666 | Labo Plastomill Micro

Labo Plastomill Micro is table-top torque rheometer (measuring mixer/extruder system) for evaluating kneading and extrusion properties with small amount of sample.

Note: Labo Plastomill Micro base unit + KF6V Small Segment Mixer

■Base unit

- Torque (current value conversion), resin temperature, and pressure can be measured.
  (Pressure sensor is option)
- Testing software allow to import measurement data, perform various characteristic value calculations, overlay data display, and convert files for export to spreadsheet software.
- Safety features including torque, pressure, and temperature limiters and mixer disassembly safety circuit etc.

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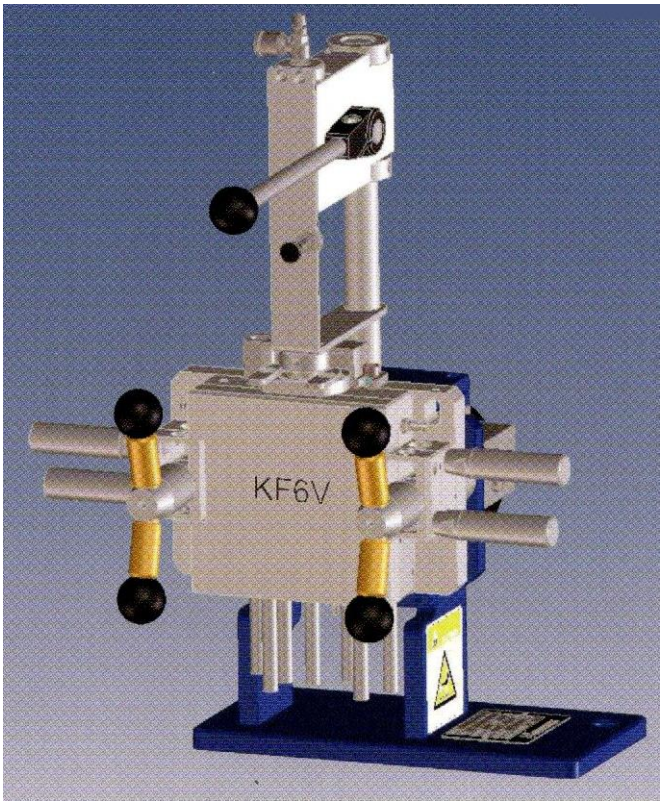
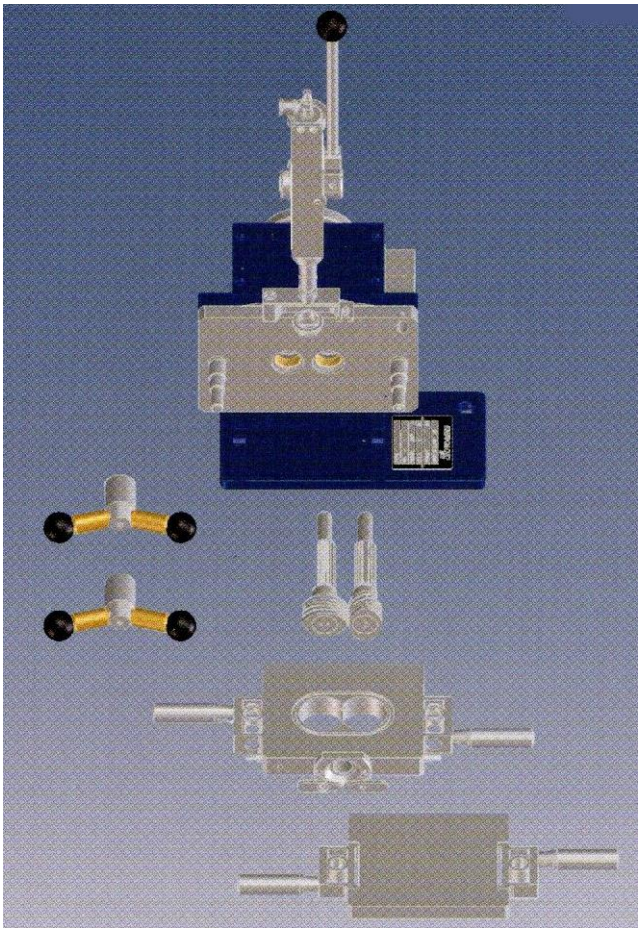
Model	4N100
Rotation	0.1 to 100rpm
Max. torque	40Nm
Temperature range	0 to 500ºC
Resin pressure range	0 to 20MPa
Safety features	Torque limiter, temperature limiter, emergency stop switch, mixer disassembly safety circuit, leakage breaker, SSR abnormal detection and overheat detection
Power supply	Three-phase, AC200V, 50/60Hz, 5.2kVA
Compressed air	0.5MPa
Dimensions	W470 x D750 x H440mm
Weight (approx.)	62kg

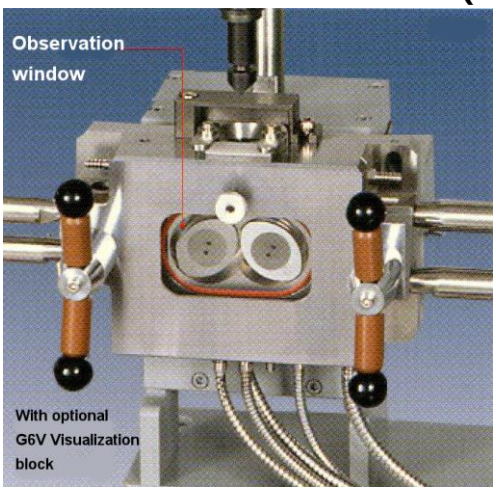
KF6V Small Segment Mixer



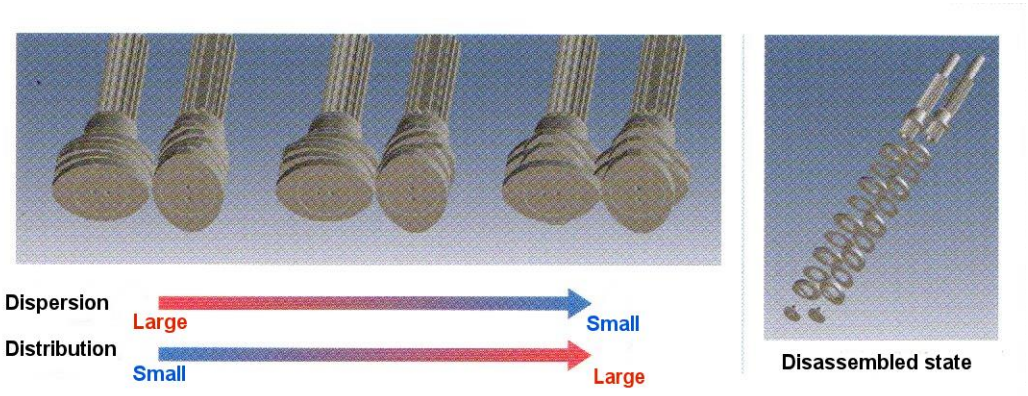


Model	**KF6V Small Segment Mixer**
System	Intermeshing type co-directional rotation
Max. rotation speed	300rpm (3x speed)
Max. torque	40Nm
Temperature range	RT+100ºC to 350ºC (Water cooling is possible under 100 ºC)
Heating zones	Heating: 3 zones (Cartridge heater) Cooling: 1 zone (#2 block) With temperature detector
Blade shape	2 lobe disc, 5-piece combination type ● KF6HB High shear blades (Standard) Max. shear rate: 1.2 x 10^3/s Chamber capacity: Approx. 5cm^3 ● KF6LB Low shear blades (Optional) Max. shear rate: 4.5 x 10^2/s Chamber capacity: Approx. 6cm^3
Sample insertion port	Ø15mm
N2 purge	Nitrogen gas is supplied from the top of the ram
Material	SUS440C
Safety feature	Shear pin
Power requirements	Single-phase, AC100V, 50Hz, 1.5kVA
Dimensions	W290 x D260 x H370mm
Weight (approx.)	20kg

■G6V Visualization block (Optional)



Model	G6V Visualization Block
Max. temperature	250ºC
Observation window	Hard glass
Accessory	Vacuum and nitrogen switching valve (with mounting bracket)

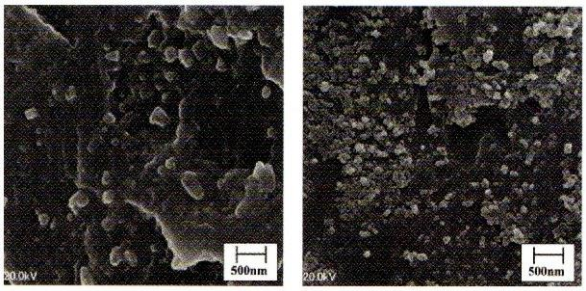


Example of disc phase recombination

The blade disc phase can be reconfigured to adjust the kneading strength to suit the sample.

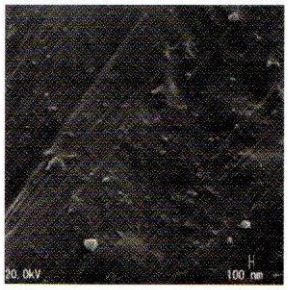
Example of mixer dispersion data (Courtesy of Nagoya University)

[PS+Silica pseudo-porous phase (5wt%) Grain dia. 20nm]

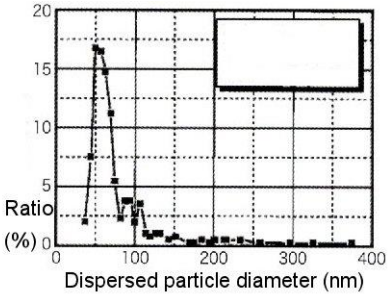


Difference in rotational speed (shear rate)
(Left: 99rpm, Right: 300rpm)

[EVOH+ Silica pseudo-porous phase (5wt%) Grain dia. 20nm]



EVOH/SiO_2 dispersion state



Dispersed particle dia. distribution

As shown above, the segment mixer is capable of high shear mixing and is suitable for evaluation of nanoparticle dispersion.

Specifications are subject to change without notice.

TOYO SEIKI SEISAKU-SHO, LTD.
5-15-4, Takinogawa, Kita-ku, Tokyo 114-8557, Japan
Tel:+81-3-3916-8183 Fax:+81-3-3916-8173
www.toyoseiki.co.jp

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