

BWD**---63/80/100

ELECTRICAL TURRETS
INSTRUCTION FOR USE AND MAINTENANCE

1. GENERAL RULES

1.1 The tool turret of YAXING design are provided for being incorporated in numerical controlled turning machines , and they must be used only for this purpose .The maximum performances of the turret are shown on the respective Technical data sheets. Any improper use or alteration of the turret relieves YAXING of any responsibility for possible injury to persons and damage to property and will also invalid any obligation for warranty.

1.2 Before installing and commissioning the turret, technician and the operator must have read carefully this instruction Manual.

1.3 Commissioning adjustment and repair of the turret must be carried out by skilled and authorized personnel who must follow the instructions in this Manual for all necessary steps.

1.4 YAXING declines any responsibility for any accident or injuries to persons or damages to property due to non observance of the respective safety rules and to the instruction shown in this Manual.

2. Application

This turret is a core of economic and advanced NC lathe. It makes sure that the workpiece can be automatically processed from turning internal, external and turning surface, arc to threading, groove just by once clamping, and widely used for machine tool, auto, gear, bearing, metallurgy industry etc.

3. Model identification

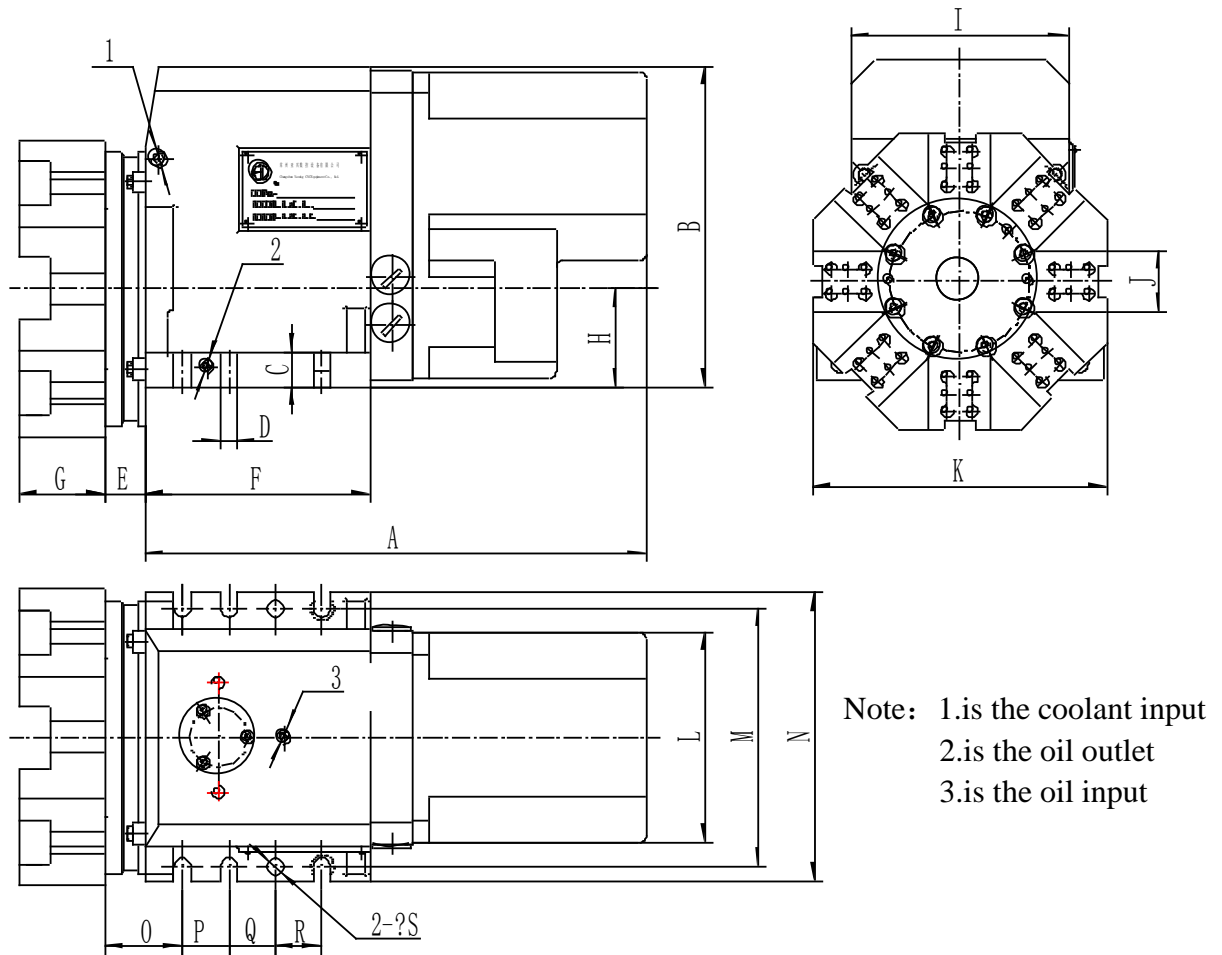
BWD — —

Model	Positions	Code	Installing method		centre H	Order number	
	Nr.6.Pos	6			63	standard	
	Nr.8.Pos	8	F	back	80	01	Other 1
When the turret indexing the disc needn't in axial motion			other	front	100		

4. Technical Data

ITEM		PARAMETER	ITEM		PARAMETER
CENTER HIGH	mm	63/80/100	Max Unbalancing torque	Nm	10/12/20
POSITIONS	N	6: 8	Repeatability accuracy	mm	<0.005
INDEXING TIME 45°	S	1.8/1.8/2.1	Dividing accuracy	mm	<0.03
INDEXING TIME 180°	S	2.9/2.9/3.2	POWER of the motot	W	90/120/140
Max tangential	KNm	0.8/1.5/3.0	Motor rps	r/min	900/1400/1400
Max axial torque	KNm	0.4/0.6/1.5	Mass (without tooldisc)	Kg	35/50/80

5. Dimension



	H	A	B	C	D	E	F	G	I	J
BWD**-63	63	323	205	20	11	26	145	55	140	40
BWD**-80	80	315	238	25	11	26	149	65	160	40
BWD**-100	100	350	280	32	13	32	172	80	205	50
	K	L	M	N	O	P	Q	R	S	T
BWD**-63	190	134	165	185	50	30	30	30		G1/4"
BWD**-80	240	149	190	210	58	32	32	32	11	G3/8"
BWD**-100	305	188	220	250	66	40	30	30		G3/8"

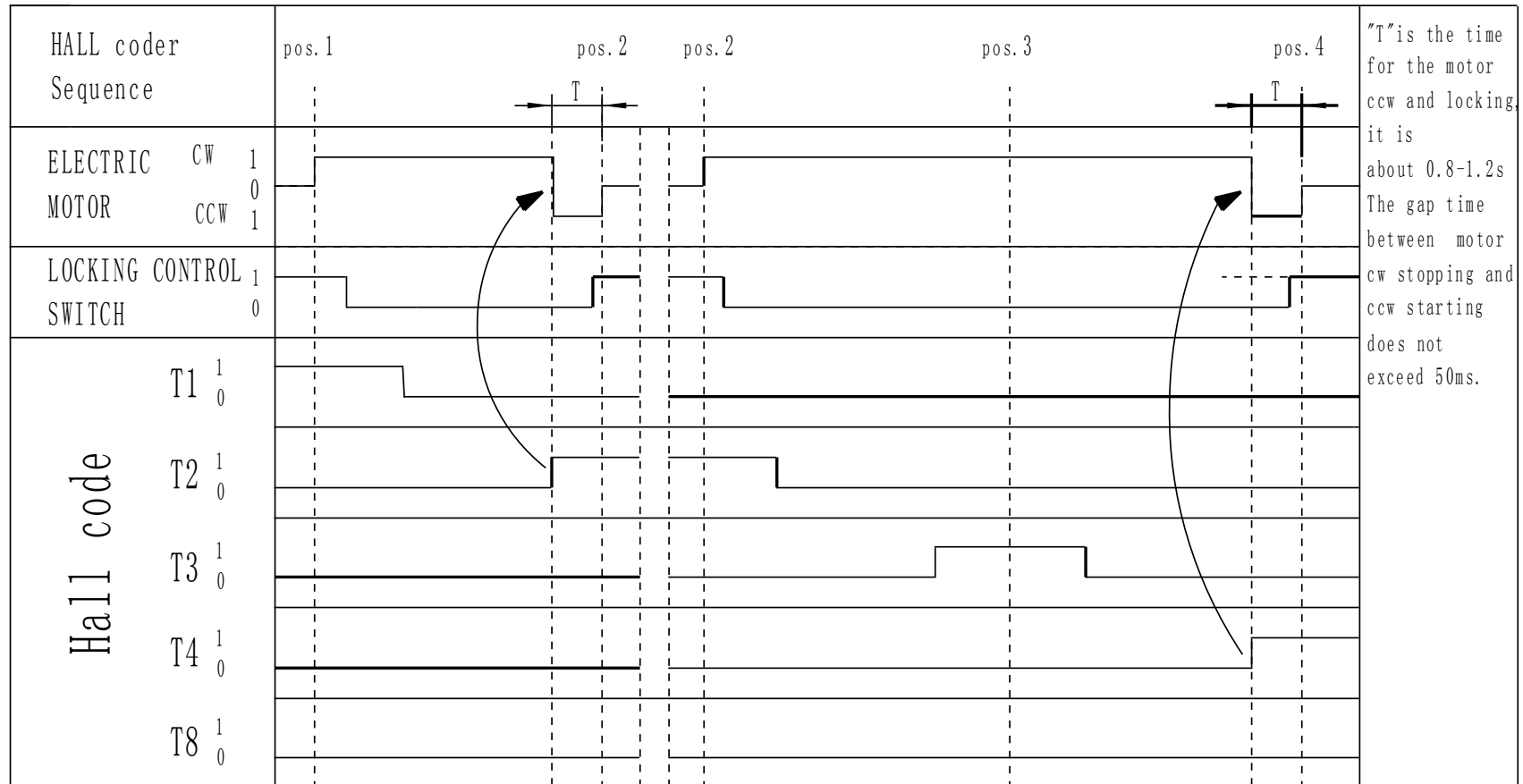
Note: Can be made according to your demands

6. Turret indexing sequence

Indexing signal---motor rotating in CW---NC received locating signal from turret---stopped motor in CW and restarted motor in CCW ---clamping---stopped motor----detected the clamping signal and response signal----working

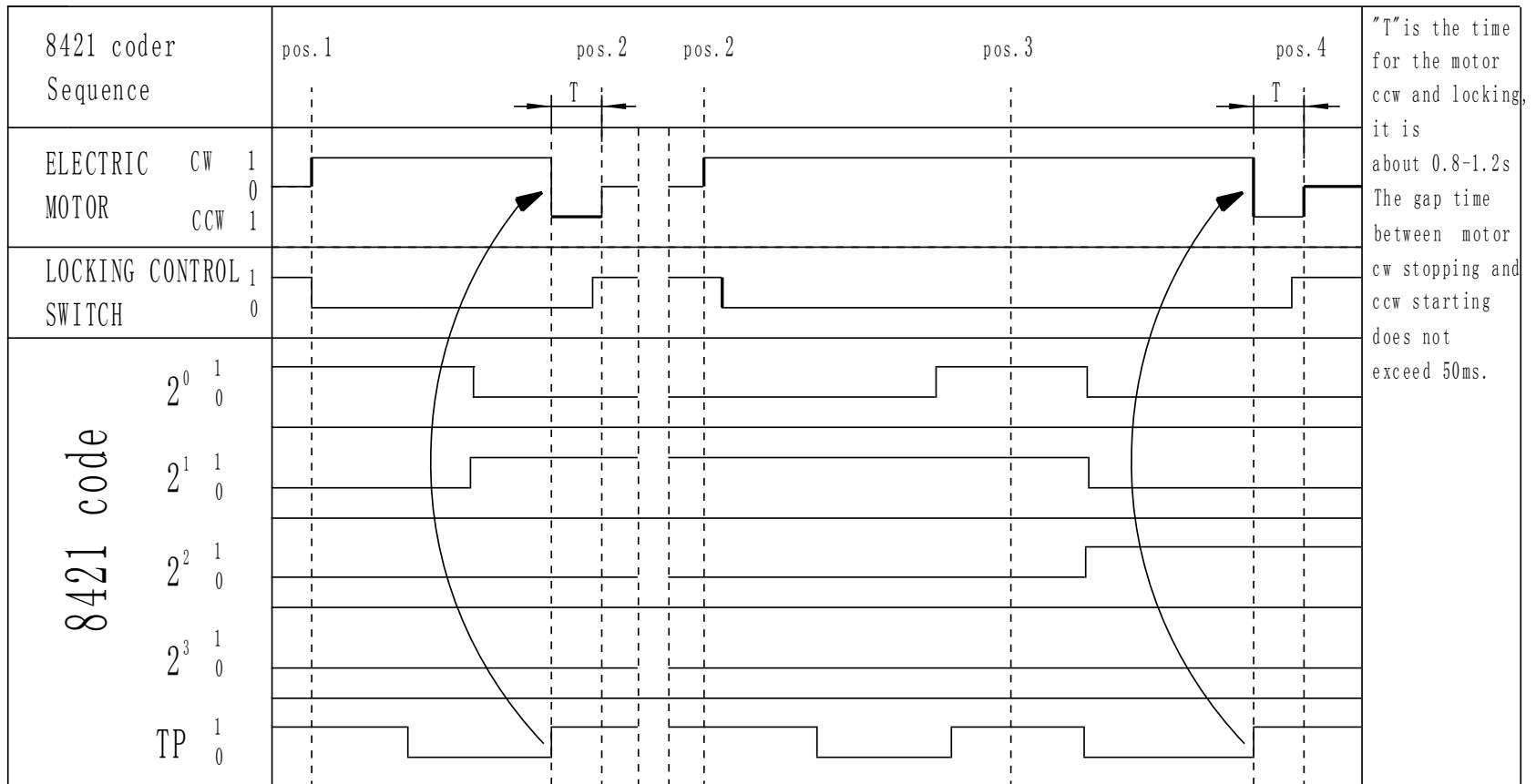
7. Sequence diagram

BWD HALL Coder Sequence Diagram



The truth table of Hall coder								
position	1	2	3	4	5	6	7	8
T1	1	0	0	0	0	0	0	0
T2	0	1	0	0	0	0	0	0
T3	0	0	1	0	0	0	0	0
T4	0	0	0	1	0	0	0	0
T8	0	0	0	0	0	0	0	1

BWD 8421 Coder Sequence Diagram



The truth table of 8421 coder												
position	1	2	3	4	5	6	7	8	9	10	11	12
2 ⁰	1	0	1	0	1	0	1	0	1	0	1	0
2 ¹	0	1	1	0	0	1	1	0	0	1	1	0
2 ²	0	0	0	1	1	1	1	0	0	0	0	1
2 ³	0	0	0	0	0	0	0	1	1	1	1	1
TP	1	1	1	1	1	1	1	1	1	1	1	1

8. ELECTRICAL CONNECTION

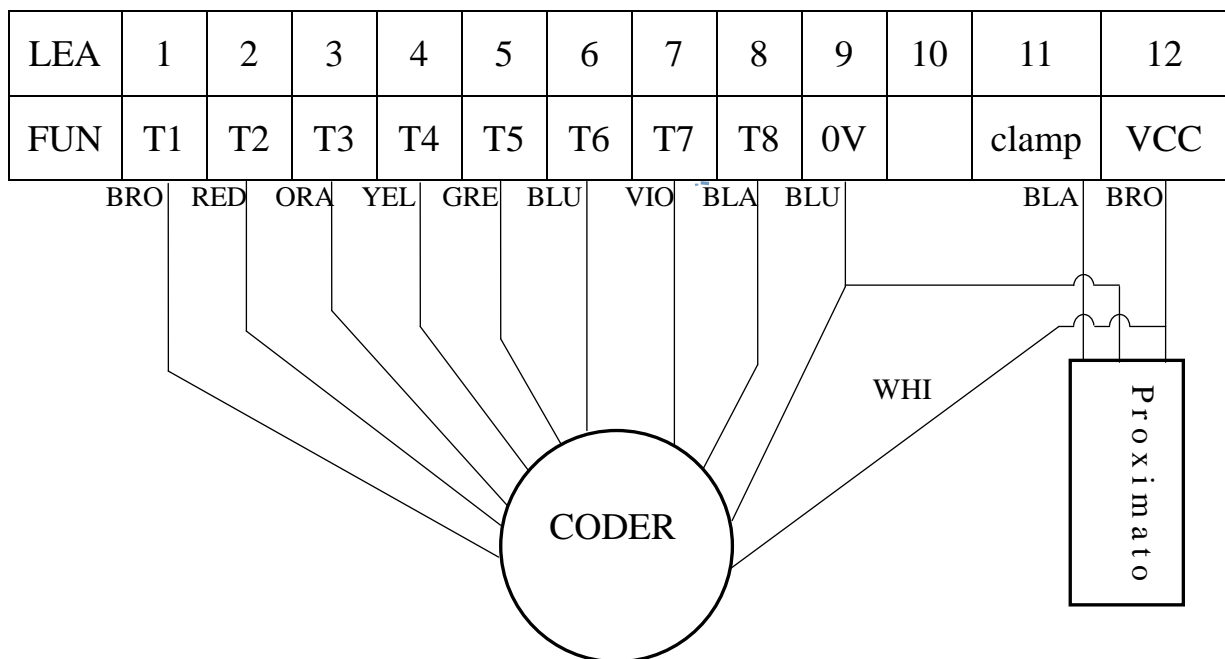
8.1 Motor connection

Lea	1	2	3
fun	U	V	W

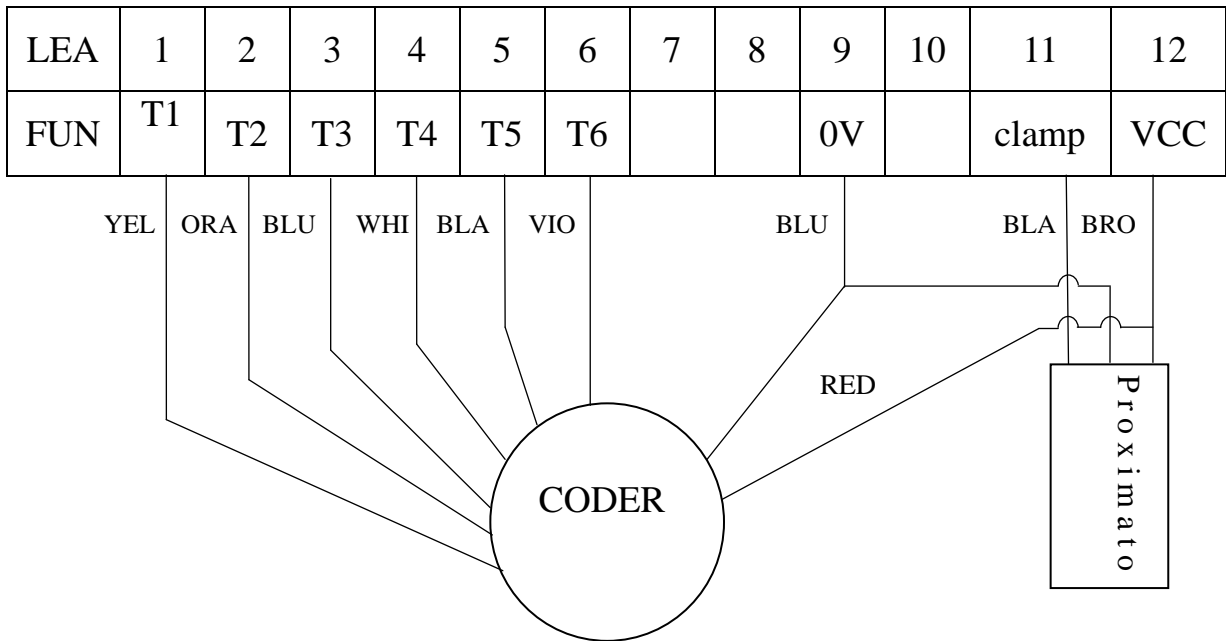
8.2 The connection of the coder and proximity switch

The signaling device composed of Hall coder and optical coder

8.2.1 The connection of the Hall coder

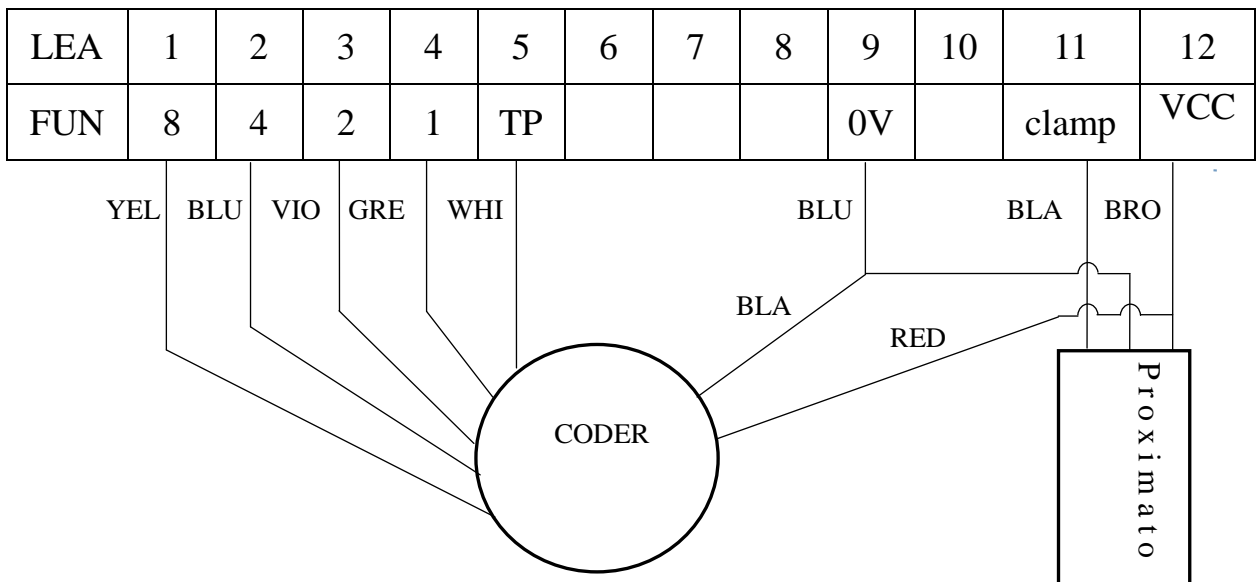


8 STATIONS TURRET



6 STATIONS TURRET

8.2.2 The connection of the 8421 coder



8.2.3.1 The clamping signal is from the clamping proximate of the turret and the clamping proximate is the NC PNP switch and it is high lever effective and it' s output current is 200mA.

8.2.3.2 Hall coder: It is composed of A 1104 BiCMOS Hall-effect switches and lower lever effective.

8.2.3.3 Signaling disc: There are two signaling disc in our company one is the high lever effective signaling disc and it is used for high lever effective CNC system and other is the lower lever effective signaling disc and it is used for lower lever effective CNC system.

8.2.3.4 8421 coder: It is NO PNP output device and it is used 24 VDC power and it's output current is 25 mA.

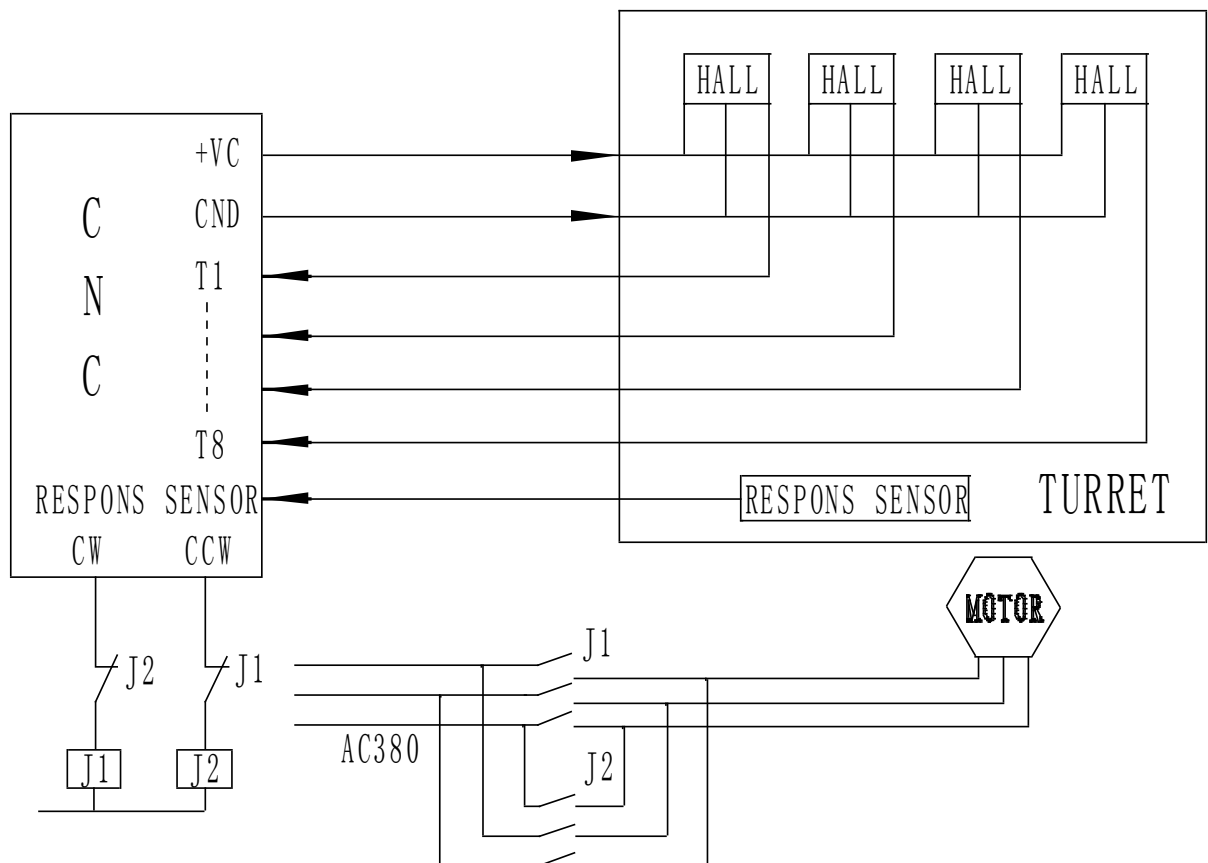
8.2.4 NOTE:

8.2.4.1 Do not with the signaling output terminal or proximate output terminal and electrode of the power short-circuiting.

8.2.4.2 It is must be close the power switch when you connecting the coder terminal and the proximate output terminal.

8.2.4.3 Because the output device is used CMOS device so when you connected from turret to CNC system the ground connecting of the electric iron must be good.

8.2.4.4 15T diagram



9 Installing and adjusting

9.1 Installing

When the turret is installing at first the assemblies must be coating oil and the driving system must be lubrication.

Make sure the fixing surface is clean and squared to ensure a proper tool alignment. Align the front surface of the disc in order to have it perpendicular to the spindle axis.

9.2 Adjusting

The electric connection must be carried out according to the 15T diagram, The connection cable must be provided with fittings and gasket in order to penetration of water into the turret. When the turret can not indexing at this first must be cutoff the power switch and detected phase of the motor and then restarted, when the turret indexing the turret must be agile and no abnormal sound.

10 Use and maintenance

10.1 The back cap do not removed and every assembly do not changed.

10.2 Indexing frequency <6 cycle min

10.3 The CCW clamping time is equal to 0.8-1.0s.

10.4 Maintenance

10.4.1 every day must be lubricating the mechanical part of the turret, and after three month must be changed lubricate and coating the oil for the tool disc.

11. FAULT,FINDING LIST, CORRECTION

FAULT	FINDING LIST	CORRECTION
1.motor can not start or upper body can't rotation	1.phase inversion vottage is too low	cut off the power at once adjust the phase and vottage of the motor then start agan.
2.upper body rotating continually and can't stop.	1.signalling disc bad contact . 2.signalling disc fault. 3.Hall unit is broken or short. 4.pole of magnet steel is inversion. 5.the position of the magnet steel and .Hall unit is relative departure. 6.the Hall unit or magnet is bad.	Unload cover,checking signalling disc and supply ,adjust the position of the magnet and Hall unit .or replace Hall unit .
3.after having correctly perfomed the indexing cycle the disk stil unloked	1.the time of the CCW so short. 2.bad contact. 3.with the locking signal cut off the CCW rotating signal.	Adjusting the time of CCW,checking wire pf the turret .can not with the locking signal foe the motor in CCW.
4.the disc goes on rotating without stopping or over.	the position of the magnet and Hall unit no good. Delay between the CW and CCW is no long.	Adjust the position of the magnet and .Hall unit and delay time between the CW and the CCW.
5.the face of the workpice present some ripple.	1.the turret is not clamping. 2.fault of the mechanical system.	Adjusted clamping time (must be according to the instruction of the turret)

Note: when adjusting the relative position of the .Hall unit and magnet the Carrier must be locked and the position of .Hall unit must be 1/3 ahead magnet steel.

12. Assembly drawing

12.1 Assembly drawing

12.2 Note:

12.2.1 When you dismantling the turret must be marked relatively position of the assembly and do not attained sealed ring of the turret.

12.2.2 When you reassembling the turret it is must be make sure the fixing surface is clean and have not dust or other material.

12.2.3 When you adjused coder at frist must be lock the turret at any position and set an approximate positioning by rotating the unit to get the corresponding position code or the signal passes from 1 to 0 and mark this new position and tighten the screws of the fixing pieces.

Assembly drawing BWD**-63/80/100

