

METAL CUTTING BAND SAW



MODEL:BS-460G



Operation manual

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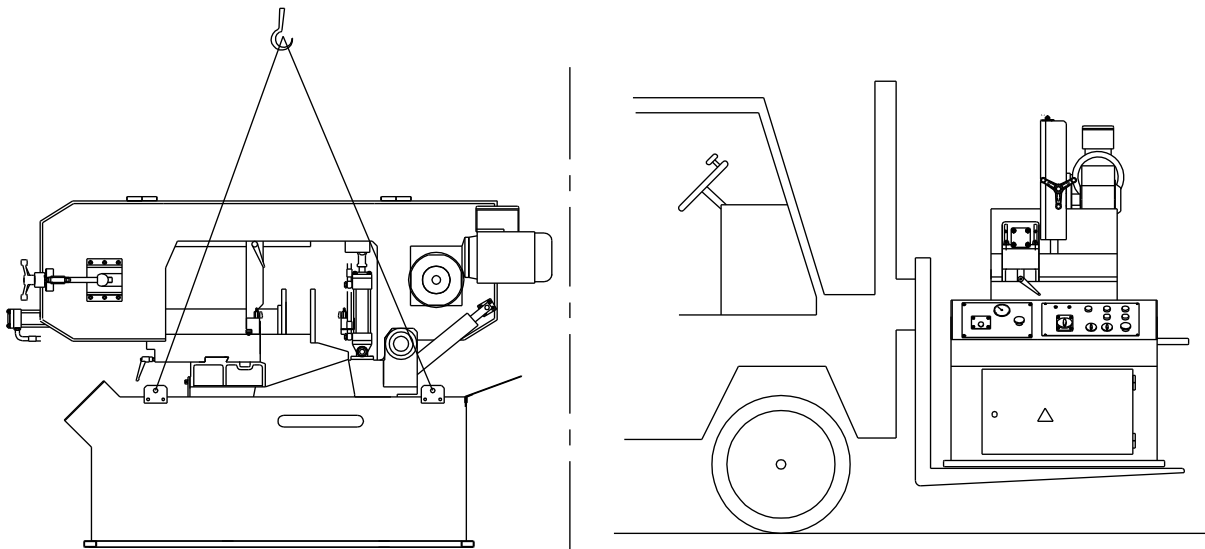
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90°	330	460X250
Right 45°	305	305X250
Right 60°	205	205X250
Left 45°	305	305X250

- 3.2 Blade speed: 40/80 M/Min 50HZ
3.3 Blade size: 27mmX0.9mmX3960mm

4. Transportation and installation

4.1 When transit the machine please make the balance of it, and please use crane or fork truck to transit. Looking at the following drawing:



4.2 Please install the machine on the horizontal ground,

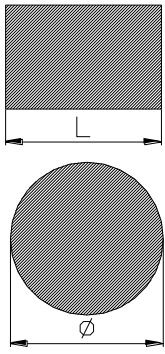
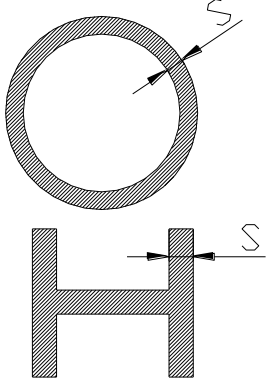
5. Assembly and operation

5.1 Adjustment: After installation, please adjust the machine with following method

Before cutting:

- 5.1.1 Turn on the oil pump to make the clamping cylinder to the clamping position, system pressure to 6Mpa.
- 5.1.2 Please adjust the sliding arm distance according with workpiece size, make the distance tighten for best guiding result. The vise is usually 5~10mm bigger than workpiece.
- 5.1.3 Choose proper blade, the blade tooth should be adjusted according with work piece

shape and material. Looking at the following chart:

Shape	L or ϕ	Suggestion tooth
	Less than 40mm	8 or 6/10T
	40-80mm	6T or 4/6T
	80-200mm	4T or 3/4T
	200-300mm	3T or 2/3T
	300-460mm	1.25T or 1.4/2.5T
Shape	S	Suggestion tooth
	Less than 1.5mm	14T or 10/14T
	1.5-3mm	10T or 8/12T
	3-6mm	8T or 6/10T
	6-10mm	6T or 5/8T
	10-15mm	4T or 4/6T
	More than 15mm	3T or 3/4T

5.1.4 Please adjust proper feeding according with different material and shape

5.1.5 Adjust the back gauge's mandril position according with length of workpiece, then lock it. Mandril should be in the middle of the workpiece.

5.1.6 Please assemble the blade into the blade wheel, then tighten the blade.

5.1.7 Please check if the power supply is well or not, if oil pump, water pump and blade is in the correct function or not, and if oil is enough or not.

5.2 Operation:

5.2.1 Put the workpiece on the worktable and conveyor, tighten the workpiece to the proper position.

5.2.2 Model BS-460G has two operations, there are automate operation and manual operation.

(1) Automate operation:

Turn the red main power supply to "ON" position, the indicator light above it will be light. Pressure "hydraulic" button, the pump will be start work, and "oil lamp" will be light. Turn the changeover switch to "debugging" position, chose automate operation. Turn the black speed switch, chose the proper speed you want. Turn the "saw blade down" button to adjust the height of saw bow according to the height of work piece. Clockwise circumrotate, increase the height of saw bow; counter-clockwise circumrotate, decrease the height of saw bow.

Pressure the white “start” button, the blade start to running. And Turn the black cooling switch to “ I ” position. Saw bow move up to the top automatically, then stop. Hydraulic cylinder drive the vice to tighten the work piece automatically. The saw bow begin to low down and cut the work piece, after finish cutting, the blade will stop running, and saw bow will move up to the top immediately, then hydraulic cylinder will drive the vice to loosen, then you can take the work piece out. Finally, press the red “pressure” button, the pump stop working, turn the red main power supply to “OFF” position.

(2) Manual operation

Turn the red main power supply to “ON” position, the indicator light above it will be light. Pressure “hydraulic” button, the pump will be start work, and “oil lamp” will be light. Turn the changeover switch to “saw” position, chose manual operation. Turn the black speed switch, chose the proper speed you want. Turn the “saw blade down” button to adjust the height of saw bow according to the height of work piece. Clockwise circumrotate, increase the height of saw bow; counter-clockwise circumrotate, decrease the height of saw bow. Tighten the work piece by press and hold “clamping” button, pressure the white “start” button, the blade start to running. And Turn the black cooling switch to “ I ” position. Press and hold the “down” button, don’t relax, the saw bow will low down and cutting the work piece. After cutting, the blade will stop running. Relax the “down” button, and press and hold the “up” button, don’t relax, the saw bow will move up to the top. Then relax the “up” button, loose the work piece by press and hold the “loseing” button. Then you can take the work piece out. Finally, press the red “pressure” button, the pump stop working, turn the red main power supply to “OFF” position.

If you want to change the descend speed of saw bow, you can do it by turn the electromagnetism switch on the left of control panel. If you want to change the speed of saw blade during working, you have to press white “start” button, then blade can running. If you want to move the vice quickly, you can do it by the “clamping” and “loseing” button in manual operation. Note: vice must tighten the work piece closely, if the tighten force less than 1 MPA, the machine will not working.

6. Maintenance

AKE SURE THAT THE UNIT IS DISCONNECTED FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT!

6.1 Please always watch out if there is any part working abnormal, if so please solve the problem.

6.2 Please clean the chip often and carefully, otherwise it will block the blade tooth, influence cutting result and blade using life.

6.3 Please check if the cooling fluid is clean enough or not, check if oil is enough or not, be sure that the fluid and oil is always enough.

6.4 Make lubricant is enough on guide surface and lubricating points, bearing in idle blade wheel should be add with lubricating grease half a year.

6.5 Every day when cutting is finished, please loosen the blade to prolong the usage life.

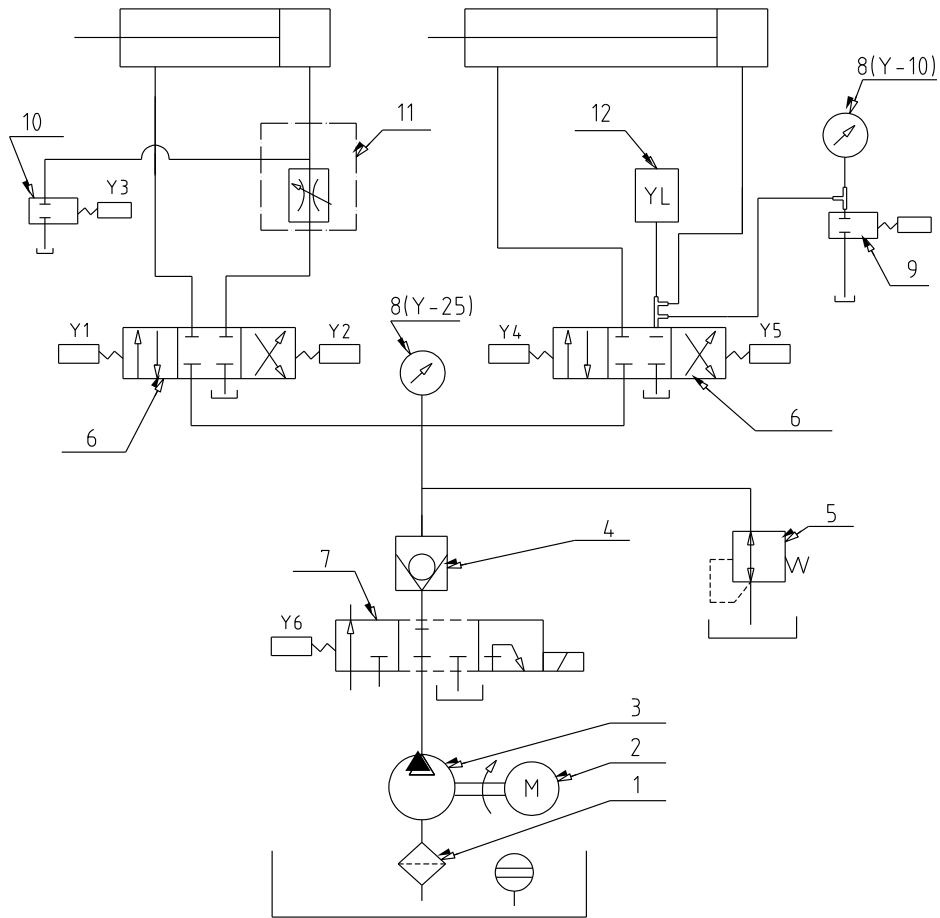
6.6 Please change the lubricating oil of the gear box regularly, usually it’s once a year.

7. TROUBLE SHOOTING CHART

Symptom	Possible Cause (s)	Corrective Action
Excessive Blade Breakage	<ol style="list-style-type: none"> 1. Material loose in vise 2. Incorrect speed or feed 3. Blade teeth spacing too large 4. Material too coarse 5. Incorrect blade tension 6. Teeth in contact with material before saw is started 7. Blade rubs on wheel flange 8. Misaligned guide bearings 9. Cracking at weld 	<ol style="list-style-type: none"> 1. Clamp work securely 2. Adjust speed or feed 3. Replace with a small teeth spacing blade 4. Use a blade of slow speed and small teeth spacing 5. Adjust where blade just does not slip on wheel 6. Place blade in correct with work after motor is started 7. Adjust wheel alignment 8. Adjust guide bearings 9. Weld again, note the weld skill
Premature Blade Dulling	<ol style="list-style-type: none"> 1. Teeth too coarse 2. Too much speed 3. Inadequate feed pressure 4. Hard spots or scale on material 5. Work hardening of material 6. Blade twist 7. Insufficient blade 	<ol style="list-style-type: none"> 1. Use finer teeth 2. Decrease speed 3. Decrease spring tension on side of saw 4. Reduce speed, increase feed pressure 5. Increase feed pressure by reducing spring tension 6. Replace with a new blade, and adjust blade tension 7. Tighten blade tension adjustable knob
Unusual Wear on Side/Back of Blade	<ol style="list-style-type: none"> 1. Blade guides worn 2. Blade guide bearings not adjusted properly 3. Blade guide bearing bracket is loose 	<ol style="list-style-type: none"> 1. Replace 2. Adjust as per operators manual 3. Tighten

Symptom	Possible Cause (s)	Corrective Action
Teeth Ripping from Blade	<ol style="list-style-type: none"> 1. Tooth too coarse for work 2. Too heavy pressure, too slow speed 3. Vibrating work piece 4. Gullets loading 	<ol style="list-style-type: none"> 1. Use finer tooth blade 2. Decrease pressure, increase speed 3. Clamp work piece securely 4. Use coarse tooth blade or brush to remove chips
Motor running too hot	<ol style="list-style-type: none"> 1. Blade tension too high 2. Drive belt tension too high 3. Gears need lubrication 4. Cut is binding blade 5. Gears aligned improperly 	<ol style="list-style-type: none"> 1. Reduce tension on blade 2. Reduce tension on drive belt 3. Check oil bath 4. Decrease feed and speed 5. Adjust gears so that worm is in center of gear
Bad Cuts	<ol style="list-style-type: none"> 1. Feed pressure too great 2. Guide bearing not adjusted properly 3. Inadequate blade tension 4. Dull blade 5. Speed incorrect 6. Blade guide spaced out too much 7. Blade guide assembly loose 8. Blade truck too far away from wheel flanges 	<ol style="list-style-type: none"> 1. Reduce pressure by increasing spring tension on side of saw 2. Adjust guide bearing, the clearance can not be greater than 0.001mm 3. Increase blade tension by adjust blade tension 4. Replace blade 5. Adjust speed 6. Adjust guides space 7. Tighten 8. Re-track blade according to operating instructions
Bad Cuts (Rough)	<ol style="list-style-type: none"> 1. Too much speed or feed 2. Blade is too coarse 3. Blade tension loose 	<ol style="list-style-type: none"> 1. Decrease speed or feed 2. Replace with finer blade 3. Adjust blade tension
Blade is twisting	<ol style="list-style-type: none"> 1. Cut is binding blade 2. Too much blade tension 	<ol style="list-style-type: none"> 1. Decrease feed pressure 2. Decrease blade tension

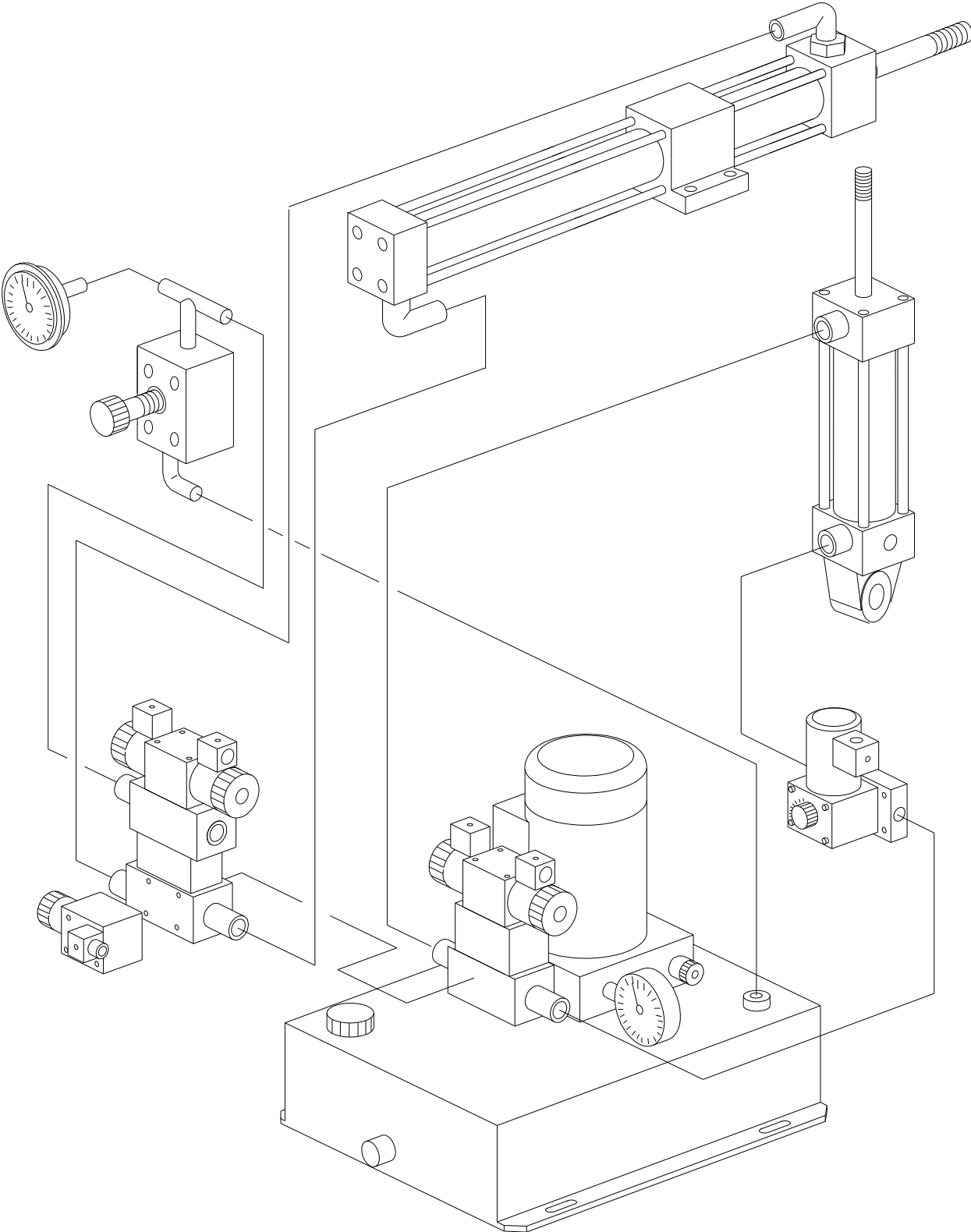
8. Hydraulic drawing



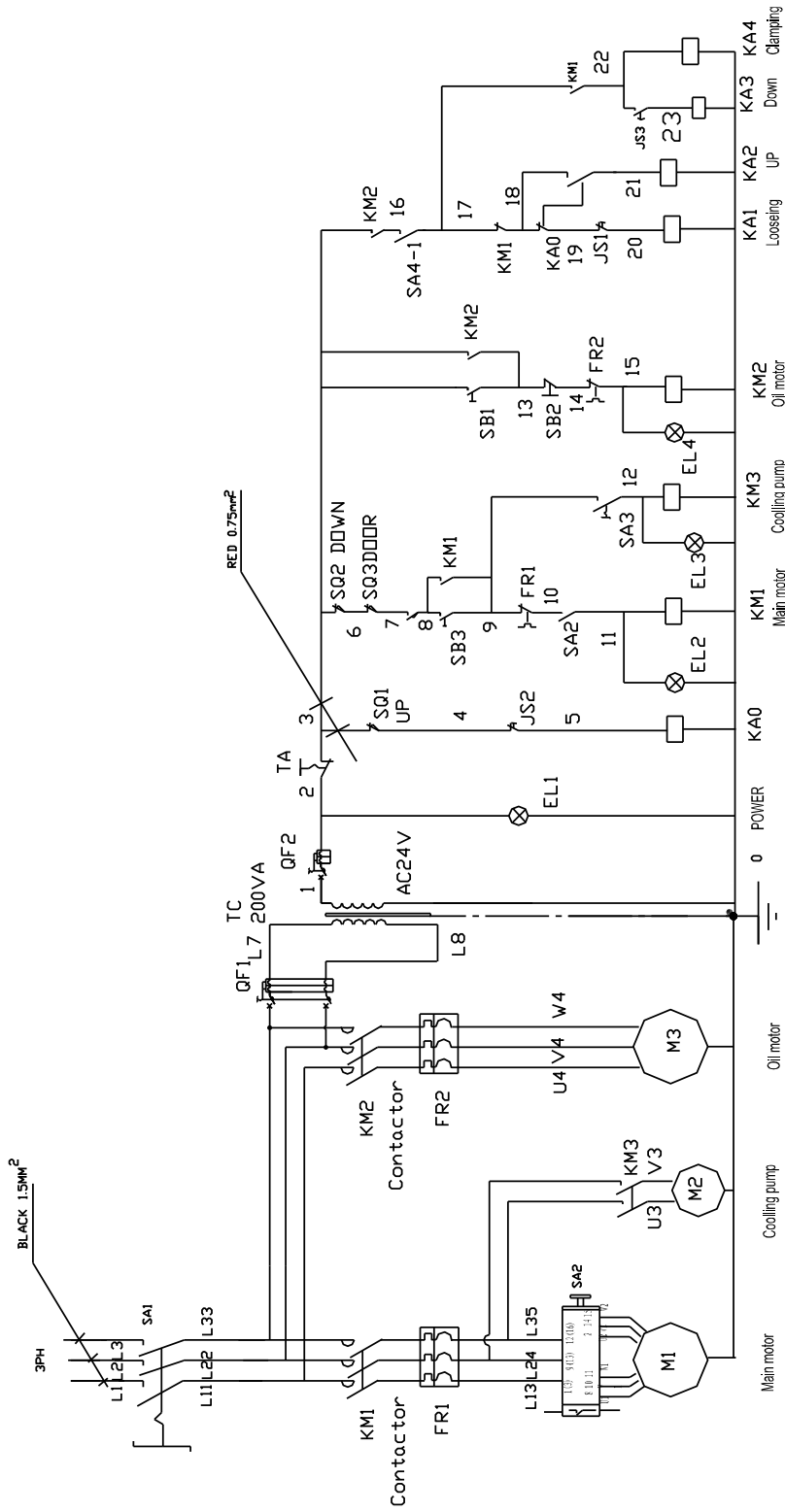
Hydraulic component

Ser. No	name	Spec.	Qty	Ser. No	name	Spec.	Qty
1	Air filter	JY-30	1	7	Olmsted	DSG-02-3C3	1
2	Motor	1HP-4P	1	8	Pressure watch	Y-25 Y-10	1
3	Pump	HGP-1A-F6R	1	9	Relief Valve	SPR-02P	1
4	One way valve	OV-02	1	10	One way valve	OPD-G-02-A1-E	1
5	Relief valve	STC-02B	1	11	Speed control valve	FSC-G02	1
6	Control valve	DSG-02-3C9	2	12	pressure relay	HED-40P15B/100C14L24S	1

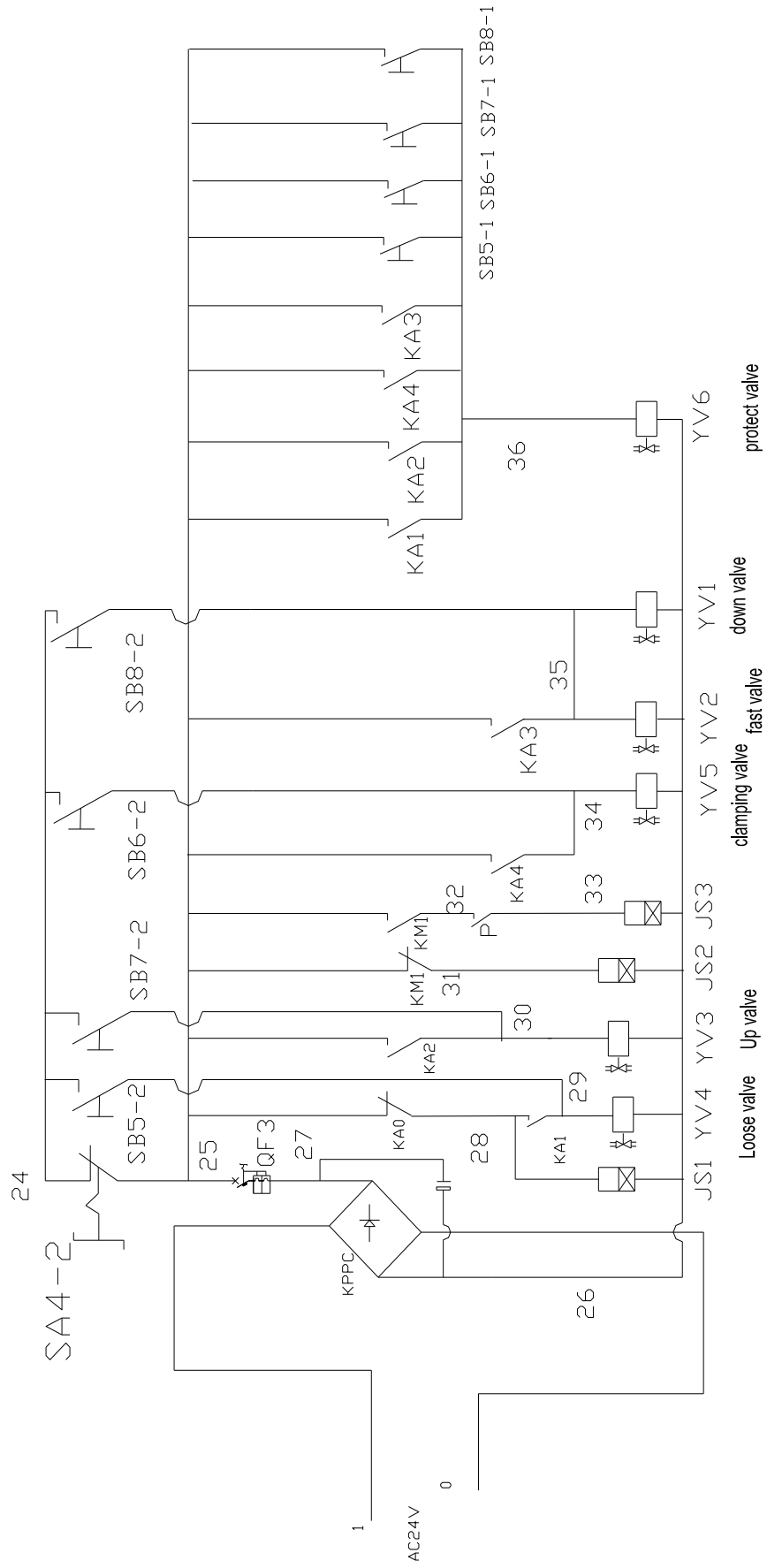
Hydraulic wiring diagram



Electric diagram



Electric diagram



No.	Description	Qty	No.	Description	Qty
1	Handle ϕ 170X ϕ 18	1	42	Grip block	4
2	Sleeve	1	43	Eccentric bushing	2
3	Spring 40X20.5X2	12	44	Eccentric bushing	2
4	Bearing AXK2035	1	45	Bearing 608-2Z	4
5	Spring pin8X35	1	46	Bolt M6X30	2
6	Adjusting bar	1	47	Bolt M6X25	2
7	Mricroswitch	1	48	Bolt M8X25	2
8	Press plate	2	49	Joint plate	1
9	Bolt M10X20	6	50	Front seat adjustment	1
10	Sliding stand	1	51	Bolt M5X12	2
11	Saw bow	1	51.1	Washer 5	2
12	Driven wheel	1	52	Cover sheet	1
13	Bearing 6208-2Z	2	53	Bolt M4X16	3
14	Spacer	1	54	Nylon wheel	1
15	Ring 80	1	55	Joint shaft	1
16	Mat	3	56	Bolt M6X8	1
17	Bolt M12X25	2	57	Ring	1
18	Guard for saw bow	1	57.1	Bearing 608-2Z	2
19	Bolt M6X12	2	58	Ring 22	2
20	Washer 6	2	59	Bolt M8X75	4
21	Blade 3960X27X0.9	1	60	Washer 8	4
22	driving wheel	1	61	Press spring	4
23	Ring 45	2	62	Stand	1
24	Bearing 6209-2Z	2	63	Small press spring	4
25	Key 12X40	1	64	Shaft	1
26	Output shaft	1	65	Bolt M6X8	1
27	Key 10X40	2	66	Steel brush	1
28	Motro	1	67	Clamping cylinder	1
28.1	Joint flange	1	68	Bolt M12X40	4
28.2	Gear box	1	69	Bolt M12X45	2
29	Washer 12	4	70	Moving plate seat	1
30	Bolt M12X30	4	71	Sliding plate of vise	1
31	Sliding guide rail	1	72	Bolt M10X20	4
32	Bolt M8X30	8	73	Guiding block	1
33	Wedge	1	74	Bolt M10X25	14
34	Sliding bracket	1	75	Guiding plate	2
35	Handle M12X35	1	76	Extension socket	1
36	Bolt M6X12	2	77	Handle M12X100	1
37	Big washer 6	2	78	Shaft	1
38	Plate guard	1	79	Contactoer	1
39	Bolt M8X25	2	80	Upper vise	1
40	Switch valve	2	81	Fixed plate of vise I	1
41	Back adjustable seat	1	82	Fixed plate of vise II	1

83	Bolt M12X25	6	127	Cover for bearing	2
84	Lower vise	1	128	Bearing 32012	2
85	Ring 20	6	129	Ring	1
86	Bearing 6204-2Z	6	130	Bolt M10X20	1
87	Roller	3	131	Shaft	1
88	Shaft	3	132	Screw	1
89	Bracket	1	132.1	Bolt M8X10	1
90	Washer 12	2	133	Switch stand	1
91	Bolt M12X25	2	134	Switch stand	1
92	Leg	2	135	Lock seat	1
93	Leg plate	2	136	Lock handle	1
94	Bolt M10X25	2	137	Screw	1
95	Washer 10	2	138	Shaft seat	1
96	Screw M10	2	139	Washer 10	4
97	Washer 10	4	140	Bolt M10X40	4
98	Screw M10	4	141	Shaft	1
99	Bolt M10X50	4	142	Ring 18	1
100	Mat	2	143	Press spring II	1
101	Bolt M8X10	2	144	Press spring I I	1
102	Shaft	1	145	Sleeve	1
103	Stop block	1	146	Press cover	1
104	Fixed link	1	147	Bolt M12X55	1
105	Scale	1	148	Limiting block	1
106	Rivet 2X5	4	149	Screw 10	2
107	Pentagon handle	2	150	Bolt M10X35	2
108	Joint shaft	1	151	Ring 16	1
109	Washer 10	3	152	Door plank	1
110	Bolt M10X30	3	153	Base	1
111	Upper stand for cylinder	1	154	Button Station	1
112	Washer 12	2	155	Screw M8	2
113	Bolt M12X30	2	156	Bolt M10X40	2
114	Upper shaft for cylinder	1	157	Shaft	1
115	Ring 20	1	158	Splasher	1
116	Bearing SIJK20C	1	159	Cooling pump	1
117	Hydraulic cylinder	1	160	Cover for cooling pump	1
118	Bolt M18X40	4	161	Oil scale A80	1
119	Washer 8	4	162	Dust box	1
120	Lower shat for cylinder	1	163	Bolt M8X16	4
121	Lower stand for cylinder	1	164	Knob 120	2
122	Ring 20	1	165	Washer 8	4
123	Gyrator	1	166	Screw M8	4
124	Ruler	1	167	hydraulic pressure station	1
125	Bolt M4X8	3			
126	Rotor	1			

