

Highly-reliable and High-performance
Electric Injection Molding Machine

FANUC

ROBOSHOT α -SiB series



FANUC standard CNC and servo system installed
Highly-reliable and High-performance Electric injection molding machine

FANUC ROBOSHOT α -SiB series



ROBOSHOT α -S50iB



ROBOSHOT α -S100iB

High-Performance of Molding

FANUC standard CNC achieves superior molding repeatability
High-rigidity and low-friction mechanism achieve precision molding
Additional servo axis control and second injection unit achieves extra value in molding

Maximizing Uptime

FANUC standard servo system achieves high-reliability and lower energy consumption
High-precision AI protection minimizes downtime
Network capability to support molding plant IoT

Ease of Use

21.5-inch large display unit achieves superior operability
Conformity to safety standards supports molding plant globalization
Robot system to promote automation of molding plant



Vertical second injection unit
ROBOSHOT SI-20A



Horizontal second injection unit
ROBOSHOT SI-300HA



Production and quality information management tool
ROBOSHOT-LINKi2



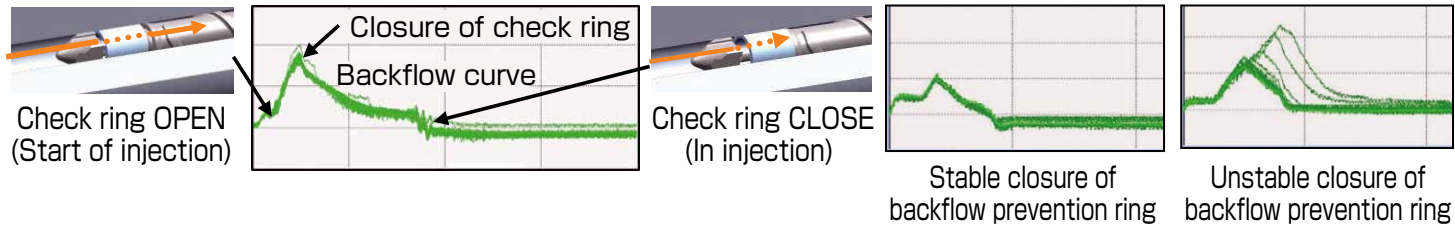
ROBOSHOT Robot package

High-Performance of Molding

FANUC standard CNC achieves superior molding repeatability

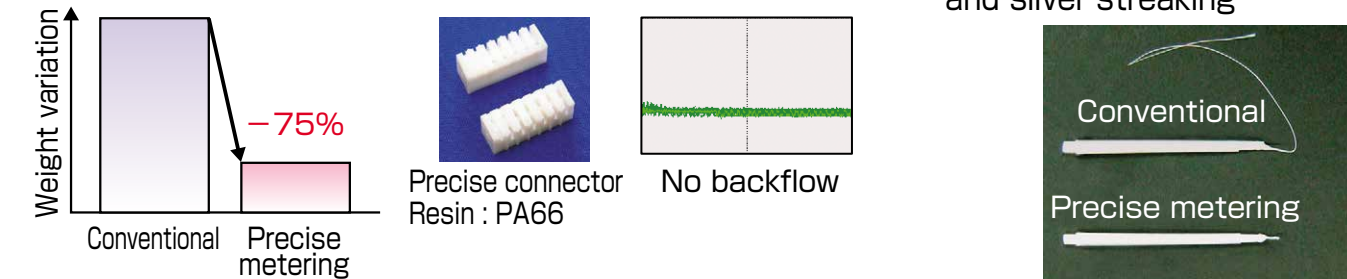
Backflow monitor

- Detects backflow precisely at injection start, Displays injection repeatability in graph
- Enables to decide replacing time of check ring and verifying stability of precise metering control



Precise metering

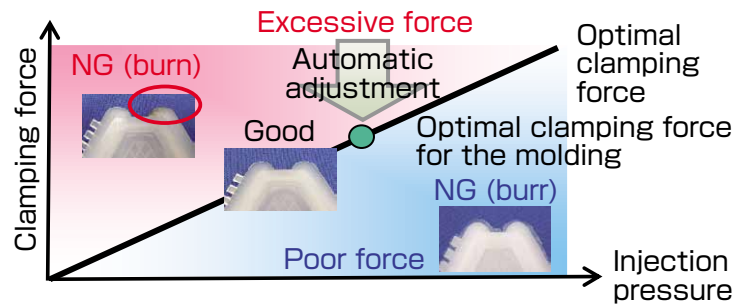
- Eliminates backflow of resin, Stabilizes injection volume and reduces weight variation of molded products
- Controls screw movement during metering optimally, Prevents string and silver streaking



Control technology achieves high-quality and stable molding

Precision clamping force control

- Adjusts clamping force automatically to be optimal for the molding by clamping force sensor
- Prevents molding defects such as burn and burr, Reduces frequency of mold maintenance

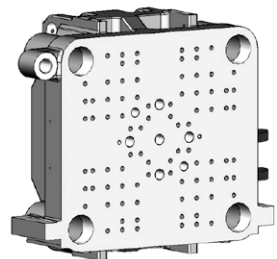


High-rigidity and low-friction mechanism achieves precision molding

Clamping unit

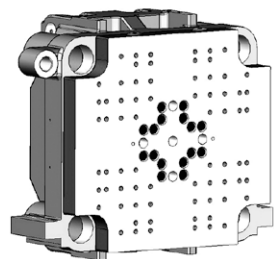
- Selectable two types of moving platen
- Low-friction linear guided support*

[Single platen]
Available for large die height mold



Magnetic clamping system
Three plates mold etc.

[Double platen]
Pursuits high rigidity

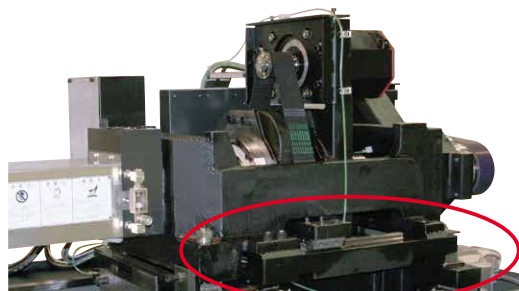


High number cavities
Thin wall molding etc.

Available for α -S50iB/ α -S100iB

Injection unit

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



Low-friction linear guides

Standard for α -S15iB/ α -S30iB/
 α -S50iB/ α -S100iB/ α -S130iB

*Optional. Available options differ in region and model.

Additional servo axis control and second injection unit achieves extra value in molding (Option)

Second injection unit

- FANUC standard CNC achieves accuracy and repeatability as same level as ROBOSHOT
- Integrated control into ROBOSHOT operation screen (Second injection unit, Rotary table, Integrated hot runner controller)*

[Vertical second injection unit]

ROBOSHOT SI-20A*1



Mechanical unit Control unit *1 Available for models with ROBOSHOT S-2000iB series or later and clamping force of 50 tons or more

[Horizontal second injection unit]

ROBOSHOT SI-300HA*2



Built-in control unit *2 Available for models with ROBOSHOT α -SiA series or later and clamping force of 100 tons or more

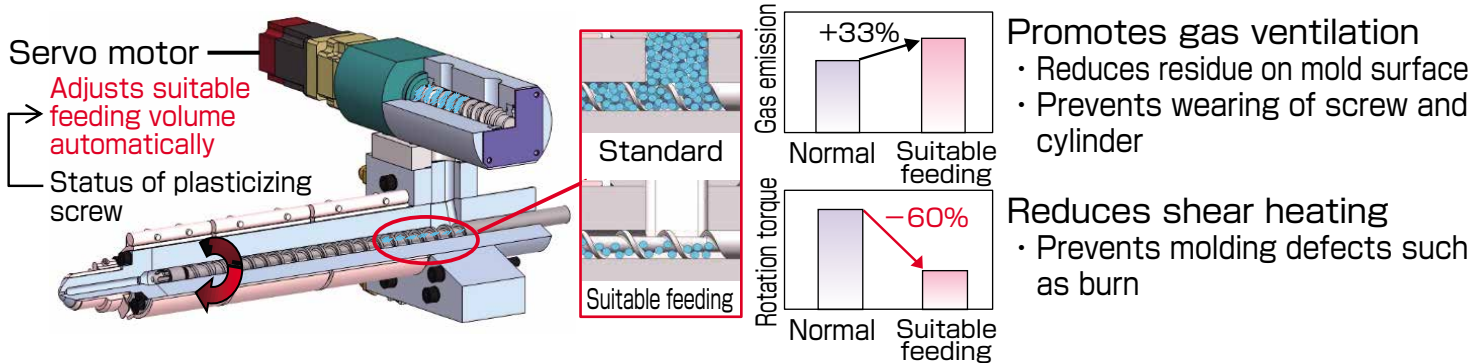
Item	Unit	SI-20A						SI-300HA			
		14	16	18	20	22	26	28	32	36	
Injection unit	Screw diameter	mm	9	11	13	15	17	19	21	23	
	Maximum injection volume	cm ³	9	11	13	15	17	19	21	23	
	Maximum injection pressure (High pressure filling mode)	MPa	--	--	--	--	--	340	320	270	220
	Maximum injection pressure	MPa	200	180	140	130	120	260	240	220	190
	Maximum pack pressure	MPa	180	160	120	110	100	260	220	200	170
	Maximum injection speed	mm/s	300						330		
	Maximum screw rotation speed	min ⁻¹	250						450		

Note : Molding conditions may be restricted depending on the screw diameters. For details, see the attached specification list.

Additional servo axis control advances ROBOSHOT further*

[Suitable feeding device]

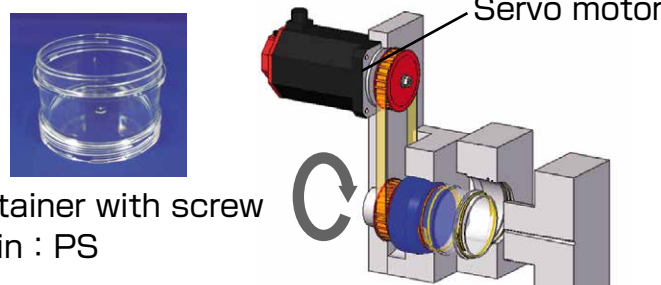
- Achieves optimal amount of resin supply by feedback control, Achieves long term molding repeatability



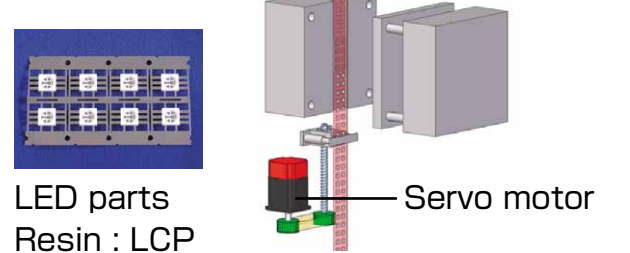
Additional axis control achieves versatile applications*

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

[Unscrewing molding]



[Hoop molding]

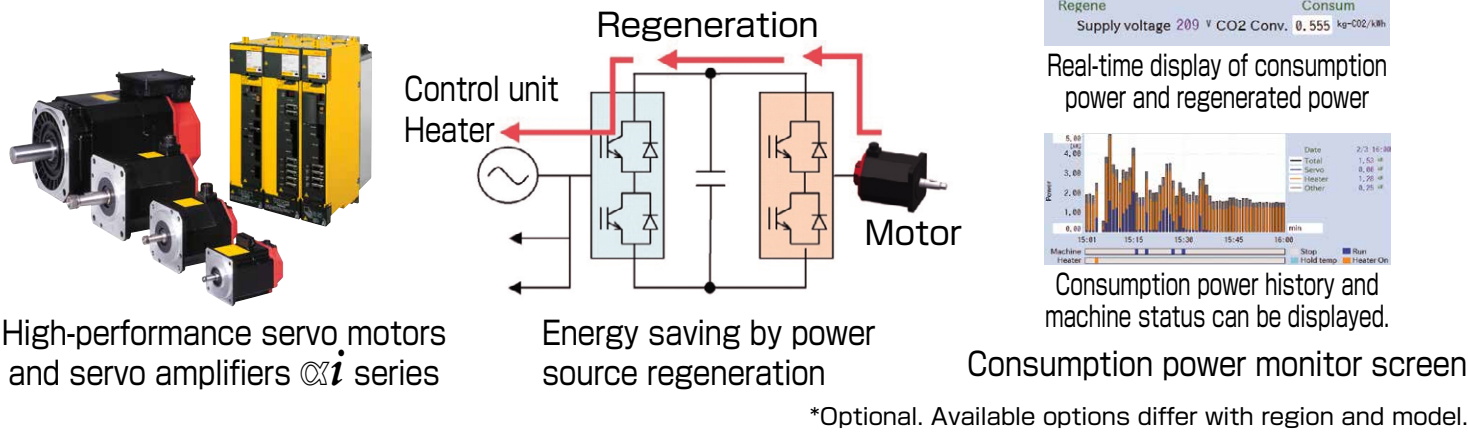


*Only additional servo system will be offered

Maximizing Uptime

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

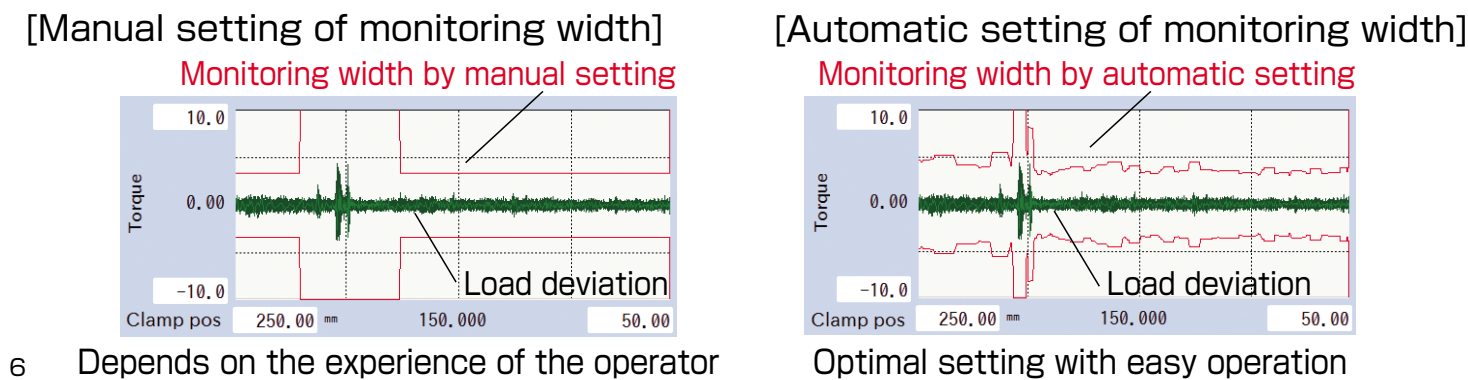
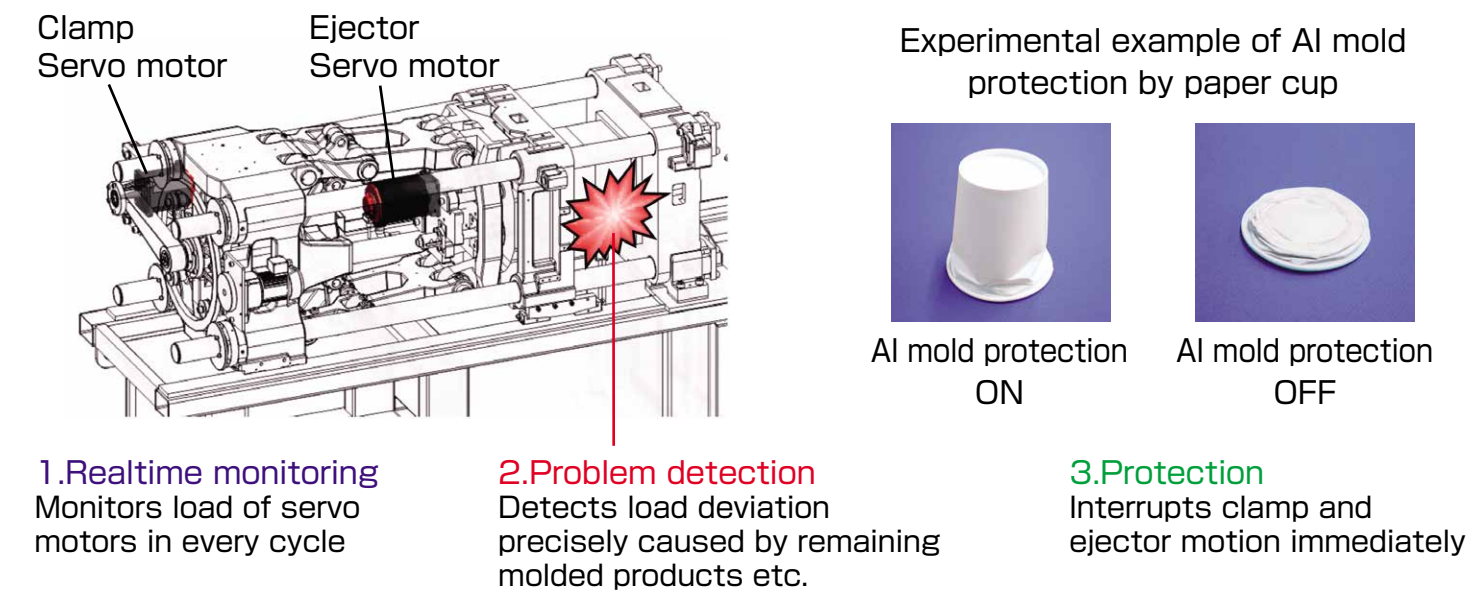
- High-efficiency servo system reuses regenerated power during deceleration of motors, Excellent energy saving performance
- Displays consumption power and regenerated power on operation screen
- Monitors power consumption including auxiliary equipment*



High-precision AI protection 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
- The load deviation during mold closing and opening can be detected, automatic setting of monitoring width is available



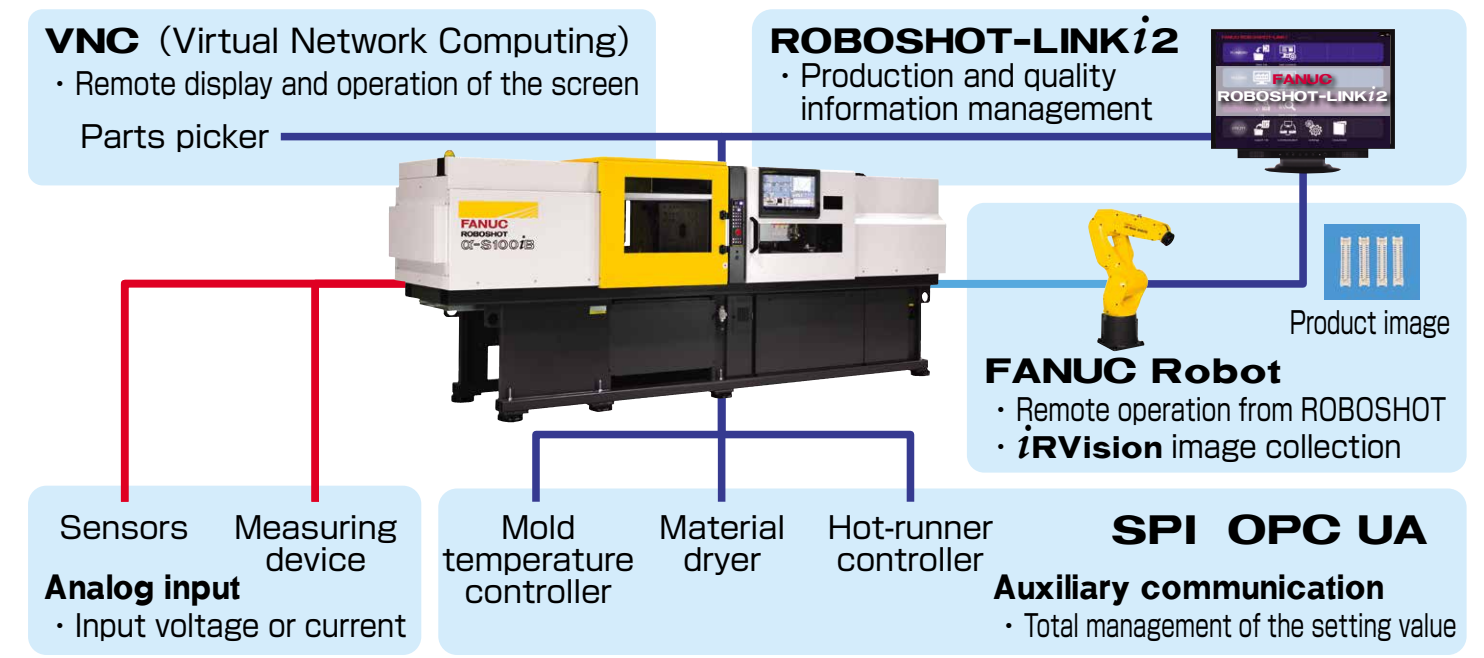
Network capability to support molding plant IoT

ROBOSHOT-LINKi2*

- Production and quality information management tool supports larger-scale and globalization of molding plant
 - Supports Web browsers and can be displayed on various devices such as PC and tablet
 - Supports communication standards (EUROMAP63, EUROMAP77) for production management system (ERP, MES)
 - Display on ROBOSHOT screen (α -SiB series)
- *Option



IoT of molding cell (Network between injection molding machine and peripheral devices, VNC)



Ease of Use

21.5-inch large display unit achieves superior operability

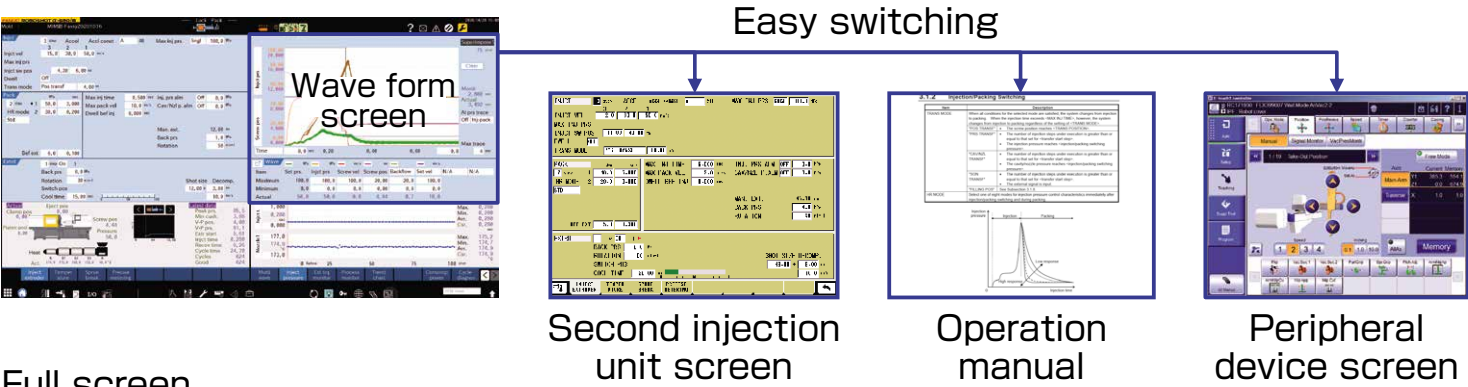
FANUC PANEL iH Pro with the latest 21.5-inch display unit

- Achieves doubled display area by full HD high-definition display screen
- Intuitive operation by swiping and multi-touch



Divided screen

- Selectable from various screens
- The horizontally arranged two screens improving superior visibility and operability.



Full screen

- **ROBOSHOT-LINKi2** displayed in full screen



Conformity to safety standards supports molding plant globalization

Conform to ISO 20430, the international safety standard for injection molding machines

- Fully enclosed cover style inhibits operator from contacting moving part and high temperature part with high-level safety
- Electromagnetic lock is installed on the safety door as standard equipment
- Cylinder heat encover with improved safety



Multiple languages support

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

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

Robot system to promote automation of molding plant

Easy connection between ROBOSHOT and FANUC Robot by FL-net

- ROBOSHOT (α -SiB series) and FANUC Robot can be connected by single Ethernet cable
- Remote operation of FANUC robot on ROBOSHOT screen is available



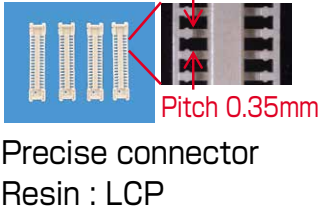
ROBOSHOT Robot package

- Package product of fundamental elements of Robot system to start automatization
- Compact design, Easy installation, Easy setting and Easy operation

Automatic inspection and alignment process by delta robot



Automatic insert and taking out process by LR Mate



Application to a range of molding fields

Precision lens

Moving platen support by linear guides*

- Prevents sink marks and warpage, Achieves uniform thickness distribution

Screw and cylinder for lens molding

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



Camera lens for smart phone
Resin : COC

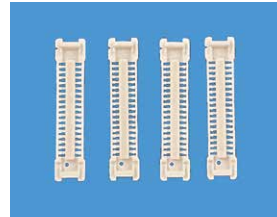
Precision connector

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

- Available for large die height mold, magnetic clamping system etc.

Hot runner controller (Built-in)*

- Integrated into ROBOSHOT operation, Achieves precise temperature control



Automotive connector
Resin : PBT

Medical parts

Medical package*

- Package options suitable for medical parts molding

Suitable feeding device*

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



Syringe
Resin : COP

Multi-components molding

Second injection unit (Vertical, Horizontal)*

- FANUC CNC installed, operation from ROBOSHOT screen

Additional servo axis control*

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



Waterproof connector
Resin : PBT+Silicone

Various molding materials

Screw and cylinder suitable for various molding materials

- Standard machine equipped with dedicated screw and cylinder enables various moldings

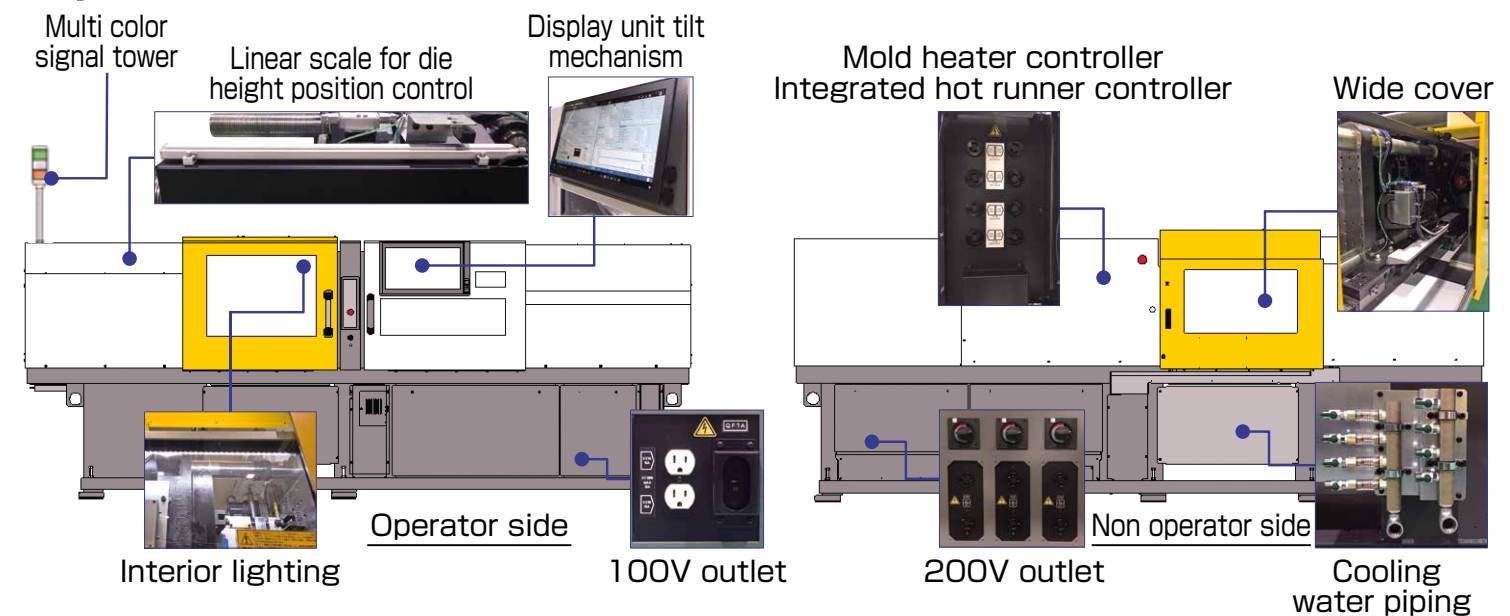
Various molding materials are available

- Silicone, MIM, CIM, Thermoset resin, carbon fiber reinforced resin, etc.



Endoscopic forceps
Resin : PP+Metal powder

Options



ROBOSHOT α -SiB Medical package

[Tiebarbushless clamping specification]

[Options for medical parts molding]
(Individual order is available)

Tiebarbushless design
Reinforced bearing
Linear guide
Reinforced base frame



- (1) White painted cover or Stainless cover
- (2) Plated platen
- (3) Anti-rust linear guide
- (4) Food grade grease
- (5) High rigidity mount

Optional, Available options differ with region and model.
Refer to the attached "specification list" for the 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 270 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.



Clamping unit	Item	Unit	α-S100T1B						α-S130T1B						α-S220T1B						α-S250T1B						
	Tonnage	kN	1000 (100tonf)						1300 (130tonf)						2200 (220tonf)						2500 (250tonf)						
	Maximum and minimum die height	Double platen Single platen	450/150 520/220						570/200						650/250						650/300						
	Clamping stroke	mm	350						400						550						600						
	Tie bar spacing (H x V)	mm	460×410						530×530						650×650						710×635						
Injection unit	Platen size (H x V)	mm	660×610						730×730						900×900						1030×960						
	Ejector point / Ejector force / Ejector stroke	point/kN/mm	5 / 25(2.5tonf) / 100						5 / 25(2.5tonf) / 100						13 / 35(3.5tonf) / 150						13 / 80(8.0tonf) / 200						
	Screw diameter	mm	22	26	28	32	36	40	26	28	32	36	40	32	36	40	44	48	52	56	32	36	40	44	48	52	56
	Maximum injection volume	cm ³	29	50	58	103	147	181	50	58	103	147	181	121	153	188	268	318	442	512	121	153	188	268	318	442	640
	Injection specification	---	200mm/s						200mm/s						200mm/s						350mm/s						
	Max. inj. prs.(High prs.mode)	MPa	340	340	320	270	220	---	340	320	270	220	---	---	---	---	---	---	---	---	380	345	---	---	---	---	---
	Max. inj. prs.(W/C)	MPa	290	290	270	250	190	160	290	270	250	190	160	310	310	260	220	190	160	---	310	310	280	240	190	160	140
	Max. inj. prs.(General purpose)	MPa	260	260	240	220	190	160	260	240	220	190	160	280	280	260	220	190	160	---	280	280	260	220	190	160	140
	Maximum injection speed	mm/s	200						200						200						350						
	Maximum screw rotation speed	min ⁻¹	300						300						300						400						
	Injection specification	---	350mm/s						350mm/s						350mm/s						---						
	Max. inj. prs.(High prs.mode)	MPa	340	340	320	270	220	---	340	320	270	220	---	380	345	---	---	---	---	---	---	---	---	---	---	---	---
	Max. inj. prs.(W/C)	MPa	290	290	270	250	190	160	290	270	250	190	160	310	310	280	240	190	160	140	---	---	---	---	---	---	---
	Max. inj. prs.(General purpose)	MPa	260	260	240	220	190	160	260	240	220	190	160	280	280	260	220	190	160	140	---	---	---	---	---	---	---
	Maximum injection speed	mm/s	350						350						350						---						
Maximum screw rotation speed	min ⁻¹	450						450						400						---							
Injection specification	---	550mm/s						550mm/s						---						---							
Max. inj. prs.(High prs.mode)	MPa	340	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Max. inj. prs.(W/C)	MPa	290	260	220	170	---	---	260	220	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Max. inj. prs.(General purpose)	MPa	260	260	220	170	---	---	260	220	170	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection speed	mm/s	550						550						---						---							
Maximum screw rotation speed	min ⁻¹	450						450						---						---							
Injection specification	---	650mm/s						650mm/s						---						---							
Max. inj. prs.(W/C)	MPa	290	290	270	210	---	---	290	270	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Max. inj. prs.(General purpose)	MPa	260	260	240	210	---	---	260	240	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Maximum injection speed	mm/s	650						650						---						---							
Maximum screw rotation speed	min ⁻¹	450						450						---						---							

Note: When high pressure filling mode is used, a special cylinder is needed.
Maximum injection pressure and maximum pack pressure are the maximum values that can be set. Maximum pack pressure is equal to maximum injection pressure. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.
Molding conditions may be restricted depending on the screw diameter.
For details, see a separate list of specifications.

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