

Dynamic Shear Rheometer DSR

EN 14770, ASTM D7175, D7552-09 PC-controlled rotation rheometer consisting of:

- ▶ Tripod with stable basic plate and high precision drive unit with measuring system including module for easy and fast changing adjustment the measuring plates
- ▶ Height adjustable adapter for setting the measuring plate system 20-4445 with precision positioning unit
- ▶ Separate measuring and electronic controller
- ▶ Windows software for CR, CS and oscillation tests

CR test:

- ▶ preset constant shear speed and measuring of the shear stress:
 - result: viscosity
- ▶ preset shear speed and measuring of the shear stress:
 - result: flow and viscosity curve
- ▶ preset shear speed leaps (strain/relaxation test) and measuring of the shear stress:
 - result: starting/decay curve, shear modulus, viscosity, strain/relaxation time

CS test:

- ▶ preset shear stress-time-ramp and measuring of the shear speed:
 - result: flow and viscosity curve, flow limit
- ▶ preset shear speed and measuring of the shear stress:
 - result: flow and viscosity curve
- ▶ preset shear stress tests (creep retardation test) and measuring of the deformation:
 - result: creep diagram, compliance

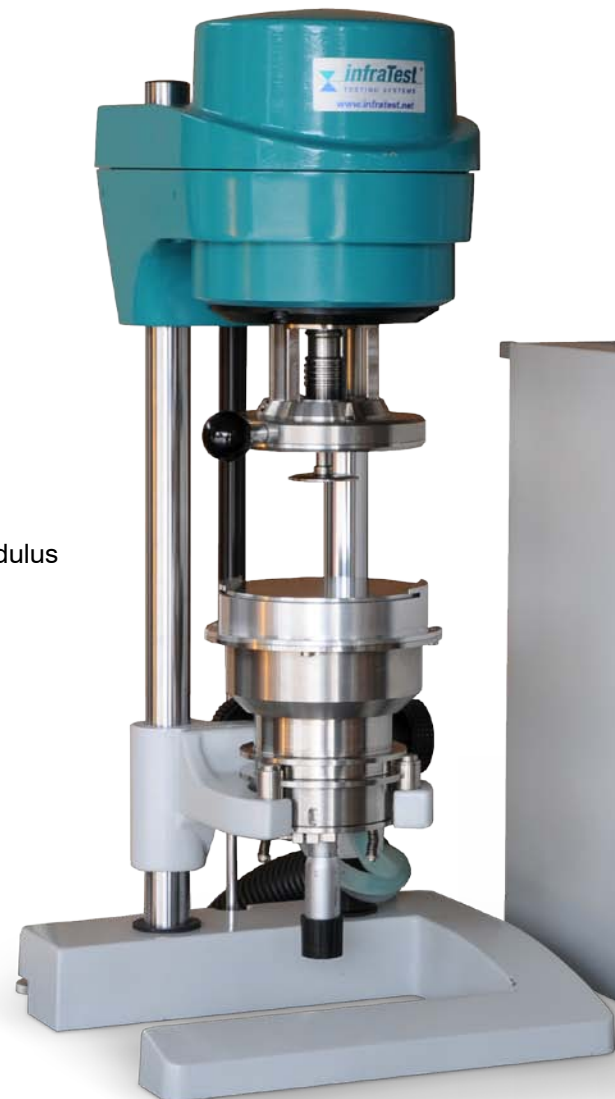
Oscillation tests:

- ▶ preset harmonic shear stress oscillations and measuring of the deformation:
 - results: memory modulus G' , loss modulus G'' , complex modulus G^* , loss factor $\tan \alpha$

MSCR test:

- ▶ Determination of multiple stress creep recovery

The measuring plate system 20-4445 as well as measuring plates 20-4452/52 are required in addition. As an option further measuring systems to carry out tests according to DIN EN 13302 – 13702 – 14896 – 15324 – 15325 are available. PC-working place with operating system Windows SE or higher, free capacity on hard disc min. 10 MB, 2 serial interfaces (COM) or 2 USB interfaces 2.0 are necessary.



Technical data:

- Torque range: 0.1 ... 200 mNm
- Torque resolution: 0.002 mNm
- Speed range: 0 ... 1000 rpm
- Speed resolution: 0.015 rpm
- Temperature range: -60 ... +350°C
- Angle range: -50 ... 300°
- Angle resolution: approx. 0.001°
- Frequency range: 0.001 ... 10 Hz
- Complex module: approx. $3 \cdot 10^2$... $6 \cdot 10^9$ Pa
- Phase angle: approx. 0 ... 90°
- Connection: 230 V, 50/60 Hz

**Measuring plate system**

with attachment to use with 20-4440. Cooling range -10...+150°C is effected using a peltier operated base plate and included cooling thermostat. The base plate is prepared with space to fit the sample and can be cleaned easily. Supplied with sample centering tool.

20-4445

Measuring Plate

with special connecting shaft.

20-4452 Ø 25 mm

20-4454 Ø 8 mm