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# **ELECTRICAL MANUAL**

## **FANUC SYSTEM**

**(SV-2517 / SVL-2517 / SV-4023 / SVL4023)**



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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
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
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
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
1070	1070 CHIP SCREW MOTOR 1 OVER LOAD
1071	1071 CHIP SCREW MOTOR 2 OVER LOAD
1072	1072 CHIP SCREW MOTOR 3 OVER LOAD
1073	1073 HYDRAULIC 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 :	<ol style="list-style-type: none"> <li>1. Check functions of the spindle oil mist mechanism. Make sure all functions work well.</li> <li>2. Press "RESET" button once to relieve the alarm.</li> </ol>
<b>Message :</b>	1047 FILTER TANK FULL FAULT
Description :	CTS tank water full alarm
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Pls check coolant tank level switch is normal</li> <li>2. Pls check return horse not be blicked</li> </ol>
<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 :	<ol style="list-style-type: none"> <li>1. Check if a trip of QM1 over-current switch in the electrical box occurs. Make sure it works well.</li> <li>2. Check the level of coolant. Make sure the coolant is sufficient.</li> <li>3. Check coolant motor runs smoothly. Make sure it works well.</li> </ol>
<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>	<b>Define</b>
<b>Message :</b>	1055 RECYCLE MOTOR OVERLOAD
Description :	CTS recycle motor overload
Troubleshooting :	<ol style="list-style-type: none"> <li>1. Check EC box over relay ( QM10 ) is normal</li> <li>2. Check coolant tank water level is normal</li> <li>3. Check motor running is normal</li> </ol>
<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
2006	2006 APC COVER NOT CLOSE
2007	2007 APC BIT OPEN
2010	2010 MAGAZINE TOOL POT MANUAL OPERATION
2011	2011 GUARD OPEN
2012	2012 SOFTWARE SWITCH 4,5,6,7 ON TOGETHER
2013	2013 SPINDLE MOTOR OVER LOAD

**Operation message & troubleshooting description**

<b>Message</b>	<b>Define</b>
<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			Taiwan
KA17 TO KA21		O1D-08-AC	Omron 10A 240V		Taiwan
KA23 , 24 , 31 , 32	RELAY PC BOARD	01D-04-DC	Omron 10A 240V		Taiwan
KA25~ KA30		O1D-08-DC	Omron 10A 240V		Taiwan
KAA	RELAY	LY-4NJ DC24V	DC24V 10A4P	OMRON	Japan
KAB	RELAY	MY-2P DC24V	DC24V 5A4P	OMRON	Japan
KM1	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM2	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM3	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM4	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM5	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM6	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM7	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KM8	MAGNACTIC CONTACTOR	DILM9-01-SOND516	DC24V	MOELLER	Germany
KMA	MAGNACTIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
KMH	MAGNACTIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
KML	MAGNACTIC CONTACTOR	DILM65 AC220V	3P 65A	MOELLER	Germany
L3	TOWER LIGHT	R,Y,G	DC24V LED		Taiwan



Index	Name	Type	Spec.	Brand	Made in
LL	WORKING LIGHT		24W AC220V		Taiwan
RL	WORKING LIGHT		24W AC220V		Taiwan
MPG unit	MPG MODULE				Taiwan
NFB	NONE FUSE BREAKER	EABW100EAG 3P75A	3P 75A	FUJI	Japan
NFB	HANDLE OPERATION MECHANISM	BZ6-N10D		FUJI	Japan
Operation board	Operation board				Taiwan
PS1	1 PHASE POWER SUPPLIER	S-100-24 4.5A	24V / 4.5A		Taiwan
PS2	1 PHASE POWER SUPPLIER	S-150-24 6.5A	24V / 6.5A		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>Brand</b>	<b>Made in</b>
TRANS1	TRANSPORTOR BOARD	0I-I/O		Taiwan
TRANS2	TRANSPORTOR BOARD	0I-I/O		Taiwan
TRANS3	TRANSPORTOR BOARD	0I-I/O		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
M39	Spindle motor load monitor start
M40	Spindle motor load monitor stop

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M Code	Define
M41	Magazine extend for M6 macro
M42	Magazine tool command search for M6 macro
M45	Tool broken check
M46	Override cancel
M48	CTS on
M49	CTS OFF
M50	Chip conveyor CW
M51	Chip conveyor stop
M52	Magazine extend
M53	Magazine return
M54	Auto tool length measurement on (option)
M55	Auto tool length measurement off (option)
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
M79	Setting spindle tool no.
M84	Spindle tool no. select
M85	T code tool no. select
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	description	Umbrella type	Arm type
K0.0	0	Servo axis can't move with ATC not ready	0	0
	1	Servo axes can move with ATC not ready		
K0.1	0	A axis zero return function ignore	0	0
	1	A axis zero return function valid		
K0.2	0	Servo axes zero return function valid	0	0
	1	Servo axes zero return function ignore		
K0.3	0	Servo axes zero return excute together	0	0
	1	Servo axes zero return execute after Z axis zero return finished		
K0.4	0	Coolant stop when M00 /M01	0	0
	1	Coolant keep status when M00 / M01		
K0.6	0	Spindle gear box valid ( M68 / M69 )	0	0
	1	Spindle gear box disable (M68/M69 )		
K0.7	0	Auto power off with M02 disable	0	0
	1	Auto power off M02 with valid		
K1.0	0	Three lamps of tool alarm detector	0	0
	1	Single lamp of tool alarm detector		
K1.1	0	X / Y axes 2nd home position valid when ATC running	0	1
	1	X / Y axes 2nd home position ignore when ATC running		
K1.2	0	Spindle tool unclamp no beforehand active	1	0
	1	Spindle tool unclamp beforehand active		
K1.3	0	Magazine pot up solenoid without keep type	1	0
	1	Magazine pot up solenoid with keep type		
K1.4	0	Arm can active with ATC ready	0	1
	1	Arm can active with Z axis on 2nd zero position		
K1.5	0	Spindle cooler alarm detector ignore	0	0
	1	Spindle cooler alarm detector valid		
K1.6	0	Spindle unclamp active don't keep type	0	0
	1	Spindle unclamp active keep type		
K1.7	0	Lubrication pressure detect	1	1
	1	Lubrication pressure detect valid		

Item	Define	description	Umbrella type	Arm type
K2.0	0	Magazine in-position signal NO type ( Normal open )	0	0
	1	Magazine in-position signal NC type ( Normal close )		
K2.1	0	Z axis interlock ignore when Arm don't ready	0	1
	1	Z axis interlock active when Arm don't ready		
K2.2	0	Spindle orientation ignore when Arm don't ready	0	0
	1	Spindle orientation valid when Arm don't ready		
K2.3	0	Servo axes locked when door interlock open	0	0
	1	Spindle and servo axes locked when doorinterlock open		
K2.4	0	Tool life over message ignore	1	0
	1	Tool life over message valid		
K2.5	0	Confirm A axis unclamp by detector	0	0
	1	Confirm A axis unclamp by timer		
K2.6	0	Spindle override command standard type	0	0
	1	Spindle override command analog type		
K2.7	0	X axis zero return by plus direction	0	1
	1	X axis zero return by minus direction		
K3.0	0	Magazine decelerate with counter sensor	0	0
	1	Magazine decelerate with in-position sensor		
K3.1	0	Arm detect sensor with NC type	0	0
	1	Arm detect sensor with NO type		
K3.3	0	Pot UP for stand-by status of magazine pot	0	0
	1	Pot DOWN for stand-by status of magazine pot		
K3.4	0	Magazine position no.1 valid	0	0
	1	Magazine position no.1 disable		
K3.5	0	Oil skimmer running when system ready	0	0
	1	Oil skimmer running when power on		
K3.6	0	Y7.6 output for oil skimmer	0	0
	1	Y7.6 output for M27 of index table function		
K3.7	0	Override limited valid when door open	0	0
	1	Override limited disable when door open		
K4.7	0	Spindle motor load monitor disable	0	0
	1	Spindle motor load monitor enable		

Item	Define	description	Umbrella type	Arm type
K5.0	0	MDI mode jig B clamp detector disable	0	0
	1	MDI mode jig B clamp detector valid		
K5.1	0	Magazine pot no. is 20	0	1
	1	Magazine pot no. is 24		
K5.2	0	Jig B locate unclamp solenoid only	0	0
	1	Jig B locate two solenoid for clamp and unclamp		
K5.4	0	NO type of lubrication level switch	0	1
	1	NC type of lubrication level switch		
K5.5	0	Jig must clamp message disable	0	0
	1	Jig must clamp message valid		
K5.6	0	Jig A locate two solenoid for clamp and unclamp	0	0
	1	Jig A locate unclamp solenoid only		
K5.7	0	NO type of magazine count sensor	0	1
	1	NC type of magazine count sensor		
K6.0	0	A axis unclamping when solenoid on	0	0
	1	A axis unclamping when solenoid off		
K6.1	0	Foot switch of jig valid on manual mode only	0	0
	1	Foot switch of jig valid at all mode		
K6.2	0	Jig clamp detector valid at MDI mode	0	0
	1	Jig clamp detector disable at MDI mode		
K6.3	0	Jig B clamp disable when emergency stop	0	0
	1	Jig B clamp valid when emergency stop		
K6.4	0	Control work light by operation panel disable	0	1
	1	Control work light by operation panel valid		
K6.5	0	Operation mode change disable	0	0
	1	Operation mode change valid		
K6.6	0	Manual absolute valid	0	0
	1	Manual absolute disable		
K6.7	0	Spindle stop when M00 / M01 code	0	0
	1	Spindle keep status when M00 / M01 code		

Item	Define	description	Umbrella type	Arm type
K7.0	0	Lubrication always on	0	1
	1	Lubrication control by timer of PMC		
K7.1	0	Lubrication running when system ready	0	1
	1	Lubrication running when cycle running		
K7.2	0	Use same pump for coolant A and B	0	0
	1	Use difference pumps for coolant A and B		
K7.3	0	Spindle will stop when change operate mode	0	0
	1	Spindle keep running status when change operate mode		
K7.4	0	Coolant B stop by M09 code valid	0	0
	1	Coolant B stop by M09 disable		
K7.5	0	C.T.S device disable	0	0
	1	C.T.S device valid		
K7.6	0	Cam type Arm device	0	0
	1	Quick tool change type Arm device		
K7.7	0	Arm device step by step control valid	0	0
	1	Arm device step by step control disable		
K8.0	0	Zero return direction with X , -Y , +Z	0	1
	1	Zero return direction with X , +Y , -Z		
K8.1	0	Spindle oil mist detector ignore	0	0
	1	Spindle oil mist detector valid		
K8.2	0	Servo off ignore when A axis clamped	0	0
	1	Servo off valid when A axis clamped		
K8.3	0	Coolant auto off display message	0	0
	1	Coolant auto off didn't display message		
K8.4	0	Spindle rigid tapping rotation	0	0
	1	Spindle gear change rotation		
K8.5	0	Magazine pot no. is 24 or 20	0	0
	1	Magazine pot no. is 30		
K8.6	0	A axis unclamping when Jog mode	0	0
	1	A axis unclamping when +4 / -4 push button pressed		
K8.7	0	Chip conveyor running when cycle running	0	0
	1	Chip conveyor running always		



Item	Define	description	Umbrella type	Arm type
K9.0	0	Chip conveyor running at all mode	0	0
	1	Chip conveyor running manual mode valid		
K9.1	0	Auto zero return X / Y running after Z return finished	0	0
	1	Auto zero return all axes running together		
K9.2	0	Left door interlock detector valid	0	1
	1	Left door interlock detector disable		
K9.3	0	Door interlock don't release when M02 / M30 code	0	0
	1	Door interlock release when M02 / M30 code		
K9.4	0	Right door interlock detector valid	0	1
	1	Right door interlock detector disable		
K9.5	0	Door interlock coil release automatically	0	0
	1	Door interlock coil release manually		
K9.6	0	Rapid override valid	0	0
	1	Rapid override cancel		
K9.7	0	Air alarm message active signal block mode	0	0
	1	Air alarm message don't active signal block mode		
K10.0	0	10% of spindle override interval	0	0
	1	5% of spindle override interval		
K10.1	0	120% of maximum spindle override	0	0
	1	200% of maximum spindle override		
K10.2	0	Chip conveyor keep forward by automatically	0	0
	1	Chip conveyor timer type forward by automatically		
K10.3	0	Keep on type of cutting air blast	0	0
	1	Flash type of cutting air blast		
K10.4	0	Y7.4 output control by M37	0	0
	1	Y7.4 output for hydraulic motor		
K10.7	0	Electro-magnetic door interlock release with handle mode only	0	0
	1	Electro-magnetic door interlock release with all mode		

Item	Define	description	Umbrella type	Arm type
K11.0	0	None		
	1	Arm move to catch tools		
K11.1	0	None		
	1	Arm in-position to catch tools		
K11.2	0	None		
	1	Arm exchange tools		
K11.3	0	None		
	1	Arm in-position to exchange tools		
K11.4	0	None		
	1	Arm return to home position		
K11.5	0	Jig unclamp		
	1	Jig clamp latch		
K11.7	0	Jig B unclamp		
	1	Jig B clamp latch		
K12.0	0	Spindle gear with magnetic contactor disable	0	1
	1	Spindle gear with magnetic contactor valid		
K12.1	0	Tool measurement unit disable	0	0
	1	Tool measurement unit valid		

## 4.2 Timer detail list

Timer no.	Define	Preset
T1	Magazine rotation check time	3000
T2	Auto tool change ( M06 ) active time	3000
T3	Lubricate run time	10000
T7	Hydraulic motor running time	4992
T8	Lubrication pressure check delay time	12000
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	500
T16	Magazine pot down time	500
T17	Spindle tool clamp delay time	
T18	Spindle tool unclamp delay time	32
T19	Spindle air blow delay time	
T23	Magazine CW stop delay timer	
T24	Magazine CCW stop delay timer	
T25	Arm jog active delay timer	3000
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
T33	A axis unclamp sensor check timer	500
T34	A axis unclamp check timer	2000
T35	A axis clamp check timer	2000
T39	Oil skimmer stop interval timer	24000
T40	Oil skimmer on timer	
TMRB 22	Air pressure detect delay timer for alarm message	2000
TMRB 87	CTS air blow delay timer after CTS motor off	1000
TMRB 88	CTS air blow on timer	2000
TMRB 89	CTS tank empty error delay timer	3000

### 4.3 Counter

#### Counter detail list

Counter no.	Define	Preset
C1	Magazine pot Number	20
C8	Lube on timer	30
C9	Lube off interval timer	28800
C10	Grease on timer	
C11	Grease one cycle timer / totally timer	

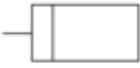


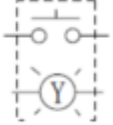



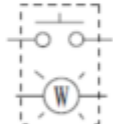



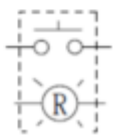



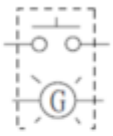







### 4.4 Data table

#### Data table detail list

Data	Define	Preset	Data	Define	Preset
D0	Tool no. of spindle	25	D23	Tool no. of magazine pot 23	23
D1	Tool no. of magazine pot 1	1	D24	Tool no. of magazine pot 24	24
D2	Tool no. of magazine pot 2	2	D25	Tool no. of magazine pot 25	25
D3	Tool no. of magazine pot 3	3	D26	Tool no. of magazine pot 26	26
D4	Tool no. of magazine pot 4	4	D27	Tool no. of magazine pot 27	27
D5	Tool no. of magazine pot 5	5	D28	Tool no. of magazine pot 28	28
D6	Tool no. of magazine pot 6	6	D29	Tool no. of magazine pot 29	29
D7	Tool no. of magazine pot 7	7	D30	Tool no. of magazine pot 30	30
D8	Tool no. of magazine pot 8	8	D31	Tool no. of magazine pot 31	31
D9	Tool no. of magazine pot 9	9	D32	Tool no. of magazine pot 32	32
D10	Tool no. of magazine pot 10	10	D33	Tool no. of magazine pot 33	33
D11	Tool no. of magazine pot 11	11	D34	Tool no. of magazine pot 34	34
D12	Tool no. of magazine pot 12	12	D35	Tool no. of magazine pot 35	35
D13	Tool no. of magazine pot 13	13	D36	Tool no. of magazine pot 36	36
D14	Tool no. of magazine pot 14	14	D37	Tool no. of magazine pot 37	37
D15	Tool no. of magazine pot 15	15	D38	Tool no. of magazine pot 38	38
D16	Tool no. of magazine pot 16	16	D39	Tool no. of magazine pot 39	39
D17	Tool no. of magazine pot 17	17	D40	Tool no. of magazine pot 40	40
D18	Tool no. of magazine pot 18	18	D100	Current pot no. of magazine	
D19	Tool no. of magazine pot 19	19	D110	Total pot no. of magazine	24
D20	Tool no. of magazine pot 20	20	D160	Spindle speed 1 when door opening	20(50rpm)
D21	Tool no. of magazine pot 21	21	D161	Spindle speed 2 when door opening	-128
D22	Tool no. of magazine pot 22	22	D300	Spindle motor load monitor level (%)	

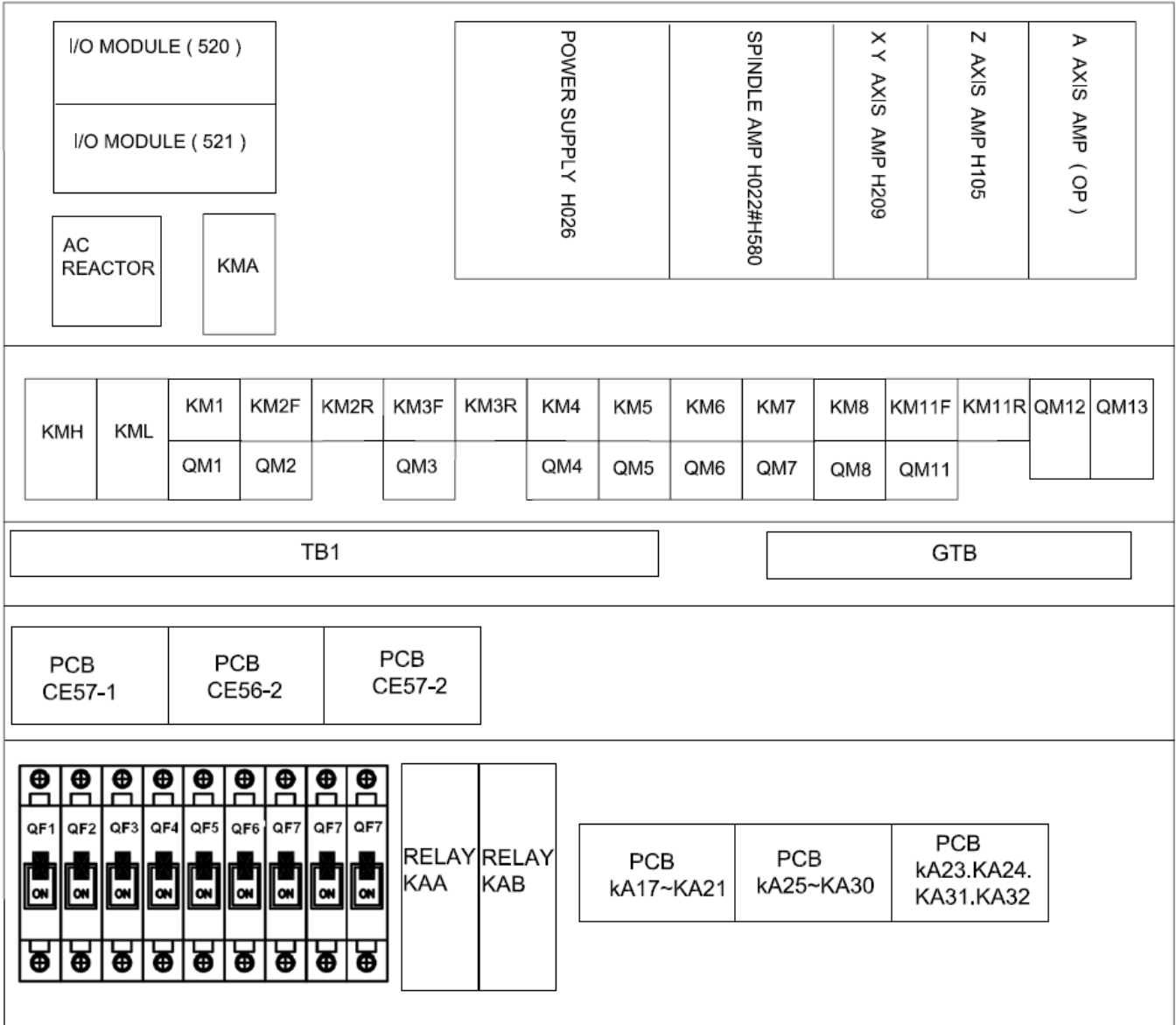
## 5. ELECTRIC-SYMBOL DETAIL

Proximity switch break contact	Proximity switch make contact	limit switch break contact	limit switch make contact
Pushbutton make contact	Pushbutton break contact	Float switch break contact	Float switch make contact
GREEN LAMP	YELLOW LAMP	ILLuminated Pushbutton Momentary	Transformer
White Lamp	Orange Lamp	Red Lamp	Key Switch
ILLuminated Pushbutton Alternate	Pushlock Turn Reset Type Pushbutton	Solenoid Valvecoil	PNP Proximity Switch Make contact
AC MOTOR 1φ	NPN Proximity Switch Break contact	PNP Porximity switch Break contact	NPN Proximity Switch Make contact

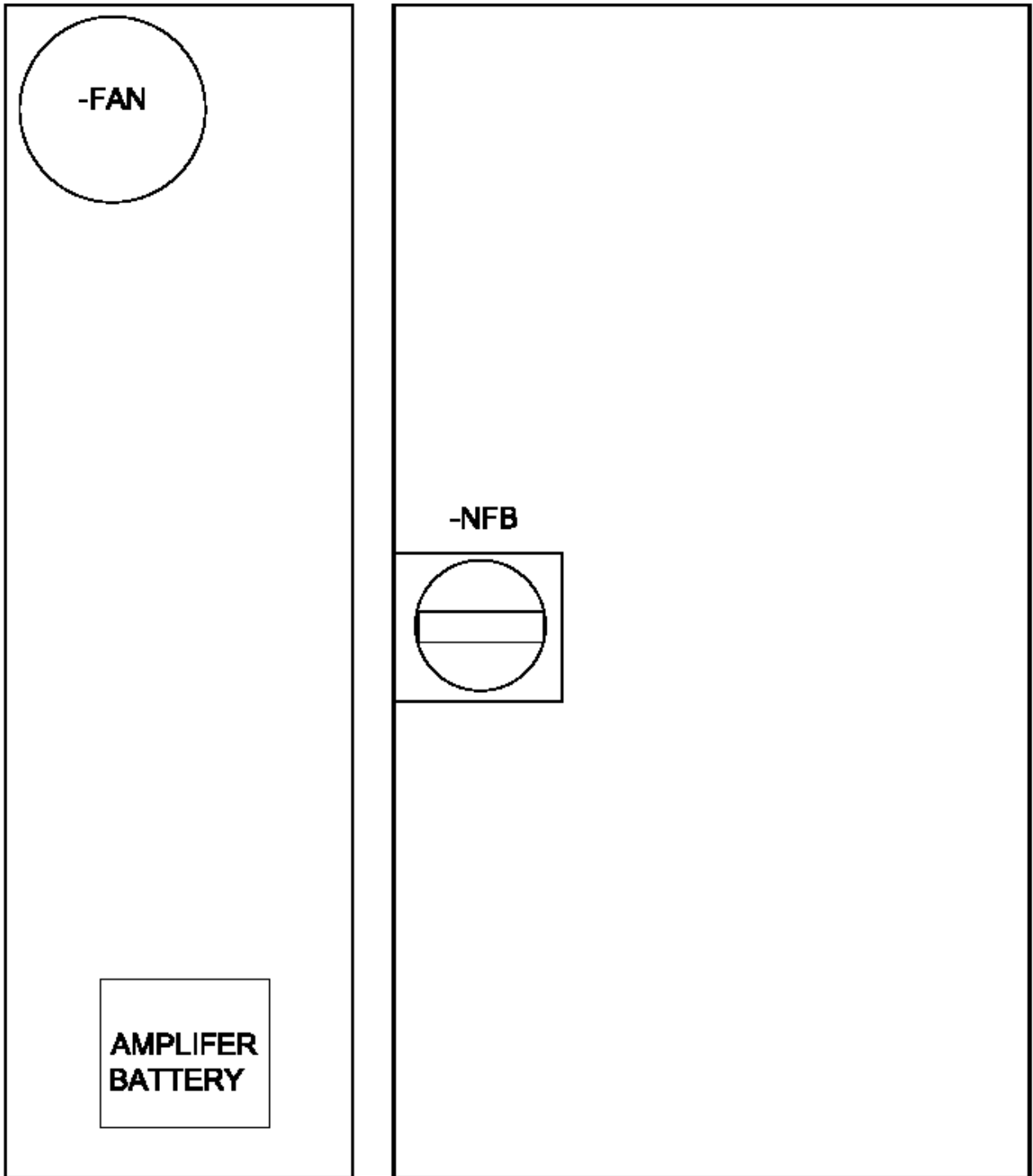
NC INPUT	NC OUT	Ground	ILLuminated Pushbutton momentary(Yellow)
			
FUSE	DIODE	LED	ILLuminated Pushbutton momentary(White)
			
Not gate	ILLuminated Pushbutton Alternate(White)	ILLuminated Pushbutton Alternate(Yellow)	ILLuminated Pushbutton momentary(Red)
			
Buffer	ILLuminated Pushbutton Alternate(Orange)	ILLuminated Pushbutton Alternate(Green)	ILLuminated Pushbutton momentary(Green)
			
Spark killer	Resistance	AC MOTOR 3φ	Relay <sup>1</sup>
			
Capacitor	Make contact	Break contact	
			

## 6. EC BOX LAYOUT

### 6.1 ELECTRICAL BOARD LAYOUT

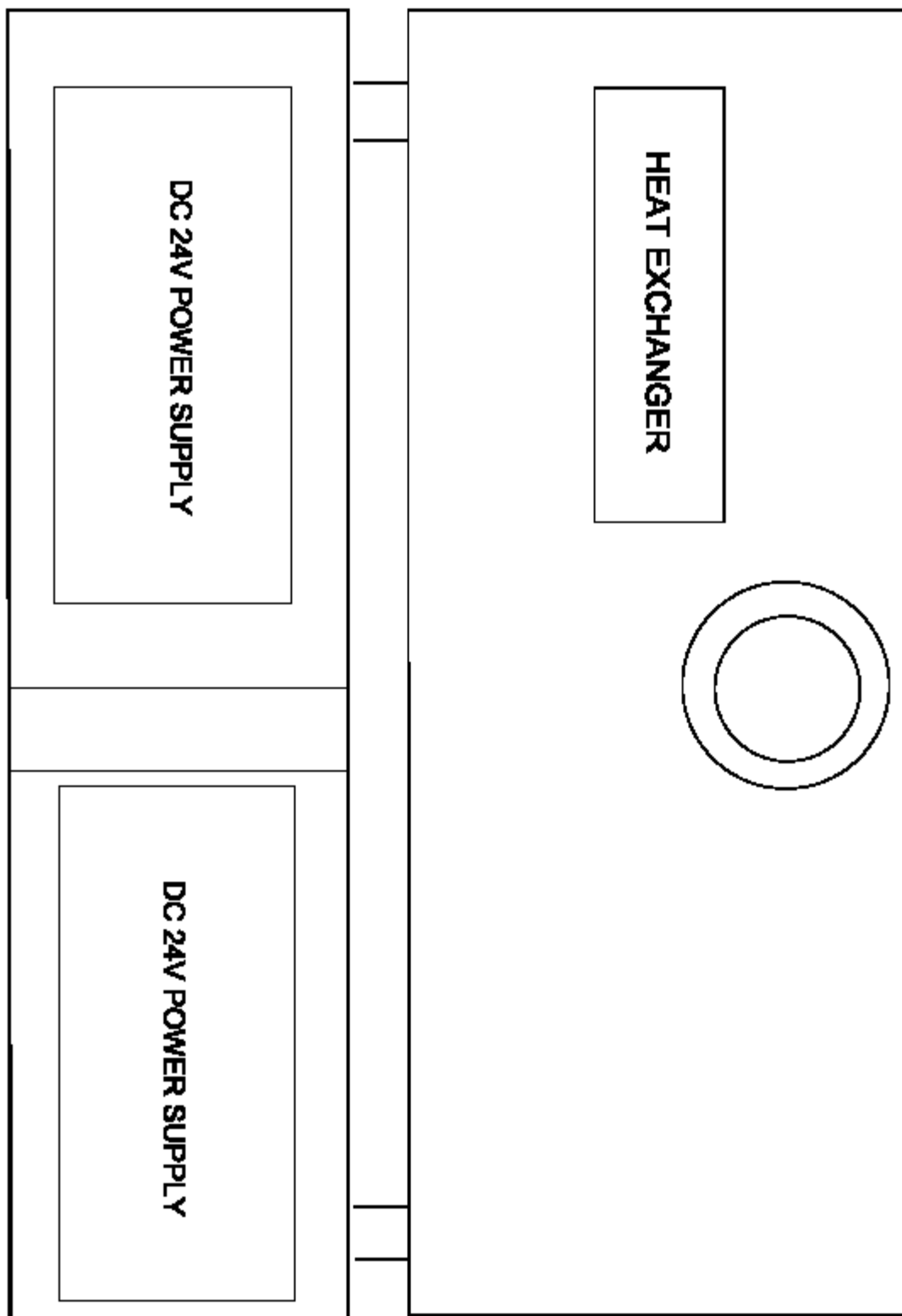


**6.2 ELECTRICAL CABINET LEFT SIDE**



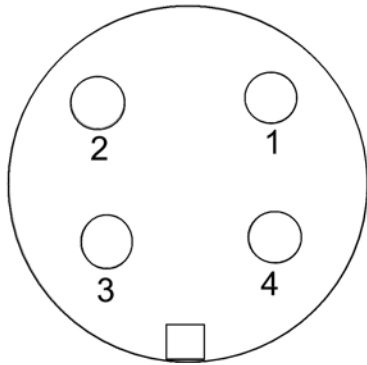


### 6.3 ELECTRICAL CABINET RIGHT SIDE

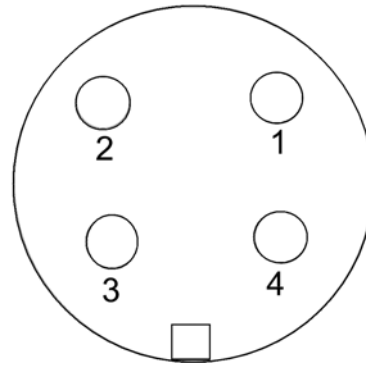


## 7. AC MOTOR CONNECT DESCRIPTION

### 7.1 CHIP CONVEYOR MOTOR



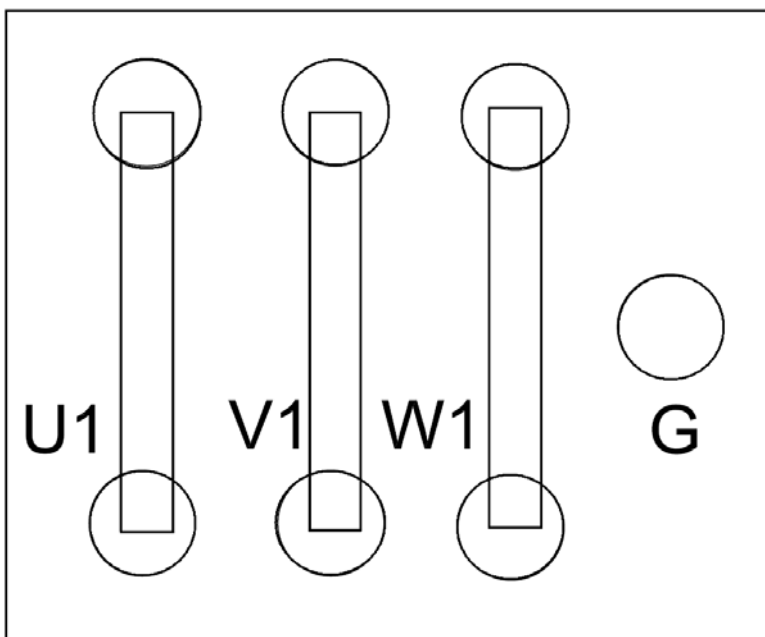
### 7.2 OIL SKIMMER MOTOR



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

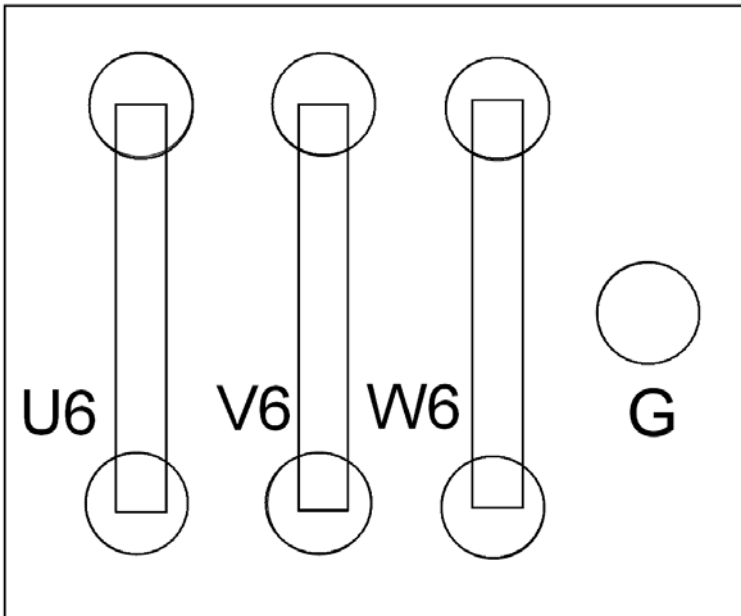
PIN	NAME	WIRE COLOR
1	U7	BROWN
2	V7	BLUE
3	W7	BLACK
4	G	YELLOW

### 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



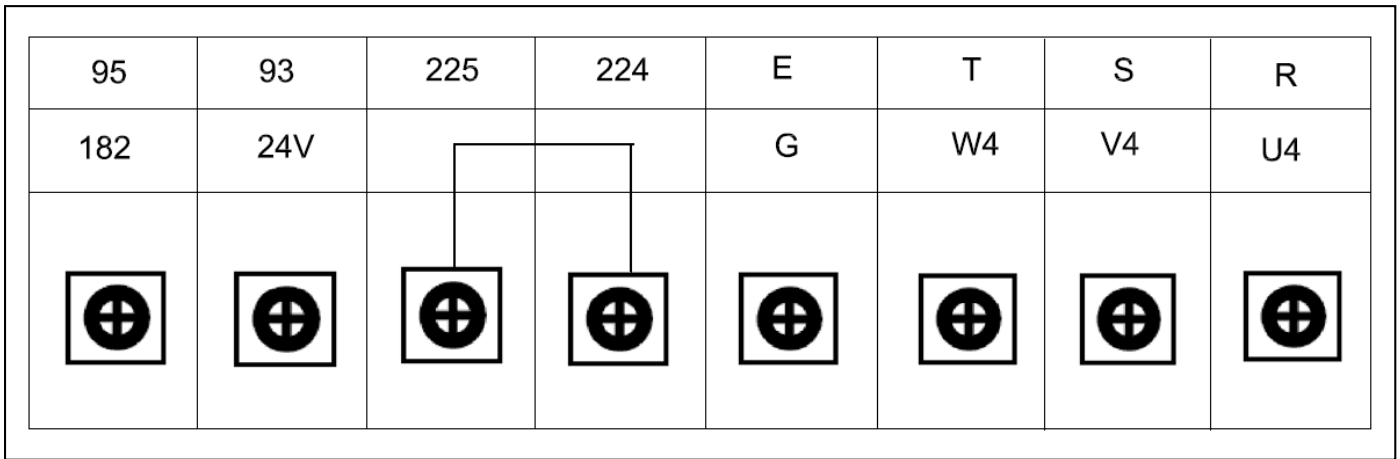
PIN	NAME	WIRE COLOR
1	U6	BROWN
2	V6	BLUE
3	W6	BLACK
4	G	YELLOW

## 7.5 LUBRICATION PUMP

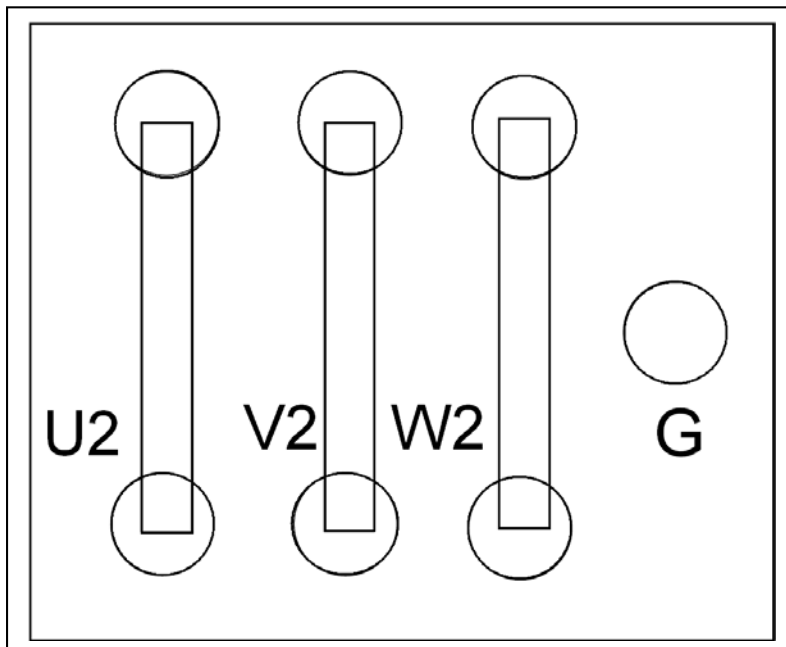
1	2	3	4	5	6	7
17A	L11	L21	24V	131	197	G

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

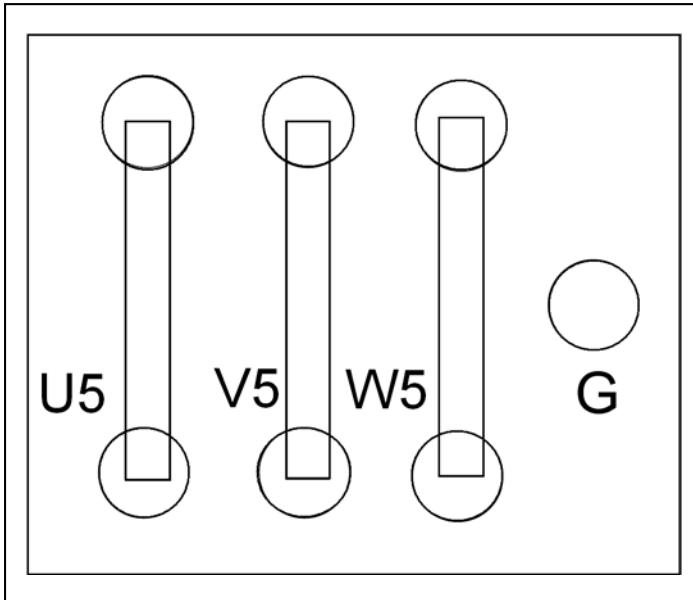


## 7.7 MAGAZINE MOTOR



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

## 7.8 ATC MOTOR

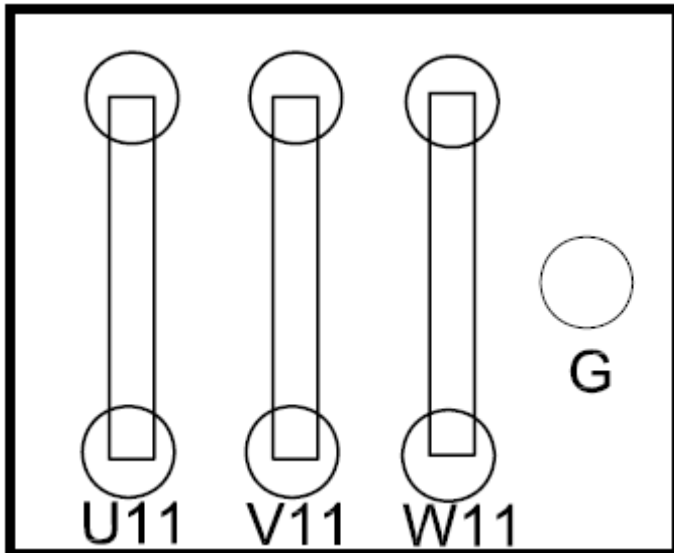


PIN	NAME	WIRE COLOR
1	U5	BLACK
2	V5	RED
3	W5	BLUE
4	G	YELLOW

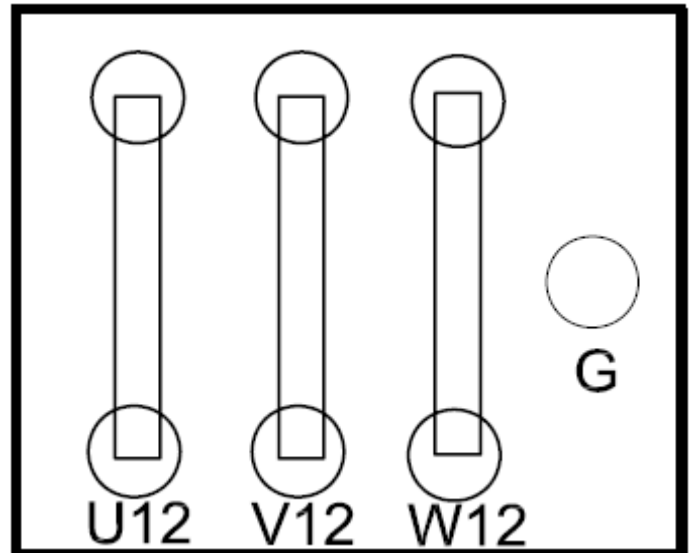
## MAGAZINE CONNECT BOX DESCRIPTION

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

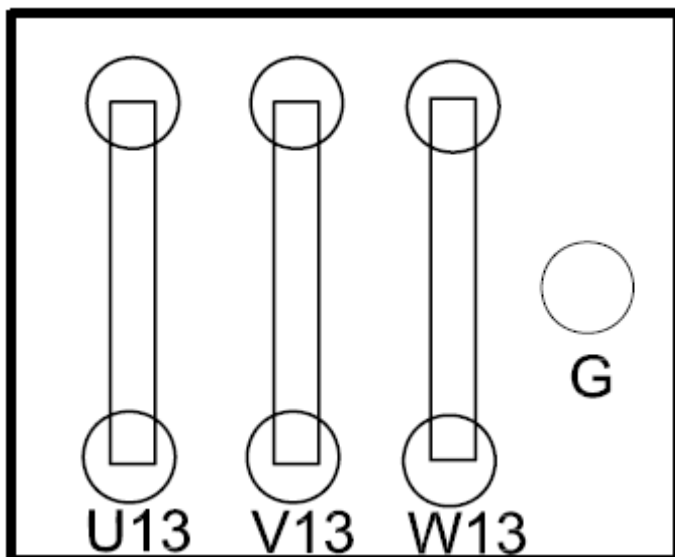
## 7.9 CHIP SCREW MOTOR



**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 :

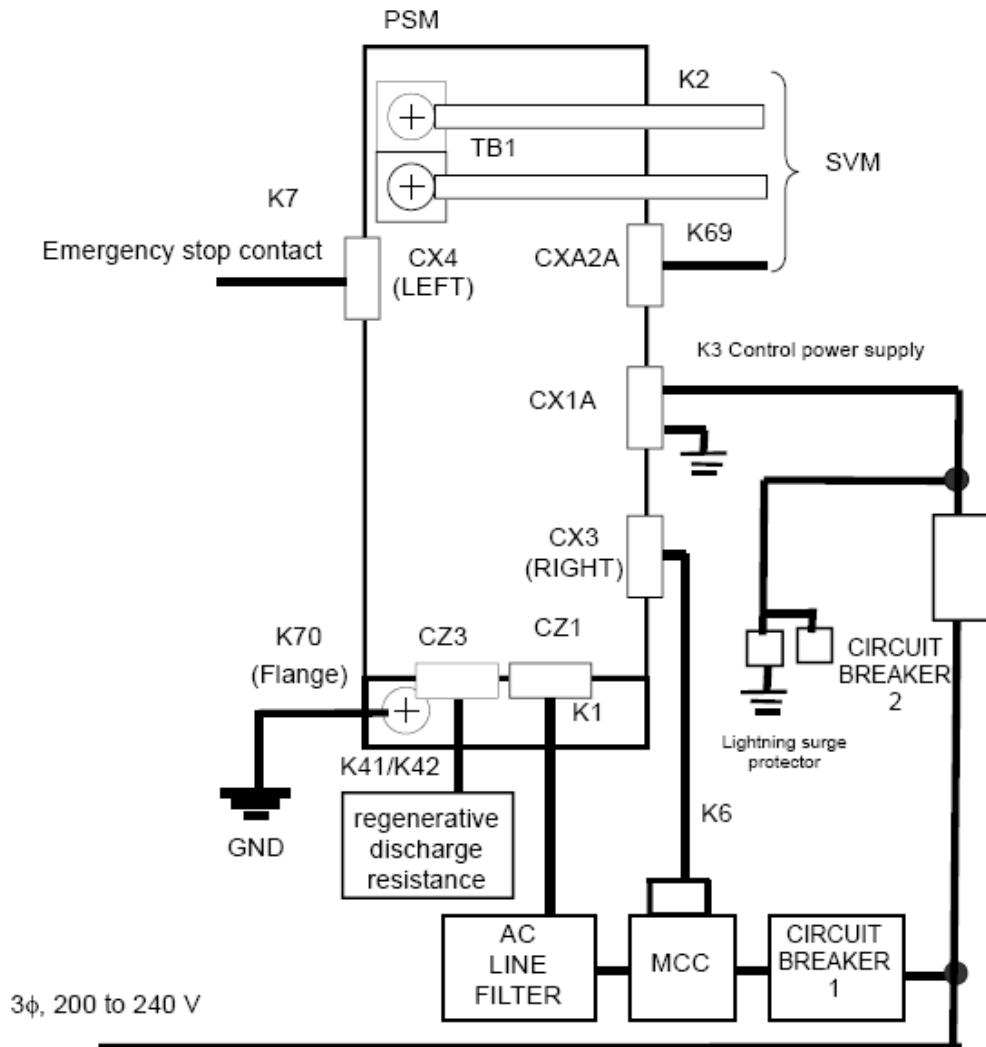
ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
NAME	U9	V9	W9	PE	U10	V10	W10	PE	24V	24V	24V	0V	0V	302				
ITEM	15	16	17	18	19	20	21											
NAME	303	304	305	306														

TB3 :

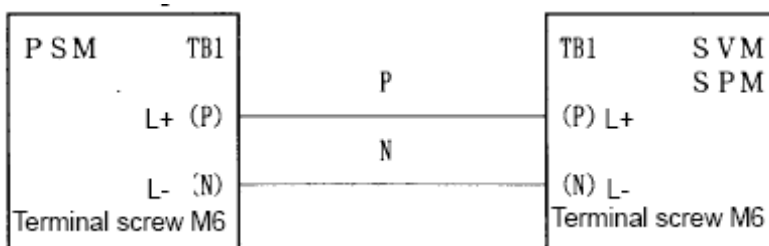
ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13					
NAME	24V	0V	OUT	132	133	134	24V	24V	24V	0V	0V	25	DC0V					
ITEM	14	15	16	17	18	19												
NAME	U8	V8	W8															

## 8. CONNECTION PIN ASSIGNMENT

### 8.1 AMP POWER SUPPLY

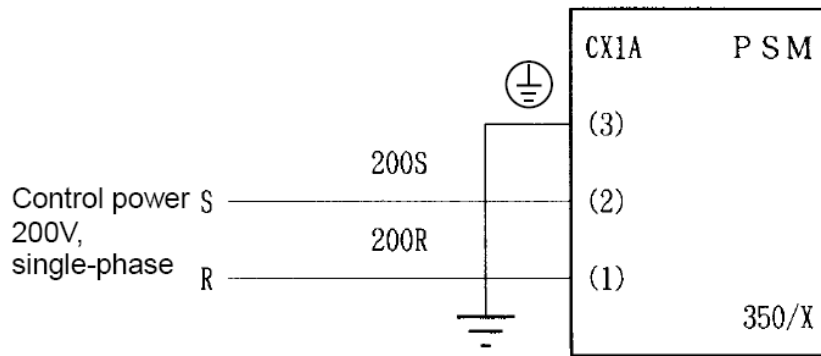


#### 1) K2 :

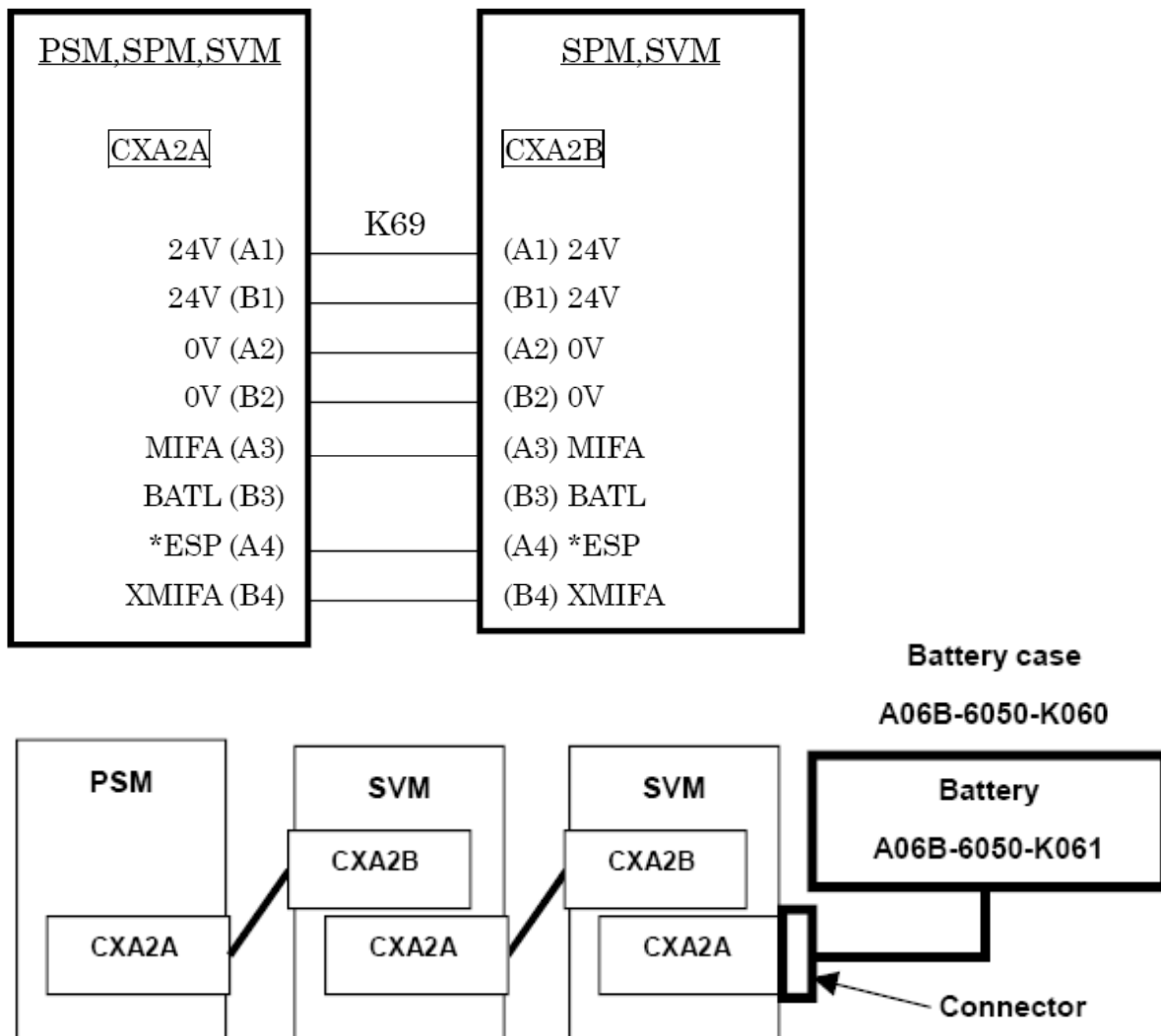


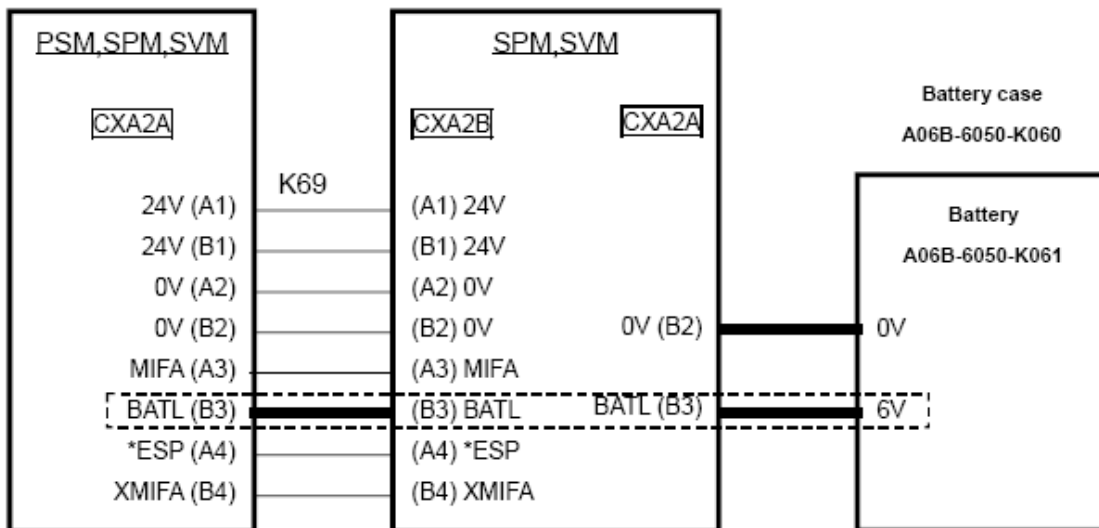
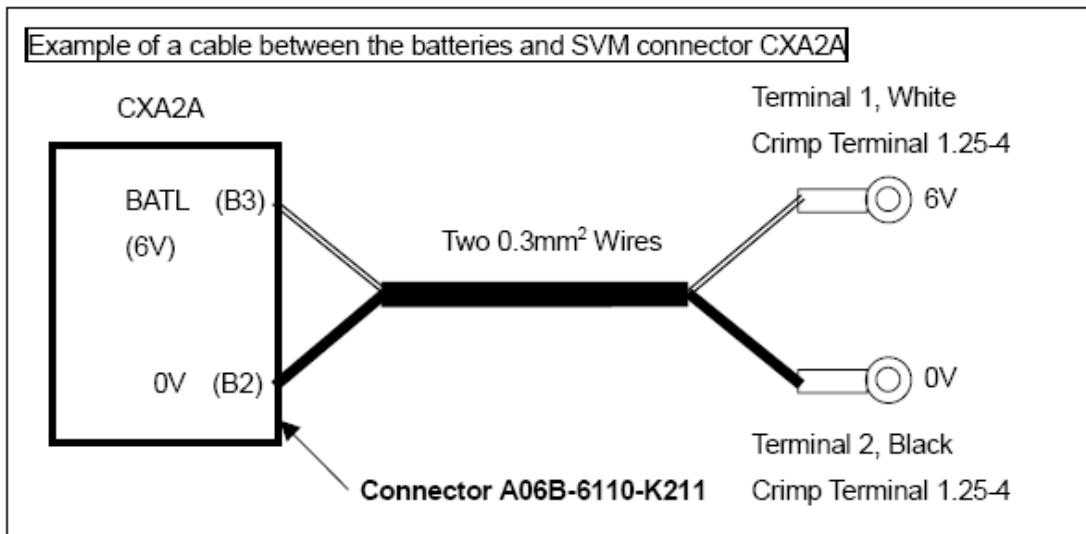


## 2 ) K3 :

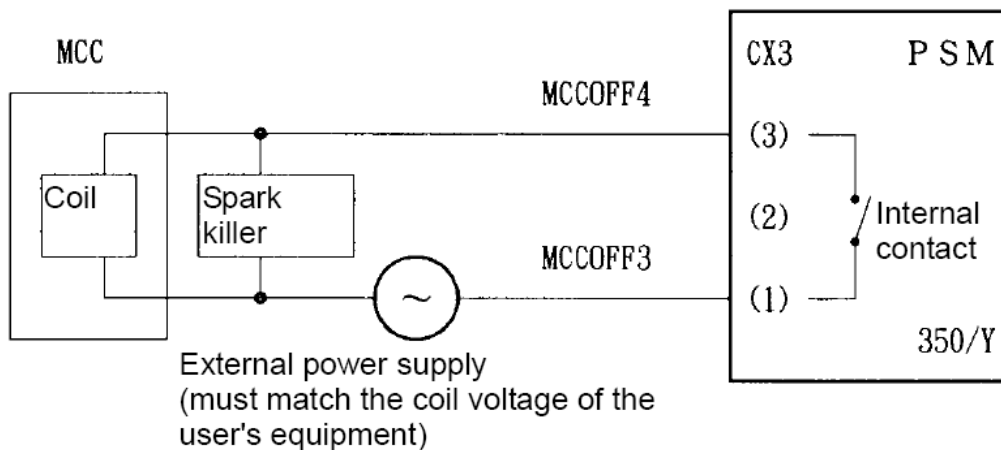


## 3 ) K69 :

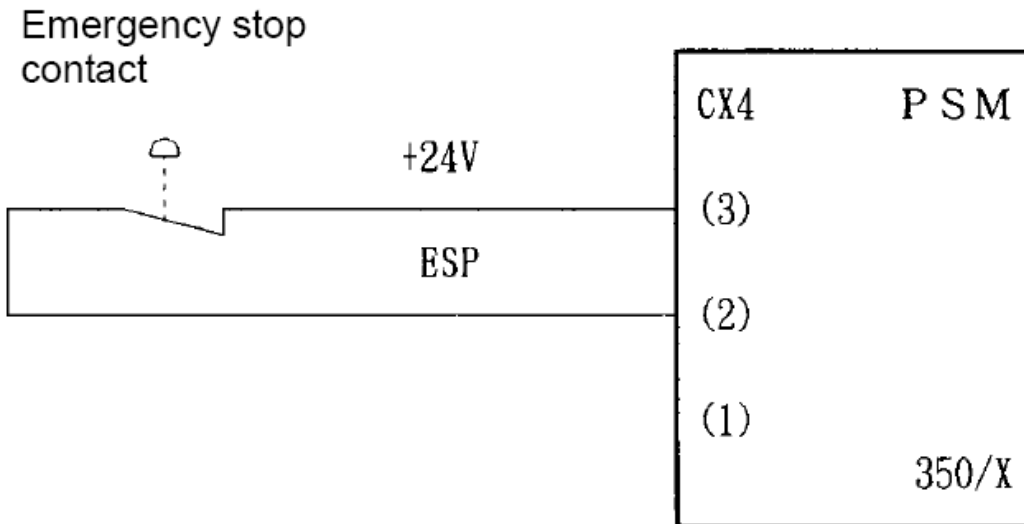




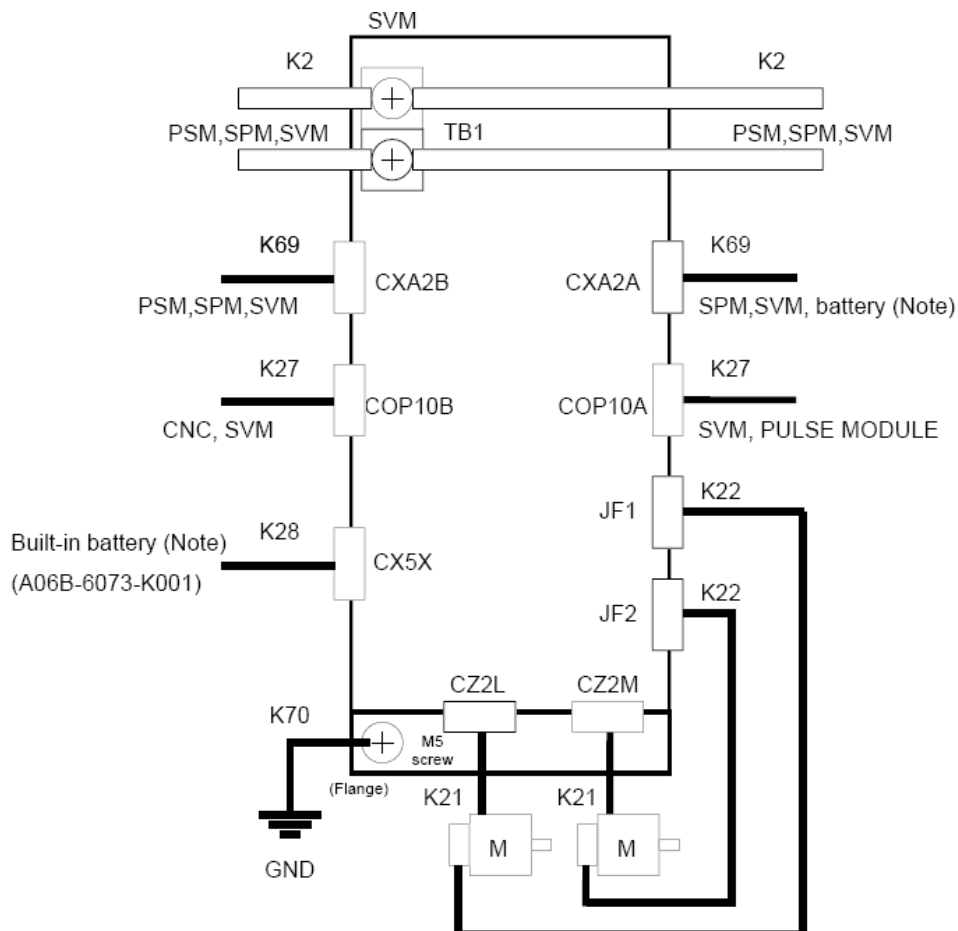
#### 4) K6 :



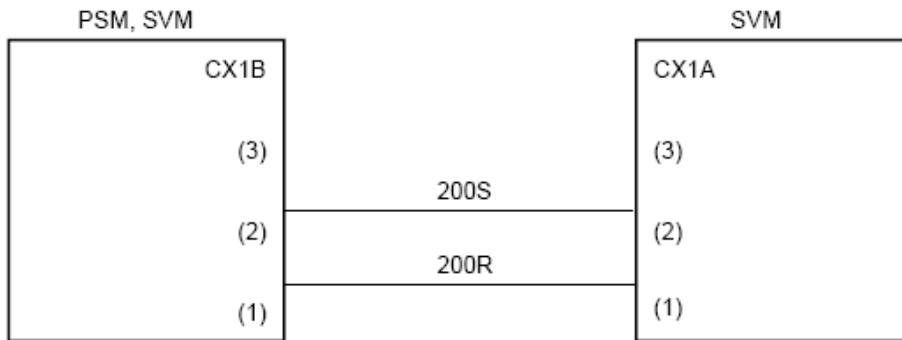
## 5) K7 :



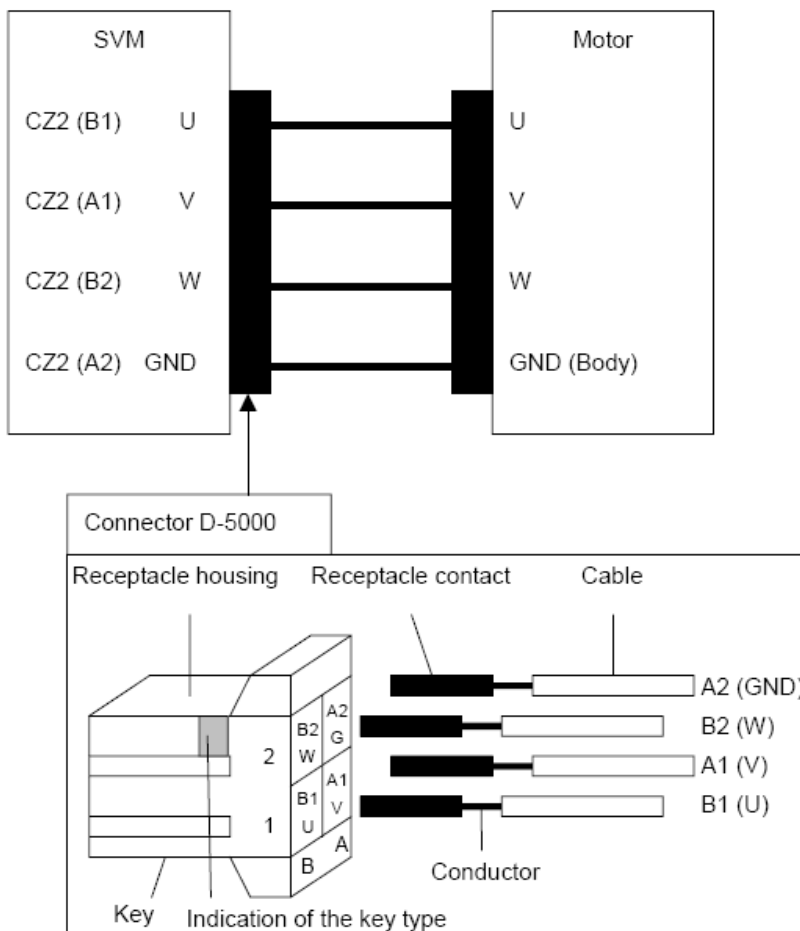
## 8.2 SERVO AMPLIFIER



## 1) K4 :

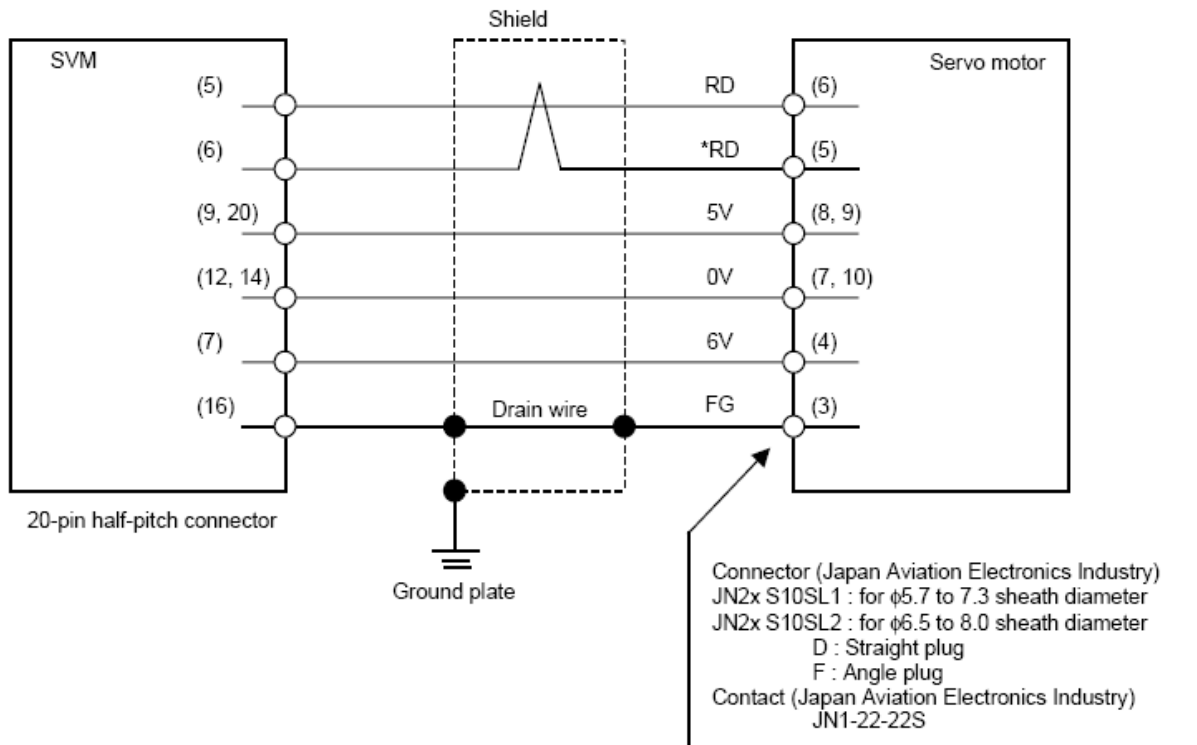


## 2) K21 :

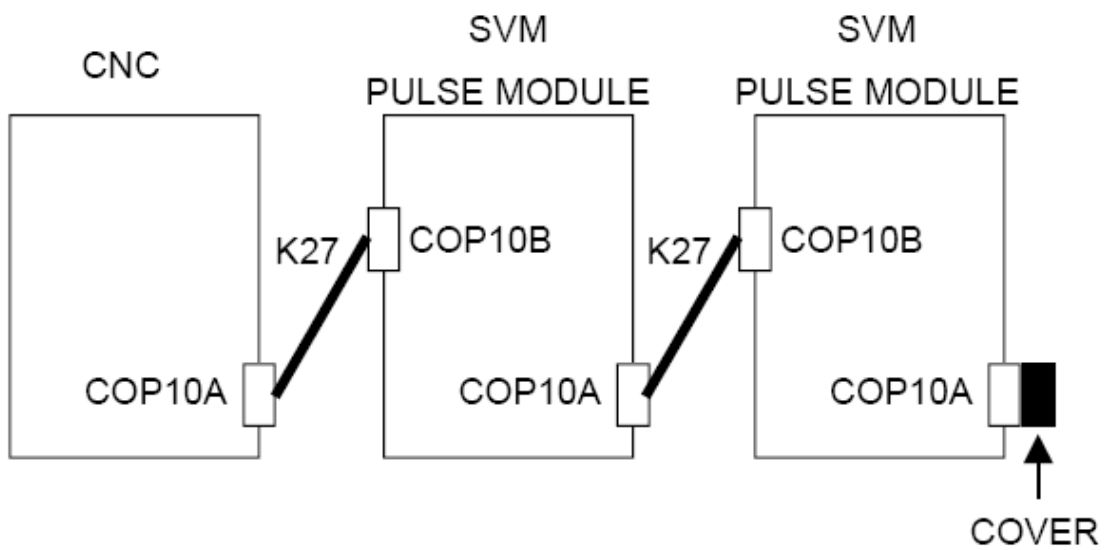


Specification of the key	Applicable SVM
XX	SVM1, SVM2(L), SVM3(L)
XY	SVM2(M), SVM3(M)
YY	SVM3(N)

### 3 ) K22 :

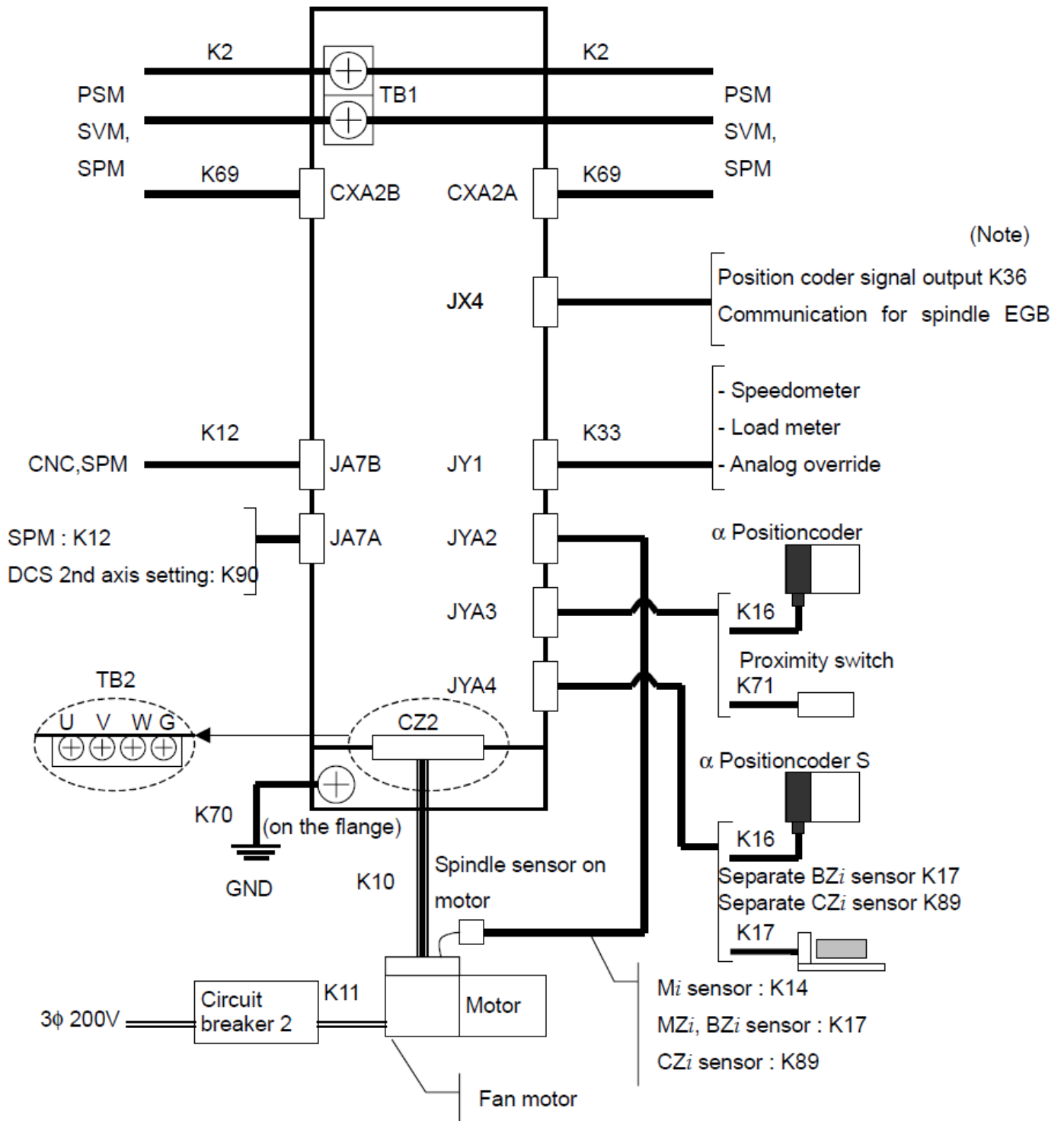


### 4 ) K27 :

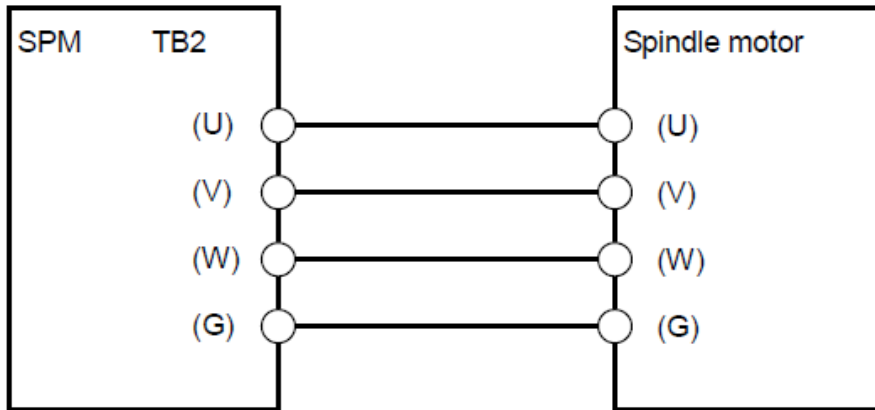


## 8.3

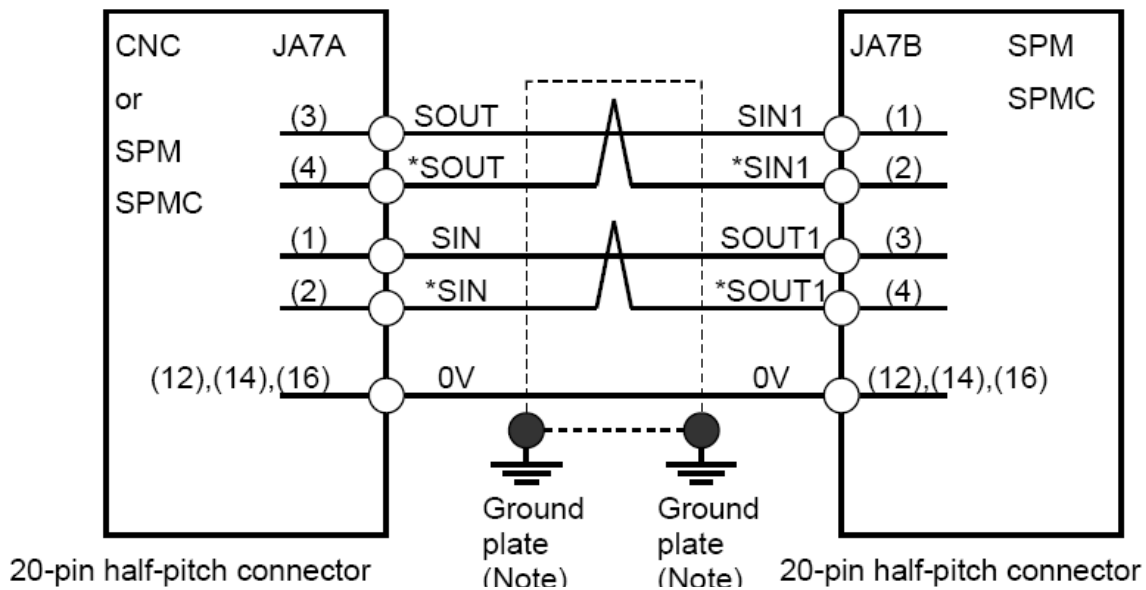
### Spindle amplifier module (SPM)



## 1) TB2

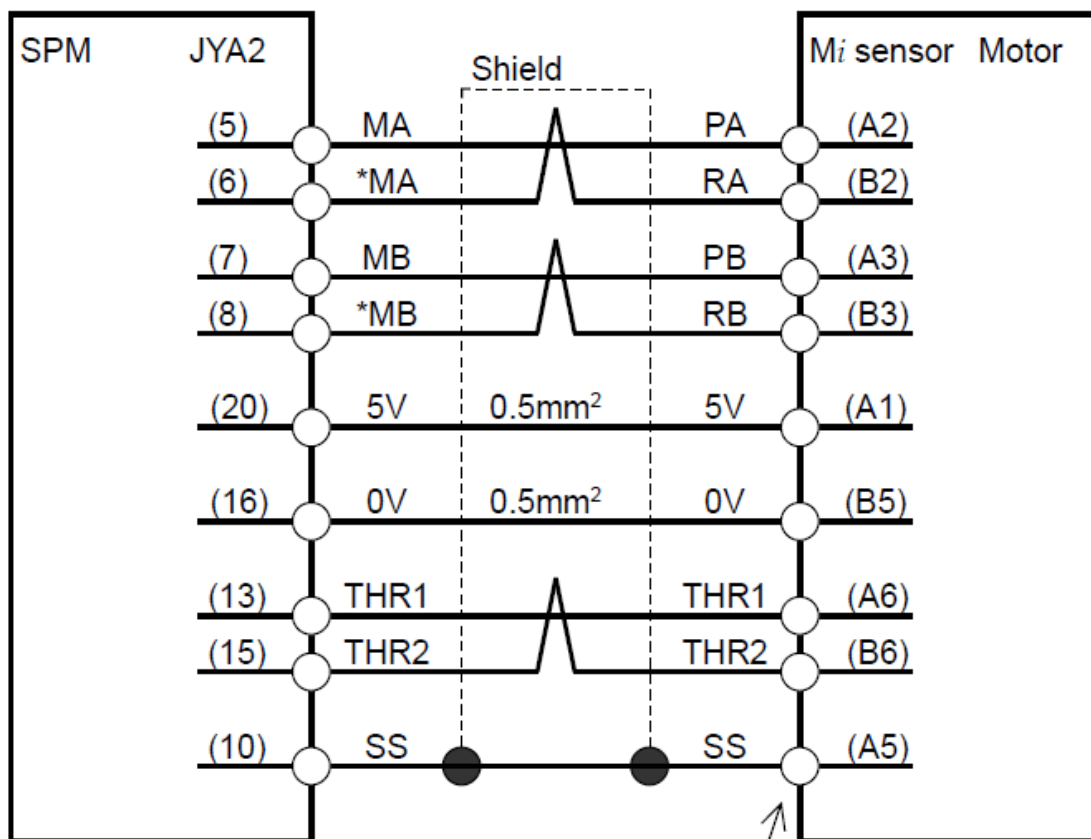


## 2) K12 :



## 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

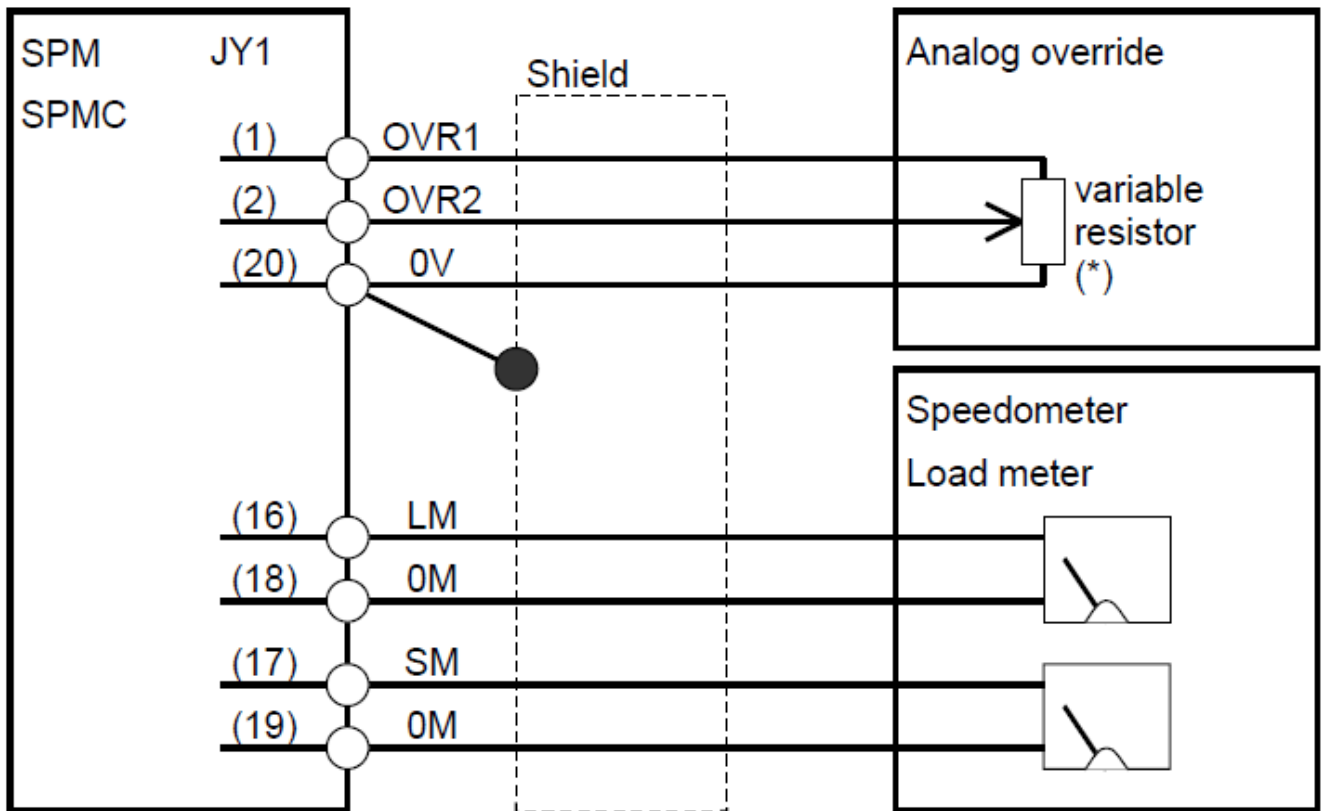
9	5V	10	SS	19	#	20	5V
7	MB	8	*MB	17	#	18	5V
5	MA	6	*MA	15	THR2	16	0V
3	#	4	#	13	THR1	14	0V
1	MZ	2	*MZ	11	#	12	0V



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

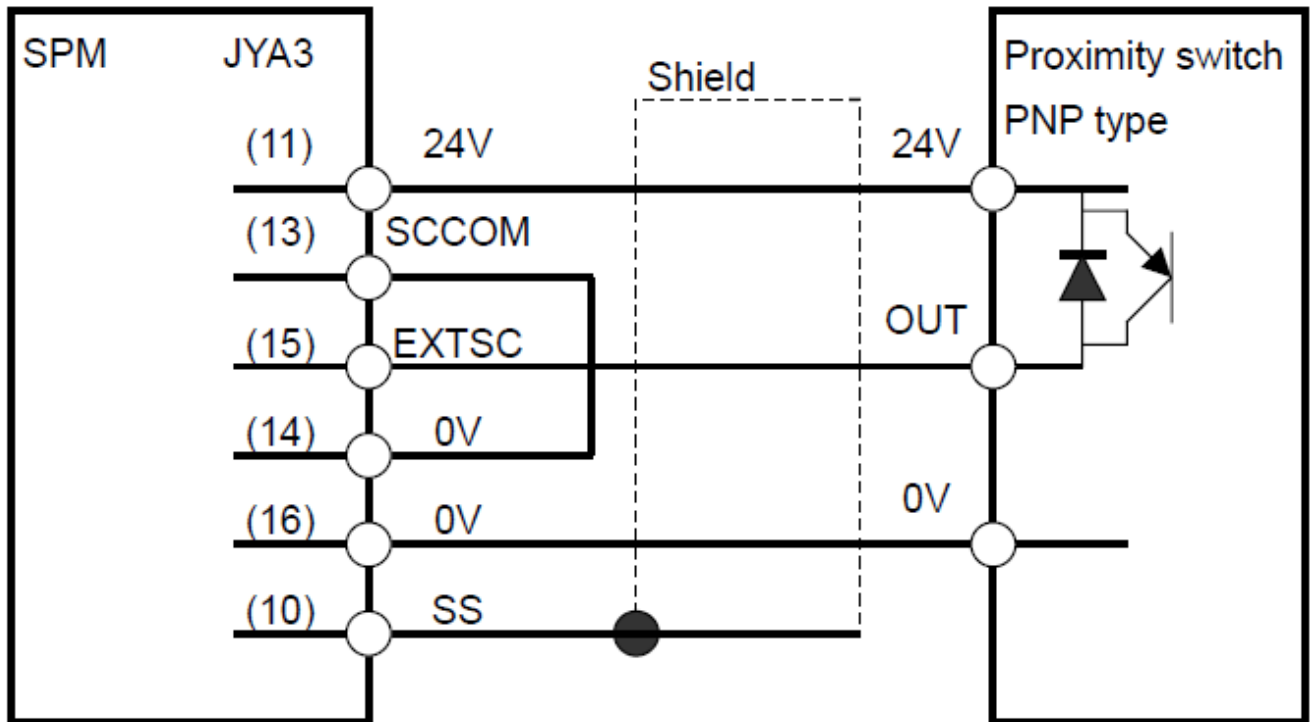


20-pin half-pitch connector

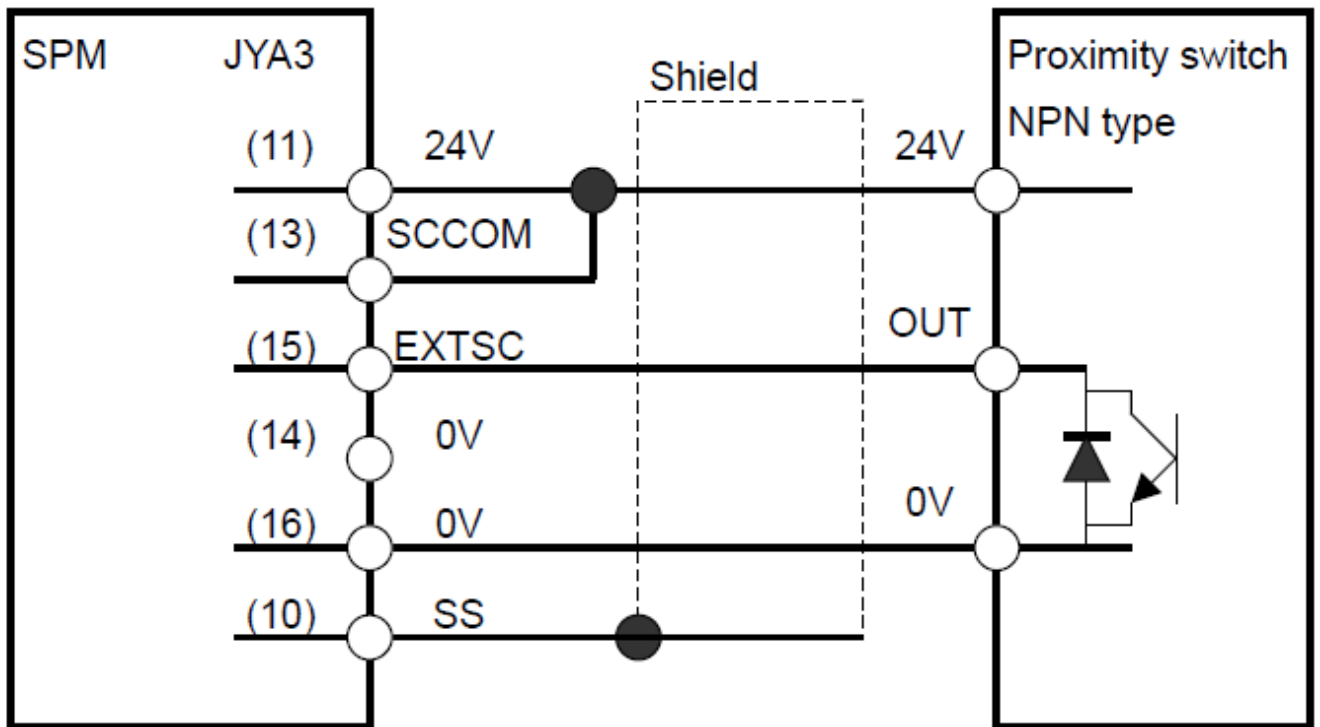
## JY1

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	#

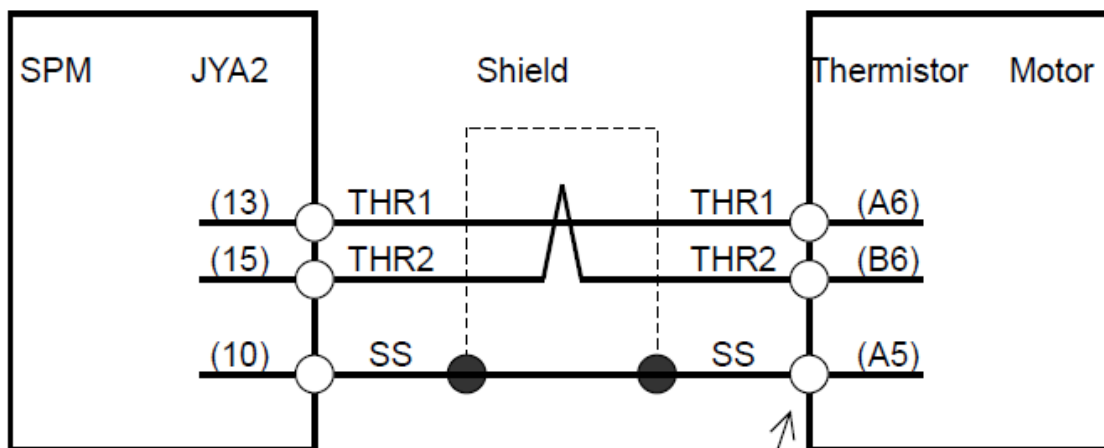
### 4) K71



20-pin half-pitch connector



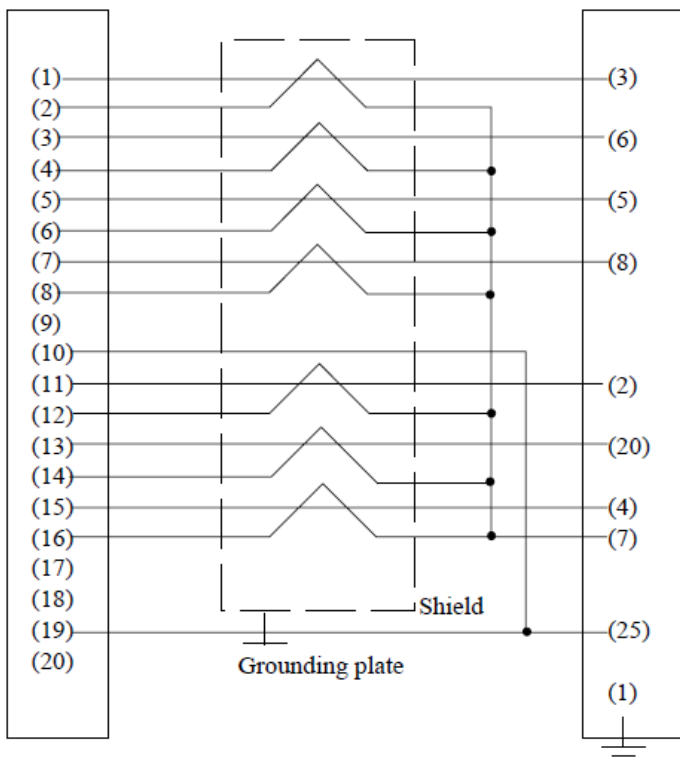
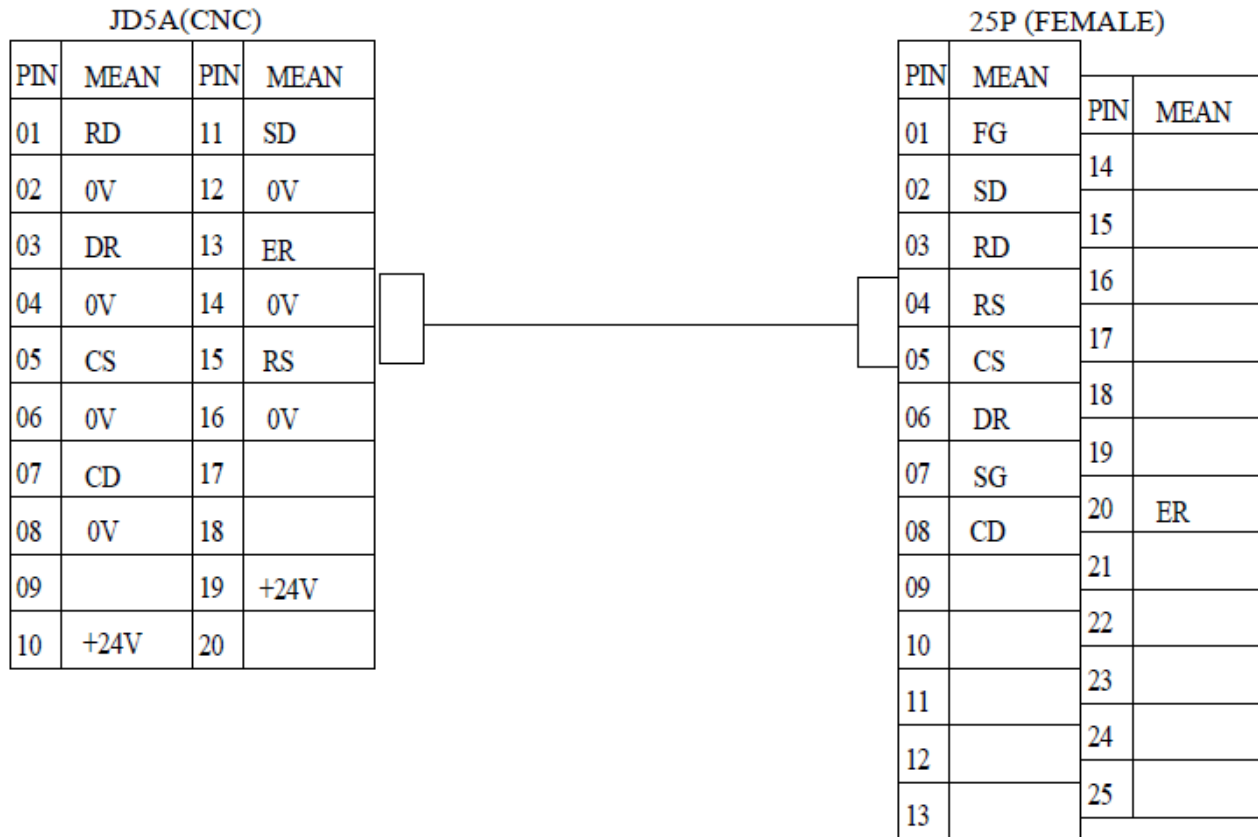
20-pin half-pitch connector



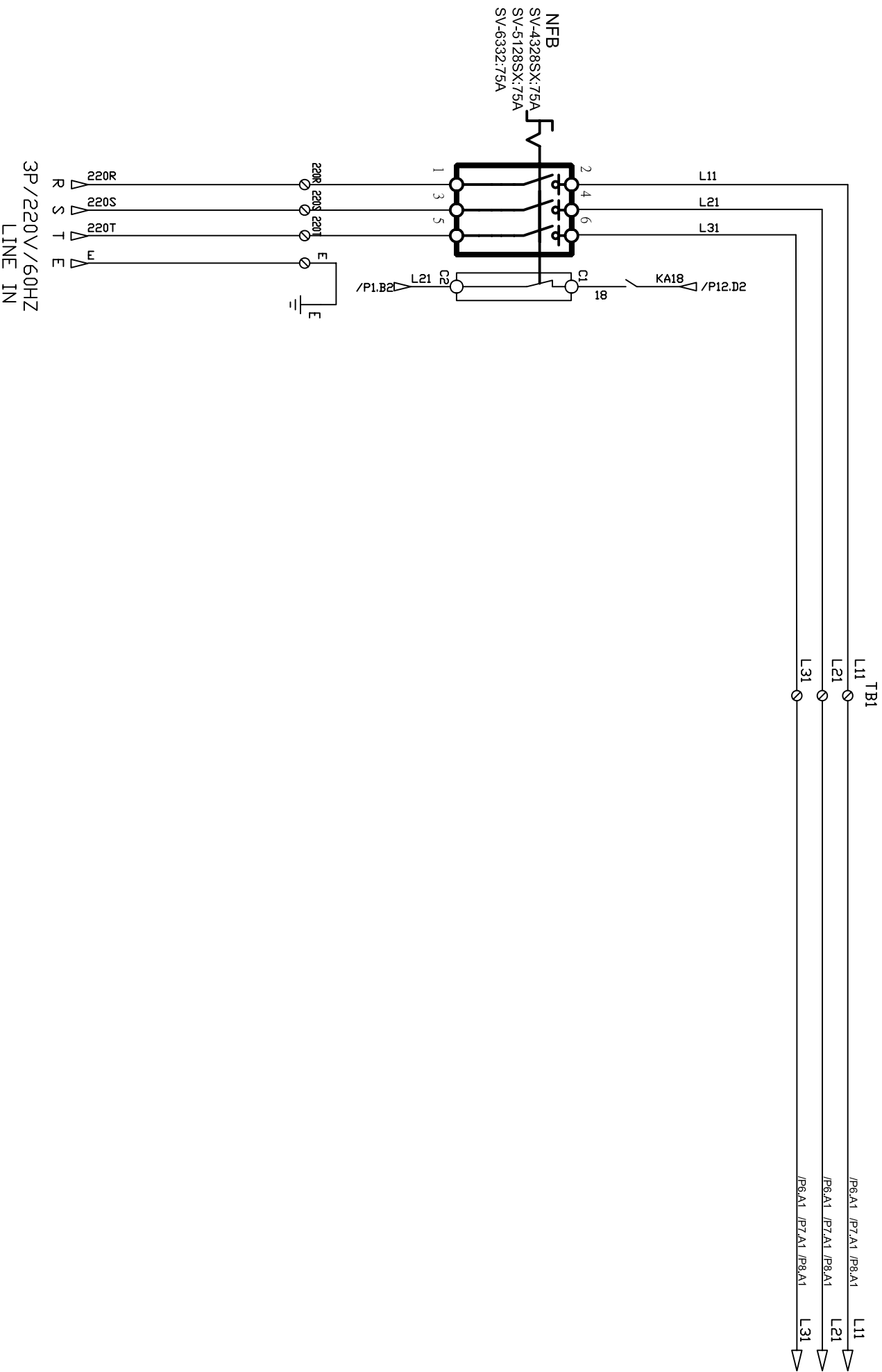
20-pin half-pitch connector

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

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



9. Electrical Wiring Diagram



3P/220V/60HZ  
LINE IN

NFB  
SV-4328SX:75A  
SV-5128SX:75A  
SV-6332:75A

**NOTE:**

For 3P / 220V voltage use

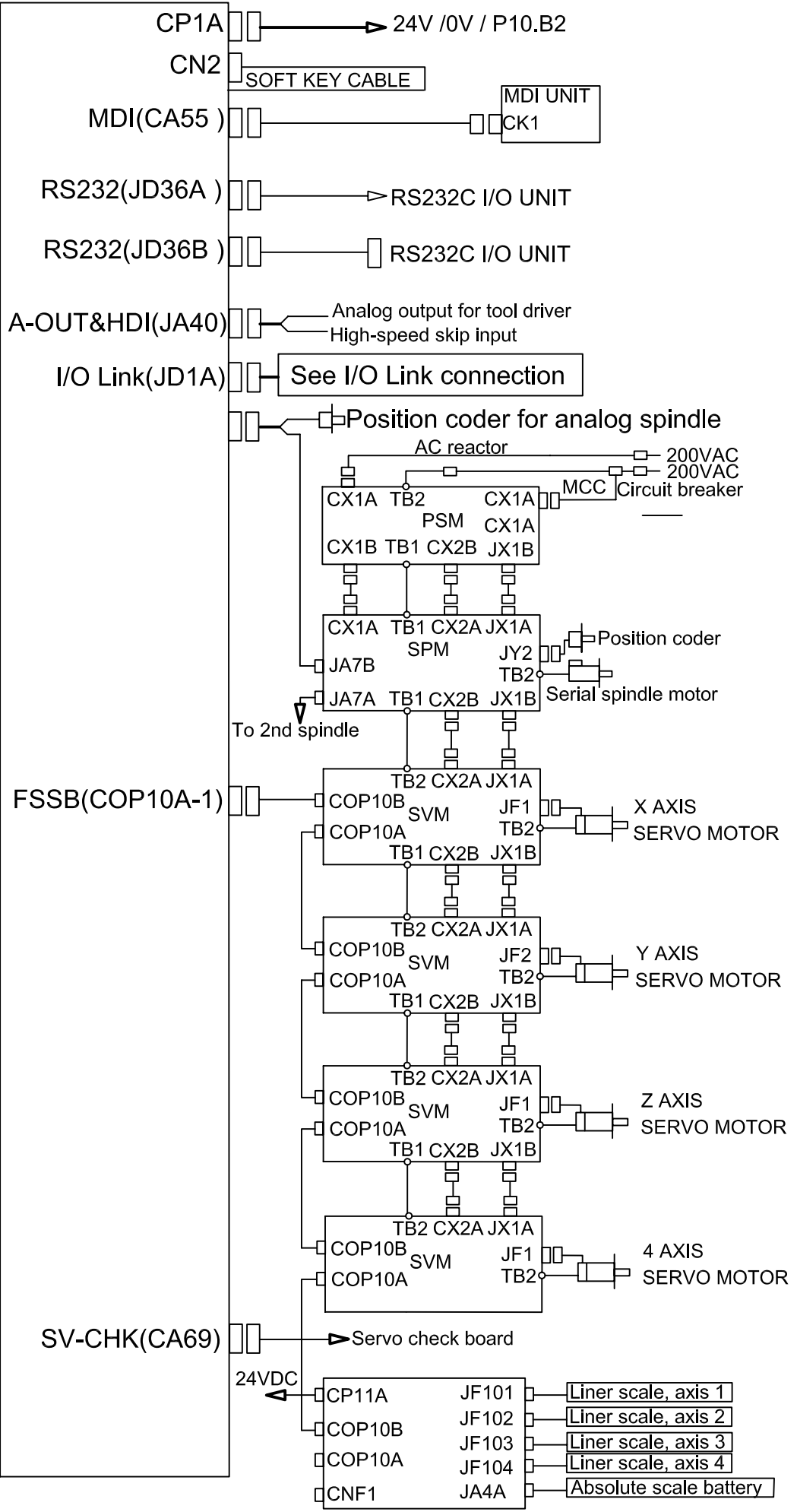


Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC .01MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P1

# FANUC

L  
C  
C  
D



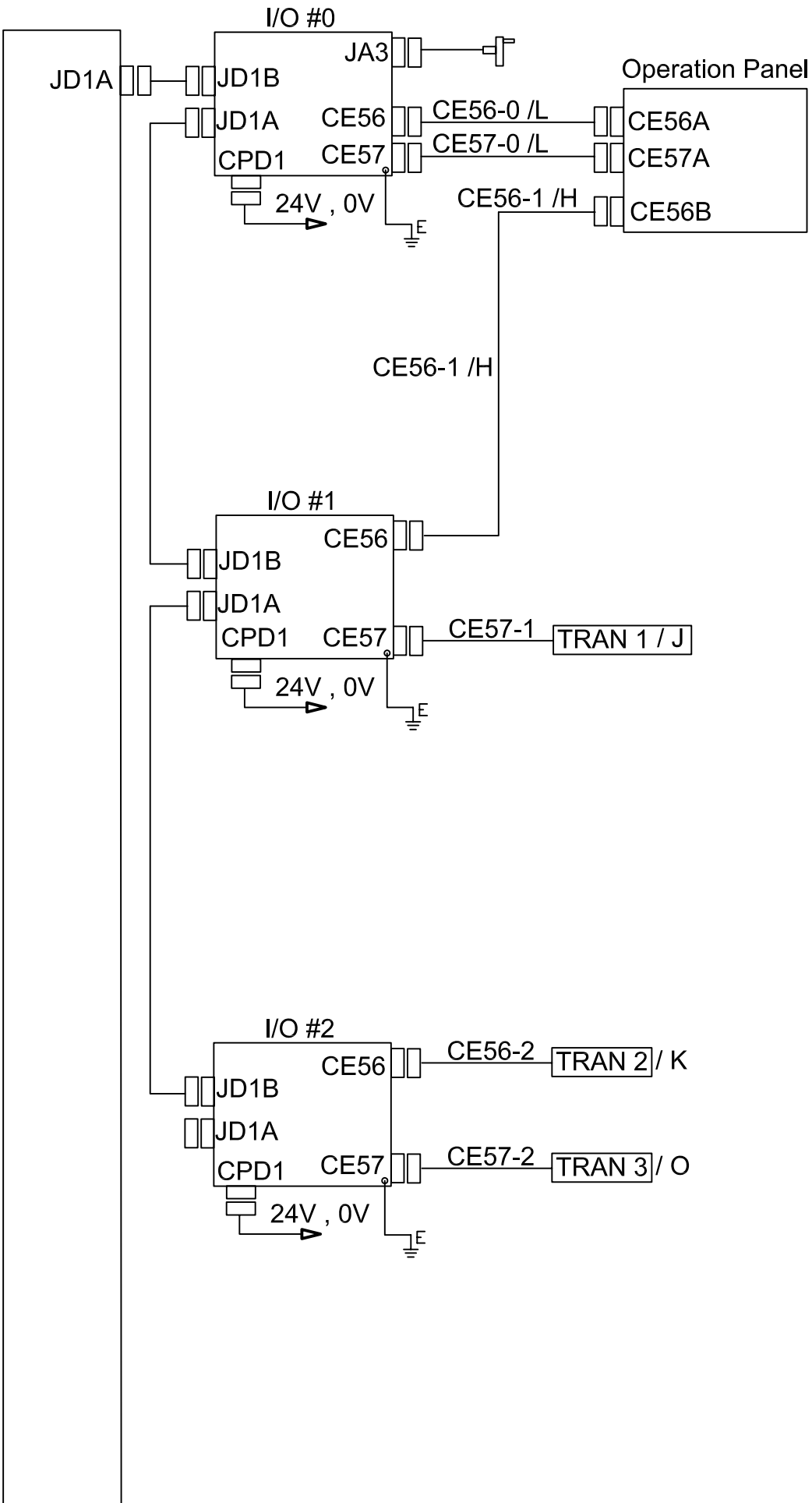
NOTE:

Control unit

SHARP

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P2



**NOTE:**

**I/O Link connection**

**SHARP** Sharp Industries . Inc

TITLE FIELD SVL/SV

DRAWN

EXAMINE

CHECKED

NC TYPE

VERSION

PRE:

NEXT:

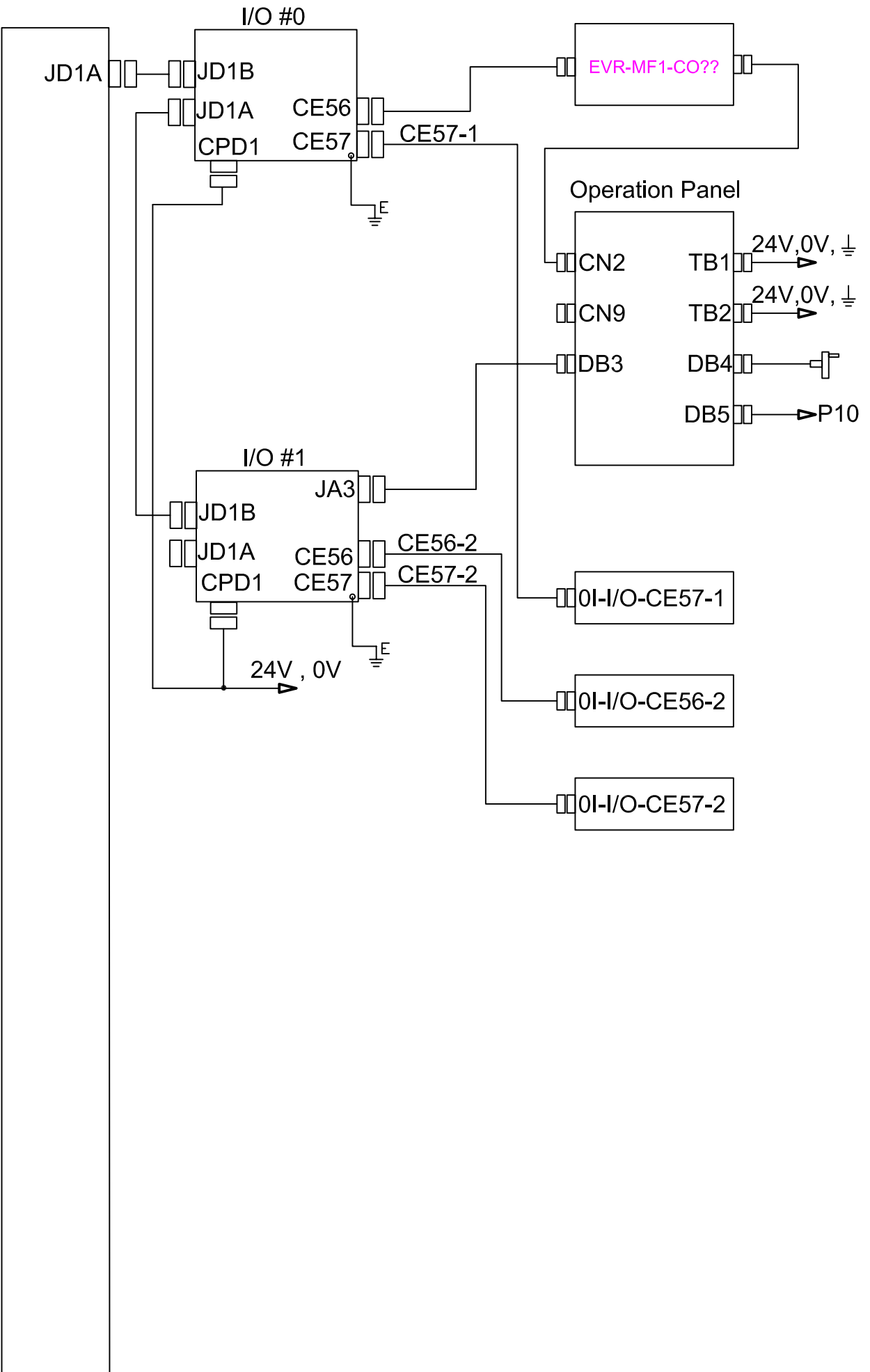
FANUC 01-M/F

2018/10/11

SHEET NO

P3

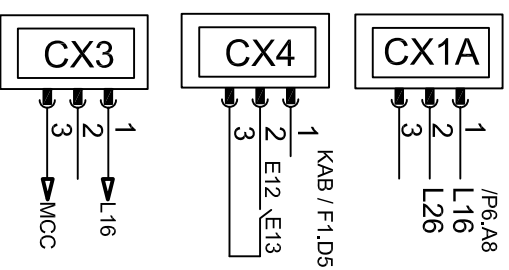
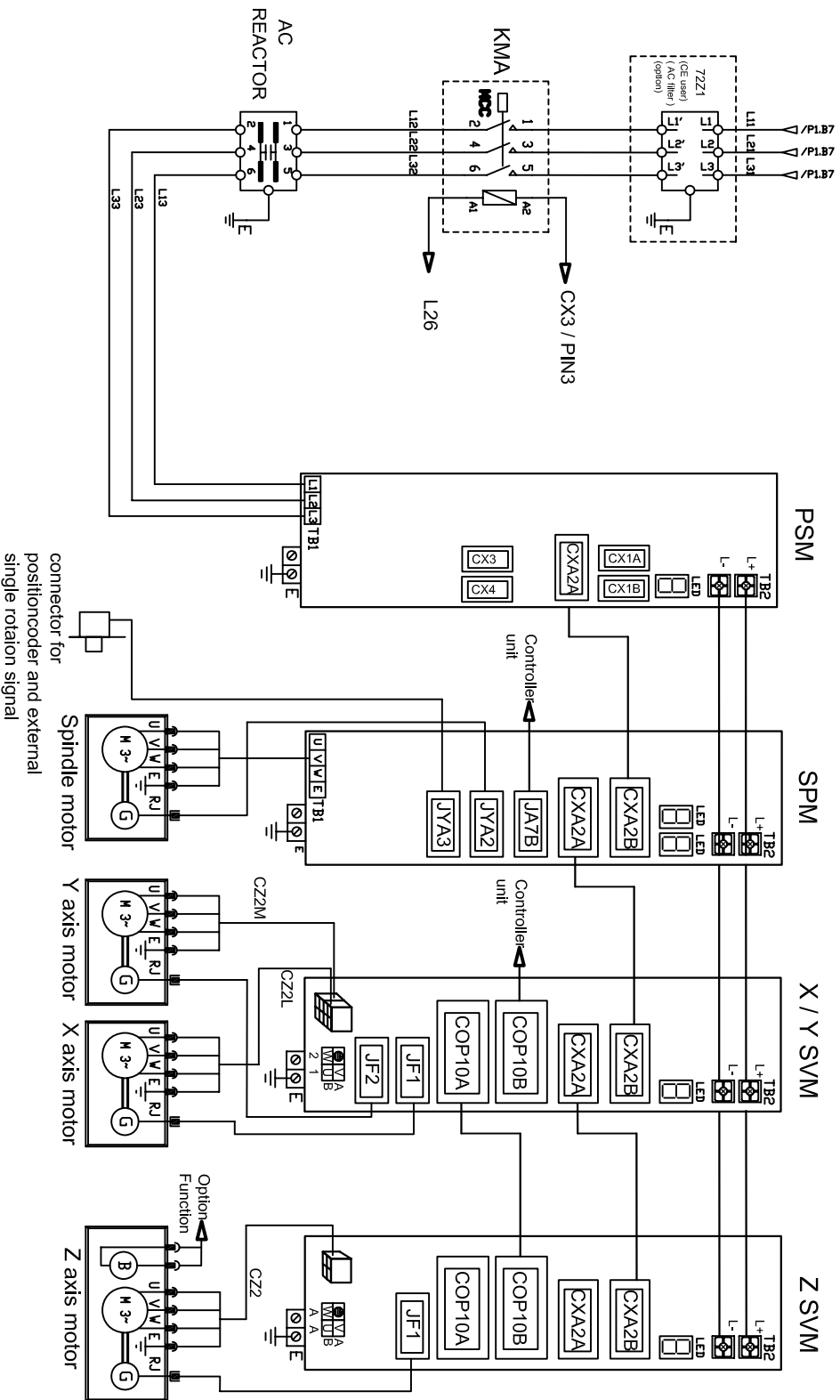




**NOTE:**  
I/O Link connection (NEW PANEL)

**SHARP** Sharp Industries . Inc

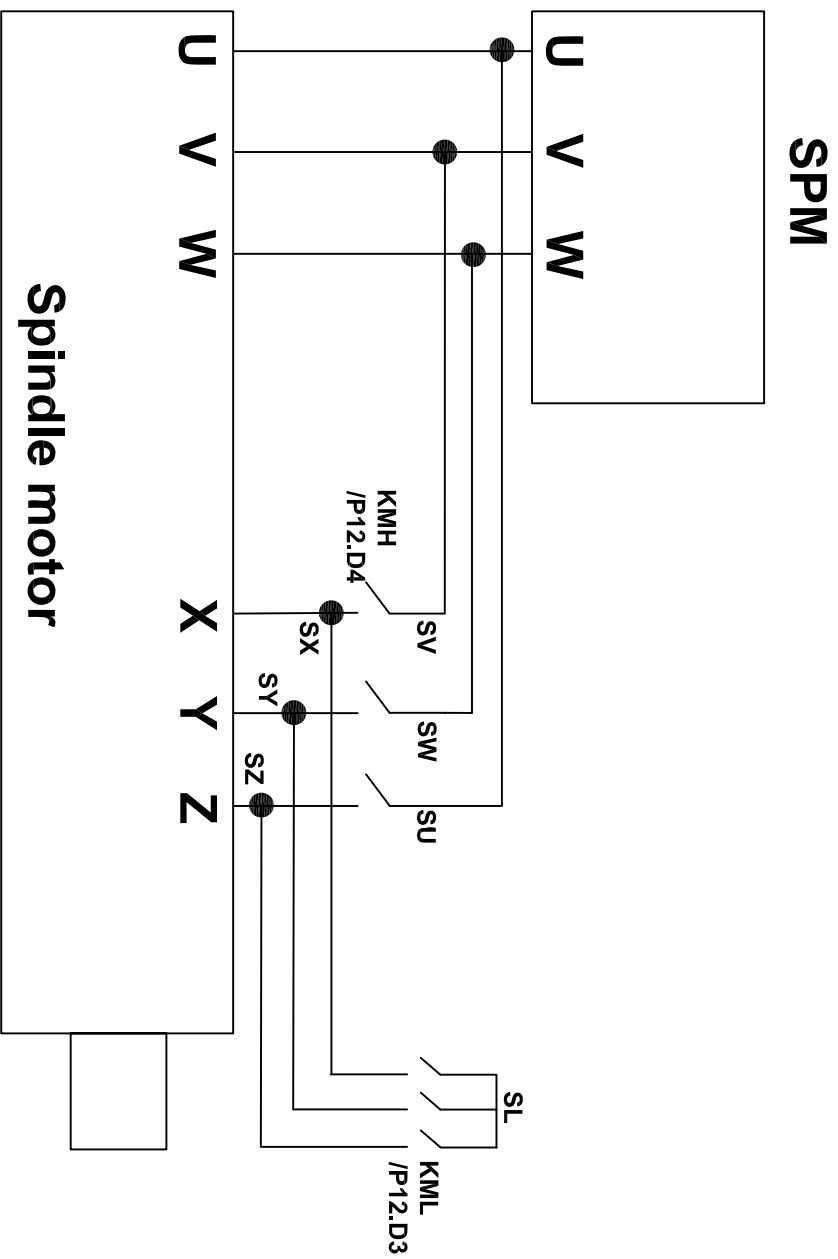
TITLE FIELD	SVL / SV	INC TYPE	FANUC QIMF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P3-1



**NOTE:** Servo/spindle drive system configuration connect

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 0I-M/F
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P4



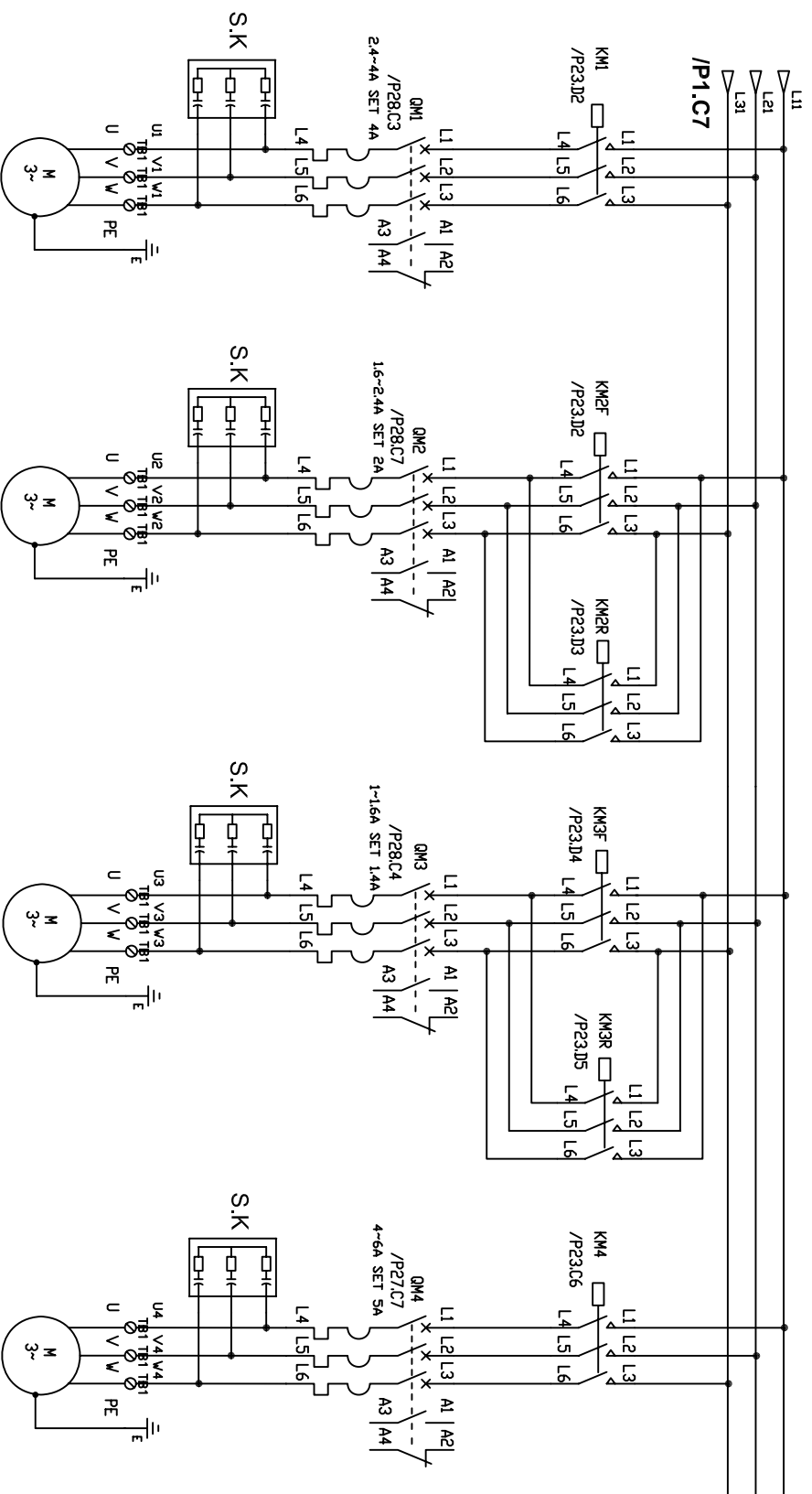
**NOTE:**

Spindle motor wiring

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P5



Coolant Motor  
3Ø220V / 750W

Magazine Motor  
3Ø220V / 370W

Chip Conveyor Motor  
3Ø220V / 200W

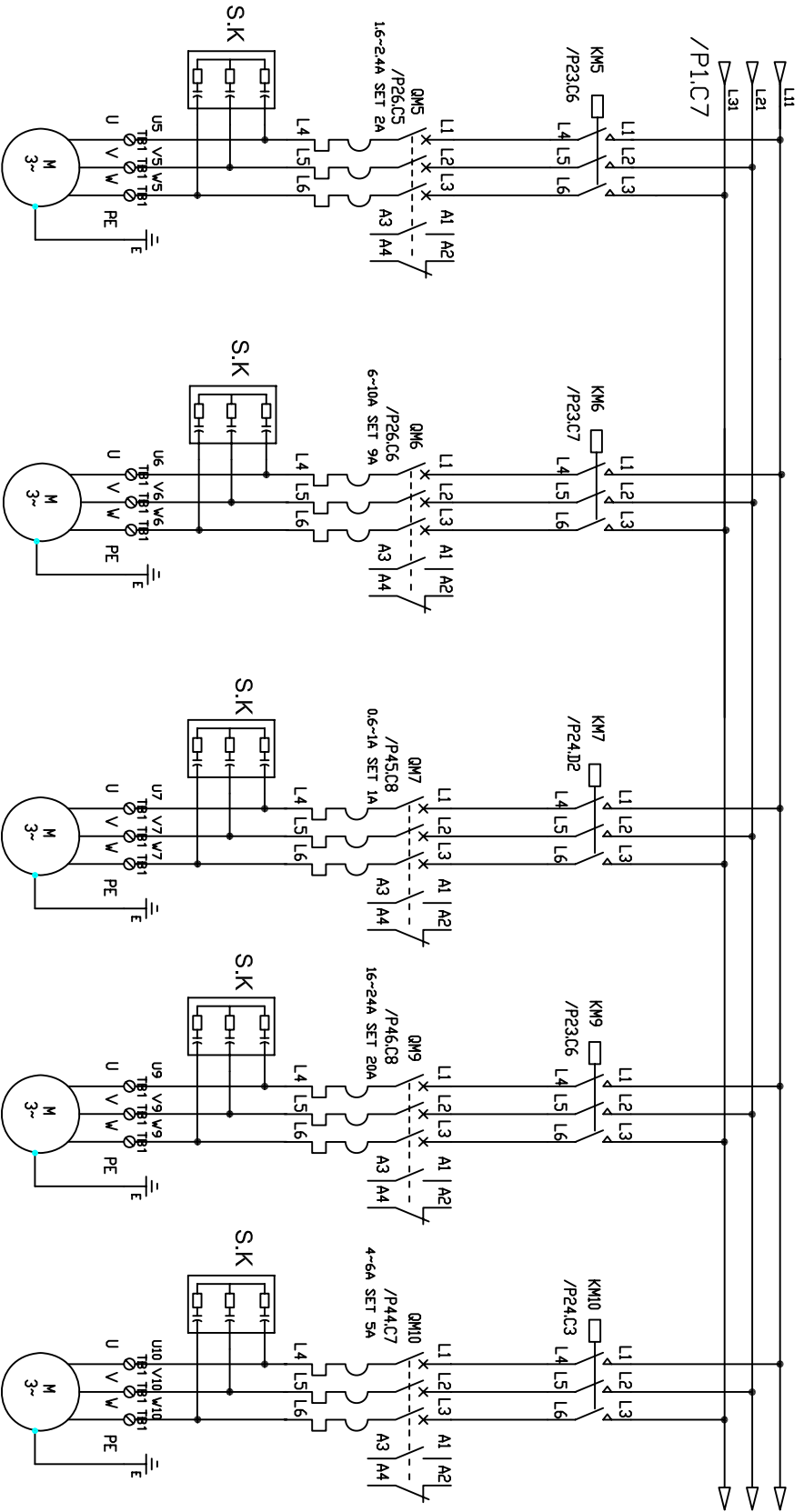
Oil Chiller Motor  
3Ø220V / 750W

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

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-M/F
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P6



Arm Motor  
3 $\phi$ 220V / 560W

Chip Flush Pump Motor  
3 $\phi$ 220V / 2050W

Oil Skimmer Motor  
3 $\phi$ 220V / 25W

CTS Motor  
3 $\phi$ 220V / 3.7KW

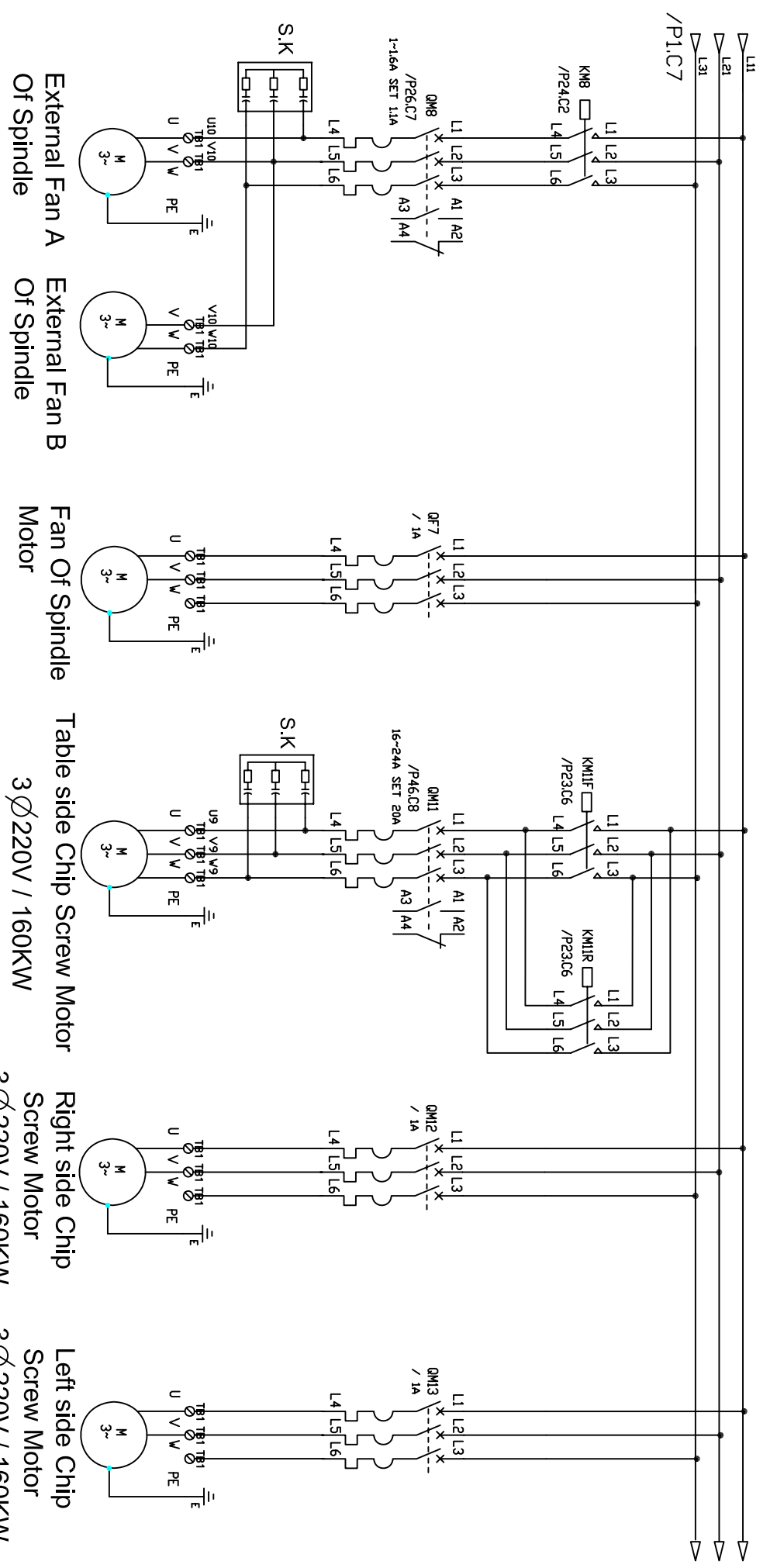
CTS Recycle Motor  
3 $\phi$ 220V / 1.5KW

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

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P7

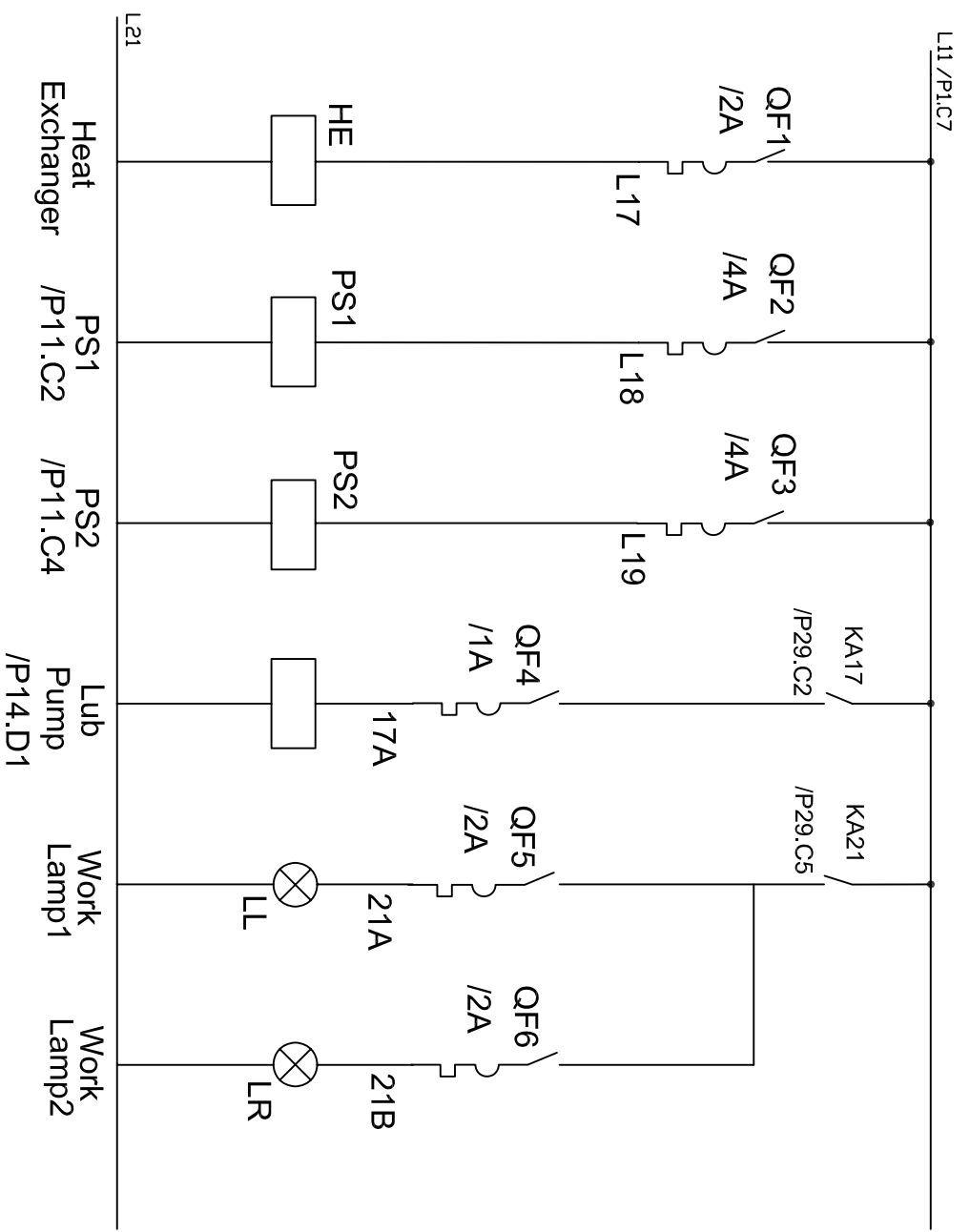


External Fan A Of Spindle      External Fan B Of Spindle      Fan Of Spindle Motor      Table side Chip Screw Motor 3Ø220V / 160KW      Right side Chip Screw Motor 3Ø220V / 160KW      Left side Chip Screw Motor 3Ø220V / 160KW

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

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 01-M/F
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P8



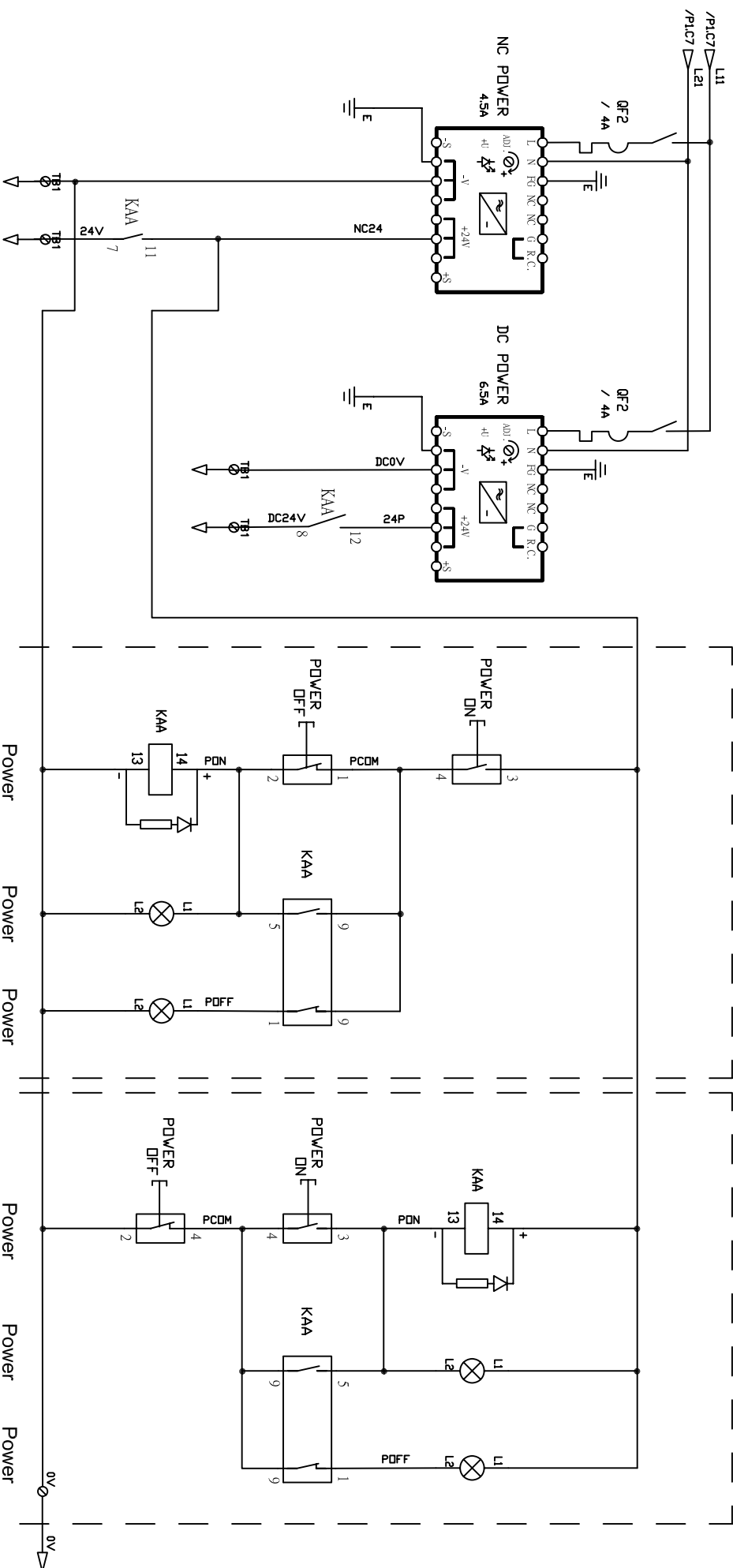
**NOTE:**

**Circuit breaker unit**

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-M/F
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P9

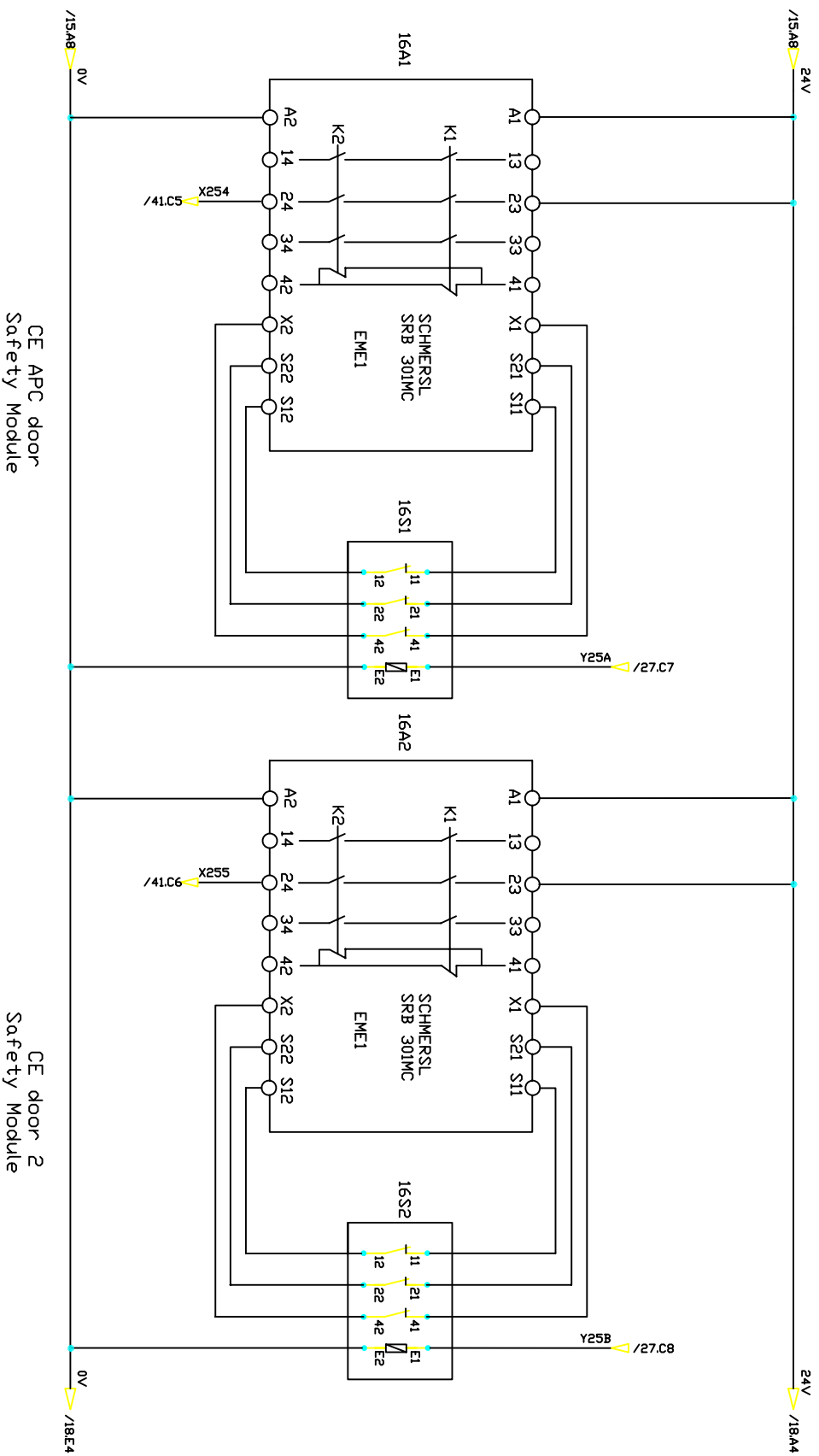


**NOTE:**  
24V DC power spully

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P10





CE APC door  
Safety Module

CE door 2  
Safety Module

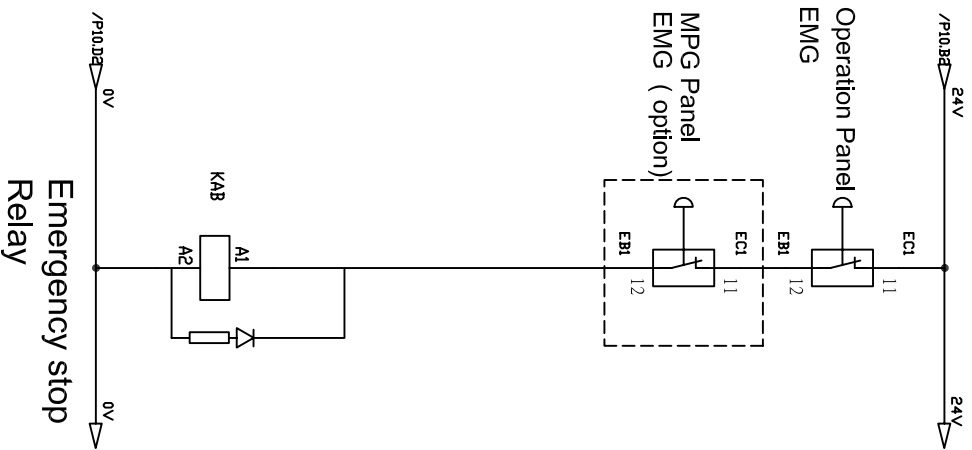
**NOTE:**

**Emergency stop Unit**

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-M/F
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P11



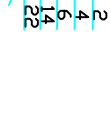
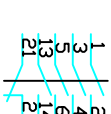
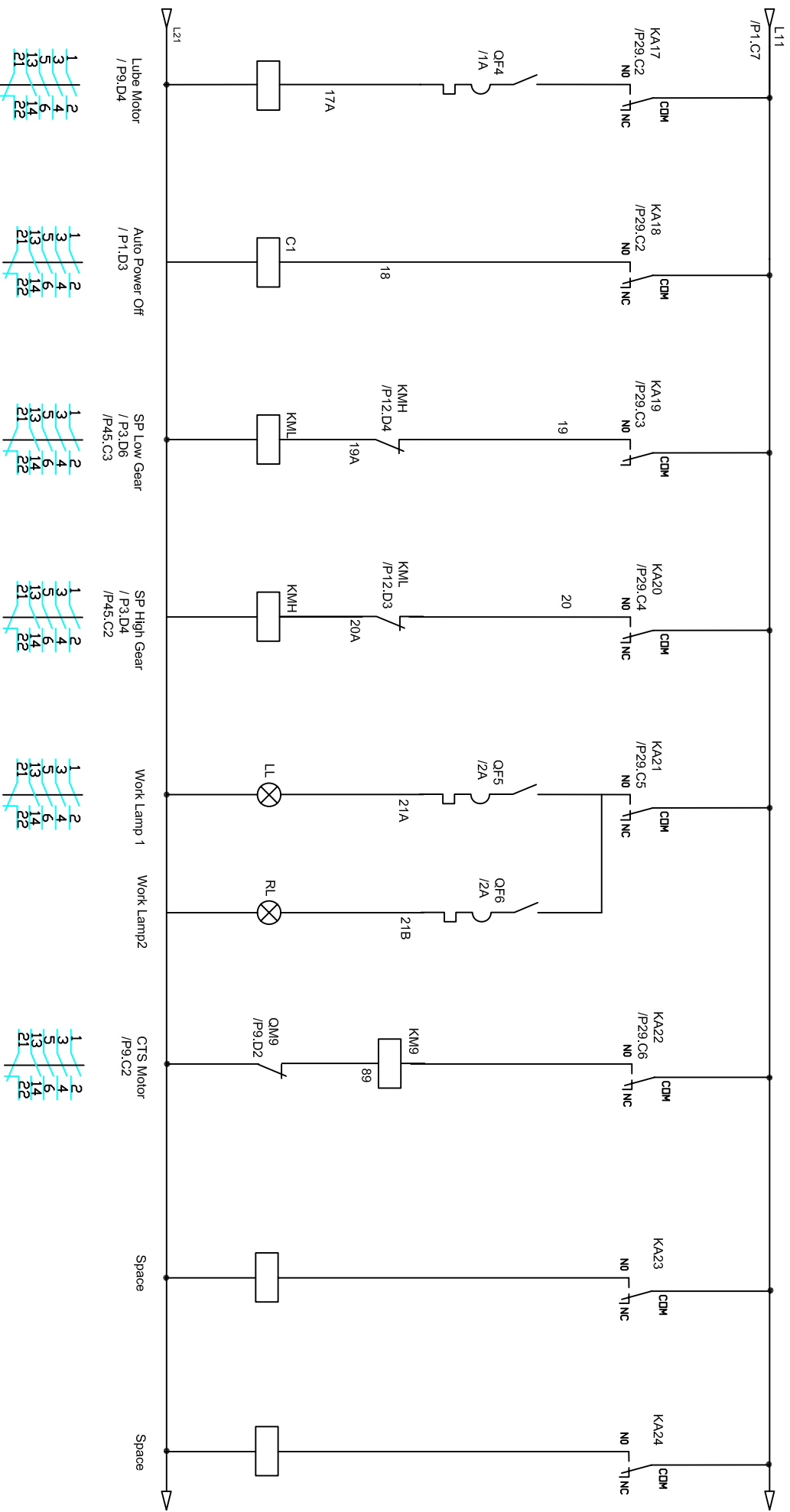
**NOTE:**

**Emergency stop Unit**

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P11-1



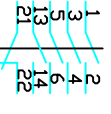
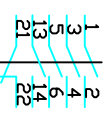
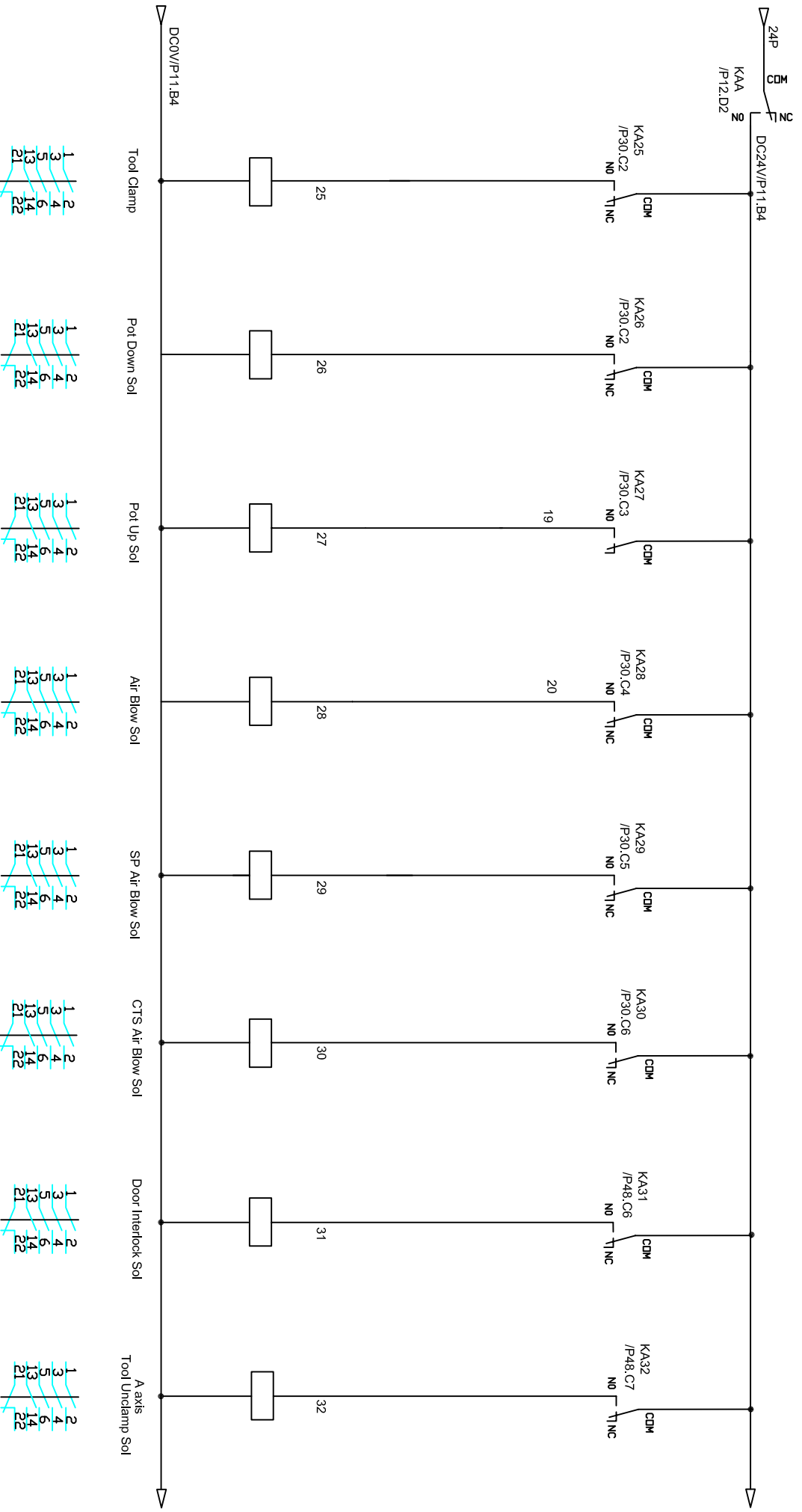
**NOTE:**

# Output Control Circuit



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P12

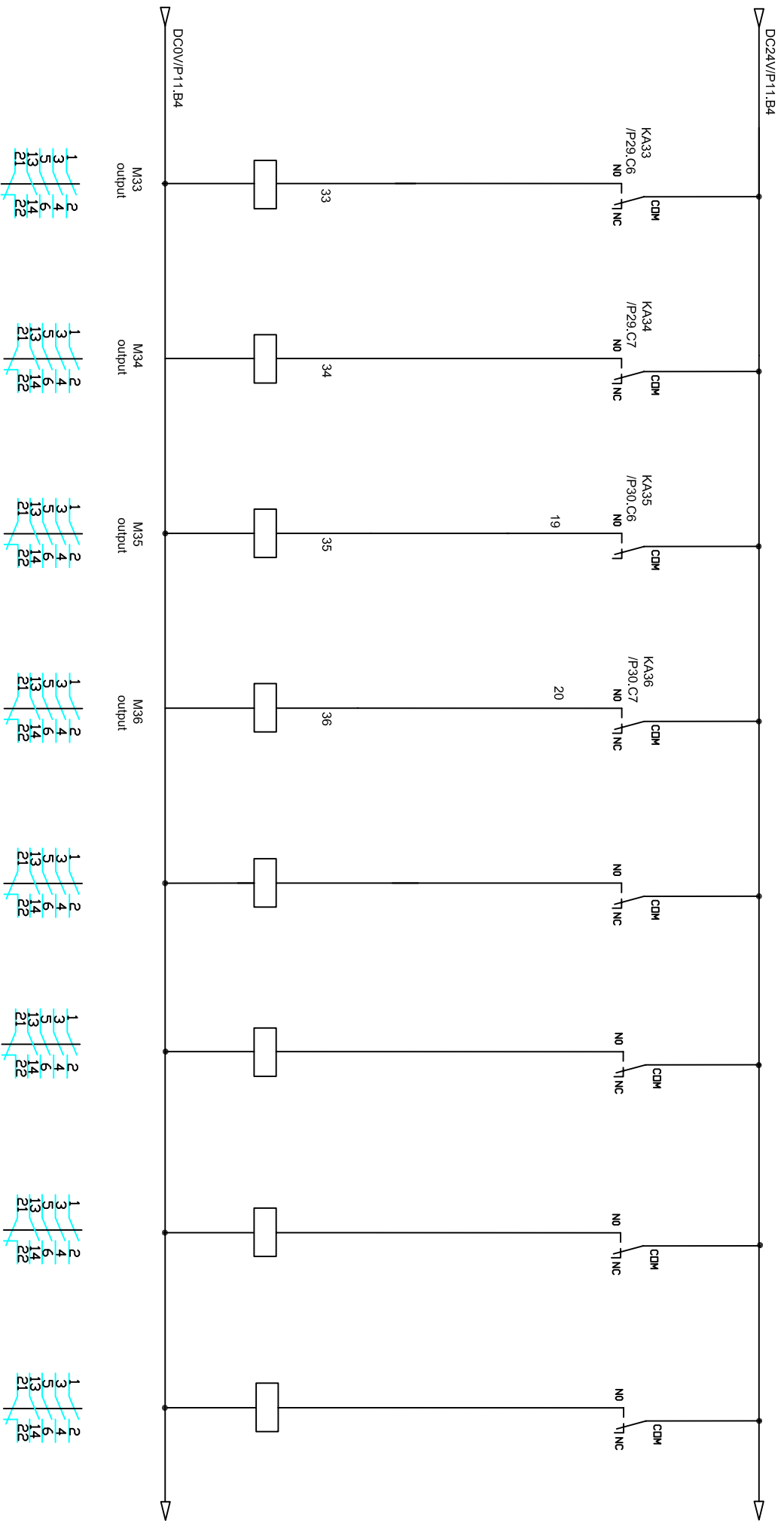


**NOTE:**

# Output Control Circuit

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P13



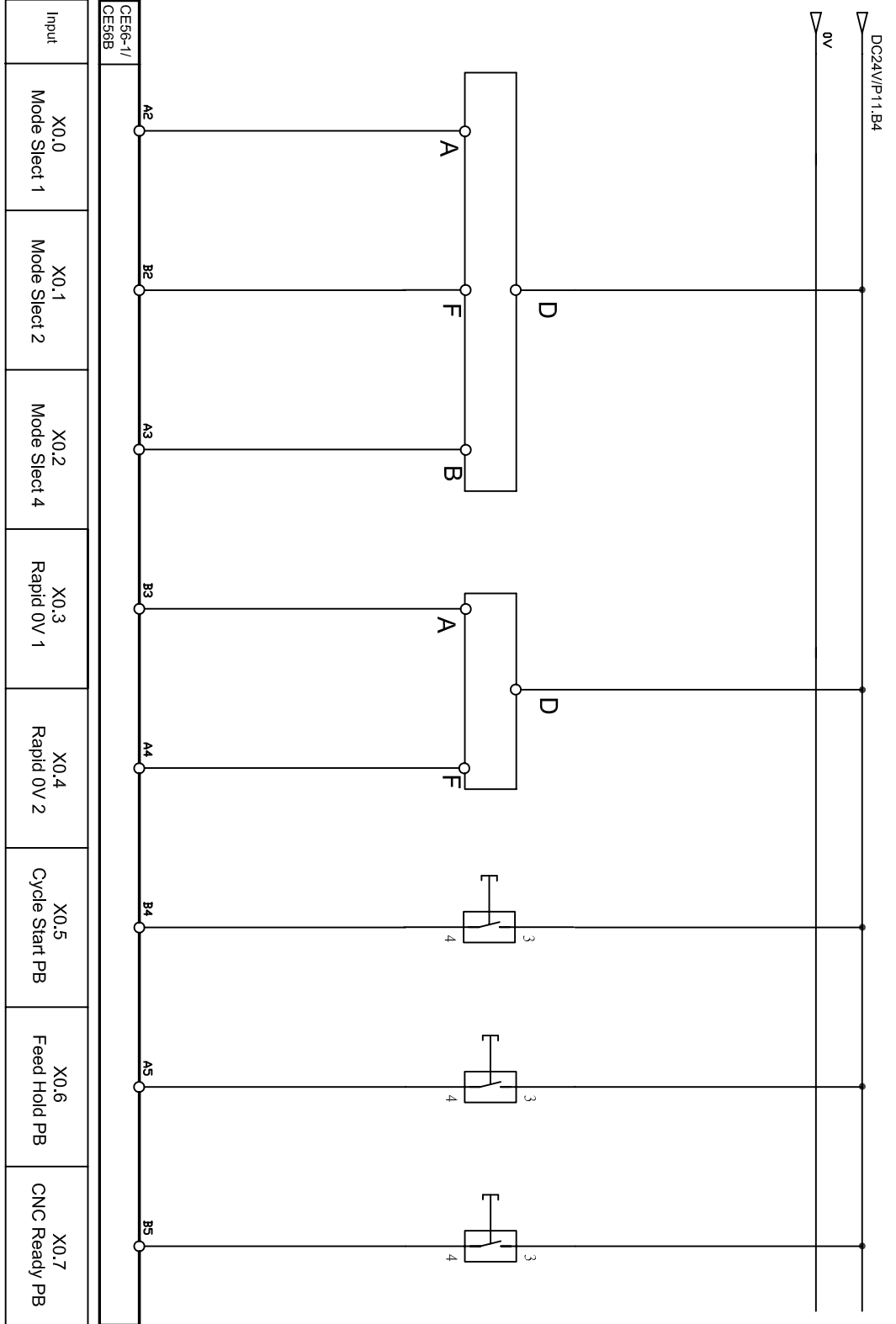
**NOTE:**

**Output Control Circuit**



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P14



Input	X0.0 Mode Select 1	X0.1 Mode Select 2	X0.2 Mode Select 4	X0.3 Rapid OV 1	X0.4 Rapid OV 2	X0.5 Cycle Start PB	X0.6 Feed Hold PB	X0.7 CNC Ready PB
-------	-----------------------	-----------------------	-----------------------	--------------------	--------------------	------------------------	----------------------	----------------------

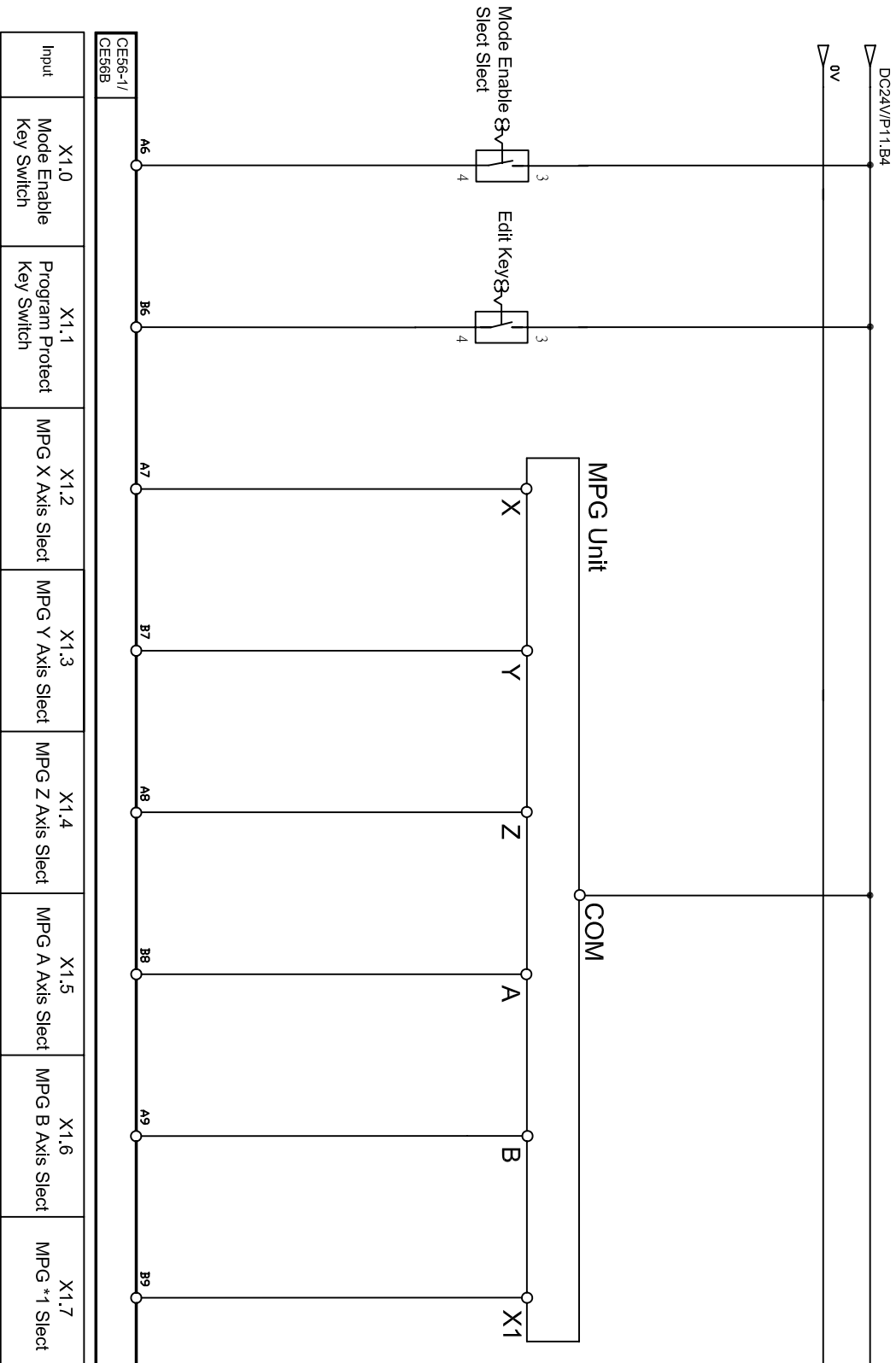
**NOTE:**

Input X0.0~X0.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P15



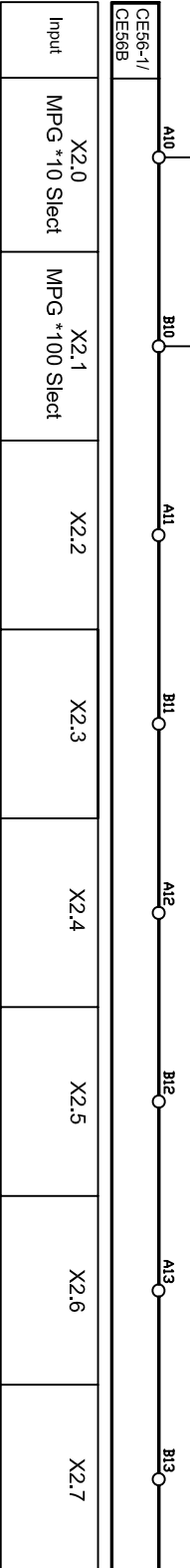
Input	X1.0 Mode Enable Key Switch	X1.1 Program Protect Key Switch	X1.2 MPG X Axis Slect	X1.3 MPG Y Axis Slect	X1.4 MPG Z Axis Slect	X1.5 MPG A Axis Slect	X1.6 MPG B Axis Slect	X1.7 MPG *1 Slect
CE56-1/ CE56B	A6	B6	A7	B7	A8	B8	A9	B9

**NOTE:**

Input X1.0~X1.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
			SHEET NO
			P16



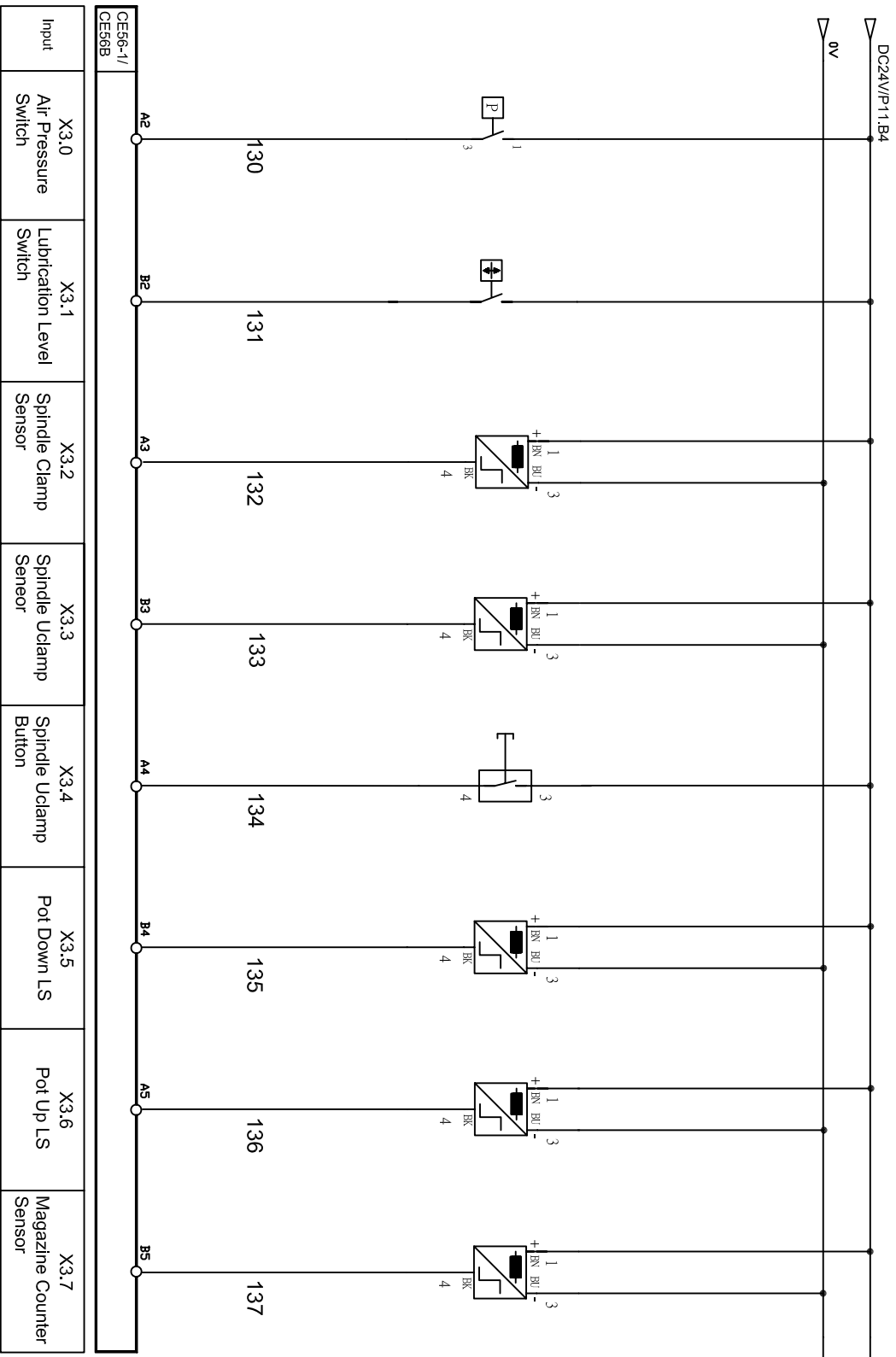
**NOTE:**

Input X2.0~X2.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P17





Input	X3.0	X3.1	X3.2	X3.3	X3.4	X3.5	X3.6	X3.7
	Air Pressure Switch	Lubrication Level Switch	Spindle Clamp Sensor	Spindle Uclamp Sensor	Spindle Uclamp Button	Pot Down LS	Pot Up LS	Magazine Counter Sensor

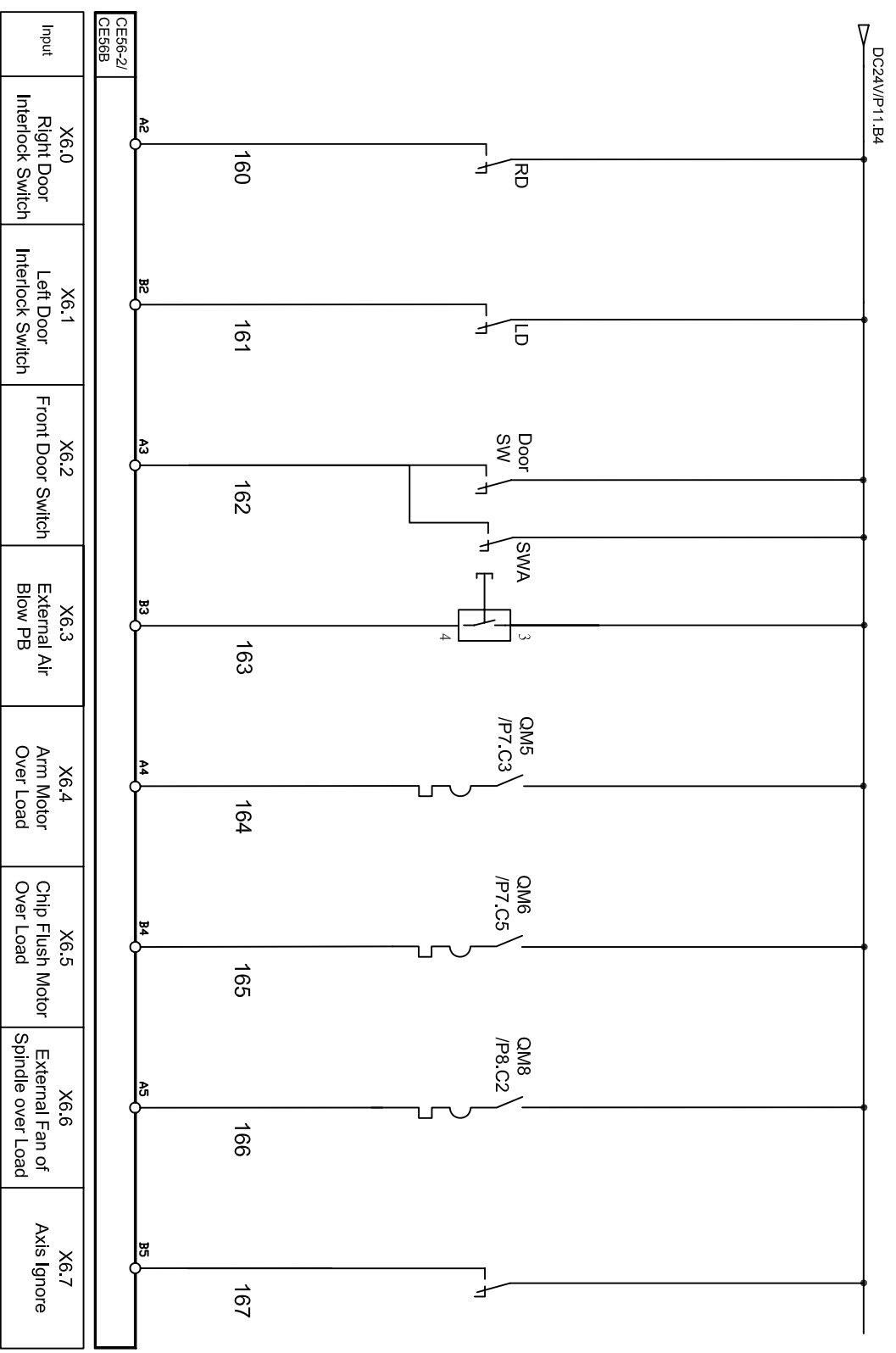
**NOTE:**

Input X3.0~X3.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P18



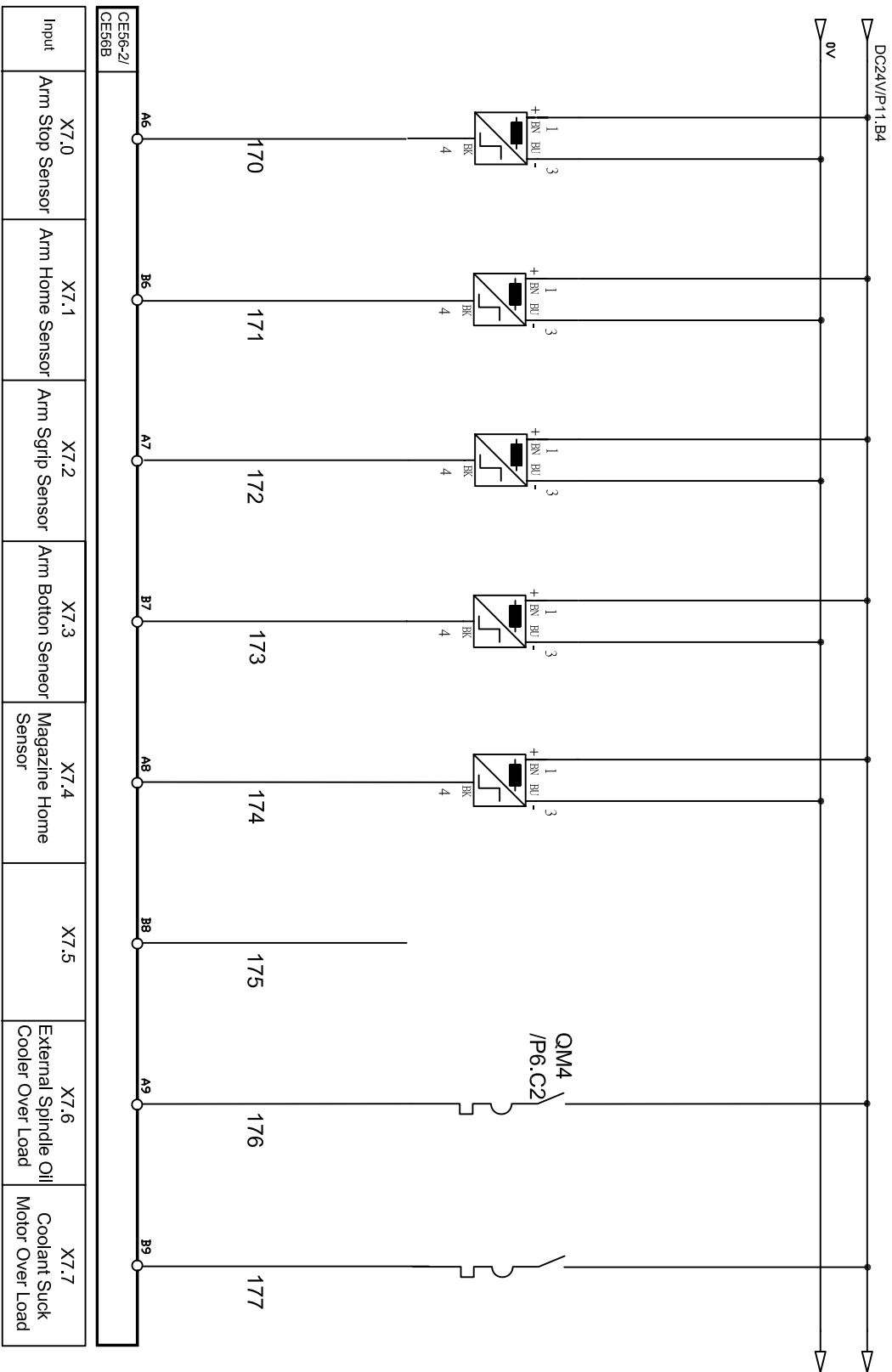
CE56-2/ CE56B	A2	B2	A3	B3	A4	B4	A5	B5
Input	X6.0 Right Door Interlock Switch	X6.1 Left Door Interlock Switch	X6.2 Front Door Switch	X6.3 External Air Blow PB	X6.4 Arm Motor Over Load	X6.5 Chip Flush Motor Over Load	X6.6 External Fan of Spindle over Load	X6.7 Axis Ignore

**NOTE:**

Input X6.0~X6.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P19



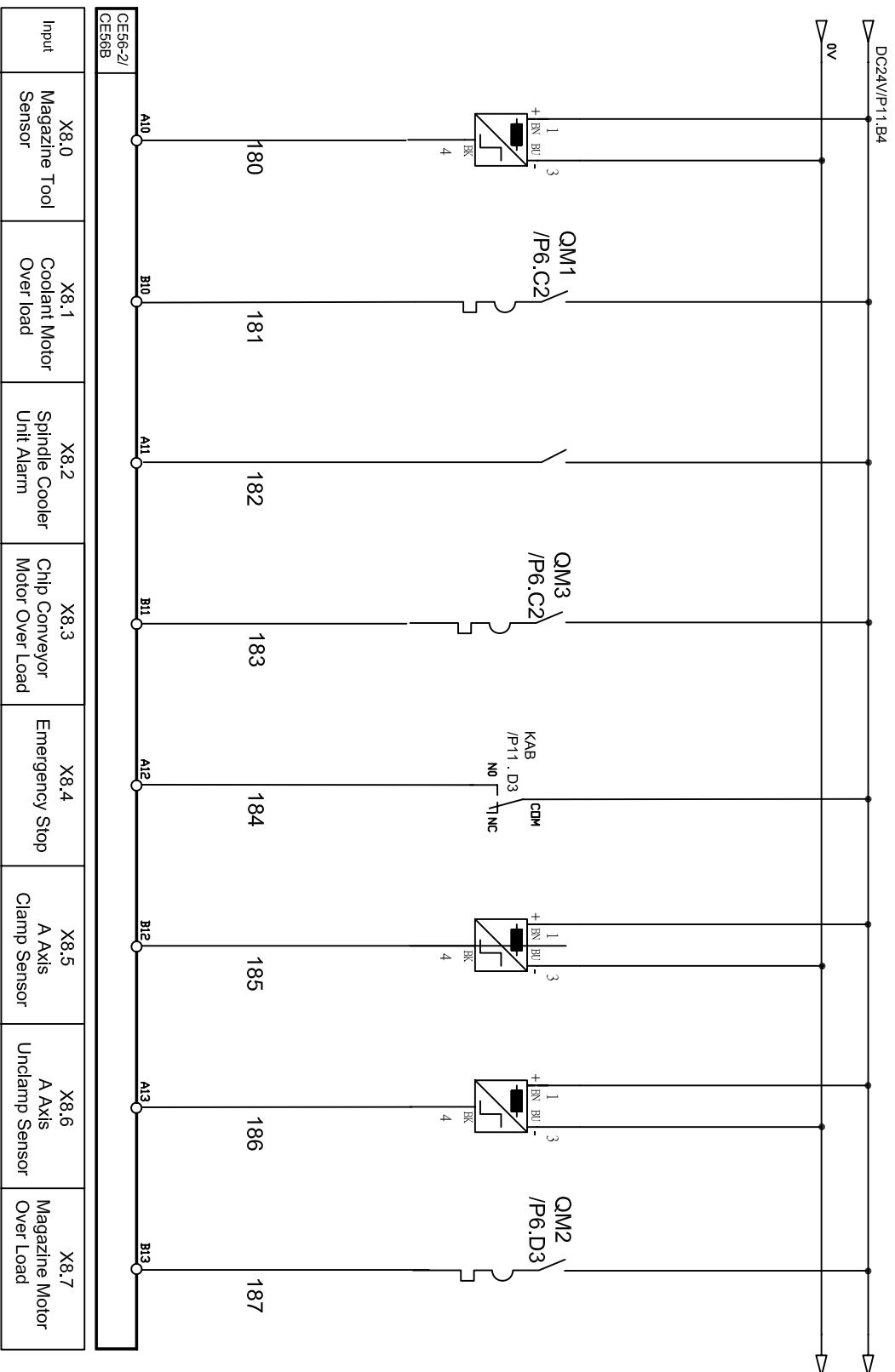
CE56-2/ CE56B	A6	170	X7.0	Arm Stop Sensor
	A6	171	X7.1	Arm Home Sensor
	A7	172	X7.2	Arm Sgrrip Sensor
	B7	173	X7.3	Arm Botton Senear
	A8	174	X7.4	Magazine Home Sensor
	B8	175	X7.5	
	A9	176	X7.6	External Spindle Oil Cooler Over Load
	B9	177	X7.7	Coolant Suck Motor Over Load

**NOTE:**

Input X7.0~X7.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC .01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P20



Input	X8.0 Magazine Tool Sensor	X8.1 Coolant Motor Over load	X8.2 Spindle Cooler Unit Alarm	X8.3 Chip Conveyor Motor Over Load	X8.4 Emergency Stop	X8.5 A Axis Clamp Sensor	X8.6 A Axis Unclamp Sensor	X8.7 Magazine Motor Over Load
-------	---------------------------------	------------------------------------	--------------------------------------	--	------------------------	--------------------------------	----------------------------------	-------------------------------------

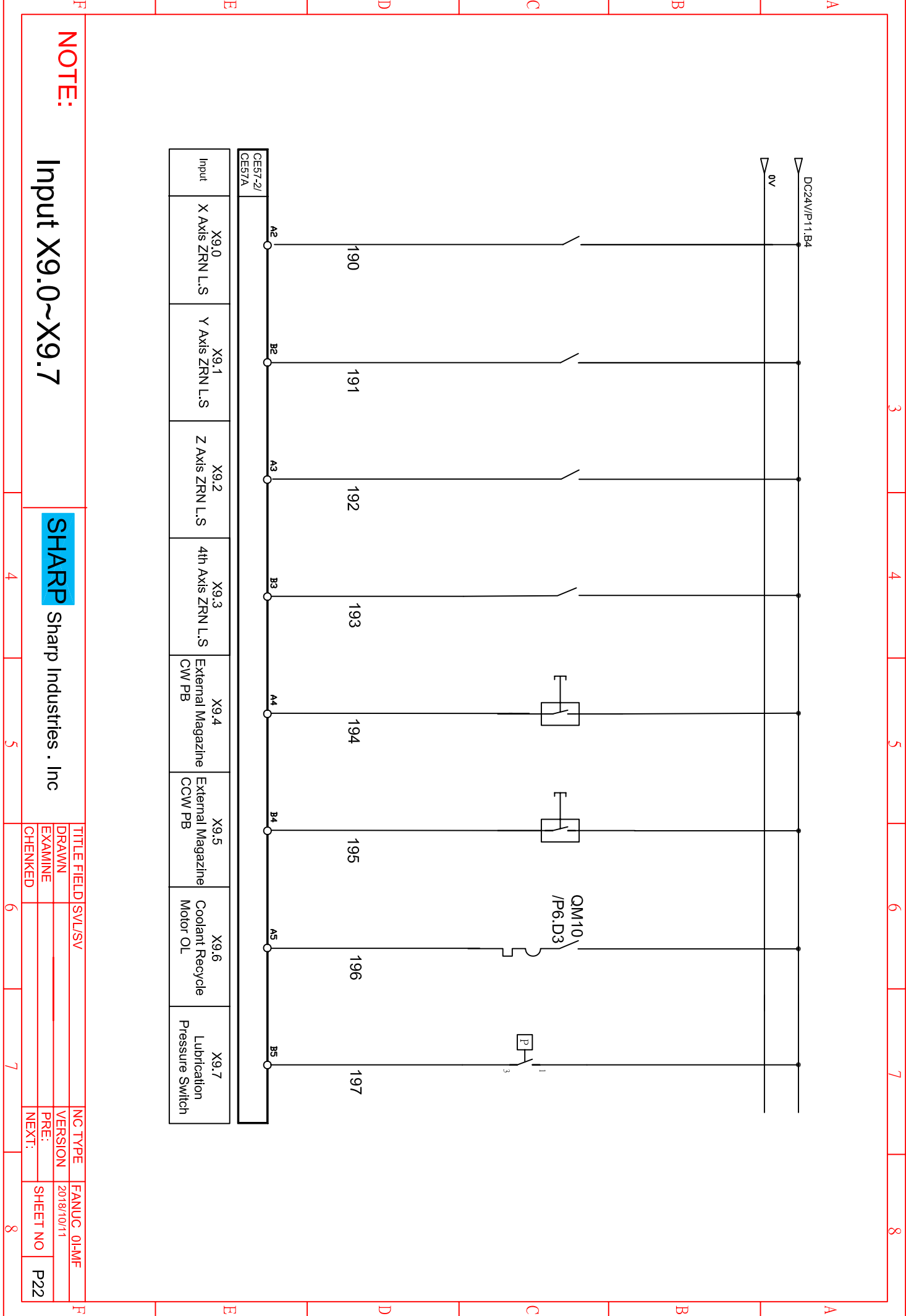
**NOTE:**

**Input X8.0~X8.7**

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P21



CE57-2/ CE57A	A2	B2	A3	B3	A4	B4	A5	B5
190	191	192	193	194	195	196	197	
X9.0 X Axis ZRN L.S	X9.1 Y Axis ZRN L.S	X9.2 Z Axis ZRN L.S	X9.3 4th Axis ZRN L.S	X9.4 External Magazine CW PB	X9.5 External Magazine CCW PB	X9.6 Coolant Recycle Motor OL	X9.7 Lubrication Pressure Switch	
Input								

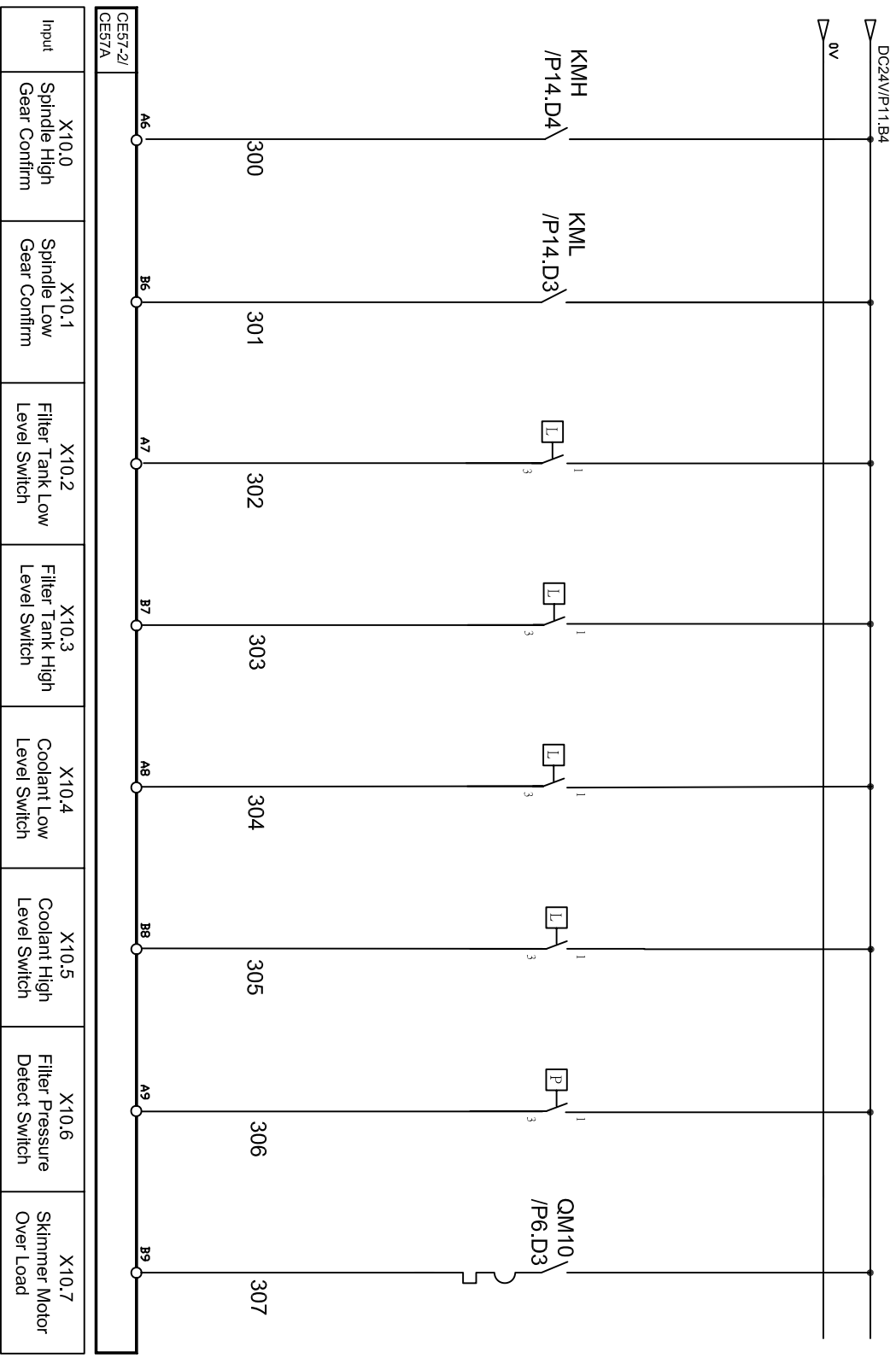
**NOTE:**

Input X9.0~X9.7

**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P22



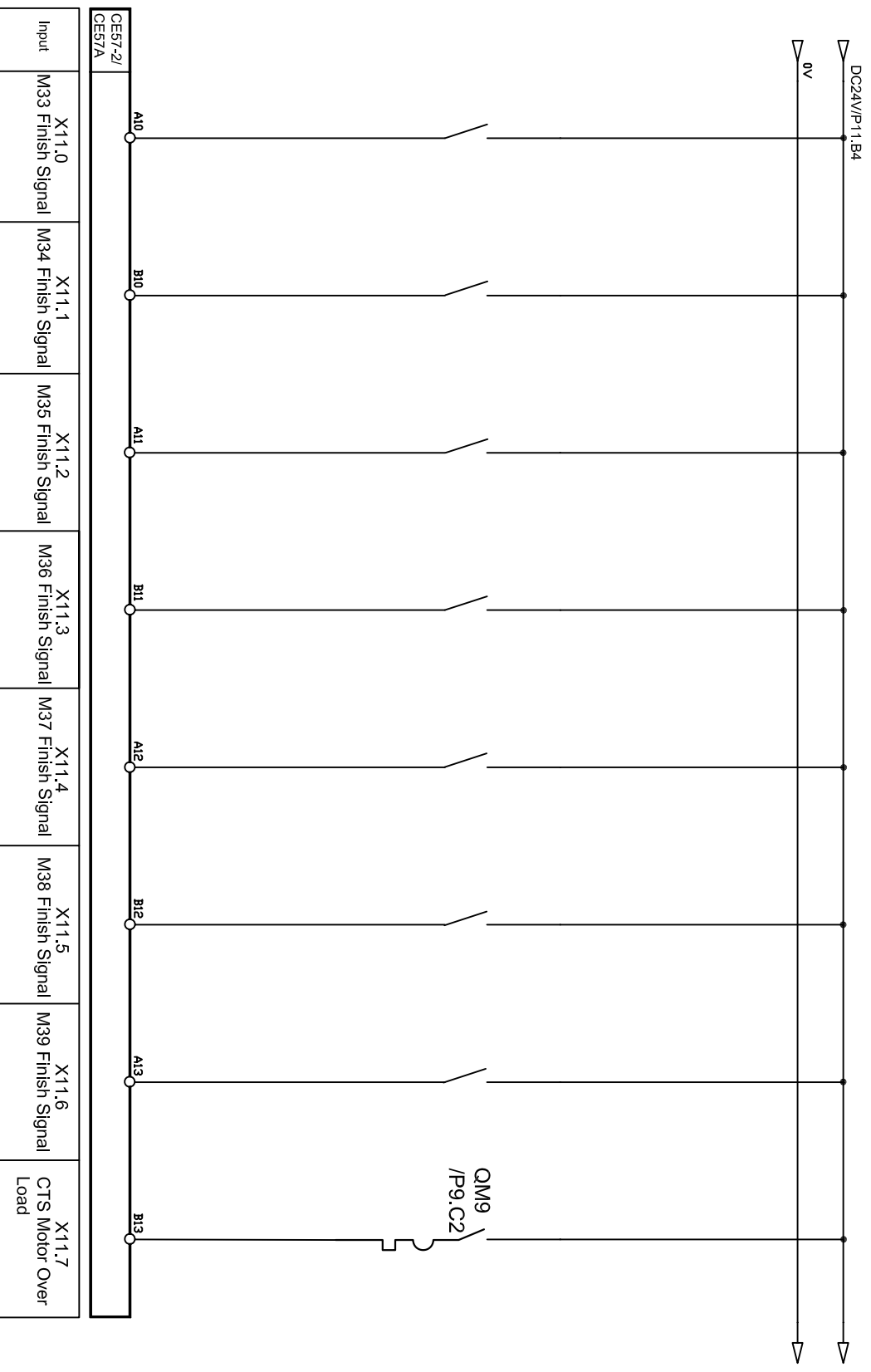
Input	X10.0	X10.1	X10.2	X10.3	X10.4	X10.5	X10.6	X10.7
	Spindle High Gear Confirm	Spindle Low Gear Confirm	Filter Tank Low Level Switch	Filter Tank High Level Switch	Coolant Low Level Switch	Coolant High Level Switch	Filter Pressure Detect Switch	Skimmer Motor Over Load

**NOTE:**

Input X10.0~X10.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P23



CE57-2/ CE57A	A10	B10	A11	B11	A12	B12	A13	B13
Input	X11.0 M33 Finish Signal	X11.1 M34 Finish Signal	X11.2 M35 Finish Signal	X11.3 M36 Finish Signal	X11.4 M37 Finish Signal	X11.5 M38 Finish Signal	X11.6 M39 Finish Signal	X11.7 CTS Motor Over Load

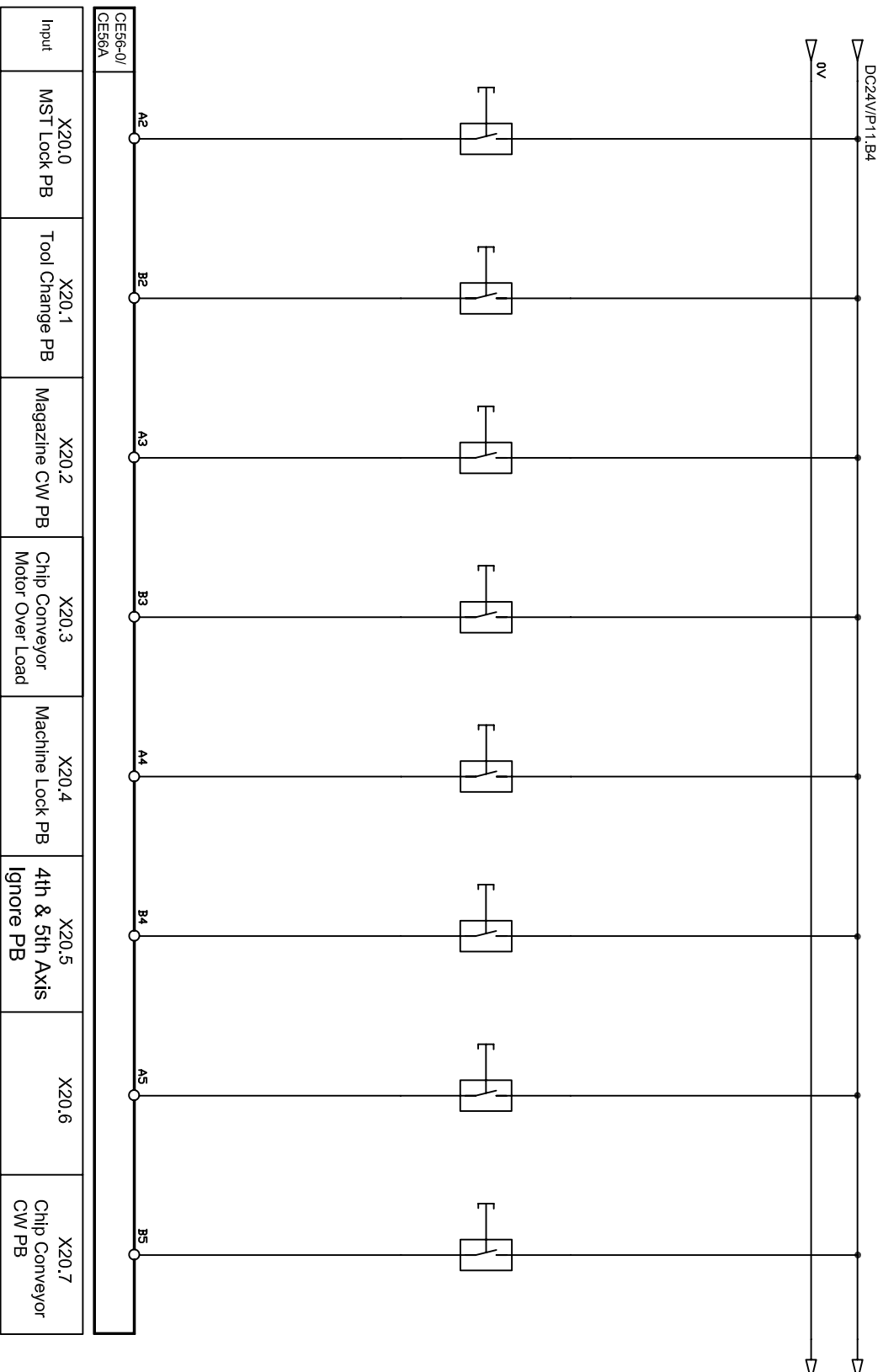
**NOTE:**

Input X11.0~X11.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P24



CE56-0/ CE56A	A2	B2	A3	B3	A4	B4	A5	B5
Input	X20.0	X20.1	X20.2	X20.3	X20.4	X20.5	X20.6	X20.7
	MST Lock PB	Tool Change PB	Magazine CW PB	Chnp Conveyor Motor Over Load	Machine Lock PB	4th & 5th Axis Ignore PB	Chnp Conveyor CW PB	

**NOTE:**

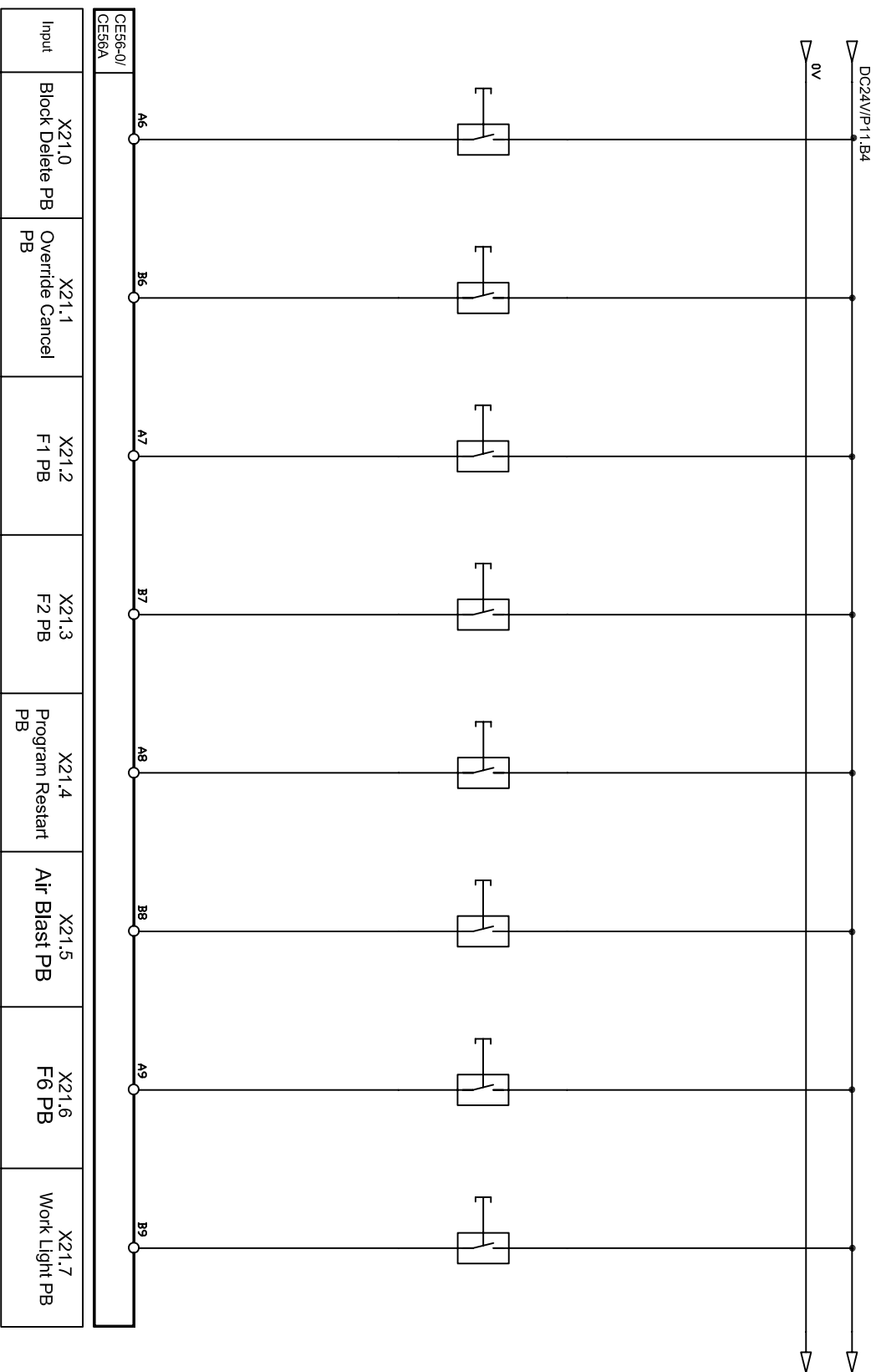
Input X20.0~X20.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P25





Input	X21.0 Block Delete PB	X21.1 Override Cancel PB	X21.2 F1 PB	X21.3 F2 PB	X21.4 Program Restart PB	X21.5 Air Blast PB	X21.6 F6 PB	X21.7 Work Light PB
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CE56-0/  
CE56A

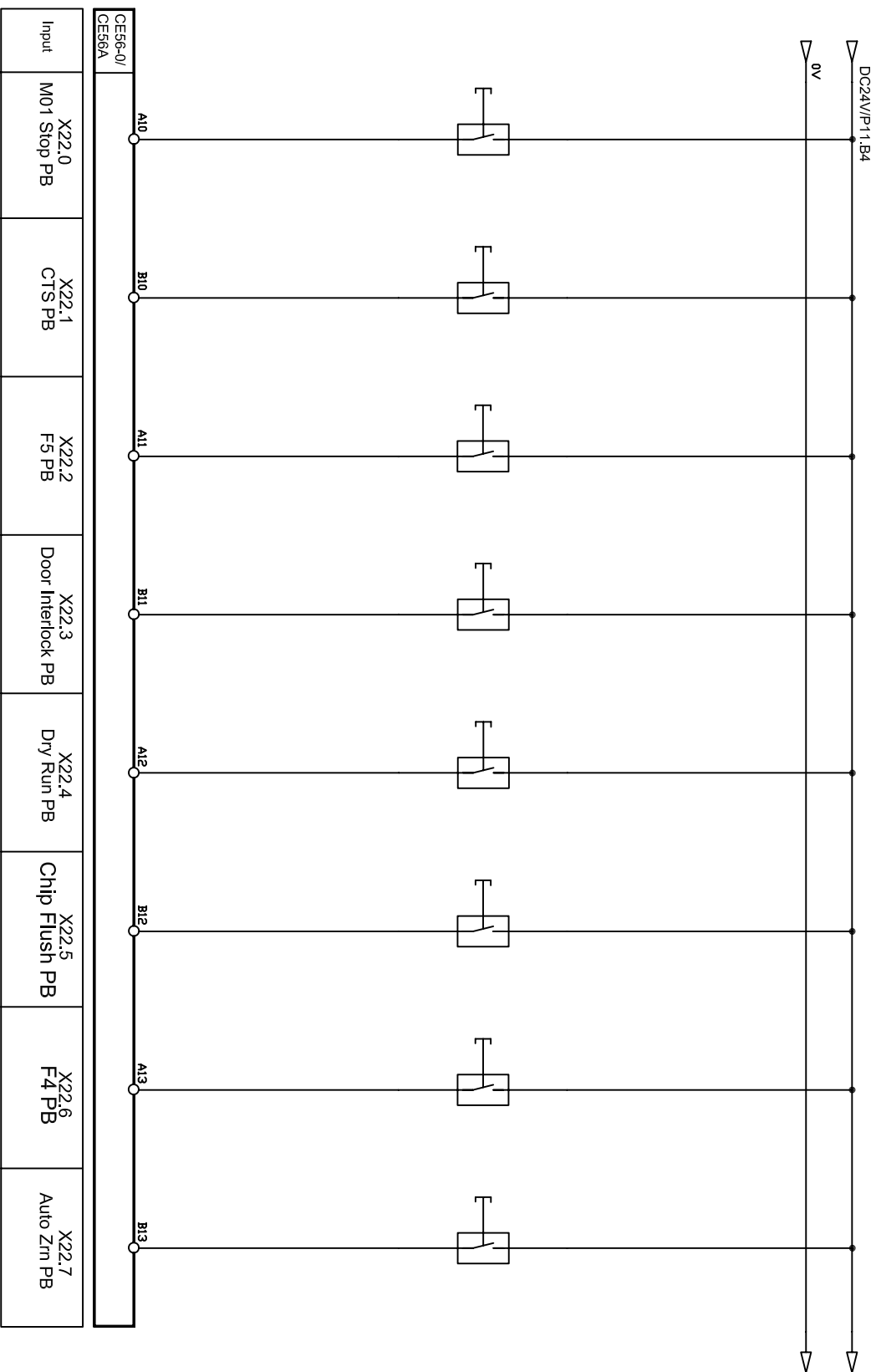
**NOTE:**

Input X21.0~X21.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P26

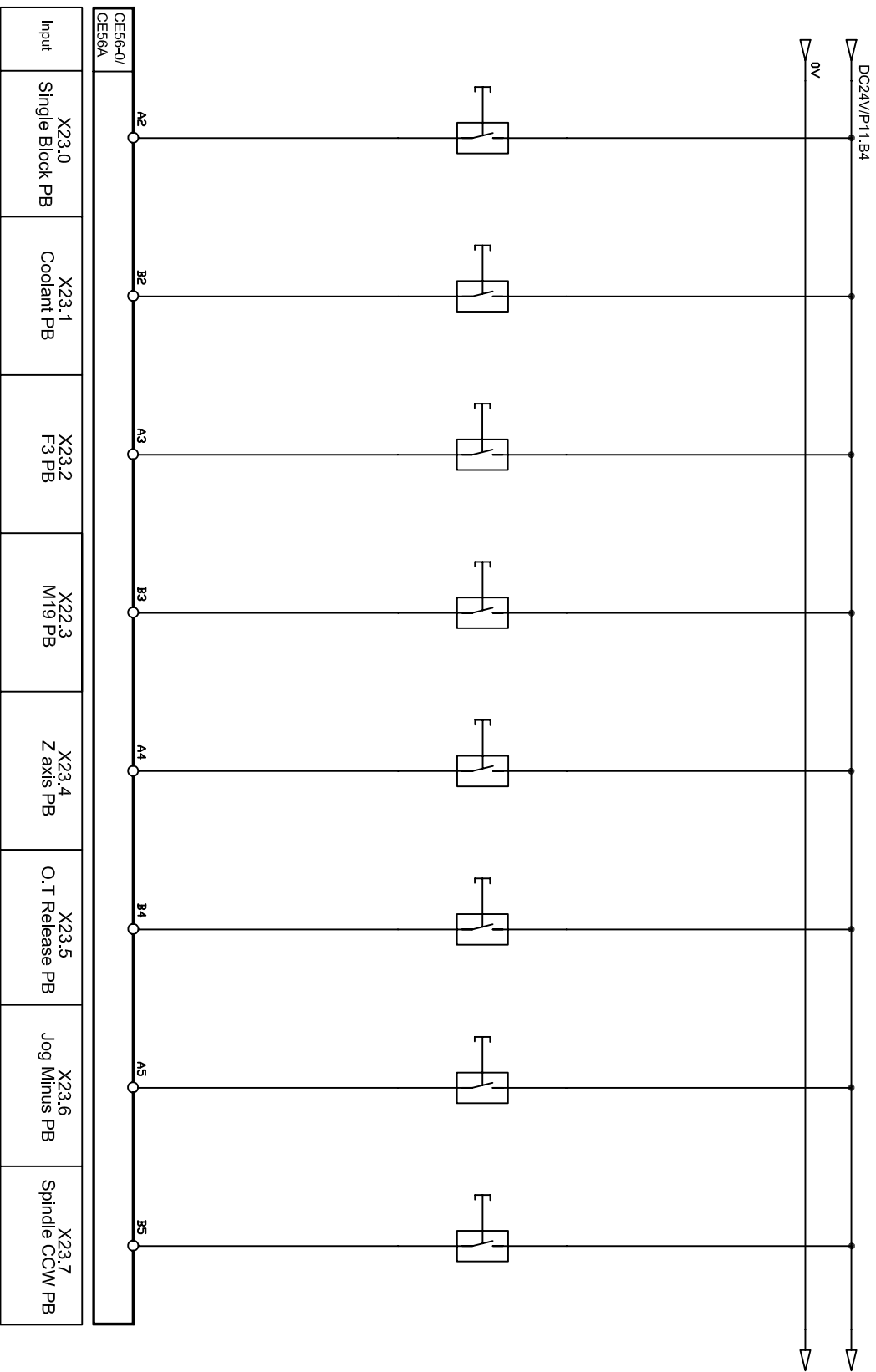


**NOTE:**

Input X22.0~X22.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P27



CE56-0/ CE56A	A2	B2	A3	B3	A4	B4	A5	B5
Input	X23.0 Single Block PB	X23.1 Coolant PB	X23.2 F3 PB	X22.3 M19 PB	X23.4 Z axis PB	X23.5 O.T Release PB	X23.6 Jog Minus PB	X23.7 Spindle CCW PB

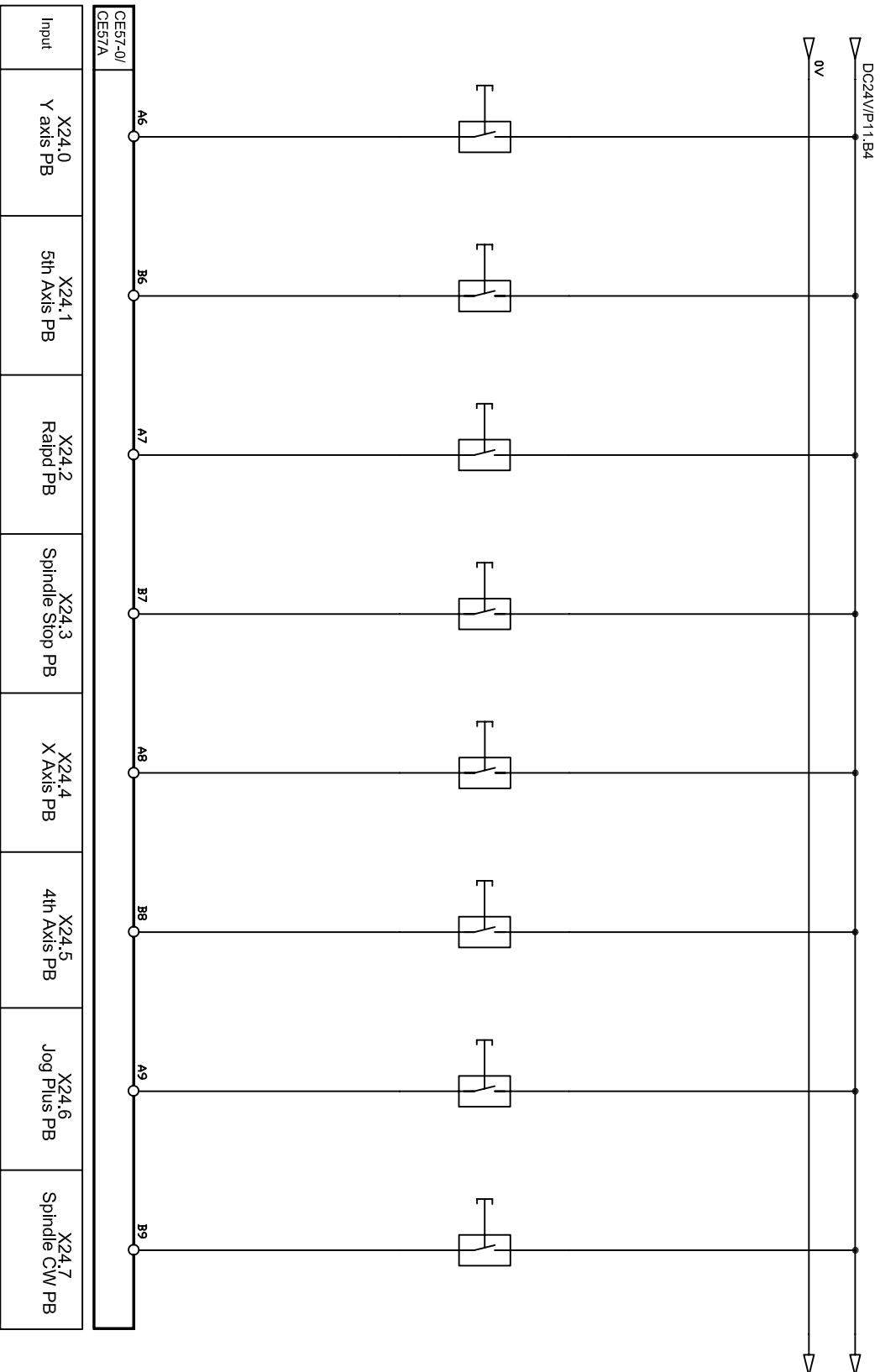
**NOTE:**

Input X23.0~X23.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P28



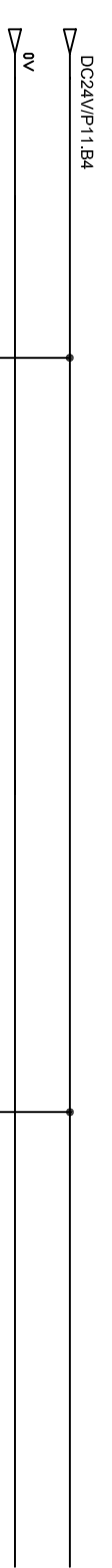
**NOTE:**

Input X24.0~X24.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P29



Input	X25.0 Spindle Speed Override 1	X25.1 Spindle Speed Override 2	X25.2 Spindle Speed Override 4	X25.3 Feed Rate Override 1	X25.4 Feed Rate Override 2	X25.5 Feed Rate Override 4	X25.6 Feed Rate Override 8	X25.7 Feed Rate Override 16
C/E57-0/ G/E57A	A10	B10	A11	B11	A12	B12	A13	B13

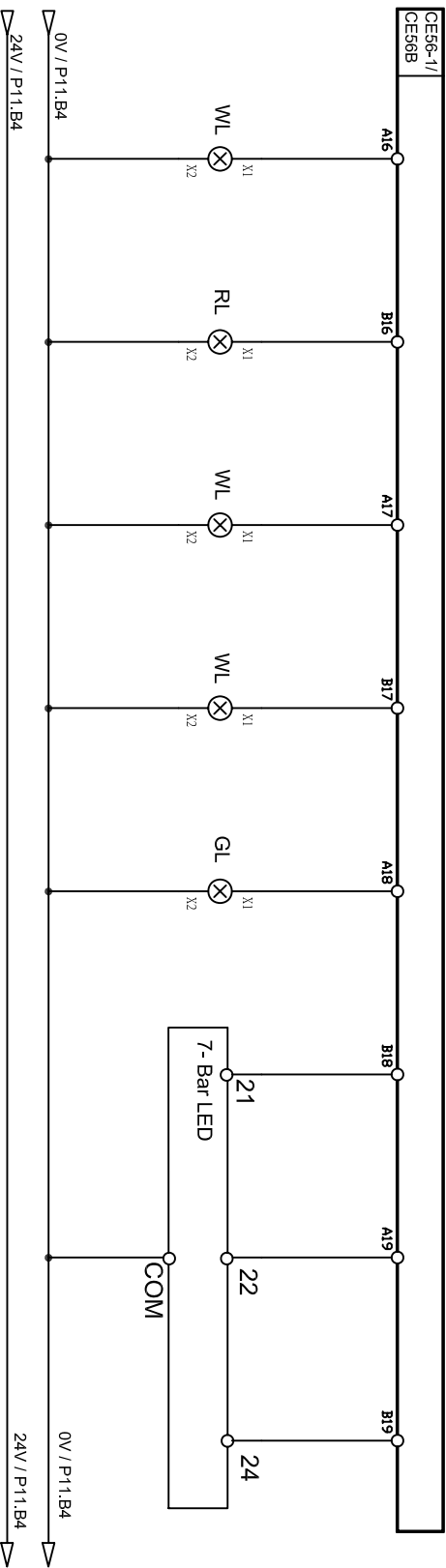
**NOTE:**

Input X25.0~X25.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P30

Output	Y0.0 5th Axis Lamp	Y0.1 Spindle Stop Lamp	Y0.2 X axis Lamp	Y0.3 4th axis Lamp	Y0.4 Spindle CW Lamp	Y0.5 Tool Number Display 21	Y0.6 Tool Number Display 22	Y0.7 Tool Number Display 24
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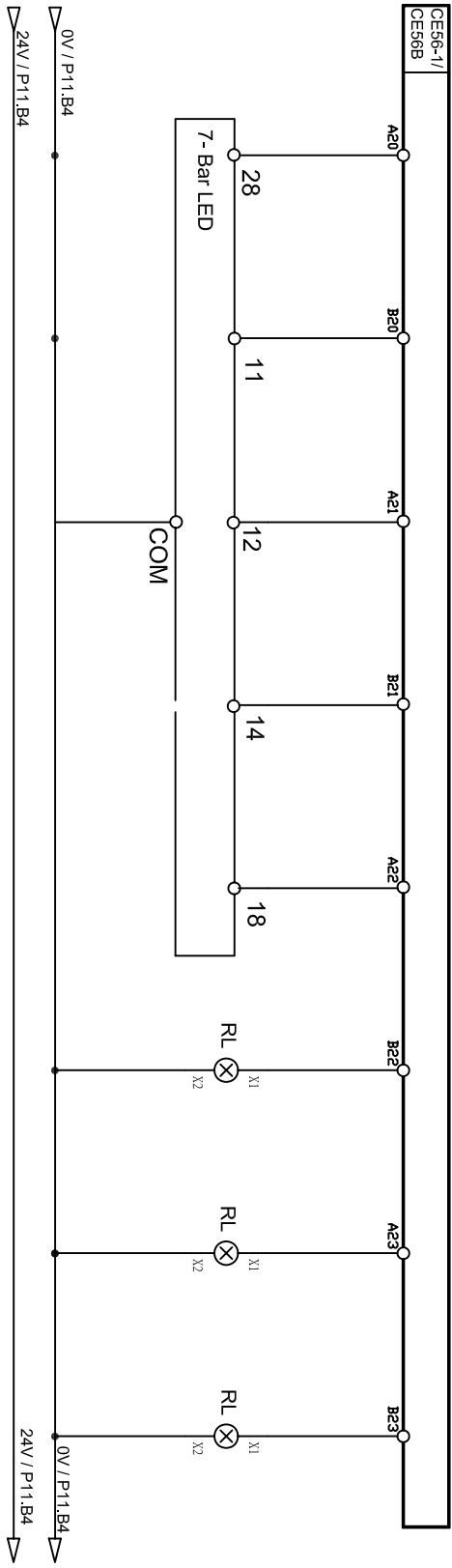
**NOTE:**

Output Y0.0~Y0.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P31

Output	Y1.0 Tool Number Display 28	Y1.1 Tool Number Display 11	Y1.2 Tool Number Display 12	Y1.3 Tool Number Display 14	Y1.4 Tool Number Display 18	Y1.5 ATC Fault LED	Y1.6 OT Fault LED	Y1.7 Machine Alarm LED
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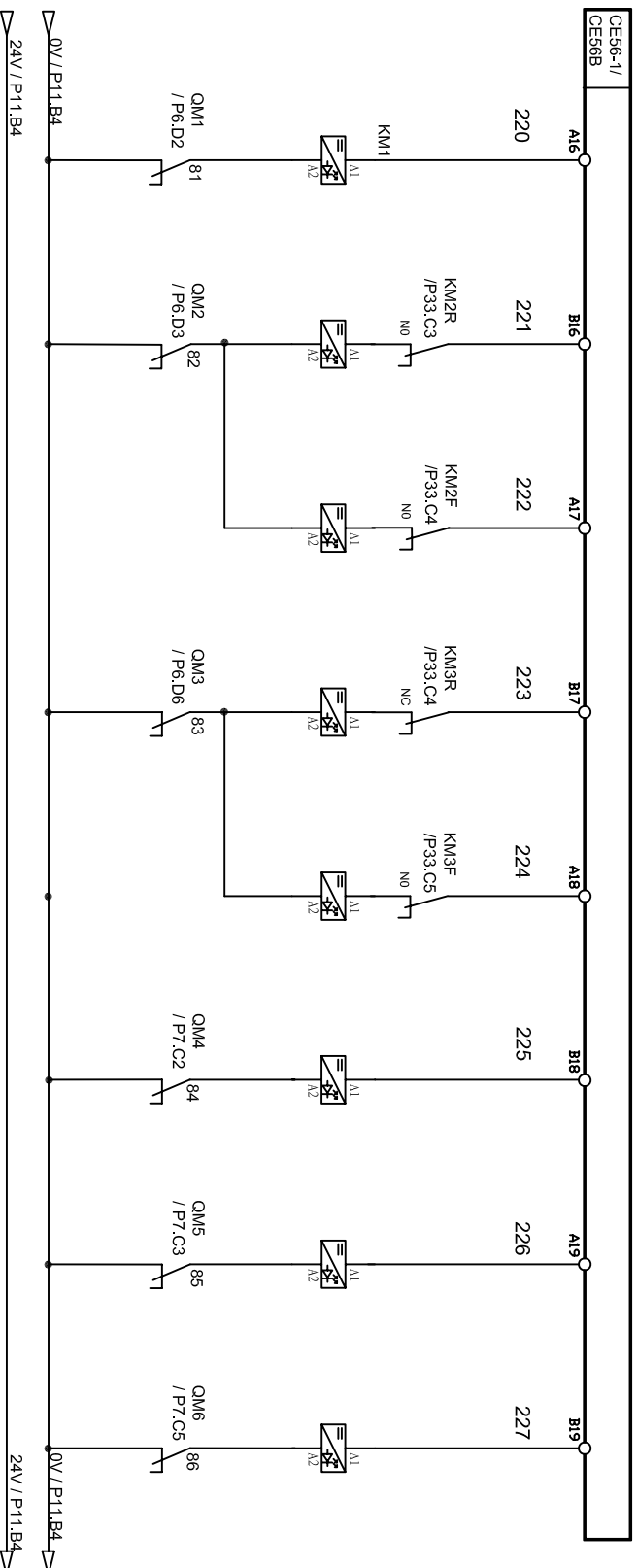
**NOTE:**

Output Y1.0~Y1.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P32

Output	Y2.0 Coolant Motor	Y2.1 Magazine Motor CW	Y2.2 Magazine Motor CCW	Y2.3 Chip Conveyor Motor CW	Y2.4 Chip Conveyor Motor CCW	Y2.5 External Spindle Oil cooler Unit	Y2.6 Arm Motor	Y2.7 Chip Flush Motor
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**NOTE:**

Output Y2.0~Y2.7

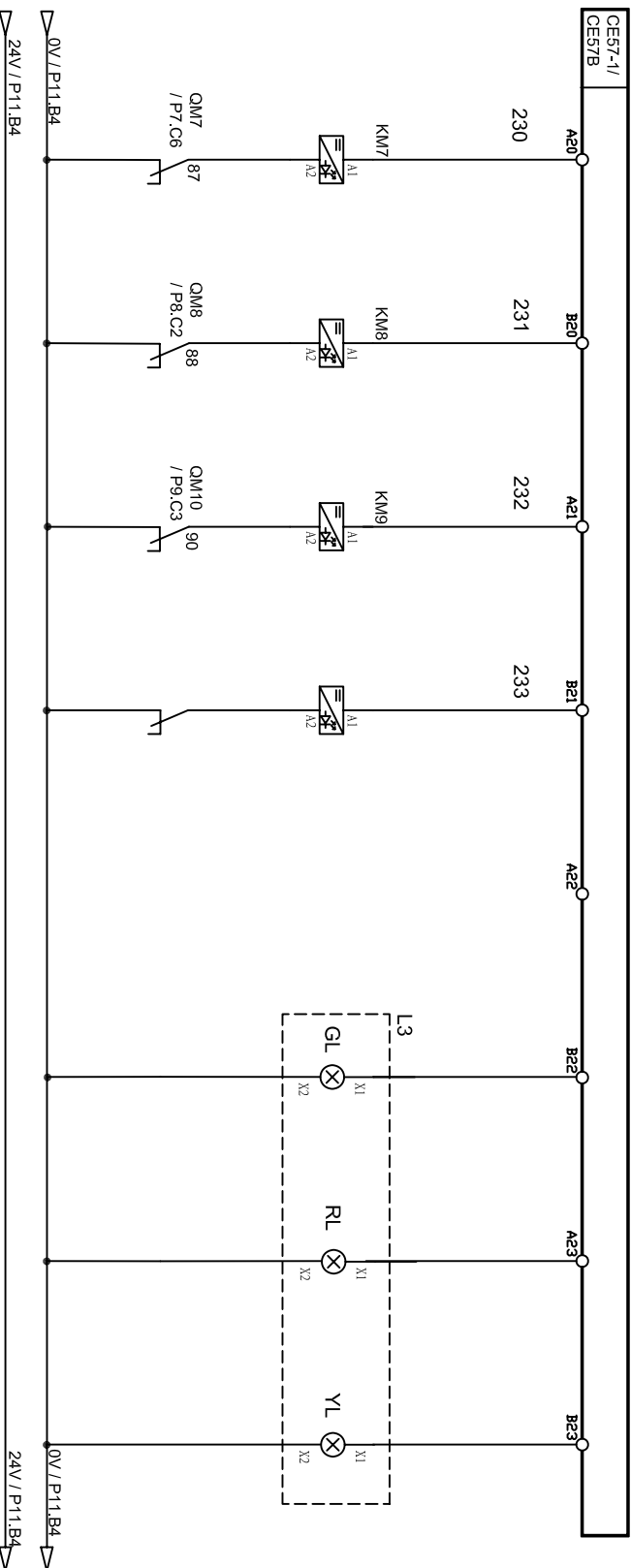
**SHARP**

Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P33



Output	Y3.0 Oil Skimmer Motor	Y3.1 External Fan Of Spindle	Y3.2 Coolant Recycle Motor	Y3.3	Y3.4	Y3.5 Cycle Start On Lamp	Y3.6 Alarm Lamp	Y3.7 Feed Hold Lamp
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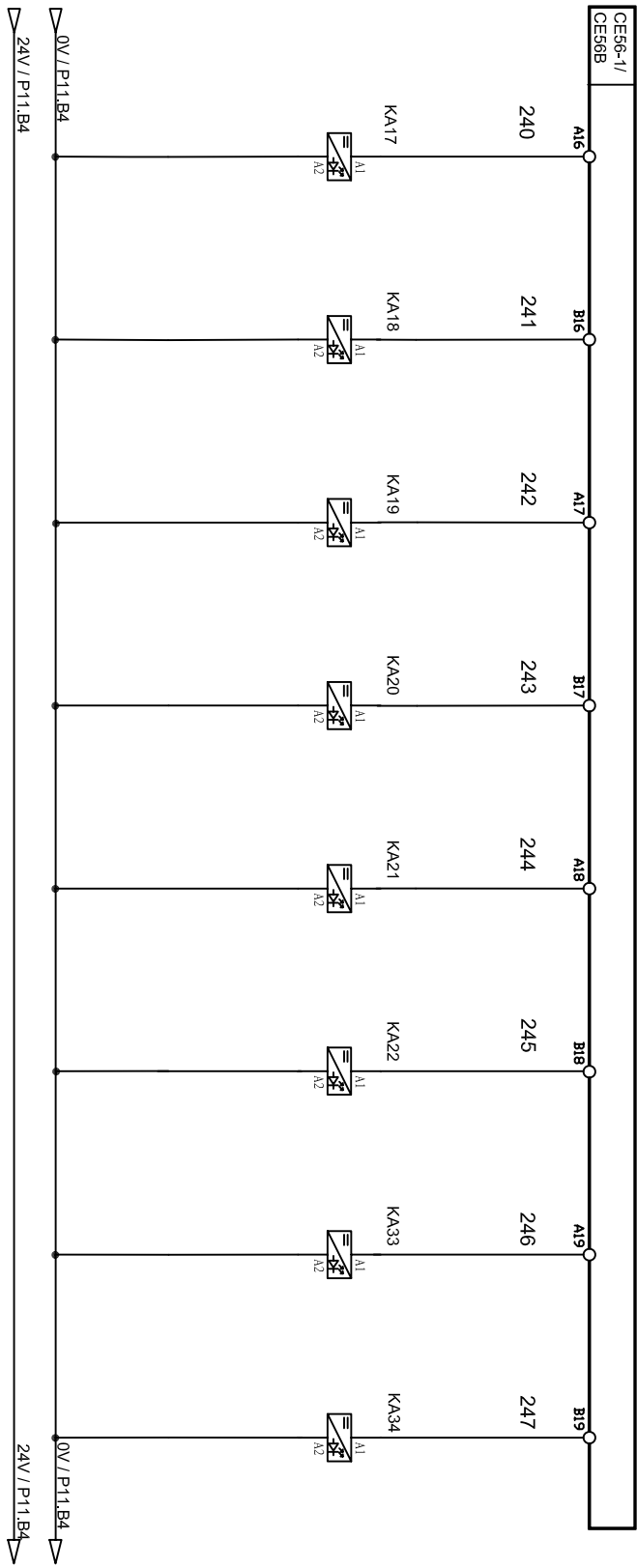
**NOTE:**

**Output Y3.0~Y3.7**

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P34

Output	Y4.0 Lubrication Motor	Y4.1 Auto Power Off Coil	Y4.2 Spindle Low Gear	Y4.3 Spindle High Gear	Y4.4 Work Light	Y4.5 CTS Motor	Y4.6 M33 Output	Y4.7 M34 Output
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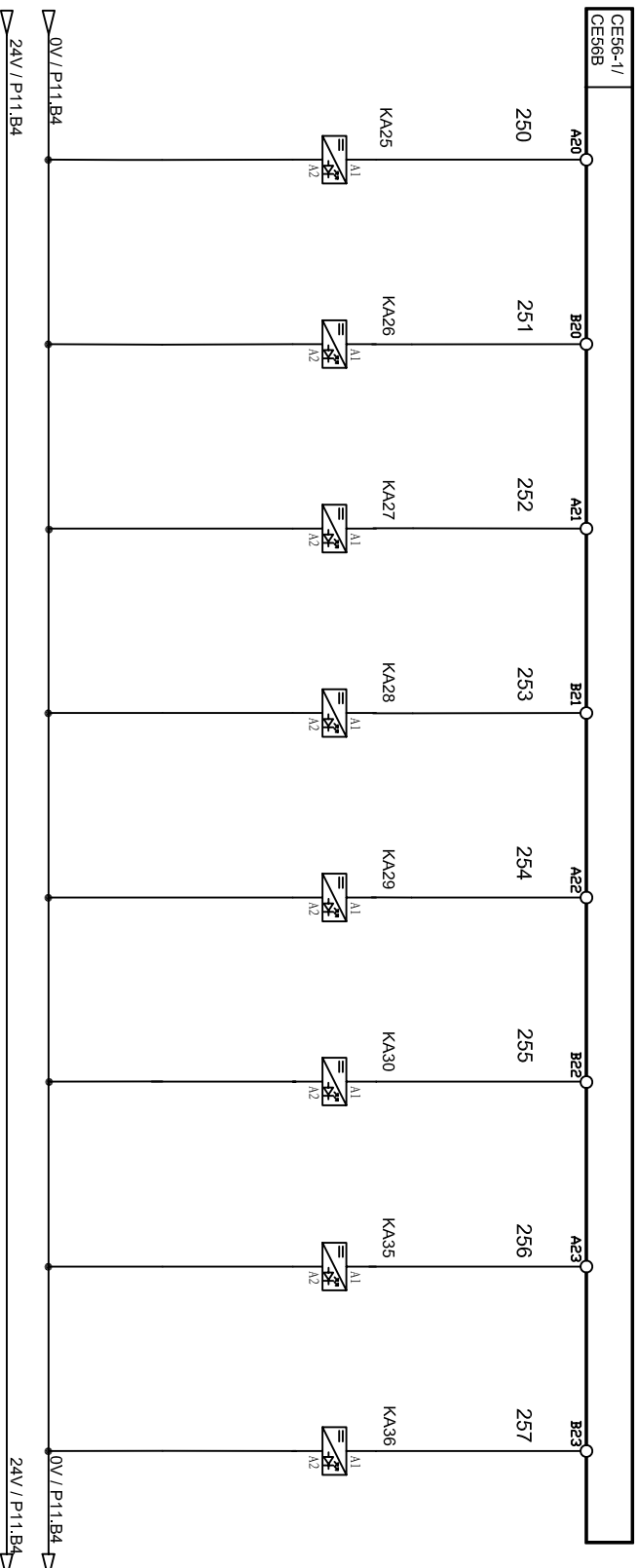


**NOTE:**  
Output Y4.0~Y4.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P35

Output	Y5.0 Tool undclamp Sol	Y5.1 Pot Down	Y5.2 Pot Up	Y5.3 Air Blow SOL	Y5.4 Spindle Air Blow SOL	Y5.5 CTS Air Blow	Y5.6 M35 Output	Y5.7 M36 Output
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**NOTE:**

Output Y5.0~Y5.7

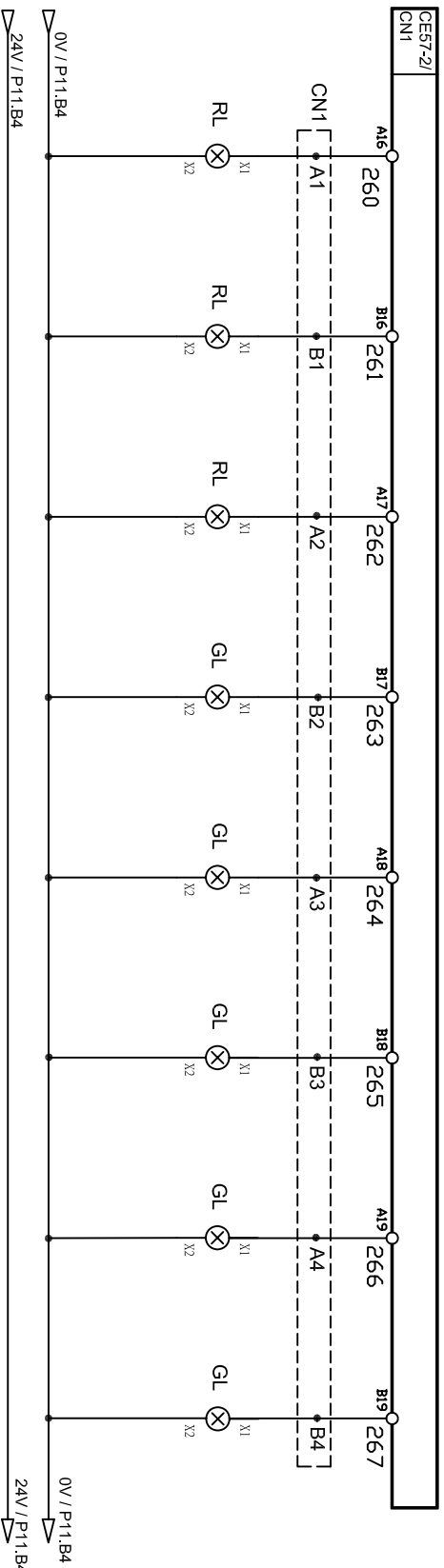


Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P36

新面板背  
光燈

Output	Y6.0 Air Pressure Low LED	Y6.1 Motor Over Load LED	Y6.2 Lube Fault LED	Y6.3 M02 / M30 LED	Y6.4 M0 / M01 LED	Y6.5 5th Axis Home LED	Y6.6 4th Axis Home LED	Y6.7 Z Axis Home LED
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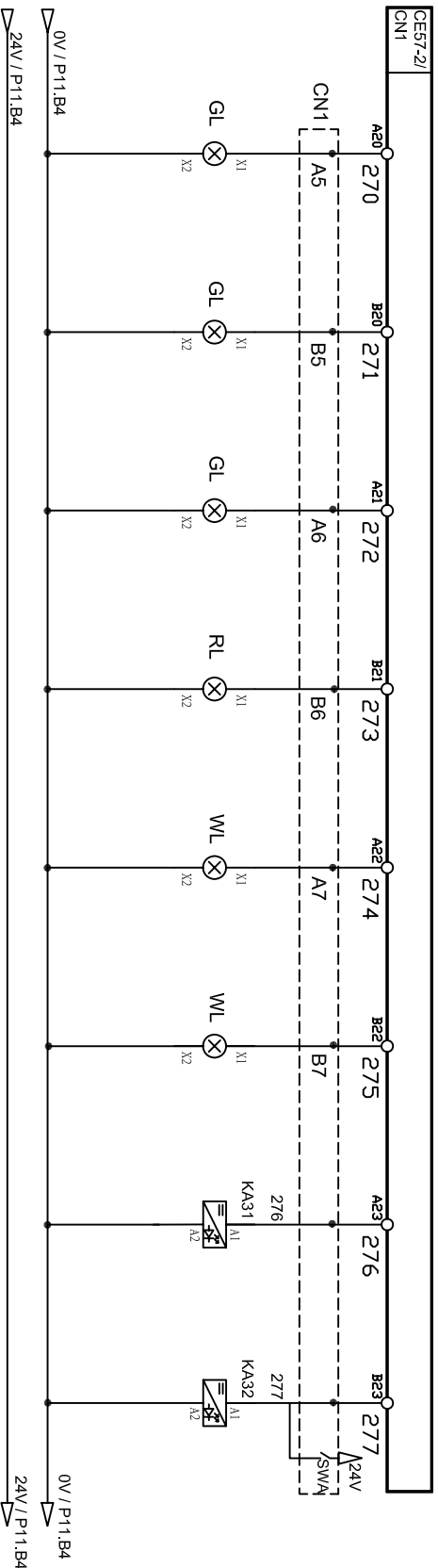
NOTE:

Output Y6.0~Y6.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P37

Output	Y7.0	Y7.1	Y7.2	Y7.3	Y7.4	Y7.5	Y7.6	Y7.7
	Y Axis Home LED	X Axis Home LED	Cycle Start Lamp	Feed Hold Lamp	CNC Ready Lamp	MFG LED	Door Interlock SOL	A Axis Unclamp SOL

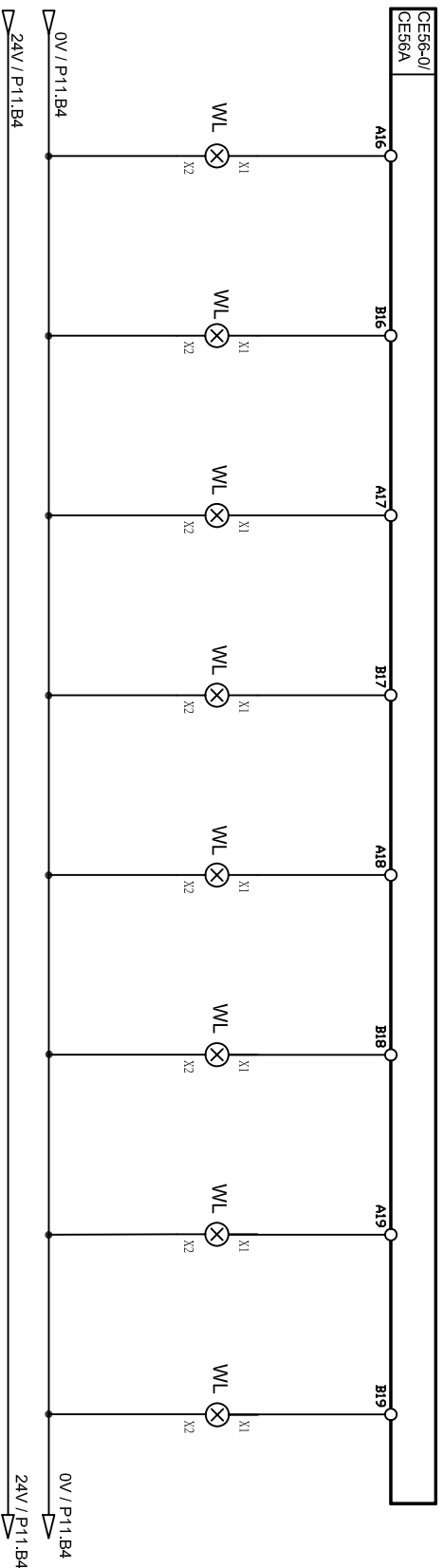


**NOTE:**  
Output Y7.0~Y7.7

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	SHEET NO
CHECKED		NEXT:	P38

Output	Y20.0	Y20.1	Y20.2	Y20.3	Y20.4	Y20.5	Y20.6	Y20.7
	MST Lamp	Tool Change Lamp	Magazine CW Lamp	Chip Conveyor CCW Lamp	Machine Lock Lamp	4 / 5th Axis Ignore Lamp	Magazine L / R Lamp	Chip Conveyor CW Lamp



**NOTE:**

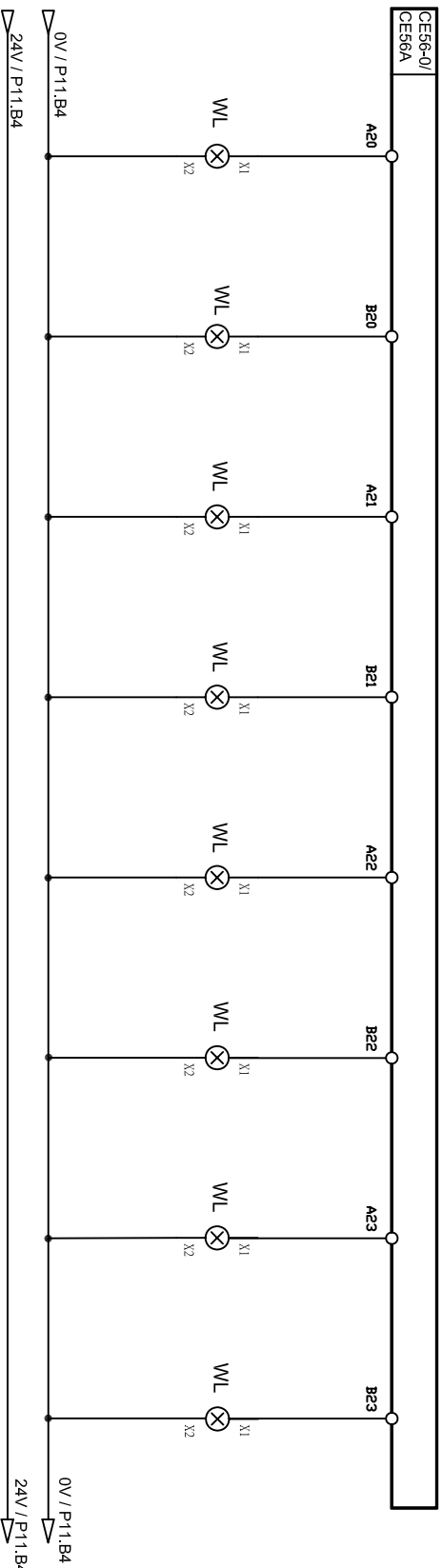
Output Y20.0~Y20.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P39

Output	Y21.0	Y21.1	Y21.2	Y21.3	Y21.4	Y21.5	Y21.6	Y21.7
	Block Delet Lamp	Override Canel Lamp	F1 Lamp	F2 Lamp	Program Restart Lamp	Air Blast Lamp	F6 Lamp	Work Light Lamp



**NOTE:**

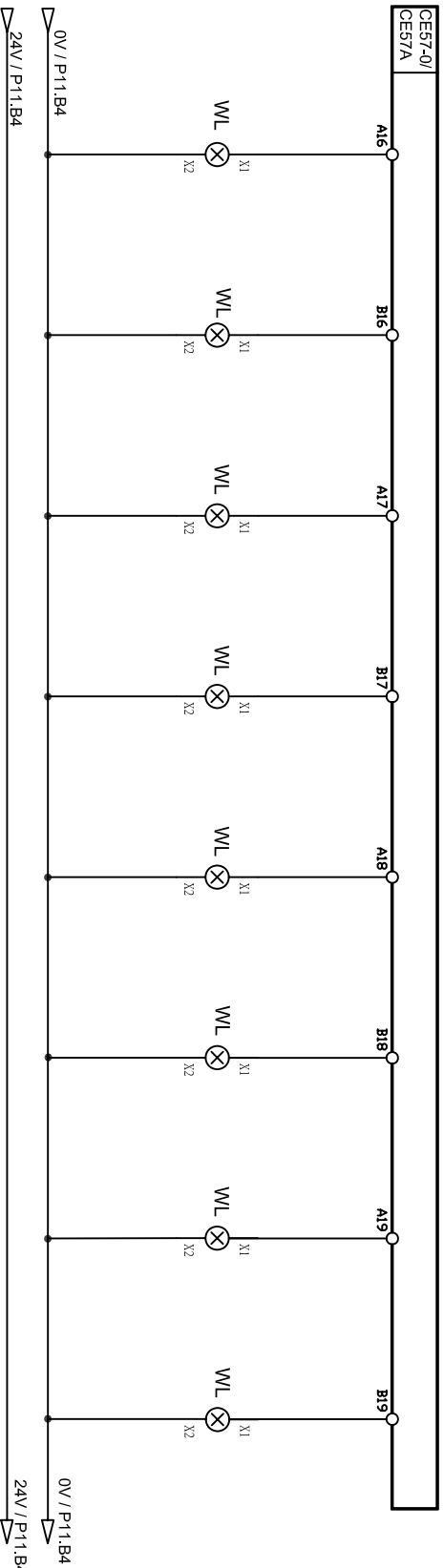
Output Y21.0~Y21.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	NC TYPE	FANUC. OI-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P40

Output	Y22.0	Y22.1	Y22.2	Y22.3	Y22.4	Y22.5	Y22.6	Y22.7
	M01 Stop Lamp	CTS Lamp	F5 Lamp	Door Unlock Lamp	Dry Run Lamp	Chip Flush Lamp	F4 Lamp	Auto ZRN Lamp



**NOTE:**

Output Y22.0~Y22.7

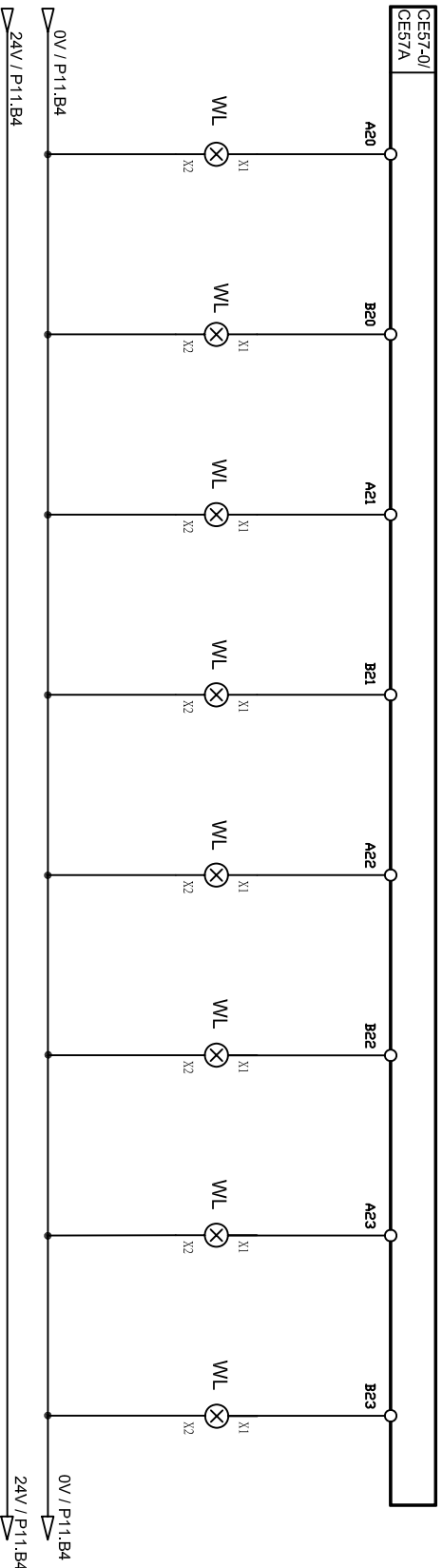


Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P41



Output	Y23.0 Single Block Lamp	Y23.1 Coolant Lamp	Y23.2 F3 Lamp	Y23.3 M19 Lamp	Y23.4 Z Axis Lamp	Y23.5 O.T Release Lamp	Y23.6 Spindle CCW Lamp	Y23.7 Y Axis Lamp
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**NOTE:**

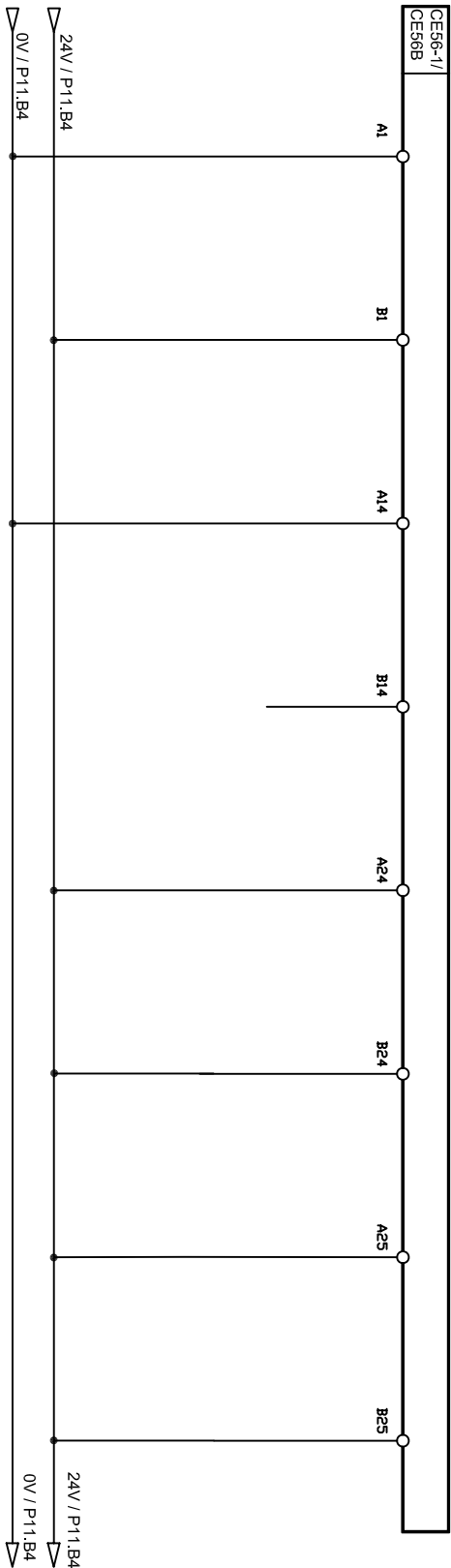
Output Y23.0~Y23.7



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC . 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P42

Output	0V	24V	DICOM	DOCOM	DOCOM	DOCOM
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**NOTE:**

**I/O Com Connection**



Sharp Industries . Inc

TITLE FIELD SVL/SV

INC TYPE

FANUC. 01-MF

DRAWN

VERSION

2018/10/11

EXAMINE

PRE:

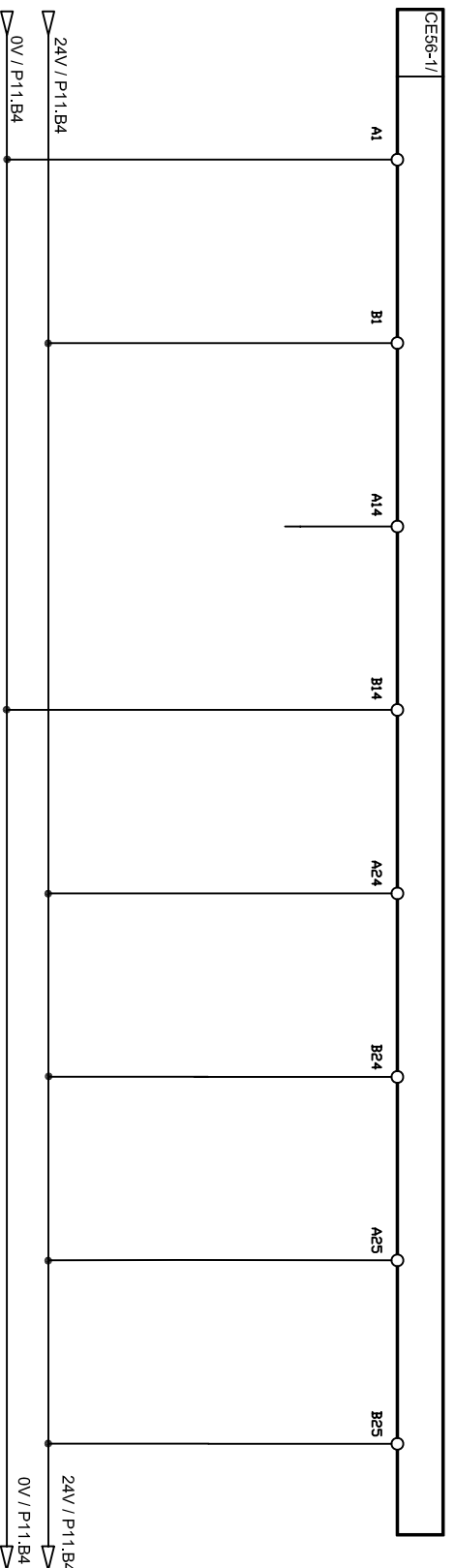
SHEET NO

CHECKED

NEXT:

P43

Output	0V	24V	DICOM	DICOM	DOCOM	DOCOM	DOCOM
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**NOTE:**

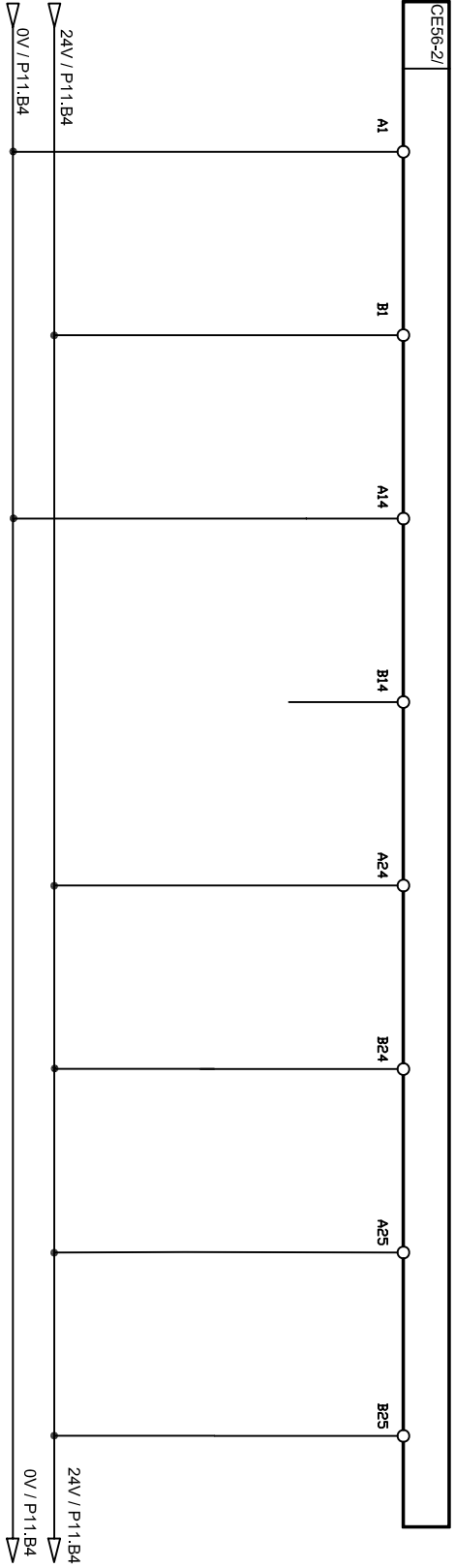
**I/O Com Connection**



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P44

Output	0V	24V	DICOM	DICOM	DOCOM	DOCOM	DOCOM
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**NOTE:**

**I/O Com Connection**



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
			SHEET NO
			<b>P45</b>

3

4

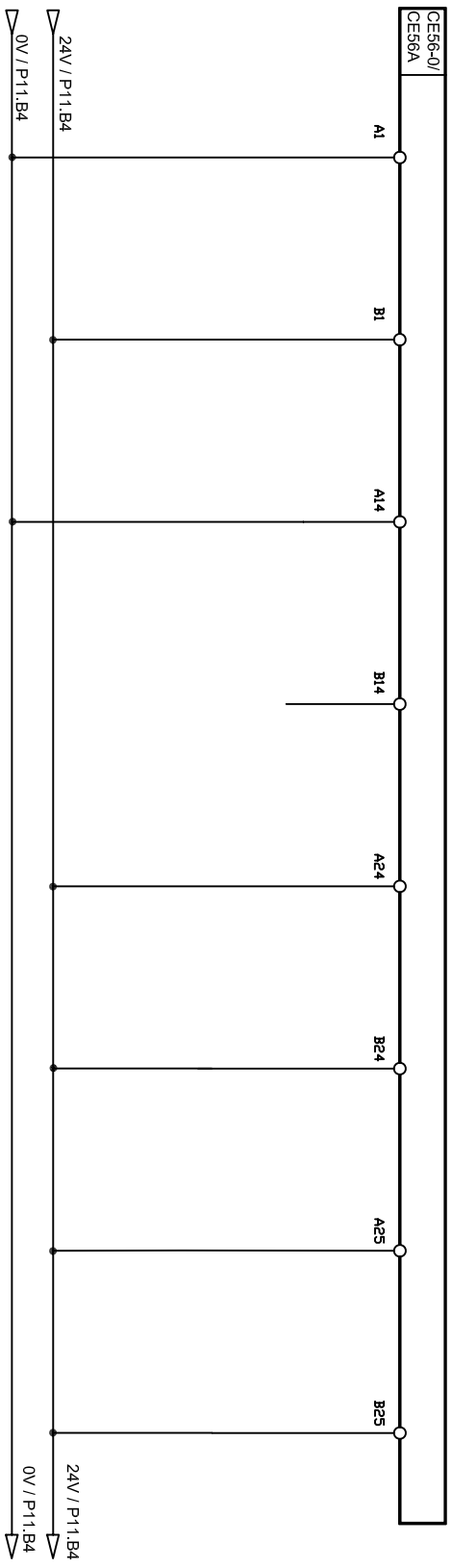
5

6

7

8

Output	0V	24V	DICOM	DICOM	DOCOM	DOCOM	DOCOM
--------	----	-----	-------	-------	-------	-------	-------



**NOTE:**

**I/O Com Connection**



Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P46

4

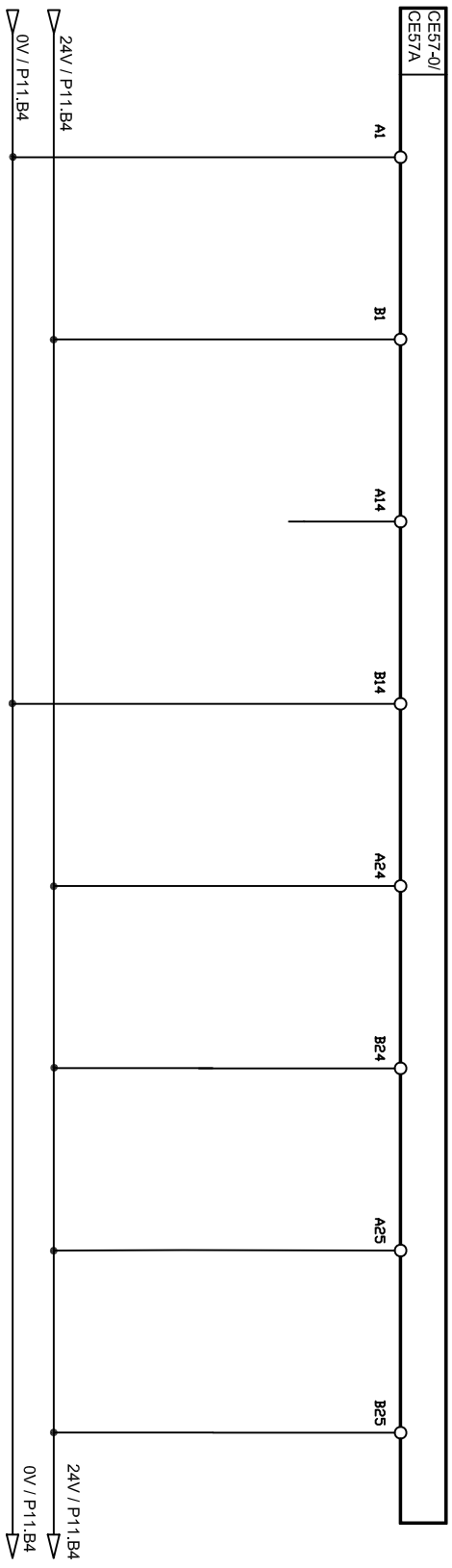
5

6

7

8

Output	0V	24V	DICOM	DICOM	DOCOM	DOCOM	DOCOM
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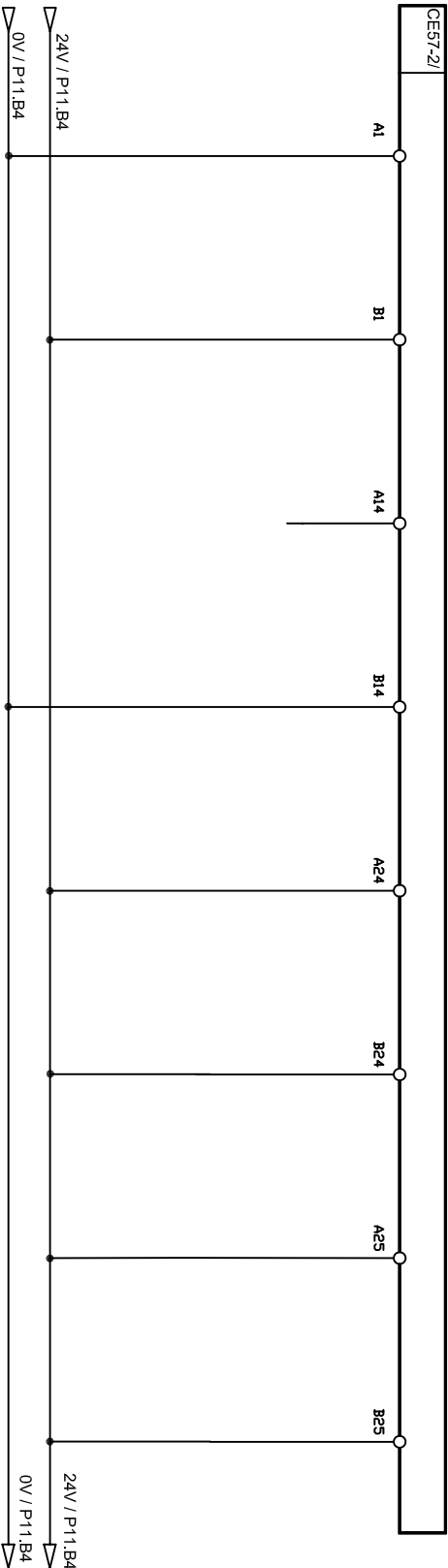
**NOTE:**

**I/O Com Connection**

**SHARP** Sharp Industries . Inc

TITLE FIELD	SVL/SV	INC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P47

Output	0V	24V	DICOM	DICOM	DOCOM	DOCOM	DOCOM
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**NOTE:**

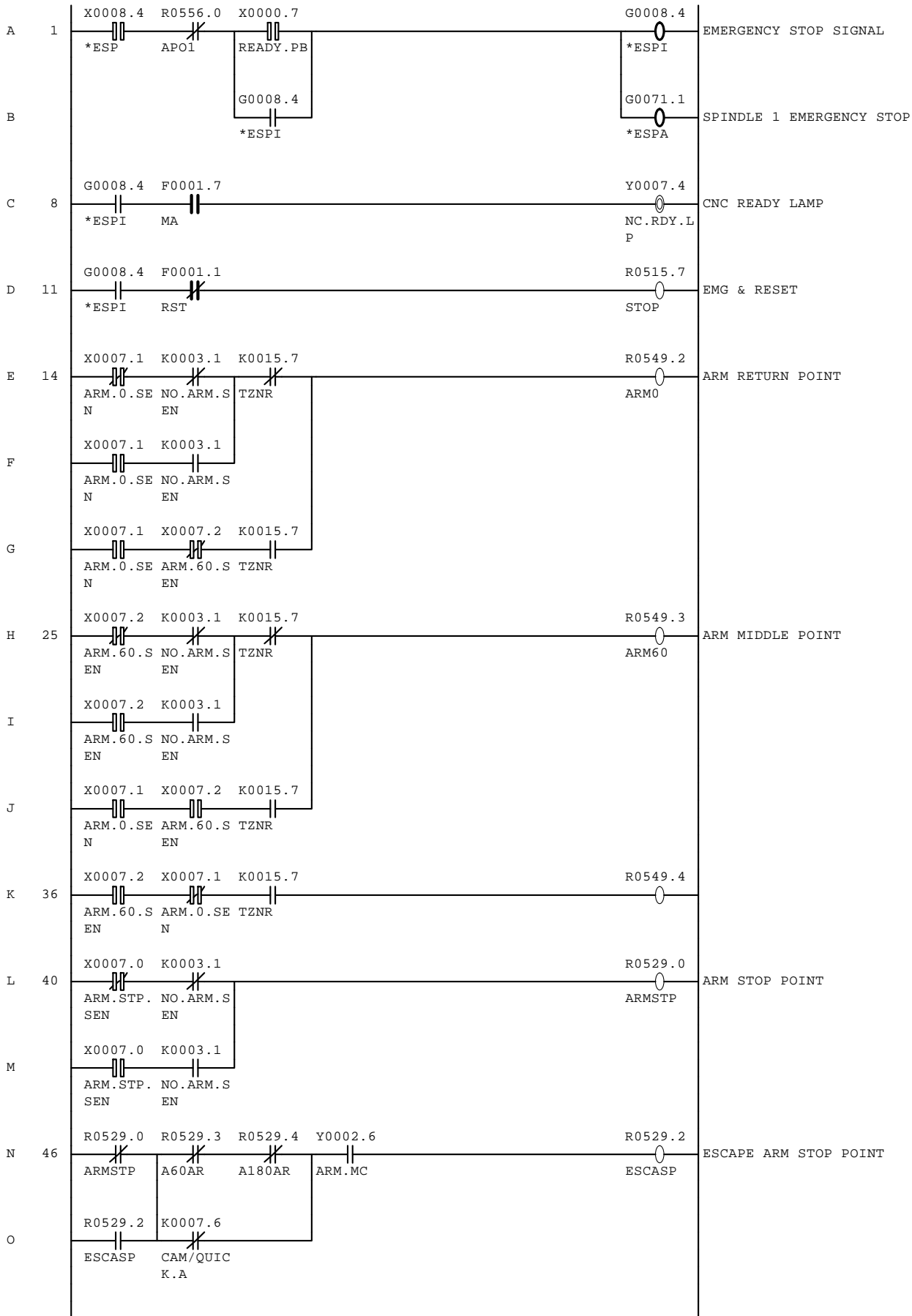
**I/O Com Connection**

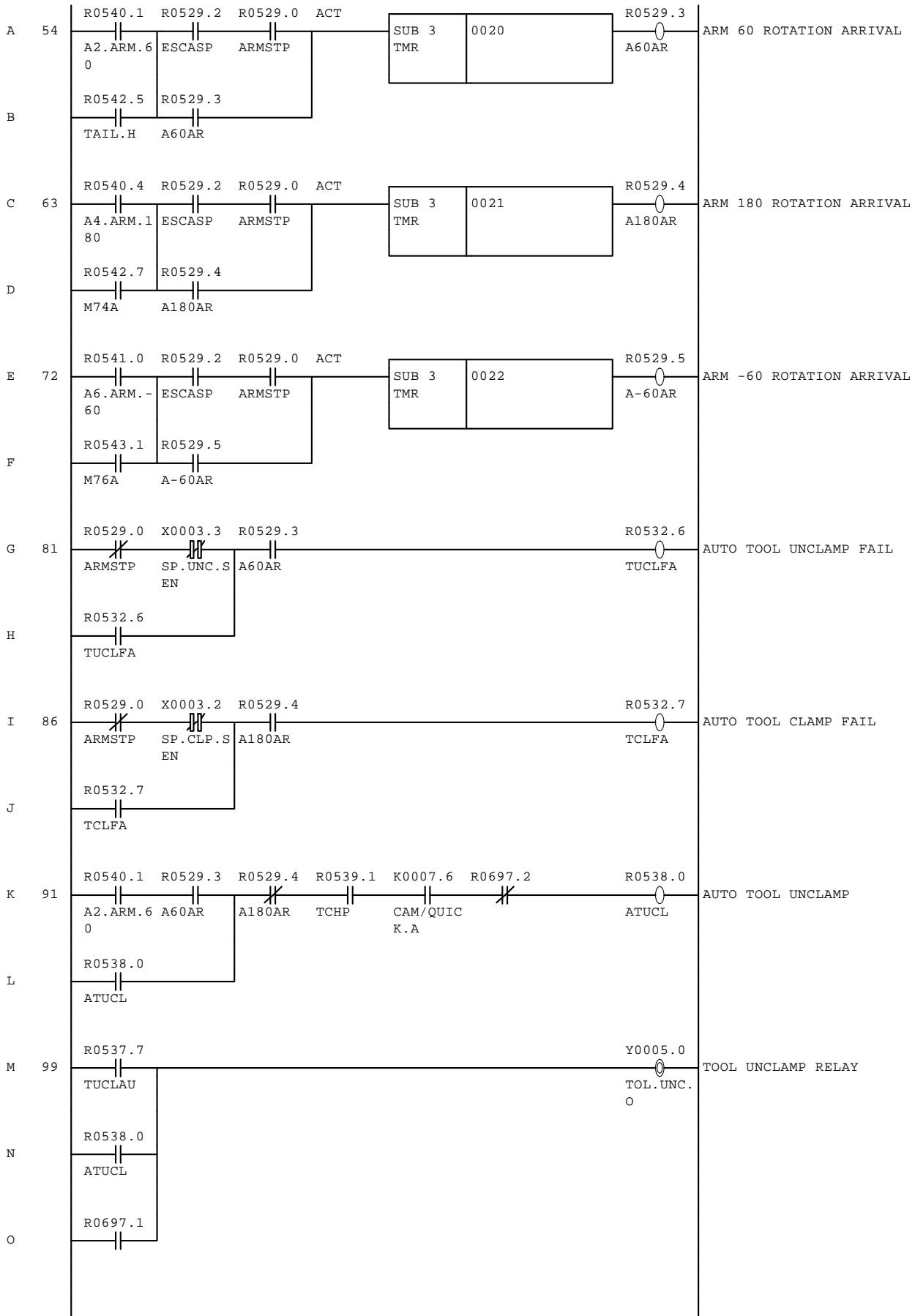
**SHARP** Sharp Industries . Inc

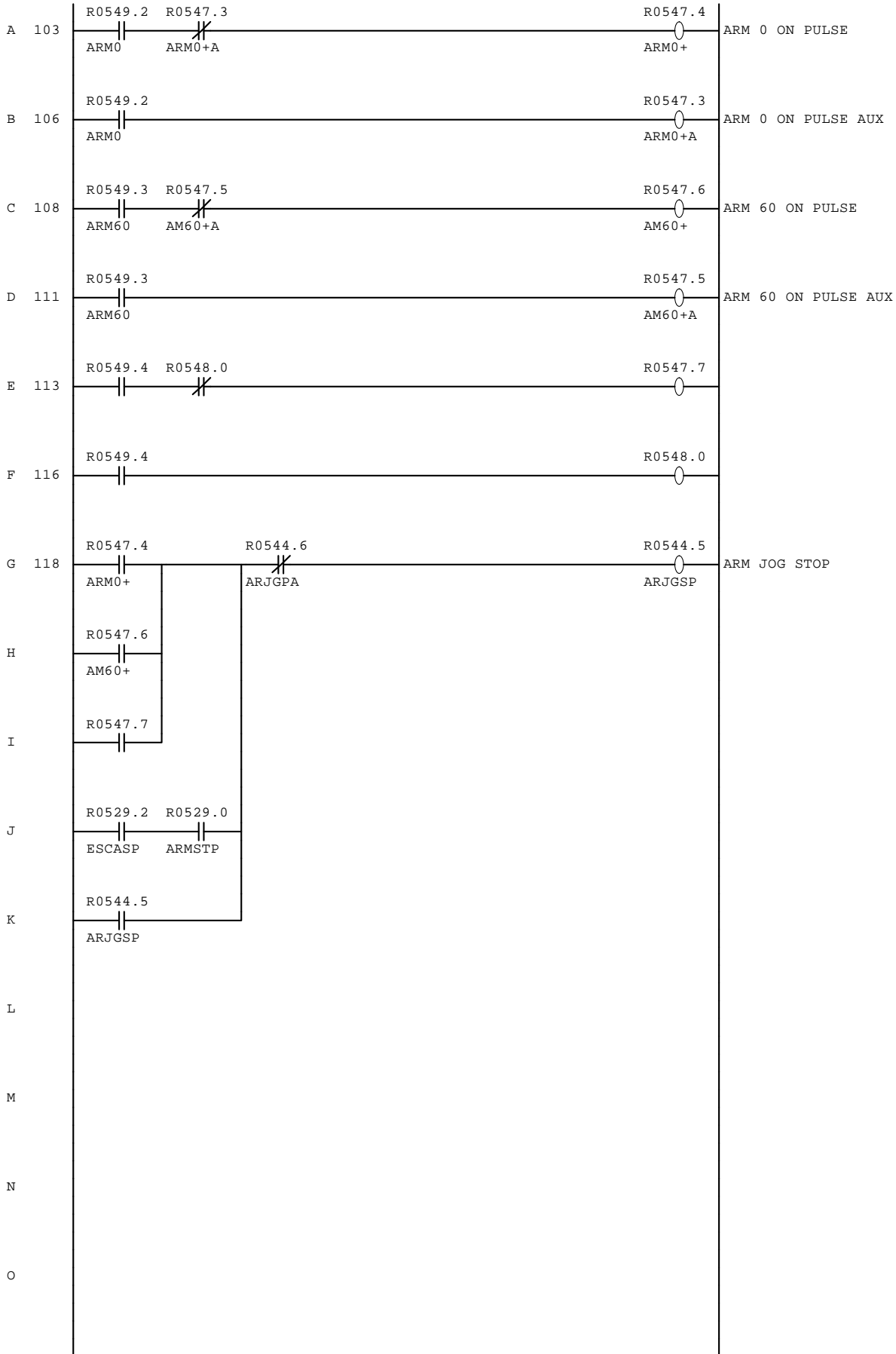
TITLE FIELD	SVL/SV	INC TYPE	FANUC. 01-MF
DRAWN		VERSION	2018/10/11
EXAMINE		PRE:	
CHECKED		NEXT:	
		SHEET NO	P48

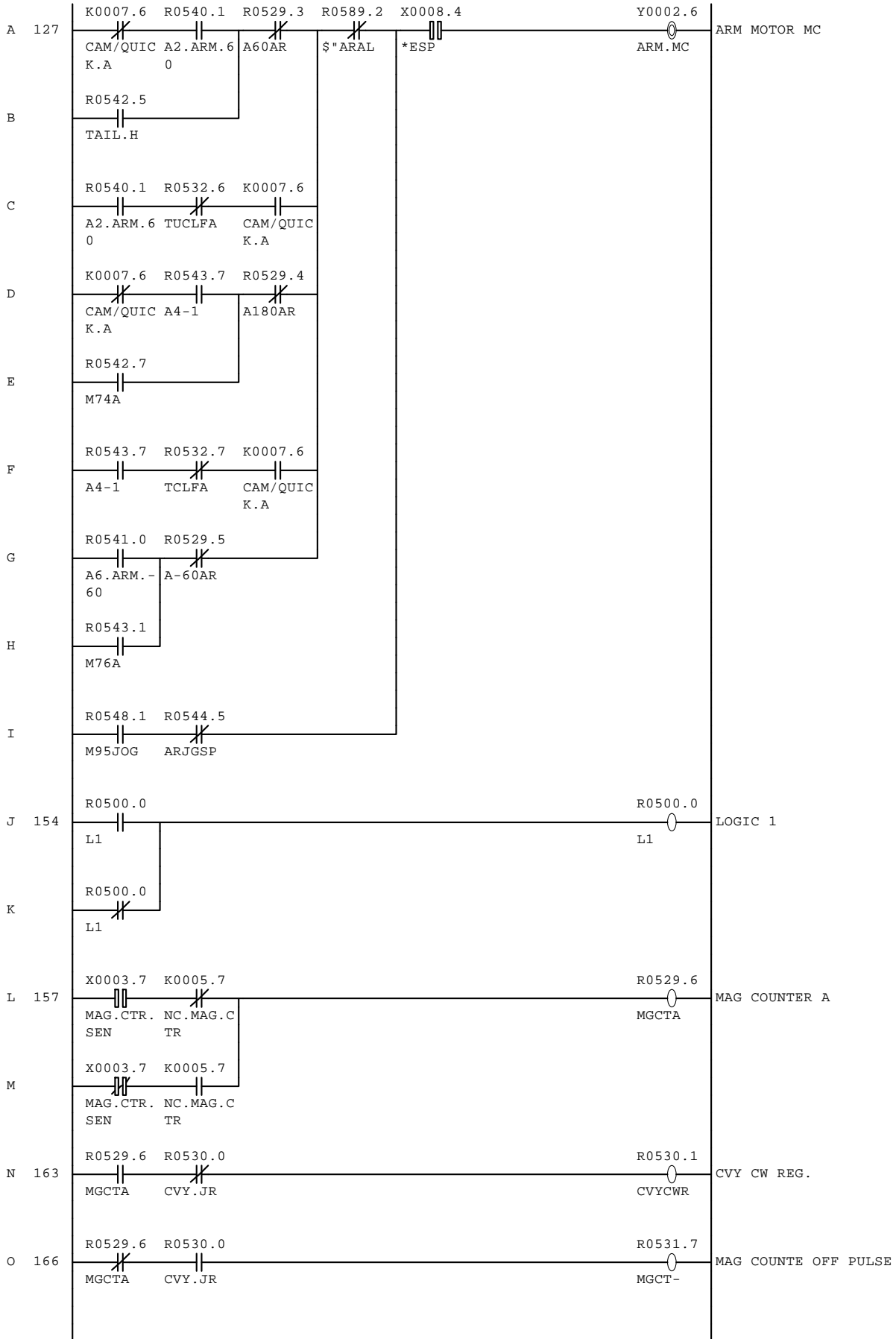
1)	MACHINE TOOL BUILDER NAME	SHARP
2)	MACHINE TOOL NAME	ARM TYPE SERIES
3)	PMC & NC NAME	0I-MF1
4)	PMC PROGRAM NO.	SVL-1000
5)	EDITION NO.	A5-2
6)	PROGRAM DRAWING NO.	CTTMF1-A5 -2
7)	DATE OF PROGRAMMING	2017/9/8
8)	PROGRAM DESIGNED BY	HYT
9)	ROM WRITTEN BY	
10)	REMARKS	(TNT-LUBE) 4TH Stand

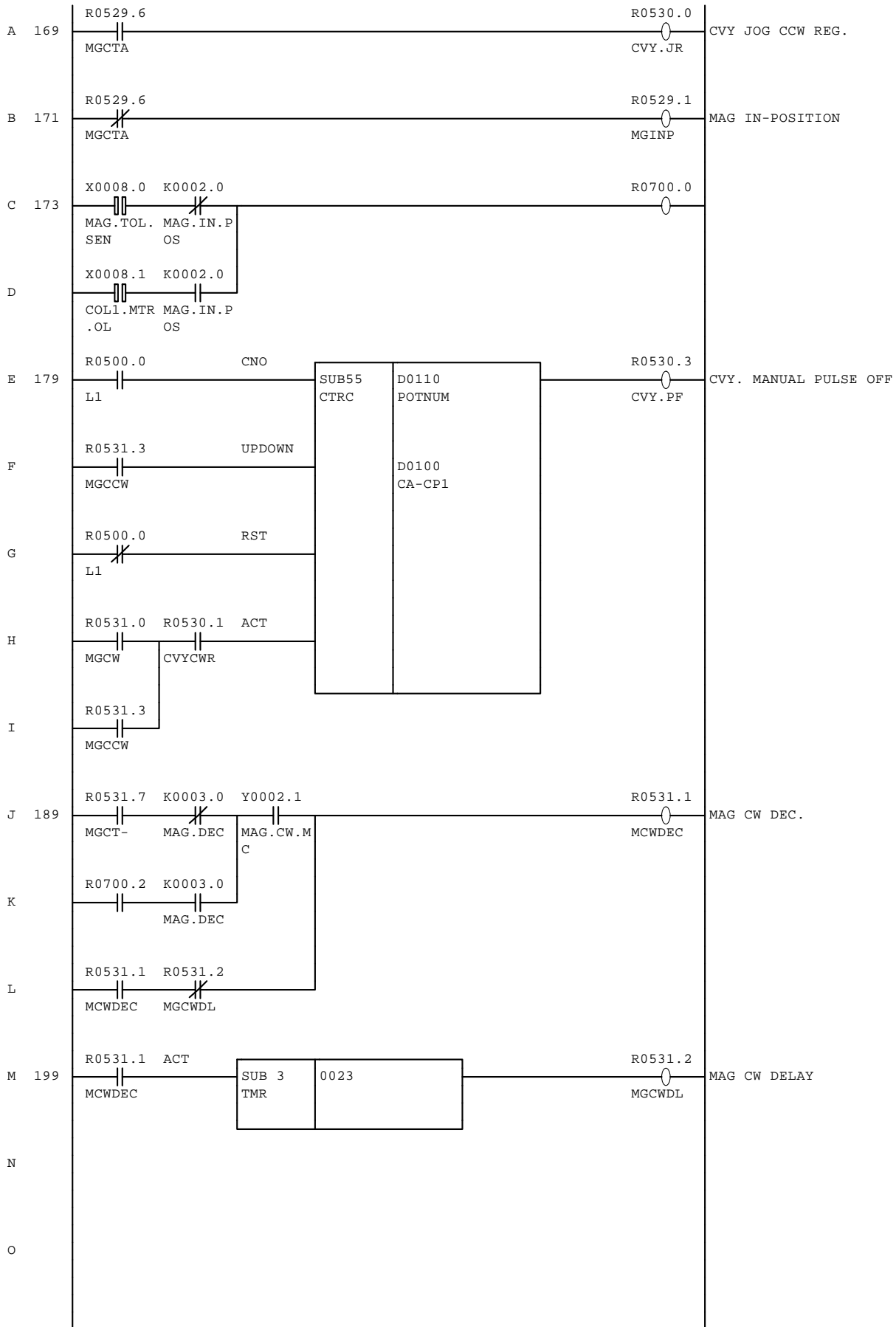


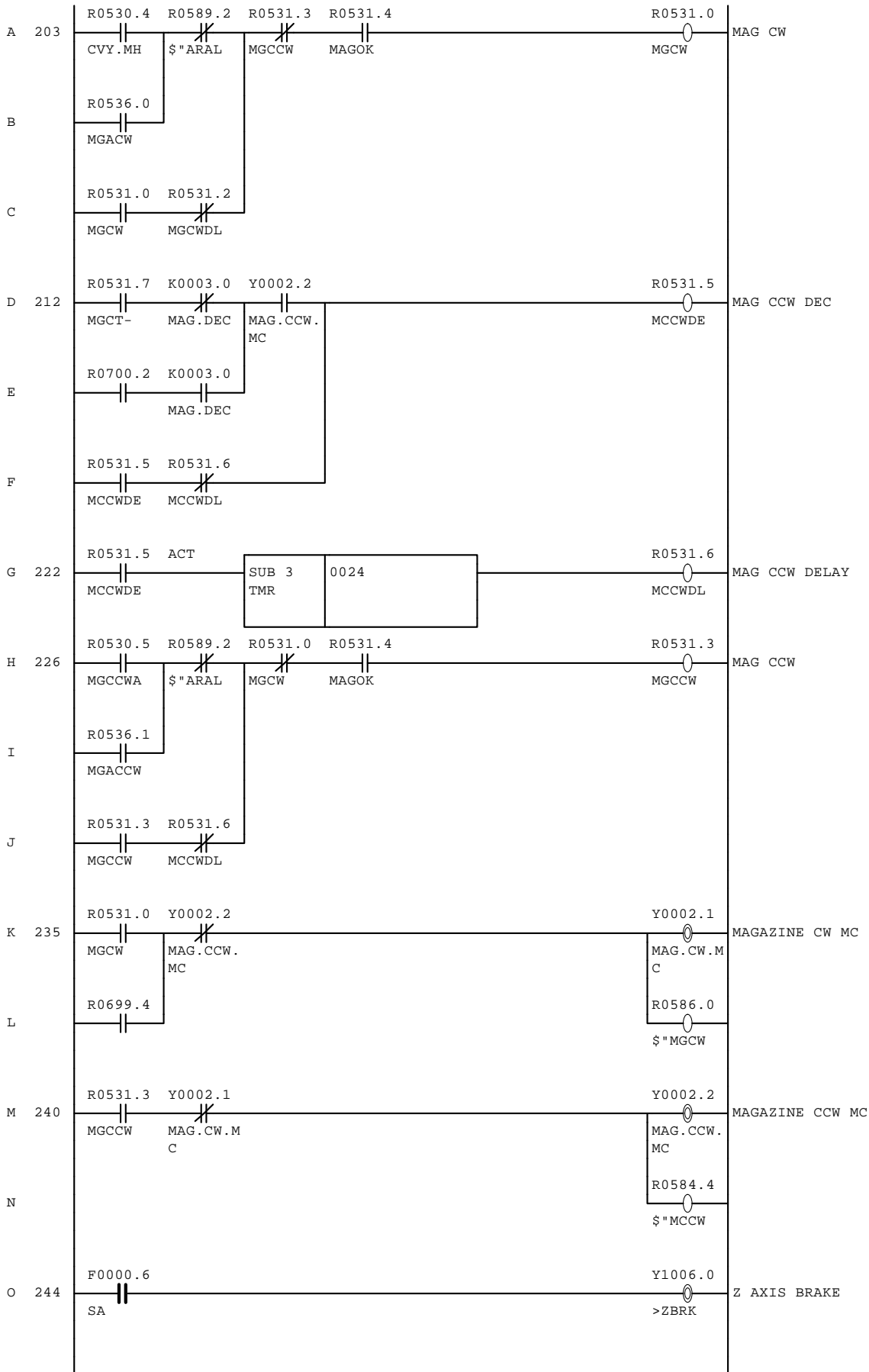




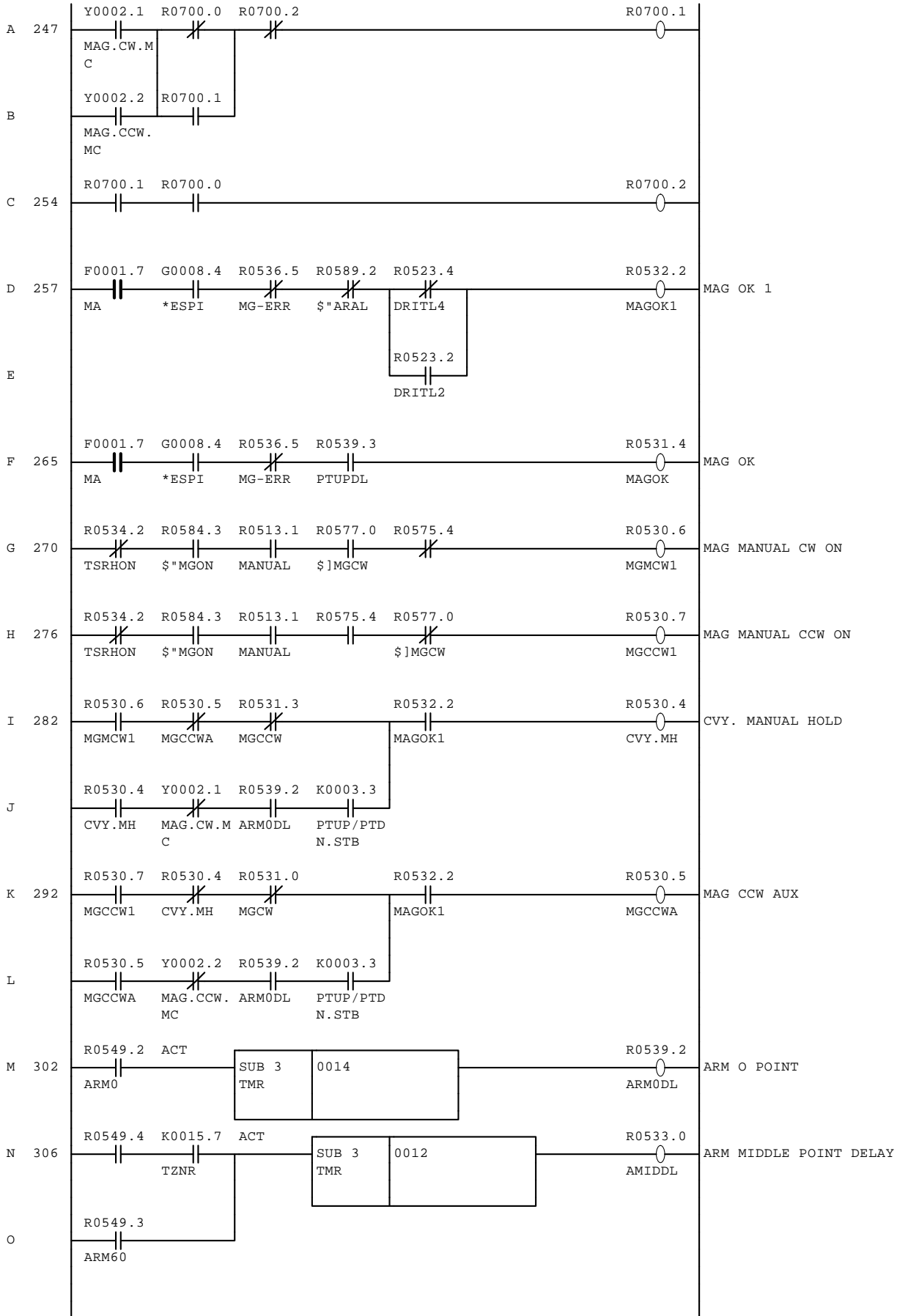




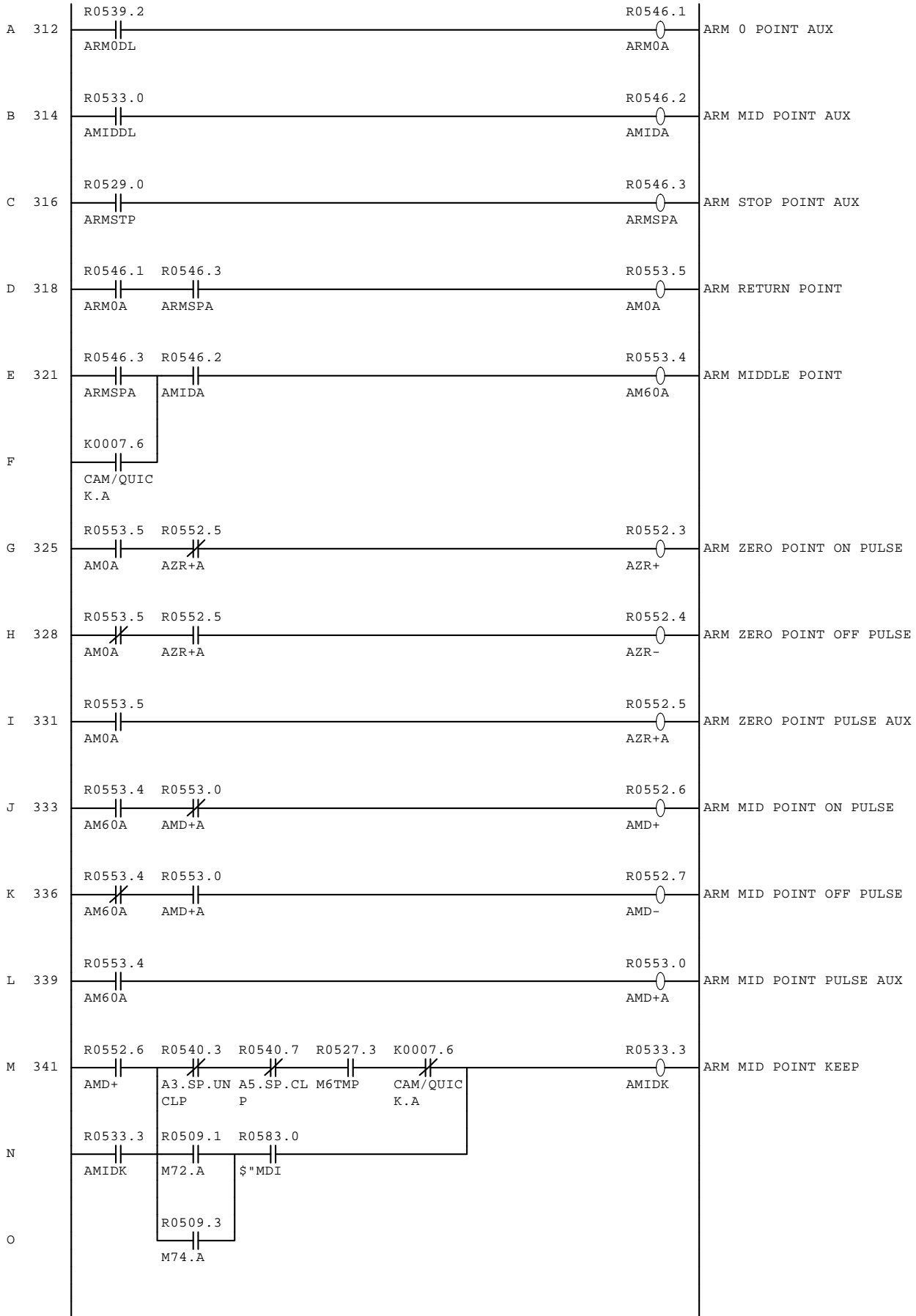


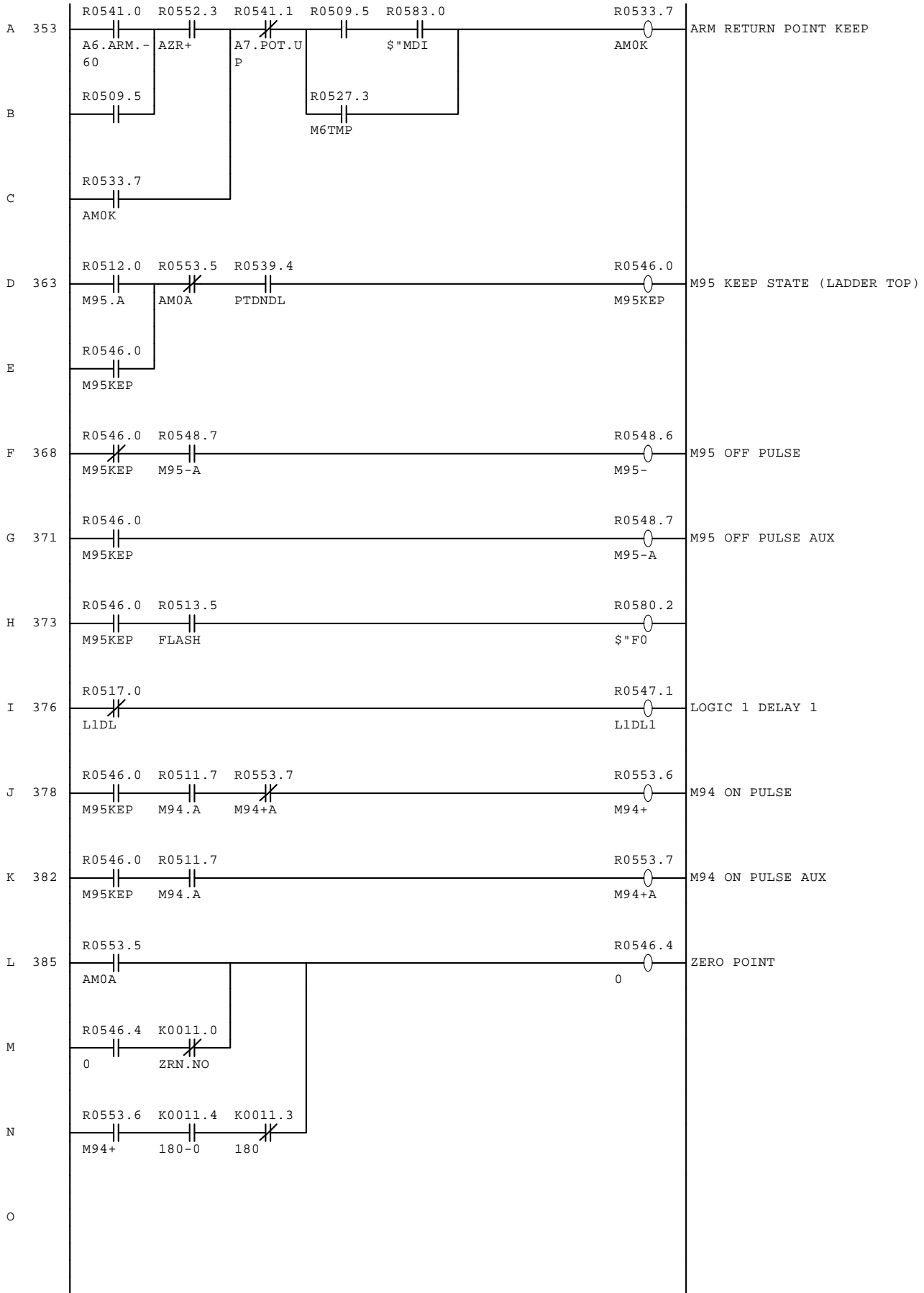


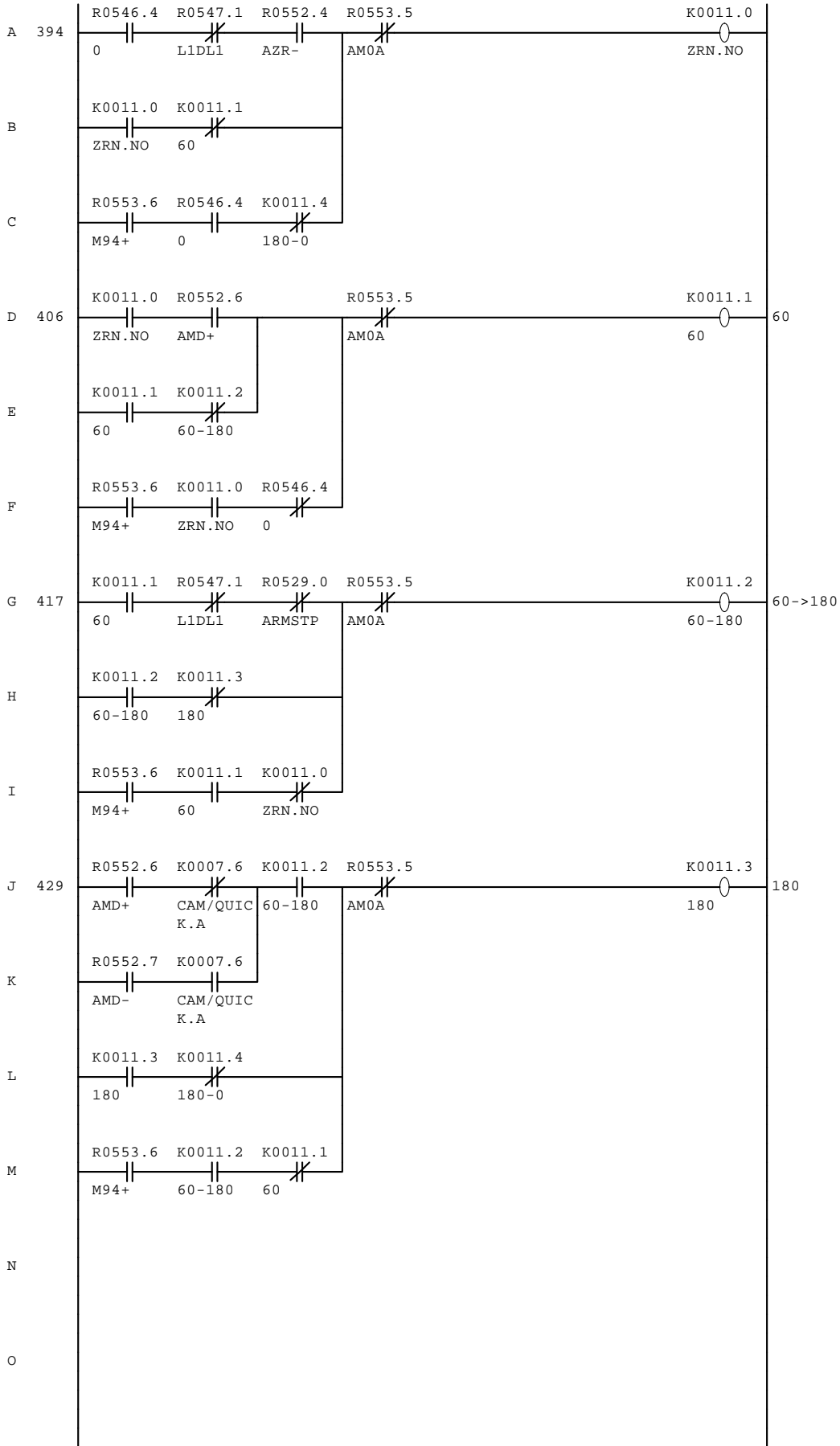


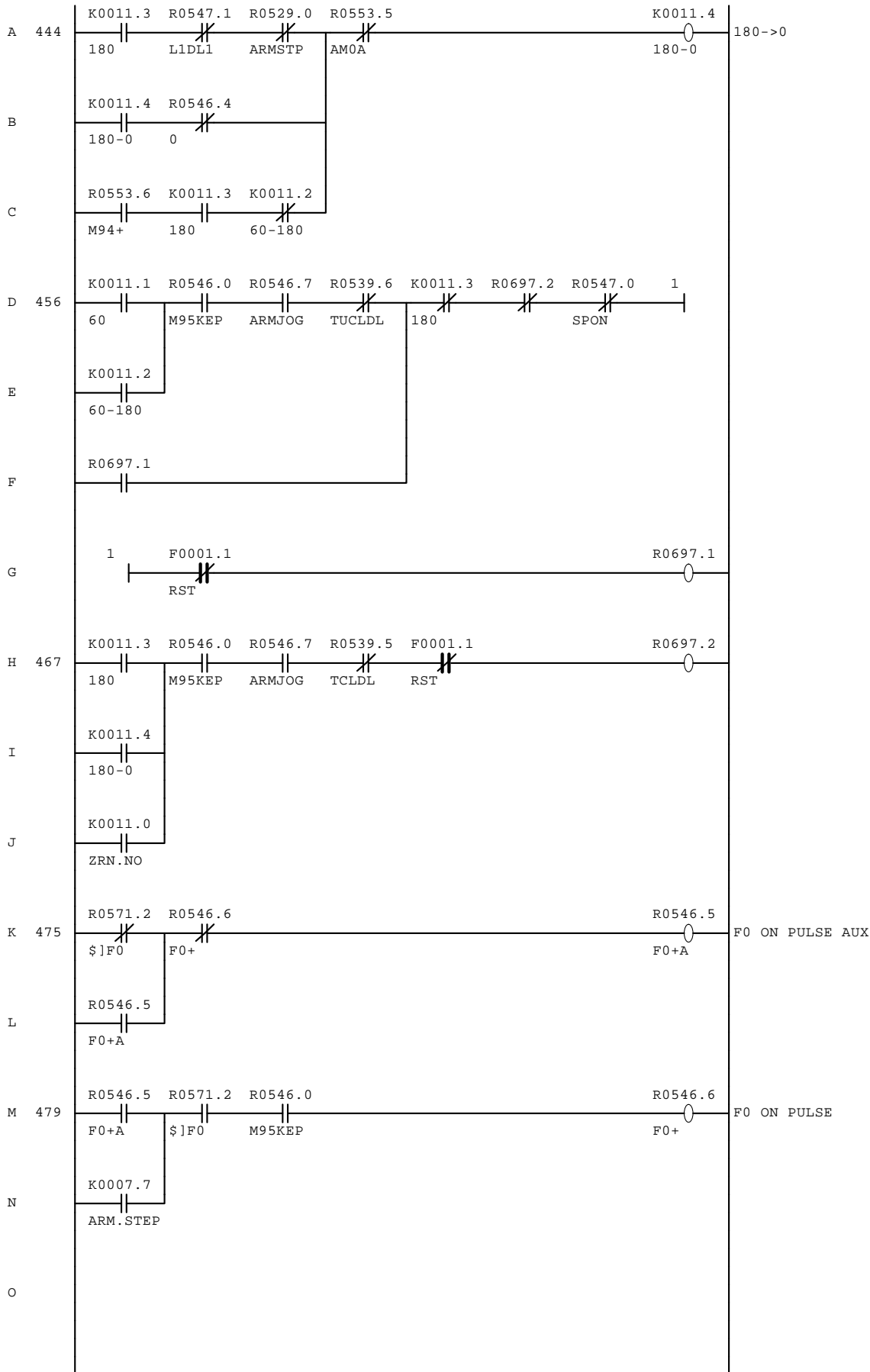


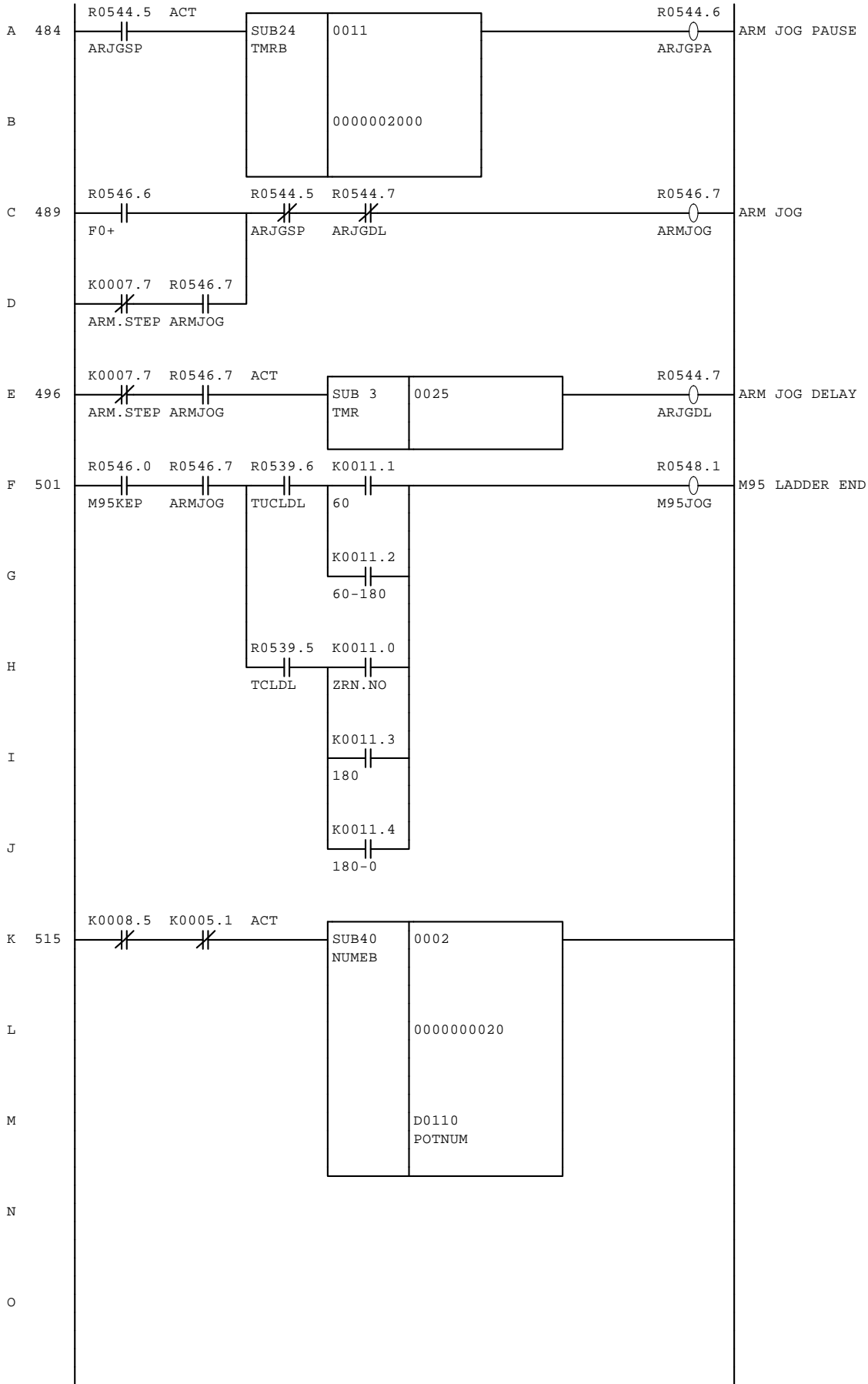


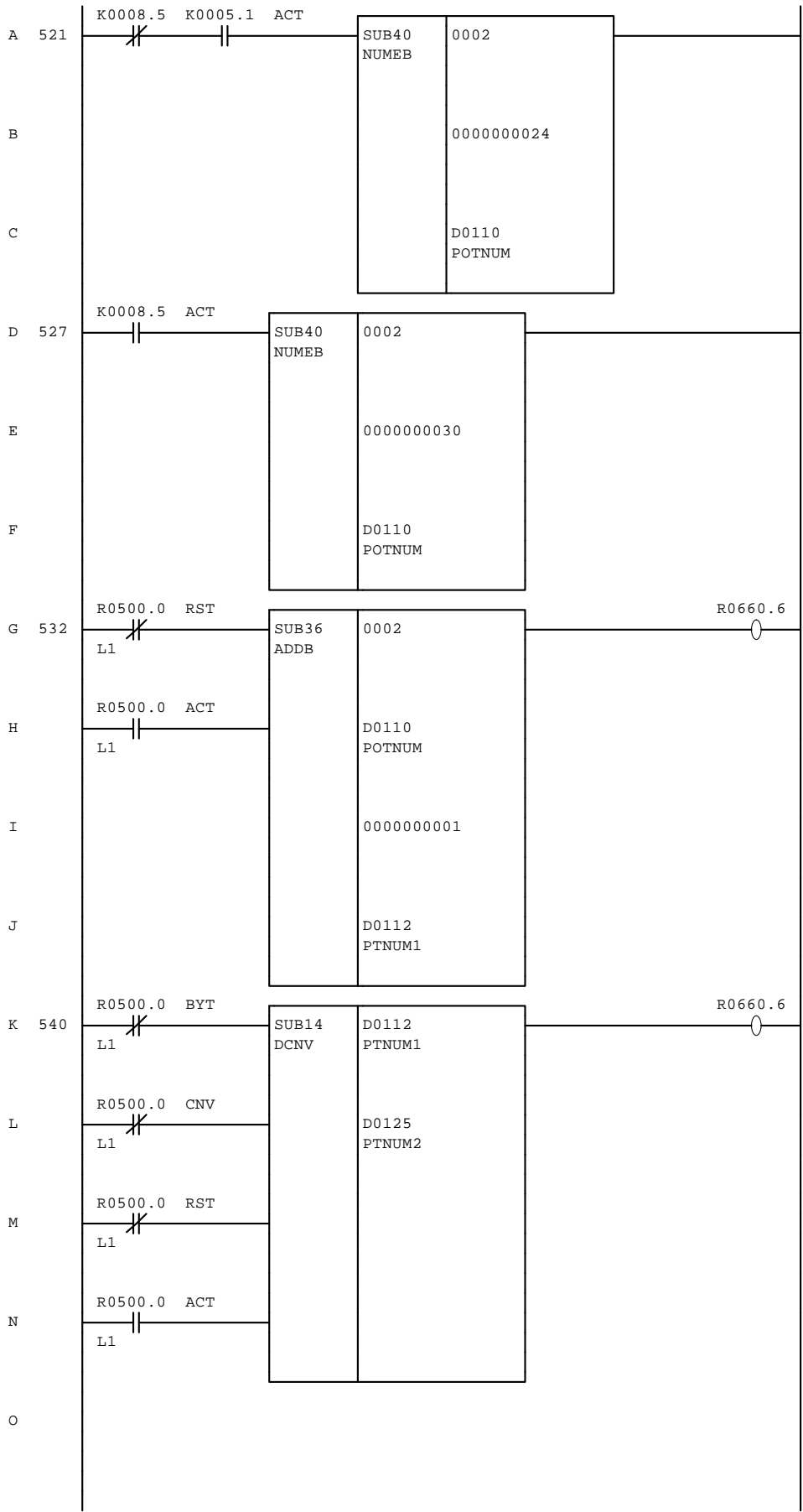


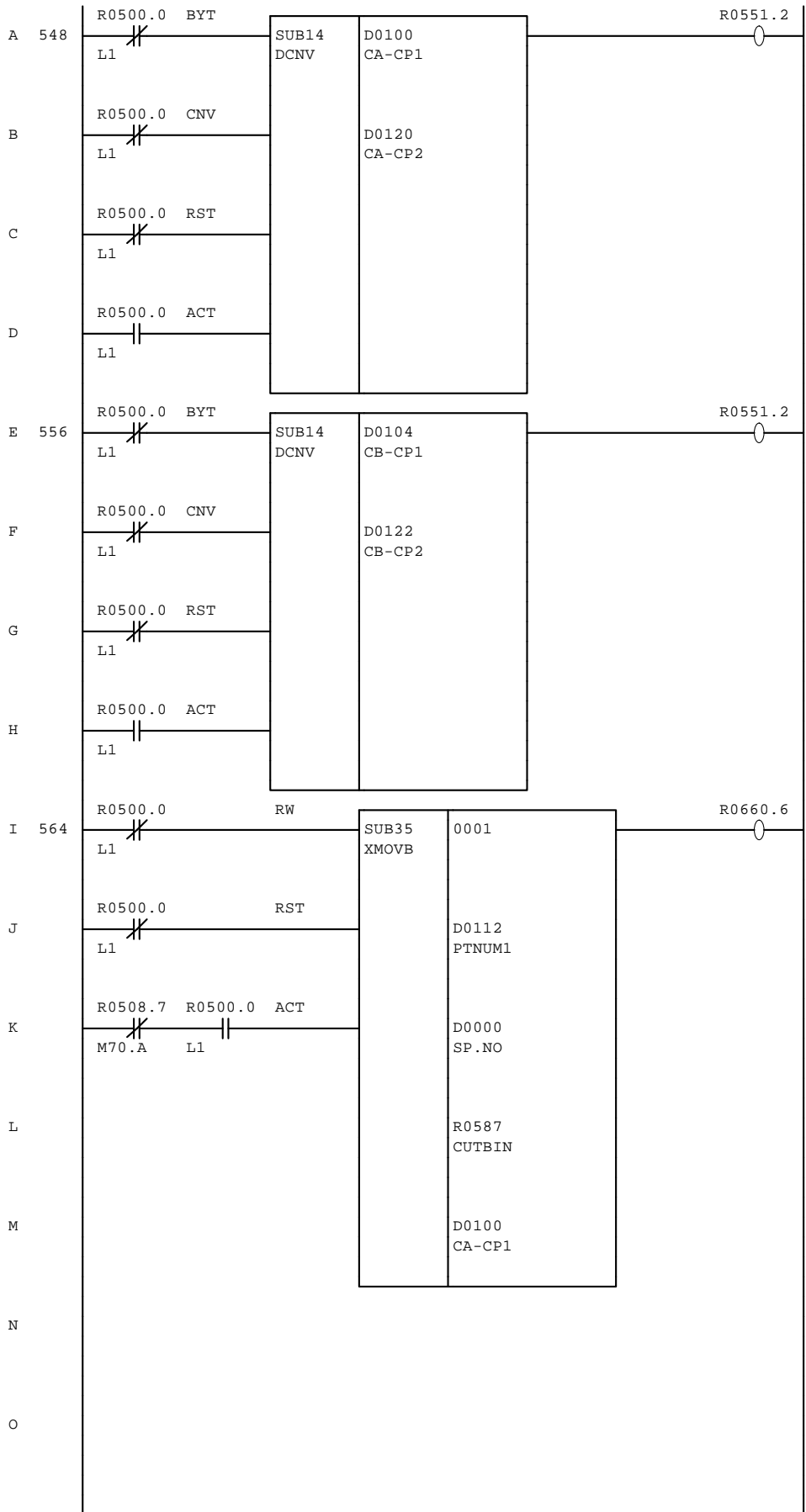


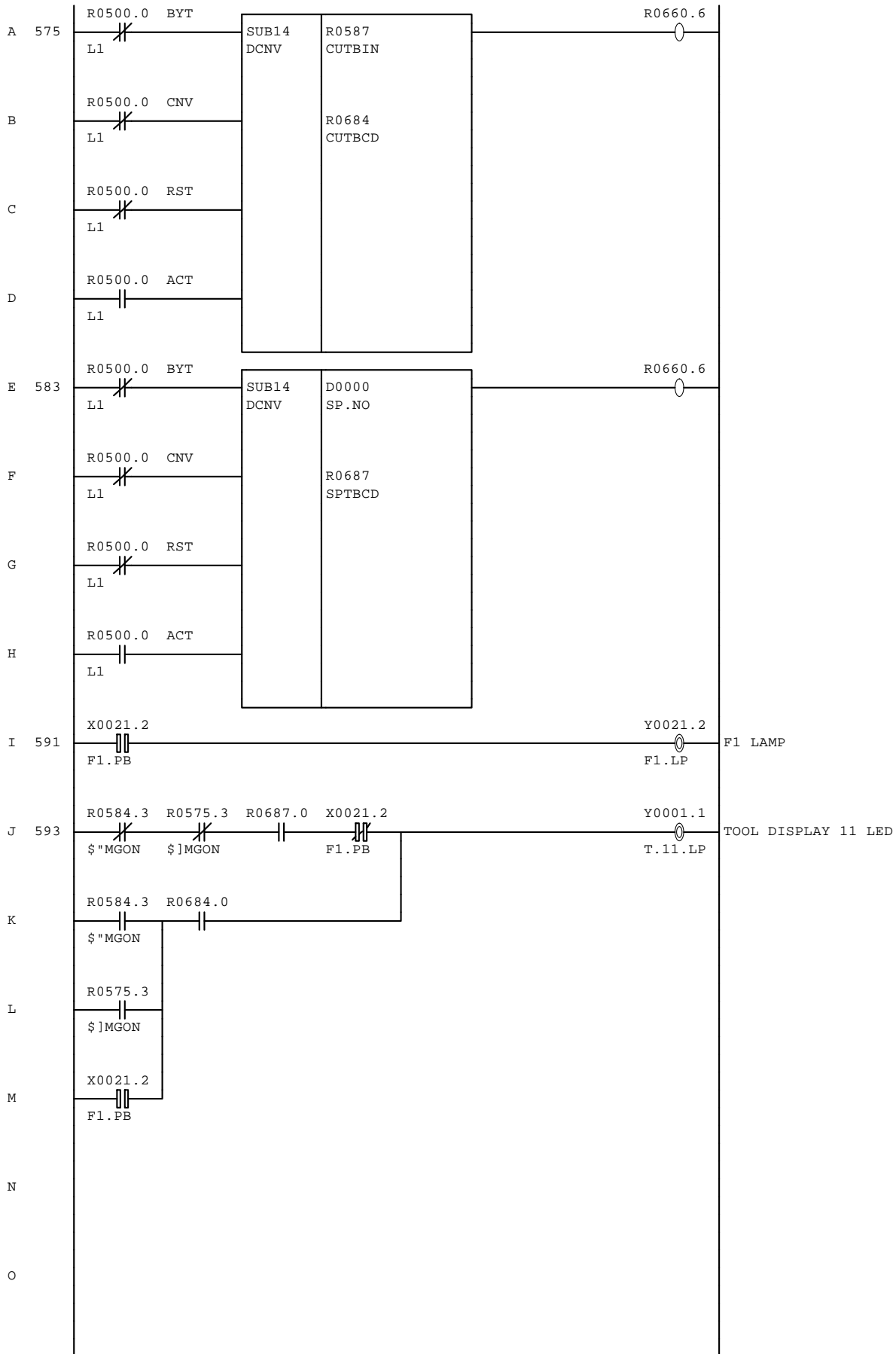




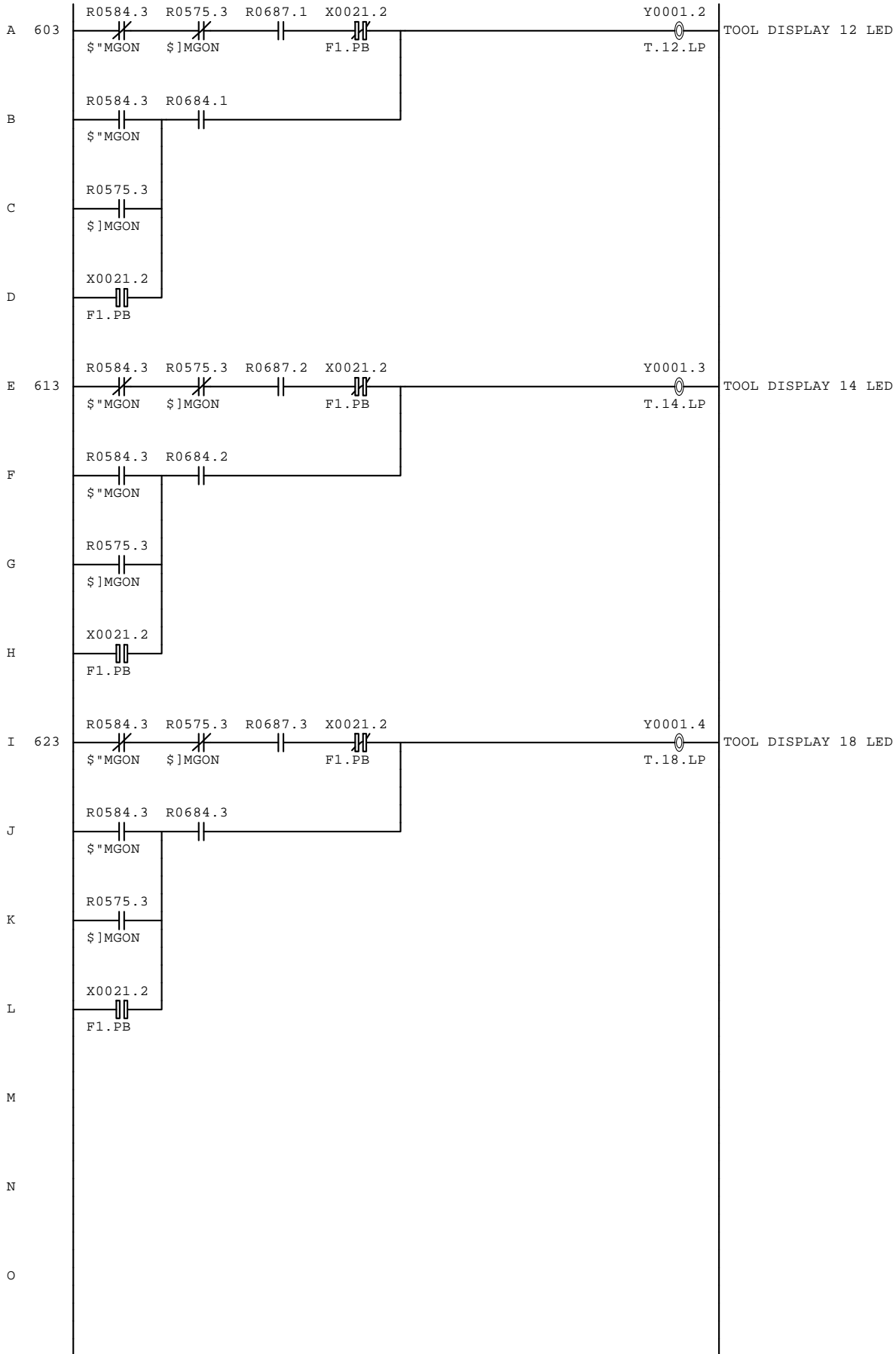


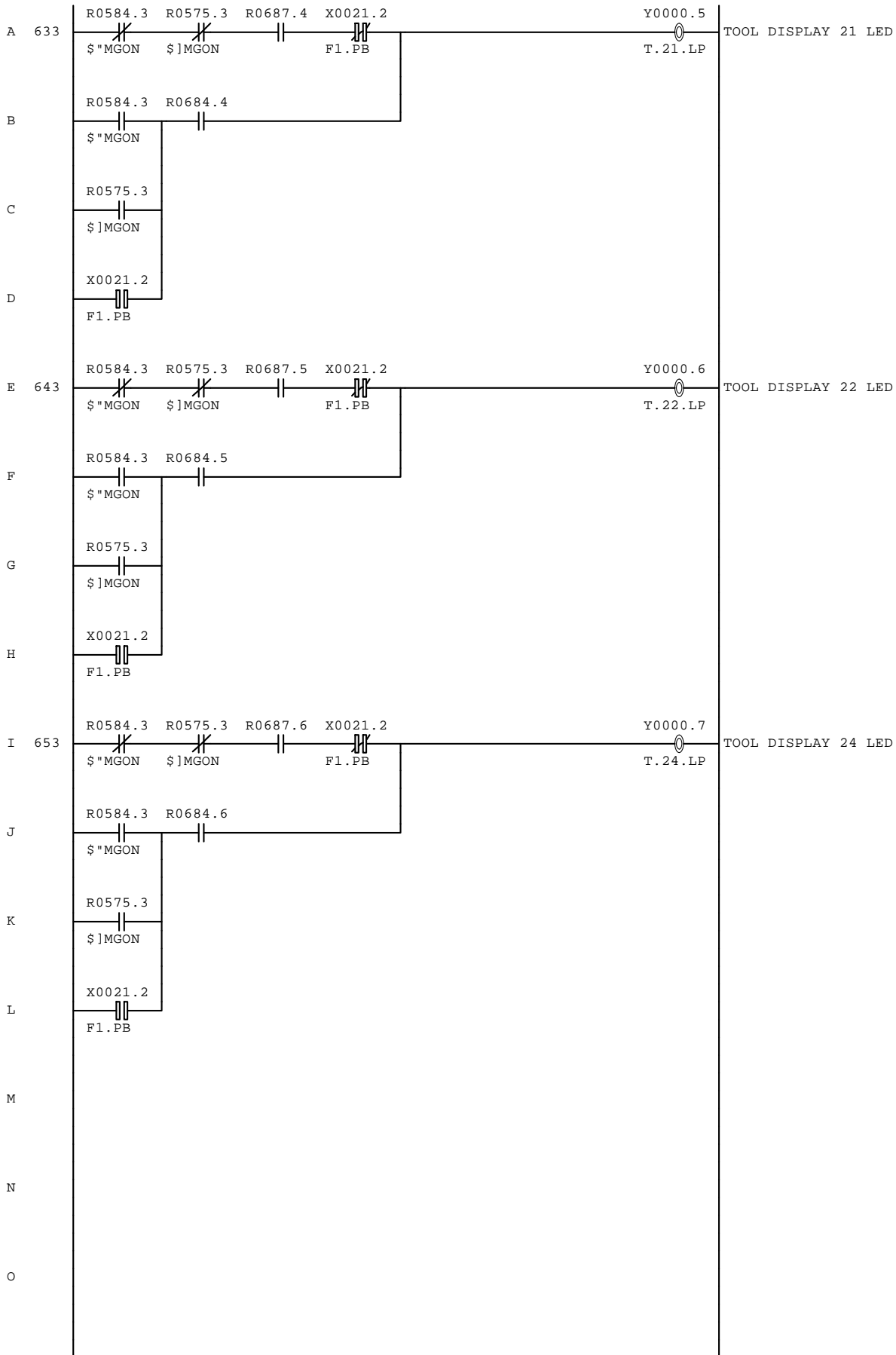


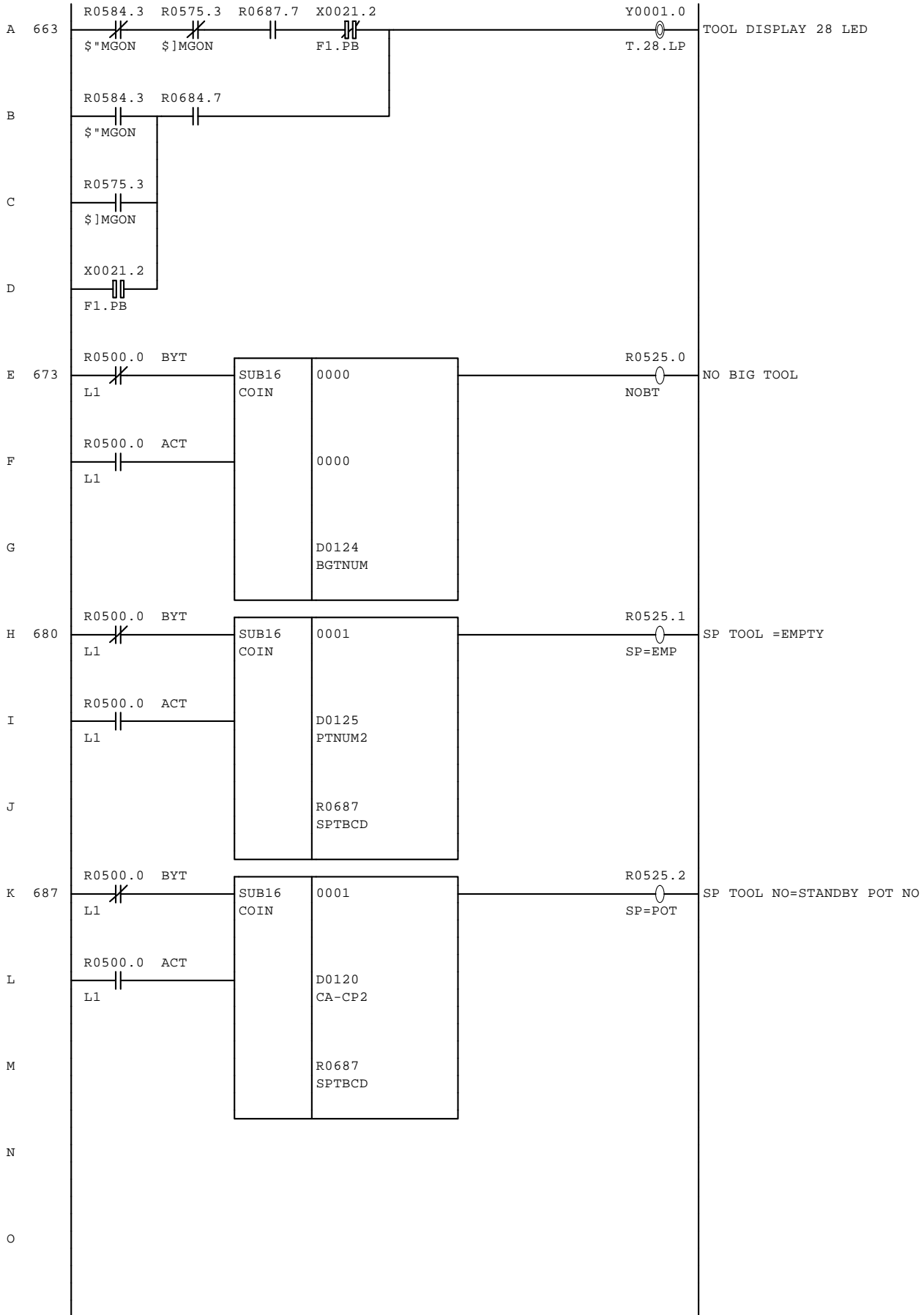


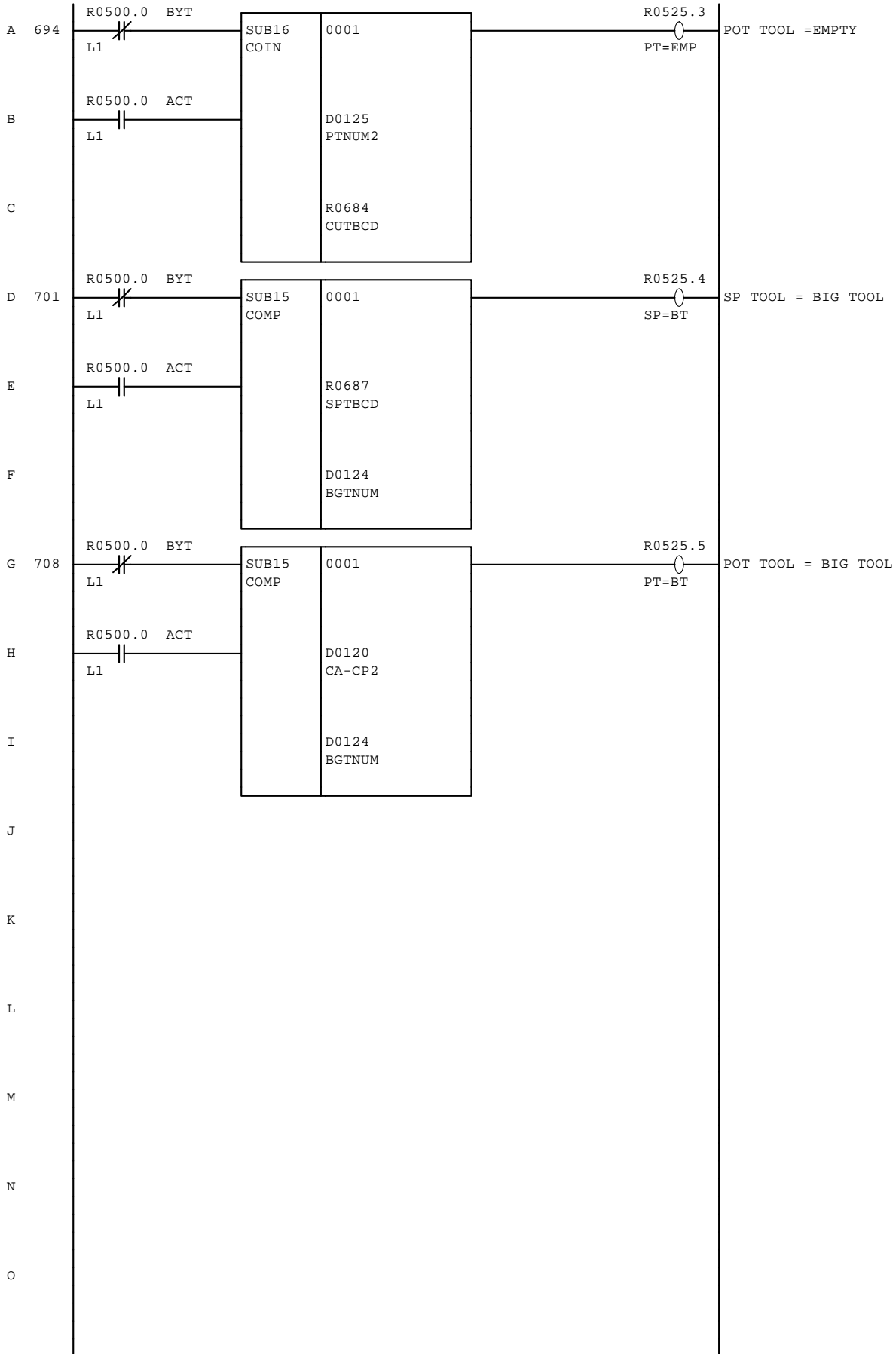


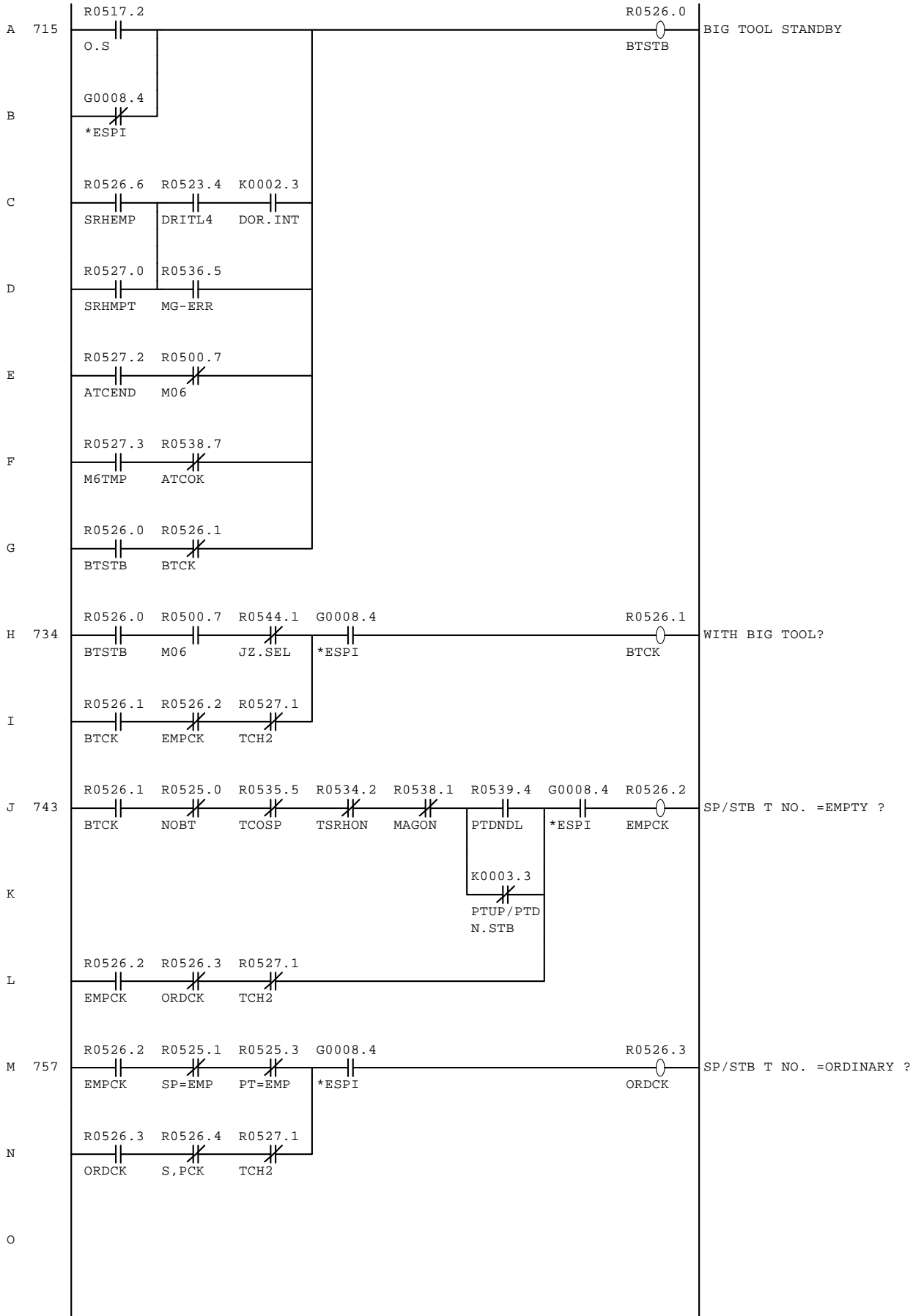


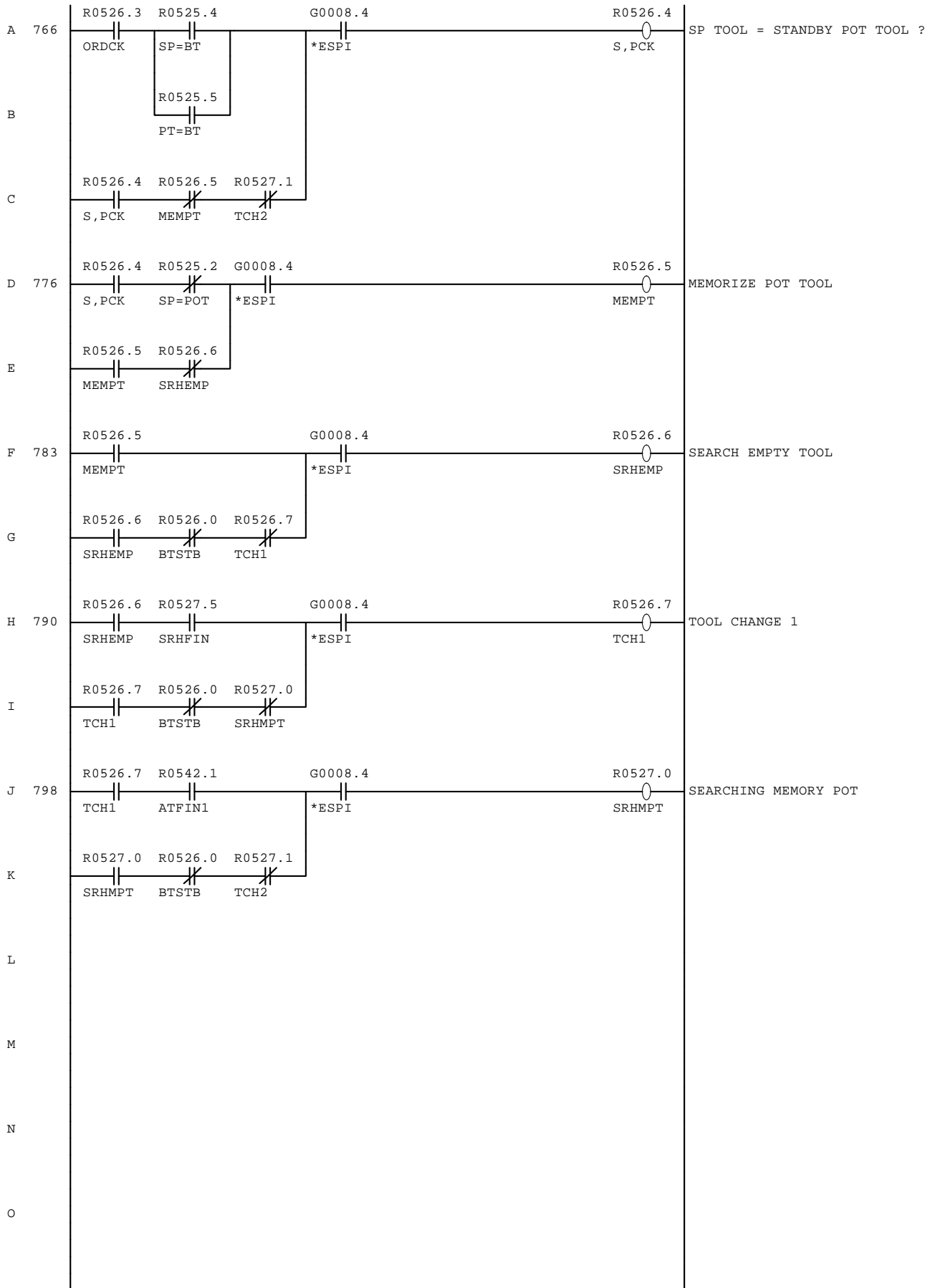


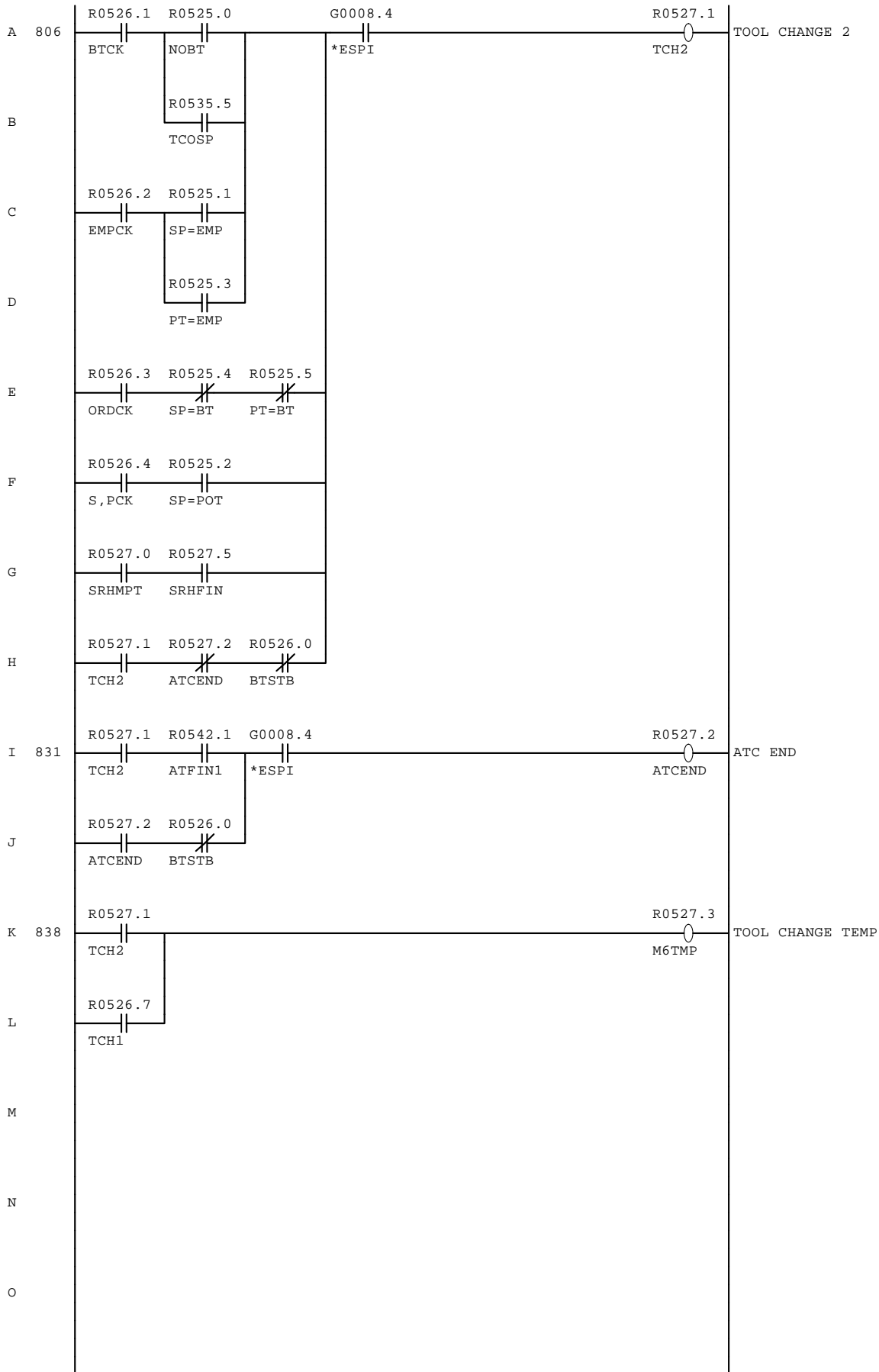


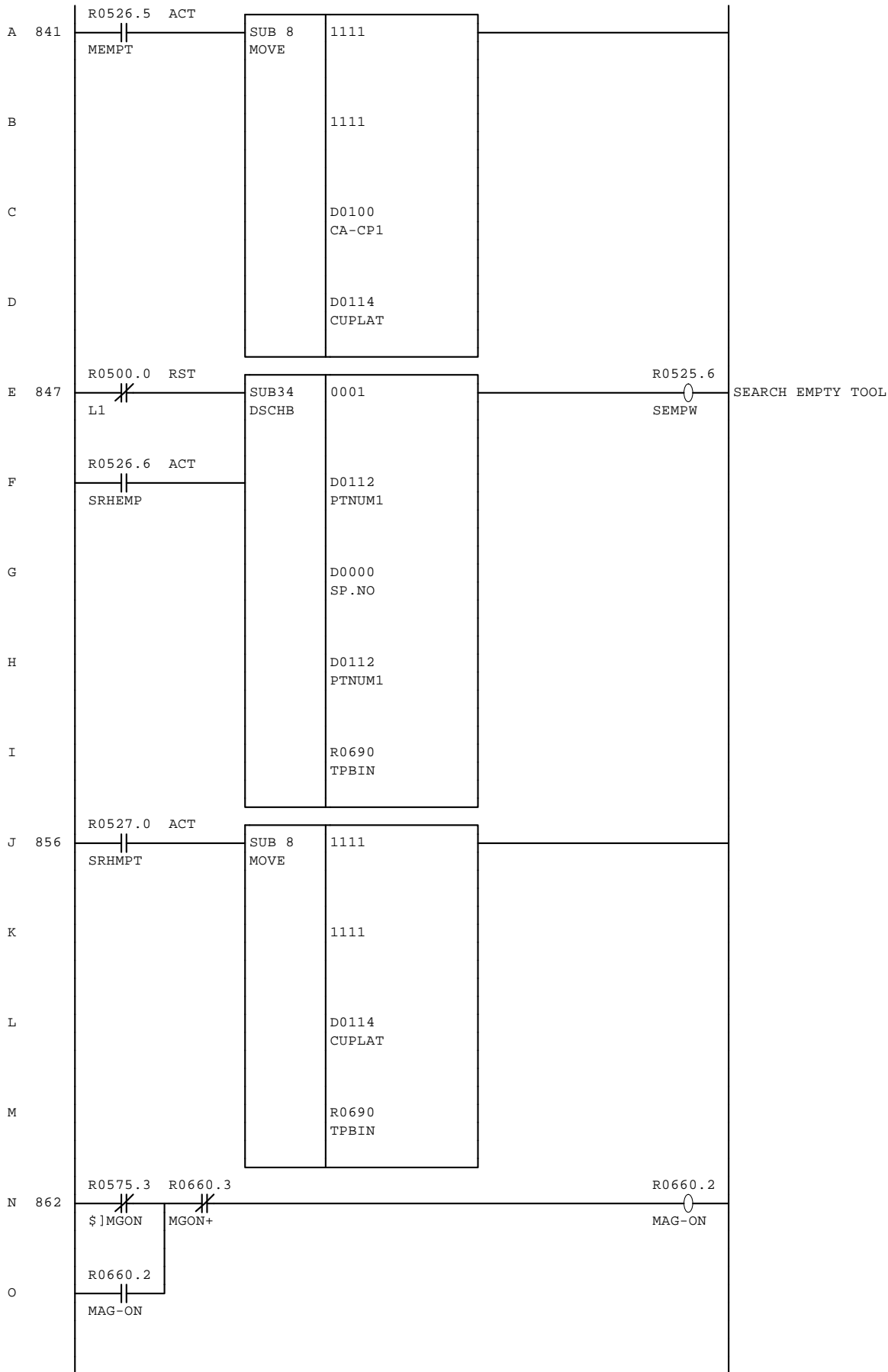




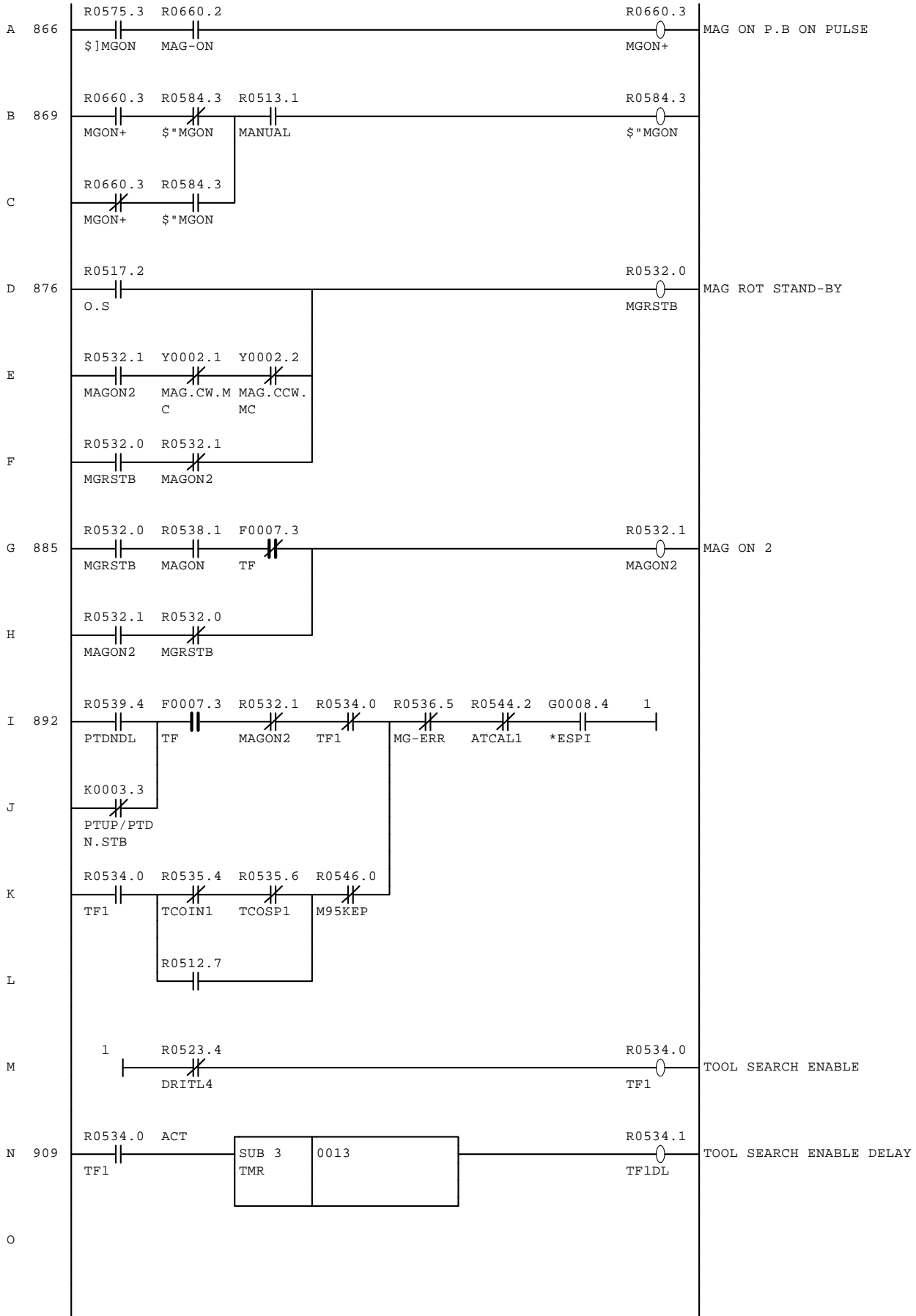


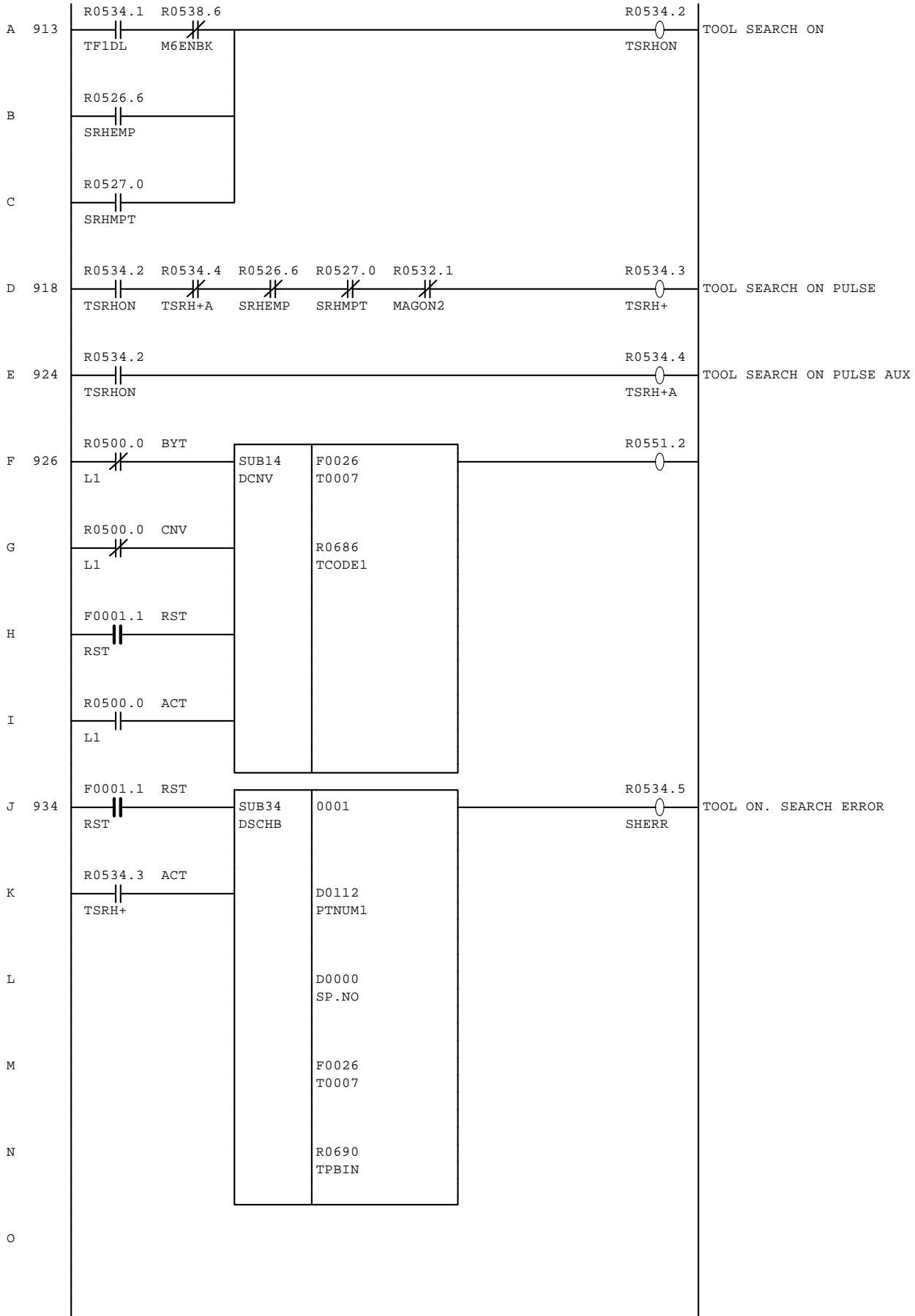


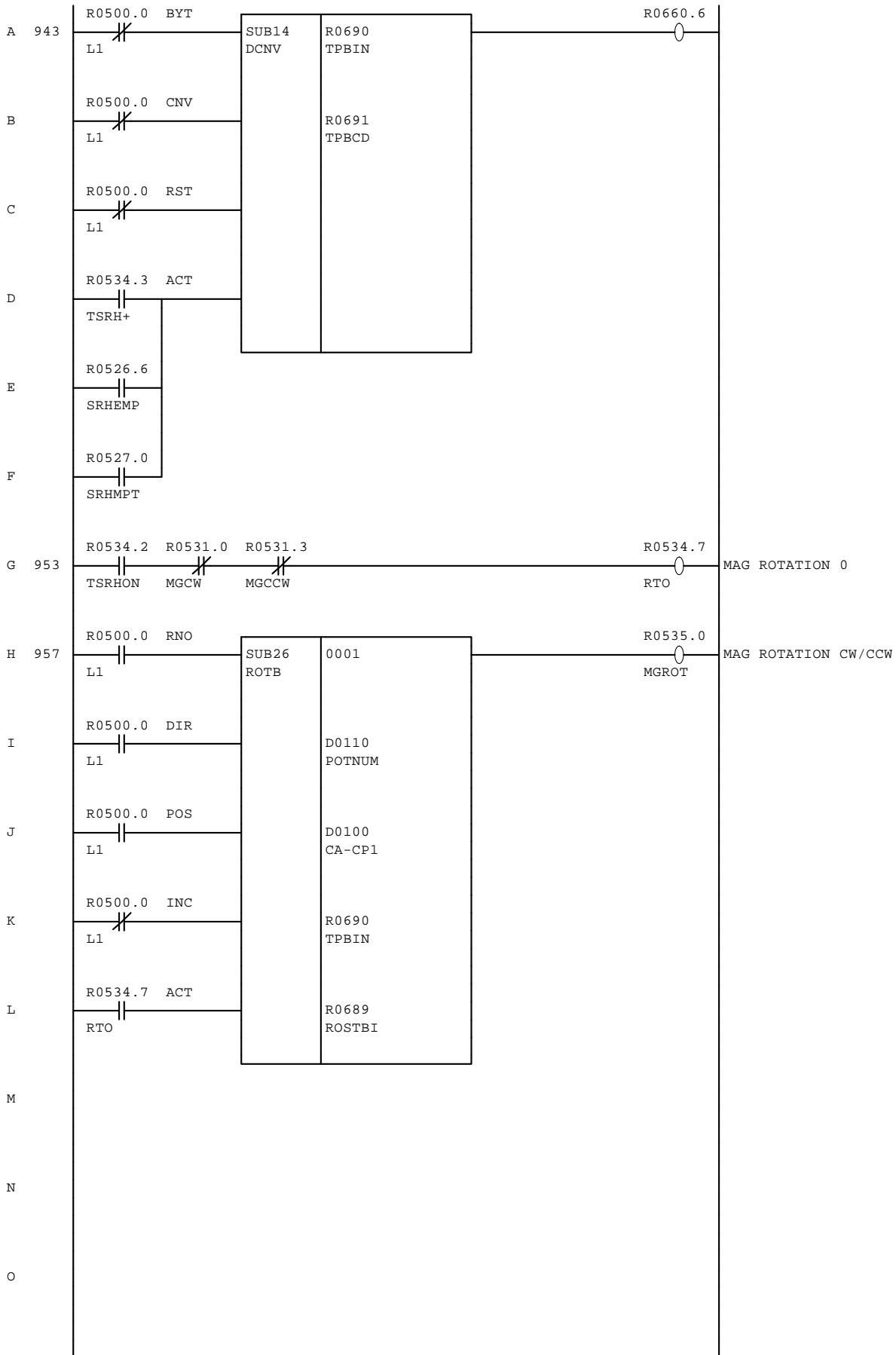


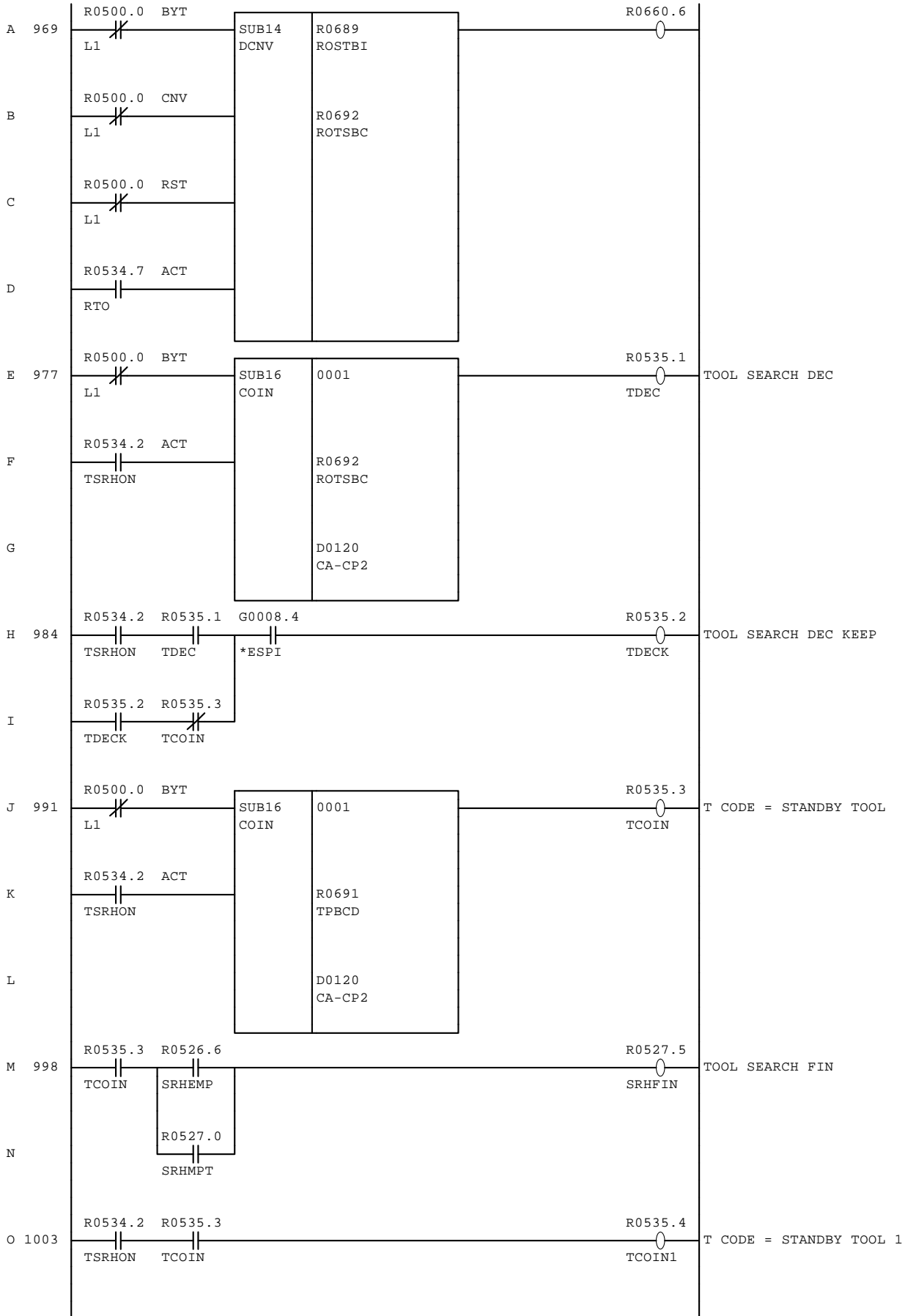


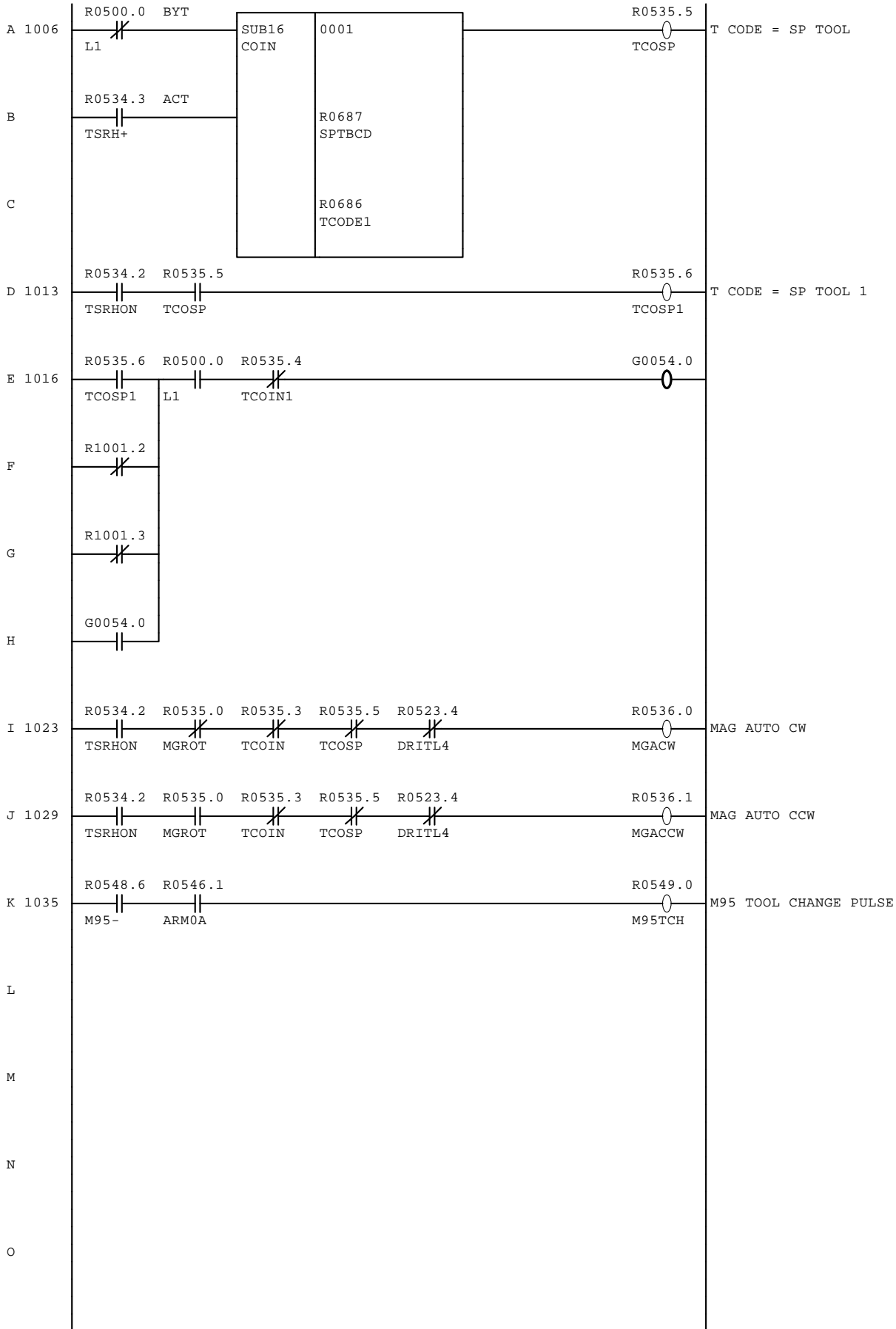


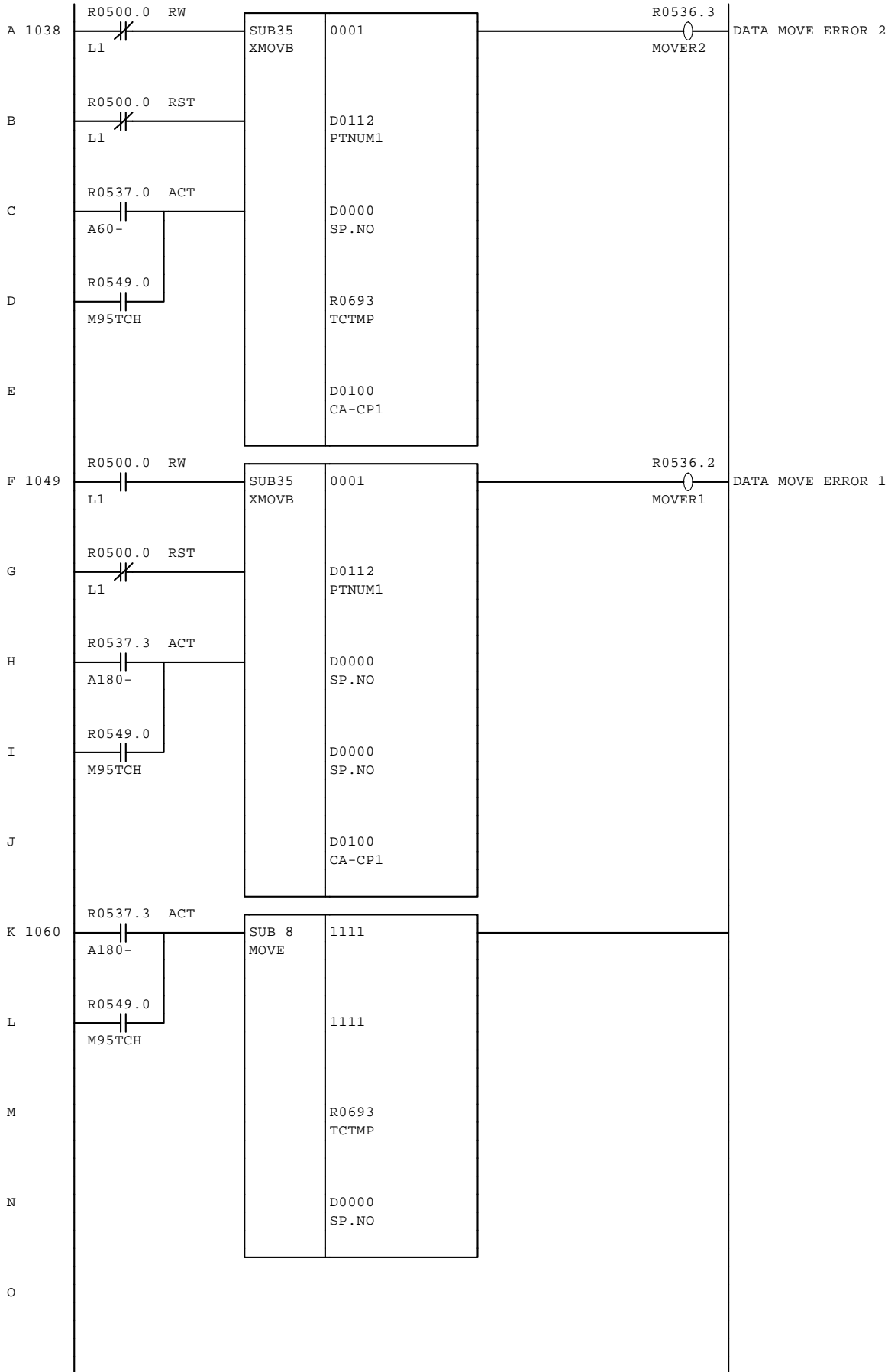


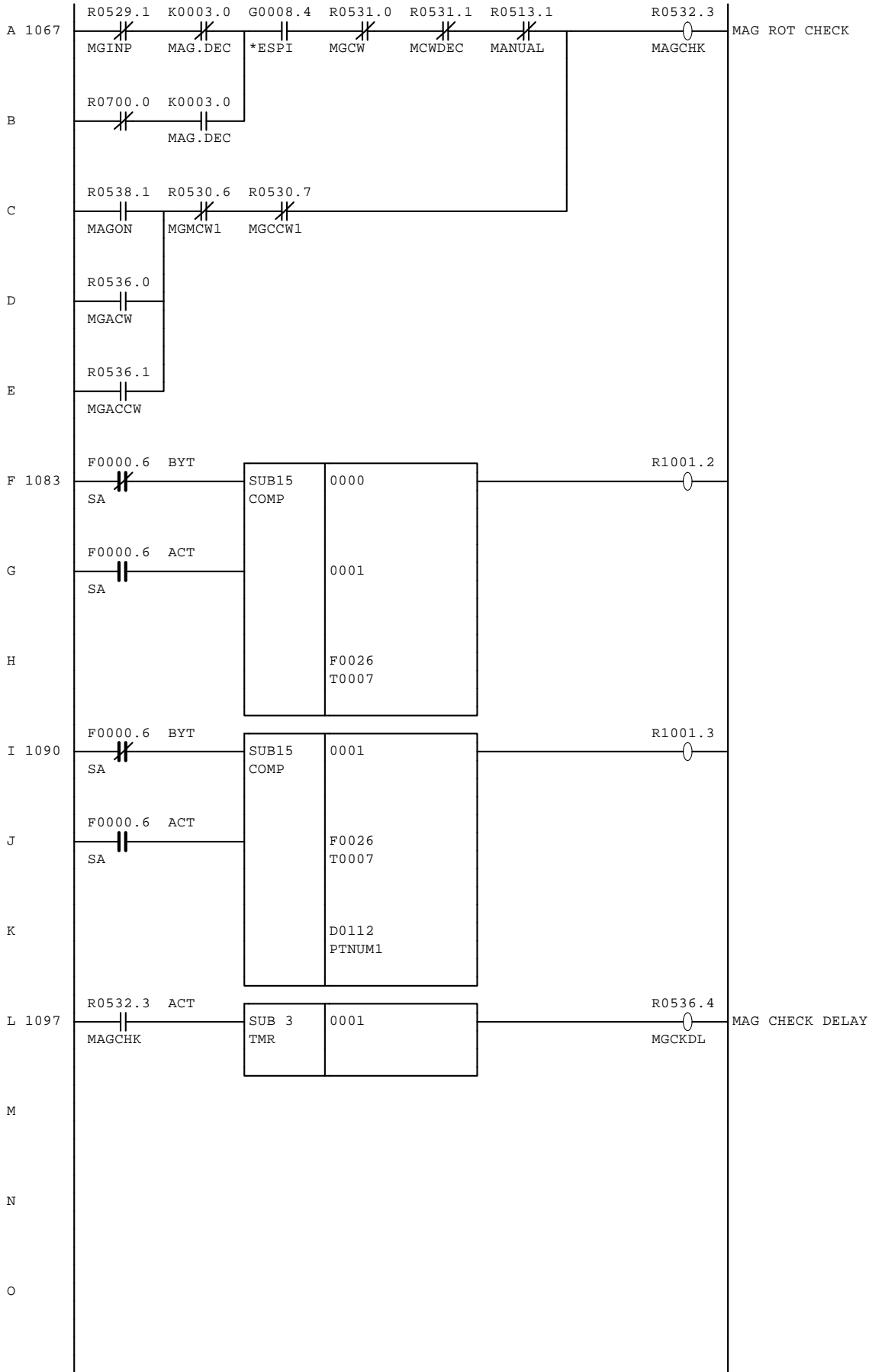


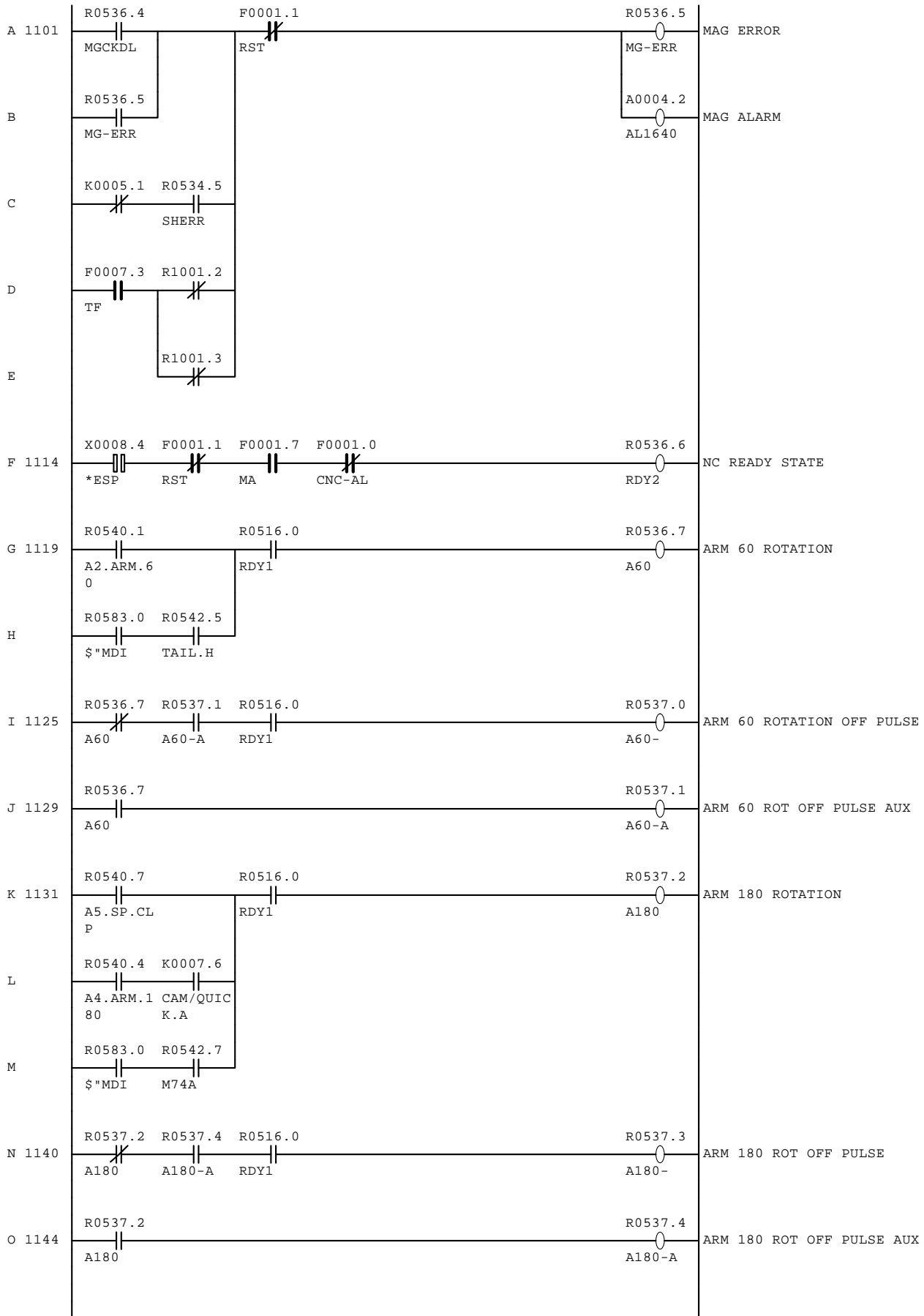




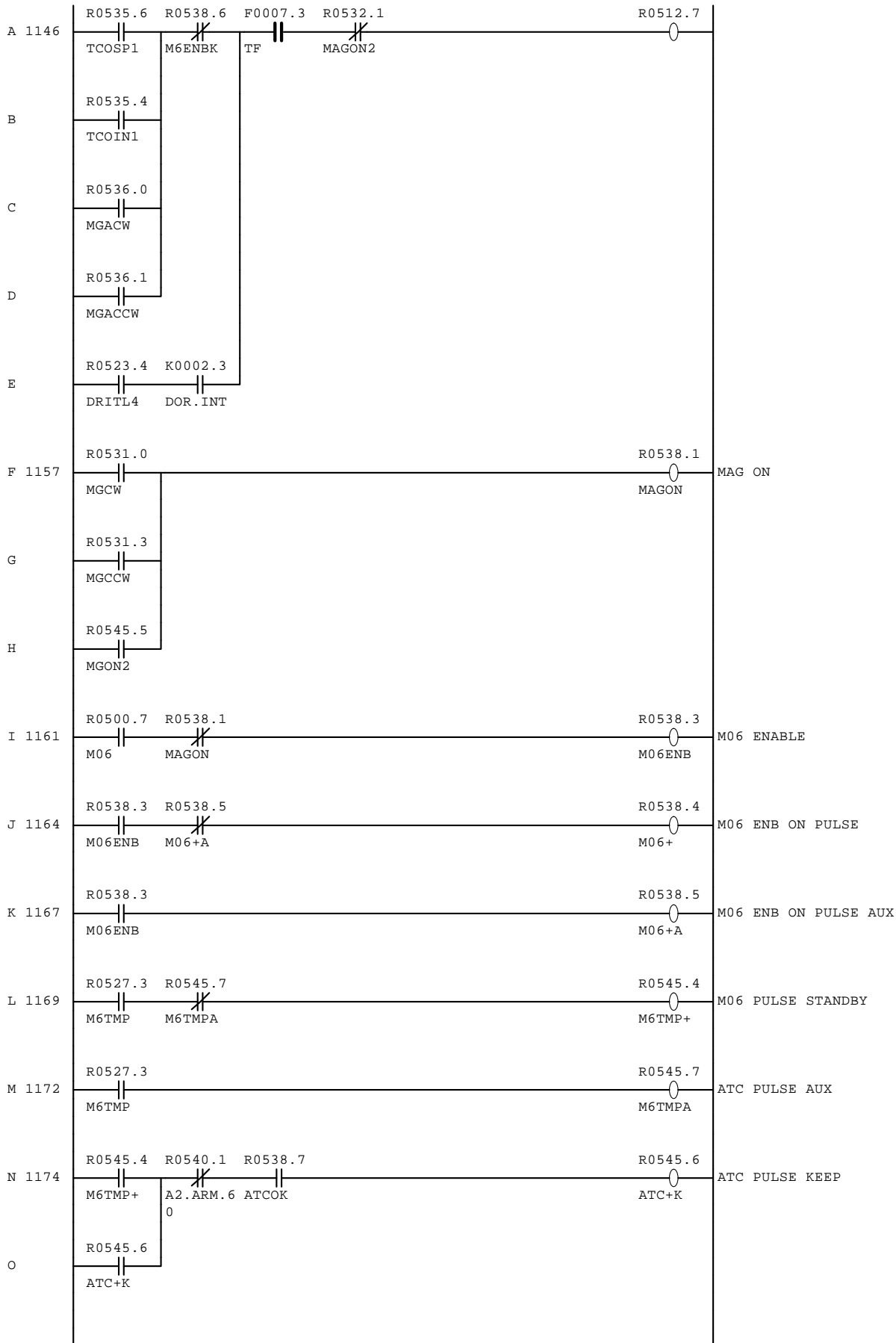


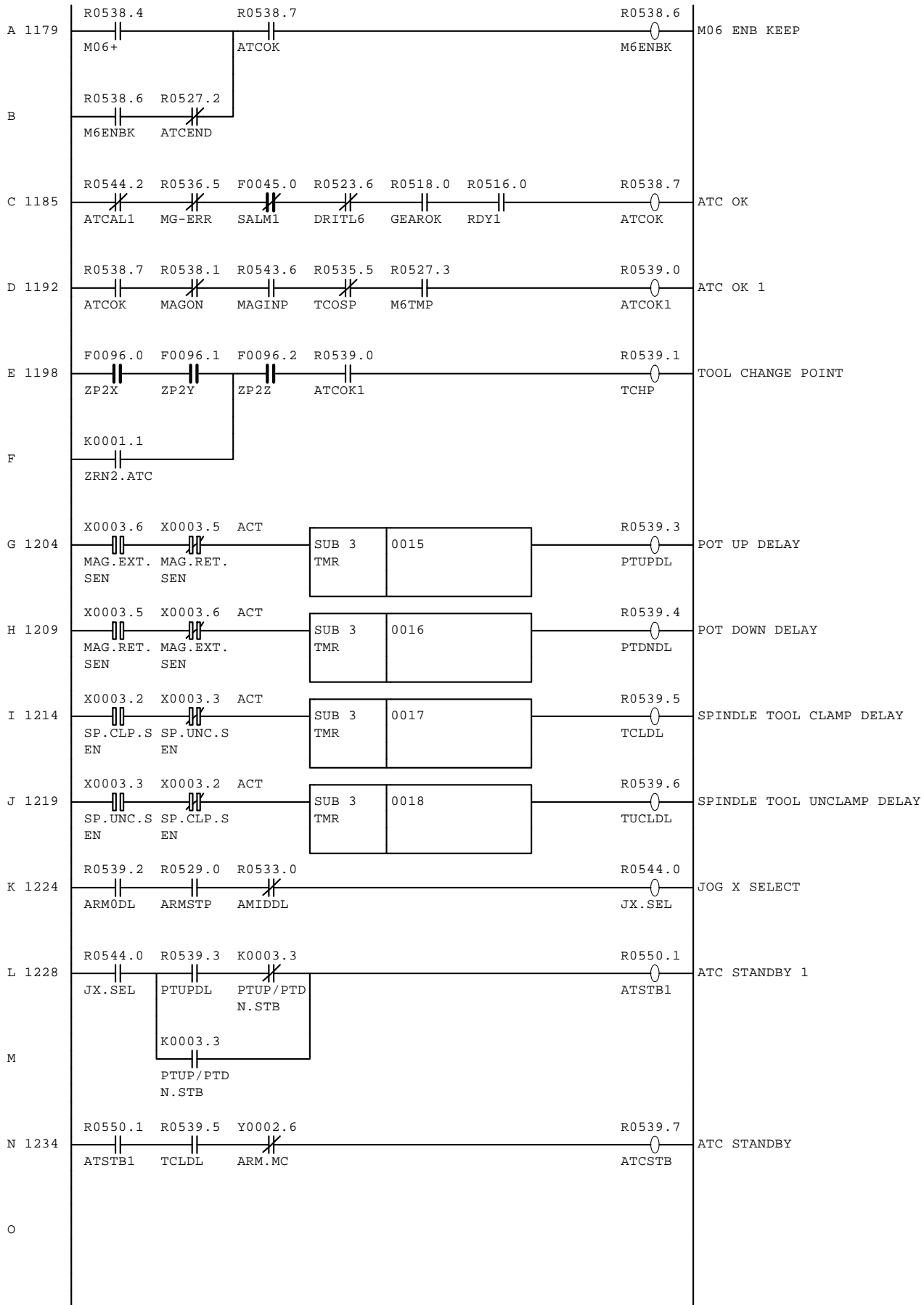


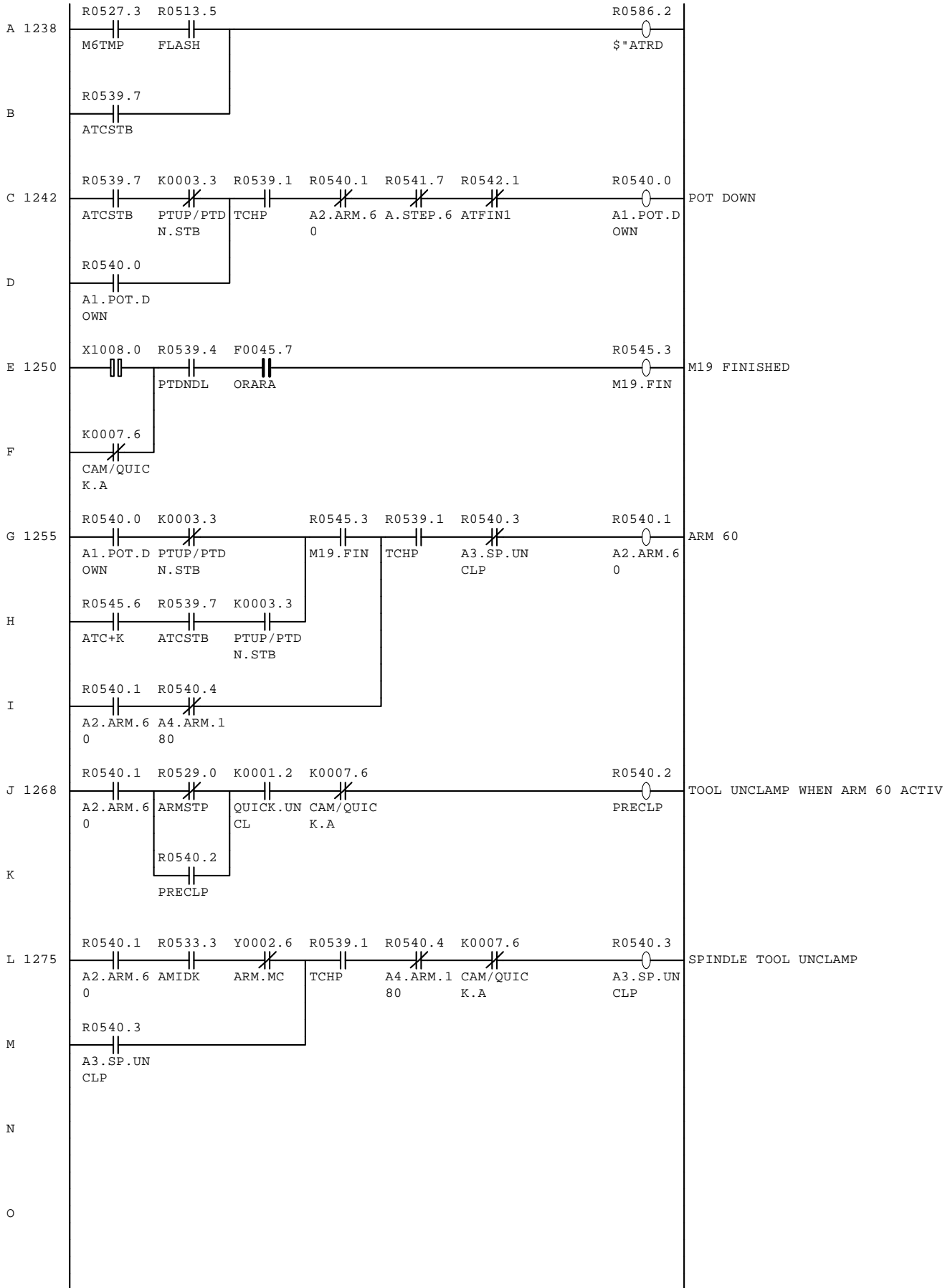


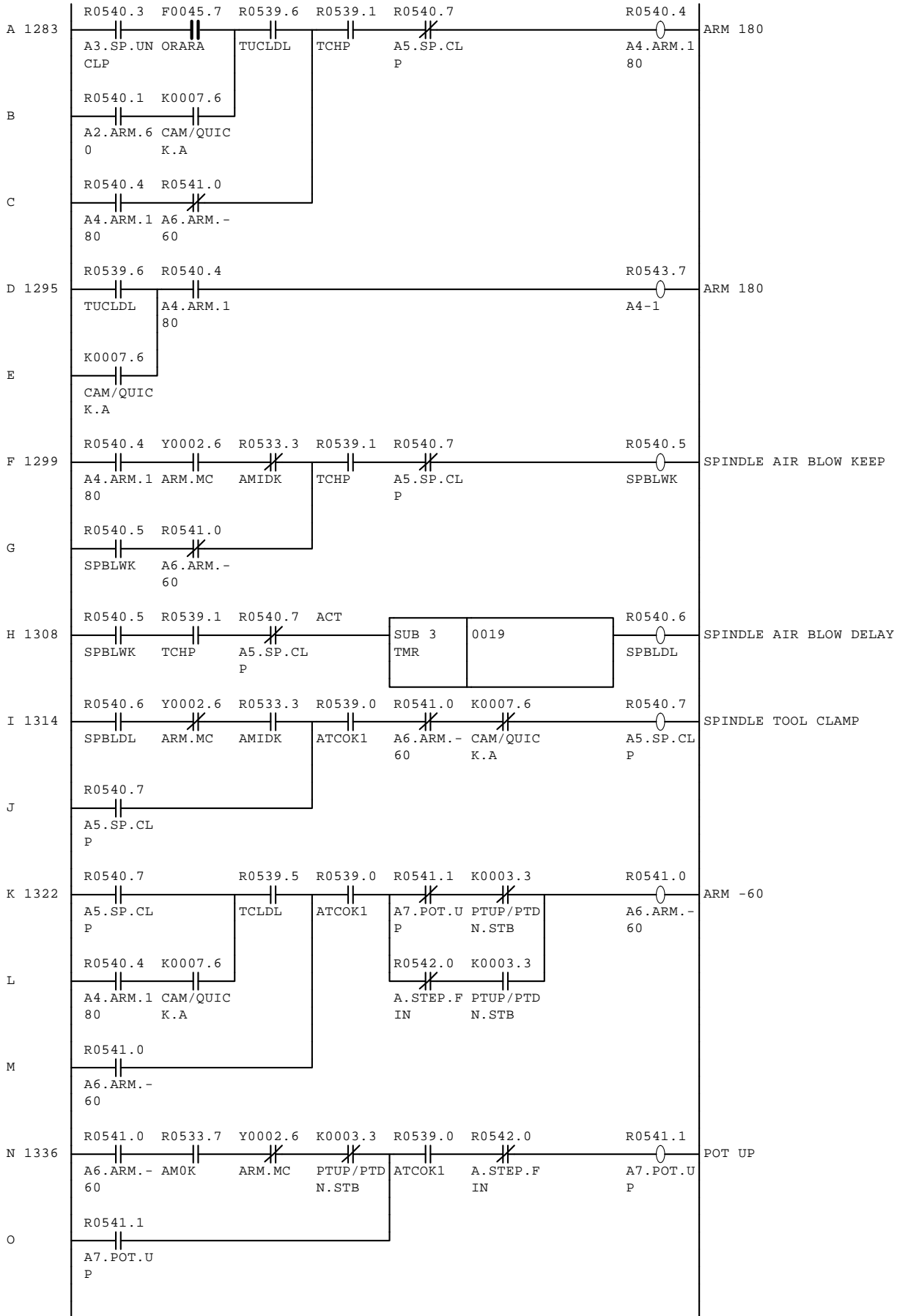


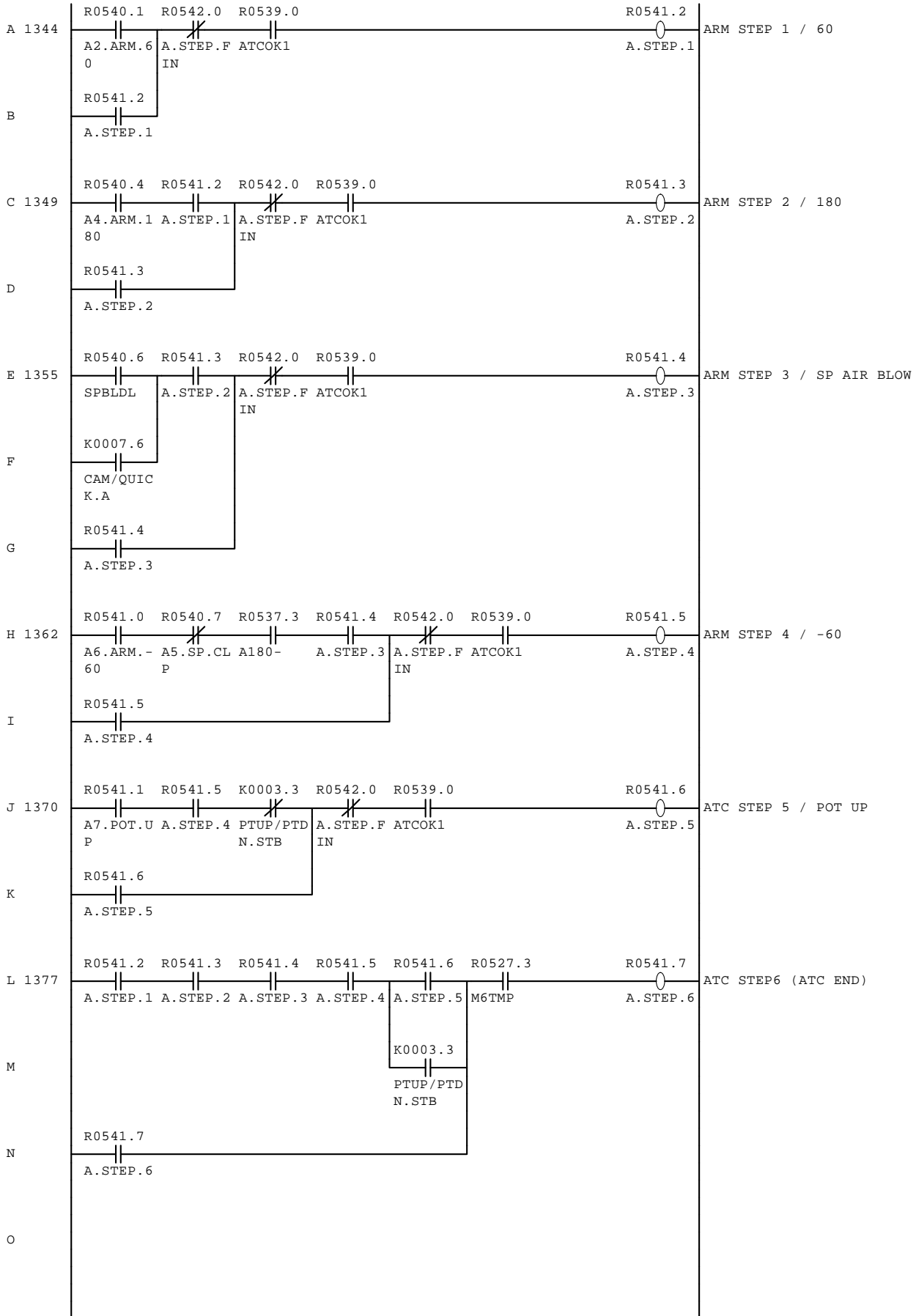


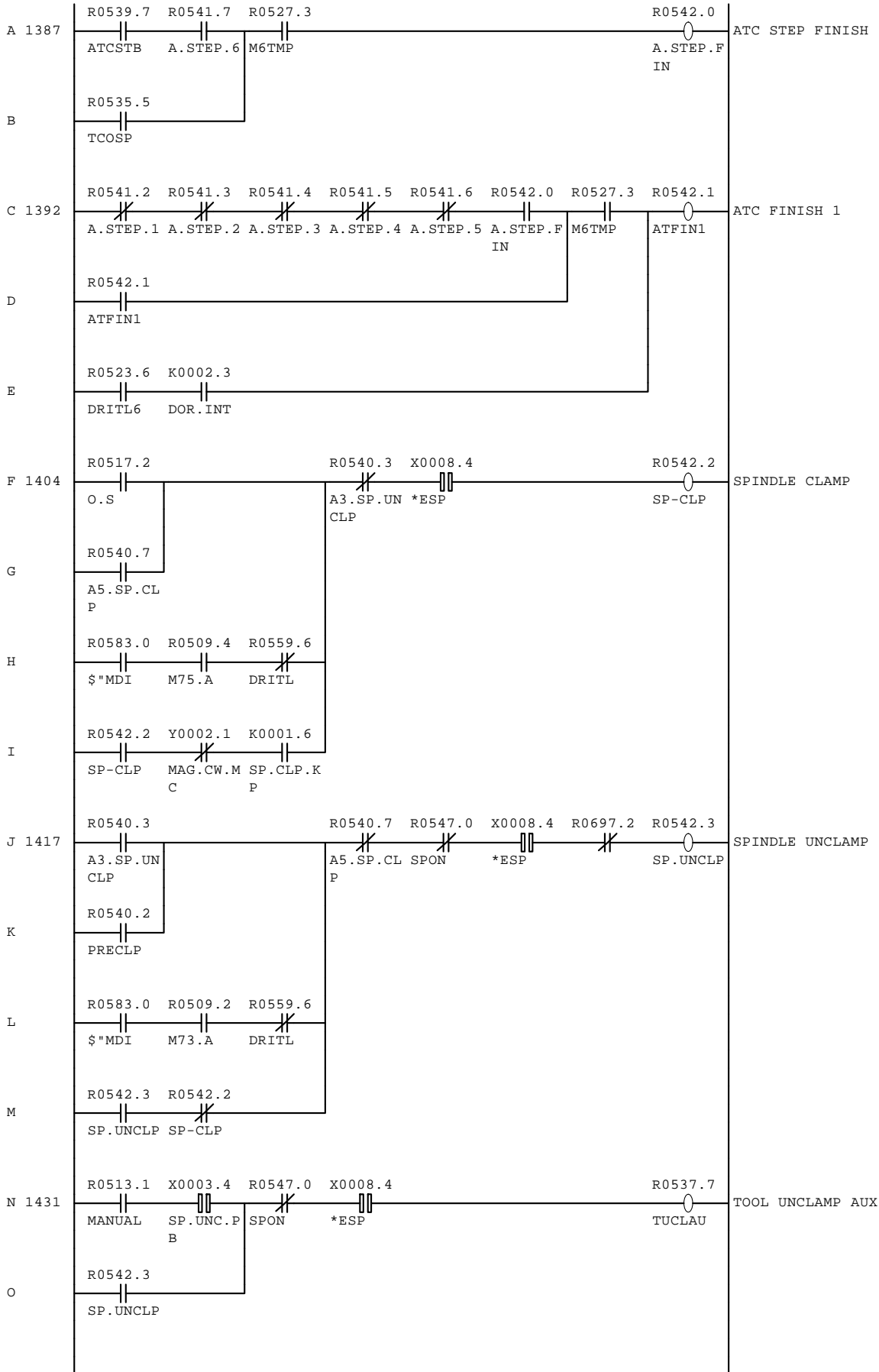


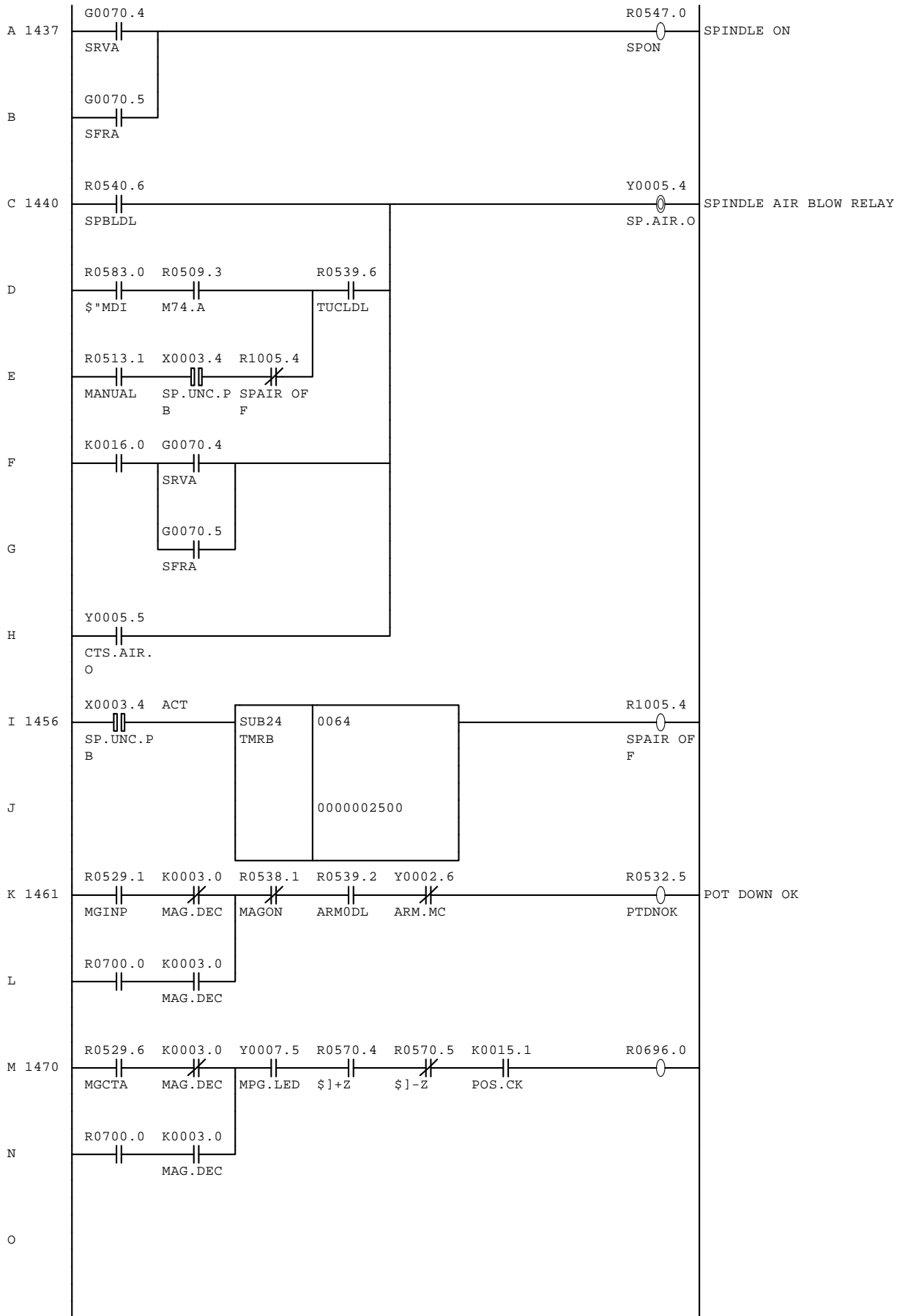


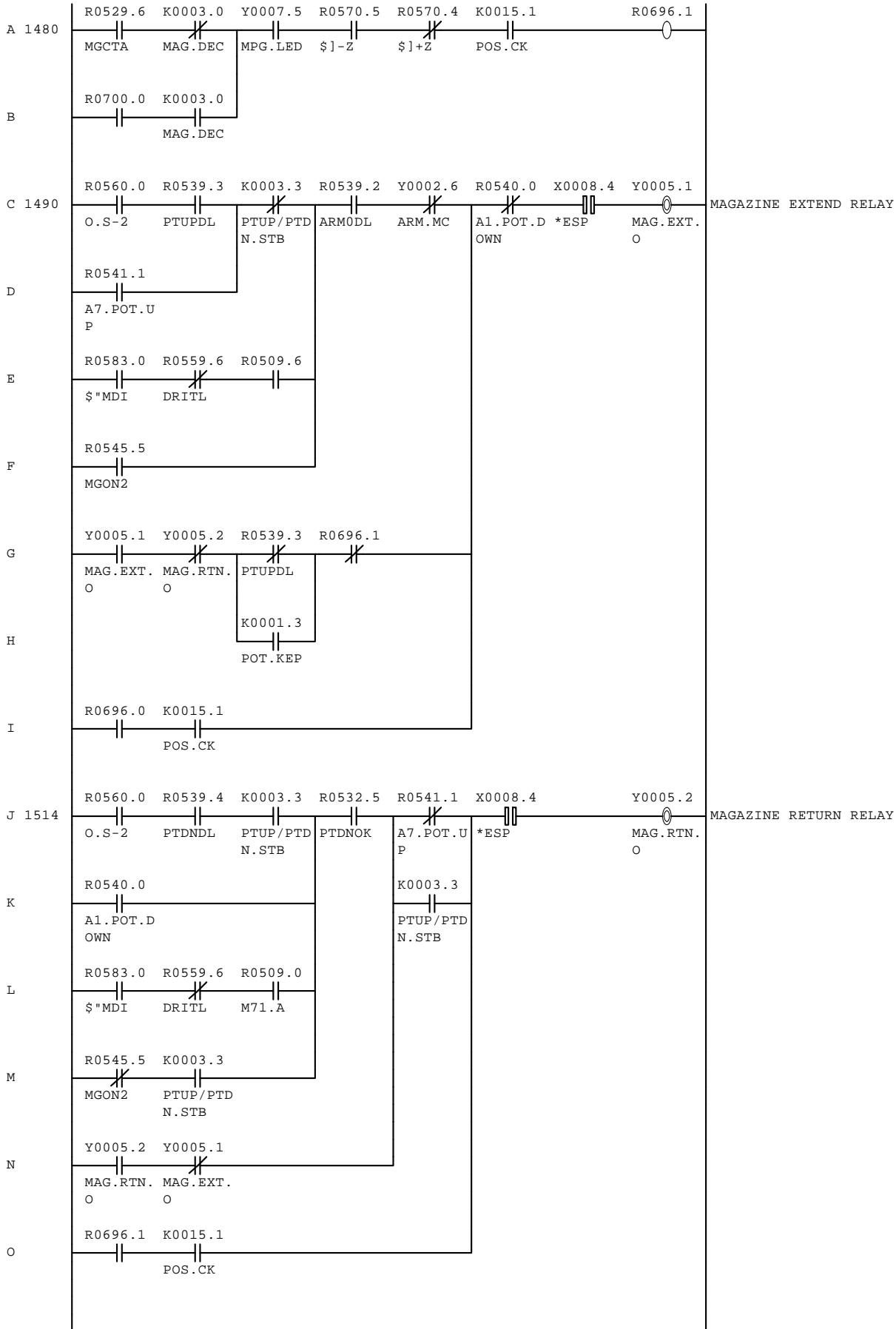




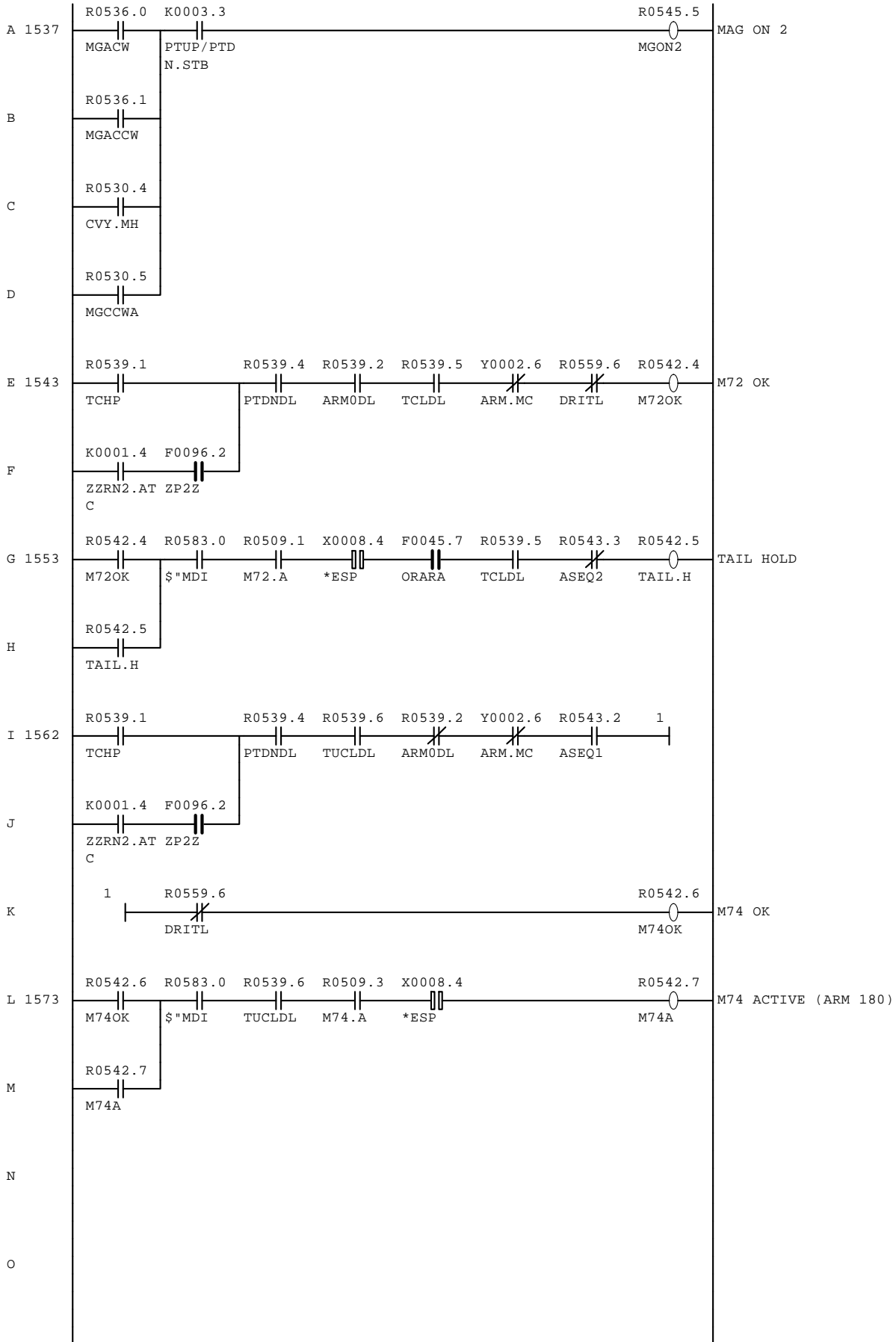


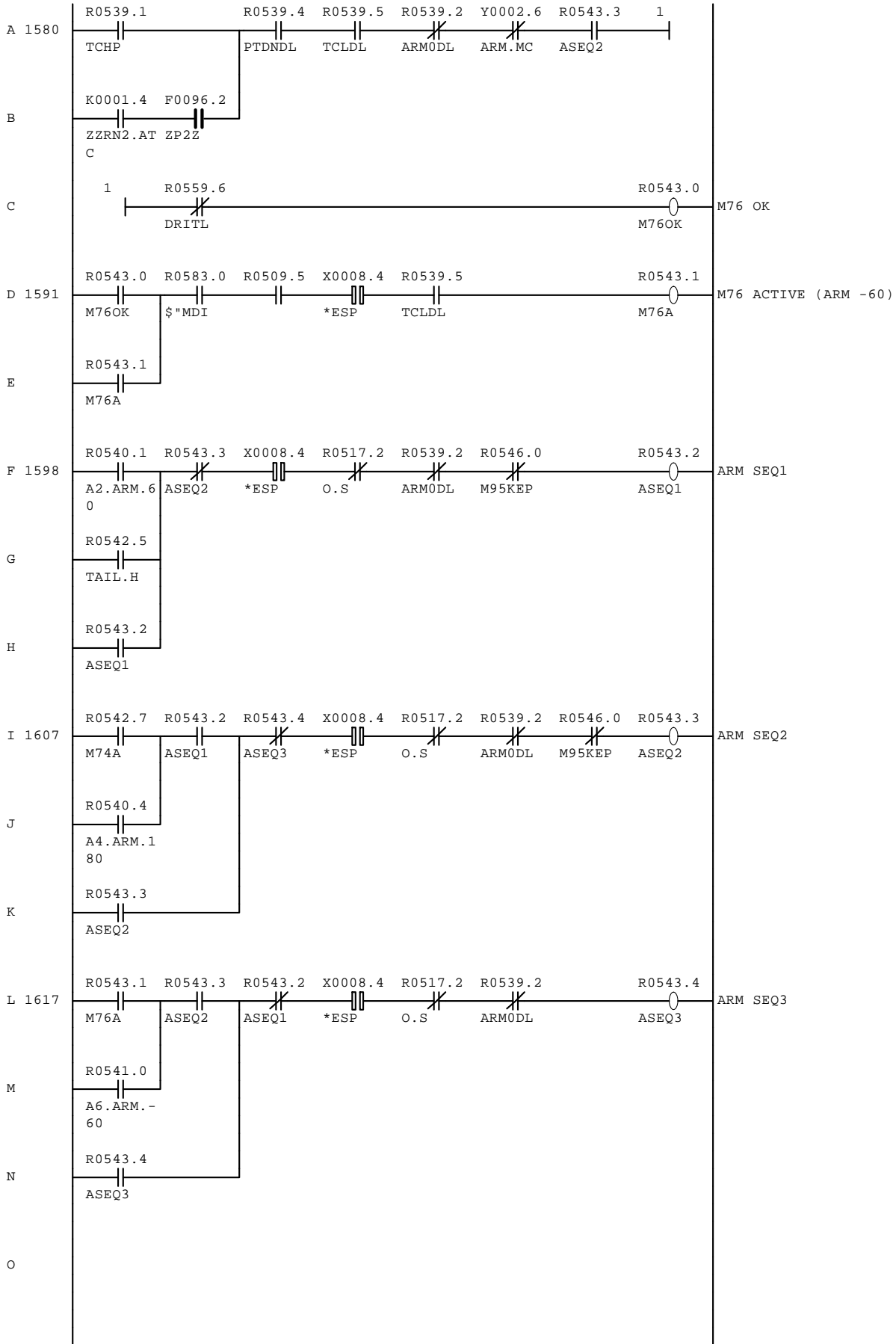


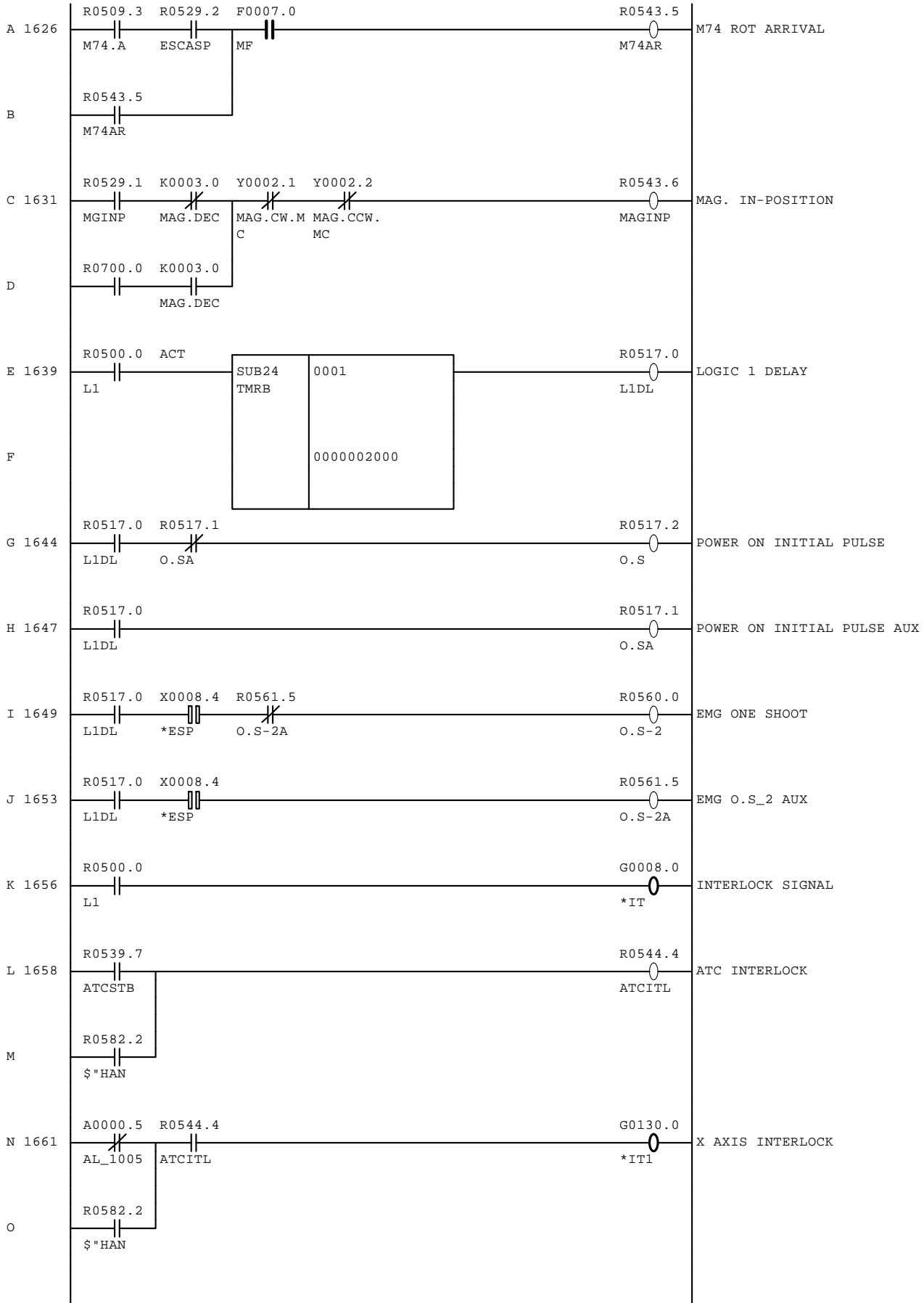


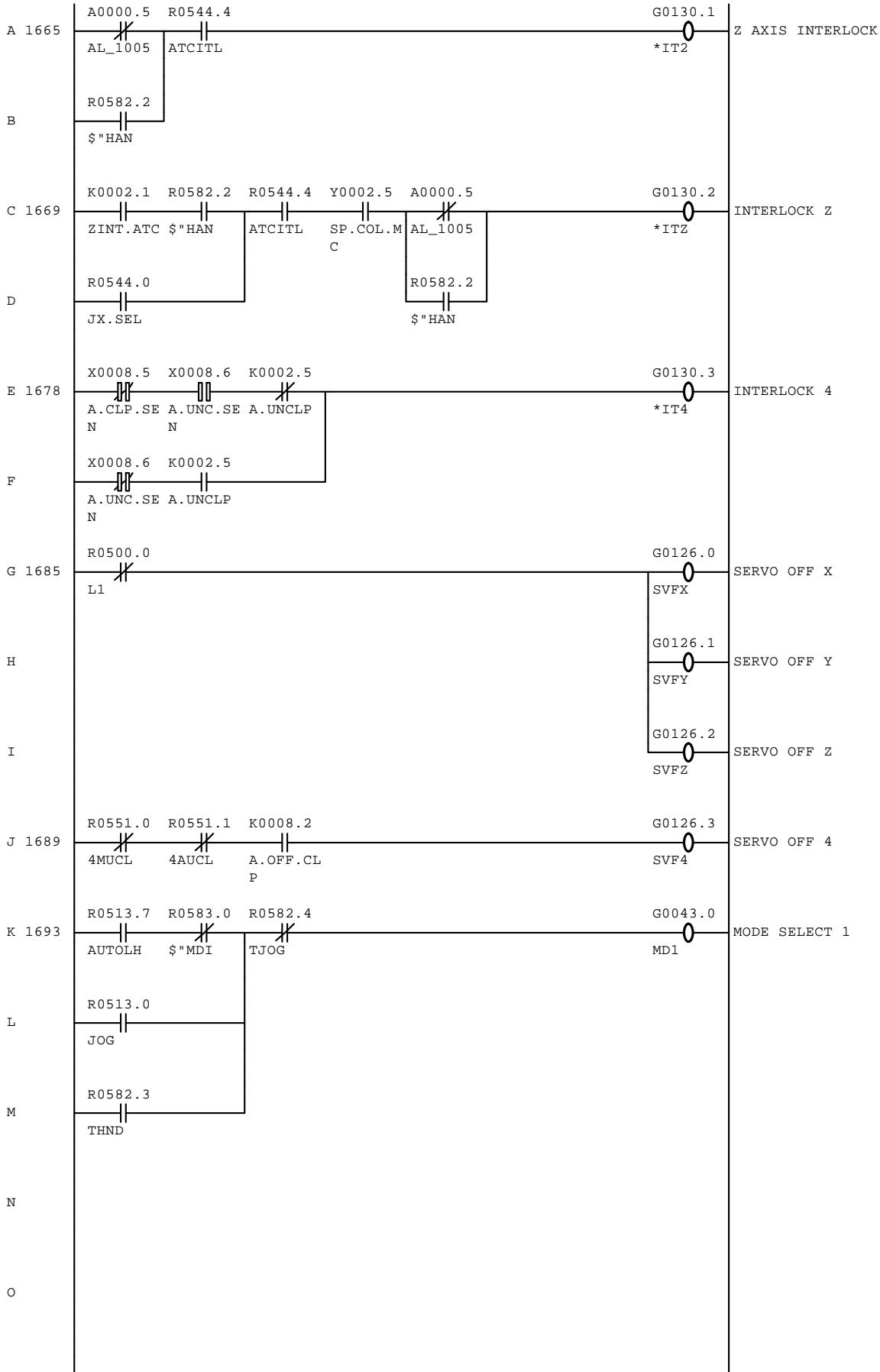


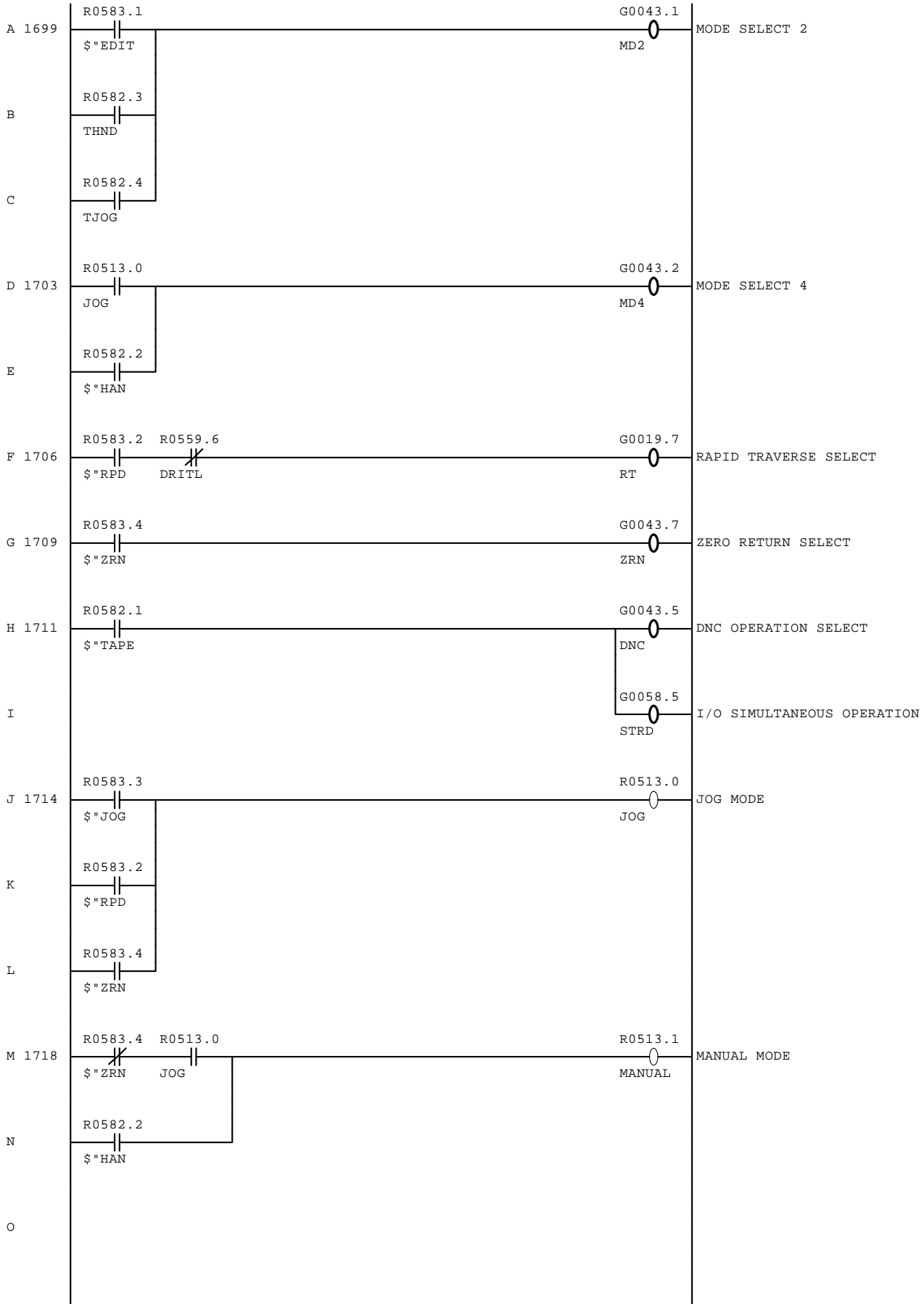


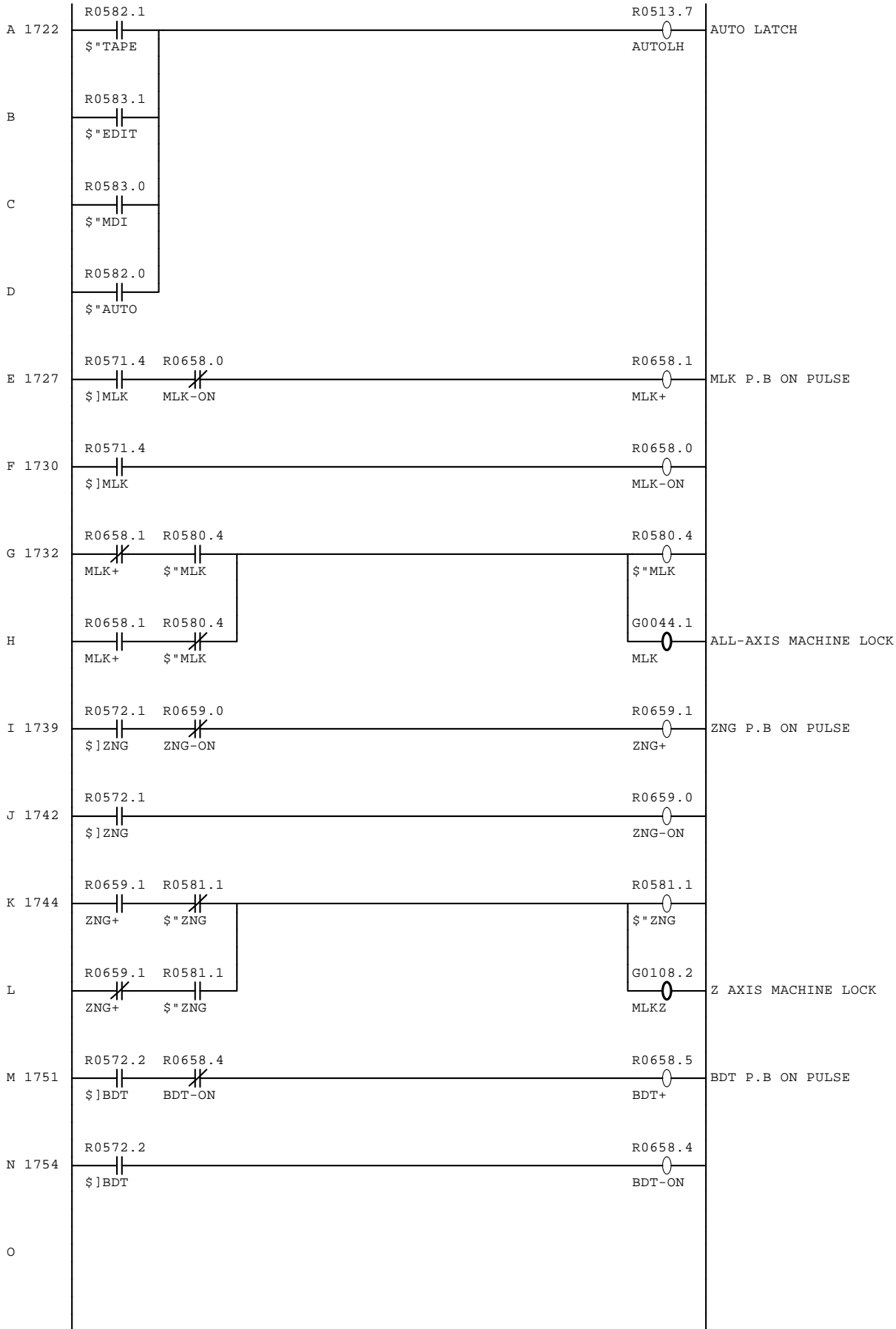


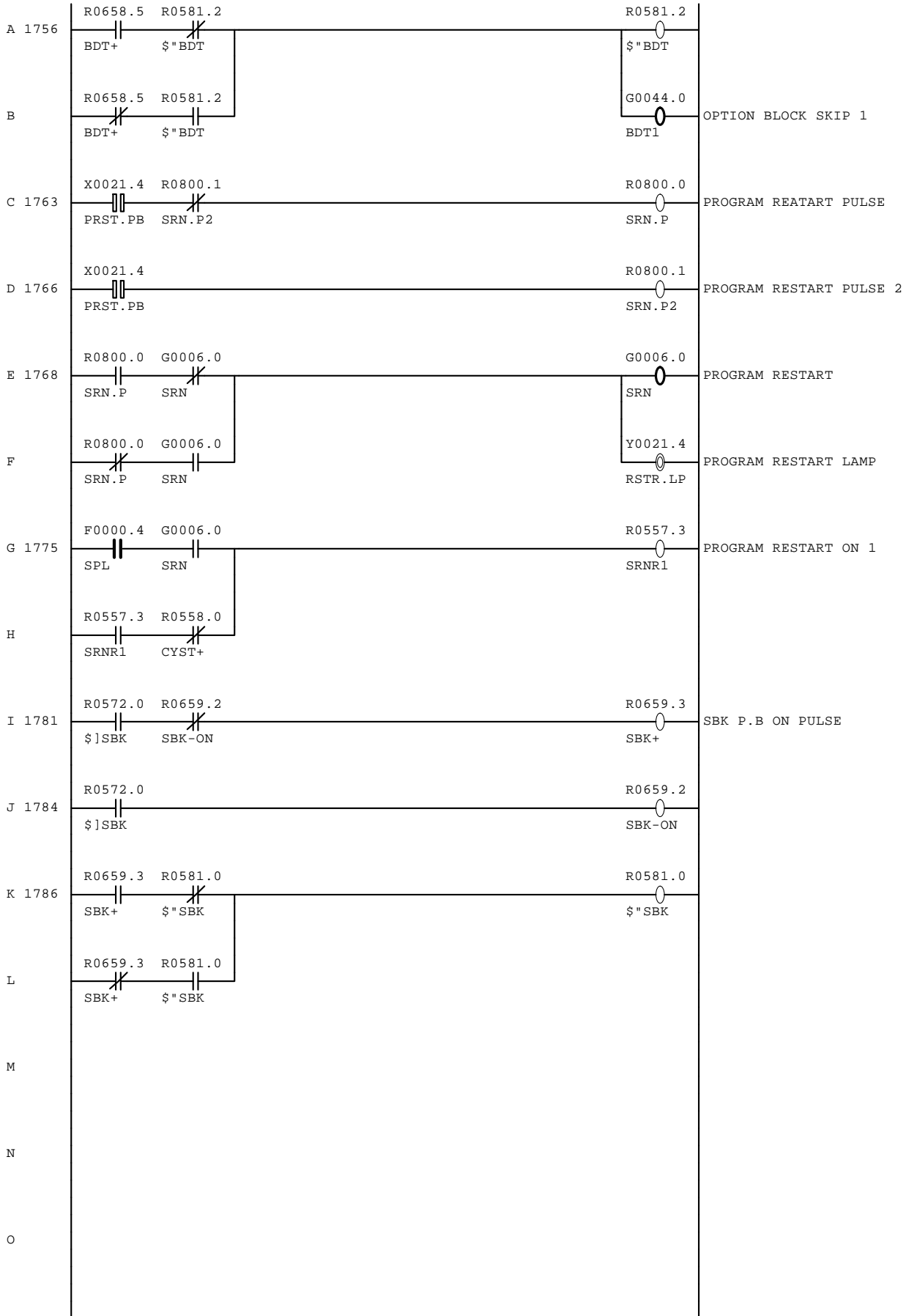


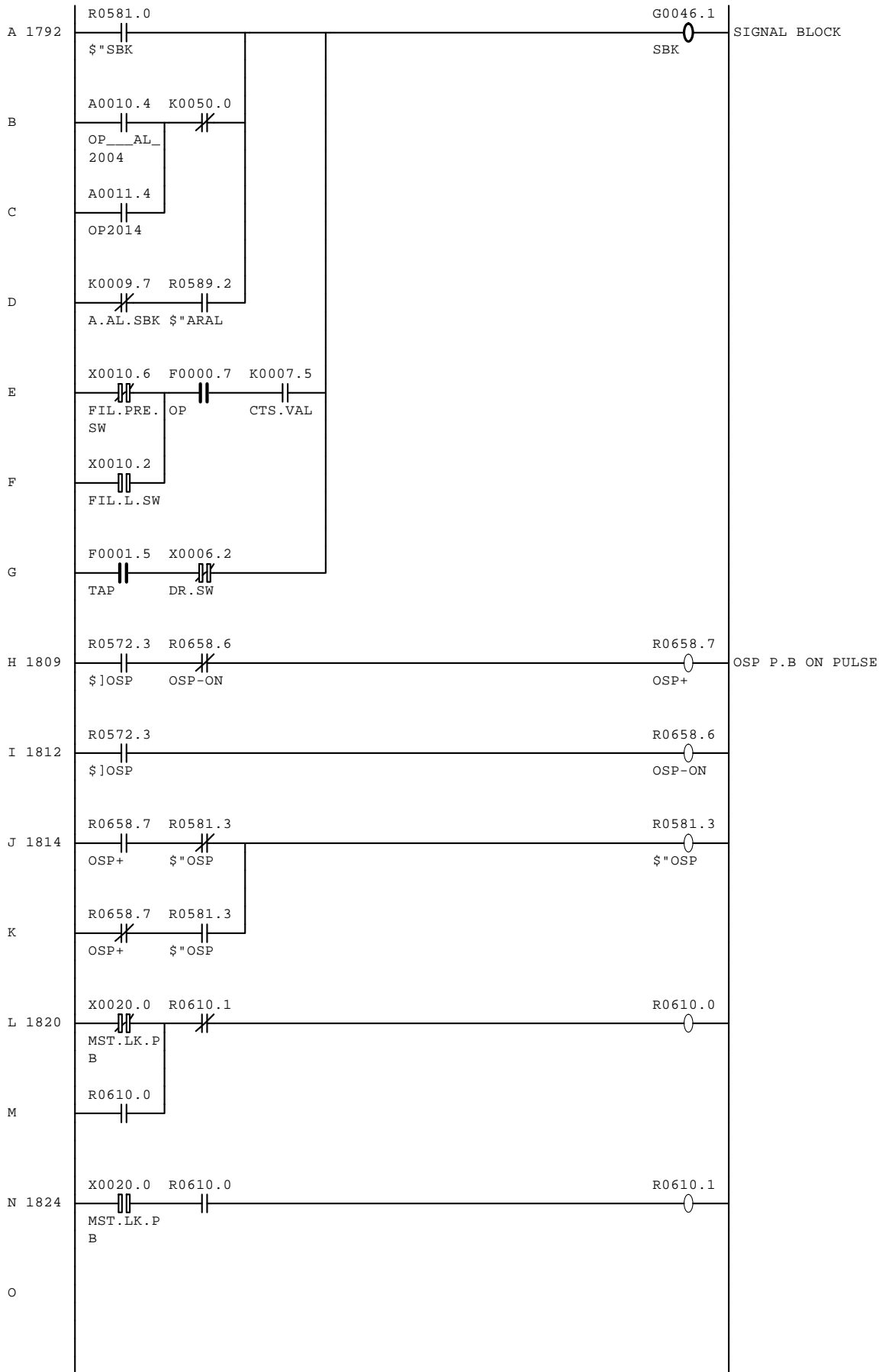




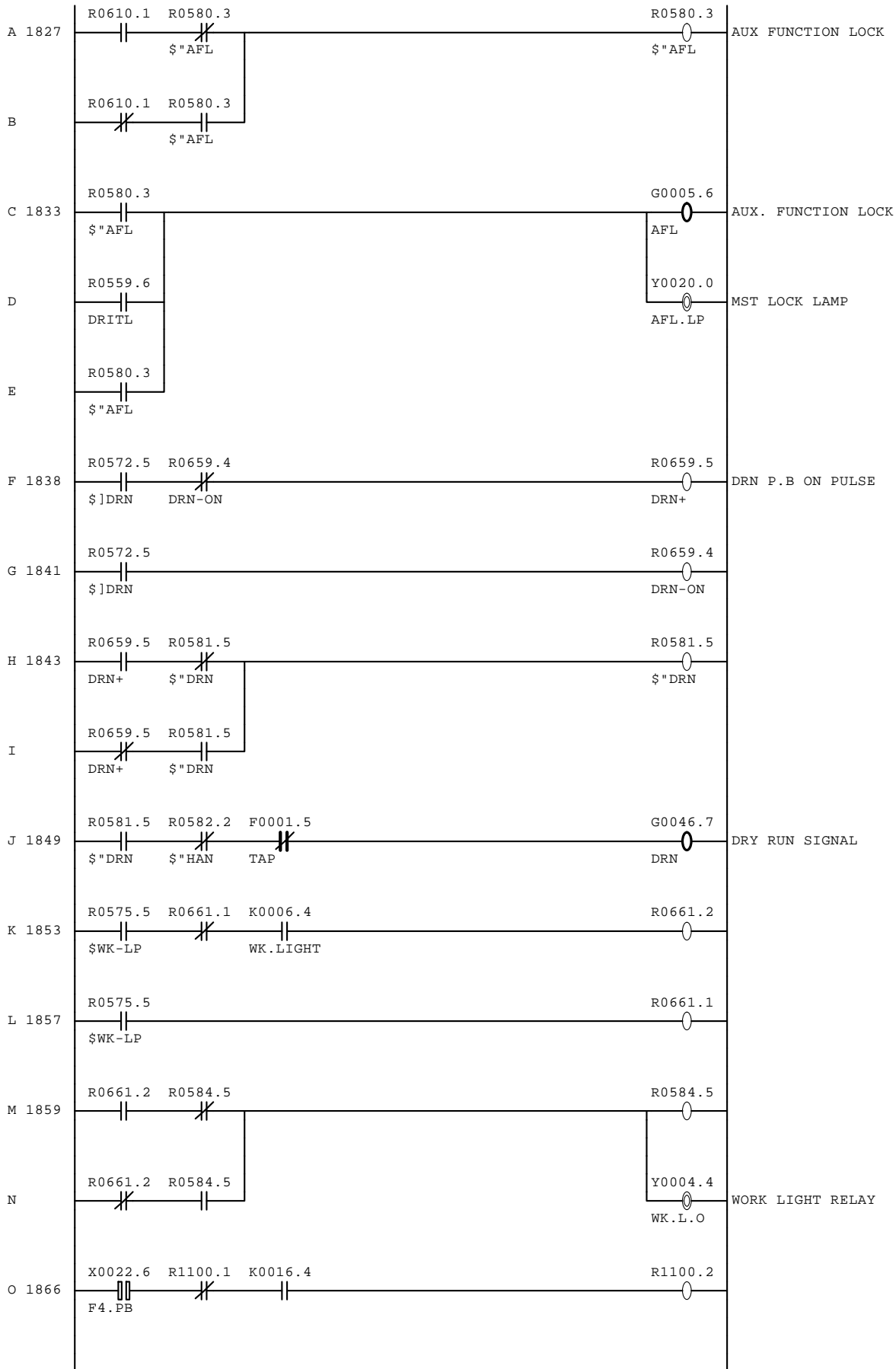


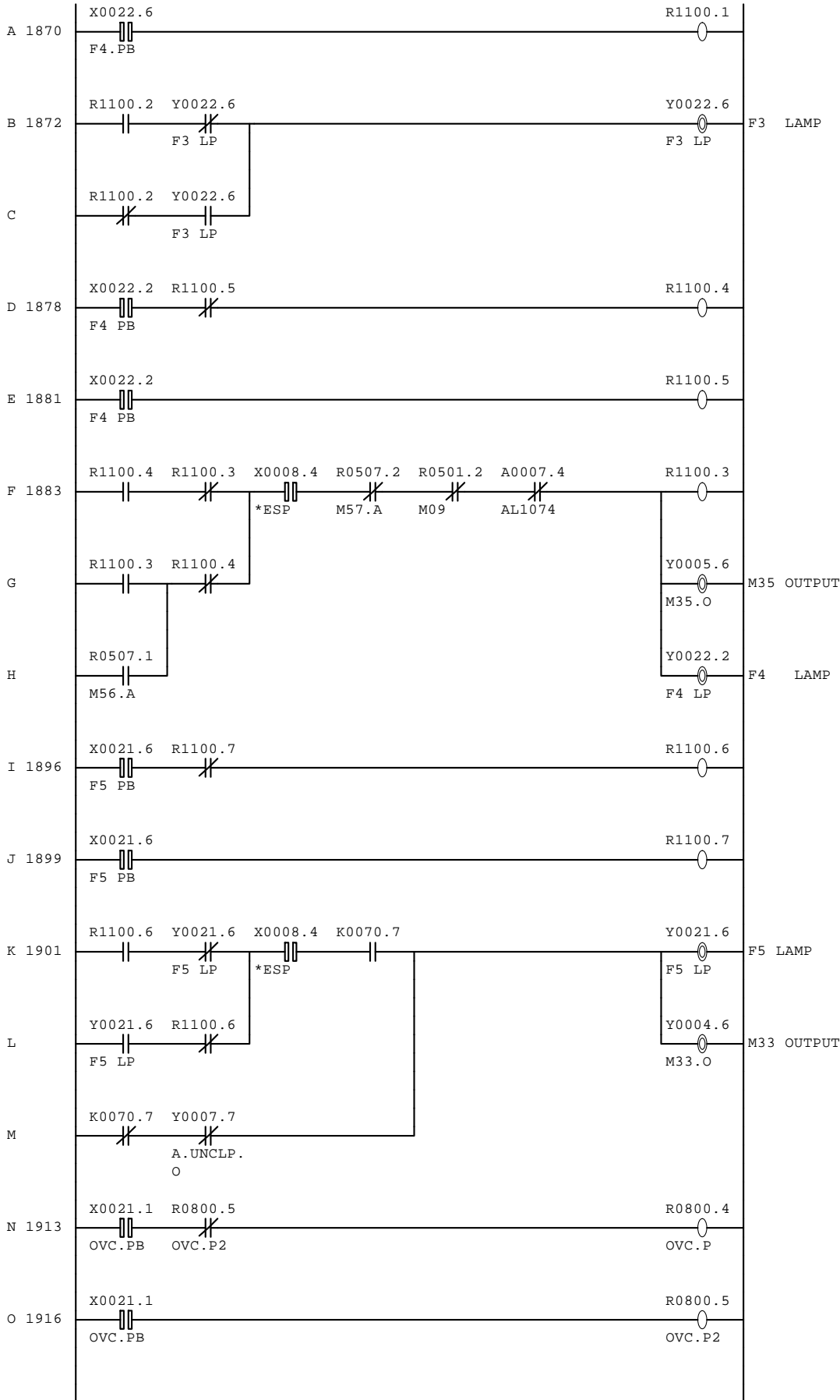


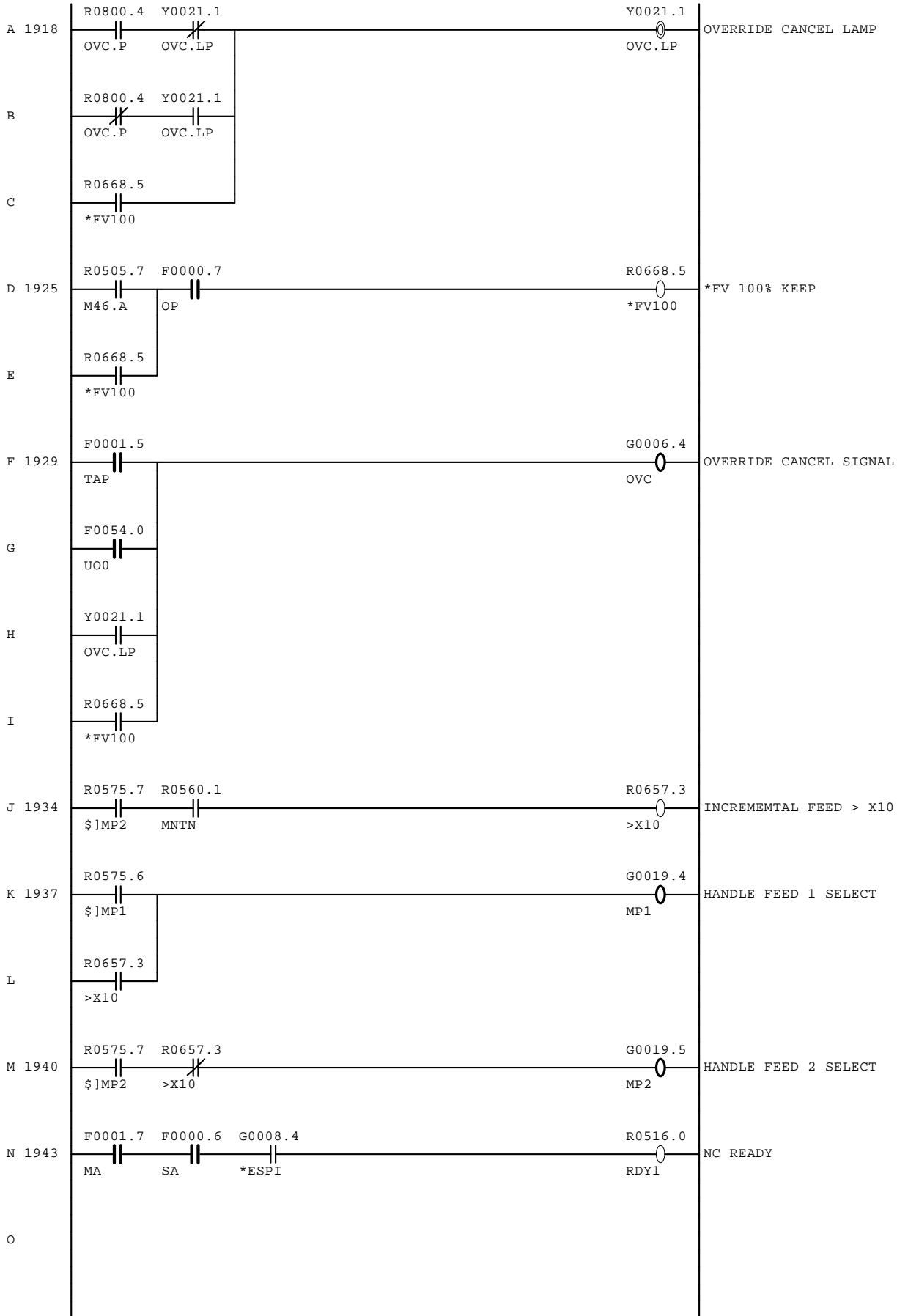


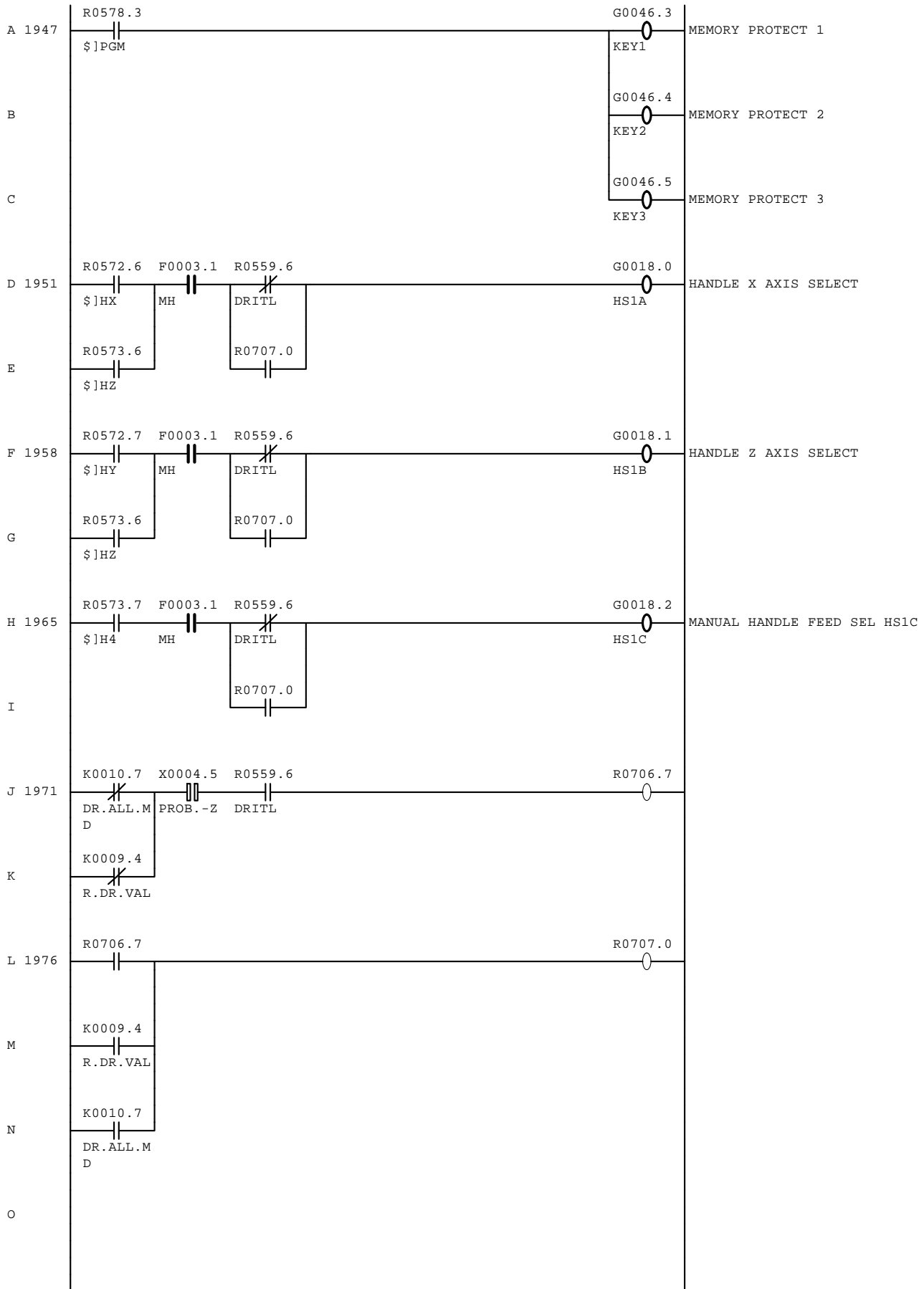


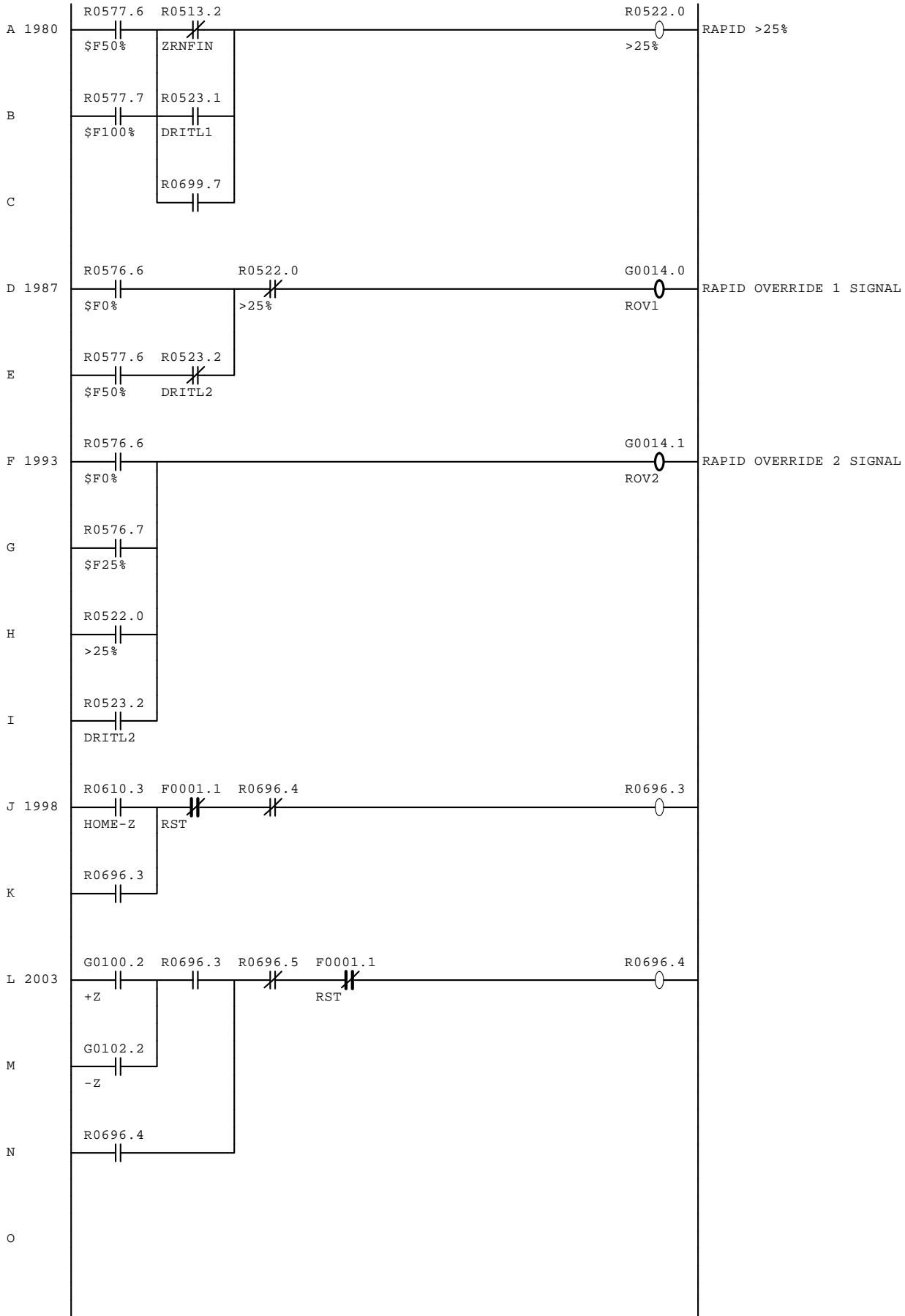


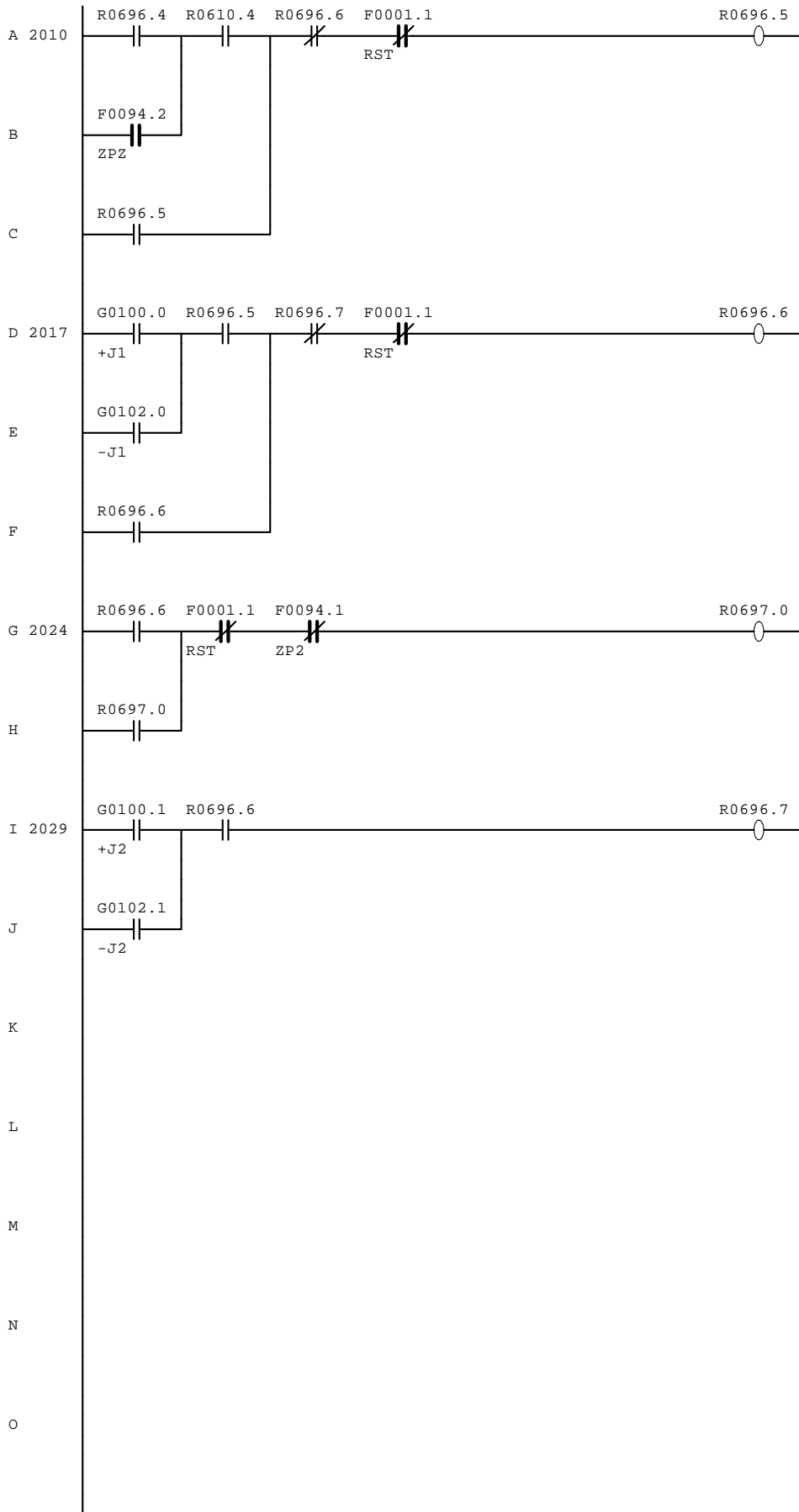


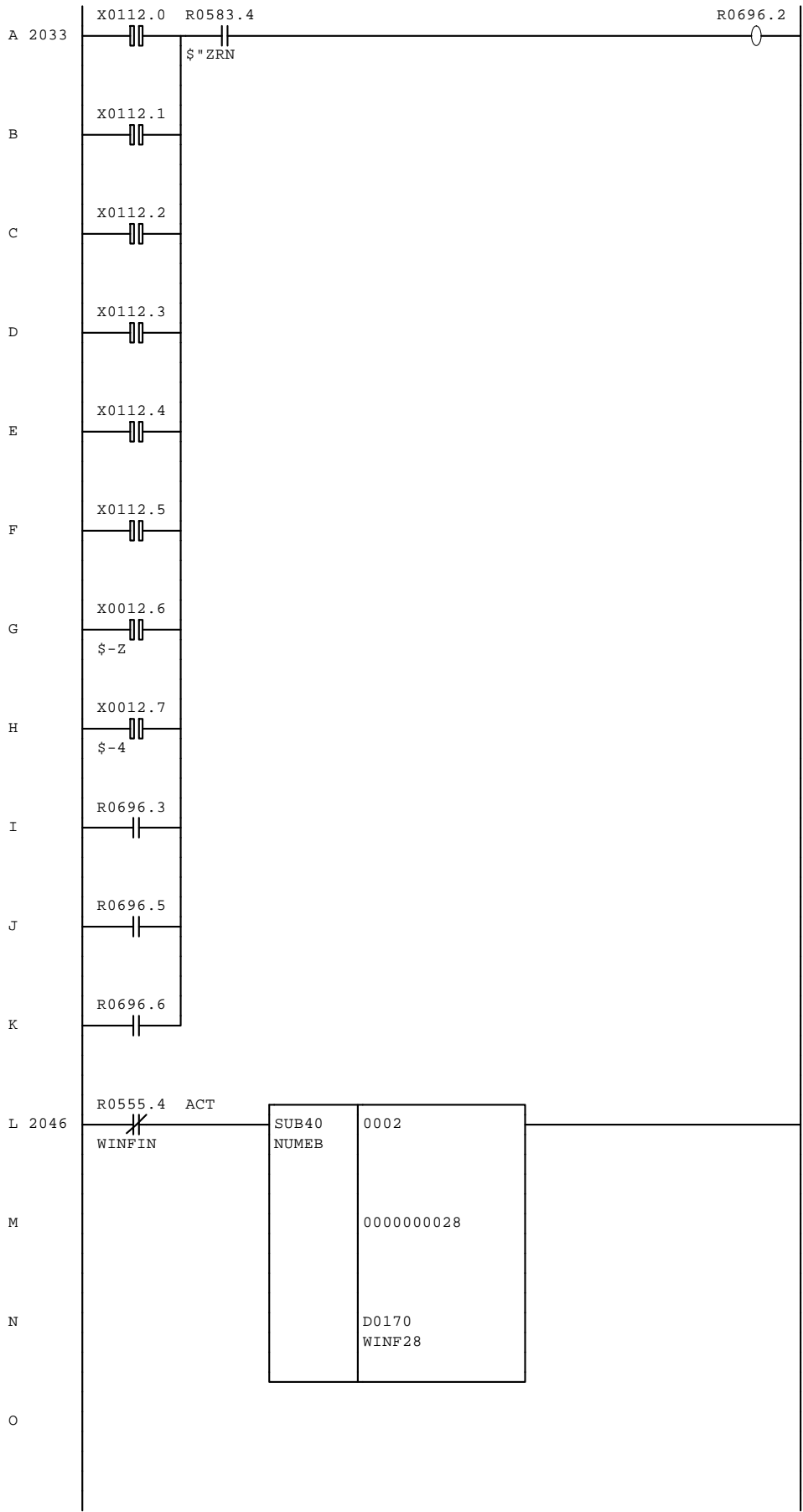


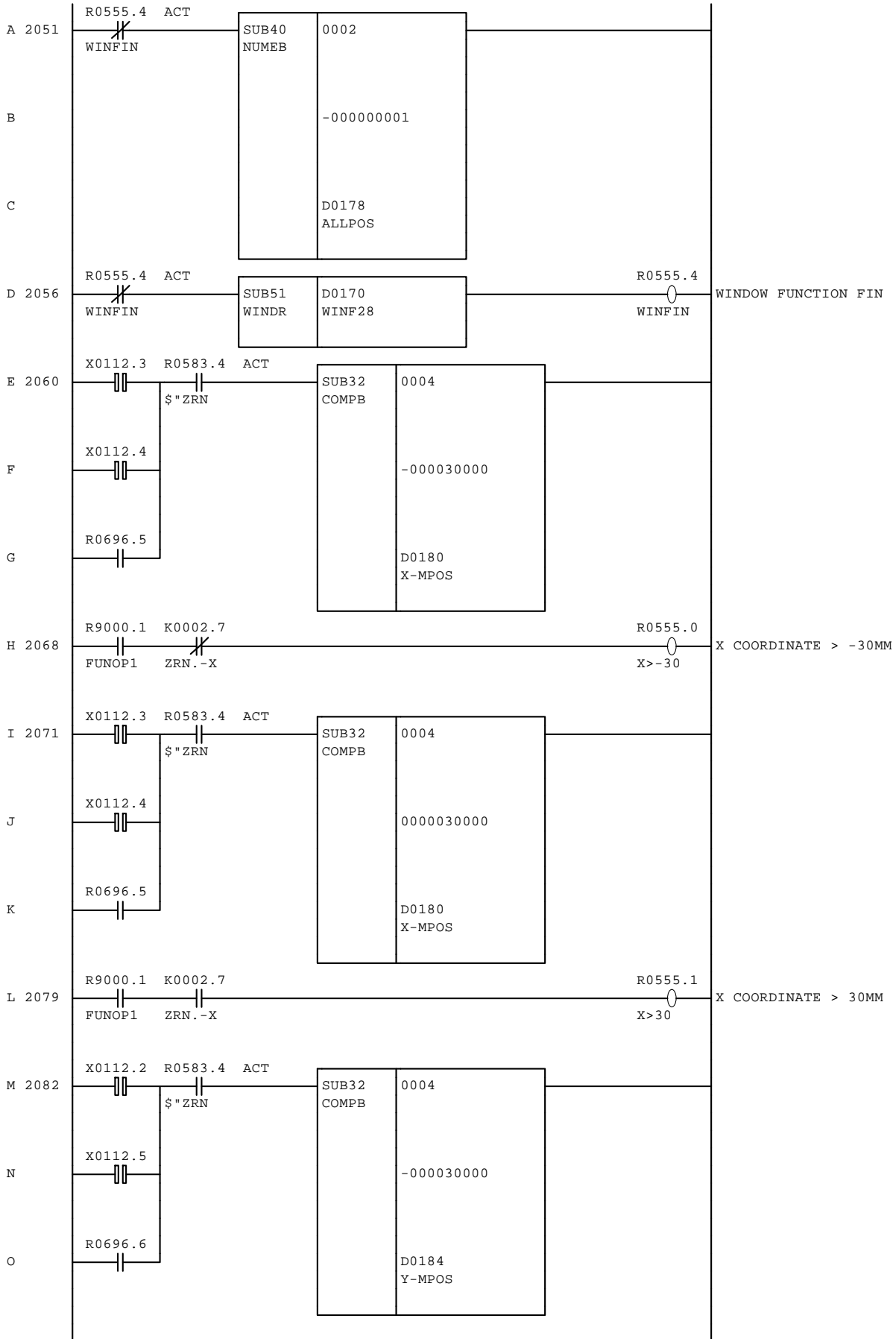




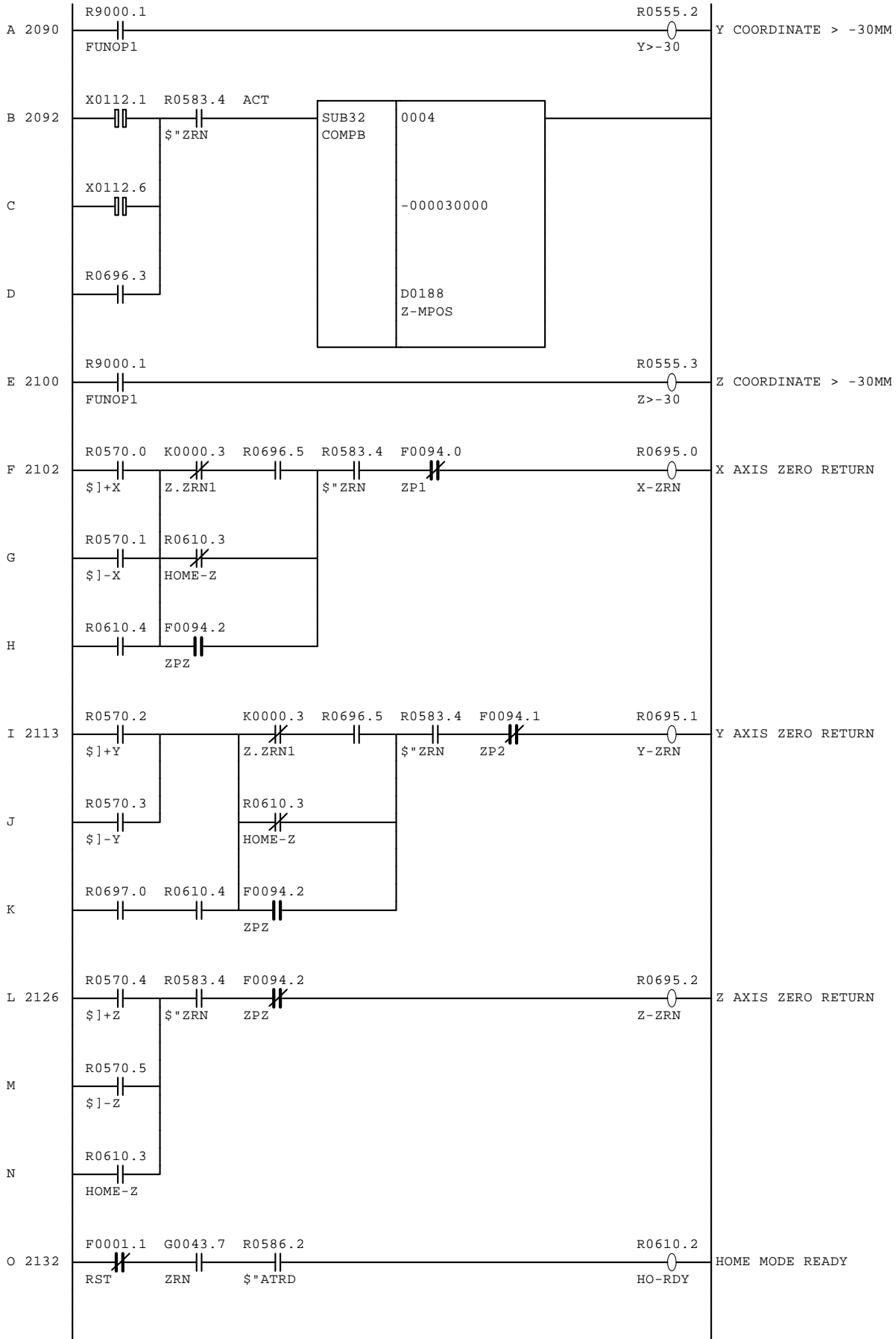


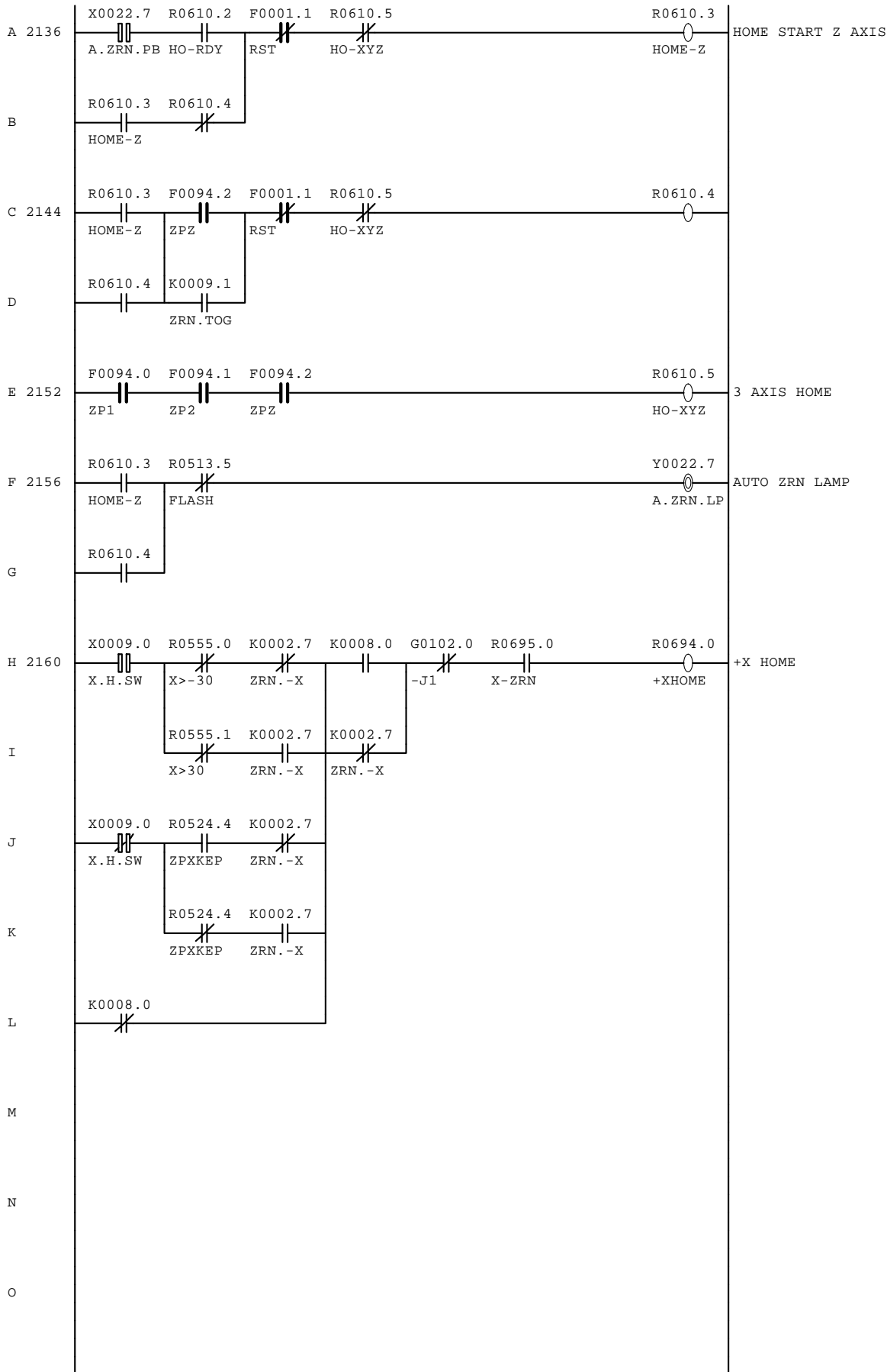


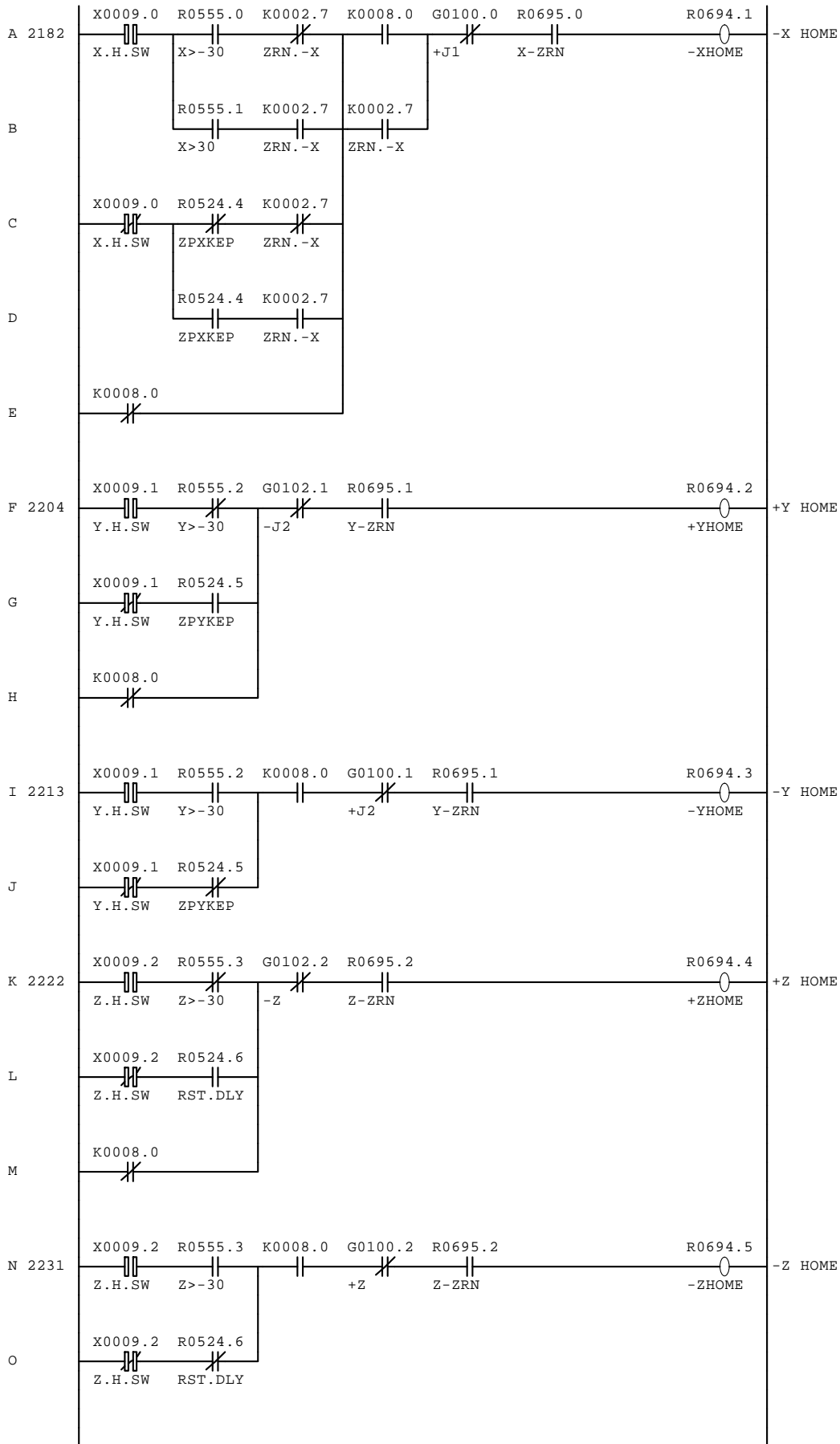


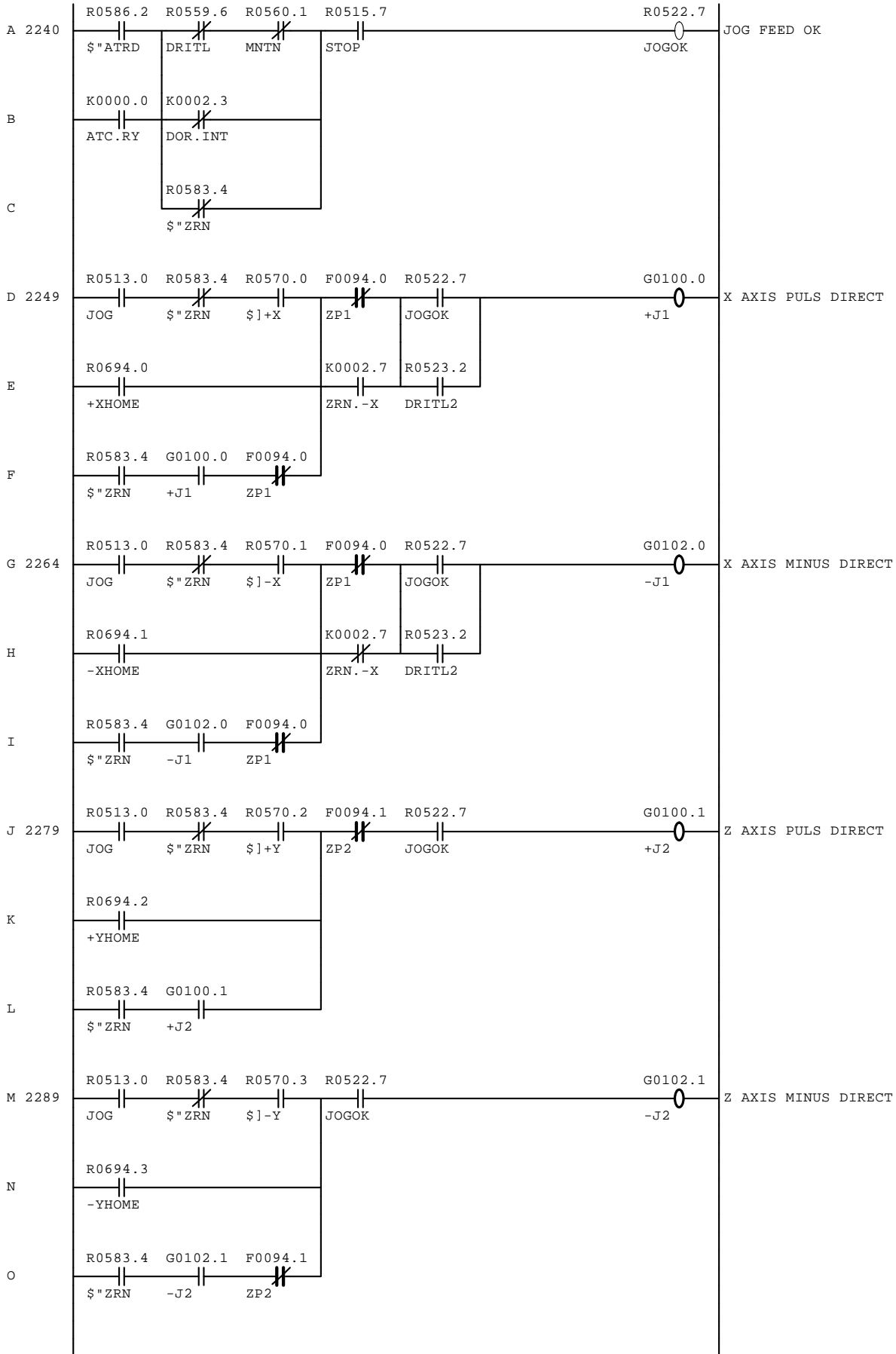


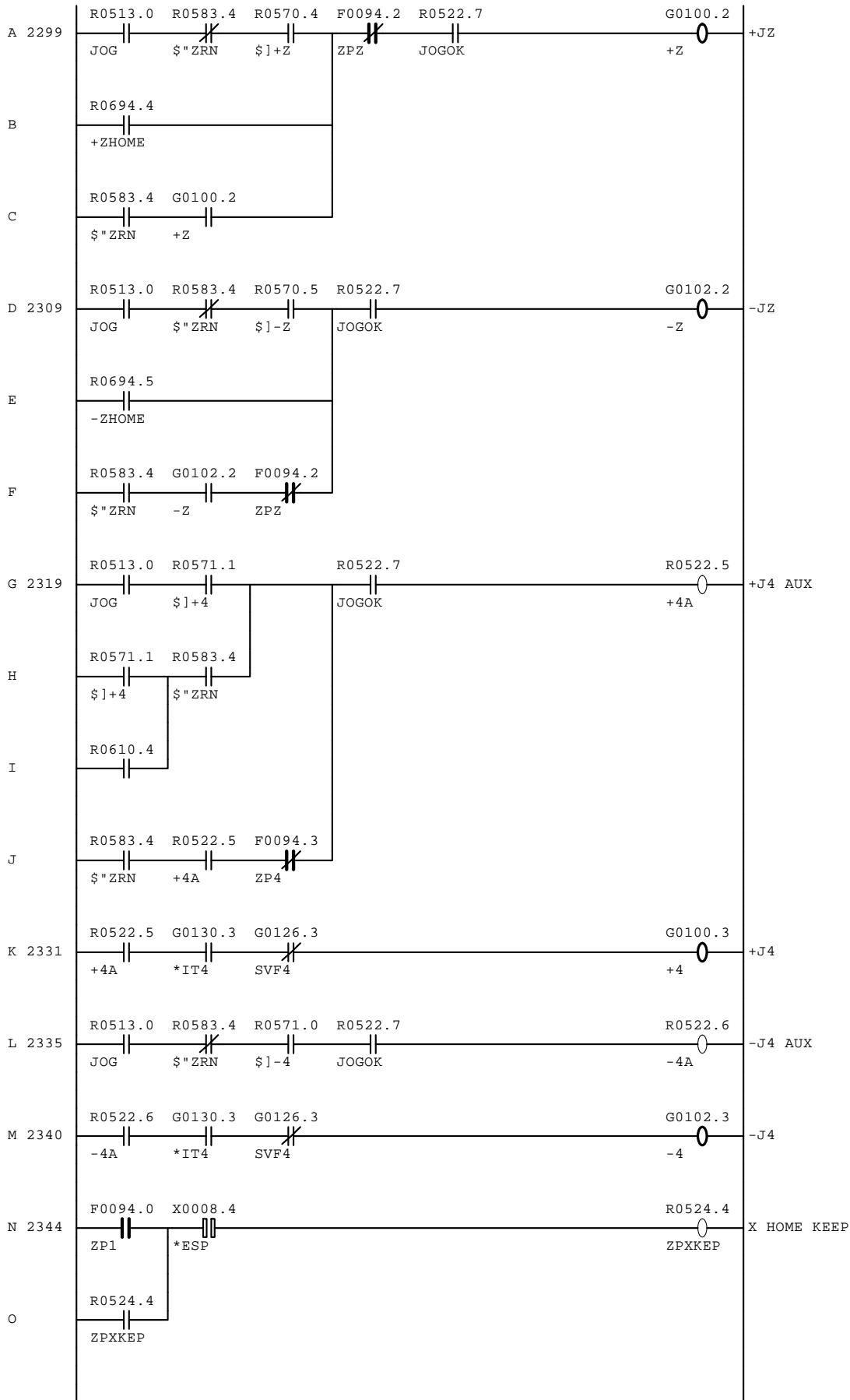


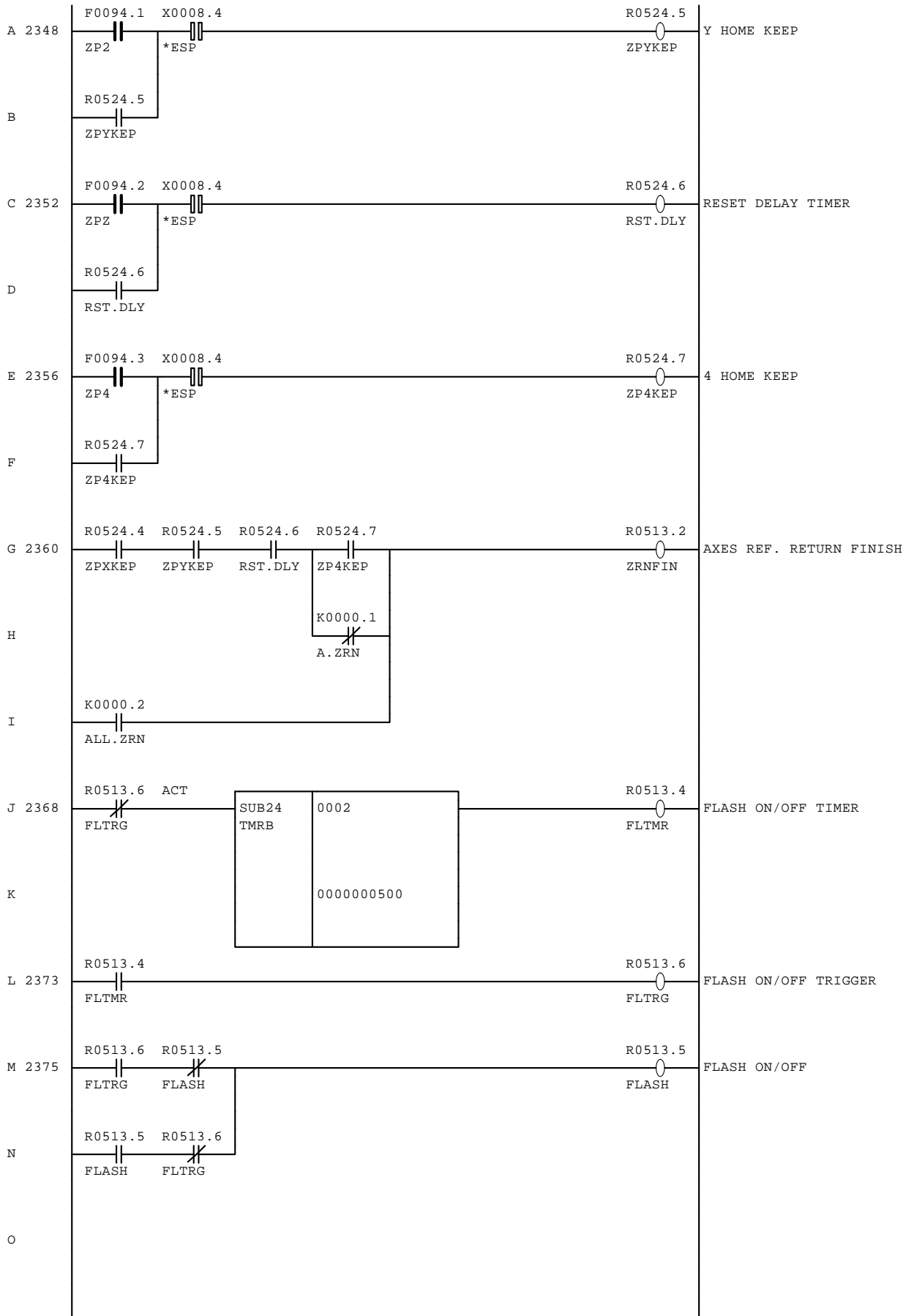


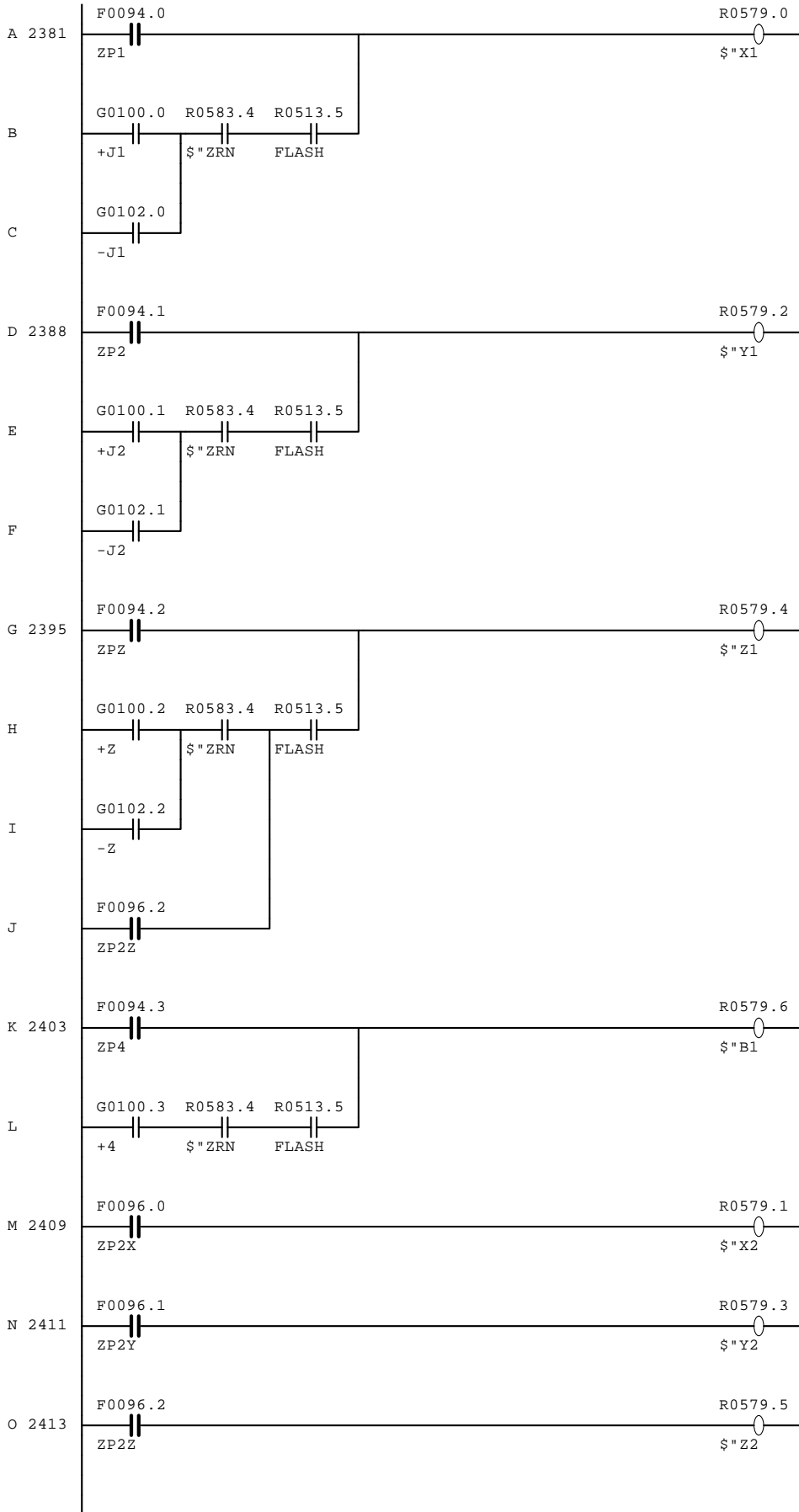


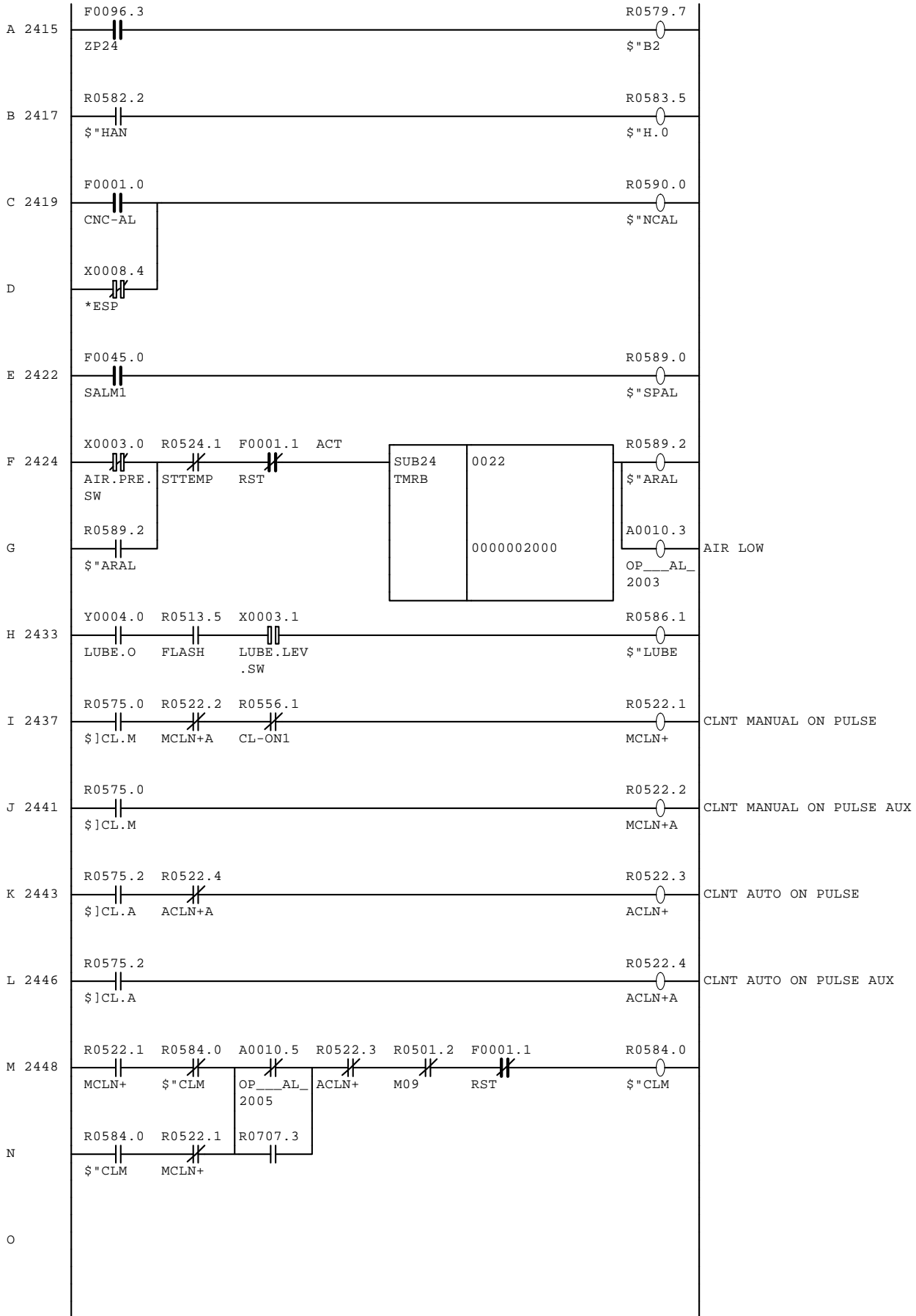




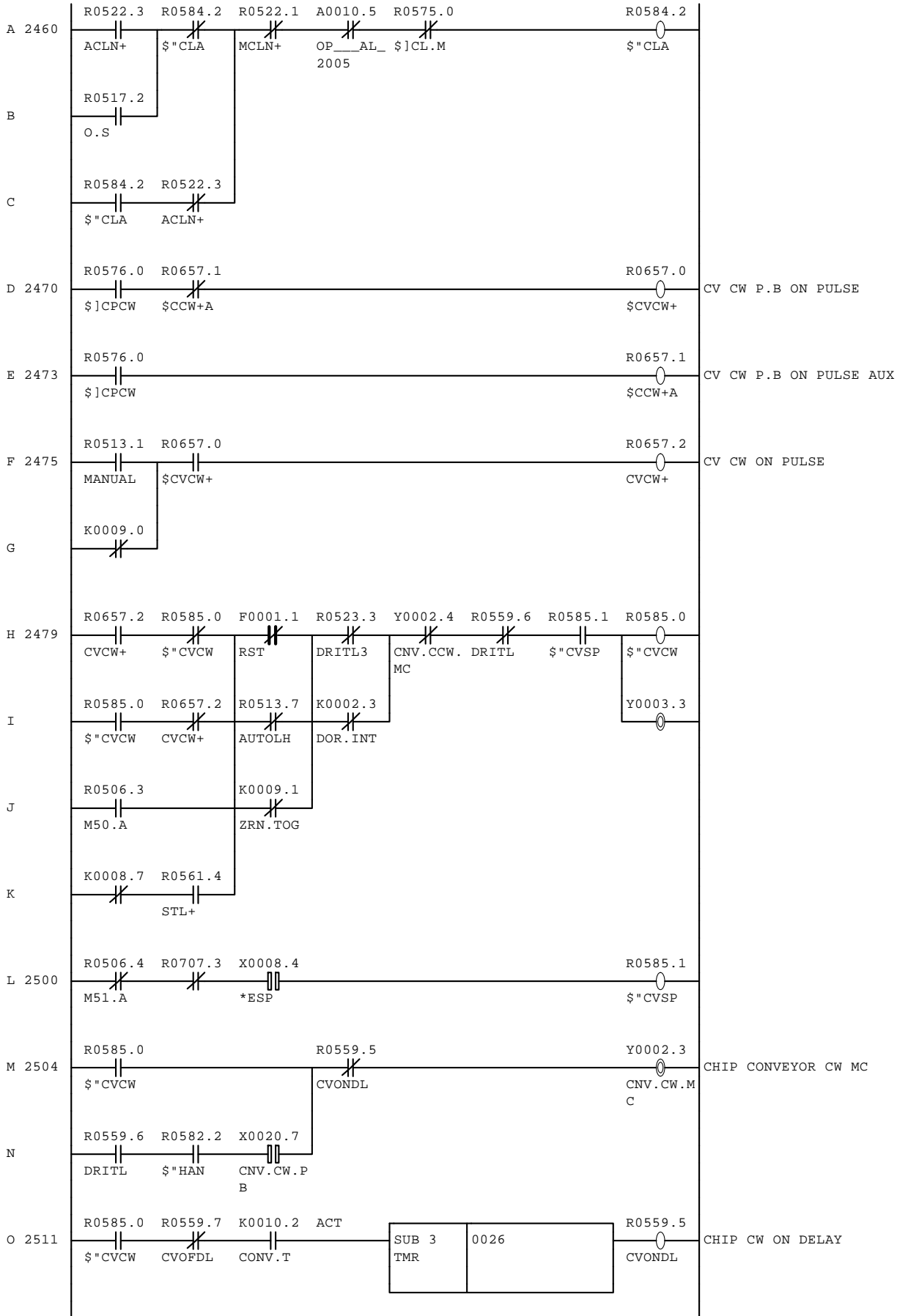


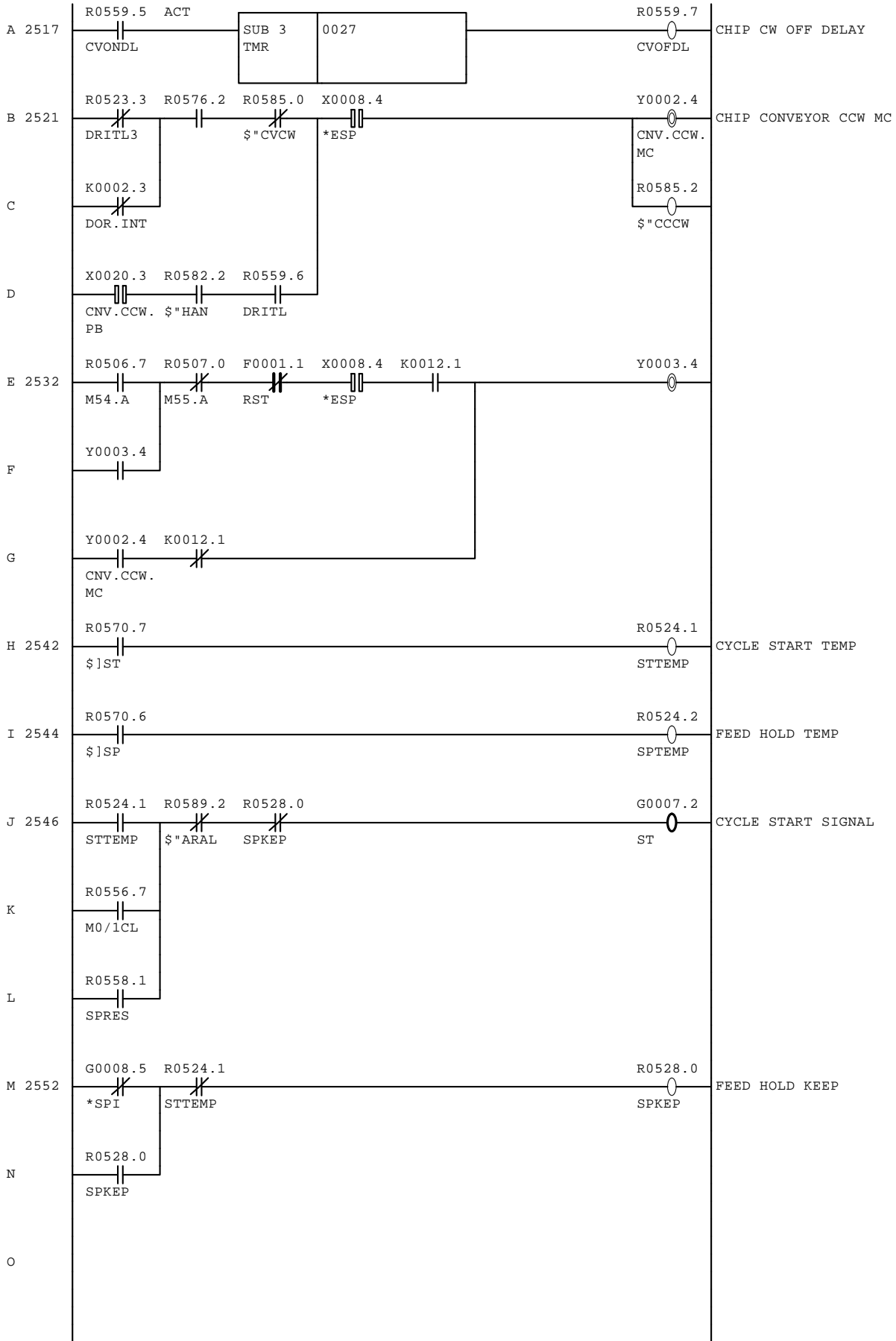


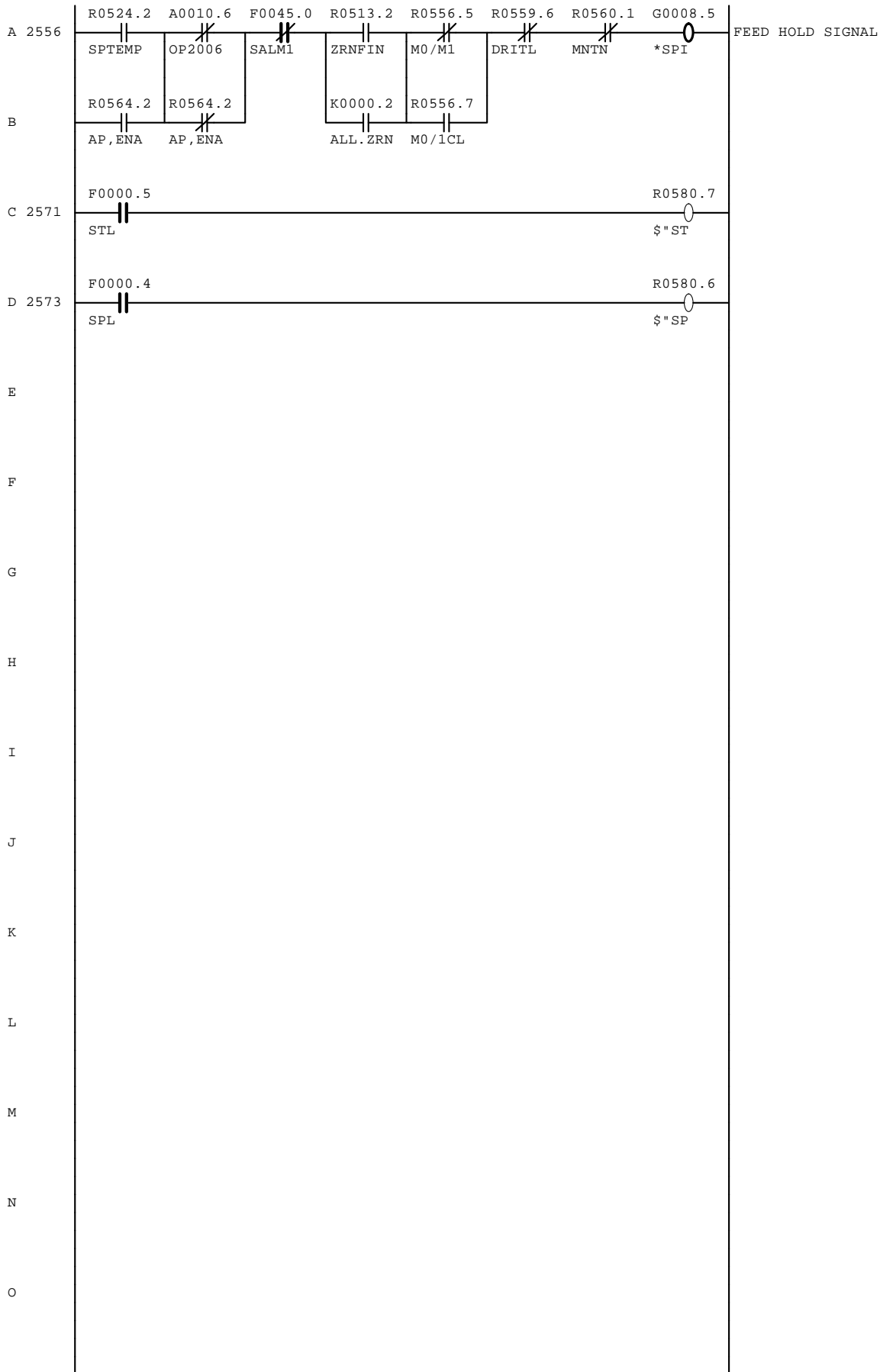


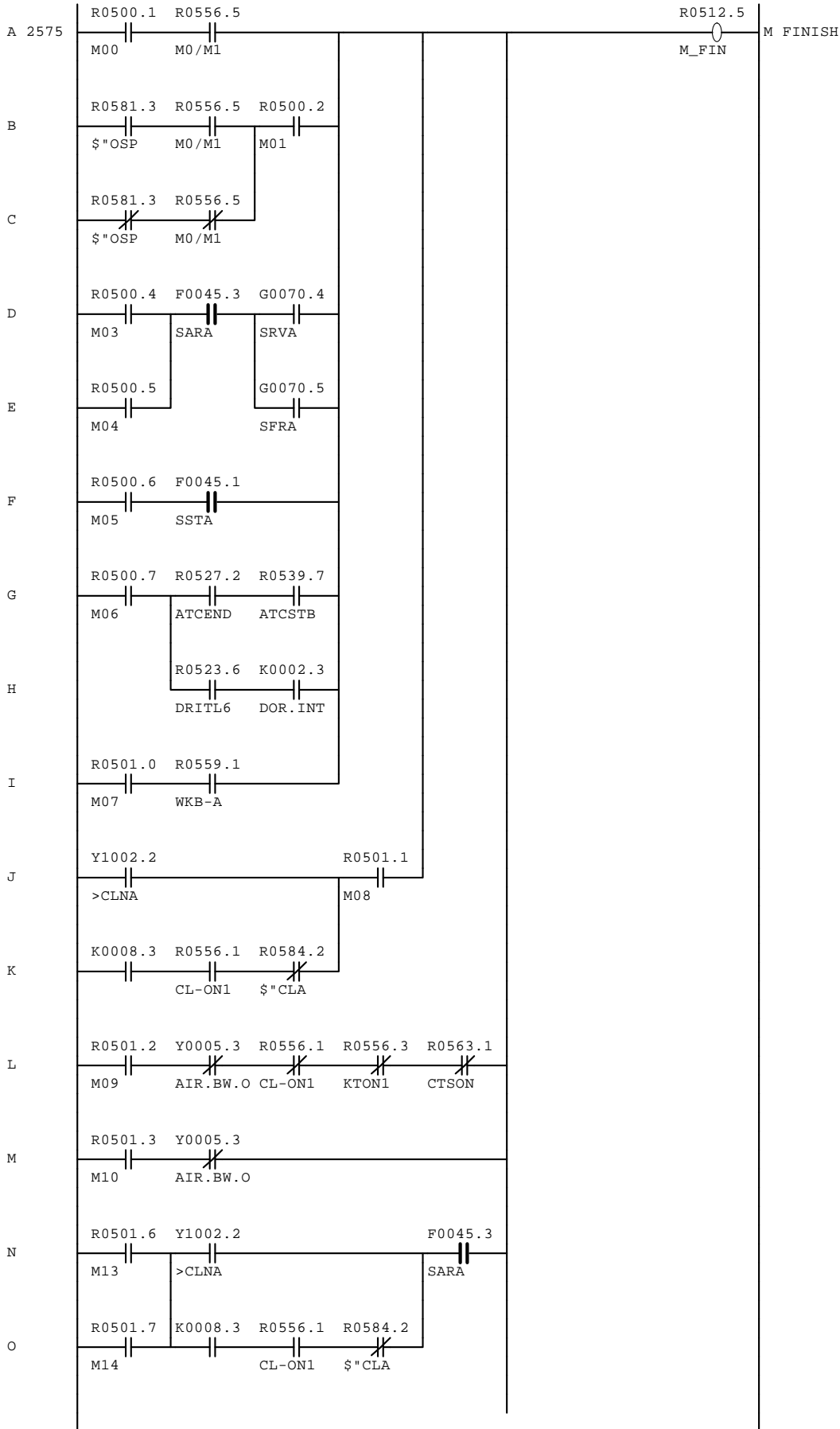


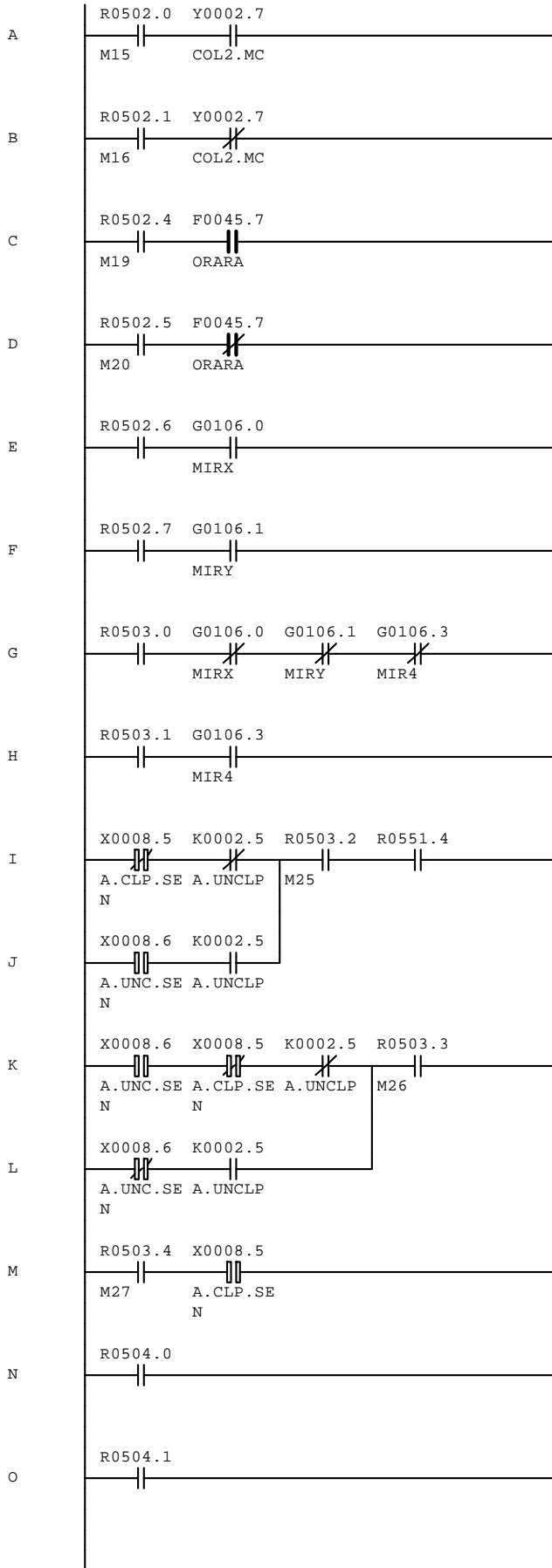


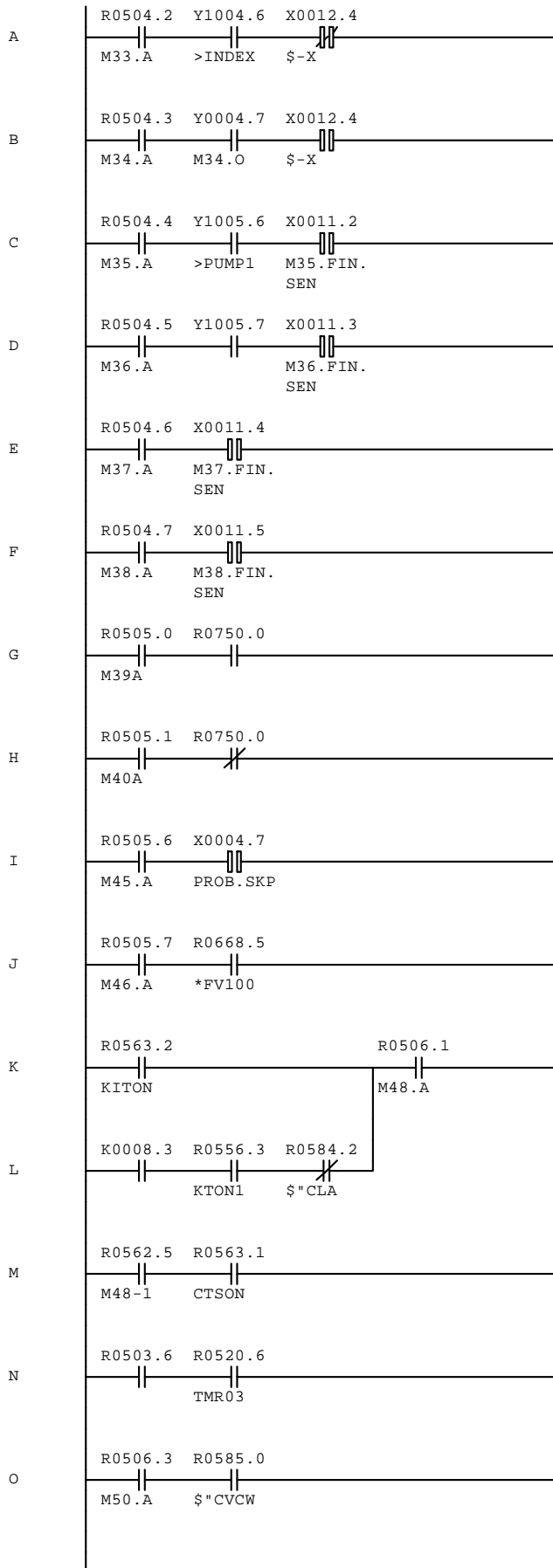


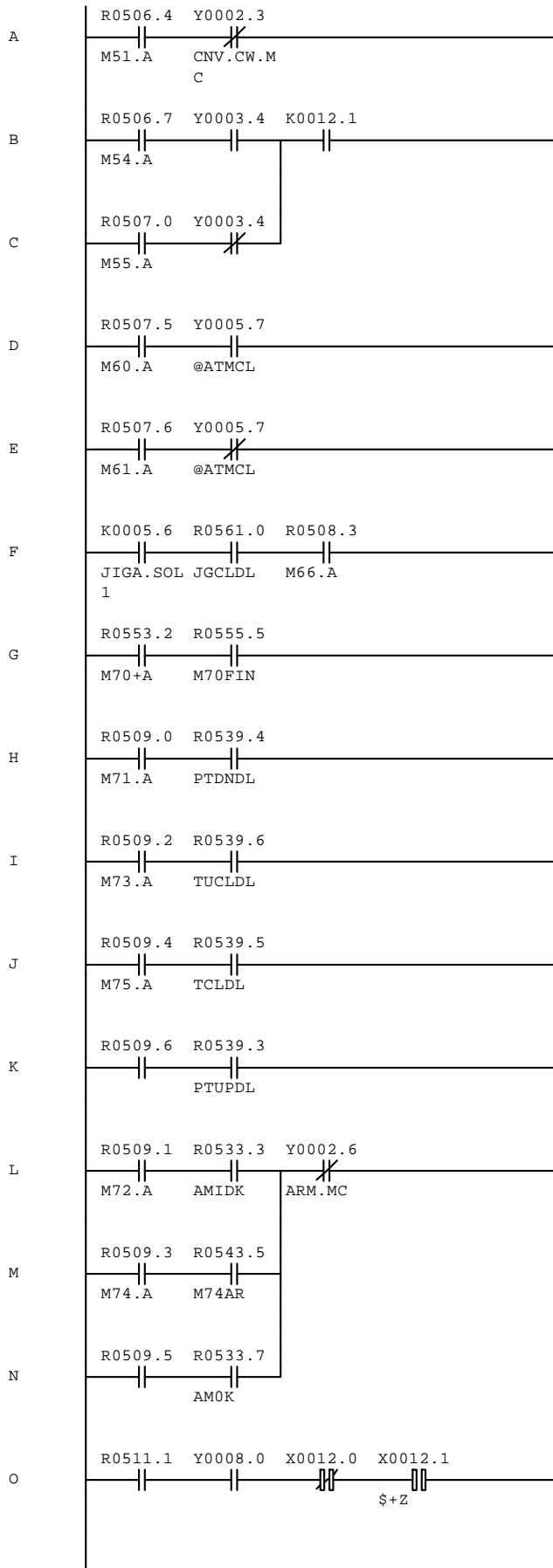


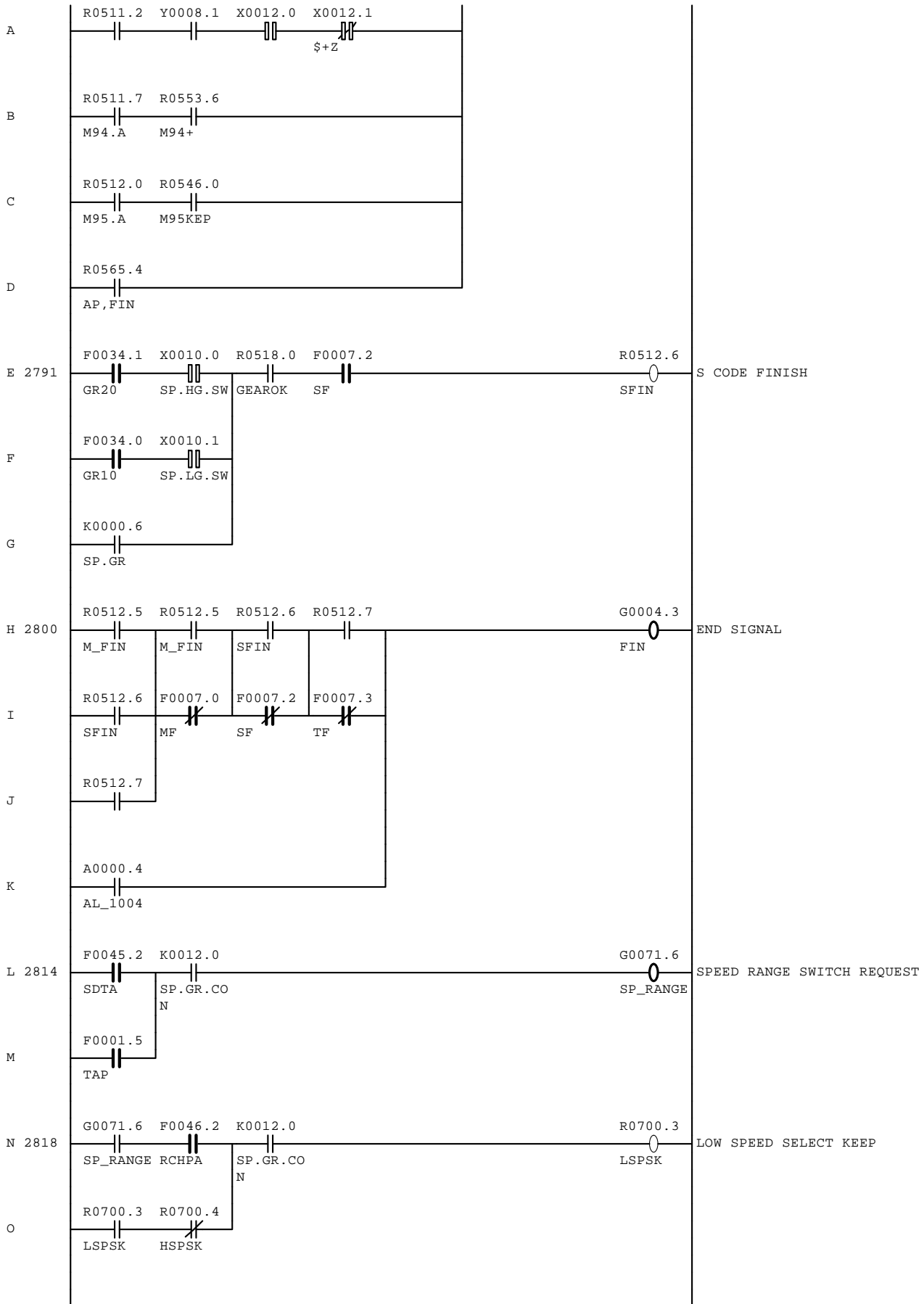




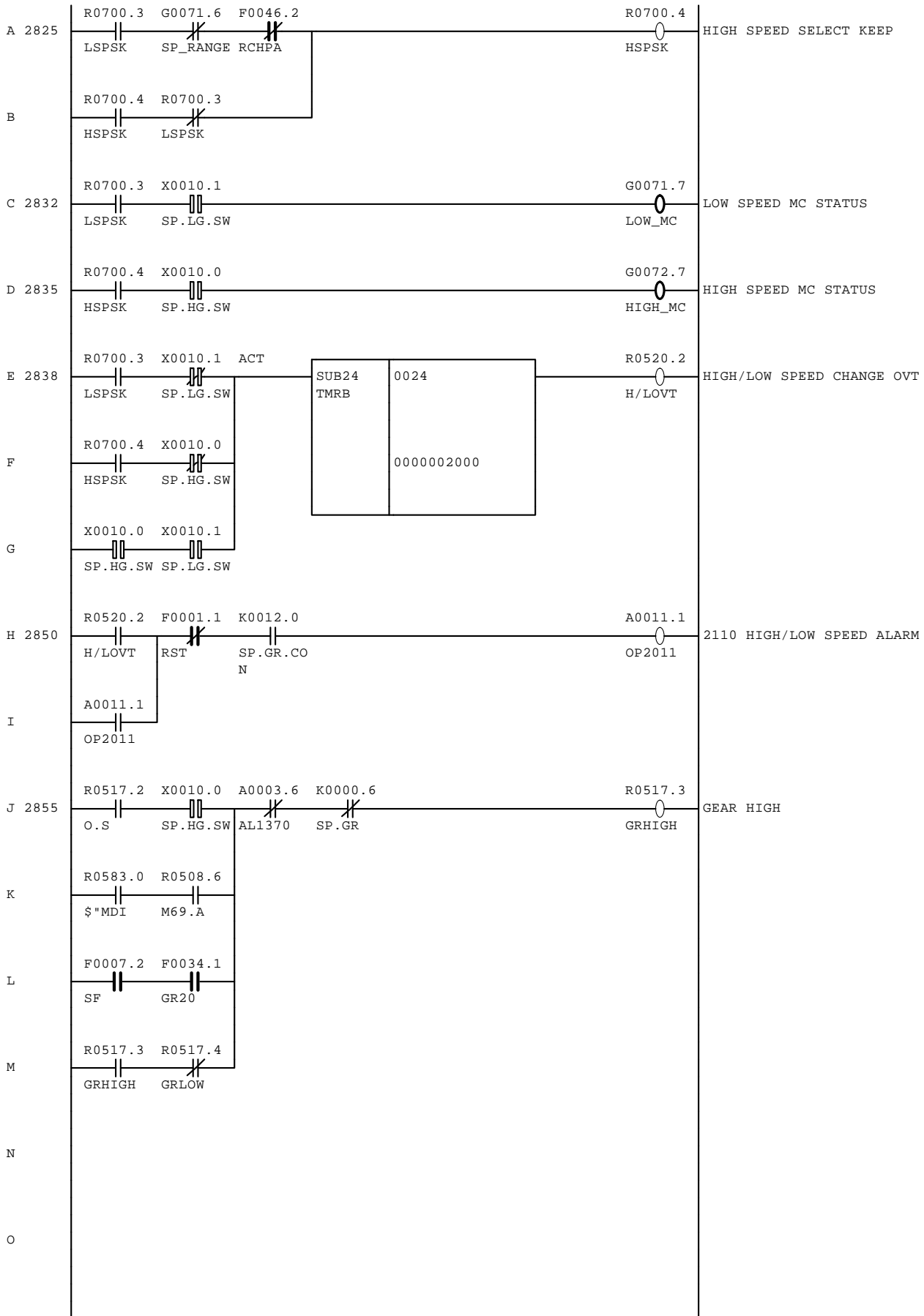


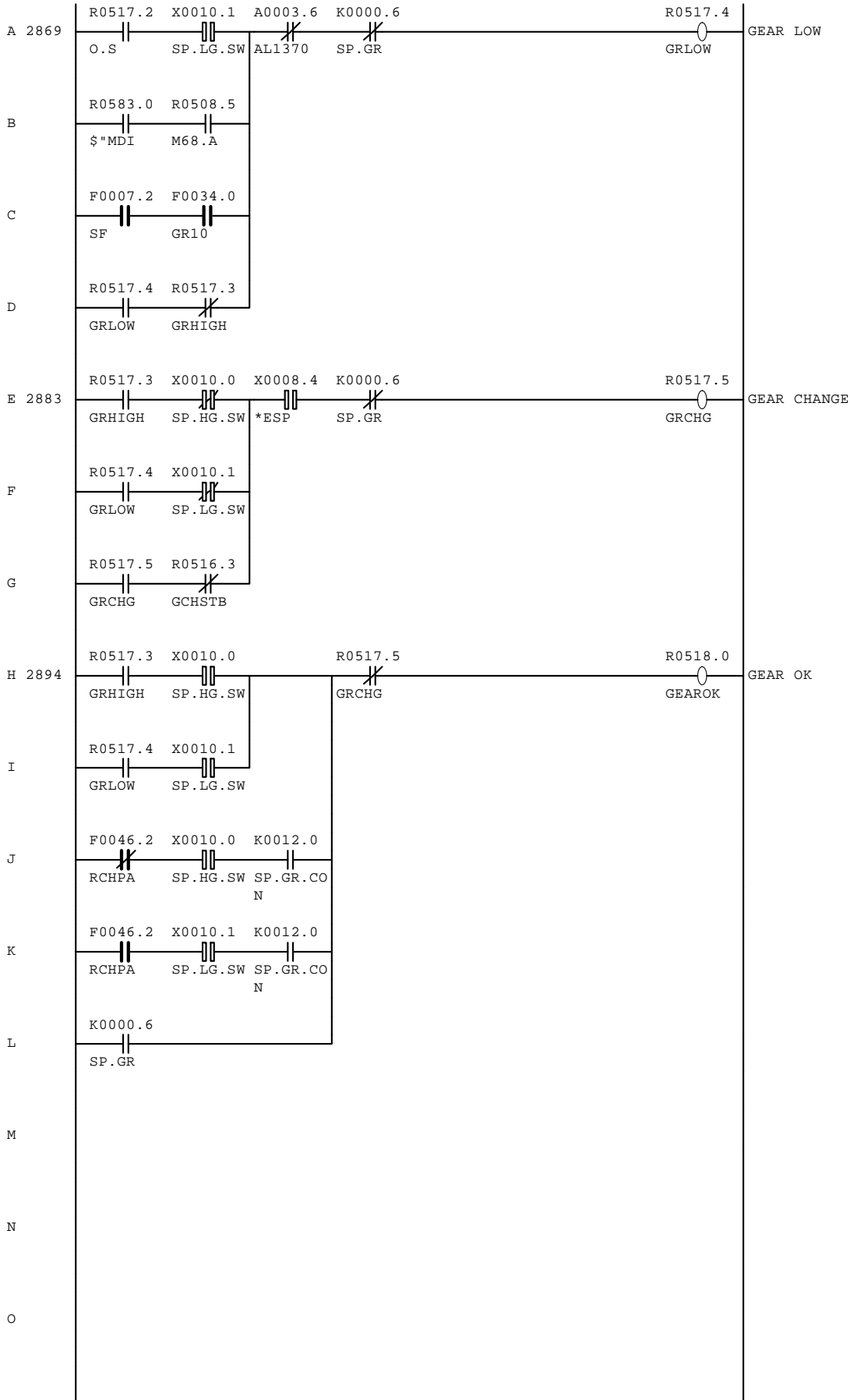


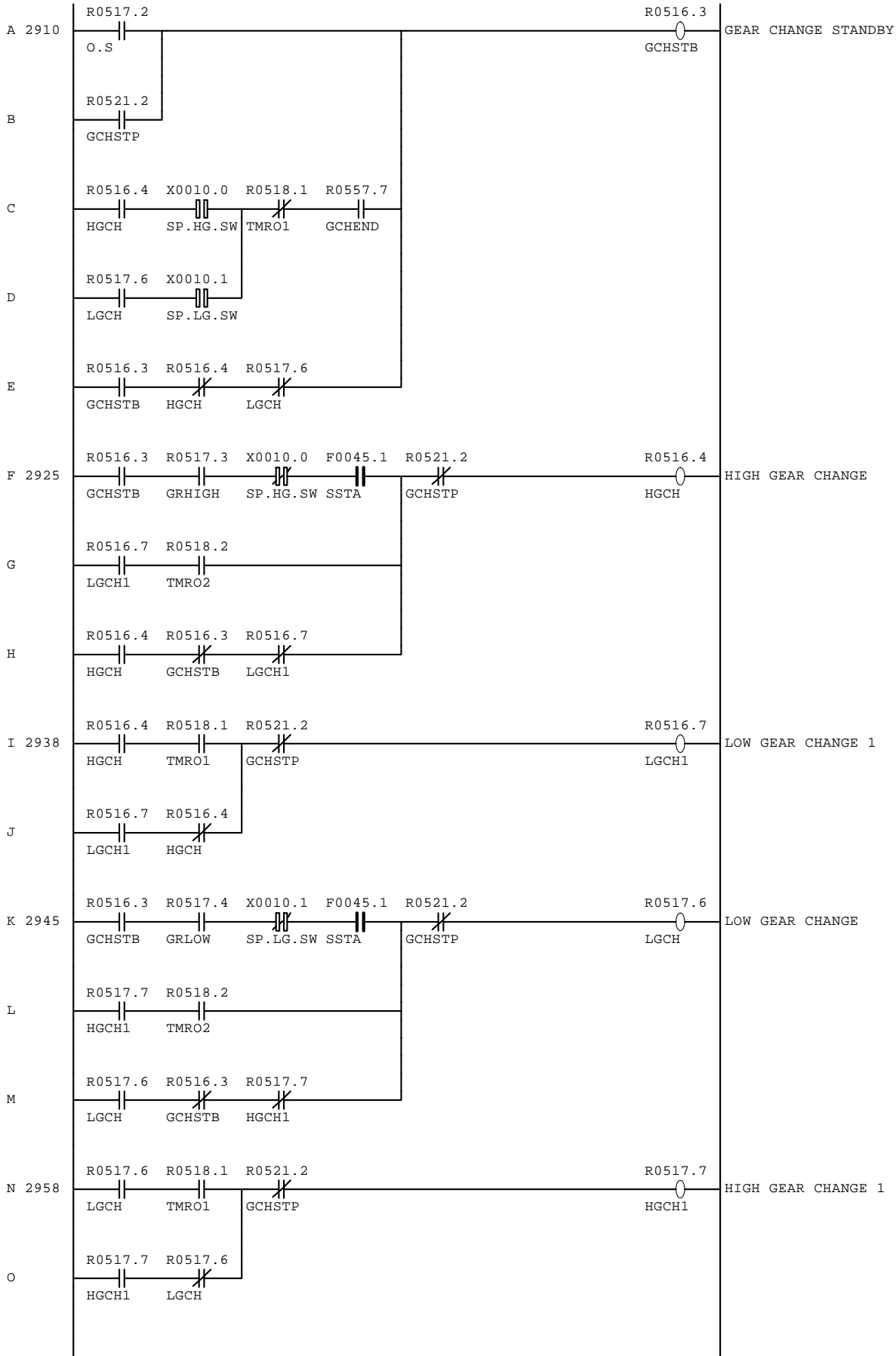


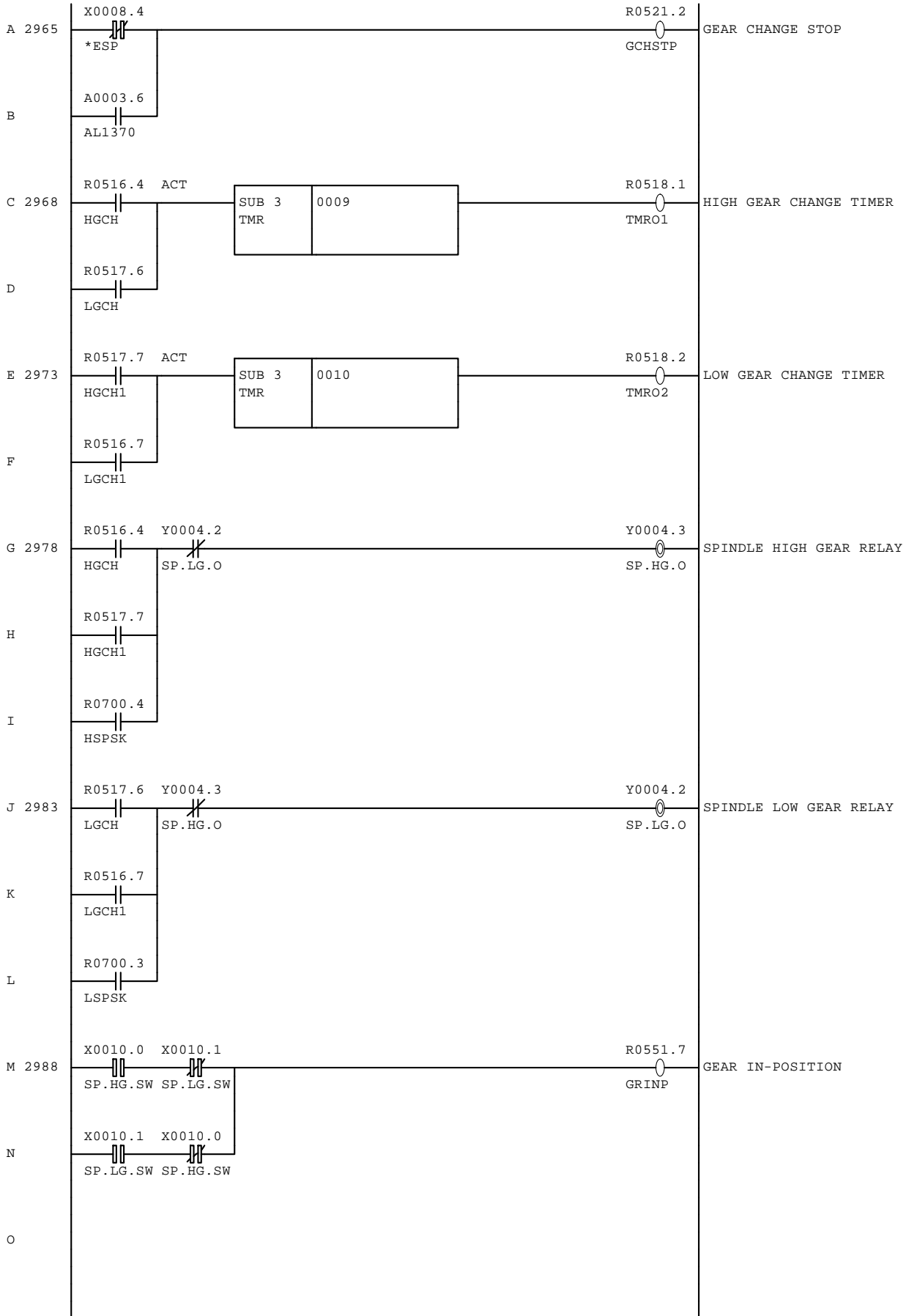


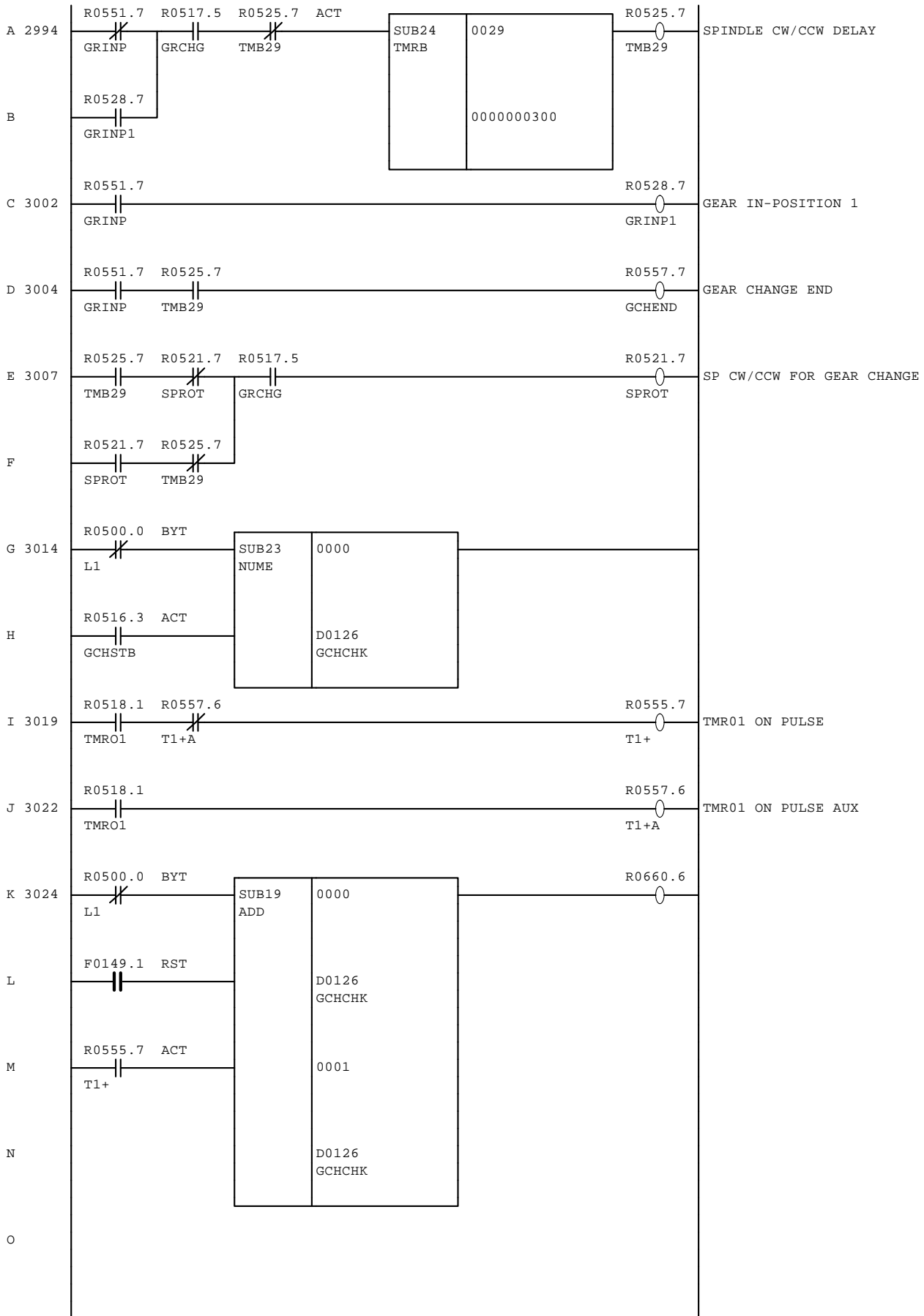


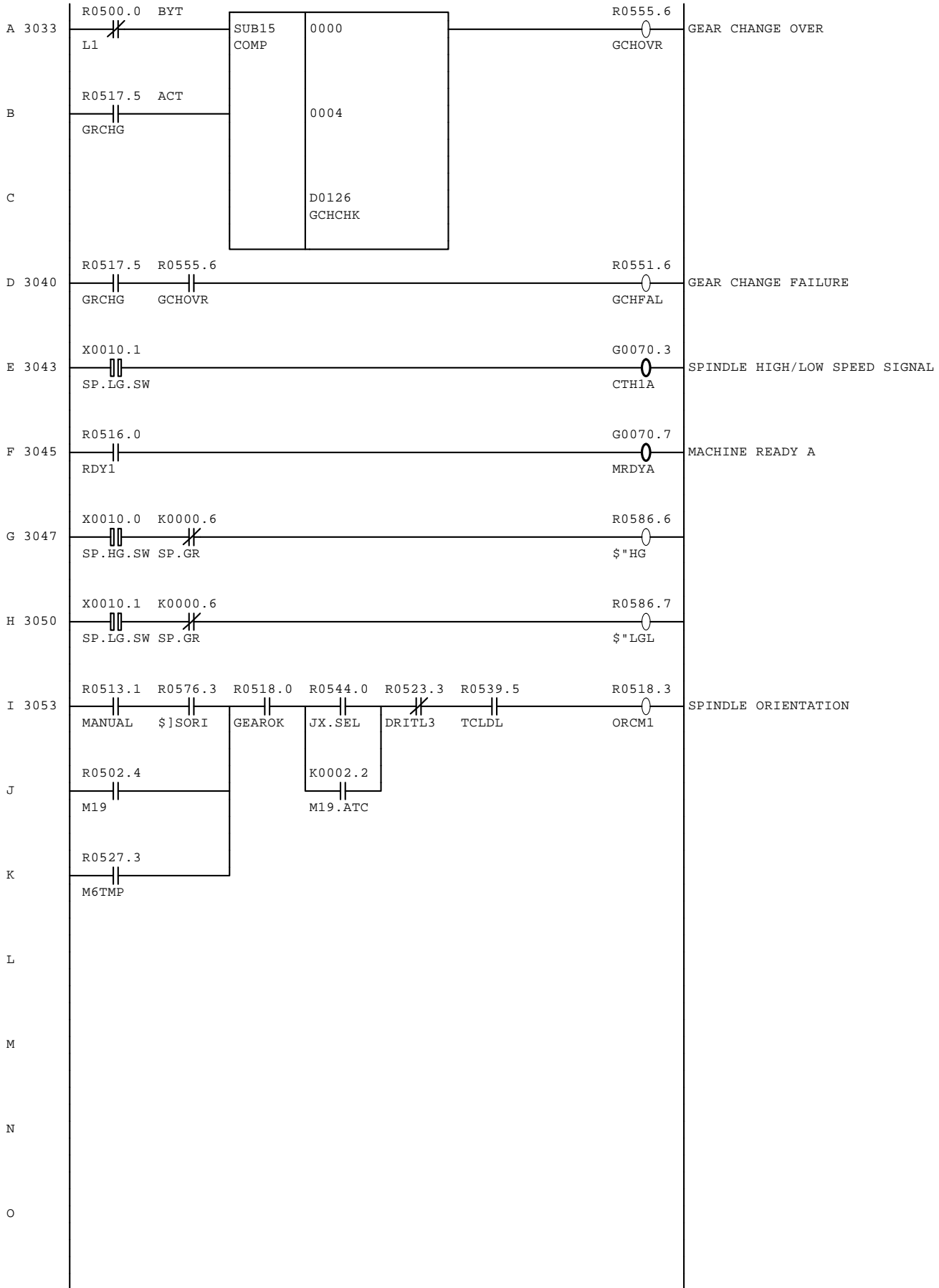


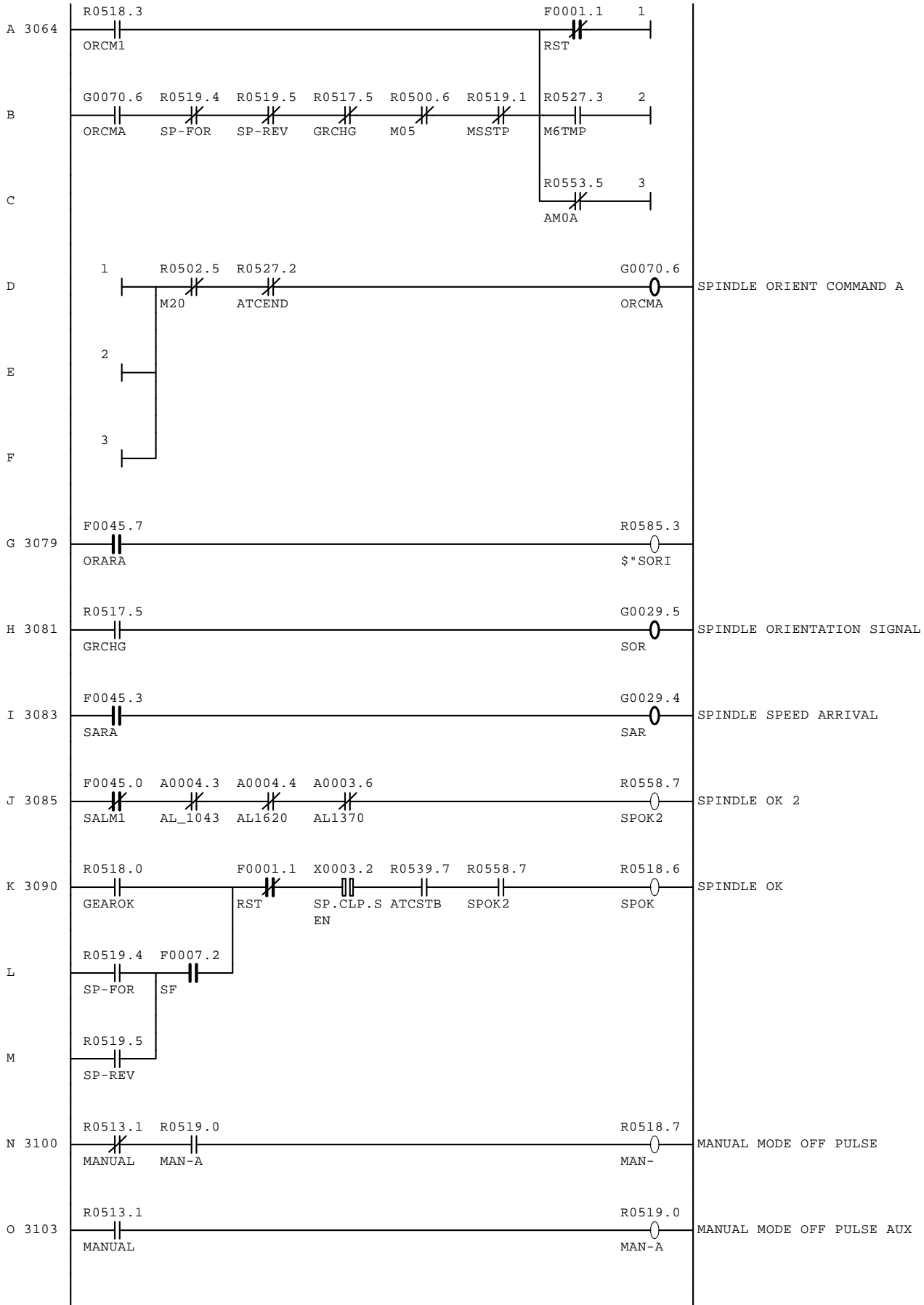


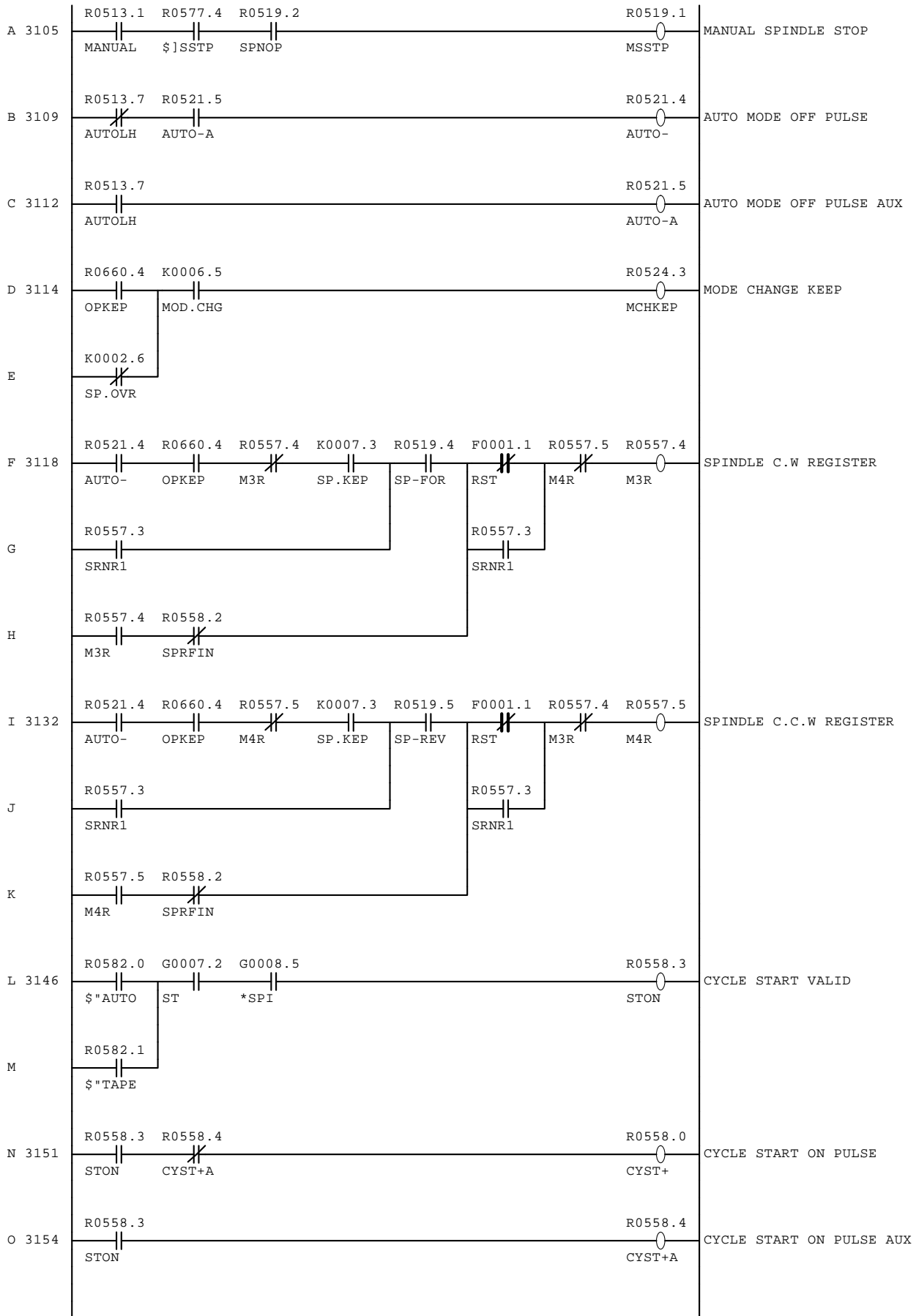




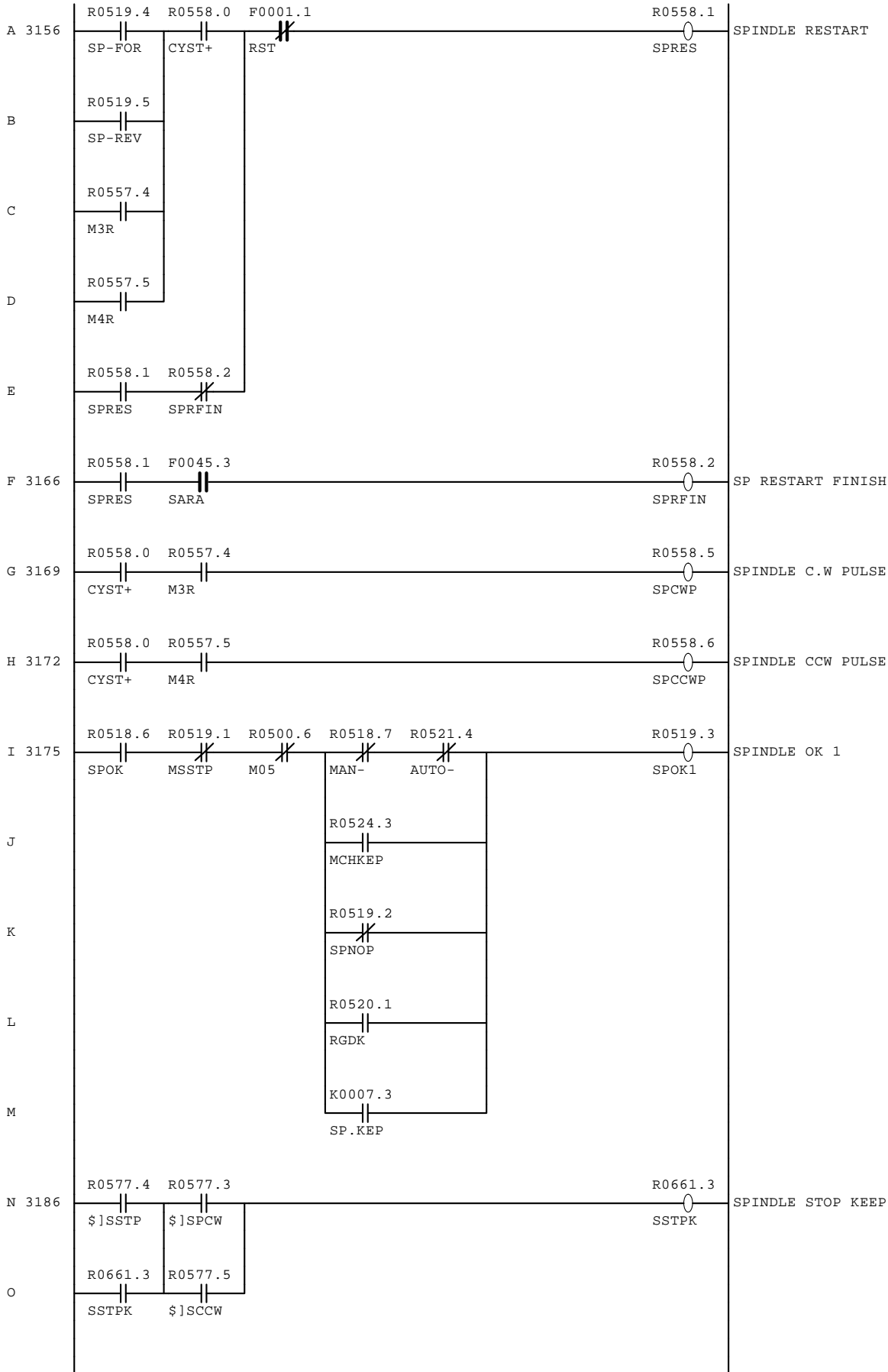


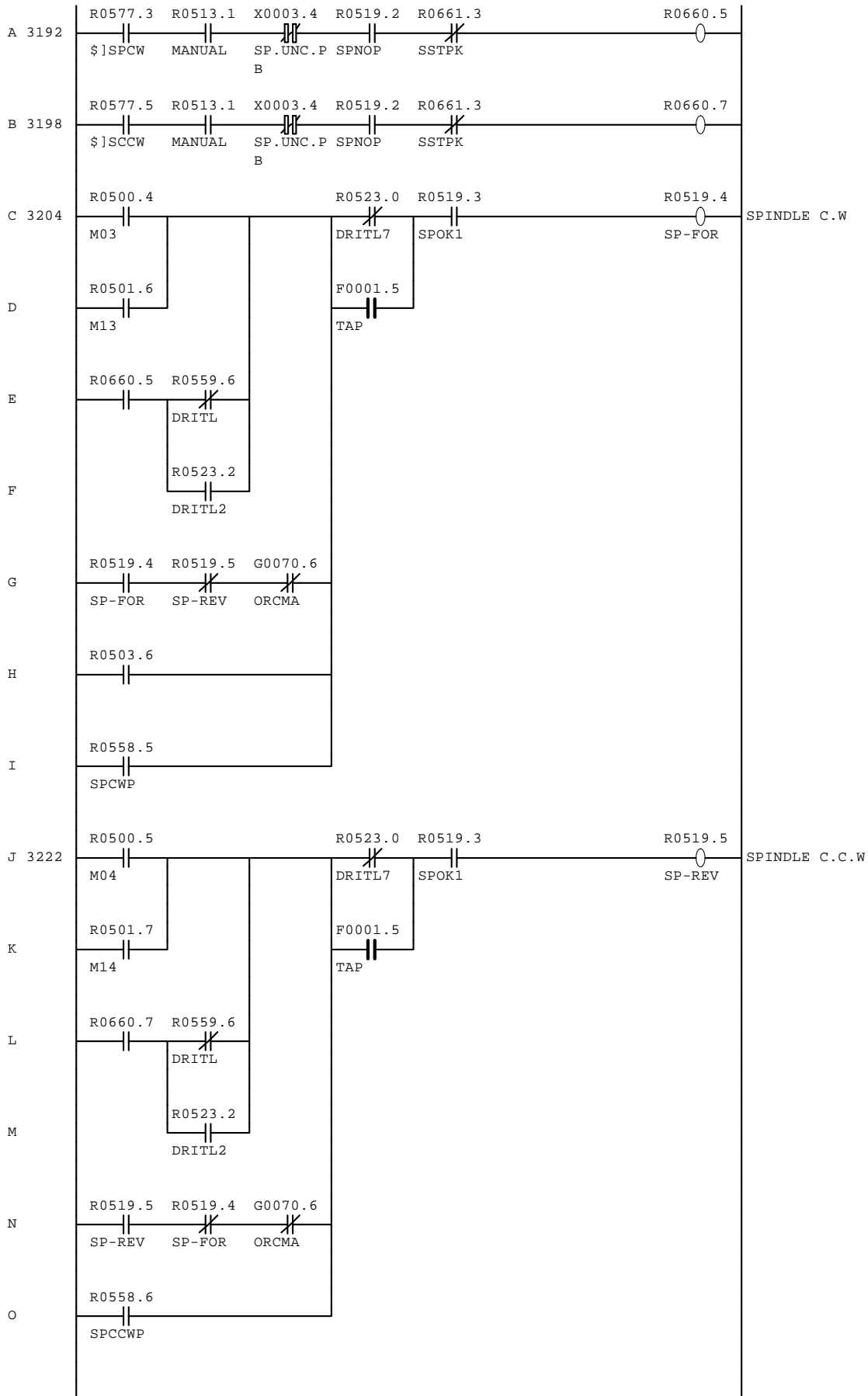


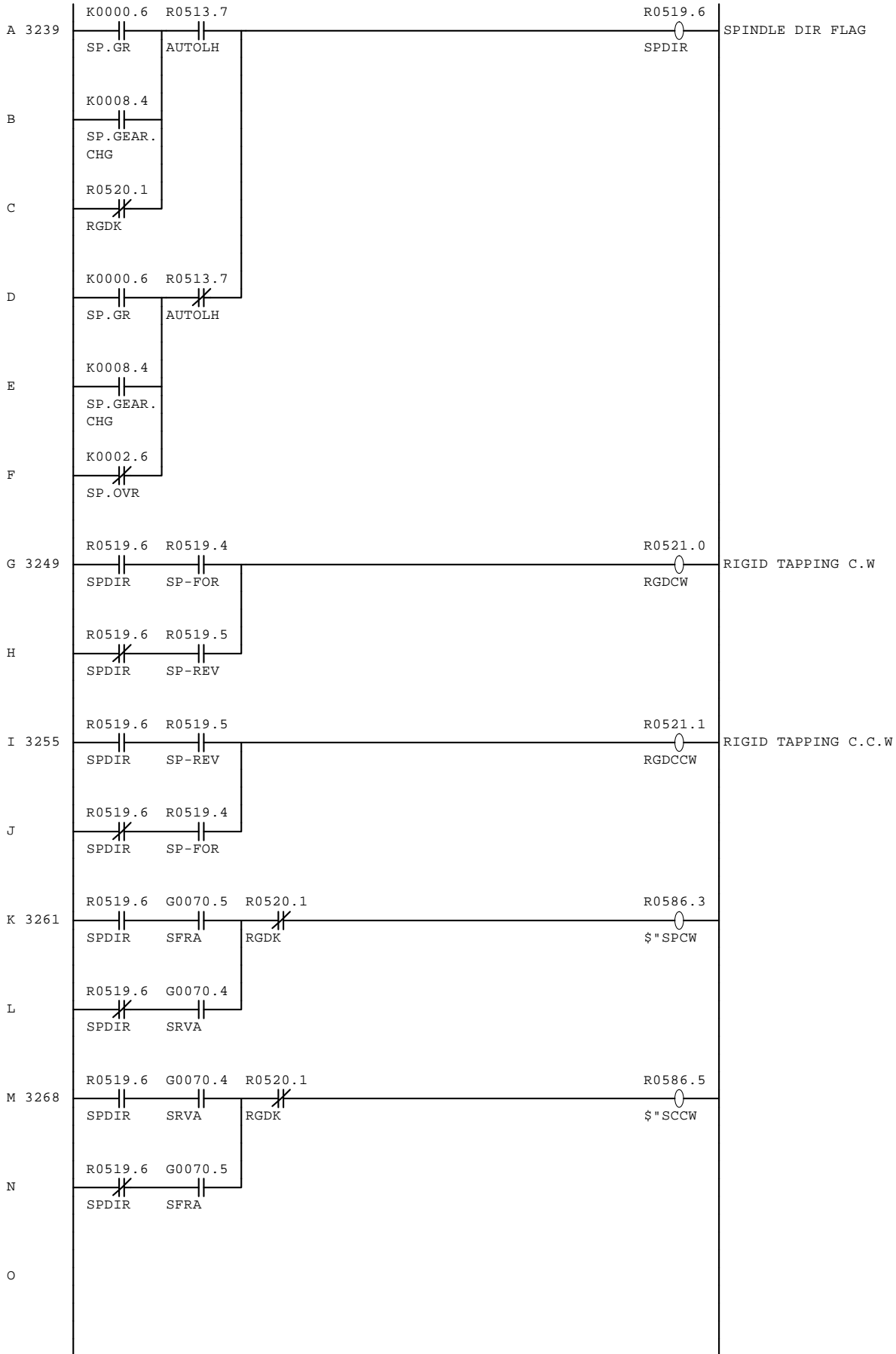


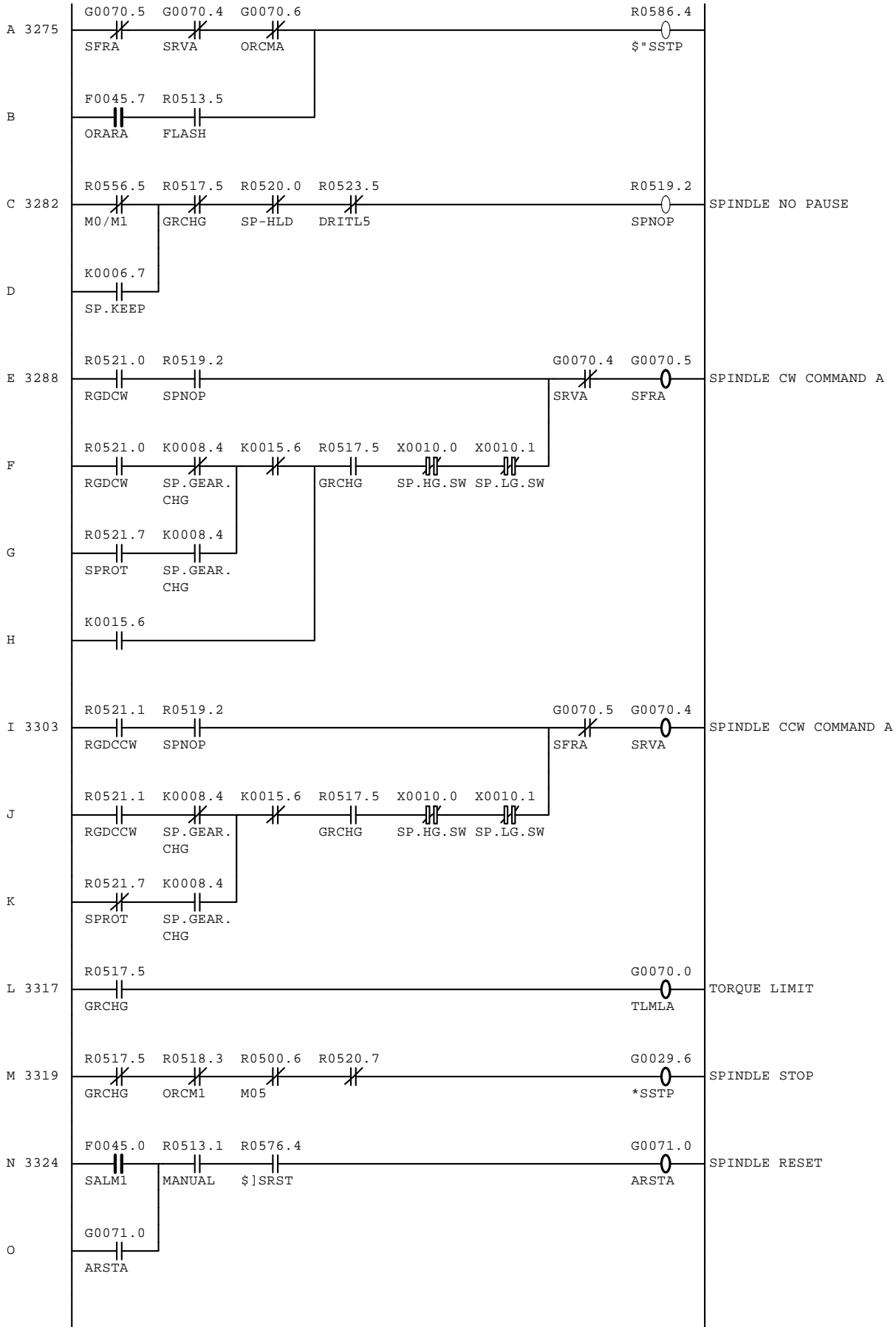


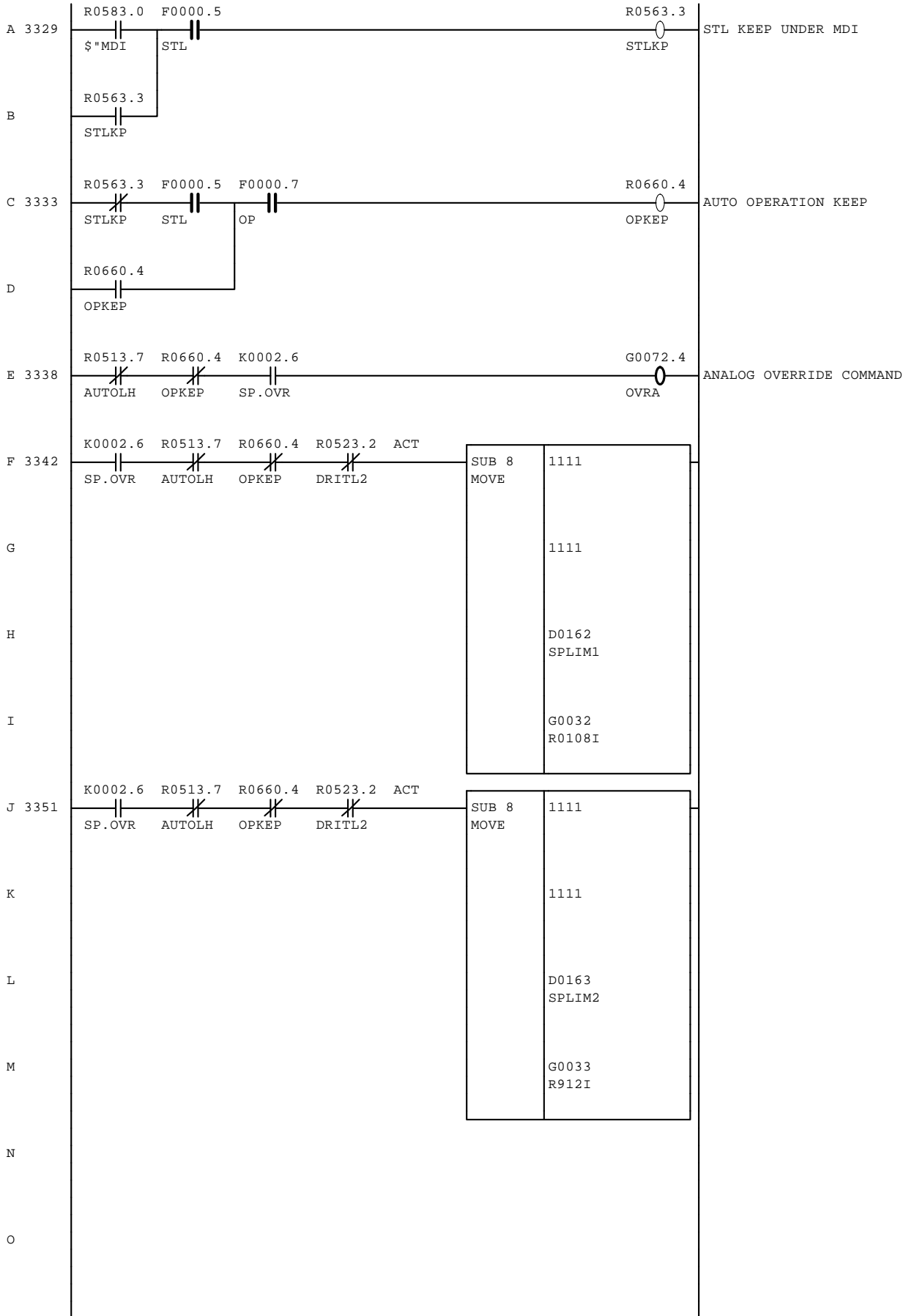


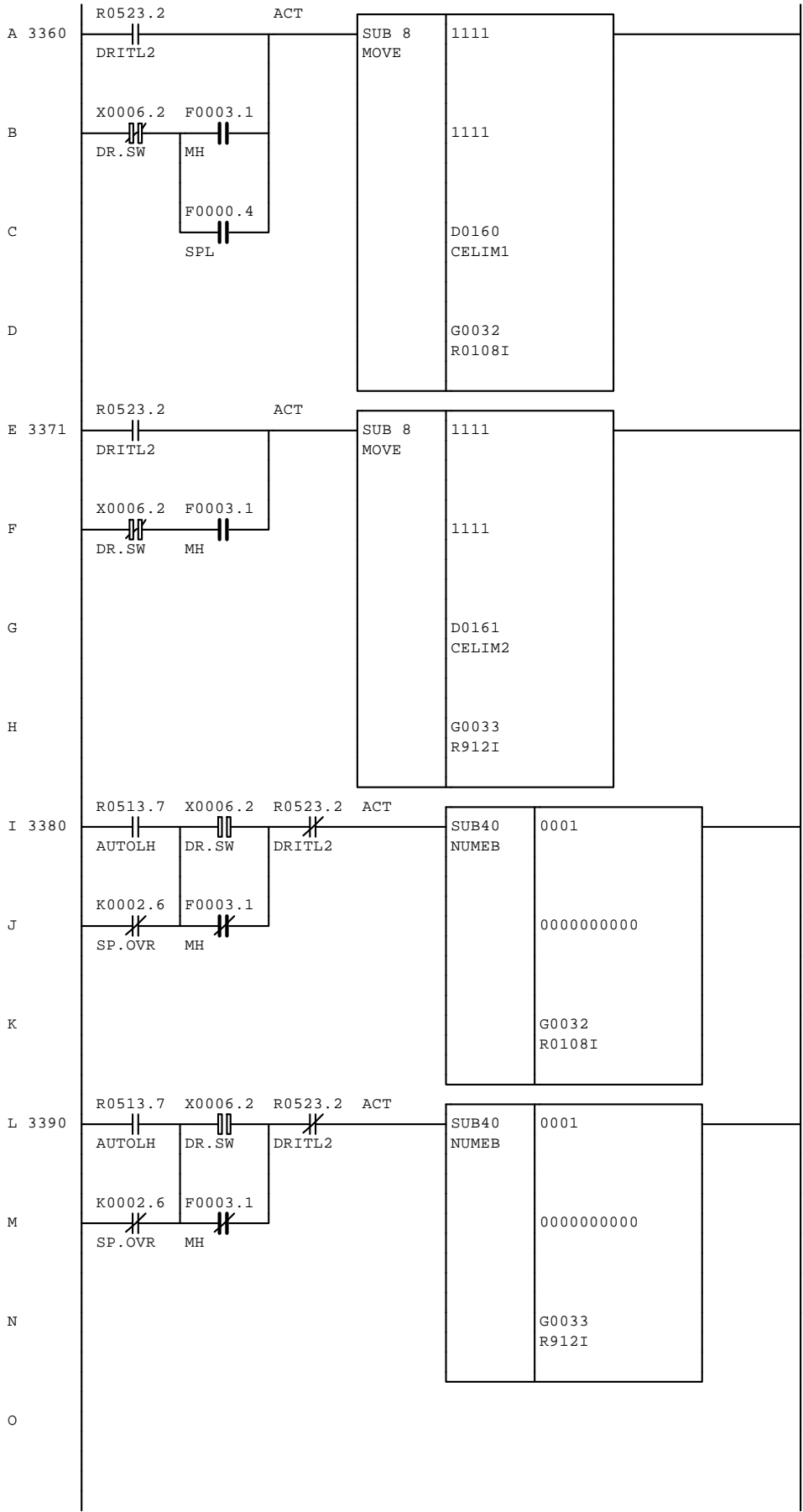


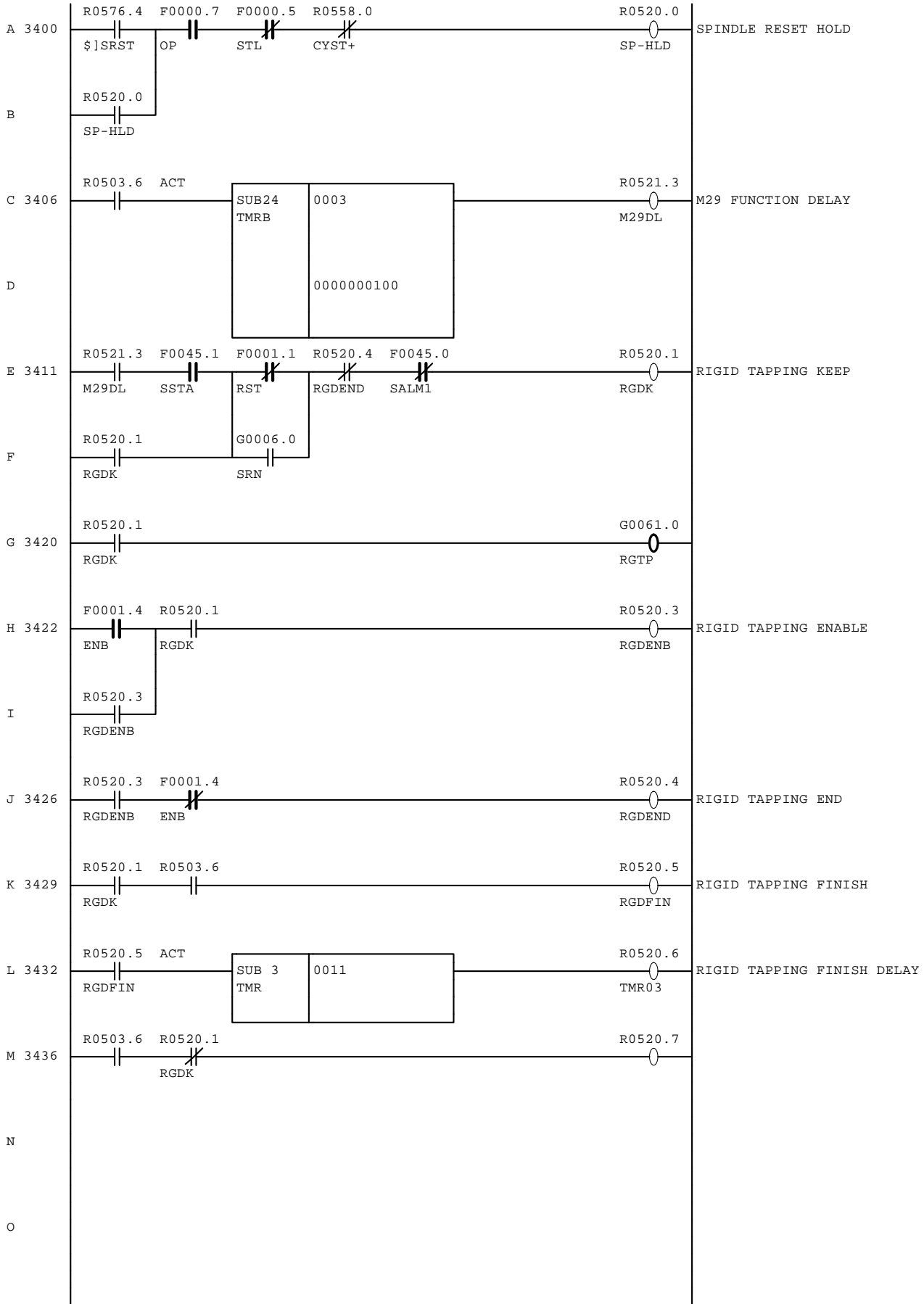


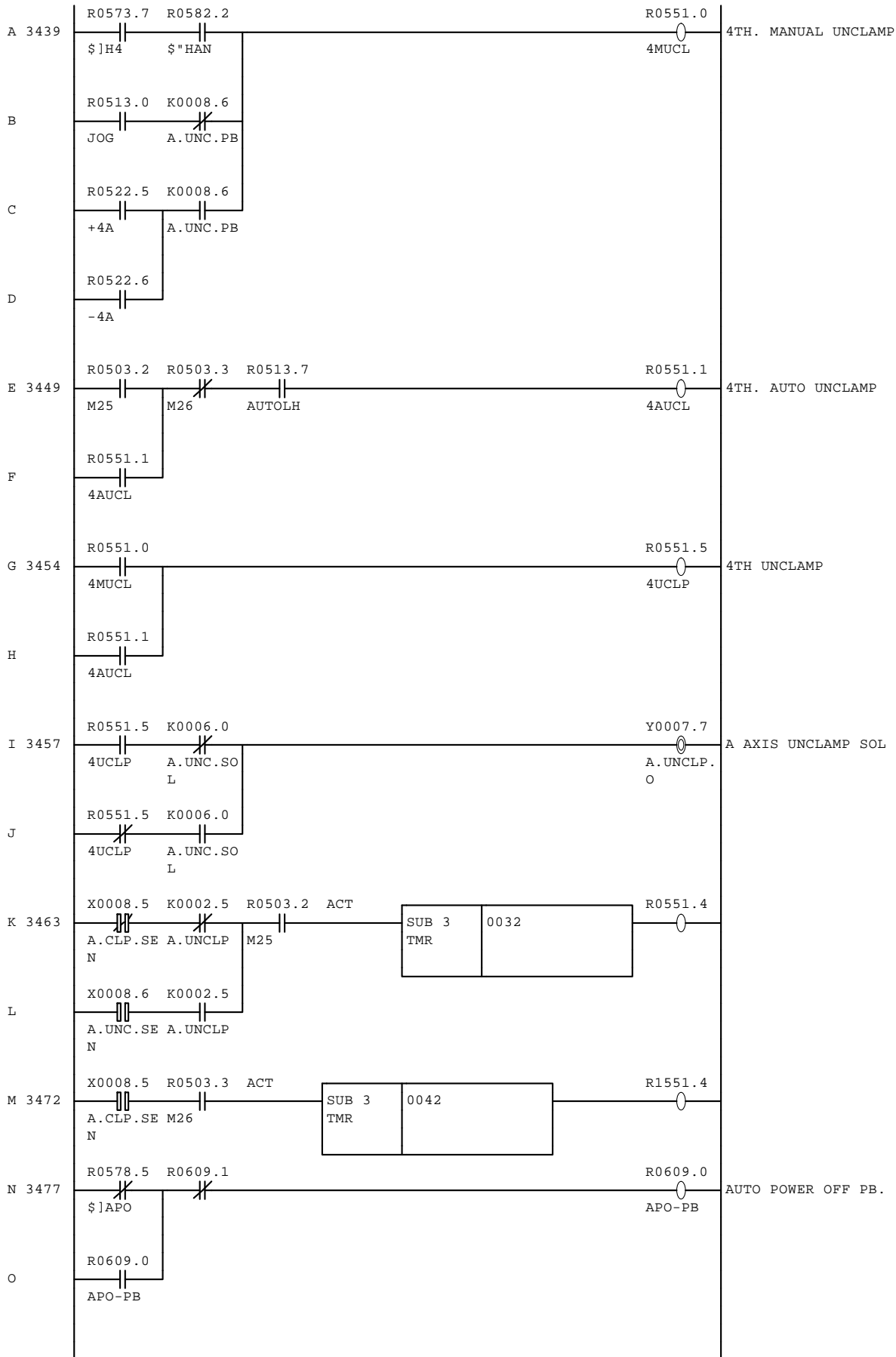




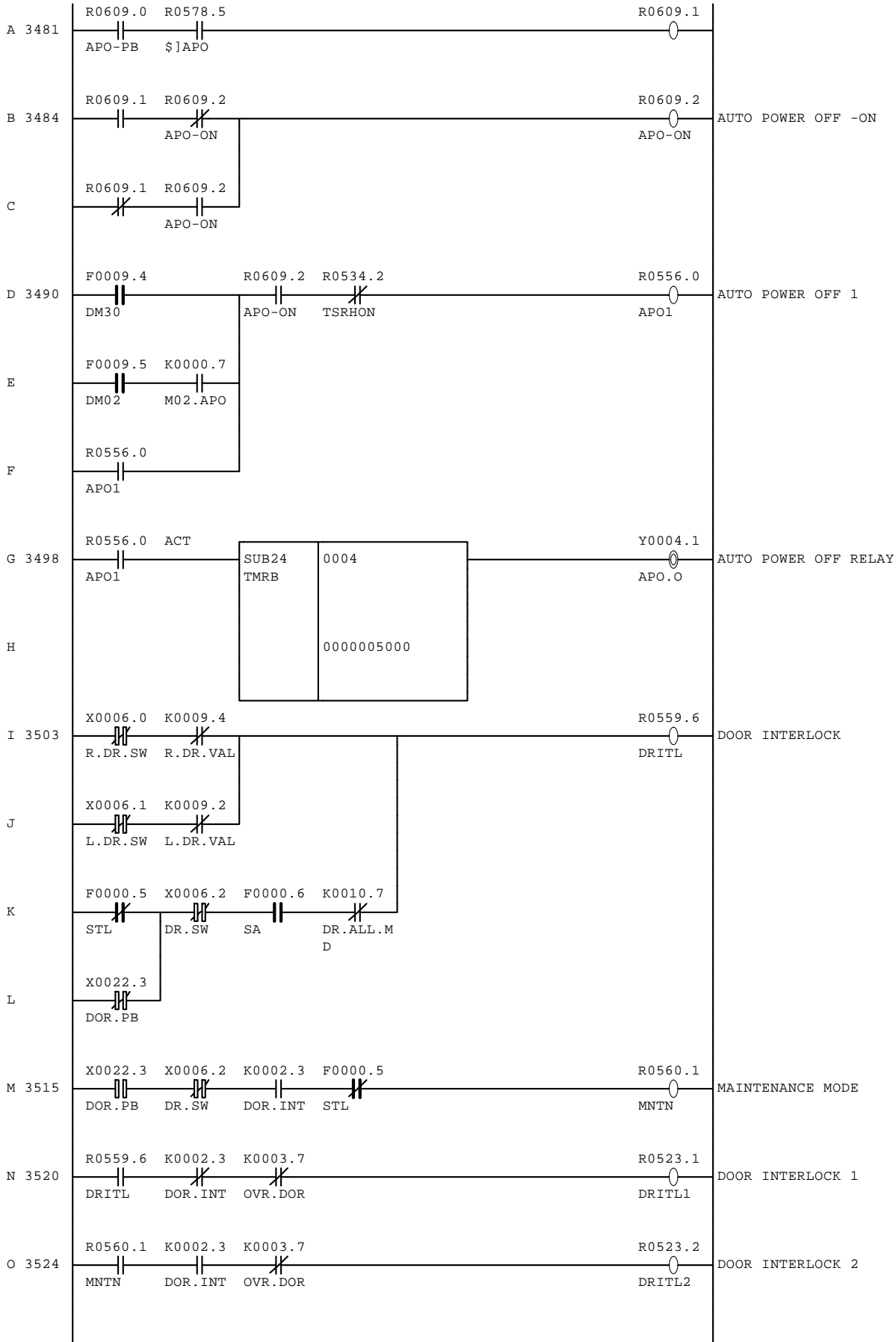


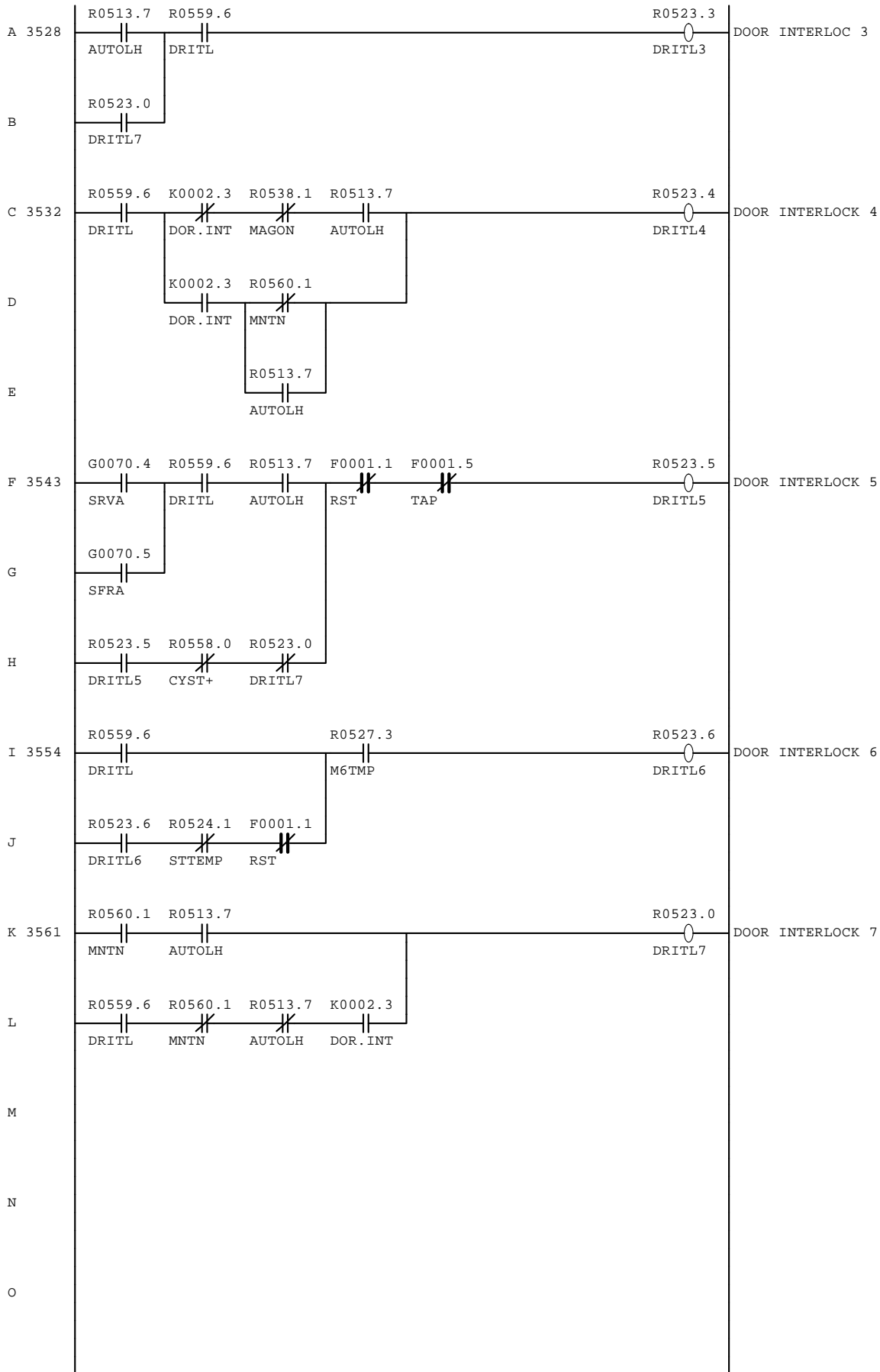


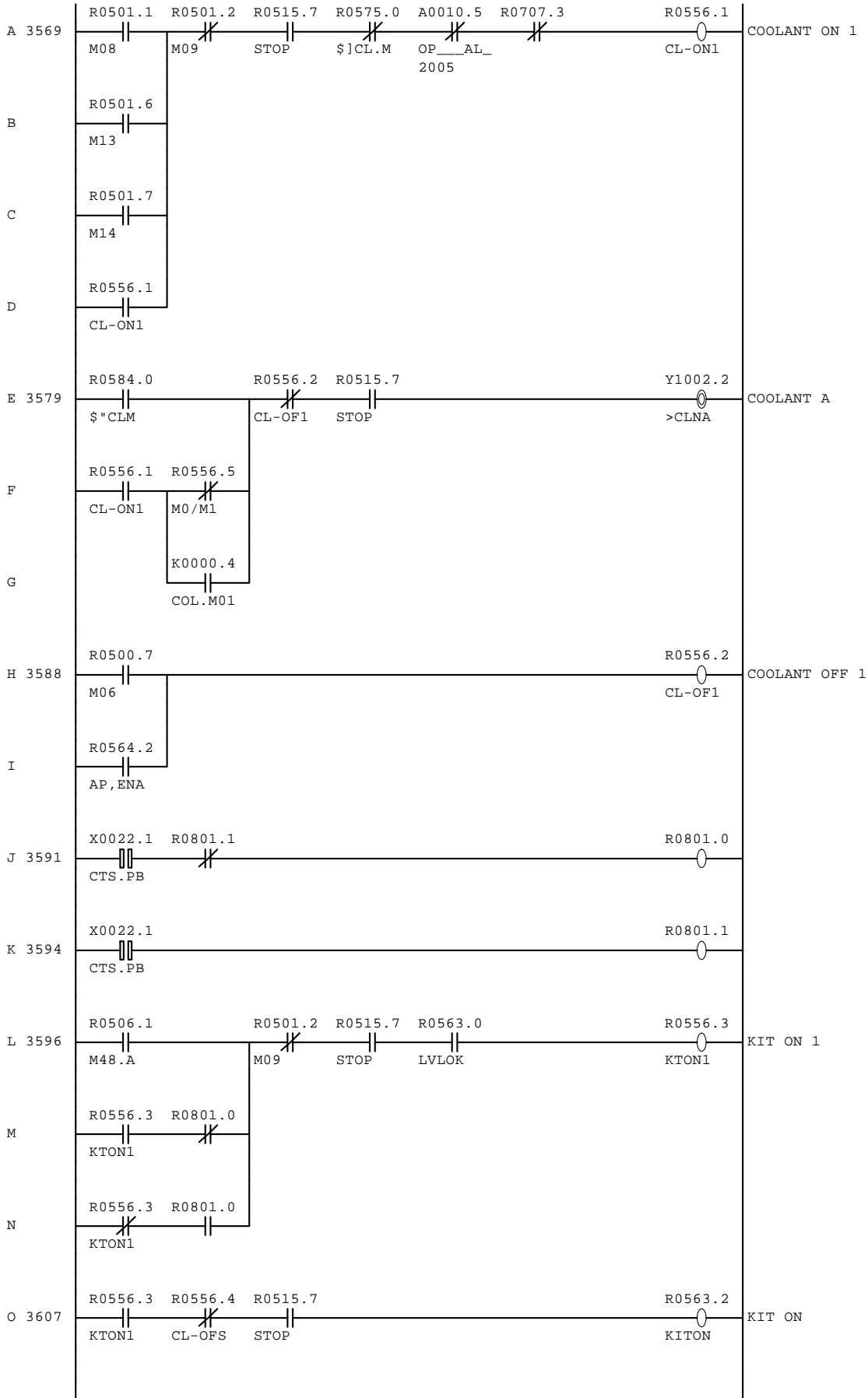


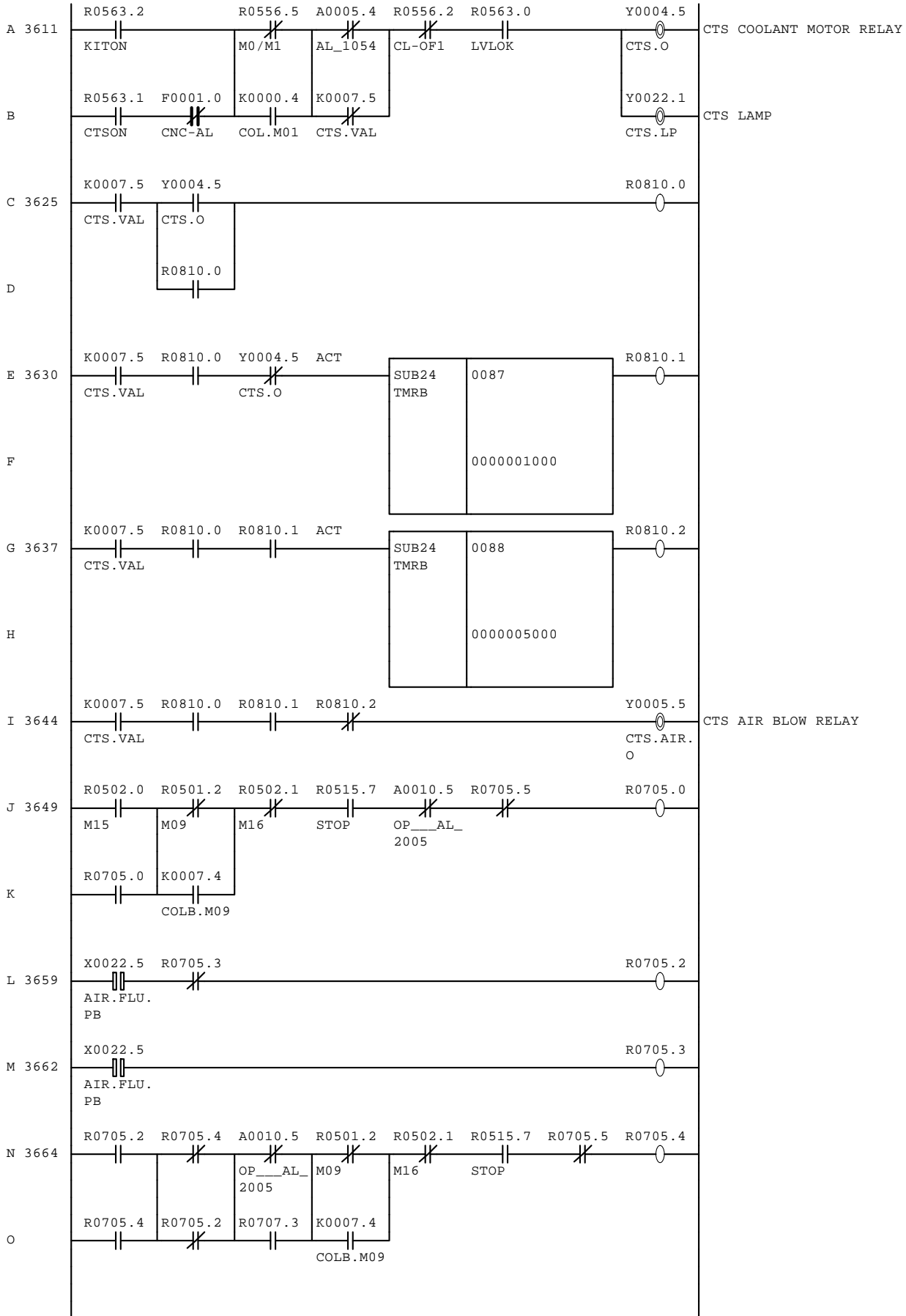


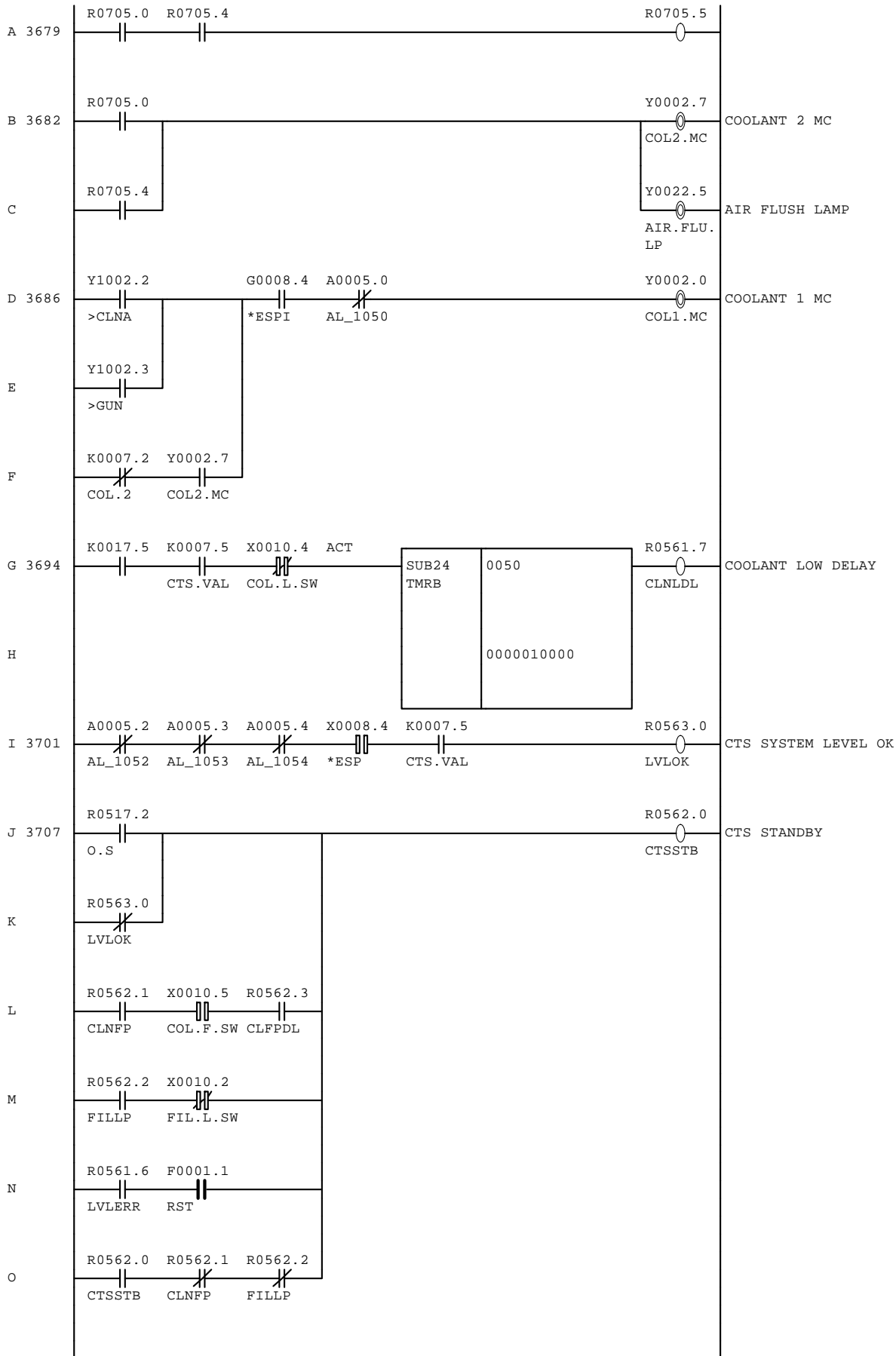


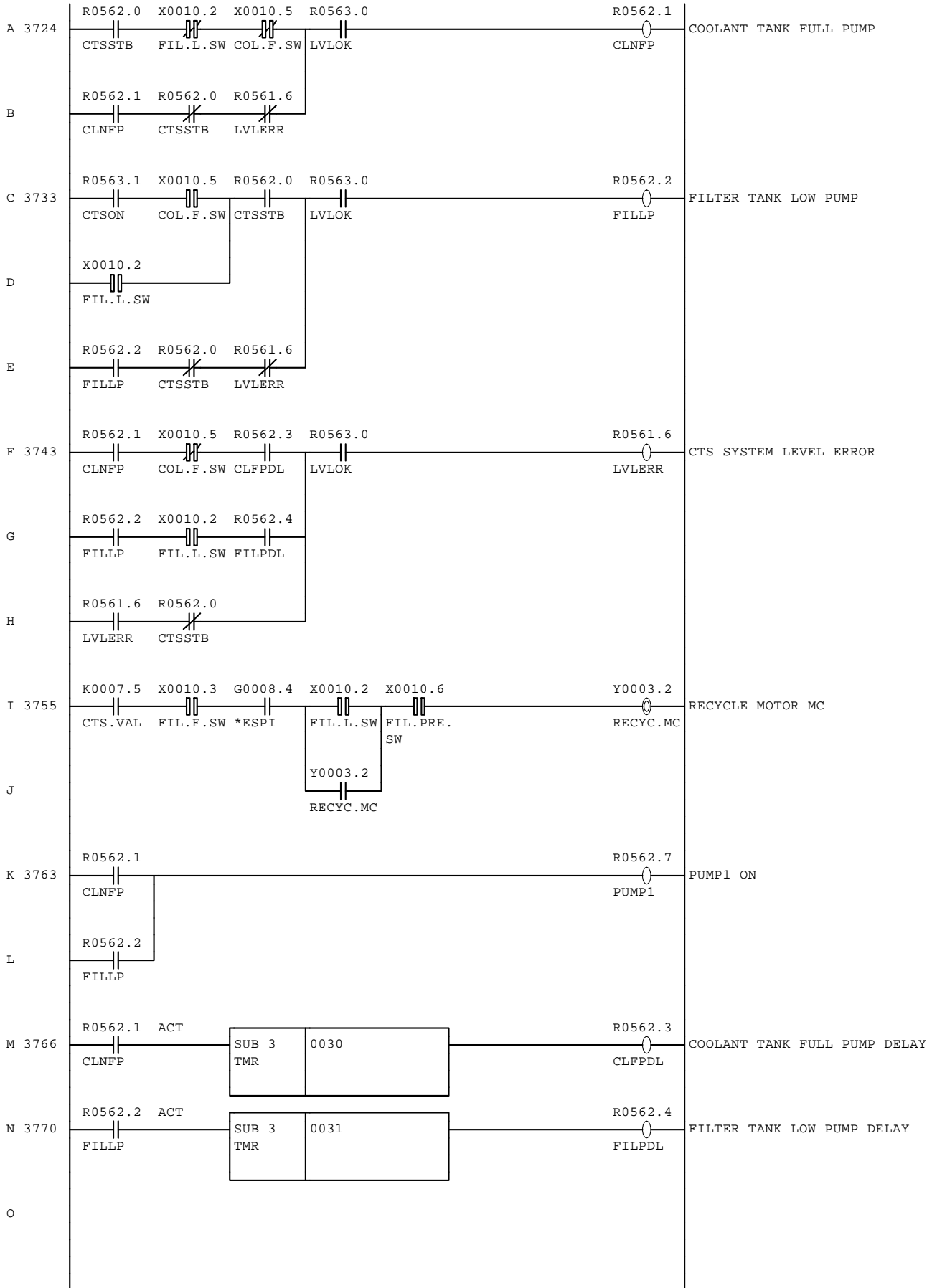


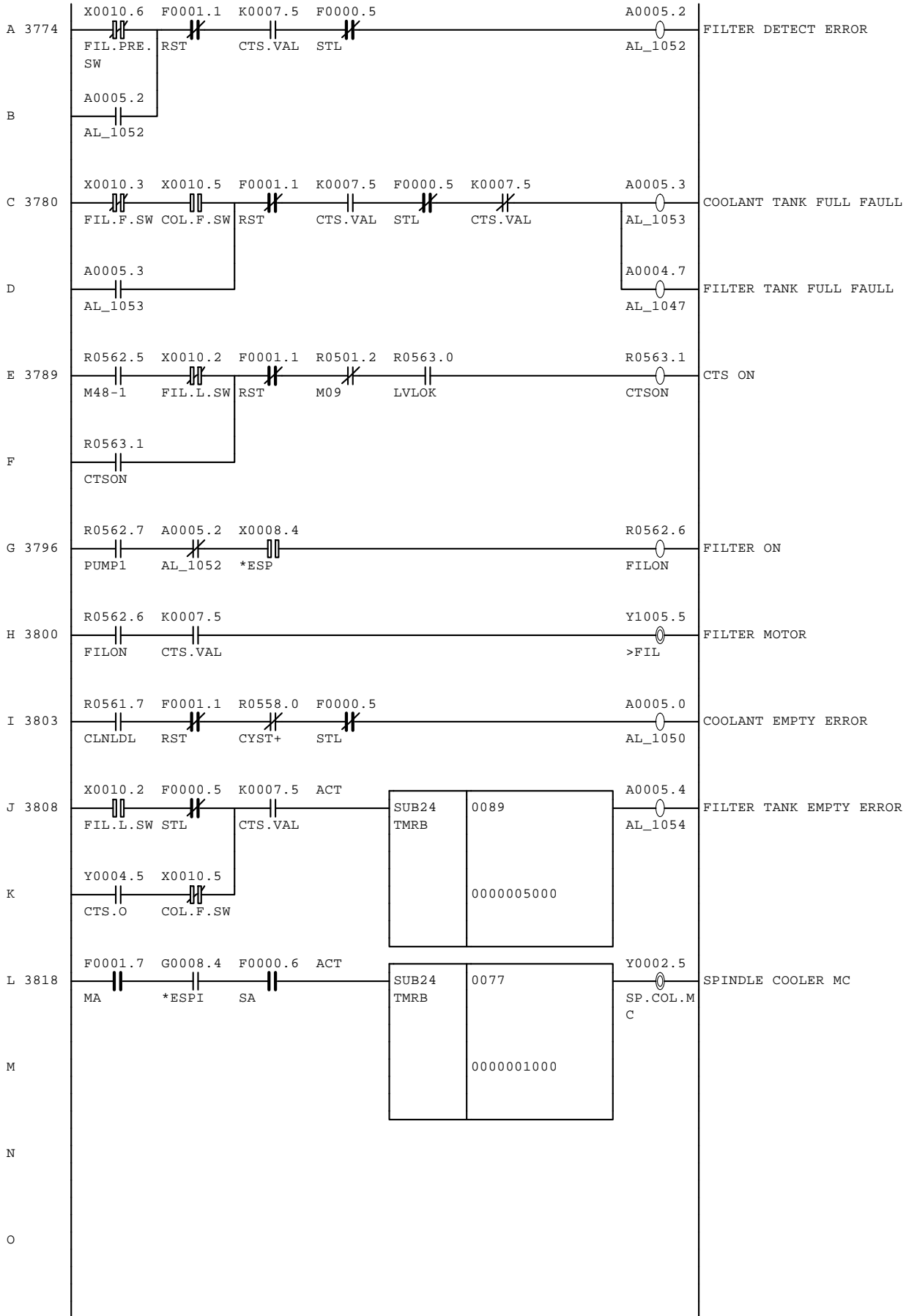


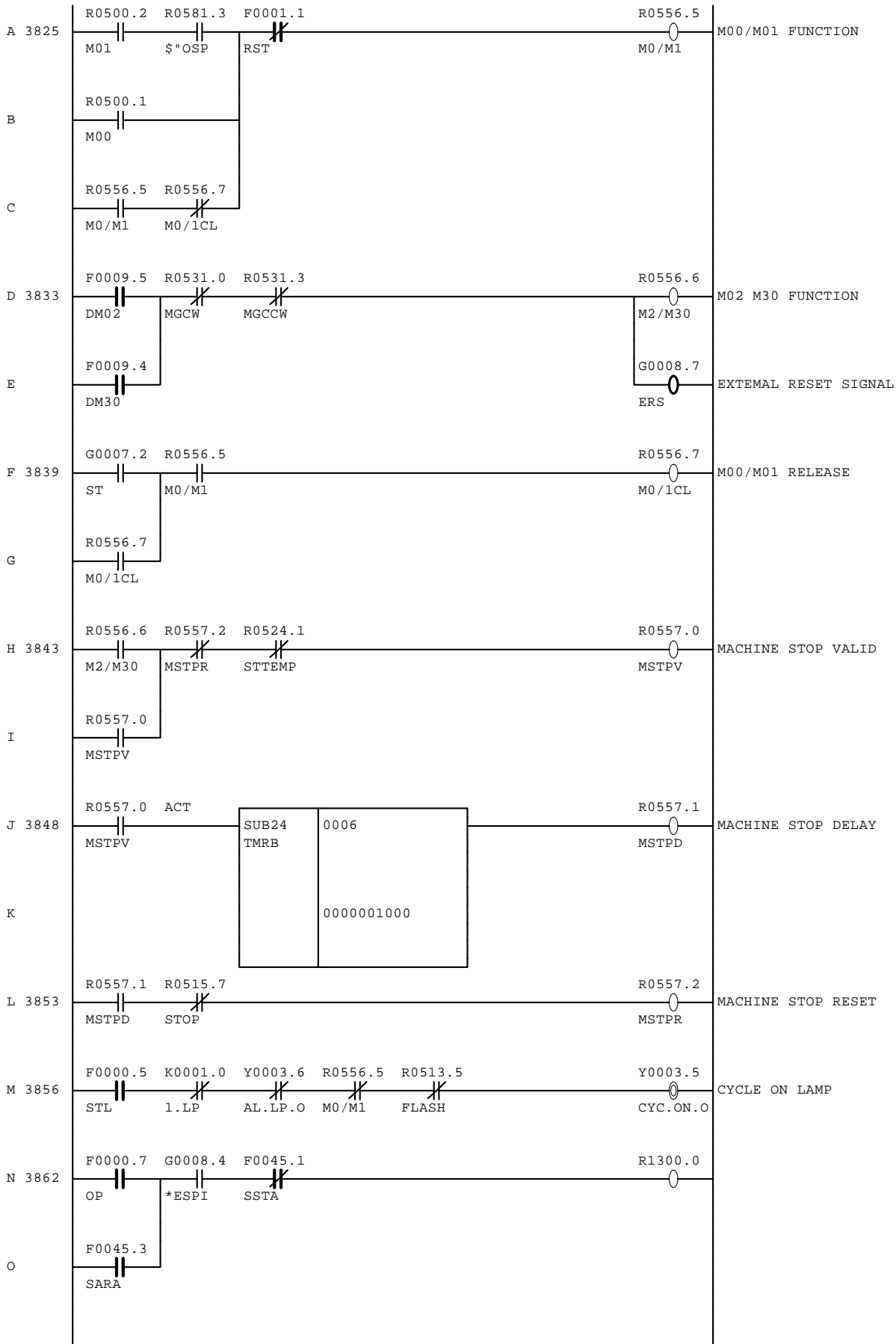




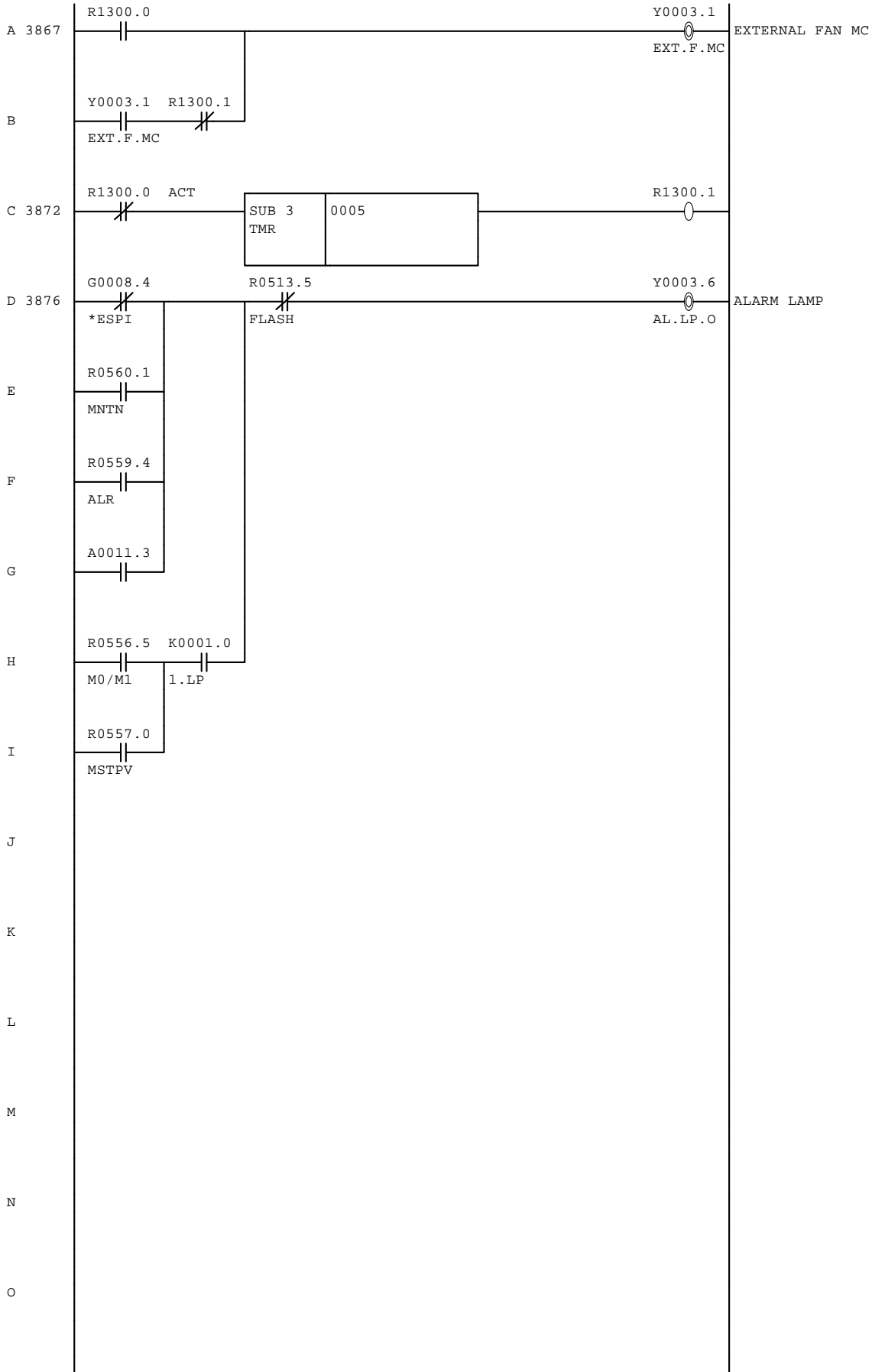


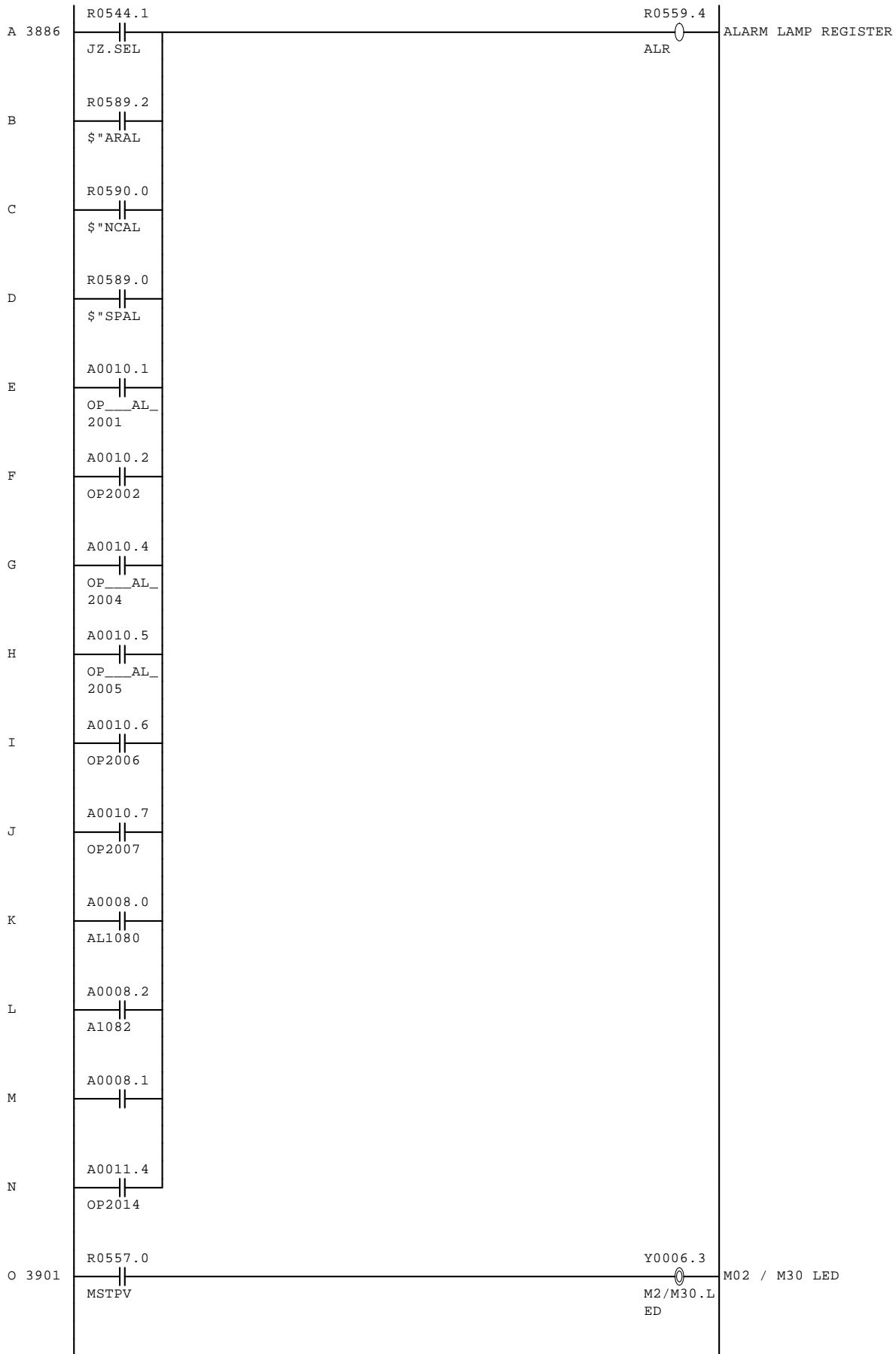


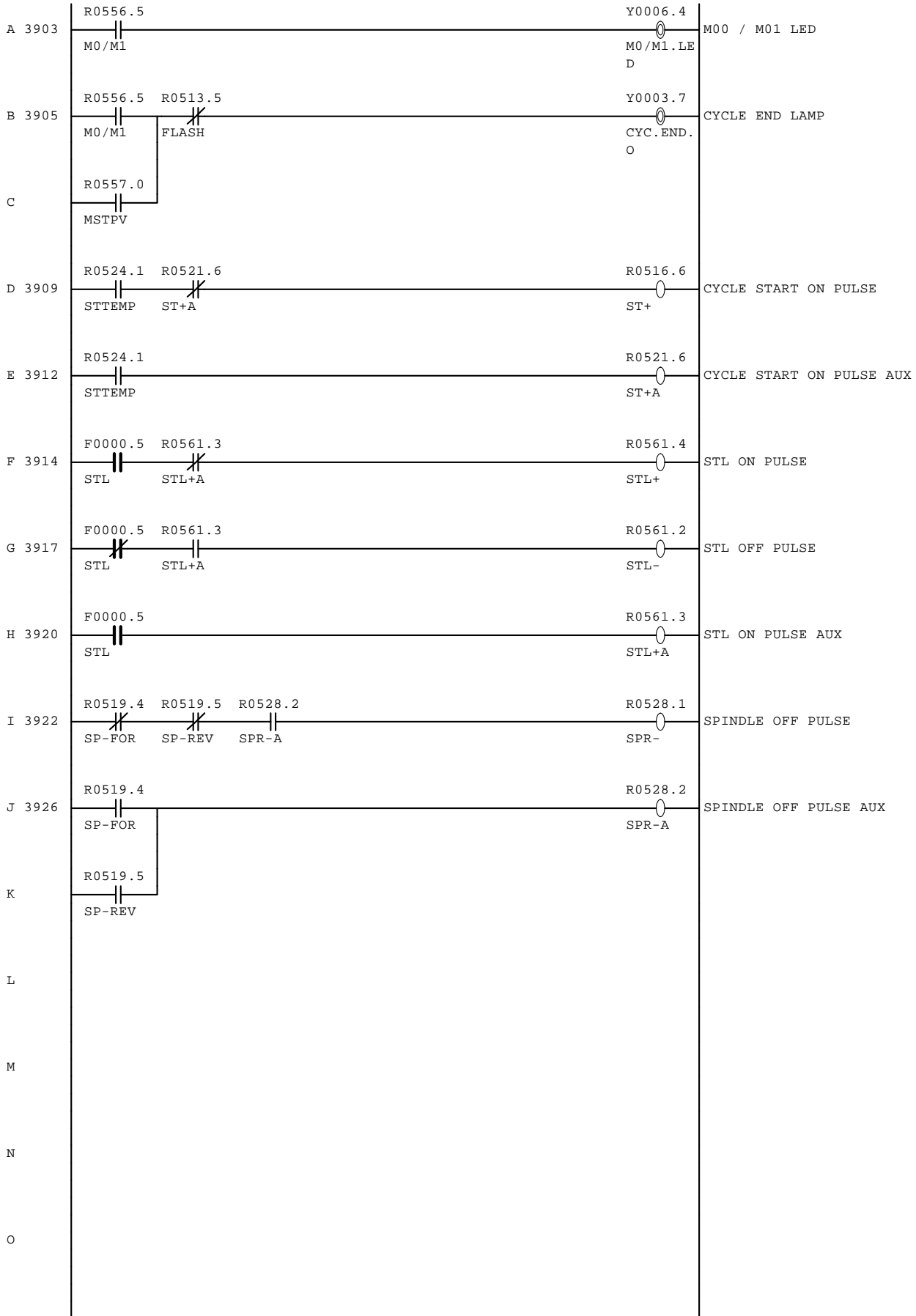


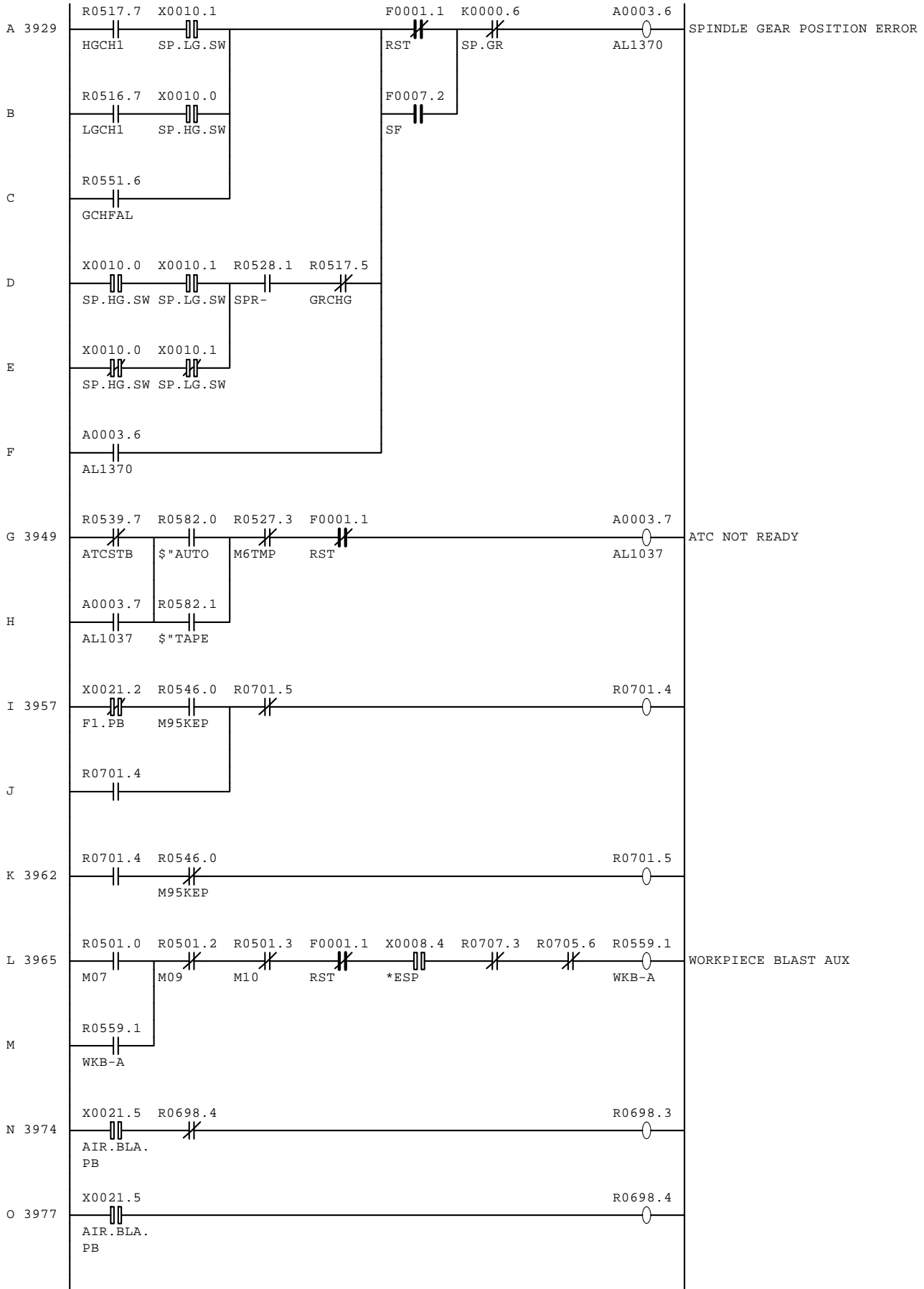


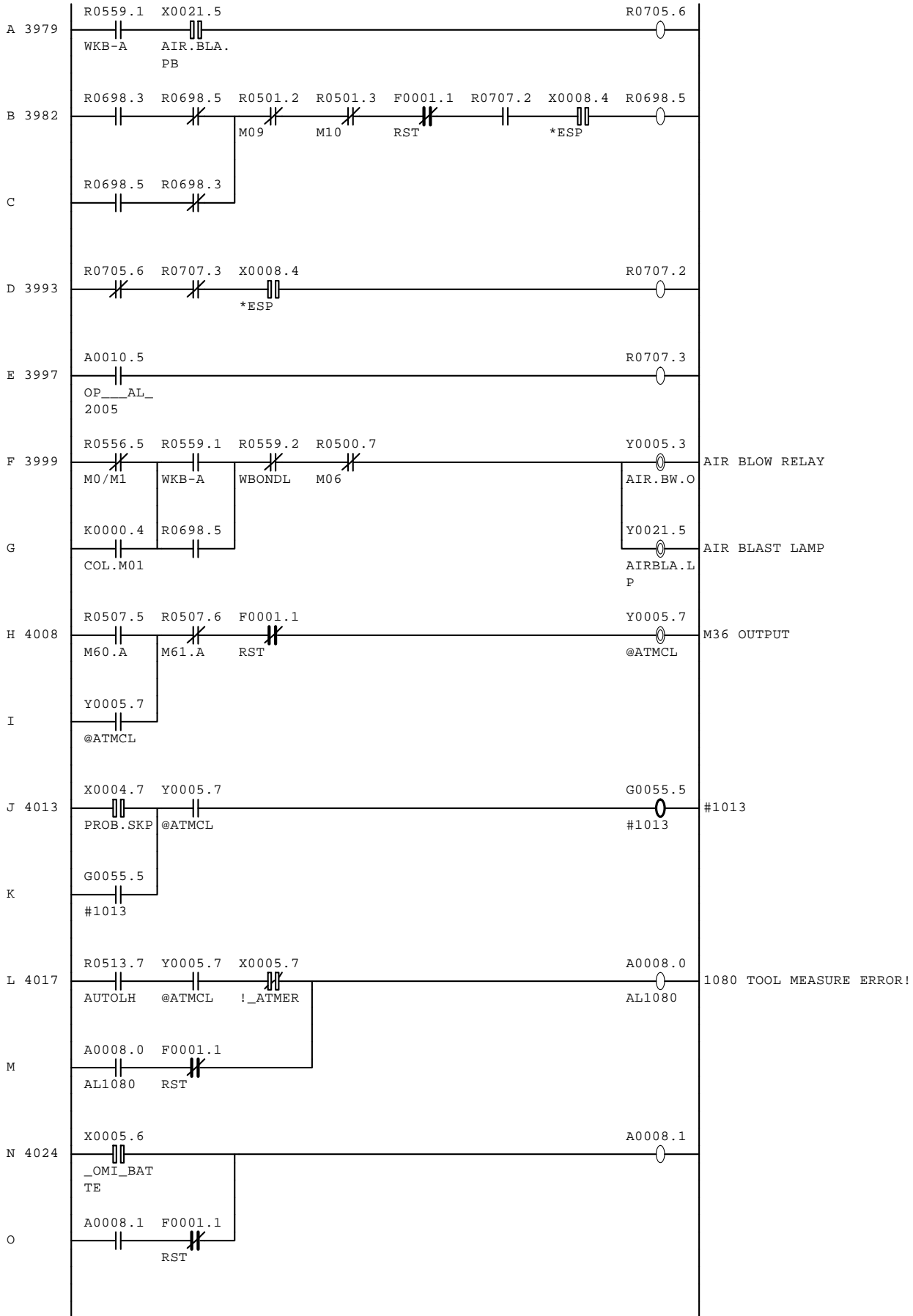


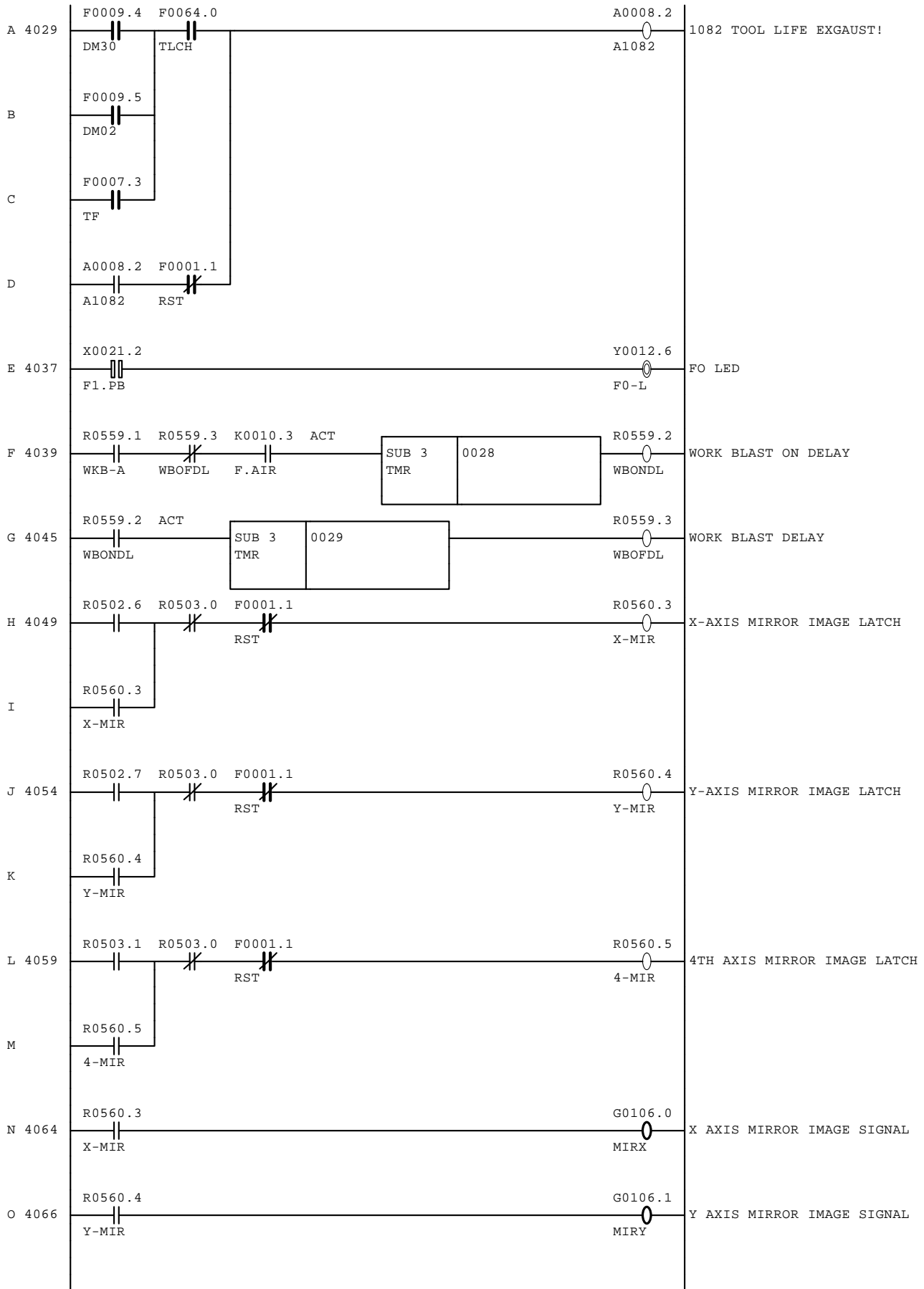


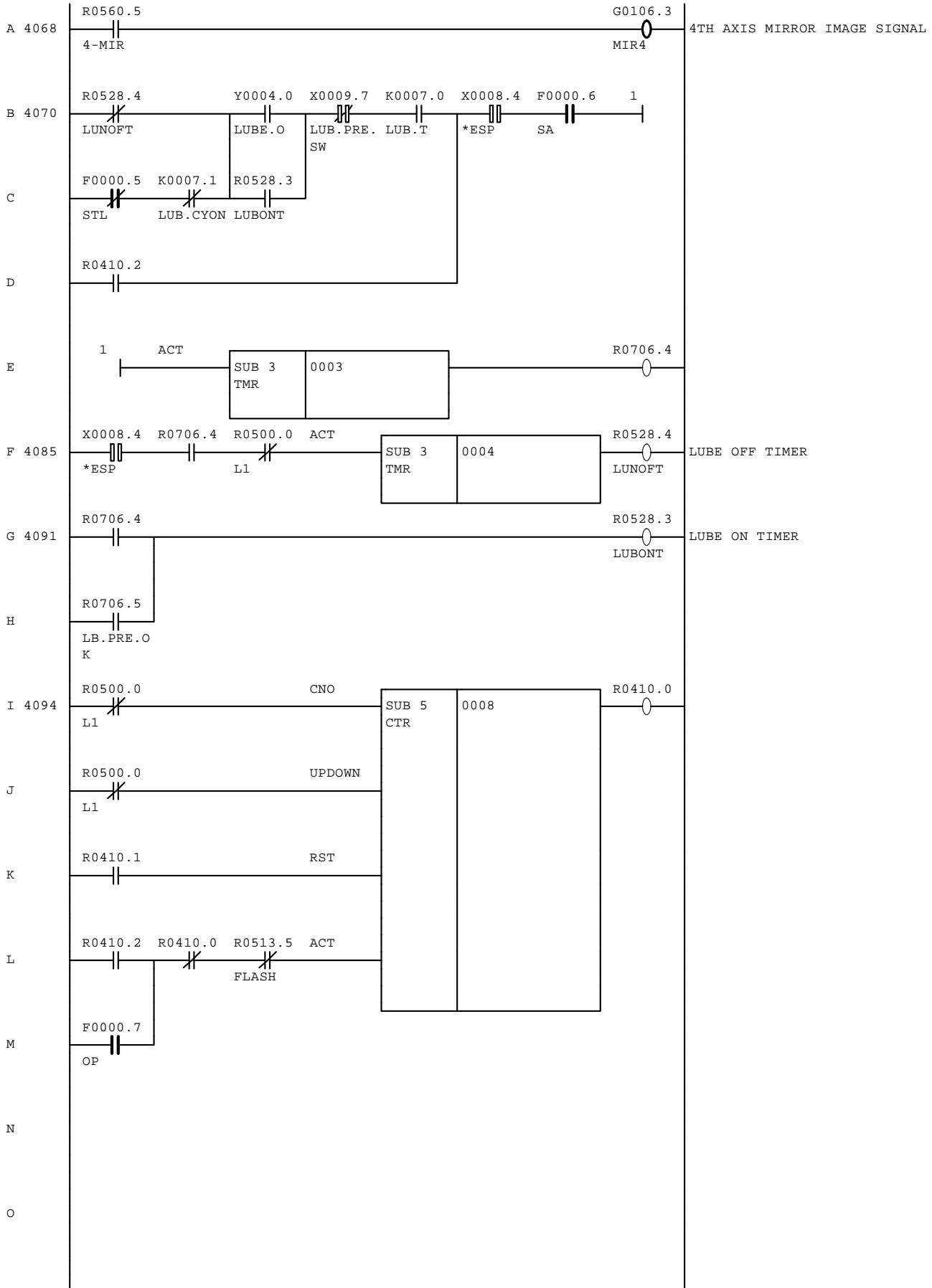


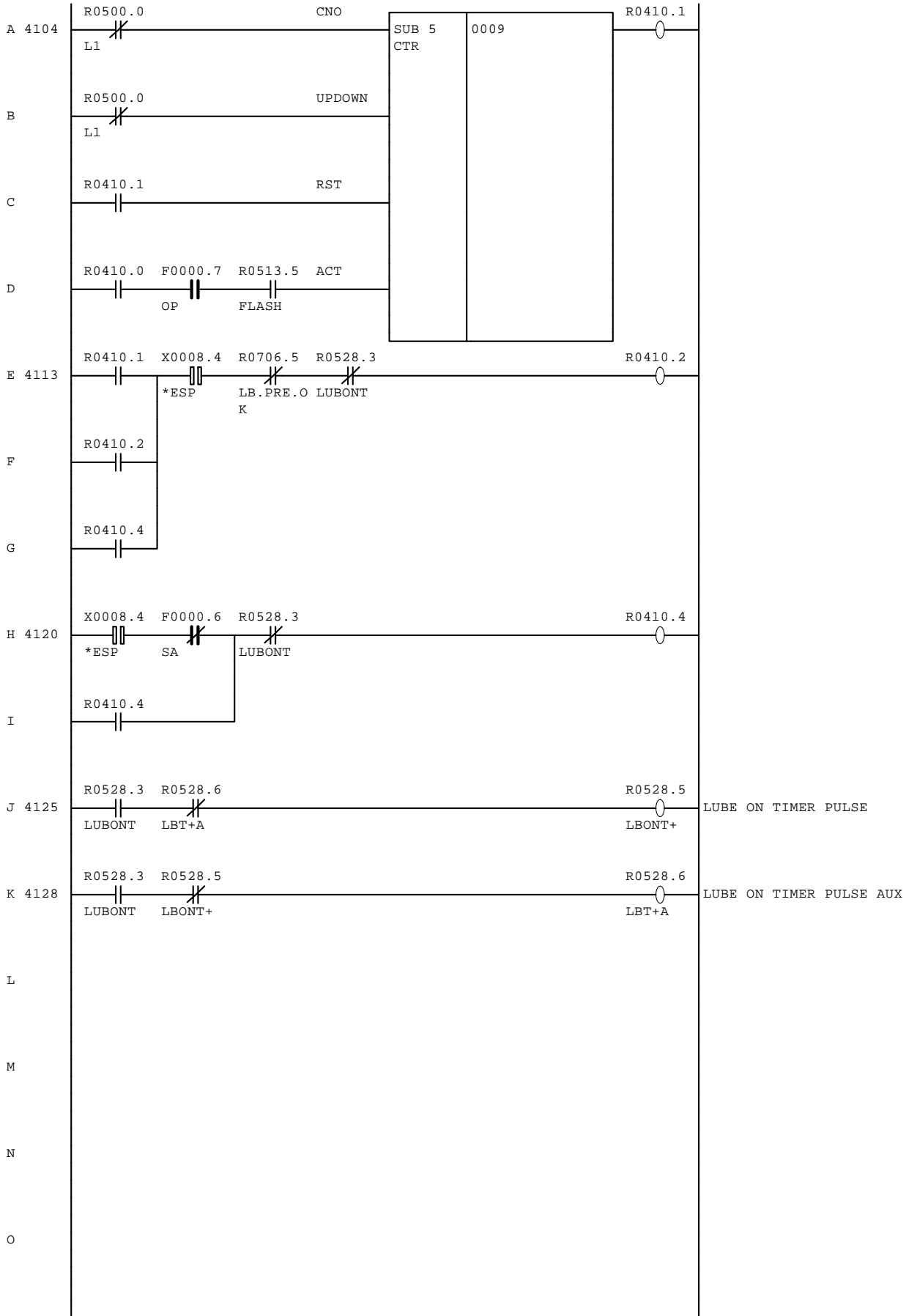




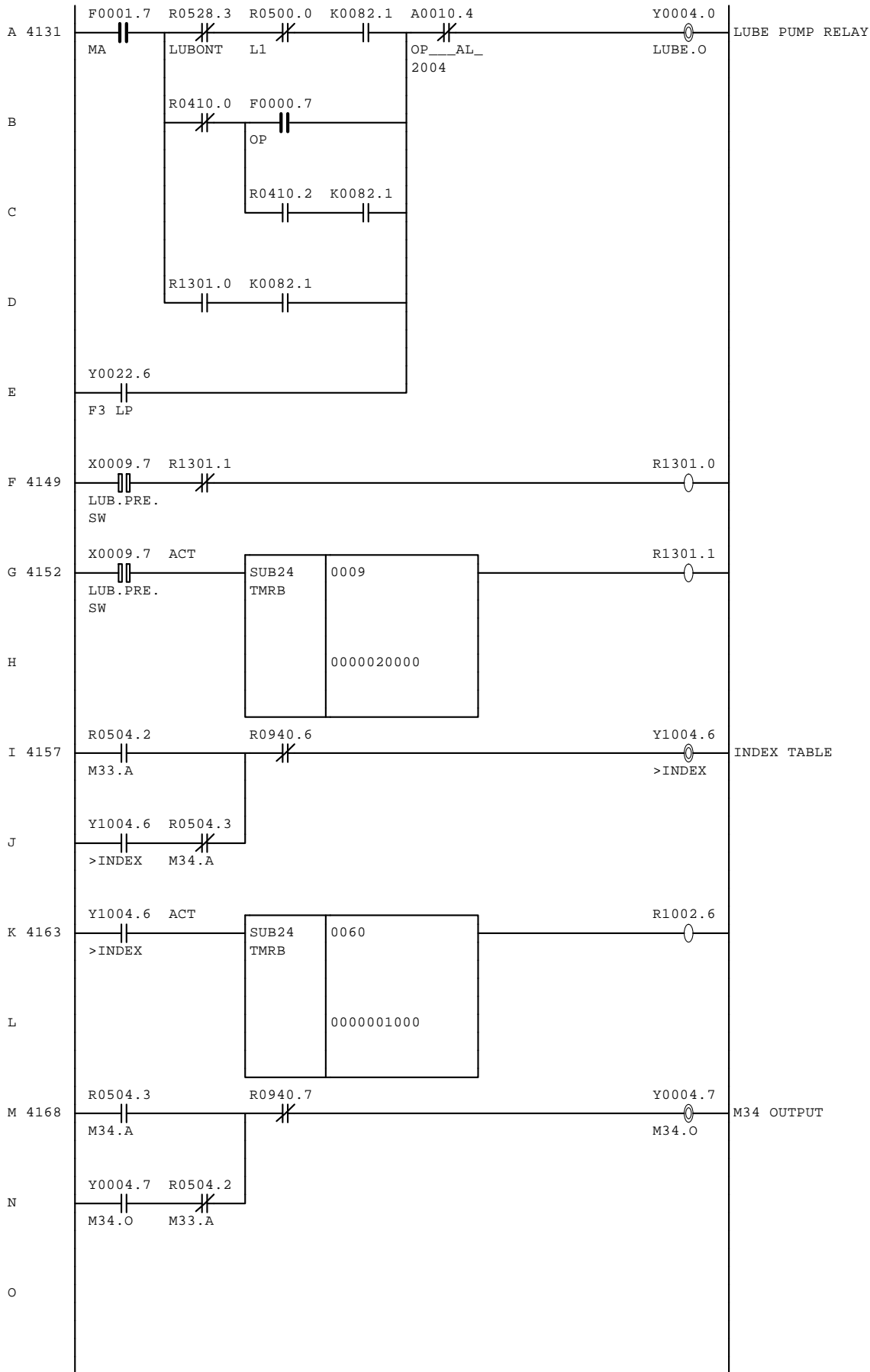


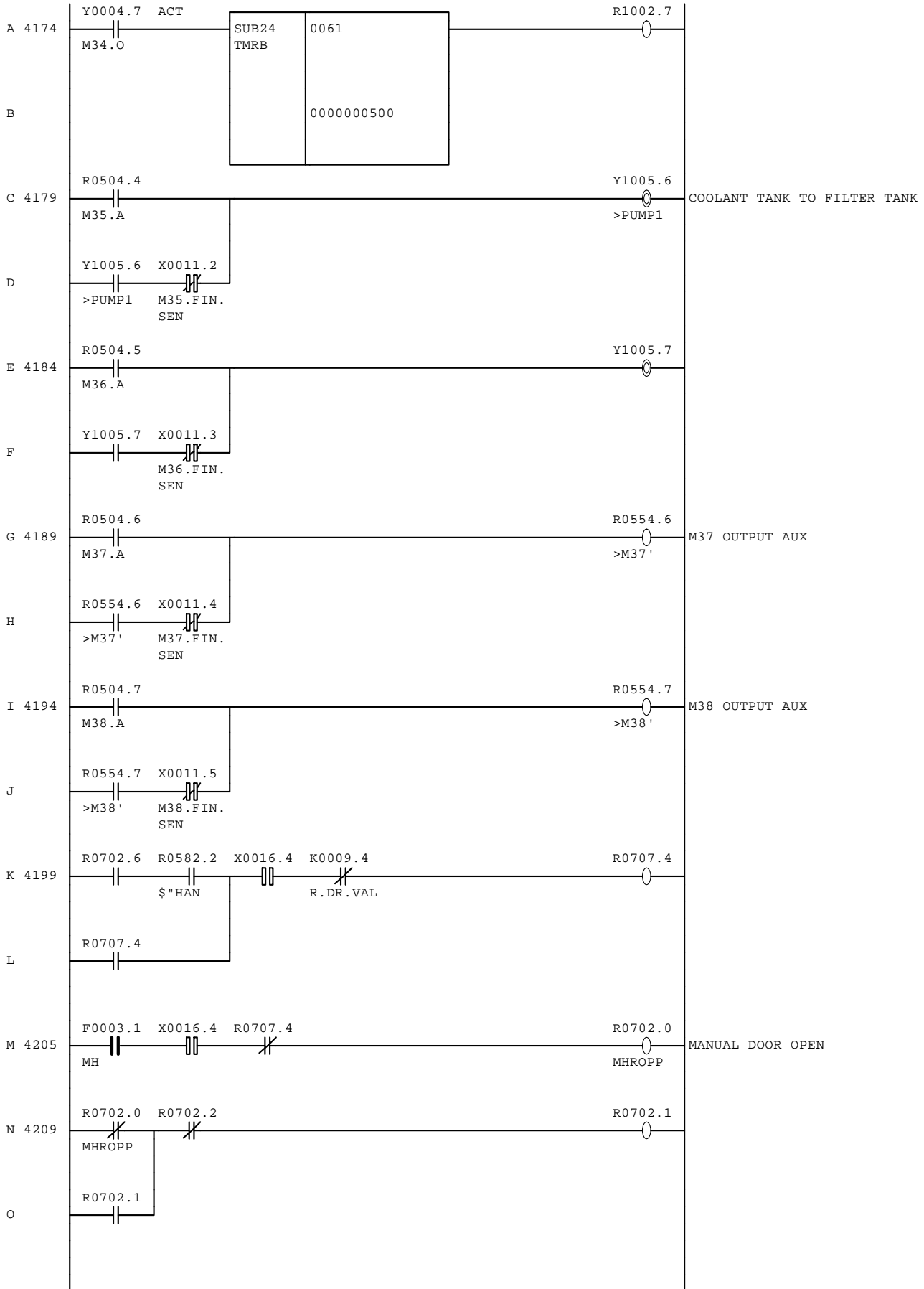


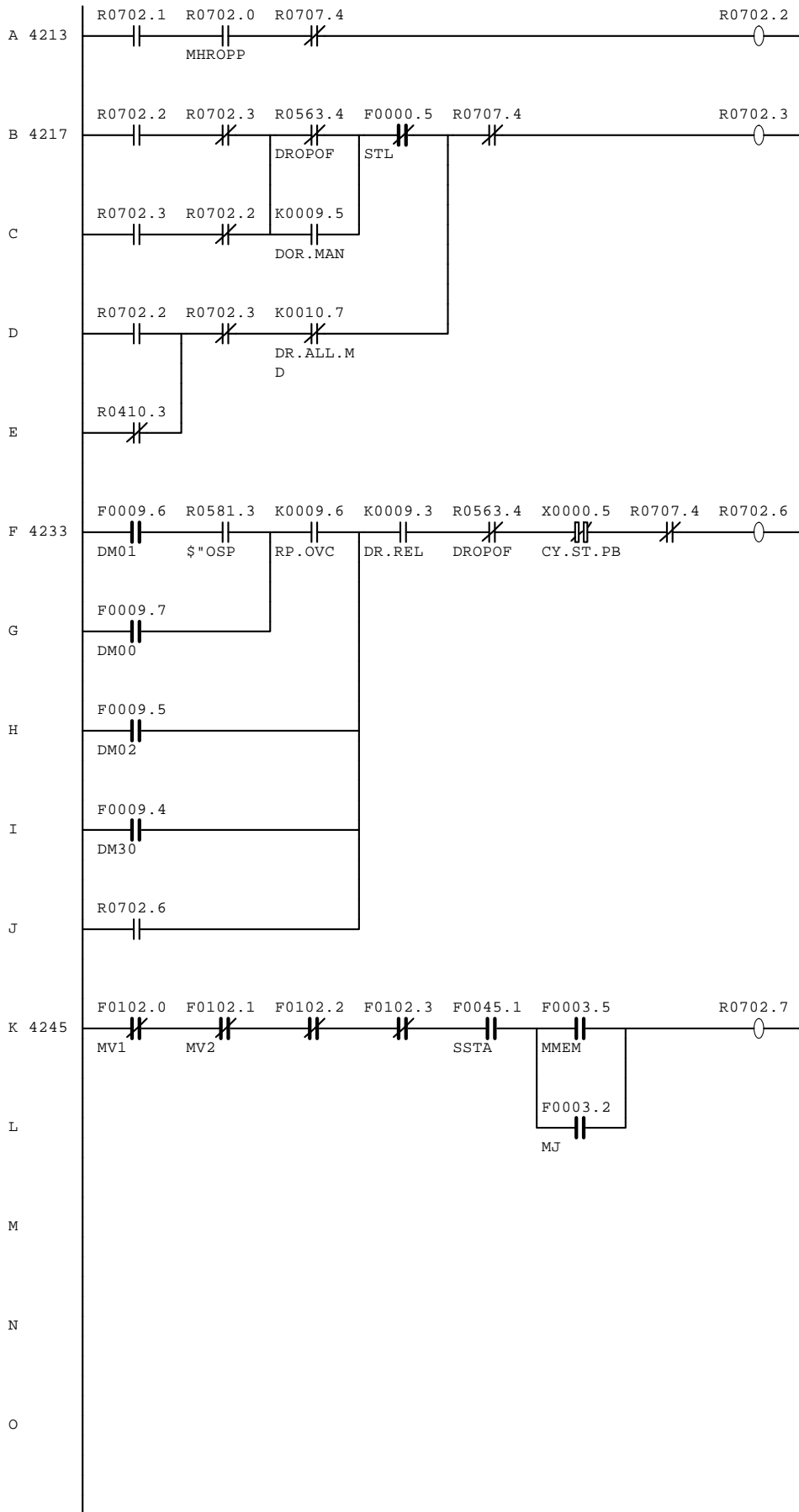


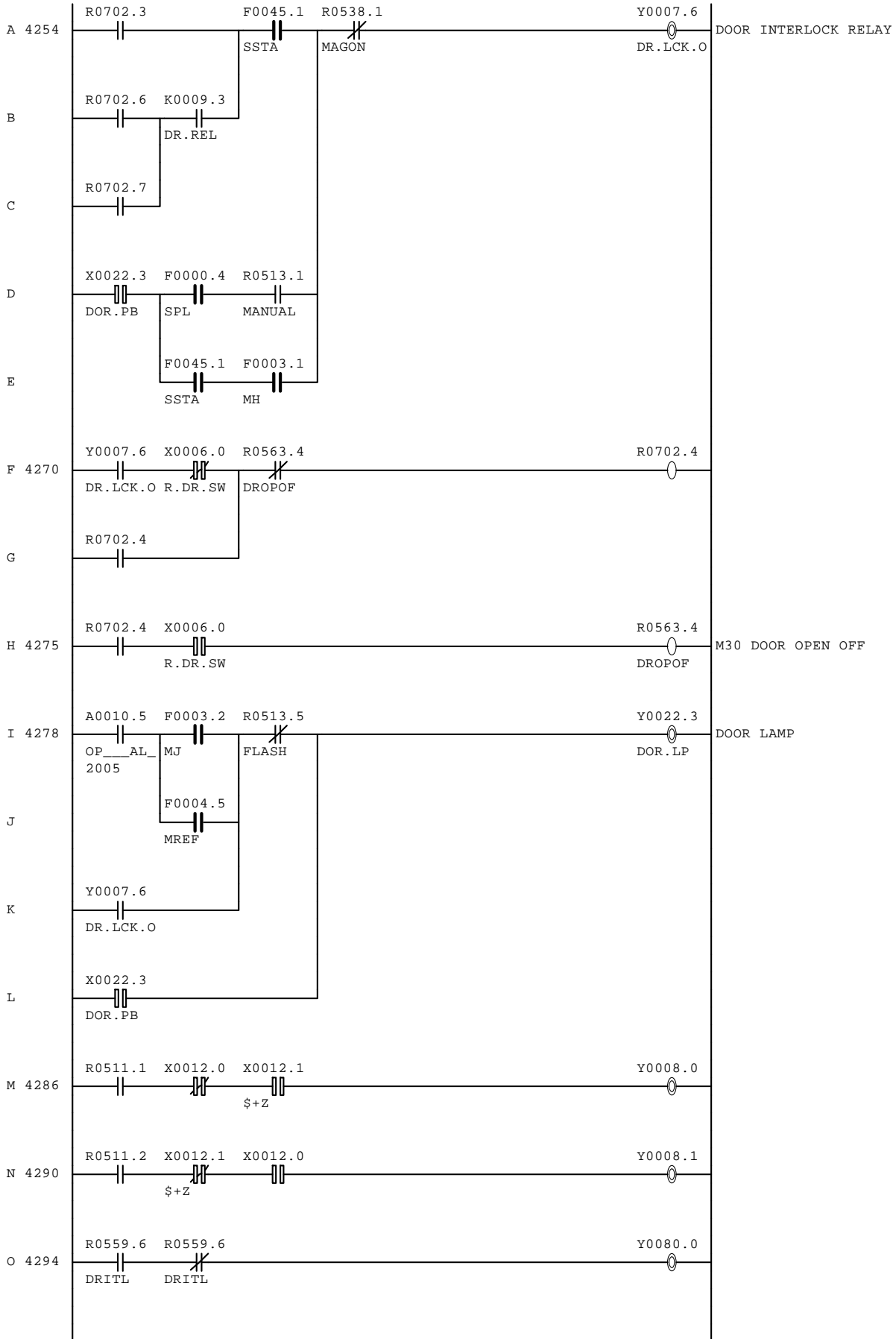


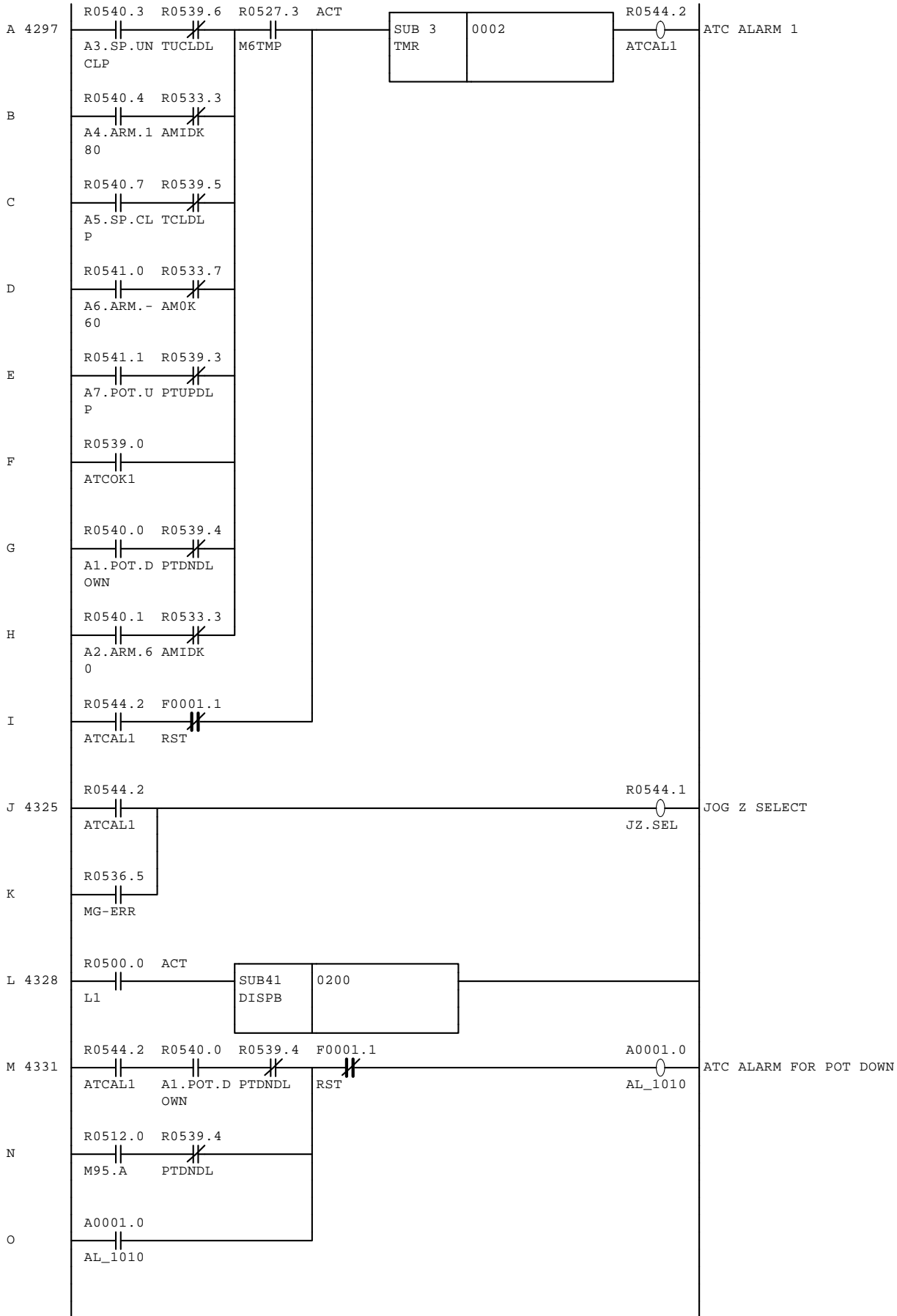


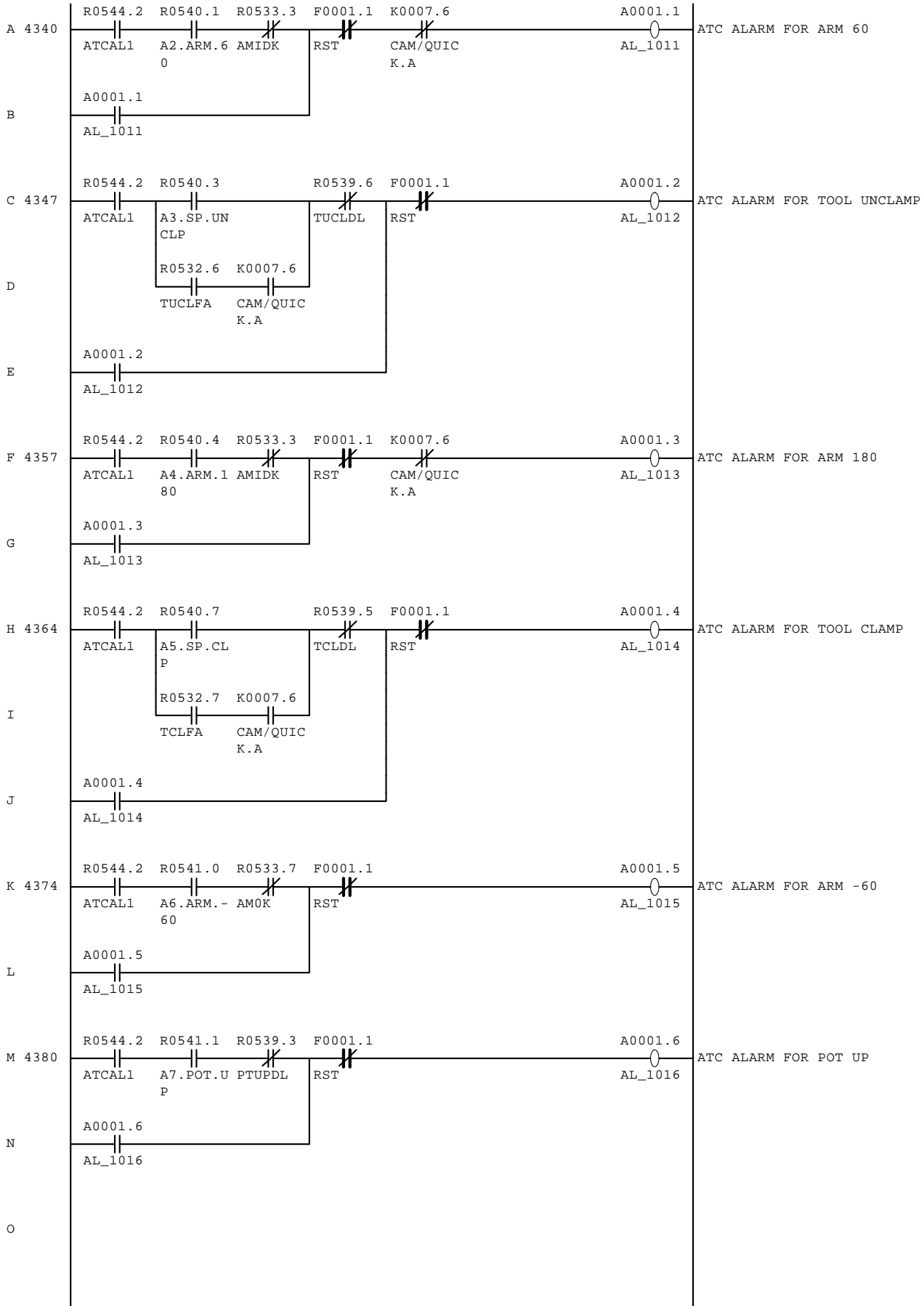


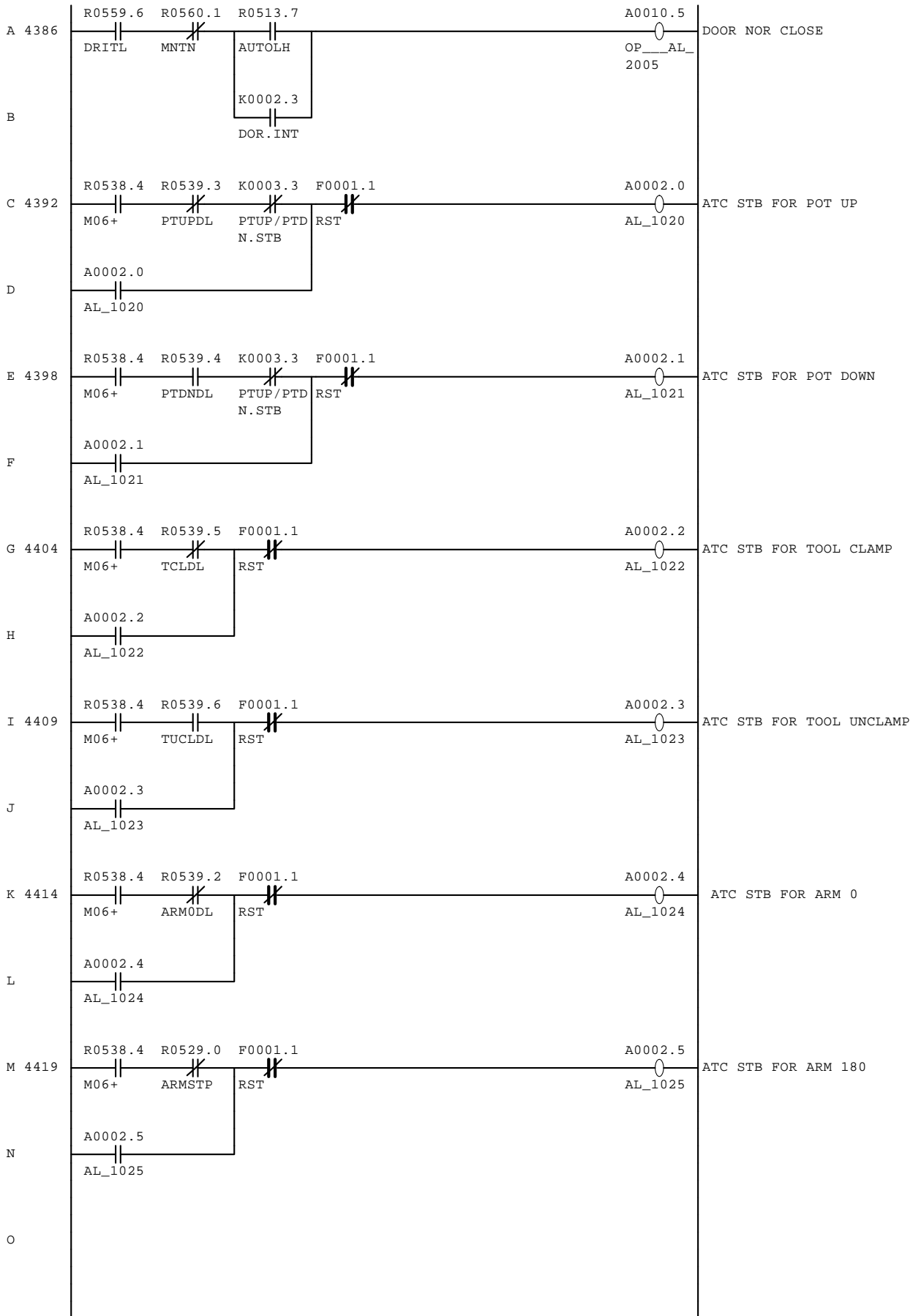


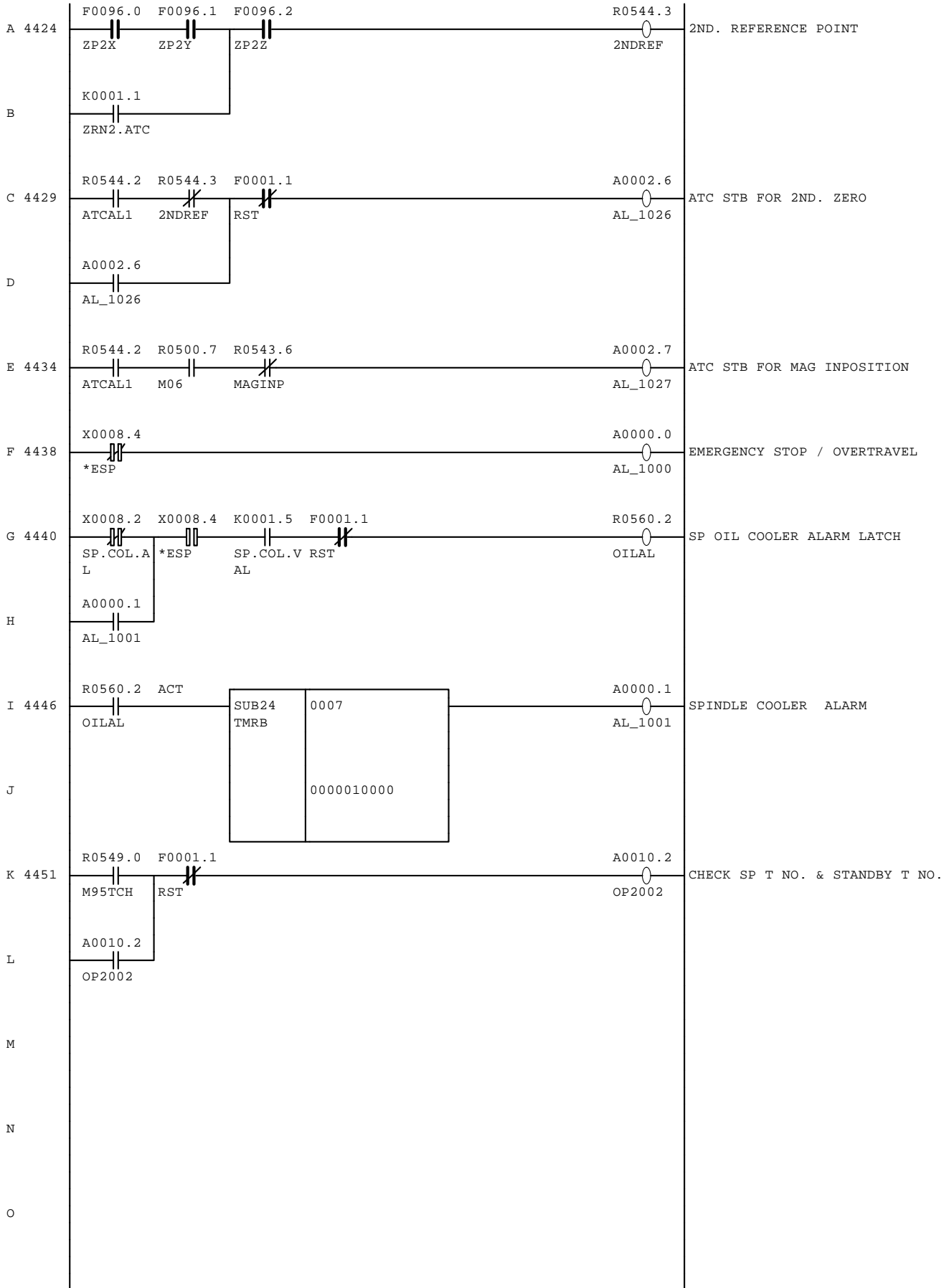




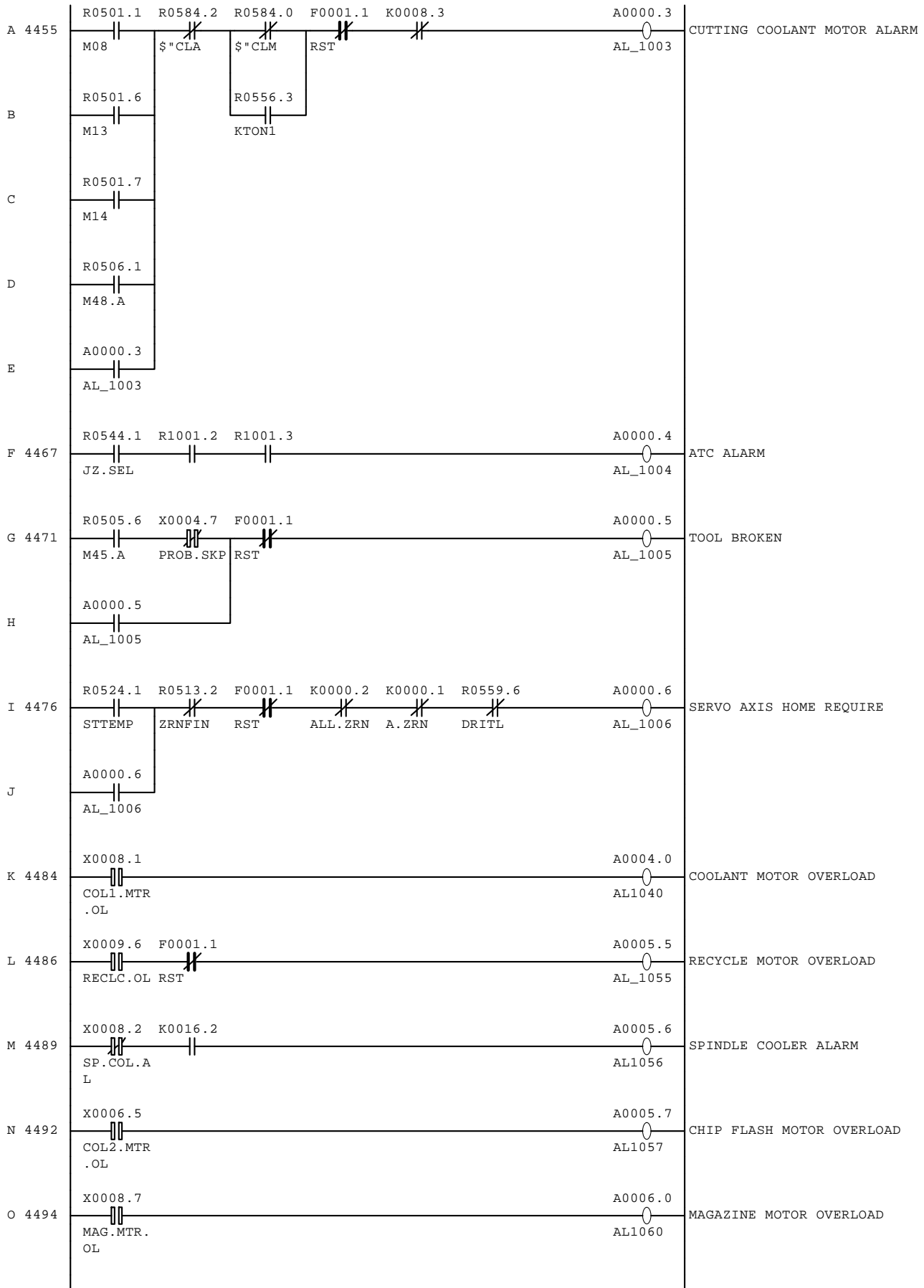


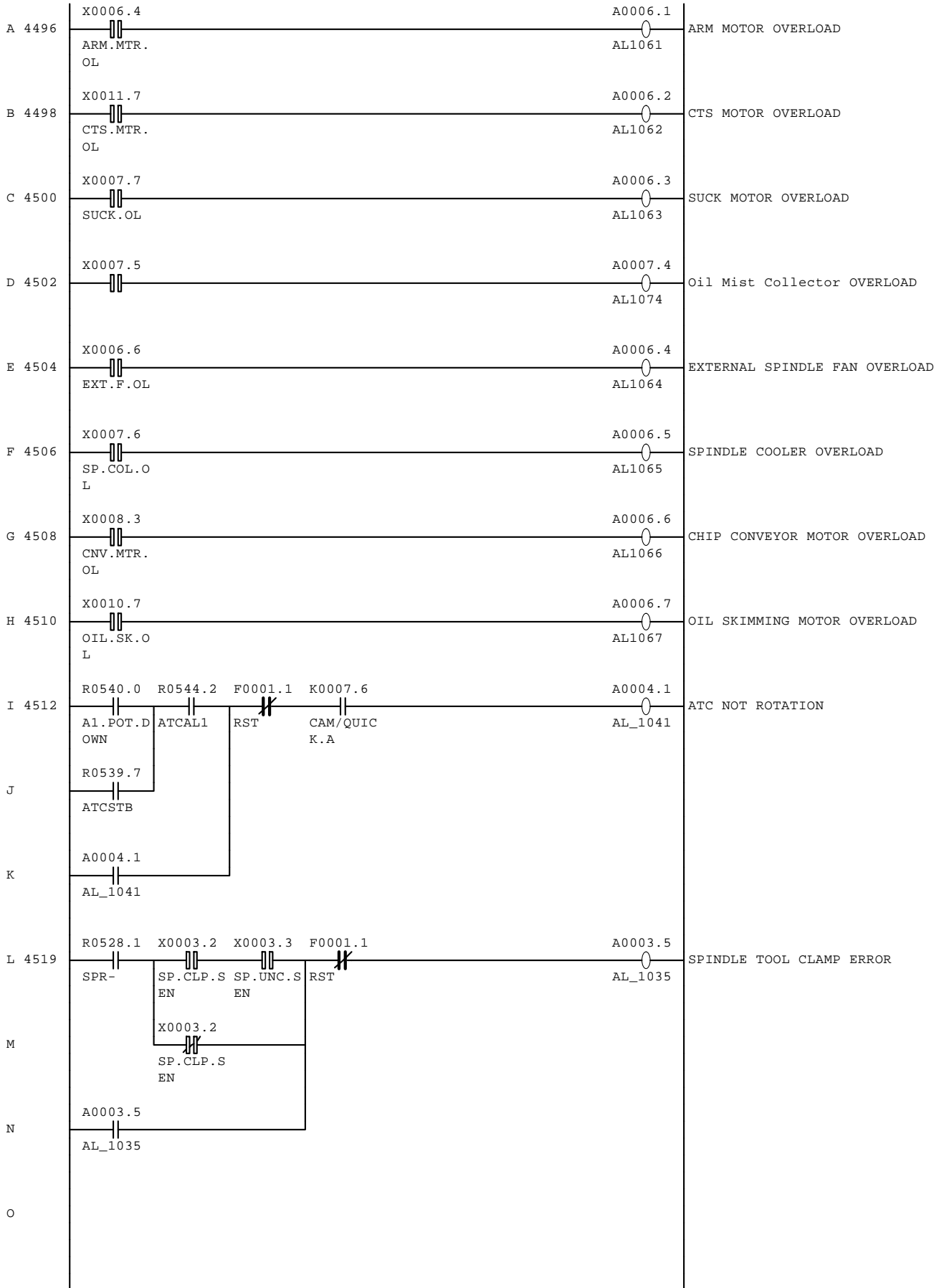


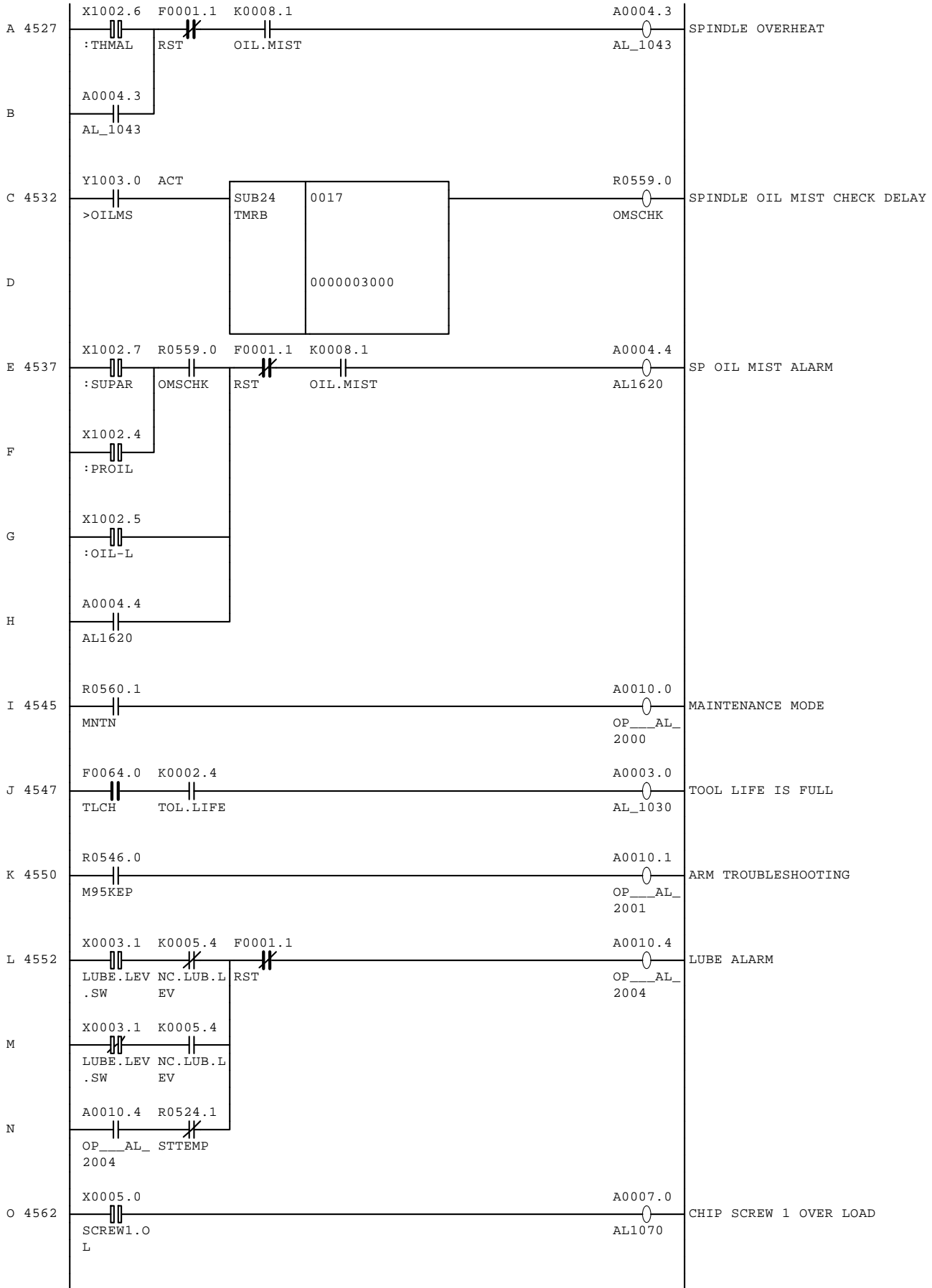


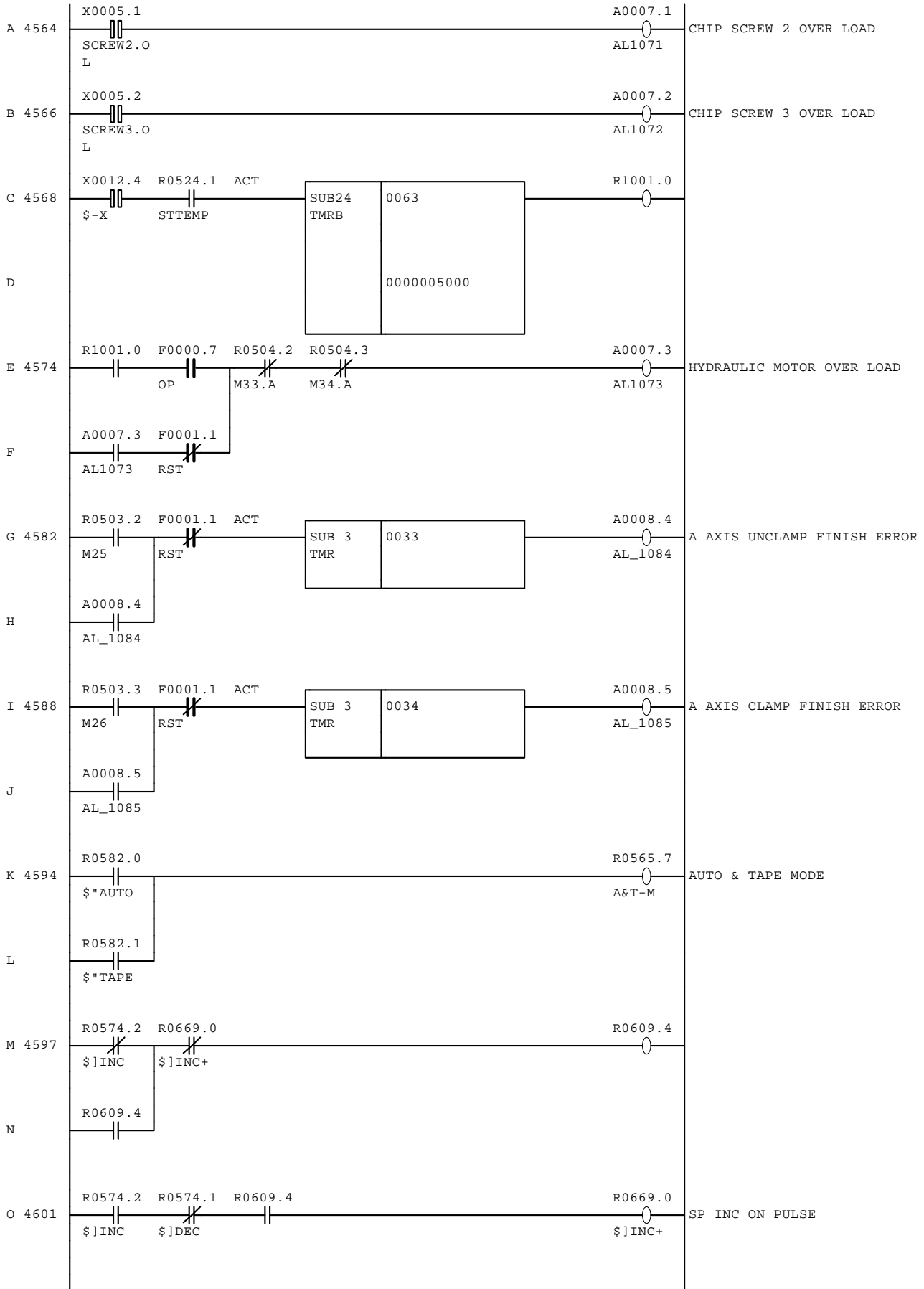


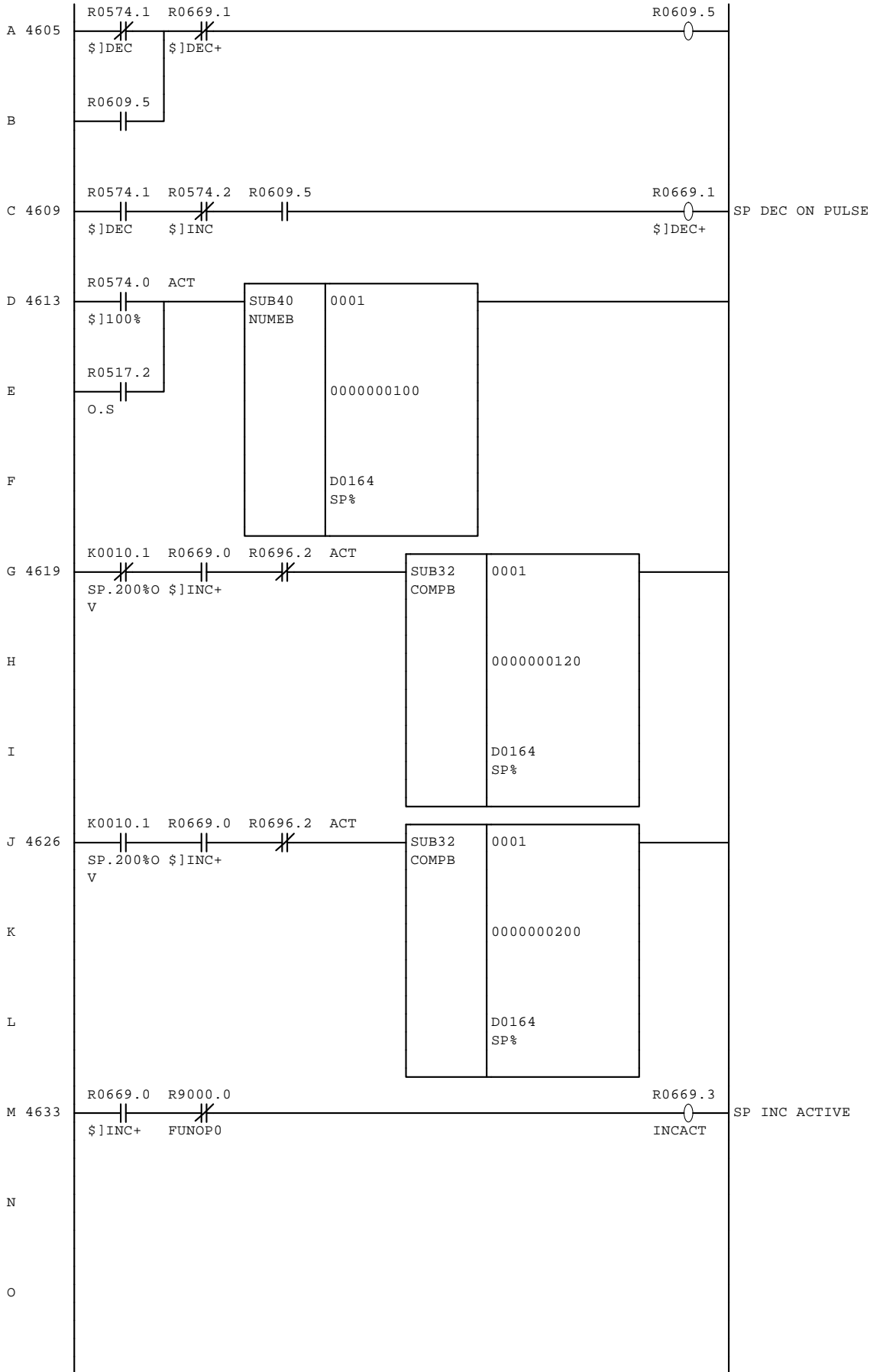


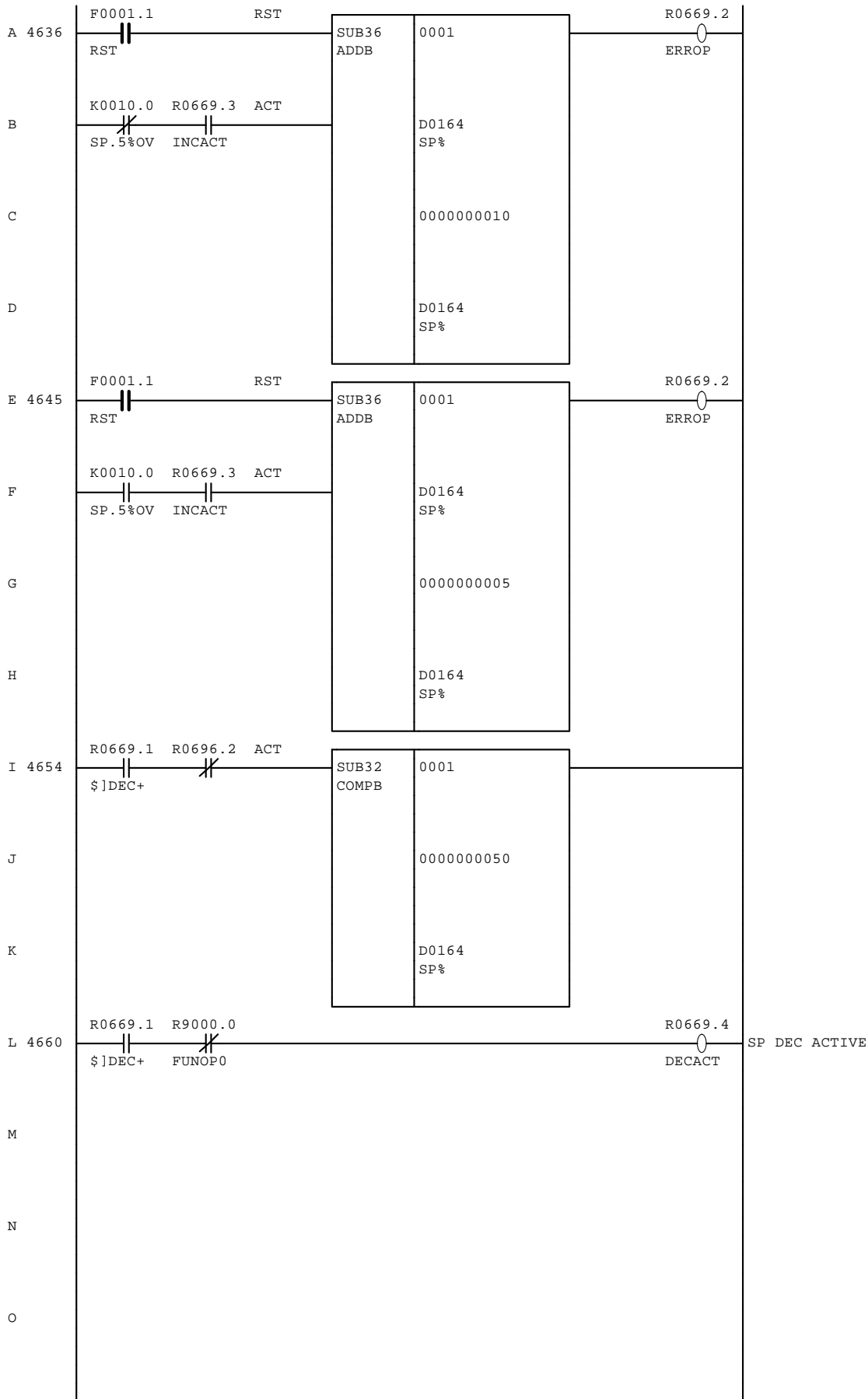


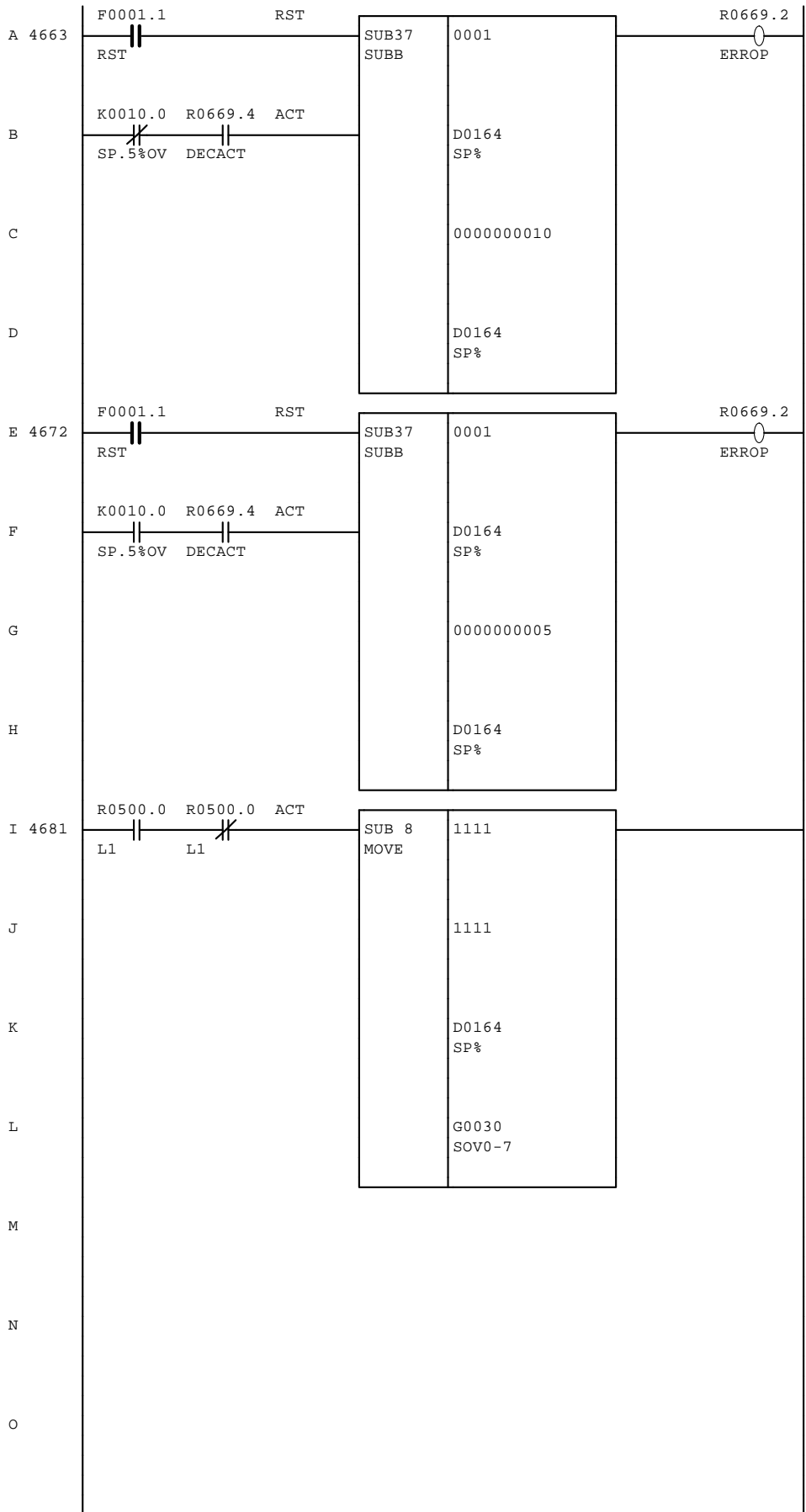


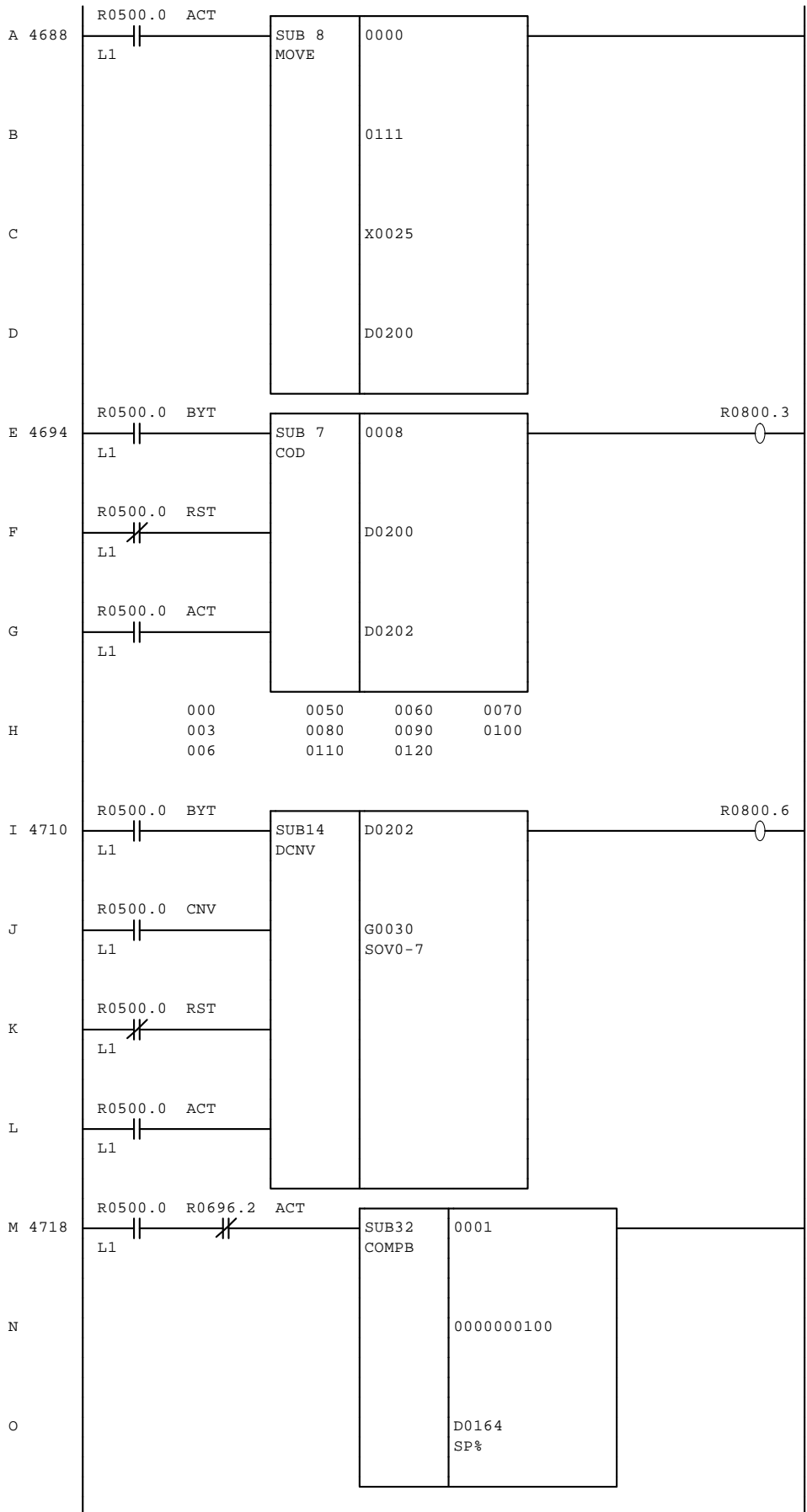




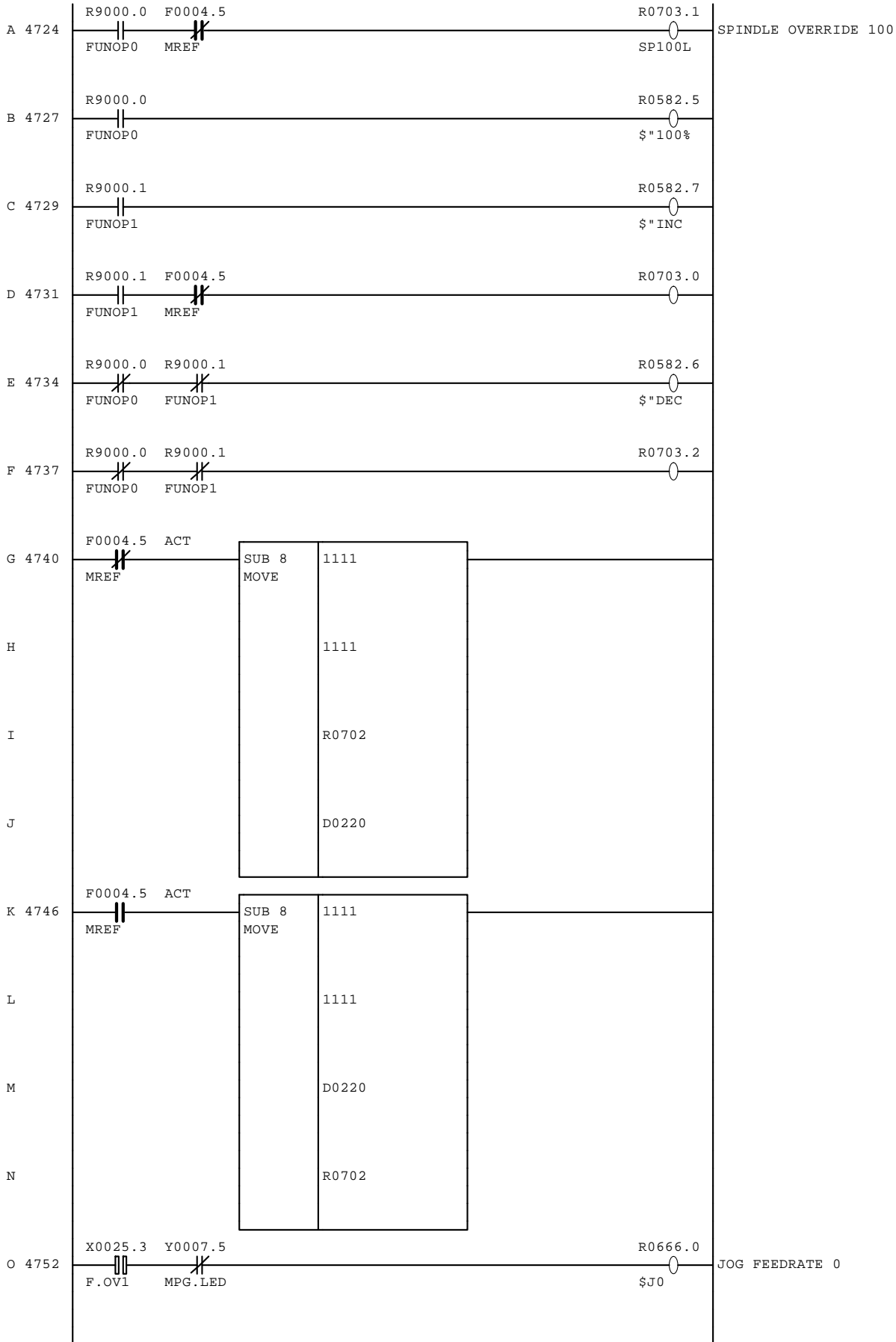


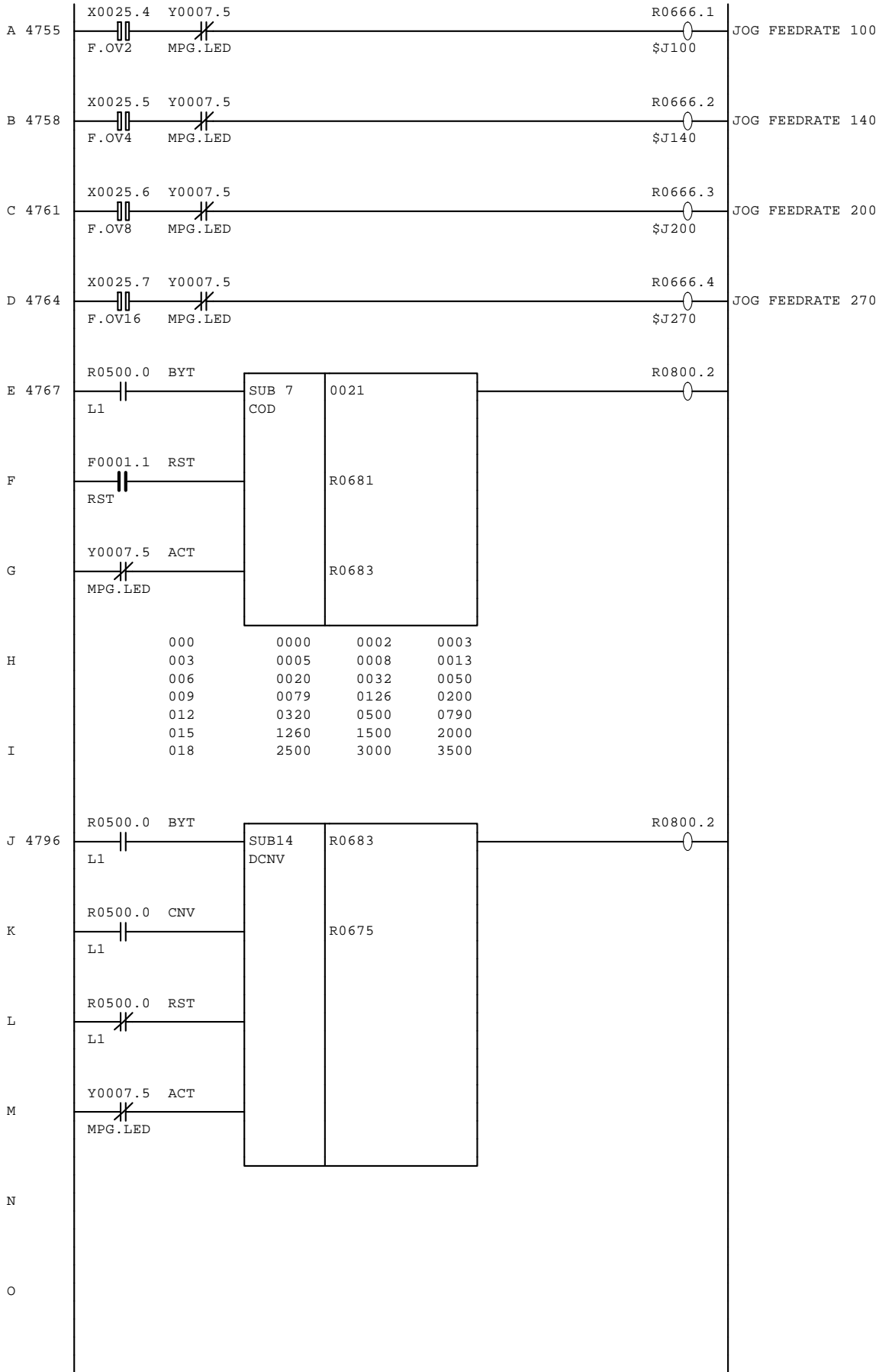


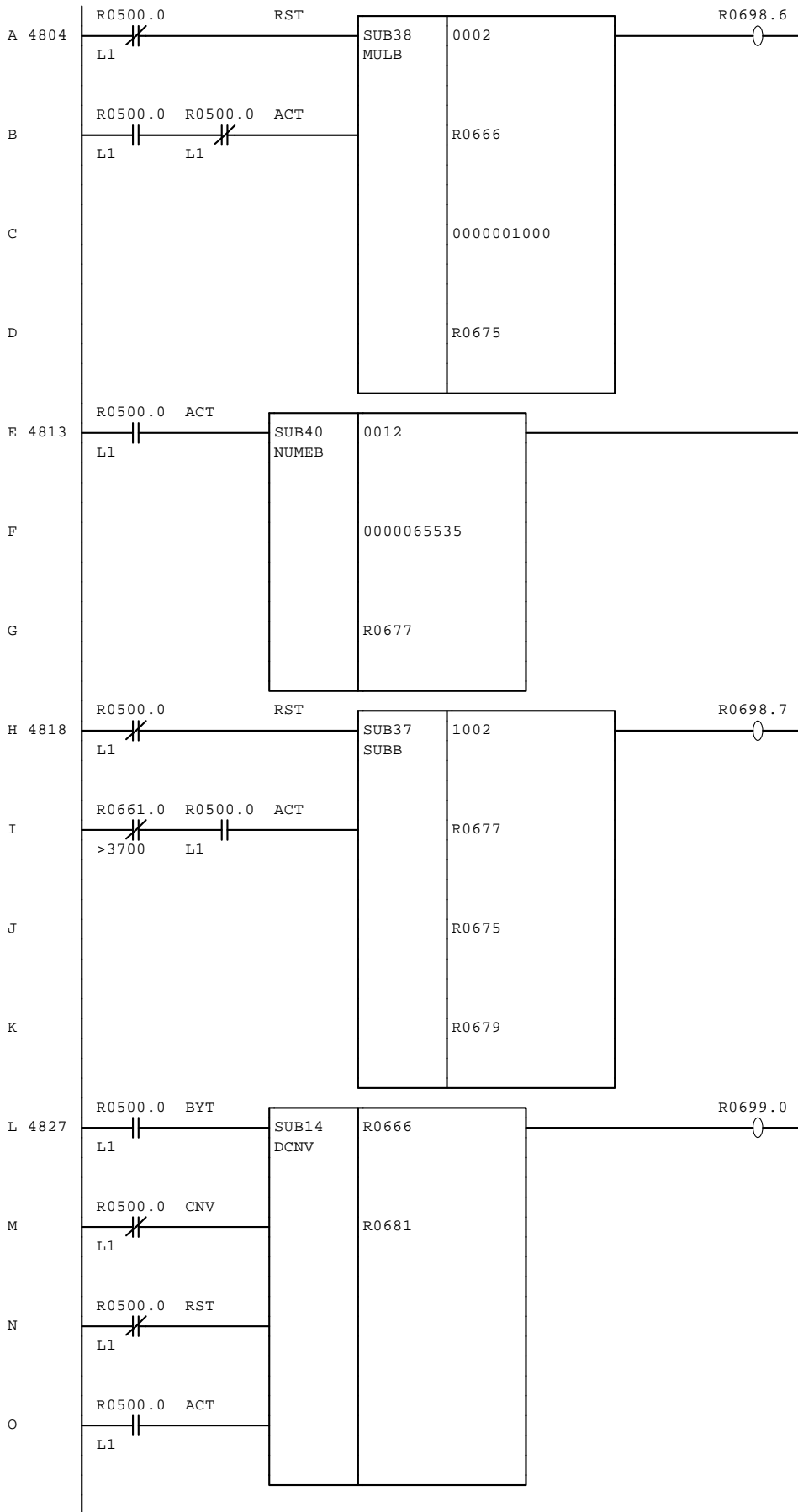




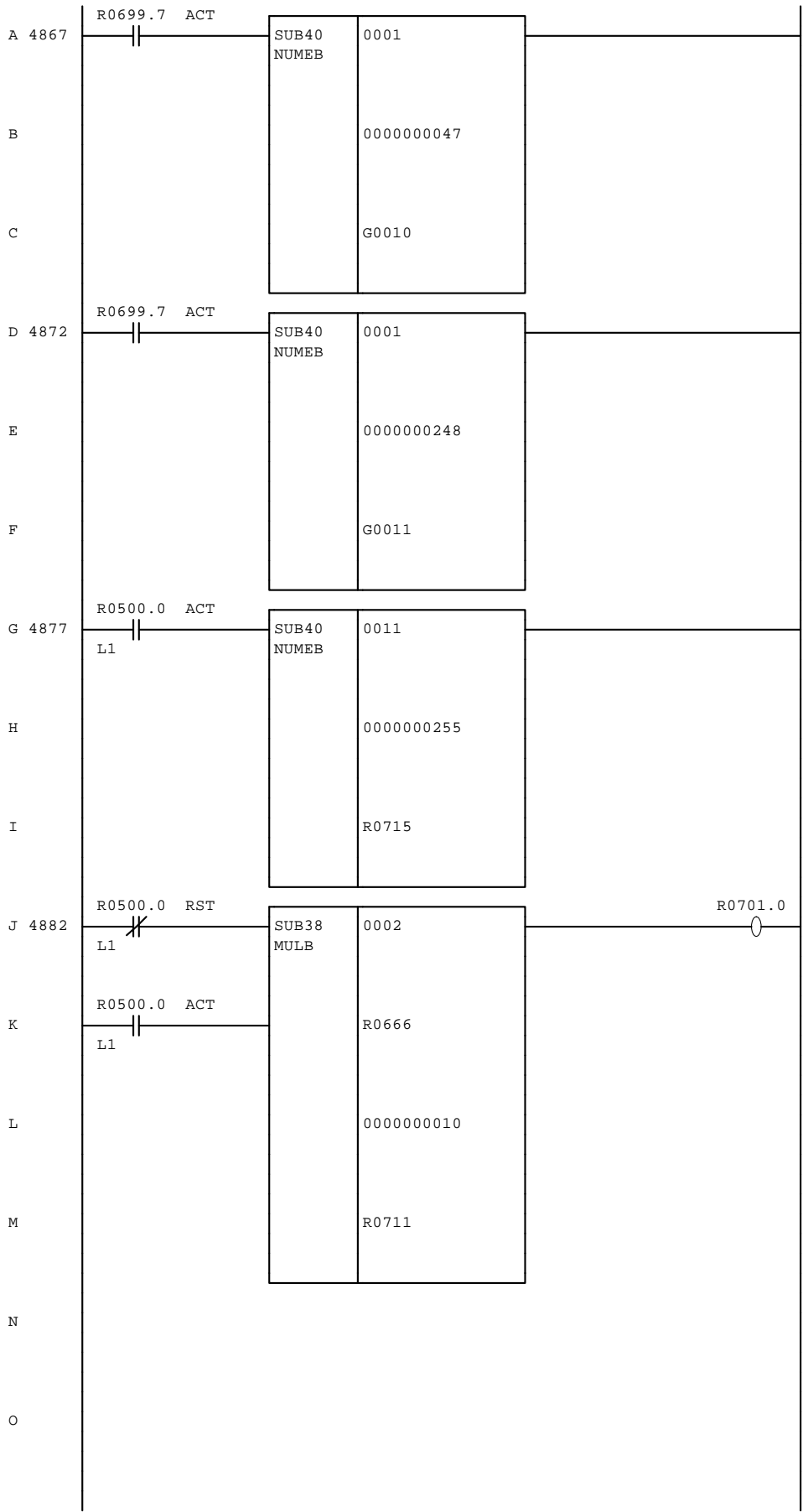


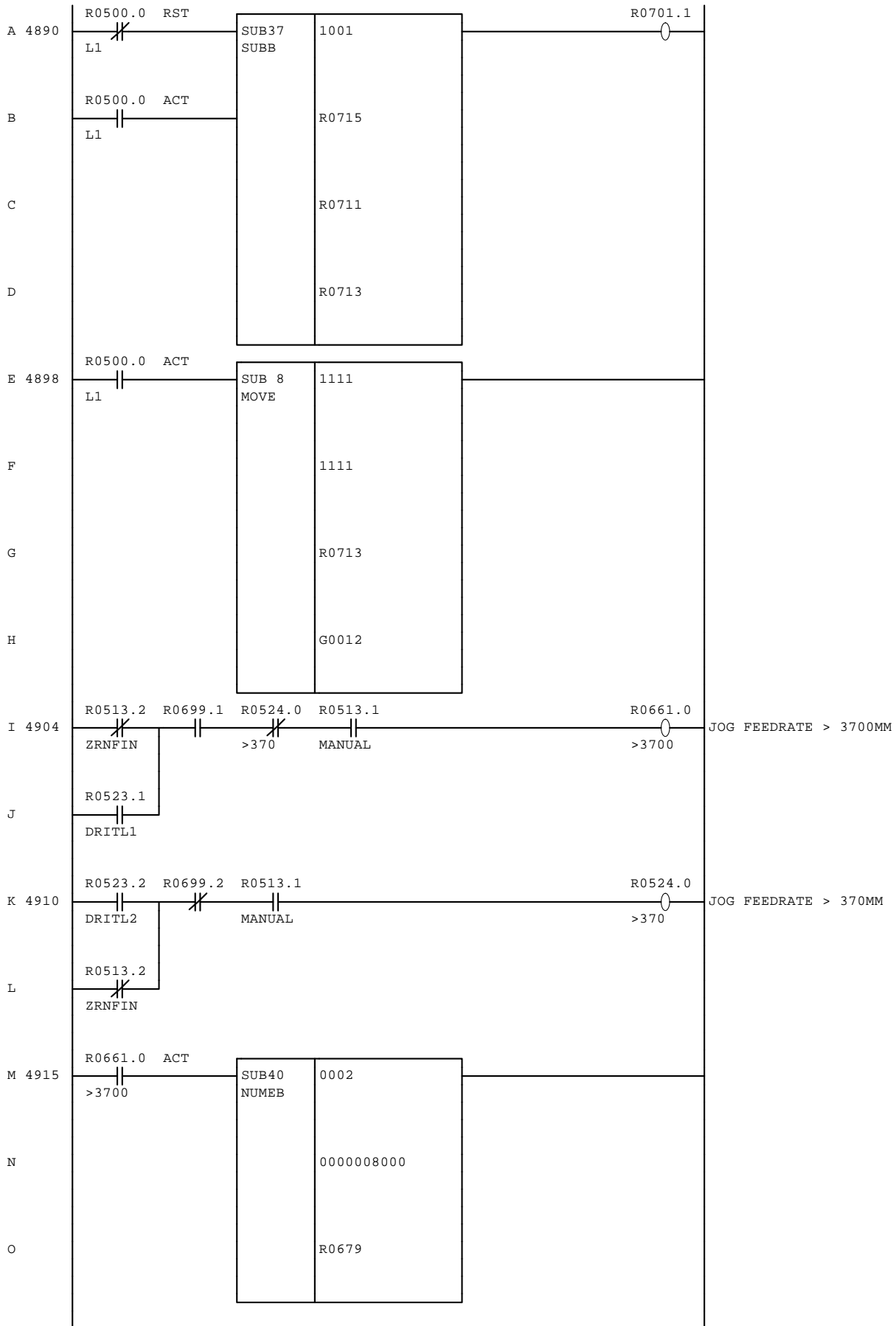


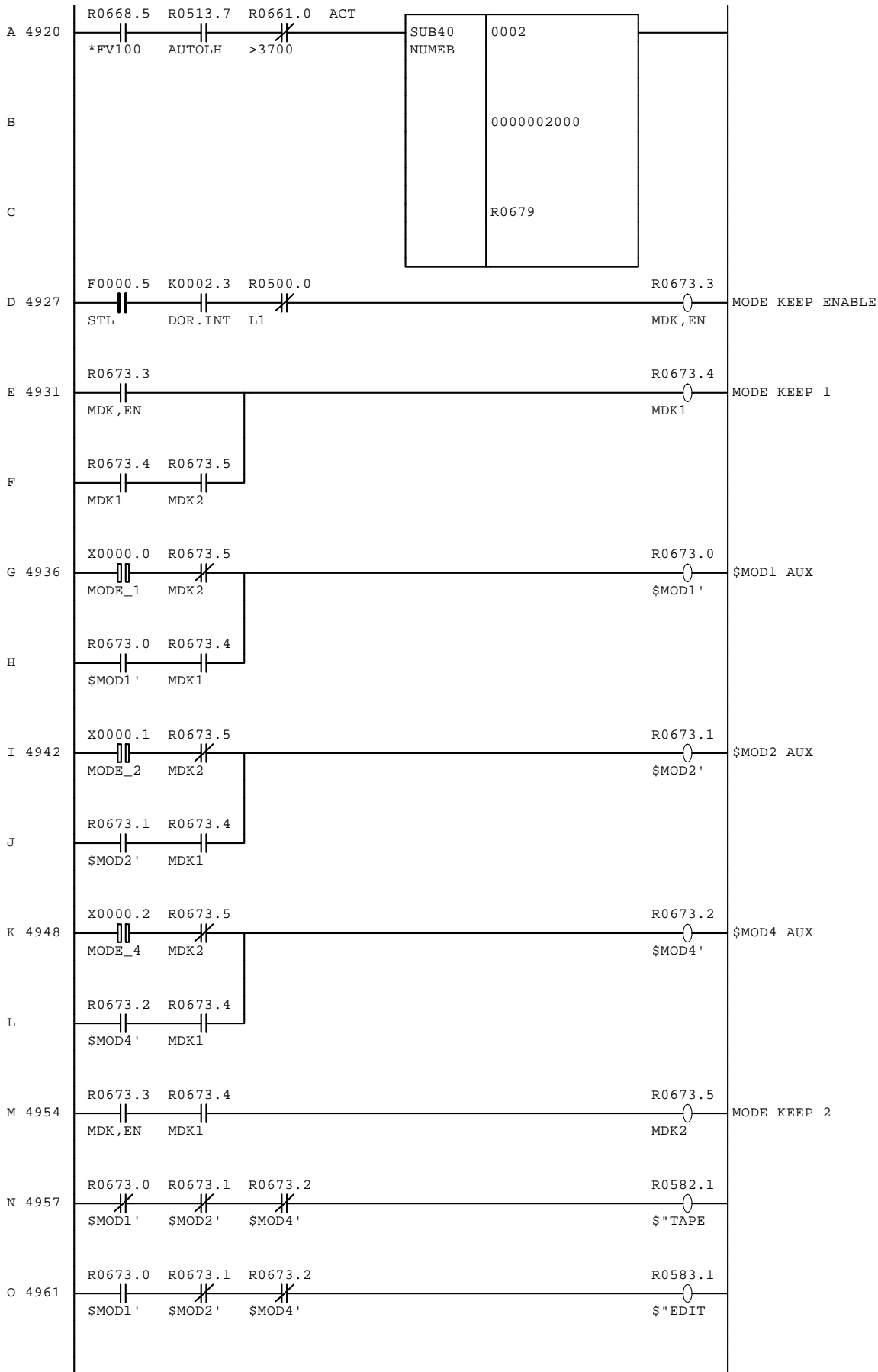


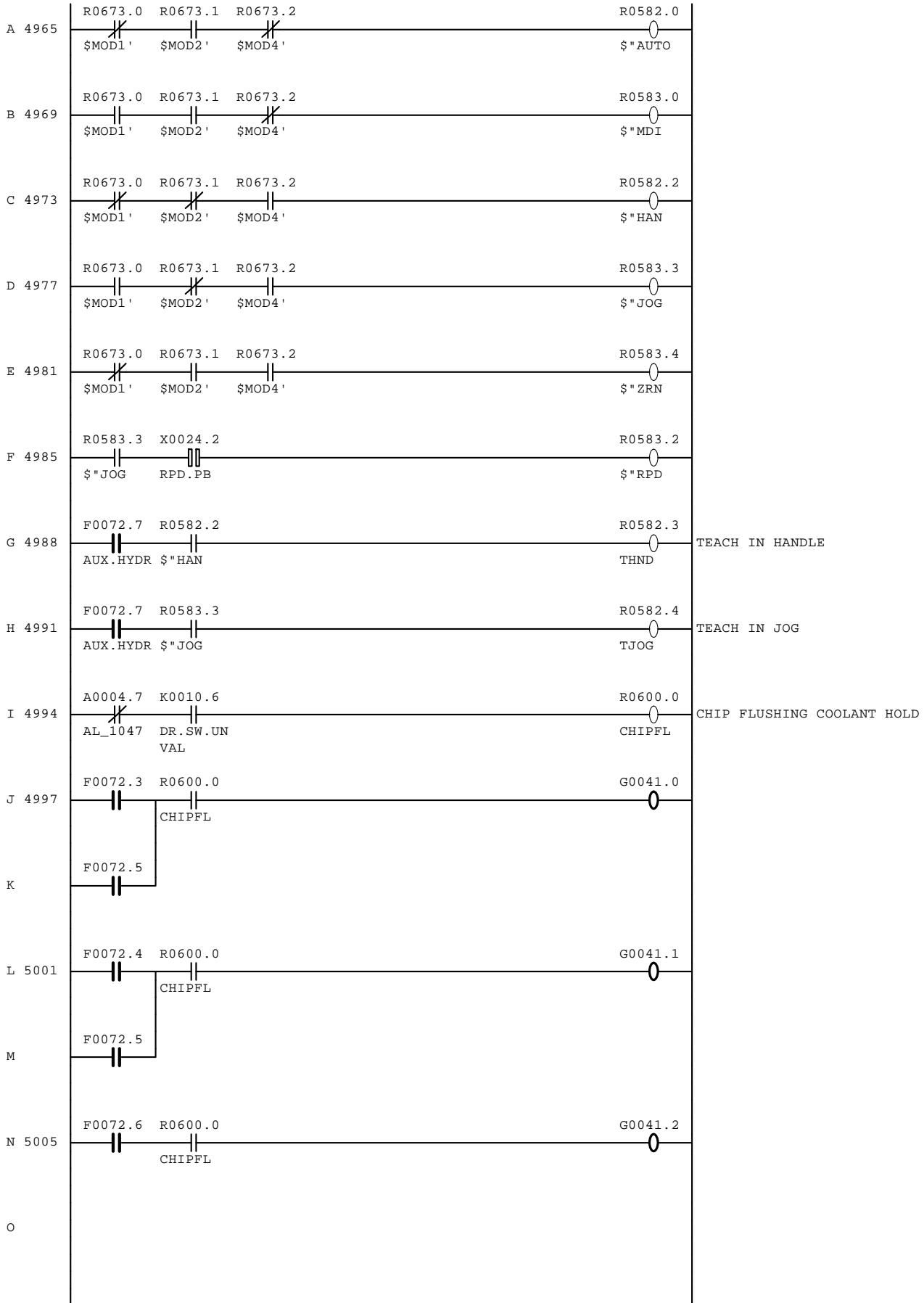




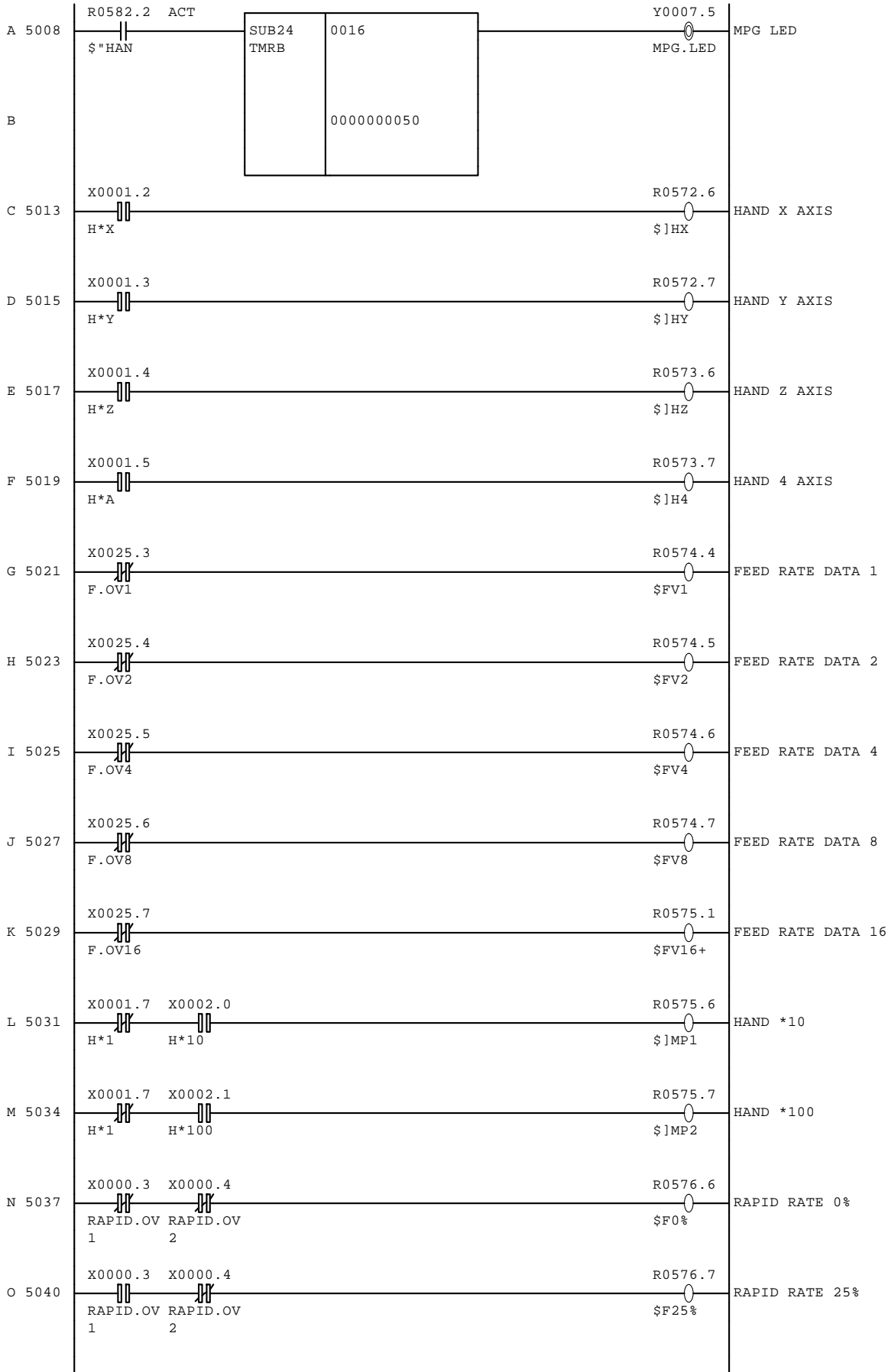


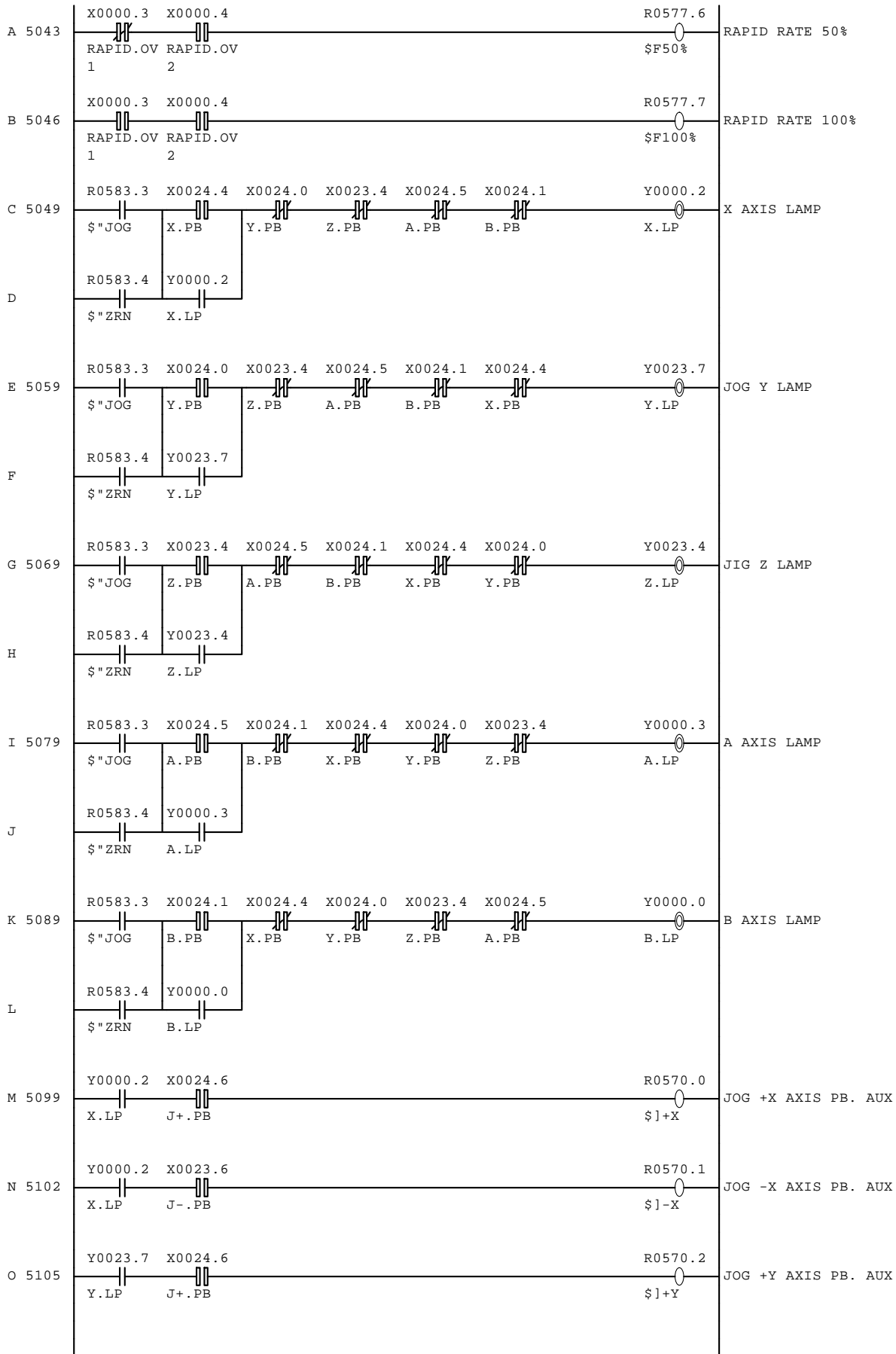


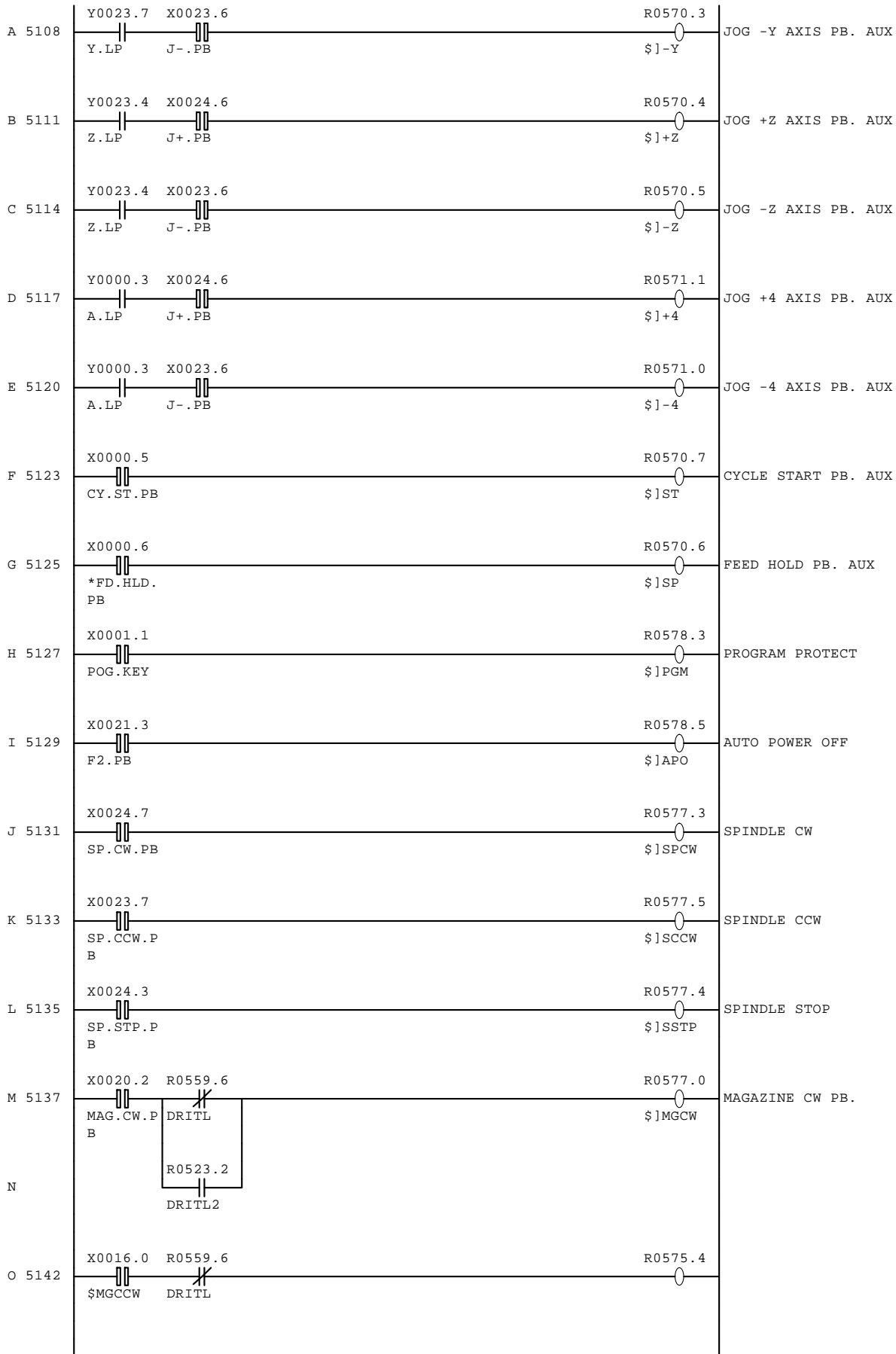


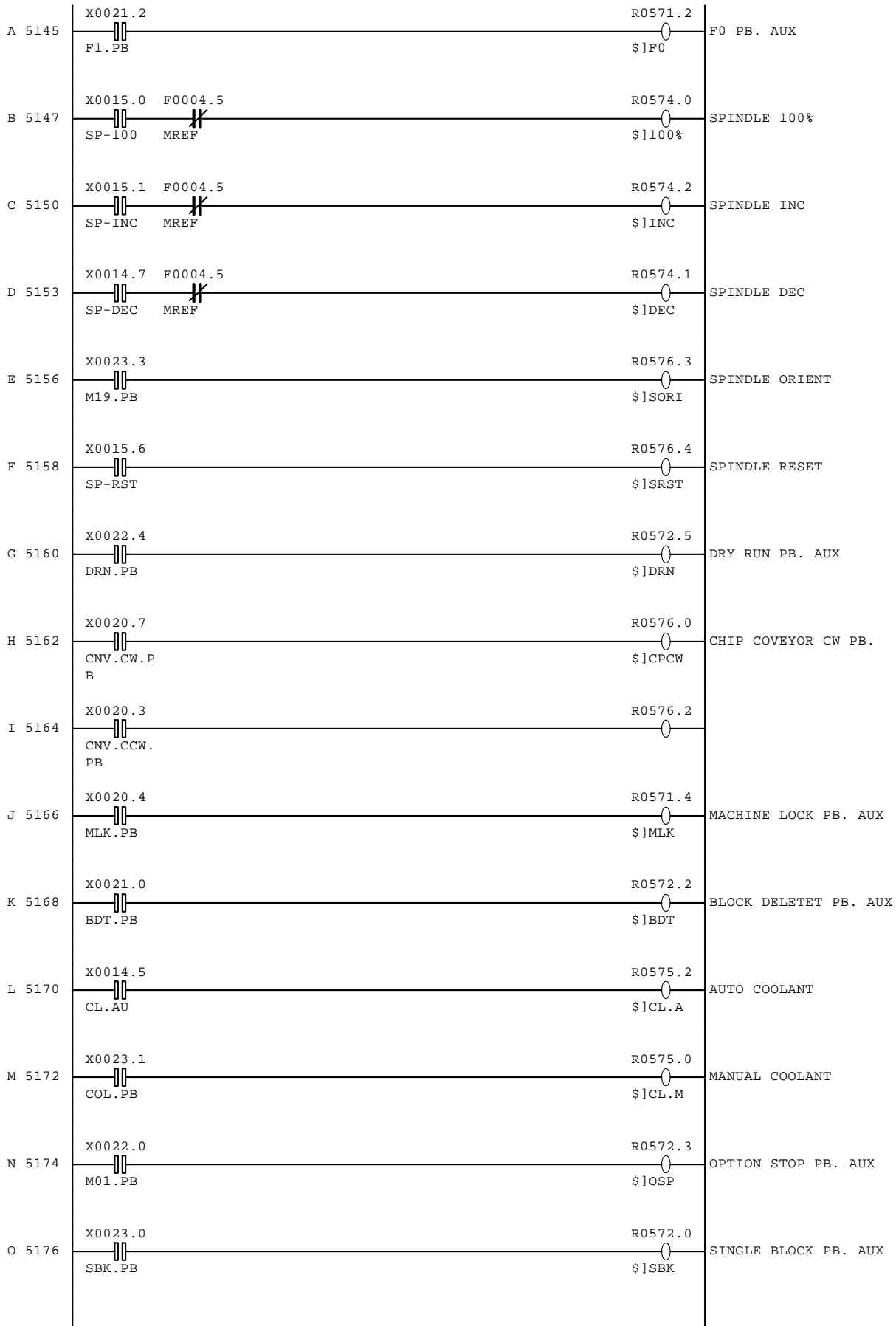


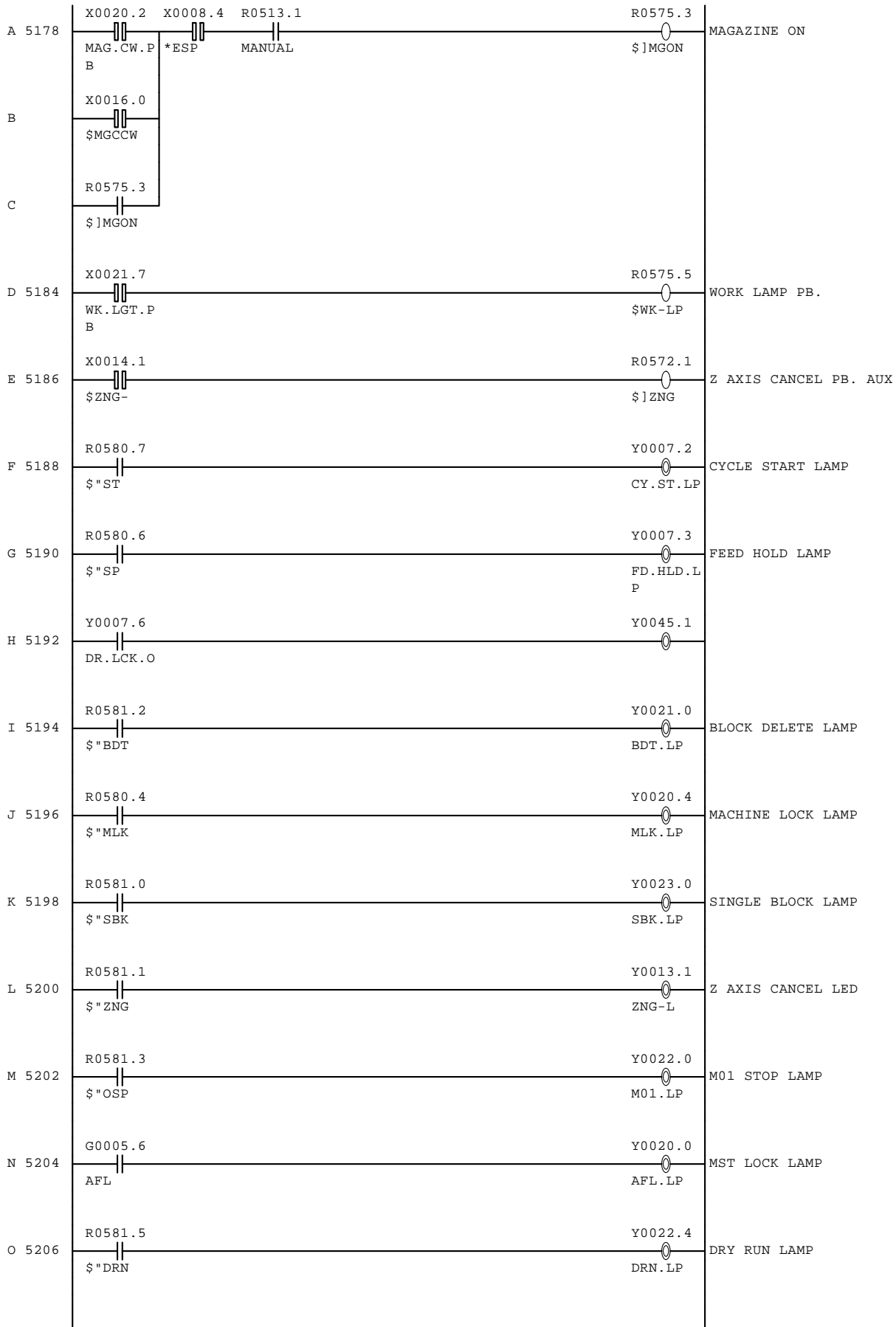


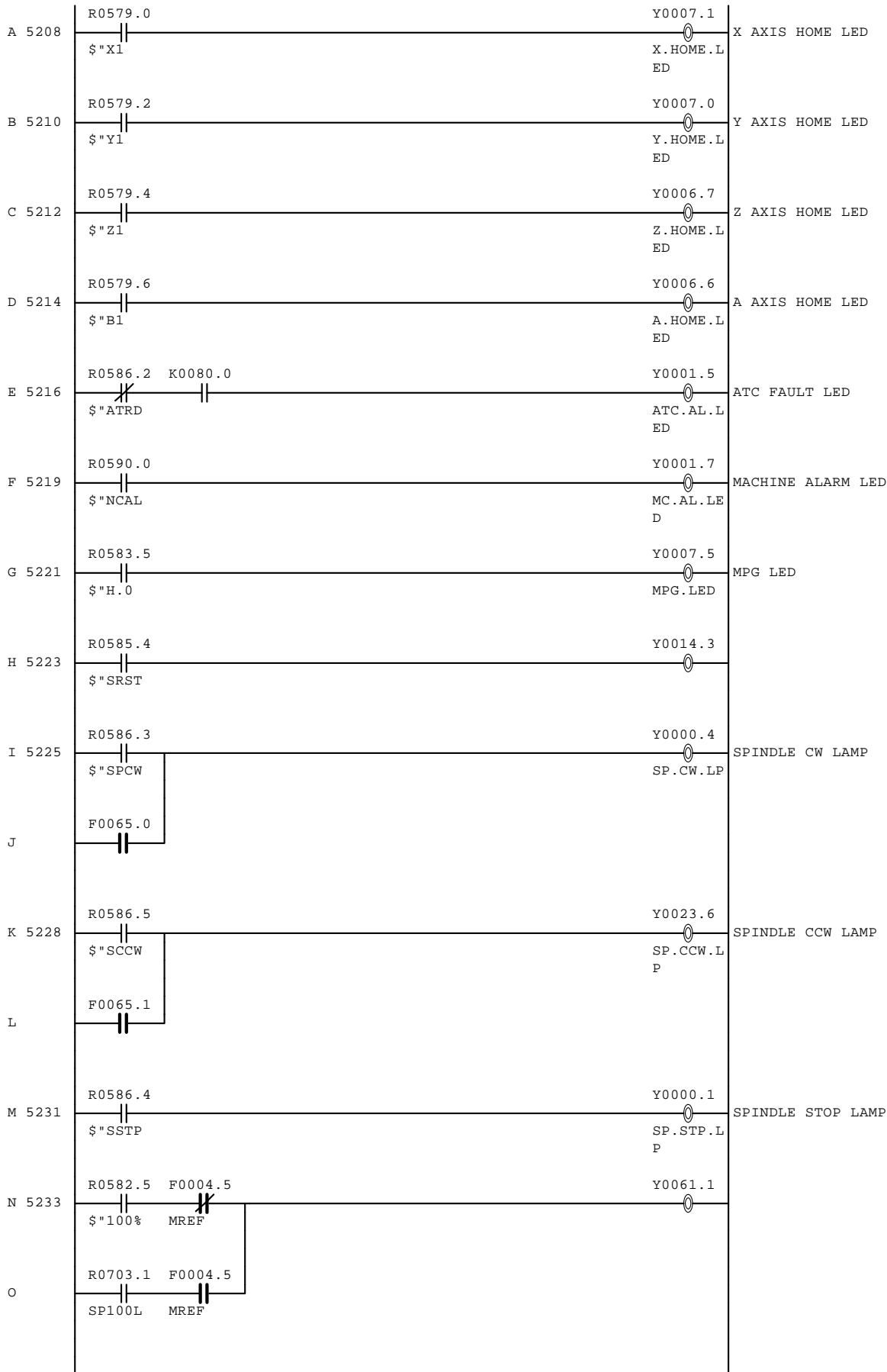


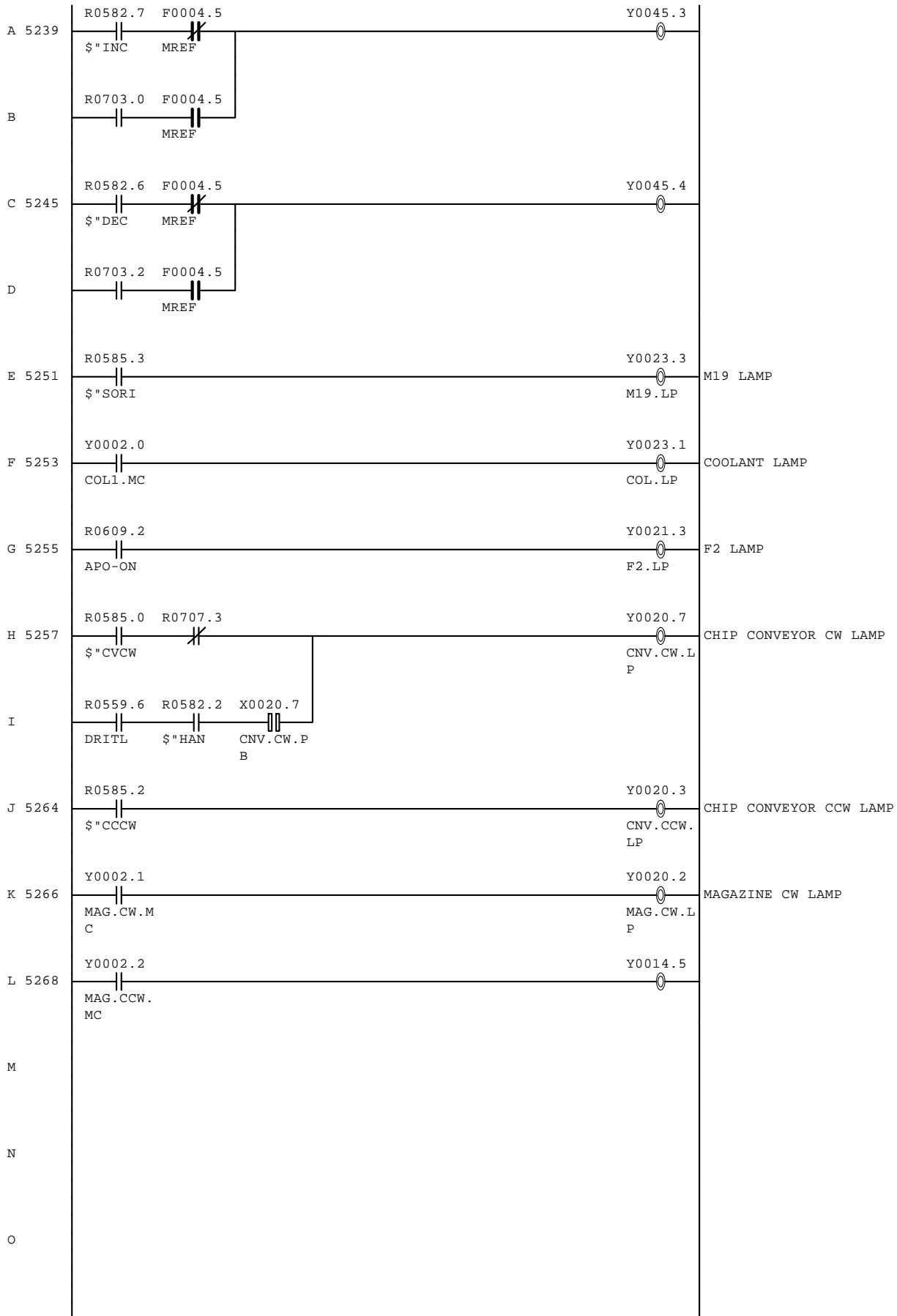


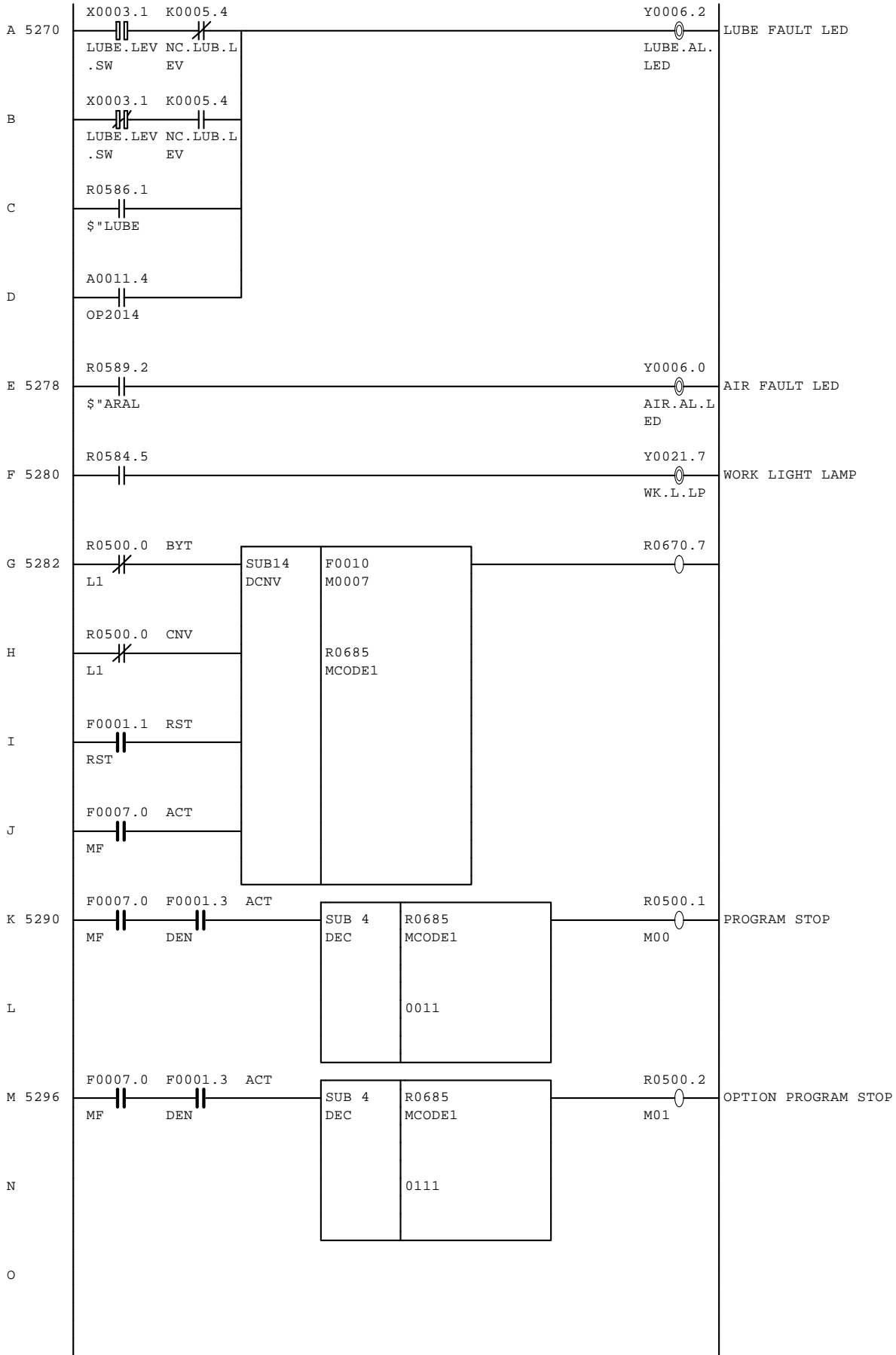




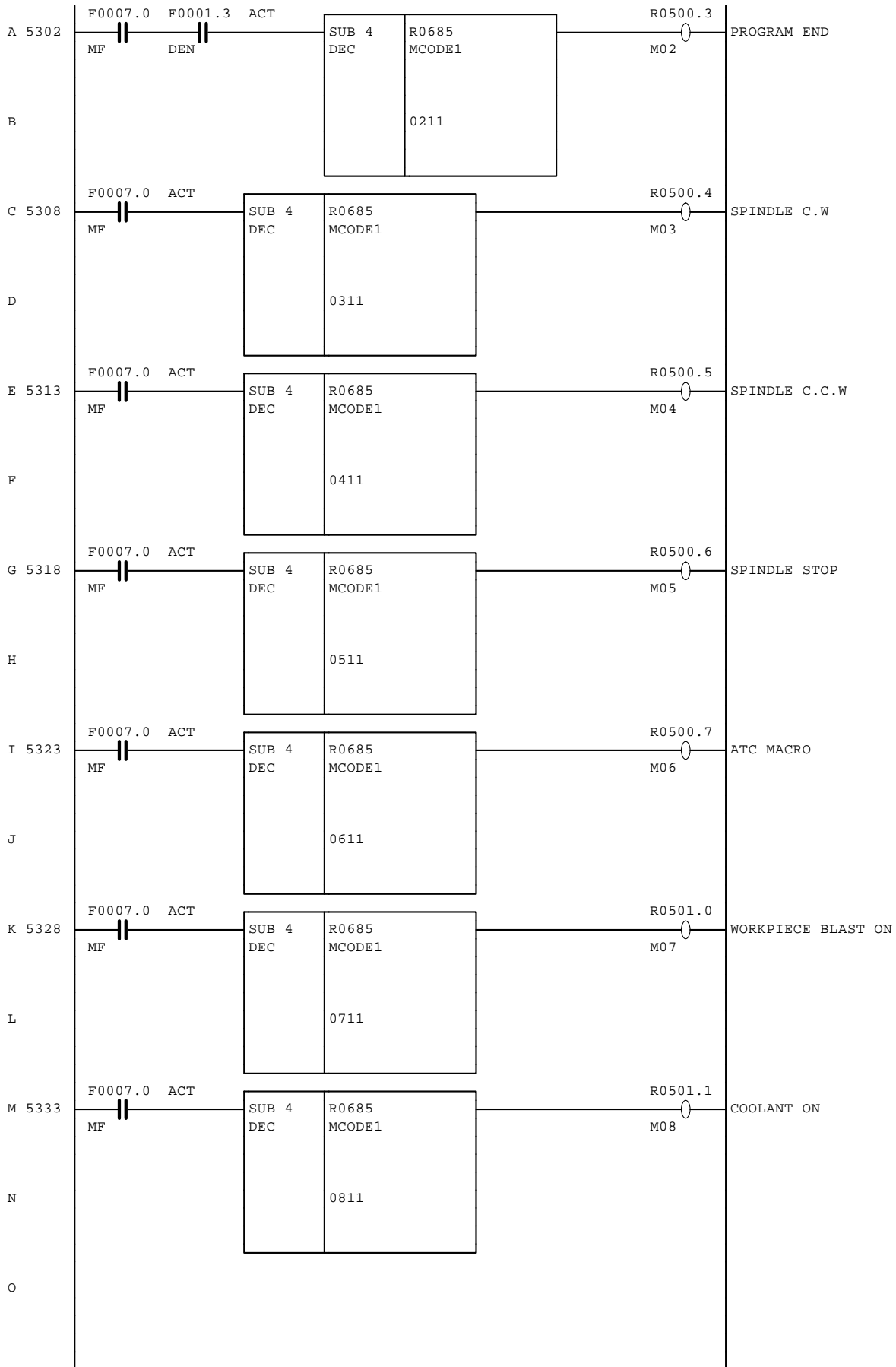


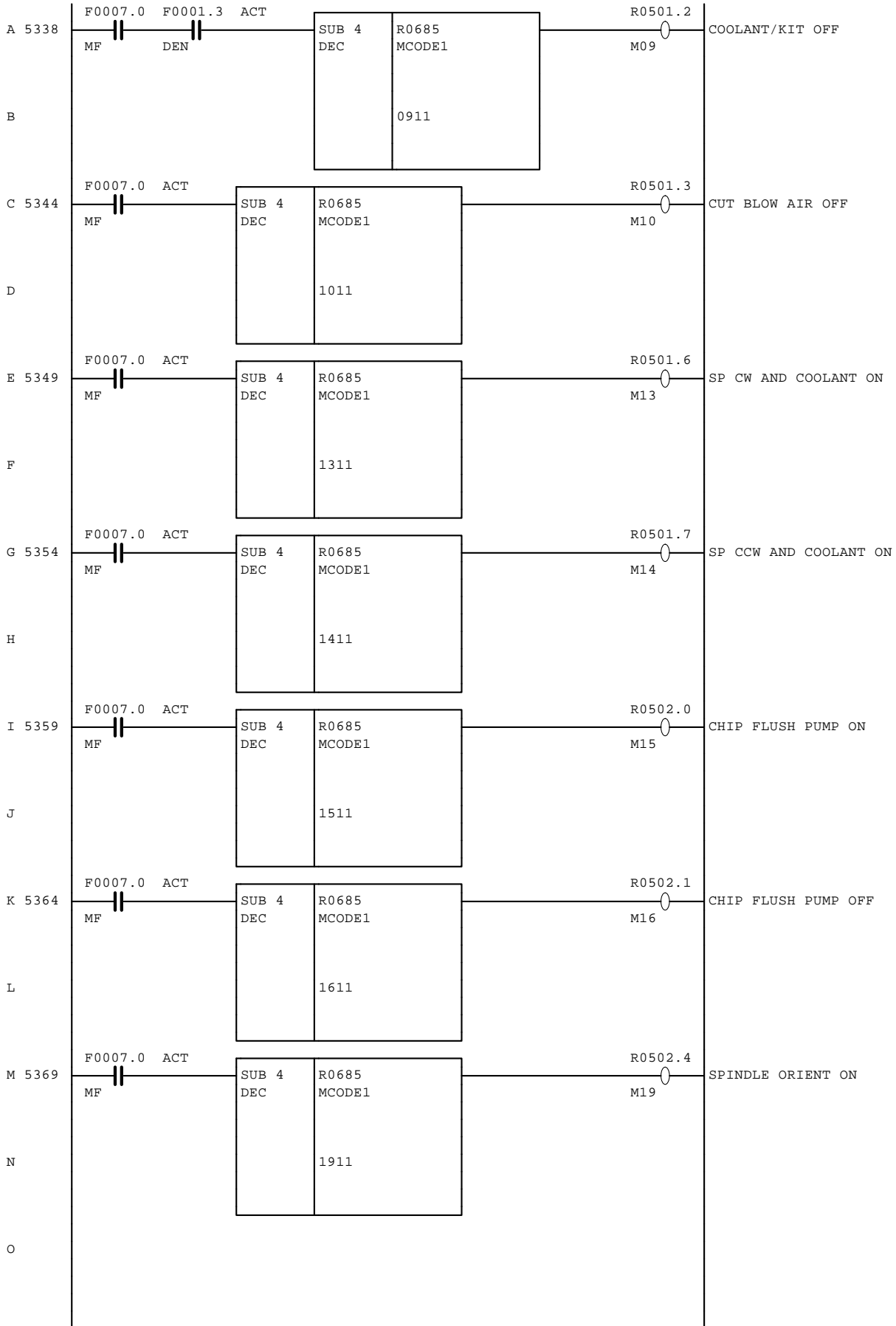


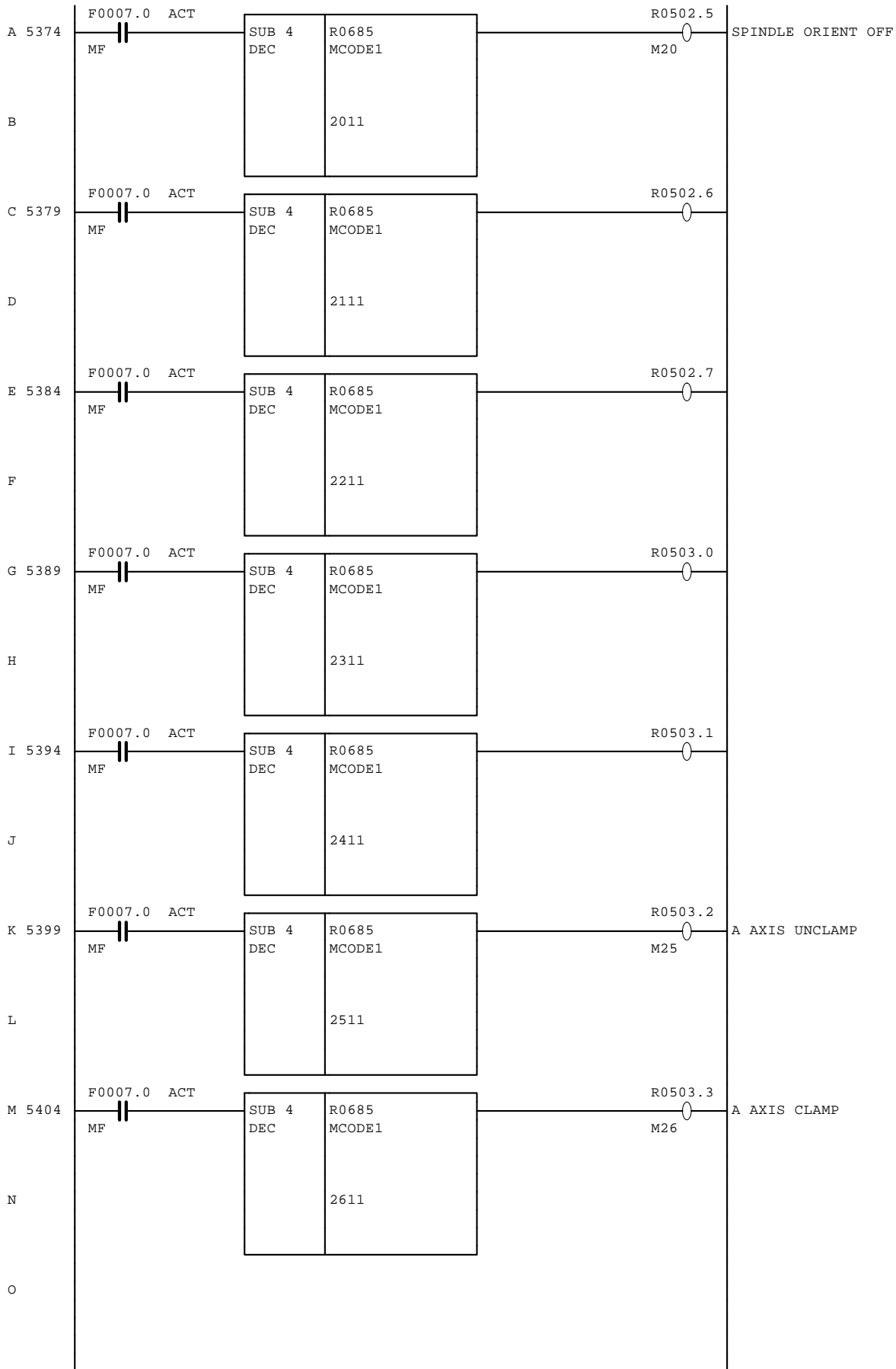


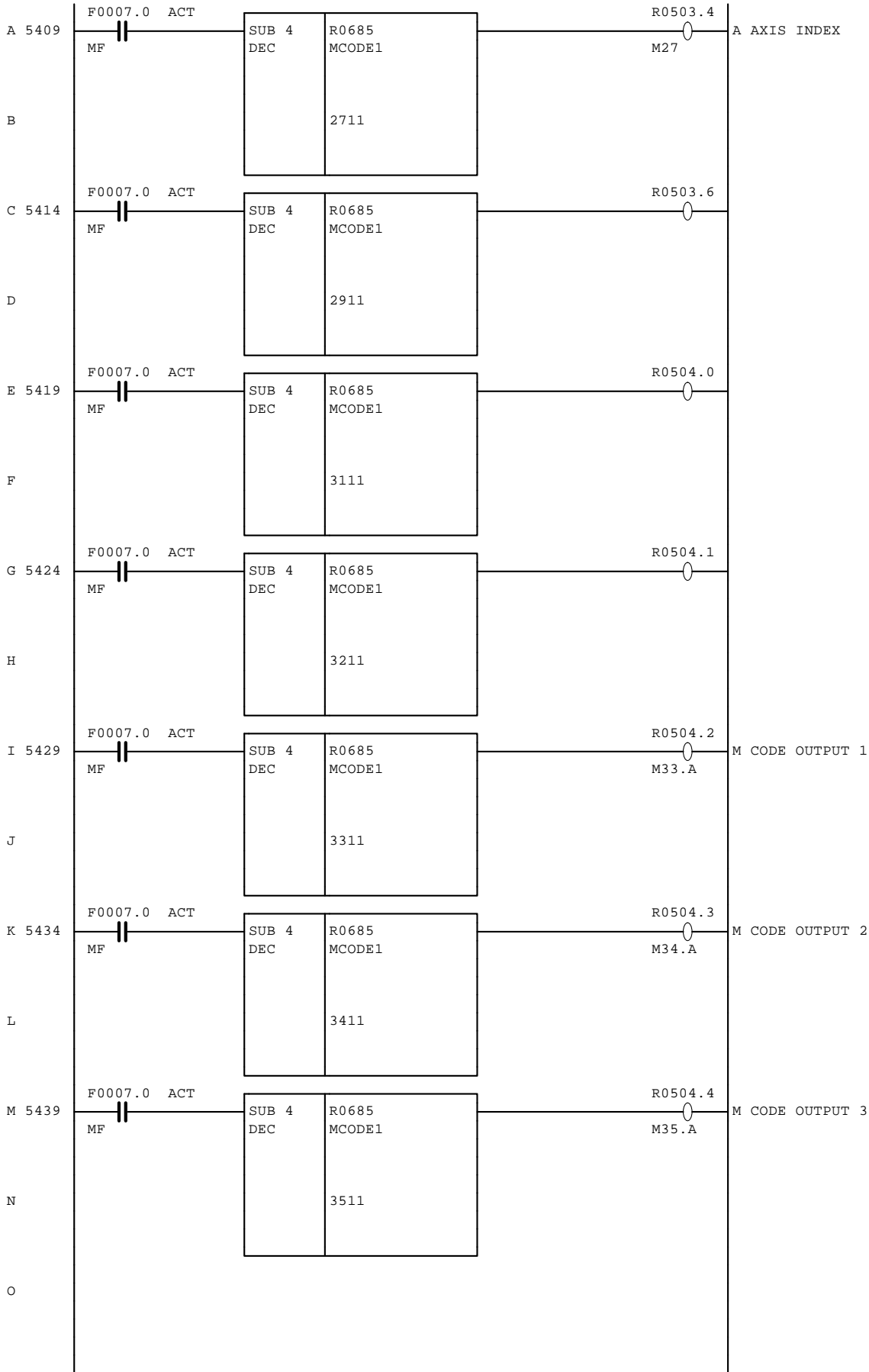


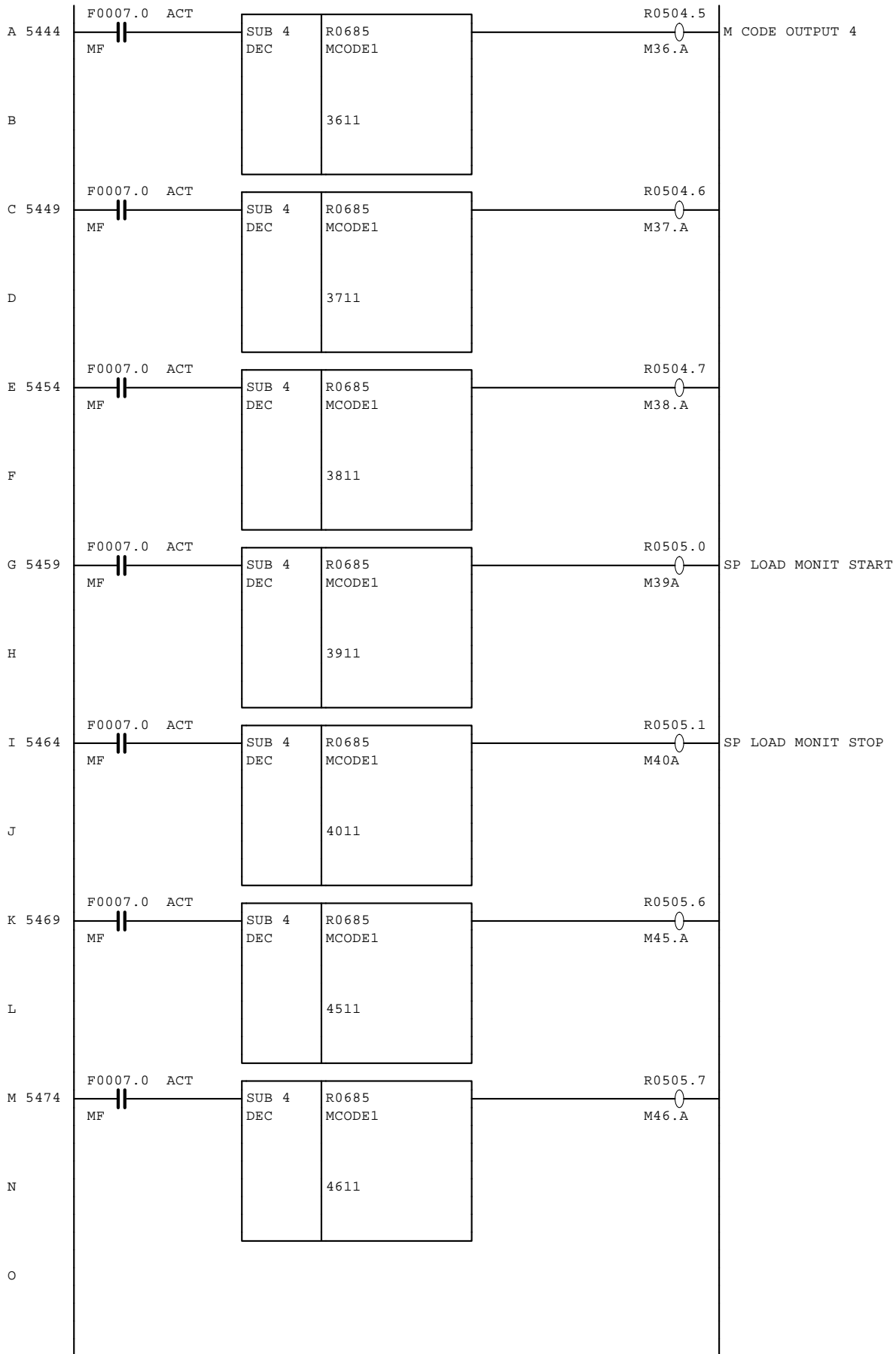


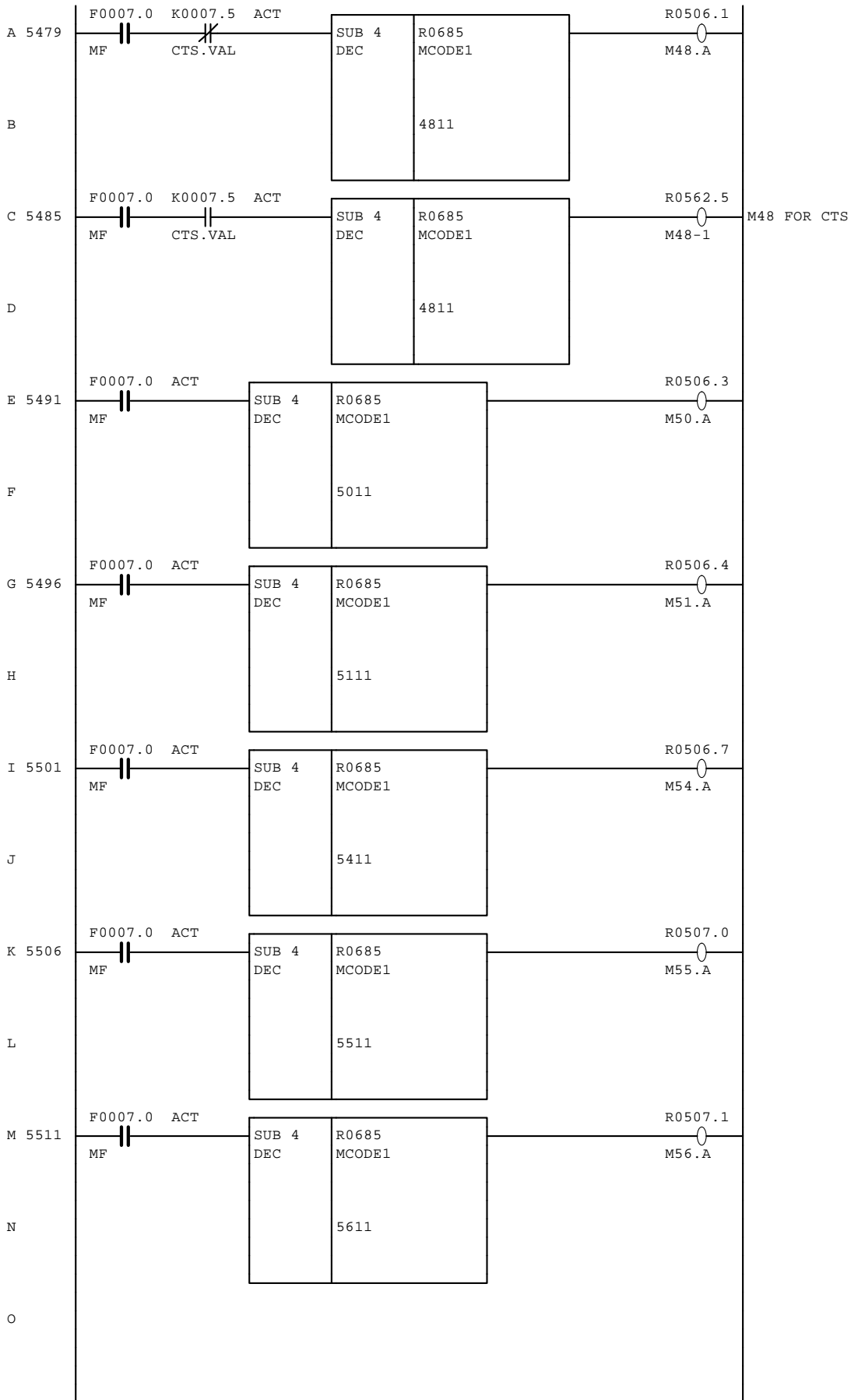


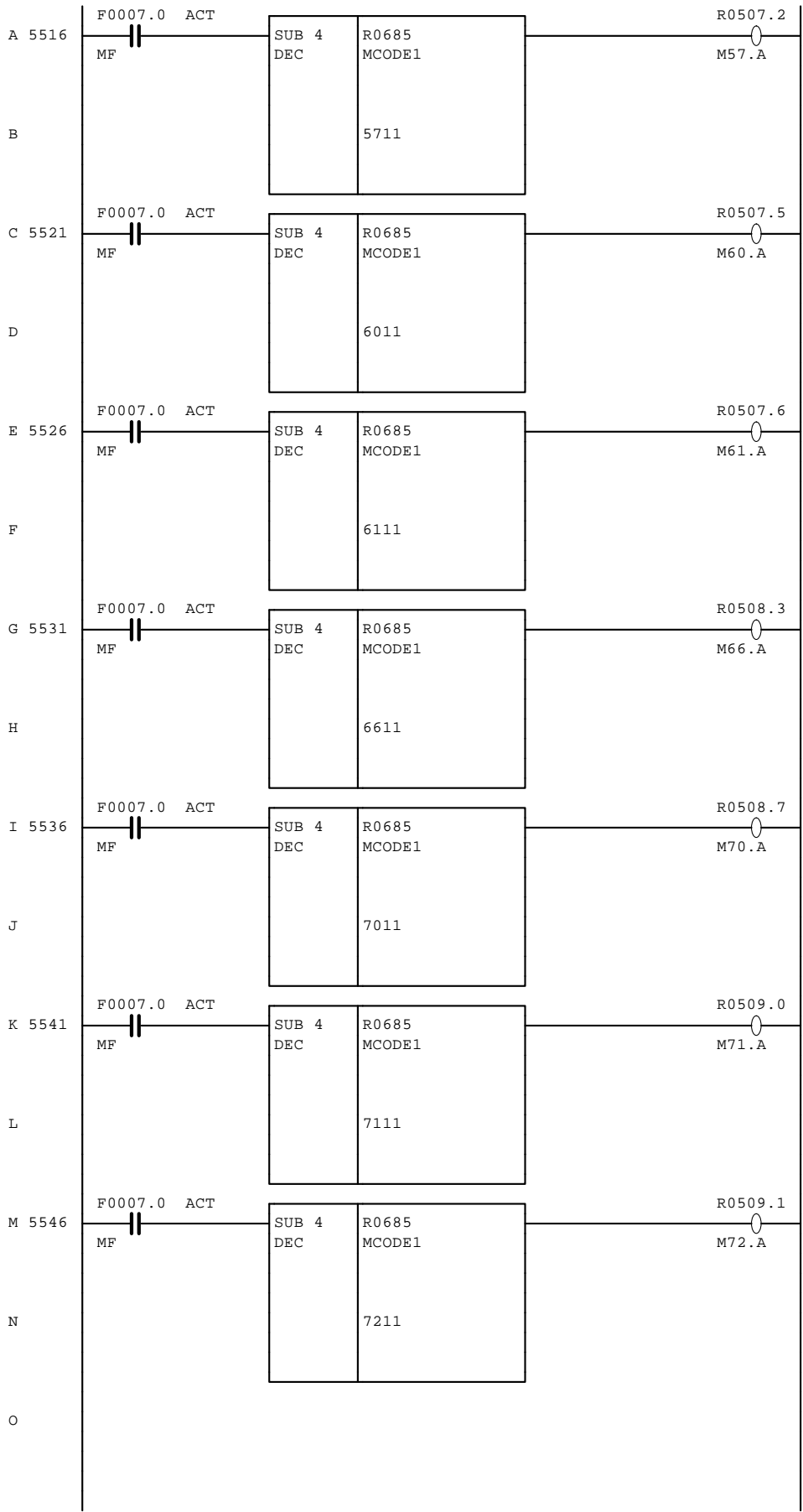


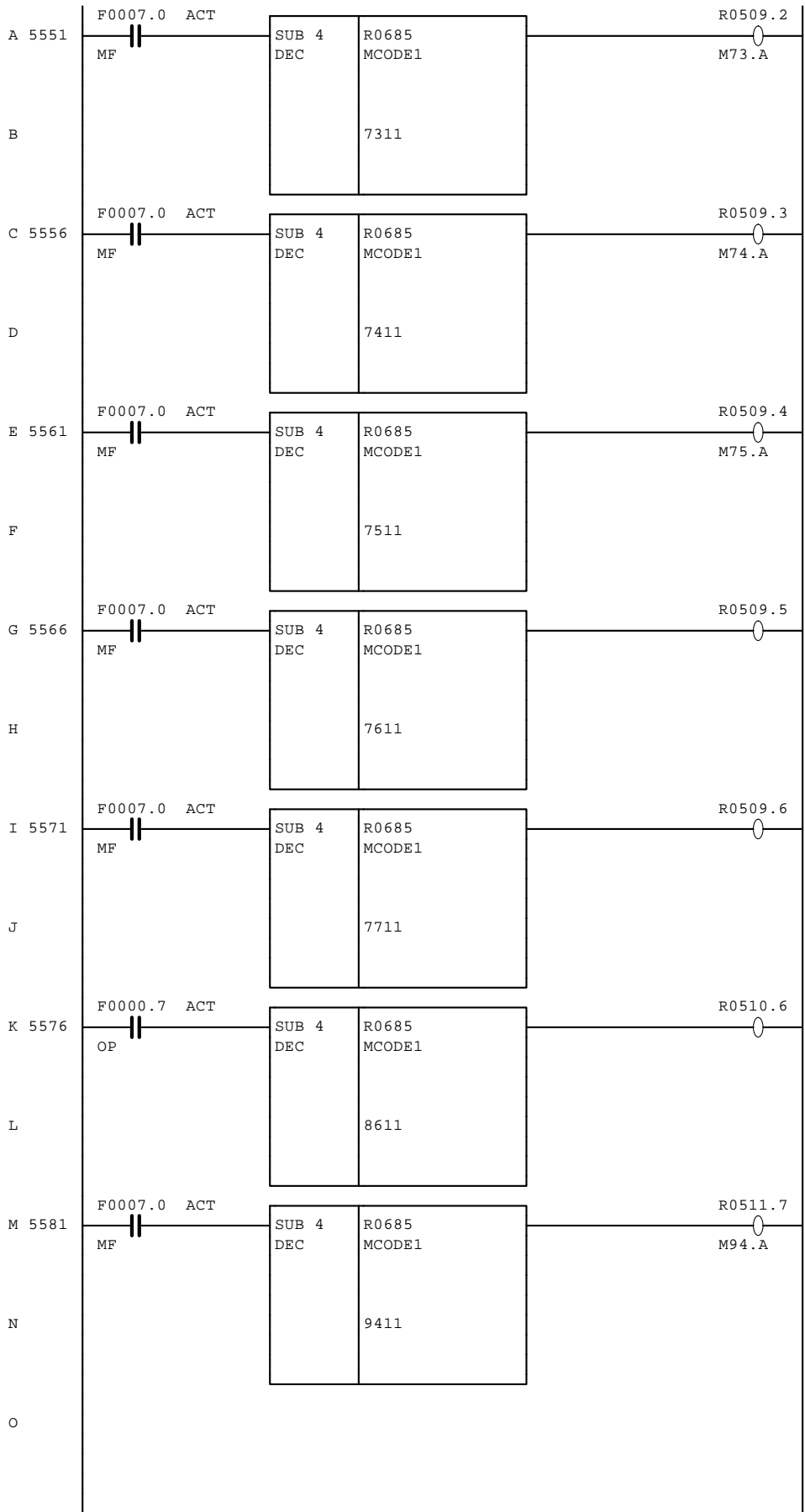




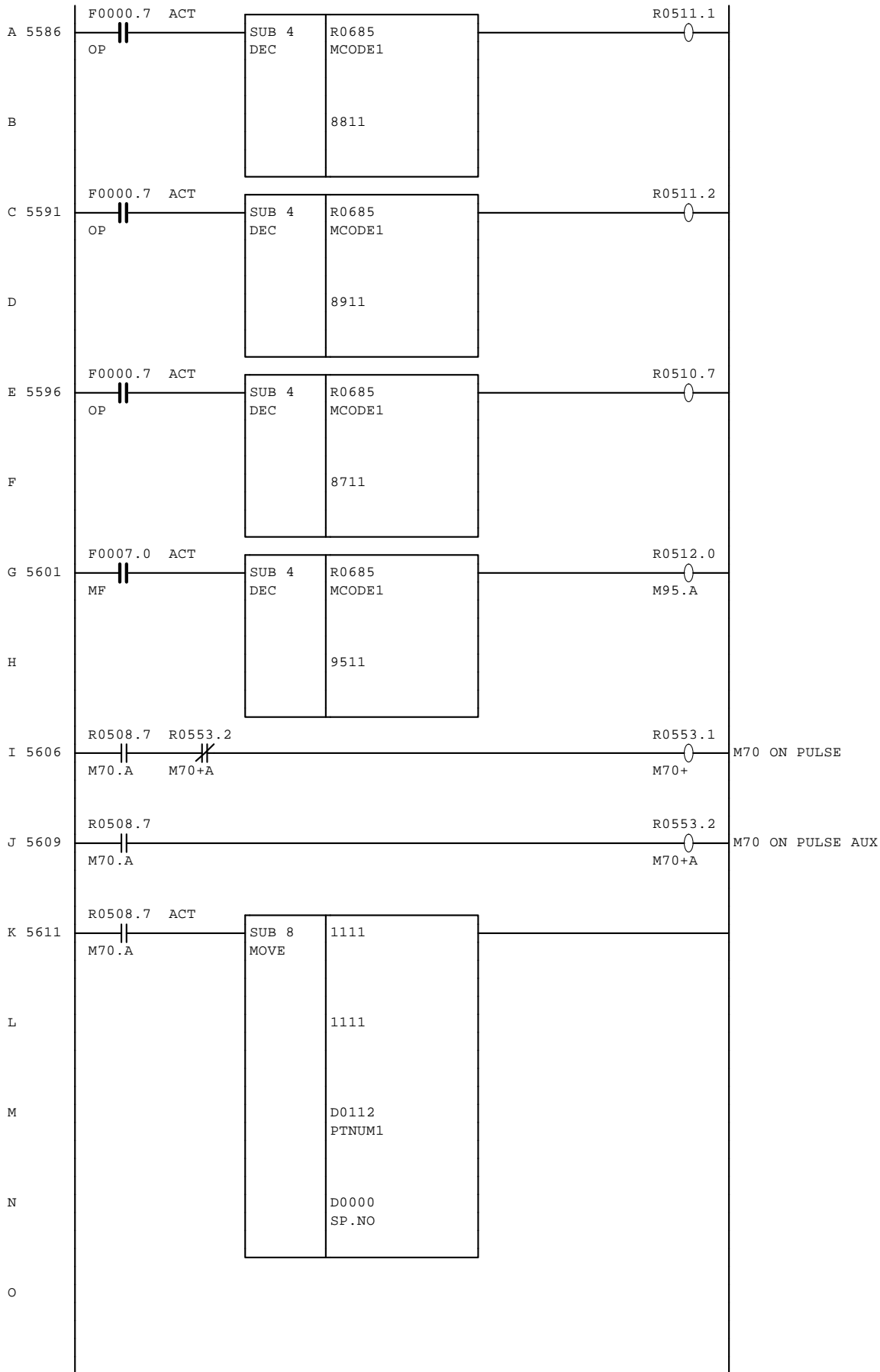


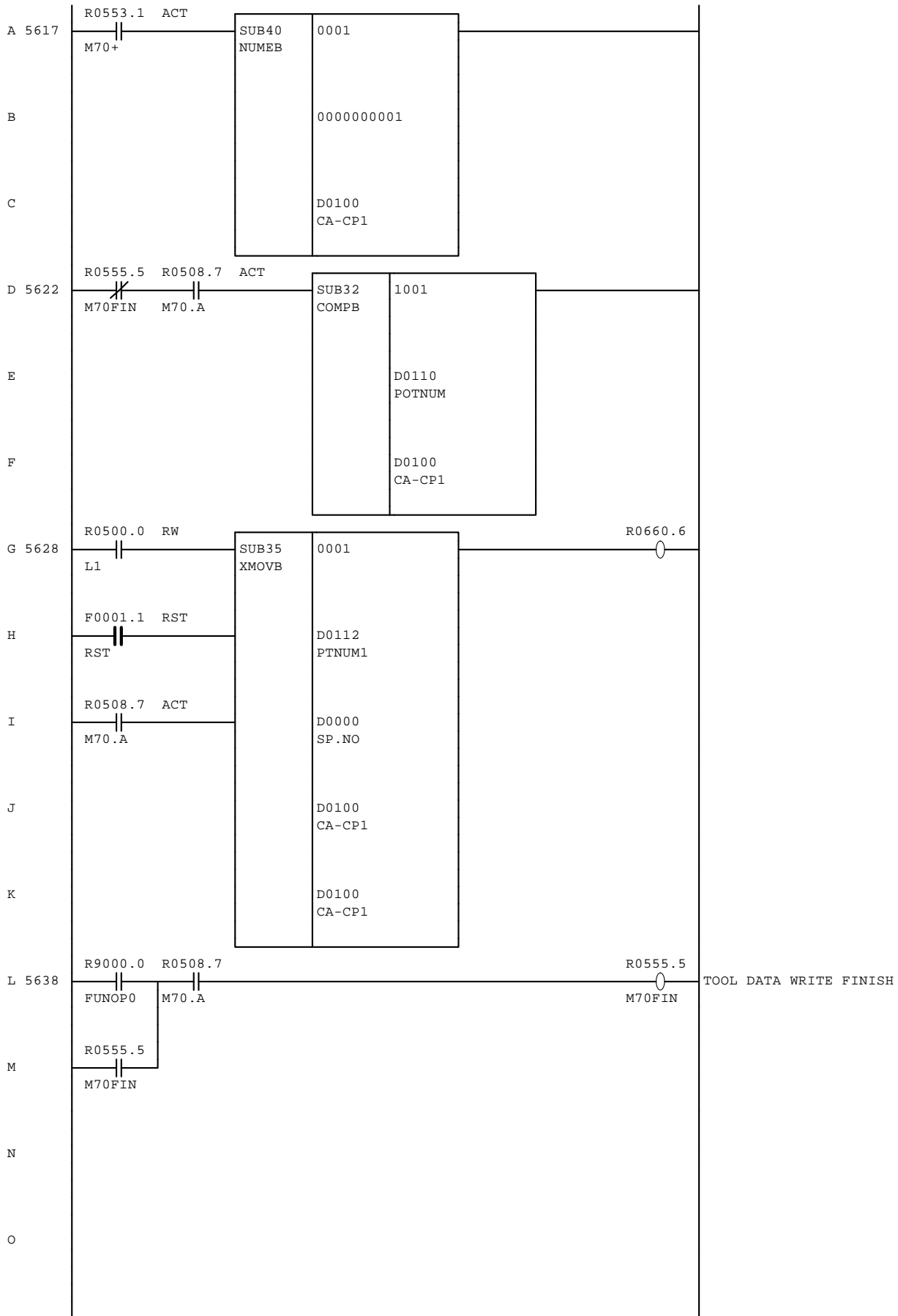


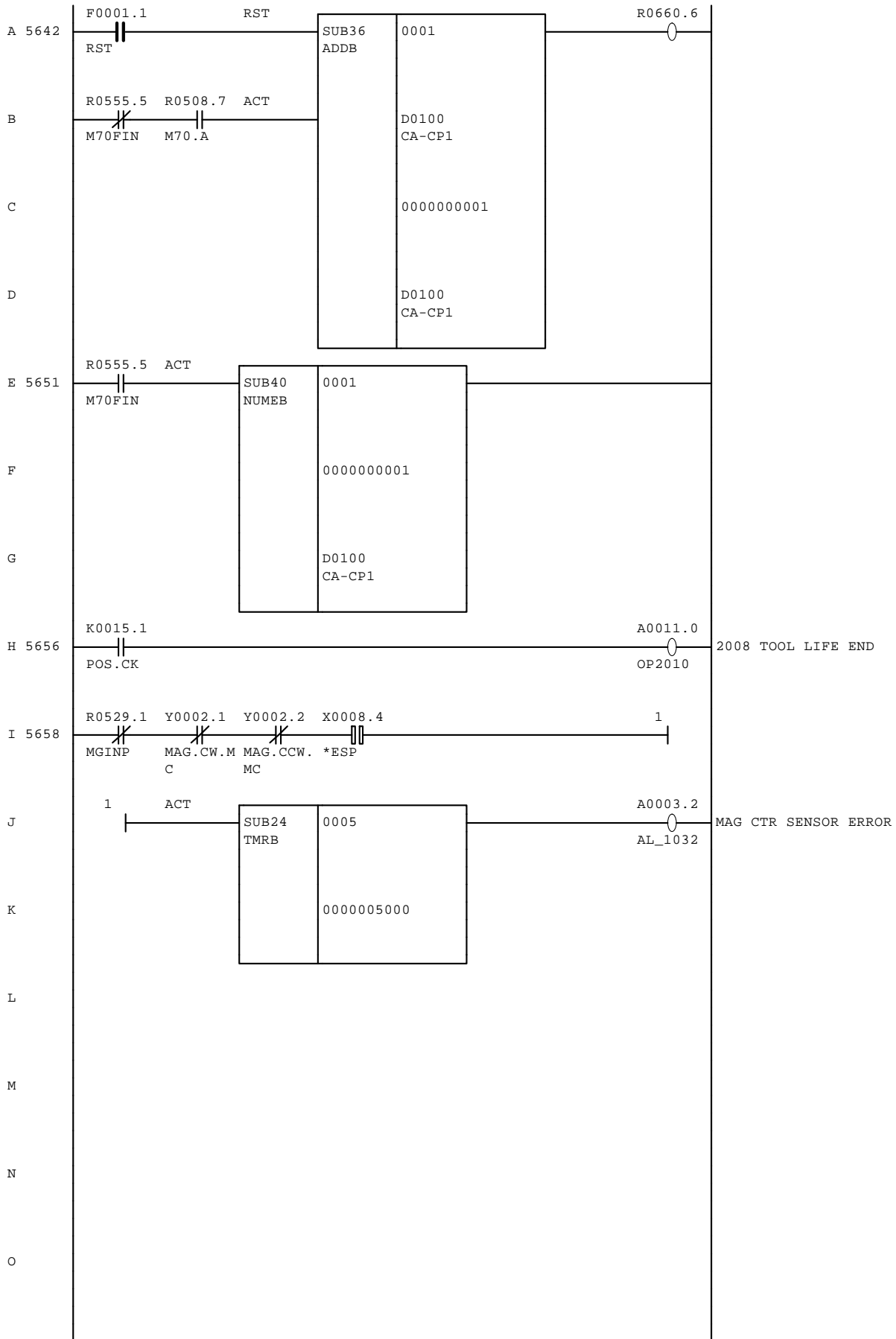


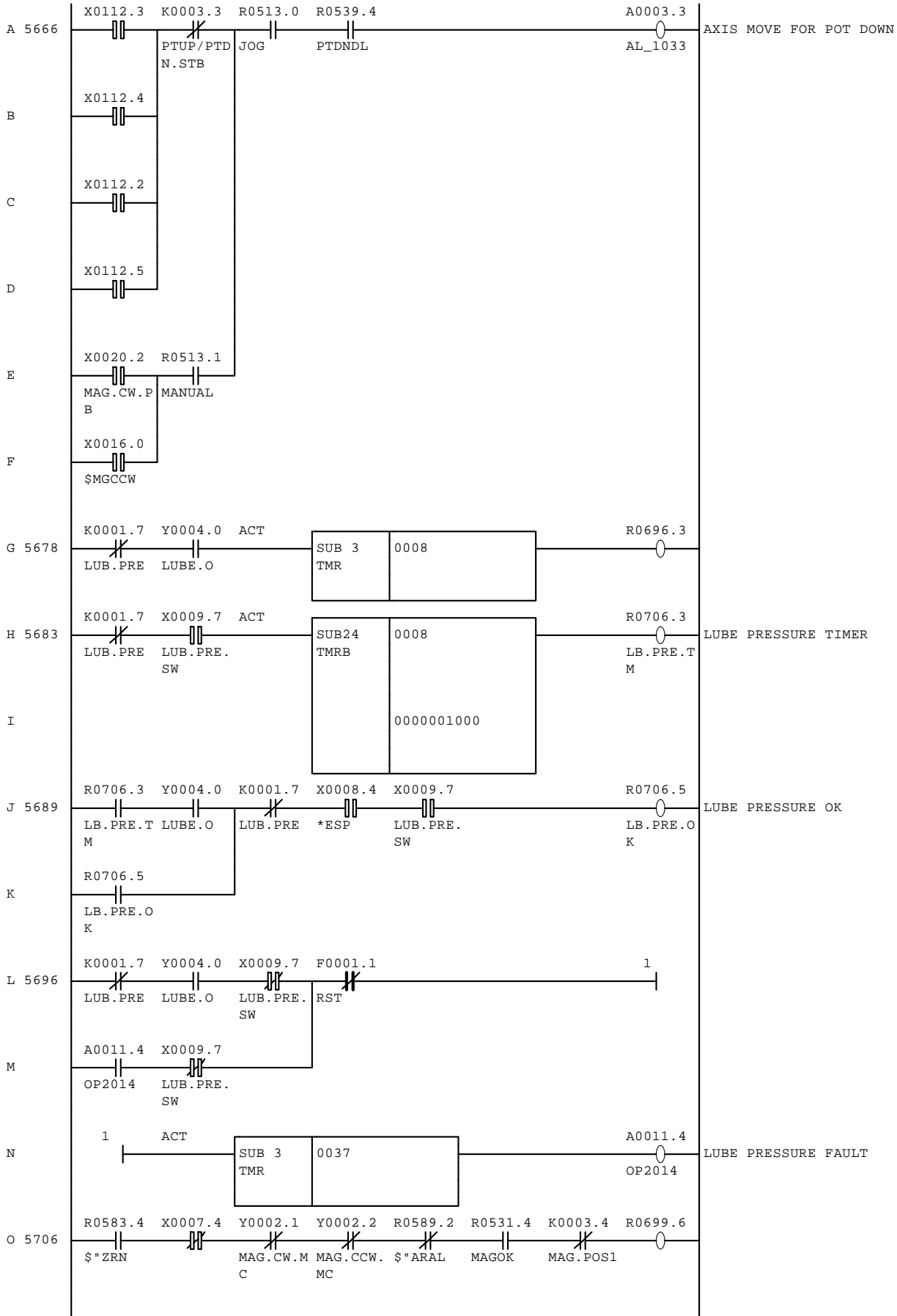


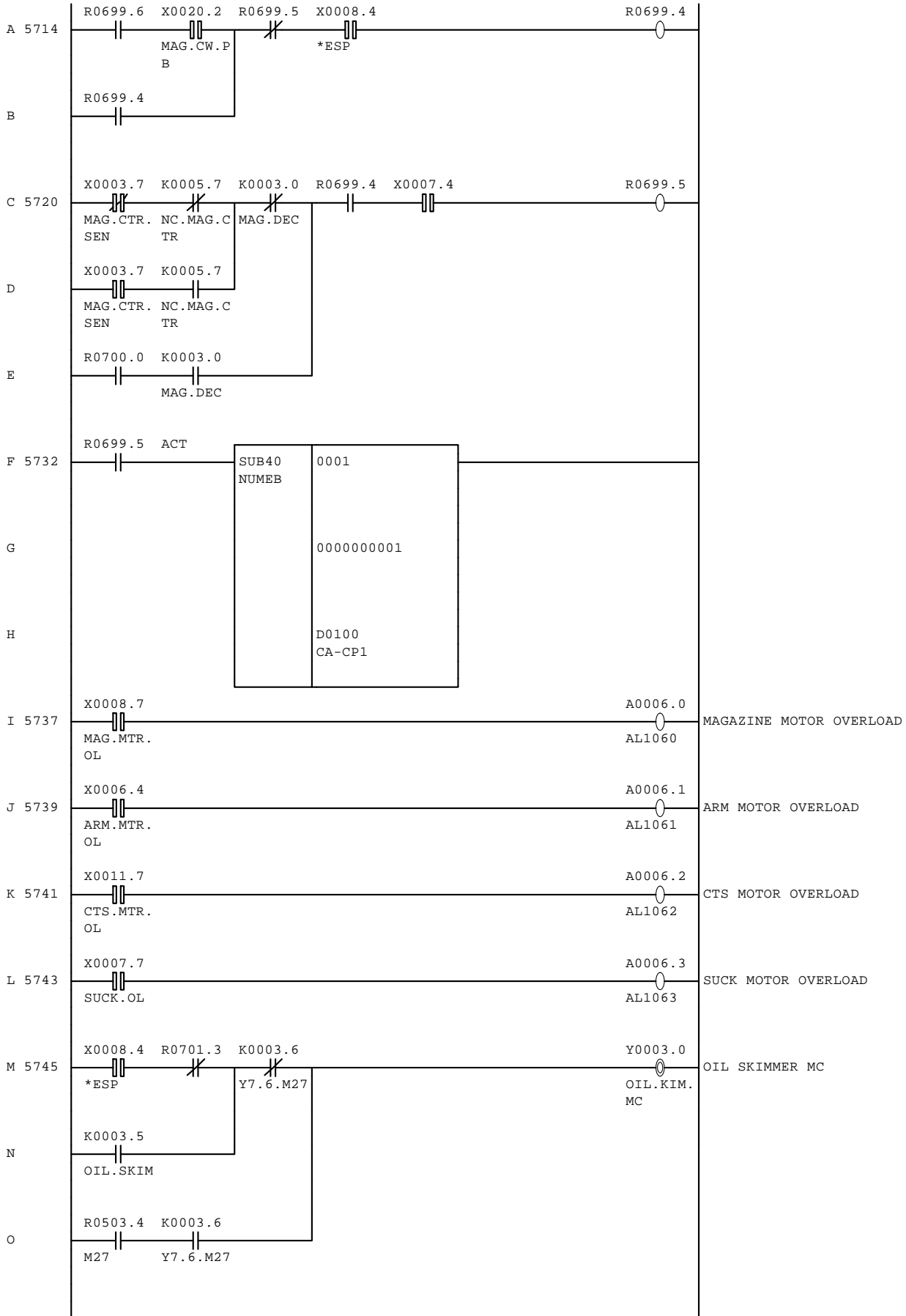


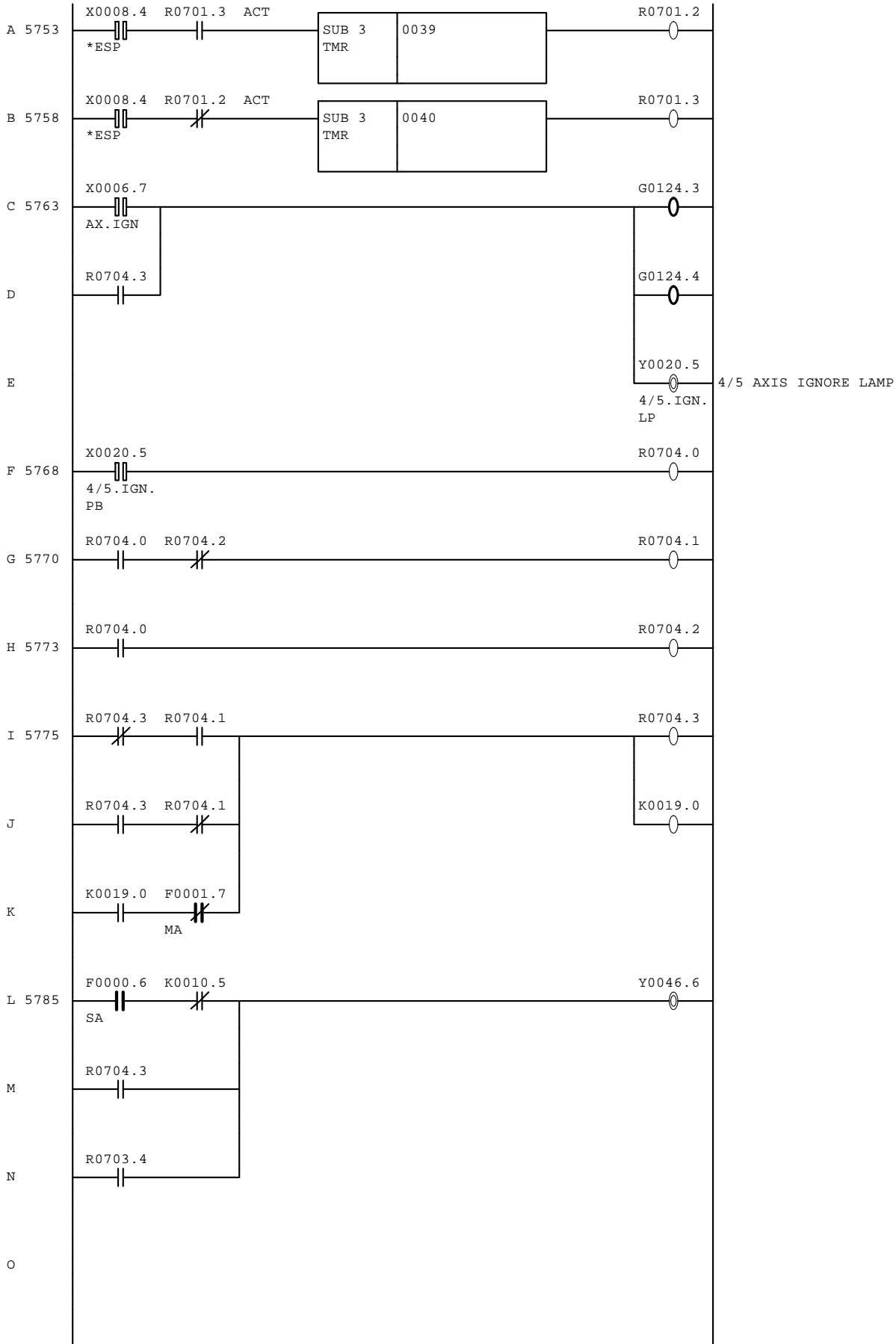


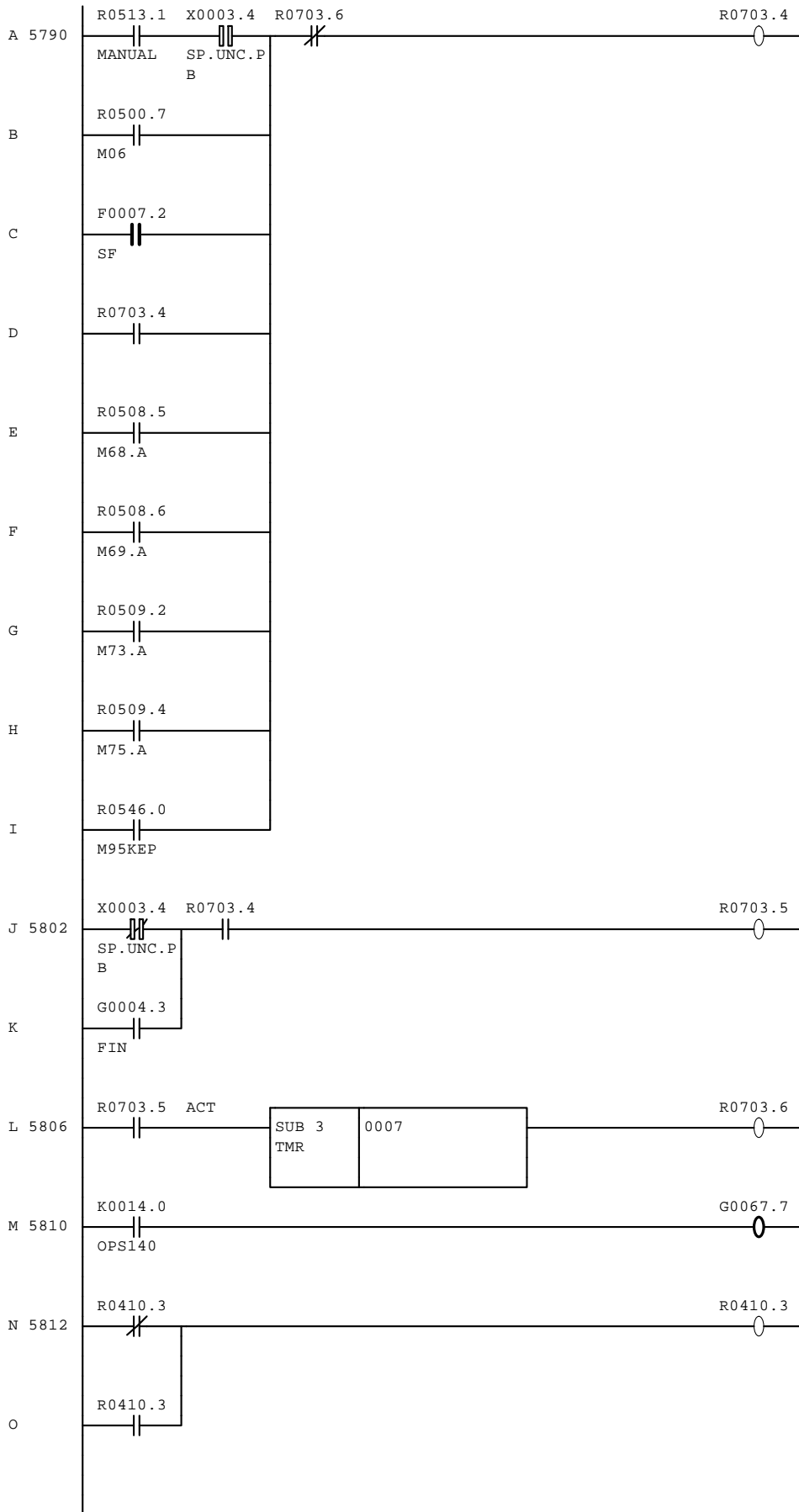


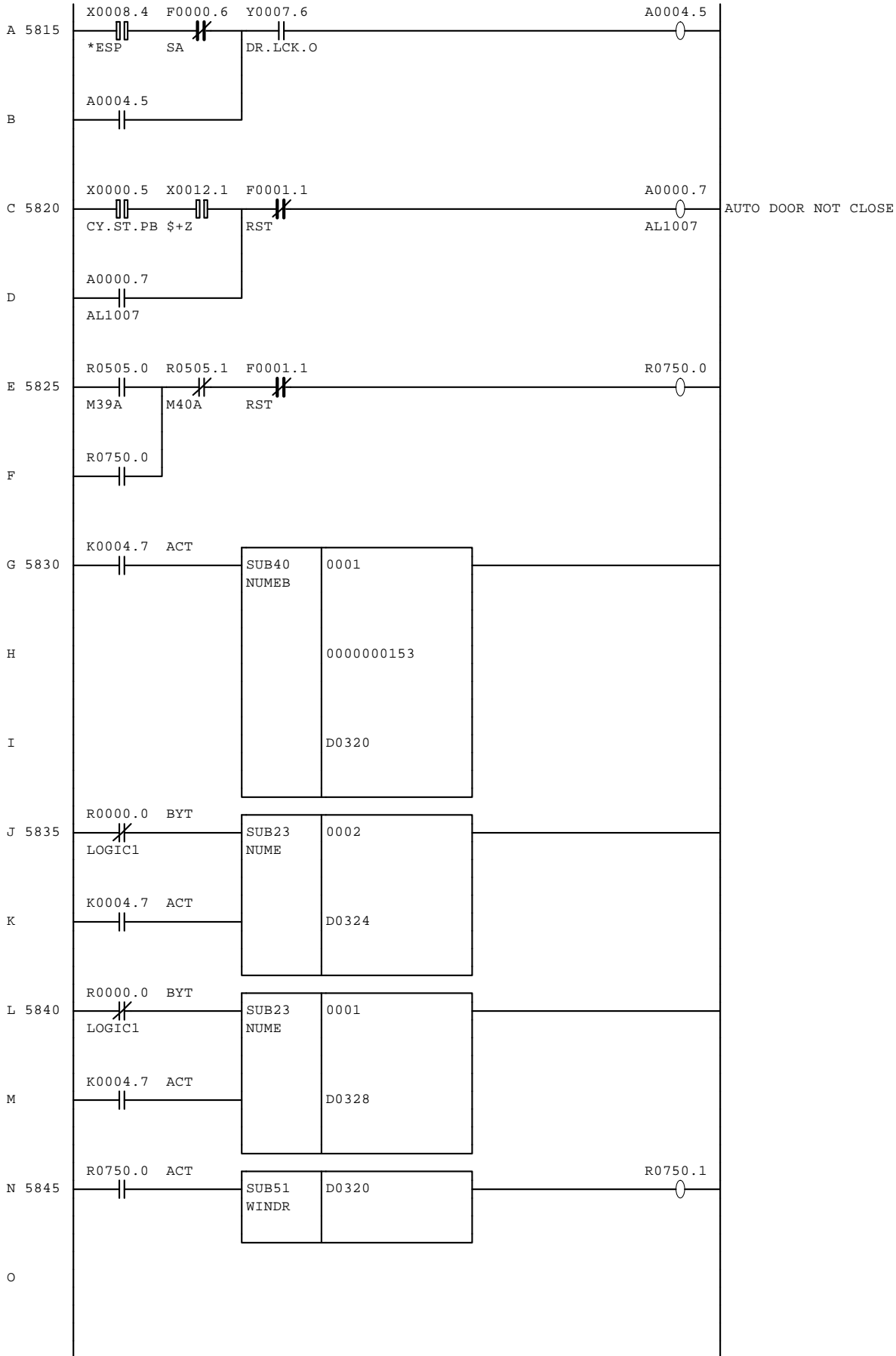




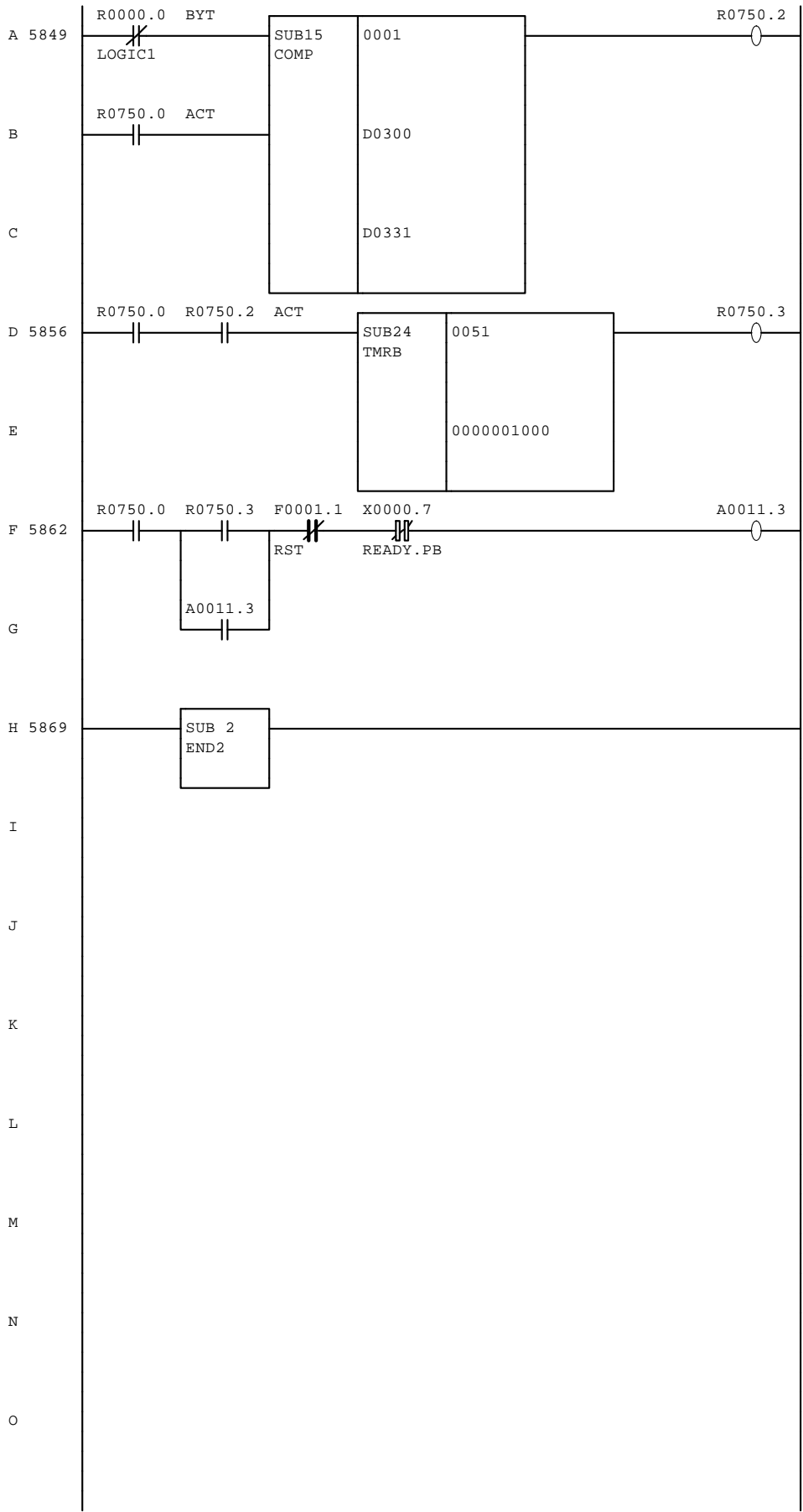












NO.	ADDRESS	MESSAGE
0001	A000.0	1000 EMERGENCY STOP/OVERTRAVEL
0002	A000.1	1001 SPINDLE COOLER ALARM
0003	A000.2	1002
0004	A000.3	1003 CUTTING COOLANT MOTOR ALARM
0005	A000.4	1004 ATC ALARM
0006	A000.5	1005 TOOL BROKEN
0007	A000.6	1006 SERVO AXES HOME REQUIRED
0008	A000.7	1007 AUTO DOOR NOT CLOSE
0009	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
0041	A005.0	1050 COOLANT EMPTY ERROR
0042	A005.1	
0043	A005.2	1052 FILTER DETECT ERROR
0044	A005.3	1053 COOLANT TANK FULL FAULT
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
0057	A007.0	1070 CHIP SCREW MOTOR 1 OVERLOAD
0058	A007.1	1071 CHIP SCREW MOTOR 2 OVERLOAD
0059	A007.2	1072 CHIP SCREW MOTOR 3 OVERLOAD
0060	A007.3	1073 CHUNK PRESSURE LOW
0061	A007.4	1074 Oil Mist Collector
0062	A007.5	
0063	A007.6	
0064	A007.7	
0065	A008.0	1080 TOOL MEASURE ALARM!
0066	A008.1	1081 OMI-2 BATTERY LOW
0067	A008.2	1082 TOOL LIFE EXHAUST!
0068	A008.3	
0069	A008.4	1084 A AXIS UNCLAMP FINISH ERROR
0070	A008.5	1085 A AXIS CLAMP FINISH ERROR
0071	A008.6	

NO.	ADDRESS	MESSAGE
0072	A008.7	
0073	A009.0	
0074	A009.1	
0075	A009.2	
0076	A009.3	
0077	A009.4	
0078	A009.5	
0079	A009.6	
0080	A009.7	
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 GUARD OPEN
0091	A011.2	2012 SOFRWARE SWITCH 4,5,6,7 ON TOGETHER
0092	A011.3	2013 SPINDLE MOTOR OVER LOAD
0093	A011.4	2014 LUBE PRESSURE FAULT
0094	A011.5	
0095	A011.6	
0096	A011.7	
0097	A012.0	
0098	A012.1	
0099	A012.2	
0100	A012.3	
0101	A012.4	
0102	A012.5	
0103	A012.6	
0104	A012.7	
0105	A013.0	
0106	A013.1	
0107	A013.2	
0108	A013.3	
0109	A013.4	
0110	A013.5	
0111	A013.6	
0112	A013.7	
0113	A014.0	
0114	A014.1	
0115	A014.2	
0116	A014.3	
0117	A014.4	
0118	A014.5	
0119	A014.6	
0120	A014.7	
0121	A015.0	
0122	A015.1	
0123	A015.2	
0124	A015.3	
0125	A015.4	
0126	A015.5	
0127	A015.6	
0128	A015.7	
0129	A016.0	
0130	A016.1	
0131	A016.2	
0132	A016.3	
0133	A016.4	
0134	A016.5	
0135	A016.6	
0136	A016.7	
0137	A017.0	
0138	A017.1	
0139	A017.2	
0140	A017.3	
0141	A017.4	
0142	A017.5	

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	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.SKP	
00034	X0005.0	SCREW1.OL	
00035	X0005.1	SCREW2.OL	
00036	X0005.2	SCREW3.OL	
00037	X0005.3	IND.T8	
00038	X0005.4	IND.LK	
00039	X0005.5	TSV.AL	
00040	X0005.6	_OMI_BATTE	
00041	X0005.7	!_ATMER	
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
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 OVERLOAD
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	EMG STOP
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

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00072	X0009.7	LUB.PRE.SW	LUBE PRESSURE SWITCH
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	
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	\$FO	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	
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	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00143	X0021.2	F1.PB	
00144	X0021.3	F2.PB	
00145	X0021.4	PRST.PB	
00146	X0021.5	AIR.BLA.PB	
00147	X0021.6	F5.PB	
00148	X0021.7	WK.LGT.PB	
00149	X0022.0	M01.PB	
00150	X0022.1	CTS.PB	
00151	X0022.2	F4.PB	
00152	X0022.3	DOR.PB	DOOR 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	
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	
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	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
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
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	@ATMCL	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	F0-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
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	F5 LP	F5 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	F4 LP	F4 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	F3 LP	F3 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	



NO.	ADDRESS	SYMBOL	FIRST COMMENT
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	
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	REST SIGNAL
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	
00411	F0002.1	RPDO	
00412	F0002.7	MDRN	
00413	F0003.0	MINC	
00414	F0003.1	MH	MANU HANDLE FEED SEL CHECK
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	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00427	F0007.2	SF	SP FUNCTION SIGNAL
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	SPINDLE SPEED ZERO
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
00451	F0094.3	ZP4	4 AXIX 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	
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	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
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
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	G0055.5	#1013	#1013
00545	G0058.5	STRD	I/O SIMULTANEOUS OPERATION
00546	G0061.0	RGTP	
00547	G0070.0	TLMLA	TORQUE LIMIT
00548	G0070.3	CTH1A	SPINDLE HIGH/LOW SPEED SIGNAL
00549	G0070.4	SRVA	SPINDLE CCW COMMAND A
00550	G0070.5	SFRA	SPINDLE CW COMMAND A
00551	G0070.6	ORCMA	SPINDLE ORIENT COMMAND A
00552	G0070.7	MRDYA	MACHINE READY A
00553	G0071.0	ARSTA	SPINDLE RESET
00554	G0071.1	*ESPA	SPINDLE 1 EMERGENCY STOP
00555	G0071.6	SP_RANGE	SPEED RANGE SWITCH REQUEST
00556	G0071.7	LOW_MC	LOW SPEED MC STATUS
00557	G0072.4	OVRA	ANALOG OVERRIDE COMMAND
00558	G0072.7	HIGH_MC	HIGH SPEED MC STATUS
00559	G0074.4	SRVB	SPINDLE CCW COMMAND B
00560	G0074.5	SFRB	SPINDLE CW COMMAND B
00561	G0074.6	ORCMB	SPINDLE ORIENT COMMAND B
00562	G0074.7	MRDYB	MACHINE READY B
00563	G0100.0	+J1	X AXIS PULS DIRECT
00564	G0100.1	+J2	Z AXIS PULS DIRECT
00565	G0100.2	+Z	+JZ
00566	G0100.3	+4	+J4
00567	G0102.0	-J1	X AXIS MINUS DIRECT
00568	G0102.1	-J2	Z AXIS MINUS DIRECT

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00569	G0102.2	-Z	-JZ
00570	G0102.3	-4	-J4
00571	G0106.0	MIRX	X AXIS MIRROR IMAGE SIGNAL
00572	G0106.1	MIRY	Y AXIS MIRROR IMAGE SIGNAL
00573	G0106.3	MIR4	4TH AXIS MIRROR IMAGE SIGNAL
00574	G0108.2	MLKZ	Z AXIS MACHINE LOCK
00575	G0114.0	*+L1	X AXIS PULS OVERTAVEL
00576	G0114.1	*+L2	Z AXIS PULS OVERTRAVEL
00577	G0116.0	*-L1	X AXIS MINUS OVERTRAVEL
00578	G0116.1	*-L2	Z AXIS MINUS OVERTRAVEL
00579	G0118.0	*+ED1	X AXIS PULS DECELERATION
00580	G0118.1	*+ED2	Z AXIS PULS DECELERATION
00581	G0120.0	*-ED1	X AXIS MINUS DECELERATION
00582	G0120.1	*-ED2	Z AXIS MINUS DECELERATION
00583	G0126.0	SVFX	SERVO OFF X
00584	G0126.1	SVFY	SERVO OFF Y
00585	G0126.2	SVFZ	SERVO OFF Z
00586	G0126.3	SVF4	SERVO OFF 4
00587	G0130.0	*IT1	X AXIS INTERLOCK
00588	G0130.1	*IT2	Z AXIS INTERLOCK
00589	G0130.2	*ITZ	INTERLOCK Z
00590	G0130.3	*IT4	INTERLOCK 4
00591	R0000.0	LOGIC1	LOGIC1
00592	R0000.1	XHOK	X AXIS HOME OK
00593	R0000.2	ZHOK	Z AXIS HOME OK
00594	R0000.3	AHOK	ALL AXIS HOME OK
00595	R0000.4	TNH	TURRET NOT HOME
00596	R0000.5	T>T12	TOOL NO. >12
00597	R0000.6	T0	TOOL NO. =0
00598	R0000.7	T-1	TOOL NO. -1
00599	R0001.0	T1OUT	TOOL NO. 1
00600	R0001.1	T2OUT	TOOL NO. 2
00601	R0001.2	T4OUT	TOOL NO. 4
00602	R0001.3	T8OUT	TOOL NO. 8
00603	R0001.4	T16OUT	TOOL NO. 16
00604	R0001.5	SUB14A1	SUB14 ALARM 1
00605	R0001.6	T1I	TOOL T1 INPUT
00606	R0001.7	COL.MP	
00607	R0002.0	AT2I	AUTO.T2 INPUT
00608	R0002.1	AT4I	AUTO T4 INPUT
00609	R0002.2	AT8I	AUTO. T8 INPUT
00610	R0002.3	AT16I	AUTO. T16 INPUT
00611	R0003.0	MT2I	MANUAL T2 INPUT
00612	R0003.1	MT4I	MANUAL T4 INPUT
00613	R0003.2	MT8I	MANUAL T8 INPUT
00614	R0003.3	MT16I	MANUAL T16 INPUT
00615	R0005.0	/TBIN0	NOT TOOL BCD 0
00616	R0005.1	/TBIN1	NOT TOOL BCD 1
00617	R0005.2	/TBIN2	NOT TOOL BIN 2
00618	R0005.3	/TBIN3	NOT TOOL BIN 3
00619	R0005.4	/TBIN4	NOT TOOL BIN 4
00620	R0005.5	/TBIN5	NOT TOOL BIN 5
00621	R0005.6	/TBIN6	NOT TOOL BIN 6
00622	R0005.7	/TBIN7	NOT TOOL BIN 7
00623	R0006.0	ZRN.M	ZERO MODE
00624	R0006.1	HZ	HANDLE Z AXIS SELECT
00625	R0006.2	HX	HANDLE X AXIS SELECT
00626	R0006.3	JOG.M	JOG MODE
00627	R0006.4	MDI.M	MDI MODE
00628	R0006.5	AUTO.M	AUTO MODE
00629	R0006.6	EDIT.M	EDIT MODE
00630	R0006.7	DNC.M	DNC MODE
00631	R0008.0	INC.P	SP OVERRIDE INC. PULSE
00632	R0008.1	DEC.P	SP. OVERRIDE DEC. PULSE
00633	R0008.2	SUB36A1	SUB36 ALARM 1
00634	R0008.3	SUB37A1	SUB37 ALARM 1
00635	R0008.4	SP.120	SP. OVERRIDE 120%
00636	R0008.5	SP.50%	SP. OVERRIDE 50%
00637	R0008.6	SP.100	SP. OVERRIDE 100%
00638	R0008.7	SUB14A2	SUB14 ALARM 2
00639	R0009.0	SPA1	SP . OVERRIDE 1

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00640	R0009.1	SPB1	SP. OVERRIDE 2
00641	R0009.2	SPC1	SP.OVERRIDE 4
00642	R0010.0	DRN1P	DRY RUN 1 PULS
00643	R0010.1	DRN1PD	DRY RUN 1 PULS DELETE
00644	R0010.2	DRNON	DRY RUN ON
00645	R0010.3	BDT1P	BLOCK SKIP 1 PULS
00646	R0010.4	BDT1PD	BLOCK SKIP 1 PULS DELETE
00647	R0010.5	BDTON	BLOCK SKIP ON
00648	R0010.6	OPI1P	OPTION STOP 1 PULS
00649	R0010.7	OPI1PD	OPTION STOP 1 PULS DELETE
00650	R0011.0	OPON	OPTION STOP ON
00651	R0011.1	MCL1P	MACHINE LOCK 1 PULS
00652	R0011.2	MCL1PD	MACHINE LOCK 1 PULS DELETE
00653	R0011.3	MCLON	MACHINE LOCK ON
00654	R0011.4	OTRE	OT RELEASE
00655	R0011.5	M30ST.D	M30 >CYCLE START DELAY TIMER
00656	R0011.6	PRST	PROGRAM START
00657	R0011.7	TMB2	CONUTER ON TIMER
00658	R0012.0	OPSP	OPTION STOP
00659	R0012.1	SUB31A1	SUB31 ALARM 1
00660	R0012.2	QUILMF	QUILL MANUAL FORWARD
00661	R0012.3	QUILMB	QUILL MANUAL BACK
00662	R0012.4	QUILAF	QUILL AUTO FORWARD
00663	R0012.5	QUILAB	QUILL AUTO BACK
00664	R0012.6	T1	TAIL AUTO BACK TIMER
00665	R0012.7	CHOP1P	CHUCK OPEN 1 PULS
00666	R0026.0	M208	M208 CODE
00667	R0026.1	M209	M209 CODE
00668	R0026.2	M210	M210 CODE
00669	R0026.3	M211	M211 CODE
00670	R0026.4	M212	M212 CODE
00671	R0026.5	M213	M213 CODE
00672	R0026.6	M214	M214 CODE
00673	R0026.7	M215	M215 CODE
00674	R0027.1	CHAOP	CHUCK AUTO OPEN
00675	R0027.2	CHACL	CHUCK AUTO CLOSE
00676	R0027.5	CHO	CHUCK OPEN
00677	R0027.6	CHC	CHUCK CLOSE
00678	R0027.7	COL.OF	COOLANT MANUAL OFF
00679	R0028.0	TMB3	HYDRAULIC START TIMER
00680	R0028.1	HYPL	HYDRAULIC PRESSURE LOW
00681	R0028.2	COOLON	COOLANT ON
00682	R0028.3	BDT1P.1	SIGNAL SKIP 1 PULS 1
00683	R0028.4	PCON.R	PARTS CATCHER ON CYCLE
00684	R0028.5	BDT1ON	SIGNAL SKIP ON
00685	R0028.6	PACST	PARTS CONVYER ON
00686	R0029.0	PASTA	PARTS CONVYER AUTO ON
00687	R0029.1	TM3	SPINDLE ORIENT TIMER
00688	R0029.2	SPMCW	SP. MANUAL CW
00689	R0029.3	SPMCCW	SP. MANUAL CCW
00690	R0029.4	SPACW	SPINDLE AUTO CW
00691	R0029.5	SPACW1	SPINDLE AUTO CW 1
00692	R0029.6	SPACCW	SPINDLE AUTO CCW
00693	R0030.0	SPCW	SPINDLE CW
00694	R0030.1	SPCCW	SPINDLE CCW
00695	R0030.2	TMB4	OPTION STOP TIMER
00696	R0030.3	TMB5	OPTION STOP 1 TIMER
00697	R0030.4	OPSPON	OPTION STOP ON
00698	R0030.5	+XDEC	X AXIS PLUS DECELERATION
00699	R0030.6	-XDEC	X AXIS MINUS DECELERATION
00700	R0030.7	+ZDEC	Z AXIS PULS DECELERATION
00701	R0031.0	-ZDEC	Z AXIS MINUS DECELERATION
00702	R0031.1	MAL1	MACHINE ALARM 1
00703	R0031.2	MAL2	MACHINE ALARM 2
00704	R0031.3	MAL3	MACHINE ALARM 3
00705	R0031.4	AL1P	ALARM 1 PULS
00706	R0031.5	AL1PD	ALARM 1 PULS DELETE
00707	R0031.6	ALSP	ALARM FEED HOLD
00708	R0031.7	APO.EM	AUPO > EMERGENCY
00709	R0032.0	MFIN1	M CODE FINISH 1
00710	R0032.1	MFIN2	M CODE FINISH 2

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00711	R0032.2	MFIN3	M CODE FINISH 3
00712	R0032.3	MFIN4	M CODE FINISH 4
00713	R0032.4	MFIN	M CODE FINISH
00714	R0032.5	M301P	M30 CONTINUE 1 PULS
00715	R0032.6	M30IPD	M30 CONTINUE 1 PULS DELETE
00716	R0032.7	M30CR	M30 CONTINUE RUN
00717	R0033.0	JV01	JOG OVERRIDE 1
00718	R0033.1	JV02	JOG OVERRIDE 2
00719	R0033.2	JV04	JOG OVERRIDE 4
00720	R0033.3	JV08	JOG OVERRIDE 8
00721	R0033.4	LOG1P	LOGIC 1 PULS
00722	R0033.5	LIG1PD	LIGIC 1 PULS DELETE
00723	R0033.6	WOL1P	WORK LIGHT 1 PULS
00724	R0033.7	WOL1PD	WORK LIGHT1 PULS DELETE
00725	R0034.0	WOLON	WORK LIGHT ON
00726	R0034.1	SBK1P	SINGAL BLOCK 1 PULS
00727	R0034.2	SBK1PD	SINGAL BLOCK 1 PULS DELETE
00728	R0034.3	SBKON	SINGAL BLOCK ON
00729	R0034.4	COLPOF	
00730	R0034.5	COL.MH	COOLANT MANUAL HOLD
00731	R0034.6	T9	TURRET DELEAY ROTAION
00732	R0034.7	MTS1P	MANUAL TOOL SELECT 1 PULS
00733	R0035.0	F1.P	F1 (AUPO) PULSE
00734	R0035.1	F1.POF	
00735	R0035.2	F1.OFF	
00736	R0037.0	BUZZR	BUZZER OFF
00737	R0037.1	TUZST	TURRET ZERO RETURN START
00738	R0037.2	MT1I	MANUAL TOOL 1 INPUT
00739	R0037.4	MAM	MANUAL MODE
00740	R0037.5	AUTO	AUTO OP. MODE
00741	R0037.6	MTS	MANUAL TOOL SELECT
00742	R0037.7	TOK1	TOOL OK 1
00743	R0039.0	TBIN0	TOOL BIN NO. 0
00744	R0039.1	TBIN1	TOOL BIN NO. 1
00745	R0039.2	TBIN2	TOOL BIN NO. 2
00746	R0039.3	TBIN3	TOOL BIN NO. 3
00747	R0039.4	TBIN4	TOOL BIN NO. 4
00748	R0039.5	TBIN5	TOOL BIN NO. 5
00749	R0039.6	TBIN6	TOOL BIN NO. 6
00750	R0039.7	TBIN7	TOOL BIN NO. 7
00751	R0040.0	JVON	JOG OVERRIDE ON
00752	R0040.1	MTS1PD	MANUAL TOOL SELECT 1 PULS DELE
00753	R0040.4	TOK	TOOL SELECT OK
00754	R0040.5	TFIN	TOOL SELECT FINISH
00755	R0040.6	ATS	AUTO TOOL SELECT
00756	R0040.7	FVON	FEED OVERRIDE ON
00757	R0041.0	T>T8	TOOL NO. > 8
00758	R0041.2	TL-1	TOOL NO. -1
00759	R0041.3	TF.ST	T CODE START ENABLE
00760	R0041.4	PRSTD	PROGRAM RESTART DELECT
00761	R0041.5	BUOFFT	BUZZER OFF TIMER
00762	R0041.6	BUONT	BUZZER ON TIMER
00763	R0041.7	BUON	BUZZER ON
00764	R0042.0		
00765	R0042.1	TRT	TURRET RUN TIMER
00766	R0043.0	T1S	TOOL 1 SELECT
00767	R0043.1	T2S	TOOL 2 SELECT
00768	R0043.2	T4S	TOOL 4 SELECT
00769	R0043.3	T8S	TOOL 8 SELECT
00770	R0050.1		
00771	R0050.2		
00772	R0050.4	T4	
00773	R0051.1	TRO.DY	TURRET ROT. DELAY
00774	R0051.5	PCFFIN	PARTS CATCHER FOR. FIN.
00775	R0051.6	PCBFIN	PARTS CATCHER BACK FIN.
00776	R0051.7	PCUP.F	PARTS CATCHER UP FIN
00777	R0052.0	PCDN.F	PARTS CATCHER DOWN FIN
00778	R0052.1	PCVY.OF	PARTS CVY. ON TIMER
00779	R0052.7	M8085F	M80/M85 FIN
00780	R0053.0	QUF.AL	QUILL FOR. ALARM
00781	R0053.1	QUB.AL	QUILL BACK ALARM

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00782	R0053.2	QUI.BK	QUILL AUTO BACK TIMER
00783	R0056.2	CVY.OFF	CVY. OFF TIMER
00784	R0056.3	CVY.ON	CVY. ON TIMER
00785	R0060.0	M30OFF	M30 HOLD OFF
00786	R0061.3	TZRNST	TURRET ZRN START
00787	R0061.5	AT.ST	AUTO TOOL SELECT START
00788	R0061.6	TF.DEY	TF DELAY
00789	R0072.0	*FV1.R2	
00790	R0072.1	*FV2.R2	
00791	R0072.2	*FV3.R2	
00792	R0072.3	*FV4.R2	
00793	R0072.4	*FV5.R2	
00794	R0072.5	*FV6.R2	
00795	R0072.6	*FV7.R2	
00796	R0072.7	*FV8.R2	
00797	R0075.0	FOV=0	
00798	R0100.0	M29R	
00799	R0100.1	SPSP.D	SP. STOP FIN DELAY
00800	R0100.2	M29.H	M29 HOLD
00801	R0100.5	M29.F	M29 FIN DELAY
00802	R0113.0	CNC_READY	
00803	R0200.0		
00804	R0200.3	H	HANDLE MODE
00805	R0201.0		
00806	R0201.3		
00807	R0202.0	T4.TUR	4T TURRET
00808	R0202.1	T8.TUR	8T TURRET
00809	R0202.2	T10.TUR	10T TURRET
00810	R0202.3	T12.TUR	12T TURRET
00811	R0300.0	M0	M0 CODE
00812	R0300.1	M1	M1 CODE
00813	R0300.2	M2	M2 CODE
00814	R0300.3	M3	M3 CODE
00815	R0300.4	M4	M4 CODE
00816	R0300.5	M5	M5 CODE
00817	R0300.6	M6	M6 CODE
00818	R0300.7	M7	M7 CODE
00819	R0301.0	M8	M8 CODE
00820	R0301.1	M9	M9 CODE
00821	R0301.2		M10 CODE
00822	R0301.3	M11	M11 CODE
00823	R0301.4	M12	M12 CODE
00824	R0301.5		M13 CODE
00825	R0301.6		M14 CODE
00826	R0301.7		M15 CODE
00827	R0302.0		M16 CODE
00828	R0302.1	M17	M17 CODE
00829	R0302.2	M18	M18 CODE
00830	R0302.3		M19 CODE
00831	R0302.4		M20 CODE
00832	R0302.5	M21	M21 CODE
00833	R0302.6	M22	M22 CODE
00834	R0302.7	M23	M23 CODE
00835	R0303.0	M24	M24 CODE
00836	R0303.4	M28	M28 CODE
00837	R0303.5	M29	M29 CODE
00838	R0303.6	M30	M30 CODE
00839	R0303.7	M31	M31 CODE
00840	R0304.0	M32	M32 CODE
00841	R0304.1	M33	M33 CODE
00842	R0304.2	M34	M34 CODE
00843	R0304.3	M35	M35 CODE
00844	R0304.4	M36	M36 CODE
00845	R0304.5	M37	M37 CODE
00846	R0304.6	M38	M38 CODE
00847	R0304.7	M39	M39 CODE
00848	R0305.0	M40	
00849	R0305.1	M41	
00850	R0305.2	M42	
00851	R0305.3	M43	
00852	R0305.4	M44	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00853	R0305.5	M45	
00854	R0305.6	M46	
00855	R0305.7	M47	
00856	R0306.0	M48	
00857	R0306.1	M49	
00858	R0306.2	M50	
00859	R0306.3	M51	
00860	R0306.4	M52	
00861	R0306.5	M53	
00862	R0306.6	M54	
00863	R0306.7	M55	
00864	R0307.0	M56	
00865	R0307.1	M57	
00866	R0307.2	M58	
00867	R0307.3	M59	
00868	R0307.4	M60	
00869	R0307.5	M61	
00870	R0307.6	M62	
00871	R0307.7	M63	
00872	R0308.0	M64	
00873	R0308.1	M65	
00874	R0308.2	M66	
00875	R0308.3	M67	
00876	R0308.4	M68	
00877	R0308.5	M69	
00878	R0308.6	M70	
00879	R0308.7	M71	
00880	R0309.0	M72	
00881	R0309.1	M73	
00882	R0309.2	M74	
00883	R0309.3	M75	
00884	R0309.4	M76	
00885	R0309.5	M77	
00886	R0309.6	M78	
00887	R0309.7	M79	
00888	R0310.0	M80	M80 CODE
00889	R0310.1	M81	M81 CODE
00890	R0310.2	M82	M82 CODE
00891	R0310.3	M83	M83 CODE
00892	R0310.4	M84	M84 CODE
00893	R0310.5	M85	M85 CODE
00894	R0310.6	M86	M86 CODE
00895	R0310.7	M87	M87 CODE
00896	R0311.0	M88	M88 CODE
00897	R0311.1	M89	M89 CODE
00898	R0311.2	M90	M90 CODE
00899	R0311.3	M91	M91 CODE
00900	R0311.4	M92	M92 CODE
00901	R0311.5	M93	M93 CODE
00902	R0311.6	M94	M94 CODE
00903	R0311.7	M95	M85 CODE
00904	R0312.0	M96	
00905	R0312.1	M97	
00906	R0312.2	M98	
00907	R0312.3	M99	
00908	R0312.4	M100	
00909	R0312.5	M101	
00910	R0312.6	M102	
00911	R0312.7	M103	
00912	R0313.0	M104	
00913	R0313.1	M105	
00914	R0313.2	M106	
00915	R0313.3	M107	
00916	R0313.4	M108	
00917	R0313.5	M109	
00918	R0330.6	M30.H	M30 HOLD
00919	R0330.7	M30OFF	M30 HOLD OFF ENABLE
00920	R0331.1	M30HOF	M30 HOLD OFF
00921	R0331.2	M30H.T	M30 HOLD ON TIMER
00922	R0333.2	NC.AL	NC ALARM HOLD
00923	R0337.3	M80.H	M80 HOLD



NO.	ADDRESS	SYMBOL	FIRST COMMENT
00924	R0337.4	M85.H	M85 HOLD
00925	R0337.5	ORI.EN	SP. ORI. ENABLE
00926	R0338.5	M7M8OF	COOLANT/AIR OFF
00927	R0350.0	M30.CP	M30 COUNTER PULSE
00928	R0350.1	COU.OV	COUNTER OVER
00929	R0350.4	AUPO.H	AUPO HOLD
00930	R0360.0	LUB.ON	LUBE ON TIMER COUNTER 2
00931	R0360.1	LUB.OF	LUBE OFF TIMER COUNTER 3
00932	R0400.6	MARK	
00933	R0500.0	L1	LOGIC 1
00934	R0500.1	M00	PROGRAM STOP
00935	R0500.2	M01	OPTION PROGRAM STOP
00936	R0500.3	M02	PROGRAM END
00937	R0500.4	M03	SPINDLE C.W
00938	R0500.5	M04	SPINDLE C.C.W
00939	R0500.6	M05	SPINDLE STOP
00940	R0500.7	M06	ATC MACRO
00941	R0501.0	M07	WORKPIECE BLAST ON
00942	R0501.1	M08	COOLANT ON
00943	R0501.2	M09	COOLANT/KIT OFF
00944	R0501.3	M10	CUT BLOW AIR OFF
00945	R0501.6	M13	SP CW AND COOLANT ON
00946	R0501.7	M14	SP CCW AND COOLANT ON
00947	R0502.0	M15	CHIP FLUSH PUMP ON
00948	R0502.1	M16	CHIP FLUSH PUMP OFF
00949	R0502.4	M19	SPINDLE ORIENT ON
00950	R0502.5	M20	SPINDLE ORIENT OFF
00951	R0503.2	M25	A AXIS UNCLAMP
00952	R0503.3	M26	A AXIS CLAMP
00953	R0503.4	M27	A AXIS INDEX
00954	R0504.2	M33.A	M CODE OUTPUT 1
00955	R0504.3	M34.A	M CODE OUTPUT 2
00956	R0504.4	M35.A	M CODE OUTPUT 3
00957	R0504.5	M36.A	M CODE OUTPUT 4
00958	R0504.6	M37.A	
00959	R0504.7	M38.A	
00960	R0505.0	M39A	SP LOAD MONIT START
00961	R0505.1	M40A	SP LOAD MONIT STOP
00962	R0505.6	M45.A	
00963	R0505.7	M46.A	
00964	R0506.1	M48.A	
00965	R0506.3	M50.A	
00966	R0506.4	M51.A	
00967	R0506.7	M54.A	
00968	R0507.0	M55.A	
00969	R0507.1	M56.A	
00970	R0507.2	M57.A	
00971	R0507.3	M58.A	
00972	R0507.4	M59.A	
00973	R0507.5	M60.A	
00974	R0507.6	M61.A	
00975	R0508.3	M66.A	
00976	R0508.4	M67.A	
00977	R0508.5	M68.A	GEAR CHANGE TO LOW
00978	R0508.6	M69.A	GEAR CHANGE TO HIGH
00979	R0508.7	M70.A	
00980	R0509.0	M71.A	
00981	R0509.1	M72.A	
00982	R0509.2	M73.A	
00983	R0509.3	M74.A	
00984	R0509.4	M75.A	
00985	R0511.7	M94.A	
00986	R0512.0	M95.A	
00987	R0512.5	M_FIN	M FINISH
00988	R0512.6	SFIN	S CODE FINISH
00989	R0513.0	JOG	JOG MODE
00990	R0513.1	MANUAL	MANUAL MODE
00991	R0513.2	ZRNFIN	AXES REF. RETURN FINISH
00992	R0513.3	ZRNLH	ZERO RETURN ACTIVE
00993	R0513.4	FLTMR	FLASH ON/OFF TIMER
00994	R0513.5	FLASH	FLASH ON/OFF

NO.	ADDRESS	SYMBOL	FIRST COMMENT
00995	R0513.6	FLTRG	FLASH ON/OFF TRIGGER
00996	R0513.7	AUTOLH	AUTO LATCH
00997	R0515.7	STOP	EMG & RESET
00998	R0516.0	RDY1	NC READY
00999	R0516.1	F.SW+A	FOOT S/W ON PULSE AUX
01000	R0516.2	F.SW+	FOOT S/W ON PULSE
01001	R0516.3	GCHSTB	GEAR CHANGE STANDBY
01002	R0516.4	HGCH	HIGH GEAR CHANGE
01003	R0516.5	JFSPOK	JIG FTSW PULSE OK
01004	R0516.6	ST+	CYCLE START ON PULSE
01005	R0516.7	LGCH1	LOW GEAR CHANGE 1
01006	R0517.0	L1DL	LOGIC 1 DELAY
01007	R0517.1	O.SA	POWER ON INITIAL PULSE AUX
01008	R0517.2	O.S	POWER ON INITIAL PULSE
01009	R0517.3	GRHIGH	GEAR HIGH
01010	R0517.4	GRLOW	GEAR LOW
01011	R0517.5	GRCHG	GEAR CHANGE
01012	R0517.6	LGCH	LOW GEAR CHANGE
01013	R0517.7	HGCH1	HIGH GEAR CHANGE 1
01014	R0518.0	GEAROK	GEAR OK
01015	R0518.1	TMRO1	HIGH GEAR CHANGE TIMER
01016	R0518.2	TMRO2	LOW GEAR CHANGE TIMER
01017	R0518.3	ORCM1	SPINDLE ORIENTATION
01018	R0518.4	M06-	M06 OFF PULSE
01019	R0518.5	M06-A	M06 OFF PULSE AUX
01020	R0518.6	SPOK	SPINDLE OK
01021	R0518.7	MAN-	MANUAL MODE OFF PULSE
01022	R0519.0	MAN-A	MANUAL MODE OFF PULSE AUX
01023	R0519.1	MSSTP	MANUAL SPINDLE STOP
01024	R0519.2	SPNOP	SPINDLE NO PAUSE
01025	R0519.3	SPOK1	SPINDLE OK 1
01026	R0519.4	SP-FOR	SPINDLE C.W
01027	R0519.5	SP-REV	SPINDLE C.C.W
01028	R0519.6	SPDIR	SPINDLE DIR FLAG
01029	R0520.0	SP-HLD	SPINDLE RESET HOLD
01030	R0520.1	RGDK	RIGID TAPPING KEEP
01031	R0520.2	H/LOVT	HIGH/LOW SPEED CHANGE OVT
01032	R0520.3	RGDENB	RIGID TAPPING ENABLE
01033	R0520.4	RGDEND	RIGID TAPPING END
01034	R0520.5	RGDFIN	RIGID TAPPING FINISH
01035	R0520.6	TMR03	RIGID TAPPING FINISH DELAY
01036	R0521.0	RGDCW	RIGID TAPPING C.W
01037	R0521.1	RGDCCW	RIGID TAPPING C.C.W
01038	R0521.2	GCHSTP	GEAR CHANGE STOP
01039	R0521.3	M29DL	M29 FUNCTION DELAY
01040	R0521.4	AUTO-	AUTO MODE OFF PULSE
01041	R0521.5	AUTO-A	AUTO MODE OFF PULSE AUX
01042	R0521.6	ST+A	CYCLE START ON PULSE AUX
01043	R0521.7	SPROT	SP CW/CCW FOR GEAR CHANGE
01044	R0522.0	>25%	RAPID >25%
01045	R0522.1	MCLN+	CLNT MANUAL ON PULSE
01046	R0522.2	MCLN+A	CLNT MANUAL ON PULSE AUX
01047	R0522.3	ACLN+	CLNT AUTO ON PULSE
01048	R0522.4	ACLN+A	CLNT AUTO ON PULSE AUX
01049	R0522.5	+4A	+J4 AUX
01050	R0522.6	-4A	-J4 AUX
01051	R0522.7	JOGOK	JOG FEED OK
01052	R0523.0	DRITL7	DOOR INTERLOCK 7
01053	R0523.1	DRITL1	DOOR INTERLOCK 1
01054	R0523.2	DRITL2	DOOR INTERLOCK 2
01055	R0523.3	DRITL3	DOOR INTERLOC 3
01056	R0523.4	DRITL4	DOOR INTERLOCK 4
01057	R0523.5	DRITL5	DOOR INTERLOCK 5
01058	R0523.6	DRITL6	DOOR INTERLOCK 6
01059	R0523.7	<370	JOG FEEDRATE < 370MM
01060	R0524.0	>370	JOG FEEDRATE > 370MM
01061	R0524.1	STEMP	CYCLE START TEMP
01062	R0524.2	SPTMP	FEED HOLD TEMP
01063	R0524.3	MCHKEP	MODE CHANGE KEEP
01064	R0524.4	ZPXKEP	X HOME KEEP
01065	R0524.5	ZPYKEP	Y HOME KEEP

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01066	R0524.6	RST.DLY	RESET DELAY TIMER
01067	R0524.7	ZP4KEP	4 HOME KEEP
01068	R0525.0	NOBT	NO BIG TOOL
01069	R0525.1	SP=EMP	SP TOOL =EMPTY
01070	R0525.2	SP=POT	SP TOOL NO=STANDBY POT NO
01071	R0525.3	PT=EMP	POT TOOL =EMPTY
01072	R0525.4	SP=BT	SP TOOL = BIG TOOL
01073	R0525.5	PT=BT	POT TOOL = BIG TOOL
01074	R0525.6	SEMPW	SEARCH EMPTY TOOL
01075	R0525.7	TMB29	SPINDLE CW/CCW DELAY
01076	R0526.0	BTSTB	BIG TOOL STANDBY
01077	R0526.1	BTCK	WITH BIG TOOL?
01078	R0526.2	EMPCK	SP/STB T NO. =EMPTY ?
01079	R0526.3	ORDCK	SP/STB T NO. =ORDINARY ?
01080	R0526.4	S,PCK	SP TOOL = STANDBY POT TOOL ?
01081	R0526.5	MEMPT	MEMORIZE POT TOOL
01082	R0526.6	SRHEMP	SEARCH EMPTY TOOL
01083	R0526.7	TCH1	TOOL CHANGE 1
01084	R0527.0	SRHMPT	SEARCHING MEMORY POT
01085	R0527.1	TCH2	TOOL CHANGE 2
01086	R0527.2	ATCEND	ATC END
01087	R0527.3	M6TMP	TOOL CHANGE TEMP
01088	R0527.5	SRHFIN	TOOL SEARCH FIN
01089	R0528.0	SPKEP	FEED HOLD KEEP
01090	R0528.1	SPR-	SPINDLE OFF PULSE
01091	R0528.2	SPR-A	SPINDLE OFF PULSE AUX
01092	R0528.3	LUBONT	LUBE ON TIMER
01093	R0528.4	LUNOFT	LUBE OFF TIMER
01094	R0528.5	LBONT+	LUBE ON TIMER PULSE
01095	R0528.6	LBT+A	LUBE ON TIMER PULSE AUX
01096	R0528.7	GRINP1	GEAR IN-POSITION 1
01097	R0529.0	ARMSTP	ARM STOP POINT
01098	R0529.1	MGINP	MAG IN-POSITION
01099	R0529.2	ESCAPS	ESCAPE ARM STOP POINT
01100	R0529.3	A60AR	ARM 60 ROTATION ARRIVAL
01101	R0529.4	A180AR	ARM 180 ROTATION ARRIVAL
01102	R0529.5	A-60AR	ARM -60 ROTATION ARRIVAL
01103	R0529.6	MGCTA	MAG COUNTER A
01104	R0529.7	MGIP+	MAG IN-POSITION PULSE
01105	R0530.0	CVY.JR	CVY JOG CCW REG.
01106	R0530.1	CVYCWR	CVY CW REG.
01107	R0530.2	CVY.M	CVY. MANUAL FOR.
01108	R0530.3	CVY.PF	CVY. MANUAL PULSE OFF
01109	R0530.4	CVY.MH	CVY. MANUAL HOLD
01110	R0530.5	MGCCWA	MAG CCW AUX
01111	R0530.6	MGMCW1	MAG MANUAL CW ON
01112	R0530.7	MGCCW1	MAG MANUAL CCW ON
01113	R0531.0	MGCW	MAG CW
01114	R0531.1	MCWDEC	MAG CW DEC.
01115	R0531.2	MGCWDL	MAG CW DELAY
01116	R0531.3	MGCCW	MAG CCW
01117	R0531.4	MAGOK	MAG OK
01118	R0531.5	MCCWDE	MAG CCW DEC
01119	R0531.6	MCCWDL	MAG CCW DELAY
01120	R0531.7	MGCT-	MAG COUNT OFF PULSE
01121	R0532.0	MGRSTB	MAG ROT STAND-BY
01122	R0532.1	MAGON2	MAG ON 2
01123	R0532.2	MAGOK1	MAG OK 1
01124	R0532.3	MAGCHK	MAG ROT CHECK
01125	R0532.5	PTDNOK	POT DOWN OK
01126	R0532.6	TUCLFA	AUTO TOOL UNCLAMP FAIL
01127	R0532.7	TCLFA	AUTO TOOL CLAMP FAIL
01128	R0533.0	AMIDDL	ARM MIDDLE POINT DELAY
01129	R0533.1	AMID+	ARM MIDDLE POINT ON PULSE
01130	R0533.2	AMID+A	ARM MID POINT ON PULSE AUX
01131	R0533.3	AMIDK	ARM MID POINT KEEP
01132	R0533.4	AMO	ARM RETURN POINT
01133	R0533.5	AMO+	ARM RETURN POINT ON PULSE
01134	R0533.6	AMO+A	ARM RTN POINT ON PULSE AUX
01135	R0533.7	AMOK	ARM RETURN POINT KEEP
01136	R0534.0	TF1	TOOL SEARCH ENABLE

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01137	R0534.1	TFIDL	TOOL SEARCH ENABLE DELAY
01138	R0534.2	TSRHON	TOOL SEARCH ON
01139	R0534.3	TSRH+	TOOL SEARCH ON PULSE
01140	R0534.4	TSRH+A	TOOL SEARCH ON PULSE AUX
01141	R0534.5	SHERR	TOOL ON. SEARCH ERROR
01142	R0534.7	RTO	MAG ROTATION 0
01143	R0535.0	MGR0T	MAG ROTATION CW/CCW
01144	R0535.1	TDEC	TOOL SEARCH DEC
01145	R0535.2	TDECK	TOOL SEARCH DEC KEEP
01146	R0535.3	TCOIN	T CODE = STANDBY TOOL
01147	R0535.4	TCOIN1	T CODE = STANDBY TOOL 1
01148	R0535.5	TCOSP	T CODE = SP TOOL
01149	R0535.6	TCOSP1	T CODE = SP TOOL 1
01150	R0536.0	MGACW	MAG AUTO CW
01151	R0536.1	MGACCW	MAG AUTO CCW
01152	R0536.2	MOVER1	DATA MOVE ERROR 1
01153	R0536.3	MOVER2	DATA MOVE ERROR 2
01154	R0536.4	MGCKDL	MAG CHECK DELAY
01155	R0536.5	MG-ERR	MAG ERROR
01156	R0536.6	RDY2	NC READY STATE
01157	R0536.7	A60	ARM 60 ROTATION
01158	R0537.0	A60-	ARM 60 ROTATION OFF PULSE
01159	R0537.1	A60-A	ARM 60 ROT OFF PULSE AUX
01160	R0537.2	A180	ARM 180 ROTATION
01161	R0537.3	A180-	ARM 180 ROT OFF PULSE
01162	R0537.4	A180-A	ARM 180 ROT OFF PULSE AUX
01163	R0537.5	JGBCLK	JIG B CLAMP KEEP
01164	R0537.6	JIGUCL	JIG UNCLAMP
01165	R0537.7	TUCLAU	TOOL UNCLAMP AUX
01166	R0538.0	ATUCL	AUTO TOOL UNCLAMP
01167	R0538.1	MAGON	MAG ON
01168	R0538.3	M06ENB	M06 ENABLE
01169	R0538.4	M06+	M06 ENB ON PULSE
01170	R0538.5	M06+A	M06 ENB ON PULSE AUX
01171	R0538.6	M6ENBK	M06 ENB KEEP
01172	R0538.7	ATCOK	ATC OK
01173	R0539.0	ATCOK1	ATC OK 1
01174	R0539.1	TCHP	TOOL CHANGE POINT
01175	R0539.2	ARM0DL	ARM 0 POINT
01176	R0539.3	PTUPDL	POT UP DELAY
01177	R0539.4	PTDNDL	POT DOWN DELAY
01178	R0539.5	TCLDL	SPINDLE TOOL CLAMP DELAY
01179	R0539.6	TUCLDL	SPINDLE TOOL UNCLAMP DELAY
01180	R0539.7	ATCSTB	ATC STANDBY
01181	R0540.0	A1.POT.DOWN	POT DOWN
01182	R0540.1	A2.ARM.60	ARM 60
01183	R0540.2	PRECLP	TOOL UNCLAMP WHEN ARM 60 ACTIV
01184	R0540.3	A3.SP.UNCLP	SPINDLE TOOL UNCLAMP
01185	R0540.4	A4.ARM.180	ARM 180
01186	R0540.5	SPBLWK	SPINDLE AIR BLOW KEEP
01187	R0540.6	SPBLDL	SPINDLE AIR BLOW DELAY
01188	R0540.7	A5.SP.CLP	SPINDLE TOOL CLAMP
01189	R0541.0	A6.ARM.-60	ARM -60
01190	R0541.1	A7.POT.UP	POT UP
01191	R0541.2	A.STEP.1	ARM STEP 1 / 60
01192	R0541.3	A.STEP.2	ARM STEP 2 / 180
01193	R0541.4	A.STEP.3	ARM STEP 3 / SP AIR BLOW
01194	R0541.5	A.STEP.4	ARM STEP 4 / -60
01195	R0541.6	A.STEP.5	ATC STEP 5 / POT UP
01196	R0541.7	A.STEP.6	ATC STEP6 (ATC END)
01197	R0542.0	A.STEP.FIN	ATC STEP FINISH
01198	R0542.1	ATFIN1	ATC FINISH 1
01199	R0542.2	SP-CLP	SPINDLE CLAMP
01200	R0542.3	SP.UNCLP	SPINDLE UNCLAMP
01201	R0542.4	M72OK	M72 OK
01202	R0542.5	TAIL.H	TAIL HOLD
01203	R0542.6	M74OK	M74 OK
01204	R0542.7	M74A	M74 ACTIVE (ARM 180)
01205	R0543.0	M76OK	M76 OK
01206	R0543.1	M76A	M76 ACTIVE (ARM -60)
01207	R0543.2	ASEQ1	ARM SEQ1

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01208	R0543.3	ASEQ2	ARM SEQ2
01209	R0543.4	ASEQ3	ARM SEQ3
01210	R0543.5	M74AR	M74 ROT ARRIVAL
01211	R0543.6	MAGINP	MAG. IN-POSITION
01212	R0543.7	A4-1	ARM 180
01213	R0544.0	JX.SEL	JOG X SELECT
01214	R0544.1	JZ.SEL	JOG Z SELECT
01215	R0544.2	ATCAL1	ATC ALARM 1
01216	R0544.3	2NDREF	2ND. REFERENCE POINT
01217	R0544.4	ATCITL	ATC INTERLOCK
01218	R0544.5	ARJGSP	ARM JOG STOP
01219	R0544.6	ARJGPA	ARM JOG PAUSE
01220	R0544.7	ARJGDL	ARM JOG DELAY
01221	R0545.3	M19.FIN	M19 FINISHED
01222	R0545.4	M6TMP+	M06 PULSE STANDBY
01223	R0545.5	MGON2	MAG ON 2
01224	R0545.6	ATC+K	ATC PULSE KEEP
01225	R0545.7	M6TMPA	ATC PULSE AUX
01226	R0546.0	M95KEEP	M95 KEEP STATE (LADDER TOP)
01227	R0546.1	ARM0A	ARM 0 POINT AUX
01228	R0546.2	AMIDA	ARM MID POINT AUX
01229	R0546.3	ARMSPA	ARM STOP POINT AUX
01230	R0546.4	0	ZERO POINT
01231	R0546.5	F0+A	F0 ON PULSE AUX
01232	R0546.6	F0+	F0 ON PULSE
01233	R0546.7	ARMJOG	ARM JOG
01234	R0547.0	SPON	SPINDLE ON
01235	R0547.1	L1DL1	LOGIC 1 DELAY 1
01236	R0547.3	ARM0+A	ARM 0 ON PULSE AUX
01237	R0547.4	ARM0+	ARM 0 ON PULSE
01238	R0547.5	AM60+A	ARM 60 ON PULSE AUX
01239	R0547.6	AM60+	ARM 60 ON PULSE
01240	R0548.1	M95JOG	M95 LADDER END
01241	R0548.6	M95-	M95 OFF PULSE
01242	R0548.7	M95-A	M95 OFF PULSE AUX
01243	R0549.0	M95TCH	M95 TOOL CHANGE PULSE
01244	R0549.2	ARM0	ARM RETURN POINT
01245	R0549.3	ARM60	ARM MIDDLE POINT
01246	R0550.0	SPSTOP	SP. STOP REG.
01247	R0550.1	ATSTB1	ATC STANDBY 1
01248	R0551.0	4MUCL	4TH. MANUAL UNCLAMP
01249	R0551.1	4AUCL	4TH. AUTO UNCLAMP
01250	R0551.5	4UCLP	4TH UNCLAMP
01251	R0551.6	GCHFAL	GEAR CHANGE FAILURE
01252	R0551.7	GRINP	GEAR IN-POSITION
01253	R0552.0	A60K	ARM 60 POINT LATCH
01254	R0552.1	A180K	ARM 180 POINT LATCH
01255	R0552.2	60KPD	ARM MIDDLE POINT LATCH DELAY
01256	R0552.3	AZR+	ARM ZERO POINT ON PULSE
01257	R0552.4	AZR-	ARM ZERO POINT OFF PULSE
01258	R0552.5	AZR+A	ARM ZERO POINT PULSE AUX
01259	R0552.6	AMD+	ARM MID POINT ON PULSE
01260	R0552.7	AMD-	ARM MID POINT OFF PULSE
01261	R0553.0	AMD+A	ARM MID POINT PULSE AUX
01262	R0553.1	M70+	M70 ON PULSE
01263	R0553.2	M70+A	M70 ON PULSE AUX
01264	R0553.3	JOGOFD	JOG MODE OFF DELAY
01265	R0553.4	AM60A	ARM MIDDLE POINT
01266	R0553.5	AM0A	ARM RETURN POINT
01267	R0553.6	M94+	M94 ON PULSE
01268	R0553.7	M94+A	M94 ON PULSE AUX
01269	R0554.0	JBFS+	JIG B FTSW ON PULSE
01270	R0554.1	JBFS+A	JIG B FTSW ON PULSE AUX
01271	R0554.2	JGBUCL	JIG B UNCLAMP
01272	R0554.3	>JBCL'	JIG B CLAMP AUX
01273	R0554.4	>JBUC'	JIG B UNCLAMP AUX
01274	R0554.5	JBCLDL	JIG B CLAMP DELAY
01275	R0554.6	>M37'	M37 OUTPUT AUX
01276	R0554.7	>M38'	M38 OUTPUT AUX
01277	R0555.0	X>-30	X COORDINATE > -30MM
01278	R0555.1	X>30	X COORDINATE > 30MM

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01279	R0555.2	Y>-30	Y COORDINATE > -30MM
01280	R0555.3	Z>-30	Z COORDINATE > -30MM
01281	R0555.4	WINFIN	WINDOW FUNCTION FIN
01282	R0555.5	M70FIN	TOOL DATA WRITE FINISH
01283	R0555.6	GCHOVR	GEAR CHANGE OVER
01284	R0555.7	T1+	TMR01 ON PULSE
01285	R0556.0	AP01	AUTO POWER OFF 1
01286	R0556.1	CL-ON1	COOLANT ON 1
01287	R0556.2	CL-OF1	COOLANT OFF 1
01288	R0556.3	KTON1	KIT ON 1
01289	R0556.4	CL-OF5	COOLANT OFF SWITCH
01290	R0556.5	M0/M1	M00/M01 FUNCTION
01291	R0556.6	M2/M30	M02 M30 FUNCTION
01292	R0556.7	M0/1CL	M00/M01 RELEASE
01293	R0557.0	MSTPV	MACHINE STOP VALID
01294	R0557.1	MSTPD	MACHINE STOP DELAY
01295	R0557.2	MSTPR	MACHINE STOP RESET
01296	R0557.3	SRNR1	PROGRAM RESTART ON 1
01297	R0557.4	M3R	SPINDLE C.W REGISTER
01298	R0557.5	M4R	SPINDLE C.C.W REGISTER
01299	R0557.6	T1+A	TMR01 ON PULSE AUX
01300	R0557.7	GCHEND	GEAR CHANGE END
01301	R0558.0	CYST+	CYCLE START ON PULSE
01302	R0558.1	SPRES	SPINDLE RESTART
01303	R0558.2	SPRFIN	SP RESTART FINISH
01304	R0558.3	STON	CYCLE START VALID
01305	R0558.4	CYST+A	CYCLE START ON PULSE AUX
01306	R0558.5	SPCWP	SPINDLE C.W PULSE
01307	R0558.6	SPCCWP	SPINDLE CCW PULSE
01308	R0558.7	SPOK2	SPINDLE OK 2
01309	R0559.0	OMSCHK	SPINDLE OIL MIST CHECK DELAY
01310	R0559.1	WKB-A	WORKPIECE BLAST AUX
01311	R0559.2	WBONDL	WORK BLAST ON DELAY
01312	R0559.3	WBOFDL	WORK BLAST DELAY
01313	R0559.4	ALR	ALARM LAMP REGISTER
01314	R0559.5	CVONDL	CHIP CW ON DELAY
01315	R0559.6	DRITL	DOOR INTERLOCK
01316	R0559.7	CVOFDL	CHIP CW OFF DELAY
01317	R0560.0	O.S-2	EMG ONE SHOOT
01318	R0560.1	MNTN	MAINTENANCE MODE
01319	R0560.2	OILAL	SP OIL COOLER ALARM LATCH
01320	R0560.3	X-MIR	X-AXIS MIRROR IMAGE LATCH
01321	R0560.4	Y-MIR	Y-AXIS MIRROR IMAGE LATCH
01322	R0560.5	4-MIR	4TH AXIS MIRROR IMAGE LATCH
01323	R0560.7	JIGCLK	JIG CLAMP KEEP
01324	R0561.0	JGCLDL	JIG CLAMP DELAY
01325	R0561.1	JGCLOV	JIG CLAMP OVERTIME
01326	R0561.2	STL-	STL OFF PULSE
01327	R0561.3	STL+A	STL ON PULSE AUX
01328	R0561.4	STL+	STL ON PULSE
01329	R0561.5	O.S-2A	EMG O.S_2 AUX
01330	R0561.6	LVLERR	CTS SYSTEM LEVEL ERROR
01331	R0561.7	CLNLDL	COOLANT LOW DELAY
01332	R0562.0	CTSSTB	CTS STANDBY
01333	R0562.1	CLNFP	COOLANT TANK FULL PUMP
01334	R0562.2	FILLP	FILTER TANK LOW PUMP
01335	R0562.3	CLFPDL	COOLANT TANK FULL PUMP DELAY
01336	R0562.4	FILPDL	FILTER TANK LOW PUMP DELAY
01337	R0562.5	M48-1	M48 FOR CTS
01338	R0562.6	FILON	FILTER ON
01339	R0562.7	PUMP1	PUMP1 ON
01340	R0563.0	LVLOK	CTS SYSTEM LEVEL OK
01341	R0563.1	CTSON	CTS ON
01342	R0563.2	KITON	KIT ON
01343	R0563.3	STLKP	STL KEEP UNDER MDI
01344	R0563.4	DROPOF	M30 DOOR OPEN OFF
01345	R0564.0	M84+A	APC M84/M91 ON PULSE AUX
01346	R0564.1	M84+	APC M84/M91 ON PULSE
01347	R0564.2	AP,ENA	APC ENABLE(AUTO CHANGE)
01348	R0564.3	AP,DIS	APC DISABLE(AUTO CHANGE)
01349	R0564.4	TMRB25	APC NOT READY DELAY

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01350	R0564.5	TMRB26	APC UP/DOWN CHECK
01351	R0564.6	AP,MVA	APC M84,M85,M91,M92 AUX
01352	R0564.7	AP,MOE	APC EXT./RET. ENABLE
01353	R0565.0	TMRB27	APC EXT./RET. CHECK
01354	R0565.1	TMRB28	APC OPEN/CLOSE CHECK
01355	R0565.2	AP,ITL	APC X,Y AXIS INTERLOCK
01356	R0565.3	AP,XI	APC X AXIS INTERLOCK
01357	R0565.4	AP,FIN	APC M CODE FINISH
01358	R0565.5	AP,MV+	APC EX/RE ON PULSE
01359	R0565.6	AP,M+A	APC EX/RE ON PULSE AUX
01360	R0565.7	A&T-M	AUTO & TAPE MODE
01361	R0566.0	AP,COP	APC COVER OPEN
01362	R0566.1	AP,ON	APC VALID
01363	R0566.2	AP-ST+	APC CYCLE START ON PULSE
01364	R0566.3	APST+A	APC CYCLE START PULSE AUX
01365	R0566.4	AP,ESS	ESC APC ROTOR STOP POINT
01366	R0566.5	AP,RAR	APC ROTATE ARRIVAL
01367	R0566.6	AP,MOC	APC EXT/RET CHECK AUX
01368	R0570.0	\$]X	JOG +X AXIS PB. AUX
01369	R0570.1	\$]-X	JOG -X AXIS PB. AUX
01370	R0570.2	\$]Y	JOG +Y AXIS PB. AUX
01371	R0570.3	\$]-Y	JOG -Y AXIS PB. AUX
01372	R0570.4	\$]Z	JOG +Z AXIS PB. AUX
01373	R0570.5	\$]-Z	JOG -Z AXIS PB. AUX
01374	R0570.6	\$]SP	FEED HOLD PB. AUX
01375	R0570.7	\$]ST	CYCLE START PB. AUX
01376	R0571.0	\$]-4	JOG -4 AXIS PB. AUX
01377	R0571.1	\$]+4	JOG +4 AXIS PB. AUX
01378	R0571.2	\$]F0	F0 PB. AUX
01379	R0571.3	\$]AFL	AFL PB. AUX
01380	R0571.4	\$]MLK	MACHINE LOCK PB. AUX
01381	R0571.5	\$]ABS	ABS PB. AUX
01382	R0572.0	\$]SBK	SINGLE BLOCK PB. AUX
01383	R0572.1	\$]ZNG	Z AXIS CANCEL PB. AUX
01384	R0572.2	\$]BDT	BLOCK DELETED PB. AUX
01385	R0572.3	\$]OSP	OPTION STOP PB. AUX
01386	R0572.4	\$]SRN	PROGRAM RESTART PB. AUX
01387	R0572.5	\$]DRN	DRY RUN PB. AUX
01388	R0572.6	\$]HX	HAND X AXIS
01389	R0572.7	\$]HY	HAND Y AXIS
01390	R0573.0	\$MD1	MODE SELECT 1
01391	R0573.1	\$MD2	MODE SELECT 2
01392	R0573.2	\$MD4	MODE SELECT 4
01393	R0573.3	\$]RPD	RAPID MODE
01394	R0573.4	\$]ZRN	HOME MODE
01395	R0573.6	\$]HZ	HAND Z AXIS
01396	R0573.7	\$]H4	HAND 4 AXIS
01397	R0574.0	\$]100%	SPINDLE 100%
01398	R0574.1	\$]DEC	SPINDLE DEC
01399	R0574.2	\$]INC	SPINDLE INC
01400	R0574.4	\$FV1	FEED RATE DATA 1
01401	R0574.5	\$FV2	FEED RATE DATA 2
01402	R0574.6	\$FV4	FEED RATE DATA 4
01403	R0574.7	\$FV8	FEED RATE DATA 8
01404	R0575.0	\$]CL.M	MANUAL COOLANT
01405	R0575.1	\$FV16+	FEED RATE DATA 16
01406	R0575.2	\$]CL.A	AUTO COOLANT
01407	R0575.3	\$]MGON	MAGAZINE ON
01408	R0575.5	\$WK-LP	WORK LAMP PB.
01409	R0575.6	\$]MP1	HAND *10
01410	R0575.7	\$]MP2	HAND *100
01411	R0576.0	\$]CPCW	CHIP COVEYOR CW PB.
01412	R0576.1	\$]CPSP	CHIP CONVEYOR STOP PB.
01413	R0576.3	\$]SORI	SPINDLE ORIENT
01414	R0576.4	\$]SRST	SPINDLE RESET
01415	R0576.6	\$F0%	RAPID RATE 0%
01416	R0576.7	\$F25%	RAPID RATE 25%
01417	R0577.0	\$]MGCW	MAGAZINE CW PB.
01418	R0577.1	\$]F8	
01419	R0577.2	\$]F9	
01420	R0577.3	\$]SPCW	SPINDLE CW

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01421	R0577.4	\$]SSTP	SPINDLE STOP
01422	R0577.5	\$]SCCW	SPINDLE CCW
01423	R0577.6	\$F50%	RAPID RATE 50%
01424	R0577.7	\$F100%	RAPID RATE 100%
01425	R0578.0	\$]*SP	FEED HOLD
01426	R0578.1	\$MT2	
01427	R0578.2	\$MT1	
01428	R0578.3	\$]PGM	PROGRAM PROTECT
01429	R0578.4	\$DOOR	DOOR INTERLOCK
01430	R0578.5	\$]APO	AUTO POWER OFF
01431	R0578.6	\$KG2ON	KEY GROUP 2 ON
01432	R0578.7	\$G2ONA	KEY GROUP 2 ON AUX
01433	R0579.0	\$"X1	
01434	R0579.1	\$"X2	
01435	R0579.2	\$"Y1	
01436	R0579.3	\$"Y2	
01437	R0579.4	\$"Z1	
01438	R0579.5	\$"Z2	
01439	R0579.6	\$"B1	
01440	R0579.7	\$"B2	
01441	R0580.0	\$KG1ON	KEY GROUP 1 ON
01442	R0580.1	\$G1ONA	KEY GROUP 1 ON AUX
01443	R0580.2	\$"F0	
01444	R0580.3	\$"AFL	AUX FUNCTION LOCK
01445	R0580.4	\$"MLK	
01446	R0580.5	\$"ABS	
01447	R0580.6	\$"SP	
01448	R0580.7	\$"ST	
01449	R0581.0	\$"SBK	
01450	R0581.1	\$"ZNG	
01451	R0581.2	\$"BDT	
01452	R0581.3	\$"OSP	
01453	R0581.4	\$"SRN	
01454	R0581.5	\$"DRN	
01455	R0582.0	\$"AUTO	
01456	R0582.1	\$"TAPE	
01457	R0582.2	\$"HAN	
01458	R0582.3	THND	TEACH IN HANDLE
01459	R0582.4	TJOG	TEACH IN JOG
01460	R0582.5	\$"100%	
01461	R0582.6	\$"DEC	
01462	R0582.7	\$"INC	
01463	R0583.0	\$"MDI	
01464	R0583.1	\$"EDIT	
01465	R0583.2	\$"RPD	
01466	R0583.3	\$"JOG	
01467	R0583.4	\$"ZRN	
01468	R0583.5	\$"H.0	
01469	R0583.6	\$"H.1	
01470	R0583.7	\$"H.2	
01471	R0584.0	\$"CLM	
01472	R0584.1	\$"F7	
01473	R0584.2	\$"CLA	
01474	R0584.3	\$"MGON	
01475	R0584.4	\$"MCCW	
01476	R0585.0	\$"CVCW	
01477	R0585.1	\$"CVSP	
01478	R0585.2	\$"CCCW	
01479	R0585.3	\$"SORI	
01480	R0585.4	\$"SRST	
01481	R0585.5	\$"SJOG	
01482	R0585.6	\$G1OFD	KEY GROUP 1 OFF DELAY
01483	R0585.7	\$G2OFD	KEY GROUP 2 OFF DELAY
01484	R0586.0	\$"MGCW	
01485	R0586.1	\$"LUBE	
01486	R0586.2	\$"ATRD	
01487	R0586.3	\$"SPCW	
01488	R0586.4	\$"SSTP	
01489	R0586.5	\$"SCCW	
01490	R0586.6	\$"HG	
01491	R0586.7	\$"LGL	



NO.	ADDRESS	SYMBOL	FIRST COMMENT
01492	R0589.0	\$"SPAL	
01493	R0589.1	\$"CLAL	
01494	R0589.2	\$"ARAL	
01495	R0590.0	\$"NCAL	
01496	R0590.1	\$"PGSP	
01497	R0590.3	\$"NCRD	
01498	R0590.4	\$LOG1	MEMBRANE LOGIC 1
01499	R0591.0	\$"ATC1	
01500	R0591.1	\$"ATC2	
01501	R0591.2	\$"ATC3	
01502	R0591.3	\$"ATC4	
01503	R0592.0	\$"ATC5	
01504	R0592.1	\$"ATC6	
01505	R0592.2	\$"ATC7	
01506	R0592.7	\$"ATC8	
01507	R0593.3	\$JFSEL	
01508	R0598.0	\$MM/IN	MM/INCH
01509	R0598.1	\$10/1M	10M/1.26M
01510	R0598.2	\$PLCRD	
01511	R0598.3	\$SP.5%	SPINDLE 5%
01512	R0600.0	CHIPFL	CHIP FLUSHING COOLANT HOLD
01513	R0609.0	APO-PB	AUTO POWER OFF PB.
01514	R0609.2	APO-ON	AUTO POWER OFF -ON
01515	R0610.2	HO-RDY	HOME MODE READY
01516	R0610.3	HOME-Z	HOME START Z AXIS
01517	R0610.5	HO-XYZ	3 AXIS HOME
01518	R0612.2	APCTRB	APC TROUBLESHOOTING
01519	R0630.0	OV1.R	FEEDRATE OV1
01520	R0630.1	OV2.R	
01521	R0630.2	OV4.R	
01522	R0630.3	OV8.R	
01523	R0630.4	OV16.R	
01524	R0657.0	\$CVCW+	CV CW P.B ON PULSE
01525	R0657.1	\$CCW+A	CV CW P.B ON PULSE AUX
01526	R0657.2	CVCW+	CV CW ON PULSE
01527	R0657.3	>X10	INCREMENTAL FEED > X10
01528	R0658.0	MLK-ON	
01529	R0658.1	MLK+	MLK P.B ON PULSE
01530	R0658.2	SRN-ON	
01531	R0658.3	SRN+	SRN P.B ON PULSE
01532	R0658.4	BDT-ON	
01533	R0658.5	BDT+	BDT P.B ON PULSE
01534	R0658.6	OSP-ON	
01535	R0658.7	OSP+	OSP P.B ON PULSE
01536	R0659.0	ZNG-ON	
01537	R0659.1	ZNG+	ZNG P.B ON PULSE
01538	R0659.2	SBK-ON	
01539	R0659.3	SBK+	SBK P.B ON PULSE
01540	R0659.4	DRN-ON	
01541	R0659.5	DRN+	DRN P.B ON PULSE
01542	R0659.6	ABS-ON	
01543	R0659.7	ABS+	ABS P.B ON PULSE
01544	R0660.0	AFL-ON	
01545	R0660.1	AFL+	AFL P.B ON PULSE
01546	R0660.2	MAG-ON	
01547	R0660.3	MAGON+	MAG ON P.B ON PULSE
01548	R0660.4	OPKEP	AUTO OPERATION KEEP
01549	R0661.0	>3700	JOG FEEDRATE > 3700MM
01550	R0661.3	SSTPK	SPINDLE STOP KEEP
01551	R0666.0	\$J0	JOG FEEDRATE 0
01552	R0666.1	\$J100	JOG FEEDRATE 100
01553	R0666.2	\$J140	JOG FEEDRATE 140
01554	R0666.3	\$J200	JOG FEEDRATE 200
01555	R0666.4	\$J270	JOG FEEDRATE 270
01556	R0666.5	\$J370	JOG FEEDRATE 370
01557	R0666.6	\$J520	JOG FEEDRATE 520
01558	R0666.7	\$J720	JOG FEEDRATE 720
01559	R0667.0	\$J1000	JOG FEEDRATE 1000
01560	R0667.1	\$J1400	JOG FEEDRATE 1400
01561	R0667.2	\$J2000	JOG FEEDRATE 2000
01562	R0667.3	\$J2700	JOG FEEDRATE 2700

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01563	R0667.4	\$J3700	JOG FEEDRATE 3700
01564	R0667.5	\$J5200	JOG FEEDRATE 5200
01565	R0667.6	\$J7200	JOG FEEDRATE 7200
01566	R0667.7	J10000	JOG FEEDRATE 10000
01567	R0668.0	G10.6A	G10.6 TEMP
01568	R0668.1	G12.1A	G12.1 TEMP
01569	R0668.2	G12.2A	G12.2 TEMP
01570	R0668.3	G12.3A	G12.3 TEMP
01571	R0668.4	G12.4A	G12.4 TEMP
01572	R0668.5	*FV100	*FV 100% KEEP
01573	R0669.0	\$]INC+	SP INC ON PULSE
01574	R0669.1	\$]DEC+	SP DEC ON PULSE
01575	R0669.2	ERROP	
01576	R0669.3	INCACT	SP INC ACTIVE
01577	R0669.4	DECACT	SP DEC ACTIVE
01578	R0669.5	SOV100	SPINDLE OVERRIDE 100%
01579	R0669.6	SOV110	SPINDLE OVERRIDE 110%
01580	R0669.7	SOV120	SPINDLE OVERRIDE 120%
01581	R0670.0	\$J17	JOG FEEDRATE 17
01582	R0670.1	\$J18	JOG FEEDRATE 18
01583	R0670.2	\$J19	JOG FEEDRATE 19
01584	R0670.3	\$J20	JOG FEEDRATE 20
01585	R0670.4	\$J21	JOG FEEDRATE 21
01586	R0671.0	\$KLDE0	KEY-LED DECODE OP0
01587	R0671.1	\$KLDE1	KEY-LED DECODE OP1
01588	R0671.2	\$KLDE2	KEY-LED DECODE OP2
01589	R0671.3	\$KLDE3	KEY-LED DECODE OP3
01590	R0671.4	\$KLDE4	KEY-LED DECODE OP4
01591	R0671.5	\$KLDE5	KEY-LED DECODE OP5
01592	R0671.6	\$KLDE6	KEY-LED DECODE OP6
01593	R0671.7	\$KLDE7	KEY-LED DECODE OP7
01594	R0673.0	\$MOD1'	\$MOD1 AUX
01595	R0673.1	\$MOD2'	\$MOD2 AUX
01596	R0673.2	\$MOD4'	\$MOD4 AUX
01597	R0673.3	MDK,EN	MODE KEEP ENABLE
01598	R0673.4	MDK1	MODE KEEP 1
01599	R0673.5	MDK2	MODE KEEP 2
01600	R0680.2	\$MP1	
01601	R0680.3	\$MP2	
01602	R0681.0	\$HX	
01603	R0681.1	\$HY	
01604	R0681.2	\$HZ	
01605	R0681.3	\$H4	
01606	R0694.0	+XHOME	+X HOME
01607	R0694.1	-XHOME	-X HOME
01608	R0694.2	+YHOME	+Y HOME
01609	R0694.3	-YHOME	-Y HOME
01610	R0694.4	+ZHOME	+Z HOME
01611	R0694.5	-ZHOME	-Z HOME
01612	R0695.0	X-ZRN	X AXIS ZERO RETURN
01613	R0695.1	Y-ZRN	Y AXIS ZERO RETURN
01614	R0695.2	Z-ZRN	Z AXIS ZERO RETURN
01615	R0700.3	LSPSK	LOW SPEED SELECT KEEP
01616	R0700.4	HSPSK	HIGH SPEED SELECT KEEP
01617	R0702.0	MHROPP	MANUAL DOOR OPEN
01618	R0703.1	SP100L	SPINDLE OVERRIDE 100
01619	R0704.4	FAN.ON	FAN ON
01620	R0704.5	FAN_OFFD	FAN OFF DELAY
01621	R0706.3	LB.PRE.TM	LUBE PRESSURE TIMER
01622	R0706.5	LB.PRE.OK	LUBE PRESSURE OK
01623	R0780.0	M82.as	M82 assist for M19
01624	R0800.0	SRN.P	PROGRAM REATART PULSE
01625	R0800.1	SRN.P2	PROGRAM RESTART PULSE 2
01626	R0800.4	OVC.P	
01627	R0800.5	OVC.P2	
01628	R0800.6		
01629	R0800.7		
01630	R1005.4	SPAIR OFF	
01631	R9000.0	FUNOP0	FUNCTION OPERATION OUTPUT
01632	R9000.1	FUNOP1	FUNCTION OPERATION OUTPUT
01633	R9091.1	ALL.ON	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01634	R9091.6	1.SEC	
01635	A0000.0	AL_1000	EMERGENCY STOP / OVERTRAVEL
01636	A0000.1	AL_1001	SPINDLE COOLER ALARM
01637	A0000.2	AL_1002	
01638	A0000.3	AL_1003	CUTTING COOLANT MOTOR ALARM
01639	A0000.4	AL_1004	ATC ALARM
01640	A0000.5	AL_1005	TOOL BROKEN
01641	A0000.6	AL_1006	SERVO AXIS HOME REQUIRE
01642	A0000.7	AL1007	AUTO DOOR NOT CLOSE
01643	A0001.0	AL_1010	ATC ALARM FOR POT DOWN
01644	A0001.1	AL_1011	ATC ALARM FOR ARM 60
01645	A0001.2	AL_1012	ATC ALARM FOR TOOL UNCLAMP
01646	A0001.3	AL_1013	ATC ALARM FOR ARM 180
01647	A0001.4	AL_1014	ATC ALARM FOR TOOL CLAMP
01648	A0001.5	AL_1015	ATC ALARM FOR ARM -60
01649	A0001.6	AL_1016	ATC ALARM FOR POT UP
01650	A0001.7	-XOTAL	-X OVER TRAVEL ALARM
01651	A0002.0	AL_1020	ATC STB FOR POT UP
01652	A0002.1	AL_1021	ATC STB FOR POT DOWN
01653	A0002.2	AL_1022	ATC STB FOR TOOL CLAMP
01654	A0002.3	AL_1023	ATC STB FOR TOOL UNCLAMP
01655	A0002.4	AL_1024	ATC STB FOR ARM 0
01656	A0002.5	AL_1025	ATC STB FOR ARM 180
01657	A0002.6	AL_1026	ATC STB FOR 2ND. ZERO
01658	A0002.7	AL_1027	ATC STB FOR MAG INPOSITION
01659	A0003.0	AL_1030	TOOL LIFE IS FULL
01660	A0003.1	CHNCAL	CHUCK NOT CLOSE ALARM
01661	A0003.2	AL_1032	MAG CTR SENSOR ERROR
01662	A0003.3	AL_1033	AXIS MOVE FOR POT DOWN
01663	A0003.4	1028	1028 QUILL FOR. AL. DELAY
01664	A0003.5	AL_1035	SPINDLE TOOL CLAMP ERROR
01665	A0003.6	AL1370	SPINDLE GEAR POSITION ERROR
01666	A0003.7	AL1037	ATC NOT READY
01667	A0004.0	AL1040	COOLANT MOTOR OVERLOAD
01668	A0004.1	AL_1041	ATC NOT ROTATION
01669	A0004.2	AL1640	MAG ALARM
01670	A0004.3	AL_1043	SPINDLE OVERHEAT
01671	A0004.4	AL1620	SP OIL MIST ALARM
01672	A0004.7	AL_1047	FILTER TANK FULL FAULL
01673	A0005.0	AL_1050	COOLANT EMPTY ERROR
01674	A0005.1	AL1660	CTS LEVEL ERROR
01675	A0005.2	AL_1052	FILTER DETECT ERROR
01676	A0005.3	AL_1053	COOLANT TANK FULL FAULL
01677	A0005.4	AL_1054	FILTER TANK EMPTY ERROR
01678	A0005.5	AL_1055	RECYCLE MOTOR OVERLOAD
01679	A0005.6	AL1056	SPINDLE COOLER ALARM
01680	A0005.7	AL1057	CHIP FLASH MOTOR OVERLOAD
01681	A0006.0	AL1060	MAGAZINE MOTOR OVERLOAD
01682	A0006.1	AL1061	ARM MOTOR OVERLOAD
01683	A0006.2	AL1062	CTS MOTOR OVERLOAD
01684	A0006.3	AL1063	SUCK MOTOR OVERLOAD
01685	A0006.4	AL1064	EXTERNAL SPINDLE FAN OVERLOAD
01686	A0006.5	AL1065	SPINDLE COOLER OVERLOAD
01687	A0006.6	AL1066	CHIP CONVEYOR MOTOR OVERLOAD
01688	A0006.7	AL1067	OIL SKIMMING MOTOR OVERLOAD
01689	A0007.0	AL1070	CHIP SCREW 1 OVER LOAD
01690	A0007.1	AL1071	CHIP SCREW 2 OVER LOAD
01691	A0007.2	AL1072	CHIP SCREW 3 OVER LOAD
01692	A0007.3	AL1073	HYDRAULIC MOTOR OVER LOAD
01693	A0007.4	AL1074	Oil Mist Collector OVERLOAD
01694	A0007.5	AL1586	1586 APC NOT UP & OPEN
01695	A0007.6	AL1587	1587 APC AXIS NOT IN-POSITION
01696	A0007.7	AL1588	1588 APC Z NOT 1ST. POINT
01697	A0008.0	AL1080	1080 TOOL MEASURE ERROR!
01698	A0008.1		
01699	A0008.2	A1082	1082 TOOL LIFE EXGAUST!
01700	A0008.3	AL1592	1592 APC ROTOR CW/CCW ALARM
01701	A0008.4	AL_1084	A AXIS UNCLAMP FINISH ERROR
01702	A0008.5	AL_1085	A AXIS CLAMP FINISH ERROR
01703	A0010.0	OP___AL_2000	MAINTENANCE MODE
01704	A0010.1	OP___AL_2001	ARM TROUBLESHOOTING

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01705	A0010.2	OP2002	CHECK SP T NO. & STANDBY T NO.
01706	A0010.3	OP___AL_2003	AIR LOW
01707	A0010.4	OP___AL_2004	LUBE ALARM
01708	A0010.5	OP___AL_2005	DOOR NOR CLOSE
01709	A0010.6	OP2006	2071 APC COVER NOT CLOSE
01710	A0010.7	OP2007	2072 APC BIT OPEN
01711	A0011.0	OP2010	2008 TOOL LIFE END
01712	A0011.1	OP2011	2110 HIGH/LOW SPEED ALARM
01713	A0011.4	OP2014	LUBE PRESSURE FAULT
01714	K0000.0	ATC.RY	SERVO CAN MOVE WITHOUT ATC RY
01715	K0000.1	A.ZRN	A AXIS ZRN VALID
01716	K0000.2	ALL.ZRN	ALL AXIS ZRN IGNORE
01717	K0000.3	Z.ZRN1	Z AXIS GO ZRN FIRST
01718	K0000.4	COL.M01	COOLANT ON WHEN M00/M01
01719	K0000.6	SP.GR	SPINDLE GEAR BOX DISABLE
01720	K0000.7	M02.APO	APO VALID BY M02
01721	K0001.0	1.LP	SINGAL LAMP FOR TOWL DETECTOR
01722	K0001.1	ZRN2.ATC	ZRN 2 POINT WITH ATC
01723	K0001.2	QUICK.UNCL	QUICK TOOL UNCLAMP SYSTEM
01724	K0001.3	POT.KEP	KEEP TYPE OF POT UP SOL
01725	K0001.4	ZZRN2.ATC	Z AXIS ZRN 2 WITH ATC
01726	K0001.5	SP.COL.VAL	SPINDLE COOLER VALID
01727	K0001.6	SP.CLP.KP	KEEP TYPE OF SPINDLE CLAMP
01728	K0001.7	LUB.PRE	LUBE PRESSURE VALID
01729	K0002.0	MAG.IN.POS	NC TYPE OF MAG.IN-POS SENSOR
01730	K0002.1	ZINT.ATC	Z AXIS INT. BY ATC NOT READY
01731	K0002.2	M19.ATC	M19 VALID BY ATC NOT READY
01732	K0002.3	DOR.INT	SERVO & SP LOCK BY DOOR OP
01733	K0002.4	TOL.LIFE	TOOL LIFE VALID
01734	K0002.5	A.UNCLP	A AXIS UNCLAMP BY TIMER
01735	K0002.6	SP.OVR	ANALOG TYPE OF SP OVERRRIDE
01736	K0002.7	ZRN.-X	ZRN DIRECTION BY - X
01737	K0003.0	MAG.DEC	MAG DECELERATE BY DEC SEN
01738	K0003.1	NO.ARM.SEN	NO SENSOR OF ARM
01739	K0003.2		
01740	K0003.3	PTUP/PTDN.STB	POT UP / DOWN OF STAND-BY
01741	K0003.4	MAG.POS1	MAG POSISITON 1 SEN VALID
01742	K0003.5	OIL.SKIM	OIL SKIM ON WHEN POWER ON
01743	K0003.6	Y7.6.M27	Y7.6 FOR M27 VALID
01744	K0003.7	OVR.DOR	OVERRIDE LIMIT WHEN DOOR OPEN
01745	K0004.0		
01746	K0004.1		
01747	K0004.4		
01748	K0004.5		
01749	K0004.6		
01750	K0005.0	MDI.JIGB	MDI JIG B CLAMP VALID
01751	K0005.1		
01752	K0005.2	JIGB.SOL2	JIG B USE TWO SOL
01753	K0005.4	NC.LUB.LEV	NC TYPE OF LUBE LEVEL SW
01754	K0005.5	JIG.CLP.M	JIG MUST CLAMP MES VAL
01755	K0005.6	JIGA.SOL1	JIG A USE ONE SOL
01756	K0005.7	NC.MAG.CTR	NC TYPE OF MAG CTR SEN
01757	K0006.0	A.UNC.SOL	A AXIS UNCLAMP WHEN SOL OFF
01758	K0006.1	JIG.FOT.SW	FOOT SW VALID FOR JIG
01759	K0006.2	JIG.SEN	JIG DETECTOR OF CLAMP VAL
01760	K0006.3	JIG.EMG	JIG CLAMP VAL WHEN EMG
01761	K0006.4	WK.LIGHT	WORK LIGHT VALID
01762	K0006.5	MOD.CHG	MODE CHANGE VALID
01763	K0006.6	ABS.DIS	MANUAL ABS DISABLE
01764	K0006.7	SP.KEEP	SP KEEP RUNNING FOR MODE CHANG
01765	K0007.0	LUB.T	LUBE ON BY TIMER
01766	K0007.1	LUB.CYON	LUBE ON BY CYCLE ON
01767	K0007.2	COL.2	COOLANT USE TWO PUMP
01768	K0007.3	SP.KEP	SP KEEP WHEN MODE CHANGE
01769	K0007.4	COLB.M09	COOLANT B STOP WHEN M09
01770	K0007.5	CTS.VAL	CTS VALID
01771	K0007.6	CAM/QUICK.A	QUICK ATC OF ARM MAG
01772	K0007.7	ARM.STEP	ARM RUNNING STEP BY STEP
01773	K0008.0		
01774	K0008.1	OIL.MIST	OIL MIST VALID
01775	K0008.2	A.OFF.CLP	A SERVO OFF WHEN CLAMP

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01776	K0008.4	SP.GEAR.CHG	SP GEAR CHANGE WHEN TAP
01777	K0008.6	A.UNC.PB	A UNCLAMP WHEN PB ON
01778	K0009.1	ZRN.TOG	ALL ZRN TOGETHER
01779	K0009.2	L.DR.VAL	LEFR DOOR SW VALID
01780	K0009.3	DR.REL	DOOR RELEASE BY M02 & M30
01781	K0009.4	R.DR.VAL	RIGHT DOOR SW VALID
01782	K0009.5	DOR.MAN	DOOR RELEASE MANUALLY
01783	K0009.6	RP.OVC	RAPID OVERRIDE CANCEL
01784	K0009.7	A.AL.SBK	DAIR AL DISABLE WHEN SBK
01785	K0010.0	SP.5%OV	5% SP OVERRIDE INT
01786	K0010.1	SP.200%OV	200% OF SP OVERRIDE
01787	K0010.2	CONV.T	CHIP CONVEYOR ON BY TIMER
01788	K0010.3	F.AIR	FLASH TYPE OF AIR BLAST
01789	K0010.4	Y7.6.HYD	Y7.6 FOR HYDRAULIC
01790	K0010.6	DR.SW.UNVAL	DOOR SW UNVALID
01791	K0010.7	DR.ALL.MD	DOOR VALID ALL MODE
01792	K0011.0	ZRN.NO	
01793	K0011.1	60	60
01794	K0011.2	60-180	60->180
01795	K0011.3	180	180
01796	K0011.4	180-0	180->0
01797	K0011.5	JGCLL	JIG CLAMP LATCH
01798	K0011.6		
01799	K0011.7	JGB.CLL	JIG B CLAMP LATCH
01800	K0012.0	SP.GR.CON	SP GEAR CONTACTOR VALID
01801	K0013.0	DRN.K	
01802	K0013.1	SBK.K	
01803	K0013.2	BDT.K	
01804	K0013.3	M01.K	
01805	K0013.4	MLK.K	
01806	K0014.0	OPS140	RIGID TAPING REVERSE
01807	K0014.1	OPS141	PART CATCHER SENSER PASS
01808	K0014.2	OPS142	QUILL FORWARD SPD INTERLOCK
01809	K0014.3	OPS143	QUILL BACKWARD SPD INTERLOCK
01810	K0014.4	OPS144	WITH QUILL SENSER
01811	K0014.5	OPS145	
01812	K0014.6	OPS146	
01813	K0014.7	OPS147	
01814	K0015.0	NEG.CK	NEGITIVE CHUCK
01815	K0015.1	POS.CK	POSTIVE CHUCK
01816	K0015.5	TZRN.F	TURRET ZRN FIN.-->AUTO MODE
01817	K0015.7	TZNR	TURRET NO ZERO RETURN
01818	K0018.3	COL.ON	COOLANT/HI.P COOLANT ON
01819	D0014.7	SP.ROT	SP. ROT. HOLD
01820	F0010	M0007	M CODE BIT0-BIT7
01821	F0011	M0815	M CODE BIT8-BIT15
01822	F0012	M1623	M CODE BIT16-BIT23
01823	F0013	M2431	M CODE BIT24-BIT31
01824	F0022	S0007	S CODE BIT0-BIT7
01825	F0023	S0815	S CODE BIT8-BIT15
01826	F0024	S1623	S CODE BIT16-BIT23
01827	F0025	S2431	S CODE BIT24-BIT31
01828	F0026	T0007	T CODE BIT0-BIT7
01829	F0027	T0815	T CODE BIT8-BIT15
01830	F0028	T1623	T CODE BIT16-BIT23
01831	F0029	T2431	
01832	F0036	R010-080	
01833	F0037	R090-120	
01834	G0030	SOV0-7	
01835	G0032	R0108I	SPINDLE SPEED COMMAND 1-8
01836	G0033	R912I	SPINDLE SPEED COMMAND 9-12
01837	R0002	TBCD-1R2	
01838	R0003	TMSEL.R	T NO. SELECTOR
01839	R0004	TBIN-1	T BIN -1
01840	R0005	TBCD-1	
01841	R0020	TBCD1	TBCD1
01842	R0021	TBCD2	TBCD2
01843	R0022	TBCD3	TBCD3
01844	R0024	TBCD4	TBCD4
01845	R0025	TBCD5	TBCD5
01846	R0039	TBCD-1R1	

NO.	ADDRESS	SYMBOL	FIRST COMMENT
01847	R0070	*JV.R	JOG OVERRIDE REG.
01848	R0570		FOR MEMBRANE PANEL
01849	R0579		FOR MEMBRANE PANEL
01850	R0587	CUTBIN	CURRENT TOOL NO.(BIN)
01851	R0588	SPDS	SPINDLE TOOL NO. DISPLAY
01852	R0589		FOR MEMBRANE PANEL
01853	R0666		JOG FEEDRATE AUX
01854	R0667		JOG FEEDRATE AUX
01855	R0670		FOR MEMBRANE PANEL
01856	R0671		FOR MEMBRANE PANEL
01857	R0672		FOR MEMBRANE PANEL
01858	R0673		FOR MEMBRANE PANEL
01859	R0675		FOR MEMBRANE PANEL
01860	R0678		FOR MEMBRANE PANEL
01861	R0679		FOR MEMBRANE PANEL
01862	R0684	CUTBCD	CURRENT TOOL NO.(BCD)
01863	R0685	MCODE1	M CODE(BCD)
01864	R0686	TCODE1	T CODE(BCD)
01865	R0687	SPTBCD	SPINDLE TOOL NO.(BCD)
01866	R0689	ROSTBI	STEPS OF ROT(BIN)
01867	R0690	TPBIN	POT NO. OF T CODE(BIN)
01868	R0691	TPBCD	POT NO. OF T CODE(BCD)
01869	R0692	ROTSBC	STEPS OF ROT(BCD)
01870	R0693	TCTMP	TEMP FOR TOOL CHANGE
01871	C0001	PT.OVER	
01872	C0002	LUB.ON.C	
01873	C0003	LUB.OFF.C	
01874	D0000	SP.NO	SPINDLE TOOL NO.
01875	D0015	MAX.BIN	
01876	D0016	MSPMAX	
01877	D0020	SPOVR1	
01878	D0021	SPOVR2	
01879	D0022	SP50-120	
01880	D0023	SPOVR2BCD	
01881	D0100	CA-CP1	CURRENT POT NO. FOR CTRA(BIN)
01882	D0104	CB-CP1	CURRENT POT NO. FOR CTRB(BIN)
01883	D0110	POTNUM	TOTAL POTS
01884	D0112	PTNUM1	TOTAL POT+1(BIN)
01885	D0114	CUPLAT	CURRENT POT NO. LATCH
01886	D0120	CA-CP2	CURRENT POT NO. FOR CTRA(BCD)
01887	D0122	CB-CP2	CURRENT POT NO. FOR CTRB(BCD)
01888	D0124	BGTNUM	NUMBERS OF BIG TOOL
01889	D0125	PTNUM2	TOTAL POT+1(BCD)
01890	D0126	GCHCHK	GEAR SHIFT CHECK
01891	D0160	CELIM1	CE MANUAL SPEED LIMIT 1
01892	D0161	CELIM2	CE MANUAL SPEED LIMIT 2
01893	D0162	SPLIM1	SP MANUAL SPEED LIMIT 1
01894	D0163	SPLIM2	SP MANUAL SPEED LIMIT 2
01895	D0164	SP%	SPINDLE INC/DEC %
01896	D0170	WINF28	READING MACHINE COORDINATE
01897	D0178	ALLPOS	READING ALL AXES COORDINATE
01898	D0180	X-MPOS	X AXIS MACHINE COORDINATE
01899	D0184	Y-MPOS	Y AXIS MACHINE COORDINATE
01900	D0188	Z-MPOS	Z AXIS MACHINE COORDINATE

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0000.0	MODE_1		
<del>— —</del> <del>— —</del>	S004913/N00746		
X0000.1	MODE_2		
<del>— —</del> <del>— —</del>	S004919/N00747		
X0000.2	MODE_4		
<del>— —</del> <del>— —</del>	S004925/N00748		
X0000.3	RAPID.OV1		
<del>— —</del> <del>— —</del>	S005014/N00776 S005017/N00777 S005020/N00778 S005023/N00779		
X0000.4	RAPID.OV2		
<del>— —</del> <del>— —</del>	S005015/N00776 S005018/N00777 S005021/N00778 S005024/N00779		
X0000.5	CY.ST.PB		
<del>— —</del> <del>— —</del>	S004219/N00624 S005100/N00793 S005797/N00956		
X0000.6	*FD.HLD.PB		
<del>— —</del> <del>— —</del>	S005102/N00794		
X0000.7	READY.PB		
<del>— —</del> <del>— —</del>	S000003/N00001 S005844/N00964		
X0001.1	POG.KEY		
<del>— —</del> <del>— —</del>	S005104/N00795		
X0001.2	H*X		
<del>— —</del> <del>— —</del>	S004990/N00765		
X0001.3	H*Y		
<del>— —</del> <del>— —</del>	S004992/N00766		
X0001.4	H*Z		
<del>— —</del> <del>— —</del>	S004994/N00767		
X0001.5	H*A		
<del>— —</del> <del>— —</del>	S004996/N00768		
X0001.7	H*1		
<del>— —</del> <del>— —</del>	S005008/N00774 S005011/N00775		
X0002.0	H*10		
<del>— —</del> <del>— —</del>	S005009/N00774		
X0002.1	H*100		
<del>— —</del> <del>— —</del>	S005012/N00775		
X0003.0	AIR.PRE.SW		
<del>— —</del> <del>— —</del>	S002418/N00372		
X0003.1	LUBE.LEV.SW		
<del>— —</del> <del>— —</del>	S002429/N00373 S004529/N00682 S004531/N00682 S005247/N00851 S005249/N00851		
X0003.2	SP.CLP.SEN		
<del>— —</del> <del>— —</del>	S000087/N00013 S001214/N00182 S001220/N00183 S003082/N00442 S004497/N00675 S004499/N00675		
X0003.3	SP.UNC.SEN		
<del>— —</del> <del>— —</del>	S000082/N00012 S001215/N00182 S001219/N00183 S004498/N00675		
X0003.4	SP.UNC.PB	SP UNC PB	
<del>— —</del> <del>— —</del>	S001432/N00210 S001444/N00212 S003180/N00460 S003186/N00461 S005768/N00950 S005779/N00951		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0003.5	MAG.RET.SEN -  - **	S001205/N00180	S001209/N00181
X0003.6	MAG.EXT.SEN -  - **	S001204/N00180	S001210/N00181
X0003.7	MAG.CTR.SEN -  - **	S000157/N00025	S000159/N00025 S005697/N00935 S005699/N00935
X0004.5	PROB.-Z -  - **	S001967/N00305	
X0004.7	PROB.SKP -  - **	S002693/N00397	S003995/N00586 S004449/N00659
X0005.0	SCREW1.OL -  - **	S004539/N00683	
X0005.1	SCREW2.OL -  - **	S004541/N00684	
X0005.2	SCREW3.OL -  - **	S004543/N00685	
X0005.6	_OMI_BATTE -  - **	S004006/N00588	
X0005.7	!_ATMER -  - **	S004001/N00587	
X0006.0	R.DR.SW -  - **	RIGHT DOOR INTERLOCK SW S003485/N00505	S004248/N00627 S004253/N00628
X0006.1	L.DR.SW -  - **	LEFT DOOR INTERLOCK SW S003487/N00505	
X0006.2	DR.SW -  - **	DOOR INTERLOCK SW S001800/N00268	S003347/N00481 S003358/N00482 S003368/N00483 S003378/N00484 S003492/N00505 S003498/N00506
X0006.4	ARM.MTR.OL -  - **	S004473/N00666	S005716/N00938
X0006.5	COL2.MTR.OL -  - **	S004469/N00664	
X0006.6	EXT.F.OL -  - **	S004481/N00670	
X0006.7	AX.IGN -  - **	S005740/N00944	
X0007.0	ARM.STP.SEN -  - **	ARM STOP POINT S000040/N00007	S000042/N00007
X0007.1	ARM.0.SEN -  - **	ARM RETURN POINT S000014/N00004	S000016/N00004 S000020/N00004 S000031/N00005 S000037/N00006
X0007.2	ARM.60.SEN -  - **	ARM MIDDLE POINT S000021/N00004	S000025/N00005 S000027/N00005 S000032/N00005 S000036/N00006
X0007.4	-  - **	S005684/N00933	S005707/N00935



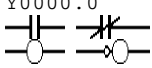
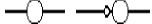
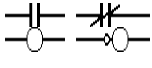
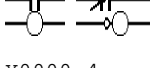





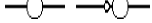

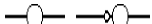
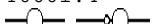
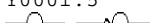
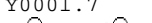
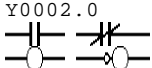
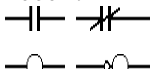
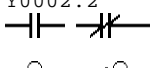
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0007.5	<del>— —</del> <del>— —</del> S004479/N00669		
X0007.6	<del>— —</del> <del>— —</del> SP.COL.OL S004483/N00671	SPINDLE COOLER OVERLOAD	
X0007.7	<del>— —</del> <del>— —</del> SUCK.OL S004477/N00668	SUCK MOTOR OVERLOAD S005720/N00940	
X0008.0	<del>— —</del> <del>— —</del> MAG.TOL.SEN S000173/N00030	MAGAZINE TOOL SENSOR	
X0008.1	<del>— —</del> <del>— —</del> COL1.MTR.OL S000175/N00030	COOLANT 1 MOTOR OL S004461/N00661	
X0008.2	<del>— —</del> <del>— —</del> SP.COL.AL S004417/N00654	SPINDLE COOLER ALARM S004466/N00663	
X0008.3	<del>— —</del> <del>— —</del> CNV.MTR.OL S004485/N00672	CHIP CONVEYOR MOTOR OL	
X0008.4	<del>— —</del> <del>— —</del> *ESP S000001/N00001	EMG STOP S000152/N00023	S001114/N00161 S001415/N00208 S001428/N00209 S001435/N00210 S001506/N00216 S001529/N00217 S001551/N00220 S001572/N00222 S001589/N00224 S001596/N00225 S001606/N00226 S001616/N00227 S001644/N00233 S001648/N00234 S001883/N00288 S001900/N00291 S002340/N00353 S002344/N00354 S002348/N00355 S002352/N00356 S002414/N00370 S002496/N00384 S002523/N00388 S002530/N00389 S002877/N00409 S002951/N00416 S003686/N00534 S003780/N00546 S003952/N00577 S003973/N00581 S003977/N00582 S004062/N00599 S004067/N00600 S004098/N00604 S004102/N00605 S004415/N00653 S004419/N00654 S005158/N00817 S005638/N00927 S005670/N00931 S005695/N00934 S005722/N00941 S005730/N00942 S005735/N00943 S005792/N00955
X0008.5	<del>— —</del> <del>— —</del> A.CLP.SEN S001672/N00240	A AXIS CLAMP SENSOR S001675/N00240	S002651/N00397 S002655/N00397 S002660/N00397 S003449/N00498 S003454/N00499
X0008.6	<del>— —</del> <del>— —</del> A.UNC.SEN S001673/N00240	A AXIS UNCLAMP SENSOR	
X0008.7	<del>— —</del> <del>— —</del> MAG.MTR.OL S004471/N00665	MAGAZINE MOTOR OL S005714/N00937	
X0009.0	<del>— —</del> <del>— —</del> X.H.SW S002154/N00336	S002161/N00336	S002176/N00337 S002183/N00337
X0009.1	<del>— —</del> <del>— —</del> Y.H.SW S002198/N00338	S002200/N00338	S002207/N00339 S002209/N00339
X0009.2	<del>— —</del> <del>— —</del> Z.H.SW S002216/N00340	S002218/N00340	S002225/N00341 S002227/N00341
X0009.6	<del>— —</del> <del>— —</del> RECLC.OL S004463/N00662	RECYCLE MOTOR OL	
X0009.7	<del>— —</del> <del>— —</del> LUB.PRE.SW S004059/N00599	LUBE PRESSURE SWITCH S004126/N00609	S004129/N00610 S005661/N00930 S005671/N00931 S005677/N00932
X0010.0	<del>— —</del> <del>— —</del> SP.HG.SW S002778/N00398	S002822/N00404	S002827/N00405 S002829/N00405 S002842/N00407 S002870/N00409 S002881/N00410 S002886/N00410 S002899/N00411 S002913/N00412 S002974/N00421 S002977/N00421 S003033/N00434 S003284/N00471 S003298/N00472 S003914/N00573 S003917/N00573 S003919/N00573

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0010.1	SP.LG.SW		
<del>— —</del> <del>— —</del>	S002780/N00398	S002819/N00403	S002825/N00405 S002830/N00405 S002856/N00408
	S002872/N00409	S002883/N00410	S002890/N00410 S002901/N00411 S002933/N00414
	S002975/N00421	S002976/N00421	S003029/N00432 S003036/N00435 S003285/N00471
	S003299/N00472	S003912/N00573	S003918/N00573 S003920/N00573
X0010.2	FIL.L.SW	FILTER TANK LEVEL SW	
<del>— —</del> <del>— —</del>	S001795/N00268	S003696/N00535	S003707/N00536 S003717/N00537 S003729/N00538
	S003740/N00539	S003772/N00545	S003790/N00549
X0010.3	FIL.F.SW	FILTER TANK FULL SW	
<del>— —</del> <del>— —</del>	S003738/N00539	S003762/N00544	
X0010.4	COL.L.SW	COOLANT LEVEL LOW SW	
<del>— —</del> <del>— —</del>	S003678/N00533		
X0010.5	COL.F.SW	COOLANT FULL SW	
<del>— —</del> <del>— —</del>	S003692/N00535	S003708/N00536	S003716/N00537 S003726/N00538 S003763/N00544
	S003793/N00549		
X0010.6	FIL.PRE.SW	FILTER PRESSURE SW	
<del>— —</del> <del>— —</del>	S001794/N00268	S003743/N00539	S003756/N00543
X0010.7	OIL.SK.OL	OIL SKIMMER MOTOR OL	
<del>— —</del> <del>— —</del>	S004487/N00673		
X0011.2	M35.FIN.SEN		
<del>— —</del> <del>— —</del>	S002674/N00397	S004158/N00615	
X0011.3	M36.FIN.SEN		
<del>— —</del> <del>— —</del>	S002678/N00397	S004163/N00616	
X0011.4	M37.FIN.SEN		
<del>— —</del> <del>— —</del>	S002681/N00397	S004168/N00617	
X0011.5	M38.FIN.SEN		
<del>— —</del> <del>— —</del>	S002684/N00397	S004173/N00618	
X0011.7	CTS.MTR.OL		
<del>— —</del> <del>— —</del>	S004475/N00667	S005718/N00939	
X0012.0			
<del>— —</del> <del>— —</del>	S002761/N00397	S002766/N00397	S004264/N00630 S004269/N00631
X0012.1	\$+Z		
<del>— —</del> <del>— —</del>	S002762/N00397	S002767/N00397	S004265/N00630 S004268/N00631 S005798/N00956
X0012.4	\$-X		
<del>— —</del> <del>— —</del>	S002666/N00397	S002670/N00397	S004545/N00686
X0012.6	\$-Z		
<del>— —</del> <del>— —</del>	S002033/N00316		
X0012.7	\$-4		
<del>— —</del> <del>— —</del>	S002034/N00316		
X0014.1	\$ZNG-	Z AXIS CANCEL PB.	
<del>— —</del> <del>— —</del>	S005163/N00819		
X0014.5	CL.AU	AUTO COOLANT PB.	
<del>— —</del> <del>— —</del>	S005147/N00813		
X0014.7	SP-DEC	SPINDLE DEC	
<del>— —</del> <del>— —</del>	S005130/N00805		

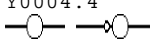
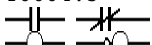
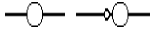
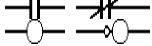
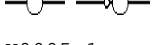
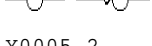
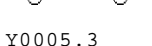
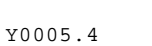
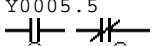
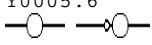
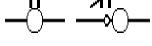

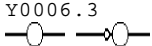

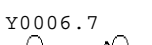
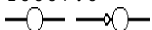



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0015.0 <del>— —</del> <del>— —</del>	SP-100 S005124/N00803	SPINDLE 100%	
X0015.1 <del>— —</del> <del>— —</del>	SP-INC S005127/N00804	SPINDLE INC	
X0015.6 <del>— —</del> <del>— —</del>	SP-RST S005135/N00807	SPINDLE RESET PB.	
X0016.0 <del>— —</del> <del>— —</del>	\$MGCCW S005119/N00801	S005156/N00817 S005649/N00928	
X0016.4 <del>— —</del> <del>— —</del>	S004179/N00619	S004183/N00620	
X0020.0 <del>— —</del> <del>— —</del>	MST.LK.PB S001814/N00272	S001818/N00273	
X0020.2 <del>— —</del> <del>— —</del>	MAG.CW.PB S005114/N00800	S005155/N00817 S005648/N00928 S005692/N00934	
X0020.3 <del>— —</del> <del>— —</del>	CNV.CCW.PB S002519/N00388	S005141/N00810	
X0020.4 <del>— —</del> <del>— —</del>	MLK.PB S005143/N00811		
X0020.5 <del>— —</del> <del>— —</del>	4/5.IGN.PB S005745/N00945		
X0020.7 <del>— —</del> <del>— —</del>	CNV.CW.PB S002501/N00385	S005139/N00809 S005238/N00847	
X0021.0 <del>— —</del> <del>— —</del>	BDT.PB S005145/N00812		
X0021.1 <del>— —</del> <del>— —</del>	OVC.PB S001907/N00292	S001910/N00293	
X0021.2 <del>— —</del> <del>— —</del>	F1.PB	S000591/N00096 S000596/N00097 S000599/N00097 S000606/N00098 S000609/N00098 S000616/N00099 S000619/N00099 S000626/N00100 S000629/N00100 S000636/N00101 S000639/N00101 S000646/N00102 S000649/N00102 S000656/N00103 S000659/N00103 S000666/N00104 S000669/N00104 S003939/N00575 S004019/N00590 S005122/N00802	
X0021.3 <del>— —</del> <del>— —</del>	F2.PB S005106/N00796		
X0021.4 <del>— —</del> <del>— —</del>	PRST.PB S001757/N00261	S001760/N00262	
X0021.5 <del>— —</del> <del>— —</del>	AIR.BLA.PB S003956/N00578	S003959/N00579 S003962/N00580	
X0021.6 <del>— —</del> <del>— —</del>	F5 PB S001890/N00289	S001893/N00290	
X0021.7 <del>— —</del> <del>— —</del>	WK.LGT.PB S005161/N00818		
X0022.0 <del>— —</del> <del>— —</del>	M01.PB S005151/N00815		
X0022.1 <del>— —</del> <del>— —</del>	CTS.PB S003573/N00517	S003576/N00518	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0022.2 <del>— —</del> <del>— —</del>	F4.PB	S001872/N00286 S001875/N00287	
X0022.3 <del>— —</del> <del>— —</del>	DOR.PB	DOOR.PB S003491/N00505 S003497/N00506 S004237/N00626 S004261/N00629	
X0022.4 <del>— —</del> <del>— —</del>	DRN.PB	S005137/N00808	
X0022.5 <del>— —</del> <del>— —</del>	AIR.FLU.PB	S003641/N00527 S003644/N00528	
X0022.6 <del>— —</del> <del>— —</del>	F4.PB	S001860/N00283 S001864/N00284	
X0022.7 <del>— —</del> <del>— —</del>	A.ZRN.PB	S002130/N00332	
X0023.0 <del>— —</del> <del>— —</del>	SBK.PB	S005153/N00816	
X0023.1 <del>— —</del> <del>— —</del>	COL.PB	S005149/N00814	
X0023.3 <del>— —</del> <del>— —</del>	M19.PB	S005133/N00806	
X0023.4 <del>— —</del> <del>— —</del>	Z.PB	S005032/N00780 S005041/N00781 S005048/N00782 S005064/N00783 S005073/N00784	
X0023.6 <del>— —</del> <del>— —</del>	J-.PB	S005080/N00786 S005086/N00788 S005092/N00790 S005098/N00792	
X0023.7 <del>— —</del> <del>— —</del>	SP.CCW.PB	S005110/N00798	
X0024.0 <del>— —</del> <del>— —</del>	Y.PB	S005031/N00780 S005038/N00781 S005054/N00782 S005063/N00783 S005072/N00784	
X0024.1 <del>— —</del> <del>— —</del>	B.PB	S005034/N00780 S005043/N00781 S005052/N00782 S005061/N00783 S005068/N00784	
X0024.2 <del>— —</del> <del>— —</del>	RPD.PB	S004963/N00757	
X0024.3 <del>— —</del> <del>— —</del>	SP.STP.PB	S005112/N00799	
X0024.4 <del>— —</del> <del>— —</del>	X.PB	S005028/N00780 S005044/N00781 S005053/N00782 S005062/N00783 S005071/N00784	
X0024.5 <del>— —</del> <del>— —</del>	A.PB	S005033/N00780 S005042/N00781 S005051/N00782 S005058/N00783 S005074/N00784	
X0024.6 <del>— —</del> <del>— —</del>	J+.PB	S005077/N00785 S005083/N00787 S005089/N00789 S005095/N00791	
X0024.7 <del>— —</del> <del>— —</del>	SP.CW.PB	S005108/N00797	
X0025.3 <del>— —</del> <del>— —</del>	F.OV1	S004729/N00718 S004998/N00769	
X0025.4 <del>— —</del> <del>— —</del>	F.OV2	S004732/N00719 S005000/N00770	

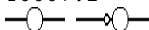
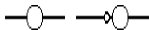
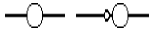
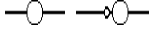
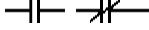
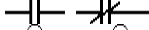
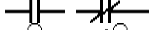
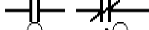
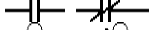
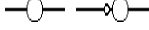
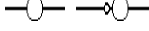
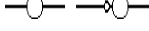
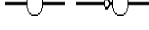







ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0025.5 <del>— —</del> <del>— —</del>	F.OV4 S004735/N00720	S005002/N00771	
X0025.6 <del>— —</del> <del>— —</del>	F.OV8 S004738/N00721	S005004/N00772	
X0025.7 <del>— —</del> <del>— —</del>	F.OV16 S004741/N00722	S005006/N00773	
X0112.0 <del>— —</del> <del>— —</del>	S002027/N00316		
X0112.1 <del>— —</del> <del>— —</del>	S002028/N00316	S002086/N00326	
X0112.2 <del>— —</del> <del>— —</del>	S002029/N00316	S002076/N00324 S005645/N00928	
X0112.3 <del>— —</del> <del>— —</del>	S002030/N00316	S002054/N00320 S002065/N00322 S005643/N00928	
X0112.4 <del>— —</del> <del>— —</del>	S002031/N00316	S002055/N00320 S002066/N00322 S005644/N00928	
X0112.5 <del>— —</del> <del>— —</del>	S002032/N00316	S002077/N00324 S005646/N00928	
X0112.6 <del>— —</del> <del>— —</del>	S002087/N00326		
X1002.4 <del>— —</del> <del>— —</del>	:PROIL S004515/N00678	PRESSURE OIL AL FOR OIL MIST	
X1002.5 <del>— —</del> <del>— —</del>	:OIL-L S004517/N00678	OIL LOW AL FOR OIL MIST	
X1002.6 <del>— —</del> <del>— —</del>	:THMAL S004504/N00676	THERMAL ALARM FOR OIL MIST	
X1002.7 <del>— —</del> <del>— —</del>	:SUPAR S004514/N00678	SUPPLY AIR AL FOR OIL MIST	
X1008.0 <del>— —</del> <del>— —</del>	S001250/N00189		

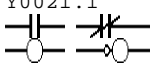
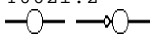
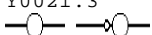
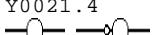
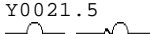
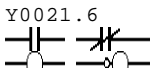
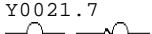
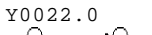
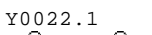
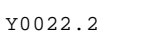
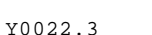
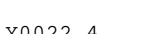
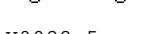
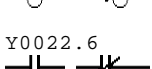
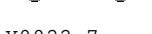


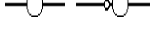
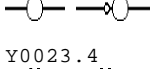
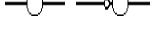
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0000.0	B.LP 	B AXIS LAMP	
	S005069/N00784		
	S005075/N00784		
Y0000.1	SP.STP.LP 	SPINDLE STOP LAMP	
	S005209/N00840		
Y0000.2	X.LP 	X AXIS LAMP	
	S005029/N00780	S005076/N00785	S005079/N00786
	S005035/N00780		
Y0000.3	A.LP 	A AXIS LAMP	
	S005059/N00783	S005094/N00791	S005097/N00792
	S005065/N00783		
Y0000.4	SP.CW.LP 	SPINDLE CW LAMP	
	S005204/N00838		
Y0000.5	T.21.LP 	TOOL DISPLAY 21 LED	
	S000642/N00101		
Y0000.6	T.22.LP 	TOOL DISPLAY 22 LED	
	S000652/N00102		
Y0000.7	T.24.LP 	TOOL DISPLAY 24 LED	
	S000662/N00103		
Y0001.0	T.28.LP 	TOOL DISPLAY 28 LED	
	S000672/N00104		
Y0001.1	T.11.LP 	TOOL DISPLAY 11 LED	
	S000602/N00097		
Y0001.2	T.12.LP 	TOOL DISPLAY 12 LED	
	S000612/N00098		
Y0001.3	T.14.LP 	TOOL DISPLAY 14 LED	
	S000622/N00099		
Y0001.4	T.18.LP 	TOOL DISPLAY 18 LED	
	S000632/N00100		
Y0001.5	ATC.AL.LED 	ATC FAULT LED	
	S005195/N00834		
Y0001.7	MC.AL.LED 	MACHINE ALARM LED	
	S005197/N00835		
Y0002.0	COL1.MC 	COOLANT 1 MC	
	S005230/N00845		
	S003675/N00532		
Y0002.1	MAG.CW.MC 	MAGAZINE CW MC	
	S000194/N00032	S000241/N00039	S000247/N00042
	S001411/N00208	S001630/N00229	S005243/N00849
	S000238/N00038	S005636/N00927	S005685/N00933
Y0002.2	MAG.CCW.MC 	MAGAZINE CCW MC	
	S000217/N00035	S000237/N00038	S000248/N00042
	S001631/N00229	S005245/N00850	S005637/N00927
	S000242/N00039	S005686/N00933	

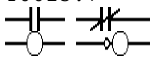
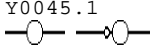
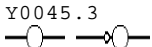
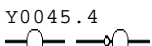
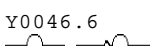
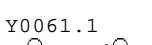
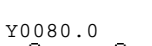
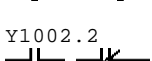
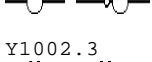
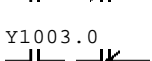
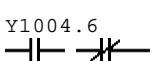
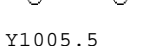
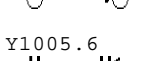
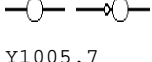
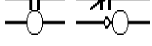
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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Y0002.4	CNV.CCW.MC 	CHIP CONVEYOR CCW MC	
	S002489/N00383 S002524/N00388	S002532/N00389	
Y0002.5	SP.COL.MC 	SPINDLE COOLER MC	
	S001667/N00239 S003806/N00550		
Y0002.6	ARM.MC 	ARM MOTOR MC	
	S000052/N00008 S001338/N00199 S001581/N00223 S000153/N00023	S001236/N00186 S001277/N00192 S001494/N00216 S002757/N00397	S001300/N00195 S001315/N00197 S001544/N00219 S001563/N00221
Y0002.7	COL2.MC 	COOLANT 2 MC	
	S002626/N00397 S003666/N00531	S002629/N00397 S003671/N00532	
Y0003.0	OIL.KIM.MC 	OIL SKIMMER MC	
	S005729/N00941		
Y0003.1	EXT.F.MC 	EXTERNAL FAN MC	
	S003850/N00559 S003853/N00559		
Y0003.2	RECYC.MC 	RECYCLE MOTOR MC	
	S003741/N00539 S003744/N00539		
Y0003.3			
	S002493/N00383		
Y0003.4			
	S002527/N00389 S002535/N00389	S002718/N00397 S002720/N00397	
Y0003.5	CYC.ON.O 	CYCLE ON LAMP	
	S003843/N00557		
Y0003.6	AL.LP.O 	ALARM LAMP	
	S003840/N00557 S003867/N00561		
Y0003.7	CYC.END.O 	CYCLE END LAMP	
	S003890/N00565		
Y0004.0	LUBE.O 	LUBE PUMP RELAY	
	S002427/N00373 S004125/N00608	S004056/N00599 S005656/N00929	S005667/N00931 S005674/N00932
Y0004.1	APO.O 	AUTO POWER OFF RELAY	
	S003484/N00504		
Y0004.2	SP.LG.O 	SPINDLE LOW GEAR RELAY	
	S002967/N00419 S002973/N00420		
Y0004.3	SP.HG.O 	SPINDLE HIGH GEAR RELAY	
	S002972/N00420 S002968/N00419		

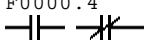
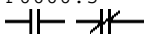
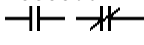
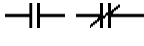
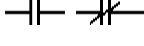
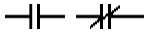
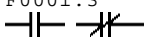
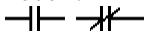
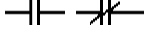
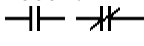
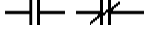
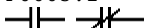
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0004.4	Wk.L.O 	WORK LIGHT RELAY	
	S001859/N00282		
Y0004.5	CTS.O 	CTS COOLANT MOTOR RELAY	
	S003608/N00522 S003614/N00523 S003792/N00549		
	S003605/N00521		
Y0004.6	M33.O 	M33 OUTPUT	
	S001906/N00291		
Y0004.7	M34.O 	M34 OUTPUT	
	S002669/N00397 S004146/N00613 S004151/N00614		
	S004150/N00613		
Y0005.0	TOL.UNC.O 	TOOL UNCLAMP RELAY	
	S000102/N00015		
Y0005.1	MAG.EXT.O 	MAGAZINE EXTEND RELAY	
	S001495/N00216 S001521/N00217		
	S001507/N00216		
Y0005.2	MAG.RTN.O 	MAGAZINE RETURN RELAY	
	S001496/N00216 S001520/N00217		
	S001530/N00217		
Y0005.3	AIR.BW.O 	AIR BLOW RELAY	
	S002607/N00397 S002613/N00397		
	S003988/N00584		
Y0005.4	SP.AIR.O 	SPINDLE AIR BLOW RELAY	
	S001454/N00212		
Y0005.5	CTS.AIR.O 	CTS AIR BLOW RELAY	
	S001453/N00212		
	S003630/N00525		
Y0005.6	M35.O 	M35 OUTPUT	
	S001888/N00288		
Y0005.7	@ATMCL 	M36 OUTPUT	
	S002725/N00397 S002728/N00397 S003991/N00585 S003997/N00586 S004000/N00587		
	S003994/N00585		
Y0006.0	AIR.AL.LED 	AIR FAULT LED	
	S005256/N00852		
Y0006.2	LUBE.AL.LED 	LUBE FAULT LED	
	S005254/N00851		
Y0006.3	M2/M30.LED 	M02 / M30 LED	
	S003884/N00563		
Y0006.4	M0/M1.LED 	M00 / M01 LED	
	S003886/N00564		
Y0006.6	A.HOME.LED 	A AXIS HOME LED	
	S005192/N00833		
Y0006.7	Z.HOME.LED 	Z AXIS HOME LED	
	S005190/N00832		
Y0007.0	Y.HOME.LED 	Y AXIS HOME LED	
	S005188/N00831		



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0007.1	X.HOME.LED 	X AXIS HOME LED	
Y0007.2	CY.ST.LP 	CYCLE START LAMP	
Y0007.3	FD.HLD.LP 	FEED HOLD LAMP	
Y0007.4	NC.RDY.LP 	CNC READY LAMP	
Y0007.5	MPG.LED 	MPG LED	S001479/N00215 S004730/N00718 S004733/N00719 S004736/N00720 S004739/N00721 S004742/N00722 S004746/N00723 S004776/N00724 S004989/N00764 S005199/N00836
Y0007.6	DR.LCK.O 	DOOR INTERLOCK RELAY	S004259/N00629 S005169/N00822 S005795/N00955
Y0007.7	A.UNCLP.O 	A AXIS UNCLAMP SOL	S001903/N00291 S003448/N00497
Y0008.0			S002760/N00397 S004266/N00630
Y0008.1			S002765/N00397 S004270/N00631
Y0012.6	F0-L 	FO LED	S004020/N00590
Y0013.1	ZNG-L 	Z AXIS CANCEL LED	S005178/N00826
Y0014.3			S005201/N00837
Y0014.5			S005246/N00850
Y0020.0	AFL.LP 	MST LOCK LAMP	S001831/N00275 S005182/N00828
Y0020.2	MAG.CW.LP 	MAGAZINE CW LAMP	S005244/N00849
Y0020.3	CNV.CCW.LP 	CHIP CONVEYOR CCW LAMP	S005242/N00848
Y0020.4	MLK.LP 	MACHINE LOCK LAMP	S005174/N00824
Y0020.5	4/5.IGN.LP 	4/5 AXIS IGNORE LAMP	S005744/N00944
Y0020.7	CNV.CW.LP 	CHIP CONVEYOR CW LAMP	S005240/N00847
Y0021.0	BDT.LP 	BLOCK DELETE LAMP	S005172/N00823

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
Y0021.1	OVC.LP 	OVERRIDE CANCEL LAMP	S001913/N00294 S001915/N00294 S001925/N00296 S001918/N00294
Y0021.2	F1.LP 	F1 LAMP	S000592/N00096
Y0021.3	F2.LP 	F2 LAMP	S005233/N00846
Y0021.4	RSTR.LP 	PROGRAM RESTART LAMP	S001768/N00263
Y0021.5	AIRBLA.LP 	AIR BLAST LAMP	S003989/N00584
Y0021.6	F5 LP 	F5 LAMP	S001896/N00291 S001897/N00291 S001905/N00291
Y0021.7	WK.L.LP 	WORK LIGHT LAMP	S005258/N00853
Y0022.0	M01.LP 	M01 STOP LAMP	S005180/N00827
Y0022.1	CTS.LP 	CTS LAMP	S003606/N00521
Y0022.2	F4 LP 	F4 LAMP	S001889/N00288
Y0022.3	DOR.LP 	DOOR LAMP	S004262/N00629
Y0022.4	DRN.LP 	DRY RUN LAMP	S005184/N00829
Y0022.5	AIR.FLU.LP 	AIR FLUSH LAMP	S003667/N00531
Y0022.6	F3 LP 	F3 LAMP	S001867/N00285 S001869/N00285 S004123/N00608 S001871/N00285
Y0022.7	A.ZRN.LP 	AUTO ZRN LAMP	S002153/N00335
Y0023.0	SBK.LP 	SINGLE BLOCK LAMP	S005176/N00825
Y0023.1	COL.LP 	COOLANT LAMP	S005231/N00845
Y0023.3	M19.LP 	M19 LAMP	S005229/N00844
Y0023.4	Z.LP 	JIG Z LAMP	S005049/N00782 S005088/N00789 S005091/N00790 S005055/N00782
Y0023.6	SP.CCW.LP 	SPINDLE CCW LAMP	S005207/N00839

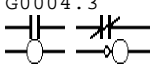
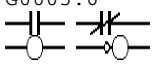
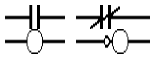
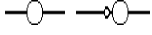
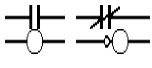
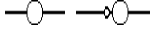
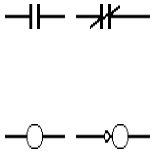
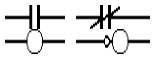
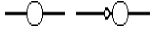
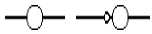
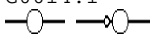
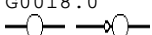
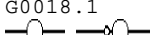
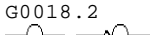
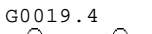
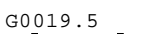
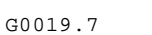
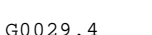
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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	S005045/N00781		
Y0045.1		S005170/N00822	
Y0045.3		S005221/N00842	
Y0045.4		S005227/N00843	
Y0046.6		S005766/N00949	
Y0061.1		S005215/N00841	
Y0080.0		S004273/N00632	
Y1002.2	>CLNA	COOLANT A	
	S002599/N00397	S002617/N00397	S003668/N00532
	S003569/N00515		
Y1002.3	>GUN	WATER GUN	
	S003669/N00532		
Y1003.0	>OILMS	SPINDLE OIL MIST	
	S004509/N00677		
Y1004.6	>INDEX	INDEX TABLE	
	S002665/N00397	S004135/N00611	S004140/N00612
	S004139/N00611		
Y1005.5	>FIL	FILTER MOTOR	
	S003784/N00547		
Y1005.6	>PUMP1	COOLANT TANK TO FILTER TANK	
	S002673/N00397	S004157/N00615	
	S004160/N00615		
Y1005.7		S002677/N00397	S004162/N00616
	S004165/N00616		
Y1006.0	>ZBRK	Z AXIS BRAKE	
	S000245/N00040		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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F0000.6	SA 	S000244/N00040 S001083/N00157 S001084/N00157 S001090/N00158 S001091/N00158 S001938/N00300 S003493/N00505 S003802/N00550 S004063/N00599 S004103/N00605 S005762/N00949 S005793/N00955	
F0000.7	OP 	S001796/N00268 S001921/N00295 S003322/N00477 S003388/N00485 S003844/N00558 S004080/N00602 S004090/N00603 S004117/N00608 S004552/N00687 S005553/N00911 S005563/N00913 S005568/N00914 S005573/N00915	
F0001.0	CNC-AL 	S001117/N00161 S002413/N00370 S003595/N00521	
F0001.1	RST 	REST SIGNAL S000012/N00003 S000465/N00078 S000473/N00079 S000928/N00136 S000934/N00137 S001111/N00160 S001115/N00161 S001994/N00310 S002002/N00311 S002009/N00312 S002016/N00313 S002020/N00314 S002126/N00331 S002135/N00332 S002143/N00333 S002421/N00372 S002452/N00378 S002482/N00383 S002529/N00389 S002838/N00406 S003058/N00437 S003081/N00442 S003113/N00449 S003127/N00450 S003150/N00454 S003400/N00487 S003533/N00511 S003539/N00512 S003699/N00535 S003758/N00543 S003765/N00544 S003774/N00545 S003786/N00548 S003813/N00551 S003926/N00573 S003937/N00574 S003951/N00577 S003971/N00581 S003993/N00585 S004003/N00587 S004008/N00588 S004016/N00589 S004034/N00593 S004039/N00594 S004044/N00595 S004297/N00633 S004315/N00636 S004321/N00637 S004332/N00638 S004338/N00639 S004349/N00640 S004355/N00641 S004361/N00642 S004373/N00644 S004379/N00645 S004384/N00646 S004389/N00647 S004394/N00648 S004399/N00649 S004409/N00651 S004421/N00654 S004430/N00656 S004441/N00657 S004451/N00659 S004456/N00660 S004464/N00662 S004493/N00674 S004502/N00675 S004506/N00676 S004519/N00678 S004537/N00682 S004554/N00687 S004561/N00688 S004567/N00689 S004613/N00699 S004622/N00700 S004640/N00703 S004649/N00704 S004745/N00723 S005261/N00854 S005606/N00922 S005619/N00924 S005679/N00932 S005800/N00956 S005805/N00957 S005843/N00964	
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F0001.5	TAP 	TAPPING SIGNAL S001799/N00268 S001845/N00279 S001923/N00296 S002801/N00400 S003204/N00462 S003221/N00463 S003534/N00511	
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F0003.1	MH 	MANU HANDLE FEED SEL CHECK S001947/N00302 S001954/N00303 S001960/N00304 S003348/N00481 S003359/N00482 S003369/N00483 S003379/N00484 S004182/N00620 S004241/N00626	
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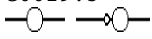
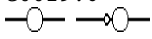
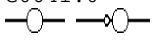
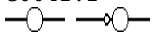
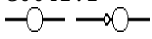
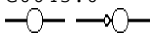
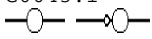
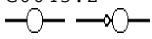
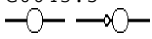
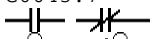
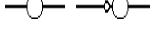
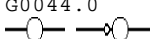
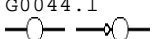
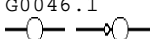
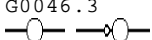
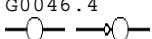
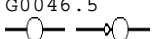
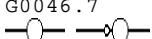
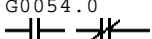
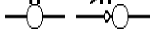
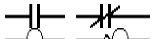

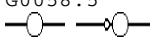
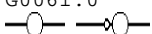
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.			
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<del>— —</del> <del>— —</del>	S004227/N00625					
F0004.5	MREF					
<del>— —</del> <del>— —</del>	S004257/N00629	S004702/N00710	S004709/N00713	S004717/N00716	S004723/N00717	
	S005125/N00803	S005128/N00804	S005131/N00805	S005211/N00841	S005213/N00841	
	S005217/N00842	S005219/N00842	S005223/N00843	S005225/N00843		
F0007.0	MF					
<del>— —</del> <del>— —</del>	S001623/N00228	S002790/N00399	S005262/N00854	S005267/N00855	S005273/N00856	
	S005279/N00857	S005285/N00858	S005290/N00859	S005295/N00860	S005300/N00861	
	S005305/N00862	S005310/N00863	S005315/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	S005416/N00884	S005421/N00885	S005426/N00886	
	S005431/N00887	S005436/N00888	S005441/N00889	S005446/N00890	S005451/N00891	
	S005456/N00892	S005462/N00893	S005468/N00894	S005473/N00895	S005478/N00896	
	S005483/N00897	S005488/N00898	S005493/N00899	S005498/N00900	S005503/N00901	
	S005508/N00902	S005513/N00903	S005518/N00904	S005523/N00905	S005528/N00906	
	S005533/N00907	S005538/N00908	S005543/N00909	S005548/N00910	S005558/N00912	
	S005578/N00916					
F0007.2	SF	SP FUNCTION SIGNAL				
<del>— —</del> <del>— —</del>	S002784/N00398	S002793/N00399	S002846/N00407	S002860/N00408	S003079/N00442	
	S003927/N00573	S005770/N00950				
F0007.3	TF					
<del>— —</del> <del>— —</del>	S000887/N00130	S000894/N00131	S001106/N00160	S001154/N00168	S002796/N00399	
	S004013/N00589					
F0009.4	DM30					
<del>— —</del> <del>— —</del>	S003472/N00503	S003816/N00552	S004011/N00589	S004215/N00624		
F0009.5	DM02					
<del>— —</del> <del>— —</del>	S003473/N00503	S003815/N00552	S004012/N00589	S004214/N00624		
F0009.6	DM01					
<del>— —</del> <del>— —</del>	S004210/N00624					
F0009.7	DM00					
<del>— —</del> <del>— —</del>	S004212/N00624					
F0034.0	GR10	GEAR SELECT SIGNAL				
<del>— —</del> <del>— —</del>	S002779/N00398	S002861/N00408				
F0034.1	GR20	GEAR SELECT SIGNAL				
<del>— —</del> <del>— —</del>	S002777/N00398	S002847/N00407				
F0045.0	SALM1	SPINDLE ALARM SIGNAL				
<del>— —</del> <del>— —</del>	S001187/N00177	S002416/N00371	S002555/N00394	S003071/N00441	S003310/N00475	
	S003404/N00487					
F0045.1	SSTA	SPINDLE SPEED ZERO				
<del>— —</del> <del>— —</del>	S002586/N00397	S002914/N00412	S002934/N00414	S003398/N00487	S003847/N00558	
	S004226/N00625	S004236/N00626	S004240/N00626			
F0045.2	SDTA					
<del>— —</del> <del>— —</del>	S002800/N00400					
F0045.3	SARA					
<del>— —</del> <del>— —</del>	S002580/N00397	S002623/N00397	S003069/N00440	S003153/N00455	S003845/N00558	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
F0045.7	ORARA		
<del>---</del> <del>---</del>		S001253/N00189 S001284/N00193 S001552/N00220 S002632/N00397 S002635/N00397	
		S003065/N00438 S003264/N00469	
F0046.2	RCHPA		
<del>---</del> <del>---</del>		S002805/N00401 S002813/N00402 S002885/N00410 S002889/N00410	
F0054.0	U00	ATLM MACRO SIGNAL	
<del>---</del> <del>---</del>		S001924/N00296	
F0064.0	TLCH	TOOL LIFE CHANGE SIGNAL	
<del>---</del> <del>---</del>		S004014/N00589 S004524/N00680	
F0065.0			
<del>---</del> <del>---</del>		S005203/N00838	
F0065.1			
<del>---</del> <del>---</del>		S005206/N00839	
F0072.3			
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F0072.4			
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F0072.5			
<del>---</del> <del>---</del>		S004975/N00761 S004979/N00762	
F0072.6			
<del>---</del> <del>---</del>		S004982/N00763	
F0072.7	AUX.HYDR		
<del>---</del> <del>---</del>		S004965/N00758 S004968/N00759	
F0094.0	ZP1		
<del>---</del> <del>---</del>		S002105/N00328 S002146/N00334 S002249/N00343 S002251/N00343 S002264/N00344	
		S002266/N00344 S002338/N00353 S002375/N00361	
F0094.1	ZP2		
<del>---</del> <del>---</del>		S002021/N00314 S002118/N00329 S002147/N00334 S002280/N00345 S002289/N00346	
		S002342/N00354 S002382/N00362	
F0094.2	ZPZ	Z AXIS 1ST. POINT	
<del>---</del> <del>---</del>		S002005/N00312 S002102/N00328 S002115/N00329 S002124/N00330 S002140/N00333	
		S002148/N00334 S002300/N00347 S002309/N00348 S002346/N00355 S002389/N00363	
F0094.3	ZP4	4 AXIX 1ST. POINT	
<del>---</del> <del>---</del>		S002321/N00349 S002350/N00356 S002397/N00364	
F0096.0	ZP2X	X AXIS 2ND. POINT	
<del>---</del> <del>---</del>		S001198/N00179 S002403/N00365 S004401/N00650	
F0096.1	ZP2Y	Y AXIS 2ND. POINT	
<del>---</del> <del>---</del>		S001199/N00179 S002405/N00366 S004402/N00650	
F0096.2	ZP2Z	Z AXIS 2ND. POINT	
<del>---</del> <del>---</del>		S001201/N00179 S001539/N00219 S001558/N00221 S001576/N00223 S002393/N00363	
		S002407/N00367 S004404/N00650	
F0096.3	ZP24		
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F0102.0	MV1		
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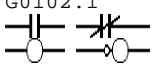
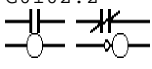
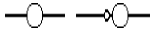
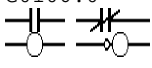
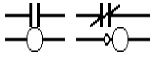
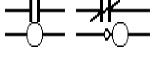
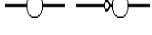
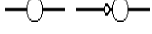
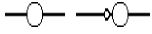
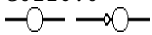
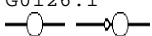
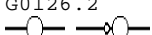
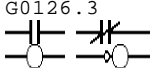
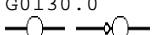
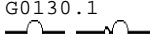
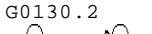
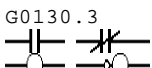
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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F0102.2 <del>— —</del> <del>— —</del>	S004224/N00625		
F0102.3 <del>— —</del> <del>— —</del>	S004225/N00625		
F0149.1 <del>— —</del> <del>— —</del>	S003011/N00429		

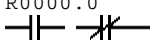
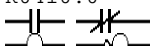
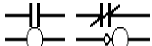
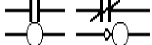
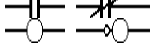
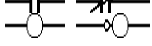
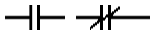
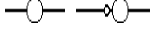
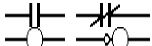
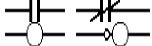
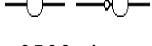

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0004.3	FIN	END SIGNAL	
	S005780/N00951 S002799/N00399		
G0005.6	AFL	AUX. FUNCTION LOCK	
	S005181/N00828 S001830/N00275		
G0006.0	SRN	PROGRAM RESTART	
	S001763/N00263 S001767/N00263	S001765/N00263 S001770/N00264 S003401/N00487	
G0006.4	OVC	OVERRIDE CANCEL SIGNAL	
	S001927/N00296		
G0007.2	ST	CYCLE START SIGNAL	
	S003134/N00451 S002545/N00392	S003821/N00553	
G0008.0	*IT	INTERLOCK SIGNAL	
	S001651/N00235		
G0008.4	*ESPI	EMERGENCY STOP SIGNAL	
	S000004/N00001 S000716/N00111 S000781/N00116 S000836/N00121 S003673/N00532 S000006/N00001	S000008/N00002 S000011/N00003 S000258/N00044 S000266/N00045 S000741/N00112 S000755/N00113 S000764/N00114 S000774/N00115 S000788/N00117 S000796/N00118 S000804/N00119 S000829/N00120 S000906/N00131 S000989/N00143 S001072/N00156 S001939/N00300 S003739/N00539 S003801/N00550 S003846/N00558 S003858/N00561	
G0008.5	*SPI	FEED HOLD SIGNAL	
	S002546/N00393 S002564/N00394	S003135/N00451	
G0008.7	ERS	EXTERNAL RESET SIGNAL	
	S003820/N00552		
G0014.0	ROV1	RAPID OVERRIDE 1 SIGNAL	
	S001986/N00308		
G0014.1	ROV2	RAPID OVERRIDE 2 SIGNAL	
	S001991/N00309		
G0018.0	HS1A	HANDLE X AXIS SELECT	
	S001951/N00302		
G0018.1	HS1B	HANDLE Z AXIS SELECT	
	S001958/N00303		
G0018.2	HS1C	MANUAL HANDLE FEED SEL HS1C	
	S001964/N00304		
G0019.4	MP1	HANDLE FEED 1 SELECT	
	S001933/N00298		
G0019.5	MP2	HANDLE FEED 2 SELECT	
	S001936/N00299		
G0019.7	RT	RAPID TRAVERSE SELECT	
	S001702/N00246		
G0029.4	SAR	SPINDLE SPEED ARRIVAL	
	S003070/N00440		



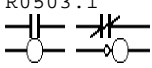
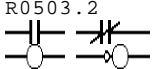
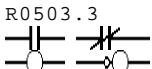
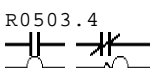
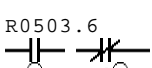
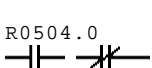
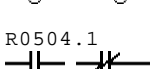
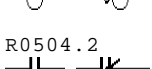
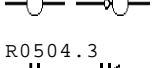
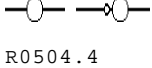
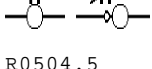
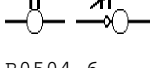
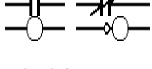
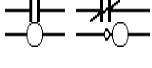
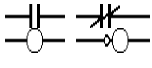
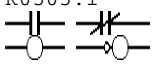
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0029.5	SOR 	SPINDLE ORIENTATION SIGNAL	
	S003068/N00439		
G0029.6	*SSTP 	SPINDLE STOP	
	S003309/N00474		
G0041.0			
	S004977/N00761		
G0041.1			
	S004981/N00762		
G0041.2			
	S004984/N00763		
G0043.0	MD1 	MODE SELECT 1	
	S001692/N00243		
G0043.1	MD2 	MODE SELECT 2	
	S001696/N00244		
G0043.2	MD4 	MODE SELECT 4	
	S001699/N00245		
G0043.5	DNC 	DNC OPERATION SELECT	
	S001706/N00248		
G0043.7	ZRN  	ZERO RETURN SELECT	
	S002127/N00331 S001704/N00247		
G0044.0	BDT1 	OPTION BLOCK SKIP 1	
	S001756/N00260		
G0044.1	MLK 	ALL-AXIS MACHINE LOCK	
	S001732/N00254		
G0046.1	SBK 	SIGNAL BLOCK	
	S001802/N00268		
G0046.3	KEY1 	MEMORY PROTECT 1	
	S001942/N00301		
G0046.4	KEY2 	MEMORY PROTECT 2	
	S001943/N00301		
G0046.5	KEY3 	MEMORY PROTECT 3	
	S001944/N00301		
G0046.7	DRN 	DRY RUN SIGNAL	
	S001846/N00279		
G0054.0	 		
	S001019/N00149 S001022/N00149		
G0055.5	#1013  	#1013	
	S003996/N00586 S003998/N00586		
G0058.5	STRD 	I/O SIMULTANEOUS OPERATION	
	S001707/N00248		
G0061.0	RGTP 		
	S003407/N00488		

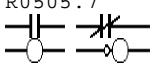
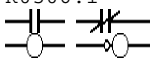
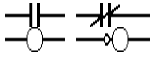
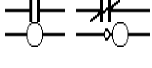
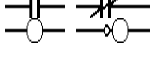
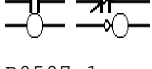
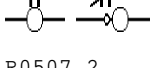
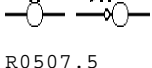
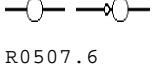
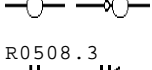
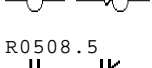
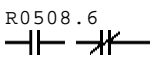
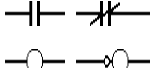
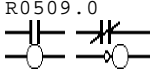
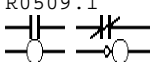


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0067.7	S005788/N00953		
G0070.0	TLMLA S003304/N00473	TORQUE LIMIT	
G0070.3	CTH1A S003030/N00432	SPINDLE HIGH/LOW SPEED SIGNAL	
G0070.4	SRVA S001437/N00211 S003262/N00469 S003302/N00472	SPINDLE CCW COMMAND A S001449/N00212 S002581/N00397 S003250/N00467 S003255/N00468 S003287/N00471 S003525/N00511	
G0070.5	SFRA S001438/N00211 S003261/N00469 S003288/N00471	SPINDLE CW COMMAND A S001450/N00212 S002582/N00397 S003248/N00467 S003257/N00468 S003301/N00472 S003526/N00511	
G0070.6	ORCMA S003051/N00437 S003064/N00437	SPINDLE ORIENT COMMAND A S003199/N00462 S003217/N00463 S003263/N00469	
G0070.7	MRDYA S003032/N00433	MACHINE READY A	
G0071.0	ARSTA S003311/N00475 S003314/N00475	SPINDLE RESET	
G0071.1	*ESPA S000007/N00001	SPINDLE 1 EMERGENCY STOP	
G0071.6	SP_RANGE S002804/N00401 S002803/N00400	SPEED RANGE SWITCH REQUEST S002812/N00402	
G0071.7	LOW_MC S002820/N00403	LOW SPEED MC STATUS	
G0072.4	OVRA S003327/N00478	ANALOG OVERRIDE COMMAND	
G0072.7	HIGH_MC S002823/N00404	HIGH SPEED MC STATUS	
G0100.0	+J1 S002011/N00313 S002257/N00343	X AXIS PULS DIRECT S002195/N00337 S002248/N00343 S002376/N00361	
G0100.1	+J2 S002023/N00315 S002282/N00345	Z AXIS PULS DIRECT S002213/N00339 S002278/N00345 S002383/N00362	
G0100.2	+Z S001997/N00311 S002302/N00347	+JZ S002231/N00341 S002298/N00347 S002390/N00363	
G0100.3	+4 S002398/N00364 S002328/N00350	+J4	
G0102.0	-J1 S002012/N00313 S002272/N00344	X AXIS MINUS DIRECT S002173/N00336 S002263/N00344 S002377/N00361	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0102.1	-J2	Z AXIS MINUS DIRECT	
	S002024/N00315	S002204/N00338	S002288/N00346 S002384/N00362
	S002292/N00346		
G0102.2	-Z	-JZ	
	S001998/N00311	S002222/N00340	S002308/N00348 S002391/N00363
	S002312/N00348		
G0102.3	-4	-J4	
	S002337/N00352		
G0106.0	MIRX	X AXIS MIRROR IMAGE SIGNAL	
	S002638/N00397	S002644/N00397	
	S004047/N00596		
G0106.1	MIRY	Y AXIS MIRROR IMAGE SIGNAL	
	S002641/N00397	S002645/N00397	
	S004049/N00597		
G0106.3	MIR4	4TH AXIS MIRROR IMAGE SIGNAL	
	S002646/N00397	S002649/N00397	
	S004051/N00598		
G0108.2	MLKZ	Z AXIS MACHINE LOCK	
	S001744/N00257		
G0124.3			
	S005742/N00944		
G0124.4			
	S005743/N00944		
G0126.0	SVFX	SERVO OFF X	
	S001680/N00241		
G0126.1	SVFY	SERVO OFF Y	
	S001681/N00241		
G0126.2	SVFZ	SERVO OFF Z	
	S001682/N00241		
G0126.3	SVF4	SERVO OFF 4	
	S002327/N00350	S002336/N00352	
	S001686/N00242		
G0130.0	*IT1	X AXIS INTERLOCK	
	S001658/N00237		
G0130.1	*IT2	Z AXIS INTERLOCK	
	S001662/N00238		
G0130.2	*ITZ	INTERLOCK Z	
	S001671/N00239		
G0130.3	*IT4	INTERLOCK 4	
	S002326/N00350	S002335/N00352	
	S001678/N00240		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0000.0		LOGIC1	LOGIC1
		S005812/N00959	S005817/N00960 S005826/N00962
R0410.0		S004081/N00602	S004089/N00603 S004116/N00608
		S004085/N00602	
R0410.1		S004078/N00602	S004088/N00603 S004095/N00604
		S004094/N00603	
R0410.2		S004061/N00599	S004079/N00602 S004096/N00604 S004118/N00608
		S004101/N00604	
R0410.3		S004204/N00623	S005789/N00954 S005790/N00954
		S005791/N00954	
R0410.4		S004097/N00604	S004104/N00605
		S004106/N00605	
R0500.0		L1	LOGIC 1
		S000154/N00024	S000155/N00024 S000179/N00031 S000181/N00031 S000532/N00089
		S000533/N00089	S000540/N00090 S000541/N00090 S000542/N00090 S000543/N00090
		S000548/N00091	S000549/N00091 S000550/N00091 S000551/N00091 S000556/N00092
		S000557/N00092	S000558/N00092 S000559/N00092 S000564/N00093 S000565/N00093
		S000567/N00093	S000575/N00094 S000576/N00094 S000577/N00094 S000578/N00094
		S000583/N00095	S000584/N00095 S000585/N00095 S000586/N00095 S000673/N00105
		S000674/N00105	S000680/N00106 S000681/N00106 S000687/N00107 S000688/N00107
		S000694/N00108	S000695/N00108 S000701/N00109 S000702/N00109 S000708/N00110
		S000709/N00110	S000847/N00124 S000926/N00136 S000927/N00136 S000929/N00136
		S000943/N00138	S000944/N00138 S000945/N00138 S000957/N00140 S000958/N00140
		S000959/N00140	S000960/N00140 S000969/N00141 S000970/N00141 S000971/N00141
		S000977/N00142	S000991/N00144 S001006/N00147 S001020/N00149 S001038/N00153
		S001039/N00153	S001049/N00154 S001050/N00154 S001633/N00230 S001650/N00235
		S001679/N00241	S003000/N00426 S003010/N00429 S003019/N00430 S004069/N00600
		S004076/N00602	S004077/N00602 S004086/N00603 S004087/N00603 S004115/N00608
		S004305/N00635	S004658/N00705 S004659/N00705 S004665/N00706 S004671/N00707
		S004672/N00707	S004673/N00707 S004687/N00708 S004688/N00708 S004689/N00708
		S004690/N00708	S004695/N00709 S004744/N00723 S004773/N00724 S004774/N00724
		S004775/N00724	S004781/N00725 S004782/N00725 S004783/N00725 S004790/N00726
		S004795/N00727	S004797/N00727 S004804/N00728 S004805/N00728 S004806/N00728
		S004807/N00728	S004812/N00729 S004813/N00729 S004819/N00730 S004820/N00730
		S004831/N00732	S004838/N00733 S004854/N00736 S004859/N00737 S004860/N00737
		S004867/N00738	S004868/N00738 S004875/N00739 S004906/N00744 S005259/N00854
		S005260/N00854	S005605/N00922
		S000156/N00024	
R0500.1		M00	PROGRAM STOP
		S002569/N00397	S003809/N00551
		S005272/N00855	
R0500.2		M01	OPTION PROGRAM STOP
		S002576/N00397	S003807/N00551
		S005278/N00856	
R0500.3		M02	PROGRAM END
		S005284/N00857	
R0500.4		M03	SPINDLE C.W
		S002578/N00397	S003190/N00462
		S005289/N00858	

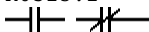


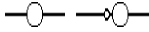
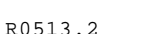


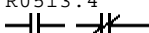
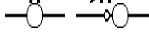
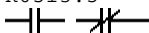


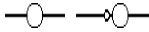
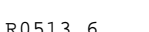
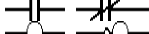

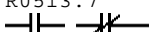



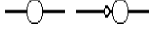
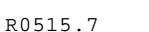
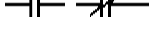
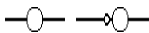
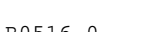
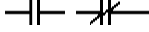
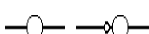

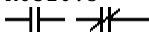


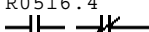
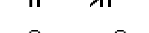
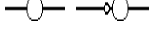
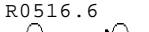

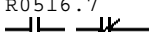


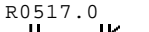
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0500.5	M04	SPINDLE C.C.W	
	S002579/N00397	S003208/N00463	
	S005294/N00859		
R0500.6	M05	SPINDLE STOP	
	S002585/N00397	S003055/N00437 S003163/N00458	S003307/N00474
	S005299/N00860		
R0500.7	M06	ATC MACRO	
	S000725/N00111	S000735/N00112 S001161/N00170	S002588/N00397 S003570/N00516
	S003987/N00584	S004412/N00652 S005769/N00950	
	S005304/N00861		
R0501.0	M07	WORKPIECE BLAST ON	
	S002596/N00397	S003947/N00577	
	S005309/N00862		
R0501.1	M08	COOLANT ON	
	S002604/N00397	S003551/N00514 S004432/N00657	
	S005314/N00863		
R0501.2	M09	COOLANT/KIT OFF	
	S001885/N00288	S002451/N00378 S002606/N00397	S003555/N00514 S003585/N00519
	S003633/N00526	S003654/N00529 S003775/N00545	S003949/N00577 S003969/N00581
	S005320/N00864		
R0501.3	M10	CUT BLOW AIR OFF	
	S002612/N00397	S003950/N00577 S003970/N00581	
	S005325/N00865		
R0501.6	M13	SP CW AND COOLANT ON	
	S002615/N00397	S003191/N00462 S003552/N00514	S004433/N00657
	S005330/N00866		
R0501.7	M14	SP CCW AND COOLANT ON	
	S002616/N00397	S003209/N00463 S003553/N00514	S004434/N00657
	S005335/N00867		
R0502.0	M15	CHIP FLUSH PUMP ON	
	S002625/N00397	S003631/N00526	
	S005340/N00868		
R0502.1	M16	CHIP FLUSH PUMP OFF	
	S002628/N00397	S003636/N00526 S003657/N00529	
	S005345/N00869		
R0502.4	M19	SPINDLE ORIENT ON	
	S002631/N00397	S003041/N00436	
	S005350/N00870		
R0502.5	M20	SPINDLE ORIENT OFF	
	S002634/N00397	S003062/N00437	
	S005355/N00871		
R0502.6			
	S002637/N00397	S004031/N00593	
	S005360/N00872		
R0502.7			
	S002640/N00397	S004036/N00594	
	S005365/N00873		
R0503.0			
	S002643/N00397	S004033/N00593 S004038/N00594	S004043/N00595
	S005370/N00874		

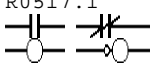
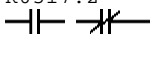
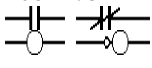
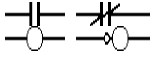
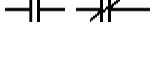
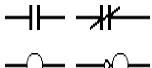
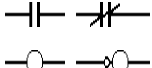
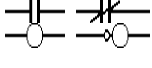
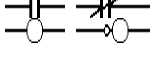
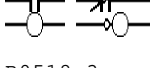
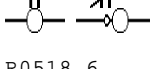
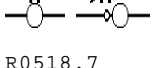
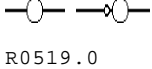
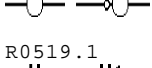

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0503.1		S002648/N00397 S004041/N00595 S005375/N00875	
R0503.2		M25 A AXIS UNCLAMP S002652/N00397 S003435/N00495 S003450/N00498 S004559/N00688 S005380/N00876	
R0503.3		M26 A AXIS CLAMP S002656/N00397 S003437/N00495 S003455/N00499 S004565/N00689 S005385/N00877	
R0503.4		M27 A AXIS INDEX S002659/N00397 S005726/N00941 S005390/N00878	
R0503.6		S002708/N00397 S003201/N00462 S003392/N00486 S003416/N00491 S003422/N00493 S005395/N00879	
R0504.0		S002662/N00397 S005400/N00880	
R0504.1		S002663/N00397 S005405/N00881	
R0504.2		M33.A M CODE OUTPUT 1 S002664/N00397 S004134/N00611 S004147/N00613 S004556/N00687 S005410/N00882	
R0504.3		M34.A M CODE OUTPUT 2 S002668/N00397 S004136/N00611 S004145/N00613 S004557/N00687 S005415/N00883	
R0504.4		M35.A M CODE OUTPUT 3 S002672/N00397 S004156/N00615 S005420/N00884	
R0504.5		M36.A M CODE OUTPUT 4 S002676/N00397 S004161/N00616 S005425/N00885	
R0504.6		M37.A S002680/N00397 S004166/N00617 S005430/N00886	
R0504.7		M38.A S002683/N00397 S004171/N00618 S005435/N00887	
R0505.0		M39A SP LOAD MONIT START S002686/N00397 S005802/N00957 S005440/N00888	
R0505.1		M40A SP LOAD MONIT STOP S002689/N00397 S005804/N00957 S005445/N00889	
R0505.6		M45.A S002692/N00397 S004448/N00659 S005450/N00890	

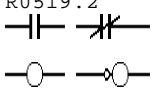
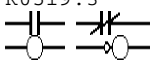
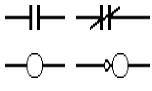
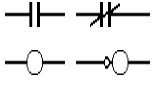
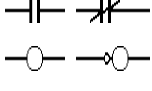
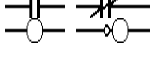
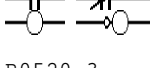
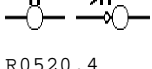
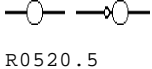
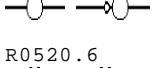
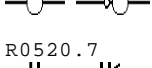
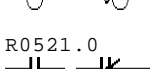
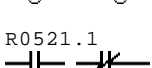
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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	S005455/N00891		
R0506.1	M48.A		
	S002703/N00397	S003578/N00519	S004435/N00657
	S005461/N00892		
R0506.3	M50.A		
	S002478/N00383	S002711/N00397	
	S005472/N00894		
R0506.4	M51.A		
	S002494/N00384	S002714/N00397	
	S005477/N00895		
R0506.7	M54.A		
	S002526/N00389	S002717/N00397	
	S005482/N00896		
R0507.0	M55.A		
	S002528/N00389	S002719/N00397	
	S005487/N00897		
R0507.1	M56.A		
	S001880/N00288		
	S005492/N00898		
R0507.2	M57.A		
	S001884/N00288		
	S005497/N00899		
R0507.5	M60.A		
	S002724/N00397	S003990/N00585	
	S005502/N00900		
R0507.6	M61.A		
	S002727/N00397	S003992/N00585	
	S005507/N00901		
R0508.3	M66.A		
	S002732/N00397		
	S005512/N00902		
R0508.5	M68.A	GEAR CHANGE TO LOW	
	S002858/N00408	S005772/N00950	
R0508.6	M69.A	GEAR CHANGE TO HIGH	
	S002844/N00407	S005773/N00950	
R0508.7	M70.A		
	S000566/N00093	S005583/N00917	S005586/N00918
	S005607/N00922	S005617/N00923	S005621/N00924
	S005517/N00903		
R0509.0	M71.A		
	S001514/N00217	S002737/N00397	
	S005522/N00904		
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	S000347/N00063	S001550/N00220	S002749/N00397
	S005527/N00905		

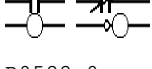
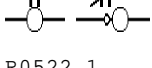
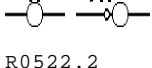
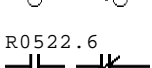
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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	S005532/N00906		
R0509.3	M74.A		
	S000348/N00063	S001442/N00212	S001571/N00222 S001620/N00228 S002751/N00397
	S005537/N00907		
R0509.4	M75.A		
	S001407/N00208	S002743/N00397	S005775/N00950
	S005542/N00908		
R0509.5			
	S000354/N00064	S000358/N00064	S001588/N00224 S002754/N00397
	S005547/N00909		
R0509.6			
	S001490/N00216	S002746/N00397	
	S005552/N00910		
R0510.6			
	S005557/N00911		
R0510.7			
	S005577/N00915		
R0511.1			
	S002759/N00397	S004263/N00630	
	S005567/N00913		
R0511.2			
	S002764/N00397	S004267/N00631	
	S005572/N00914		
R0511.7	M94.A		
	S000379/N00070	S000383/N00071	S002769/N00397
	S005562/N00912		
R0512.0	M95.A		
	S000363/N00065	S002772/N00397	S004311/N00636
	S005582/N00916		
R0512.5	M_FIN	M FINISH	
	S002786/N00399	S002789/N00399	
	S002776/N00397		
R0512.6	SFIN	S CODE FINISH	
	S002787/N00399	S002792/N00399	
	S002785/N00398		
R0512.7			
	S000900/N00131	S002788/N00399	S002795/N00399
	S001156/N00168		
R0513.0	JOG	JOG MODE	
	S001689/N00243	S001697/N00245	S001713/N00250 S002243/N00343 S002258/N00344
	S002273/N00345	S002283/N00346	S002293/N00347 S002303/N00348 S002313/N00349
	S002329/N00351	S003427/N00494	S005652/N00928
	S001711/N00249		

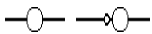
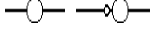
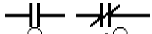
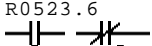
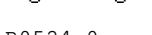
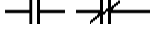
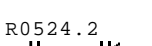
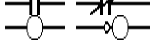
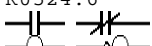
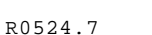
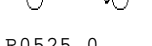
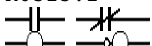




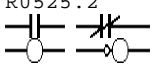
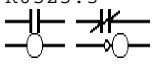
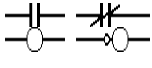
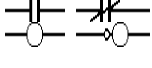
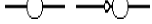
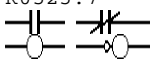
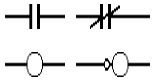
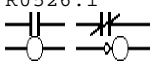
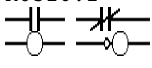
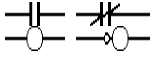
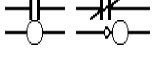
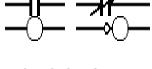
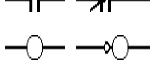
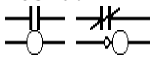
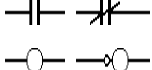
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0513.1	MANUAL	MANUAL MODE	
	S000272/N00046	S000278/N00047 S000874/N00128	S001075/N00156 S001431/N00210
	S001443/N00212	S002469/N00382 S003039/N00436	S003086/N00443 S003089/N00444
	S003091/N00445	S003179/N00460 S003185/N00461	S003312/N00475 S004239/N00626
	S004885/N00740	S004890/N00741 S005159/N00817	S005650/N00928 S005767/N00950
	S001715/N00250		
R0513.2	ZRNFIN	AXES REF. RETURN FINISH	
	S001976/N00307	S002556/N00394 S004455/N00660	S004881/N00740 S004888/N00741
	S002361/N00357		
R0513.4	FLTMR	FLASH ON/OFF TIMER	
	S002367/N00359		
	S002366/N00358		
R0513.5	FLASH	FLASH ON/OFF	
	S000374/N00068	S001239/N00187 S002152/N00335	S002370/N00360 S002371/N00360
	S002379/N00361	S002386/N00362 S002394/N00363	S002400/N00364 S002428/N00373
	S003265/N00469	S003842/N00557 S003866/N00561	S003889/N00565 S004082/N00602
	S004091/N00603	S004260/N00629	
	S002374/N00360		
R0513.6	FLTRG	FLASH ON/OFF TRIGGER	
	S002362/N00358	S002369/N00360 S002372/N00360	
	S002368/N00359		
R0513.7	AUTOLH	AUTO LATCH	
	S001687/N00243	S002483/N00383 S003095/N00446	S003098/N00447 S003228/N00464
	S003232/N00464	S003324/N00478 S003329/N00479	S003338/N00480 S003366/N00483
	S003376/N00484	S003438/N00495 S003510/N00509	S003517/N00510 S003520/N00510
	S003528/N00511	S003544/N00513 S003547/N00513	S003999/N00587 S004365/N00643
	S004898/N00743		
	S001720/N00251		
R0515.7	STOP	EMG & RESET	
	S002241/N00342	S003556/N00514 S003568/N00515	S003586/N00519 S003591/N00520
	S003637/N00526	S003658/N00529 S003836/N00556	
	S000013/N00003		
R0516.0	RDY1	NC READY	
	S001123/N00162	S001127/N00163 S001138/N00165	S001142/N00166 S001190/N00177
	S003031/N00433		
	S001940/N00300		
R0516.3	GCHSTB	GEAR CHANGE STANDBY	
	S002875/N00409	S002906/N00411 S002911/N00412	S002919/N00412 S002931/N00414
	S002939/N00414	S003001/N00426	
	S002910/N00411		
R0516.4	HGCH	HIGH GEAR CHANGE	
	S002898/N00411	S002907/N00411 S002918/N00412	S002924/N00413 S002927/N00413
	S002954/N00417	S002964/N00419	
	S002923/N00412		
R0516.6	ST+	CYCLE START ON PULSE	
	S003893/N00566		
R0516.7	LGCH1	LOW GEAR CHANGE 1	
	S002915/N00412	S002920/N00412 S002926/N00413	S002960/N00418 S002970/N00420
	S003913/N00573		
	S002930/N00413		
R0517.0	L1DL	LOGIC 1 DELAY	
	S000376/N00069	S001638/N00231 S001641/N00232	S001643/N00233 S001647/N00234
	S001637/N00230		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0517.1	O.SA 	POWER ON INITIAL PULSE AUX	
	S001639/N00231 S001642/N00232		
R0517.2	O.S 	POWER ON INITIAL PULSE	
	S000715/N00111 S001617/N00227 S003689/N00535 S001640/N00231	S000876/N00129 S002455/N00379 S004591/N00695	S001404/N00208 S002841/N00407 S001597/N00225 S002855/N00408 S001607/N00226 S002896/N00411
R0517.3	GRHIGH 	GEAR HIGH	
	S002849/N00407 S002854/N00407	S002864/N00408 S002869/N00409	S002880/N00410 S002912/N00412
R0517.4	GRLOW 	GEAR LOW	
	S002850/N00407 S002868/N00408	S002863/N00408 S002871/N00409	S002882/N00410 S002932/N00414
R0517.5	GRCHG 	GEAR CHANGE	
	S002874/N00409 S003026/N00431 S003297/N00472 S002879/N00409	S002894/N00410 S003054/N00437 S003303/N00473	S002982/N00422 S003067/N00439 S003305/N00474 S002998/N00425 S003270/N00470 S003923/N00573 S003020/N00430 S003283/N00471
R0517.6	LGCH 	LOW GEAR CHANGE	
	S002900/N00411 S002955/N00417 S002943/N00414	S002908/N00411 S002969/N00420	S002938/N00414 S002944/N00415 S002947/N00415
R0517.7	HGCH1 	HIGH GEAR CHANGE 1	
	S002935/N00414 S003911/N00573 S002950/N00415	S002940/N00414 S002946/N00415	S002959/N00418 S002965/N00419
R0518.0	GEAROK 	GEAR OK	
	S001189/N00177 S002895/N00410	S002783/N00398 S003043/N00436	S003076/N00442
R0518.1	TMRO1 	HIGH GEAR CHANGE TIMER	
	S002903/N00411 S002958/N00417	S002925/N00413 S002945/N00415	S003005/N00427 S003008/N00428
R0518.2	TMRO2 	LOW GEAR CHANGE TIMER	
	S002916/N00412 S002963/N00418	S002936/N00414	
R0518.3	ORCM1 	SPINDLE ORIENTATION	
	S003050/N00437 S003049/N00436	S003306/N00474	
R0518.6	SPOK 	SPINDLE OK	
	S003161/N00458 S003085/N00442		
R0518.7	MAN- 	MANUAL MODE OFF PULSE	
	S003164/N00458 S003088/N00443		
R0519.0	MAN-A 	MANUAL MODE OFF PULSE AUX	
	S003087/N00443 S003090/N00444		
R0519.1	MSSTP 	MANUAL SPINDLE STOP	
	S003056/N00437 S003094/N00445	S003162/N00458	

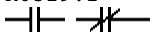
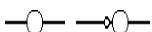
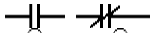
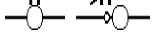
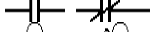
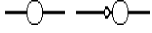
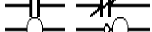
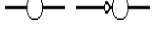


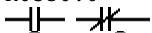
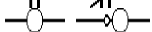
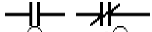
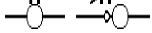
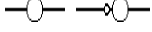
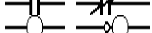
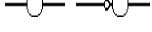
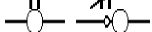

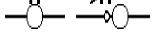

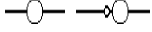
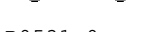

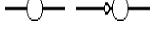
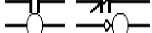

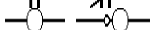

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0519.2	SPNOP 	SPINDLE NO PAUSE	S003093/N00445 S003167/N00458 S003181/N00460 S003187/N00461 S003275/N00471 S003290/N00472 S003273/N00470
R0519.3	SPOK1 	SPINDLE OK 1	S003206/N00462 S003223/N00463 S003171/N00458
R0519.4	SP-FOR 	SPINDLE C.W	S003052/N00437 S003077/N00442 S003109/N00449 S003142/N00454 S003197/N00462 S003216/N00463 S003236/N00465 S003244/N00466 S003904/N00571 S003908/N00572 S003207/N00462
R0519.5	SP-REV 	SPINDLE C.C.W	S003053/N00437 S003078/N00442 S003123/N00450 S003143/N00454 S003198/N00462 S003215/N00463 S003238/N00465 S003242/N00466 S003905/N00571 S003909/N00572 S003224/N00463
R0519.6	SPDIR 	SPINDLE DIR FLAG	S003235/N00465 S003237/N00465 S003241/N00466 S003243/N00466 S003247/N00467 S003249/N00467 S003254/N00468 S003256/N00468 S003234/N00464
R0520.0	SP-HLD 	SPINDLE RESET HOLD	S003271/N00470 S003387/N00485 S003391/N00485
R0520.1	RGDK 	RIGID TAPPING KEEP	S003168/N00458 S003227/N00464 S003252/N00467 S003259/N00468 S003399/N00487 S003406/N00488 S003410/N00489 S003415/N00491 S003423/N00493 S003405/N00487
R0520.2	H/LOVT 	HIGH/LOW SPEED CHANGE OVT	S002836/N00406 S002835/N00405
R0520.3	RGDENB 	RIGID TAPPING ENABLE	S003409/N00489 S003412/N00490 S003411/N00489
R0520.4	RGDEND 	RIGID TAPPING END	S003403/N00487 S003414/N00490
R0520.5	RGDFIN 	RIGID TAPPING FINISH	S003418/N00492 S003417/N00491
R0520.6	TMR03 	RIGID TAPPING FINISH DELAY	S002709/N00397 S003421/N00492
R0520.7			S003308/N00474 S003424/N00493
R0521.0	RGDCW 	RIGID TAPPING C.W	S003274/N00471 S003276/N00471 S003240/N00465
R0521.1	RGDCCW 	RIGID TAPPING C.C.W	S003289/N00472 S003291/N00472 S003246/N00466

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0521.2	GCHSTP 	GEAR CHANGE STOP	S002897/N00411 S002922/N00412 S002929/N00413 S002942/N00414 S002949/N00415 S002953/N00416
R0521.3	M29DL 	M29 FUNCTION DELAY	S003397/N00487 S003396/N00486
R0521.4	AUTO- 	AUTO MODE OFF PULSE	S003104/N00449 S003118/N00450 S003165/N00458 S003097/N00446
R0521.5	AUTO-A 	AUTO MODE OFF PULSE AUX	S003096/N00446 S003099/N00447
R0521.6	ST+A 	CYCLE START ON PULSE AUX	S003892/N00566 S003895/N00567
R0521.7	SPROT 	SP CW/CCW FOR GEAR CHANGE	S002994/N00425 S002995/N00425 S003278/N00471 S003293/N00472 S002999/N00425
R0522.0	>25% 	RAPID >25%	S001985/N00308 S001989/N00309 S001980/N00307
R0522.1	MCLN+ 	CLNT MANUAL ON PULSE	S002442/N00378 S002445/N00378 S002460/N00379 S002434/N00374
R0522.2	MCLN+A 	CLNT MANUAL ON PULSE AUX	S002432/N00374 S002436/N00375
R0522.3	ACLN+ 	CLNT AUTO ON PULSE	S002450/N00378 S002454/N00379 S002458/N00379 S002439/N00376
R0522.4	ACLN+A 	CLNT AUTO ON PULSE AUX	S002438/N00376 S002441/N00377
R0522.5	+4A 	+J4 AUX	S002320/N00349 S002325/N00350 S003430/N00494 S002324/N00349
R0522.6	-4A 	-J4 AUX	S002334/N00352 S003431/N00494 S002333/N00351
R0522.7	JOGOK  	JOG FEED OK	S002254/N00343 S002269/N00344 S002281/N00345 S002291/N00346 S002301/N00347 S002311/N00348 S002323/N00349 S002332/N00351 S002242/N00342
R0523.0	DRITL7 	DOOR INTERLOCK 7	S003203/N00462 S003220/N00463 S003511/N00509 S003531/N00511 S003550/N00513
R0523.1	DRITL1 	DOOR INTERLOCK 1	S001977/N00307 S004882/N00740 S003505/N00507

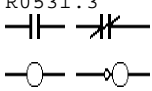
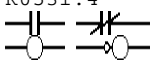
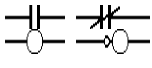
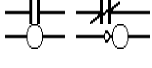
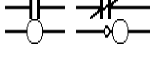
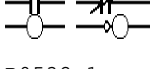
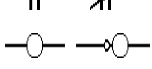
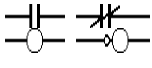
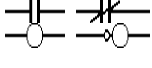
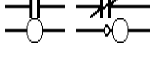
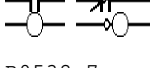
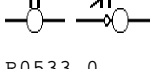
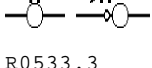
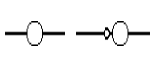
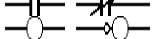
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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		S003194/N00462 S003212/N00463 S003331/N00479 S003340/N00480 S003346/N00481	
		S003357/N00482 S003371/N00483 S003381/N00484 S004887/N00741 S005116/N00800	
		S003509/N00508	
R0523.3	DRITL3 	DOOR INTERLOC 3	
		S002486/N00383 S002515/N00388 S003047/N00436	
		S003513/N00509	
R0523.4	DRITL4 	DOOR INTERLOCK 4	
		S000261/N00044 S000719/N00111 S000907/N00131 S001027/N00150 S001033/N00151	
		S001151/N00168	
		S003524/N00510	
R0523.5	DRITL5 	DOOR INTERLOCK 5	
		S003272/N00470 S003529/N00511	
		S003535/N00511	
R0523.6	DRITL6 	DOOR INTERLOCK 6	
		S001188/N00177 S001400/N00207 S002591/N00397 S003537/N00512	
		S003542/N00512	
R0524.0	>370 	JOG FEEDRATE > 370MM	
		S004884/N00740	
		S004891/N00741	
R0524.1	STTEMP 	CYCLE START TEMP	
		S002420/N00372 S002540/N00392 S002548/N00393 S003538/N00512 S003828/N00554	
		S003891/N00566 S003894/N00567 S004453/N00660 S004535/N00682 S004546/N00686	
		S002537/N00390	
R0524.2	SPTEMP 	FEED HOLD TEMP	
		S002550/N00394	
		S002539/N00391	
R0524.3	MCHKEP 	MODE CHANGE KEEP	
		S003166/N00458	
		S003103/N00448	
R0524.4	ZPXKEP 	X HOME KEEP	
		S002162/N00336 S002164/N00336 S002184/N00337 S002186/N00337 S002339/N00353	
		S002354/N00357	
		S002341/N00353	
R0524.5	ZPYKEP 	Y HOME KEEP	
		S002201/N00338 S002210/N00339 S002343/N00354 S002355/N00357	
		S002345/N00354	
R0524.6	RST.DLY 	RESET DELAY TIMER	
		S002219/N00340 S002228/N00341 S002347/N00355 S002356/N00357	
		S002349/N00355	
R0524.7	ZP4KEP 	4 HOME KEEP	
		S002351/N00356 S002357/N00357	
		S002353/N00356	
R0525.0	NOBT 	NO BIG TOOL	
		S000744/N00113 S000807/N00120	
		S000679/N00105	
R0525.1	SP=EMP 	SP TOOL =EMPTY	
		S000758/N00114 S000811/N00120	
		S000686/N00106	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0525.2	SP=POT 	SP TOOL NO=STANDBY POT NO S000777/N00116 S000820/N00120 S000693/N00107	
R0525.3	PT=EMP 	POT TOOL =EMPTY S000759/N00114 S000812/N00120 S000700/N00108	
R0525.4	SP=BT 	SP TOOL = BIG TOOL S000767/N00115 S000816/N00120 S000707/N00109	
R0525.5	PT=BT 	POT TOOL = BIG TOOL S000768/N00115 S000817/N00120 S000714/N00110	
R0525.6	SEMPW 	SEARCH EMPTY TOOL S000855/N00124	
R0525.7	TMB29 	SPINDLE CW/CCW DELAY S002983/N00422 S002991/N00424 S002993/N00425 S002996/N00425 S002987/N00422	
R0526.0	BTSTB 	BIG TOOL STANDBY S000730/N00111 S000734/N00112 S000785/N00117 S000793/N00118 S000801/N00119 S000827/N00120 S000834/N00121 S000733/N00111	
R0526.1	BTCK 	WITH BIG TOOL? S000731/N00111 S000737/N00112 S000743/N00113 S000806/N00120 S000742/N00112	
R0526.2	EMPCK 	SP/STB T NO. =EMPTY ? S000738/N00112 S000751/N00113 S000757/N00114 S000810/N00120 S000756/N00113	
R0526.3	ORDCK 	SP/STB T NO. =ORDINARY ? S000752/N00113 S000760/N00114 S000766/N00115 S000815/N00120 S000765/N00114	
R0526.4	S,PCK 	SP TOOL = STANDBY POT TOOL ? S000761/N00114 S000770/N00115 S000776/N00116 S000819/N00120 S000775/N00115	
R0526.5	MEMPT 	MEMORIZE POT TOOL S000771/N00115 S000778/N00116 S000783/N00117 S000841/N00123 S000782/N00116	
R0526.6	SRHEMP 	SEARCH EMPTY TOOL S000717/N00111 S000779/N00116 S000784/N00117 S000790/N00118 S000848/N00124 S000915/N00133 S000920/N00134 S000947/N00138 S000999/N00145 S000789/N00117	
R0526.7	TCH1 	TOOL CHANGE 1 S000786/N00117 S000792/N00118 S000798/N00119 S000839/N00122 S000797/N00118	
R0527.0	SRHMPT 	SEARCHING MEMORY POT S000718/N00111 S000794/N00118 S000800/N00119 S000822/N00120 S000856/N00125 S000916/N00133 S000921/N00134 S000948/N00138 S001000/N00145 S000805/N00119	

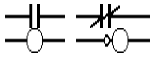
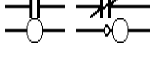
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0527.1	TCH2	TOOL CHANGE 2	
	S000739/N00112	S000753/N00113 S000762/N00114	S000772/N00115 S000802/N00119
	S000825/N00120	S000831/N00121 S000838/N00122	
	S000830/N00120		
R0527.2	ATCEND	ATC END	
	S000724/N00111	S000826/N00120 S000833/N00121	S001181/N00176 S002589/N00397
	S003063/N00437		
	S000837/N00121		
R0527.3	M6TMP	TOOL CHANGE TEMP	
	S000345/N00063	S000360/N00064 S000727/N00111	S001169/N00173 S001172/N00174
	S001196/N00178	S001238/N00187 S001385/N00205	S001390/N00206 S001399/N00207
	S003042/N00436	S003059/N00437 S003541/N00512	S003936/N00574 S004295/N00633
	S000840/N00122		
R0527.5	SRHFIN	TOOL SEARCH FIN	
	S000791/N00118	S000823/N00120	
	S001002/N00145		
R0528.0	SPKEP	FEED HOLD KEEP	
	S002544/N00392	S002547/N00393	
	S002549/N00393		
R0528.1	SPR-	SPINDLE OFF PULSE	
	S003922/N00573	S004496/N00675	
	S003907/N00571		
R0528.2	SPR-A	SPINDLE OFF PULSE AUX	
	S003906/N00571		
	S003910/N00572		
R0528.3	LUBONT	LUBE ON TIMER	
	S004057/N00599	S004100/N00604 S004105/N00605	S004107/N00606 S004110/N00607
	S004114/N00608		
	S004075/N00601		
R0528.4	LUNOFT	LUBE OFF TIMER	
	S004052/N00599		
	S004072/N00600		
R0528.5	LBONT+	LUBE ON TIMER PULSE	
	S004111/N00607		
	S004109/N00606		
R0528.6	LBT+A	LUBE ON TIMER PULSE AUX	
	S004108/N00606		
	S004112/N00607		
R0528.7	GRINP1	GEAR IN-POSITION 1	
	S002981/N00422		
	S002989/N00423		
R0529.0	ARMSTP	ARM STOP POINT	
	S000046/N00008	S000057/N00009 S000066/N00010	S000075/N00011 S000081/N00012
	S000086/N00013	S000122/N00022 S000316/N00054	S000419/N00075 S000446/N00077
	S001225/N00184	S001269/N00191 S004397/N00649	
	S000045/N00007		
R0529.1	MGINP	MAG IN-POSITION	
	S001067/N00156	S001455/N00213 S001625/N00229	S005635/N00927
	S000172/N00029		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0529.2	ESCAP	ESCAPE ARM STOP POINT	
	S000047/N00008	S000056/N00009	S000065/N00010
	S001621/N00228	S000074/N00011	S000121/N00022
	S000053/N00008		
R0529.3	A60AR	ARM 60 ROTATION ARRIVAL	
	S000048/N00008	S000058/N00009	S000084/N00012
	S000062/N00009	S000092/N00014	S000130/N00023
R0529.4	A180AR	ARM 180 ROTATION ARRIVAL	
	S000049/N00008	S000067/N00010	S000089/N00013
	S000071/N00010	S000094/N00014	S000138/N00023
R0529.5	A-60AR	ARM -60 ROTATION ARRIVAL	
	S000076/N00011	S000146/N00023	
	S000080/N00011		
R0529.6	MGCTA	MAG COUNTER A	
	S000163/N00026	S000166/N00027	S000169/N00028
	S001474/N00215	S000171/N00029	S001464/N00214
	S000162/N00025		
R0530.0	CVY.JR	CVY JOG CCW REG.	
	S000164/N00026	S000167/N00027	
	S000170/N00028		
R0530.1	CVYCWR	CVY CW REG.	
	S000184/N00031		
	S000165/N00026		
R0530.3	CVY.PF	CVY. MANUAL PULSE OFF	
	S000188/N00031		
R0530.4	CVY.MH	CVY. MANUAL HOLD	
	S000203/N00034	S000285/N00048	S000293/N00049
	S000291/N00048	S001533/N00218	
R0530.5	MGCCWA	MAG CCW AUX	
	S000226/N00037	S000283/N00048	S000295/N00049
	S000301/N00049	S001534/N00218	
R0530.6	MGMCW1	MAG MANUAL CW ON	
	S000282/N00048	S001079/N00156	
	S000275/N00046		
R0530.7	MGCCW1	MAG MANUAL CCW ON	
	S000292/N00049	S001080/N00156	
	S000281/N00047		
R0531.0	MGCW	MAG CW	
	S000182/N00031	S000206/N00034	S000232/N00037
	S000954/N00139	S000235/N00038	S000294/N00049
	S000211/N00034	S001073/N00156	S001157/N00169
		S003817/N00552	
R0531.1	MCWDEC	MAG CW DEC.	
	S000195/N00032	S000199/N00033	S001074/N00156
	S000198/N00032		
R0531.2	MGCWDL	MAG CW DELAY	
	S000196/N00032	S000207/N00034	
	S000202/N00033		



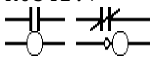
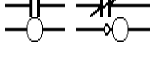
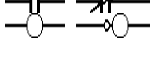
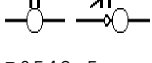
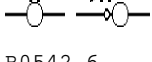
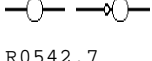
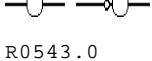
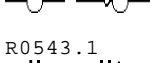
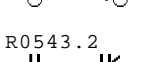
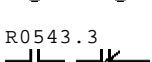
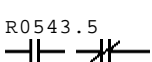
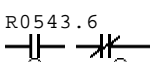

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0531.3	MGCCW 	MAG CCW	S000180/N00031 S000183/N00031 S000209/N00034 S000229/N00037 S000240/N00039 S000284/N00048 S000955/N00139 S001158/N00169 S003818/N00552 S000234/N00037
R0531.4	MAGOK 	MAG OK	S000210/N00034 S000233/N00037 S005688/N00933 S000269/N00045
R0531.5	MCCWDE 	MAG CCW DEC	S000218/N00035 S000222/N00036 S000221/N00035
R0531.6	MCCWDL 	MAG CCW DELAY	S000219/N00035 S000230/N00037 S000225/N00036
R0531.7	MGCT- 	MAG COUNT OFF PULSE	S000189/N00032 S000212/N00035 S000168/N00027
R0532.0	MGRSTB 	MAG ROT STAND-BY	S000881/N00129 S000885/N00130 S000889/N00130 S000884/N00129
R0532.1	MAGON2 	MAG ON 2	S000877/N00129 S000882/N00129 S000888/N00130 S000895/N00131 S000922/N00134 S001155/N00168 S000891/N00130
R0532.2	MAGOK1 	MAG OK 1	S000290/N00048 S000300/N00049 S000264/N00044
R0532.3	MAGCHK 	MAG ROT CHECK	S001097/N00159 S001082/N00156
R0532.5	PTDNOK 	POT DOWN OK	S001519/N00217 S001463/N00213
R0532.6	TUCLFA 	AUTO TOOL UNCLAMP FAIL	S000083/N00012 S000132/N00023 S004326/N00638 S000085/N00012
R0532.7	TCLFA 	AUTO TOOL CLAMP FAIL	S000088/N00013 S000141/N00023 S004343/N00640 S000090/N00013
R0533.0	AMIDDL 	ARM MIDDLE POINT DELAY	S000314/N00053 S001226/N00184 S000311/N00051
R0533.3	AMIDK 	ARM MID POINT KEEP	S000342/N00063 S001276/N00192 S001301/N00195 S001316/N00197 S002750/N00397 S004277/N000633 S004293/N00633 S004319/N00637 S004336/N00639 S000352/N00063
R0533.7	AMOK 	ARM RETURN POINT KEEP	S000356/N00064 S001337/N00199 S002755/N00397 S004283/N00633 S004353/N00641 S000362/N00064

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0534.0	TF1	TOOL SEARCH ENABLE	
	S000896/N00131	S000897/N00131	S000909/N00132
	S000908/N00131		
R0534.1	TF1DL	TOOL SEARCH ENABLE DELAY	
	S000913/N00133		
	S000912/N00132		
R0534.2	TSRHON	TOOL SEARCH ON	
	S000270/N00046	S000276/N00047	S000746/N00113
	S000953/N00139	S000978/N00142	S000984/N00143
	S001013/N00148	S001023/N00150	S001029/N00151
	S000917/N00133	S000918/N00134	S000924/N00135
		S000992/N00144	S001003/N00146
R0534.3	TSRH+	TOOL SEARCH ON PULSE	
	S000935/N00137	S000946/N00138	S001007/N00147
	S000923/N00134		
R0534.4	TSRH+A	TOOL SEARCH ON PULSE AUX	
	S000919/N00134		
	S000925/N00135		
R0534.5	SHERR	TOOL ON. SEARCH ERROR	
	S001104/N00160		
	S000942/N00137		
R0534.7	RTO	MAG ROTATION 0	
	S000961/N00140	S000972/N00141	
	S000956/N00139		
R0535.0	MGROT	MAG ROTATION CW/CCW	
	S001024/N00150	S001030/N00151	
	S000968/N00140		
R0535.1	TDEC	TOOL SEARCH DEC	
	S000985/N00143		
	S000983/N00142		
R0535.2	TDECK	TOOL SEARCH DEC KEEP	
	S000986/N00143		
	S000990/N00143		
R0535.3	TCOIN	T CODE = STANDBY TOOL	
	S000987/N00143	S000998/N00145	S001004/N00146
	S000997/N00144	S001025/N00150	S001031/N00151
R0535.4	TCOIN1	T CODE = STANDBY TOOL 1	
	S000898/N00131	S001021/N00149	S001147/N00168
	S001005/N00146		
R0535.5	TCOSP	T CODE = SP TOOL	
	S000745/N00113	S000808/N00120	S001014/N00148
	S001195/N00178	S001389/N00206	S001026/N00150
	S001012/N00147	S001032/N00151	
R0535.6	TCOSP1	T CODE = SP TOOL 1	
	S000899/N00131	S001016/N00149	S001146/N00168
	S001015/N00148		
R0536.0	MGACW	MAG AUTO CW	
	S000204/N00034	S001077/N00156	S001148/N00168
	S001028/N00150	S001531/N00218	

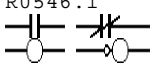
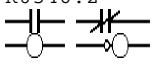
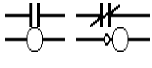
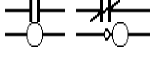
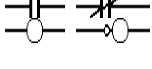
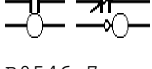
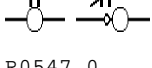
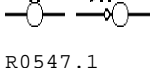
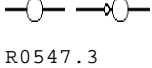
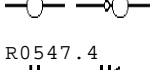
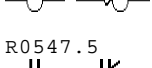
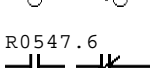
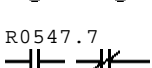
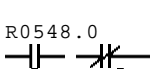
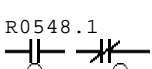

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0536.1	MGACCW 	MAG AUTO CCW	S000227/N00037 S001078/N00156 S001149/N00168 S001532/N00218 S001034/N00151
R0536.2	MOVER1 	DATA MOVE ERROR 1	S001059/N00154
R0536.3	MOVER2 	DATA MOVE ERROR 2	S001048/N00153
R0536.4	MGCKDL 	MAG CHECK DELAY	S001101/N00160 S001100/N00159
R0536.5	MG-ERR 	MAG ERROR	S000259/N00044 S000267/N00045 S000721/N00111 S000904/N00131 S001102/N00160 S001186/N00177 S004303/N00634 S001112/N00160
R0536.6	RDY2 	NC READY STATE	S001118/N00161
R0536.7	A60 	ARM 60 ROTATION	S001125/N00163 S001129/N00164 S001124/N00162
R0537.0	A60- 	ARM 60 ROTATION OFF PULSE	S001040/N00153 S001128/N00163
R0537.1	A60-A 	ARM 60 ROT OFF PULSE AUX	S001126/N00163 S001130/N00164
R0537.2	A180 	ARM 180 ROTATION	S001140/N00166 S001144/N00167 S001139/N00165
R0537.3	A180- 	ARM 180 ROT OFF PULSE	S001051/N00154 S001060/N00155 S001364/N00203 S001143/N00166
R0537.4	A180-A 	ARM 180 ROT OFF PULSE AUX	S001141/N00166 S001145/N00167
R0537.7	TUCLAU 	TOOL UNCLAMP AUX	S000099/N00015 S001436/N00210
R0538.0	ATUCL 	AUTO TOOL UNCLAMP	S000093/N00014 S000100/N00015 S000098/N00014
R0538.1	MAGON 	MAG ON	S000747/N00113 S000886/N00130 S001076/N00156 S001162/N00170 S001193/N00178 S001460/N00213 S003516/N00510 S004245/N00626 S001160/N00169
R0538.3	M06ENB 	M06 ENABLE	S001164/N00171 S001167/N00172 S001163/N00170

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0538.4	M06+	M06 ENB ON PULSE	
	S001179/N00176	S004369/N00644 S004375/N00645	S004381/N00646 S004386/N00647
	S004391/N00648	S004396/N00649	
	S001166/N00171		
R0538.5	M06+A	M06 ENB ON PULSE AUX	
	S001165/N00171		
	S001168/N00172		
R0538.6	M6ENBK	M06 ENB KEEP	
	S000914/N00133	S001150/N00168 S001180/N00176	
	S001184/N00176		
R0538.7	ATCOK	ATC OK	
	S000728/N00111	S001177/N00175 S001183/N00176	S001192/N00178
	S001191/N00177		
R0539.0	ATCOK1	ATC OK 1	
	S001202/N00179	S001318/N00197 S001328/N00198	S001341/N00199 S001347/N00200
	S001353/N00201	S001360/N00202 S001368/N00203	S001375/N00204 S004288/N00633
	S001197/N00178		
R0539.1	TCHP	TOOL CHANGE POINT	
	S000095/N00014	S001245/N00188 S001265/N00190	S001279/N00192 S001292/N00193
	S001305/N00195	S001309/N00196 S001537/N00219	S001556/N00221 S001574/N00223
	S001203/N00179		
R0539.2	ARMODL	ARM O POINT	
	S000287/N00048	S000297/N00049 S000312/N00052	S001224/N00184 S001461/N00213
	S001493/N00216	S001542/N00219 S001562/N00221	S001580/N00223 S001598/N00225
	S001608/N00226	S001618/N00227 S004392/N00648	
	S000305/N00050		
R0539.3	PTUPDL	POT UP DELAY	
	S000268/N00045	S001229/N00185 S001485/N00216	S001497/N00216 S002747/N00397
	S004286/N00633	S004359/N00642 S004370/N00644	
	S001208/N00180		
R0539.4	PTDNDL	POT DOWN DELAY	
	S000366/N00065	S000748/N00113 S000892/N00131	S001252/N00189 S001509/N00217
	S001541/N00219	S001560/N00221 S001578/N00223	S002738/N00397 S004290/N00633
	S004310/N00636	S004312/N00636 S004376/N00645	S005653/N00928
	S001213/N00181		
R0539.5	TCLDL	SPINDLE TOOL CLAMP DELAY	
	S000472/N00079	S000507/N00085 S001235/N00186	S001326/N00198 S001543/N00219
	S001553/N00220	S001579/N00223 S001590/N00224	S002744/N00397 S003048/N00436
	S004280/N00633	S004347/N00640 S004382/N00646	
	S001218/N00182		
R0539.6	TUCLDL	SPINDLE TOOL UNCLAMP DELAY	
	S000460/N00078	S000503/N00085 S001288/N00193	S001295/N00194 S001446/N00212
	S001561/N00221	S001570/N00222 S002741/N00397	S004275/N00633 S004330/N00638
	S004387/N00647		
	S001223/N00183		
R0539.7	ATCSTB	ATC STANDBY	
	S001240/N00187	S001242/N00188 S001258/N00190	S001387/N00206 S001652/N00236
	S002590/N00397	S003083/N00442 S003931/N00574	S004490/N00674
	S001237/N00186		
R0540.0	A1.POT.DOWN	POT DOWN	
	S001244/N00188	S001255/N00190 S001505/N00216	S001511/N00217 S004289/N00633
	S004309/N00636	S004489/N00674	
	S001249/N00188		

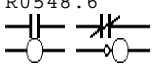
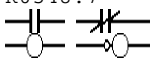
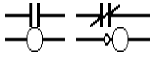
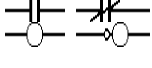
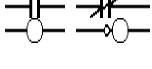
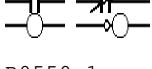
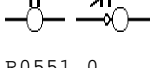
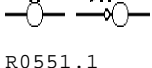
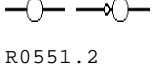
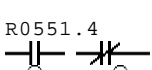
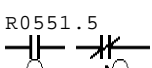
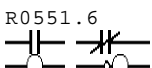
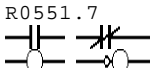
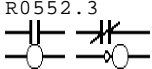
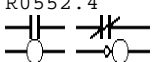

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0540.1	A2.ARM.60	ARM 60	
	S000054/N00009	S000091/N00014	S000128/N00023 S000131/N00023 S001119/N00162
	S001176/N00175	S001246/N00188	S001262/N00190 S001268/N00191 S001275/N00192
	S001285/N00193	S001344/N00200	S001592/N00225 S004292/N00633 S004318/N00637
	S001267/N00190		
R0540.2	PRECLP	TOOL UNCLAMP WHEN ARM 60 ACTIV	
	S001270/N00191	S001418/N00209	
	S001274/N00191		
R0540.3	A3.SP.UNCLP	SPINDLE TOOL UNCLAMP	
	S000343/N00063	S001266/N00190	S001278/N00192 S001283/N00193 S001414/N00208
	S001417/N00209	S004274/N00633	S004325/N00638
	S001282/N00192		
R0540.4	A4.ARM.180	ARM 180	
	S000063/N00010	S001132/N00165	S001263/N00190 S001280/N00192 S001289/N00193
	S001297/N00194	S001299/N00195	S001323/N00198 S001349/N00201 S001602/N00226
	S004276/N00633	S004335/N00639	
	S001294/N00193		
R0540.5	SPBLWK	SPINDLE AIR BLOW KEEP	
	S001302/N00195	S001308/N00196	
	S001307/N00195		
R0540.6	SPBLDL	SPINDLE AIR BLOW DELAY	
	S001314/N00197	S001355/N00202	S001440/N00212
	S001313/N00196		
R0540.7	A5.SP.CLP	SPINDLE TOOL CLAMP	
	S000344/N00063	S001131/N00165	S001293/N00193 S001306/N00195 S001310/N00196
	S001317/N00197	S001322/N00198	S001363/N00203 S001405/N00208 S001426/N00209
	S004279/N00633	S004342/N00640	
	S001321/N00197		
R0541.0	A6.ARM.-60	ARM -60	
	S000072/N00011	S000144/N00023	S000353/N00064 S001290/N00193 S001303/N00195
	S001319/N00197	S001327/N00198	S001336/N00199 S001362/N00203 S001612/N00227
	S004282/N00633	S004352/N00641	
	S001335/N00198		
R0541.1	A7.POT.UP	POT UP	
	S000357/N00064	S001329/N00198	S001340/N00199 S001370/N00204 S001486/N00216
	S001523/N00217	S004285/N00633	S004358/N00642
	S001343/N00199		
R0541.2	A.STEP.1	ARM STEP 1 / 60	
	S001345/N00200	S001350/N00201	S001377/N00205 S001392/N00207
	S001348/N00200		
R0541.3	A.STEP.2	ARM STEP 2 / 180	
	S001351/N00201	S001357/N00202	S001378/N00205 S001393/N00207
	S001354/N00201		
R0541.4	A.STEP.3	ARM STEP 3 / SP AIR BLOW	
	S001358/N00202	S001365/N00203	S001379/N00205 S001394/N00207
	S001361/N00202		
R0541.5	A.STEP.4	ARM STEP 4 / -60	
	S001366/N00203	S001371/N00204	S001380/N00205 S001395/N00207
	S001369/N00203		
R0541.6	A.STEP.5	ATC STEP 5 / POT UP	
	S001373/N00204	S001381/N00205	S001396/N00207
	S001376/N00204		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0541.7	A.STEP.6	ATC STEP6 (ATC END)	
	S001247/N00188	S001384/N00205	S001388/N00206
	S001386/N00205		
R0542.0	A.STEP.FIN	ATC STEP FINISH	
	S001331/N00198	S001342/N00199	S001346/N00200 S001352/N00201 S001359/N00202
	S001367/N00203	S001374/N00204	S001397/N00207
	S001391/N00206		
R0542.1	ATFIN1	ATC FINISH 1	
	S000799/N00119	S000832/N00121	S001248/N00188 S001398/N00207
	S001403/N00207		
R0542.2	SP-CLP	SPINDLE CLAMP	
	S001410/N00208	S001424/N00209	
	S001416/N00208		
R0542.3	SP.UNCLP	SPINDLE UNCLAMP	
	S001423/N00209	S001433/N00210	
	S001430/N00209		
R0542.4	M72OK	M72 OK	
	S001547/N00220		
	S001546/N00219		
R0542.5	TAIL.H	TAIL HOLD	
	S000055/N00009	S000129/N00023	S001121/N00162 S001548/N00220 S001593/N00225
	S001555/N00220		
R0542.6	M74OK	M74 OK	
	S001567/N00222		
	S001566/N00221		
R0542.7	M74A	M74 ACTIVE (ARM 180)	
	S000064/N00010	S000137/N00023	S001136/N00165 S001568/N00222 S001601/N00226
	S001573/N00222		
R0543.0	M76OK	M76 OK	
	S001585/N00224		
	S001584/N00223		
R0543.1	M76A	M76 ACTIVE (ARM -60)	
	S000073/N00011	S000145/N00023	S001586/N00224 S001611/N00227
	S001591/N00224		
R0543.2	ASEQ1	ARM SEQ1	
	S001564/N00221	S001594/N00225	S001603/N00226 S001615/N00227
	S001600/N00225		
R0543.3	ASEQ2	ARM SEQ2	
	S001554/N00220	S001582/N00223	S001595/N00225 S001604/N00226 S001613/N00227
	S001610/N00226		
R0543.4	ASEQ3	ARM SEQ3	
	S001605/N00226	S001614/N00227	
	S001619/N00227		
R0543.5	M74AR	M74 ROT ARRIVAL	
	S001622/N00228	S002752/N00397	
	S001624/N00228		
R0543.6	MAGINP	MAG. IN-POSITION	
	S001194/N00178	S004413/N00652	
	S001632/N00229		

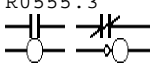
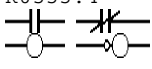
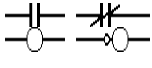
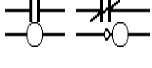
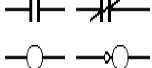
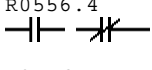
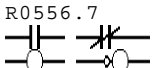
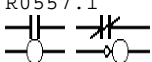
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0543.7	A4-1	ARM 180	
	S000136/N00023	S000140/N00023	
	S001298/N00194		
R0544.0	JX.SEL	JOG X SELECT	
	S001228/N00185	S001665/N00239	S003044/N00436
	S001227/N00184		
R0544.1	JZ.SEL	JOG Z SELECT	
	S000736/N00112	S003868/N00562	S004444/N00658
	S004304/N00634		
R0544.2	ATCAL1	ATC ALARM 1	
	S000905/N00131	S001185/N00177	S004296/N00633
	S004317/N00637	S004324/N00638	S004334/N00639
	S004357/N00642	S004406/N00651	S004411/N00652
	S004301/N00633	S004302/N00634	S004308/N00636
		S004341/N00640	S004351/N00641
		S004491/N00674	
R0544.3	2NDREF	2ND. REFERENCE POINT	
	S004407/N00651		
	S004405/N00650		
R0544.4	ATCITL	ATC INTERLOCK	
	S001657/N00237	S001661/N00238	S001666/N00239
	S001654/N00236		
R0544.5	ARJGSP	ARM JOG STOP	
	S000124/N00022	S000150/N00023	S000484/N00082
	S000126/N00022	S000493/N00083	
R0544.6	ARJGPA	ARM JOG PAUSE	
	S000125/N00022		
	S000488/N00082		
R0544.7	ARJGDL	ARM JOG DELAY	
	S000494/N00083		
	S000500/N00084		
R0545.3	M19.FIN	M19 FINISHED	
	S001261/N00190		
	S001254/N00189		
R0545.4	M6TMP+	M06 PULSE STANDBY	
	S001174/N00175		
	S001171/N00173		
R0545.5	MGON2	MAG ON 2	
	S001159/N00169	S001492/N00216	S001516/N00217
	S001536/N00218		
R0545.6	ATC+K	ATC PULSE KEEP	
	S001175/N00175	S001257/N00190	
	S001178/N00175		
R0545.7	M6TMPA	ATC PULSE AUX	
	S001170/N00173		
	S001173/N00174		
R0546.0	M95KEP	M95 KEEP STATE (LADDER TOP)	
	S000364/N00065	S000368/N00066	S000371/N00067
	S000382/N00071	S000458/N00078	S000470/N00079
	S000902/N00131	S001599/N00225	S001609/N00226
	S003945/N00576	S004527/N00681	S005776/N00950
	S000367/N00065	S000373/N00068	S000378/N00070
		S000482/N00081	S000501/N00085
		S002773/N00397	S003940/N00575

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0546.1	ARM0A	ARM 0 POINT AUX	
	S000318/N00055 S000313/N00052	S001036/N00152	
R0546.2	AMIDA	ARM MID POINT AUX	
	S000323/N00056 S000315/N00053		
R0546.3	ARMSPA	ARM STOP POINT AUX	
	S000319/N00055 S000317/N00054	S000321/N00056	
R0546.4	0	ZERO POINT	
	S000386/N00072 S000393/N00072	S000394/N00073 S000401/N00073 S000413/N00074 S000448/N00077	
R0546.5	F0+A	F0 ON PULSE AUX	
	S000476/N00080 S000478/N00080	S000479/N00081	
R0546.6	F0+	F0 ON PULSE	
	S000477/N00080 S000483/N00081	S000489/N00083	
R0546.7	ARMJOG	ARM JOG	
	S000459/N00078 S000495/N00083	S000471/N00079 S000491/N00083 S000497/N00084 S000502/N00085	
R0547.0	SPON	SPINDLE ON	
	S000464/N00078 S001439/N00211	S001427/N00209 S001434/N00210	
R0547.1	L1DL1	LOGIC 1 DELAY 1	
	S000395/N00073 S000377/N00069	S000418/N00075 S000445/N00077	
R0547.3	ARM0+A	ARM 0 ON PULSE AUX	
	S000104/N00016 S000107/N00017		
R0547.4	ARM0+	ARM 0 ON PULSE	
	S000118/N00022 S000105/N00016		
R0547.5	AM60+A	ARM 60 ON PULSE AUX	
	S000109/N00018 S000112/N00019		
R0547.6	AM60+	ARM 60 ON PULSE	
	S000119/N00022 S000110/N00018		
R0547.7			
	S000120/N00022 S000115/N00020		
R0548.0			
	S000114/N00020 S000117/N00021		
R0548.1	M95JOG	M95 LADDER END	
	S000149/N00023 S000514/N00085		

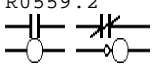
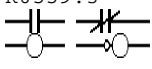
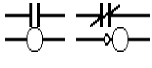
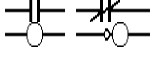
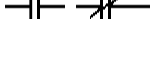
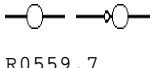
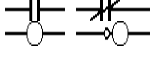
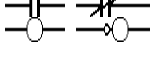
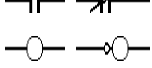
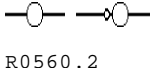
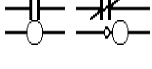
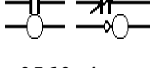
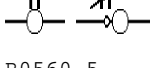
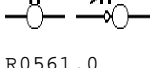
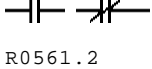
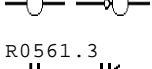
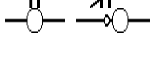


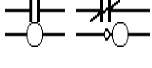
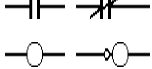
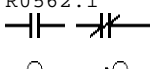
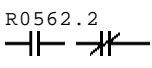
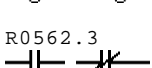
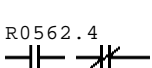
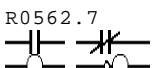
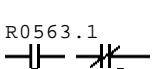
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0548.6	M95- 	M95 OFF PULSE	
	S001035/N00152 S000370/N00066		
R0548.7	M95-A 	M95 OFF PULSE AUX	
	S000369/N00066 S000372/N00067		
R0549.0	M95TCH 	M95 TOOL CHANGE PULSE	
	S001041/N00153 S001037/N00152	S001052/N00154 S001061/N00155 S004428/N00656	
R0549.2	ARM0 	ARM RETURN POINT	
	S000103/N00016 S000024/N00004	S000106/N00017 S000302/N00050	
R0549.3	ARM60 	ARM MIDDLE POINT	
	S000108/N00018 S000035/N00005	S000111/N00019 S000308/N00051	
R0549.4			
	S000113/N00020 S000039/N00006	S000116/N00021 S000306/N00051	
R0550.1	ATSTB1 	ATC STANDBY 1	
	S001234/N00186 S001233/N00185		
R0551.0	4MUCL 	4TH. MANUAL UNCLAMP	
	S001683/N00242 S003434/N00494	S003440/N00496	
R0551.1	4AUCL 	4TH. AUTO UNCLAMP	
	S001684/N00242 S003439/N00495	S003436/N00495 S003441/N00496	
R0551.2			
	S000555/N00091	S000563/N00092 S000933/N00136	
R0551.4			
	S002653/N00397 S003453/N00498		
R0551.5	4UCLP 	4TH UNCLAMP	
	S003443/N00497 S003442/N00496	S003445/N00497	
R0551.6	GCHFAL 	GEAR CHANGE FAILURE	
	S003916/N00573 S003028/N00431		
R0551.7	GRINP 	GEAR IN-POSITION	
	S002980/N00422 S002979/N00421	S002988/N00423 S002990/N00424	
R0552.3	AZR+ 	ARM ZERO POINT ON PULSE	
	S000355/N00064 S000327/N00057		
R0552.4	AZR- 	ARM ZERO POINT OFF PULSE	
	S000396/N00073 S000330/N00058		

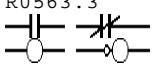
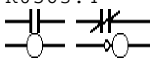
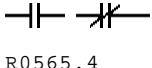
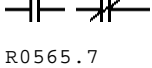
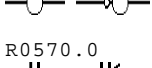
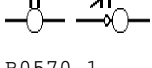
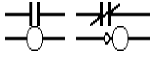
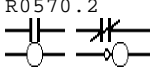
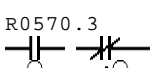
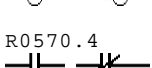
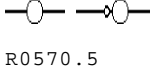
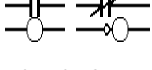
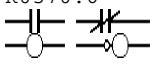
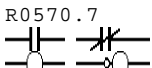
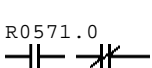
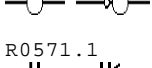
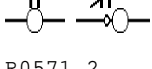
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0552.5	AZR+A	ARM ZERO POINT PULSE AUX	
	S000326/N00057	S000329/N00058	
	S000332/N00059		
R0552.6	AMD+	ARM MID POINT ON PULSE	
	S000341/N00063	S000407/N00074	S000429/N00076
	S000335/N00060		
R0552.7	AMD-	ARM MID POINT OFF PULSE	
	S000431/N00076		
	S000338/N00061		
R0553.0	AMD+A	ARM MID POINT PULSE AUX	
	S000334/N00060	S000337/N00061	
	S000340/N00062		
R0553.1	M70+	M70 ON PULSE	
	S005594/N00920		
	S005585/N00917		
R0553.2	M70+A	M70 ON PULSE AUX	
	S002734/N00397	S005584/N00917	
	S005587/N00918		
R0553.4	AM60A	ARM MIDDLE POINT	
	S000333/N00060	S000336/N00061	S000339/N00062
	S000324/N00056		
R0553.5	AM0A	ARM RETURN POINT	
	S000325/N00057	S000328/N00058	S000331/N00059
	S000404/N00073	S000415/N00074	S000427/N00075
	S003060/N00437	S000442/N00076	S000454/N00077
	S000320/N00055		
R0553.6	M94+	M94 ON PULSE	
	S000389/N00072	S000400/N00073	S000411/N00074
	S000450/N00077	S002770/N00397	S000423/N00075
	S000381/N00070	S000438/N00076	
R0553.7	M94+A	M94 ON PULSE AUX	
	S000380/N00070		
	S000384/N00071		
R0554.6	>M37'	M37 OUTPUT AUX	
	S004167/N00617		
	S004170/N00617		
R0554.7	>M38'	M38 OUTPUT AUX	
	S004172/N00618		
	S004175/N00618		
R0555.0	X>-30	X COORDINATE > -30MM	
	S002155/N00336	S002177/N00337	
	S002064/N00321		
R0555.1	X>30	X COORDINATE > 30MM	
	S002157/N00336	S002179/N00337	
	S002075/N00323		
R0555.2	Y>-30	Y COORDINATE > -30MM	
	S002199/N00338	S002208/N00339	
	S002085/N00325		

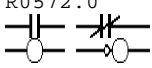
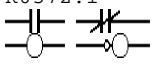
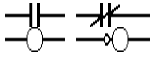
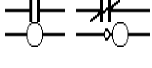
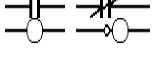
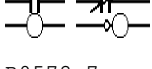
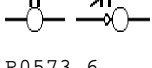
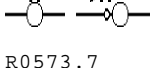
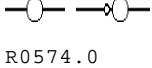
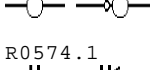
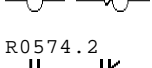
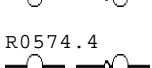
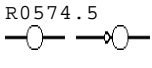
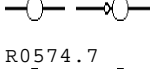
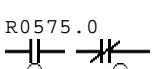


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0555.3	Z>-30 	Z COORDINATE > -30MM	S002217/N00340 S002226/N00341 S002095/N00327
R0555.4	WINFIN 	WINDOW FUNCTION FIN	S002040/N00317 S002045/N00318 S002050/N00319 S002053/N00319
R0555.5	M70FIN 	TOOL DATA WRITE FINISH	S002735/N00397 S005599/N00921 S005616/N00923 S005620/N00924 S005628/N00925 S005618/N00923
R0555.6	GCHOVR 	GEAR CHANGE OVER	S003027/N00431 S003025/N00430
R0555.7	T1+ 	TMR01 ON PULSE	S003012/N00429 S003007/N00427
R0556.0	AP01 	AUTO POWER OFF 1	S000002/N00001 S003476/N00503 S003480/N00504 S003479/N00503
R0556.1	CL-ON1 	COOLANT ON 1	S002433/N00374 S002601/N00397 S002608/N00397 S002619/N00397 S003554/N00514 S003562/N00515 S003560/N00514
R0556.2	CL-OF1 	COOLANT OFF 1	S003567/N00515 S003603/N00521 S003572/N00516
R0556.3	KTON1 	KIT ON 1	S002609/N00397 S002700/N00397 S003579/N00519 S003582/N00519 S003589/N00520 S004439/N00657 S003588/N00519
R0556.4	CL-OFS 	COOLANT OFF SWITCH	S003590/N00520
R0556.5	M0/M1 	M00/M01 FUNCTION	S002559/N00394 S002570/N00397 S002572/N00397 S002574/N00397 S003268/N00470 S003563/N00515 S003597/N00521 S003810/N00551 S003823/N00553 S003841/N00557 S003862/N00561 S003885/N00564 S003887/N00565 S003981/N00584 S003814/N00551
R0556.6	M2/M30 	M02 M30 FUNCTION	S003825/N00554 S003819/N00552
R0556.7	M0/1CL 	M00/M01 RELEASE	S002541/N00392 S002560/N00394 S003811/N00551 S003822/N00553 S003824/N00553
R0557.0	MSTPV 	MACHINE STOP VALID	S003826/N00554 S003830/N00555 S003863/N00561 S003883/N00563 S003888/N00565 S003829/N00554
R0557.1	MSTPD 	MACHINE STOP DELAY	S003835/N00556 S003834/N00555

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0557.2	MSTPR 	MACHINE STOP RESET	
	S003827/N00554 S003837/N00556		
R0557.3	SRNR1 	PROGRAM RESTART ON 1	
	S001771/N00264 S001774/N00264	S003108/N00449 S003114/N00449 S003122/N00450 S003128/N00450	
R0557.4	M3R 	SPINDLE C.W REGISTER	
	S003106/N00449 S003117/N00449	S003110/N00449 S003130/N00450 S003144/N00454 S003156/N00456	
R0557.5	M4R 	SPINDLE C.C.W REGISTER	
	S003116/N00449 S003131/N00450	S003120/N00450 S003124/N00450 S003145/N00454 S003159/N00457	
R0557.6	T1+A 	TMR01 ON PULSE AUX	
	S003006/N00427 S003009/N00428		
R0557.7	GCHEND 	GEAR CHANGE END	
	S002904/N00411 S002992/N00424		
R0558.0	CYST+ 	CYCLE START ON PULSE	
	S001772/N00264 S003530/N00511 S003139/N00452	S003146/N00454 S003155/N00456 S003158/N00457 S003390/N00485 S003787/N00548	
R0558.1	SPRES 	SPINDLE RESTART	
	S002542/N00392 S003151/N00454	S003147/N00454 S003152/N00455	
R0558.2	SPRFIN 	SP RESTART FINISH	
	S003111/N00449 S003154/N00455	S003125/N00450 S003148/N00454	
R0558.3	STON 	CYCLE START VALID	
	S003137/N00452 S003136/N00451	S003140/N00453	
R0558.4	CYST+A 	CYCLE START ON PULSE AUX	
	S003138/N00452 S003141/N00453		
R0558.5	SPCWP 	SPINDLE C.W PULSE	
	S003202/N00462 S003157/N00456		
R0558.6	SPCCWP 	SPINDLE CCW PULSE	
	S003219/N00463 S003160/N00457		
R0558.7	SPOK2 	SPINDLE OK 2	
	S003084/N00442 S003075/N00441		
R0559.0	OMSCHK 	SPINDLE OIL MIST CHECK DELAY	
	S004516/N00678 S004513/N00677		
R0559.1	WKB-A 	WORKPIECE BLAST AUX	
	S002597/N00397 S003955/N00577	S003948/N00577 S003961/N00580 S003983/N00584 S004021/N00591	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0559.2	WBONDL	WORK BLAST ON DELAY	
	S003986/N00584	S004027/N00592	
	S004026/N00591		
R0559.3	WBOFDL	WORK BLAST DELAY	
	S004022/N00591		
	S004030/N00592		
R0559.4	ALR	ALARM LAMP REGISTER	
	S003860/N00561		
	S003882/N00562		
R0559.5	CVONDL	CHIP CW ON DELAY	
	S002503/N00385	S002511/N00387	
	S002510/N00386		
R0559.6	DRITL	DOOR INTERLOCK	
	S001408/N00208	S001421/N00209	S001489/N00216
	S001513/N00217	S001545/N00219	
	S001565/N00221	S001583/N00223	S001701/N00246
	S001828/N00275	S001948/N00302	
	S001955/N00303	S001961/N00304	S001968/N00305
	S002236/N00342	S002490/N00383	
	S002499/N00385	S002521/N00388	S002562/N00394
	S003193/N00462	S003211/N00463	
	S003502/N00507	S003512/N00509	S003514/N00510
	S003527/N00511	S003536/N00512	
	S003545/N00513	S004271/N00632	S004272/N00632
	S004363/N00643	S004459/N00660	
	S004827/N00731	S005115/N00800	S005120/N00801
	S005236/N00847		
	S003496/N00505		
R0559.7	CVOFDL	CHIP CW OFF DELAY	
	S002506/N00386		
	S002514/N00387		
R0560.0	O.S-2	EMG ONE SHOOT	
	S001484/N00216	S001508/N00217	
	S001646/N00233		
R0560.1	MNTN	MAINTENANCE MODE	
	S001929/N00297	S002237/N00342	S002563/N00394
	S003506/N00508	S003519/N00510	
	S003543/N00513	S003546/N00513	S003859/N00561
	S004364/N00643	S004522/N00679	
	S003501/N00506		
R0560.2	OILAL	SP OIL COOLER ALARM LATCH	
	S004423/N00655		
	S004422/N00654		
R0560.3	X-MIR	X-AXIS MIRROR IMAGE LATCH	
	S004032/N00593	S004046/N00596	
	S004035/N00593		
R0560.4	Y-MIR	Y-AXIS MIRROR IMAGE LATCH	
	S004037/N00594	S004048/N00597	
	S004040/N00594		
R0560.5	4-MIR	4TH AXIS MIRROR IMAGE LATCH	
	S004042/N00595	S004050/N00598	
	S004045/N00595		
R0561.0	JGCLDL	JIG CLAMP DELAY	
	S002731/N00397		
R0561.2	STL-	STL OFF PULSE	
	S003901/N00569		
R0561.3	STL+A	STL ON PULSE AUX	
	S003897/N00568	S003900/N00569	
	S003903/N00570		

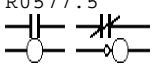
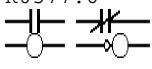
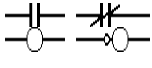
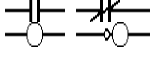
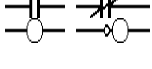
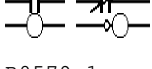
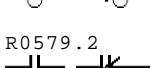
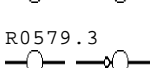
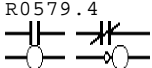
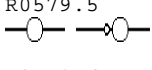
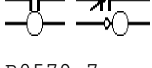
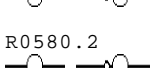
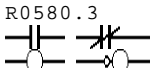
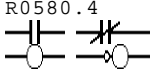
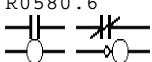


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0561.4	STL+ 	STL ON PULSE	
	S002480/N00383 S003898/N00568		
R0561.5	O.S-2A 	EMG O.S_2 AUX	
	S001645/N00233 S001649/N00234		
R0561.6	LVLERR 	CTS SYSTEM LEVEL ERROR	
	S003698/N00535 S003736/N00538	S003711/N00536 S003721/N00537 S003732/N00538	
R0561.7	CLNLDL 	COOLANT LOW DELAY	
	S003785/N00548 S003682/N00533		
R0562.0	CTSSTB 	CTS STANDBY	
	S003701/N00535 S003733/N00538 S003705/N00535	S003706/N00536 S003710/N00536 S003718/N00537 S003720/N00537	
R0562.1	CLNFP 	COOLANT TANK FULL PUMP	
	S003691/N00535 S003748/N00541 S003714/N00536	S003702/N00535 S003709/N00536 S003725/N00538 S003745/N00540	
R0562.2	FILLP 	FILTER TANK LOW PUMP	
	S003695/N00535 S003752/N00542 S003724/N00537	S003703/N00535 S003719/N00537 S003728/N00538 S003746/N00540	
R0562.3	CLFPDL 	COOLANT TANK FULL PUMP DELAY	
	S003693/N00535 S003751/N00541	S003727/N00538	
R0562.4	FILPDL 	FILTER TANK LOW PUMP DELAY	
	S003730/N00538 S003755/N00542		
R0562.5	M48-1 	M48 FOR CTS	
	S002705/N00397 S005467/N00893	S003771/N00545	
R0562.6	FILON 	FILTER ON	
	S003782/N00547 S003781/N00546		
R0562.7	PUMP1 	PUMP1 ON	
	S003778/N00546 S003747/N00540		
R0563.0	LVLOK 	CTS SYSTEM LEVEL OK	
	S003587/N00519 S003735/N00538 S003688/N00534	S003604/N00521 S003690/N00535 S003713/N00536 S003723/N00537 S003776/N00545	
R0563.1	CTSON 	CTS ON	
	S002610/N00397 S003777/N00545	S002706/N00397 S003594/N00521 S003715/N00537 S003773/N00545	
R0563.2	KITON 	KIT ON	
	S002698/N00397 S003592/N00520	S003593/N00521	

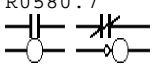
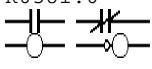
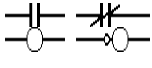
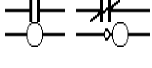
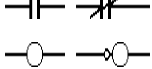
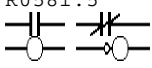
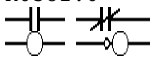
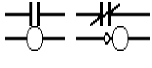
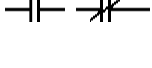
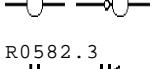
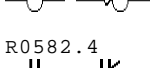
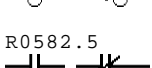
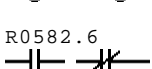
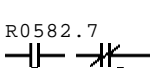
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0563.3	STLKP 	STL KEEP UNDER MDI S003316/N00476 S003319/N00477 S003318/N00476	
R0563.4	DROPOF 	M30 DOOR OPEN OFF S004199/N00623 S004218/N00624 S004250/N00627 S004254/N00628	
R0564.2	AP,ENA 	APC ENABLE(AUTO CHANGE) S002551/N00394 S002553/N00394 S003571/N00516	
R0565.4	AP,FIN 	APC M CODE FINISH S002775/N00397	
R0565.7	A&T-M 	AUTO & TAPE MODE S004573/N00690	
R0570.0	\$]X 	JOG +X AXIS PB. AUX S002096/N00328 S002245/N00343 S005078/N00785	
R0570.1	\$]-X 	JOG -X AXIS PB. AUX S002097/N00328 S002260/N00344 S005081/N00786	
R0570.2	\$]Y 	JOG +Y AXIS PB. AUX S002107/N00329 S002275/N00345 S005084/N00787	
R0570.3	\$]-Y 	JOG -Y AXIS PB. AUX S002108/N00329 S002285/N00346 S005087/N00788	
R0570.4	\$]Z 	JOG +Z AXIS PB. AUX S001470/N00214 S001481/N00215 S002120/N00330 S002295/N00347 S005090/N00789	
R0570.5	\$]-Z 	JOG -Z AXIS PB. AUX S001471/N00214 S001480/N00215 S002121/N00330 S002305/N00348 S005093/N00790	
R0570.6	\$]SP 	FEED HOLD PB. AUX S002538/N00391 S005103/N00794	
R0570.7	\$]ST 	CYCLE START PB. AUX S002536/N00390 S005101/N00793	
R0571.0	\$]-4 	JOG -4 AXIS PB. AUX S002331/N00351 S005099/N00792	
R0571.1	\$]+4 	JOG +4 AXIS PB. AUX S002314/N00349 S002315/N00349 S005096/N00791	
R0571.2	\$]F0 	F0 PB. AUX S000475/N00080 S000481/N00081 S005123/N00802	
R0571.4	\$]MLK 	MACHINE LOCK PB. AUX S001721/N00252 S001724/N00253 S005144/N00811	

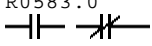
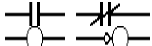
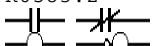
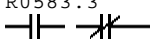
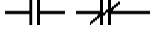
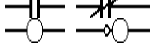
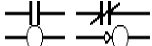
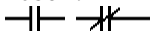
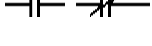
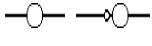
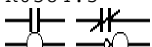
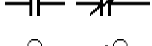
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0572.0	\$]SBK	SINGLE BLOCK PB. AUX	
	S001775/N00265	S001778/N00266	
	S005154/N00816		
R0572.1	\$]ZNG	Z AXIS CANCEL PB. AUX	
	S001733/N00255	S001736/N00256	
	S005164/N00819		
R0572.2	\$]BDT	BLOCK DELETED PB. AUX	
	S001745/N00258	S001748/N00259	
	S005146/N00812		
R0572.3	\$]OSP	OPTION STOP PB. AUX	
	S001803/N00269	S001806/N00270	
	S005152/N00815		
R0572.5	\$]DRN	DRY RUN PB. AUX	
	S001832/N00276	S001835/N00277	
	S005138/N00808		
R0572.6	\$]HX	HAND X AXIS	
	S001945/N00302		
	S004991/N00765		
R0572.7	\$]HY	HAND Y AXIS	
	S001952/N00303		
	S004993/N00766		
R0573.6	\$]HZ	HAND Z AXIS	
	S001946/N00302	S001953/N00303	
	S004995/N00767		
R0573.7	\$]H4	HAND 4 AXIS	
	S001959/N00304	S003425/N00494	
	S004997/N00768		
R0574.0	\$]100%	SPINDLE 100%	
	S004590/N00695		
	S005126/N00803		
R0574.1	\$]DEC	SPINDLE DEC	
	S004579/N00692	S004582/N00693	S004586/N00694
	S005132/N00805		
R0574.2	\$]INC	SPINDLE INC	
	S004574/N00691	S004578/N00692	S004587/N00694
	S005129/N00804		
R0574.4	\$FV1	FEED RATE DATA 1	
	S004999/N00769		
R0574.5	\$FV2	FEED RATE DATA 2	
	S005001/N00770		
R0574.6	\$FV4	FEED RATE DATA 4	
	S005003/N00771		
R0574.7	\$FV8	FEED RATE DATA 8	
	S005005/N00772		
R0575.0	\$]CL.M	MANUAL COOLANT	
	S002431/N00374	S002435/N00375	S002462/N00379
	S005150/N00814	S003557/N00514	

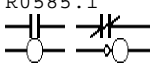
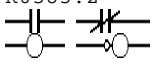
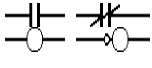
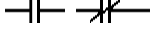
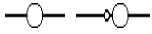
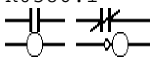
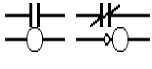
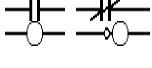
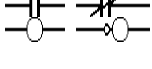
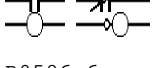


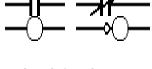
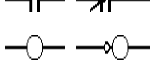
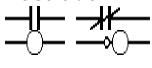
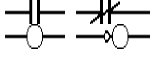
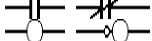


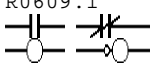
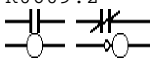
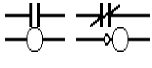
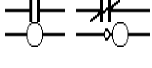
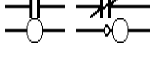
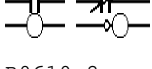
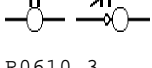
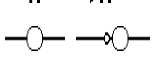
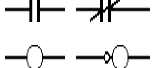
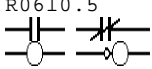
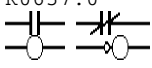
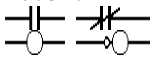
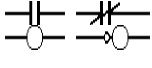
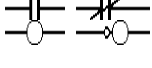
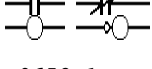
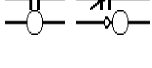
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0575.1	\$FV16+	FEEED RATE DATA 16	
	S005007/N00773		
R0575.2	\$]CL.A	AUTO COOLANT	
	S002437/N00376	S002440/N00377	
	S005148/N00813		
R0575.3	\$]MGON	MAGAZINE ON	
	S000594/N00097	S000598/N00097	S000604/N00098
	S000618/N00099	S000624/N00100	S000628/N00100
	S000644/N00102	S000648/N00102	S000654/N00103
	S000668/N00104	S000862/N00126	S000866/N00127
	S005160/N00817	S000608/N00098	S000614/N00099
		S000634/N00101	S000638/N00101
		S000664/N00104	
R0575.4			
	S000274/N00046	S000279/N00047	
	S005121/N00801		
R0575.5	\$WK-LP	WORK LAMP PB.	
	S001847/N00280	S001851/N00281	
	S005162/N00818		
R0575.6	\$]MP1	HAND *10	
	S001931/N00298		
	S005010/N00774		
R0575.7	\$]MP2	HAND *100	
	S001928/N00297	S001934/N00299	
	S005013/N00775		
R0576.0	\$]CPCW	CHIP COVEYOR CW PB.	
	S002464/N00380	S002467/N00381	
	S005140/N00809		
R0576.2			
	S002517/N00388		
	S005142/N00810		
R0576.3	\$]SORI	SPINDLE ORIENT	
	S003040/N00436		
	S005134/N00806		
R0576.4	\$]SRST	SPINDLE RESET	
	S003313/N00475	S003386/N00485	
	S005136/N00807		
R0576.6	\$F0%	RAPID RATE 0%	
	S001981/N00308	S001987/N00309	
	S005016/N00776		
R0576.7	\$F25%	RAPID RATE 25%	
	S001988/N00309		
	S005019/N00777		
R0577.0	\$]MGCW	MAGAZINE CW PB.	
	S000273/N00046	S000280/N00047	
	S005118/N00800		
R0577.3	\$]SPCW	SPINDLE CW	
	S003174/N00459	S003178/N00460	
	S005109/N00797		
R0577.4	\$]SSTP	SPINDLE STOP	
	S003092/N00445	S003172/N00459	
	S005113/N00799		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0577.5	\$]SCCW	SPINDLE CCW	
	S003175/N00459	S003184/N00461	
	S005111/N00798		
R0577.6	\$F50%	RAPID RATE 50%	
	S001974/N00307	S001982/N00308	
	S005022/N00778		
R0577.7	\$F100%	RAPID RATE 100%	
	S001975/N00307		
	S005025/N00779		
R0578.3	\$]PGM	PROGRAM PROTECT	
	S001941/N00301		
	S005105/N00795		
R0578.5	\$]APO	AUTO POWER OFF	
	S003459/N00500	S003464/N00501	
	S005107/N00796		
R0579.0	\$"X1		
	S005185/N00830		
	S002381/N00361		
R0579.1	\$"X2		
	S002404/N00365		
R0579.2	\$"Y1		
	S005187/N00831		
	S002388/N00362		
R0579.3	\$"Y2		
	S002406/N00366		
R0579.4	\$"Z1		
	S005189/N00832		
	S002396/N00363		
R0579.5	\$"Z2		
	S002408/N00367		
R0579.6	\$"B1		
	S005191/N00833		
	S002402/N00364		
R0579.7	\$"B2		
	S002410/N00368		
R0580.2	\$"F0		
	S000375/N00068		
R0580.3	\$"AFL	AUX FUNCTION LOCK	
	S001822/N00274	S001824/N00274 S001827/N00275 S001829/N00275	
	S001826/N00274		
R0580.4	\$"MLK		
	S001727/N00254	S001729/N00254 S005173/N00824	
	S001731/N00254		
R0580.6	\$"SP		
	S005167/N00821		
	S002568/N00396		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0580.7	\$"ST 	S005165/N00820 S002566/N00395	
R0581.0	\$"SBK 	S001781/N00267 S001783/N00267 S001786/N00268 S005175/N00825 S001785/N00267	
R0581.1	\$"ZNG 	S001739/N00257 S001741/N00257 S005177/N00826 S001743/N00257	
R0581.2	\$"BDT 	S001751/N00260 S001753/N00260 S005171/N00823 S001755/N00260	
R0581.3	\$"OSP 	S001809/N00271 S001811/N00271 S002571/N00397 S002573/N00397 S003808/N00551 S004211/N00624 S005179/N00827 S001813/N00271	
R0581.5	\$"DRN 	S001838/N00278 S001840/N00278 S001843/N00279 S005183/N00829 S001842/N00278	
R0582.0	\$"AUTO 	S001719/N00251 S003132/N00451 S003933/N00574 S004571/N00690 S004945/N00752	
R0582.1	\$"TAPE 	S001705/N00248 S001716/N00251 S003133/N00451 S003934/N00574 S004572/N00690 S004937/N00750	
R0582.2	\$"HAN 	S001653/N00236 S001656/N00237 S001660/N00238 S001664/N00239 S001669/N00239 S001698/N00245 S001714/N00250 S001844/N00279 S002411/N00369 S002500/N00385 S002520/N00388 S003426/N00494 S004177/N00619 S004966/N00758 S004985/N00764 S005237/N00847 S004953/N00754	
R0582.3	THND 	TEACH IN HANDLE S001690/N00243 S001694/N00244 S004967/N00758	
R0582.4	TJOG 	TEACH IN JOG S001691/N00243 S001695/N00244 S004970/N00759	
R0582.5	\$"100% 	S005210/N00841 S004705/N00711	
R0582.6	\$"DEC 	S005222/N00843 S004713/N00714	
R0582.7	\$"INC 	S005216/N00842 S004707/N00712	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0583.0	\$"MDI 	S000349/N00063 S000359/N00064 S001120/N00162 S001135/N00165 S001406/N00208 S001419/N00209 S001441/N00212 S001488/N00216 S001512/N00217 S001549/N00220 S001569/N00222 S001587/N00224 S001688/N00243 S001718/N00251 S002843/N00407 S002857/N00408 S003315/N00476	S004949/N00753
R0583.1	\$"EDIT 	S001693/N00244 S001717/N00251	S004941/N00751
R0583.2	\$"RPD 	S001700/N00246 S001709/N00249	S004964/N00757
R0583.3	\$"JOG 	S001708/N00249 S004962/N00757 S004969/N00759 S005026/N00780 S005036/N00781 S005046/N00782 S005056/N00783 S005066/N00784	S004957/N00755
R0583.4	\$"ZRN 	S001703/N00247 S001710/N00249 S001712/N00250 S002038/N00316 S002057/N00320 S002068/N00322 S002079/N00324 S002089/N00326 S002104/N00328 S002117/N00329 S002123/N00330 S002239/N00342 S002244/N00343 S002247/N00343 S002259/N00344 S002262/N00344 S002274/N00345 S002277/N00345 S002284/N00346 S002287/N00346 S002294/N00347 S002297/N00347 S002304/N00348 S002307/N00348 S002317/N00349 S002319/N00349 S002330/N00351 S002378/N00361 S002385/N00362 S002392/N00363 S002399/N00364 S005027/N00780 S005037/N00781 S005047/N00782 S005057/N00783 S005067/N00784 S005683/N00933	S004961/N00756
R0583.5	\$"H.0 	S005198/N00836	S002412/N00369
R0584.0	\$"CLM 	S002443/N00378 S002444/N00378 S003561/N00515 S004438/N00657	S002453/N00378
R0584.2	\$"CLA 	S002456/N00379 S002457/N00379 S002602/N00397 S002620/N00397 S002701/N00397	S004437/N00657 S002463/N00379
R0584.3	\$"MGON 	S000271/N00046 S000277/N00047 S000593/N00097 S000597/N00097 S000603/N00098 S000607/N00098 S000613/N00099 S000617/N00099 S000623/N00100 S000627/N00100 S000633/N00101 S000637/N00101 S000643/N00102 S000647/N00102 S000653/N00103 S000657/N00103 S000663/N00104 S000667/N00104 S000870/N00128 S000872/N00128	S000875/N00128
R0584.4	\$"MCCW 	S000243/N00039	
R0584.5		S001854/N00282 S001856/N00282 S005257/N00853	S001858/N00282
R0585.0	\$"CVCW 	S002474/N00383 S002475/N00383 S002498/N00385 S002505/N00386 S002518/N00388 S002712/N00397 S005234/N00847	S002492/N00383

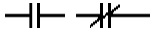
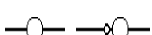

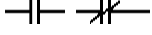
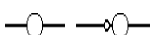
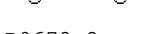
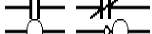

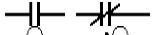
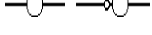
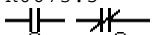
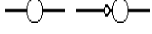
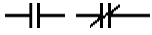
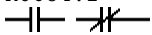
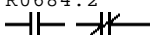
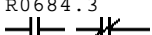
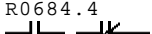
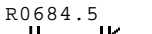
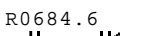
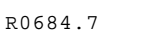
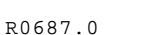
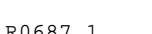
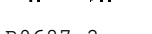


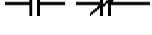
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0585.1	\$"CVSP 	S002491/N00383 S002497/N00384	
R0585.2	\$"CCCW 	S005241/N00848 S002525/N00388	
R0585.3	\$"SORI 	S005228/N00844 S003066/N00438	
R0585.4	\$"SRST 	S005200/N00837	
R0586.0	\$"MGCW 	S000239/N00038	
R0586.1	\$"LUBE 	S005252/N00851 S002430/N00373	
R0586.2	\$"ATRD 	S002128/N00331 S002234/N00342 S005193/N00834 S001241/N00187	
R0586.3	\$"SPCW 	S005202/N00838 S003253/N00467	
R0586.4	\$"SSTP 	S005208/N00840 S003267/N00469	
R0586.5	\$"SCCW 	S005205/N00839 S003260/N00468	
R0586.6	\$"HG 	S003035/N00434	
R0586.7	\$"LGL 	S003038/N00435	
R0589.0	\$"SPAL 	S003871/N00562 S002417/N00371	
R0589.2	\$"ARAL 	S000148/N00023 S000205/N00034 S000228/N00037 S000260/N00044 S001792/N00268 S002419/N00372 S002543/N00392 S003869/N00562 S005255/N00852 S005687/N00933 S002425/N00372	
R0590.0	\$"NCAL 	S003870/N00562 S005196/N00835 S002415/N00370	
R0600.0	CHIPFL 	CHIP FLUSHING COOLANT HOLD S004976/N00761 S004980/N00762 S004983/N00763 S004973/N00760	
R0609.0	APO-PB 	AUTO POWER OFF PB. S003460/N00500 S003463/N00501 S003462/N00500	

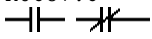
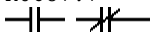
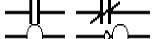
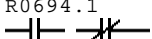
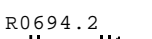
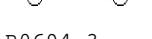
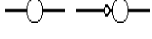
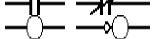
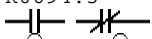
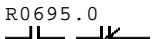
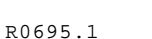

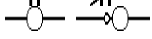
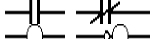
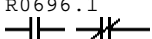
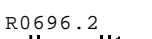
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0609.1		S003461/N00500 S003466/N00502 S003468/N00502 S003465/N00501	
R0609.2		APO-ON AUTO POWER OFF -ON S003467/N00502 S003469/N00502 S003477/N00503 S005232/N00846 S003471/N00502	
R0609.4		S004575/N00691 S004580/N00692 S004577/N00691	
R0609.5		S004583/N00693 S004588/N00694 S004585/N00693	
R0610.0		S001815/N00272 S001819/N00273 S001817/N00272	
R0610.1		S001816/N00272 S001821/N00274 S001823/N00274 S001820/N00273	
R0610.2		HO-RDY HOME MODE READY S002131/N00332 S002129/N00331	
R0610.3		HOME-Z HOME START Z AXIS S001992/N00310 S002101/N00328 S002114/N00329 S002122/N00330 S002132/N00332 S002138/N00333 S002150/N00335 S002137/N00332	
R0610.4		S002006/N00312 S002098/N00328 S002110/N00329 S002133/N00332 S002139/N00333 S002151/N00335 S002316/N00349 S002145/N00333	
R0610.5		HO-XYZ 3 AXIS HOME S002136/N00332 S002144/N00333 S002149/N00334	
R0657.0		\$CVCW+ CV CW P.B ON PULSE S002471/N00382 S002466/N00380	
R0657.1		\$CCW+A CV CW P.B ON PULSE AUX S002465/N00380 S002468/N00381	
R0657.2		CVCW+ CV CW ON PULSE S002473/N00383 S002476/N00383 S002472/N00382	
R0657.3		>X10 INCREMENTAL FEED > X10 S001932/N00298 S001935/N00299 S001930/N00297	
R0658.0		MLK-ON S001722/N00252 S001725/N00253	
R0658.1		MLK+ MLK P.B ON PULSE S001726/N00254 S001728/N00254 S001723/N00252	

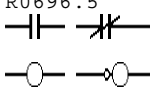
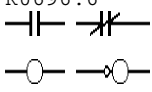
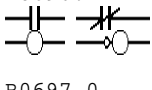
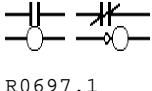
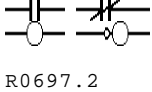
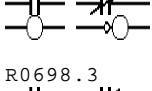
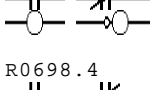
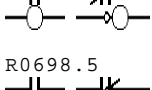
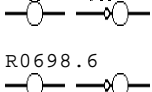
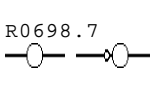
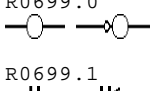
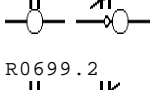
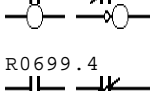
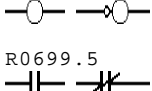
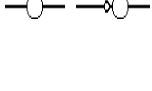

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0658.4	BDT-ON		
	S001746/N00258		
	S001749/N00259		
R0658.5	BDT+	BDT P.B ON PULSE	
	S001750/N00260	S001752/N00260	
	S001747/N00258		
R0658.6	OSP-ON		
	S001804/N00269		
	S001807/N00270		
R0658.7	OSP+	OSP P.B ON PULSE	
	S001808/N00271	S001810/N00271	
	S001805/N00269		
R0659.0	ZNG-ON		
	S001734/N00255		
	S001737/N00256		
R0659.1	ZNG+	ZNG P.B ON PULSE	
	S001738/N00257	S001740/N00257	
	S001735/N00255		
R0659.2	SBK-ON		
	S001776/N00265		
	S001779/N00266		
R0659.3	SBK+	SBK P.B ON PULSE	
	S001780/N00267	S001782/N00267	
	S001777/N00265		
R0659.4	DRN-ON		
	S001833/N00276		
	S001836/N00277		
R0659.5	DRN+	DRN P.B ON PULSE	
	S001837/N00278	S001839/N00278	
	S001834/N00276		
R0660.2	MAG-ON		
	S000863/N00126	S000867/N00127	
	S000865/N00126		
R0660.3	MGON+	MAG ON P.B ON PULSE	
	S000864/N00126	S000869/N00128	S000871/N00128
	S000868/N00127		
R0660.4	OPKEP	AUTO OPERATION KEEP	
	S003100/N00448	S003105/N00449	S003119/N00450
	S003330/N00479	S003339/N00480	S003321/N00477
	S003323/N00477	S003325/N00478	S003325/N00478
R0660.5			
	S003192/N00462		
	S003183/N00460		
R0660.6			
	S000539/N00089	S000547/N00090	S000574/N00093
	S000952/N00138	S000976/N00141	S003018/N00429
		S000582/N00094	S000590/N00095
		S005614/N00922	S005627/N00924
R0660.7			
	S003210/N00463		
	S003189/N00461		

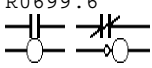
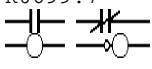
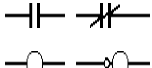
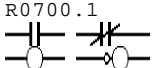
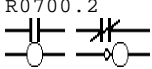
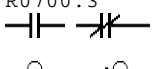
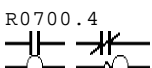
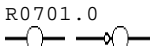
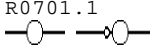
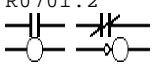
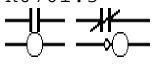
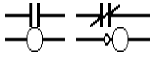
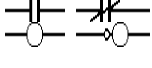
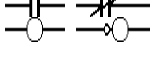
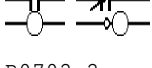
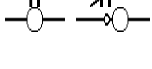
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0661.0	>3700	JOG FEEDRATE > 3700MM	
	S004796/N00727	S004892/N00742	S004899/N00743
	S004886/N00740		
R0661.1			
	S001848/N00280		
	S001852/N00281		
R0661.2			
	S001853/N00282	S001855/N00282	
	S001850/N00280		
R0661.3	SSTPK	SPINDLE STOP KEEP	
	S003173/N00459	S003182/N00460	S003188/N00461
	S003177/N00459		
R0666.0	\$J0	JOG FEEDRATE 0	
	S004731/N00718		
R0666.1	\$J100	JOG FEEDRATE 100	
	S004734/N00719		
R0666.2	\$J140	JOG FEEDRATE 140	
	S004737/N00720		
R0666.3	\$J200	JOG FEEDRATE 200	
	S004740/N00721		
R0666.4	\$J270	JOG FEEDRATE 270	
	S004743/N00722		
R0668.5	*FV100	*FV 100% KEEP	
	S001917/N00294	S001920/N00295	S001926/N00296
	S001922/N00295	S002696/N00397	S004897/N00743
R0669.0	\$]INC+	SP INC ON PULSE	
	S004576/N00691	S004597/N00696	S004604/N00697
	S004581/N00692	S004610/N00698	
R0669.1	\$]DEC+	SP DEC ON PULSE	
	S004584/N00693	S004631/N00701	S004637/N00702
	S004589/N00694		
R0669.2	ERROP		
	S004621/N00699	S004630/N00700	S004648/N00703
		S004657/N00704	
R0669.3	INCACT	SP INC ACTIVE	
	S004615/N00699	S004624/N00700	
	S004612/N00698		
R0669.4	DECACT	SP DEC ACTIVE	
	S004642/N00703	S004651/N00704	
	S004639/N00702		
R0670.7			
	S005266/N00854		
R0673.0	\$MOD1'	\$MOD1 AUX	
	S004915/N00746	S004934/N00750	S004938/N00751
	S004950/N00754	S004954/N00755	S004958/N00756
	S004918/N00746		



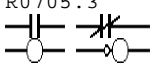
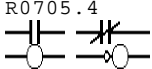
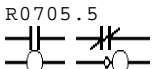
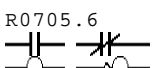
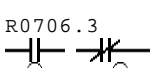
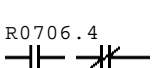
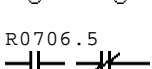
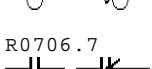
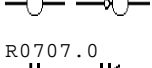
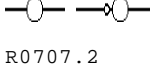
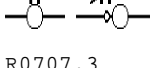
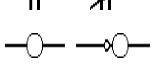
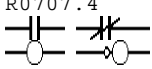
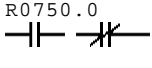
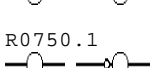
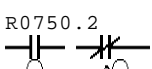
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0673.1	\$MOD2'	\$MOD2 AUX	
	S004921/N00747	S004935/N00750	S004939/N00751 S004943/N00752 S004947/N00753
	S004951/N00754	S004955/N00755	S004959/N00756
	S004924/N00747		
R0673.2	\$MOD4'	\$MOD4 AUX	
	S004927/N00748	S004936/N00750	S004940/N00751 S004944/N00752 S004948/N00753
	S004952/N00754	S004956/N00755	S004960/N00756
	S004930/N00748		
R0673.3	MDK,EN	MODE KEEP ENABLE	
	S004908/N00745	S004931/N00749	
	S004907/N00744		
R0673.4	MDK1	MODE KEEP 1	
	S004909/N00745	S004916/N00746	S004922/N00747 S004928/N00748 S004932/N00749
	S004912/N00745		
R0673.5	MDK2	MODE KEEP 2	
	S004910/N00745	S004914/N00746	S004920/N00747 S004926/N00748
	S004933/N00749		
R0684.0			
	S000600/N00097		
R0684.1			
	S000610/N00098		
R0684.2			
	S000620/N00099		
R0684.3			
	S000630/N00100		
R0684.4			
	S000640/N00101		
R0684.5			
	S000650/N00102		
R0684.6			
	S000660/N00103		
R0684.7			
	S000670/N00104		
R0687.0			
	S000595/N00097		
R0687.1			
	S000605/N00098		
R0687.2			
	S000615/N00099		
R0687.3			
	S000625/N00100		
R0687.4			
	S000635/N00101		
R0687.5			
	S000645/N00102		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0687.6	 S000655/N00103		
R0687.7	 S000665/N00104		
R0694.0	+XHOME  S002246/N00343 S002175/N00336	+X HOME	
R0694.1	-XHOME  S002261/N00344 S002197/N00337	-X HOME	
R0694.2	+YHOME  S002276/N00345 S002206/N00338	+Y HOME	
R0694.3	-YHOME  S002286/N00346 S002215/N00339	-Y HOME	
R0694.4	+ZHOME  S002296/N00347 S002224/N00340	+Z HOME	
R0694.5	-ZHOME  S002306/N00348 S002233/N00341	-Z HOME	
R0695.0	X-ZRN  S002174/N00336 S002196/N00337 S002106/N00328	X AXIS ZERO RETURN	
R0695.1	Y-ZRN  S002205/N00338 S002214/N00339 S002119/N00329	Y AXIS ZERO RETURN	
R0695.2	Z-ZRN  S002223/N00340 S002232/N00341 S002125/N00330	Z AXIS ZERO RETURN	
R0696.0	 S001502/N00216 S001473/N00214		
R0696.1	 S001500/N00216 S001526/N00217 S001483/N00215		
R0696.2	 S004598/N00696 S004605/N00697 S004632/N00701 S004696/N00709 S002039/N00316		
R0696.3	 S001993/N00310 S001999/N00311 S002035/N00316 S002088/N00326 S001996/N00310 S005659/N00929		
R0696.4	 S001995/N00310 S002000/N00311 S002004/N00312 S002003/N00311		

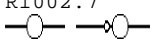
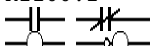
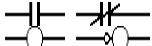
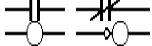
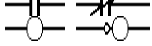
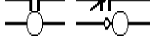
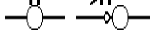
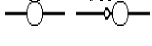
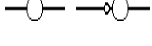
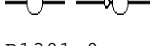

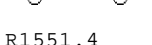
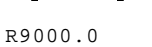
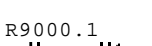

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0696.6		S002008/N00312 S002014/N00313 S002018/N00314 S002025/N00315 S002037/N00316 S002078/N00324 S002017/N00313	
R0696.7		S002015/N00313 S002026/N00315	
R0697.0		S002019/N00314 S002109/N00329 S002022/N00314	
R0697.1		S000101/N00015 S000461/N00078 S000466/N00078	
R0697.2		S000097/N00014 S000463/N00078 S001429/N00209 S000474/N00079	
R0698.3		S003964/N00581 S003967/N00581 S003958/N00578	
R0698.4		S003957/N00578 S003960/N00579	
R0698.5		S003965/N00581 S003966/N00581 S003984/N00584 S003974/N00581	
R0698.6		S004789/N00725	
R0698.7		S004803/N00727	
R0699.0		S004811/N00728	
R0699.1		S004883/N00740 S004818/N00729	
R0699.2		S004826/N00731 S004889/N00741 S004825/N00730	
R0699.4		S000236/N00038 S005693/N00934 S005706/N00935 S005696/N00934	
R0699.5		S005694/N00934 S005709/N00936 S005708/N00935	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0699.6		S005691/N00934 S005690/N00933	
R0699.7		S001978/N00307 S004829/N00731	S004830/N00732 S004837/N00733 S004844/N00734 S004849/N00735
R0700.0		S000249/N00042 S001476/N00215 S000178/N00030	S000255/N00043 S001069/N00156 S001457/N00213 S001466/N00214 S001627/N00229 S005703/N00935
R0700.1		S000250/N00042 S000253/N00042	S000254/N00043
R0700.2		S000191/N00032 S000256/N00043	S000214/N00035 S000252/N00042
R0700.3		LSPSK S002806/N00401 S002971/N00420 S002810/N00401	LOW SPEED SELECT KEEP S002811/N00402 S002815/N00402 S002818/N00403 S002824/N00405
R0700.4		HSPSK S002807/N00401 S002817/N00402	HIGH SPEED SELECT KEEP S002814/N00402 S002821/N00404 S002826/N00405 S002966/N00419
R0701.0		S004866/N00737	
R0701.1		S004874/N00738	
R0701.2		S005736/N00943 S005734/N00942	
R0701.3		S005723/N00941 S005739/N00943	S005731/N00942
R0701.4		S003941/N00575 S003943/N00575	S003944/N00576
R0701.5		S003942/N00575 S003946/N00576	
R0702.0		MHROPP S004186/N00621 S004185/N00620	MANUAL DOOR OPEN S004191/N00622
R0702.1		S004187/N00621 S004189/N00621	S004190/N00622
R0702.2		S004188/N00621 S004193/N00622	S004194/N00623 S004197/N00623 S004203/N00623

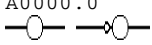
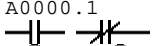
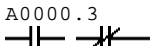
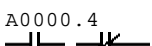
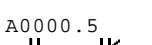



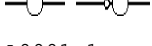
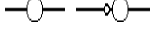
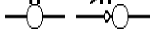
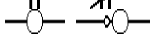
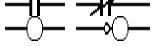
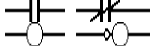
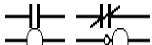
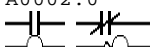
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0702.4		S004249/N00627 S004252/N00628 S004251/N00627	
R0702.6		S004176/N00619 S004216/N00624 S004232/N00626 S004221/N00624	
R0702.7		S004233/N00626 S004230/N00625	
R0703.0		S005218/N00842 S004710/N00713	
R0703.1		SP100L SPINDLE OVERRIDE 100 S005212/N00841 S004703/N00710	
R0703.2		S005224/N00843 S004716/N00715	
R0703.4		S005765/N00949 S005771/N00950 S005781/N00951 S005778/N00950	
R0703.5		S005783/N00952 S005782/N00951	
R0703.6		S005777/N00950 S005786/N00952	
R0704.0		S005747/N00946 S005750/N00947 S005746/N00945	
R0704.1		S005753/N00948 S005755/N00948 S005749/N00946	
R0704.2		S005748/N00946 S005751/N00947	
R0704.3		S005741/N00944 S005752/N00948 S005754/N00948 S005764/N00949 S005760/N00948	
R0705.0		S003632/N00526 S003661/N00530 S003664/N00531 S003640/N00526	
R0705.2		S003646/N00529 S003649/N00529 S003643/N00527	

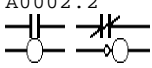
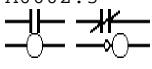
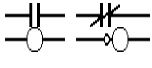
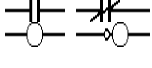
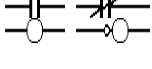

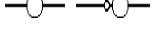
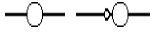
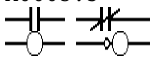
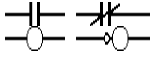
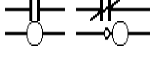
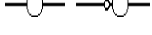
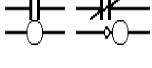
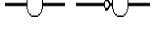
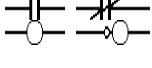
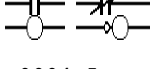
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0705.4		S003647/N00529 S003660/N00529	S003648/N00529 S003662/N00530 S003665/N00531
R0705.5		S003639/N00526 S003663/N00530	S003659/N00529
R0705.6		S003954/N00577 S003963/N00580	S003975/N00582
R0706.3		LB.PRE.TM S005666/N00931 S005665/N00930	LUBE PRESSURE TIMER
R0706.4		S004068/N00600 S004066/N00599	S004073/N00601
R0706.5		LB.PRE.OK S004074/N00601 S005672/N00931	LUBE PRESSURE OK S004099/N00604 S005668/N00931 S005675/N00932
R0706.7		S001970/N00306 S001969/N00305	
R0707.0		S001949/N00302 S001973/N00306	S001956/N00303 S001962/N00304
R0707.2		S003972/N00581 S003978/N00582	
R0707.3		S002448/N00378 S003976/N00582 S003980/N00583	S002495/N00384 S003559/N00514 S003652/N00529 S003953/N00577 S005235/N00847
R0707.4		S004178/N00619 S004181/N00619	S004184/N00620 S004192/N00622 S004208/N00623 S004220/N00624
R0750.0		S002687/N00397 S005833/N00963 S005806/N00957	S002690/N00397 S005803/N00957 S005822/N00961 S005827/N00962 S005839/N00964
R0750.1		S005825/N00961	
R0750.2		S005834/N00963 S005832/N00962	
R0750.3		S005840/N00964 S005838/N00963	

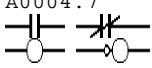
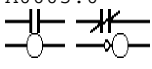
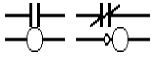
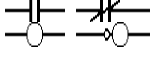
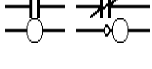
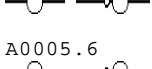
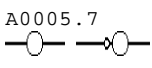
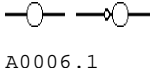
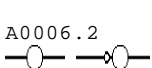
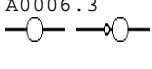
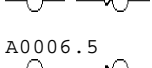
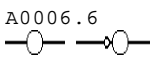
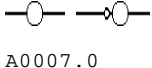
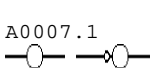
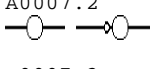
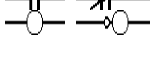




ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
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R0800.1	SRN.P2 	PROGRAM RESTART PULSE 2 S001758/N00261 S001761/N00262	
R0800.2		S004772/N00723 S004780/N00724	
R0800.3		S004686/N00707	
R0800.4	OVC.P 	S001912/N00294 S001914/N00294 S001909/N00292	
R0800.5	OVC.P2 	S001908/N00292 S001911/N00293	
R0800.6		S004694/N00708	
R0801.0		S003580/N00519 S003583/N00519 S003575/N00517	
R0801.1		S003574/N00517 S003577/N00518	
R0810.0		S003609/N00522 S003613/N00523 S003620/N00524 S003627/N00525 S003611/N00522	
R0810.1		S003621/N00524 S003628/N00525 S003618/N00523	
R0810.2		S003629/N00525 S003625/N00524	
R0940.6		S004138/N00611	
R0940.7		S004149/N00613	
R1001.0		S004551/N00687 S004550/N00686	
R1001.2		S001017/N00149 S001107/N00160 S004445/N00658 S001089/N00157	
R1001.3		S001018/N00149 S001108/N00160 S004446/N00658 S001096/N00158	
R1002.6		S004144/N00612	

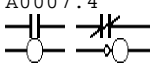
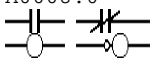
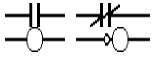
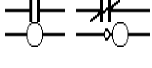
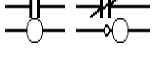
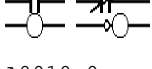
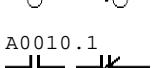
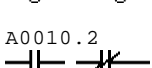
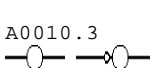
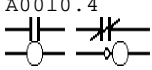
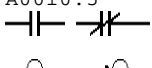
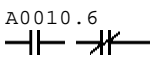
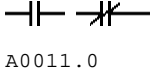
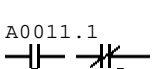
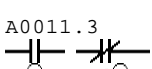


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R1002.7		S004155/N00614	
R1100.1		S001861/N00283 S001865/N00284	
R1100.2		S001866/N00285 S001868/N00285 S001863/N00283	
R1100.3		S001878/N00288 S001879/N00288 S001887/N00288	
R1100.4		S001877/N00288 S001881/N00288 S001874/N00286	
R1100.5		S001873/N00286 S001876/N00287	
R1100.6		S001895/N00291 S001898/N00291 S001892/N00289	
R1100.7		S001891/N00289 S001894/N00290	
R1300.0		S003849/N00559 S003854/N00560 S003848/N00558	
R1300.1		S003851/N00559 S003857/N00560	
R1301.0		S004121/N00608 S004128/N00609	
R1301.1		S004127/N00609 S004133/N00610	
R1551.4		S002657/N00397 S003458/N00499	
R9000.0		FUNOP0 S004611/N00698 S004638/N00702 S004701/N00710 S004704/N00711 S004711/N00714 S004714/N00715 S005615/N00923	
R9000.1		FUNOP1 S002062/N00321 S002073/N00323 S002084/N00325 S002094/N00327 S004706/N00712 S004708/N00713 S004712/N00714 S004715/N00715	

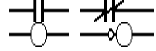


ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0000.0	AL_1000 	EMERGENCY STOP / OVERTRAVEL	
	S004416/N00653		
A0000.1	AL_1001 	SPINDLE COOLER ALARM	
	S004418/N00654		
	S004427/N00655		
A0000.3	AL_1003 	CUTTING COOLANT MOTOR ALARM	
	S004436/N00657		
	S004443/N00657		
A0000.4	AL_1004 	ATC ALARM	
	S002798/N00399		
	S004447/N00658		
A0000.5	AL_1005 	TOOL BROKEN	
	S001655/N00237	S001659/N00238	S001668/N00239
	S004452/N00659	S004450/N00659	
A0000.6	AL_1006 	SERVO AXIS HOME REQUIRE	
	S004454/N00660		
	S004460/N00660		
A0000.7	AL1007 	AUTO DOOR NOT CLOSE	
	S005799/N00956		
	S005801/N00956		
A0001.0	AL_1010 	ATC ALARM FOR POT DOWN	
	S004314/N00636		
	S004316/N00636		
A0001.1	AL_1011 	ATC ALARM FOR ARM 60	
	S004320/N00637		
	S004323/N00637		
A0001.2	AL_1012 	ATC ALARM FOR TOOL UNCLAMP	
	S004331/N00638		
	S004333/N00638		
A0001.3	AL_1013 	ATC ALARM FOR ARM 180	
	S004337/N00639		
	S004340/N00639		
A0001.4	AL_1014 	ATC ALARM FOR TOOL CLAMP	
	S004348/N00640		
	S004350/N00640		
A0001.5	AL_1015 	ATC ALARM FOR ARM -60	
	S004354/N00641		
	S004356/N00641		
A0001.6	AL_1016 	ATC ALARM FOR POT UP	
	S004360/N00642		
	S004362/N00642		
A0002.0	AL_1020 	ATC STB FOR POT UP	
	S004372/N00644		
	S004374/N00644		
A0002.1	AL_1021 	ATC STB FOR POT DOWN	
	S004378/N00645		
	S004380/N00645		

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	
A0003.5	AL_1035 	SPINDLE TOOL CLAMP ERROR	
A0003.6	AL1370 	SPINDLE GEAR POSITION ERROR	S002866/N00408 S002952/N00416 S003074/N00441 S003925/N00573
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	S004505/N00676
A0004.4	AL1620 	SP OIL MIST ALARM	S004518/N00678
A0004.5			S005794/N00955 S005796/N00955

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0004.7	AL_1047 	FILTER TANK FULL FAULL	
	S004971/N00760 S003770/N00544		
A0005.0	AL_1050 	COOLANT EMPTY ERROR	
	S003674/N00532 S003789/N00548		
A0005.2	AL_1052 	FILTER DETECT ERROR	
	S003683/N00534 S003757/N00543 S003779/N00546 S003761/N00543		
A0005.3	AL_1053 	COOLANT TANK FULL FAULL	
	S003684/N00534 S003764/N00544 S003769/N00544		
A0005.4	AL_1054 	FILTER TANK EMPTY ERROR	
	S003600/N00521 S003685/N00534 S003799/N00549		
A0005.5	AL_1055 	RECYCLE MOTOR OVERLOAD	
	S004465/N00662		
A0005.6	AL1056 	SPINDLE COOLER ALARM	
	S004468/N00663		
A0005.7	AL1057 	CHIP FLASH MOTOR OVERLOAD	
	S004470/N00664		
A0006.0	AL1060 	MAGAZINE MOTOR OVERLOAD	
	S004472/N00665 S005715/N00937		
A0006.1	AL1061 	ARM MOTOR OVERLOAD	
	S004474/N00666 S005717/N00938		
A0006.2	AL1062 	CTS MOTOR OVERLOAD	
	S004476/N00667 S005719/N00939		
A0006.3	AL1063 	SUCK MOTOR OVERLOAD	
	S004478/N00668 S005721/N00940		
A0006.4	AL1064 	EXTERNAL SPINDLE FAN OVERLOAD	
	S004482/N00670		
A0006.5	AL1065 	SPINDLE COOLER OVERLOAD	
	S004484/N00671		
A0006.6	AL1066 	CHIP CONVEYOR MOTOR OVERLOAD	
	S004486/N00672		
A0006.7	AL1067 	OIL SKIMMING MOTOR OVERLOAD	
	S004488/N00673		
A0007.0	AL1070 	CHIP SCREW 1 OVER LOAD	
	S004540/N00683		
A0007.1	AL1071 	CHIP SCREW 2 OVER LOAD	
	S004542/N00684		
A0007.2	AL1072 	CHIP SCREW 3 OVER LOAD	
	S004544/N00685		
A0007.3	AL1073 	HYDRAULIC MOTOR OVER LOAD	
	S004553/N00687 S004558/N00687		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0007.4	AL1074 	Oil Mist Collector OVERLOAD	
A0008.0	AL1080 	1080 TOOL MEASURE ERROR!	S001886/N00288 S004480/N00669 S003878/N00562 S004002/N00587 S004005/N00587
A0008.1			S003880/N00562 S004007/N00588 S004010/N00588
A0008.2	A1082 	1082 TOOL LIFE EXGAUST!	S003879/N00562 S004015/N00589 S004018/N00589
A0008.4	AL_1084 	A AXIS UNCLAMP FINISH ERROR	S004560/N00688 S004564/N00688
A0008.5	AL_1085 	A AXIS CLAMP FINISH ERROR	S004566/N00689 S004570/N00689
A0010.0	OP__AL_2000 	MAINTENANCE MODE	S004523/N00679
A0010.1	OP__AL_2001 	ARM TROUBLESHOOTING	S003872/N00562 S004528/N00681
A0010.2	OP2002 	CHECK SP T NO. & STANDBY T NO.	S003873/N00562 S004429/N00656 S004431/N00656
A0010.3	OP__AL_2003 	AIR LOW	S002426/N00372
A0010.4	OP__AL_2004 	LUBE ALARM	S001787/N00268 S003874/N00562 S004124/N00608 S004534/N00682 S004538/N00682
A0010.5	OP__AL_2005 	DOOR NOR CLOSE	S002447/N00378 S002461/N00379 S003558/N00514 S003638/N00526 S003651/N00529 S003875/N00562 S003979/N00583 S004255/N00629 S004368/N00643
A0010.6	OP2006 	2071 APC COVER NOT CLOSE	S002552/N00394 S003876/N00562
A0010.7	OP2007 	2072 APC BIT OPEN	S003877/N00562
A0011.0	OP2010 	2008 TOOL LIFE END	S005634/N00926
A0011.1	OP2011 	2110 HIGH/LOW SPEED ALARM	S002837/N00406 S002840/N00406
A0011.3			S003861/N00561 S005841/N00964 S005845/N00964

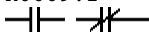
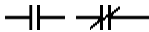
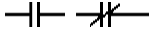
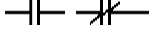
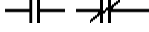
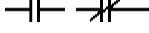
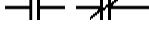
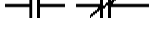
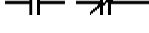


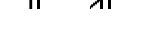


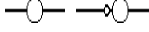
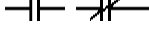
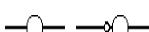
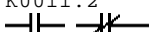
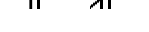
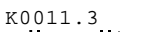
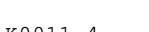
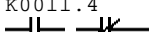
ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
A0011.4	OP2014	LUBE PRESSURE FAULT	
	S001788/N00268 S005682/N00932	S003881/N00562	S005253/N00851 S005676/N00932

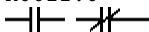
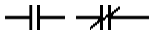
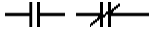
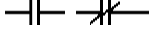
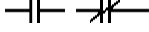
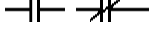
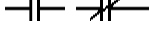
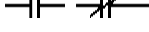
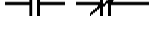

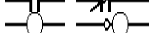

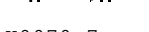
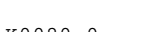

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0000.0 <del>— —</del> <del>— —</del>	ATC.RY S002235/N00342	SERVO CAN MOVE WITHOUT ATC RY	
K0000.1 <del>— —</del> <del>— —</del>	A.ZRN S002358/N00357	A AXIS ZRN VALID S004458/N00660	
K0000.2 <del>— —</del> <del>— —</del>	ALL.ZRN S002360/N00357	ALL AXIS ZRN IGNORE S002557/N00394 S004457/N00660	
K0000.3 <del>— —</del> <del>— —</del>	Z.ZRN1 S002099/N00328	Z AXIS GO ZRN FIRST S002112/N00329	
K0000.4 <del>— —</del> <del>— —</del>	COL.M01 S003564/N00515	COOLANT ON WHEN M00/M01 S003598/N00521 S003982/N00584	
K0000.6 <del>— —</del> <del>— —</del>	SP.GR S002782/N00398 S003034/N00434	SPINDLE GEAR BOX DISABLE S002853/N00407 S002867/N00408 S002878/N00409 S002893/N00410 S003037/N00435 S003225/N00464 S003229/N00464 S003929/N00573	
K0000.7 <del>— —</del> <del>— —</del>	M02.APO S003474/N00503	APO VALID BY M02	
K0001.0 <del>— —</del> <del>— —</del>	1.LP S003839/N00557	SINGAL LAMP FOR TOWL DETECTOR S003864/N00561	
K0001.1 <del>— —</del> <del>— —</del>	ZRN2.ATC S001200/N00179	ZRN 2 POINT WITH ATC S004403/N00650	
K0001.2 <del>— —</del> <del>— —</del>	QUICK.UNCL S001272/N00191	QUICK TOOL UNCLAMP SYSTEM	
K0001.3 <del>— —</del> <del>— —</del>	POT.KEP S001498/N00216	KEEP TYPE OF POT UP SOL	
K0001.4 <del>— —</del> <del>— —</del>	ZZRN2.ATC S001538/N00219	Z AXIS ZRN 2 WITH ATC S001557/N00221 S001575/N00223	
K0001.5 <del>— —</del> <del>— —</del>	SP.COL.VAL S004420/N00654	SPINDLE COOLER VALID	
K0001.6 <del>— —</del> <del>— —</del>	SP.CLP.KP S001412/N00208	KEEP TYPE OF SPINDLE CLAMP	
K0001.7 <del>— —</del> <del>— —</del>	LUB.PRE S005655/N00929	LUBE PRESSURE VALID S005660/N00930 S005669/N00931 S005673/N00932	
K0002.0 <del>— —</del> <del>— —</del>	MAG.IN.POS S000174/N00030	NC TYPE OF MAG.IN-POS SENSOR S000176/N00030	
K0002.1 <del>— —</del> <del>— —</del>	ZINT.ATC S001663/N00239	Z AXIS INT. BY ATC NOT READY	
K0002.2 <del>— —</del> <del>— —</del>	M19.ATC S003045/N00436	M19 VALID BY ATC NOT READY	
K0002.3 <del>— —</del> <del>— —</del>	DOR.INT S000720/N00111 S002516/N00388 S003515/N00510	SERVO & SP LOCK BY DOOR OP S001152/N00168 S001401/N00207 S002238/N00342 S002487/N00383 S002592/N00397 S003499/N00506 S003503/N00507 S003507/N00508 S003518/N00510 S003548/N00513 S004366/N00643 S004905/N00744	
K0002.4 <del>— —</del> <del>— —</del>	TOL.LIFE S004525/N00680	TOOL LIFE VALID	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0002.5	A.UNCLP -  - **	A AXIS UNCLAMP BY TIMER	S001674/N00240 S001676/N00240
K0002.6	SP.OVR -  - **	ANALOG TYPE OF SP OVERRIDE	S003101/N00448 S003231/N00464 S003326/N00478 S003328/N00479 S003337/N00480 S003367/N00483 S003377/N00484
K0002.7	ZRN.-X -  - **	ZRN DIRECTION BY - X	S002063/N00321 S002074/N00323 S002156/N00336 S002158/N00336 S002163/N00336 S002165/N00336 S002171/N00336 S002178/N00337 S002180/N00337 S002185/N00337 S002187/N00337 S002193/N00337 S002252/N00343 S002267/N00344
K0003.0	MAG.DEC -  - **	MAG DECELERATE BY DEC SEN	S000190/N00032 S000192/N00032 S000213/N00035 S000215/N00035 S001068/N00156 S001070/N00156 S001456/N00213 S001458/N00213 S001465/N00214 S001467/N00214 S001475/N00215 S001477/N00215 S001626/N00229 S001628/N00229 S005702/N00935 S005704/N00935
K0003.1	NO.ARM.SEN -  - **	NO SENSOR OF ARM	S000015/N00004 S000017/N00004 S000026/N00005 S000028/N00005 S000041/N00007 S000043/N00007
K0003.3	PTUP/PTDN.STB -  - **	POT UP / DOWN OF STAND-BY	S000288/N00048 S000298/N00049 S000749/N00113 S000893/N00131 S001230/N00185 S001231/N00185 S001243/N00188 S001256/N00190 S001259/N00190 S001330/N00198 S001332/N00198 S001339/N00199 S001372/N00204 S001382/N00205 S001487/N00216 S001510/N00217 S001517/N00217 S001524/N00217 S001535/N00218 S004371/N00644 S004377/N00645 S005647/N00928
K0003.4	MAG.POS1 -  - **	MAG POSISITON 1 SEN VALID	S005689/N00933
K0003.5	OIL.SKIM -  - **	OIL SKIM ON WHEN POWER ON	S005724/N00941
K0003.6	Y7.6.M27 -  - **	Y7.6 FOR M27 VALID	S005725/N00941 S005727/N00941
K0003.7	OVR.DOR -  - **	OVERRIDE LIMIT WHEN DOOR OPEN	S003504/N00507 S003508/N00508 S004828/N00731
K0004.7	-  - **		S005807/N00958 S005813/N00959 S005818/N00960
K0005.1	-  - **		S000516/N00086 S000522/N00087 S001103/N00160
K0005.4	NC.LUB.LEV -  - **	NC TYPE OF LUBE LEVEL SW	S004530/N00682 S004532/N00682 S005248/N00851 S005250/N00851
K0005.6	JIGA.SOL1 -  - **	JIG A USE ONE SOL	S002730/N00397
K0005.7	NC.MAG.CTR -  - **	NC TYPE OF MAG CTR SEN	S000158/N00025 S000160/N00025 S005698/N00935 S005700/N00935
K0006.0	A.UNC.SOL -  - **	A AXIS UNCLAMP WHEN SOL OFF	S003444/N00497 S003446/N00497
K0006.4	WK.LIGHT -  - **	WORK LIGHT VALID	S001849/N00280
K0006.5	MOD.CHG -  - **	MODE CHANGE VALID	S003102/N00448

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0006.7 -  - **	SP.KEEP S003269/N00470	SP KEEP RUNNING FOR MODE CHANG	
K0007.0 -  - **	LUB.T S004060/N00599	LUBE ON BY TIMER	
K0007.1 -  - **	LUB.CYON S004054/N00599	LUBE ON BY CYCLE ON	
K0007.2 -  - **	COL.2 S003670/N00532	COOLANT USE TWO PUMP	
K0007.3 -  - **	SP.KEP S003107/N00449	SP KEEP WHEN MODE CHANGE S003121/N00450 S003169/N00458	
K0007.4 -  - **	COLB.M09 S003634/N00526	COOLANT B STOP WHEN M09 S003655/N00529	
K0007.5 -  - **	CTS.VAL S001797/N00268	CTS VALID S003601/N00521 S003607/N00522 S003612/N00523 S003619/N00524 S003626/N00525 S003677/N00533 S003687/N00534 S003737/N00539 S003759/N00543 S003766/N00544 S003768/N00544 S003783/N00547 S003795/N00549 S005457/N00892 S005463/N00893	
K0007.6 -  - **	CAM/QUICK.A S000050/N00008	QUICK ATC OF ARM MAG S000096/N00014 S000127/N00023 S000133/N00023 S000135/N00023 S000142/N00023 S000322/N00056 S000346/N00063 S000430/N00076 S000432/N00076 S001133/N00165 S001251/N00189 S001273/N00191 S001281/N00192 S001286/N00193 S001296/N00194 S001320/N00197 S001324/N00198 S001356/N00202 S004322/N00637 S004327/N00638 S004339/N00639 S004344/N00640 S004494/N00674	
K0007.7 -  - **	ARM.STEP S000480/N00081	ARM RUNNING STEP BY STEP S000490/N00083 S000496/N00084	
K0008.0 -  - **	S002168/N00336 S002212/N00339	S002170/N00336 S002221/N00340	S002191/N00337 S002192/N00337 S002203/N00338 S002230/N00341
K0008.1 -  - **	OIL.MIST S004507/N00676	OIL MIST VALID S004520/N00678	
K0008.2 -  - **	A.OFF.CLP S001685/N00242	A SERVO OFF WHEN CLAMP	
K0008.3 -  - **	S002600/N00397	S002618/N00397 S002699/N00397	S004442/N00657
K0008.4 -  - **	SP.GEAR.CHG S003226/N00464	SP GEAR CHANGE WHEN TAP S003230/N00464 S003277/N00471 S003279/N00471 S003292/N00472 S003294/N00472	
K0008.5 -  - **	S000515/N00086	S000521/N00087 S000527/N00088	
K0008.6 -  - **	A.UNC.PB S003428/N00494	A UNCLAMP WHEN PB ON S003432/N00494	
K0008.7 -  - **	S002479/N00383		
K0009.0 -  - **	S002470/N00382		
K0009.1 -  - **	ZRN.TOG S002141/N00333	ALL ZRN TOGETHER S002484/N00383	



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0009.2	L.DR.VAL 	LEFR DOOR SW VALID	
	S003488/N00505		
K0009.3	DR.REL 	DOOR RELEASE BY M02 & M30	
	S004217/N00624	S004234/N00626	
K0009.4	R.DR.VAL 	RIGHT DOOR SW VALID	
	S001966/N00305	S001971/N00306 S003486/N00505 S004180/N00619	
K0009.5	DOR.MAN 	DOOR RELEASE MANUALLY	
	S004200/N00623		
K0009.6	RP.OVC 	RAPID OVERRIDE CANCEL	
	S004213/N00624		
K0009.7	A.AL.SBK 	DAIR AL DISABLE WHEN SBK	
	S001791/N00268		
K0010.0	SP.5%OV 	5% SP OVERRIDE INT	
	S004614/N00699	S004623/N00700 S004641/N00703 S004650/N00704	
K0010.1	SP.200%OV 	200% OF SP OVERRIDE	
	S004596/N00696	S004603/N00697	
K0010.2	CONV.T 	CHIP CONVEYOR ON BY TIMER	
	S002507/N00386		
K0010.3	F.AIR 	FLASH TYPE OF AIR BLAST	
	S004023/N00591		
K0010.5			
	S005763/N00949		
K0010.6	DR.SW.UNVAL 	DOOR SW UNVALID	
	S004972/N00760		
K0010.7	DR.ALL.MD 	DOOR VALID ALL MODE	
	S001965/N00305	S001972/N00306 S003494/N00505 S004206/N00623	
K0011.0	ZRN.NO 		
	S000387/N00072	S000397/N00073 S000406/N00074 S000412/N00074 S000425/N00075	
	S000469/N00079	S000508/N00085	
		S000405/N00073	
K0011.1	60 	60	
	S000398/N00073	S000408/N00074 S000417/N00075 S000424/N00075 S000440/N00076	
	S000456/N00078	S000504/N00085	
		S000416/N00074	
K0011.2	60-180 	60->180	
	S000409/N00074	S000420/N00075 S000434/N00076 S000439/N00076 S000452/N00077	
	S000457/N00078	S000505/N00085	
		S000428/N00075	
K0011.3	180 	180	
	S000391/N00072	S000421/N00075 S000435/N00076 S000444/N00077 S000451/N00077	
	S000462/N00078	S000467/N00079 S000509/N00085	
		S000443/N00076	
K0011.4	180-0 	180->0	
	S000390/N00072	S000402/N00073 S000436/N00076 S000447/N00077 S000468/N00079	
	S000510/N00085		
		S000455/N00077	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
K0012.0	SP.GR.CON	SP GEAR CONTACTOR VALID	
	S002802/N00400	S002809/N00401 S002839/N00406 S002887/N00410 S002891/N00410	
K0012.1			
	S002531/N00389	S002533/N00389 S002722/N00397	
K0014.0	OPS140	RIGID TAPING REVERSE	
	S005787/N00953		
K0015.1	POS.CK	POSTIVE CHUCK	
	S001472/N00214	S001482/N00215 S001503/N00216 S001527/N00217 S005633/N00926	
K0015.6			
	S003281/N00471	S003282/N00471 S003296/N00472	
K0015.7	TZNR	TURRET NO ZERO RETURN	
	S000019/N00004	S000022/N00004 S000030/N00005 S000033/N00005 S000038/N00006	
	S000307/N00051		
K0016.0			
	S001448/N00212		
K0016.2			
	S004467/N00663		
K0016.4			
	S001862/N00283		
K0017.5			
	S003676/N00533		
K0019.0			
	S005757/N00948		
	S005761/N00948		
K0050.0			
	S001789/N00268		
K0070.7			
	S001901/N00291	S001902/N00291	
K0080.0			
	S005194/N00834		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
X0025	S004669/N00706		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
F0010	M0007 S005264/N00854	M CODE BIT0-BIT7	
F0026	T0007 S000931/N00136 S000940/N00137 S001088/N00157 S001094/N00158	T CODE BIT0-BIT7	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
G0010	S004836/N00732	S004848/N00734	
G0011	S004843/N00733	S004853/N00735	
G0012	S004880/N00739		
G0030	SOV0-7	S004664/N00705	S004693/N00708
G0032	R0108I	SPINDLE SPEED COMMAND 1-8	
	S003336/N00479	S003356/N00481	S003375/N00483
G0033	R912I	SPINDLE SPEED COMMAND 9-12	
	S003345/N00480	S003365/N00482	S003385/N00484

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0587	CUTBIN	CURRENT TOOL NO.(BIN)	
	S000572/N00093	S000580/N00094	
R0666		JOG FEEDRATE AUX	
	S004786/N00725	S004809/N00728 S004863/N00737	
R0675		FOR MEMBRANE PANEL	
	S004779/N00724	S004788/N00725 S004801/N00727	
R0677			
	S004794/N00726	S004800/N00727	
R0679		FOR MEMBRANE PANEL	
	S004802/N00727	S004835/N00732 S004896/N00742 S004903/N00743	
R0680			
	S004842/N00733		
R0681			
	S004749/N00723	S004810/N00728 S004817/N00729 S004824/N00730	
R0683			
	S004750/N00723	S004778/N00724	
R0684	CUTBCD	CURRENT TOOL NO.(BCD)	
	S000581/N00094	S000699/N00108	
R0685	MCODE1	M CODE(BCD)	
	S005265/N00854	S005270/N00855 S005276/N00856 S005282/N00857 S005287/N00858	
	S005292/N00859	S005297/N00860 S005302/N00861 S005307/N00862 S005312/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 S005413/N00883	
	S005418/N00884	S005423/N00885 S005428/N00886 S005433/N00887 S005438/N00888	
	S005443/N00889	S005448/N00890 S005453/N00891 S005459/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	S005525/N00905 S005530/N00906 S005535/N00907 S005540/N00908	
	S005545/N00909	S005550/N00910 S005555/N00911 S005560/N00912 S005565/N00913	
	S005570/N00914	S005575/N00915 S005580/N00916	
R0686	TCODE1	T CODE(BCD)	
	S000932/N00136	S001011/N00147	
R0687	SPTBCD	SPINDLE TOOL NO.(BCD)	
	S000589/N00095	S000685/N00106 S000692/N00107 S000705/N00109 S001010/N00147	
R0689	ROSTBI	STEPS OF ROT(BIN)	
	S000967/N00140	S000974/N00141	
R0690	TPBIN	POT NO. OF T CODE(BIN)	
	S000854/N00124	S000861/N00125 S000941/N00137 S000950/N00138 S000966/N00140	
R0691	TPBCD	POT NO. OF T CODE(BCD)	
	S000951/N00138	S000995/N00144	
R0692	ROTSBC	STEPS OF ROT(BCD)	
	S000975/N00141	S000981/N00142	
R0693	TCTMP	TEMP FOR TOOL CHANGE	
	S001046/N00153	S001065/N00155	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
R0702	S004721/N00716	S004728/N00717	
R0711	S004865/N00737	S004872/N00738	
R0713	S004873/N00738	S004879/N00739	
R0715	S004858/N00736	S004871/N00738	

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
D0000	SP.NO	SPINDLE TOOL NO.	
	S000571/N00093	S000588/N00095	S000852/N00124
	S001056/N00154	S001057/N00154	S001066/N00155
		S000939/N00137	S001045/N00153
		S005593/N00919	S005611/N00922
D0100	CA-CP1	CURRENT POT NO. FOR CTRA(BIN)	
	S000187/N00031	S000553/N00091	S000573/N00093
	S001047/N00153	S001058/N00154	S005598/N00920
	S005613/N00922	S005624/N00924	S005626/N00924
		S005632/N00925	S005713/N00936
D0104	CB-CP1	CURRENT POT NO. FOR CTRB(BIN)	
	S000561/N00092		
D0110	POTNUM	TOTAL POTS	
	S000186/N00031	S000520/N00086	S000526/N00087
	S000964/N00140	S005603/N00921	S000531/N00088
			S000536/N00089
D0112	PTNUM1	TOTAL POT+1(BIN)	
	S000538/N00089	S000545/N00090	S000570/N00093
	S000938/N00137	S001044/N00153	S001055/N00154
	S005610/N00922	S001095/N00158	S005592/N00919
D0114	CUPLAT	CURRENT POT NO. LATCH	
	S000846/N00123	S000860/N00125	
D0120	CA-CP2	CURRENT POT NO. FOR CTRA(BCD)	
	S000554/N00091	S000691/N00107	S000712/N00110
		S000982/N00142	S000996/N00144
D0122	CB-CP2	CURRENT POT NO. FOR CTRB(BCD)	
	S000562/N00092		
D0124	BGTNUM	NUMBERS OF BIG TOOL	
	S000678/N00105	S000706/N00109	S000713/N00110
D0125	PTNUM2	TOTAL POT+1(BCD)	
	S000546/N00090	S000684/N00106	S000698/N00108
D0126	GCHCHK	GEAR SHIFT CHECK	
	S003004/N00426	S003015/N00429	S003017/N00429
		S003024/N00430	
D0160	CELIM1	CE MANUAL SPEED LIMIT 1	
	S003355/N00481		
D0161	CELIM2	CE MANUAL SPEED LIMIT 2	
	S003364/N00482		
D0162	SPLIM1	SP MANUAL SPEED LIMIT 1	
	S003335/N00479		
D0163	SPLIM2	SP MANUAL SPEED LIMIT 2	
	S003344/N00480		
D0164	SP%	SPINDLE INC/DEC %	
	S004595/N00695	S004602/N00696	S004609/N00697
	S004627/N00700	S004629/N00700	S004636/N00701
	S004654/N00704	S004656/N00704	S004663/N00705
		S004618/N00699	S004620/N00699
		S004645/N00703	S004647/N00703
		S004700/N00709	
D0170	WINF28	READING MACHINE COORDINATE	
	S002044/N00317	S002052/N00319	
D0178	ALLPOS	READING ALL AXES COORDINATE	
	S002049/N00318		
D0180	X-MPOS	X AXIS MACHINE COORDINATE	
	S002061/N00320	S002072/N00322	



ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
D0184	Y-MPOS S002083/N00324	Y AXIS MACHINE COORDINATE	
D0188	Z-MPOS S002093/N00326	Z AXIS MACHINE COORDINATE	
D0200	S004670/N00706	S004676/N00707	
D0202	S004677/N00707	S004692/N00708	
D0220	S004722/N00716	S004727/N00717	
D0300	S005830/N00962		
D0320	S005811/N00958	S005824/N00961	
D0324	S005816/N00959		
D0328	S005821/N00960		
D0331	S005831/N00962		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
CTR No.8	S004083/N00602		
CTR No.9	S004092/N00603		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMR No.1	S001098/N00159		
TMR No.2	S004299/N00633		
TMR No.3	S004064/N00599		
TMR No.4	S004070/N00600		
TMR No.5	S003855/N00560		
TMR No.7	S005784/N00952		
TMR No.8	S005657/N00929		
TMR No.9	S002956/N00417		
TMR No.10	S002961/N00418		
TMR No.11	S003419/N00492		
TMR No.12	S000309/N00051		
TMR No.13	S000910/N00132		
TMR No.14	S000303/N00050		
TMR No.15	S001206/N00180		
TMR No.16	S001211/N00181		
TMR No.17	S001216/N00182		
TMR No.18	S001221/N00183		
TMR No.19	S001311/N00196		
TMR No.20	S000060/N00009		
TMR No.21	S000069/N00010		
TMR No.22	S000078/N00011		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMR No.23	S000200/N00033		
TMR No.24	S000223/N00036		
TMR No.25	S000498/N00084		
TMR No.26	S002508/N00386		
TMR No.27	S002512/N00387		
TMR No.28	S004024/N00591		
TMR No.29	S004028/N00592		
TMR No.30	S003749/N00541		
TMR No.31	S003753/N00542		
TMR No.32	S003451/N00498		
TMR No.33	S004562/N00688		
TMR No.34	S004568/N00689		
TMR No.37	S005680/N00932		
TMR No.39	S005732/N00942		
TMR No.40	S005737/N00943		
TMR No.42	S003456/N00499		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMRB No.1	S001634/N00230		
TMRB No.2	S002363/N00358		
TMRB No.3	S003393/N00486		
TMRB No.4	S003481/N00504		
TMRB No.5	S005639/N00927		
TMRB No.6	S003831/N00555		
TMRB No.7	S004424/N00655		
TMRB No.8	S005662/N00930		
TMRB No.9	S004130/N00610		
TMRB No.11	S000485/N00082		
TMRB No.16	S004986/N00764		
TMRB No.17	S004510/N00677		
TMRB No.22	S002422/N00372		
TMRB No.24	S002832/N00405		
TMRB No.29	S002984/N00422		
TMRB No.50	S003679/N00533		
TMRB No.51	S005835/N00963		
TMRB No.60	S004141/N00612		
TMRB No.61	S004152/N00614		
TMRB No.63	S004547/N00686		
TMRB No.77	S003803/N00550		

ADDRESS	SYMBOL	FIRST COMMENT	STEP NO./NET NO.
TMRB No. 87	S003615/N00523		
TMRB No. 88	S003622/N00524		
TMRB No. 89	S003796/N00549		

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
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.SKIP @		PROB.-Z @	PROB.+Z @	PROB.-X @	PROB.+X @	YAE @	XAE @
X0005	!_ATMER @	_OMI_BATTE @	TSV.AL @	IND.LK @	IND.T8 @	SCREW3.OL @	SCREW2.OL @	SCREW1.OL @
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 @	RECLC.OL @	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 @





ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
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 @	@	@	RECYC.MC @	EXT.F.MC @	OIL.KIM.MC @
Y0004	M34.O @	M33.O @	CTS.O @	WK.L.O @	SP.HG.O @	SP.LG.O @	APO.O @	LUBE.O @
Y0005	@ATMCL @	M35.O @	CTS.AIR.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	A.UNCLP.O @	DR.LCK.O @	MPG.LED @	NC.RDY.LP @	FD.HLD.LP @	CY.ST.LP @	X.HOME.LED @	Y.HOME.LED @
Y0008							@	@
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 @	F5 LP @	AIRBLA.LP @	RSTR.LP @	F2.LP @	F1.LP @	OVC.LP @	BDT.LP @
Y0022	A.ZRN.LP @	F3 LP @	AIR.FLU.LP @	DRN.LP @	DOR.LP @	F4 LP @	CTS.LP @	M01.LP @
Y0023	Y.LP @	SP.CCW.LP @	OT.LP	Z.LP @	M19.LP @	F3.LP	COL.LP @	SBK.LP @
Y0045				@	@		@	

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
Y0046		@						
Y0061							@	
Y0080								@
Y1002					>GUN @	>CLNA @		
Y1003				>ATLM	>JGCLP	>JGUCL		>OILMS @
Y1004	\$SPL	>INDEX @						
Y1005	@	>PUMP1 @	>FIL @					
Y1006						>LG	>HG	>ZBRK @

ADDRESS	BIT NUMBER							BYTE	
	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	-	-	-	-	-	-	-	-	@
F0011 M0815	-	-	-	-	-	-	-	-	-
F0026 T0007	-	-	-	-	-	-	-	-	@
F0027 T0815	-	-	-	-	-	-	-	-	-
F0034							GR20 @	GR10 @	
F0045	ORARA @				SARA @	SDTA @	SSTA @	SALM1 @	
F0046						RCHPA @			
F0054								UO0 @	
F0064								TLCH @	
F0065							@	@	
F0072	AUX.HYDR @	@	@	@	@	DNCSW	OVCSW	*ABSSW	

ADDRESS	BIT NUMBER								BYTE
	7	6	5	4	3	2	1	0	
F0094					ZP4 @	ZPZ @	ZP2 @	ZP1 @	
F0096					ZP24 @	ZP2Z @	ZP2Y @	ZP2X @	
F0102					@	@	MV2 @	MV1 @	
F0149							@		

ADDRESS	BIT NUMBER								BYTE
	7	6	5	4	3	2	1	0	
G0004					FIN @				
G0005		AFL @							
G0006				OVC @		*ABSM		SRN @	
G0007						ST @			
G0008	ERS @	RRW	*SPI @	*ESPI @				*IT @	
G0010	*JV7 -	*JV6 -	*JV5 -	*JV4 -	*JV3 -	*JV2 -	*JV1 -	*JV0 -	@
G0011	*JV15 -	*JV14 -	*JV13 -	*JV12 -	*JV11 -	*JV10 -	*JV9 -	*JV8 -	@
G0012	*FV7 -	*FV6 -	*FV5 -	*FV4 -	*FV3 -	*FV2 -	*FV1 -	*FV0-7 -	@
G0014							ROV2 @	ROV1 @	
G0018						HS1C @	HS1B @	HS1A @	
G0019	RT @		MP2 @	MP1 @					
G0029		*SSTP @	SOR @	SAR @					
G0030 SOV0-7	SOV7 -	SOV6 -	SOV5 -	SOV4 -	SOV3 -	SOV2 -	SOV1 -	SOV0 -	@
G0031	-	-	-	-	-	-	-	-	-
G0032 R0108I	-	-	-	-	-	-	-	-	@
G0033 R912I	SIND -	-	-	-	-	-	-	-	@
G0041						@	@	@	

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
G0043	ZRN @		DNC @			MD4 @	MD2 @	MD1 @
G0044							MLK @	BDT1 @
G0046	DRN @	KEY4	KEY3 @	KEY2 @	KEY1 @		SBK @	
G0054								@
G0055			#1013 @	UI12	UI11	UI10	UI9	
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 @	+Z @	+J2 @	+J1 @
G0102					-4 @	-Z @	-J2 @	-J1 @
G0106					MIR4 @		MIRY @	MIRX @
G0108						MLKZ @		
G0124				@	@			
G0126					SVF4 @	SVFZ @	SVFY @	SVFX @

ADDRESS	BIT NUMBER								BYTE
	7	6	5	4	3	2	1	0	
G0130					*IT4 @	*ITZ @	*IT2 @	*IT1 @	

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
R0000	T-1	T0	T>T12	TNH	AHOK	ZHOK	XHOK	LOGIC1 @
R0410				@	@	@	@	@
R0500	M06 @	M05 @	M04 @	M03 @	M02 @	M01 @	M00 @	L1 @
R0501	M14 @	M13 @			M10 @	M09 @	M08 @	M07 @
R0502	@	@	M20 @	M19 @			M16 @	M15 @
R0503		@		M27 @	M26 @	M25 @	@	@
R0504	M38.A @	M37.A @	M36.A @	M35.A @	M34.A @	M33.A @	@	@
R0505	M46.A @	M45.A @					M40A @	M39A @
R0506	M54.A @			M51.A @	M50.A @		M48.A @	
R0507		M61.A @	M60.A @	M59.A	M58.A	M57.A @	M56.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 @
R0510	@	@						
R0511	M94.A @					@	@	
R0512	@	SFIN @	M_FIN @					M95.A @
R0513	AUTOLH @	FLTRG @	FLASH @	FLTMR @	ZRNLH	ZRNFIN @	MANUAL @	JOG @
R0515	STOP @							



ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
R0516	LGCH1 @	ST+ @	JFSPOK	HGCH @	GCHSTB @	F.SW+	F.SW+A	RDY1 @
R0517	HGCH1 @	LGCH @	GRCHG @	GRLow @	GRHIGH @	O.S @	O.SA @	L1DL @
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 @

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
R0533	AMOK @	AM0+A	AM0+	AM0	AMIDK @	AMID+A	AMID+	AMIDDL @
R0534	RTO @		SHERR @	TSRH+A @	TSRH+ @	TSRHON @	TF1DL @	TF1 @
R0535		TCOSP1 @	TCOSP @	TCOIN1 @	TCOIN @	TDECK @	TDEC @	MGROT @
R0536	A60 @	RDY2 @	MG-ERR @	MGCKDL @	MOVER2 @	MOVER1 @	MGACCW @	MGACW @
R0537	TUCLAU @	JIGUCL	JGBCLK	A180-A @	A180- @	A180 @	A60-A @	A60- @
R0538	ATCOK @	M6ENBK @	M06+A @	M06+ @	M06ENB @		MAGON @	ATUCL @
R0539	ATCSTB @	TUCLDL @	TCLDL @	PTDNDL @	PTUPDL @	ARM0DL @	TCHP @	ATCOK1 @
R0540	A5.SP.CL P @	SPBLDL @	SPBLWK @	A4.ARM.1 80 @	A3.SP.UN CLP @	PRECLP @	A2.ARM.6 0 @	A1.POT.D OWN @
R0541	A.STEP.6 @	A.STEP.5 @	A.STEP.4 @	A.STEP.3 @	A.STEP.2 @	A.STEP.1 @	A7.POT.U P @	A6.ARM.- 60 @
R0542	M74A @	M74OK @	TAIL.H @	M72OK @	SP.UNCLP @	SP-CLP @	ATFIN1 @	A.STEP.F IN @
R0543	A4-1 @	MAGINP @	M74AR @	ASEQ3 @	ASEQ2 @	ASEQ1 @	M76A @	M76OK @
R0544	ARJGDL @	ARJGPA @	ARJGSP @	ATCITL @	2NDREF @	ATCAL1 @	JZ.SEL @	JX.SEL @
R0545	M6TMPA @	ATC+K @	MGON2 @	M6TMP+ @	M19.FIN @			
R0546	ARMJOG @	F0+ @	F0+A @	0 @	ARMSPA @	AMIDA @	ARM0A @	M95KEP @
R0547		AM60+ @	AM60+A @	ARM0+ @	ARM0+A @		L1DL1 @	SPON @
R0548	M95-A @	M95- @					M95JOG @	
R0549					ARM60 @	ARM0 @		M95TCH @





ADDRESS	BIT NUMBER								BYTE
	7	6	5	4	3	2	1	0	
R0588 SPDS	-	-	-	-	-	-	-	-	-
R0589						\$"ARAL @	\$"CLAL @	\$"SPAL @	-
R0590				\$LOG1	\$"NCRD		\$"PGSP	\$"NCAL @	
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 @	@
R0667	J10000 -	\$J7200 -	\$J5200 -	\$J3700 -	\$J2700 -	\$J2000 -	\$J1400 -	\$J1000 -	-
R0668			*FV100 @	G12.4A	G12.3A	G12.2A	G12.1A	G10.6A	
R0669	SOV120	SOV110	SOV100	DECACT @	INCACT @	ERROP @	\$]DEC+ @	\$]INC+ @	
R0670	@			\$J21	\$J20	\$J19	\$J18	\$J17	
R0673			MDK2 @	MDK1 @	MDK,EN @	\$MOD4' @	\$MOD2' @	\$MOD1' @	





ADDRESS	BIT NUMBER								BYTE
	7	6	5	4	3	2	1	0	
R0712	-	-	-	-	-	-	-	-	-
R0713	-	-	-	-	-	-	-	-	@
R0715	-	-	-	-	-	-	-	-	@
R0750					@	@	@	@	
R0800			OVC.P2	OVC.P			SRN.P2	SRN.P	
R0801		@	@	@	@	@	@	@	
R0810							@	@	@
R0940	@	@							
R1001					@	@		@	
R1002	@	@							
R1100	@	@	@	@	@	@	@	@	
R1300							@	@	
R1301							@	@	
R1551				@					
R9000							FUNOP1	FUNOP0	
							@	@	



ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
A0000	AL1007 @	AL_1006 @	AL_1005 @	AL_1004 @	AL_1003 @	AL_1002	AL_1001 @	AL_1000 @
A0001	-XOTAL	AL_1016 @	AL_1015 @	AL_1014 @	AL_1013 @	AL_1012 @	AL_1011 @	AL_1010 @
A0002	AL_1027 @	AL_1026 @	AL_1025 @	AL_1024 @	AL_1023 @	AL_1022 @	AL_1021 @	AL_1020 @
A0003	AL1037 @	AL1370 @	AL_1035 @	1028	AL_1033 @	AL_1032 @	CHNCAL	AL_1030 @
A0004	AL_1047 @			AL1620 @	AL_1043 @	AL1640 @	AL_1041 @	AL1040 @
A0005	AL1057 @	AL1056 @	AL_1055 @	AL_1054 @	AL_1053 @	AL_1052 @	AL1660	AL_1050 @
A0006	AL1067 @	AL1066 @	AL1065 @	AL1064 @	AL1063 @	AL1062 @	AL1061 @	AL1060 @
A0007	AL1588	AL1587	AL1586	AL1074 @	AL1073 @	AL1072 @	AL1071 @	AL1070 @
A0008			AL_1085 @	AL_1084 @	AL1592	A1082 @		AL1080 @
A0010	OP2007 @	OP2006 @	OP____AL_ 2005 @	OP____AL_ 2004 @	OP____AL_ 2003 @	OP2002 @	OP____AL_ 2001 @	OP____AL_ 2000 @
A0011				OP2014 @			OP2011 @	OP2010 @

ADDRESS	BIT NUMBER							BYTE
	7	6	5	4	3	2	1	
K0000	M02.APO @	SP.GR @		COL.M01 @	Z.ZRN1 @	ALL.ZRN @	A.ZRN @	ATC.RY @
K0001	LUB.PRE @	SP.CLP.K P @	SP.COL.V AL @	ZZRN2.AT C @	POT.KEP @	QUICK.UN CL @	ZRN2.ATC @	1.LP @
K0002	ZRN.-X @	SP.OVR @	A.UNCLP @	TOL.LIFE @	DOR.INT @	M19.ATC @	ZINT.ATC @	MAG.IN.P OS @
K0003	OVR.DOR @	Y7.6.M27 @	OIL.SKIM @	MAG.POS1 @	PTUP/PTD N.STB @		NO.ARM.S EN @	MAG.DEC @
K0004	@							
K0005	NC.MAG.C TR @	JIGA.SOL 1 @	JIG.CLP. M @	NC.LUB.L EV @		JIGB.SOL 2 @		MDI.JIGB @
K0006	SP.KEEP @	ABS.DIS @	MOD.CHG @	WK.LIGHT @	JIG.EMG @	JIG.SEN @	JIG.FOT. SW @	A.UNC.SO L @
K0007	ARM.STEP @	CAM/QUIC K.A @	CTS.VAL @	COLB.M09 @	SP.KEP @	COL.2 @	LUB.CYON @	LUB.T @
K0008	@	A.UNC.PB @	@	SP.GEAR. CHG @	@	A.OFF.CL P @	OIL.MIST @	@
K0009	A.AL.SBK @	RP.OVC @	DOR.MAN @	R.DR.VAL @	DR.REL @	L.DR.VAL @	ZRN.TOG @	@
K0010	DR.ALL.M D @	DR.SW.UN VAL @	@	Y7.6.HYD @	F.AIR @	CONV.T @	SP.200%O V @	SP.5%OV @
K0011	JGB.CLL @		JGCLL @	180-0 @	180 @	60-180 @	60 @	ZRN.NO @
K0012							@	SP.GR.CO N @
K0014	OPS147	OPS146	OPS145	OPS144	OPS143	OPS142	OPS141	OPS140 @
K0015	TZNR @	@	TZRN.F @				POS.CK @	NEG.CK @
K0016				@		@		@
K0017			@					