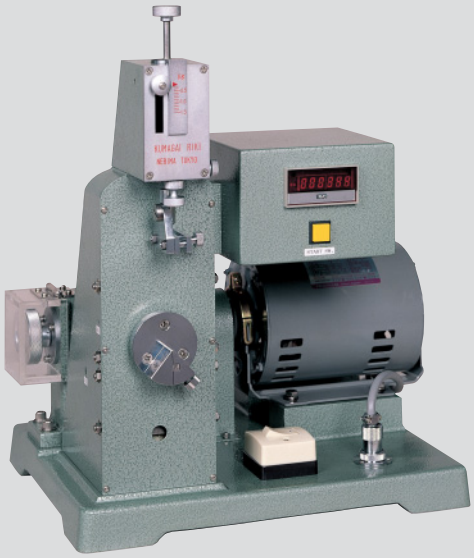
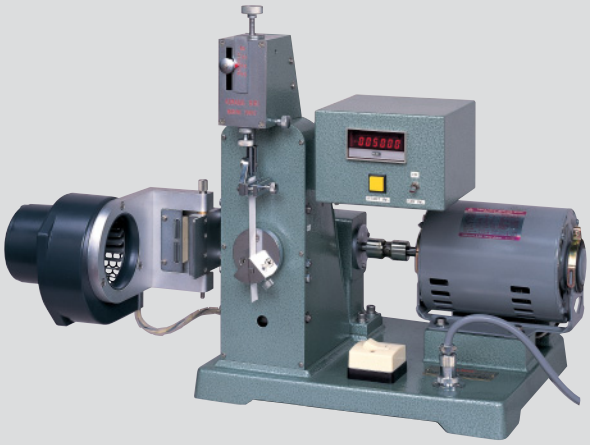


No. 2015-M



with cooling fan

No. 2015-MR

No. 2015-M

MIT folding endurance tester

This machine counts the number of folds which a specimen under a specified tension will withstand before failure. It is used for testing money and map papers subject to repetitive folds. It is also used for evaluating deterioration of paper due to aging. With different lower clamps, it can test a wide range of thickness.
The number of folds to failure of some specimens may reach several thousands to several ten thousands. This machine counts folds by an optical sensor to show the fold number on the counter. The resistance at the gears for producing reciprocating movement for folding is minimized. So the operation sound is very low.

Folding load: 5 to 15 N (0.5 to 1.5 kg) standard 9.8 N (1.0 kg)
Rotating speed: 175±10times
Clamps: 0.25 mm (standard)
0.5, 0.75, 1.0, 1.25 mm (optional)
Referential standards: JIS P8115-2001, TAPPI T511om-02, ISO 5626
Power source: single-phase 100/110 VAC 50/60 Hz 3A
Outer dimensions: 430×300×420 mm
Instrument weight: 24 kg

No.2015-MR (with cooling fan)

In a test with a specimen whose number of folds to failure is large, the moisture in the specimen changes due to temperature rise of the folding portion, thereby reducing the folding endurance. This machine has an exhaust fan in front of the folding part to avoid temperature rise at the folding head. Except for this point, its specifications are the same as those of No.2015-M.

Outer dimensions: 430 × 400 × 420 mm
Instrument weight: 30 kg

No. 2015-D

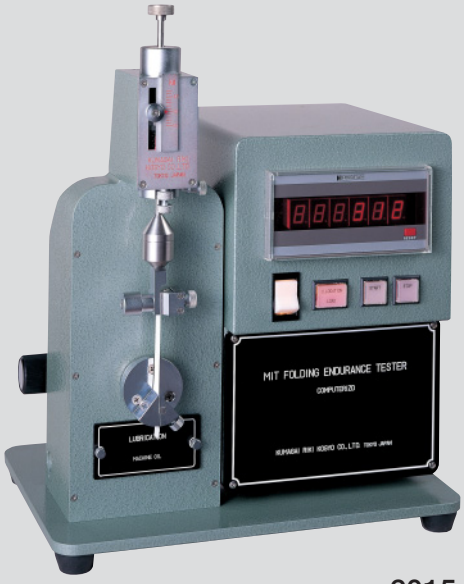
MIT folding endurance tester (improved type)

This machine counts the number of folds which a specimen will withstand before failure. The upper end of specimen is secured with the loading spring clamp and the other end with the folding clamp. The loading clamp applies a constant tension on the specimen. In this state, the folding clamp reciprocates to repeatedly fold the specimen till it breaks. The number of reciprocating actions counted is shown digitally.

(Features)

1. The reciprocating part is provided with rolling bearings for silent operation and reduced maintenance.
2. The specimen is set on the upper chuck from the chuck front. This setting direction is the same for the lower chuck, ensuring accurate vertical setting. The hanger of the upper chuck is a universal joint that can freely moves in all directions. This design automatically corrects torsion of the specimen due to inclination of the chuck.
3. The upper chuck support rod is equipped with a rolling bearing to reduce the friction in vertical movement of the rod, thereby increasing the loading accuracy.
4. The folding action transmits vertical movements to the spring load. The spring load weight is minimized to make its inertia as small as possible.
5. The spring for tensioning twists when compressed. The twisting force produces friction between load pointer arm and side wall. To reduce such friction, one of the spring seats can rotate to remove twisting to alleviate the friction.
6. Photoelectric sensors are used to detect the number of folds and specimen failure, resulting in remarkably improved accuracy and durability.

Specimen tension: 5 to 15 N (0.5 to 1.5 kgf), standard 9.8 N (1.0 kgf)
Rotation speed: 175±10 times
Folding angle: 135±2° in each direction
Chucks: 0.25 mm (standard)
0.5, 0.75, 1.0, 1.25 mm (optional)
Fold number indicator: digital counter with five digits, with automatic stop mechanism working on specimen failure
Fixation of upper chuck: designed with universal joint to allow free rotation
Detection of lower chuck position:
interlock mechanism working when the chuck is in the correct start position and the specimen is tensioned
Referential standards: JIS P-8115-2001, TAPPI T511om-02, ISO 5626
Power source: 100/110 VAC 50/60 Hz 1.5A
Outer dimensions: 340×270×470 mm high
Instrument weight: 24 kg

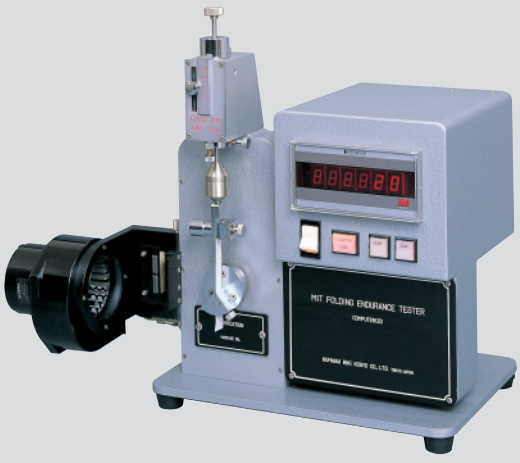


No. 2015-D

No.2015-DR (with cooling fan)

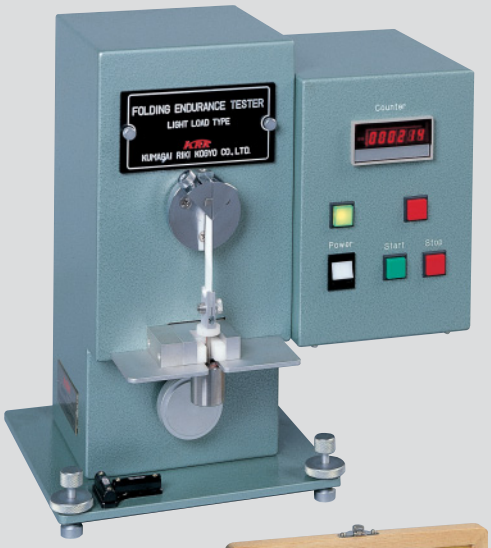
As specified in ISO and TAPPI standards, in a test with a specimen whose number of folds to failure is large, repetitive folding actions will produce heat at the folding portion, causing rise of temperature of the specimen, and diminishing water content, thereby reducing the folding endurance. This machine has an exhaust fan in front of the lower chuck, to avoid temperature rise around the chuck.

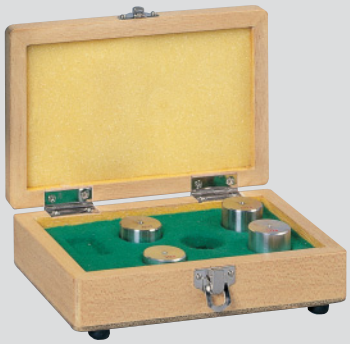
Outer dimensions: 520×330×470 mm
Instrument weight: 27 kg



with cooling fan

No. 2015-DR





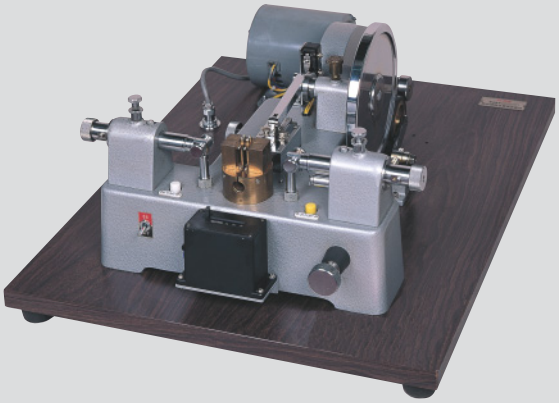
No. 2015-UL

No. 2015-UL

Ultra-light load folding endurance tester

Acid paper prepared with aluminum sulfate, which has been used widely for about 170 years, tends to become brittle during storage. Not only books in public libraries but also private libraries may suffer from such damage. Currently, neutral paper is manufactured, replacing acid paper. However, at present, there is no tester satisfactory for evaluating deterioration of paper. With the conventional MIT folding tester, tension is too high and wear of the shaft is another problem, making it difficult to assess differences between deteriorated paper specimens. For providing a solution for this problem, we KRK developed a folding tester under an ultra-light loading range, under the direction of Dr. Oe, former professor of Tokyo University of Agriculture and Technology. The basic configuration is the same as that of the conventional MIT folding endurance tester. This KRK's tester was well reputed by users, so it was launched into the market. With this instrument, tension is given by a dead load. It has such a mechanism that shaft friction is completely removed to improve the measurement accuracy.

Folding mechanism: based on the same principle as that of the conventional MIT folding endurance tester, with standard chuck (0.25 mm)
Specimen: 15 mm wide×100 mm long
Specimen tension loads: 20, 30, 50, 70, 100 kgf
Tensioning: with a weight
Folding angle: 135±2° in each direction
No. of folds: digitally indicated, counted by photoelectric sensor; The counting and motor are automatically stop at specimen failure.
Power source: 100/110 VAC 50/60 Hz 1A



No. 2016

No. 2016

Schopper folding tester

This is a tester for resistance to folding of a sheet of paper or film. The specimen is inserted into a slit in the reciprocal movement metallic plate where the specimen is held at the right and left ends to be given light tension. The holding line of the specimen is subject to repeated reciprocal movement, and leads to fracture.
The number of reciprocations to cause fracture is displayed as Schopper folding resistance.

Specimen: 15 mm wide, 110 mm long, 0.25 mm thick
Folding blade: thickness 0.5 mm, slit interval 0.5 mm
Guide roll: 6 mm in diameter, 18 mm long
Load: initial tension 7.6 N, maximum tension 9.8 N
Reciprocating speed: 115±10 times per minute
Counter: one-touch-based resetting
Referential standards: JIS P-8114-2003, TAPPI T423om-98, ISO 5626
Power Source: single-phase 100/110 VAC 50/60 Hz 1A
Outer dimension: 500×700×250 mm
Instrument weight: 28 kg