

Product Information

Pneumatic grips, Type 8497 (Fmax 50 kN) and Type 8597 (Fmax 100 kN)

CTA: 39595 39596



Pneumatic grips, type 8497, Fmax 50 kN



Pneumatic grips, type 8597, Fmax 100 kN

Applications

- Specimen material:
Metals, plastics, textiles, wood
- Specimen shape:
Round and flat specimens
- Type of loading:
Tensile, compression, alternating load

Function description

Pneumatic grips are double acting and can be used for symmetrical gripping.

Pneumatic specimen grips are ideal for clamping-sensitive materials or if a high specimen throughput is required. The gripping force always remains constant, regardless of test load.

The gripping pressure for the specimen grip can be set steplessly and reproducibly via pneumatic control unit and optionally via the testXpert III testing software. The specimen is held securely and jaw breaks are prevented during the test.

The specimen grip is opened and closed via buttons on the testing machine. The optional foot pedal unit or machine remote control can be used for additional operating convenience.

Double-actuator pneumatic grips always close symmetrically with respect to the tensile axis. This means the

specimen is clamped in a precise axial position. It is not necessary to set the specimen thickness.

The closing force is initialized via a centrally positioned pneumatic actuator. It transfers the closing movement via a steering lever to the symmetrical closing jaws.

A position-independent switching device is integrated into the specimen grips, which automatically switches the transmission ratio to apply the gripping force as soon as the jaws hit the specimen. It switches from a small transmission to a large transmission, thus, reaching very large gripping forces in instances in which sizes are compact. The gripping distance varies depending on specimen thickness and the current opening width. There is a resulting linear relationship (see diagram).

Advantages and features

- The symmetrically closing jaws save time required for adjusting to varying specimen thicknesses and ensure that the specimen is held exactly in the test axis.
- The jaws can be changed easily for different applications.
- Precise test results combined with high number of cycles achieved through centric insertion of specimen using easily adjustable centering stop.
- Constant gripping force enables repeatable test results to be achieved.

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- Constant pneumatic pressure allows even specimens prone to shrinkage to be held securely.
- Save time by attaching small specimen grips and test fixtures to large specimen grips quickly and easily via T-slot systems. The precise alignment ensures reliable test results.

Technical data

Item No.	1106801 ¹⁾	1106802 ¹⁾	
Type	8497	8597	
Test load F _{max}	50	100	kN
Operating pressure	1 ... 10	1 ... 10	bar
The operating pressure depends on the upstream components.			
Gripping force at 6 bar	60	110	kN
Gripping force at 10 bar	100	170	kN
Opening width with jaws	See Jaws table	See Jaws table	
Gripping travel ²⁾	21	15	mm
Gripping of the specimen	The specimen must be gripped with at least 2/3 of the jaw height.		
Dimensions			
Height	306	341	mm
Width	390	390	mm
Depth	156	156	mm
Depth with connection unit	206	206	mm
Connection, hole	Ø 36	Ø 60	mm
Weight per specimen grip, approx.	57	53	kg
Ambient temperature	+10 ... +35	+10 ... +35	°C
Scope of delivery	2	2	piece(s)

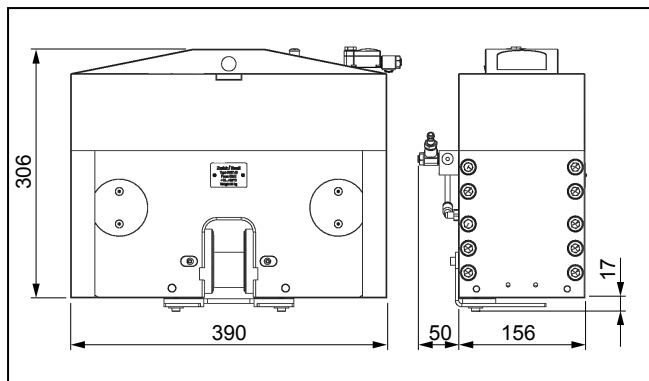
¹⁾ Recommended and approved for strain rate control compliant to standards DIN EN ISO 6892-1:2009 and ASTM E8-09.

²⁾ See the diagram that depicts the correlation between the gripping travel and the specimen thickness/opening width

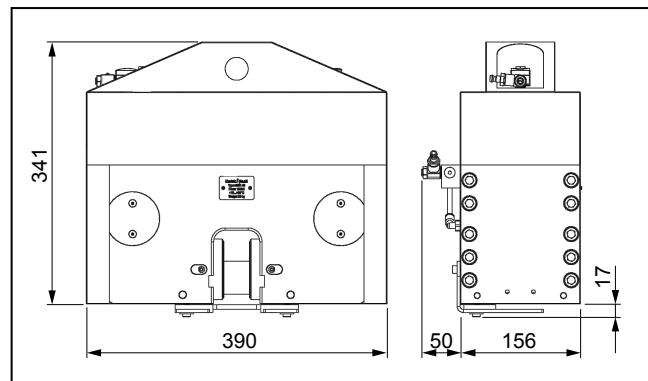
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CTA: 289640 288987

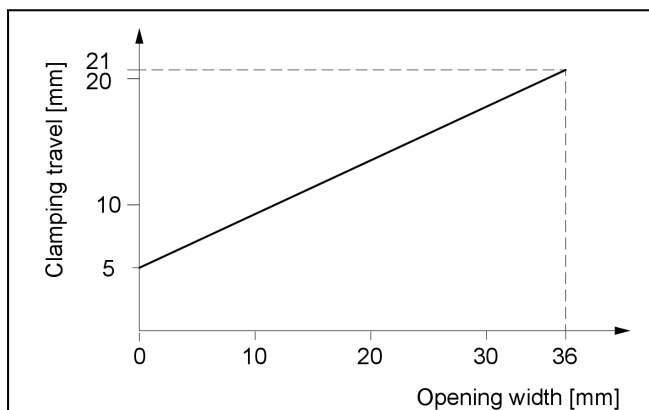


Pneumatic grips type 8497, Fmax 50 kN, dimensions

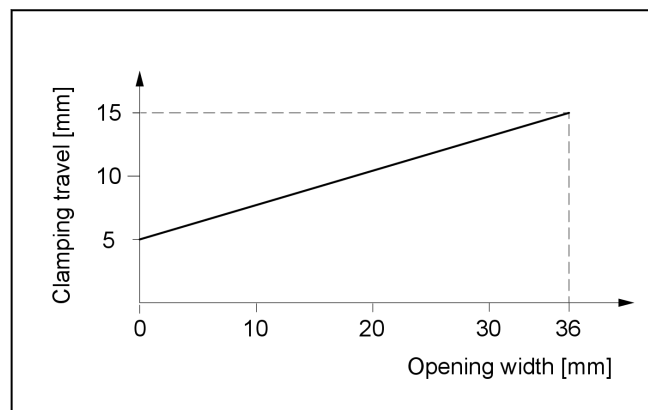


Pneumatic grips type 8597, Fmax 100 kN, dimensions

CTA: 39605 39606



Pneumatic grips type 8497, ratio gripping travel / opening width



Pneumatic grips type 8597, ratio gripping travel / opening width

Accessories required

Pneumatic hoses (1x required)

Description	ArticleNumber
Set of pneumatic hoses for connecting a pair of pneumatic grips; including hose guiding for strain relief	1112640

Pneumatic control unit

See section 4.6 Accessories

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Flat jaws

Scope of delivery: 2 pieces each

Application	Version	Specimen dimensions		Clamping surface Diameter [mm]	Ambient temperature [°C]	Hardness	Item No.
		Type 8497, F _{max} 50 kN Flat specimen, thickness [mm]	Type 8597, F _{max} 100 kN Flat specimen, thickness [mm]				
Flat jaws for metal strip and shoulder-end specimens, reinforced plastics (flat specimens)	Steel, concentric Grooves, distance 1mm	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	314046
Flat jaws for metal strip and shoulder-end specimens, reinforced plastics (flat specimens)	Steel, pr ²⁾ 0.35 mm	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	316139
Flat jaws for metal strip and shoulder-end specimens, reinforced plastics (flat specimens)	Steel, pr ²⁾ 0.75 mm	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	320618
Flat jaws for metal strip and shoulder-end specimens, reinforced plastics (flat specimens)	Steel, pr ²⁾ 1.5 mm	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	320620
Flat jaws for metal strip and shoulder-end specimens, reinforced plastics (flat specimens)	Steel, concentric Grooves, distance 2 mm	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	317244
Thin metal strips, CFRP/GFRP strip specimens	Steel, smooth, ground	0 ... 35	0 ... 29	74 ¹⁾	-70 ... +250	58 HRC	317246

1) With shatter protection shield

2) Pr = pyramid grid

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Scope of delivery: 1 set (= 4 pieces). 1 set required.

Application	Version	Specimen dimensions		Clamping surface		Ambient temperature [°C]	Hardness	Item No.
		Type 8497, F _{max} 50 kN Flat specimen, thickness [mm]	Type 8597, F _{max} 100 kN Flat specimen, thickness [mm]	Height [mm]	Width [mm]			
Flat specimens	Steel, smooth	0 ... 18	0 ... 12	110	110	+10 ... +35	55 HRC	320354
Flat specimens	Steel, corrugated	0 ... 18	0 ... 12	110	110	-70 ... +250	55 HRC	320356

Prism jaws

Scope of delivery: 2 pieces

4x jaws and 4x jaw mountings required.

Application	Version	Specimen dimensions		Clamping height [mm]	Ambient temperature [°C]	Hardness	Item No.
		Type 8497, F _{max} 50 kN Round specimen, Ø [mm]	Type 8597, F _{max} 100 kN Round specimen, Ø [mm]				
Round specimens with and without shoulders, pipes with plugs	Steel, V-notch, corrugated, distance 1 mm	6 ... 12	6 ... 15	74	-70 ... +250	58 HRC	314050 ¹⁾
Round specimens with and without shoulders, pipes with plugs	Steel, V-notch, corrugated, distance 1 mm	10 ... 35	10 ... 29	74	-70 ... +250	58 HRC	314052 ¹⁾

¹⁾ Suitable jaw mountings for the prism jaws (required for prism jaws): Item No. 314048

Jaw mounting (required for prism jaws)

Description	ArticleNumber
Suitable jaw mounting for prism jaws Scope of delivery: 2 pieces	314048

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Optional accessories

Pressure amplifier

Description	ArticleNumber
Pressure amplifier for increasing operating pressure, max. input pressure 10 bar, pressure ratio 1:2, flow rate 900l/min, output pressure 2 - 10 bar. For installation in control unit line.	315016
Pressure amplifier for increasing operating pressure, max. input pressure 10 bar, pressure ratio 1:2, flow rate 400l/min, output pressure 2 - 20 bar. For installation in control unit line.	315018

Connection and mounting options

Description	ArticleNumber
T-slotted shoe connector for pneumatic and wedge screw grips with: Connectors with M28x1 x 5 thread for connecting Ø8, 20, 36 mm mounting studs or load cells, centering gauge, Ø 30 H7, for connecting mounting unit, mounting flange or Ø 60 mm mounting stud Scope of delivery: 2 pieces	320252
T-slotted shoe connector for load cell calibration, Fmax 100 kN, hole Ø 64/48 mm, and for specimen grips 8306/8406/8506/8497/8597	029093
Mounting unit for attaching compression test kits (fmax 250 kN) ¹⁾ , rigid upper anvil holder (Fmax 250 kN) ¹⁾ , rocking upper anvil holder (Fmax 20 kN) ¹⁾ , Type A/B flexure table (20 kN) ¹⁾ Scope of delivery: 1 piece	314058
Mounting flange for attaching flexure tables (Fmax 250 kN) ¹⁾ , preferably for installation in lower grip Scope of delivery: 1 piece	314060

¹⁾ Fmax may be limited by a lower Fmax for the test kit.