

INSTRUCTION FOR USE

Test-equipment according to DIN 96298-3

REF 08500



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Test-equipment according to DIN 96298-3

Instruction for use

Test-equipment

- for bone splitters, hollow chisel forceps and bone punches: cardboard 160 g/m²
- for atraumatic clamps: paper 30 g/m²
- for surgical scissors: control material according to DIN 96298-3, 2017-10
- for chisels, raspatories, bone curettes and sharp spoons: plastic round profile
- for needle holder: wire 0,4 / 0,6 / 0,8 / 1,0 mm
- for non-cutting conchotome: synthetic film with a strength of 300 µm
- for forceps: plates made of synthetic material 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 4,0 mm
- for scalpels and knives and for cutting conchotome: synthetic film with a strength of 100 µm / test drum made of synthetic material
- magnifying glass with 4x zoom, with light, incl. 2 batteries

Additional test-equipment (not according to DIN 96298-3):

- for rigid endoscopes: magnifying glass for testing the inner lenses

1.0 Preparation

Clean all instruments before tests.

2.0 Testing the cutting efficiency**2.1 Testing the cutting efficiency of bone splitters and hollow chisel forceps, bone punches**

Test material: cardboard 160 g/m²

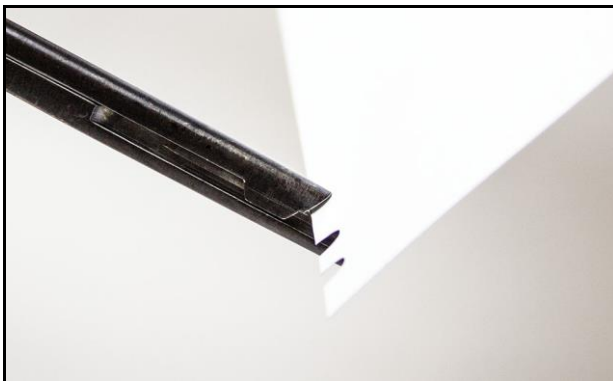
Test: To test the cutting efficiency, make three cuts through the cutting material. The test cutting length is at least 1/3 of the cutting length in the anterior part of the working end. It must be possible to separate the test material smoothly, and without it slipping.



Bone splitters



Bone punches



Hollow chisel forceps

2.2 Cutting efficiency of through-cutting conchotomes

Test material: synthetic foil with a strength of 100 μm

Test: To test the cutting efficiency, make three cuts through the cutting material. It must be possible to separate the test material smoothly, and without it slipping.



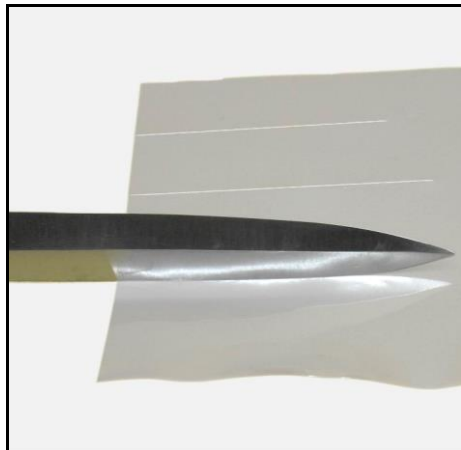
Through-cutting conchotomes

2.3 Cutting efficiency of scalpels and knives

Test material: plastic foil with a strength of 100 µm / test drum

Test: Scalpels and knives, with the exception of sharp eye instruments, are tested by making a cut through the foil, while guiding the cut across the anterior half of the blade. The foil must be separated with a smooth cut.

Sharp eye instruments such as e.g. cataract knives and lancets are tested by making a cut through the foil stretched across the test drum.



Knives



Sharp eye instruments

2.4 Cutting efficiency of scissors

Test material: red and yellow latex tape

Test: Use the test material listed in Table 1. To test the cutting efficiency, make three continuous cuts across 2/3 of the cutting length of the scissors through the test material, without exerting any lateral pressure. It must be possible to separate the test material smoothly, and without it slipping.

FM	Strength or layers and type of test material
	Latex tape
≥ 0,70	3,00 mm NR-SBR
0,71 - 1,00	2,00 mm NR-SBR
1,01 - 2,00	1,00 mm NR-SBR
micro or spring scissors	0,2 mm latex tape red

Table 1



Micro or spring scissors,
fine vascular and tissue scissors



Preparation scissors and surgical scissors,
dressings', intestinal and bone scissors

2.5 Cutting efficiency of chisels, raspatories, curettes and sharp spoons

Test material: plastic round profiles with a diameter of 6 mm

Test: Cuts are made to a test material. The cut must be cleanly applied.



Curettes

3.0 Testing the elasticity

3.1 Ring-nosed forceps with exception of needle holders

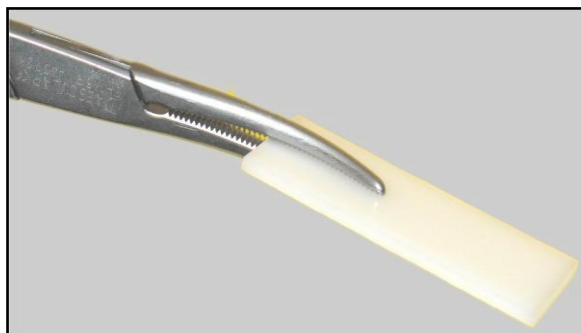
Test accessories: plastic plates 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 4,0 mm, white paper 30 g/m²

Test: Place a piece of test material listed in table 2 between the functional surfaces in the anterior third of the working end. The ring-nosed forceps must be fully engaged (all ratchet teeth engaged) and stored at room temperature 3h +/- 5 minutes after being subjected to this stress. On completion of the test, there must not be any deformations or lasting changes noticeable.

The white paper test material is placed between the functional surfaces of the clamp and then the clamp is fully closed. After holding for at least two seconds, the clamp is opened again and the test material withdrawn. The impression of the longitudinal profile must be uniformly visible and must not be perforated in any place.

Total length	Length of the mouth piece	Strength of the test material
< 100 mm	each	1,0 mm
100 mm to < 160 mm	< 25 mm	1,5 mm
100 mm to < 160 mm	25 mm to 30 mm	1,5 mm
100 mm to < 160 mm	> 30 mm	2,0 mm
160 mm to 220 mm	< 25 mm	2,0 mm
160 mm to 220 mm	25 mm to 30 mm	2,5 mm
160 mm to 220 mm	> 30 mm	3,0 mm
> 220 mm	< 25 mm	2,5 mm
> 220 mm	25 mm to 40 mm	3,0 mm
> 220 mm	> 40 mm	4,0 mm

Table 2

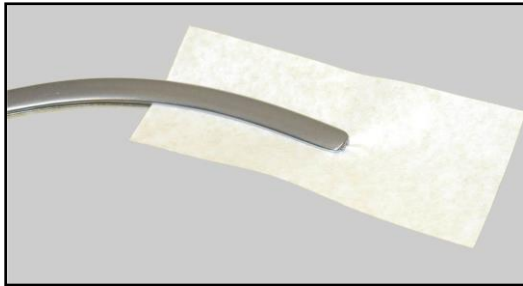


Ring-nosed forceps

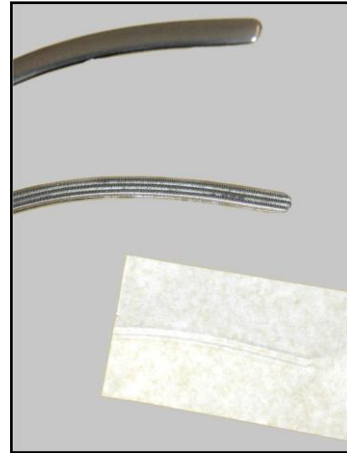
3.2 Ring-nosed forceps with atraumatic perforation

Test material: paper 30 g/m²

Test: The test material is placed between the functional surfaces of the clamp and then the clamp is fully closed. After holding for at least 2 s, the clamp is opened again and the test material withdrawn. The impression of the longitudinal profile must be uniformly visible and must not be perforated in any place.



Atraumatic clamps



4.0 Needle holder

Test material: wire 0,4 / 0,6 / 0,8 / 1,0 mm, hand magnifying glass (4x zoom)

Test: Place a piece of wire as listed in Table 3 between the functional surfaces at the tip of the needle holder. Then the needle holder must be fully engaged (all ratchet teeth engaged) and stored at room temperature (23°C +/- 2°C) 3h +/- 5 min. after being subjected to this stress. On completion of the test, there must not be any deformations or lasting changes noticeable. No tears should be noticeable during visual inspection with a magnifying glass.

Total length [mm]	Barrel-Surfaces profile	Diameter test material [mm]
bis 160	flat or cross groove, division 0,2	0,4
	flat or cross groove division 0,4 bis 0,6	0,6
über 160	flat or cross groove division 0,2	0,8
	cross groove division 0,4 bis 0,6	1

Table 3



Needle holder

4.1 Testing the gripping strength of non-through-cutting conchotomes

Test material: synthetic foil with a strength of 300 µm

Test: To test the gripping strength, the test material must continue to be held by the jaws even using strong counterforce.



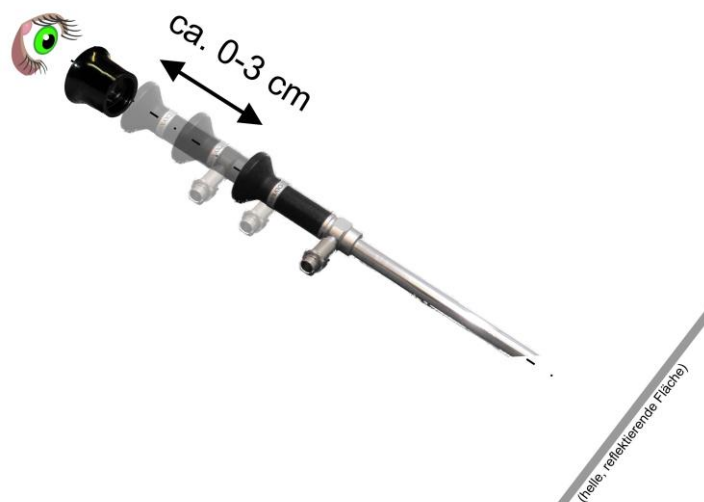
non-through-cutting conchotomes

5.0 Testing optics

5.1 Testing the lenses of rigid endoscopes

Test material: (monocular) magnifying glass

Test: Place the (monocular) magnifying glass before one eye and direct the endoscope towards a bright, reflecting surface and look with the magnifying glass into the ocular end of the endoscope. The optical axes (of the eye using the magnifying glass as well as of the longitudinal axis of the endoscope) must be perfectly aligned. While varying the distance between the endoscope and the eye (with the axis orientation unchanged), look through the individual lenses within the endoscope into the optics. By focusing on a lens surface contaminants can be detected or ruled out. By focusing on a lens, lens breakages can be seen.



6.0 Refill package for test-equipment according to DIN 96298-3

SKU	Description	UOM
95172	cardboard, 160 g/m ²	50 pieces
95141	synthetic foil with a strength of 100 µm	500 pieces
95140	test drum	1 piece
08502	two latex tapes, 100& latex, powdered with talc	eack 1 tape
95169	round profile with a diameter of 6 mm	1 piece
95154	plates made of synthetic material 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 4,0 mm	each 3 pieces
95143	paper pack, 30 g/m ²	1 pack
95155	wire 0,4 / 0,6 / 0,8 / 1,0 mm	each 10 pieces
95139	synthetic foil with a strength of 300 µm	50 pieces
08511	hand magnifying glass, with light, incl. batteries	1 piece
08509	monocular magnifying glass, 10x zoom	1 piece