

PLASTIC ALMIGHTY SPECIMEN CUTTING EQUIPMENT

TYPE SDAP-1200FD-TRPL



In ISO International Standard(ISO-3167-1993)for thermoplastic resin materials, JISK-7139:1996, which was integrated in ISO standard as new JIS, stipulates two kinds of specimen, typeA & B, for tensile test, as the standard specimen. These two kinds of specimen, type A & B, for tensile test are called as multi-purposes specimen, because they can be used for many purposes widely if a simple machine work to a part of them is added. The characteristics of multi-purposes specimen which is formed under same condition and is measured under same state is told that it does not happens unevenness in characteristic value to be obtained. In the past , there was the impossible physically to obtain the specimen for tensile test and other specimen including for Izod and Charpy impact tests directly from cutting. If the specimen could be obtained, it has many difficulties for standard specimen. Therefore, in general, to obtain the specimen, machine cutting method was only used as the effective means. But, in this preparation method, it needs much time. And also there were many difficulties such as physical influence to the specimen due to friction heat to be happened at the time of cutting work, rough finish of cutting surface, problem in accuracy, the cost of equipment itself, etc.

In order to solve these technical problems, we already developed Plastic Full Automatic Sample Cutter, Type: SDAP-1183-FBAT, which combined our epoch making ideas and our technic for our original products, Super Dumbbell Cutters(blade exchange system), as the manufacturing equipment of atandard specimen. So far, we have been selling many units of this equipment as rational and ideal cutting equipment.

SDAP-1200FD-TRPL PLASTIC ALMIGHTY SPECIMEN CUTTING EQUIPMENT utilizes excellent characteristic and technic of aforesaid Plastic Full Automatic Specimen Cutting Equipment which is already developed by us and in addition this is newly developed cutting equipment which is loaded update cutting system basing on the development philosophy of this equipment.

Obtaining specimen by this equipment

◆ Dumbbell shaped specimen (1B shaped)

Firstly, cut one side of longitudinal direction from press formed sheet. Immediately after that, work-table turns automatically by 180 degrees.

And cut the rest of one opposite side to complete the cutting by two shot.

◆ Prism shaped (long strip of paper shaped)specimen

At first, cut one side of longitudinal direction by 1st shot. Parallel movement of work-table by manual feed handle. Following cutting after 2nd shot(optional numbers). After cutting of longitudinal side and optional numbers, turn work-table by 90 degrees and cut end surface finally.

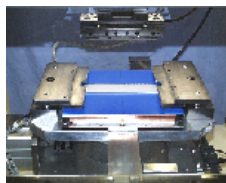
Also, regarding the both Dumbbell shaped specimen and prism shaped specimen, it can be easily corresponded by changing the cutter unit only. Especially, in obtaining prism shaped (long strip of paper shaped), as the method cuts longitudinal direction one side by one side, the selection of transfer pitch can be possible in any ranges and therefore a user can cut precisely in a user's optional dimensions. Transfer of work-table after 2nd shot can be made correctly by feed movement of manual handle. As the distance of transfer at the time is displayed on liquid crystal (minimum scale spacing is 1/100 mm), continuous cutting can be made confirming actual distance of transfer.

Thus, this equipment is original products based on new ideas which has never thought to conventional type.

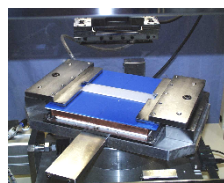
Characteristics of this equipment

(1) Labor-saving by semi-automatically.

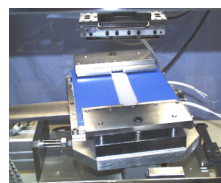
(2) Work-table turning function is loaded. 【 Movable range: 0 ~ 180° 】 As work-table turns, you can use one die-set for a general-purpose.



0° /180°



45°



90°

(3) Work-table parallel transferring function is loaded.

Work parallel transfer is possible with optional pitch and correctly, you can obtain any and all long strip of paper shaped specimen by one die-set.

(4) Dimensional accuracy of the specimen obtainable is improved.

◇ Cutting accuracy of flat surface (especially, measuring parallel portion)-within 10 ± 0.07 mm.

◇ Vertical cutting surface: Standard deviation is approx. 0.05 ~ 0.07mm between top surface and bottom surface of the specimen.

◇ Condition of cutting surface: Extremely good.

(5) Influence to the specimen obtainable in cutting.

No friction heat is generated at the time of cutting, so it does not give any influence by temperature. Also, it does no cause whitening phenomena.

(6) Permanent quality control for blades by Super blade exchange method.

All cutting cutters are designed and manufactured for blade exchange method configuration. For blade edge which is worn and consumed, as it can be replaced easily to new spare blade, you can always maintain the best condition. Also, you can use cutter's mechanism part nearly eternally.

(7) Obtainable various kinds of specimen. :By the exchange of cutter unit, you can obtain various specimen.

(8) Safety and clean working environment.

◇ Transparent resin safety hoods are installed around cutting room and sliding part of work-table.(Standard specification)

Also, if front door is opened during the working of the equipment , the operation of the equipment is stopped immediately.

[as additional specification, we can provide you with infrared rays beam sensor system.(drive circuit is cut off by beam sensor)]

◇ Cutting filings, fine particles,etc. do not generated as this equipment differs from rotation cutter cutting method.

(HDPE & LDPE 4(t)mm)



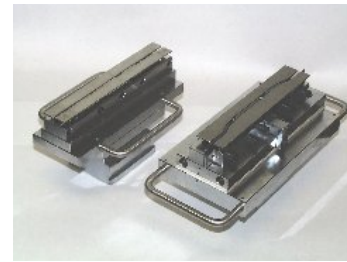
【 by this equipment 】

Patent Pending(Cutter is already patented in USA,CA,KR,JP)



DUMBBELL CO.,LTD.

Testing method	Quoted Standards	Type of test piece and dimensions(mm)
Tensile test	ISO527-2	Type A or B
Tensile creep test	ISO899	Type A or B
Bending test	ISO178	80 × 10 × 4
Bending creep test	ISO6602	80 × 10 × 4
Compression test	ISO604	(10 ~ 40) × 10 × 4
Impact intensity(Charpy)	ISO179	80 × 10 × 4
Impact intensity(Izod)	ISO180	80 × 10 × 4
Impact intensity(Tensile impact)	ISO8256	80 × 10 × 4
Load deflection temperature	ISO75	(110 or 80) × 10 × 4
Vicat softening temperature	ISO306	10 × 10 × 4
Hardness-Ball indentation	ISO2039-1	(≥ 20) × 20 × 4
Environment stress cracking	ISO4599	Type A or B or
	ISO4600	80 × 10 × 4
Consistency	ISO1183A method	30 × 10 × 4
Oxygen index	ISO4589	80 × 10 × 4
Comparative tracking index(CTI)	IEC112	> 15 × 15 × 4
Electric corrosion	IEC426	30 × 10 × 4
Coefficient of linear expansion		> 30 × 10 × 4



Type: SDSPK-1000-DU Series (Picture: right)

Super Dumbbell Separate Cutter Unit

[For JISK-7139 1B shaped, side face
(right and left is double duty)]

Type: SSSK-1000-DU Series (Picture: left)

Super Single straight Cutter Unit

[For JISK-7139 Prism shaped, (long strip of paper shaped)]

MAIN SPECIFICATIONS

Main cutting drive part	Diameter of air-cylinder ram φ 200 × 150(ST)mm
Solenoid valve for main cutting	3-position type(Intermediate is waiting)
Work-table(vertical direction)maintain part	Diameter of air-cylinder ram φ 50 × 15(ST)mm × 2systematic (right & left) controls
Work-table(horizontal direction)maintain part	Diameter of air-cylinder ram φ 25 × 15(ST)mm
Work-table rotation drive	Cross roller ring guide, thrust bearing mechanism, rack gear transmission mechanism combination by air drive
Table drive	Diameter of air-cylinder ram φ 80 × 100(ST)mm
Work-table rotation range	0° ~ 90° / 0° ~ 180° manual change
Work-table sliding part	Y axis(front and rear) LM linear guide and thrust bearing mechanism Transfer stroke : 120 mm Manual handle (2.0 mm/turn)
Slide table brake part	Diameter of air-cylinder ram φ 80 × 10(ST)mm
Transfer distance display	Linear scale. Liquid digital 5 digits display (3 digits in integral number / 2 degits in small number)
Pressure and speed control	Pressure indicator and pressure regulator Display 5 systems
Air supply pressure	6.5 kg/ (G)
Air working pressure	1.5 ~ 6.5 kg/ (G)
Size of work-table	Approx. 200 × 220 mm Usable up to 4.5(t)mm (max.) thick of work
Size of sheet (1B shaped / prism shaped)	1B shaped (Dumbbell shaped) (W)35 × (L)170 mm Prism shaped (W)200 × (L)200 mm
Cutter to be used (standard accessory)	① SDSPK-1001B-Du [corresponds to JISK-7139 1B shaped (Dumbbell shaped)] ② SSSK-1000S-Du [corresponds to JISK-7139 prism shaped and other long strip a paper shaped specimen]
Equipped around cutting room	PVC resin transparent safety foods are installed (at right & left and backside)
Front opening	Turn-over type safety door is installed (PVC resin made). During it opens, circuit of main cutting drive is cut off.
Illumination inside of room	20W direct tube type fluorescent lamp One lamp
Power source	AC-100V 50/60Hz single phase 1.5A
Unit dimensions & unit weight	Approx. (W)800 × (D)750 × (H)1150 mm, or 1450 mm / approx. 250Kg

Special additional mechanism (Option)

Temperature control(heating mechanism)	Heating mechanism built-in by temperature control (2 systems)
Object of work materials	Hard vinyl chloride, PS and other hard thermoplastic resin
Temperature control(2 systems)	① Cutter side: AC-100V 400W ② Table side: AC-100V 500W
Temperature range / control system	Room temperature ~ 199 °C/ Digital system PID proportional control system
Addition of electric capacity	AC-100V single phase 11A
Infrared beam sensor mechanism	Front opening - safety mechanism by infrared beam sensor

HANDLING ITEMS

Manufacturing of various kinds of Physical Testing Machines,
Specimen Forming Molds for testing and Related Equipments
SD type Sample Cutting Cutter and Related Equipments



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