TUCANA-02 M **TUCANA-02 AS / AL**

END MILLING MACHINES

User's Manual

CONTENTS **Page**

1. GENERAL INFORMATION

1.1 INTRODUCTION

The user's manual given by the manufacturer contains necessary information about the machine parts. Each machine operator should read these instructions carefully, and the machine should be operated after fully understanding them.

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

1.2 DISTRIBUTOR

ATech Machine, Inc.
10752-A Tucker Street – Beltsville, MD 20705 USA
Phone: +1-301-595-1816 Fax: +1-301-560-6627
Website: www.ATechMachinery.com E-mail: info@ATechMachinery.com

In case of any technical problem please contact your nearest ATECH dealer, or ATECH head office through the above mentioned phone, fax or e-mail address.

Technical labels with the model description of the machine are fixed onto the front side of each machine.

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

2. MACHINE'S DESCRIPTION AND PURPOSE OF USE

2.1. MACHINE'S DESCRIPTION

END MILLING MACHINES TUCANA-02 M, TUCANA-02 AS and TUCANA-02 AL

End milling machines designed for precise end milling operations on PVC and Aluminum mullion profiles.

- TUCANA-02 M : Clamping is pneumatic, milling operation is manual
- TUCANA-02 AS: Capable of angular end milling. Clamping and end milling operation is automatic. 8" Stroke.
- TUCANA-02 AL: End milling operation is automatic. Capable to process two different profile series. Angular end milling. 15" Stroke.

Please mention the below mentioned data in all your correspondence regarding the machine with the manufacturer and/or your ATECH dealer.

*Machine 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

Technical Features (American)								
TUCANA-02 P	800W 120V 60Hz		d=1 3/16" D=Max 4 23/32"	3000 rpm	--	--	14x20x17"	66 lb
TUCANA-02 M	800W 120V 60Hz	1200W 440V 60Hz	d=1 3/16" D=Max 6 11/32"	3000 rpm	90-120 psi	0.2 CFM	19x23x44"	132 lb
TUCANA-02 AS	1200W 440V 60Hz		d=1 3/16" D=Max 6 11/32"	3000 rpm	90-120 psi	1 CFM	19x23x44"	176 lb
TUCANA-02 AL	1200W 440V 60Hz		d=1 3/16" D=Max 6 11/32"	3000 rpm	90-120 psi	1 CFM	19x23x44"	205 lb

Technical Features (Metric)								
TUCANA-02 P	800W 230V 50Hz		d=30 mm D=Max.120	3000 rpm	--	--	35x51x42 cm	30 kg
TUCANA-02 M	800W 230V 50Hz	1200W 400V 50Hz	d=30 mm D=Max.161	3000 rpm	6-8 Bar	5 1/min	47x58x112 cm	60 kg.
TUCANA-02 AS	1200W 400V 50Hz		d=30 mm D=Max.161	3000 rpm	6-8 Bar	30 1/min	48x75x115 cm	80 kg
TUCANA-02 AL	1200W 400V 50Hz		d=30 mm D=Max.161	3000 rpm	6-8 Bar	30 1/min	48x75x115 cm	93 kg

2.3. OVERALL DIMENSIONS

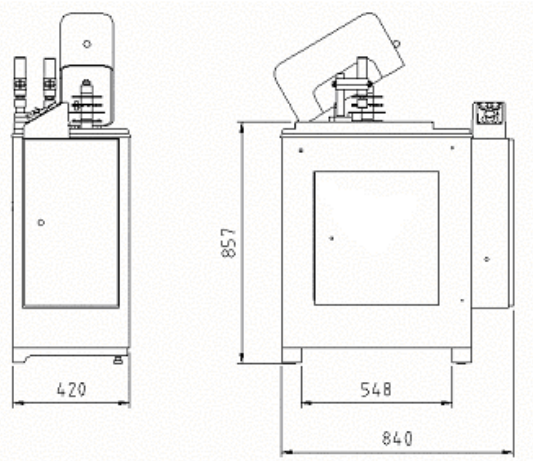


Figure - 1
TUCANA-02 AS

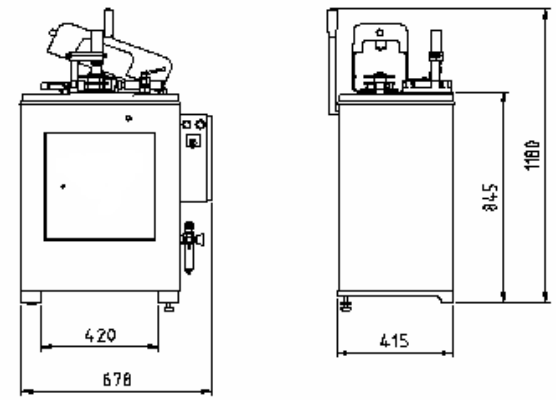
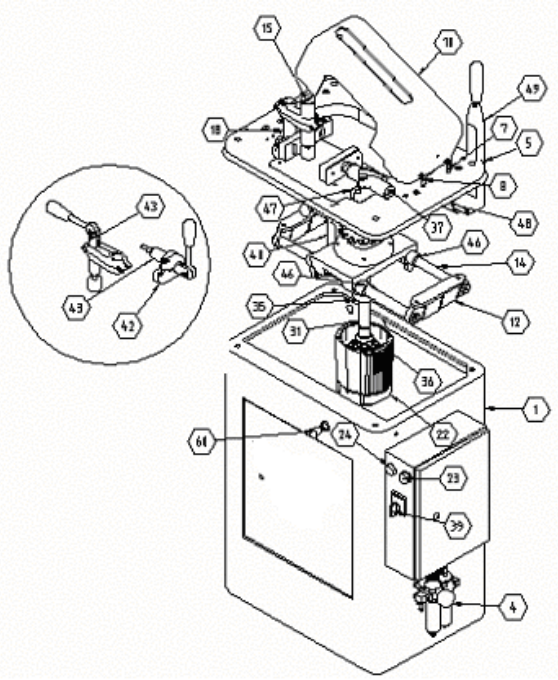


Figure - 2
TUCANA-02 M

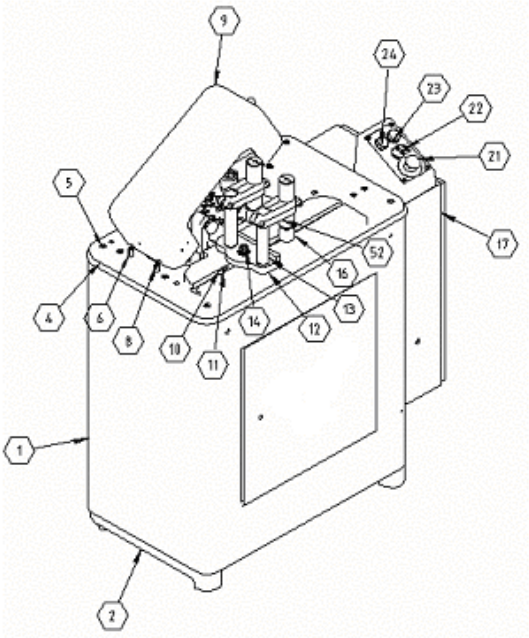
2.4. PART LISTS AND TECHNICAL DRAWINGS



No.	STOCK NO. / PART NAME	QTY
1	TUCANA-02 M-014 FRAME	1
4	** 241-009 CONDITIONER	1
5	111-100 BASE	1
7	141-149 HINGE FEMALE PART	2
8	141-148 HINGE MALE PART	2
10	111-105 PROTECTION COVER	1
12	111-107 SHAFT CONNECTION COLUMN	2
14	144-008 MOVEMENT BEARING SHAFT	2
15	** 550-008 PNEUMATIC CLAMP CYLINDER	1
18	141-144 CLAMP COLUMN SHAFT	1
22	550-056 ELECTRIC MOTOR 400V	1
23	165-046 CUTTING START BUTTON	1
24	165-047 MOTOR START BUTTON	1
31	142-028 ROTOR SHAFT	1
35	191-006 6206 BEARING	1
36	191-004 6203 BEARING	1
37	** 550-020 LOWER CLAMP	1
39	161-007 MAIN SWITCH	1
40	111-098 PROFİLE FENCE	1
42	* 111-099 LOWER CLAMP HOUSING	1
43	* 550-027 LOWER MECHANIC CLAMP	2
46	192-008 STOPPER PP25x35x40	4
47	** 111-106 BOTTOM CLAMP BAD	1
48	112-084 ARM CONNECTION PART	1
49	111-209 ARM	1
60	** 241-011 SV3 M5 BUTON	1

NOTE:
Parts marked with **, are used only with the model TUCANA-02 M

Figure - 3
TUCANA-02 M



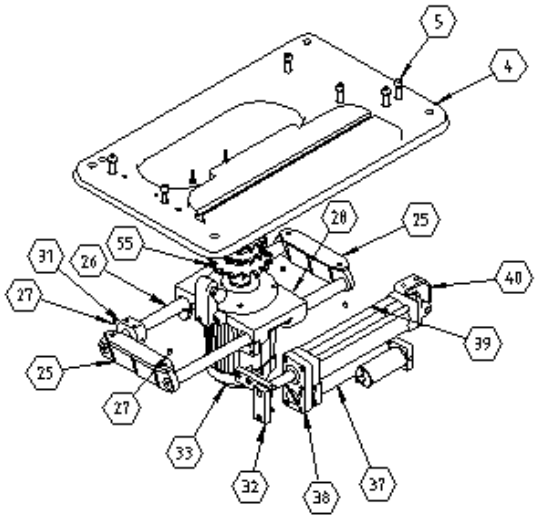


Figure - 4
TUCANA-02 AS

No.	STOCK NO. / PART NAME	QTY
1	TUCANA-02 M-016 FRAME	1
2	111-108 FRAME BASE	2
4	111-120 BASE	1
5	172-004 M10x35 HEXAG. SCREW	13
6	141-149 HINGE FEMALE PART	2
8	141-148 HINGE MALE PART	2
9	111-126 PROTECTION COVER	1
10	141-154 SET SQUARE CONNECTION	1
11	141-161 ANGLE READER	1
12	111-122 ANGLE SET SQUARE	1
13	141-221 CLAMP COLUMN SHAFT	2
14	176-004 M12 BOLT	1
16	550-003 PNEUMATIC CLMAP	2
17	TUCANA-02 M-016 PANEL	1
21	165-008 EMERGENCY STOP BUTTON	1
22	165-027 CLAMP BUTTON	1
23	165-047 CUTTING START BUTTON	1
24	165-046 MOTOR START BUTTON	1
52	113-012 PNEUMATIC CLAMP HOUSING	2

No.	STOCK NO. / PART NAME	QTY
4	111-120 BASE	1
5	172-004 M10x35 HEX. SCREW	13
25	117-107 SHAFT CONNECT.COLUMN	2
26	144-010 MOVEM. HOUSING SHAFT	2
27	180-006 M6x8 SCREW	4
28	112-102 MOVEMENT HOUSING	1
31	112-009 SWITCH REAR CONNECT.	1
32	145-019 HYDRO-PULL CON.PLATE	1
33	550-056 ELECTRIC MOTOR 400V	1
37	550-001 HYDRO-PULL GROUP	1
38	111-124 HYDRO-PULL CONNECT.	1
39	242-029 50x200 PISTON	1
40	111-123 PISTON REAR CONNECT.	1
55	MILLING CUTTER GROUP	1

No	STOCK NO / PART NAME	OTY
13	111-120 BASE	1
14	141-149 HINGE FEMALE PART	2
15	141-148 HINGE MALE PART	2
18	111-107 SHAFT CONNECTION COLUMN	2
19	144-010 MOVEMENT BEARING SHAFT	2
22	550-058 ELECTRIC MOTOR 400V	1
25	141-154 SET SQUARE CONNECTION	1
26	141-153 SET SQUARE SCREW	1
27	111-122 ANGLE SET SQUARE	1
31	242-029 50x200 PAG AY PISTON	1
42	141-221 CLAMP COLUMN SHAFT	2
43	111-113 CLAMP HOUSING	2
44	550-003 PNEUMATIC CLAMPING	2
45	141-161 ANGLE READER	1
46	112-009 SWITCH REAR CONNECT.	1
47	111-136 PROTECTION COVER	1
48	111-127 PISTON REAR CONNECT.	1
49	141-162 RISING BUSHE	4
50	111-130 MOTOR TOP COVER	1
51	111-129 MOVEMENT HOUSING	1
53	142-032 PISTON COLUMN SHAFT	2
54	111-128 PİSTON CONNECT.	1
55	242-030 50x85 PAG Y PİSTON	1
59	141-166 PROFİLE FENCE	1
63	MILLING CUTTER GROUP	2

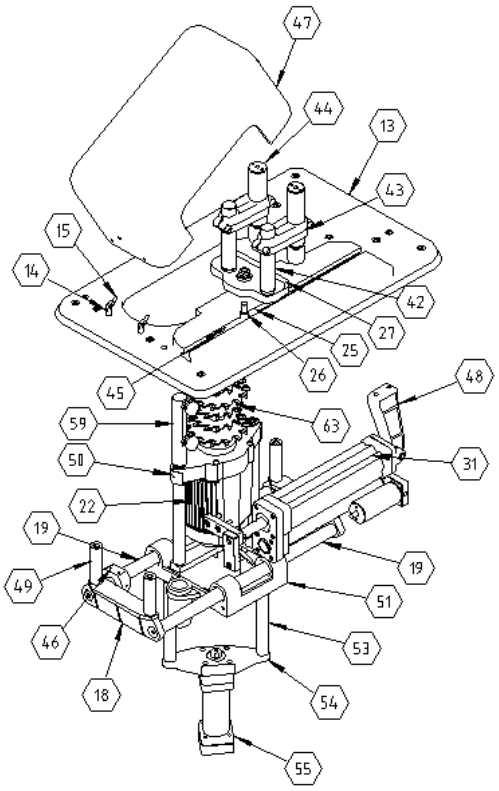


Figure - 5
TUCANA-02 AS

3. SAFETY

3.1. SAFETY INFORMATION

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

IMPORTANT

The **IMPORTANT** symbol above is one telling to apply special care and to be careful at carrying out the specified operation.

CAUTION!

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

DANGER WARNING

The above symbol **DANGER WARNING**, warns you against specific dangers, and you have definitely 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 cover national and international safety directives.

3.2.2. It is the task of the employer to warn his staff against accident risks, to train them on prevention of accidents, to provide for 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 the machine, learn all details of the machine's operation.

3.2.4. Machine should be operated only by 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. Otherwise, the manufacturer shall not be deemed responsible for any damages or injuries. And such circumstances would lead to the termination of the warranty.

3.3. GENERAL SAFETY INFORMATION

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

3.3.2. If the power cable should be damaged during operation, don't touch and unplug it. Never use damaged power cables.

3.3.3. Don't overload machines for drilling and cutting. Your machine will operate more safely with power supply in accordance with the stipulated values.

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 jewels. 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 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. Ensure 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, let it replace by a qualified electrician. Keep handles and grips free of any oil and grease.

3.3.13. Unplug first, before conducting and maintenance works.

3.3.14. Ensure that any keys or adjustment tools have been removed before 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 carried out by qualified technicians only. Otherwise, accidents may occur.

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

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

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

4. TRANSPORT OF THE MACHINE

IMPORTANT

4.1. The transport should be done by qualified personnel only.
4.2. The machine should be transported by lifting with proper equipment (not touching the ground during the transport).
4.3. The machine is delivered wrapped in nylon, unless otherwise agreed with the customer.
4.4. For the weight and dimensions of the machine see Technical Features on Page 5.
4.5. The machine should be transported after fixing all its moving parts.

5. INSTALLATION OF THE MACHINE

5.1. PREPARATION

5.1.1. The machine's dimension are shown in the Technical Features page (Page 5). The ground, where the machine will be placed, should be even, solid enough to bear the weight of the machine.
5.1.2. The machine should be located approx. 100 cm away from the back wall.

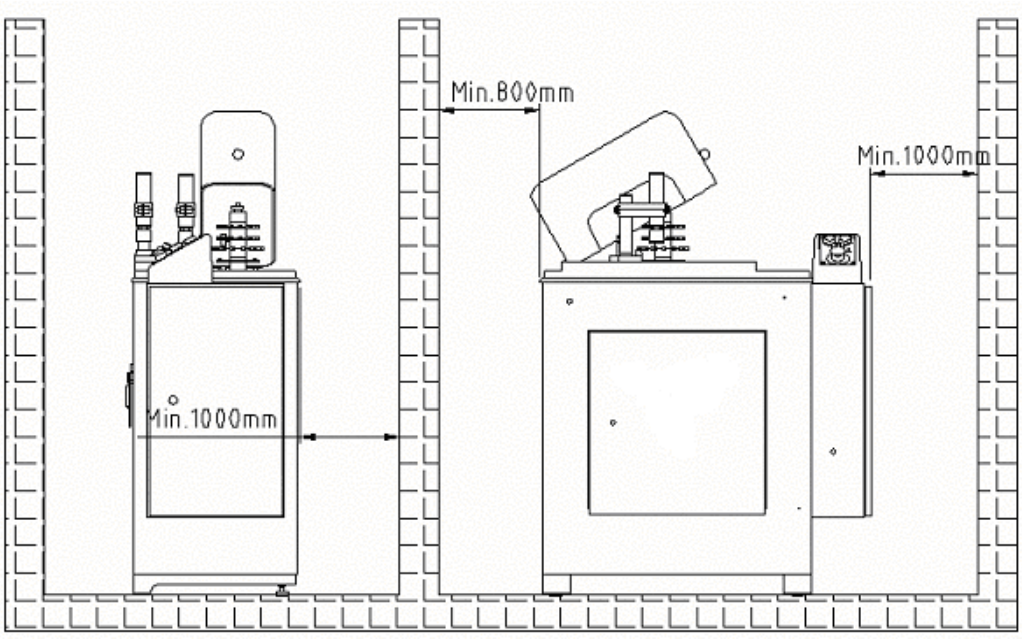


Figure-6

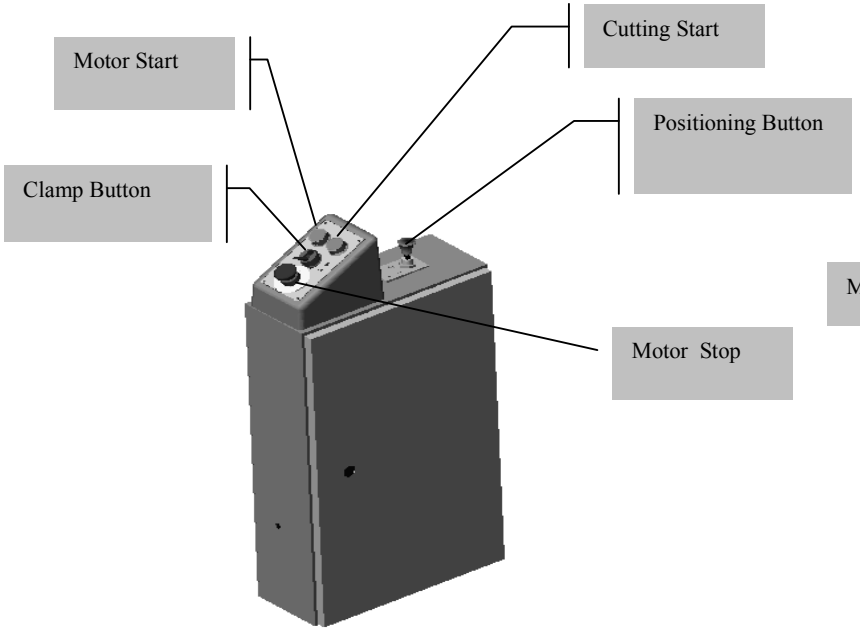


Figure - 7
TUCANA-02 AS Panel

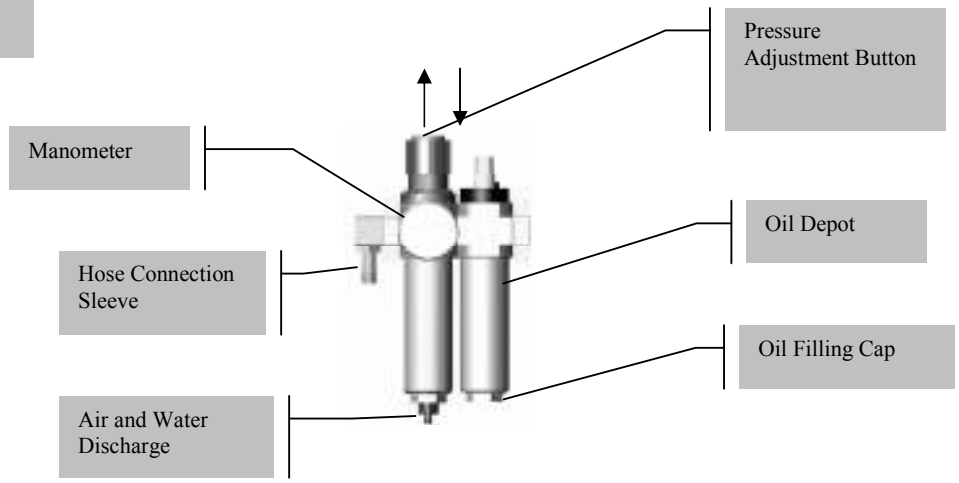


Figure - 8

5.2. ELECTRIC CONNECTION

5.2.1 The three-phase electric cable socket has to be in accordance with the socket on the machine.

5.2.2 The operating voltage at our models TUCANA-02 P and TUCANA-02 M is 230V 50 Hz (110V 60Hz) or 400V 50 Hz (220V/440V 60Hz) as per option. The operating voltage at our model TUCANA-02 AS and TUCANA-02 AL is 400V 50 Hz (220V/440V 60Hz).

5.2.3 Use grounded sockets.

CAUTION !

5.2.4. Check the supply voltage. The supply voltage must be in accordance with the data stipulated on the machine's type label.

5.2.5. *The electric connections have to be made by a qualified electrician, the rotation direction of the milling cutters has to be observed by starting the machine. If the milling cutters rotate in reverse direction, the socket connections have to be checked and re-connected properly.

5.2.6. *If the cutters rotate in reverse direction, it will cause danger for the operator and the equipment.

NOTE: * VALID FOR THREE-PHASE MOTORS ONLY.

6. MACHINE SAFETY INFORMATION

6.1.1. It is not allowed to operate the machine with the protective cover and other protective equipment removed.

6.1.2. Lifting, installation, electric, pneumatic maintenance of the machine should be carried out by qualified personnel only.

6.1.3. Routine maintenance and scheduled maintenance should be carried out by qualified personnel after unplugging the machine and disconnecting the air supply first.

6.1.4. Ensure that the machine has been cleaned, tested and maintain before starting to operate.

6.1.5. Check the safety devices, power cable and moving parts regularly. Don't operate the machine before having replaced defective safety devices or faulty parts.

6.1.6. Never replace the milling cutters before unplugging first.

6.1.7. Keep foreign materials away from the working area of the machine, keep away from the machine's moving parts.

IMPORTANT

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

7. OPERATION

7.1. BEGINNING TO WORK

7.1.1. Ensure that the machine table and all kind of parts are clean and dry. Degrease and dry the machine table. Especially ensure that the holding grips and handles are clean and dry. (TUCANA-02 M)

7.12. Clean all surfaces of the machine from chip and foreign particles. Use eye glasses for protection.

7.1.3. Check with the appropriate keys that the milling cutters are tightened well.

7.1.4. Check the milling cutters for wear, bending and breaking. Replace them if damaged.

7.1.5. Our end milling machines TUCANA-02 M, TUCANA-02 AS, TUCANA-02 AL are used for working of non-ferrous materials, aluminum and PVC mullion profiles to make <T > connections.

7.1.6. Connect the air hose with appropriate inner diameter to the air inlet sleeve (Figure 8).

7.1.7. Switch the system start switch to "1".

7.1.8. Place the mullion profile on the machine table and push it forward until it contacts the stopper (Figure 9).

NOTE: The milling length of the mullion profile can be adjusted precisely by loosening the stopper on the machine (Figure 9), and fixing it at the desired length.

7.1.9. Fix the aluminum or PVC mullion profile with the clamps on the machine. The clamp releasing/fixing button of TUCANA-02 M is shown in Figure 3, No.60, and that of models TUCANA-02 AS and TUCANA-02 AL in Figure 7.

NOTE: THE CLAMPS OPERATE MANUALLY AT TUCANA-02 P, AND PNEUMATICALLY AT TUCANA-02 M, TUCANA-02 AS AND TUCANA-02 AL.

NOTE : Ensure that the mullion profile has touched the stopper on the machine !

7.1.10. The clamps are movable upwards and downwards, which provides easiness to clamp different profile types.

7.1.11. For the models TUCANA-02 AS and TUCANA-02 AL: Press the Motor Start button to rotate the milling cutters (See Figure 7). Press the Cutting Start button (See Figure 7) to start the travel of the milling cutter group. The milling cutters carry out the milling operation and return to the original position automatically. Press the Motor Stop button (See Figure 7) to finish the operation.

7.1.12. At the model TUCANA-02 M start to rotate the milling cutters by pressing the Motor Start button. For the milling operation, push the lever on the machine (See Figure 3) with low pressure alongside the profile. After returning the lever to its original position, press the Motor Stop button to complete the operation.

7.1.13. At our full automatic machines (TUCANA-02 AS and TUCANA-02 AL) the travel speed of the milling cutter group is adjustable. Turning the travel speed adjustment valve shown in Figure 9 in clockwise direction decreases the travel speed, turning it counter clockwise will increase the travel speed of the milling cutter group.

7.1.14 The models TUCANA-02 AS and TUCANA-02 AL are capable of angular end milling (See Figure 9). It can be turned 45° to the right and/or to the left according to the scale located on the angular set square, and angular end milling can be carried out.

7.1.15. The model TUCANA-02 AL is capable of processing two different profile types. The respective milling cutter group can be chosen automatically via positioning button (See Figure 8) without replacing the group.

Don't start to process the work piece before ensuring that it is clamped properly.

7.1.16. For the operator's safety, all our models are designed so that in case of opening the protection cover (See Figure 5, No. 47) during the operation, the machine stops automatically.

7.1.17. Release the clamps and remove the end milled profile.

CAUTION !

Don't start to process the work piece before ensuring that it is clamped properly.

The milling operation has always to be started from the starting position of the machine. Never start this operation from the opposite side.

NOTE: The milling cutters have to be started freely, without touching the profile. They have to start to rotate first before making the milling operation.

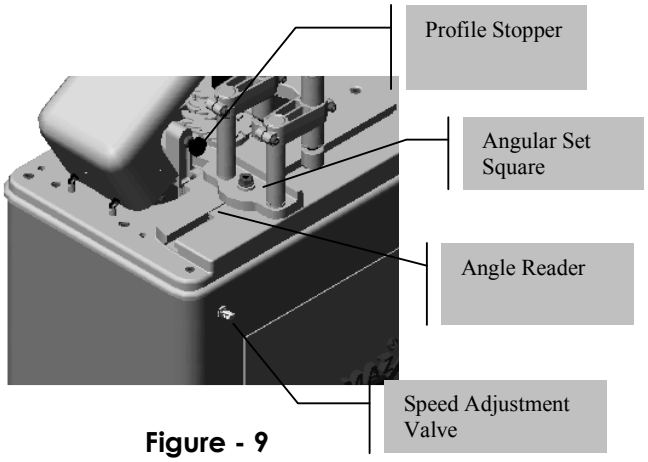


Figure - 9

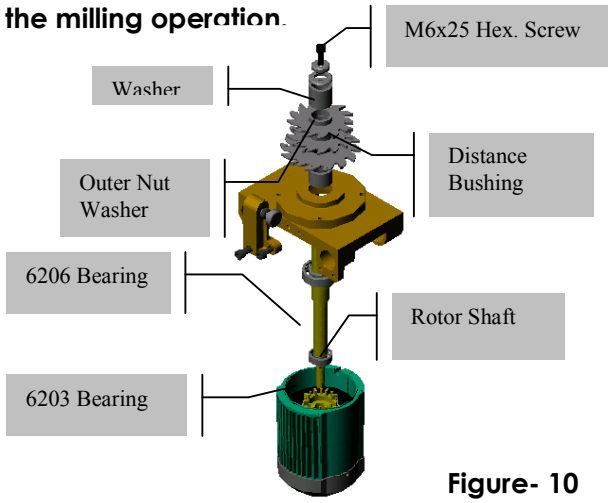


Figure- 10

7.2 CHANGING THE MILLING CUTTER GROUP

7.2.1. If it becomes necessary to replace the milling cutters for any reason, follow the following order for replacement:

7.2.2. Unplug the machine.

7.2.3. Remove the 10x25 hexagonal screw with a 8mm key, and carefully take out the milling cutter group (See Figure 10). After replacing the milling cutter group, tighten the screw.

WHEN REPLACING THE MILLING CUTTER GROUP, ENSURE THE CUTTERS ROTATE IN THE CORRECT DIRECTION.

NOTE: Ensure that the milling cutter group has been fixed properly.

CAUTION !

7.2.4. Check the milling cutter group before use. The milling cutter group has to be placed onto the shaft properly (no vibration). Don't use blunt, damaged cutters. Check the machine by running it at least 20 sec. in idle position.

7.3. ADJUSTING THE AIR PRESSURE OF PNEUMATIC CLAMPS (MODELS TUCANA-02 M / TUCANA-02 AS and TUCANA-02 AL)

IMPORTANT

NOTE: Adjust the air pressure between 7-8 Bar (90-120 psi). The manometer reads the air pressure in Bar. If the value read on the manometer is lower than the desired air pressure, adjust it to 7-8 Bar (9-120 psi) by turning the air adjustment button to the right or left accordingly. (Figure 8)

If the air pressure is lower than 4 Bar, the milling cutter group and the clamps will not work for safety reasons.

In order to prevent that the water inside the air system causes damage to the pneumatic system components, the conditioner unit collects the water in the collection receptacle. Discharge the collected water periodically (at the end of the working day) by pressing the button under the cylinder depot of the conditioner.

7.4. ADJUSTING THE AIR PRESSURE

7.4.1. Pull the adjustment button of the conditioner upwards (Figure 12)

a- Turning the adjustment button in clockwise direction increases the pressure

b- Turning the adjustment button in counter clockwise direction decreases the pressure

7.4.2. Once you read 6-8 Bar (90-120 psi) on the manometer, push the adjustment button of the conditioner down and lock it in that position. See Figure 12

7.4.3. The manufacturer recommends to use the following oils with the conditioner: TELLUS C 10 / BP ENERGOL HLP 10/ MOBIL DTE LIGHT / PETROL OFISI SPINDURA 10.

8. MAINTENANCE

8.1. PERIODIC CHECKS

8.1.1 STARTING TO WORK

8.1.1. Ensure that the machine table and all kind of parts are clean and dry. Degrease and dry the machine table. Especially ensure that the holding grips and handles are clean and dry.

8.1.2. Clean all surfaces of the machine from chip and foreign particles. Use eye glasses for protection.

8.1.3. Check the milling cutters for wear, bending and breaking. Replace them if damaged.

8.1.4. Check the air pressure. Adjust the air pressure between 7 – 8 Bar (See Figure 8).

8.1.5. Check the air filters and the oil level in the conditioner. Fill up oil, if necessary (See Figure 8).

Always disconnect the electric and power supply first before carrying out these works.

8.2. MAINTENANCE AT THE END OF THE WORKING DAY

8.2.1. D**isconnect the electric and power supply**. (Main Switch in "0" position)

8.2.2. Remove all burr and foreign materials from the machine. If it is necessary to clean the inside of the protection cover, lift and clean it wearing protective gloves because of the cutters. Use protective eye glasses.

8.2.3. If you have used water or water based liquids during drilling operations, dry the machine with a dry cloth after the operation is finished.

8.2.4. If the machine will not be used for a long time, lubricate the unpainted sections of the machine as protection against corrosion.

8.2.5. Avoid damage to the paint when cleaning the machine.

8.2.6. Apply protective machine oil onto both surfaces of the milling cutters as protection against corrosion.

9. INFORMATION ABOUT FAULTY USE

9.1.1. Check the plug for power supply.

9.1.2. Ensure that the rotation direction of the milling cutters is correct.

9.1.3. Don't operate the milling cutters before having pressed the Motor Start button. The milling cutters have to be moved always after starting at the original position. (At the model TUCANA-02 M).

9.1.4. Don't carry out any operation before having clamped the work piece manually or pneumatically.

9.1.5. The model TUCANA-02 M is capable for end milling operations of PVC and aluminum mullion profiles at 90°. TUCANA-02 AS and TUCANA-02 AL are capable for end milling operation at 90° and at other desired angles.

10. ELECTRIC / PNEUMATIC COMPONENTS

10.1. TUCANA-02 M ELECTRIC COMPONENTS

STOCK CODE	PART NAME	QTY
161-004	BAP MUM 33 LIMITING SWITCH	1
161-005	CA10-A200 PAKO SWITCH	1
162-003	CAPACITOR 25 MF 250 V	1
162-004	CONTACTOR LC1 K 0610 M7	1
164-003	1 mm CABLE (BLACK)	1
164-011	3*1.5 TTR CABLE	3
164-014	INTERM. CABLE 2*1 TTR	1
164-015	PRINTED PLUG 3*1	1
165-011	PERFORATED RAIL(KLEMSAN)	0.045
165-031	PG 13.5 SLEEVE	1
165-032	PG 7 SLEEVE	3
165-046	START BUTTON	1
165-047	STOP BUTTON	1
550-058	ELECTRIC MOTOR	1

10.2. TUCANA-02 M PNEUMATIC COMPONENTS

STOCK CODE	PART NAME	QTY
241-004	6mm AIR HOSE	2.4
241-005	AIR GUN HOSE	2.5
241-009	FRC-1/8-D-MINI/CONDITIONER	1
241-022	1/4 EXHAUST (SC-SINTER)	1
241-023	SV 1/4-3/2 D.O MANUAL VALVE	1
242-001	AIR GUN LBP-1/4	1
243-004	1/4 HOSE INLET	1
243-008	1/4 TRIPLE DISTRIBUTOR	1
243-009	LATERAL GEAR T S6440-6-1/4	1
243-010	1/4-1/8 NIPPEL (REDUCER)	1
243-011	1/4-6 SLEEVE (S6510-6-1/4)	1
243-014	1/4-8 SLEEVE (S6510-8-1/4)	1
243-023	1/8-6 ANKLE (S6520-6-1/8)	2
243-025	1/8-6 SLEEVE (S6510-6-1/8)	1

10.3. TUCANA-02 AS ELECTRIC COMPONENTS

STOCK CODE	PART NAME	QTY
161-003	MN1 PUM7 SWITCH	1
161-004	BAP MUM 33 LIMITING SWITCH	1
161-006	MAIN SWITCH KG1OB	1
162-004	CONTACTOR LC1 K 0610 M7	1
162-007	RELAIS RUN 21D21P7	1
162-008	RELAIS SOCKET RUZ 1D	1
162-009	THERMAL SWITCH LR2 K 0308	1
164-008	2*0.50 TTR CABLE	0.45
164-013	4*1.5 TTR CABLE H0 7RN-F	2.5
164-014	INTERM. CABLE 2*1 TTR	2.5
165-008	EMERGENCY STOP BUTTON	1
165-011	PERFORATED RAIL	0.2
165-012	WGD1 CONNECTOR STOPPER	1
165-016	CABLE CHANNEL (37.5*37.5)	0.65
165-020	PEK 2.5 mm BEIGE CONNECTOR	7
165-025	PEK 2.5 mm BLUE CONNECTOR	1
165-027	CLAMP BUTTON	1
165-028	TERMINAL PLATE NPP 2.5 10	4
165-040	WARNING LABEL IP 2S	3
165-046	START BUTTON	1
165-048	GROUNDING CONNECTOR WGT4	1
165-059	THREE-PHASE PLUG (5 UÇLU)	1
550-058	ELECTRIC MOTOR	1

10.4. TUCANA-02 AS PNEUMATIC COMPONENTS

STOCK CODE	PART NAME	QTY
241-001	FKV 1/4 HYDRAULIC REDUCER	1
241-004	6mm AIR HOSE	2.7
241-005	AIR GUN HOSE	2.5
241-008	H-22 SWITCH €IT KEY	1
241-009	FRC-1/8-D-MINI/CONDITIONER	1
241-011	SV-3-M5/PANEL ASSEMBLY VALVE	1
241-013	MFH 5-1/8 230V VALVE (WATER DISCHARGE)	1
241-014	1/8 EXHAUST REDUCER (SINTER)	1
241-016	1/8 EXHAUST (SC-SINTER)	1
241-017	PEV-W-KL-LED-GH/PRESSURE BREAKER	1
241-026	U-M5 SILENCER	1
242-001	AIR GUN LBP-1/4	1
242-003	PISTON COVER (PEMAKS)	1
242-010	PISTON EB 50	1
242-029	PISTON PAG AY 50*200	1
243-004	1/4 HOSE INLET	1
243-008	1/4 TRIPLE DISTRIBUTOR	1
243-010	1/4-1/8 NIPPEL REDUCER	1
243-012	1/4-6 ANKLE (S6520-6-1/4)	2
243-014	1/4-8 SLEEVE (S6510-8-1/4)	1
243-017	LATERAL THREAD T (S6440-6-1/8)	1
243-023	1/8-6 ANKLE (S6520-6-1/8)	3
243-025	1/8-6 SLEEVE (S6510-6-1/8)	2
243-029	SEXTANT T (6540-6)	1
243-038	SEXTANT Y (6560-6)	1
243-044	M5-6 SLEEVE (6511-6-M5)	3

10.5. TUCANA-02 AL ELECTRIC COMPONENTS

STOCK CODE	PART NAME	QTY
161-003	MN1 PUM7 SWITCH	1
161-004	BAP MUM 33 LIMITING SWITCH	1
161-006	MAIN SWITCH KG1OB	1
162-004	CONTACTOR LC1 K 0610 M7	1
162-007	RELAIS RUN 21D21P7	1
162-008	RELAIS SOCKET RUZ 1D	1
162-009	THERMAL SWITCH LR2 K 0308	1
164-008	2*0.50 TTR CABLE	0.45
164-013	4*1.5 TTR CABLE H0 7RN-F	2.5
164-014	INTERM. CABLE 2*1 TTR	2.5
165-008	EMERGENCY STOP BUTTON	1
165-011	PERFORATED RAIL	0.2
165-012	WGD1 CONTACTOR STOPPER	1
165-016	CABLE CHANNEL (37.5*37.5)	0.65
165-020	PEK 2.5 mm BEIGE CONNECTOR	7

165-025	PEK 2.5 mm BLUE CONNECTOR	1
165-027	CLAMP BUTTON	1
165-028	TERMINAL PLATE NPP 2.5 10	4
165-029	PG 11 SLEEVE	1
165-040	WARNING LABEL IP 2S	3
165-046	START BUTTON	1
165-048	GROUNDING CONNECTOR WGT4	1
165-059	THREE-PHASE PLUG (5 WIRES)	1

10.6. TUCANA-02 AL PNEUMATIC COMPONENTS

STOCK CODE	PART NAME	QTY
241-001	FKV 1/4 HYDRAULIC REDUCER	1
241-004	6mm AIR HOSE	2.7
241-005	AIR GUN HOSE	2.5
241-008	H-22 SWITCH IT BREAKER	1
241-009	FRC-1/8-D-MINI/CONDITIONER	1
241-011	SV-3-M5/PANEL ASSEMBLY VALVE	1
241-012	SV 1/4-5/2 D.O VALVE	1
241-013	MFH 5-1/8 230V VALVE (WATER DISCHARGE)	1
241-014	1/8 EXHAUST REDUCER(SINTER)	1
241-016	1/8 EXHAUST (SC-SINTER)	1
241-017	PEV-W-KL-LED-GH/PRESSURE BREAKER	1
241-021	1/4 EXHAUST REDUCER(SVE-SINTER)	2
241-026	U-M5 SILENCER	1
242-001	AIR GUN LBP-1/4	1
242-003	PISTON COVER (PEMAKS)	1
242-010	PISTON EB 50	1
242-029	PISTON PAG AY 50*200	1
242-030	PISTON PAG Y 50*85	1
243-004	1/4 HOSE INLET	1
243-008	1/4 TRIPLE DISTRIBUTOR	1
243-010	1/4-1/8 NIPPEL (REDUCER)	1
243-012	1/4-6 ANKLE (S6520-6-1/4)	9
243-014	1/4-8 SLEEVE (S6510-8-1/4)	1
243-023	1/8-6 ANKLE (S6520-6-1/8)	3
243-025	1/8-6 SLEEVE (S6510-6-1/8)	2
243-029	SEXTANT T (6540-6)	1
243-033	1/8-6 BUSHING (6610-6-1/8)	3