

.EC MACHINERY DIRECTIVE 89/392/EEC
ELECTRICAL MANUAL

PRESERVE THIS MANUAL FOR
FUTURE REFERENCE AND USE

MACHINE NAME: HORIZONTAL SURFACE GRINDING MACHINE

BRAND: ACER

MODEL: AHDII SERIES

MANUFACTURE: ACER GROUP.

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Approved by:

Checked by:

Prepared by:

VERSION:3

Date:

CHAPTER 1:

1.1:DESIGN REQUIREMENT OF ELECTRICAL SYSTEM

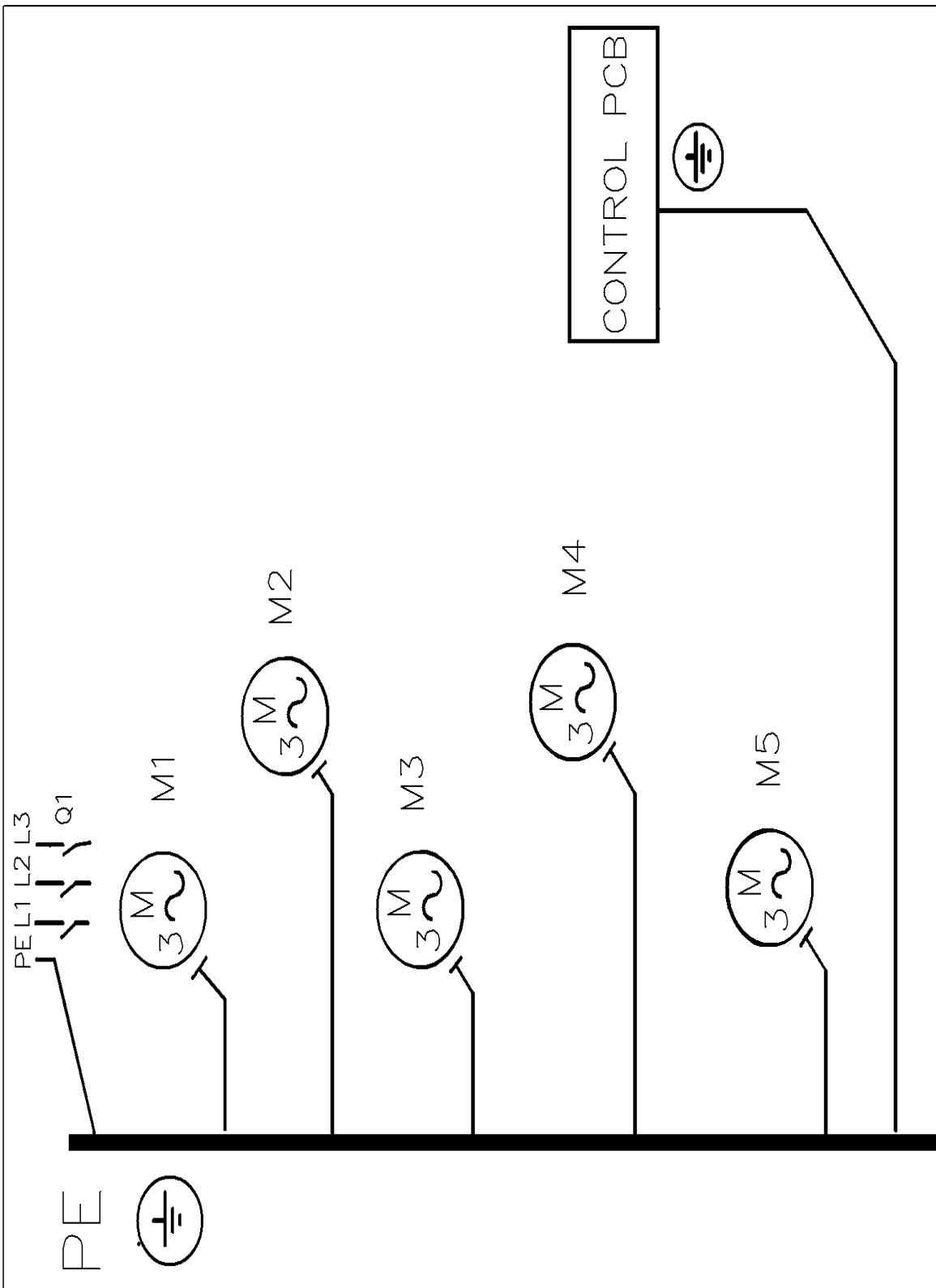
Requirement of the electricity

- (1) Voltage: 3 Phases, AC voltage which is decided by customers,
rated voltage: 0.9--1.1.
- (2) Frequency: 50/60 HZ, 0.99--1.01 rated frequency.
- (3) Voltage for electromagnetic chuck: MAX. DC 110V
- (4) Electricity consumption: 3 or 4KVA(FOR 618&818 AHDII)
Electricity consumption:6.5~8.5 KVA(FOR 1020&1224&14&16 AHDII)
- (5) Connected wire: 2mm²(L1, L2, L3, PE) FOR 618/818 AHDII.
Connected wire: 3.5mm²(L1, L2, L3, PE) FOR 1020/1224 AHDII.
Connected wire: 5.5mm²(L1, L2, L3, PE) FOR 14/16 AHDII.

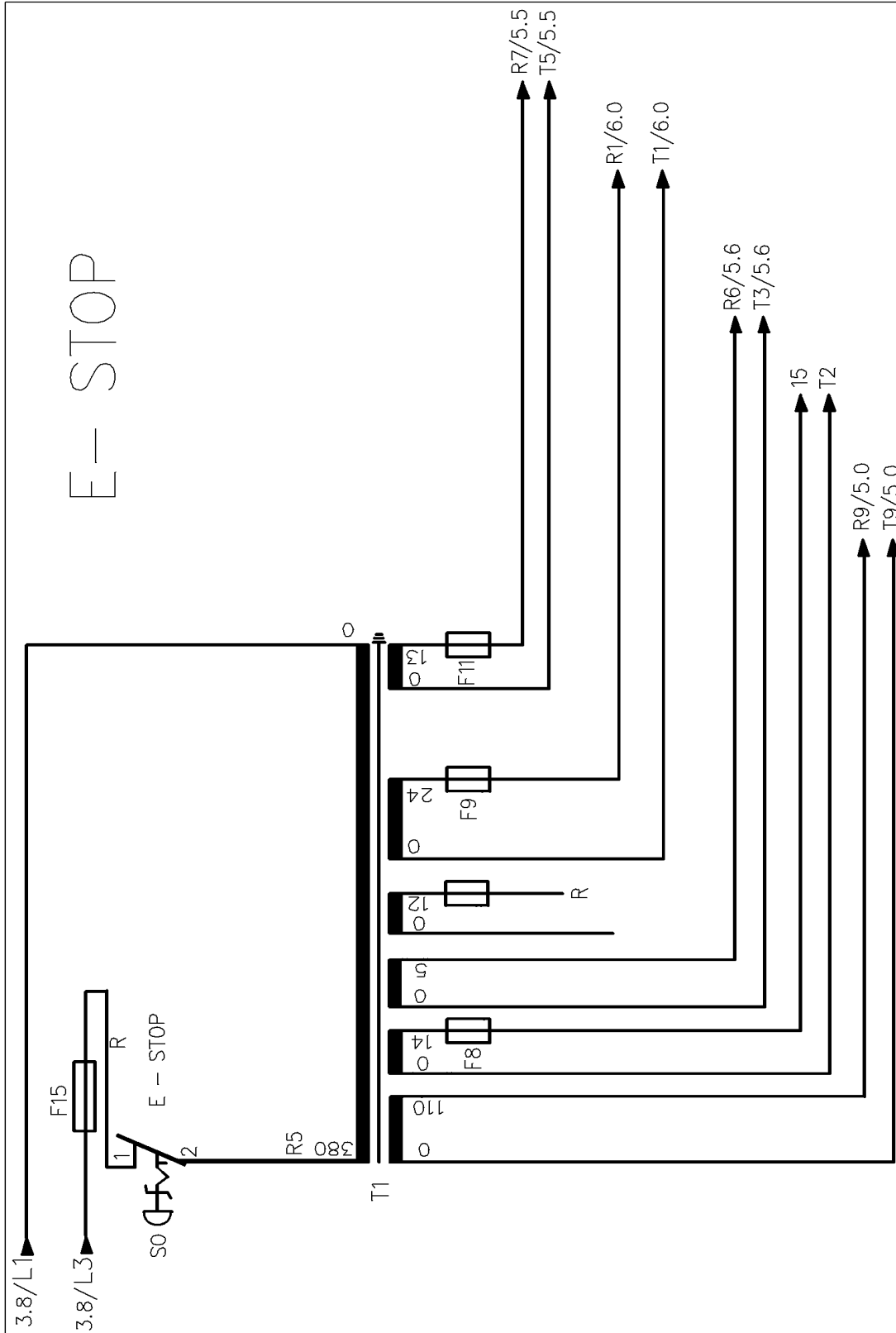
WARNING:

Please do not connect PE terminal if there's neutral line in the electric power line. If the power line have no PE line, please set another grounded copper bar, and the electric resistance should be lower than 100 OHMS .

1.2: GROUNDING SYSTEM DIAGRAM.

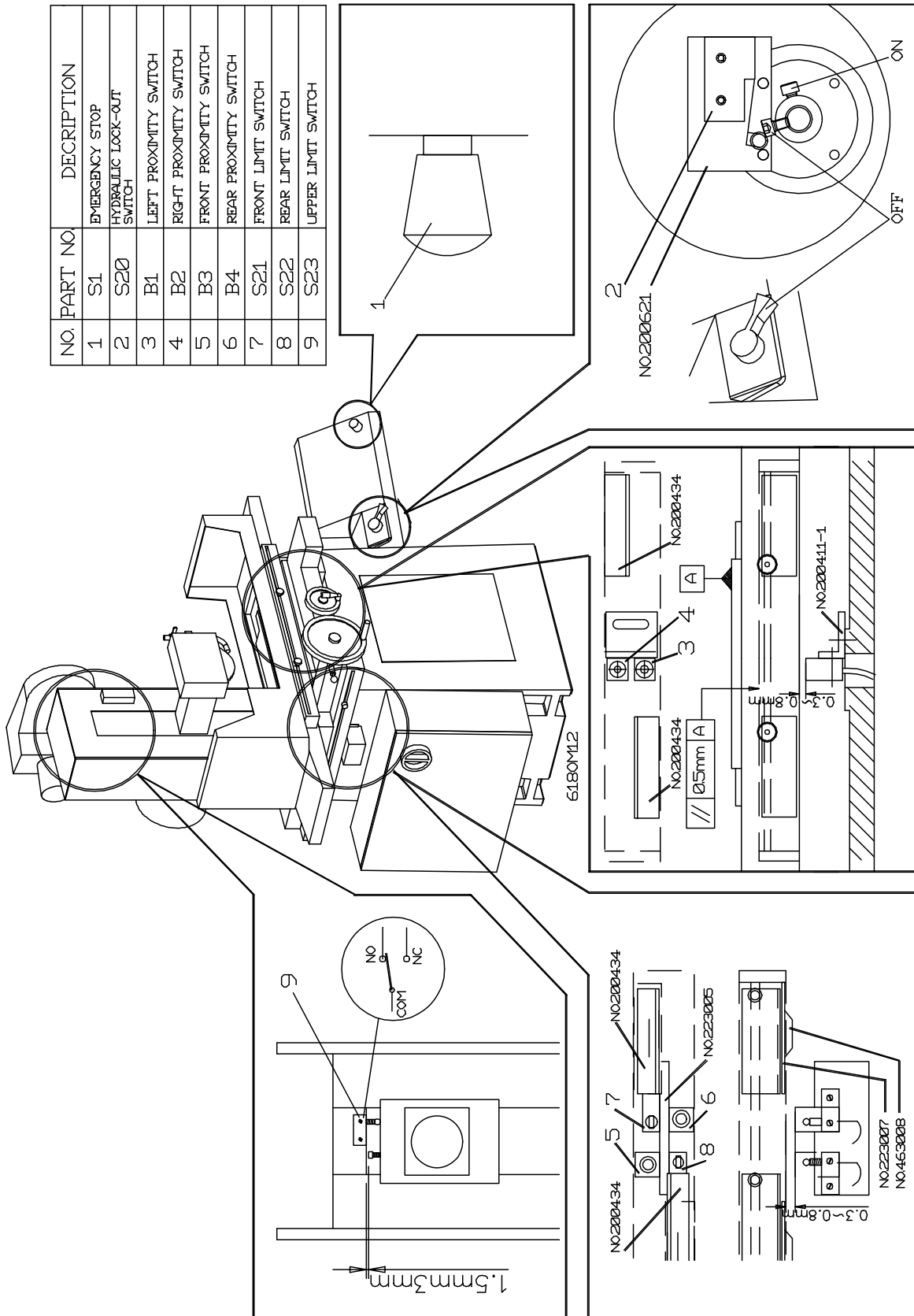


1.3: EMERGENCY STOP DIAGRAM.

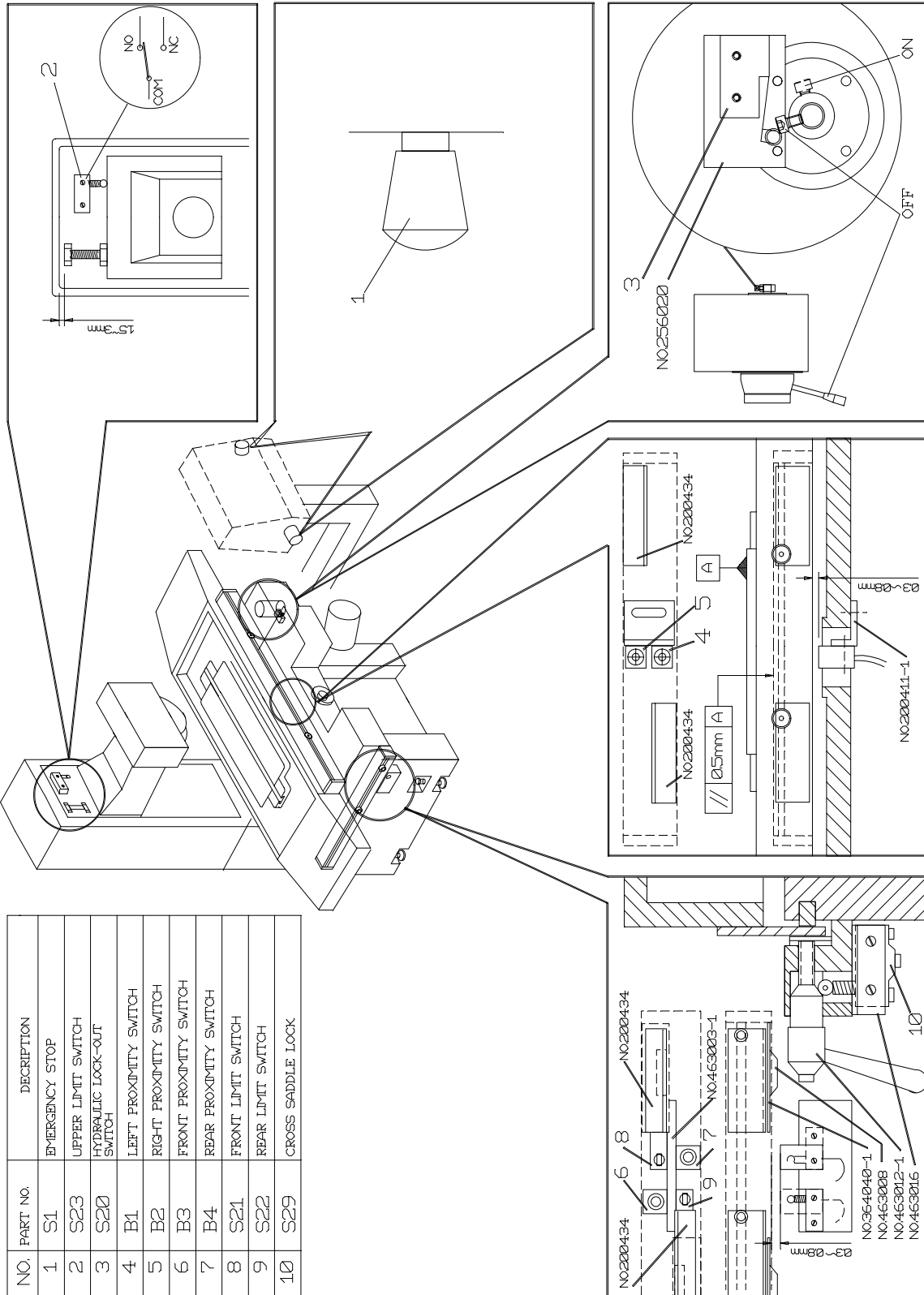


1.4: LIMIT (OR PROXIMITY) SWITCHES LAYOUT

1.4.1: FOR 618/818 AHDII



1.4.1: FOR 1020/1224/14/16 AHDII

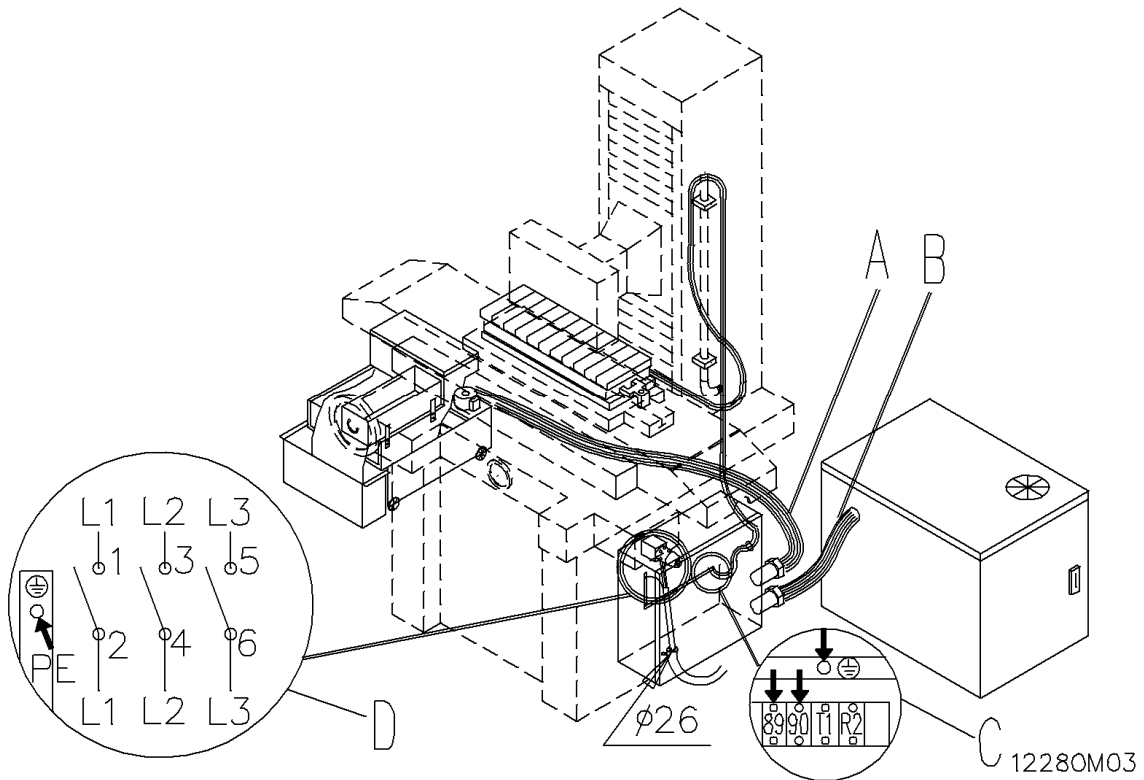
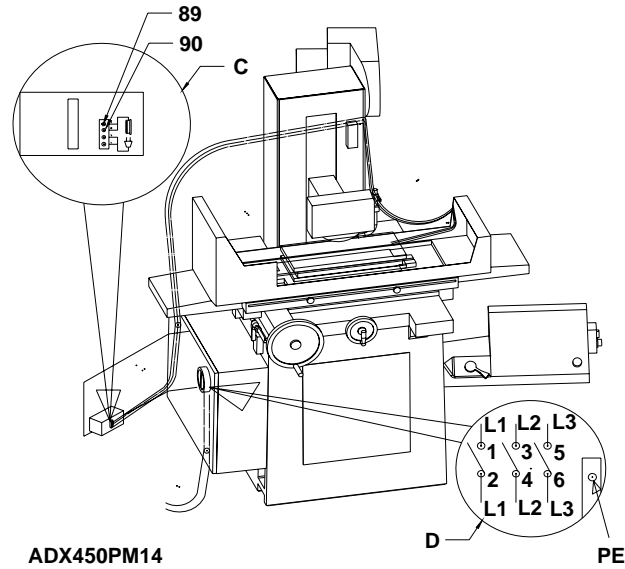


NO.	PART NO.	DESCRIPTION
1	S1	EMERGENCY STOP
2	S23	UPPER LIMIT SWITCH
3	S20	HYDRAULIC LOCK-OUT SWITCH
4	B1	LEFT PROXIMITY SWITCH
5	B2	RIGHT PROXIMITY SWITCH
6	B3	FRONT PROXIMITY SWITCH
7	B4	REAR PROXIMITY SWITCH
8	S21	FRONT LIMIT SWITCH
9	S22	REAR LIMIT SWITCH
10	S29	CROSS SADDLE LOCK

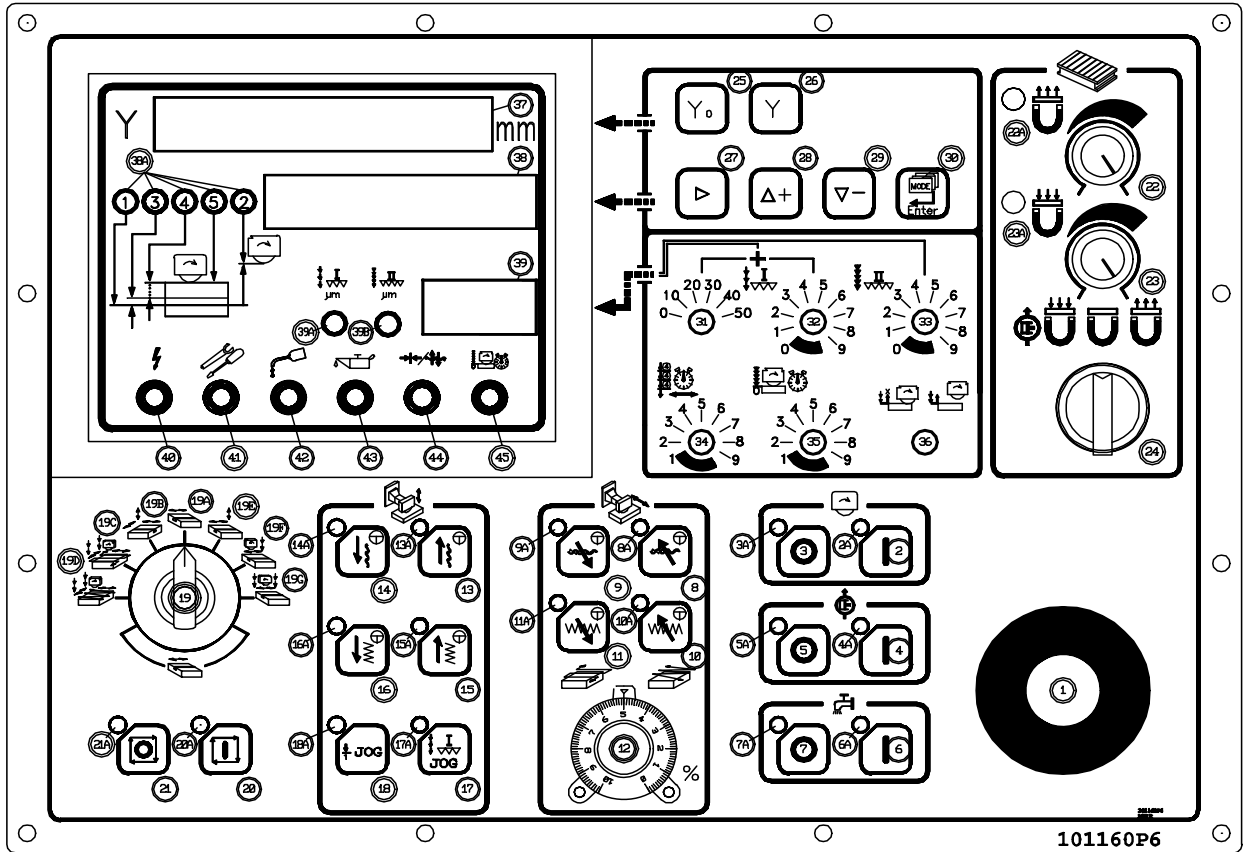
12280M24

1.5:CONNECTING MAIN POWER SUPPLY

WHERE: A is a coolant system cable.
 B is a hydraulic system cable.
 C is a magnetic chuck terminal.
 D is a power supply terminal.



1.6 :CONTROL PANEL FOR AHD II SERIES



1.6.1 Description of CONTROL PANEL for AHD II series (OPERATION INSTRUTION)

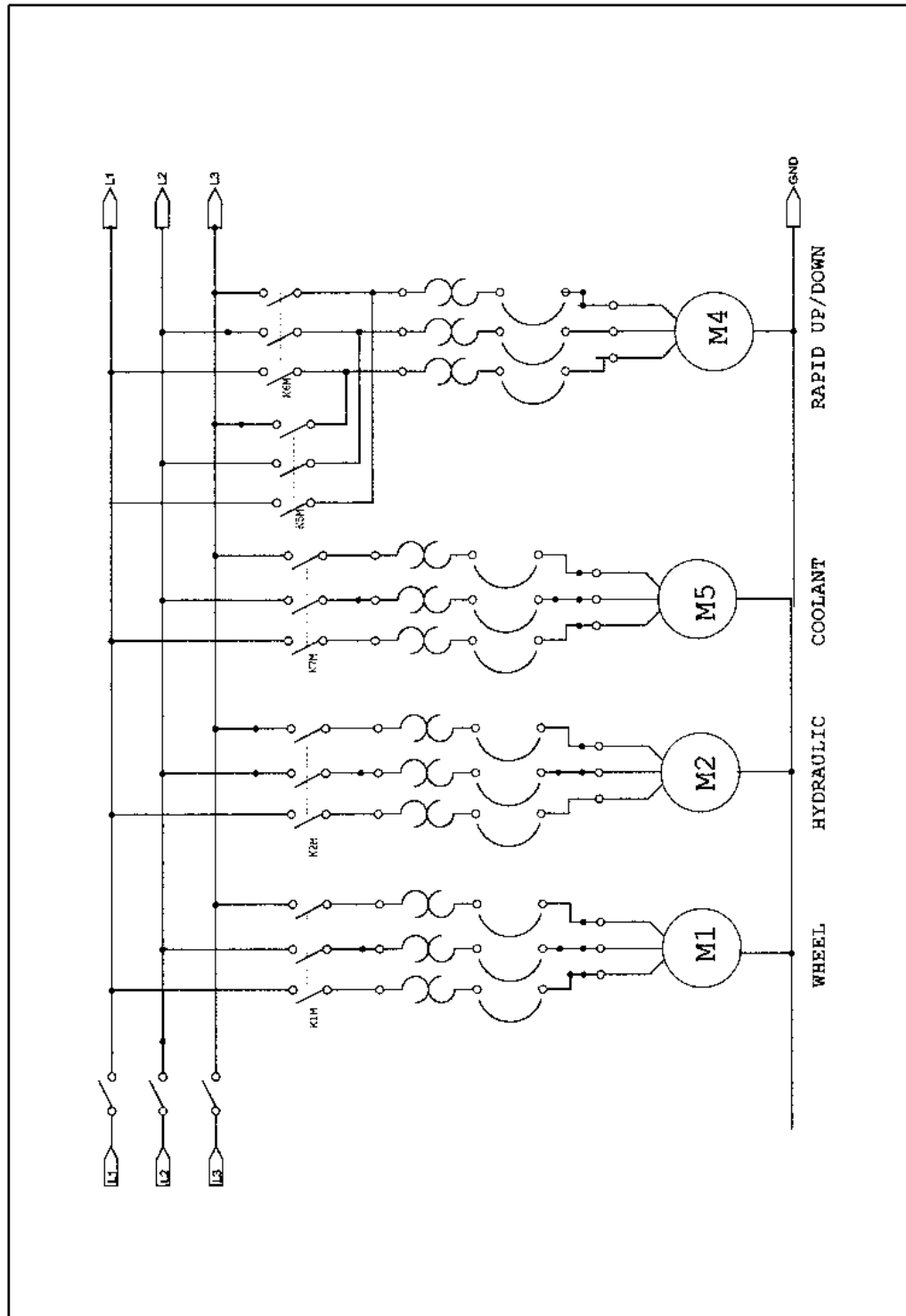
NO.	ELECTRICAL CODE NO.	P/N	SYMBOLIC DEFINITION DESCRIPTION
1	SO	C23-25R1B	Emergency stop button
2		1160Key3	Spindle start button
2A		1160Key3	Spindle start indicator (green)
3		1160Key3	Spindle stop button
3A		1160Key3	Spindle stop indicator (red)
4		1160Key3	Longitudinal hydraulic start button
4A		1160Key3	Longitudinal start indicator (green)
5		1160Key3	Longitudinal hydraulic stop button
5A		1160Key3	Longitudinal hydraulic stop indicator (red)
6		1160Key3	Coolant start button
6A		1160Key3	Coolant start indicator (green)
7		1160Key3	Coolant stop button
7A		1160Key3	Coolant stop indicator (red)
8		AHD2-Key1	Saddle rapid inward button (to change to inward direction is available in auto cross feed mode (press 2 seconds)
8A		AHD2-Key1	Green : available to do rapid inward movement

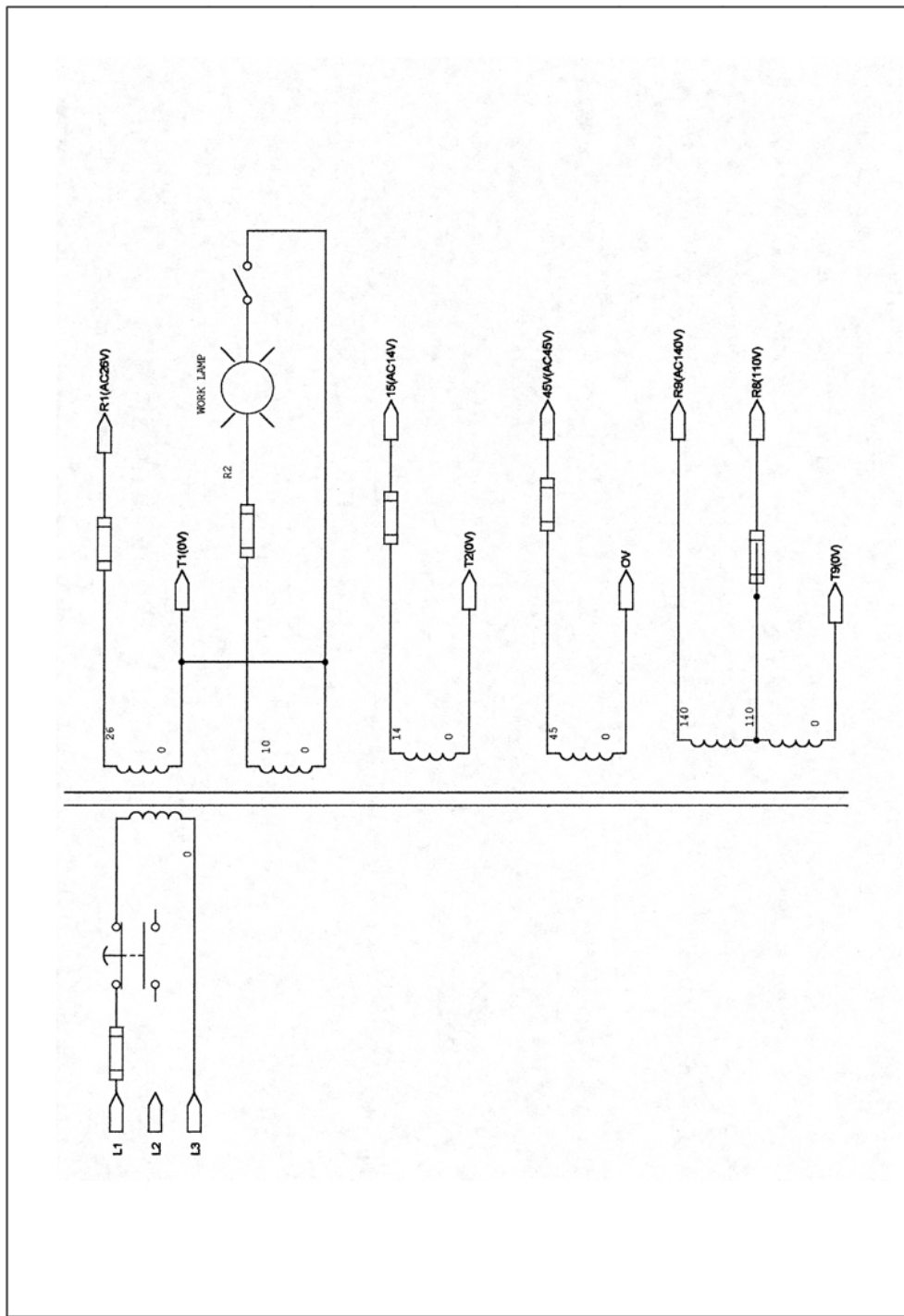
9	AHD2-Key1	Orange: working on rapid Inward movement Saddle rapid out ward button (to change to outward direction is available in auto cross feed mode (press 2 seconds))
9A	AHD2-Key1	Green : available to do rapid outward movement Orange : Working on rapid Out inward movement
10	AHD2-Key1	Saddle slow inward button (to change to inward direction is available in auto cross feed mode (press 2 seconds))
10A	AHD2-Key1	Green : Available to do slow inward movement Orange : Working on slow inward movement
11	AHD2-Key1	Saddle slow outward button (to change to outward direction is available in auto cross feed mode (press 2 seconds))
11A	AHD2-Key1	Green : Available to do slow Outward movement Orange : Working on slow Outward movement
12	VRA103	Cross feed variable step increment switch / crossfeed speed adjustable switch / cross constant feed speed adjustable switch
13	AHD2-Key1	Rapid up button
13A	AHD2-Key1	Green : Available to do rapid up movement Orange : Working on rapid up movement
14	AHD2-Key1	Rapid down button
14A	AHD2-Key1	Green : Available to do rapid down movement Orange : Working on rapid down movement
15	AHD2-Key1	Slow up button
15A	AHD2-Key1	Green : Available to do slow up movement Orange : Working on slow up movement
16	AHD2-Key1	Slow down button
16A	AHD2-Key1	Green : Available to do slow down movement Orange : Working on slow down movement
17	AHD2-Key1	Step downfeed button (see the digital in display No.39)
17A	AHD2-Key1	Green : available to do step downfeed Orange : working on step downfeed
18	AHD2-Key1	1 μ m/0.00005" jogging downfeed
18A	AHD2-Key1	Green : available to do jogging downfeed Orange : working on jogging downfeed
19	AHD2-Key1	Grinding mode selector
20	AHD2-Key1	Grinding mode confirmation
20A	AHD2-Key1	Grinding mode confirmed indication lamp (green)
21	AHD2-Key1	Grinding mode stop
21A	AHD2-Key1	Grinding mode stop indication lamp (red)
22	PB2	C99-VR500KB
22A		C108-8LEDR
23		C99-VR50KB

23A	C108-8LEDG	Magnetizing indication lamp〔green〕
24	C93-30SW2A1B	Magnetize/demagnetize selector switch
25	Key-23	Zero positioning for Y axis〔zero onNo.37〕
26	Key-23	Current position value setting value change in No.37〕
27	Key-23	Change digital position
28	Key-23	Digital amend up
29	Key-23	Digital amend down
30	Key-23	Selecting mode / read the Selecting mode / read the or 38〕
31	AHD2-SET	Auto downfeed step increment selector switch 〔rough grinding〕
32	AHD2-SET	Auto downfeed step increment selector switch 〔rough grinding〕
33	AHD2-SET	Auto downfeed step increment selector switch 〔finish grinding〕
34	AHD2-SET	Intermittent spark-out times selector switch〔by the digital set in 38A-4〕
35	AHD2-SET	Spark-out grinding times selector switch.
36	AHD2-SET	Wheel head auto rise up after grinding procedure finished selector switch.
37	MIS.523+MS-MDIS-1	Current value of Y axis〔vertical axis〕
38	MIS.523+MS-MDIS-1	Figure display screen of positioning modes.
38A	MIS.523+MS-MDIS-1	1: Target point indication lamp. 2: rise up point indication lamp after cycle completed. 3: value of finish grinding indication lamp. 4: intermittent spark-out point indication lamp. 5: start point indication lamp.
39	AHD2-DIS	Value of rough / finish grinding display screen.
39A	AHD2-DIS	Working on the value of rough grinding indication lamp.
39B	AHD2-DIS	Working on the value of finish grinding indication lamp
40	AHD2-DIS	Power indication lamp〔red〕
41	AHD2-DIS	Power overload lamp〔spindle hydraulic & coolant〕〔red〕
42	AHD2-DIS	Lubrication working lamp〔green〕(for 1020 abve)
43	AHD2-DIS	Lubrication oil not enough lamp.(for 1020 abve)
44	AHD2-DIS	Crossfeed locking lamp〔red〕(for 1020 abve)
45	AHD2-DIS	Spark-out indication lamp

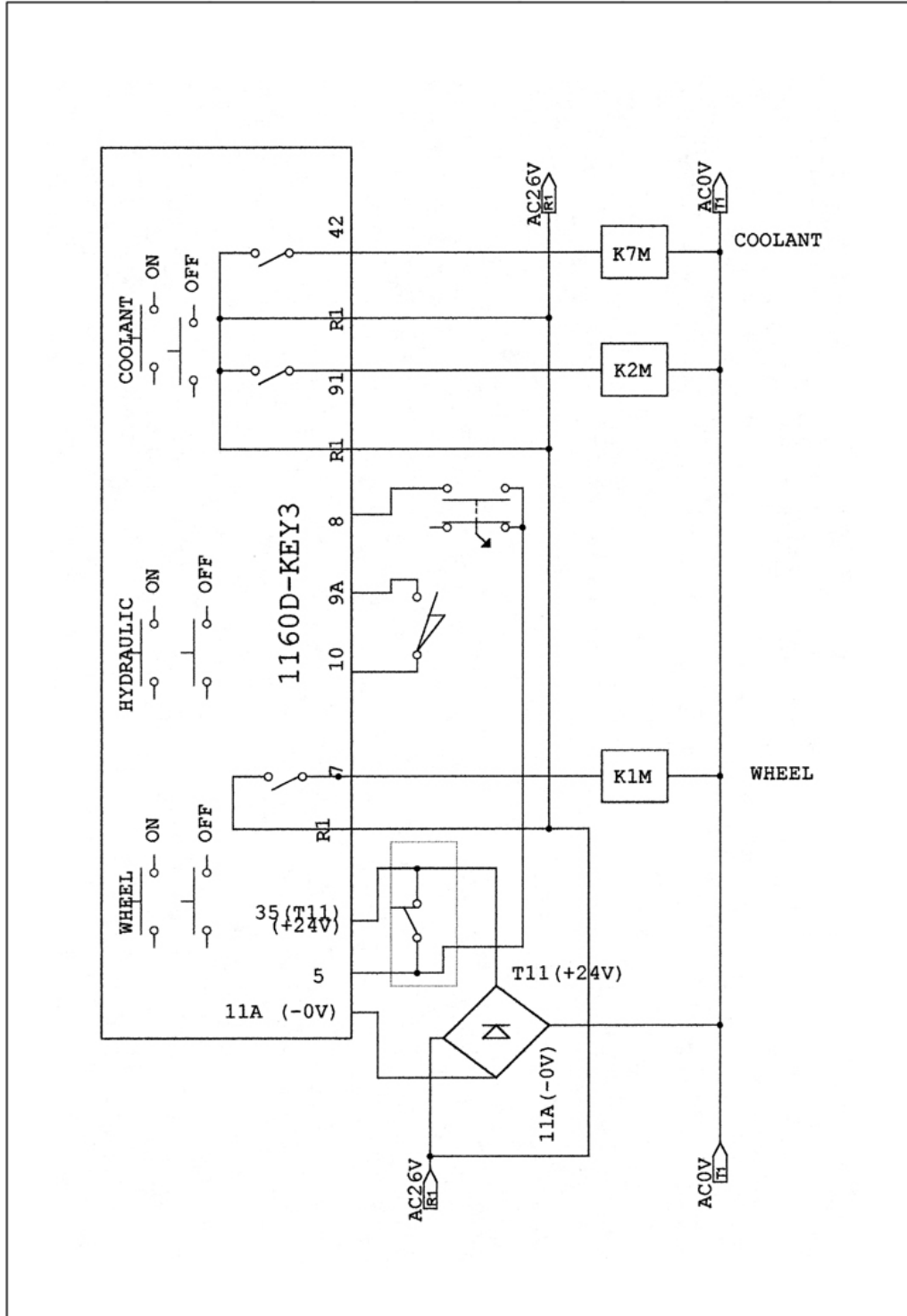
CHAPTER 2

ELECTRIC CIRCUIT DIAGRAM

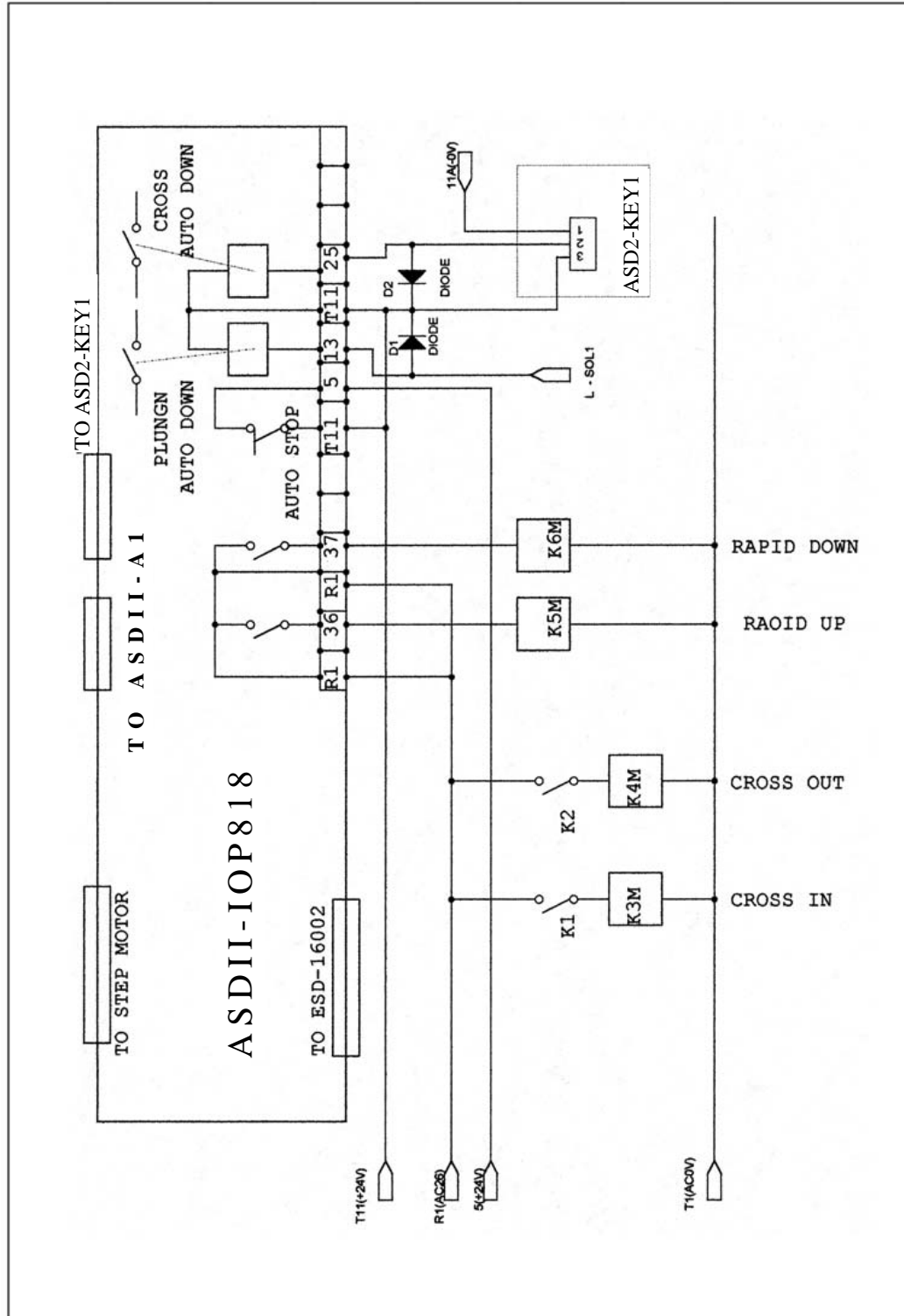




ASD II-2

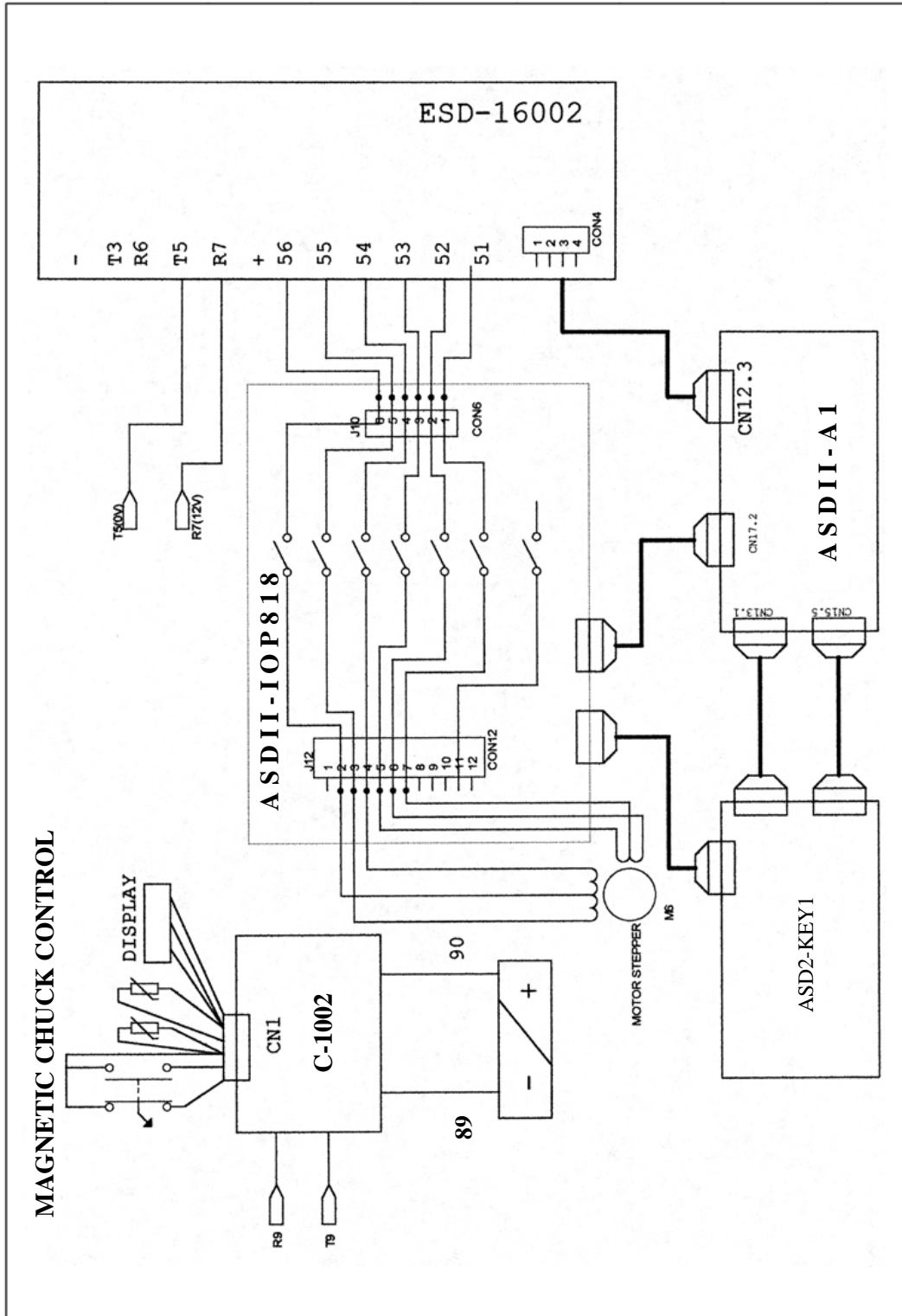


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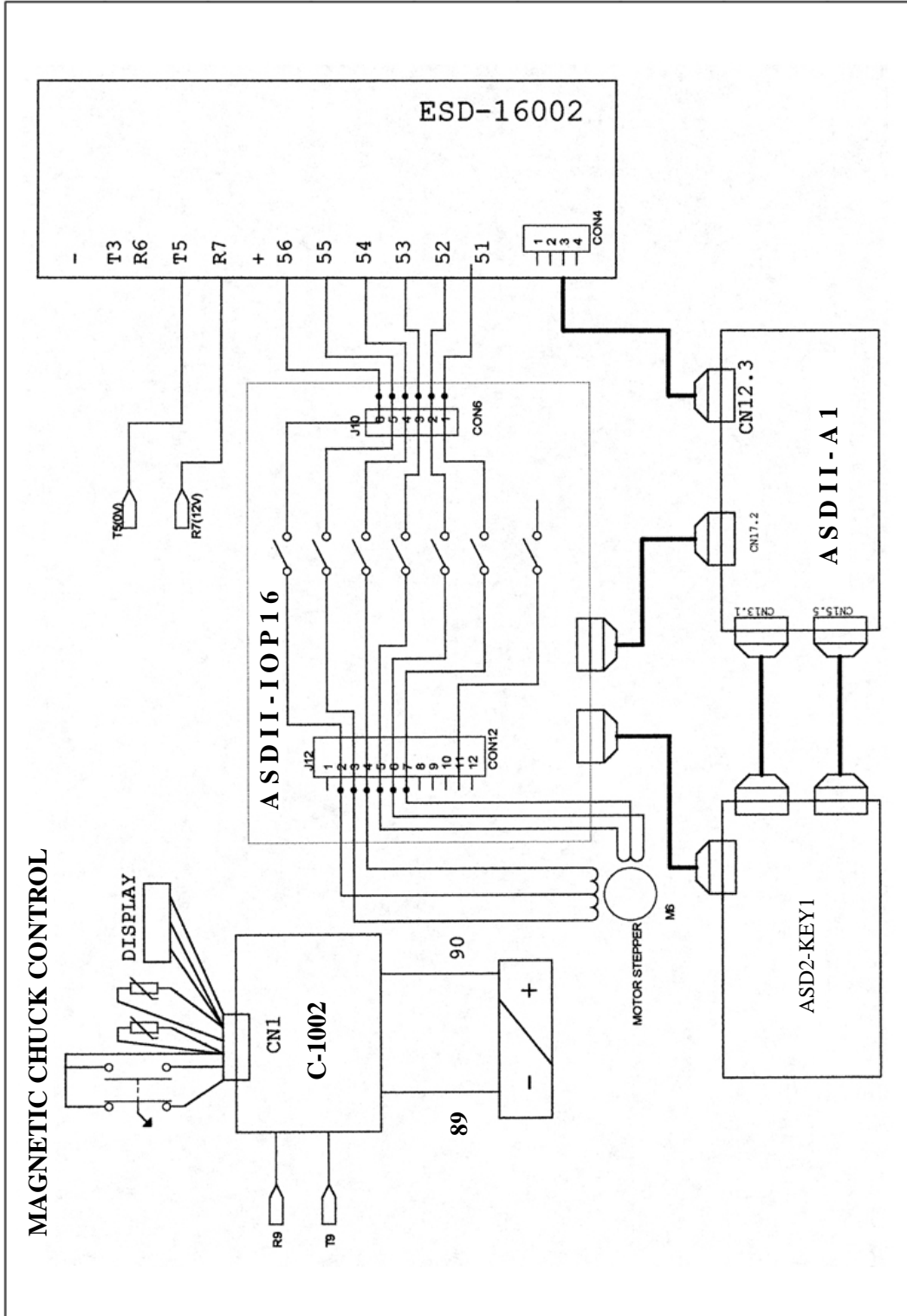
ASDII-4

FOR 618&818 AHDII

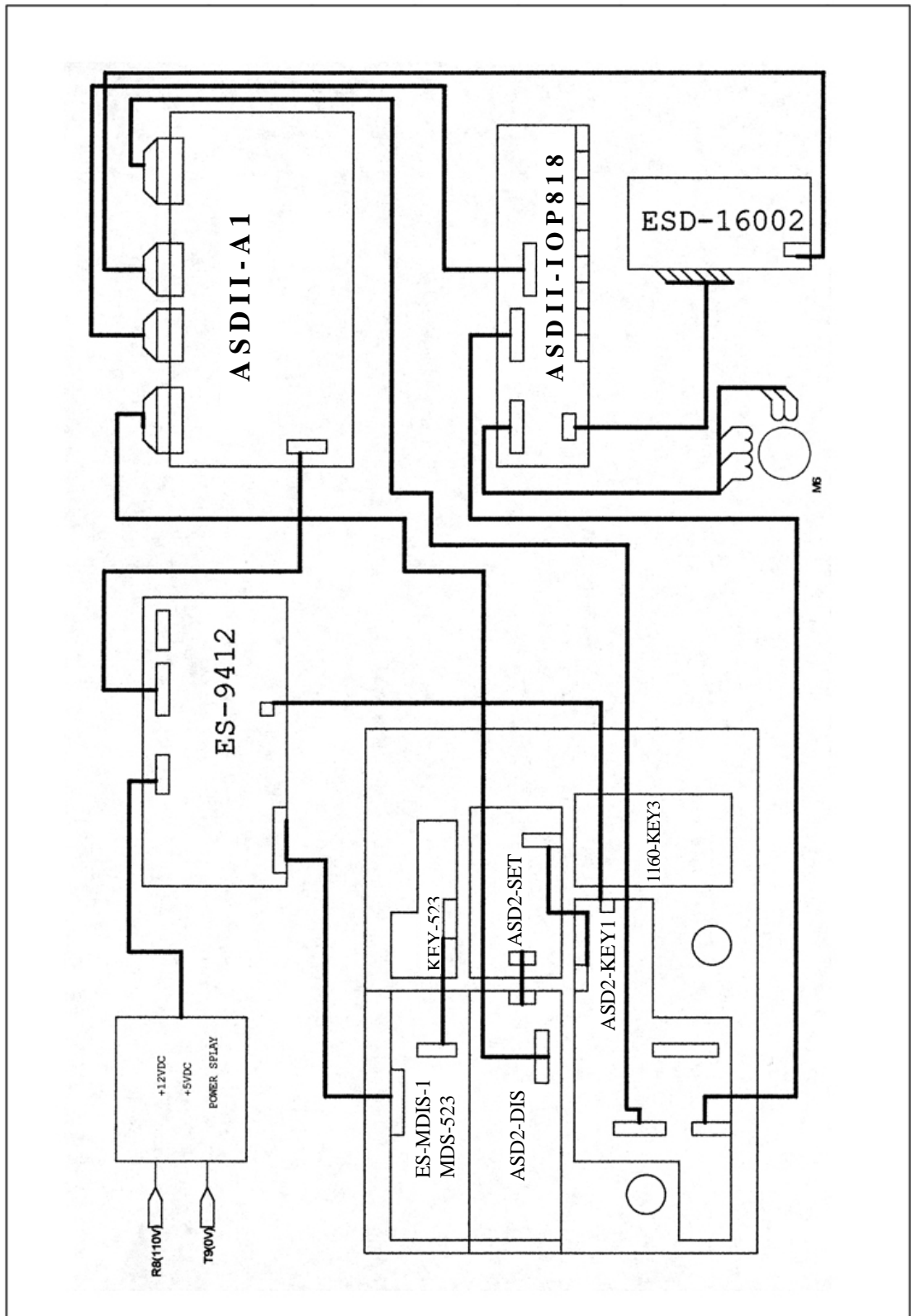


ASDII-7

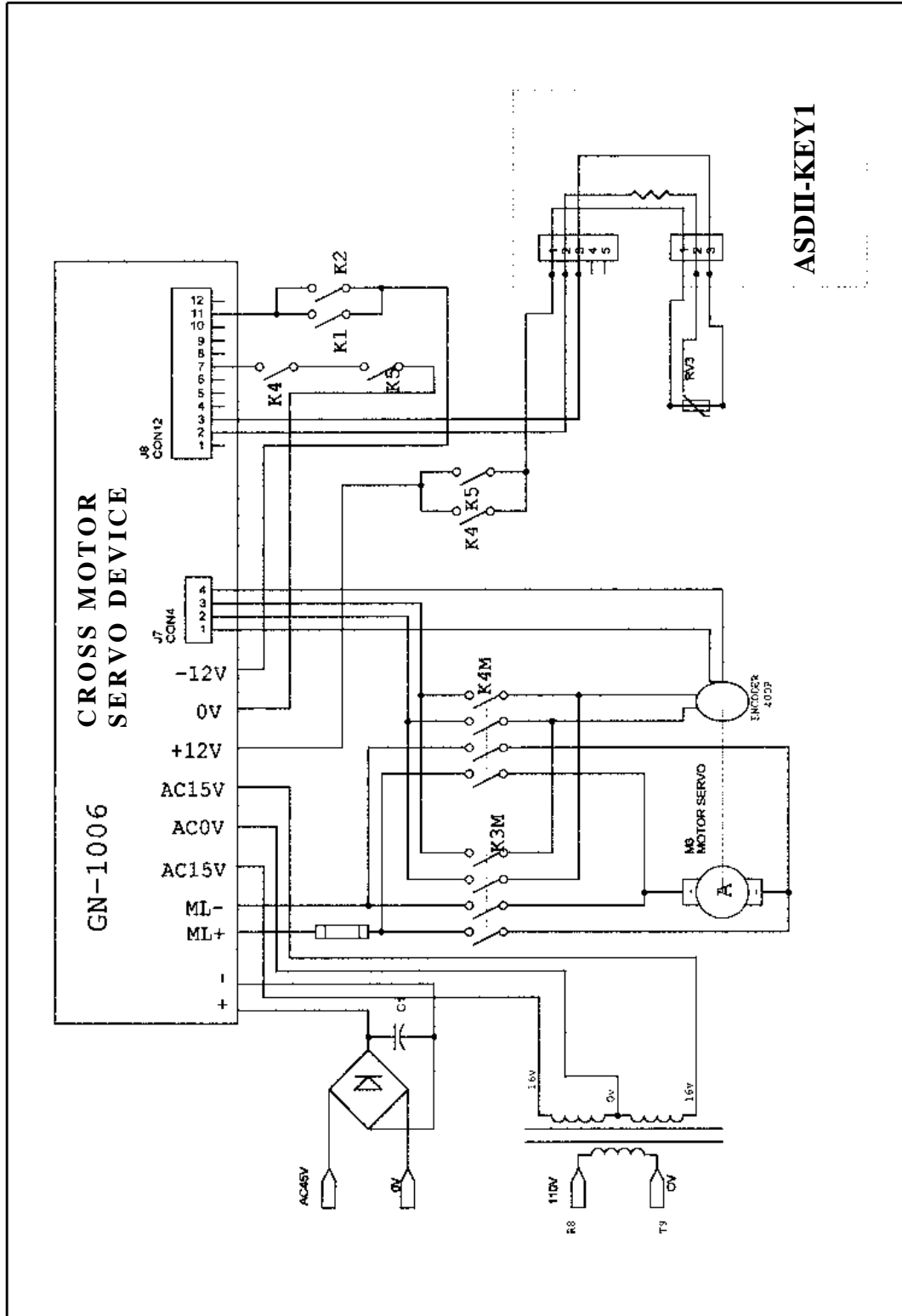
FOR 1020&1224&14&16 AHDII



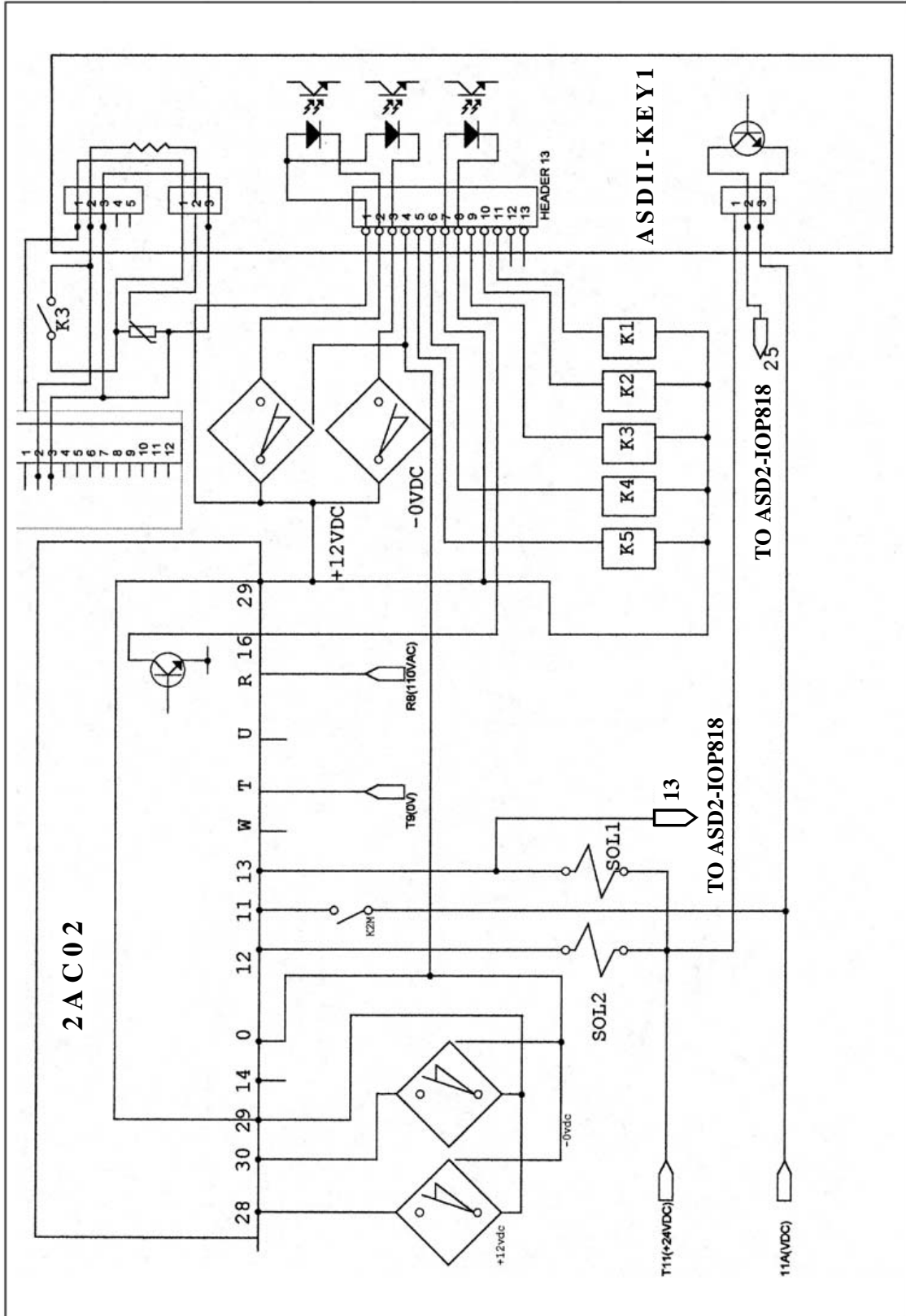
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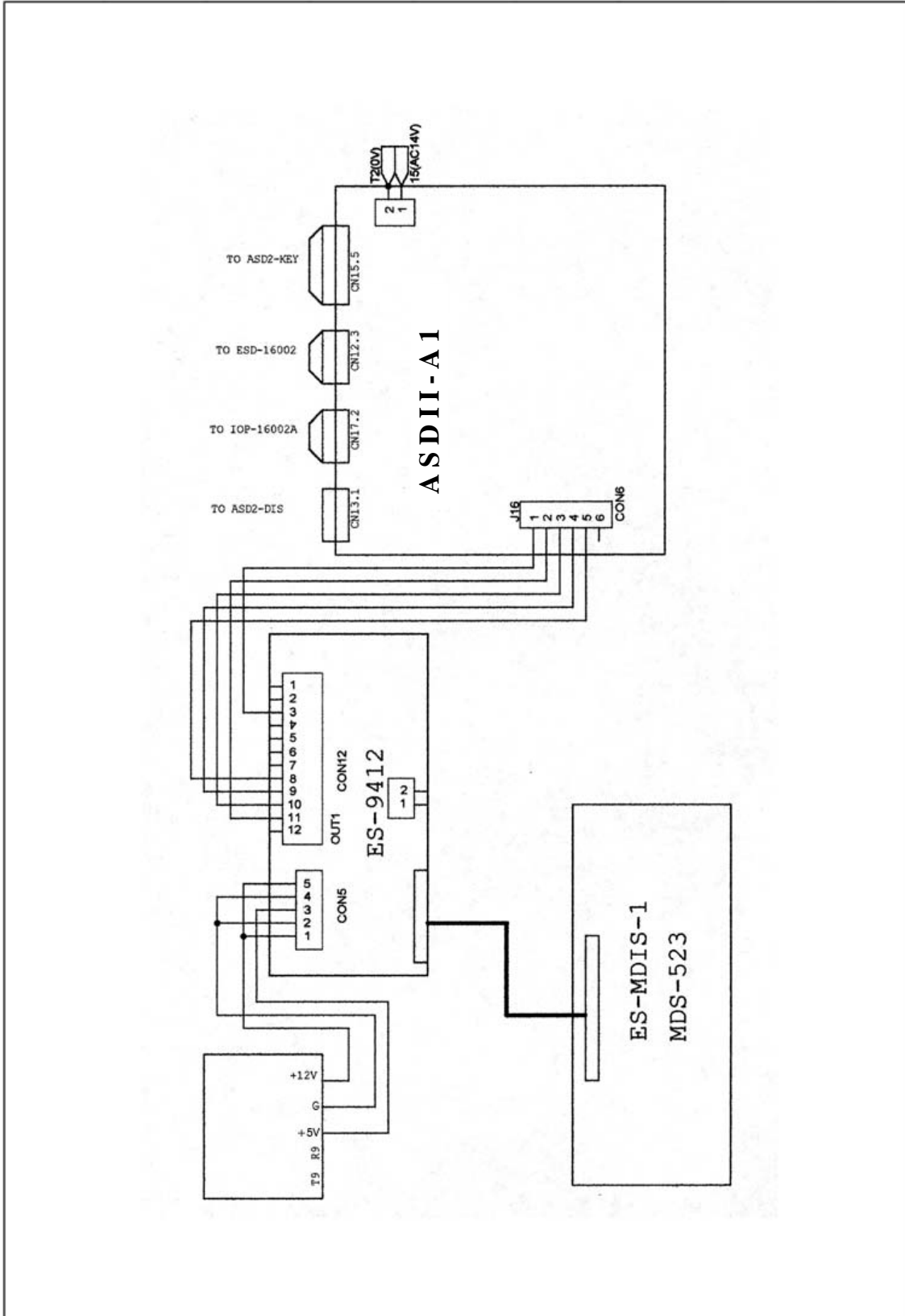
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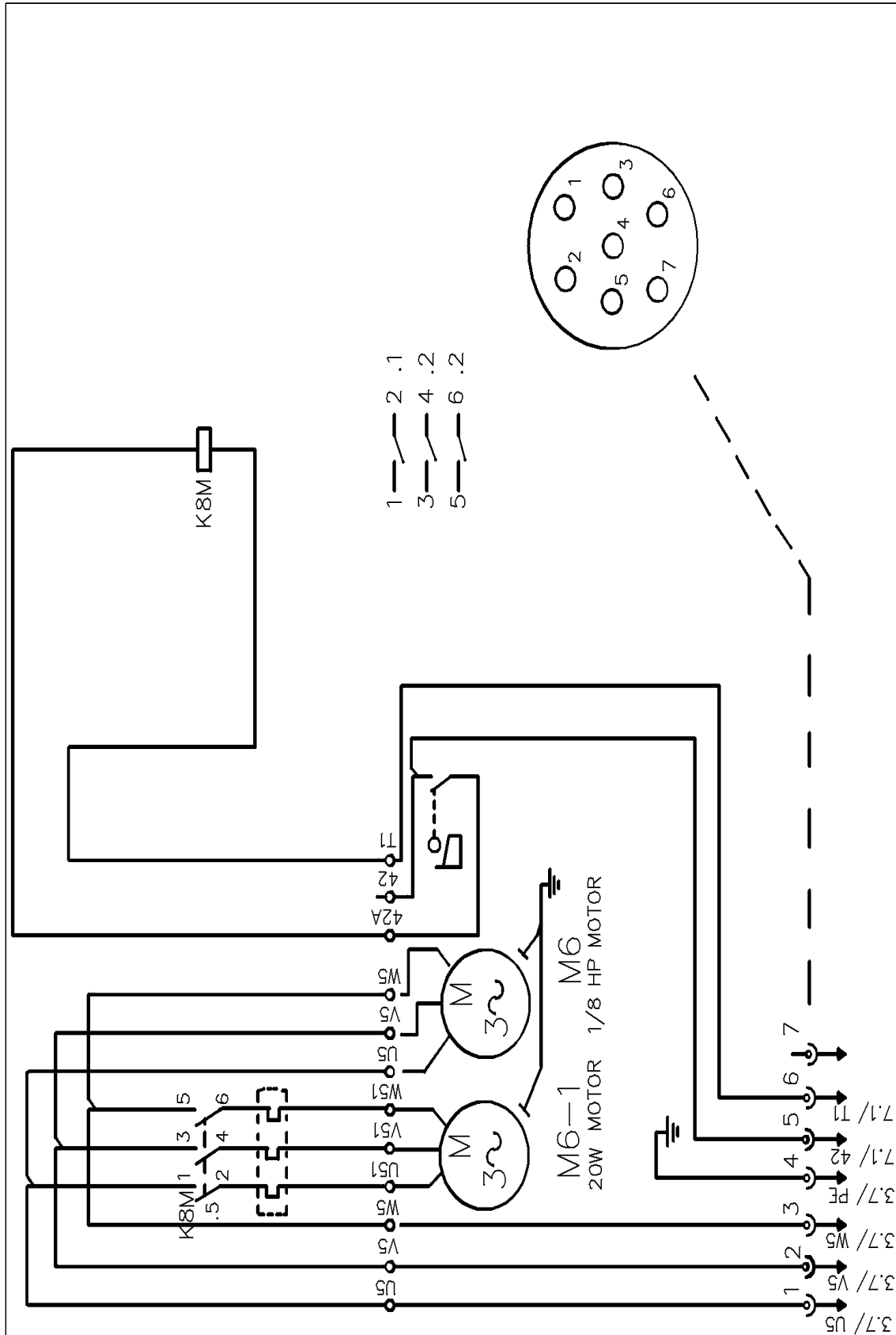
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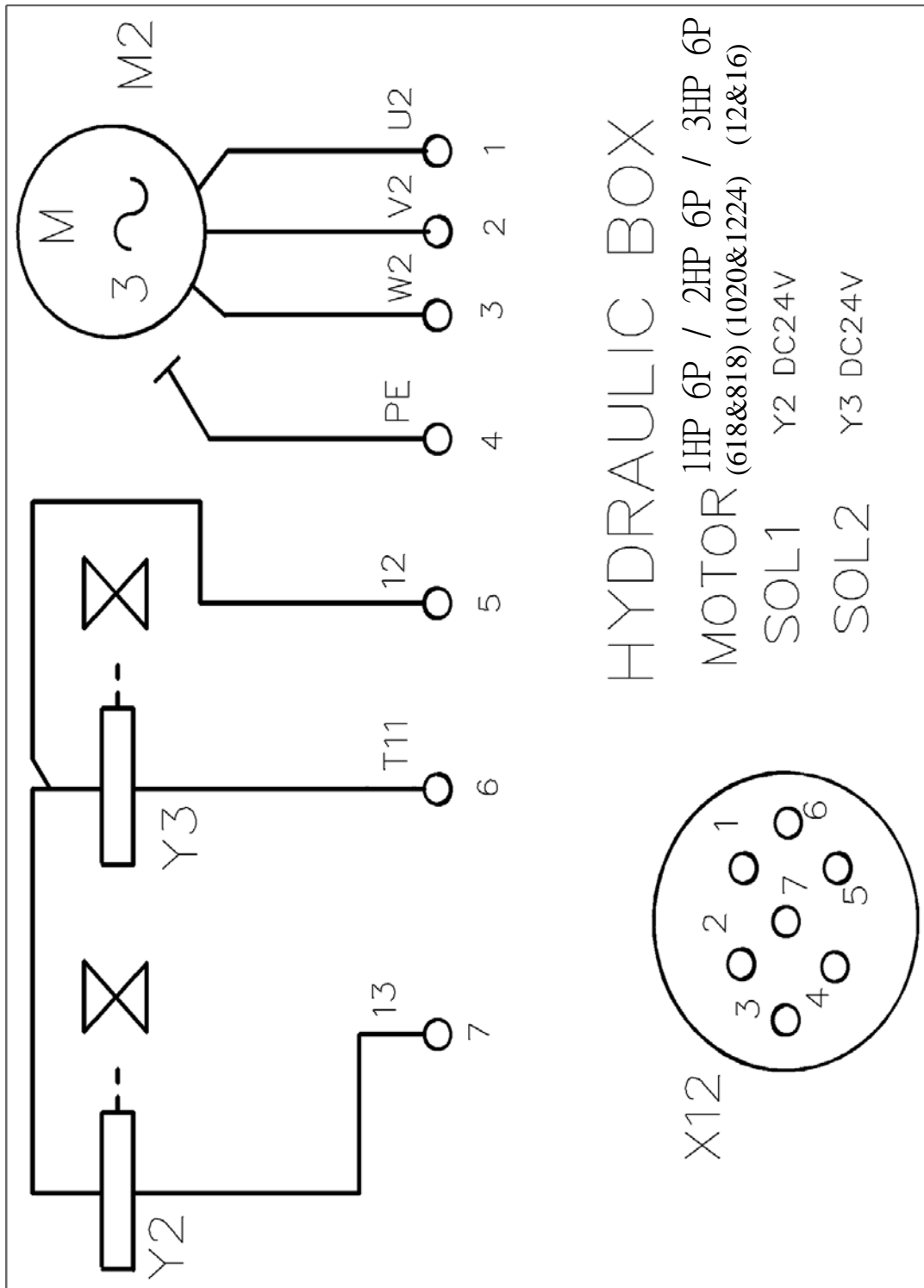
ASD II-5



ASDII-1



(618&818)/(1020&1224)/(14&16) AHDII



CHAPTER 3

ELECTRICAL PARTS LIST

3.1: PART OF CONTROL STATION

3.1.1: PART OF CONTROL STATION (FOR 618/818 AHDII)

OPERATION NO	ELECTRICAL NO	PART NO
1	K1M	LC1-D096 B7
2	K2M	LC1-D096 B7
3	K5M	LC1-D096 B7
4	K6M	LC1-D096 B7
5	K7M	LC1-D096 B7
6	K1	PYF-08A
7	K2	PYF-08A
8	K3	PYF-08A
9	K4	PYF-08A
10	K5	PYF-08A
11	K1	OMRON MY2J 12VDC
12	K2	OMRON MY2J 12VDC
13	K3	OMRON MY2J 12VDC
14	K4	OMRON MY2J 12VDC
15	K5	OMRON MY2J 12VDC
16	T1	550VA
17	C	470 μ f 50VDC
18		TS-015x47(Pin)
19		3PSWITCH DOORLOCK/PADLOCK 32A
20		ESD-16002
21		KBPC 25-06
22		GN-1006
23		2A-C02
24		GN-1006
25		FUSE DOX 1P 10A x7
26		GLASS FUSE 3A x4
27		GLASS FUSE 5A x5
28		GLASS FUSE 10A x2

 3.1.2: PART OF CONTROL STATION (FOR 1020/1224/14/16 AHDII)

OPERATION NO	ELECTRICAL NO	PAET NO
1	K1M	LC 1D096 B7
2	K2M	LC 1D096 B7
3	K5M	LC 1D096 B7
4	K6M	LC 1D096 B7
5	K7M	LC 1D096 B7
6	KI	PYF-08A
7	K2	PYF-08A
8	K3	PYF-08A
9	K4	PYF-08A
10	K5	PYF-08A
11	K1	OMRON MY2J 12VDC
12	K2	OMRON MY2J 12VDC
13	K3	OMRON MY2J 12VDC
14	K4	OMRON MY2J 12VDC
15	K5	OMRON MY2J 12VDC
16	T1	550VA
17	C	470 μ f 50VDC
18		TS-015x72(Pin)
19		3PSWITCH DOORLOCK/PADLOCK 32A
20		ESD-16002
21		KBPC 25-06
22		GN-1006
23		2A-C02
24		GN-1006
25		FUSE DOX 1P 10A x7
26		GLASS FUSE 3A x3
27		GLASS FUSE 5A x6
28		GLASS FUSE 10A x2

3.2: PART OF OPERATION PANEL

OPERATION NO	ELECTRICAL NO	PAET NO
1		MDIS-523
2		ES-MDIS-1
3		1160-KEY3
4		ASD2-KEY1
5		ASD2-SET
6		ASD2-DIS
7		ES-9412
8		RP20501S(POWER SPIAY)
9		ENCODE1
10		ASDII -A1
11		ASDII -IOP818
12		ASDII -IOP16
12		2AC02
13		ESD-16002
14		GN-1006

3.3: PART OF LIMIT (OR PROXIMITY) SWITCHES

PART NO.	TECHICAL DATA	SUPPLIER	SUPPLIERS REFERENCES	SPECS	Remark
1	S20	15A 125VAC	OMRON		1NO,1NC UL, CSA
2	S21	15A 125VAC	OMRON	Z15G1308	1NO,1NC UL, CSA
3	S22	15A 125VAC	OMRON	Z15G1308	1NO,1NC UL, CSA
4	S23	15A 125VAC	OMRON	Z15G1308	1NO,1NC UL, CSA
5	S29	15A 125VAC	OMRON	Z15G1308	1NO,1NC UL, CSA
6	B1	12-24VDC 100mA	F.T.C	PL-5P (PROXIMITY)	PnP
7	B2	12-24VDC 100mA	F.T.C	PL-5P (PROXIMITY)	PnP
8	B3	12-24VDC 100mA	F.T.C	PL-5P (PROXIMITY)	PnP
9	B4	12-24VDC 100mA	F.T.C	PL-5P (PROXIMITY)	PnP

3.4: PART OF MOTOR

3.4.1: PART OF MOTOR (FOR 618/818 AHDII)

PART NO.	TECHICAL DATA	SUPPLIER	SUPLIERS REFERENCE	Remark
1	M1			
2	M2			
3	M4			
4	M5		5IK40A-SW	
5	M6	VEXTA	PK296-03B	
6	M7		110V PUMP	
7	Y2		D24 (DC24V)	
8	Y3		D24 (DC24V)	

3.4.2: PART OF MOTOR (FOR 1020/1224 AHDII)

PART NO.	TECHICAL DATA	SUPPLIER	SUPLIERS REFERENCE	Remark
1	M1			(1020 AHD II)
	M1			(1224 AHD II)
2	M2			
3	M4			
4	M5			
5	M6	VEXTA	PK296-01A	
6	M7		110V PUMP	
7	Y2		D24 (DC24V)	
8	Y3		D24 (DC24V)	

3.4.3: PART OF MOTOR (FOR 14/16 AHDII)

PART NO.	TECHICAL DATA	SUPPLIER	SUPLIERS REFERENCE	Remark
1	M1			
2	M2			
3	M4			
4	M5			
5	M6	VEXTA	PK299-01A	
6	M7		110V PUMP	
7	Y2		D24 (DC24V)	
8	Y3		D24 (DC24V)	

3.5 INSPECTION AND MAINTENANCE

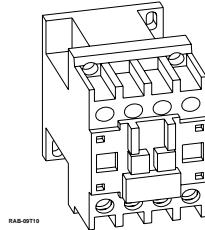
1. Visual Check of Magnet Contactor Actions

<Checking procedure>

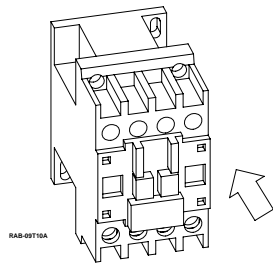
1) Visual check

<Magnet contactor did not activated>

When the magnetic contactor is not activated, the movable contact spring support and the contactor body are at the same height.



<Magnet contactor activated>



When the magnetic contactor is activated, the movable spring support is pulled in.

Approximately 4 mm from the contactor body.

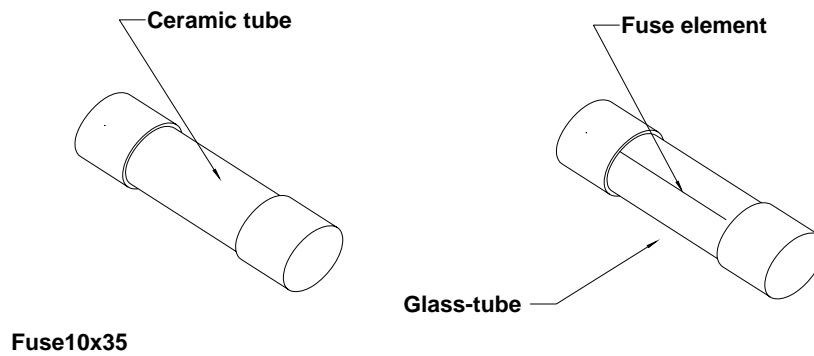
NOTE: There may be cases when the syntax sticks and the spring support remains pulled, even though the magnet contactor is not activated.

Dust or other foreign matter entering between the contactor or in the moving parts may cause poor contact.

Magnet contactor state (spring support pulled-in or projection condition) will vary according to the type of magnet contactor. However, whether or not a particular magnet contactor has been activated can be easily determined by comparing it with other magnetic contactors at site.

2. Fuse Testing and Inspection

<Cartridge fuse>



A cartridge fuse contains its fuse element in a transparent glass-tube ceramic tube

If the fuse element is not visible, please Check whether or not the fuse is blown with a multi-meter.

Glass-tube fuse; when the fuse element is blown, it is easily visible.