

TUBE AND PROFILE END GRINDER

Model: PRS-4A



Operation Manual

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I General Security Instruction

1. Operation manual: The Tube and Profile End Grinder can only be used for grinding ends of tube sections and deburring ground tube section ends. For your own security read the operation manual before starting the machine. The operation manual should be kept in a secure place. You should know about how to handle the machine, its limits and its specific dangers.

2. Keep your working place clean: Disorder on your working place will result in danger. Take that your working place is free from chips and dirt. Use only the right tools to clean your machine from chips. Keep your working place free from obstacles.

3. Machinery must be anchored to the floor.

4. Check if there are any damages at the machine: Before you start the machine check the function of the security equipment. Check the function of all movable parts. All parts have to be mounted correctly. Damaged security parts should be repaired or exchanged by after sales service.

5. Take care about outer conditions: Don't use the machine in dangerous areas. Take care, that electrical parts don't get humid or wet. Work only with a good illumination. Don't remove mechanical or electrical security parts. Check if all security parts are mounted and adequately functioning.

6. Wear only suitable clothes: Don't wear large clothes, wristwatches or jewels. For your own security always wear working shoes while working. If you have long hair always wear a hairnet. While working with the machine you have to wear security glasses. If you work under dusty condition you have to wear a dust protection breathing mask.

7. Keep incompetent persons away from the working area. Take care, that there are no persons in your working area who could be exposed to danger. Children and visitors should be kept in a secure distance to the working area. Keep children away from the machine. Don't let other people touch the machine or the cable of the machine. Make sure that only authorized persons can reach the workshop.

8. Take care about the power supply cable. Before connecting the power supply cable to the wall socket ensure that the machine is switched off. Don't use the cable to pull the plug out of the socket. Take care, that there is no tensile force on the cable. Beware the power supply cable from heat, oil and sharp edges. Control the plug and cable regular and in case of damage let it repair by the after sales service. Please control also the extension cable. Never use the machine without Protection Earth.

9. Unplug the machine: If you don't use and while servicing the machine pull off the power supply plug. This is necessary because the machine should not run unintentionally and to protect you from electric shock. Avoid accidental starts by being sure the start switch is "OFF" before plugging in the machine.

10. Be careful with your tools: Keep your tools sharp and clean to work good and secure. Follow the instructions for tool exchange and servicing.

11. Don't forget tools inside the machine: Before starting making sure that there are no tools inside the machine which could be hurled out of the machine. Make sure, that there are no loosen parts which could be dangerous.

12. Take care about your hands: Make sure, that tools and work pieces are securely fasten. Use only the right tools to clamp and to fasten tools and work pieces. This is more secure than to fasten the work piece with the hand and you can have two hands to handle the machine.

13. Pay attention to your balance: Take care about the position of your feet. Never climb on the machine, because dangerous injury may result from falling down or contacting moving parts.

14. Accessories and accessory parts: Only use accessories and accessory parts which are specified by the operation manual or the supplier. The use of other accessories and accessory parts may result in dangerous injury and damage to the machine. Only use accessories and accessory parts for the right tasks.

15. Electrical parts: The electrical parts conform to the determination of electrical security. Mending may only be done by electric specialist to prevent accidents for the user.

16. Leaving the machine: Never leave the machine while it is running.

17. Alcohol, medicaments drugs: Never use the machine under influence of alcohol, medicaments or drugs.

18. Danger of fire : To avoid the risk of fire, ensure that there are no flammable materials within an extended area of sparks, when grinding metal. Don't use highly inflammable fluids. Before you work with cleaning solvent you should read the instruction of the fluid, to prevent accidents.

II. Technical Specification

PRS76C is a new model developed from PRS-4A. with an additional work area, and more capacity. Except can be used for grinding ends of tube sections and deburring ground tube section ends, but also can be used for polishing surface of plate, square tube. Combination of the tube grinding, surface grinding and wheel grinding three functions.

A survey of the roller available: Roller diameters from $\phi 20$ up to and incl. $\phi 60$ mm increasing by 2 mm steps. Roller diameters $\phi 76$ mm; 1/4", 1/2"; 3/4"; 1", 1 1/4; 1 1/2; 2" and 2 1/2" . Other diameters between $\phi 20$ and $\phi 76$ mm are available on request from your dealer.

Type of grinding belt:

Diameter	STEEL		RVS		ALUMINIUM	
	TYPE	GRAIN	TYPE	TYPE	TYPE	GRAIN
$\phi 20$ - $\phi 40$	R822	36	R981	150	R822	36
$\phi 40$ - $\phi 76$	R845	36	R981	36	R822	36

Measurements of the grinding belt: length x width =2000 x100 (79" x4")

Survey of the switches and zero voltage coils for certain voltages:

Tension 230Volt switches: PKZM1-10 +coil U-PKZM1-230

Tension 400Volt switches: PKZM1-6 +coil U-PKZM1-400

III . Mechanical Operating

A. INSTALL

1. Remove the detachable parts (scrap bin, with the spare parts, box with grinding belts and the ordered grinding rollers) from the packing.
2. Dismount the two fixing bolts, by which the pipe notcher is fixed to the underframe of the packing. Remove also the four wooden screws by which the column and underframe are fixed to the crate.
3. Take the column and underframe out of the packing and mount these together. (See ill. No.2) Attention!! The grinding belts, scrap bin, sphere handle, fastening bolt, and lever are included in the column.
4. Take the pipe notcher from its packing by means of the rope connected to it. (See ill. No.1)
5. Open the side flap and position the pipe notcher by a rope (see ill.No.2) on the column. Fasten the machine to the column by the two M12 bolts. Place the scrap bin under the pipe notcher.

6. Mount the handle A and the lever B to the front and under the clamp (ill. No3)

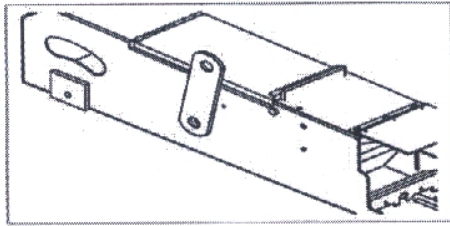


Illustration 1

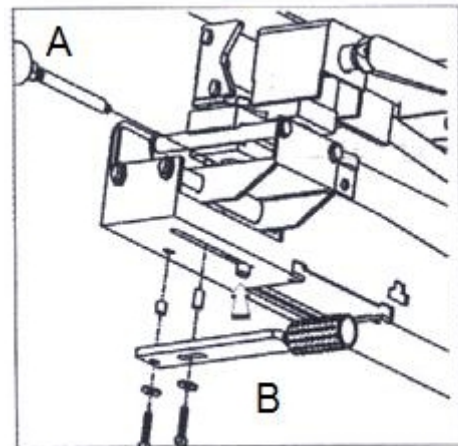


Illustration 3

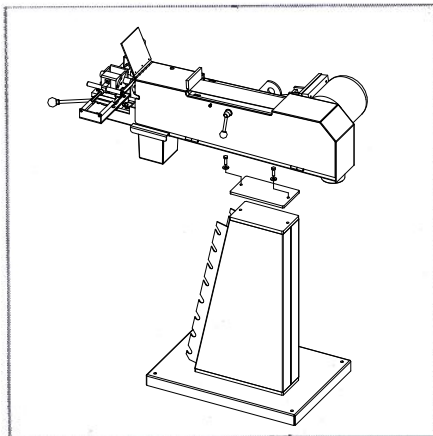


Illustration 2

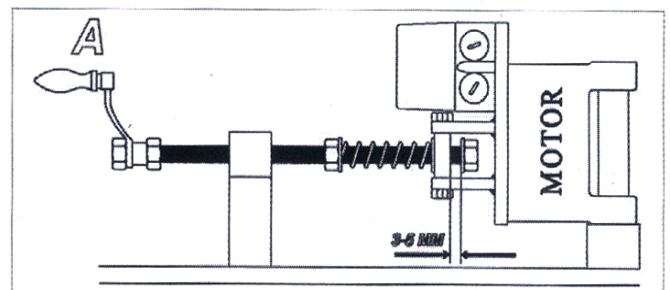


Illustration 4

7. Check the voltage, which is mentioned on the machine. When the voltage is not correct this has to be altered. See for instructions chapter "Connection of 230 or 400Volt"
8. A plug has to be mounted the the cable. Please check, after you have connected the plug, if the driving roller of Tube and Profile End Grinder rotates in the rotating direction indicated on the driving roller. If this is not the case, you have to change the threads in question in the plug.
9. Lead the cable to the power supply socket in a way that nobody can stumble over it.
10. To increase the stability of the machine an adjusting screw has been mounted underneath the underframe. To achieve an even better stability we advise you to anchor the machine to the floor.

B. (DIS) MOUNTING OF THE GRINDING BELT

- => Before removing the grinding belt, it must completely come to a standstill
- => Rotate the compound tables as far as possible from the machine
- => Open the side flap and the top flap.
- => Rotate handcrank A (see ill.no.4) to the left, to release the tension of the grinding belt.
- => Now position the grinding belt, please see to it, that the arrow on the inside of the grinding belt and the arrow on the power roller are heading the same direction. Start to replace the grinding belt at the side of the grinding roller. For the execution and type of a new grinding belt we refer to the technical information.
- => Then the grinding belt has to be brought to the correct tension. This can be achieved y rotating handcrank A to the right, so far, that the space between the cylinder and the plate is between the 3 and 5 mm.(see ill.no.4).

After this the adjustment has to be checked again, according to the procedure "Adjusting the grinding belt and grinding roller".

C. (DIS) MOUNTING OF THE GRINDING ROLLER

Before changing the grinding roller the grinding belt has to be removed first, this is shown in the chapter "Changing of the grinding belt".

- => Remove the grinding roller by pulling it to you. The grinding roller held by two springy balls (see ill.5)
- => Clean the bearing holders well, this prevents the problem that the grinding roller does not clamp.
- => Never adjust the glands, by which the bearings are held, these are adjusted correctly.
- => Position the new grinding roller. Remark: Additionally we can supply roller diameters. See the technical information for the different dimensions.

ATTENTION:

The bearings which are assembled on the grinding roller, must e handle very carefully, because they are very sensitive for damages.

We advise you, when you use a grinding roller smaller than $\phi 30\text{mm.}$, to take a grinding belt which first has been used with a bigger grinding roller diameter. This is because otherwise the grinding belt will crack, because it is very tough.

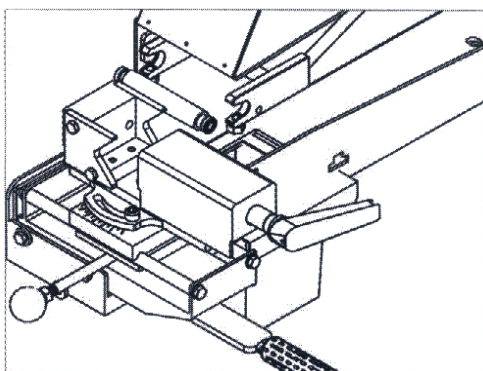


Illustration 5

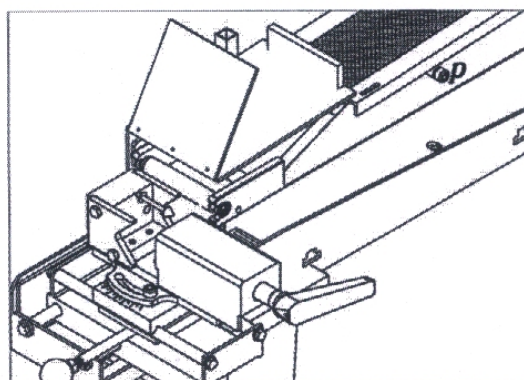


Illustration 6

D. ADJUSTING OF THE GRINDING BELT/-ROLLER

When putting into use and changing a grinding roller you always have to check the following adjustments:

- a. The sideways movement of the grinding belt should be prevented.
- b. The centerline height of the grinding roller has to be equal to the tube section, which has to be grounded.

When the adjustments are not correct, they have to be adjusted as follows to here by:

- a. The sideways movement of the grinding belt. : For the first rough adjustment the grinding belt has to be turned manually. For a more specific adjustment the motor can be turned on (see to it that sideflap E is closed). (see ill.6)
- b. The height adjustment of the grinding roller: The height of the grinding roller has been adjusted well by the manufacturer. When the centerline of the tube section is not situated on the centerline of the grinding roller, the height of the grinding roller has to be adjusted by unscrew the hexagonal bolts and adjust the height. After this, the bolts have to be fastened again. (see ill.7)

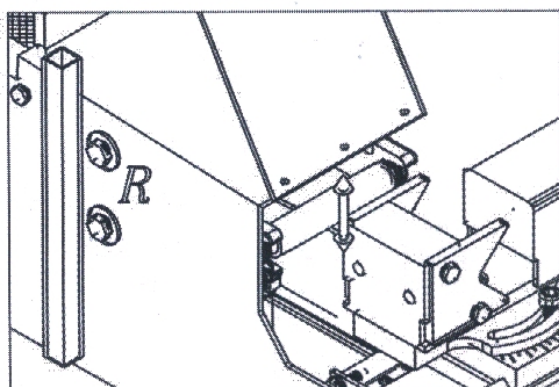


Illustration 7

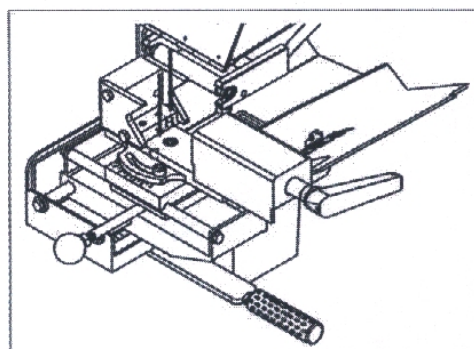


Illustration 8

E. OPERATING INSTRUCTION MANUAL

- a. Operation of the compound table : You can move the compound table forwards and backwards by means of the lever. By moving the sphere handle a quarter turn to the left first you can move the clamp to the left or to the right.
- b. To tighten the product :The clamp is suitable for the roller diameters from Ø18mm till Ø76mm. For the use of tubes you have to see to it, that the centerline of the tube is at the same height as the centerline of the pressure roller. It is possible to use a filling cheek. (see ill.8)
- c. Adjusting the angle

By means of the graduation on the compound table you can turn the stretch block simply and fast between 90°en 30°.During the adjusting of the angle the hollow-head bolts B and C have to be unscrewed, after which the right angle can be adjusted. The hollow-head bolts have to be fastened firmly.

- d. Stop

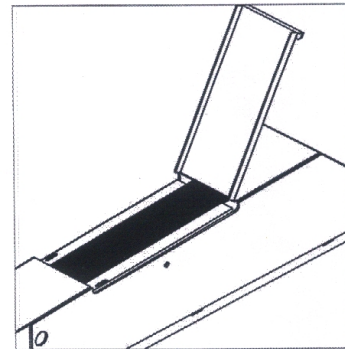
Underneath the compound table of the clamp is a block, by which the standard stop can be adjusted (see ill.3). This stop is for moving the product towards the grinding roller. On the flat side of the stretch block there are two M8 threaded holes to which a length stop can be fixed.

- e. Grinding

After the profile has been stretched the compound table is to be positioned in such so that the profile to be ground is straight in front of the pressure roller. Then the profile can be grounded by moving the lever B towards the machine. Attention: see to it that the grinding width is not exceeding that of the grinding belt.

- f. Deburring

The machined pipe can be deburred at once.This is possible by opening the flap on top of the machine (see ill.9), so that the grinding belt is free, on which the pipes can be deburred.



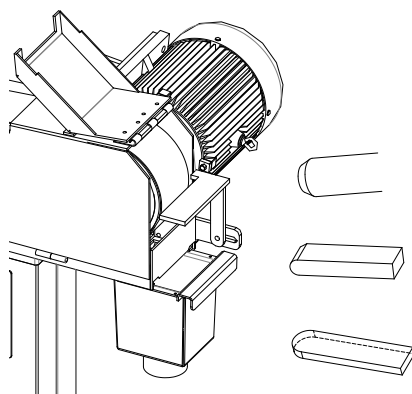
Illustrations 9

- g. Added working area

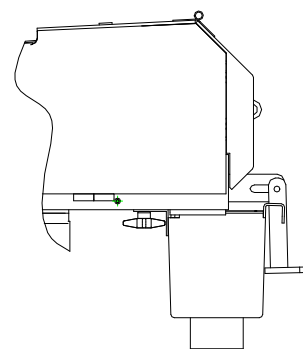
Open end cover, can be grinding ends of tube and deburred of round tube at once. also can be used for polishing surface of plate, square tube. (see ill.10),

- h. Safety

To keep safety, when not working, please turn worktable to a suitable position as draw. (see ill.11), and put down end cover.



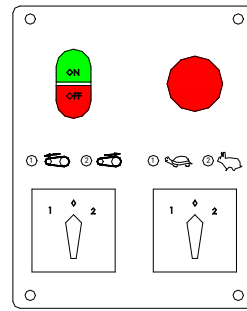
Illustrations 10



Illustrations 11

i. Switch

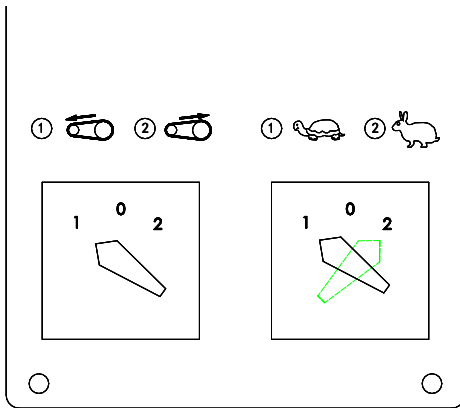
Usually the two switches all on position “o” when leave factory.
(see ill.12)



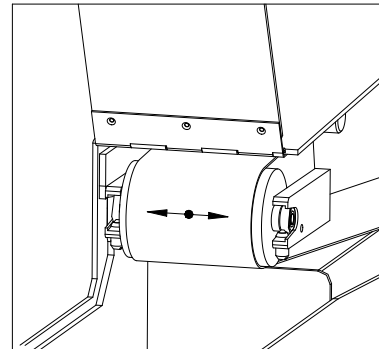
Illustrations 12

j. Sanding

The select switch in the bottom left of control panel is for adjusting the belt run direction. When turn the switch on “1” position, the belt is running left. If turn the switch on “2” position, the belt is running right. The select switch in the bottom right of control panel is for adjusting the belt running speed. “1” position is in lower speed, “2” position is in high speed. Usually, the running state of belt is adjusted suitable when leave factory—that’s means belt at middle of rear wheel.
(see ill.13 & ill.14)



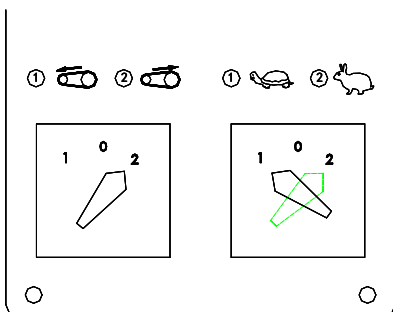
Illustrations 13



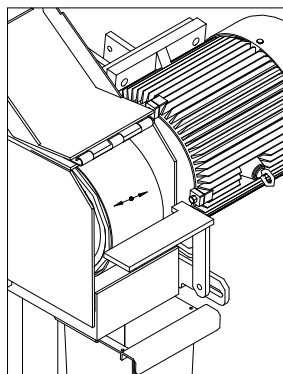
Illustrations 14

k. Sanding

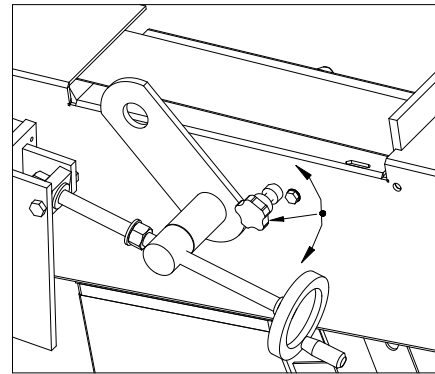
If the belt is not in the middle of wheels, this can be adjusted through star handle (see ill17)



Illustrations 15

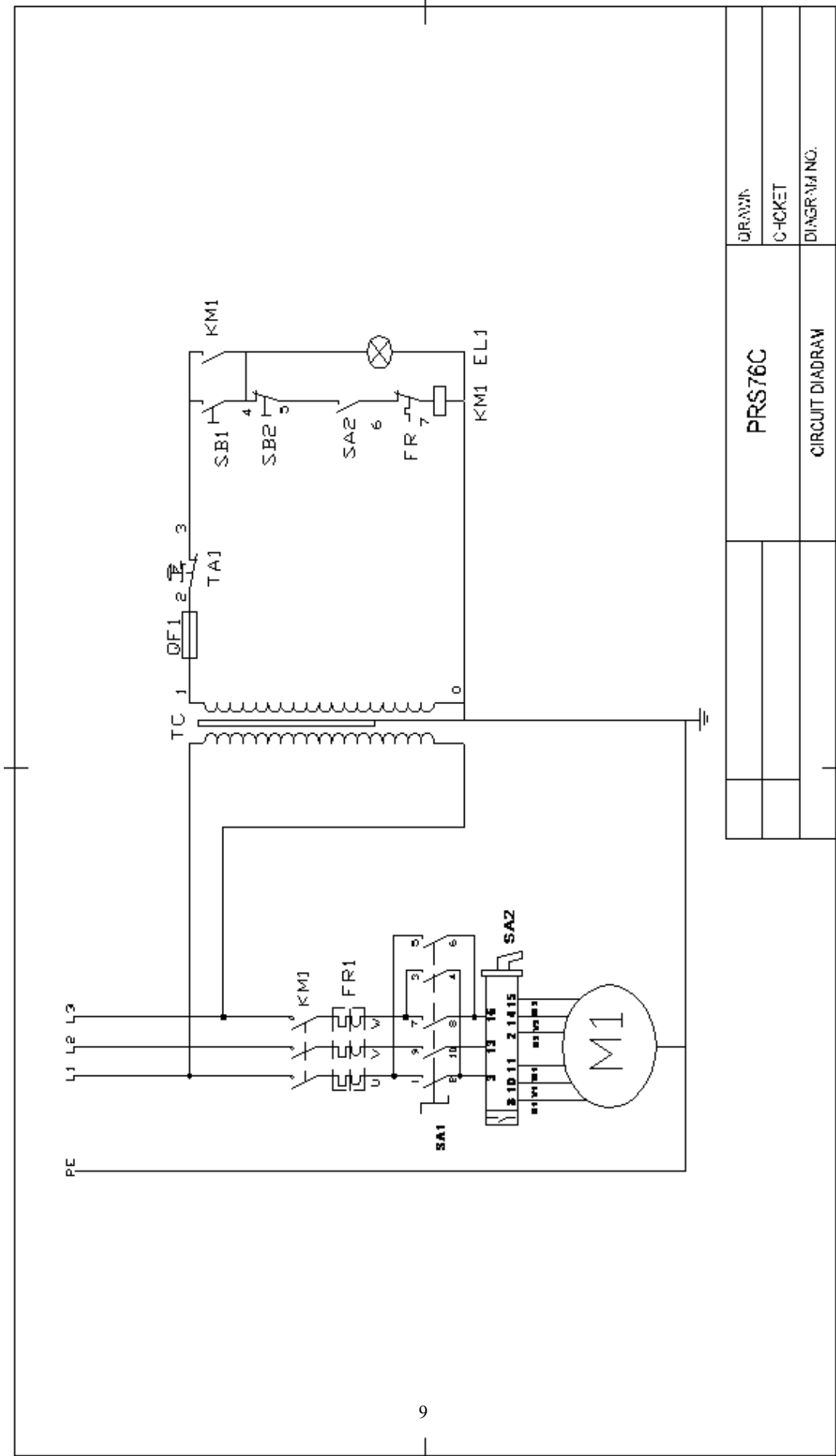


Illustrations 16



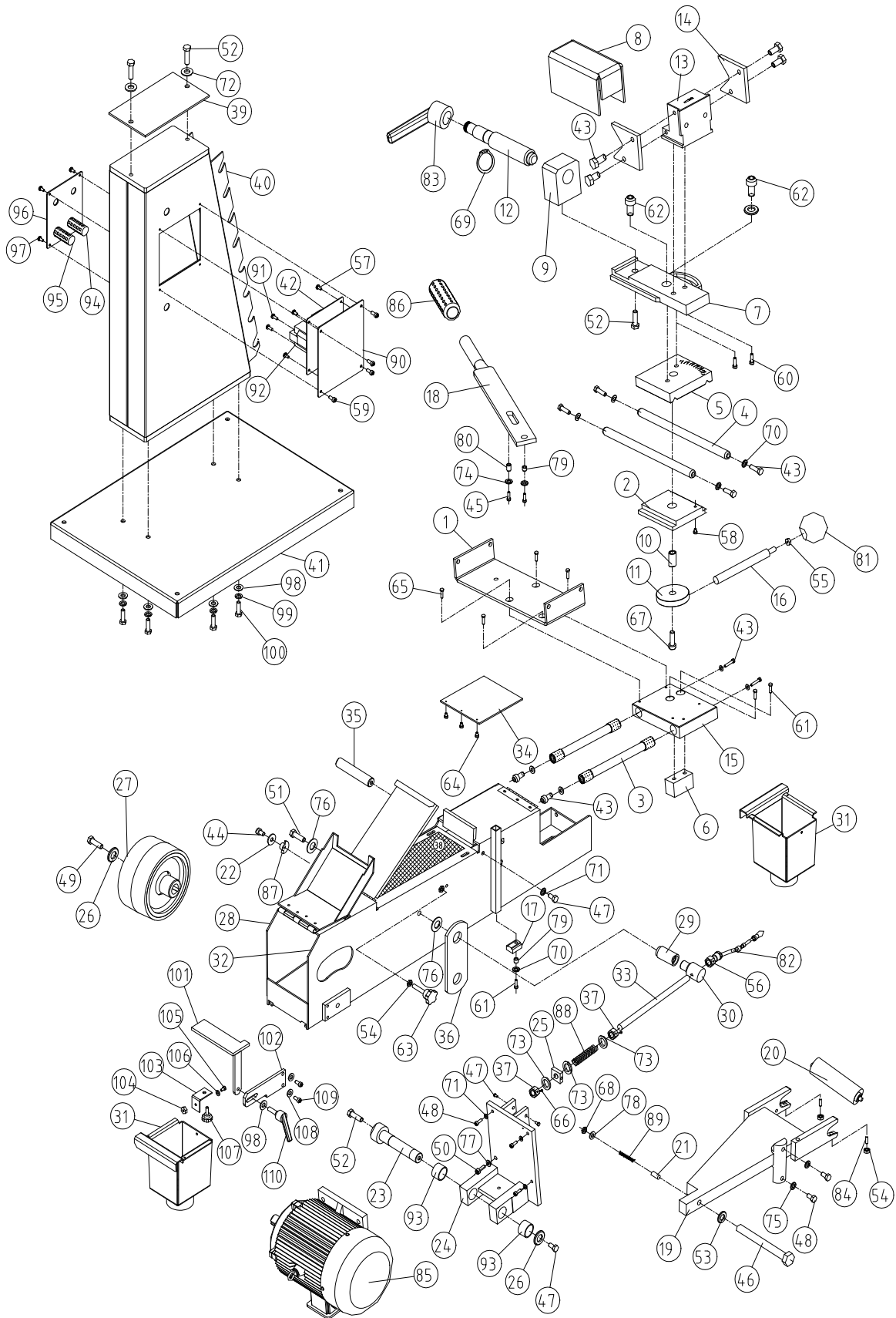
Illustrations 17

IV Electric Drawing



DRAWN	PRRS76C
CHECKED	
DRAWING NO.	CIRCUIT DIAGRAM

V Exploded Drawing & Parts List



Part No.	Description	QTY	Part No.	Description	QTY
1	Guiding seat	1	42	Fix plate of control box	1
2	Square sliding plate	1	43	Bolt M8X20	12
3	Short guiding shaft	2	44	Screw M10X15	1
4	Long guiding shaft	2	45	Bolt M8X30	2
5	Upper slide block	1	46	Bolt M8X100	1
6	Small slide block	1	47	Bolt M10X20	4
7	Swivel base	1	48	Bolt M10X25	5
8	Frame of vice	1	49	Bolt M10X25	1
9	Nut block	1	50	Bolt M10X45	1
10	Locking nut	1	51	Bolt M12X40	1
11	Round locking block	1	52	Bolt M12X30	4
12	Lead screw	1	53	Washer 8	1
13	Fix block of jaw	1	54	Nut M10	4
14	Clamping plate of jaw	2	55	Nut M12	1
15	Bottom slide block	1	56	Nut M16	1
16	Locking bolt	1	57	Bolt M4X10	4
17	Saddle	1	58	Bolt M6X10	1
18	Moving handle of vice	1	59	Bolt M6X16	4
19	Bracket of back wheel	1	60	Bolt M8X20	2
20	Working roller	1	61	Bolt M8X25	2
21	Support sleeve	1	62	Bolt M10X20	3
22	Washer	1	63	Handle M10X50	1
23	Fixed shaft	1	64	Bolt M4X10	3
24	Bracket of motor	1	65	Bolt M6X16	4
25	Tension block	1	66	Locking bolt M6X8	2
26	Washer	1	67	Locking bolt M6X12	1
27	Driving wheel	1	68	Nut M8	2
28	Front guard plate	1	69	Washer on shaft 22	1
29	Bottom fixed pin	1	70	Washer 8	8
30	Upper fixed pin	1	71	Washer 10	5
31	Chip tray	2	72	Washer 12	2
32	Frame to machine	1	73	Washer 16	3
33	Long lead screw	1	74	Washer 8	2
34	Guard glass	1	75	Washer 10	3
35	Pulling shaft	1	76	Big washer 12	2
36	Plate	1	77	Locking washer 10	1
37	Nut M16	2	78	Washer 8	1
38	Graphite paper 100X400X2	1	79	Small sleeve	2
39	Insulation plate	1	80	Small sleeve	1
40	Stand column	1	81	Handle Knob M12	1
41	Bottom plate	1	82	Turning handle M8X71	1

Part No.	Description	QTY	Part No.	Description	QTY
83	Adjustable locking handle M12	1	97	Bolt M6X16	4
84	Ball goggle bolt M10X17	2	98	Flat washer 10	5
85	Motor	1	99	Spring washer 10	4
86	Sleeve of handle 22	1	100	Bolt M10X25	4
87	Locking block	1	101	Work saddle	1
88	Spring	1	102	Plate	1
89	Spring	1	103	Fixed foot	1
90	Back cover plate	1	104	Nut M6	1
91	Bolt M6X16	4	105	Bolt M6X16	4
92	Transformer	1	106	Flat washer 6	1
93	Bush	2	107	Crossing handle M8X16	1
94	Switch of positive & negative	1	108	Flat washer 8	2
95	Switch of low and high speed	1	109	Bolt M8X25	2
96	Panel	1	110	Adjustable locking handle M10X25	1

Note: This manual is only for your reference. Owing to the continuous improvement of the machine, changes may be made at any time without obligation on notice. And please note the local voltage while operating this electric machine.