

FK50

Spring Force Gauge

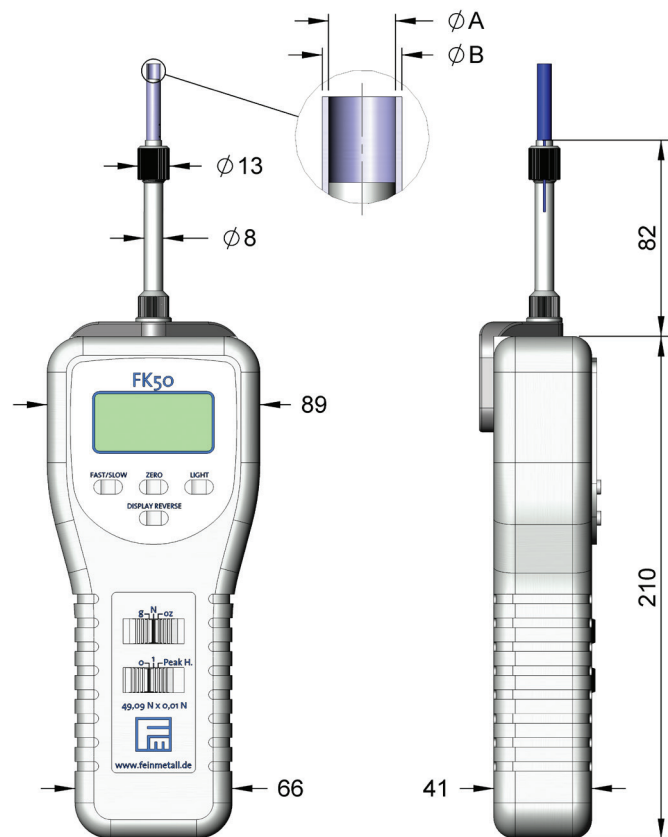
The Spring Force Gauge allows force measurement at all types of spring contact probes up to 50 N. This instrument allows in a very simple way to verify, if a probe is still intact and to determine the spring force of the probe. The measuring results are displayed at the instrument and the display can be electrically turned by 180° if needed, e.g. for overhead applications. For the measurement just put the measuring sleeve over the probe and push it to the mounting plate. The sleeves depth can be adjusted according to the projection height of the probe. Adjustable measuring sleeves are available with three different diameters.

Technical Specifications

Minimum force: 3g / 0,10oz / 0,03N
 Resolution: 1g / 0,03oz / 0,01N
 Measuring accuracy: +/- 0,5% at 25°C
 Data output: via RS 232 (order code 2111810)
 Power supply: 6 x 1,5V AA (UM-3 batteries)
(Batteries non included in delivery)

Included in Delivery:

- Spring Force Gauge with receptacle for measuring sleeve
- Measuring sleeve Ø 5,0mm
- Calibration certificate
- Carrying case



Operating manual available on the homepage.

Dimensions of adjustable measuring sleeves


Measuring sleeve	Inner-Ø A [mm]	Outer-Ø B [mm]	Height adjustable from/to [mm]
MS30	3,00	4,00	0 - 40,50
MS40	4,00	5,00	0 - 40,50
MS50	5,00	6,00	0 - 40,50

Description	Order code
Spring force gauge FK50	FK50
Measuring sleeve Ø 3,0 mm	MS30
Measuring sleeve Ø 4,0 mm	MS40
Measuring sleeve Ø 5,0 mm	MS50
Data cable RS232	2111810

Rigid measuring sleeves with fixed stop

Rigid measuring sleeves for repeating measurements at probes with fixed projection height are available with different diameters.

Example for height adjustment at measuring sleeve

	Projection height of probe, e.g. F732:	= 10,50 mm
	Nominal:	= 4,00 mm
	Projection height - nominal:	= 10,50 - 4,00 mm
	Value of height to fix:	= <u>6,50 mm</u>



Measuring sleeve	Order code	for series	Inner-Ø A [mm]	Outer-Ø B [mm]	Projection Height [mm]	Nominal travel [mm]
Measuring sleeve F732	MS230E065	F732	2,30	2,70	10,50	4,00
Measuring sleeve F733	MS360E065	F733	3,60	4,00	10,50	4,00
Measuring sleeve VF3	MS270E355	VF3	2,70	3,20	40,50	5,00
Measuring sleeve VF4	MS370E355	VF4	3,70	4,20	40,50	5,00
Measuring sleeve VF5	MS460E315	VF5	4,60	5,00	36,50	4,80

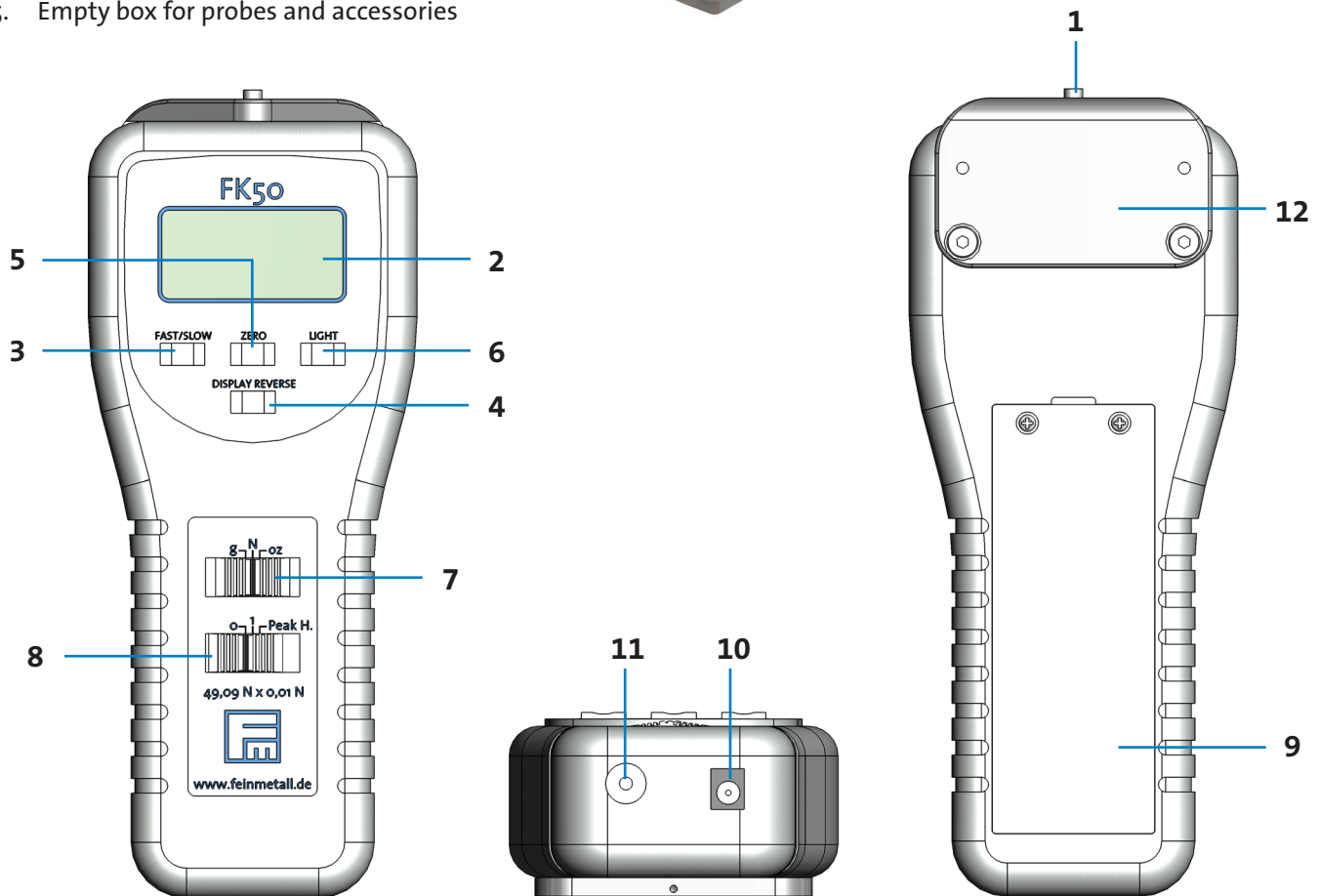
FK50

Mounting tool for twist proof receptacles

Congratulations on your purchase of a Spring Force Gauge of FEINMETALL. For questions, requests or suggestions, do not hesitate to contact us. Read this manual carefully before commissioning, even if you already have experience with FEINMETALL measuring instruments. The instrument may only be operated and maintained by trained staff.

Scope of delivery

1. Carrying case
2. Spring Force Gauge FK50 with receptacle for measuring sleeve
3. Measuring sleeve \varnothing 5mm (MS50)
4. Calibration certificate
5. Empty box for probes and accessories



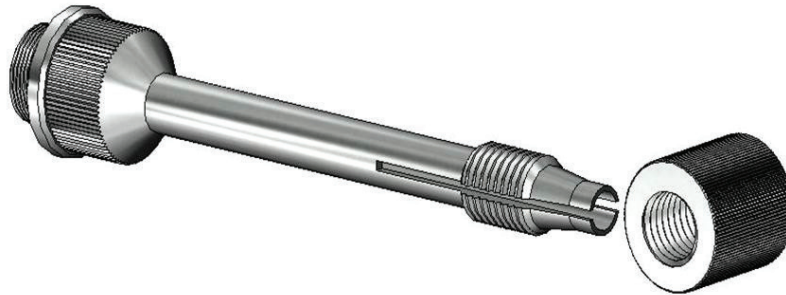
Assembly

1. Load cell
2. LC Display
3. FAST/SLOW (Button for fast or slow measuring frequency)
4. DISPLAY REVERSE (reversal by 180°)
5. ZERO (zero setting)
6. LIGHT (Backlight, must be pressed at least 2 sec. Automatic shutdown after about 15 sec.)
7. Unit selection (N, g, oz)
8. Power / Peak Hold – sliding switch
9. battery case
10. DC 9V connector
11. RS 232 output terminal
12. Retainer (angle)

TOOLS / ACCESSORIES

Maintenance

The screw thread of the clamping nut and the adapter needs to be cleaned and greased in periodical time segments to keep an ideal clamping force and movability.



Warning notices

The instrument is only suitable for use by the human hand.

It is not suitable for use with technical hooks or cranes.

Wrong executed measurements may cause serious personal injury and damage of property.

In particular forces that overload the maximum load of the instrument or any lateral forces on the load cell have to be avoided.

Otherwise the instrument can be damaged.

If the maximum load is exceeded „----“, is displayed.

All kind of torsions of the instrument may lead to breakage of the instrument or decline of accuracy.

Please note:

Any technical modification of the instrument is prohibited and may cause incorrect results, safety defects and the destruction of the instrument.

The instrument may only be used in accordance to the described guidelines.

The warranty expires by:

- Failure to comply with our guidelines
- Use other than the described applications
- Modification or opening the device, mechanical damage by media, liquids
- Wear and tear
- Inappropriate mechanical or electrical installation
- Overload

Within the quality assurance the measurement technology properties of the instrument must be reviewed at regular intervals.

The responsible user has to define a suitable interval as well as the type and quantity of the maintenance interval.

Operating conditions

- 0°C to 50°C
- 15% to 80% humidity
- Measure capacity and accuracy 50 N +/- 0,5 % at 25°C

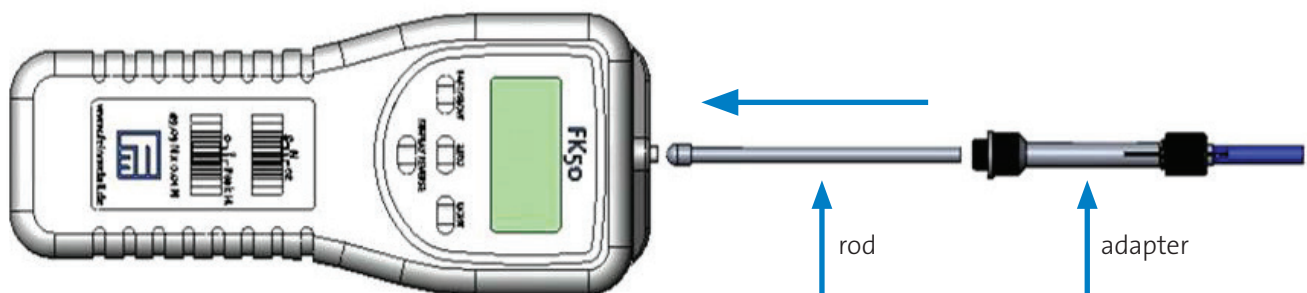
Power supply

- 6 x 1,5 V AA, UM-3 size battery (not included)
- Built in low battery indicator (LCD shows “Lo”)
- or DC 9V adapter (not included)
- The power consumption is approximately DC 28 mA.

TOOLS / ACCESSORIES

Measuring procedure

Install the adapter with the rod to the retainer angle (12.).

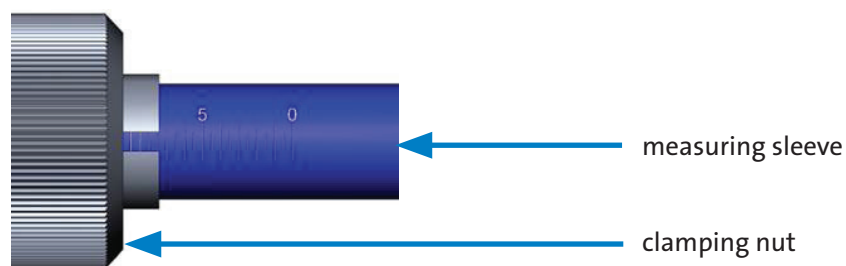


Set the measurement range according to the following formula via the clamping nut and the measuring sleeve: Projection height (PH) minus working travel (WT) equals the value to set at the scale.

E.g.: PH = 10,9mm, WT = 4,0mm, value = 6,9mm (PH – WT).

Please note: The scale on the measuring sleeve is for orientation.

The adjusted value has to be checked with a calibrated measurement equipment.



Set the Power sliding switch (8.) to Peak Hold and the Unit selection sliding switch (7.) to N. Turn the advice upside down that the adapter faces downwards. Now push the DISPLAY REVERSE (4.) button. Next push the ZERO (5.) button. Start the measuring procedure by guiding the measuring sleeve over the spring contact probe.



The result is now displayed. After pushing the ZERO (5.) button, the next measuring procedure can be started.

TOOLS / ACCESSORIES

Configuration of the RS 232 and the computer interface cable

The computer interface cable, one side with a ear phone plug that connects to the meter's RS 232 output and the other side with the D9 plug that connects the computer's COM terminal, is optional available. 16-digit-signal output:

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
D0						End Word									
D1 & D8						Display reading, D1 = LSD, D8 = MSD									
D9						Decimal Point (DP), position from right to left 0 = No DP, 1 = 1 DP, 2 = 2 DP, 3 = 3 DP									
D10						Polarity, 0 = Positive, 1 = Negative									
D11 & D12						Annunciator for Display									
						g = 57			Newton = 59			oz = 58			
						Kg = 55			LB = 56						
D13						1									
D14						4									
D15						Start Word									

Configuration of the D9 plug:

Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Received Data	7	Request to Send
3	Transmitted Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicator
5	Signal Ground		

Configuration of the ear phone plug:

Signal (Tip) = Pin 2, Ground (Sleeve) = Pin 5
RS 232 setting

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit

Optional accessories

- RS232 Computer interface cable
- Miscellaneous adjustable and rigid adapters (the range is shown in the latest catalog or on www.feinmetall.com)