



Velocity Engineers Private Limited

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VE- 24 DT High Speed Fine Wire Drawing Machine

Main Technical Parameter

1. inlets size:	$\phi 0.55 \sim 1.6$ mm
2. outlet:	$\phi 0.08 - \phi 0.50$ mm
3. fixed speed diameter:	$\phi 160$ mm
4. drawing dies NO:	Max. 24
5. Drawing slip ratio:	1.15
6. max drawing speed:	2000 M/MIN
7. main motor:	18.5 KW (AC)
8. take-up spool:	$\phi 300 * \phi 215 * 290$ mm
9. annealing voltage:	60V * 300A (DC)
10. take-up motor:	4KW (AC)
11. Steam generator Power:	6KW
11. total power installation:	55KVA

Machine Consist

1. Overhead pay-off	1 set
2. Main drawing machine	1 set
3. Steam generator	1 set

(Technical document) operation manual 1 set.

Including: technical parameter, machines operations, machine structure, drawing dies formula, foundation drawings (including water power air drawings), error removing method, machine maintainace, electrical diagram, inverter manual

Machine Details and Usage

Main Machine:

1. Machine structure

1.1 Material: Q235

1.2 Structure: welded by steel, annealed, processing by precision CNC machine

2. Inlet

2.1 Inlet position: on the left of machine, 6 inlet holes.



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2.2 water collection parts at the below of inlet part.

2.3 Inlet hole device: Ceramic eyes

3. Axis

3.1 Material: 42CrMo+40Cr

3.2 Precision tempered, ensuring removing the inner force, enhance the hardness of parts.

4. Transmission parts

Adopting NSK or SKF bearings, transmission parts with belts.

5. Drawing drum

5.1 Adopting ceramic drum, 11 layers 4 pcs, last drawing drum 1 pcs, drums in horizontal, easy inserting wires.

5.2 Drawing drum fixed by conical screw, easy loading and unloading.

6. Die base

6.1 first drawing die and last die is in single place.

6.2 from 2nd to 23rd is cast parts, easy inserting wires.

6.3 drawing die base can be adjustable.

7. Lubricant

7.1 spraying oil over drum and drawing dies, spraying pipes adjustable.

7.2 1st and last one adopting single spraying pipe.

8. Drawing Part

drawing parts with SS covers, easy opening.

Annealing Parts Technical Parameters

1. Usage: This part working with double wire drawing part, continuous annealing $\phi 0.12 \sim 0.55 \text{mm}$

2. Main Structure: Vertical type, welded by steel plate, annealed

3. annealing parts adopting steel protection, annealing channel and cooling chamber

Filling with steam or cooling water, preventing copper wire become black.

4. annealing driving: connecting to main machine by flat belt.



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5. Main technical parameter

NO	Name	Unit	Data
1	Annealing wire	mm	Φ0.08-Φ0.50mm
2	Annealing speed	M/Min	2000
3	Annealing current	A	300 DC
4	Annealing voltage	V	65 DC
5	Annealing wheel diameter	mm	Φ160
6	Annealing type		Touching circuit annealing, 2 or 3 sections annealing according wire size 15
7	Cooling water need	m ³ /h	≥0.4Mpa 6kg/h
8	Steam needed		≥20
9	Compress air need	m ³ /h	0.4-0.6
10	Compressed air pressure	MPa	

Tension and Take-up

1. Tension part

The tension controller is composed of a guide wheel set, a swing bar, a signal feedback device and a sensor. The device provides a deviation signal electrical control system, automatically adjusts the speed of the take-up motor after the operation of the electrical system PID, and achieves the synchronous function with the host speed

1.1 Type: Balance arm.

1.2 Guiding wheel: Ceramic aluminum wheel.

1.3 Tension monitoring: Precision indicating.

1.4 wire breaking monitoring: approaching switches.

2. Take-up

Adopting single shaft and screw fixed type, with spools loading and unloading parts.



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2.1 Main Technical Parameter

Take-up Range:	Φ0.08-Φ0.50mm (based on main drawing wires).
Max take-up speed	2000 m/min according to main drawing speed
Take-up motor	4KW (AC)
Spools size	φ300*φ217*290mm (50KG steel spool) (or according to client sizes)

2.2 full seal covers, with checking windows, to watching working condition.

2.3 Tool to load and unload spool.

Control

3 phase 5 wires; 415V, 50Hz

adopting PLC+HMI control (can display working condition and errors), main drawing machine and take-up machine adopting inverter control, annealing parts adopting digital controller, annealing voltage according to drawing speed, with wire length setting, wire breaking and error occurring machines stopping functions.

Customers Requirement

1. customer providing air pipe water supply and pipes and other connecting wire cables
2. total installation power 55KVA
3. compressed air P≥0.4Mpa
4. Testing machines dies: customer providing

Main parts brands

NO	Name	Brand	Origin
1	Main bearing	NSK or NTN and SKF	
2	INVERTER	Inovance	
3	MAIN MOTOR	WN MOTOR	AnHui
4	PLC	INOVANCE	SHENZHEN
5	HMI	DELTA	Taiwan
6	ANNEALING CONTROL	ETD	
7	AIR SWITCH	SHILIN	TAIWAN
8	BUTTONS AND RELAYS	SCHNEIDER	FRANCE
9	APPROACHING SWITCH	TEND	TAIWAN



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