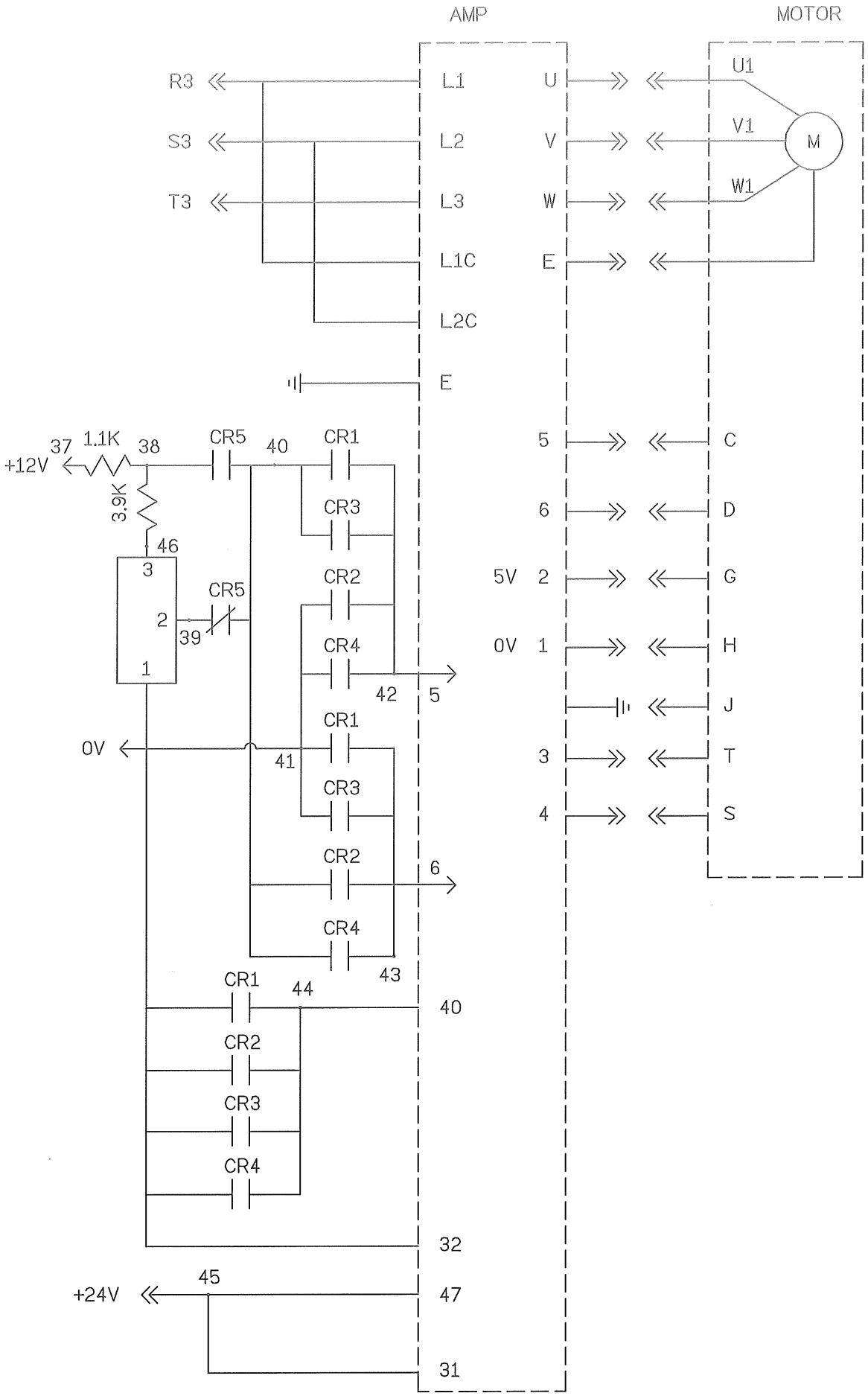
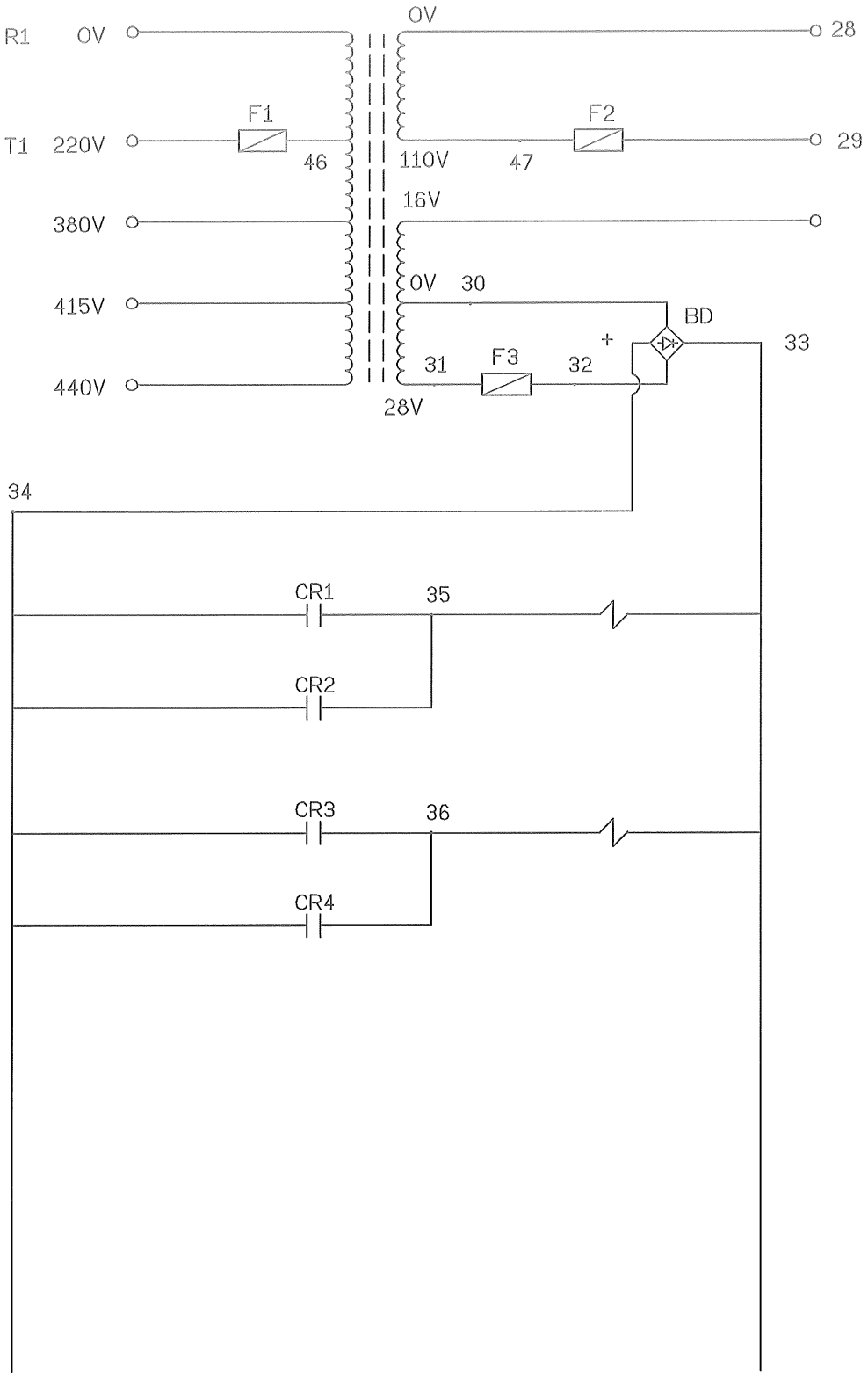
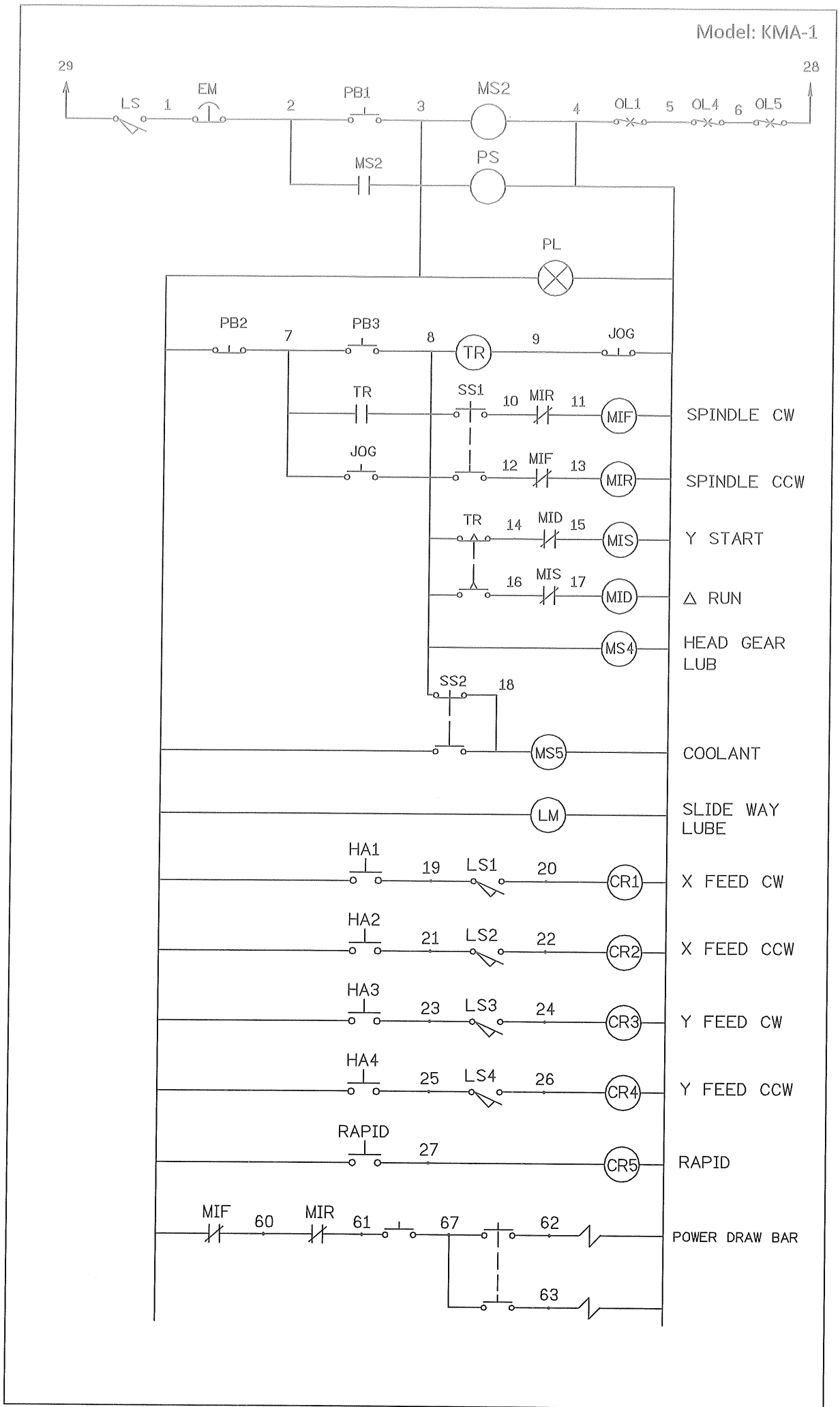
Model: KMA-1

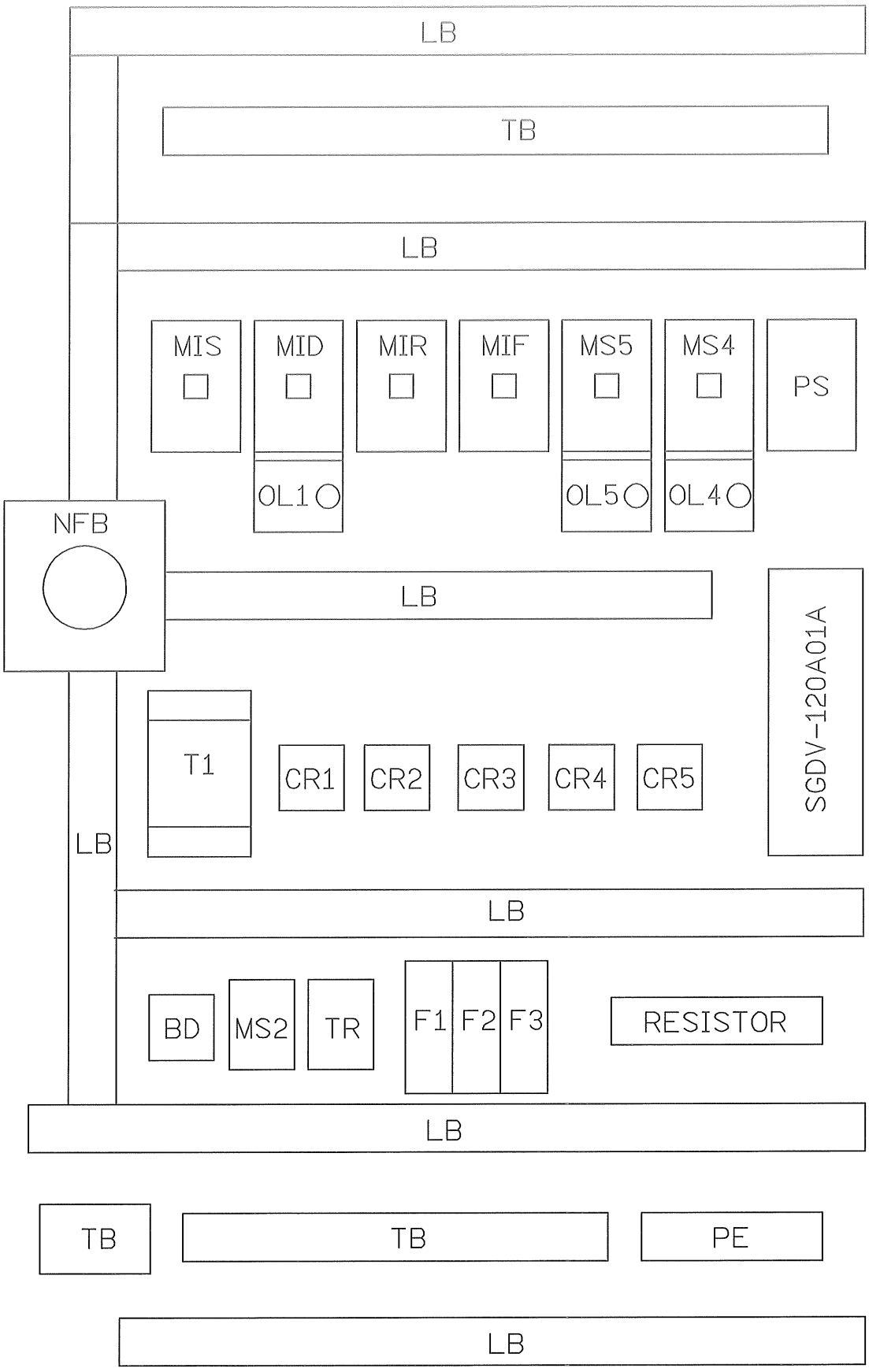
SGDV-120A01A

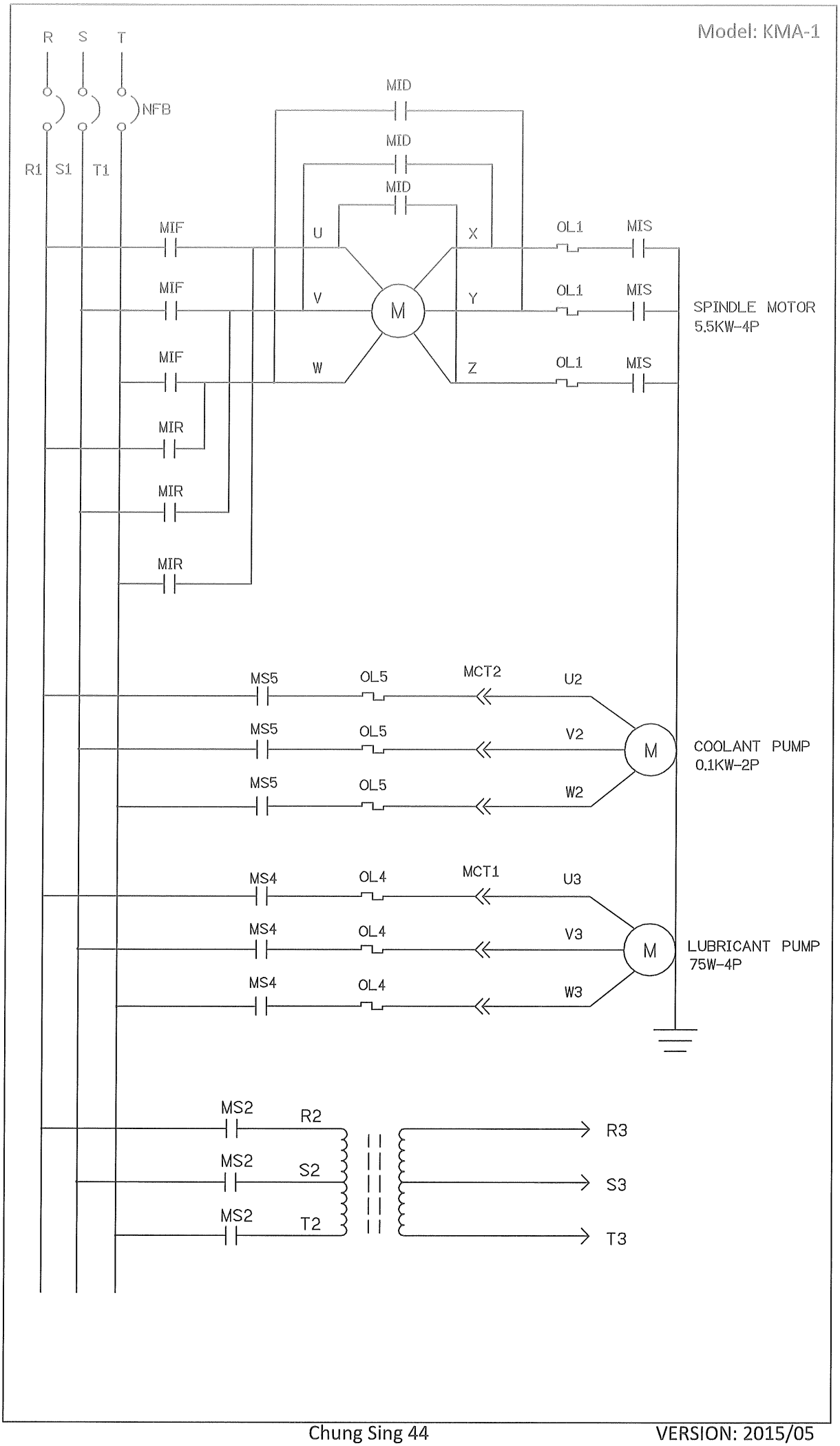



R1
0V
T1
220V
380V
415V
440V
F1
46
0V
28
F2
110V
47
29
16V
0V
30
BD
+
33
31
F3
32
28V
34
CR1
35
CR2
CR3
36
CR4


Model: KMA-1
29
28
LS
1
EM
2
PB1
3
MS2
4
OL1
5
OL4
6
OL5
MS2
PS
PL
PB2
7
PB3
8
TR
9
JOG
TR
SS1
10
MIR
11
MIF
SPINDLE CW
JOG
12
MIF
13
MIR
SPINDLE CCW
TR
14
MID
15
MIS
Y START
16
MIS
17
MID
△ RUN
MS4
HEAD GEAR LUB
SS2
18
MS5
COOLANT
LM
SLIDE WAY LUBE
HA1
19
LS1
20
CR1
X FEED CW
HA2
21
LS2
22
CR2
X FEED CCW
HA3
23
LS3
24
CR3
Y FEED CW
HA4
25
LS4
26
CR4
Y FEED CCW
RAPID
27
CR5
RAPID
MIF
60
MIR
61
67
62
63
POWER DRAW BAR

INSTALLATION DIAGRAM FOR CONTROL CABINET




Model: KMA-1
R
S
T
NFB
R1
S1
T1
MID
MID
MID
MIF
MIF
MIF
MIR
MIR
MIR
U
V
W
X
Y
Z
M
OL1
MIS
SPINDLE MOTOR
5.5KW-4P
MS5
OL5
MCT2
U2
V2
W2
COOLANT PUMP
0.1KW-2P
MS4
OL4
MCT1
U3
V3
W3
LUBRICANT PUMP
75W-4P
MS2
R2
S2
T2
R3
S3
T3

10. TROUELE SHOOTING

Table 9

Trouble	Possible causes	Correction
1.Running out of cutter	1.Not accurate for cutter edges 2.Not accurate for cutters' holder 3.Dirty inside the spindle hole	1.Regringing the cutter edges 2.Replace new one 3.Clean it
2.Chatter	1.Tool shank too long or too fine 2.Laek of rigidity in the machine , fixture , or workpiece 3.Spindle bearing too loose or worn 4.Feed rate too high 5.Dull of cutter 6.Cutting angles of Cutter not proper 7.Back-lash of feed screw too loose 8.Gib of table too loose	1.Replace suitable one 2.Improve rigidity 3.Adjust or change it 4.Reduce feed rate 5.Resharpen it 6.Regring it 7.Adjust by the adjustable nut 8.Adjust by the adjustable screws
3.Poor surface finish	1.Feed too high 2.Dull tool 3.Speed too low 4.Insufficient number of cutter teeth	1.Reduce feed or increase cutting speed 2.Resharpen it 3.Increase surface speed of cutter 4.Adding more teeth for cutter
4.Vibration	1.Loose of levelling screws 2.Torn or mismatch of V - belt 3.Motor out of balance 4.Unbalance of pully	1.Tighten it 2.Replace with new set 3.Replace it 4.Replace it
5.Cutter burns	1.Insufficient lubricants 2.Speed too high	1.Add more sulfur base oil 2.Reduce speed
6.Teeth bearing	1.Feed too high 2.Lack of rigidity of workpiece	1.Reduce feed 2.Improve design of workpiece or fixture
7.Out of dimension of workpiece after taking off from fixture	1.Not suitable of fixture 2.Some residual stress in the inside of workpiece 3.Rough surface	1.Improve design of fixture 2.Improve heat treatment 3.Refinishing
8.Stepped machinning surface	Center line of spindle not in perpendicular to table or slide way of carriage or bed	Readjust it correctly

11. MAINTENANCE SCHEDULE

Table 10

ITEM	POSITION	FREQUENCY			
		DAILY	WEEKLY	MONTHLY	YEARLY
1.LUBRICATION	ACCORDING TO TABLE 3	1	1-2		
2.ACCURACY	ACCORDING TO ACCUR A-INSPECTION CHART				1
3.CLEANING AND CORROSION PROTECTION	ALL SLIDDING SURFACES, TABLE SURFACE, T-SLOTS, SPINDLE NOSE, SPINDLE HOLE, ALL EXPOSED FI-NISHING SURFACES	1			
4.ADJUSTING OF GIBS	TABLE , SADDLE , SPINDLE , HEAD			2	
5.ADJUSTMENT OF FEEDING SCREWS	FTABLE , SADDLE , SPINDLE , HEAD			1	
6.ADJUSTING OF FIXED MECHAN-ISM	TABLE , SADDLE , SPINDLE HEAD			2	
7.LEVELLING AND TIGHTEN	FOUNDATION BOLT & SETTING SCREWS				2
8.TEMPERATURE OF BEARINGS CHECK UP	SPINDLE , GEAR BOX , BEARINGS MOTORS AND HYDRAULIC SYSTEM			1	
9.VIBRATION AND SOME ABNORMAL MOVEMENT CHECK UP	MOTORS , HYDRAULIC SYSTEM , GEARS AND SOTHER TRANSHISSION		1		
10.ELECTRIC CIRCUIT CHECK UP	MOTORS , SWITCHSCON-NECTING POINTS OF WIRE , PUSH BUTTONS			1	

Table 7-1

Milling cutter	Work		Brinell hard-ness HB	Feed amount per tooth mm					
	Quality of materials			Face milling cutter	Plane milling cutter with helical teeth	Slotting saw and side milling cutter	End mill	Formed cutter	Saw blade milling cutter
High-speed steel milling cutters	Special steel	Hard	300 400	0.1	0.075	0.075	0.05	0.05	0.025
		Tough	220 300	0.13	0.125	0.1	0.075	0.05	0.05
		Annealed	180 220	0.2	0.175	0.125	0.1	0.025	0.05
	Low - carbon steel	Malleable	152 197	0.25	0.2	0.13	0.125	0.075	0.075
		Cuts well	150 180	0.3	0.25	0.175	0.13	0.1	0.035
	Cast iron	Hard	220 300	0.27	0.2	0.13	0.13	0.1	0.075
		Medium hard	150 250	0.325	0.25	0.175	0.175	0.1	0.0075
		Soft	150 180	0.4	0.325	0.225	0.2	0.125	0.1
	Brass and bronze	Hard	150 250	0.225	0.225	0.13	0.125	0.075	0.05
		Medium hard	100 150	0.35	0.35	0.2	0.175	0.1	0.075
		Cuts well	80 100	0.55	0.55	0.325	0.27	0.175	0.125
	Magnesium and its alloys			0.55	0.45	0.325	0.27	0.175	0.125
	Aluminum and its alloys			0.55	0.45	0.325	0.27	0.175	0.125
	Plastic			0.375	0.3	0.225	0.175	0.125	0.1

Table 7-2 (Continue)

Milling cutter	Work			Feed amount per tooth mm					
	Quality of materials		Brinell hardness (HB)	Face milling cutter	Plane milling cutter with helical teeth	Slotting saw and side milling cutter	End mill	Formed cutter	Saw blade milling cutter
Sper-hard alloy milling cutter	Special steel	Hard	300 400	0.25	0.2	0.13	0.125	0.075	0.075
		Tough	220 300	0.3	0.25	0.175	0.13	0.1	0.075
		Annealed	180 220	0.35	0.27	0.2	0.175	0.1	0.1
	Low - carbon steel	Malleable	152 197	0.35	0.27	0.2	0.175	0.1	0.1
		Cuts well	150 180	0.4	0.325	0.225	0.2	0.125	0.1
	Cast iron	Hard	220 300	0.3	0.25	0.175	0.13	0.1	0.075
		Medium hard	180 220	0.4	0.325	0.25	0.2	0.125	0.1
		Soft	150 180	0.5	0.4	0.3	0.25	0.13	0.125
	Brass and bronze	Hard	140 250	0.25	0.2	0.13	0.125	0.075	0.075
		Medium hard	100 150	0.3	0.25	0.175	0.13	0.1	0.075
		Cuts well	80 100	0.5	0.4	0.3	0.25	0.13	0.125
	Magnesium and its alloys			0.4	0.45	0.3	0.25	0.13	0.125
	Aluminum and its alloys			0.4	0.45	0.3	0.25	0.13	0.125
	Plastic			0.3	0.3	0.225	0.175	0.125	0.1