KENT USA®

Since 1979

CNC Milling Machine
Model: S-2500
Operation Manual

1 UNCRATING AND LIFTING INFORMATION :

1-1 UNCRATING

Carefully remove the protective carting and skid so that machine and parts are not marred , scratched or damaged. In the event of any damage in transit, notify our representative at once as well as the transportation company, who made the final delivery.

1-2 By forklift

1. The crane must be able to bear the load of 150% of the machine.
2. Crane can be used to move machine with packing. When use crane to move Machine without packing , please follow the below steps :
   2-1. If there is guarding (table guard, rear splash guard, chip pan, full enclosure guarding), please remove the guarding fires.
   2-2. Use the chain, wire or rope to lift the machine with the steel bars passing through the reserved holes on the machine body.
   2-3. please make sure the chain. Wire, rope and the steel bars are strong enough to withstand the machine gravity.
   3. Adjust the sling or any other lifting material to the right position and be aware of gravity center of the machine.
   4. Have someone help to instruct the movement when moving machine to assure security.

2. INSTALLATION :

During installation please keep machine from vibration area, heat sources and polluted surrounding. Otherwise accuracy maintained, life of electrical components, CNC control will be influenced or easily damaged…
machine foundation should be flat and concrete constructed. A careless installation will result in inaccurate operation.

The attached machine mounts or any other good quality machine mounts should be seated adequately on the foundation. After machine installed with the machine mounts, make certain that the adjusting bolts are well situated on the mounts for freely adjustment of leveling.

During leveling , make sure that machine table positional in the middle of X&Y axes. After leveling adjustment, lock the bolt with nuts.

With in 3 months after the first time leveling adjustment , you are suggested to perform another adjustment , ensure machine is on perfect leveling.

3. SAFETY RULES :

3-1 GENERAL SAFETY RULES

1. Read and understand instruction of this manual entirely before operate machine.
2. Always wear approved safety goggles/face shields when using the machine.
3. Make sure that machine is properly grounded.
4. Within the working area, there must be enough illumination.
5. Before machine in operation, remove ties, rings, watches, other jewelry, and roll your sleeves up to about elbows. Remove loose clothing and confine long hair.
6. keep floor around this machine tiny and free of scrap material, oil and grease.
7. keep machine guards in place at all time when the machine is in use. If it is removed for maintenance purpose, pay extra attention and place it back Afterwards.
8. Do not over reach, Keep a balance distance all the time so that you do not fall or Lean against running spindle or some other moving parts.
9. Whenever make any adjustment / maintenance with machine, power source must be unplugged.
10. Use right tools. Do not force a tool / attachment to perform a job that was not designed for.
11. Replace warning label if it is become obscured or removed.
12. Make sure main switch is in “off” : position while connecting machine to the power supply.
13. Pay your attention / concentration while working, looking around, carrying, on a Conversation, or : Horse-play : are careless acts which might result in serious injury.
14. Keep visitors in a safe distance from working area.
15. Use recommended accessories and parts.
16. Improper accessories may be hazardous.
17. From a good habit of checking to see keys and wrenches are removed before turning on this machine.

18. It is prohibited to touch switches with wet hands in order to prevent shorts circuit and electric shock from happening.
19. Unqualified person is prohibited to operate , repair maintenance on the machine. When replacing fuses, you must pay attention to the fuse specification.
20. Before reading the instruction manual thoroughly and understanding all the button Functions and machine characteristics, it is prohibited to operate machine along, An inexperienced operator must be accompanied with an experienced person.
21. It is prohibited to operate against the standard procedure or to touch buttons and switches randomly.
22. When a machining process requires two or more operators to operate, each step must be clarified. If there is any doubt, never to continue.
23. Transportation or installation of the machine must be done according to the Procedure stipulated in this manual.
24. Read and understand warnings that posted on the machine.
25. Failure to comply with any of these warnings cause serious injury.

3-2 Machine safety rules

Machine equipped with safety devices to prevent operator as well as visitors and equipment from damage. Anyone who wants to operate, maintain, or repair the machine should read this manual first.

1. It is prohibited for any personnel other than operator or professional to enter the marked danger zone of the machine especially children.
2. It is prohibited to operate machine before making sure the safety guard is closed.
3. Before starting machine , make sure there is no personnel and object in the danger Zone.

4. STARTING OF THE MACHINE

4-1. Before switching On

1. Use adequate cable and wiring protected with local regulations.
2. Make sure the correct voltage and capacity have been connected well to machine.
3. Be sure to close well door or cover to avoid water or dust into the cabinet.
4. Be sure every oil level, as coolant oil is adequate.
5. Turn on the feeder switch at the factory and the machine main circuit breaker.

4-2 After switching On

1. Check and see the ready lamp should be lit when turning on the power.
2. Make sure there is no unusual be noise at the motor and other parts.
3. When first starting machine , after unpacking , check the coolant pump If running at correct direction.
4. When first starting, the machine each sliding parts must be lubricated with Enough lubricant.
5. Check safety guard and safety device for proper operation.

4-3 Machine in operation

1. Never check / touch a turning spindle or work piece with unprotected hands.
2. Never check / touch a spindle nose with unprotected hands. Use brush to clean it.
3. Never open the safety guards while machine is running.

4-4. Completion of a job

Before leaving machine at the end of the shift, turn off machine main circuit breaker and factory feeder switch in order.

5. MAINTENANCE

The electrical maintenance must be managed by qualified person or someone who competent to do the job.

Fuse , cable, ……..etc. manufactured by qualified / testified manufactured.

5-1. Air Regulatory , filter and lubricator unit

This unit is for controlling the input air pressure and the quality of air.

It will filtrate the moisture of the input air mixed the lubricant to ensure the pneumatic driving units and spindle are protected and free from rust.

The daily check for filter and lubricator is necessary. The low density lubricant or equivalent to ISO VG32 is recommended for the lubricator.

5-2. Lubrication

Machine equipped with an automatic lubrication pump for all moving parts.

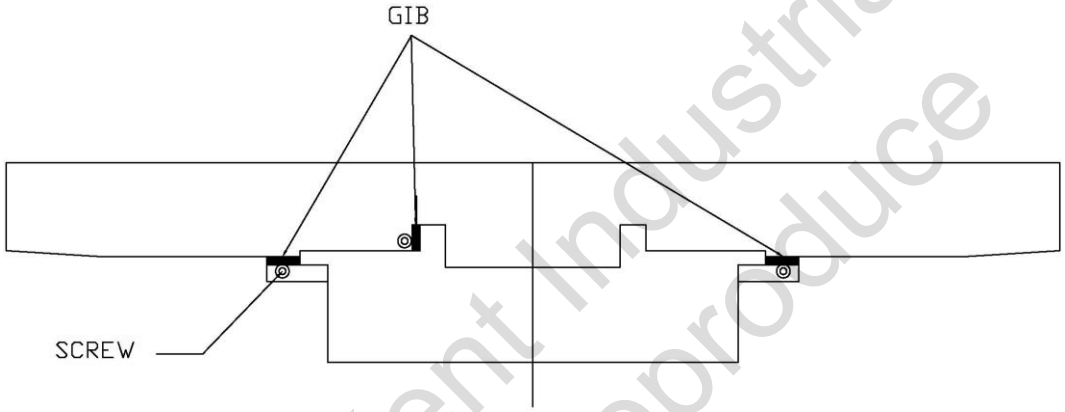
Periodically the pump works to output a certain amount of oil.

To maintain the machine.

6. ADJUSTMENT

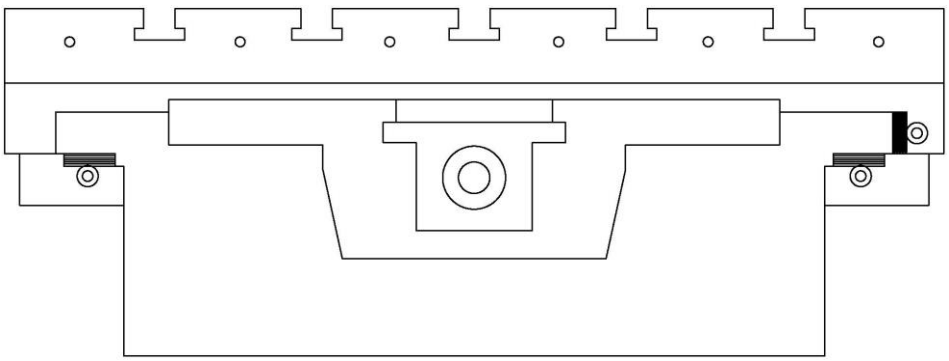
6-1 Front /Rear gibs (As drawing “A”)

1. Take off the chip wipers.
2. There are 3 gibs on the saddle, One located at the outside of the box slide way is for adjusting the clearance of right / left direction. The other 2 gibs underneath the box slide way are for adjusting the clearance of fitness.
3. Release the screws at the rear of the gibs which must be adjusting and Turn the screws in front of gibs clockwise for adjusting to a proper clearance.



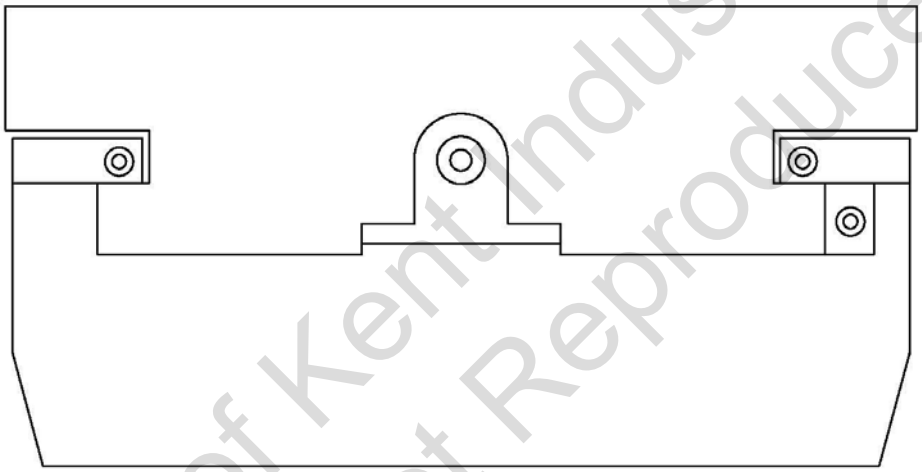
6-2 Right / Left gibs (As drawing “B”)

1. There are 2 independent gibs on the working table. There are 2 units in front of the gibs. Release the rear nut first and turn the front nut forward for adjusting the gibs. Turn the screw in front of the gib clockwise for forward and counter-clockwise for backward, Before adjusting the gib, first release the socket head cap screw on the saddle, which is used to lock the gib in position. After adjusting the gib, please lock again this socket head cap screw.



6-3 Headstock support gibs (As drawing “C”)

1. Take off the chip wiper
2. There are 3 gibs connected with head stock support and the column.
   One by outside of the box slide way is for adjusting the right / left backlash of the heads tock support. The other 3 gibs located underneath of the box slide way are for adjusting the clearance of front / rear inclination.
3. Release the screws at the lower end the gib which must be adjusting
   Turn the screws at the top end of gib clockwise for forward.



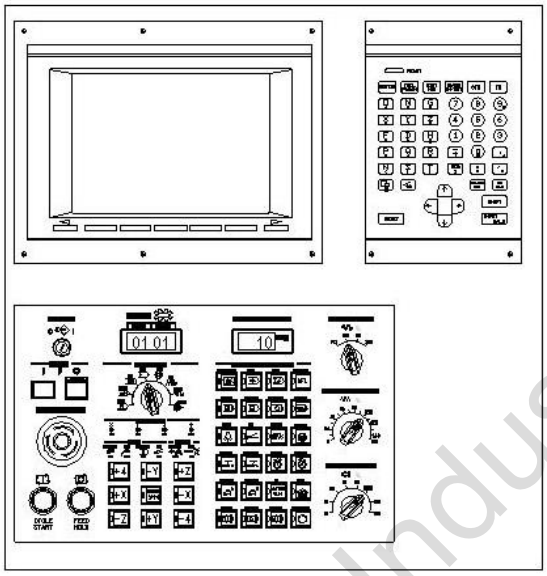
VERTICAL MACHINING CENTER
Model: S-2000 (FANUC 0i /32i)

OPERATION MANUAL

S-2000 Operation Manual
Content

Chapter 1 Description of Operating Box

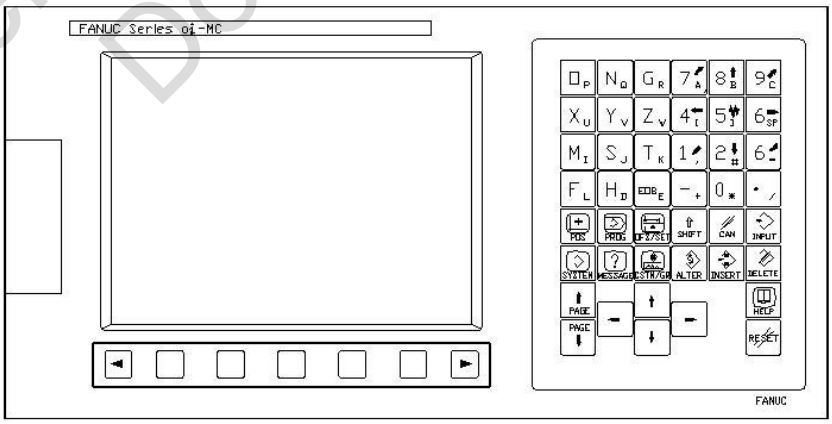
1-1. Description of Operating Box



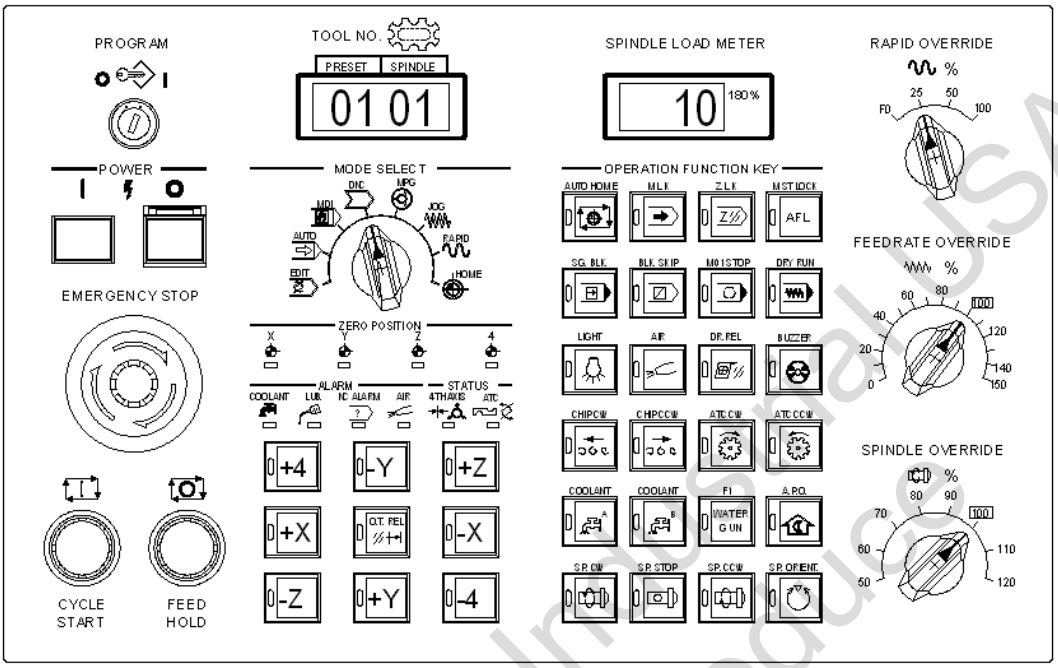
1-2. CNC Control Panel :

The operating method of this panel please refer to each controller's manual.

(1) FANUC Serial :

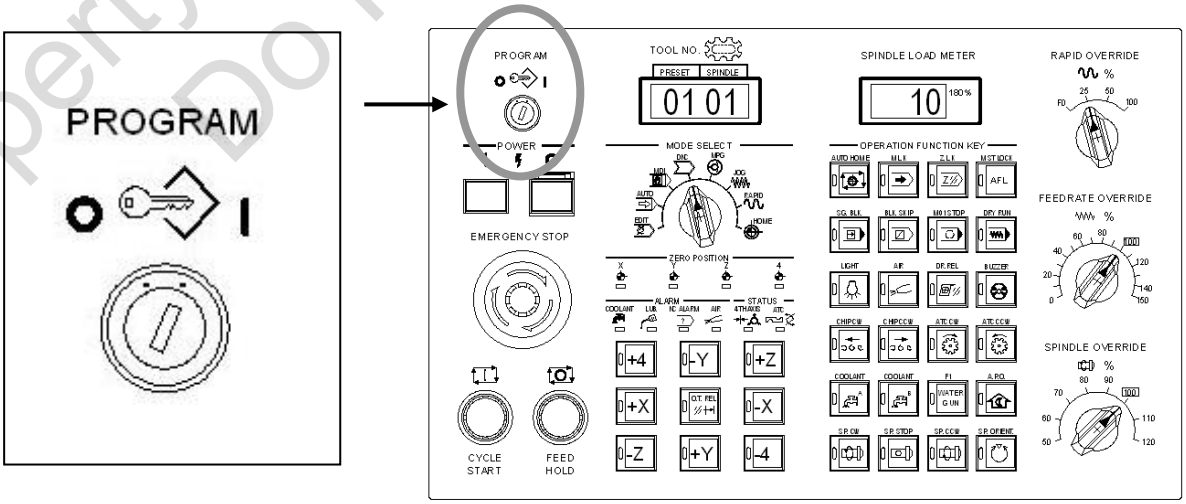


1-3. Operating Panel

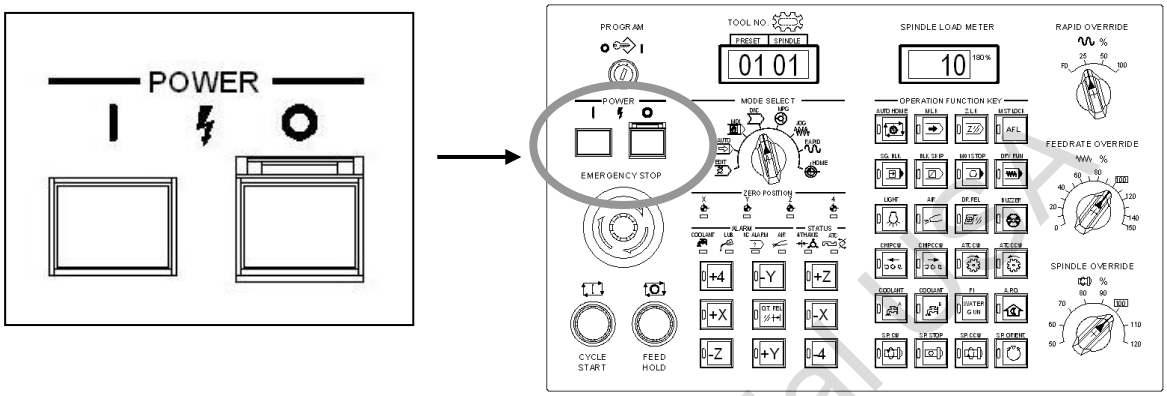


1-4. PROGRAM KEY:

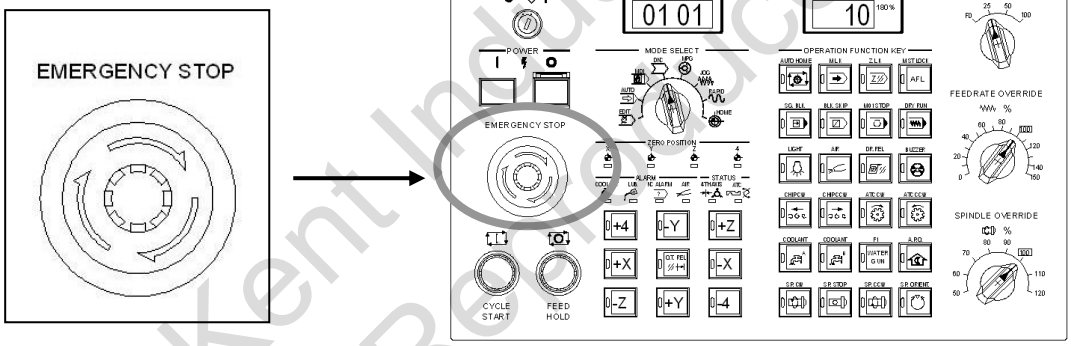
When the key is locked, the program cannot be edited or modified.



1-5. Power Switch (Power on/off): Turn on and off the power

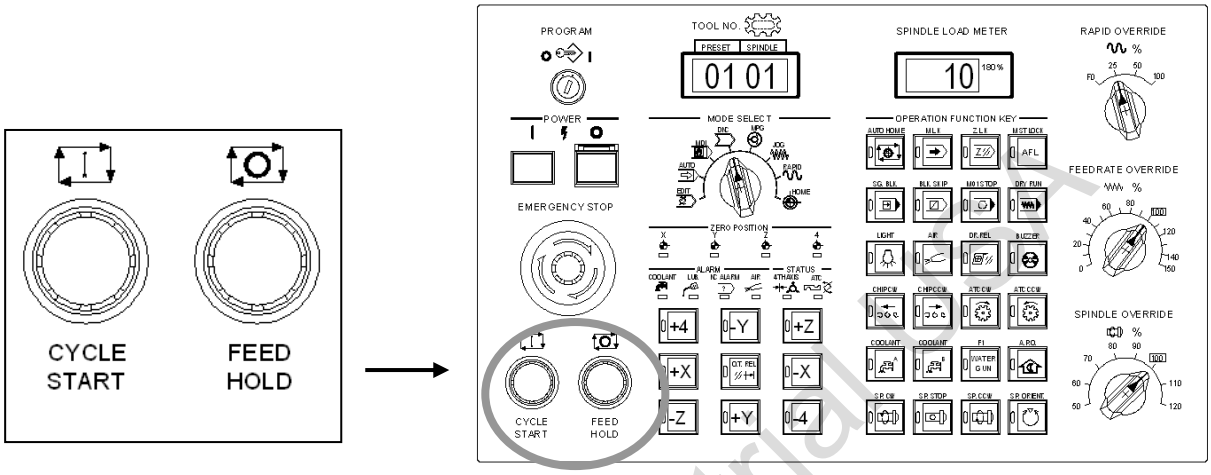


1-6. Emergency Stop Switch:



1. It is used under emergency condition, e.g., the machine run improperly may cause or endanger the operator or machine itself.
2. After pressing the button, every motor will be cut off and stop any\ operation immediately.
3. After pressing the button:
   A. The three axes is stopped (including 4th axis if it is existed)
   B. The spindle is stopped rotating.
   C. The controller's screen displays the alarm massage.
   D. The rotating alarm light is enabled.
   E. The ATC is stopped changing the tool.
4. Release method: it could be released by turning clockwise but some condition should be noted:
   A. It could be released after the alarming situation is be removed
   B. It could be released after every command and actions were cancelled and re-start the machine.
   C. While it is changing the tool, the button is pushed. It could be released after the tool is return to the original position by manual.

1-7 Cycle Start / Feed Hold Switch:



A. Cycle Start Switch: As it is ON under auto mode (AUTO, MDI), the machine will execute the program

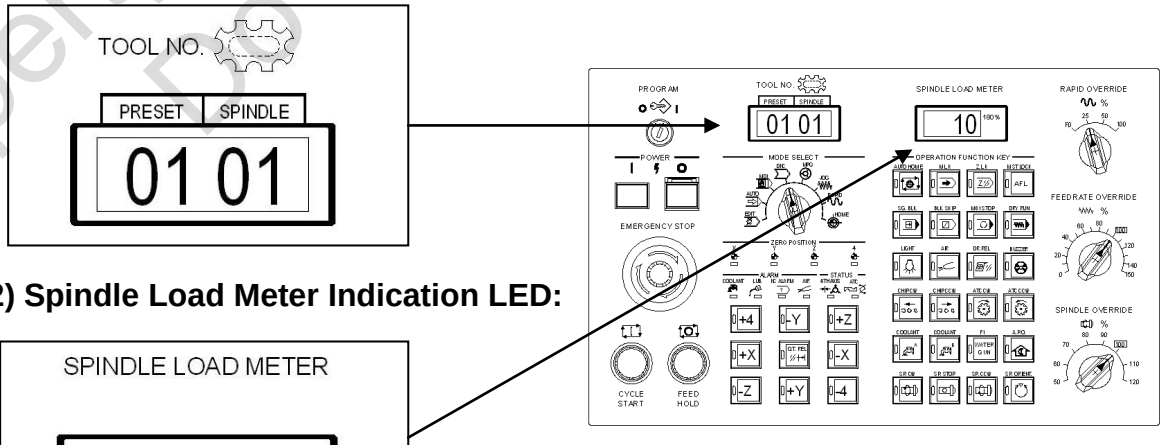
B. Feed Hold Switch:

1.Under the auto mode, the executing program will be paused when the switch is ON.

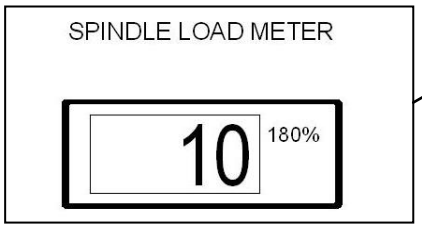
2. The program will be restart when pressing the Cycle Start Switch.

1-8. A.T.C. Tool NO. / Spindle Load Meter Indication LED:

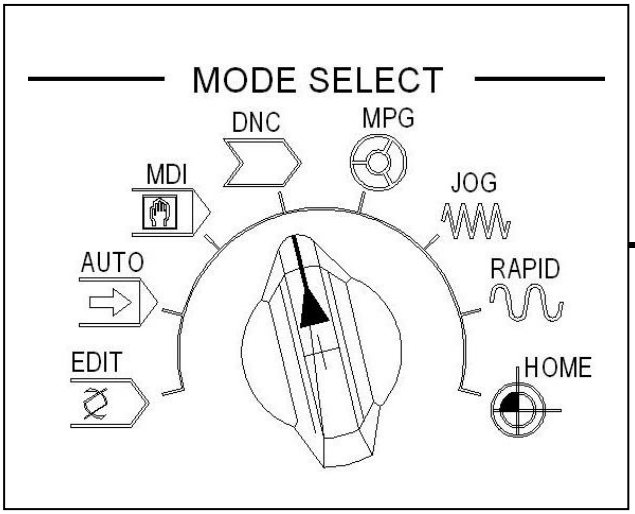
(1). A.T.C. Tool NO. / Spindle Load Meter Indication LED:

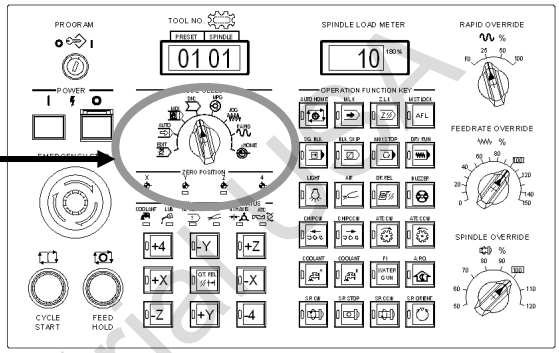


(2) Spindle Load Meter Indication LED:



1-9 Mode Select Switch:





1. **Edit (Prog**ram Editing Mode):
    1. Create an editing program.
    2. Editing, modifying, adding, and deleting original program.
    3. This is only for editing, not for executing.

2. **AUTO** (Program Executing Mode): Auto-executing program

3. **MDI** (Manual Data Input Mode):

4. **DNC** (DNC Mode):

5. **M.P.G.** (Hand wheel Mode):

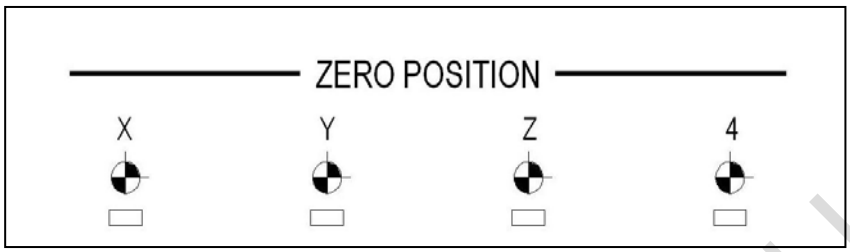
6. **JOG** (Jog Mode):

7. **RAPID** (RAPID Mode):

8. **HOME** (Zero Return Mode):

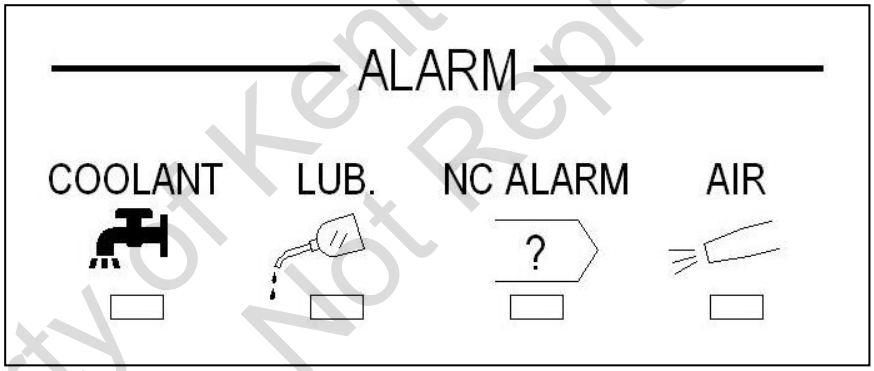
1-10 Indication Lamp:

(1) Axis Zero position Indication Lamp:



X –HOME: As it is on, the X-axis returns to the mechanical zero point.
Y –HOME: As it is on, the Y-axis returns to the mechanical zero point.
Z –HOME: As it is on, the Z-axis returns to the mechanical zero point.
4TH –HOME: As it is on, the 4th-axis returns to the mechanical zero point.

(2) ALARM MESSAGE Indication Lamp:



A. COOLANT (COOLANT ALARM) :

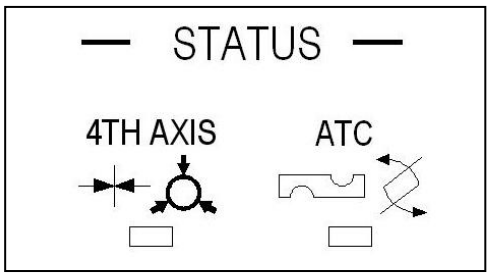
B. LUB (LUB FAULT) : As it is on, the lubrication oil is failure. But the machine will stop when the program is ended.

CAUTION : Please add the lubrication oil immediately in order to protect the slide way and mechanical parts.

C. NC ALARM: When it is ON, it means the control has alarm Occur, please check the alarm message in controller.

D. AIR (LOW PRESSURE) : As it is on, the air pressure is failure.

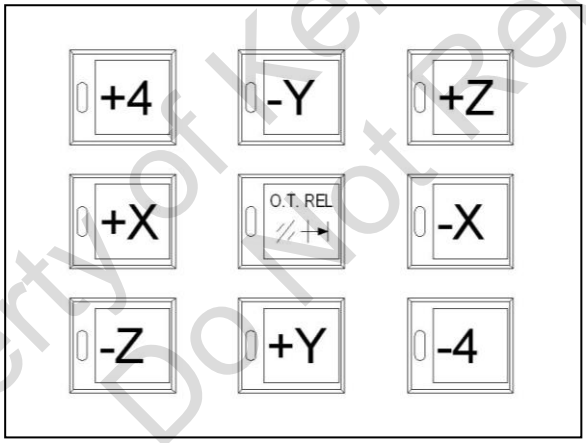
(3). STATUA Indication Lamp:



A. 4TH AXIS (4TH AXIS): When 4TH AXIS is clamp the green LED will “ON”.
When 4TH AXIS is unclamping the green LED will “OFF”.

B. ATC: When tool changer is OK. The green LED will “ON”.
During tool changer the green LED will flash.
When tool changer is alarm the green LED will “OFF”.

1-11. AXIS SELECT:



O.T. Release: When the axis is over-travel, the axis will not move forward in order to protect the machine.

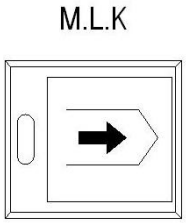
Release method: 1. Keep pressing the button.
2. Use the hand wheel or jog switch to return into the travel at the same time.
3. Release the button.
4. Press the “**RESET**” button to remove the over-travel.

1-12. OPERATION FUNCTION SWITCH:

(1). AUTO Home (AUTO ZRN SWITCH):

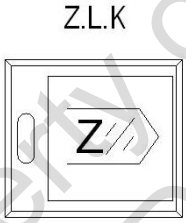
When it is ON under ZRN mode, the Z-axis will return to zero firstly, then the others' will return to zero at the same time.

(2). MLK (MACHINE LOCK):



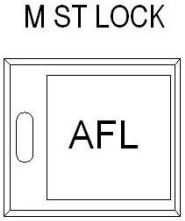
1. In the manual and auto mode, when the switch is ON, the position is run normally by the program, and each axes will not have any movement.
2. Under the auto mode, when the switch is ON, the M, S, T command will be executed normally.

(3). ZLK (Z- AXIS LOCK):



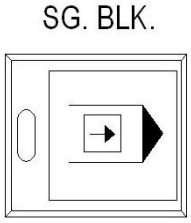
As it is ON, the Z-axis is locked (The position is run by program). The rest of axes will be executed normally.

(4). M/S/T LOCK:



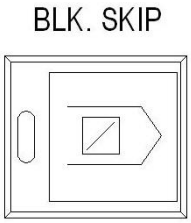
When it is on, the controller will not execute the M code, S code, and T code. It is useful when program test running.

(5). SG. BLK (Single Block):



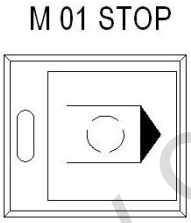
1. As it is ON, it will execute one single block when pressing the "**CYCLE START**" button each time.
2. As it is OFF, it will proceed the program in normal condition.

(6). BLK Skip (Block Skip)



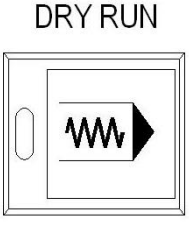
When it is on, the program contained the slash "/" will ignore the specified block.

(7). M01 STOP (OPTION STOP):



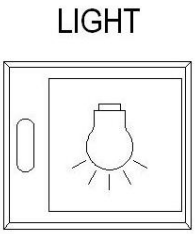
1. When "on" :
   When executing a single block including M01 (selected stop) command, the program will stop at the single block. If you want to proceed again, please press "cycle start" button
2. When "off":
   When executing a single block including M01, the program won't stop

(8). DRN RUN:

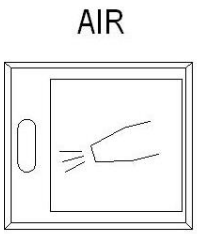


1. As it is ON, the F (speed) is invalid. The feed rate is controlled by Feed override switch.
2. As it is ON, the command "tapping fixing cycle" is invlid.

(9). LIGHT (LIGHT SWITCH):

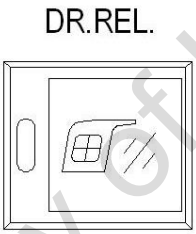


(10). AIR (AIR BLOW SWITCH):

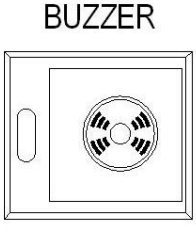


When it is ON, the work piece air blow is on.
It can be turn on automatically by M code.

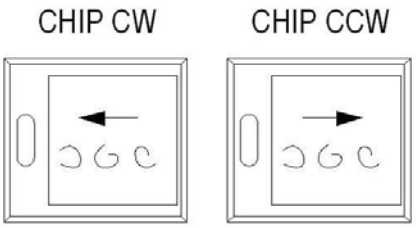
(11). DR. DTL (DOOR SWITCH):



(12). BUZZER (BUZZER SWITCH): (OPTION)

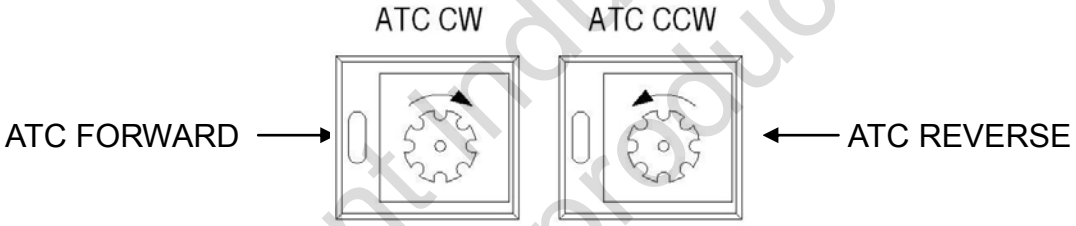


(13). CHIP CONVEYOR FORWARD / REVERSE SWITCH:



When program running, the chip conveyer will on automatically. It can be stop manually. when the chip is pilled up, the “BACK” bottom can reverse the chip conveyer in order to avoid jam.

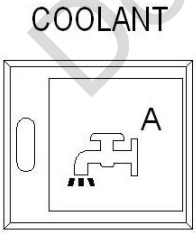
(14). ATC CW / CCW (ATC FORWARD / REVERSE SWITCH):



Under the manual mode, the ATC will rotate in clockwise when it is ON.

1. The ATC will rotate one tool position when press each time.
2. The ATC will rotate continuously if the switch is not released.

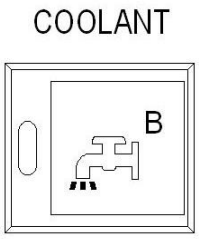
(15). COOLANT A (COOLANT SWITCH):



1 Under manual mode (JOG, ZRN, Hx1, Hx10, Hx100), the coolant pump is enabled when it is ON. Press the switch again to disable the pump.

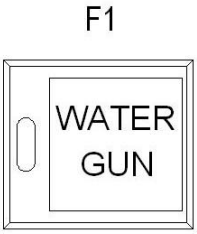
2. Under Auto mode (MDI, AUTO), when the switch is released, the command M08 will start the coolant pump. The command M09 will stop the coolant pump.

(16). COOLANT B (CHIP FLUSHING SWITCH):

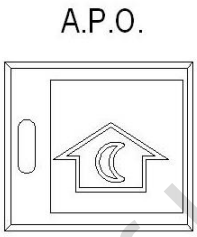


When it is ON, the chip flushing system will on. The coolant will come out from the back of the chip pan.

(17). F1 (WATER GUN SWITCH):



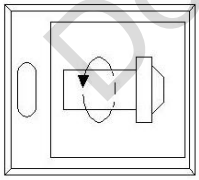
(18). APO (AUTO POWER OFF SWITCH):



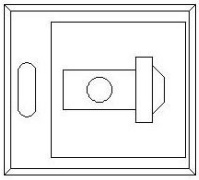
When it is ON, the machine's power will cut off automatically after a specified time, after the program execute the M30 function.

(19). SP CW / SP STOP/ SP CCW (SPINDLE FORWARD / STOP / REVERSE):

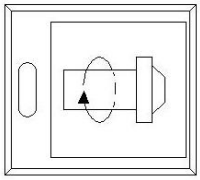
FORWARD



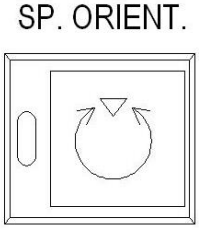
STOP



REVERSE

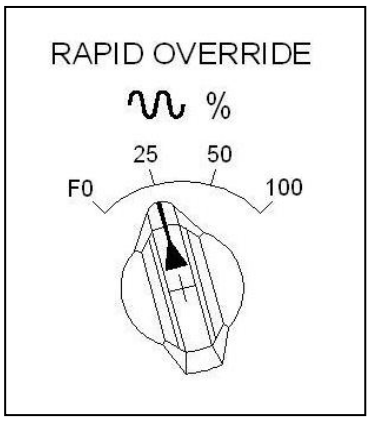


(20). SP ORIENT (SPINDLE ORINET SWITCH):



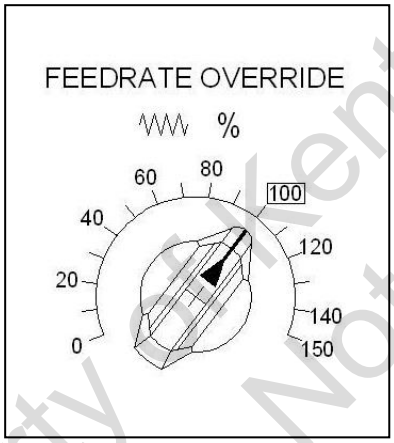
1-13. Speed Override Switch

(1). Rapid Override Switch:



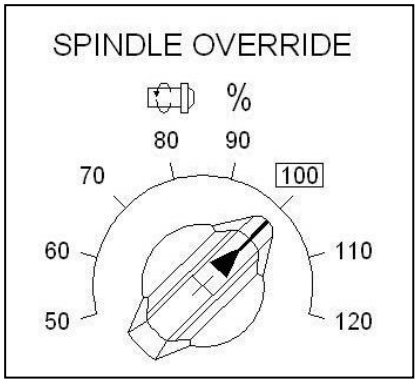
Displacement%	Metric (mm)	Inch (inch)
Low	500.0	20.0
25	5000.0	200.0
50	10000.0	250.0
100	20000.0	787.0

(2). Feed Override Switch:

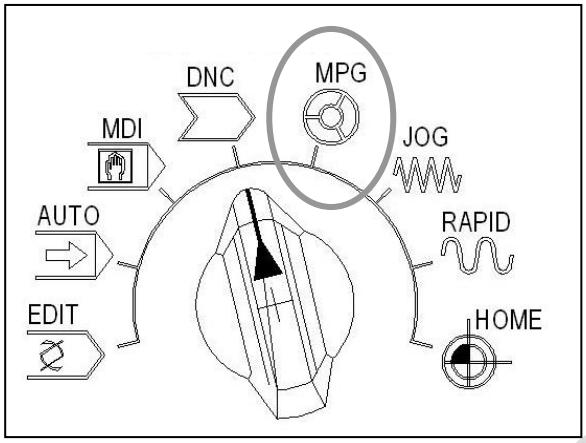


Displacement%	Metric (mm)	Inch (inch)
0	0	0
10	2.0	0.08
20	3.2	0.12
30	5.0	0.20
40	7.9	0.30
50	12.6	0.50
60	20.0	0.80
70	32.0	1.20
80	50.0	2.00
90	79.0	3.00
100	126.0	5.00
110	200.0	8.00
120	320.0	12.00
130	500.0	20.00
140	790.0	30.00
150	1260.0	50.00

(3). Spindle Speed Override Switch:



1-14. EXTERNAL MPG:



AXIS SELECT →

← FEED SELECT
(×100、×10、×1)

×100 = 01mm
×10 = 0.01mm
×1 = 0.001mm

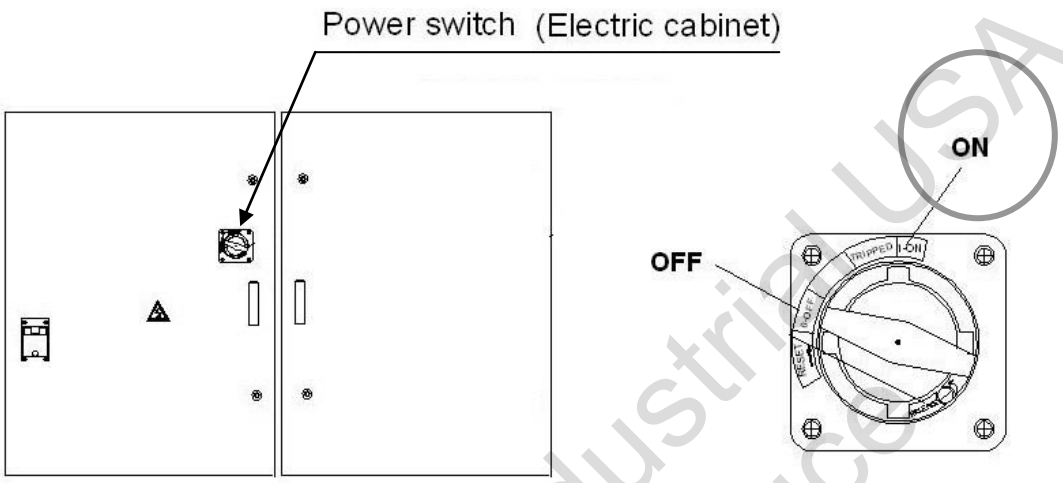
Chapter 2-Warm up and Shut off

2-1 Operating Notice before warm up

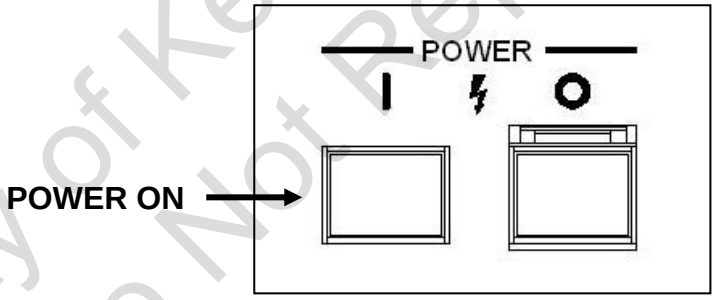
1. The operators have to read this manual's each chapters carefully and understand the special prerequisite needing attention in order to protect themselves.
2. Whether the door of the electrical box is closed or not.
3. Make sure of each operating door and the door on each side is closed or not.
4. Check the full enclosure is complete or not.
5. Check the lubrication oil is sufficient or not.
6. Check the air pressure is normal or not.
7. Check the tools, mold scale and working material is correct or not.
8. No matter in what kind of produce procedure, it should be test drive and make sure everything is OK after changing the tool and editing the program.

2-2 Sequence of Warm up

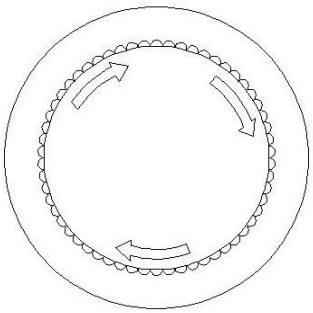
1. Turn on the electrical box's power to **ON** position. (Input electricity)



2. Press the POWER ON switch on the control panel

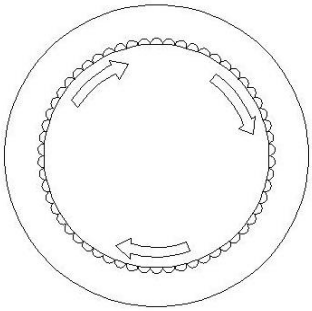


3. Release the EMG switch: turn clockwise to release

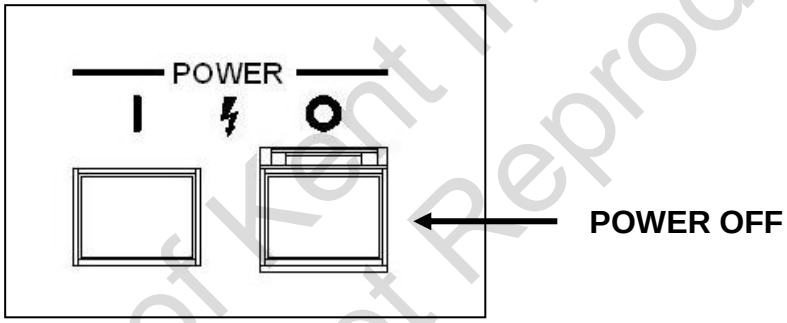


2-3 Sequence of Shut down

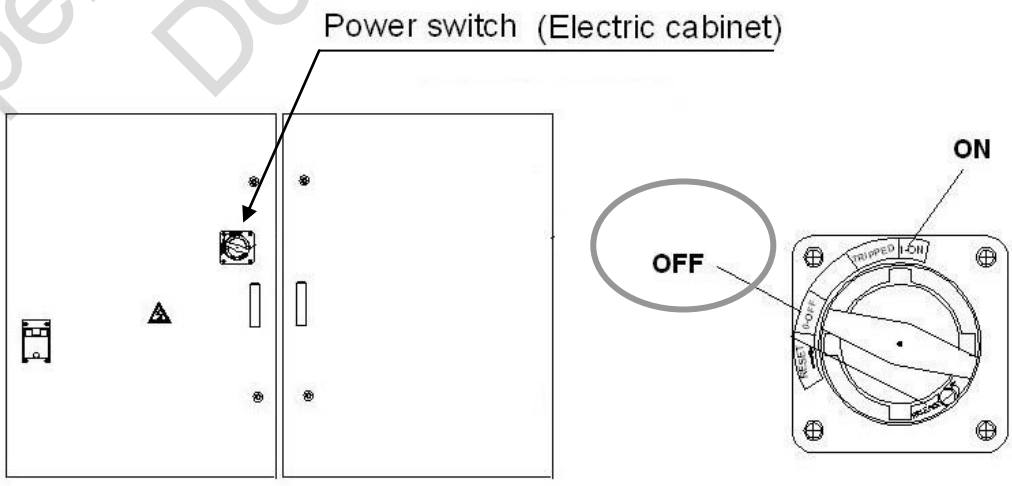
1. Push the EMG button



2. Press the POWER OFF button on the control panel



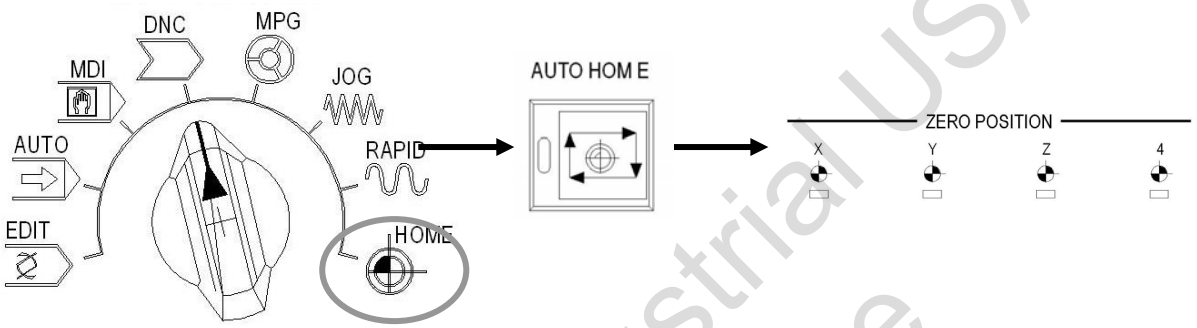
3. Turn off the electrical box's power to **OFF** position (Cut the electricity input)



Chapter 3 Operation of Manual Mode

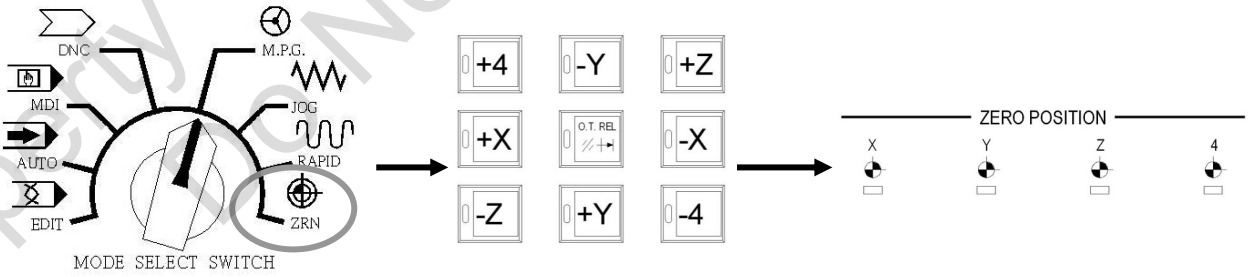
3-1 Zero Return : 1.This machine has to execute this function before using.
2.The ZRN has to tie in with the Rapid% switch to select the speed.

A. AUTO ZRN (Auto Mode)



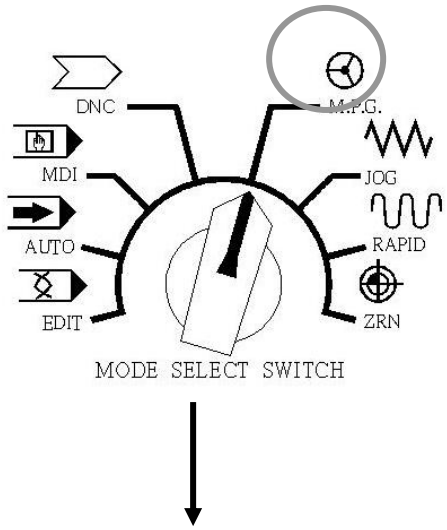
(1) Turn the MODE SELECT knob to ZRN mode.
(2) Use the RAPID% to select the feed speed.
(3) Press the AUTO and ZRN button on the control panel at the same time to do the zero return.
(4) The Z-axis will return to zero at the beginning, and wait for the Z-HOME indicator light up.
(5) The X and Y-axes will return simultaneously.
(6) When the X, and Y-HOME indicator light up. The ZRN action is completed.

B. ZRN (Manual Mode)



(1). Turn the MODE SELECT knob to ZRN
(2). Select one axis (X, Y or Z)
(3). Use the RAPID% to select the feed speed
(4). Press +JOG button to return this axis rapidly.
(5). Until the X, Y or Z-HOME indicator light up.
(6). When the indicator light up, the ZRN procedure of this axis is finished
(7). Then repeat the procedure above to complete the ZRN procedure of others' axis

3-2 MPG Mode:



1. Turn the AXIS SELECT knob to select one axis.
2. Use the MPG to move the axis
   (1) Turning clockwise is toward positive.
   (2) Turning anticlockwise is toward negative.
3. Tie in with the H×1 / H×10 / H×100 to select the tool feed value.
   Please refer the following value to make the tool feed

   (In accordance with the tool feed value per scale.)

(1) Metric Input (mm)

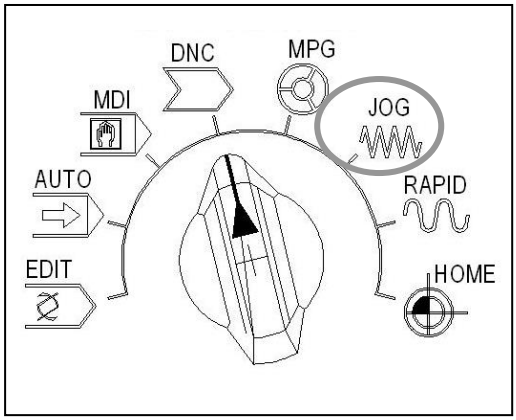
H × 1	=	0.001	mm
H × 10	=	0.01	mm
H × 100	=	0.1	mm

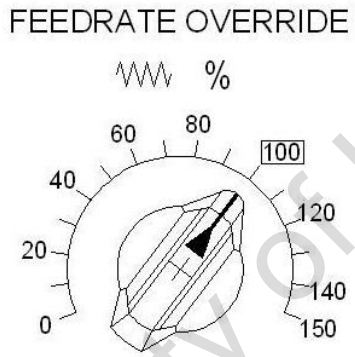
(2)Inch Input (inch)

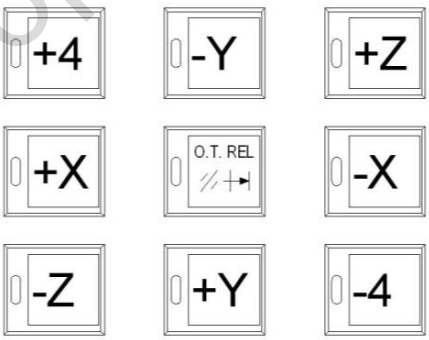
H × 1	=	0.0001 inch
H × 10	=	0.001 inch
H × 100	=	0.01 inch

3-3 JOG Mode:

3-3-1. JOG FEED



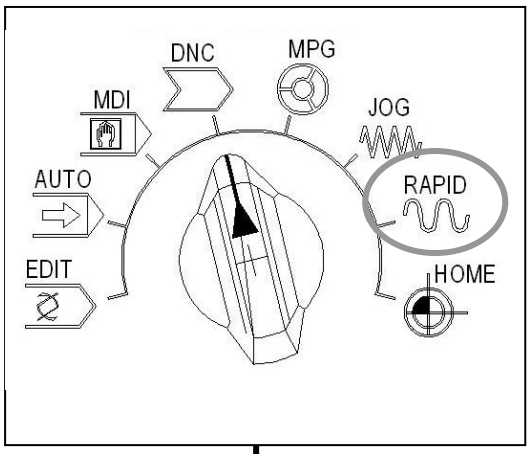


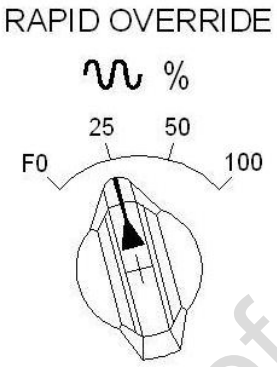


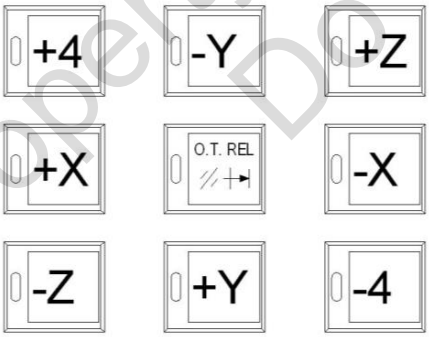
(1) Turn the MODE SELECT knob to the JOG mode.
(2) Turn the JOG FEEDRATE% knob to choose the Jog speed.
(3) Press the **+X/+Y/+Z/+4TH** button to move positive direction.
(4) Press the **-X/-Y/-Z/-4TH** button to move negative direction.
(5) The JOG FEED RATE% selecting depends on the following value.

Displacement%	Metric (mm)	Inch (inch)
0	0	0
10	2.0	0.08
20	3.2	0.12
30	5.0	0.2
40	7.9	0.3
50	12.6	0.5
60	20.0	0.8
70	32.0	1.2
80	50.0	2.0
90	79.0	3.0
100	126.0	5.0
110	200.0	8.0
120	320.0	12.0
130	500.0	20.0
140	790.0	30.0
150	1260.0	50.0

3-3-2 RAPID FEED:



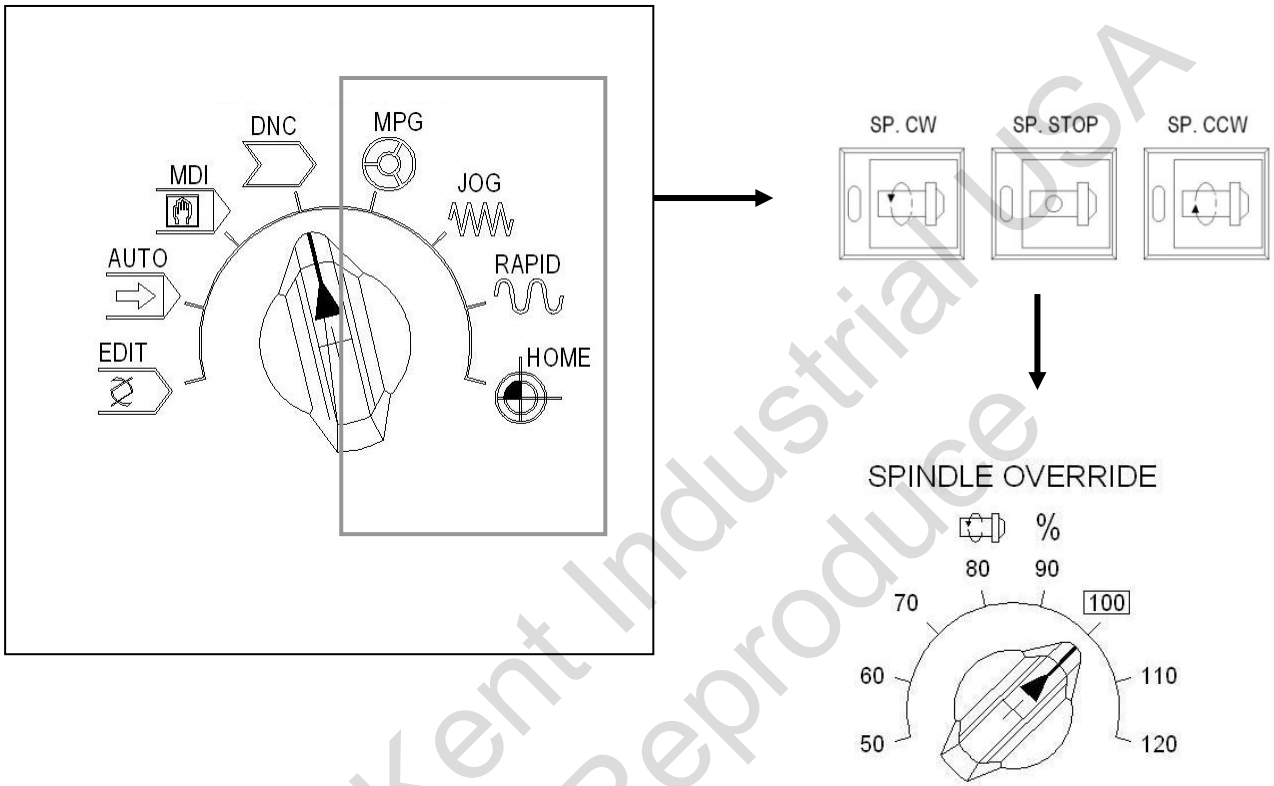




(1) Turn the MODE SELECT knob to the RAPID mode.
(2) Turning the RAPID% knob to select the speed; Low / 25/ 50 / 100.
(3) Press the **+X/+Y/+Z/+4TH** button to move positive direction.
(4) Press the **-X/-Y/-Z/-4TH** button to move negative direction.
(5) The RAPID FEED% selecting depends on the following value.

Displacement%	Metric (mm)	Inch (inch)
Low	500.0	20.0
25	5000.0	200.0
50	10000.0	250.0
100	20000.0	787.0

3-4 Manual Mode of spindle Running



1. Mod e select: it should be under JOG, ZRN, MPG， manual mode

2. Press the FORWARD button, and then the spindle will turn clockwise.

3. Press the SPINDLE STOP button, and then the spindle will be stopped.

4. The adjustment of spindle's speed:

(1) Mode select: MDI mode

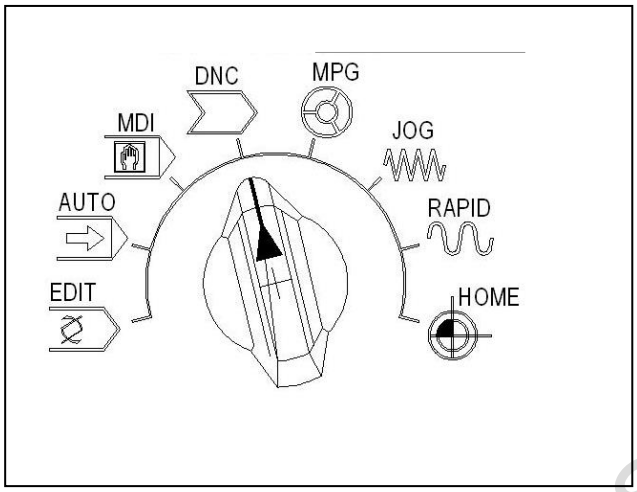
(2) Input the spindle speed "S" value, which is the basic value as 100%.

(3) The spindle speed could be adjusted by turning the SPINDLE% knob.

(4) The speed rate is range from 50% to 120%

(5) It is NOT ALLOWED to touch the spindle, while it is running, to avoid the harm of the operator.

3-5 Manual Mode of Tool Clamping and Unclamping



(Notice: If there is a switch on the lower and right corner in front of the spindle, the control panel will not have the button to unclamp the tool)

1. The use timing:

(1) Use the switch to clamp the tool on the ATC.
(2) Forbid on using this switch while the spindle is running.

2. The manual mode of tool clamp

(1) Mode Select: Manual mode (such as JOG, ZRN, MPG)
(2) The left hand holds the tool and inserts it into the inner hole of the spindle.
(3) The spindle nose has to match the key way of the tool.
(4) The right hand pushes the manual clamp / unclamp button in front of the spindle continuously, (or the TOOL UNCLAMP button on the control panel) for inserting the tool into the normal position.
(5) After the tool in position, release the clamp / unclamp button.
(6) After release the button, shaking the tool to make sure the tool is clamped correctly and tightly.
(7) If the tool is not clamped tightly, please redo the item 4.
(8) Reconfirm the tool is clamped tightly, and then loose the left hand.

3. The manual mode of tool unclamping

(1). Mode Select: Manual mode (such as JOG, ZRN, MPG)
(2). The left hand holds the tool.
(3). The right hand pushes the manual clamp / unclamp button in front of the spindle continuously, (or the TOOL UNCLAMP button on the control panel). After the spindle released the tool, took the tool out.
(4). After the tool left the spindle, the clamp / unclamp button could be released.
(5). The unclamping process is finished.

3-6 M code list :

1. M00 : Program stop
   When the control reads the M00, the program will be paused at the M00 block, and waited for the cycle start signal.
2. M01 : Program optional stop
   When M01 is applied, and the M01 push bottom on operating panel is ON, the program will stop at the M01 block, and wait for cycle start signal.
3. M03 : Spindle CW
   When M03 is applied, the spindle will run clockwise. The M03 should come with S code to specify the spindle speed.
4. M04 : Spindle CCW
   When M04 is applied, the spindle will run counter-clockwise. The M04 should come with S code to specify the spindle speed.
5. M05 : Spindle stop
   When M05 is applied, the spindle will stop.
6. M06 : Auto tool change
   When M06 is applied, the tool will change automatically. M06 should always come with T code. i.e. M06 T01.
7. M07 : Coolant Through Spindle enable
   When M07 is applied, the Coolant Through Spindle function is ON.
8. M08 : Coolant enable
   When M08 is applied, The coolant beside the spindle is ON.
9. M09 : Coolant stop / C.T.S. stop
   When M09 is applied, The coolant beside the spindle, and C.T.S. is OFF.
10. M10 : Auto chip conveyor ON
    When M10 is applied, The chip conveyor is running.
11. M11 : Auto chip conveyor OFF
    When M10 is applied, The chip conveyor is stopped.
12. M17 : Air blow ON
    When M17 is applied, The air blow beside the spindle is ON.
13. M18 : Air blow OFF
    When M18 is applied, The air blow beside the spindle is OFF.
14. M19 : Spindle orientation
    When M19 is applied, The spindle will stop at the tool change angel, and holding.
    WARNING , DO NOT lock the tool such as end mill, drill, when spindle is orientated.

15. M29 : Rigid Tapping

    When M29 is applied, The spindle rigid tapping function is ON.

    The format is :

        M29 S1000

        G98 G84 Z-10. R2. F1000.

        G80

16. M81 : Tool pot down (Maintenance function)

    When M81 is applied, The magazine tool pot is down.

17. M83 : Tool unclamp (Maintenance function)

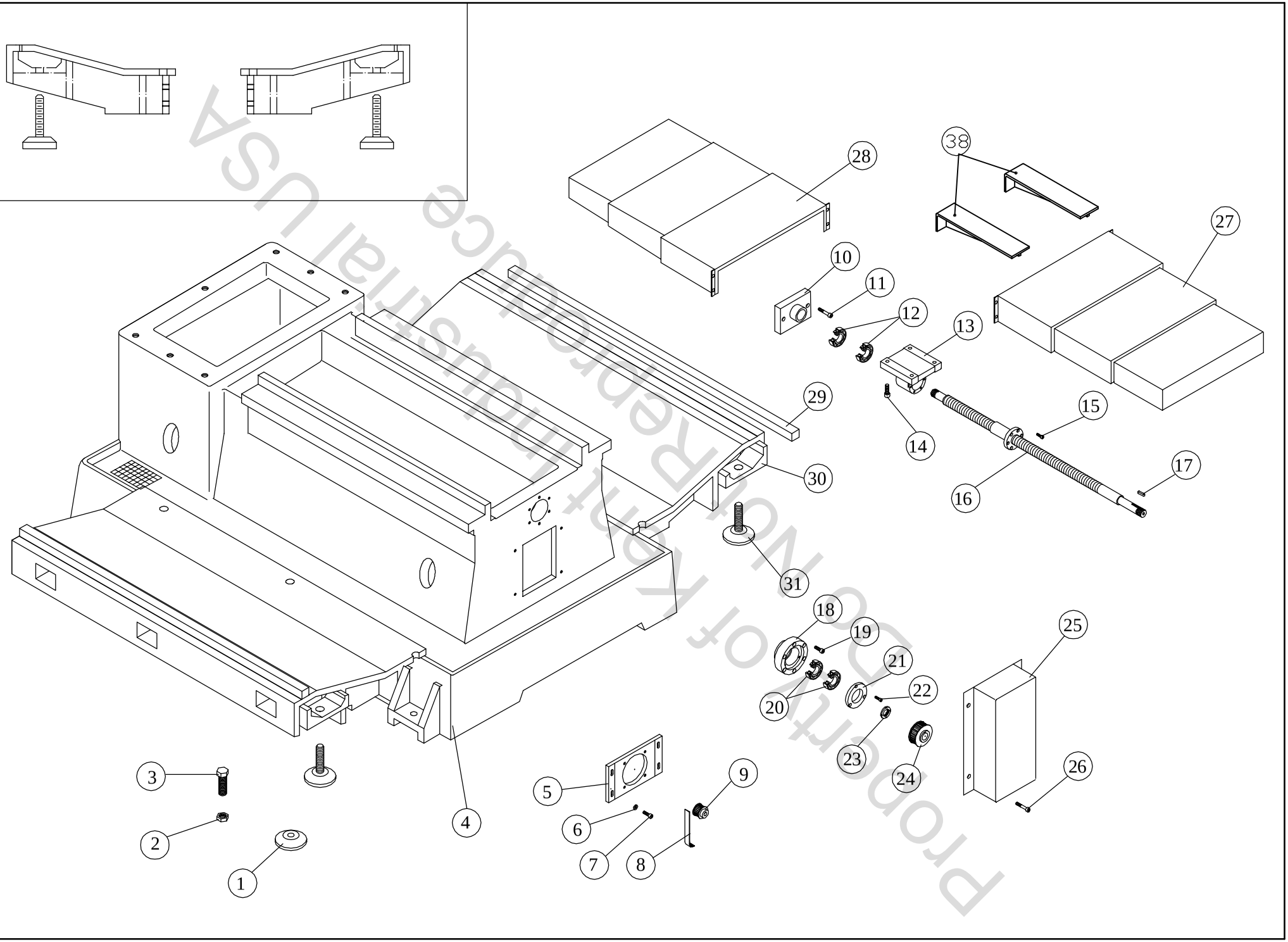
    When M83 is applied, The spindle is unclamping the tool.

18. M85 : Tool clamp (Maintenance function)

    When M85 is applied, The spindle is clamping the tool.

19. M87 : Tool pot up (Maintenance function)

    When M87 is applied, The magazine tool pot is up.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BASE

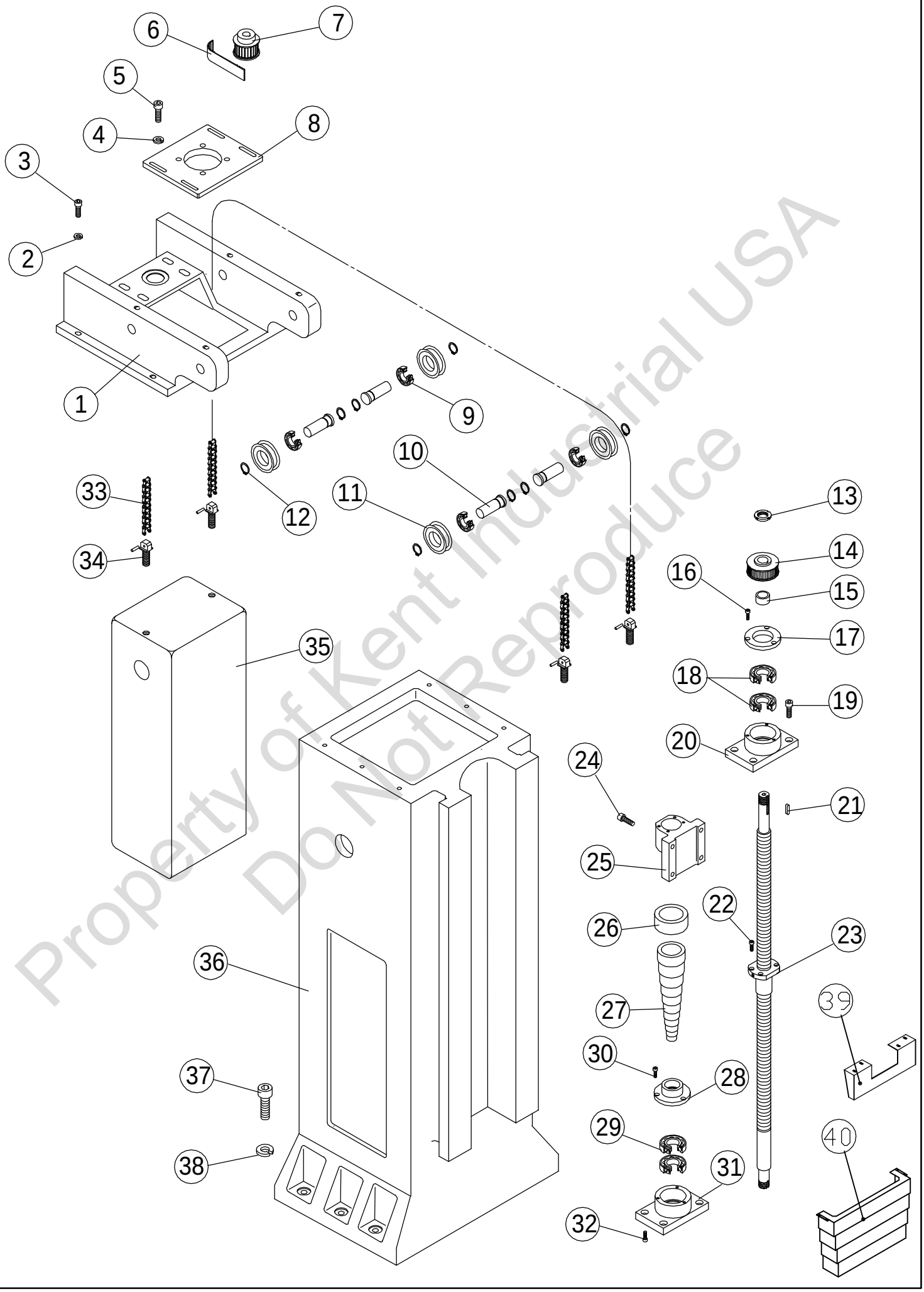
ITEM	Part No.	Description	Specification	Q'ty	Remark
1		**Leveling Pad**		6	
2		**Nut**		6	
3		**Screw**	**3/4" * 3"**	6	
4		**Base**		1	
5		**Motor plate**		1	
6		**Washer**		4	
7		**Screw**	**M8 * 30**	4	
8		**Belt**	**M8 * 520**	1	
9		**Pulley**	**T 28**	1	
10		**Bearing Bracket**		1	
11		**Screw**	**M8 * 30**	2	
12		**Bearing**	**# 6205**	2	
13		**Nut bracket**		1	
14		**Screw**	**M12 *40**	4	
15		**Screw**	**M8 * 25**	6	
16		**Ballscrew**		1	
17		**Key**	**6 * 30 mm**	1	
18		**Bearing Bracket**		1	
19		**Screw**	**M6 *20**	6	
20		**Bearing**	**# 7205**	2	
21		**Bearing Cover**		1	
22		**Screw**	**M6 *20**	3	
23		**Nut**		1	
24		**Pulley**	**T 24**	1	
25		**Pulley Cover**		1	
26		**Screw**	**M5 *10**	4	
27		**Front way Cover**		1	
29		**Rear way Cover**		2	
30		**Fixed base**		6	
31		**Leveling pad**		6	
32		**Chip pan**		1	
33		**Fixed plate**		2	
34		**Sub Slideway**		2	
35		**Fixed plate**		4	
36		**Swivel pendant arm**		1	

37		**Swivel pendant base**		1	
38		**SUPPORT**		2	

TABLE

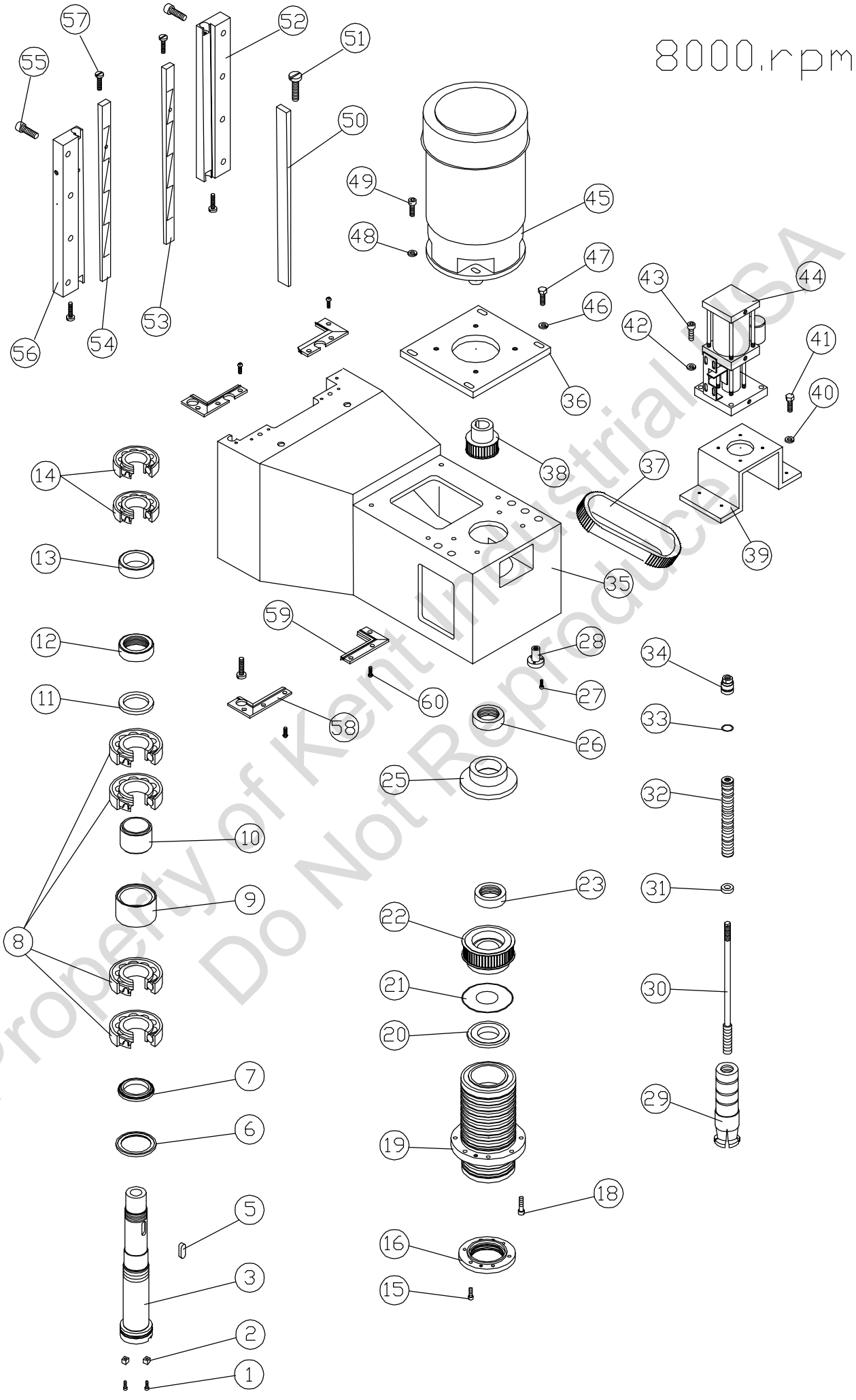
ITEM	Part No.	Description	Specification	Q'ty	Remark
1		**Left Way Cover**		1	
2		**Screw**	**M10 * 25**	4	
3		**Washer**		4	
4		**Table**		1	
5		**Right Way Cover**		1	
6		**Screw**	**M6 * 30**	2	
			M6 * 55	2	
			M6 * 65	2	
7		**Pulley Cover**		1	
8		**Bearing**	**# 6203**	1	
9		**Pulley**	**T 28**	1	
10		**Screw**	**M6 * 20**	3	
11		**Bearing Cover**		1	
12		**Nut**		1	
13		**Bearing**	**# 7205**	2	
14		**Screw**	**M8 * 25**	4	
15		**Washer**		4	
16		**Bracket**		1	
17		**Key**	**6 * 6 *25 mm**	1	
18		**Ballscrew**		1	
19		**Screw**	**M6 * 20**	6	
20		**Nut Bracket**		1	
21		**Screw**	**M8 * 30**	4	
22		**Bearing Bracket**		1	
23		**Screw**	**M8 * 30**	4	
24		**Bearing**	**# 6205**	2	
25		**Bearing Cover**		1	
26		**Screw**	**M6 * 20**	3	
27		**Screw**	**M8 * 30**	4	
28		**Washer**		4	
29		**Pulley**	**T14(2:1),T28(1:1)**	1	
30		**Belt**	**M8 * 640 (1:1)**	1	**M8*600(1:2)**
31		**Motor Plate**		1	
32		**Screw**		2	
33		**Gib**		1	
34		**Saddle**		1	
35		**Gib**		1	
36		**Wiper**		2	
37		**Wiper**		2	

38		**Gib Screw**		2	
39		**Bracket**		1	
40		**Gib**		1	
41		**Gib**		1	
42		**Gib Screw**		6	
43		**Washer**		12	
44		**Screw**	**M5 *10**	12	
45		**Screw**	**M12 *40**	10	
46		**Bracket**		1	
47		**Sliding base**		2	
48		**Screw**	**M8 * 40**	12	
49		**Bearing seat**		2	
50		**Adjustment base**		2	
51		**Adjustment Plate**		2	
52		**Adjustment Screw**		2	
53		**Sub Slidrway**		2	
54		**Leveling Pad**		16	
55		**Nut**		16	
56		**Screw**	**3/4" * 3"**	16	



FRAME

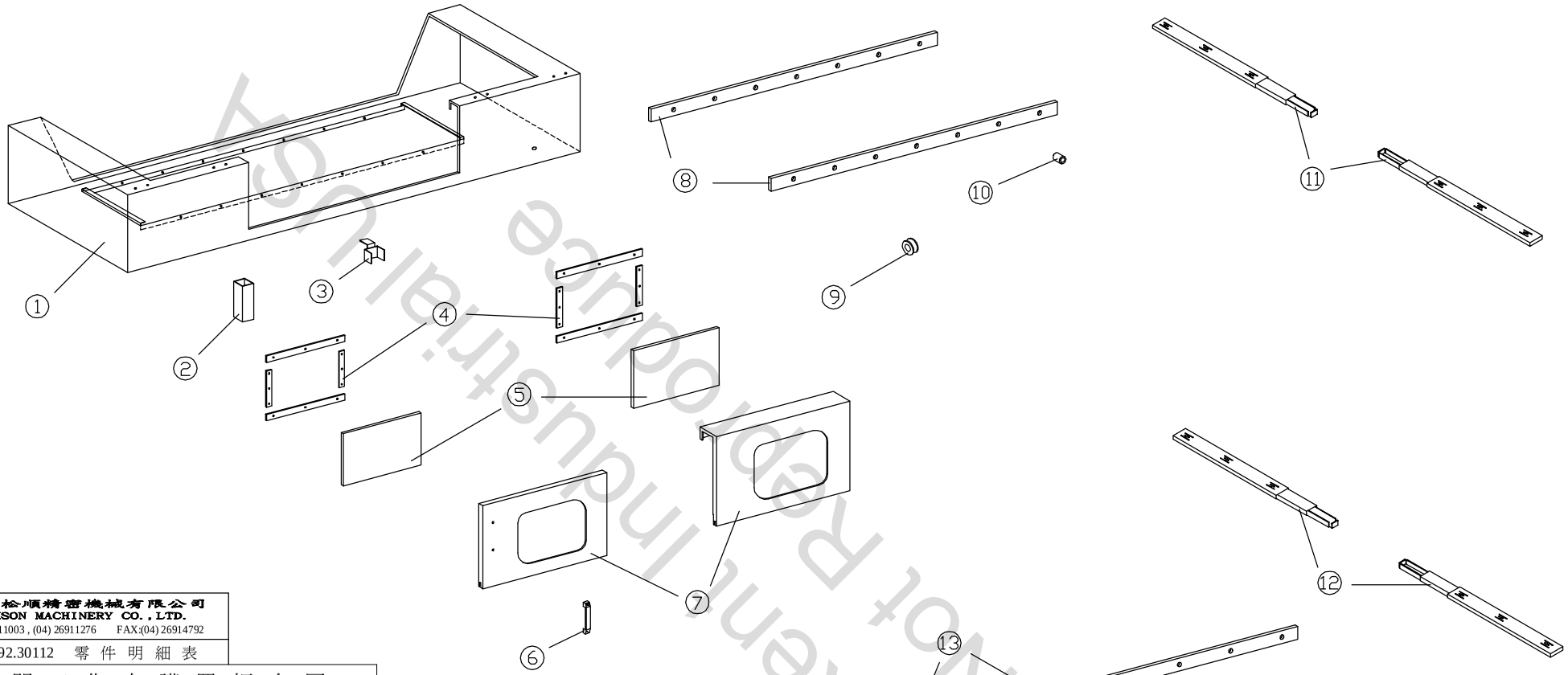
ITEM	Part No.	Description	Specification	Q'ty	Remark
1		**Chain Supporter**		1	
2		**Washer**		4	
3		**Screw**	**M8*40**	4	
4		**Washer**		4	
5		**Screw**	**M8*25**	4	
6		**Belt**	**8M-776**	1	
7		**Pulley**	**8M-24T**	1	
8		**Motor Plate**		1	
9		**Bearing**	**#6205**	4	
10		**Shaft**		4	
11		**Wheel**		4	
12		**C-Ring**		8	
13		**Nut**		1	
14		**Pulley**	**8M-40T**	1	
15		**Spacer**		1	
16		**Screw**	**M6 * 20**	3	
17		**Bearing Cover**		1	
18		**Bearing**	**35TAC72B**	2	
19		**Screw**	**M8*30**	4	
20		**Bearing Bracket**		1	
21		**Key**	**8 * 16mm**	1	
22		**Screw**	**M6 * 20**	6	
23		**Ballscrew**		1	
24		**Screw**	**M10 * 30**	4	
25		**Nut Bracket**		1	
26		**Upper Stay**		1	
27		**Ballscrew Chip Cover**		1	
28		**Lower stay**		1	
29		**Bearing**	**#6205**	2	
30		**Screw**	**M5 * 10**	3	
31		**Bearing Bracket**		1	
32		**Screw**	**M8 * 25**	4	
33		**Chain**		2	
34		**Screw**	**M16 * 60**	4	
35		**Count Blance**		1	
36		**Frame**		1	
37		**Screw**	**M24*100**	6	
38		**Washer**		6	



HEAD

ITEM	Part No.	Description	Specification	Q'ty	Remark
1		**Screw**	**M6 * 16**	2	
2		**Key**	**16 * 16 mm**	2	
3		**Spindle**		1	
5		**Key**		1	
6		**Seal**	**110*80 mm**	1	
7		**Seal**	**100*70**	1	
8		**Bearing**	**#7014**	3	
9		**Spacer**		1	
10		**Spacer**		1	
11		**Collar**		1	
12		**Nut**		1	
13		**Collar**		1	
14		**Bearing**		2	
15		**Screw**	**M8*20**	8	
16		**Cover**		1	
18		**Screw**	**M10*25**	8	
19		**Quill**		1	
20		**Chip Cover**		1	
21		**Chip Cover**		1	
22		**Pulley**	**T40**	1	
23		**Nut**		1	
24		**Bearing**	**#6012**	1	
25		**Cover**		1	
26		**Nut**		1	
27		**Screw**	**M6*16**	3	
28		**Coolant Nozzle**		3	
29		**4 Jaws**		1	
30		**Draw Bar**		1	
31		**Collar**		1	
32		**Disc Spring**		1	
33		**Collar**		**1**	
34		**Nut**		1	
35		**Headstock**		1	
36		**Motor Plate**		1	
37		**Belt**		1	
38		**Motor plley**	**T40**	1	
39		**Cylinder seat**		1	
40		**Washer**		4	
41		**Screw**	**M8*30**	4	

42		**Washer**		4	
43		**Screw**	**M8*30**	4	
44		**Power Draw Bar**		1	
45		**Motor**		1	
46		**Washer**		4	
47		**Screw**	**M12*20**	4	
48		**Washer**		4	
49		**Screw**		4	
50		**Gib**		1	
51		**Gib screw**	**5/16"*24NF**	2	
52		**Bracket**		1	
53		**Gib**		1	
54		**Gib**		1	
55		**Screw**	**M12*40**	10	
56		**Bracket**		1	
57		**Gib screw**	**5/16"*24NF**	4	
58		**Wiper**		2	
59		**Wiper**		2	
60		**Screw**	**M5*10**	12	



SAMSON 松順精密機械有限公司
SAMSON MACHINERY CO., LTD.
TEL:(04) 26911003 , (04) 26911276 FAX:(04) 26914792

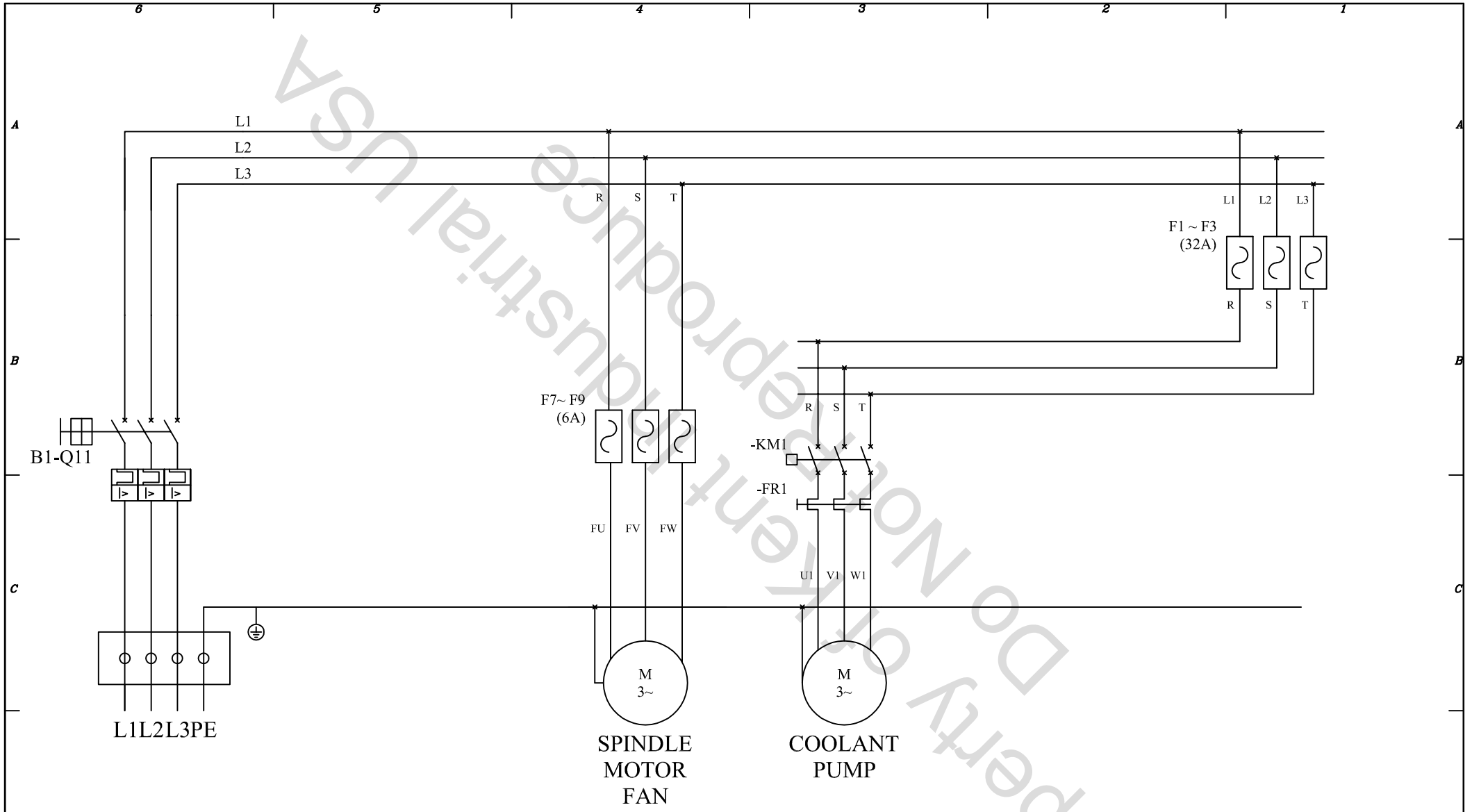
型號 3092.30112 零件明細表

單開工作台護罩板金圖

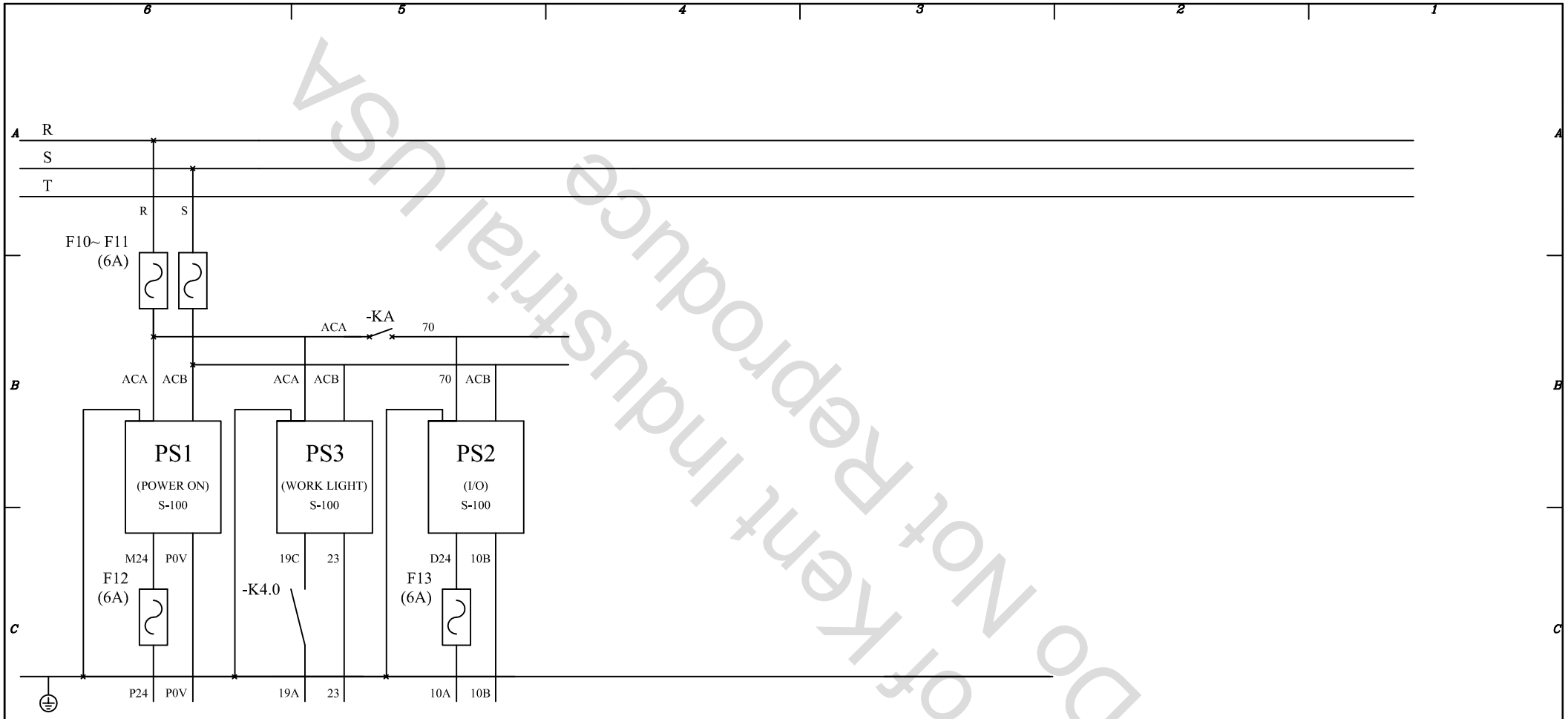
編號	名稱	數量	編號	名稱	數量
1	工作台護罩	1	7	活動門	2
2	套管	1	8	軌道	2
3	固定門座	1	9	滑輪	4
4	壓條	8	10	套筒	10
5	壓克力	7	11	三節滑軌	2
6	弓形手把	1			

雙開工作台護罩板金圖

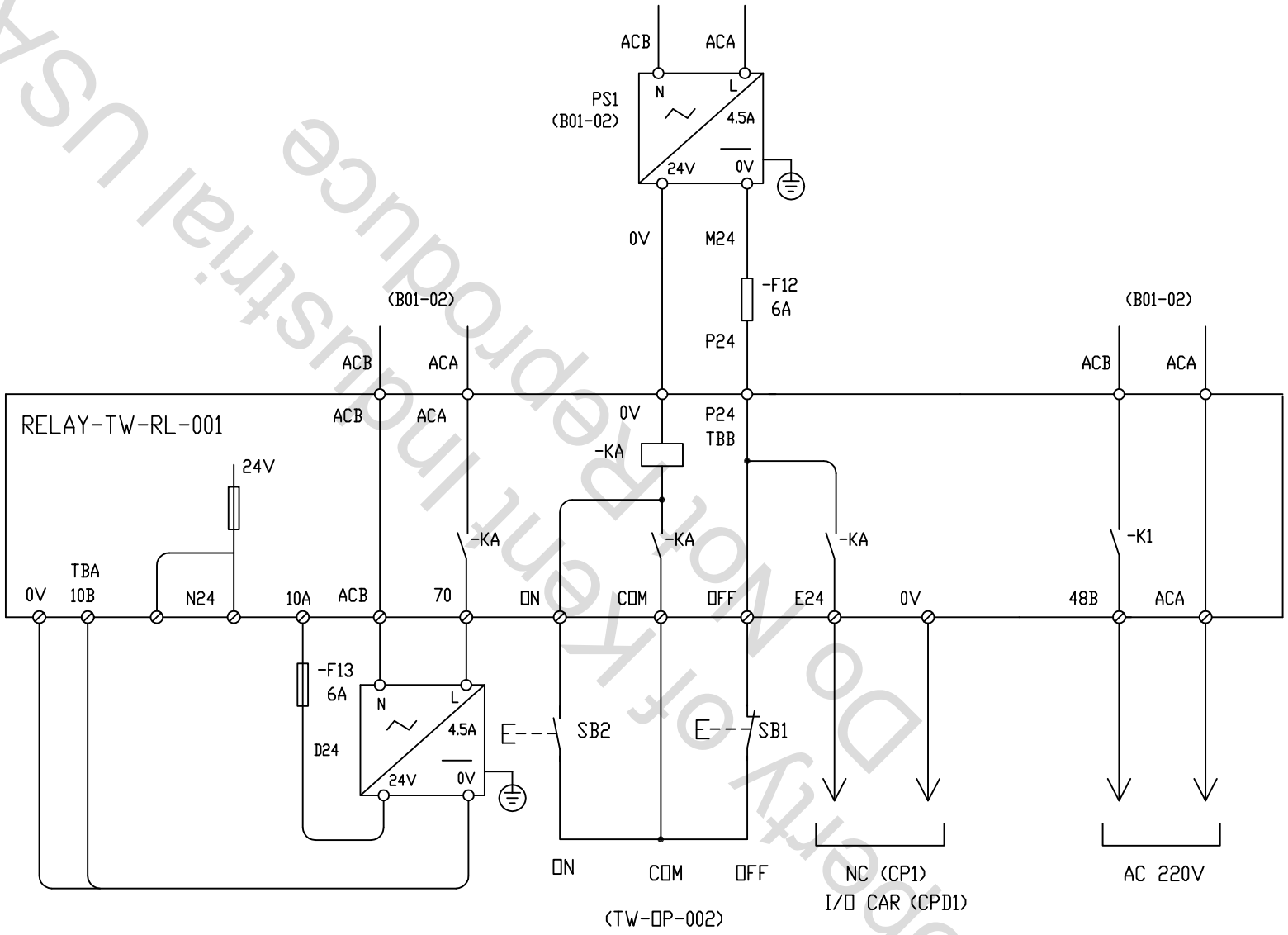
編號	名稱	數量	編號	名稱	數量
12	三節滑軌	2	16	左側活動門	1
13	軌道	2	17	右側活動門	1
14	壓條	8	18	弓形手把	2
15	壓克力	2	19	滑輪	4



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	B01/01
		MAIN POWER INPUT	DATE	10-29-2012	VERSION	TWH REV.1.0



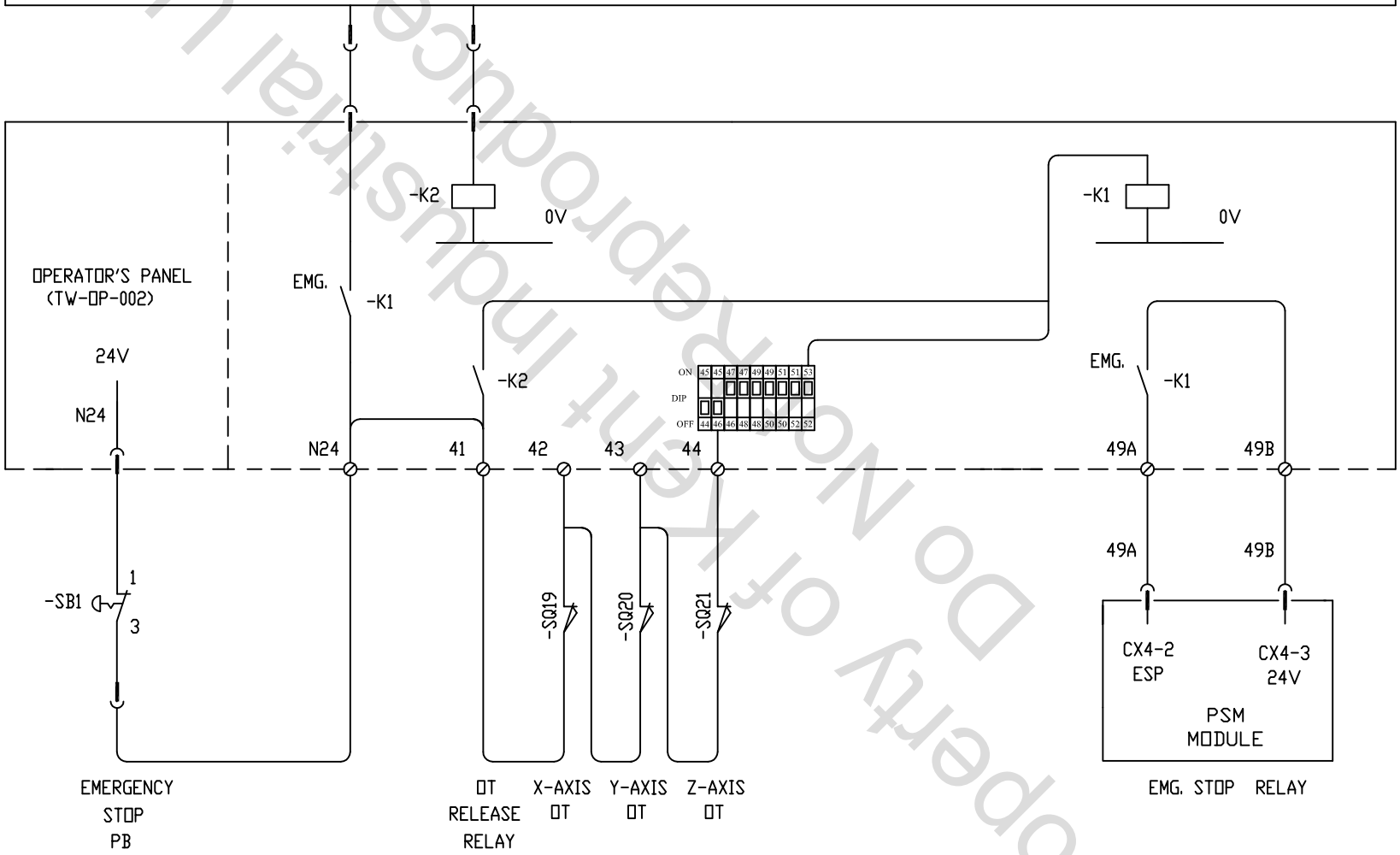
KENT USA INC.	TITLE: S-1500 MAIN POWER INPUT	CH.: ALEX YU	PAGE: B01/02
		DATE: 10-28-2012	VERSION: TWH REV.1.0



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	B02/01
		POWER ON CIRCUIT	DATE	10-28-2012	VERSION	TWL REV.1.0

CONTROL CIRCUT OF THE EMERGENCY STOP

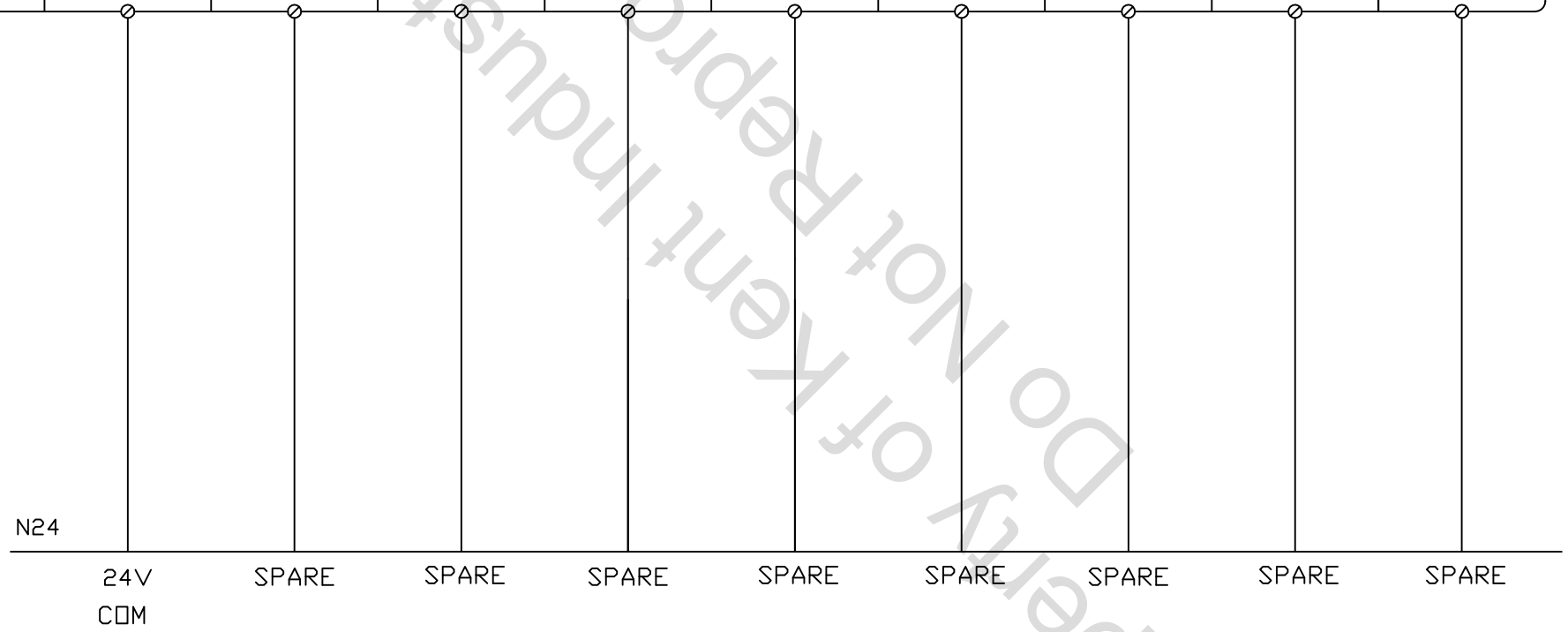
SYMBO-NAME	EMG. STOP	OT RELEASE
PLC-ADDRESS	X8.4	Y4.2
CONNECT-PIN NO.	CB105-A8	CB106-A17



KENT USA INC.	TITLE	S-1500 OVER TRAVEL CIRCUIT	CH. ALEX YU	PAGE B03/01
			DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

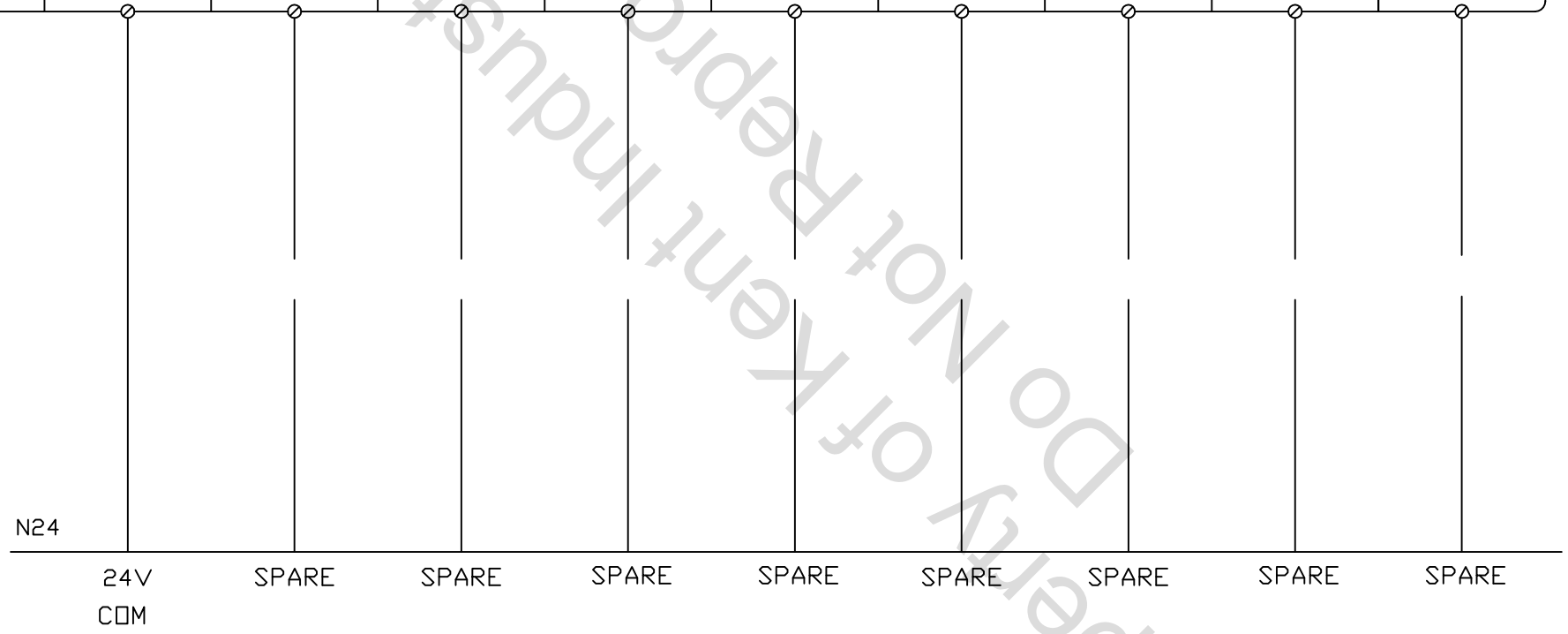
PLC ADDRESS	24V	X0.0	X0.1	X0.2	X0.3	X0.4	X0.5	X0.6	X0.7
I/O CONNECT	CB105-B1 CB-106-B1	CB-104-A2	CB-104-B2	CB-104-A3	CB-104-B3	CB0104-A4	CB-104-B4	CB-104-A5	CB104-B5
PCB. TERMINAL	TB2-N24	X0T-1	X0T-2	X0T-3	X0T-4	X0T-5	X0T-6	X0T-7	X0T-8
LINE NUMBER	N24	X0.0	X0.1	X0.2	X0.3	X0.4	X0.5	X0.6	X0.7



KENT USA INC.	TITLE	S-1500 INPUT SIGNAL (BASIC)	CH.	ALEX YU	PAGE	C01/01
			DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

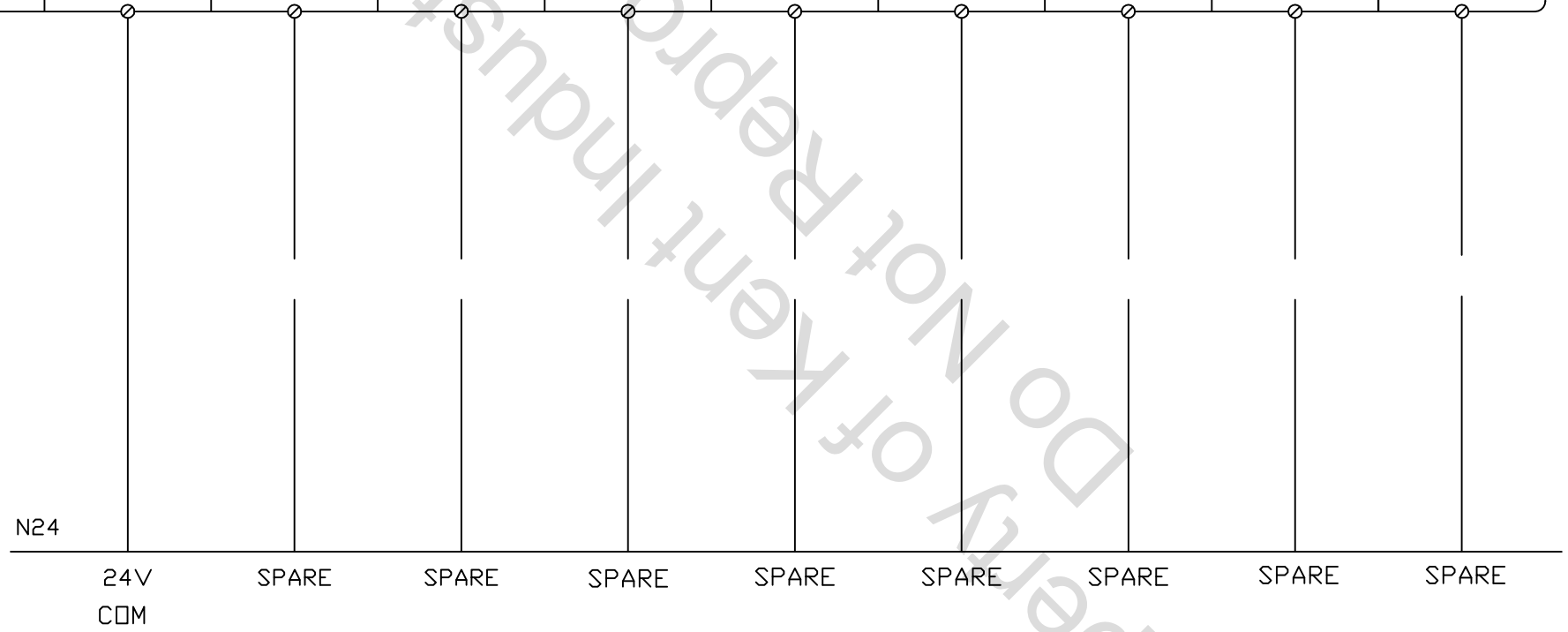
PLC ADDRESS	24V	X1.0	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	X1.7
I/O CONNECT	CB-105-B1 CB-106-B1	CB104-A6	CB104-B6	CB104-A7	CB104-B7	CB104-A8	CB104-B8	CB104-A9	CB104-B9
PCB. TERMINAL	TB2-N24	X1T-1	X1T-2	X1T-3	X1T-4	X1T-5	X1T-6	X1T-7	X1T-8
LINE NUMBER	N24	X1.0	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6	X1.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH.: ALEX YU	PAGE: C02/01
		DATE: 10-28-2012	VERSION: TWH REV.1.0

I/O INTERFACE

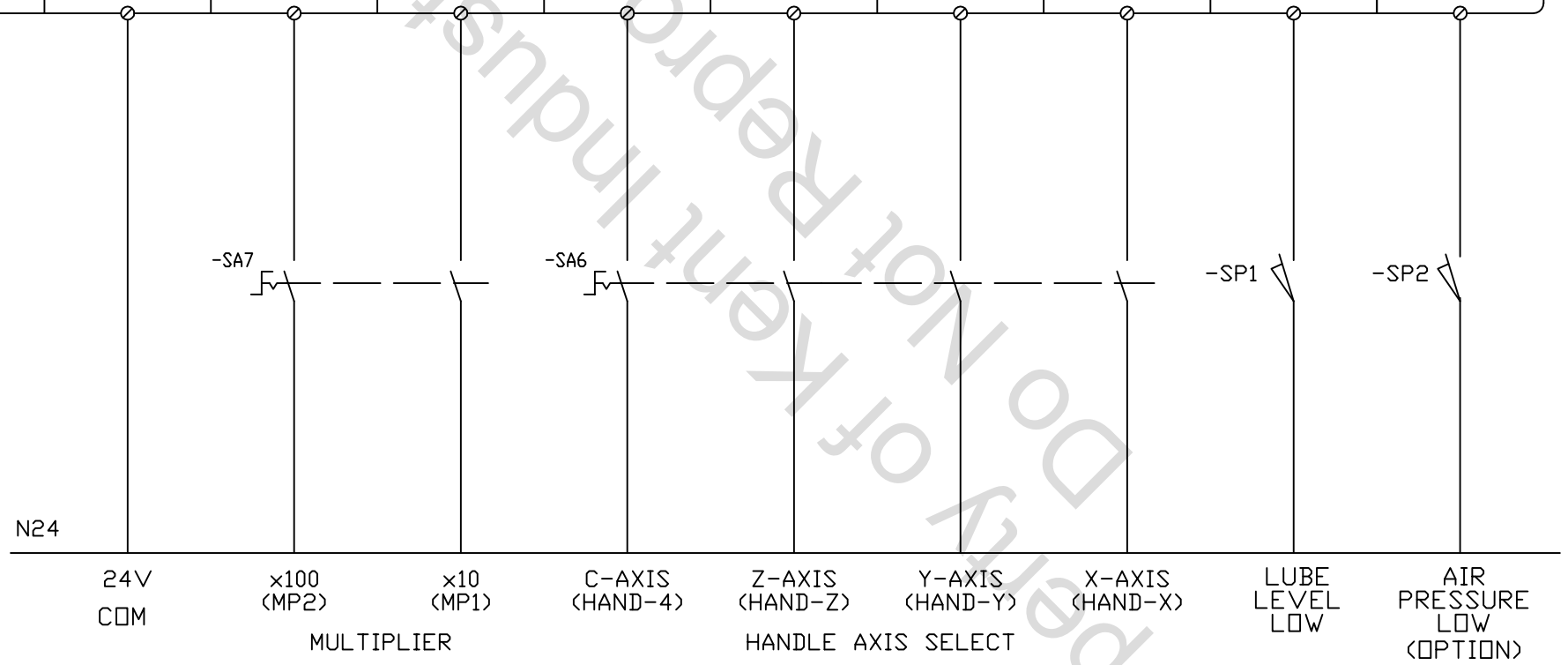
PLC ADDRESS	24V	X2.0	X2.1	X2.2	X2.3	X2.4	X2.5	X2.6	X2.7
I/O CONNECT	CB105-B1 CB106-B1	CB104-A10	CB104-B10	CB104-A11	CB104-B11	CB104-A12	CB104-B12	CB104-A13	CB104-B13
PCB. TERMINAL	TB2-N24	X2T-1	X2T-2	X2T-3	X2T-4	X2T-5	X2T-6	X2T-7	X2T-8
LINE NUMBER	N24	X2.0	X2.1	X2.2	X2.3	X2.4	X2.5	X2.6	X2.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL DIAGRAM	CH. ALEX YU	PAGE C03/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

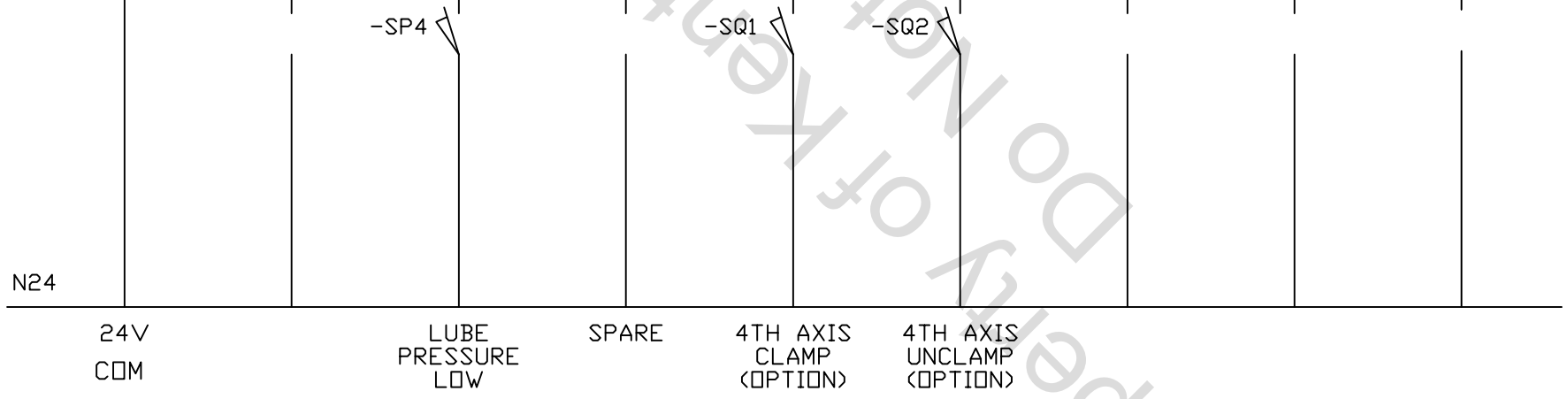
PLC ADDRESS	24V	X3.0	X3.1	X3.2	X3.3	X3.4	X3.5	X3.6	X3.7
I/O CONNECT	CB105-B1 CB106-B1	CB105-A2	CB105-B2	CB105-A3	CB105-B3	CB105-A4	CB105-B4	CB105-A5	CB105-B5
PCB. TERMINAL	TB2-N24							XYT-5	XYT-7
LINE NUMBER	N24	X3.0	X3.1	X3.2	X3.3	X3.4	X3.5	X3.6	X3.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH.: ALEX YU	PAGE: C04/01
		DATE: 10-28-2012	VERSION: TWH REV.1.0

I/O INTERFACE

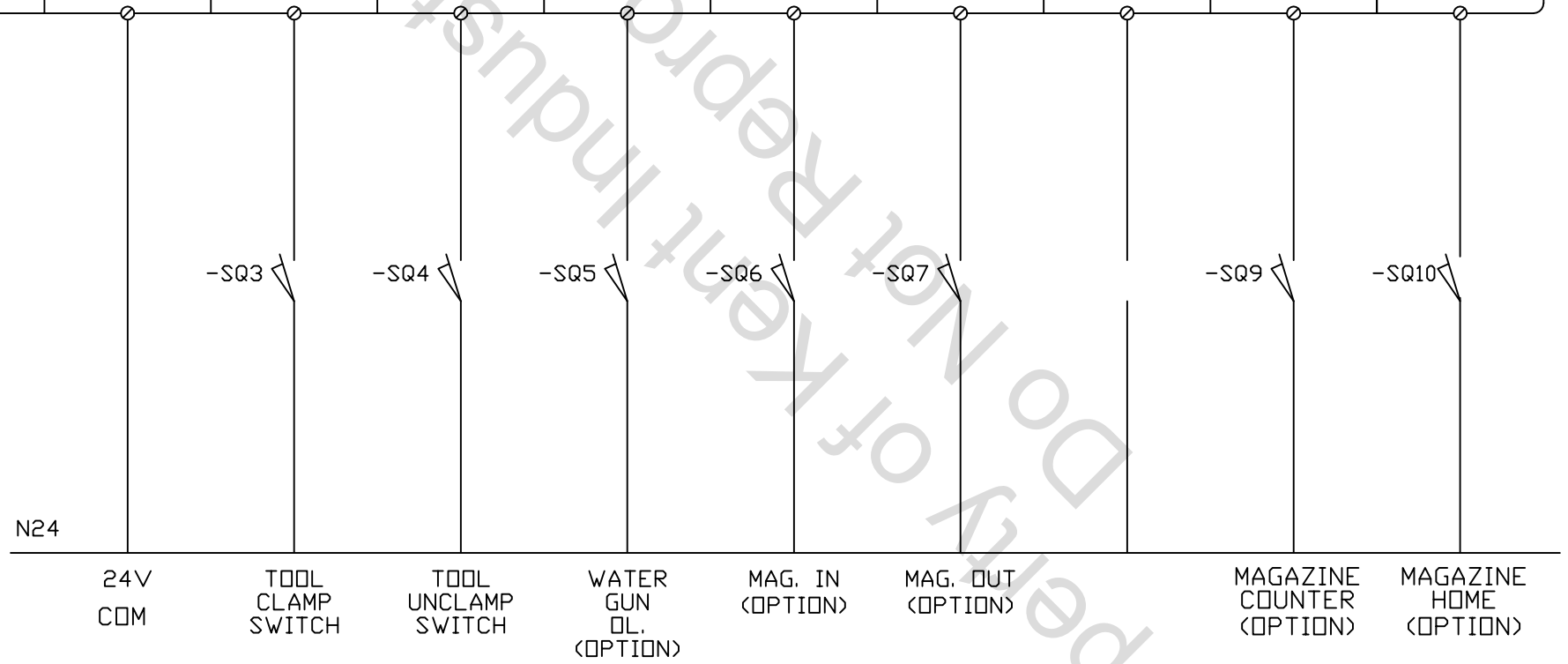
PLC ADDRESS	24V	X4.0	X4.1	X4.2	X4.3	X4.4	X4.5	X4.6	X4.7
I/O CONNECT	CB105-B1 CB106-B1	CB106-A2	CB106-B2	CB106-A3	CB106-B3	CB106-A4	CB106-B4	CB106-A5	CB106-B5
PCB. TERMINAL	TB2-N24	X4T-1	X4T-2	X4T-3	X4T-4	X4T-5	X4T-6	X4T-7	X4T-8
LINE NUMBER	N24	X4.0	X4.1	X4.2	X4.3	X4.4	X4.5	X4.6	X4.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH. ALEX YU	PAGE C05/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

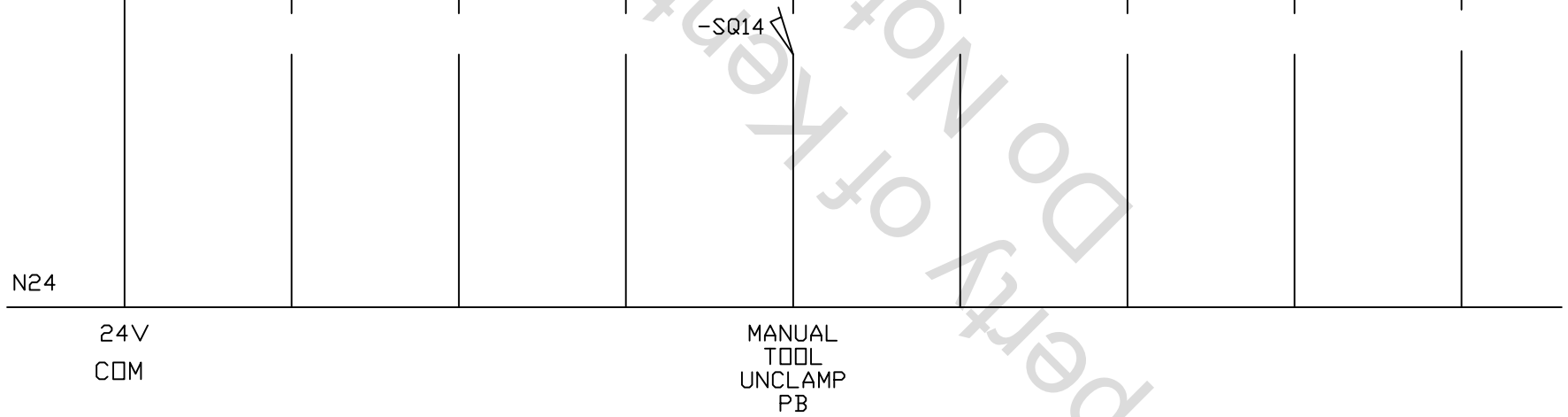
PLC ADDRESS	24V	X5.0	X5.1	X5.2	X5.3	X5.4	X5.5	X5.6	X5.7
I/O CONNECT	CB105-B1 CB106-B1	CB106-A6	CB106-B6	CB106-A7	CB106-B7	CB106-A8	CB106-B8	CB106-A9	CB106-B9
PCB. TERMINAL	TB2-N24	X5T-1	X5T-2	X5T-3	X5T-4	X5T-5	X5T-6	X5T-7	X5T-8
LINE NUMBER	N24	X5.0	X5.1	X5.2	X5.3	X5.4	X5.5	X5.6	X5.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH.: ALEX YU	PAGE: C06/01
		DATE: 10-28-2012	VERSION: TWH REV.1.0

I/O INTERFACE

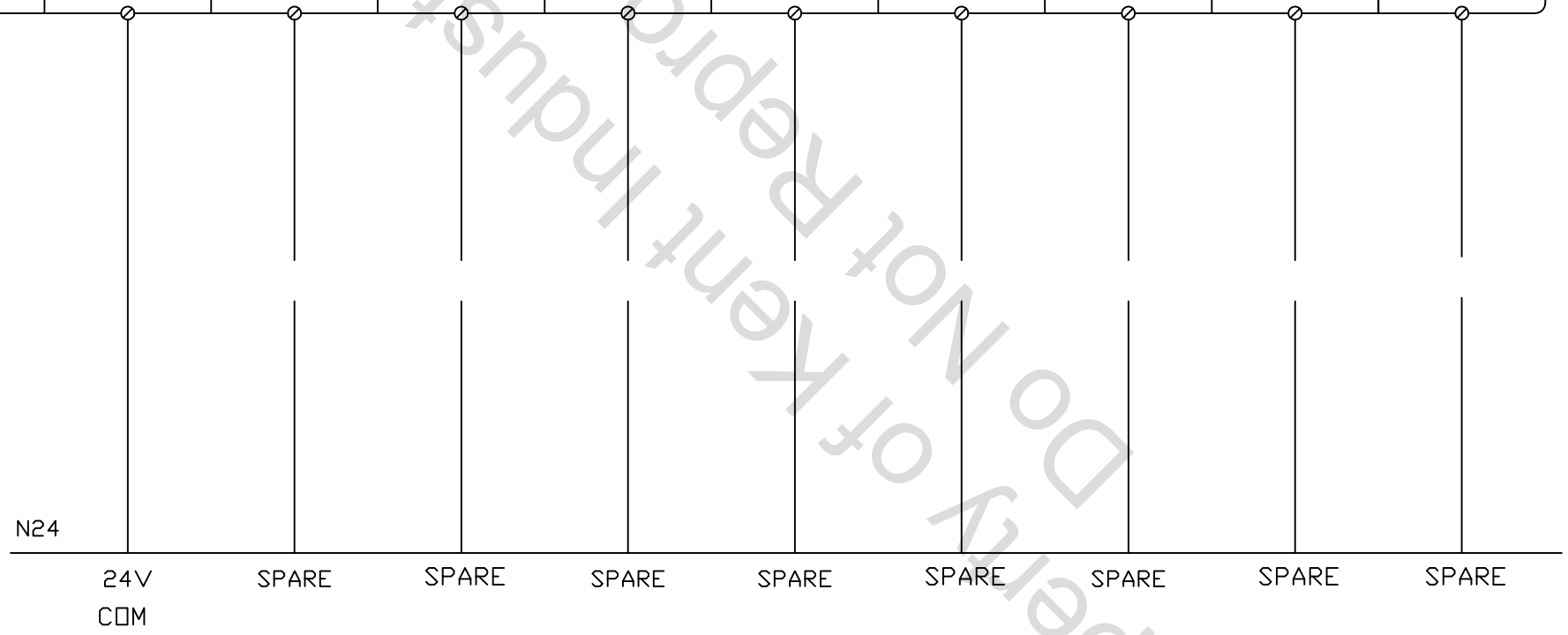
PLC ADDRESS	24V	X6.0	X6.1	X6.2	X6.3	X6.4	X6.5	X6.6	X6.7
I/O CONNECT	CB105-B1 CB106-B1	CB106-A10	CB106-B10	CB106-A11	CB106-B11	CB106-A12	CB106-B12	CB106-A13	CB106-B13
PCB. TERMINAL	TB2-N24	X6T-1	X6T-2	X6T-3	X6T-4	X6T-5	X6T-6	X6T-7	X6T-8
LINE NUMBER	N24	X6.0	X6.1	X6.2	X6.3	X6.4	X6.5	X6.6	X6.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH. ALEX YU	PAGE C07/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

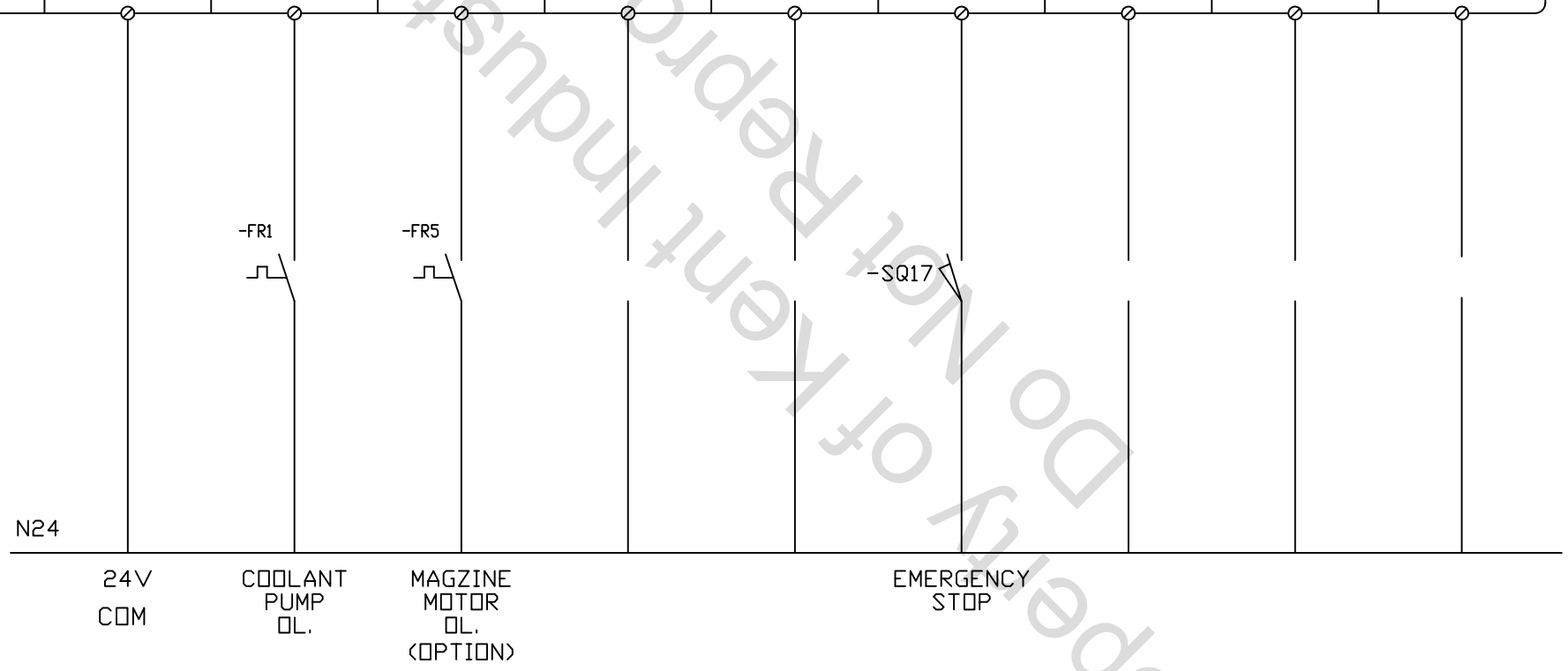
PLC ADDRESS	24V	X10.0	X10.1	X10.2	X10.3	X10.4	X10.5	X10.6	X10.7
I/O CONNECT	CB105-B1 CB106-B1	CB107-A6	CB107-B6	CB107-A7	CB107-B7	CB107-A8	CB107-B8	CB107-A9	CB107-B9
PCB. TERMINAL	TB2-N24	TW-OP-002 SP/X-1	TW-OP-002 SP/X-2	TW-OP-002 SP/X-3	TW-OP-002 SP/X-4	TW-OP-002 SP/X-5	TW-OP-002 SP/X-6	TW-OP-002 SP/X-7	TW-OP-002 MST
LINE NUMBER	N24	X10.0	X10.1	X10.2	X10.3	X10.4	X10.5	X10.6	



KENT USA INC.	TITLE S-1500 INPUT SIGNAL (BASIC)	CH. ALEX YU	PAGE C08/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

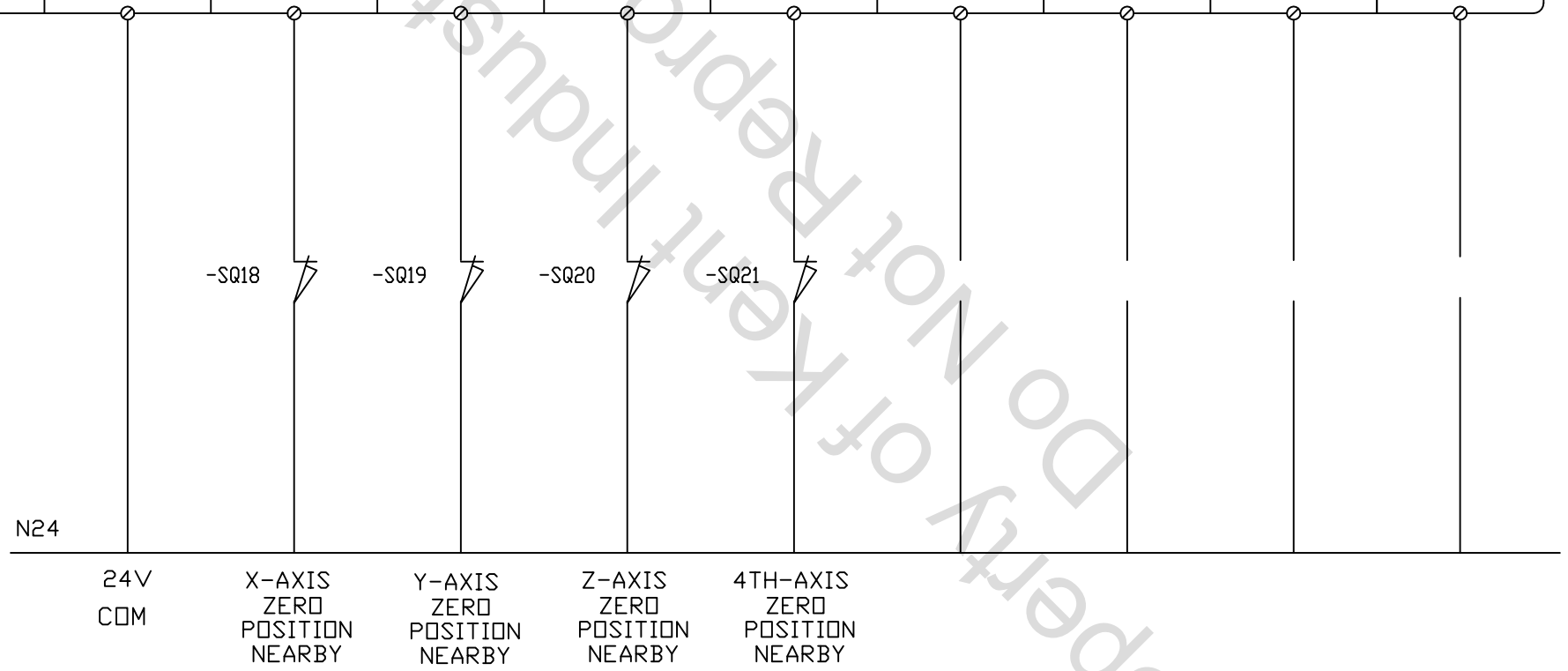
PLC ADDRESS	24V	X8.0	X8.1	X8.2	X8.3	X8.4	X8.5	X8.6	X8.7
I/O CONNECT	CB105-B1 CB106-B1	CB105-A6	CB105-B6	CB105-A7	CB105-B7	CB105-A8	CB105-B8	CB105-A9	CB105-B9
PCB. TERMINAL	TB2-N24	X8T-1	X8T-2	X8T-3	X8T-4	X8T-5	X8T-6	X8T-7	X8T-8
LINE NUMBER	N24	X8.0	X8.1	X8.2	X8.3	X8.4	X8.5	X8.6	X8.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH. ALEX YU	PAGE C09/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

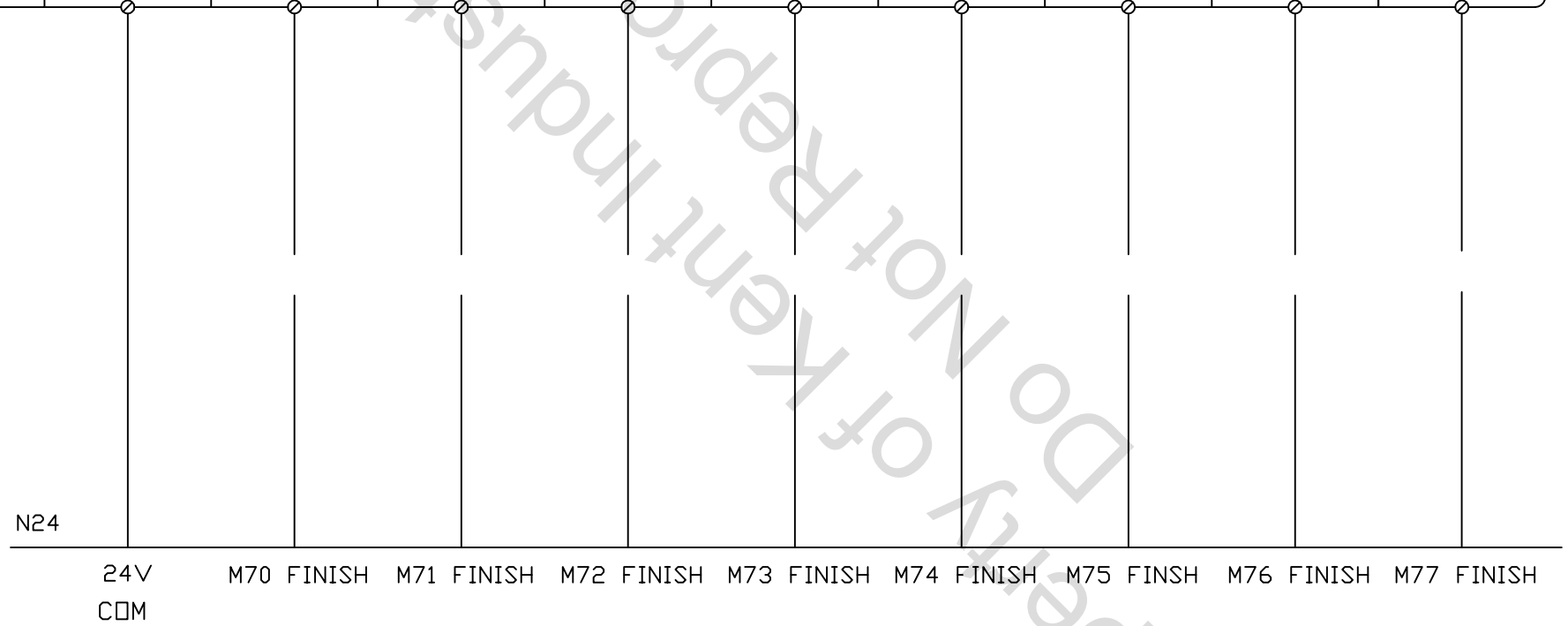
PLC ADDRESS	24V	X9.0	X9.1	X9.2	X9.3	X9.4	X9.5	X9.6	X9.7
I/O CONNECT	CB105-B1 CB106-B1	CB105-A10	CB105-B10	CB105-A11	CB105-B11	CB105-A12	CB105-B12	CB105-A13	CB105-B13
PCB. TERMINAL	TB2-N24	X9T-1	X9T-2	X9T-3	X9T-4	X9T-5	X9T-6	X9T-7	X9T-8
LINE NUMBER	N24	X9.0	X9.1	X9.2	X9.3	X9.4	X9.5	X9.6	X9.7



KENT USA INC.	TITLE	S-1500 INPUT SIGNAL (BASIC)	CH.	ALEX YU	PAGE	C10/01
			DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

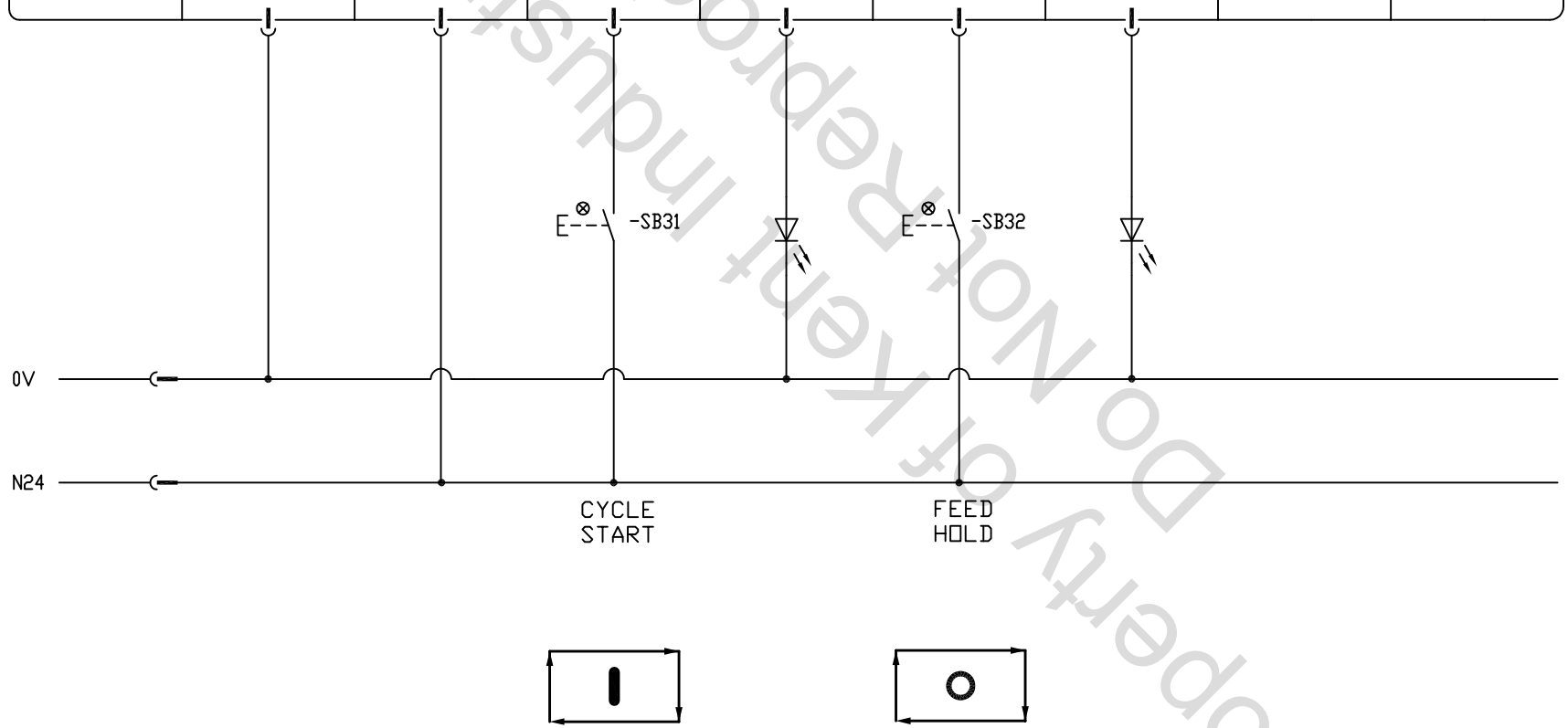
PLC ADDRESS	24V	X7.0	X7.1	X7.2	X7.3	X7.4	X7.5	X7.6	X7.7
I/O CONNECT	CB105-B1 CB106-B1	CB106-A10	CB106-B10	CB106-A11	CB106-B11	CB106-A12	CB106-B12	CB106-A13	CB106-B13
PCB. TERMINAL	TB2-N24	X7T-8	X7T-7	X7T-6	X7T-5	X7T-4	X7T-3	X7T-2	X7T-1
LINE NUMBER	N24	X7.0	X7.1	X7.2	X7.3	X7.4	X7.5	X7.6	X7.7



KENT USA INC.	TITLE: S-1500 INPUT SIGNAL (BASIC)	CH. ALEX YU	PAGE C11/01
		DATE 10-28-2010	VERSION TWH REV.1.0

I/O INTERFACE

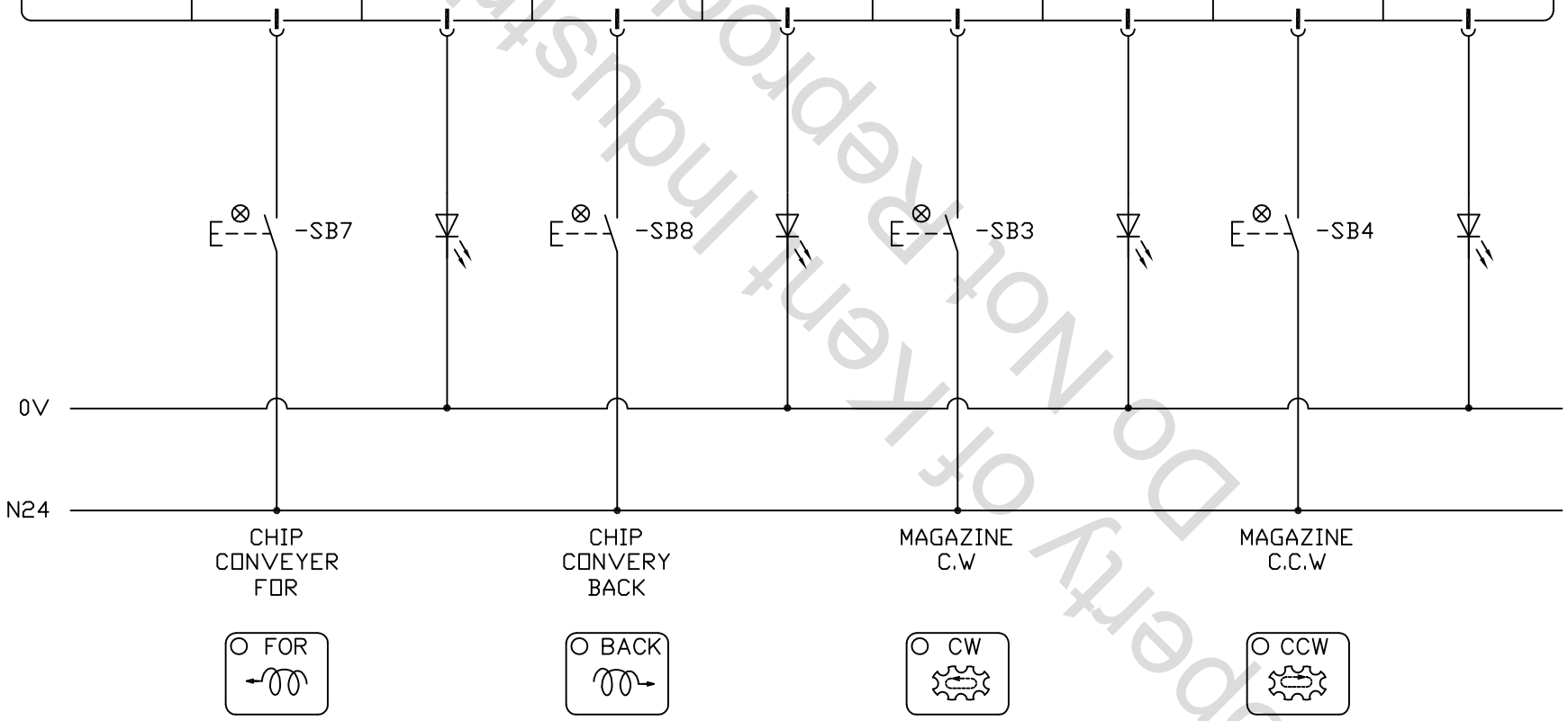
PLC ADDRESS	0V	24V	X30.0	Y30.0	X30.1	Y30.1		
I/O CARD CONNECT	CE56(A1,A14) CE57(A1,B14)	CE56(B1) CE57(B1)	CE56-A2	CE56-A16	CE56-B2	CE56-B16		
PANEL CONNECT			CYCLE-2	CYCLE-4	HOLD-2	HOLD-4		



KENT USA INC.	TITLE: S-1500 PANEL INPUT	CH.: ALEX YU DATE: 10-28-2012	PAGE: D01/01 VERSION: TWH REV.1.0

I/O INTERFACE

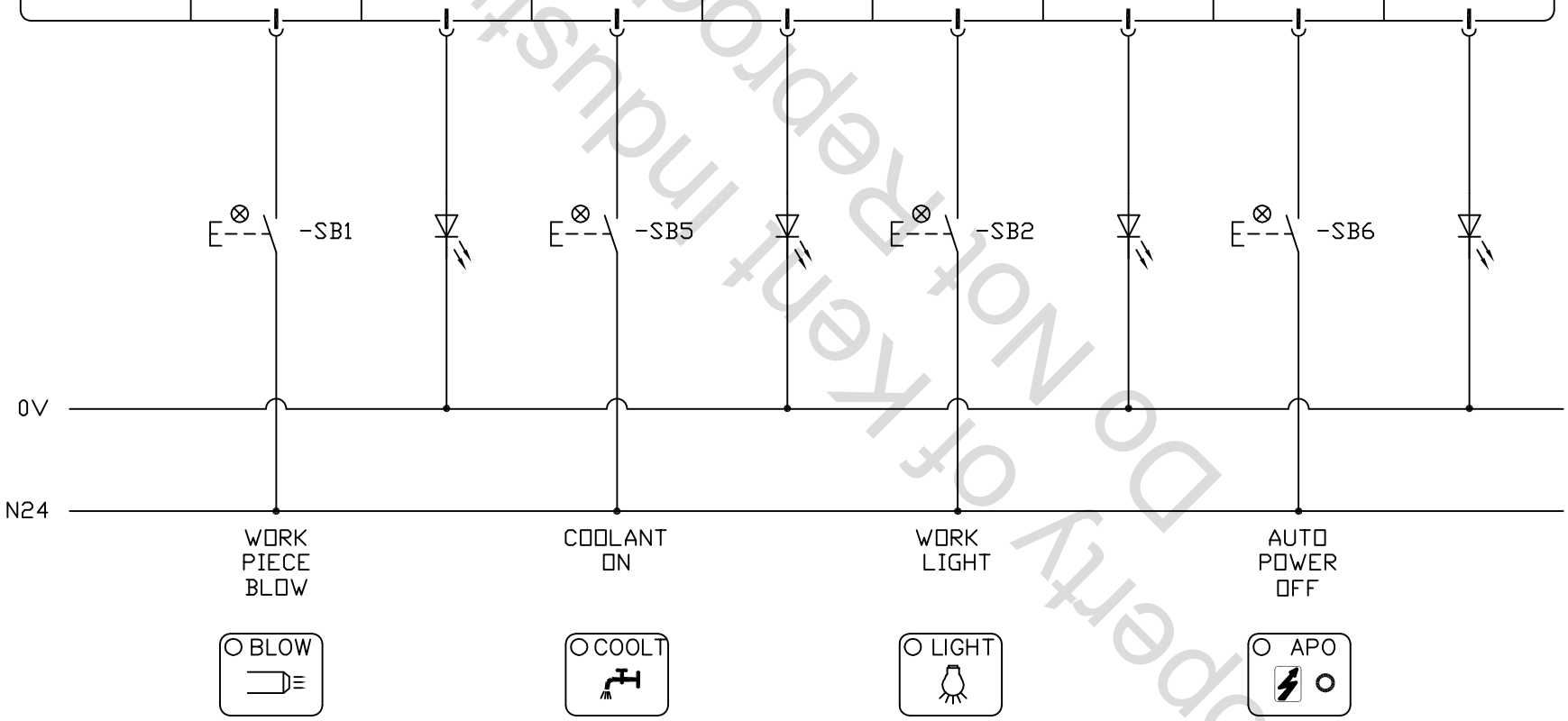
PLC ADDRESS	X35.1	Y33.4	X35.2	Y33.3	X34.6	Y33.7	X34.7	Y33.6
I/O CARD CONNECT	CE57-B10	CE57-A22	CE57-A11	CE57-B21	CE57-A9	CE57-B23	CE57-B9	CE57-A23



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D02/01
		PANEL I/O UNIT	DATE	10-12-2012	VERSION	TWH REV.1.0

I/O INTERFACE

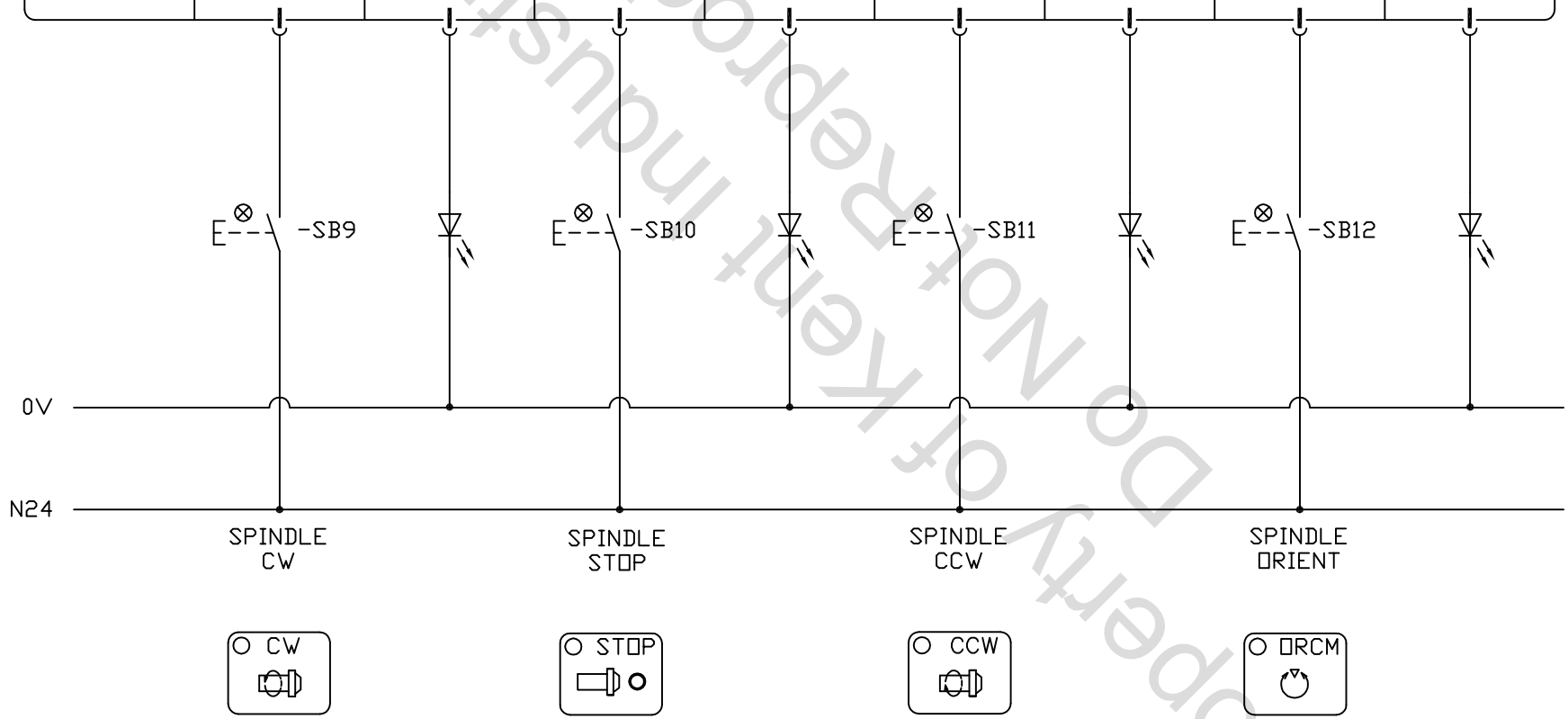
PLC ADDRESS	X35.3	Y33.2	X35.5	Y33.0	X35.0	Y33.5	X35.7	Y32.6
I/O CARD CONNECT	CE57-B11	CE57-A21	CE57-B12	CE57-A20	CE57-A10	CE57-B22	CE57-B13	CE57-A19



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D03/01
		PANEL I/O UNIT	DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

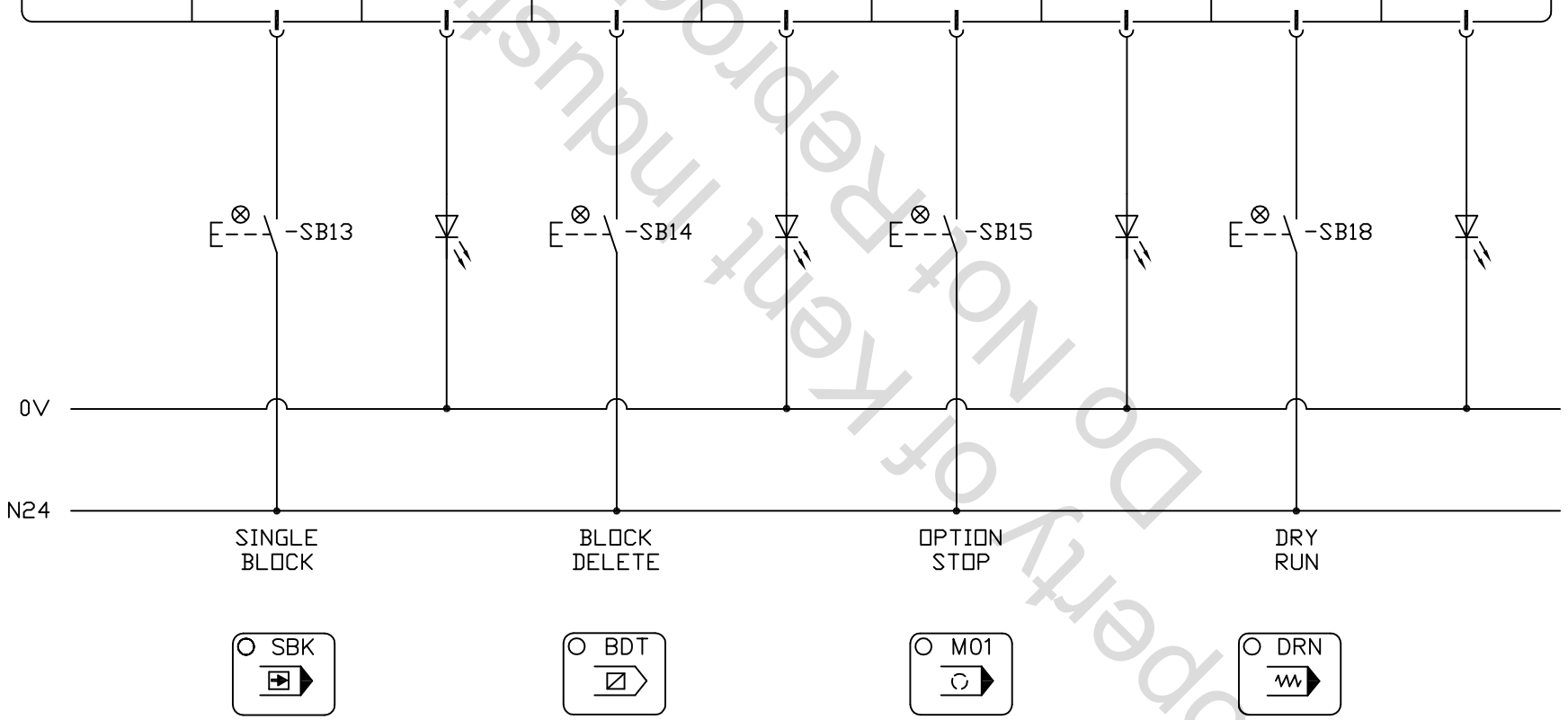
PLC ADDRESS	X32.0	Y31.2	X33.0	Y31.5	X32.1	Y30.5	X32.3	Y30.7
I/O CARD CONNECT	CE56-A10	CE57-A21	CE57-A2	CE56-B22	CE56-B9	CE56-B18	CE56-B11	CE56-B19



KENT USA INC.	TITLE: S-1500 PANEL I/O UNIT	CH.: ALEX YU	PAGE: D04-/01
		DATE: 10-28-2012	VERSION: TWH REV.1.0

I/O INTERFACE

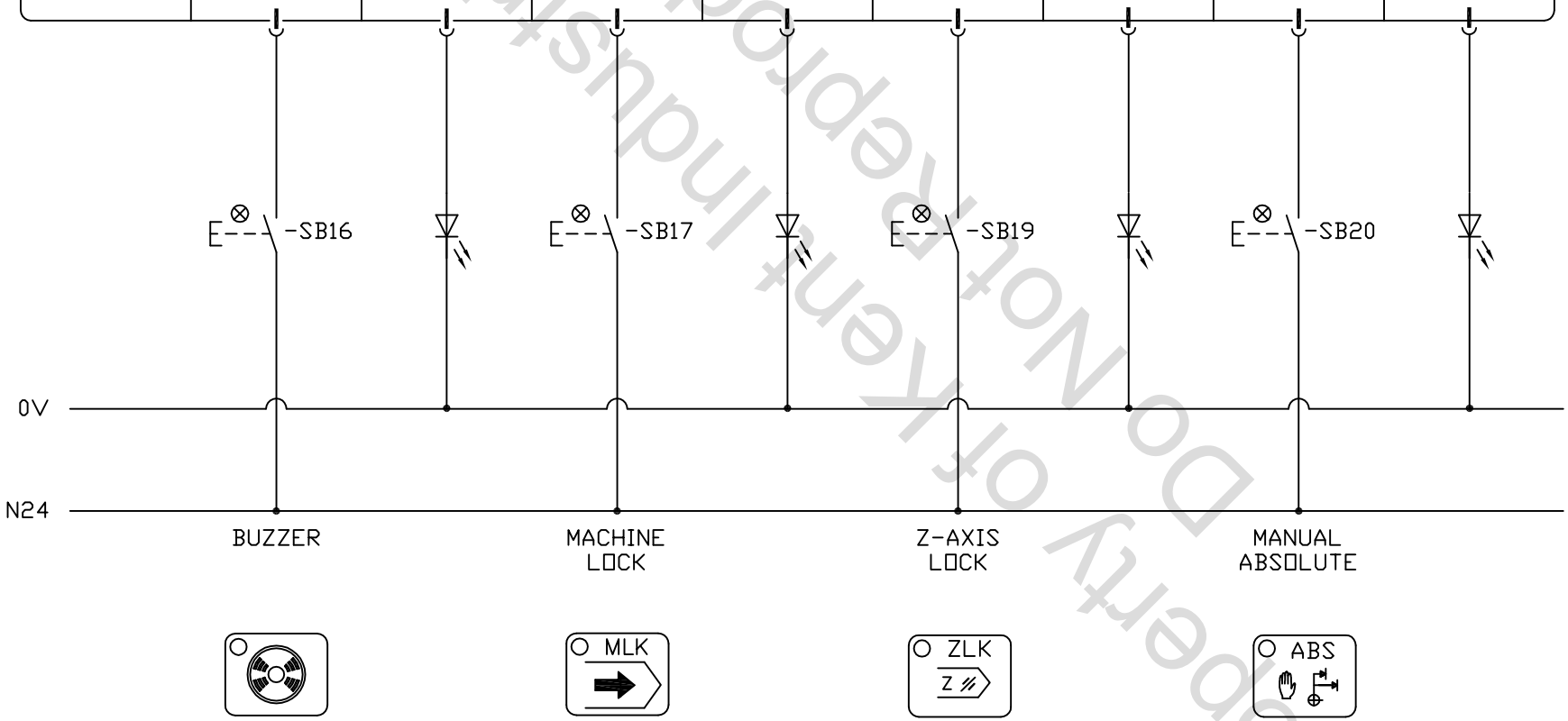
PLC ADDRESS	X32.2	Y30.4	X32.4	Y30.6	X32.7	Y31.3	X31.7	Y31.4
I/O CARD CONNECT	CE56-A11	CE56-A18	CE56-A12	CE56-A19	CE56-B13	CE56-B21	CE56-B9	CE56-A22



KENT USA INC.	TITLE S-1500 PANEL I/O UNIT	CH. ALEX YU	PAGE D05/01
		DATE 10-28-2012	VERSION TWH REV.1.0

I/O INTERFACE

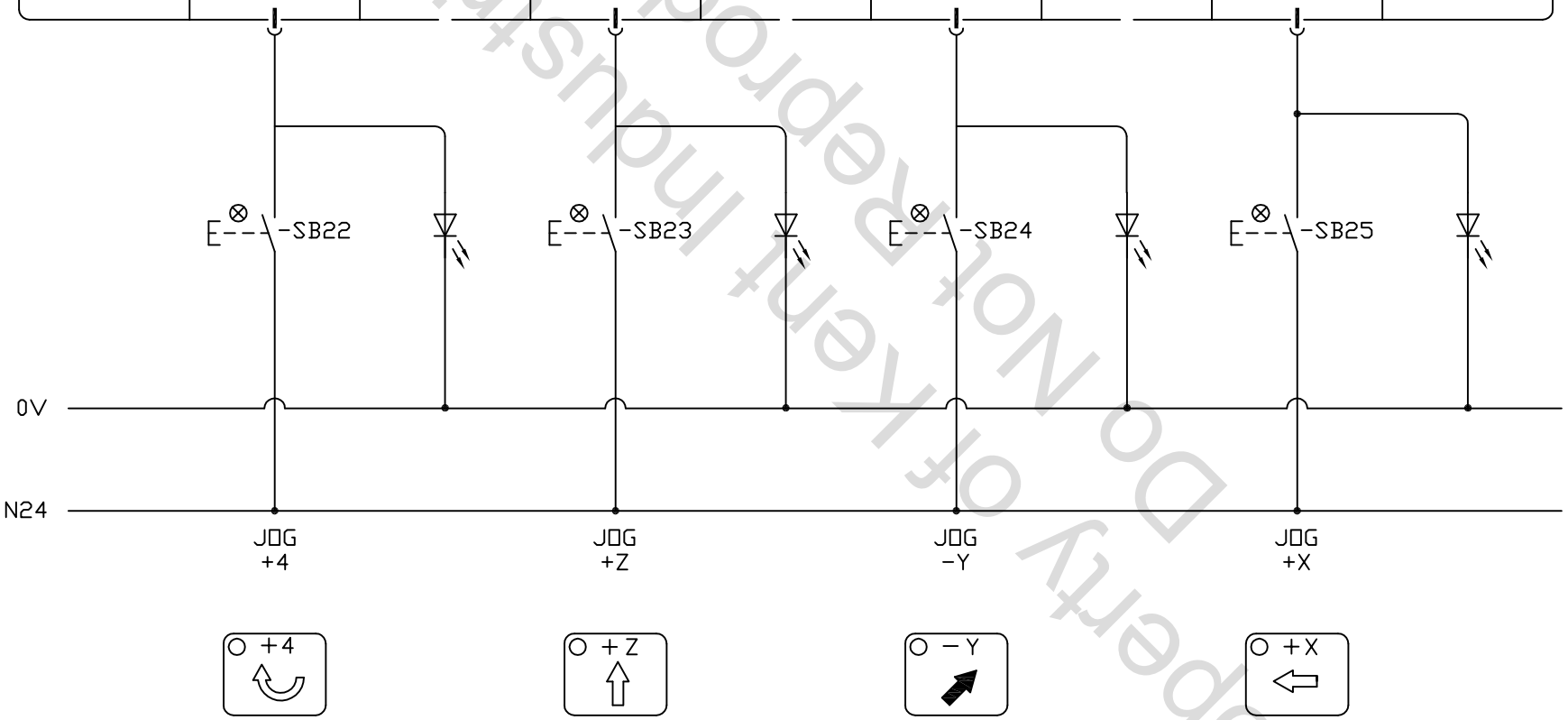
PLC ADDRESS	X32.6	Y31.0	X31.6	Y31.6	X32.5	Y31.1	X33.1	Y31.7
I/O CARD CONNECT	CE56-A13	CE56-A23	CE56-A9	CE56-A23	C72-B4	C74-B6	C71-A4	C74-B6
PANEL CONNECT	BI-7	BO-7	BI-9	BO-9	BI-13	BO-13	BI-15	BO-15



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D06/01
		PANEL I/O UNIT	DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

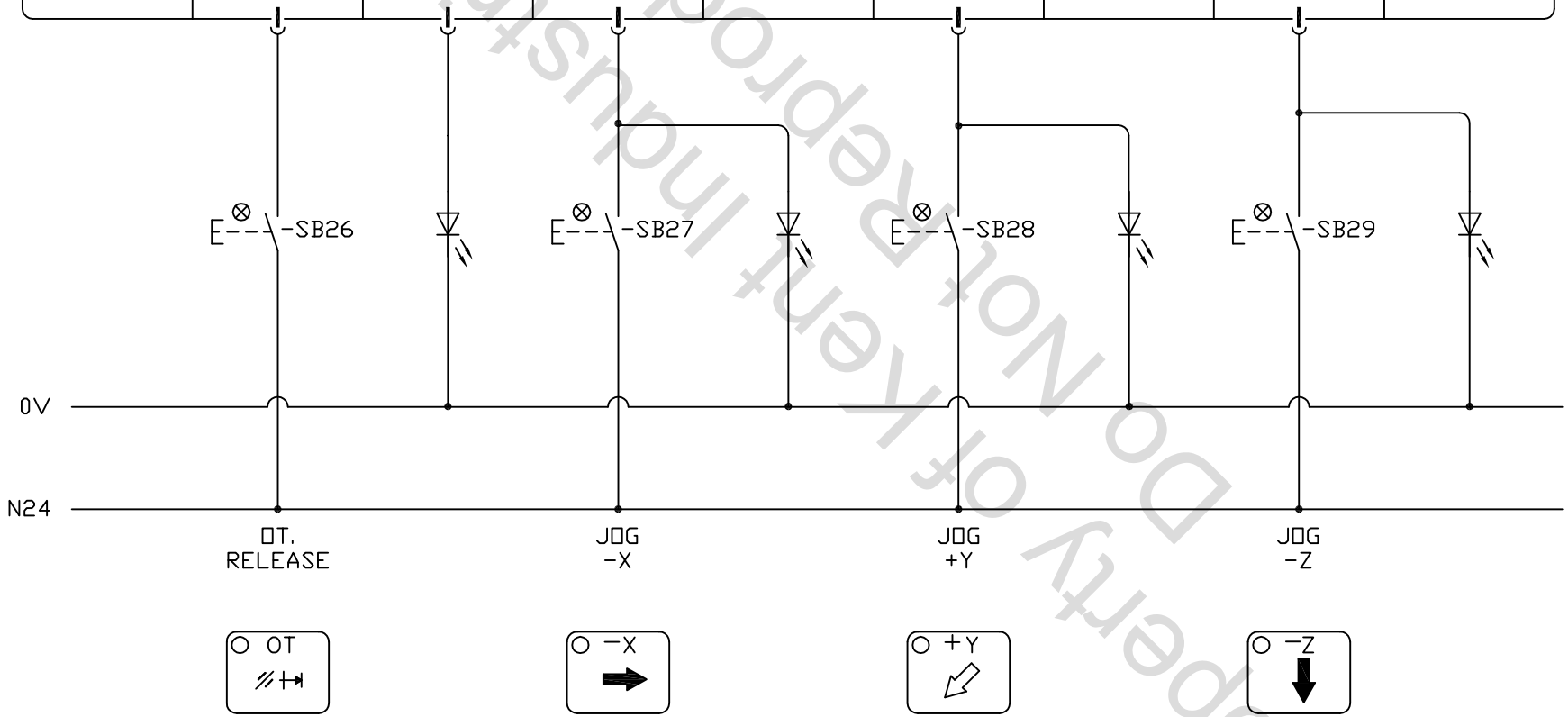
PLC ADDRESS	X31.1		X31.0		X30.6		X30.4	
I/O CARD CONNECT	CE56-A7		CE56-B6		CE56-A6		CE56-B5	
PANEL CONNECT	CI-1		CI-3		CI-5		CI-7	



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D07/01
		PANEL I/O UNUT	DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

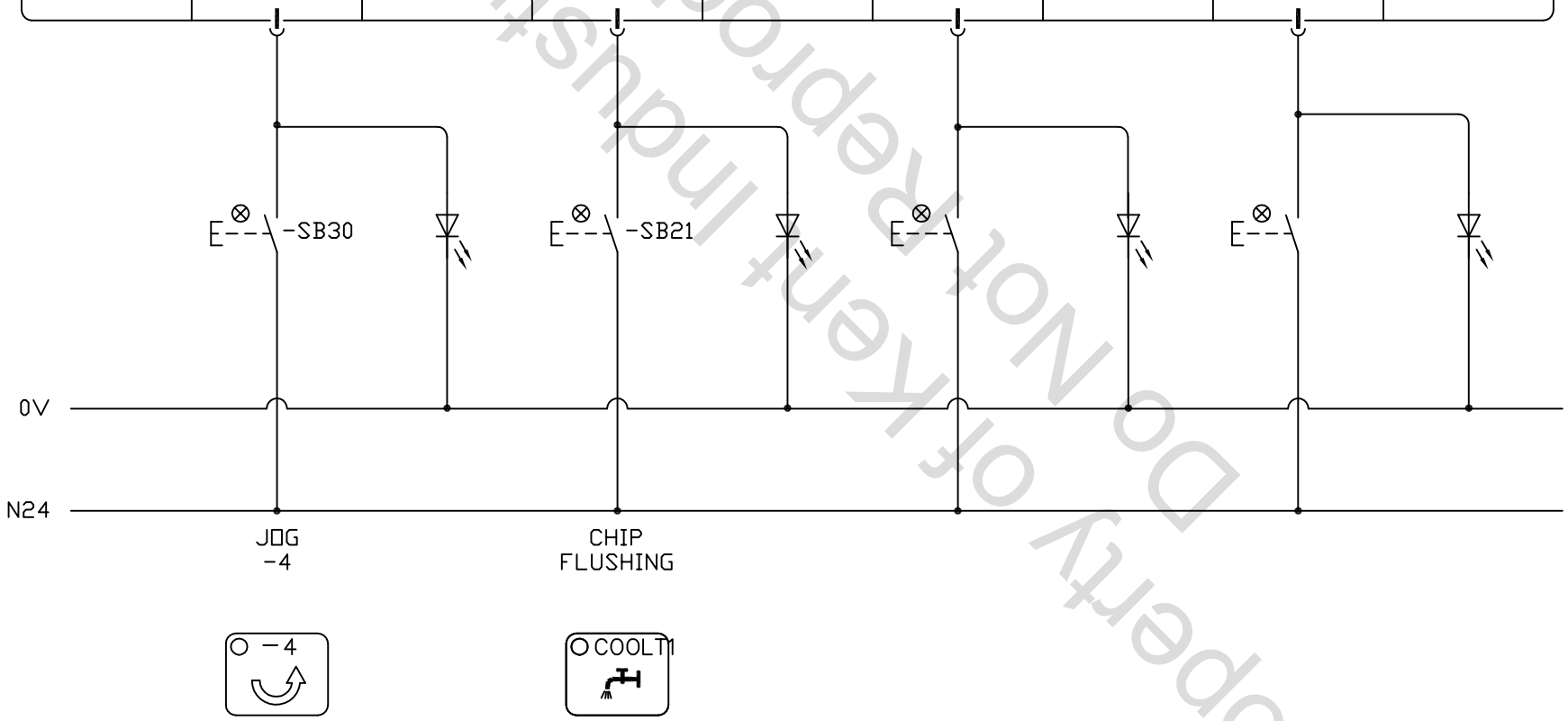
PLC ADDRESS	X30.2	Y30.2	X30.3		X30.5		X30.7	
I/O CARD CONNECT	CE56-A5	CB106-A18	CE56-B4		CE56-A4		CE56-B3	
PANEL CONNECT	CI-9	CO-9	CI-11		CI-13		CI-15	
		PA-A5						



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D08/01
		PANEL I/O UNUT	DATE	10-28-2012	VERSION	TWH REV.1.0

I/O INTERFACE

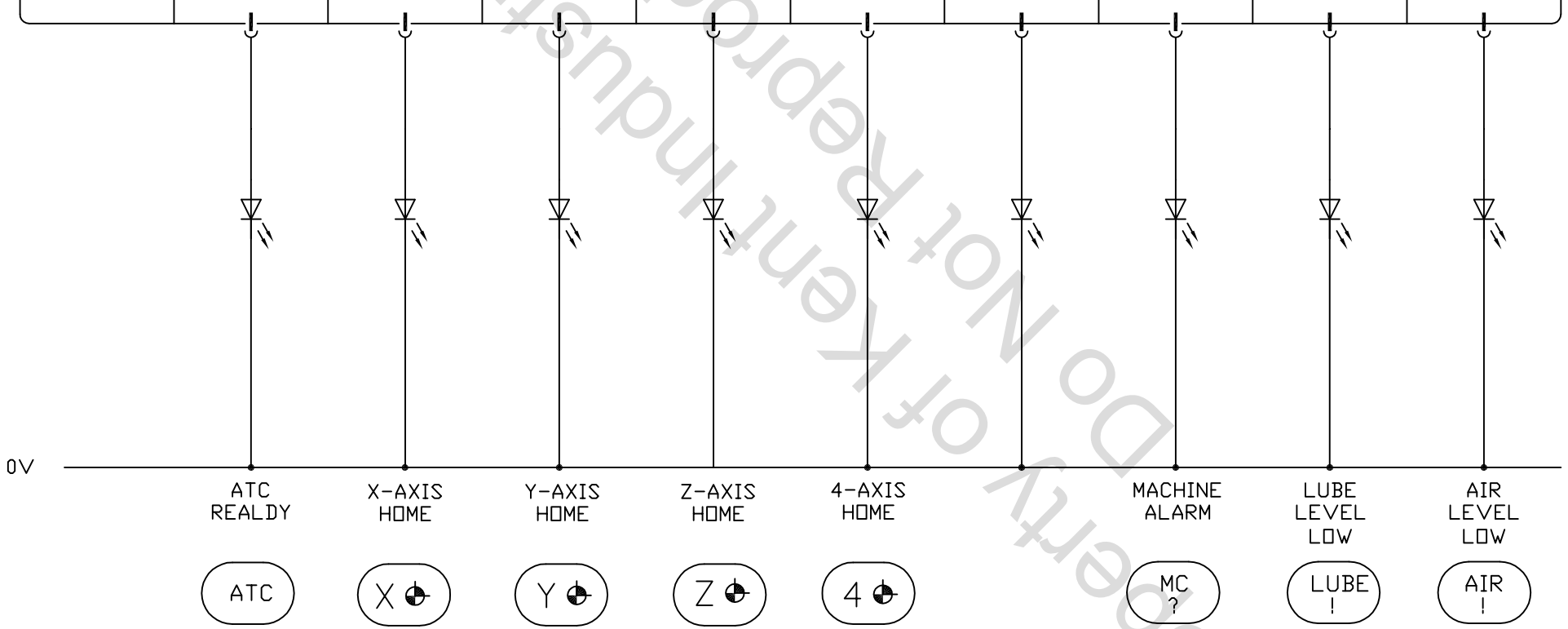
PLC ADDRESS	X31.2		X35.6	Y32.7				
I/O CARD CONNECT	CE56-A3		CE56-B13	CE57-A17				
PANEL CONNECT	CI-17		BI-17	BO-17				



KENT USA INC.	TITLE	S-1500	CH.	ALEX YU	PAGE	D09/01
		PANEL I/O UNUT	DATE	10-28-2012	VERSION	TWH REV.1.0

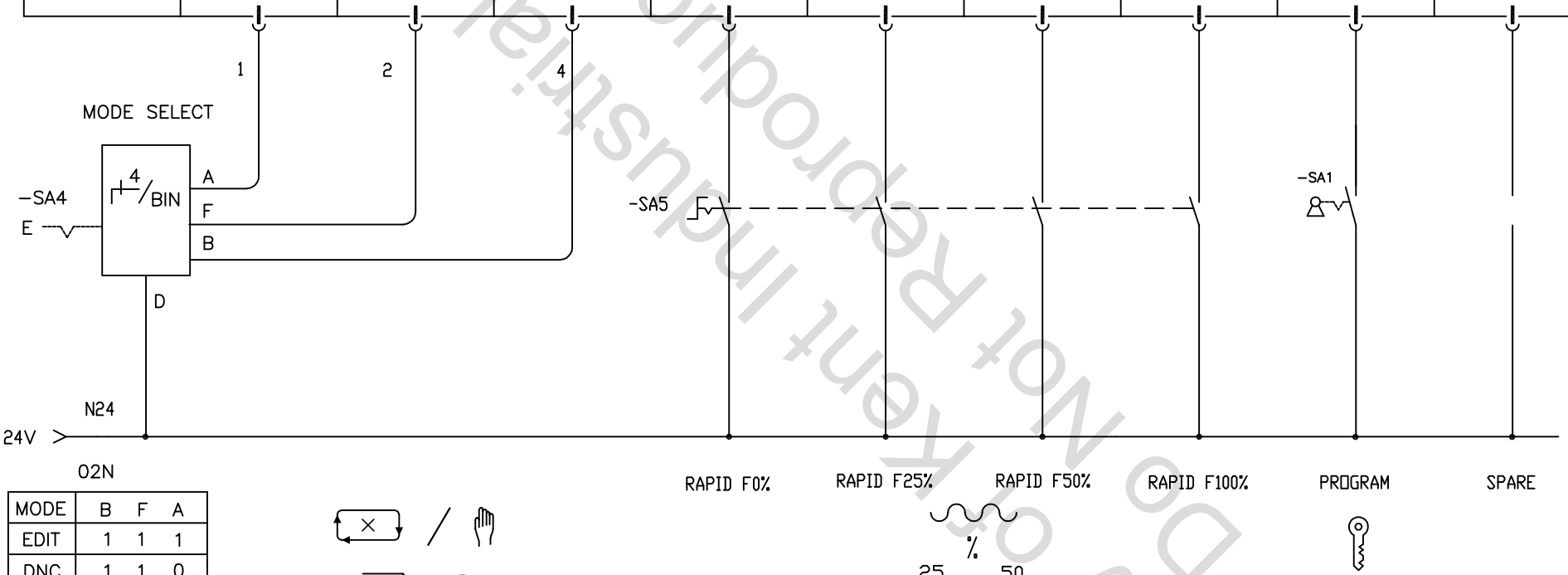
I/O INTERFACE

PLC ADDRESS	Y32.0	Y32.2	Y32.3	Y32.4	Y32.5		Y4.4	Y4.5	Y4.6
I/O CARD CONNECT	CB57-A16	CB57-A17	CB57-B17	CB57-A18	CB57-B18		CB106-A18	CB106-B18	CB106-A19



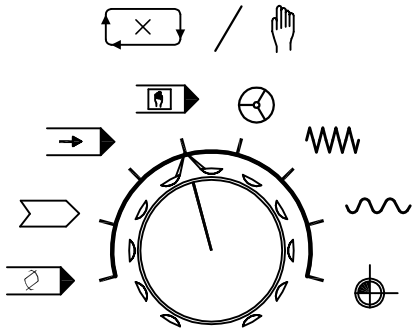
KENT USA INC.	TITLE: S-1500 PANEL I/O UNUT	CH. ALEX YU	PAGE D10/01
		DATE 10-28-2012	VERSION TWH REV.1.0

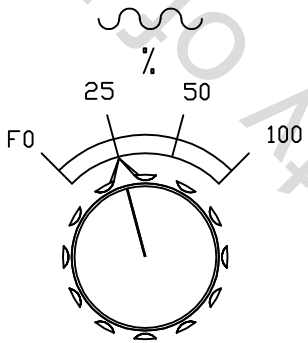
PLC ADDRESS	X31.3	X31.4	X31.5		X34.0	X34.1		X34.5	
CONNECT PIN NO.	CE56-B7	CE56-A8	CE56-B8		CE57-B2	CE57-A5		CE57-B4	
PANEL CONNECT PIN NNMBER	MODE-A	MODE-F	MODE-B		RAPID-C	RAPID-D		KEY-2	



02N

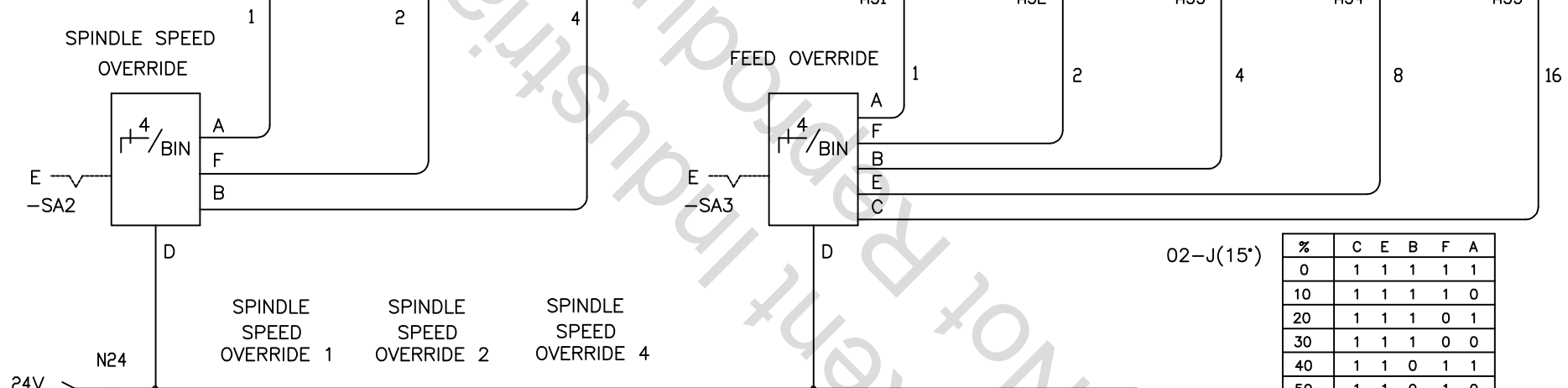
MODE	B	F	A
EDIT	1	1	1
DNC	1	1	0
AUTO	1	0	1
MDI	1	0	0
MPG	0	1	1
JOG	0	1	0
RAPID	0	0	1
ZRN	0	0	0





KENT USA INC.	TITLE S-1500 PANEL I/O UNUT	CH. ALEX YU	PAGE D11/01
		DATE 10-28-2012	VERSION TWH REV.1.0

PLC ADDRESS	X34.2	X34.3	X34.4		X33.2	X33.3	X33.4	X33.5	X33.6
CONNECT PIN NO.	CE57-A7	CE57-B7	CE57-A8		CE57-A3	CE57-B3	CE57-A4	CE57-B4	CE57-A5
PANEL CONNECT PIN NNMBER	SPEED-1(A)	SPEED-6(F)	SPEED-2(B)		FEED-A(1)	FEED-F(6)	FEED-B(2)	FEED-E(5)	FEED-C(3)
					PA-A1	PA-B1	PA-A2	PA-B2	PA-A3

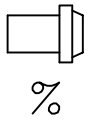


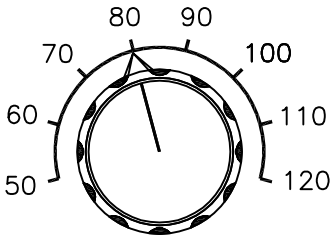
02-J(15°)

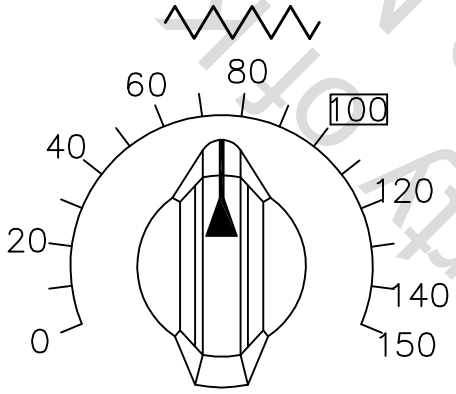
%	C	E	B	F	A
0	1	1	1	1	1
10	1	1	1	1	0
20	1	1	1	0	1
30	1	1	1	0	0
40	1	1	0	1	1
50	1	1	0	1	0
60	1	1	0	0	1
70	1	1	0	0	0
80	1	0	1	1	1
90	1	0	1	1	0
100	1	0	1	0	1
110	1	0	1	0	0
120	1	0	0	1	1
130	1	0	0	1	0
140	1	0	0	0	1
150	1	0	0	0	0

02-N(30°)

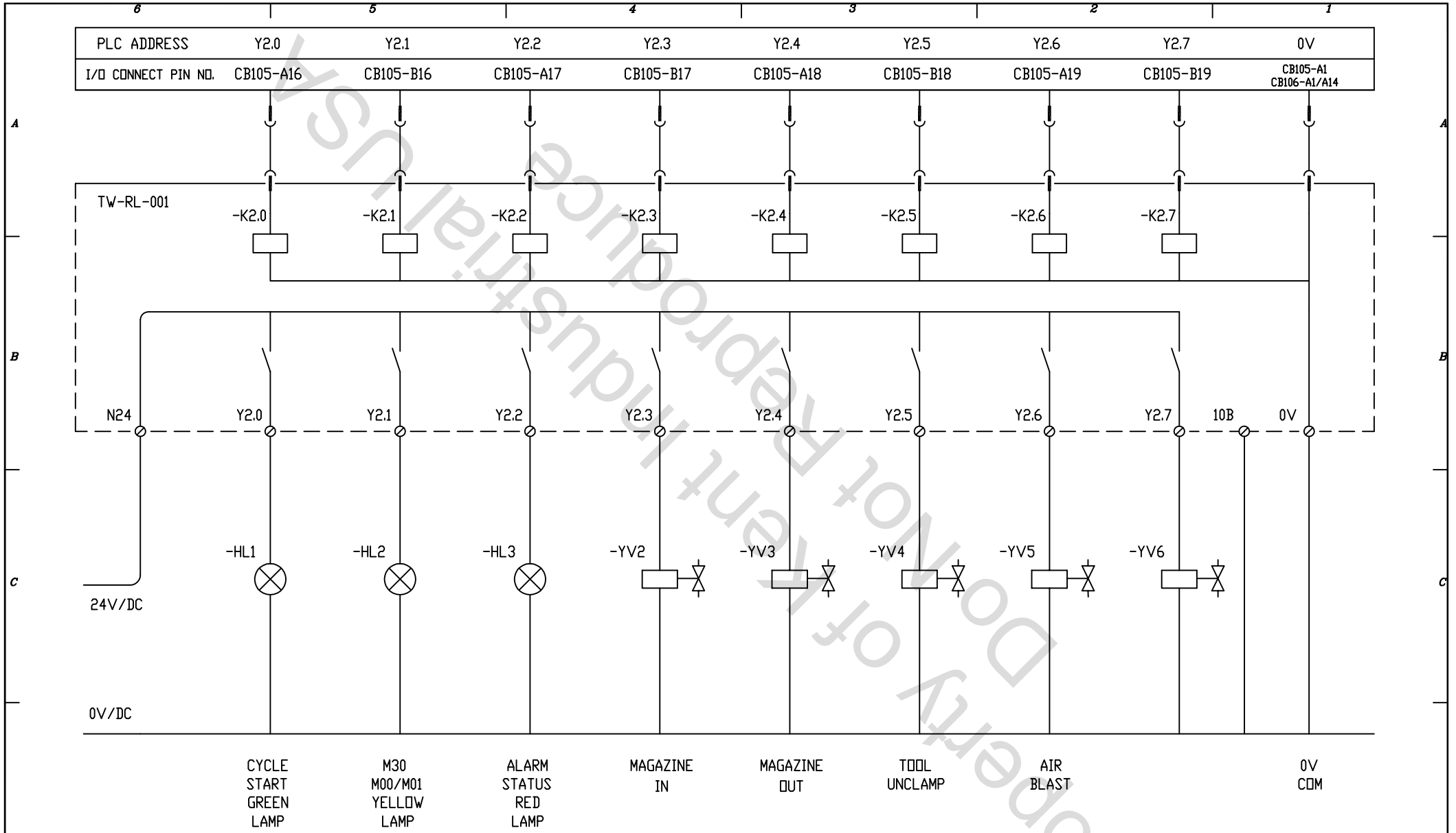
%	B	F	A
50	1	1	1
60	1	1	0
70	1	0	1
80	1	0	0
90	0	1	1
100	0	1	0
110	0	0	1
120	0	0	0



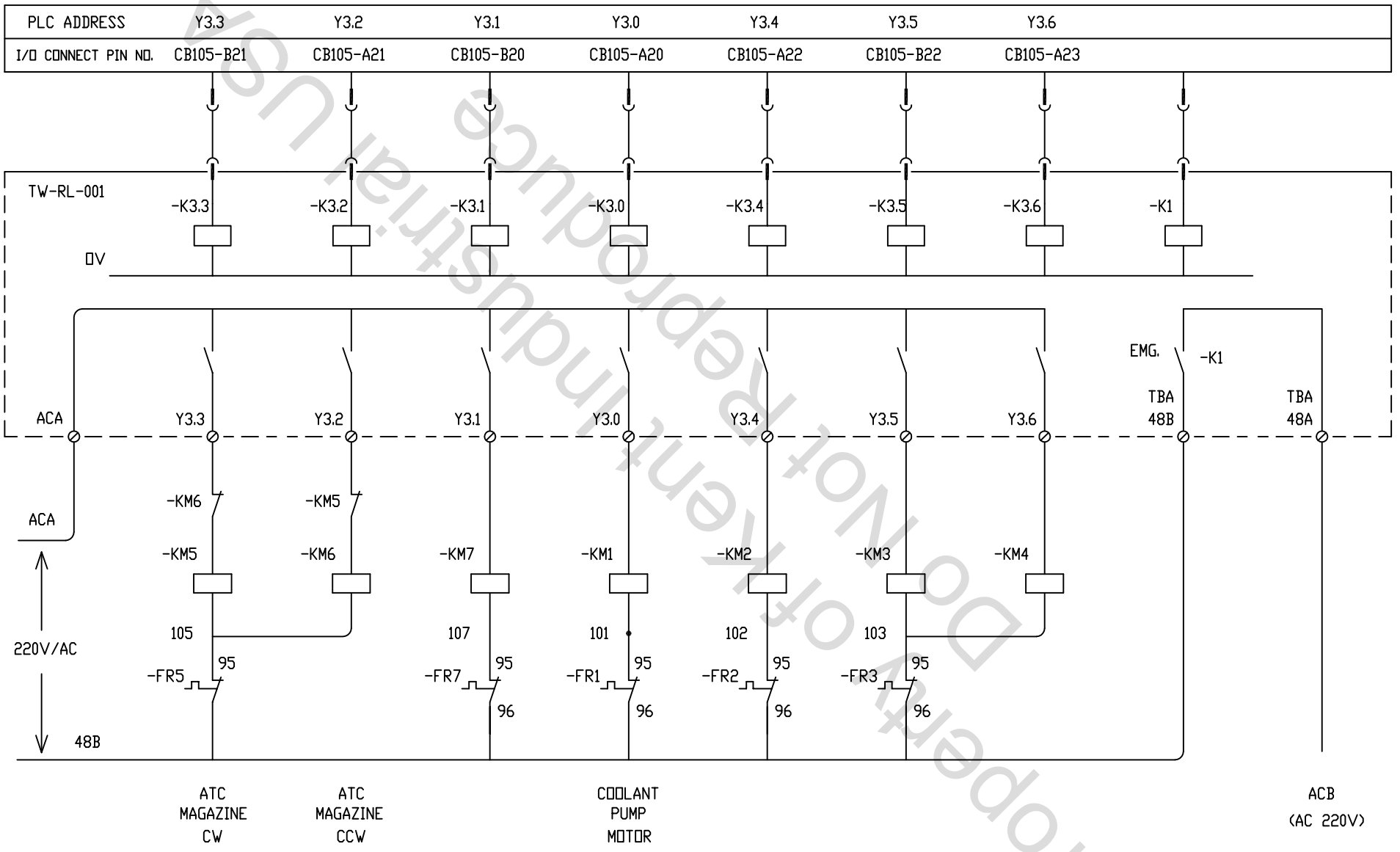




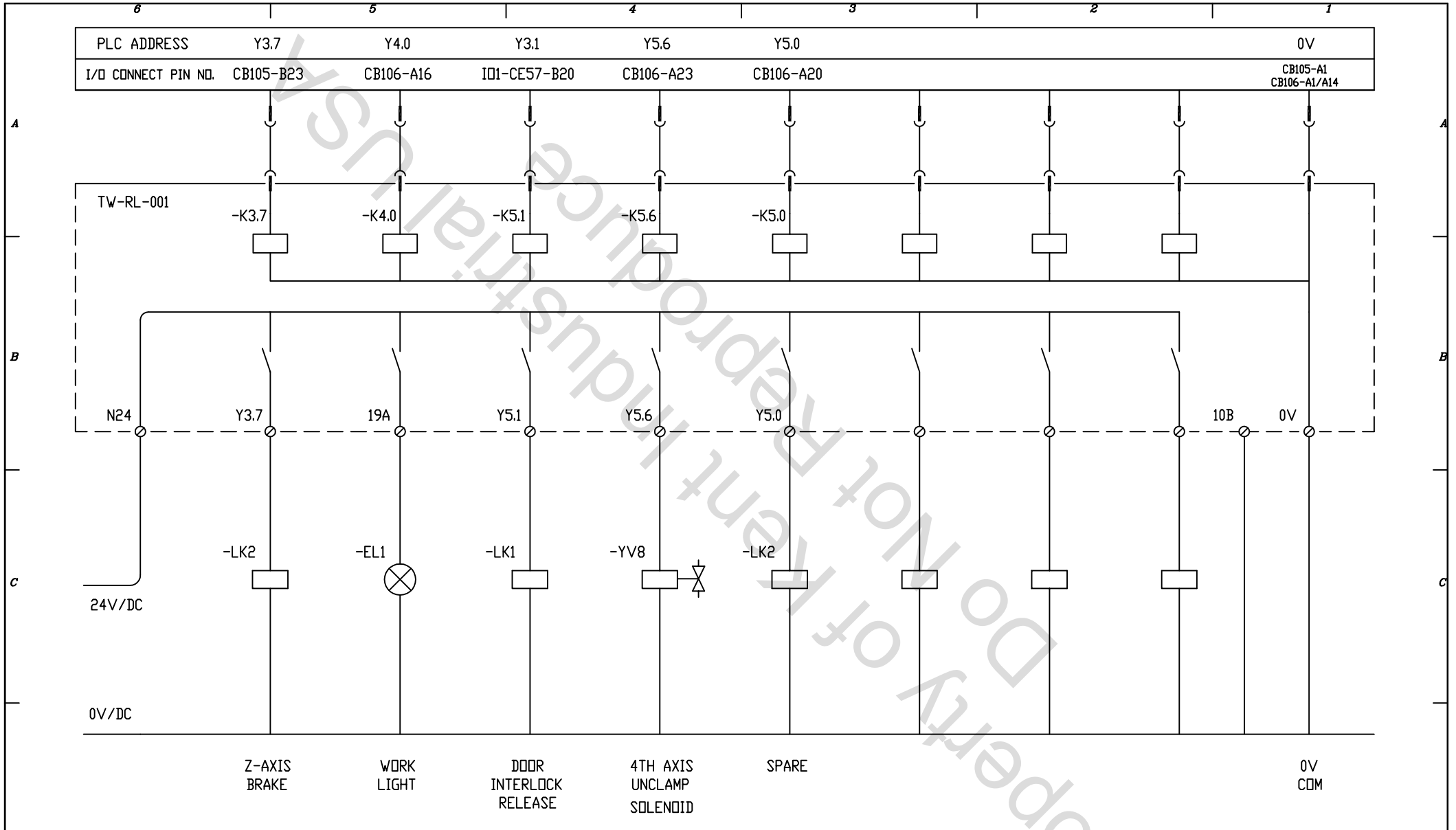
KENT USA INC.	TITLE S-1500 PANEL I/O UNUT	CH. ALEX YU	PAGE D12/01
		DATE 10-28-2012	VERSION TWH REV.1.0



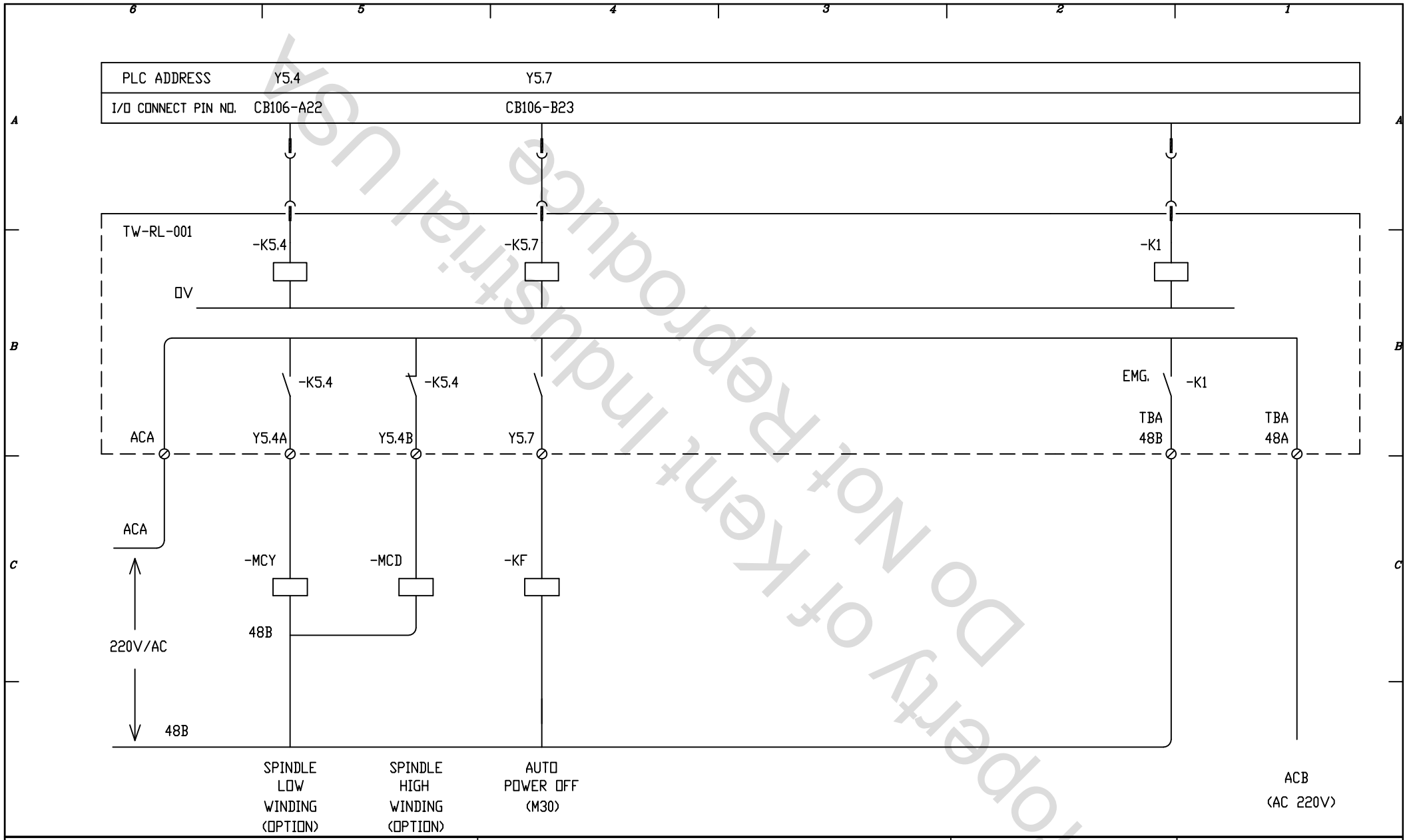
KENT USA INC.	TITLE S-1500 RELAY OUTPUT UNIT	CH. ALEX YU	PAGE E01/02
		DATE 10-28-2012	VERSION TWH REV.1.0



KENT USA INC.	TITLE S-1500 RELAY OUTPUT UNIT	CH. ALEX YU	PAGE E02/01
		DATE 10-28-2012	VERSION TWH REV.1.0



KENT USA INC.	TITLE S-1500 RELAY OUTPUT UNIT	CH. ALEX YU	PAGE E03/01
		DATE 10-28-2012	VERSION TWH REV.1.0



KENT USA INC.	TITLE S-1500 RELAY OUTPUT UNIT	CH. ALEX YU	PAGE E04/01
		DATE 10-28-2012	VERSION TWH REV.1.0