

**Material Testing Machine
for the
Quality Control**

**UNIMAT[®] Basic
050 · 052 · 054 · 056**

**with
Software (intern)
for Stand Alone Usage**



testing equipment for quality management

ERICHSEN
since 1910

Technical Description

**Universal Testing
Machines for
Tension and Compression**

General Information

The compact material testing machines of the **UNIMAT® Basic serie** have been specifically designed to facilitate quality checks simple and fast. The machines are available with a capacity of **3 kN, 5 kN, 10 kN or 20 kN** (higher forces on request).

The robust construction of massive aluminium and stainless steel makes these testing machines suitable for in-process controls.

For driving the cross-arm the Universal Testing Machines are equipped with electric motor drive (microprocessor-controlled, recirculating ball screw and bellows).

The motor including controls as well as the measurement and control system are integrated into the desktop housing.

The force is measured via a strain gauge load cell.

All testing machines can also be operated as a **stand-alone version** (with internal software) - without a PC - or with an **external Windows program**.

The testing machines operated via control panel with foil keypad (LCD with 2-line display).

(at models 050/052 – integrated into housing; at model 054/056 – side mounting or by remote control)

Software (intern) – Stand Alone Usage

The basic version of the machine includes a program to determine the maximum force and travel distance as well as to determine the maximum breaking force and distance.

During the test force and displacement values are sent via the USB interface.

After the end these values are visible in the display.

There are two basic programs in the machine:

- *constant speed*:
the machine moves with a constant speed.
- *constant force*:
the machine holds the force constantly; a preset force maintained over a defined period.

The program in the machine is changeable via USB.

Available languages: German, English, Spanish, French, Danish, Italian.

Windows Program (on CD)

The package includes a Windows Program (runs under Windows 95/98/2000 / XP and NT / W7 or W8) for controlling, recording, display and saving data. Forces and distances will be presented, compared and stored.



Fig. Mod. 050-Basic

UNIMAT® 050-Basic – 3 kN

Universal Testing Machine **UNIMAT®050-Basic**, with **one spindle and one bellow**, has a control panel **integrated** in the housing: (keypad, LCD with 2-line display: force / displacement).

Two versions of the testing machine are available (incl. load cell 3000 N):

- Testing force **3 kN**, travelling distance 500 mm
- Testing force **3 kN**, travelling distance 1200 mm

UNIMAT® 052-Basic – 5 kN

Universal Testing Machine **UNIMAT®052-Basic**, design as model 050-Basic

Two versions of the testing machine are available (incl. load cell 5000 N):

- Testing force **5 kN**, travelling distance 500 mm
- Testing force **5 kN**, travelling distance 1200 mm



Fig. Mod. 054-Basic

UNIMAT® 054-Basic – 10 kN

Universal Testing Machine **UNIMAT® 054-Basic**, with two spindles and two bellows, has a **separate** control panel for lateral attachment or can be operated by remote control (keypad, LCD with 2-line display: force / displacement).

Six versions of the testing machine are available (incl. load cell 10000 N):

- Testing force **10 kN**, travelling distance 700 mm / clearance 400 mm
- Testing force **10 kN**, travelling distance 700 mm / clearance 600 mm
- Testing force **10 kN**, travelling distance 700 mm / clearance 800 mm
- Testing force **10 kN**, travelling distance 1200 mm / clearance 400 mm
- Testing force **10 kN**, travelling distance 1200 mm / clearance 600 mm
- Testing force **10 kN**, travelling distance 1200 mm / clearance 800 mm



Fig. Mod. 056-Basic

UNIMAT® 056-Basic – 20 kN

The Universal Testing Machine **UNIMAT® 056-Basic**, is a **heavy two-spindle design** with a side-mounted cabinet, where is also the control panel (keypad, LCD with 2-line display: force / displacement).

Two versions of the testing machine are available (incl. load cell 20000 N):

- Testing force **20 kN**, travelling distance 700 mm / clearance 425 mm
- Testing force **20 kN**, travelling distance 1200 mm / clearance 425 mm

Higher testing forces available on request.

As accessories load cells (from 5 N up to 20 kN) and various grips are available (please refer to our relevant selection guide as well as our price list).

Order Information	
Ord.-No.	Product-Description
0050.01.51	UNIMAT® 050-Basic – 3 kN – 500
0050.02.51	UNIMAT® 050-Basic – 3 kN – 1200
0052.01.51	UNIMAT® 052-Basic – 5 kN – 500
0052.02.51	UNIMAT® 052-Basic – 5 kN – 1200
0054.01.51	UNIMAT® 054-Basic – 10 kN – 700/400
0054.02.51	UNIMAT® 054-Basic – 10 kN – 700/600
0054.03.51	UNIMAT® 054-Basic – 10 kN – 700/800
0054.04.51	UNIMAT® 054-Basic – 10 kN – 1200/400
0054.05.51	UNIMAT® 054-Basic – 10 kN – 1200/600
0054.06.51	UNIMAT® 054-Basic – 10 kN – 1200/800
0056.01.51	UNIMAT® 056-Basic – 20 kN – 700/425
0056.02.51	UNIMAT® 056-Basic – 20 kN – 1200/425
Included in the scope of supply: <ul style="list-style-type: none"> • Load cell • Software (CD) • Power supply cable • Manual 	

Technical Data

	UNIMAT® 050 Basic		UNIMAT® 052 Basic		UNIMAT® 054 Basic		UNIMAT® 056 Basic	
Max force	3 kN		5 kN		10 kN		20 kN	
Max speed [mm/min]	700		700		600		1600	
Min speed [mm/min]	0.1		0.1		0.1		0.1	
Smallest distance to adapter [mm]	66		66		--		--	
Clearance [mm]	--		--		400/600/800		425	
Adapter size [mm]	15.8		15.8		15.8		31.8	
Motor [Watt]	50		90		170		800	
Voltage [~V]	220/110		220/110		220/110		380	
Motor type Producer	DC Maxon		DC Maxon		DC Maxon		AC-Servo Stöber	
Stiffness / LZ [mm/kN]	0.3							
Max. travel distance [mm]	500	1200	500	1200	700	1200	700	1200
Weight [kg]	36	55	37	56	80	105	235	260
Dimensions [mm]	1036	1677	1036	1677	1226	1726	1317	1837
H x W x D	390 300	390 300	390 300	390 300	640 240	640 240	1071 433	1071 433
Packing dimensions [mm]	1150	1800	1150	1800	1315	1916	1900	1900
H x W x D	500 400	500 400	500 400	740 400	740 400	740 400	1200 800	1200 800

Current grips for UNIMAT® Basic Testing Machines					
Type of Machine (Model)	050-3 kN (1 - 3 kN)		052-5 kN	054-10 kN	056-20 kN
Measuring range	1 kN	3 kN	5 kN	10 kN	20 kN
Wedge Grips	SZ03-5 kN 0050.01.52			SZS622-10 kN 0054.01.52	SZ243-20 kN 0056.01.52
<i>Pyramid jaws</i>	SZ03-BP 0050.02.52			SZS622-BP 0054.02.52	SZ243-BP 0056.02.52
<i>V-jaws</i>	SZ03-BV 0050.03.52			SZ622-BV 0054.03.52	SZ243-BV 0056.03.52
Small Vice Grip (including pyramid jaws)	SZ140k-100N 0050.04.52				
Vice Grips	SZ240k-1 kN 0050.05.52	SZ240g-3 kN 0050.08.52			
<i>Pyramid jaws</i>	SZ240k-BP 0050.06.52	SZ240g-BP 0050.09.52			
<i>V-jaws</i>	SZ240k-BV2 0050.07.52	SZ240g-BV 0050.10.52			
Round Compression Plate Ø 56 mm Ø 96 mm Ø 116 mm Ø 156 mm	SZ23-AI 0050.11.52 0050.12.52		SZ23-St 0054.04.52 0054.05.52		
Square Plate Chuck (with T-shaped grooves)			SZ36T-250 mm - AI 0054.06.52		
Bending Grips (3-point)	SZ238-150 mm - AI 0050.13.52		SZ238-300 mm - St 0052.01.52		
Peeling Grips (Peel test 180°/FTM1/FTM3) Accessory: Carrier plate	SZ49 0050.14.52				
	SZ49-EGP 0050.15.52				
Peeling Grips (Peel test 90°/FTM2) Accessory: Carrier plate	SZ50 0050.16.52				
	SZ50-PL03 0050.17.52				
Cardan joint	SZ327-5 kN 0050.18.52				
			SZ327-20 kN 0054.07.52		

The list represents only a small selection of grips.

Figures	Ord.-No.	Description
Grips for Model 050-Basic:		
	0050.01.52	<u>Wedge Grips SZ03-5 kN</u> (per pair) without jaws, tensile force 5 kN
	0050.02.52	<u>Pyramid jaws SZ03-BP</u> (4 pcs./set) hardened, opening 0 – 8 mm, clamping surface 40 x 10 mm
	0050.03.52	<u>V-jaws SZ03-BV</u> (4 pcs./set) hardened, for round samples \varnothing 2 – 8 mm, clamping level 40 mm
	0050.04.52	<u>Small Vice Grip SZ140k-100 N</u> (per pair) incl. pyramid jaws, opening 0 – 8 mm, clamping surface 15 x 15 mm (63 g)
	0050.05.52	<u>Vice Grips SZ240k-1 kN</u> (per pair) without jaws, tensile force 1 kN, opening 0 – 10 mm
	0050.06.52	<u>Pyramid jaws SZ240k-BP</u> (4 pcs./set) hardened, clamping surface 30 x 30 mm
	0050.07.52	<u>V-jaws SZ240k-BV2</u> (4 pcs./set) hardened, for round samples from \varnothing 2 mm
	0050.08.52	<u>Vice Grips SZ240g-5 kN</u> (per pair) without jaws, tensile force 5 kN, opening 0 – 30 mm
	0050.09.52	<u>Pyramid jaws SZ240g-BP</u> (4 pcs./set) hardened, clamping surface 30 x 50 mm
	0050.10.52	<u>V-jaws SZ240g-BV</u> (4 pcs./set) hardened, for round samples \varnothing 2 - 30 mm
	0050.11.52	<u>Round Compression Plate SZ23-Ø56 mm - Al</u> (per pair) with centring grooves
	0050.12.52	<u>Round Compression Plate SZ23-Ø96 mm - Al</u> (per pair) with centring grooves
	0050.13.52	<u>3-Point Bending Grip SZ238-150 mm – Al</u> (per pc.) pressure force 2.5 kN, bearing area 4 – 150 mm, with steel fins (radius optionally: 1, 2, 3.2 or 5 mm – please specify when ordering)
	0050.14.52	<u>Peeling Grip SZ49 (Peel test 180°/FTM1+3)</u> (per pc.) maximum load 5 kN, sample width 50 mm, sample length 280 mm
	0050.15.52	<u>Necessary accessory: carrier plate SZ49-EGP</u> for samples (300 x 50 x 5 mm)
	0050.16.52	<u>Peeling Grip SZ50 (Peel Test 90°/FTM2)</u> (per pc.) maximum load 5 kN, sample width 50 mm, sample length 280 mm
	0050.17.52	<u>Necessary accessory: carrier plate SZ50-PL03</u> for samples (280 x 56 x 2 mm)

Figures	Ord.-No.	Description
	0050.18.52	<u>Cardan joint SZ327-5 kN</u> (per pc.) tensile force 5 kN
Grips for Model 052-Basic:		
	0050.01.52	<u>Wedge Grips SZ03-5 kN</u> (per pair) <u>without</u> jaws, tensile force 5 kN
	0050.02.52	<u>Pyramid jaws SZ03-BP</u> (4 pcs./set) hardened, opening 0 – 8 mm, clamping surface 40 x 10 mm
	0050.03.52	<u>V-jaws SZ03-BV</u> (4 pcs./set) hardened, for round samples Ø 2 – 8 mm, clamping level 40 mm
	0050.11.52	<u>Round Compression Plate SZ23-Ø56 mm - Al</u> (per pair) with centring grooves
	0050.12.52	<u>Round Compression Plate SZ23-Ø96 mm - Al</u> (per pair) with centring grooves
	0052.01.52	<u>3-Point Bending Grip SZ238-300 mm - St</u> (per pc.) pressure force 10 kN, bearing area 4 – 300 mm, with steel fins (radius optionally: 1, 2, 3.2 or 5 mm – please specify when ordering)
	0050.14.52	<u>Peeling Grip SZ49 (Peel test 180°/FTM1+3)</u> (per pc.) maximum load 5 kN, sample width 50 mm, sample length 280 mm
	0050.15.52	<u>Necessary accessory: carrier plate SZ49-EGP</u> for samples (300 x 50 x 5 mm)
	0050.16.52	<u>Peeling Grip SZ50 (Peel test 90°/FTM2)</u> (per pc.) maximum load 5 kN, sample width 50 mm, sample length 280 mm
	0050.17.52	<u>Necessary accessory: carrier plate SZ50-PL03</u> for samples (280 x 56 x 2 mm)
	0050.18.52	<u>Cardan joint SZ327-5 kN</u> (per pc.) tensile force 5 kN
Grips for Model 054-Basic:		
	0054.01.52	<u>Wedge Grips SZ622-10 kN</u> (per pair) <u>without</u> jaws, tensile force 10 kN
	0054.02.52	<u>Pyramid jaws SZ622-BP</u> (4 pcs./set) hardened, opening 0 – 9 mm clamping surface 40 x 34 mm
	0054.03.52	<u>V-jaws SZ622-BV</u> (4 pcs./set) hardened, for round samples Ø 3 – 13 mm, clamping level 40 mm

Figures	Ord.-No.	Description
	0054.04.52	<u>Round Compression Plate SZ23-Ø116 mm - Steel</u> (per pair) with centring grooves
	0054.05.52	<u>Round Compression Plate SZ23-Ø156 mm - Steel</u> (per pair) with centring grooves
	0054.06.52	<u>Square Plate Chuck SZ36T-250 mm - Al</u> (per pc.) with T-shaped grooves, size 250 x 250 mm
	0052.01.52	<u>3-Point Bending Grip SZ238-300 mm - St</u> (per pc.) pressure force 10 kN, bearing area 4 – 300 mm, with steel fins (radius optionally: 1, 2, 3.2 or 5 mm – please specify when ordering)
	0054.07.52	<u>Cardan joint SZ327-20 kN</u> (per pc.) tensile force 20 kN
Grips for Model 056-Basic:		
	0056.01.52	<u>Wedge Grips SZ243-20 kN</u> (per pair) <u>without</u> jaws, tensile force 20 kN
	0056.02.52	Pyramid jaws SZ243-BP (4 pcs./set) hardened, opening 0 – 13 mm clamping surface 50 x 35 mm
	0056.03.52	V-jaws SZ243-BV (4 pcs./set) hardened, for round samples Ø 3 – 13 mm, clamping level 50 mm
	0054.04.52	<u>Round Compression Plate SZ23-Ø116 mm - Steel</u> (per pair) with centring grooves
	0054.05.52	<u>Round Compression Plate SZ23-Ø156 mm - Steel</u> (per pair) with centring grooves
	0054.06.52	<u>Square Plate Chuck SZ36T-250 mm - Al</u> (per pc.) with T-shaped grooves, size 250 x 250 mm
	0054.07.52	<u>Cardan joint SZ327-20 kN</u> (per pc.) tensile force 20 kN

TBE 050/052/054/056-Basic – XII/2015
The right of technical modifications is reserved.