Code 107702 Original Instructions

# PROFESSIONAL

# **AP310T2** 310mm Spiral Cut Thicknesser





AT: 14/07/2022 BOOK VERSION: 3

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# **EU DECLARATION OF CONFORMITY**

Cert No	o: MB103	EU Declaration of Conformity		
Axminster Axminster	Tool Centre Ltd Devon	This machine complies with the following directives:		
EX13 5PH	UK	2006/42/EC EN 55014-1:2006+A1+A2		
axminste	rtools.com	2014/30/EU EN 55014-2:1997+A1+A2		
		06/42/EC - Annex I/05.2006	EN 55014-1:2017	
declares that the machinery described:-		EN 60204-1:2006+A1+AC	EN 55014-2:2015	
Туре	Thicknesser	EN 861:2007+A2	EN 61000-3-2:2014	
Турс	Internesser	EN 61000-3-3:2013		
Model	AP310T2	and conforms to the machinery example for which the		
		EC Type-Examination Certificate No AE 50390663		
Signod		has been issued by Laizhou Planet Machinery Co., Ltd.		
at: Yutai West Street Laizhou, Shandong 261400 China (Mainland)			ong 261400 China (Mainland)	
Andrew P	Andrew Parkhouse and complies with the relevant essential health and safety requirements.		ntial health and safety requirements.	
Operation	Operations Director Date: 15/12/2017			

The symbols below advise the correct safety procedures when using this machine.



and safety instructions before use

should be worn

Eye protection should be worn



Dust mask should be worn



Quantity	ltem	Model Number
		AP310T2
1 No	310mm Spiral Cut Thicknesser	
1 No	7mm, 5.5mm Spanner	
1 No	Instruction Manual	





#### Introduction

For the production of boards or frames to a uniform size, a thicknesser is unbeatable. This compact machine has strength in abundance with a cast iron frame and table, supported by a welded steel chassis. This machine is powered by a 2.2kW induction motor, driving the cutter block by a multi vee-type belt, with the feed rollers with a tensioned chain drive.

The table is supported by a generous single column, has a digital height gauge and can be locked into position. The table also has support rollers at each end. The cutter block is the increasingly popular helical type, this one having 6 rows of 14 indexing TCT cutters, giving an almost unbelievable finish. Each cutter has 4 curved edges, so can simply be revolved to a fresh

edge when required. If one or more cutters is damaged, then simply replace. Each edge lasts up to 10 times the expected life of an HSS blade, so downtime for changing knives is much reduced. Also, no setting is required, saving more time and guaranteeing accuracy. The curved edge gives a shear style of cut, much kinder on the timber than traditional square cutters.

There are two other main benefits of this type of cutter block: much lower noise, and much reduced power required to drive it, reducing the load on the motor and drive belt. The waste chips are much more uniform, being easier to extract and packing more into your extractor's waste container. This is a compact machine, but capable of handling quite large board runs or sizing frames or beams.

# **GENERAL INSTRUCTIONS FOR 230V MACHINES**

The following will enable you to observe good working practices, keep yourself and fellow workers safe and maintain your tools and equipment in good working order.



WARNING!! KEEP TOOLS AND EQUIPMENT OUT OF REACH OF YOUNG CHILDREN



KEEP WORK AREA AS UNCLUTTERED AS IS PRACTICAL. UNDER NO CIRCUMSTANCES SHOULD CHILDREN BE ALLOWED IN WORK AREAS.

#### **Mains Powered Tools**

- Tools are supplied with an attached 13 Amp plug.
- Inspect the cable and plug to ensuree that neither are
- damaged. Repair if necessary by a suitably qualified person.
- Do not use when or where it is liable to get wet.

#### Workplace

- Do not use 230V a.c. powered tools anywhere within a site area that is flooded.
- Keep machine clean.
- Leave machine unplugged until work is about to commence.
- Always disconnect by pulling on the plug body and not the cable.

- Carry out a final check e.g. check the cutting tool is securely tightened in the machine and the correct speed and function set.
- Ensure you are comfortable before you start work, balanced, not reaching etc.
- Wear appropriate safety clothing, goggles, gloves, masks etc. Wear ear defenders at all times.
- If you have long hair wear a hair net or helmet to prevent it being caught up in the rotating parts of the machine.
- Consideration should be given to the removal of rings and wristwatches.
- Consideration should also be given to non-slip footwear etc.
- If another person is to use the machine, ensure they are suitably qualified to use it.
- Do not use the machine if you are tired or distracted
- Do not use this machine within the designated safety areas of flammable liquid stores or in areas where there may be volatile gases.
- Check cutters are correct type and size, are undamaged and are kept clean and sharp, this will maintain their operating performance and lessen the loading on the machine.
- **OBSERVE....** make sure you know what is happening around you and **USE YOUR COMMON SENSE.**

# SPECIFIC PRECAUTIONS USING THICKNESSERS

Most machines currently, are well interlocked to ensure that the machine must be in the correct configuration to perform one task or the other. Make yourself familiar with these configurations and do not try to use the machine in a half and half state; or rig the interlocks to enable you to do so.

- Lower the thicknessing hood and lock in place.
- Connect the dust extraction. Ensure the hose will not foul any materials being passed through the machine.
- Check the height of the thicknessing table.

- Engage the autofeed mechanism.
- Check blade inserts for damage, chips etc. Rotate or replace if required.
- Periodically, clean any excess build up of resin from the thicknessing table, and apply any proprietary brand of lubricating agent.

**NOTE,** Consideration should be given to the type of finish you will be applying to the surface when you select your cleaning/ lubrication agent.

# **SPECIFICATION**

Code	107702
Model	AP310T2
Rating	Professional
Power	2.2kW 230V 1ph
Feed Speed	8m/min
Cutterblock Speed	4,050rpm
Cutterblock Diameter	95 mm
Noise Level	85dB
Max Thicknesser Capacity	310 x 220 mm
Max Depth of Cut	5 mm
Knives	78 XTCT Spur Cutters
Length of Table	930 mm
Min Extraction Airflow Required	1,000m³/hr
Dust Extraction Outlet	125 mm
Overall L x W x H	1,050 mm x 610 mm x 1,020 mm
Weight	200 kg

#### ASSEMBLY



The planer Thicknesser comes 98% assembled. It is enclosed in a packing case with all the accessories. Having removed the top and the sides of the packing case, remove all the components from the machine, place safely aside.

1. Ascertain the orientation of the machine and move it to its desired position in the workshop. Make sure its positioned on a flat level surface and ensure that the machine is positioned to allow sufficient clearance both in front and behind the machine to cater for the maximum length of timber you will wish to machine.

2. The machine is secured down on to the pallet that forms the bottom of the packing case. Remove the four nuts/bolts, that secures the machine to the pallet. Place lifting straps around the machine, **DO NOT under normal circumstances** lift, push or pull the machine using the tables. Any movement is best carried out against the main frame cabinet. Hoist the machine clear of the pallet, slide the pallet out of the way and lower the machine in position.

**NOTE:** Secure the thicknesser if required to the floor using the four 10mm holes that secured the machine to the pallet. Attach adjustable machine feet if required, visit our website for details.

**3.** If you do not have the availability of such a hoist, and are going to have to 'manhandle' the machine off the pallet; make sure the thicknessing table is locked in position by turning the rise & fall locking handle in the down position before applying any lifting force, see fig 01.

#### Fig 01



#### **Dust Extraction Support Bracket**

1. Mounted to the rear of the thicknesser's duct hood is the hose support hook bracket that needs to be rotated round to support the extraction hose, see fig 02.

2. Remove the four Phillips screws, washer and spring washers. Rotate the hook support bracket round and replace and secure in place with the fixings you just removed, see fig 03-04.



3. Introduce one end of the 125mm hose into the dust hood extraction outlet and insert the hose into support bracket hook, see fig 05. NOTE: Make sure the hose does not obstruct the thicknesser's table, adjust the hose until its above the table's outlet, see fig 06.

#### Fig 05-06



#### Fig 02-03-04









ON/OFF Control



The Digital Thickness Display, will give an accurate visual indication of the amount you are adjusting the thicknessing table in 0.10mm increments.



Autofeed lever (A) to engage the thicknessing fuction Emergency stop (B), rotate the button to unlock the switch



Lift & Shift locking handle to secure the thicknessing cover



Rise and fall clamping handle (A), in the locked postion clamping handle (B), in the un-locked position



Thicknessing table rise and fall control wheel





Cutter block drive assembly



Thicknesser cover safety micro switch



Table column grease nipple



Drive belt threaded tension stop







# **POSITIONING THE MACHINE**



SETTING THE DIGITAL THICKNESS DISPLAY

The Axminster Digital Display will give an accurate visual indication of the amount you are adjusting the thicknessing table in 0.10mm increments. Perfect for multiple board production.

To set the 'Digital Display', follow the instruction below:

1. Roughly by eye set the distance between the thicknessing table and the blade at its lowest point.



#### **CONNECT THE THICKNESSER TO THE MAINS SUPPLY AND SWITCH ON!**

- 2. Carefully insert a piece of timber through by eye.
- 3. Raise the table in 1mm increments and take further cuts until you have a clean cut.
- 4. Without raising the table, turn the timber over and repeat the process.



#### SWITCH OFF THE THICKNESSER AND WAIT UNTIL IT COMES TO A **COMPLETE STOP!**

5. Remove the timber from the table and accurately measure the machined sides using a vernier and write down the reading, see fig 07.



6. Loosen the collar on the digital thickness display, see fig 08. Turn the collar to dial in the measurement you wrote down, see fig 09. Re-tighten the collar to the drive shaft.

# Fig 08-09



# **OPERATING INSTRUCTIONS**

#### Setting the Machine for Thicknessing

**1.** Visit the HSE (Health and Safety Executive) website for the correct safe operating procedures.



#### **HSE Health and Safety Executive**

To operate the machine correctly, it is recommended to read the HSE (Health and Safety Executive) website at **www.hse.gov.uk**. on the safe operation procedures.

- **2.** Connect a 125mm extraction hose to the extraction hood outlet.
- **3.** Lower the thicknessing hood and secure in place with the lift and shift handle, see fig 10-11.

#### Fig 10-11



4. Release the rise and fall clamping handle (A) and turn the operating wheel (B) clockwise to raise the thicknessing table to the required thickness using the 'Digital Display'. Turn the clamping handle in the locked position to secure the table, see fig 13-14-15.

# Fig 13-14-15









CONNECT THE MACHINE TO THE MAINS SUPPLY!

- **5.** Make sure the mushroom shaped emergency stop button is unlocked. Twist the button to unlock, see fig 19.
- **6.** Clear all the tools away from the thicknesser and press the 'GREEN' button on the control assembly to start the machine. Allow the thicknesser to reach full speed, see fig 16.





- **7.** Raise the autofeed lever to engage the thicknessing function and guide the timber through, see fig 17.
- 8. When you are finished, switch off the machine by pressing the 'RED' button on the control assembly and wait until the machine comes to a complete stop. Disengage the autofeed fuction to reduce wear on the autofeed drive wheel.

# Fig 17





DISCONNECT THE MACHINE TO THE MAINS SUPPLY BEFORE MAKING ANY ADJUSTMENTS!

#### **Emergency Stop**

The emergency stop is a mushroom shaped button, mounted to the side of the thicknesser, below the thicknessing fuction lever. In an emergency, press the button in to bring the machine to a halt. Twist the button to unlock before restarting the thicknesser, see fig 18-19.

# Fig 18-19



#### **Changing the Spiral Cutter Block Blades**



DISCONNECT THE MACHINE FROM THE MAINS SUPPLY BEFORE CONTINUING!

The spiral cutter block has four rows of square cutters running around its circumference. There are 84 square cutters in total on the 12inch cutter block. There is a blade machined to each side of the square cutter allowing the cutter to be rotated to a clean sharp edge if one side has been damaged or has become blunt, see fig 20.

The square cutter has an embossed position marker to one of its four corners, once this mark has gone round one full rotatation it is time to replace the square cutter, see fig 21.

To rotate the cutter, loosen the Torx head screw and rotate until the new edge is in alignment with the other cutters. Re-tighten the Torx head screw to lock the cutter in place, see fig 21.



WARNING! BE VERY CAREFUL WHEN TURNING THE CUTTERS AS THE BLADES ARE EXTREMELY SHARP.



DO NOT OVERTIGHTEN TO AVOID THE TORX HEAD SCREW HEAD FROM GETTING DAMAGED!

# Fig 20-21







# DISCONNECT THE MACHINE FROM THE MAINS SUPPLY BEFORE CONTINUING!

#### Daily

**Check** that thicknessing table is clean, not coated with resin etc. Apply a proprietary cleaner/lubricating agent such as 'Wax & Polish Remover' (1) and 'Lubricating Wax' (2).

**Check** the cable and the plug for damage or defects.

**Check** the dust extraction hood and ensure there are no excessive build ups of sawdust/resin, especially in the mouth of the chip deflector and around the mouth of the extractor, see fig 22.

**Check** the blades for sharpness and damage.

**Check** the rollers of the thicknessing table rotate freely, and there is no build up between the roller and the extension table.







#### Weekly

Carry out the 'Daily' checks.

Clean the machine thoroughly, remove any shavings, sawdust, chips etc, from in, under and around the machine.

**Check** the Spiral cutter block for resin build up, especially behind the blade.

**Raise** the thicknessing table and brush out and clean any debris or build up around edges of the table.

**Check** the infeed and take off pressure rollers are not clogged, clean as necessary.

**Check** the action of the anti-kickback fingers, again clean and lubricate as required.



Visually check for signs of excessive build up inside the extraction hood and the end of the hose

# Fig 23-24-25-26



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**Fig 22** 

#### MAINTENANCE



Clean out any build up of debris around the edges of the thicknessing table

#### Monthly

Carry out the 'Weekly' checks.

Remove the machine's motor/drive access panel by removing the Phillips screws on either side of the panel. Lift away the panel and place to the side, see fig 27-28-29-30. Un-lock the thicknesser hood handle and lift up the assembly, see fig 31-32.

#### Fig 27-28-29-30







Fig 31-32



Check the condition and tension of the drive belt, see fig 33.

**Check** the autofeed engage and disengage function, see fig 34-35.

**Check** the condition of the drive chains, clean and apply a light coating of oil to the chains and sprockets.

Using 'Dry PTFE Film Antistick' spray, (3) lubricate all the bearing areas, taking care not to get oil on the drive belt and tyre surfaces. Replace the motor/drive access panel.

# Fig 33









Fig 34-35

Autofeed wheel disengaged

Autofeed wheel engaged

#### **Drive Belt Tension**

Remove the motor/drive access panel, if not done so already. Check the tension of the belt by pushing the belt, there should be a deflection of between (12-20mm). If there is considerable movement in the belt, adjust the motor's threaded pivot stop.

# Fig 36-37



To adjust the threaded stop first loosen the motor's pivot bolt (A) on the motor's base plate then adjust the threaded stop nuts (B and C) until the drive belt is under tension. Nip up the pivot bolt (A), see fig 36-37.





#### **Table Lifting Column**

- 1. To the side of the lifting column housing there is a grease nipple to lubricate the inner column. If you notice after a period of time that the table is becoming harder to raise and lower or a grinding noise when adjusting the table, it could be a sign that the inner column needs lubricating.
- **2.** Using a grease gun inject small amounts of grease into the inner column, raise and lower the table to work the grease around the column. It is recommended to do this once or twice a year, see fig 38-39.



NOTE: DO NOT INTRODUCE TOO MUCH GREASE INTO THE COLUMN AT ONE TIME!





#### **Thicknessing Table**

If the thicknesser is not going to be in use for long periods, apply a light coat of 'Lubricating Wax' (2) over the thicknessing table.

#### Table Rise & Fall Screw Mechanism

It it recommended to grease the tables rise and fall screw mechanism once or twice a year. Smear a light coat of grease around the length of the screw that is exposed. Raise and lower the table to work the grease around the full length of the screw and the warm gear drive machanism, see fig 40.

Fig 40



#### **Autofeed Drive Wheel**

- 1. If the autofeed function lever is not disengaged after every use, over time depressions will form to the centre of the drive wheel. Check for any signs of wear on the autofeed wheel.
- **2.** Check yearly for signs of side play in the autofeed drive wheel, see fig 41. If there is side play movement or depressions in the drive wheel, contact our after sales department on 0800 371822 for assistance.

Fig 41



LIBERON



# **EXPLODED DIAGRAM/PARTS LIST**

NO.	DESCRIPTION	QTY	103	SOCKET HEAD CAP SCREW
1	BODY	1		M8x35
2	SMALL PLATE	2	104	WASHER 8
3	WASHER	9	105	SOCKET HEAD CAP SCREW
4	SCREW M5x8	4	106	NUT M6
7	RIGHT COVER PLATE	1	107	
8	SCREW M5x8	13	107	
10	SCREW M10x16	1	110	
11	MOTOR	1	111	SPRING WASHER 8
12	SCREW M8X25	4	112	SCREW M8X20
13	NUT M8	4	113	SCREW M8X15
14	WASHER 8	4	114	SEAL RING
15	WASHER 8	8	115	SCREW M8X20
16	DRIVER PULLEY	1	116	SIFEVE
17	SET SCREW M6X10	1	117	TABLE
18	BELT L=1500	2	118	FENCE
19	PROTECTION GUARD	1	119	SUNK SCREW M5X8
20	PAN HEAD SCREW M5X12	2	120	INDICATOR
21	WASHER 5	2	120	PAN HEAD SCREW M5x8
25	MOTOR BASE	1	121	PAN HEAD SCREW M4x6
26	PIN SHAFT	1	123	SCALE PLATE
27	SCREW	1	124	SCREW M6x20
28	NUT M8	5	125	WASHER 6
29	ADJUSTING BOLT	1	126	PLATE
30	SHAFT	1	127	SELE-LOCKING NUT M6
31	MOUNTED PLATE	1	128	WASHER
32	WASHER 8	2	129	MANDRIL
33	SCREW M8X20	2	130	SELF-LOCKING NUT M6
34	PIN 3.2X30	2	131	PLATE
36	HEX BOLT M8x16	3	132	WASHER 6
37	KEY FOR MICROSWITCH	1	133	SCREW M6x20
36	MICROSWITCH	1	134	HANDWHEEL
37	NUT M4	2	135	BAR
38	SCREW M4x10	2	136	NUT M12
39	MICROSWITCH	1	137	CHECK RING 20
40	NUTM4	2	138	SUPPORTING SLEEVE
41	SCREW M4*35	2	139	DOUBLE-THREAD SCREW
42	WASHER	1	140	HANDLE
43	SUNK SCREW M6x16	1	141	SCREW M6x65
44	BUTTON	1	142	SPRING WASHER 6
45	SWITCH	1	143	WASHER 6
			144	CIRCLIP FOR SHAFT
47	TAPPING SCREW 4x12	2	145	GEAR SHAFT
48	DIAGRAM	1	146	FLAT KEY 5X12
49	SCREW M5X16	4	147	FLAT WASHER 10
50	NUT M5	4	148	WASHER10
51	CONTACTOR BOX	1	149	HELICAL GEAR
52	CABLE STRAIN RELIEVER	3	150	THRUST BEARING 51102
53	CABLE STRAIN RELIEVER (ROHS)	3	151	BUSH
54	CONTACTOR	1	152	LEAD SCREW
			153	PIN 4X25
			-	

# EXPLODED DIAGRAM/PARTS LIST

154	LOCK NUT M10	2
155	WASHER 10	1
156	GEAR BOX	1
157	PIN 4X18	2
158	LOCATING SLEEVE	1
159	ROLL SHAFT	2
160	COVER PLATE	2
161	U SUPPORT	2
162	SCREW M8x16	6
163	TACKING SCREW M6x10	4
164	SPRING WASHER 8	6
165	WASHER 8	6
166	SPLIT WASHER 6	2
167	BEARING 628	4
168	PIN ROLL	4
169	NUT M10	4
201	LEFT BRACKET	1
202	RIGHT BRACKET	1
203	WASHER 8	8
204	WASHER 8	8
205	SCREW M8x30	8
206	LEFT HINGE	1
207	RIGHT HINGE	1
208	TOP GUARD	1
209	SUPPORTNG SHAFT	2
210	HANDLE	1
211	SCREW M8*20	2
212	WASHER 8	2
213	NUT M8	2
214	SCREW M6X35	4
215	SCREW M6X16	3
216	HANDLE R63	1
217	ECCENTRIC ROD	1
218	CHECKING RING 12	1
219	SELF-LOCK NUT M8	1
220	SCREW M6*16	2
221	SPRING WASHER 6	3
222	SUPPORT I	1
223	RODI	1

224	ROD II	2
225	SCREW M8x25	1
226	SELF-LOCK NUT M6	1
227	NUT M8	1
228	PIN ROLL	1
229	PIN ROLL	1
230	SPLIT WASHER 4	1
231	SCREW M8x25	2
232	SPRING WASHER 8	2
233	WASHER 8	2
234	SPRING	1
235	LOCKING PLATE	1
236	WASHER 6	6
237	SPRING WASHER 6	2
238	SCREW M6X10	2
239	HOOK PARTS	1
240	SCREW M6x12	4
310	SCREW M6x16	1
311	SHAFT SLEEVE	8
312	SLEEVE	4
313	ROLLER	1
314	DRIVING ROLL	1
315	B FLAT KEY 5x16	2
317	TACKING SCREW M6x10	2
318	CHAIN WHEEL	2
319	CHECK RING 12	1
320	CHAIN 05B-1X106	1
321	CHAIN 05B-1X90	1
322	STUD	4
323	WASHER 8	4
324	SELF-LOCKING NUT M8	4
325	SPRING	4
326	NUT M10	2
327	SHAFT	1
328	HANDLE	1
329	SPRING	1
330	WASHER 10	1
331	PIN ROLL	1
332	SPROCKET SHAFT	1

333	WASHER 6	1
334	BOLT M6x10	1
335	TENSION SYSTEM	1
336	TENSION SPRING	1
337	TENSION SUPPORT PLATE	1
338	BEARING 6303-2Z	1
339	PIN	1
340	WASHER 10	1
341	NUT M10	1
342	CHAIN WHEEL ASSEMBLY	1
343	SCREW M6x10	4
344	BEARING 6901-2Z	4
345	CIRCLIP 24	4
346	LARGE CHAIN WHEEL	1
347	CHAIN WHEEL	1
350	CHAIN WHEEL I	1
352	FRICTION WHEEL	1
353	SCREW M6x16	3
354	BOB	20
355	SPINDLE	1
356	SHAFT SLEEVE	2
401	CIRCLIP 62	4
402	SET SCREW M6X16	4
403	BEARING SEAT	2
404	COVER	2
405	COVER	2
406	BALL BEARING 2206	2
407	BACK PLATE	1
408	SCREW M5x12	2
409	B FLAT KEY 8x16	1
410	TACKING SCREW 6x10	1
411	DRIVEN PULLEY	1
412	CUTTER BODY	1
413	CUTTER	1
414	PRESSURE SPRING	8
416	BLADE FOR PLANE	4
417	WEDGE	4
418	SQUARE HEAD SCREW 6x10	24







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