

USER'S MANUAL

RADIAL SAW RAS-420 series





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1.1. INTRODUCTION

This user's manual contains necessary information about the machine and its parts. Each machine operator should read these instructions carefully, and the machine should be operated after fully reading this manual.

A safe and efficient use of this machine for long term depends on understanding and following the instructions contained in this manual. The technical drawings and details contained in this manual are a guide for the operator.

1.2. DISTRIBUTOR

Aslan Machine, Inc. 20423 Waters Point Lane, Germantown, MD 20874 Phone: +1-301-528-1696 Fax: +1-301-542-0185 Website: www.aslanmachine.com E-mail: info@aslanmachine.com

In case of any technical problem, please contact us.

Technical identification label is on the front side of each machine.

The machine's serial number and manufacturing year are on the technical label.

2. MACHINE'S DESCRIPTION AND PURPOSE OF USE

2.1. MACHINE'S DESCRIPTION

RAS 420 Radial Saw Machine is designed for the strait or angular cutting operations of the large size of materials made of PVC, aluminum and timbers.

The features of this machine:

- Performing different cutting operations are possible by means of the pivoting and tilting features.
- > Powerful cutting operations by means of the 2.2 kW, 3000 r.p.m motor
- Smooth movement, high precision and great sensitivity provided with linear bearings and ergonomic handle.
- > 2 x pneumatic vertical clamps.
- Cast iron construction that is strong and lasting.
- Robust mechanical construction enables the ease of adjustment for the requested cutting angles.
- Equipped with saw blade diameter of 420 mm for cutting.
- Location points at 150-22,50-300-450-600 900 both left and right
- > Pivoting range from 45° left to 60° right infinitely adjustable
- > Tilting range from 90° to 45° left

Please include the following information in all your correspondences.

*Machine's model *Machine's serial number *Voltage and frequency *Name of dealer where machine was purchased *Date of purchase *Description of the machine fault *Average daily operation period

2.2. TECHNICAL FEATURES

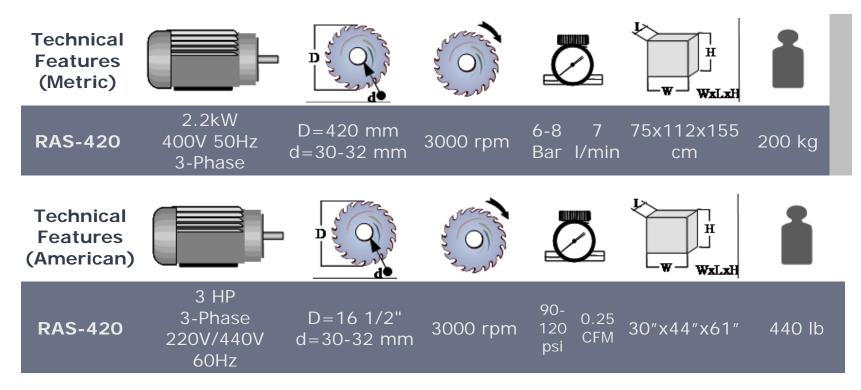
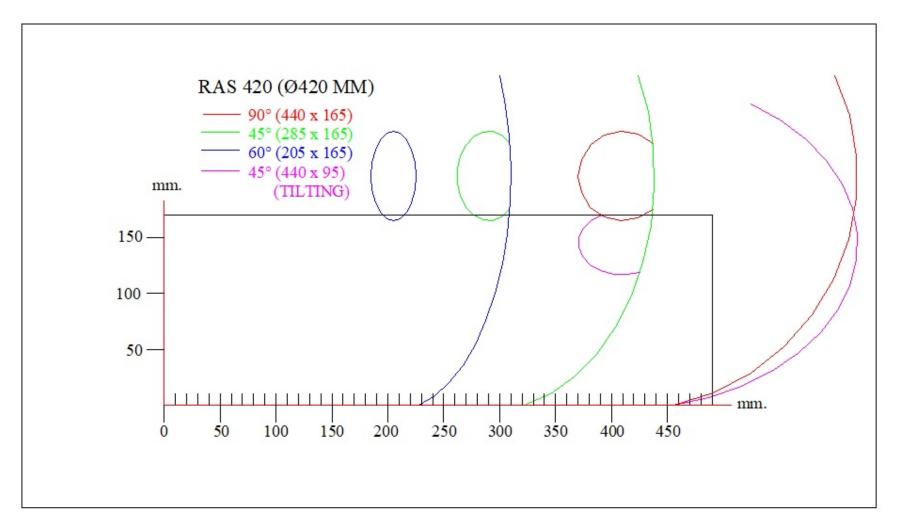
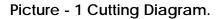


Table 1 – The technical features of this machine.





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2.4. OVERALL DIMENSIONS

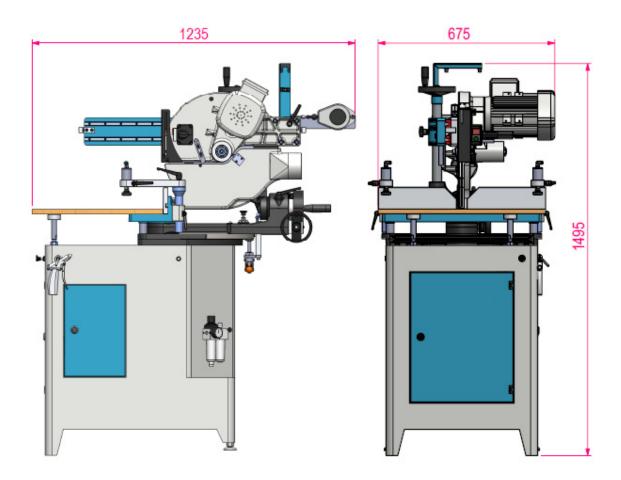
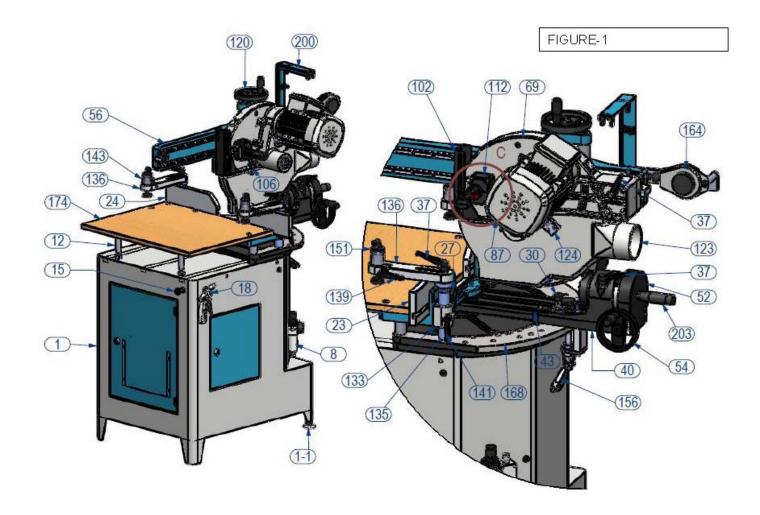
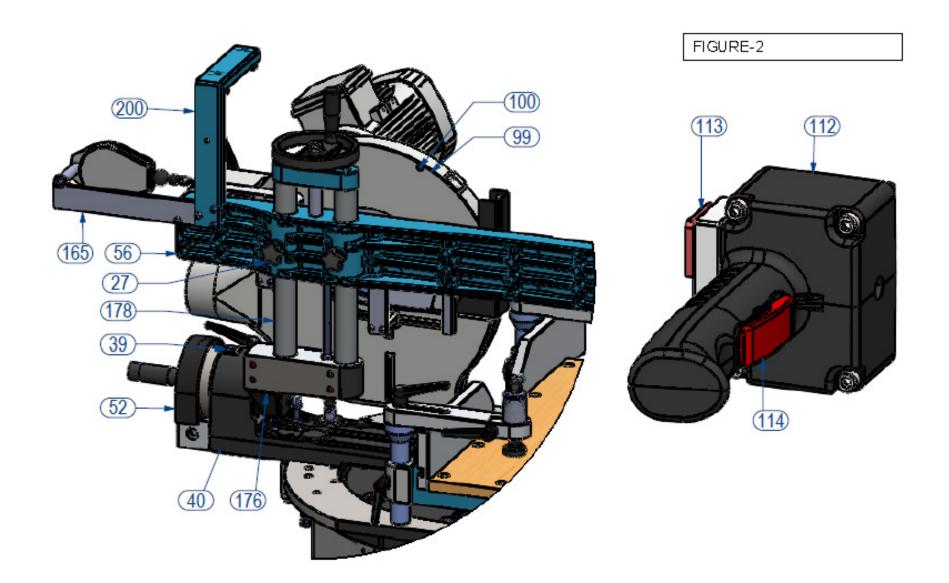


Figure – 3 Overall Dimensions (in terms of millimeters)

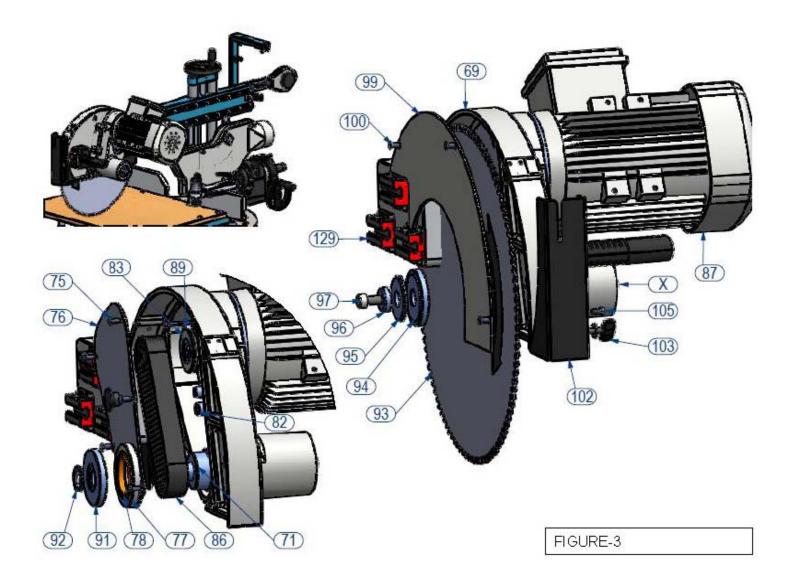
⁸ Aslan Machine, Inc. <u>info@aslanmachine.com</u>, Tel: +1 301 528 1696

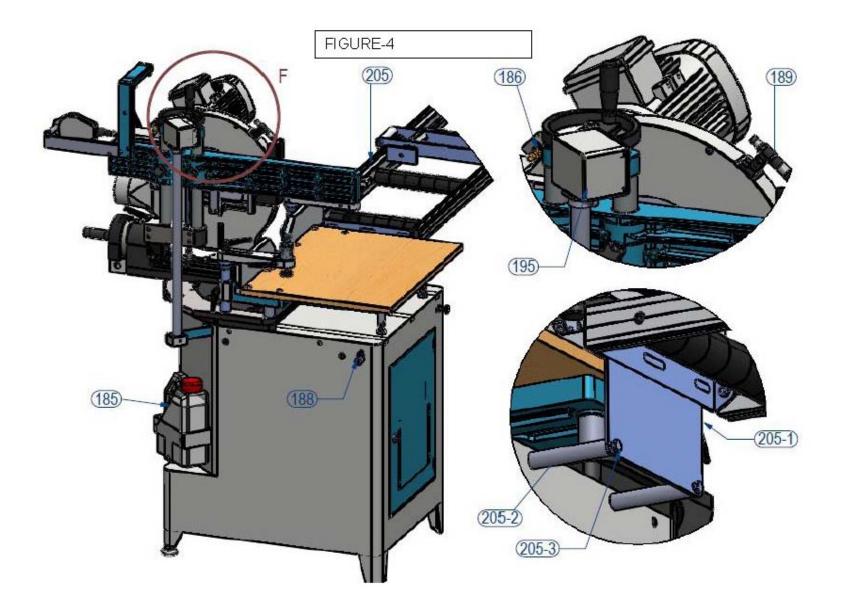
2.5. PARTS LIST AND TECHNICAL DRAWINGS





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NO	CODE	QTY	NO	CODE	QTY
1	1SA010000-0346	1	92	2TU011110-0122	1
8	3UA110030-0020	1	93	1SK010000-0074 *	1
12	2TU011110-1583	2	93	1SK010000-0112 *	1
15	1PN010000-0087	1	94	2TU011110-0423	1
18	1PN080000-0009	1	95	2TU011441-0016	1
23	2TU012210-1706	1	96	2TU011110-0488	1
24	2TU012210-1707	1	97	1SC011000-0003	1
27	1PL020000-0013	4	99	2TU011441-1257	1
30	3UA030030-0007	1	100	1SC031000-0012	3
37	3UA040030-0002	4	102	1SA050000-0638	1
39	2TU011441-0017	1	103	2TU011110-0146	1
40	2TU011610-0000-0	1	105	2TU011110-0226	1
43	2TU011441-1328	1	106	2TU011441-1327	1
52	1SA050000-0640	1	112	1PL010000-0105	1
54	2TU010010-0108	1	113	1EL090000-0017	1
56	2TU012510-0577	1	114	1EL020000-0022	1
69	2TU012510-0583-0	1	120	2TU010010-0011	1
71	2TU011110-1584	1	123	2TU012510-0578	1
75	1SC021000-0132	8	124	1PN010000-0157	1
76	2TU011441-1258	1	129	1SR080000-0211	3
77	2TU012110-1075	1	133	2TU012710-0010	2
78	1PN043000-0307	1	135	2TU011110-1585	2
82	2TU011110-1579	1	136	2TU012210-1708	2
83	2TU012110-1074	1	139	3UA040030-0005	2
86	1SR070000-0015	1	141	3UA040030-0008	2
87	1EL070001-0002	1	143 -151	3UA060030-0018	2
89	1SC021000-0030	7	156	1SC180000-0022	1
91	2TU011110-0422	1	164	1SC180000-0024	1

165	2TU011441-1333	1	
168	2TU011610-0023	1	
174	2TU018010-0002	1	
176	2TU011610-0026	1	
178	2TU014010-0277	2	
185	1PL010000-0020 **	1	
186	1PN010000-0012 **	1	
188	1PN130000-0007 **	1	
189	3UA930030-0006 **	1	
195	3UA930030-0007 **	1	
200	1SA050000-0686	1	
203	1PL010000-0076	1	
205	4UN300030-0003 **	1	

*1SK010000-0112 (WOOD)

*1SK010000-0074 (ALM – PVC)

** OPTIONAL

21 	SPARE PART LIST				
PART NO	PICTURE	CODE	PART NAME		
95	\bigcirc	2TU011441-0016	COUPLIN		
	0	2TU011110-0422	SAW COUPLIN		
23		2TU012210-1706	SETSQUARE (RIGHT)		
24		2TU012210-1707	SETSQUARE (LEFT)		

174		2TU018010-0002	TABLE
136		2TU012210-1708	CLAMP MOUNTING BRACKET
143		3UA060030-0018	PNEUMATIC CLAMP
156	C	1SC180000-0022	CLAMP
139		3UA040030-0005	M8x45 HANDLE
141		3UA040030-0008	M8x32 HANDLE

37		3UA040030-0002	M10*50 HANDLE
93	·	1SK010000-0074 (ALM-PVC) 1SK010000-0112 (FOR WOOD)	Ø 420 SAW BLADE
186		1PN010000-0012	WATER SPRAY VALVE
		1SR010000-0005	6204 BEARING
86		1SR070000-0015	BELT (PJ 483*24,5)
		1PL010000-0033	CLAMP FEET

112	1PL010000-0105	HANDLE
113	1EL090000-0017	SWITCH
87	1EL070001-0001 (400V 3P 50 Hz)	MOTOR
8	3UA110030-0020	LUBRICATOR

124		1PN0140000-0157	AZ 431 MP VALVE
164		1SC180000-0024	BALANCER
30	Carico Co	3UA030030-0007	PINS
15		1PN010000-0087	CLAMP BUTTON VALVE
27		1PL020000-0013	M8*20 SCREW

2.6. ELECTRIC PANEL

The electric and pneumatic control panel enables you to make adjustments regarding the air pressure.

The cover of the panel has to be kept closed/locked during cutting.

Before servicing the machine: TURN OFF THE ELECTRIC AND PNEUMATIC SUPPLY CONNECTIONS.

3. SAFETY

3.1. SAFETY INFORMATION

The symbols shown hereunder must be read with a special attention. Not reading or observing them may cause damage to the equipment or personal injury.

IMPORTANT

The **IMPORTANT** symbol above shows that it is necessary to pay special attention at the specified operation.



The **CAUTION!** symbol above warns you against specific dangers, and requires reading the text. Not observing may cause damage to the equipment.



The **DANGER WARNING** symbol warns you against specific dangers, and you have to read them. Negligence may cause damage to the equipment and bodily injury.

Read the user's manual carefully before using the machine or carrying out maintenance works.



3.2. ACCIDENT PREVENTION

3.2.1. Our machines are manufactured in accordance with EN 60204-1 and EN 292-2 CE safety directives, which international safety directives.

3.2.2. It is the responsibility of the employer to warn his staff against accident risks, to train them on prevention of accidents, to provide the necessary safety equipment and devices for the operator's safety.

3.2.3. Before starting to work with the machine, the operator should check the features of this machine; learn all details of the machine's operation.

3.2.4. Machine should be operated only by the assigned and properly trained staff members, who have read and understood the contents of this manual.

3.2.5. All directives, recommendations and general safety rules contained in this manual have to be observed fully. The machine cannot be operated in any way for purposes other than those described herein. The manufacturer shall not be deemed responsible for any damages or injuries due to wrong/unsafe usage. And such circumstances would lead to the termination of the warranty.

3.3. GENERAL SAFETY INFORMATION

3.3.1. The power cable should be placed in a way that nobody can step on it or nothing can be placed on it. Special care must be taken regarding the inlet and outlet sockets.



3.3.2. If the power cable is damaged during operation, don't touch it and do not unplug it. Call your electrician to resolve the problem. Never use damaged power cables.

3.3.3. Don't overload the machine. Your machine will operate more safely with power supply shown on the technical label.

3.3.4. Don't place your hands between parts in motion.





3.3.5. Use protective eye glasses and ear plugs. Don't wear oversize clothes and jewelry. These can be caught by moving parts.



3.3.6. Keep your working place always clean, dry and tidy for accident prevention and safe operation.

3.3.7. Use correct illumination for the safety of the operator. (ISO 8995-89 Standard The Lighting of Indoor Work Systems)

3.3.8. Don't leave anything on the machine.

3.3.9. Don't use any materials other than those recommended by the manufacturer for cutting operations on the machine.

3.3.10. Ensure that the work piece is clamped appropriately by the machine's clamp or vice.

3.3.11. Use safe working position, always keep your balance.



3.3.12. Keep your machine always clean for safe operation. Follow the instructions at maintenance and replacement of accessories. Check the plug and cable regularly. If damaged, have it replaced by a qualified electrician. Keep handles free from any oil and grease.

3.3.13. Unplug first before any maintenance works.

3.3.14. Make sure that any keys or adjustment tools are removed before re-operating the machine.

3.3.15. If you are required to operate the machine outside, use only appropriate extension cables.

3.3.16. Repairs should be done by a qualified technician only. Otherwise, accidents may occur.

3.3.17. Before starting a new operation, check the appropriate function of protective devices and tools, make sure that they work properly. All conditions have to be fulfilled to ensure proper operation of your machine. Damaged protective parts and equipment must be replaced or repaired properly (by the manufacturer or dealer).

3.3.18. Don't use this machine with improper functioning buttons and switches.

3.3.19. Don't keep flammable, combustible liquids and materials next to the machine and electric connections.

4. SAFELY TRANSPORTING THE MACHINE

IMPORTANT

The transporting must be done by qualified personnel only.

The machine should be transported by lifting with proper equipment (The machine should not be touching the ground during the transport).

Don't lift the machine before making sure that lifting devices or other equipment is placed properly under the machine.

5. INSTALING THE MACHINE

The machine should be located at least 2 feet (50 cm away) from the back wall for the full opening of the top safety cover to the back, and to do maintenance and cleaning works on the machine. For the required minimum free distances around the machine, see Figure-6.

5.1. PREPARATION

5.1.1. The outer dimensions of the machine are shown in the Dimensions page in this manual. The ground where the machine will be placed, should be even and solid enough to bear the weight of the machine.

5.1.2. At this saw, all parts are delivered ready for use.

5.1.3. Assemble the optional conveyors, if you received it, to the right side of the machine if needed.

5.2. ELECTRIC CONNECTION

5.2.1. The three-phase power cable socket must be installed by your electrician.

5.2.2. Check the power supply before powering the machine.

5.2.3. Make the electric socket connections when the MAIN POWER SWITCH on the machine is set to 0. (i.e. cut the power going to the machine.)

CAUTION !

*The power connection must be made by a qualified electrician. The rotation direction of the saw blade must be observed by starting the machine. If the saw blade rotates in reverse direction, the connections must be checked and re-connected properly.

**If the saw blade rotates in reverse direction, it will create danger for the operator and the equipment.

To correct the rotation direction of the saw blade, connect the machine to an electric power plug for 3-phase, and follow these instructions:

1. Press the Motor Start Button to operate the saw blade.

2. Monitor the rotation direction of the saw blade through the blade slot.

3. The correct direction is shown with an arrow on the picture.

The cable connections must be checked and corrected by a qualified electrician.

The rotation direction of the saw blade must be determined with testing and checking during installation by a qualified electrician.

6. MACHINE SAFETY INFORMATION



6.8.1. It is not allowed to operate the machine with its safety cover and other safety components removed.

6.8.2. Your machine operates with 220 V or 400V (440V) \sim 3 Phase 50Hz (60Hz). Use a qualified electrician only for the installation.

6.8.3. Lifting, installation, electric, pneumatic maintenance of the machine must be done by qualified personnel only.

6.8.4. Routine maintenance and scheduled maintenance should be done by qualified personnel after disconnecting the power and air supply first.

6.8.5. Make sure that the machine is cleaned, tested and maintained before starting to operate.

6.8.6. Check the safety components, power cable and moving parts regularly. Don't operate the machine before replacing defective safety devices or faulty parts.

- 6.8.7. Never replace the saw blade without disconnecting the power first.
- 6.8.8. Keep foreign materials away from the working area of the machine,

6.8.9. Keep away from the machine's moving parts.

IMPORTANT

The safety data is defined above. In order to prevent any physical damage or damage to the equipment, please read the safety information carefully and keep the user's manual always in an easy accessible place.

7. Operation (straight-angular cutting)

7.2.1 Arrange the saw assembly in the desired angle. Fort his purpose, first turn the saw assembly with the help of crank handle (FIGURE 1 NO.203) and bring it to the desired angle. You can read the angle values through plate (FIGURE 1 NO.168) by means of degree reading plate (FIGURE 1 NO.4). Make sure that, during the process of turning, spring pin (FIGURE 1 NO.30) is high above and fixing clamp of the table (FIGURE 1 NO.156) is open. Once the desired angle is achieved, make sure that spring pin (FIGURE 1 NO. 30) has snapped into the slot. Then you must tighten the clamp to fix the table (FIGURE 1 NO.156).

7.2.215 - 22.5 - 30 - 45 and 60 degrees can be set by means of the spring (FIGURE NO. 30) and others freely. In intermediary degrees, the spring pin does not snap into the slot. Once

you achieve the desired angle fort he saw assembly, you must tighten the clamp to fix the table (FIGURE 1 NO.156).

7.2.3 Steepness of the saw assembly must be adjusted through the crank handle in the back (FIGURE 1 NO.54) by reading on the degree label. Once the desired angle is achieved, you must tighten the clamp lever (FIGURE 1 NO.37).

7.2.4 Up and down position setting of the saw assembly must be adjusted through the crank handle (FIGURE 1 NO.120). After adjusting, fix it with the help of the clamp levers (FIGURE 2 NO.27).

7.2.5 After bringing the moving squares (FIGURE 1 NO.23/24) to the appropriate position for cutting, fix it with the help of tightening screws in the back (FIGURE 1 NO.27). Make sure that moving squares do not enter into the cutting area of the saw. Check the saw assembly by bringing forward before operation.

7.2.6 Put the wooden, PVC or aluminium plate that you will operate on the plate (FIGURE 1 NO.174). Fix the profile by means of clamps on the table (FIGURE 1 NO.143).

7.2.7 Clamps are applied pneumatically in RAS 420 models. You can adjust the back and forth and up and down positions of the clamps by means of special tightening parts (FIGURE 1 NO.139 / 37 / 141). The control of the clamps can be performed through the button (FIGURE 1 NO.15) on the chassis (FIGURE 1 NO.1).

7.2.8 Operate the motor by pressing the start button (FIGURE 2 NO.113) on arm (FIGURE 2 NO.112)

7.2.9 Pull up the locking mechanism (FIGURE 1 NO.106) as you pull the saw mechanism forward. Leave it after releasing the lock.

7.2.10 Make sure that special tightening sleeve (FIGURE 1 NO.37) is not tightened.

7.2.11 By adjusting the cutting progress by hand according to the type, size of the material to be cut push the saw with arm pressure until the cutting operation is completed.

7.2.12 Bring the cutting arm to the first position at the end of the cutting process, and press the stop button. Saw completes the free rotation and remain completely still.

7.2.13 Balancer (FIGURE 1 NO.164) is used to ensure that the saw is back comfortably were used. You can help by turning the crank handle on Balancer the spring tension adjustment. The spring tension adjustment of the balancer can be made through the crank handle on it.

7.2.14 Remove the part by opening the clamps.

7.3 Angular (tilting) cutting

7.3.1 Adjust the saw assembly to the straight up position and for straight cut. Fort his purpose, follow the instructions described in the straight cut. Snap the spring (FIGURE 1 NO.30) pin into the slot in the '0' degree position. After bringing it to the straight up position, fix it with the help of table fixing clamp (FIGURE 1 NO.156).

7.3.2 Tilting cut can only be performed by adjustment according to the straight (90 degrees) angle. Tilting cut cannot be performed for other degrees. Tilting cut can be performed between 0-45 degrees by laying the saw assembly to the side.

7.3.3 Adjust the saw assembly according to the desired angle. Fort his purpose bring the saw assembly to the desired angle by turning it with the crank handle (FIGURE 1 NO.54). You can read the angle values through degree label by means of degree reading arrow (FIGURE 2 NO.39). Make sure that the clamp lever (FIGURE 1 NO.37) is not tightened during the turning process. You must tighten the clamp lever (FIGURE 1 NO.37) once the desired angle is achieved.

7.3.4 After bringing the moving squares (FIGURE 1 NO.23/24) to the appropriate position for cutting, fix it with the help of tightening screws in the back (FIGURE 1 NO.27). Make sure that moving squares do not enter into the cutting area of the saw. Check the saw assembly by bringing forward before operation.

7.3.5 Afterwards you can start the cutting process

Do not operate the circular saw while on the track. Saw should always be operated in the rear position, must be put on the piece when rotating cyclically.

Be careful when changing the position (degree, back and forth, up and down) of the saw assembly. Make sure there is no touching or jamming to other parts. After brining to the desired position, make sure to perform such operations as fixing-tightening.

Before starting the cutting operation, make sure to run the machine in idle position for security purposes.

8.2 Safe installation of the saw blade



8.2.1 Cut the electric connection of the machine.

8.2.2 When the machine is in the straight up position, pull forward the saw assembly. Make sure to tighten the clamp lever (FIGURE 1 NO.37) in order to fix it.

8.2.3 Remove the saw assembly by using the appropriate equipment in an order mentioned below.

8.2.4 Take the Front casing plate of the saw (FIGURE 3 NO.102), out by removing the connection parts (FIGURE 3 NO.103 / 105).

8.2.5 Take the side casing plate (FIGURE 3 NO.99) by removing the screws on it (FIGURE 3 NO.100).

8.2.6 Take the M10 bolt, (FIGURE 3 NO.97) out with the help of 17 mm wrench. While taking out the bolt, hold it on the other side of the saw spindle (FIGURE 3 NO.71) with 8 mm Allen wrench (FIGURE 3 X marked) 8 mm Allen.

8.2.7 Remove the parts fixing the saw (FIGURE 3 NO.96 / 95 / 94) in an order.

8.2.8 Take out the saw blade (FIGURE 3 NO.93) carefully.

8.2.9 Install the new saw blade onto the shaft ensuring the correct rotation direction.

8.2.10 Install the guard group parts applying the reverse order as described above.

8.2.11 It is necessary to sharpen / replace the saw blade in certain intervals depending on the cutting material. If the cut material leaves burr after the cutting operation or if the saw blade is strained, it needs to be sharpened / replaced.

8.2.12 When replacing the saw blade, use the part of the blade washer which is appropriate for the blade shaft diameter. The outer diameter of the blade washer is 30 and 32 mm.

8.2.13 During saw blade change operations, use protective gloves

8.2.14 Saw must be selected according to standart DIN EN 847-1

8.2.15 A saw blade rotating in reverse direction, causes danger both for the operator and the equipment. The teeth of the saw blade would be damaged and even broken.

8.3 Changing the belt

8.3.1 Cut the electric connection of the machine.

8.3.2 Take the saw assembly out by applying the instructions for replacing the saw (8.2).

8.3.3 Remove parts numbered (FIGURE 3 NO.92 / 91) in an order.

8.3.4 Take the belt guard plate (FIGURE 3 NO.76) out by removing the bolts on it (FIGURE 3 NO.75).

8.3.5 Loosen the motor connection bolts (FIGURE 3 NO.89) with the aid of 6 mm Allen switch.

8.3.6 Change the new belt with the previous one. Be careful when fixing the belt to the channels of balancing wheel (FIGURE 3 NO.83/71) of the channels of the belt.

8.3.7 After inserting the new belt, adjust the belt tension by holding the belt stretching part (FIGURE 3 NO.82) with the help of 8 mm Allen wrench. After adjusting it to the appropriate tension, tighten the engine mounting bolts (FIGURE 3 NO.89) with your free hand.

8.3.8 Fix the removed parts by following the reverse sequence that your removed them before.

8.4 Angular and run out adjustment control of saw blade and set square

8.4.1 Cut the electric connection of the machine.

8.4.2 Control the run out of the saw blade with eyes. If possible use a dial gage.

8.4.3 If there is any problem in the inclined cut, control the saw's 90 degrees orthogonal to the set square with the aid of the set-square. If it is not proper, loosen the stay bolt at the top which tightens the spring (FIGURE 1 NO.23) Have the pin located to its place by turning the spring in way that it can provide it to be proper by setting it to the 90 degrees. Tighten the screw at the top again which fastens the spring.

8.5. ADJUSTING THE AIR PRESSURE

8.5.1. Pull the adjustment knob of the conditioner upwards. (See Figure – 12)
a- Turn the knob in clockwise direction to increase the pressure
b- Turn the knob in counter clockwise direction to decrease the pressure

8.5.2. Once you read 6-8 Bar (90-120 psi) on the gauge, push the knob down and lock it in that position. See Figure - 12

8.5.3. The manufacturer recommends the following oils for the air conditioning unit: TELLUS C 10BP ENERGOL HLP 10MOBIL DTE LIGHT

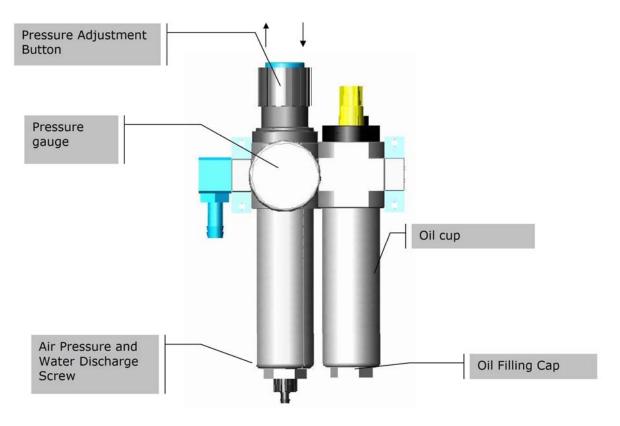


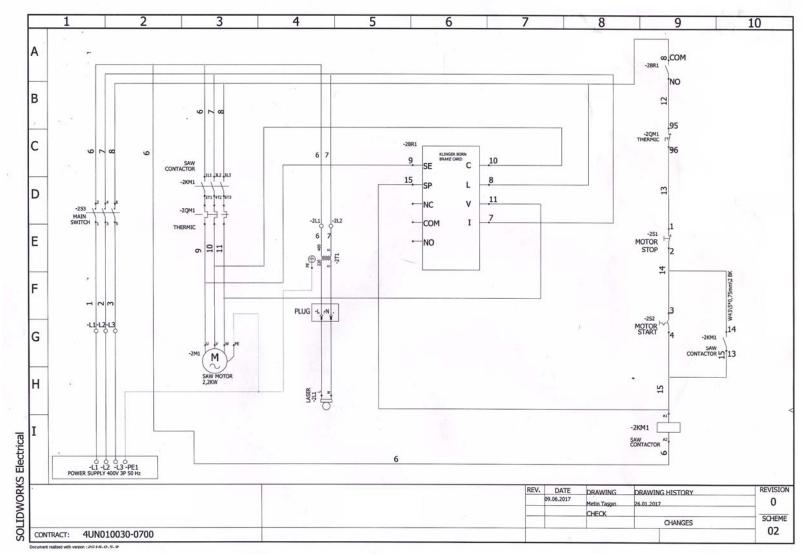
Figure – 12 Air conditioning Unit.

9. TROUBLESHOOTING GUIDE

Here are some recommendations for solving urgent problems. If the trouble cannot be solved, or if you have a problem other than those described hereunder, please contact our technical service or your nearest dealer.

TROUBLE	CAUSES	REMEDY
Low surface quality (at aluminum and similar materials) :	Saw blade surfaces are not cooled as needed.	 Lubricate the saw blade cutting surfaces. Use cooling liquid.
Rough surface,Large chips/shavingsNot homogenous	Damaged or blunt saw blade.	Check the saw blade teeth. Replace if necessary.
surface,Saw blade traces visible	Saw blade is moving up too fast.	The cutting speed is too high for the material. Decrease it.
Motor does not work when Start button is pressed, not working.	 No power supply to the machine. 	 Check the electric cable connections. Check the electric power sockets.
Motor is working but the pneumatic clamp pistons do not work.	There is no air supply to the machine or the air pressure is too low.	 Check the air compressor connections. Adjust the air pressure between 6-8 Bar (90-120 psi) on the conditioner.
The saw blade rotates in reverse direction.	The electric connection, at the power cable or the connection at the electric panel is wrong.	Call a qualified electrician to fix the problem.

10. WIRING DIAGRAM



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