

Operating Instructions and Parts Manual

Aluminum Miter Circle Saw

Model: ALU-350



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Warnings

1. Read and understand the entire owner's manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace the warning labels if they become obscured or removed.
4. This band saw is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a band saw, do not use until proper training and knowledge have been obtained.
5. Do not use this band saw for other than its intended use. If used for other purposes, PROMAC, disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses/face shields while using this band saw. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
7. Before operating this band saw, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear ear protectors (plugs or muffs) during extended periods of operation.
9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply.
12. Make certain the machine is properly grounded.
13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
16. Check damaged parts. Before further use of the machine, 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 may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

Warnings

17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**
20. Make your workshop child proof with padlocks, master switches or by removing starter keys.
21. Give your work undivided attention. Looking around, carrying on a conversation and “horse-play” are careless acts that can result in serious injury.
22. Maintain a balanced stance at all times so that you do not fall or lean against the blade or other moving parts. Do not overreach or use excessive force to perform any machine operation.
23. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
24. Use recommended accessories; improper accessories may be hazardous.
25. Maintain tools with care. Keep blades sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
26. Make sure the work piece is securely clamped in the vise. Never use your hand to hold the work piece.
27. Turn off the machine before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
28. Do not stand on the machine. Serious injury could occur if the machine tips over.
29. Never leave the machine running unattended. Turn the power off and do not leave the machine until the blade comes to a complete stop.
30. Remove loose items and unnecessary work pieces from the area before starting the machine.

Familiarize yourself with the following safety notices used in this manual:

CAUTION This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

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

- - SAVE THESE INSTRUCTIONS - -

Specifications

Model.....	SY-350-ALU
Stock Number	S850
Cutting Capacity	
Round at 90° (mm).....	100
Round at 45° (mm).....	100
Square at 90° (mm).....	100
Square at 45° (mm).....	100
Rectangle at 90° (mm)	100 x 195
Rectangle at 45° (mm)	100 x 135
Blade Size (mm).....	350 x 30
Blade Speeds (RPM)	3300
Motor	1.5kW, 400V, 3Ph
Machine Dimension (mm)	700 x 700 x 1400
Machine Package (mm)	660 x 900 x 1500
Net Weight (kg.)	110

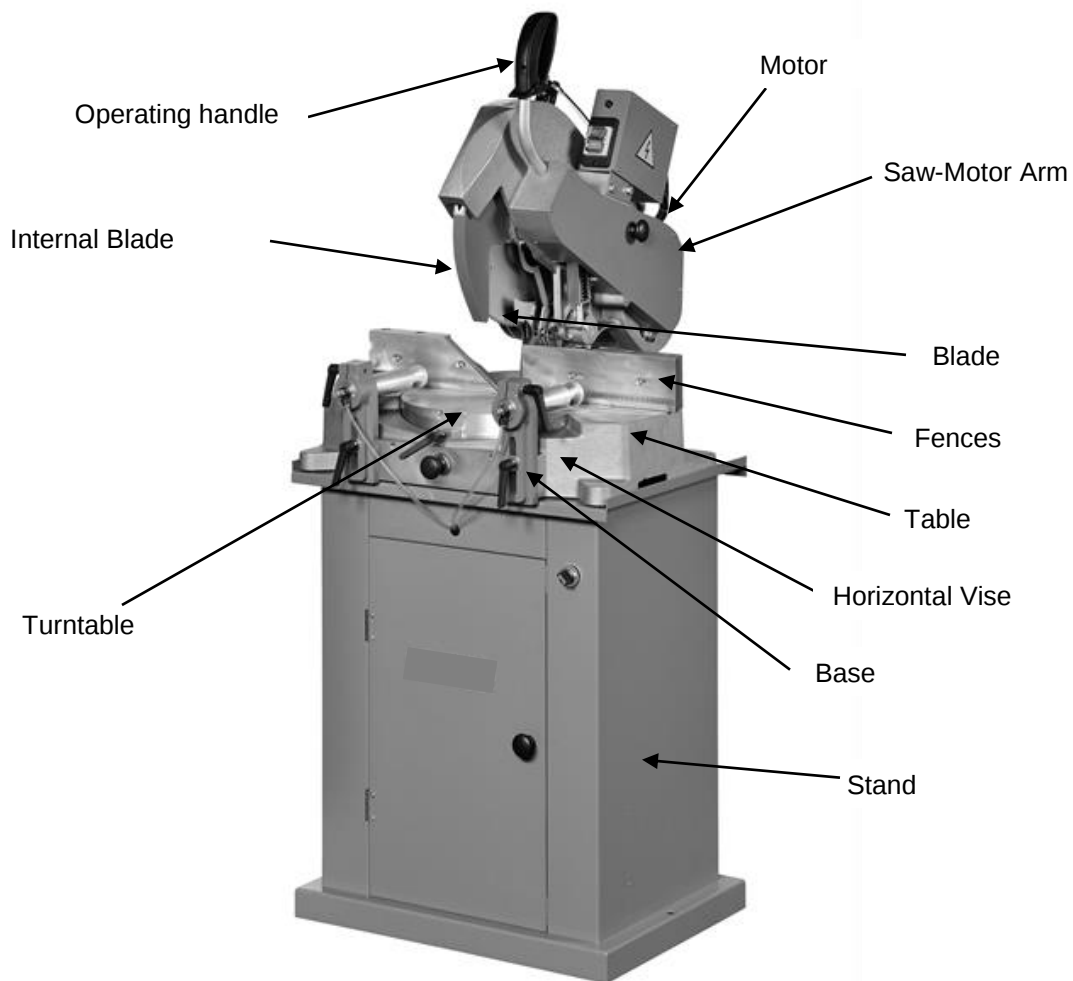


Fig 1

Shipping Contents

Contents of the Carton

- 1 Machine body (A) FIG 2
- 1 Backgauge Seat Right Plate (B) FIG 3
- 1 Operating Instructions/Parts List
(Not shown)

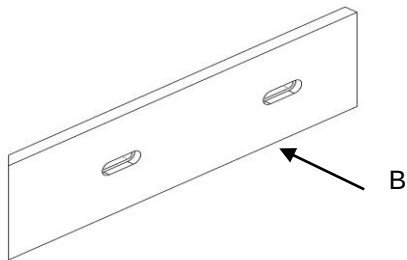


Fig 3

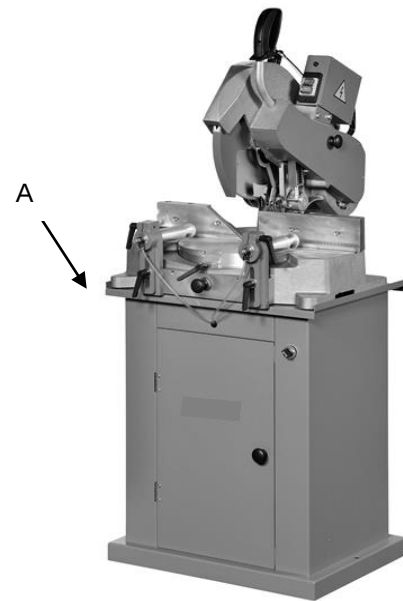


Fig 2

Assembly

Assembly

You will find the replacement vise plates inside of the machine stand.

Attention:

The vise plate only service for 90 degree cutting (saw arm angle).

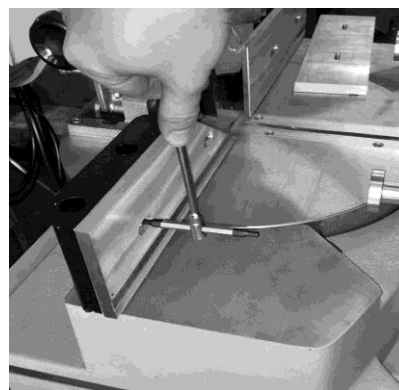


Fig 4

Controls and Indicators

Keep this manual in a good state and available at a close distance from the machine.

Foreword

For the preparation of this manual, we have considered all operations referring to normal use and regular maintenance of the machine. Therefore, for correct and optimal use of the machine, it is necessary to carefully follow the instructions described herein. The use of the machine should be entrusted only to authorized and skilled personnel.

Attention: It is recommended not to carry out any repair or intervention unless not indicated. All operations requiring the disassembly of machine parts should be entrusted to specialized technical personnel.

Warranty

The machine is guaranteed for a period of 12 months starting from the date of the purchase invoice. It consists of a free of charge replacement of all mechanical parts showing material or manufacturing defects.

All electric and electronic components are excluded from this warranty. The warranty does not cover breakages or defects arising out of external factors, maintenance mistakes or other causes, improper use of the machine, use of the machine overloaded, normal wear, assembly mistakes which we may not be held responsible for. Replacements are shipped ex our factory. The machine must be returned on a free port basis, even when covered by the warranty.

Communication

For any written or verbal communication with the Dealer or with

the Firm about the machine, it is necessary to supply the following information:

Machine model

Serial number

Voltage and frequency of the machine

Name of the dealer from which the machine was purchased.

Description of the defect found, if any description of the type of operation carried out working hours per day.

Machine identification

The machine model is identified by a plate situated at the front of the base, showing the following data:

Serial number

Year of manufacture

Manufacturer's name

Use and limitations to use

The machine is for professional use and has been designed and conceived for cutting wooden semi-finished materials and their sub-products and, with suitable adaptations (a suitable blade and a "vise" accessory plastic materials (PVC) or light alloys (aluminum)). The protection rating of the electrical installation is IP 54. Only the user may be held responsible for any damage arising out of a different use of the machine other than that indicates.

Attention:

1. In particular, the machine is not suitable for cutting ferrous materials.
2. The machine cannot be used in explosive environments.

Operations

Cutting operation

1. Connect the pressure-air supply on the plug C (Fig 5).
2. Clamp the material to be cut firmly to the working base by turn on the switch D (Fig 6) keeping it pressed against the fence so that it cannot move during the cutting operation.
3. Push green button of main switch E (Fig 7).
4. Use the handle F (Fig 7) to lower the blade until it comes into contact with the material to be cut, then push grad gradually until you have completed the desired cut.

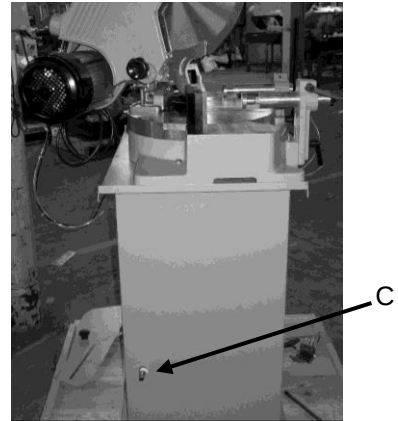


Fig 5

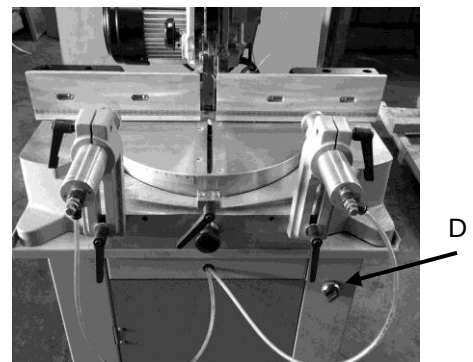


Fig 6

⚠ WARNING

1. Pushing down harder on the handgrip does not necessarily mean that you will cut faster; in fact this can lead to the motor overloading, resulting in less efficient operation.
2. When you have completed the cut, turn off the motor by releasing the button and guide the saw/motor arm back to its idle position.

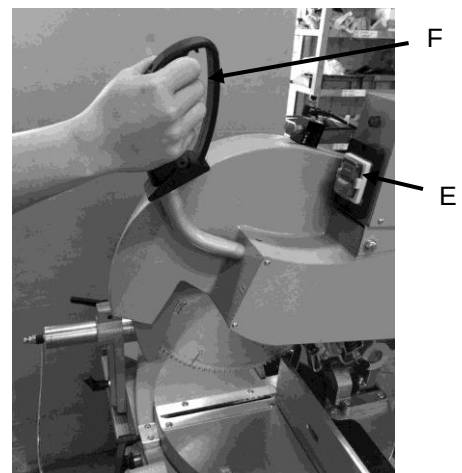


Fig 7

Setting and Adjustment

Adjustment of the table angle

The turntable can be turned right or left. It is semi automatically blocked at 15 degree, 22-1/2 degree, 30 degree, 45 degree and in center position at 90 degree.

In order to turn the table to these positions, first release knob H (Fig 8) if it is tightened. Pull up lever G (Fig 8) and turn the saw-motor arm. When the fixed pointer located on the base is indicating the required setting of the scale (printed on the turntable), release lever G to block the turntable in the setting. The lever will flick back to its start position. Also tighten down knob H to prevent the machine from shaking during operation.

Attention:

1. Move the saw-motor arm left or right to make sure it is firmly secured in place.
2. Angles between the semi-automatic settings are obtained by blocking the rotating table with knob G.

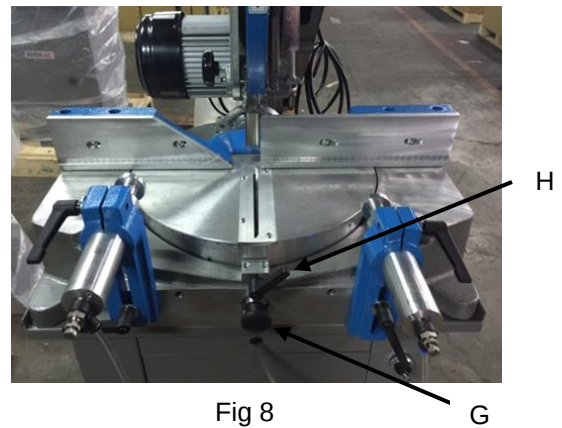


Fig 8

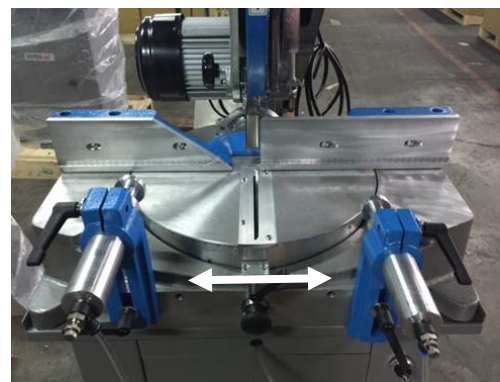


Fig 9

Adjusting the arm angle

The saw-motor arm can only be tilted leftwards to a maximum angle of 45° (end of the stroke), but the turntable can be tilted to any angle.

The arm is tilted as follows:

1. Unlock the screw, L (Fig 10), at the back of the machine.
2. Tilt the saw-motor arm as requested using the handgrip. The angle can be checked on the scale printed next to the hinge for rotation. Once you have tilted the arm enough, lock the screw again (Fig 11).

Attention:

During cutting operations, keep a firm hold on the handle and use the pneumatic clamps hold the work piece against the table and the fence.



Fig 10

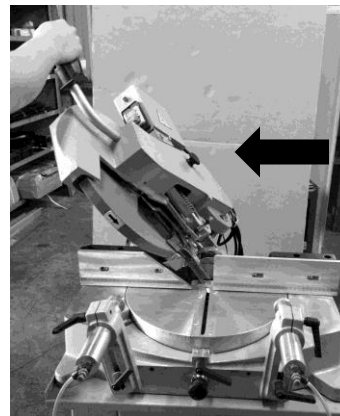


Fig 11

Blade mounting and/or replacement

⚠WARNING For this operation, wear work gloves and always pull the plug out of its socket before beginning your work (Fig 12).

The blades are mounted or replaced as follows:

1. If the arm is locked in its lowered position, release it by unlocking knob M (Fig 13) and guide it to its raised idle position.
2. In order to release the movement of the internal guard by push the point N (Fig 14), and push up the guard O (Fig 15).
3. Block the drive shaft from its end by fitting a 6 mm setscrew P (Fig 16) wrench inside the center hole of the belt guard and loosen the left screw S (Fig 17) with the 8 mm hex wrench Q (Fig 16).
4. Loosen and remove screw S and remove outer flange R (Fig 17).
5. Mount or remove the blade by taking it out from the bottom part; make sure the teeth are facing in the direction shown by the arrow on the saw arm (Fig 18). After you have ended your work, mount the outer flange, R, and the left screw S, and wrench using the above mentioned wrenches.
6. Pull down the internal guard until back to its initial position.

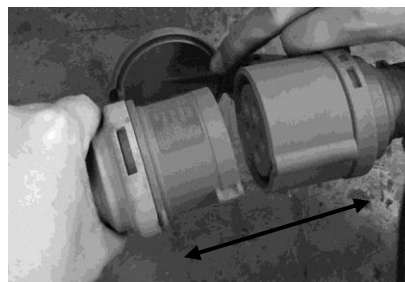


Fig 12

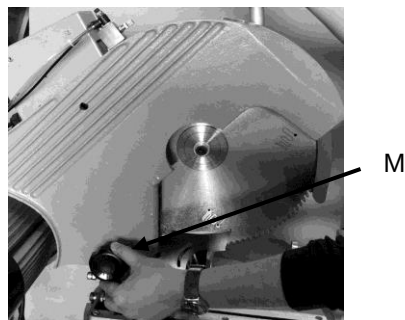


Fig 13

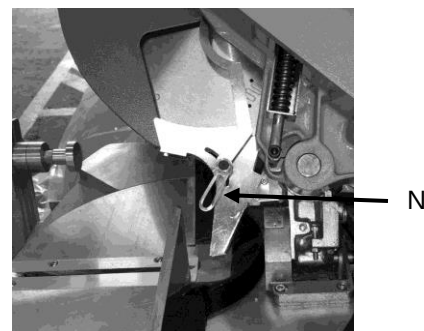


Fig 14

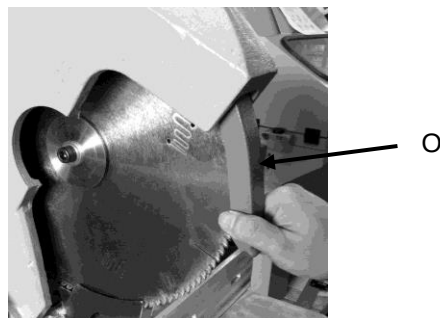


Fig 15

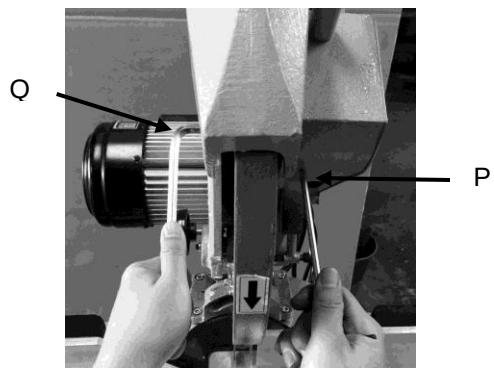


Fig 16

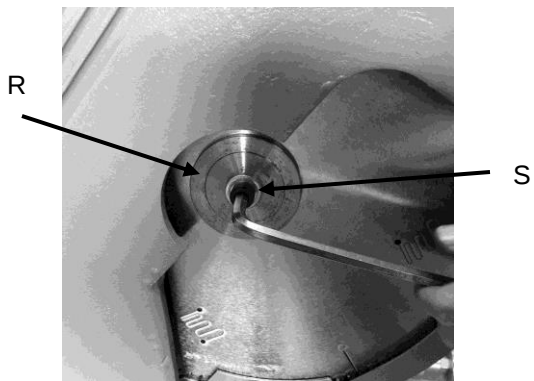


Fig 17

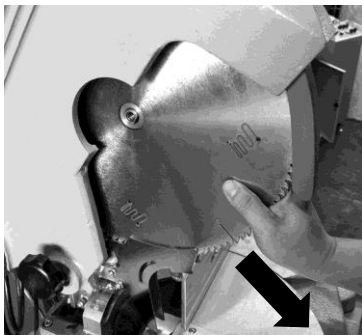


Fig 18

Maintenance

Maintenance must be carried out by qualified staff. The various operations for the ordinary and extra ordinary maintenance are indicated in the last pages of this manual.

It is compulsory to switch off the general electrical equipment, when it is necessary to adjust the machine or to disassemble any protection, by pointing out such operation through a clearly visible placard.

An important security factor is the cleaning of the machine, of the working tables, of the floor and the surrounding places.

It is very useful to read carefully through this manual before starting the machine:

In this way you will realise that the machine has been concerned to offer the best performances together with the highest security.

Encumbering and mobile objects, which could come into contact with the moving organs, are very dangerous.

A certain risk factor, which is eliminable with a good technique and with a constant attention by your side, exists in every work.

Before starting the machine, make sure that there are no other people carrying at maintenance operations.

Other risks

In spite of the adopted security directions, some other risks could remain.

Due to high R.P.M. of the blade, although precautions (like guards) are adopted, that could be rejected if wrongly fitted therefore pay attention while fitting the blade.

A protracted sonorous exposition could provoke health troubles.

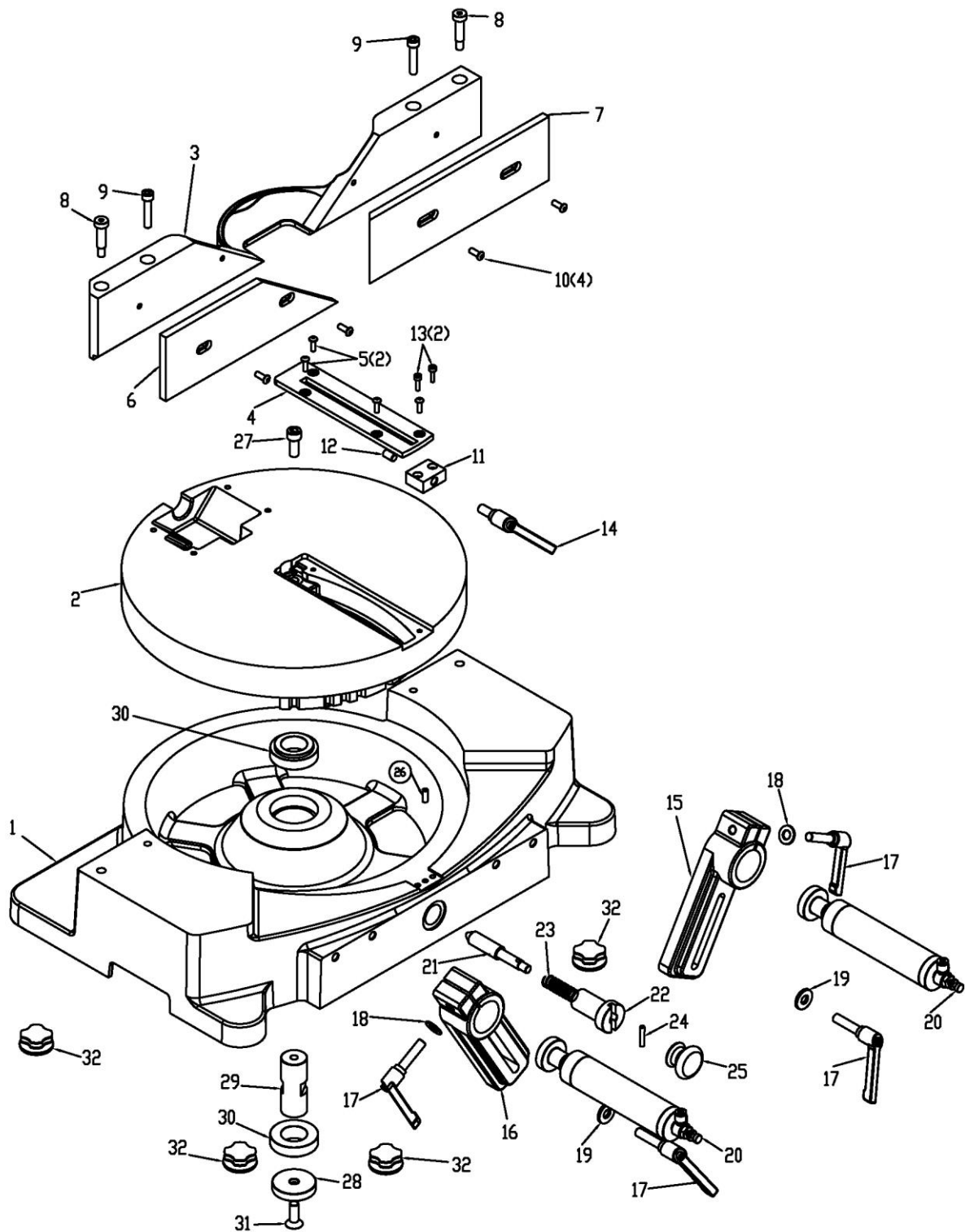
Troubleshooting

Problem	Probable Cause	Solution
Teeth breaking	Incorrect lubricant/coolant fluid	Ensure proper coolant flow.
	Material too hard	Check the cutting speed, feed speed and air pressure parameters and the type of blade you are using.
	Disc not worn--in correctly	With a new blade it is necessary to start cutting at half feeding speed. After the wearing--in period (a cutting surface of about 300 cm ² for hard materials and about 1000 cm ² for soft materials) the cutting and feed speeds can be brought up to normal values
	Disc with excessively fine tooth pitch	The dwarf wedges into the bottom of the teeth causing excessive pressure on the teeth themselves
	New blade inserted in a partially completed cut	The surface of the cut may have undergone work hardening. When starting work again, use a lower cutting speed and head feed speed. A tooth from the old blade may be left in the cut: check and remove before starting work again.
	Work piece not clamped firmly in place	Any movement of the work piece during cutting can cause broken teeth: check the vise, jaws and clamping pressure.
Rapid tooth wear	Feed speed too slow	The blade runs over the material without removing it: increase feed speed.
	Cutting pressure too high	Reduce cutting pressure.
	Blade speed too high	The teeth slide over the material without cutting it: reduce the blade speed.
	Insufficient coolant	Check the coolant level and clean coolant lines and nozzles.
	Incorrect fluid concentration	Check and use the correct concentration.
	Material defective	The materials may present altered zones either on the surface, such as oxides or sand, or in section, such as under-cooled inclusions. These zones, which are much harder than the blade, cause the teeth to break: discard or clean these materials.
Broken blade	Feed speed too high	Reduce blade speed.
	Teeth in contact with material before starting the cut	Always check the position of the blade before starting a new job.
	Insufficient coolant	Check the coolant level and clean coolant lines and nozzles.

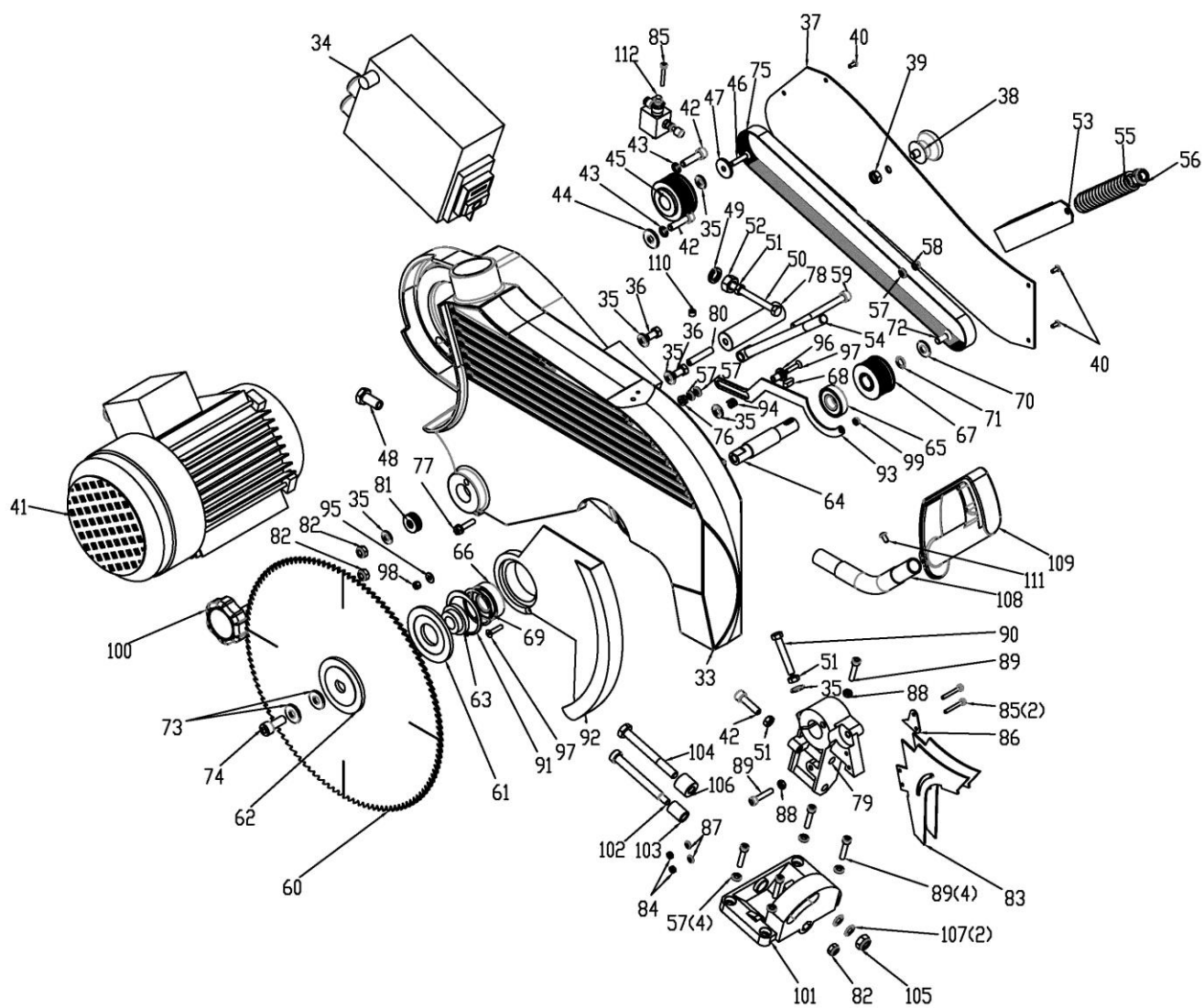
Troubleshooting

Spindle motor will not turn	Electrical power supply	Check: the cables, plug and socket. Also check that the motor connections are in place.
	Transformer	Check that the voltages are present both on the input and output. Otherwise replace.
	Contactor	Check that the phases in it are present both on the input and output, that it is not jammed, that it closes when powered and that it is not causing short circuits. Change if any of these problems are found.
	Thermal relay	Make sure it is closed, i.e. check that the phases are present in input and output that it is not causing short circuits and responds when the reset coil is closed. If it has tripped to protect the motor, check the amperage setting, reset, and check the motor. Change if necessary.
	Motor	Check that it has not burnt out, that it turns freely and that there is no moisture in the connection terminal board box. The winding can be rewound or replaced.

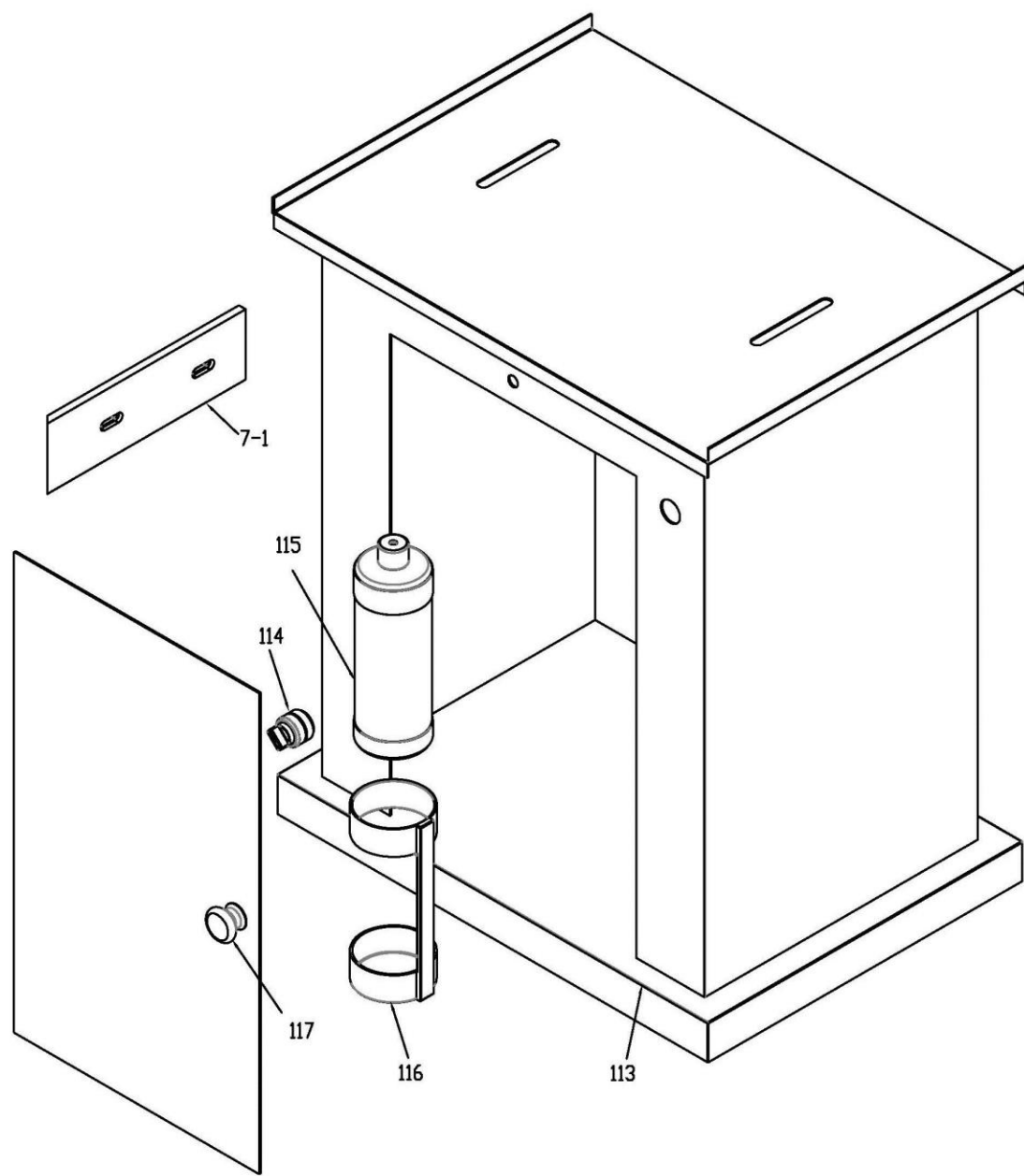
Saw Bow Assembly Drawing-1



Saw Bow Assembly Drawing-2



Stand Assembly Drawing



Saw Assembly Parts

Part No.	Description	Size	Q'ty
1	Base		1
2	Round Plate		1
3	Backgage Seat		1
4	Blade Plate		1
5	Screw	M5x16	4
6	Backgage Seat Left Plate		1
7	Backgage Seat Right Plate	45 degree	1
7-1	Backgage Seat Right Plate	90 degree	1
8	Screw	M8x13	2
9	Screw	M8x40	2
10	Screw	M6x16	4
11	Round Plate Seat		1
12	Round Plate Seat Soft Column		1
13	Screw	M5x16	2
14	Flexible Pin	M10x20	1
15	Pneumatic Clamping Rod Right Seat		1
16	Pneumatic Clamping Rod Left Seat		1
17	Flexible Pin	M10x40	4
18	Washer	M10x22x10	2
19	Washer	M10x25x10	2
20	Pneumatic Clamping		2
21	Round Plate Pin		1
22	Round Plate Pin Seat		1
23	Spring	15x5x43	1
24	Pin Spring	5x26	1
25	Round Plate Pin Handle		1
26	Screw	M6x16	1
27	Screw	M10x25	1
28	Base Bearing Plate		1
29	Swivel Shaft		1
30	Bearing	32006	2
31	Screw	M10x24	1
32	Rubber Plate		4
33	Bow Saw		1
34	Power Box		1
35	Washer	M8	6
36	Screw	M8	2
37	Bow Saw Power		1
38	Bow Saw Power Handle		1
39	Screw		1
40	Screw	M4x10	5
41	Motor		1
42	Screw		3
43	Spring Washer	M8	2
44	Washer	M8	1
45	Motor Belt		1
46	Screw	M6x26	1
47	Washer	M6	1
48	Screw	M12x8	1
49	Spring Washer	M12	1
50	Screw	M8x80	1
51	Nut	M8	3
52	Nut	M12	1
53	Flexible Seat		1
54	Flexible Seat Handle		1

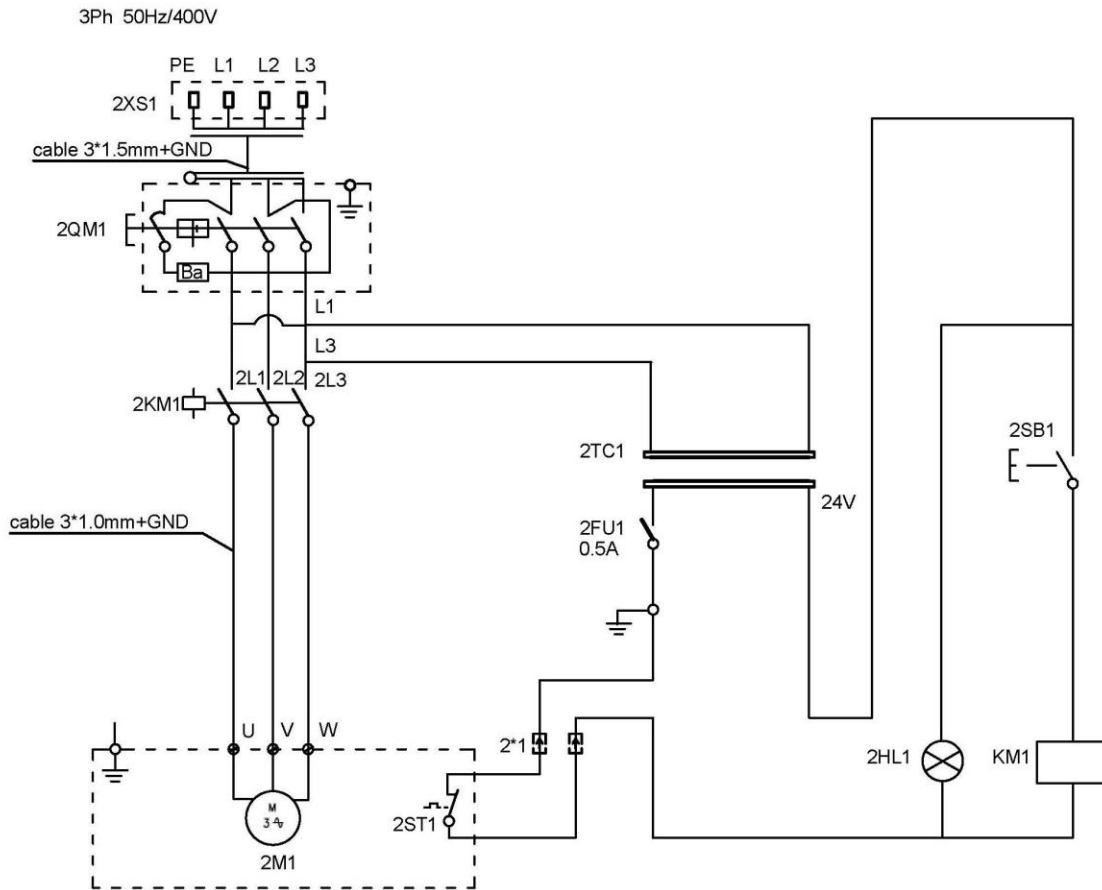
Saw Assembly Parts

Part No.	Description	Size	Q'ty
55	Flexible Seat Handle Spring		1
56	Nut	M12	1
57	Washer	M6	7
58	Nut	M6	1
59	Screw	M8x30x90	1
60	Blade		1
61	Blade Within Clip		1
62	Blade Outer Clip		1
63	Blade Seat		1
64	Blade Shaft		1
65	Bearing	6203	1
66	Bearing	6204	1
67	Blade Belt		1
68	Key	6x6x15	1
69	C-Ring	20	1
70	Blade Belt Washer	M8xT1	1
71	Blade Belt Washer	M8xT2	1
72	Screw	M8x15	1
73	Washer	M10	2
74	Screw	M10x25	1
75	Belt		1
76	Nut	M6	1
77	Screw	M6	1
78	Swivel Shaft		1
79	Swivel Up Seat		1
80	Screw	M8x40	1
81	Bearing	51100	1
82	Nut	M8	3
83	Blade Down Cover		1
84	Nut	M4	2
85	Screw	M4x30	3
86	Swivel Up Seat		1
87	Washer	M4	2
88	Nut	M6	2
89	Screw	M6x130	6
90	Screw	M8x50	1
91	C-Ring	55	1
92	Blade Outer Cover		1
93	Blade Outer Cover Support		1
94	Blade Outer Cover Support Spring		1
95	Washer		1
96	Blade Spring Bushing		1
97	Screw	M5x120	2
98	Nut	M5	1
99	Set Slide Nut	M5	1
100	Swivel Seat Handle		1
101	Swivel Down Seat		1
102	Swivel Down Screws		1
103	Swivel Down Bushing		1
104	Screw	M10x30x90	1
105	Set Slide Nut	M10	1
106	Swivel Down Up Bushing		1
107	Washer	10x16x10	2
108	Wire Handle Pipe		1
111	Screw		1

Saw Assembly Parts

Part No.	Description	Size	Q'ty
109	Wire Handle		1
110	Screw	M8x6	1
112	Oil Mist Device		1
113	Machine Stand		1
114	Power Knob.....		1
115	Oil Mist Bottle		1
116	Oil Mist Bottle Holder		1
117	Machine Stand Door		1

Wiring Diagram and Parts



ITEM	DESCRIPTION	BRAND NO.	SPECIFICATION
2KM1	Magnetic Switch For Motor	S-P09-S/AC24V (Shihlin)	AC 600V AZ1=1TH=20A CE
2QM1	Main Power Switch	KJD-18 400V (Kedu)	AC3-7.5A AC-15-6A AC-1-13.5A CE
2SB1	Trigger Switch	CMV100D	UI:380V ITH:10A AC-15 DC-13 CE
2M1	Motor		3Ph 400V 50Hz
2HL1	Pilot light		24V DC
2FU1	Fuse		0.5 Amp
2ST1	Temperature Over Load (Internal Motor)		
2TC1	Transformer		400V/24V/10AV

