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FANYUAN INSTRUMENT (HF)CO.,LTD.
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DW5300 TORQUE RHEOMETER





MODEL NO.

DW5300 (ZJL300 original)

APPLICATION

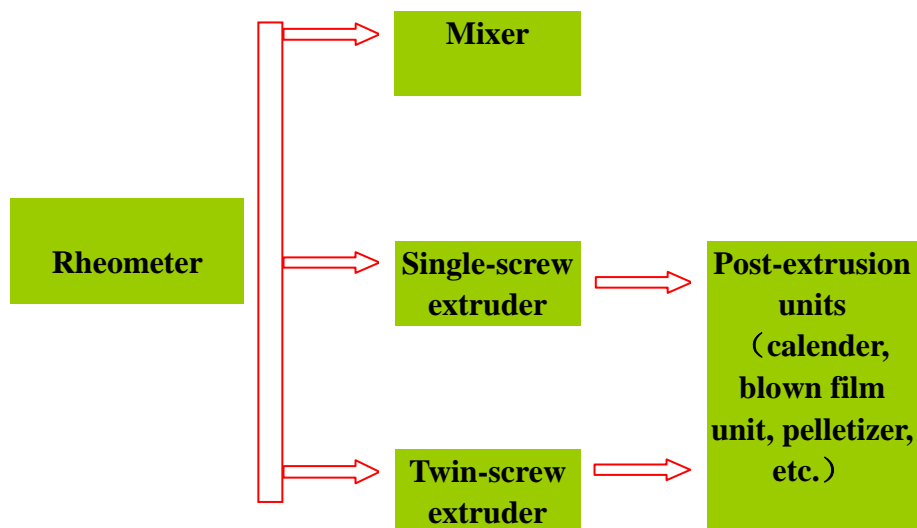
DW5300 Torque Rheometer. It is a well-combined rheometer available, consisting of rheometer, mixer, extruder, etc. It is applicable to determine several parameters of thermoplastic material via host computer with proprietary software, such as thermal stability, shear stability, fluidity and plasticizing behavior. It also can measure curing properties of thermosetting material during processing which is similar to the actual process. The typical specimens are PVC, PE, PP, rubber, etc.

Torque Rheometer is suitable to test rheological characteristics of polymers, typical applications in the polymer processing include:

- Determination of the processing behavior
- Evaluating processability
- Compounding polymers with additives
- Extruding profiles, films, etc. for further testing
- Rheological testing
- Optimizing process parameters or performing quality control, etc.

The reason that we use torque rheometer, as follow:

- Polymers processing under molten state, such as extruding, injection molding
- Processibility and the product quality affected by fluidity(viscosity)
- Torque rheometer and measuring sensors are miniaturization production equipments
- Testing process is similar to the actual process



Process flow diagram

We are a leading manufactory of test equipment located in China and have been in this field for more than twenty years. Based on our extensive experience, we first developed torque rheometer controlled by computer in 1996. This equipment is popular with enterprises and almost all Chinese universities. We can sell more than 50 sets every year, just in 2007, we sold 68 sets.



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STANDARDS

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Note: this tester can conform to but not limit to the standards above, for more standards conformance, please contact us.

FEATURES

- Advanced electric control, high reliability, easy to maintain;
- Well-made, stainless steel bearing bushing, wearable and durable;
- Abundant processing software, powerful function, fast and efficient, easy to operate;
- High accuracy, high repeatability;
- High cost performance;
- Diagram output for speed, torque, temperature, pressure and time;
- Methods and datas interchangeable between lab and automation equipment;
- Possible to connect with mixer, extruder, calender, blown film unit, pelletizer, etc.

KEY SPECIFICATION

Main Machine

Item	Main Machine
Power of motor and reducer	4.0kw
Speed range	2~120 rpm (stepless) 2~200 rpm (stepless)
Speed accuracy	$\pm 0.2\%$ F.S.
Torque range	0~300Nm
Torque accuracy	0.1%~0.2% F.S.
Pressure range	0 ~100MPa*
Pressure accuracy	0.1%~0.5% F.S.
Temperature range	Room Temperature~400°C
Temperature accuracy	$\pm 0.1^{\circ}\text{C}$
Temperature control	9 zones, 1 zone for material temperature
Cooling control	6 zones, 4 zones for air cooling
Power	AC380VNE,14A, $E \leq 4 \Omega$

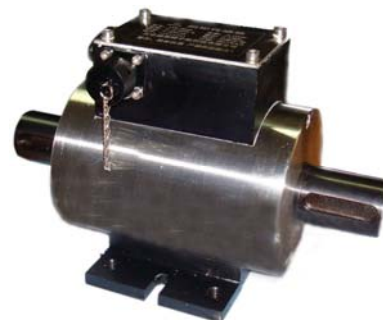


Main machine

* Measuring range of pressure sensor, 60MPa max. in the actual process.



Pressure sensor



Torque sensor

Mixers



- Several optional types of mixer volume, 30ml, 60ml, 200ml*;
- Exchangeable rotors with different geometries as standard.

Typical mixer specification

Item	Mixer LH-30	Mixer LH-60	Mixer LH-200
Volume	30ml	60ml	200ml
Rotors	Delta, Roller, Banbury, Sigma (optional)		
Heating	3 zones, electric heating, 350°C max.		
Heating speed	200°C/10mins		200°C/12mins
Cooling method	air or water		

* 500ml, 1000ml, 2000ml volume of mixer existed, named Banbury mixer, which can be used in lab and factory separately.

Extruders

- Extruder with single- or twin-screw, to extrude pipe, capillary, blown film, pellet etc. according to different extruder dies.



Single-screw extruder



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Specification

Item	Plastics Extruder	Rubbers Extruder
Screw style	single screw	
Screw	progressive, mutant, etc. (optional)	progressive, isobathic and variable pitch (optional)
Screw diameter	Φ 20mm	Φ 30mm
L/D ratios	25/1	12/1
Heating	3 zones, electric heating	2 zones, electric heating
Heating speed	200℃/15mins	adjustable
Cooling	3 zones, air cooling	2 zones, air cooling
Dies (customized)	cylinder, Φ 5mm×1(standard configuration); pellet; pipe; plain film; capillary; cable coating; Garvey(for rubbers extruder)	



Screw

Parallel twin-screw extruder



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Specification :

Item	Twin-screw extruder
Screw	cordwood
Diameter	21.7mm
L/D ratios	40/1
Groove depth	3.5mm
Heating	5 zones, electric heating, 350℃ max.
Cooling	5 zones, air cooling
Feeding method	dosing feed
Speed	10~300rpm
Venting	vacuum venting
Cooling trough	Stainless steel, 1200mm long, air drying
Dies(customized)	cylinder, Φ 5mm \times 1(standard configuration); plain film; pellet; pipe; cable coating; capillary

Calender



Item	Calender
Power	3N~50HZ, 380V-NE
Motor power	1.10kw
Dimensions	Φ 80 \times 150mm
Speed range	2~60rpm, frequency control
Temperature control	electric heating or water cooling

Pelletizer



Item	Pelletizer
Motor power	0.75kw
pellet length	3mm
Speed	stepless, frequency control
Power	AC380VE

Blown Film Unit

Item	Blown Film Unit
Pulling speed	0~80rpm
Reduced diameter of film	0~120mm
Film thickness	0.02~0.1mm
Motor power	180w
Dimensions	1500(L) × 500(W) × 2050(H)mm





Blown film product line, consists of blown film unit, parallel twin-screw extruder and torque rheometer.

STANDARD CONFIGURATION

No.	Item	Quantity
1	Main machine	1 set

OPTIONAL ACCESSORIES

No.	Item	Quantity
1	LH-30 Mixer	1 set
2	LH-60 Mixer	1 set
3	LH-200 Mixer	1 set
4	LH-A Delta Rotor*	1 pcs
5	LH-B Roller Rotor	1 pcs
6	LH-C Banbury Rotor	1 pcs
7	LH-D Sigma Rotor	1 pcs



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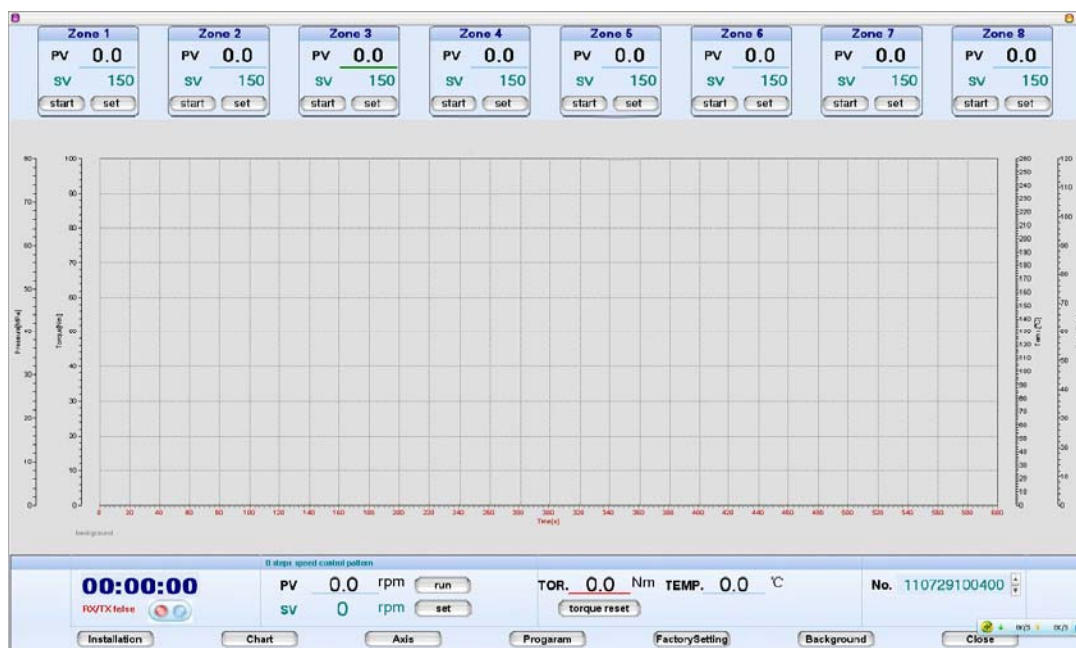
8	LSJ-20 Plastics Extruder	1 set
9	LXJ-30 Rubbers Extruder	1 set
10	LSHJ-20 Parallel Twin-Screw Extruder	1 set
11	Dies** for extruder	customized
12	LSC-120 Blown Film Unit	1 set
13	SG-20 Pelletizer	1 set
14	LXY-80×150 Calender	1 set
15	Computer	1 set
16	Printer	1 set
17	HZY-B200 Electronic balance(0.01g)	1 set

* Rotors for mixer, you can choose one type for one pcs which we provided in the standard configuration, you can also customize for more than one type or one pcs.

** Dies for extruder, 1 pcs of cylinder die is standard configuration, you can also customize others.

ATTACHMENT

Software user interface:





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Testing report:

