

ICWS-200B Automatic Fiber Coil Winding Station



Description

Idealphotonics ICWS-200B fiber coil winding station is a newly-released machine which can wind the fiber coil for FOGs in the method of CW straight or any other ways like Octupole winding, Dipole Winding and etc. Its fiber coil outer diameter is $\leq 200\text{mm}$, and its fiber coating diameter is $\leq 0.5\text{mm}$, total fiber winding length is $\leq 3\text{KM}$

Feature

1. Manual operation should be necessary for installation the fiber transition spool and fiber delivery.
Automatic operation is done for product spool fiber winding, automatic splitting, automatic change for fiber transition spool at both side, automatic crossing change and etc.
2. Per customer own requirement, programme can be made for automatic winding, automatic splitting, automatic change and automatic crossing change at any winding method.
3. Winding programme can be custom-made for fiber outer diameter, product spool diameter, transition spool diameter and required tension .
4. Fiber outer diameter programmable precision: 0.001mm
5. Transition Spool winding slot and product spool slot width programme precision: 0.01mm
6. Splitting Axis splitting precision: 0.01mm
7. Splitting Axis Repetition Position Precision: 0.005mm
8. Incorporated into closed-loop tension controller, fiber tension is very

stable while winding (variation: setting $\pm 1.5g$). Actual tension is 1/6 of setting data.

9. Total Fiber Length programme precision: 100m, (variation: setting $\pm 0.5\%$).

10. Fiber from transition spool is automatic delivery while winding the fiber coil.

11. Automatic unwinding 2 methods are available, one is to first stopping while winding, then unwinding. The other is to unwinding for the whole layer.

12. Automatic fiber collecting is available while it is in unwinding.

13. Automatic zero-finding is available for main axis and splitting axis programme.

14. Tension alarm for over and off the limits is available.

15. Fiber broken protection set-up is available.

16. Automatic fiber coil compensation is available.

17. Designing method: transition spool can automatically cross and change compared to the conventional QUADRUPOLAR winder which transition spool is unchangeable. It can be winding the fiber coil at any method with direct winding, Dipole Winding , Quadrupole Winding, Octupole Winding and hexadecapole winding , cross winding and cross-free winding and etc.

Application

- Optical fiber sensor system
- Fiber optical Gyroscope

Specification

Model	ICWS-200B	
Main Axis Case	Moveable (Dual Main Axis Case)	
Windable Bobbin Outer Diameter (max)	mm	200
Splitting Distance (max)	mm	80
Windable Fiber Diameter(max)	mm	0.5
Power Supply	Single phase AC200V to 230V(10%), 50/60Hz	
Power Consumption	Kw	<4
Dimensions (LXWXH)	mm	1600*1100*1960
<i>Main Axis</i>		

Main Axis No	8 (2pcs main axis,6pcs sub-main axis)	
Main Axis Motor	W	4750W AC servo motor + fine reducer
Sub-main axis motor	W	100W AC servo motor
Main Axis rotating speed (max)	rpm	40
Main Axis Position Precision	degree	1
<i>Splitting Set-up</i>		
Splitting axis no	3+2 (Dual Main Axis Case Moveable)	
X Axis driving motor	W	400W AC Servo Motor
X Axis Distance (max)	mm	200
X Axis Stepping Precision	mm	0.005
X Axis Repetition Precision	mm	0.005
Y Axis driving motor	W	200W AC Servo Motor
Y Axis Distance (max)	mm	150
Y Axis Stepping Precision	mm	0.005
Y Axis Repetition Precision	mm	0.005
Z Axis driving motor	W	400W AC Servo Motor(With Arrester)
Z Axis Distance (max)	mm	150
Z Axis Stepping Precision	mm	0.005
Z Axis Repetition Precision	mm	0.005
X/Y/Z Displacement Speed (max)	mm/se cond	120
Left Main Axis Case Moveable Motor	56 Step-Motor	
Left Main Axis Case Stepping distance(max)	mm	60
Left Main Axis Case Stepping Speed (max)	mm/sec ond	50
Left Main Axis Case Stepping Precision	mm	0.01
Left Main Axis Case Repetition Precision	mm	0.005
Right Main Axis Case Moveable Motor	56 Step Motor	
Right Main Axis Case Stepping distance(max)	mm	60
Right Main Axis Case Stepping Speed (max)	mm/sec ond	50
Right Main Axis Case Stepping	mm	0.01

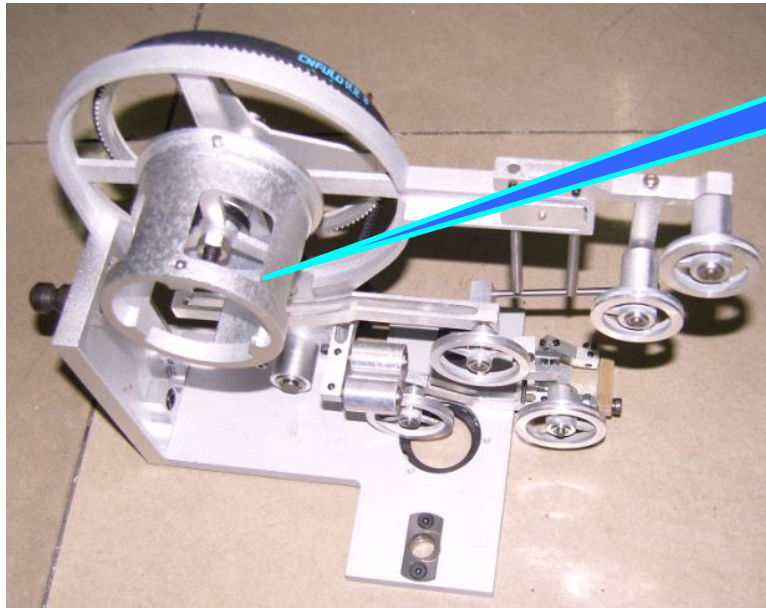
Precision		
Right Main Axis Case Repetition Precision	mm	0.005
<i>Control incorporated</i>		
Controlling System		Special CNC controlling system
Controller		K12
LCM Display		10" TFT Touch LCD
<i>Tension Sensor</i>		
Tensioner	Set	Closed-loop Servo Tension Controller
Tension controllable precision		Data settable, precision : $\pm 1.5g$
Tension Sensor	pc	2 sets special tension sensor
Length-meter	Set	Special designed length meter (precision: $\pm 0.3\%$)
<i>Option</i>		
Image Collecting System	set	CCD camera vision system+ five visual adjusting stage/holder
Single-layer length meter	set	2 sets (length metering precision: 1%)
Sub-splitting set-up	set	2 sets special set-up

Package information

Main parts for Winding Station

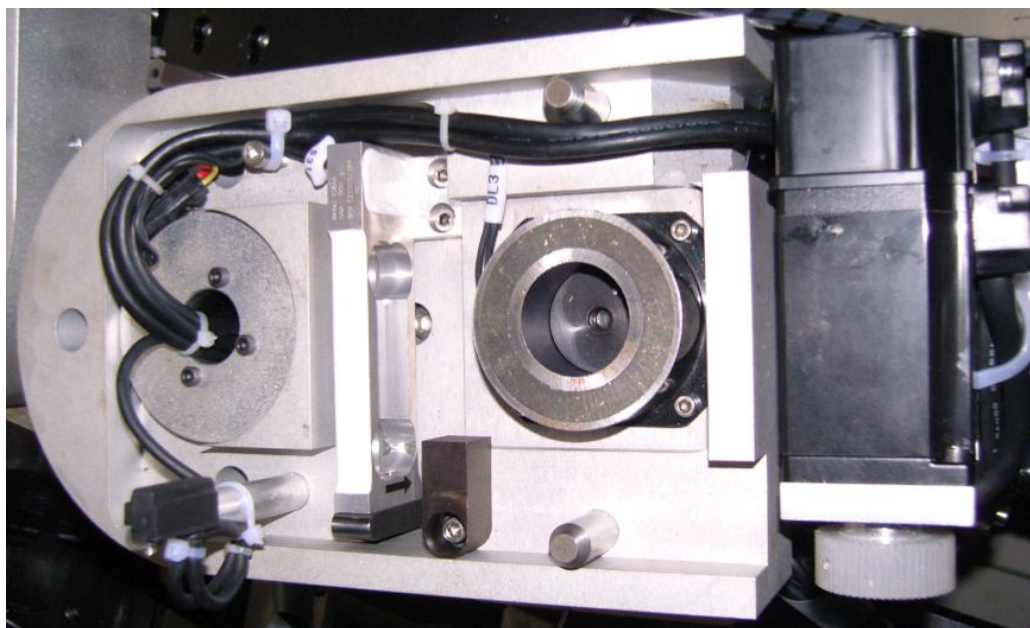
Driving device for accumulating wire spool

The device is very lightweight since it is acted as passive interchangeable part. It is comprised of accumulating wire spool fixture, pay-off active device and coordinated transposition position.



Fixed Axis for accumulating wire spool

2、 System for closed-loop tension and **coordinated transposition position. for accumulating wire spool**



3、 Controlling chassis for Main frame:

The special main controlling system is for 10 axis controlling, it keeps strong/weak current departed.

4. Fivevisual Driving Device

Motor for pay-off device

Tension Sensor

The device can support precise moving and position at X/Y/Z (advanced servo motor+ precise ball screw+ bearing are built-into) and rotating movement on the left/right platform. It can satisfy the accumulating wire spool departure, movement, interchange and building while **coordinated transposition.**

5. Precise main axis and servo-driving

2 sets of precise main axis are built-onto the winding station, which can support higher rotation precision. Driving is built with advanced servo-motor and planet gear reducer, which can support the runing balance and précising.

6. Main controlling panel

It is designed by 10" touchable screen, which is easy to read.

7. Industrial vision system and illumination device

In order to keep the coil winding well, it should be equipped with industrial vision system with fivevisual adjustable device and assistant illumination device which operation is by manually. It adopted the remote switches controlling for the assistant illumination device.

The CCD system can be amplified 20-100times, it facilitate the fiber winding inspecting clearlyand easily. It substantially save the manpower and improved the quality .

We can make other optional accessories on request. It is welcomed that you tell us your detailed Requirements.