	Pulley Cover
29L	Slide Bar (L)	81-S1	Screw
29S	Slide Bar (S)	85	Pulley Cover Knob
29-S1	Washer	85-S1	Screw
31	Motor Base	86Z	Pulley Shaft Set
31-S1	Spring Washer	89	V-BELT
31-S2	Hex Nut	89A	V-BELT
35Z	Feed Shaft Set	90	Hex Wrench
35-S1	Hex Nut	90-1	Hex Wrench
38	Key	91	Hex Wrench
40	Feed Handle	91-1	Hex Wrench
41	Grip	92	Micro Switch
42	Scale Ring	93	Micro Switch Box
44	Indicator	93A	Spring Sheet
45	Rivet	93-S1	Screw

**PD-28 SPARE PARTS LIST Cont.**

93-S2	Hex Nut
94	Clutch
94-S1	Hex Nut
94-S2	Spring Washer
94-S3	Screw
101D	Micro Switch Base
101Z	Micro Switch Bracket Set
101-S1	Screw
101-S2	Screw
102P	Safety Guard
102S	Safety Guard
102SZ	Safety Guard Set
102A	Safety Guard Slide
102-S1	Lead Bolt
102-S2	Screw
102-S3	Washer
103IZ	Bracket Rod Set
103NZ	Bracket Rod Set
103-S1	C-Ring
103-S2	Washer

103-S3	Screw
104Z	Emergency Stop Switch Set
104-S1	Screw
108D	Magnetic Switch
108-S1	Screw

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



**WARNING**

*Disconnect all power from the machine before servicing.  
There may be multiple power sources present.  
Remove the plug from the power point or remove the fuse if hardwired. Failure to do may cause death or injury.*

# WARNING

## General Machinery Safety Instructions

---

Machinery House  
requires you to read this entire Manual before using this machine.

- 1. Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
- 2. Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
- 3. Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
- 4. Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
- 5. Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
- 6. Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
- 7. Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
- 8. Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
- 9. Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
- 10. Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
- 11. Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
- 12. Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
- 13. Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
- 14. Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
- 15. Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
- 16. Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
- 19. Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
- 20. Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
- 21. Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
- 22. Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
- 23. Lock mobile bases.** Make sure any mobile bases are locked before using machine.
- 24. Allergic reactions.** Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

# WARNING

## Drilling Machine Safety Instructions

---

Machinery House  
requires you to read this entire Manual before using this machine.

- 1. Maintenance.** Make sure the Drill is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
- 2. Drill Condition.** Drill must be maintained for a proper working condition. Never operate a Drill that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Leaving a Drill Unattended.** Always turn the Drill off and make sure all moving parts have come to a complete stop before leaving the Drill. Do not leave Drill running unattended for any reason.
- 4. Avoiding Entanglement.** Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the Drill spindle or moving parts.
- 5. Chuck key & wrench safety.** Always remove chuck keys, wrenches and any service tools immediately after use. Chuck keys left in the chuck can cause serious injury.
- 6. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 7. Drill bit selection.** Always use the correct Drill bit for the job you are Drilling. Make sure you use the correct shank drill bit for your drilling machine.
- 8. Secure the Drill Bit.** Properly tighten and securely lock the drill bit in the chuck.
- 9. Cutting Tool inspection.** Inspect Drill for sharpness, chips, or cracks before use. Replace any cutting tools immediately if dull, chipped or cracked. Handle new cutting tools with care. Cutting edges are very sharp and can cause lacerations.
- 10. Reversing the spindle.** Make sure the spindle has come to a complete stop before changing the direction of the spindle.
- 11. Stopping the spindle.** Do not slow or stop the spindle by using your hand.
- 12. Speed selection.** Select the appropriate speed for the type of work, material, and tool bit. Allow the Drill to reach full speed before beginning a cut.
- 13. Changing Belts for speed selection.** Always allow the machine to come to a complete stop and turn power off before changing belts. Not turning power off when changing belts can cause serious injury.
- 14. Clearing chips.** Always use a brush to clear chips. Never clear chips when the drill is running.
- 15. Power outage.** In the event of a power failure during use of the drill, turn off all switches to avoid possible sudden start up once power is restored.
- 16. Clean work area.** Keep the area around the drill clean from oil, tools, chips.
- 17. Surface/workpiece area.** Before turning the drill on, make sure the table is clear of any objects (tools, scraps, off-cuts etc.) Do not drill material that does not have a flat surface unless a suitable support is used.
- 18. Table Lock.** Make sure the table is tightened before starting the drill.
- 19. For - Radial Drill Arm Lock.** Make sure the arm is locked before leaving or starting a radial arm drill. An unlocked radial drill arm can swing and cause serious injury.
- 20. Drilling Sheet metal.** All sheet metal should be clamped to the table before drilling.
- 21. Mounting workpieces.** Use clamps or vices to secure workpiece before drilling. Position work so you avoid drilling into table.
- 22. Guarding.** Do not operate the drill when chuck guard is removed.
- 23. Eye and hand protection.** A face shield with safety glasses is recommended. Always keep hands and fingers away from the drill bit. Never hold a workpiece in your hand while drilling. Do not wear gloves while operating the drill.
- 24. Drill operation.** Never start the drill with the drill bit pressed against the workpiece. Feed the drill evenly into the workpiece. Back the drill out of deep holes. Turn the machine off and clear chips and scrap pieces with a brush. Turn power off, remove drill bit, and clean the table before leaving the machine.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

# PLANT SAFETY PROGRAM

## **NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL**

### **Drilling Machine**

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures  
This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace ( WHSA 2011 No10 )

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies <small>(Recommended for Purchase / Buyer / User)</small>
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support work material on drill table.
C	CUTTING, STABBING, PUNCTURING.	MEDIUM	Isolate power to machine prior to any checks or maintenance being carried out. Do not adjust or clean until the machine has fully stopped.
D	SHEARING	MEDIUM	Isolate power to machine when changing speeds or maintenance is being carried out. Make sure all guards are secured shut when machine is on.
F	STRIKING	MEDIUM	Ensure workpieces are tightly secured on machine. Wear safety glasses. For Radial Arm Drills ensure that arm is locked before drilling. Ensure correct spindle direction when drilling..
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Never clean or dust machine when power is on. Machine should be installed & checked by a Licensed Electrician.
M	HIGH TEMPERATURE	LOW	Wear appropriate protective clothing to prevent hot swarf.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			



[www.machineryhouse.com.au](http://www.machineryhouse.com.au)



[www.machineryhouse.co.nz](http://www.machineryhouse.co.nz)

Authorised and signed by:  
Safety officer:

  
.....  
Manager:

.....

Revised Date: 12th March 2012