

Test



Models 320 / 420 / 1191

Hand-held electronic and mechanical instruments for forces and torques



Model 320/420

Special features:

- Leading-edge technology
- Rugged
- Ease of use
- Maintenance-free
- Newest software
- Portable
- Superb accuracy
- Carrying case with many accessories

Applications:

The TesT hand-held electronic measurement units for force, Model 320, and the version for torques, Model 420, are used in research and devel-

opment and in quality assurance final inspections, or during production operations. They can measure: strength, actuation forces, torques for components, for operating units at all types of devices:

- Springs
- Levers
- Cosmetics
- Foods
- Push-buttons
- Sockets
- Vehicles
- Precision mechanics
- Switches
- Fasteners
- Medical technology
- and many, many more

Description:

The TesT electronic, hand-held measurement instruments contain either a force or torque transducer and microprocessor-controlled electronics with the most modern of software. The various functions are matched to practical daily needs in quality assurance work. A listing is given in the technical specifications. Default settings, once they have been stored, remain in memory even after the unit is switched off. Work can be resumed immediately once the unit has been powered up again. The instrument case is made of aluminum; its design follows human

engineering principles and the unit is suitable for right- or left-hand use. It may also be mounted permanently in a test jig.

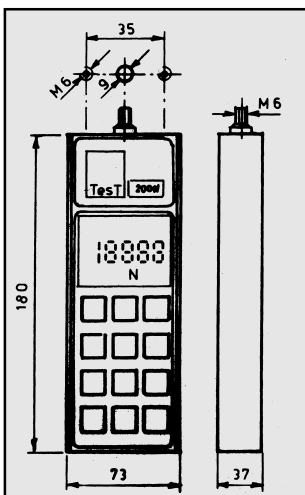
Rechargeable batteries provide about ten hours of trouble-free, portable use. These sturdy units are suitable for the inhospitable environments found in manufacturing operations. They can be recharged overnight.

Calibration is made using either reference instruments or weights which themselves are checked regularly by the PTB or by DKD-authorized agencies. Thus traceability as prescribed in ISO 9000 ff. is ensured.

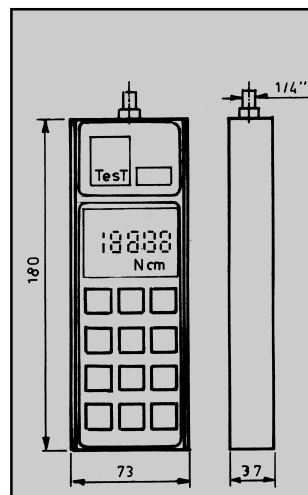


Examples of use

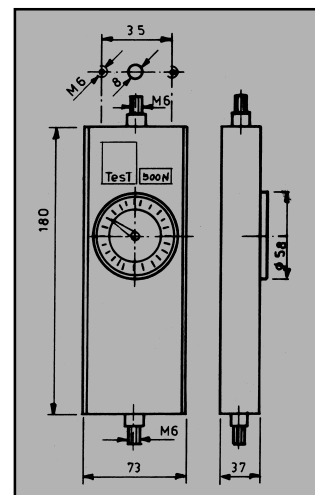
Model 320



Model 420



Model 1191



Model 1191

Mechanical measurement units



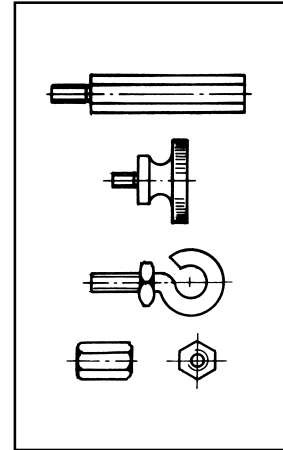
Model 1191

The mechanical designs are especially rugged, simple and reliable in use. They are employed primarily for occasional measurements on the shop floor and during final quality control inspections.

The Model 1191 series of hand-held gauges features high-precision measurement springs, in an opposed configuration and connected to the force transfer linkage. The excursion path is registered using a precision dial gauge and is proportional to the force applied. The display scale is graduated in Newtons (N).

Calibration is made using either reference instruments or weights

which themselves are checked regularly by the PTB or by DKD-authorized agencies. Thus traceability as prescribed in ISO 9000 ff. is ensured.



Accessories for 320/1191

Accessories

Model 320
Storage case
Operating instructions
Power pack, 220 V AC
Pressure adapter, 23 mm diam.
M6 threaded connector
Pull hook with lock nut, M6 threads
Extension, M6 × 15 mm
Extension, M6 × 45 mm

Model 420
Storage case
Operating instructions
Power pack, 220 V AC
1/4" attachment for slotted screws, 4 mm

1/4" attachment with 10 mm hex socket
Extra-cost option: 1/4" attachment with adjustable chuck, 0.5 to 8 mm

Model 1191
Storage case
Operating instructions

Pressure adapter, 23 mm diam.
M6 threaded connector
Pull hook with lock nut, M6 threads
Extension, M6 × 15 mm
Extension, M6 × 45 mm

Technical specifications

Model 320
Measurement ranges:
320. 20N 0... 20 N
320. 50N 0... 50 N
320.100N 0...100 N
320.200N 0...200 N
320.500N 0...500 N
320. 1kN 0... 1 kN

Load cell with full strain gauge
bridge rectifier
Measurement uncertainty: $\leq \pm 0.1\%$
of full-range value
Selectable display: N - kg - lb

Model 420
Measurement ranges:
420. 20 Ncm 0... 20 Ncm
420. 50 Ncm 0... 50 Ncm
420.100 Ncm 0...100 Ncm
420.200 Ncm 0...200 Ncm
420.500 Ncm 0...500 Ncm

Torque transducer with full strain gauge
bridge rectifier
Measurement uncertainty: $\leq \pm 0.5\%$
of full-range value
Selectable display: Ncm - kgcm - lb/in

Model 1191
Measurement ranges:
1191. 20N 0... 20 N
1191. 50N 0... 50 N
1191.100N 0...100 N
1191.200N 0...200 N
1191.500N 0...500 N

Tensile and compressive forces, using
pre-loaded, precision measurement springs
Measurement uncertainty: $\leq \pm 0.5\%$
of full-range value
Display in Newtons (N) (Option: kg or lb)

Resolution, max.: 0 to 20,000 digits, with floating comma
Display and control panel can be rotated by 180°

Digital filter: 0 - 1 - 2 - 4 - 8 - 16 - 32

Zero-reset button
Measurement frequency 1 kHz
Peak value memory for positive and negative measured values
2 limit value signals for positive and negative measured values
RS 50 interface to printer or PC (Mitutoyo)
RS232 interface to printer or PC
10 hours of service • charge monitoring • rechargeable battery
Power pack 220 V AC
Option: Statistics software

Resolution: 0 to 100 graduations
Tension/compression readings with precision, bidirectional dial pointer

Force introduction at either end

Zeroing with rotating dial scale
Peak value measurement with drag pointer



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