



Automatic Focusing Cutting Head Electric Manual

Apply to: NC12
NC30
NC30B
NC60
NC60B

Shenzhen Worthing Technology Co., Ltd



Test Condition

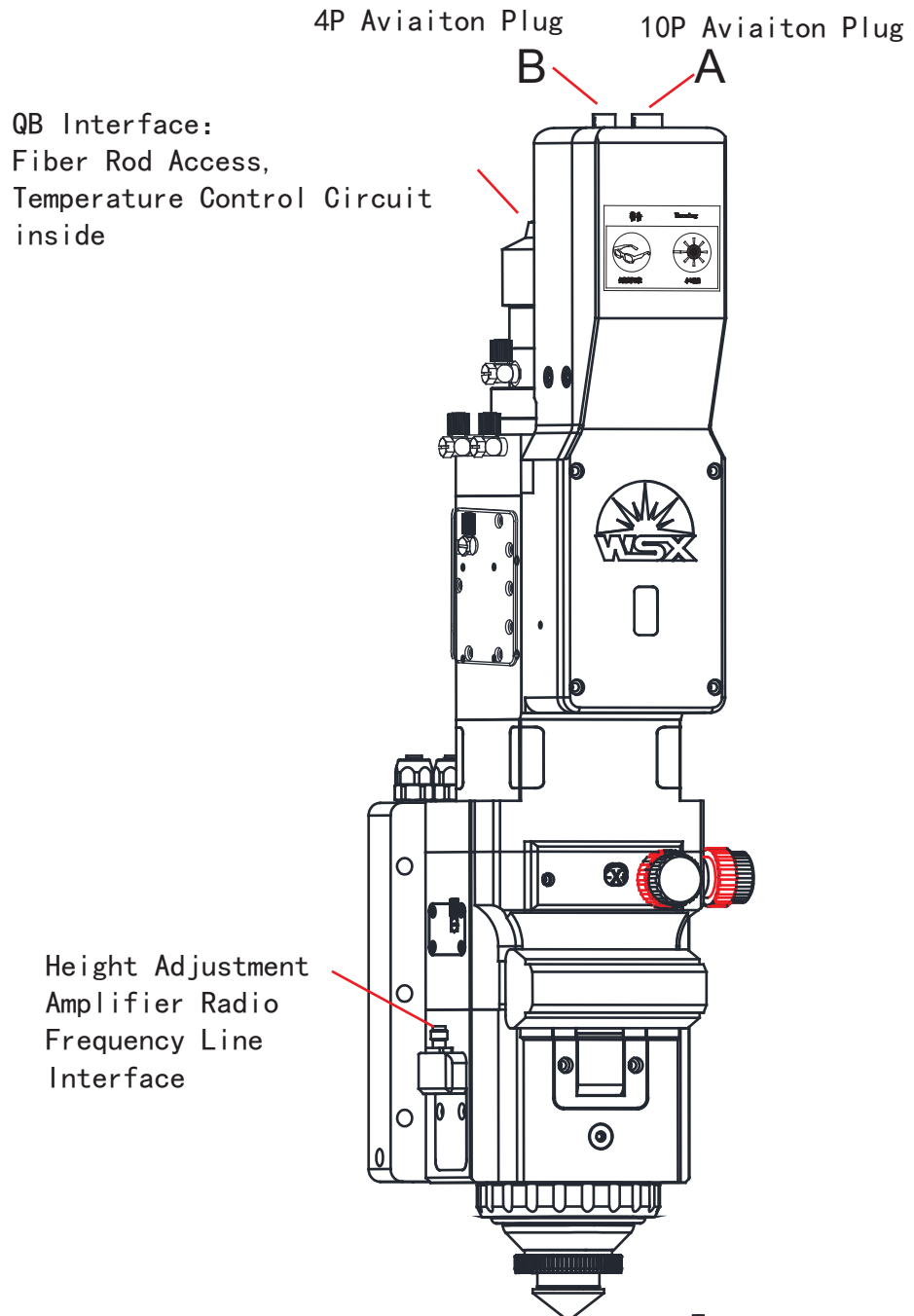
1. Read this manual carefully.
2. Correct wiring.
3. Smoothing and voltage stabilizing circuit.
4. Good earthing.
5. Correct software parameter setting.

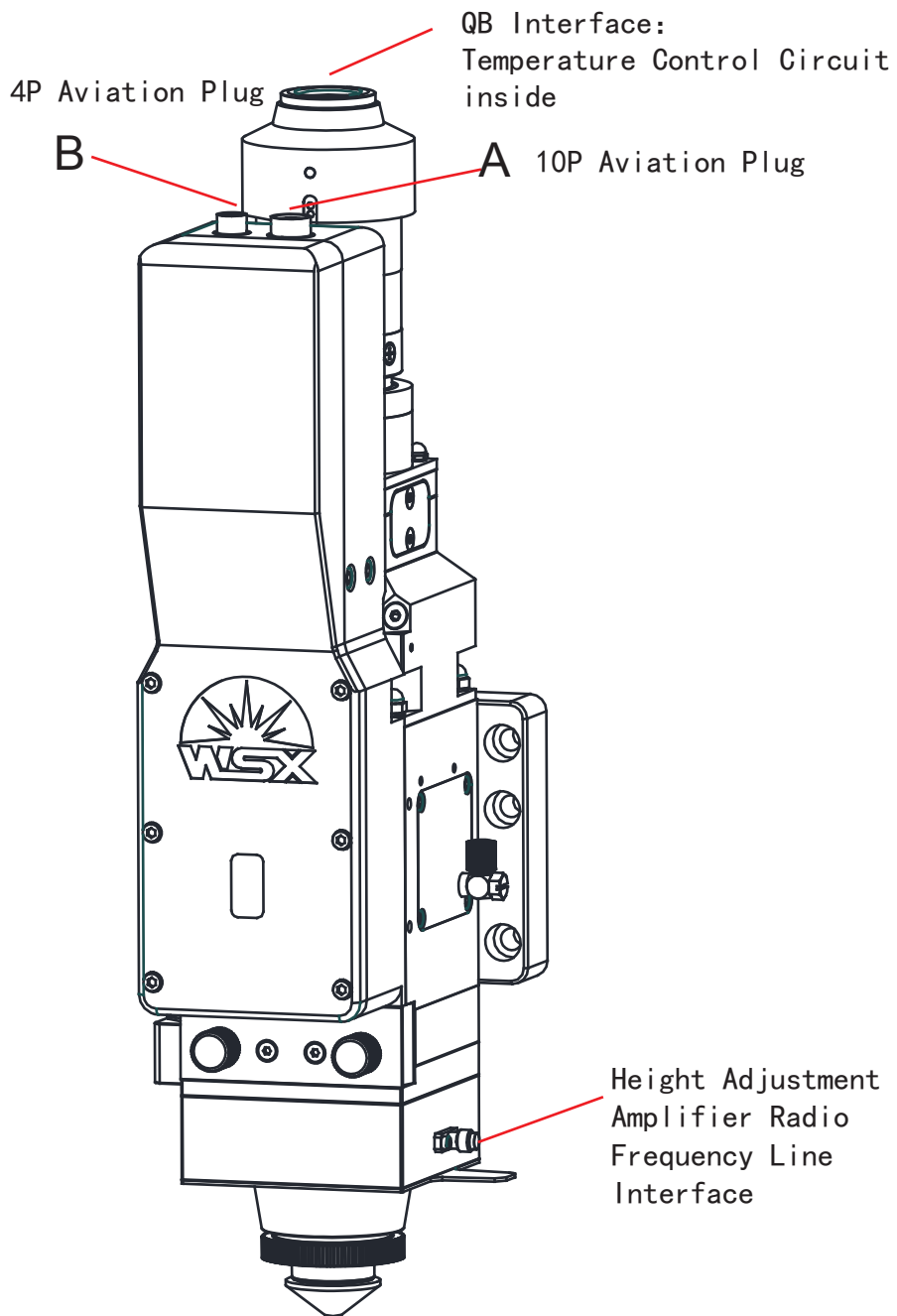
Steps

1. Adjust soft limitation to -100~100
2. Set inching speed to 1mm/s
3. Inching at positive direction until reach positive limitation
4. Inching at negative direction until reach negative limitation
5. After confirming effectiveness of positive & negative limitation, set back to origin
6. Restore soft limitation & inching speed to origin

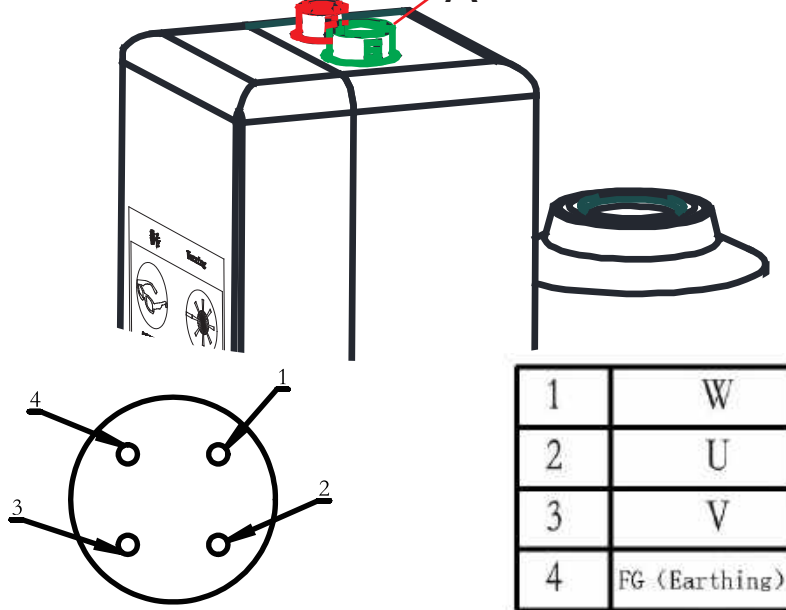


NC30,NC60

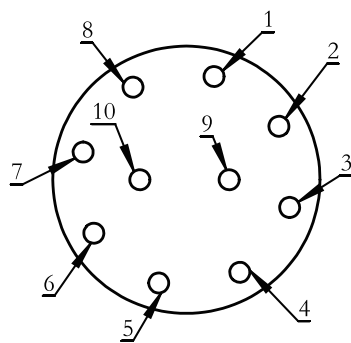




4P Aviation Plug B A 10P Aviation Plug

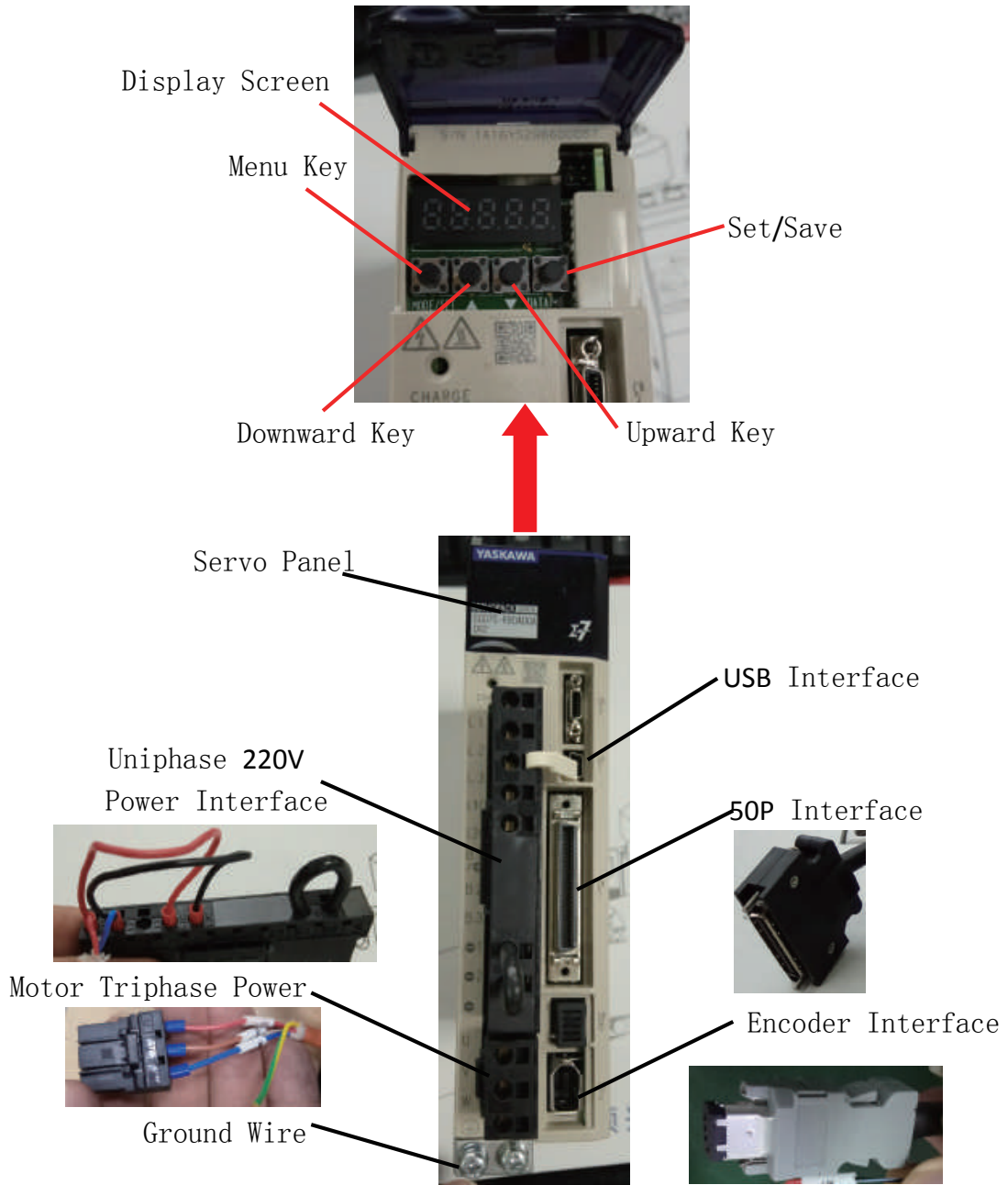


Servo Motor Power Supply Interface (Red)



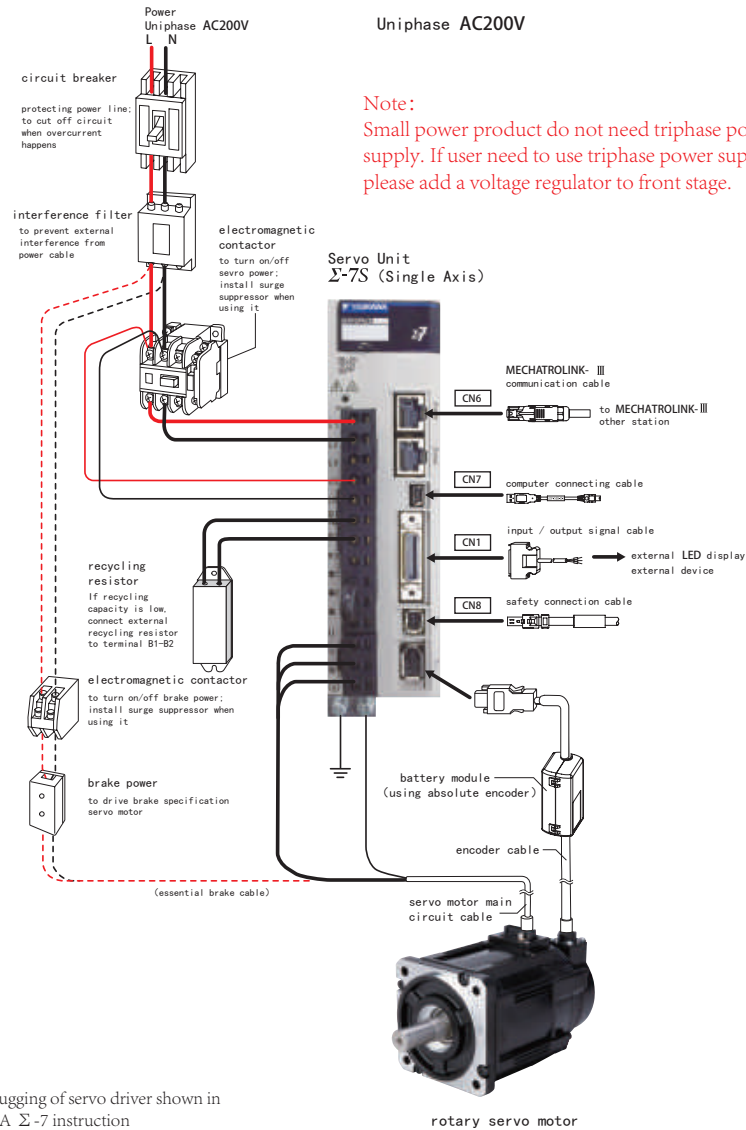
1	FG	(Shield Wire)
2	-D	(Encoder Signal Data-)
3	+D	(Encoder Signal Data+)
4	SG	(Signal Ground Wire)
5	VCC	(Encoder Power +5V)
6	+24V	(Approach Switch Power Line)
7	0V	(Approach Switch Power Line)
8	W+	(Approach Switch Signal Line)
9	W-	(Approach Switch Signal Line)

Servo Motor Encoder & Approach Switch Interface (Green)

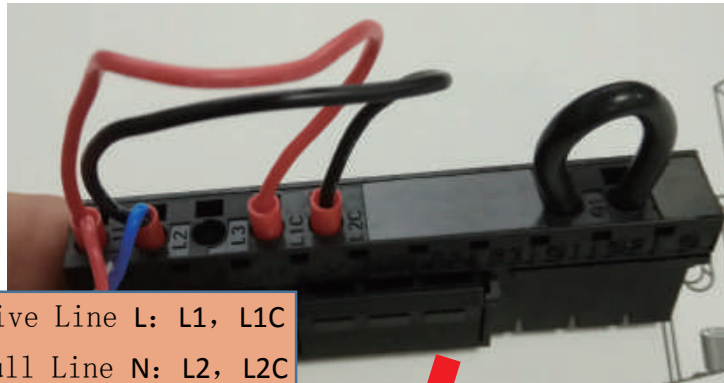


Servo Driver Connects to Motor YASKAWA-7 System Construction Example

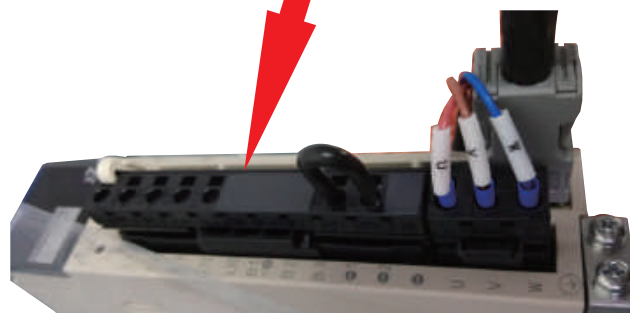
Σ -7S Servo Unit & Rotary Servo Motor

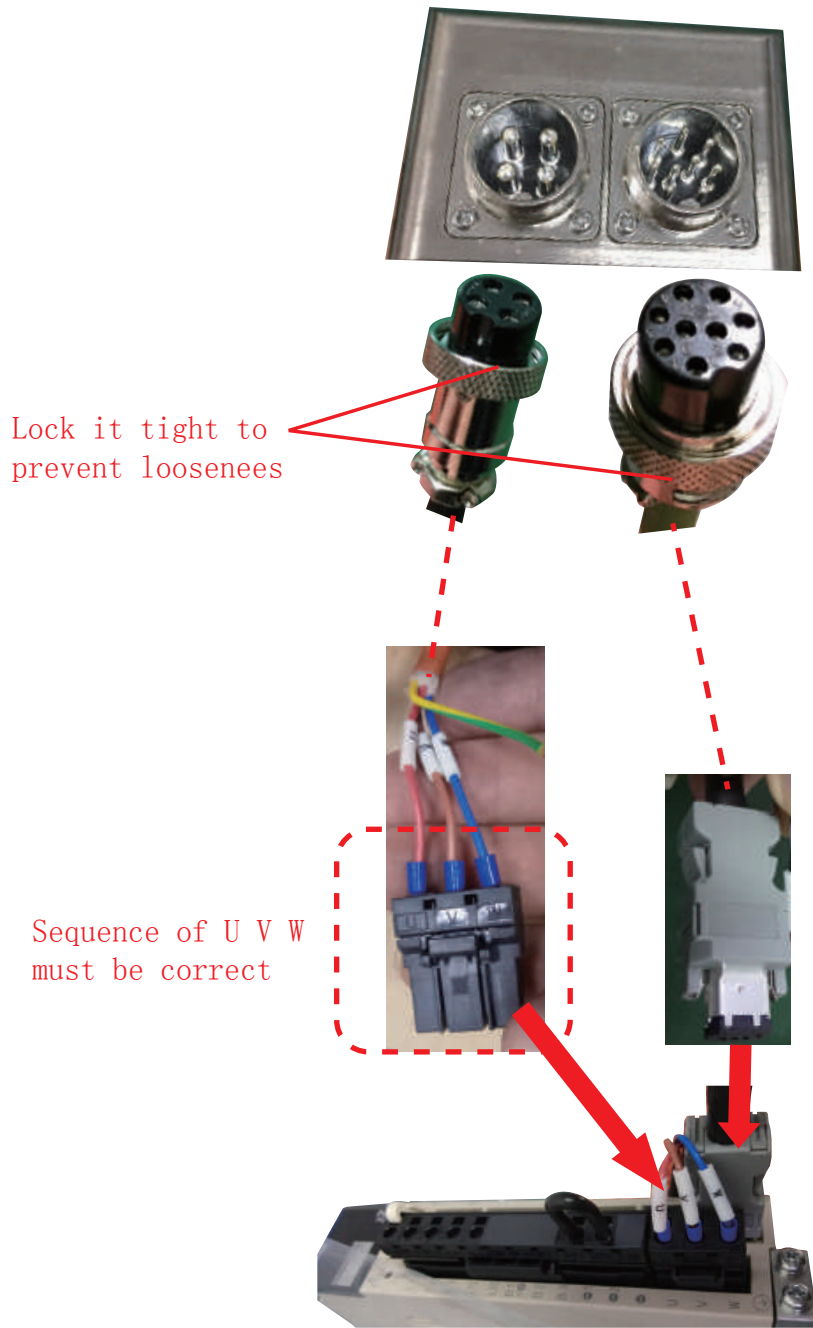


Note: Debugging of servo driver shown in YASKAWA Σ -7 instruction



Live Line L: L1, L1C
Null Line N: L2, L2C







Check Method of Connection between Laser Head and Driver

1. Check the tags on the UVW Cables, which should be corresponding to the UVW on the Plugs.
2. There shall not be breakover between UVW and ground wire & shell; value of resistance between UVW and shell shall be higher than 5 M Ω .

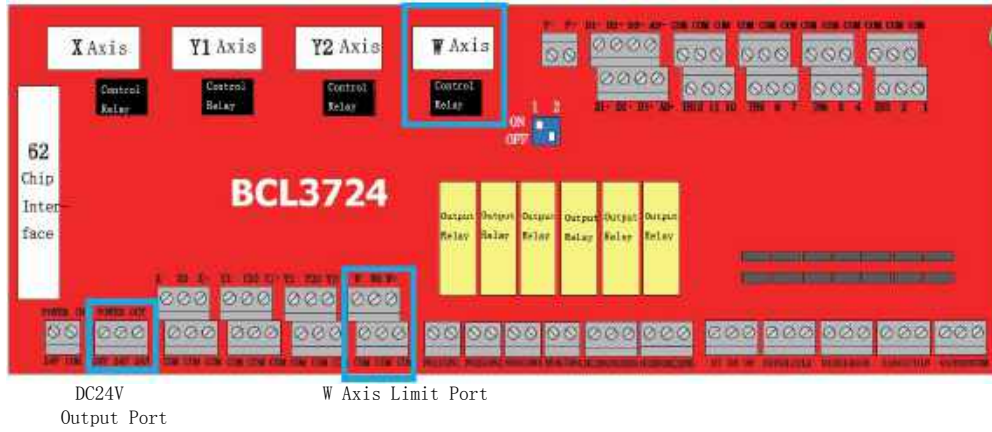
Test condition: connect the end to the cutting head; disconnect the end to the driver.

3. UVW interelectrode resistance is about 20 Ω . If the resistance is 0 (short circuit), or the multimeter shows infinity (open circuit), all are considered abnormal.

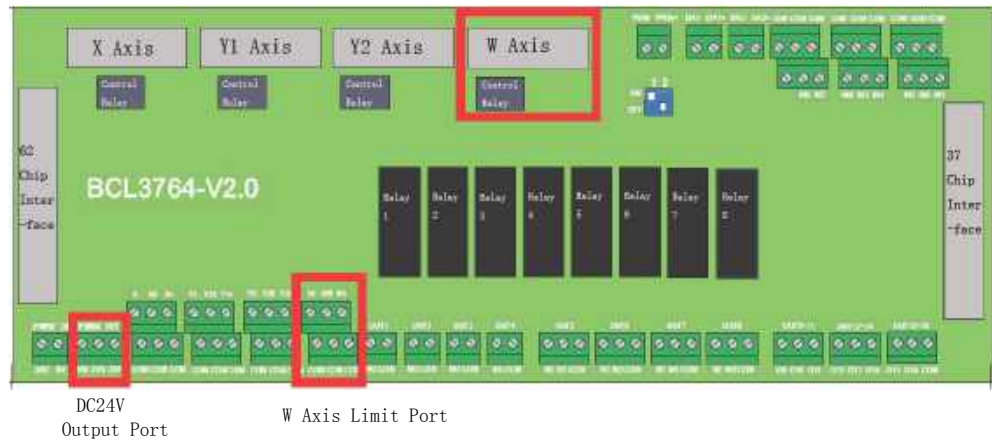
Test condition: connect the end to the cutting head; disconnect the end to the driver.

4. Ground connection (extremely important).

Friendess Closed-loop Expansion Board



Friendess Open-loop Expansion Board

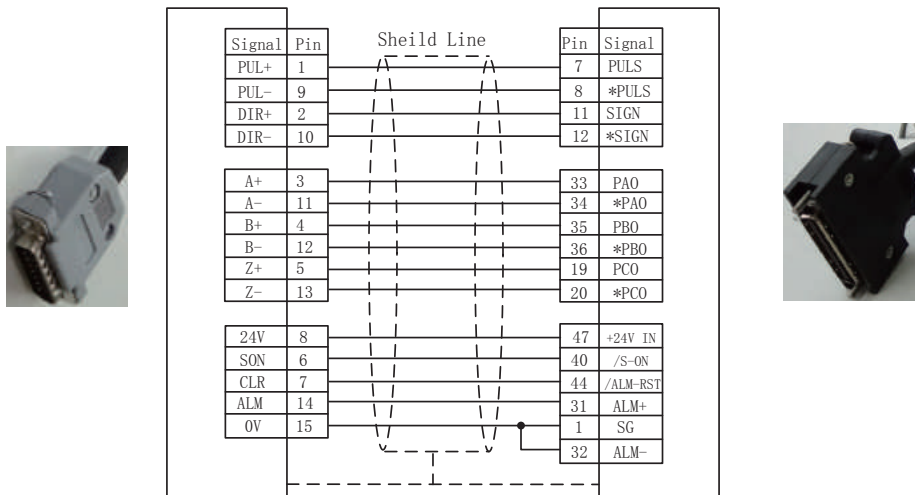




Friendless FSCUT2000A laser cutting control system BCL3764 port plate Axis W DB15 servo control interface connect with YASKAWA servo driver 50P interface definition

Friendless DB15 Servo Control Interface

YASKAWA Σ -V Servo 50P Interface



Parts of parameter list, subject to actual using and YASKAWA servo instruction.

NC30 Parameter

Parameter	Value	Parameter	Value	Parameter	Value
PN000	0010	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548

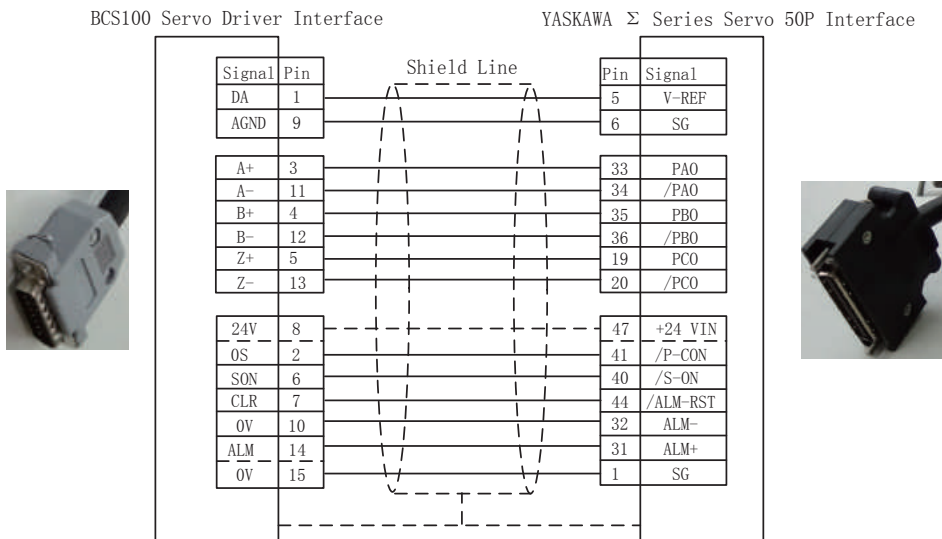
NC60 Parameter

Parameter	Value	Parameter	Value	Parameter	Value
PN000	0011	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548

Note: 1. Definition of servo driver and servo motor connection shown in YASKAWA servo driver instruction;
2. Please use uniphase power, L connects to L1 & L1C; N connects to L2 & L2C.



Friendess FSCUT4000A laser cutting control system BCL3724 port plate Axis W DB15 servo control interface connect with YASKAWA servo driver 50P interface definition



Parts of parameter list, subject to actual using and YASKAWA servo instruction.

NC30 Parameter

Parameter	Value	Parameter	Value	Parameter	Value
PN000	0000	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548

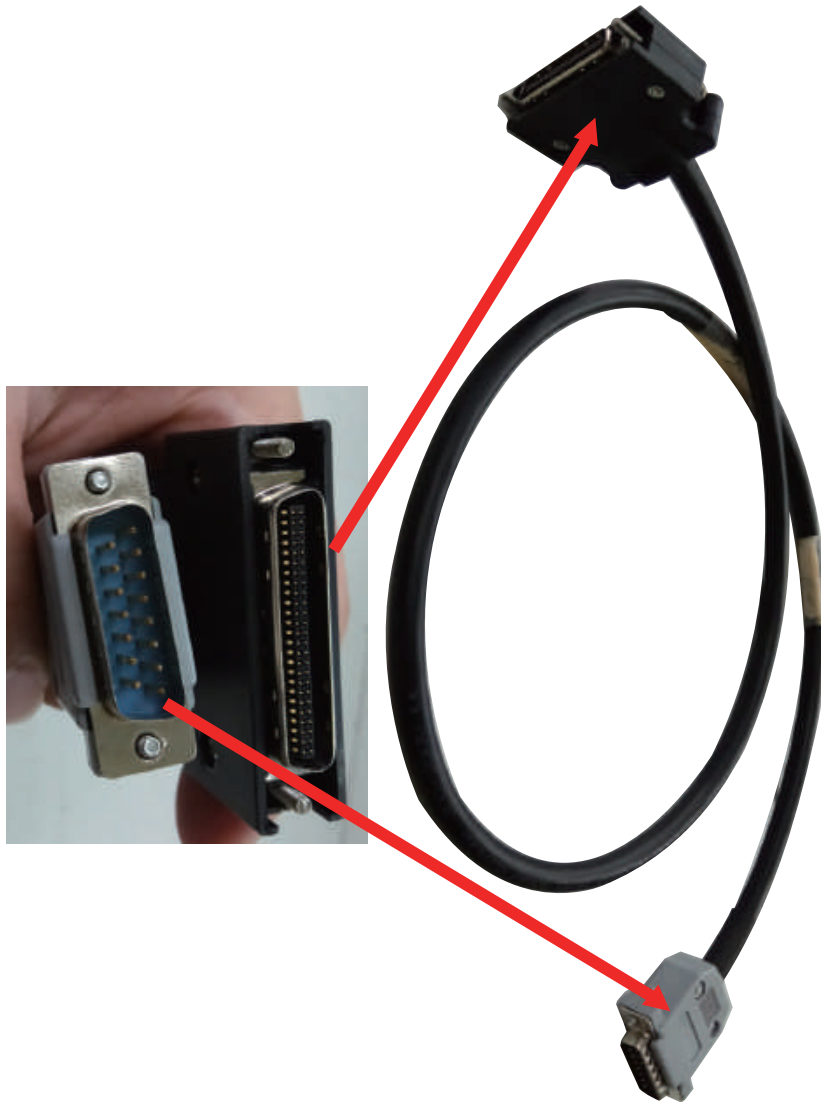
NC60 Parameter

Parameter	Value	Parameter	Value	Parameter	Value
PN000	0001	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548

Note: 1. Definition of servo driver and servo motor connection shown in YASKAWA servo driver instruction;
2. Please use uniphase power, L connects to L1 & L1C; N connects to L2 & L2C.

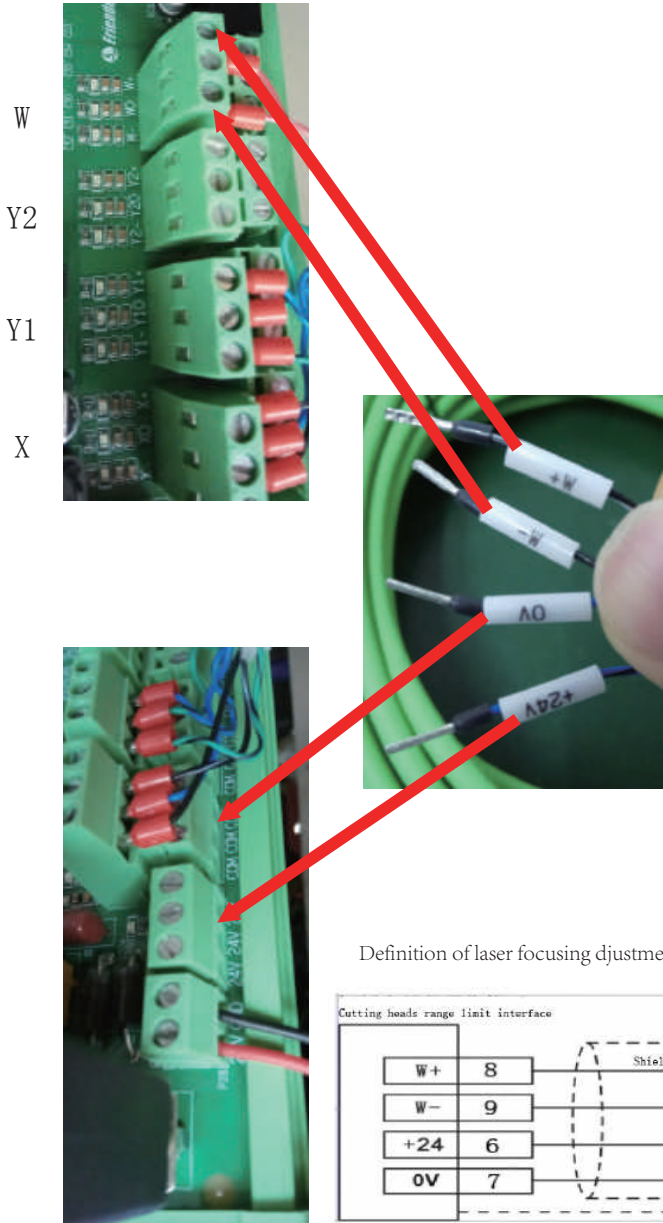


50Pin Interface
connects to Driver CN1



15Pin Interface W Axis







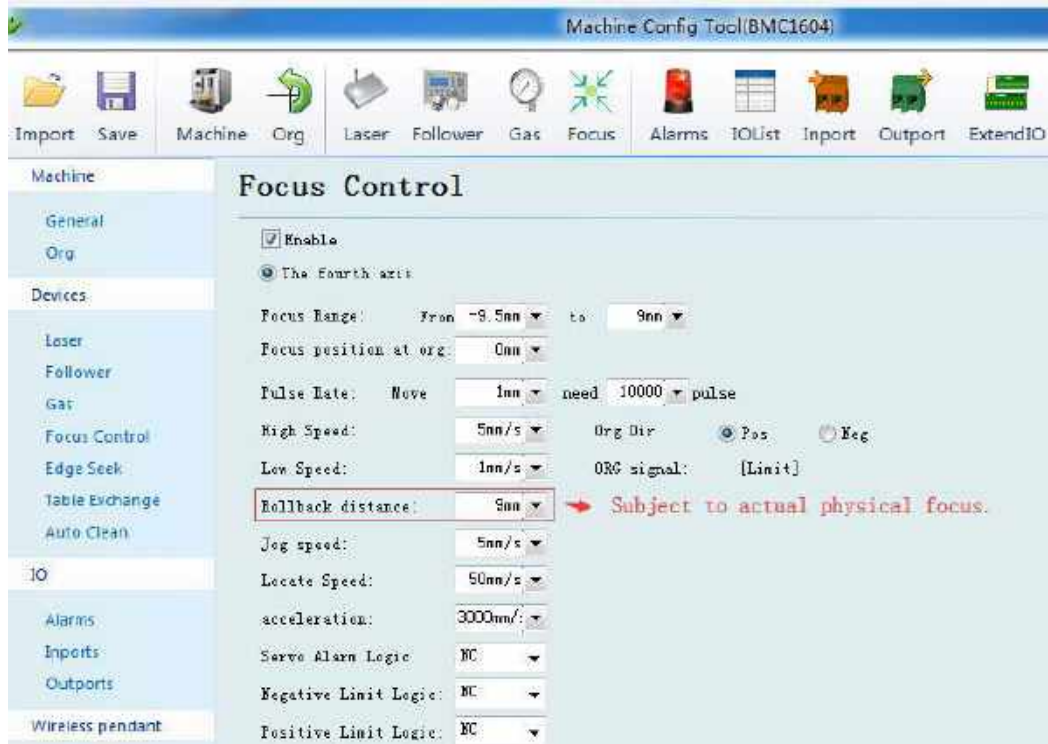
Check method of Limit Signal

Test Condition

1. Connect to DC24 power
2. Do Not connect W+ W- first
3. Laser head scale 0 should be at the middle of the window

Steps

1. Choose “Direct Voltage” on multimeter, 200V or high position.
2. Connect the red probe to DC24V end, connect the black probe to W+ end (laser head wire side).
3. Displayed voltage higher than 18V is normal (theoretical value is 24V); displayed voltage higher than 14V is abnormal (theoretical value is 0V).
4. Inch at the positive direction, if voltage changes, and the differential voltage is higher than 12V, it is normal.
5. Connect the red probe to DC24V end, connect the black probe to W- end (laser head wire side).
6. Displayed voltage higher than 18V is normal (theoretical value is 24V); displayed voltage higher than 14V is abnormal (theoretical value is 0V).
7. Inch at the positive & negative direction successively, if voltage changes, and the differential voltage is higher than 12V, it is normal.
8. Connect W+ & W- to corresponding ports on the system expansion card.
9. Open the control software, set limit logic to normal closed. Inch to positive & negative limit, observe whether the system can detect the limits.
10. Above is the check method of normal closed limit switch; for checking normal open limit switch is on the contrary.



Note: 1.This parameter is default value; when user changes it, please avoid hard ware damage;
2. Please contact technician to get specific parameters of different lens combinations.



Note: 1. This parameter is default value; when user changes it, please avoid hard ware damage;
2. Please contact technician to get specific parameters of different lens combinations.



Purpose: To revise “Rollback distance”, and make actual physical focus coincided with software focus which as standard of follow-up technological adjustment.

Method:1.With cutting kerf method, judge the focus position by the width of cutting kerf. The cutting kerf at the focus position is the narrowest.
2.Revise “Rollback distance”, and make actual physical focus coincided with software focus which as standard of follow-up technological adjustment.

For example: 1. Platform setting: 


2.Start cutting from software focus +6 with an interval of 1mm, keep cutting to focus -2. If the 5th kerf is the narrowest, the actual focus 0 is at the position of current software displayed focus +2.

3.Revise: If actual focus is higher than software displayed focus, then Rollback distance (correct) = Rollback distance (setting) - value difference
Rollback distance = 9 - 2 = 7

Vice versa.

Cutting kerf Method

Actual Focus	Kerf No.	Software Display Focus
4	1	6
3	2	5
2	3	4
1	4	3
0	5	2
-1	6	1
-2	7	0
-3	8	-1
-4	9	-2



Weihong Expansion Board 1

Terminal Board Wiring Diagram

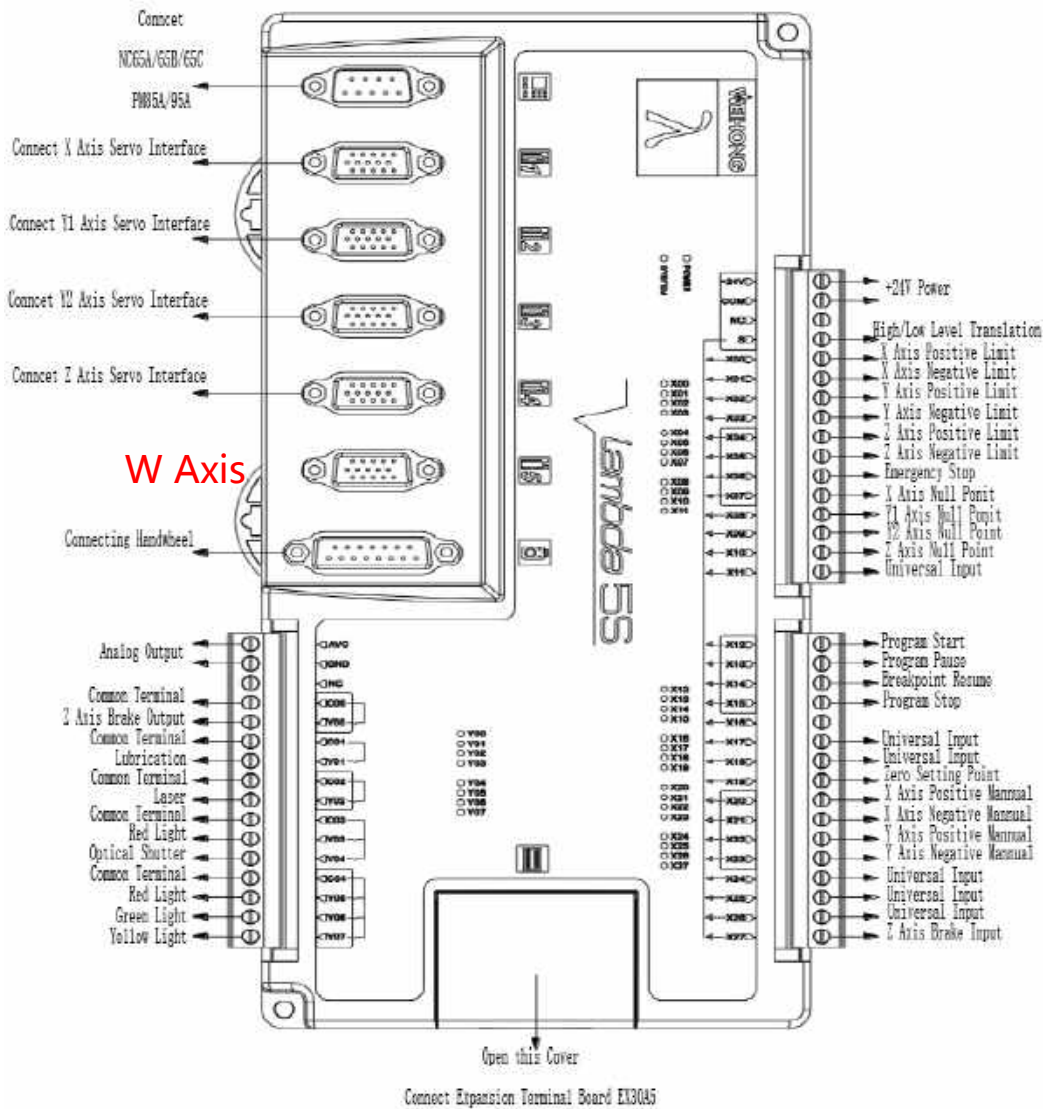


Fig 4-1 Laser Cutting System (Double Y) Lambda Controller Connection Diagram

Weihong Expansion Board 2

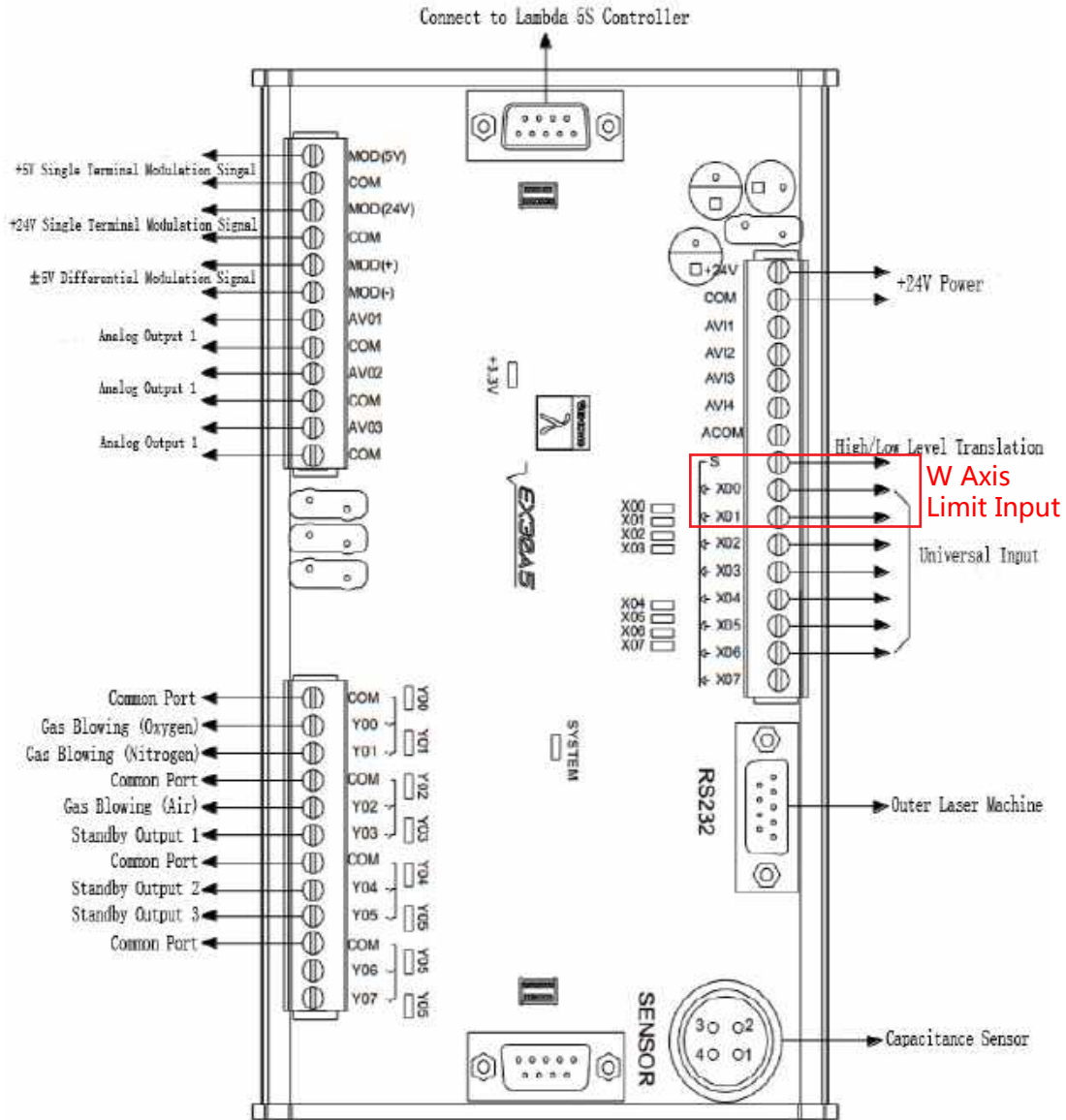
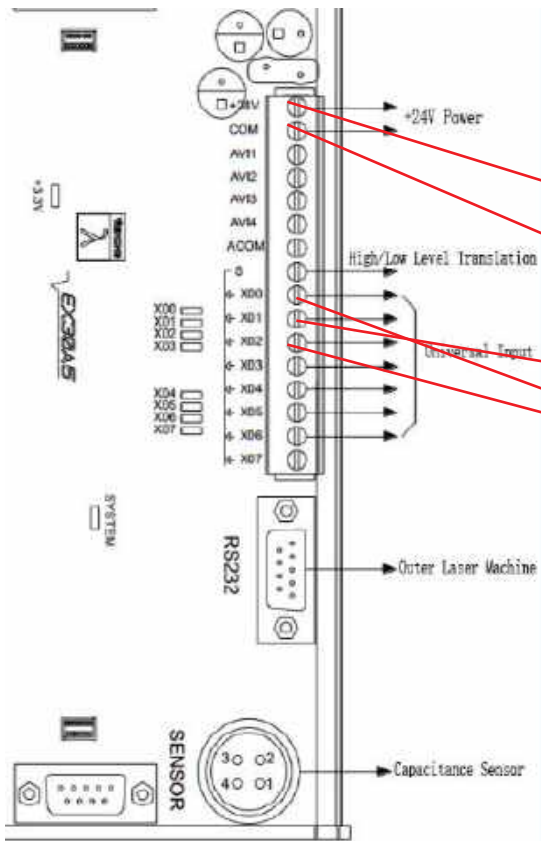
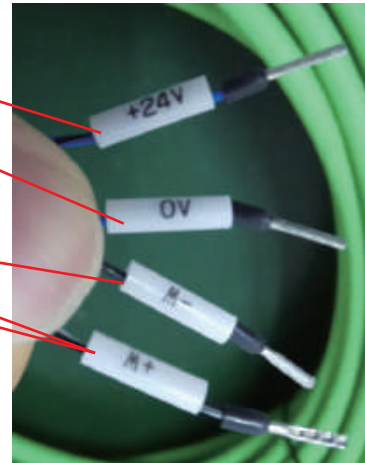


Fig 4-2 Expansion Terminal Board EX3045 in Laser Cutting System Connection Diagram



Connect +24V Cable to "+24V" Port & S Port on the Board

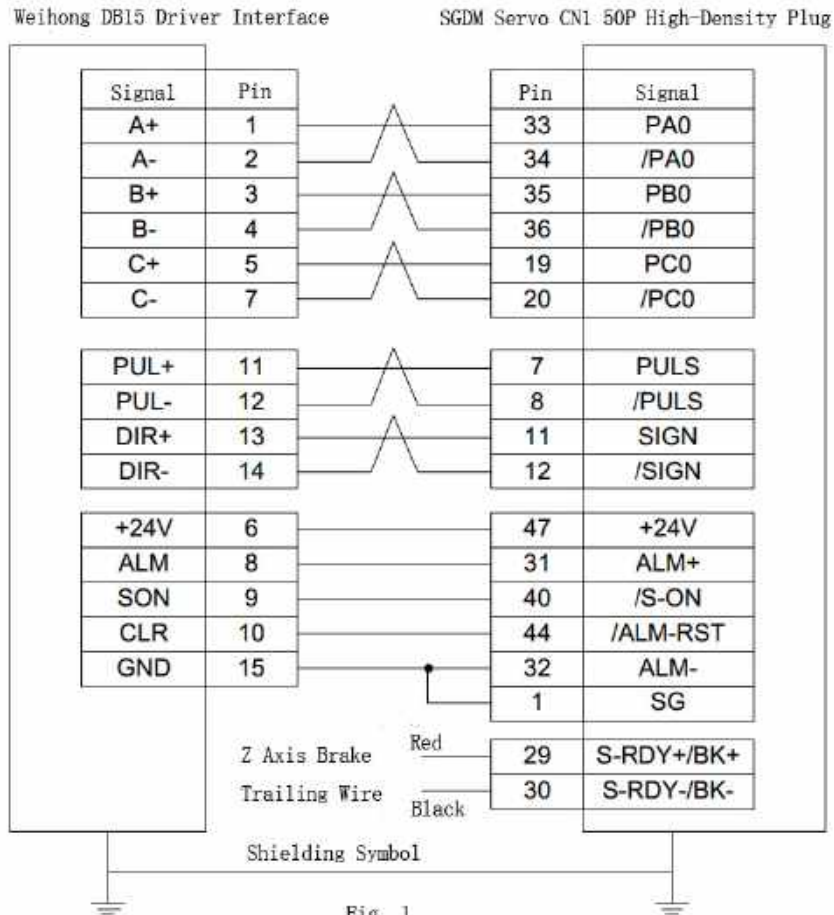


Connect W- to "x01" Port;
Connect W+ to "x00" & "x02"

EX30A5 In Laser Cutting System Connection Diagram

Limit Logic Parameter Setting

EX00	P	00072	E,F:16ms S:4ms	W Axis Pos Limit
EX01	P	00073	E,F:16ms S:4ms	W Axis Neg Limit
EX02	P	00074	E,F:16ms S:4ms	W Axis Null Point



Parameter	Value	Parameter	Value	Parameter	Value
PN000	0010	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548

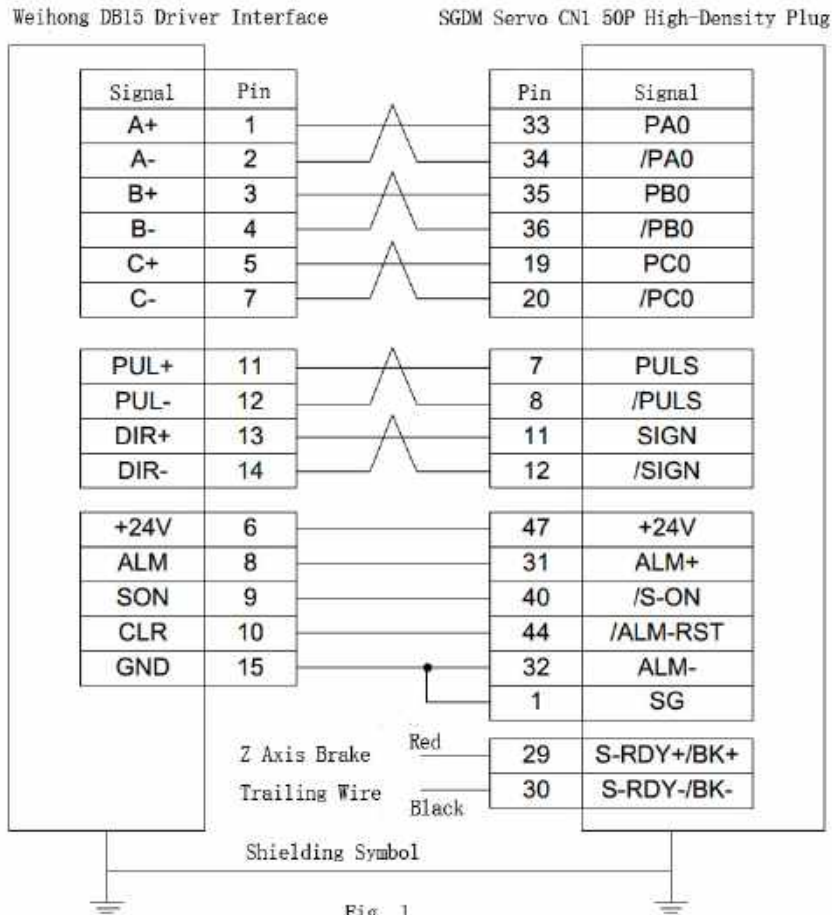
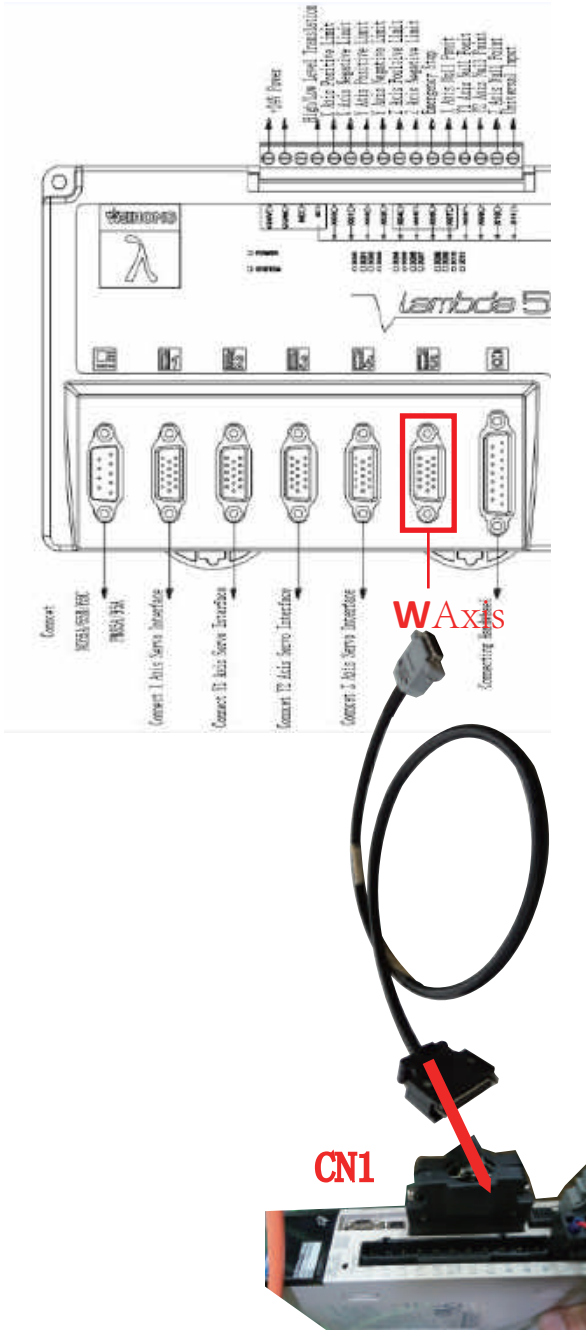


Fig. 1

Parameter	Value	Parameter	Value	Parameter	Value
PN000	0011	PN170	1400	PN402	50
PN00B	0101	PN200	0000	PN403	50
PN100	120	PN20E	4194304	PN406	100
PN102	180	PN210	2500	PN50A	8100
PN103	100	PN212	2500	PN50B	6548



No.	Name	Value	Unit	Effect Time	Parameter description
1.0 Manu					
N01	Rapid jogging speed	18000.000	mm/min	Immediately	The speed under Rapid-Jog mo
N02	Jogging speed	6000.000	mm/min	Immediately	The default speed under Jog r
N03	Stepping speed	6000.000	mm/min	Immediately	The default speed under Stepp
1.1 FixedPoint					
N04	X machine coordinate	0.000	mm	Immediately	X machine coordinate of the fi
N05	Y machine coordinate	0.000	mm	Immediately	Y machine coordinate of the fi
1.2 Bkref					
N06	Force homing befor...	NO		Immediately	Force homing before machining
N07	Limit switch used as...	YES		Immediately	Whether the limit switch can be
N08	X direction in coarse...	-1		Immediately	The moving direction of X in co
N09	Y direction in coarse...	-1		Immediately	The moving direction of Y in co
N10	Z direction in coarse...	1		Immediately	The moving direction of Z in co
N11	X speed in coarse p...	6000.000	mm/min	Immediately	The feeding speed of X in coar
N12	Y speed in coarse p...	6000.000	mm/min	Immediately	The feeding speed of Y in coar
N13	Z speed in coarse p...	1800.000	mm/min	Immediately	The feeding speed of Z in coar
N14	X speed in precision...	600.000	mm/min	Immediately	The feeding speed of X in prec
N15	Y speed in precision...	600.000	mm/min	Immediately	The feeding speed of Y in prec

Permission

Operator

Manufacture

Set Password

Limit Logic Parameter Configuration

● EX00	P	00072	E,F:16ms S:4ms	Positive Limit of Axis W
● EX01	P	00073	E,F:16ms S:4ms	Negative Limit of Axis W
● EX02	P	00074	E,F:16ms S:4ms	Axis W Zero

W Axis Configuration (NC30)

1. Default direction of N59 & N20 are opposite, when N59 is 1, N20 should be -1.
2. Default rollback direction is positive direction.

2.3 WAxisParam					
AxisParam	N64	Axis direction	1	Restart	Axis direction (Positive: 1, Neg...
	N65	Pulse equivalent	0.0001 mm/p	Restart	The pulse equivalent of axis; r...
	N66	Check worktable str...	YES	Restart	Whether to check worktable st
ProgramParam	N67	Lower limit of workt...	-9.500 mm	Restart	Lower limit of worktable stroke
	N68	Upper limit of workt...	9.000 mm	Restart	Upper limit of worktable stroke
OperateParam	N68	Upper limit of workt...	1000.000 mm	Restart	Upper limit of worktable stroke
	N69	Starting speed	0.000 mm/min	Restart	Starting speed; range: [0, Max]
	N70	Single axis accelera...	3000.000 mm/s^2	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000.... mm/s^3	Immediately	The rate of change of single a:
AxisParam	N72	Max. speed	3000.000 mm/min	Immediately	Maximum speed; range: (0, Me
	N73	Manual feed acceler...	400.000 mm/s^2	Immediately	Control the acceleration of mai
	N74	Manual feed jerk	10000.000 mm/s^3	Immediately	Control the jerk of manual jog
	N75	Jogging speed	120.000 mm/min	Immediately	The default speed under Jog n
AxisParam	N20	W direction in coars...	-1	Immediately	The moving direction of W in co
	N21	W speed in coarse ...	5.000 mm/min	Immediately	The feeding speed of W in coa
	N22	W speed in precisio...	1.000 mm/min	Immediately	The feeding speed of W in pre
	N23	Back space of W	9.000 mm	Immediately	The additional displacement of
	N70	Single axis accelera...	400.000 mm/s^2	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000.... mm/s^3	Immediately	The rate of change of single a:

Focus Control ✖

Parameter

Locate speed: mm/min

Jog speed: mm/min

Focus offset: (Focus pos after home)

Control

Focus Pos: + -

Locate Home Stop

W Axis Configuration (NC60)

1. Default direction of N59 & N20 are opposite, when N59 is 1, N20 should be -1.
2. Default rollback direction is positive direction.

2.3 WAxisParam						
AxisParam	N54	Axis direction	1		Restart	Axis direction (Positive: 1, Neg
	N55	Pulse equivalent	0.000225	mm/p	Restart	The pulse equivalent of axis; r
	N56	Check worktable str...	YES		Restart	Whether to check worktable st
	N57	Lower limit of workt...	-16.000	mm	Restart	Lower limit of worktable stroke
	N58	Upper limit of workt...	16.000	mm	Restart	Upper limit of worktable stroke
ProgramParam	N68	Upper limit of workt...	1000.000	mm	Restart	Upper limit of worktable stroke
	N69	Starting speed	0.000	mm/min	Restart	Starting speed; range: [0, Ma
	N70	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000.000	mm/s ³	Immediately	The rate of change of single ax
OtherParam	N72	Max. speed	3000.000	mm/min	Immediately	Maximum speed; range: (0, Ma
	N73	Manual feed accelera...	400.000	mm/s ²	Immediately	Control the acceleration of ma
	N74	Manual feed jerk	10000.000	mm/s ³	Immediately	Control the jerk of manual jog
	N75	Jogging speed	120.000	mm/min	Immediately	The default speed under Jog r
AxisParam	N20	W direction in coars...	-1		Immediately	The moving direction of W in co
	N21	W speed in coarse ...	5.000	mm/min	Immediately	The feeding speed of W in coa
	N22	W speed in precisio...	1.000	mm/min	Immediately	The feeding speed of W in pre
	N23	Back space of W	16.500	mm	Immediately	The additional displacement of
	N70	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000.000	mm/s ³	Immediately	The rate of change of single ax

Focus Control E3

Parameter

Locate speed: mm/min

Jog speed: mm/min

Focus offset: (Focus pos after home)

Control

Focus Pos:

No.	Name	Value	Unit	Effect Time	Parameter description
N121	Y1,Y2 Dynamic lower...	3.000	mm	Immediately	When Y1,Y2 axis is dynamic, it
N122	Auto clear workcoor...	0		Immediately	Whether to clear workcoor wh
N125	Scan cutting type	1		Restart	1: 1st generation-LD5S; 2: 2n
N124	Wiring of S port of t...	1		Restart	0: com; 1: 24V
N125	Laser on lead time F...	2		Immediately	It can be set large when some
N126	Laser off lag time fo...	1		Immediately	It can be set large when some
N127	The buffer count fo...	95		Immediately	Modify the parameter when cu
N128	Empty Move Collide ...	100	ms	Immediately	Control the sensitivity of part I
N129	Cutting Collide Sens...	200	ms	Immediately	Control the sensitivity of part I
N130	Enable Exchange W...	NO		Restart	Whether to enable exchange v
N131	Enable auto exhaust	NO		Immediately	Whether to enable auto exhau
N132	Disable Exhaust Delay	1000	ms	Immediately	Delayed time before disabling c
N133	Start position of ex...	0.000	mm	Immediately	Starting position of exhausting
N134	Exhausting interval1	1000.000		Immediately	The length of No.1 exhausting
N135	Exhausting interval2	1000.000		Immediately	The length of No.2 exhausting
N136	Exhausting interval3	1000.000		Immediately	The length of No.3 exhausting
N137	Back distance at br...	2.000	mm	Immediately	The retreat distance at breakp
N138	Enable focus control	YES		Immediately	Whether to enable focus cont

Permission:
 Operator
 Manufacture

Name: Enable focus control Value: YES Unit: Effect Time: Immediately
 Parameter description: Whether to enable focus control.

Choose YES for N138; then the Forth Axis(W) will be enable.

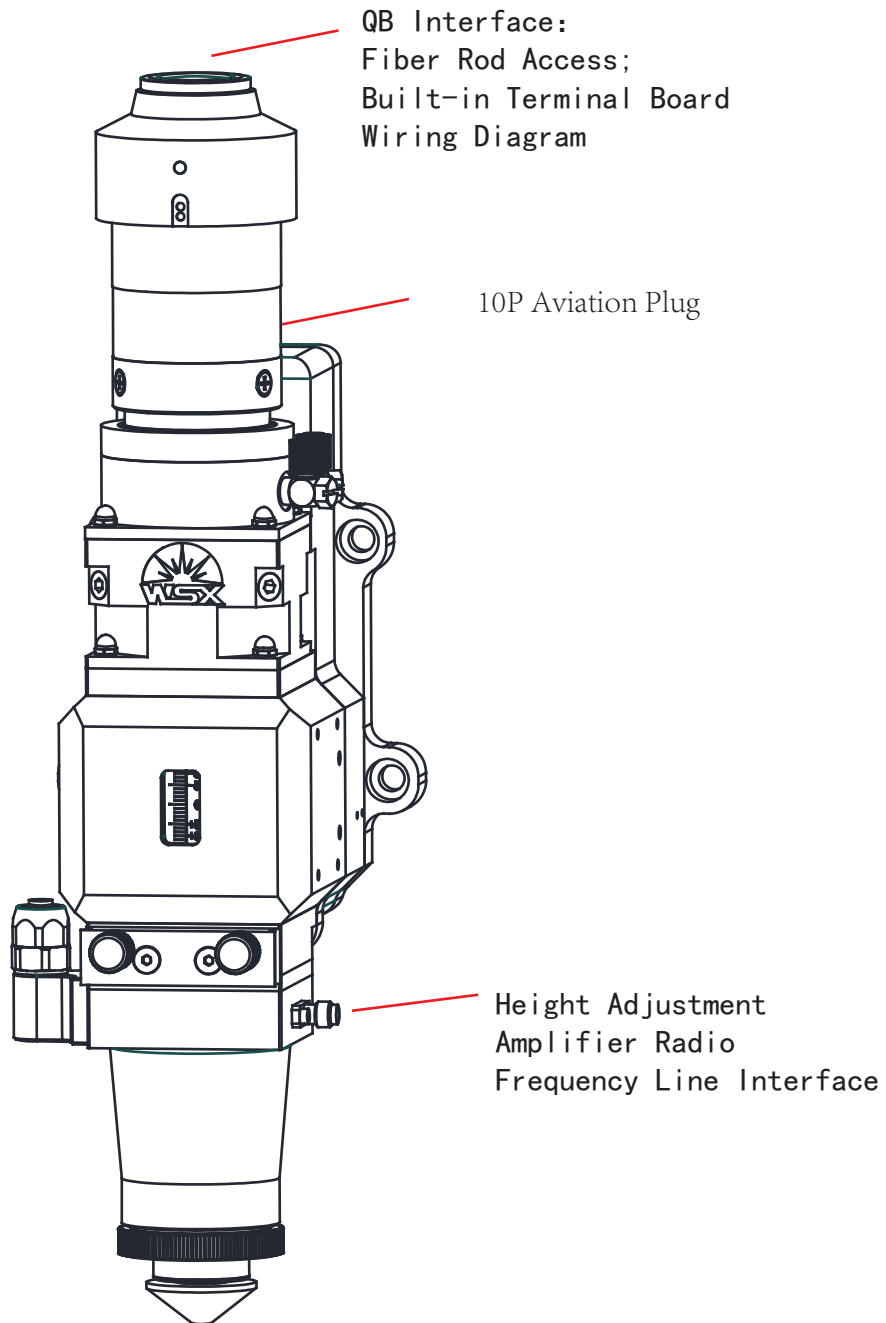
1. Target Focus Input Box & Focus Position Display Box
2. Execute Button
3. Negative Focus Moving
4. Positive Focus Moving
5. Rollback
6. Stop

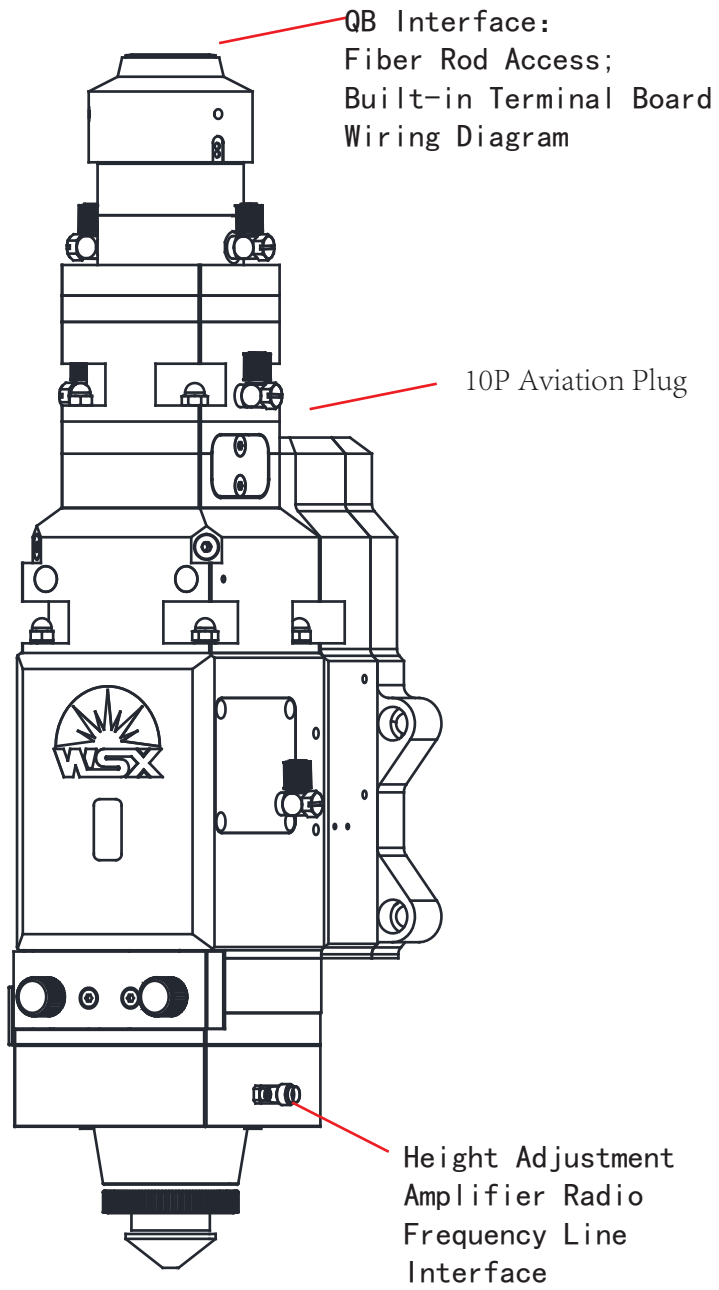


Malfunction	Reason Analysis	Method
A. 0b0	Servo ON instruction invalid alarm, after executing auxiliary function of electrifying the motor, servo NO input (/S-ON) signal is inputted from host device.	Electrify again
A. 100	1. Check whether it is short circuited between U V W, check whether it is short circuited between U V W to ground (outer shell) 2. U V W phase sequence is incorrect.	1. If short circuited, replace cables or send it to factory for repair. 2. Adjust phase sequence. Check according to P8.
A. 410	1. LIC / L2C has not connect to AC power supply. 2. Abnormal voltage, or driver damaged by short circuited.	1. Wiring according P6. 2. Send it to factory for repair.
A. 710	Overload, limit invalidated or disconnected make the mechanical parts get to the end.	Check limit signal according P14 & P21.
A. 840	1. Encoder data alarm 2. Abnormal voltage leads to encoding module damage.	1. Check whether encoding cable connection is normal. 2. Send it to factory for repair.
A. C90	Encoder and servo unit can not communicate.	1. Check whether encoding cable connection is normal. 2. Replace cable. 3. Send it to factory for repair.
Positive & negative limit both alarm	1. Software logic is incorrect. 2. Limit signal cable connection is incorrect.	1. Reverse limit logic. 2. Check according P14 & P21.



NC12,NC30B,NC60B

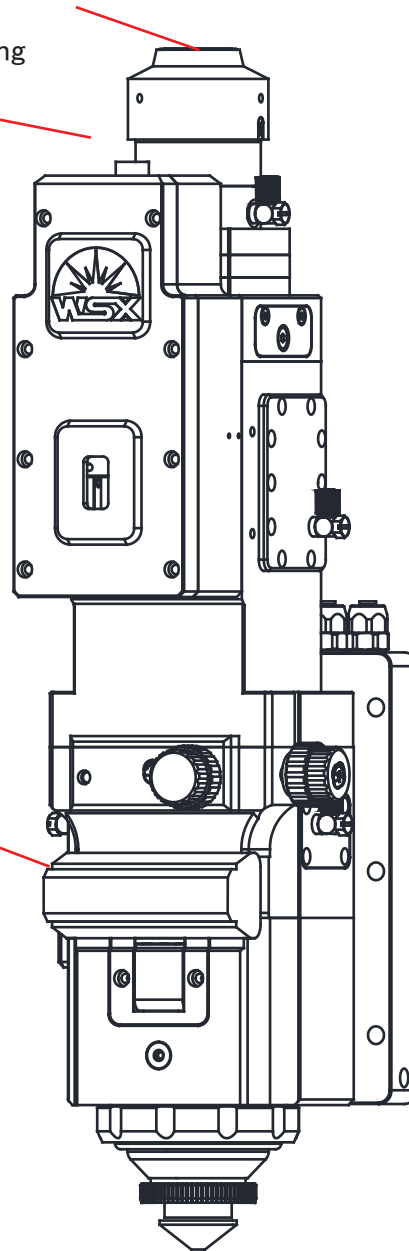


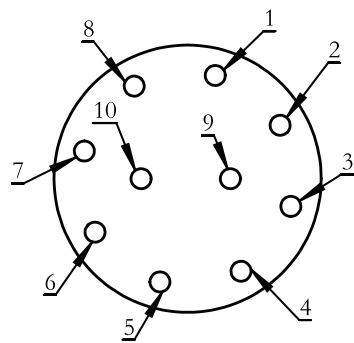
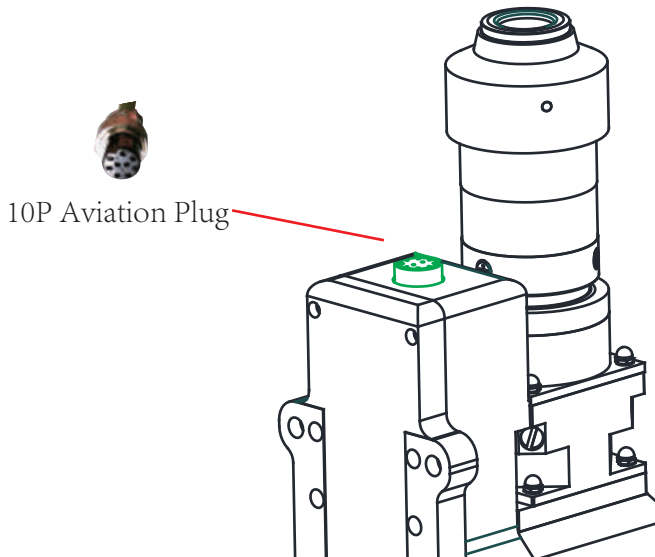


QB Interface:
Fiber Rod Access;
Built-in Terminal Board Wiring
Diagram

10P Aviation Plug

Height Adjustment
Amplifier Radio
Frequency Line
Interface





10P Aviation Plug	
Pin	Signal
1	Null
2	A+(Stepper Motor A Phase Power Line)
3	A-(Stepper Motor A Phase Power Line)
4	B+(Stepper Motor B Phase Power Line)
5	B-(Stepper Motor B Phase Power Line)
6	+24V(Approach Switch Power Line)
7	0V(Approach Switch Power Line)
8	W+(Approach Switch Signal Line)
9	W-(Approach Switch Power Line)
10	Null

Motor Power Supply & Approach Switth Interface (Green)

Friendess

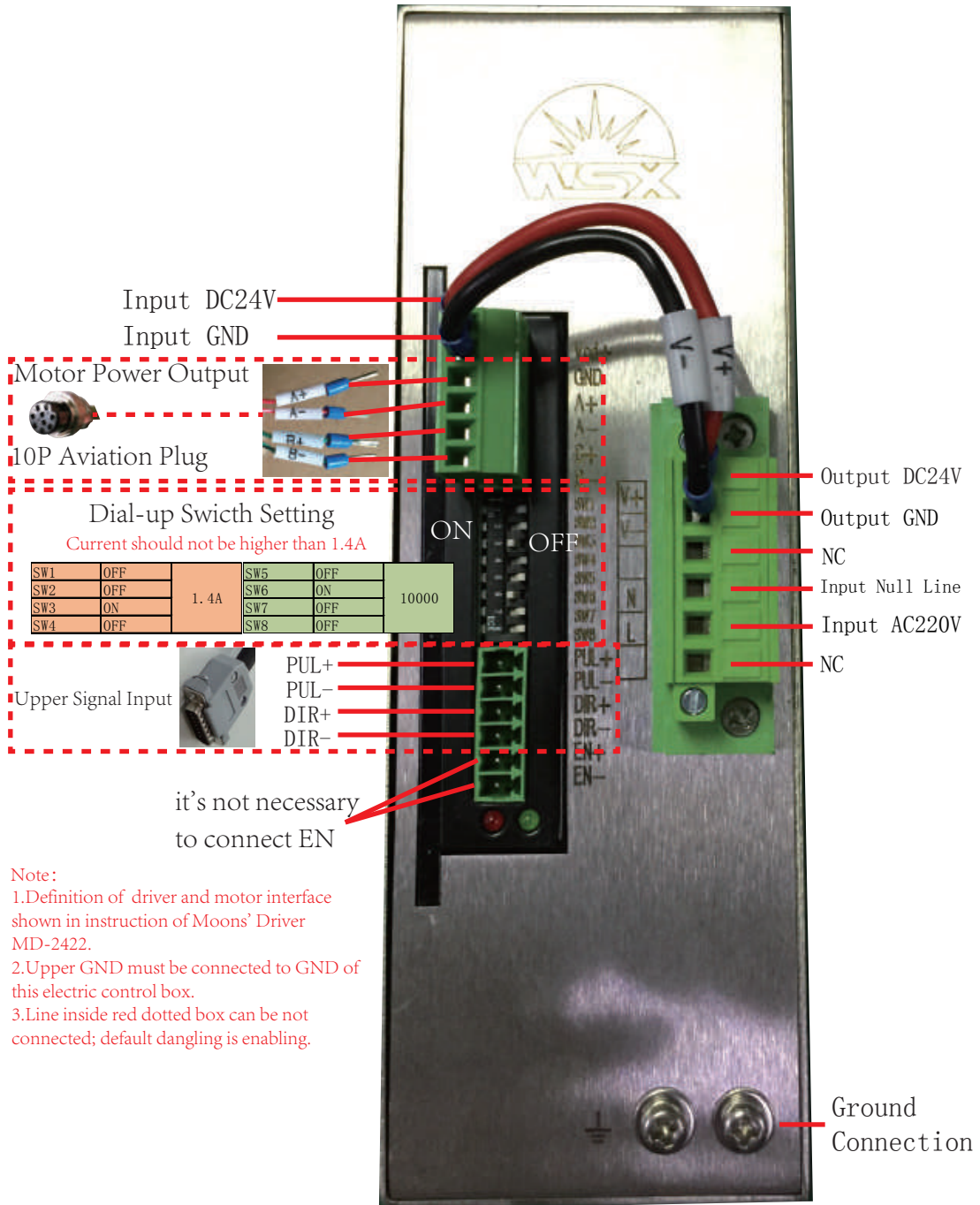
Friendess D15 Servo Control Interface		Electric Control Box	
Signal	Pin		Pin
PUL+	1	→	PUL+ (CW+)
PUL-	9	→	PUL- (CW-)
DIR+	2	→	DIR+ (CW+)
DIR-	10	→	DIR- (CW-)
A+	3		Null
A-	11		Null
B+	4		Null
B-	12		Null
Z+	5		Null
Z-	13		Null
24V	8		Null
SON	6		Null
CLK	7		Null
ALM	14		Null
0V	15	→	GND



Weihong

Weihong D15 Servo Control Interface		Electric Control Box	
Signal	Pin		Signal
PUL+	11	→	PUL+ (CW+)
PUL-	12	→	PUL- (CW-)
DIR+	13	→	DIR+ (CW+)
DIR-	14	→	DIR- (CW-)
A+	1		Null
A-	2		Null
B+	3		Null
B-	4		Null
Z+	5		Null
Z-	7		Null
24V	6		Null
SON	9		Null
CLK	10		Null
ALM	10		Null
0V	15	→	GND



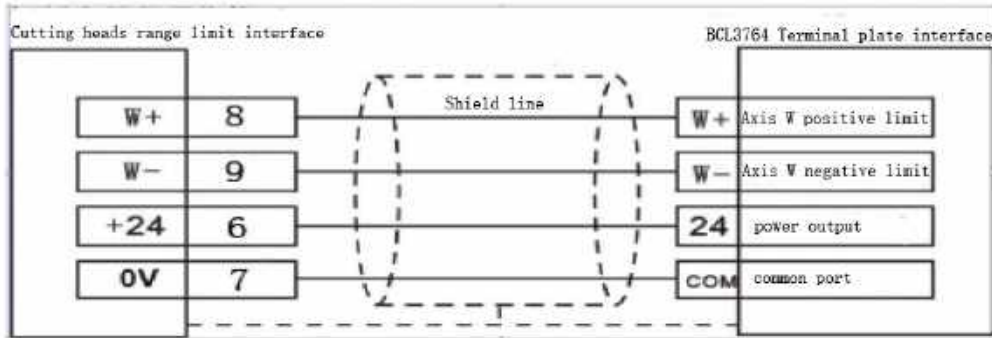


Note:

1. Definition of driver and motor interface shown in instruction of Moons' Driver MD-2422.
2. Upper GND must be connected to GND of this electric control box.
3. Line inside red dotted box can be not connected; default dangling is enabling.



Definition of laser focusing adjustment range limitation switch connector



Connection of Limit Signal shown in Page 14 & Page 21



Focus Control

Enable

The Fourth axis Precitec HighIAG ECL4515Z[No Connection]

Focus Range: From to

Focus position at org:

Pulse Rate: Move need pulse

High Speed: Org Dir: Yes Neg

Low Speed: ORG signal:

Rollback distance:

Jog speed:

Locate Speed:

acceleration:

Servo Alarm Logic:

Negative Limit Logic:

Positive Limit Logic:

Note: 1.This parameter is default value; when user changes it, please avoid hard ware damage;
2. Please contact technician to get specific parameters of different lens combinations.



Note: 1.This parameter is default value; when user changes it, please avoid hard ware damage;
2. Please contact technician to get specific parameters of different lens combinations.



- Note: 1.This parameter is default value; when user changes it, please avoid hard ware damage;
2. Please contact technician to get specific parameters of different lens combinations.



Parameter Setting

No.	Name	Value	Unit	Effect Time	Parameter description
1.0 Manu					
N01	Rapid jogging speed	18000.000	mm/min	Immediately	The speed under Rapid-Jog mc
N02	Jogging speed	6000.000	mm/min	Immediately	The default speed under Jog r
N03	Stepping speed	6000.000	mm/min	Immediately	The default speed under Stepp
1.1 FixedPoint					
N04	X machine coordinate	0.000	mm	Immediately	X machine coordinate of the fi
N05	Y machine coordinate	0.000	mm	Immediately	Y machine coordinate of the fi
1.2 Bkref					
N06	Force homing befor...	NO		Immediately	Force homing before machining
N07	Limit switch used as...	YES		Immediately	Whether the limit switch can be
N08	X direction in coarse...	-1		Immediately	The moving direction of X in co
N09	Y direction in coarse...	-1		Immediately	The moving direction of Y in co
N10	Z direction in coarse...	1		Immediately	The moving direction of Z in co
N11	X speed in coarse p...	6000.000	mm/min	Immediately	The feeding speed of X in coar
N12	Y speed in coarse p...	6000.000	mm/min	Immediately	The feeding speed of Y in coar
N13	Z speed in coarse p...	1800.000	mm/min	Immediately	The feeding speed of Z in coar
N14	X speed in precision...	600.000	mm/min	Immediately	The feeding speed of X in prec
N15	Y speed in precision...	600.000	mm/min	Immediately	The feeding speed of Y in prec

Permission

Operator

Manufacture

Set Password

Name: Limit switch used as home switch Value: YES Unit: Effect Time: Immediately

Parameter description: Whether the limit switch can be used as home switch as well. That is, exclusive home switch can be absent, and limit switch signal serves as home switch signal in homing.

Limit Logic Parameter Configuration

EX00	P	00072	E,F:16ms S:4ms	Positive Limit of Axis W
EX01	P	00073	E,F:16ms S:4ms	Negative Limit of Axis W
EX02	P	00074	E,F:16ms S:4ms	Axis W Zero

W Axis Configuration (NC12)

1. Default direction of N59 & N20 are opposite, when N59 is 1, N20 should be -1.
2. Default rollback direction is positive direction.

Parameter	Value	Unit	Restart	Description
N64	Axis direction	1	Restart	Axis direction (Positive: 1, Negative: -1)
N65	Pulse equivalent	0.000225	mm/p	The pulse equivalent of axis; range: (0, 1000000)
N66	Check worktable stroke	YES	Restart	Whether to check worktable stroke
N67	Lower limit of worktable stroke	-7.500	mm	Lower limit of worktable stroke
N68	Upper limit of worktable stroke	7.000	mm	Upper limit of worktable stroke
N69	Upper limit of worktable stroke	1000.000	mm	Upper limit of worktable stroke
N69	Starting speed	0.000	mm/min	Starting speed; range: (0, Max)
N70	Single axis acceleration	400.000	mm/s ²	Single axis acceleration in positive direction
N71	G00 Jerk	100000.000	mm/s ³	The rate of change of single axis speed
N72	Max. speed	2000.000	mm/min	Maximum speed; range: (0, Max)
N73	Manual feed acceleration	1000.000	mm/s ²	Control the acceleration of manual feed
N74	Manual feed jerk	5000.000	mm/s ³	Control the jerk of manual jog
N75	Jogging speed	120.000	mm/min	The default speed under Jog mode
N20	W direction in coarse feed	-1	Immediately	The moving direction of W in coarse feed
N21	W speed in coarse feed	5.000	mm/min	The feeding speed of W in coarse feed
N22	W speed in precision feed	1.000	mm/min	The feeding speed of W in precision feed
N23	Back space of W	7.500	mm	The additional displacement of W
N70	Single axis acceleration	400.000	mm/s ²	Single axis acceleration in positive direction
N71	G00 Jerk	100000.000	mm/s ³	The rate of change of single axis speed

Focus Control ☰

Parameter

Locate speed: mm/min

Jog speed: mm/min

Focus offset: (Focus pos after home)

Control

Focus Pos:

W Axis Configuration (NC30B)

1. Default direction of N59 & N20 are opposite, when N59 is 1, N20 should be -1.
2. Default rollback direction is positive direction.

2.3 WAxisParam						
OperateParam	N64	Axis direction	1		Restart	Axis direction (Positive: 1, Neg
	N65	Pulse equivalent	0.000225	mm/μp	Restart	The pulse equivalent of axis; r
	N66	Check worktable str...	YES		Restart	Whether to check worktable st
	N67	Lower limit of workt...	-9.500	mm	Restart	Lower limit of worktable stroke
AxisParam	N68	Upper limit of workt...	9.000	mm	Restart	Upper limit of worktable stroke
	N69	Starting speed	1000.000	mm	Restart	Upper limit of worktable stroke
	N70	Starting speed	0.000	mm/min	Restart	Starting speed; range: [0, Ma
	N71	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N72	G00 Jerk	100000.000	mm/s ³	Immediately	The rate of change of single a
	N73	Max. speed	2000.000	mm/min	Immediately	Maximum speed; range: {0, Ma
	N74	Manual feed accelera...	1000.000	mm/s ²	Immediately	Control the acceleration of ma
	N75	Manual feed jerk	5000.000	mm/s ³	Immediately	Control the jerk of manual jog
OperateParam	N20	W direction in coars...	-1		Immediately	The moving direction of W in co
	N21	W speed in coarse ...	5.000	mm/min	Immediately	The feeding speed of W in coa
	N22	W speed in precisio...	1.000	mm/min	Immediately	The feeding speed of W in pre
	N23	Back space of W	9.000	mm	Immediately	The additional displacement of
	N70	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000.000	mm/s ³	Immediately	The rate of change of single a

Focus Control E3

Parameter

Locate speed: mm/min

Jog speed: mm/min

Focus offset: (Focus pos after home)

Control

Focus Pos:

W Axis Configuration (NC60B)

1. Default direction of N59 & N20 are opposite, when N59 is 1, N20 should be -1.
2. Default rollback direction is positive direction.

2.3 WAxisParam						
OperateParam	N64	Axis direction	1		Restart	Axis direction (Positive: 1, Neg
	N65	Pulse equivalent	0.0005625	mm/p	Restart	The pulse equivalent of axis; ri
	N66	Check worktable str...	YES		Restart	Whether to check worktable st
	N67	Lower limit of workt...	-16.000	mm	Restart	Lower limit of worktable stroke
	N68	Upper limit of workt...	16.000	mm	Restart	Upper limit of worktable stroke
OperateParam	N68	Upper limit of workt...	1000.000	mm	Restart	Upper limit of worktable stroke
	N69	Starting speed	0.000	mm/min	Restart	Starting speed; range: [0, Ma
	N70	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000....	mm/s ³	Immediately	The rate of change of single a
	N72	Max. speed	2000.000	mm/min	Immediately	Maximum speed; range: (0, Ma
AxisParam	N73	Manual feed accelera...	1000.000	mm/s ²	Immediately	Control the acceleration of ma
	N74	Manual feed jerk	5000.000	mm/s ³	Immediately	Control the jerk of manual jog
	N75	Jogging speed	120.000	mm/min	Immediately	The default speed under Jog m
AxisParam	N20	W direction in coars...	-1		Immediately	The moving direction of W in co
	N21	W speed in coarse ...	5.000	mm/min	Immediately	The feeding speed of W in coa
	N22	W speed in prediso...	1.000	mm/min	Immediately	The feeding speed of W in pre
	N23	Back space of W	16.500	mm	Immediately	The additional displacement of
	N70	Single axis accelera...	400.000	mm/s ²	Immediately	Single axis acceleration in posit
	N71	G00 Jerk	100000....	mm/s ³	Immediately	The rate of change of single a

Focus Control E3

Parameter

Locate speed: mm/min

Jog speed: mm/min

Focus offset: (Focus pos after home)

Control

Focus Pos:

Parameter Setting

No.	Name	Value	Unit	Effect Time	Parameter description
N121	Y1Y2 Dynamic Inter...	3.000	mm	Immediately	When Y1Y2 axis is dynamic, it
N122	Auto clear workcoor	0		Immediately	Whether to clear workcoor wh
N123	Scan cutting type	1		Restart	1: 1st generation-LD5S; 2: 2n
N124	Wiring of S port of t...	1		Restart	0: com; 1: 24V
N125	Laser on lead time f...	2		Immediately	It can be set large when some
N126	Laser off lag time fo...	1		Immediately	It can be set large when some
N127	The buffer count fo...	95		Immediately	Modify the parameter when cu
N128	Empty Move Collide ...	100	ms	Immediately	Control the sensitivity of part t
N129	Cutting Collide Sens...	200	ms	Immediately	Control the sensitivity of part t
N130	Enable Exchange W...	NO		Restart	Whether to enable exchange v
N131	Enable auto exhaust	NO		Immediately	Whether to enable auto exhau
N132	Disable Exhaust Delay	1000	ms	Immediately	Delayed time before disabling s
N133	Start position of ex...	0.000	mm	Immediately	Starting position of exhausting
N134	Exhausting interval1	1000.000		Immediately	The length of No.1 exhausting
N135	Exhausting interval2	1000.000		Immediately	The length of No.2 exhausting
N136	Exhausting interval3	1000.000		Immediately	The length of No.3 exhausting
N137	Back distance at br...	2.000	mm	Immediately	The retreat distance at breakp
N138	Enable focus control	YES		Immediately	Whether to enable focus contr

Permission: Name: Enable focus control Value: YES Unit: Effect Time: Immediately

Operator
 Manufacture

Set Password

Choose YES for N138; then the Forth Axis(W) will be enable.

Focus Control

Parameter

Locate speed: 1200.000 mm/min

Jog speed: 120.000 mm/min

Focus offset: 0.000 (Focus pos after home)

Control

Focus Pos: 0.000

0 [Locate] [Home] [Stop]

1 2 3 4 5 6

1. Target Focus Input Box & Focus Position Display Box
2. Execute Button
3. Negative Focus Moving
4. Positive Focus Moving
5. Rollback
6. Stop



地 址 : 广东省深圳市龙华新区大浪街道浪口工业园青年梦工厂3栋3楼
Address : Floor 3, Building 3, Langkou Industrial Zone, Dalang,
Longhua District, Shenzhen

电话 T e l : +86 0755 27702280

传真 F a x : +86 0755 27702881

网址 W e b : www.szworthing.com.cn

邮箱 Email : info@szworthing.com.cn