

# SV-4328 / SV5128 / SV6332 VERTICAL MACHINE CENTER ELECTRICAL MANUAL



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## 1. Alarm & operation message

### Alarm message detail list

<b>Message</b>	<b>Define</b>
1000	1000 EMERGENCY STOP / OVER TRAVEL
1001	1001 SPINDLE COOLER ALARM
1002	1002 LUBE PRESSURE FAULT
1003	
1004	1004 ATC ALARM
1005	1005 TOOL BROKEN
1006	1006 SERVO AXES HOME REQUIRED
1007	
1010	1010 ATC ALARM FOR POT DOWN
1011	1011 ATC ALARM FOR ARM 60
1012	1012 ATC ALARM FOR TOOL UNCLAMP
1013	1013 ATC ALARM FOR ARM 180
1014	1014 ATC ALARM FOR TOOL CLAMP
1015	1015 ATC ALARM FOR ARM -60
1016	1016 ATC ALARM FOR POT UP
1017	
1020	1020 ATC STAND-BY FOR POT UP
1021	1021 ATC STAND-BY FOR POT DOWN
1022	1022 ATC STAND-BY FOR TOOL CLAMP
1023	1023 ATC STAND-BY FOR TOOL UNCLAMP
1024	1024 ATC STAND-BY FOR ARM 0
1025	1025 ATC STAND-BY FOR ARM 180
1026	1026 ATC STAND-BY FOR 2ND. ZERO
1027	1027 ATC STAND-BY FOR MAG. IN-POSITION
1030	1030 TOOL LIFE IS FULL
1031	1031 MAG CTR NO. ERROR
1032	1032 MAG CTR SENSOR ERROR
1033	1033 AXIS MOVE FOR POT DOWN
1034	1034 JIG NOT CLAMPED
1035	1035 SPINDLE TOOL CLAMP ERROR
1036	1036 SPINDLE GEAR IN-POSITION ERROR
1037	1037 ATC NOT READY
1040	1040 COOLANT MOTOR OVERLOAD

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<b>Message</b>	<b>Define</b>
1041	1041 ATC OIL ALARM
1042	1042 MAGAZINE ALARM
1043	1043 SPINDLE OVER HEAT
1044	1044 SPINDLE OIL MIST ALARM
1045	
1046	
1047	1047 FILTER TANK FULL FAULT
1050	1050 COOLANT EMPTY ERROR
1051	1051 CTS EMPTY ERROR
1052	1052 FILTER DETECT ERROR
1053	1053 COOLANT TANK FULL FAULT
1054	1054 FILTER TANK EMPTY ERROR
1055	1055 RECYCLE MOTOR OVERLOAD
1056	1056 SPINDLE COOLER ALARM
1057	1057 CHIP FLASH MOTOR OVER LOAD
1060	1060 MAGAZINE MOTOR OVER LOAD
1061	1061 ARM MOTOR OVER LOAD
1062	1062 CTS MOTOR OVER LOAD
1063	1063 SUCK MOTOR OVER LOAD
1064	1064 EXTERNAL SPINDLE FAN OVER LOAD
1065	1065 SPINDLE COOLER OVER LOAD
1066	1066 CHIP CONVEYOR MOTOR OVERLOAD
1067	1067 OIL SKIMMING MOTOR OVER LOAD
1084	1084 A AXIS UNCLAMP FINISH ERROR
1085	1085 A AXIS CLAMP FINISH ERROR



### Alarm messages & troubleshooting description

Message	Define
<b>Message :</b>	1000 EMERGENCY STOP / OVER TRAVEL
Description :	Emergency stop or over travel
Troubleshooting :	1. Check the machine to cancel emergency stop. Press the white "System Preparation Completed" button once to exclude the condition. 2. Check if each servo travel position exceeds the limit. Move and check each servo position and then press "RESET" button to relieve over travel alarm.
<b>Message :</b>	1001 SPINDLE COOLER ALARM
Description :	alarm for spindle cooling mechanism
Troubleshooting :	Check the spindle cooling mechanism. Add oil to solve the problem if necessary.
<b>Message :</b>	1002 LUBE PRESSURE FAULT
Description :	Pneumatic pressure for sliding rail too low
Troubleshooting :	1. Relieve the alarm by adding oil and pressing pressure feed button until reaching the required pneumatic pressure for sliding rail for 2 seconds. 2. If pneumatic pressure doesn't go up by continuously pressing the pressure feed button for 10 seconds, check if oil circuit for sliding rail is loose or damaged.
<b>Message :</b>	1004 ATC ALARM
Description :	Auto tool change alarm
Troubleshooting :	1. Check and fix failure of over current relay of motor. 2. Check ATC mechanism and troubleshoot it.
<b>Message :</b>	1005 TOOL BROKEN
Description :	Alarm for a broken tool.
Troubleshooting :	Replace the tool. Re-adjust the tool and press "RESET" button to cancel the alarm.
<b>Message :</b>	1006 SERVO AXES HOME REQUIRED
Description :	Each servo axis should go back to its origin.
Troubleshooting :	1. Move each servo axis to a safe position under manual mode. 2. Press "AUTO-ZERO" button under ZRN mode for automatic axis homing. 3. Press "RESET" button once to relieve the alarm.
<b>Message :</b>	1010 ATC ALARM FOR POT DOWN
Description :	alarm for tool pot going down
Troubleshooting :	1. ATC tool pot is going down. Be careful while operating. 2. When tool change arm is at the origin, lift the tool pot with M77 command.

Message	Define
<b>Message :</b>	1011 ATC ALARM FOR ARM 60
Description :	alarm for tool holding by tool change arm at 60°.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. The tool change arm is now at the tool holding position. Be careful while operating.</li> <li>2. Move the tool change arm back to its origin with M76 command upon clamping controlled by the spindle.</li> <li>3. Cross rotate the tool change arms for tool change with M74 command upon unclamping driven by the spindle.</li> </ol>
<b>Message :</b>	1012 ATC ALARM FOR TOOL UNCLAMP
Description :	Alarm for tool unclamping controlled by the spindle.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Activate the spindle for clamping with M75 command.</li> <li>2. Cross rotate tool change arms tool change with M74 command.</li> </ol>
<b>Message :</b>	1013 ATC ALARM FOR ARM 180
Description :	alarm for tool change by tool change arm at 180°.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Tool change arms stop during cross tool change. Cross rotate tool change arms to complete tool change with M74 command.</li> <li>2. Activate the spindle for clamping with M75 command.</li> </ol>
<b>Message :</b>	1014 ATC ALARM FOR TOOL CLAMP
Description :	Alarm for clamping controlled by the spindle.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Carefully operate during clamping by the tool holder along the spindle.</li> <li>2. Move the tool change arm back to its origin with M76 command while clamping controlled by the spindle.</li> <li>3. Activate the spindle for unclamping with M73 command.</li> </ol>
<b>Message :</b>	1015 ATC ALARM FOR ARM -60
Description :	Alarm for tool change arm to retract to its origin.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Tool change arm is in position for tool holding. Be careful while operating.</li> <li>2. Move the tool pot up with M77 command.</li> </ol>
<b>Message :</b>	1016 ATC ALARM FOR POT UP
Description :	Alarm for tool pot going up.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. ATC tool pot is going up. Be careful while operating.</li> <li>2. Press "RESET" button once to cancel the alarm.</li> </ol>

Message	Define
<b>Message :</b>	1020 ATC STAND-BY FOR POT UP
Description :	ATC tool pot is going up during tool change.
Troubleshooting :	ATC tool pot is going up. Be careful while operating.
<b>Message :</b>	1021 ATC STAND-BY FOR POT DOWN
Description :	ATC tool pot is going down during tool change.
Troubleshooting :	ATC tool pot is going down. Be careful while operating.
<b>Message :</b>	1022 ATC STAND-BY FOR TOOL CLAMP
Description :	The spindle is activated for tool clamping during tool change.
Troubleshooting :	Carefully operate while clamping controlled by the spindle.
<b>Message :</b>	1023 ATC STAND-BY FOR TOOL UNCLAMP
Description :	The spindle is activated for tool unclamping during tool change.
Troubleshooting :	Carefully operate while unclamping controlled by the spindle.
<b>Message :</b>	1024 ATC STAND-BY FOR ARM 0
Description :	The tool change arm is in the zero position during tool change.
Troubleshooting :	The ATC tool change arm is now at its origin. Be careful while operating.
<b>Message :</b>	1025 ATC STAND-BY FOR ARM 180
Description :	ATC tool change arm is in position for tool exchange during tool change.
Troubleshooting :	ATC tool change arm is now in tool exchange. Be careful while operating.
<b>Message :</b>	1026 ATC STAND-BY FOR 2ND. ZERO
Description :	Servo axes are at the 2nd zero during tool change.
Troubleshooting :	Each servo axis is in the position of the 2nd zero. Be careful while operating.
<b>Message :</b>	1027 ATC STAND-BY FOR MAG. IN-POSITION
Description :	The tool magazine is in positioning during tool change.
Troubleshooting :	The tool magazine is now in position. Be careful while operating.
<b>Message :</b>	1030 TOOL LIFE COUNT FULL
Description :	The tool life count reaches the limit.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check and replace the tool with full life count.</li> <li>Make sure the tool is properly installed without damage.</li> <li>2. Reset tool life count to zero.</li> </ol>

Message	Define
<b>Message :</b>	1032 MAG CTR SENSOR ERROR
Description :	An error occurs to the CTR sensor of the tool magazine.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. When the tool pot is going up, choose manual mode and press "carousel clockwise rotation" to rotate the tool carousel CRT No. 1 to complete tool carousel resetting.</li> <li>2. Check the proximity switch for carousel tool count and make sure it works well.</li> </ol>
<b>Message :</b>	1033 AXIS MOVE FOR POT DOWN
Description :	Servo axis is moving for the tool pot going down.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the tool pot mechanism for going up and down. Make sure it runs smoothly.</li> <li>2. Check the detection switch for the tool pot going up and down. Make sure it works well.</li> <li>3. Lift the tool pot with M77 command. Press "RESET" button once to relieve the alarm.</li> </ol>
<b>Message :</b>	1034 JIG NOT CLAMPED
Description :	The jig fails to clamp a work piece tightly.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the jig mechanism for clamping and unclamp. Make sure it works perfectly.</li> <li>2. Check the detection switch for clamping and unclamping. Make sure it works well.</li> </ol>
<b>Message :</b>	1035 SPINDLE TOOL CLAMP ERROR
Description :	An error of tool clamping controlled by the spindle occurs.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the spindle unclamping mechanism for tool clamping and unclamping. Make sure it works well.</li> <li>2. Check the detection switch for spindle tool clamping and unclamping. Make sure it works wells.</li> <li>3. Activate spindle tool clamping with M75 command. Press "RESET" button once to relieve the alarm.</li> </ol>
<b>Message :</b>	1036 SPINDLE GEAR IN-POSITION ERROR
Description :	An error of the position of the spindle gear occurs.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the spindle gear shifting mechanism. Make sure it works well.</li> <li>2. Check the detection switch for high and low gear. Make sure it works well.</li> </ol>

Message	Define
<b>Message :</b>	1037 ATC NOT READY
Description :	ATC device is not ready to run yet.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the tool pot mechanism. Make sure the pot goes up. If the pot does not go up, please refer to alarm 1033 for troubleshooting.</li> <li>2. Check the tool carousel mechanism and make sure the carousel is in position. If the carousel is not in position, please refer to alarm 1032 for troubleshooting.</li> <li>3. Check the tool change arm mechanism. Make sure the tool change arm is homed. If not homed, manually move the arm to its origin.</li> </ol>
<b>Message :</b>	1040 COOLANT MOTOR OVERLOAD
Description :	The motor for sending coolant is overloaded.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check all motor over-current switches in the electrical box and remove the overloading condition.</li> <li>2. Press the "RESET" button to relieve the alarm.</li> </ol>
<b>Message :</b>	1041 ATC OIL ALARM
Description :	Alarm for the lubricant of the ATC device.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check the lubricant in the ATC mechanism. Make sure the quality and amount of lubricant are OK.</li> <li>2. Press "RESET" button once to relieve the alarm.</li> <li>3. The lubricant should be replaced at least once a year. Contact the manufacturer for oil specifications.</li> </ol>
<b>Message :</b>	1042 MAGAZINE ALARM
Description :	alarm for the tool magazine
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check functions of the tool magazine. Make sure all functions work well.</li> <li>2. Press "RESET" button to relieve the alarm.</li> </ol>
<b>Message :</b>	1043 SPINDLE OVER HEAT
Description :	The spindle over-heats.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check if the machining program is set over machining or check if the tool is damaged or broken. Make sure all machining conditions are normal.</li> <li>2. Check all functions of the spindle mechanism. Make sure all functions work well.</li> <li>3. Press "RESET" button once to relieve the alarm.</li> </ol>

Message	Define
<b>Message :</b>	1044 SPINDLE OIL MIST ALARM
Description :	Alarm for the cooling device for spindle oil mist.
Troubleshooting :	1. Check functions of the spindle oil mist mechanism. Make sure all functions work well. 2. Press "RESET" button once to relieve the alarm.
<b>Message :</b>	1047 FILTER TANK FULL FAULT
Description :	CTS tank water full alarm
Troubleshooting :	1. Pls check coolant tank level switch is normal 2. Pls check return hose not be blicked
<b>Message :</b>	1050 COOLANT EMPTY ERROR
Description :	The level of coolant gets too low.
Troubleshooting :	Check the level of the coolant. Make sure coolant is sufficient.
<b>Message :</b>	1051 CTS EMPTY ERROR
Description :	The coolant level of CTS gets too low.
Troubleshooting :	Check the coolant level of CTS. Make sure coolant is sufficient.
<b>Message :</b>	1052 FILTER DETECT ERROR
Description :	Abnormal filter condition is detected.
Troubleshooting :	Check the filter system and make sure it works well.
<b>Message :</b>	1053 COOLANT FULL FAULT
Description :	The coolant system fails.
Troubleshooting :	1. Check if a trip of QM1 over-current switch in the electrical box occurs. Make sure it works well. 2. Check the level of coolant. Make sure the coolant is sufficient. 3. Check coolant motor runs smoothly. Make sure it works well.
<b>Message :</b>	1054 FILTER TANK EMPTY ERROR
Description :	The level of the filter tank gets too low.
Troubleshooting :	Check the level of the fluid in the filter tank. Make sure the fluid reaches the required level.
<b>Message :</b>	1055 RECYCLE MOTOR OVERLOAD
Description :	CTS recycle motor overload
Troubleshooting :	1. Check EC box over relay ( QM10 ) is normal 2. Check coolant tank water level is normal 3. Check motor running is normal

Message	Define
<b>Message :</b>	1056 SPINDLE COOLER ALARM
Description :	The oil cooler for the spindle fails.
Troubleshooting :	The signal sending an alarm for failure of spindle oil cooler is disconnected. Check and make sure if it works well.
<b>Message :</b>	1057 CHIP FLASH MOTOR OVER LOAD
Description :	The flash motor is overloaded.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check if a trip of QM6 over current switch in the electrical box occurs. Make sure it works well.</li> <li>2. Check the level of the coolant. Make sure the coolant reaches the required level.</li> <li>3. Check if the machining motor runs smoothly. Make sure all functions work well.</li> </ol>
<b>Message :</b>	1060 MAGAZINE MOTOR OVER LOAD
Description :	The magazine motor is overloaded.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check if a trip of QM2 over current switch in the electrical box occurs. Make sure it works well.</li> <li>2. Check if the magazine mechanism functions well. Make sure it works smoothly.</li> </ol>
<b>Message :</b>	1061 ARM MOTOR OVER LOAD
Description :	The motor for tool change arm is overloaded.
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check if a trip of QM5 over current switch trip in the electrical box occurs. Make sure it works well.</li> <li>2. Check if tool change arm mechanism functions well. Make sure its function works smoothly.</li> </ol>
<b>Message :</b>	1062 CTS MOTOR OVER LOAD
Description :	CTS motor is overloaded
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check if a trip of QM9 over current switch in the electrical box occurs. Make sure it functions well.</li> <li>2. Check the level of CTS fluid. Make sure the fluid reaches the required level.</li> <li>3. Check if CTS motor runs smoothly. Make sure it functions well</li> </ol>



Message	Define
<b>Message :</b>	1063 SUCK MOTOR OVER LOAD
Description :	The suck motor is overloaded.
Troubleshooting :	1. Check if a trip of QM10 over current switch occurs. Make sure it works well. 2. Check if the suck motor runs smoothly. Make sure it functions well.
<b>Message :</b>	1064 EXTERNAL SPINDLE FAN OVER LOAD
Description :	The external spindle fan is overloaded.
Troubleshooting :	1. Check if a trip of QM8 over current switch in the electrical box occurs. Make sure it functions well. 2. Check if the external spindle fan runs smoothly. Make sure it works well.
<b>Message :</b>	1065 SPINDLE COOLER OVER LOAD
Description :	The external spindle cooler is overloaded.
Troubleshooting :	
<b>Message :</b>	1066 CHIP CONVEYOR MOTOR OVERLOAD
Description :	The motor for chip conveyor is overloaded.
Troubleshooting :	1. Check if a trip of QM3 over current switch in the electrical box occurs. Make sure it functions well. 2. Check if the chip conveyor runs smoothly. Make sure it works well.
<b>Message :</b>	1067 OIL SKIMMING MOTOR OVER LOAD
Description :	The motor for oil skimming is overloaded.
Troubleshooting :	1. Check if a trip of QM7 over current switch in the electrical box occurs. Make sure it functions well. 2. Check if the motor for oil skimming run smoothly. Make sure it functions well.
<b>Message :</b>	1084 A AXIS UNCLAMP FINISH ERROR
Description :	A axis unclamp not complete alarm
Troubleshooting :	1. Check EC box relay ( KA32 ) is ON 2. Check air is normal 3. Check solenoid valve is ON
<b>Message :</b>	1085 A AXIS CLAMP FINISH ERROR
Description :	A axis clamp not complete alarm
Troubleshooting :	1. Check EC box relay ( KA32 ) is OFF 2. Check air is normal 3. Check solenoid valve is OFF

## Operation message detail list

Message	Define
2000	2000 MAINTENANCE MODE
2001	2001 ARM TROUBLESHOOTING
2002	2002 CHECK TOOL NO. OF SPINDLE & STAND-BY
2003	2003 AIR LOW
2004	2004 LUBE ALARM
2005	2005 DOOR NOT CLOSE

## Operation message & troubleshooting description

Message	Define
<b>Message:</b>	2000 MAINTENANCE MODE
Description :	It's in the maintenance mode.
Troubleshooting :	Cancel the maintenance mode controlled by the user's software switch to cancel the message.
<b>Message :</b>	2001 ARM TROUBLESHOOTING
Description :	The mode of tool change arm troubleshooting is activated.
Troubleshooting :	Complete the troubleshooting steps for tool change arm to cancel the message.
<b>Message :</b>	2002 CHECK TOOL NO. OF SPINDLE & STAND-BY
Description :	Check the tool number by spindle or by tool magazine.
Troubleshooting:	Complete checking the tool number and the message is automatically cancelled.
<b>Message :</b>	2003 AIR LEAK
Description :	The source of air pressure is too low.
Troubleshooting:	Check the air pressure system. Make sure the air pressure reaches to the required level and the message is automatically cancelled.
<b>Message :</b>	2004 LUBE ALARM
Description :	alarm for automatic lubricator
Troubleshooting :	Check the automatic lubricator. Make sure the lubricant reaches the required level to automatically cancel the message.
<b>Message :</b>	2005 DOOR NOT CLOSE
Description :	The safety door is not properly closed.
Troubleshooting :	The safety door is not properly closed. Make sure the door is closed to cancel the message.

## 2. Parts list

Index	Name	Type	Spec.	Brand	Made in
C1	TRIPPER COIL	BZ6FK 10C	AC220V	FUJI	Japan
HE	HEAT EXCHANGER	CH-2AR AC220V		高抗	Taiwan
KA17 TO KA21		O1D-08-AC	Omron 10A 240V	優聖盟	Taiwan
KA23 , 24 , 31 , 32	RELAY PC BOARD	01D-04-DC	Omron 10A 240V	優聖盟	Taiwan
KA25~ KA30		O1D-08-DC	Omron 10A 240V	優聖盟	Taiwan
KAA	RELAY	LY-4NJ DC24V	DC24V 10A4P	OMRON	Japan
KAB	RELAY	MY-2P DC24V	DC24V 5A4P	OMRON	Japan
KM1	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM2	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM3	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM4	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM5	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM6	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM7	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM8	MAGNETIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KMA	MAGNETIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
KMH	MAGNETIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
KML	MAGNETIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
L3	TOWER LIGHT	R,Y,G	DC24V LED	巨簏	Taiwan

Index	Name	Type	Spec.	Brand	Made in
LL	WORKING LIGHT		24W AC220V	巨簷	Taiwan
RL	WORKING LIGHT		24W AC220V	巨簷	Taiwan
MPG unit	MPG MODULE			遠瞻	Taiwan
NFB	NONE FUSE BREAKER	EABW100EAG 3P75A	3P 75A	FUJI	Japan
NFB	HANDLE OPERATION MECHANISM	BZ6-N10D		FUJI	Japan
Operation board	Operation board			經冠	Taiwan
PS1	1 PHASE POWER SUPPLIER	S-100-24 4.5A	24V / 4.5A	明緯	Taiwan
PS2	1 PHASE POWER SUPPLIER	S-150-24 6.5A	24V / 6.5A	明緯	Taiwan
QF1	SAFE TRIP	1P 2A	10 KA	MOELLER	Germany
QF2	SAFE TRIP	1P 4A	10 KA	MOELLER	Germany
QF3	SAFE TRIP	1P 4A	10 KA	MOELLER	Germany
QF4	SAFE TRIP	1P 1A	10 KA	MOELLER	Germany
QF5	SAFE TRIP	1P 2A	10 KA	MOELLER	Germany
QF6	SAFE TRIP	1P 2A	10 KA	MOELLER	Germany
QF7	SAFE TRIP	3P 1A	10 KA	MOELLER	Germany
QM1	OVER RELAY	ZB12-4	2.5A~4A	MOELLER	Germany
QM2	OVER RELAY	ZB12-1.6	1~1.6A	MOELLER	Germany
QM3	OVER RELAY	ZB12-2.5	1.6~2.5A	MOELLER	Germany
QM4	OVER RELAY	ZB12-6	4A~6A	MOELLER	Germany
QM5	OVER RELAY	ZB12-4	2.5A~4A	MOELLER	Germany
QM6	OVER RELAY	ZB12-4	2.5A~4A	MOELLER	Germany
QM7	OVER RELAY	ZB12-0.4	0.25A~0.4A	MOELLER	Germany
QM8	OVER RELAY	ZB12-1.6	1~1.6A	MOELLER	Germany
RS232 Box	RS232 INTERFACE	With net connector			Taiwan
SN1	PROXIMITY SENSOR	E2E2-X2B1	PNP N0	OMRON	Japan
TB1	TERMINAL BLOCK	20021201	10A 600VAC	WAGO	Germany

<b>Index</b>	<b>Name</b>	<b>Type</b>	<b>Spec.</b>	<b>Brand</b>	<b>Made in</b>
TRANS1	TRANSPORTOR BOARD	0I-I/O		優聖盟	Taiwan
TRANS2	TRANSPORTOR BOARD	0I-I/O		優聖盟	Taiwan
TRANS3	TRANSPORTOR BOARD	0I-I/O		優聖盟	Taiwan

**3. M code list**

M Code	Define
M00	Program Stop
M01	Optional program stop
M02	Program end
M03	Spindle CW
M04	Spindle CCW
M05	Spindle stop
M06	Auto tool change
M07	Cutting air blow on
M08	Coolant pump on
M09	Coolant pump off
M10	Cutting air blow off
M13	Spindle CW and coolant on
M14	Spindle CCW and coolant on
M15	High pressure coolant chip remove on
M16	High pressure coolant chip remove off
M19	Spindle original
M21	X axis mirror image on
M22	Y axis mirror image on
M23	Mirror image off
M24	A axis mirror image
M25	A axis unclamp
M26	A axis clamp
M27	A axis index
M29	Rigid tapping
M30	Program end
M33	M code reserve 1
M34	M code reserve 2
M35	M code reserve 3
M36	M code reserve 4
M41	Magazine extend for M6 macro

M Code	Define
M42	Magazine tool command search for M6 macro
M46	Override cancel
M48	CTS on
M50	Chip conveyor CW
M51	Chip conveyor stop
M52	Magazine extend
M53	Magazine return
M66	Auto tool change start for M6
M70	Automatic tool data table re-building
M71	Tool pot down
M72	Arm move to catch tools
M73	Spindle tool unclamp
M74	Arm move to exchange tools
M75	Spindle tool clamp
M76	Arm return to home position
M77	Tool pot up
M90	Magazine search tool number command
M95	Arm trouble shooting
M98	Call sub-program
M99	Program re-start / Return to main program



## 4. PLC parameter

### 4.1 Keep relay

Item	Define = 0	Define = 1	Arm type
K0.0	Servo axis can't move with ATC not ready	Servo axes can move with ATC not ready	0
K0.1	A axis zero return function ignore	A axis zero return function valid	0
K0.2	Servo axes zero return function valid	Servo axes zero return function ignore	0
K0.3	Servo axes zero return excute together	Servo axes zero return execute after Z axis zero return finished	0
K0.4	Coolant stop when M00 /M01	Coolant keep status when M00 / M01	0
K0.5			0
K0.6	Spindle gear box valid ( M68 / M69 )	Spindle gear box disable ( M68 / M69 )	1
K0.7	Auto power off with M02 disable	Auto power off M02 with valid	0
K1.0	Three lamps of tool alarm detector	Single lamp of tool alarm detector	0
K1.1	X / Y axes 2nd home position valid when ATC running	X / Y axes 2nd home position ignore when ATC running	1
K1.2	Spindle tool unclamp no beforehand active	Spindle tool unclamp beforehand active	0
K1.3	Magazine pot up solenoid without keep type	Magazine pot up solenoid with keep type	0
K1.4	Arm can active with ATC ready	Arm can active with Z axis on 2nd zero position	1
K1.5	Spindle cooler alarm detector ignore	Spindle cooler alarm detector valid	0
K1.6	Spindle unclamp active don't keep type	Spindle unclamp active keep type	0
K1.7	Lubrication pressure detect disable	Lubrication pressure detect valid	1
K2.0	Magazine in-position signal NO type ( Normal open )	Magazine in-position signal NC type ( Normal close )	0
K2.1	Z axis interlock ignore when Arm don't ready	Z axis interlock active when Arm don't ready	1
K2.2	Spindle orientation ignore when Arm don't ready	Spindle orientation valid when Arm don't ready	0
K2.3	Servo axes locked when door interlock open	Spindle and servo axes locked when door interlock open	0
K2.4	Tool life over message ignore	Tool life over message valid	0

Item	Define = 0	Define = 1	Arm type
K2.5	Confirm A axis unclamp by detector	Confirm A axis unclamp by timer	0
K2.6	Spindle override command standard type	Spindle override command analog type	0
K2.7	X axis zero return by plus direction	X axis zero return by minus direction	1
K3.0	Magazine decelerate with counter sensor	Magazine decelerate with in-position sensor	0
K3.1	Arm detect sensor with NC type	Arm detect sensor with NO type	0
K3.3	Pot UP for stand-by status of magazine pot	Pot DOWN for stand-by status of magazine pot	0
K3.4	Magazine position no.1 valid	Magazine position no.1 disable	0
K3.5	Oil skimmer running when system ready	Oil skimmer running when power on	0
K3.6	Y7.6 output for oil skimmer	Y7.6 output for M27 of index table function	0
K3.7	Override limited valid when door open	Override limited disable when door open	0
K5.0	MDI mode jig B clamp detector disable	MDI mode jig B clamp detector valid	0
K5.2	Jig B locate unclamp solenoid only	Jig B locate two solenoid for clamp and unclamp	0
K5.4	NO type of lubrication level switch	NC type of lubrication level switch	1
K5.5	Jig must clamp message disable	Jig must clamp message valid	0
K5.6	Jig A locate two solenoid for clamp and unclamp	Jig A locate unclamp solenoid only	0
K5.7	NO type of magazine count sensor	NC type of magazine count sensor	1
K6.0	A axis unclamping when solenoid on	A axis unclamping when solenoid off	0
K6.1	Foot switch of jig valid on manual mode only	Foot switch of jig valid at all mode	0
K6.2	Jig clamp detector valid at MDI mode	Jig clamp detector disable at MDI mode	0
K6.3	Jig B clamp disable when emergency stop	Jig B clamp valid when emergency stop	0
K6.4	Control work light by operation panel disable	Control work light by operation panel valid	1
K6.5	Operation mode change disable	Operation mode change valid	0

Item	Define = 0	Define = 1	Arm type
K6.6	Manual absolute valid	Manual absolute disable	0
K6.7	Spindle stop when M00 / M01 code	Spindle keep status when M00 / M01 code	0
K7.0	Lubrication always on	Lubrication control by timer of PMC	1
K7.1	Lubrication running when system ready	Lubrication running when cycle running	1
K7.2	Use same pump for coolant A and B	Use difference pumps for coolant A and B	0
K7.3	Spindle will stop when change operate mode	Spindle keep running status when change operate mode	0
K7.4	Coolant B stop by M09 code valid	Coolant B stop by M09 disable	0
K7.5	C.T.S device disable	C.T.S device valid	0
K7.6	Cam type Arm device	Quick tool change type Arm device	0
K7.7	Arm device step by step control valid	Arm device step by step control disable	0
K8.0	Zero return direction with X , -Y , +Z	Zero return direction with X , +Y , -Z	1
K8.1	Spindle oil mist detector ignore	Spindle oil mist detector valid	0
K8.2	Servo off ignore when A axis clamped	Servo off valid when A axis clamped	0
K8.3	Coolant auto off display message	Coolant auto off didn't display message	0
K8.4	Spindle rigid tapping rotation	Spindle gear change rotation	0
K8.5	Magazine pot no. is 24 or 20		0
K8.6	A axis unclamping when Jog mode	A axis unclamping when +4 / -4 push button pressed	0
K8.7	Chip conveyor running when cycle running	Chip conveyor running always	0
K9.0	Chip conveyor running at all mode	Chip conveyor running manual mode valid	0
K9.1	Auto zero return X / Y running after Z return finished	Auto zero return all axes running together	0
K9.2	Left door interlock detector valid	Left door interlock detector disable	1
K9.3	Door interlock don't release when M02 / M30 code	Door interlock release when M02 / M30 code	0

Item	Define = 0	Define = 1	Arm type
K9.4	Right door interlock detector valid	Right door interlock detector disable	1
K9.5	Door interlock coil release automatically	Door interlock coil release manually	0
K9.6	Rapid override valid	Rapid override cancel	0
K9.7	Air alarm message active signal block mode	Air alarm message don't active signal block mode	0
K10.0	10% of spindle override interval	5% of spindle override interval	0
K10.1	120% of maximum spindle override	200% of maximum spindle override	0
K10.2	Chip conveyor keep forward by automatically	Chip conveyor timer type forward by automatically	0
K10.3	Keep on type of cutting air blast	Flash type of cutting air blast	0
K10.4	Y7.4 output control by M37	Y7.4 output for hydraulic motor	0
K10.7	Electro-magnetic door interlock release with handle mode only	Electro-magnetic door interlock release with all mode	0
K11.0	None	Arm move to catch tools	
K11.1	None	Arm in-position to catch tools	
K11.2	None	Arm exchange tools	
K11.3	None	Arm in-position to exchange tools	
K11.4	None	Arm return to home position	
K11.5	Jig unclamp	Jig clamp latch	
K11.7	Jig B unclamp	Jig B clamp latch	
K12.0	Spindle gear with magnetic contactor disable	Spindle gear with magnetic contactor valid	1

## Standard setting list

Keep relay	Arm type	Keep relay	Arm type	Keep relay	Arm type	Keep relay	Arm type
K0.0	1	K3.0	0	K6.0	0	K9.0	0
K0.1	0	K3.1	0	K6.1	0	K9.1	0
K0.2	1	K3.2	1	K6.2	0	K9.2	1
K0.3	0	K3.3	0	K6.3	0	K9.3	1
K0.4	0	K3.4	0	K6.4	1	K9.4	1
K0.5	1	K3.5	0	K6.5	0	K9.5	0
K0.6	1	K3.6	0	K6.6	0	K9.6	1
K0.7	0	K3.7	0	K6.7	0	K9.7	1
K1.0	0	K4.0	0	K7.0	1	K10.0	0
K1.1	1	K4.1	0	K7.1	1	K10.1	0
K1.2	0	K4.2	0	K7.2	1	K10.2	0
K1.3	0	K4.3	0	K7.3	1	K10.3	0
K1.4	1	K4.4	0	K7.4	0	K10.4	1
K1.5	0	K4.5	0	K7.5	0	K10.5	1
K1.6	0	K4.6	0	K7.6	0	K10.6	0
K1.7	0	K4.7	1	K7.7	0	K10.7	0
K2.0	0	K5.0	0	K8.0	0	K12.0	1
K2.1	1	K5.1	0	K8.1	0	K12.1	0
K2.2	0	K5.2	0	K8.2	0	K12.2	1
K2.3	1	K5.3	0	K8.3	1	K12.3	0
K2.4	0	K5.4	0	K8.4	0	K12.4	0
K2.5	0	K5.5	0	K8.5	1	K8.5	0
K2.6	0	K5.6	0	K8.6	0	K12.6	0
K2.7	1	K5.7	1	K8.7	1	K12.7	0
K17.0	0	K19.0	0				
K17.1	1	K19.1	0				
K17.2	0	K19.2	1				
K17.3	0	K19.3	0				
K17.4	0	K19.4	0				
K17.5	0	K19.5	0				
K17.6	0	K19.6	0				
K17.7	0	K19.0	0				

## 4.2 Timer detail list

Timer no.	Define	Preset
T1	Magazine rotation check time	49968
T2	Auto tool change ( M06 ) active time	14976
T3	Lubricate run time	14976
T4	Lubricate stop interval time	14976
T7	Hydraulic motor running time	4992
T8	Lubrication pressure check delay time	15984
T9	High gear change time	15000
T10	Low gear change time	15000
T11	Rapid tapping delay finish time	
T12	Arm middle point check delay time	
T13	Tool search enable delay time	
T14	Arm home position detect delay time	
T15	Magazine pot up time	
T16	Magazine pot down time	
T17	Spindle tool clamp delay time	
T18	Spindle tool unclamp delay time	
T19	Spindle air blow delay time	
T20	Arm 60 deg. Rotate arrival delay time	
T21	Arm 180 deg. Rotate arrival delay time	
T22	Arm -60 deg. Rotate arrival delay time	
T23	Magazine CW stop delay timer	
T24	Magazine CCW stop delay timer	
T25	Arm jog active delay timer	496
T26	Chip conveyor CW running timer	
T27	Chip conveyor stop interval timer	
T28	Cutting air blast flash on timer	
T29	Cutting air blast flash off interval timer	
T30	Coolant tank full level check timer	10000
T31	C.T.S coolant tank level check timer	10000
T39	Oil skimmer stop interval timer	24000
T40	Oil skimmer on timer	24000

### 4.3 Counter

#### Counter detail list

Counter no.	Define	Preset
C8	Lube on timer	15
C9	Lube off interval timer	600
C10	Grease on timer	100
C11	Grease one cycle timer / totally timer	0
C13		15

### 4.4 Data table

#### Data table detail list




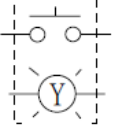
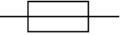

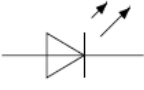
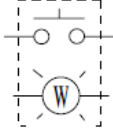
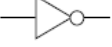
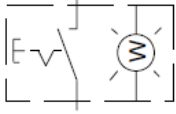
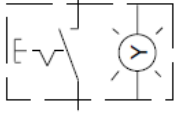
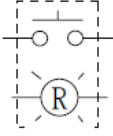

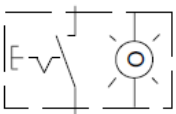
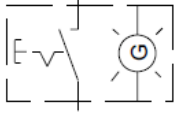
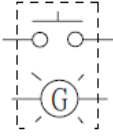
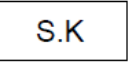


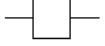



Data	Define	Preset
D0	Tool no. of spindle	25
D1	Tool no. of magazine pot 1	1
D2	Tool no. of magazine pot 2	2
D3	Tool no. of magazine pot 3	3
D4	Tool no. of magazine pot 4	4
D5	Tool no. of magazine pot 5	5
D6	Tool no. of magazine pot 6	6
D7	Tool no. of magazine pot 7	7
D8	Tool no. of magazine pot 8	8
D9	Tool no. of magazine pot 9	9
D10	Tool no. of magazine pot 10	10
D11	Tool no. of magazine pot 11	11
D12	Tool no. of magazine pot 12	12
D13	Tool no. of magazine pot 13	13
D14	Tool no. of magazine pot 14	14
D15	Tool no. of magazine pot 15	15
D16	Tool no. of magazine pot 16	16
D17	Tool no. of magazine pot 17	17
D18	Tool no. of magazine pot 18	18
D19	Tool no. of magazine pot 19	19
D20	Tool no. of magazine pot 20	20



Data	Define	Preset
D21	Tool no. of magazine pot 21	21
D22	Tool no. of magazine pot 22	22
D23	Tool no. of magazine pot 23	23
D24	Tool no. of magazine pot 24	24
D25	Tool no. of magazine pot 25	25
D26	Tool no. of magazine pot 26	26
D27	Tool no. of magazine pot 27	27
D28	Tool no. of magazine pot 28	28
D29	Tool no. of magazine pot 29	29
D30	Tool no. of magazine pot 30	30

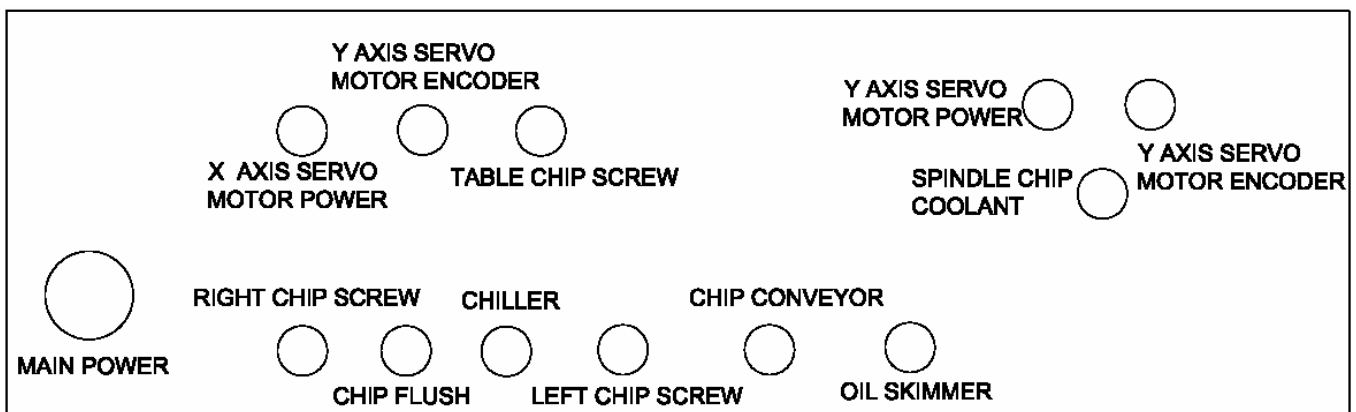
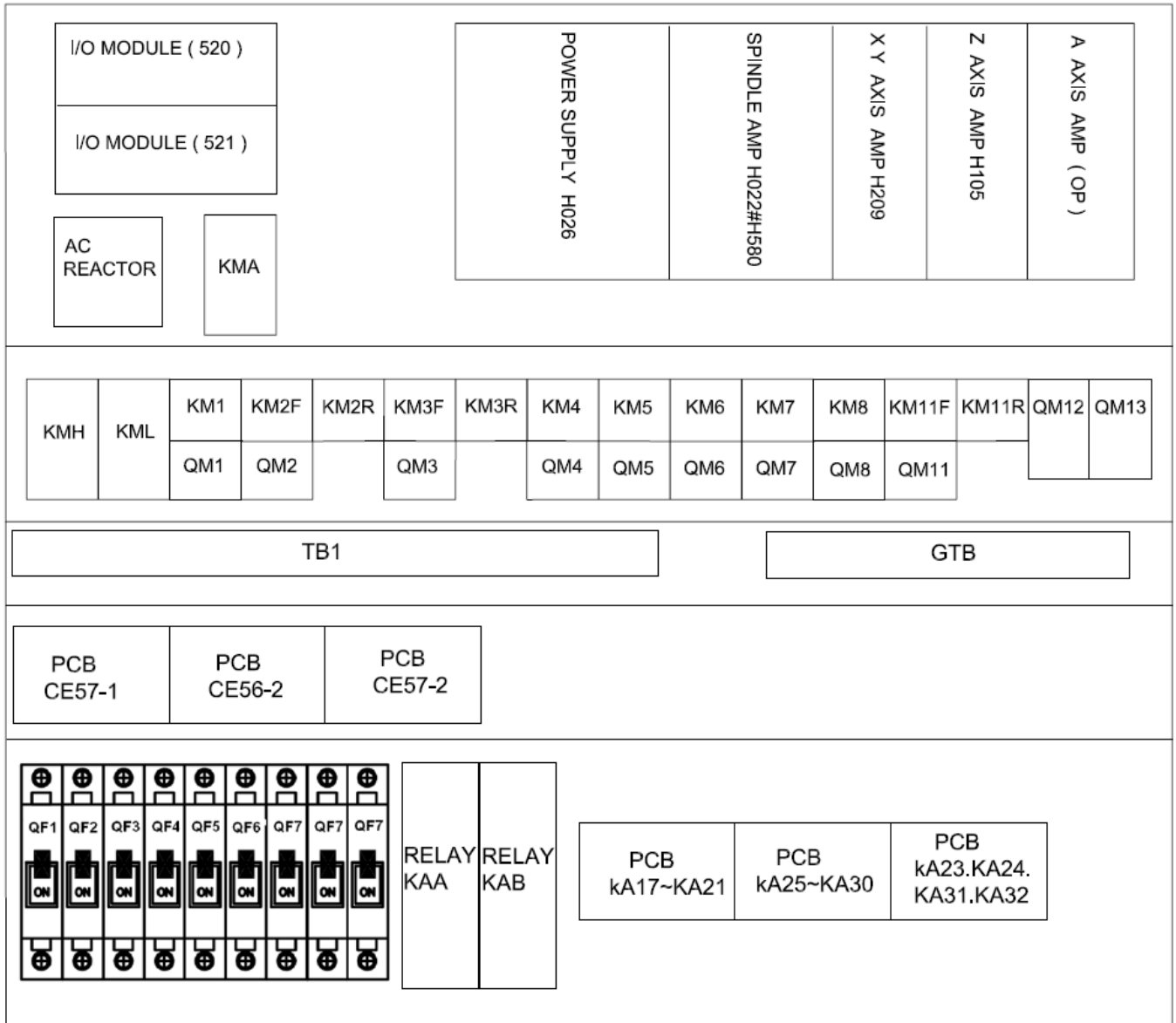
## 5. ELECTRIC-SYMBOL DETAIL

Proximity switch break contact 近接開關 常閉接點	Proximity switch make contact 近接開關 常開接點	limit switch break contact 極限開關 常閉接點	limit switch make contact 極限開關 常開接點
Pushbutton make contact 按鍵開關 常開接點	Pushbutton break contact 按鍵開關 常閉接點	Float switch break contact 浮球開關 常閉接點	Float switch make contact 浮球開關 常開接點
GREEN LAMP 綠色指示燈	YELLOW LAMP 黃色指示燈	ILLuminated Pushbutton Momentary 照光式按鍵開關瞬間型	Transformer 變壓器
White Lamp 白色指示燈	Orange Lamp 橘色指示燈	Red Lamp 紅色指示燈	Key Switch 鑰匙開關
ILLuminated Pushbutton Alternate 照光式按鍵開關交替型	Pushlock Turn Reset Type Pushbutton 按壓鎖定旋轉釋放型按鍵開關	Solenoid Valvecoil 電磁閥	PNP Proximity Switch Make contact PNP型近接開關 常開接點
AC MOTOR 1φ 交流單向馬達	NPN Proximity Switch Break contact NPN型近接開關 常閉接點	PNP Porximity switch Break contact PNP型近接開關 常閉接點	NPN Proximity Switch Make contact NPN型近接開關 常開接點

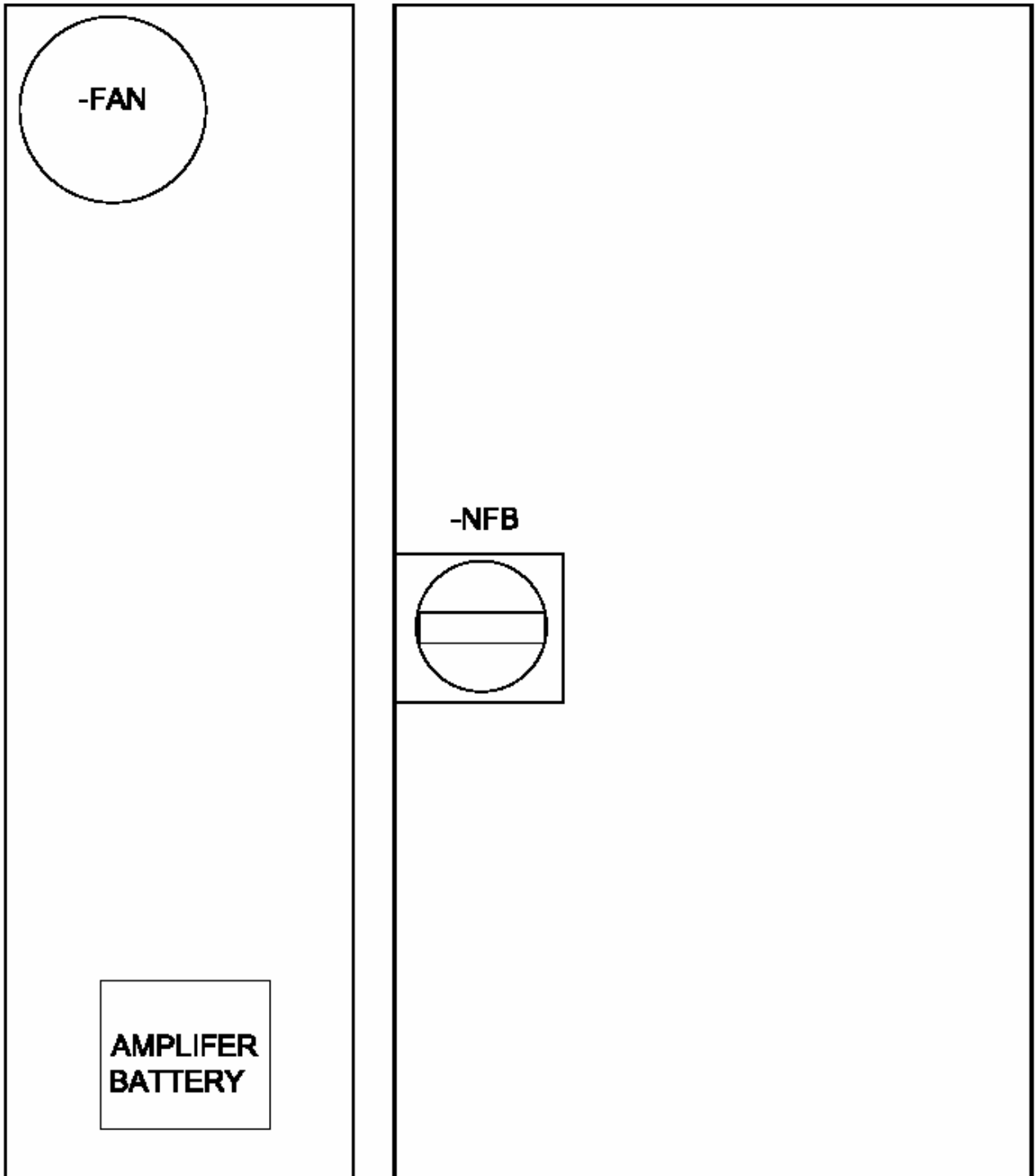
NC INPUT	NC OUT	Ground	ILLuminated Pushbutton momentary(Yellow)
NC信號 輸入	NC信號 輸出	接地	照光式按鍵開關瞬間型 (黃色)
			
FUSE	DIODE	LED	ILLuminated Pushbutton momentary(White)
保險絲	二極體	發光二極體	照光式按鍵開關瞬間型 (白色)
			
Not gate	ILLuminated Pushbutton Alternate(White)	ILLuminated Pushbutton Alternate(Yellow)	ILLuminated Pushbutton momentary(Red)
反閘	照光式按鍵開關交替型 (白色)	照光式按鍵開關交替型 (黃色)	照光式按鍵開關瞬間型 (紅色)
			
Buffer	ILLuminated Pushbutton Alternate(Orange)	ILLuminated Pushbutton Alternate(Green)	ILLuminated Pushbutton momentary(Green)
暫存器	照光式按鍵開關交替型 (橘色)	照光式按鍵開關交替型 (綠色)	照光式按鍵開關瞬間型 (綠色)
			
Spark killer	Resistance	AC MOTOR 3φ	Relay <sup>1</sup>
火花消除器	電阻	交流三向馬達	繼電器
			
Capacitor	Make contact	Break contact	
電容器	常開接點	常閉接點	
			

## 6. EC BOX LAYOUT

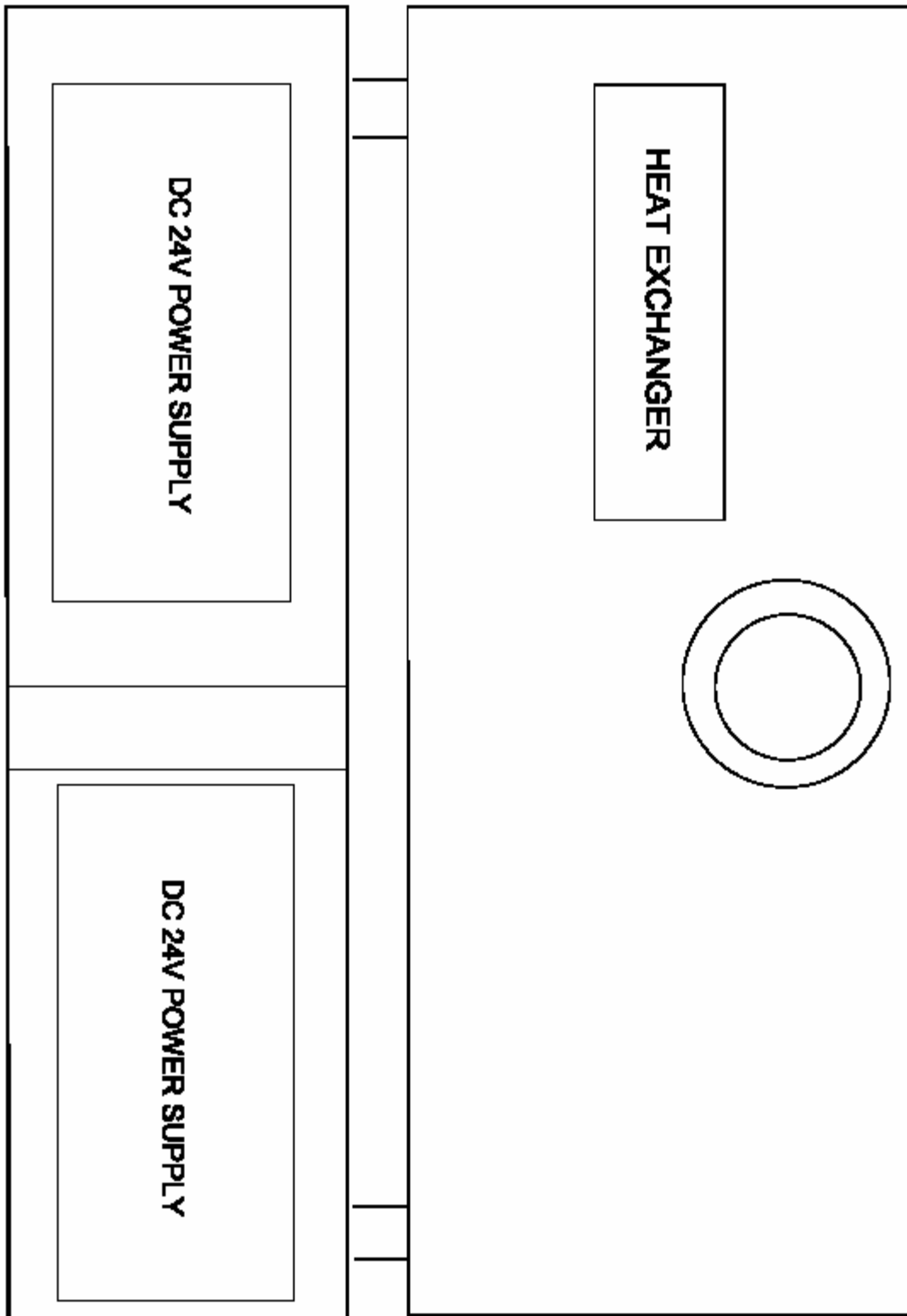
### 6.1 ELECTRICAL BOARD LAYOUT



**6.2 ELECTRICAL CABINET LEFT SIDE**

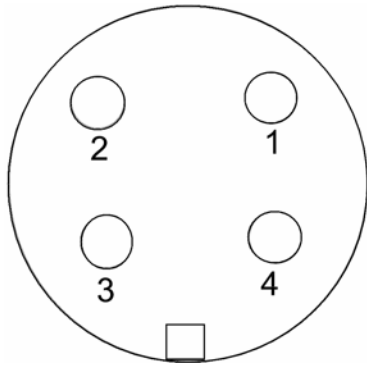


### 6.3 ELECTRICAL CABINET RIGHT SIDE



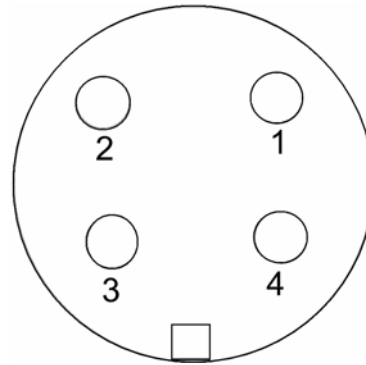
## 7. AC MOTOR CONNECT DESCRIPTION

### 7.1 CHIP CONVEYOR MOTOR



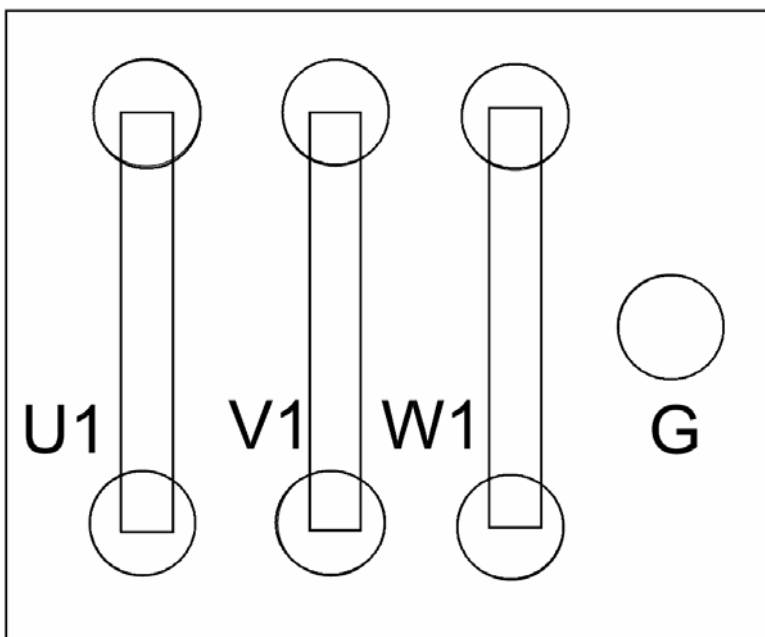
PIN	NAME	WIRE COLOR
1	U3	BROWN
2	V3	BLUE
3	W3	BLACK
4	G	YELLOW

### 7.2 OIL SKIMMER MOTOR



PIN	NAME	WIRE COLOR
1	U7	BROWN
2	V7	BLUE
3	W7	BLACK
4	G	YELLOW

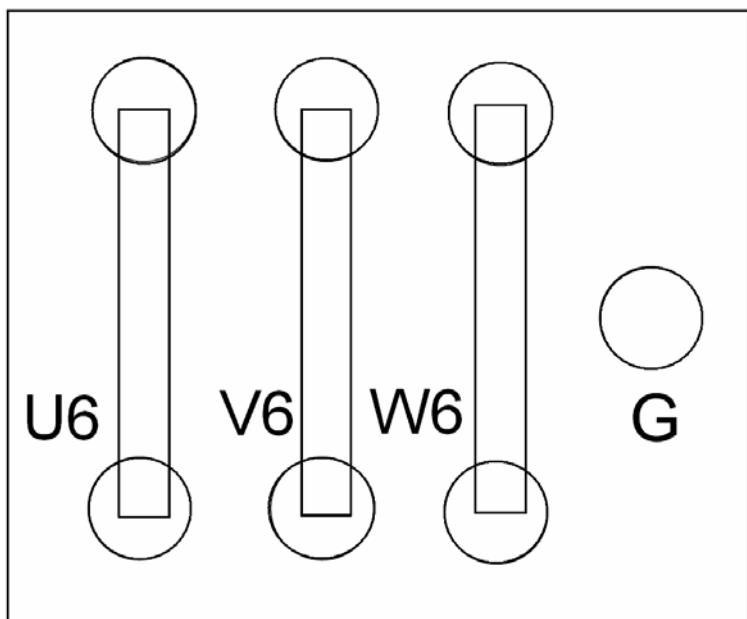
### 7.3 SPINDLE CHIP COOLANT MOTOR



PIN	NAME	WIRE COLOR
1	U1	BROWN
2	V1	BLUE
3	W1	BLACK
4	G	YELLOW



## 7.4 CHIP FLUSH MOTOR



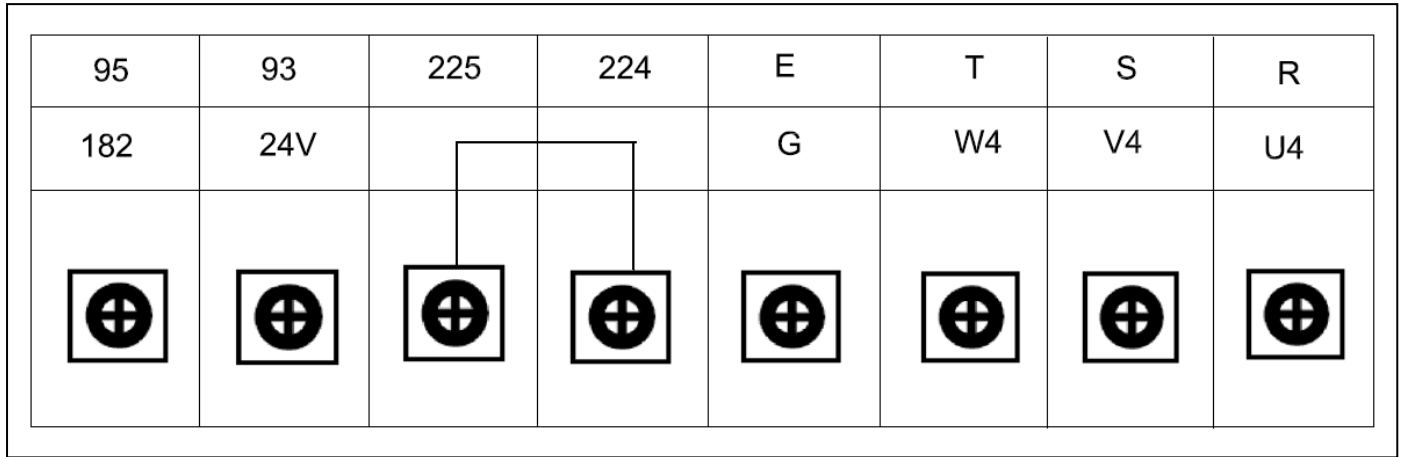
PIN	NAME	WIRE COLOR
1	U6	BROWN
2	V6	BLUE
3	W6	BLACK
4	G	YELLOW

## 7.5 LUBRICATION PUMP

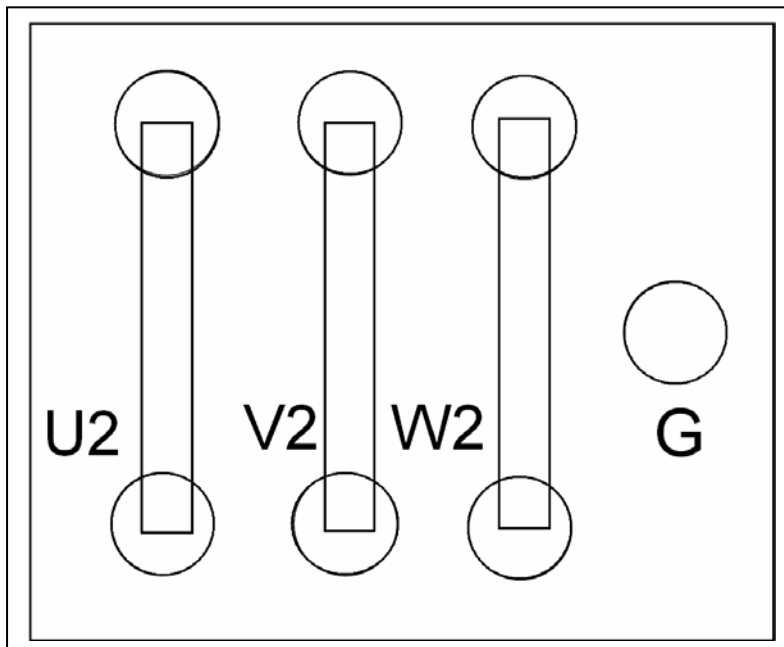
1	2	3	4	5	6	7
17A	L11	L21	24V	131	197	G

PIN	NAME	WIRE COLOR
1	17A	BROWN
2	L11	YELLOW
3	L21	ORANGE
4	24V	BLACK · GRAY
5	131	BLUE
6	197	WHITE
7	G	GREE

## 7.6 SPINDLE OIL COOLANT

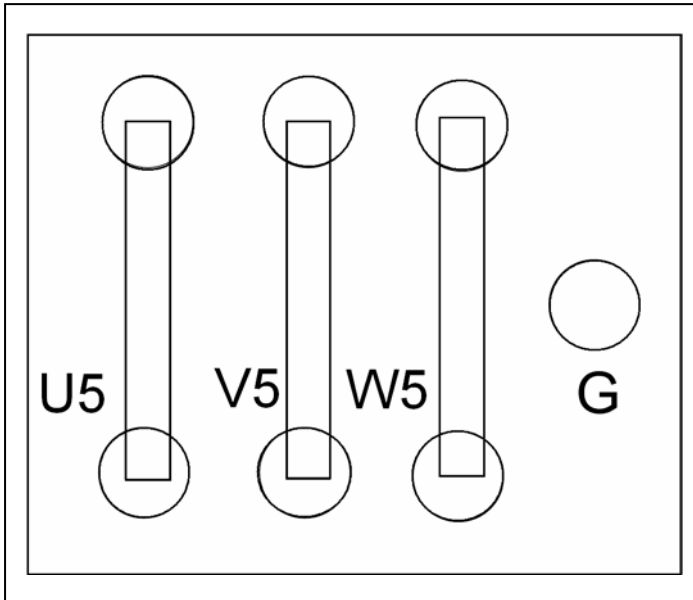


## 7.7 MAGAZINE MOTOR



PIN	NAME	WIRE COLOR
1	U2	BLACK
2	V2	RED
3	W2	BLUE
4	G	YELLOW

## 7.8 ATC MOTOR

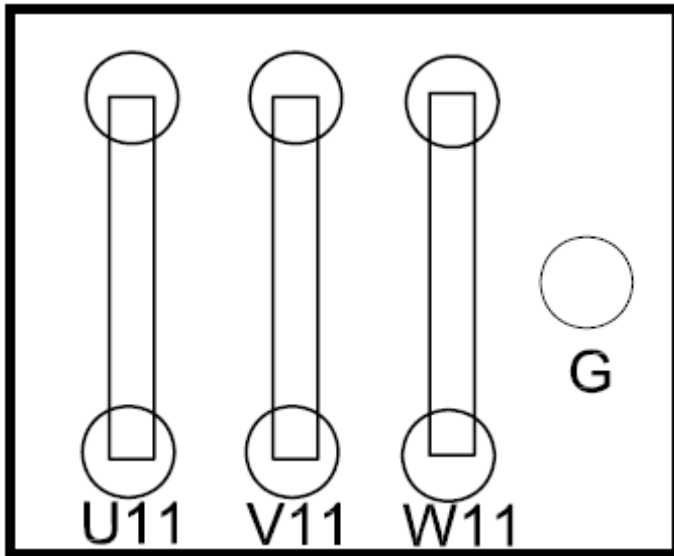


PIN	NAME	WIRE COLOR
1	U5	BLACK
2	V5	RED
3	W5	BLUE
4	G	YELLOW

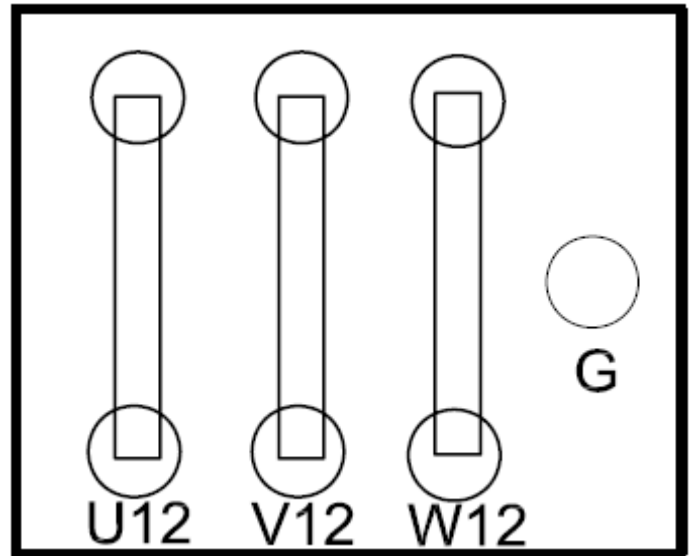
## MAGAZINE CONNECT BOX DESCRIPTION

OUTPUT	INPUT
24V	24V
24V	24V
24V	24V
24V	24V
24V	24V
0V	0V
0V	0V
0V	0V
0V	0V
1	136
2	135
3	173
4	170
5	172
6	171
7	174
8	137
W2	W5
V2	V5
U2	U5
E	G
E	G
W1	W2
V1	V2
U1	U2

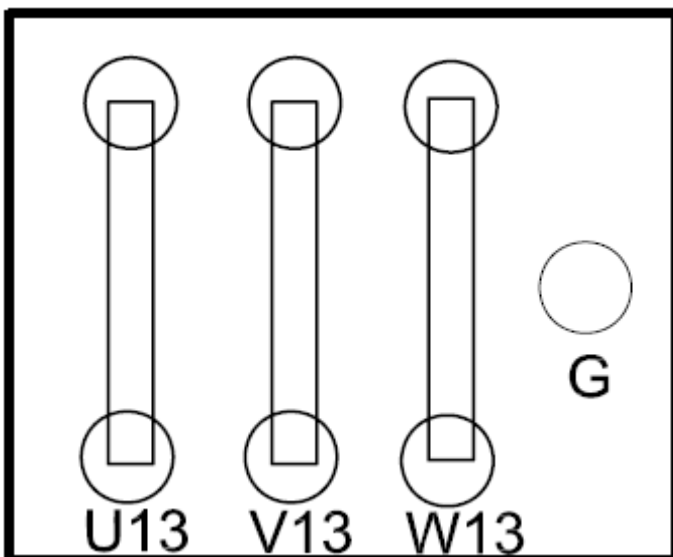
## 7.9 CHIP SCREW MOTOR



**Table side**



**Machine left side**



**Machine right side**

PIN	NAME	WIRE COLOR
1	U11	BLACK
2	V11	RED
3	W11	BLUE
4	G	YELLOW

PIN	NAME	WIRE COLOR
1	U12	BLACK
2	V12	RED
3	W12	BLUE
4	G	YELLOW

PIN	NAME	WIRE COLOR
1	U13	BLACK
2	V13	RED
3	W13	BLUE
4	G	YELLOW

### 7.10 Terminal Description

TB1 :

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	L11	L11	L11	L11	L21	L21	L21	L21	L31	L31	MCC1			

ITEM	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
NAME	U1	V1	W1	U2	V2	W2	U3	V3	W3	U4	V4	W4	U5	V5	W5	U6	V6	W6

ITEM	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
NAME	U7	V7	W7	U8	V8	W8	L17	L18	L19	17A	21A				24V	24V	24V

ITEM	50	51	52	53	54	55	56	57	58	59	60	61	62
NAME	24V	24V	0V	0V	0V	0V	0V	DC24V	DC24V	DC0V	DC0V	PON	POFF

ITEM	64	65	66	67	68	69	70	71	72	73	74
NAME				NC24	POFF	E12	E13	99			

TB2 :

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	U9	V9	W9	PE	U10	V10	W10	PE	24V	24V	24V	0V	0V	302

ITEM	15	16	17	18	19	20	21
NAME	303	304	305	306			

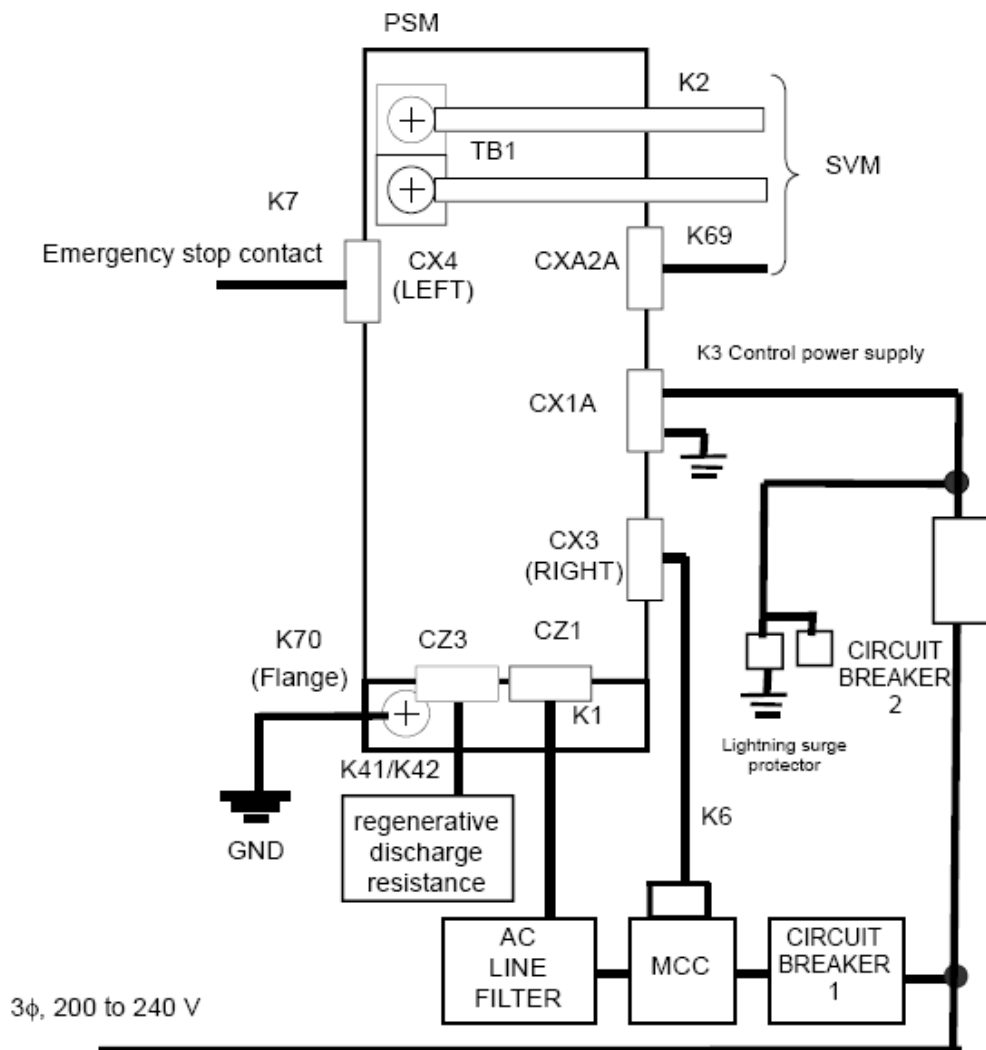
TB3 :

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13
NAME	24V	0V	OUT	132	133	134	24V	24V	24V	0V	0V	25	DC0V

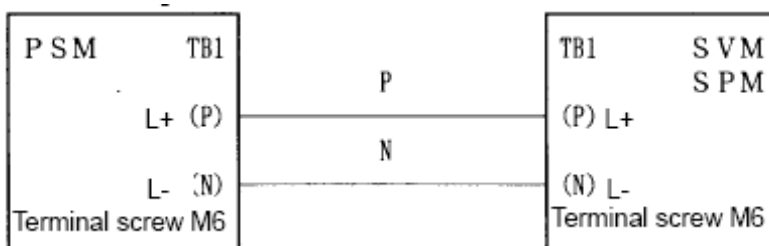
ITEM	14	15	16	17	18	19
NAME	U8	V8	W8			

## 8. CONNECTION PIN ASSIGNMENT

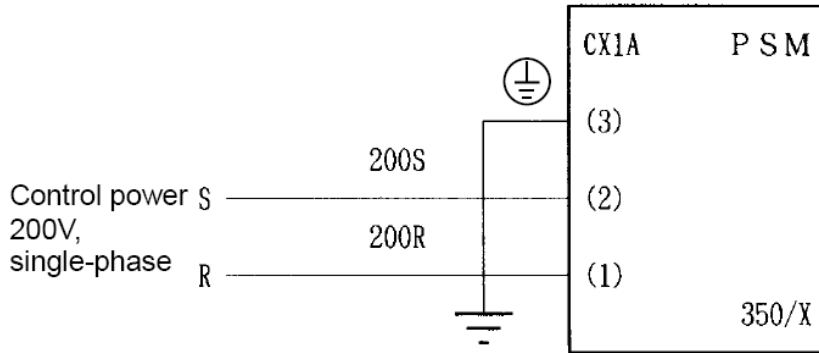
### 8.1 AMP POWER SUPPLY



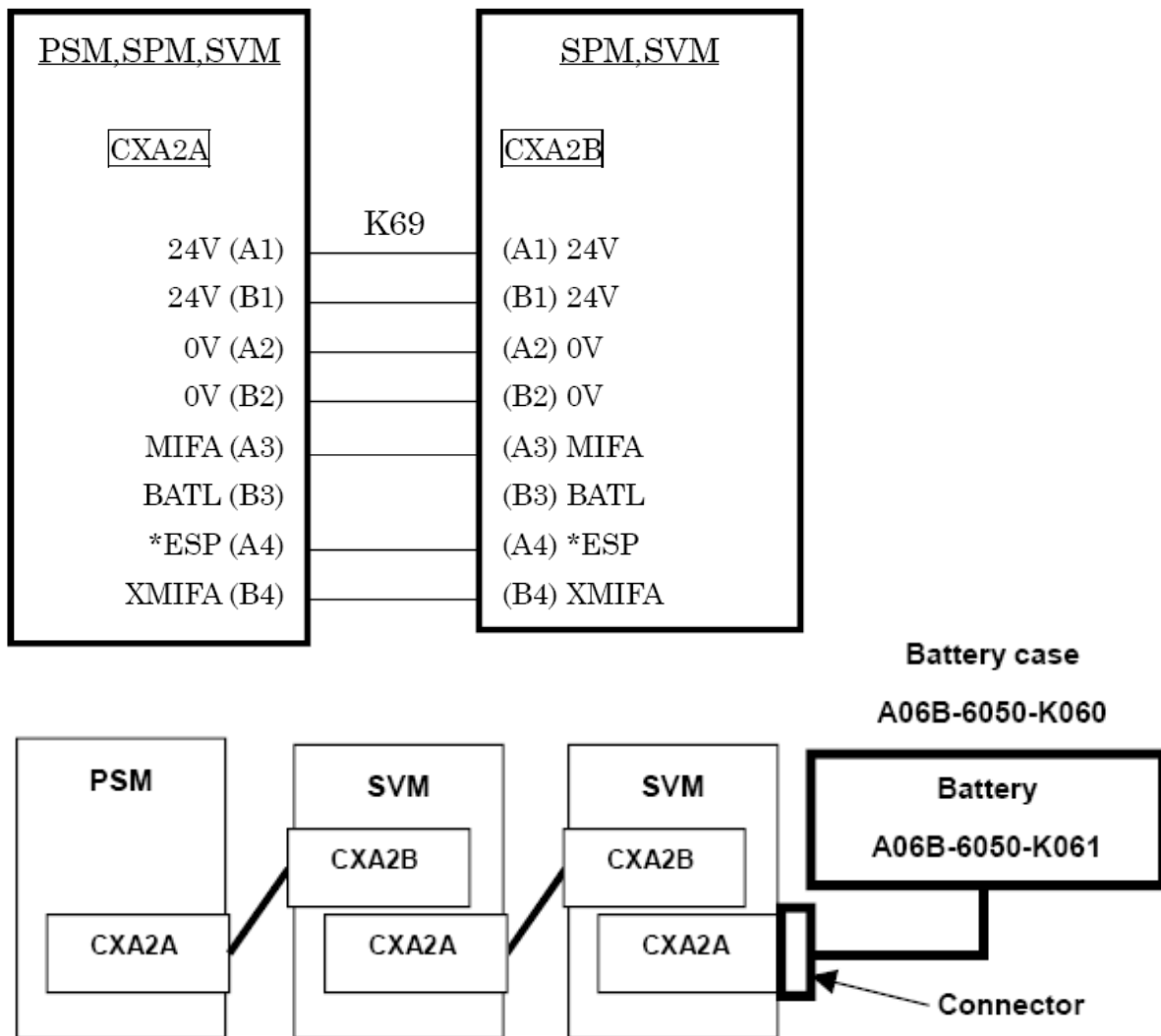
#### 1) K2 :

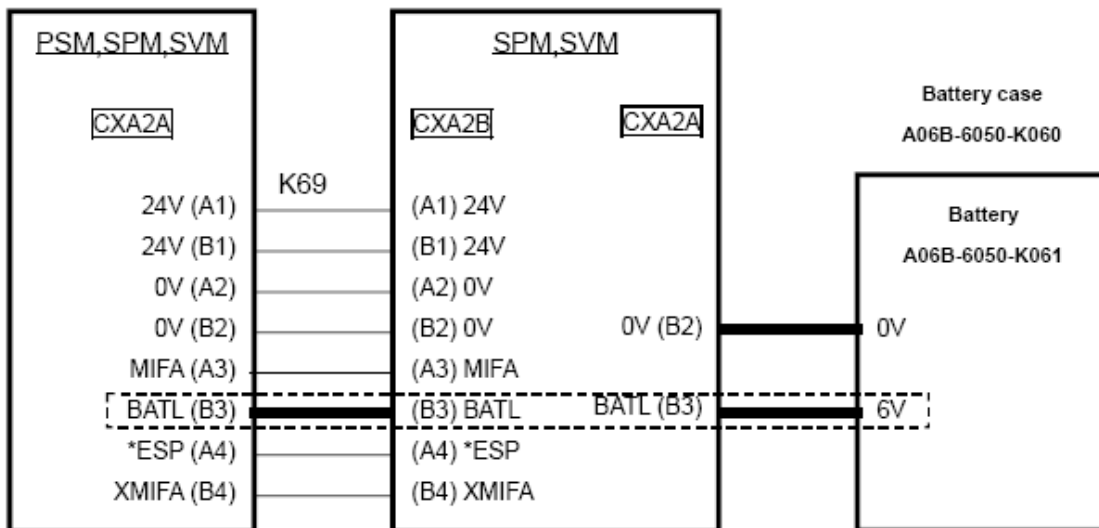
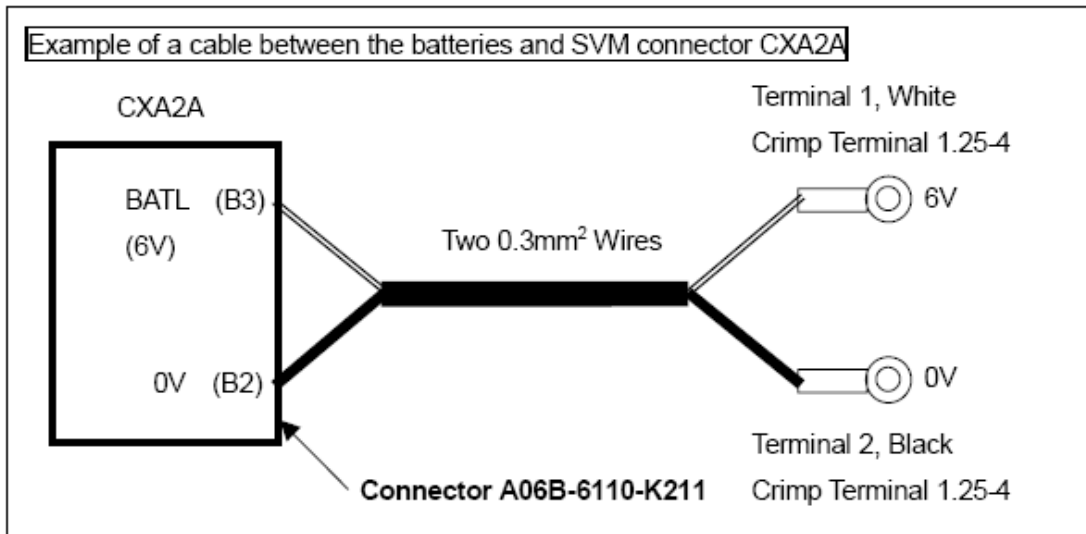


## 2 ) K3 :

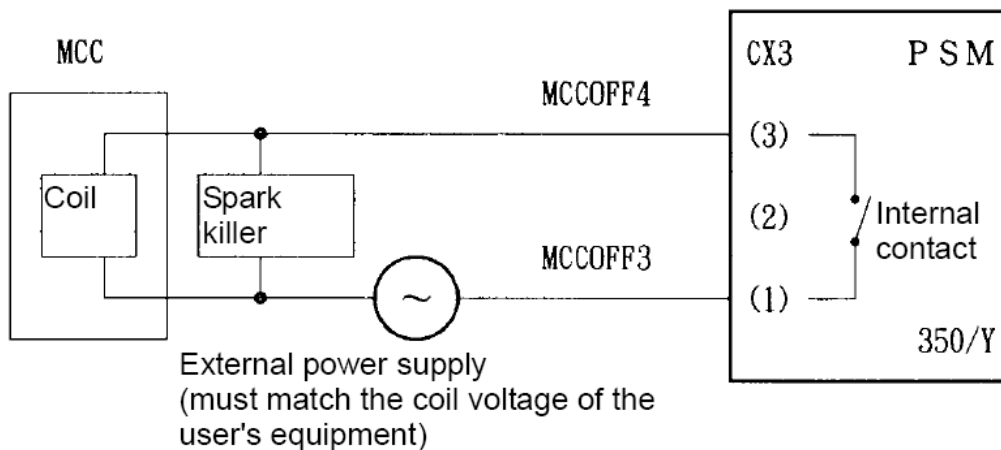


## 3 ) K69 :



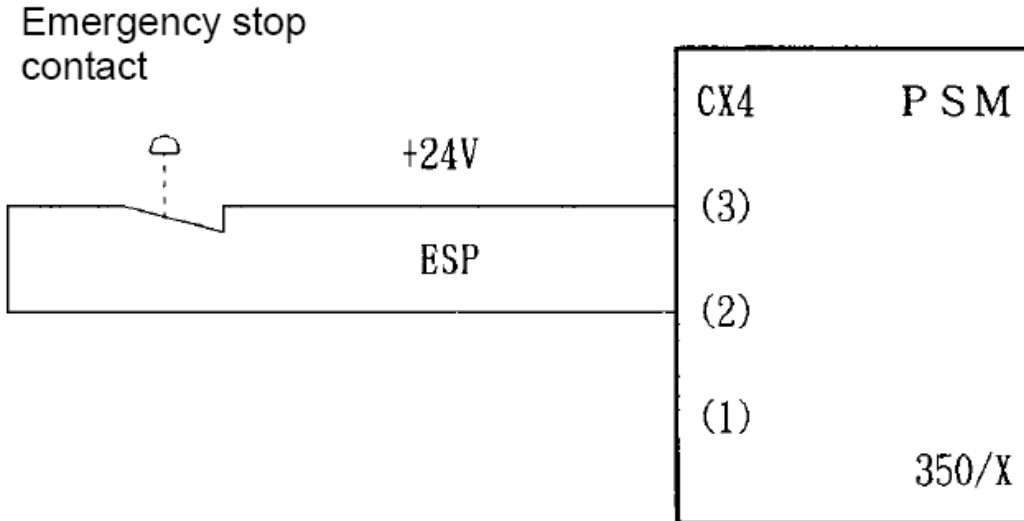


#### 4) K6 :

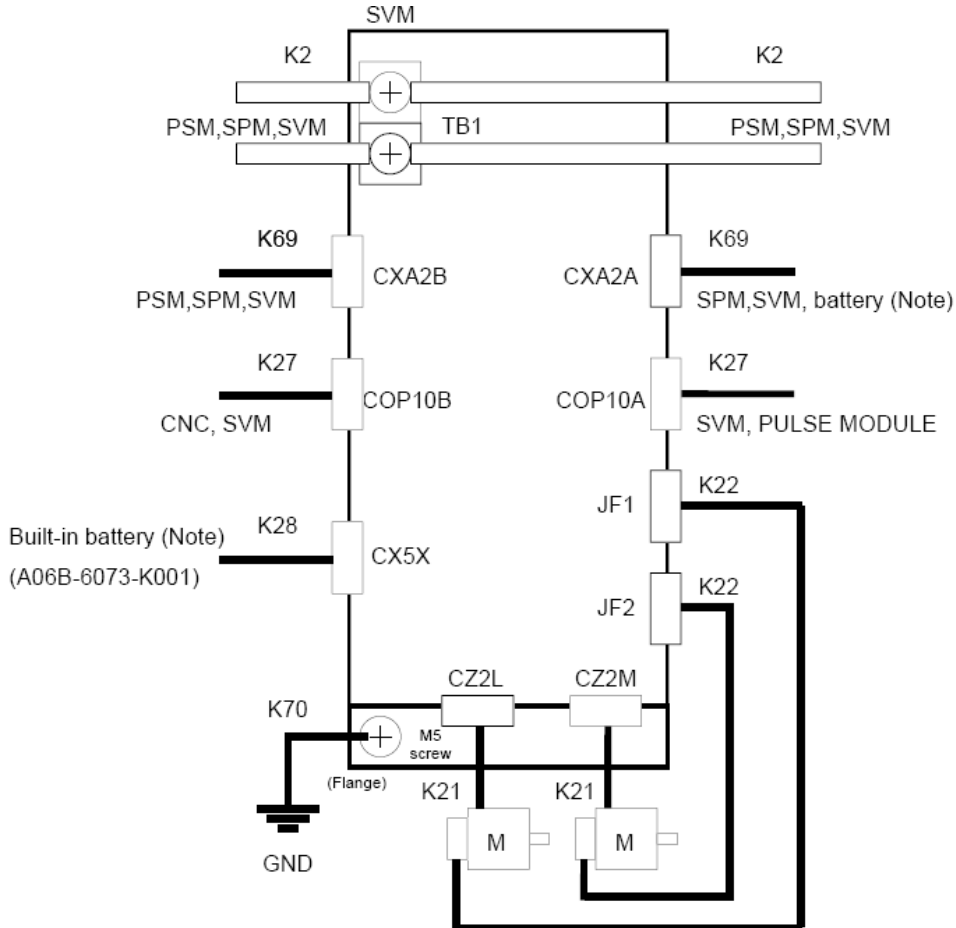




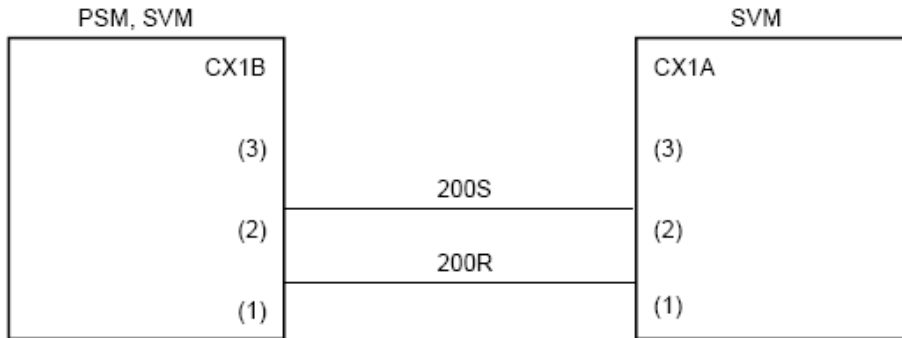
## 5) K7 :



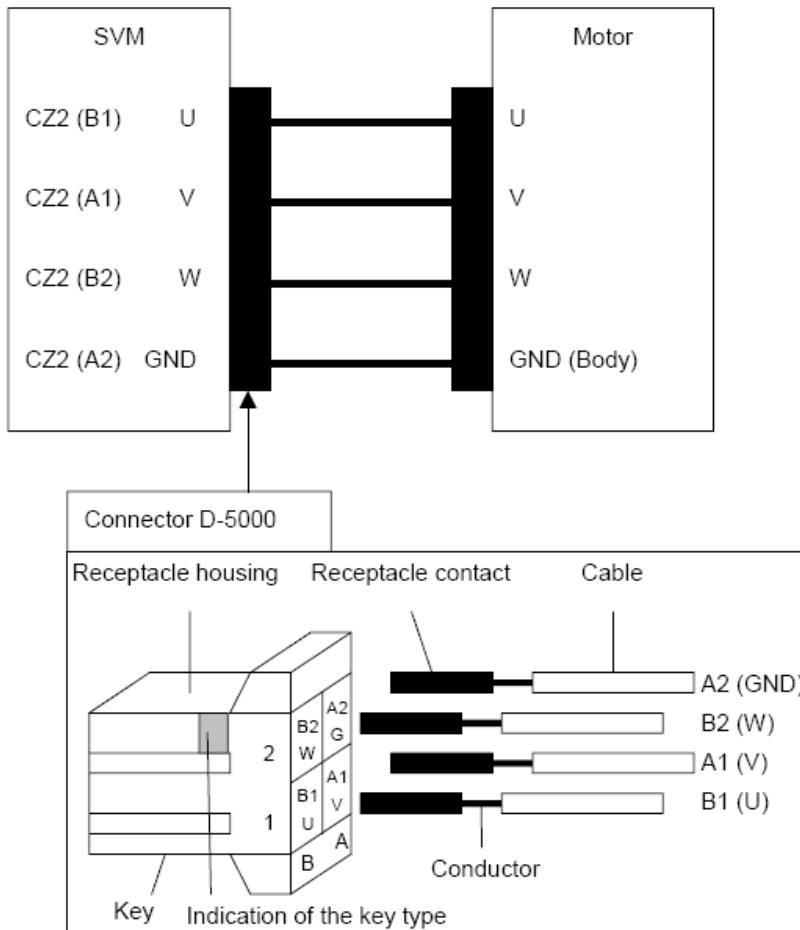
## 8.2 SERVO AMPLIFIER



## 1) K4 :

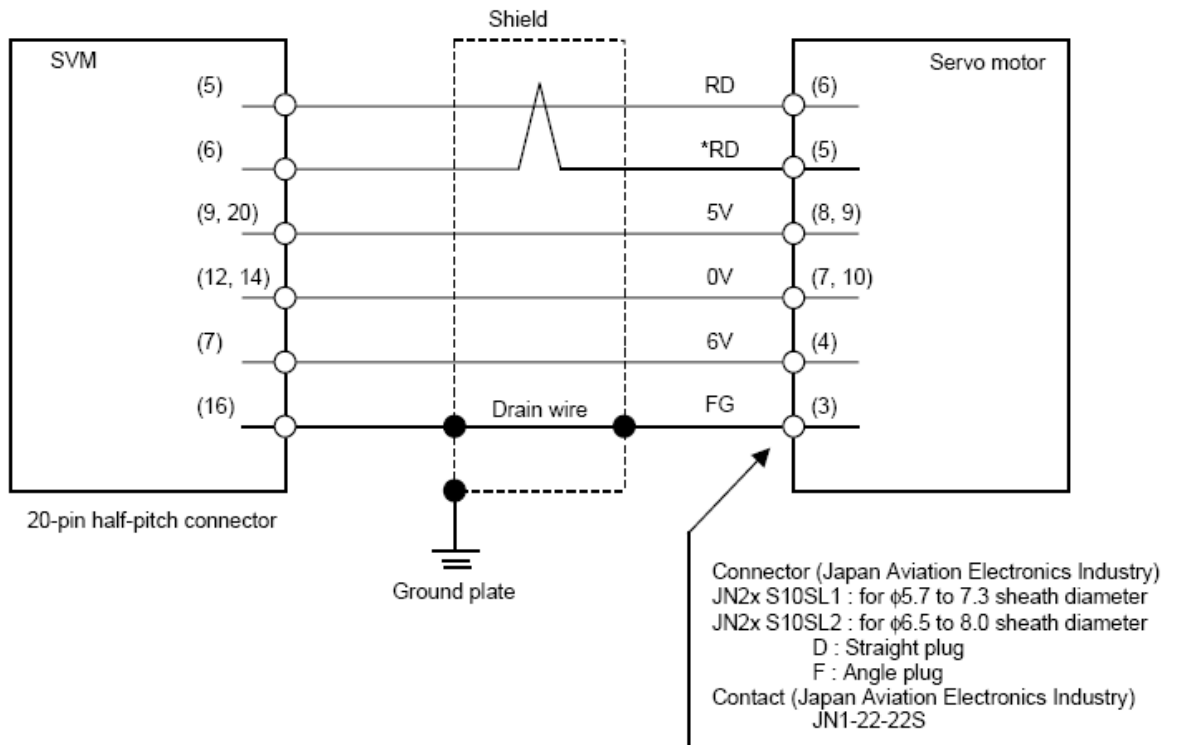


## 2) K21 :

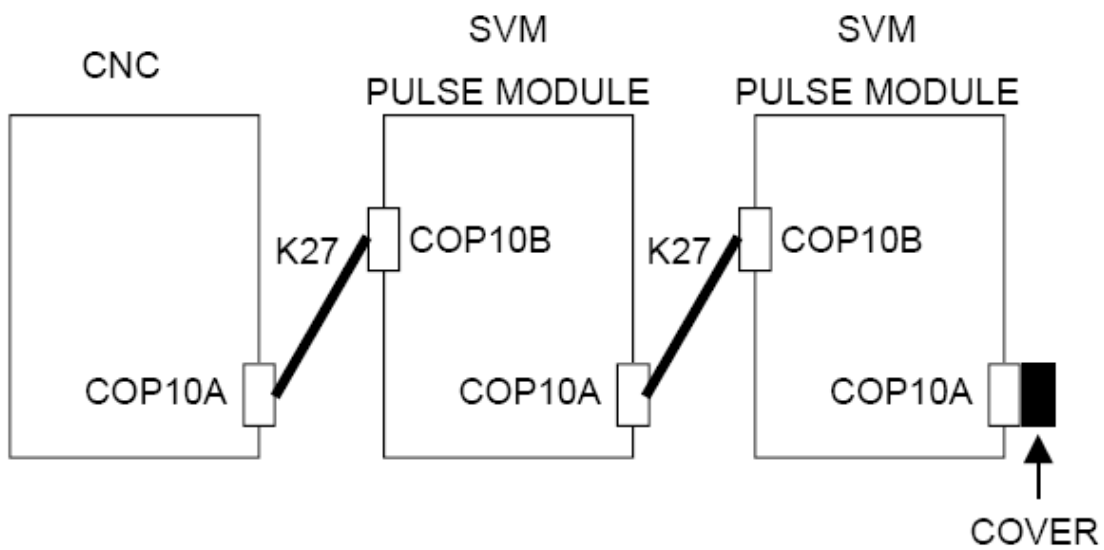


Specification of the key	Applicable SVM
XX	SVM1, SVM2(L), SVM3(L)
XY	SVM2(M), SVM3(M)
YY	SVM3(N)

### 3) K22 :

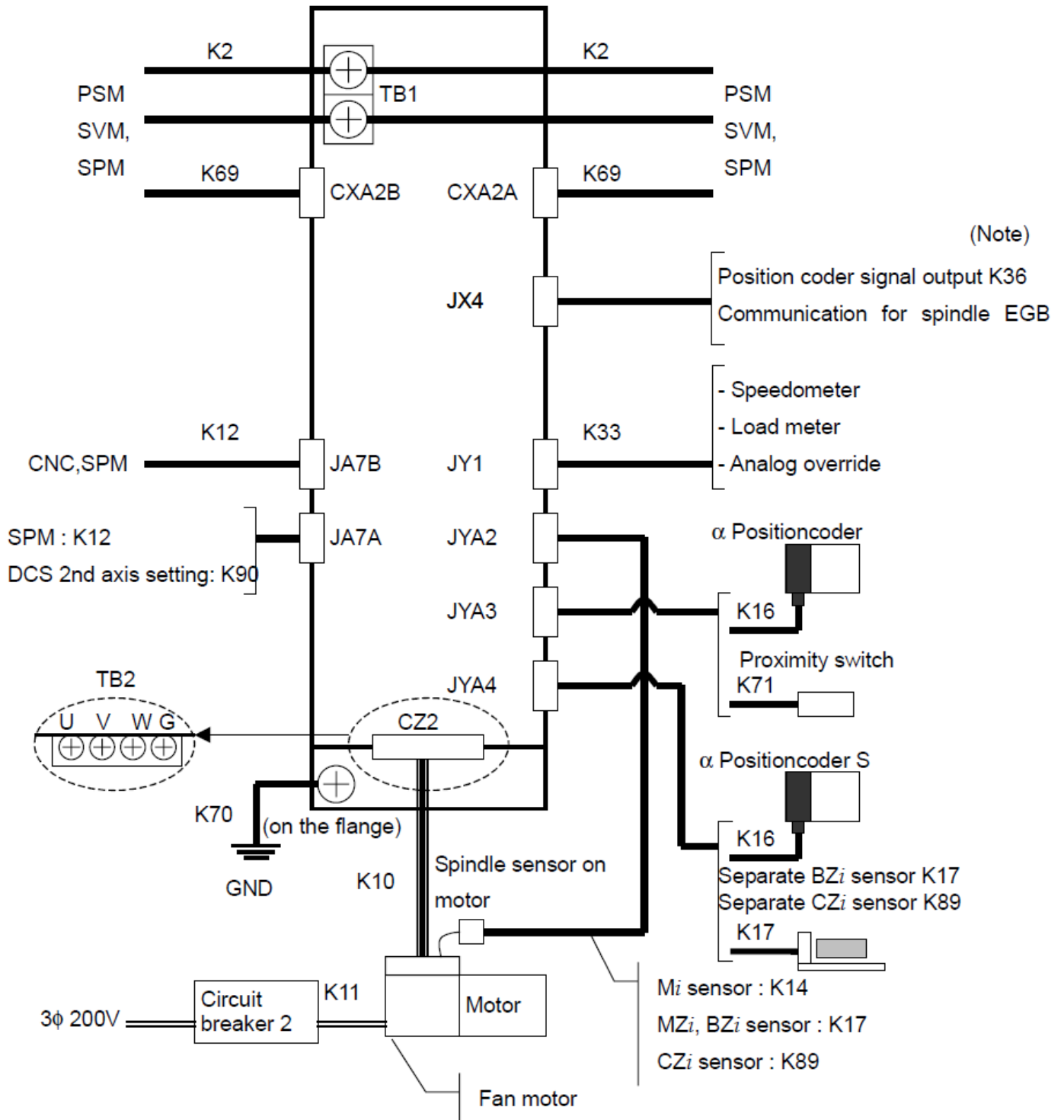


### 4) K27 :

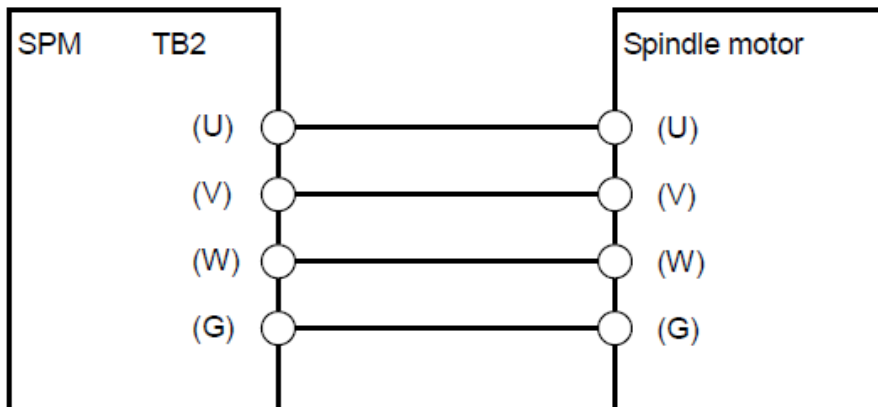


## 8.3

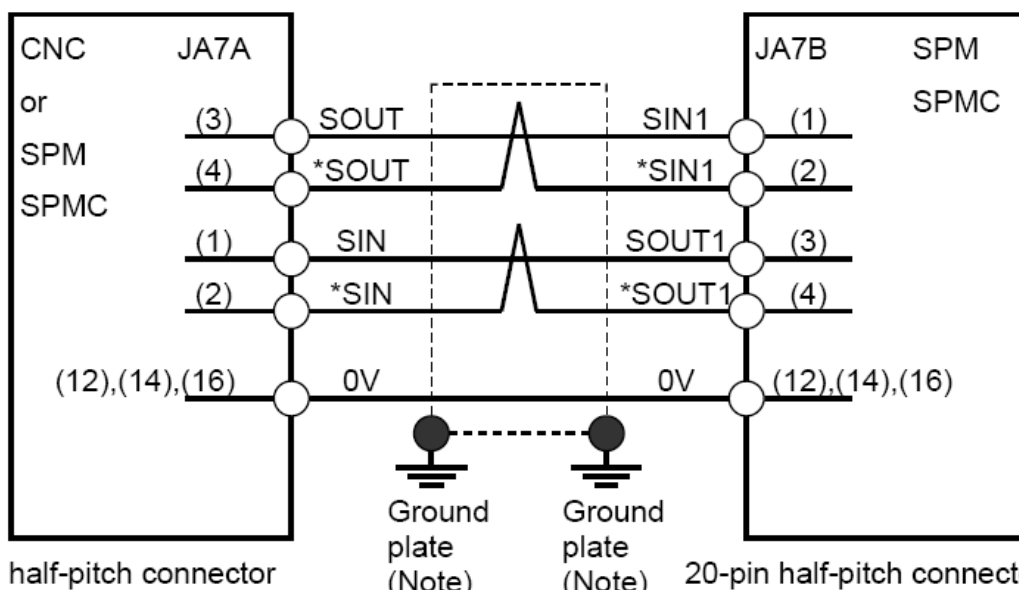
### Spindle amplifier module (SPM)



1) TB2



2) K12 :



20-pin half-pitch connector

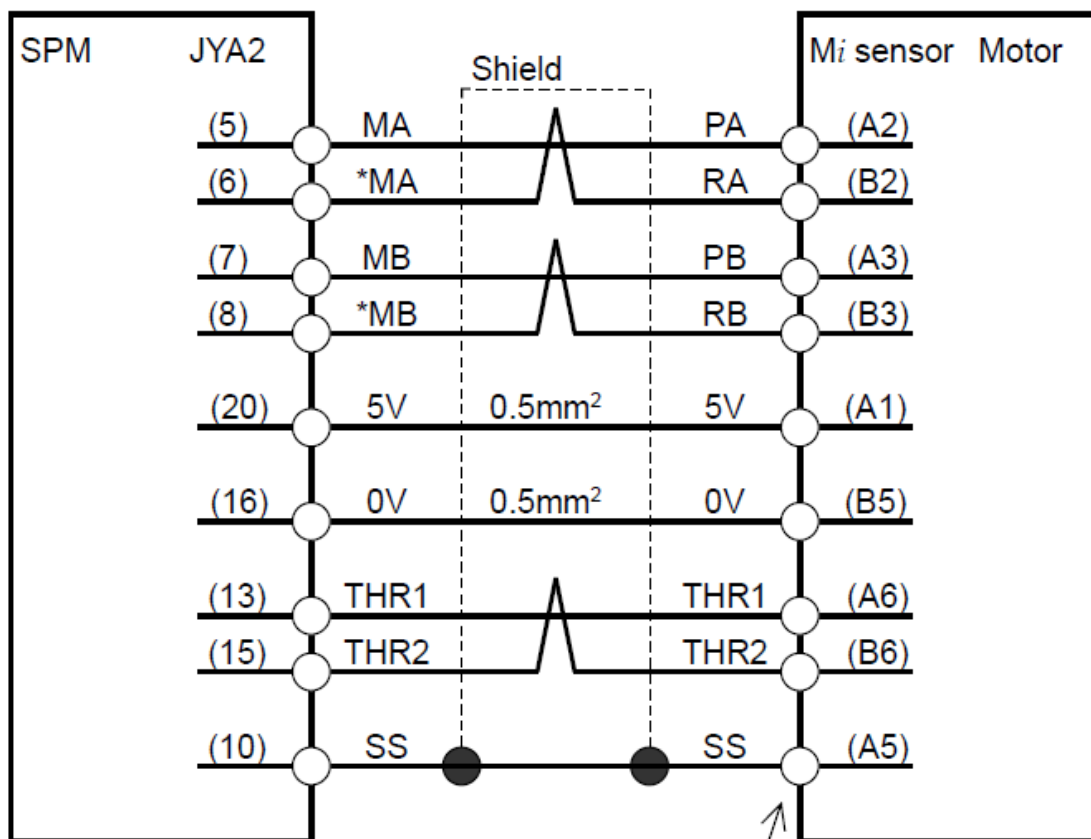
Ground plate (Note)

Ground plate (Note)

20-pin half-pitch connector

JA7A and JA7B

9	5V (Note 1)	10		19		20	5V (Note 1)
7		8		17		18	5V (Note 1)
5		6		15		16	0V
3	SOUT	4	*SOUT	13		14	0V
1	SIN	2	*SIN	11		12	0V



20-pin half-pitch connector

Manufactured by Tyco Electronics AMP  
 Housing : 178289-6  
 Contact : 1-175217-2

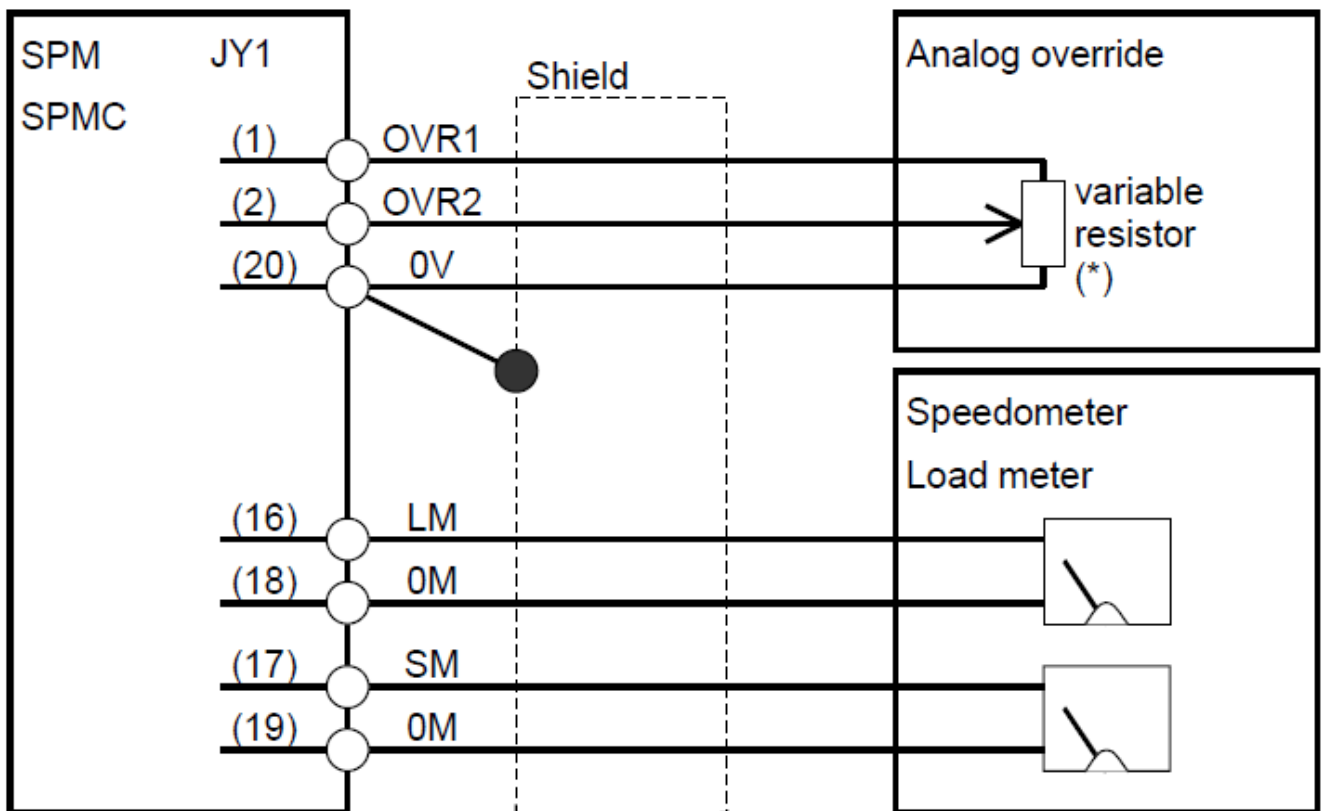
## JYA2

9	5V	10	SS	19	#	20	5V
7	MB	8	*MB	17	#	18	5V
5	MA	6	*MA	15	THR2	16	0V
3	#	4	#	13	THR1	14	0V
1	MZ	2	*MZ	11	#	12	0V

Pin arrangement of the connector (manufactured by Tyco Electronics AMP) on the motor side

A1	+5V	B1	
A2	PA	B2	RA
A3	PB	B3	RB
A4		B4	
A5	SS	B5	0V
A6	THR1	B6	THR2

### 3) K33

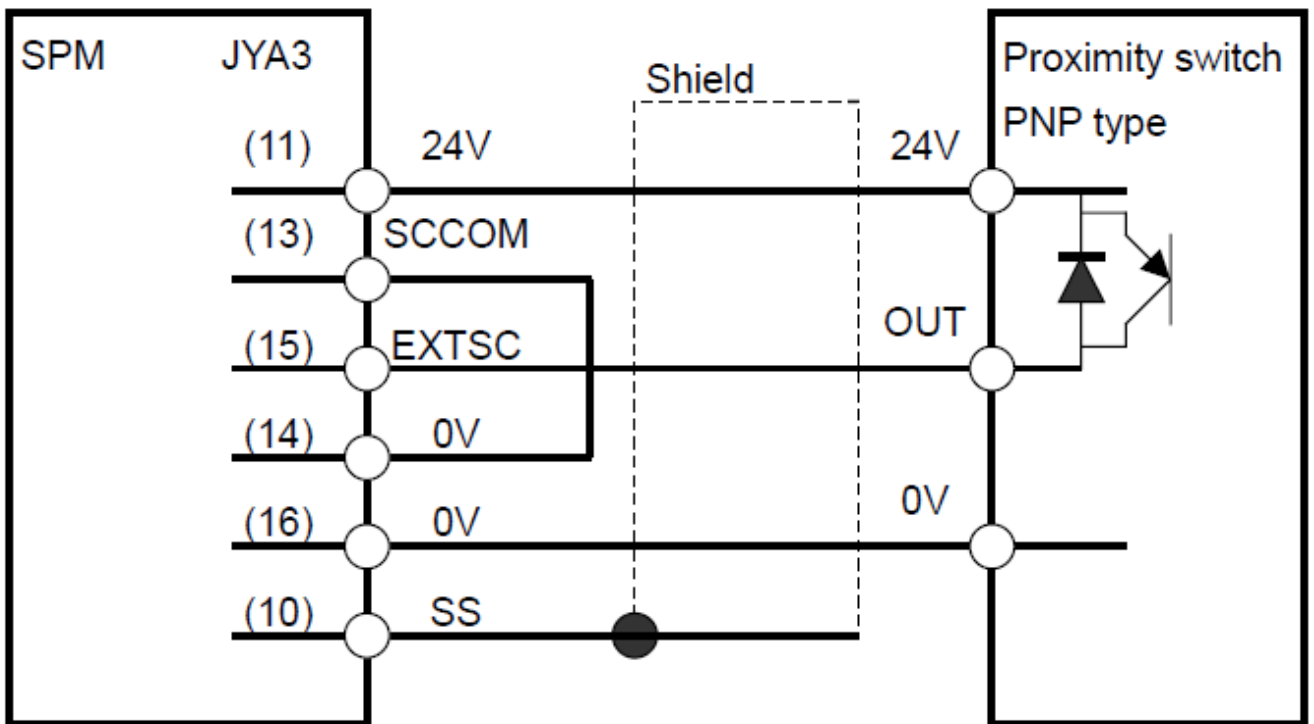


20-pin half-pitch connector

## JY1

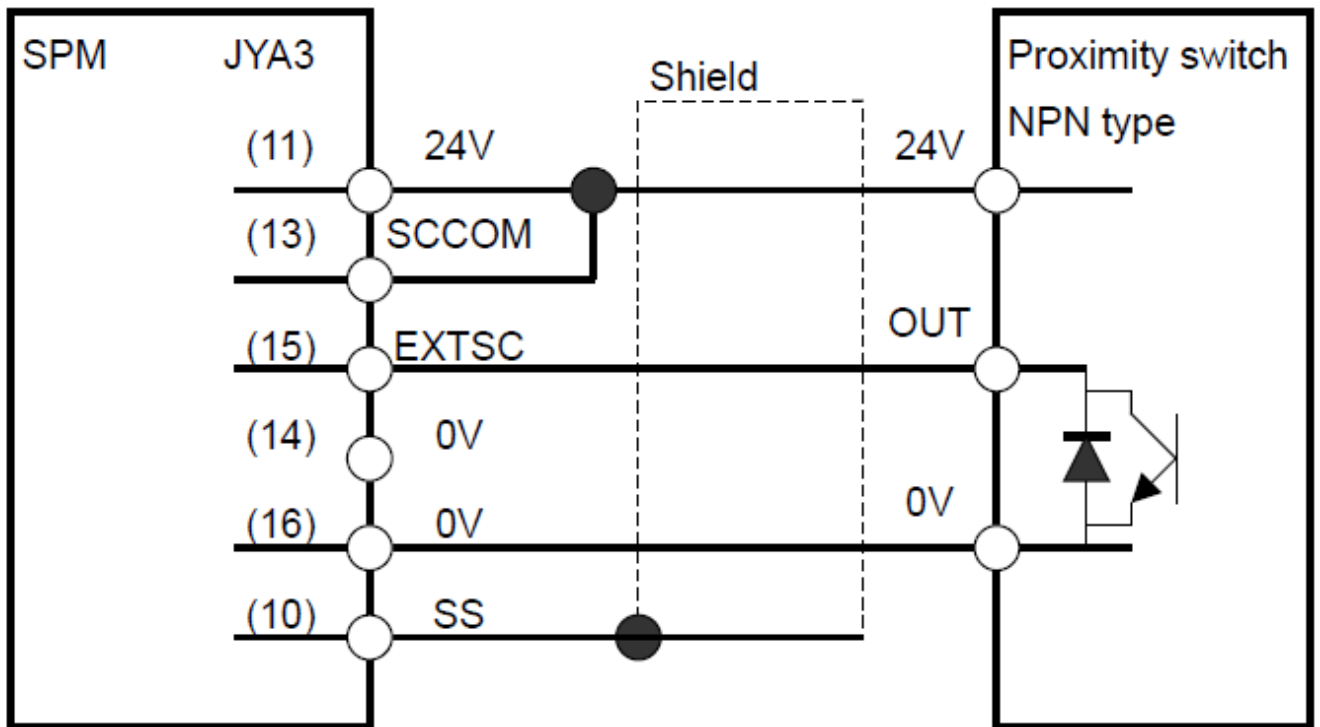
9	#	10	#	19	0M	20	0V
7	#	8	#	17	SM	18	0M
5	#	6	#	15	#	16	LM
3	#	4	#	13	#	14	#
1	OVR1	2	OVR2	11	#	12	#

## 4) K71

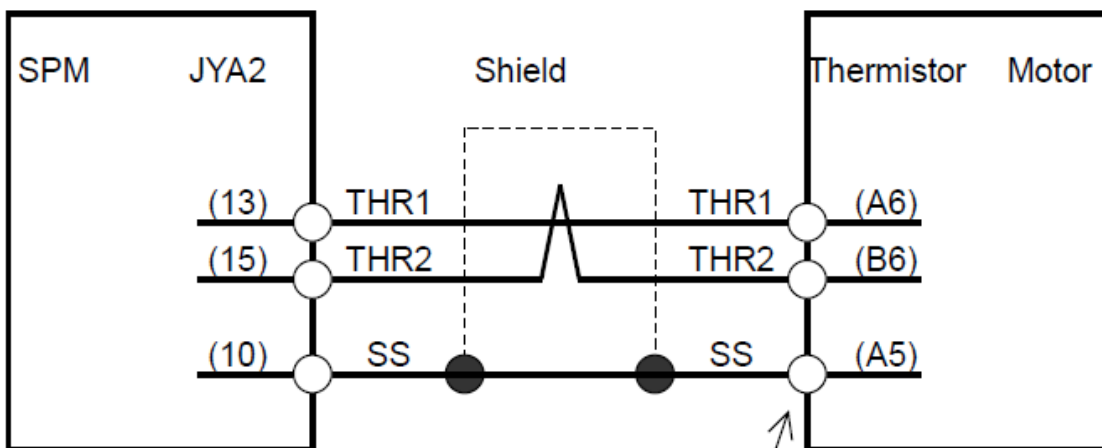


20-pin half-pitch connector





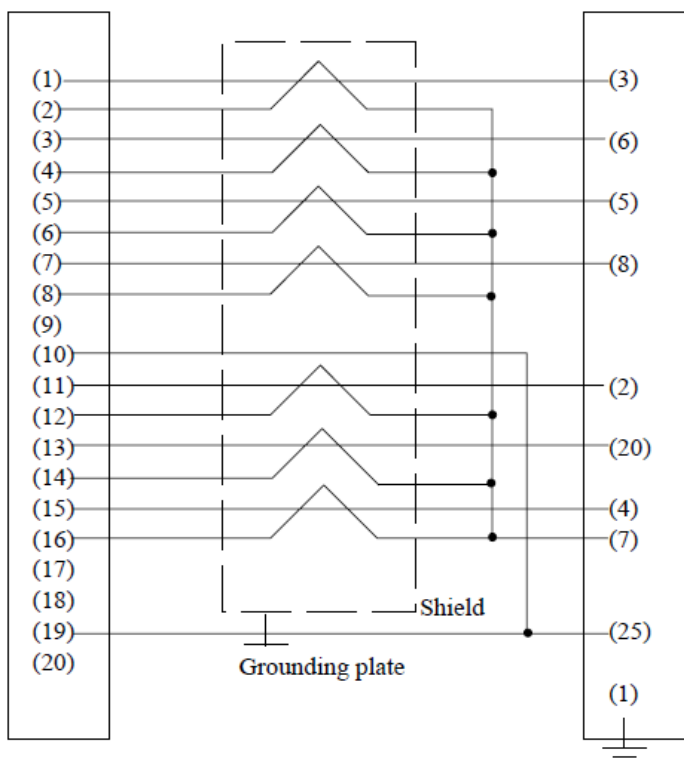
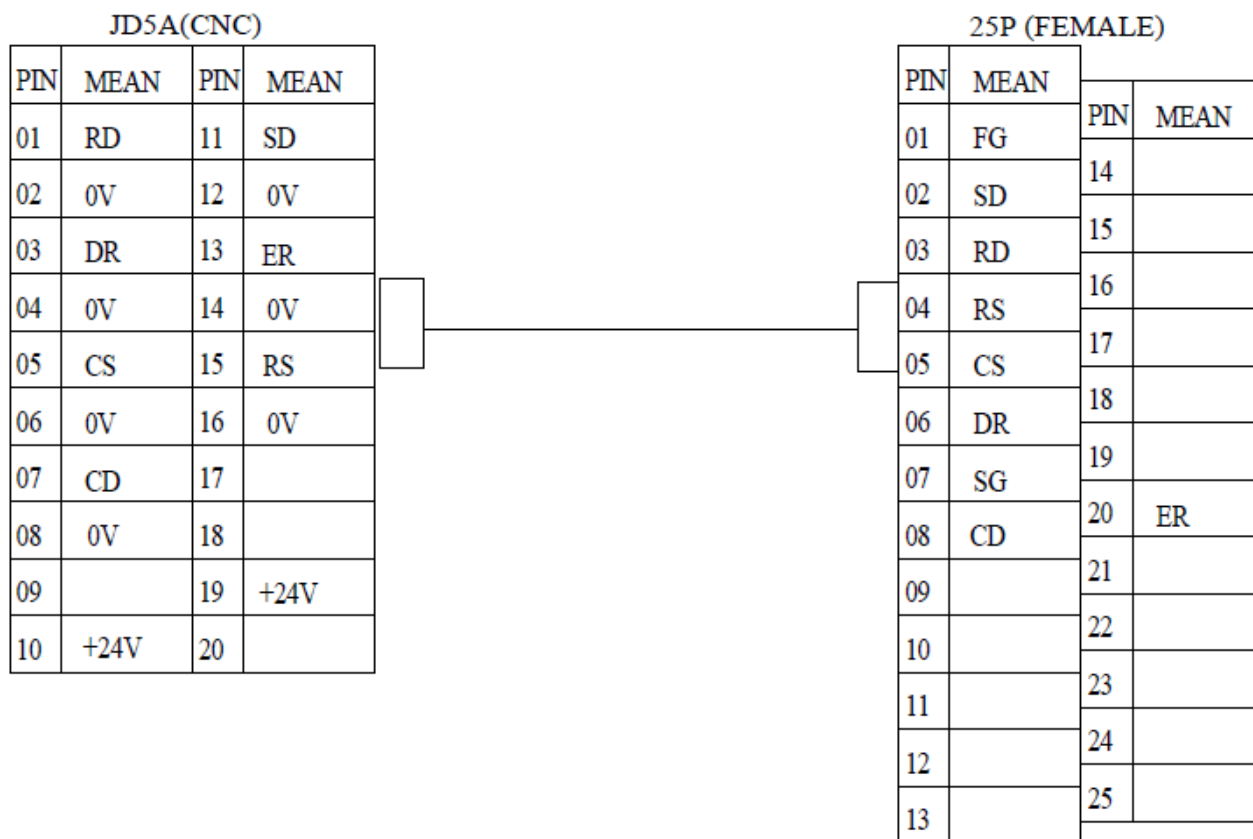
20-pin half-pitch connector



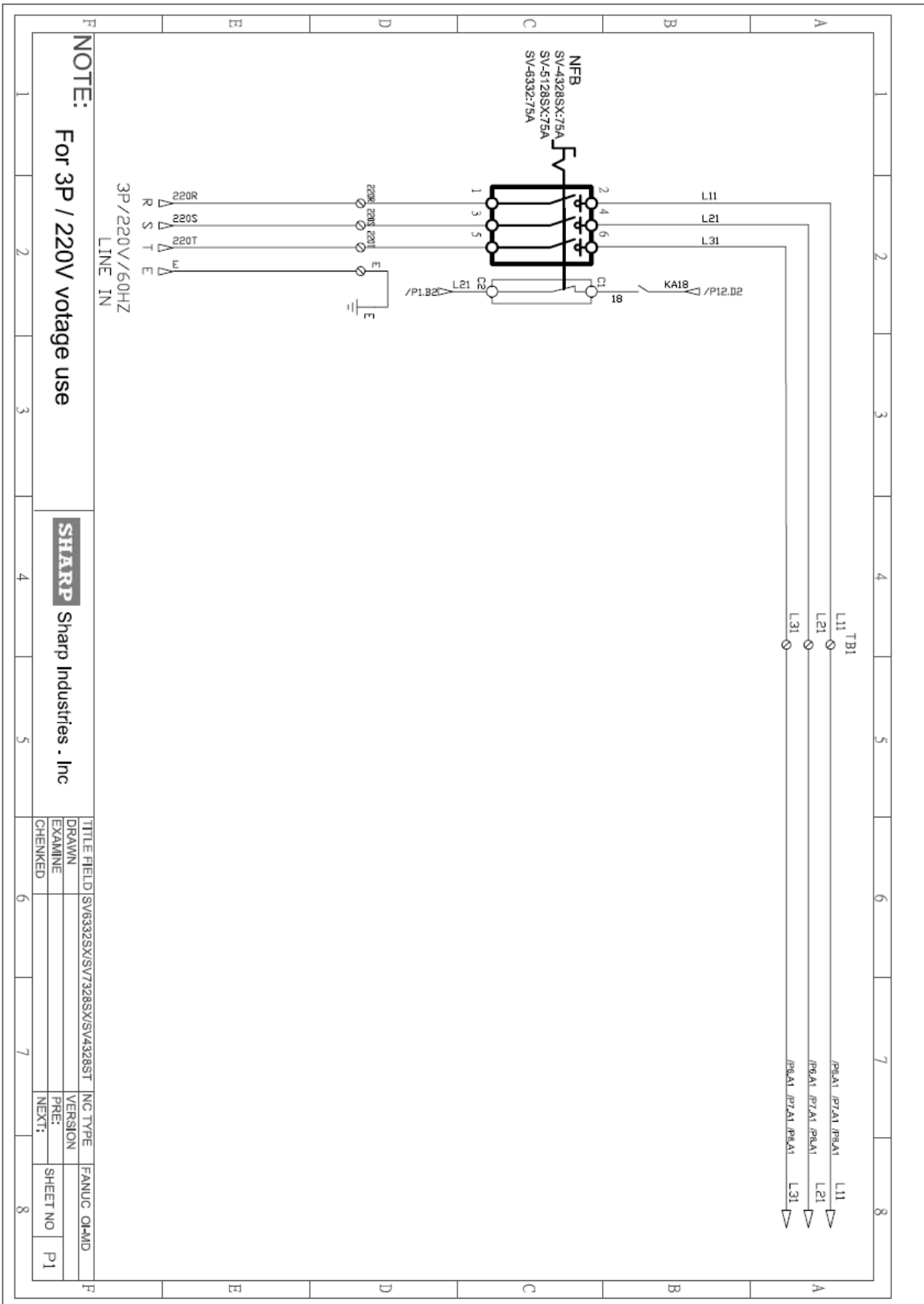
20-pin half-pitch connector

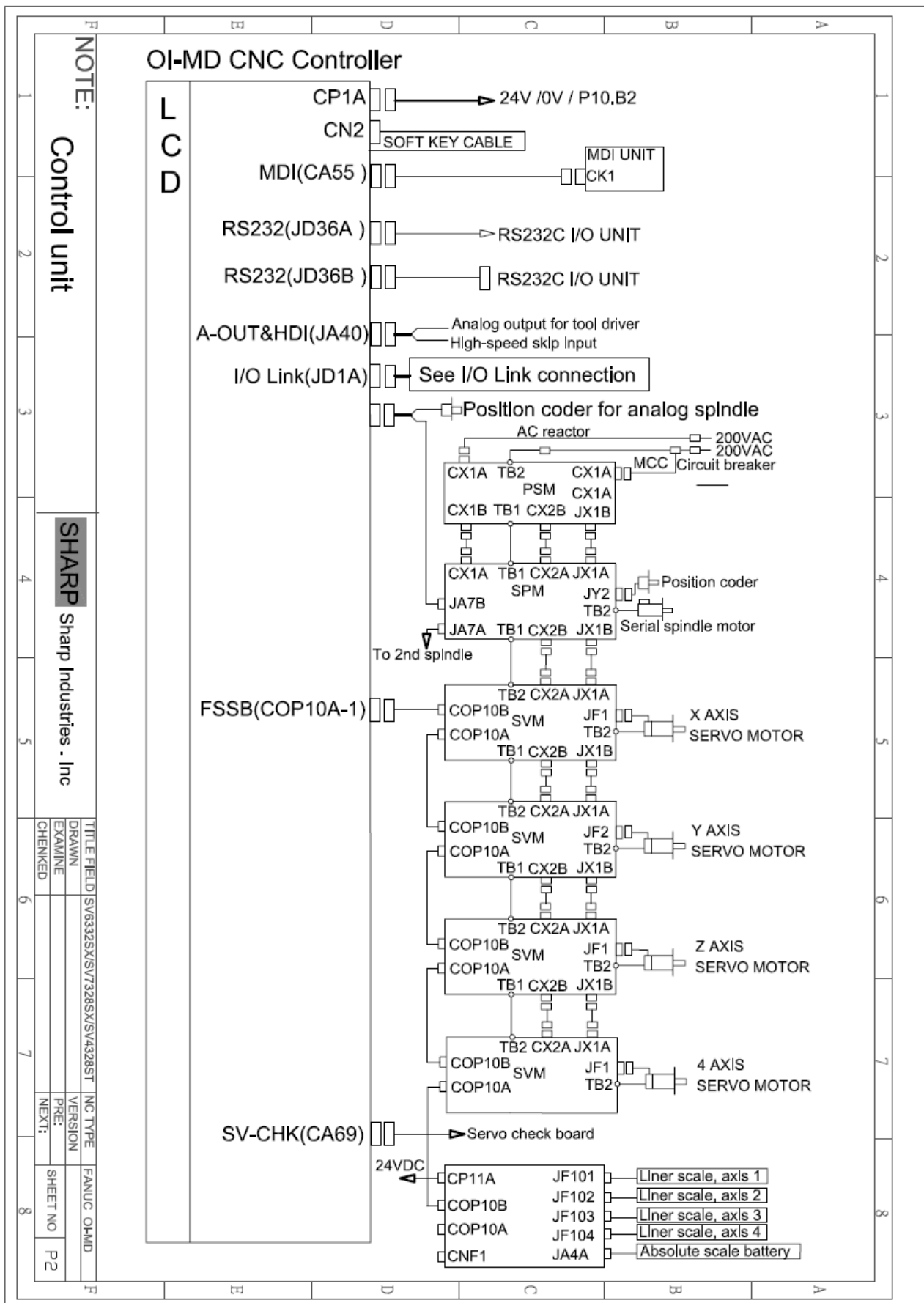
Manufactured by tyco Electronics AMP  
 Housing : 178289-6  
 Contact : 1-175217-2

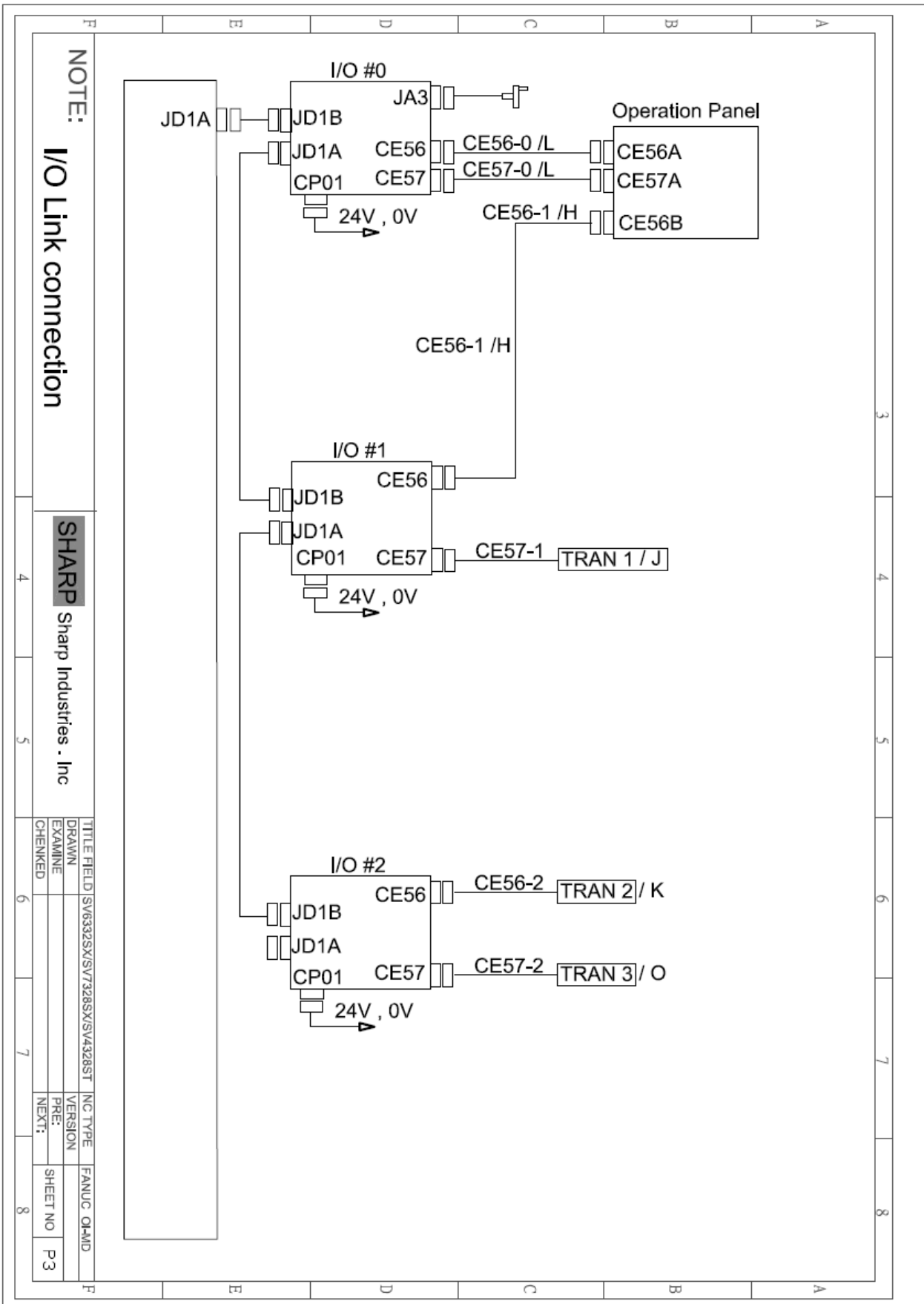
## 8.4 DATA INPUT / OUTPUT ( RS232C / JD5A )

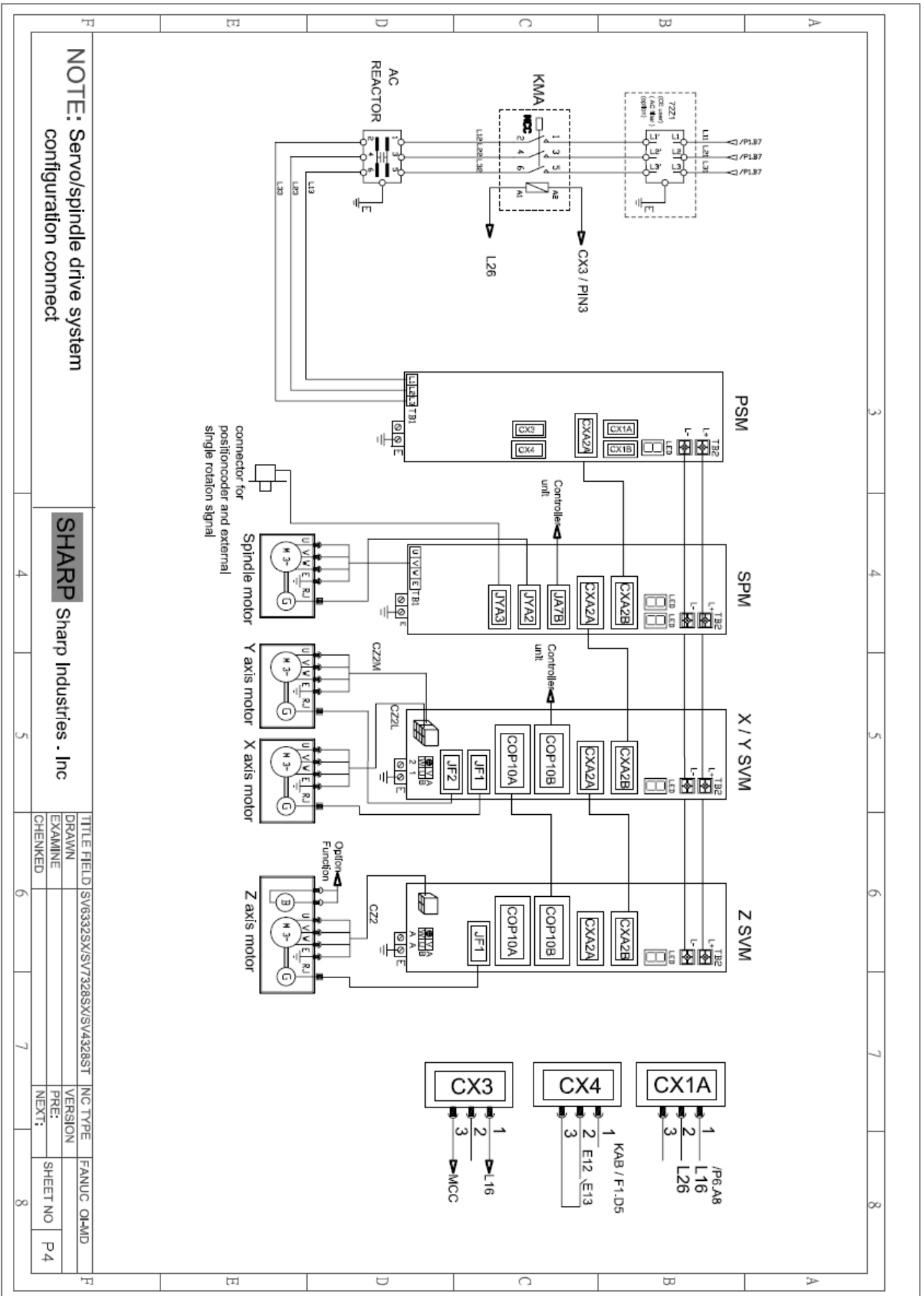


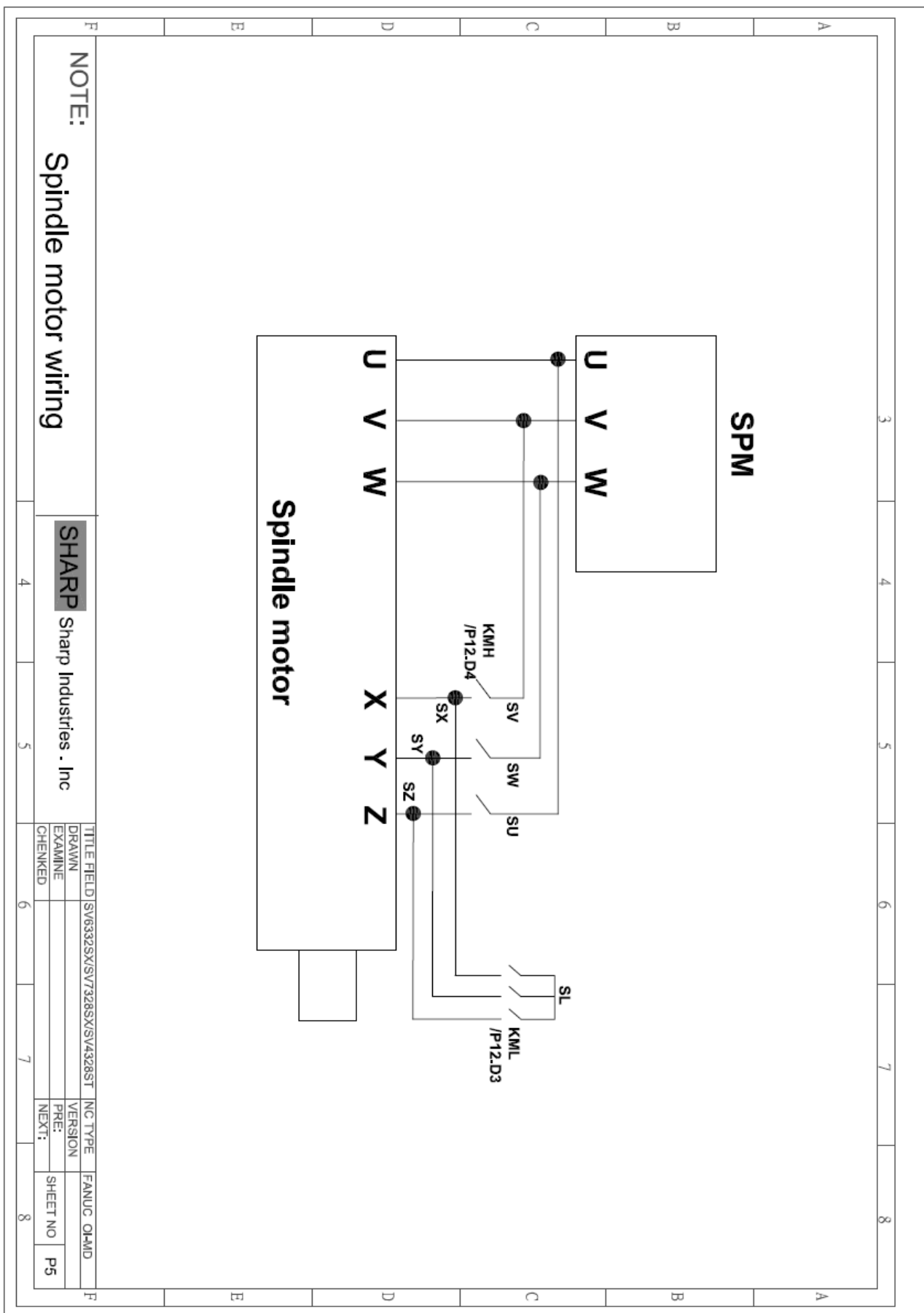
## 9. Electrical Wiring Diagram







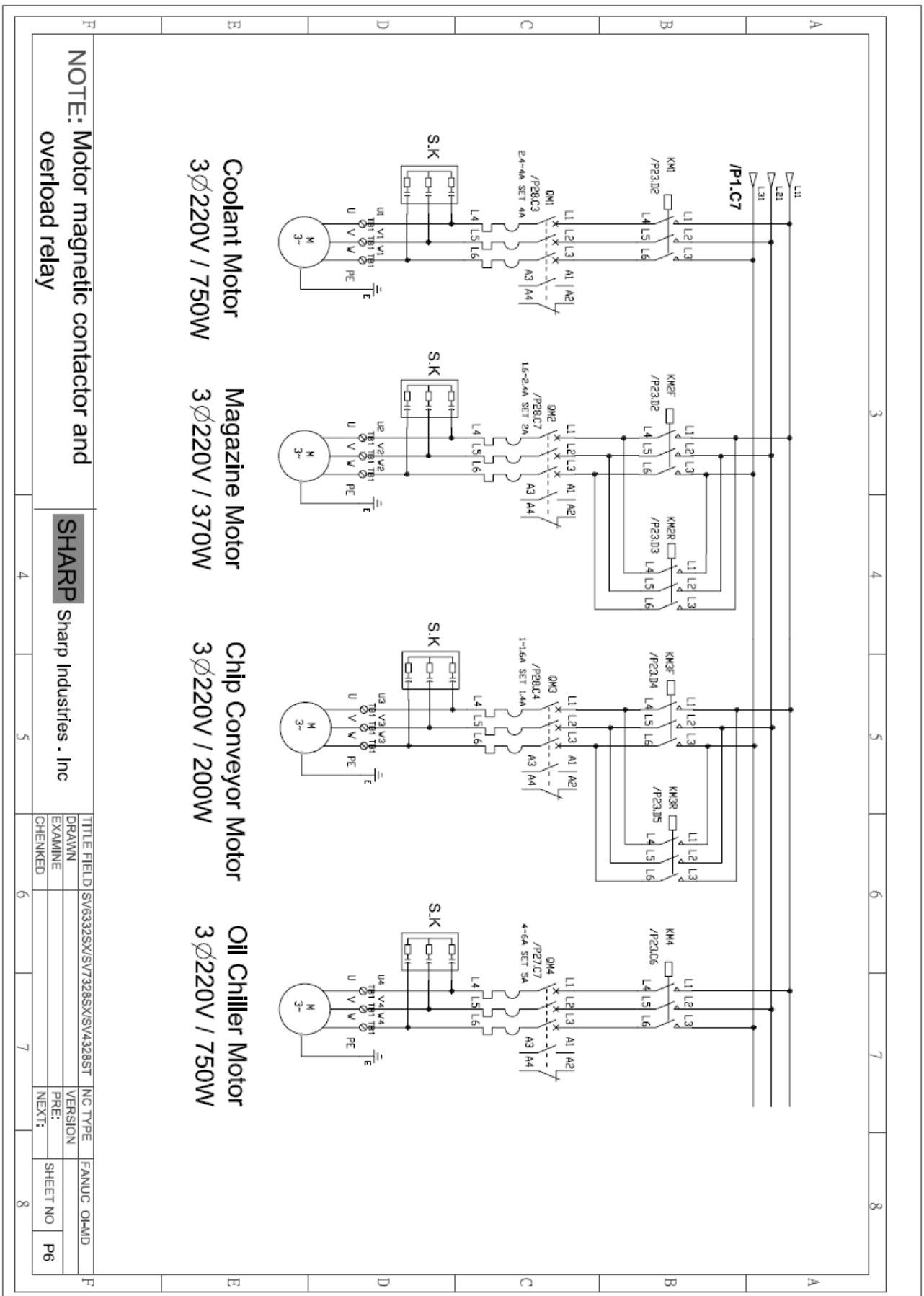




**NOTE:**  
Spindle motor wiring

**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6S32SX/SV7328SX/SV4328ST		INC TYPE	FANUC Q-MAD
DRAWN			VERSION	
EXAMINE			PRE:	SHEET NO
CHECKED			NEXT:	P5

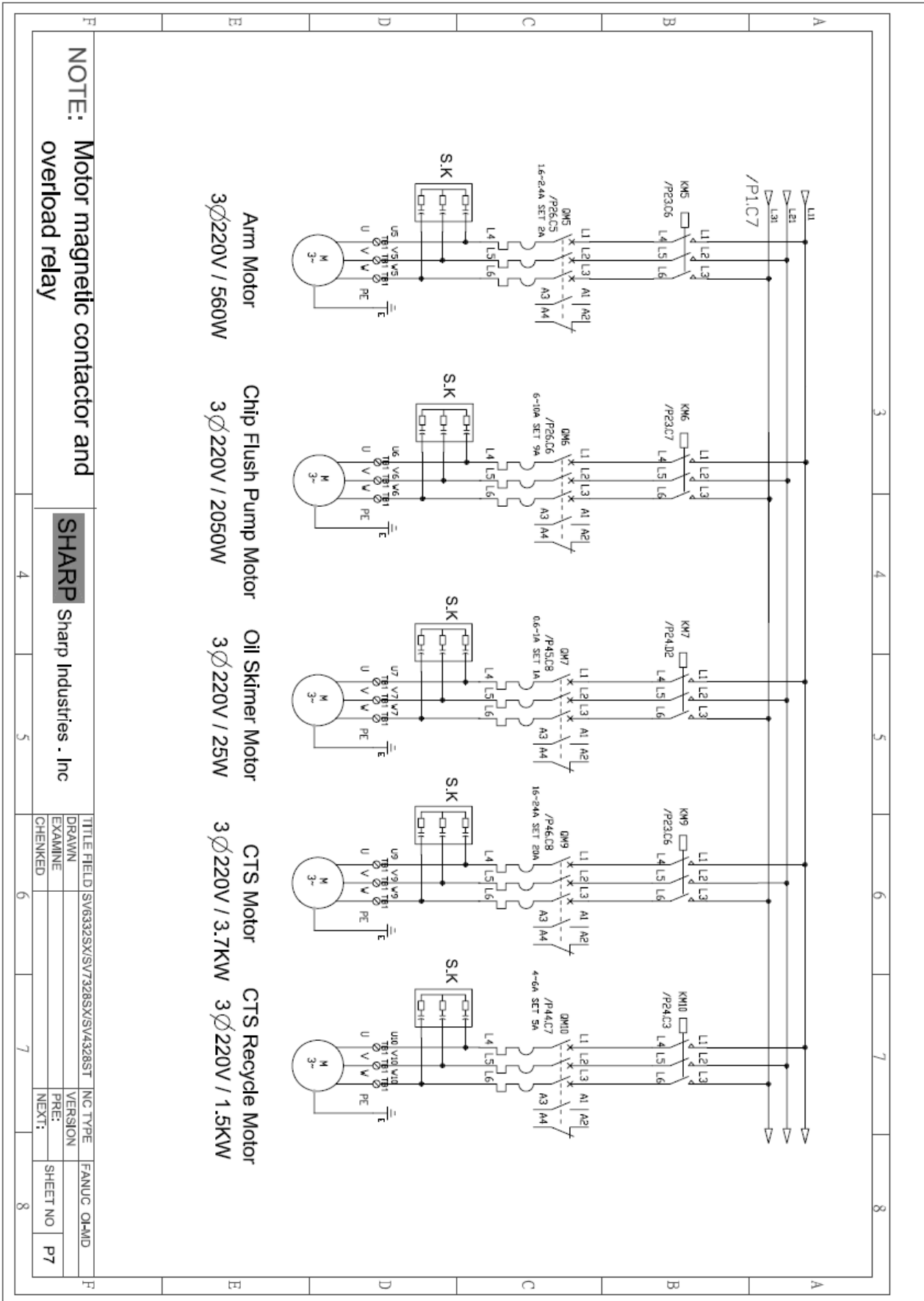


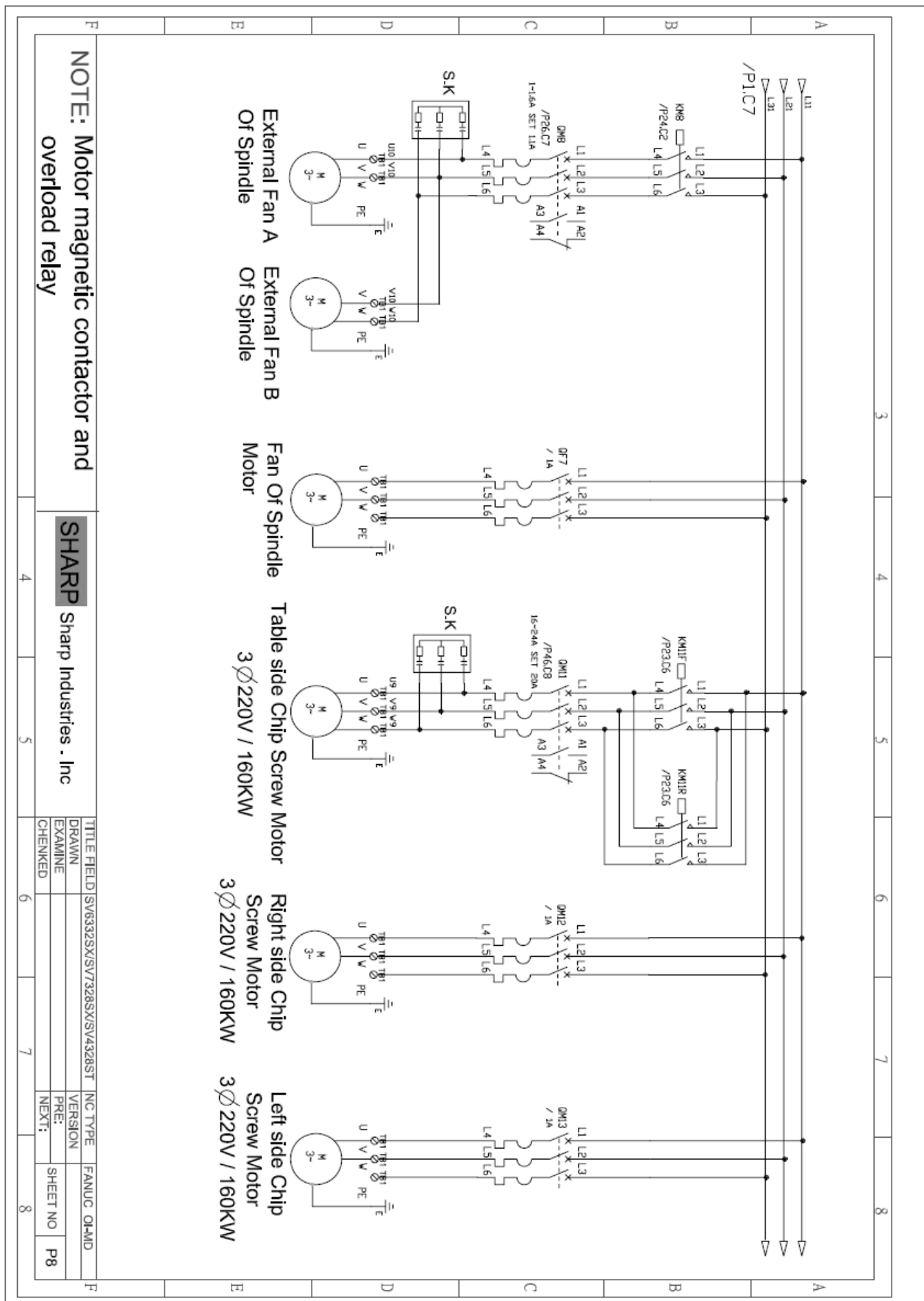
NOTE: Motor magnetic contactor and overload relay

**SHARP** Sharp Industries . Inc

TITLE	FIELD	SV6932SX/SV7328SX/SV4328ST	NC TYPE	FANUC OL-MD
DRAWN			VERSION	
EXAMINE			PRE:	SHEET NO
CHECKED			NEXT:	P6



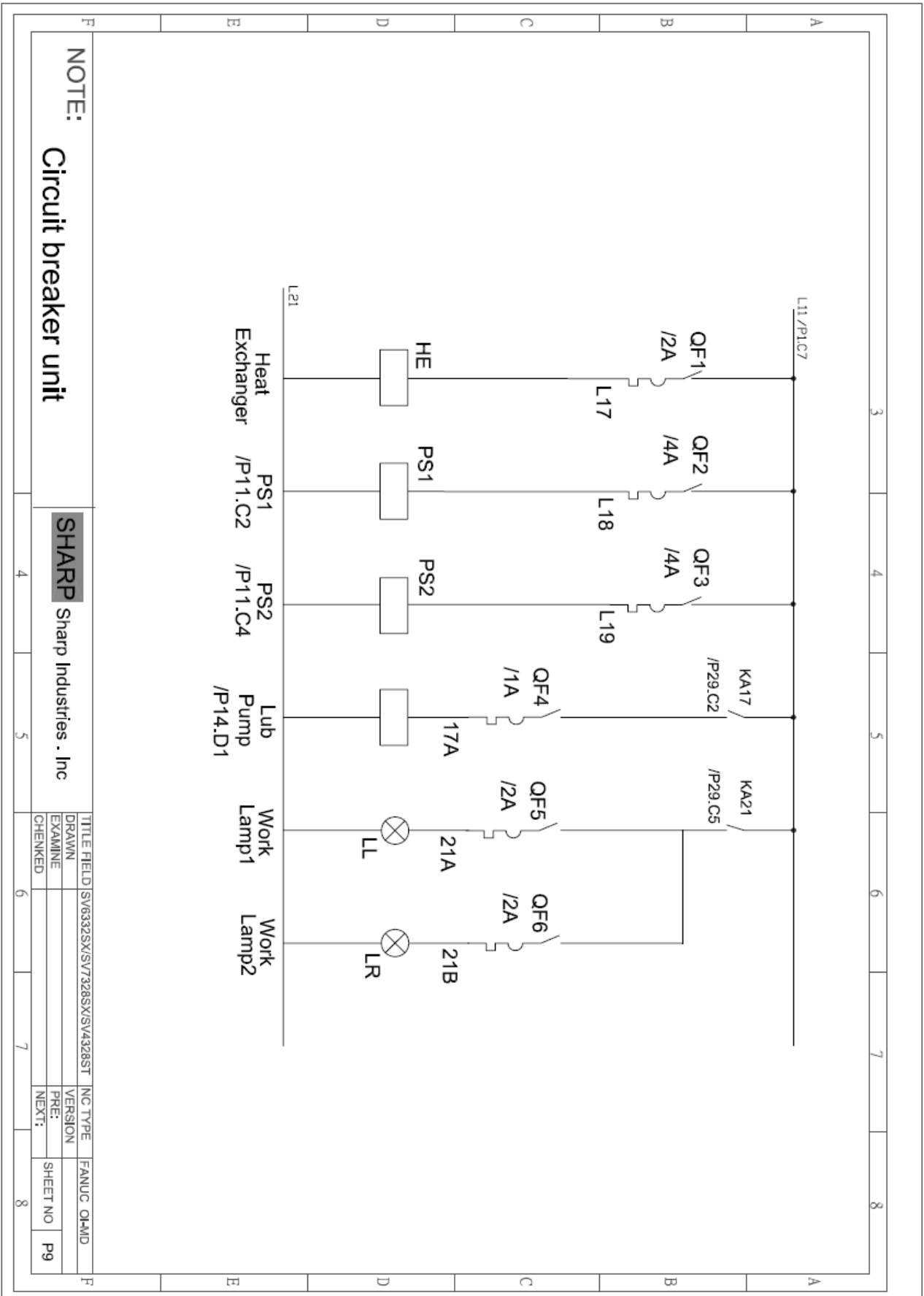




**NOTE: Motor magnetic contactor and overload relay**

**SHARP** Sharp Industries . Inc

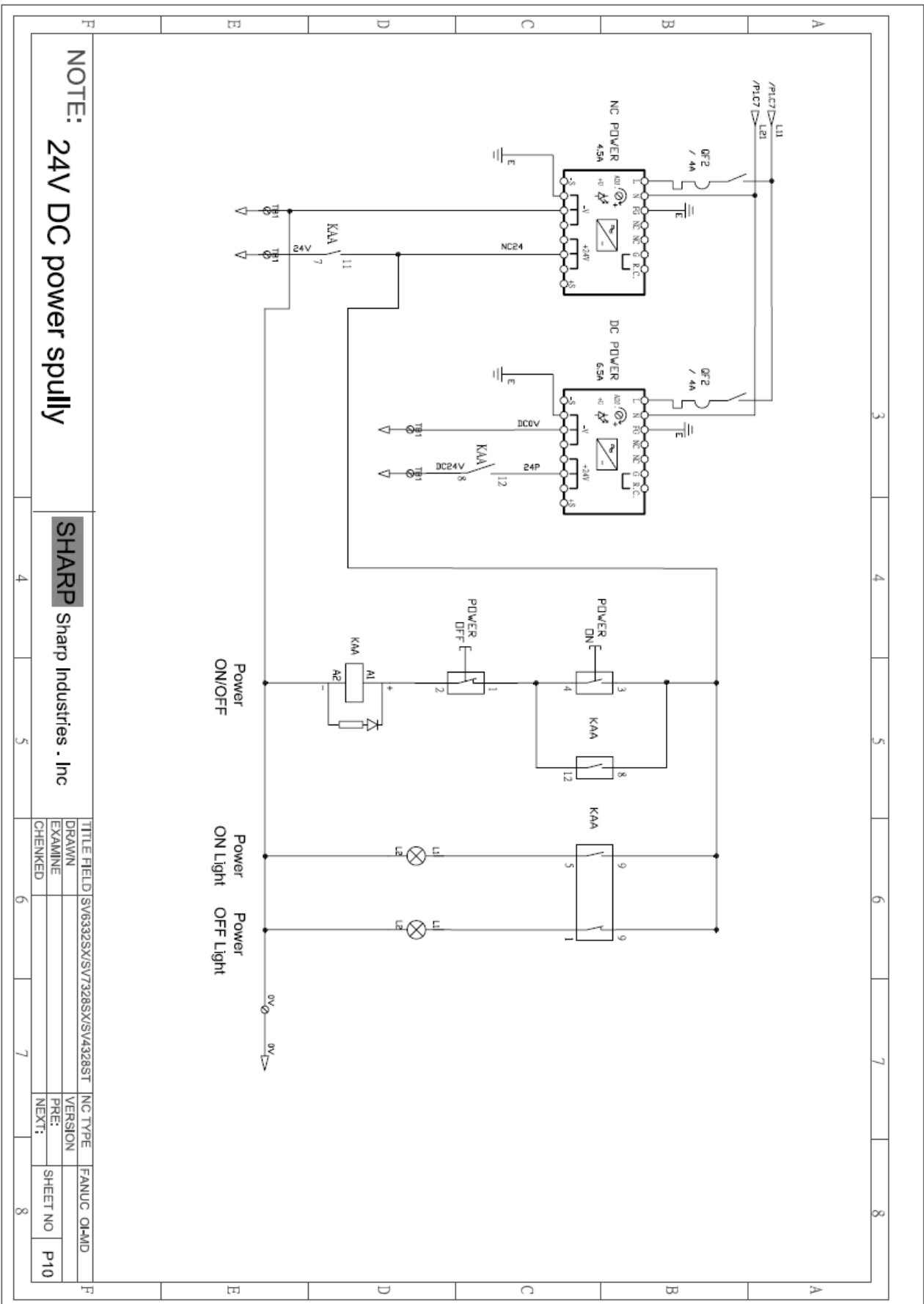
TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC Q-MID
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P8



**NOTE:**  
Circuit breaker unit

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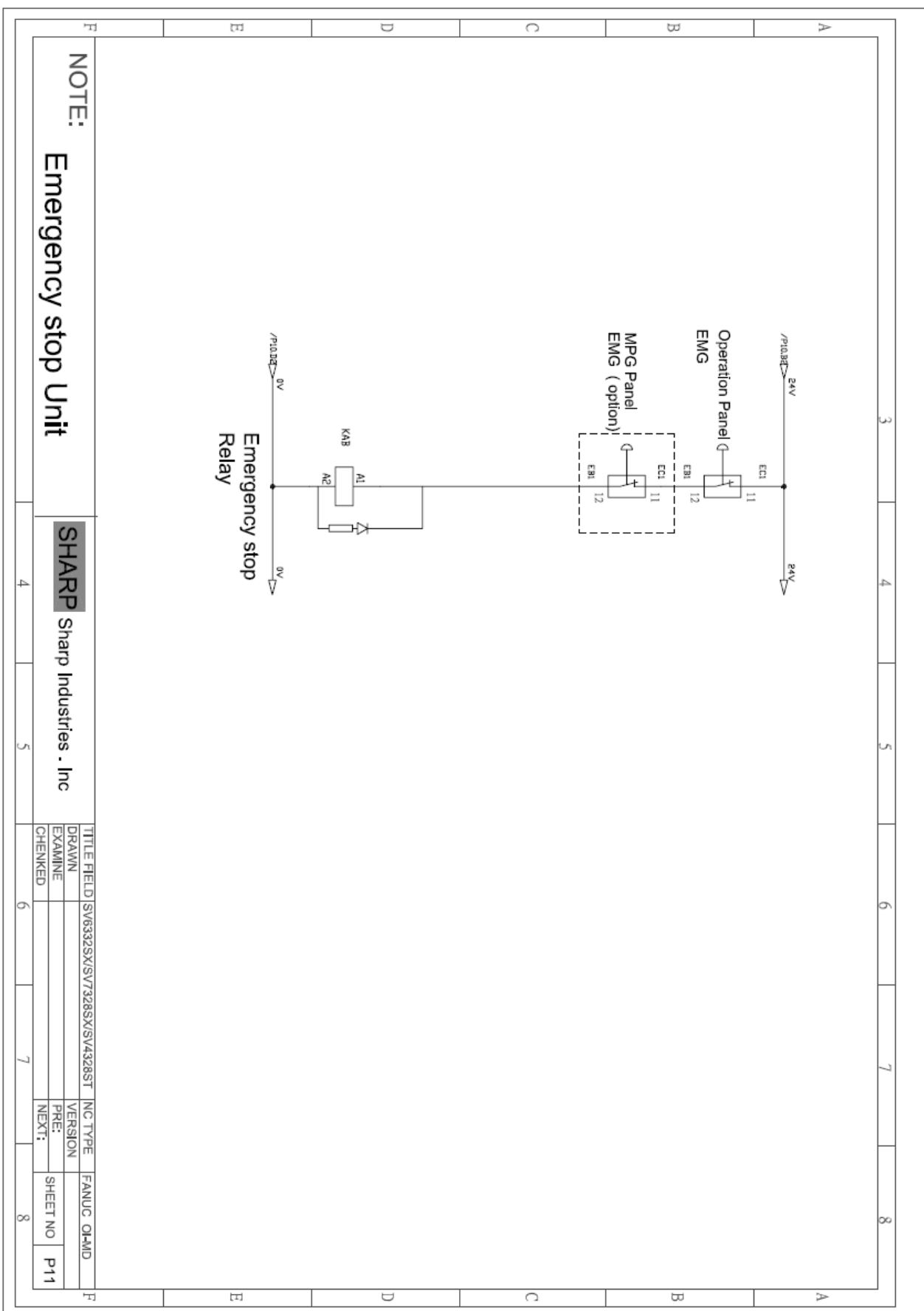
TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	INC TYPE	FANUC Q-MID
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P9



NOTE: 24V DC power spully

SHARP Sharp Industries . Inc

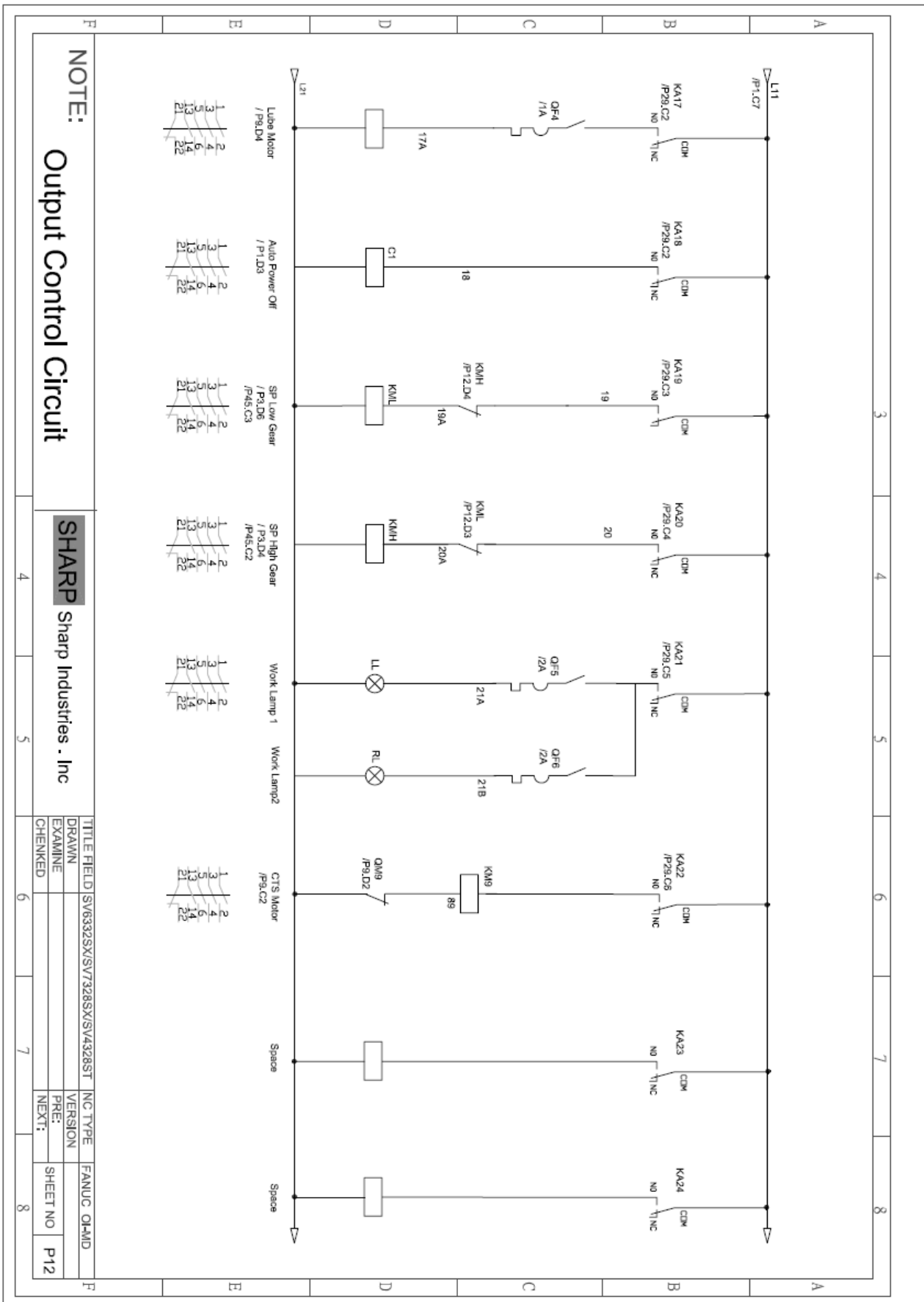
TITLE FIELD	SV6332SX/SV73285X/SV43285T	NC TYPE	FANUC QI-MD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P10

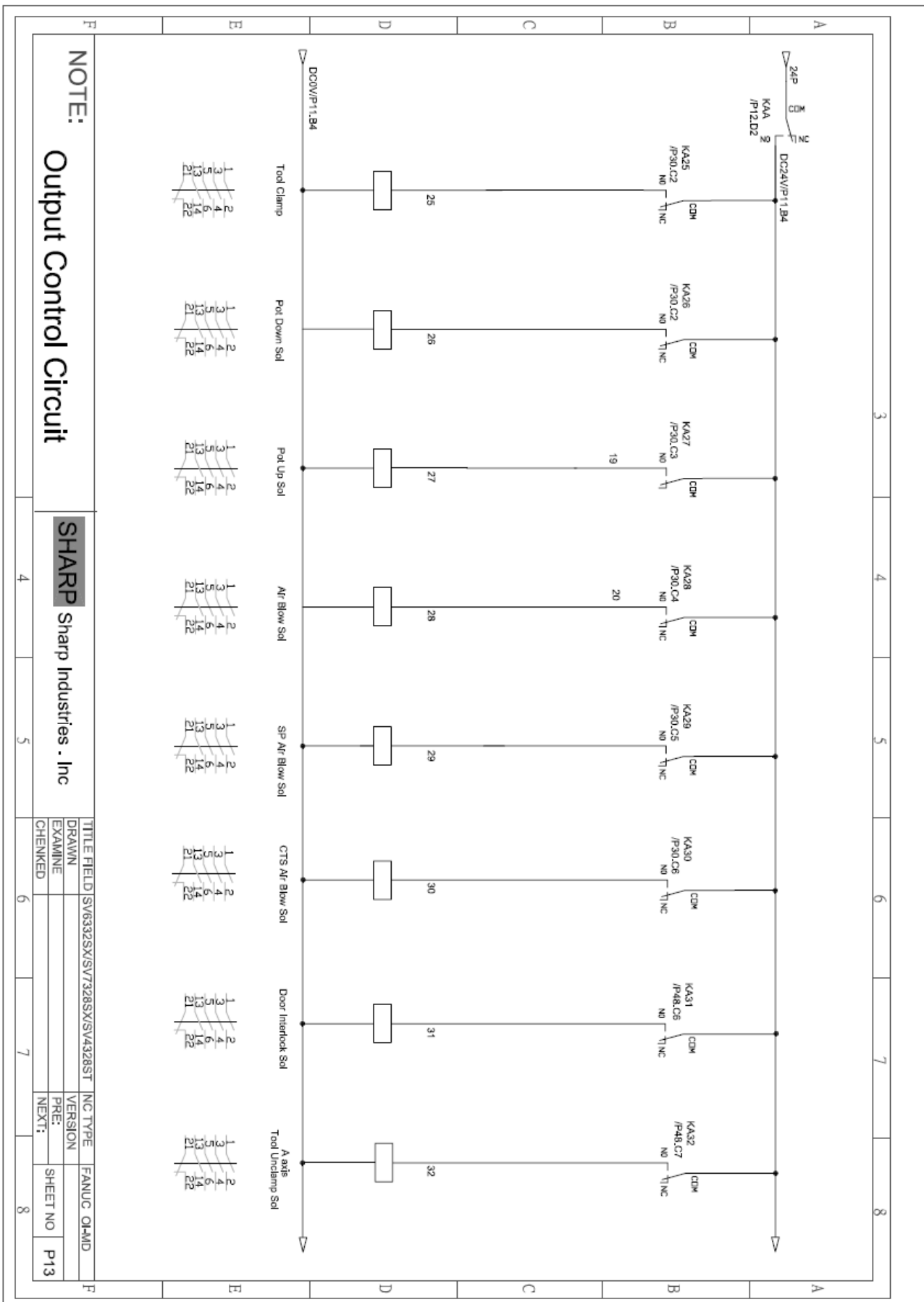


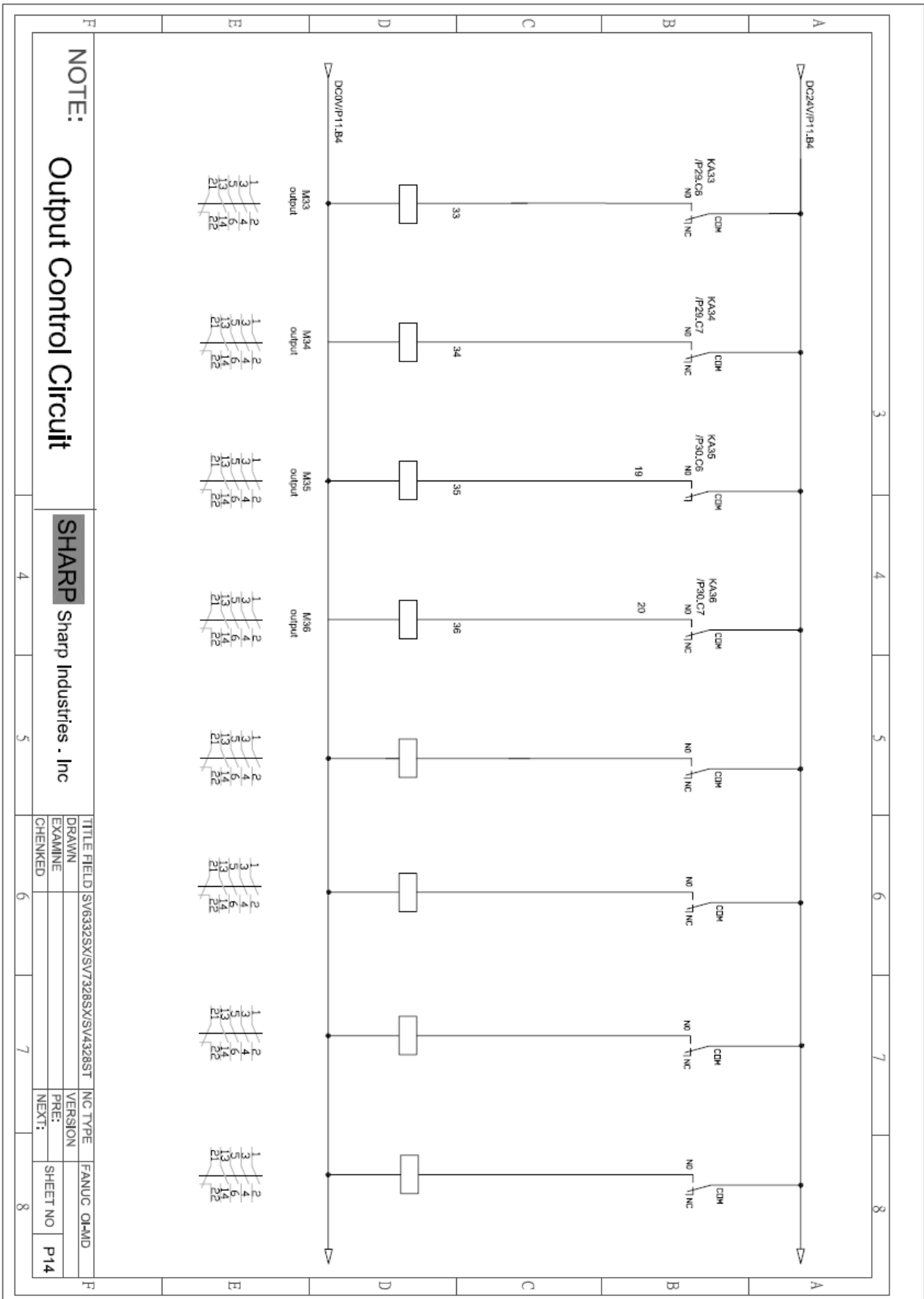
**NOTE:**  
Emergency stop Unit

**SHARP** Sharp Industries . Inc

TITLE	FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC Q-MID
DRAWN	EXAMINE		VERSION	
CHECKED			PRE-NEXT:	SHEET NO
				P11







NOTE:

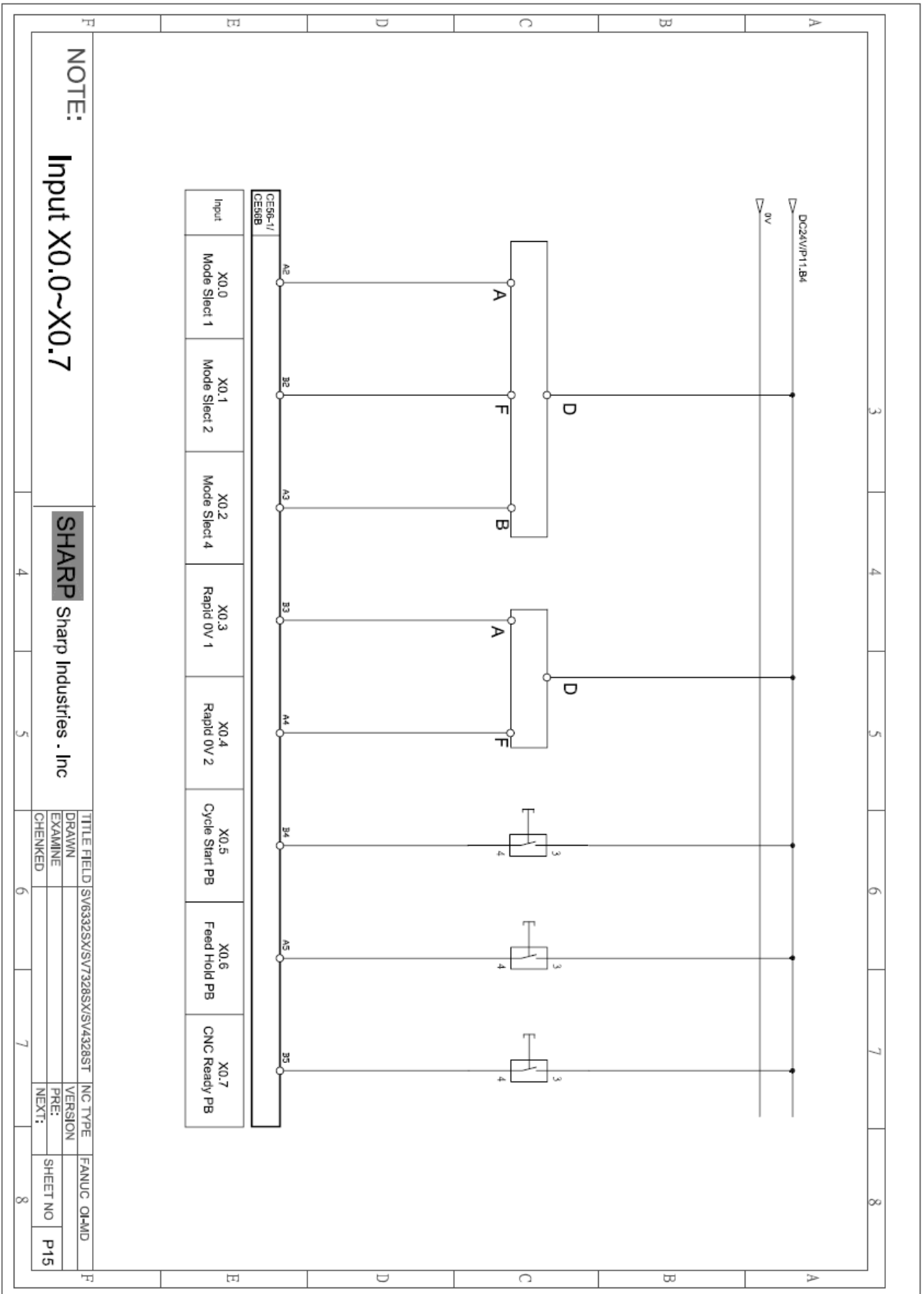
## Output Control Circuit

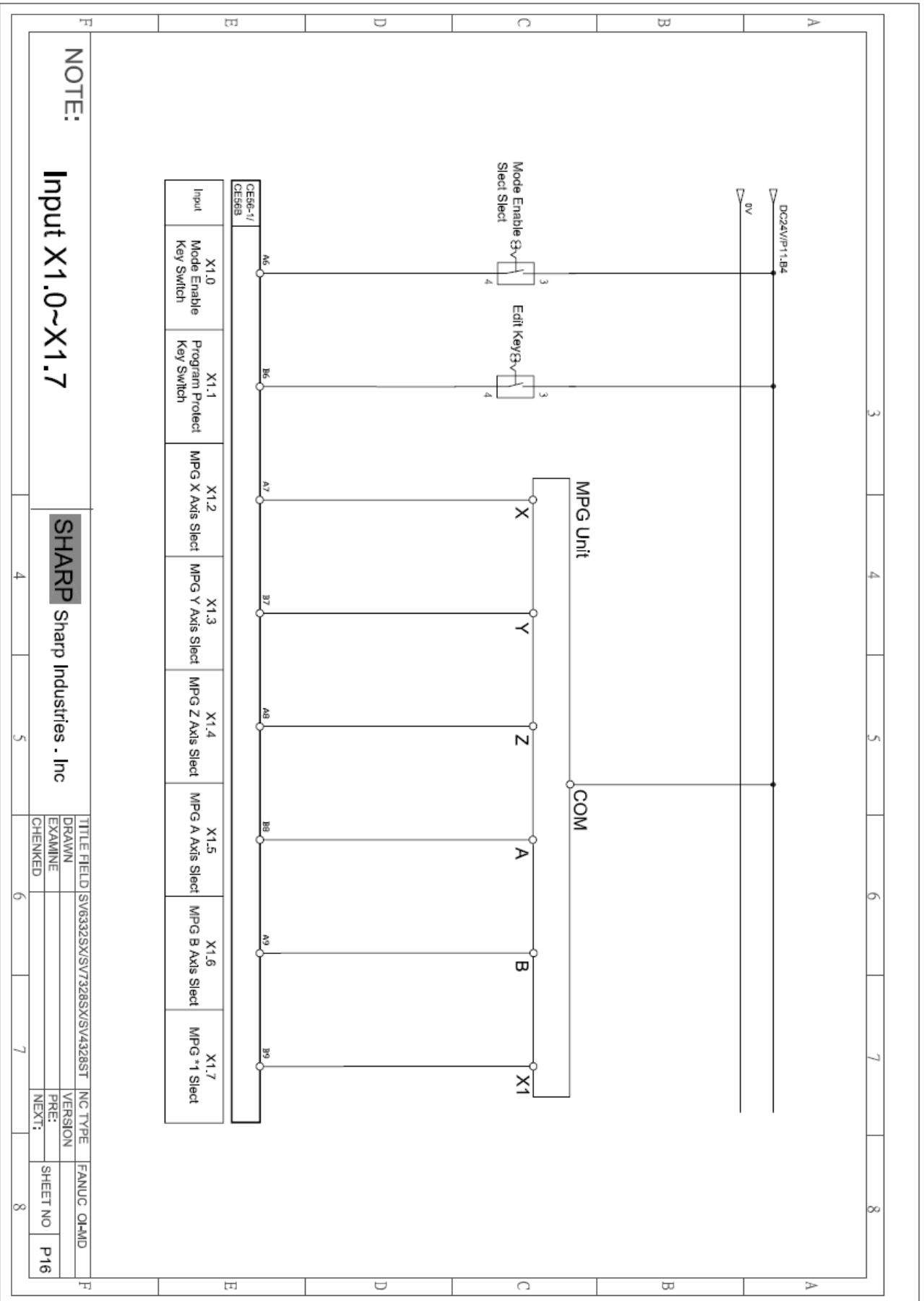
**SHARP** Sharp Industries - Inc

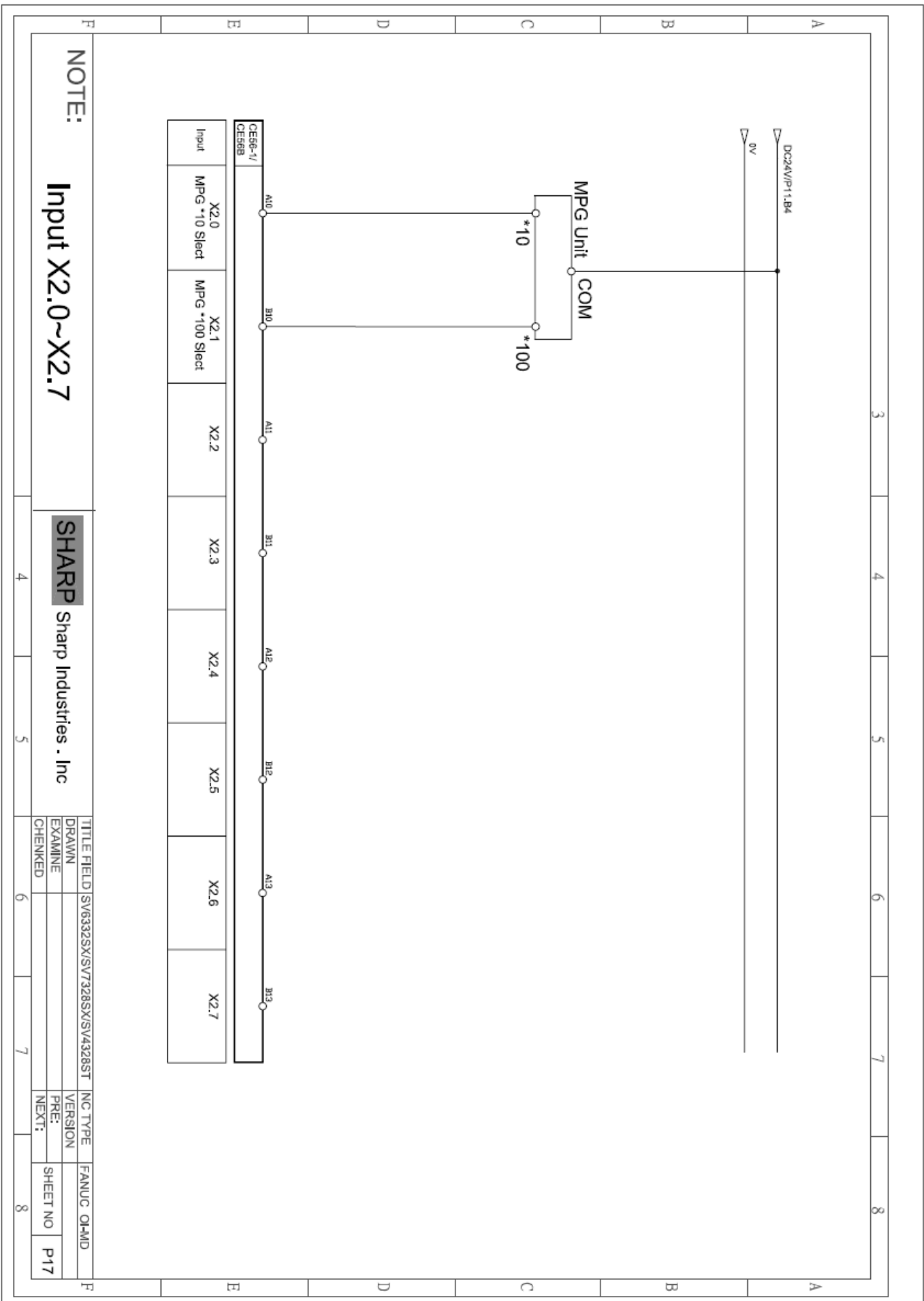
4	5	6	7	8
---	---	---	---	---

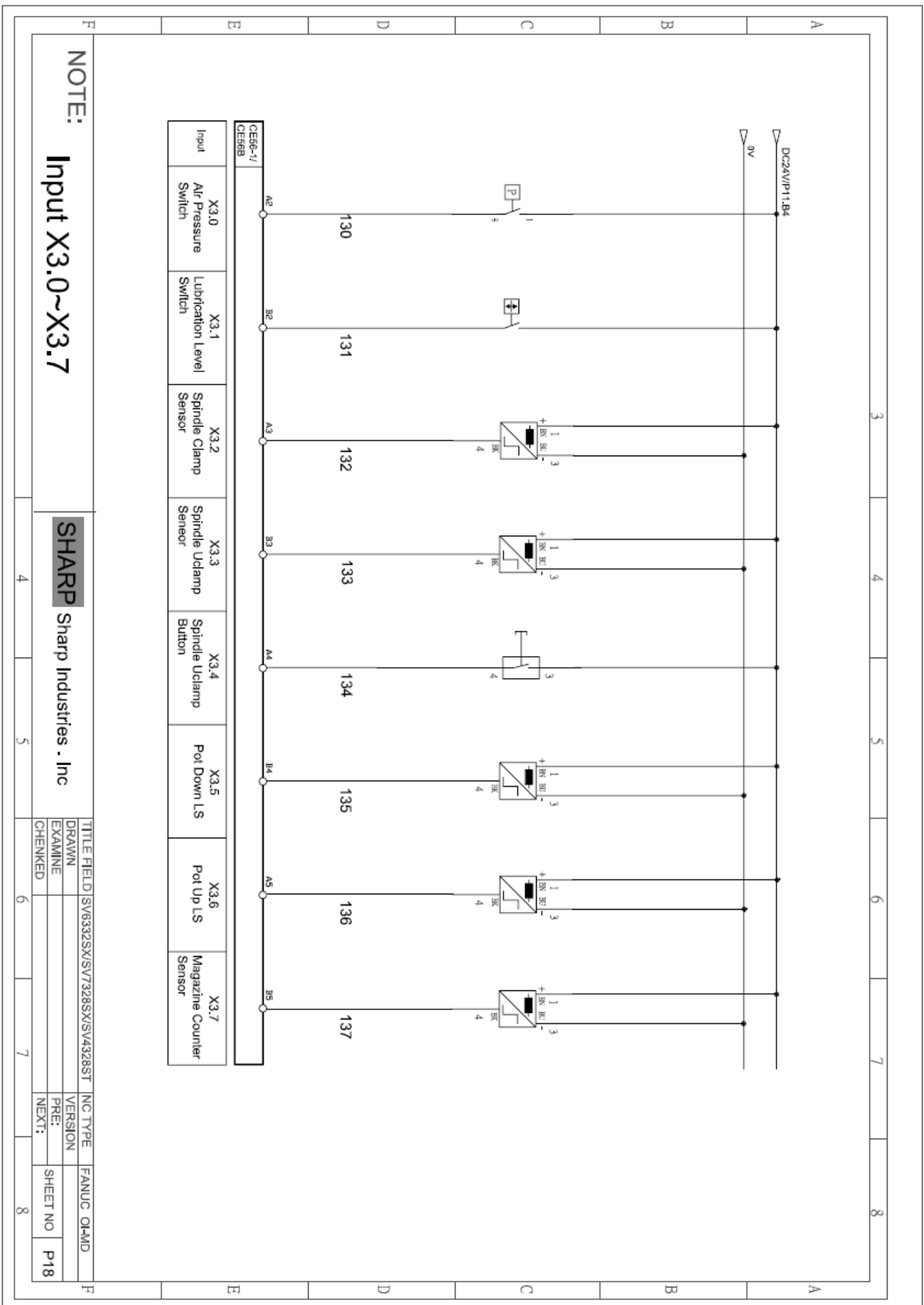
TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC OI-MD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P14

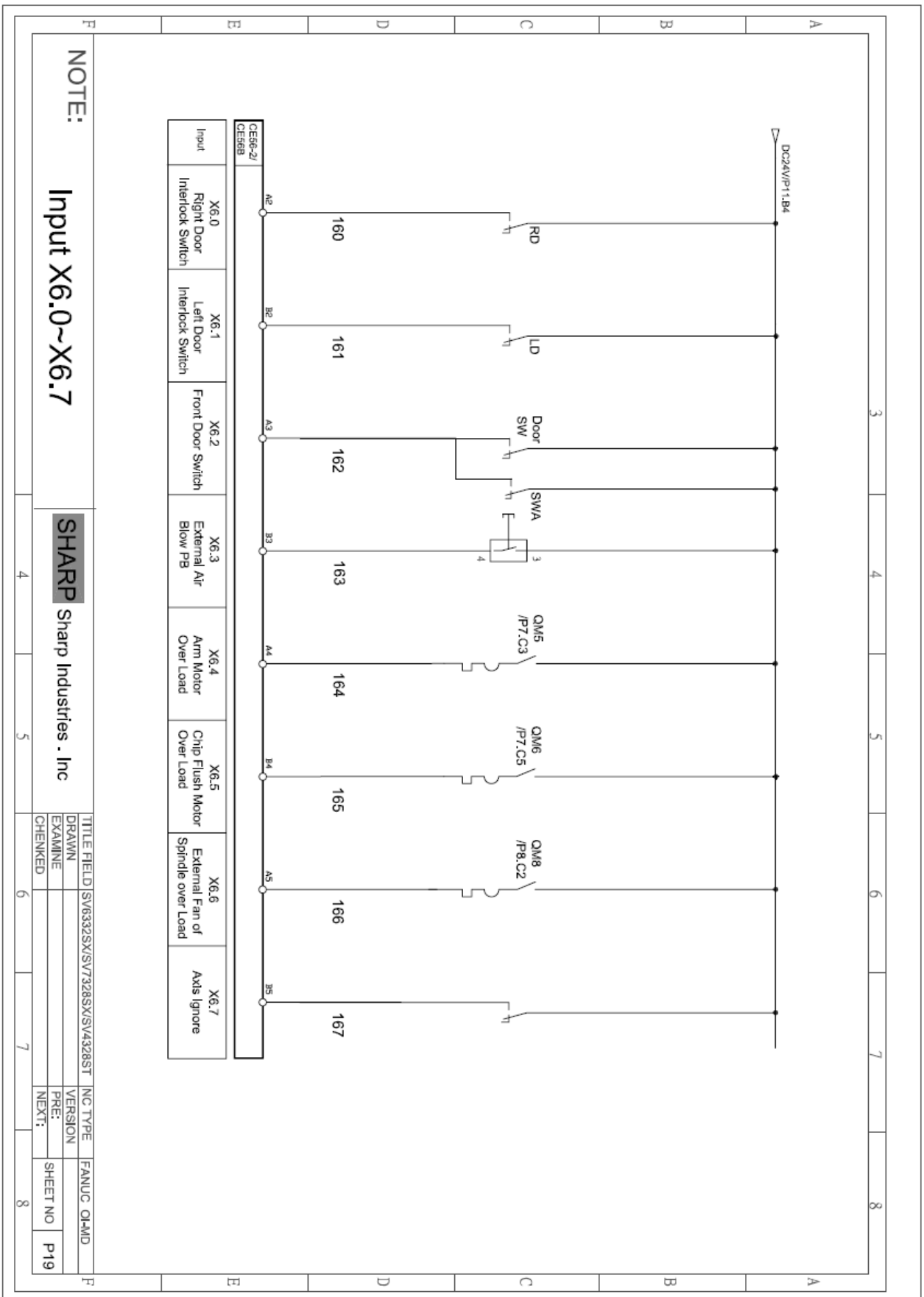


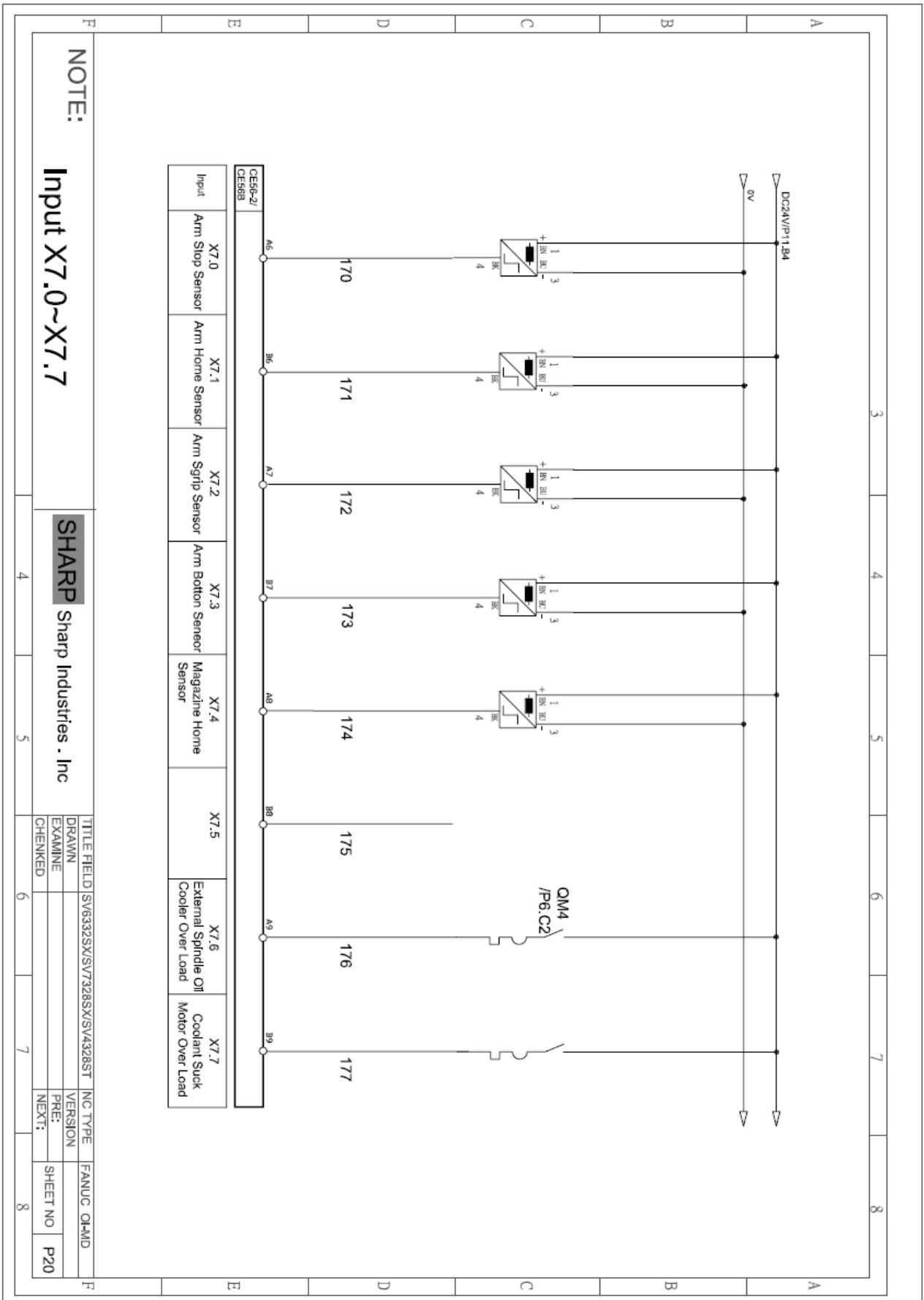


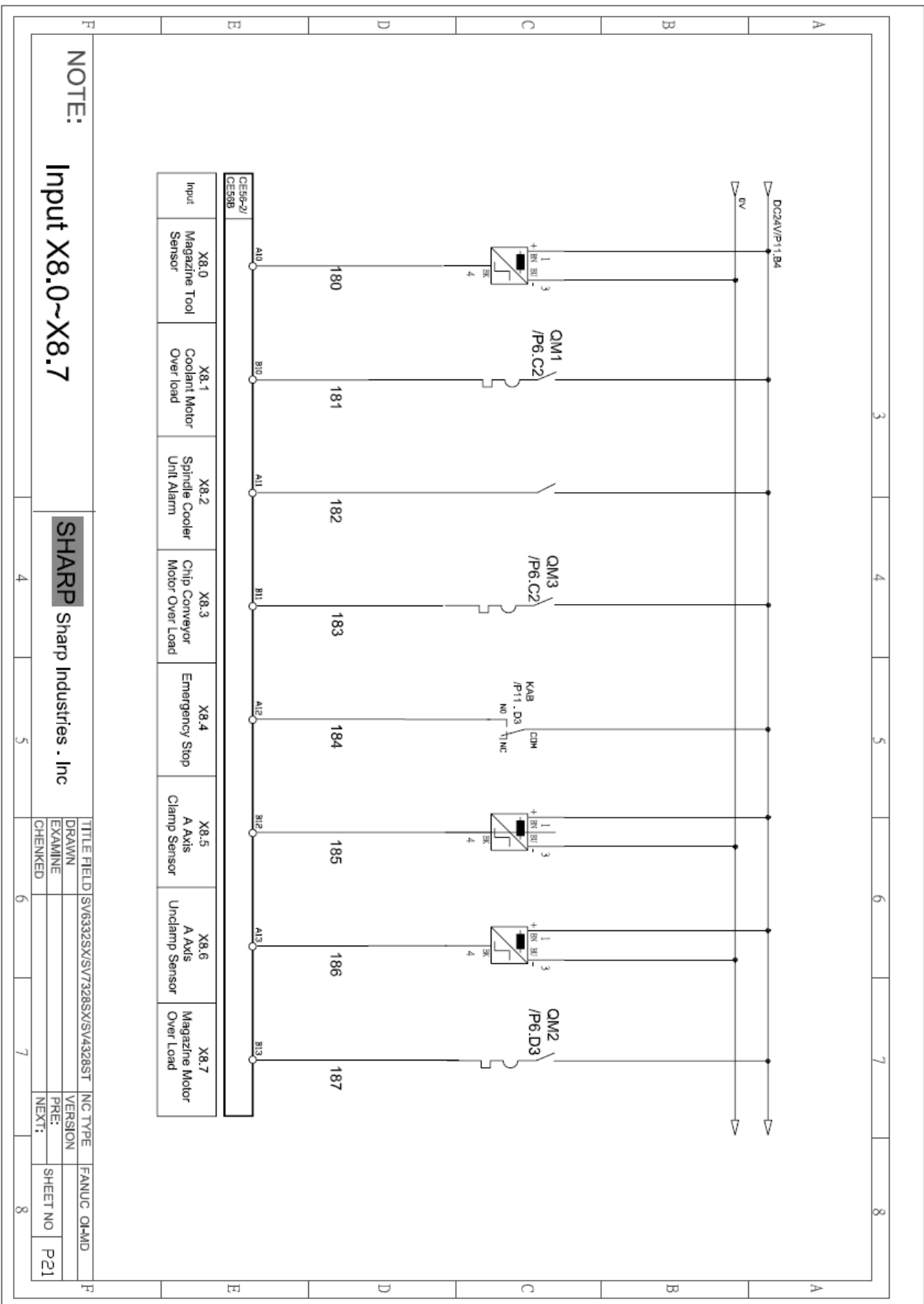












NOTE:

Input X8.0~X8.7

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4

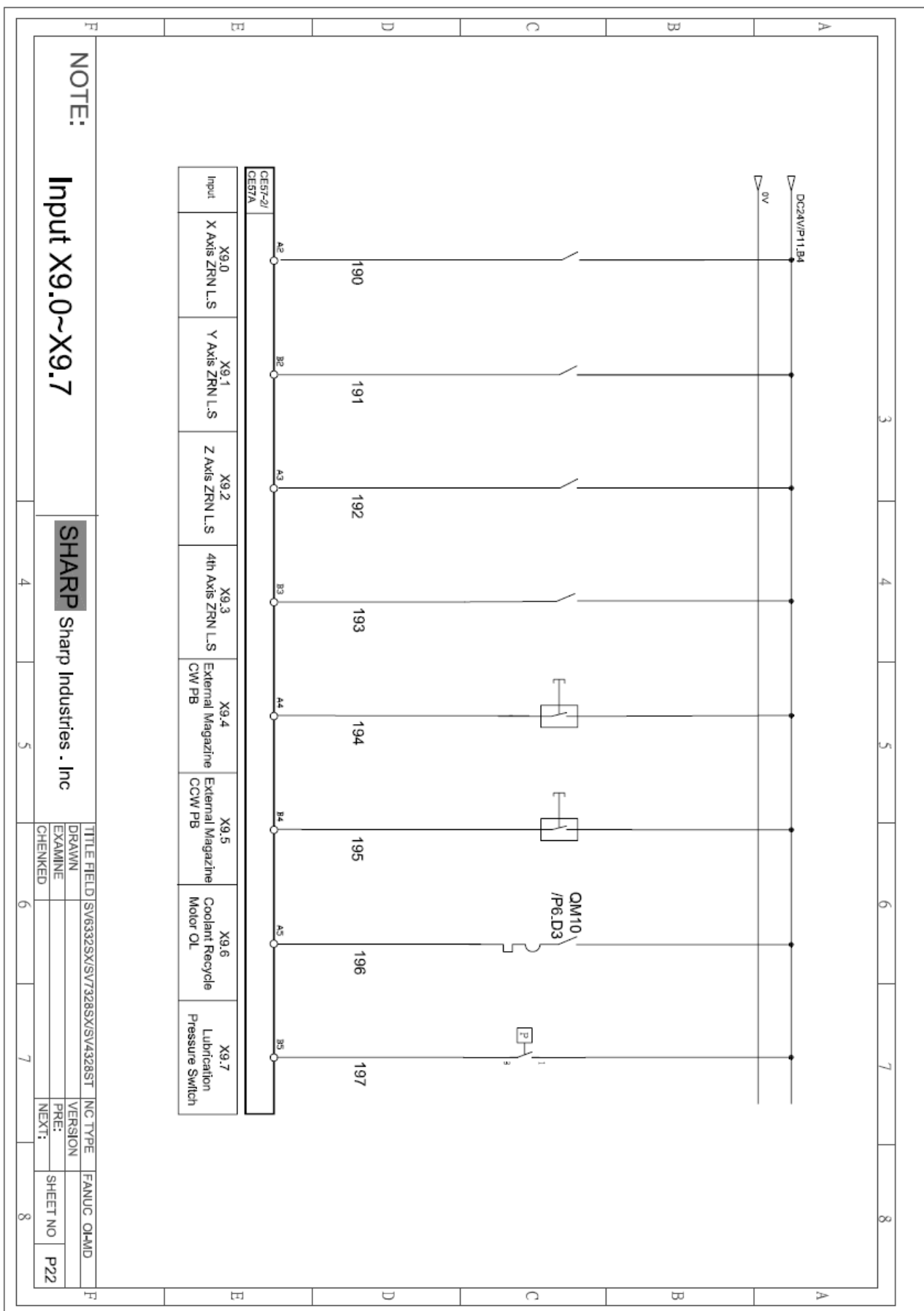
5

6

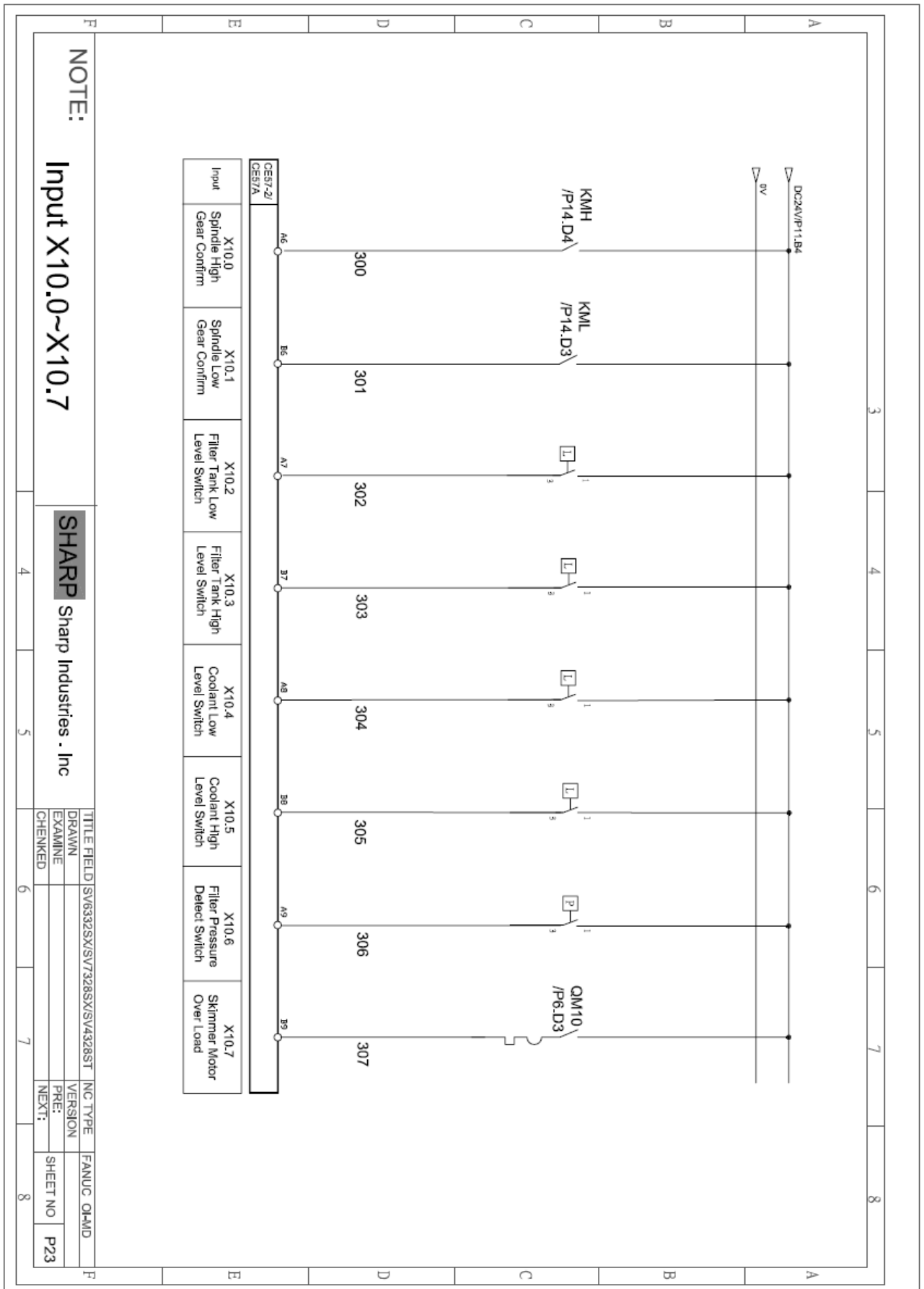
7

8

TITLE	FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC QMAD
DRAWN	EXAMINE		VERSION	
CHECKED			PRE-NEXT:	SHEET NO
				P21



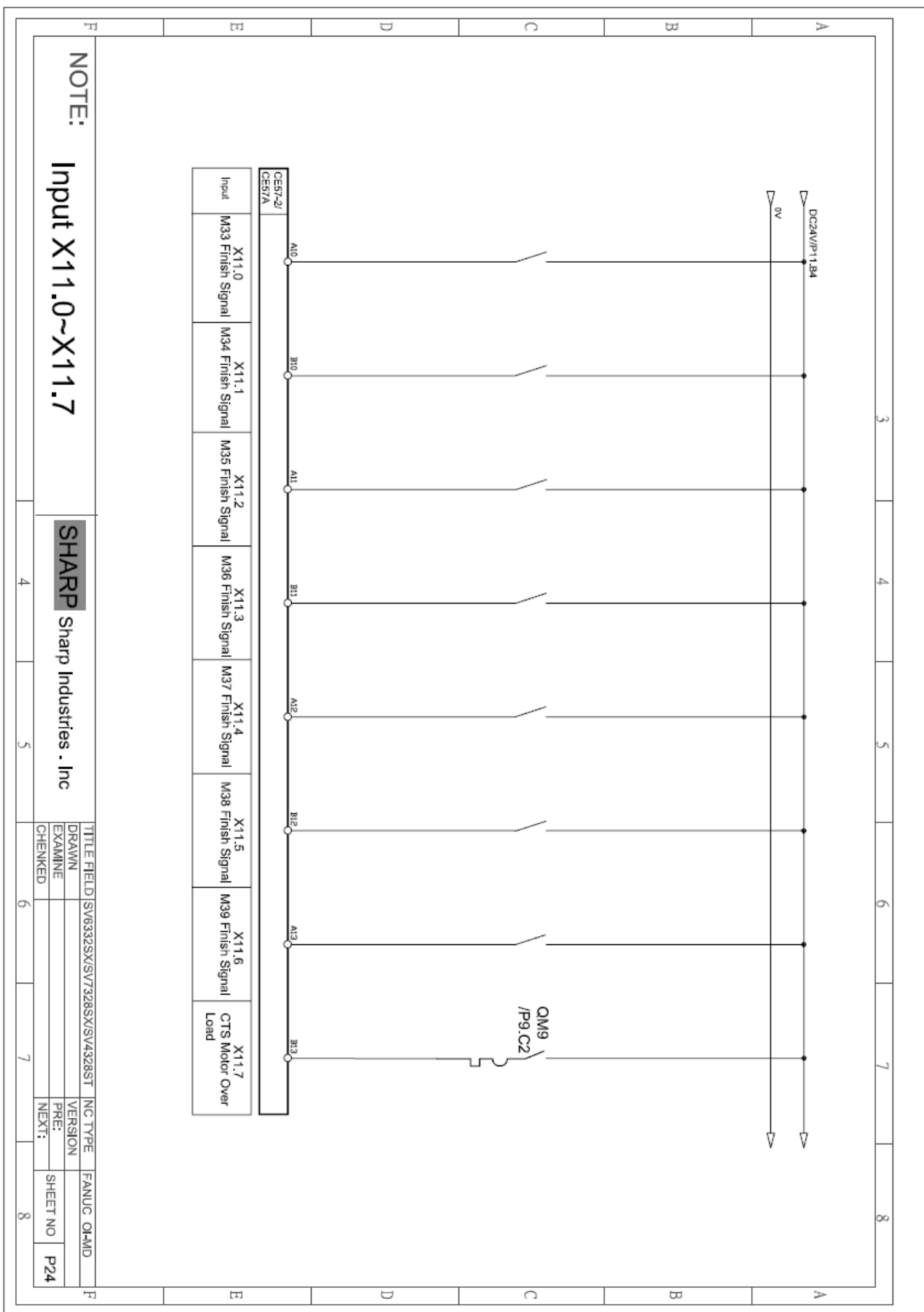


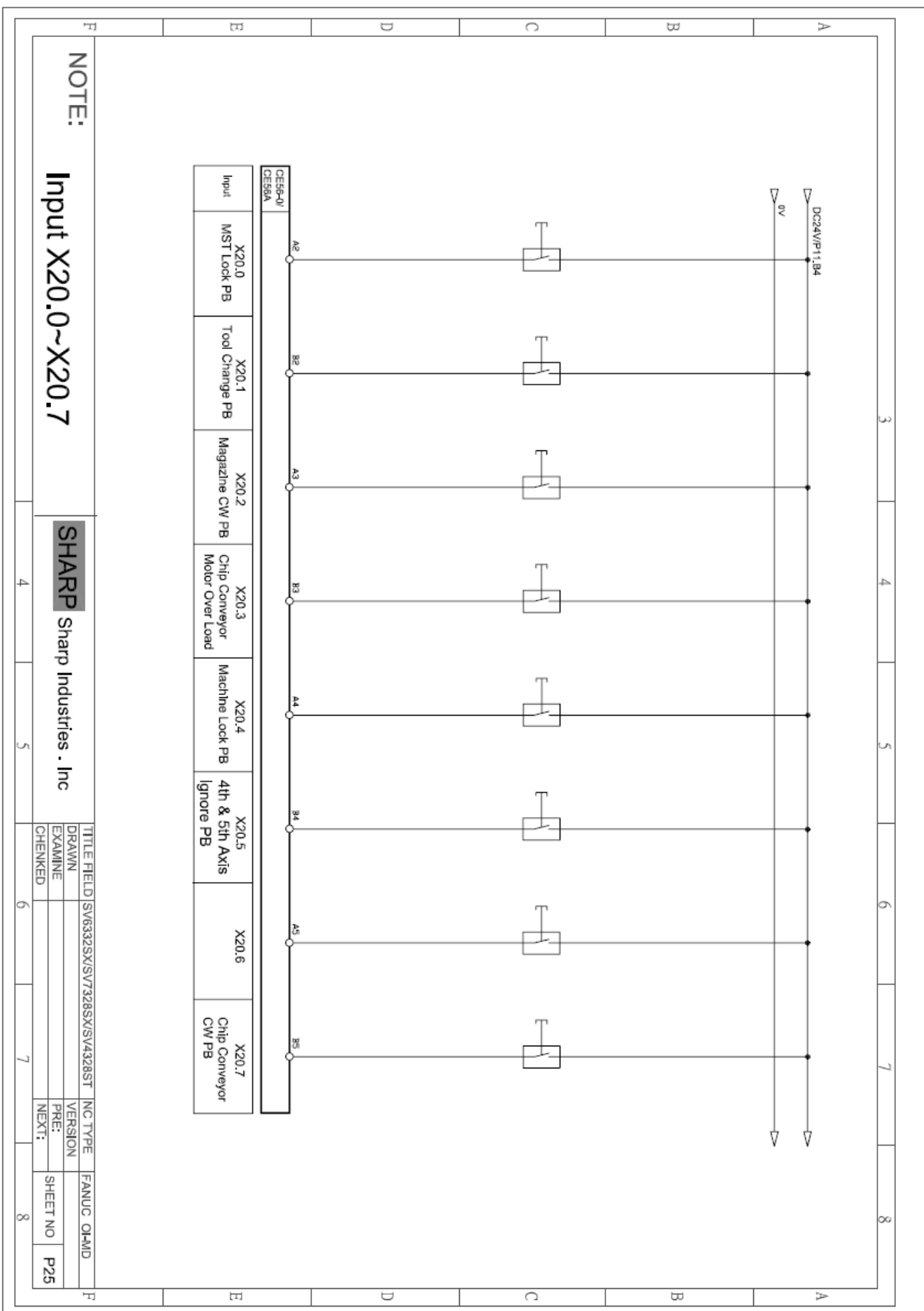


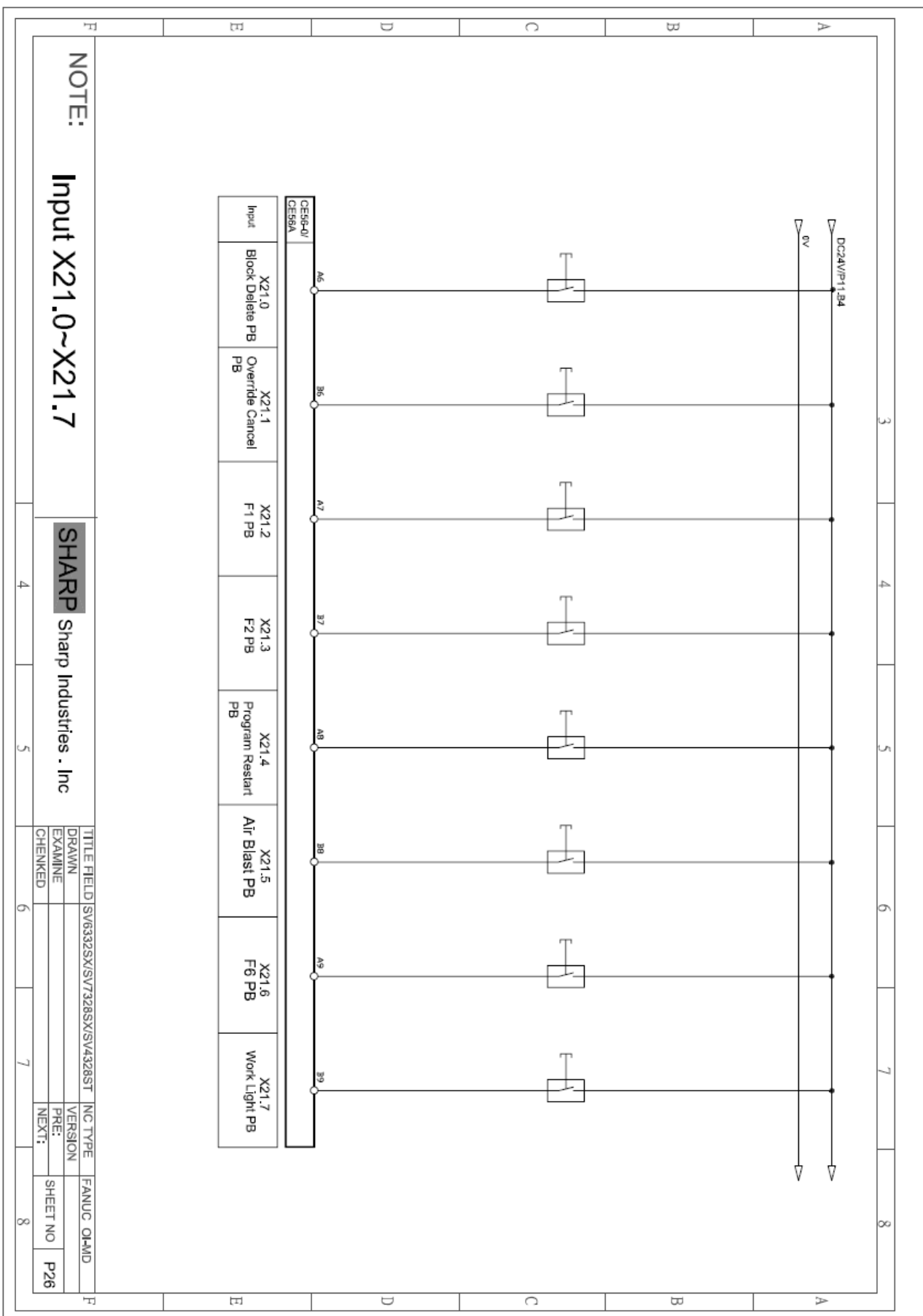
NOTE:  
Input X10.0~X10.7

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TITLE	FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC Q-MID
DRAWN	EXAMINE		VERSION	
CHECKED			PRE:	
			NEXT:	
			SHEET NO	P23



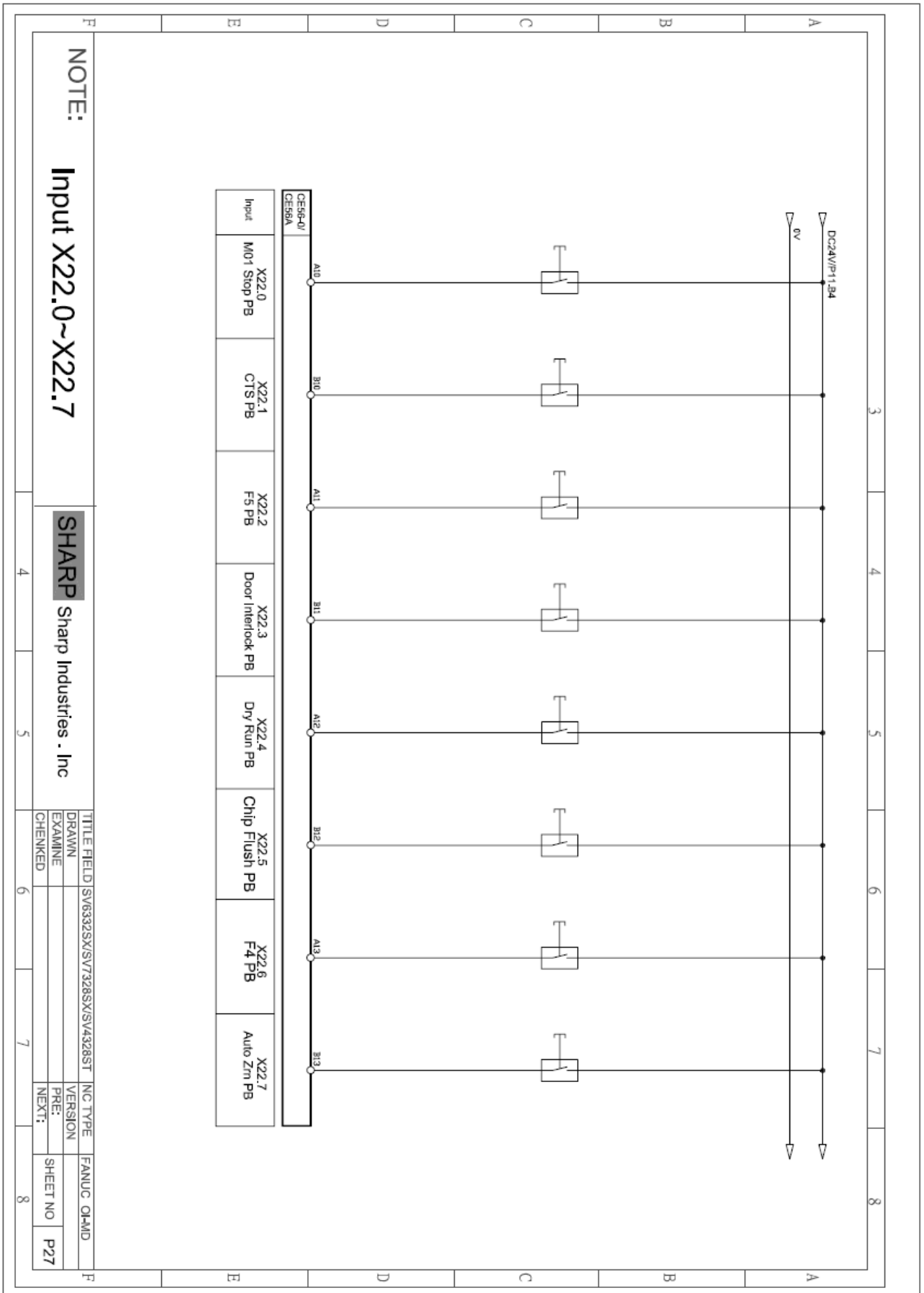




**NOTE:**  
Input X21.0~X21.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6332SX/SV7328SX/SA4328ST	INC TYPE	FANUC QMAD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P26



NOTE:

Input X22.0~X22.7

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4

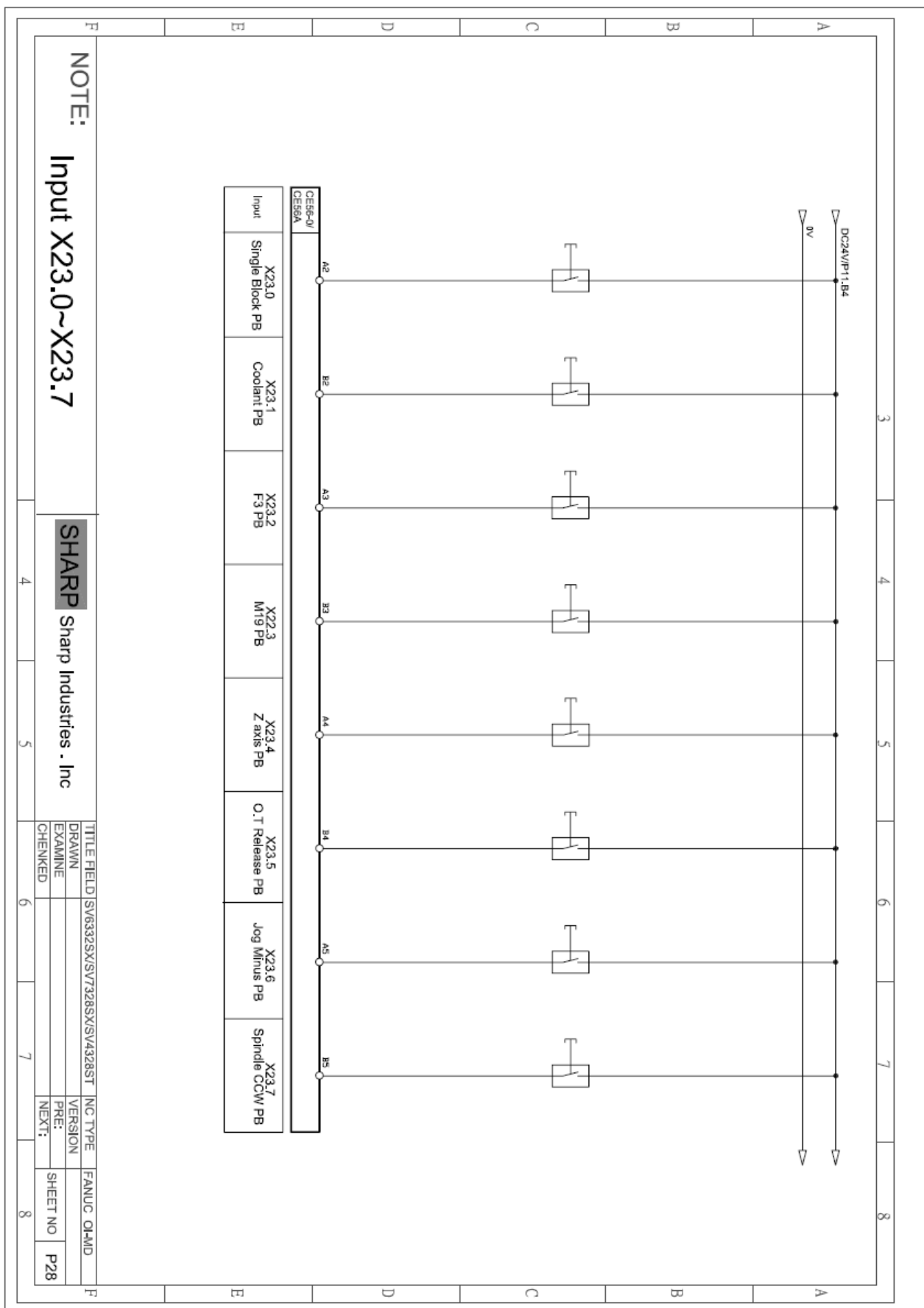
5

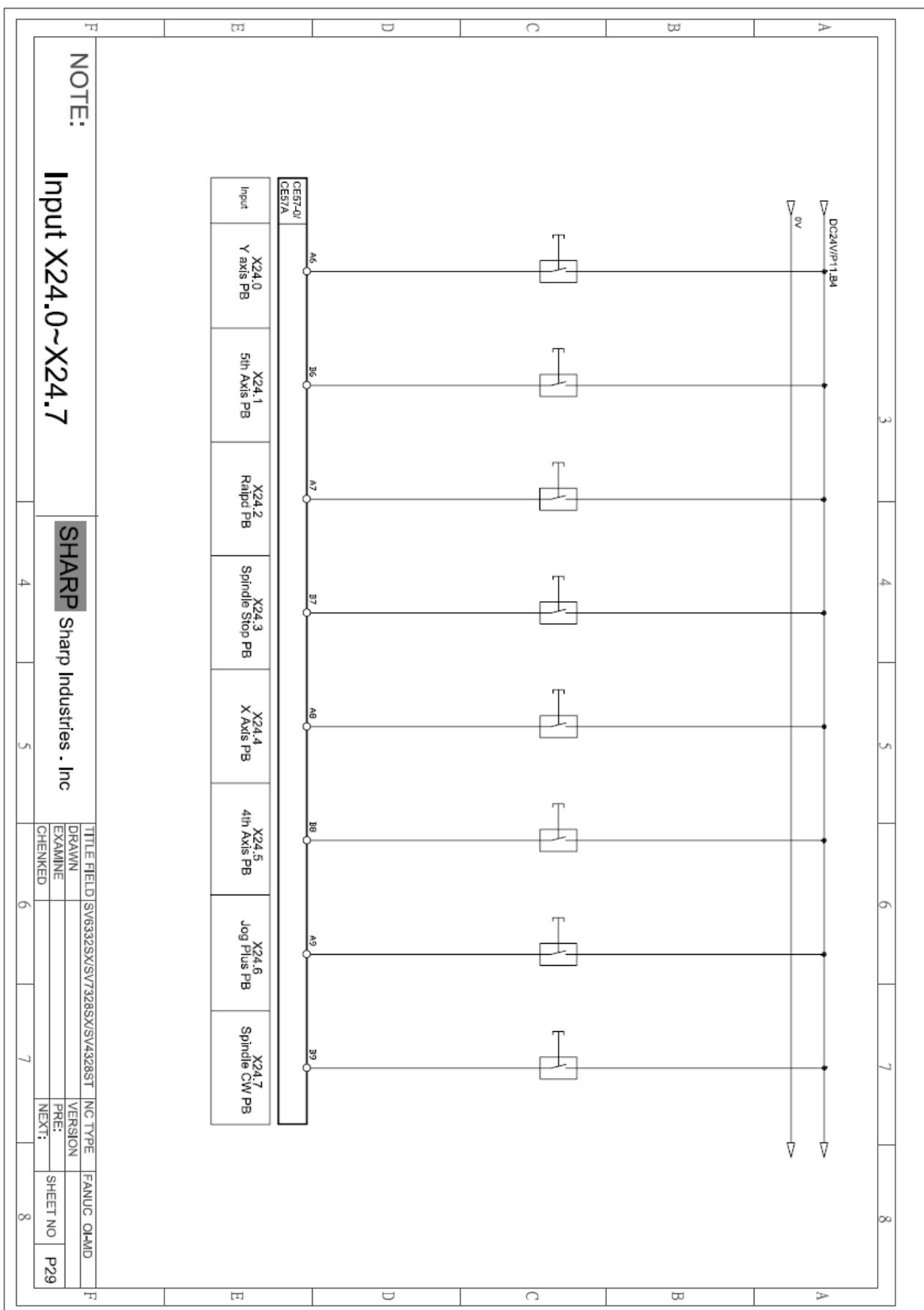
6

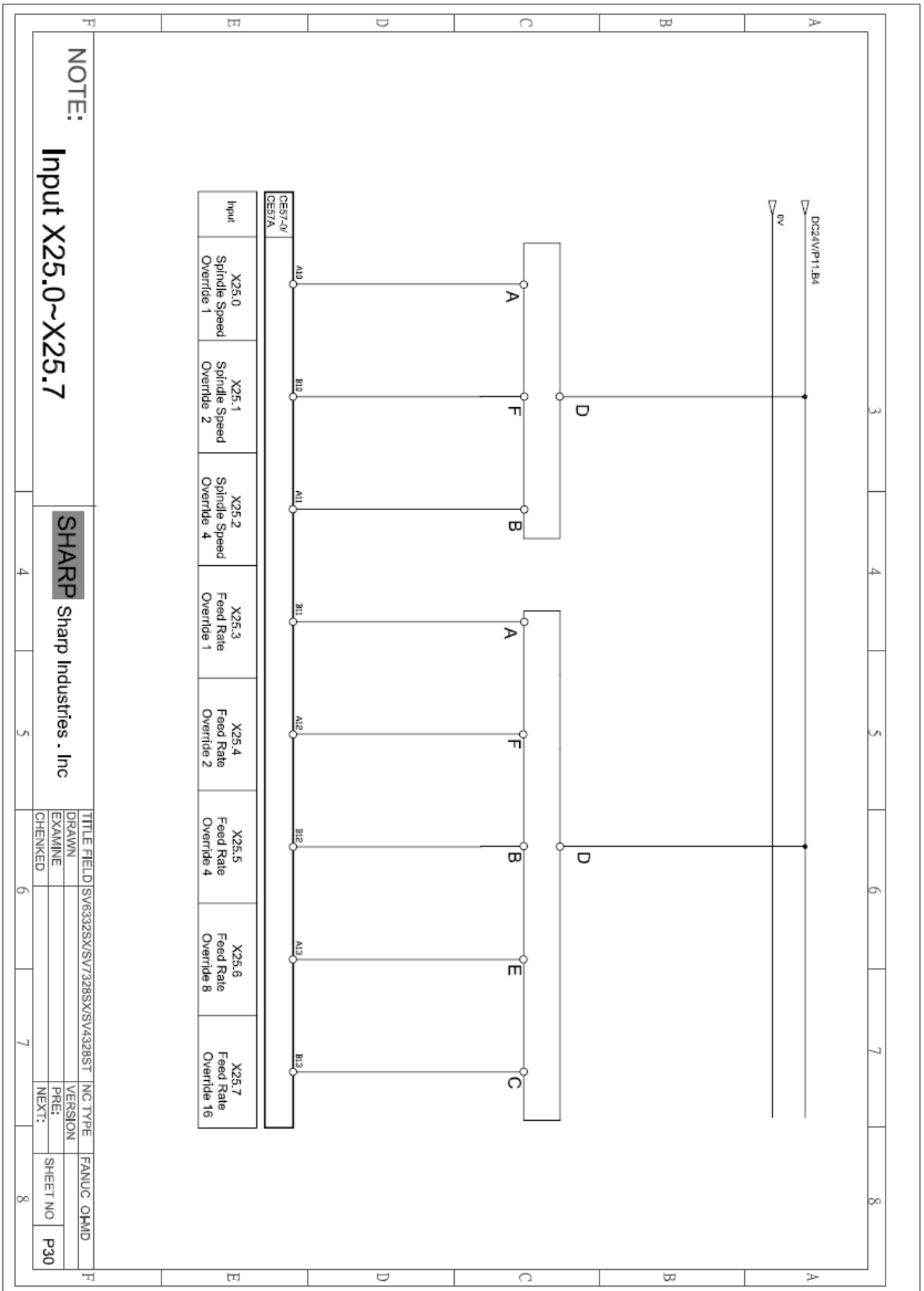
7

8

TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	INC TYPE	FANUC QMAD
DRAWN		VERSION	
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P27







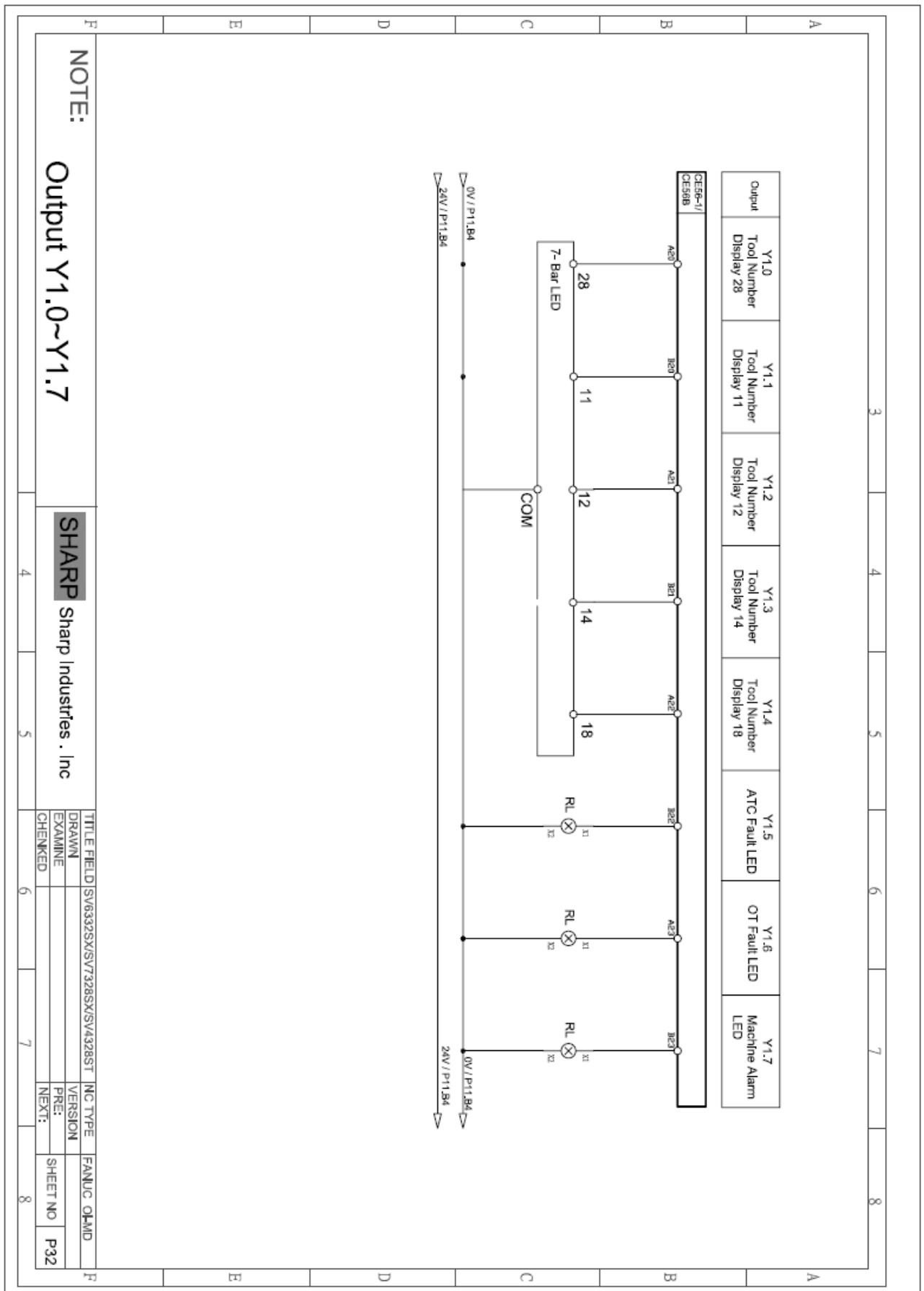
NOTE:  
Input X25.0~X25.7

**SHARP** Sharp Industries . Inc

TITLE	FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC QMID
DRAWN	EXAMINE		VERSION	
CHECKED			PRE:	
			NEXT:	
			SHEET NO	P30





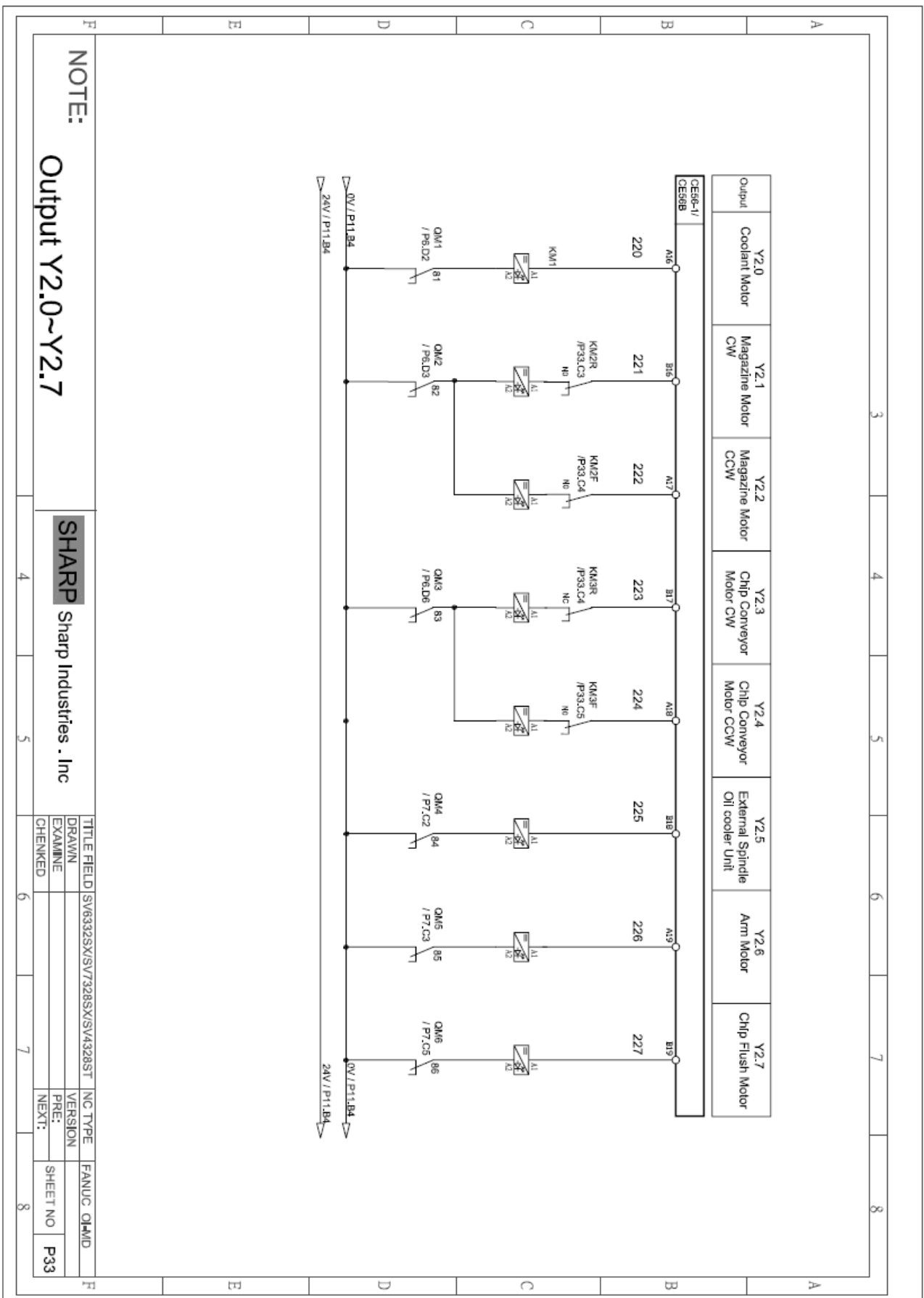


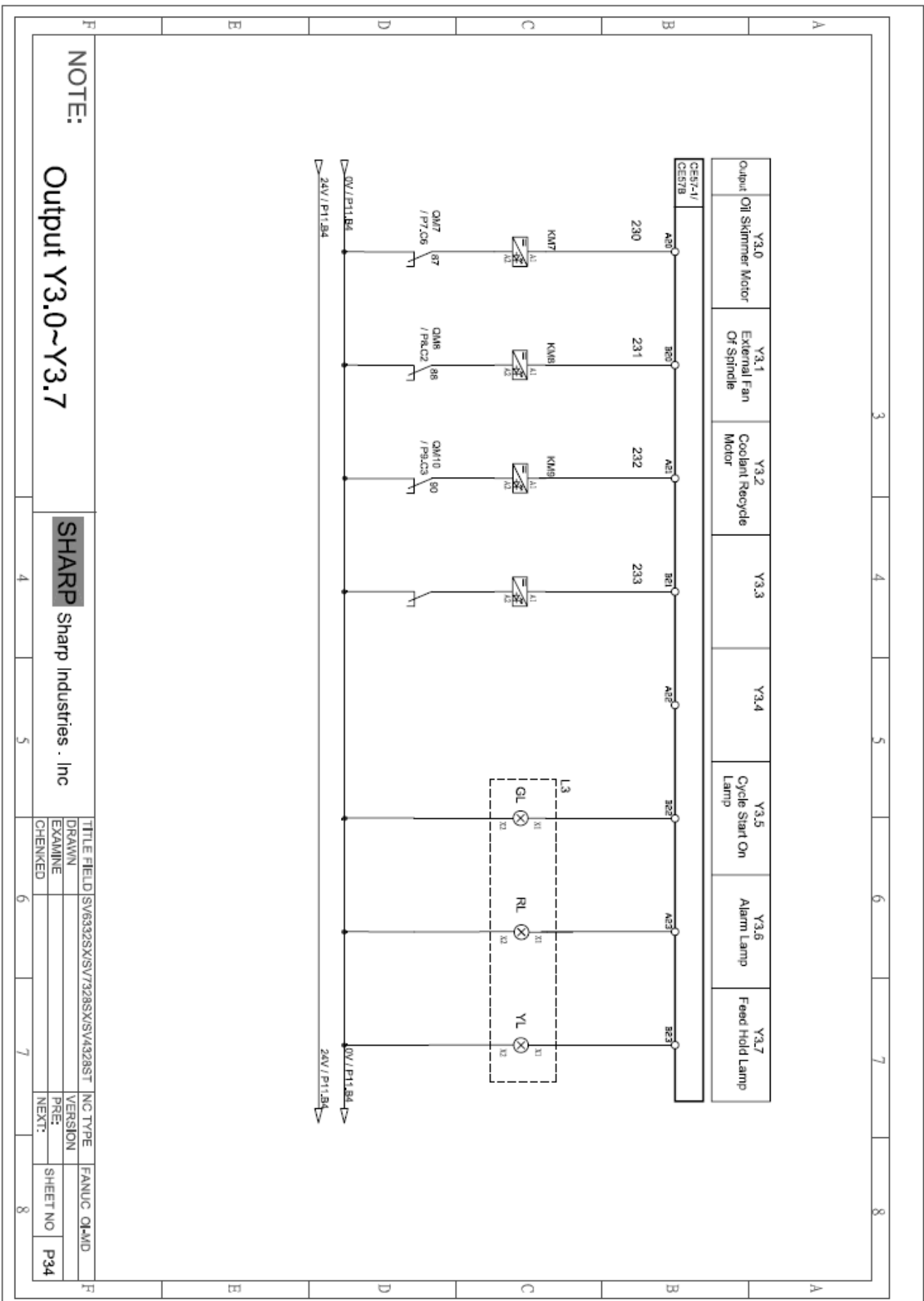
Output Y1.0~Y1.7



Sharp Industries . Inc

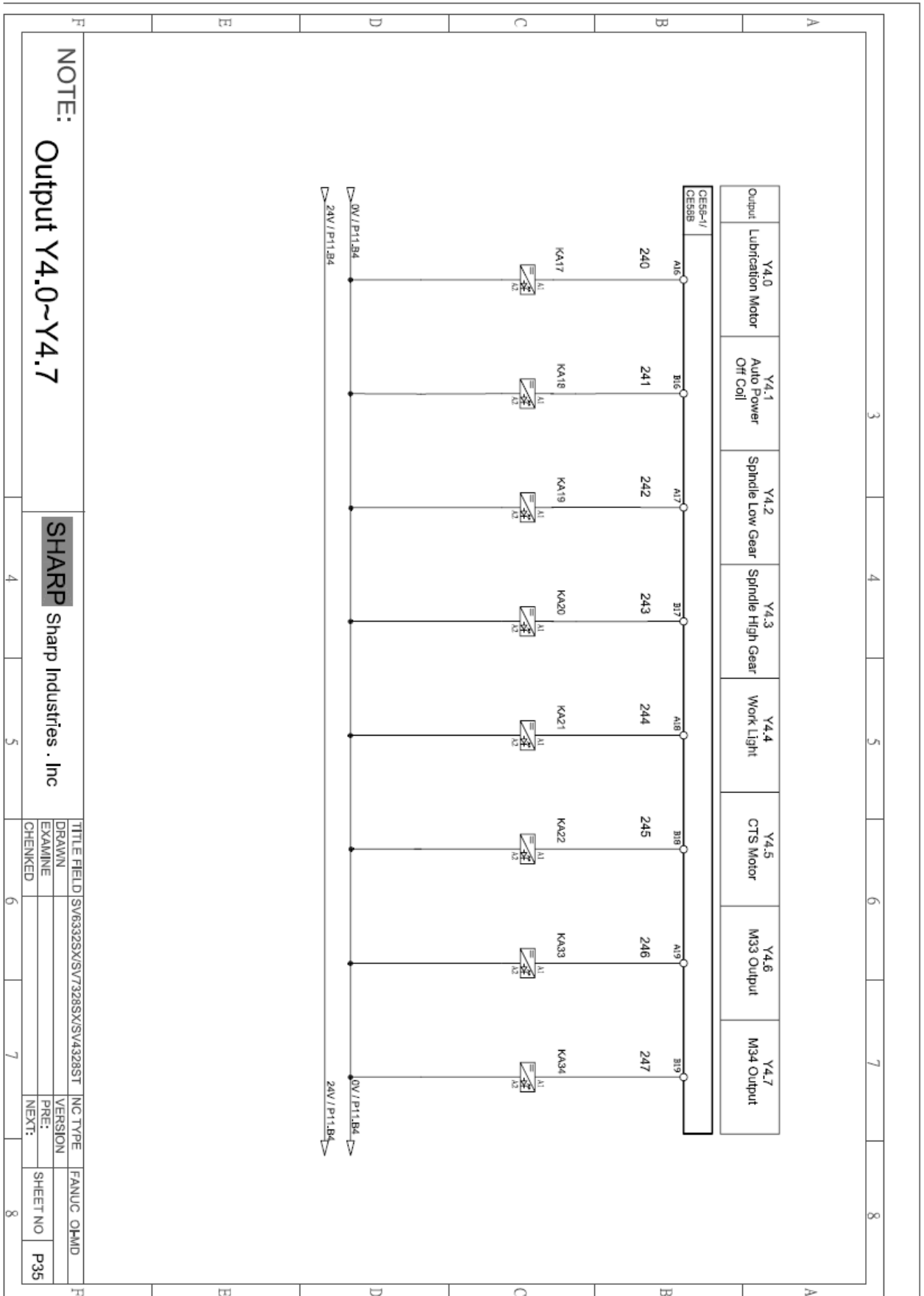
TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	INC TYPE	FANUC QJAMP
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P32

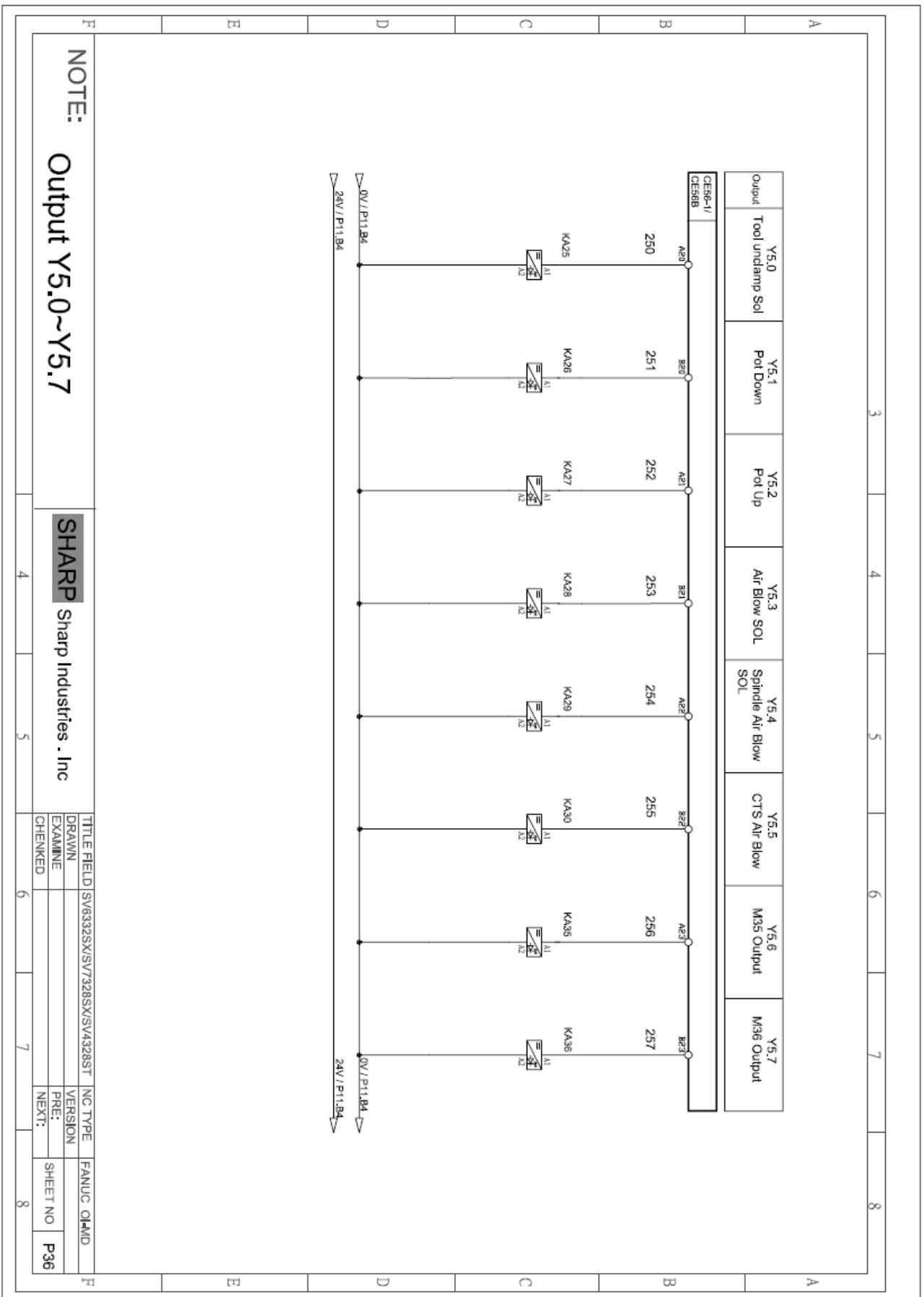


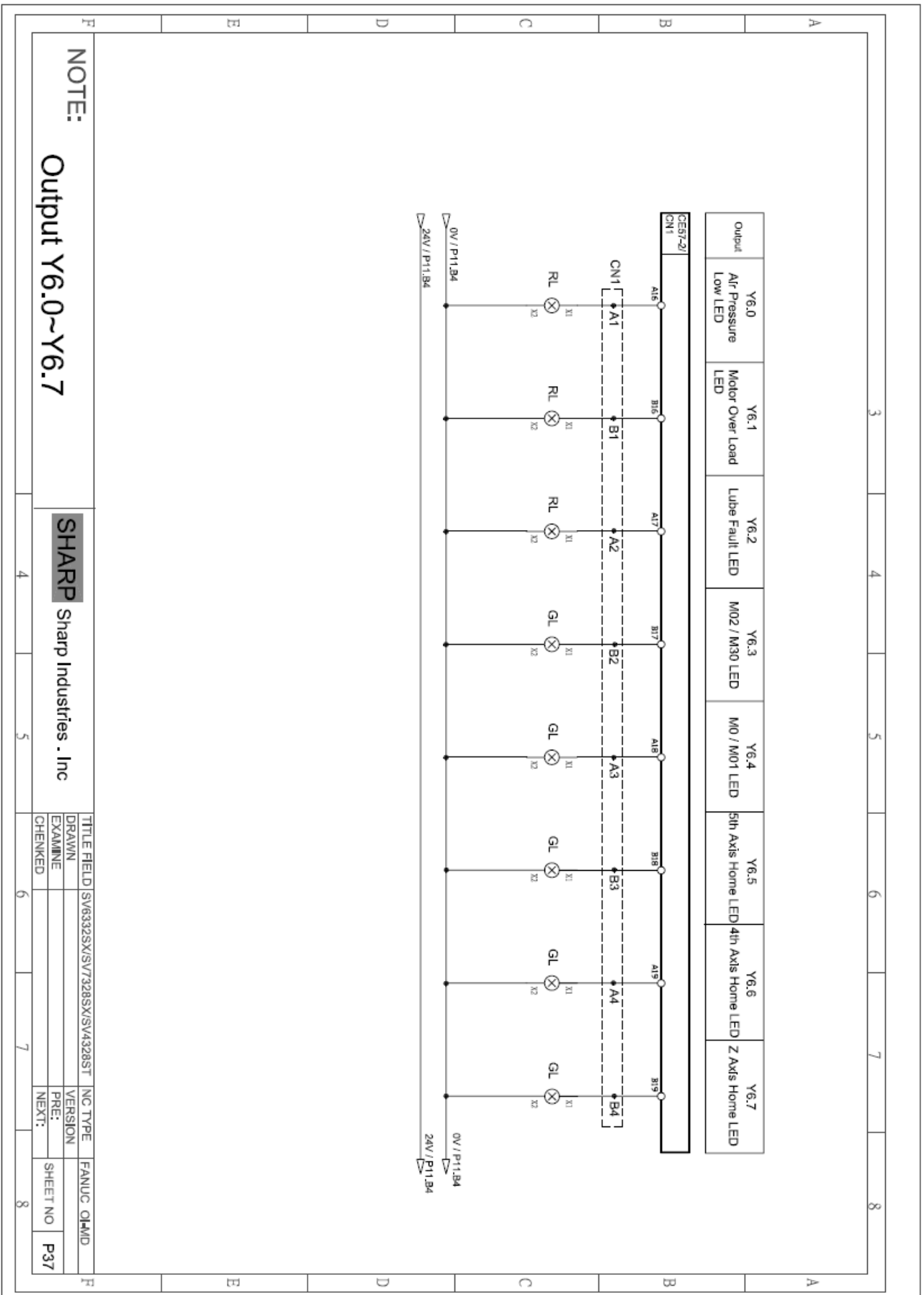


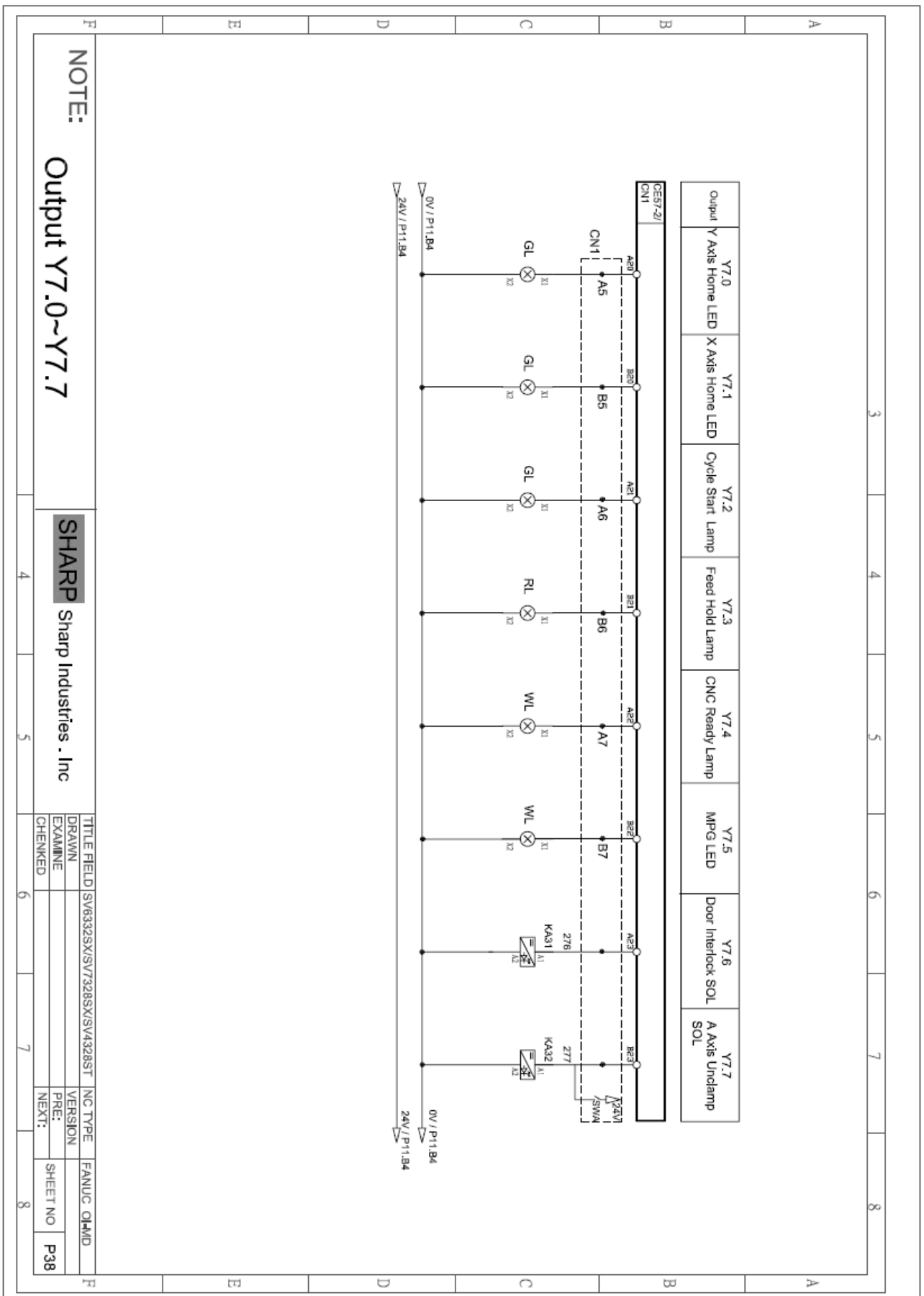
**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC Q-MD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P34







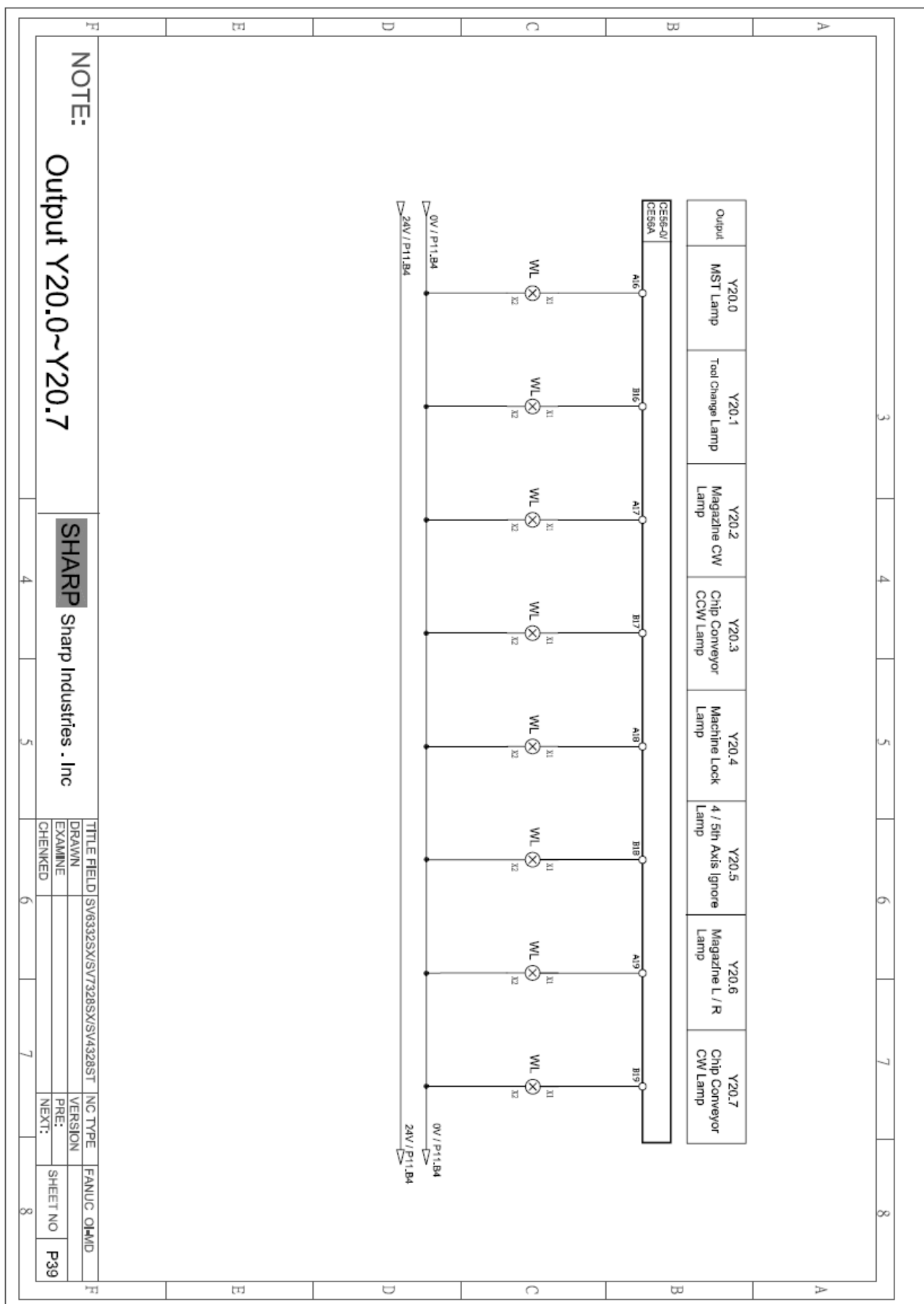


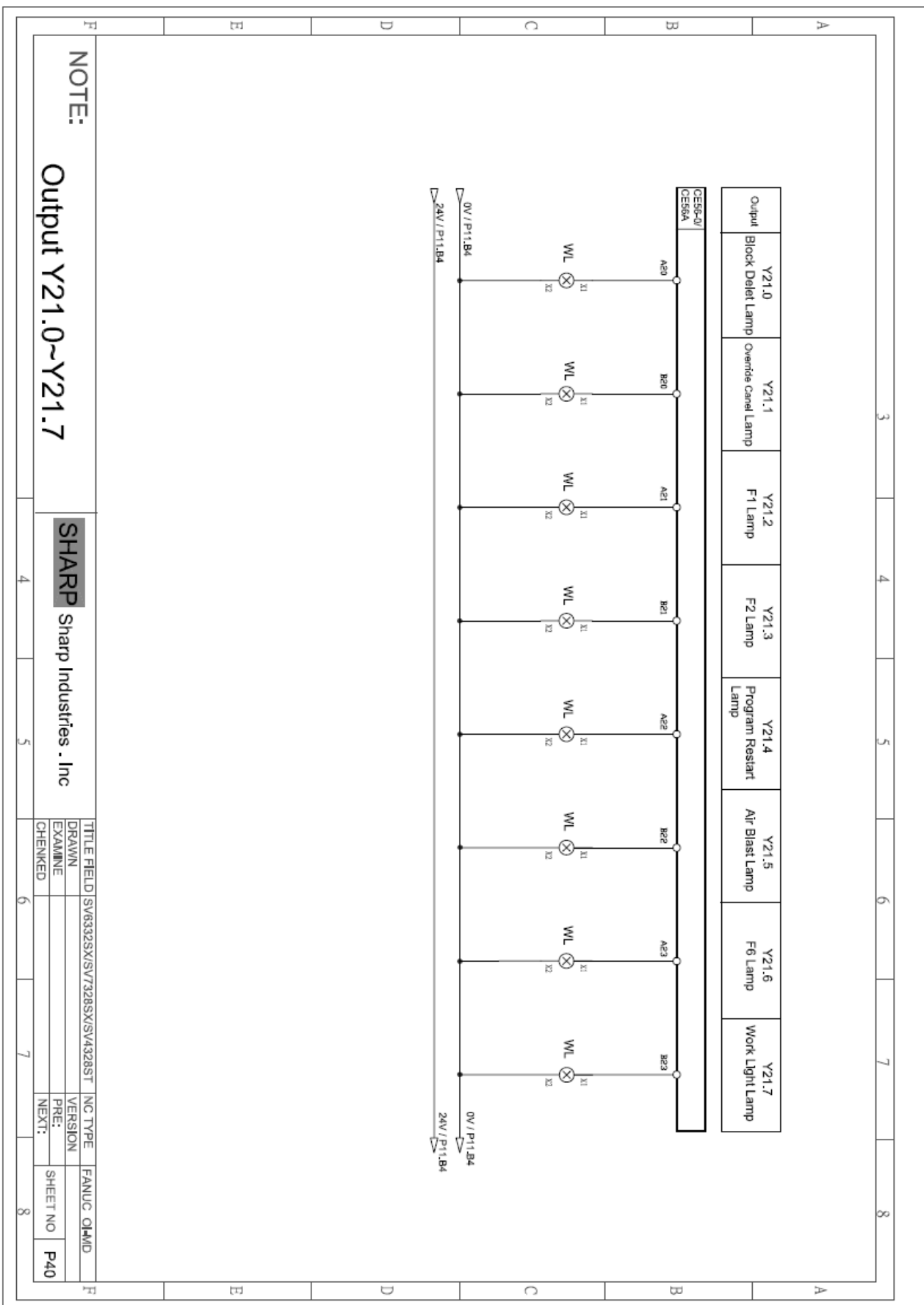
**NOTE:**  
Output Y7.0~Y7.7

**SHARP** Sharp Industries . Inc

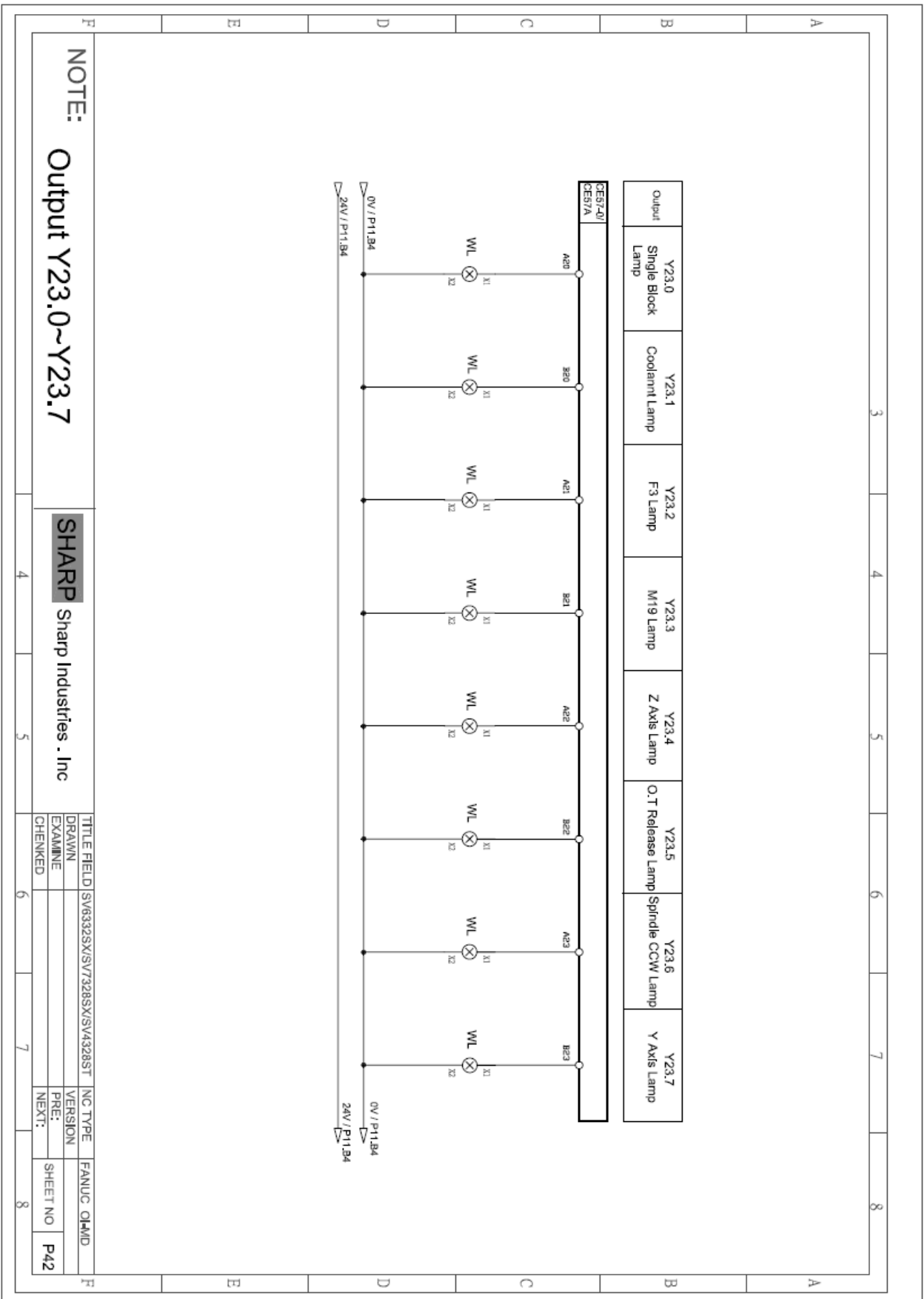
TITLE FIELD	SV63328X/SV73288X/SV43288T	NC TYPE	FANUC QI-MD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P38

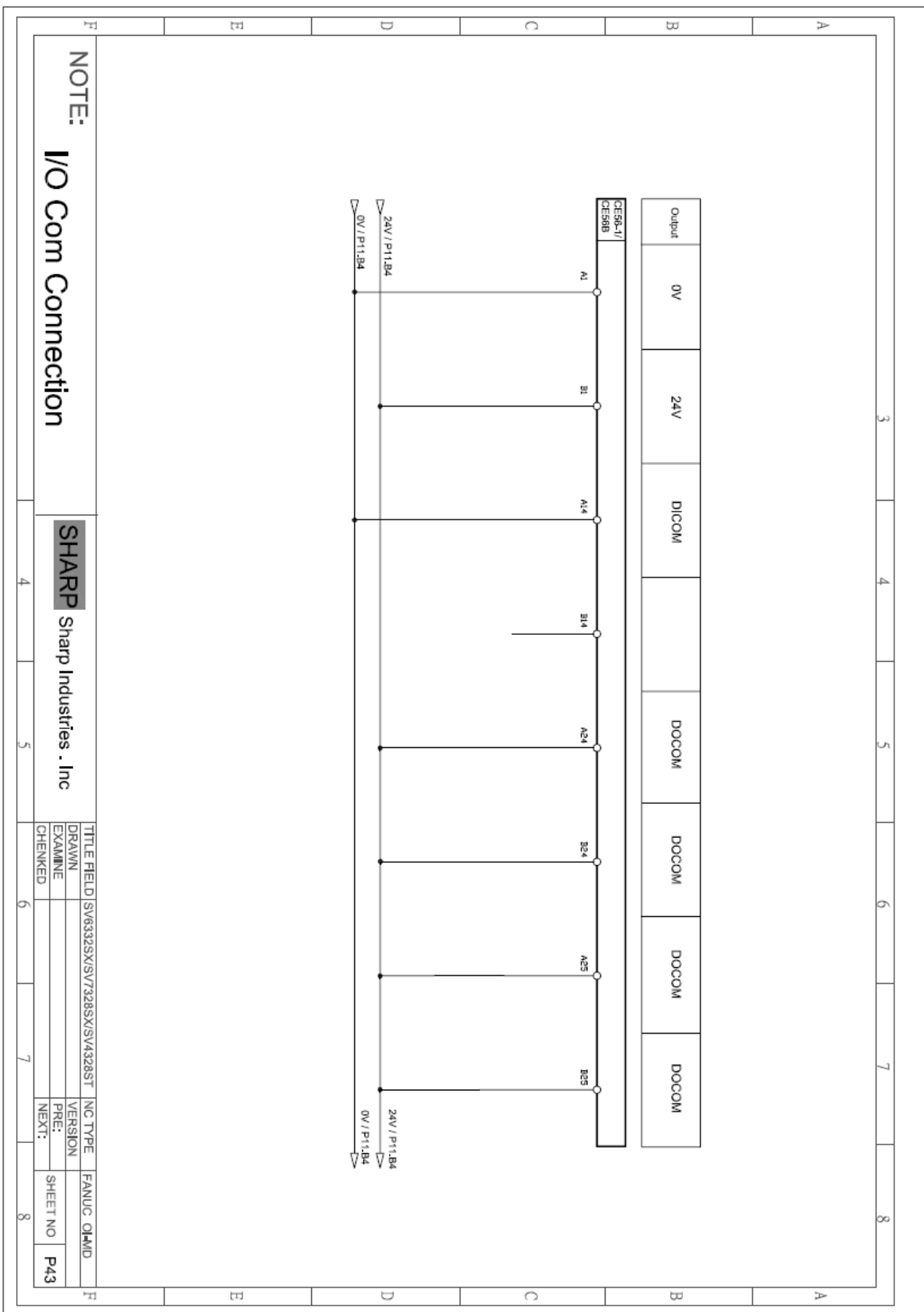








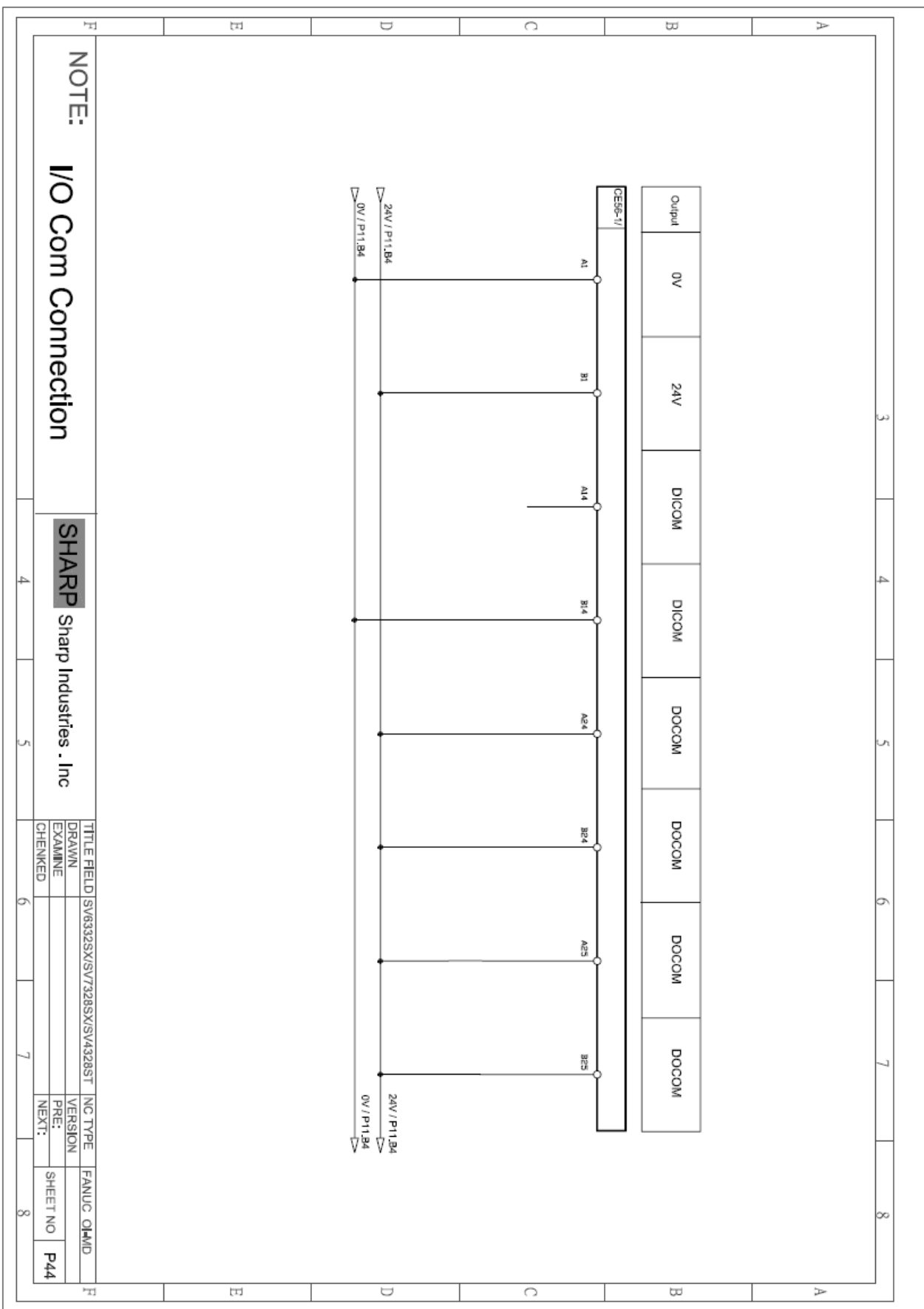


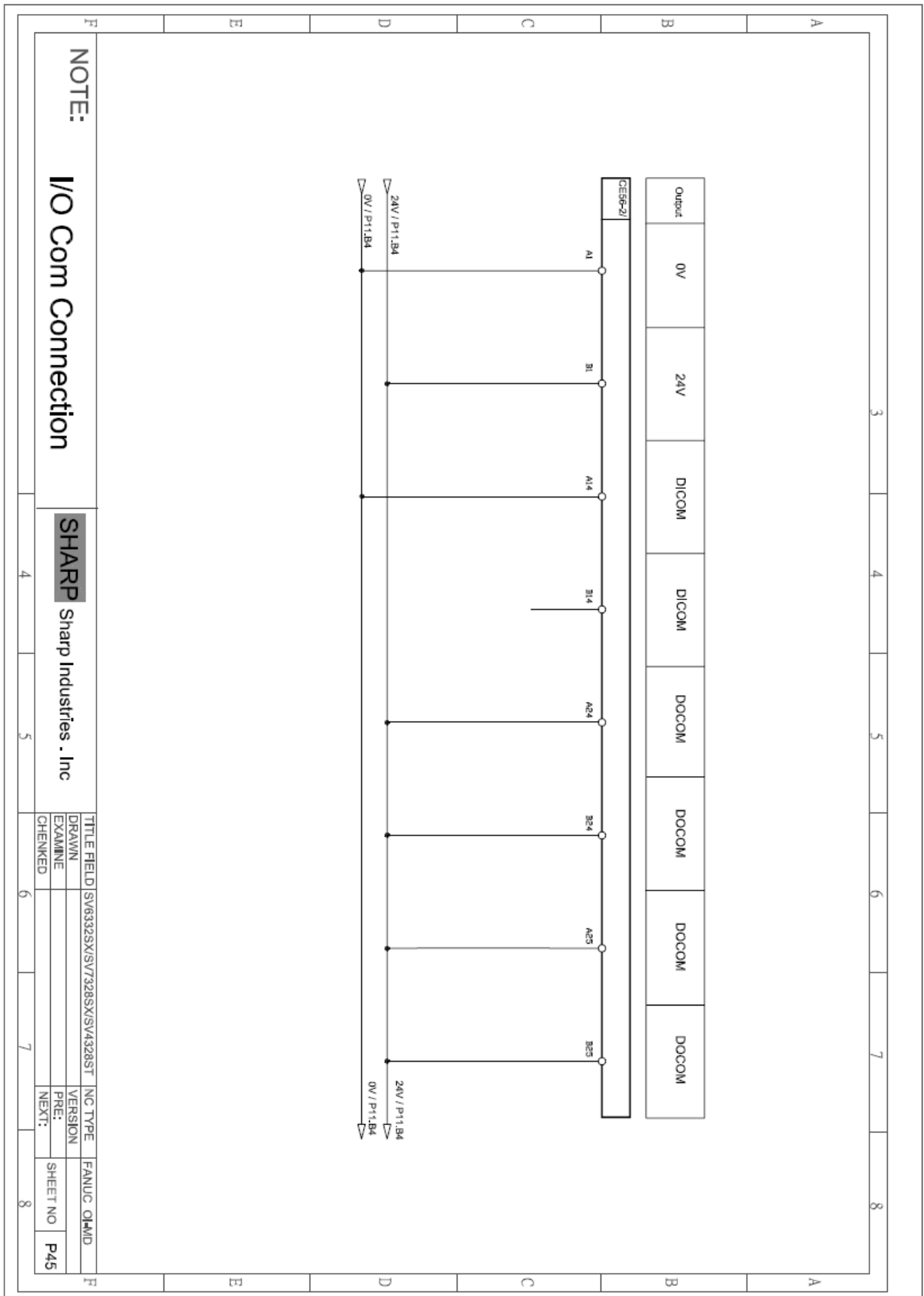


**NOTE:**  
I/O Com Connection

**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	INC TYPE	FANUC QMAD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P43



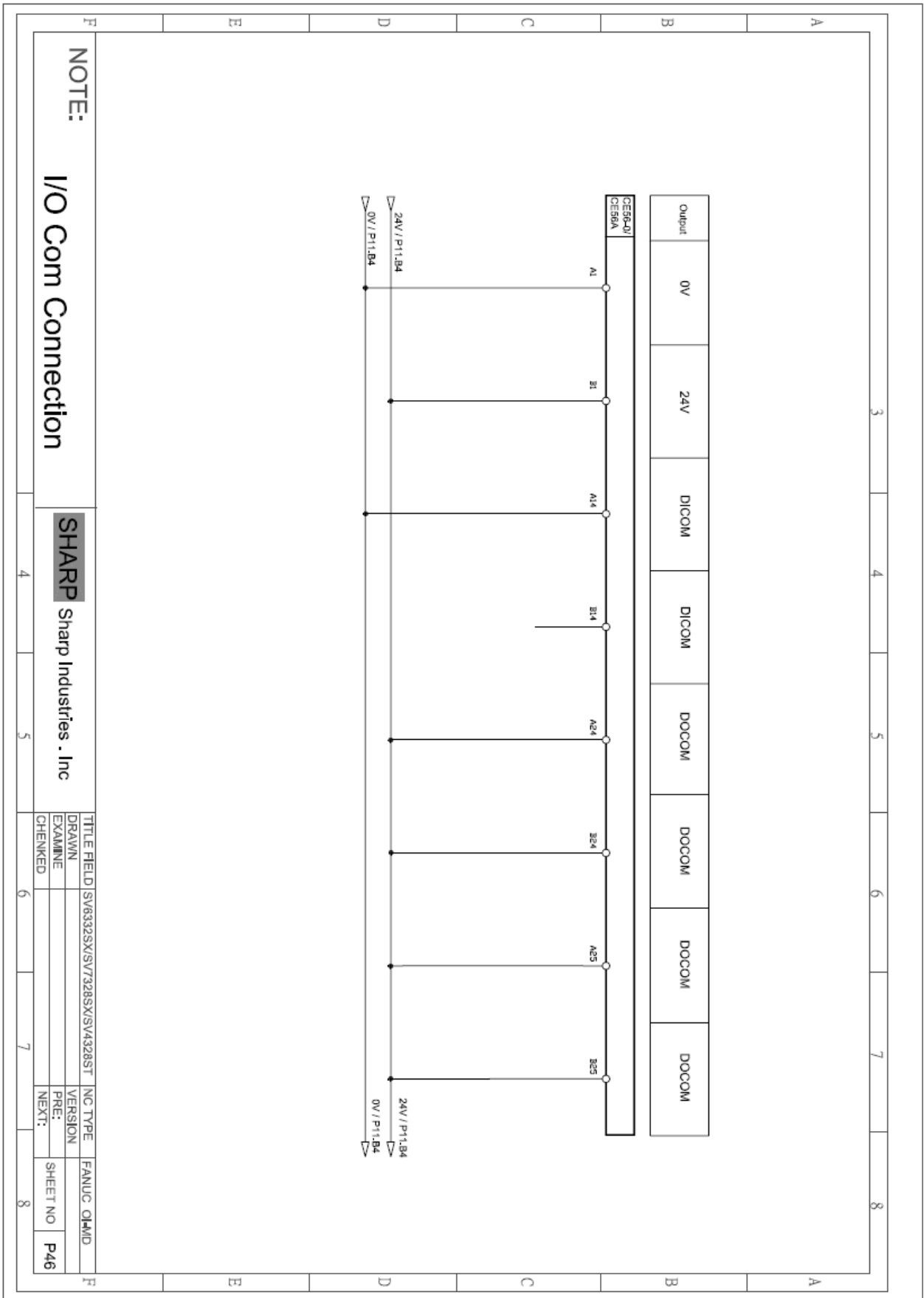


NOTE:

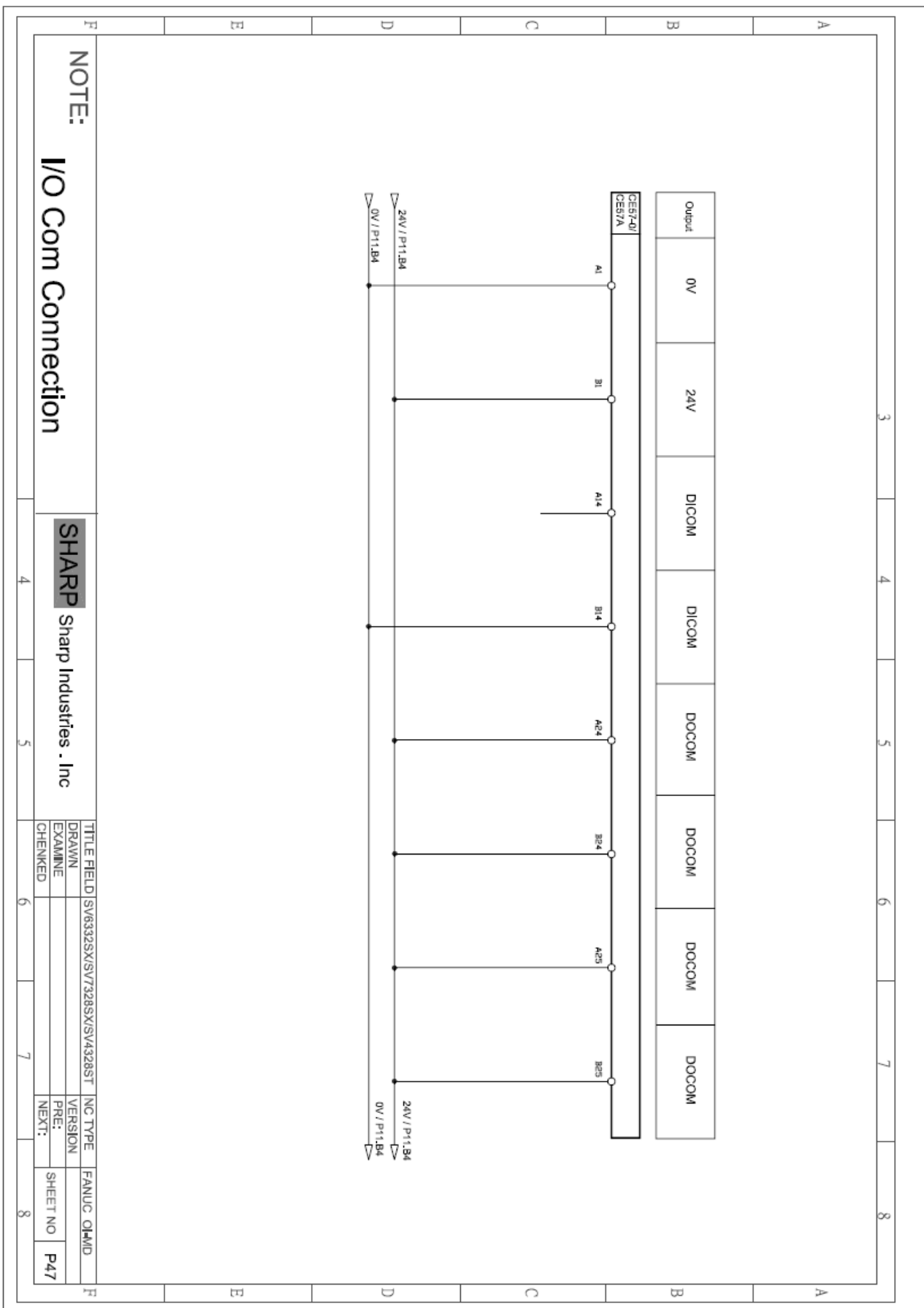
## I/O Com Connection

**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6332SX/SV7328SX/SV4328ST	NC TYPE	FANUC QMMD
DRAWN		VERSION	
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P45



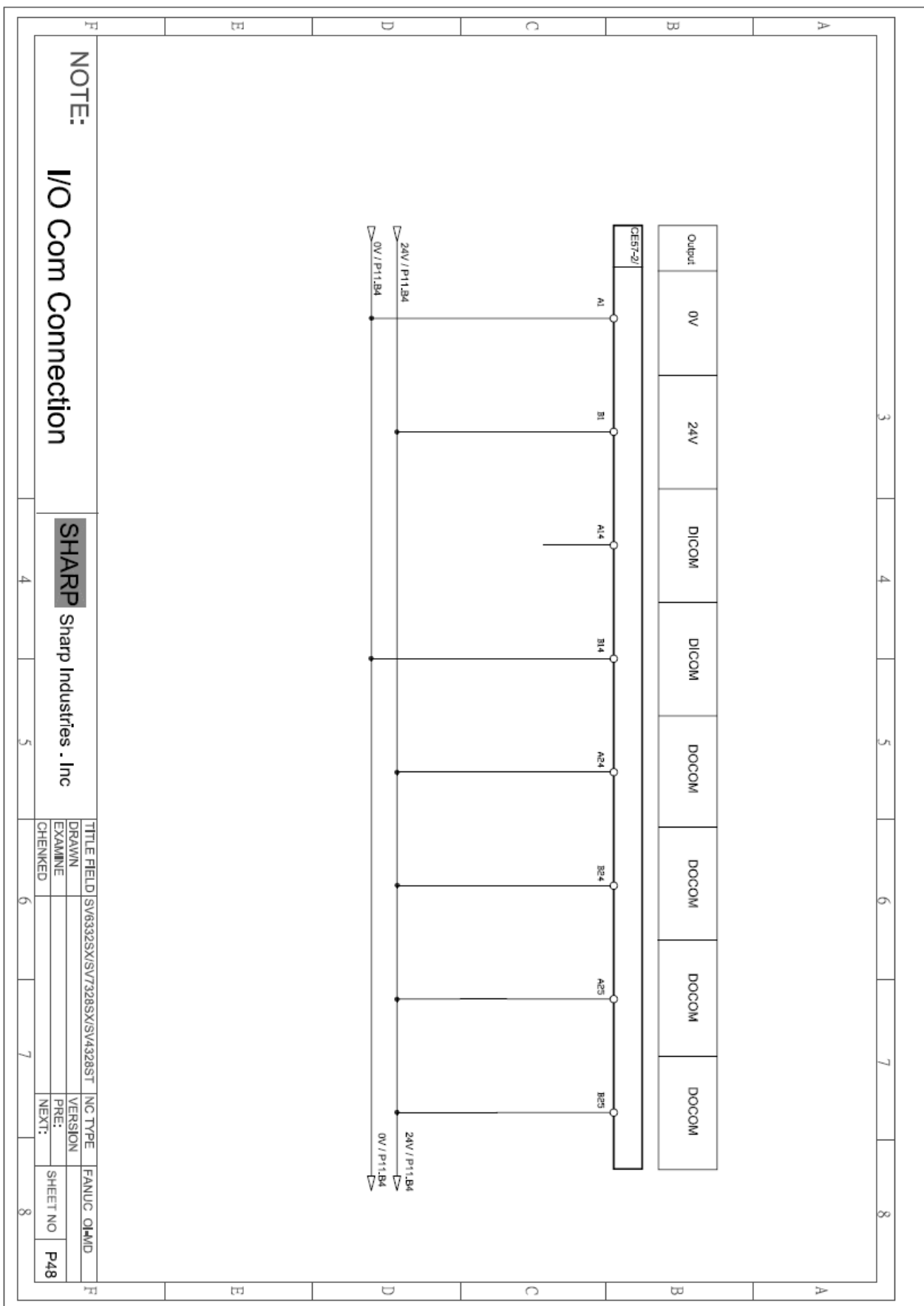




**NOTE:**  
I/O Com Connection

**SHARP** Sharp Industries . Inc

TITLE FIELD	SV6332SX/SV/328SX/SV4328ST	NC TYPE	FANUC Q14MD
DRAWN		VERSION	
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P47



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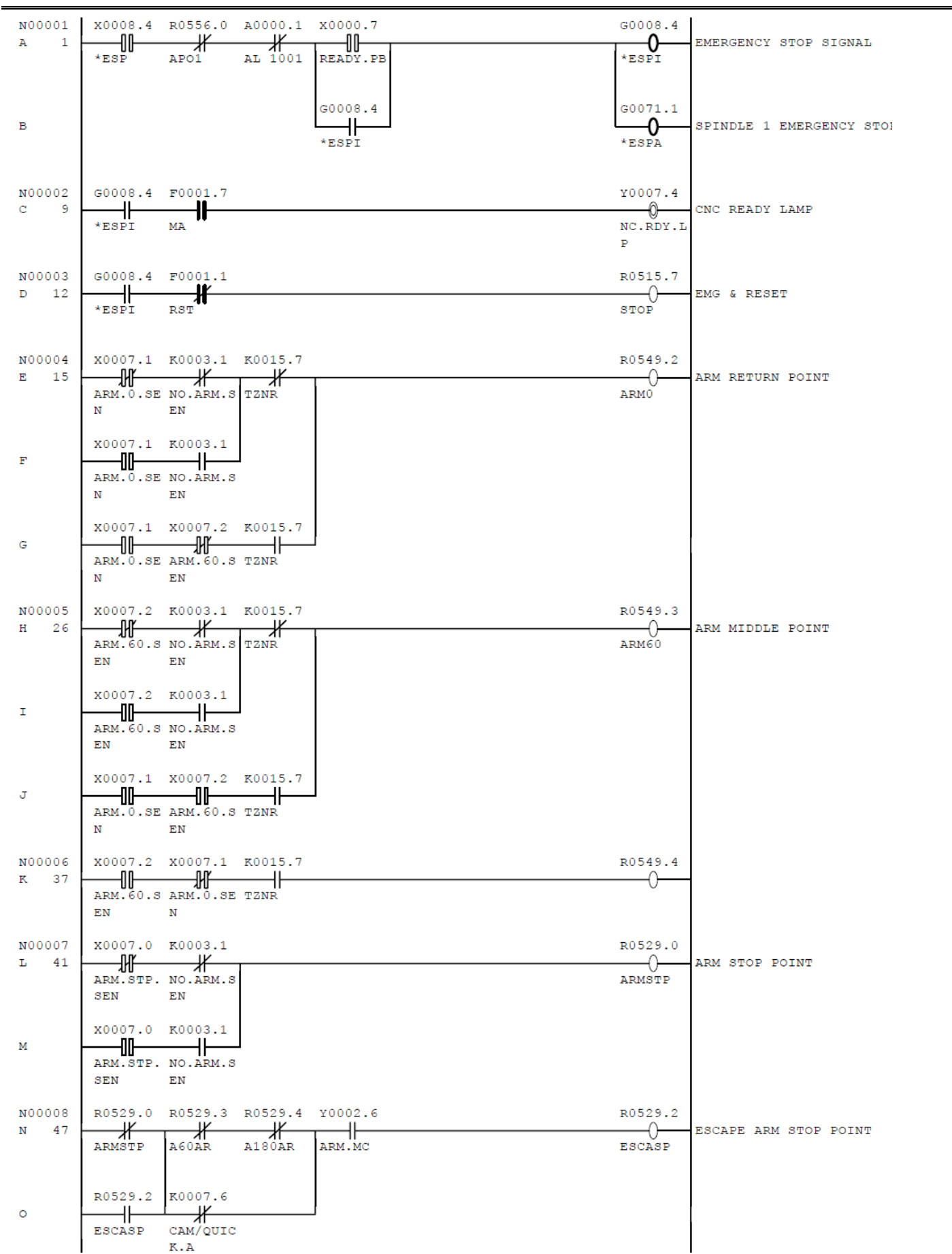
**10. PMC ladder**

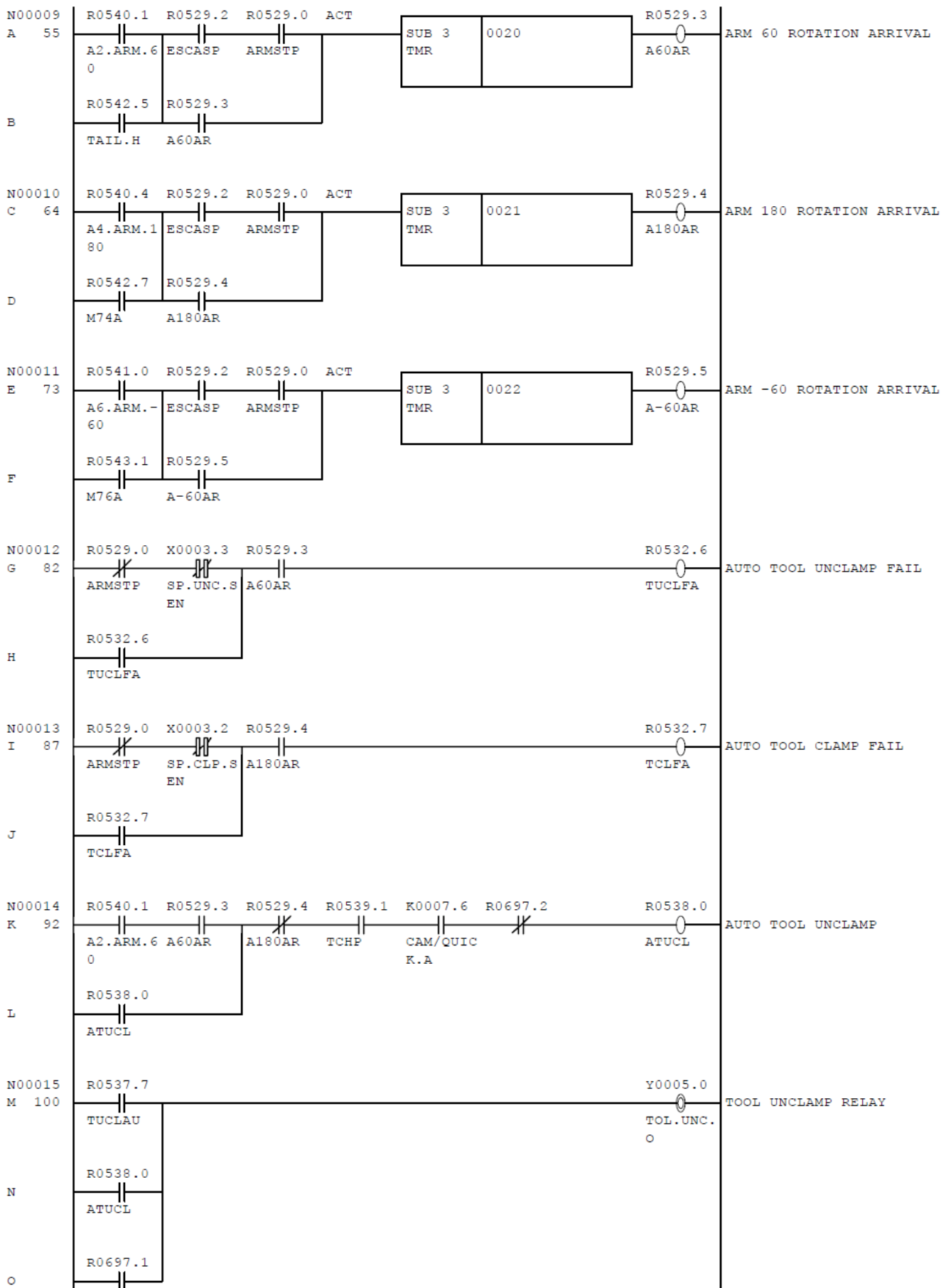
[SV4328STB0]

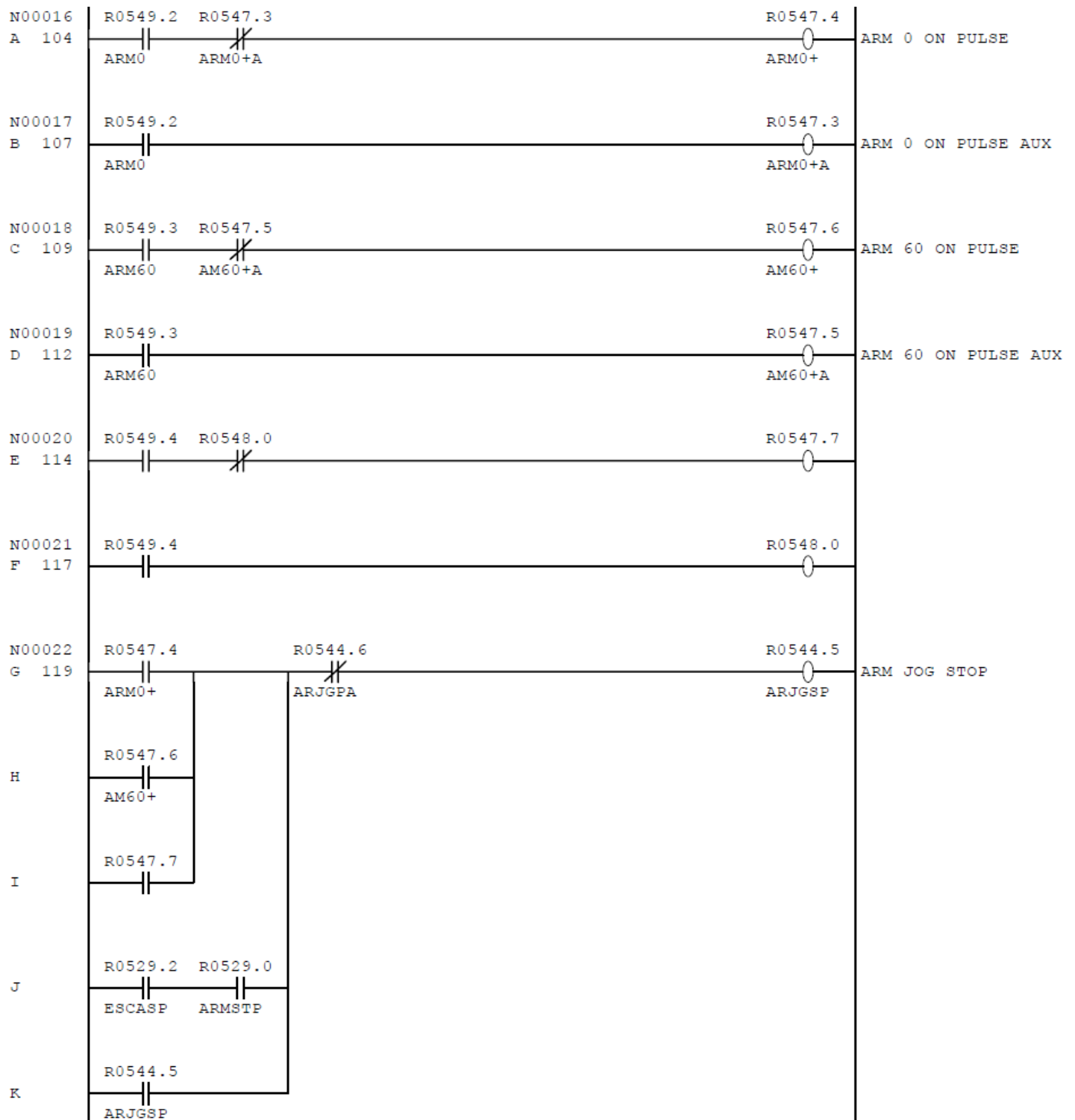
## System Parameter

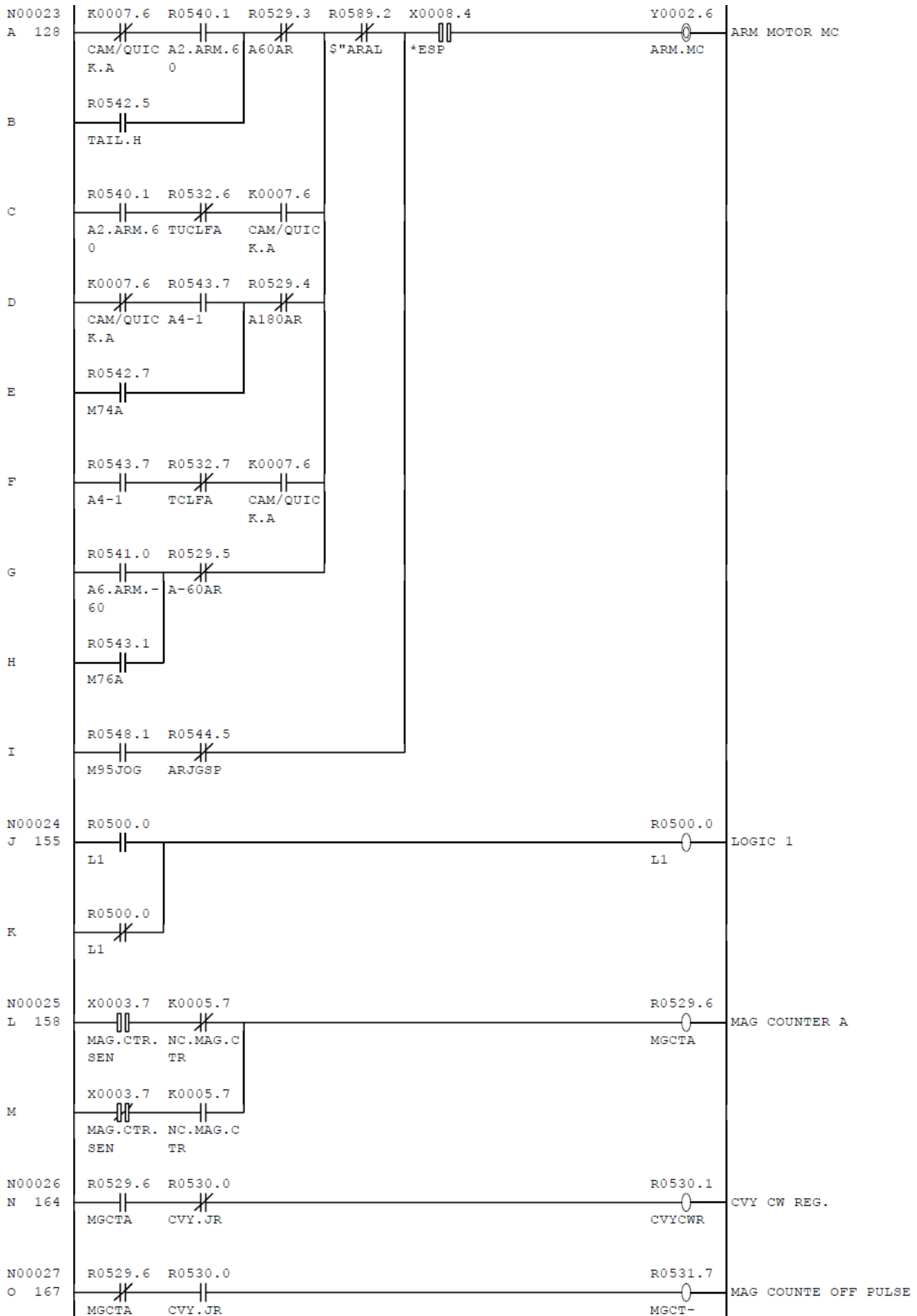
1)	COUNTER DATA TYPE	BINARY	( 0:BINARy, 1:BCD )
2)	OPERATOR PANEL	NO	( 0:NO, 1:YES )
3)	KEY ADDRESS		
4)	LED ADDRESS		
5)	KEY BIT IMAGE ADDRESS		
6)	LED BIT IMAGE ADDRESS		
7)	SELECTABLE I/O LINK (CHANNEL 1)	NO USE	
8)	BASIC GROUP COUNT		( 0-16 )
9)	SELECTABLE I/O LINK (CHANNEL 2)	NO USE	
10)	BASIC GROUP COUNT		( 0-16 )
11)	SELECTABLE I/O LINK (CHANNEL 3)	NO USE	
12)	BASIC GROUP COUNT		( 0-16 )
13)	SELECTABLE I/O LINK (CHANNEL 4)	NO USE	
14)	BASIC GROUP COUNT		( 0-16 )
15)	Activate Language No.	1	( 1-16 )
16)	Setting Language1	-1,0	

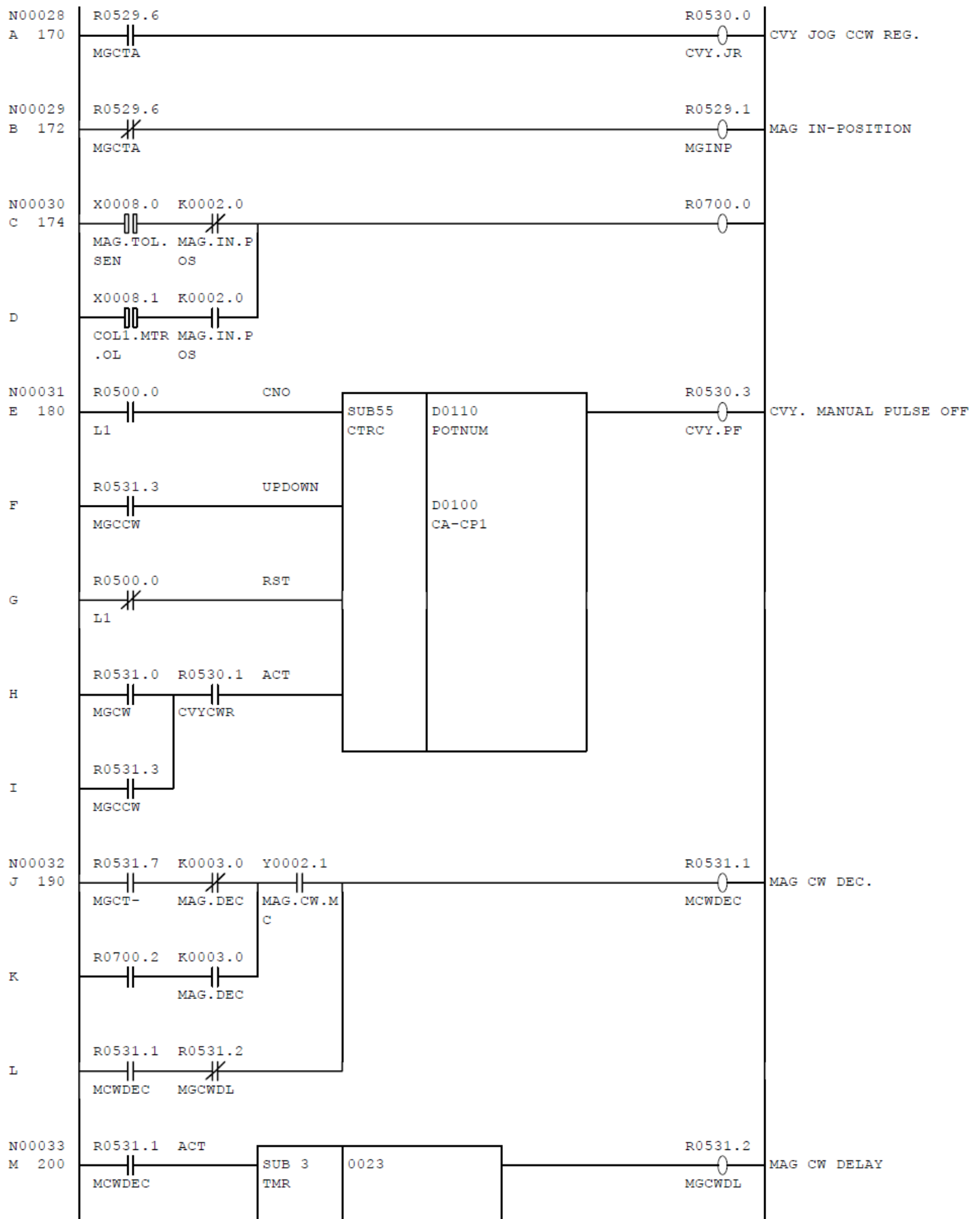
PMC TYPE = 0i-D PMC



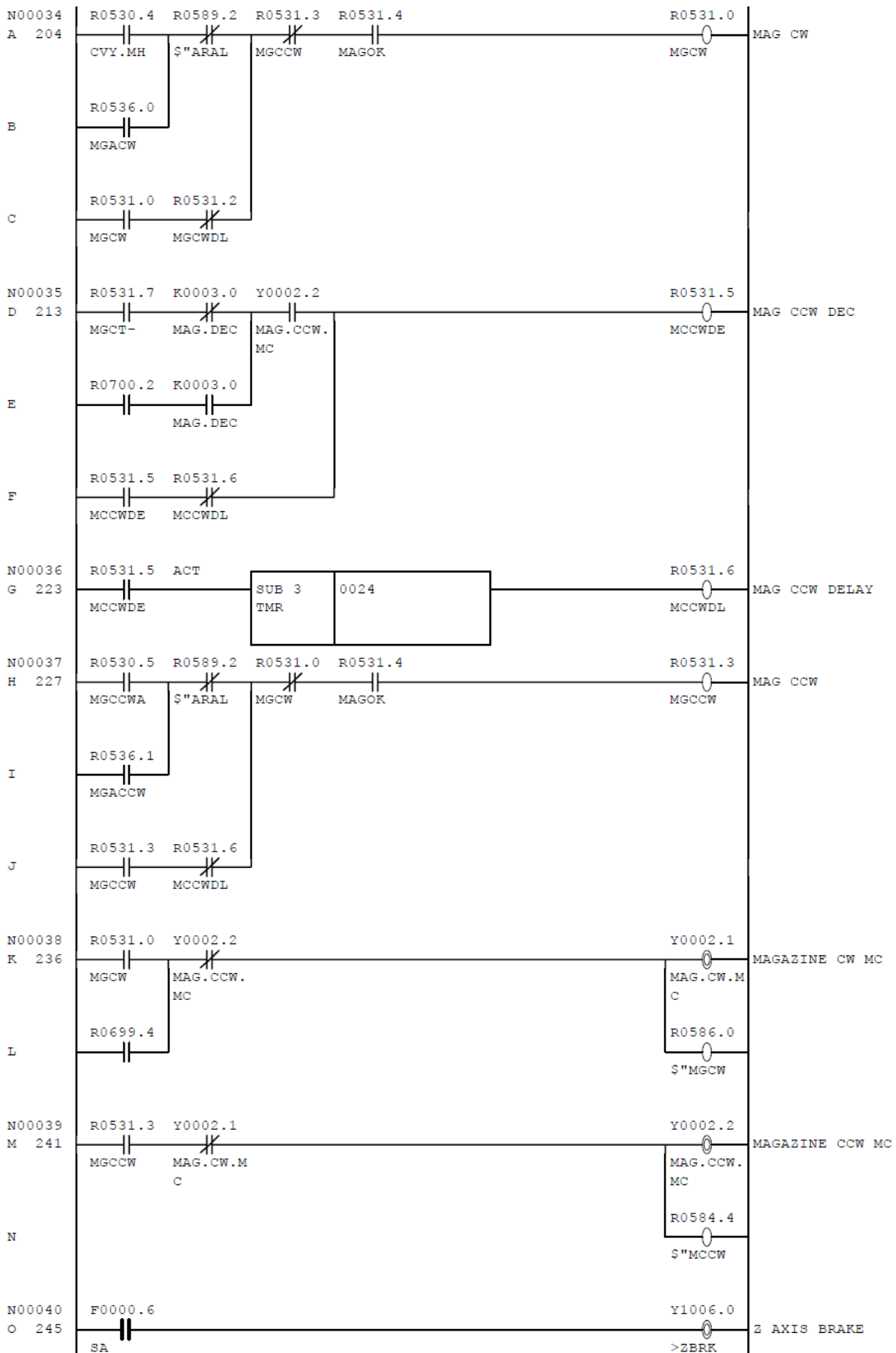


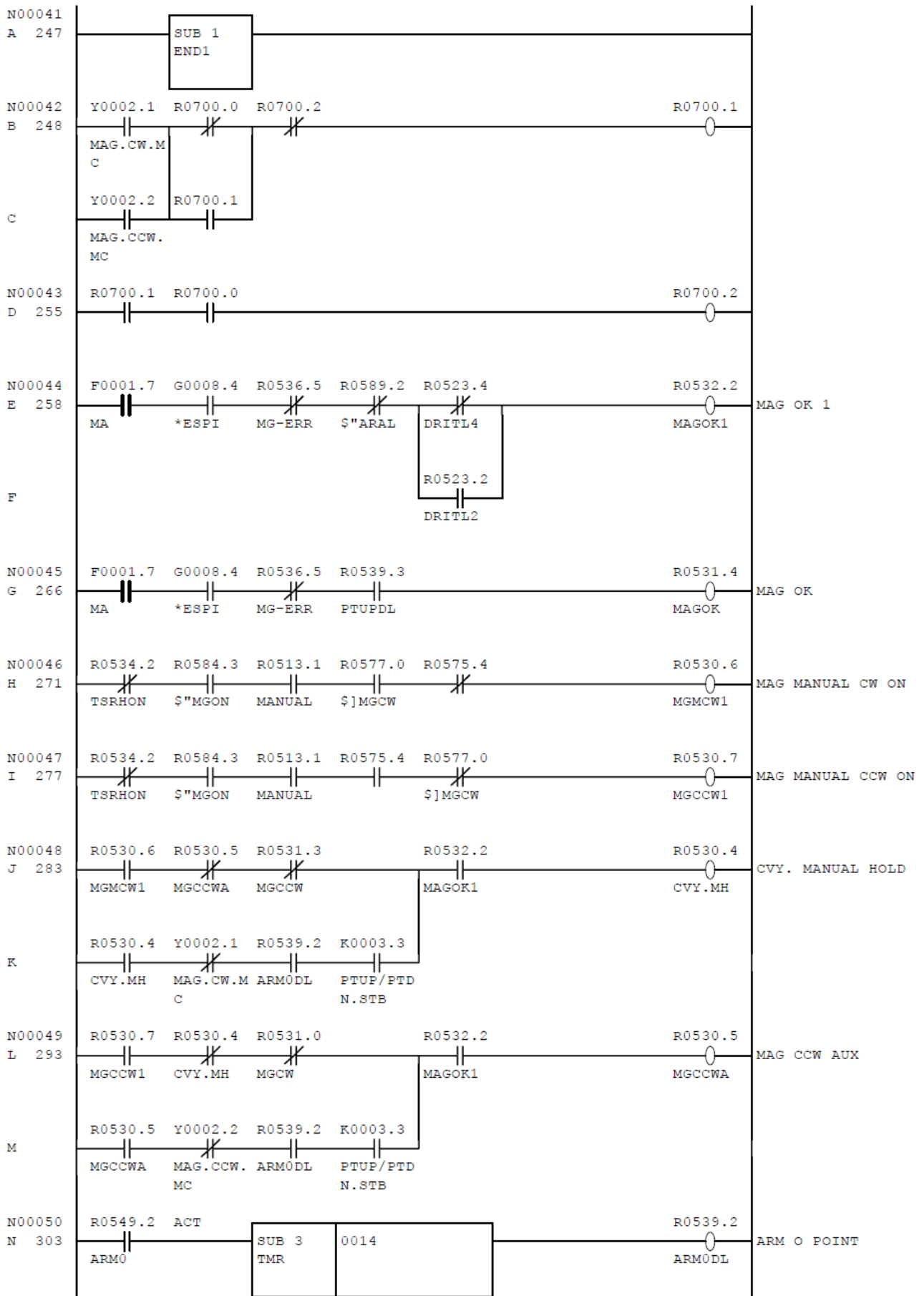


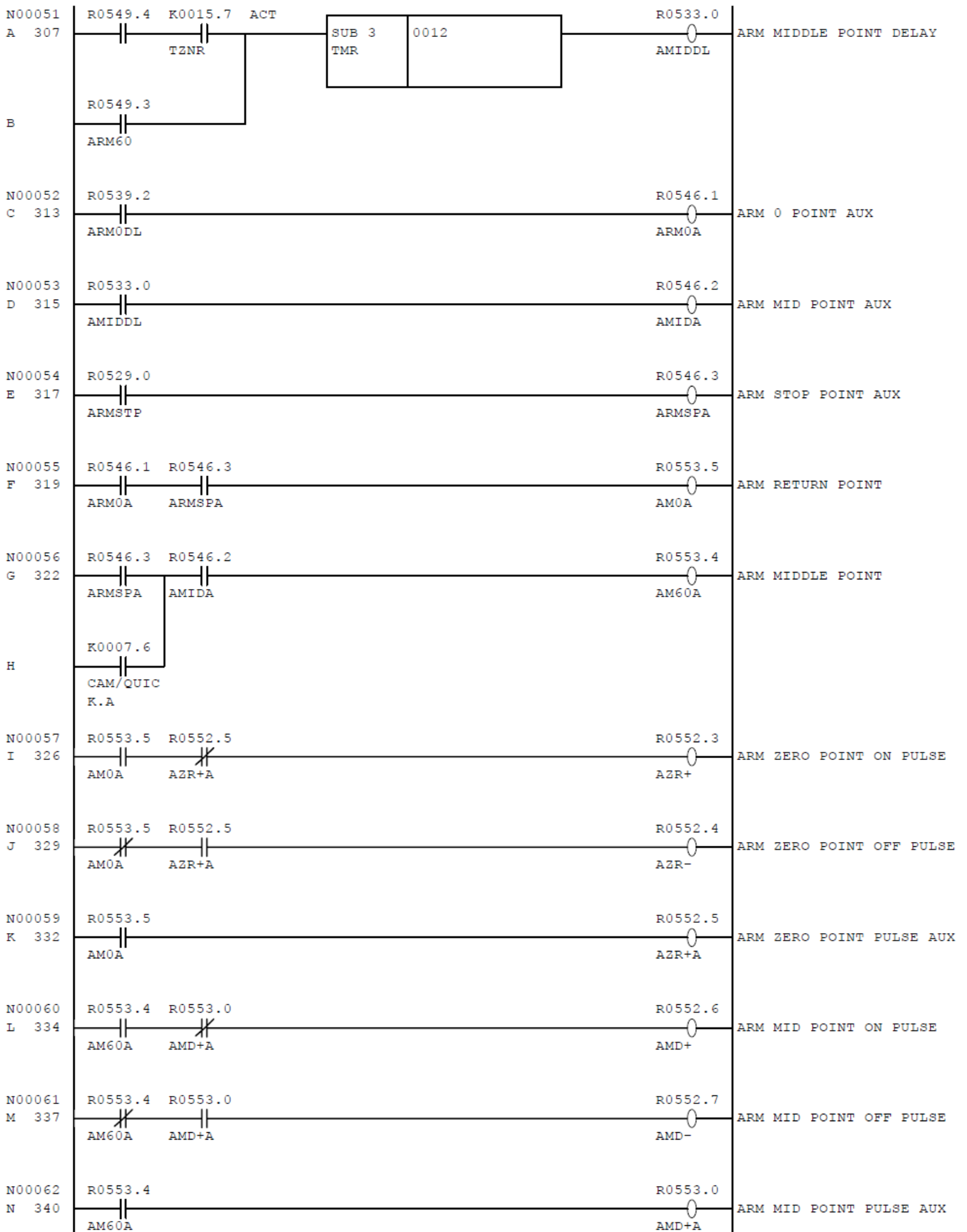


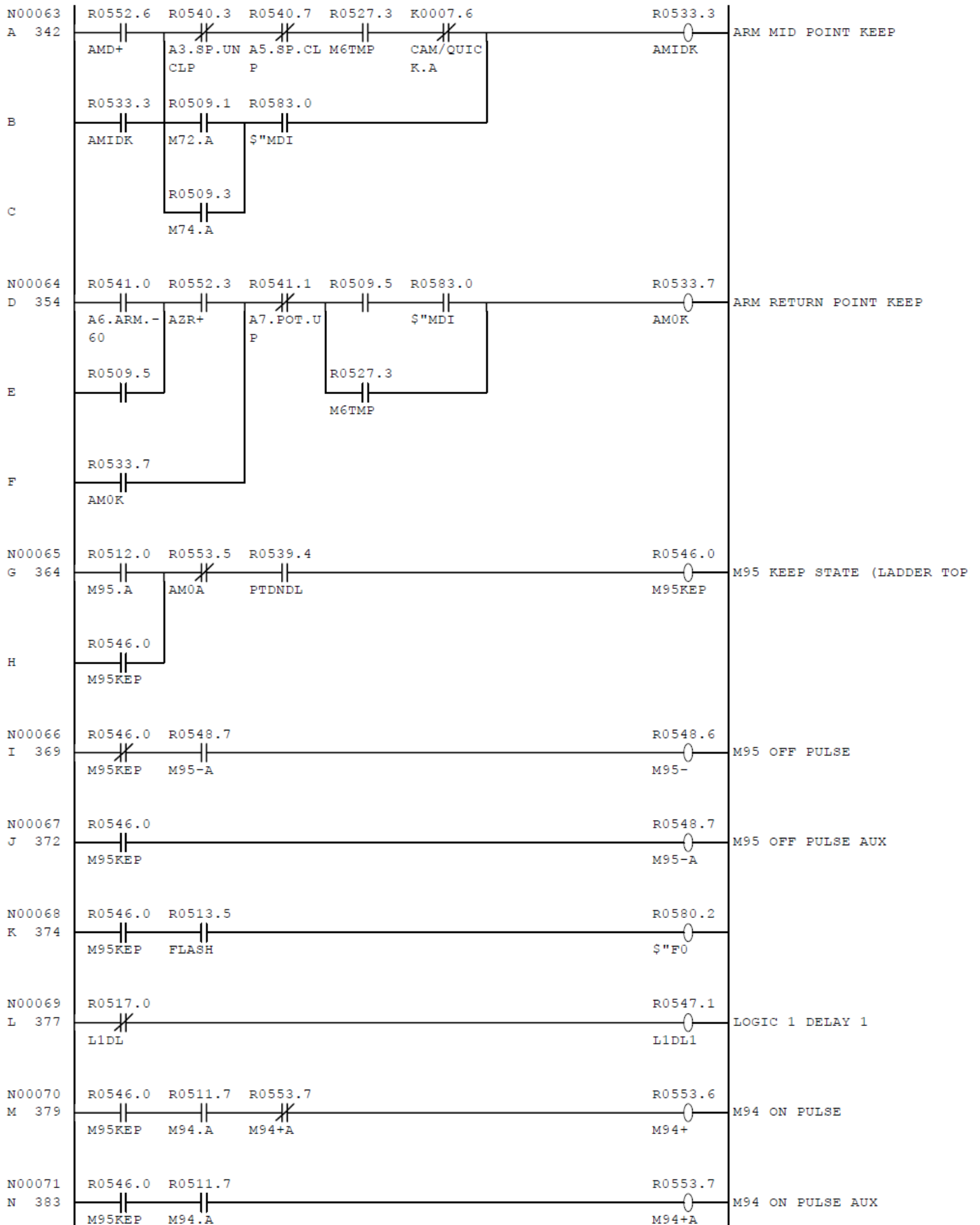


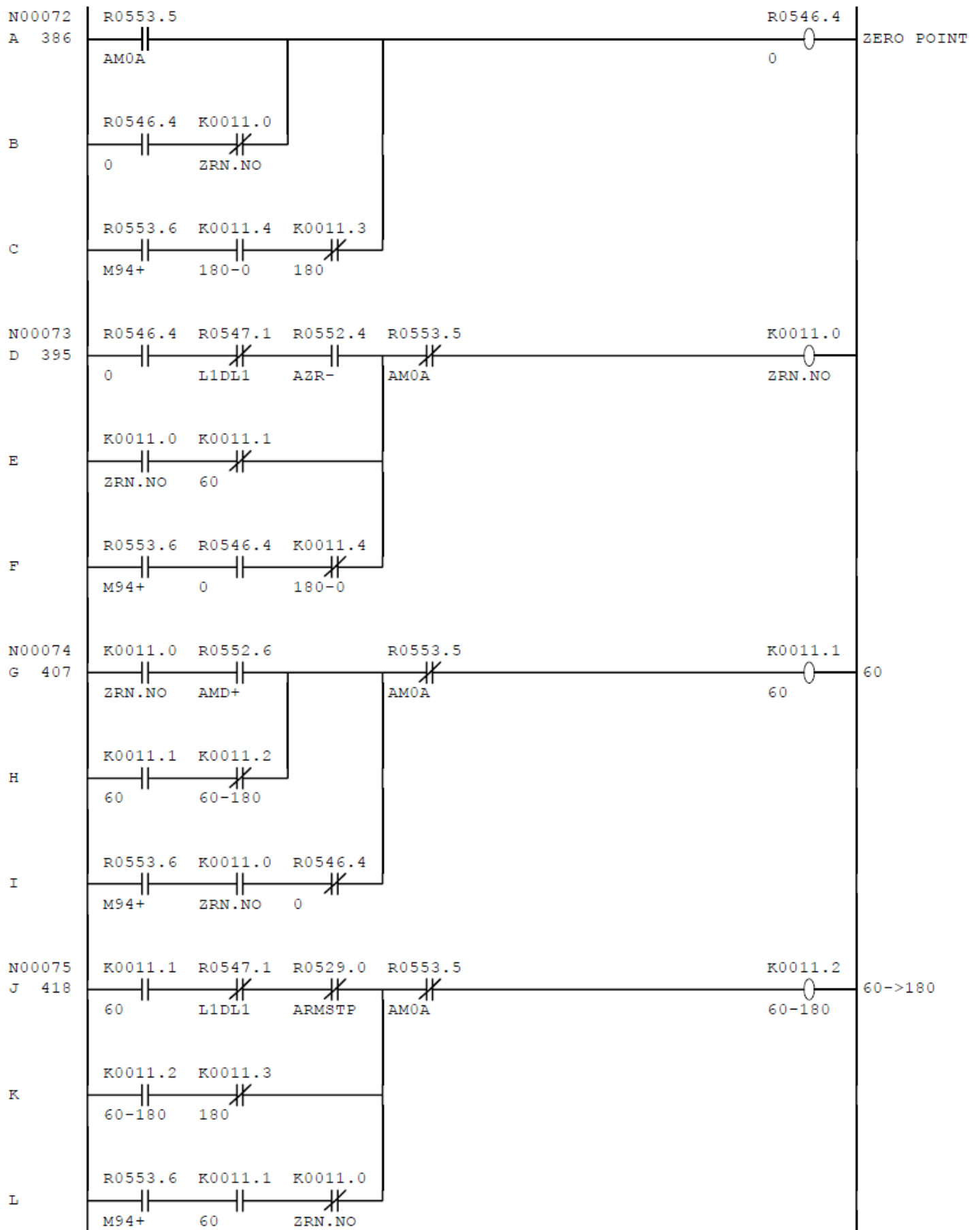


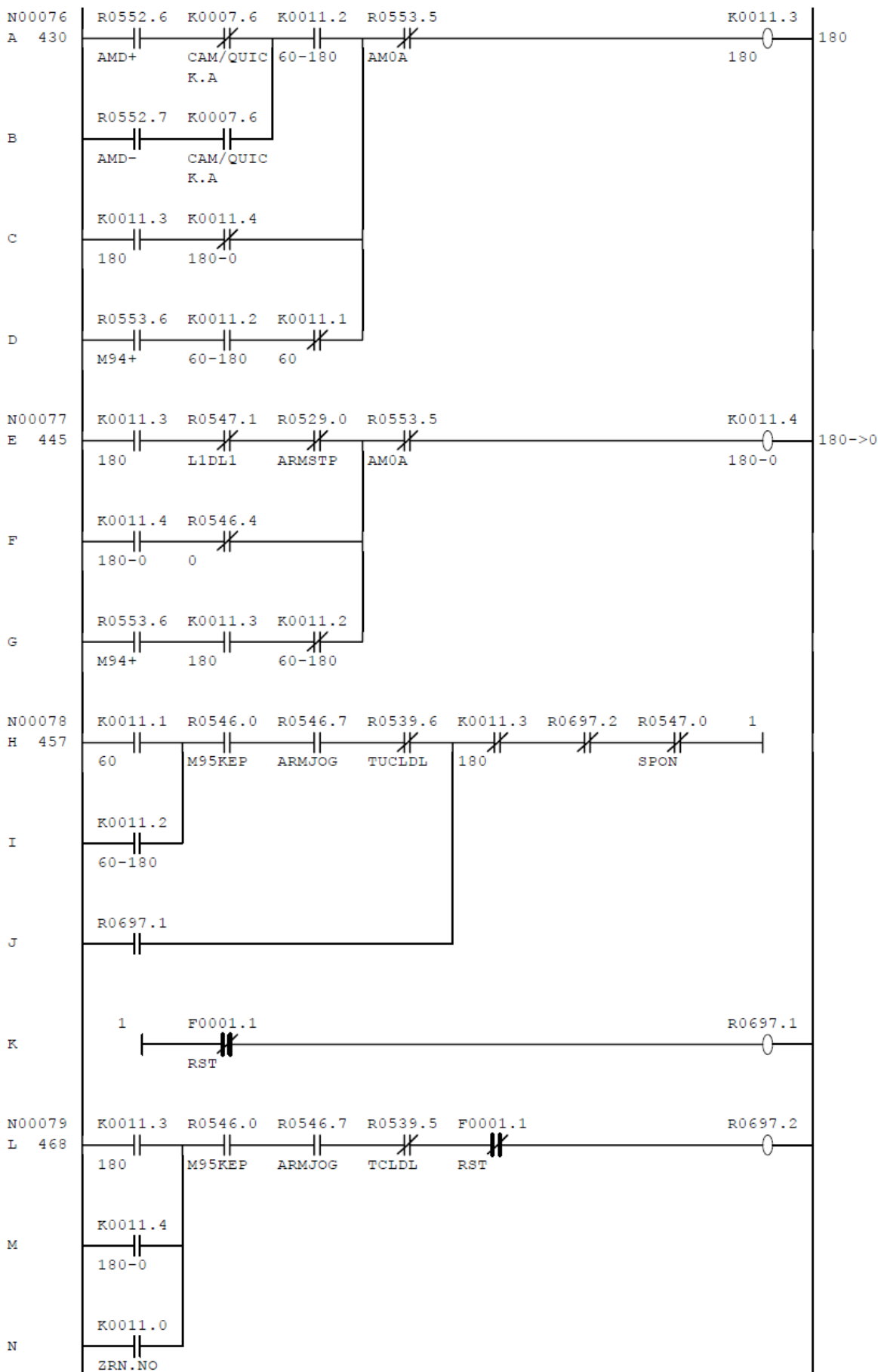


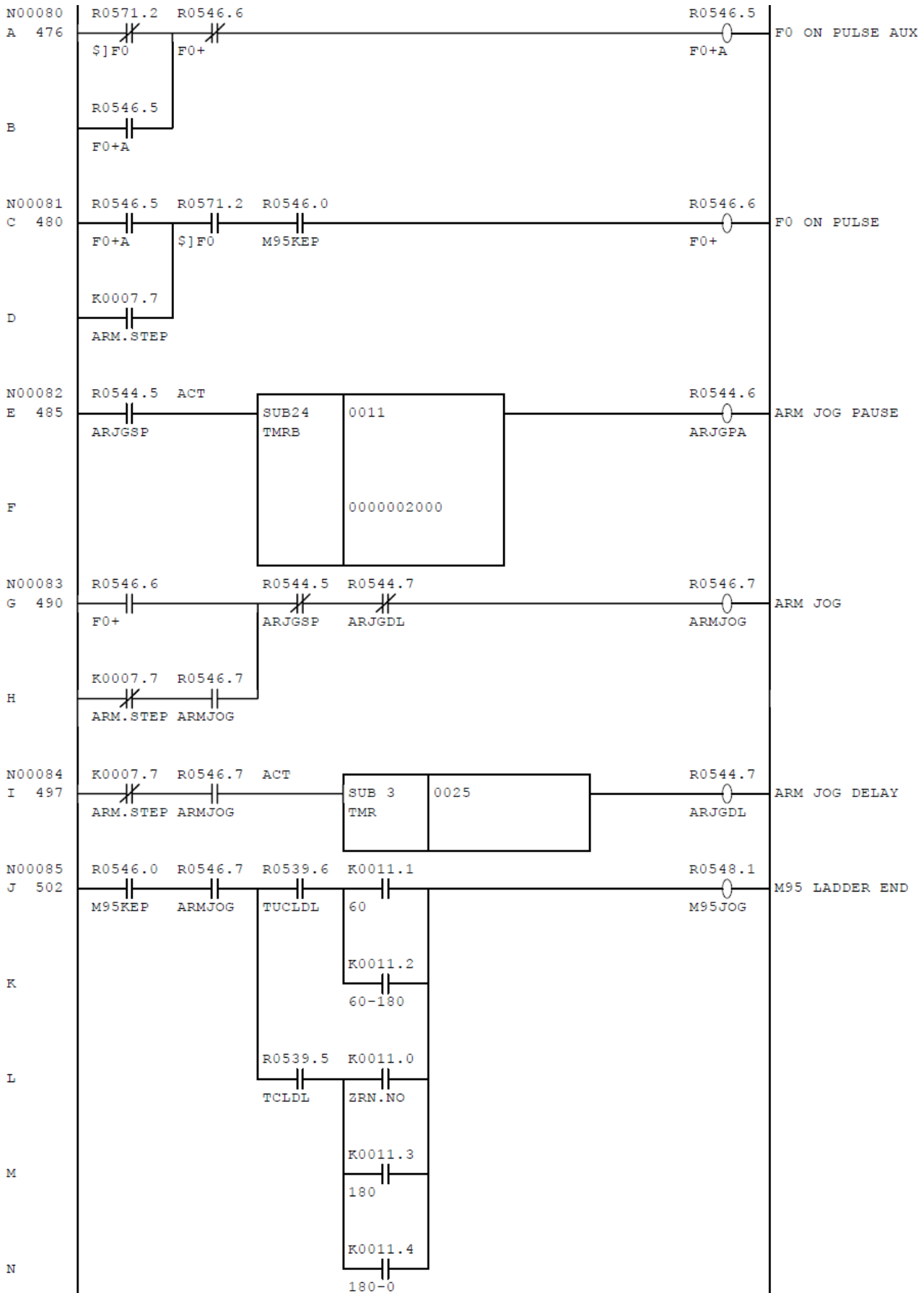


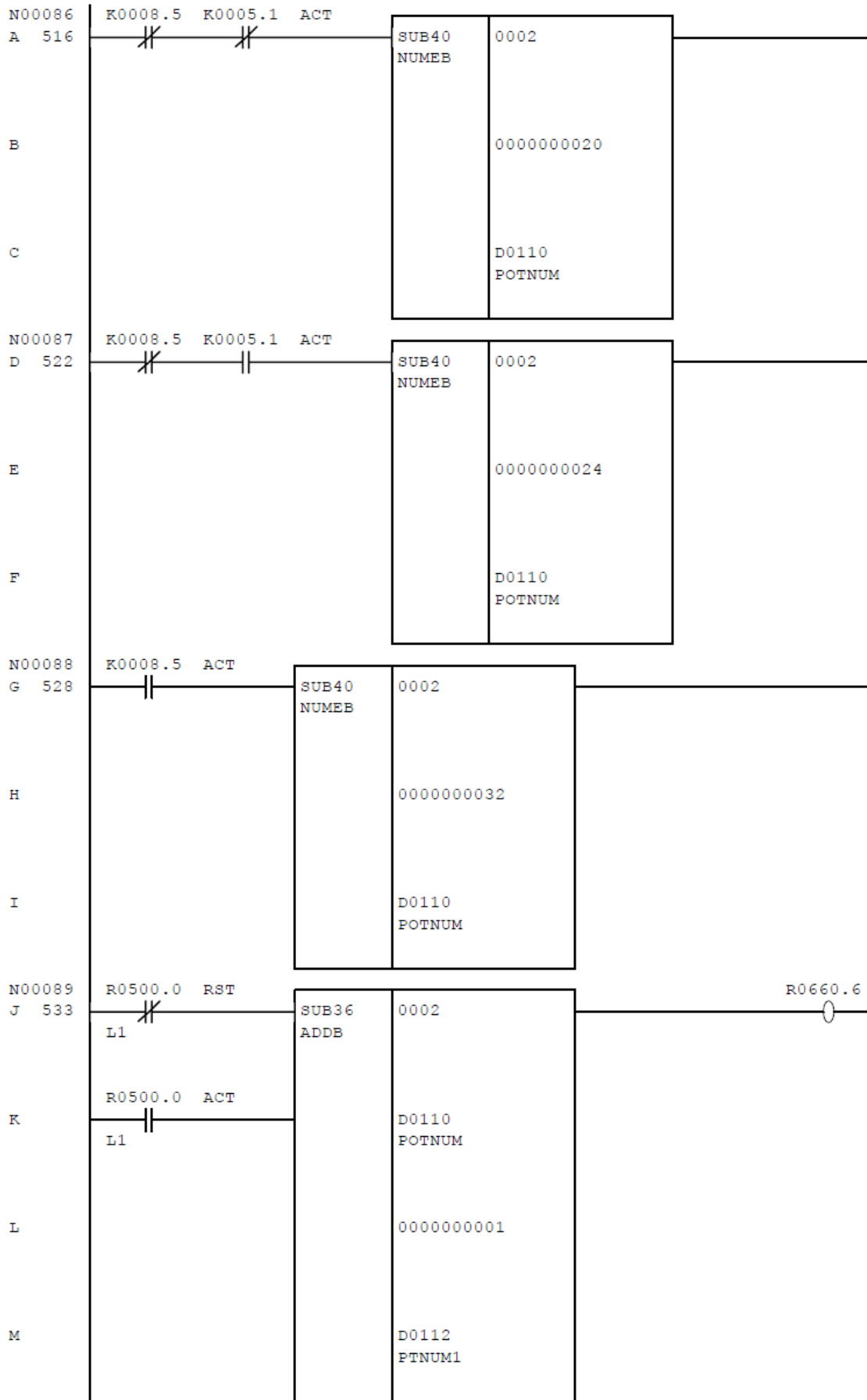




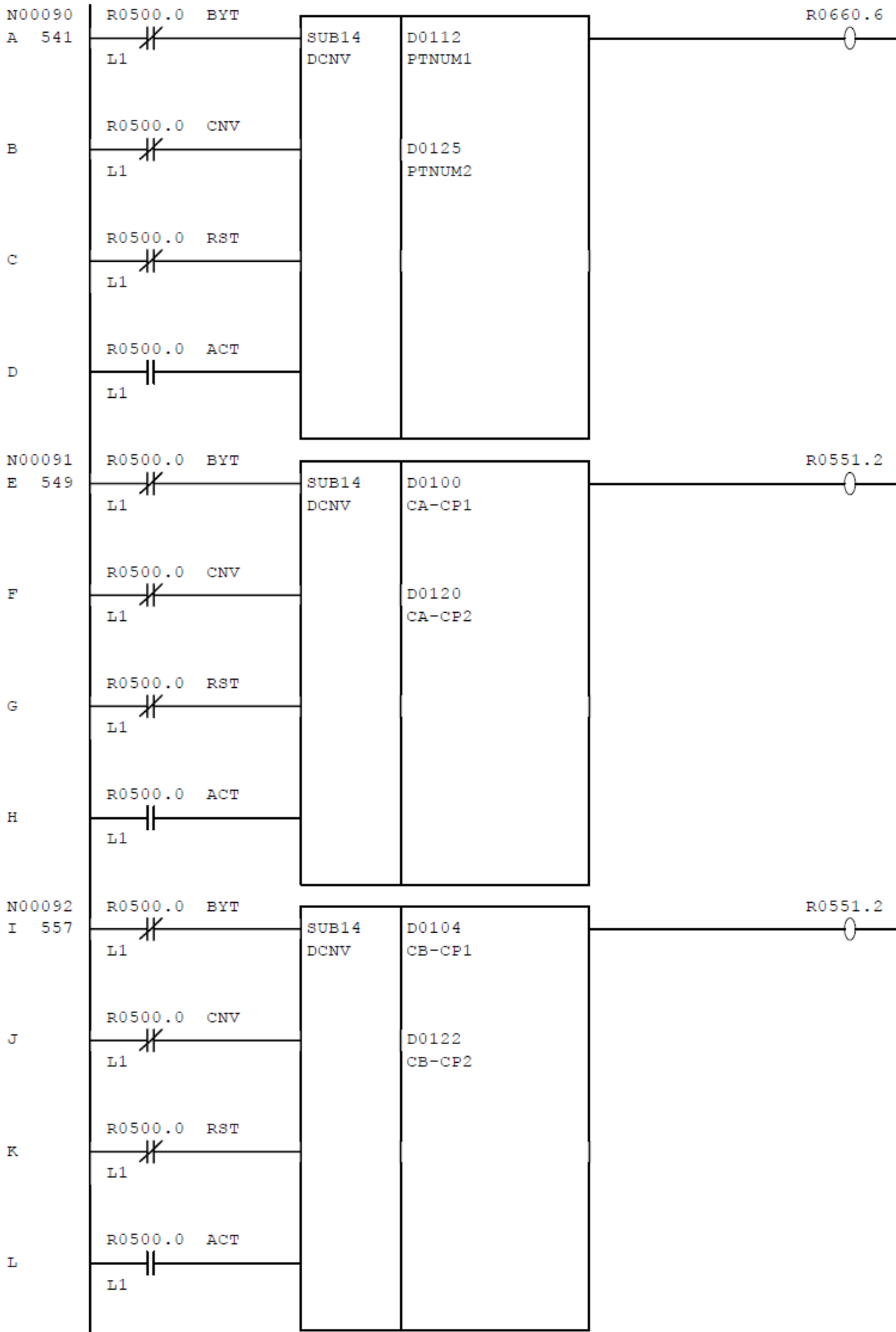


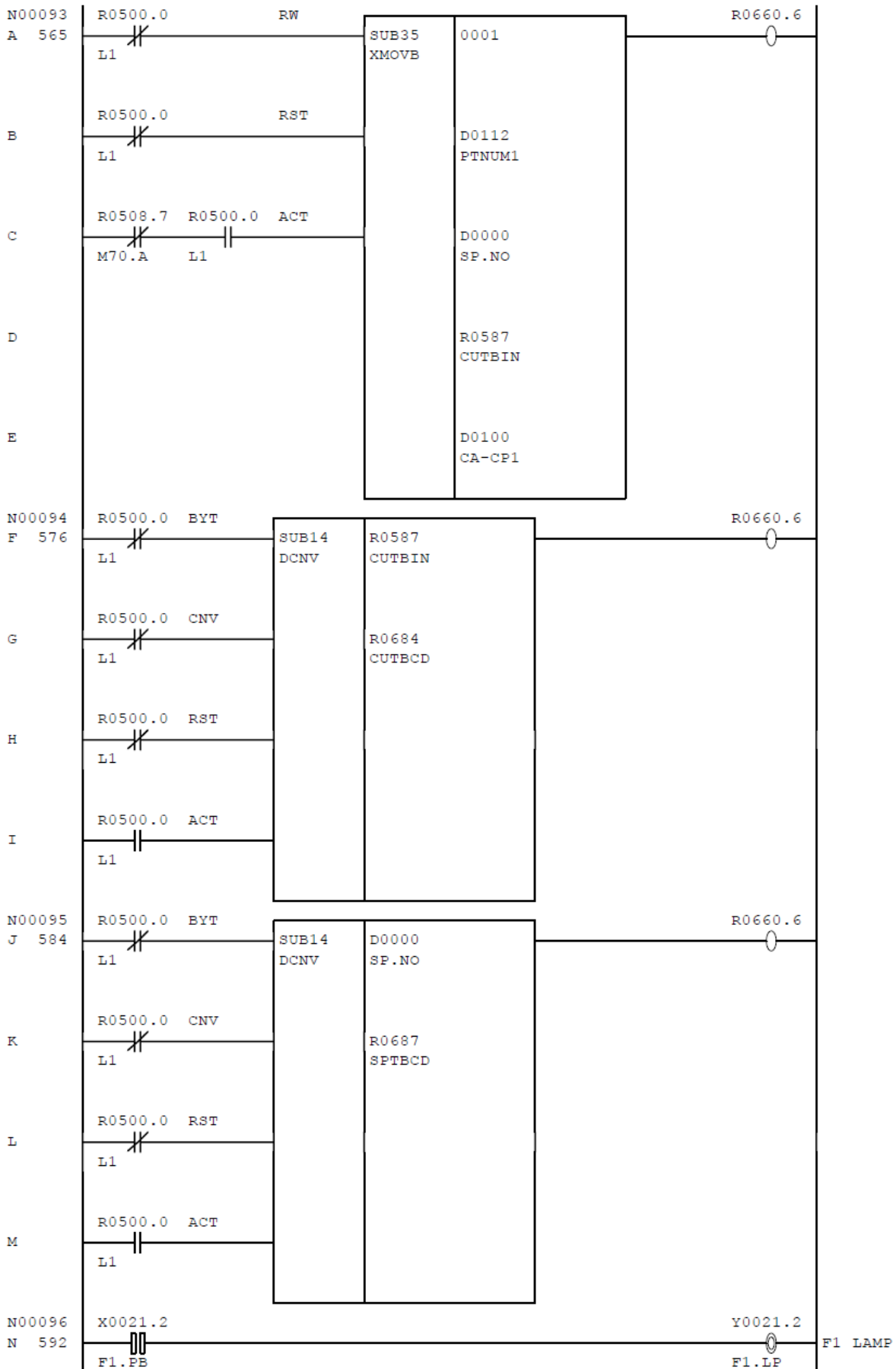


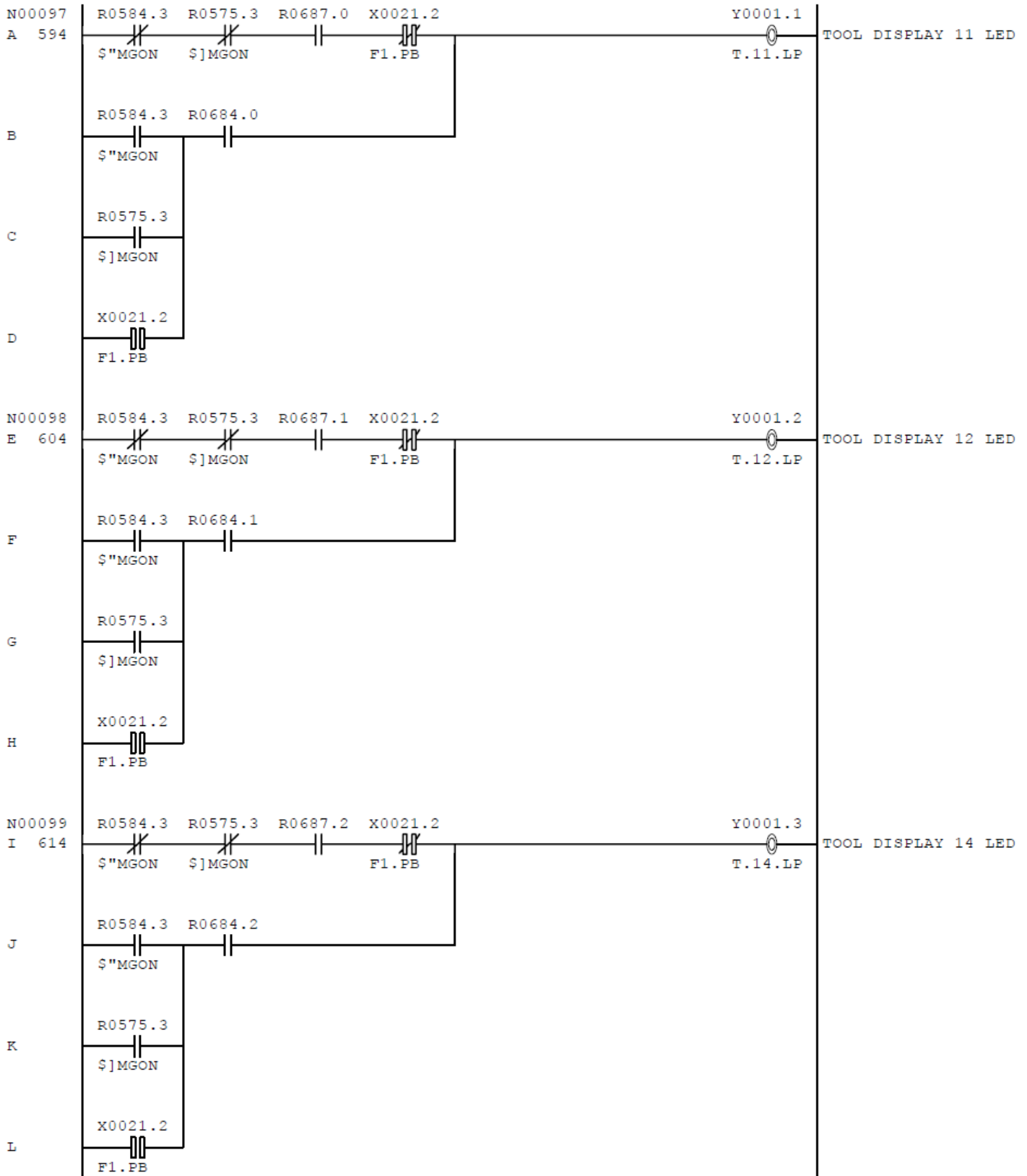


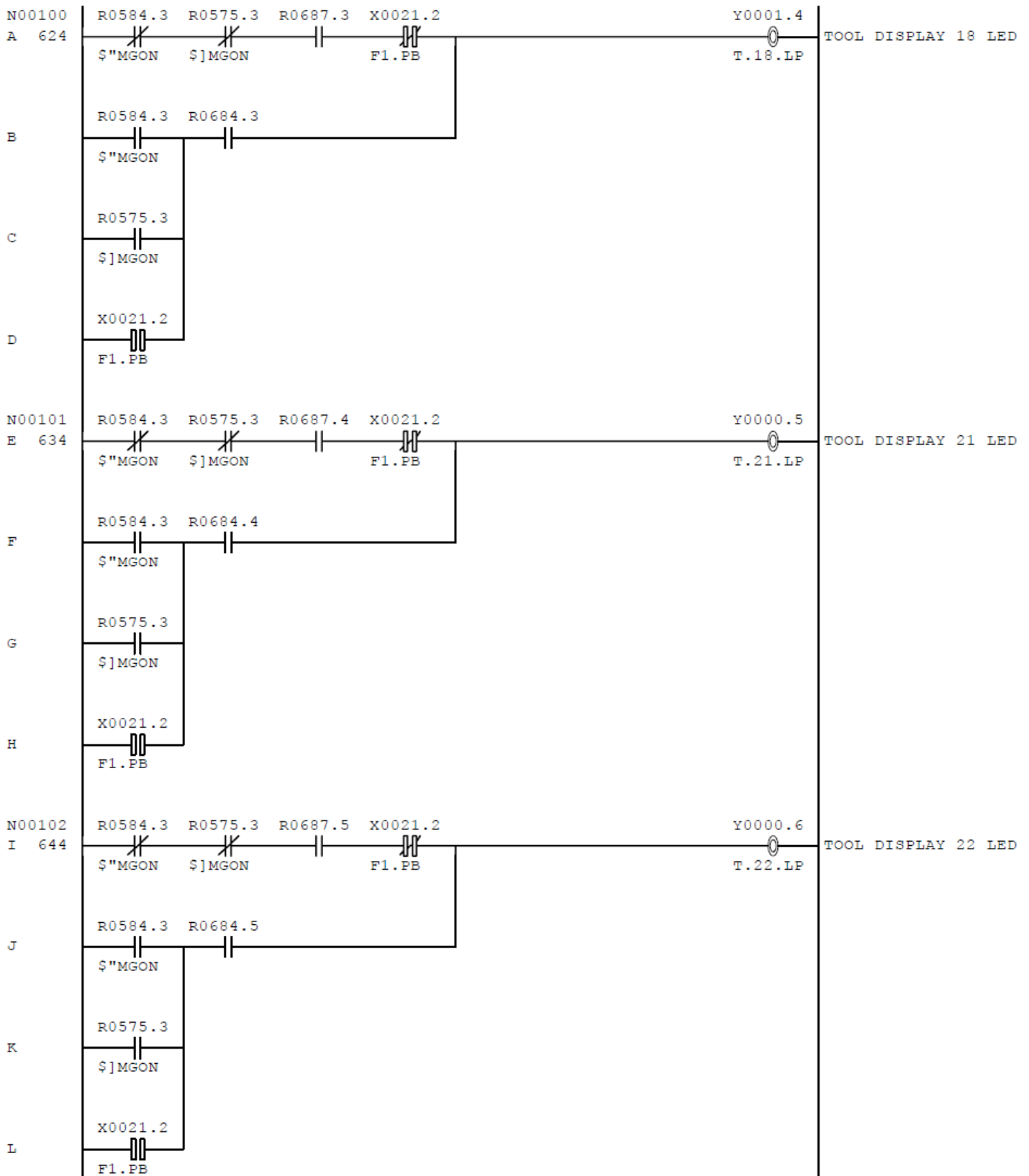


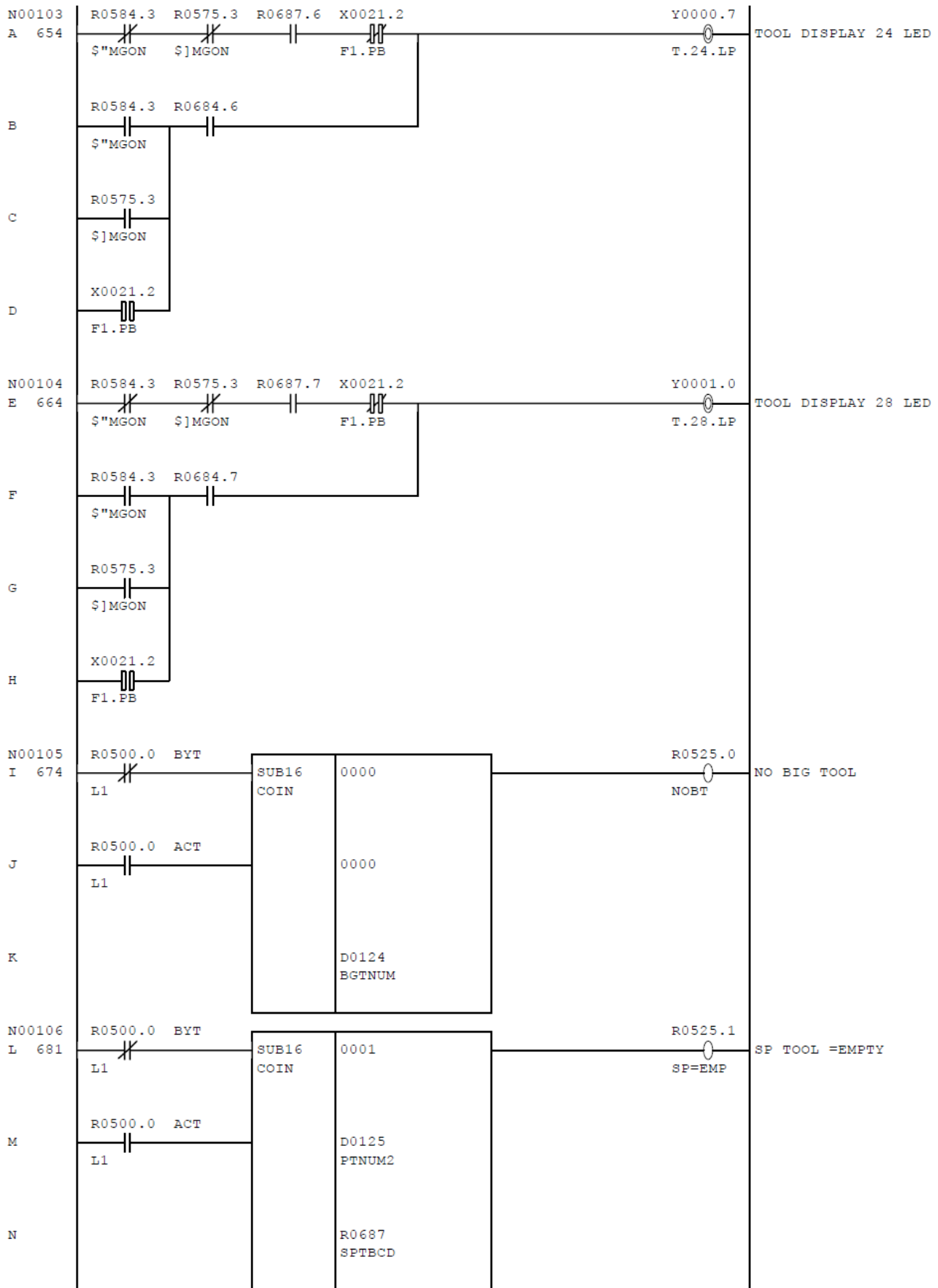


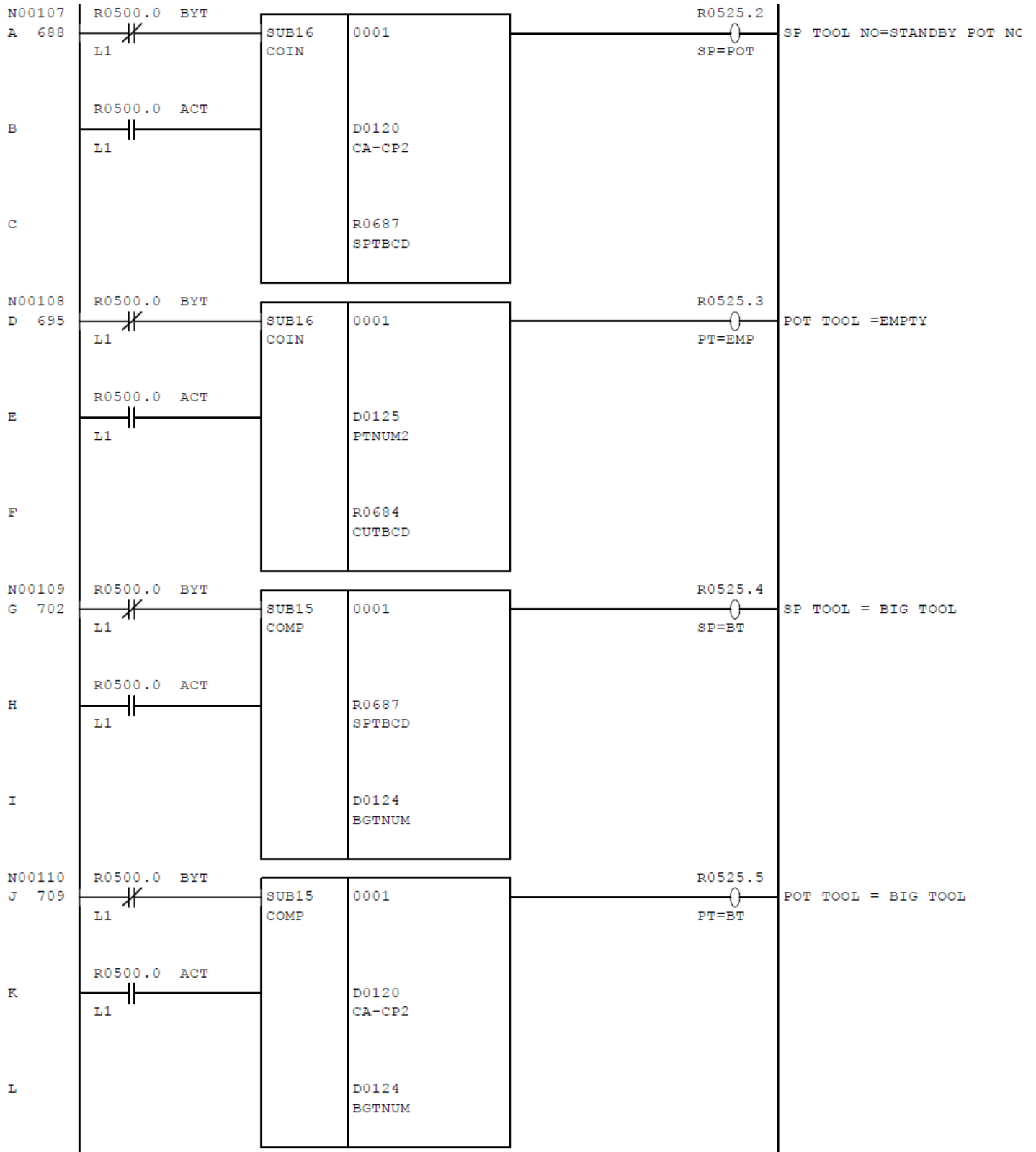


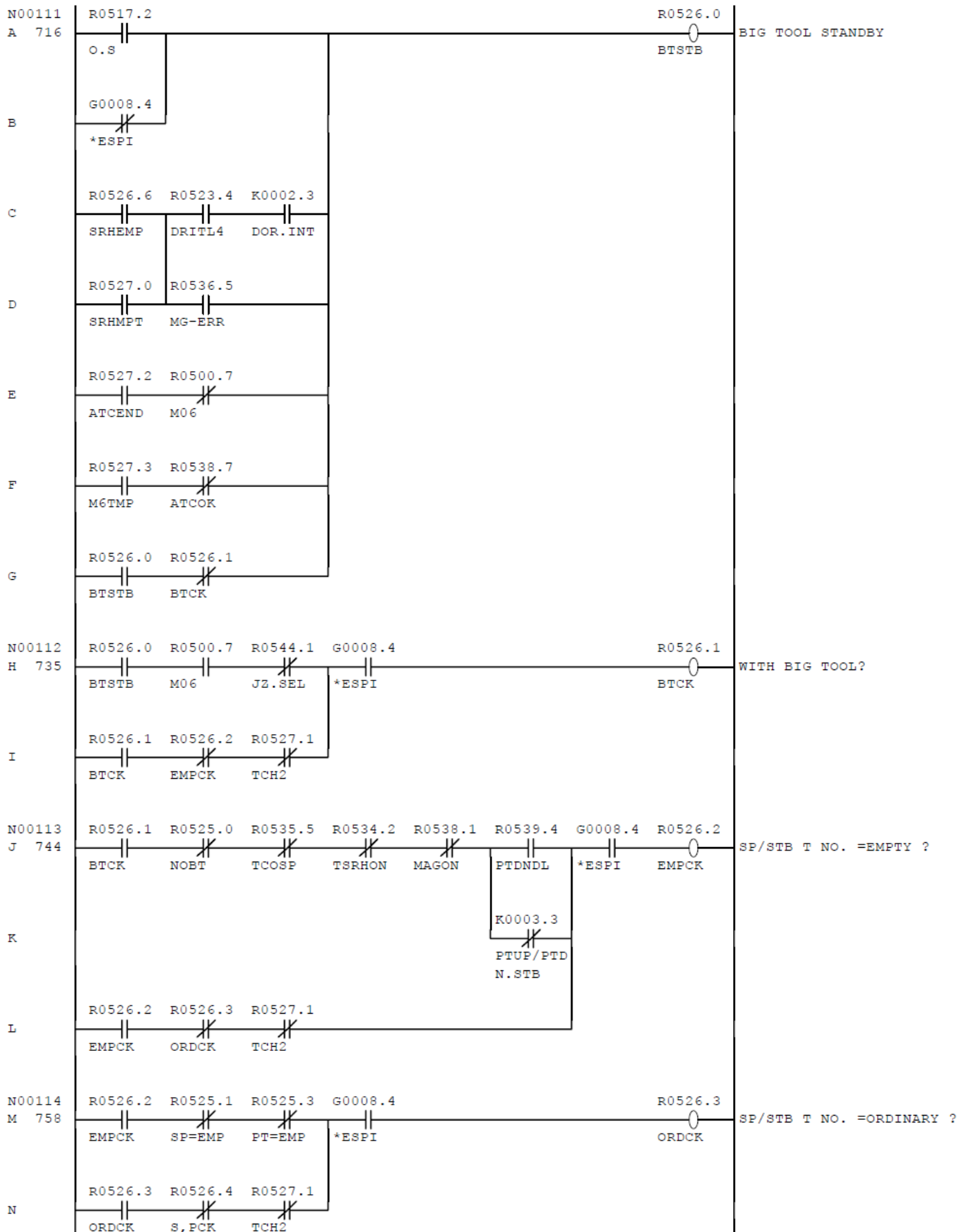


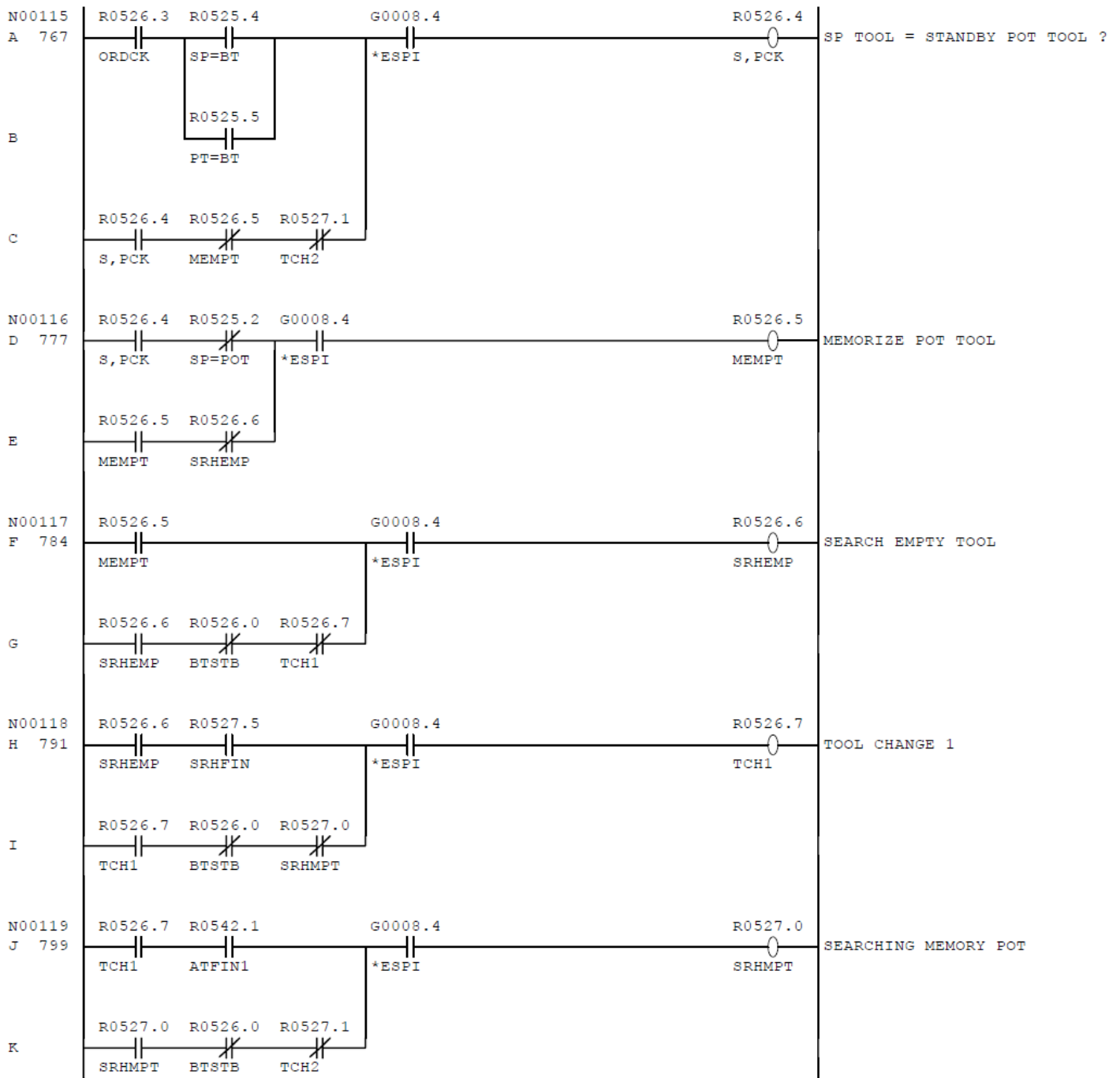




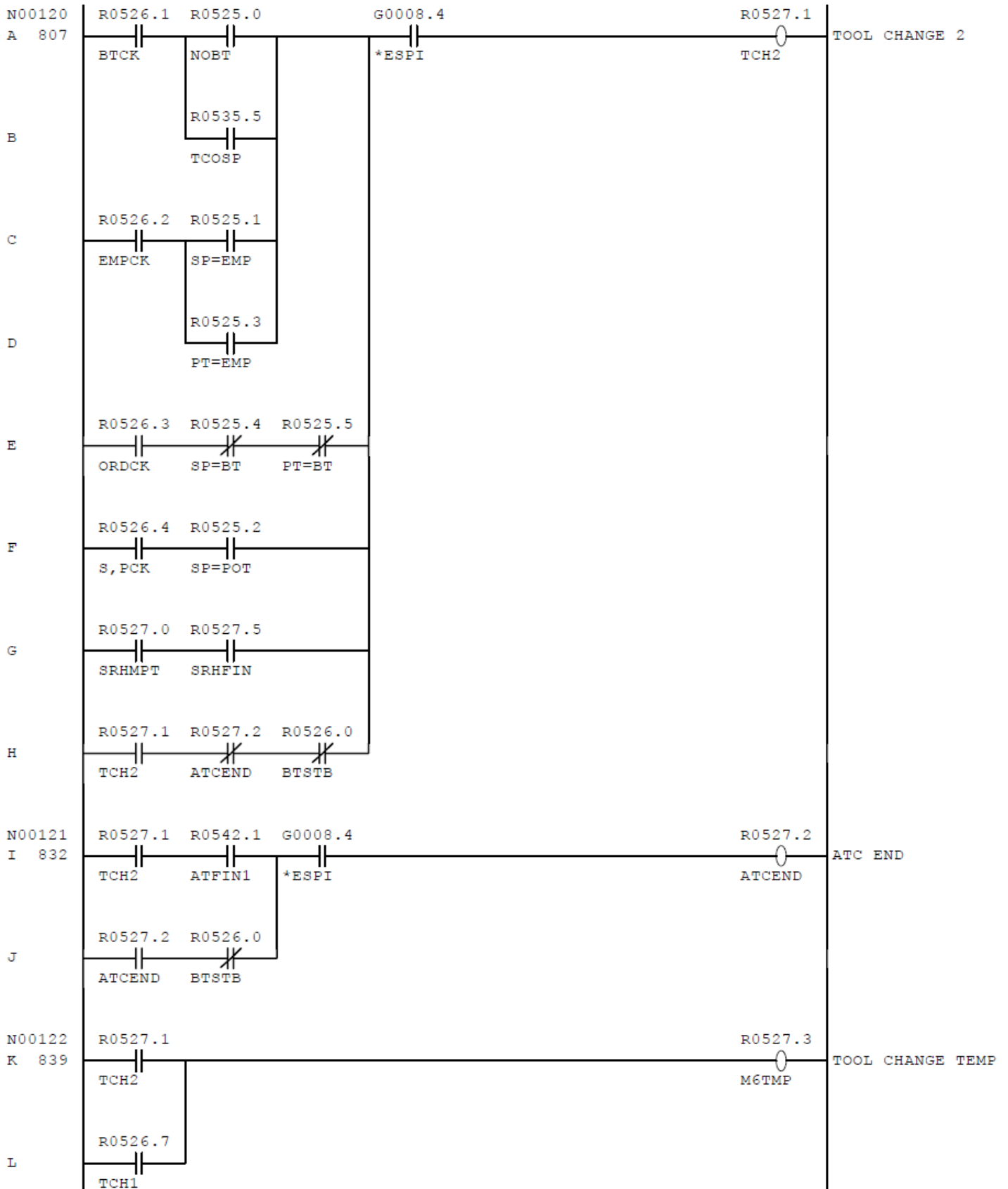


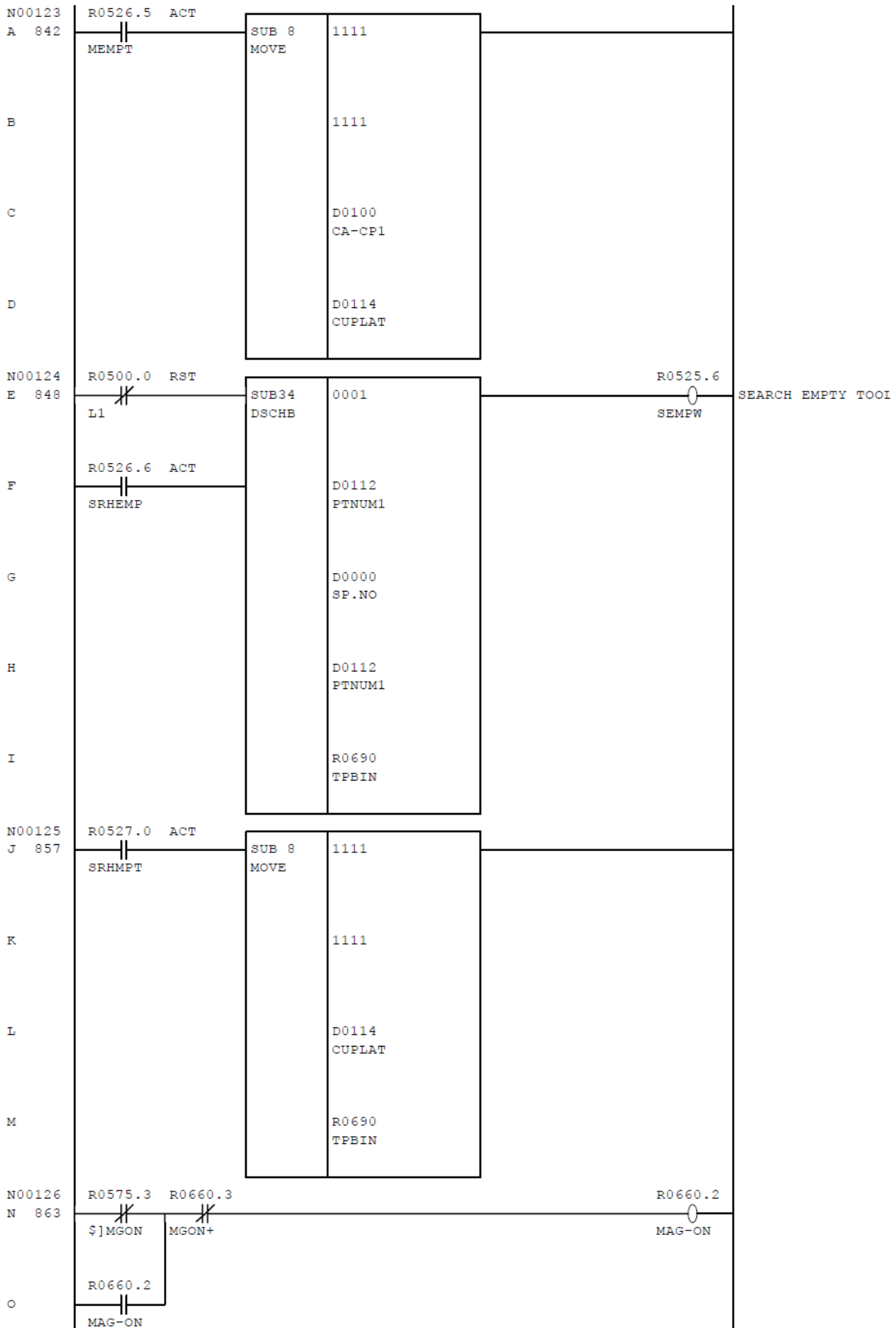


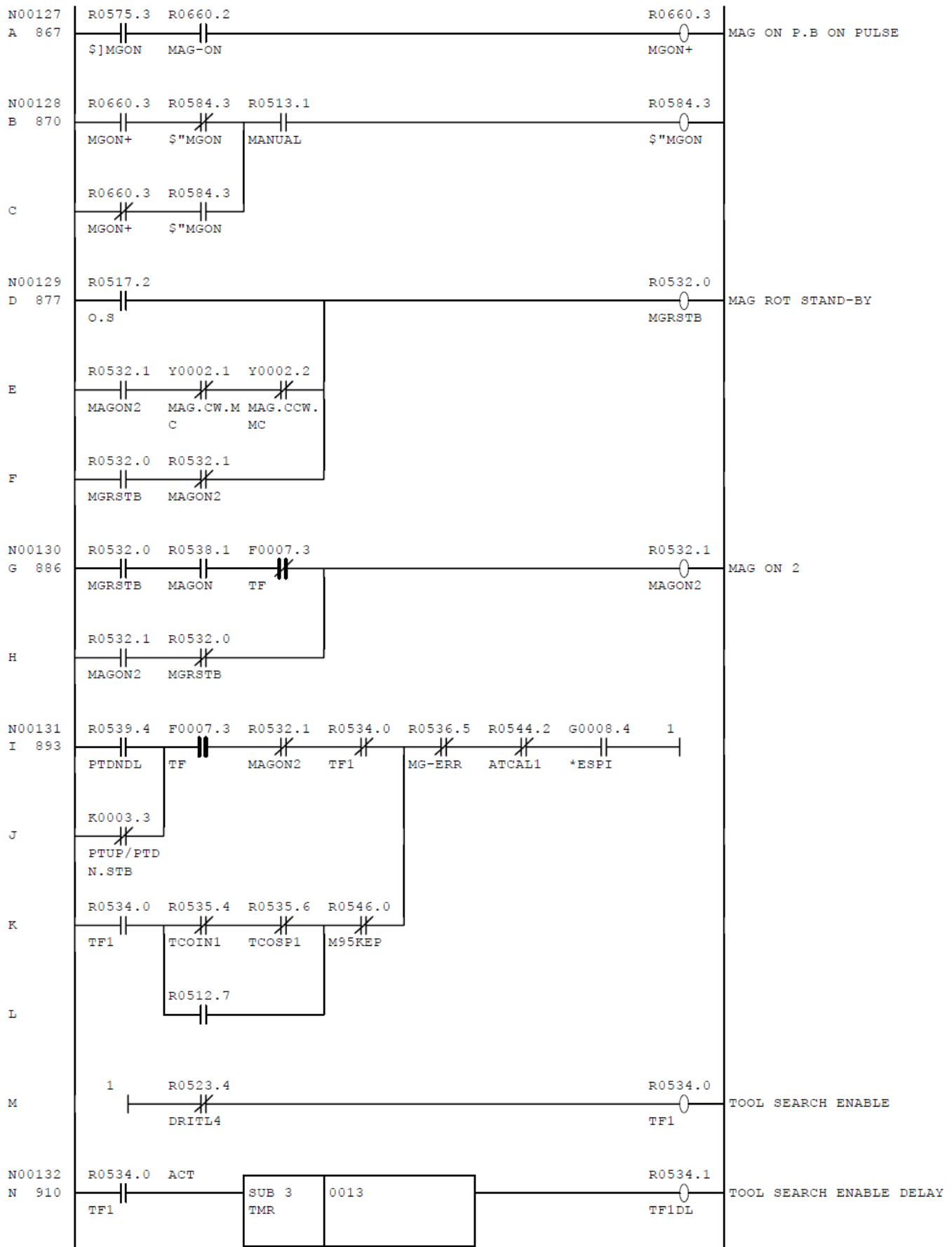


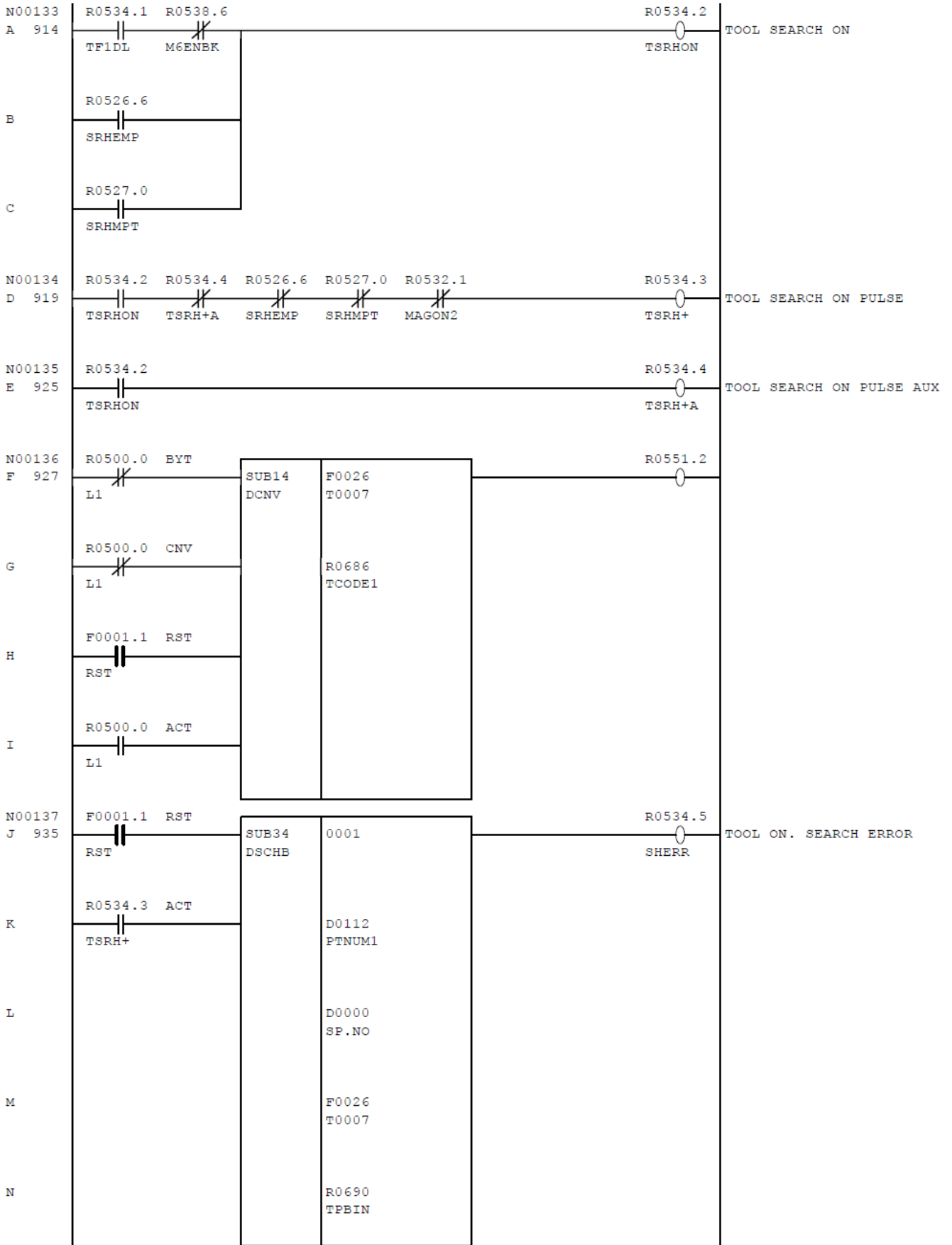


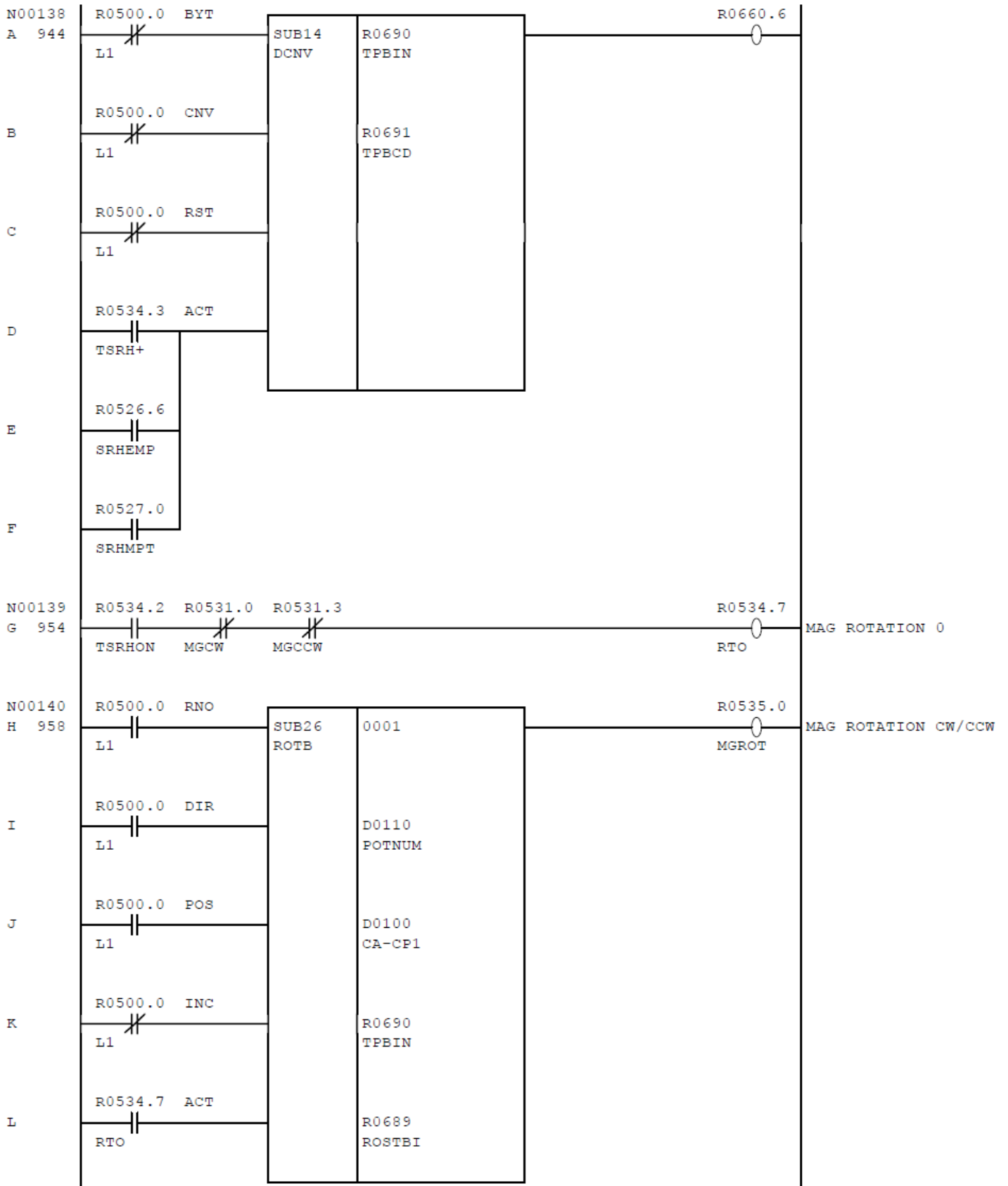


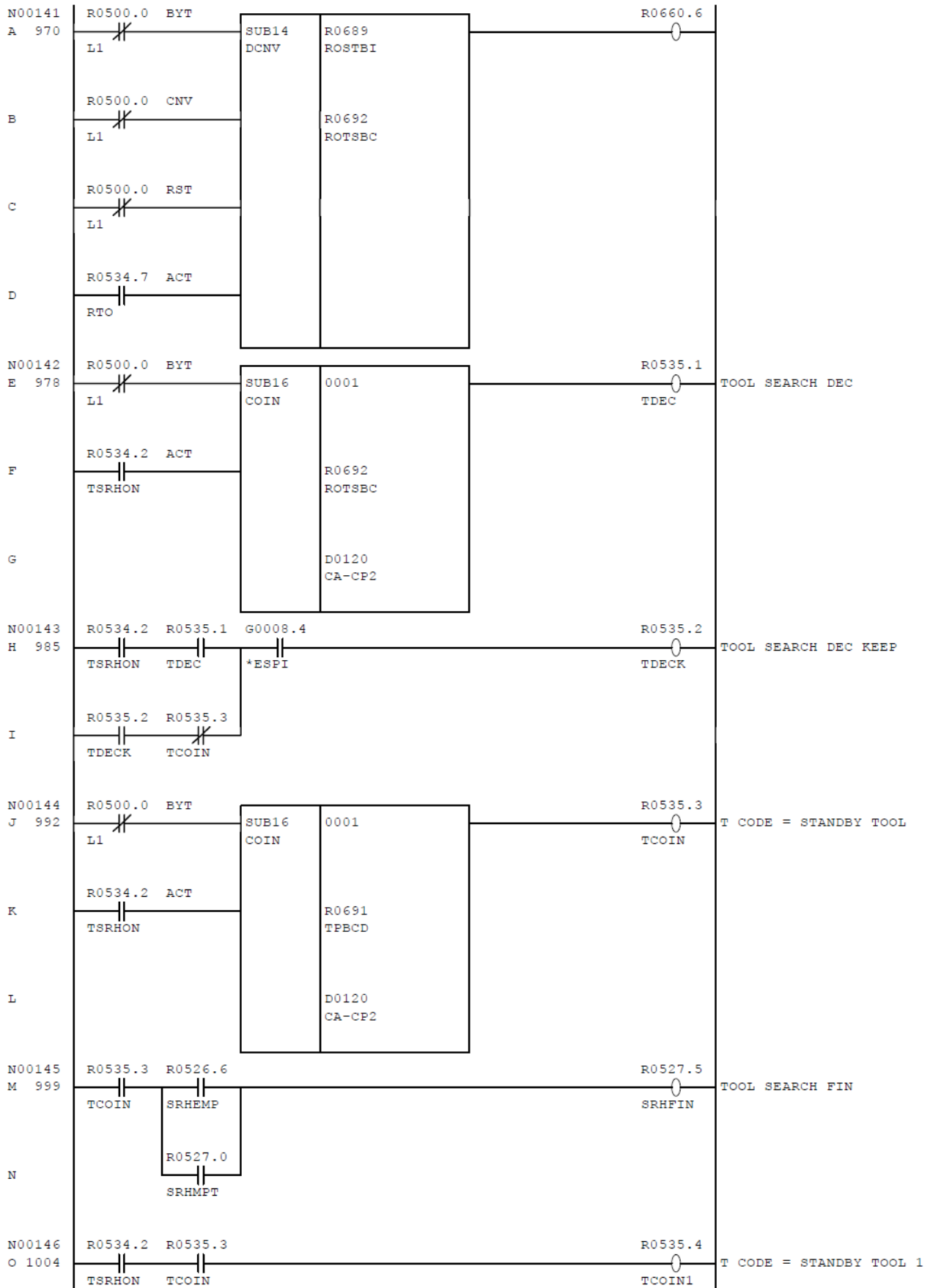


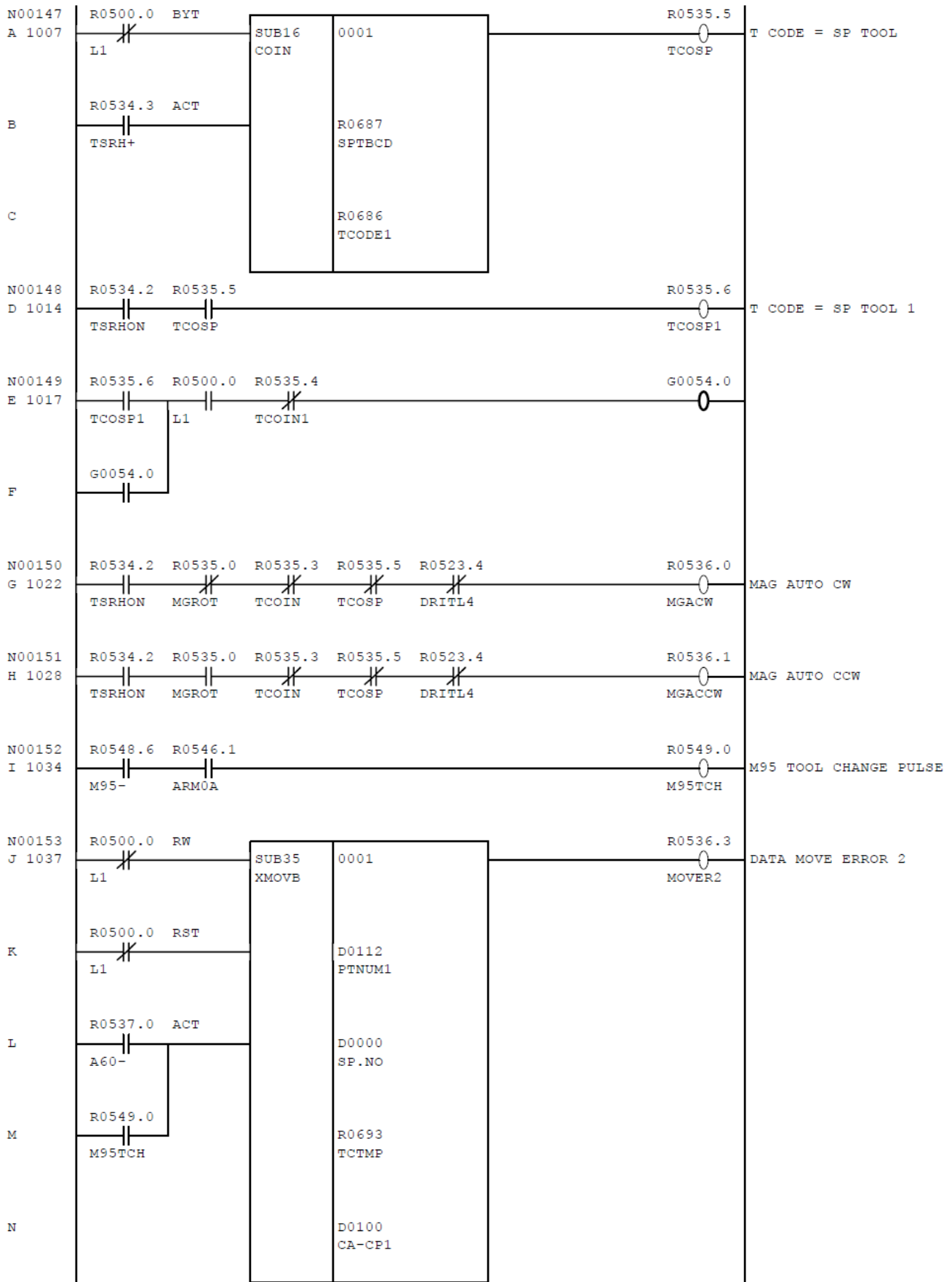


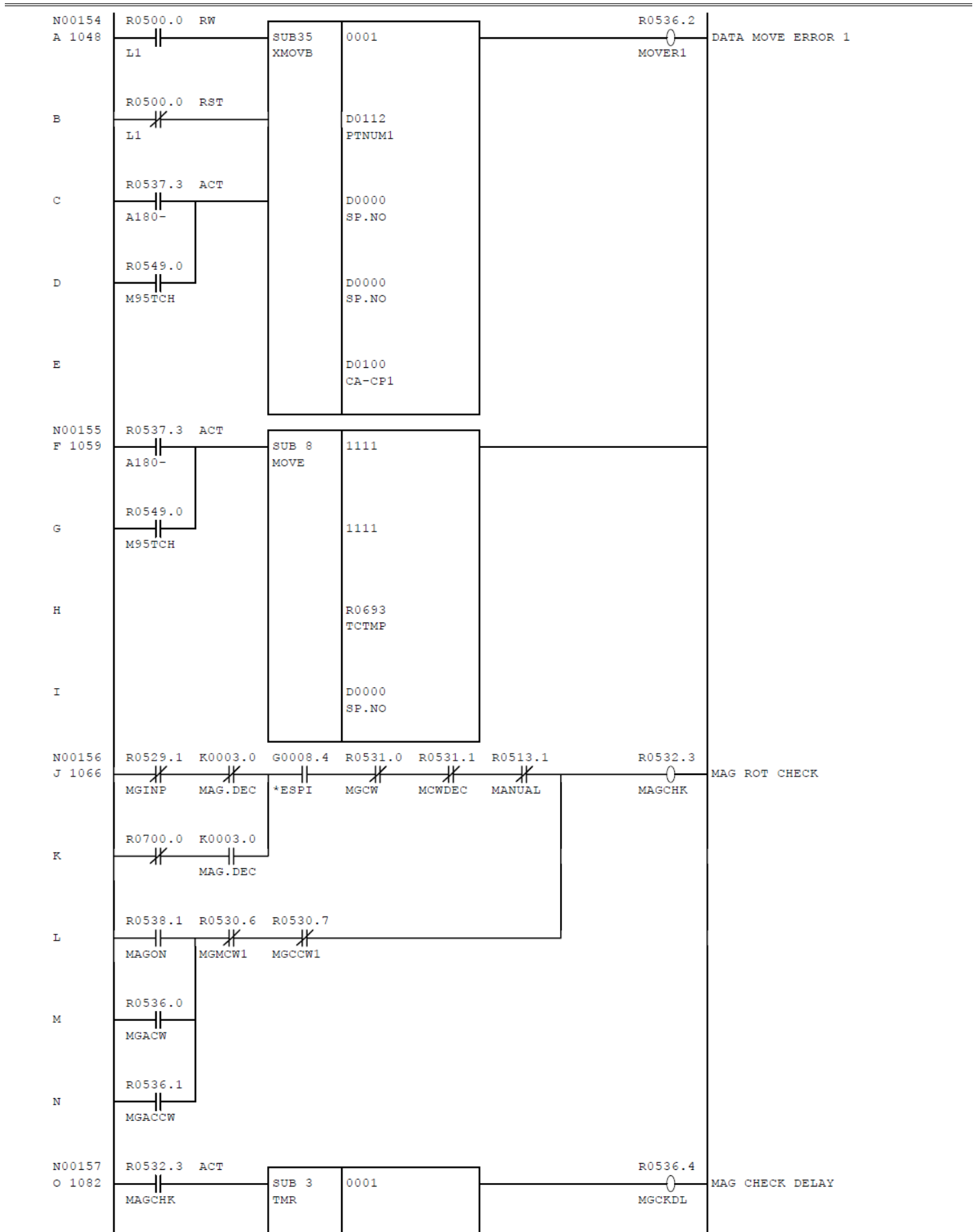




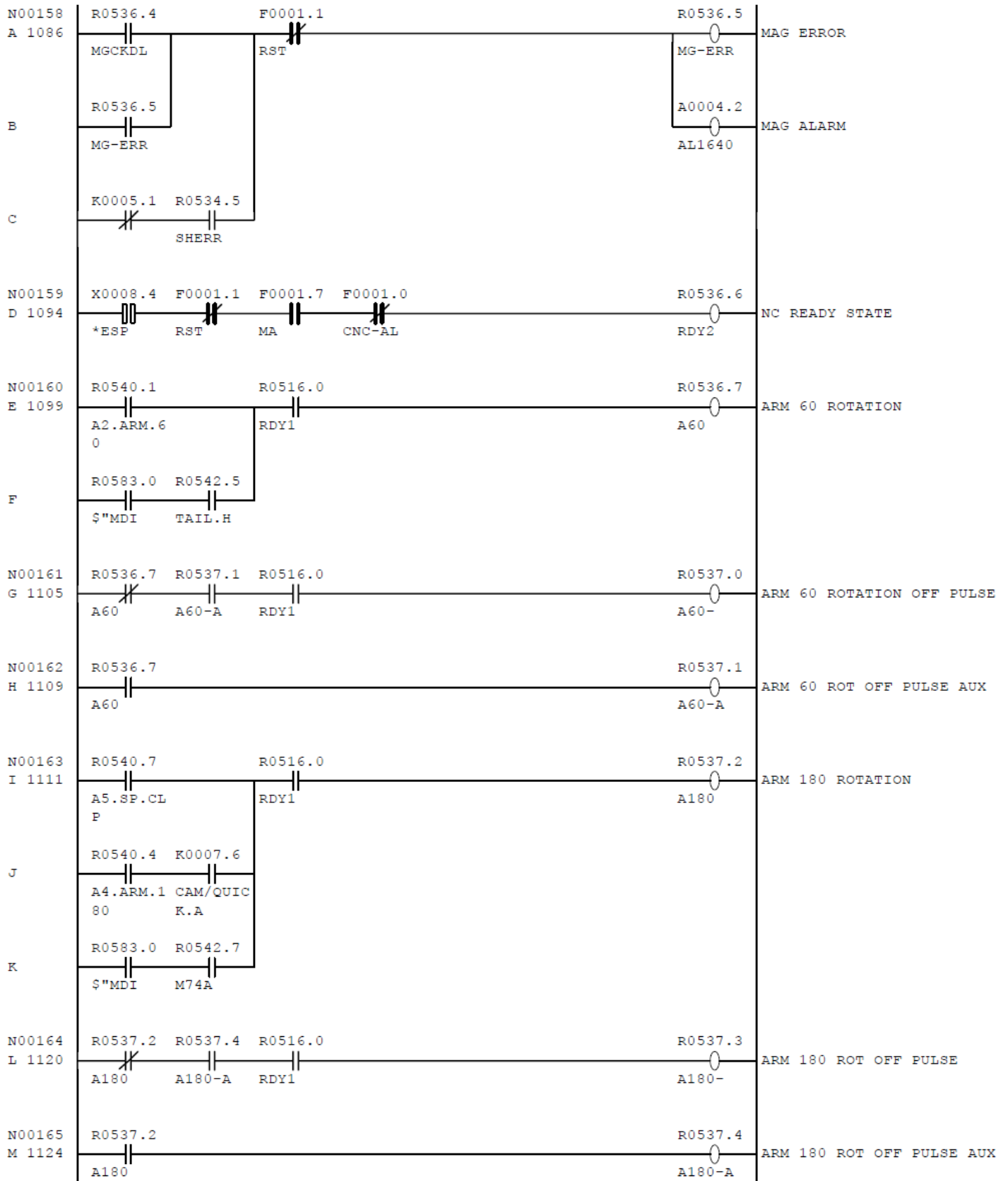


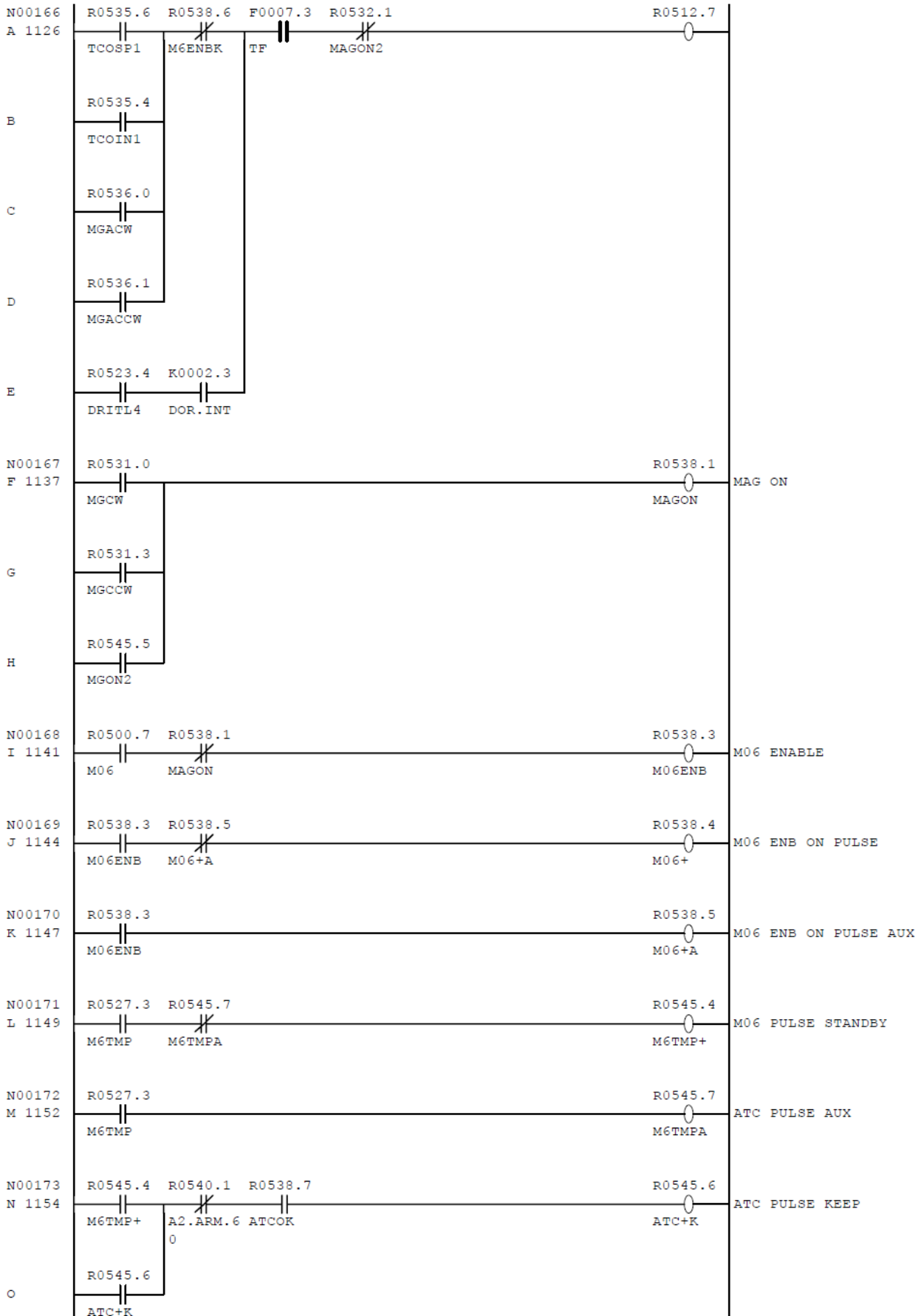


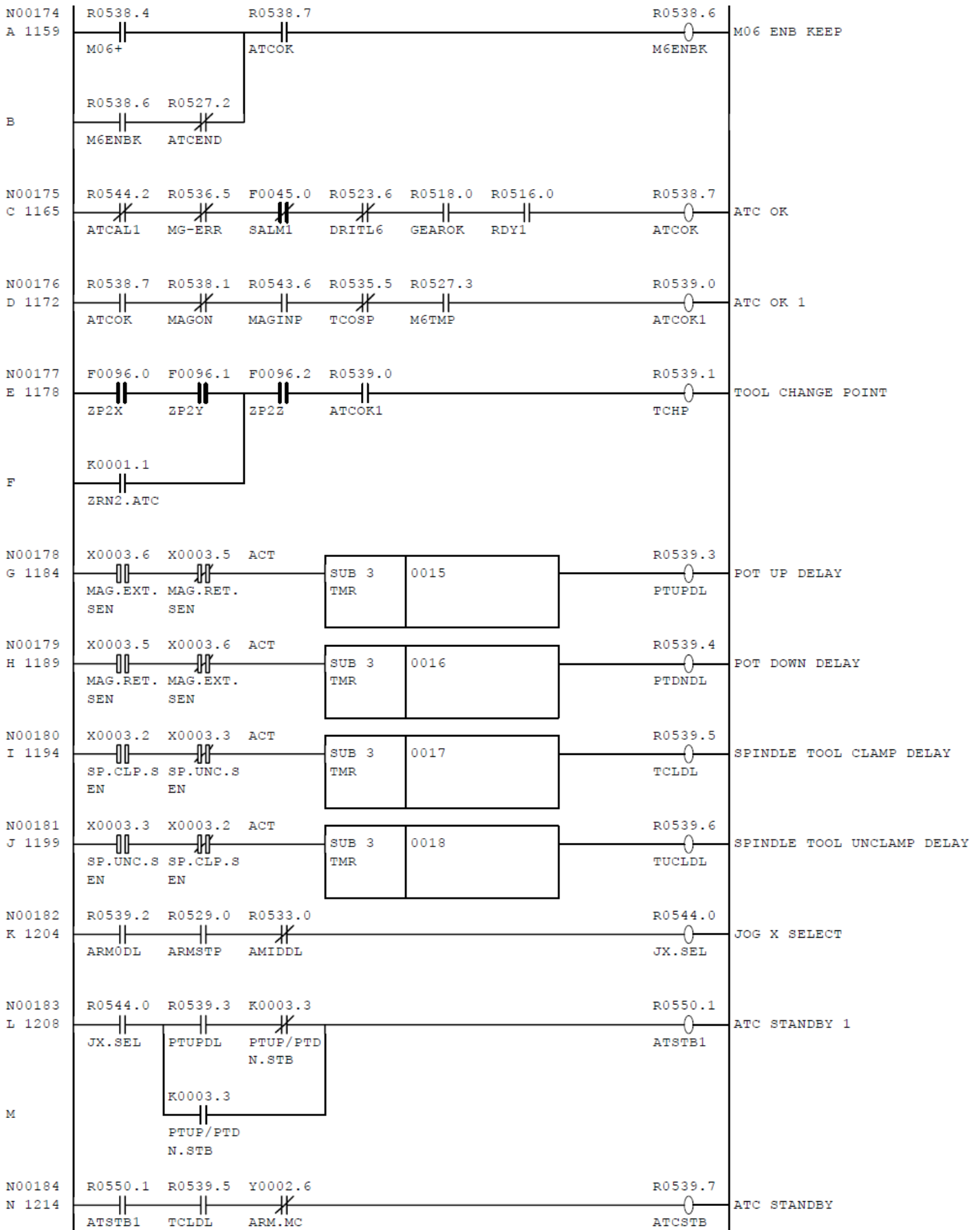


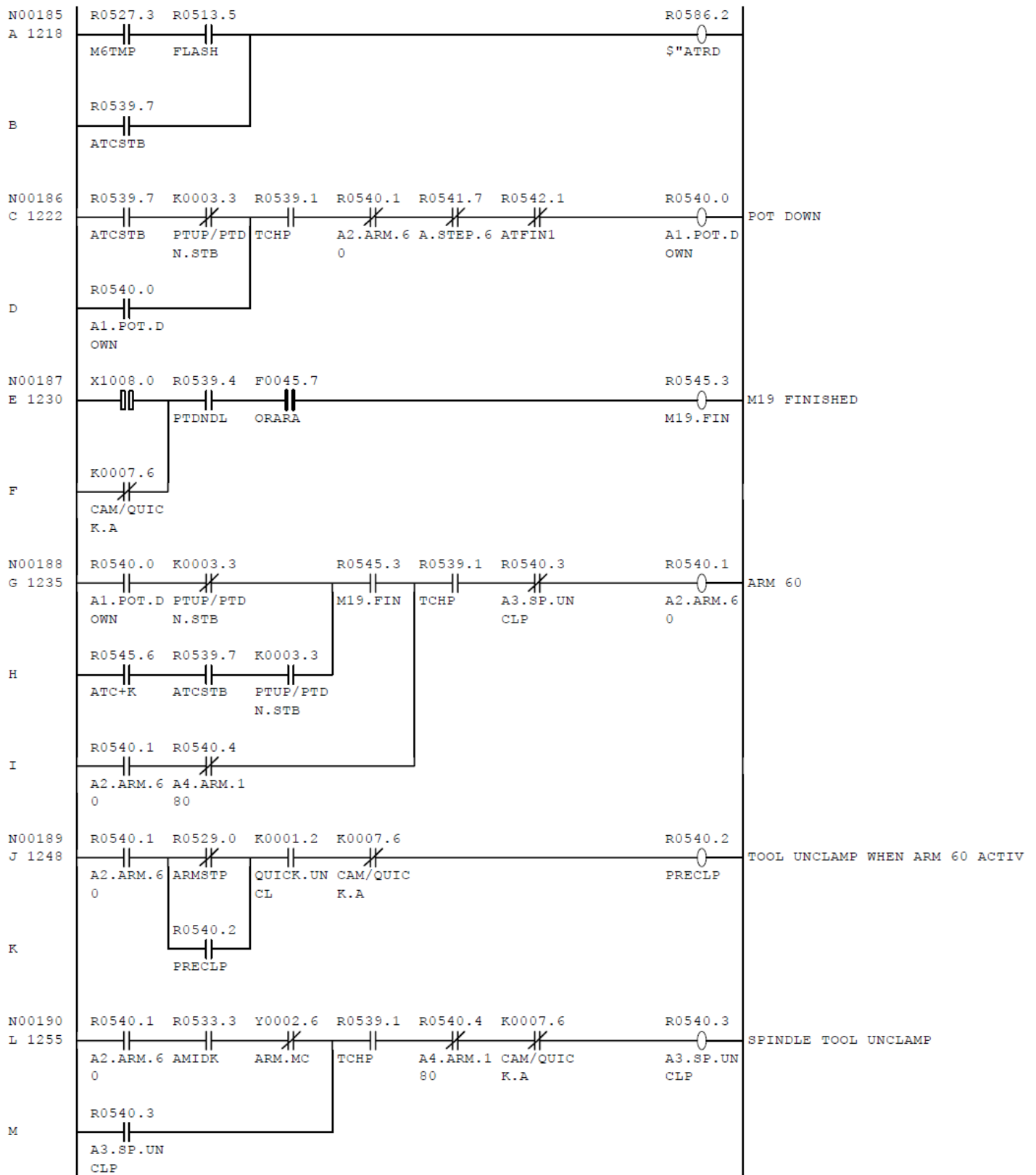


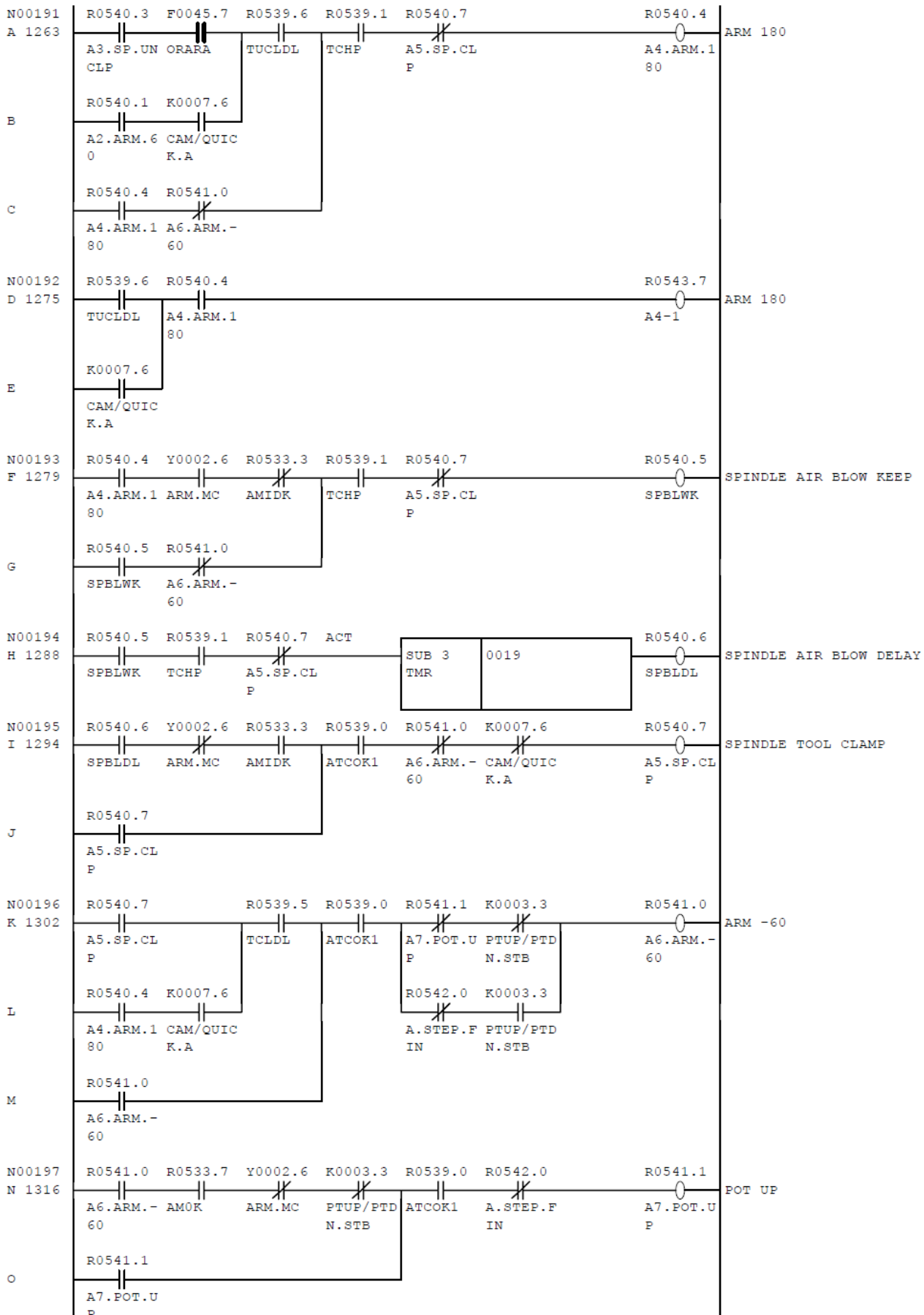


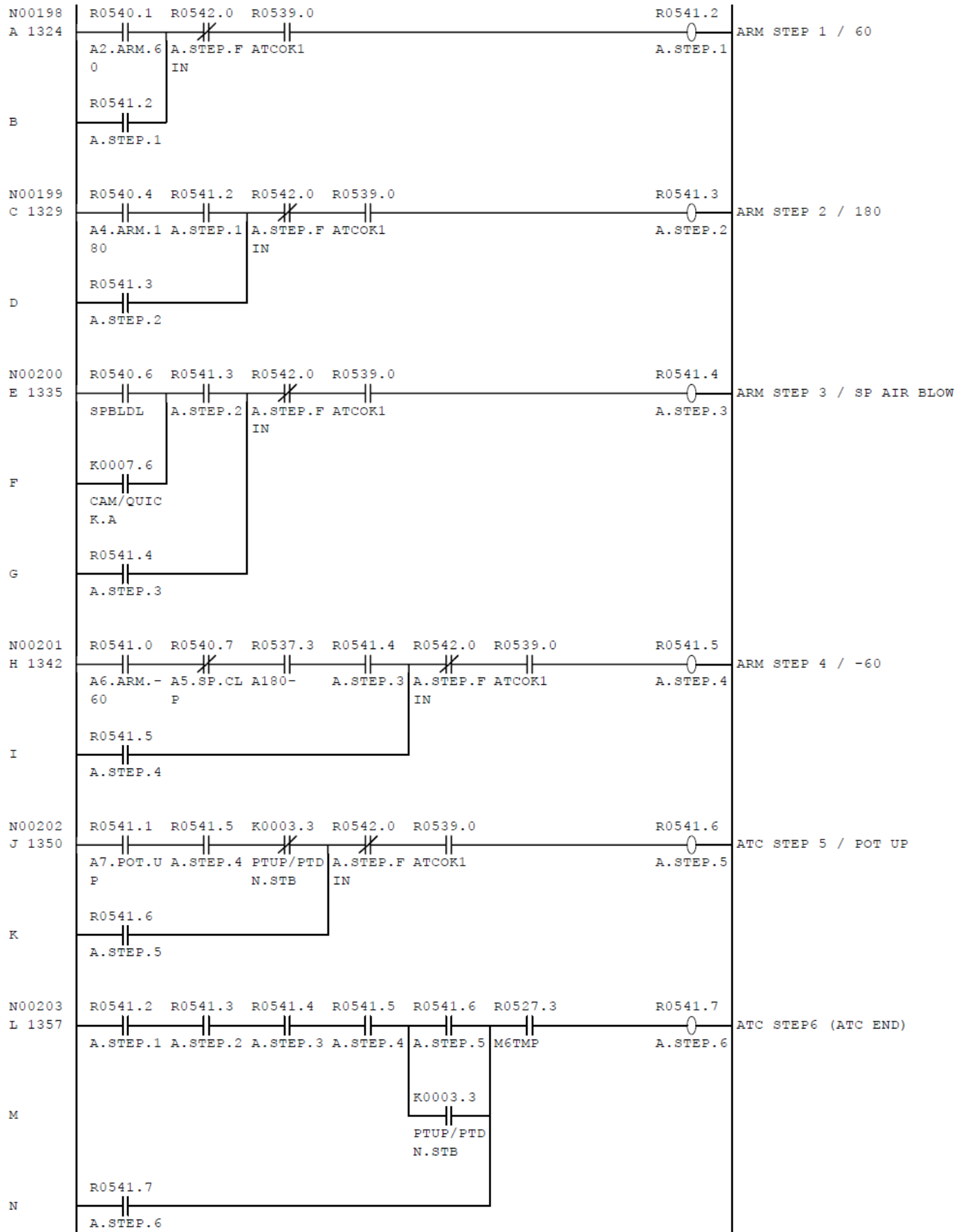


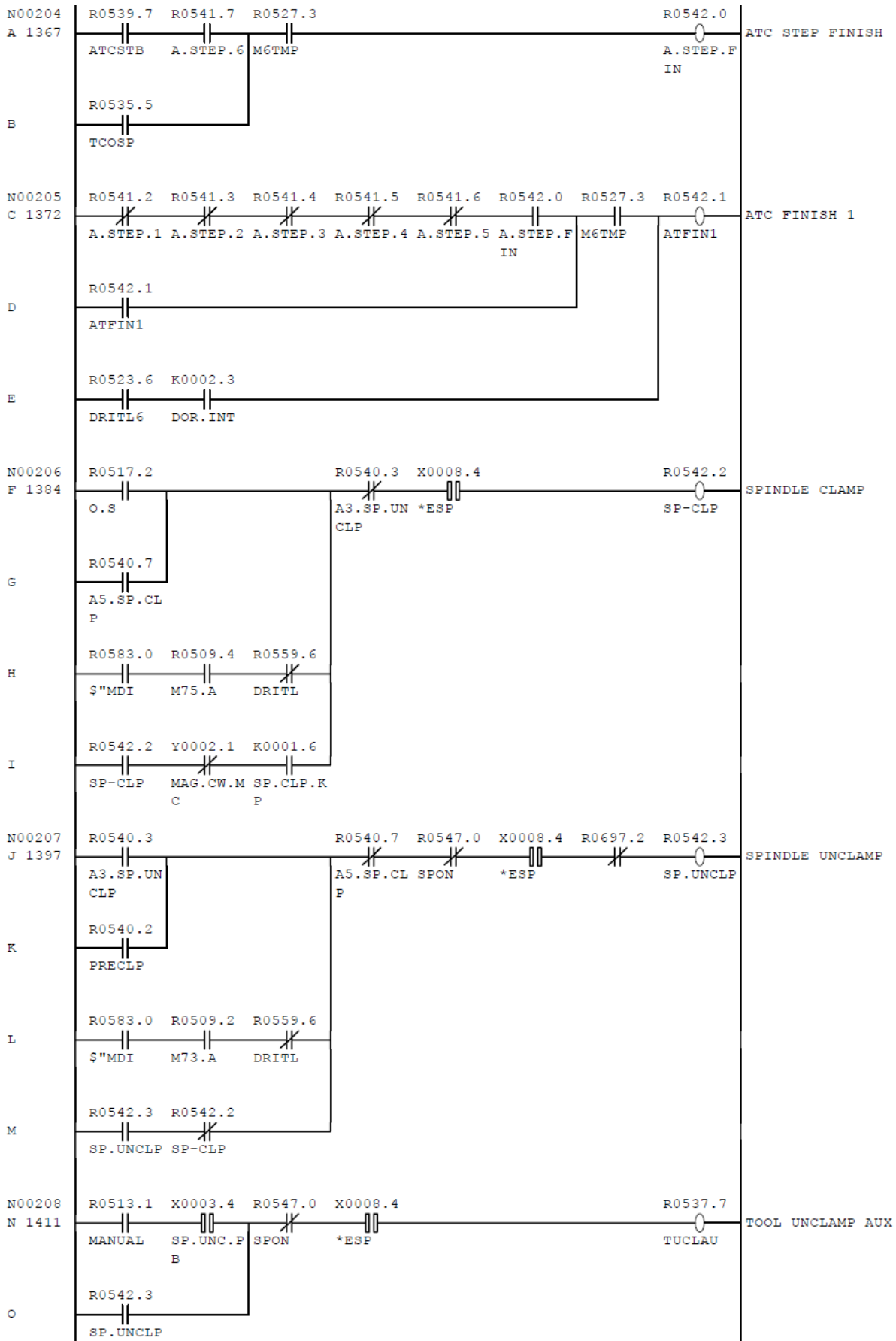


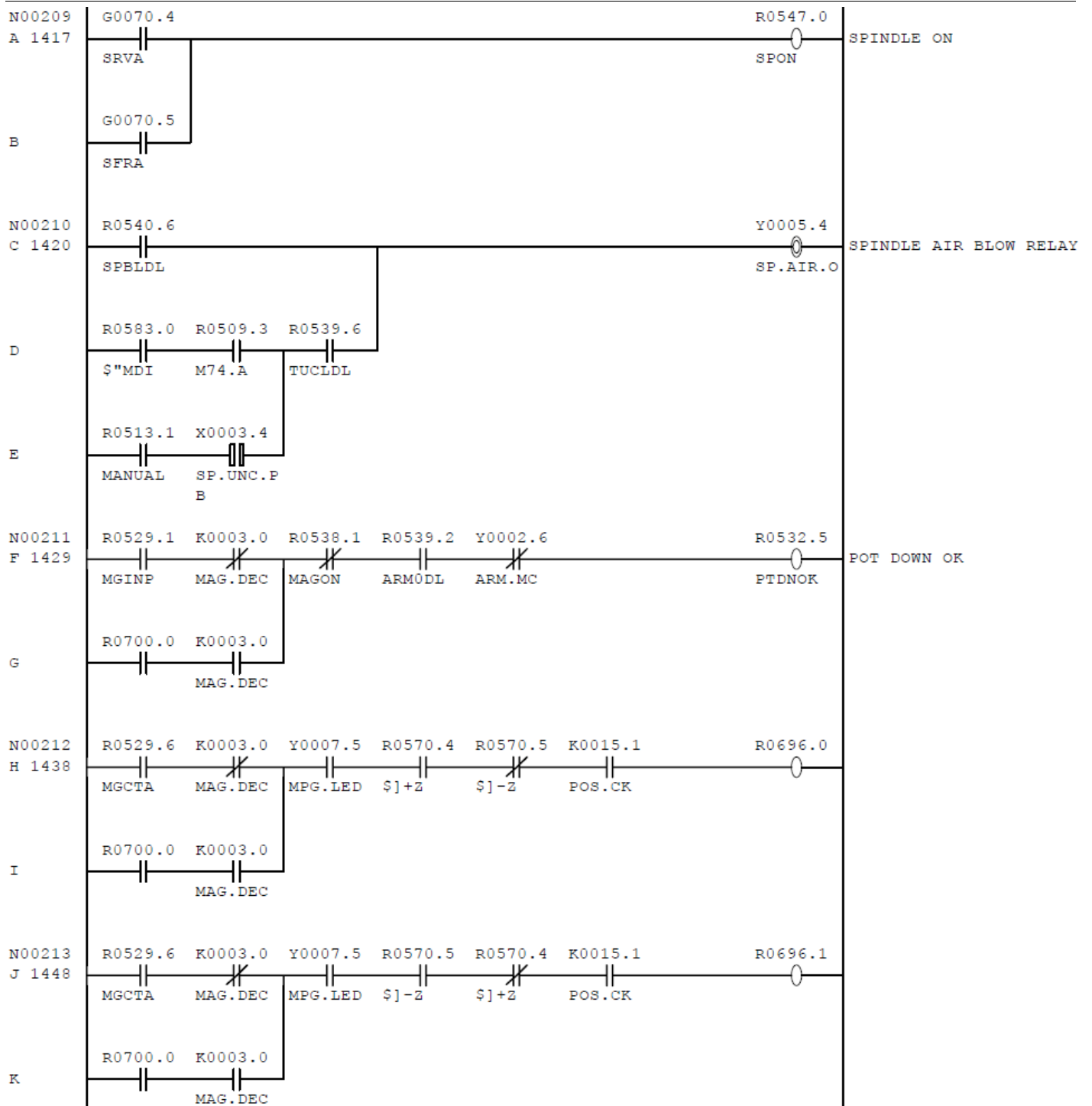




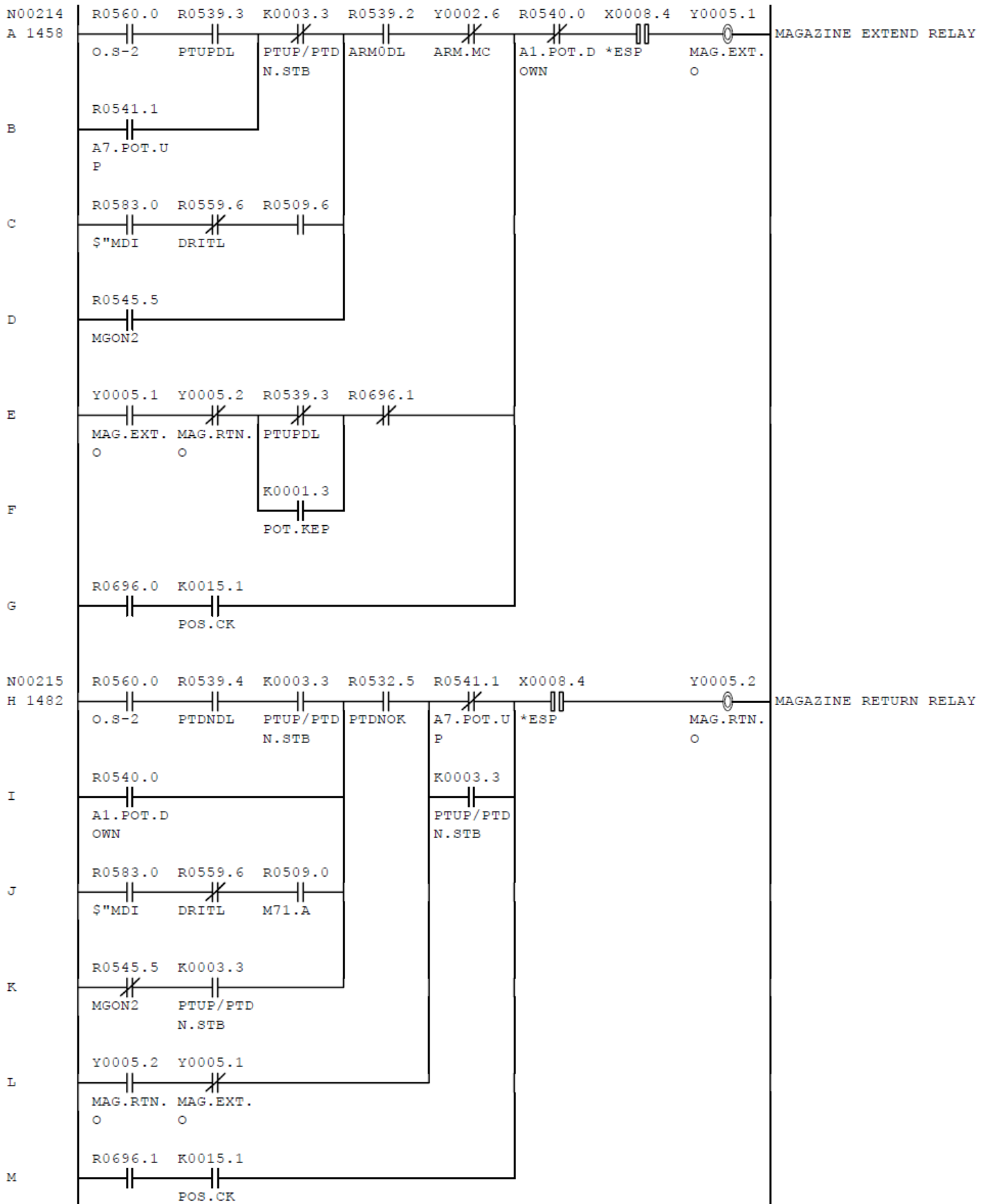


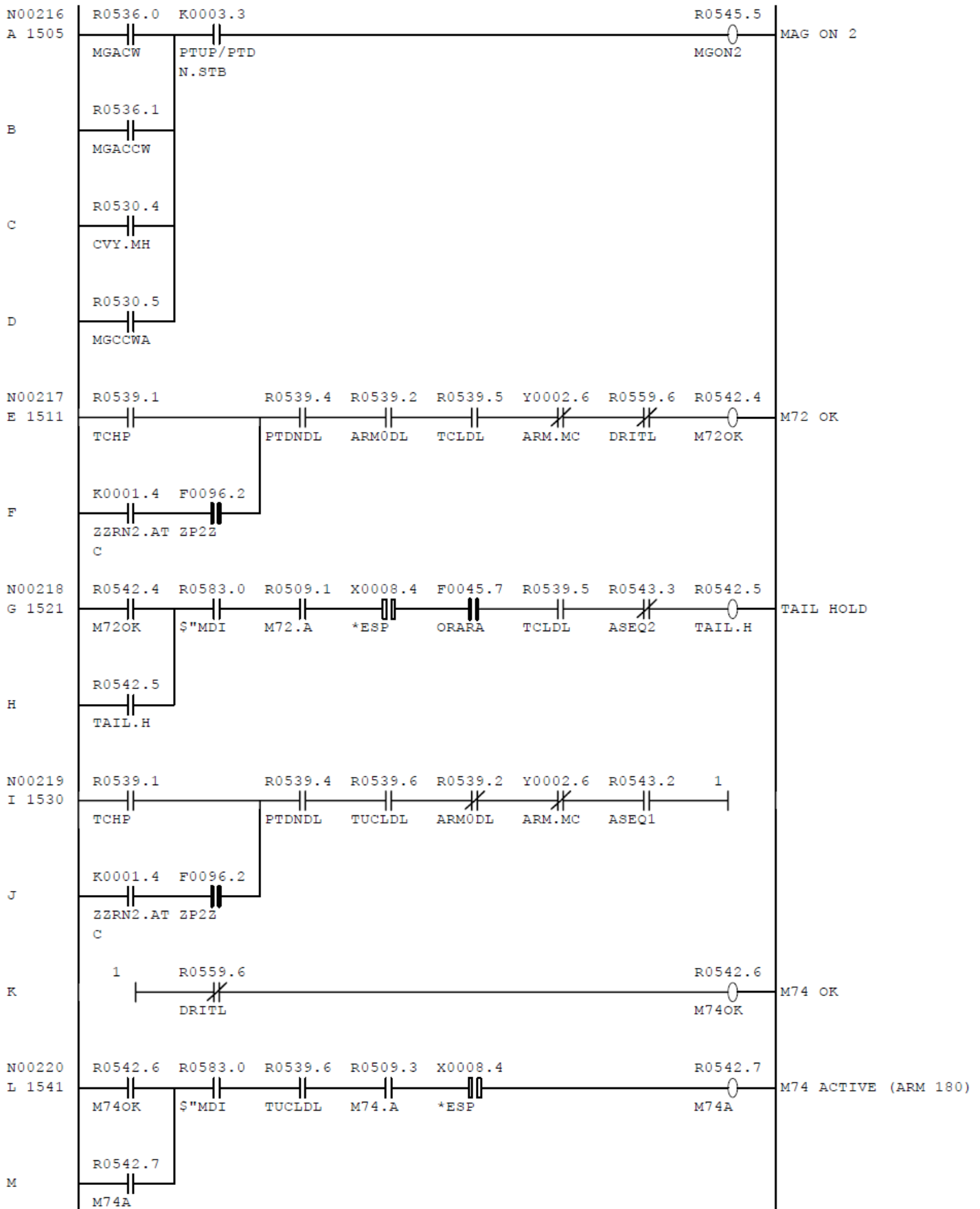


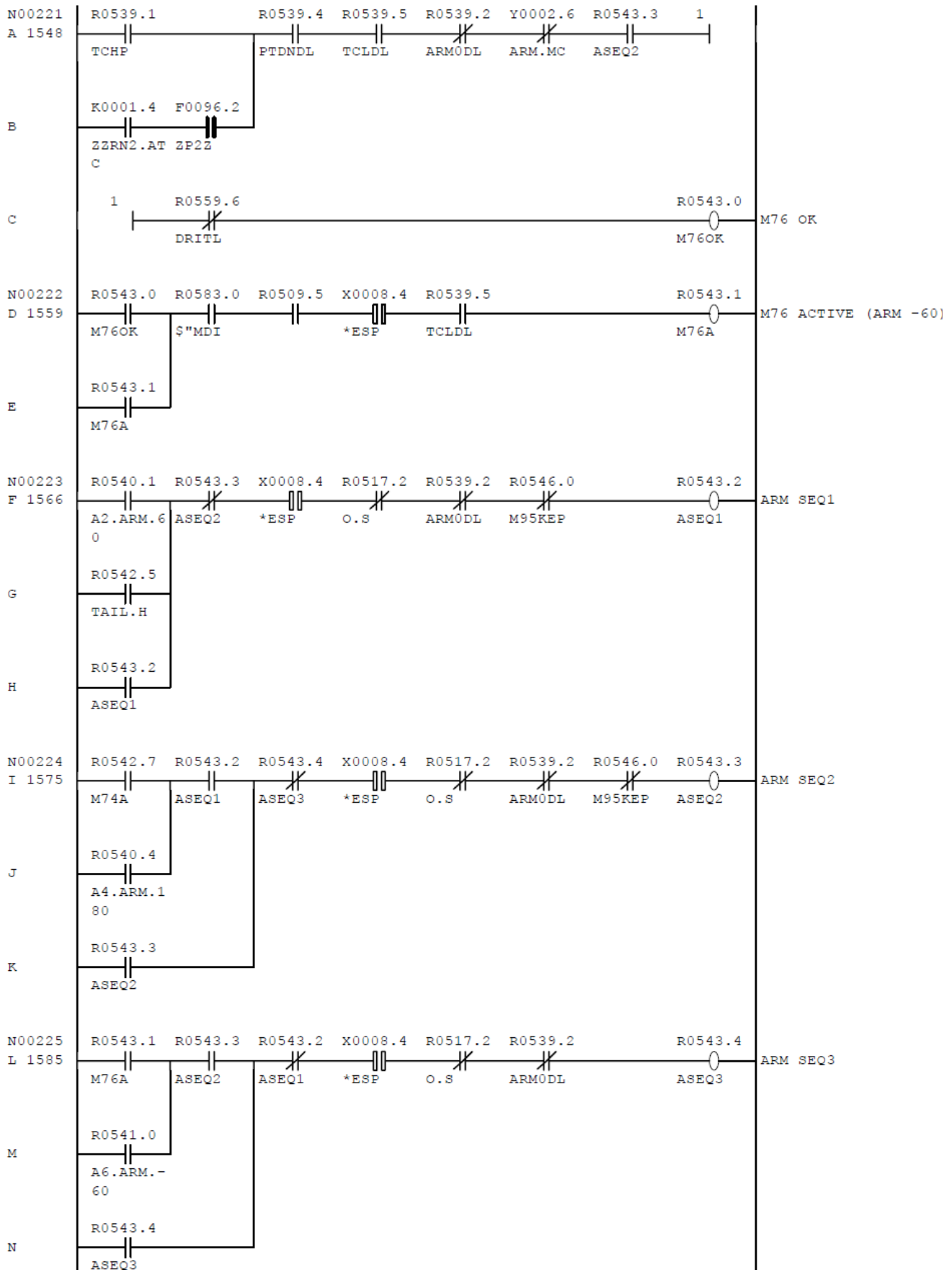


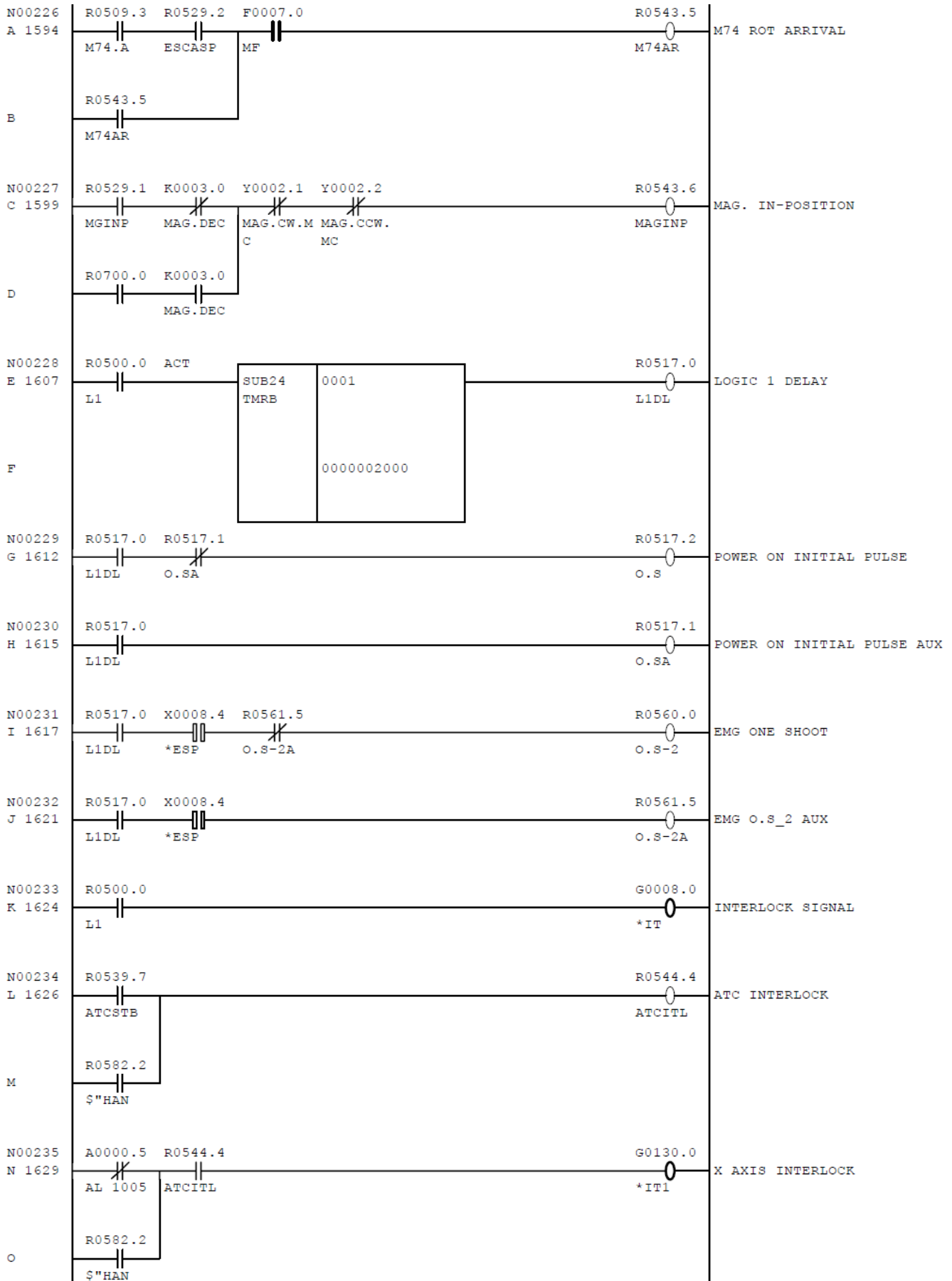


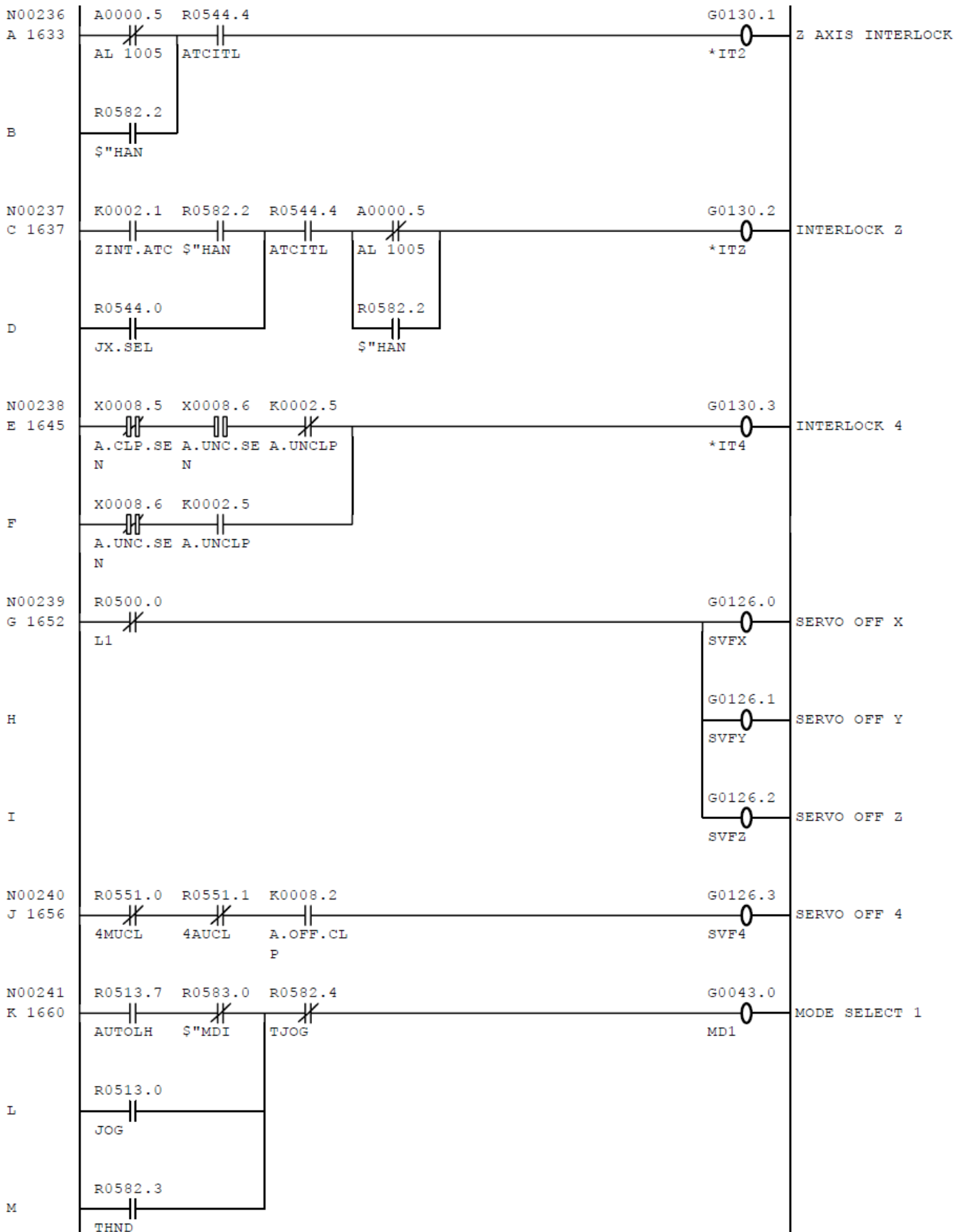


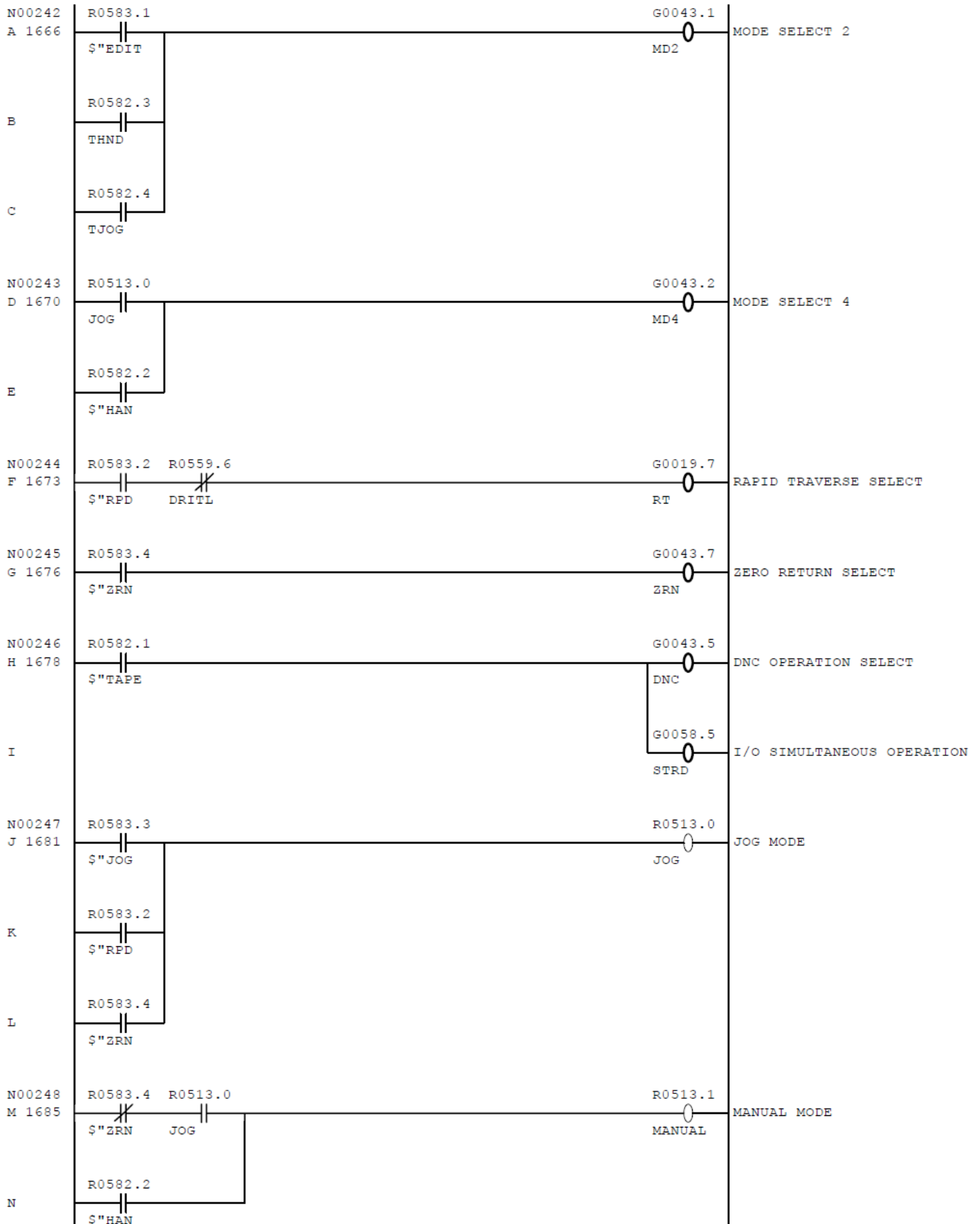


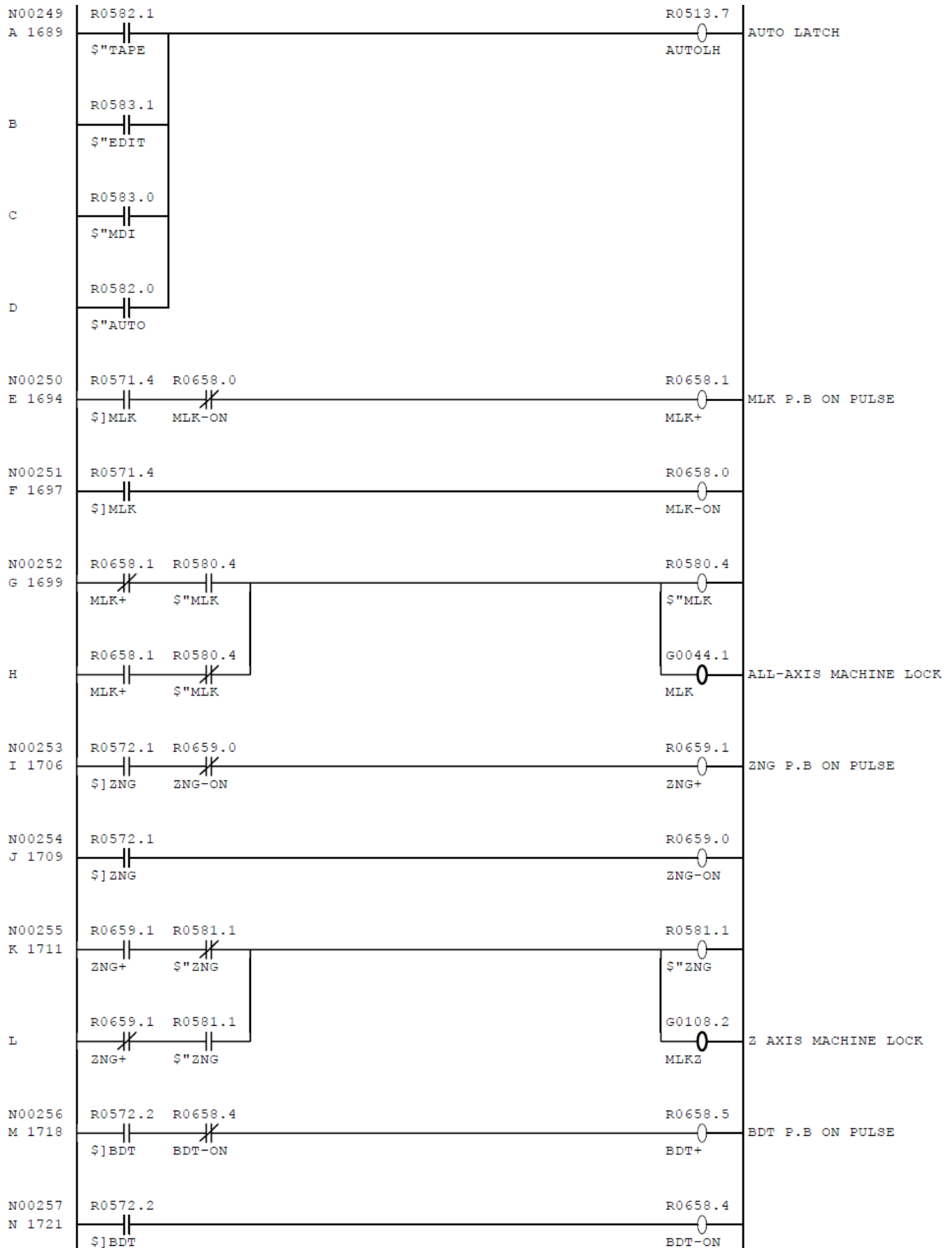


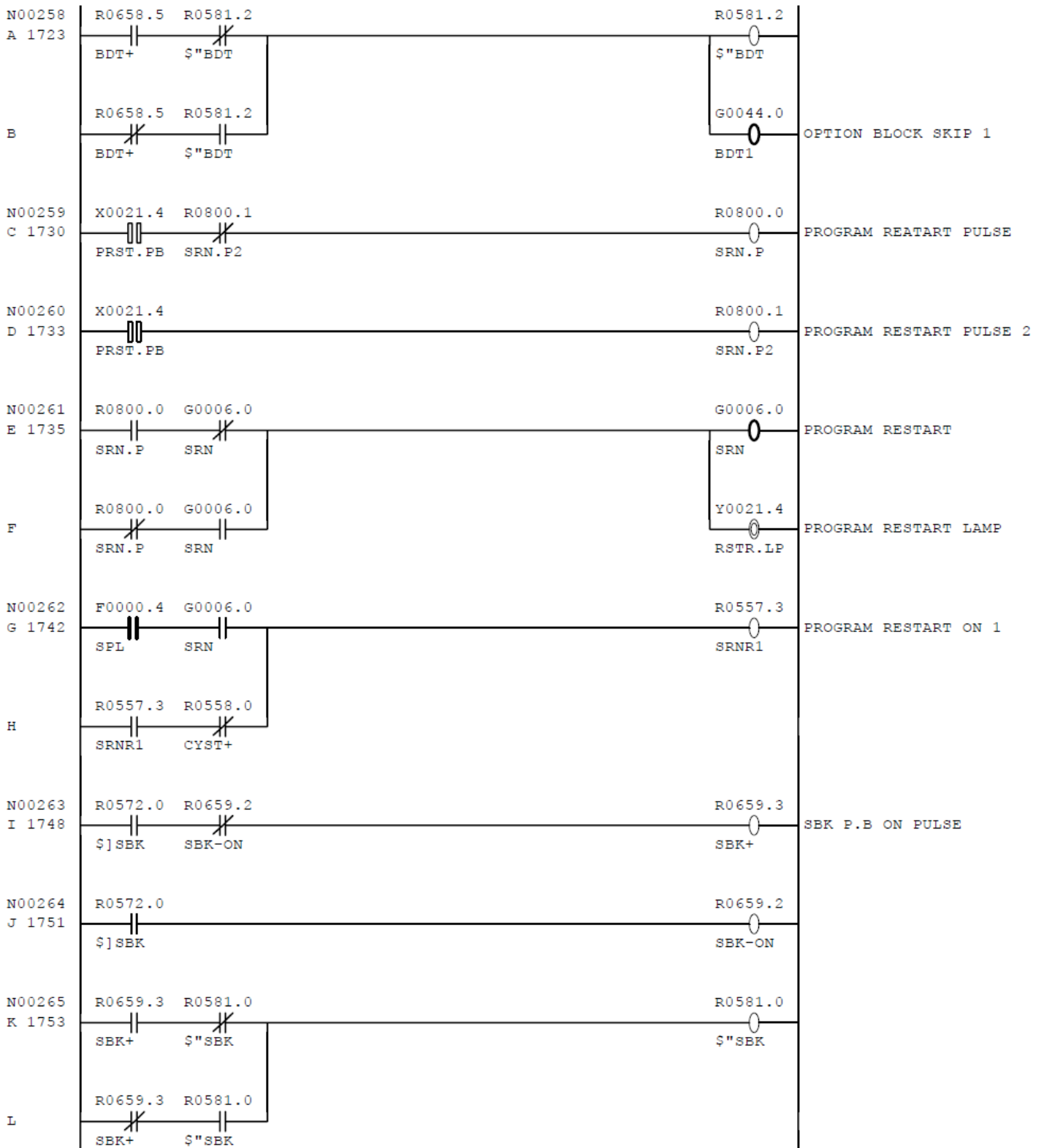




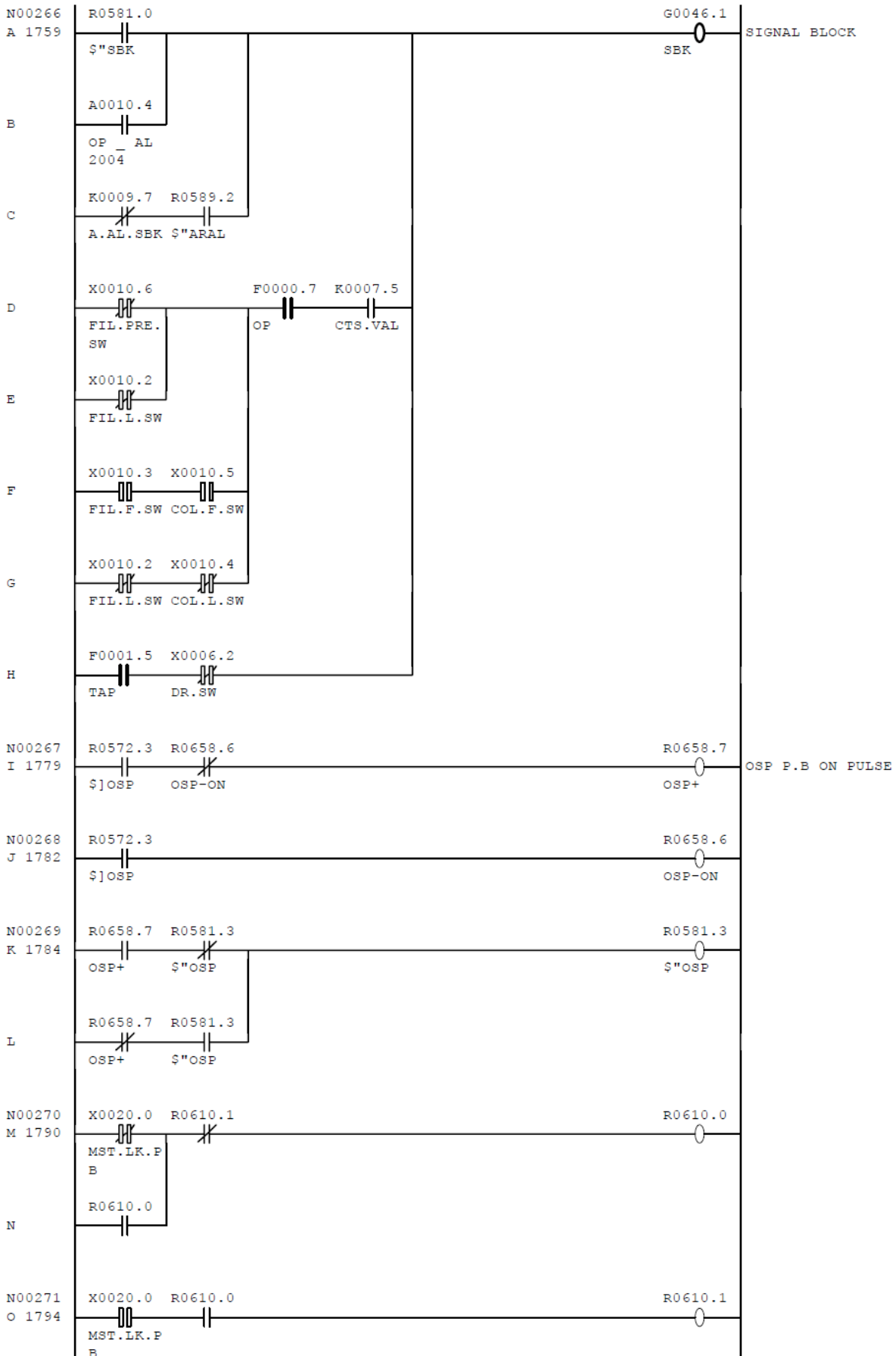


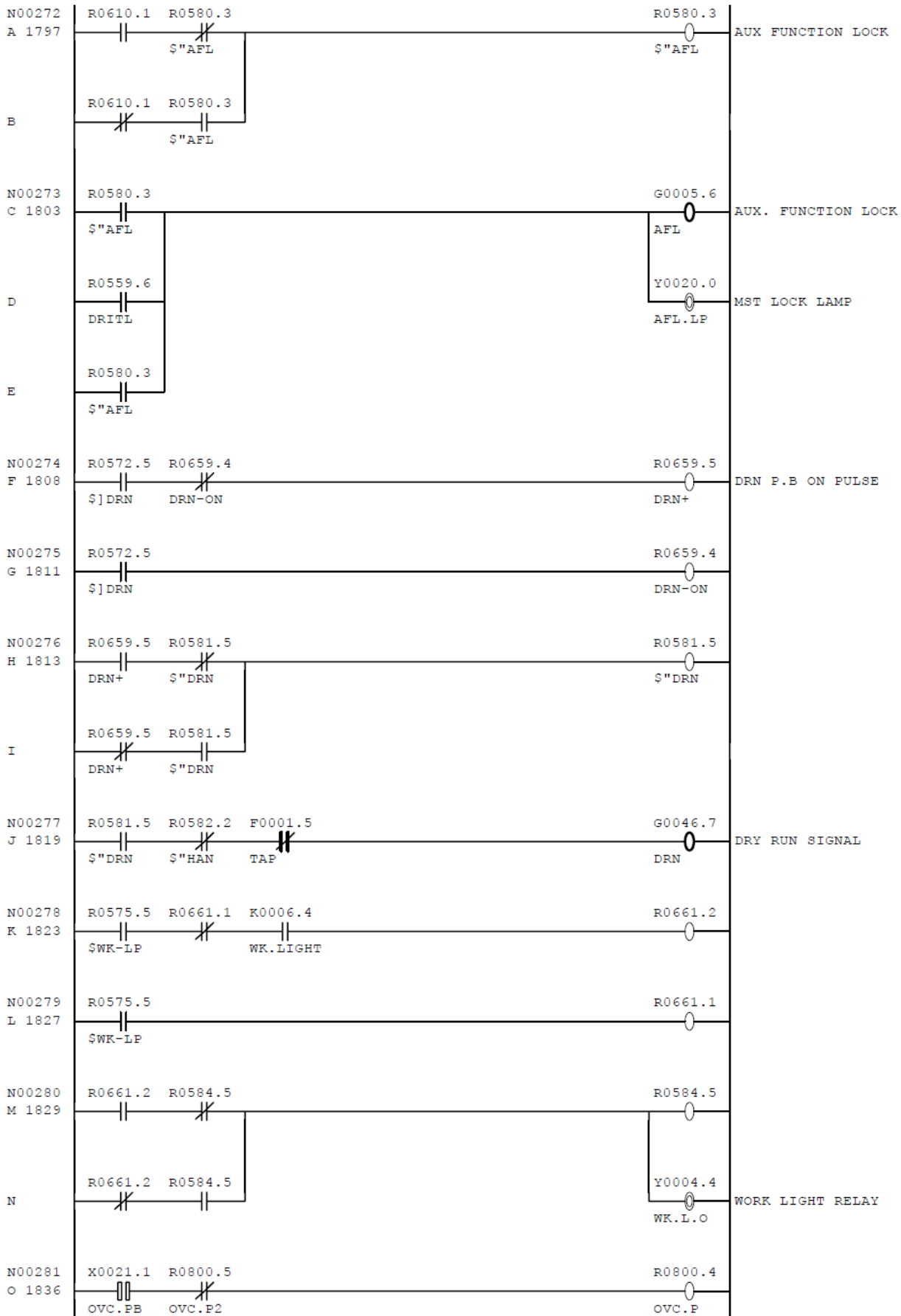


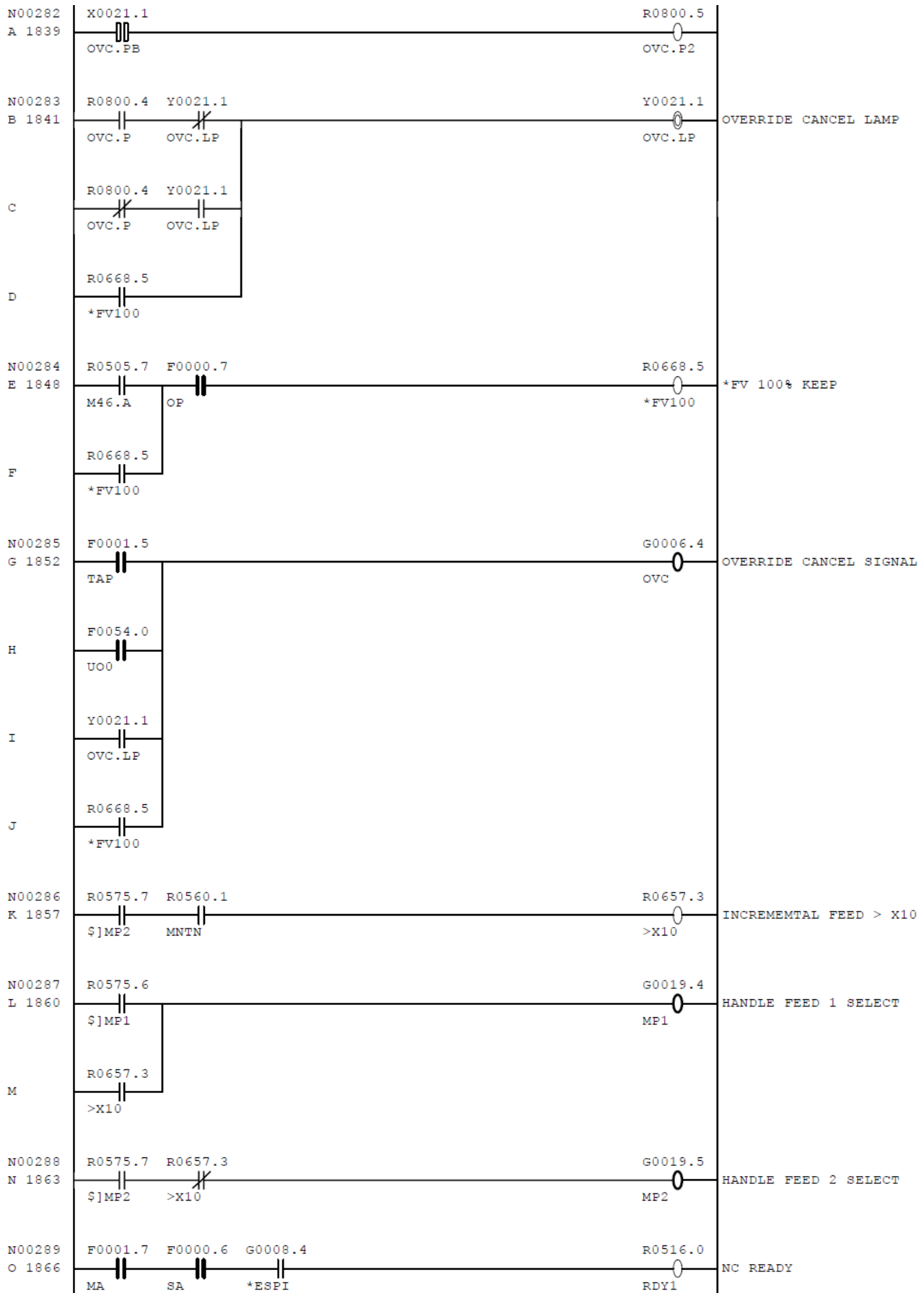


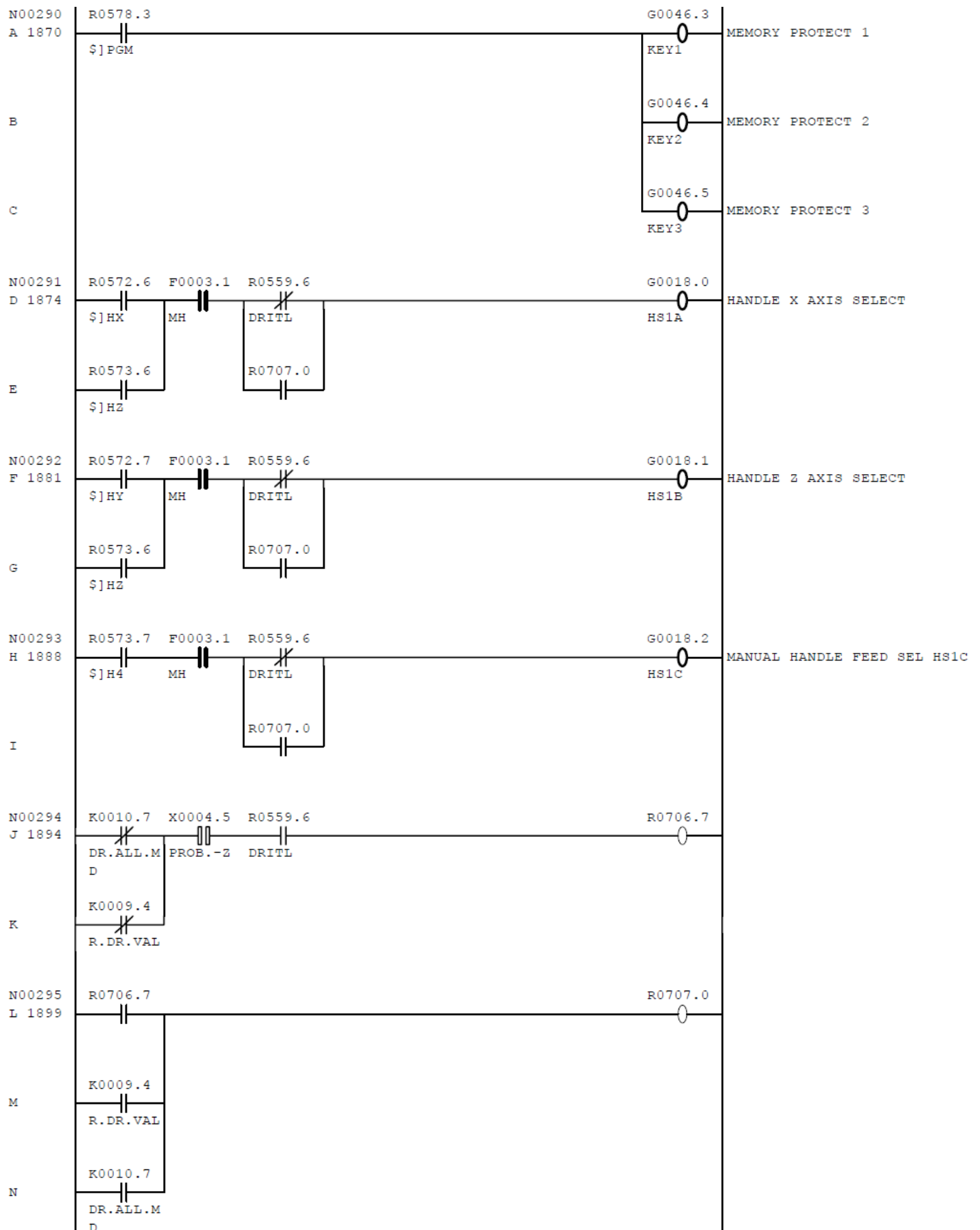


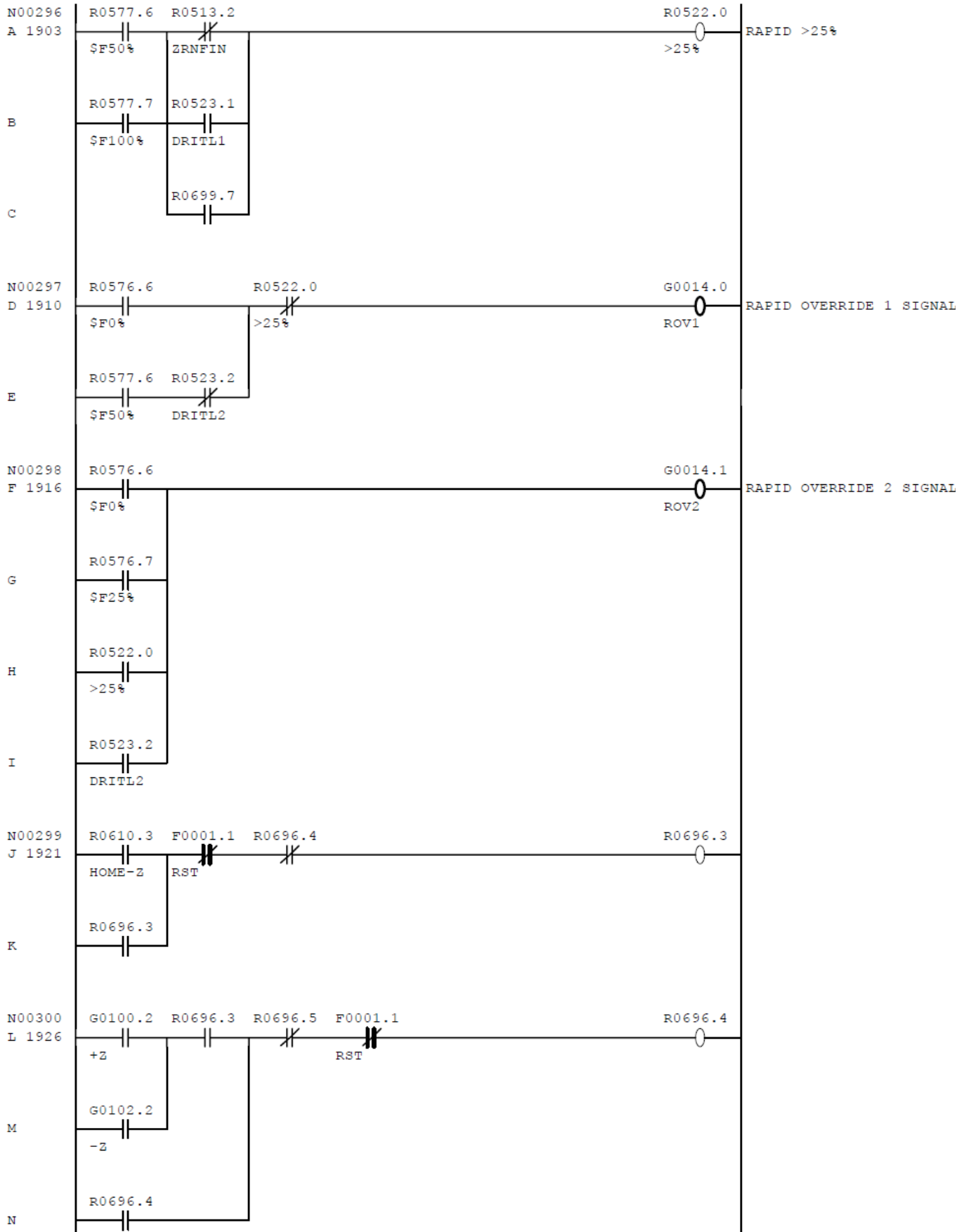


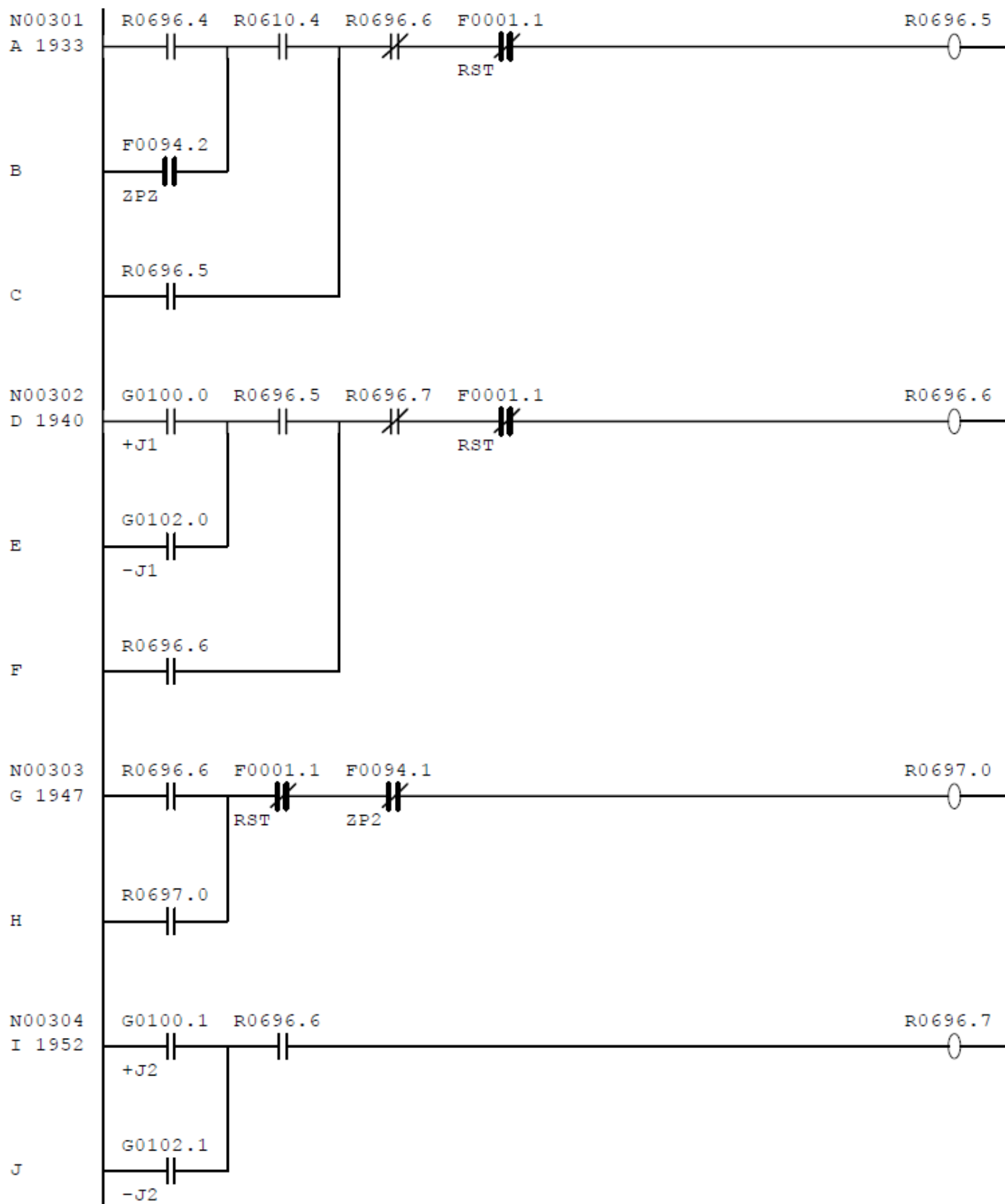


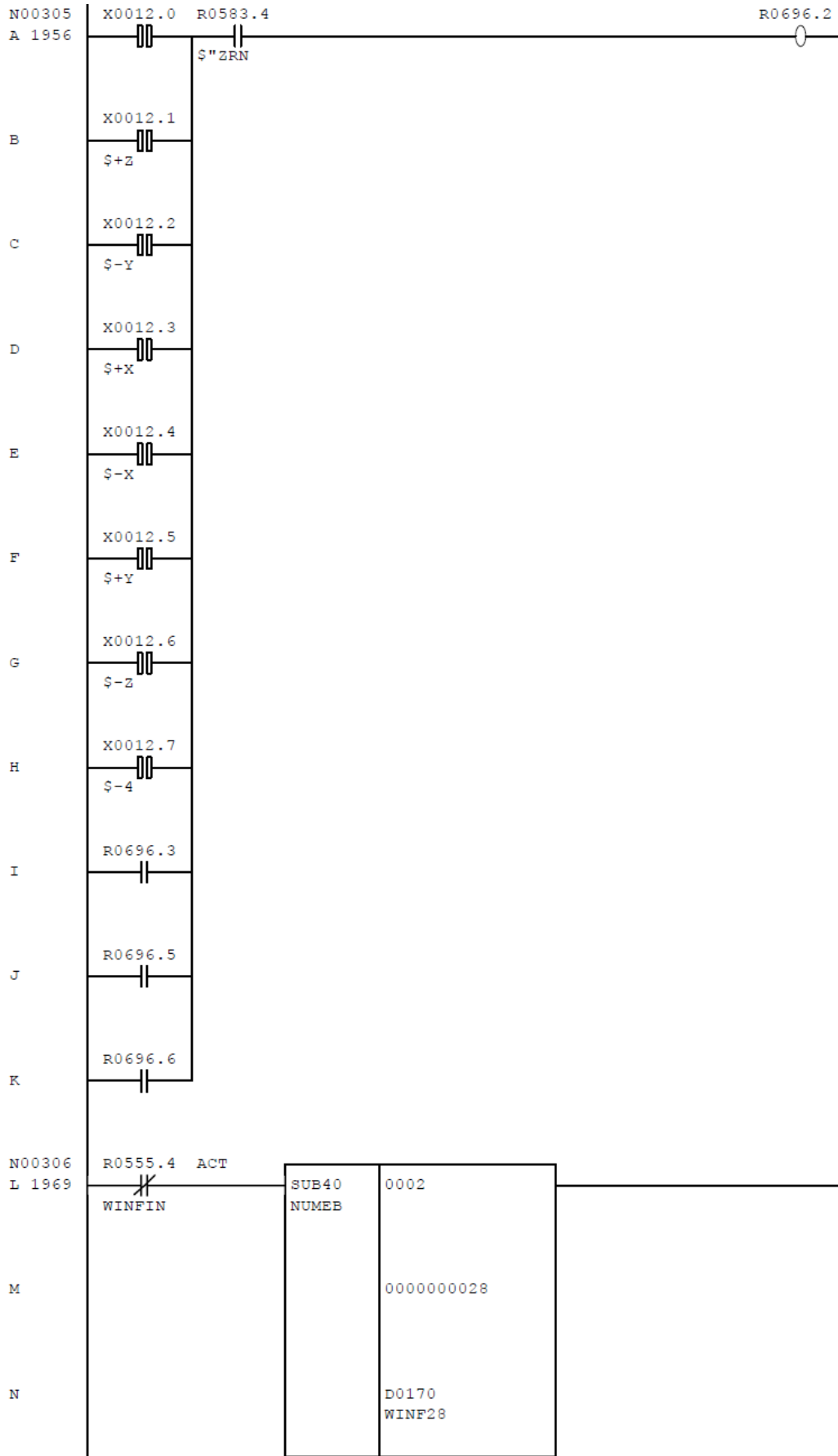


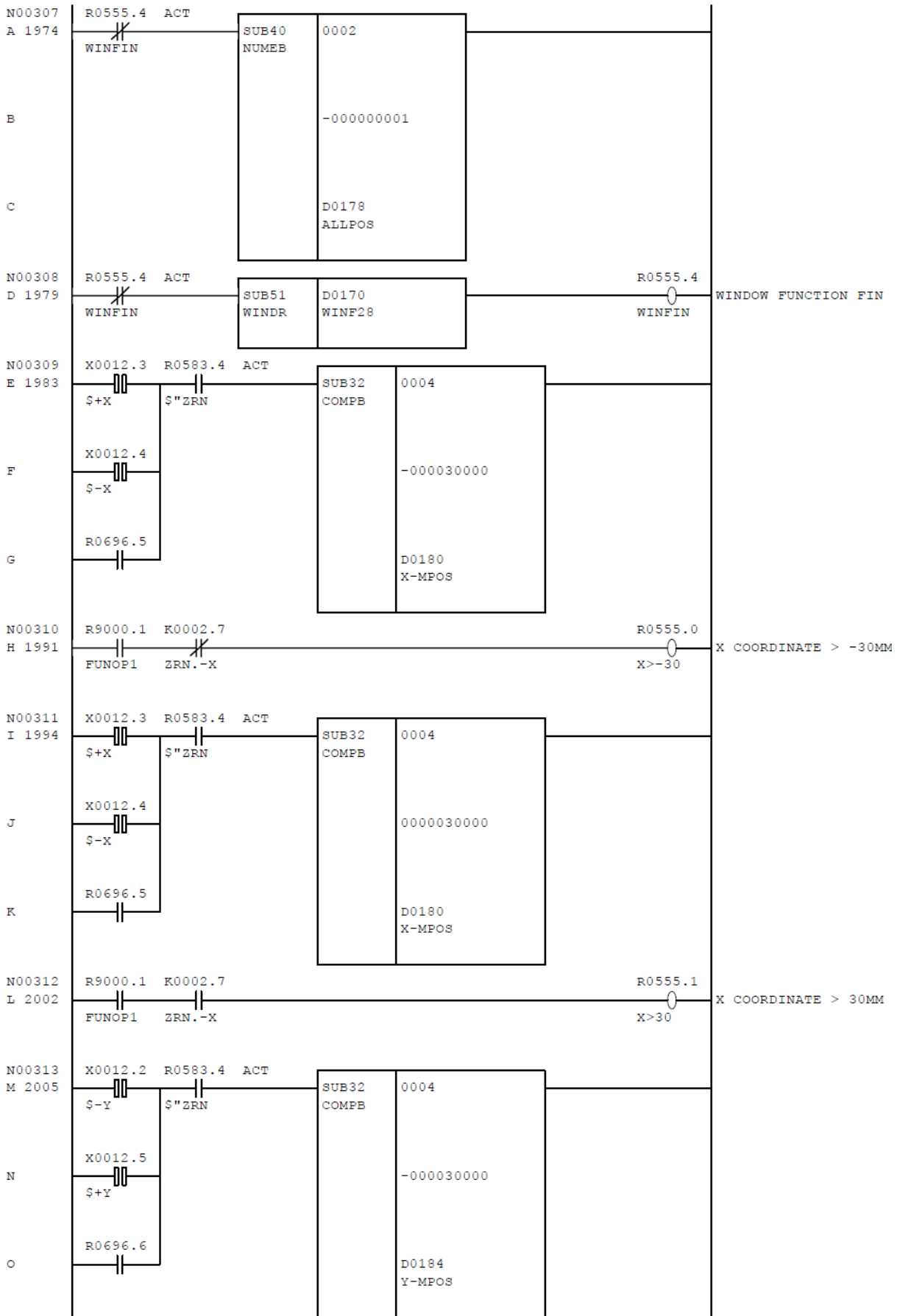




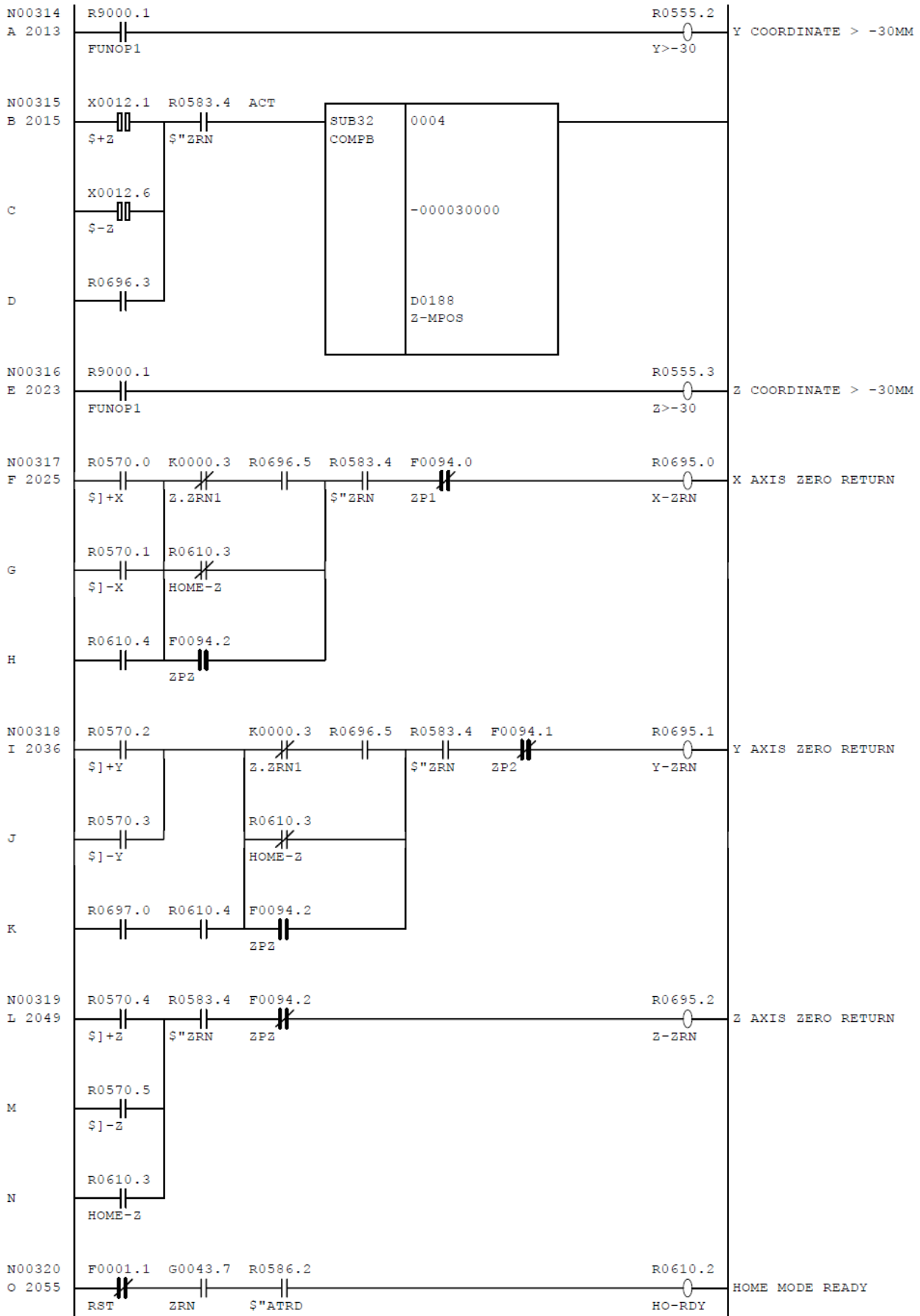


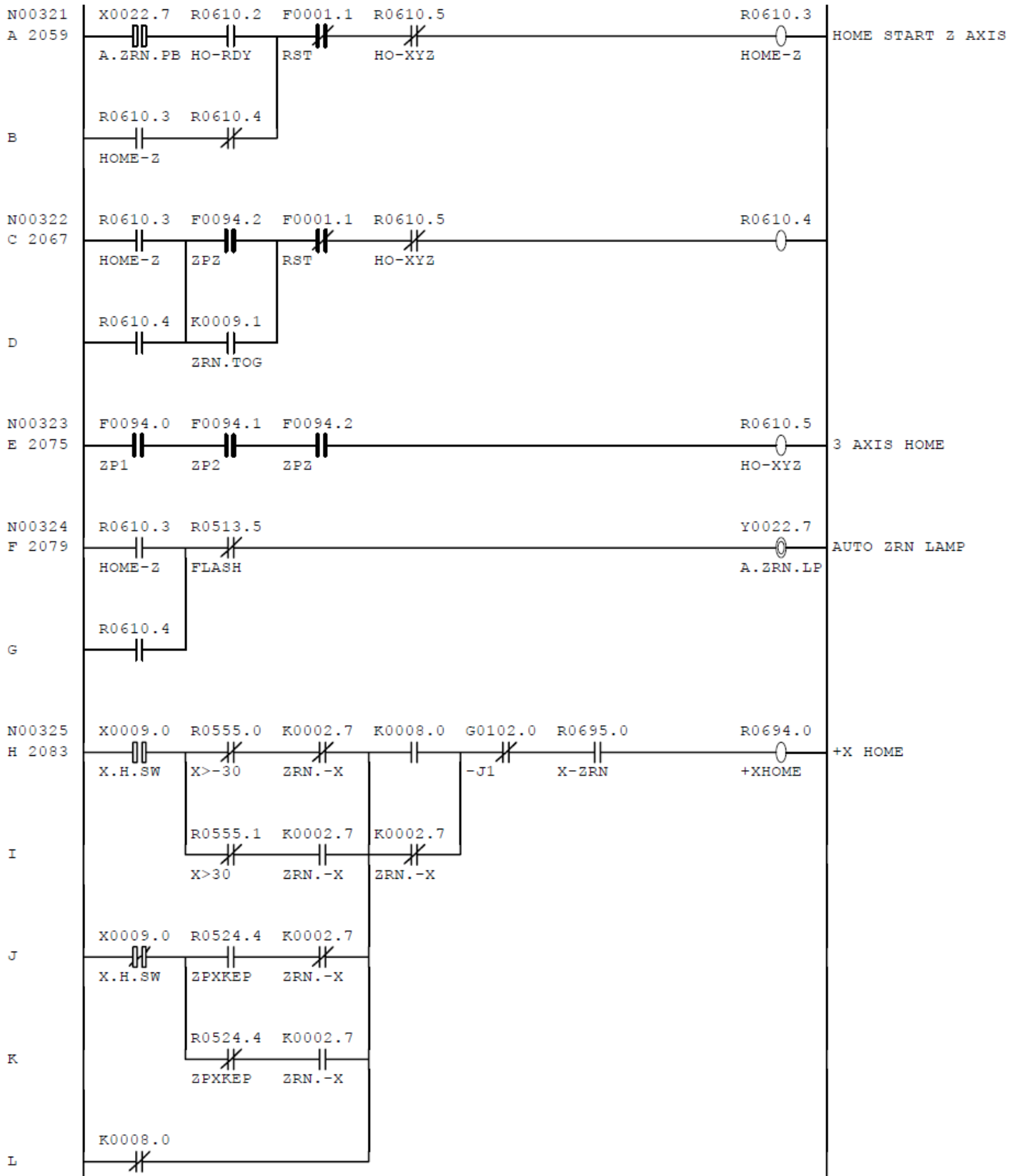


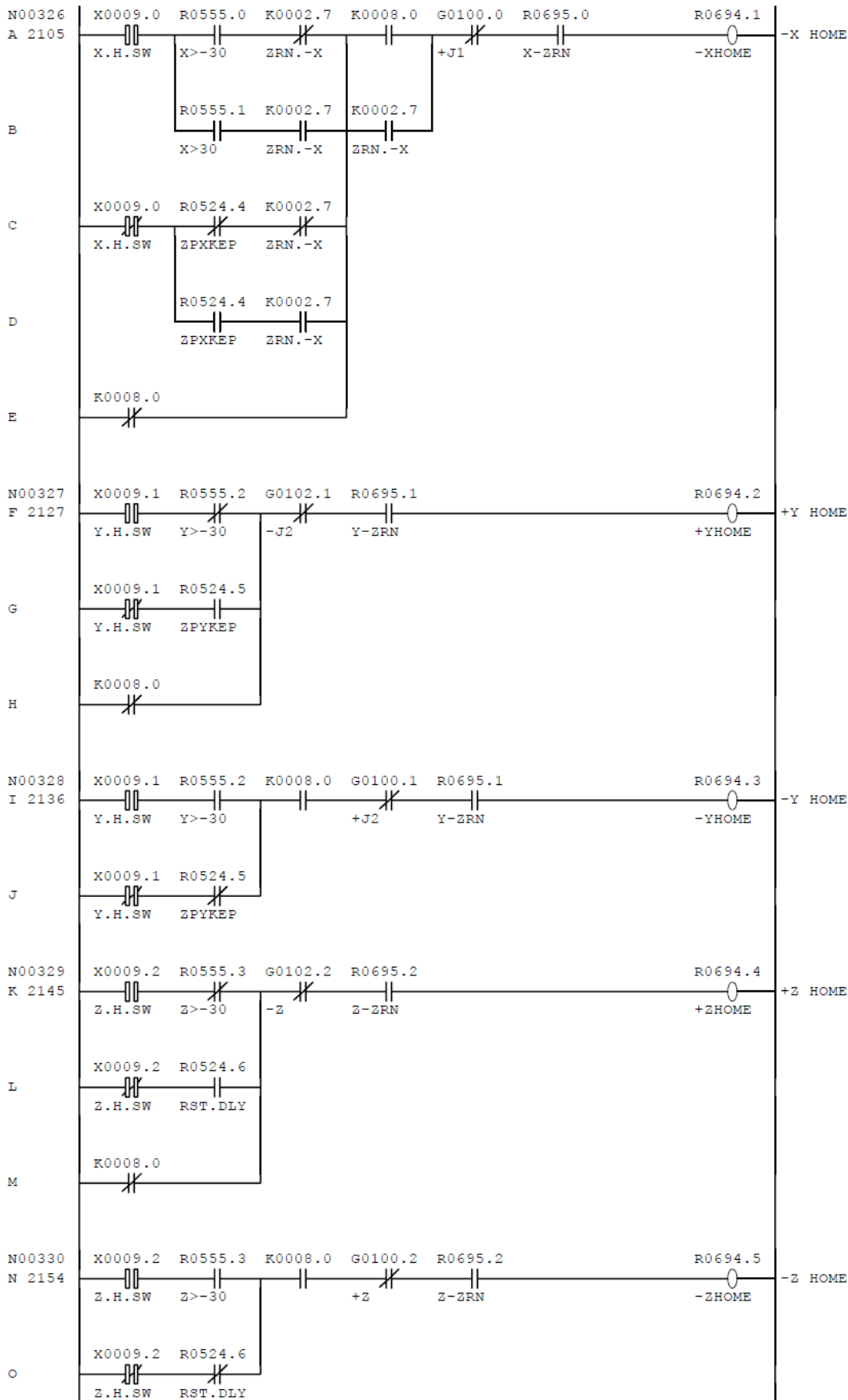


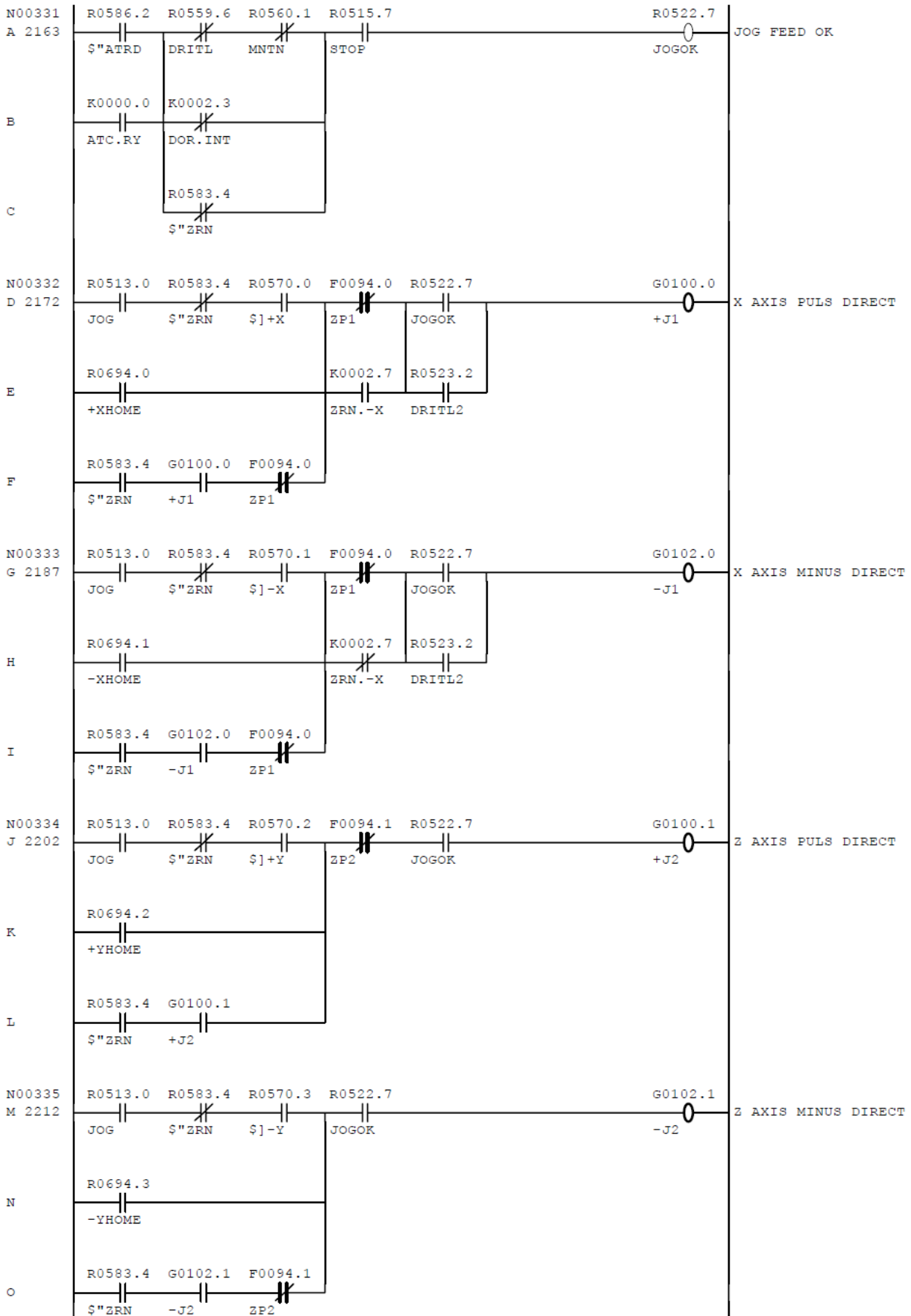


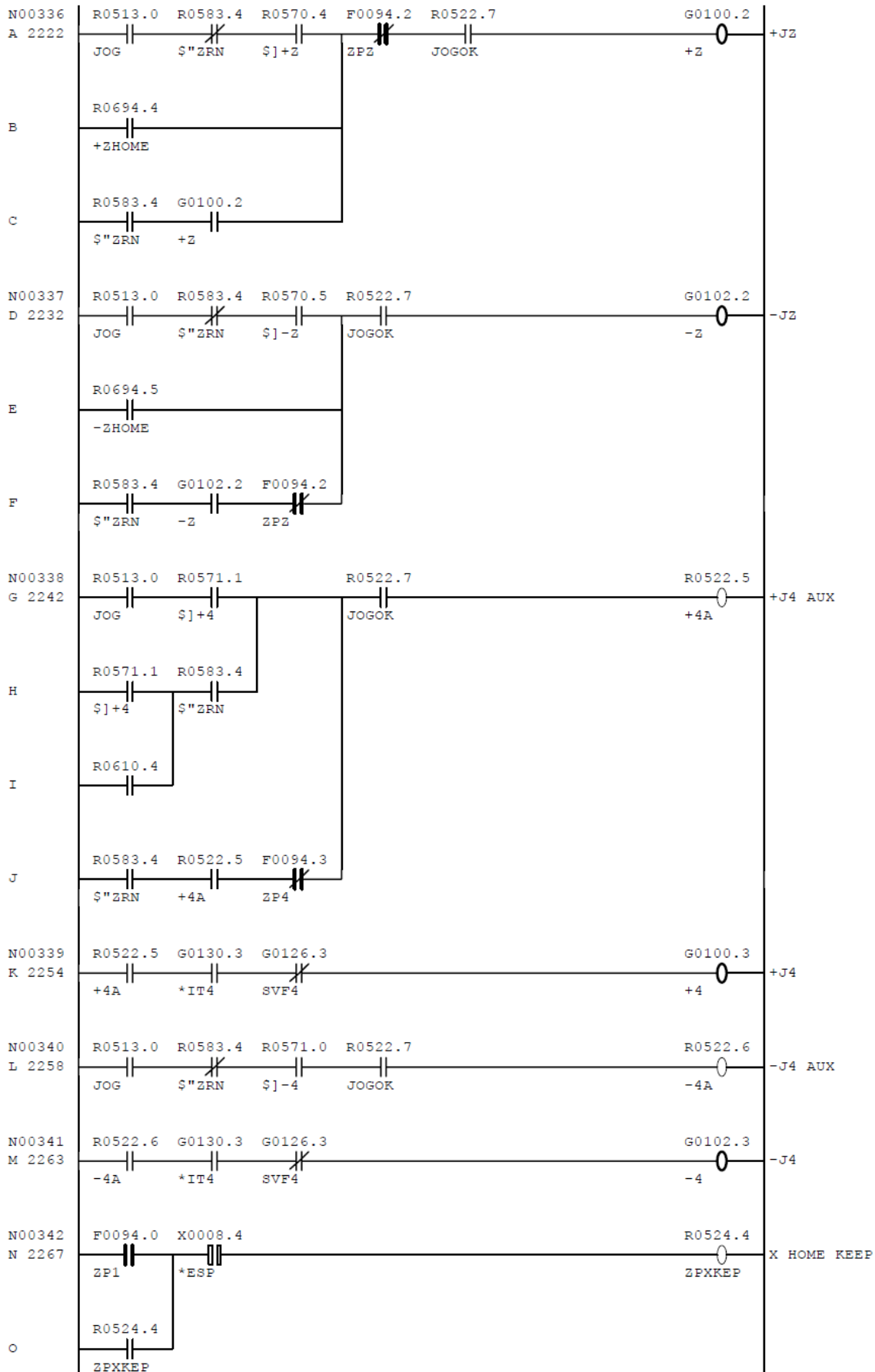


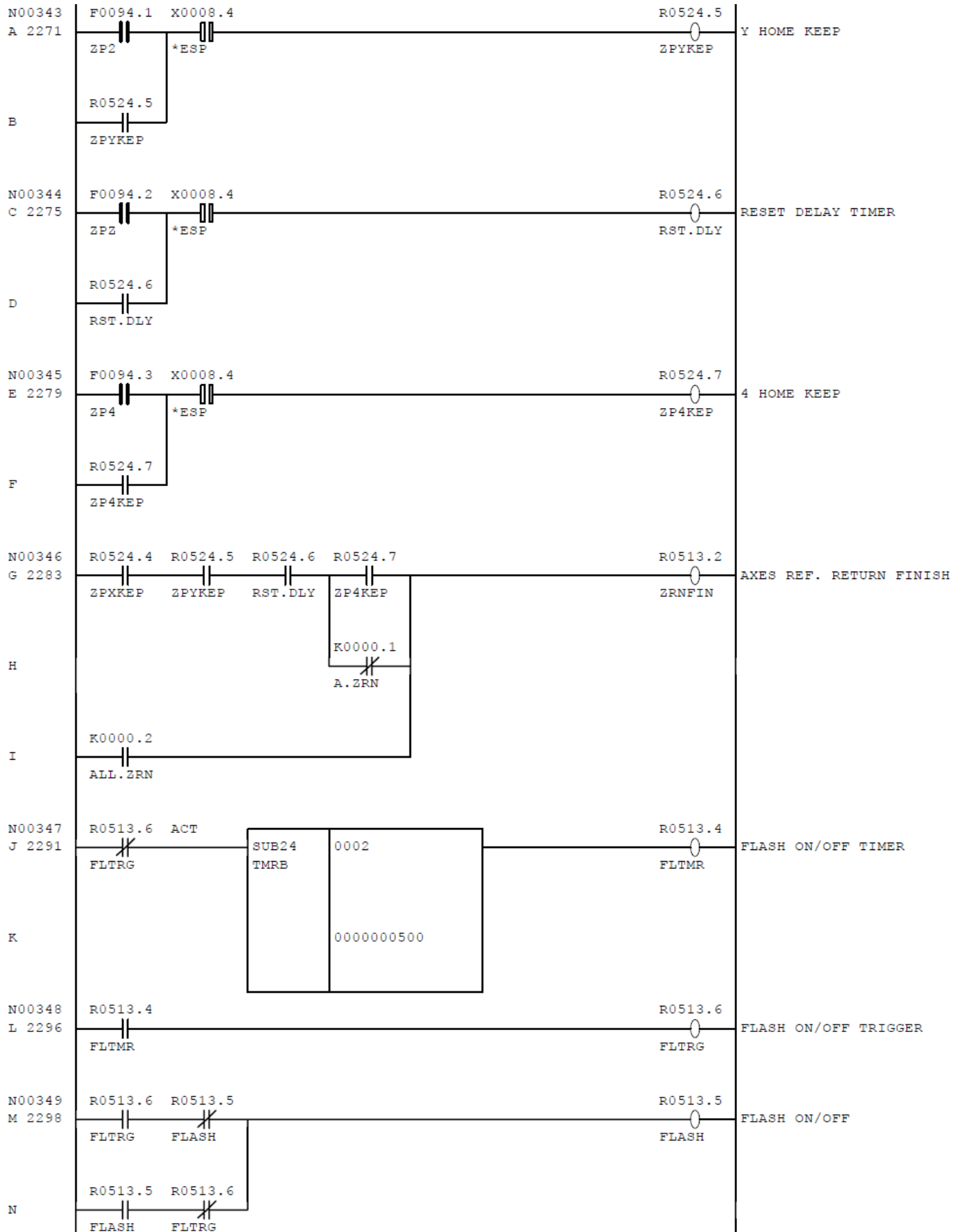


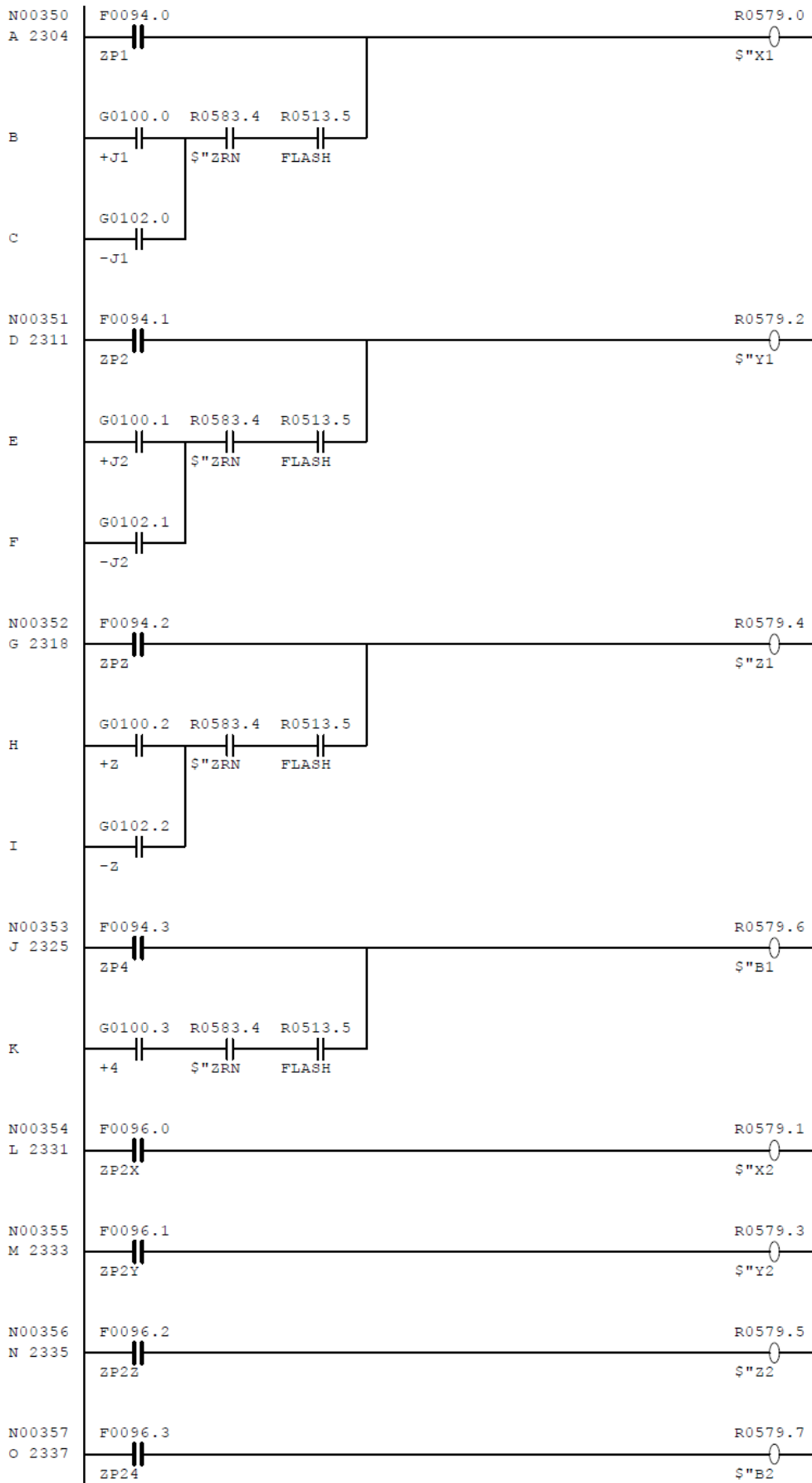


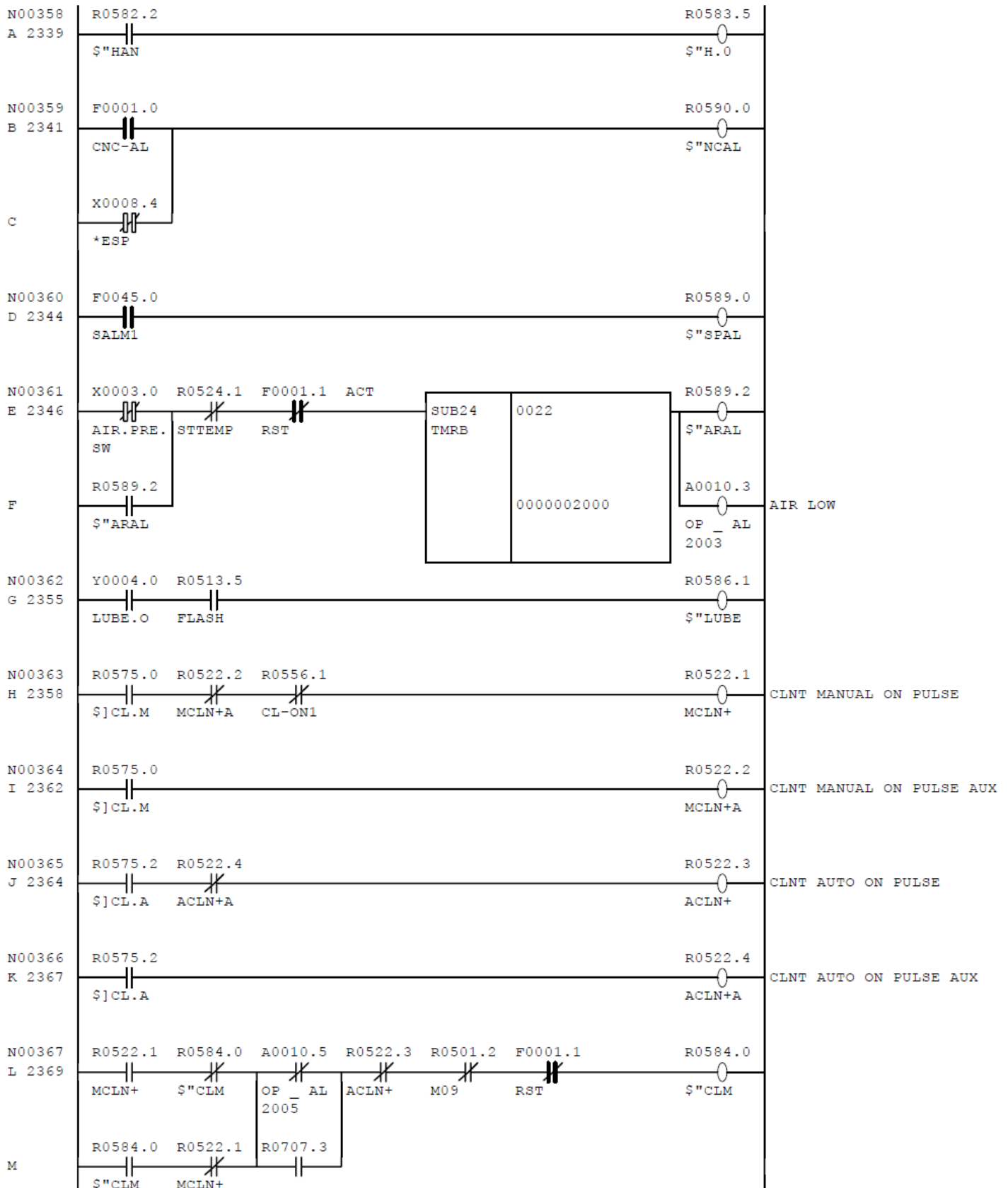




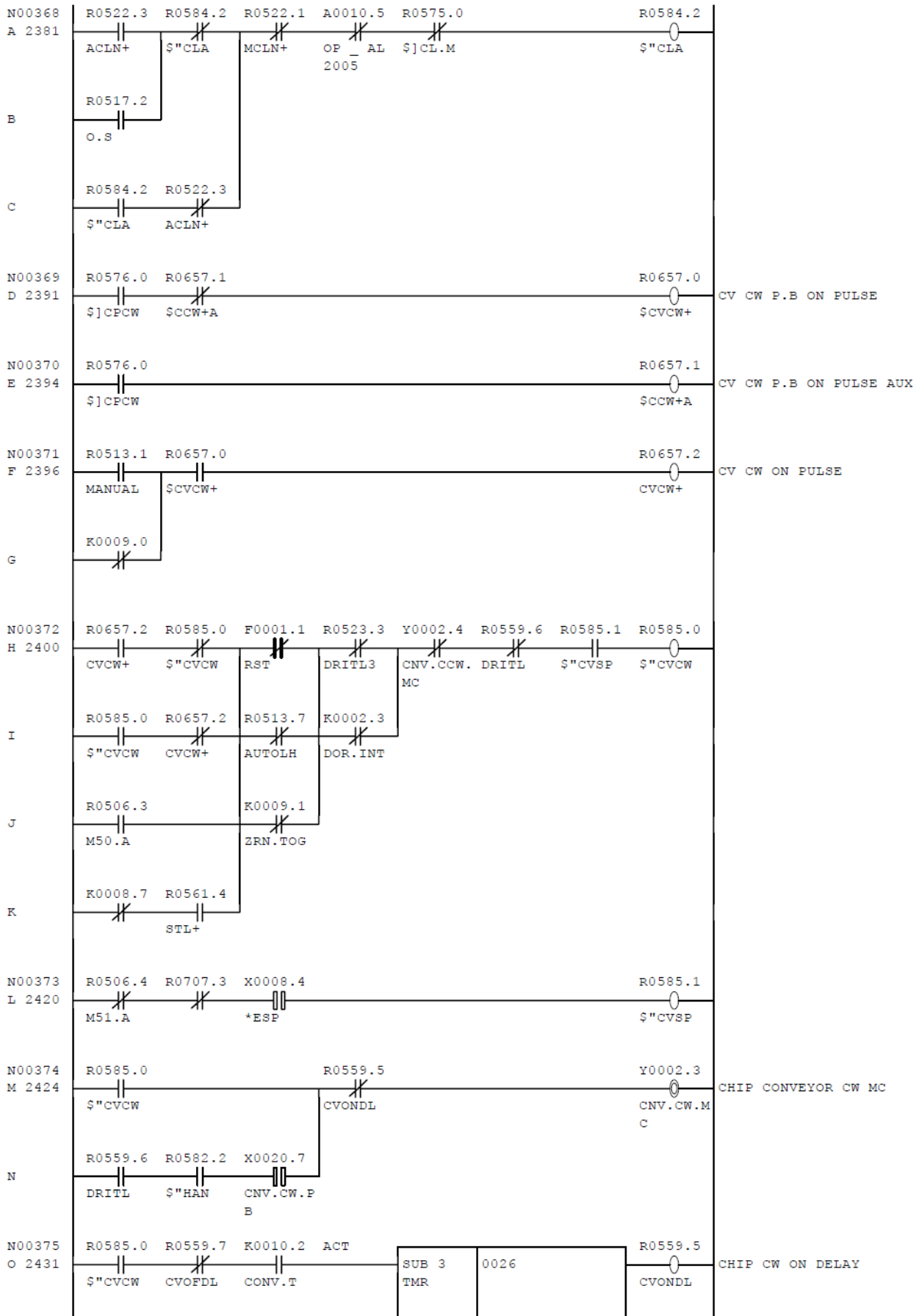


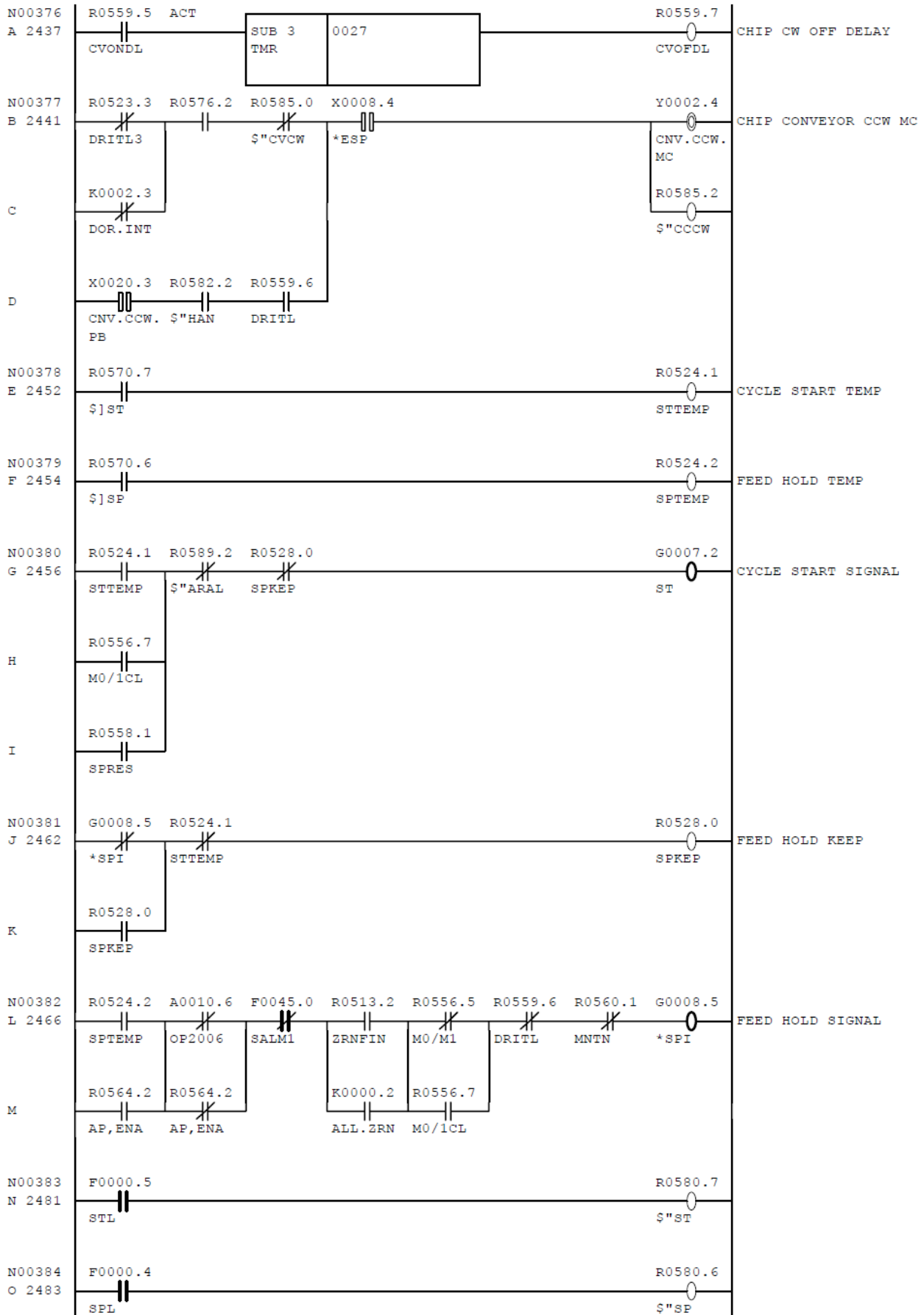


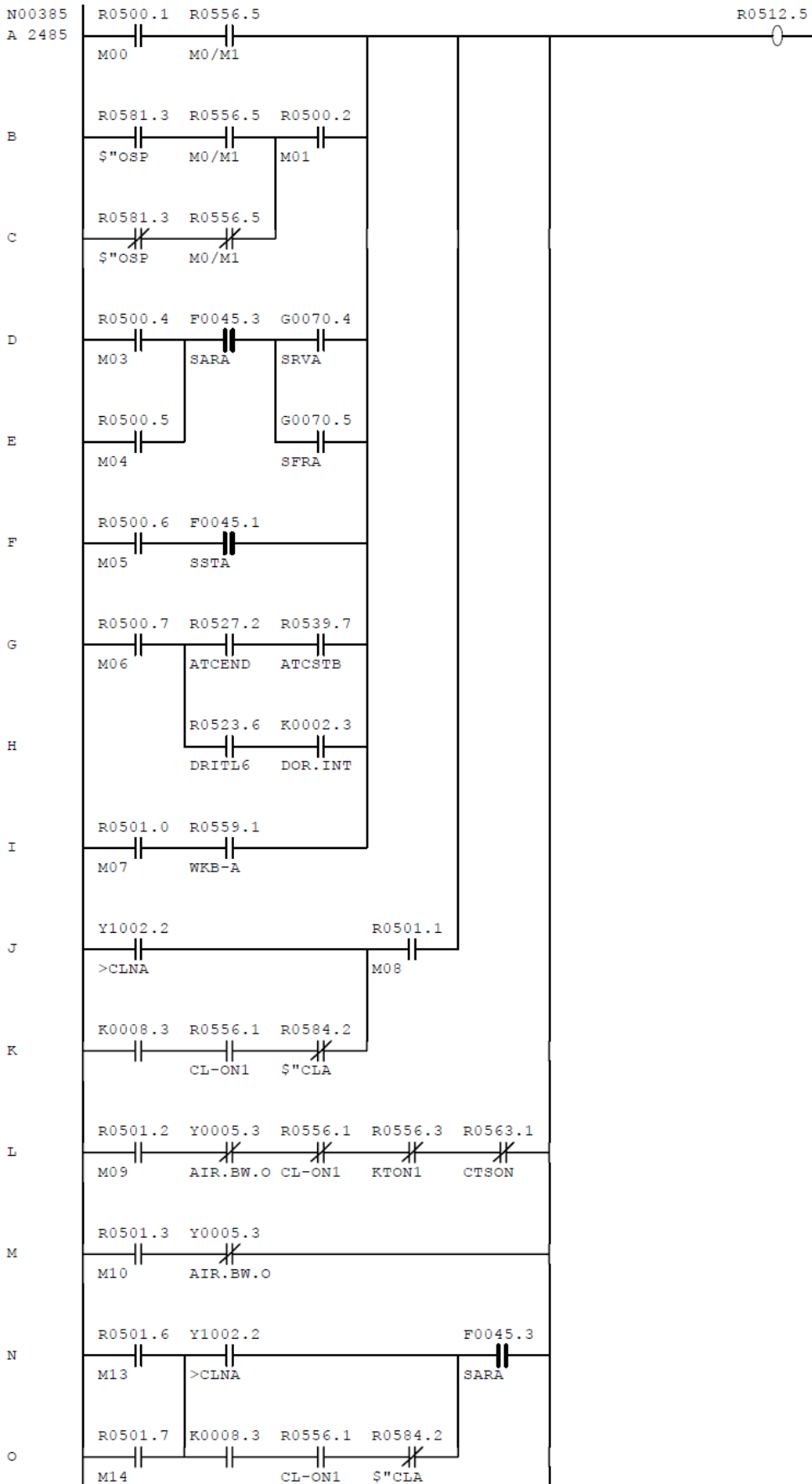


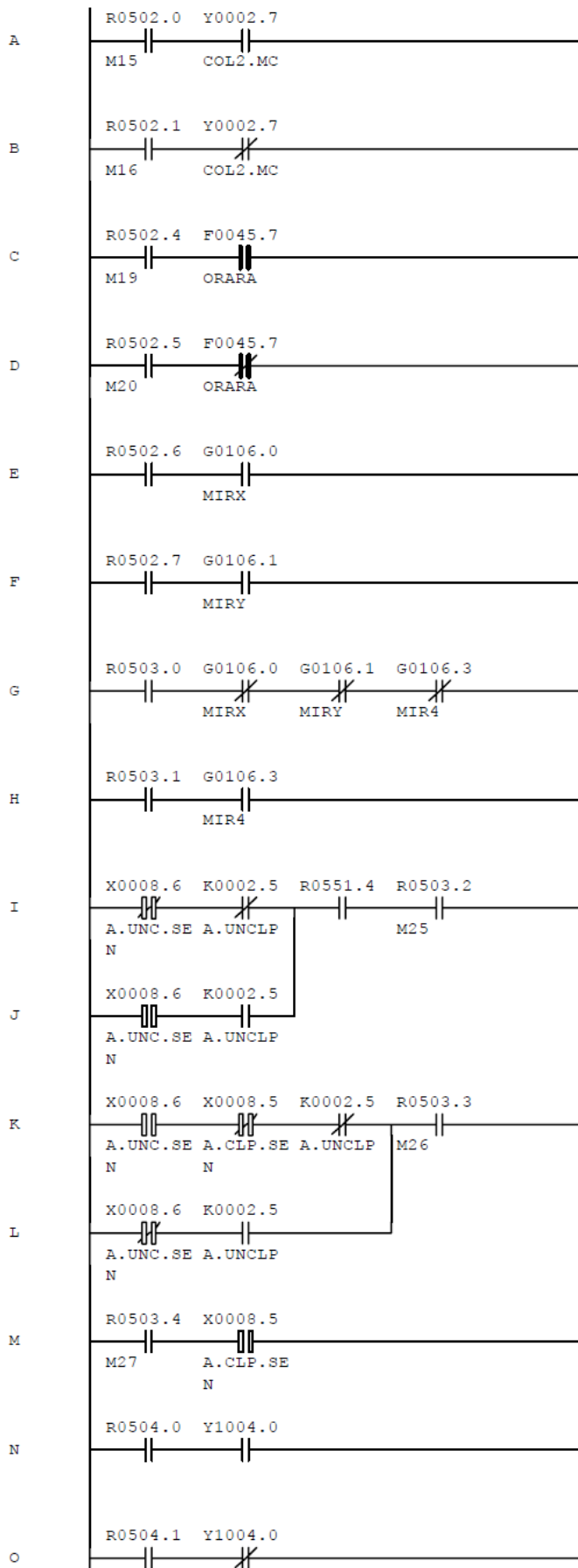


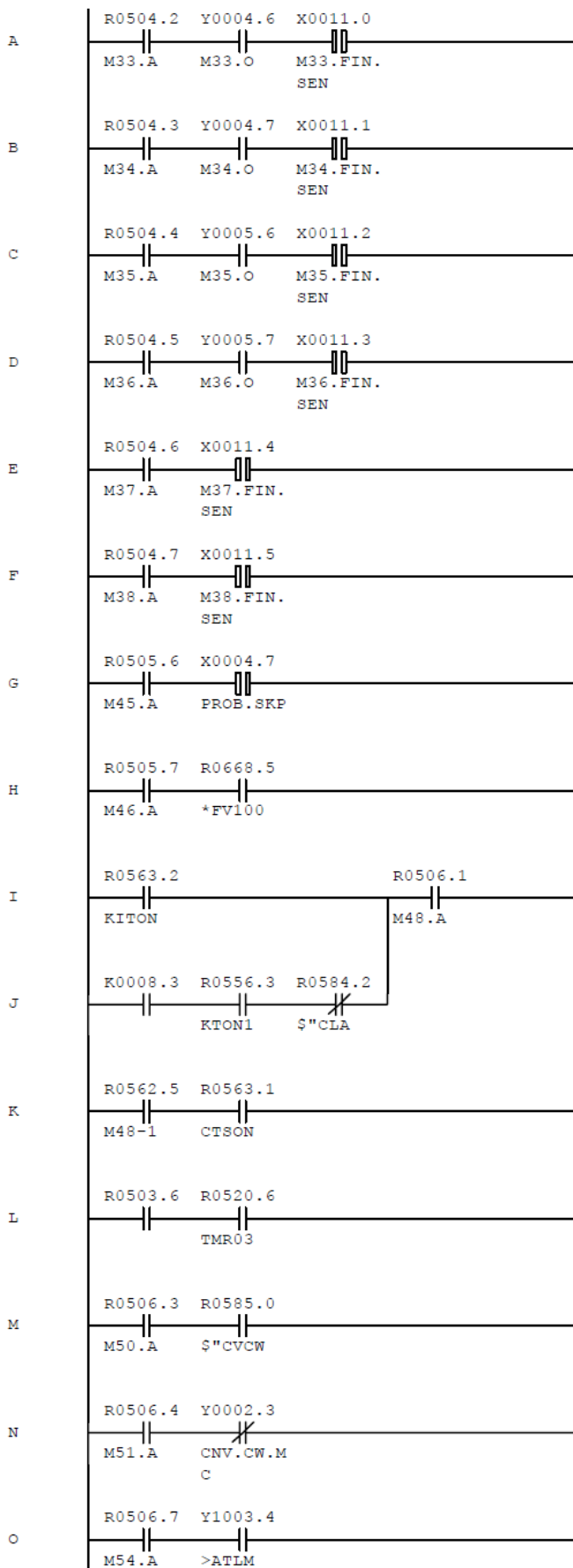


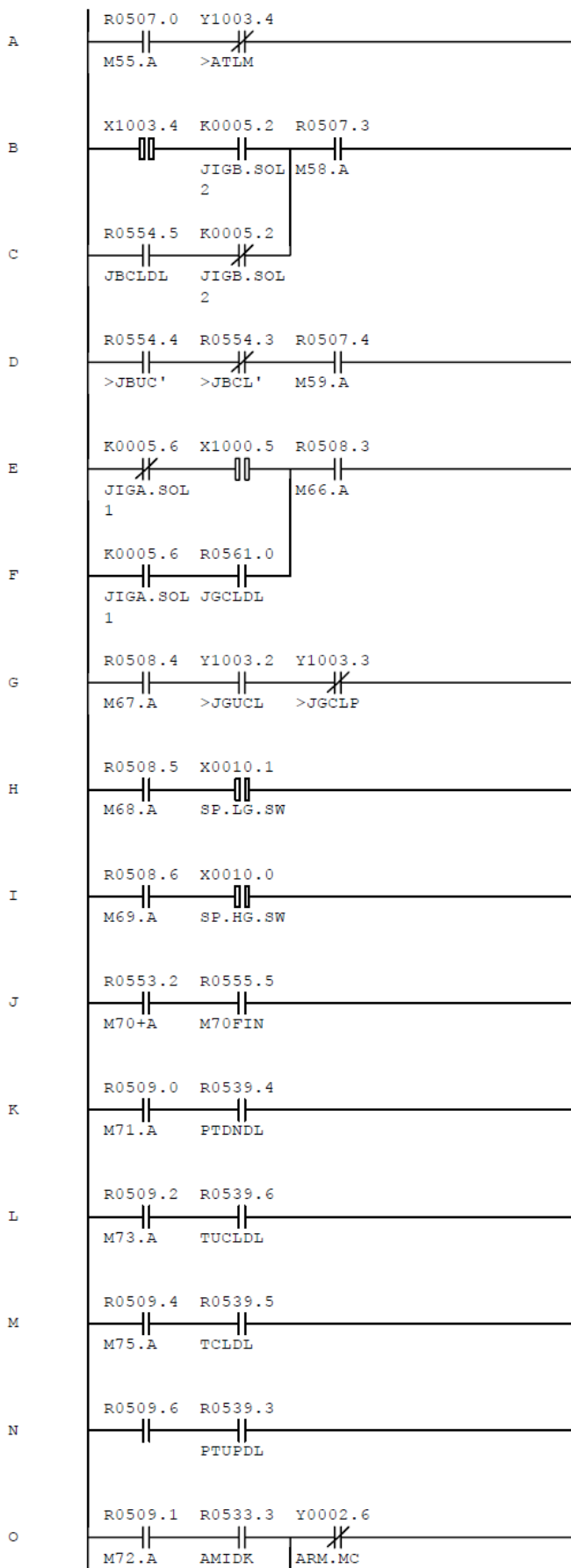


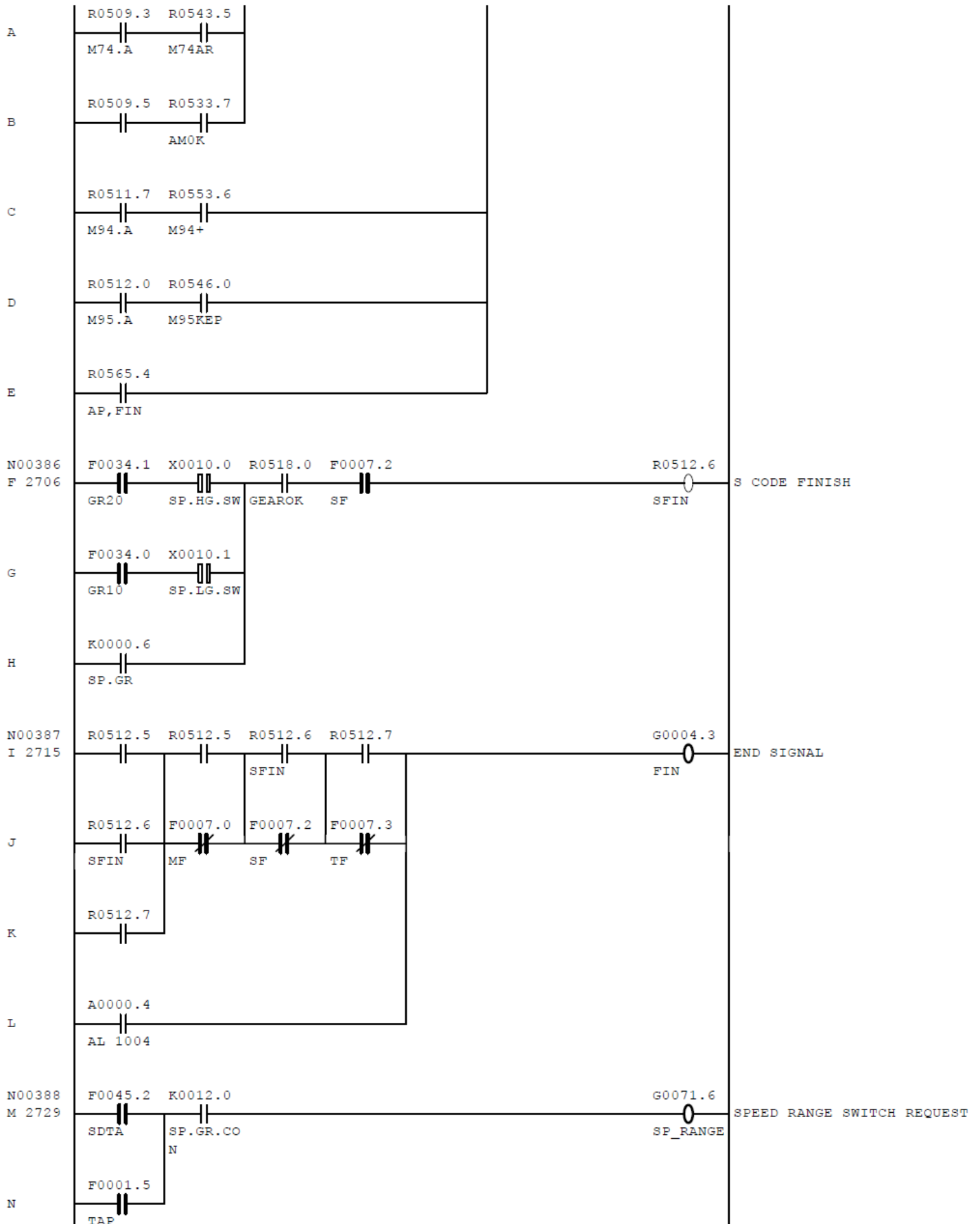


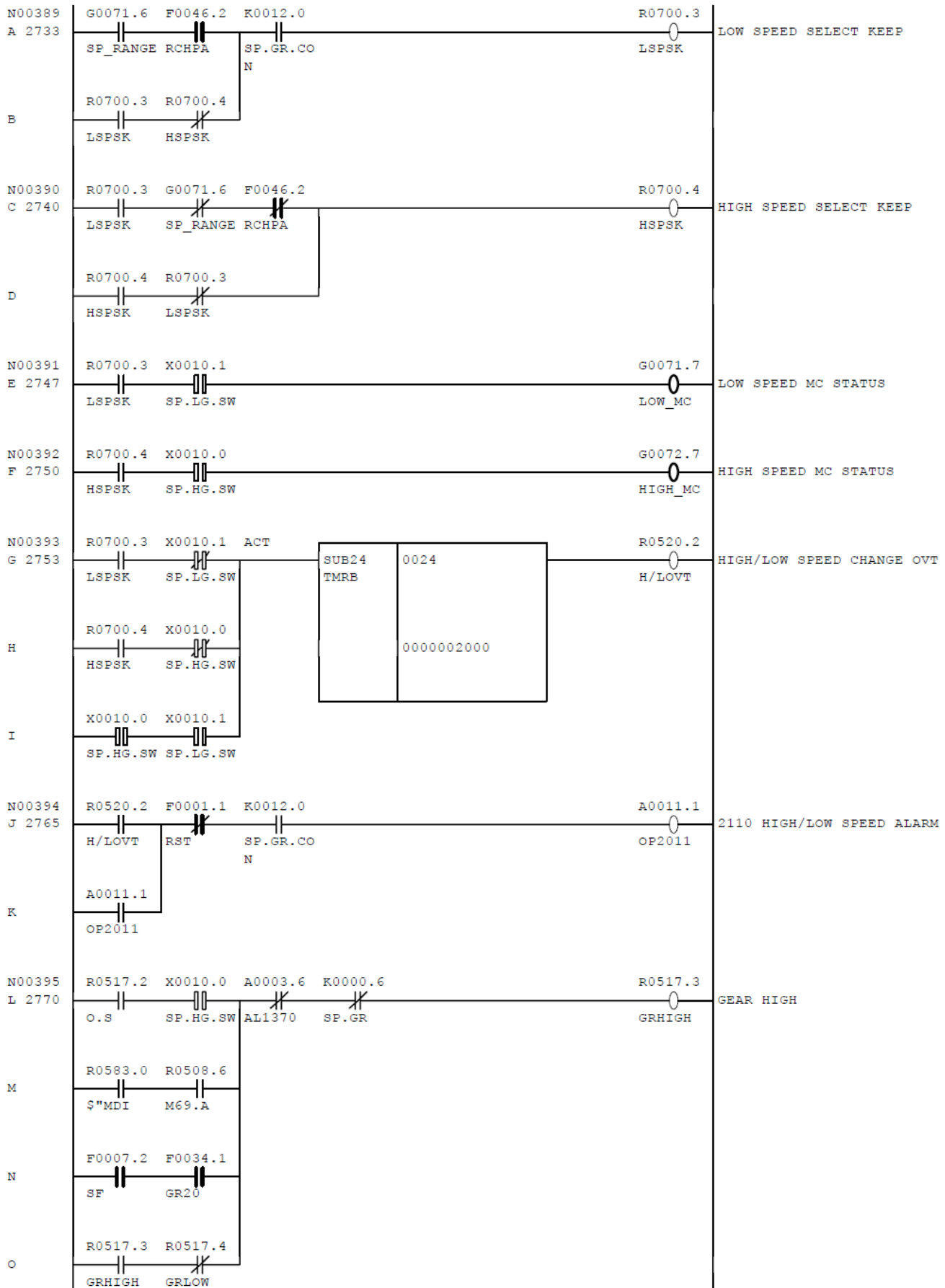




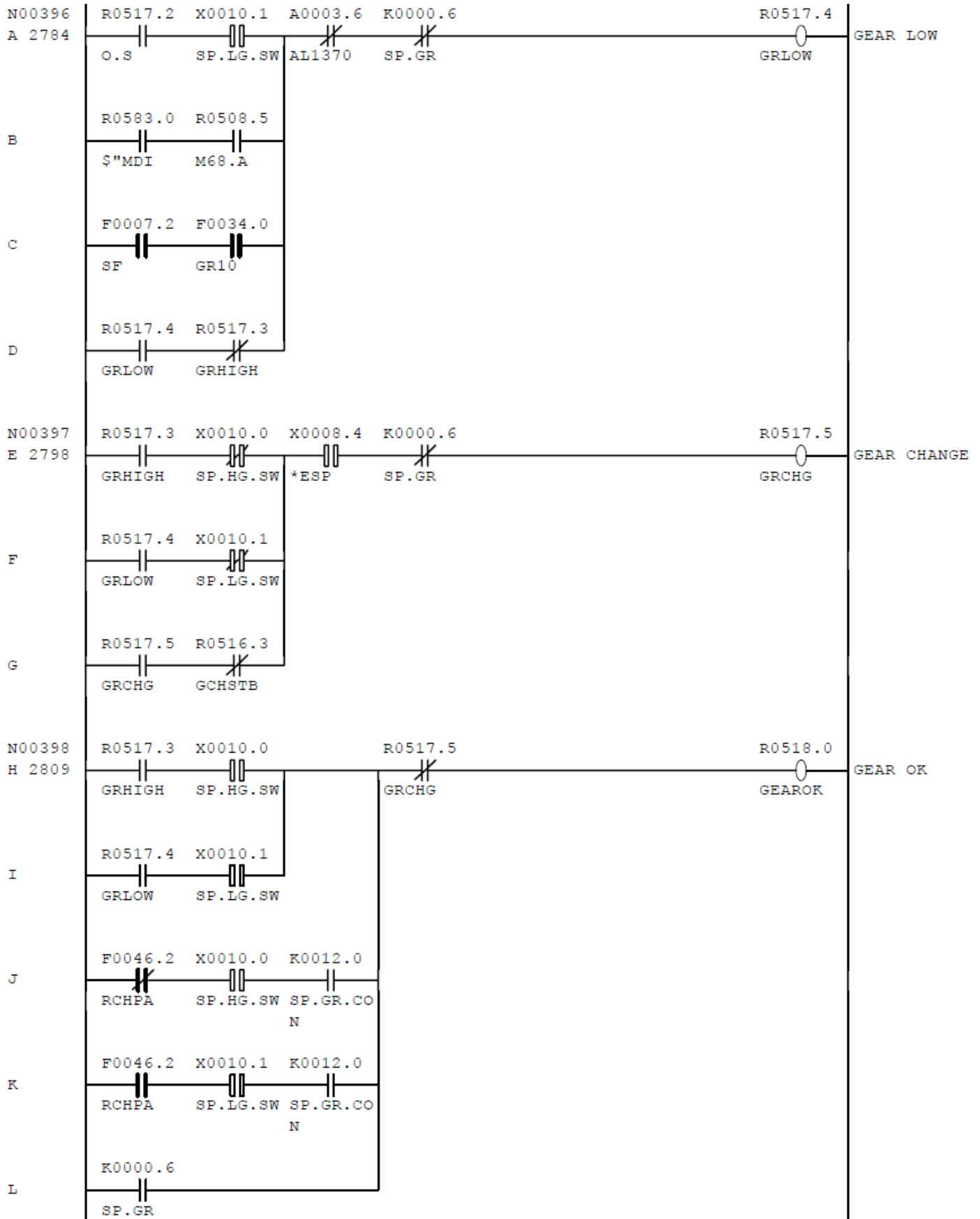




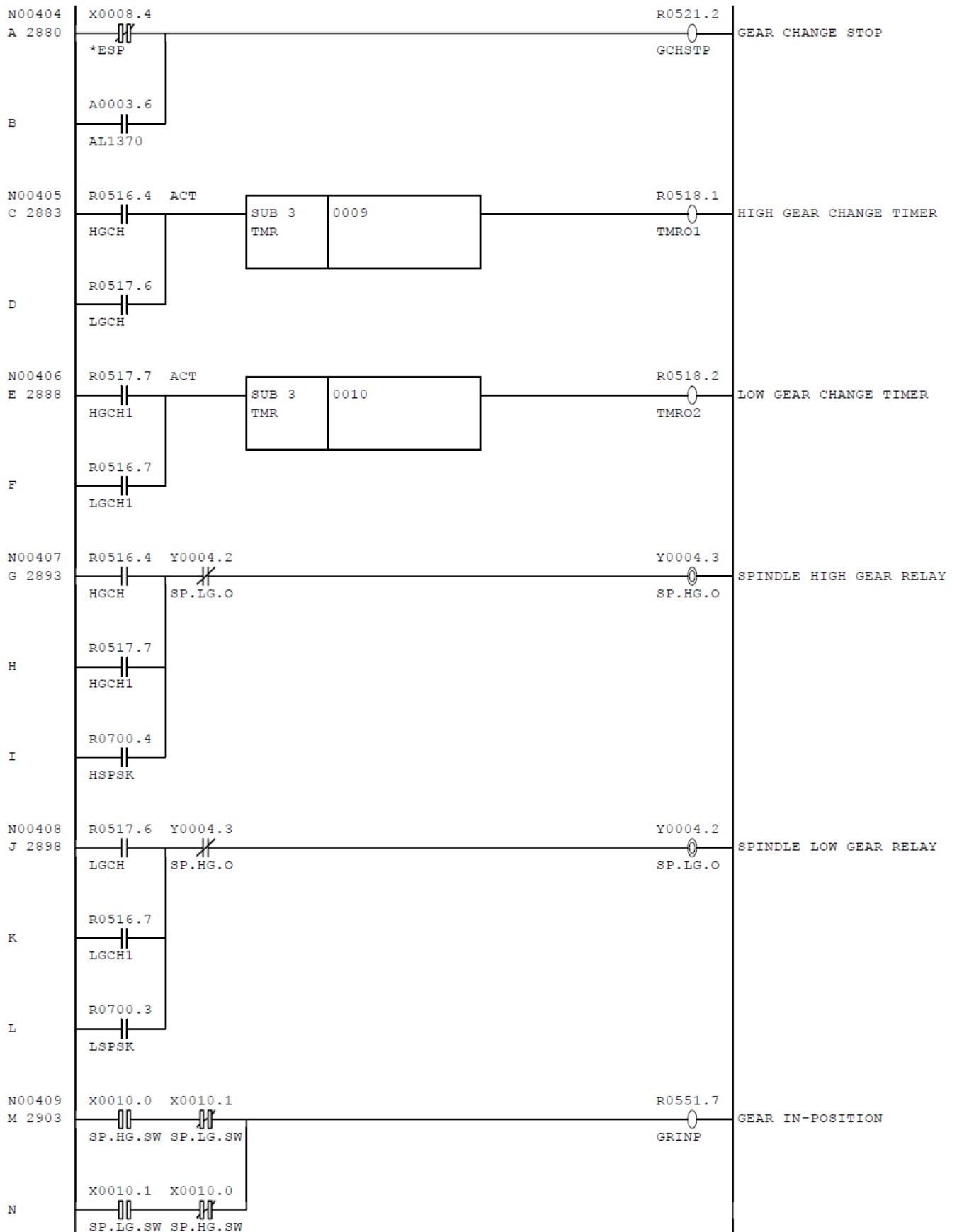


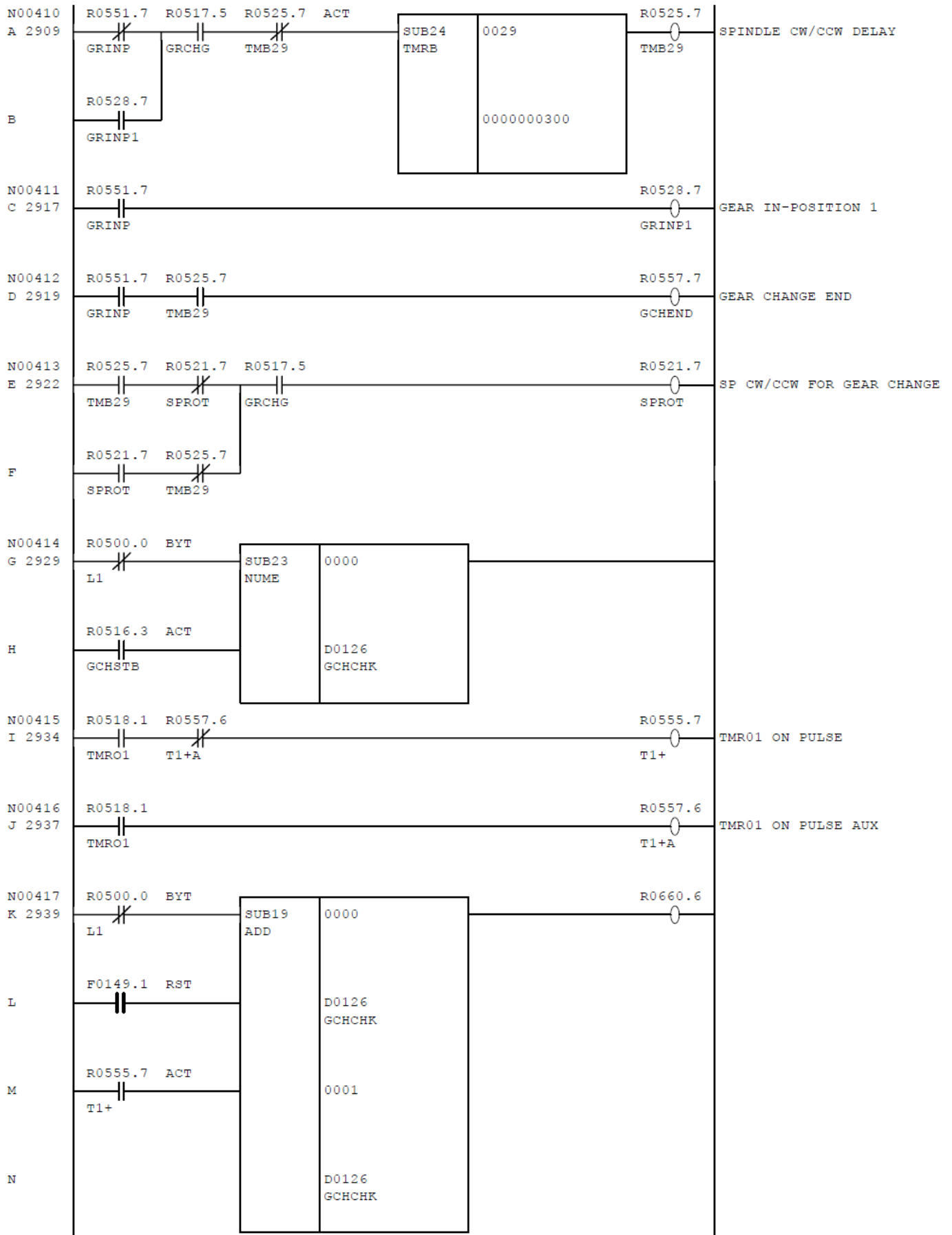


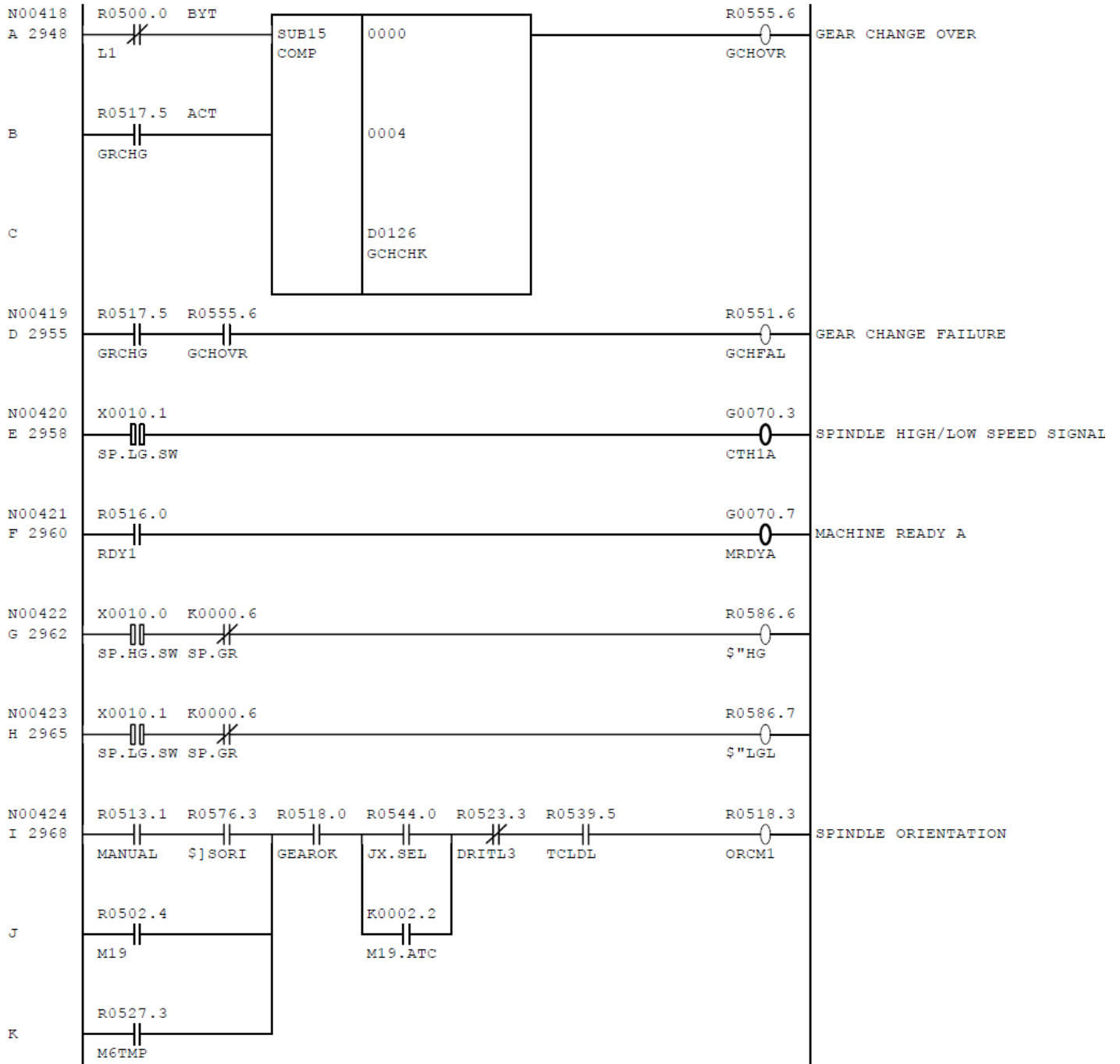


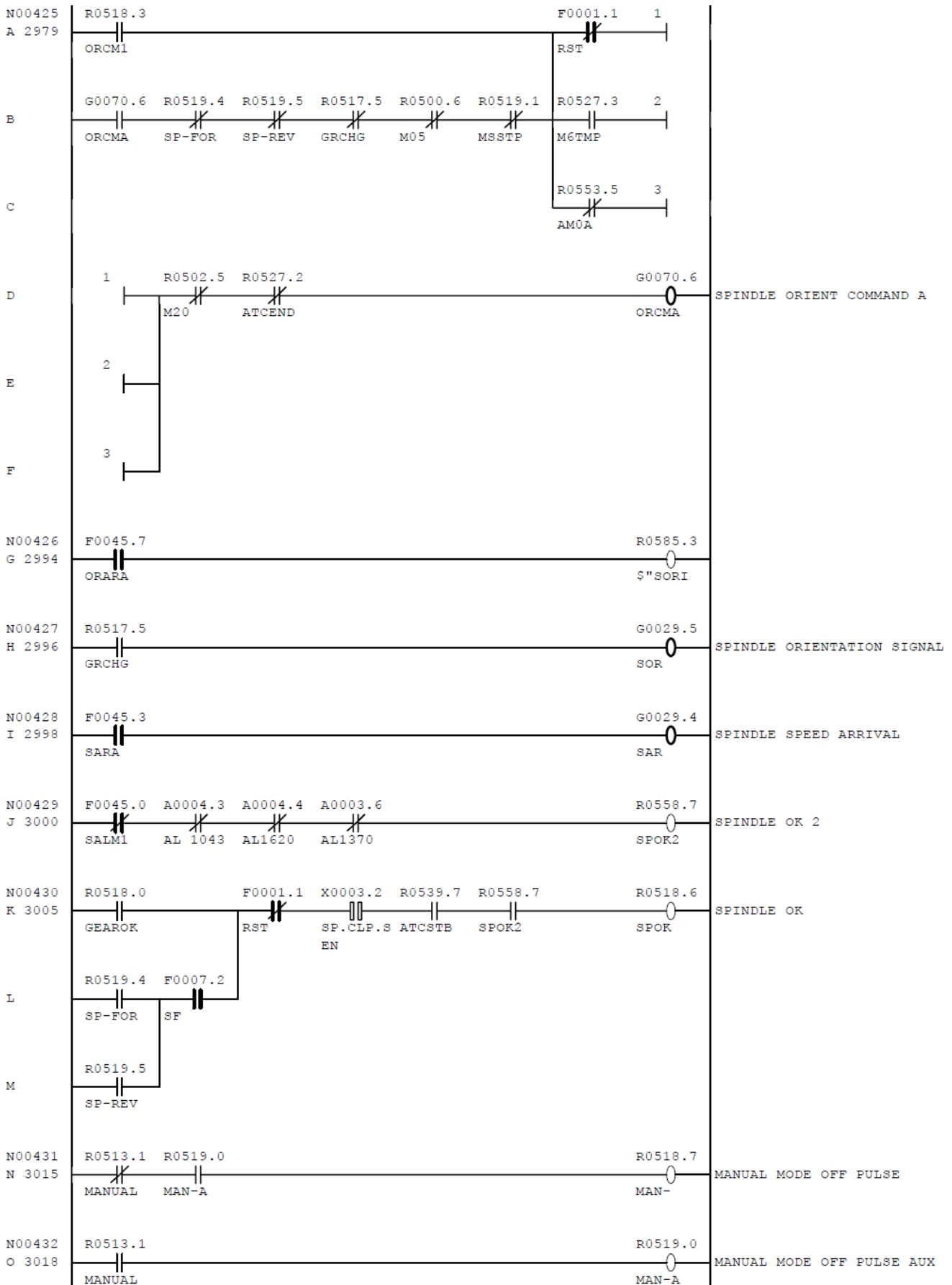


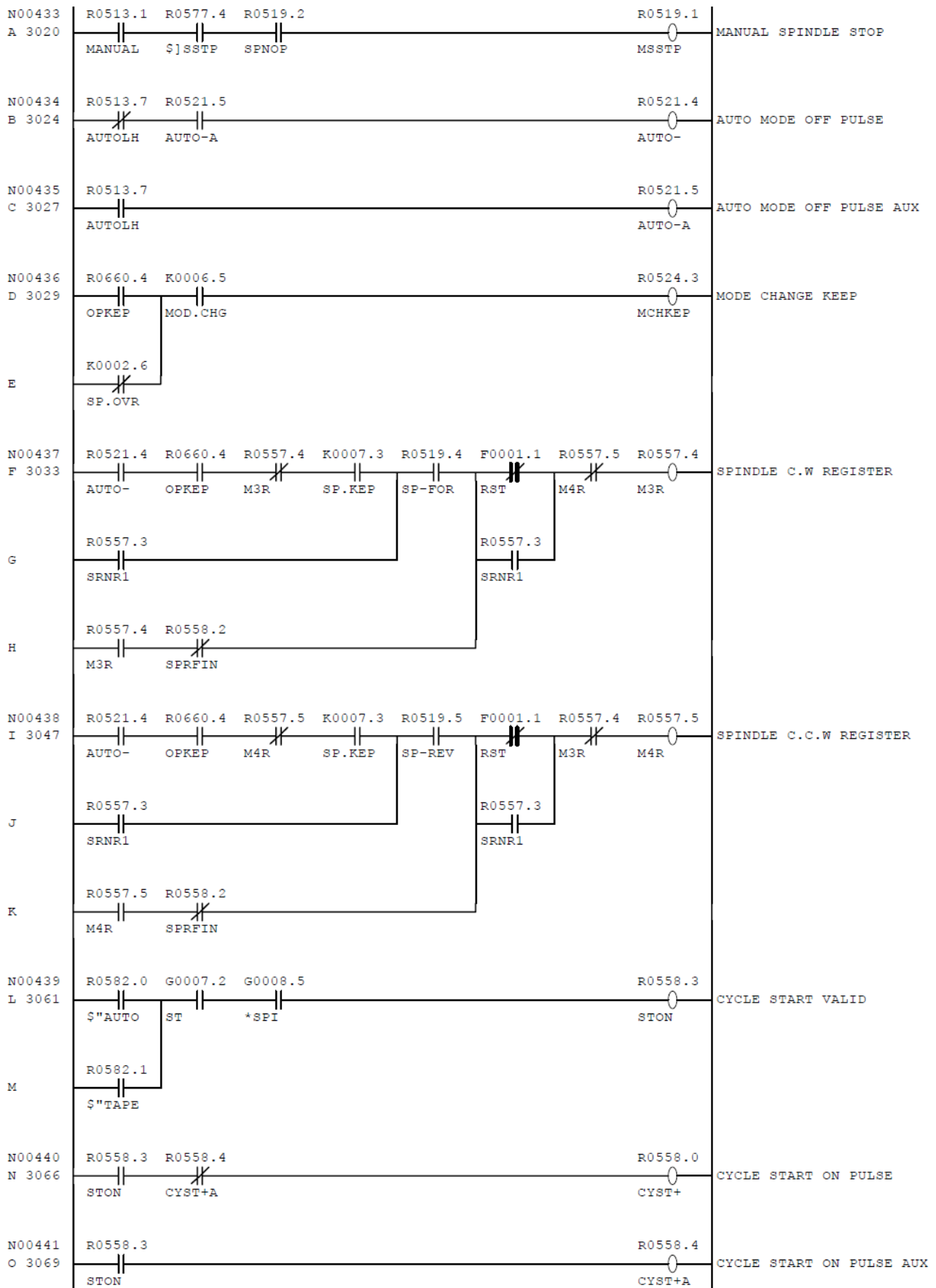






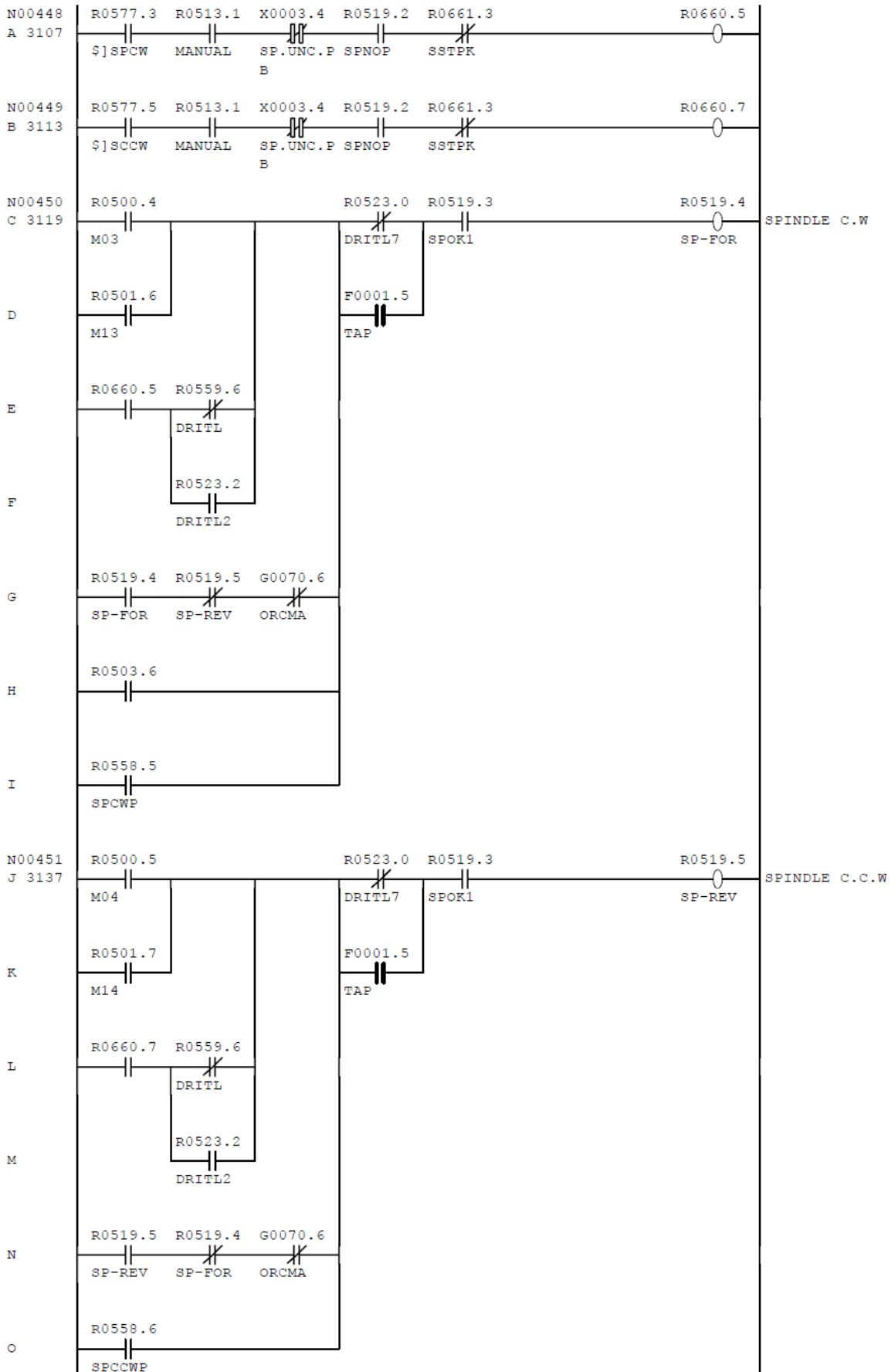


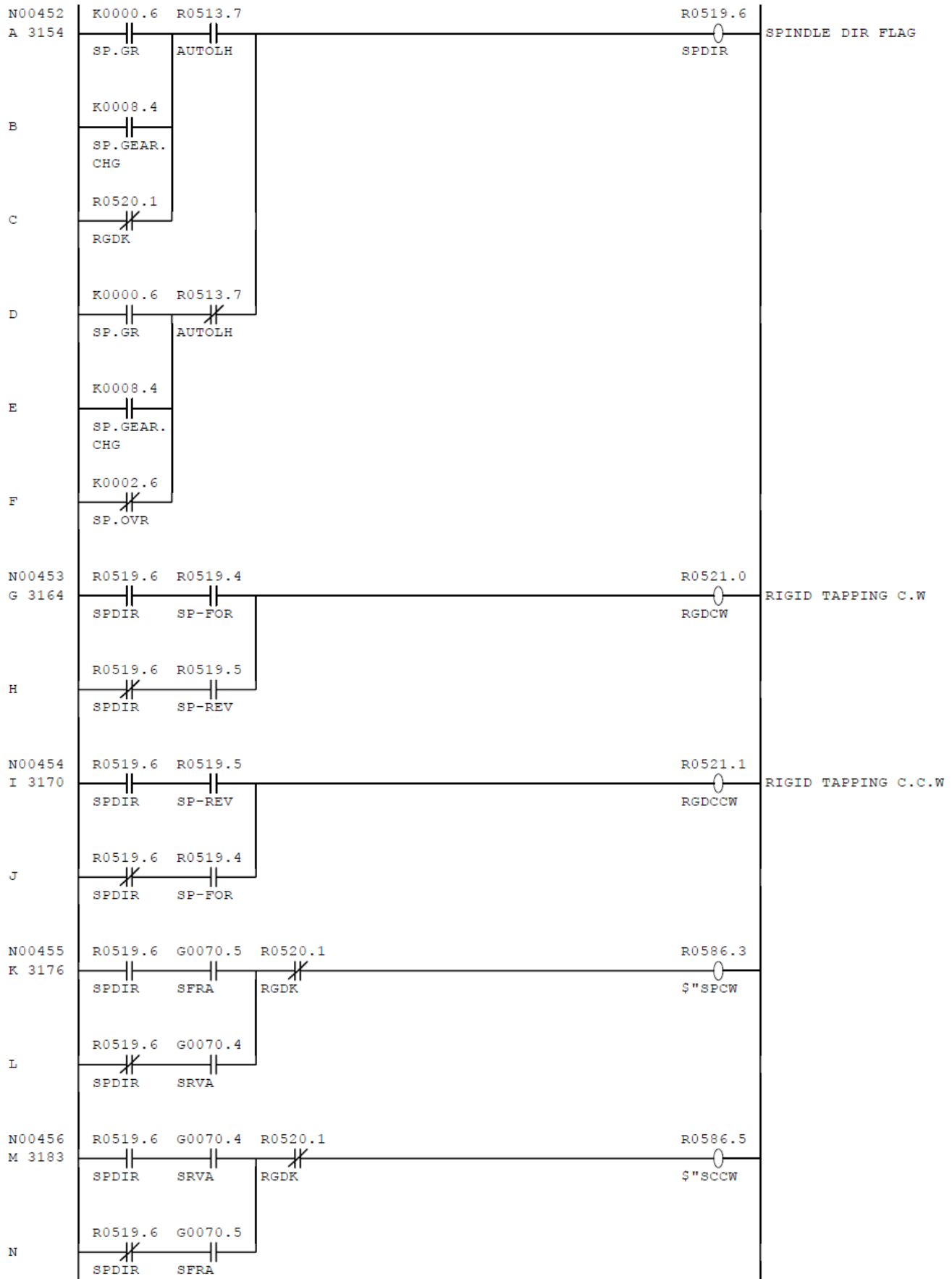


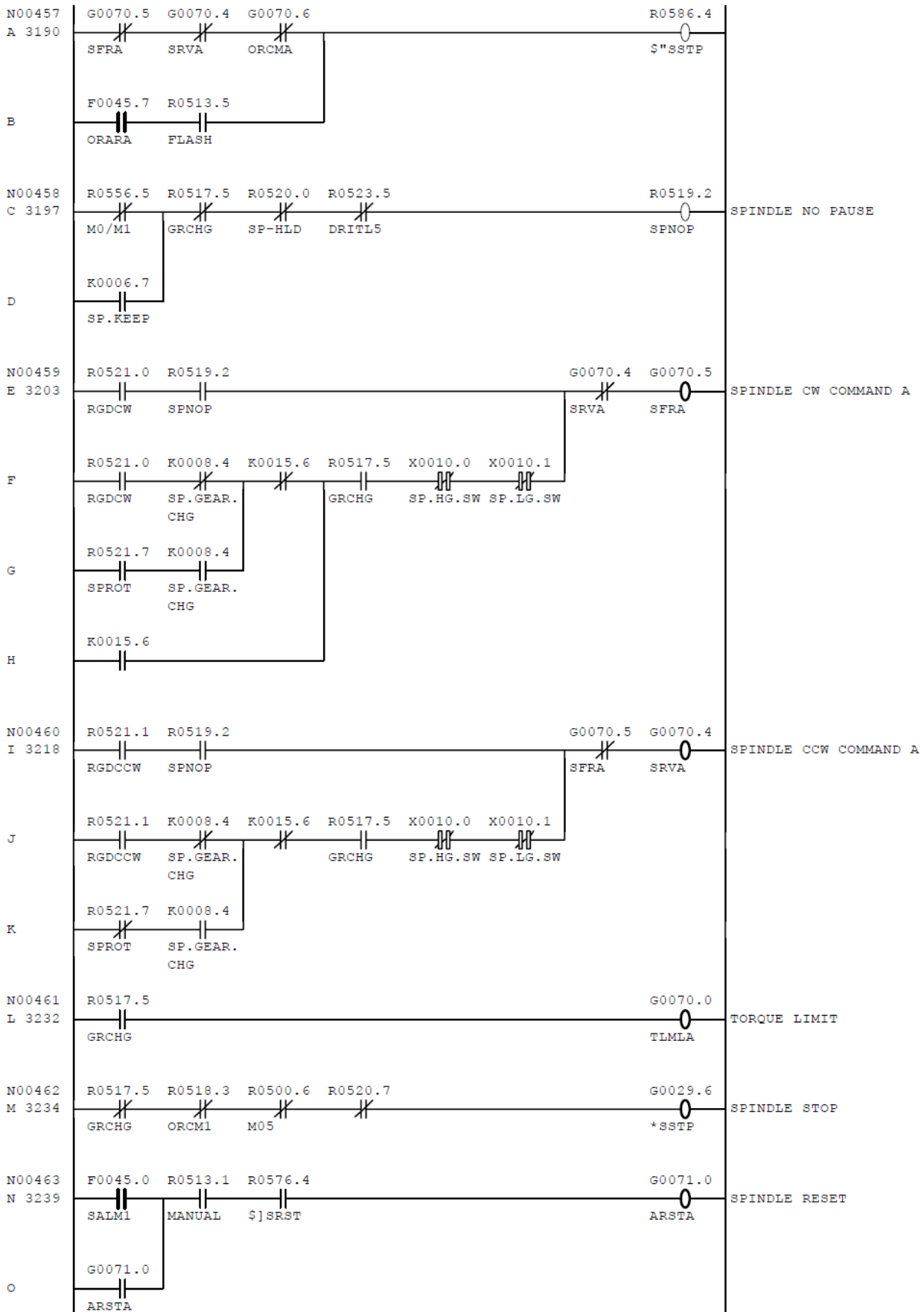


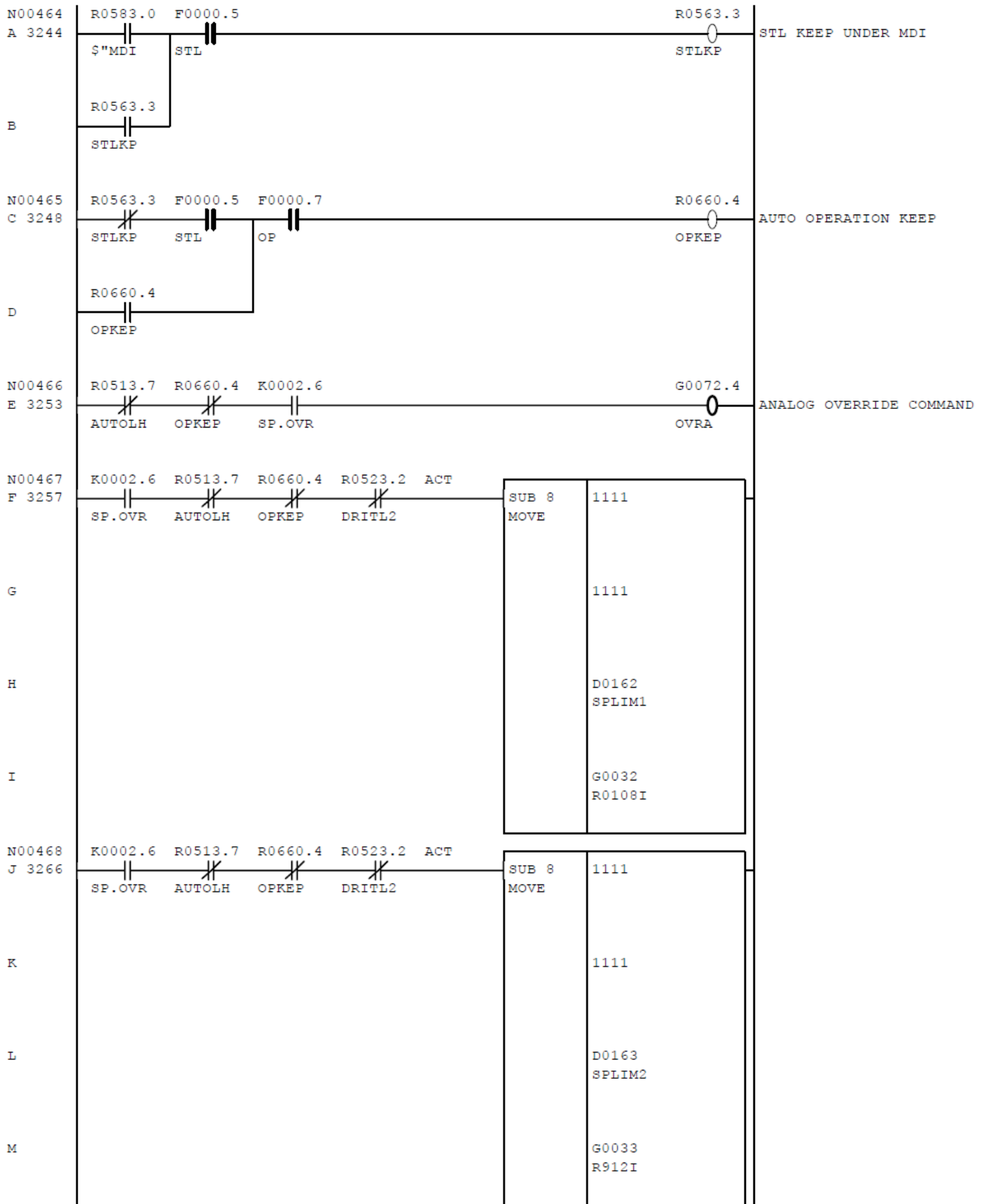


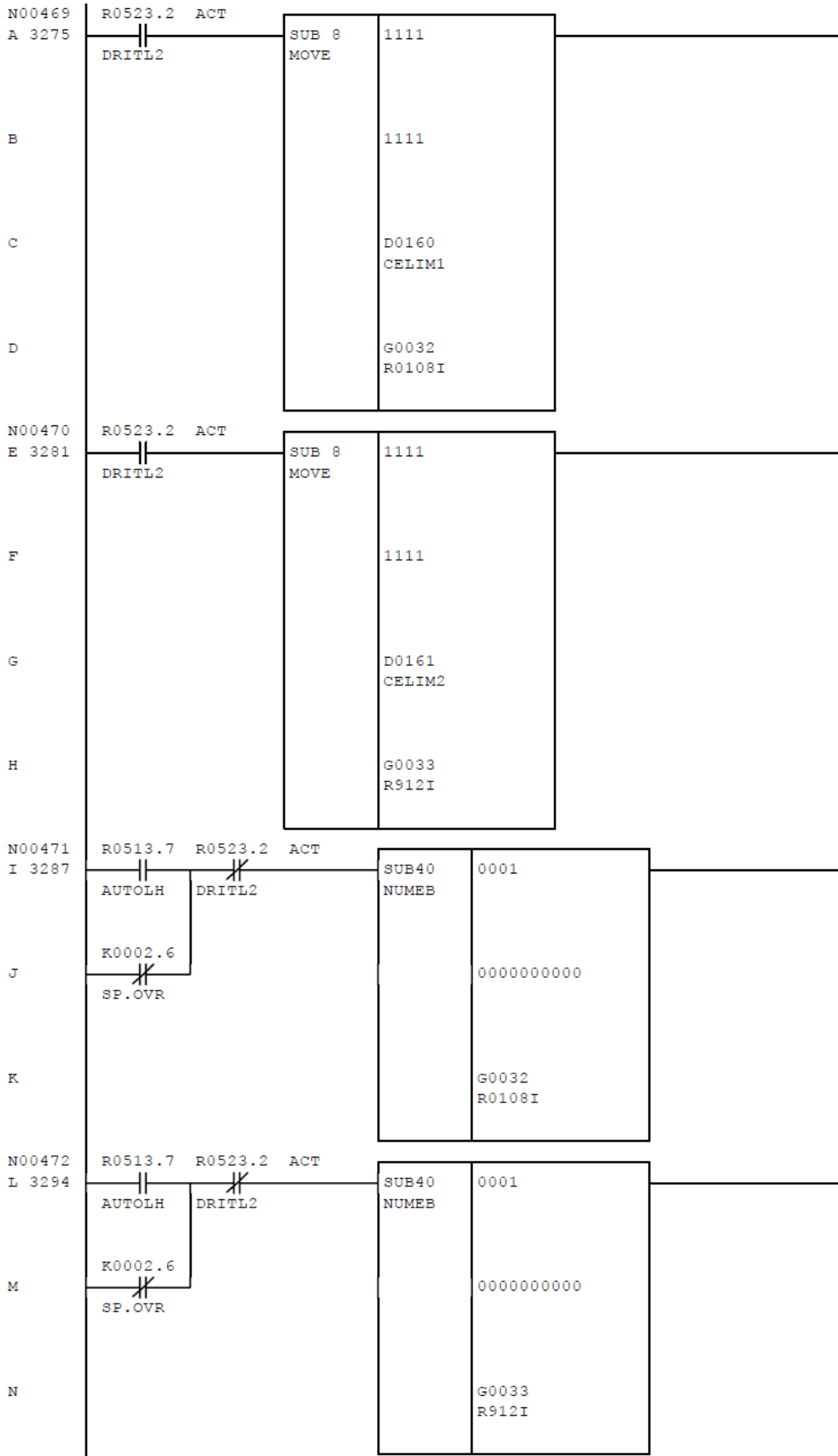


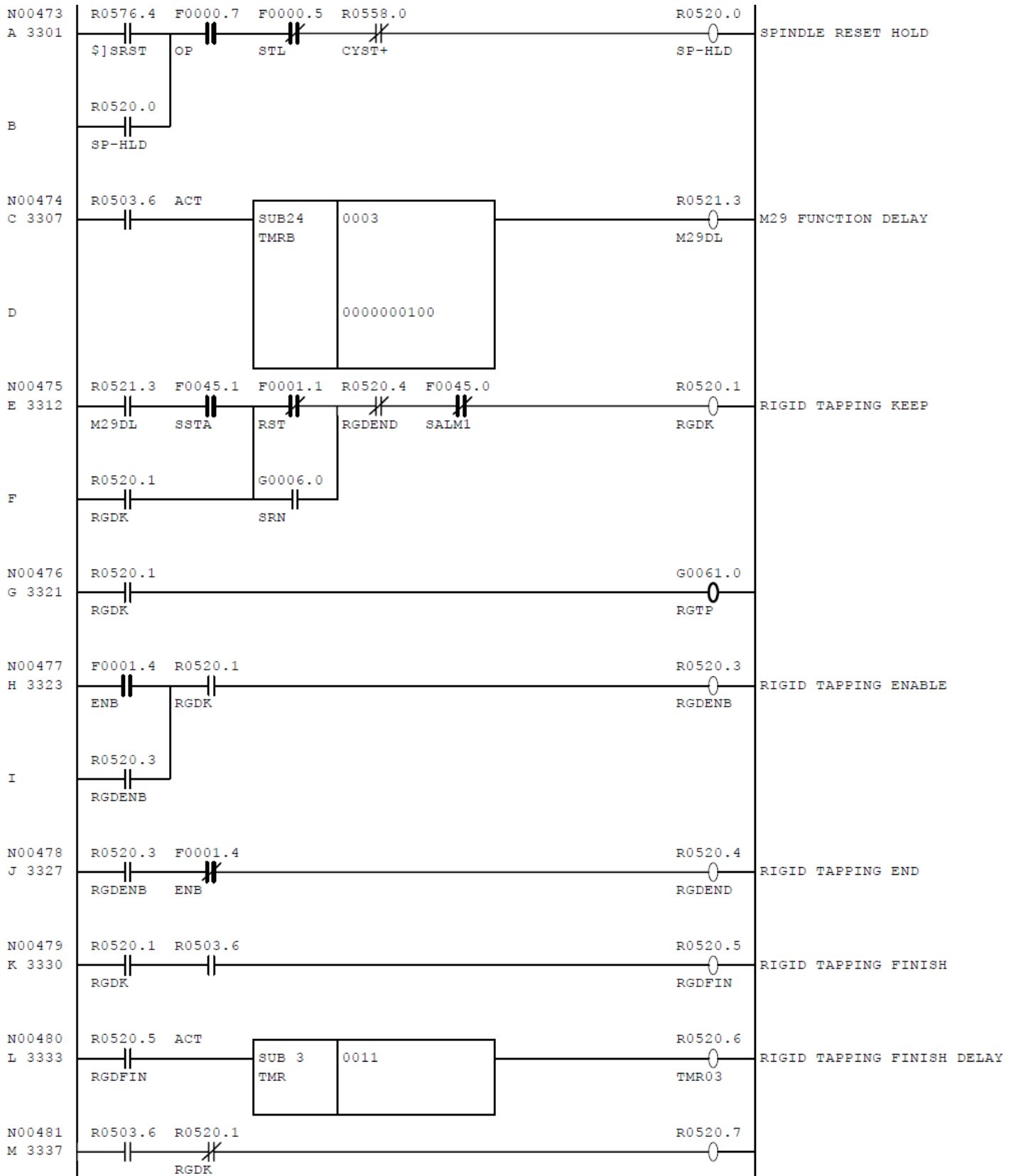


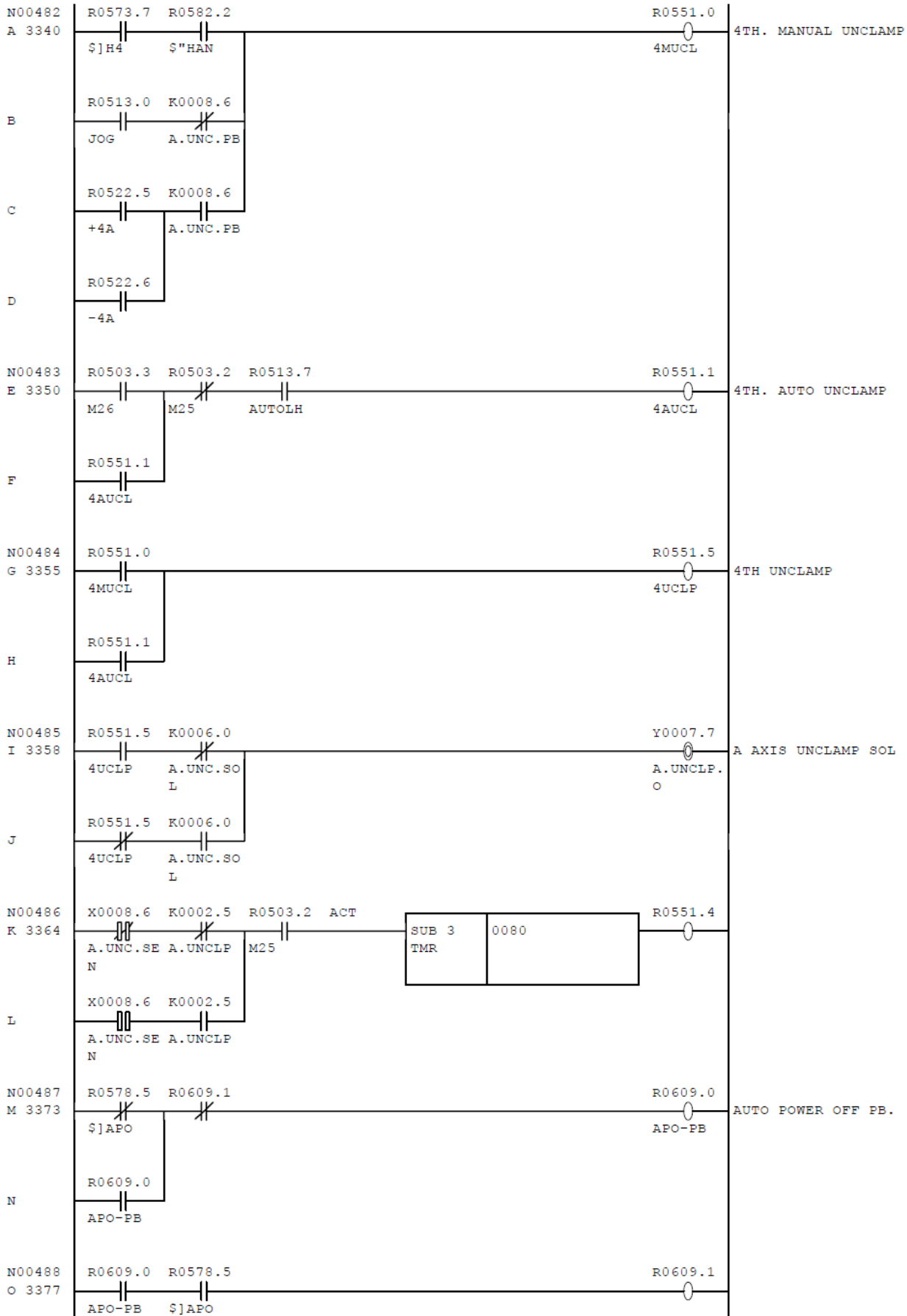


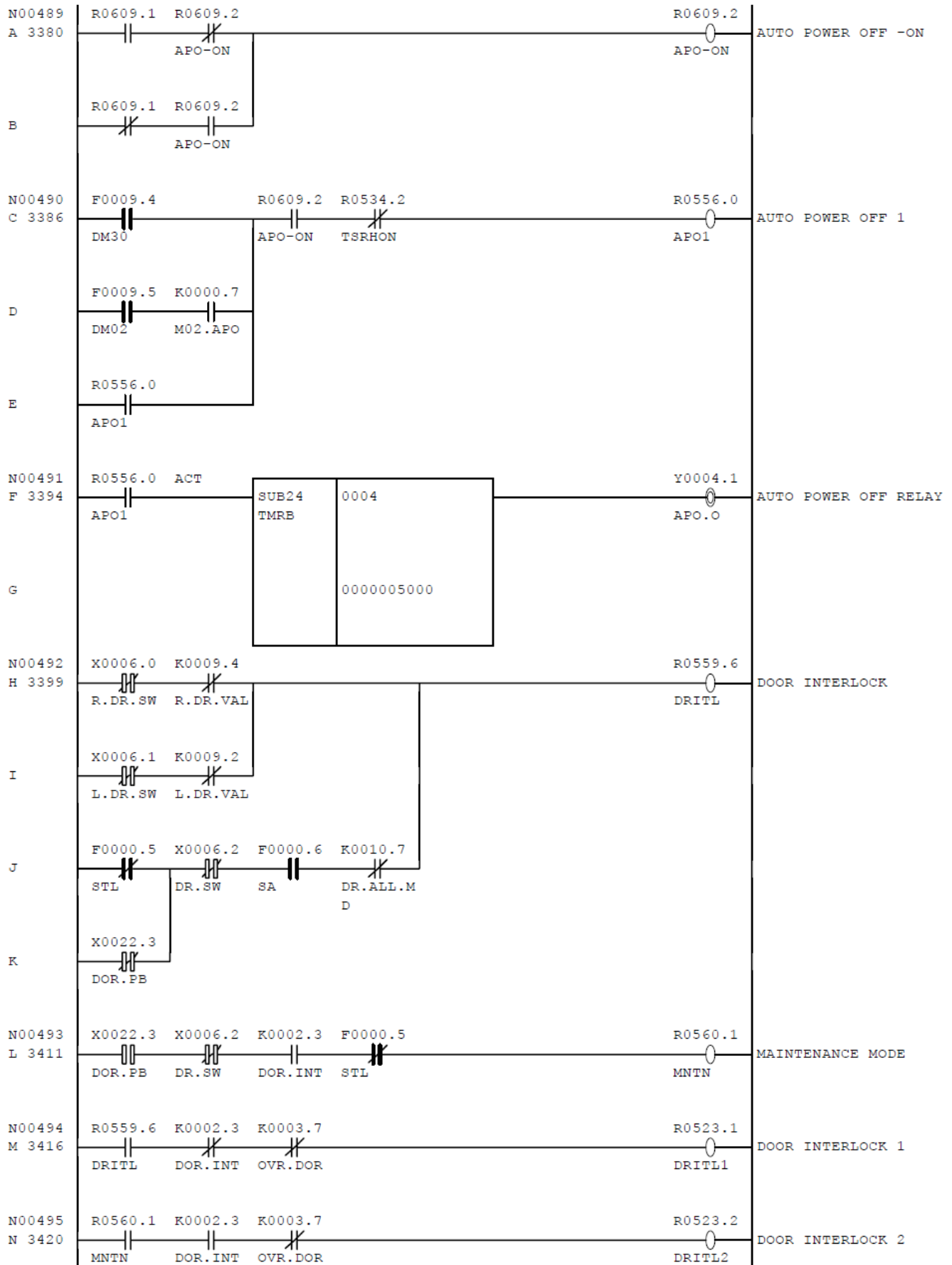




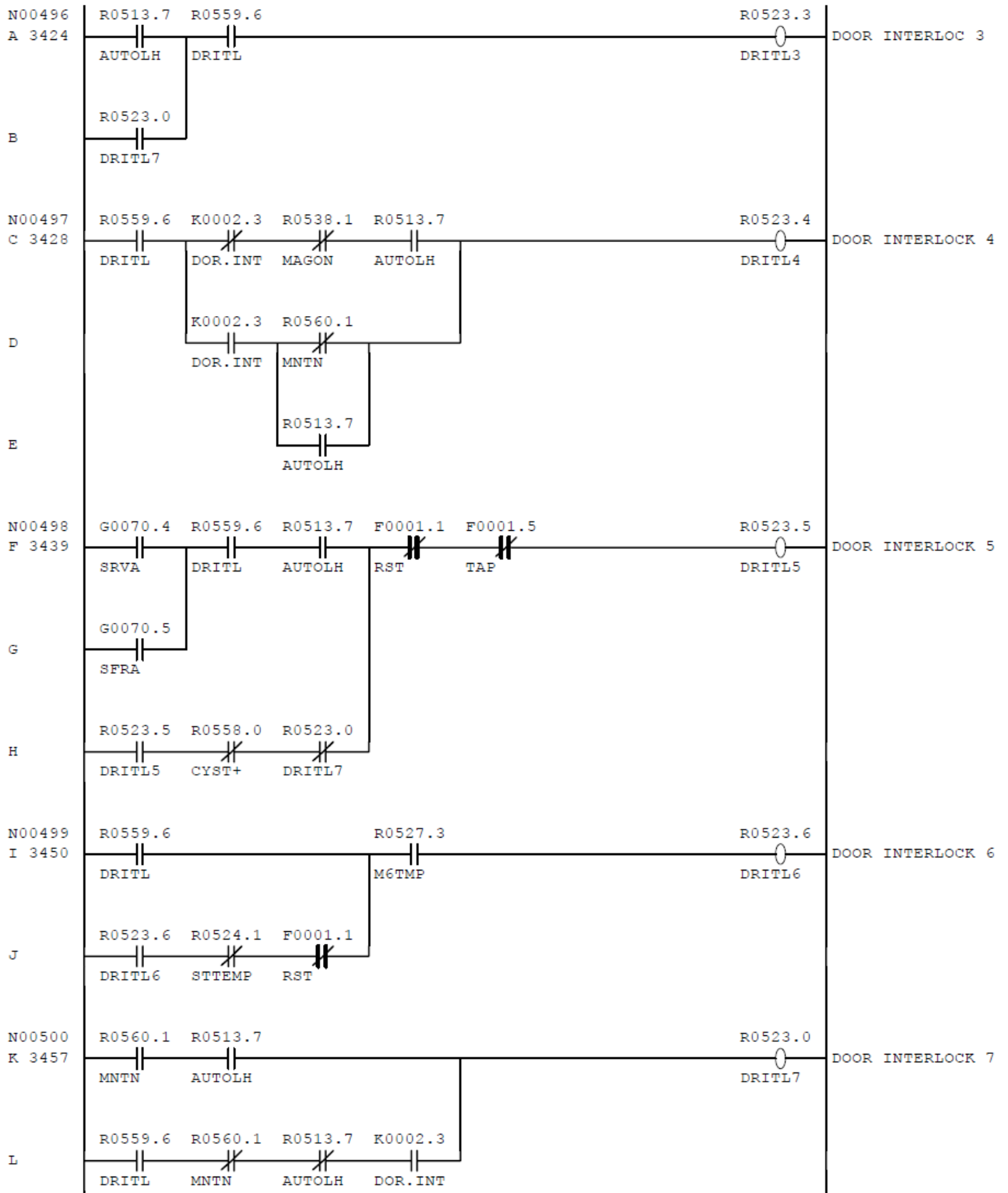


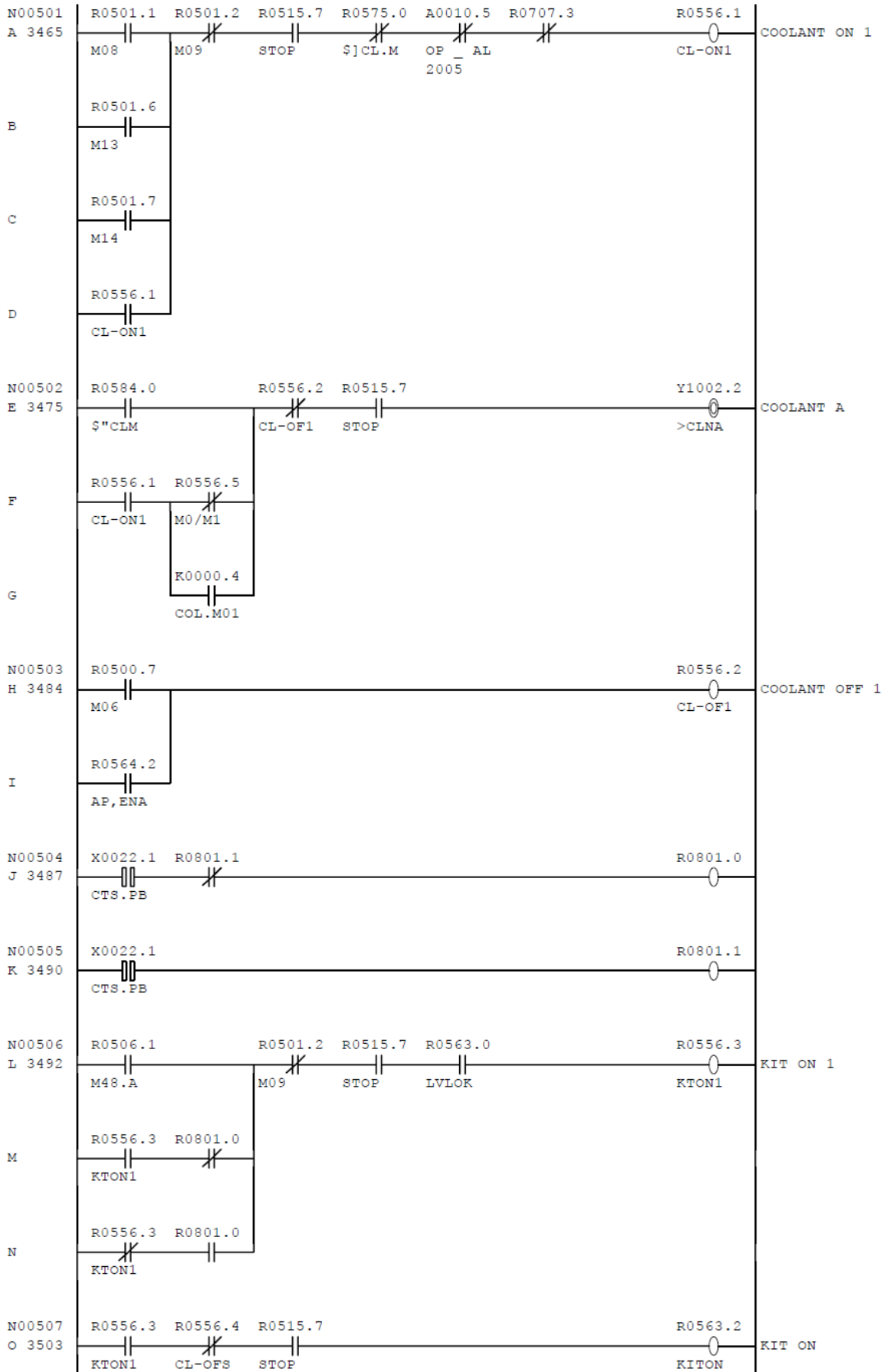


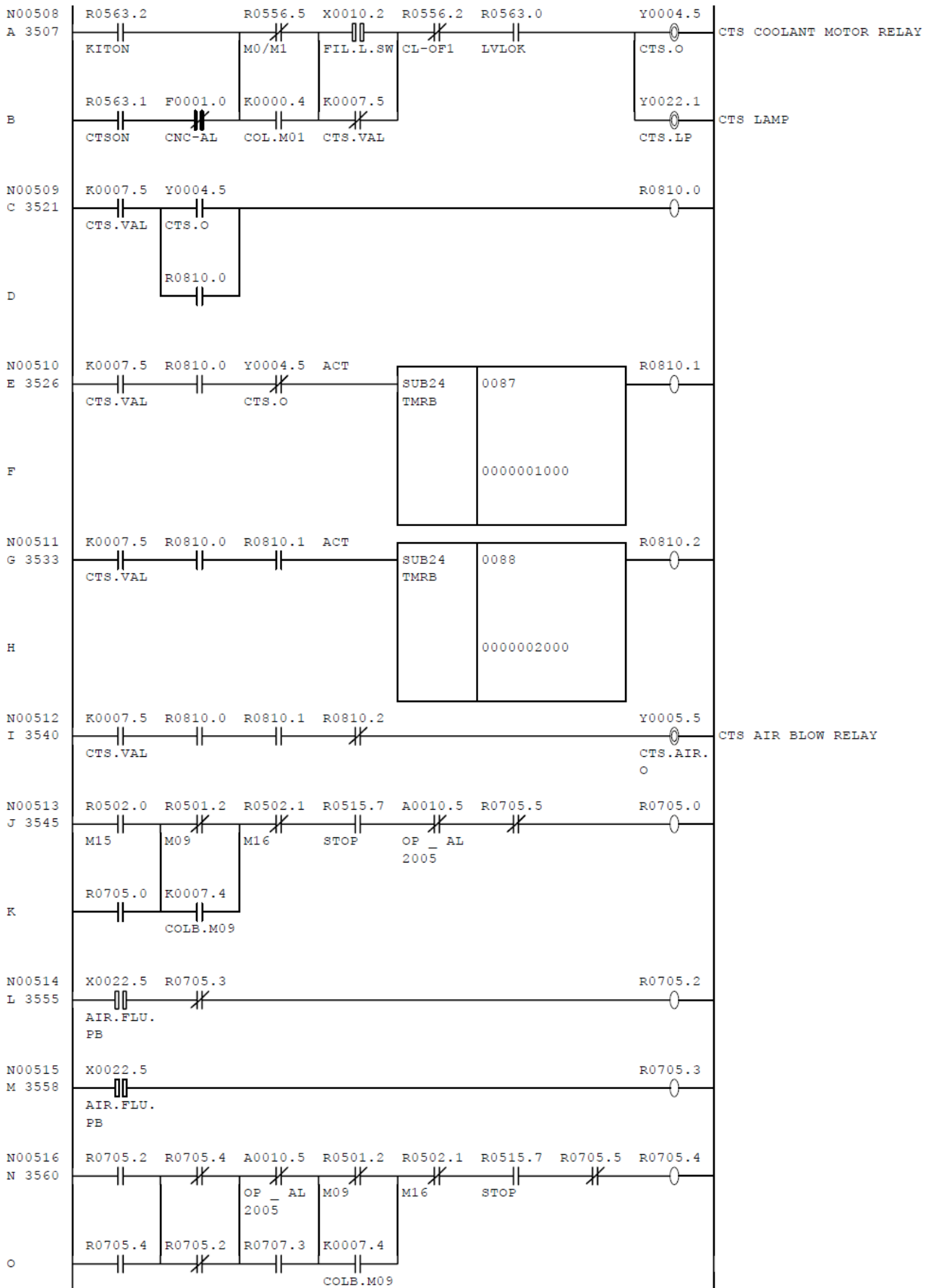


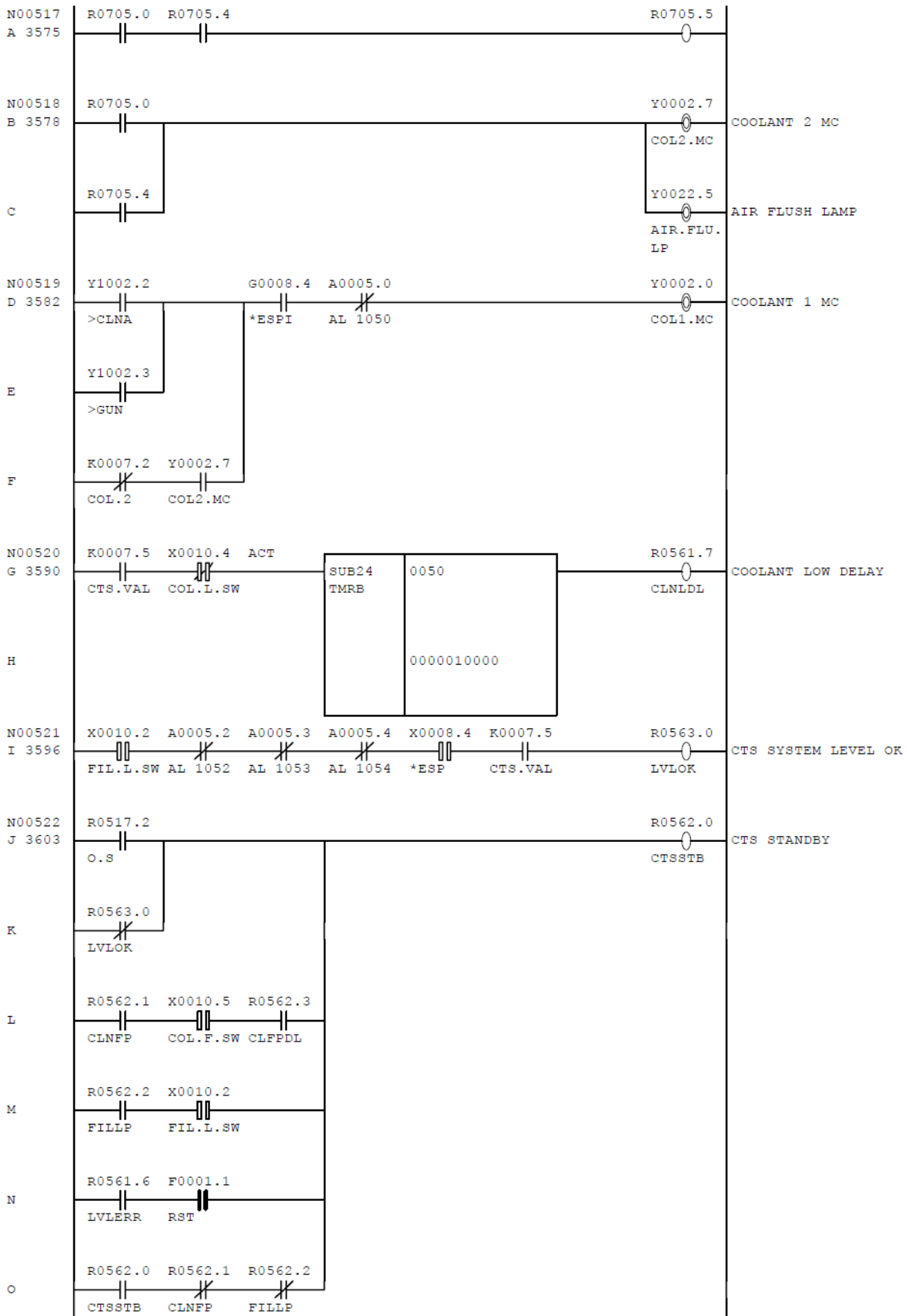


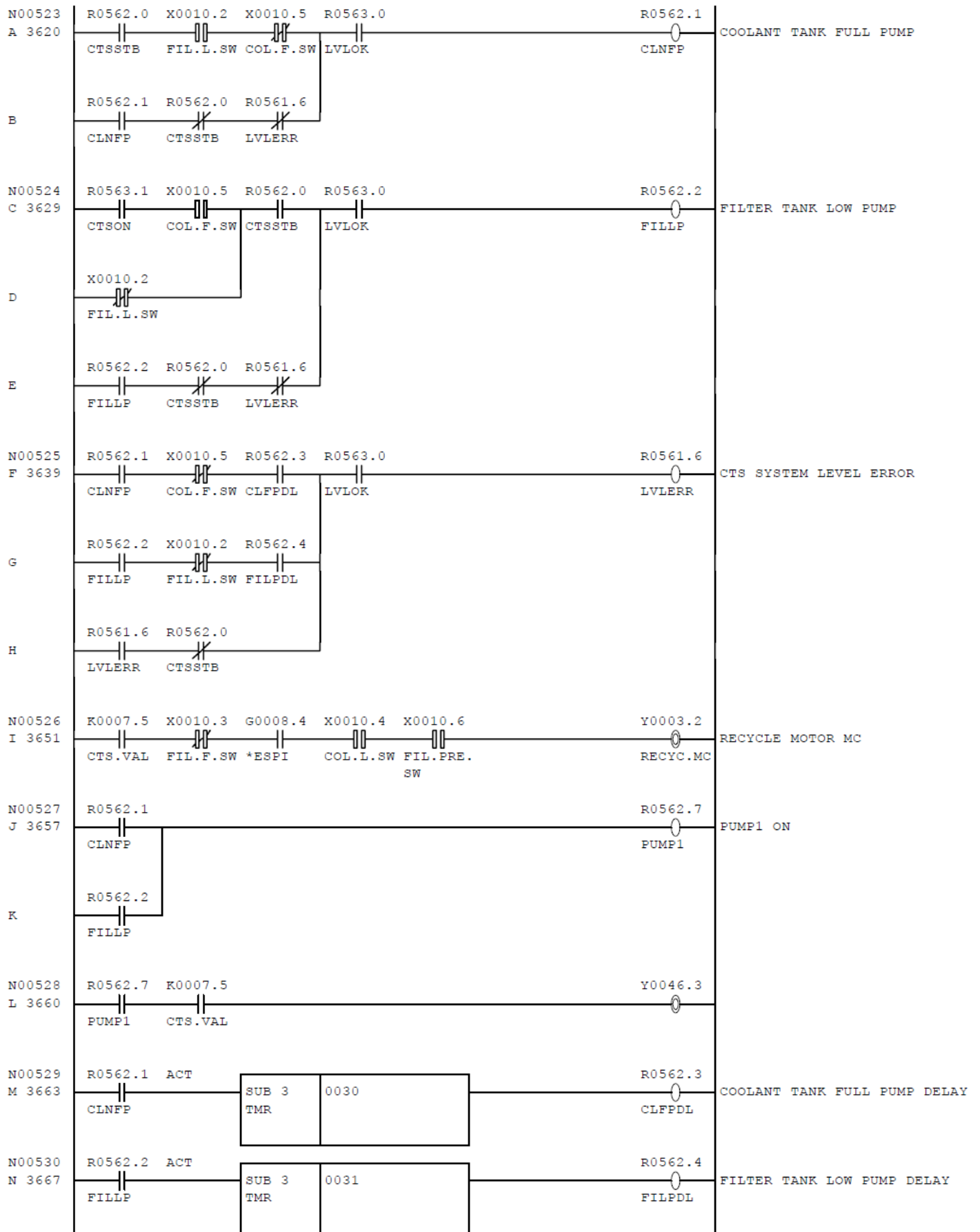


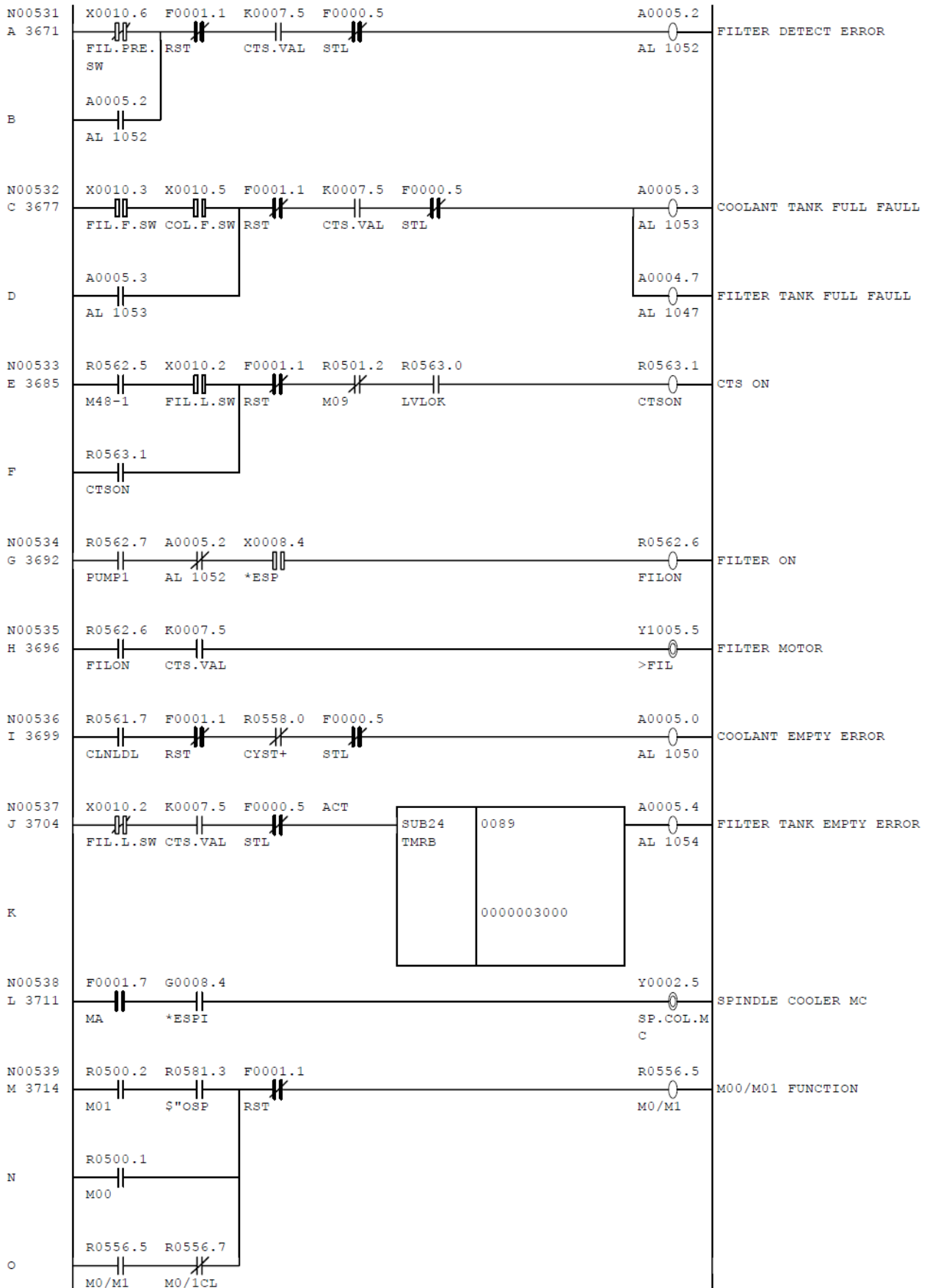


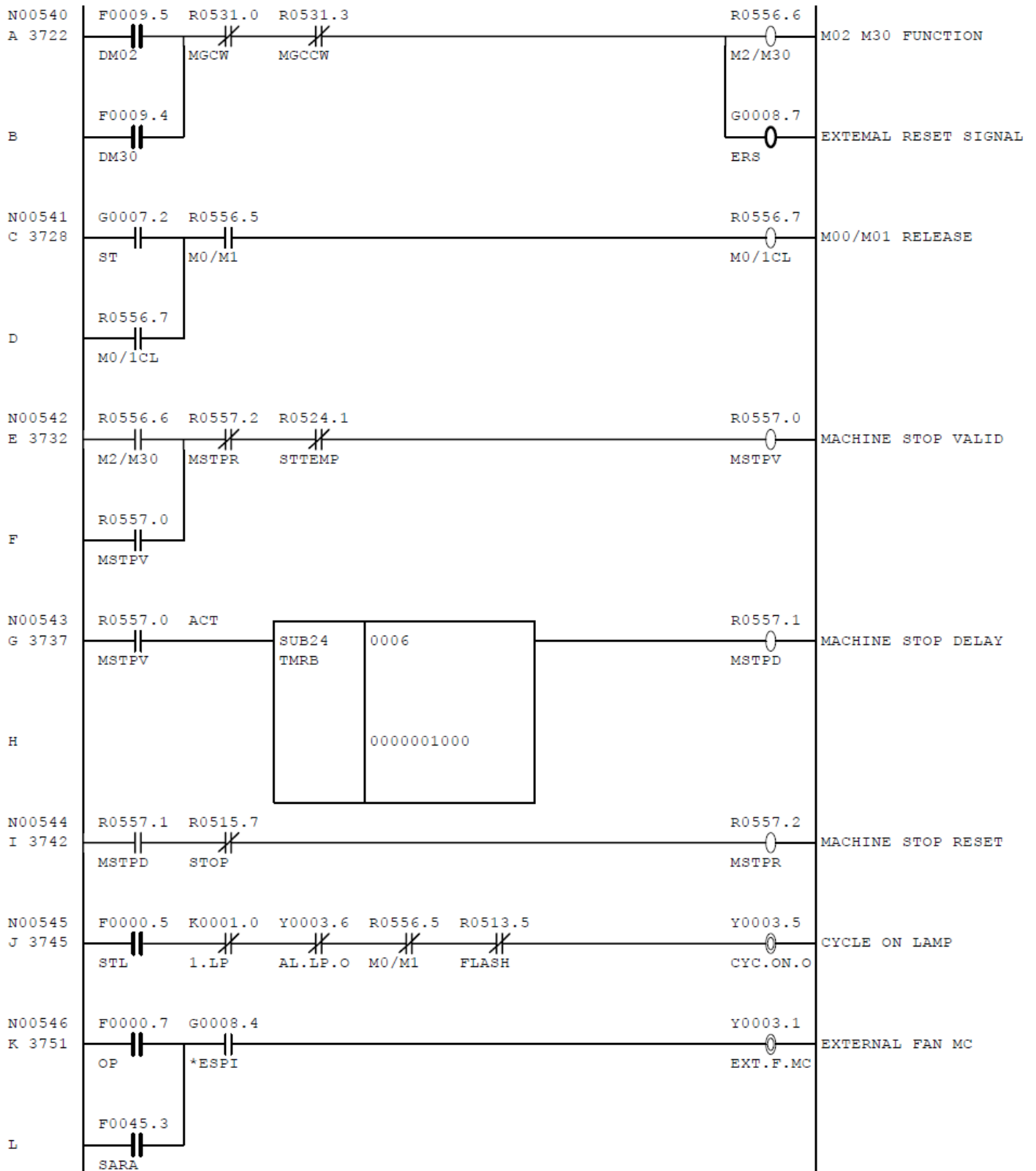


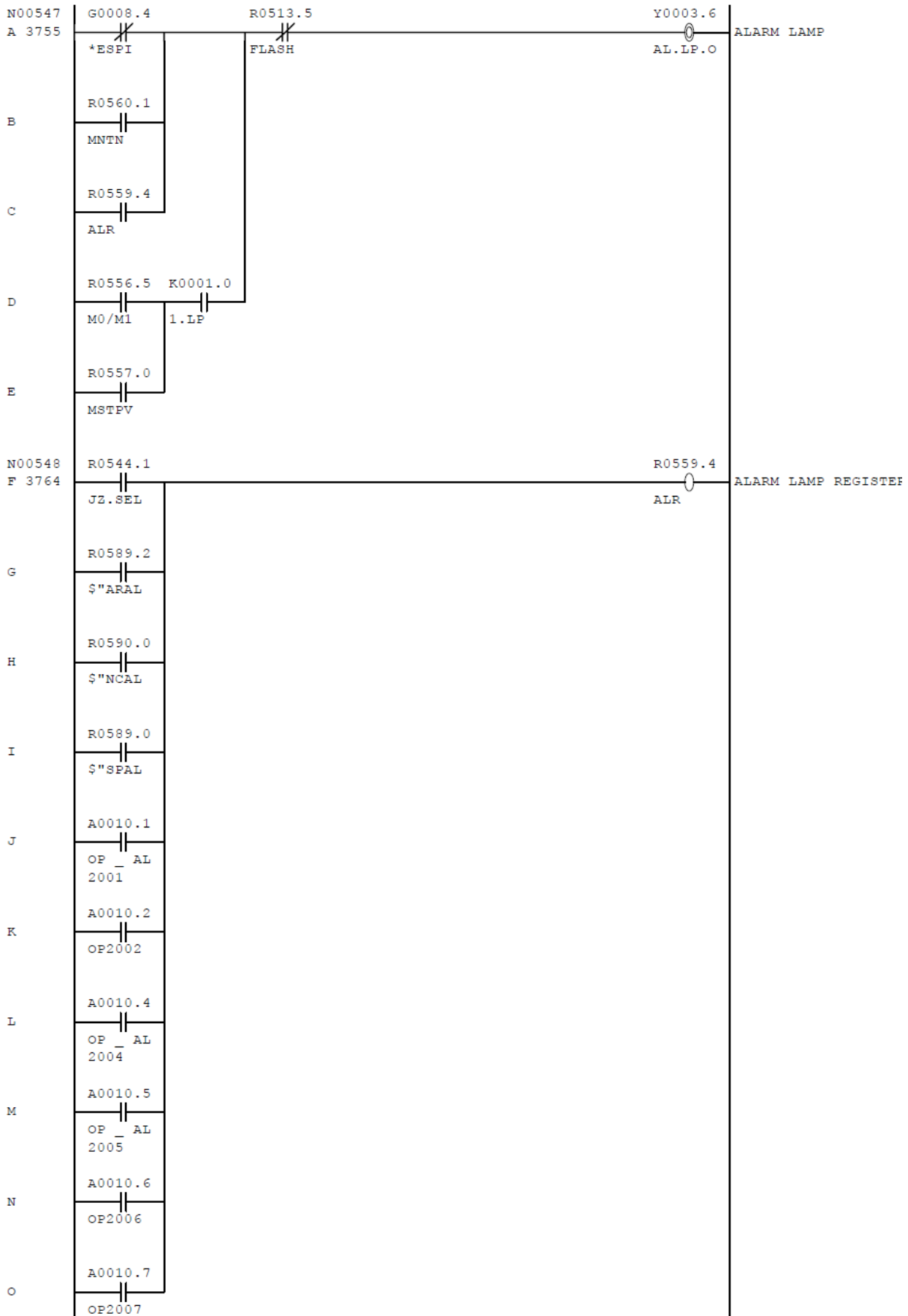




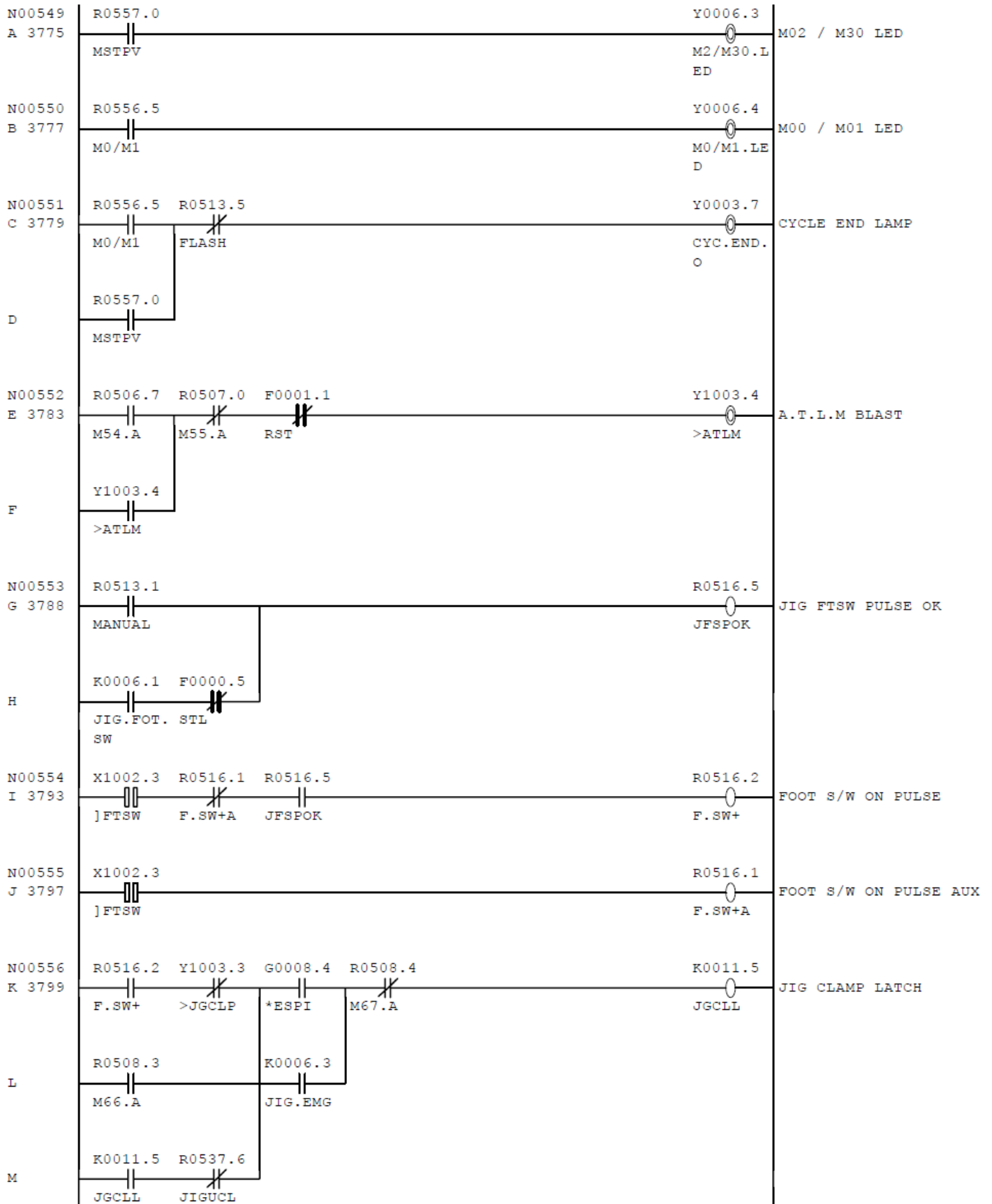


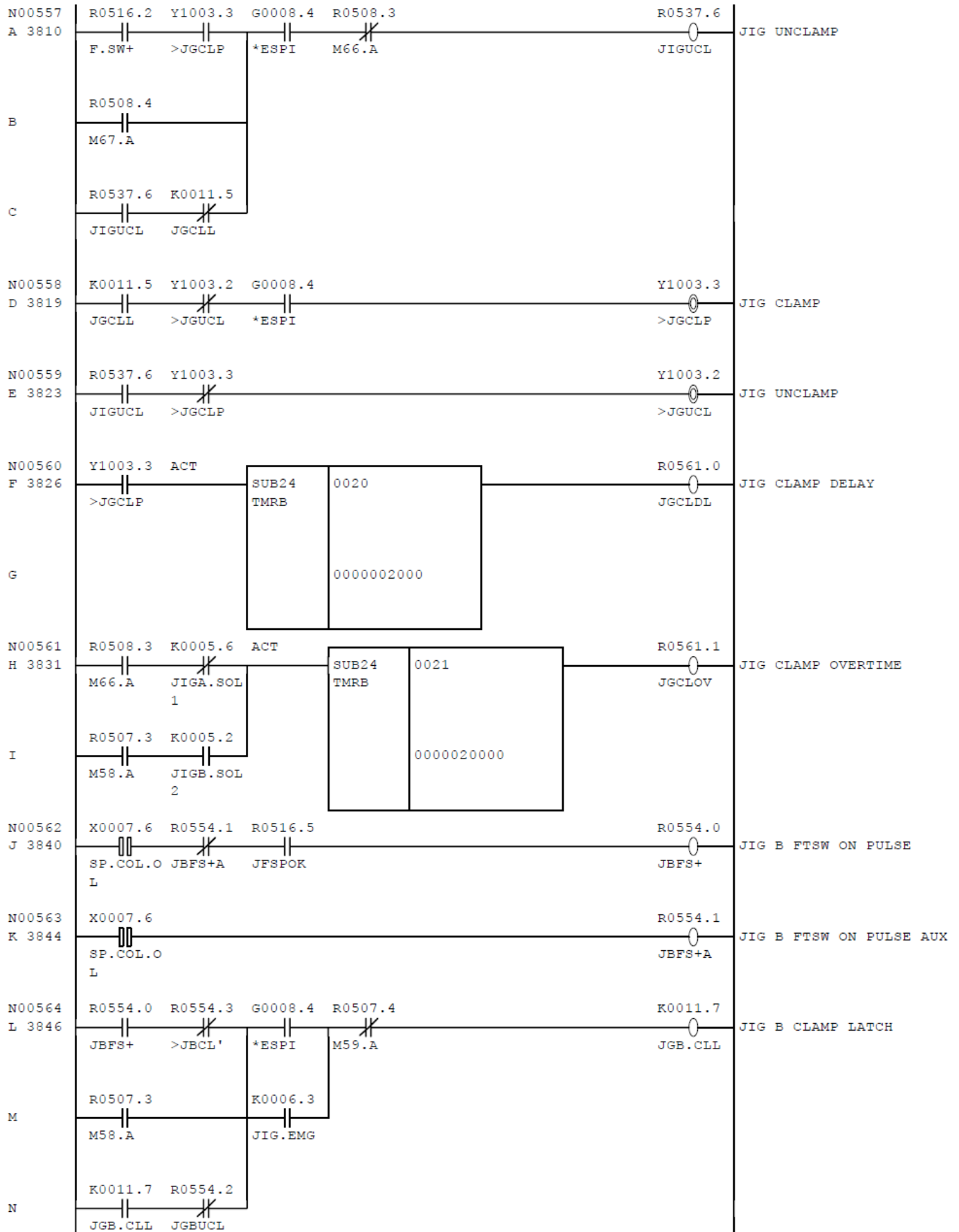


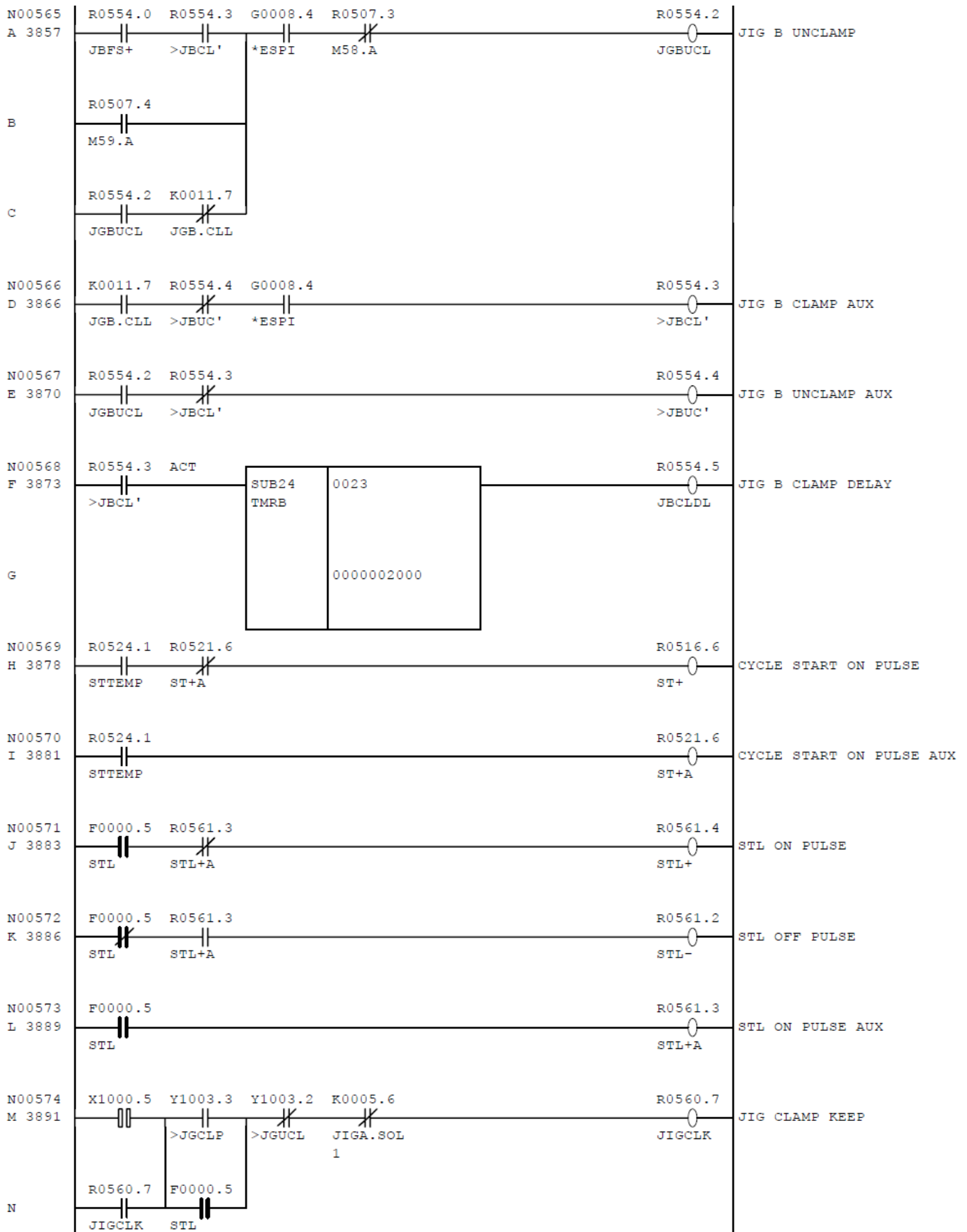


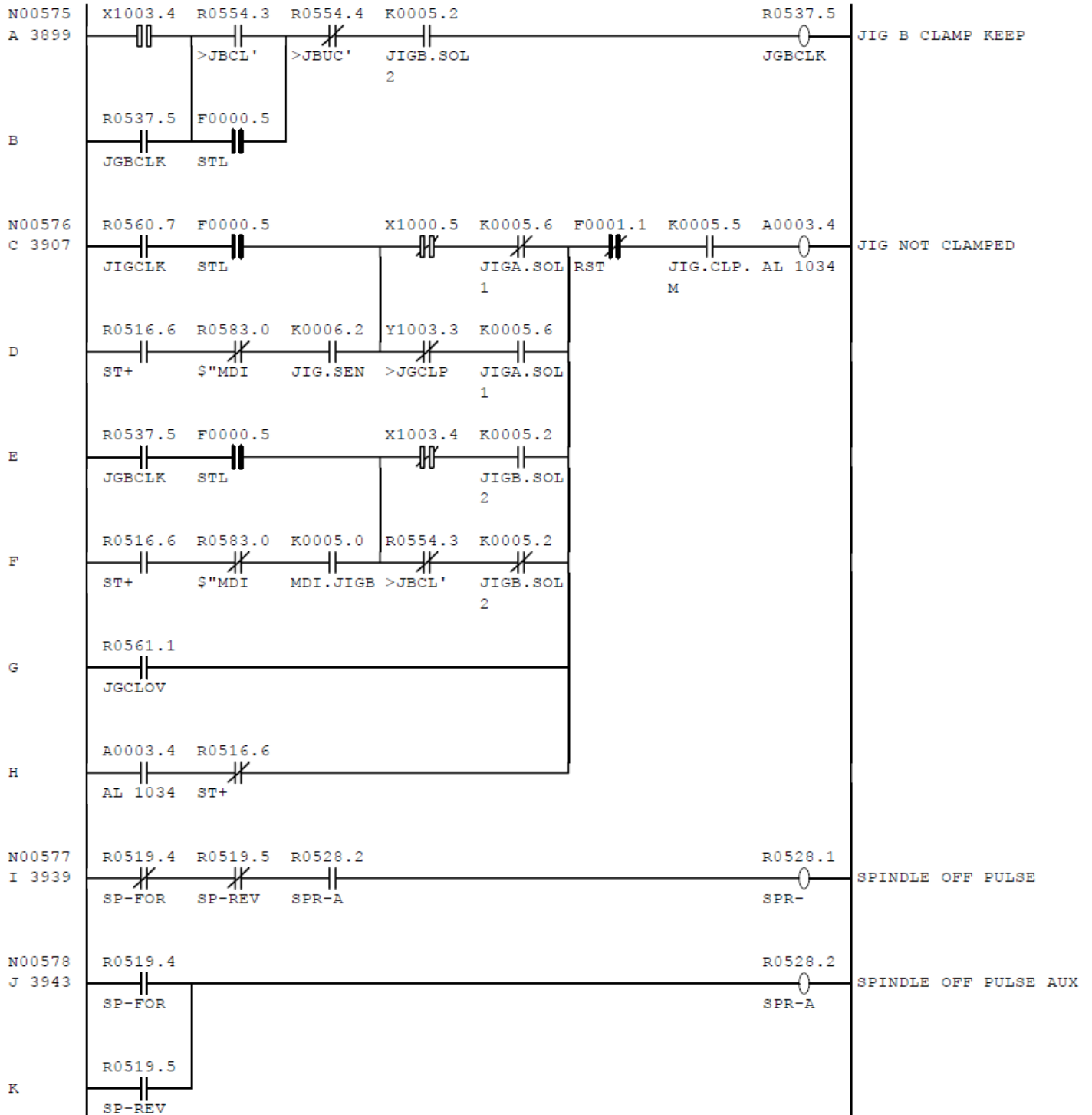


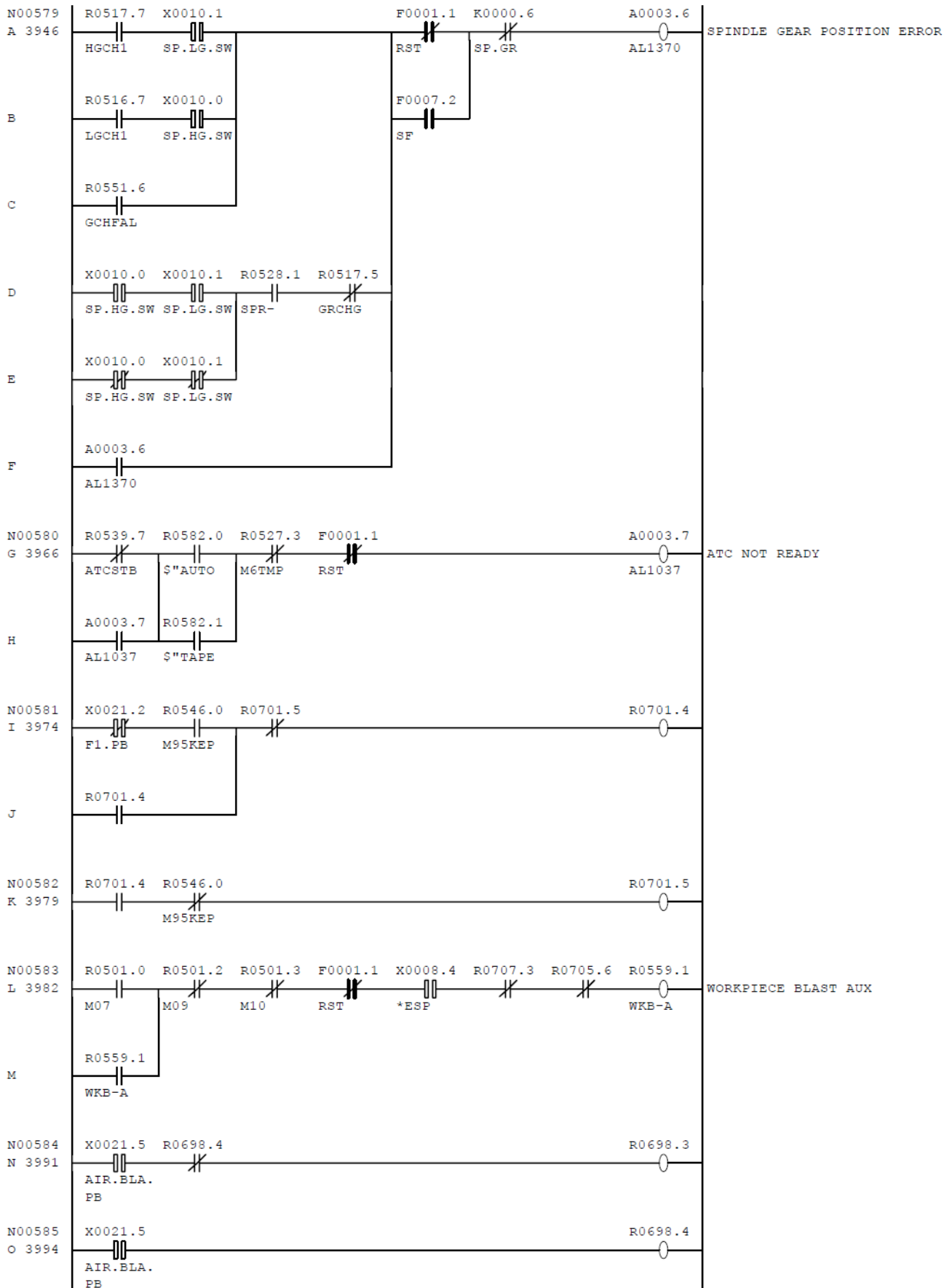


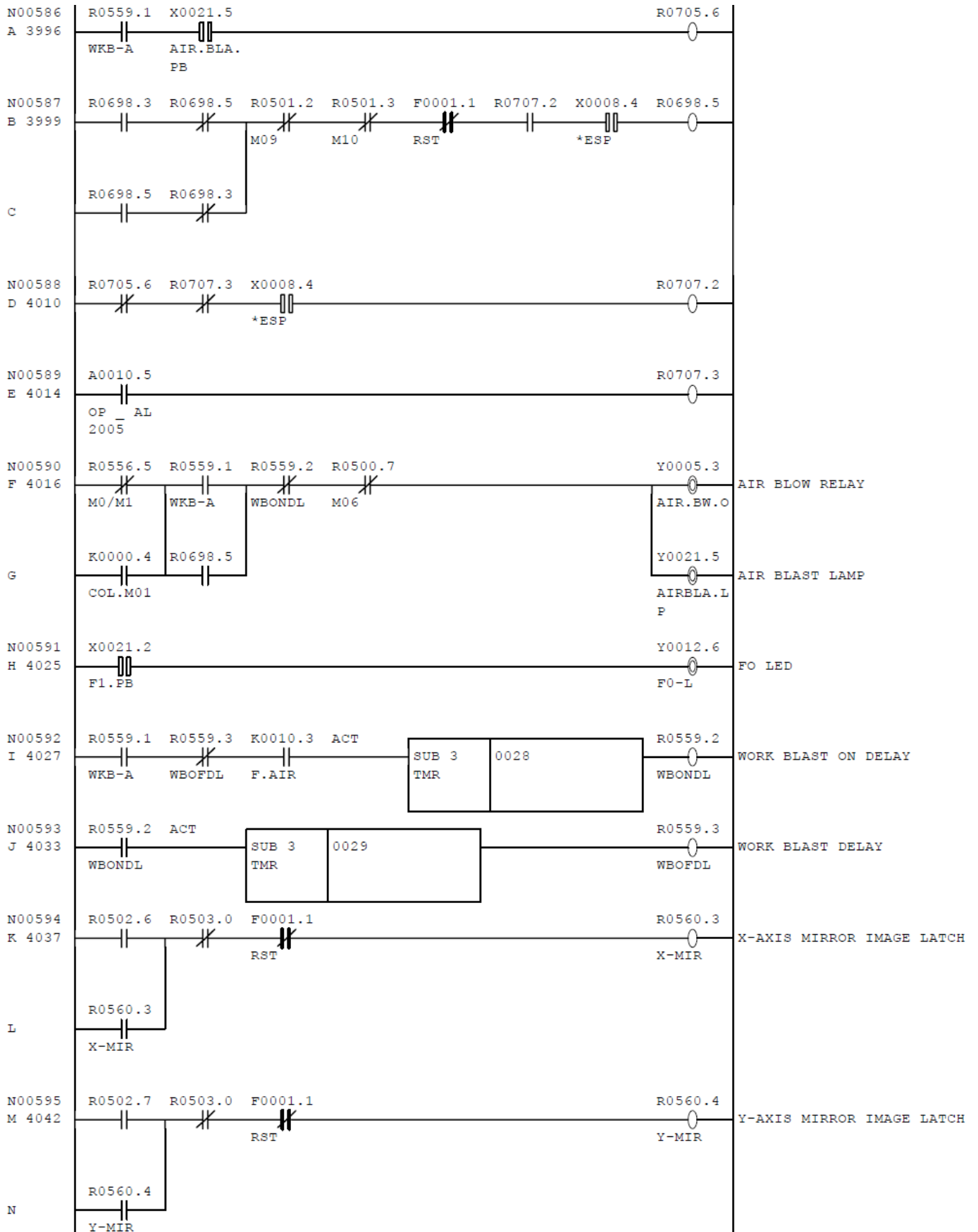


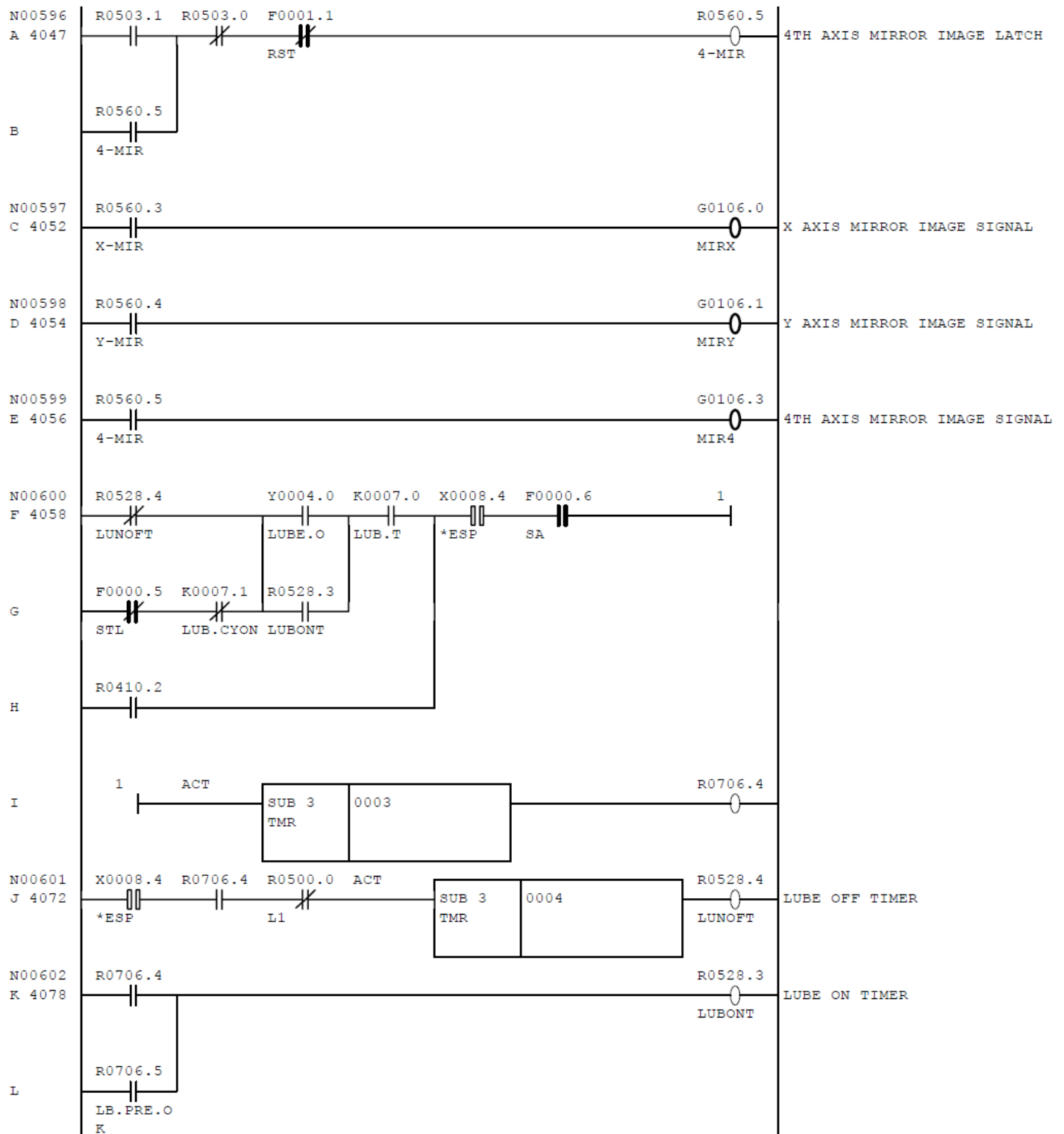


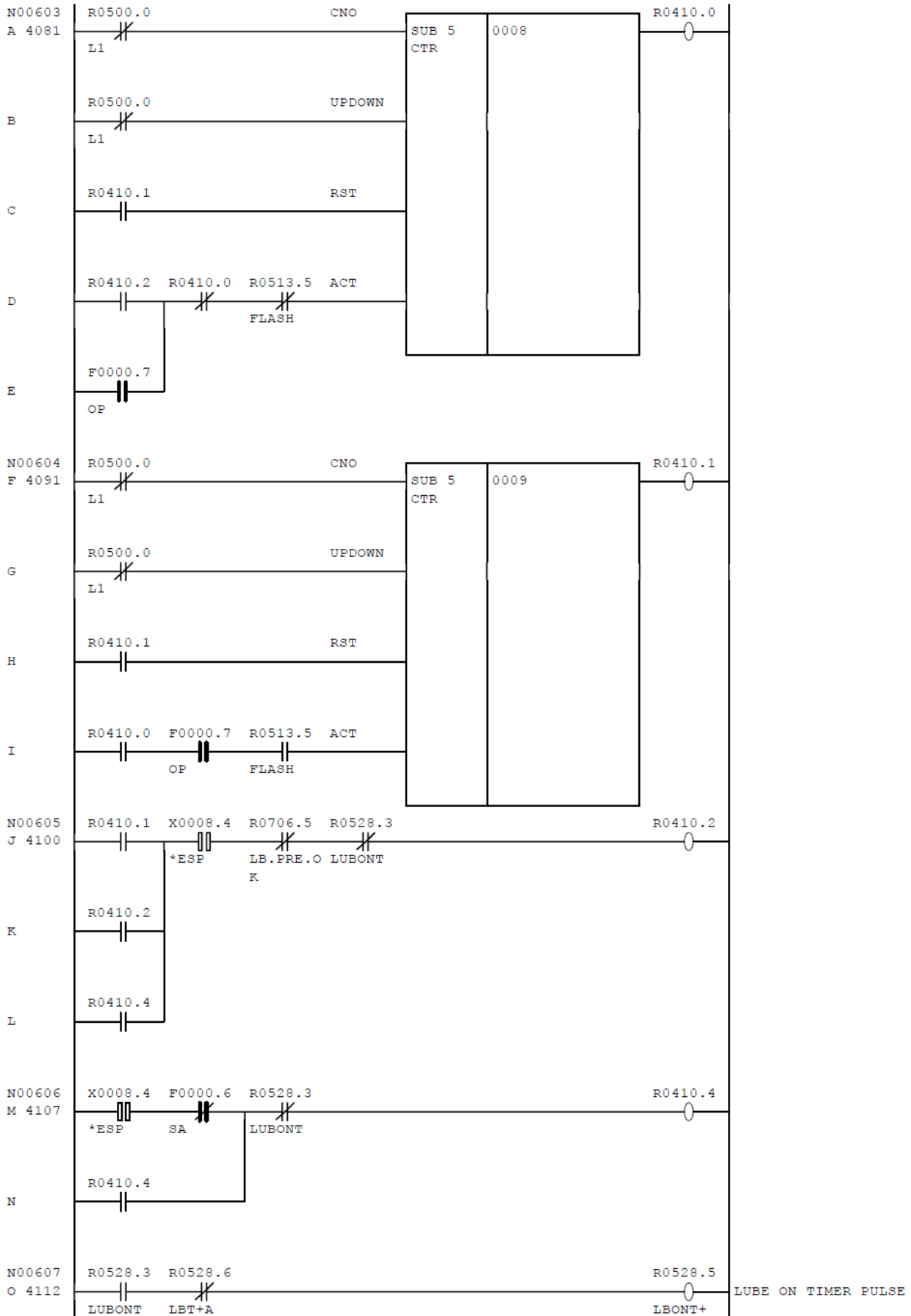




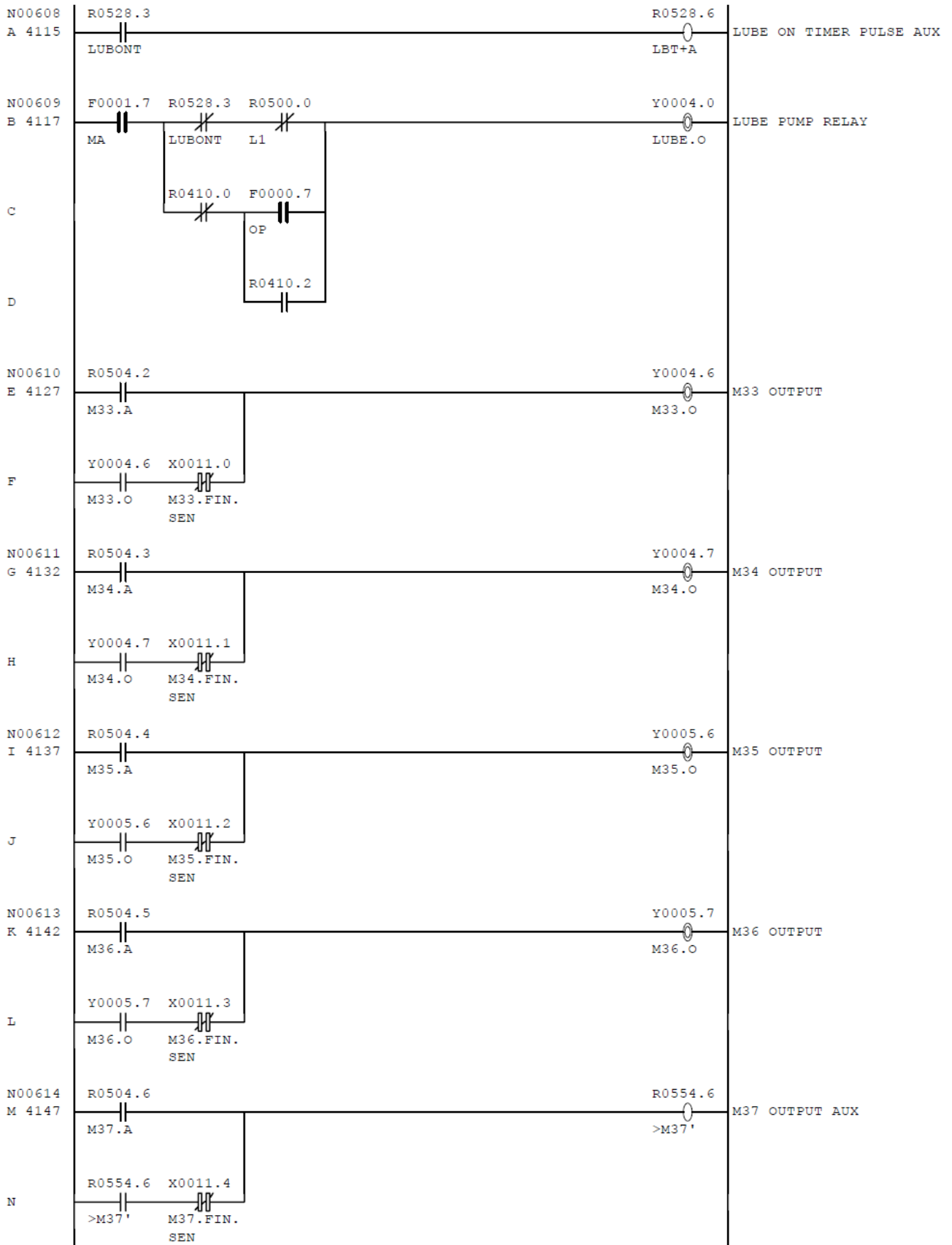


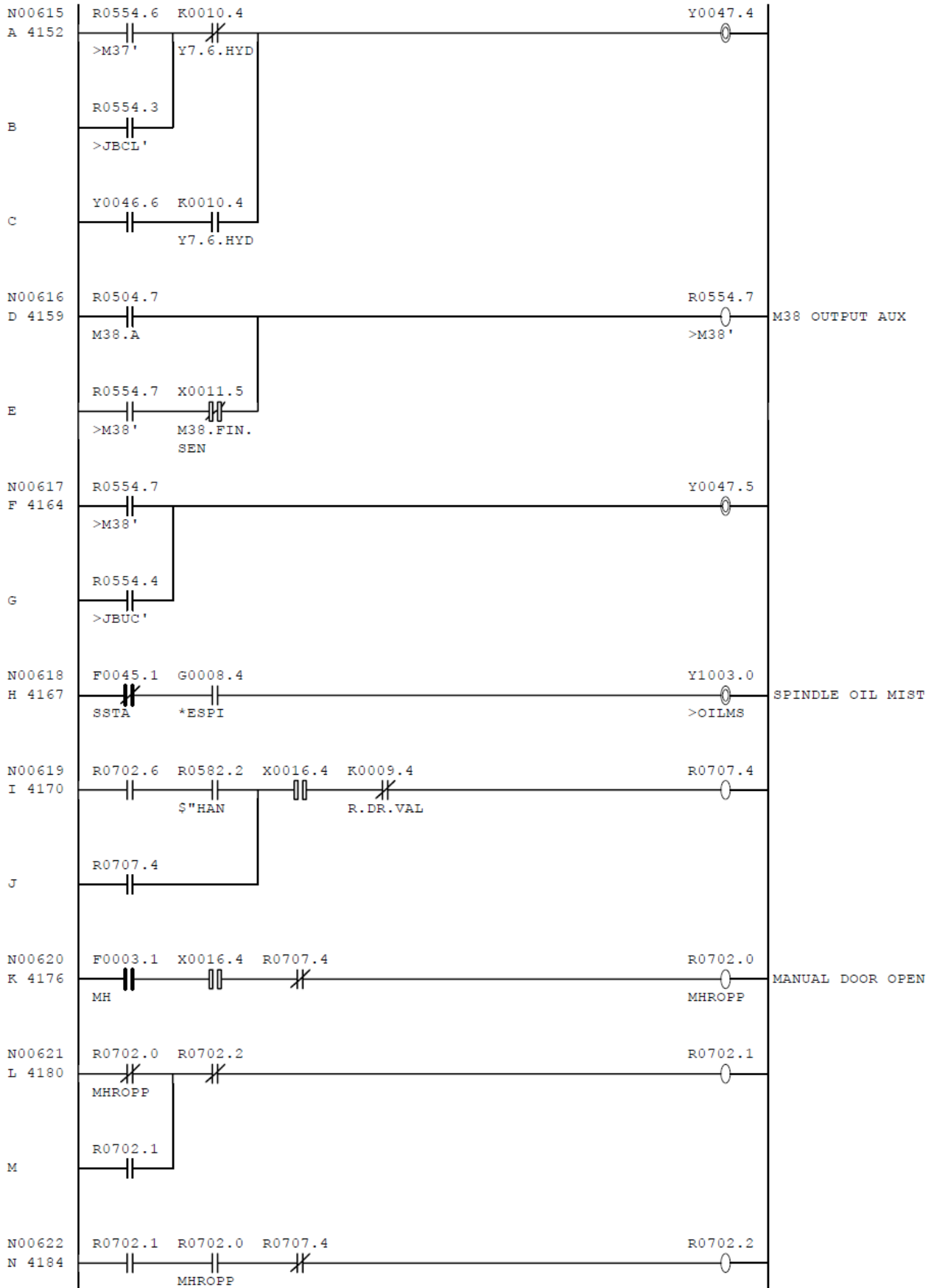


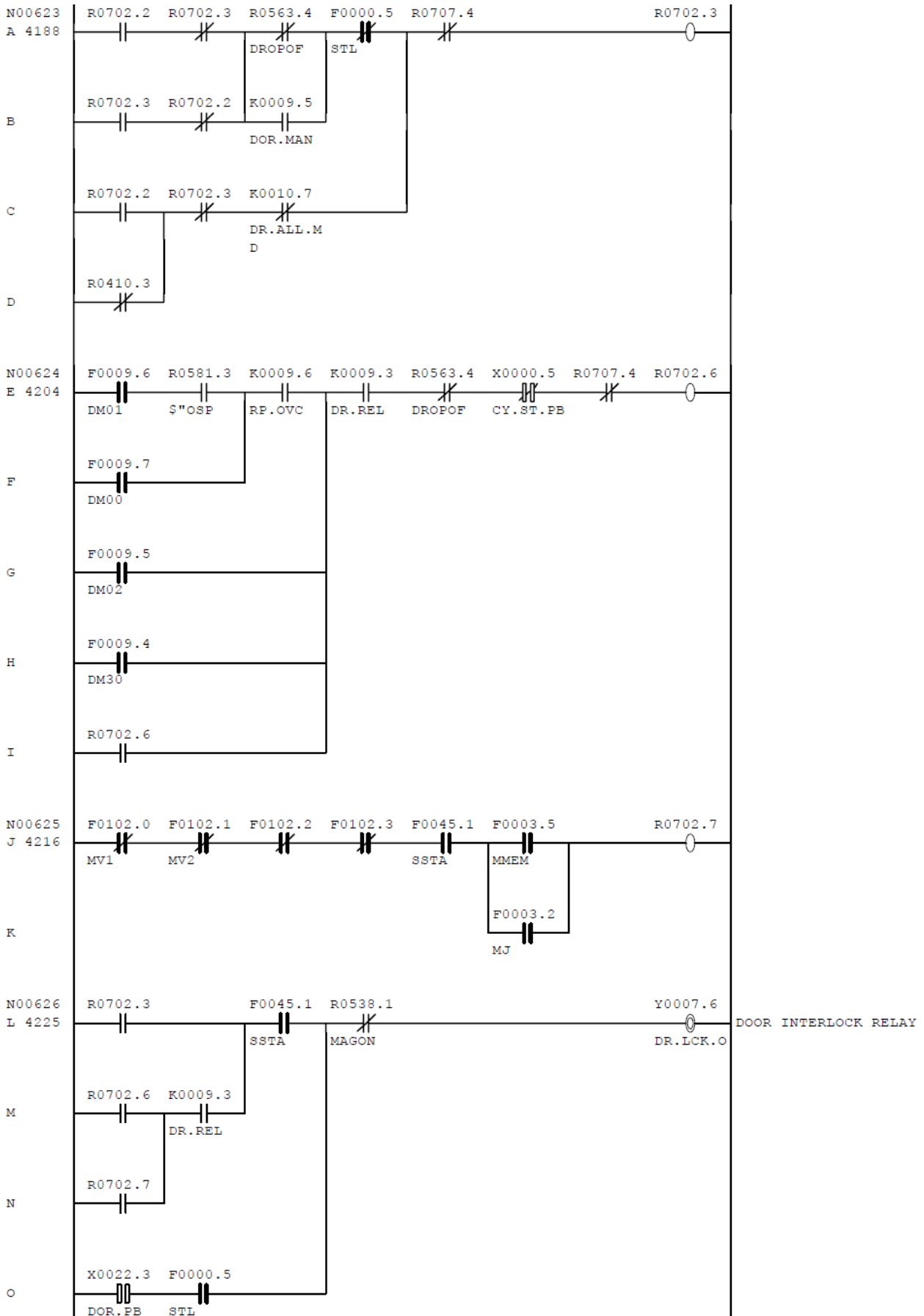


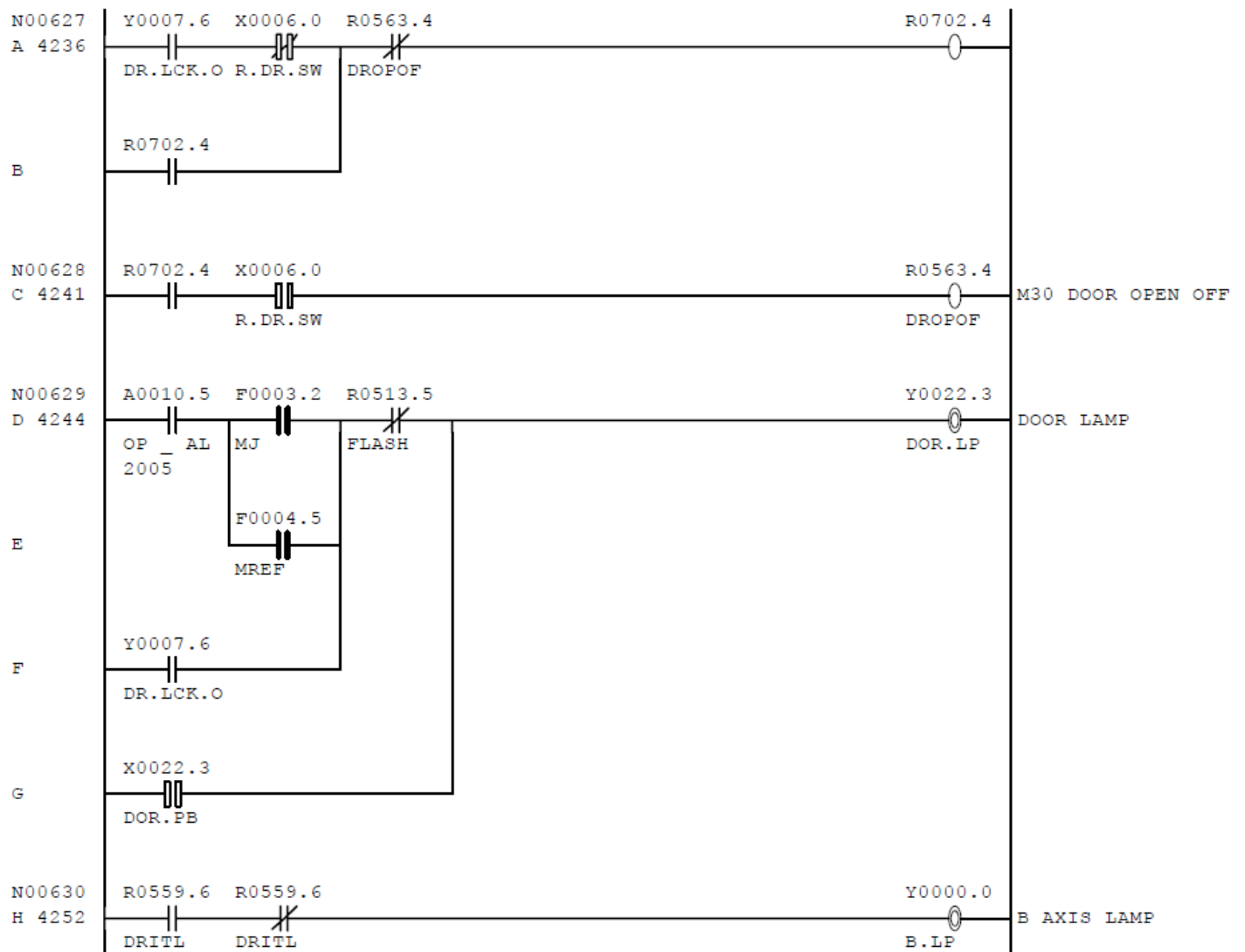


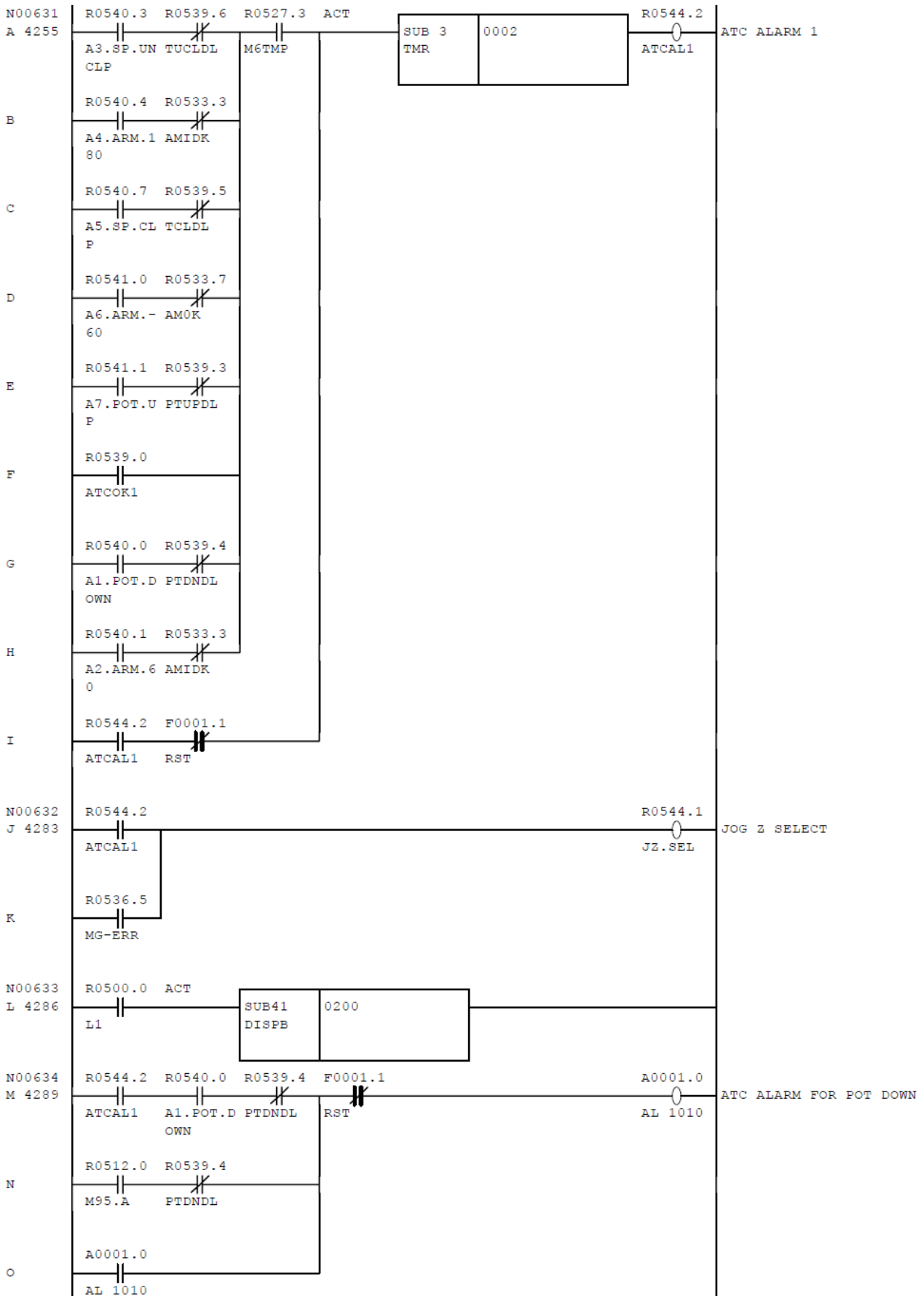


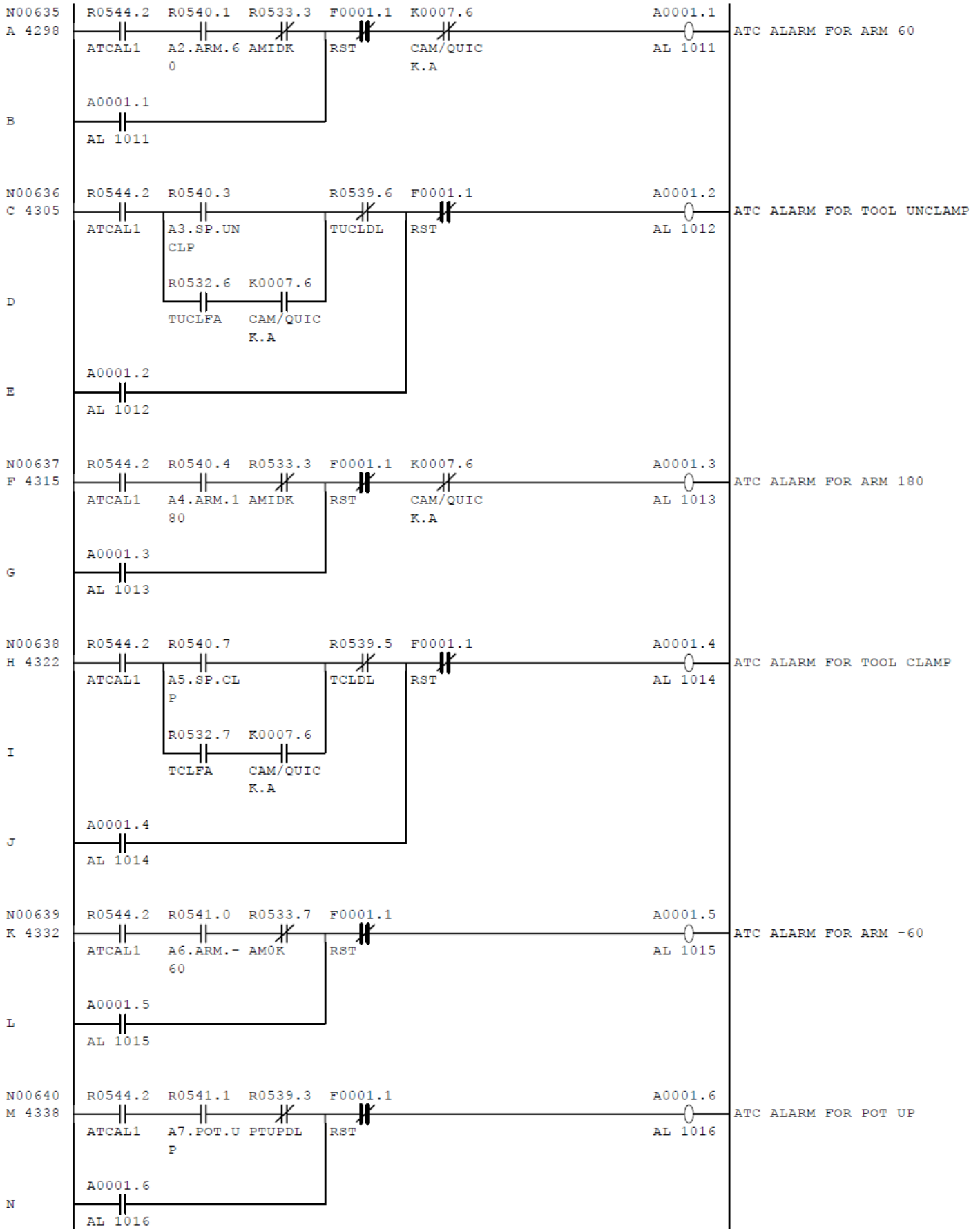


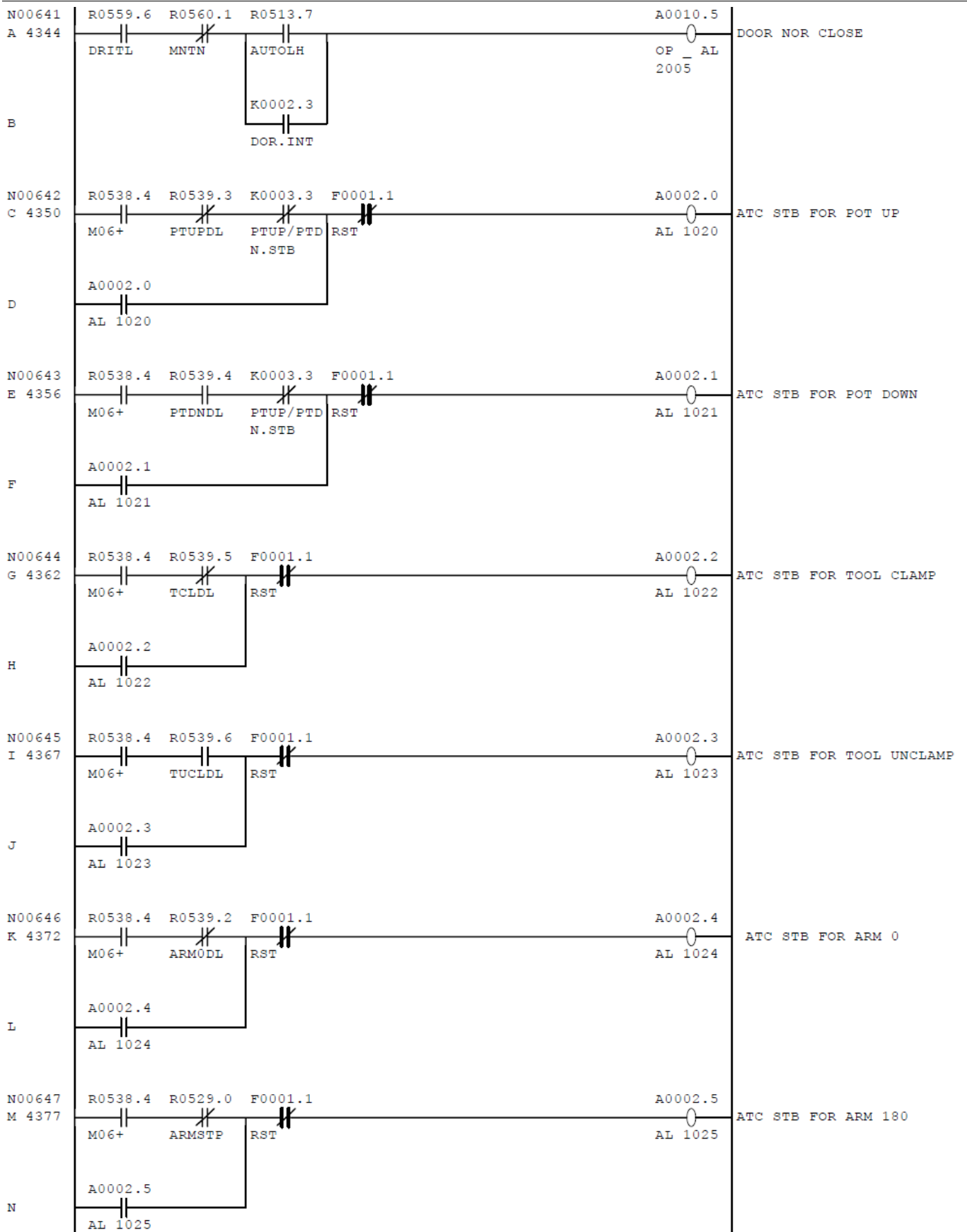


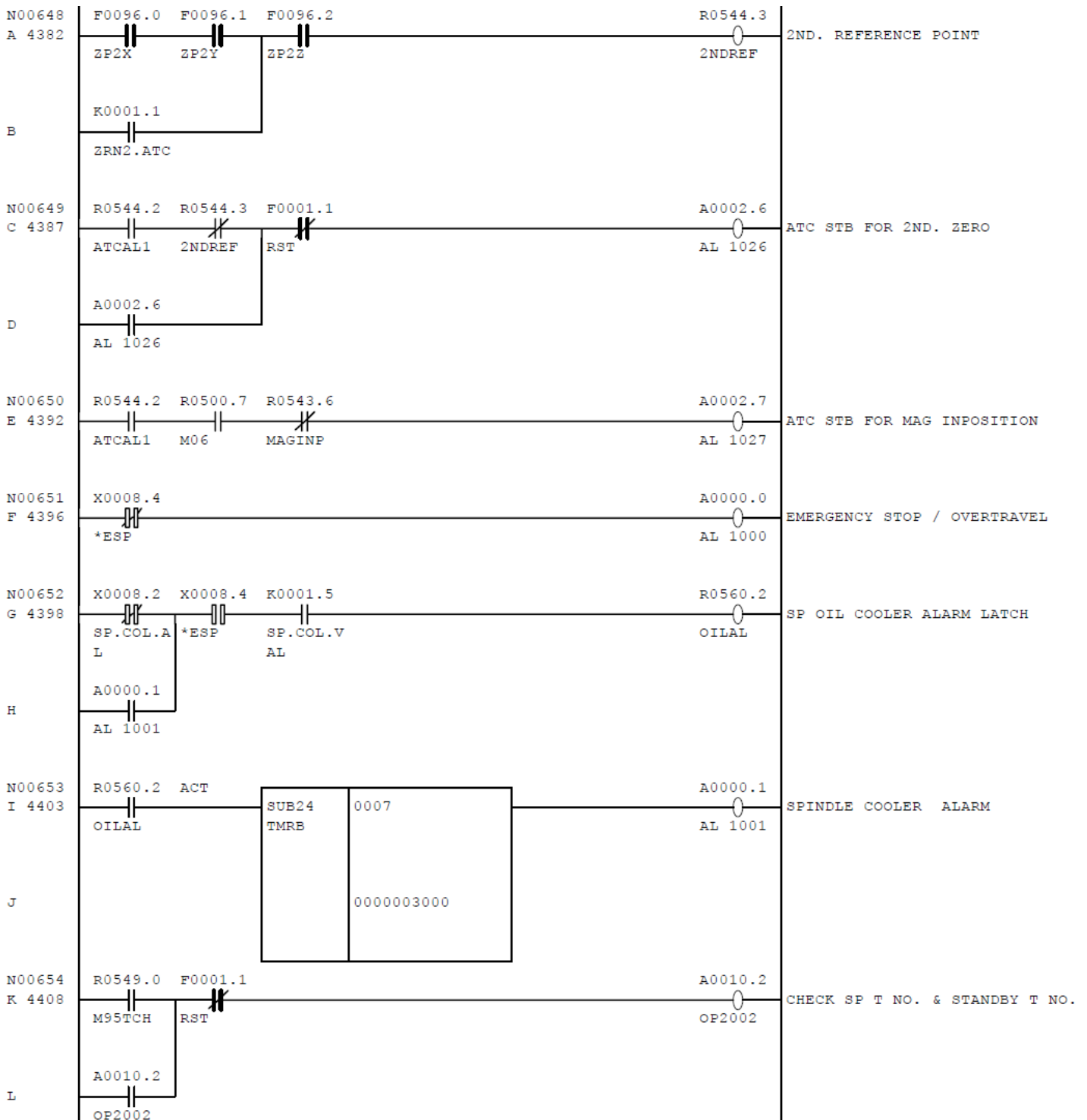




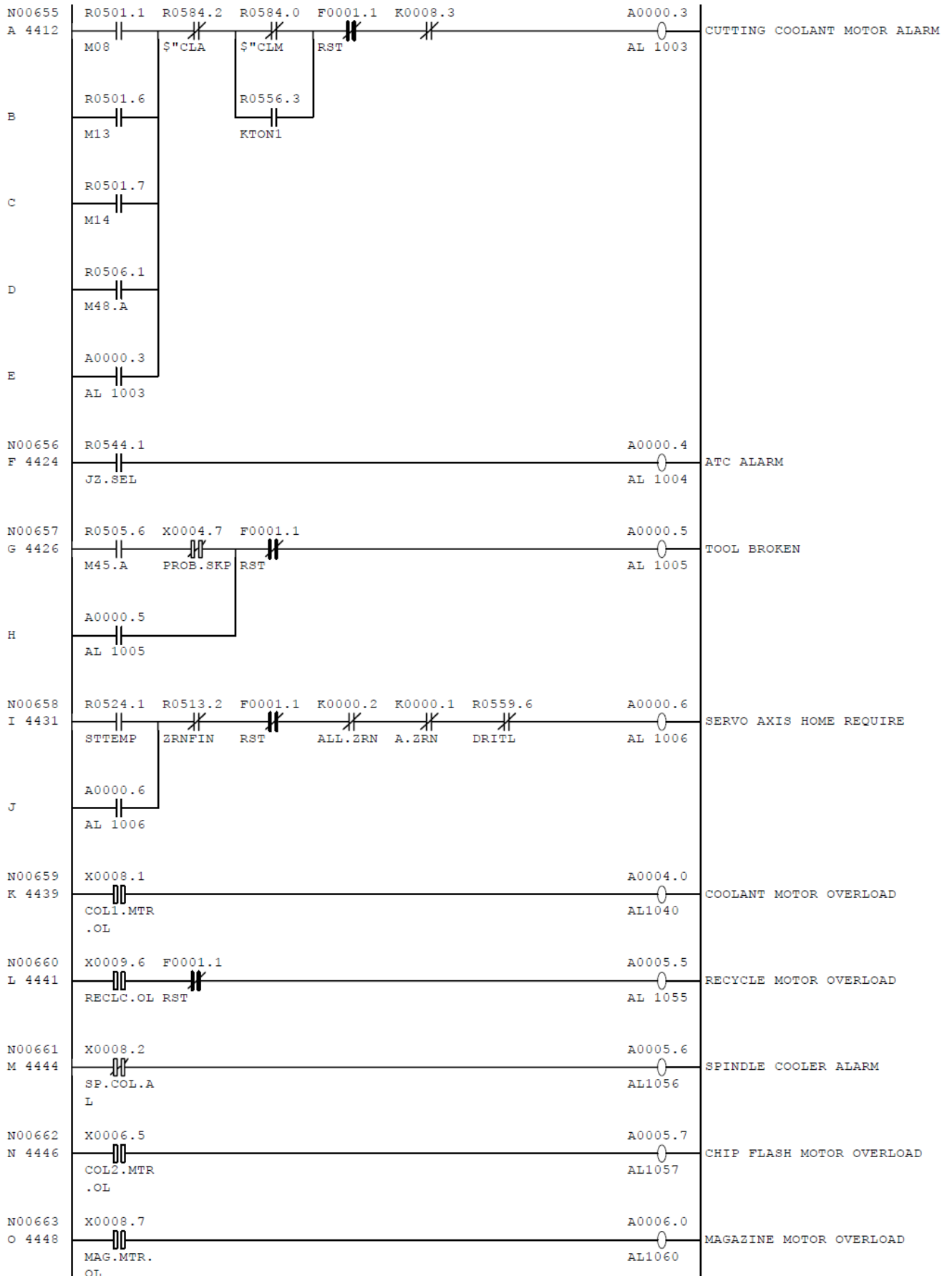


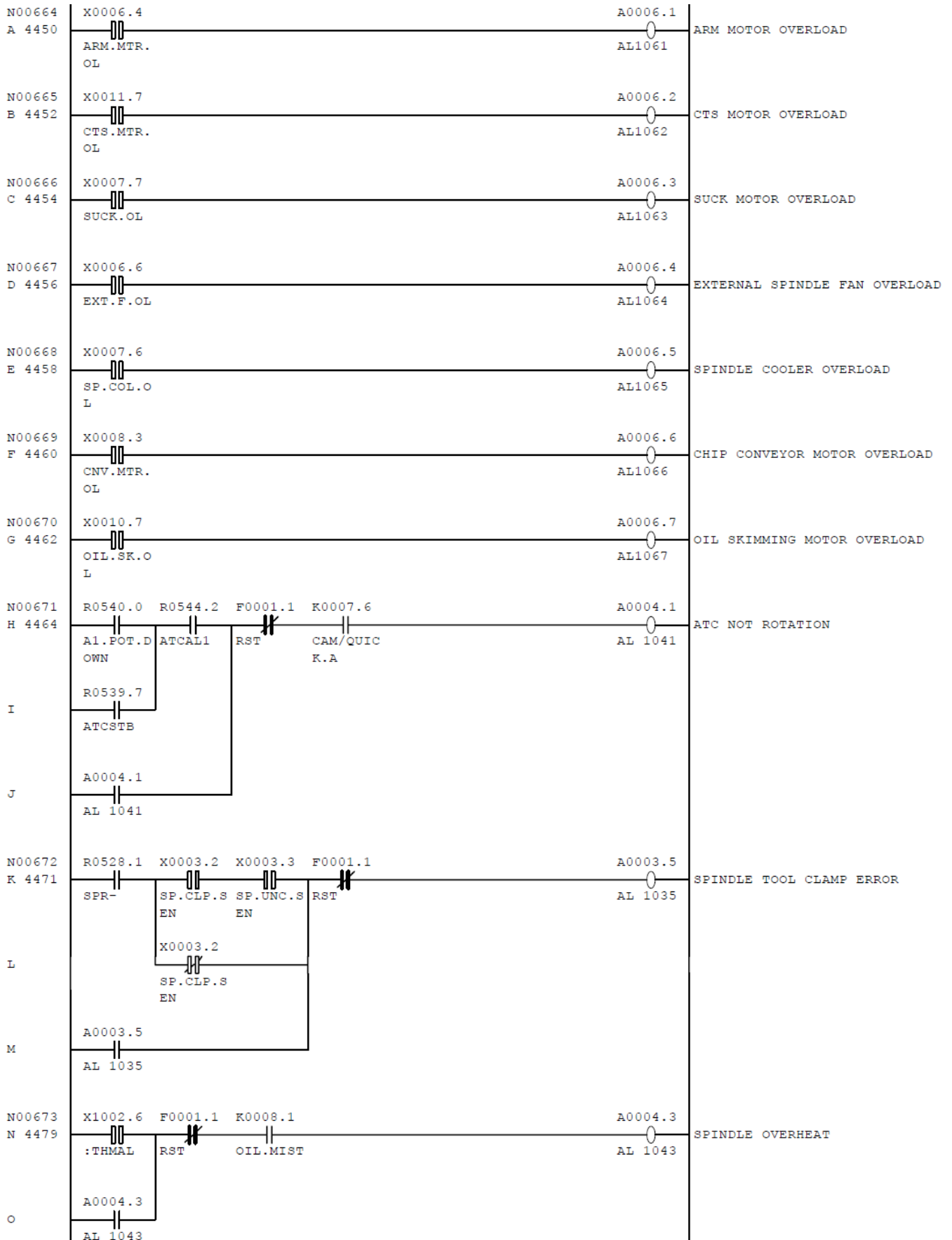


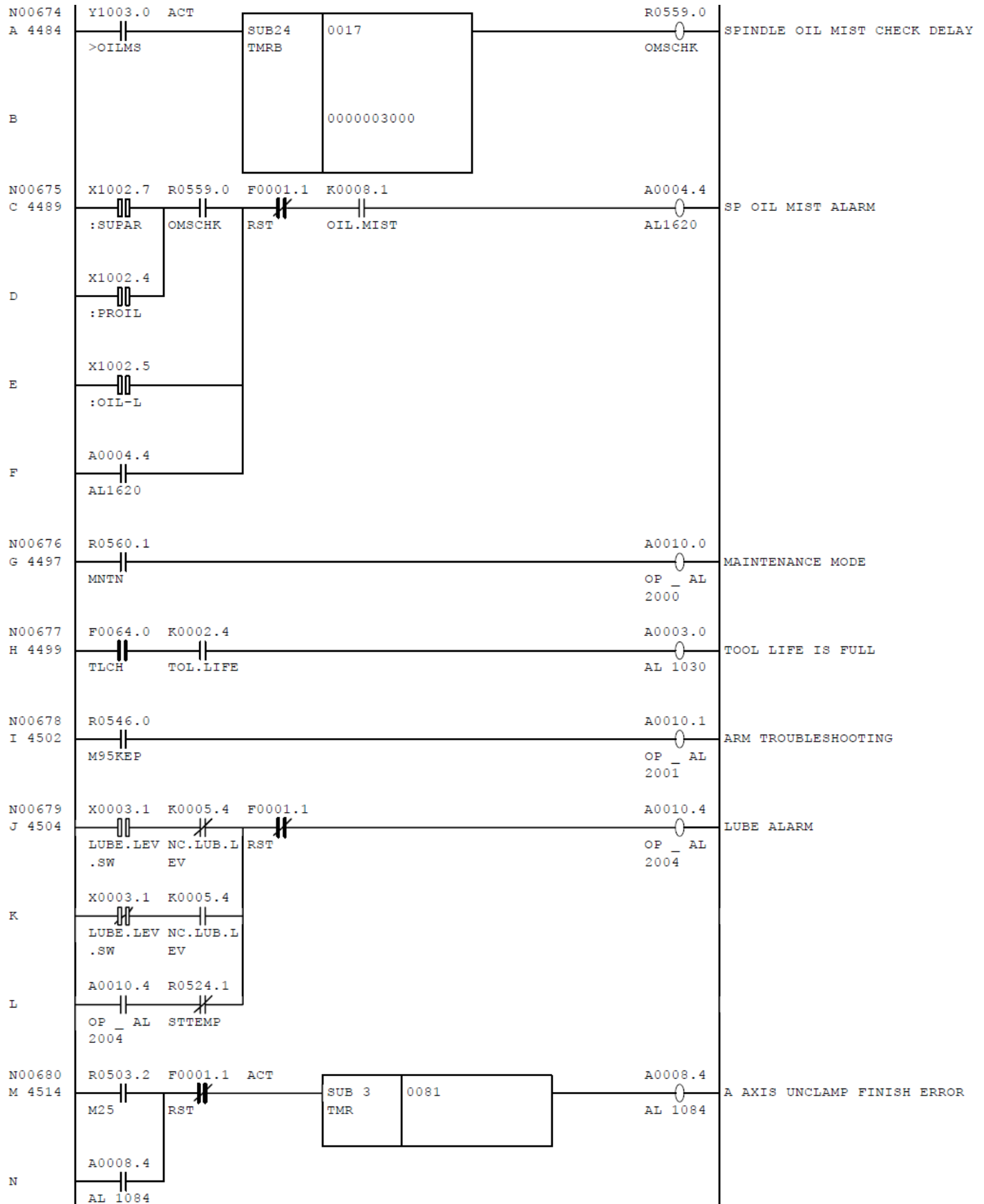


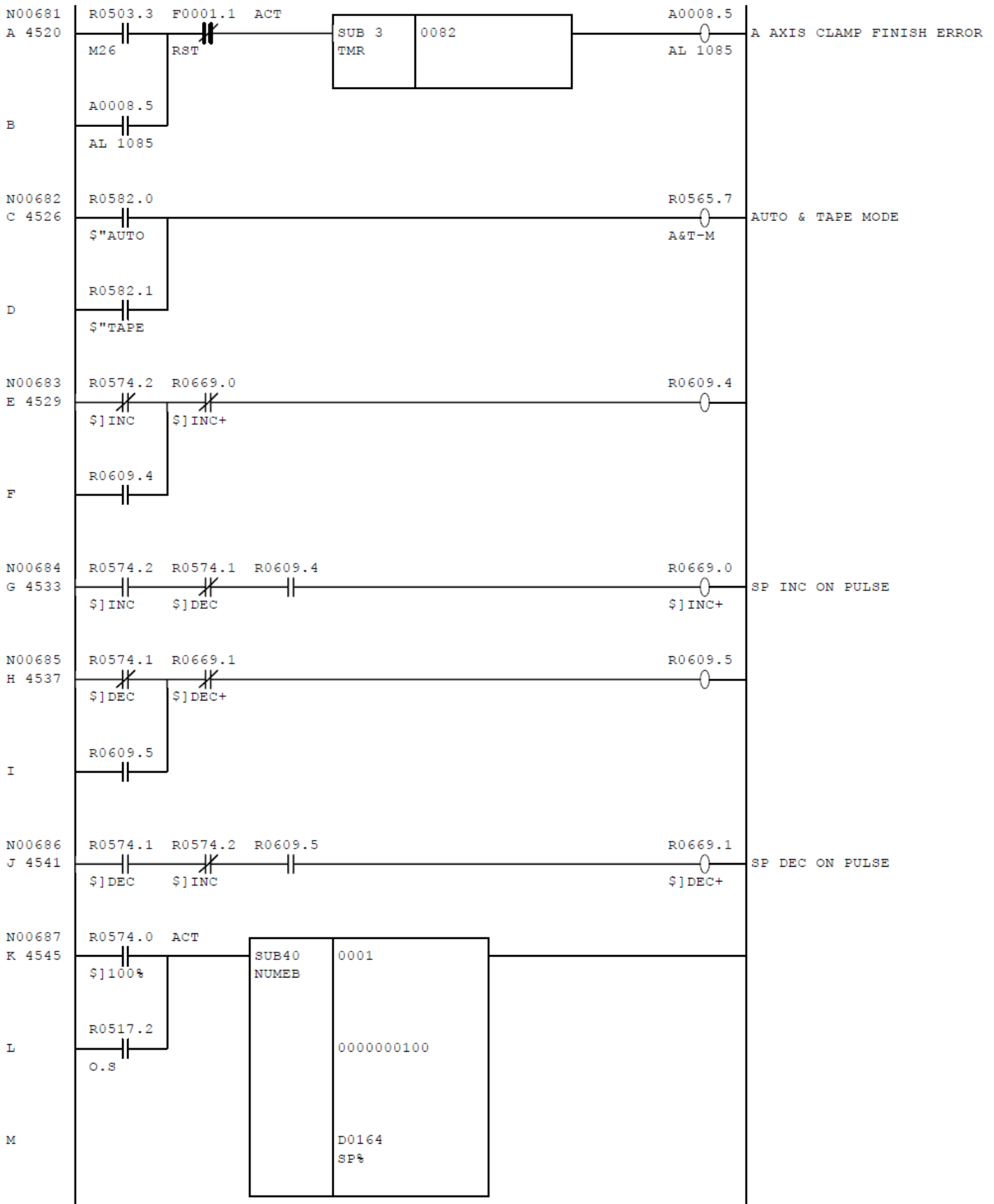


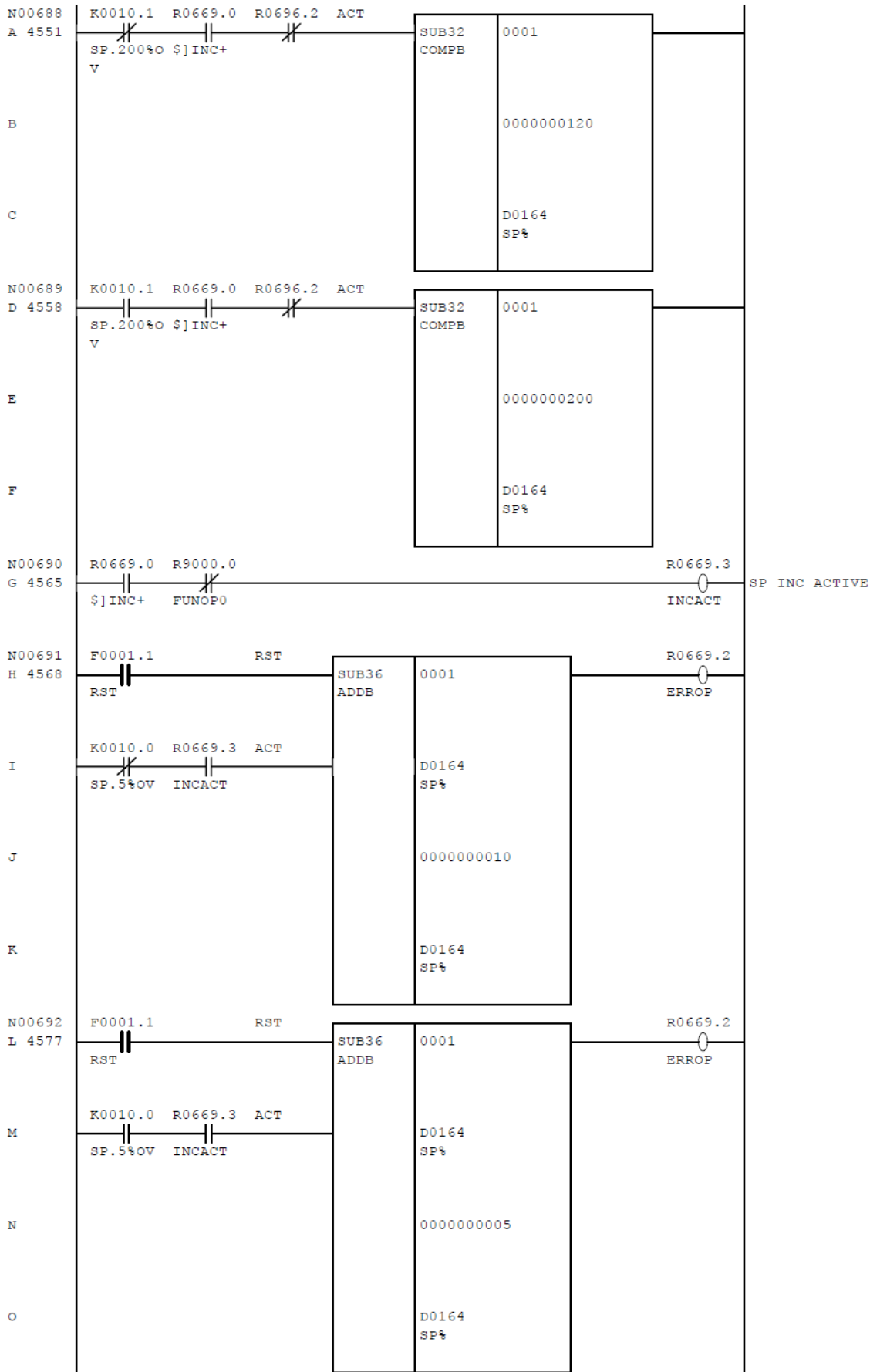


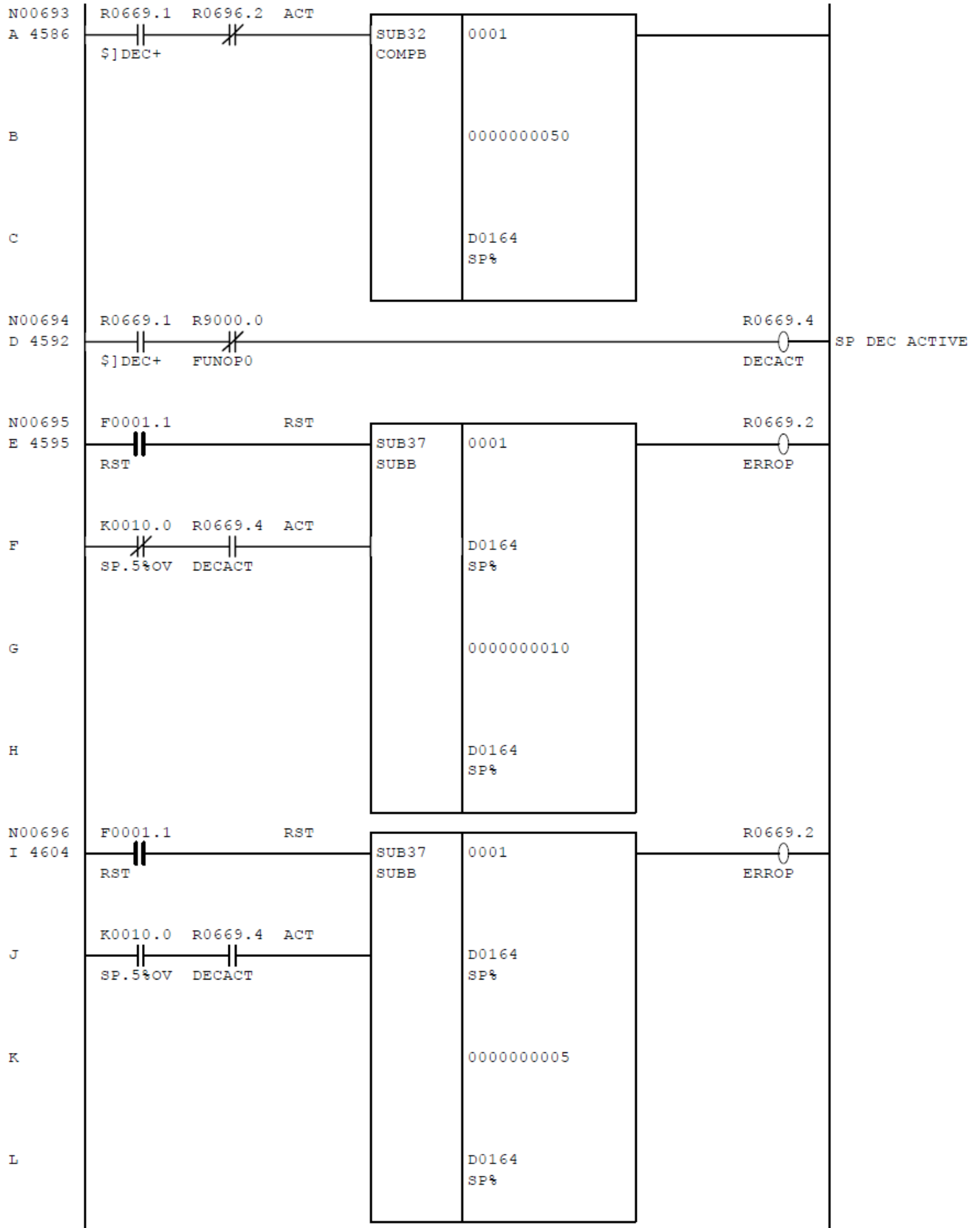


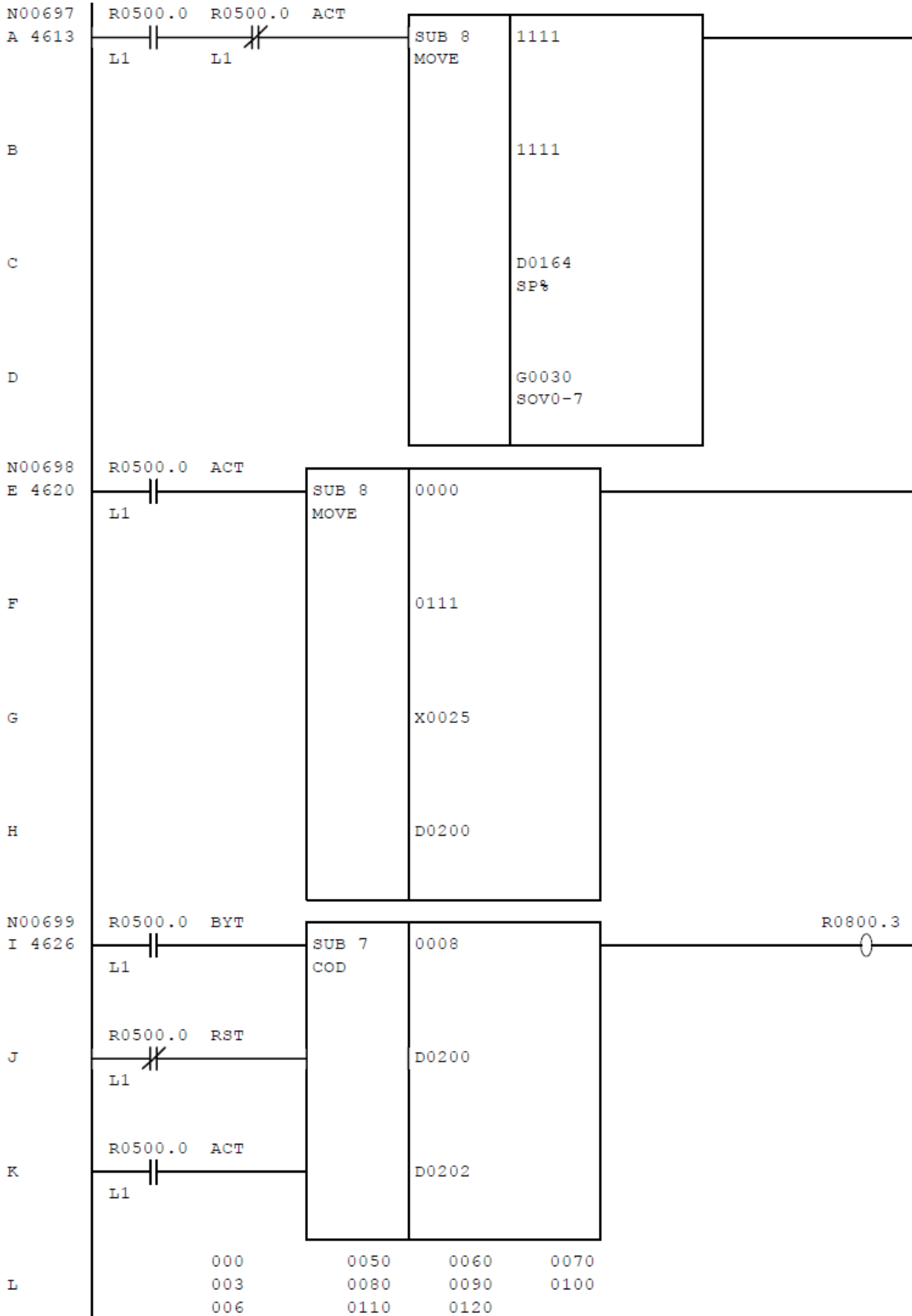


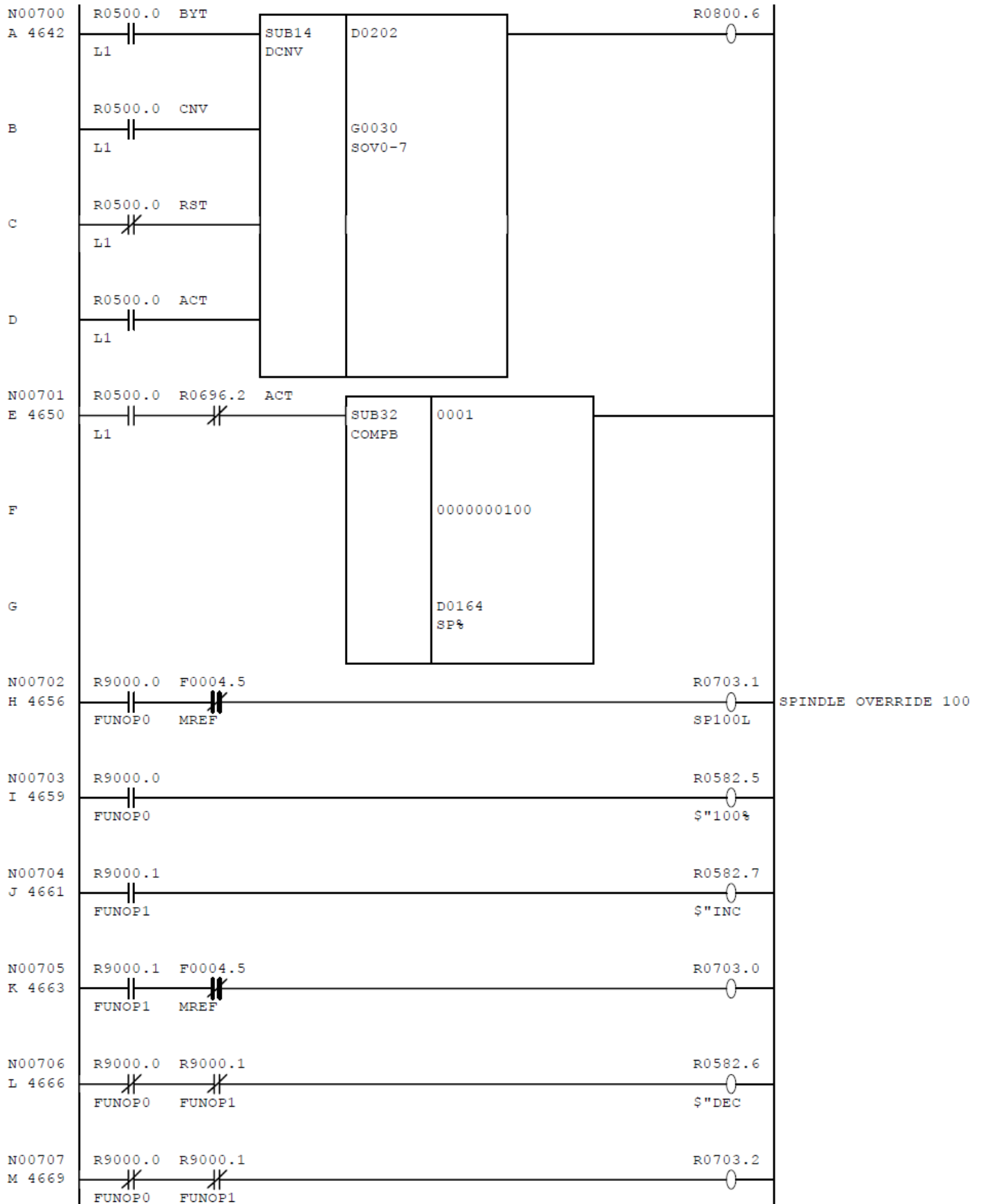




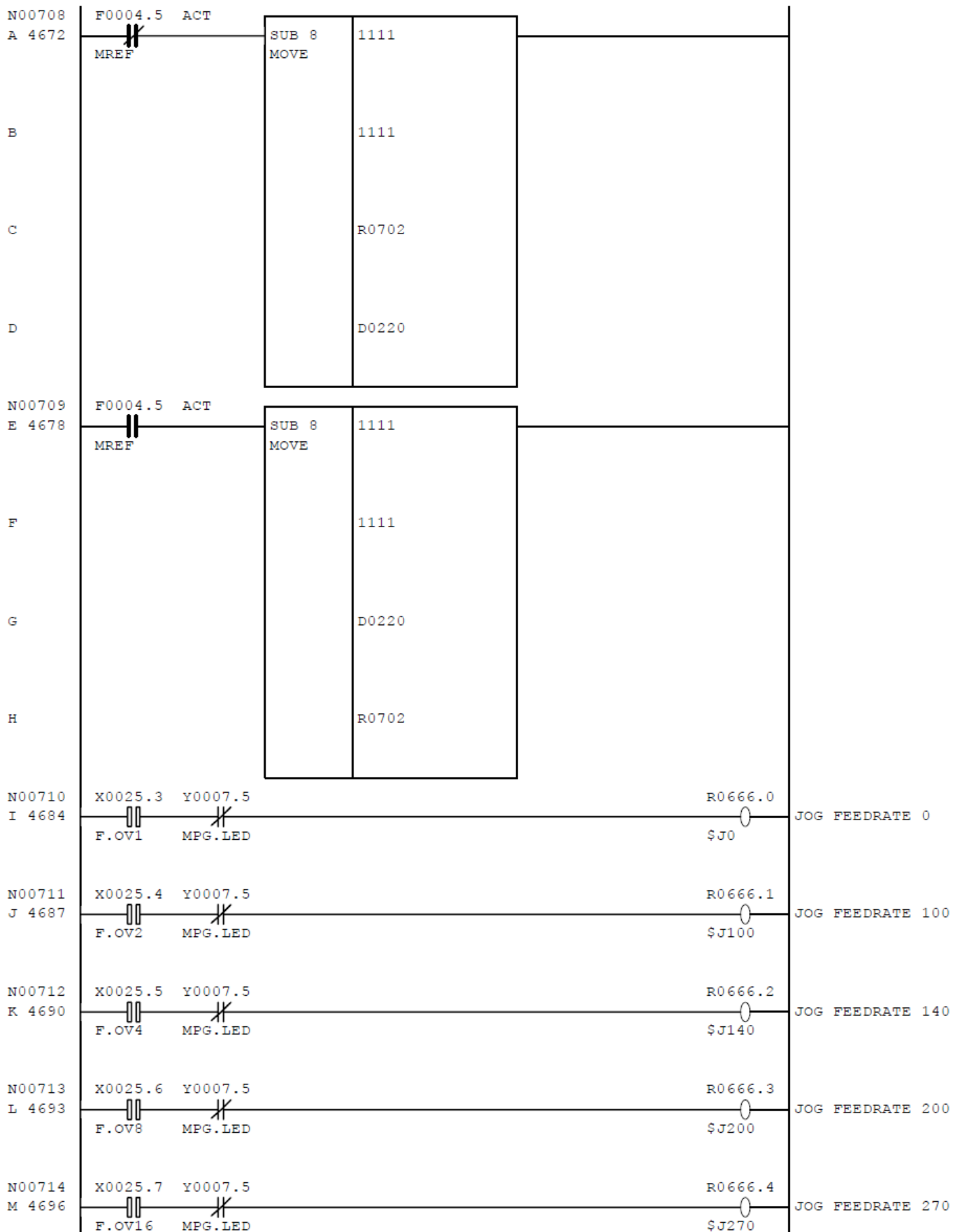


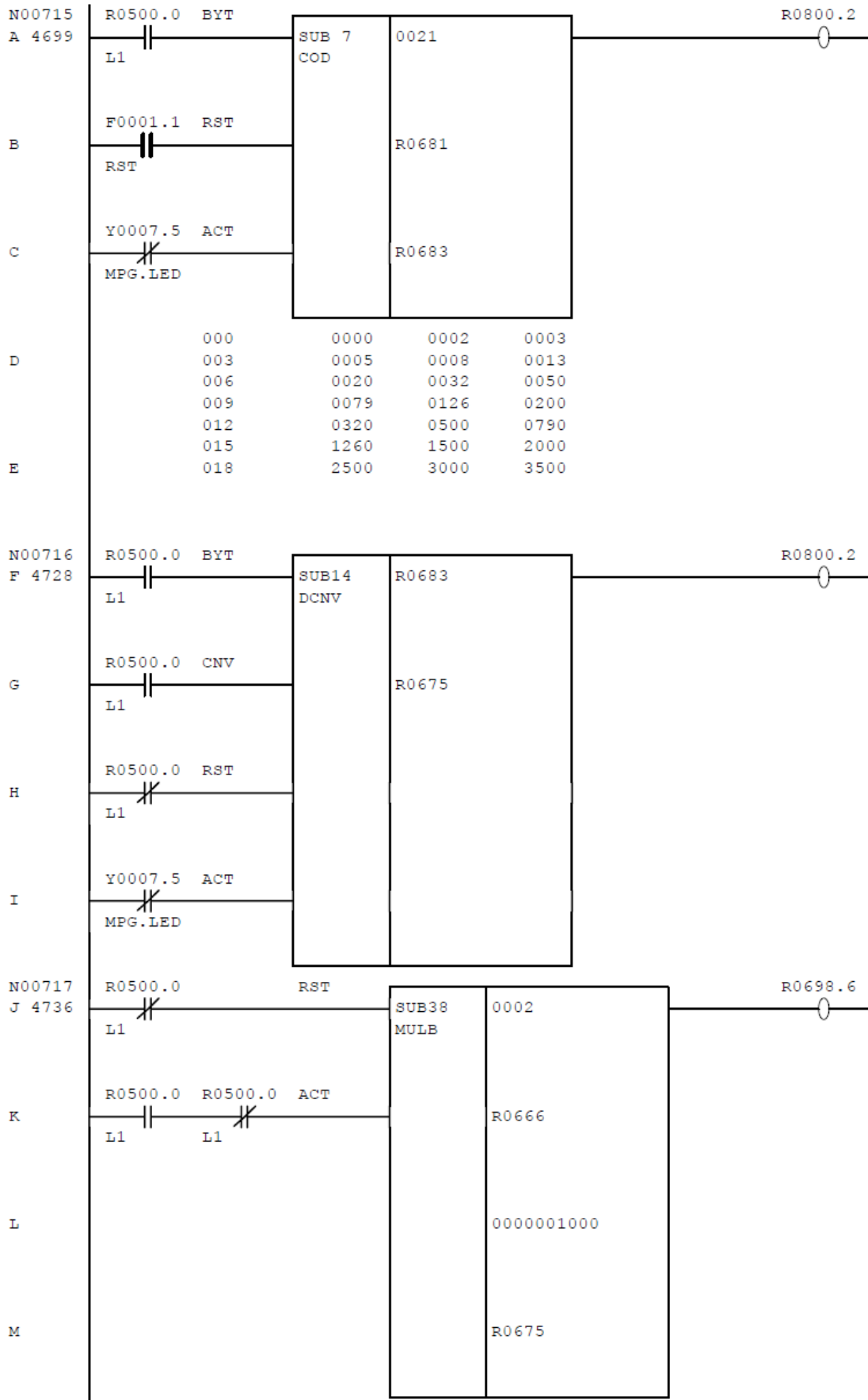


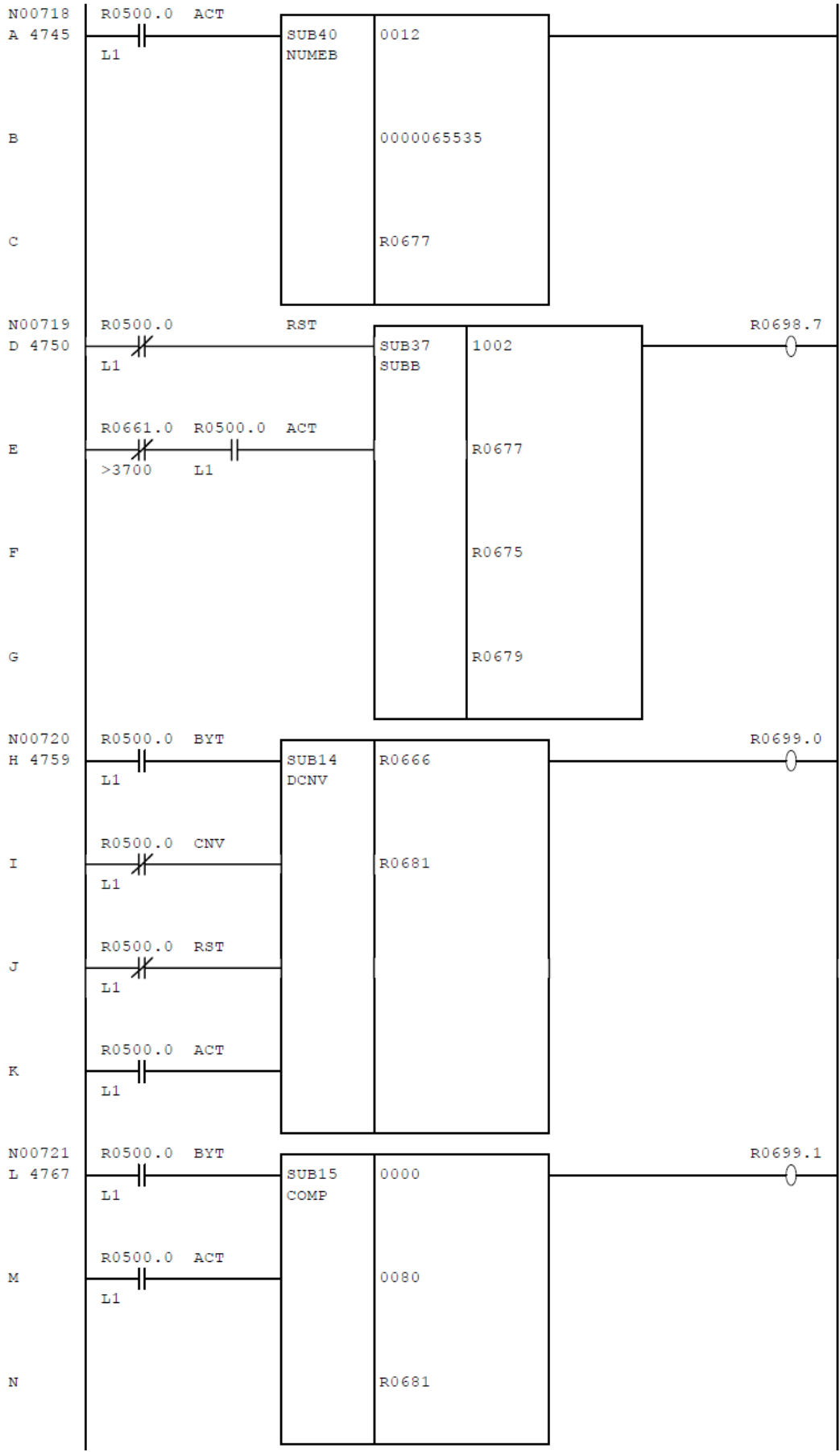


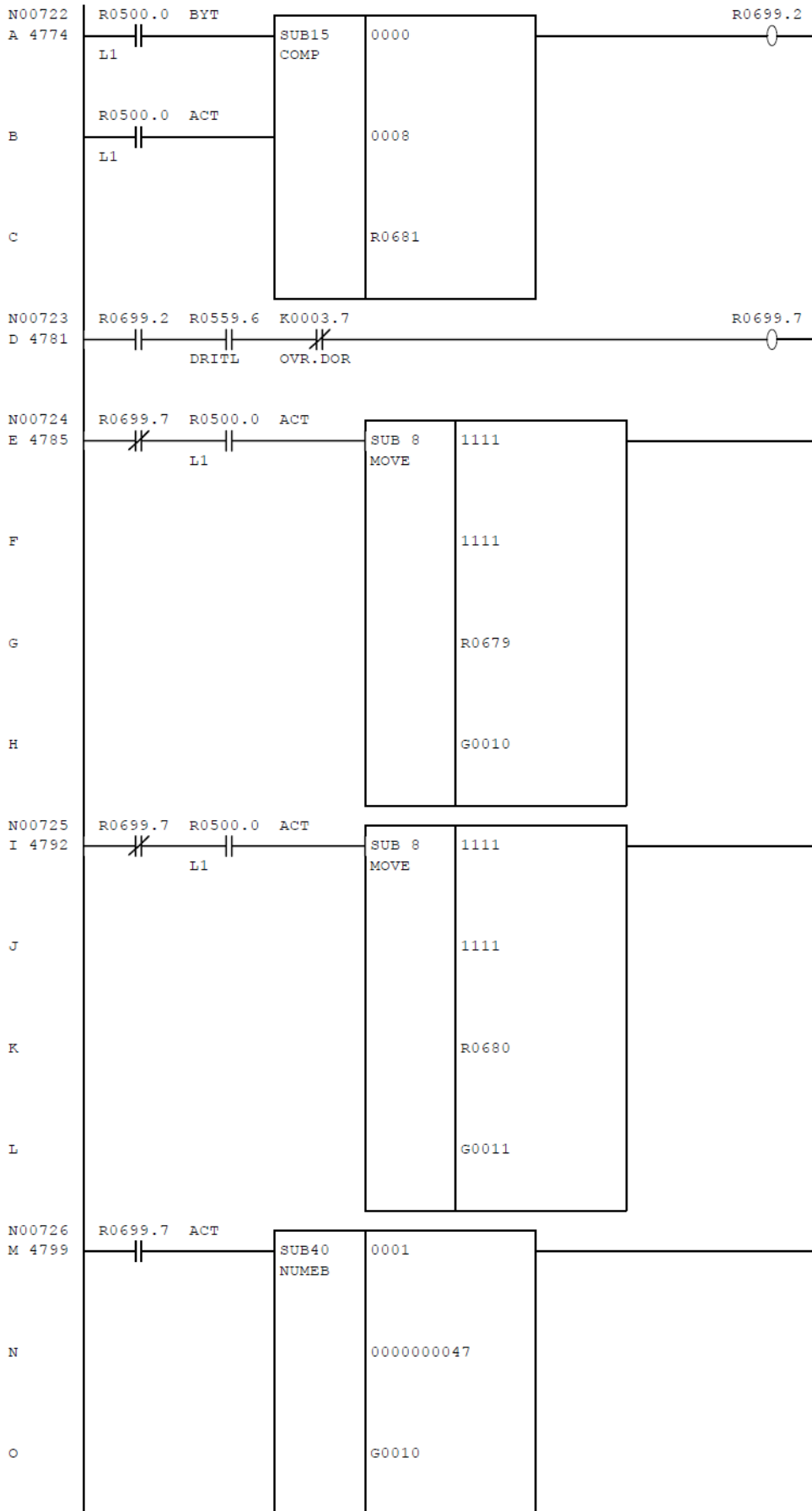


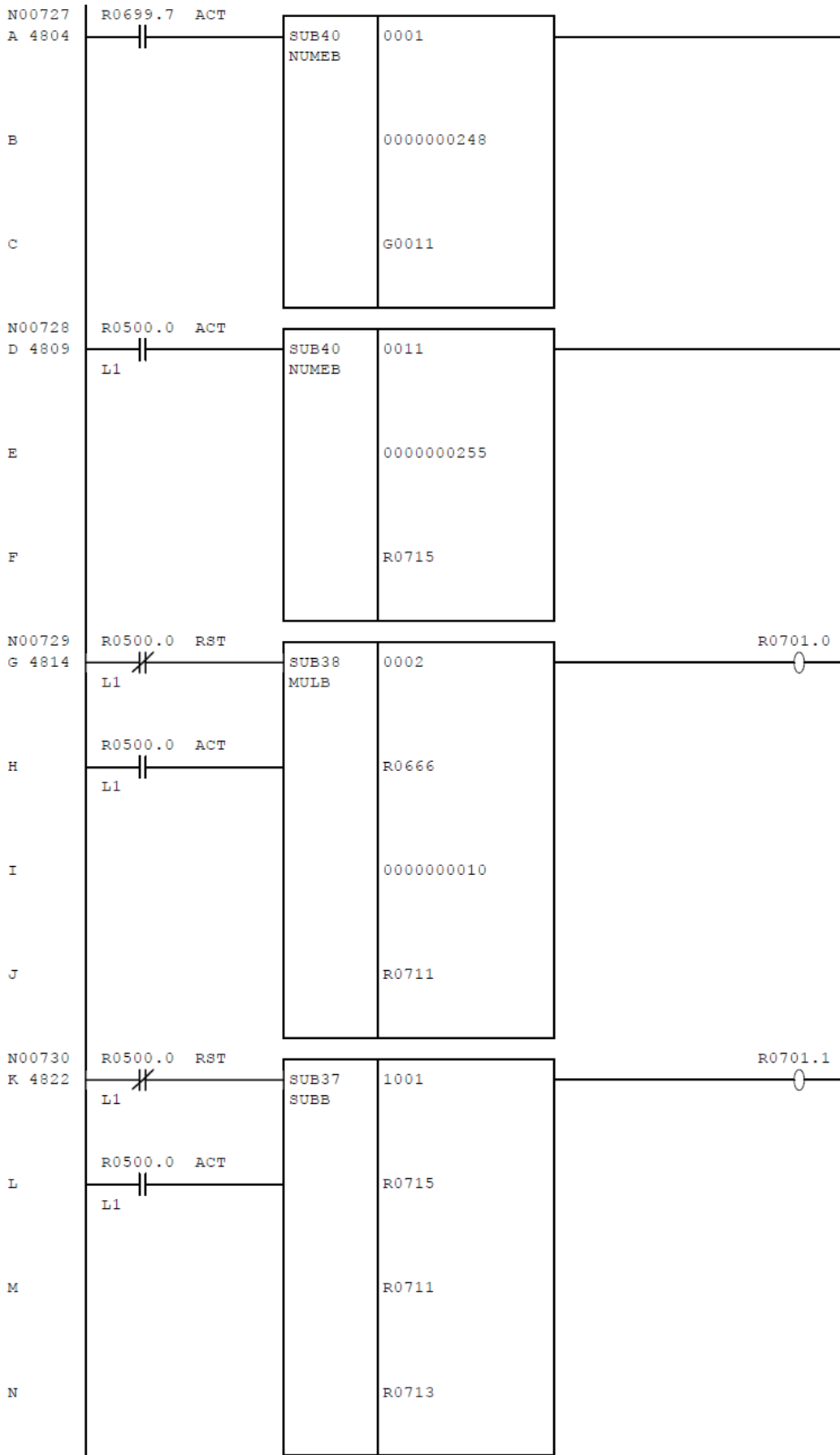


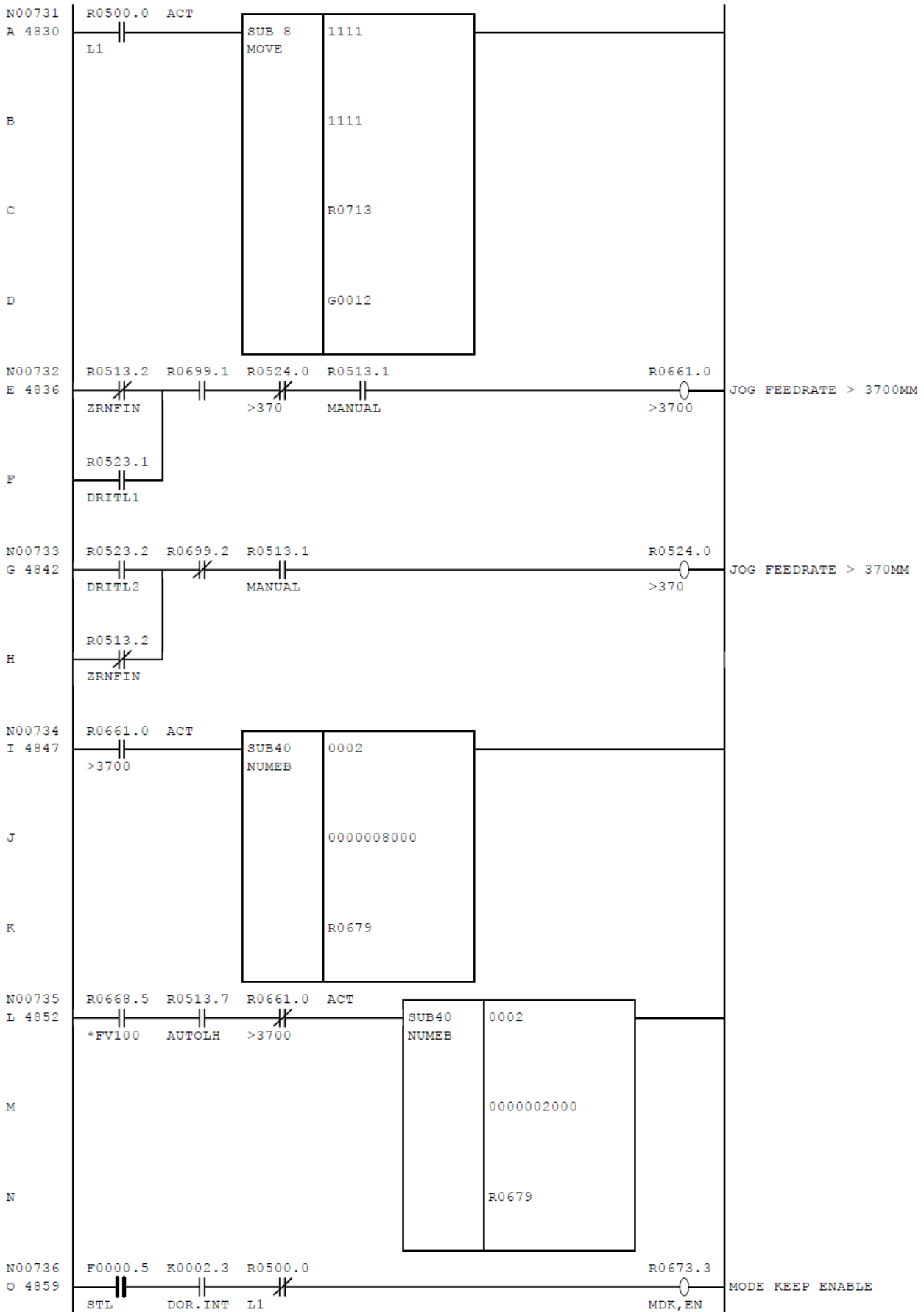


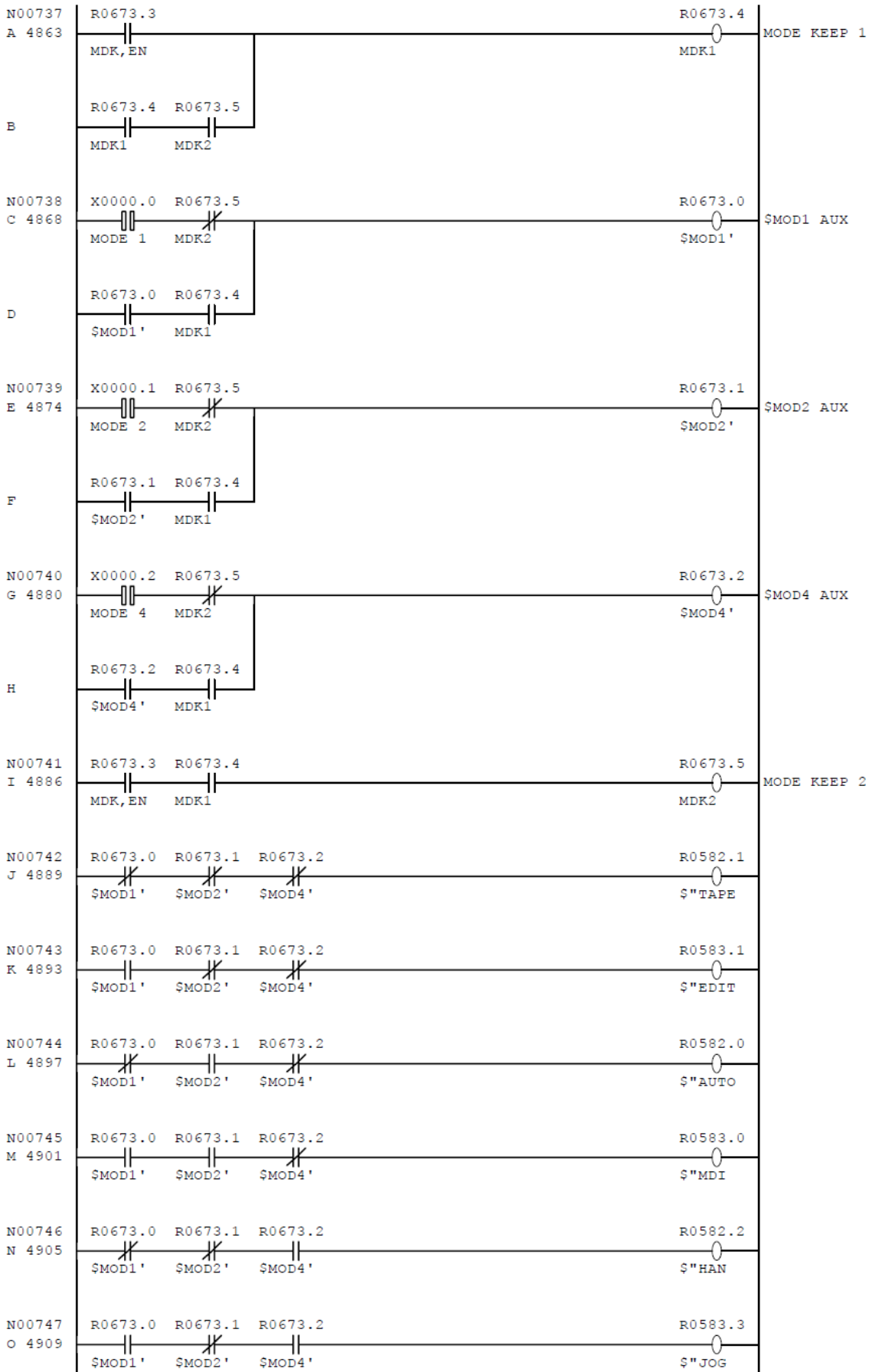


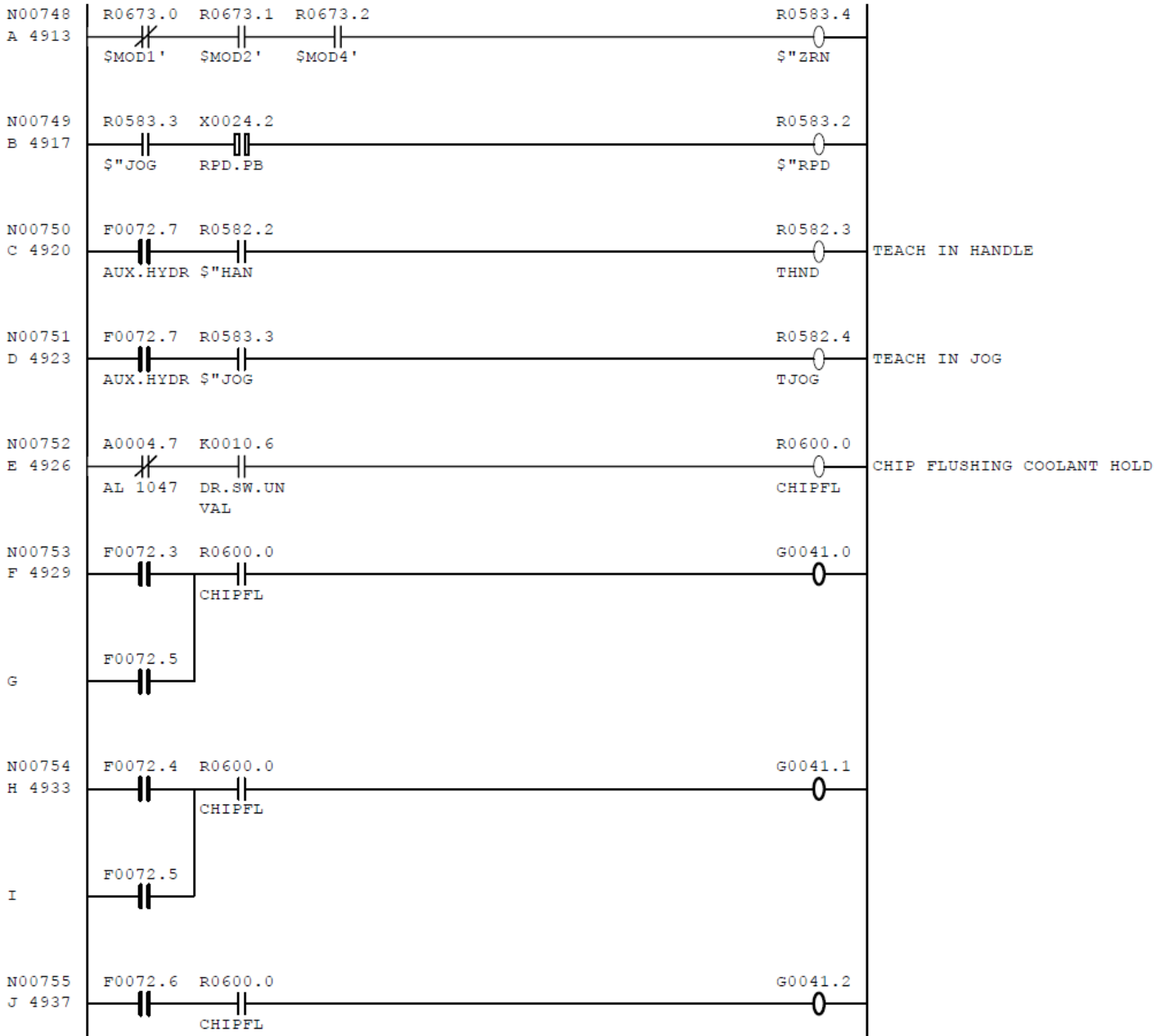




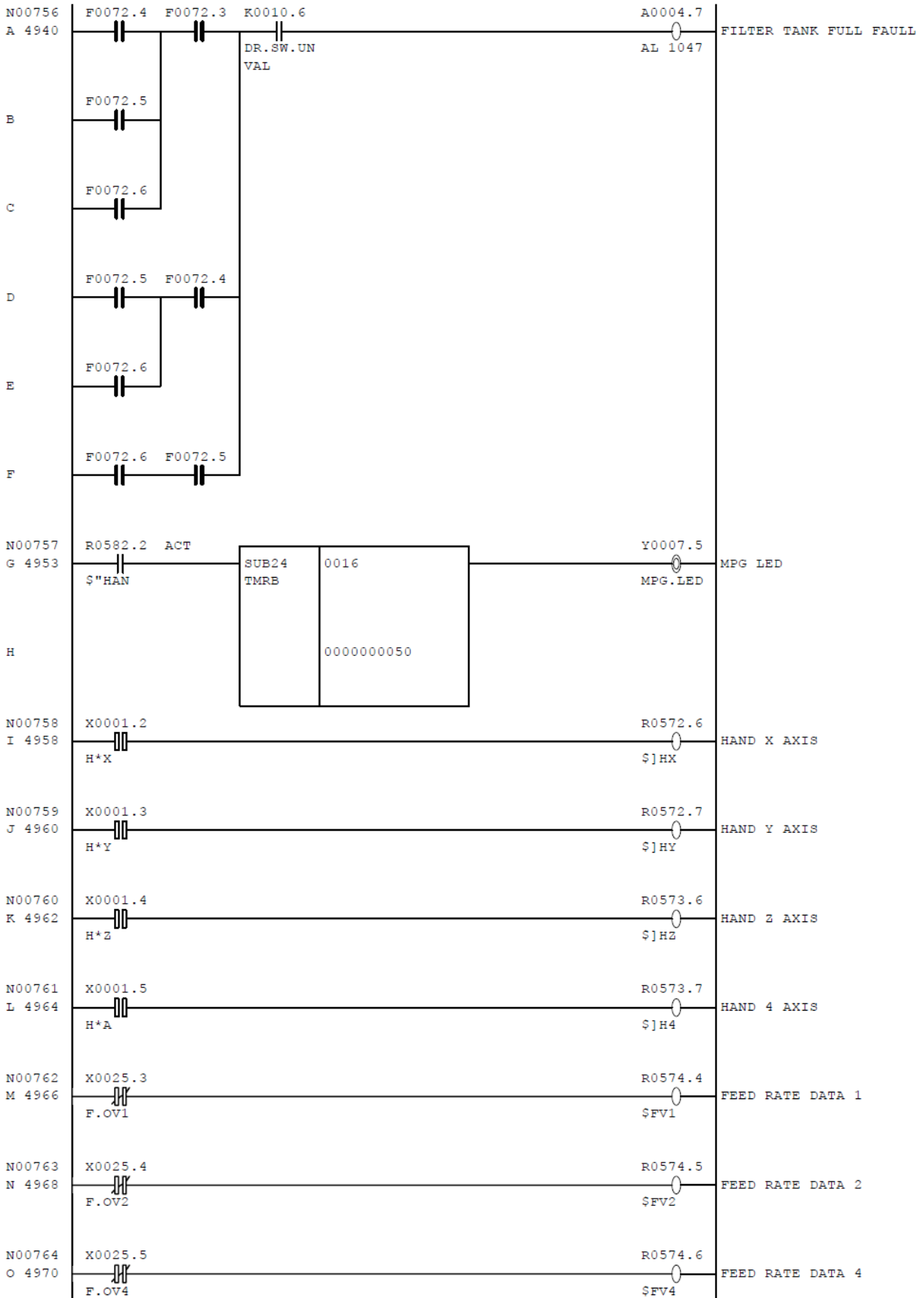


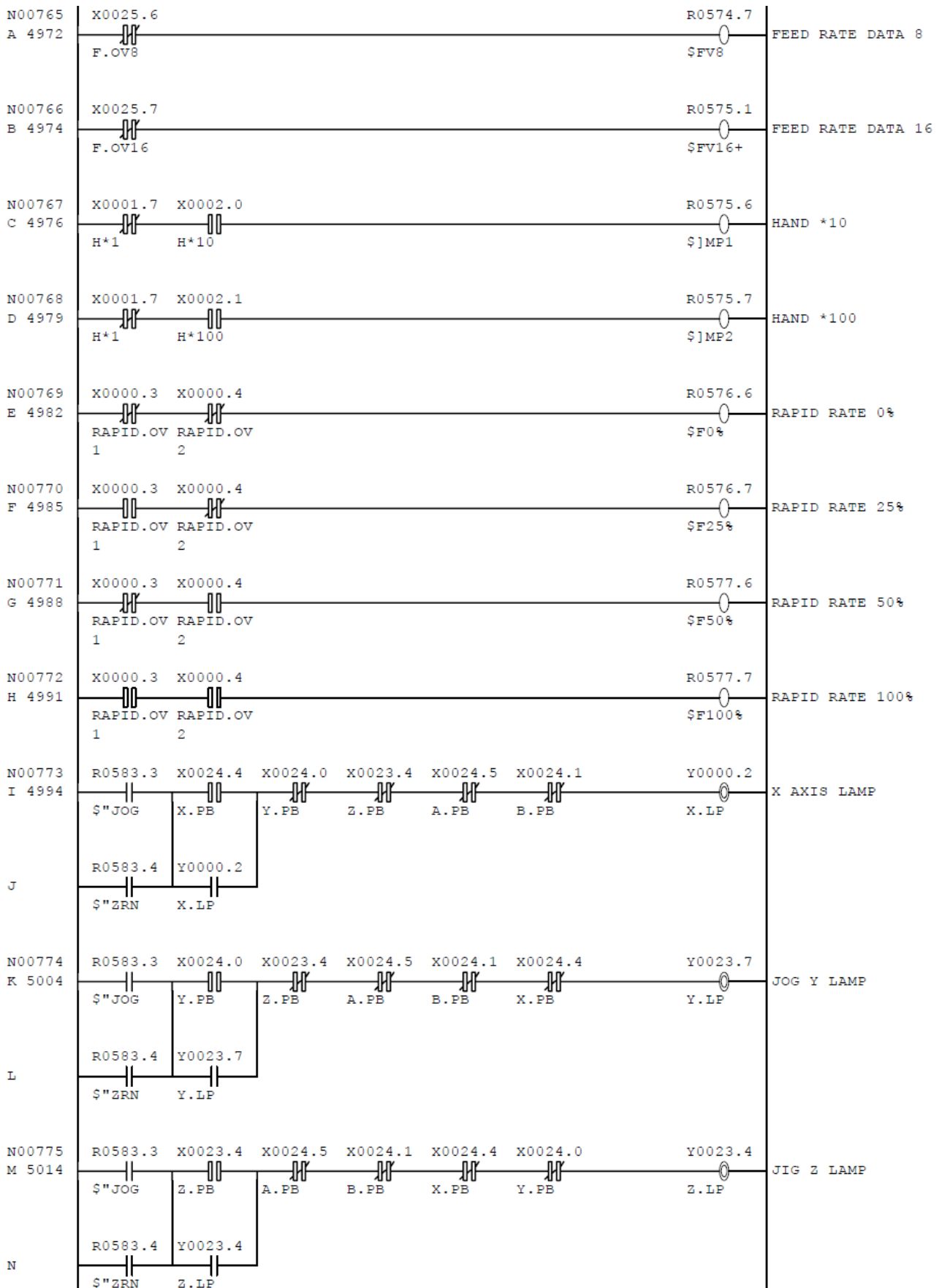


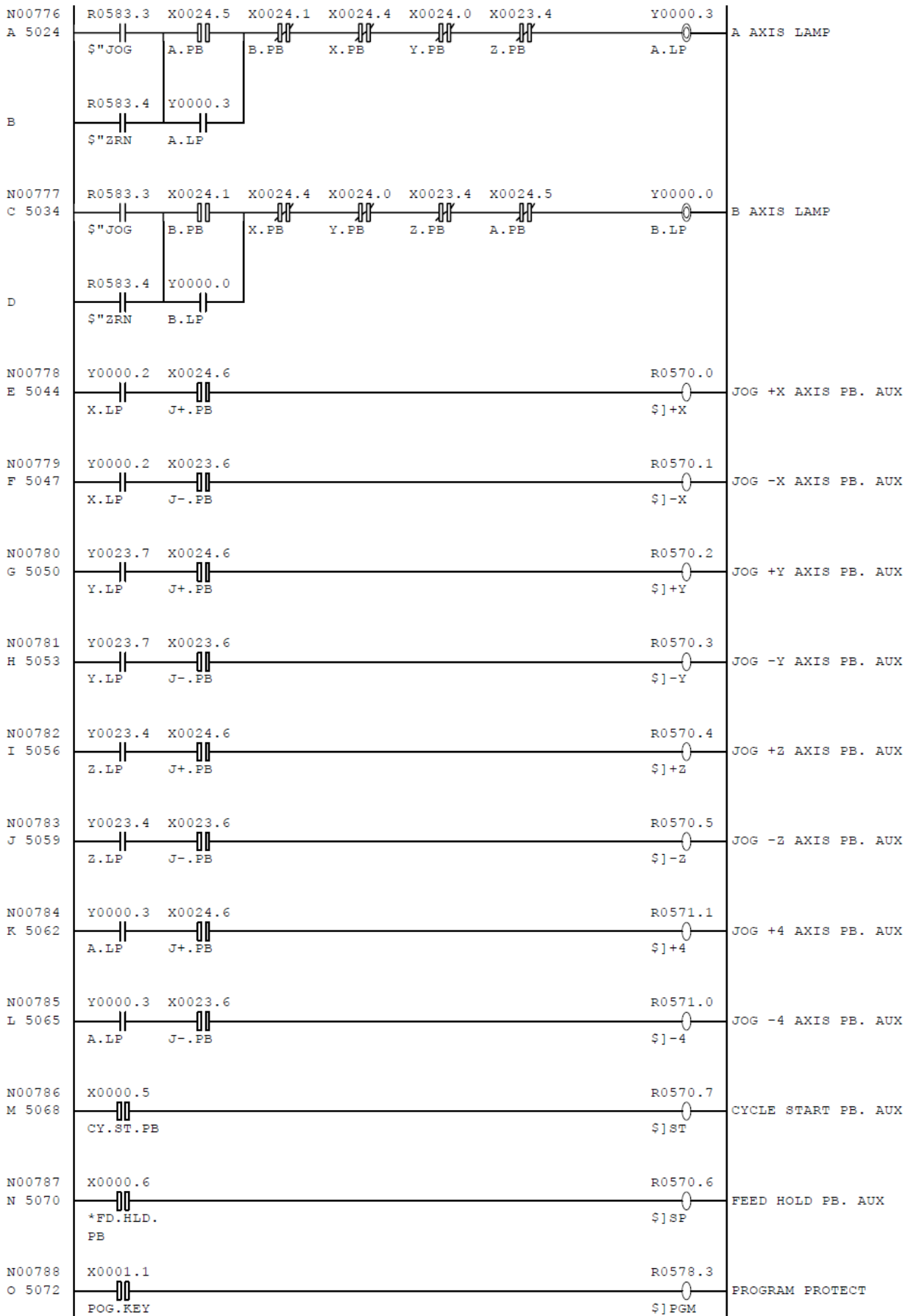


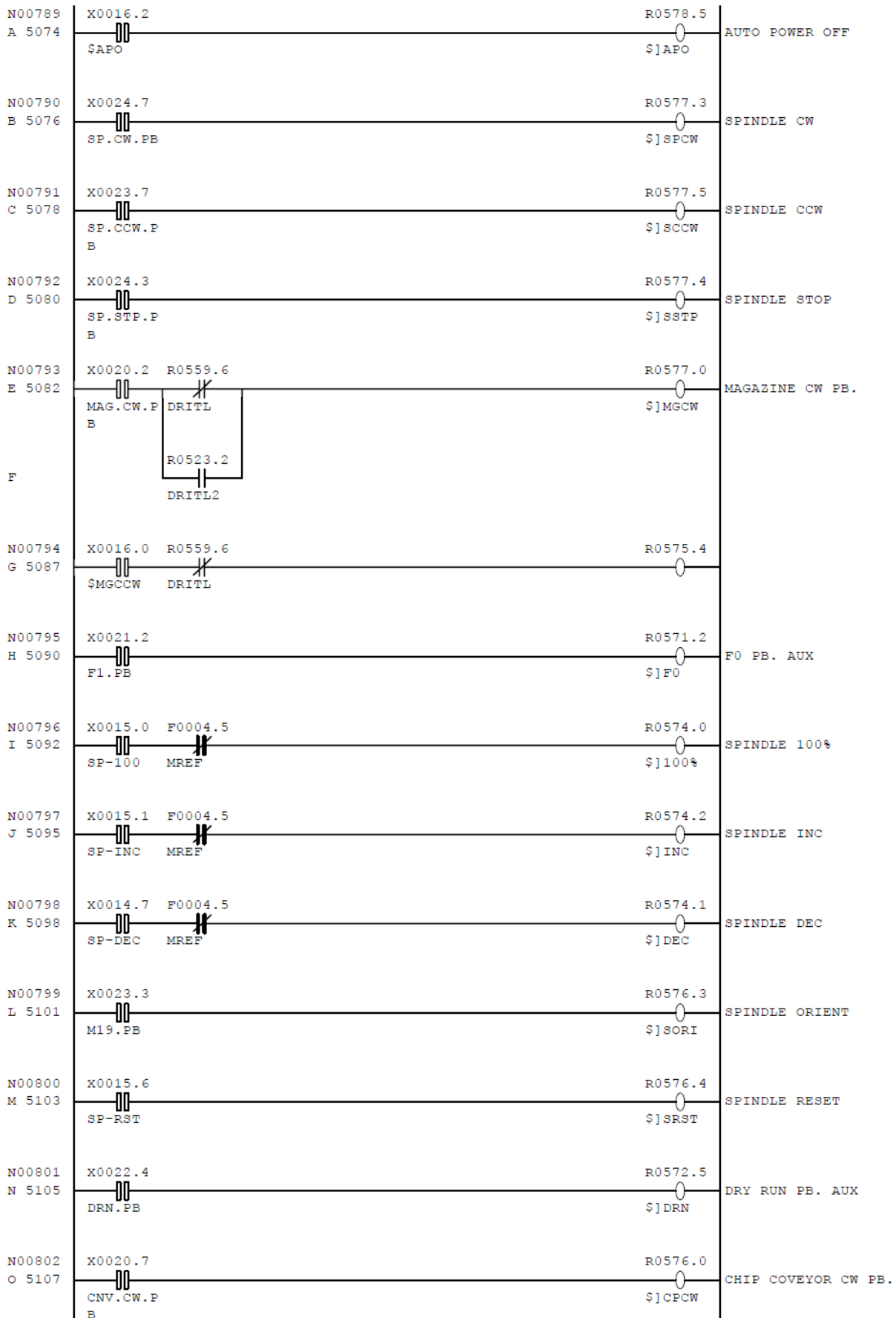


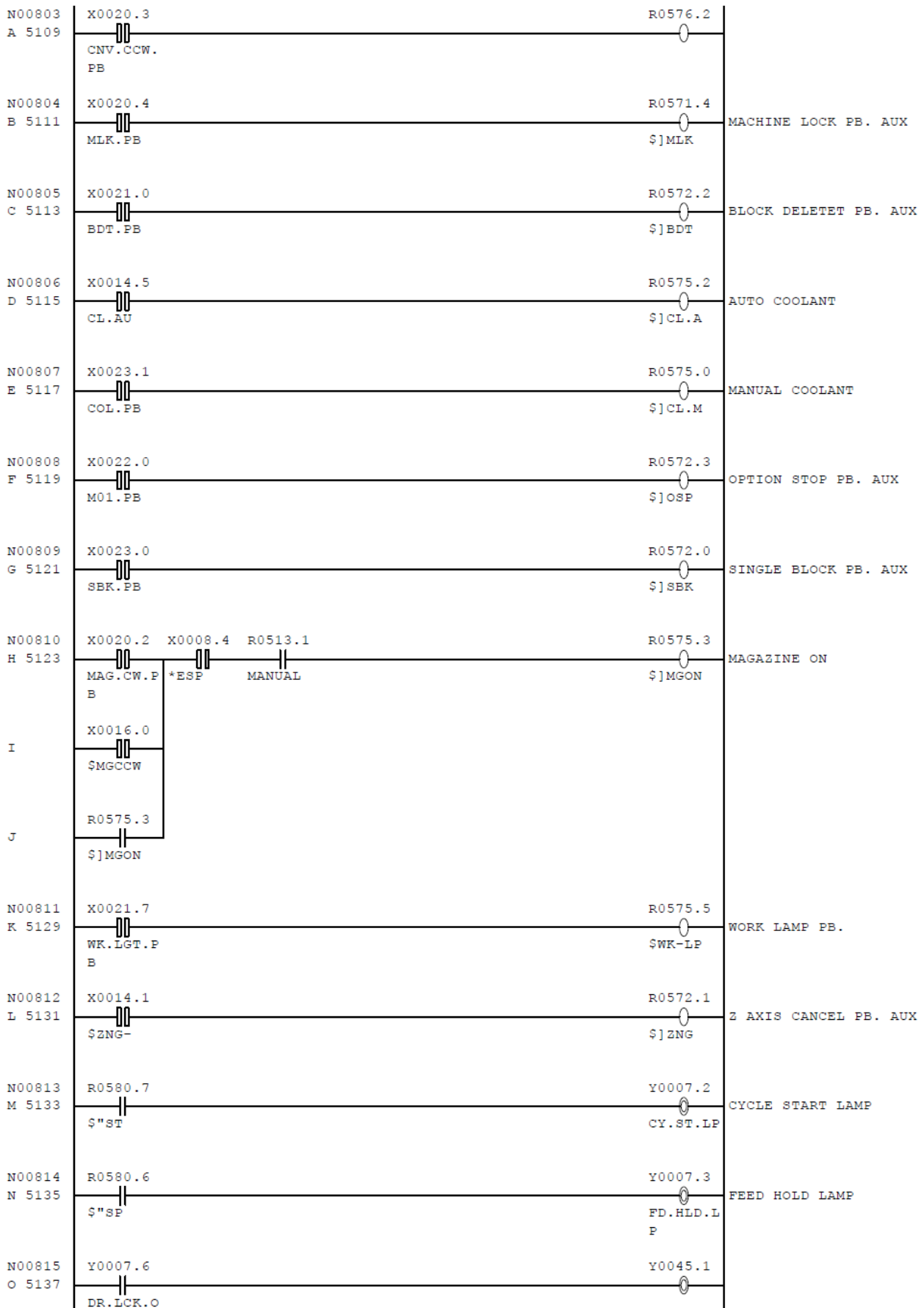




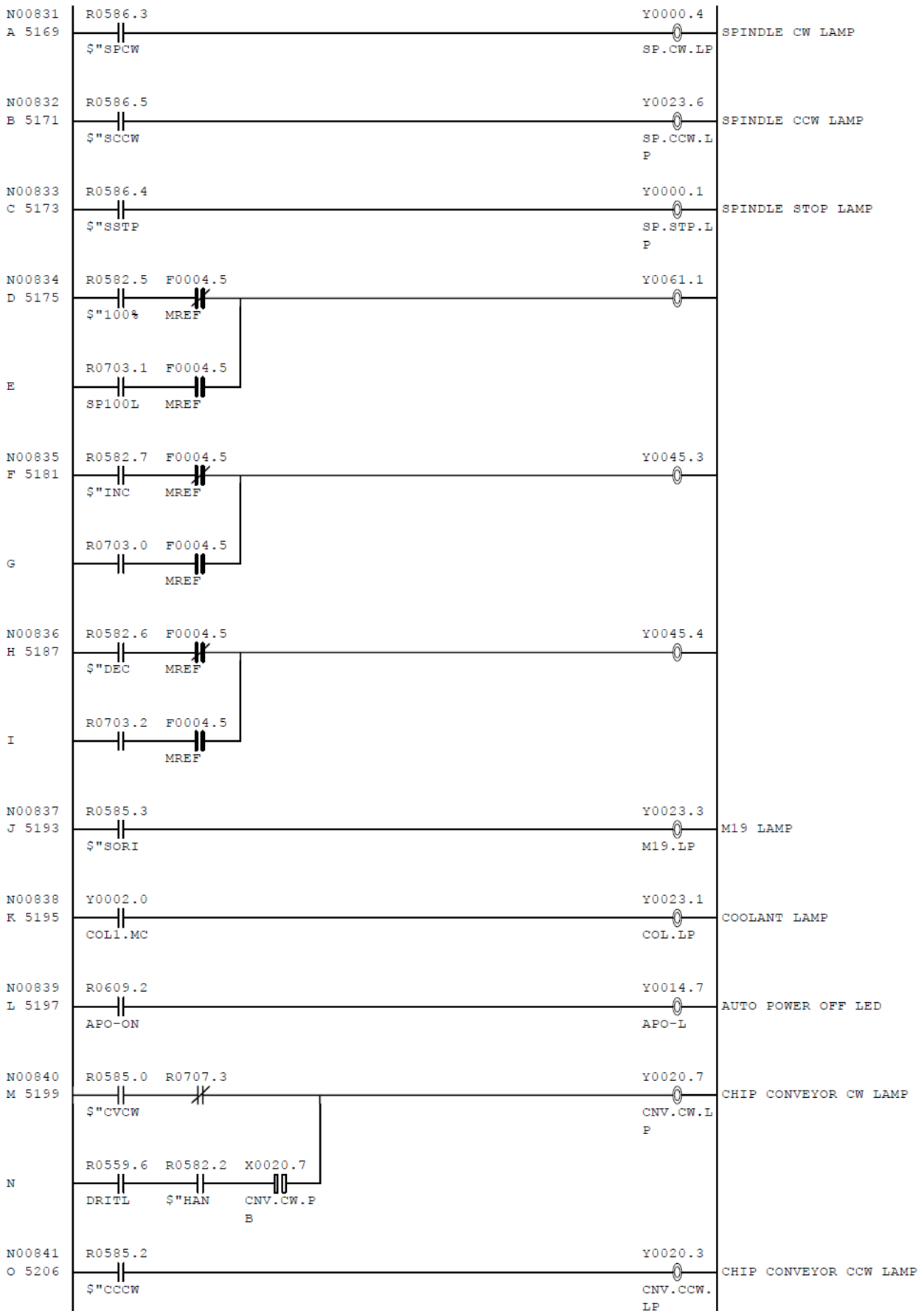


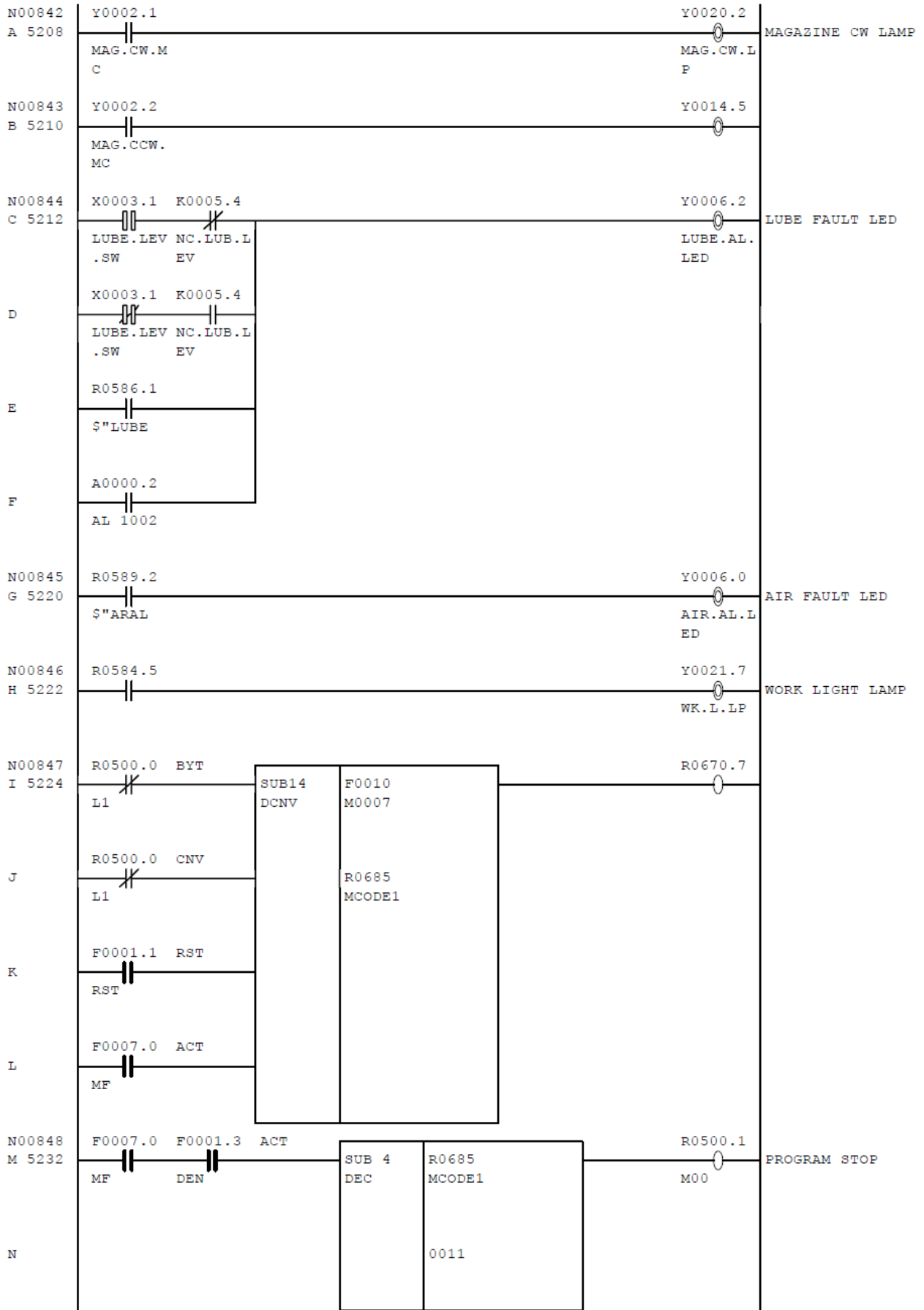




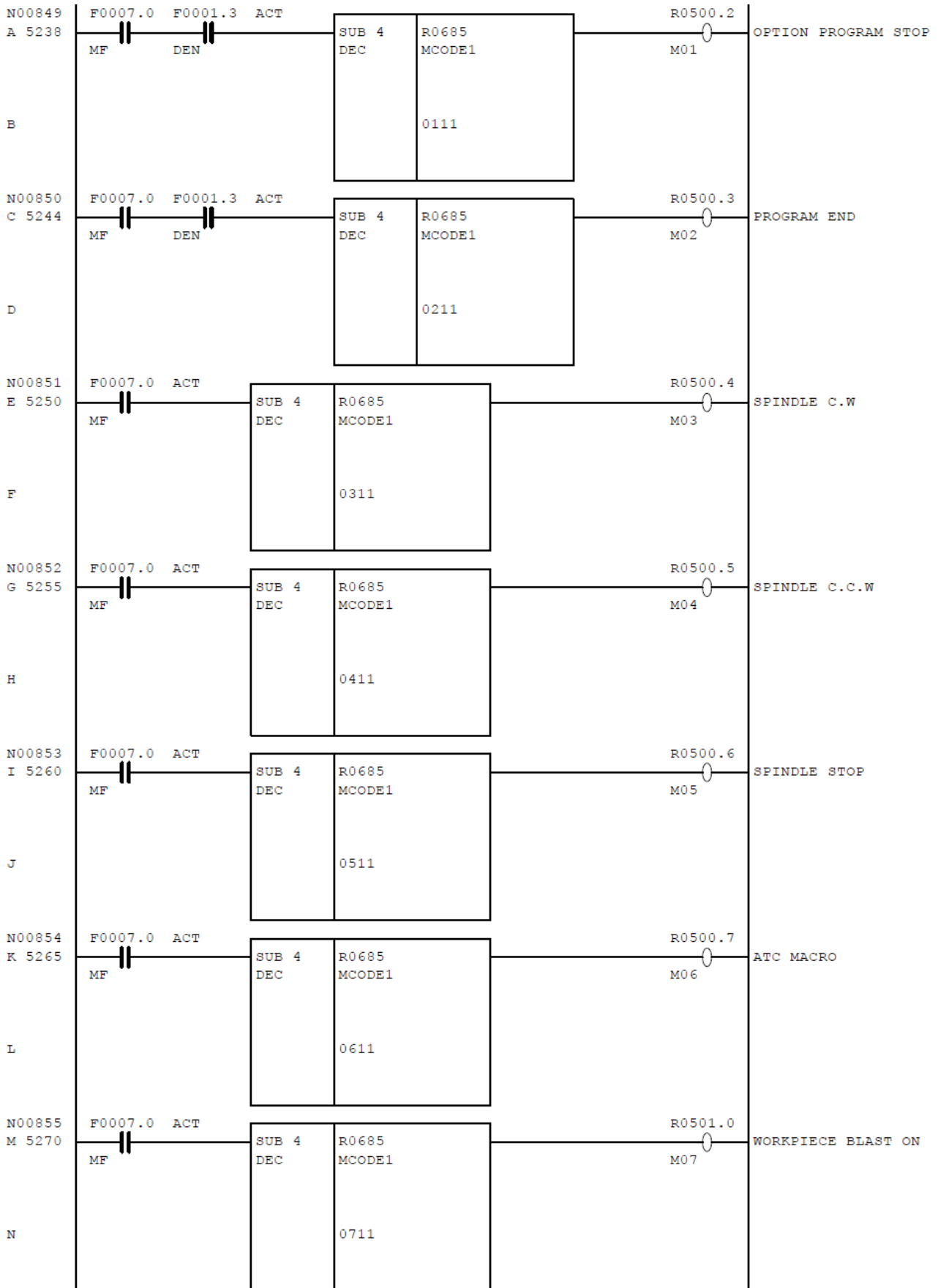


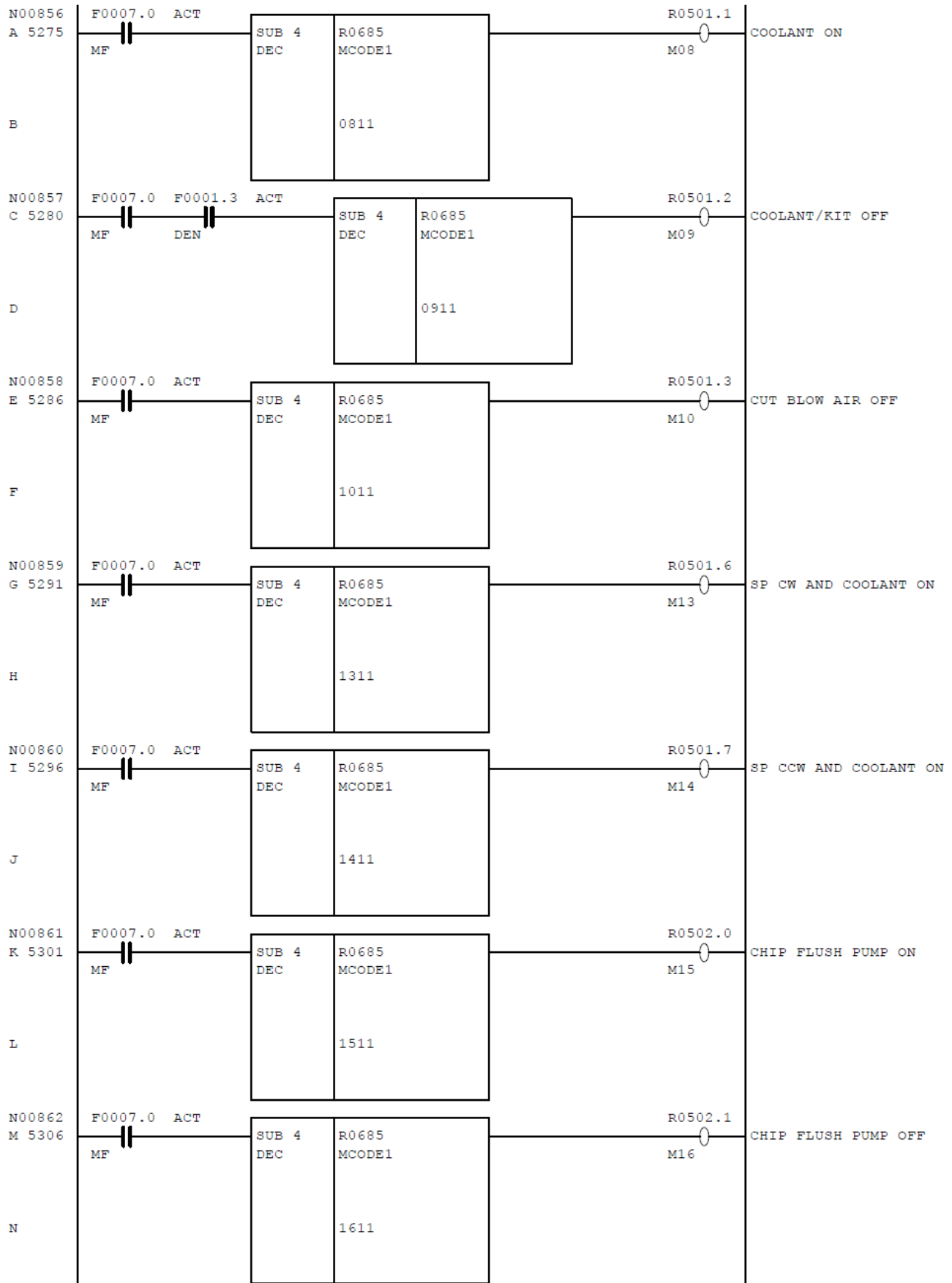
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N00817 B 5141	R0580.4    \$"MLK	Y0020.4 ○ MLK.LP	MACHINE LOCK LAMP
N00818 C 5143	R0581.0    \$"SBK	Y0023.0 ○ SBK.LP	SINGLE BLOCK LAMP
N00819 D 5145	R0581.1    \$"ZNG	Y0013.1 ○ ZNG-L	Z AXIS CANCEL LED
N00820 E 5147	R0581.3    \$"OSP	Y0022.0 ○ M01.LP	M01 STOP LAMP
N00821 F 5149	G0005.6    AFL	Y0020.0 ○ AFL.LP	MST LOCK LAMP
N00822 G 5151	R0581.5    \$"DRN	Y0022.4 ○ DRN.LP	DRY RUN LAMP
N00823 H 5153	R0579.0    \$"X1	Y0007.1 ○ X.HOME.LED	X AXIS HOME LED
N00824 I 5155	R0579.2    \$"Y1	Y0007.0 ○ Y.HOME.LED	Y AXIS HOME LED
N00825 J 5157	R0579.4    \$"Z1	Y0006.7 ○ Z.HOME.LED	Z AXIS HOME LED
N00826 K 5159	R0579.6    \$"B1	Y0006.6 ○ A.HOME.LED	A AXIS HOME LED
N00827 L 5161	R0586.2    \$"ATRD	Y0001.5 ○ ATC.AL.LED	ATC FAULT LED
N00828 M 5163	R0590.0    \$"NCAL	Y0001.7 ○ MC.AL.LED	MACHINE ALARM LED
N00829 N 5165	R0583.5    \$"H.0	Y0007.5 ○ MPG.LED	MPG LED
N00830 O 5167	R0585.4    \$"SRST	Y0014.3 ○	

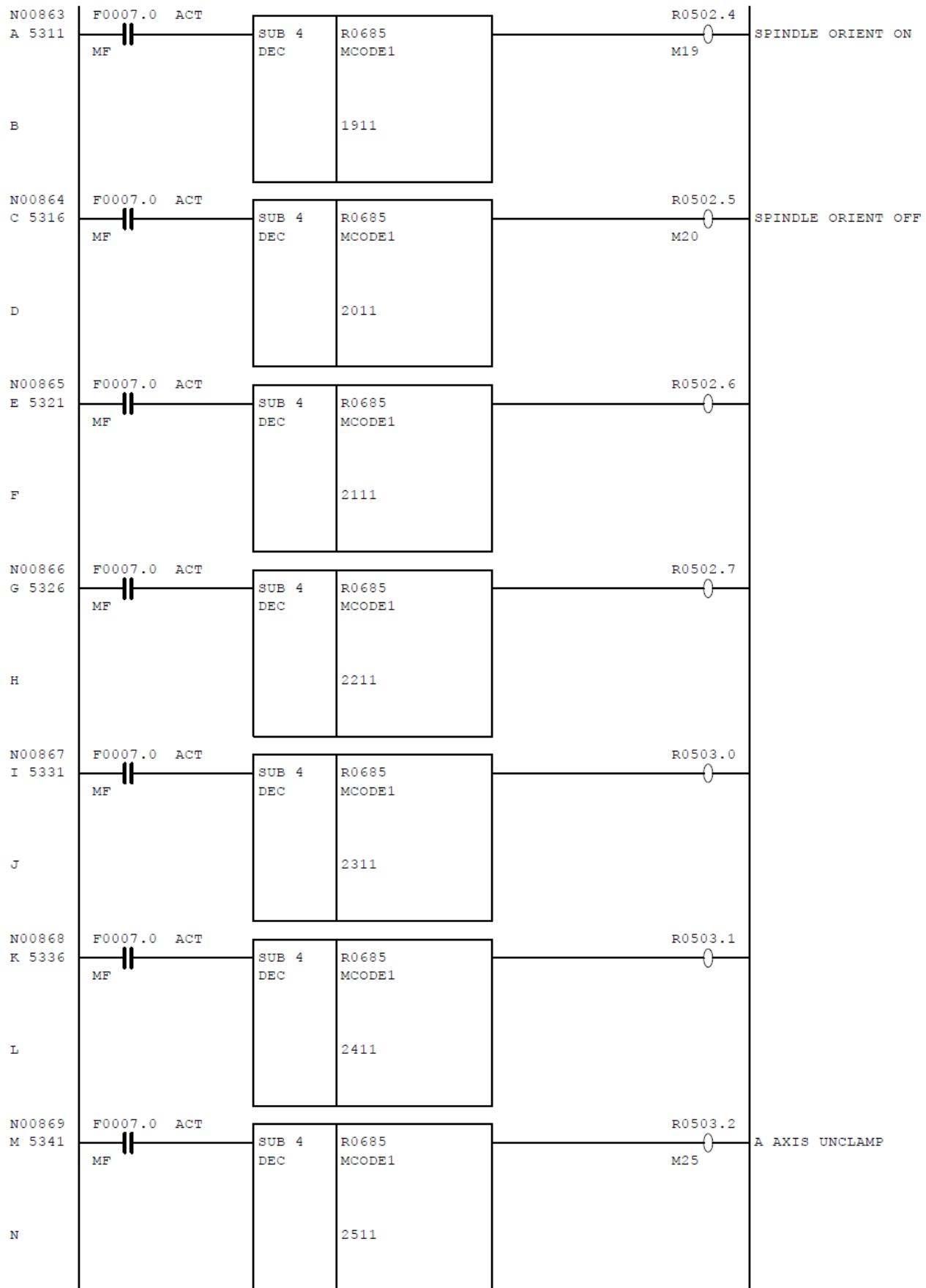


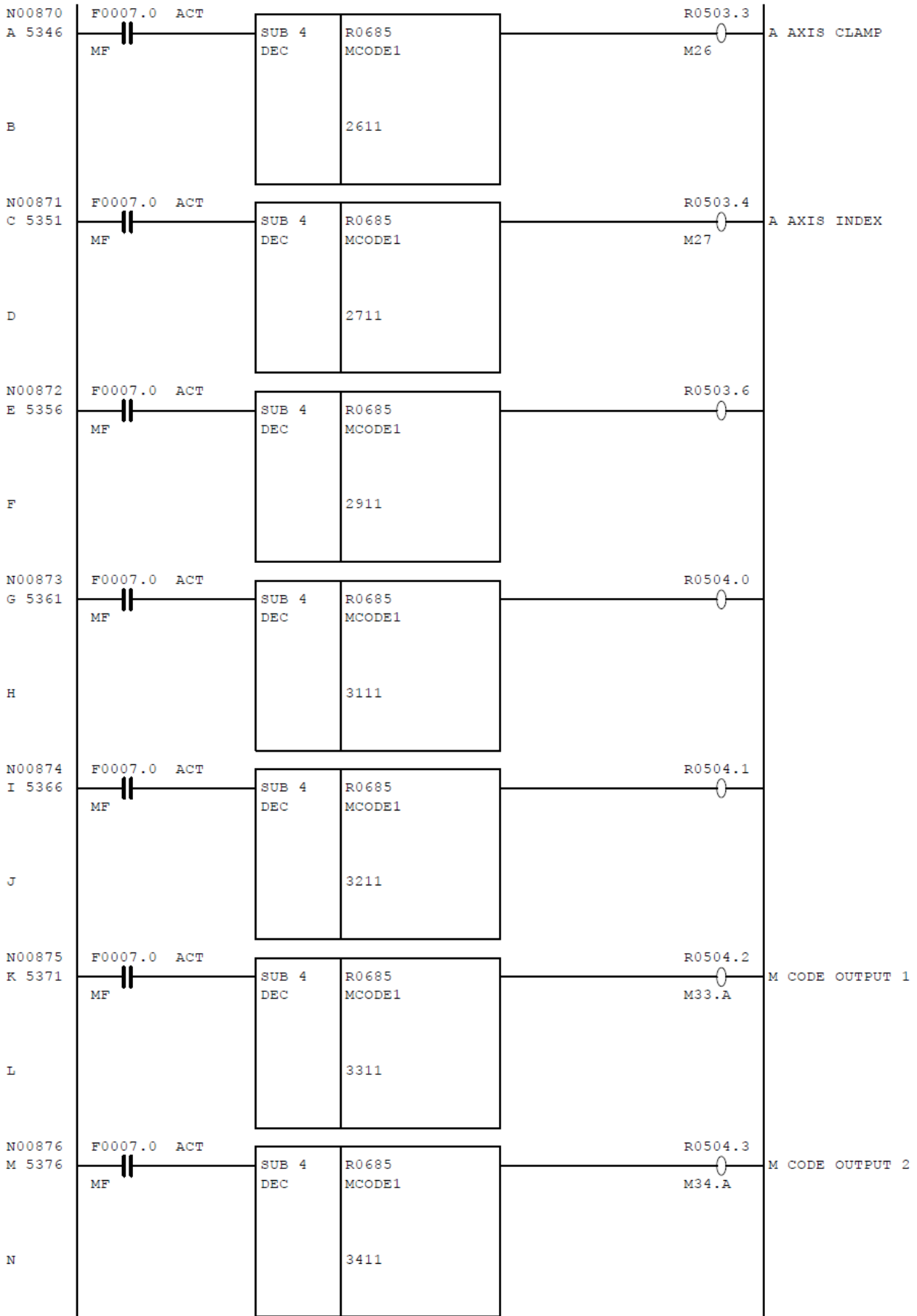


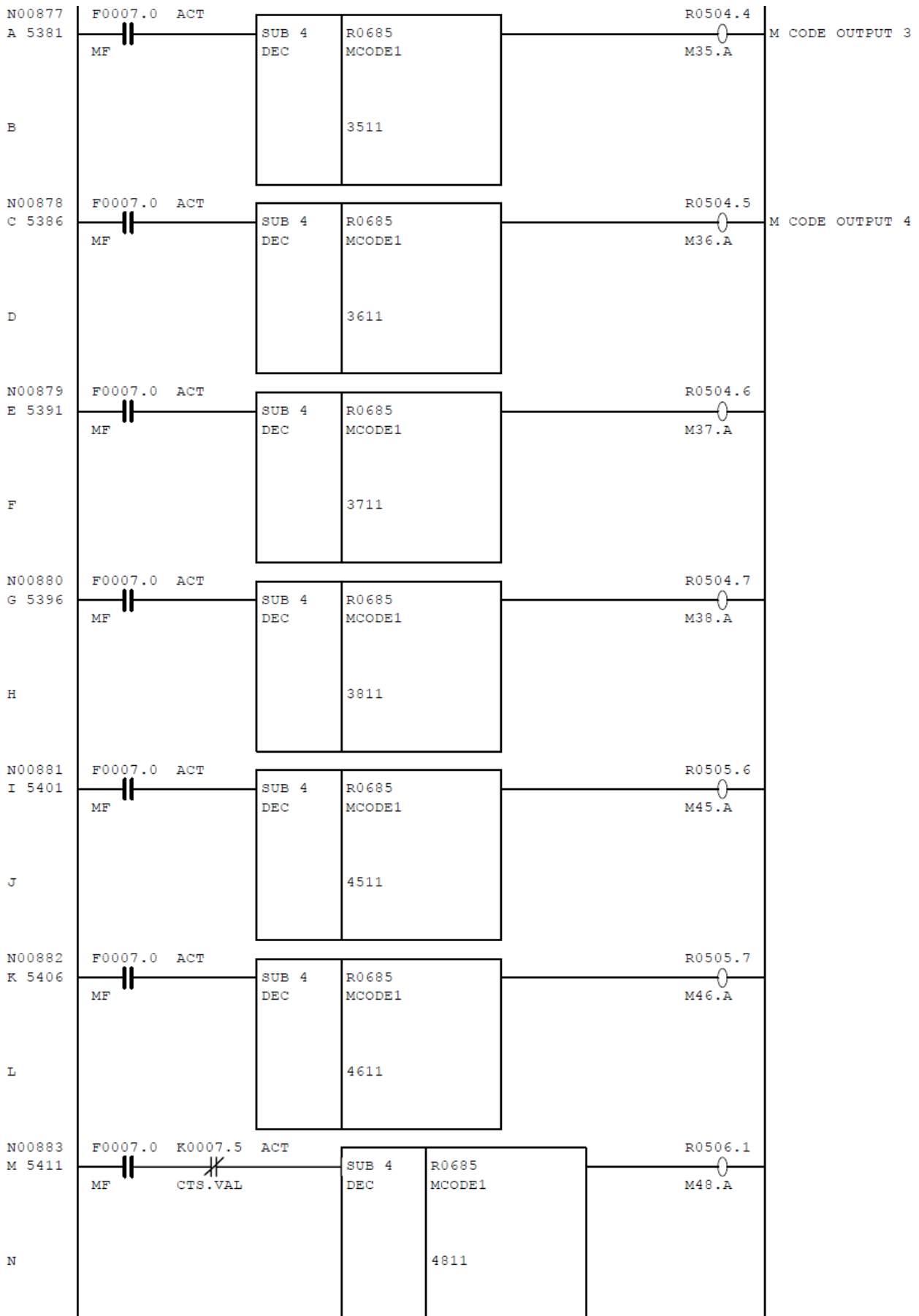


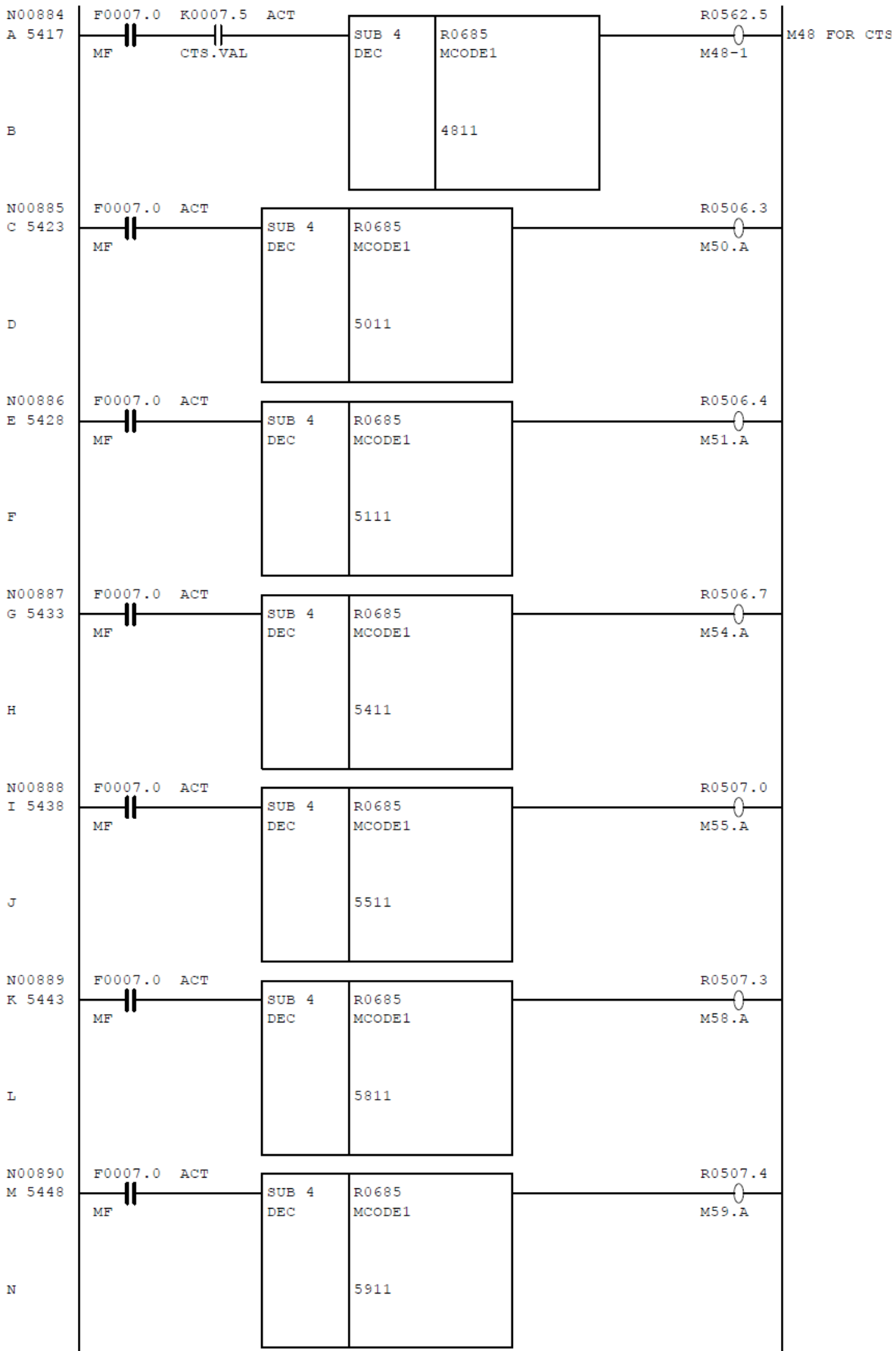


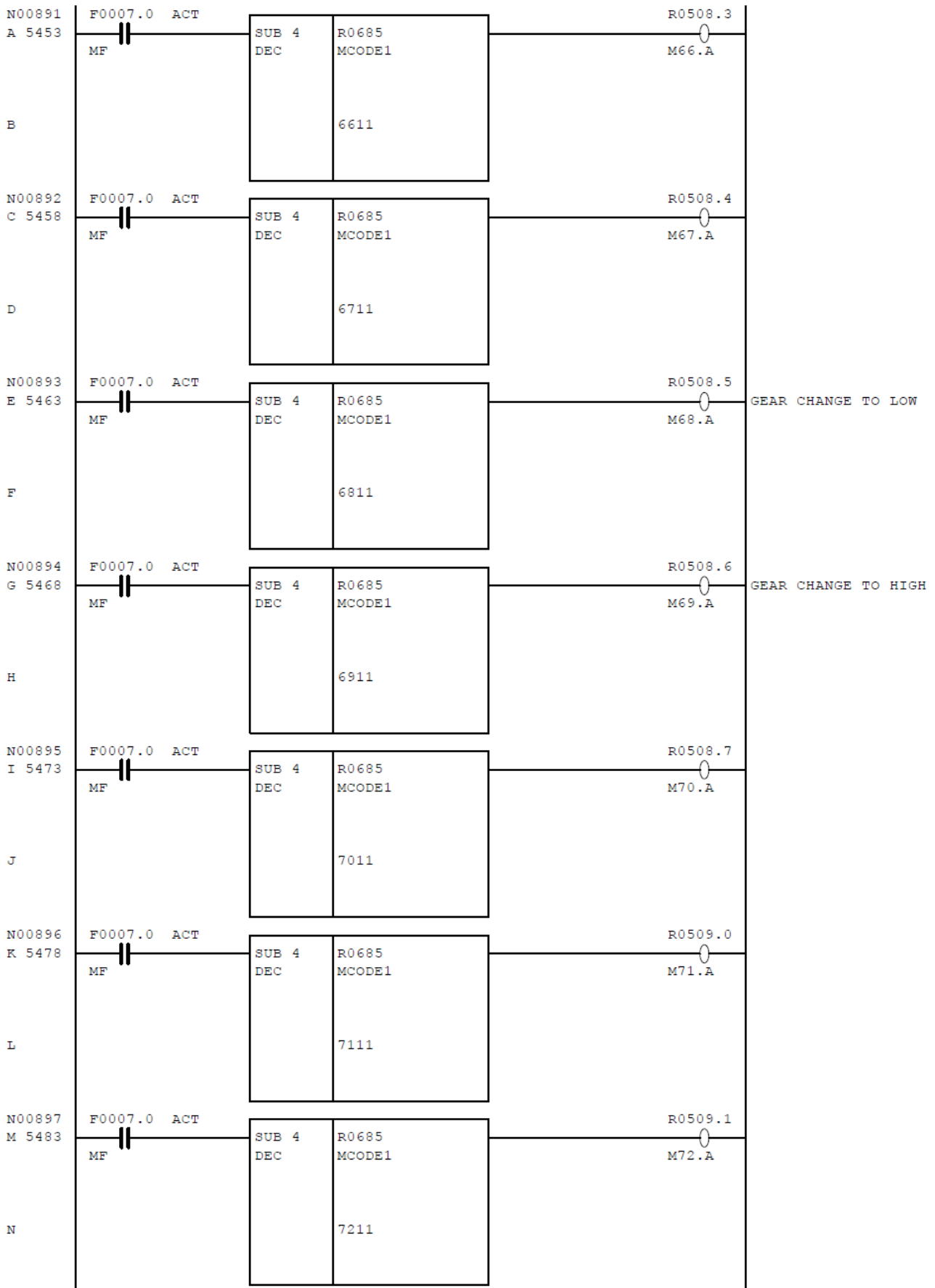


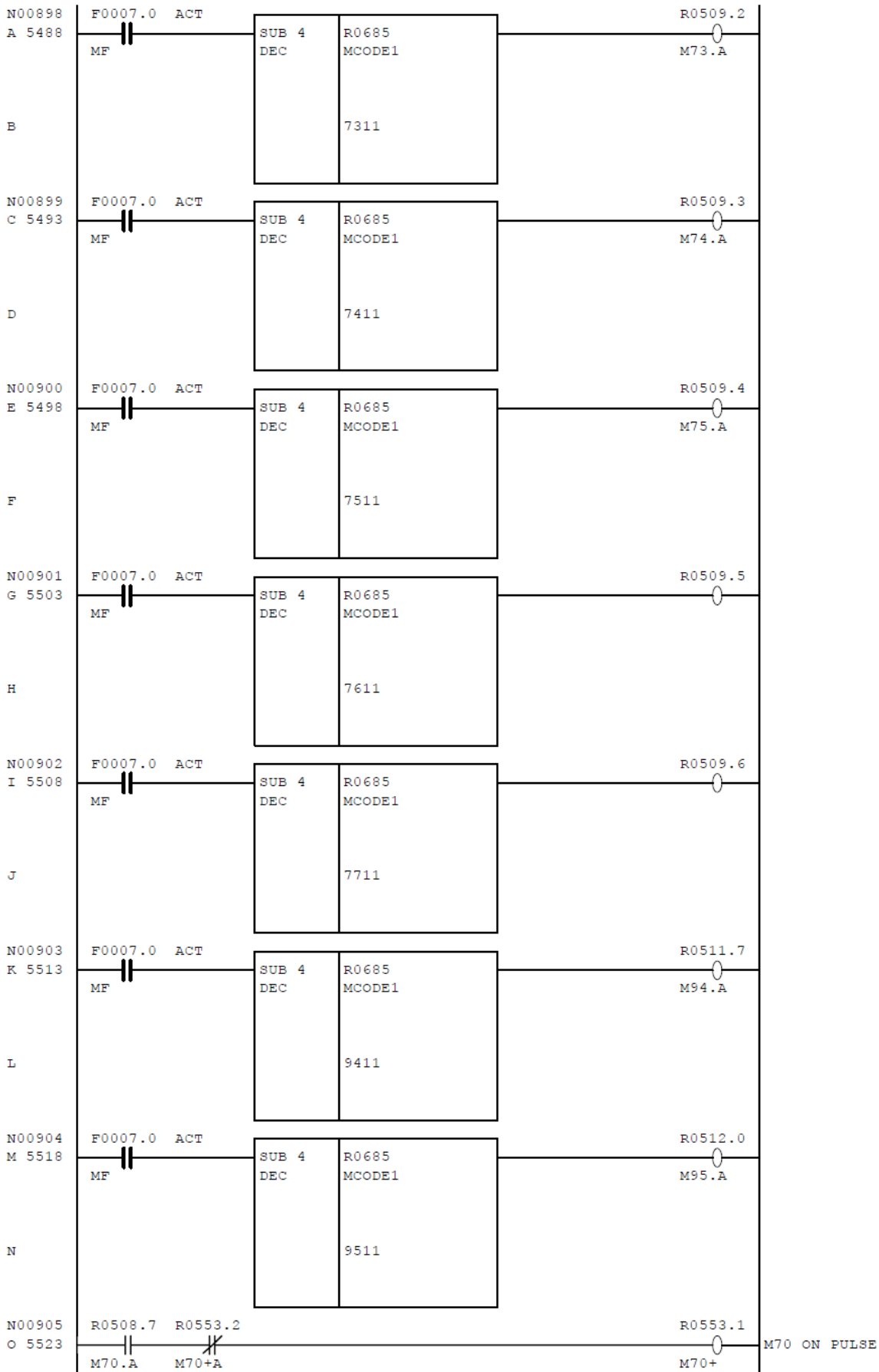




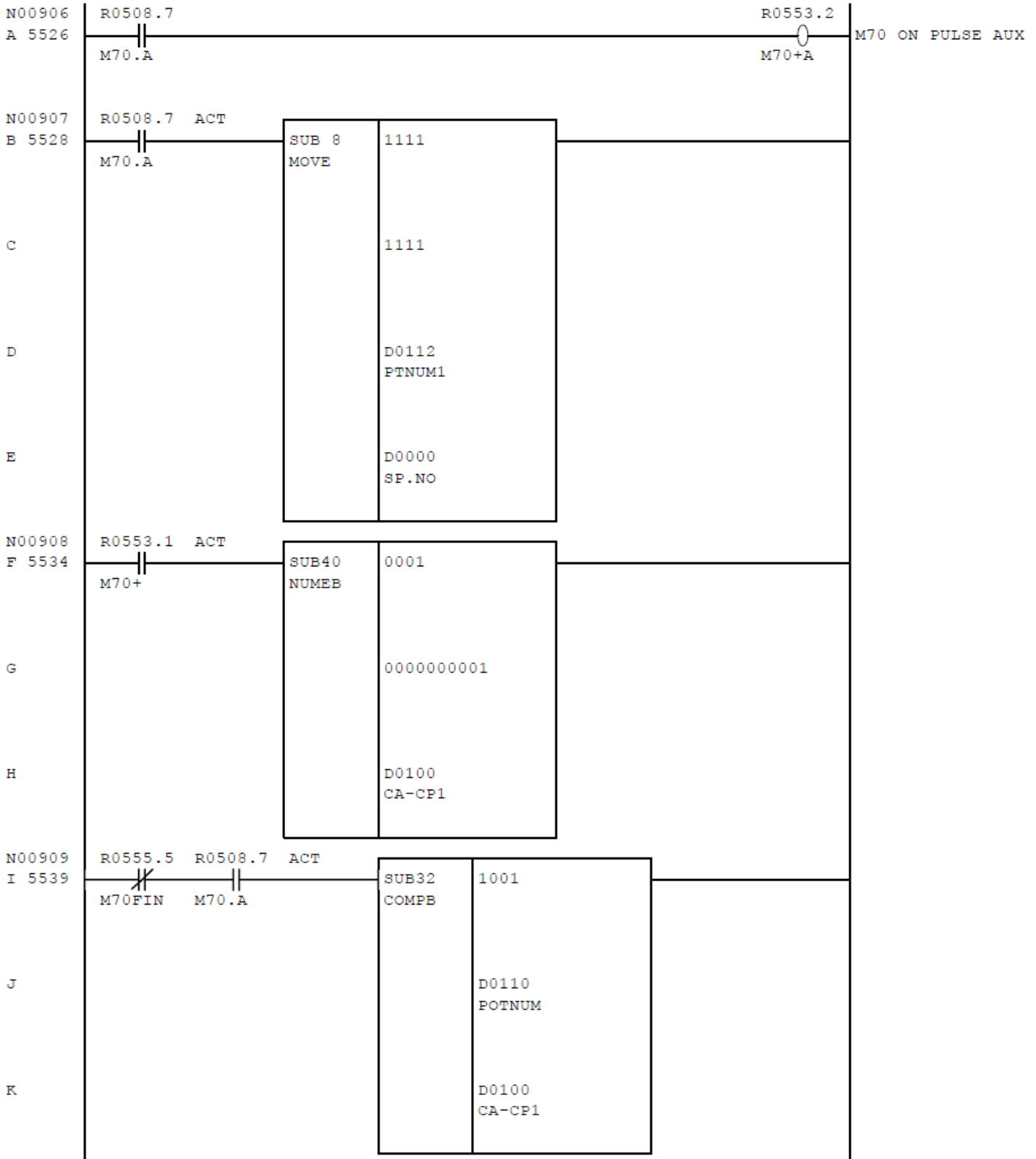


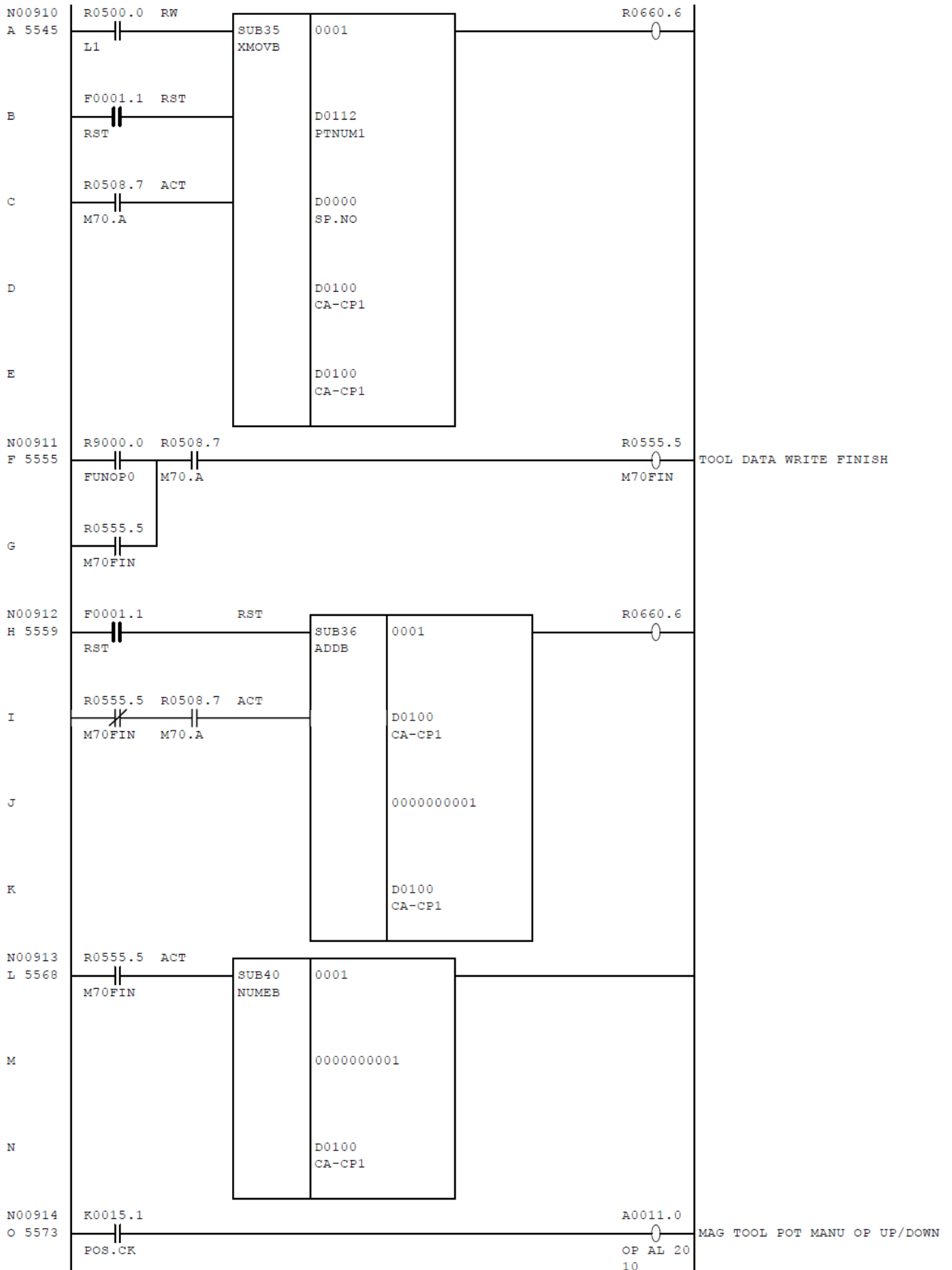


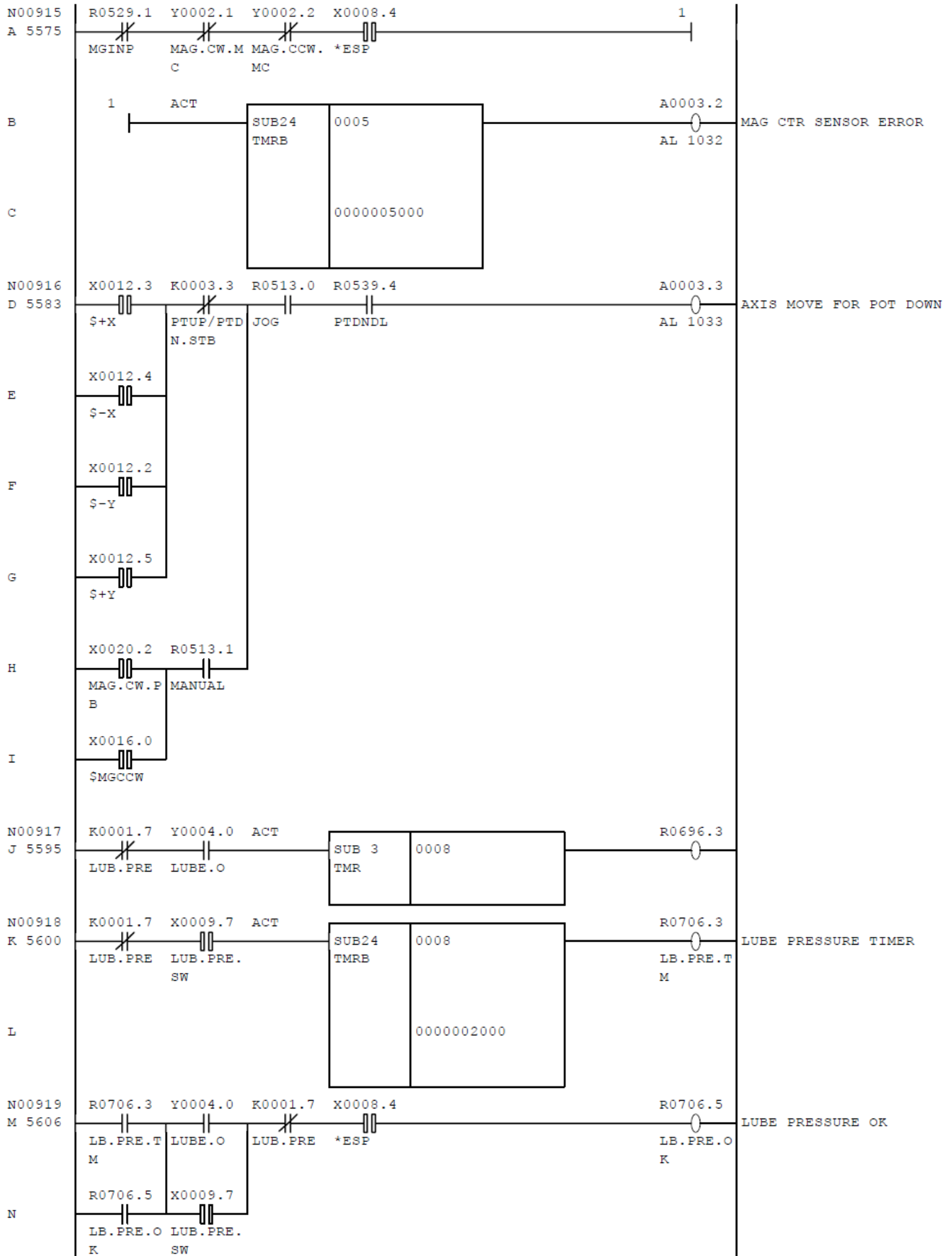


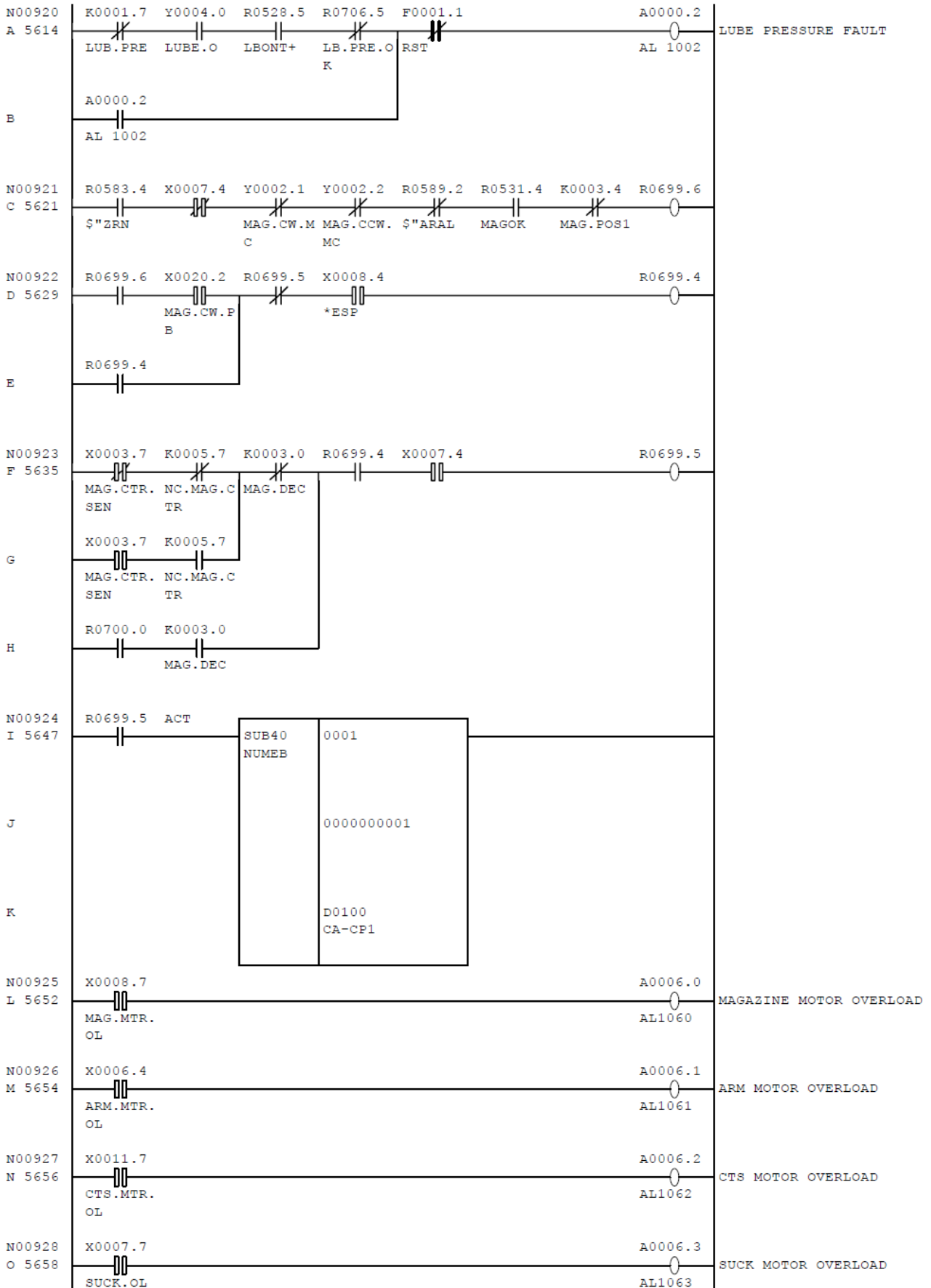


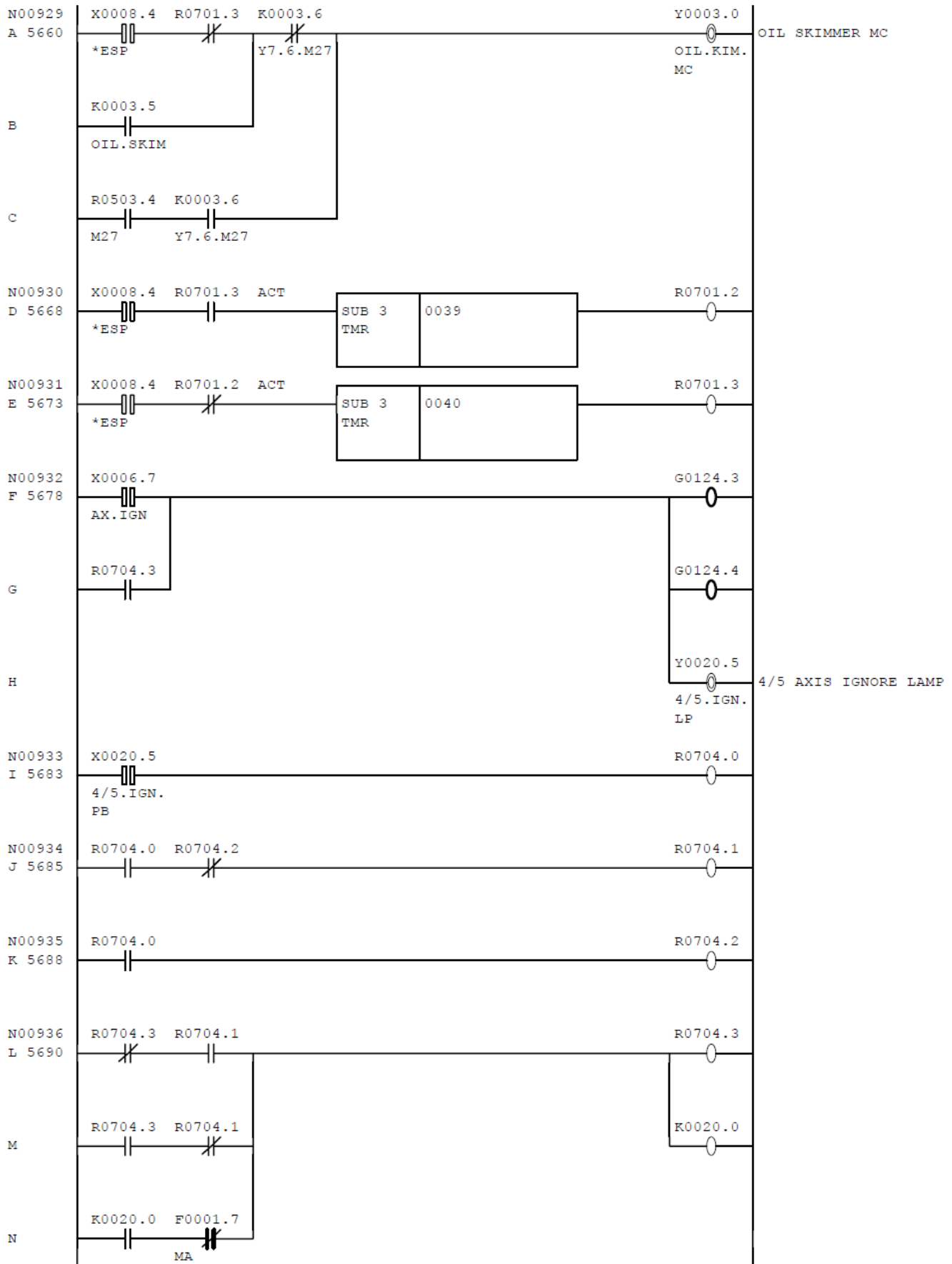


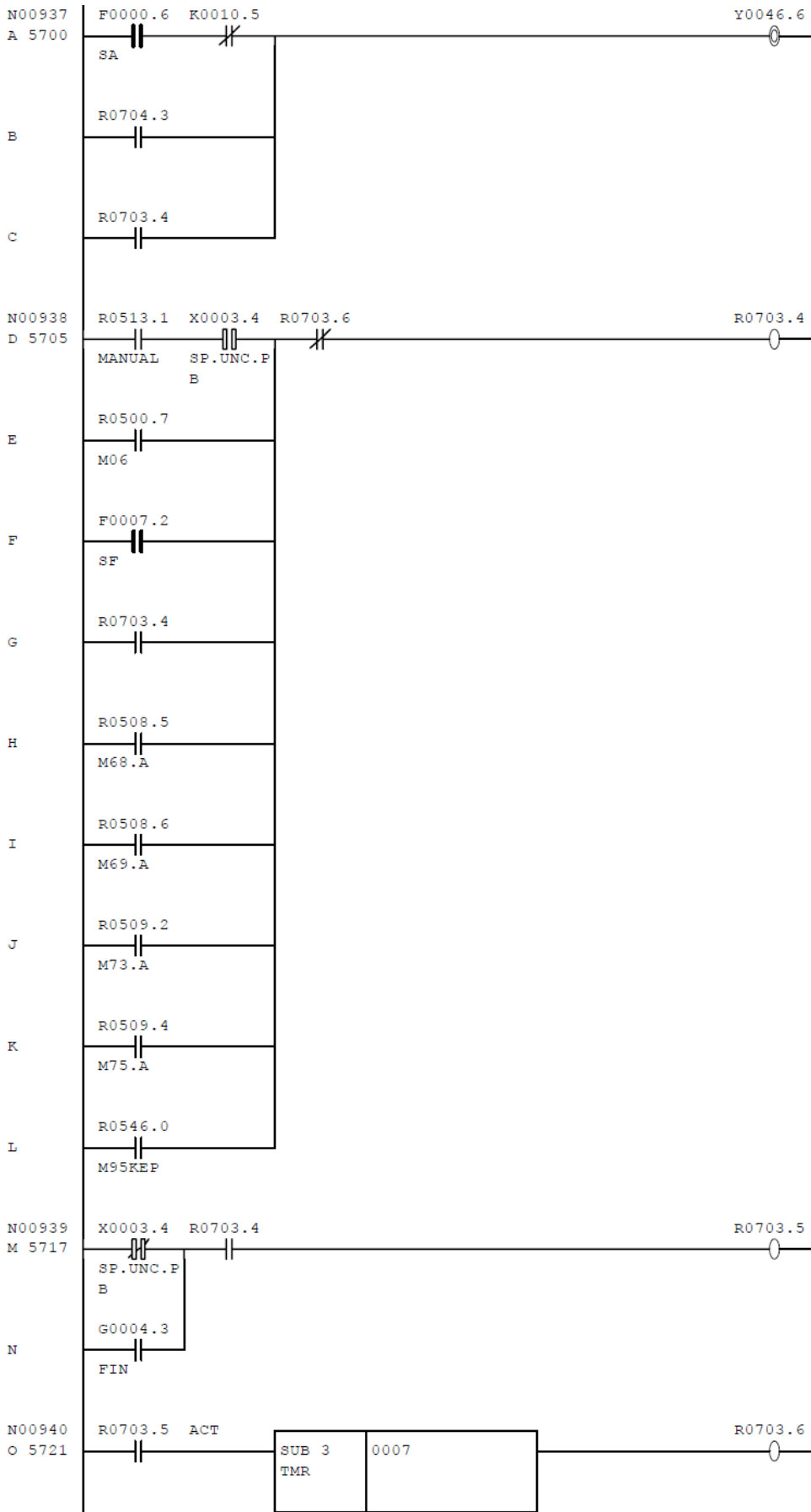


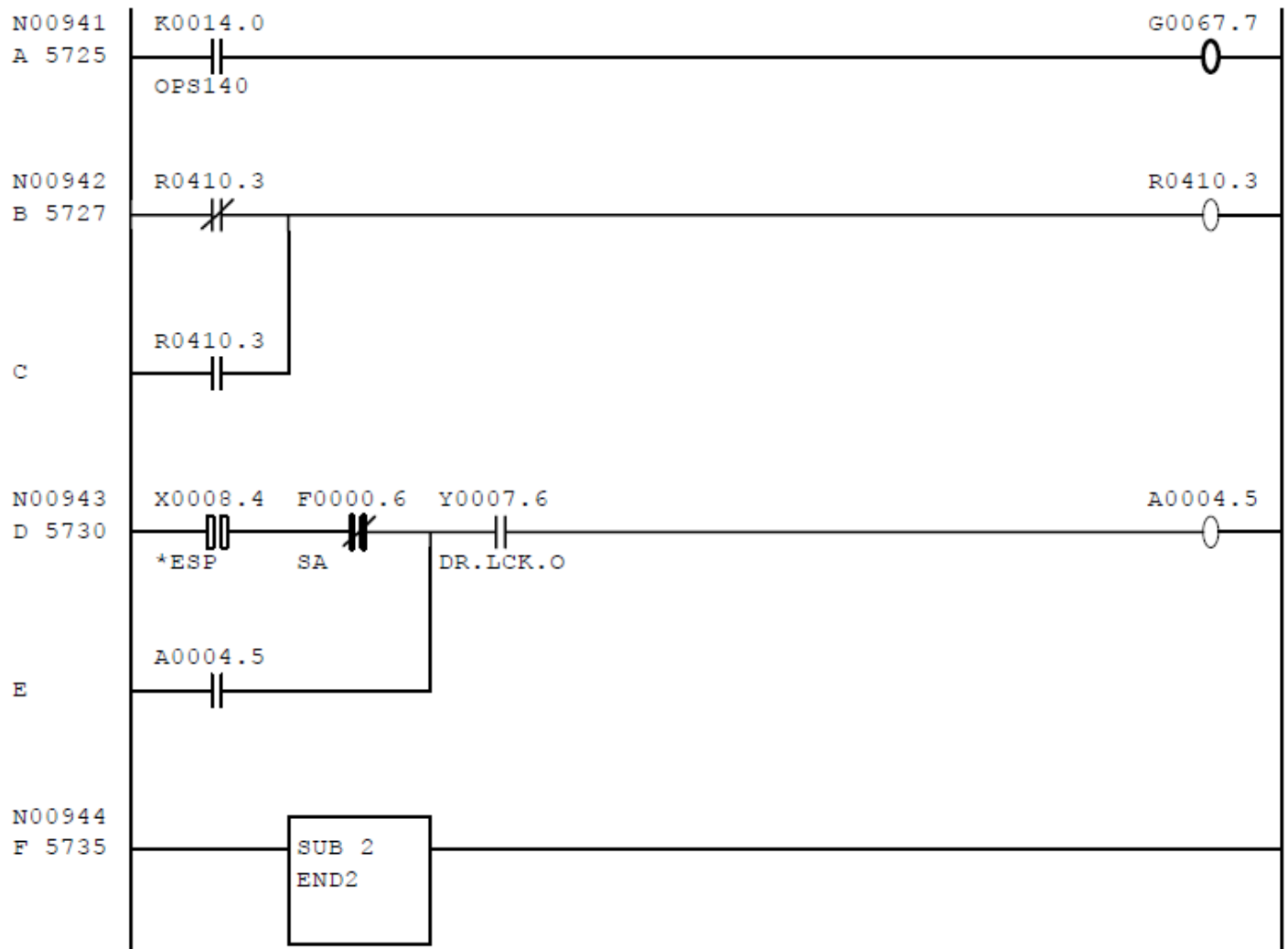












## I/O Module

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X0002	1	0	01	/6	
X0003	1	0	01	/6	
X0004	1	0	01	/6	
X0005	1	0	01	/6	
X0006	2	0	01	/6	
X0007	2	0	01	/6	
X0008	2	0	01	/6	
X0009	2	0	01	/6	
X0010	2	0	01	/6	
X0011	2	0	01	/6	
X0012					
X0013					
X0014					
X0015					
X0016					
X0017					
X0018					
X0019					
X0020	0	0	01	/16	
X0021	0	0	01	/16	
X0022	0	0	01	/16	
X0023	0	0	01	/16	
X0024	0	0	01	/16	
X0025	0	0	01	/16	
X0026	0	0	01	/16	
X0027	0	0	01	/16	
X0028	0	0	01	/16	
X0029	0	0	01	/16	
X0030	0	0	01	/16	
X0031	0	0	01	/16	
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X0033	0	0	01	/16	
X0034	0	0	01	/16	
X0035	0	0	01	/16	



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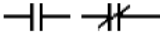
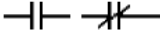
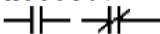
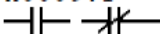
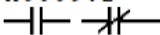
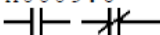
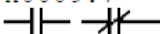
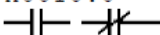
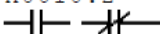
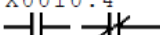
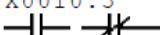
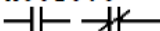
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Y0001	1	0	01	/4	
Y0002	1	0	01	/4	
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Y0004	2	0	01	/4	
Y0005	2	0	01	/4	
Y0006	2	0	01	/4	
Y0007	2	0	01	/4	
Y0008					
Y0009					
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Y0011					
Y0012					
Y0013					
Y0014					
Y0015					
Y0016					
Y0017					
Y0018					
Y0019					
Y0020	0	0	01	/4	
Y0021	0	0	01	/4	
Y0022	0	0	01	/4	
Y0023	0	0	01	/4	

[ TEST ]

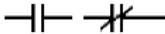
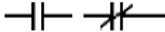
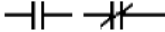
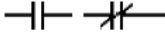
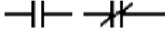
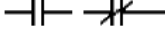
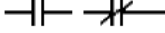
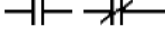
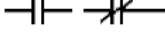
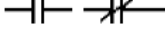
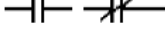
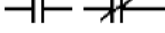
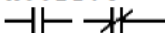
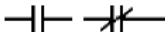
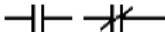
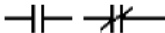
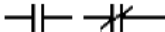
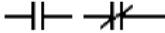
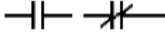
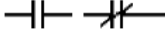
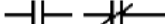
Cross Reference

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0000.0 — — — —	MODE 1 S004868/N00738		
X0000.1 — — — —	MODE 2 S004874/N00739		
X0000.2 — — — —	MODE 4 S004880/N00740		
X0000.3 — — — —	RAPID.OV1 S004982/N00769	S004985/N00770 S004988/N00771 S004991/N00772	
X0000.4 — — — —	RAPID.OV2 S004983/N00769	S004986/N00770 S004989/N00771 S004992/N00772	
X0000.5 — — — —	CY.ST.PB S004213/N00624	S005068/N00786	
X0000.6 — — — —	*FD.HLD.PB S005070/N00787		
X0000.7 — — — —	READY.PB S000004/N00001		
X0001.1 — — — —	POG.KEY S005072/N00788		
X0001.2 — — — —	H*X S004958/N00758		
X0001.3 — — — —	H*Y S004960/N00759		
X0001.4 — — — —	H*Z S004962/N00760		
X0001.5 — — — —	H*A S004964/N00761		
X0001.7 — — — —	H*1 S004976/N00767	S004979/N00768	
X0002.0 — — — —	H*10 S004977/N00767		
X0002.1 — — — —	H*100 S004980/N00768		
X0003.0 — — — —	AIR.PRE.SW S002346/N00361		
X0003.1 — — — —	LUBE.LEV.SW S004504/N00679	S004506/N00679 S005212/N00844 S005214/N00844	
X0003.2 — — — —	SP.CLP.SEN S000088/N00013	S001194/N00180 S001200/N00181 S003011/N00430 S004472/N00672 S004474/N00672	
X0003.3 — — — —	SP.UNC.SEN S000083/N00012	S001195/N00180 S001199/N00181 S004473/N00672	
X0003.4 — — — —	SP.UNC.PB S001412/N00208	S001424/N00210 S003109/N00448 S003115/N00449 S005706/N00938 S005717/N00939	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0003.5	MAG.RET.SEN		
	S001185/N00178	S001189/N00179	
X0003.6	MAG.EXT.SEN		
	S001184/N00178	S001190/N00179	
X0003.7	MAG.CTR.SEN		
	S000158/N00025	S000160/N00025	S005635/N00923 S005637/N00923
X0004.5	PROB.-Z		
	S001896/N00294		
X0004.7	PROB.SKP		
	S002615/N00385	S004427/N00657	
X0006.0	R.DR.SW	RIGHT DOOR INTERLOCK SW	
	S003399/N00492	S004237/N00627 S004242/N00628	
X0006.1	L.DR.SW	LEFT DOOR INTERLOCK SW	
	S003401/N00492		
X0006.2	DR.SW	DOOR INTERLOCK SW	
	S001776/N00266	S003406/N00492 S003412/N00493	
X0006.4	ARM.MTR.OL		
	S004450/N00664	S005654/N00926	
X0006.5	COL2.MTR.OL		
	S004446/N00662		
X0006.6	EXT.F.OL		
	S004456/N00667		
X0006.7	AX.IGN		
	S005678/N00932		
X0007.0	ARM.STP.SEN	ARM STOP POINT	
	S000041/N00007	S000043/N00007	
X0007.1	ARM.0.SEN	ARM RETURN POINT	
	S000015/N00004	S000017/N00004 S000021/N00004	S000032/N00005 S000038/N00006
X0007.2	ARM.60.SEN	ARM MIDDLE POINT	
	S000022/N00004	S000026/N00005 S000028/N00005	S000033/N00005 S000037/N00006
X0007.4			
	S005622/N00921	S005645/N00923	
X0007.6	SP.COL.OL	SPINDLE COOLER OVERLOAD	
	S003840/N00562	S003844/N00563 S004458/N00668	
X0007.7	SUCK.OL	SUCK MOTOR OVERLOAD	
	S004454/N00666	S005658/N00928	
X0008.0	MAG.TOL.SEN	MAGAZINE TOOL SENSOR	
	S000174/N00030		
X0008.1	COL1.MTR.OL	COOLANT 1 MOTOR OL	
	S000176/N00030	S004439/N00659	
X0008.2	SP.COL.AL	SPINDLE COOLER ALARM	
	S004398/N00652	S004444/N00661	
X0008.3	CNV.MTR.OL	CHIP CONVEYOR MOTOR OL	
	S004460/N00669		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0008.4	*ESP		
	S000001/N00001	S000153/N00023	S001094/N00159
	S001415/N00208	S001480/N00214	S001503/N00215
	S001563/N00222	S001570/N00223	S001580/N00224
	S001622/N00232	S002269/N00342	S002273/N00343
	S002342/N00359	S002422/N00373	S002449/N00377
	S003600/N00521	S003694/N00534	S003987/N00583
	S004067/N00600	S004072/N00601	S004103/N00605
	S004400/N00652	S005126/N00810	S005578/N00915
	S005660/N00929	S005668/N00930	S005673/N00931
		S001395/N00206	S001408/N00207
		S001525/N00218	S001546/N00220
		S001618/N00231	S002281/N00345
		S002806/N00397	S002880/N00404
		S004008/N00587	S004012/N00588
		S004107/N00606	S004396/N00651
		S005612/N00919	S005633/N00922
		S005730/N00943	
X0008.5	A.CLP.SEN	A AXIS CLAMP SENSOR	
	S001645/N00238	S002576/N00385	S002584/N00385
X0008.6	A.UNC.SEN	A AXIS UNCLAMP SENSOR	
	S001646/N00238	S001648/N00238	S002567/N00385
	S002578/N00385	S003364/N00486	S003366/N00486
S002569/N00385	S002575/N00385		
X0008.7	MAG.MTR.OL	MAGAZINE MOTOR OL	
	S004448/N00663	S005652/N00925	
X0009.0	X.H.SW		
	S002083/N00325	S002090/N00325	S002105/N00326
S002112/N00326			
X0009.1	Y.H.SW		
	S002127/N00327	S002129/N00327	S002136/N00328
S002138/N00328			
X0009.2	Z.H.SW		
	S002145/N00329	S002147/N00329	S002154/N00330
S002156/N00330			
X0009.6	RECLC.OL	RECYCLE MOTOR OL	
	S004441/N00660		
X0009.7	LUB.PRE.SW		
	S005601/N00918	S005609/N00919	
X0010.0	SP.HG.SW		
	S002671/N00385	S002707/N00386	S002751/N00392
	S002771/N00395	S002799/N00397	S002810/N00398
	S002842/N00400	S002903/N00409	S002906/N00409
	S003227/N00460	S003949/N00579	S003952/N00579
S002756/N00393	S002758/N00393	S002815/N00398	S002828/N00399
S002962/N00422	S003213/N00459	S003954/N00579	
X0010.1	SP.LG.SW		
	S002668/N00385	S002709/N00386	S002748/N00391
	S002785/N00396	S002801/N00397	S002812/N00398
	S002862/N00402	S002904/N00409	S002905/N00409
	S003214/N00459	S003228/N00460	S003947/N00579
S002754/N00393	S002759/N00393	S002819/N00398	S002830/N00399
S002958/N00420	S002965/N00423	S003953/N00579	S003955/N00579
X0010.2	FIL.L.SW	FILTER TANK LEVEL SW	
	S001765/N00266	S001769/N00266	S003514/N00508
	S003621/N00523	S003631/N00524	S003643/N00525
S003596/N00521	S003610/N00522	S003686/N00533	S003704/N00537
X0010.3	FIL.F.SW	FILTER TANK FULL SW	
	S001766/N00266	S003652/N00526	S003677/N00532
X0010.4	COL.L.SW	COOLANT LEVEL LOW SW	
	S001770/N00266	S003591/N00520	S003654/N00526
X0010.5	COL.F.SW	COOLANT FULL SW	
	S001767/N00266	S003606/N00522	S003622/N00523
	S003678/N00532		S003630/N00524
S003640/N00525			
X0010.6	FIL.PRE.SW	FILTER PRESSURE SW	
	S001764/N00266	S003655/N00526	S003671/N00531

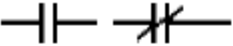
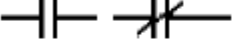
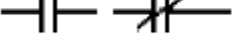
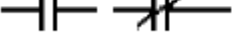

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0010.7 — — — —	OIL.SK.OL S004462/N00670	OIL SKIMMER MOTOR OL	
X0011.0 — — — —	M33.FIN.SEN S002594/N00385	S004129/N00610	
X0011.1 — — — —	M34.FIN.SEN S002598/N00385	S004134/N00611	
X0011.2 — — — —	M35.FIN.SEN S002602/N00385	S004139/N00612	
X0011.3 — — — —	M36.FIN.SEN S002606/N00385	S004144/N00613	
X0011.4 — — — —	M37.FIN.SEN S002609/N00385	S004149/N00614	
X0011.5 — — — —	M38.FIN.SEN S002612/N00385	S004161/N00616	
X0011.7 — — — —	CTS.MTR.OL S004452/N00665	S005656/N00927	
X0012.0 — — — —	S001956/N00305		
X0012.1 — — — —	§+Z S001957/N00305	S002015/N00315	
X0012.2 — — — —	§-Y S001958/N00305	S002005/N00313 S005585/N00916	
X0012.3 — — — —	§+X S001959/N00305	S001983/N00309 S001994/N00311 S005583/N00916	
X0012.4 — — — —	§-X S001960/N00305	S001984/N00309 S001995/N00311 S005584/N00916	
X0012.5 — — — —	§+Y S001961/N00305	S002006/N00313 S005586/N00916	
X0012.6 — — — —	§-Z S001962/N00305	S002016/N00315	
X0012.7 — — — —	§-4 S001963/N00305		
X0014.1 — — — —	§ZNG- S005131/N00812	Z AXIS CANCEL PB.	
X0014.5 — — — —	CL.AU S005115/N00806	AUTO COOLANT PB.	
X0014.7 — — — —	SP-DEC S005098/N00798	SPINDLE DEC	
X0015.0 — — — —	SP-100 S005092/N00796	SPINDLE 100%	
X0015.1 — — — —	SP-INC S005095/N00797	SPINDLE INC	
X0015.6 — — — —	SP-RST S005103/N00800	SPINDLE RESET PB.	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0016.0	\$MGCCW		
	S005087/N00794	S005124/N00810 S005589/N00916	
X0016.2	\$APO	AUTO POWER OFF S.W	
	S005074/N00789		
X0016.4			
	S004173/N00619	S004177/N00620	
X0020.0	MST.LK.PB		
	S001790/N00270	S001794/N00271	
X0020.2	MAG.CW.PB		
	S005082/N00793	S005123/N00810 S005588/N00916 S005630/N00922	
X0020.3	CNV.CCW.PB		
	S002445/N00377	S005109/N00803	
X0020.4	MLK.PB		
	S005111/N00804		
X0020.5	4/5.IGN.PB		
	S005683/N00933		
X0020.7	CNV.CW.PB		
	S002427/N00374	S005107/N00802 S005203/N00840	
X0021.0	BDT.PB		
	S005113/N00805		
X0021.1	OVC.PB		
	S001836/N00281	S001839/N00282	
X0021.2	F1.PB		
	S000592/N00096	S000597/N00097 S000600/N00097 S000607/N00098 S000610/N00098	
	S000617/N00099	S000620/N00099 S000627/N00100 S000630/N00100 S000637/N00101	
	S000640/N00101	S000647/N00102 S000650/N00102 S000657/N00103 S000660/N00103	
	S000667/N00104	S000670/N00104 S003974/N00581 S004025/N00591 S005090/N00795	
X0021.4	PRST.PB		
	S001730/N00259	S001733/N00260	
X0021.5	AIR.BLA.PB		
	S003991/N00584	S003994/N00585 S003997/N00586	
X0021.7	WK.LGT.PB		
	S005129/N00811		
X0022.0	M01.PB		
	S005119/N00808		
X0022.1	CTS.PB		
	S003487/N00504	S003490/N00505	
X0022.3	DOR.PB		
	S003405/N00492	S003411/N00493 S004231/N00626 S004250/N00629	
X0022.4	DRN.PB		
	S005105/N00801		
X0022.5	AIR.FLU.PB		
	S003555/N00514	S003558/N00515	
X0022.7	A.ZRN.PB		
	S002059/N00321		

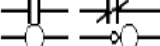
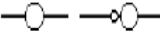
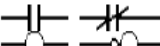
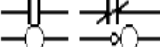
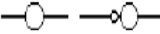
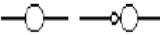
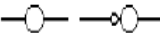
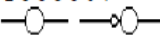
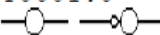
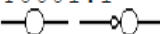
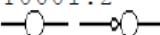
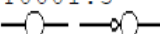
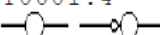
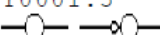
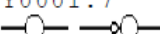
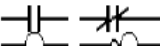
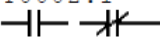
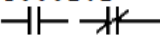


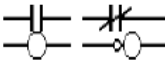
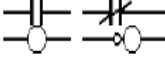
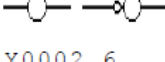
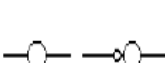
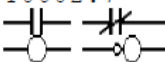
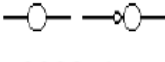
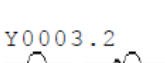
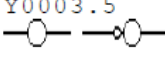
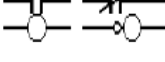
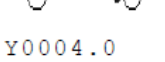
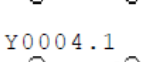
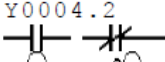
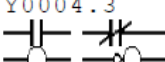
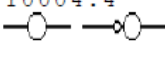
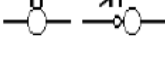
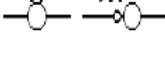




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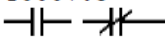
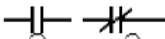
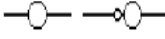
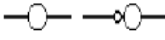
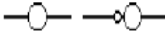
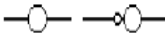
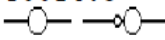
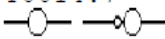
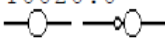
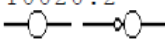
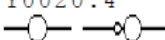
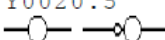
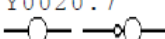
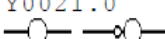
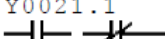
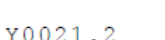
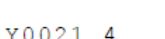
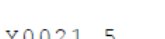
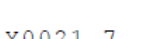
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X1002.5	:OIL-L	OIL LOW AL FOR OIL MIST	
	S004492/N00675		
X1002.6	:THMAL	THERMAL ALARM FOR OIL MIST	
	S004479/N00673		
X1002.7	:SUPAR	SUPPLY AIR AL FOR OIL MIST	
	S004489/N00675		
X1003.4			
	S002645/N00385	S003899/N00575	S003925/N00576
X1008.0			
	S001230/N00187		

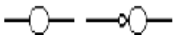
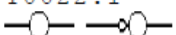
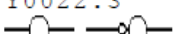
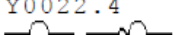
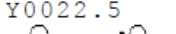
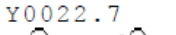
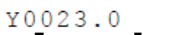
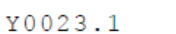
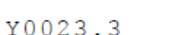
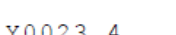
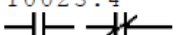
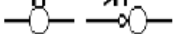
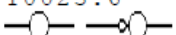
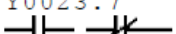
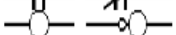

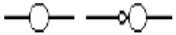
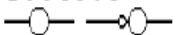
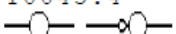
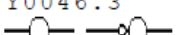
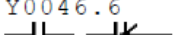
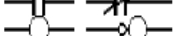
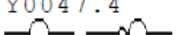
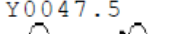
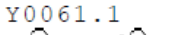


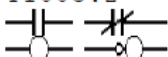
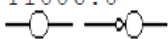
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0000.0	B.LP 	B AXIS LAMP	
	S005037/N00777		
	S004254/N00630	S005043/N00777	
Y0000.1	SP.STP.LP 	SPINDLE STOP LAMP	
	S005174/N00833		
Y0000.2	X.LP 	X AXIS LAMP	
	S004997/N00773	S005044/N00778 S005047/N00779	
	S005003/N00773		
Y0000.3	A.LP 	A AXIS LAMP	
	S005027/N00776	S005062/N00784 S005065/N00785	
	S005033/N00776		
Y0000.4	SP.CW.LP 	SPINDLE CW LAMP	
	S005170/N00831		
Y0000.5	T.21.LP 	TOOL DISPLAY 21 LED	
	S000643/N00101		
Y0000.6	T.22.LP 	TOOL DISPLAY 22 LED	
	S000653/N00102		
Y0000.7	T.24.LP 	TOOL DISPLAY 24 LED	
	S000663/N00103		
Y0001.0	T.28.LP 	TOOL DISPLAY 28 LED	
	S000673/N00104		
Y0001.1	T.11.LP 	TOOL DISPLAY 11 LED	
	S000603/N00097		
Y0001.2	T.12.LP 	TOOL DISPLAY 12 LED	
	S000613/N00098		
Y0001.3	T.14.LP 	TOOL DISPLAY 14 LED	
	S000623/N00099		
Y0001.4	T.18.LP 	TOOL DISPLAY 18 LED	
	S000633/N00100		
Y0001.5	ATC.AL.LED 	ATC FAULT LED	
	S005162/N00827		
Y0001.7	MC.AL.LED 	MACHINE ALARM LED	
	S005164/N00828		
Y0002.0	COL1.MC 	COOLANT 1 MC	
	S005195/N00838		
	S003589/N00519		
Y0002.1	MAG.CW.MC 	MAGAZINE CW MC	
	S000195/N00032	S000242/N00039 S000248/N00042 S000287/N00048 S000879/N00129	
	S001391/N00206	S001604/N00227 S005208/N00842 S005576/N00915 S005623/N00921	
	S000239/N00038		
Y0002.2	MAG.CCW.MC 	MAGAZINE CCW MC	
	S000218/N00035	S000238/N00038 S000249/N00042 S000297/N00049 S000880/N00129	
	S001605/N00227	S005210/N00843 S005577/N00915 S005624/N00921	
	S000243/N00039		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0002.3	 CNV.CW.MC S002637/N00385 S002430/N00374	CHIP CONVEYOR CW MC	
Y0002.4	 CNV.CCW.MC S002416/N00372 S002450/N00377	CHIP CONVEYOR CCW MC	
Y0002.5	 SP.COL.MC S003713/N00538	SPINDLE COOLER MC	
Y0002.6	 ARM.MC S000053/N00008 S001318/N00197 S001555/N00221 S000154/N00023	ARM MOTOR MC	S001216/N00184 S001257/N00190 S001280/N00193 S001295/N00195 S001436/N00211 S001468/N00214 S001518/N00217 S001537/N00219 S002696/N00385
Y0002.7	 COL2.MC S002542/N00385 S003580/N00518	COOLANT 2 MC	S002545/N00385 S003585/N00519
Y0003.0	 OIL.KIM.MC S005667/N00929	OIL SKIMMER MC	
Y0003.1	 EXT.F.MC S003754/N00546	EXTERNAL FAN MC	
Y0003.2	 RECYC.MC S003656/N00526	RECYCLE MOTOR MC	
Y0003.5	 CYC.ON.O S003750/N00545	CYCLE ON LAMP	
Y0003.6	 AL.LP.O S003747/N00545 S003763/N00547	ALARM LAMP	
Y0003.7	 CYC.END.O S003782/N00551	CYCLE END LAMP	
Y0004.0	 LUBE.O S002355/N00362 S004126/N00609	LUBE PUMP RELAY	S004062/N00600 S005596/N00917 S005608/N00919 S005615/N00920
Y0004.1	 APO.O S003398/N00491	AUTO POWER OFF RELAY	
Y0004.2	 SP.LG.O S002896/N00407 S002902/N00408	SPINDLE LOW GEAR RELAY	
Y0004.3	 SP.HG.O S002901/N00408 S002897/N00407	SPINDLE HIGH GEAR RELAY	
Y0004.4	 WK.L.O S001835/N00280	WORK LIGHT RELAY	
Y0004.5	 CTS.O S003522/N00509 S003519/N00508	CTS COOLANT MOTOR RELAY	S003528/N00510
Y0004.6	 M33.O S002593/N00385 S004131/N00610	M33 OUTPUT	S004128/N00610

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0004.7	M34.O	M34 OUTPUT	
	S002597/N00385 S004133/N00611 S004136/N00611		
Y0005.0	TOL.UNC.O	TOOL UNCLAMP RELAY	
	S000103/N00015		
Y0005.1	MAG.EXT.O	MAGAZINE EXTEND RELAY	
	S001469/N00214 S001495/N00215 S001481/N00214		
Y0005.2	MAG.RTN.O	MAGAZINE RETURN RELAY	
	S001470/N00214 S001494/N00215 S001504/N00215		
Y0005.3	AIR.BW.O	AIR BLOW RELAY	
	S002523/N00385 S002529/N00385 S004023/N00590		
Y0005.4	SP.AIR.O	SPINDLE AIR BLOW RELAY	
	S001428/N00210		
Y0005.5	CTS.AIR.O	CTS AIR BLOW RELAY	
	S003544/N00512		
Y0005.6	M35.O	M35 OUTPUT	
	S002601/N00385 S004138/N00612 S004141/N00612		
Y0005.7	M36.O	M36 OUTPUT	
	S002605/N00385 S004143/N00613 S004146/N00613		
Y0006.0	AIR.AL.LED	AIR FAULT LED	
	S005221/N00845		
Y0006.2	LUBE.AL.LED	LUBE FAULT LED	
	S005219/N00844		
Y0006.3	M2/M30.LED	M02 / M30 LED	
	S003776/N00549		
Y0006.4	M0/M1.LED	M00 / M01 LED	
	S003778/N00550		
Y0006.6	A.HOME.LED	A AXIS HOME LED	
	S005160/N00826		
Y0006.7	Z.HOME.LED	Z AXIS HOME LED	
	S005158/N00825		
Y0007.0	Y.HOME.LED	Y AXIS HOME LED	
	S005156/N00824		
Y0007.1	X.HOME.LED	X AXIS HOME LED	
	S005154/N00823		
Y0007.2	CY.ST.LP	CYCLE START LAMP	
	S005134/N00813		
Y0007.3	FD.HLD.LP	FEED HOLD LAMP	
	S005136/N00814		
Y0007.4	NC.RDY.LP	CNC READY LAMP	
	S000011/N00002		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0007.5	MPG.LED 	MPG LED	
	S001443/N00212	S001453/N00213 S004685/N00710	S004688/N00711 S004691/N00712
	S004694/N00713	S004697/N00714 S004701/N00715	S004731/N00716
	S004957/N00757	S005166/N00829	
Y0007.6	DR.LCK.O 	DOOR INTERLOCK RELAY	
	S004236/N00627	S004248/N00629 S005137/N00815	S005733/N00943
	S004235/N00626		
Y0007.7	A.UNCLP.O 	A AXIS UNCLAMP SOL	
	S003363/N00485		
Y0012.6	F0-L 	FO LED	
	S004026/N00591		
Y0013.1	ZNG-L 	Z AXIS CANCEL LED	
	S005146/N00819		
Y0014.3			
	S005168/N00830		
Y0014.5			
	S005211/N00843		
Y0014.7	APO-L 	AUTO POWER OFF LED	
	S005198/N00839		
Y0020.0	AFL.LP 	MST LOCK LAMP	
	S001807/N00273	S005150/N00821	
Y0020.2	MAG.CW.LP 	MAGAZINE CW LAMP	
	S005209/N00842		
Y0020.3	CNV.CCW.LP 	CHIP CONVEYOR CCW LAMP	
	S005207/N00841		
Y0020.4	MLK.LP 	MACHINE LOCK LAMP	
	S005142/N00817		
Y0020.5	4/5.IGN.LP 	4/5 AXIS IGNORE LAMP	
	S005682/N00932		
Y0020.7	CNV.CW.LP 	CHIP CONVEYOR CW LAMP	
	S005205/N00840		
Y0021.0	BDT.LP 	BLOCK DELETE LAMP	
	S005140/N00816		
Y0021.1	OVC.LP 	OVERRIDE CANCEL LAMP	
	S001842/N00283	S001844/N00283 S001854/N00285	
	S001847/N00283		
Y0021.2	F1.LP 	F1 LAMP	
	S000593/N00096		
Y0021.4	RSTR.LP 	PROGRAM RESTART LAMP	
	S001741/N00261		
Y0021.5	AIRBLA.LP 	AIR BLAST LAMP	
	S004024/N00590		
Y0021.7	WK.L.LP 	WORK LIGHT LAMP	
	S005223/N00846		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0022.0	M01.LP 	M01 STOP LAMP	
Y0022.1	CTS.LP 	CTS LAMP	
Y0022.3	DOR.LP 	DOOR LAMP	
Y0022.4	DRN.LP 	DRY RUN LAMP	
Y0022.5	AIR.FLU.LP 	AIR FLUSH LAMP	
Y0022.7	A.ZRN.LP 	AUTO ZRN LAMP	
Y0023.0	SBK.LP 	SINGLE BLOCK LAMP	
Y0023.1	COL.LP 	COOLANT LAMP	
Y0023.3	M19.LP 	M19 LAMP	
Y0023.4	Z.LP 	JIG Z LAMP	
		S005017/N00775 S005056/N00782 S005059/N00783	
		S005023/N00775	
Y0023.6	SP.CCW.LP 	SPINDLE CCW LAMP	
Y0023.7	Y.LP 	JOG Y LAMP	
		S005007/N00774 S005050/N00780 S005053/N00781	
		S005013/N00774	
Y0045.1		S005138/N00815	
Y0045.3		S005186/N00835	
Y0045.4		S005192/N00836	
Y0046.3		S003662/N00528	
Y0046.6		S004155/N00615	
		S005704/N00937	
Y0047.4		S004158/N00615	
Y0047.5		S004166/N00617	
Y0061.1		S005180/N00834	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y1002.2	>CLNA 	COOLANT A	
	S002515/N00385	S002533/N00385	S003582/N00519
	S003483/N00502		
Y1002.3	>GUN 	WATER GUN	
	S003583/N00519		
Y1003.0	>OILMS 	SPINDLE OIL MIST	
	S004484/N00674		
	S004169/N00618		
Y1003.2	>JGUCL 	JIG UNCLAMP	
	S002664/N00385	S003820/N00558	S003896/N00574
	S003825/N00559		
Y1003.3	>JGCLP 	JIG CLAMP	
	S002665/N00385	S003800/N00556	S003811/N00557
	S003893/N00574	S003915/N00576	S003824/N00559
	S003822/N00558		S003826/N00560
Y1003.4	>ATLM 	A.T.L.M BLAST	
	S002640/N00385	S002643/N00385	S003784/N00552
	S003787/N00552		
Y1004.0			
	S002587/N00385	S002590/N00385	
Y1005.5	>FIL 	FILTER MOTOR	
	S003698/N00535		
Y1006.0	>ZBRK 	Z AXIS BRAKE	
	S000246/N00040		



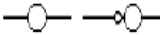
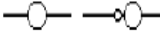

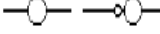
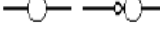




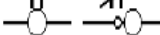
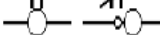
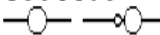
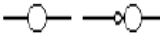
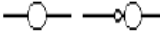
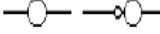
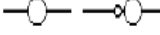
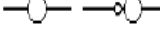
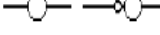


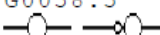
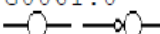
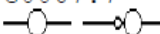
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	S003414/N00493	S003675/N00531	S003682/N00532 S003702/N00536 S003706/N00537
	S003745/N00545	S003790/N00553	S003883/N00571 S003886/N00572 S003889/N00573
	S003894/N00574	S003902/N00575	S003908/N00576 S003920/N00576 S004059/N00600
	S004196/N00623	S004232/N00626	S004859/N00736
F0000.6	SA		
	S000245/N00040	S001867/N00289	S003407/N00492 S004068/N00600 S004108/N00606
	S005700/N00937	S005731/N00943	
F0000.7	OP		
	S001772/N00266	S001850/N00284	S003251/N00465 S003303/N00473 S003751/N00546
	S004085/N00603	S004095/N00604	S004121/N00609
F0001.0	CNC-AL		
	S001097/N00159	S002341/N00359	S003509/N00508
F0001.1	RST		
	S000013/N00003	S000466/N00078	S000474/N00079 S000929/N00136 S000935/N00137
	S001091/N00158	S001095/N00159	S001923/N00299 S001931/N00300 S001938/N00301
	S001945/N00302	S001949/N00303	S002055/N00320 S002064/N00321 S002072/N00322
	S002349/N00361	S002379/N00367	S002409/N00372 S002767/N00394 S002987/N00425
	S003010/N00430	S003042/N00437	S003056/N00438 S003079/N00442 S003315/N00475
	S003447/N00498	S003453/N00499	S003613/N00522 S003673/N00531 S003680/N00532
	S003688/N00533	S003700/N00536	S003720/N00539 S003786/N00552 S003936/N00576
	S003961/N00579	S003972/N00580	S003986/N00583 S004006/N00587 S004040/N00594
	S004045/N00595	S004050/N00596	S004278/N00631 S004296/N00634 S004302/N00635
	S004313/N00636	S004319/N00637	S004330/N00638 S004336/N00639 S004342/N00640
	S004354/N00642	S004360/N00643	S004365/N00644 S004370/N00645 S004375/N00646
	S004380/N00647	S004390/N00649	S004410/N00654 S004421/N00655 S004429/N00657
	S004434/N00658	S004442/N00660	S004468/N00671 S004477/N00672 S004481/N00673
	S004494/N00675	S004512/N00679	S004516/N00680 S004522/N00681 S004568/N00691
	S004577/N00692	S004595/N00695	S004604/N00696 S004700/N00715 S005226/N00847
	S005546/N00910	S005559/N00912	S005619/N00920
F0001.3	DEN		
	S005233/N00848	S005239/N00849	S005245/N00850 S005281/N00857
F0001.4	ENB	SPINDLE ENABLE SIGNAL	
	S003323/N00477	S003328/N00478	
F0001.5	TAP	TAPPING SIGNAL	
	S001775/N00266	S001821/N00277	S001852/N00285 S002730/N00388 S003133/N00450
	S003150/N00451	S003448/N00498	
F0001.7	MA		
	S000010/N00002	S000258/N00044	S000266/N00045 S001096/N00159 S001866/N00289
	S003711/N00538	S004117/N00609	S005696/N00936
F0003.1	MH		
	S001876/N00291	S001883/N00292	S001889/N00293 S004176/N00620
F0003.2	MJ		
	S004222/N00625	S004245/N00629	
F0003.5	MMEM		
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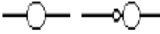
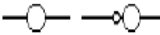
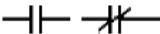
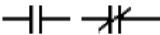

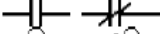
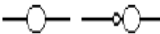
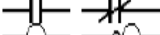
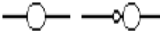
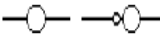
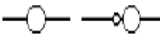
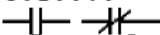
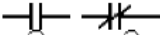
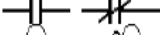
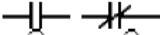
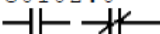
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	S005182/N00835	S005184/N00835	S005188/N00836 S005190/N00836
F0007.0	MF		
	S001597/N00226	S002719/N00387	S005227/N00847 S005232/N00848 S005238/N00849
	S005244/N00850	S005250/N00851	S005255/N00852 S005260/N00853 S005265/N00854
	S005270/N00855	S005275/N00856	S005280/N00857 S005286/N00858 S005291/N00859
	S005296/N00860	S005301/N00861	S005306/N00862 S005311/N00863 S005316/N00864
	S005321/N00865	S005326/N00866	S005331/N00867 S005336/N00868 S005341/N00869
	S005346/N00870	S005351/N00871	S005356/N00872 S005361/N00873 S005366/N00874
	S005371/N00875	S005376/N00876	S005381/N00877 S005386/N00878 S005391/N00879
	S005396/N00880	S005401/N00881	S005406/N00882 S005411/N00883 S005417/N00884
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	S005448/N00890	S005453/N00891	S005458/N00892 S005463/N00893 S005468/N00894
	S005473/N00895	S005478/N00896	S005483/N00897 S005488/N00898 S005493/N00899
	S005498/N00900	S005503/N00901	S005508/N00902 S005513/N00903 S005518/N00904
F0007.2	SF		
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	S003962/N00579	S005708/N00938	
F0007.3	TF		
	S000888/N00130	S000895/N00131	S001134/N00166 S002725/N00387
F0009.4	DM30		
	S003386/N00490	S003723/N00540	S004209/N00624
F0009.5	DM02		
	S003387/N00490	S003722/N00540	S004208/N00624
F0009.6	DM01		
	S004204/N00624		
F0009.7	DM00		
	S004206/N00624		
F0034.0	GR10	GEAR SELECT SIGNAL	
	S002708/N00386	S002790/N00396	
F0034.1	GR20	GEAR SELECT SIGNAL	
	S002706/N00386	S002776/N00395	
F0045.0	SALM1	SPINDLE ALARM SIGNAL	
	S001167/N00175	S002344/N00360	S002471/N00382 S003000/N00429 S003239/N00463
	S003319/N00475		
F0045.1	SSTA		
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F0045.7	ORARA		
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	S002994/N00426	S003193/N00457	
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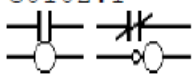
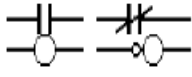
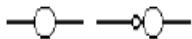
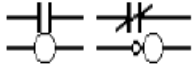
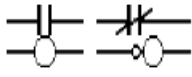
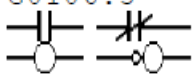
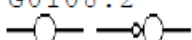
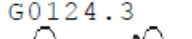
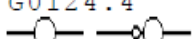
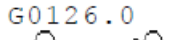
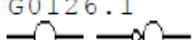
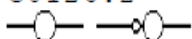
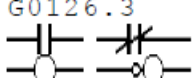
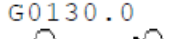
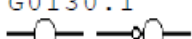
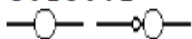
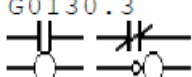


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
F0054.0 — — — —	U00 S001853/N00285	ATLM MACRO SIGNAL	
F0064.0 — — — —	TLCH S004499/N00677	TOOL LIFE CHANGE SIGNAL	
F0072.3 — — — —	S004929/N00753	S004943/N00756	
F0072.4 — — — —	S004933/N00754	S004940/N00756 S004946/N00756	
F0072.5 — — — —	S004930/N00753	S004934/N00754 S004941/N00756 S004944/N00756 S004949/N00756	
F0072.6 — — — —	S004937/N00755	S004942/N00756 S004945/N00756 S004948/N00756	
F0072.7 — — — —	AUX.HYDR S004920/N00750	S004923/N00751	
F0094.0 — — — —	ZP1 S002034/N00317	S002075/N00323 S002178/N00332 S002180/N00332 S002193/N00333	S002195/N00333 S002267/N00342 S002304/N00350
F0094.1 — — — —	ZP2 S001950/N00303	S002047/N00318 S002076/N00323 S002209/N00334 S002218/N00335	S002271/N00343 S002311/N00351
F0094.2 — — — —	ZPZ S001934/N00301	Z AXIS 1ST. POINT S002031/N00317 S002044/N00318 S002053/N00319 S002069/N00322	S002077/N00323 S002229/N00336 S002238/N00337 S002275/N00344 S002318/N00352
F0094.3 — — — —	ZP4 S002250/N00338	4 AXIX 1ST. POINT S002279/N00345 S002325/N00353	
F0096.0 — — — —	ZP2X S001178/N00177	X AXIS 2ND. POINT S002331/N00354 S004382/N00648	
F0096.1 — — — —	ZP2Y S001179/N00177	Y AXIS 2ND. POINT S002333/N00355 S004383/N00648	
F0096.2 — — — —	ZP2Z S001181/N00177	Z AXIS 2ND. POINT S001513/N00217 S001532/N00219 S001550/N00221 S002335/N00356	S004385/N00648
F0096.3 — — — —	ZP24 S002337/N00357		
F0102.0 — — — —	MV1 S004216/N00625		
F0102.1 — — — —	MV2 S004217/N00625		
F0102.2 — — — —	S004218/N00625		
F0102.3 — — — —	S004219/N00625		
F0149.1 — — — —	S002940/N00417		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.	
G0004.3	FIN 	END SIGNAL		
	S005718/N00939 S002728/N00387			
G0005.6	AFL 	AUX. FUNCTION LOCK		
	S005149/N00821 S001806/N00273			
G0006.0	SRN 	PROGRAM RESTART		
	S001736/N00261 S001740/N00261	S001738/N00261 S001743/N00262 S003316/N00475		
G0006.4	OVC 	OVERRIDE CANCEL SIGNAL		
	S001856/N00285			
G0007.2	ST 	CYCLE START SIGNAL		
	S003063/N00439 S002461/N00380	S003728/N00541		
G0008.0	*IT 	INTERLOCK SIGNAL		
	S001625/N00233			
G0008.4	*ESPI 	EMERGENCY STOP SIGNAL		
	S000005/N00001 S000717/N00111 S000782/N00116 S000837/N00121 S003587/N00519 S003805/N00556 S003868/N00566	S000009/N00002 S000742/N00112 S000789/N00117 S000907/N00131 S003653/N00526 S003816/N00557 S004168/N00618	S000012/N00003 S000756/N00113 S000797/N00118 S000990/N00143 S003712/N00538 S003821/N00558 S000259/N00044 S000775/N00115 S000805/N00119 S001071/N00156 S003753/N00546 S003852/N00564	S000267/N00045 S000775/N00115 S000830/N00120 S001868/N00289 S003755/N00547 S003863/N00565
	S000007/N00001			
G0008.5	*SPI 	FEED HOLD SIGNAL		
	S002462/N00381 S002480/N00382	S003064/N00439		
G0008.7	ERS 	EXTERNAL RESET SIGNAL		
	S003727/N00540			
G0014.0	ROV1 	RAPID OVERRIDE 1 SIGNAL		
	S001915/N00297			
G0014.1	ROV2 	RAPID OVERRIDE 2 SIGNAL		
	S001920/N00298			
G0018.0	HS1A 	HANDLE X AXIS SELECT		
	S001880/N00291			
G0018.1	HS1B 	HANDLE Z AXIS SELECT		
	S001887/N00292			
G0018.2	HS1C 	MANUAL HANDLE FEED SEL HS1C		
	S001893/N00293			
G0019.4	MP1 	HANDLE FEED 1 SELECT		
	S001862/N00287			
G0019.5	MP2 	HANDLE FEED 2 SELECT		
	S001865/N00288			
G0019.7	RT 	RAPID TRAVERSE SELECT		
	S001675/N00244			
G0029.4	SAR 	SPINDLE SPEED ARRIVAL		
	S002999/N00428			

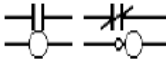
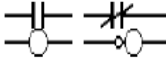
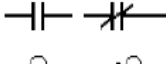
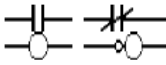
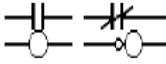
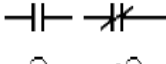
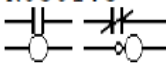
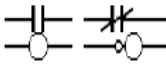
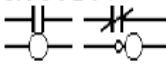
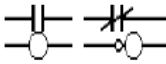
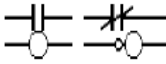
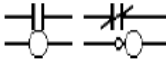
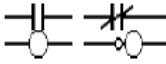
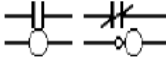
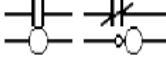
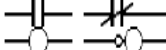
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0029.5 	SOR S002997/N00427	SPINDLE ORIENTATION SIGNAL	
G0029.6 	*SSTP S003238/N00462	SPINDLE STOP	
G0041.0 	S004932/N00753		
G0041.1 	S004936/N00754		
G0041.2 	S004939/N00755		
G0043.0 	MD1 S001665/N00241	MODE SELECT 1	
G0043.1 	MD2 S001669/N00242	MODE SELECT 2	
G0043.2 	MD4 S001672/N00243	MODE SELECT 4	
G0043.5 	DNC S001679/N00246	DNC OPERATION SELECT	
G0043.7  	ZRN S002056/N00320 S001677/N00245	ZERO RETURN SELECT	
G0044.0 	BDT1 S001729/N00258	OPTION BLOCK SKIP 1	
G0044.1 	MLK S001705/N00252	ALL-AXIS MACHINE LOCK	
G0046.1 	SBK S001778/N00266	SIGNAL BLOCK	
G0046.3 	KEY1 S001871/N00290	MEMORY PROTECT 1	
G0046.4 	KEY2 S001872/N00290	MEMORY PROTECT 2	
G0046.5 	KEY3 S001873/N00290	MEMORY PROTECT 3	
G0046.7 	DRN S001822/N00277	DRY RUN SIGNAL	
G0054.0  	S001018/N00149 S001021/N00149		
G0058.5 	STRD S001680/N00246	I/O SIMULTANEOUS OPERATION	
G0061.0 	RGTP S003322/N00476		
G0067.7 	S005726/N00941		

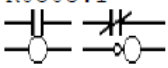
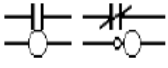
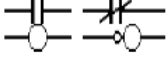
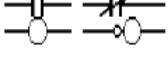
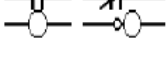
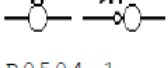
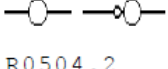
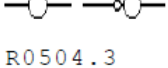
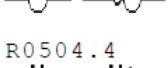
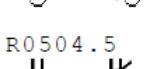
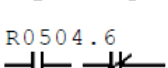
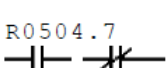
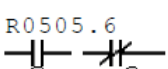
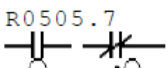
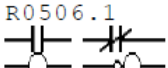

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0070.0	TLMLA 	TORQUE LIMIT	
	S003233/N00461		
G0070.3	CTH1A 	SPINDLE HIGH/LOW SPEED SIGNAL	
	S002959/N00420		
G0070.4	SRVA 	SPINDLE CCW COMMAND A	
	S001417/N00209 S002497/N00385 S003179/N00455 S003184/N00456 S003191/N00457		
	S003216/N00459 S003439/N00498		
	S003231/N00460		
G0070.5	SFRA 	SPINDLE CW COMMAND A	
	S001418/N00209 S002498/N00385 S003177/N00455 S003186/N00456 S003190/N00457		
	S003230/N00460 S003440/N00498		
	S003217/N00459		
G0070.6	ORCMA 	SPINDLE ORIENT COMMAND A	
	S002980/N00425 S003128/N00450 S003146/N00451 S003192/N00457		
	S002993/N00425		
G0070.7	MRDYA 	MACHINE READY A	
	S002961/N00421		
G0071.0	ARSTA 	SPINDLE RESET	
	S003240/N00463		
	S003243/N00463		
G0071.1	*ESPA 	SPINDLE 1 EMERGENCY STOP	
	S000008/N00001		
G0071.6	SP_RANGE 	SPEED RANGE SWITCH REQUEST	
	S002733/N00389 S002741/N00390		
	S002732/N00388		
G0071.7	LOW_MC 	LOW SPEED MC STATUS	
	S002749/N00391		
G0072.4	OVRA 	ANALOG OVERRIDE COMMAND	
	S003256/N00466		
G0072.7	HIGH_MC 	HIGH SPEED MC STATUS	
	S002752/N00392		
G0100.0	+J1 	X AXIS PULS DIRECT	
	S001940/N00302 S002124/N00326 S002177/N00332 S002305/N00350		
	S002186/N00332		
G0100.1	+J2 	Z AXIS PULS DIRECT	
	S001952/N00304 S002142/N00328 S002207/N00334 S002312/N00351		
	S002211/N00334		
G0100.2	+Z 	+JZ	
	S001926/N00300 S002160/N00330 S002227/N00336 S002319/N00352		
	S002231/N00336		
G0100.3	+4 	+J4	
	S002326/N00353		
	S002257/N00339		
G0102.0	-J1 	X AXIS MINUS DIRECT	
	S001941/N00302 S002102/N00325 S002192/N00333 S002306/N00350		
	S002201/N00333		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0102.1	-J2	Z AXIS MINUS DIRECT	
	S001953/N00304 S002221/N00335	S002133/N00327 S002217/N00335	S002313/N00351
G0102.2	-Z	-JZ	
	S001927/N00300 S002241/N00337	S002151/N00329 S002237/N00337	S002320/N00352
G0102.3	-4	-J4	
	S002266/N00341		
G0106.0	MIRX	X AXIS MIRROR IMAGE SIGNAL	
	S002554/N00385 S004053/N00597	S002560/N00385	
G0106.1	MIRY	Y AXIS MIRROR IMAGE SIGNAL	
	S002557/N00385 S004055/N00598	S002561/N00385	
G0106.3	MIR4	4TH AXIS MIRROR IMAGE SIGNAL	
	S002562/N00385 S004057/N00599	S002565/N00385	
G0108.2	MLKZ	Z AXIS MACHINE LOCK	
	S001717/N00255		
G0124.3			
	S005680/N00932		
G0124.4			
	S005681/N00932		
G0126.0	SVFX	SERVO OFF X	
	S001653/N00239		
G0126.1	SVFY	SERVO OFF Y	
	S001654/N00239		
G0126.2	SVFZ	SERVO OFF Z	
	S001655/N00239		
G0126.3	SVF4	SERVO OFF 4	
	S002256/N00339 S001659/N00240	S002265/N00341	
G0130.0	*IT1	X AXIS INTERLOCK	
	S001632/N00235		
G0130.1	*IT2	Z AXIS INTERLOCK	
	S001636/N00236		
G0130.2	*ITZ	INTERLOCK Z	
	S001644/N00237		
G0130.3	*IT4	INTERLOCK 4	
	S002255/N00339 S001651/N00238	S002264/N00341	

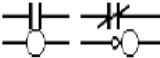
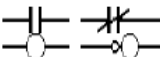
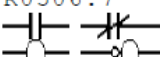
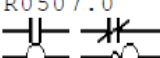
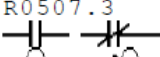
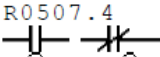
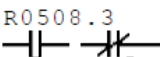
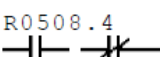
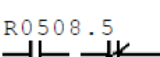

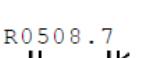
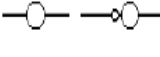
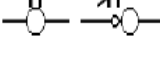
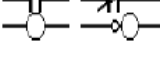
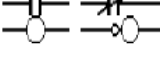
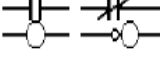


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0410.1		S004083/N00603 S004093/N00604 S004100/N00605	
		S004099/N00604	
R0410.2		S004066/N00600 S004084/N00603 S004101/N00605 S004122/N00609	
		S004106/N00605	
R0410.3		S004198/N00623 S005727/N00942 S005728/N00942	
		S005729/N00942	
R0410.4		S004102/N00605 S004109/N00606	
		S004111/N00606	
R0500.0		L1 LOGIC 1	
		S000155/N00024 S000156/N00024 S000180/N00031 S000182/N00031 S000533/N00089	
		S000534/N00089 S000541/N00090 S000542/N00090 S000543/N00090 S000544/N00090	
		S000549/N00091 S000550/N00091 S000551/N00091 S000552/N00091 S000557/N00092	
		S000558/N00092 S000559/N00092 S000560/N00092 S000565/N00093 S000566/N00093	
		S000568/N00093 S000576/N00094 S000577/N00094 S000578/N00094 S000579/N00094	
		S000584/N00095 S000585/N00095 S000586/N00095 S000587/N00095 S000674/N00105	
		S000675/N00105 S000681/N00106 S000682/N00106 S000688/N00107 S000689/N00107	
		S000695/N00108 S000696/N00108 S000702/N00109 S000703/N00109 S000709/N00110	
		S000710/N00110 S000848/N00124 S000927/N00136 S000928/N00136 S000930/N00136	
		S000944/N00138 S000945/N00138 S000946/N00138 S000958/N00140 S000959/N00140	
		S000960/N00140 S000961/N00140 S000970/N00141 S000971/N00141 S000972/N00141	
		S000978/N00142 S000992/N00144 S001007/N00147 S001019/N00149 S001037/N00153	
		S001038/N00153 S001048/N00154 S001049/N00154 S001607/N00228 S001624/N00233	
		S001652/N00239 S002929/N00414 S002939/N00417 S002948/N00418 S004074/N00601	
		S004081/N00603 S004082/N00603 S004091/N00604 S004092/N00604 S004119/N00609	
		S004286/N00633 S004613/N00697 S004614/N00697 S004620/N00698 S004626/N00699	
		S004627/N00699 S004628/N00699 S004642/N00700 S004643/N00700 S004644/N00700	
		S004645/N00700 S004650/N00701 S004699/N00715 S004728/N00716 S004729/N00716	
		S004730/N00716 S004736/N00717 S004737/N00717 S004738/N00717 S004745/N00718	
		S004750/N00719 S004752/N00719 S004759/N00720 S004760/N00720 S004761/N00720	
		S004762/N00720 S004767/N00721 S004768/N00721 S004774/N00722 S004775/N00722	
		S004786/N00724 S004793/N00725 S004809/N00728 S004814/N00729 S004815/N00729	
		S004822/N00730 S004823/N00730 S004830/N00731 S004861/N00736 S005224/N00847	
		S005225/N00847 S005545/N00910	
		S000157/N00024	
R0500.1		M00 PROGRAM STOP	
		S002485/N00385 S003716/N00539	
		S005237/N00848	
R0500.2		M01 OPTION PROGRAM STOP	
		S002492/N00385 S003714/N00539	
		S005243/N00849	
R0500.3		M02 PROGRAM END	
		S005249/N00850	
R0500.4		M03 SPINDLE C.W	
		S002494/N00385 S003119/N00450	
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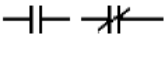
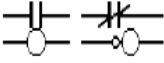
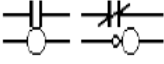
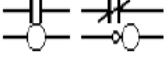
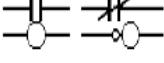
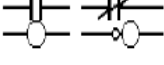
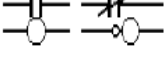
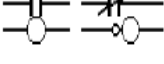
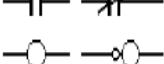
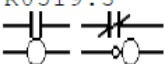
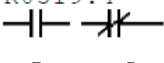
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0500.6	M05 	SPINDLE STOP S002501/N00385 S002984/N00425 S003092/N00446 S003236/N00462 S005264/N00853	
R0500.7	M06 	ATC MACRO S000726/N00111 S000736/N00112 S001141/N00168 S002504/N00385 S003484/N00503 S004022/N00590 S004393/N00650 S005707/N00938 S005269/N00854	
R0501.0	M07 	WORKPIECE BLAST ON S002512/N00385 S003982/N00583 S005274/N00855	
R0501.1	M08 	COOLANT ON S002520/N00385 S003465/N00501 S004412/N00655 S005279/N00856	
R0501.2	M09 	COOLANT/KIT OFF S002378/N00367 S002522/N00385 S003469/N00501 S003499/N00506 S003547/N00513 S003568/N00516 S003689/N00533 S003984/N00583 S004004/N00587 S005285/N00857	
R0501.3	M10 	CUT BLOW AIR OFF S002528/N00385 S003985/N00583 S004005/N00587 S005290/N00858	
R0501.6	M13 	SP CW AND COOLANT ON S002531/N00385 S003120/N00450 S003466/N00501 S004413/N00655 S005295/N00859	
R0501.7	M14 	SP CCW AND COOLANT ON S002532/N00385 S003138/N00451 S003467/N00501 S004414/N00655 S005300/N00860	
R0502.0	M15 	CHIP FLUSH PUMP ON S002541/N00385 S003545/N00513 S005305/N00861	
R0502.1	M16 	CHIP FLUSH PUMP OFF S002544/N00385 S003550/N00513 S003571/N00516 S005310/N00862	
R0502.4	M19 	SPINDLE ORIENT ON S002547/N00385 S002970/N00424 S005315/N00863	
R0502.5	M20 	SPINDLE ORIENT OFF S002550/N00385 S002991/N00425 S005320/N00864	
R0502.6		S002553/N00385 S004037/N00594 S005325/N00865	
R0502.7		S002556/N00385 S004042/N00595 S005330/N00866	
R0503.0		S002559/N00385 S004039/N00594 S004044/N00595 S004049/N00596 S005335/N00867	

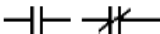
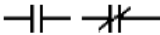
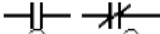
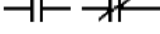

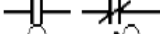
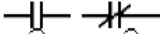
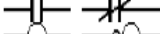
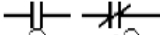
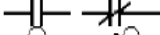

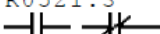
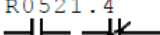
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0503.2		M25 A AXIS UNCLAMP S002573/N00385 S003352/N00483 S003369/N00486 S004514/N00680 S005345/N00869	
R0503.3		M26 A AXIS CLAMP S002581/N00385 S003350/N00483 S004520/N00681 S005350/N00870	
R0503.4		M27 A AXIS INDEX S002583/N00385 S005664/N00929 S005355/N00871	
R0503.6		S002630/N00385 S003130/N00450 S003307/N00474 S003331/N00479 S003337/N00481 S005360/N00872	
R0504.0		S002586/N00385 S005365/N00873	
R0504.1		S002589/N00385 S005370/N00874	
R0504.2		M33.A M CODE OUTPUT 1 S002592/N00385 S004127/N00610 S005375/N00875	
R0504.3		M34.A M CODE OUTPUT 2 S002596/N00385 S004132/N00611 S005380/N00876	
R0504.4		M35.A M CODE OUTPUT 3 S002600/N00385 S004137/N00612 S005385/N00877	
R0504.5		M36.A M CODE OUTPUT 4 S002604/N00385 S004142/N00613 S005390/N00878	
R0504.6		M37.A S002608/N00385 S004147/N00614 S005395/N00879	
R0504.7		M38.A S002611/N00385 S004159/N00616 S005400/N00880	
R0505.6		M45.A S002614/N00385 S004426/N00657 S005405/N00881	
R0505.7		M46.A S001848/N00284 S002617/N00385 S005410/N00882	
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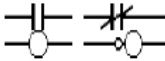
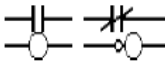
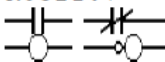
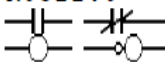
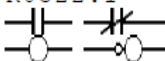
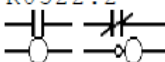
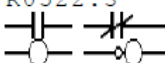
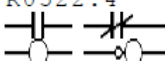
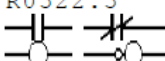
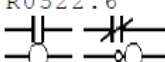
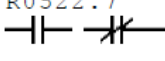
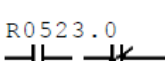
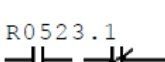
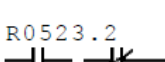
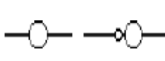


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0506.7	M54.A 	S002639/N00385 S003783/N00552 S005437/N00887	
R0507.0	M55.A 	S002642/N00385 S003785/N00552 S005442/N00888	
R0507.3	M58.A 	S002650/N00385 S003833/N00561 S003848/N00564 S003864/N00565 S005447/N00889	
R0507.4	M59.A 	S002654/N00385 S003855/N00564 S003859/N00565 S005452/N00890	
R0508.3	M66.A 	S002661/N00385 S003801/N00556 S003817/N00557 S003831/N00561 S005457/N00891	
R0508.4	M67.A 	S002663/N00385 S003808/N00556 S003812/N00557 S005462/N00892	
R0508.5	M68.A 	GEAR CHANGE TO LOW S002667/N00385 S002787/N00396 S005710/N00938 S005467/N00893	
R0508.6	M69.A 	GEAR CHANGE TO HIGH S002670/N00385 S002773/N00395 S005711/N00938 S005472/N00894	
R0508.7	M70.A 	S000567/N00093 S005523/N00905 S005526/N00906 S005528/N00907 S005540/N00909 S005547/N00910 S005557/N00911 S005561/N00912 S005477/N00895	
R0509.0	M71.A 	S001488/N00215 S002676/N00385 S005482/N00896	
R0509.1	M72.A 	S000348/N00063 S001524/N00218 S002688/N00385 S005487/N00897	
R0509.2	M73.A 	S001400/N00207 S002679/N00385 S005712/N00938 S005492/N00898	
R0509.3	M74.A 	S000349/N00063 S001422/N00210 S001545/N00220 S001594/N00226 S002690/N00385 S005497/N00899	
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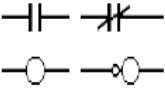
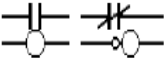
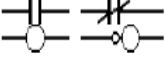
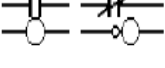
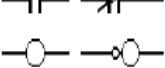
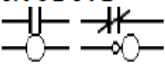
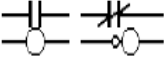
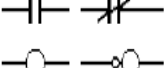
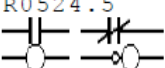
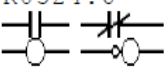
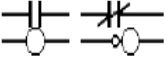
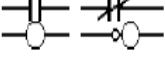
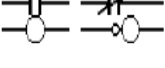
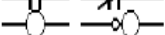
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0509.5		S000355/N00064 S000359/N00064 S001562/N00222 S002693/N00385 S005507/N00901	
R0509.6		S001464/N00214 S002685/N00385 S005512/N00902	
R0511.7		M94.A S000380/N00070 S000384/N00071 S002698/N00385 S005517/N00903	
R0512.0		M95.A S000364/N00065 S002701/N00385 S004292/N00634 S005522/N00904	
R0512.5		S002715/N00387 S002718/N00387 S002705/N00385	
R0512.6		SFIN S CODE FINISH S002716/N00387 S002721/N00387 S002714/N00386	
R0512.7		S000901/N00131 S002717/N00387 S002724/N00387 S001136/N00166	
R0513.0		JOG JOG MODE S001662/N00241 S001670/N00243 S001686/N00248 S002172/N00332 S002187/N00333 S002202/N00334 S002212/N00335 S002222/N00336 S002232/N00337 S002242/N00338 S002258/N00340 S003342/N00482 S005592/N00916 S001684/N00247	
R0513.1		MANUAL MANUAL MODE S000273/N00046 S000279/N00047 S000875/N00128 S001074/N00156 S001411/N00208 S001423/N00210 S002396/N00371 S002968/N00424 S003015/N00431 S003018/N00432 S003020/N00433 S003108/N00448 S003114/N00449 S003241/N00463 S003788/N00553 S004840/N00732 S004845/N00733 S005127/N00810 S005590/N00916 S005705/N00938 S001688/N00248	
R0513.2		ZRNFIN AXES REF. RETURN FINISH S001905/N00296 S002472/N00382 S004433/N00658 S004836/N00732 S004843/N00733 S002290/N00346	
R0513.4		FLTMR FLASH ON/OFF TIMER S002296/N00348 S002295/N00347	
R0513.5		FLASH FLASH ON/OFF S000375/N00068 S001219/N00185 S002081/N00324 S002299/N00349 S002300/N00349 S002308/N00350 S002315/N00351 S002322/N00352 S002328/N00353 S002356/N00362 S003194/N00457 S003749/N00545 S003762/N00547 S003781/N00551 S004087/N00603 S004096/N00604 S004249/N00629 S002303/N00349	
R0513.6		FLTRG FLASH ON/OFF TRIGGER S002291/N00347 S002298/N00349 S002301/N00349 S002297/N00348	

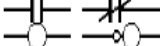
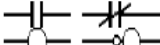
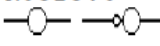
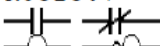
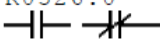
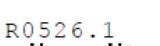
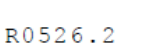
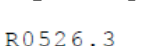
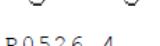
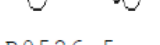
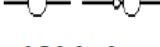
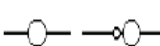
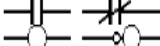
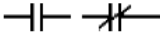

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0517.4	GRLOW	GEAR LOW	
	S002779/N00395 S002797/N00396	S002792/N00396 S002800/N00397	S002811/N00398 S002861/N00402
R0517.5	GRCHG	GEAR CHANGE	
	S002803/N00397 S002955/N00419 S003226/N00460 S002808/N00397	S002823/N00398 S002911/N00410 S002983/N00425 S002996/N00427 S003232/N00461 S003234/N00462	S002927/N00413 S002949/N00418 S003199/N00458 S003212/N00459 S003958/N00579
R0517.6	LGCH	LOW GEAR CHANGE	
	S002829/N00399 S002884/N00405 S002872/N00402	S002837/N00399 S002867/N00402 S002898/N00408	S002873/N00403 S002876/N00403
R0517.7	HGCH1	HIGH GEAR CHANGE 1	
	S002864/N00402 S003946/N00579 S002879/N00403	S002869/N00402 S002875/N00403	S002888/N00406 S002894/N00407
R0518.0	GEAROK	GEAR OK	
	S001169/N00175 S002824/N00398	S002712/N00386 S002972/N00424	S003005/N00430
R0518.1	TMRO1	HIGH GEAR CHANGE TIMER	
	S002832/N00399 S002887/N00405	S002854/N00401 S002874/N00403	S002934/N00415 S002937/N00416
R0518.2	TMRO2	LOW GEAR CHANGE TIMER	
	S002845/N00400 S002892/N00406	S002865/N00402	
R0518.3	ORCM1	SPINDLE ORIENTATION	
	S002979/N00425 S002978/N00424	S003235/N00462	
R0518.6	SPOK	SPINDLE OK	
	S003090/N00446 S003014/N00430		
R0518.7	MAN-	MANUAL MODE OFF PULSE	
	S003093/N00446 S003017/N00431		
R0519.0	MAN-A	MANUAL MODE OFF PULSE AUX	
	S003016/N00431 S003019/N00432		
R0519.1	MSSTP	MANUAL SPINDLE STOP	
	S002985/N00425 S003023/N00433	S003091/N00446	
R0519.2	SPNOP	SPINDLE NO PAUSE	
	S003022/N00433 S003219/N00460 S003202/N00458	S003096/N00446 S003110/N00448	S003116/N00449 S003204/N00459
R0519.3	SPOK1	SPINDLE OK 1	
	S003135/N00450 S003100/N00446	S003152/N00451	
R0519.4	SP-FOR	SPINDLE C.W	
	S002981/N00425 S003145/N00451 S003136/N00450	S003006/N00430 S003038/N00437 S003165/N00453 S003173/N00454	S003071/N00442 S003126/N00450 S003939/N00577 S003943/N00578

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0519.5	SP-REV 	SPINDLE C.C.W	
	S002982/N00425	S003007/N00430 S003052/N00438	S003072/N00442 S003127/N00450
	S003144/N00451	S003167/N00453 S003171/N00454	S003940/N00577 S003944/N00578
	S003153/N00451		
R0519.6	SPDIR 	SPINDLE DIR FLAG	
	S003164/N00453	S003166/N00453 S003170/N00454	S003172/N00454 S003176/N00455
	S003178/N00455	S003183/N00456 S003185/N00456	
	S003163/N00452		
R0520.0	SP-HLD 	SPINDLE RESET HOLD	
	S003200/N00458	S003302/N00473	
	S003306/N00473		
R0520.1	RGDK 	RIGID TAPPING KEEP	
	S003097/N00446	S003156/N00452 S003181/N00455	S003188/N00456 S003314/N00475
	S003321/N00476	S003325/N00477 S003330/N00479	S003338/N00481
	S003320/N00475		
R0520.2	H/LOVT 	HIGH/LOW SPEED CHANGE OVT	
	S002765/N00394		
	S002764/N00393		
R0520.3	RGDENE 	RIGID TAPPING ENABLE	
	S003324/N00477	S003327/N00478	
	S003326/N00477		
R0520.4	RGDEND 	RIGID TAPPING END	
	S003318/N00475		
	S003329/N00478		
R0520.5	RGDFIN 	RIGID TAPPING FINISH	
	S003333/N00480		
	S003332/N00479		
R0520.6	TMR03 	RIGID TAPPING FINISH DELAY	
	S002631/N00385		
	S003336/N00480		
R0520.7			
	S003237/N00462		
	S003339/N00481		
R0521.0	RGDCW 	RIGID TAPPING C.W	
	S003203/N00459	S003205/N00459	
	S003169/N00453		
R0521.1	RGDCCW 	RIGID TAPPING C.C.W	
	S003218/N00460	S003220/N00460	
	S003175/N00454		
R0521.2	GCHSTP 	GEAR CHANGE STOP	
	S002826/N00399	S002851/N00400 S002858/N00401	S002871/N00402 S002878/N00403
	S002882/N00404		
R0521.3	M29DL 	M29 FUNCTION DELAY	
	S003312/N00475		
	S003311/N00474		
R0521.4	AUTO- 	AUTO MODE OFF PULSE	
	S003033/N00437	S003047/N00438 S003094/N00446	
	S003026/N00434		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0521.5	AUTO-A 	AUTO MODE OFF PULSE AUX	
	S003025/N00434 S003028/N00435		
R0521.6	ST+A 	CYCLE START ON PULSE AUX	
	S003879/N00569 S003882/N00570		
R0521.7	SPROT 	SP CW/CCW FOR GEAR CHANGE	
	S002923/N00413 S002928/N00413	S002924/N00413 S003207/N00459	S003222/N00460
R0522.0	>25% 	RAPID >25%	
	S001914/N00297 S001909/N00296	S001918/N00298	
R0522.1	MCLN+ 	CLNT MANUAL ON PULSE	
	S002369/N00367 S002361/N00363	S002372/N00367 S002387/N00368	
R0522.2	MCLN+A 	CLNT MANUAL ON PULSE AUX	
	S002359/N00363 S002363/N00364		
R0522.3	ACLN+ 	CLNT AUTO ON PULSE	
	S002377/N00367 S002366/N00365	S002381/N00368 S002385/N00368	
R0522.4	ACLN+A 	CLNT AUTO ON PULSE AUX	
	S002365/N00365 S002368/N00366		
R0522.5	+4A 	+J4 AUX	
	S002249/N00338 S002253/N00338	S002254/N00339 S003345/N00482	
R0522.6	-4A 	-J4 AUX	
	S002263/N00341 S002262/N00340	S003346/N00482	
R0522.7	JOGOK 	JOG FEED OK	
	S002183/N00332 S002240/N00337 S002171/N00331	S002198/N00333 S002210/N00334 S002252/N00338 S002261/N00340	S002220/N00335 S002230/N00336
R0523.0	DRITL7 	DOOR INTERLOCK 7	
	S003132/N00450 S003464/N00500	S003149/N00451 S003425/N00496	S003445/N00498
R0523.1	DRITL1 	DOOR INTERLOCK 1	
	S001906/N00296 S003419/N00494	S004837/N00732	
R0523.2	DRITL2 	DOOR INTERLOCK 2	
	S000263/N00044 S003123/N00450 S003281/N00470 S003423/N00495	S001912/N00297 S001919/N00298 S003141/N00451 S003260/N00467 S003289/N00471 S003296/N00472	S002184/N00332 S002199/N00333 S003269/N00468 S003275/N00469 S004842/N00733 S005084/N00793
R0523.3	DRITL3 	DOOR INTERLOC 3	
	S002413/N00372 S003427/N00496	S002441/N00377 S002976/N00424	

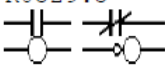
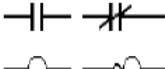
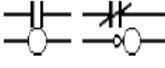
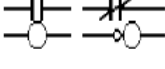
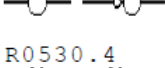
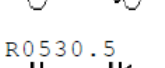
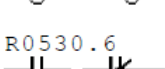
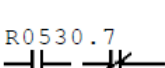
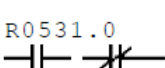
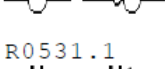
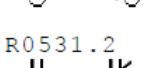
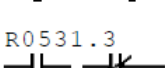
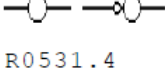
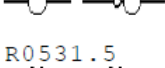
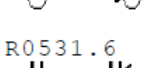



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0523.4	DRITL4 	DOOR INTERLOCK 4	
	S000262/N00044	S000720/N00111 S000908/N00131	S001026/N00150 S001032/N00151
	S001131/N00166		
	S003438/N00497		
R0523.5	DRITL5 	DOOR INTERLOCK 5	
	S003201/N00458	S003443/N00498	
	S003449/N00498		
R0523.6	DRITL6 	DOOR INTERLOCK 6	
	S001168/N00175	S001380/N00205 S002507/N00385	S003451/N00499
	S003456/N00499		
R0524.0	>370 	JOG FEEDRATE > 370MM	
	S004839/N00732		
	S004846/N00733		
R0524.1	STTEMP 	CYCLE START TEMP	
	S002348/N00361	S002456/N00380 S002464/N00381	S003452/N00499 S003735/N00542
	S003878/N00569	S003881/N00570 S004431/N00658	S004510/N00679
	S002453/N00378		
R0524.2	SPTEMP 	FEED HOLD TEMP	
	S002466/N00382		
	S002455/N00379		
R0524.3	MCHKEP 	MODE CHANGE KEEP	
	S003095/N00446		
	S003032/N00436		
R0524.4	ZPXKEP 	X HOME KEEP	
	S002091/N00325	S002093/N00325 S002113/N00326	S002115/N00326 S002268/N00342
	S002283/N00346		
	S002270/N00342		
R0524.5	ZPYKEP 	Y HOME KEEP	
	S002130/N00327	S002139/N00328 S002272/N00343	S002284/N00346
	S002274/N00343		
R0524.6	RST.DLY 	RESET DELAY TIMER	
	S002148/N00329	S002157/N00330 S002276/N00344	S002285/N00346
	S002278/N00344		
R0524.7	ZP4KEP 	4 HOME KEEP	
	S002280/N00345	S002286/N00346	
	S002282/N00345		
R0525.0	NOBT 	NO BIG TOOL	
	S000745/N00113	S000808/N00120	
	S000680/N00105		
R0525.1	SP=EMP 	SP TOOL =EMPTY	
	S000759/N00114	S000812/N00120	
	S000687/N00106		
R0525.2	SP=POT 	SP TOOL NO=STANDBY POT NO	
	S000778/N00116	S000821/N00120	
	S000694/N00107		
R0525.3	PT=EMP 	POT TOOL =EMPTY	
	S000760/N00114	S000813/N00120	
	S000701/N00108		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0525.4	SP=BT 	SP TOOL = BIG TOOL	
	S000768/N00115	S000817/N00120	
	S000708/N00109		
R0525.5	PT=BT 	POT TOOL = BIG TOOL	
	S000769/N00115	S000818/N00120	
	S000715/N00110		
R0525.6	SEMPW 	SEARCH EMPTY TOOL	
	S000856/N00124		
R0525.7	TMB29 	SPINDLE CW/CCW DELAY	
	S002912/N00410	S002920/N00412 S002922/N00413	S002925/N00413
	S002916/N00410		
R0526.0	BTSTB 	BIG TOOL STANDBY	
	S000731/N00111	S000735/N00112 S000786/N00117	S000794/N00118 S000802/N00119
	S000828/N00120	S000835/N00121	
	S000734/N00111		
R0526.1	BTCK 	WITH BIG TOOL?	
	S000732/N00111	S000738/N00112 S000744/N00113	S000807/N00120
	S000743/N00112		
R0526.2	EMPCK 	SP/STB T NO. =EMPTY ?	
	S000739/N00112	S000752/N00113 S000758/N00114	S000811/N00120
	S000757/N00113		
R0526.3	ORDCK 	SP/STB T NO. =ORDINARY ?	
	S000753/N00113	S000761/N00114 S000767/N00115	S000816/N00120
	S000766/N00114		
R0526.4	S,PCK 	SP TOOL = STANDBY POT TOOL ?	
	S000762/N00114	S000771/N00115 S000777/N00116	S000820/N00120
	S000776/N00115		
R0526.5	MEMPT 	MEMORIZE POT TOOL	
	S000772/N00115	S000779/N00116 S000784/N00117	S000842/N00123
	S000783/N00116		
R0526.6	SRHEMP 	SEARCH EMPTY TOOL	
	S000718/N00111	S000780/N00116 S000785/N00117	S000791/N00118 S000849/N00124
	S000916/N00133	S000921/N00134 S000948/N00138	S001000/N00145
	S000790/N00117		
R0526.7	TCH1 	TOOL CHANGE 1	
	S000787/N00117	S000793/N00118 S000799/N00119	S000840/N00122
	S000798/N00118		
R0527.0	SRHMPT 	SEARCHING MEMORY POT	
	S000719/N00111	S000795/N00118 S000801/N00119	S000823/N00120 S000857/N00125
	S000917/N00133	S000922/N00134 S000949/N00138	S001001/N00145
	S000806/N00119		
R0527.1	TCH2 	TOOL CHANGE 2	
	S000740/N00112	S000754/N00113 S000763/N00114	S000773/N00115 S000803/N00119
	S000826/N00120	S000832/N00121 S000839/N00122	
	S000831/N00120		
R0527.2	ATCEND 	ATC END	
	S000725/N00111	S000827/N00120 S000834/N00121	S001161/N00174 S002505/N00385
	S002992/N00425		
	S000838/N00121		

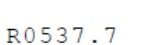
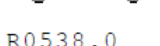
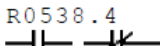

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0527.3	M6TMP 	TOOL CHANGE TEMP S000346/N00063 S000361/N00064 S000728/N00111 S001149/N00171 S001152/N00172 S001176/N00176 S001218/N00185 S001365/N00203 S001370/N00204 S001379/N00205 S002971/N00424 S002988/N00425 S003455/N00499 S003971/N00580 S004276/N00631 S000841/N00122	
R0527.5	SRHFIN 	TOOL SEARCH FIN S000792/N00118 S000824/N00120 S001003/N00145	
R0528.0	SPKEP 	FEED HOLD KEEP S002460/N00380 S002463/N00381 S002465/N00381	
R0528.1	SPR- 	SPINDLE OFF PULSE S003957/N00579 S004471/N00672 S003942/N00577	
R0528.2	SPR-A 	SPINDLE OFF PULSE AUX S003941/N00577 S003945/N00578	
R0528.3	LUBONT 	LUBE ON TIMER S004063/N00600 S004105/N00605 S004110/N00606 S004112/N00607 S004115/N00608 S004118/N00609 S004080/N00602	
R0528.4	LUNOFT 	LUBE OFF TIMER S004058/N00600 S004077/N00601	
R0528.5	LBONT+ 	LUBE ON TIMER PULSE S005616/N00920 S004114/N00607	
R0528.6	LBT+A 	LUBE ON TIMER PULSE AUX S004113/N00607 S004116/N00608	
R0528.7	GRINP1 	GEAR IN-POSITION 1 S002910/N00410 S002918/N00411	
R0529.0	ARMSTP 	ARM STOP POINT S000047/N00008 S000058/N00009 S000067/N00010 S000076/N00011 S000082/N00012 S000087/N00013 S000123/N00022 S000317/N00054 S000420/N00075 S000447/N00077 S001205/N00182 S001249/N00189 S004378/N00647 S000046/N00007	
R0529.1	MGINP 	MAG IN-POSITION S001066/N00156 S001429/N00211 S001599/N00227 S005575/N00915 S000173/N00029	
R0529.2	ESCASP 	ESCAPE ARM STOP POINT S000048/N00008 S000057/N00009 S000066/N00010 S000075/N00011 S000122/N00022 S001595/N00226 S000054/N00008	
R0529.3	A60AR 	ARM 60 ROTATION ARRIVAL S000049/N00008 S000059/N00009 S000085/N00012 S000093/N00014 S000131/N00023 S000063/N00009	
R0529.4	A180AR 	ARM 180 ROTATION ARRIVAL S000050/N00008 S000068/N00010 S000090/N00013 S000095/N00014 S000139/N00023 S000072/N00010	

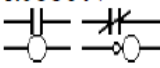
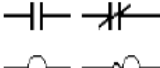
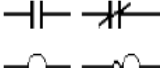
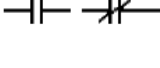
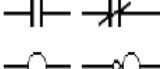
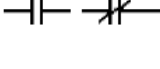
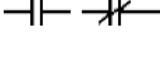
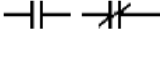
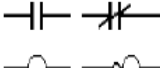
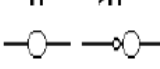
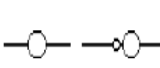



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0529.5	A-60AR 	ARM -60 ROTATION ARRIVAL	
	S000077/N00011	S000147/N00023	
	S000081/N00011		
R0529.6	MGCTA 	MAG COUNTER A	
	S000164/N00026	S000167/N00027	S000170/N00028 S000172/N00029 S001438/N00212
	S001448/N00213		
	S000163/N00025		
R0530.0	CVY.JR 	CVY JOG CCW REG.	
	S000165/N00026	S000168/N00027	
	S000171/N00028		
R0530.1	CVYCWR 	CVY CW REG.	
	S000185/N00031		
	S000166/N00026		
R0530.3	CVY.PF 	CVY. MANUAL PULSE OFF	
	S000189/N00031		
R0530.4	CVY.MH 	CVY. MANUAL HOLD	
	S000204/N00034	S000286/N00048	S000294/N00049 S001507/N00216
	S000292/N00048		
R0530.5	MGCCWA 	MAG CCW AUX	
	S000227/N00037	S000284/N00048	S000296/N00049 S001508/N00216
	S000302/N00049		
R0530.6	MGMCW1 	MAG MANUAL CW ON	
	S000283/N00048	S001078/N00156	
	S000276/N00046		
R0530.7	MGCCW1 	MAG MANUAL CCW ON	
	S000293/N00049	S001079/N00156	
	S000282/N00047		
R0531.0	MGCW 	MAG CW	
	S000183/N00031	S000207/N00034	S000233/N00037 S000236/N00038 S000295/N00049
	S000955/N00139	S001072/N00156	S001137/N00167 S003724/N00540
	S000212/N00034		
R0531.1	MCWDEC 	MAG CW DEC.	
	S000196/N00032	S000200/N00033	S001073/N00156
	S000199/N00032		
R0531.2	MGCWDL 	MAG CW DELAY	
	S000197/N00032	S000208/N00034	
	S000203/N00033		
R0531.3	MGCCW 	MAG CCW	
	S000181/N00031	S000184/N00031	S000210/N00034 S000230/N00037 S000241/N00039
	S000285/N00048	S000956/N00139	S001138/N00167 S003725/N00540
	S000235/N00037		
R0531.4	MAGOK 	MAG OK	
	S000211/N00034	S000234/N00037	S005626/N00921
	S000270/N00045		
R0531.5	MCCWDE 	MAG CCW DEC	
	S000219/N00035	S000223/N00036	
	S000222/N00035		
R0531.6	MCCWDL 	MAG CCW DELAY	
	S000220/N00035	S000231/N00037	
	S000226/N00036		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0531.7	MGCT-	MAG COUNT OFF PULSE	
	S000190/N00032 S000213/N00035 S000169/N00027		
R0532.0	MGRSTB	MAG ROT STAND-BY	
	S000882/N00129 S000886/N00130 S000890/N00130 S000885/N00129		
R0532.1	MAGON2	MAG ON 2	
	S000878/N00129 S000883/N00129 S000889/N00130 S000896/N00131 S000923/N00134 S001135/N00166 S000892/N00130		
R0532.2	MAGOK1	MAG OK 1	
	S000291/N00048 S000301/N00049 S000265/N00044		
R0532.3	MAGCHK	MAG ROT CHECK	
	S001082/N00157 S001081/N00156		
R0532.5	PTDNOK	POT DOWN OK	
	S001493/N00215 S001437/N00211		
R0532.6	TUCLFA	AUTO TOOL UNCLAMP FAIL	
	S000084/N00012 S000133/N00023 S004307/N00636 S000086/N00012		
R0532.7	TCLFA	AUTO TOOL CLAMP FAIL	
	S000089/N00013 S000142/N00023 S004324/N00638 S000091/N00013		
R0533.0	AMIDDL	ARM MIDDLE POINT DELAY	
	S000315/N00053 S001206/N00182 S000312/N00051		
R0533.3	AMIDK	ARM MID POINT KEEP	
	S000343/N00063 S001256/N00190 S001281/N00193 S001296/N00195 S002689/N00385 S004258/N00631 S004274/N00631 S004300/N00635 S004317/N00637 S000353/N00063		
R0533.7	AMOK	ARM RETURN POINT KEEP	
	S000357/N00064 S001317/N00197 S002694/N00385 S004264/N00631 S004334/N00639 S000363/N00064		
R0534.0	TF1	TOOL SEARCH ENABLE	
	S000897/N00131 S000898/N00131 S000910/N00132 S000909/N00131		
R0534.1	TF1DL	TOOL SEARCH ENABLE DELAY	
	S000914/N00133 S000913/N00132		
R0534.2	TSRHON	TOOL SEARCH ON	
	S000271/N00046 S000277/N00047 S000747/N00113 S000919/N00134 S000925/N00135 S000954/N00139 S000979/N00142 S000985/N00143 S000993/N00144 S001004/N00146 S001014/N00148 S001022/N00150 S001028/N00151 S003392/N00490 S000918/N00133		
R0534.3	TSRH+	TOOL SEARCH ON PULSE	
	S000936/N00137 S000947/N00138 S001008/N00147 S000924/N00134		

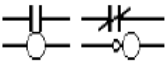
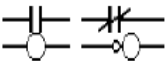
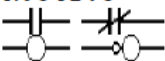
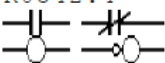
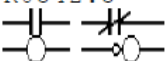
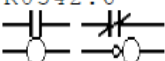
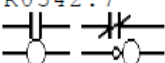
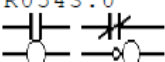
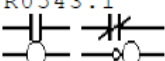
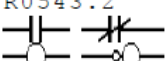
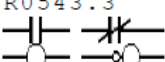
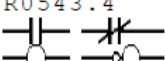
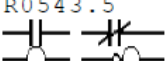
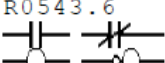
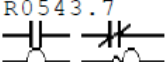
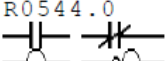
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0534.4	TSRH+A 	TOOL SEARCH ON PULSE AUX	
	S000920/N00134 S000926/N00135		
R0534.5	SHERR 	TOOL ON. SEARCH ERROR	
	S001089/N00158 S000943/N00137		
R0534.7	RTO 	MAG ROTATION 0	
	S000962/N00140 S000957/N00139	S000973/N00141	
R0535.0	MGROT 	MAG ROTATION CW/CCW	
	S001023/N00150 S000969/N00140	S001029/N00151	
R0535.1	TDEC 	TOOL SEARCH DEC	
	S000986/N00143 S000984/N00142		
R0535.2	TDECK 	TOOL SEARCH DEC KEEP	
	S000987/N00143 S000991/N00143		
R0535.3	TCOIN 	T CODE = STANDBY TOOL	
	S000988/N00143 S000998/N00144	S000999/N00145 S001005/N00146 S001024/N00150 S001030/N00151	
R0535.4	TCOIN1 	T CODE = STANDBY TOOL 1	
	S000899/N00131 S001006/N00146	S001020/N00149 S001127/N00166	
R0535.5	TCOSP 	T CODE = SP TOOL	
	S000746/N00113 S001175/N00176 S001013/N00147	S000809/N00120 S001015/N00148 S001025/N00150 S001031/N00151 S001369/N00204	
R0535.6	TCOSP1 	T CODE = SP TOOL 1	
	S000900/N00131 S001016/N00148	S001017/N00149 S001126/N00166	
R0536.0	MGACW 	MAG AUTO CW	
	S000205/N00034 S001027/N00150	S001076/N00156 S001128/N00166 S001505/N00216	
R0536.1	MGACCW 	MAG AUTO CCW	
	S000228/N00037 S001033/N00151	S001077/N00156 S001129/N00166 S001506/N00216	
R0536.2	MOVER1 	DATA MOVE ERROR 1	
	S001058/N00154		
R0536.3	MOVER2 	DATA MOVE ERROR 2	
	S001047/N00153		
R0536.4	MGCKDL 	MAG CHECK DELAY	
	S001086/N00158 S001085/N00157		
R0536.5	MG-ERR 	MAG ERROR	
	S000260/N00044 S001166/N00175 S001092/N00158	S000268/N00045 S000722/N00111 S000905/N00131 S001087/N00158 S004284/N00632	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0536.6	RDY2 	NC READY STATE	
	S001098/N00159		
R0536.7	A60 	ARM 60 ROTATION	
	S001105/N00161 S001109/N00162		
	S001104/N00160		
R0537.0	A60- 	ARM 60 ROTATION OFF PULSE	
	S001039/N00153		
	S001108/N00161		
R0537.1	A60-A 	ARM 60 ROT OFF PULSE AUX	
	S001106/N00161		
	S001110/N00162		
R0537.2	A180 	ARM 180 ROTATION	
	S001120/N00164 S001124/N00165		
	S001119/N00163		
R0537.3	A180- 	ARM 180 ROT OFF PULSE	
	S001050/N00154 S001059/N00155 S001344/N00201		
	S001123/N00164		
R0537.4	A180-A 	ARM 180 ROT OFF PULSE AUX	
	S001121/N00164		
	S001125/N00165		
R0537.5	JGBCLK 	JIG B CLAMP KEEP	
	S003900/N00575 S003919/N00576		
	S003906/N00575		
R0537.6	JIGUCL 	JIG UNCLAMP	
	S003803/N00556 S003813/N00557 S003823/N00559		
	S003818/N00557		
R0537.7	TUCLAU 	TOOL UNCLAMP AUX	
	S000100/N00015		
	S001416/N00208		
R0538.0	ATUCL 	AUTO TOOL UNCLAMP	
	S000094/N00014 S000101/N00015		
	S000099/N00014		
R0538.1	MAGON 	MAG ON	
	S000748/N00113 S000887/N00130 S001075/N00156 S001142/N00168 S001173/N00176		
	S001434/N00211 S003430/N00497 S004234/N00626		
	S001140/N00167		
R0538.3	M06ENB 	M06 ENABLE	
	S001144/N00169 S001147/N00170		
	S001143/N00168		
R0538.4	M06+ 	M06 ENB ON PULSE	
	S001159/N00174 S004350/N00642 S004356/N00643 S004362/N00644 S004367/N00645		
	S004372/N00646 S004377/N00647		
	S001146/N00169		
R0538.5	M06+A 	M06 ENB ON PULSE AUX	
	S001145/N00169		
	S001148/N00170		
R0538.6	M6ENBK 	M06 ENB KEEP	
	S000915/N00133 S001130/N00166 S001160/N00174		
	S001164/N00174		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0538.7	ATCOK	ATC OK	
	S000729/N00111 S001171/N00175	S001157/N00173 S001163/N00174	S001172/N00176
R0539.0	ATCOK1	ATC OK 1	
	S001182/N00177 S001333/N00199 S001177/N00176	S001298/N00195 S001340/N00200 S001348/N00201	S001321/N00197 S001327/N00198 S001355/N00202 S004269/N00631
R0539.1	TCHP	TOOL CHANGE POINT	
	S000096/N00014 S001285/N00193 S001183/N00177	S001225/N00186 S001289/N00194 S001511/N00217	S001245/N00188 S001259/N00190 S001272/N00191 S001530/N00219 S001548/N00221
R0539.2	ARM0DL	ARM O POINT	
	S000288/N00048 S001467/N00214 S001582/N00224 S000306/N00050	S000298/N00049 S001516/N00217 S001592/N00225 S004373/N00646	S000313/N00052 S001204/N00182 S001435/N00211 S001554/N00221 S001572/N00223
R0539.3	PTUPDL	POT UP DELAY	
	S000269/N00045 S004267/N00631 S001188/N00178	S001209/N00183 S004340/N00640	S001459/N00214 S001471/N00214 S002686/N00385 S004351/N00642
R0539.4	PTDNDL	POT DOWN DELAY	
	S000367/N00065 S001515/N00217 S004291/N00634 S001193/N00179	S000749/N00113 S001534/N00219 S004293/N00634	S000893/N00131 S001232/N00187 S001483/N00215 S001552/N00221 S002677/N00385 S004271/N00631 S004357/N00643 S005593/N00916
R0539.5	TCLDL	SPINDLE TOOL CLAMP DELAY	
	S000473/N00079 S001527/N00218 S004261/N00631 S001198/N00180	S000508/N00085 S001553/N00221 S004328/N00638	S001215/N00184 S001306/N00196 S001517/N00217 S002683/N00385 S002977/N00424 S004363/N00644
R0539.6	TUCLDL	SPINDLE TOOL UNCLAMP DELAY	
	S000461/N00078 S001535/N00219 S004368/N00645 S001203/N00181	S000504/N00085 S001544/N00220	S001268/N00191 S001275/N00192 S001426/N00210 S002680/N00385 S004256/N00631 S004311/N00636
R0539.7	ATCSTB	ATC STANDBY	
	S001220/N00185 S002506/N00385 S001217/N00184	S001222/N00186 S003012/N00430	S001238/N00188 S001367/N00204 S001626/N00234 S003966/N00580 S004465/N00671
R0540.0	A1.POT.DOWN	POT DOWN	
	S001224/N00186 S004290/N00634 S001229/N00186	S001235/N00188 S004464/N00671	S001479/N00214 S001485/N00215 S004270/N00631
R0540.1	A2.ARM.60	ARM 60	
	S000055/N00009 S001156/N00173 S001265/N00191 S001247/N00188	S000092/N00014 S001226/N00186 S001324/N00198	S000129/N00023 S001242/N00188 S001566/N00223 S000132/N00023 S001248/N00189 S004273/N00631 S001099/N00160 S001255/N00190 S004299/N00635
R0540.2	PRECLP	TOOL UNCLAMP WHEN ARM 60 ACTIV	
	S001250/N00189 S001254/N00189	S001398/N00207	



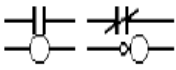
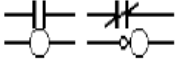
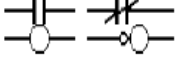
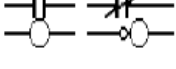
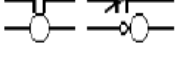
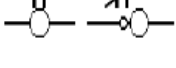
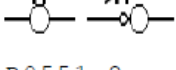
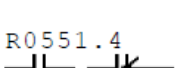
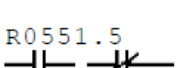
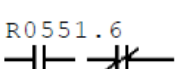
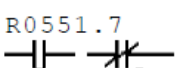
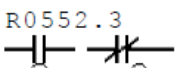
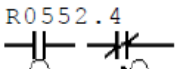
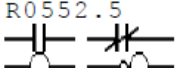
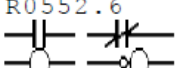

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0540.3	A3.SP.UNCLP	SPINDLE TOOL UNCLAMP	
	S000344/N00063	S001246/N00188 S001258/N00190	S001263/N00191 S001394/N00206
	S001397/N00207	S004255/N00631 S004306/N00636	
	S001262/N00190		
R0540.4	A4.ARM.180	ARM 180	
	S000064/N00010	S001112/N00163 S001243/N00188	S001260/N00190 S001269/N00191
	S001277/N00192	S001279/N00193 S001303/N00196	S001329/N00199 S001576/N00224
	S004257/N00631	S004316/N00637	
	S001274/N00191		
R0540.5	SPBLWK	SPINDLE AIR BLOW KEEP	
	S001282/N00193	S001288/N00194	
	S001287/N00193		
R0540.6	SPBLDL	SPINDLE AIR BLOW DELAY	
	S001294/N00195	S001335/N00200 S001420/N00210	
	S001293/N00194		
R0540.7	A5.SP.CLP	SPINDLE TOOL CLAMP	
	S000345/N00063	S001111/N00163 S001273/N00191	S001286/N00193 S001290/N00194
	S001297/N00195	S001302/N00196 S001343/N00201	S001385/N00206 S001406/N00207
	S004260/N00631	S004323/N00638	
	S001301/N00195		
R0541.0	A6.ARM.-60	ARM -60	
	S000073/N00011	S000145/N00023 S000354/N00064	S001270/N00191 S001283/N00193
	S001299/N00195	S001307/N00196 S001316/N00197	S001342/N00201 S001586/N00225
	S004263/N00631	S004333/N00639	
	S001315/N00196		
R0541.1	A7.POT.UP	POT UP	
	S000358/N00064	S001309/N00196 S001320/N00197	S001350/N00202 S001460/N00214
	S001497/N00215	S004266/N00631 S004339/N00640	
	S001323/N00197		
R0541.2	A.STEP.1	ARM STEP 1 / 60	
	S001325/N00198	S001330/N00199 S001357/N00203	S001372/N00205
	S001328/N00198		
R0541.3	A.STEP.2	ARM STEP 2 / 180	
	S001331/N00199	S001337/N00200 S001358/N00203	S001373/N00205
	S001334/N00199		
R0541.4	A.STEP.3	ARM STEP 3 / SP AIR BLOW	
	S001338/N00200	S001345/N00201 S001359/N00203	S001374/N00205
	S001341/N00200		
R0541.5	A.STEP.4	ARM STEP 4 / -60	
	S001346/N00201	S001351/N00202 S001360/N00203	S001375/N00205
	S001349/N00201		
R0541.6	A.STEP.5	ATC STEP 5 / POT UP	
	S001353/N00202	S001361/N00203 S001376/N00205	
	S001356/N00202		
R0541.7	A.STEP.6	ATC STEP6 (ATC END)	
	S001227/N00186	S001364/N00203 S001368/N00204	
	S001366/N00203		
R0542.0	A.STEP.FIN	ATC STEP FINISH	
	S001311/N00196	S001322/N00197 S001326/N00198	S001332/N00199 S001339/N00200
	S001347/N00201	S001354/N00202 S001377/N00205	
	S001371/N00204		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0542.1	ATFIN1 	ATC FINISH 1	S000800/N00119 S000833/N00121 S001228/N00186 S001378/N00205 S001383/N00205
R0542.2	SP-CLP 	SPINDLE CLAMP	S001390/N00206 S001404/N00207 S001396/N00206
R0542.3	SP.UNCLP 	SPINDLE UNCLAMP	S001403/N00207 S001413/N00208 S001410/N00207
R0542.4	M72OK 	M72 OK	S001521/N00218 S001520/N00217
R0542.5	TAIL.H 	TAIL HOLD	S000056/N00009 S000130/N00023 S001101/N00160 S001522/N00218 S001567/N00223 S001529/N00218
R0542.6	M74OK 	M74 OK	S001541/N00220 S001540/N00219
R0542.7	M74A 	M74 ACTIVE (ARM 180)	S000065/N00010 S000138/N00023 S001116/N00163 S001542/N00220 S001575/N00224 S001547/N00220
R0543.0	M76OK 	M76 OK	S001559/N00222 S001558/N00221
R0543.1	M76A 	M76 ACTIVE (ARM -60)	S000074/N00011 S000146/N00023 S001560/N00222 S001585/N00225 S001565/N00222
R0543.2	ASEQ1 	ARM SEQ1	S001538/N00219 S001568/N00223 S001577/N00224 S001589/N00225 S001574/N00223
R0543.3	ASEQ2 	ARM SEQ2	S001528/N00218 S001556/N00221 S001569/N00223 S001578/N00224 S001587/N00225 S001584/N00224
R0543.4	ASEQ3 	ARM SEQ3	S001579/N00224 S001588/N00225 S001593/N00225
R0543.5	M74AR 	M74 ROT ARRIVAL	S001596/N00226 S002691/N00385 S001598/N00226
R0543.6	MAGINP 	MAG. IN-POSITION	S001174/N00176 S004394/N00650 S001606/N00227
R0543.7	A4-1 	ARM 180	S000137/N00023 S000141/N00023 S001278/N00192
R0544.0	JX.SEL 	JOG X SELECT	S001208/N00183 S001639/N00237 S002973/N00424 S001207/N00182

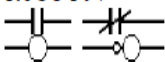
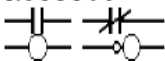
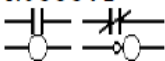
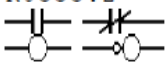
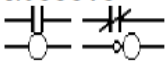
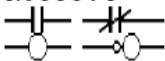
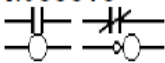
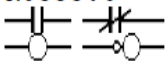
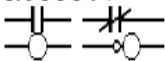
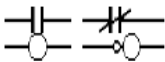
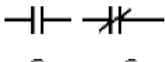
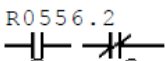
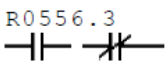
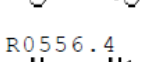
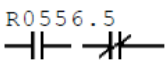
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0544.1	JZ.SEL 	JOG Z SELECT	
	S000737/N00112 S004285/N00632	S003764/N00548 S004424/N00656	
R0544.2	ATCAL1 	ATC ALARM 1	
	S000906/N00131 S004298/N00635 S004338/N00640 S004282/N00631	S001165/N00175 S004305/N00636 S004387/N00649 S004392/N00650	S004277/N00631 S004322/N00638 S004466/N00671 S004289/N00634 S004332/N00639
R0544.3	2NDREF 	2ND. REFERENCE POINT	
	S004388/N00649 S004386/N00648		
R0544.4	ATCITL 	ATC INTERLOCK	
	S001631/N00235 S001628/N00234	S001635/N00236 S001640/N00237	
R0544.5	ARJGSP 	ARM JOG STOP	
	S000125/N00022 S000127/N00022	S000151/N00023 S000485/N00082	S000494/N00083
R0544.6	ARJGPA 	ARM JOG PAUSE	
	S000126/N00022 S000489/N00082		
R0544.7	ARJGDL 	ARM JOG DELAY	
	S000495/N00083 S000501/N00084		
R0545.3	M19.FIN 	M19 FINISHED	
	S001241/N00188 S001234/N00187		
R0545.4	M6TMP+ 	M06 PULSE STANDBY	
	S001154/N00173 S001151/N00171		
R0545.5	MGON2 	MAG ON 2	
	S001139/N00167 S001510/N00216	S001466/N00214 S001490/N00215	
R0545.6	ATC+K 	ATC PULSE KEEP	
	S001155/N00173 S001158/N00173	S001237/N00188	
R0545.7	M6TMPA 	ATC PULSE AUX	
	S001150/N00171 S001153/N00172		
R0546.0	M95KEP 	M95 KEEP STATE (LADDER TOP)	
	S000365/N00065 S000383/N00071 S000903/N00131 S003980/N00582 S000368/N00065	S000369/N00066 S000459/N00078 S001573/N00223 S004502/N00678	S000372/N00067 S000471/N00079 S001583/N00224 S005714/N00938 S000374/N00068 S000379/N00070 S000483/N00081 S000502/N00085 S003975/N00581
R0546.1	ARM0A 	ARM 0 POINT AUX	
	S000319/N00055 S000314/N00052	S001035/N00152	
R0546.2	AMIDA 	ARM MID POINT AUX	
	S000324/N00056 S000316/N00053		

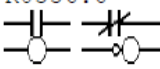
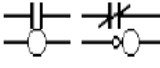
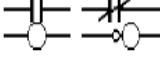
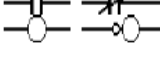
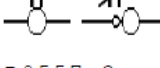
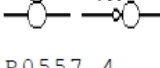
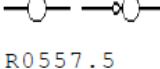
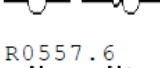
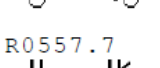
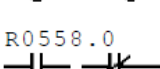
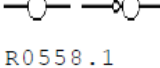
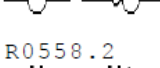
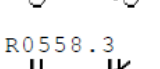
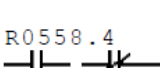
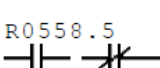



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0546.3	ARMSPA 	ARM STOP POINT AUX S000320/N00055 S000322/N00056 S000318/N00054	
R0546.4	0 	ZERO POINT S000387/N00072 S000395/N00073 S000402/N00073 S000414/N00074 S000449/N00077 S000394/N00072	
R0546.5	F0+A 	F0 ON PULSE AUX S000477/N00080 S000480/N00081 S000479/N00080	
R0546.6	F0+ 	F0 ON PULSE S000478/N00080 S000490/N00083 S000484/N00081	
R0546.7	ARMJOG 	ARM JOG S000460/N00078 S000472/N00079 S000492/N00083 S000498/N00084 S000503/N00085 S000496/N00083	
R0547.0	SPON 	SPINDLE ON S000465/N00078 S001407/N00207 S001414/N00208 S001419/N00209	
R0547.1	L1DL1 	LOGIC 1 DELAY 1 S000396/N00073 S000419/N00075 S000446/N00077 S000378/N00069	
R0547.3	ARM0+A 	ARM 0 ON PULSE AUX S000105/N00016 S000108/N00017	
R0547.4	ARM0+ 	ARM 0 ON PULSE S000119/N00022 S000106/N00016	
R0547.5	AM60+A 	ARM 60 ON PULSE AUX S000110/N00018 S000113/N00019	
R0547.6	AM60+ 	ARM 60 ON PULSE S000120/N00022 S000111/N00018	
R0547.7		S000121/N00022 S000116/N00020	
R0548.0		S000115/N00020 S000118/N00021	
R0548.1	M95JOG 	M95 LADDER END S000150/N00023 S000515/N00085	
R0548.6	M95- 	M95 OFF PULSE S001034/N00152 S000371/N00066	
R0548.7	M95-A 	M95 OFF PULSE AUX S000370/N00066 S000373/N00067	

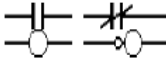
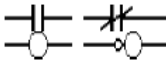
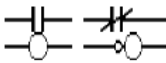
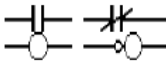
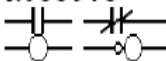
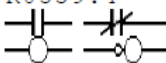
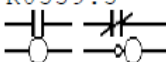
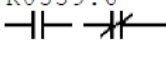
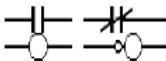
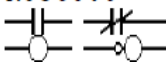
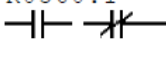
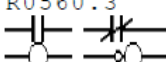
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0549.0	M95TCH	M95 TOOL CHANGE PULSE	
	S001040/N00153 S001036/N00152	S001051/N00154 S001060/N00155	S004408/N00654
R0549.2	ARM0	ARM RETURN POINT	
	S000104/N00016 S000025/N00004	S000107/N00017 S000303/N00050	
R0549.3	ARM60	ARM MIDDLE POINT	
	S000109/N00018 S000036/N00005	S000112/N00019 S000309/N00051	
R0549.4			
	S000114/N00020 S000040/N00006	S000117/N00021 S000307/N00051	
R0550.1	ATSTB1	ATC STANDBY 1	
	S001214/N00184 S001213/N00183		
R0551.0	4MUCL	4TH. MANUAL UNCLAMP	
	S001656/N00240 S003349/N00482	S003355/N00484	
R0551.1	4AUCL	4TH. AUTO UNCLAMP	
	S001657/N00240 S003354/N00483	S003351/N00483 S003356/N00484	
R0551.2			
	S000556/N00091	S000564/N00092 S000934/N00136	
R0551.4			
	S002572/N00385 S003372/N00486		
R0551.5	4UCLP	4TH UNCLAMP	
	S003358/N00485 S003357/N00484	S003360/N00485	
R0551.6	GCHFAL	GEAR CHANGE FAILURE	
	S003951/N00579 S002957/N00419		
R0551.7	GRINP	GEAR IN-POSITION	
	S002909/N00410 S002908/N00409	S002917/N00411 S002919/N00412	
R0552.3	AZR+	ARM ZERO POINT ON PULSE	
	S000356/N00064 S000328/N00057		
R0552.4	AZR-	ARM ZERO POINT OFF PULSE	
	S000397/N00073 S000331/N00058		
R0552.5	AZR+A	ARM ZERO POINT PULSE AUX	
	S000327/N00057 S000333/N00059	S000330/N00058	
R0552.6	AMD+	ARM MID POINT ON PULSE	
	S000342/N00063 S000336/N00060	S000408/N00074 S000430/N00076	

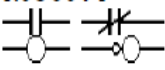
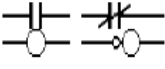
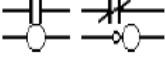
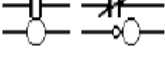
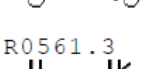
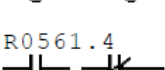
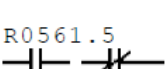
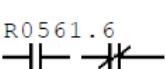
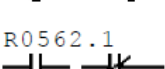
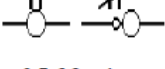
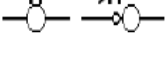
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0552.7	AMD-	ARM MID POINT OFF PULSE	
	S000432/N00076 S000339/N00061		
R0553.0	AMD+A	ARM MID POINT PULSE AUX	
	S000335/N00060 S000341/N00062	S000338/N00061	
R0553.1	M70+	M70 ON PULSE	
	S005534/N00908 S005525/N00905		
R0553.2	M70+A	M70 ON PULSE AUX	
	S002673/N00385 S005527/N00906	S005524/N00905	
R0553.4	AM60A	ARM MIDDLE POINT	
	S000334/N00060 S000325/N00056	S000337/N00061 S000340/N00062	
R0553.5	AM0A	ARM RETURN POINT	
	S000326/N00057 S000405/N00073 S002989/N00425 S000321/N00055	S000329/N00058 S000332/N00059 S000416/N00074 S000428/N00075	S000366/N00065 S000386/N00072 S000443/N00076 S000455/N00077
R0553.6	M94+	M94 ON PULSE	
	S000390/N00072 S000451/N00077 S000382/N00070	S000401/N00073 S000412/N00074 S002699/N00385	S000424/N00075 S000439/N00076
R0553.7	M94+A	M94 ON PULSE AUX	
	S000381/N00070 S000385/N00071		
R0554.0	JBFS+	JIG B FTSW ON PULSE	
	S003846/N00564 S003843/N00562	S003857/N00565	
R0554.1	JBFS+A	JIG B FTSW ON PULSE AUX	
	S003841/N00562 S003845/N00563		
R0554.2	JGBUCL	JIG B UNCLAMP	
	S003850/N00564 S003865/N00565	S003860/N00565 S003870/N00567	
R0554.3	>JBCL'	JIG B CLAMP AUX	
	S002653/N00385 S003901/N00575 S003869/N00566	S003847/N00564 S003858/N00565 S003927/N00576 S004153/N00615	S003871/N00567 S003873/N00568
R0554.4	>JBUC'	JIG B UNCLAMP AUX	
	S002652/N00385 S003872/N00567	S003867/N00566 S003904/N00575	S004165/N00617
R0554.5	JBCLDL	JIG B CLAMP DELAY	
	S002647/N00385 S003877/N00568		
R0554.6	>M37'	M37 OUTPUT AUX	
	S004148/N00614 S004151/N00614	S004152/N00615	

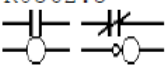
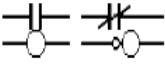
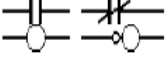
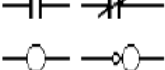
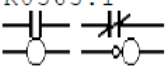
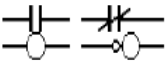
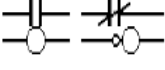
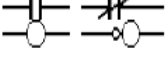
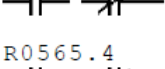
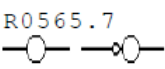
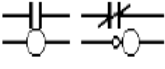
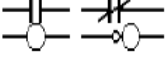
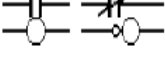
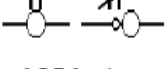
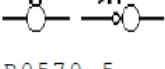
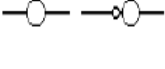

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0554.7	>M38'	M38 OUTPUT AUX	
	S004160/N00616 S004163/N00616	S004164/N00617	
R0555.0	X>-30	X COORDINATE > -30MM	
	S002084/N00325 S001993/N00310	S002106/N00326	
R0555.1	X>30	X COORDINATE > 30MM	
	S002086/N00325 S002004/N00312	S002108/N00326	
R0555.2	Y>-30	Y COORDINATE > -30MM	
	S002128/N00327 S002014/N00314	S002137/N00328	
R0555.3	Z>-30	Z COORDINATE > -30MM	
	S002146/N00329 S002024/N00316	S002155/N00330	
R0555.4	WINFIN	WINDOW FUNCTION FIN	
	S001969/N00306 S001982/N00308	S001974/N00307 S001979/N00308	
R0555.5	M70FIN	TOOL DATA WRITE FINISH	
	S002674/N00385 S005558/N00911	S005539/N00909 S005556/N00911 S005560/N00912 S005568/N00913	
R0555.6	GCHOVR	GEAR CHANGE OVER	
	S002956/N00419 S002954/N00418		
R0555.7	T1+	TMR01 ON PULSE	
	S002941/N00417 S002936/N00415		
R0556.0	AP01	AUTO POWER OFF 1	
	S000002/N00001 S003393/N00490	S003390/N00490 S003394/N00491	
R0556.1	CL-ON1	COOLANT ON 1	
	S002360/N00363 S003476/N00502 S003474/N00501	S002517/N00385 S002524/N00385 S002535/N00385 S003468/N00501	
R0556.2	CL-OFF1	COOLANT OFF 1	
	S003481/N00502 S003486/N00503	S003517/N00508	
R0556.3	KTON1	KIT ON 1	
	S002525/N00385 S004419/N00655 S003502/N00506	S002622/N00385 S003493/N00506 S003496/N00506 S003503/N00507	
R0556.4	CL-OFS	COOLANT OFF SWITCH	
	S003504/N00507		
R0556.5	M0/M1	M00/M01 FUNCTION	
	S002475/N00382 S003477/N00502 S003758/N00547 S003721/N00539	S002486/N00385 S002488/N00385 S002490/N00385 S003197/N00458 S003511/N00508 S003717/N00539 S003730/N00541 S003748/N00545 S003777/N00550 S003779/N00551 S004016/N00590	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0556.6	M2/M30 	M02 M30 FUNCTION	
	S003732/N00542 S003726/N00540		
R0556.7	M0/1CL 	M00/M01 RELEASE	
	S002457/N00380 S003731/N00541	S002476/N00382 S003718/N00539	S003729/N00541
R0557.0	MSTPV 	MACHINE STOP VALID	
	S003733/N00542 S003736/N00542	S003737/N00543 S003759/N00547	S003775/N00549 S003780/N00551
R0557.1	MSTPD 	MACHINE STOP DELAY	
	S003742/N00544 S003741/N00543		
R0557.2	MSTPR 	MACHINE STOP RESET	
	S003734/N00542 S003744/N00544		
R0557.3	SRNR1 	PROGRAM RESTART ON 1	
	S001744/N00262 S001747/N00262	S003037/N00437 S003043/N00437	S003051/N00438 S003057/N00438
R0557.4	M3R 	SPINDLE C.W REGISTER	
	S003035/N00437 S003046/N00437	S003039/N00437 S003059/N00438	S003073/N00442 S003085/N00444
R0557.5	M4R 	SPINDLE C.C.W REGISTER	
	S003045/N00437 S003060/N00438	S003049/N00438 S003053/N00438	S003074/N00442 S003088/N00445
R0557.6	T1+A 	TMR01 ON PULSE AUX	
	S002935/N00415 S002938/N00416		
R0557.7	GCHEND 	GEAR CHANGE END	
	S002833/N00399 S002921/N00412		
R0558.0	CYST+ 	CYCLE START ON PULSE	
	S001745/N00262 S003444/N00498 S003068/N00440	S003075/N00442 S003084/N00444 S003701/N00536	S003087/N00445 S003305/N00473
R0558.1	SPRES 	SPINDLE RESTART	
	S002458/N00380 S003080/N00442	S003076/N00442 S003081/N00443	
R0558.2	SPRFIN 	SP RESTART FINISH	
	S003040/N00437 S003083/N00443	S003054/N00438 S003077/N00442	
R0558.3	STON 	CYCLE START VALID	
	S003066/N00440 S003065/N00439	S003069/N00441	
R0558.4	CYST+A 	CYCLE START ON PULSE AUX	
	S003067/N00440 S003070/N00441		
R0558.5	SPCWP 	SPINDLE C.W PULSE	
	S003131/N00450 S003086/N00444		

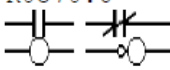
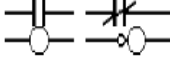
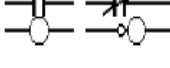
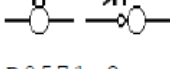
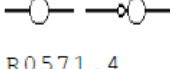
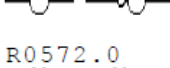
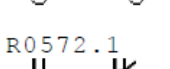
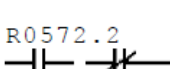
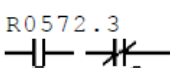
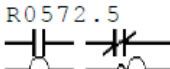
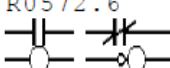
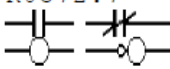
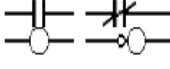
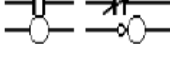
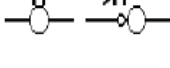



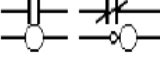
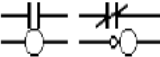
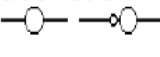
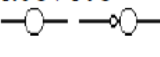
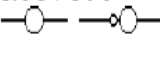
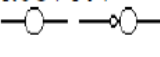
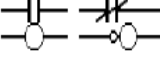
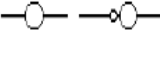
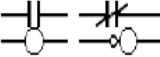
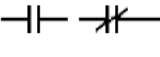
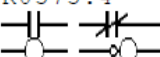
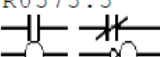
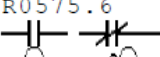
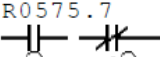
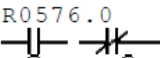
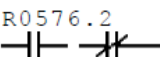
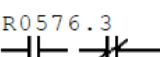
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0558.6	SPCCWP 	SPINDLE CCW PULSE	
	S003148/N00451 S003089/N00445		
R0558.7	SPOK2 	SPINDLE OK 2	
	S003013/N00430 S003004/N00429		
R0559.0	OMSCHK 	SPINDLE OIL MIST CHECK DELAY	
	S004491/N00675 S004488/N00674		
R0559.1	WKB-A 	WORKPIECE BLAST AUX	
	S002513/N00385 S003990/N00583	S003983/N00583 S003996/N00586 S004018/N00590 S004027/N00592	
R0559.2	WBONDL 	WORK BLAST ON DELAY	
	S004021/N00590 S004032/N00592	S004033/N00593	
R0559.3	WBOFDL 	WORK BLAST DELAY	
	S004028/N00592 S004036/N00593		
R0559.4	ALR 	ALARM LAMP REGISTER	
	S003757/N00547 S003774/N00548		
R0559.5	CVONDL 	CHIP CW ON DELAY	
	S002429/N00374 S002436/N00375	S002437/N00376	
R0559.6	DRITL 	DOOR INTERLOCK	
	S001388/N00206 S001539/N00219 S001884/N00292 S002425/N00374 S003416/N00494 S003459/N00500 S004782/N00723 S003410/N00492	S001401/N00207 S001557/N00221 S001890/N00293 S002447/N00377 S003426/N00496 S004252/N00630 S005083/N00793	S001463/N00214 S001674/N00244 S001897/N00294 S002478/N00382 S003428/N00497 S004253/N00630 S005088/N00794 S005201/N00840
	S001487/N00215 S001804/N00273 S002165/N00331 S003122/N00450 S003441/N00498 S004344/N00641 S005201/N00840	S001519/N00217 S001877/N00291 S002417/N00372 S003140/N00451 S003450/N00499 S004437/N00658	
R0559.7	CVOFDL 	CHIP CW OFF DELAY	
	S002432/N00375 S002440/N00376		
R0560.0	O.S-2 	EMG ONE SHOOT	
	S001458/N00214 S001620/N00231	S001482/N00215	
R0560.1	MNTN 	MAINTENANCE MODE	
	S001858/N00286 S003457/N00500 S003415/N00493	S002166/N00331 S003460/N00500 S003756/N00547	S002479/N00382 S003420/N00495 S003433/N00497 S004345/N00641 S004497/N00676
R0560.2	OILAL 	SP OIL COOLER ALARM LATCH	
	S004403/N00653 S004402/N00652		
R0560.3	X-MIR 	X-AXIS MIRROR IMAGE LATCH	
	S004038/N00594 S004041/N00594	S004052/N00597	

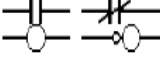
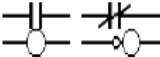
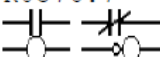
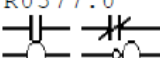
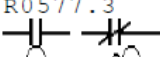
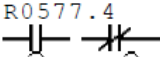
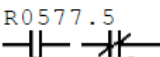
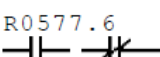
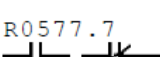
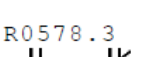
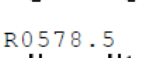
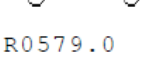
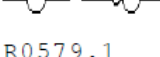
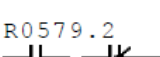
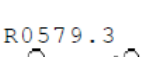
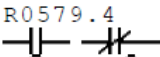
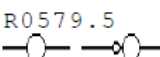
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0560.4	Y-MIR 	Y-AXIS MIRROR IMAGE LATCH S004043/N00595 S004054/N00598 S004046/N00595	
R0560.5	4-MIR 	4TH AXIS MIRROR IMAGE LATCH S004048/N00596 S004056/N00599 S004051/N00596	
R0560.7	JIGCLK 	JIG CLAMP KEEP S003892/N00574 S003907/N00576 S003898/N00574	
R0561.0	JGCLDL 	JIG CLAMP DELAY S002659/N00385 S003830/N00560	
R0561.1	JGCLOV 	JIG CLAMP OVERTIME S003932/N00576 S003839/N00561	
R0561.2	STL- 	STL OFF PULSE S003888/N00572	
R0561.3	STL+A 	STL ON PULSE AUX S003884/N00571 S003887/N00572 S003890/N00573	
R0561.4	STL+ 	STL ON PULSE S002407/N00372 S003885/N00571	
R0561.5	O.S-2A 	EMG O.S_2 AUX S001619/N00231 S001623/N00232	
R0561.6	LVLERR 	CTS SYSTEM LEVEL ERROR S003612/N00522 S003625/N00523 S003635/N00524 S003646/N00525 S003650/N00525	
R0561.7	CLNLDL 	COOLANT LOW DELAY S003699/N00536 S003595/N00520	
R0562.0	CTSSTB 	CTS STANDBY S003615/N00522 S003620/N00523 S003624/N00523 S003632/N00524 S003634/N00524 S003647/N00525 S003619/N00522	
R0562.1	CLNFP 	COOLANT TANK FULL PUMP S003605/N00522 S003616/N00522 S003623/N00523 S003639/N00525 S003657/N00527 S003663/N00529 S003628/N00523	
R0562.2	FILLP 	FILTER TANK LOW PUMP S003609/N00522 S003617/N00522 S003633/N00524 S003642/N00525 S003658/N00527 S003667/N00530 S003638/N00524	
R0562.3	CLFPDL 	COOLANT TANK FULL PUMP DELAY S003607/N00522 S003641/N00525 S003666/N00529	
R0562.4	FILPDL 	FILTER TANK LOW PUMP DELAY S003644/N00525 S003670/N00530	

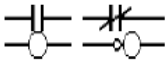
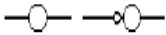
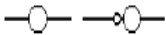
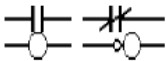
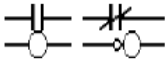
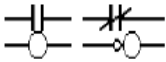
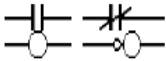
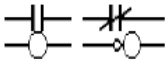
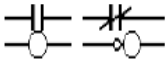
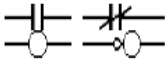
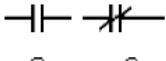
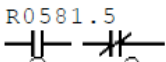
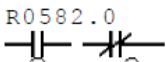
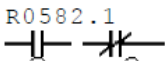
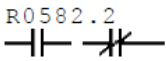
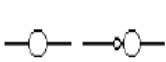
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0562.5	M48-1 	M48 FOR CTS S002627/N00385 S003685/N00533 S005422/N00884	
R0562.6	FILON 	FILTER ON S003696/N00535 S003695/N00534	
R0562.7	PUMP1 	PUMP1 ON S003660/N00528 S003692/N00534 S003659/N00527	
R0563.0	LVLOK 	CTS SYSTEM LEVEL OK S003501/N00506 S003518/N00508 S003604/N00522 S003649/N00525 S003690/N00533 S003602/N00521	S003627/N00523 S003637/N00524
R0563.1	CTSON 	CTS ON S002526/N00385 S002628/N00385 S003508/N00508 S003691/N00533	S003629/N00524 S003687/N00533
R0563.2	KITON 	KIT ON S002620/N00385 S003507/N00508 S003506/N00507	
R0563.3	STLKP 	STL KEEP UNDER MDI S003245/N00464 S003248/N00465 S003247/N00464	
R0563.4	DROPOF 	M30 DOOR OPEN OFF S004193/N00623 S004212/N00624 S004239/N00627 S004243/N00628	
R0564.2	AP,ENA 	APC ENABLE(AUTO CHANGE) S002467/N00382 S002469/N00382 S003485/N00503	
R0565.4	AP,FIN 	APC M CODE FINISH S002704/N00385	
R0565.7	A&T-M 	AUTO & TAPE MODE S004528/N00682	
R0570.0	§]+X 	JOG +X AXIS PB. AUX S002025/N00317 S002174/N00332 S005046/N00778	
R0570.1	§]-X 	JOG -X AXIS PB. AUX S002026/N00317 S002189/N00333 S005049/N00779	
R0570.2	§]+Y 	JOG +Y AXIS PB. AUX S002036/N00318 S002204/N00334 S005052/N00780	
R0570.3	§]-Y 	JOG -Y AXIS PB. AUX S002037/N00318 S002214/N00335 S005055/N00781	
R0570.4	§]+Z 	JOG +Z AXIS PB. AUX S001444/N00212 S001455/N00213 S002049/N00319 S005058/N00782	S002224/N00336
R0570.5	§]-Z 	JOG -Z AXIS PB. AUX S001445/N00212 S001454/N00213 S002050/N00319 S005061/N00783	S002234/N00337

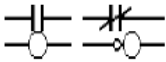
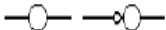
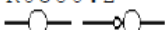
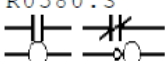
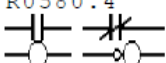
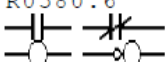
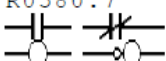
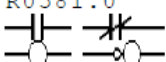
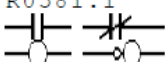
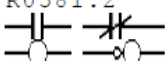
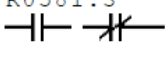
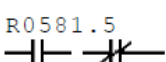
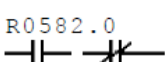
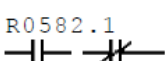
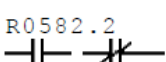
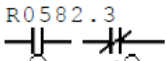


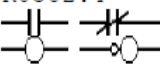
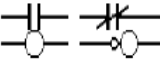
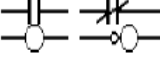
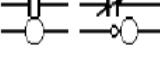
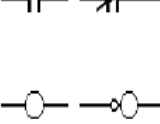
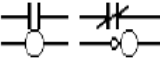
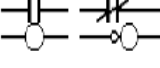
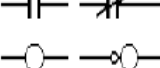

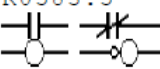
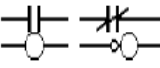
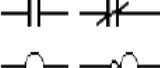
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0570.6	§]SP  S002454/N00379 S005071/N00787	FEED HOLD PB. AUX	
R0570.7	§]ST  S002452/N00378 S005069/N00786	CYCLE START PB. AUX	
R0571.0	§]-4  S002260/N00340 S005067/N00785	JOG -4 AXIS PB. AUX	
R0571.1	§]+4  S002243/N00338 S005064/N00784	JOG +4 AXIS PB. AUX	S002244/N00338
R0571.2	§]F0  S000476/N00080 S005091/N00795	F0 PB. AUX	S000482/N00081
R0571.4	§]MLK  S001694/N00250 S005112/N00804	MACHINE LOCK PB. AUX	S001697/N00251
R0572.0	§]SBK  S001748/N00263 S005122/N00809	SINGLE BLOCK PB. AUX	S001751/N00264
R0572.1	§]ZNG  S001706/N00253 S005132/N00812	Z AXIS CANCEL PB. AUX	S001709/N00254
R0572.2	§]BDT  S001718/N00256 S005114/N00805	BLOCK DELETET PB. AUX	S001721/N00257
R0572.3	§]OSP  S001779/N00267 S005120/N00808	OPTION STOP PB. AUX	S001782/N00268
R0572.5	§]DRN  S001808/N00274 S005106/N00801	DRY RUN PB. AUX	S001811/N00275
R0572.6	§]HX  S001874/N00291 S004959/N00758	HAND X AXIS	
R0572.7	§]HY  S001881/N00292 S004961/N00759	HAND Y AXIS	
R0573.6	§]HZ  S001875/N00291 S004963/N00760	HAND Z AXIS	S001882/N00292
R0573.7	§]H4  S001888/N00293 S004965/N00761	HAND 4 AXIS	S003340/N00482
R0574.0	§]100%  S004545/N00687 S005094/N00796	SPINDLE 100%	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0574.1	\$]DEC 	SPINDLE DEC	S004534/N00684 S004537/N00685 S004541/N00686 S005100/N00798
R0574.2	\$]INC 	SPINDLE INC	S004529/N00683 S004533/N00684 S004542/N00686 S005097/N00797
R0574.4	\$FV1 	FEED RATE DATA 1	S004967/N00762
R0574.5	\$FV2 	FEED RATE DATA 2	S004969/N00763
R0574.6	\$FV4 	FEED RATE DATA 4	S004971/N00764
R0574.7	\$FV8 	FEED RATE DATA 8	S004973/N00765
R0575.0	\$]CL.M 	MANUAL COOLANT	S002358/N00363 S002362/N00364 S002389/N00368 S003471/N00501 S005118/N00807
R0575.1	\$FV16+ 	FEED RATE DATA 16	S004975/N00766
R0575.2	\$]CL.A 	AUTO COOLANT	S002364/N00365 S002367/N00366 S005116/N00806
R0575.3	\$]MGON 	MAGAZINE ON	S000595/N00097 S000599/N00097 S000605/N00098 S000609/N00098 S000615/N00099 S000619/N00099 S000625/N00100 S000629/N00100 S000635/N00101 S000639/N00101 S000645/N00102 S000649/N00102 S000655/N00103 S000659/N00103 S000665/N00104 S000669/N00104 S000863/N00126 S000867/N00127 S005125/N00810 S005128/N00810
R0575.4			S000275/N00046 S000280/N00047 S005089/N00794
R0575.5	\$WK-LP 	WORK LAMP PB.	S001823/N00278 S001827/N00279 S005130/N00811
R0575.6	\$]MP1 	HAND *10	S001860/N00287 S004978/N00767
R0575.7	\$]MP2 	HAND *100	S001857/N00286 S001863/N00288 S004981/N00768
R0576.0	\$]CPCW 	CHIP COVEYOR CW PB.	S002391/N00369 S002394/N00370 S005108/N00802
R0576.2			S002443/N00377 S005110/N00803
R0576.3	\$]SORI 	SPINDLE ORIENT	S002969/N00424 S005102/N00799

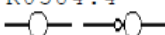
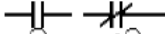
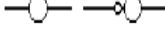
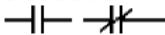
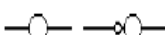
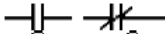
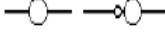
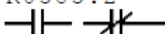
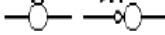
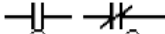
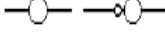
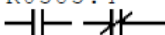
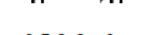
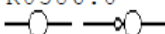

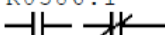
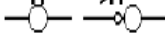
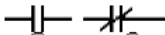
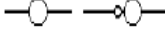
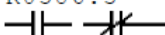
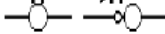
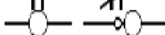
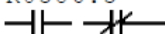
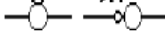
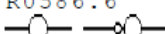

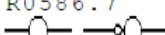

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0576.4	\$]SRST	SPINDLE RESET	
	S003242/N00463	S003301/N00473	
	S005104/N00800		
R0576.6	\$F0%	RAPID RATE 0%	
	S001910/N00297	S001916/N00298	
	S004984/N00769		
R0576.7	\$F25%	RAPID RATE 25%	
	S001917/N00298		
	S004987/N00770		
R0577.0	\$]MGCW	MAGAZINE CW PB.	
	S000274/N00046	S000281/N00047	
	S005086/N00793		
R0577.3	\$]SPCW	SPINDLE CW	
	S003103/N00447	S003107/N00448	
	S005077/N00790		
R0577.4	\$]SSTP	SPINDLE STOP	
	S003021/N00433	S003101/N00447	
	S005081/N00792		
R0577.5	\$]SCCW	SPINDLE CCW	
	S003104/N00447	S003113/N00449	
	S005079/N00791		
R0577.6	\$F50%	RAPID RATE 50%	
	S001903/N00296	S001911/N00297	
	S004990/N00771		
R0577.7	\$F100%	RAPID RATE 100%	
	S001904/N00296		
	S004993/N00772		
R0578.3	\$]PGM	PROGRAM PROTECT	
	S001870/N00290		
	S005073/N00788		
R0578.5	\$]APO	AUTO POWER OFF	
	S003373/N00487	S003378/N00488	
	S005075/N00789		
R0579.0	\$"X1		
	S005153/N00823		
	S002310/N00350		
R0579.1	\$"X2		
	S002332/N00354		
R0579.2	\$"Y1		
	S005155/N00824		
	S002317/N00351		
R0579.3	\$"Y2		
	S002334/N00355		
R0579.4	\$"Z1		
	S005157/N00825		
	S002324/N00352		
R0579.5	\$"Z2		
	S002336/N00356		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0579.6	§"B1 	S005159/N00826 S002330/N00353	
R0579.7	§"B2 	S002338/N00357	
R0580.2	§"F0 	S000376/N00068	
R0580.3	§"AFL 	AUX FUNCTION LOCK S001798/N00272 S001802/N00272	S001800/N00272 S001803/N00273 S001805/N00273
R0580.4	§"MLK 	S001700/N00252 S001704/N00252	S001702/N00252 S005141/N00817
R0580.6	§"SP 	S005135/N00814 S002484/N00384	
R0580.7	§"ST 	S005133/N00813 S002482/N00383	
R0581.0	§"SBK 	S001754/N00265 S001758/N00265	S001756/N00265 S001759/N00266 S005143/N00818
R0581.1	§"ZNG 	S001712/N00255 S001716/N00255	S001714/N00255 S005145/N00819
R0581.2	§"BDT 	S001724/N00258 S001728/N00258	S001726/N00258 S005139/N00816
R0581.3	§"OSP 	S001785/N00269 S004205/N00624 S001789/N00269	S001787/N00269 S002487/N00385 S002489/N00385 S003715/N00539 S005147/N00820
R0581.5	§"DRN 	S001814/N00276 S001818/N00276	S001816/N00276 S001819/N00277 S005151/N00822
R0582.0	§"AUTO 	S001692/N00249 S004900/N00744	S003061/N00439 S003968/N00580 S004526/N00682
R0582.1	§"TAPE 	S001678/N00246 S004892/N00742	S001689/N00249 S003062/N00439 S003969/N00580 S004527/N00682
R0582.2	§"HAN 	S001627/N00234 S001671/N00243 S002446/N00377 S005202/N00840 S004908/N00746	S001630/N00235 S001634/N00236 S001638/N00237 S001642/N00237 S001687/N00248 S001820/N00277 S002339/N00358 S002426/N00374 S003341/N00482 S004171/N00619 S004921/N00750 S004953/N00757
R0582.3	THND 	S001663/N00241 S004922/N00750	TEACH IN HANDLE S001667/N00242

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0579.6	§"B1  S005159/N00826 S002330/N00353		
R0579.7	§"B2  S002338/N00357		
R0580.2	§"F0  S000376/N00068		
R0580.3	§"AFL  S001798/N00272 S001802/N00272	AUX FUNCTION LOCK S001800/N00272 S001803/N00273 S001805/N00273	
R0580.4	§"MLK  S001700/N00252 S001704/N00252	S001702/N00252 S005141/N00817	
R0580.6	§"SP  S005135/N00814 S002484/N00384		
R0580.7	§"ST  S005133/N00813 S002482/N00383		
R0581.0	§"SBK  S001754/N00265 S001758/N00265	S001756/N00265 S001759/N00266 S005143/N00818	
R0581.1	§"ZNG  S001712/N00255 S001716/N00255	S001714/N00255 S005145/N00819	
R0581.2	§"BDT  S001724/N00258 S001728/N00258	S001726/N00258 S005139/N00816	
R0581.3	§"OSP  S001785/N00269 S004205/N00624 S001789/N00269	S001787/N00269 S002487/N00385 S002489/N00385 S003715/N00539 S005147/N00820	
R0581.5	§"DRN  S001814/N00276 S001818/N00276	S001816/N00276 S001819/N00277 S005151/N00822	
R0582.0	§"AUTO  S001692/N00249 S004900/N00744	S003061/N00439 S003968/N00580 S004526/N00682	
R0582.1	§"TAPE  S001678/N00246 S004892/N00742	S001689/N00249 S003062/N00439 S003969/N00580 S004527/N00682	
R0582.2	§"HAN  S001627/N00234 S001671/N00243 S002446/N00377 S005202/N00840 S004908/N00746	S001630/N00235 S001634/N00236 S001638/N00237 S001642/N00237 S001687/N00248 S001820/N00277 S002339/N00358 S002426/N00374 S003341/N00482 S004171/N00619 S004921/N00750 S004953/N00757	
R0582.3	THND  S001663/N00241 S004922/N00750	TEACH IN HANDLE S001667/N00242	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0582.4	TJOG	TEACH IN JOG	
	S001664/N00241 S004925/N00751	S001668/N00242	
R0582.5	\$"100%		
	S005175/N00834 S004660/N00703		
R0582.6	\$"DEC		
	S005187/N00836 S004668/N00706		
R0582.7	\$"INC		
	S005181/N00835 S004662/N00704		
R0583.0	\$"MDI		
	S000350/N00063 S000360/N00064 S001100/N00160 S001115/N00163 S001386/N00206 S001399/N00207 S001421/N00210 S001462/N00214 S001486/N00215 S001523/N00218 S001543/N00220 S001561/N00222 S001661/N00241 S001691/N00249 S002772/N00395 S002786/N00396 S003244/N00464 S003910/N00576 S003922/N00576 S004904/N00745		
R0583.1	\$"EDIT		
	S001666/N00242 S001690/N00249 S004896/N00743		
R0583.2	\$"RPD		
	S001673/N00244 S001682/N00247 S004919/N00749		
R0583.3	\$"JOG		
	S001681/N00247 S004917/N00749 S004924/N00751 S004994/N00773 S005004/N00774 S005014/N00775 S005024/N00776 S005034/N00777 S004912/N00747		
R0583.4	\$"ZRN		
	S001676/N00245 S001683/N00247 S001685/N00248 S001967/N00305 S001986/N00309 S001997/N00311 S002008/N00313 S002018/N00315 S002033/N00317 S002046/N00318 S002052/N00319 S002168/N00331 S002173/N00332 S002176/N00332 S002188/N00333 S002191/N00333 S002203/N00334 S002206/N00334 S002213/N00335 S002216/N00335 S002223/N00336 S002226/N00336 S002233/N00337 S002236/N00337 S002246/N00338 S002248/N00338 S002259/N00340 S002307/N00350 S002314/N00351 S002321/N00352 S002327/N00353 S004995/N00773 S005005/N00774 S005015/N00775 S005025/N00776 S005035/N00777 S005621/N00921 S004916/N00748		
R0583.5	\$"H.0		
	S005165/N00829 S002340/N00358		
R0584.0	\$"CLM		
	S002370/N00367 S002371/N00367 S003475/N00502 S004418/N00655 S002380/N00367		
R0584.2	\$"CLA		
	S002383/N00368 S002384/N00368 S002518/N00385 S002536/N00385 S002623/N00385 S004417/N00655 S002390/N00368		



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0584.3	\$"MGON 	S000272/N00046 S000278/N00047 S000594/N00097 S000598/N00097 S000604/N00098 S000608/N00098 S000614/N00099 S000618/N00099 S000624/N00100 S000628/N00100 S000634/N00101 S000638/N00101 S000644/N00102 S000648/N00102 S000654/N00103 S000658/N00103 S000664/N00104 S000668/N00104 S000871/N00128 S000873/N00128 S000876/N00128	
R0584.4	\$"MCCW 	S000244/N00039	
R0584.5	 	S001830/N00280 S001832/N00280 S005222/N00846 S001834/N00280	
R0585.0	\$"CVCW  	S002401/N00372 S002402/N00372 S002424/N00374 S002431/N00375 S002444/N00377 S002634/N00385 S005199/N00840 S002419/N00372	
R0585.1	\$"CVSP  	S002418/N00372 S002423/N00373	
R0585.2	\$"CCCW  	S005206/N00841 S002451/N00377	
R0585.3	\$"SORI  	S005193/N00837 S002995/N00426	
R0585.4	\$"SRST  	S005167/N00830	
R0586.0	\$"MGCW  	S000240/N00038	
R0586.1	\$"LUBE  	S005217/N00844 S002357/N00362	
R0586.2	\$"ATRD  	S002057/N00320 S002163/N00331 S005161/N00827 S001221/N00185	
R0586.3	\$"SPCW  	S005169/N00831 S003182/N00455	
R0586.4	\$"SSTP  	S005173/N00833 S003196/N00457	
R0586.5	\$"SCCW  	S005171/N00832 S003189/N00456	
R0586.6	\$"HG  	S002964/N00422	
R0586.7	\$"LGL  	S002967/N00423	

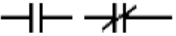
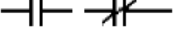
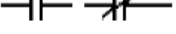



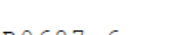
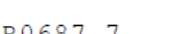
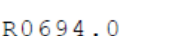
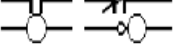
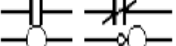
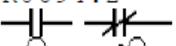
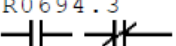
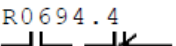
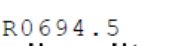
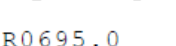
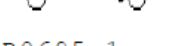
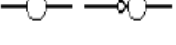
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0589.0		§"SPAL S003767/N00548 S002345/N00360	
R0589.2		§"ARAL S000149/N00023 S002347/N00361 S002353/N00361	S000206/N00034 S000229/N00037 S000261/N00044 S001762/N00266 S002459/N00380 S003765/N00548 S005220/N00845 S005625/N00921
R0590.0		§"NCAL S003766/N00548 S002343/N00359	S005163/N00828
R0600.0		CHIPFL S004931/N00753 S004928/N00752	CHIP FLUSHING COOLANT HOLD S004935/N00754 S004938/N00755
R0609.0		APO-PB S003374/N00487 S003376/N00487	AUTO POWER OFF PB. S003377/N00488
R0609.1		S003375/N00487 S003379/N00488	S003380/N00489 S003382/N00489
R0609.2		APO-ON S003381/N00489 S003385/N00489	AUTO POWER OFF -ON S003383/N00489 S003391/N00490 S005197/N00839
R0609.4		S004530/N00683 S004532/N00683	S004535/N00684
R0609.5		S004538/N00685 S004540/N00685	S004543/N00686
R0610.0		S001791/N00270 S001793/N00270	S001795/N00271
R0610.1		S001792/N00270 S001796/N00271	S001797/N00272 S001799/N00272
R0610.2		HO-RDY S002060/N00321 S002058/N00320	HOME MODE READY
R0610.3		HOME-Z S001921/N00299 S002067/N00322 S002066/N00321	HOME START Z AXIS S002030/N00317 S002043/N00318 S002051/N00319 S002061/N00321 S002079/N00324
R0610.4		S001935/N00301 S002080/N00324 S002074/N00322	S002027/N00317 S002039/N00318 S002062/N00321 S002068/N00322 S002245/N00338
R0610.5		HO-XYZ S002065/N00321 S002078/N00323	3 AXIS HOME S002073/N00322

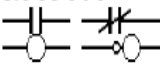
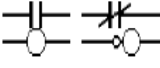
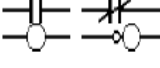
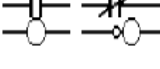
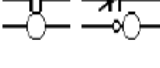
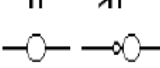
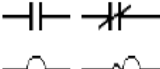
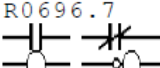
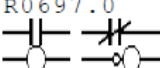
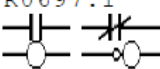
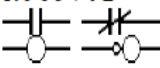
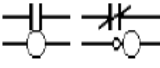
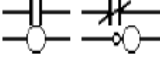
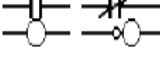
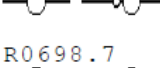



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0657.0	\$CVCW+	CV CW P.B ON PULSE	
	S002398/N00371 S002393/N00369		
R0657.1	\$CCW+A	CV CW P.B ON PULSE AUX	
	S002392/N00369 S002395/N00370		
R0657.2	CVCW+	CV CW ON PULSE	
	S002400/N00372 S002399/N00371	S002403/N00372	
R0657.3	>X10	INCREMENTAL FEED > X10	
	S001861/N00287 S001859/N00286	S001864/N00288	
R0658.0	MLK-ON		
	S001695/N00250 S001698/N00251		
R0658.1	MLK+	MLK P.B ON PULSE	
	S001699/N00252 S001696/N00250	S001701/N00252	
R0658.4	BDT-ON		
	S001719/N00256 S001722/N00257		
R0658.5	BDT+	BDT P.B ON PULSE	
	S001723/N00258 S001720/N00256	S001725/N00258	
R0658.6	OSP-ON		
	S001780/N00267 S001783/N00268		
R0658.7	OSP+	OSP P.B ON PULSE	
	S001784/N00269 S001781/N00267	S001786/N00269	
R0659.0	ZNG-ON		
	S001707/N00253 S001710/N00254		
R0659.1	ZNG+	ZNG P.B ON PULSE	
	S001711/N00255 S001708/N00253	S001713/N00255	
R0659.2	SBK-ON		
	S001749/N00263 S001752/N00264		
R0659.3	SBK+	SBK P.B ON PULSE	
	S001753/N00265 S001750/N00263	S001755/N00265	
R0659.4	DRN-ON		
	S001809/N00274 S001812/N00275		
R0659.5	DRN+	DRN P.B ON PULSE	
	S001813/N00276 S001810/N00274	S001815/N00276	

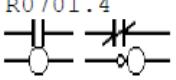
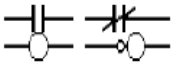
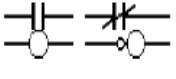
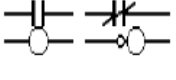
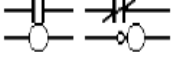
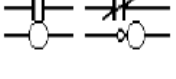
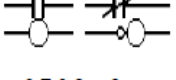
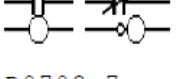
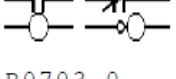
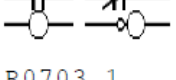
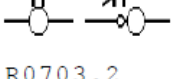
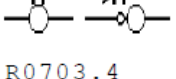
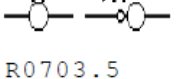
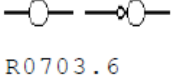
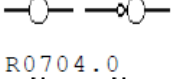
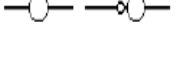
R0660.2	MAG-ON				
	S000864/N00126	S000868/N00127			
	S000866/N00126				
R0660.3	MGON+	MAG ON P.B ON PULSE			
	S000865/N00126	S000870/N00128	S000872/N00128		
	S000869/N00127				
R0660.4	OPKEP	AUTO OPERATION KEEP			
	S003029/N00436	S003034/N00437	S003048/N00438	S003250/N00465	S003254/N00466
	S003259/N00467	S003268/N00468			
	S003252/N00465				
R0660.5					
	S003121/N00450				
	S003112/N00448				
R0660.6					
	S000540/N00089	S000548/N00090	S000575/N00093	S000583/N00094	S000591/N00095
	S000953/N00138	S000977/N00141	S002947/N00417	S005554/N00910	S005567/N00912
R0660.7					
	S003139/N00451				
	S003118/N00449				
R0661.0	>3700	JOG FEEDRATE > 3700MM			
	S004751/N00719	S004847/N00734	S004854/N00735		
	S004841/N00732				
R0661.1					
	S001824/N00278				
	S001828/N00279				
R0661.2					
	S001829/N00280	S001831/N00280			
	S001826/N00278				
R0661.3	SSTPK	SPINDLE STOP KEEP			
	S003102/N00447	S003111/N00448	S003117/N00449		
	S003106/N00447				
R0666.0	\$J0	JOG FEEDRATE 0			
	S004686/N00710				
R0666.1	\$J100	JOG FEEDRATE 100			
	S004689/N00711				
R0666.2	\$J140	JOG FEEDRATE 140			
	S004692/N00712				
R0666.3	\$J200	JOG FEEDRATE 200			
	S004695/N00713				
R0666.4	\$J270	JOG FEEDRATE 270			
	S004698/N00714				
R0668.5	*FV100	*FV 100% KEEP			
	S001846/N00283	S001849/N00284	S001855/N00285	S002618/N00385	S004852/N00735
	S001851/N00284				
R0669.0	\$]INC+	SP INC ON PULSE			
	S004531/N00683	S004552/N00688	S004559/N00689	S004565/N00690	
	S004536/N00684				

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0669.1	\$]DEC+	SP DEC ON PULSE	
	S004539/N00685	S004586/N00693	S004592/N00694
	S004544/N00686		
R0669.2	ERROP		
	S004576/N00691	S004585/N00692	S004603/N00695 S004612/N00696
R0669.3	INCACT	SP INC ACTIVE	
	S004570/N00691	S004579/N00692	
	S004567/N00690		
R0669.4	DECACT	SP DEC ACTIVE	
	S004597/N00695	S004606/N00696	
	S004594/N00694		
R0670.7			
	S005231/N00847		
R0673.0	\$MOD1'	\$MOD1 AUX	
	S004870/N00738	S004889/N00742	S004893/N00743 S004897/N00744 S004901/N00745
	S004905/N00746	S004909/N00747	S004913/N00748
	S004873/N00738		
R0673.1	\$MOD2'	\$MOD2 AUX	
	S004876/N00739	S004890/N00742	S004894/N00743 S004898/N00744 S004902/N00745
	S004906/N00746	S004910/N00747	S004914/N00748
	S004879/N00739		
R0673.2	\$MOD4'	\$MOD4 AUX	
	S004882/N00740	S004891/N00742	S004895/N00743 S004899/N00744 S004903/N00745
	S004907/N00746	S004911/N00747	S004915/N00748
	S004885/N00740		
R0673.3	MDK,EN	MODE KEEP ENABLE	
	S004863/N00737	S004886/N00741	
	S004862/N00736		
R0673.4	MDK1	MODE KEEP 1	
	S004864/N00737	S004871/N00738	S004877/N00739 S004883/N00740 S004887/N00741
	S004867/N00737		
R0673.5	MDK2	MODE KEEP 2	
	S004865/N00737	S004869/N00738	S004875/N00739 S004881/N00740
	S004888/N00741		
R0684.0			
	S000601/N00097		
R0684.1			
	S000611/N00098		
R0684.2			
	S000621/N00099		
R0684.3			
	S000631/N00100		
R0684.4			
	S000641/N00101		
R0684.5			
	S000651/N00102		
R0684.6			
	S000661/N00103		

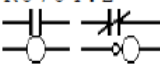
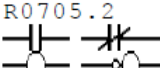
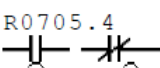
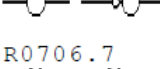
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0684.7		S000671/N00104	
R0687.0		S000596/N00097	
R0687.1		S000606/N00098	
R0687.2		S000616/N00099	
R0687.3		S000626/N00100	
R0687.4		S000636/N00101	
R0687.5		S000646/N00102	
R0687.6		S000656/N00103	
R0687.7		S000666/N00104	
R0694.0		+XHOME S002175/N00332 S002104/N00325	+X HOME
R0694.1		-XHOME S002190/N00333 S002126/N00326	-X HOME
R0694.2		+YHOME S002205/N00334 S002135/N00327	+Y HOME
R0694.3		-YHOME S002215/N00335 S002144/N00328	-Y HOME
R0694.4		+ZHOME S002225/N00336 S002153/N00329	+Z HOME
R0694.5		-ZHOME S002235/N00337 S002162/N00330	-Z HOME
R0695.0		X-ZRN S002103/N00325 S002035/N00317	X AXIS ZERO RETURN S002125/N00326
R0695.1		Y-ZRN S002134/N00327 S002048/N00318	Y AXIS ZERO RETURN S002143/N00328
R0695.2		Z-ZRN S002152/N00329 S002054/N00319	Z AXIS ZERO RETURN S002161/N00330

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0696.0		S001476/N00214 S001447/N00212	
R0696.1		S001474/N00214 S001457/N00213	S001500/N00215
R0696.2		S004553/N00688 S001968/N00305	S004560/N00689 S004587/N00693 S004651/N00701
R0696.3		S001922/N00299 S001925/N00299	S001928/N00300 S001964/N00305 S002017/N00315 S005599/N00917
R0696.4		S001924/N00299 S001932/N00300	S001929/N00300 S001933/N00301
R0696.5		S001930/N00300 S001996/N00311 S001939/N00301	S001936/N00301 S001942/N00302 S001965/N00305 S001985/N00309 S002029/N00317 S002042/N00318
R0696.6		S001937/N00301 S002007/N00313 S001946/N00302	S001943/N00302 S001947/N00303 S001954/N00304 S001966/N00305
R0696.7		S001944/N00302 S001955/N00304	
R0697.0		S001948/N00303 S001951/N00303	S002038/N00318
R0697.1		S000102/N00015 S000467/N00078	S000462/N00078
R0697.2		S000098/N00014 S000475/N00079	S000464/N00078 S001409/N00207
R0698.3		S003999/N00587 S003993/N00584	S004002/N00587
R0698.4		S003992/N00584 S003995/N00585	
R0698.5		S004000/N00587 S004009/N00587	S004001/N00587 S004019/N00590
R0698.6		S004744/N00717	
R0698.7		S004758/N00719	

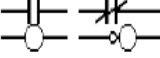
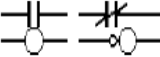
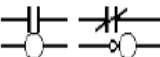
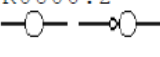
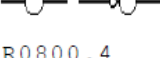
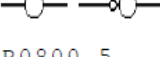
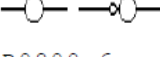
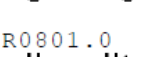
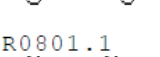
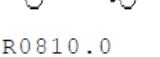
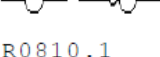
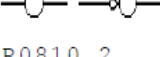
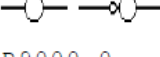
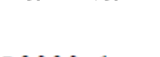

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0699.1		S004838/N00732 S004773/N00721	
R0699.2		S004781/N00723 S004844/N00733 S004780/N00722	
R0699.4		S000237/N00038 S005631/N00922 S005644/N00923 S005634/N00922	
R0699.5		S005632/N00922 S005647/N00924 S005646/N00923	
R0699.6		S005629/N00922 S005628/N00921	
R0699.7		S001907/N00296 S004785/N00724 S004792/N00725 S004799/N00726 S004804/N00727 S004784/N00723	
R0700.0		S000250/N00042 S000256/N00043 S001068/N00156 S001431/N00211 S001440/N00212 S001450/N00213 S001601/N00227 S005641/N00923 S000179/N00030	
R0700.1		S000251/N00042 S000255/N00043 S000254/N00042	
R0700.2		S000192/N00032 S000215/N00035 S000253/N00042 S000257/N00043	
R0700.3		LSPSK LOW SPEED SELECT KEEP S002735/N00389 S002740/N00390 S002744/N00390 S002747/N00391 S002753/N00393 S002900/N00408 S002739/N00389	
R0700.4		HSPSK HIGH SPEED SELECT KEEP S002736/N00389 S002743/N00390 S002750/N00392 S002755/N00393 S002895/N00407 S002746/N00390	
R0701.0		S004821/N00729	
R0701.1		S004829/N00730	
R0701.2		S005674/N00931 S005672/N00930	
R0701.3		S005661/N00929 S005669/N00930 S005677/N00931	

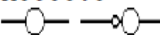
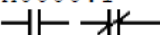
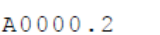

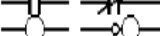
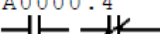
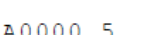
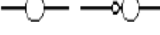
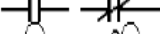
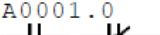
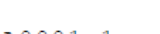
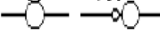
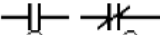
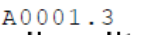

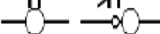
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0701.5		S003977/N00581 S003981/N00582	
R0702.0		MHROPP S004180/N00621 S004179/N00620	MANUAL DOOR OPEN S004185/N00622
R0702.1		S004181/N00621 S004183/N00621	S004184/N00622
R0702.2		S004182/N00621 S004187/N00622	S004188/N00623 S004191/N00623 S004197/N00623
R0702.3		S004189/N00623 S004203/N00623	S004190/N00623 S004199/N00623 S004225/N00623
R0702.4		S004238/N00627 S004240/N00627	S004241/N00628
R0702.6		S004170/N00619 S004215/N00624	S004210/N00624 S004226/N00626
R0702.7		S004227/N00626 S004224/N00625	
R0703.0		S005183/N00835 S004665/N00705	
R0703.1		SP100L S005177/N00834 S004658/N00702	SPINDLE OVERRIDE 100
R0703.2		S005189/N00836 S004671/N00707	
R0703.4		S005703/N00937 S005716/N00938	S005709/N00938 S005719/N00939
R0703.5		S005721/N00940 S005720/N00939	
R0703.6		S005715/N00938 S005724/N00940	
R0704.0		S005685/N00934 S005684/N00933	S005688/N00935

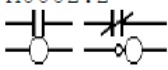
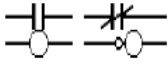
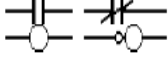
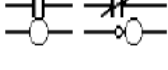
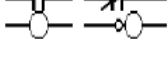
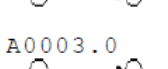
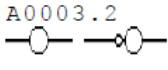
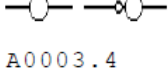
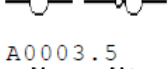
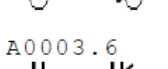
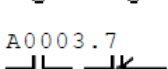
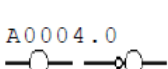
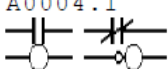
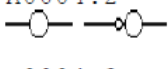
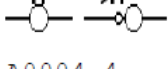
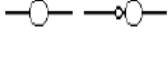




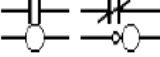
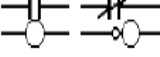
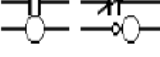
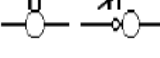
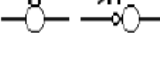
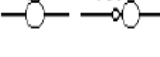
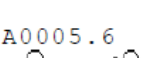
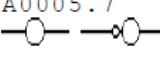
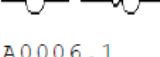
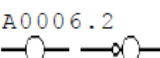
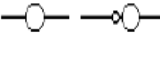
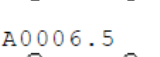
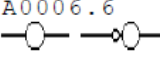
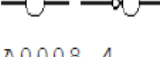
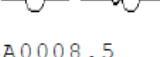


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0704.2		S005686/N00934 S005689/N00935	
R0704.3		S005679/N00932 S005690/N00936 S005692/N00936 S005698/N00936	S005702/N00937
R0705.0		S003546/N00513 S003575/N00517 S003578/N00518 S003554/N00513	
R0705.2		S003560/N00516 S003563/N00516 S003557/N00514	
R0705.3		S003556/N00514 S003559/N00515	
R0705.4		S003561/N00516 S003562/N00516 S003576/N00517 S003574/N00516	S003579/N00518
R0705.5		S003553/N00513 S003573/N00516 S003577/N00517	
R0705.6		S003989/N00583 S004010/N00588 S003998/N00586	
R0706.3		LB.PRE.TM LUBE PRESSURE TIMER S005606/N00919 S005605/N00918	
R0706.4		S004073/N00601 S004078/N00602 S004071/N00600	
R0706.5		LB.PRE.OK LUBE PRESSURE OK S004079/N00602 S004104/N00605 S005607/N00919 S005613/N00919	S005617/N00920
R0706.7		S001899/N00295 S001898/N00294	
R0707.0		S001878/N00291 S001885/N00292 S001891/N00293 S001902/N00295	
R0707.2		S004007/N00587 S004013/N00588	
R0707.3		S002375/N00367 S002421/N00373 S003473/N00501 S004011/N00588 S005200/N00840 S004015/N00589	S003566/N00516 S003988/N00583

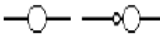
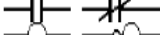
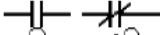


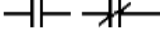
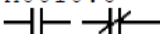
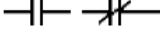
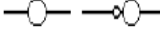
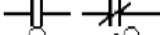


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0707.4		S004172/N00619 S004178/N00620 S004186/N00622 S004202/N00623 S004214/N00624 S004175/N00619	
R0800.0		SRN.P PROGRAM REATART PULSE S001735/N00261 S001737/N00261 S001732/N00259	
R0800.1		SRN.P2 PROGRAM RESTART PULSE 2 S001731/N00259 S001734/N00260	
R0800.2		S004727/N00715 S004735/N00716	
R0800.3		S004641/N00699	
R0800.4		OVC.P S001841/N00283 S001843/N00283 S001838/N00281	
R0800.5		OVC.P2 S001837/N00281 S001840/N00282	
R0800.6		S004649/N00700	
R0801.0		S003494/N00506 S003497/N00506 S003489/N00504	
R0801.1		S003488/N00504 S003491/N00505	
R0810.0		S003523/N00509 S003527/N00510 S003534/N00511 S003541/N00512 S003525/N00509	
R0810.1		S003535/N00511 S003542/N00512 S003532/N00510	
R0810.2		S003543/N00512 S003539/N00511	
R9000.0		FUNOP0 FUNCTION OPERATION OUTPUT S004566/N00690 S004593/N00694 S004656/N00702 S004659/N00703 S004666/N00706 S004669/N00707 S005555/N00911	
R9000.1		FUNOP1 FUNCTION OPERATION OUTPUT S001991/N00310 S002002/N00312 S002013/N00314 S002023/N00316 S004661/N00704 S004663/N00705 S004667/N00706 S004670/N00707	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0000.0	AL 1000 	EMERGENCY STOP / OVERTRAVEL	
A0000.1	AL 1001 	SPINDLE COOLER ALARM	
A0000.2	AL 1002 	LUBE PRESSURE FAULT	
A0000.3	AL 1003 	CUTTING COOLANT MOTOR ALARM	
A0000.4	AL 1004 	ATC ALARM	
A0000.5	AL 1005 	TOOL BROKEN	
A0000.6	AL 1006 	SERVO AXIS HOME REQUIRE	
A0001.0	AL 1010 	ATC ALARM FOR POT DOWN	
A0001.1	AL 1011 	ATC ALARM FOR ARM 60	
A0001.2	AL 1012 	ATC ALARM FOR TOOL UNCLAMP	
A0001.3	AL 1013 	ATC ALARM FOR ARM 180	
A0001.4	AL 1014 	ATC ALARM FOR TOOL CLAMP	
A0001.5	AL 1015 	ATC ALARM FOR ARM -60	
A0001.6	AL 1016 	ATC ALARM FOR POT UP	
A0002.0	AL 1020 	ATC STB FOR POT UP	
A0002.1	AL 1021 	ATC STB FOR POT DOWN	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0002.2	AL 1022 	ATC STB FOR TOOL CLAMP	
A0002.3	AL 1023 	ATC STB FOR TOOL UNCLAMP	
A0002.4	AL 1024 	ATC STB FOR ARM 0	
A0002.5	AL 1025 	ATC STB FOR ARM 180	
A0002.6	AL 1026 	ATC STB FOR 2ND. ZERO	
A0002.7	AL 1027 	ATC STB FOR MAG INPOSITION	
A0003.0	AL 1030 	TOOL LIFE IS FULL	
A0003.2	AL 1032 	MAG CTR SENSOR ERROR	
A0003.3	AL 1033 	AXIS MOVE FOR POT DOWN	
A0003.4	AL 1034 	JIG NOT CLAMPED	
A0003.5	AL 1035 	SPINDLE TOOL CLAMP ERROR	
A0003.6	AL1370 	SPINDLE GEAR POSITION ERROR	S002795/N00396 S002881/N00404 S003003/N00429 S003960/N00579
A0003.7	AL1037 	ATC NOT READY	
A0004.0	AL1040 	COOLANT MOTOR OVERLOAD	
A0004.1	AL 1041 	ATC NOT ROTATION	
A0004.2	AL1640 	MAG ALARM	
A0004.3	AL 1043 	SPINDLE OVERHEAT	S003001/N00429 S004480/N00673
A0004.4	AL1620 	SP OIL MIST ALARM	S003002/N00429 S004493/N00675

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0004.5		S005732/N00943 S005734/N00943	
A0004.7		AL 1047 FILTER TANK FULL FAULT S004926/N00752 S003684/N00532 S004952/N00756	
A0005.0		AL 1050 COOLANT EMPTY ERROR S003588/N00519 S003703/N00536	
A0005.2		AL 1052 FILTER DETECT ERROR S003597/N00521 S003672/N00531 S003693/N00534 S003676/N00531	
A0005.3		AL 1053 COOLANT TANK FULL FAULT S003598/N00521 S003679/N00532 S003683/N00532	
A0005.4		AL 1054 FILTER TANK EMPTY ERROR S003599/N00521 S003710/N00537	
A0005.5		AL 1055 RECYCLE MOTOR OVERLOAD S004443/N00660	
A0005.6		AL1056 SPINDLE COOLER ALARM S004445/N00661	
A0005.7		AL1057 CHIP FLASH MOTOR OVERLOAD S004447/N00662	
A0006.0		AL1060 MAGAZINE MOTOR OVERLOAD S004449/N00663 S005653/N00925	
A0006.1		AL1061 ARM MOTOR OVERLOAD S004451/N00664 S005655/N00926	
A0006.2		AL1062 CTS MOTOR OVERLOAD S004453/N00665 S005657/N00927	
A0006.3		AL1063 SUCK MOTOR OVERLOAD S004455/N00666 S005659/N00928	
A0006.4		AL1064 EXTERNAL SPINDLE FAN OVERLOAD S004457/N00667	
A0006.5		AL1065 SPINDLE COOLER OVERLOAD S004459/N00668	
A0006.6		AL1066 CHIP CONVEYOR MOTOR OVERLOAD S004461/N00669	
A0006.7		AL1067 OIL SKIMMING MOTOR OVERLOAD S004463/N00670	
A0008.4		AL 1084 A AXIS UNCLAMP FINISH ERROR S004515/N00680 S004519/N00680	
A0008.5		AL 1085 A AXIS CLAMP FINISH ERROR S004521/N00681 S004525/N00681	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0010.0	OP AL 2000 	MAINTENANCE MODE	
	S004498/N00676		
A0010.1	OP AL 2001 	ARM TROUBLESHOOTING	
	S003768/N00548 S004503/N00678		
A0010.2	OP2002 	CHECK SP T NO. & STANDBY T NO.	
	S003769/N00548 S004411/N00654	S004409/N00654	
A0010.3	OP AL 2003 	AIR LOW	
	S002354/N00361		
A0010.4	OP AL 2004 	LUBE ALARM	
	S001760/N00266 S004513/N00679	S003770/N00548 S004509/N00679	
A0010.5	OP AL 2005 	DOOR NOR CLOSE	
	S002374/N00367 S003771/N00548 S004349/N00641	S002388/N00368 S003472/N00501 S004014/N00589 S004244/N00629	S003552/N00513 S003565/N00516
A0010.6	OP2006 	2071 APC COVER NOT CLOSE	
	S002468/N00382	S003772/N00548	
A0010.7	OP2007 	2072 APC BIT OPEN	
	S003773/N00548		
A0011.0	OP AL 2010 	MAG TOOL POT MANU OP UP/DOWN	
	S005574/N00914		
A0011.1	OP2011 	2110 HIGH/LOW SPEED ALARM	
	S002766/N00394 S002769/N00394		

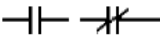
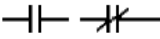
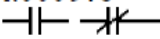
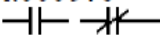
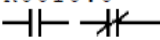
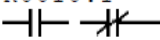
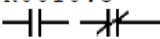
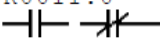
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0000.0 — — — —	ATC.RY S002164/N00331	SERVO CAN MOVE WITHOUT ATC RY	
K0000.1 — — — —	A.ZRN S002287/N00346	A AXIS ZRN VALID	S004436/N00658
K0000.2 — — — —	ALL.ZRN S002289/N00346	ALL AXIS ZRN IGNORE	S002473/N00382 S004435/N00658
K0000.3 — — — —	Z.ZRN1 S002028/N00317	Z AXIS GO ZRN FIRST	S002041/N00318
K0000.4 — — — —	COL.M01 S003478/N00502	COOLANT ON WHEN M00/M01	S003512/N00508 S004017/N00590
K0000.6 — — — —	SP.GR S002711/N00386 S002963/N00422	SPINDLE GEAR BOX DISABLE	S002782/N00395 S002796/N00396 S002807/N00397 S002822/N00398 S002966/N00423 S003154/N00452 S003158/N00452 S003964/N00579
K0000.7 — — — —	M02.APO S003388/N00490	APO VALID BY M02	
K0001.0 — — — —	1.LP S003746/N00545	SINGAL LAMP FOR TOWL DETECTOR	S003760/N00547
K0001.1 — — — —	ZRN2.ATC S001180/N00177	ZRN 2 POINT WITH ATC	S004384/N00648
K0001.2 — — — —	QUICK.UNCL S001252/N00189	QUICK TOOL UNCLAMP SYSTEM	
K0001.3 — — — —	POT.KEP S001472/N00214	KEEP TYPE OF POT UP SOL	
K0001.4 — — — —	ZZRN2.ATC S001512/N00217	Z AXIS ZRN 2 WITH ATC	S001531/N00219 S001549/N00221
K0001.5 — — — —	SP.COL.VAL S004401/N00652	SPINDLE COOLER VALID	
K0001.6 — — — —	SP.CLP.KP S001392/N00206	KEEP TYPE OF SPINDLE CLAMP	
K0001.7 — — — —	LUB.PRE S005595/N00917	LUBE PRESSURE VALID	S005600/N00918 S005611/N00919 S005614/N00920
K0002.0 — — — —	MAG.IN.POS S000175/N00030	NC TYPE OF MAG.IN-POS SENSOR	S000177/N00030
K0002.1 — — — —	ZINT.ATC S001637/N00237	Z AXIS INT. BY ATC NOT READY	
K0002.2 — — — —	M19.ATC S002974/N00424	M19 VALID BY ATC NOT READY	
K0002.3 — — — —	DOR.INT S000721/N00111 S002442/N00377 S003429/N00497	SERVO & SP LOCK BY DOOR OP	S001132/N00166 S001381/N00205 S002167/N00331 S002414/N00372 S002508/N00385 S003413/N00493 S003417/N00494 S003421/N00495 S003432/N00497 S003462/N00500 S004347/N00641 S004860/N00736
K0002.4 — — — —	TOL.LIFE S004500/N00677	TOOL LIFE VALID	



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0002.5	A.UNCLP	A AXIS UNCLAMP BY TIMER	
	S001647/N00238	S001649/N00238 S002568/N00385	S002570/N00385 S002577/N00385
	S002579/N00385	S003365/N00486 S003367/N00486	
K0002.6	SP.OVR	ANALOG TYPE OF SP OVERRRIDE	
	S003030/N00436	S003160/N00452 S003255/N00466	S003257/N00467 S003266/N00468
	S003288/N00471	S003295/N00472	
K0002.7	ZRN.-X	ZRN DIRECTION BY - X	
	S001992/N00310	S002003/N00312 S002085/N00325	S002087/N00325 S002092/N00325
	S002094/N00325	S002100/N00325 S002107/N00326	S002109/N00326 S002114/N00326
	S002116/N00326	S002122/N00326 S002181/N00332	S002196/N00333
K0003.0	MAG.DEC	MAG DECELERATE BY DEC SEN	
	S000191/N00032	S000193/N00032 S000214/N00035	S000216/N00035 S001067/N00156
	S001069/N00156	S001430/N00211 S001432/N00211	S001439/N00212 S001441/N00212
	S001449/N00213	S001451/N00213 S001600/N00227	S001602/N00227 S005640/N00923
	S005642/N00923		
K0003.1	NO.ARM.SEN	NO SENSOR OF ARM	
	S000016/N00004	S000018/N00004 S000027/N00005	S000029/N00005 S000042/N00007
	S000044/N00007		
K0003.3	PTUP/PTDN.STB	POT UP / DOWN OF STAND-BY	
	S000289/N00048	S000299/N00049 S000750/N00113	S000894/N00131 S001210/N00183
	S001211/N00183	S001223/N00186 S001236/N00188	S001239/N00188 S001310/N00196
	S001312/N00196	S001319/N00197 S001352/N00202	S001362/N00203 S001461/N00214
	S001484/N00215	S001491/N00215 S001498/N00215	S001509/N00216 S004352/N00642
	S004358/N00643	S005587/N00916	
K0003.4	MAG.POS1	MAG POSISITON 1 SEN VALID	
	S005627/N00921		
K0003.5	OIL.SKIM	OIL SKIM ON WHEN POWER ON	
	S005662/N00929		
K0003.6	Y7.6.M27	Y7.6 FOR M27 VALID	
	S005663/N00929	S005665/N00929	
K0003.7	OVR.DOR	OVERRIDE LIMIT WHEN DOOR OPEN	
	S003418/N00494	S003422/N00495 S004783/N00723	
K0005.0	MDI.JIGB	MDI JIG B CLAMP VALID	
	S003923/N00576		
K0005.1			
	S000517/N00086	S000523/N00087 S001088/N00158	
K0005.2	JIGB.SOL2	JIG B USE TWO SOL	
	S002646/N00385	S002648/N00385 S003834/N00561	S003905/N00575 S003926/N00576
	S003928/N00576		
K0005.4	NC.LUB.LEV	NC TYPE OF LUBE LEVEL SW	
	S004505/N00679	S004507/N00679 S005213/N00844	S005215/N00844
K0005.5	JIG.CLP.M	JIG MUST CLAMP MES VAL	
	S003937/N00576		
K0005.6	JIGA.SOL1	JIG A USE ONE SOL	
	S002656/N00385	S002658/N00385 S003832/N00561	S003897/N00574 S003914/N00576
	S003916/N00576		
K0005.7	NC.MAG.CTR	NC TYPE OF MAG CTR SEN	
	S000159/N00025	S000161/N00025 S005636/N00923	S005638/N00923

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0006.0 — — —	A.UNC.SOL S003359/N00485	A AXIS UNCLAMP WHEN SOL OFF S003361/N00485	
K0006.1 — — —	JIG.FOT.SW S003789/N00553	FOOT SW VALID FOR JIG	
K0006.2 — — —	JIG.SEN S003911/N00576	JIG DETECTOR OF CLAMP VAL	
K0006.3 — — —	JIG.EMG S003806/N00556	JIG CLAMP VAL WHEN EMG S003853/N00564	
K0006.4 — — —	WK.LIGHT S001825/N00278	WORK LIGHT VALID	
K0006.5 — — —	MOD.CHG S003031/N00436	MODE CHANGE VALID	
K0006.7 — — —	SP.KEEP S003198/N00458	SP KEEP RUNNING FOR MODE CHANG	
K0007.0 — — —	LUB.T S004065/N00600	LUBE ON BY TIMER	
K0007.1 — — —	LUB.CYON S004060/N00600	LUBE ON BY CYCLE ON	
K0007.2 — — —	COL.2 S003584/N00519	COOLANT USE TWO PUMP	
K0007.3 — — —	SP.KEP S003036/N00437	SP KEEP WHEN MODE CHANGE S003050/N00438 S003098/N00446	
K0007.4 — — —	COLB.M09 S003548/N00513	COOLANT B STOP WHEN M09 S003569/N00516	
K0007.5 — — —	CTS.VAL S001773/N00266	CTS VALID S003515/N00508 S003521/N00509 S003526/N00510 S003533/N00511 S003540/N00512 S003590/N00520 S003601/N00521 S003651/N00526 S003661/N00528 S003674/N00531 S003681/N00532 S003697/N00535 S003705/N00537 S005412/N00883 S005418/N00884	
K0007.6 — — —	CAM/QUICK.A S000051/N00008	QUICK ATC OF ARM MAG S000097/N00014 S000128/N00023 S000134/N00023 S000136/N00023 S000143/N00023 S000323/N00056 S000347/N00063 S000431/N00076 S000433/N00076 S001113/N00163 S001231/N00187 S001253/N00189 S001261/N00190 S001266/N00191 S001276/N00192 S001300/N00195 S001304/N00196 S001336/N00200 S004303/N00635 S004308/N00636 S004320/N00637 S004325/N00638 S004469/N00671	
K0007.7 — — —	ARM.STEP S000481/N00081	ARM RUNNING STEP BY STEP S000491/N00083 S000497/N00084	
K0008.0 — — —		S002097/N00325 S002099/N00325 S002120/N00326 S002121/N00326 S002132/N00327 S002141/N00328 S002150/N00329 S002159/N00330	
K0008.1 — — —	OIL.MIST S004482/N00673	OIL MIST VALID S004495/N00675	
K0008.2 — — —	A.OFF.CLP S001658/N00240	A SERVO OFF WHEN CLAMP	
K0008.3 — — —		S002516/N00385 S002534/N00385 S002621/N00385 S004422/N00655	



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0008.4	SP.GEAR.CHG 	SP GEAR CHANGE WHEN TAP	S003155/N00452 S003159/N00452 S003206/N00459 S003208/N00459 S003221/N00460 S003223/N00460
K0008.5			S000516/N00086 S000522/N00087 S000528/N00088
K0008.6	A.UNC.PB 	A UNCLAMP WHEN PB ON	S003343/N00482 S003347/N00482
K0008.7			S002406/N00372
K0009.0			S002397/N00371
K0009.1	ZRN.TOG 	ALL ZRN TOGETHER	S002070/N00322 S002411/N00372
K0009.2	L.DR.VAL 	LEFR DOOR SW VALID	S003402/N00492
K0009.3	DR.REL 	DOOR RELEASE BY M02 & M30	S004211/N00624 S004228/N00626
K0009.4	R.DR.VAL 	RIGHT DOOR SW VALID	S001895/N00294 S001900/N00295 S003400/N00492 S004174/N00619
K0009.5	DOR.MAN 	DOOR RELEASE MANUALLY	S004194/N00623
K0009.6	RP.OVC 	RAPID OVERRIDE CANCEL	S004207/N00624
K0009.7	A.AL.SBK 	DAIR AL DISABLE WHEN SBK	S001761/N00266
K0010.0	SP.5%OV 	5% SP OVERRIDE INT	S004569/N00691 S004578/N00692 S004596/N00695 S004605/N00696
K0010.1	SP.200%OV 	200% OF SP OVERRIDE	S004551/N00688 S004558/N00689
K0010.2	CONV.T 	CHIP CONVEYOR ON BY TIMER	S002433/N00375
K0010.3	F.AIR 	FLASH TYPE OF AIR BLAST	S004029/N00592
K0010.4	Y7.6.HYD 	Y7.6 FOR HYDRAULIC	S004154/N00615 S004156/N00615
K0010.5			S005701/N00937
K0010.6	DR.SW.UNVAL 	DOOR SW UNVALID	S004927/N00752 S004951/N00756
K0010.7	DR.ALL.MD 	DOOR VALID ALL MODE	S001894/N00294 S001901/N00295 S003408/N00492 S004200/N00623
K0011.0	ZRN.NO 		S000388/N00072 S000398/N00073 S000407/N00074 S000413/N00074 S000426/N00075 S000470/N00079 S000509/N00085 S000406/N00073
			

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0011.1	60  	60 S000399/N00073 S000409/N00074 S000418/N00075 S000425/N00075 S000441/N00076 S000457/N00078 S000505/N00085 S000417/N00074	
K0011.2	60-180  	60->180 S000410/N00074 S000421/N00075 S000435/N00076 S000440/N00076 S000453/N00077 S000458/N00078 S000506/N00085 S000429/N00075	
K0011.3	180  	180 S000392/N00072 S000422/N00075 S000436/N00076 S000445/N00077 S000452/N00077 S000463/N00078 S000468/N00079 S000510/N00085 S000444/N00076	
K0011.4	180-0  	180->0 S000391/N00072 S000403/N00073 S000437/N00076 S000448/N00077 S000469/N00079 S000511/N00085 S000456/N00077	
K0011.5	JGCLL  	JIG CLAMP LATCH S003802/N00556 S003814/N00557 S003819/N00558 S003809/N00556	
K0011.7	JGB.CLL  	JIG B CLAMP LATCH S003849/N00564 S003861/N00565 S003866/N00566 S003856/N00564	
K0012.0	SP.GR.CON  	SP GEAR CONTACTOR VALID S002731/N00388 S002738/N00389 S002768/N00394 S002816/N00398 S002820/N00398	
K0014.0	OPS140  	RIGID TAPING REVERSE S005725/N00941	
K0015.1	POS.CK  	POSTIVE CHUCK S001446/N00212 S001456/N00213 S001477/N00214 S001501/N00215 S005573/N00914	
K0015.6	 	S003210/N00459 S003211/N00459 S003225/N00460	
K0015.7	TZNR  	TURRET NO ZERO RETURN S000020/N00004 S000023/N00004 S000031/N00005 S000034/N00005 S000039/N00006 S000308/N00051	
K0020.0	 	S005695/N00936 S005699/N00936	

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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0025	S004624/N00698		
F0010	M0007 S005229/N00847	M CODE BIT0-BIT7	
F0026	T0007 S000932/N00136	T CODE BIT0-BIT7 S000941/N00137	
G0010	S004791/N00724	S004803/N00726	
G0011	S004798/N00725	S004808/N00727	
G0012	S004835/N00731		
G0030	SOV0-7 S004619/N00697	S004648/N00700	
G0032	R0108I S003265/N00467	SPINDLE SPEED COMMAND 1-8 S003280/N00469 S003293/N00471	
G0033	R912I S003274/N00468	SPINDLE SPEED COMMAND 9-12 S003286/N00470 S003300/N00472	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0587	CUTBIN S000573/N00093	CURRENT TOOL NO. (BIN) S000581/N00094	
R0666	S004741/N00717	JOG FEEDRATE AUX S004764/N00720 S004818/N00729	
R0675	S004734/N00716	FOR MEMBRANE PANEL S004743/N00717 S004756/N00719	
R0677	S004749/N00718	S004755/N00719	
R0679	S004757/N00719	FOR MEMBRANE PANEL S004790/N00724 S004851/N00734 S004858/N00735	
R0680	S004797/N00725		
R0681	S004704/N00715	S004765/N00720 S004772/N00721 S004779/N00722	
R0683	S004705/N00715	S004733/N00716	
R0684	CUTBCD S000582/N00094	CURRENT TOOL NO. (BCD) S000700/N00108	
R0685	MCODE1 S005230/N00847	M CODE (BCD) S005235/N00848 S005241/N00849 S005247/N00850 S005252/N00851 S005257/N00852 S005262/N00853 S005267/N00854 S005272/N00855 S005277/N00856 S005283/N00857 S005288/N00858 S005293/N00859 S005298/N00860 S005303/N00861 S005308/N00862 S005313/N00863 S005318/N00864 S005323/N00865 S005328/N00866 S005333/N00867 S005338/N00868 S005343/N00869 S005348/N00870 S005353/N00871 S005358/N00872 S005363/N00873 S005368/N00874 S005373/N00875 S005378/N00876 S005383/N00877 S005388/N00878 S005393/N00879 S005398/N00880 S005403/N00881 S005408/N00882 S005414/N00883 S005420/N00884 S005425/N00885 S005430/N00886 S005435/N00887 S005440/N00888 S005445/N00889 S005450/N00890 S005455/N00891 S005460/N00892 S005465/N00893 S005470/N00894 S005475/N00895 S005480/N00896 S005485/N00897 S005490/N00898 S005495/N00899 S005500/N00900 S005505/N00901 S005510/N00902 S005515/N00903 S005520/N00904	
R0686	TCODE1 S000933/N00136	T CODE (BCD) S001012/N00147	
R0687	SPTBCD S000590/N00095	SPINDLE TOOL NO. (BCD) S000686/N00106 S000693/N00107 S000706/N00109 S001011/N00147	
R0689	ROSTBI S000968/N00140	STEPS OF ROT (BIN) S000975/N00141	
R0690	TPBIN S000855/N00124	POT NO. OF T CODE (BIN) S000862/N00125 S000942/N00137 S000951/N00138 S000967/N00140	
R0691	TPBCD S000952/N00138	POT NO. OF T CODE (BCD) S000996/N00144	
R0692	ROTSBC S000976/N00141	STEPS OF ROT (BCD) S000982/N00142	
R0693	TCTMP S001045/N00153	TEMP FOR TOOL CHANGE S001064/N00155	
R0702	S004676/N00708	S004683/N00709	

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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0711	S004820/N00729	S004827/N00730	
R0713	S004828/N00730	S004834/N00731	
R0715	S004813/N00728	S004826/N00730	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
D0000	SP.NO	SPINDLE TOOL NO.	
	S000572/N00093	S000589/N00095 S000853/N00124	S000940/N00137 S001044/N00153
	S001055/N00154	S001056/N00154 S001065/N00155	S005533/N00907 S005551/N00910
D0100	CA-CP1	CURRENT POT NO. FOR CTRA(BIN)	
	S000188/N00031	S000554/N00091 S000574/N00093	S000846/N00123 S000966/N00140
	S001046/N00153	S001057/N00154 S005538/N00908	S005544/N00909 S005552/N00910
	S005553/N00910	S005564/N00912 S005566/N00912	S005572/N00913 S005651/N00924
D0104	CB-CP1	CURRENT POT NO. FOR CTRB(BIN)	
	S000562/N00092		
D0110	POTNUM	TOTAL POTS	
	S000187/N00031	S000521/N00086 S000527/N00087	S000532/N00088 S000537/N00089
	S000965/N00140	S005543/N00909	
D0112	PTNUM1	TOTAL POT+1(BIN)	
	S000539/N00089	S000546/N00090 S000571/N00093	S000852/N00124 S000854/N00124
	S000939/N00137	S001043/N00153 S001054/N00154	S005532/N00907 S005550/N00910
D0114	CUPLAT	CURRENT POT NO. LATCH	
	S000847/N00123	S000861/N00125	
D0120	CA-CP2	CURRENT POT NO. FOR CTRA(BCD)	
	S000555/N00091	S000692/N00107 S000713/N00110	S000983/N00142 S000997/N00144
D0122	CB-CP2	CURRENT POT NO. FOR CTRB(BCD)	
	S000563/N00092		
D0124	BGTNUM	NUMBERS OF BIG TOOL	
	S000679/N00105	S000707/N00109 S000714/N00110	
D0125	PTNUM2	TOTAL POT+1(BCD)	
	S000547/N00090	S000685/N00106 S000699/N00108	
D0126	GCHCHK	GEAR SHIFT CHECK	
	S002933/N00414	S002944/N00417 S002946/N00417	S002953/N00418
D0160	CELIM1	CE MANUAL SPEED LIMIT 1	
	S003279/N00469		
D0161	CELIM2	CE MANUAL SPEED LIMIT 2	
	S003285/N00470		
D0162	SPLIM1	SP MANUAL SPEED LIMIT 1	
	S003264/N00467		
D0163	SPLIM2	SP MANUAL SPEED LIMIT 2	
	S003273/N00468		
D0164	SP%	SPINDLE INC/DEC %	
	S004550/N00687	S004557/N00688 S004564/N00689	S004573/N00691 S004575/N00691
	S004582/N00692	S004584/N00692 S004591/N00693	S004600/N00695 S004602/N00695
	S004609/N00696	S004611/N00696 S004618/N00697	S004655/N00701
D0170	WINF28	READING MACHINE COORDINATE	
	S001973/N00306	S001981/N00308	
D0178	ALLPOS	READING ALL AXES COORDINATE	
	S001978/N00307		
D0180	X-MPOS	X AXIS MACHINE COORDINATE	
	S001990/N00309	S002001/N00311	

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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
D0184	Y-MPOS S002012/N00313	Y AXIS MACHINE COORDINATE	
D0188	Z-MPOS S002022/N00315	Z AXIS MACHINE COORDINATE	
D0200			
	S004625/N00698	S004631/N00699	
D0202			
	S004632/N00699	S004647/N00700	
D0220			
	S004677/N00708	S004682/N00709	
CTR No.8			
	S004088/N00603		
CTR No.9			
	S004097/N00604		



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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMR No.1	S001083/N00157		
TMR No.2	S004280/N00631		
TMR No.3	S004069/N00600		
TMR No.4	S004075/N00601		
TMR No.7	S005722/N00940		
TMR No.8	S005597/N00917		
TMR No.9	S002885/N00405		
TMR No.10	S002890/N00406		
TMR No.11	S003334/N00480		
TMR No.12	S000310/N00051		
TMR No.13	S000911/N00132		
TMR No.14	S000304/N00050		
TMR No.15	S001186/N00178		
TMR No.16	S001191/N00179		
TMR No.17	S001196/N00180		
TMR No.18	S001201/N00181		
TMR No.19	S001291/N00194		
TMR No.20	S000061/N00009		
TMR No.21	S000070/N00010		
TMR No.22	S000079/N00011		
TMR No.23	S000201/N00033		



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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMR No.24	S000224/N00036		
TMR No.25	S000499/N00084		
TMR No.26	S002434/N00375		
TMR No.27	S002438/N00376		
TMR No.28	S004030/N00592		
TMR No.29	S004034/N00593		
TMR No.30	S003664/N00529		
TMR No.31	S003668/N00530		
TMR No.39	S005670/N00930		
TMR No.40	S005675/N00931		
TMR No.80	S003370/N00486		
TMR No.81	S004517/N00680		
TMR No.82	S004523/N00681		

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ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMRB No.1	S001608/N00228		
TMRB No.2	S002292/N00347		
TMRB No.3	S003308/N00474		
TMRB No.4	S003395/N00491		
TMRB No.5	S005579/N00915		
TMRB No.6	S003738/N00543		
TMRB No.7	S004404/N00653		
TMRB No.8	S005602/N00918		
TMRB No.11	S000486/N00082		
TMRB No.16	S004954/N00757		
TMRB No.17	S004485/N00674		
TMRB No.20	S003827/N00560		
TMRB No.21	S003836/N00561		
TMRB No.22	S002350/N00361		
TMRB No.23	S003874/N00568		
TMRB No.24	S002761/N00393		
TMRB No.29	S002913/N00410		
TMRB No.50	S003592/N00520		
TMRB No.87	S003529/N00510		
TMRB No.88	S003536/N00511		
TMRB No.89	S003707/N00537		

[TEST]

Message

NO.	ADDRESS	MESSAGE
0001	A000.0	1000 EMERGENCY STOP/OVERTRAVEL
0002	A000.1	1001 SPINDLE COOLER ALARM
0003	A000.2	1002 LUBE PRESSURE FAULT
0004	A000.3	1003 CUTTING COOLANT MOTOR ALARM
0005	A000.4	1004 ATC ALARM
0006	A000.5	1005 TOOL BROKEN
0007	A000.6	1006 SERVO AXES HOME REQUIRED
0008	A000.7	1007
0009	A001.0	1010 ATC ALARM FOR POT DOWN
0010	A001.1	1011 ATC ALARM FOR ARM 60
0011	A001.2	1012 ATC ALARM FOR TOOL UNCLAMP
0012	A001.3	1013 ATC ALARM FOR ARM 180
0013	A001.4	1014 ATC ALARM FOR TOOL CLAMP
0014	A001.5	1015 ATC ALARM FOR ARM -60
0015	A001.6	1016 ATC ALARM FOR POT UP
0016	A001.7	1007
0017	A002.0	1020 ATC STAND-BY FOR POT UP
0018	A002.1	1021 ATC STAND-BY FOR POT DOWN
0019	A002.2	1022 ATC STAND-BY FOR TOOL CLAMP
0020	A002.3	1023 ATC STAND-BY FOR TOOL UNCLAMP
0021	A002.4	1024 ATC STAND-BY FOR ARM 0
0022	A002.5	1025 ATC STAND-BY FOR ARM 180
0023	A002.6	1026 ATC STAND-BY FOR 2ND. ZERO
0024	A002.7	1027 ATC STAND-BY FOR MAG. INPOSITION
0025	A003.0	1030 TOOL LIFE IS FULL
0026	A003.1	
0027	A003.2	1032 MAG CTR SENSOR ERROR
0028	A003.3	1033 AXIS MOVE FOR POT DOWN
0029	A003.4	1034 JIG NOT CLAMPED
0030	A003.5	1035 SPINDLE TOOL CLAMP ERROR
0031	A003.6	
0032	A003.7	1037 ATC NOT READY
0033	A004.0	1040 COOLANT MOTOR OVERLOAD
0034	A004.1	1041 ATC NOT ROTATION
0035	A004.2	1042 MAGAZINE ALARM
0036	A004.3	1043 SPINDLE OVERHEAT
0037	A004.4	1044 SPINDLE OIL MIST ALARM
0038	A004.5	
0039	A004.6	
0040	A004.7	1047 FILTER TANK FULL FAULT

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NO.	ADDRESS	MESSAGE
0041	A005.0	1050 COOLANT EMPTY ERROR
0042	A005.1	
0043	A005.2	1052 FILTER DETECT ERROR
0044	A005.3	1053 COOLANT TANK FULL FAULL
0045	A005.4	1054 FILTER TANK EMPTY ERROR
0046	A005.5	1055 RECYCLE MOTOR OVERLOAD
0047	A005.6	1056 SPINDLE COOLER ALARM
0048	A005.7	1057 CHIP FLASH MOTOR OVERLOAD
0049	A006.0	1060 MAGAZINE MOTOR OVERLOAD
0050	A006.1	1061 ARM MOTOR OVERLOAD
0051	A006.2	1062 CTS MOTOR OVERLOAD
0052	A006.3	1063 SUCK MOTOR OVERLOAD
0053	A006.4	1064 EXTERNAL SPINDLE FAN OVERLOAD
0054	A006.5	1065 SPINDLE COOLER OVERLOAD
0055	A006.6	1066 CHIP CONVEYOR MOTOR OVERLOAD
0056	A006.7	1067 OIL SKIMMING MOTOR OVERLOAD
0069	A008.4	1084 A AXIS UNCLAMP FINISH ERROR
0070	A008.5	1085 A AXIS CLAMP FINISH ERROR
0081	A010.0	2000 MAINTENANCE MODE
0082	A010.1	2001 ARM TROUBLESHOOTING
0083	A010.2	2002 CHECK SPINDLE TOOL NO. & STAND-BY TOOL NO.
0084	A010.3	2003 AIR LOW
0085	A010.4	2004 LUBE ALARM
0086	A010.5	2005 DOOR NOT CLOSE
0087	A010.6	
0088	A010.7	
0089	A011.0	2010 MAGAZINE TOOL POT MANUAL OPERATION UP/DOWN@0A@
0090	A011.1	2011 HIGH/LOW SPEED ALARM

[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
X0000	READY.PB @	*FD.HLD.PB @	CY.ST.PB @	RAPID.OV2 @	RAPID.OV1 @	MODE 4 @	MODE 2 @	MODE 1 @
X0001	H*1 @	H*B @	H*A @	H*Z @	H*Y @	H*X @	POG.KEY @	MD.ENA.KEY @
X0002							H*100 @	H*10 @
X0003	MAG.CTR.SEN @	MAG.EXT.SEN @	MAG.RET.SEN @	SP.UNC.PB @	SP.UNC.SEN @	SP.CLP.SEN @	LUBE.LEV.SW @	AIR.PRE.SW @
X0004	PROB.SKP @		PROB.-Z @	PROB.+Z @	PROB.-X @	PROB.+X @	YAE @	XAE @
X0006	AX.IGN @	EXT.F.OL @	COL2.MTR.OL @	ARM.MTR.OL @	AIR.BLW.PB @	DR.SW @	L.DR.SW @	R.DR.SW @
X0007	SUCK.OL @	SP.COL.OL @			ARM.BOT.SEN @	ARM.60.SEN @	ARM.0.SEN @	ARM.STP.SEN @
X0008	MAG.MTR.OL @	A.UNC.SEN @	A.CLP.SEN @	*ESP @	CNV.MTR.OL @	SP.COL.AL @	COL1.MTR.OL @	MAG.TOL.SEN @
X0009	LUB.PRE.SW @		MAG.CCW.PBA @	MAG.CW.PBA @	A.H.SW @	Z.H.SW @	Y.H.SW @	X.H.SW @
X0010	OIL.SK.OL @	FIL.PRE.SW @	COL.F.SW @	COL.L.SW @	FIL.F.SW @	FIL.L.SW @	SP.LG.SW @	SP.HG.SW @
X0011	CTS.MTR.OL @	M39.FIN.SEN @	M38.FIN.SEN @	M37.FIN.SEN @	M36.FIN.SEN @	M35.FIN.SEN @	M34.FIN.SEN @	M33.FIN.SEN @
X0012	\$-4 @	\$-Z @	\$(+Y @	\$-X @	\$(+X @	\$(+Y @	\$(+Z @	@
X0014	SP-DEC @	CL.MA @	CL.AU @	CP-CCW @	CP-CW @		\$(ZNG- @	\$(BDT- @
X0015	\$(MGCW @	SP-RST @	\$(SPCCW @	\$(SPSTP @	\$(SPCW @	SP-ORT @	SP-INC @	SP-100 @
X0016		\$(ROV2 @	\$(ROV1 @	@	\$(PGM @	\$(APO @		\$(MGCCW @
X0020	CNV.CW.PB @	MAG.L/R.PB @	4/5.IGN.PB @	MLK.PB @	CNV.CCW.PB @	MAG.CW.PB @	TOL.CHG.PB @	MST.LK.PB @
X0021	WK.LGT.PB @	F6.PB @	AIR.BLA.PB @	PRST.PB @	F2.PB @	F1.PB @	OVC.PB @	BDT.PB @

[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
X0022	A.ZRN.PB @	F4.PB	AIR.FLU. PB @	DRN.PB @	DOR.PB	F5.PB	CTS.PB @	M01.PB @
X0023	SP.CCW.P B @	J-.PB @	OT.PB	Z.PB @	M19.PB @	F3.PB	COL.PB @	SBK.PB @
X0024	SP.CW.PB @	J+.PB @	A.PB @	X.PB @	SP.STP.P B @	RPD.PB @	B.PB @	Y.PB @
X0025	F.OV16 @	F.OV8 @	F.OV4 @	F.OV2 @	F.OV1 @	SP.OV4 @	SP.OV2 @	SP.OV1 @
X1000			@					]MNKEY @
X1002	:SUPAR @	:THMAL @	:OIL-L @	:PROIL @	]FTSW @			
X1003				@				
X1008								@

[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
Y0000	T.24.LP @	T.22.LP @	T.21.LP @	SP.CW.LP @	A.LP @	X.LP @	SP.STP.LP @	B.LP @
Y0001	MC.AL.LED @	OT.AL.LED @	ATC.AL.LED @	T.18.LP @	T.14.LP @	T.12.LP @	T.11.LP @	T.28.LP @
Y0002	COL2.MC @	ARM.MC @	SP.COL.MC @	CNV.CCW.MC @	CNV.CW.MC @	MAG.CCW.MC @	MAG.CW.MC @	COL1.MC @
Y0003	CYC.END.O @	AL.LP.O @	CYC.ON.O @			CTS.MC @	EXT.F.MC @	OIL.KIM.MC @
Y0004	M34.O @	M33.O @		WK.L.O @	SP.HG.O @	SP.LG.O @	APO.O @	LUBE.O @
Y0005	M36.O @	M35.O @	DOR.LCK.O @	SP.AIR.O @	AIR.BW.O @	MAG.RTN.O @	MAG.EXT.O @	TOL.UNC.O @
Y0006	Z.HOME.LED @	A.HOME.LED @	B.HOME.LED @	M0/M1.LED @	M2/M30.LED @	LUBE.AL.LED @	MTR.OL.LED @	AIR.AL.LED @
Y0007			MPG.LED @	NC.RDY.LP @	FD.HLD.LP @	CY.ST.LP @	X.HOME.LED @	Y.HOME.LED @
Y0012	DRN-L @	F0-L @	MLK-L @	OSP-L @	SBK-L @		*SP-L @	ST-L @
Y0013						AFL-L @	ZNG-L @	BDT-L @
Y0014	APO-L @		@		@			
Y0020	CNV.CW.LP @	MAG.L.R.LP @	4/5.IGN.LP @	MLK.LP @	CNV.CCW.LP @	MAG.CW.LP @	TOL.CHG.LP @	AFL.LP @
Y0021	WK.L.LP @	F6.LP @	AIRBLA.LP @	RSTR.LP @	F2.LP @	F1.LP @	OVC.LP @	BDT.LP @
Y0022	A.2RN.LP @	F4.LP @	AIR.FLU.LP @	DRN.LP @	DOR.LP @	F5.LP @	CTS.LP @	M01.LP @
Y0023	Y.LP @	SP.CCW.LP @	OT.LP @	Z.LP @	M19.LP @	F3.LP @	COL.LP @	SBK.LP @
Y0043	@							
Y0045				@	@		@	

[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
Y0046		@			@			
Y0047			@	@				
Y0061							@	
Y1002					>GUN @	>CLNA @		
Y1003				>ATLM @	>JGCLP @	>JGUCL @		>OILMS @
Y1004	\$SPL	>INDEX						@
Y1005		>PUMP1	>FIL @					
Y1006						>LG	>HG	>ZBRK @



[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
F0000	OP @	SA @	STL @	SPL @				
F0001	MA @		TAP @	ENB @	DEN @	BAL	RST @	CNC-AL @
F0003	MTCHIN	MEDT	MMEM	MRMT	MMDI	MJ	MH @	MINC
F0004			MREF @	MAFL	MSBK		MMLK	MBDT1
F0007					TF @	SF @		MF @
F0009	DM00 @	DM01 @	DM02 @	DM30 @				
F0010 M0007	@	@	@	@	@	@	@	@
F0026 T0007	@	@	@	@	@	@	@	@
F0034							GR20 @	GR10 @
F0045	ORARA @				SARA @	SDTA @	SSTA @	SALM1 @
F0046						RCHPA @		
F0054								U00 @
F0064								TLCH @
F0072	AUX.HYDR @	@	@	@	@	DNCSW	OVCSW	*ABSSW
F0094					ZP4 @	ZPZ @	ZP2 @	ZP1 @
F0096					ZP24 @	ZP2Z @	ZP2Y @	ZP2X @
F0149							@	

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
G0004					FIN ①			
G0005		AFL ①						
G0006				OVC ①		*ABSM		SRN ①
G0007						ST ①		
G0008	ERS ①	RRW	*SPI ①	*ESPI ①				*IT ①
G0010	*JV7 ①	*JV6 ①	*JV5 ①	*JV4 ①	*JV3 ①	*JV2 ①	*JV1 ①	*JV0 ①
G0011	*JV15 ①	*JV14 ①	*JV13 ①	*JV12 ①	*JV11 ①	*JV10 ①	*JV9 ①	*JV8 ①
G0012	*FV7 ①	*FV6 ①	*FV5 ①	*FV4 ①	*FV3 ①	*FV2 ①	*FV1 ①	*FV0-7 ①
G0014							ROV2 ①	ROV1 ①
G0018						HS1C ①	HS1B ①	HS1A ①
G0019	RT ①		MP2 ①	MP1 ①				
G0029		*SSTP ①	SOR ①	SAR ①				
G0030 SOV0-7	SOV7 ①	SOV6 ①	SOV5 ①	SOV4 ①	SOV3 ①	SOV2 ①	SOV1 ①	SOV0 ①
G0032 R0108I	①	①	①	①	①	①	①	①
G0033 R912I	SIND ①	①	①	①	①	①	①	①
G0041						①	①	①
G0043	ZRN ①		DNC ①			MD4 ①	MD2 ①	MD1 ①

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
G0044							MLK @	BDT1 @
G0046	DRN @	KEY4	KEY3 @	KEY2 @	KEY1 @		SBK @	
G0054								@
G0058			STRD @					
G0061								RGTP @
G0067	@							
G0070	MRDYA @	ORCMA @	SFRA @	SRVA @	CTH1A @			TLMLA @
G0071	LOW_MC @	SP_RANGE @					*ESPA @	ARSTA @
G0072	HIGH_MC @			OVRA @				
G0100					+4 @	+2 @	+J2 @	+J1 @
G0102					-4 @	-2 @	-J2 @	-J1 @
G0106					MIR4 @		MIRY @	MIRX @
G0108						MLKZ @		
G0124					@			
G0126					SVF4 @	SVFZ @	SVFY @	SVFX @
G0130					*IT4 @	*ITZ @	*IT2 @	*IT1 @

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Bit Address Map

ADDRESS	BIT NUMBER							USED ADDRESS
	7	6	5	4	3	2	1	
R0410				@	@	@	@	@
R0500	M06 @	M05 @	M04 @	M03 @	M02 @	SUB14A3 @	M00 @	L1 @
R0501	@	@			@	M09 @	M08 @	M07 @
R0502	@	@		@			M16.A @	M15.A @
R0503		@		@	@	@	@	@
R0504	M38.A @	M37.A @	M36.A @	M35.A @	M34.A @	M33.A @		@
R0505	M46.A @	M45.A @						
R0506	M54.A @			M51.A @	M50.A @		M48.A @	
R0507				M59.A @	M58.A @			M55.A @
R0508	M70.A @	M69.A @	M68.A @	M67.A @	M66.A @			
R0509		@	@	M75.A @	M74.A @	M73.A @	M72.A @	M71.A @
R0511	M94.A @							
R0512	@	SFIN @	@					M95.A @
R0513	AUTOLH @	FLTRG @	FLASH @	FLTMR @	ZRNLH	ZRNFIN @	MANUAL @	JOG @
R0515	STOP @							
R0516	LGCH1 @	ST+ @	JFSPOK @	HGCH @	GCHSTB @	F.SW+ @	F.SW+A @	RDY1 @
R0517	HGCH1 @	LGCH @	GRCHG @	GRLOW @	GRHIGH @	O.S @	O.SA @	L1DL @

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
R0518	MAN- @	SPOK @	M06-A	M06- @	ORCM1 @	TMRO2 @	TMRO1 @	GEAROK @
R0519		SPDIR @	SP-REV @	SP-FOR @	SPOK1 @	SPNOP @	MSSTP @	MAN-A @
R0520		TMR03 @	RGDFIN @	RGDEND @	RGDENB @	H/LOVT @	RGDK @	SP-HLD @
R0521	SPROT @	ST+A @	AUTO-A @	AUTO- @	M29DL @	GCHSTP @	RGDCCW @	RGDCW @
R0522	JOGOK @	-4A @	+4A @	ACLN+A @	ACLN+ @	MCLN+A @	MCLN+ @	>25% @
R0523	<370 @	DRITL6 @	DRITL5 @	DRITL4 @	DRITL3 @	DRITL2 @	DRITL1 @	DRITL7 @
R0524	ZP4KEP @	RST.DLY @	ZPYKEP @	ZPXKEP @	MCHKP @	SPTEMP @	STTEMP @	>370 @
R0525	TMB29 @	SEMPW @	PT=BT @	SP=BT @	PT=EMP @	SP=POT @	SP=EMP @	NOBT @
R0526	TCH1 @	SRHEMP @	MEMPT @	S, PCK @	ORDCK @	EMPCK @	BTCK @	BTSTB @
R0527			SRHFIN @		M6TMP @	ATCEND @	TCH2 @	SRHMPT @
R0528	GRINP1 @	LBT+A @	LBONT+ @	LUNOFT @	LUBONT @	SPR-A @	SPR- @	SPKEP @
R0529	MGIP+ @	MGCTA @	A-60AR @	A180AR @	A60AR @	ESCAPS @	MGINP @	ARMSTP @
R0530	MGCCW1 @	MGMCW1 @	MGCCWA @	CVY.MH @	CVY.PF @	CVY.M @	CVYCWR @	CVY.JR @
R0531	MGCT- @	MCCWDL @	MCCWDE @	MAGOK @	MGCCW @	MGCWDL @	MCWDEC @	MGCW @
R0532	TCLFA @	TUCLFA @	PTDNOK @		MAGCHK @	MAGOK1 @	MAGON2 @	MGRSTB @
R0533	AM0K @	AM0+A @	AM0+ @	AM0 @	AMIDK @	AMID+A @	AMID+ @	AMIDDL @
R0534	RTO @		SHERR @	TSRH+A @	TSRH+ @	TSRHON @	TF1DL @	TF1 @

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Bit Address Map

ADDRESS	BIT NUMBER							USED ADDRESS
	7	6	5	4	3	2	1	
R0535		TCOSP1 ⓪	TCOSP ⓪	TCOIN1 ⓪	TCOIN ⓪	TDECK ⓪	TDEC ⓪	MGROT ⓪
R0536	A60 ⓪	RDY2 ⓪	MG-ERR ⓪	MGCKDL ⓪	MOVER2 ⓪	MOVER1 ⓪	MGACCW ⓪	MGACW ⓪
R0537	TUCLAU ⓪	JIGUCL ⓪	JGBCLK ⓪	A180-A ⓪	A180- ⓪	A180 ⓪	A60-A ⓪	A60- ⓪
R0538	ATCOK ⓪	M6ENBK ⓪	M06+A ⓪	M06+ ⓪	M06ENB ⓪		MAGON ⓪	ATUCL ⓪
R0539	ATCSTB ⓪	TUCLDL ⓪	TCLDL ⓪	PTDNDL ⓪	PTUPDL ⓪	ARM0DL ⓪	TCHP ⓪	ATCOK1 ⓪
R0540	A5.SP.CL P ⓪	SPBLDL ⓪	SPBLWK ⓪	A4.ARM.1 80 ⓪	A3.SP.UN CLP ⓪	PRECLP ⓪	A2.ARM.6 0 ⓪	A1.POT.D OWN ⓪
R0541	A.STEP.6 ⓪	A.STEP.5 ⓪	A.STEP.4 ⓪	A.STEP.3 ⓪	A.STEP.2 ⓪	A.STEP.1 ⓪	A7.POT.U P ⓪	A6.ARM.- 60 ⓪
R0542	M74A ⓪	M74OK ⓪	TAIL.H ⓪	M72OK ⓪	SP.UNCLP ⓪	SP-CLP ⓪	ATFIN1 ⓪	A.STEP.F IN ⓪
R0543	A4-1 ⓪	MAGINP ⓪	M74AR ⓪	ASEQ3 ⓪	ASEQ2 ⓪	ASEQ1 ⓪	M76A ⓪	M76OK ⓪
R0544	ARJGDL ⓪	ARJGPA ⓪	ARJGSP ⓪	ATCITL ⓪	2NDREF ⓪	ATCAL1 ⓪	JZ.SEL ⓪	JX.SEL ⓪
R0545	M6TMPA ⓪	ATC+K ⓪	MGON2 ⓪	M6TMP+ ⓪	M19.FIN ⓪			
R0546	ARMJOG ⓪	F0+ ⓪	F0+A ⓪	0 ⓪	ARMSPA ⓪	AMIDA ⓪	ARMOA ⓪	M95KEP ⓪
R0547		AM60+ ⓪	AM60+A ⓪	ARM0+ ⓪	ARM0+A ⓪		L1DL1 ⓪	SPON ⓪
R0548	M95-A ⓪	M95- ⓪					M95JOG ⓪	
R0549					ARM60 ⓪	ARM0 ⓪		M95TCH ⓪
R0550							ATSTB1 ⓪	SPSTOP ⓪
R0551	GRINP ⓪	GCHFAL ⓪	4UCLP ⓪				4AUCL ⓪	4MUCL ⓪

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
R0552	AMD- ⓪	AMD+ ⓪	AZR+A ⓪	AZR- ⓪	AZR+ ⓪	60KPDL	A180K	A60K
R0553	M94+A ⓪	M94+ ⓪	AM0A ⓪	AM60A ⓪	JOGOFD	M70+A ⓪	M70+ ⓪	AMD+A ⓪
R0554	>M38' ⓪	>M37' ⓪	JBCLDL ⓪	>JBUC' ⓪	>JBCL' ⓪	JGBUCL ⓪	JBFS+A ⓪	JBFS+ ⓪
R0555	T1+ ⓪	GCHOVR ⓪	M70FIN ⓪	WINFIN ⓪	Z>-30 ⓪	Y>-30 ⓪	X>30 ⓪	X>-30 ⓪
R0556	M0/1CL ⓪	M2/M30 ⓪	M0/M1 ⓪	CL-OFS ⓪	KTON1 ⓪	CL-OF1 ⓪	CL-ON1 ⓪	AP01 ⓪
R0557	GCHEND ⓪	T1+A ⓪	M4R ⓪	M3R ⓪	SRNR1 ⓪	MSTPR ⓪	MSTPD ⓪	MSTPV ⓪
R0558	SPOK2 ⓪	SPCCWP ⓪	SPCWP ⓪	CYST+A ⓪	STON ⓪	SPRFIN ⓪	SPRES ⓪	CYST+ ⓪
R0559	CVOFDL ⓪	DRITL ⓪	CVONDL ⓪	ALR ⓪	WBOFDL ⓪	WBONDL ⓪	WKB-A ⓪	OMSCHK ⓪
R0560	JIGCLK ⓪		4-MIR ⓪	Y-MIR ⓪	X-MIR ⓪	OILAL ⓪	MNTN ⓪	O.S-2 ⓪
R0561	CLNLDL ⓪	LVLERR ⓪	O.S-2A ⓪	STL+ ⓪	STL+A ⓪	STL- ⓪	JGCLOV ⓪	JGCLDL ⓪
R0562	PUMP1 ⓪	FILON ⓪	M48-1 ⓪	FILPDL ⓪	CLFPDL ⓪	FILLP ⓪	CLNFP ⓪	CTSSTB ⓪
R0563				DROPOF ⓪	STLKP ⓪	KITON ⓪	CTSON ⓪	LVLOK ⓪
R0564	AP, MOE ⓪	AP, MVA ⓪	TMRB26 ⓪	TMRB25 ⓪	AP, DIS ⓪	AP, ENA ⓪	M84+ ⓪	M84+A ⓪
R0565	A&T-M ⓪	AP, M+A ⓪	AP, MV+ ⓪	AP, FIN ⓪	AP, XI ⓪	AP, ITL ⓪	TMRB28 ⓪	TMRB27 ⓪
R0570	⓪]ST ⓪	⓪]SP ⓪	⓪]-Z ⓪	⓪]+Z ⓪	⓪]-Y ⓪	⓪]+Y ⓪	⓪]-X ⓪	⓪]+X ⓪
R0571			⓪]ABS ⓪	⓪]MLK ⓪	⓪]AFL ⓪	⓪]F0 ⓪	⓪]+4 ⓪	⓪]-4 ⓪
R0572	⓪]HY ⓪	⓪]HX ⓪	⓪]DRN ⓪	⓪]SRN ⓪	⓪]OSP ⓪	⓪]BDT ⓪	⓪]ZNG ⓪	⓪]SBK ⓪

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
R0573	\$]H4 @	\$]HZ @		\$]ZRN	\$]RPD	\$MD4	\$MD2	\$MD1
R0574	\$FV8 @	\$FV4 @	\$FV2 @	\$FV1 @		\$]INC @	\$]DEC @	\$]100% @
R0575	\$]MP2 @	\$]MP1 @	\$WK-LP @		\$]MGON @	\$]CL.A @	\$FV16+ @	\$]CL.M @
R0576	\$F25% @	\$F0% @		\$]SRST @	\$]SORI @		\$]CPSP @	\$]CPCW @
R0577	\$F100% @	\$F50% @	\$]SCCW @	\$]SSTP @	\$]SPCW @	\$]F9 @	\$]F8 @	\$]MGCW @
R0578	\$G2ONA	\$KG2ON	\$]APO @	\$DOOR	\$]PGM @	\$MT1	\$MT2	\$]*SP
R0579	\$"B2 @	\$"B1 @	\$"Z2 @	\$"Z1 @	\$"Y2 @	\$"Y1 @	\$"X2 @	\$"X1 @
R0580	\$"ST @	\$"SP @	\$"ABS	\$"MLK @	\$"AFL @	\$"F0 @	\$G1ONA	\$KGLON
R0581			\$"DRN @	\$"SRN	\$"OSP @	\$"BDT @	\$"ZNG @	\$"SBK @
R0582	\$"INC @	\$"DEC @	\$"100% @	TJOG @	THND @	\$"HAN @	\$"TAPE @	\$"AUTO @
R0583	\$"H.2 @	\$"H.1 @	\$"H.0 @	\$"ZRN @	\$"JOG @	\$"RPD @	\$"EDIT @	\$"MDI @
R0584				\$"MCCW @	\$"MGON @	\$"CLA @	\$"F7 @	\$"CLM @
R0585	\$G2OFD	\$G1OFD	\$"SJOG	\$"SRST @	\$"SORI @	\$"CCCW @	\$"CVSP @	\$"CVCW @
R0586	\$"LGL @	\$"HG @	\$"SCCW @	\$"SSTP @	\$"SPCW @	\$"ATRD @	\$"LUBE @	\$"MGCW @
R0587 CUTBIN	@	@	@	@	@	@	@	@
R0589						\$"ARAL @	\$"CLAL	\$"SPAL @
R0590				\$LOG1	\$"NCRD		\$"PGSP	\$"NCAL @



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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
R0600								CHIPFL @
R0609			@	@		APO-ON @		APO-PB @
R0610			HO-XYZ @	@	HOME-Z @	HO-RDY @	@	@
R0657					>X10 @	CVCW+ @	\$CCW+A @	\$CVCW+ @
R0658	OSP+ @	OSP-ON @	BDT+ @	BDT-ON @	SRN+ @	SRN-ON @	MLK+ @	MLK-ON @
R0659	ABS+ @	ABS-ON @	DRN+ @	DRN-ON @	SBK+ @	SBK-ON @	ZNG+ @	ZNG-ON @
R0660	@	@	@	OPKEP @	MGON+ @	MAG-ON @	AFL+ @	AFL-ON @
R0661					SSTPK @	@	@	>3700 @
R0666	\$J720 @	\$J520 @	\$J370 @	\$J270 @	\$J200 @	\$J140 @	\$J100 @	\$J0 @
R0668			*FV100 @	G12.4A	G12.3A	G12.2A	G12.1A	G10.6A
R0669	SOV120	SOV110	SOV100	DECACT @	INCACT @	ERROP @	\$JDEC+ @	\$JINC+ @
R0670	@			\$J21	\$J20	\$J19	\$J18	\$J17
R0673			MDK2 @	MDK1 @	MDK, EN @	\$MOD4' @	\$MOD2' @	\$MOD1' @
R0675	@	@	@	@	@	@	@	@
R0677	@	@	@	@	@	@	@	@
R0679	@	@	@	@	@	@	@	@
R0680	@	@	@	@	\$MP2 @	\$MP1 @	@	@

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
R0681					\$H4	\$HZ	\$HY	\$HX
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0683								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0684 CUTBCD								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0685 MCODE1								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0686 TCODE1								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0687 SPTBCD								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0689 ROSTBI								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0690 TPBIN								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0691 TPBCD								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0692 ROTSBC								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0693 TCTMP								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0694			-ZHOME	+ZHOME	-YHOME	+YHOME	-XHOME	+XHOME
			⓪	⓪	⓪	⓪	⓪	⓪
R0695						Z-ZRN	Y-ZRN	X-ZRN
						⓪	⓪	⓪
R0696								
	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
R0697								
						⓪	⓪	⓪
R0698								
	⓪	⓪	⓪	⓪	⓪			
R0699								
	⓪	⓪	⓪	⓪		⓪	⓪	⓪

[sv4328]

Bit Address Map

ADDRESS	BIT NUMBER							USED ADDRESS
	7	6	5	4	3	2	1	
R0700				HSPSK @	LSPSK @	@	@	@
R0701			@	@	@	@	@	@
R0702	@	@	@	@	@	@	@	MHROPP @
R0703		@	@	@	@	@	SP100L @	@
R0704			FAN OFFD	FAN.ON	@	@	@	@
R0705		@	@	@	@	@		@
R0706	@		LB.PRE.O K	@	LB.PRE.T M	@		
R0707				@	@	@		@
R0711	@	@	@	@	@	@	@	@
R0713	@	@	@	@	@	@	@	@
R0715	@	@	@	@	@	@	@	@
R0800		@	OVC.P2	OVC.P	@	@	SRN.P2	SRN.P
R0801			@	@	@	@	@	@
R9000							FUNOP1	FUNOP0
							@	@

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
A0000	HYOLAL @	PCOLAL @	AIR.AL @	MC.AL @	COR @	M22AL @	M21AL @	LUBAL @
A0001	-XOTAL @	+XOTAL @	M74AL @	M73AL @	COLAL @	DOPAL @	BFAL @	HYPLAL @
A0002	XANHAL @	NO.ZRN @	EMPAL @	INVAL @	SPHTAL @	TAL @	-ZOTAL @	+ZOTAL @
A0003	AL1380 @	AL1370 @	1029 @	1028 @	TUNZAL @	TNEAL @	CHNCAL @	ZANHAL @
A0004	@	@	@	AL1620 @	AL1610 @	AL1640 @	AL1630 @	AL1040 @
A0005	AL1057 @	AL1056 @	@	@	AL1680 @	AL1670 @	AL1660 @	AL1650 @
A0006	AL1067 @	AL1066 @	AL1065 @	AL1064 @	AL1063 @	AL1062 @	AL1061 @	AL1060 @
A0010	OP2007 @	OP2006 @	OP2005 @	OP2004 @	OP2003 @	OP2002 @	OP2001 @	OP2000 @
A0011	@	@	@	@	@	@	OP2011 @	OP2010 @

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Bit Address Map

ADDRESS	BIT NUMBER							USED ADDRESS
	7	6	5	4	3	2	1	
K0000	⓪	HY.TL ⓪		PT.CON ⓪	LUB.NC ⓪	A.SW.NC ⓪		COOLD ⓪
K0001	DP.SVT ⓪	LS.SVT ⓪	T.OFF ⓪	T.NO.2 ⓪	T.NO.1 ⓪	QUICK.UN CL ⓪	LUB.PRE ⓪	
K0002	BLOCK.T ⓪	M30APO ⓪	TS.VAL ⓪	PT.CT.SW ⓪	PT.CT ⓪	CO.LEVEL ⓪	CHOC ⓪	A.SW ⓪
K0003		2011.OFF ⓪	CVYTMR ⓪	SP.B ⓪	PTUP/PTD N.STB ⓪	SP.OP ⓪	NO.ARM.S EN ⓪	TL-LF.VA L ⓪
K0005			IO.SP ⓪				Y.VALID ⓪	
K0006			RST/RWD ⓪	DO.SW ⓪		SP.HD ⓪	QL.KP ⓪	T.S.REL ⓪
K0007		CAM/QUIC K.A ⓪			SP.KEEP ⓪			CW/CCW ⓪
K0008							TL.SET ⓪	T.SV.MAN ⓪
K0009				R.DR.VAL ⓪		L.DR.VAL ⓪	HO-Z-S ⓪	
K0010	DR.SW.VA L ⓪			CHCLC ⓪			HYPRLD ⓪	
K0011	ABS.V ⓪	AP,MOV ⓪	JGCLL ⓪	180-0 ⓪	180 ⓪	60-180 ⓪	60 ⓪	ZRN.NO ⓪
K0012								LGPON ⓪
K0014	OPS147 ⓪	OPS146 ⓪	OPS145 ⓪	OPS144 ⓪	OPS143 ⓪	OPS142 ⓪	OPS141 ⓪	OPS140 ⓪
K0015	TZNR ⓪		TZRN.F ⓪				POS.CK ⓪	NEG.CK ⓪

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Bit Address Map

ADDRESS	BIT NUMBER							
	7	6	5	4	3	2	1	0
D0000 SP.NO	e	e	e	e	e	e	e	e
D0100 CA-CP1	e	e	e	e	e	e	e	e
D0104 CB-CP1	e	e	e	e	e	e	e	e
D0110 POTNUM	e	e	e	e	e	e	e	e
D0112 PTNUM1	e	e	e	e	e	e	e	e
D0114 CUPLAT	e	e	e	e	e	e	e	e
D0120 CA-CP2	e	e	e	e	e	e	e	e
D0122 CB-CP2	e	e	e	e	e	e	e	e
D0124 BGTNUM	e	e	e	e	e	e	e	e
D0125 PTNUM2	e	e	e	e	e	e	e	e
D0126 GCHCHK	e	e	e	e	e	e	e	e
D0160 CELIM1	e	e	e	e	e	e	e	e
D0161 CELIM2	e	e	e	e	e	e	e	e
D0162 SPLIM1	e	e	e	e	e	e	e	e
D0163 SPLIM2	e	e	e	e	e	e	e	e
D0164 SP%	e	e	e	e	e	e	e	e
D0170 WINF28	e	e	e	e	e	e	e	e

[SV4328STB0]

Symbol & Comment

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00001	X0000.0	MODE 1	
00002	X0000.1	MODE 2	
00003	X0000.2	MODE 4	
00004	X0000.3	RAPID.OV1	
00005	X0000.4	RAPID.OV2	
00006	X0000.5	CY.ST.PB	
00007	X0000.6	*FD.HLD.PB	
00008	X0000.7	READY.PB	
00009	X0001.0	MD.ENA.KEY	
00010	X0001.1	POG.KEY	
00011	X0001.2	H*X	
00012	X0001.3	H*Y	
00013	X0001.4	H*Z	
00014	X0001.5	H*A	
00015	X0001.6	H*B	
00016	X0001.7	H*1	
00017	X0002.0	H*10	
00018	X0002.1	H*100	
00019	X0003.0	AIR.PRE.SW	
00020	X0003.1	LUBE.LEV.SW	
00021	X0003.2	SP.CLP.SEN	
00022	X0003.3	SP.UNC.SEN	
00023	X0003.4	SP.UNC.PB	
00024	X0003.5	MAG.RET.SEN	
00025	X0003.6	MAG.EXT.SEN	
00026	X0003.7	MAG.CTR.SEN	
00027	X0004.0	XAE	
00028	X0004.1	YAE	
00029	X0004.2	PROB.+X	
00030	X0004.3	PROB.-X	
00031	X0004.4	PROB.+Z	
00032	X0004.5	PROB.-Z	
00033	X0004.7	PROB.SKPF	
00034	X0005.0	IND.T1	
00035	X0005.1	IND.T2	
00036	X0005.2	IND.T4	
00037	X0005.3	IND.T8	
00038	X0005.4	IND.LK	
00039	X0005.5	TSV.AL	
00040	X0005.6	PROB.EXTEND	
00041	X0005.7	PROB.RETURN	
00042	X0006.0	R.DR.SW	RIGHT DOOR INTERLOCK SW
00043	X0006.1	L.DR.SW	LEFT DOOR INTERLOCK SW
00044	X0006.2	DR.SW	DOOR INTERLOCK SW

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00045	X0006.3	AIR.BLW.PB	
00046	X0006.4	ARM.MTR.OL	
00047	X0006.5	COL2.MTR.OL	
00048	X0006.6	EXT.F.OL	
00049	X0006.7	AX.IGN	
00050	X0007.0	ARM.STP.SEN	ARM STOP POINT
00051	X0007.1	ARM.0.SEN	ARM RETURN POINT
00052	X0007.2	ARM.60.SEN	ARM MIDDLE POINT
00053	X0007.3	ARM.BOT.SEN	ARM BOTTON SEN
00054	X0007.5		
00055	X0007.6	SP.COL.OL	SPINDLE COOLER OVERLOAI
00056	X0007.7	SUCK.OL	SUCK MOTOR OVERLOAD
00057	X0008.0	MAG.TOL.SEN	MAGAZINE TOOL SENSOR
00058	X0008.1	COL1.MTR.OL	COOLANT 1 MOTOR OL
00059	X0008.2	SP.COL.AL	SPINDLE COOLER ALARM
00060	X0008.3	CNV.MTR.OL	CHIP CONVEYOR MOTOR OL
00061	X0008.4	*ESP	
00062	X0008.5	A.CLP.SEN	A AXIS CLAMP SENSOR
00063	X0008.6	A.UNC.SEN	A AXIS UNCLAMP SENSOR
00064	X0008.7	MAG.MTR.OL	MAGAZINE MOTOR OL
00065	X0009.0	X.H.SW	
00066	X0009.1	Y.H.SW	
00067	X0009.2	Z.H.SW	
00068	X0009.3	A.H.SW	
00069	X0009.4	MAG.CW.PBA	
00070	X0009.5	MAG.CCW.PBA	
00071	X0009.6	RECLC.OL	RECYCLE MOTOR OL
00072	X0009.7	LUB.PRE.SW	
00073	X0010.0	SP.HG.SW	
00074	X0010.1	SP.LG.SW	
00075	X0010.2	FIL.L.SW	FILTER TANK LEVEL SW
00076	X0010.3	FIL.F.SW	FILTER TANK FULL SW
00077	X0010.4	COL.L.SW	COOLANT LEVEL LOW SW
00078	X0010.5	COL.F.SW	COOLANT FULL SW
00079	X0010.6	FIL.PRE.SW	FILTER PRESSURE SW
00080	X0010.7	OIL.SK.OL	OIL SKIMMER MOTOR OL
00081	X0011.0	M33.FIN.SEN	
00082	X0011.1	M34.FIN.SEN	
00083	X0011.2	M35.FIN.SEN	



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00084	X0011.3	M36.FIN.SEN	
00085	X0011.4	M37.FIN.SEN	
00086	X0011.5	M38.FIN.SEN	
00087	X0011.6	M39.FIN.SEN	
00088	X0011.7	CTS.MTR.OL	
00089	X0012.0		
00090	X0012.1	\$+Z	
00091	X0012.2	\$-Y	
00092	X0012.3	\$+X	
00093	X0012.4	\$-X	
00094	X0012.5	\$+Y	
00095	X0012.6	\$-Z	
00096	X0012.7	\$-4	
00097	X0013.0	HO-ST	HOME START
00098	X0013.1	\$ST	
00099	X0013.2	\$SP	
00100	X0013.3	SBK-	SINGLE BLOCK
00101	X0013.4	\$OSP-	OPTION STOP
00102	X0013.5	\$MLK-	MACHINE LOCK PB.
00103	X0013.6	\$F0	F0 PB.
00104	X0013.7	\$DRN-	DRY RUN PB.
00105	X0014.0	\$BDT-	BLOCK DELETE PB.
00106	X0014.1	\$ZNG-	Z AXIS CANCEL PB.
00107	X0014.3	CP-CW	CHIP COVEYOR CW PB.
00108	X0014.4	CP-CCW	CHIP COVEYOR CCW PB.
00109	X0014.5	CL.AU	AUTO COOLANT PB.
00110	X0014.6	CL.MA	MANUAL COOLANT PB.
00111	X0014.7	SP-DEC	SPINDLE DEC
00112	X0015.0	SP-100	SPINDLE 100%
00113	X0015.1	SP-INC	SPINDLE INC
00114	X0015.2	SP-ORT	SPINDLE ORIENT PB.
00115	X0015.3	\$SPCW	
00116	X0015.4	\$SPSTP	
00117	X0015.5	\$SPCCW	
00118	X0015.6	SP-RST	SPINDLE RESET PB.
00119	X0015.7	\$MGCW	
00120	X0016.0	\$MGCCW	
00121	X0016.2	\$APO	AUTO POWER OFF S.W
00122	X0016.3	\$PGM	
00123	X0016.5	\$ROV1	
00124	X0016.6	\$ROV2	
00125	X0017.0	\$MOD1	

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00126	X0017.1	\$MOD2	
00127	X0017.2	\$MOD4	
00128	X0017.3	\$FV1/X	
00129	X0017.4	\$FV2/Y	
00130	X0017.5	\$FV4/Z	
00131	X0017.6	\$FV8/4	
00132	X0017.7	\$FV16	
00133	X0020.0	MST.LK.PB	
00134	X0020.1	TOL.CHG.PB	
00135	X0020.2	MAG.CW.PB	
00136	X0020.3	CNV.CCW.PB	
00137	X0020.4	MLK.PB	
00138	X0020.5	4/5.IGN.PB	
00139	X0020.6	MAG.L/R.PB	
00140	X0020.7	CNV.CW.PB	
00141	X0021.0	BDT.PB	
00142	X0021.1	OVC.PB	
00143	X0021.2	F1.PB	
00144	X0021.3	F2.PB	
00145	X0021.4	PRST.PB	
00146	X0021.5	AIR.BLA.PB	
00147	X0021.6	F6.PB	
00148	X0021.7	WK.LGT.PB	
00149	X0022.0	M01.PB	
00150	X0022.1	CTS.PB	
00151	X0022.2	F5.PB	
00152	X0022.3	DOR.PB	
00153	X0022.4	DRN.PB	
00154	X0022.5	AIR.FLU.PB	
00155	X0022.6	F4.PB	
00156	X0022.7	A.ZRN.PB	
00157	X0023.0	SBK.PB	
00158	X0023.1	COL.PB	
00159	X0023.2	F3.PB	
00160	X0023.3	M19.PB	
00161	X0023.4	Z.PB	
00162	X0023.5	OT.PB	
00163	X0023.6	J-.PB	
00164	X0023.7	SP.CCW.PB	
00165	X0024.0	Y.PB	

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00166	X0024.1	B.PB	
00167	X0024.2	RPD.PB	
00168	X0024.3	SP.STP.PB	
00169	X0024.4	X.PB	
00170	X0024.5	A.PB	
00171	X0024.6	J+.PB	
00172	X0024.7	SP.CW.PB	
00173	X0025.0	SP.OV1	
00174	X0025.1	SP.OV2	
00175	X0025.2	SP.OV4	
00176	X0025.3	F.OV1	
00177	X0025.4	F.OV2	
00178	X0025.5	F.OV4	
00179	X0025.6	F.OV8	
00180	X0025.7	F.OV16	
00181	X0026.1	CHU.OP	
00182	X0027.4	OV16	
00183	X0028.7	MOD8	
00184	X0029.0	SP.INC	
00185	X0029.2	SP.DEC	
00186	X0030.0	RP1.05	
00187	X0030.1	RP2.05	
00188	X0030.2	FO1.05	
00189	X0030.3	FO2.05	
00190	X0030.4	FO4.05	
00191	X0030.5	FO8.05	
00192	X0030.6	F16.05	
00193	X0030.7	MD1.05	
00194	X0031.0	MD2.05	
00195	X0031.1	MD4.05	
00196	X0031.2	MD8.05	
00197	X0031.3	T1.05	
00198	X0031.4	T2.05	
00199	X0031.5	T4.05	
00200	X0031.6	CVC.05	
00201	X0031.7	CSP.05	
00202	X0032.0	CCC.05	
00203	X0032.1	IDX.05	
00204	X0032.2	KEY.05	
00205	X0032.3	OT.05	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00206	X0032.4	F2.05	
00207	X0032.5	+X.05	
00208	X0032.6	SCW.05	
00209	X0032.7	SSP.05	
00210	X0033.0	SCC.05	
00211	X0033.1	SLK.05	
00212	X0033.2	SPJ.05	
00213	X0033.3	MLK.05	
00214	X0033.4	ALK.05	
00215	X0033.5	+Z.05	
00216	X0033.6	RP.05	
00217	X0033.7	-Z.05	
00218	X0034.0	F1.05	
00219	X0034.1	AIR.05	
00220	X0034.2	DOR.05	
00221	X0034.3	DRN.05	
00222	X0034.4	BDT.05	
00223	X0034.5	SBK.05	
00224	X0034.6	OPT.05	
00225	X0034.7	-X.05	
00226	X0035.0	H*Z.05	
00227	X0035.1	H*X.05	
00228	X0035.2	CCL.05	
00229	X0035.3	CUN.05	
00230	X0035.4	CLM.05	
00231	X0035.5	CLA.05	
00232	X0035.6	F.H.05	
00233	X0035.7	ST.05	
00234	X1000.0	]MNKEY	MAINTENANCE KEY
00235	X1002.3	]FTSW	FOOT SWITCH
00236	X1002.4	:PROIL	PRESSURE OIL AL FOR OIL MIST
00237	X1002.5	:OIL-L	OIL LOW AL FOR OIL MIST
00238	X1002.6	:THMAL	THERMAL ALARM FOR OIL MIST
00239	X1002.7	:SUPAR	SUPPLY AIR AL FOR OIL MIST
00240	X1007.6	\$KG1.1	
00241	X1007.7	\$KG1.2	
00242	X1011.4	AP-CA	APC COVER A
00243	X1011.5	AP-CB	APC COVER B
00244	X1011.6	:AP-OP	APC DOOR OPEN
00245	X1011.7	:AP-CL	APC DOOR CLOSE
00246	Y0000.0	B.LP	B AXIS LAMP
00247	Y0000.1	SP.STP.LP	SPINDLE STOP LAMP
00248	Y0000.2	X.LP	X AXIS LAMP
00249	Y0000.3	A.LP	A AXIS LAMP
00250	Y0000.4	SP.CW.LP	SPINDLE CW LAMP

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00251	Y0000.5	T.21.LP	TOOL DISPLAY 21 LED
00252	Y0000.6	T.22.LP	TOOL DISPLAY 22 LED
00253	Y0000.7	T.24.LP	TOOL DISPLAY 24 LED
00254	Y0001.0	T.28.LP	TOOL DISPLAY 28 LED
00255	Y0001.1	T.11.LP	TOOL DISPLAY 11 LED
00256	Y0001.2	T.12.LP	TOOL DISPLAY 12 LED
00257	Y0001.3	T.14.LP	TOOL DISPLAY 14 LED
00258	Y0001.4	T.18.LP	TOOL DISPLAY 18 LED
00259	Y0001.5	ATC.AL.LED	ATC FAULT LED
00260	Y0001.6	OT.AL.LED	OT ALARM LED
00261	Y0001.7	MC.AL.LED	MACHINE ALARM LED
00262	Y0002.0	COL1.MC	COOLANT 1 MC
00263	Y0002.1	MAG.CW.MC	MAGAZINE CW MC
00264	Y0002.2	MAG.CCW.MC	MAGAZINE CCW MC
00265	Y0002.3	CNV.CW.MC	CHIP CONVEYOR CW MC
00266	Y0002.4	CNV.CCW.MC	CHIP CONVEYOR CCW MC
00267	Y0002.5	SP.COL.MC	SPINDLE COOLER MC
00268	Y0002.6	ARM.MC	ARM MOTOR MC
00269	Y0002.7	COL2.MC	COOLANT 2 MC
00270	Y0003.0	OIL.KIM.MC	OIL SKIMMER MC
00271	Y0003.1	EXT.F.MC	EXTERNAL FAN MC
00272	Y0003.2	RECYC.MC	RECYCLE MOTOR MC
00273	Y0003.3		
00274	Y0003.4		
00275	Y0003.5	CYC.ON.O	CYCLE ON LAMP
00276	Y0003.6	AL.LP.O	ALARM LAMP
00277	Y0003.7	CYC.END.O	CYCLE END LAMP
00278	Y0004.0	LUBE.O	LUBE PUMP RELAY
00279	Y0004.1	APO.O	AUTO POWER OFF RELAY
00280	Y0004.2	SP.LG.O	SPINDLE LOW GEAR RELAY
00281	Y0004.3	SP.HG.O	SPINDLE HIGH GEAR RELAY
00282	Y0004.4	WK.L.O	WORK LIGHT RELAY
00283	Y0004.5	CTS.O	CTS COOLANT MOTOR RELAY
00284	Y0004.6	M33.O	M33 OUTPUT



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00285	Y0004.7	M34.O	M34 OUTPUT
00286	Y0005.0	TOL.UNC.O	TOOL UNCLAMP RELAY
00287	Y0005.1	MAG.EXT.O	MAGAZINE EXTEND RELAY
00288	Y0005.2	MAG.RTN.O	MAGAZINE RETURN RELAY
00289	Y0005.3	AIR.BW.O	AIR BLOW RELAY
00290	Y0005.4	SP.AIR.O	SPINDLE AIR BLOW RELAY
00291	Y0005.5	CTS.AIR.O	CTS AIR BLOW RELAY
00292	Y0005.6	M35.O	M35 OUTPUT
00293	Y0005.7	M36.O	M36 OUTPUT
00294	Y0006.0	AIR.AL.LED	AIR FAULT LED
00295	Y0006.1	MTR.OL.LED	MOTOR OL LED
00296	Y0006.2	LUBE.AL.LED	LUBE FAULT LED
00297	Y0006.3	M2/M30.LED	M02 / M30 LED
00298	Y0006.4	M0/M1.LED	M00 / M01 LED
00299	Y0006.5	B.HOME.LED	B AXIS HOME LED
00300	Y0006.6	A.HOME.LED	A AXIS HOME LED
00301	Y0006.7	Z.HOME.LED	Z AXIS HOME LED
00302	Y0007.0	Y.HOME.LED	Y AXIS HOME LED
00303	Y0007.1	X.HOME.LED	X AXIS HOME LED
00304	Y0007.2	CY.ST.LP	CYCLE START LAMP
00305	Y0007.3	FD.HLD.LP	FEED HOLD LAMP
00306	Y0007.4	NC.RDY.LP	CNC READY LAMP
00307	Y0007.5	MPG.LED	MPG LED
00308	Y0007.6	DR.LCK.O	DOOR INTERLOCK RELAY
00309	Y0007.7	A.UNCLP.O	A AXIS UNCLAMP SOL
00310	Y0012.0	ST-L	CYCLE START LED
00311	Y0012.1	*SP-L	FEED HOLD LED
00312	Y0012.3	SBK-L	SINGLE BLOCK LED
00313	Y0012.4	OSP-L	OPTION STOP LED
00314	Y0012.5	MLK-L	MACHINE LOCK LED
00315	Y0012.6	FO-L	FO LED
00316	Y0012.7	DRN-L	DRY RUN LED
00317	Y0013.0	BDT-L	BLOCK DELETE LED
00318	Y0013.1	ZNG-L	Z AXIS CANCEL LED
00319	Y0013.2	AFL-L	AFL LED
00320	Y0014.7	APO-L	AUTO POWER OFF LED
00321	Y0020.0	AFL.LP	MST LOCK LAMP
00322	Y0020.1	TOL.CHG.LP	TOOL CHANGE LAMP
00323	Y0020.2	MAG.CW.LP	MAGAZINE CW LAMP
00324	Y0020.3	CNV.CCW.LP	CHIP CONVEYOR CCW LAMP
00325	Y0020.4	MLK.LP	MACHINE LOCK LAMP

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00326	Y0020.5	4/5.IGN.LP	4/5 AXIS IGNORE LAMP
00327	Y0020.6	MAG.L.R.LP	MAGAZINE L/R LAMP
00328	Y0020.7	CNV.CW.LP	CHIP CONVEYOR CW LAMP
00329	Y0021.0	BDT.LP	BLOCK DELETE LAMP
00330	Y0021.1	OVC.LP	OVERRIDE CANCEL LAMP
00331	Y0021.2	F1.LP	F1 LAMP
00332	Y0021.3	F2.LP	F2 LAMP
00333	Y0021.4	RSTR.LP	PROGRAM RESTART LAMP
00334	Y0021.5	AIRBLA.LP	AIR BLAST LAMP
00335	Y0021.6	F6.LP	F6 LAMP
00336	Y0021.7	WK.L.LP	WORK LIGHT LAMP
00337	Y0022.0	M01.LP	M01 STOP LAMP
00338	Y0022.1	CTS.LP	CTS LAMP
00339	Y0022.2	F5.LP	F5 LAMP
00340	Y0022.3	DOR.LP	DOOR LAMP
00341	Y0022.4	DRN.LP	DRY RUN LAMP
00342	Y0022.5	AIR.FLU.LP	AIR FLUSH LAMP
00343	Y0022.6	F4.LP	F4 LAMP
00344	Y0022.7	A.ZRN.LP	AUTO ZRN LAMP
00345	Y0023.0	SBK.LP	SINGLE BLOCK LAMP
00346	Y0023.1	COL.LP	COOLANT LAMP
00347	Y0023.2	F3.LP	F3 LAMP
00348	Y0023.3	M19.LP	M19 LAMP
00349	Y0023.4	Z.LP	JIG Z LAMP
00350	Y0023.5	OT.LP	OT RELASE LAMP
00351	Y0023.6	SP.CCW.LP	SPINDLE CCW LAMP
00352	Y0023.7	Y.LP	JOG Y LAMP
00353	Y0030.0	XH.L05	
00354	Y0030.1	ZH.L05	
00355	Y0030.2	CCKL05	
00356	Y0030.3	NL.L05	
00357	Y0030.4	LUAL05	
00358	Y0030.5	AL.L05	
00359	Y0030.6	CCWL05	
00360	Y0030.7	CSPL05	
00361	Y0031.0	CCCL05	
00362	Y0031.1	IDXL05	
00363	Y0031.2	OT.L05	
00364	Y0031.3	F2.L05	
00365	Y0031.4	SCWL05	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00366	Y0031.5	SSPL05	
00367	Y0031.6	SCCL05	
00368	Y0031.7	SLKL05	
00369	Y0032.0	SPJL05	
00370	Y0032.1	MLKL05	
00371	Y0032.2	ALKL05	
00372	Y0032.3	F1.L05	
00373	Y0032.4	AP.L05	
00374	Y0032.5	DR.L05	
00375	Y0032.6	DRNL05	
00376	Y0032.7	BDTL05	
00377	Y0033.0	SBKL05	
00378	Y0033.1	OPTL05	
00379	Y0033.6	FH.L05	
00380	Y0033.7	ST.L05	
00381	Y1002.2	>CLNA	COOLANT A
00382	Y1002.3	>GUN	WATER GUN
00383	Y1003.0	>OILMS	SPINDLE OIL MIST
00384	Y1003.2	>JGUCL	JIG UNCLAMP
00385	Y1003.3	>JGCLP	JIG CLAMP
00386	Y1003.4	>ATLM	A.T.L.M BLAST
00387	Y1004.6	>INDEX	INDEX TABLE
00388	Y1004.7	\$SPL	SPL LAMP
00389	Y1005.5	>FIL	FILTER MOTOR
00390	Y1005.6	>PUMP1	COOLANT TANK TO FILTER TANK
00391	Y1006.0	>ZBRK	Z AXIS BRAKE
00392	Y1006.1	>HG	HIGH GEAR
00393	Y1006.2	>LG	LOW GEAR
00394	Y1007.0	>AP-UP	APC PALLET UP
00395	Y1007.1	>AP-DN	APC PALLET DOWN
00396	Y1007.2	>AP-EX	APC PALLET EXTEND
00397	Y1007.4	>AP-RE	APC PALLET RETRACT
00398	Y1007.5	>AP-BL	APC AIR BLOW
00399	Y1007.6	\$STL	STL LAMP
00400	F0000.4	SPL	
00401	F0000.5	STL	
00402	F0000.6	SA	
00403	F0000.7	OP	
00404	F0001.0	CNC-AL	
00405	F0001.1	RST	
00406	F0001.2	BAL	
00407	F0001.3	DEN	
00408	F0001.4	ENB	SPINDLE ENABLE SIGNAL
00409	F0001.5	TAP	TAPPING SIGNAL
00410	F0001.7	MA	



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00411	F0002.1	RPDO	
00412	F0002.7	MDRN	
00413	F0003.0	MINC	
00414	F0003.1	MH	
00415	F0003.2	MJ	
00416	F0003.3	MMDI	
00417	F0003.4	MRMT	
00418	F0003.5	MMEM	
00419	F0003.6	MEDT	
00420	F0003.7	MTCHIN	
00421	F0004.0	MBDT1	
00422	F0004.1	MMLK	
00423	F0004.3	MSBK	
00424	F0004.4	MAFL	
00425	F0004.5	MREF	
00426	F0007.0	MF	
00427	F0007.2	SF	
00428	F0007.3	TF	
00429	F0009.4	DM30	
00430	F0009.5	DM02	
00431	F0009.6	DM01	
00432	F0009.7	DM00	
00433	F0034.0	GR10	GEAR SELECT SIGNAL
00434	F0034.1	GR20	GEAR SELECT SIGNAL
00435	F0045.0	SALM1	SPINDLE ALARM SIGNAL
00436	F0045.1	SSTA	
00437	F0045.2	SDTA	
00438	F0045.3	SARA	
00439	F0045.7	ORARA	
00440	F0046.2	RCHPA	
00441	F0054.0	UO0	ATLM MACRO SIGNAL
00442	F0062.7	PRTSF	
00443	F0064.0	TLCH	TOOL LIFE CHANGE SIGNAL
00444	F0072.0	*ABSSW	
00445	F0072.1	OVCSW	
00446	F0072.2	DNCSW	
00447	F0072.7	AUX.HYDR	
00448	F0094.0	ZP1	
00449	F0094.1	ZP2	
00450	F0094.2	ZPZ	Z AXIS 1ST. POINT

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00451	F0094.3	ZP4	4 AXIS 1ST. POINT
00452	F0096.0	ZP2X	X AXIS 2ND. POINT
00453	F0096.1	ZP2Y	Y AXIS 2ND. POINT
00454	F0096.2	ZP2Z	Z AXIS 2ND. POINT
00455	F0096.3	ZP24	
00456	F0098.0	ZP3X	X AXIS 3RD. POINT
00457	F0098.1	ZP3Y	Y AXIS 3RD. POINT
00458	F0098.2	ZP3Z	Z AXIS 3RD. POINT
00459	F0098.3	ZP34	4 AXIS 3RD. POINT
00460	F0100.0	ZP4X	X AXIS 4TH. POINT
00461	F0100.1	ZP4Y	Y AXIS 4TH. POINT
00462	F0100.2	ZP4Z	Z AXIS 4TH. POINT
00463	F0100.3	ZP44	4 AXIS 4TH. POINT
00464	F0102.0	MV1	
00465	F0102.1	MV2	
00466	F0106.0	MVD1	
00467	F0106.1	MVD2	
00468	G0004.3	FIN	END SIGNAL
00469	G0005.6	AFL	AUX. FUNCTION LOCK
00470	G0006.0	SRN	PROGRAM RESTART
00471	G0006.2	*ABSM	MANUAL ABSOLUTE SIGNAL
00472	G0006.4	OVC	OVERRIDE CANCEL SIGNAL
00473	G0007.2	ST	CYCLE START SIGNAL
00474	G0008.0	*IT	INTERLOCK SIGNAL
00475	G0008.4	*ESPI	EMERGENCY STOP SIGNAL
00476	G0008.5	*SPI	FEED HOLD SIGNAL
00477	G0008.6	RRW	RESET AND REWIND SIGNAL
00478	G0008.7	ERS	EXTEMAL RESET SIGNAL
00479	G0010.0	*JV0	
00480	G0010.1	*JV1	
00481	G0010.2	*JV2	
00482	G0010.3	*JV3	
00483	G0010.4	*JV4	
00484	G0010.5	*JV5	
00485	G0010.6	*JV6	
00486	G0010.7	*JV7	
00487	G0011.0	*JV8	
00488	G0011.1	*JV9	
00489	G0011.2	*JV10	
00490	G0011.3	*JV11	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00491	G0011.4	*JV12	
00492	G0011.5	*JV13	
00493	G0011.6	*JV14	
00494	G0011.7	*JV15	
00495	G0012.0	*FV0-7	FEEEDRATE 1-7
00496	G0012.1	*FV1	
00497	G0012.2	*FV2	
00498	G0012.3	*FV3	
00499	G0012.4	*FV4	
00500	G0012.5	*FV5	
00501	G0012.6	*FV6	
00502	G0012.7	*FV7	
00503	G0014.0	ROV1	RAPID OVERRIDE 1 SIGNAL
00504	G0014.1	ROV2	RAPID OVERRIDE 2 SIGNAL
00505	G0018.0	HS1A	HANDLE X AXIS SELECT
00506	G0018.1	HS1B	HANDLE Z AXIS SELECT
00507	G0018.2	HS1C	MANUAL HANDLE FEED SEL HS1C
00508	G0019.4	MP1	HANDLE FEED 1 SELECT
00509	G0019.5	MP2	HANDLE FEED 2 SELECT
00510	G0019.7	RT	RAPID TRAVERSE SELECT
00511	G0027.0	SWS1	SPINDLE 1SELECTION
00512	G0027.3	*SSTP1	SPINDLE 1 STOP
00513	G0029.4	SAR	SPINDLE SPEED ARRIVAL
00514	G0029.5	SOR	SPINDLE ORIENTATION SIGNAL
00515	G0029.6	*SSTP	SPINDLE STOP
00516	G0030.0	SOV0	
00517	G0030.1	SOV1	
00518	G0030.2	SOV2	
00519	G0030.3	SOV3	
00520	G0030.4	SOV4	
00521	G0030.5	SOV5	
00522	G0030.6	SOV6	
00523	G0030.7	SOV7	
00524	G0033.7	SIND	SPINDLE SPEED COMMAND
00525	G0043.0	MD1	MODE SELECT 1
00526	G0043.1	MD2	MODE SELECT 2
00527	G0043.2	MD4	MODE SELECT 4
00528	G0043.5	DNC	DNC OPERATION SELECT
00529	G0043.7	ZRN	ZERO RETURN SELECT
00530	G0044.0	BDT1	OPTION BLOCK SKIP 1

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00531	G0044.1	MLK	ALL-AXIS MACHINE LOCK
00532	G0046.1	SBK	SIGNAL BLOCK
00533	G0046.3	KEY1	MEMORY PROTECT 1
00534	G0046.4	KEY2	MEMORY PROTECT 2
00535	G0046.5	KEY3	MEMORY PROTECT 3
00536	G0046.6	KEY4	MEMORY PROTECT 4
00537	G0046.7	DRN	DRY RUN SIGNAL
00538	G0053.6	SMZ	ERROR DETECT SIGNAL
00539	G0053.7	CDZ	CHAMFERING SIGNAL
00540	G0055.1	UI9	PALLET B POSITION
00541	G0055.2	UI10	PALLET A POSITION
00542	G0055.3	UI11	SWING ARM TYPE
00543	G0055.4	UI12	ROTARY TYPE
00544	G0058.5	STRD	I/O SIMULTANEOUS OPERATION
00545	G0061.0	RGTP	
00546	G0070.0	TLMLA	TORQUE LIMIT
00547	G0070.3	CTH1A	SPINDLE HIGH/LOW SPEED SIGNAL
00548	G0070.4	SRVA	SPINDLE CCW COMMAND A
00549	G0070.5	SFRA	SPINDLE CW COMMAND A
00550	G0070.6	ORCMA	SPINDLE ORIENT COMMAND A
00551	G0070.7	MRDYA	MACHINE READY A
00552	G0071.0	ARSTA	SPINDLE RESET
00553	G0071.1	*ESPA	SPINDLE 1 EMERGENCY STOP
00554	G0071.6	SP_RANGE	SPEED RANGE SWITCH REQUEST
00555	G0071.7	LOW_MC	LOW SPEED MC STATUS
00556	G0072.4	OVRA	ANALOG OVERRIDE COMMAND
00557	G0072.7	HIGH_MC	HIGH SPEED MC STATUS
00558	G0074.4	SRVB	SPINDLE CCW COMMAND B
00559	G0074.5	SFRB	SPINDLE CW COMMAND B
00560	G0074.6	ORCMB	SPINDLE ORIENT COMMAND B
00561	G0074.7	MRDYB	MACHINE READY B
00562	G0100.0	+J1	X AXIS PULS DIRECT
00563	G0100.1	+J2	Z AXIS PULS DIRECT
00564	G0100.2	+Z	+JZ
00565	G0100.3	+4	+J4
00566	G0102.0	-J1	X AXIS MINUS DIRECT
00567	G0102.1	-J2	Z AXIS MINUS DIRECT
00568	G0102.2	-Z	-JZ

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00569	G0102.3	-4	-J4
00570	G0106.0	MIRX	X AXIS MIRROR IMAGE SIGNAL
00571	G0106.1	MIRY	Y AXIS MIRROR IMAGE SIGNAL
00572	G0106.3	MIR4	4TH AXIS MIRROR IMAGE SIGNAL
00573	G0108.2	MLKZ	Z AXIS MACHINE LOCK
00574	G0114.0	*+L1	X AXIS PULS OVERTAVEL
00575	G0114.1	*+L2	Z AXIS PULS OVERTRAVEL
00576	G0116.0	*-L1	X AXIS MINUS OVERTRAVEL
00577	G0116.1	*-L2	Z AXIS MINUS OVERTRAVEL
00578	G0118.0	*+ED1	X AXIS PULS DECELERATION
00579	G0118.1	*+ED2	Z AXIS PULS DECELERATION
00580	G0120.0	*-ED1	X AXIS MINUS DECELERATION
00581	G0120.1	*-ED2	Z AXIS MINUS DECELERATION
00582	G0126.0	SVFX	SERVO OFF X
00583	G0126.1	SVFY	SERVO OFF Y
00584	G0126.2	SVFZ	SERVO OFF Z
00585	G0126.3	SVF4	SERVO OFF 4
00586	G0130.0	*IT1	X AXIS INTERLOCK
00587	G0130.1	*IT2	Z AXIS INTERLOCK
00588	G0130.2	*ITZ	INTERLOCK Z
00589	G0130.3	*IT4	INTERLOCK 4
00590	R0000.0	LOGIC1	LOGIC1
00591	R0000.1	XHOK	X AXIS HOME OK
00592	R0000.2	ZHOK	Z AXIS HOME OK
00593	R0000.3	AHOK	ALL AXIS HOME OK
00594	R0000.4	TNH	TURRET NOT HOME
00595	R0000.5	T>T12	TOOL NO. >12
00596	R0000.6	T0	TOOL NO. =0
00597	R0000.7	T-1	TOOL NO. -1
00598	R0001.0	T1OUT	TOOL NO. 1
00599	R0001.1	T2OUT	TOOL NO. 2
00600	R0001.2	T4OUT	TOOL NO. 4
00601	R0001.3	T8OUT	TOOL NO. 8
00602	R0001.4	T16OUT	TOOL NO. 16
00603	R0001.5	SUB14A1	SUB14 ALARM 1
00604	R0001.6	T1I	TOOL T1 INPUT
00605	R0001.7	COL.MP	
00606	R0002.0	AT2I	AUTO.T2 INPUT
00607	R0002.1	AT4I	AUTO T4 INPUT
00608	R0002.2	AT8I	AUTO. T8 INPUT
00609	R0002.3	AT16I	AUTO. T16 INPUT
00610	R0003.0	MT2I	MANUAL T2 INPUT



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00611	R0003.1	MT4I	MANUAL T4 INPUT
00612	R0003.2	MT8I	MANUAL T8 INPUT
00613	R0003.3	MT16I	MANUAL T16 INPUT
00614	R0005.0	/TBIN0	NOT TOOL BCD 0
00615	R0005.1	/TBIN1	NOT TOOL BCD 1
00616	R0005.2	/TBIN2	NOT TOOL BIN 2
00617	R0005.3	/TBIN3	NOT TOOL BIN 3
00618	R0005.4	/TBIN4	NOT TOOL BIN 4
00619	R0005.5	/TBIN5	NOT TOOL BIN 5
00620	R0005.6	/TBIN6	NOT TOOL BIN 6
00621	R0005.7	/TBIN7	NOT TOOL BIN 7
00622	R0006.0	ZRN.M	ZERO MODE
00623	R0006.1	HZ	HANDLE Z AXIS SELECT
00624	R0006.2	HX	HANDLE X AXIS SELECT
00625	R0006.3	JOG.M	JOG MODE
00626	R0006.4	MDI.M	MDI MODE
00627	R0006.5	AUTO.M	AUTO MODE
00628	R0006.6	EDIT.M	EDIT MODE
00629	R0006.7	DNC.M	DNC MODE
00630	R0008.0	INC.P	SP OVERRIDE INC. PULSE
00631	R0008.1	DEC.P	SP. OVERRIDE DEC. PULSE
00632	R0008.2	SUB36A1	SUB36 ALARM 1
00633	R0008.3	SUB37A1	SUB37 ALARM 1
00634	R0008.4	SP.120	SP. OVERRIDE 120%
00635	R0008.5	SP.50%	SP. OVERRIDE 50%
00636	R0008.6	SP.100	SP. OVERRIDE 100%
00637	R0008.7	SUB14A2	SUB14 ALARM 2
00638	R0009.0	SPA1	SP . OVERRIDE 1
00639	R0009.1	SPB1	SP. OVERRIDE 2
00640	R0009.2	SPC1	SP.OVERRIDE 4
00641	R0010.0	DRN1P	DRY RUN 1 PULS
00642	R0010.1	DRN1PD	DRY RUN 1 PULS DELETE
00643	R0010.2	DRNON	DRY RUN ON
00644	R0010.3	BDT1P	BLOCK SKIP 1 PULS
00645	R0010.4	BDT1PD	BLOCK SKIP 1 PULS DELETE
00646	R0010.5	BDTON	BLOCK SKIP ON
00647	R0010.6	OP1P	OPTION STOP 1 PULS
00648	R0010.7	OP1PD	OPTION STOP 1 PULS DELETE
00649	R0011.0	OPON	OPTION STOP ON
00650	R0011.1	MCL1P	MACHINE LOCK 1 PULS

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00651	R0011.2	MCL1PD	MACHINE LOCK 1 PULS DELETE
00652	R0011.3	MCLON	MACHINE LOCK ON
00653	R0011.4	OTRE	OT RELEASE
00654	R0011.5	M30ST.D	M30 >CYCLE START DELAY TIMER
00655	R0011.6	PRST	PROGRAM START
00656	R0011.7	TMB2	CONUTER ON TIMER
00657	R0012.0	OPSP	OPTION STOP
00658	R0012.1	SUB31A1	SUB31 ALARM 1
00659	R0012.2	QUILMF	QUILL MANUAL FORWARD
00660	R0012.3	QUILMB	QUILL MANUAL BACK
00661	R0012.4	QUILAF	QUILL AUTO FORWARD
00662	R0012.5	QUILAB	QUILL AUTO BACK
00663	R0012.6	T1	TAIL AUTO BACK TIMER
00664	R0012.7	CHOP1P	CHUCK OPEN 1 PULS
00665	R0026.0	M208	M208 CODE
00666	R0026.1	M209	M209 CODE
00667	R0026.2	M210	M210 CODE
00668	R0026.3	M211	M211 CODE
00669	R0026.4	M212	M212 CODE
00670	R0026.5	M213	M213 CODE
00671	R0026.6	M214	M214 CODE
00672	R0026.7	M215	M215 CODE
00673	R0027.1	CHAOP	CHUCK AUTO OPEN
00674	R0027.2	CHACL	CHUCK AUTO CLOSE
00675	R0027.5	CHO	CHUCK OPEN
00676	R0027.6	CHC	CHUCK CLOSE
00677	R0027.7	COL.OF	COOLANT MANUAL OFF
00678	R0028.0	TMB3	HYDRAULIC START TIMER
00679	R0028.1	HYPL	HYDRAULIC PRESSURE LOW
00680	R0028.2	COOLON	COOLANT ON
00681	R0028.3	BDT1P1	SIGNAL SKIP 1 PULS 1
00682	R0028.4	PCON.R	PARTS CATCHER ON CYCLE
00683	R0028.5	BDT1ON	SIGNAL SKIP ON
00684	R0028.6	PACST	PARTS CONVYER ON
00685	R0029.0	PASTA	PARTS CONVYER AUTO ON
00686	R0029.1	TM3	SPINDLE ORIENT TIMER
00687	R0029.2	SPMCW	SP. MANUAL CW
00688	R0029.3	SPMCCW	SP. MANUAL CCW
00689	R0029.4	SPACW	SPINDLE AUTO CW
00690	R0029.5	SPACW1	SPINDLE AUTO CW 1

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00691	R0029.6	SPACCW	SPINDLE AUTO CCW
00692	R0030.0	SPCW	SPINDLE CW
00693	R0030.1	SPCCW	SPINDLE CCW
00694	R0030.2	TMB4	OPTION STOP TIMER
00695	R0030.3	TMB5	OPTION STOP 1 TIMER
00696	R0030.4	OPSPON	OPTION STOP ON
00697	R0030.5	+XDEC	X AXIS PLUS DECELERATION
00698	R0030.6	-XDEC	X AXIS MINUS DECELERATION
00699	R0030.7	+ZDEC	Z AXIS PULS DECELERATION
00700	R0031.0	-ZDEC	Z AXIS MINUS DECELERATION
00701	R0031.1	MAL1	MACHINE ALARM 1
00702	R0031.2	MAL2	MACHINE ALARM 2
00703	R0031.3	MAL3	MACHINE ALARM 3
00704	R0031.4	AL1P	ALARM 1 PULS
00705	R0031.5	AL1PD	ALARM 1 PULS DELETE
00706	R0031.6	ALSP	ALARM FEED HOLD
00707	R0031.7	APO.EM	AUPO > EMERGENCY
00708	R0032.0	MFIN1	M CODE FINISH 1
00709	R0032.1	MFIN2	M CODE FINISH 2
00710	R0032.2	MFIN3	M CODE FINISH 3
00711	R0032.3	MFIN4	M CODE FINISH 4
00712	R0032.4	MFIN	M CODE FINISH
00713	R0032.5	M301P	M30 CONTINUE 1 PULS
00714	R0032.6	M30IPD	M30 CONTINUE 1 PULS DELETE
00715	R0032.7	M30CR	M30 CONTINUE RUN
00716	R0033.0	JV01	JOG OVERRIDE 1
00717	R0033.1	JV02	JOG OVERRIDE 2
00718	R0033.2	JV04	JOG OVERRIDE 4
00719	R0033.3	JV08	JOG OVERRIDE 8
00720	R0033.4	LOG1P	LOGIC 1 PULS
00721	R0033.5	LIG1PD	LIGIC 1 PULS DELETE
00722	R0033.6	WOL1P	WORK LIGHT 1 PULS
00723	R0033.7	WOL1PD	WORK LIGHT1 PULS DELETE
00724	R0034.0	WOLON	WORK LIGHT ON
00725	R0034.1	SBK1P	SINGAL BLOCK 1 PULS
00726	R0034.2	SBK1PD	SINGAL BLOCK 1 PULS DELETE
00727	R0034.3	SBKON	SINGAL BLOCK ON
00728	R0034.4	COLPOF	
00729	R0034.5	COL.MH	COOLANT MANUAL HOLD
00730	R0034.6	T9	TURRET DELEAY ROTAION



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00731	R0034.7	MTS1P	MANUAL TOOL SELECT 1 PULS
00732	R0035.0	F1.P	F1 (AUPO) PULSE
00733	R0035.1	F1.POF	
00734	R0035.2	F1.OFF	
00735	R0037.0	BUZZR	BUZZER OFF
00736	R0037.1	TUZST	TURRET ZERO RETURN START
00737	R0037.2	MT1I	MANUAL TOOL 1 INPUT
00738	R0037.4	MAM	MANUAL MODE
00739	R0037.5	AUTO	AUTO OP. MODE
00740	R0037.6	MTS	MANUAL TOOL SELECT
00741	R0037.7	TOK1	TOOL OK 1
00742	R0039.0	TBIN0	TOOL BIN NO. 0
00743	R0039.1	TBIN1	TOOL BIN NO. 1
00744	R0039.2	TBIN2	TOOL BIN NO. 2
00745	R0039.3	TBIN3	TOOL BIN NO. 3
00746	R0039.4	TBIN4	TOOL BIN NO. 4
00747	R0039.5	TBIN5	TOOL BIN NO. 5
00748	R0039.6	TBIN6	TOOL BIN NO. 6
00749	R0039.7	TBIN7	TOOL BIN NO. 7
00750	R0040.0	JVON	JOG OVERRIDE ON
00751	R0040.1	MTS1PD	MANUAL TOOL SELECT 1 PULS DELE
00752	R0040.4	TOK	TOOL SELECT OK
00753	R0040.5	TFIN	TOOL SELECT FINISH
00754	R0040.6	ATS	AUTO TOOL SELECT
00755	R0040.7	FVON	FEED OVERRIDE ON
00756	R0041.0	T>T8	TOOL NO. > 8
00757	R0041.2	TL-1	TOOL NO. -1
00758	R0041.3	TF.ST	T CODE START ENABLE
00759	R0041.4	PRSTD	PROGRAM RESTART DELECT
00760	R0041.5	BUOFFT	BUZZER OFF TIMER
00761	R0041.6	BUONT	BUZZER ON TIMER
00762	R0041.7	BUON	BUZZER ON
00763	R0042.0		
00764	R0042.1	TRT	TURRET RUN TIMER
00765	R0043.0	T1S	TOOL 1 SELECT
00766	R0043.1	T2S	TOOL 2 SELECT
00767	R0043.2	T4S	TOOL 4 SELECT
00768	R0043.3	T8S	TOOL 8 SELECT
00769	R0050.1		
00770	R0050.2		

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00771	R0050.4	T4	
00772	R0051.1	TRO.DY	TURRET ROT. DELAY
00773	R0051.5	PCFFIN	PARTS CATCHER FOR. FIN.
00774	R0051.6	PCBFIN	PARTS CATCHER BACK FIN.
00775	R0051.7	PCUP.F	PARTS CATCHER UP FIN
00776	R0052.0	PCDN.F	PARTS CATCHER DOWN FIN
00777	R0052.1	PCVY.OF	PARTS CVY. ON TIMER
00778	R0052.7	M8085F	M80/M85 FIN
00779	R0053.0	QUF.AL	QUILL FOR. ALARM
00780	R0053.1	QUB.AL	QUILL BACK ALARM
00781	R0053.2	QUI.BK	QUILL AUTO BACK TIMER
00782	R0056.2	CVY.OFF	CVY. OFF TIMER
00783	R0056.3	CVY.ON	CVY. ON TIMER
00784	R0060.0	M30OFF	M30 HOLD OFF
00785	R0061.3	TZRNST	TURRET ZRN START
00786	R0061.5	AT.ST	AUTO TOOL SELECT START
00787	R0061.6	TF.DEY	TF DELAY
00788	R0072.0	*FV1.R2	
00789	R0072.1	*FV2.R2	
00790	R0072.2	*FV3.R2	
00791	R0072.3	*FV4.R2	
00792	R0072.4	*FV5.R2	
00793	R0072.5	*FV6.R2	
00794	R0072.6	*FV7.R2	
00795	R0072.7	*FV8.R2	
00796	R0075.0	FOV=0	
00797	R0100.0	M29R	
00798	R0100.1	SPSP.D	SP. STOP FIN DELAY
00799	R0100.2	M29.H	M29 HOLD
00800	R0100.5	M29.F	M29 FIN DELAY
00801	R0200.0		
00802	R0200.3	H	HANDLE MODE
00803	R0201.0		
00804	R0201.3		
00805	R0202.0	T4.TUR	4T TURRET
00806	R0202.1	T8.TUR	8T TURRET
00807	R0202.2	T10.TUR	10T TURRET
00808	R0202.3	T12.TUR	12T TURRET
00809	R0300.0	M0	M0 CODE
00810	R0300.1	M1	M1 CODE

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00811	R0300.2	M2	M2 CODE
00812	R0300.3	M3	M3 CODE
00813	R0300.4	M4	M4 CODE
00814	R0300.5	M5	M5 CODE
00815	R0300.6	M6	M6 CODE
00816	R0300.7	M7	M7 CODE
00817	R0301.0	M8	M8 CODE
00818	R0301.1	M9	M9 CODE
00819	R0301.2		M10 CODE
00820	R0301.3	M11	M11 CODE
00821	R0301.4	M12	M12 CODE
00822	R0301.5		M13 CODE
00823	R0301.6		M14 CODE
00824	R0301.7		M15 CODE
00825	R0302.0		M16 CODE
00826	R0302.1	M17	M17 CODE
00827	R0302.2	M18	M18 CODE
00828	R0302.3		M19 CODE
00829	R0302.4		M20 CODE
00830	R0302.5	M21	M21 CODE
00831	R0302.6	M22	M22 CODE
00832	R0302.7	M23	M23 CODE
00833	R0303.0	M24	M24 CODE
00834	R0303.4	M28	M28 CODE
00835	R0303.5	M29	M29 CODE
00836	R0303.6	M30	M30 CODE
00837	R0303.7	M31	M31 CODE
00838	R0304.0	M32	M32 CODE
00839	R0304.1	M33	M33 CODE
00840	R0304.2	M34	M34 CODE
00841	R0304.3	M35	M35 CODE
00842	R0304.4	M36	M36 CODE
00843	R0304.5	M37	M37 CODE
00844	R0304.6	M38	M38 CODE
00845	R0304.7	M39	M39 CODE
00846	R0305.0	M40	
00847	R0305.1	M41	
00848	R0305.2	M42	
00849	R0305.3	M43	
00850	R0305.4	M44	
00851	R0305.5	M45	
00852	R0305.6	M46	

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
00853	R0305.7	M47	
00854	R0306.0	M48	
00855	R0306.1	M49	
00856	R0306.2	M50	
00857	R0306.3	M51	
00858	R0306.4	M52	
00859	R0306.5	M53	
00860	R0306.6	M54	
00861	R0306.7	M55	
00862	R0307.0	M56	
00863	R0307.1	M57	
00864	R0307.2	M58	
00865	R0307.3	M59	
00866	R0307.4	M60	
00867	R0307.5	M61	
00868	R0307.6	M62	
00869	R0307.7	M63	
00870	R0308.0	M64	
00871	R0308.1	M65	
00872	R0308.2	M66	
00873	R0308.3	M67	
00874	R0308.4	M68	
00875	R0308.5	M69	
00876	R0308.6	M70	
00877	R0308.7	M71	
00878	R0309.0	M72	
00879	R0309.1	M73	
00880	R0309.2	M74	
00881	R0309.3	M75	
00882	R0309.4	M76	
00883	R0309.5	M77	
00884	R0309.6	M78	
00885	R0309.7	M79	
00886	R0310.0	M80	M80 CODE
00887	R0310.1	M81	M81 CODE
00888	R0310.2	M82	M82 CODE
00889	R0310.3	M83	M83 CODE
00890	R0310.4	M84	M84 CODE

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00891	R0310.5	M85	M85 CODE
00892	R0310.6	M86	M86 CODE
00893	R0310.7	M87	M87 CODE
00894	R0311.0	M88	M88 CODE
00895	R0311.1	M89	M89 CODE
00896	R0311.2	M90	M90 CODE
00897	R0311.3	M91	M91 CODE
00898	R0311.4	M92	M92 CODE
00899	R0311.5	M93	M93 CODE
00900	R0311.6	M94	M94 CODE
00901	R0311.7	M95	M85 CODE
00902	R0312.0	M96	
00903	R0312.1	M97	
00904	R0312.2	M98	
00905	R0312.3	M99	
00906	R0312.4	M100	
00907	R0312.5	M101	
00908	R0312.6	M102	
00909	R0312.7	M103	
00910	R0313.0	M104	
00911	R0313.1	M105	
00912	R0313.2	M106	
00913	R0313.3	M107	
00914	R0313.4	M108	
00915	R0313.5	M109	
00916	R0330.6	M30.H	M30 HOLD
00917	R0330.7	M30OFE	M30 HOLD OFF ENABLE
00918	R0331.1	M30HOF	M30 HOLD OFF
00919	R0331.2	M30H.T	M30 HOLD ON TIMER
00920	R0333.2	NC.AL	NC ALARM HOLD
00921	R0337.3	M80.H	M80 HOLD
00922	R0337.4	M85.H	M85 HOLD
00923	R0337.5	ORI.EN	SP. ORI. ENABLE
00924	R0338.5	M7M8OF	COOLANT/AIR OFF
00925	R0350.0	M30.CP	M30 COUNTER PULSE
00926	R0350.1	COU.OV	COUNTER OVER
00927	R0350.4	AUPO.H	AUPO HOLD
00928	R0360.0	LUB.ON	LUBE ON TIMER COUNTER 2
00929	R0360.1	LUB.OF	LUBE OFF TIMER COUNTER 3
00930	R0400.6	MARK	



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00931	R0500.0	L1	LOGIC 1
00932	R0500.1	M00	PROGRAM STOP
00933	R0500.2	M01	OPTION PROGRAM STOP
00934	R0500.3	M02	PROGRAM END
00935	R0500.4	M03	SPINDLE C.W
00936	R0500.5	M04	SPINDLE C.C.W
00937	R0500.6	M05	SPINDLE STOP
00938	R0500.7	M06	ATC MACRO
00939	R0501.0	M07	WORKPIECE BLAST ON
00940	R0501.1	M08	COOLANT ON
00941	R0501.2	M09	COOLANT/KIT OFF
00942	R0501.3	M10	CUT BLOW AIR OFF
00943	R0501.6	M13	SP CW AND COOLANT ON
00944	R0501.7	M14	SP CCW AND COOLANT ON
00945	R0502.0	M15	CHIP FLUSH PUMP ON
00946	R0502.1	M16	CHIP FLUSH PUMP OFF
00947	R0502.4	M19	SPINDLE ORIENT ON
00948	R0502.5	M20	SPINDLE ORIENT OFF
00949	R0503.2	M25	A AXIS UNCLAMP
00950	R0503.3	M26	A AXIS CLAMP
00951	R0503.4	M27	A AXIS INDEX
00952	R0504.2	M33.A	M CODE OUTPUT 1
00953	R0504.3	M34.A	M CODE OUTPUT 2
00954	R0504.4	M35.A	M CODE OUTPUT 3
00955	R0504.5	M36.A	M CODE OUTPUT 4
00956	R0504.6	M37.A	
00957	R0504.7	M38.A	
00958	R0505.6	M45.A	
00959	R0505.7	M46.A	
00960	R0506.1	M48.A	
00961	R0506.3	M50.A	
00962	R0506.4	M51.A	
00963	R0506.7	M54.A	
00964	R0507.0	M55.A	
00965	R0507.3	M58.A	
00966	R0507.4	M59.A	
00967	R0508.3	M66.A	
00968	R0508.4	M67.A	
00969	R0508.5	M68.A	GEAR CHANGE TO LOW
00970	R0508.6	M69.A	GEAR CHANGE TO HIGH

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00971	R0508.7	M70.A	
00972	R0509.0	M71.A	
00973	R0509.1	M72.A	
00974	R0509.2	M73.A	
00975	R0509.3	M74.A	
00976	R0509.4	M75.A	
00977	R0511.7	M94.A	
00978	R0512.0	M95.A	
00979	R0512.6	SFIN	S CODE FINISH
00980	R0513.0	JOG	JOG MODE
00981	R0513.1	MANUAL	MANUAL MODE
00982	R0513.2	ZRNFIN	AXES REF. RETURN FINISH
00983	R0513.3	ZRN LH	ZERO RETURN ACTIVE
00984	R0513.4	FL TMR	FLASH ON/OFF TIMER
00985	R0513.5	FLASH	FLASH ON/OFF
00986	R0513.6	FL TRG	FLASH ON/OFF TRIGGER
00987	R0513.7	AUTO L H	AUTO LATCH
00988	R0515.7	STOP	EMG & RESET
00989	R0516.0	RDY1	NC READY
00990	R0516.1	F.SW+A	FOOT S/W ON PULSE AUX
00991	R0516.2	F.SW+	FOOT S/W ON PULSE
00992	R0516.3	GCHSTB	GEAR CHANGE STANDBY
00993	R0516.4	HGCH	HIGH GEAR CHANGE
00994	R0516.5	JFSPOK	JIG FTSW PULSE OK
00995	R0516.6	ST+	CYCLE START ON PULSE
00996	R0516.7	LGCH1	LOW GEAR CHANGE 1
00997	R0517.0	L1DL	LOGIC 1 DELAY
00998	R0517.1	O.SA	POWER ON INITIAL PULSE AUX
00999	R0517.2	O.S	POWER ON INITIAL PULSE
01000	R0517.3	GRHIGH	GEAR HIGH
01001	R0517.4	GRLOW	GEAR LOW
01002	R0517.5	GRCHG	GEAR CHANGE
01003	R0517.6	LGCH	LOW GEAR CHANGE
01004	R0517.7	HGCH1	HIGH GEAR CHANGE 1
01005	R0518.0	GEAROK	GEAR OK
01006	R0518.1	TMRO1	HIGH GEAR CHANGE TIMER
01007	R0518.2	TMRO2	LOW GEAR CHANGE TIMER
01008	R0518.3	ORCM1	SPINDLE ORIENTATION
01009	R0518.4	M06-	M06 OFF PULSE
01010	R0518.5	M06-A	M06 OFF PULSE AUX

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
01011	R0518.6	SPOK	SPINDLE OK
01012	R0518.7	MAN-	MANUAL MODE OFF PULSE
01013	R0519.0	MAN-A	MANUAL MODE OFF PULSE AUX
01014	R0519.1	MSSTP	MANUAL SPINDLE STOP
01015	R0519.2	SPNOP	SPINDLE NO PAUSE
01016	R0519.3	SPOK1	SPINDLE OK 1
01017	R0519.4	SP-FOR	SPINDLE C.W
01018	R0519.5	SP-REV	SPINDLE C.C.W
01019	R0519.6	SPDIR	SPINDLE DIR FLAG
01020	R0520.0	SP-HLD	SPINDLE RESET HOLD
01021	R0520.1	RGDK	RIGID TAPPING KEEP
01022	R0520.2	H/LOVT	HIGH/LOW SPEED CHANGE OVT
01023	R0520.3	RGDENB	RIGID TAPPING ENABLE
01024	R0520.4	RGDEND	RIGID TAPPING END
01025	R0520.5	RGDFIN	RIGID TAPPING FINISH
01026	R0520.6	TMR03	RIGID TAPPING FINISH DELAY
01027	R0521.0	RGDCW	RIGID TAPPING C.W
01028	R0521.1	RGDCCW	RIGID TAPPING C.C.W
01029	R0521.2	GCHSTP	GEAR CHANGE STOP
01030	R0521.3	M29DL	M29 FUNCTION DELAY
01031	R0521.4	AUTO-	AUTO MODE OFF PULSE
01032	R0521.5	AUTO-A	AUTO MODE OFF PULSE AUX
01033	R0521.6	ST+A	CYCLE START ON PULSE AUX
01034	R0521.7	SPROT	SP CW/CCW FOR GEAR CHANGE
01035	R0522.0	>25%	RAPID >25%
01036	R0522.1	MCLN+	CLNT MANUAL ON PULSE
01037	R0522.2	MCLN+A	CLNT MANUAL ON PULSE AUX
01038	R0522.3	ACLN+	CLNT AUTO ON PULSE
01039	R0522.4	ACLN+A	CLNT AUTO ON PULSE AUX
01040	R0522.5	+4A	+J4 AUX
01041	R0522.6	-4A	-J4 AUX
01042	R0522.7	JOGOK	JOG FEED OK
01043	R0523.0	DRITL7	DOOR INTERLOCK 7
01044	R0523.1	DRITL1	DOOR INTERLOCK 1
01045	R0523.2	DRITL2	DOOR INTERLOCK 2
01046	R0523.3	DRITL3	DOOR INTERLOC 3
01047	R0523.4	DRITL4	DOOR INTERLOCK 4
01048	R0523.5	DRITL5	DOOR INTERLOCK 5
01049	R0523.6	DRITL6	DOOR INTERLOCK 6
01050	R0523.7	<370	JOG FEEDRATE < 370MM



NO.	ADDRESS	SYMBOL	FIRST COMMENT
01051	R0524.0	>370	JOG FEEDRATE > 370MM
01052	R0524.1	STTEMP	CYCLE START TEMP
01053	R0524.2	SPTEMP	FEED HOLD TEMP
01054	R0524.3	MCHKEP	MODE CHANGE KEEP
01055	R0524.4	ZPXKEP	X HOME KEEP
01056	R0524.5	ZPYKEP	Y HOME KEEP
01057	R0524.6	RST.DLY	RESET DELAY TIMER
01058	R0524.7	ZP4KEP	4 HOME KEEP
01059	R0525.0	NOBT	NO BIG TOOL
01060	R0525.1	SP=EMP	SP TOOL =EMPTY
01061	R0525.2	SP=POT	SP TOOL NO=STANDBY POT NO
01062	R0525.3	PT=EMP	POT TOOL =EMPTY
01063	R0525.4	SP=BT	SP TOOL = BIG TOOL
01064	R0525.5	PT=BT	POT TOOL = BIG TOOL
01065	R0525.6	SEMPW	SEARCH EMPTY TOOL
01066	R0525.7	TMB29	SPINDLE CW/CCW DELAY
01067	R0526.0	BTSTB	BIG TOOL STANDBY
01068	R0526.1	BTCK	WITH BIG TOOL?
01069	R0526.2	EMPCK	SP/STB T NO. =EMPTY ?
01070	R0526.3	ORDCK	SP/STB T NO. =ORDINARY ?
01071	R0526.4	S,PCK	SP TOOL = STANDBY POT TOOL ?
01072	R0526.5	MEMPT	MEMORIZE POT TOOL
01073	R0526.6	SRHEMP	SEARCH EMPTY TOOL
01074	R0526.7	TCH1	TOOL CHANGE 1
01075	R0527.0	SRHMPT	SEARCHING MEMORY POT
01076	R0527.1	TCH2	TOOL CHANGE 2
01077	R0527.2	ATCEND	ATC END
01078	R0527.3	M6TMP	TOOL CHANGE TEMP
01079	R0527.5	SRHFIN	TOOL SEARCH FIN
01080	R0528.0	SPKEP	FEED HOLD KEEP
01081	R0528.1	SPR-	SPINDLE OFF PULSE
01082	R0528.2	SPR-A	SPINDLE OFF PULSE AUX
01083	R0528.3	LUBONT	LUBE ON TIMER
01084	R0528.4	LUNOFT	LUBE OFF TIMER
01085	R0528.5	LBONT+	LUBE ON TIMER PULSE
01086	R0528.6	LBT+A	LUBE ON TIMER PULSE AUX
01087	R0528.7	GRINP1	GEAR IN-POSITION 1
01088	R0529.0	ARMSTP	ARM STOP POINT
01089	R0529.1	MGINP	MAG IN-POSITION
01090	R0529.2	ESCAP	ESCAPE ARM STOP POINT

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01091	R0529.3	A60AR	ARM 60 ROTATION ARRIVAL
01092	R0529.4	A180AR	ARM 180 ROTATION ARRIVAL
01093	R0529.5	A-60AR	ARM -60 ROTATION ARRIVAL
01094	R0529.6	MGCTA	MAG COUNTER A
01095	R0529.7	MGIP+	MAG IN-POSITION PULSE
01096	R0530.0	CVY.JR	CVY JOG CCW REG.
01097	R0530.1	CVYCWR	CVY CW REG.
01098	R0530.2	CVY.M	CVY. MANUAL FOR.
01099	R0530.3	CVY.PF	CVY. MANUAL PULSE OFF
01100	R0530.4	CVY.MH	CVY. MANUAL HOLD
01101	R0530.5	MGCCWA	MAG CCW AUX
01102	R0530.6	MGMCW1	MAG MANUAL CW ON
01103	R0530.7	MGCCW1	MAG MANUAL CCW ON
01104	R0531.0	MGCW	MAG CW
01105	R0531.1	MCWDEC	MAG CW DEC.
01106	R0531.2	MGCWDL	MAG CW DELAY
01107	R0531.3	MGCCW	MAG CCW
01108	R0531.4	MAGOK	MAG OK
01109	R0531.5	MCCWDE	MAG CCW DEC
01110	R0531.6	MCCWDL	MAG CCW DELAY
01111	R0531.7	MGCT-	MAG COUNT OFF PULSE
01112	R0532.0	MGRSTB	MAG ROT STAND-BY
01113	R0532.1	MAGON2	MAG ON 2
01114	R0532.2	MAGOK1	MAG OK 1
01115	R0532.3	MAGCHK	MAG ROT CHECK
01116	R0532.5	PTDNOK	POT DOWN OK
01117	R0532.6	TUCLFA	AUTO TOOL UNCLAMP FAIL
01118	R0532.7	TCLFA	AUTO TOOL CLAMP FAIL
01119	R0533.0	AMIDDL	ARM MIDDLE POINT DELAY
01120	R0533.1	AMID+	ARM MIDDLE POINT ON PULSE
01121	R0533.2	AMID+A	ARM MID POINT ON PULSE AUX
01122	R0533.3	AMIDK	ARM MID POINT KEEP
01123	R0533.4	AM0	ARM RETURN POINT
01124	R0533.5	AM0+	ARM RETURN POINT ON PULSE
01125	R0533.6	AM0+A	ARM RTN POINT ON PULSE AUX
01126	R0533.7	AM0K	ARM RETURN POINT KEEP
01127	R0534.0	TF1	TOOL SEARCH ENABLE
01128	R0534.1	TF1DL	TOOL SEARCH ENABLE DELAY
01129	R0534.2	TSRHON	TOOL SEARCH ON
01130	R0534.3	TSRH+	TOOL SEARCH ON PULSE
01131	R0534.4	TSRH+A	TOOL SEARCH ON PULSE AUX
01132	R0534.5	SHERR	TOOL ON. SEARCH ERROR
01133	R0534.7	RTO	MAG ROTATION 0
01134	R0535.0	MGROT	MAG ROTATION CW/CCW
01135	R0535.1	TDEC	TOOL SEARCH DEC
01136	R0535.2	TDECK	TOOL SEARCH DEC KEEP

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01137	R0535.3	TCOIN	T CODE = STANDBY TOOL
01138	R0535.4	TCOIN1	T CODE = STANDBY TOOL 1
01139	R0535.5	TCOSP	T CODE = SP TOOL
01140	R0535.6	TCOSP1	T CODE = SP TOOL 1
01141	R0536.0	MGACW	MAG AUTO CW
01142	R0536.1	MGACCW	MAG AUTO CCW
01143	R0536.2	MOVER1	DATA MOVE ERROR 1
01144	R0536.3	MOVER2	DATA MOVE ERROR 2
01145	R0536.4	MGCKDL	MAG CHECK DELAY
01146	R0536.5	MG-ERR	MAG ERROR
01147	R0536.6	RDY2	NC READY STATE
01148	R0536.7	A60	ARM 60 ROTATION
01149	R0537.0	A60-	ARM 60 ROTATION OFF PULSE
01150	R0537.1	A60-A	ARM 60 ROT OFF PULSE AUX
01151	R0537.2	A180	ARM 180 ROTATION
01152	R0537.3	A180-	ARM 180 ROT OFF PULSE
01153	R0537.4	A180-A	ARM 180 ROT OFF PULSE AUX
01154	R0537.5	JGBCLK	JIG B CLAMP KEEP
01155	R0537.6	JIGUCL	JIG UNCLAMP
01156	R0537.7	TUCLAU	TOOL UNCLAMP AUX
01157	R0538.0	ATUCL	AUTO TOOL UNCLAMP
01158	R0538.1	MAGON	MAG ON
01159	R0538.3	M06ENB	M06 ENABLE
01160	R0538.4	M06+	M06 ENB ON PULSE
01161	R0538.5	M06+A	M06 ENB ON PULSE AUX
01162	R0538.6	M6ENBK	M06 ENB KEEP
01163	R0538.7	ATCOK	ATC OK
01164	R0539.0	ATCOK1	ATC OK 1
01165	R0539.1	TCHP	TOOL CHANGE POINT
01166	R0539.2	ARM0DL	ARM 0 POINT
01167	R0539.3	PTUPDL	POT UP DELAY
01168	R0539.4	PTDNDL	POT DOWN DELAY
01169	R0539.5	TCLDL	SPINDLE TOOL CLAMP DELAY
01170	R0539.6	TUCLDL	SPINDLE TOOL UNCLAMP DELAY
01171	R0539.7	ATCSTB	ATC STANDBY
01172	R0540.0	A1.POT.DOWN	POT DOWN
01173	R0540.1	A2.ARM.60	ARM 60
01174	R0540.2	PRECLP	TOOL UNCLAMP WHEN ARM 60 ACTIV
01175	R0540.3	A3.SP.UNCLP	SPINDLE TOOL UNCLAMP
01176	R0540.4	A4.ARM.180	ARM 180
01177	R0540.5	SPBLWK	SPINDLE AIR BLOW KEEP
01178	R0540.6	SPBLDL	SPINDLE AIR BLOW DELAY
01179	R0540.7	A5.SP.CLP	SPINDLE TOOL CLAMP
01180	R0541.0	A6.ARM.-60	ARM -60

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01181	R0541.1	A7.POT.UP	POT UP
01182	R0541.2	A.STEP.1	ARM STEP 1 / 60
01183	R0541.3	A.STEP.2	ARM STEP 2 / 180
01184	R0541.4	A.STEP.3	ARM STEP 3 / SP AIR BLOW
01185	R0541.5	A.STEP.4	ARM STEP 4 / -60
01186	R0541.6	A.STEP.5	ATC STEP 5 / POT UP
01187	R0541.7	A.STEP.6	ATC STEP6 (ATC END)
01188	R0542.0	A.STEP.FIN	ATC STEP FINISH
01189	R0542.1	ATFIN1	ATC FINISH 1
01190	R0542.2	SP-CLP	SPINDLE CLAMP
01191	R0542.3	SP.UNCLP	SPINDLE UNCLAMP
01192	R0542.4	M72OK	M72 OK
01193	R0542.5	TAIL.H	TAIL HOLD
01194	R0542.6	M74OK	M74 OK
01195	R0542.7	M74A	M74 ACTIVE (ARM 180)
01196	R0543.0	M76OK	M76 OK
01197	R0543.1	M76A	M76 ACTIVE (ARM -60)
01198	R0543.2	ASEQ1	ARM SEQ1
01199	R0543.3	ASEQ2	ARM SEQ2
01200	R0543.4	ASEQ3	ARM SEQ3
01201	R0543.5	M74AR	M74 ROT ARRIVAL
01202	R0543.6	MAGINP	MAG. IN-POSITION
01203	R0543.7	A4-1	ARM 180
01204	R0544.0	JX.SEL	JOG X SELECT
01205	R0544.1	JZ.SEL	JOG Z SELECT
01206	R0544.2	ATCAL1	ATC ALARM 1
01207	R0544.3	2NDREF	2ND. REFERENCE POINT
01208	R0544.4	ATCITL	ATC INTERLOCK
01209	R0544.5	ARJGSP	ARM JOG STOP
01210	R0544.6	ARJGPA	ARM JOG PAUSE
01211	R0544.7	ARJGDL	ARM JOG DELAY
01212	R0545.3	M19.FIN	M19 FINISHED
01213	R0545.4	M6TMP+	M06 PULSE STANDBY
01214	R0545.5	MGON2	MAG ON 2
01215	R0545.6	ATC+K	ATC PULSE KEEP
01216	R0545.7	M6TMPA	ATC PULSE AUX
01217	R0546.0	M95KEP	M95 KEEP STATE (LADDER TOP)
01218	R0546.1	ARM0A	ARM 0 POINT AUX
01219	R0546.2	AMIDA	ARM MID POINT AUX
01220	R0546.3	ARMSPA	ARM STOP POINT AUX



NO.	ADDRESS	SYMBOL	FIRST COMMENT
01221	R0546.4	0	ZERO POINT
01222	R0546.5	F0+A	F0 ON PULSE AUX
01223	R0546.6	F0+	F0 ON PULSE
01224	R0546.7	ARMJOG	ARM JOG
01225	R0547.0	SPON	SPINDLE ON
01226	R0547.1	L1DL1	LOGIC 1 DELAY 1
01227	R0547.3	ARM0+A	ARM 0 ON PULSE AUX
01228	R0547.4	ARM0+	ARM 0 ON PULSE
01229	R0547.5	AM60+A	ARM 60 ON PULSE AUX
01230	R0547.6	AM60+	ARM 60 ON PULSE
01231	R0548.1	M95JOG	M95 LADDER END
01232	R0548.6	M95-	M95 OFF PULSE
01233	R0548.7	M95-A	M95 OFF PULSE AUX
01234	R0549.0	M95TCH	M95 TOOL CHANGE PULSE
01235	R0549.2	ARM0	ARM RETURN POINT
01236	R0549.3	ARM60	ARM MIDDLE POINT
01237	R0550.0	SPSTOP	SP. STOP REG.
01238	R0550.1	ATSTB1	ATC STANDBY 1
01239	R0551.0	4MUCL	4TH. MANUAL UNCLAMP
01240	R0551.1	4AUCL	4TH. AUTO UNCLAMP
01241	R0551.5	4UCLP	4TH UNCLAMP
01242	R0551.6	GCHFAL	GEAR CHANGE FAILURE
01243	R0551.7	GRINP	GEAR IN-POSITION
01244	R0552.0	A60K	ARM 60 POINT LATCH
01245	R0552.1	A180K	ARM 180 POINT LATCH
01246	R0552.2	60KPDL	ARM MIDDLE POINT LATCH DELAY
01247	R0552.3	AZR+	ARM ZERO POINT ON PULSE
01248	R0552.4	AZR-	ARM ZERO POINT OFF PULSE
01249	R0552.5	AZR+A	ARM ZERO POINT PULSE AUX
01250	R0552.6	AMD+	ARM MID POINT ON PULSE
01251	R0552.7	AMD-	ARM MID POINT OFF PULSE
01252	R0553.0	AMD+A	ARM MID POINT PULSE AUX
01253	R0553.1	M70+	M70 ON PULSE
01254	R0553.2	M70+A	M70 ON PULSE AUX
01255	R0553.3	JOGOFD	JOG MODE OFF DELAY
01256	R0553.4	AM60A	ARM MIDDLE POINT
01257	R0553.5	AM0A	ARM RETURN POINT
01258	R0553.6	M94+	M94 ON PULSE
01259	R0553.7	M94+A	M94 ON PULSE AUX
01260	R0554.0	JBFS+	JIG B FTSW ON PULSE

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01261	R0554.1	JBFS+A	JIG B FTSW ON PULSE AUX
01262	R0554.2	JGBUCL	JIG B UNCLAMP
01263	R0554.3	>JBCL'	JIG B CLAMP AUX
01264	R0554.4	>JBUC'	JIG B UNCLAMP AUX
01265	R0554.5	JBCLDL	JIG B CLAMP DELAY
01266	R0554.6	>M37'	M37 OUTPUT AUX
01267	R0554.7	>M38'	M38 OUTPUT AUX
01268	R0555.0	X>-30	X COORDINATE > -30MM
01269	R0555.1	X>30	X COORDINATE > 30MM
01270	R0555.2	Y>-30	Y COORDINATE > -30MM
01271	R0555.3	Z>-30	Z COORDINATE > -30MM
01272	R0555.4	WINFIN	WINDOW FUNCTION FIN
01273	R0555.5	M70FIN	TOOL DATA WRITE FINISH
01274	R0555.6	GCHOVR	GEAR CHANGE OVER
01275	R0555.7	T1+	TMR01 ON PULSE
01276	R0556.0	AP01	AUTO POWER OFF 1
01277	R0556.1	CL-ON1	COOLANT ON 1
01278	R0556.2	CL-OF1	COOLANT OFF 1
01279	R0556.3	KTON1	KIT ON 1
01280	R0556.4	CL-OFS	COOLANT OFF SWITCH
01281	R0556.5	M0/M1	M00/M01 FUNCTION
01282	R0556.6	M2/M30	M02 M30 FUNCTION
01283	R0556.7	M0/1CL	M00/M01 RELEASE
01284	R0557.0	MSTPV	MACHINE STOP VALID
01285	R0557.1	MSTPD	MACHINE STOP DELAY
01286	R0557.2	MSTPR	MACHINE STOP RESET
01287	R0557.3	SRNR1	PROGRAM RESTART ON 1
01288	R0557.4	M3R	SPINDLE C.W REGISTER
01289	R0557.5	M4R	SPINDLE C.C.W REGISTER
01290	R0557.6	T1+A	TMR01 ON PULSE AUX
01291	R0557.7	GCHEND	GEAR CHANGE END
01292	R0558.0	CYST+	CYCLE START ON PULSE
01293	R0558.1	SPRES	SPINDLE RESTART
01294	R0558.2	SPRFIN	SP RESTART FINISH
01295	R0558.3	STON	CYCLE START VALID
01296	R0558.4	CYST+A	CYCLE START ON PULSE AUX
01297	R0558.5	SPCWP	SPINDLE C.W PULSE
01298	R0558.6	SPCCWP	SPINDLE CCW PULSE
01299	R0558.7	SPOK2	SPINDLE OK 2
01300	R0559.0	OMSCHK	SPINDLE OIL MIST CHECK DELAY

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01301	R0559.1	WKB-A	WORKPIECE BLAST AUX
01302	R0559.2	WBONDL	WORK BLAST ON DELAY
01303	R0559.3	WBOFDL	WORK BLAST DELAY
01304	R0559.4	ALR	ALARM LAMP REGISTER
01305	R0559.5	CVONDL	CHIP CW ON DELAY
01306	R0559.6	DRITL	DOOR INTERLOCK
01307	R0559.7	CVOFDL	CHIP CW OFF DELAY
01308	R0560.0	O.S-2	EMG ONE SHOOT
01309	R0560.1	MNTN	MAINTENANCE MODE
01310	R0560.2	OILAL	SP OIL COOLER ALARM LATCH
01311	R0560.3	X-MIR	X-AXIS MIRROR IMAGE LATCH
01312	R0560.4	Y-MIR	Y-AXIS MIRROR IMAGE LATCH
01313	R0560.5	4-MIR	4TH AXIS MIRROR IMAGE LATCH
01314	R0560.7	JIGCLK	JIG CLAMP KEEP
01315	R0561.0	JGCLDL	JIG CLAMP DELAY
01316	R0561.1	JGCLOV	JIG CLAMP OVERTIME
01317	R0561.2	STL-	STL OFF PULSE
01318	R0561.3	STL+A	STL ON PULSE AUX
01319	R0561.4	STL+	STL ON PULSE
01320	R0561.5	O.S-2A	EMG O.S_2 AUX
01321	R0561.6	LVLERR	CTS SYSTEM LEVEL ERROR
01322	R0561.7	CLNLDL	COOLANT LOW DELAY
01323	R0562.0	CTSSTB	CTS STANDBY
01324	R0562.1	CLNFP	COOLANT TANK FULL PUMP
01325	R0562.2	FILLP	FILTER TANK LOW PUMP
01326	R0562.3	CLFPDL	COOLANT TANK FULL PUMP DELAY
01327	R0562.4	FILPDL	FILTER TANK LOW PUMP DELAY
01328	R0562.5	M48-1	M48 FOR CTS
01329	R0562.6	FILON	FILTER ON
01330	R0562.7	PUMP1	PUMP1 ON
01331	R0563.0	LVLOK	CTS SYSTEM LEVEL OK
01332	R0563.1	CTSON	CTS ON
01333	R0563.2	KITON	KIT ON
01334	R0563.3	STLKP	STL KEEP UNDER MDI
01335	R0563.4	DROPOF	M30 DOOR OPEN OFF
01336	R0564.0	M84+A	APC M84/M91 ON PULSE AUX
01337	R0564.1	M84+	APC M84/M91 ON PULSE
01338	R0564.2	AP,ENA	APC ENABLE(AUTO CHANGE)
01339	R0564.3	AP,DIS	APC DISABLE(AUTO CHANGE)
01340	R0564.4	TMRB25	APC NOT READY DELAY

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01341	R0564.5	TMRB26	APC UP/DOWN CHECK
01342	R0564.6	AP,MVA	APC M84,M85,M91,M92 AUX
01343	R0564.7	AP,MOE	APC EXT./RET. ENABLE
01344	R0565.0	TMRB27	APC EXT./RET. CHECK
01345	R0565.1	TMRB28	APC OPEN/CLOSE CHECK
01346	R0565.2	AP,ITL	APC X,Y AXIS INTERLOCK
01347	R0565.3	AP,XI	APC X AXIS INTERLOCK
01348	R0565.4	AP,FIN	APC M CODE FINISH
01349	R0565.5	AP,MV+	APC EX/RE ON PULSE
01350	R0565.6	AP,M+A	APC EX/RE ON PULSE AUX
01351	R0565.7	A&T-M	AUTO & TAPE MODE
01352	R0566.0	AP,COP	APC COVER OPEN
01353	R0566.1	AP,ON	APC VALID
01354	R0566.2	AP-ST+	APC CYCLE START ON PULSE
01355	R0566.3	APST+A	APC CYCLE START PULSE AUX
01356	R0566.4	AP,ESS	ESC APC ROTOR STOP POINT
01357	R0566.5	AP,RAR	APC ROTATE ARRIVAL
01358	R0566.6	AP,MOC	APC EXT/RET CHECK AUX
01359	R0570.0	\$]X	JOG +X AXIS PB. AUX
01360	R0570.1	\$]-X	JOG -X AXIS PB. AUX
01361	R0570.2	\$]Y	JOG +Y AXIS PB. AUX
01362	R0570.3	\$]-Y	JOG -Y AXIS PB. AUX
01363	R0570.4	\$]Z	JOG +Z AXIS PB. AUX
01364	R0570.5	\$]-Z	JOG -Z AXIS PB. AUX
01365	R0570.6	\$]SP	FEED HOLD PB. AUX
01366	R0570.7	\$]ST	CYCLE START PB. AUX
01367	R0571.0	\$]-4	JOG -4 AXIS PB. AUX
01368	R0571.1	\$]+4	JOG +4 AXIS PB. AUX
01369	R0571.2	\$]F0	F0 PB. AUX
01370	R0571.3	\$]AFL	AFL PB. AUX
01371	R0571.4	\$]MLK	MACHINE LOCK PB. AUX
01372	R0571.5	\$]ABS	ABS PB. AUX
01373	R0572.0	\$]SBK	SINGLE BLOCK PB. AUX
01374	R0572.1	\$]ZNG	Z AXIS CANCEL PB. AUX
01375	R0572.2	\$]BDT	BLOCK DELETET PB. AUX
01376	R0572.3	\$]OSP	OPTION STOP PB. AUX
01377	R0572.4	\$]SRN	PROGRAM RESTART PB. AUX
01378	R0572.5	\$]DRN	DRY RUN PB. AUX
01379	R0572.6	\$]HX	HAND X AXIS
01380	R0572.7	\$]HY	HAND Y AXIS



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NO.	ADDRESS	SYMBOL	FIRST COMMENT
01381	R0573.0	\$MD1	MODE SELECT 1
01382	R0573.1	\$MD2	MODE SELECT 2
01383	R0573.2	\$MD4	MODE SELECT 4
01384	R0573.3	\$]RPD	RAPID MODE
01385	R0573.4	\$]ZRN	HOME MODE
01386	R0573.6	\$]HZ	HAND Z AXIS
01387	R0573.7	\$]H4	HAND 4 AXIS
01388	R0574.0	\$]100%	SPINDLE 100%
01389	R0574.1	\$]DEC	SPINDLE DEC
01390	R0574.2	\$]INC	SPINDLE INC
01391	R0574.4	\$FV1	FEED RATE DATA 1
01392	R0574.5	\$FV2	FEED RATE DATA 2
01393	R0574.6	\$FV4	FEED RATE DATA 4
01394	R0574.7	\$FV8	FEED RATE DATA 8
01395	R0575.0	\$]CL.M	MANUAL COOLANT
01396	R0575.1	\$FV16+	FEED RATE DATA 16
01397	R0575.2	\$]CL.A	AUTO COOLANT
01398	R0575.3	\$]MGON	MAGAZINE ON
01399	R0575.5	\$WK-LP	WORK LAMP PB.
01400	R0575.6	\$]MP1	HAND *10
01401	R0575.7	\$]MP2	HAND *100
01402	R0576.0	\$]CPCW	CHIP COVEYOR CW PB.
01403	R0576.1	\$]CPSP	CHIP CONVEYOR STOP PB.
01404	R0576.3	\$]SORI	SPINDLE ORIENT
01405	R0576.4	\$]SRST	SPINDLE RESET
01406	R0576.6	\$F0%	RAPID RATE 0%
01407	R0576.7	\$F25%	RAPID RATE 25%
01408	R0577.0	\$]MGCW	MAGAZINE CW PB.
01409	R0577.1	\$]F8	
01410	R0577.2	\$]F9	
01411	R0577.3	\$]SPCW	SPINDLE CW
01412	R0577.4	\$]SSTP	SPINDLE STOP
01413	R0577.5	\$]SCCW	SPINDLE CCW
01414	R0577.6	\$F50%	RAPID RATE 50%
01415	R0577.7	\$F100%	RAPID RATE 100%
01416	R0578.0	\$]*SP	FEED HOLD
01417	R0578.1	\$MT2	
01418	R0578.2	\$MT1	
01419	R0578.3	\$]PGM	PROGRAM PROTECT
01420	R0578.4	\$DOOR	DOOR INTERLOCK

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
01421	R0578.5	\$JAPO	AUTO POWER OFF
01422	R0578.6	\$KG2ON	KEY GROUP 2 ON
01423	R0578.7	\$G2ONA	KEY GROUP 2 ON AUX
01424	R0579.0	\$"X1	
01425	R0579.1	\$"X2	
01426	R0579.2	\$"Y1	
01427	R0579.3	\$"Y2	
01428	R0579.4	\$"Z1	
01429	R0579.5	\$"Z2	
01430	R0579.6	\$"B1	
01431	R0579.7	\$"B2	
01432	R0580.0	\$KG1ON	KEY GROUP 1 ON
01433	R0580.1	\$G1ONA	KEY GROUP 1 ON AUX
01434	R0580.2	\$"F0	
01435	R0580.3	\$"AFL	AUX FUNCTION LOCK
01436	R0580.4	\$"MLK	
01437	R0580.5	\$"ABS	
01438	R0580.6	\$"SP	
01439	R0580.7	\$"ST	
01440	R0581.0	\$"SBK	
01441	R0581.1	\$"ZNG	
01442	R0581.2	\$"BDT	
01443	R0581.3	\$"OSP	
01444	R0581.4	\$"SRN	
01445	R0581.5	\$"DRN	
01446	R0582.0	\$"AUTO	
01447	R0582.1	\$"TAPE	
01448	R0582.2	\$"HAN	
01449	R0582.3	THND	TEACH IN HANDLE
01450	R0582.4	TJOG	TEACH IN JOG
01451	R0582.5	\$"100%	
01452	R0582.6	\$"DEC	
01453	R0582.7	\$"INC	
01454	R0583.0	\$"MDI	
01455	R0583.1	\$"EDIT	
01456	R0583.2	\$"RPD	
01457	R0583.3	\$"JOG	
01458	R0583.4	\$"ZRN	
01459	R0583.5	\$"H.0	
01460	R0583.6	\$"H.1	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01461	R0583.7	\$"H.2	
01462	R0584.0	\$"CLM	
01463	R0584.1	\$"F7	
01464	R0584.2	\$"CLA	
01465	R0584.3	\$"MGON	
01466	R0584.4	\$"MCCW	
01467	R0585.0	\$"CVCW	
01468	R0585.1	\$"CVSP	
01469	R0585.2	\$"CCCW	
01470	R0585.3	\$"SORI	
01471	R0585.4	\$"SRST	
01472	R0585.5	\$"SJOG	
01473	R0585.6	\$G1OFD	KEY GROUP 1 OFF DELAY
01474	R0585.7	\$G2OFD	KEY GROUP 2 OFF DELAY
01475	R0586.0	\$"MGCW	
01476	R0586.1	\$"LUBE	
01477	R0586.2	\$"ATRD	
01478	R0586.3	\$"SPCW	
01479	R0586.4	\$"SSTP	
01480	R0586.5	\$"SCCW	
01481	R0586.6	\$"HG	
01482	R0586.7	\$"LGL	
01483	R0589.0	\$"SPAL	
01484	R0589.1	\$"CLAL	
01485	R0589.2	\$"ARAL	
01486	R0590.0	\$"NCAL	
01487	R0590.1	\$"PGSP	
01488	R0590.3	\$"NCRD	
01489	R0590.4	\$LOG1	MEMBRANE LOGIC 1
01490	R0591.0	\$"ATC1	
01491	R0591.1	\$"ATC2	
01492	R0591.2	\$"ATC3	
01493	R0591.3	\$"ATC4	
01494	R0592.0	\$"ATC5	
01495	R0592.1	\$"ATC6	
01496	R0592.2	\$"ATC7	
01497	R0592.7	\$"ATC8	
01498	R0593.3	\$JFSEL	
01499	R0598.0	\$MM/IN	MM/INCH
01500	R0598.1	\$10/1M	10M/1.26M

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01501	R0598.2	\$PLCRD	
01502	R0598.3	\$SP.5%	SPINDLE 5%
01503	R0600.0	CHIPFL	CHIP FLUSHING COOLANT HOLD
01504	R0609.0	APO-PB	AUTO POWER OFF PB.
01505	R0609.2	APO-ON	AUTO POWER OFF -ON
01506	R0610.2	HO-RDY	HOME MODE READY
01507	R0610.3	HOME-Z	HOME START Z AXIS
01508	R0610.5	HO-XYZ	3 AXIS HOME
01509	R0612.2	APCTRB	APC TROUBLESHOOTING
01510	R0630.0	OV1.R	FEEDRATE OV1
01511	R0630.1	OV2.R	
01512	R0630.2	OV4.R	
01513	R0630.3	OV8.R	
01514	R0630.4	OV16.R	
01515	R0657.0	\$CVCW+	CV CW P.B ON PULSE
01516	R0657.1	\$CCW+A	CV CW P.B ON PULSE AUX
01517	R0657.2	CVCW+	CV CW ON PULSE
01518	R0657.3	>X10	INCREMENTAL FEED > X10
01519	R0658.0	MLK-ON	
01520	R0658.1	MLK+	MLK P.B ON PULSE
01521	R0658.2	SRN-ON	
01522	R0658.3	SRN+	SRN P.B ON PULSE
01523	R0658.4	BDT-ON	
01524	R0658.5	BDT+	BDT P.B ON PULSE
01525	R0658.6	OSP-ON	
01526	R0658.7	OSP+	OSP P.B ON PULSE
01527	R0659.0	ZNG-ON	
01528	R0659.1	ZNG+	ZNG P.B ON PULSE
01529	R0659.2	SBK-ON	
01530	R0659.3	SBK+	SBK P.B ON PULSE
01531	R0659.4	DRN-ON	
01532	R0659.5	DRN+	DRN P.B ON PULSE
01533	R0659.6	ABS-ON	
01534	R0659.7	ABS+	ABS P.B ON PULSE
01535	R0660.0	AFL-ON	
01536	R0660.1	AFL+	AFL P.B ON PULSE
01537	R0660.2	MAG-ON	
01538	R0660.3	MGON+	MAG ON P.B ON PULSE
01539	R0660.4	OPKEP	AUTO OPERATION KEEP
01540	R0661.0	>3700	JOG FEEDRATE > 3700MM

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NO.	ADDRESS	SYMBOL	FIRST COMMENT
01541	R0661.3	SSTPK	SPINDLE STOP KEEP
01542	R0666.0	\$J0	JOG FEEDRATE 0
01543	R0666.1	\$J100	JOG FEEDRATE 100
01544	R0666.2	\$J140	JOG FEEDRATE 140
01545	R0666.3	\$J200	JOG FEEDRATE 200
01546	R0666.4	\$J270	JOG FEEDRATE 270
01547	R0666.5	\$J370	JOG FEEDRATE 370
01548	R0666.6	\$J520	JOG FEEDRATE 520
01549	R0666.7	\$J720	JOG FEEDRATE 720
01550	R0667.0	\$J1000	JOG FEEDRATE 1000
01551	R0667.1	\$J1400	JOG FEEDRATE 1400
01552	R0667.2	\$J2000	JOG FEEDRATE 2000
01553	R0667.3	\$J2700	JOG FEEDRATE 2700
01554	R0667.4	\$J3700	JOG FEEDRATE 3700
01555	R0667.5	\$J5200	JOG FEEDRATE 5200
01556	R0667.6	\$J7200	JOG FEEDRATE 7200
01557	R0667.7	J10000	JOG FEEDRATE 10000
01558	R0668.0	G10.6A	G10.6 TEMP
01559	R0668.1	G12.1A	G12.1 TEMP
01560	R0668.2	G12.2A	G12.2 TEMP
01561	R0668.3	G12.3A	G12.3 TEMP
01562	R0668.4	G12.4A	G12.4 TEMP
01563	R0668.5	*FV100	*FV 100% KEEP
01564	R0669.0	\$JINC+	SP INC ON PULSE
01565	R0669.1	\$JDEC+	SP DEC ON PULSE
01566	R0669.2	ERROP	
01567	R0669.3	INCACT	SP INC ACTIVE
01568	R0669.4	DECACT	SP DEC ACTIVE
01569	R0669.5	SOV100	SPINDLE OVERRIDE 100%
01570	R0669.6	SOV110	SPINDLE OVERRIDE 110%
01571	R0669.7	SOV120	SPINDLE OVERRIDE 120%
01572	R0670.0	\$J17	JOG FEEDRATE 17
01573	R0670.1	\$J18	JOG FEEDRATE 18
01574	R0670.2	\$J19	JOG FEEDRATE 19
01575	R0670.3	\$J20	JOG FEEDRATE 20
01576	R0670.4	\$J21	JOG FEEDRATE 21
01577	R0671.0	\$KLDE0	KEY-LED DECODE OP0
01578	R0671.1	\$KLDE1	KEY-LED DECODE OP1
01579	R0671.2	\$KLDE2	KEY-LED DECODE OP2
01580	R0671.3	\$KLDE3	KEY-LED DECODE OP3



NO.	ADDRESS	SYMBOL	FIRST COMMENT
01581	R0671.4	\$KLDE4	KEY-LED DECODE OP4
01582	R0671.5	\$KLDE5	KEY-LED DECODE OP5
01583	R0671.6	\$KLDE6	KEY-LED DECODE OP6
01584	R0671.7	\$KLDE7	KEY-LED DECODE OP7
01585	R0673.0	\$MOD1'	\$MOD1 AUX
01586	R0673.1	\$MOD2'	\$MOD2 AUX
01587	R0673.2	\$MOD4'	\$MOD4 AUX
01588	R0673.3	MDK, EN	MODE KEEP ENABLE
01589	R0673.4	MDK1	MODE KEEP 1
01590	R0673.5	MDK2	MODE KEEP 2
01591	R0680.2	\$MP1	
01592	R0680.3	\$MP2	
01593	R0681.0	\$HX	
01594	R0681.1	\$HY	
01595	R0681.2	\$HZ	
01596	R0681.3	\$H4	
01597	R0694.0	+XHOME	+X HOME
01598	R0694.1	-XHOME	-X HOME
01599	R0694.2	+YHOME	+Y HOME
01600	R0694.3	-YHOME	-Y HOME
01601	R0694.4	+ZHOME	+Z HOME
01602	R0694.5	-ZHOME	-Z HOME
01603	R0695.0	X-ZRN	X AXIS ZERO RETURN
01604	R0695.1	Y-ZRN	Y AXIS ZERO RETURN
01605	R0695.2	Z-ZRN	Z AXIS ZERO RETURN
01606	R0700.3	LSPSK	LOW SPEED SELECT KEEP
01607	R0700.4	HSPSK	HIGH SPEED SELECT KEEP
01608	R0702.0	MHROPP	MANUAL DOOR OPEN
01609	R0703.1	SP100L	SPINDLE OVERRIDE 100
01610	R0704.4	FAN.ON	FAN ON
01611	R0704.5	FAN OFFD	FAN OFF DELAY
01612	R0706.3	LB.PRE.TM	LUBE PRESSURE TIMER
01613	R0706.5	LB.PRE.OK	LUBE PRESSURE OK
01614	R0780.0	M82.as	M82 assist for M19
01615	R0800.0	SRN.P	PROGRAM REATART PULSE
01616	R0800.1	SRN.P2	PROGRAM RESTART PULSE 2
01617	R0800.4	OVC.P	
01618	R0800.5	OVC.P2	
01619	R0800.6		
01620	R0800.7		

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01621	R9000.0	FUNOP0	FUNCTION OPERATION OUTPUT
01622	R9000.1	FUNOP1	FUNCTION OPERATION OUTPUT
01623	R9091.1	ALL.ON	
01624	R9091.6	1.SEC	
01625	A0000.0	AL 1000	EMERGENCY STOP / OVERTRAVEL
01626	A0000.1	AL 1001	SPINDLE COOLER ALARM
01627	A0000.2	AL 1002	LUBE PRESSURE FAULT
01628	A0000.3	AL 1003	CUTTING COOLANT MOTOR ALARM
01629	A0000.4	AL 1004	ATC ALARM
01630	A0000.5	AL 1005	TOOL BROKEN
01631	A0000.6	AL 1006	SERVO AXIS HOME REQUIRE
01632	A0000.7	HYOLAL	HYDRAULIC OVERLOAD ALARM
01633	A0001.0	AL 1010	ATC ALARM FOR POT DOWN
01634	A0001.1	AL 1011	ATC ALARM FOR ARM 60
01635	A0001.2	AL 1012	ATC ALARM FOR TOOL UNCLAMP
01636	A0001.3	AL 1013	ATC ALARM FOR ARM 180
01637	A0001.4	AL 1014	ATC ALARM FOR TOOL CLAMP
01638	A0001.5	AL 1015	ATC ALARM FOR ARM -60
01639	A0001.6	AL 1016	ATC ALARM FOR POT UP
01640	A0001.7	-XOTAL	-X OVER TRAVEL ALARM
01641	A0002.0	AL 1020	ATC STB FOR POT UP
01642	A0002.1	AL 1021	ATC STB FOR POT DOWN
01643	A0002.2	AL 1022	ATC STB FOR TOOL CLAMP
01644	A0002.3	AL 1023	ATC STB FOR TOOL UNCLAMP
01645	A0002.4	AL 1024	ATC STB FOR ARM 0
01646	A0002.5	AL 1025	ATC STB FOR ARM 180
01647	A0002.6	AL 1026	ATC STB FOR 2ND. ZERO
01648	A0002.7	AL 1027	ATC STB FOR MAG INPOSITION
01649	A0003.0	AL 1030	TOOL LIFE IS FULL
01650	A0003.1	CHNCAL	CHUCK NOT CLOSE ALARM
01651	A0003.2	AL 1032	MAG CTR SENSOR ERROR
01652	A0003.3	AL 1033	AXIS MOVE FOR POT DOWN
01653	A0003.4	AL 1034	JIG NOT CLAMPED
01654	A0003.5	AL 1035	SPINDLE TOOL CLAMP ERROR
01655	A0003.6	AL1370	SPINDLE GEAR POSITION ERROR
01656	A0003.7	AL1037	ATC NOT READY
01657	A0004.0	AL1040	COOLANT MOTOR OVERLOAD
01658	A0004.1	AL 1041	ATC NOT ROTATION
01659	A0004.2	AL1640	MAG ALARM
01660	A0004.3	AL 1043	SPINDLE OVERHEAT

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01661	A0004.4	AL1620	SP OIL MIST ALARM
01662	A0004.7	AL 1047	FILTER TANK FULL FAULL
01663	A0005.0	AL 1050	COOLANT EMPTY ERROR
01664	A0005.1	AL1660	CTS LEVEL ERROR
01665	A0005.2	AL 1052	FILTER DETECT ERROR
01666	A0005.3	AL 1053	COOLANT TANK FULL FAULL
01667	A0005.4	AL 1054	FILTER TANK EMPTY ERROR
01668	A0005.5	AL 1055	RECYCLE MOTOR OVERLOAD
01669	A0005.6	AL1056	SPINDLE COOLER ALARM
01670	A0005.7	AL1057	CHIP FLASH MOTOR OVERLOAD
01671	A0006.0	AL1060	MAGAZINE MOTOR OVERLOAD
01672	A0006.1	AL1061	ARM MOTOR OVERLOAD
01673	A0006.2	AL1062	CTS MOTOR OVERLOAD
01674	A0006.3	AL1063	SUCK MOTOR OVERLOAD
01675	A0006.4	AL1064	EXTERNAL SPINDLE FAN OVERLOAD
01676	A0006.5	AL1065	SPINDLE COOLER OVERLOAD
01677	A0006.6	AL1066	CHIP CONVEYOR MOTOR OVERLOAD
01678	A0006.7	AL1067	OIL SKIMMING MOTOR OVERLOAD
01679	A0007.0	AL1581	1581 PALLET A,B POSITION AL
01680	A0007.1	AL1582	1582 APC ARM NOT RETRACT
01681	A0007.2	AL1583	1583 APC EXTEND/RETRACT ALARM
01682	A0007.3	AL1584	1584 APC NOT READY
01683	A0007.4	AL1585	1585 APC OPEN/CLOSE ALARM
01684	A0007.5	AL1586	1586 APC NOT UP & OPEN
01685	A0007.6	AL1587	1587 APC AXIS NOT IN-POSITION
01686	A0007.7	AL1588	1588 APC Z NOT 1ST. POINT
01687	A0008.0	AL1589	1589 APC UP/DOWN ALARM
01688	A0008.1	AL1590	1590 APC ROTOR NOT IN-POSITION
01689	A0008.3	AL1592	1592 APC ROTOR CW/CCW ALARM
01690	A0008.4	AL 1084	A AXIS UNCLAMP FINISH ERROR
01691	A0008.5	AL 1085	A AXIS CLAMP FINISH ERROR
01692	A0010.0	OP _ AL 2000	MAINTENANCE MODE
01693	A0010.1	OP _ AL 2001	ARM TROUBLESHOOTING
01694	A0010.2	OP2002	CHECK SP T NO. & STANDBY T NO.
01695	A0010.3	OP _ AL 2003	AIR LOW
01696	A0010.4	OP _ AL 2004	LUBE ALARM
01697	A0010.5	OP _ AL 2005	DOOR NOR CLOSE
01698	A0010.6	OP2006	2071 APC COVER NOT CLOSE
01699	A0010.7	OP2007	2072 APC BIT OPEN
01700	A0011.0	OP AL 2010	MAG TOOL POT MANU OP UP/DOWN
01701	A0011.1	OP2011	2110 HIGH/LOW SPEED ALARM
01702	K0000.0	ATC.RY	SERVO CAN MOVE WITHOUT ATC RY
01703	K0000.1	A.ZRN	A AXIS ZRN VALID
01704	K0000.2	ALL.ZRN	ALL AXIS ZRN IGNORE



NO.	ADDRESS	SYMBOL	FIRST COMMENT
01705	K0000.3	Z.ZRN1	Z AXIS GO ZRN FIRST
01706	K0000.4	COL.M01	COOLANT ON WHEN M00/M01
01707	K0000.6	SP.GR	SPINDLE GEAR BOX DISABLE
01708	K0000.7	M02.APO	APO VALID BY M02
01709	K0001.0	1.LP	SINGAL LAMP FOR TOWL DETECTOR
01710	K0001.1	ZRN2.ATC	ZRN 2 POINT WITH ATC
01711	K0001.2	QUICK.UNCL	QUICK TOOL UNCLAMP SYSTEM
01712	K0001.3	POT.KEP	KEEP TYPE OF POT UP SOL
01713	K0001.4	ZZRN2.ATC	Z AXIS ZRN 2 WITH ATC
01714	K0001.5	SP.COL.VAL	SPINDLE COOLER VALID
01715	K0001.6	SP.CLP.KP	KEEP TYPE OF SPINDLE CLAMP
01716	K0001.7	LUB.PRE	LUBE PRESSURE VALID
01717	K0002.0	MAG.IN.POS	NC TYPE OF MAG.IN-POS SENSOR
01718	K0002.1	ZINT.ATC	Z AXIS INT. BY ATC NOT READY
01719	K0002.2	M19.ATC	M19 VALID BY ATC NOT READY
01720	K0002.3	DOR.INT	SERVO & SP LOCK BY DOOR OP
01721	K0002.4	TOL.LIFE	TOOL LIFE VALID
01722	K0002.5	A.UNCLP	A AXIS UNCLAMP BY TIMER
01723	K0002.6	SP.OVR	ANALOG TYPE OF SP OVERRRIDE
01724	K0002.7	ZRN.-X	ZRN DIRECTION BY - X
01725	K0003.0	MAG.DEC	MAG DECELERATE BY DEC SEN
01726	K0003.1	NO.ARM.SEN	NO SENSOR OF ARM
01727	K0003.2		
01728	K0003.3	PTUP/PTDN.STB	POT UP / DOWN OF STAND-BY
01729	K0003.4	MAG.POS1	MAG POSISITON 1 SEN VALID
01730	K0003.5	OIL.SKIM	OIL SKIM ON WHEN POWER ON
01731	K0003.6	Y7.6.M27	Y7.6 FOR M27 VALID
01732	K0003.7	OVR.DOR	OVERRIDE LIMIT WHEN DOOR OPEN
01738	K0005.0	MDI.JIGB	MDI JIG B CLAMP VALID
01739	K0005.1		
01740	K0005.2	JIGB.SOL2	JIG B USE TWO SOL
01741	K0005.4	NC.LUB.LEV	NC TYPE OF LUBE LEVEL SW
01742	K0005.5	JIG.CLP.M	JIG MUST CLAMP MES VAL
01743	K0005.6	JIGA.SOL1	JIG A USE ONE SOL
01744	K0005.7	NC.MAG.CTR	NC TYPE OF MAG CTR SEN
01745	K0006.0	A.UNC.SOL	A AXIS UNCLAMP WHEN SOL OFF
01746	K0006.1	JIG.FOT.SW	FOOT SW VALID FOR JIG
01747	K0006.2	JIG.SEN	JIG DETECTOR OF CLAMP VAL
01748	K0006.3	JIG.EMG	JIG CLAMP VAL WHEN EMG
01749	K0006.4	WK.LIGHT	WORK LIGHT VALID
01750	K0006.5	MOD.CHG	MODE CHANGE VALID
01751	K0006.6	ABS.DIS	MANUAL ABS DISABLE
01752	K0006.7	SP.KEEP	SP KEEP RUNNING FOR MODE CHANG

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01753	K0007.0	LUB.T	LUBE ON BY TIMER
01754	K0007.1	LUB.CYON	LUBE ON BY CYCLE ON
01755	K0007.2	COL.2	COOLANT USE TWO PUMP
01756	K0007.3	SP.KEP	SP KEEP WHEN MODE CHANGE
01757	K0007.4	COLB.M09	COOLANT B STOP WHEN M09
01758	K0007.5	CTS.VAL	CTS VALID
01759	K0007.6	CAM/QUICK.A	QUICK ATC OF ARM MAG
01760	K0007.7	ARM.STEP	ARM RUNNING STEP BY STEP
01761	K0008.0		
01762	K0008.1	OIL.MIST	OIL MIST VALID
01763	K0008.2	A.OFF.CLP	A SERVO OFF WHEN CLAMP
01764	K0008.4	SP.GEAR.CHG	SP GEAR CHANGE WHEN TAP
01765	K0008.6	A.UNC.PB	A UNCLAMP WHEN PB ON
01766	K0009.1	ZRN.TOG	ALL ZRN TOGETHER
01767	K0009.2	L.DR.VAL	LEFR DOOR SW VALID
01768	K0009.3	DR.REL	DOOR RELEASE BY M02 & M30
01769	K0009.4	R.DR.VAL	RIGHT DOOR SW VALID
01770	K0009.5	DOR.MAN	DOOR RELEASE MANUALLY
01771	K0009.6	RP.OVC	RAPID OVERRIDE CANCEL
01772	K0009.7	A.AL.SBK	DAIR AL DISABLE WHEN SBK
01773	K0010.0	SP.5%OV	5% SP OVERRIDE INT
01774	K0010.1	SP.200%OV	200% OF SP OVERRIDE
01775	K0010.2	CONV.T	CHIP CONVEYOR ON BY TIMER
01776	K0010.3	F.AIR	FLASH TYPE OF AIR BLAST
01777	K0010.4	Y7.6.HYD	Y7.6 FOR HYDRAULIC
01778	K0010.6	DR.SW.UNVAL	DOOR SW UNVALID
01779	K0010.7	DR.ALL.MD	DOOR VALID ALL MODE
01780	K0011.0	ZRN.NO	
01781	K0011.1	60	60
01782	K0011.2	60-180	60->180
01783	K0011.3	180	180
01784	K0011.4	180-0	180->0
01785	K0011.5	JGCLL	JIG CLAMP LATCH
01786	K0011.6		
01787	K0011.7	JGB.CLL	JIG B CLAMP LATCH
01788	K0012.0	SP.GR.CON	SP GEAR CONTACTOR VALID
01789	K0013.0	DRN.K	
01790	K0013.1	SBK.K	
01791	K0013.2	BDT.K	
01792	K0013.3	M01.K	
01793	K0013.4	MLK.K	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01794	K0014.0	OPS140	RIGID TAPING REVERSE
01795	K0014.1	OPS141	PART CATCHER SENSER PASS
01796	K0014.2	OPS142	QUILL FORWARD SPD INTERLOCK
01797	K0014.3	OPS143	QUILL BACKWARD SPD INTERLOCK
01798	K0014.4	OPS144	WITH QUILL SENSER
01799	K0014.5	OPS145	
01800	K0014.6	OPS146	
01801	K0014.7	OPS147	
01802	K0015.0	NEG.CK	NEGITIVE CHUCK
01803	K0015.1	POS.CK	POSTIVE CHUCK
01804	K0015.5	TZRN.F	TURRET ZRN FIN.->AUTO MODE
01805	K0015.7	TZNR	TURRET NO ZERO RETURN
01806	K0018.3	COL.ON	COOLANT/HI.P COOLANT ON
01807	D0014.7	SP.ROT	SP. ROT. HOLD
01808	F0010	M0007	M CODE BIT0-BIT7
01809	F0011	M0815	M CODE BIT8-BIT15
01810	F0012	M1623	M CODE BIT16-BIT23
01811	F0013	M2431	M CODE BIT24-BIT31
01812	F0022	S0007	S CODE BIT0-BIT7
01813	F0023	S0815	S CODE BIT8-BIT15
01814	F0024	S1623	S CODE BIT16-BIT23
01815	F0025	S2431	S CODE BIT24-BIT31
01816	F0026	T0007	T CODE BIT0-BIT7
01817	F0027	T0815	T CODE BIT8-BIT15
01818	F0028	T1623	T CODE BIT16-BIT23
01819	F0029	T2431	
01820	F0036	R010-080	
01821	F0037	R090-120	
01822	G0030	SOV0-7	
01823	G0032	R0108I	SPINDLE SPEED COMMAND 1-8
01824	G0033	R912I	SPINDLE SPEED COMMAND 9-12
01825	R0002	TBCD-1R2	
01826	R0003	TMSEL.R	T NO. SELECTOR
01827	R0004	TBIN-1	T BIN -1
01828	R0005	TBCD-1	
01829	R0020	TBCD1	TBCD1
01830	R0021	TBCD2	TBCD2
01831	R0022	TBCD3	TBCD3
01832	R0024	TBCD4	TBCD4
01833	R0025	TBCD5	TBCD5
01834	R0039	TBCD-1R1	
01835	R0070	*JV.R	JOG OVERRIDE REG.

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01836	R0570		FOR MEMBRANE PANEL
01837	R0579		FOR MEMBRANE PANEL
01838	R0587	CUTBIN	CURRENT TOOL NO. (BIN)
01839	R0588	SPDS	SPINDLE TOOL NO. DISPLAY
01840	R0589		FOR MEMBRANE PANEL
01841	R0666		JOG FEEDRATE AUX
01842	R0667		JOG FEEDRATE AUX
01843	R0670		FOR MEMBRANE PANEL
01844	R0671		FOR MEMBRANE PANEL
01845	R0672		FOR MEMBRANE PANEL
01846	R0673		FOR MEMBRANE PANEL
01847	R0675		FOR MEMBRANE PANEL
01848	R0678		FOR MEMBRANE PANEL
01849	R0679		FOR MEMBRANE PANEL
01850	R0684	CUTBCD	CURRENT TOOL NO. (BCD)
01851	R0685	MCODE1	M CODE (BCD)
01852	R0686	TCODE1	T CODE (BCD)
01853	R0687	SPTBCD	SPINDLE TOOL NO. (BCD)
01854	R0689	ROSTBI	STEPS OF ROT (BIN)
01855	R0690	TPBIN	POT NO. OF T CODE (BIN)
01856	R0691	TPBCD	POT NO. OF T CODE (BCD)
01857	R0692	ROTSBC	STEPS OF ROT (BCD)
01858	R0693	TCTMP	TEMP FOR TOOL CHANGE
01859	C0001	PT.OVER	
01860	C0002	LUB.ON.C	
01861	C0003	LUB.OFF.C	
01862	D0000	SP.NO	SPINDLE TOOL NO.
01863	D0015	MAX.BIN	
01864	D0016	MSPMAX	
01865	D0020	SPOVR1	
01866	D0021	SPOVR2	
01867	D0022	SP50-120	
01868	D0023	SPOVR2BCD	



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NO.	ADDRESS	SYMBOL	FIRST COMMENT
01869	D0100	CA-CP1	CURRENT POT NO. FOR CTRA (BIN)
01870	D0104	CB-CP1	CURRENT POT NO. FOR CTRB (BIN)
01871	D0110	POTNUM	TOTAL POTS
01872	D0112	PTNUM1	TOTAL POT+1 (BIN)
01873	D0114	CUPLAT	CURRENT POT NO. LATCH
01874	D0120	CA-CP2	CURRENT POT NO. FOR CTRA (BCD)
01875	D0122	CB-CP2	CURRENT POT NO. FOR CTRB (BCD)
01876	D0124	BGTNUM	NUMBERS OF BIG TOOL
01877	D0125	PTNUM2	TOTAL POT+1 (BCD)
01878	D0126	GCHCHK	GEAR SHIFT CHECK
01879	D0160	CELIM1	CE MANUAL SPEED LIMIT 1
01880	D0161	CELIM2	CE MANUAL SPEED LIMIT 2
01881	D0162	SPLIM1	SP MANUAL SPEED LIMIT 1
01882	D0163	SPLIM2	SP MANUAL SPEED LIMIT 2
01883	D0164	SP%	SPINDLE INC/DEC %
01884	D0170	WINF28	READING MACHINE COORDINATE
01885	D0178	ALLPOS	READING ALL AXES COORDINATE
01886	D0180	X-MPOS	X AXIS MACHINE COORDINATE
01887	D0184	Y-MPOS	Y AXIS MACHINE COORDINATE
01888	D0188	Z-MPOS	Z AXIS MACHINE COORDINATE