

MKE Hardware Platform Laboratory Compounding & Molding System



Blending & Compounding Technology

MKE
MYUNG KIM EXTRUSION

MKE 마이크로 컴파운더 (MKE MicroCompounder)



Lab solution for small size compounding with intelligent O/S
(4th Industrial Revolution Compatible System)

- **Batch mode operation**
Co-rotating circulation batch mode operation
(20~80g)
Mixing with kneading block
- **Micro-Twin Screw Feeder**
Special feeder for Micro-compounding
- **Computer control system**
Automatic control for Micro-Compounder
DAS (Data Acquisition System)
Main feeder on/off control
Windows11 based O/S (Not PLC control)
Built-in PC & attached monitor (컴퓨터 일체형디자인)
Operating condition database store and look-up

MKE 미니 컴파운더 (MKE MiniCompounder)

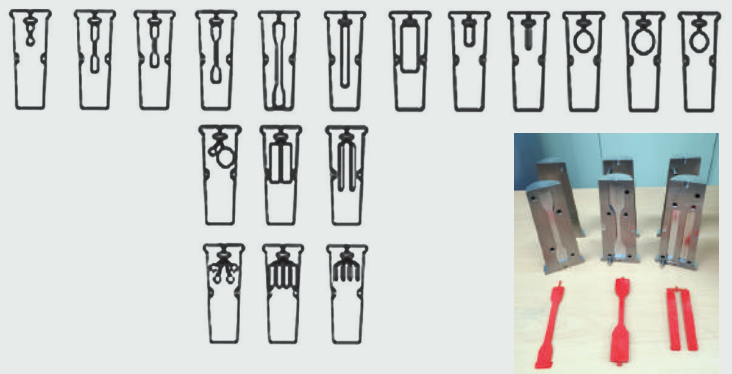
Continuous mode lab compounder

Continuous compounding with kneading action
Capacity : 0.5 - 4Kg/hr (depending on materials)
Max temperature : 350°C
Max. screw speed : 500rpm

MKE 실험실용 소형 사출 성형기 (MKE MiniJect)

물성시험제작용 실험실용 사출 성형기

- Shot volume : 3.5 to 20ml (standard)
- Two ways melt accommodation
 - Conduction melting
 - Transfer from MicroCompounder
- High injection pressure (1,500~2,100bar)
- Max temp. : 400°C
- Melt transfer unit (with cradle)
- Easy cleaning
- Low noise : < 50 db
- Versatile wedge mold selection
 - ASTM, ISO complies
 - Rheometer specimen
 - DMA sample
- Suitable for Super EP research
- High speed injection option available
- Compatible with Xplore and Haake system
- Injection Control Device (optional)
 - (incl. Digital air pressure regulator)
- Mold cooling method air cooling (standard)



MKE 자동제어 소형 사출 성형시스템 (MKE MiniJect PRO)

자동제어/DAS 장착 소형 사출 성형기

- Computer control and DAS system in the same machine
- Precise injection pressure control via advanced computer
- Process monitoring for injection stroke, injection pressure, mold temperature and etc.



i-RheoComp®



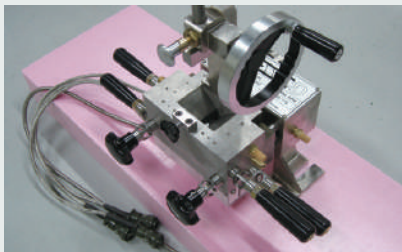
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MKE 실험실용 배치 믹서 시스템 (MKE RheoComp® BIM series)

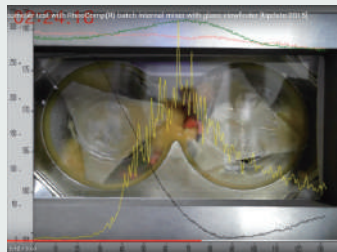


Measurable Internal Batch Mixers RheoComp BIM-150/BIM-350 (4th Industrial Revolution Compatible System)

Basic and historical equipment for blending and compounding research / Laboratory management system
Automatic control & Data Acquisition System (Temp., Rpm, Torque) / Servo motor & driver
W840×D850×H1600 내장형 컴퓨터, 포터블 키보드 사용 (추가 컴퓨터데스크나 공간 필요 없음)



BIM-150 (시료량 ~ 50g)
소량 배치믹서모듈



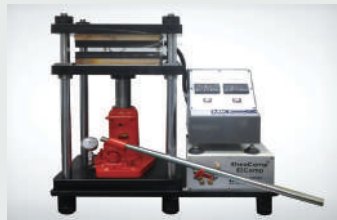
배치믹서 실험
Viewfinder(option)



배치믹서
실험동영상
보러 가기



Mixing blades



Compression Molding Machine



BIM-350 (시료량 ~ 200g)

Command Station model

RheoComp® Harmony

RheoComp® Concerto

RheoComp® Nano

(Module 확장성, 모터용량, Torque limit 등 차이)

EuroMap Compatible Modbus protocol



MKE Solution for Color Compounders

(MKE EN13900 FPV compatible tester)

NEW

EN13900

Color master batch 분산성 시험 방법

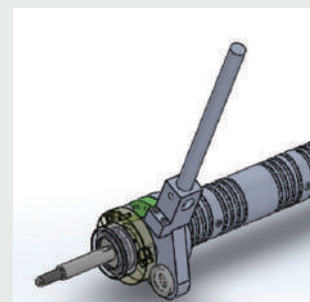
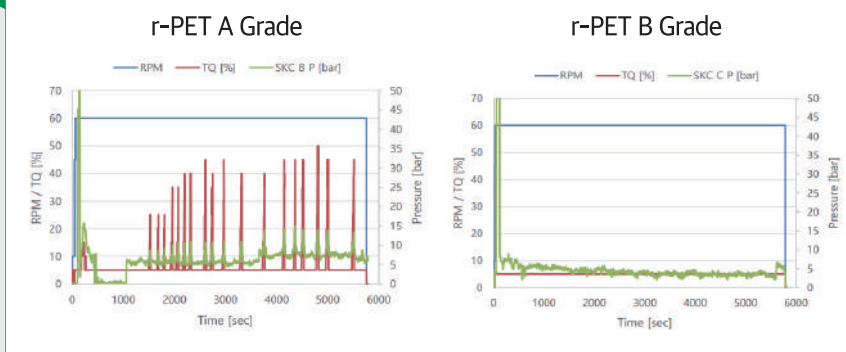
Recycled PET의 이물 혼입 시험

- Test for dispersibility in the thermoplastic compound for fillers/pigments
- Testing of the quality of the full compound and master match
- Two ways of FPV tests are available.
 - Full EN13900 test
 - EN13900 compatible test
- Full EN13900 test unit
 - An SSE 19 Extruder for melter
 - A Tandem SSE 19 extruder for melt conveying extruder
 - Integrated screen changer with measurement of the melt pressure
- MKE's FPV compatible test method
 - An SSE 19 Extruder
 - Constant feeding system
 - Integrated screen changer with measurement of the melt pressure



SSE19 System

Sample test results



Screen changer

- Test result of “bad recycled PET” and “good recycled PET”
- “Good recycled PET” shows no pressure build up in the melt pressure sensor

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MKE 실험실용 컴파운더(블렌딩용) (MKE Co-TSE Compounder : **Blending**)

| Polymer Blend application |



Co-rotating Twin Screw Compounder for Intelligent Compounding Solution with Smart O/S (4th Industrial Revolution Compatible System)

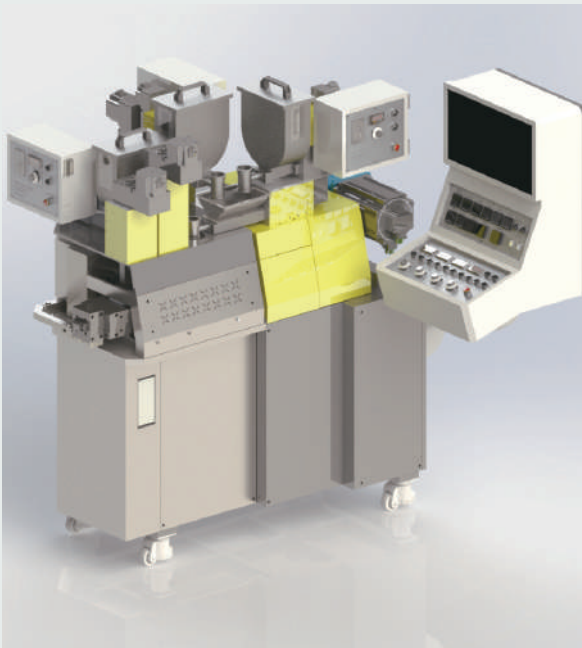
- Barrel Diameter 25mm, L/D 32~42
- Throughput : depends on test materials
: 5~10kg/hr (300rpm)
- Motor power : 7.5kW, 600rpm, Max. 400°C
- MKE i-RheoComp[®] O/S adopted (Optional)
: Automatic control & DAS (Plastics Industry 4.0 compatible)
- Windows 11, embedded PC system
- Process data storing and retrieving system
- Data connection through networking using TCP/IP connection
- QR code tag system: Experiment identification (optional)
- Smart DAQ System for Laboratory management



MKE 실험실용 컴파운더(필러분산용) (MKE Co-TSE Compounder : Compounding)

UPGRADE

| Polymer Compounding Application |



Intelli-Compounder w/ Side feeding system

Co-rotating Twin Screw Compounder for Intelligent Compounding Solution with Smart O/S (4th Industrial Revolution Compatible System)

- Barrel Diameter 25mm, L/D 36~42
- Side feeding system, vent port, liquid injection ports available
- Throughput : depends on test materials : 5~8kg/hr (300rpm)
- Motor power : 7.5kW, 600rpm, Max. 400°C
- MKE i-RheoComp[®] O/S adopted (Optional) : Automatic control & DAS (Plastics Industry 4.0 compatible)
- Windows 11, embedded PC system
- Process data storing and retrieving system
- Data connection through networking using TCP/IP connection
- QR code tag system : Experiment identification (optional)
- Smart DAQ System for Laboratory management



i-RheoComp[®]



Intelligent Compounder



Twin screw feeder



Single screw feeder



Variable length pelletizer

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RheoComp®
Batch Mixer System



Screw Rheometer

RheoComp® Harmony / Concerto / Nano RheoComp® Modules

Batch Internal Mixer (BIM series)
Powder Batch Internal Mixer (PBIM series)
Single Screw Extruder
Vented Single Screw Extruder
Single Screw Rubber Extruder
Pin Barrel Single Screw Extruder
Co-rotating Twin Screw Extruder
Counter-rotating Twin Screw Extruder
Micro-Compounder

Stand-Alone Equipments & Devices

MicroCompounder
MiniCompounder
Intelligent Compounder
MiniJect (Mini-Injection Molding Sys.)
EzCast Mini (Lab Film Casting Line)
EzCast (Pilot Film Casting Line)
EzCast BF (Pilot Blown Film Line)
Melt Screw Rheometer (MSR)
Rubber Screw Rheometer (RSR)
Slurry Screw Rheometer (SSR)
EzComp (Compression Molding)
RheoSation
Digital Material Center
MS EL-Vis Station (Melt Strength)
FREEDAQ (Data Acquisition System)

MKE Rheology Solutions

Shear Viscosity, Viscosity Function
Melt Strength, Elongational Viscosity
P-V-T
Thermal Conductivity
Melt Density, Bulk Density



Best Solution, Best Partner!!!

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