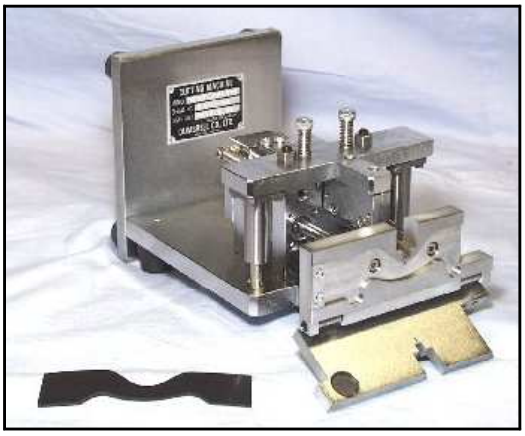
MODEL SDSC-1200 SERIES

SLITTING JIG FOR VULCANIZED RUBBER TEAR TEST SPECIMEN

【*Shin-Etsu Chemical Co.,ltd.* Jointly Developed Product Obtained Utility Model Right】



This is the special tool to cut a slit of the specified dimension to the test specimen.
Unlike conventional type, the slit can be certainly cut as specified to the soft material like silicone rubber.
Because, the blade edge slides to cut like an arc.

Operation Method: ① Set a work in the cavity (photo front side) and close the lid.
② The operation is completed only by lightly pressing down the cavity.

Dimensions:（Approx.）(W)130×(D)150×(H)220 ㎜ / Weight:（Approx.）5kg

Ⅰ. Kinds of this new jig

Model: SDSC-1200NJ	for JIS K6252, ISO 34-1 Crescent test specimen	Nick depth	1±0.2 ㎜
Model: SDSC-1200AS	for ASTM D624 Die B	Nick depth	0.5±0.05 ㎜
Model: SDSC-1200J	for JIS K6301 A-shaped	Nick depth	0.5±0.08 ㎜

Ⅱ. Comparison of a slit part by the pictures between conventional jig and new jig

Hardness: JIS-A 62 Tensile strength:5.49MPa Elongation:240%

【Conventional jig】

【New jig】

Hardness: JIS-A 14 Tensile strength:4.31MPa Elongation:760%

【Conventional jig】

【New jig】

DUMBBELL CO., LTD.

Ⅲ. Comparison by data between Conventional jig and New jig

Table 1 Comparison of result in silicone rubber *1 Average is length calculated by(Shallow + Deep) / 2
*2 Calculated based on average value of each [*1]

		Conventional jig (0.5 ㎜)	New jig (0.5 ㎜)	New jig (1.0 ㎜)
Average value(㎜) of slitting length	Shallow	0.442	0.488	0.986
	Deep	0.688	0.545	1.055
	Average *1	0.565	0.517	1.020
	Difference of slitting	0.246	0.057	0.069
CV value(%) of slitting	Shallow	21.4	5.5	7.8
	Deep	24.3	6.9	10.0
	Average *2	12.6	4.9	8.7
CV value(%) of tear strength		2.7	2.1	1.7

【 Reference Value: Hardness: JIS-A 60 Tensile strength(MPa): 7.94 Elongation(%): 290 】

Table 2 Comparison in various rubbers

*1 Slitting length and CV value of slitting are calculated by average of slitting (Average of slitting of front and back of specimen { Shallow + Deep }/ 2)

Kinds	Reference property			Slitting length(㎜) *1		CV value(%) of slitting *1	
	Hardness	Tensile strength	Elong-ation	Conventional jig (0.5 ㎜)	New jig (0.5 ㎜)	Conventional jig (0.5 ㎜)	New jig (0.5 ㎜)
A	JIS-A 14	4.31MPa	760 %	0.867	0.475	23.3	19.0
B	JIS-A 30	4.70MPa	340 %	1.058	0.548	26.6	6.8
C	JIS-A 38	7.06MPa	350 %	1.018	0.510	9.2	3.9
D	JIS-A 60	7.84MPa	290 %	0.565	0.517	12.6	5.0
E	JIS-A 62	5.49MPa	240 %	0.492	0.475	2.9	0.0

Kinds	Reference property			Slitting length(㎜)		CV value(%) of slitting	
	Hardness	Tensile strength	Elong -ation	Conventional jig (0.5 ㎜)	New jig (0.5 ㎜)	Conventional jig (0.5 ㎜)	New jig (0.5 ㎜)
For roll	JIS-A 1	0.98MPa	450%	not slit	0.625	not slit	0.0
For roll	JIS-A 10	1.27MPa	300%	0.900	0.592	7.4	6.5
Rubber contact	JIS-A 13	4.12MPa	740%	1.317	0.625	17.6	14.4
Rubber contact	JIS-A 14	4.31MPa	760%	0.867	0.475	23.3	19.0
For die making	JIS-A 30	4.70MPa	340%	1.058	0.548	26.6	6.8
For nipple	JIS-A 35	10.78MPa	890%	0.485	0.586	37.8	7.1
For die making	JIS-A 36	11.76MPa	900%	0.858	0.617	13.1	2.3
Rubber contact	JIS-A 38	7.06MPa	350%	1.018	0.510	9.2	3.9
For insulating material	JIS-A 60	7.84MPa	290%	0.565	0.517	12.6	5.0
For die making	JIS-A 62	5.49MPa	240%	0.492	0.475	2.9	0.0

	Unevenness of slitting of all products		
	CV value(%) Manual	CV value(%) Machine(0.5 ㎜)	CV value(%) Machine(1.0 ㎜)
Shallow	53.0	10.4	6.4
Deep	33.0	11.9	8.1
Average	37.3	8.5	6.7

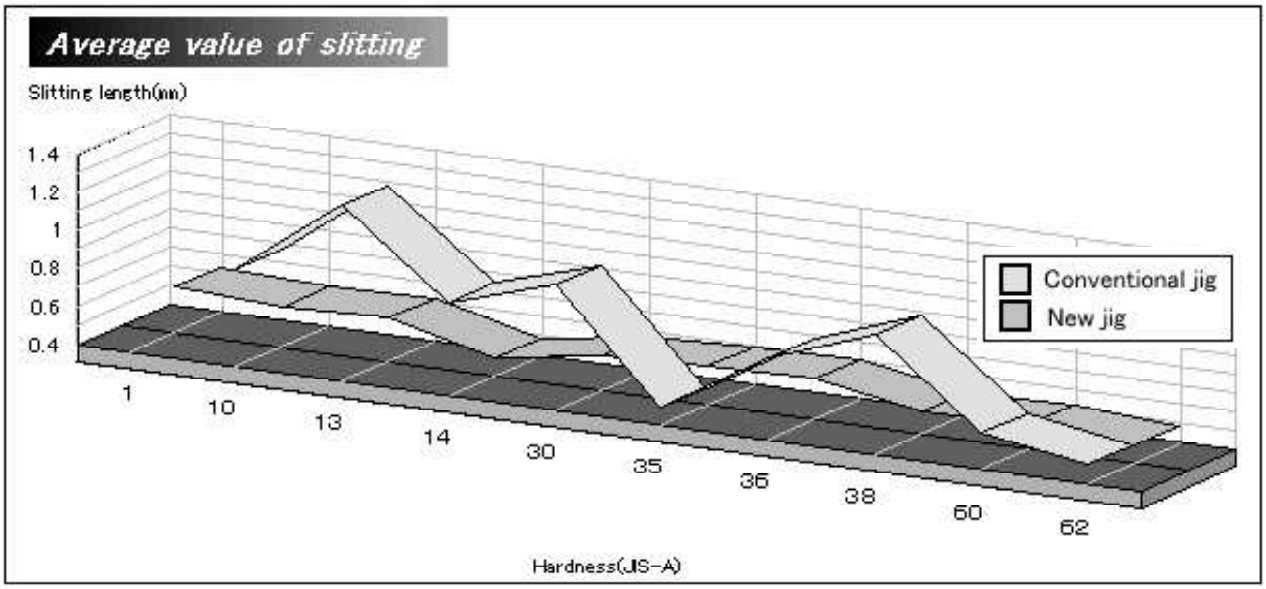
	Average(㎜)of slitting of all products		
	Manual	Machine (0.5 ㎜)	Machine (1.0 ㎜)
Shallow	0.640	0.495	1.002
Deep	0.966	0.575	1.098
Average	0.803	0.535	1.050
*3	0.326	0.080	0.096

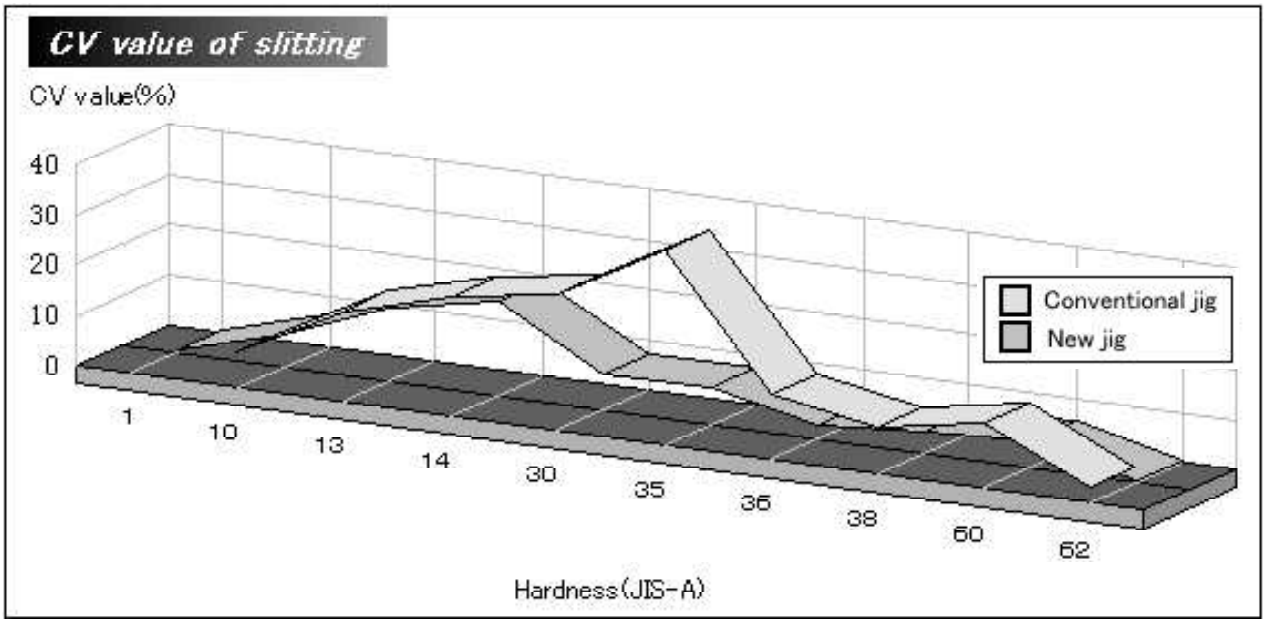
*3 Difference of front & back

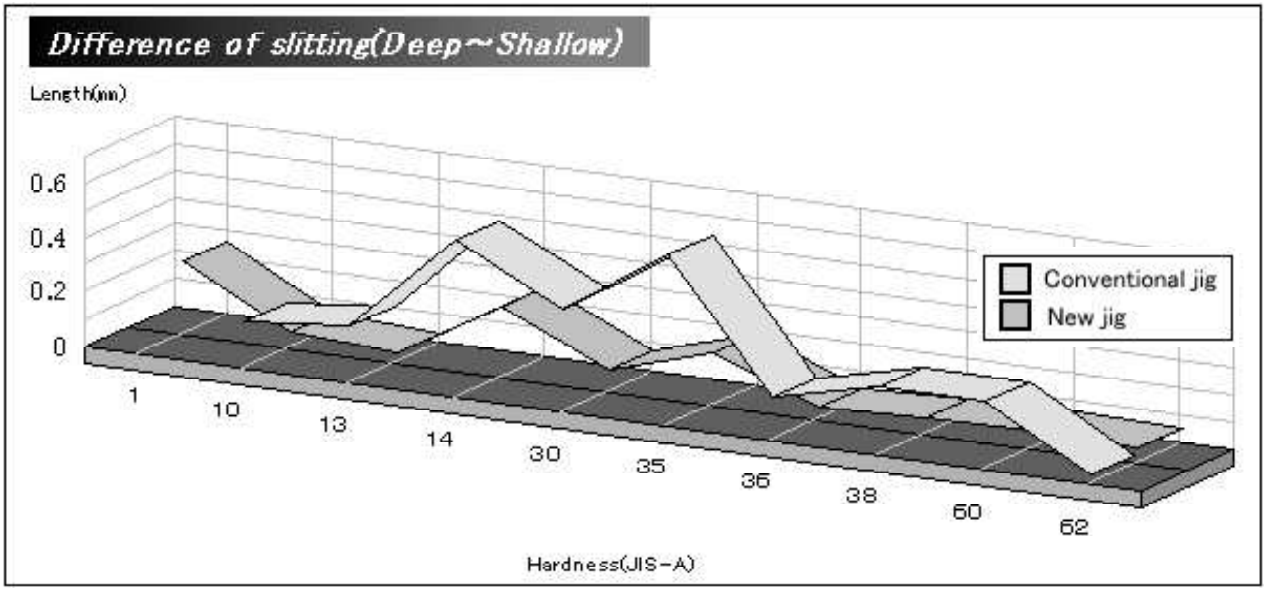
SUPER DUMBBELL CUTTER

MODEL: SDMAK-1000
Conformed to JIS K6252 Crescent shaped standard

Ⅳ. Each data graph according to hardness (JIS-A)







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

DUMBBELL CO.,LTD.
2243-1 Kasahata Kawagoe-shi, Saitama 350-1175 JAPAN
TEL. 049-232-1550 (Operator) FAX. 049-233-5242
E-MAIL: cutter@dumbbell.co.jp
http://www1.odn.ne.jp/dumbbell.co.jp