

2713 SERIES SELF-TIGHTENING ROLLER GRIPS

2713-006

The thin film grips, originally designed by Malaysian Rubber Producers' Research Association, are primarily used for the precision testing of elastomeric and other thin flexible materials.

Until now the most common type of grip used were pneumatic or simple wrap-around utilizing the capstan effect. Pneumatic grips using parallel or shaped faces can be made to grip satisfactory but due to the large local pressure build up, especially with very thin film specimens, failure at the grips is very common. Wrap around grips do not usually suffer from this defect but due to the difficulty of obtaining sufficient surface contact slippage occurs.

The thin film grips overcome these problems by achieving a 360° wrap-around, which, due to the exponential relationship of the capstan effect, squares the effective gripping friction. This combination of clamping and capstan effect prevents both slip and tearing, whilst still conforming to the requirements of standard test methods.

PRINCIPLE OF OPERATION

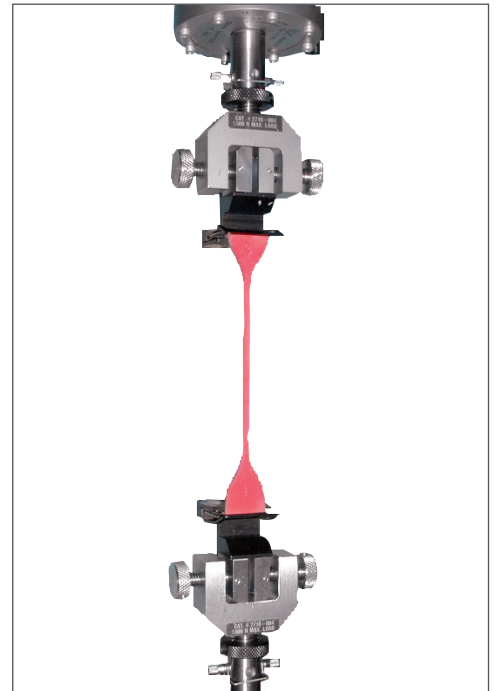
The thin film grip uses a simple 360° over-lapping capstan with clamping grip rods that can be opened or closed by a simple thumb and forefinger action. The combination of clamping and the capstan effect, prevents both slipping and tearing of the specimen, while still conforming to the requirements of standard test methods. The initial clamping action is sufficient to hold the material until a load is applied and the follow up action of the roller during test prevents the specimen from creeping out of the grip as the load increases.

FEATURES

- Rated capacity: 100 N (10 kgf, 22 lbf)
- Elimination of slippage and breakage at the grip
- Ideal for natural rubber latex, elastomers, paper and polymer films
- Fast action for rapid specimen insertion to increase testing throughput
- Small effective test length increases available crosshead travel
- Positive, non-slip gripping action for accurate results
- Self-aligning upper grip prevents off-axis loads for consistent test data
- Mounts to conventional grips or directly to test machine using optional adaptor kit
- Rugged design for minimum maintenance
- Temperature range: Ambient only

APPLICATION RANGE

- Type of loading: Tension. Not suitable for through zero/ reverse stress or fatigue testing.
- Specimen material: Polymer, films, latex, elastomers, paper and natural rubber.
- Specimen shapes: Flat specimen with or without shoulder tab ends.



Thin film grip for testing natural rubber, latex, elastomers, paper and polymer films



Close-up of specimen clamping

SPECIFICATIONS

Catalog Number		2713-006
Maximum Capacity	kN	100
	kgf	10
	lbf	22

MECHANICAL CONNECTION²

Upper Fitting		Tabbed end
Lower Fitting		Tabbed end
Overall Width (A)	mm	42
	in	1.6

EFFECTIVE LENGTH (B)³

Upper Grip	mm	28
	in	1.1
Lower Grip	mm	28
	in	1.1

EFFECTIVE LENGTH (C)⁴

Upper Grip	mm	40
	in	1.6
Lower Grip	mm	40
	in	1.6
Weight per Grip	g	49
	oz	1.7
Temperature Range		Ambient
Working Principle		Capstan effect clamping action
Gripping Force		Clamping force increases with applied force
Maximum Specimen Width	mm	25
	in	1
Maximum Specimen Thickness	mm	0.2
	in	0.008

ACCESSORIES

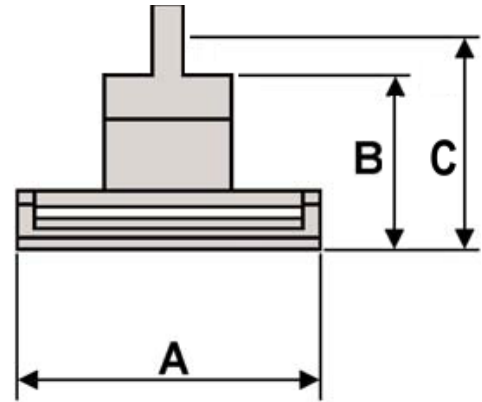
Catalog Number		2501-351
Adapter Kit Includes		Two 6 mm clevis pin (Type Om) One $\frac{3}{16}$ in clevis pin (Type Bm) One $\frac{1}{2}$ in clevis pin adapters

EFFECTIVE LENGTHS

6 mm clevis pin (Type Om) (D)	mm	25
	in	1
$\frac{3}{16}$ in clevis pin (Type Bm) (E)	mm	30
	in	1.2
$\frac{1}{2}$ in clevis pin (Type Dm) (F)	mm	45
	in	1.8

WEIGHT

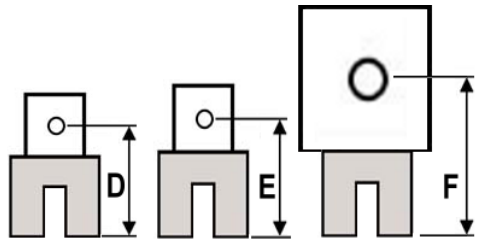
6 mm clevis pin (Type Om)	g	74
	oz	2.6
$\frac{3}{16}$ in clevis pin (Type Bm)	g	78
	oz	2.8



Grip dimensions



Grip dimensions



Grip dimensions

Notes:

1. Grip catalog number provides two grips.
2. Grips can be mounted directly to standard grips through the tabbed ends. Use 2501-351 to convert tabbed ends to Instron® conventional connections.
3. Use this effective length when using with grips.
4. Use this effective length when using with 2501-351 adapter.

www.instron.com



Worldwide Headquarters
825 University Ave, Norwood, MA 02062-2643, USA
Tel: +1 800 564 8378 or +1 781 575 5000

European Headquarters
Coronation Road, High Wycombe, Bucks HP12 3SY, UK
Tel: +44 1494 464646