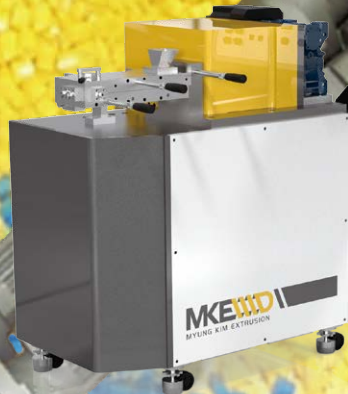


# ***MKE Hardware Platform Laboratory Compounding & Molding System***



***Blending & Compounding Technology***

**MKE**  
MYUNG KIM EXTRUSION

# MKE 마이크로 컴파운더 (MKE Micro-Compounder)



i-RheoComp®



NEW

Lab solution for small size batch & continuous compounding with intelligent O/S  
(4<sup>th</sup> Industrial Revolution Compatible System)

- **Batch mode operation**

Co-rotating circulation batch mode operation

(20~80g)

Mixing with kneading block

- **Continuous mode operation**

Mild continuous compounding with kneading action

Capacity : 0.5 - 1Kg/hr(depending on products)

Max temperature : 350℃

Max. screw speed : 500rpm

- **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

Windows10 based O/S(Not PLC control)

Built-in PC & attached monitor(컴퓨터 일체형디자인)

Operating condition database store and look-up

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

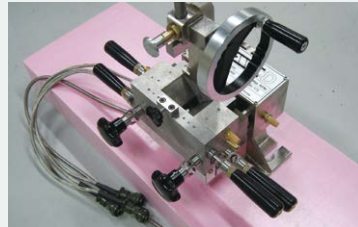


## Measurable Internal Batch Mixers RheoComp BIM-150/BIM-350 (4<sup>th</sup> Industrial Revolution Compatible System)

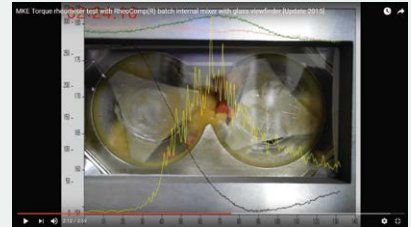
Basic and historical equipment for blending and compounding research / Laboratory management system  
Automatic control & Data Acquisition System (Temp., Rpm, Torque) / Servo motor & driver  
W840×D850×H1600 내장형 컴퓨터, 포터블 키보드 사용 (추가 컴퓨터데스크나 공간 필요 없음)



BIM-350 (시료량 ~ 200g)



BIM-150 (시료량 ~ 50g)  
소량 배치믹서모듈



배치믹서 실험동영상 보러 가기  
<https://www.youtube.com/watch?v=A-AXLCA0-3c&t=8s>



Mixing blades



Compression Molding Machine



## Command Station model

RheoComp® Harmony

RheoComp® Concerto

RheoComp® Nano

(Module 확장성, 모터용량, Torque limit 등 차이, 디자인 상이)

EuroMap Compatible Modbus protocol



# MKE 실험실용 지능형 컴파운더

(MKE Intelligent-Compounder : **Blending**)

| Polymer Blend application |



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

- Barrel Diameter 25mm, L/D 32~
- Throughput : depends on test materials  
: 5~10kg/hr (300rpm)
- Motor power : 7.5kW, 600rpm, Max. 400°C
- MKE i-RheoComp<sup>®</sup> O/S adopted (Optional)  
: Automatic control & DAS (Plastics Industry 4.0 compatible)
- Windows 10, 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 지능형 컴파운더

(MKE Intelligent-Compounder : Compounding)

NEW

## | Polymer Compounding Application |



Intelli-Compounder w/ Side feeding system



i-RheoComp®



Intelligent Compounder

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

- Barrel Diameter 25mm, L/D 36 ~
- Side feeding system, vent port, liquid injection ports available
- Throughput : depends on test materials : 5~6kg/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 10, 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



Twin screw feeder



Single screw feeder



Variable length pelletizer

**MKE**  
MYUNG KIM EXTRUSION

# MKE Solution for Color Compounders

(MKE EN13900 FPV compatible tester)

**NEW**

## EN13900

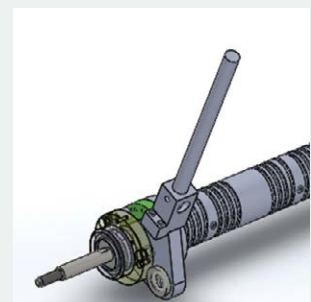
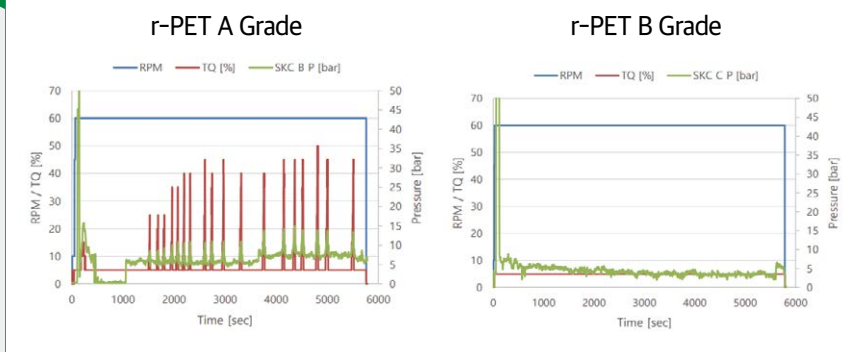
Color master batch 분산성 시험 방법  
Recycled PET의 이물 혼입 시험

- 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



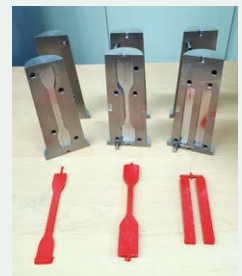
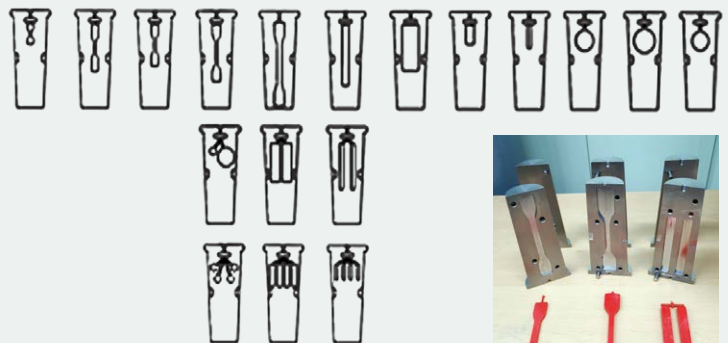
Screen changer

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

## MKE 실험실용 소형 사출 성형기 (MKE Mini-Ject)

### 물성시험제작용 실험실용 사출 성형기

- Shot volume : 3.5 to 20ml
- Two ways melt accommodation
  - Conduction melting
  - Transfer from micro compounder
- High injection pressure(1,500~2,100bar)
- Max temp. : 400°C
- Melt transfer unit (w/ 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)



## MKE 자동제어 소형 사출 성형시스템 (MKE Mini-Ject 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.





RheoComp®  
Batch Mixer System



Micro-Compounder

## 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

Micro-Compounder  
Intelligent Compounder  
Mini-Ject (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

