

# SB16 Pillar Drill



## Cert No: Drilling Machine

Axminster Tools & Machinery Ltd  
Axminster Devon  
EX13 5PH UK  
**axminster.co.uk**

declares that the machinery described:-

Type	<b>Pillar Drills</b>
Model	<b>SB-250, TB-16, SB-16, SB-25, RDP-20B</b>

Signed



**Andrew Parkhouse**  
Operations Director

Date: **06/01/2017**

## EU Declaration of Conformity

**This machine complies with the following directives:**

2006/42/EC	EN ISO14121-1:2007	EN55011:2007+A2
2006/95/EC	EN550141-1:2006	EN61000-3-2:2006
EN ISO12100-1:2003	EN55014-2:1997+A1+A2	EN61000-3-3:2008
EN ISO12100-2:2003	EN61000-6-2:2005	EN ISO 12100 :2010
EN60204-1: 2006	EN61000-6-4:2007	EN60204-1:2006/AC:2010
		EN12717:2001+A1:2009

and conforms to the machinery example for which the  
EC Type-Examination Certificate No RA/2017/10001C  
has been issued by **Liang Lih Machine Co., Ltd.**  
at: No. 247, Yasiou Rd., Daya Dist., Taichung City 428, Taiwan, (R.O.C)

and complies with the relevant essential health and safety requirements.

## ● THE SAFETY POINTS ●

### BEFORE PUT IN USE, IT MUST BE UNDERSTOOD !

Before the DRILL PRESS is intended to use, the accessories like the Instruction Manual is with the machine system, it is must be read perfectly. The Manual offers the operation safe condition. To follow the correct and safe operation in the Instruction Manual ; and there are two safety points condition, it is different from : Refer to the below instruction:



When we operate uncorrectly, it is occurred to dangerous condition. And it will lead to serious injury and dead.



When we operate uncorrectly, it is occurred to dangerous condition. And it will lead to injury and machine system is broken.



Instruction for safe use in production.



#### Intend use :

The DRILL PRESS is designed to execute drilling. It is dangerous when it is in work. Because it work in high rotation speed, may be some hazards will happen such as entanglement, shearing, ejection parts .....etc. We suggest customers that must use it with guards to prevent any hazards.

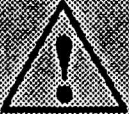
**AND " Please think about safety warnings in the instruction manual before puting it in use "**

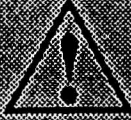
## 1. FOR SAFE OPERATION

For your own safety read the instruction manual before operating DRILL PRESS.

 <b>DANGER</b>	
<p><b>HIGH VOLTAGE</b></p> <p>TURN OFF THE POWER BEFORE SERVICE</p>	<ol style="list-style-type: none"> <li>1. SWITCH the POWER OFF before setting, inspecting, lubricating, cleaning or changing the drill.</li> <li>2. To wear the eye protection.</li> <li>3. Do not wear gloves, necktie or loose clothing.</li> <li>4. To clamp workpiece or brace against column to prevent rotation.</li> <li>5. To use recommended speed for drill accessory, and workpiece material .</li> </ol>


## 2. GENERAL SAFETY INSTRUCTION

 <b>WARNING</b>	<p><b>GENERAL SAFETY INSTRUCTION</b></p>
<ol style="list-style-type: none"> <li>1. Keep guards in place and in working order.</li> <li>2. Remove adjusting key and wrenches. From habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.</li> <li>3. Keep work area clean. Cutter area and benches invite accidents.</li> <li>4. Do not use in dangerous environment. Do not use power tools in damp or wet locations or expose them to rain. Keep work area well lighted.</li> <li>5. All visitors should be kept safe distance from work area.</li> <li>6. Make workshop kid proof with padlocks, master switches, or by removing starter key.</li> <li>7. Do not force tool. It will do the job better and safer at the rate for which it was not designed.</li> </ol>	


**WARNING****GENERAL SAFETY  
INSTRUCTION**

8. Use right tool. Do not force tool on attachment to do a job for which it was not designed.
9. Wear proper apparel. No loose clothing, gloves, necktie, rings or other jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. Always use safety glasses. Also use face or dust mask if cutting operation is dust. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
11. Secure work. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tools.
12. Do not overreach. Keep proper footing and balance at all times.
13. Maintain tools with care. Keep tools sharp and clean for best and safest performance.
14. Disconnect tools before servicing, when changing accessories such as blades, bits, cutter ... etc.
15. Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.
16. Use recommended accessories. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
17. Never stand on tool. Serious injury could occur if the tool is unintentionally contracted.
18. Check damaged parts. Before further use of tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts., breakage of parts, mounting and any other conditions that affect its operation. A guard or other parts that is damaged should be properly repaired or replaced.
19. Direction of feed. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
20. Never leave tool running unattended. Turn power off. Do not leave tool until it comes to a complete stop.

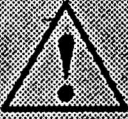
### 3. SAFETY INSTRUCTIONS FOR DRILL PRESS

 <h1 style="margin: 0;">CAUTION</h1>	<h2 style="margin: 0;">SAFETY INSTRUCTIONS FOR DRILL PRESS</h2>
<ol style="list-style-type: none"> <li>1. Wear eye protection.</li> <li>2. Do not wear gloves, necktie, rings or loose clothing.</li> <li>3. Clamp workpiece or brace against column to prevent rotation.</li> <li>4. Use recommended speed for drill accessories and workpiece materials.</li> <li>5. Be sure drill bit or cutter tool is securely locked in the chuck.</li> <li>6. Be sure chuck key is removed from the chuck before turning on power.</li> <li>7. Adjust the table or depth stop to avoid drilling into the table, shut off the power. Remove the drill bit or cutting tool, and clean the table before leaving the machine.</li> <li>8. Do not operate until it is completely assembled and installed according to the instructions.</li> <li>9. If any part of your drill press is malfunctioning or has been damaged or broken, do not operate until the part is properly repaired or replaced.</li> <li>10. Never place your fingers in a position where they could contract the drill or other cutting tool if the workpiece should unexpectedly shift.</li> <li>11. Never use your hand to hold on the object while drilling, always screw the object tight on the working table or use the drill vise to prevent accident injury.</li> <li>12. Never perform any operation by moving the head or table with respect to one another. Do not pull the motor switch " ON " or " I " or start any operation before checking the head and table lock handle are clamped tight to column, and head and table support collars are correctly positioned.</li> <li>13. Before pulling the power switch " ON " and " I " be positive the belt cover is down the chuck is installed properly.</li> <li>14. Lock the motor switch when leaving the drill press. Do not perform layout, assembly or setup work on the table while the cutting tools rotating.</li> </ol>	

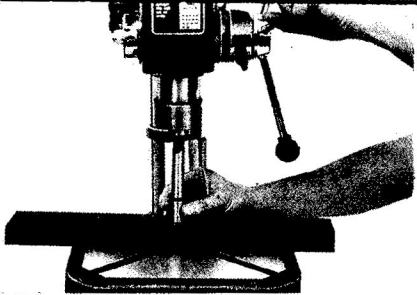
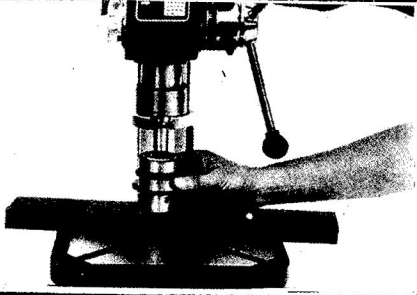
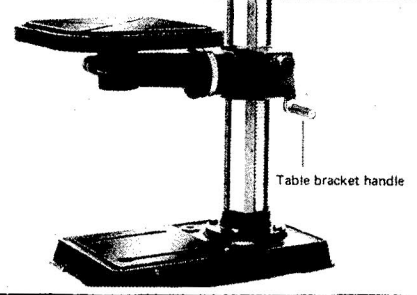
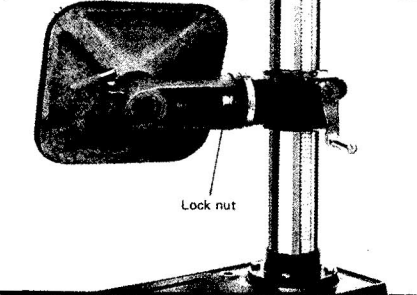
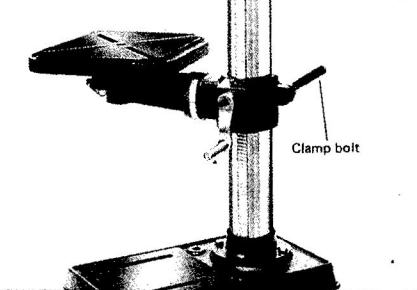
#### 4. VOLTAGE WARNING

 <b>WARNING</b>	<b>VOLTAGE WARNING</b>
<ol style="list-style-type: none"><li>1. Before connecting the tool to a power source ( receptacle, outlet ... etc. )</li><li>2. A power source with voltage greater than that specified for the tool can result in serious injury to the user.</li><li>3. If you are ensure of the voltage rating do not use tool. Also using a power source with voltage less than that of the tool will harm the motor.</li></ol>	

#### 5. GROUNDING INSTRUCTION

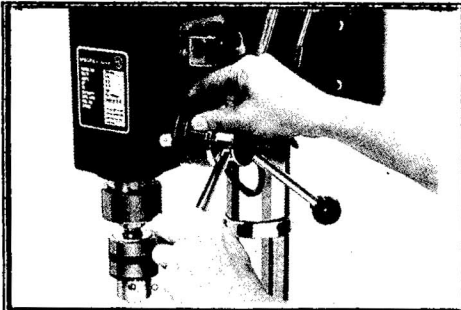
 <b>CAUTION</b>	<b>GROUNDING INSTRUCTION</b>
<ol style="list-style-type: none"><li>1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that it is properly installed and grounded in accordance with all local codes and ordinances.</li><li>2. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.</li><li>3. Improper connection of the equipment grounding can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with yellow stripes is equipment grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment grounding conductor to a live terminal.</li><li>4. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as wheter the tool is properly grounded.</li><li>5. Use only 3-wire extension cord that have 3-prong grounding plug and 3-pole receptacles that accept the tool's plug.</li><li>6. Repair or replace damage or worm cord immediately.</li></ol>	

## 6. OPERATION ( PROCEDURE )

	<p>Insert arbor into spindle pull feed handle down to press arbor in place.</p> <p><b>NOTE :</b> Clean out the spindle hole, arbor and tapered hole in the chuck with a clean cloth before insert arbor and chuck.</p>
	<p>Open chuck jaws completely by turning attached chuck key counter-clockwise to the end. Install chuck to the arbor tightly. ( put a piece of wood on the table to protect chuck nose )</p>
 <p style="text-align: center;">Table bracket handle</p>	<p>Table height adjustment to adjust up or down, loosen the clamp bolt then adjust the table to your desired position by turning the table bracket handle.</p>
 <p style="text-align: center;">Lock nut</p>	<p><b>Tilting Adjustment</b></p> <p>Loosen the table level lock bolt with adjustable wrench. Tilt table to your desired angle and retighten the bolt.</p>
 <p style="text-align: center;">Clamp bolt</p>	<p><b>Swing 360° degree</b></p> <p>Loosen clamp bolt then swing table to appropriate position and retighten bolt.</p>

Following next page.





### FEED DEPTH ADJUSTMENT

Depth control scale sleeve type.

Loosen the clamp bolt and move to desire depth then retighten the clamp bolt.

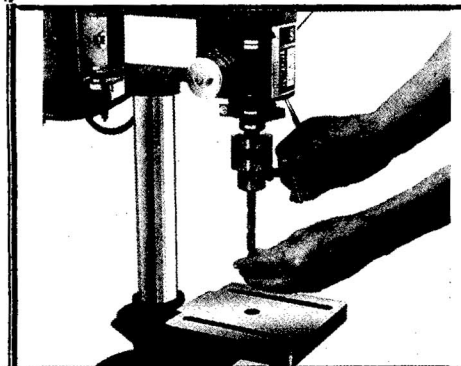


### SPEED ADJUSTMNT

Open the pulley case and loosen the belt tension lock handle. Choose speed for drilling operation and move belt to correct position for for desired speed.

Push motor backward until moderate belt tension is acquired. Then retighten the lock handle again.

**NOTE :** In change the speed you have to turn OFF the switch and wait until the machine is completely stop.



### INSTALLING DRILL BITS

Insert drill bits into chuck jaws about 1"(25.4mm) long. When using a small drill bit do not insert it so far that the jaws touch the flutes of the drill bit. Make sure that the drill bit is centered in the chuck before tightening the chuck with the key.

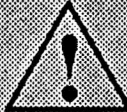
### POSITIONING WORKPIEC

Always place a piece of wood ( or plywood ... ) on the table. This will prevent "splintering" or making heavy burrs on the underside of workpiece as the drill breaks through. The wood should contract the left side of the cplumn.


### USING VICE

For small workpiece that can not be clamped to the table, use a drill vice. The vice must be clamped or bolted to the table.

## 7. MAINTENANCE

<b>MAINTENANCE !</b>	 <b>CAUTION</b>
<ol style="list-style-type: none"> <li>1. Frequency blow out any dust that may accumulate inside the motor.</li> <li>2. A coat of automobile type wax applied to the table and column will help to keep the surface clean.</li> <li>3. If the power cord is worn or cut, or damaged in any way, have it replaced immediately.</li> <li>4. All of the ball bearing are packed with grease at the factory. They require no further lubrication.</li> <li>5. Periodically lubricate the gear and rack table elevation mechanism, the SPINDLE (grooves) in the spindle, and the RACK (teeth on the quill).</li> <li>6. After use the machine you have to clean it completely and lubricate all sliding moving parts. For your own safety, turn switch "OFF" or "I" and remove plug from power source outlet before maintaining or lubricating your drill press.</li> </ol>	

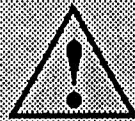
## 8. INSTALLATION

<b>INSTALLATION !</b>	 <b>CAUTION</b>
<ol style="list-style-type: none"> <li>1. When transport the machine, please be attention that you have always to ask two people at least to carry it.</li> <li>2. After installing the drill press, use the kerosene to wash out the anti-rust oil which have been coated in the factory. Then wipe it with lubricant oil.</li> <li>3. Install your drill press in flate, sturdy floor or surface, and fixed it on the ground by screw.</li> </ol>	

9. The proper drill speed for a given drill bit size is as on following table :

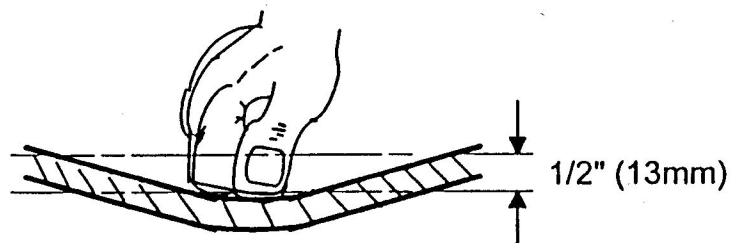
SIZE		Cast steel		Tool steel		Cast iron		Mild steel		Alum & Copper	
Diameter		Cutting speed									
		m/min	ft/min	m/min	ft/min	m/min	ft/min	m/min	ft/min	m/min	ft/min
		12	40	18	60	24	80	30	100	60	200
mm	inch	Cutting speed revolution per minute									
2	1/16	1,910	2,445	2,865	3,665	3,820	4,890	4,775	6,110	9,550	12,225
3	1/8	1,275	1,220	1,910	1,835	2,545	2,445	3,185	3,055	6,365	6,110
5	3/16	765	815	1,145	1,220	1,530	1,630	1,910	2,035	3,820	4,075
6	1/4	610	610	955	915	1,275	1,220	1,590	1,530	3,180	3,055
8	5/16	480	490	715	735	955	980	1,195	1,220	2,390	2,445
10	3/8	380	405	570	610	765	815	955	1,020	1,910	2,035
11	7/16	350	350	520	525	700	700	870	870	1,740	1,745
13	1/2	300	305	440	460	590	610	735	765	1,470	1,530
16	5/8	240	245	360	365	480	490	600	610	1,200	1,220
19	3/4	190	205	285	305	380	405	480	510	955	1,020

### BELT TENSION ADJUSTMENT



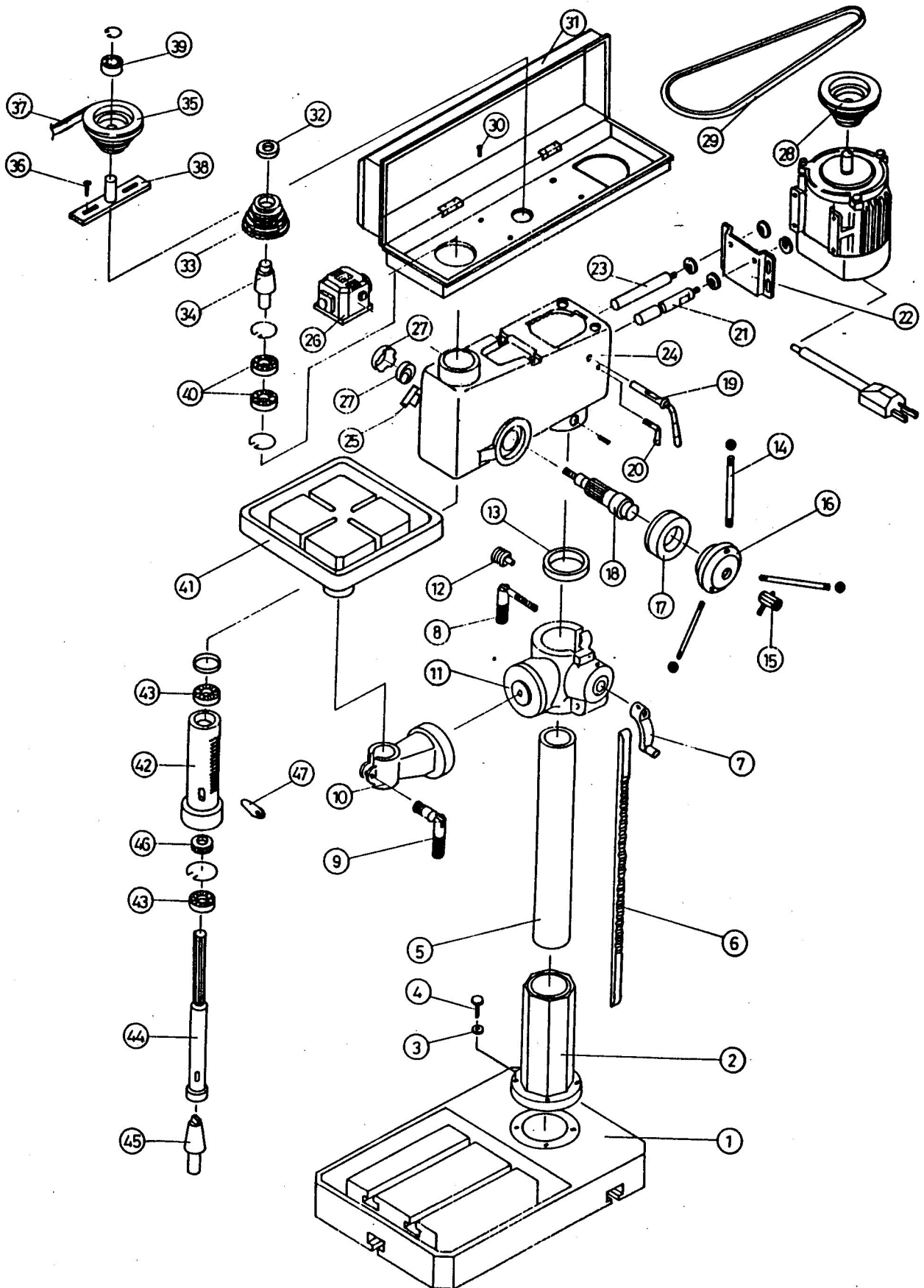
## CAUTION

For proper belt tension : Use 10 lbs pressure or hand pressure on the belt as shown below. The distance is 1/2" (13mm)  $\pm$  10 % .



## 10. TROUBLE SHOOTING

★	Trouble	★	☆	Trouble cause	☆	⊖	Measures	⊖
1	Noisy operation  Noise level : 75dB		1.	Incorrect bell tension.		1.	Adjust tension.	
			2.	Dry spindle.		2.	Lubricate spindle.	
			3.	Loosen spindle pulley or motor pulley.		3.	Tighten set screws in pulleys.	
2	Bit burns or smokes		1.	Incorrect speed.		1.	Change speed.	
			2.	Chips not coming out of hole.		2.	Retract bit frequently to clear chips.	
			3.	Dull bit.		3.	Sharpen or replace bit.	
			4.	Feeding too slow.		4.	Feed fast enough.. allow drill press to cut.	
			5.	Not lubricated.		5.	Lubricate bit.	
			6.	Bit running backwards.		6.	Check motor rotation.	
3	Excessive drill runout or wobble		1.	Bent bit.		1.	Use a straight bit.	
			2.	Worn spindle bearing.		2.	Replace bearing.	
			3.	Bit not properly installed in chuck.		3.	Install bit properly.	
			4.	Chuck not properly installed.		4.	Install chuck properly.	
4	Drill binds in workpiece		1.	Workpiece pinching. Bit or excessive feed pressure.		1.	Support or clamp workpiece.	
			2.	Improper belt tension.		2.	Adjust tension.	
5	Workpiece torn		1.	Not supported or clamped properly.		1.	Support or clamp workpiece.	
6	Table difficult to raise		1.	Needs lubrication.		1.	Lubricate with light oil.	
			2.	Bent rack.		2.	Straighten rack.	
			3.	Table lock tightened.		3.	Loosen clamp.	



**PARTS LIST**

<b>NO.</b>	<b>PART NAME</b>	<b>NO.</b>	<b>PART NAME</b>
1	Base	24	Head
2	Flange	25	Spring & Cap Base
3	Spring washer (4x)	26	Switch
4	Screw	27	Spring & Cap
5	Column	28	Motor Pulley
6	Rack	29	Belt
7	Handle	30	Screw (4x)
8	Clamp Bolt	31	Pulley Cover
9	Clamp Bolt	32	Insert Pulley Nut
10	Table Arm	33	Spindle Pulley
11	Table Bracket	34	Insert Pulley
12	Worm	35	Middle Pulley
13	Collar	36	Screw & Spring (2x)
14	Feed Handle (3x)	37	Belt
15	Lock Handle	38	Middle Pulley Shaft
16	Feed Head	39	Bearing
17	Spindle Scale	40	Bearing
18	Feed Shaft	41	Table
19	Belt Adjust Handle	42	Quill
20	Wing Bolt	43	Bearing
21	Road - A	44	Spindle
22	Motor Plate	45	Arbor
23	Road - B	46	Wedge

# **EC Declaration of Conformity**

**Manufacturer** : LIANG LIH MACHINE CO., LTD  
**Business Name** : LIANG LIH MACHINE CO., LTD  
**(Address)** : NO.247,YASIOU ROAD,DAYA DIST  
TAICHUNG TAIWAN,R.O.C

declares that the machinery described:

1. Make LIANG LIH MACHINE CO., LTD  
2. Model 505208  
3. Serial Number \_\_\_\_\_

conforms to the following directives:

2006/42/EC, 2006/95/EC

uses the following standards:

EN ISO12100-1:2003, EN ISO12100-2:2003,  
EN60204-1:2006, EN ISO14121-1:2007  
EN550141-1:2006, EN55014-2:1997+A1+A2,  
EN61000-6-2:2005, EN61000-6-4:2007  
EN55011:2007+A2, EN61000-3-2:2006  
EN61000-3-3:2008

and complies with the relevant essential health and safety requirements

Michael Chou  
MANAGER DIRECTOR

Signed at LIANG LIH on 02/03/2010



## The Axminster guarantee

Buy with confidence from Axminster!

So sure are we of the quality, we cover all parts and labour free of charge for three years!



For more information visit [axminstertools.com/3years](https://axminstertools.com/3years)



The packaging is suitable for recycling.  
Please dispose of it in a responsible manner.



### EU Countries Only

Do not dispose of electric tools together with household waste material.  
By law they must be collected and recycled separately.

Axminster Tools, Axminster Devon EX13 5PH

[axminstertools.com](https://axminstertools.com)