








Fiber optic Indoor cable production line for produce 0.9mm tight buffer
<https://Delgosha.com>


K-30 PLC+IPC control tight buffered fiber production line

一、 Main composition are as follows:

item	All parts' name and specification	Brand	Qty	Picture(for reference)
1	Double heads motorized pay-off rack	HK	1set	
2	preheating oven	HK	1set	
3	φ30mm extruder main motor	HK	1set	
4	fine-adjustment machine-head (vacuum device)	HK	1set	
5	25KG Dryer machine and automatic hopper	TAIRI	1set/each	
6	Electric apparatus, main temperature control cabinet (PLC+IPC control)	HK	1set	

7	2.5m moving water trough	HK	1set/each	
8	Air cooled chiller(3hp)	Le Chang	1set	
9	Shanghai gongjiu laser diameter gauge	Shanghai gongjiu	1set	
10	8m single-layer U-type fixed type cooling water trough	HK	1set/each	
11	∅ 400mm single-wheel capstan (include dance wheel device)	HK	1set	
12	∅ 235 ~ 400mm double-shaft take-up machine	HK	1et	

13	∅ 30mm screw of low smoke halogen free	Kangda	1piece	
14	Stand-by parts	HK	1set	
15	Providing tools	HK	1set	
16	Providing data	HK	1et	

The equipment instruction: machine direction: left  right

二、 Application: Mainly applied in the production of tight buffered fiber.

III.main Parts brand:

Motor: Siemens beide Motor

Transducer: American Emerson transducer

Temperature controller: Japan RKC Brand PID Smart type

PLC and Control Module: Siemens

IPC:Taiwan Yanhua

Screw and Barrel: Produced by jinhu Company.

四、 Main specification and performance:

- 1、 extruding material: PVC、 LSZH etc.
- 2、 plasticization degree: 100%
- 3、 wire conductor diameter: $\phi 0.254\text{mm}$
finished outer diameter: $\phi 0.6\text{mm}/0.9\text{mm}$
- 4、 Extrusion output: 30KG/HR (the machine head is open, PVC material)
- 5、 Wire coaxiality: above-98.7%
- 6、 Power supply: AC380V/30KW
- 7、 Center height of machine: 1000mm from background
- 8、 Color: sky blue
- 9、 Design speed: 300m/min
Actual speed: 200m/min ($\phi 0.9\text{mm}/\phi 0.6\text{mm}$, PVC)
130m/min ($\phi 0.9\text{mm}/\phi 0.6\text{mm}$, LSZH)

五、 main technical parameter and configuration:

1. Double heads motorized pay-off rack

- 1-1、 wire spool size: $\phi 236*\phi 25.4*108\text{mm}(25\text{km})$, $\phi 265*\phi 25.4*180\text{mm}.$ (50KM)
No.: 2heads;
- 1-2、 pay-off type: shaft motorized pay-off rack;
- 1-3、 tension control: tension frame automatic control tension;
- 1-4、 working type: Linkage with main motor or work alone
- 1-5、 dynamic system: 2sets 750W AC motor +Danfoss control
- 1-6、 Pay-off tension: 0.3N-1.5 N

2. preheating oven

2-1、Effective length of heating:1200mm;

2-2、Infrared heating, temperature control table to display the temperature, can set the Heating temperature;

2-3、Flip type, the operation is simple and convenient

2-4、power:4KW

2-5、Heating temperature: $\leq 200^{\circ}\text{C}$

3. $\phi 30\text{mm}$ extruder main motor

3-1.machine frame: it is assembled and welded with A3 steel plate and channel steel.

3-2.deceleration box: it is Putuo 133-8 type

A. The square gearbox is cast formed with annealing, the material is HT200-300

B. The gear material: High Chrome Alloy Steel

C. The tooth surface of gears is high-frequency quenched and polished accurately, The index of noise is less than 75db,the gears are lubricated with The oil forcefully.

3-3. Screw

A. suitable for the production of PVC 、LSZH and other plastic, the plastification: 100%

B. the material is 38CrMoAL .Hardness: Above-HRC60~63, the nitrogenization:0.4-0.7mm, the surface is plated chromium.

C. Diameter: $\phi 30\text{mm}$ (1 piece of screw stem), L/D=25:1, revolution speed: 10-100rpm.

3-4.screw cylinder

A: Screw barrel inner diameter: $\phi 30\text{mm}$, it is one piece type from gearbox junction to the machine head.

B. material: 38 CrMoAL, hardness: above-HRC60~63, Nitrogenization depth: 0.4-0.7mm.

3-5: Electric heating: the screw stem is heated by 3sections by aluminum calorifere with voltage AC380V2KW/section. Japan RKC brand PID smart type temperature-controller plus contactor control.

3-6.Cooling: adopts 3sets high-pressure centrifugal air blower work with temperature-controller to cool automatically

3-7. main motor drive: AC 380V 15HP Siemens beide Motor is equipped with AC 380V 15Hp American Emerson transducer control.

4.25KG hopper dryer and automatic sucking machine

4-1、Tairi brand 25kg hopper dryer and automatic sucking machine ,there is auto alarm without material.

4-2、the drying machine for material loading is equipment with hot air electrothermal dryer, the temperature of hopper and heating time can be customized, electric

heating:2.8KW,Blowing:130W

4-3、 the auto-feeder is the vacuum brute force suction type, the suction bucket is laid above the machine platform, the horsepower of exhauster is not lower than 1.0HP,feeding height is 4m.

5. fine-adjustment machine-head

5-1、 no of free-adjustable machine head:2 piece(with two sets of moulds), With low smoke zero halogen shunt, Shunt surface nitriding treatment.

5-2、 The heating bar heating, With pressure sensor, Japan RKC temperature control meter control heating

5-3、 machine head clip: bayonet mount clamping, the cast aluminum heater is outlaid.

5-4、 looking direction: lock anti-clockwisely

6. Electric apparatus, temperature control (PLC+IPC control)

6-1. Whole machine adopts the control technology between industry controller and program controller (PC + PLC way), Siemens S7 series products as PLC, Taiwan ADVANTECH computer control as Upper computer, with 17" Liquid crystal display, keyboard and mouse.

6-2. PLC as main control system to realize linkage control system of full production line, operators can choose stop, low speed, fast speed running status by interface. The production line can automatically switch in 3 kinds of status according to operation order and machine all status signal. speed can change according to settable lifting speed time and no sudden change. Can automatically respond to all defaults signal and be with accurate defaults indication. Both production speed and meter-counting data have obvious display. Can pre-set meter-counting length.

6-3. Industrial controller can make a record of human machine data exchange and production data. The industrial controller provide human machine interface including:

A. Production Interface: provide all operation function buttons and parameters settable window of production line including production line speed display, production line speed set, extrusion machine revolution speed and electric current display, extruder revolution speed set, haul-off and extruder start-stop button and products length, etc. and also can display all the status of production line.

B. Alarm interface: Displays and records the momentary and historical alarm signals of production line all parts to be convenient for operators to inquire.

C. Curve interface: the historical curve and alarm of production line speed, main machine revolution speed, machine head pressure, extruder electric current, products outer diameter, be convenient for operators to inquire historical data.

D. Formula interface: operators can set formula according to workart parameter, and take it out for usage while use.

E. Other interface and function shall change and increase according to client's requirement.

6-4. Temperature controller adopts Japan RKC or OMRON brand.

6-5. Industrial Controller adopts Taiwan ADVANTECH products with operation system, PLC choose Siemens S7 series products;

6-6. AC motor adopts Siemens beide Motor;

6-7. AC motor driver adopts American Emerson transducer;

7. 2.5 m moving water trough

7-1、 material: stainless-steel

7-2、 length :2.5m,movable amount is 0.5m.

7-3、 Air-pressure is adjustable, with one unit of switch

7-4、 Heating power:6KW

7-5、 Water tank volume : 0.3m³

7-6、 Circulating water capacity : 1.8m³/h

8. Shanghai gongjiu laser diameter gauge

8-1.origin: Shanghai

8-2.precision:±0.003mm

8-3.range of wire diameter: 0.1-20mm

8-4.control: automatically feedback-control main motor speed to ensure the setting range of wire diameter.

9. 8 m U shape single-layer fixed water trough

9-1、 material: stainless steel

9-2、 length: 8m

9-3、 Water tank volume : 0.3m³

9-4、 Circulating water capacity : 1.8m³/h

9-5、 Air-pressure is adjustable, with one unit of switch

9-6、 one set water dryer

10. ∅ 400mm single-wheel capstan machine

10-1、 machine rack: it is assembled and welded with A3 steel plate and channel steel

10-2、 capstan wheel: material: casting aluminum ∅400mm with 1 pieces。

10-3、 dragging: AC380V2HP frequency motor+ Makishinko Worm Reducer +SERVO

10-4、 line speed: $v \leq 300m/min$,It is coordinated action control with main motor.

10-5、 meter-counting:6 digit electronic meter-counting.

11.∅235-400 double-shaft take-up machine

11-1、 wire spool: ∅235-400, line speed $v \leq 300m/min$

11-2、 drive: AC 380V 2HP Siemens beide Motor, with AC380V2HP American Emerson transducer and tension deflection detector can automatically control take-up speed.

11-3、 traversing: screw type control traversing, 400W Panasonic servo motor +driver control+6.7 inch weilun PLC touch screen+S7-200 PLC program, the pitch and range of traversing can

be adjustable, it is coordinated with take-up speed.

12. Φ 30screw of low smoke halogen free.....1set

13. supplied accessories:

A. Tools:

Tool box-----1 piece
Scissors-----1 piece
Inner hexagon wrench-----1 set
“1” screwdriver-----1 set
Cross screwdriver-----1 set
Active wrench-----1 set
Special wrench for Machine head-clip-----1 piece

B. Stand-by (preparation) parts:

PVC water-pipe (used in the inside of machine) -----1 lot
Air-pipe-----1 lot
Mould (client provides the specification)-----2sets
basic screws and fixed screw -----1 unit
Machine head clip heating plate-----5 pieces
Machine neck heating ring-----4piece
Thermal couple-----5 items

Providing folder:

One set of Machine installation drawing. Usage instruction (manual). Circuit diagram, etc.