

Direct and residual shear testing machine DIGISHEAR

ASTM D3080 | AASHTO T236 | BS 1377:7 | CEN-ISO/TS 17892-10 | NF P94-071

MAIN FEATURES

- Maximum **horizontal** force: **5 kN**
- Maximum **vertical** force: **5 kN**
- Infinitely variable speed from **0.00001** to **15.00000 mm/min**
- Digital display LCD 4-row by 20 characters
- **High stiffness load chain** shear box - driving head - load cell
- Compatible with shear boxes **up to 100 mm** diameter or square
- Sturdy shear box **techno-polymeric carriage untouchable by corrosion**
- Test velocity and travel (forward and reverse) adjustable (residual shear test)
- Suitable for **analogue or digital measurement** with **dedicated external data acquisition**

GENERAL DESCRIPTION

Digishear is the entry level machine for direct/residual shear testing. It incorporates one high-resolution stepper motor with high precision transmissions.

The user interface is based digital display LCD 4-row by 20 characters permitting to start, pause and stop the test.

The axial transmission of the horizontal force adopts a straight connection through shear box, shaft and load cell. This design avoids the load measurement inaccuracies occurring with the widely used "swan neck" basic design.

A high quality techno-polymeric material has been adopted for the carriage of the shear box, offering excellent resistance to corrosion, wear and tear and to the chemicals often mixed with the soil specimens. Furthermore, this polymeric carriage is lightweight and easy to clean.

Vertical load is applied directly to the specimen via a loading yoke and a weights holding arm which amplifies 10 times the applied value.

The machine can be supplied in two different configurations:

- Analogue with load ring and dial gauges
- Digital with load cell and displacement transducers that have to be connected to an external data acquisition system (see [GEODATALOG 8](#))

TECHNICAL SPECIFICATIONS

- **Maximum shear force:** 5000 N
- **Maximum vertical force:** 500 N or 5000 N using 10:1 cantilever loading device supplied with the machine
- **Maximum horizontal travel:** 23 mm
- **Test speed:** from 0.00001 to 15.00000 mm/min
- **Digital display:** LCD 4 row by 20 characters
- **Sample type and size:** up to 100 mm square or round
- **Overall dimensions:** 1040 x 350 x 1200 mm (l x d x h)
- **Multivoltage:** Multifrequency power supply 230 V, 50 Hz or 110 V, 60 Hz

DATA SHEET

ORDERING INFO

27-WF20D60

Digishear, direct and residual shear testing machine with digital LCD display
 110-230 V, 50-60 Hz, 1 ph

ACCESSORIES

Analogue measuring device

Load ring

27-WF1002/ST

Load ring 2 kN capacity, with adapters

27-WF1003/ST

Load ring 5 kN capacity, with adapters

Dial gauge

30-WF6401

Dial gauge for measuring vertical deformation, 12 mm travel and 0.002 resolution

30-WF6402

Dial gauge for measuring horizontal deformation, 30 mm travel and 0.01 resolution

Electronic measuring device

Load cell

27-WF0377/ST

Load cell 5 kn capacity, with adapters

Displacement transducers

30-WF6207

Linear potentiometric transducer, 10 mm travel, for vertical deformation, complete with mounting block

30-WF6208

Linear potentiometric transducer, 25 mm travel, for horizontal deformation, complete with mounting block

Datalogger

30-WF6008

Geodatalog 8

82-P9008/ELT

Set of four cable adapters

Shear box: including loading pad, base plate, 2 plain grind plates, 2 perforated grid plates and 2 sintered bronze porous stone

Code 27-	WF0215/B	WF0216/B	WF0217/B	WF0218/B	WF0219/B	WF0222/B
Shape	Square	Square	Round	Round	Round	Round

DATA SHEET

Sample size [mm]	60	100	50	60	63.5	100
Sample cutter 27-	WF0215/B7	WF0216/B7	WF0217/B7	WF0218/B7	WF0219/B7	WF0222/B7
Extrusion dolly 27-	WF0215/8	WF0216/8	WF0217/8	WF0218/8	WF0219/8	WF0222/8

Weight set

27-WF0230/C3

Weight set 37.5 kg comprising 2x0.25, 2x0.5, 2x1, 3x2, 3x4 and 2x8 kg weights

Additional weight set

27-WF0230/C4

Weight set 34 kg comprising 2x1, 1x2 and 3x10 kg weights

Data processing template

30-WF6016/T2

Direct and residual shear Geo-Analysis template conforming to BS 1377:7

30-WF6016/T9

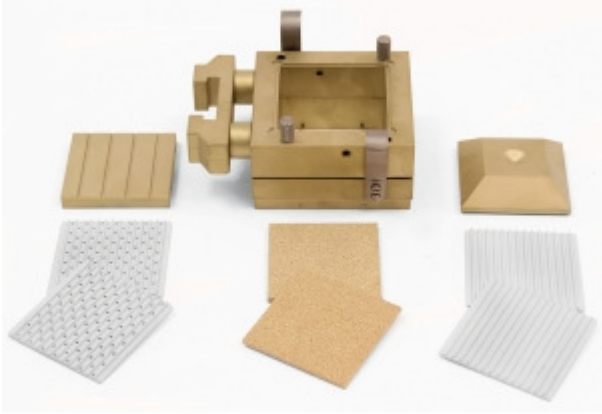
Direct and residual shear Geo-Analysis template conforming to ASTM D3080

Note: in case of analogue acquisition template can be filled in manually



Digital direct/residual shear machine DIGISHAR (27-WF20D60) with analogue measurement

DATA SHEET



Shear box assembly



27-WF1002/ST Load ring with adapter

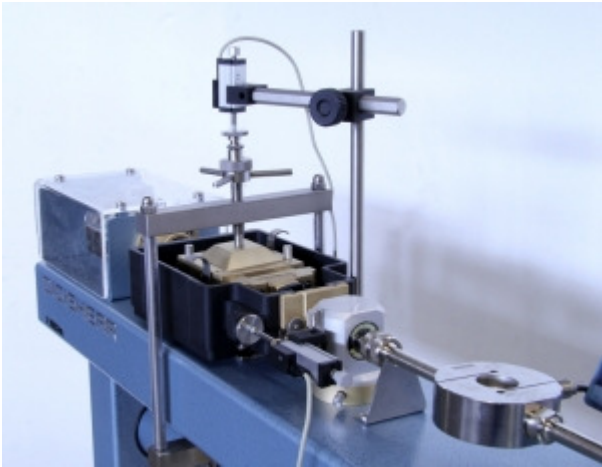
DATA SHEET



30-WF6207, 30 -WF6208 Displacement transducers



27-WF0377/ST, 5 kN load cell



measuring system

Digital direct/residual shear machine DIGISHEAR (27-20D60) fitted with digital