

5740

2/8/10

HARE & FORBES MACHINERY HOUSE

SECTION AND PIPE BENDER S740

OPERATION MANUAL AND PARTS LIST

Model Type HK-50

MANUFACTURED DATE: 2010 06
SERIAL NO. : 081140

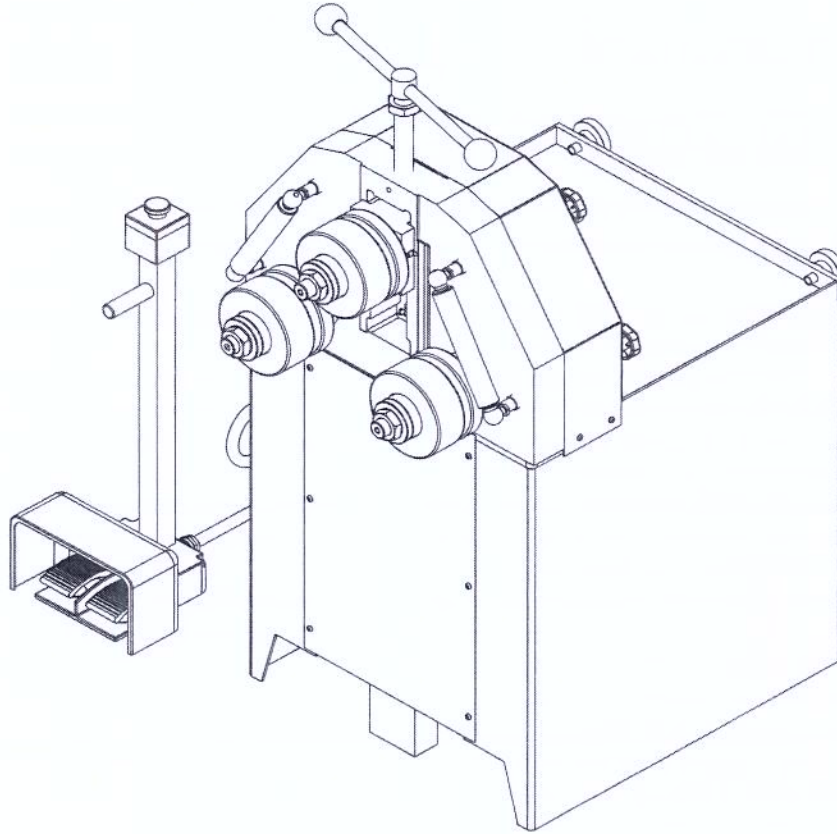


SPECIFICATION

Model	HK-50
Motor	3HP (2.25 KW)
Shaft Speed	18rpm (50HZ) / 22rpm(60HZ)
Shaft Diameters	Ø 50 mm
Top Roll Diameters	Ø 155 mm
Lower Rolls Diameters	Ø 155 mm
Operating Position	Vertical or Horizontal
Foot Pedal Stand	Yes
Length	830 mm
Width	730 mm
Height	1350 mm
Shipping Weight	388 kgs




OPERATION MAUNAL & PARTS LIST

Section & Pipe Bender



WARNING!!!

The operator must thoroughly read and understand this manual before operating the machine. Any servicing, care should be taken to follow all the safety rules and warning instructions.

CAUTION & WARNING	
	Read and understand operator's manual before using this machine. Failure to follow operating instructions could result in death or serious injury.
	Flying objects and loud noise hazards. Wear approved ear and eye protection.
	Respiratory hazard. Wear approved respirator in this area.

READ THIS MANUAL CAREFULLY BEFORE ASSEMBLY, TESTING & OPERATING

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- **WARNING!**

Please read this manual carefully before assembly, testing and operating.

- **WARNING!**

Do not operate this unit before training and read the instruction manual.

IMPORTANT SAFETY RULES:

Metalworking can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

Safety equipment such as guards, push sticks, hold-downs, goggles, dust masks and hearing protection can reduce your potential for injury. But even the best guard won't make up for poor judgment, carelessness or inattention. Always use common sense and exercise caution in the workshop. If a procedure feels dangerous, don't try it. Figure out an alternative procedure that feels safer. REMEMBER: Your personal safety is your responsibility.

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.
2. **KEEP GUARDS IN PLACE** and in working order
3. **ALWAYS WEAR EYE PROTECTION**
4. **GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter plug must be attached to a known ground. Never remove the third prong.
5. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "ON".
6. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
7. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
8. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
9. **MAKE WORKSHOP CHILDPROOF** – with padlocks, master switches, or by removing starter keys.
10. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
11. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
12. **WEAR PROPER APPAREL.** No loose clothing, gloves, neck-ties, rings, bracelets, or other jewelry to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
13. **ALWAYS USE SAFETY GLASSES.** Wear safety glasses. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses. Also use face or dust mask if cutting operation is dusty.
14. **DON'T OVERREACH.** Keep proper footing and balance at all times.
15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, oil, cutters, etc.
17. **USE RECOMMENDED ACCESSORIES.** The use of accessories and attachments not recommended by us may cause hazards or risk of injury to persons.
18. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.
19. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
20. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure 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.
21. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
22. **NEVER LEAVE TOOL RUNNING UNATTENDED.** TURN POWER OFF. Don't leave tool until it comes to a complete stop.
23. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol or any medication.
24. **MAKES SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or reconnected.
25. **DON'T** operate the machine unless properly trained.

SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

The appliance must be grounded, if it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having equipment-ground conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING – Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet; have a proper outlet installed by a qualified electrician.

For grounded, cord-connected appliances:

This appliance is for use on a circuit having a normal rating more than 120 volt and is factory-equipped with a specific electric cord and plug to permit connection to a proper electric circuit. Make sure that the appliance is connected to an outlet having the same configuration as the plug. No adaptor should be used with this appliance. If the appliance must be reconnected for use on a different type of electric circuit, qualified service personnel should make the reconnection.

For a permanently connected appliance:

This appliance must be connected to a grounded metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance.

Technical Specifications:

Motor----- 2 HP

Shaft Diameters: ----- ϕ 50 mm

Roll Diameters: ----- ϕ 155 mm

Shaft Speed----- 22 RPM---60Hz
18 RPM---50Hz

Switch----- Control Box

Overall Dimensions ----- 830 x 730 x 1350mm

N.W. ----- 370 KGS

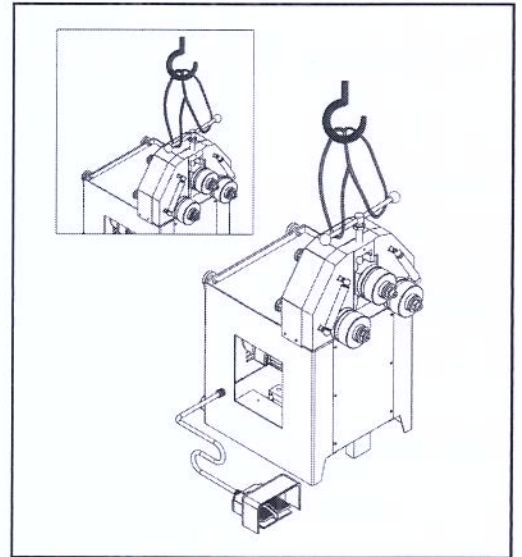
G.W. ----- 410 KGS

CUFT----- 44.5'

Setting & Installation

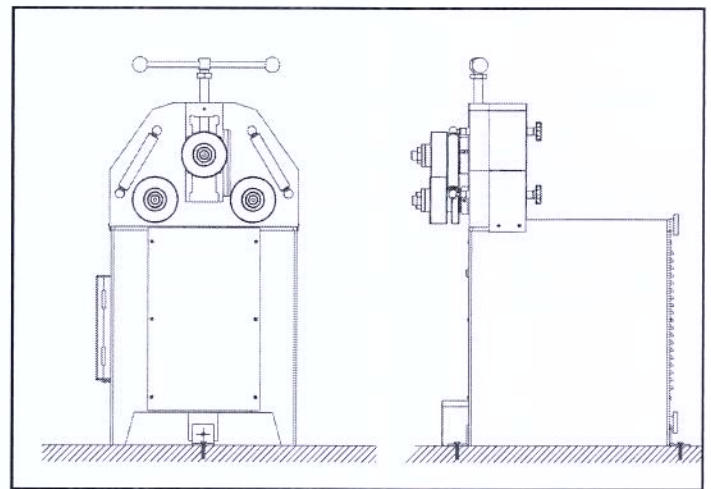
Lift up the machine from the wood base with rope tight on the top rod and move slowly and carefully.

CAUTION: Always pay attention when moving the machine.

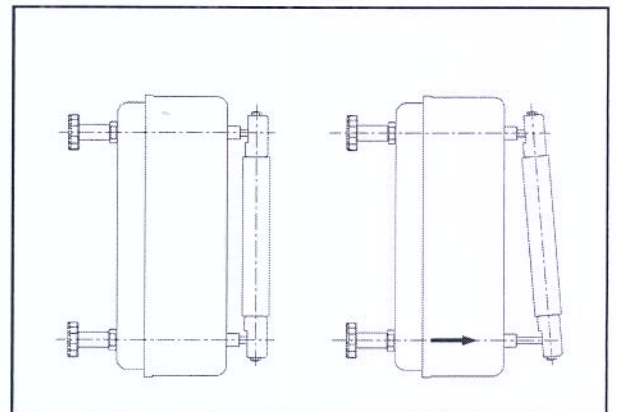


Mount the machine on the ground with screws or bolts. Make sure the machine is tightly mounted on the ground before operating.

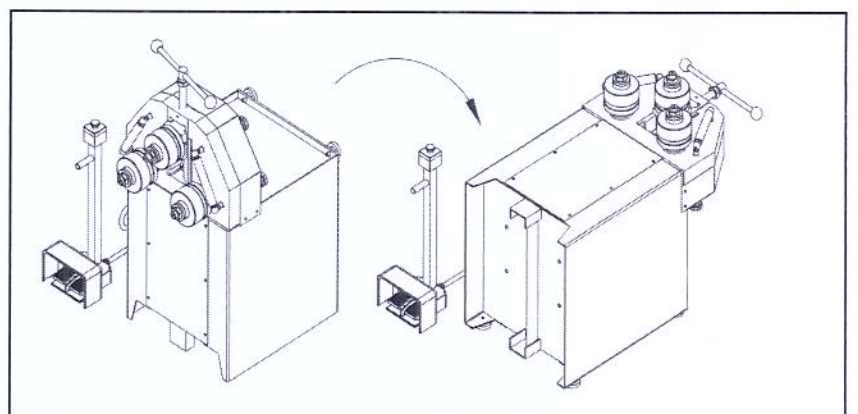
CAUTION: Failure to mount the machine on the ground might cause injure, please be aware of this.

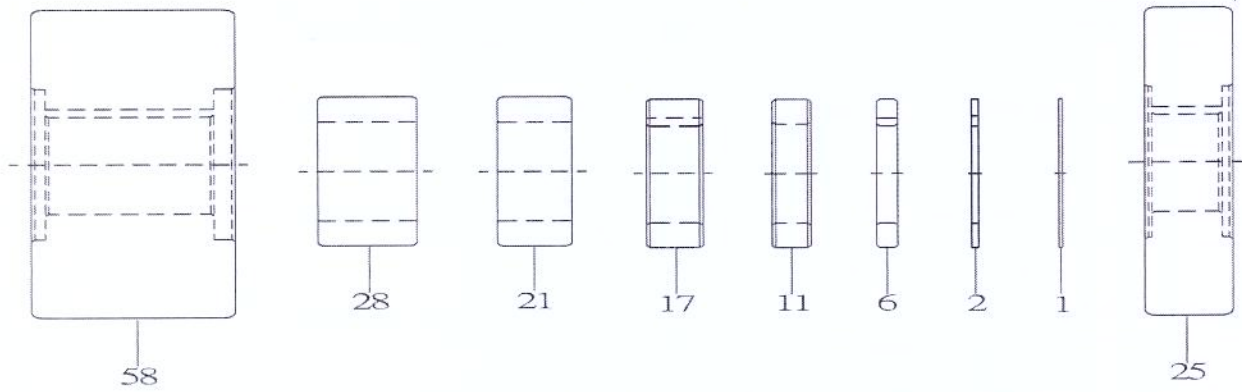


There are 2 support rods at side, please adjust the title angle to make the tube or pipe smoothly against on the rods when operating. These 2 rods help the work piece not twisting of asymmetric when bending.



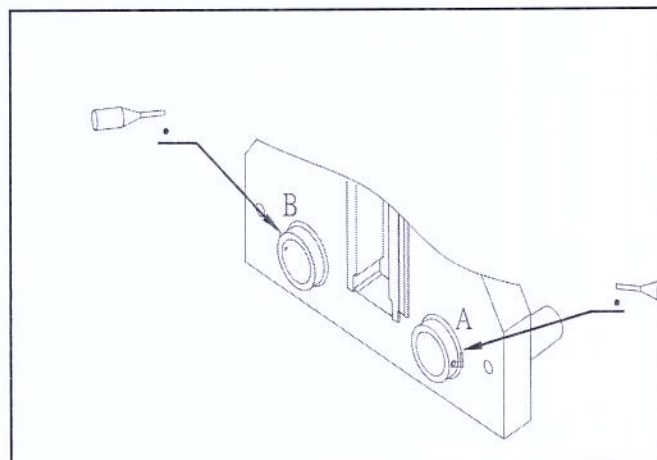
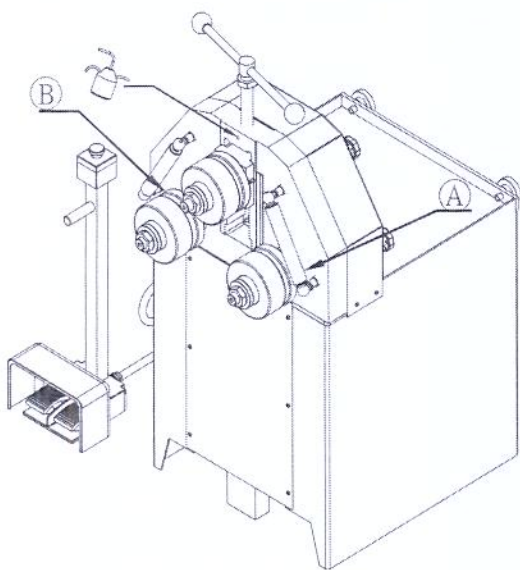
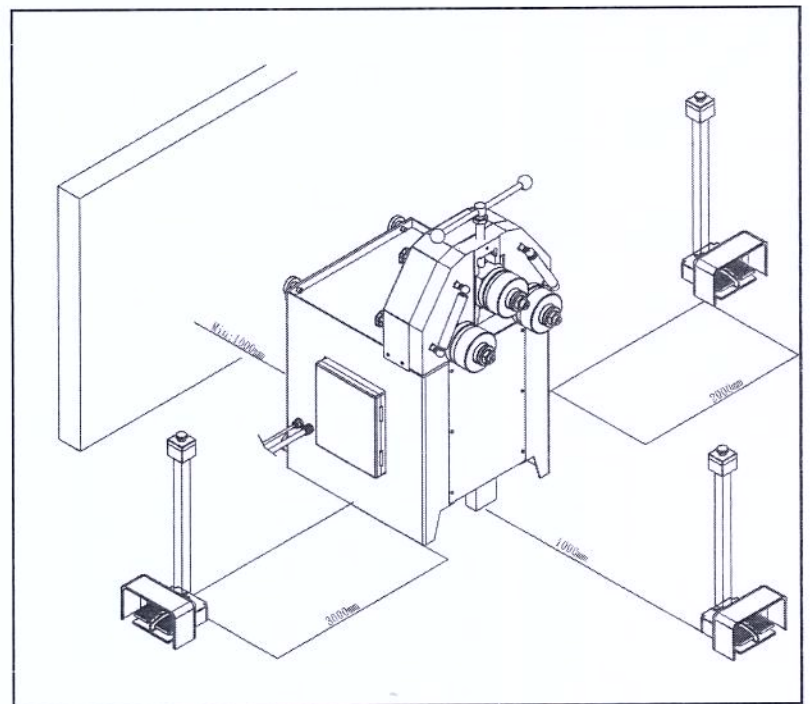
This machine can be operated in horizontal or vertical position. (Make sure the machine is tightly mounted on the ground.)




















There are 6 sizes as standard rolls accessories. There is also 3 packing (1, 2, and 6 mm) for adjust size using

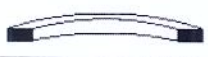

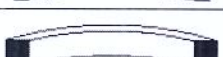


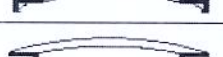
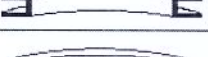

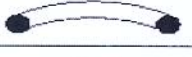
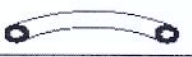
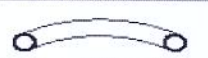
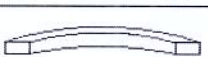


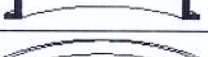
Setting up the machine at the center with front and back safety distance 1000mm, left and right safety distance 2000~3000mm.



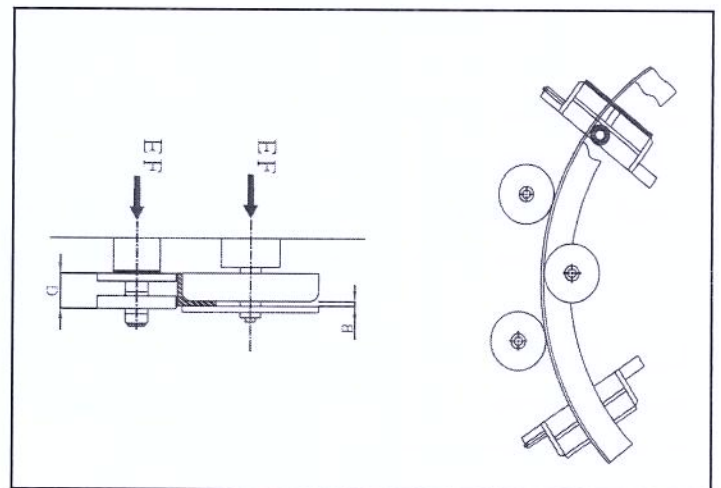
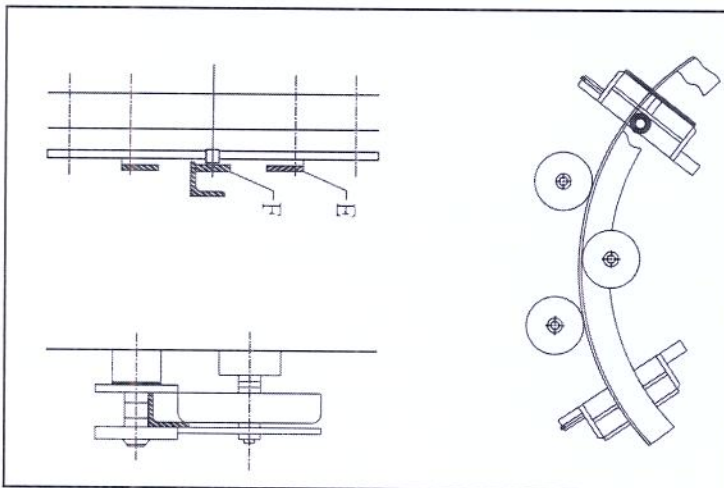
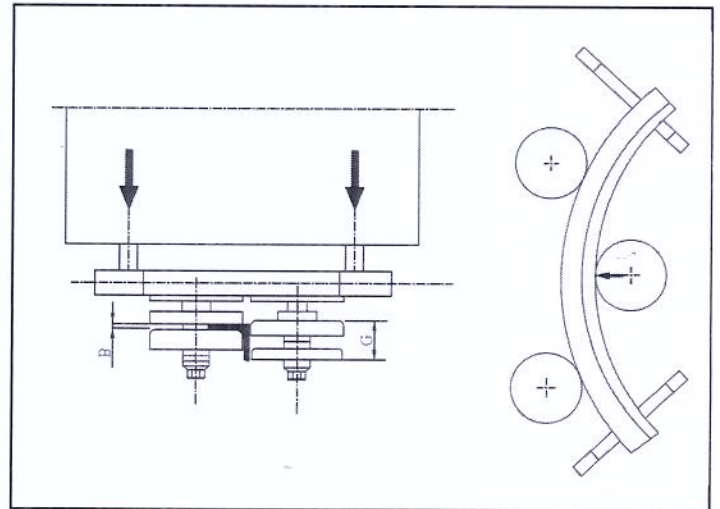
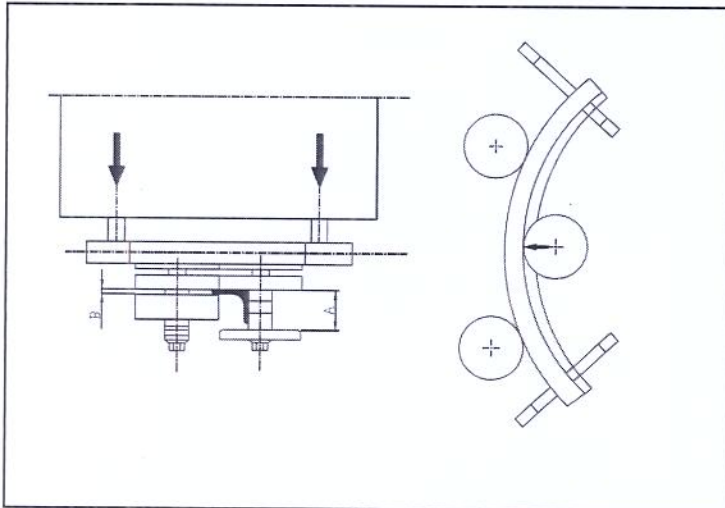
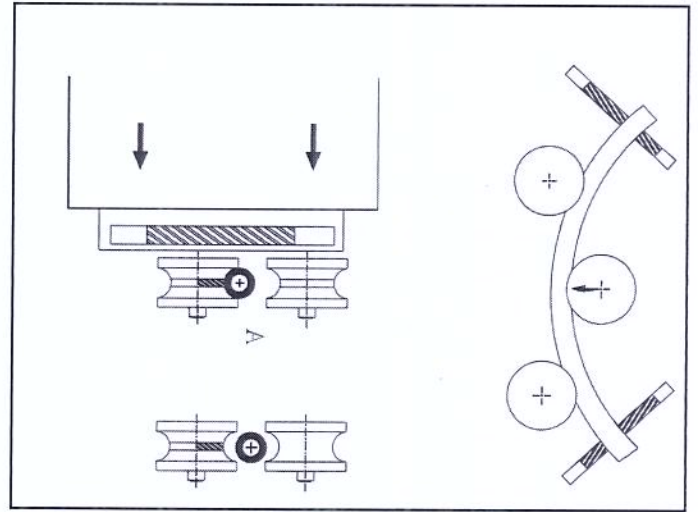
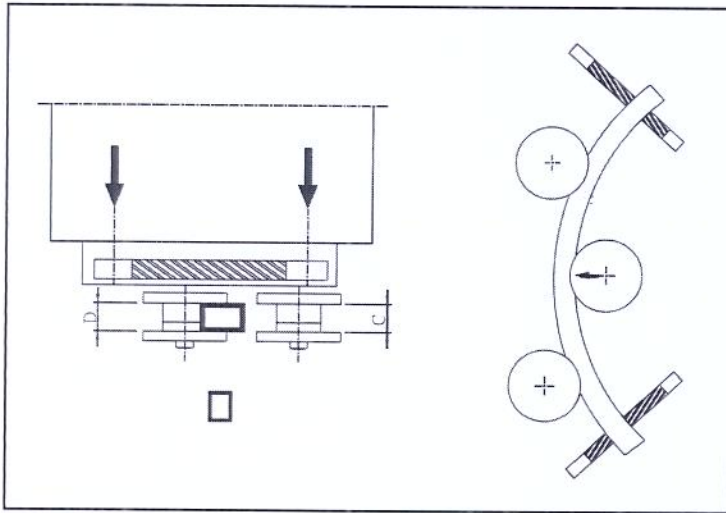
MAINTANCE: Every 500 hours, inject the lubrication oil from the inject holes.

Rolls Profile:

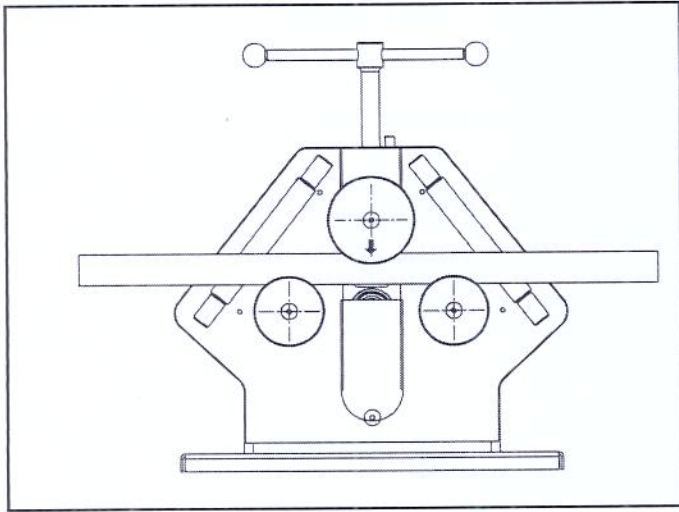
1. Flat-(Hard)-Standard 	2. Flat-(Easy) –Standard 
3. Square Tube-(Solid) –Standard 	4. T-Leg-(Out) –Standard 
5. T-Leg-(In) –Standard 	6. C-Leg-(Out) –Standard 
7. C-Leg-(In) –Standard 	8. Round Tube-(Solid)-Optional 
9. Round Pipe-Optional 	10. Round Tube-Optional 
11. Rectangle Tube-(Hard) –Optional 	12. Rectangle Tube-(Easy) –Optional 
13. Angle Leg-(Out) –Optional 	14. Angle-Leg-(In) –Optional 
15. Angle-Leg-(Up) –Optional 	

NR	PROFILE	MAX.SIZE	MIN \varnothing	NOTES
1		60X10 40X10	800 500	Standard Rolls
2		100X15 60X10	750 600	Standard Rolls
3		35X35 20X20	1200 400	Standard Rolls
4		60X7 50X6	900 650	Standard Rolls
5		60X7 50X6	900 650	Standard Rolls
6		UNP 80 UNP 60	1000 550	Standard Rolls
7		UNP 80 UNP 30	1200 800	Standard Rolls
8		\varnothing 35 \varnothing 30	800 500	Optional Rolls
9		\varnothing 70X2 \varnothing 30X2	1200 500	Optional Rolls
10		2"X2.9 1"X2.3	1200 350	Optional Rolls
11		70X30X2 50X40X3	1500 1500	Optional Rolls
12		50X3 40X3	2000 800	Optional Rolls
13		60X60X6 50X50X5	1200 850	Optional Rolls
14		50X50X6 30X30X3	1200 700	Optional Rolls
15		60X7 50X6	900 650	Optional Rolls

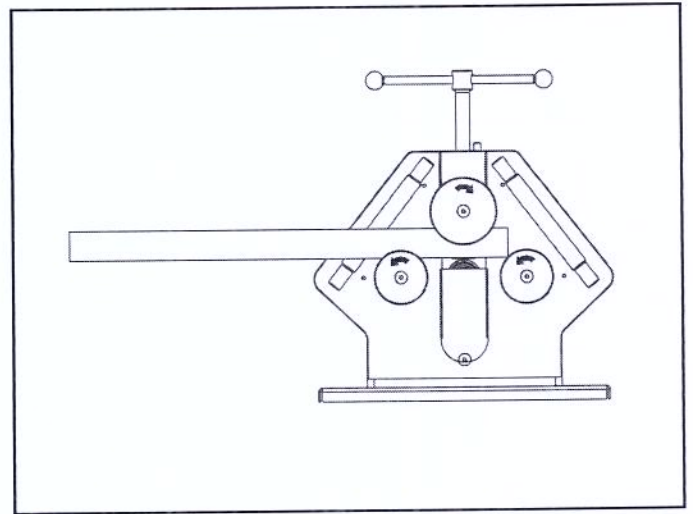
Rolls Profile Operations Example:



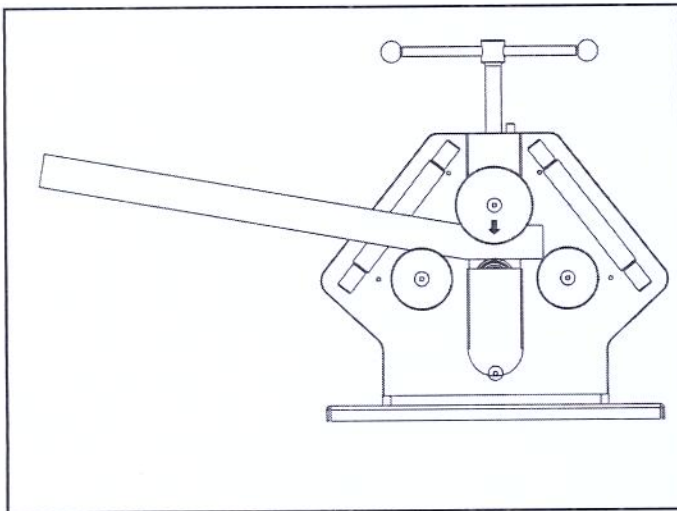
Operating Steps:



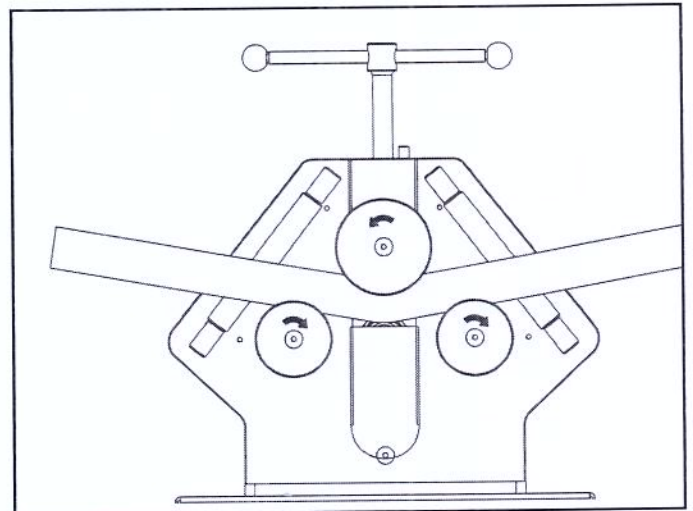
(FIG.1)



(FIG.2)



(FIG.3)

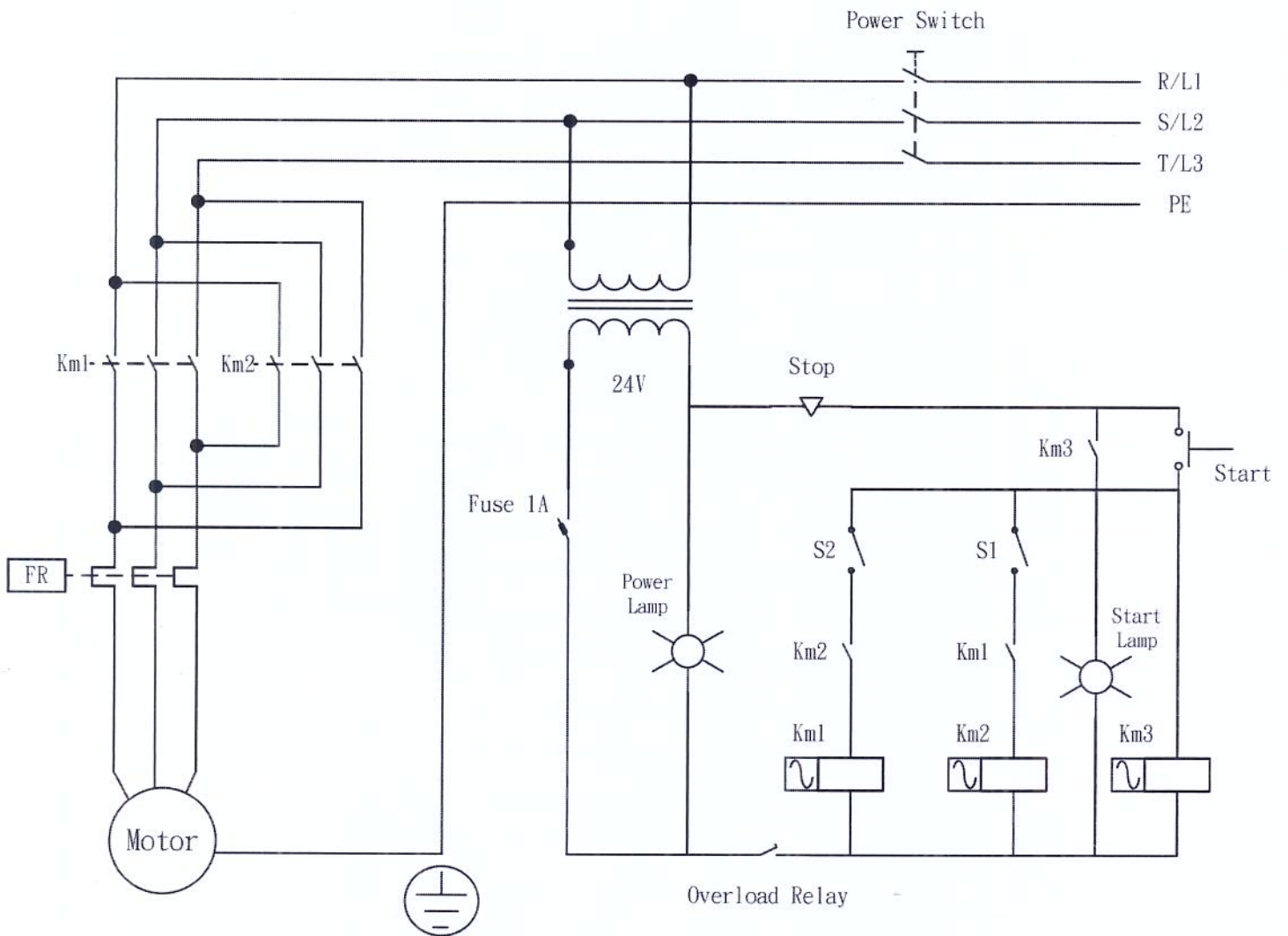


(FIG.4)

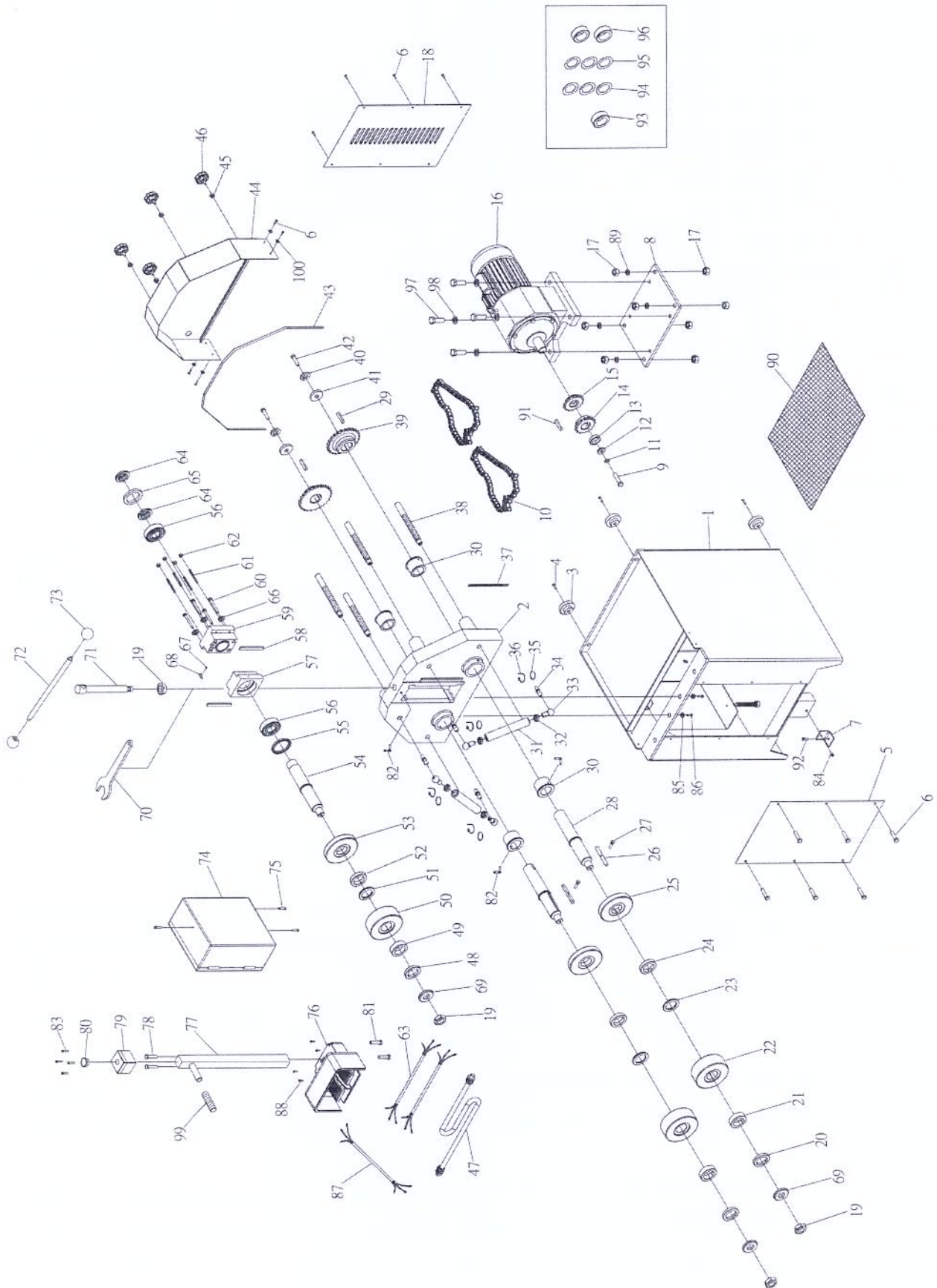
- Step1. Insert the work piece and lower the middle roller into operation. (See FIG.1)
- Step2. By operate the foot-pedal control, allow the work piece go through the rolls back and forward. (See FIG.2)
- Step3. Lower the middle roll again. (See FIG.3)
- Step4. Let the work piece to bend again. (See FIG.4)
- Step5. Through certain combinations on the inner and outer rolls, the groove –width should be 1mm wider (with a square pipe needs about 5mm) than the bending material.**

CAUTION: The operation is repeated until the bending-dimension has been achieved. Care must be taken while operating. Do not over stressed use machine. The 2 side support rods are helping work piece not twisting of asymmetric.

WIRING DIAGRAM:



EXPLODED DIAGRAM:



Part List

NO.	Description	Specification	Q'TY
1	Base		1
2	Head Set		1
3	Foot Pad		4
4	Cap Screw	M12*25	4
5	Front Cover Board		1
6	Bottom Head Screw	M6*8	16
7	Fixing Plate		2
8	Motor Plate		1
9	Hex Head Bolt	M12*25	1
10	Chain	3/4"*72	2
11	Spring Washer	M12	1
12	Motor Packing	Φ14.5*Φ50.8*4.5	1
13	Motor Packing	Φ38*Φ50*13	1
14	Double Key Gear-A	3/4"*14T	1
15	Double Key Gear-B	3/4"*14T	1
16	Reducing Motor	2HP	1
17	Nut	5/8"	8
18	Rear Cover Board		1
19	Nut	M30*3.5	3
20	Pleated Roller-K	Φ50*Φ75*11	2
21	Pleated Roller-V	Φ50*Φ75*21	2
22	Pleated Roller-B	Φ50*Φ155*58	2
23	Pleated Roller-L	Φ50*Φ75*6	2
24	Pleated Roller-E	Φ50*Φ75*17	2
25	Pleated Roller-C	Φ50*Φ155*25	2
26	Round Key	14*9*110	2
27	Cap Screw	M5*10	2
28	Spindle-B		2
29	Key	14*9*30	2
30	Copper Ring		4
31	Transmission Rod	Φ35*205	2
32	Ball Bearing	Φ18*Φ20*25	4
33	Ball		4
34	Ball Pin		4
35	Spring Inner Ring		4

36	Spring Ring		4
37	Meter		1
38	Indicator		4
39	Transmission Chain-A	3/4" T*28T	2
40	Spring Washer	M14	2
41	Block		2
42	Hex Head Bolt	M14*35	2
43	Rubber Cover		1
44	Cover		1
45	Nut	M10	4
46	Knob-A	M10*25	4
47	Wire Tube	1/2"*1.65M	1
48	Roller-I	Φ50*Φ75*11	1
49	Roller-G	Φ50*Φ75*21	1
50	Roller-A	Φ50*Φ155*58	1
51	Roller-J	Φ50*Φ75*6	1
52	Roller-Q	Φ50*Φ75*17	1
53	Roller-D	Φ50*Φ155*25	1
54	Spindle-A		1
55	Plastic Washer	Φ70*Φ90*6.5	1
56	Ball Bearing	#30210	2
57	Block-B		1
58	Adjust Copper Plate		2
59	Block-A		1
60	Cap Screw	M12*90	4
61	Set Screw	M8*45	4
62	Lock Nut	M8	4
63	Power Cord		2
64	Ball Bearing Nut	M45(AN09)	2
65	Ball Bear Packing	M45(AW09)	1
66	Spring Washer	M12	4
67	Bottom Head Screw	M5*6	1
68	Indicator		1
69	Washer	Φ31*Φ69*10	3
70	Open Wrench		1

71	Spring Washer		1
72	Bottom Head Screw		1
73	Indicator	M12	2
74	Spring Washer		1
75	Bottom Head Screw	M6*10	3
76	Indicator		1
77	Spring Washer		1
78	Bottom Head Screw	M4*8	2
79	Indicator		1
80	Spring Washer		1
81	Flange Bolt	1/4"*1/2"	2
82	Oil Inject Hole	PT1/8"	3
83	Phillips Head Screw	M4*35	4
84	Cap Screw	M8*15	2
85	Spring Washer	M16	4
86	Cap Screw	M16*45	4
87	Wire		1
88	Round Head Screw	M5*15	4
89	Spring Washer	5/8"	4
90	Carpet Plastic	610*480*1.2	1
91	Round Head Key	10*8*45	1
92	Tapping Hex Head Bolt	5/16"*1"	2
93	Flange Bolt	Φ50*Φ75*28	1
94	Oil Inject Hole	Φ50*Φ75*2	3
95	Phillips Head Screw	Φ50*Φ75*1	3
96	Cap Screw	Φ50*Φ75*28	2
97	Hex Head Bolt	M14*45	4
98	Spring Washer	M14	4
99	Plastic Handle		1
100	Washer	Φ6*Φ13*1	4