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# No.260 Strograph Model **VG** · **VGS** · **S**

**Universal tester up to 20kN (VG), 50kN (S)**



**Model VG**

(Note: Dedicated stand is option)



**Operation panel**

## ■ APPLICATION

The **Strograph VGS/VG/S** series dual column, universal testing machines are designed for testing tensile, bend/flexure, compression, peel, friction etc. of various materials, ranging up to 5kN (VGS), 20kN (VG) and 50kN (S).

## ■ SPECIFICATIONS

### VG series (Standard model up to 20kN)

| Model                                   | VG20F  | VG10F                | VG5F                 | VG1F                 |
|---|--|----------------------|----------------------|----------------------|
| Load cell capacity                      | Max. 20kN  | Max. 10kN            | Max. 5kN             | Max. 1kN             |
| Cross-head stroke                       | 1100mm   |                      |                      |                      |
| Effective stroke<br>(Using chuck model) | 595mm<br>(Model C-1)   | 670mm<br>(Model C-2) | 750mm<br>(Model C-3) | 785mm<br>(Model C-4) |
| Force accuracy                          | Within $\pm 1\%$ of indicated value<br><i>(In the range 1/1 to 1/500 of load cell related capacity)</i><br>Conforms to ISO 7500-1 (JIS B 7721) Class 1 |                      |                      |                      |
| Force magnification                     | Range-less (x1 to x 100 equivalent).   |                      |                      |                      |
| Cross-head speed range                  | 0.0005, 0.001, 0.05, 0.5, 1, 1.5, 2.0, 2.5, 3.0, 5.0, 10, 15, 20, 25, 30, 50, 100, 150, 200, 250, 300, 500, 1000mm/min. (23 steps)                     |                      |                      |                      |
| Crosshead speed accuracy                | $\pm 0.1\%$ (0.5 to 500mm/min.)<br><i>Note: Based on Toyoseiki inspection method</i>   |                      |                      |                      |
| Interface                               | RS-232C  |                      |                      |                      |
| Power requirement                       | Single-phase, AC100V, 50Hz or 60Hz, 0.8kVA   |                      |                      |                      |
| Dimensions                              | W720 x D470 x H1600mm  |                      |                      |                      |
| Weight                                  | Approx. 135kg  |                      |                      |                      |



**Model VG**

## VGS series (Small size model up to 5kN)

| Model                                   | VGS5F  | VGS1F                | VGS05F    |
|---|--|----------------------|-----------|
| Load cell capacity                      | Max. 5kN   | Max. 1kN             | Max. 500N |
| Cross-head stroke                       | 830mm  |                      |           |
| Effective stroke<br>(Using chuck model) | 495mm<br>(Model C-3)   | 610mm<br>(Box chuck) |           |
| Force accuracy                          | Within $\pm 1\%$ of indicated value<br><i>(In the range 1/1 to 1/500 of load cell related capacity)</i><br>Conforms to ISO 7500-1 (JIS B 7721) Class 1 |                      |           |
| Force magnification                     | Range-less (x1 to x 100 equivalent).   |                      |           |
| Cross-head speed range                  | 0.0005, 0.001, 0.05, 0.5, 1, 1.5, 2.0, 2.5, 3.0, 5.0, 10, 15, 20, 25, 30, 50, 100, 150, 200, 250, 300, 500, 1000mm/min. (23 steps)                     |                      |           |
| Crosshead speed accuracy                | $\pm 0.1\%$ (0.5 to 500mm/min.)<br>Note: Based on Toyoseiki inspection method  |                      |           |
| Interface                               | RS-232C  |                      |           |
| Power requirement                       | Single-phase, AC100V, 50Hz or 60Hz, 0.7kVA   |                      |           |
| Dimensions                              | W600 x D470 x H1300mm  |                      |           |
| Weight                                  | Approx. 105kg  |                      |           |



**Model VGS**

### Comparison between VGS vs VG

|     | Width | Height | Load cell capacity |
|-----|-------|--------|--------------------|
| VGS | 600mm | 1300mm | Up to 5kN          |
| VG  | 720mm | 1600mm | Up to 20kN         |

## S series (High capacity model up to 50kN)

| Model                                   | S50-F (S50)  | S20-F (S20) |
|---|--|-------------|
| Load cell capacity                      | Max. 50kN  | Max. 20kN   |
| Cross-head stroke                       | 940mm  |             |
| Effective stroke<br>(Using chuck model) | 620mm<br>(Model C-1)   |             |
| Force accuracy                          | Within $\pm 1\%$ of indicated value<br><i>(In the range 1/1 to 1/500 of load cell related capacity)</i><br>Conforms to ISO 7500-1 (JIS B 7721) Class 1 |             |
| Force magnification                     | Range-less (x1 to x 100 equivalent).   |             |
| Cross-head speed range                  | 0.0005, 0.001, 0.05, 0.5, 1, 1.5, 2.0, 2.5, 3.0, 5.0, 10, 15, 20, 25, 30, 50, 100, 150, 200, 250, 300, 500, 1000mm/min. (23 steps)                     |             |
| Crosshead speed accuracy                | $\pm 0.1\%$ (0.5 to 500mm/min.)<br>Note: Based on Toyoseiki inspection method  |             |
| Interface                               | RS-232C  |             |
| Power requirement                       | Three-phase, AC200V, 50Hz or 60Hz, 3.5kVA  |             |
| Dimensions                              | W870 x D590 x H1620mm  |             |
| Weight                                  | Approx. 175kg  |             |



**Model S50-F/S20-F**



**Model S50/S20**

*(S50/S20 does not have operation panel.)*

*Optional data processing unit is required for operation)*

## ■ OPTIONS

### Load cell

| Model       | Capacity | Female screw | Universal joint | Pin |
|-------------|----------|--------------|-----------------|-----|
| RCT-10N-AF  | 10N      | M12P1.5      | UV-200N         | Ø3  |
| RCT-20N-AF  | 20N      |              |                 |     |
| RCT-50N-AF  | 50N      |              |                 |     |
| RCT-100N-AF | 100N     |              | UV-1kN          | Ø4  |
| RCT-200N-AF | 200N     |              |                 |     |
| RCT-500N-AF | 500N     |              | UV-5kN          | Ø6  |
| RCT-1kN-AF  | 1kN      |              |                 |     |
| RCT-2kN-AF  | 2kN      |              |                 |     |
| RCT-5kN-AF  | 5kN      | M14P2        | UV-10kN         | Ø8  |
| RCT-10kN-AF | 10kN     |              |                 |     |
| RCT-20kN-AF | 20kN     |              |                 |     |
| RCT-50kN-AF | 50kN     | M26P2        | UV-50kN         | Ø16 |

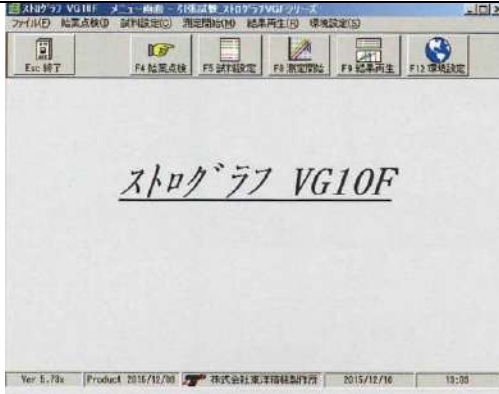


Universal joint

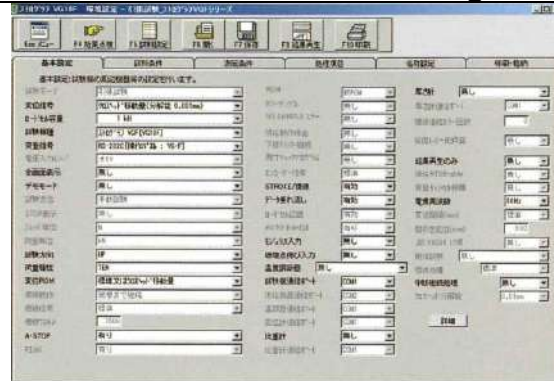
# Data processing software (English language version)

Note: Examples are Japanese language version. However functions are the same.

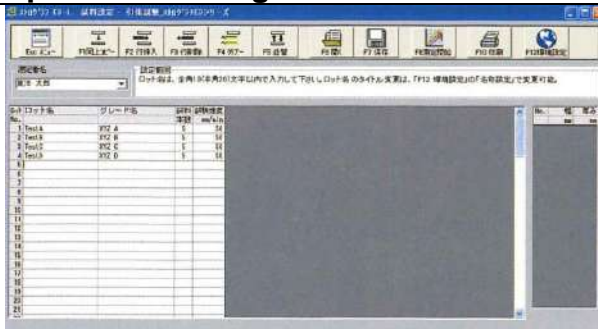
## Menu



## Measurement condition setting



## Specimen setting

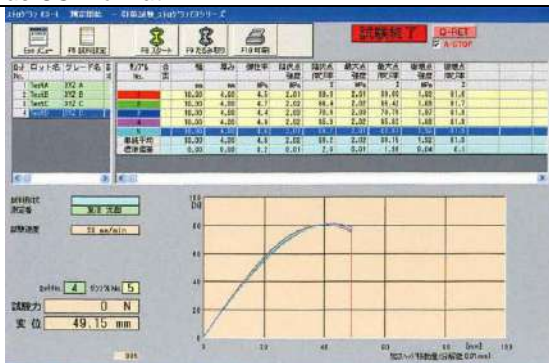


## Processing item setting



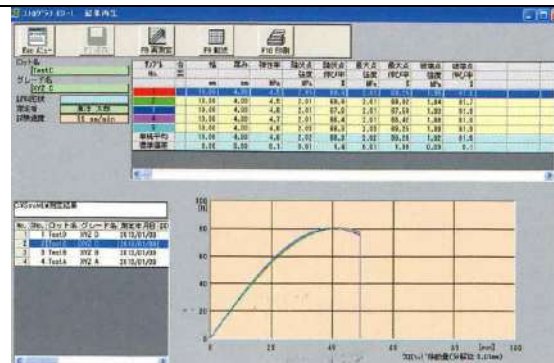
## Measurement

During measurement, overwrite the displacement/ load graph. Measurement results can transfer to spread sheet as CSV format.



## Results reproduction

Possible to elastic modulus recalculation, redesignation of processing item.





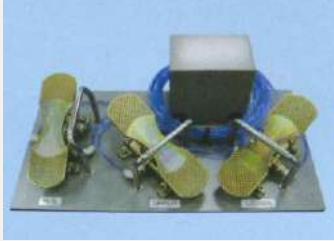
**Features:**

- In measuring, measured values of load and stroke between chucks are displayed on computer's display during measurement.
- Up to 20 tests of 1 lot can be plotted together on same display.
- Maximum 50 samples of same testing conditions can be registered and continuously measured.
- Processing items are indicated on pattern, allowing you to see them at a glance.
- Detailed data processing is also possible by pressing the "Detailed Setting" button.
- Testing conditions can be registered and retrieved.
- By selecting kind of sample (plastic, rubber, etc.) and specifying standard sample, chuck span, distance between bench marks and standard sample dimensions are automatically set.

**Data processing items:**

- Tensile test
- Tear test
- Compression test
- Bending test
- Peeling test

## Pneumatic chuck control switch

| Name   | Model  |   |
|--|--------|---|
| Switch box with Hi-Low pressure control (Standard)   |        |   |
| Air chuck drive unit (Air chuck switch)<br>Possible to control from operation panel (Option) | VG-PSW |   |
| Foot switch with Hi-Low pressure control (Option)  |        |  |

### ***Hi-Low pressure control (Double action closure) of pneumatic chuck***

#### **1. Step one**

*Close the chuck with “low” pressure to avoid finger injury of operator who holds the specimen.*



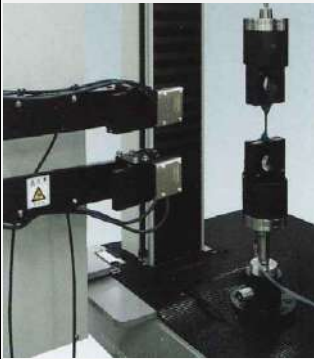

#### **2. Step two**



*Once specimen is installed, close the chuck with “high” pressure for the test.*





## Extensometer

|                                   |       |                     |  |   |
|-----------------------------------|-------|---------------------|--|---|
| Contact type                      | DE-C  | Meas. principle     | Pulse type encoder   |    |
|                                   |       | Meas. range         | Max. 1000mm  |   |
|                                   |       | Gauge length        | 10, 20, 50, 100, 200, 500, 1000mm  |   |
|                                   |       | Resolution          | 0.01mm   |   |
|                                   |       | Accuracy            | ±0.2mm or 1% of reading, whichever greater   |   |
|                                   |       | Power supply        | Single-phase, AC100V, 0.3kVA (Others on request)   |   |
|                                   |       | Dimensions          | W180 x D150 x H1390mm  |   |
| Contact type<br>(High resolution) | DE-CH | Meas. principle     | Large elongation:<br>Encoder with wire<br>Fine elongation:<br>Non-contact linear encoder |   |
|                                   |       | Gauge length        | 50mm   |   |
|                                   |       | Resolution          | Large elongation: 22.0µm<br>Fine elongation: 0.4µm                                       |   |
|                                   |       | Accuracy            | Large elongation: ±1%<br>Fine elongation: ±1µm   |   |
|                                   |       | Power supply        | Single-phase, AC100V, 0.5kVA (Others on request)   |   |
|                                   |       | Dimensions          | W300 x D250 x H1300mm  |   |
| Non-contact type<br>(Optical)     | DE-A  | Meas. principle     | CCD camera   |  |
|                                   |       | Meas. range         | Max. 450mm (No.3 Dumbbell)   |   |
|                                   |       | Ink for marking     | Main mark: Silver<br>Mask mark: Black  |   |
|                                   |       | Light source        | LED  |   |
|                                   |       | Gauge length        | 20, 25, 50mm   |   |
|                                   |       | Resolution          | 0.1 mm   |   |
|                                   |       | Accuracy            | N/A  |   |
|                                   |       | Power supply        | Single-phase, AC100V<br>0.2kVA (Others on request)                                       |   |
|                                   |       | Dimensions          | W250 x D250 x H1700mm  |   |
| Non-contact type<br>(Laser)       | DE-SP | Meas. principle     | Laser (Marking is not required)  |  |
|                                   |       | Applicable specimen | Plastics, Rubber etc.<br>(Confirmation test is recommended)                              |   |
|                                   |       | Meas. range         | Within effective stroke of Strograph main unit   |   |
|                                   |       | Gauge length        | 20 to 75mm   |   |
|                                   |       | Resolution          | N/A  |   |
|                                   |       | Accuracy            | Large elongation:<br>±1% of reading<br>Fine elongation:<br>1.0µm                         |   |
|                                   |       | Max. tensile speed  | 500mm/min.   |   |
|                                   |       | Power supply        | Single-phase, AC100V,<br>0.5kVA (Others on request)                                      |   |
|                                   |       | Dimensions          | N/A  |   |

|  |       |                 |   |   |
|--|-------|-----------------|---|---|
| Strain gauge type<br>Micro extensometer<br>(For elastic modulus) | DE-ME | Meas. principle | Strain gauge                            | <br>Micro extensometer<br>Model: DE-ME<br><br><br>Calibration device<br>Mode: ME-CD |
|  |       | Gauge length    | 50mm or 75mm<br>(Selection)             |   |
|  |       | Accuracy        | ±0.5% or 1µm<br>whichever greater       |   |
|  |       | Power supply    | Single-phase,<br>AC100 to 240V, 0.08kVA |   |
|  |       | Dimensions      | W260 x D280 x H100mm                    |   |
|  |       | Net weight      | Approx. 3.5kg                           |   |

### Thermostatic chamber

|        |   |  |
|--------|---|--|
| VGf-50 | Refrigerator<br>-50 to +200°C (For VG)            |  |
| VGf-30 | Refrigerator<br>-30 to +200 °C (For VG)           |  |
| VGSCO  | Liquid Co <sup>2</sup><br>-60 to +150°C (For VGS) |  |
| VGCO   | Liquid Co <sup>2</sup><br>-60 to +250°C (For VG)  |  |
| VGS200 | Heater only<br>RT+30 to +150°C (For VGS)          |  |
| VG300  | Heater only,<br>RT+30 to +300°C (For VG)          |  |

### Stroke 300mm extension option

| Name                          | Model |  |
|-------------------------------|-------|--|
| Stroke 300mm extension option | N/A   |  |

### Floorstand for VG

| Name              | Model  |   |
|-------------------|--------|---|
| Floorstand for VG | BED-VG |  |

## Chucks (Grips)

### Application

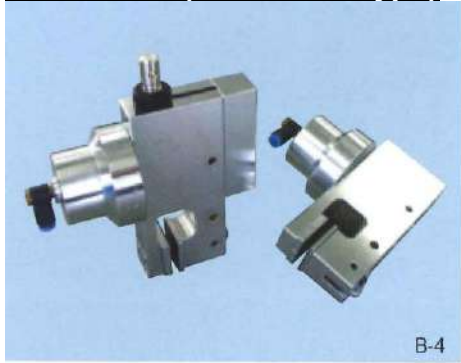
|                              |           |   |
|------------------------------|-----------|---|
| Vise chuck (Screw clamp)     | 50N~1kN   | Plastic sheet, Cloth, Paper etc.  |
| Vise chuck (Pneumatic)       | 5N~1kN    | Plastic sheet, Plastic film, Rubber (dumbbell), Thread, Cloth, Paper etc. |
| Wedge chuck (Spring clamp)   | 300N~1kN  | Plastic sheet etc.  |
| Wedge chuck (Fixed position) | 200N~1kN  | Plastic sheet etc.  |
| Dumbbell chuck               | 500N~3kN  | Rubber(dumbbell) etc.   |
| Wide range box chuck         | 100N~500N | Plastic film, Paper etc.  |
| Eccentric chuck              | 1kN       | Rubber(dumbbell) etc.   |
| Box chuck                    | 200N~500N | Paper etc.  |
| Cord chuck                   | 300N~1kN  | Thread etc.   |

### Vise chuck (Screw clamp type)

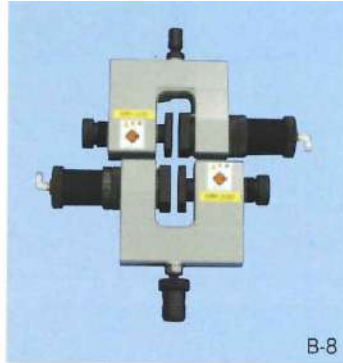


| Model | Max load | W x H     | Clearance | Surface                 |
|-------|----------|-----------|-----------|-------------------------|
| A-1   | 10kN     | 50 x 54mm | 16mm      | Filling                 |
| A-2   | 5kN      | 50 x 50mm | 16mm      | Filling                 |
| A-3   | 1kN      | 50 x 40mm | 16mm      | Filling or rubber sheet |
| A-4   | 200N     | 30 x 30mm | 9mm       | Filling or rubber sheet |
| A-5   | 100N     | 30 x 30mm | 9mm       | Filling or rubber sheet |
| A-6   | 50N      | 20 x 20mm | 9mm       | Filling or rubber sheet |

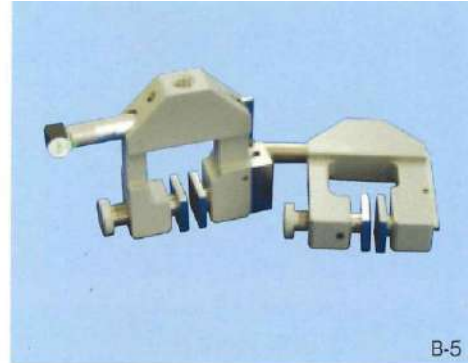
## Vise chuck (Pneumatic type)



B-4



B-8



B-5



B-13



BD-10K

Note:  
Picture shown with  
optional safety cover

| Model  | Max load | W x H     | Clearance   | Surface                 |
|--------|----------|-----------|-------------|-------------------------|
| B-1    | 10kN     | 50 x 50mm | 16mm        | Filling                 |
| B-2    | 5kN      | 50 x 50mm | 16mm        | Filling                 |
| B-3    | 1kN      | 50 x 40mm | 8 + 8mm     | Filling or rubber sheet |
| B-4    | 500N     | 25 x 25mm | 3mm         | Filling or rubber sheet |
| B-5    | 50N      | 20 x 20mm | 2.5 + 2.5mm | Filling or rubber sheet |
| B-6    | 20N      | 18 x 18mm | 3 + 3mm     | Filling or rubber sheet |
| B-7    | 20kN     | 50 x 50mm | 2 + 5mm     | Filling                 |
| B-8    | 10kN     | 50 x 50mm | 2 + 5mm     | Filling                 |
| B-9    | 5kN      | 60 x 50mm | 5 + 5mm     | Filling                 |
| B-10   | 2kN      | 50 x 50mm | 5 + 5mm     | Filling                 |
| B-11   | 5kN      | 40 x 30mm | 10mm        | Filling                 |
| B-12   | 1kN      | 30 x 24mm | 10mm        | Filling or rubber sheet |
| B-13   | 500N     | 30 x 20mm | 10mm        | Filling or rubber sheet |
| B-15   | 2kN      | 30 x 24mm | 10mm        | Filling                 |
| B-16   | 100N     | 25 x 25mm | 3 + 5mm     | Filling or rubber sheet |
| B-17   | 100N     | 25 x 20mm | 8mm         | Filling or rubber sheet |
| BD-10K | 10kN     | 40 x 40mm | 8mm         | Filling                 |
| BD-20K | 20kN     | 50 x 50mm | 8mm         | Filling                 |

### Wedge chuck (Spring clamp type)



| Model | System      | Max load | W x H     | Clearance | Surface |
|-------|-------------|----------|-----------|-----------|---------|
| D-1   | Lever guide | 20kN     | 60 x 60mm | 6.5mm     | Filling |
| D-2   | Lever guide | 10kN     | 50 x 40mm | 4.5mm     | Filling |
| D-3   | Lever guide | 5kN      | 50 x 40mm | 4.5mm     | Filling |
| D-4   | Lever guide | 1kN      | 30 x 25mm | 4.5mm     | Filling |
| D-5   | Pin guide   | 5kN      | 26 x 30mm | 5.0mm     | Filling |
| D-6   | Pin guide   | 2kN      | 26 x 30mm | 5.0mm     | Filling |
| D-7   | Pin guide   | 1kN      | 10 x 30mm | 5.0mm     | Filling |
| D-8   | Pin guide   | 300N     | 10 x 30mm | 5.0mm     | Filling |

### Wedge chuck (Fixed position type)



| Model | Max load | W x H     | Clearance | Surface |
|-------|----------|-----------|-----------|---------|
| C-0   | 50kN     | 40 x 42mm | 6.5mm     | Filling |
| C-1   | 20kN     | 32 x 45mm | 7.5mm     | Filling |
| C-2   | 10kN     | 26 x 35mm | 7.5mm     | Filling |
| C-3   | 5kN      | 26 x 30mm | 7.5mm     | Filling |
| C-4   | 1kN      | 26 x 30mm | 7.5mm     | Filling |

### Dumbbell chuck



| Model | Max load | Width | Roll diameter | Clearance | Surface  |
|-------|----------|-------|---------------|-----------|----------|
| H-1   | 3kN      | 35mm  | Ø8mm          | 4mm       | Rod      |
| H-2   | 500N     | 35mm  | Ø8mm          | 4mm       | Rod      |
| H-3   | 3kN      | 35mm  | Ø8mm          | 4mm       | Knurling |
| H-4   | 500N     | 35mm  | Ø8mm          | 4mm       | Knurling |

### Wide range box chuck



J-3

| Model | Max load | W x H     | Clearance | Surface                         |
|-------|----------|-----------|-----------|---------------------------------|
| J-1   | 5kN      | 50 x 30mm | 6mm       | Flat or Rubber sheet or Filling |
| J-2   | 500N     | 50 x 30mm | 6mm       | Flat or Rubber sheet or Filling |
| J-3   | 100N     | 50 x 20mm | 6mm       | Flat or Rubber sheet or Filling |

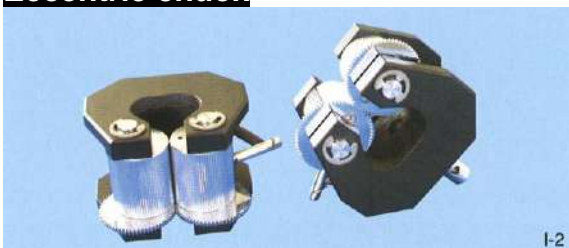
### Strip chuck



L-1

| Model | Max load | W x H     | Clearance | Surface                      |
|-------|----------|-----------|-----------|------------------------------|
| L-1   | 5kN      | 60 x 30mm | 6mm       | Corrugated rubber or Filling |
| L-2   | 500N     | 60 x 30mm | 6mm       | Corrugated rubber or Filling |

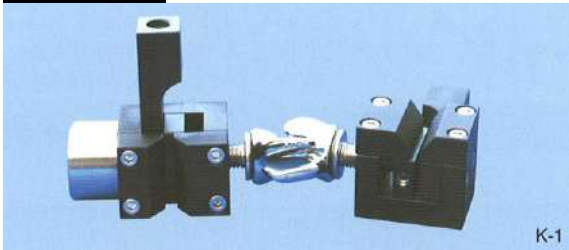
### Eccentric chuck



I-2

| Model | Max load | Width | Clearance | Surface  |
|-------|----------|-------|-----------|----------|
| I-1   | 3kN      | 26mm  | 6mm       | Knurling |
| I-2   | 1kN      | 26mm  | 6mm       | Knurling |

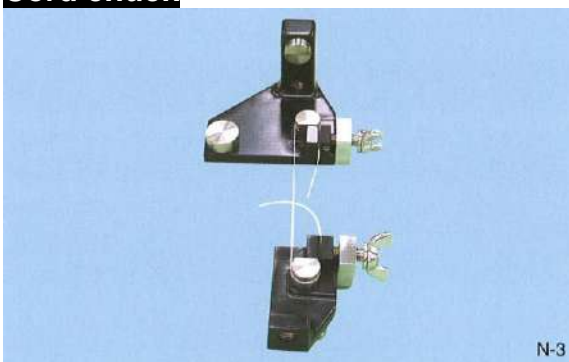
### Box chuck



K-1

| Model | Max load | W x H     | Clearance | Surface              |
|-------|----------|-----------|-----------|----------------------|
| K-1   | 500N     | 16 x 30mm | 3mm       | Flat or Rubber sheet |
| K-2   | 200N     | 16 x 30mm | 3mm       | Flat or Rubber sheet |

### Cord chuck



N-3



*Pneumatic clamp model*

| Model | Max load | Clearance | Clamp system |
|-------|----------|-----------|--------------|
| N-1   | 2kN      | 4mm       | Manual       |
| N-2   | 1kN      | 3mm       | Manual       |
| N-3   | 300N     | 3mm       | Manual       |
| N-4   | 1kN      | 3mm       | Pneumatic    |
| N-5   | 2kN      | 2mm       | Pneumatic    |
| N-6   | 5kN      | 3mm       | Pneumatic    |

### Rope chuck

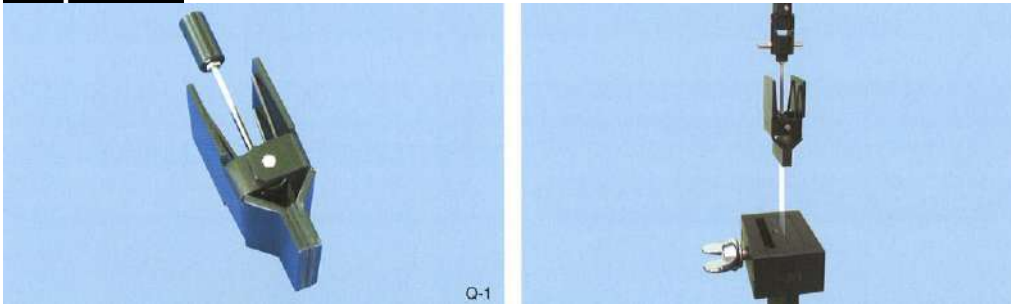


O-3

| Model | Max load | Width |
|-------|----------|-------|
| O-1   | 5kN      | 25mm  |
| O-2   | 2kN      | 25mm  |
| O-3   | 2kN      | 8mm   |

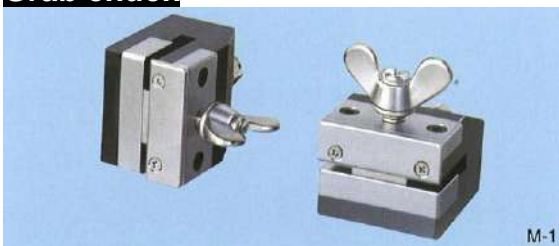


### Snap chuck



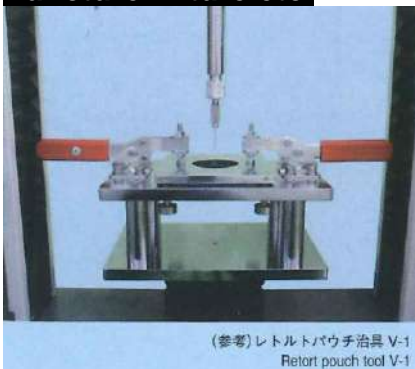
| Model | Max load | W x H     | Clearance | Surface      |
|-------|----------|-----------|-----------|--------------|
| Q-1   | 10N      | 32 x 10mm | 1mm       | Rubber sheet |

### Grab chuck



| Model | Max load | W x H         | Clearance | Surface |
|-------|----------|---------------|-----------|---------|
| M-1   | 5kN      | 25.4 x 25.4mm | 4mm       | Flat    |
| M-2   | 1kN      | 25.4 x 25.4mm | 4mm       | Flat    |

### Puncture fixture etc.



| Model | System       | Standard | Hole diameter | Indenter             |
|-------|--------------|----------|---------------|----------------------|
| T-1   | Bursting     | ASTM     | Ø44.45mm      | R6.35mm, R12.7mm     |
| T-2   | Pierce       |          | Ø44.45mm      | Trigonal pyramid tip |
| V-1   | Retort pouch | JAS      | Ø50.8mm       | Ø1, Tip R0.5         |

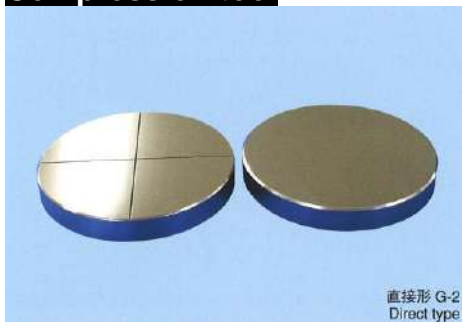
## Cardboard compression tool



W-2

| Model | Max. load | W x D       |
|-------|-----------|-------------|
| W-1   | 20kN      | 500 x 800mm |
| W-2   | 10kN      | 400 x 600mm |
| W-3   | 5kN       | 400 x 400mm |
| W-4   | 5kN       | 300 x 300mm |

## Compression tool



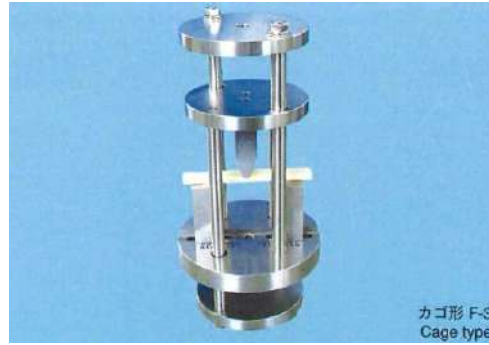
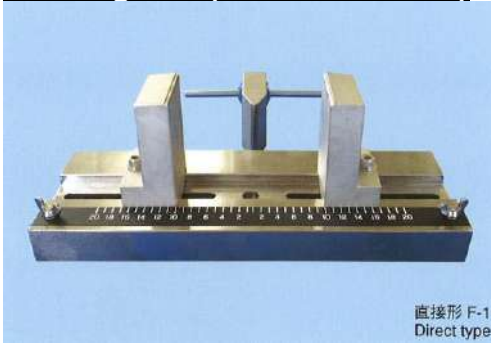
直接形 G-2  
Direct type



カゴ形 G-9  
Cage type

| Model | Max load | Diameter | System                    | Max diameter of specimen |
|-------|----------|----------|---------------------------|--------------------------|
| G-1   | 20kN     | Ø150mm   | Direct type               | Ø150mm                   |
| G-2   | 10kN     | Ø100mm   |                           | Ø100mm                   |
| G-3   | 5kN      | Ø100mm   |                           | Ø100mm                   |
| G-4   | 20kN     | Ø150mm   | Direct type with ball tip | Ø150mm                   |
| G-5   | 10kN     | Ø100mm   |                           | Ø100mm                   |
| G-6   | 5kN      | Ø100mm   |                           | Ø100mm                   |
| G-7   | 20kN     | Ø140mm   | Cage type                 | Ø60mm                    |
| G-8   | 10kN     | Ø120mm   |                           | Ø55mm                    |
| G-9   | 5kN      | Ø100mm   |                           | Ø40mm                    |
| G-10  | 10kN     | Ø100mm   | JIS K 7181                | Ø50mm                    |

## Bending tool (For flexural test)



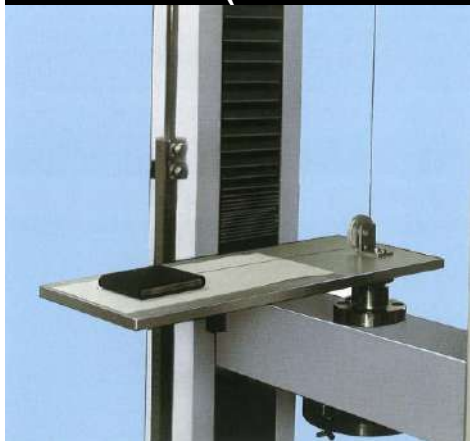
| Model | Max load | Standard | Support span | Upper loading anvil | Lower support anvils | System      |
|-------|----------|----------|--------------|---------------------|----------------------|-------------|
| F-0   | 5kN      | ISO/JIS  | 20 to 200mm  | R5mm                | R5mm                 | Direct type |
| F-1   | 5kN      | JIS      | 20 to 200mm  | R5mm                | R2mm                 |             |
| F-2   | 5kN      | ASTM     | 20 to 200mm  | R3.2mm              | R3.2mm               |             |
| F-3   | 5kN      | JIS      | 30 to 100mm  | R5mm                | R5mm                 | Cage type   |
| F-4   | 5kN      | ASTM     | 30 to 100mm  | R3.2mm              | R3.2mm               |             |
| F-5   | 500N     | JIS      | 20 to 80mm   | R5mm                | R5mm                 |             |
| F-6   | 500N     | ASTM     | 20 to 80mm   | R3.2mm              | R3.2mm               |             |

## 90° peeling tool



| Model | Max load | Size of base material | Exfoliation Width |
|-------|----------|-----------------------|-------------------|
| R-1   | 50N      | 25 x 109mm            | 19mm              |
| R-2   | 30N      | 35 x 109mm            | 29mm              |

### Slide test tool (For friction test)



| Model | Standard | Table size  | Sled dimensions | Sled contact face | Sled weight | Spring                  | Sliding speed |
|-------|----------|-------------|-----------------|-------------------|-------------|-------------------------|---------------|
| S-1   | ASTM     | 160 x 380mm | 63.5 x 63.5mm   | Sponge            | 200g        | N/A                     | 150mm/min     |
| S-2   | J.TAPPI  | 200 x 450mm | 60 x 100mm      | Metal             | 1000g       | N/A                     | 10mm/min      |
| S-3   | JIS/ISO  | 160 x 380mm | 63 x 63mm       | Felt              | 200g        | Use for static friction | 100mm/min     |

*Specifications are subject to change without notice.*

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