

High-performance, high-reliability and high-productivity
electric injection molding machine

FANUC

ROBOSHOT α -SiA series



FANUC standard CNC and servo system installed
Electric injection molding machine achieves high quality,

FANUC ROBOSHOT α -SiA series

Applying the latest
CNC & servo
technology



High-Performance of Molding

Precision and stable molding

Highly-Rigid and Low-Friction Mechanism

Additional Servo Axis Control

Good combination
with FANUC Robot



High-Sustainability

High-Reliability

Minimize Downtime

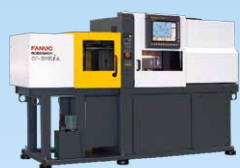
ROBOSHOT-LINK*i*

Ease of Use

Fully Enclosed Cover Style

Conformity to Safety Standards

Robot System



α -S15*iA*

α -S30*iA*

α -S50*iA*

α -S100*iA*

α -S130*iA*

high reliability and high productivity

High-Performance of Molding

FANUC standard CNC achieves superior molding repeatability
Highly-rigid and low-friction mechanism achieve precision molding
Additional servo axis control achieves extra value in molding

High-Sustainability

FANUC standard servo system achieves high-reliability and lower energy consumption
High-precision AI protect function minimizes downtime
ROBOSHOT-LINK*i* manages product and quality information

Ease of Use

Fully enclosed cover style achieves both safety and accessibility
Conformity to safety standards supports molding plant globalization
Robot system with superior interoperability



α-S300iA



α-S450iA



α-S150iA



α-S220iA



α-S250iA

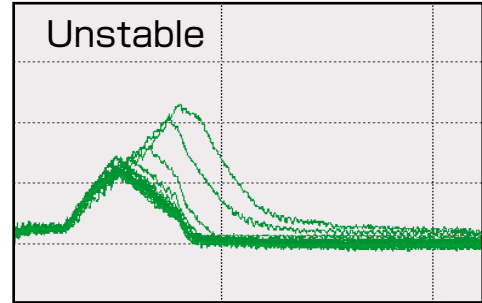
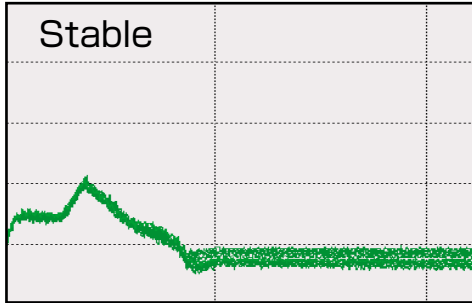
The outer view and operation differ in specifications.

High-Performance of Molding

FANUC standard CNC achieves superior molding repeatability

Backflow monitor

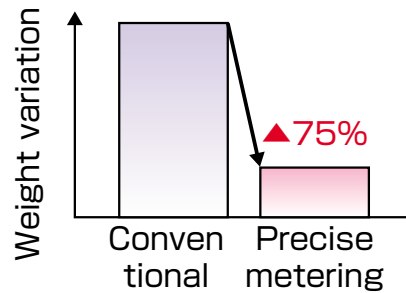
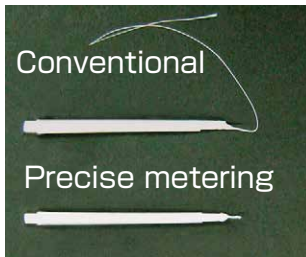
- Detects backflow precisely at injection start, Displays injection repeatability in graph



Backflow monitor screen

Precise metering

- Controls screw movement during metering optimally, Prevents string and silver streaking
- Eliminates backflow of resin, Stabilizes injection volume and reduces weight variation of molded products



Precise connector
Resin : PA66

Highly-rigid and low-friction mechanism achieves precision molding

Clamping unit

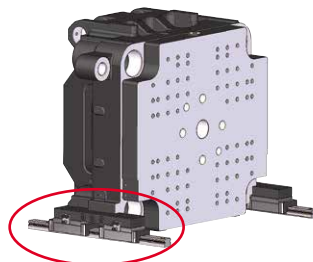
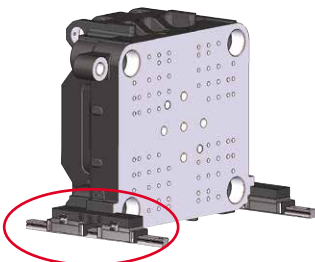
- Selectable two types of moving platen*
- Low-friction linear guided support*

Injection unit

- Adopts low-friction linear guides, Achieves smooth injection and metering motion

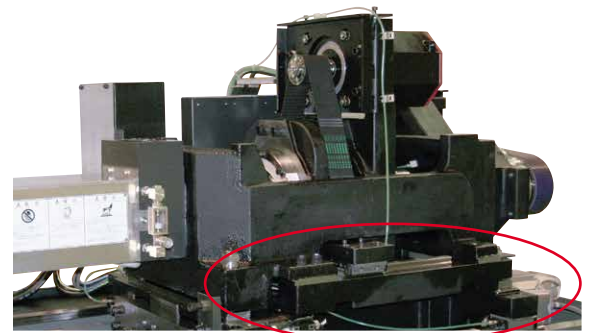
[Single platen]
Expands mold area

[Double platen]
Pursuits high rigidity



Magnetic clamping system
Three plates mold etc.

Multi cavities
Thin wall molding etc.



Low-friction linear guides

Standard for α -S15iA/ α -S30iA/ α -S50iA/ α -S100iA/ α -S130iA

*:Optional. Available options differ in region and model.

Additional servo axis control achieves extra value in molding (Option)

Additional servo axis control advances ROBOSHOT further

[Suitable feeding device]

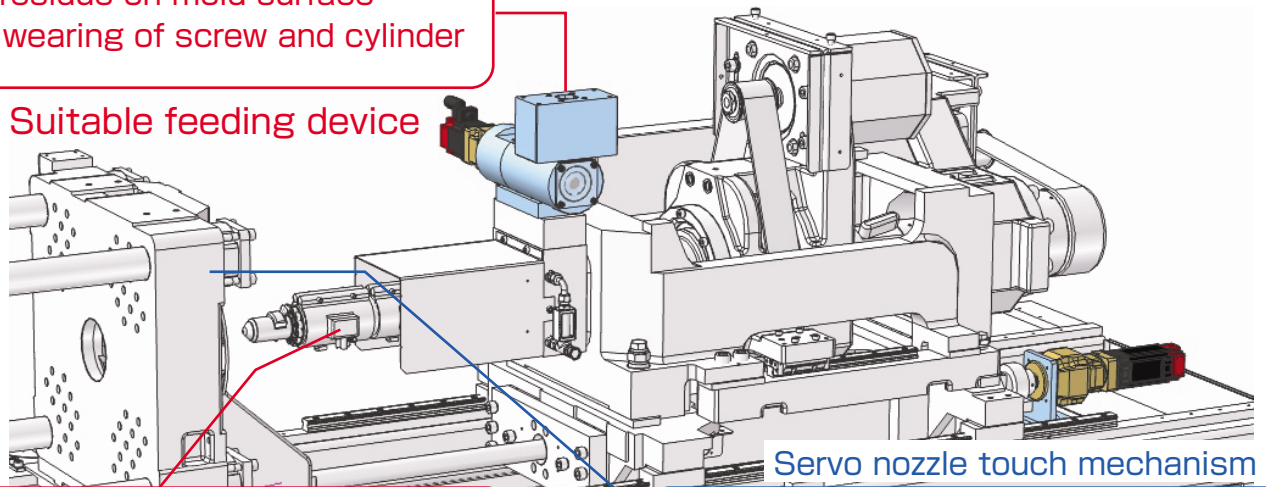
- Achieves optimal amount of resin supply by feedback control, Achieves long term molding repeatability

[Servo nozzle touch]

- Controls nozzle touch force during molding cycle optimally

- Promotes gas ventilation
- Reduces residue on mold surface
- Prevents wearing of screw and cylinder

Suitable feeding device



- Reduces shear heating
- Prevents molding defects such as burn

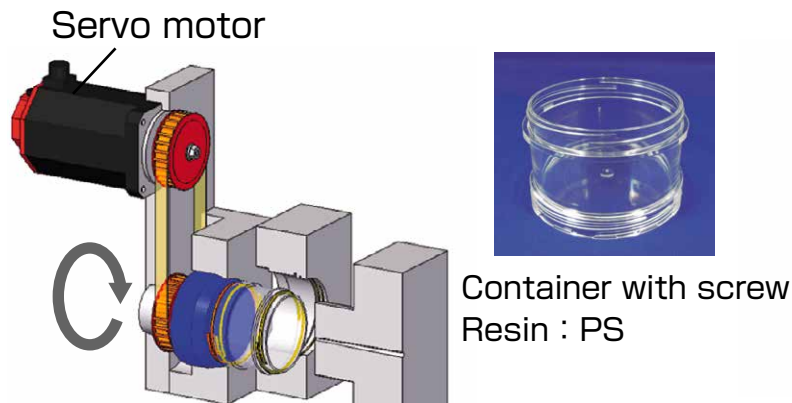
Superior platen parallelism

- Achieves precise molding and longer life of mold

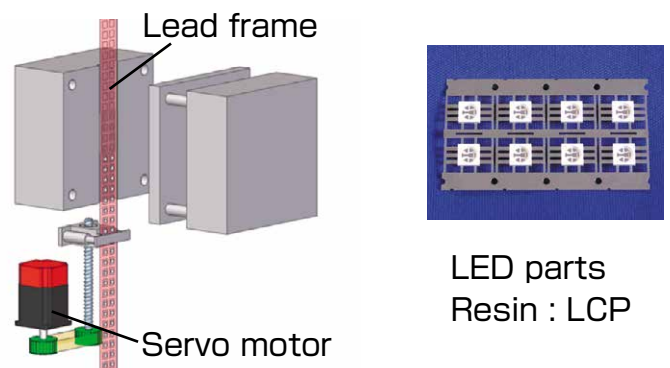
Additional servo axis control achieves versatile applications*

- High-speed and accuracy positioning by FANUC servo technology
- No additional control equipment required, Integrated into ROBOSHOT operation

[Unscrewing molding]



[Hoop molding]



*Only additional servo system is offered

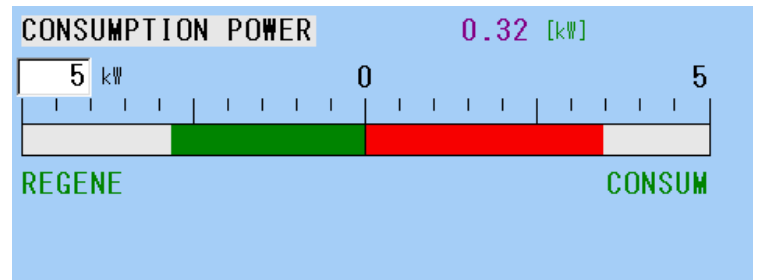
High-Sustainability

FANUC standard servo system achieves high-reliability and lower energy consumption

- High-efficiency servo system reuses regenerated power during deceleration of motors, Excellent energy saving performance
- Displays consumption power and regenerated power on operation screen
- Monitors power consumption including auxiliary equipments*



High-performance servo motors and amplifiers αi series



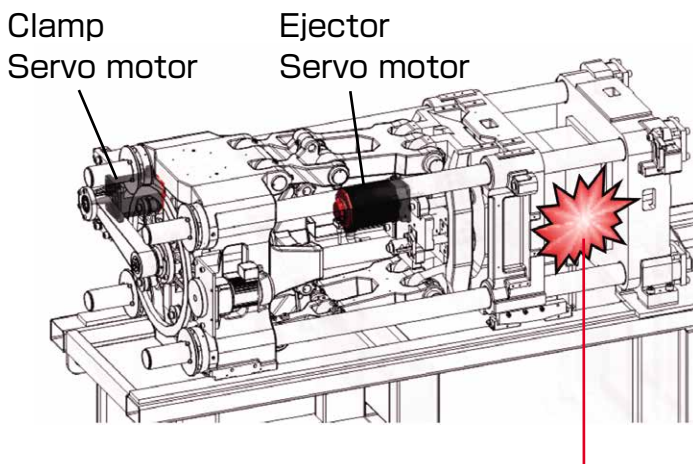
Consumption power monitor screen

*:Optional. Available options differ in region and model.

High-precision AI protect function minimizes downtime

AI mold protection

- Detects remaining molded products during mold closing or abnormal sliding core motion during mold opening with high-accuracy
- Interrupts motion immediately after abnormal status detected, Protects mold and ejector pin from damage



Experimental example of AI mold protection by using paper cup



AI mold protection ON



AI mold protection OFF

1. Realtime monitoring
Monitors load of servo motors in every cycle

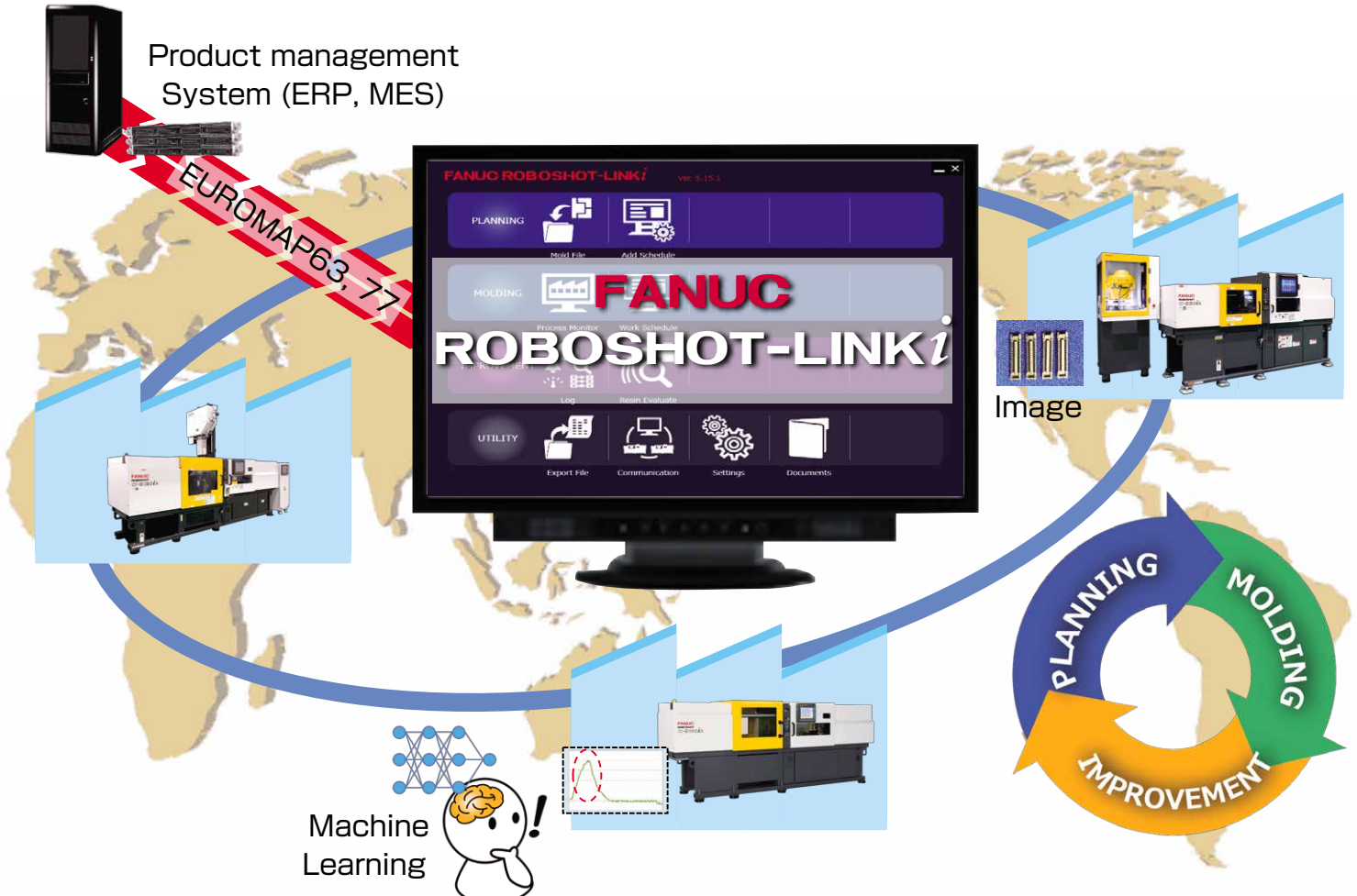
2. Problem detection
Detects load deviation precisely caused by remaining molded products etc.

3. Protection
Interrupts clamp and ejector motion immediately

ROBOSHOT-LINK*i*

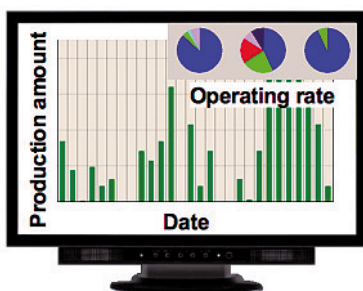
ROBOSHOT-LINK*i* manages product and quality information (Optional)

- Production and quality information management tool supports larger-scale and globalization of molding plant
- Realization of traceability by molding image
- Interfaces available for EUROMAP 63 and EUROMAP 77
- Realization of preventive maintenance on machine learning



Product information management

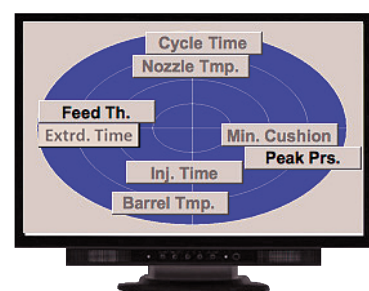
- Achieves lower cost and higher operation rate
- Monitors consumption power including auxiliary equipments



Visualization of production amount and operating time

Quality information management

- Achieves traceability and advanced quality
- Investigates cause of failure and molding repeatability



Visualization of cause of failure

Ease of Use

Fully enclosed cover style achieves both safety and accessibility

High-level safety

- Fully enclosed cover style prevents contact with moving part and high temperature part with high-level safety
- Achieves compact machine dimensions

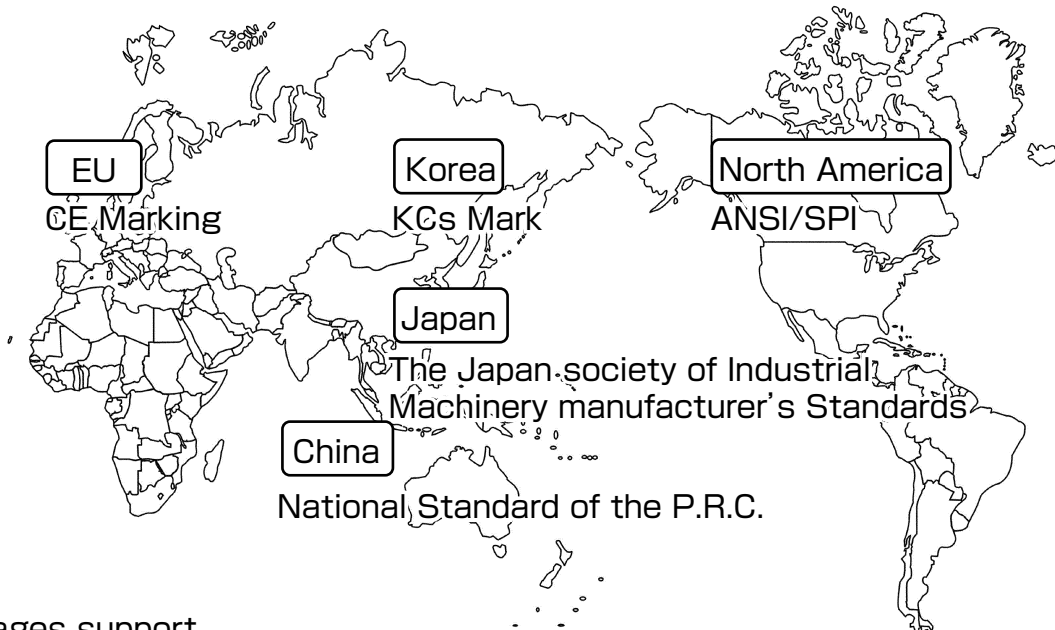
Superior accessibility

- Wide opened hopper maintenance area, Enhances accessibility



Conformity to safety standards supports molding plant globalization

Regional safety standards and multiple languages support



Multiple languages support

Japanese / English / Chinese simplified / Chinese traditional / Korean / Thai / Vietnamese / Indonesian / German / French / Italian / Spanish (Mexican) / Portuguese / Czech / Finnish / Dutch / Hungarian / Polish / Danish / Turkish / Swedish

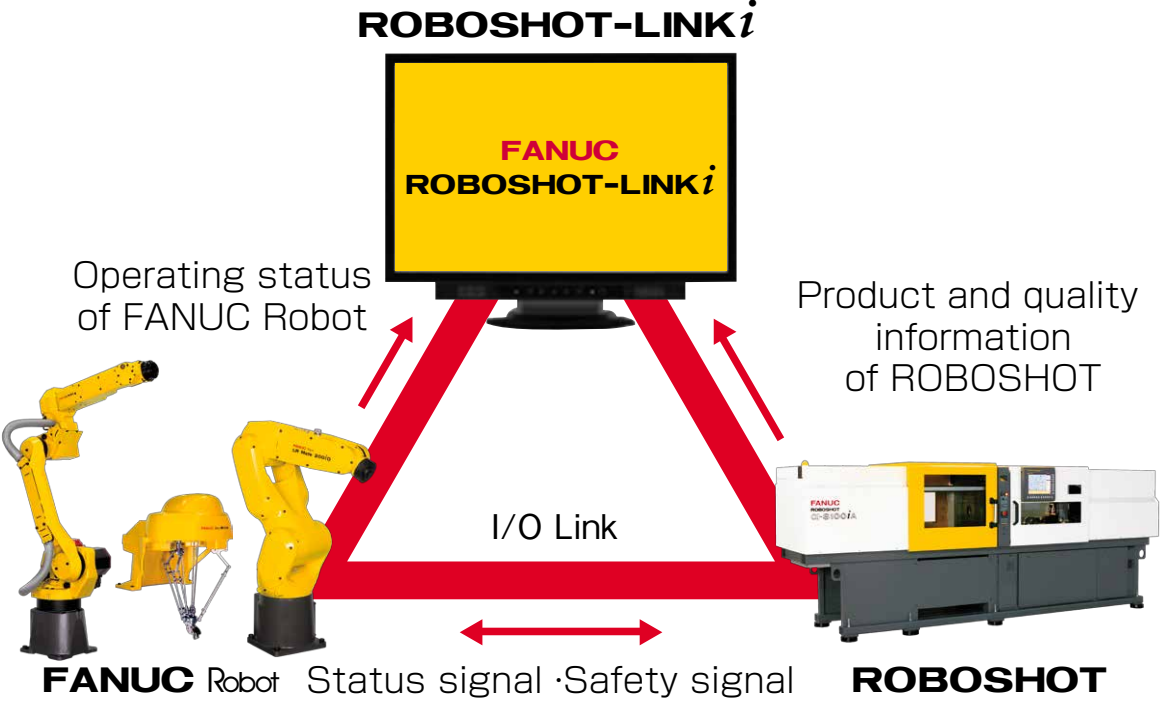
Safety requirements differ in region

Please confirm the latest safety requirements of the region where ROBOSHOT is installed.

Robot system with superior interoperability*

Superior interoperability

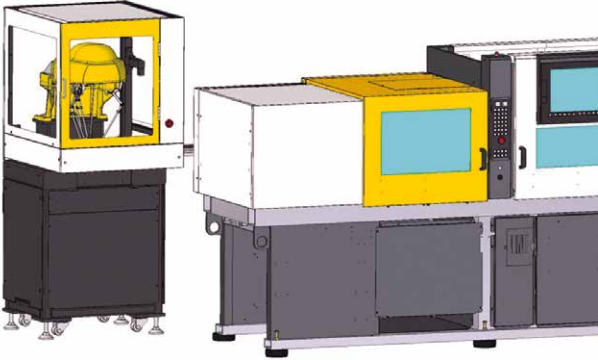
- Wire-saving connection by high speed and reliable I/O Link
- Allows principle robot operation on ROBOSHOT screen
- "Visualization" of molding plant by ROBOSHOT-LINK*i*



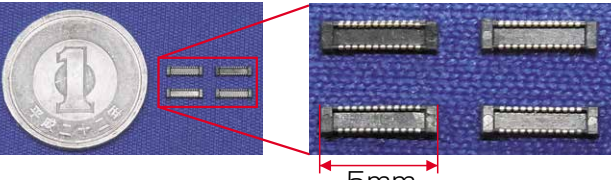
Robot systemization example

[Automatized check · sort]

1. Precision and stable molding by ROBOSHOT



2. Automatic check and sort after parts detection by FANUC Robot



Precision connector
Resin : LCP

[Automatized check · insert]

1. Precision insert of parts by FANUC Robot



2. Precision and stable molding by ROBOSHOT



Automotive interior part
Resin : ABS

*:Optional. Available options differ in region and model.

Application to a range of molding fields

Thin wall light guide panel

Decompression control at injection to packing (8 modes)

- Prevents sink marks and warpage, Achieves uniformed thickness distribution

High pressure resistance cylinder and High pressure filling mode*

- Achieves thinner wall molding by injection with ultra high pressure



Light guide panel for smartphone
Resin : PC

Precise lens

Moving platen support by linear guides*

- Superior platen parallelism and straightness of clamp motion

Screw and cylinder for lens molding

- Optimized screw design and surface treatment achieves high-quality molding



Camera lens for smartphone
Resin : COC

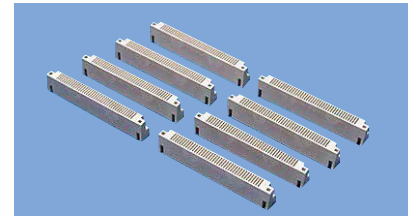
Precise connector

Precise metering

- Reduces weight variation and eliminates stringy, Achieves long term molding repeatability

Nozzle for Liquid Crystal Polymer*

- Optimized nozzle and temperature control for LCP achieves high-quality molding, Prevents resin carbonization



Precise fine-pitch connector
Resin : LCP

Automotive parts

Single platen

- Expanded mold installation area, Supports magnetic clamping system

Hot runner controller (Built-in)*

- Integrated into ROBOSHOT operation, Achieves precise temperature control



Automotive connector
Resin : PBT

Medical parts

Fully enclosed cover style

- Clean and quiet, Ideal for molding in clean room

Suitable feeding device*

- Prevents burn and carbonization, Suitable for molding with transparent resin



Syringe
Resin : COP

Two components molding

Second injection unit*

- FANUC CNC installed, operate from ROBOSHOT screen

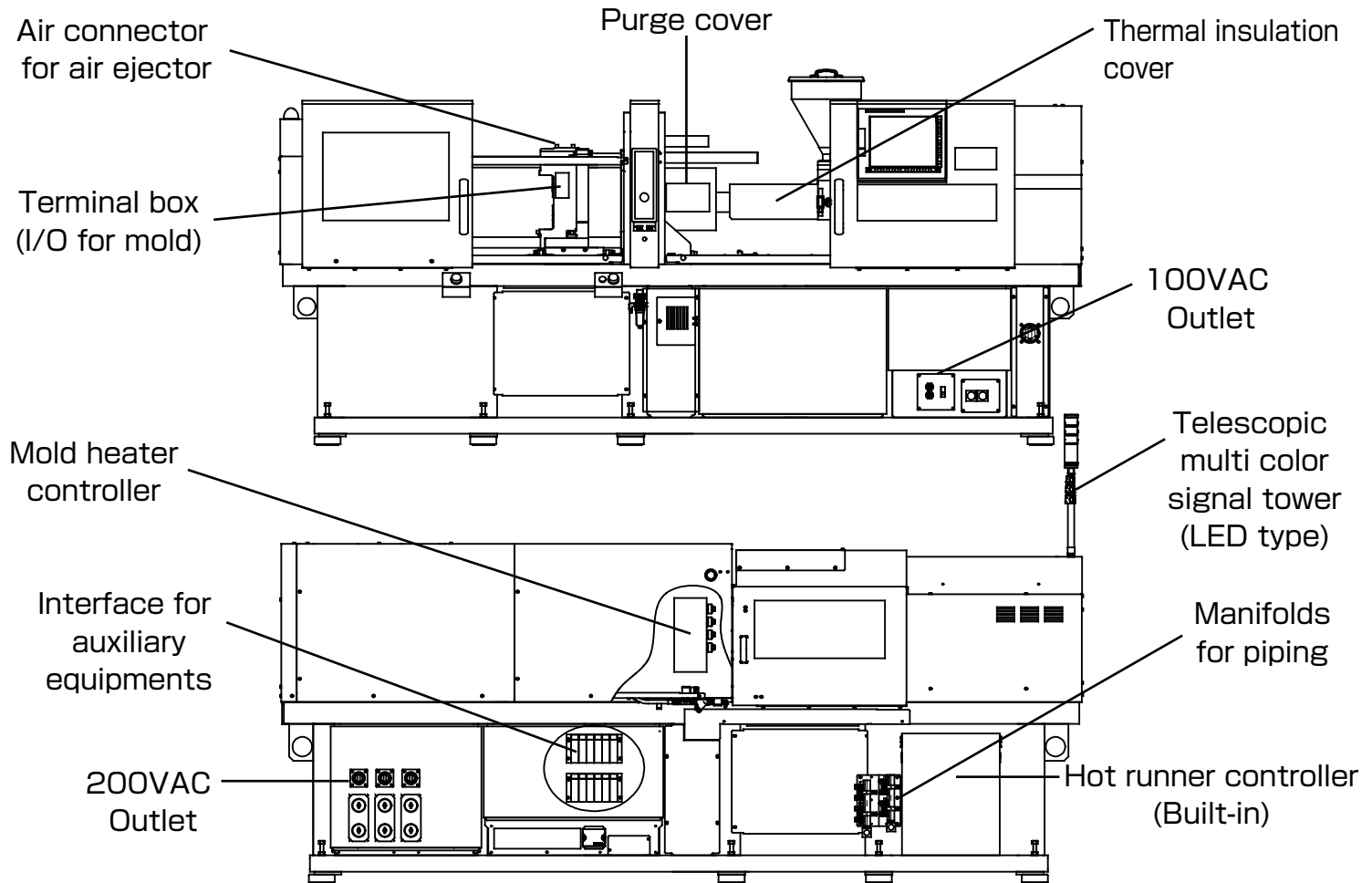
Additional servo axis control*

- Integrated into ROBOSHOT operation, Achieves high-speed and accuracy positioning of rotary table



Automotive interior part
Resin : ABS+PP

Options



Optional, Available options differ in region and model. Refer to the "specification list" for details on the options.

Service & Support

Excellent Maintenance Services

FANUC service team delivers customer trust and confidence based on direction of service "Maximizing Uptime", "Global Service" and "Lifetime maintenance".

Service First

Conforming to the spirit of "Service First", FANUC provides lifetime maintenance to its products for as long as they are used by customers, through more than 260 service locations supporting more than 100 countries and regions throughout the world.

Maximizing Uptime



FANUC ACADEMY

FANUC ACADEMY operates training programs on FANUC ROBOSHOT which focus on practical operations and molding know how and maintenance.



Specifications

Item		Unit	α-S15iA				α-S30iA						α-S50iA															
Clamping unit	Tonnage	kN	150 (15tonf)				300 (30tonf)						300 (30tonf) High precision clamp															
	Maximum and minimum mold height	mm	260/130				330/150						330/150															
	Clamping stroke	mm	160				230						230															
	Tie bar spacing (H x V)	mm	260x235				310x290						310x290															
	Platen size (H x V)	mm	355x340				440x420						440x420															
	Ejector point / Ejector force / Ejector stroke	point/kN/mm	1/7 (0.7tonf) / 50				1/8 (0.8tonf) / 60						1/8 (0.8tonf) / 60															
Injection unit	Screw diameter	mm	14	16	18	14	16	18	20	22	14	16	18	20	22	20	22	26	28	32	14	16	18	20	22	26	28	32
	Maximum injection volume	cm ³	9	11	19	9	11	19	24	29	9	11	19	24	29	24	29	50	58	76	9	11	19	24	29	50	58	76
	Injection specification	---	525mm/s				525mm/s						525mm/s															
	Maximum injection pressure (High pressure filling mode)	MPa	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum injection pressure	MPa	250	250	230	250	250	260	270	220	250	250	260	270	220	280	260	210	190	150	250	250	260	280	260	210	190	150
	Maximum pack pressure	MPa	250	230	190	250	250	260	250	200	250	250	260	250	200	280	240	190	160	130	250	250	260	280	240	190	160	130
	Maximum injection speed	mm/s	525				525						525															
	Maximum screw rotation speed	min ⁻¹	450				450						450															
	Injection specification	---	800mm/s				800mm/s						800mm/s															
	Maximum injection pressure (High pressure filling mode)	MPa	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum injection pressure	MPa	250	250	230	250	250	260	270	220	250	250	260	270	220	280	260	210	190	---	---	---	---	---	---	---	---	---
	Maximum pack pressure	MPa	250	230	190	250	250	260	250	200	250	250	260	250	200	280	240	190	160	---	---	---	---	---	---	---	---	---
Maximum injection speed	mm/s	800				800						800																
Maximum screw rotation speed	min ⁻¹	450				450						450																

Item		Unit	α-S100iA						α-S130iA						α-S150iA											
Clamping unit	Tonnage	kN	1000 (100tonf)						1300 (130tonf)						1500 (150tonf)											
	Maximum and minimum mold height	mm	450/150						---						500/200											
	Clamping stroke	mm	520/220						570/200						575/275											
	Tie bar spacing (H x V)	mm	460x410						530x530						560x510											
	Platen size (H x V)	mm	660x610						730x730						800x750											
	Ejector point / Ejector force / Ejector stroke	point/kN/mm	5 / 25 (2.5tonf) / 100						5 / 25 (2.5tonf) / 100						5 / 35 (3.5tonf) / 150											
Injection unit	Screw diameter	mm	22	26	28	32	36	40	26	28	32	36	40	22	26	28	32	36	40	32	36	40	44	48	52	
	Maximum injection volume	cm ³	29	50	58	103	147	181	50	58	103	147	181	29	50	58	103	147	181	121	153	188	268	318	442	
	Injection specification	---	200mm/s						200mm/s						200mm/s											
	Maximum injection pressure	MPa	260	260	240	220	190	160	260	240	220	190	160	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum pack pressure	MPa	260	260	240	200	170	140	260	220	200	170	140	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum injection speed	mm/s	200						200						---											
	Maximum screw rotation speed	min ⁻¹	300						300						---											
	Injection specification	---	330mm/s						330mm/s						330mm/s (Small capacity)											
	Maximum injection pressure (High pressure filling mode)	MPa	340	340	320	270	220	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum injection pressure	MPa	260	260	240	220	190	160	260	240	220	190	160	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum pack pressure	MPa	260	260	220	200	170	140	260	220	200	170	140	---	---	---	---	---	---	---	---	---	---	---	---	---
	Maximum injection speed	mm/s	330						330						330											
Maximum screw rotation speed	min ⁻¹	450						450						450												
Injection specification	---	500mm/s						500mm/s						500mm/s (Small capacity)												
Maximum injection pressure (High pressure filling mode)	MPa	340	320	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection pressure	MPa	260	260	240	220	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum pack pressure	MPa	260	260	220	200	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection speed	mm/s	500						500						---												
Maximum screw rotation speed	min ⁻¹	450						---						---												
Injection specification	---	1000mm/s (Ultra high speed)						1200mm/s (Ultra high speed)						---												
Maximum injection pressure	MPa	400	380	350	270	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum pack pressure	MPa	380	350	300	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection speed	mm/s	1000						---						---												
Maximum screw rotation speed	min ⁻¹	450						---						---												

Item		Unit	α-S220iA						α-S250iA						α-S300iA						α-S450iA										
Clamping unit	Tonnage	kN	2200 (220tonf)						2500 (250tonf)						3000 (300tonf)						4500 (450tonf)										
	Maximum and minimum mold height	mm	650/250						650/300						650/300						1000/350										
	Clamping stroke	mm	550						600						600						900										
	Tie bar spacing (H x V)	mm	650x650						710x635						810x710						920x920										
	Platen size (H x V)	mm	900x900						1030x960						1130x1030						1300x1300										
	Ejector point / Ejector force / Ejector stroke	point/kN/mm	13 / 35 (3.5tonf) / 150						13 / 80 (8.0tonf) / 200						13 / 80 (8.0tonf) / 200						21 / 150 (15.0tonf) / 250										
Injection unit	Screw diameter	mm	32	36	40	44	48	52	26	28	32	36	40	44	48	52	40	44	48	52	56	64	68	56	64	68	72	80	90	100	
	Maximum injection volume	cm ³	121	153	188	268	318	442	50	58	103	121	153	188	268	318	442	188	268	318	442	640	836	944	640	836	944	1059	1810	2290	2827
	Injection specification	---	200mm/s						1200mm/s						330mm/s						240mm/s										
	Maximum injection pressure	MPa	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Maximum injection pressure	MPa	280	280	260	220	190	160	450	450	380	280	280	260	220	190	160	280	280	270	240	225	175	155	---	---	---	---	---	---	
	Maximum pack pressure	MPa	280	280	220	190	160	130	450	430	330	280	280	260	220	190	160	280	260	240	220	195	150	130	---	---	---	---	---	---	
	Maximum injection speed	mm/s	200						1200						330						240										
	Maximum screw rotation speed	min ⁻¹	300						450						400						180										
	Injection specification	---	330mm/s						---						---						---										
	Maximum injection pressure (High pressure filling mode)	MPa	380	345	280	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Maximum injection pressure	MPa	280	280	260	220	190	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	Maximum pack pressure	MPa	280	280	260	220	190	160	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection speed	mm/s	330						---						---						---											
Maximum screw rotation speed	min ⁻¹	400						---						---						---											

Note: When high filling mode is used, a special cylinder is needed. Molding conditions may be restricted depending on the screw diameter. For details, see a separate list of specifications.

FANUC CORPORATION

3580, Shibokusa, Oshino-mura, Minamitsuru-gun, Yamanashi, 401-0597, JAPAN Phone: (+81)555-84-5555 <https://www.fanuc.co.jp/>

- The content of this catalog describes the specifications as of Jul., 2023.
- All specifications are subject to change without notice.
- No part of this catalog may be reproduced in any form.
- The photo includes options.
- The products in this catalog are controlled based on Japan's "Foreign Exchange and Foreign Trade Law". The export from Japan may be subject to an export license by the government of Japan. Further, re-export to another country may be subject to the license of the government of the country from where the product is re-exported. Furthermore, the product may also be controlled by re-export regulations of the United States government. Should you wish to export or re-export these products, please contact FANUC for advice.

