

# All Electric Injection Molding Machine

## FANUC ROBOSHOT

$\alpha$ -S50*i*B /  $\alpha$ -S100*i*B /  $\alpha$ -S130*i*B  
 $\alpha$ -S150*i*B /  $\alpha$ -S220*i*B

### Specification sheets

- Specifications and installation conditions
- External dimensions
- Standard and optional features  
(Mechanical unit, Control unit, Software, Barrel/Screw)
- Floor plan / Utility
- **ROBOSHOT-LINK*i*2**

This specification sheet mainly describes the specifications of machines installed in European countries and corresponds to the safety requirements identification symbol "E" below.

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

Safety requirements identification	Specifications	Safety standards or regulations to conform to	
		Mechanical	Electrical/control panel
J	A-97155-00096EN	ISO20430	JIS B 9960-1
A	A-97155-00096EN	ISO20430	JIS B 9960-1 and KC-IEC 60204-1
C	A-97155-00097CM	ISO20430 and GB22530	GB5226.1
E	A-97155-00098EN	ISO20430 and EN201 and Regulatory standard No.12 (NR12)	IEC 60204-1
U	A-97155-00099EN	ISO20430 and ANSI/SPI B151	NFPA79 and CSA

## Mechanical specifications

Item		Unit	Data						
Clamping unit	Clamping mechanism	---	Double toggle						
	Tonnage	kN	Standard 500 (50tonf) / Increased 650 (65tonf) [Option]						
	Maximum and minimum die height	mm	Double platen 350 - 150 / Extended die height 400 - 150 [Option] Single platen 410 - 210 / Extended die height 460 - 210 [Option]						
	Clamping stroke	mm	250						
	Locating ring diameter	mm	$\phi$ 125						
	Tie bar spacing (H×V)	mm	360 × 320						
	Platen size (H×V)	mm	500 × 470						
	Minimum mold size (H×V) *1	mm	205 × 185						
	Maximum mold weight (Moving-Stationary) *2	kg	Double platen 220 - 220 / Single platen 300 - 220						
	Ejector stroke	mm	70						
	Maximum ejector force	kN	Standard 20 (2tonf) / Increased 60 (6tonf) [Option]						
Injection unit	Screw diameter	mm	18	20	22	26	28	32 <sup>*11</sup>	
	Injection stroke	mm	75	75	75	95	95	95	
	Maximum injection volume	cm <sup>3</sup>	19	24	29	50	58	76	
	Inj.speed 350mm/s	High pressure filling mode *3 *5	MPa	300	360	340	290	250	190
		Max. injection & pack prs.1 *3 *6	MPa	290	310	290	240	220	180
		Max. injection & pack prs.2 *3 *7	MPa	260	280	260	210	190	150
		Maximum injection rate *4	cm <sup>3</sup> /s	89	109	133	185	215	281
		Maximum injection speed *4	mm/s	350					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Inj.speed 550mm/s	High pressure filling mode *3 *5	MPa	300	330	---	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	290	310	280	200	170	---
		Max. injection & pack prs.2 *3 *7	MPa	260	280	260	190	170	---
		Maximum injection rate *4	cm <sup>3</sup> /s	139	172	209	292	338	---
		Maximum injection speed *4	mm/s	550					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Nozzle touch force / Increased *8	kN	15 (1.5tonf) / 30 (3tonf) [Option]						
Screw & Barrel	Number of pyrometers	Barrel	3						
		Nozzle	1						
	Total heater wattage	kW	3.1	3.5	3.8	6.5	7.2	8.4	
Machine Weight *9		t	Inj.speed 350mm/s (Double platen) Approx. 2.9 / (Single platen) Approx. 2.85 Inj.speed 550mm/s (Double platen) Approx. 2.9 / (Single platen) Approx. 2.85						

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected.

High pressure resistance barrel and nozzle are necessary, when high pressure filling mode option is selected. (Contact sales for detail)

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

## Installation conditions

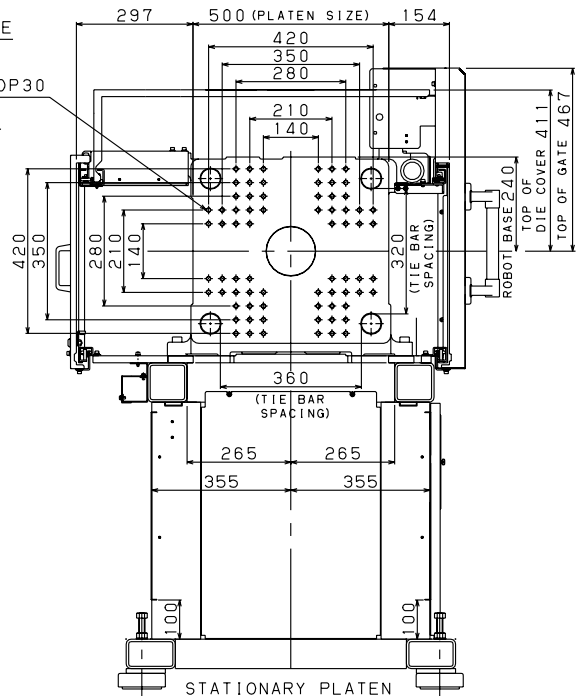
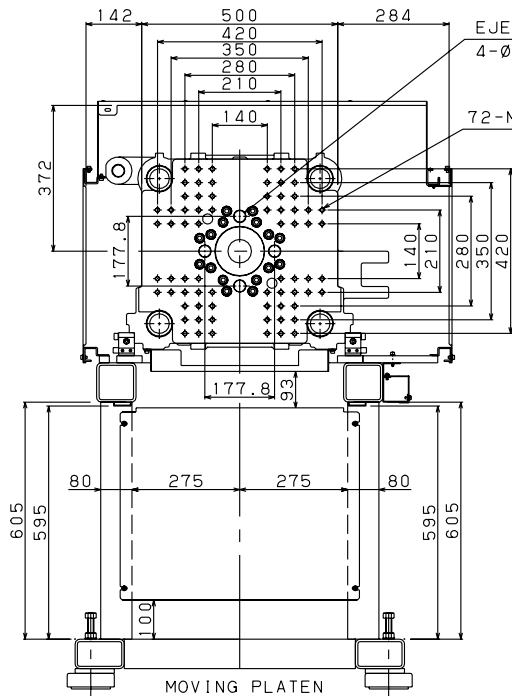
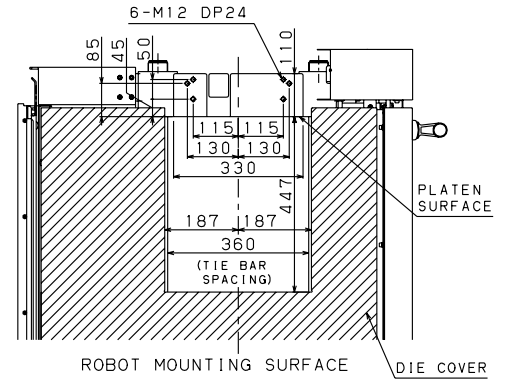
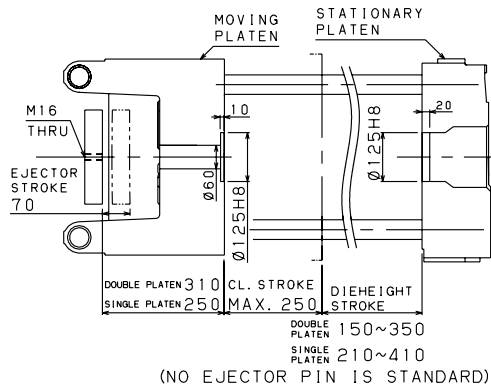
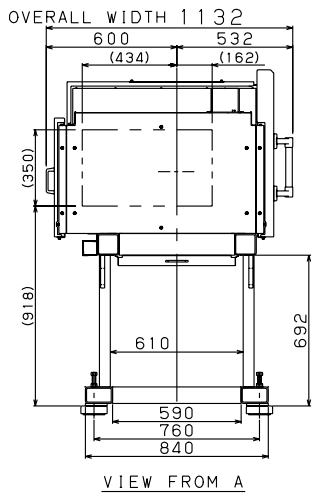
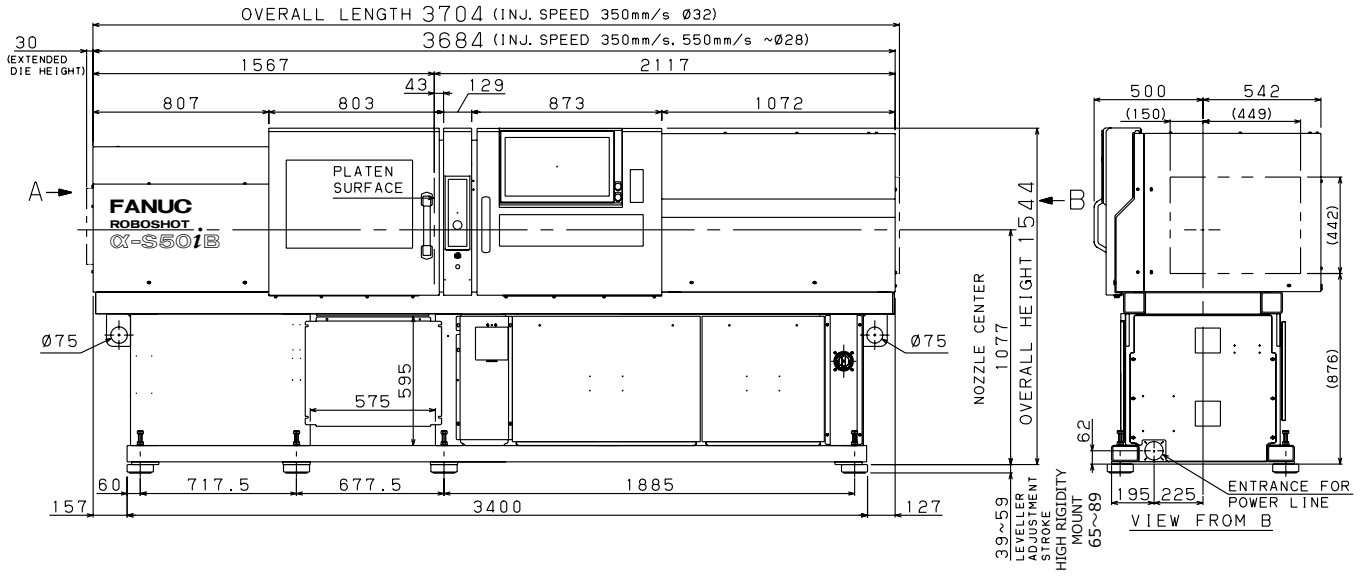
Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj.speed 350mm/s	150A (With peripheral devices) *14 50A (With no peripheral device) *14
	Inj.speed 550mm/s	150A (With peripheral devices) *14 50A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

\*13 Connect power cable to the machine's main breaker directly.

\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Intefrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used.

# FANUC ROBOSHOT $\alpha$ -S50iB



**Mechanical specifications**

Item		Unit	Data						
Clamping unit	Clamping mechanism	---	Double toggle						
	Tonnage	kN	Standard 1000 (100tonf) / Increased 1250 (125tonf) [Option]						
	Maximum and minimum die height	mm	Double platen 450 - 150 / Extended die height 550 - 150 [Option] Single platen 520 - 220 / Extended die height 620 - 220 [Option]						
	Clamping stroke	mm	350						
	Locating ring diameter	mm	φ125						
	Tie bar spacing (H×V)	mm	460 × 410						
	Platen size (H×V)	mm	660 × 610						
	Minimum mold size (H×V) *1	mm	265 × 240						
	Maximum mold weight (Moving-Stationary) *2	kg	Double platen 440 - 440 / Single platen 600 - 440						
	Ejector stroke	mm	100						
Maximum ejector force	kN	Standard 25 (2.5tonf) / Increased 60 (6tonf) [Option]							
Injection unit	Screw diameter	mm	22	26	28	32	36	40 *11	
	Injection stroke	mm	75	95	95	128	144	144	
	Maximum injection volume	cm <sup>3</sup>	29	50	58	103	147	181	
	Inj. speed 200mm/s	High pressure filling mode *3 *5	MPa	340	340	320	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	290	290	270	250	190	160
		Max. injection & pack prs.2 *3 *7	MPa	260	260	240	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	76	106	123	160	203	251
		Maximum injection speed *4	mm/s	200					
		Maximum screw rotation speed	min <sup>-1</sup>	300					
	Inj. speed 200mm/s (High duty)	High pressure filling mode *3 *5	MPa	---	---	---	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	---	---	---	250	200	180
		Max. injection & pack prs.2 *3 *7	MPa	---	---	---	220	200	180
		Maximum injection rate *4	cm <sup>3</sup> /s	---	---	---	160	203	251
		Maximum injection speed *4	mm/s	200					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Inj. speed 350mm/s	High pressure filling mode *3 *5	MPa	340	340	320	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	290	290	270	250	190	160
		Max. injection & pack prs.2 *3 *7	MPa	260	260	240	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	133	185	215	281	356	439
		Maximum injection speed *4	mm/s	350					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Inj. speed 550mm/s	High pressure filling mode *3 *5	MPa	340	---	---	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	290	260	220	170	---	---
Max. injection & pack prs.2 *3 *7		MPa	260	260	220	170	---	---	
Maximum injection rate *4		cm <sup>3</sup> /s	209	292	338	442	---	---	
Maximum injection speed *4		mm/s	550						
Maximum screw rotation speed		min <sup>-1</sup>	450						
Nozzle touch force / Increased *8		kN	15 (1.5tonf) / 30 (3tonf) [Option]						
Screw & Barrel	Number of pyrometers	Barrel	3						
		Nozzle	1						
Total heater wattage		kW	3.8	6.5	7.2	8.4	9.1	9.9	
Machine Weight *9		t	Inj. speed 200mm/s (Double platen) Approx. 4.4 / (Single platen) Approx. 4.25 Inj. speed 200mm/s (High duty) (Double platen) Approx. 4.4 / (Single platen) Approx. 4.25 Inj. speed 350mm/s (Double platen) Approx. 4.4 / (Single platen) Approx. 4.25 Inj. speed 550mm/s (Double platen) Approx. 4.4 / (Single platen) Approx. 4.25						

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected. High pressure resistance barrel and nozzle are necessary, when high pressure filling mode option is selected. (Contact sales for detail)

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

**Installation conditions**

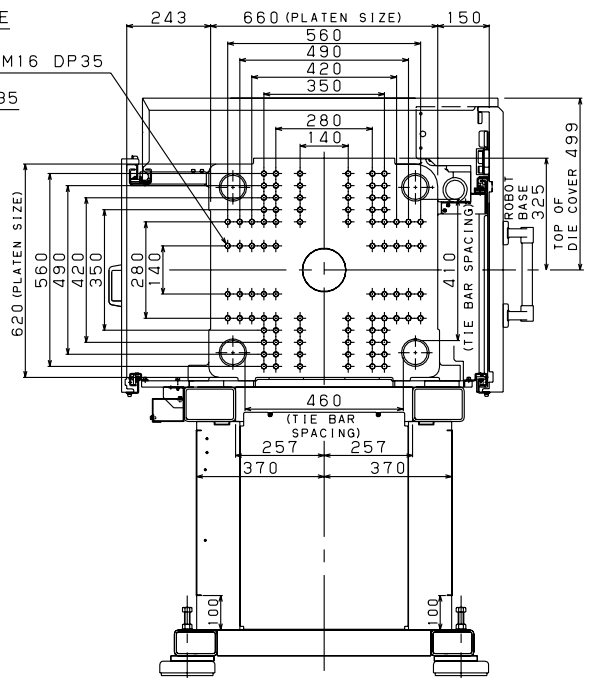
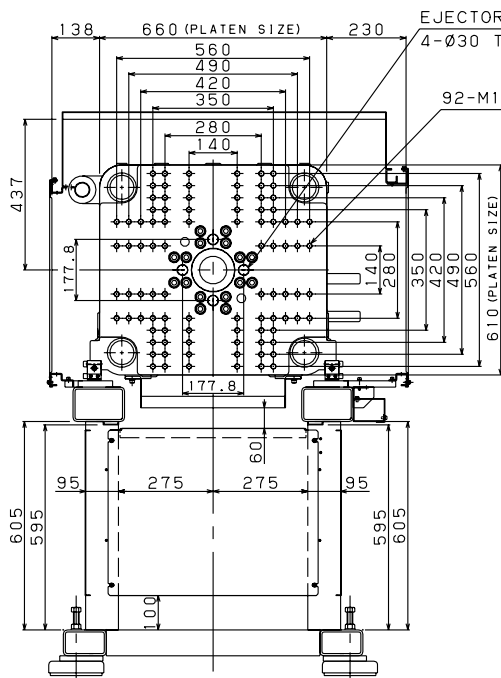
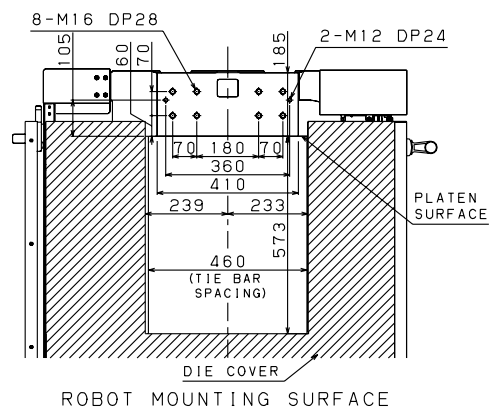
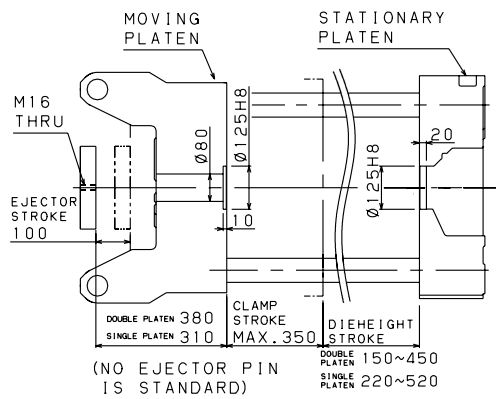
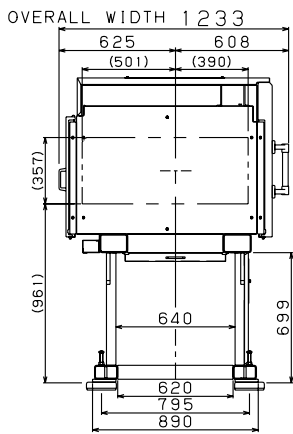
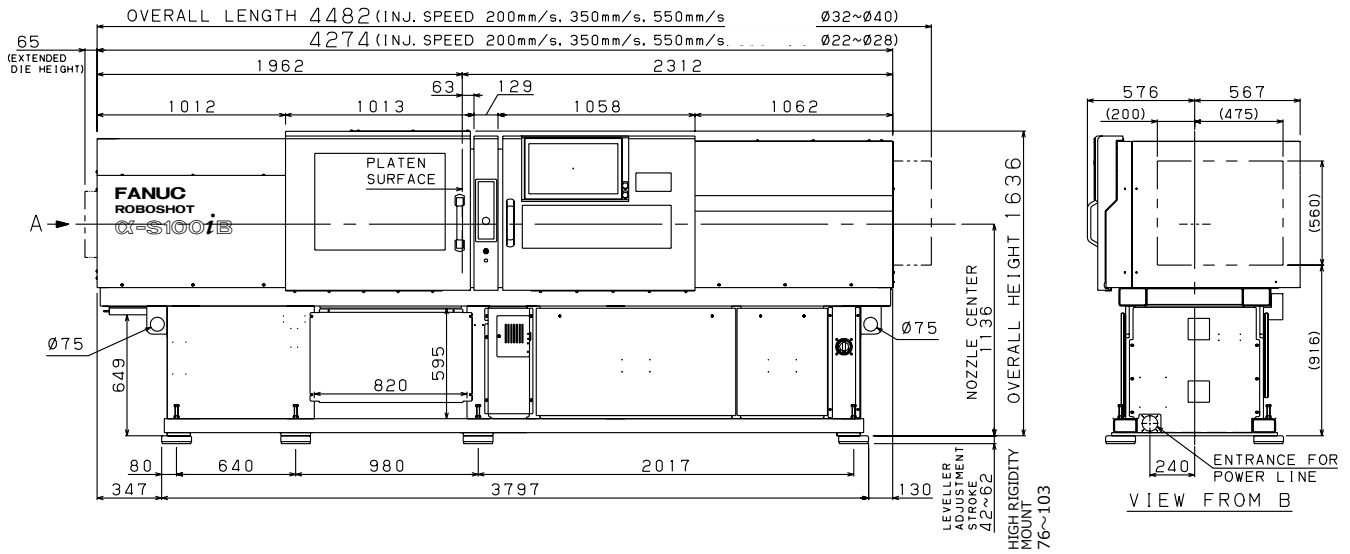
Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj. speed 200mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 200mm/s (High duty)	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 350mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 550mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

\*13 Connect power cable to the machine's main breaker directly.

\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Intefrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used.

# FANUC ROBOSHOT $\alpha$ -S100iB



## Mechanical specifications

Item		Unit	Data					
Clamping unit	Clamping mechanism	---	Double toggle					
	Tonnage	kN	1300 (130tonf)					
	Maximum and minimum die height	mm	Single platen 570 - 200 / Extended die height 670 - 200 [Option]					
	Clamping stroke	mm	400					
	Locating ring diameter	mm	$\phi$ 125					
	Tie bar spacing (H×V)	mm	530 × 530					
	Platen size (H×V)	mm	730 × 730					
	Minimum mold size (H×V) *1	mm	300 × 300					
	Maximum mold weight (Moving-Stationary) *2	kg	Single platen 750 - 750					
	Ejector stroke	mm	100					
Maximum ejector force	kN	Standard 25 (2.5tonf) / Increased 60 (6tonf) [Option]						
Injection unit	Screw diameter	mm	26	28	32	36	40 *11	
	Injection stroke	mm	95	95	128	144	144	
	Maximum injection volume	cm <sup>3</sup>	50	58	103	147	181	
	Inj. speed 200mm/s	High pressure filling mode *3 *5	MPa	340	320	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	290	270	250	190	160
		Max. injection & pack prs.2 *3 *7	MPa	260	240	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	106	123	160	203	251
		Maximum injection speed *4	mm/s	200				
		Maximum screw rotation speed	min <sup>-1</sup>	300				
	Inj. speed 200mm/s (High duty)	High pressure filling mode *3 *5	MPa	---	---	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	---	---	250	200	180
		Max. injection & pack prs.2 *3 *7	MPa	---	---	220	200	180
		Maximum injection rate *4	cm <sup>3</sup> /s	---	---	160	203	251
		Maximum injection speed *4	mm/s	---	---	200		
		Maximum screw rotation speed	min <sup>-1</sup>	---	---	450		
	Inj. speed 350mm/s	High pressure filling mode *3 *5	MPa	340	320	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	290	270	250	190	160
		Max. injection & pack prs.2 *3 *7	MPa	260	240	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	185	215	281	356	439
		Maximum injection speed *4	mm/s	350				
		Maximum screw rotation speed	min <sup>-1</sup>	450				
	Inj. speed 550mm/s	Max. injection & pack prs.1 *3 *6	MPa	260	220	170	---	---
		Max. injection & pack prs.2 *3 *7	MPa	260	220	170	---	---
Maximum injection rate *4		cm <sup>3</sup> /s	292	338	442	---	---	
Maximum injection speed *4		mm/s	550					
Maximum screw rotation speed		min <sup>-1</sup>	450					
Nozzle touch force / Increased *8		kN	15 (1.5tonf) / 30 (3tonf) [Option]					
Screw & Barrel	Number of pyrometers	Barrel	3					
		Nozzle	1					
Total heater wattage		kW	6.5	7.2	8.4	9.1	9.9	
Machine Weight *9		t	Inj. speed 200mm/s Approx. 4.9 Inj. speed 200mm/s (High duty) Approx. 4.9 Inj. speed 350mm/s Approx. 4.9 Inj. speed 550mm/s Approx. 4.9					

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected. High pressure resistance barrel and nozzle are necessary, when high pressure filling mode option is selected. (Contact sales for detail)

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

## Installation conditions

Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj. speed 200mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 200mm/s (High duty)	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 350mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 550mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

\*13 Connect power cable to the machine's main breaker directly.

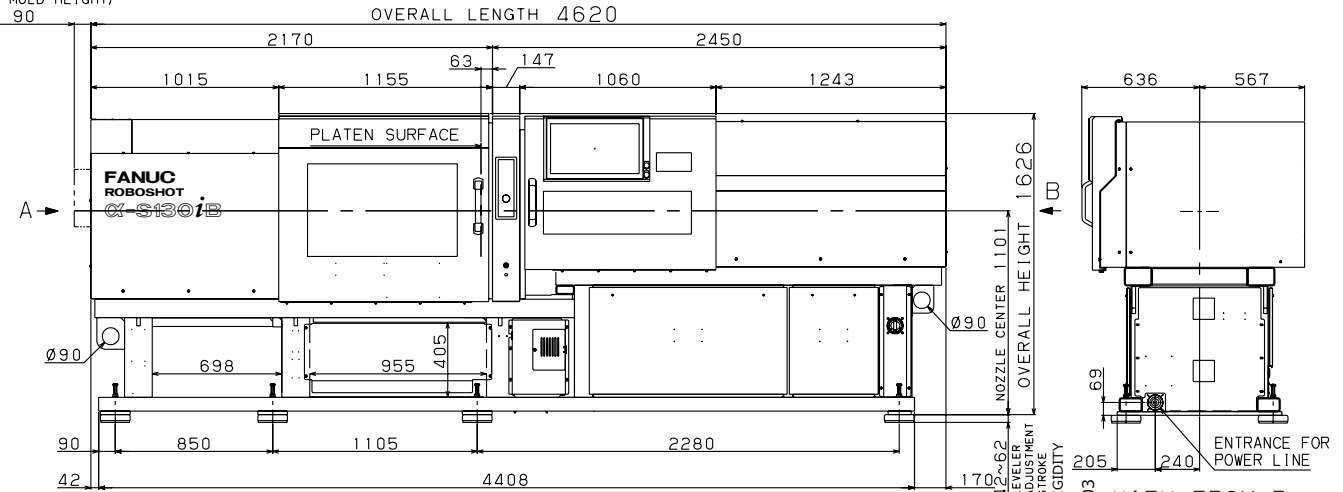
\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Intefrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used.

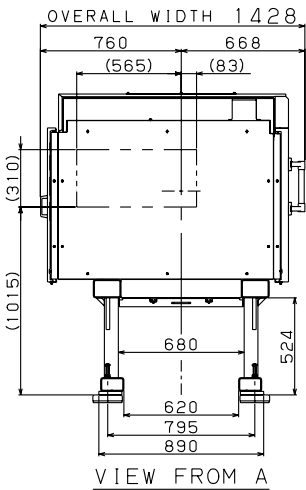
All specifications are subject to change without notice.

# FANUC ROBOSHOT $\alpha$ -S130iB

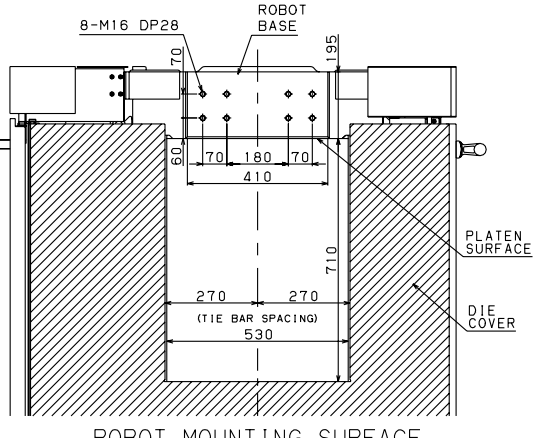
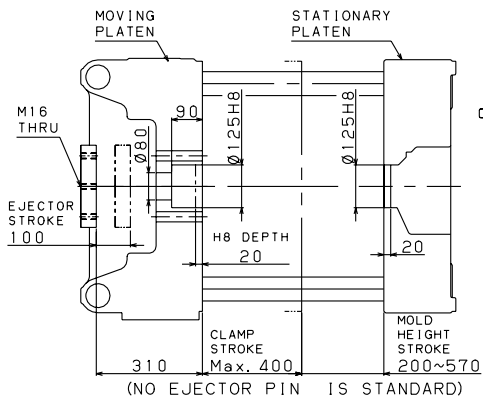
(EXTENDED  
MOLD HEIGHT)  
90



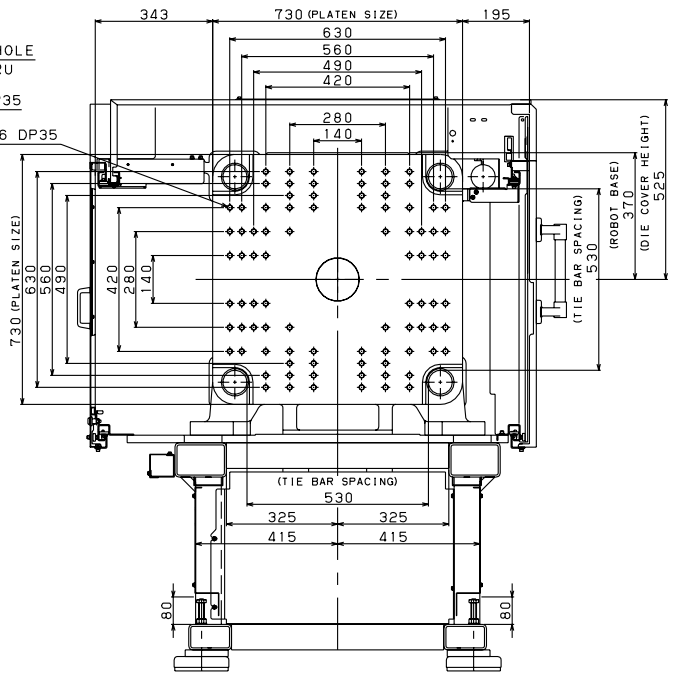
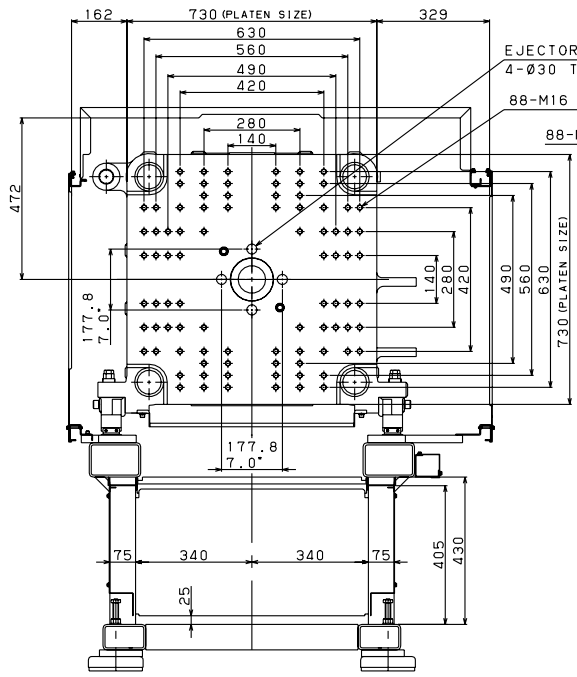
VIEW FROM B



VIEW FROM A



ROBOT MOUNTING SURFACE



## Mechanical specifications

Item		Unit	Data						
Clamping unit	Clamping mechanism	---	Double toggle						
	Tonnage	kN	Standard 1500 (150tonf) / Increased 1800 (180tonf) [Option]						
	Maximum and minimum die height	mm	Double platen 500 - 200 / Extended die height 600 - 200 [Option] Single platen 575 - 275 / Extended die height 675 - 275 [Option]						
	Clamping stroke	mm	440						
	Locating ring diameter	mm	$\phi$ 160						
	Tie bar spacing (H×V)	mm	560 × 510						
	Platen size (H×V)	mm	800 × 750						
	Minimum mold size (H×V) *1	mm	325 × 300						
	Maximum mold weight (Moving-Stationary) *2	kg	Double platen 800 - 800 / Single platen 1060 - 800						
	Ejector stroke	mm	150						
Maximum ejector force	kN	Standard 35 (3.5tonf) / Increased 80 (8tonf) [Option]							
Injection unit	Screw diameter	mm	32	36	40	44	48	52 *11	
	Injection stroke	mm	150	150	150	176	176	208	
	Maximum injection volume	cm <sup>3</sup>	121	153	188	268	318	442	
	Inj.speed 200mm/s	Max. injection & pack prs.1 *3 *6	MPa	310	310	260	220	190	160
		Max. injection & pack prs.2 *3 *7	MPa	280	280	260	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	160	203	251	304	361	424
		Maximum injection speed *4	mm/s	200					
		Maximum screw rotation speed	min <sup>-1</sup>	300					
	Inj.speed 270mm/s (High duty)	High pressure filling mode *3 *5	MPa	380	345	320	280	---	---
		Max. injection & pack prs.1 *3 *6	MPa	310	310	280	260	230	200
		Max. injection & pack prs.2 *3 *7	MPa	280	280	280	260	230	200
		Maximum injection rate *4	cm <sup>3</sup> /s	217	274	339	410	488	573
		Maximum injection speed *4	mm/s	270					
	Maximum screw rotation speed	min <sup>-1</sup>	400						
	Inj.speed 350mm/s	High pressure filling mode *3 *5	MPa	380	345	---	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	310	310	280	240	190	160
		Max. injection & pack prs.2 *3 *7	MPa	280	280	260	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	281	356	439	532	633	743
		Maximum injection speed *4	mm/s	350					
	Maximum screw rotation speed	min <sup>-1</sup>	400						
Nozzle touch force / Increased *8	kN	30 (3tonf) / 50 (5tonf) [Option]							
Screw & Barrel	Number of pyrometers	Barrel	3						
		Nozzle	1						
	Total heater wattage	kW	12.0	13.0	14.9	15.9	17.9	20.2	
Machine Weight *9		t	Inj.speed 200mm/s (Double platen) Approx. 7.05 / (Single platen) Approx. 6.8 Inj.speed 270mm/s (High duty) (Double platen) Approx. 7.2 / (Single platen) Approx. 6.95 Inj.speed 350mm/s (Double platen) Approx. 7.2 / (Single platen) Approx. 6.95						

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected.

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

## Installation conditions

Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj.speed 200mm/s	175A (With peripheral devices) *14 75A (With no peripheral device) *14
	Inj.speed 270mm/s (High duty)	225A (With peripheral devices) *14 125A (With no peripheral device) *14
	Inj.speed 350mm/s	225A (With peripheral devices) *14 125A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

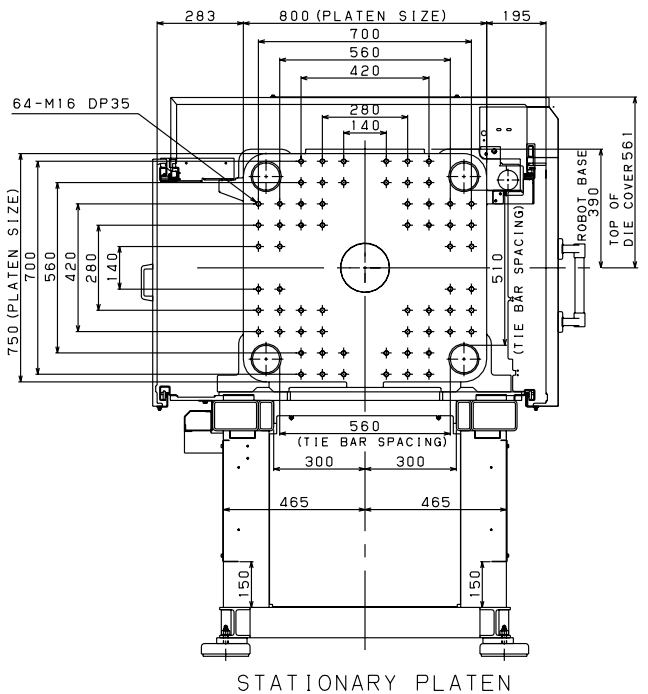
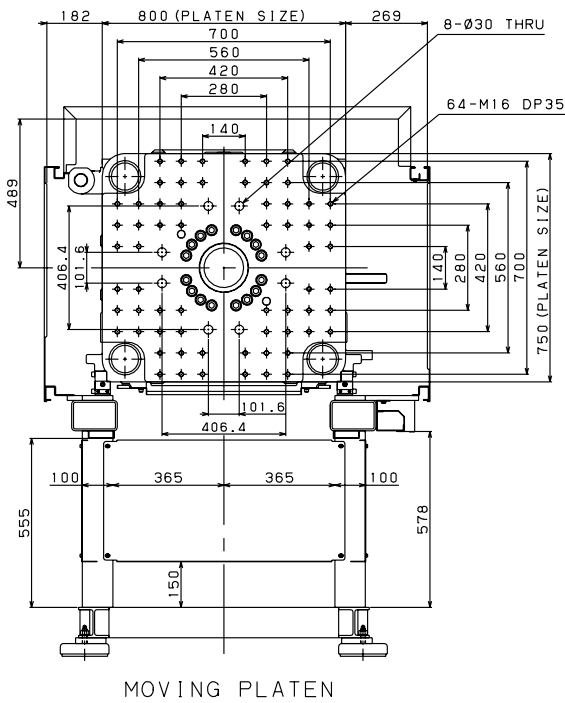
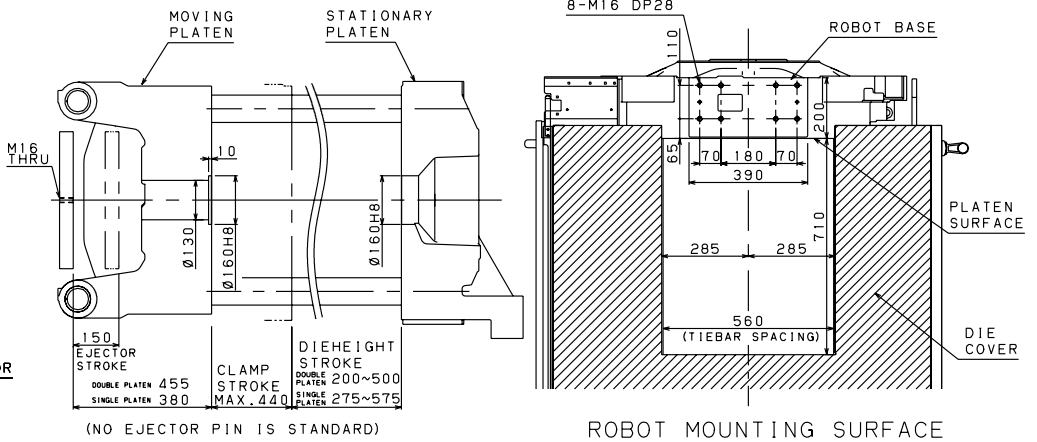
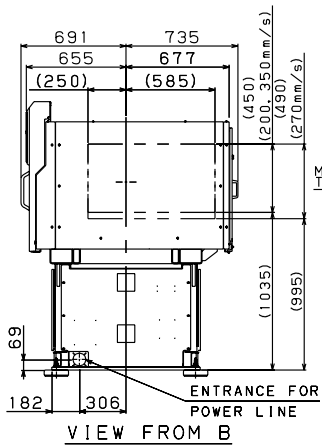
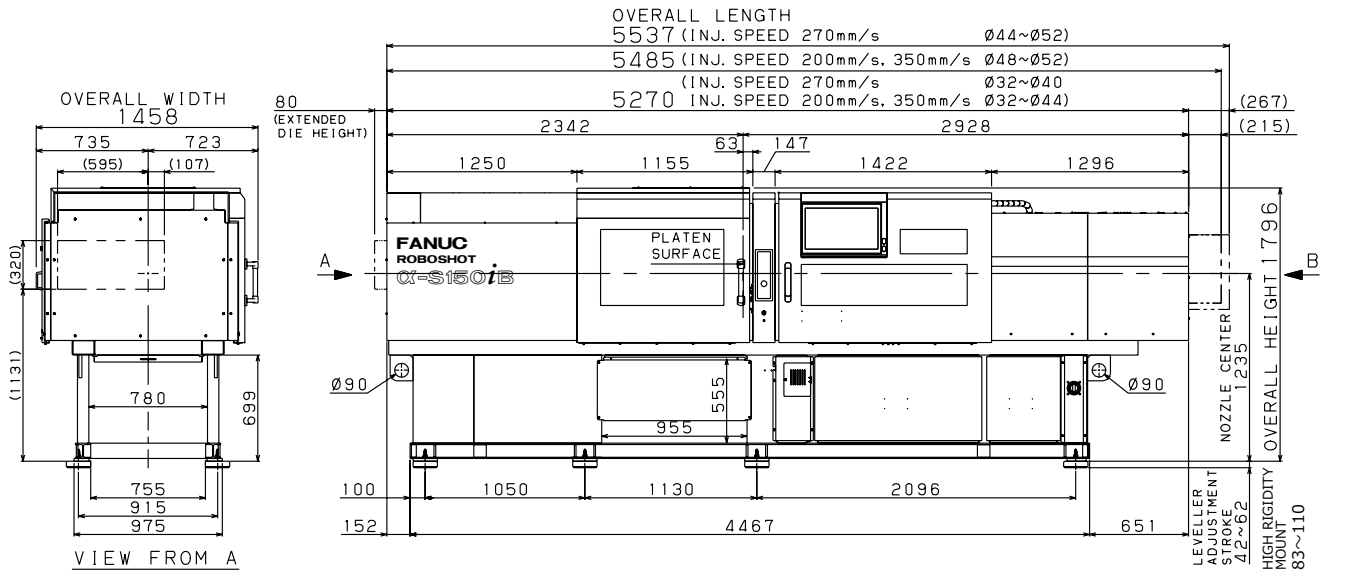
\*13 Connect power cable to the machine's main breaker directly.

\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Infrared hotrunner controller" cannot be selected simultaneously.)  
With no peripheral device : When only the molding machine is used.

All specifications are subject to change without notice.



# FANUC ROBOSHOT $\alpha$ -S150iB



**Mechanical specifications**

Item		Unit	Data						
Clamping unit	Clamping mechanism	---	Double toggle						
	Tonnage	kN	Standard 1500 (150tonf) / Increased 1800 (180tonf) [Option]						
	Maximum and minimum die height	mm	Double platen 500 - 200 / Extended die height 600 - 200 [Option] Single platen 575 - 275 / Extended die height 675 - 275 [Option]						
	Clamping stroke	mm	440						
	Locating ring diameter	mm	$\phi$ 160						
	Tie bar spacing (H×V)	mm	560 × 510						
	Platen size (H×V)	mm	800 × 750						
	Minimum mold size (H×V) *1	mm	325 × 300						
	Maximum mold weight (Moving-Stationary) *2	kg	Double platen 800 - 800 / Single platen 1060 - 800						
	Ejector stroke	mm	150						
	Maximum ejector force	kN	Standard 35 (3.5tonf) / Increased 80 (8tonf) [Option]						
Injection unit	Screw diameter	mm	22	26	28	32	36	40 *11	
	Injection stroke	mm	75	95	95	128	144	144	
	Maximum injection volume	cm <sup>3</sup>	29	50	58	103	147	181	
	Inj. speed 350mm/s	High pressure filling mode *3 *5	MPa	340	340	320	270	220	---
		Max. injection & pack prs.1 *3 *6	MPa	290	290	270	250	190	160
		Max. injection & pack prs.2 *3 *7	MPa	260	260	240	220	190	160
		Maximum injection rate *4	cm <sup>3</sup> /s	133	185	215	281	356	439
		Maximum injection speed *4	mm/s	350					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Inj. speed 550mm/s	High pressure filling mode *3 *5	MPa	340	---	---	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	290	260	220	170	---	---
		Max. injection & pack prs.2 *3 *7	MPa	260	260	220	170	---	---
		Maximum injection rate *4	cm <sup>3</sup> /s	209	292	338	442	---	---
		Maximum injection speed *4	mm/s	550					
		Maximum screw rotation speed	min <sup>-1</sup>	450					
	Nozzle touch force / Increased *8		kN	15 (1.5tonf) / 30 (3tonf) [Option]					
	Screw & Barrel	Number of pyrometers	Barrel	3					
Nozzle			1						
Total heater wattage		kW	3.8	6.5	7.2	8.4	9.1	9.9	
Machine Weight *9		t	Inj. speed 350mm/s (Double platen) Approx. 6.4 / (Single platen) Approx. 6.15 Inj. speed 550mm/s (Double platen) Approx. 6.4 / (Single platen) Approx. 6.15						

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected.

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

**Installation conditions**

Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj. speed 350mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
	Inj. speed 550mm/s	150A (With peripheral devices) *14 60A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

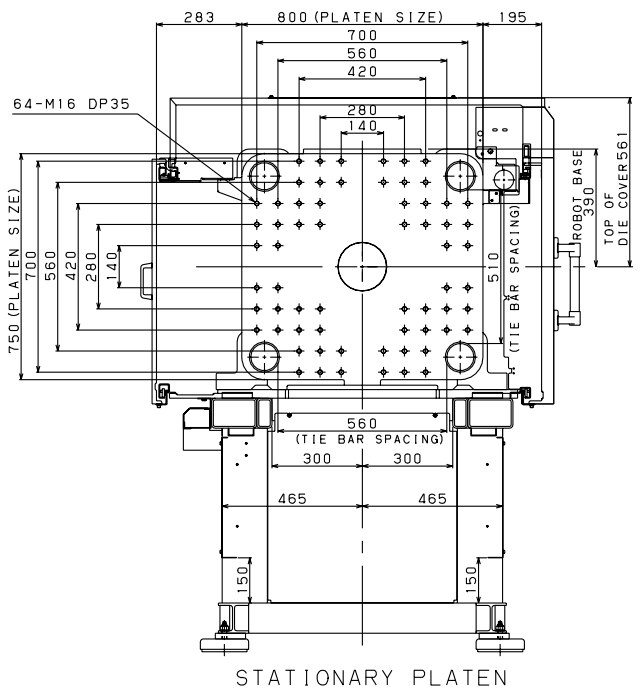
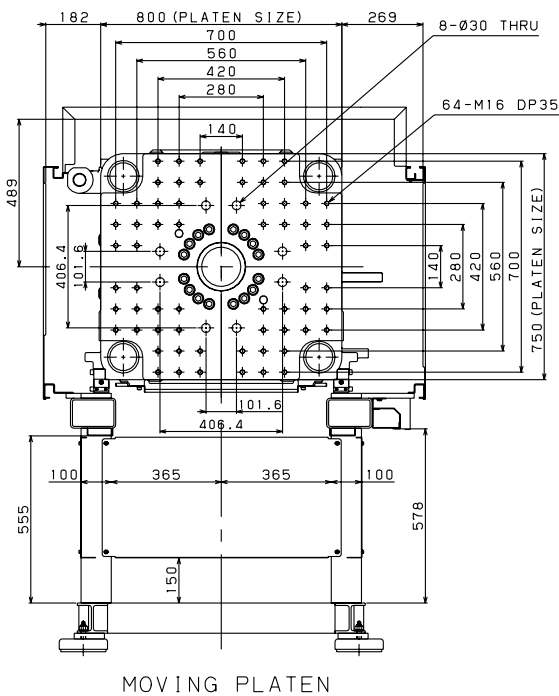
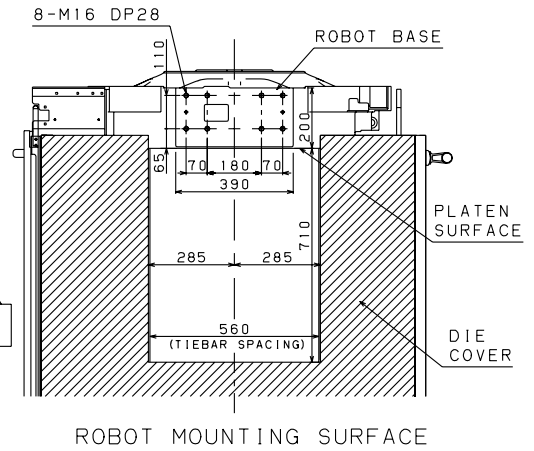
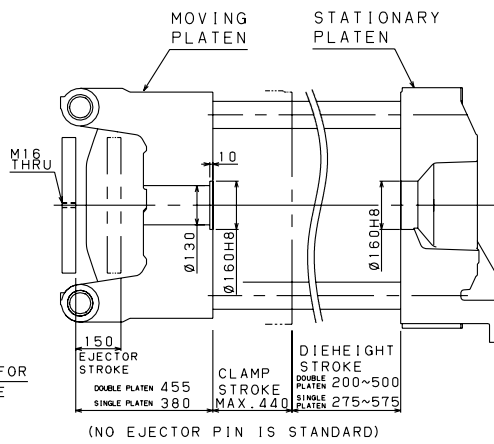
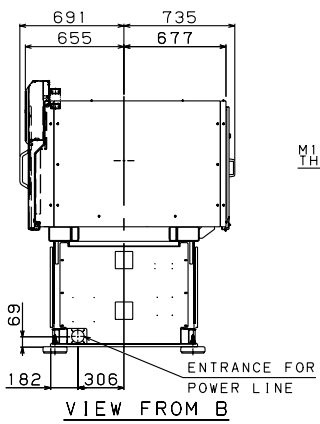
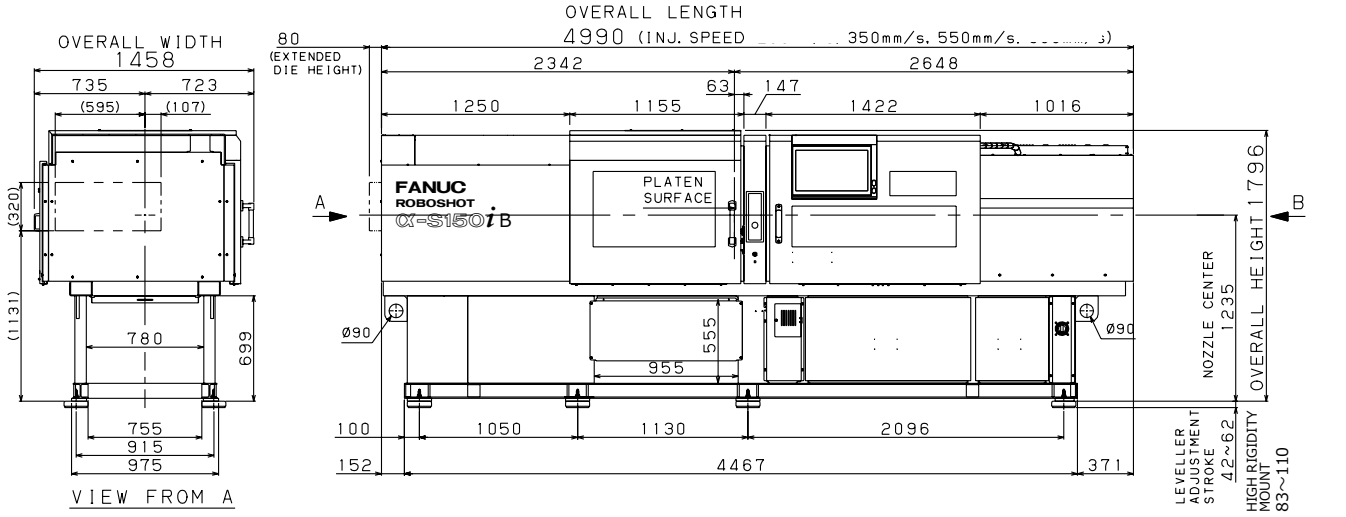
\*13 Connect power cable to the machine's main breaker directly.

\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Intefrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used.

All specifications are subject to change without notice.

# FANUC ROBOSHOT $\alpha$ -S150iB Small capacity injection specification



## Mechanical specifications

Item		Unit	Data							
Clamping unit	Clamping mechanism	---	Double toggle							
	Tonnage	kN	2200 (220tonf)							
	Maximum and minimum die height	mm	Single platen 650 - 250 / Extended die height 750 - 250 [Option]							
	Clamping stroke	mm	550							
	Locating ring diameter	mm	φ160							
	Tie bar spacing (H×V)	mm	650 × 650							
	Platen size (H×V)	mm	900 × 900							
	Minimum mold size (H×V) *1	mm	375 × 375							
	Maximum mold weight (Moving-Stationary) *2	kg	Single platen 1500 - 1500							
	Ejector stroke	mm	150							
Maximum ejector force	kN	Standard 35 (3.5tonf) / Increased 80 (8tonf) [Option]								
Injection unit	Screw diameter	mm	32	36	40	44	48	52 <sup>*11</sup>	56 <sup>*11</sup>	
	Injection stroke	mm	150	150	150	176	176	208	208	
	Maximum injection volume	cm <sup>3</sup>	121	153	188	268	318	442	512	
	Inj.speed 200mm/s	Max. injection & pack prs.1 *3 *6	MPa	310	310	260	220	190	160	---
		Max. injection & pack prs.2 *3 *7	MPa	280	280	260	220	190	160	---
		Maximum injection rate *4	cm <sup>3</sup> /s	160	203	251	304	361	424	---
		Maximum injection speed *4	mm/s	200						
		Maximum screw rotation speed	min <sup>-1</sup>	300						
	Inj.speed 270mm/s (High duty)	High pressure filling mode *3 *5	MPa	380	345	320	280	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	310	310	280	260	230	200	172
		Max. injection & pack prs.2 *3 *7	MPa	280	280	280	260	230	200	172
		Maximum injection rate *4	cm <sup>3</sup> /s	217	274	339	410	488	573	665
		Maximum injection speed *4	mm/s	270						
	Inj.speed 350mm/s	High pressure filling mode *3 *5	MPa	380	345	---	---	---	---	---
		Max. injection & pack prs.1 *3 *6	MPa	310	310	280	240	190	160	140
		Max. injection & pack prs.2 *3 *7	MPa	280	280	260	220	190	160	140
		Maximum injection rate *4	cm <sup>3</sup> /s	281	356	439	532	633	743	862
		Maximum injection speed *4	mm/s	350						
	Maximum screw rotation speed	min <sup>-1</sup>	400							
	Nozzle touch force / Increased *8		kN	30 (3tonf) / 50 (5tonf) [Option]						
Screw & Barrel	Number of pyrometers	Barrel	3							
		Nozzle	1							
Total heater wattage		kW	12.0	13.0	14.9	15.9	17.9	20.2	23.5	
Machine Weight *9		t	Inj.speed 200mm/s Approx. 8.7 Inj.speed 270mm/s (High duty) Approx. 8.85 Inj.speed 350mm/s Approx. 8.85							

\*1 Smaller mold than this size may limit clamp force.

\*2 If the weight of a mold exceeds maximum mold weight, the molding condition may be limited.

\*3 Maximum injection pressure and maximum pack pressure are the output of the injection unit, not the resin pressure. Maximum injection pressure and maximum pack pressure are the maximum values that can be set.

\*4 Maximum injection rate and maximum injection speed is a theoretical value. Maximum injection rate and maximum injection speed can not be guaranteed when the injection pressure is maximum.

\*5 The maximum injection pressure setting at high pressure filling mode option. There is a limitation in injection time setting and pack time setting, when high pressure filling mode option is selected.

\*6 Maximum injection pressure 1 and maximum pack pressure 1 are the values when the wear-resistant and anti-corrosion cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*7 Maximum injection pressure 2 and maximum pack pressure 2 are the values when the general purpose cylinder etc. is installed. Maximum injection pressure and maximum pack pressure may vary depends on the installed screw and cylinder specifications.

\*8 Sprue break cannot be used with increased nozzle touch force option.

\*9 The machine without option.

\*10 The pressure conversion is 1MPa=10kgf/cm<sup>2</sup>.

\*11 The molding condition might be limited by the resin. (Contact sales for detail)

\*12 In case of the replacement to different screw diameter after shipment, some covers may be needed to replace. (Contact sales for detail)

## Installation conditions

Item		Data
Input power source		3-phase AC200V±10% 50/60Hz±1Hz 3-phase AC220V±10% 60Hz±1Hz
Main breaker *13	Inj.speed 200mm/s	175A (With peripheral devices) *14 75A (With no peripheral device) *14
	Inj.speed 270mm/s (High duty)	225A (With peripheral devices) *14 125A (With no peripheral device) *14
	Inj.speed 350mm/s	225A (With peripheral devices) *14 125A (With no peripheral device) *14
Ground		Follow relevant laws and standards of the country where the machine is installed when performing grounding.
Installing environment	Temperature	0~40°C (20~25°C recommended)
	Humidity	Below 75% (Below 95% under short term operation)
	Vibration	Below 0.5G
	Atmosphere	Take care of corrosive gas.

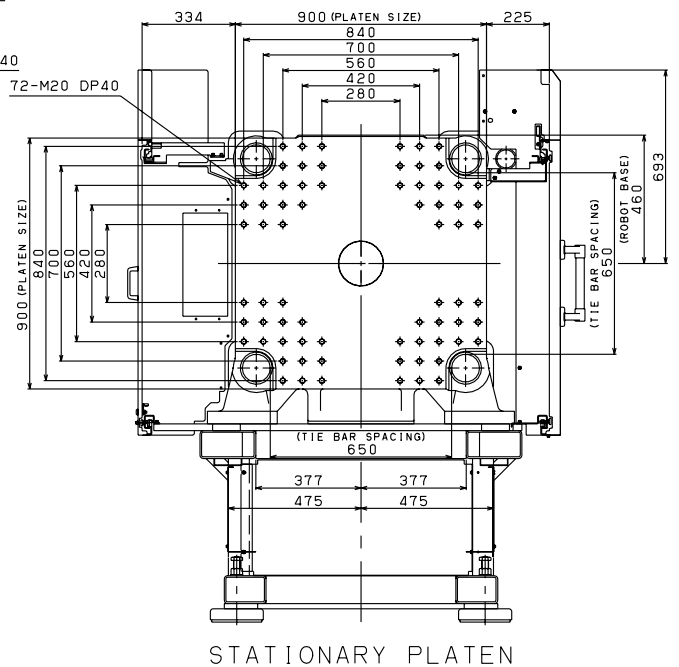
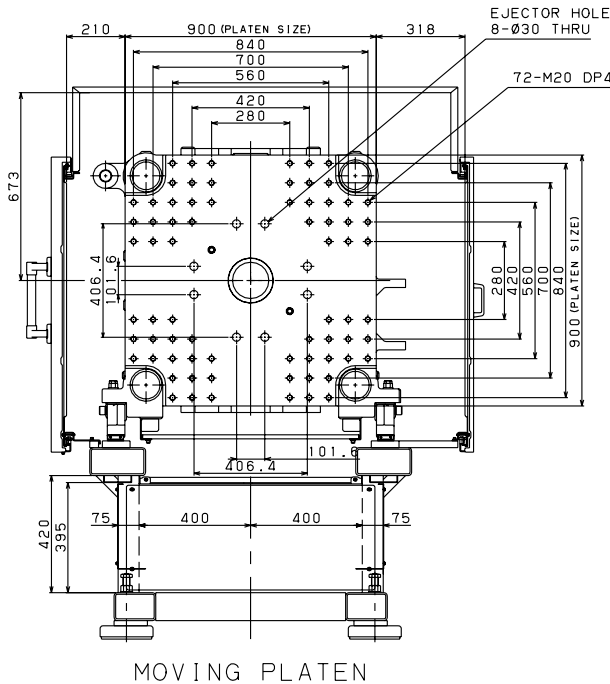
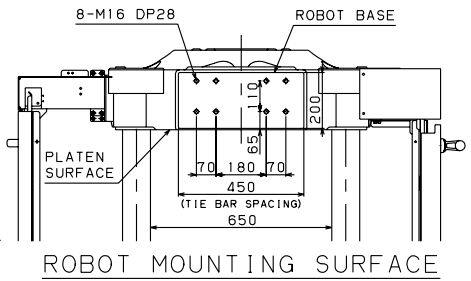
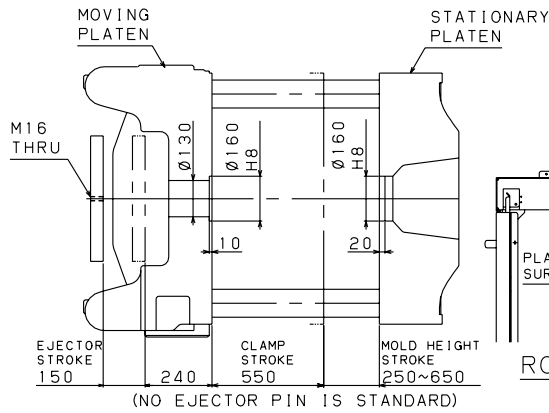
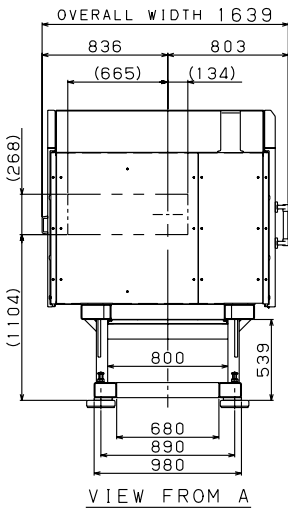
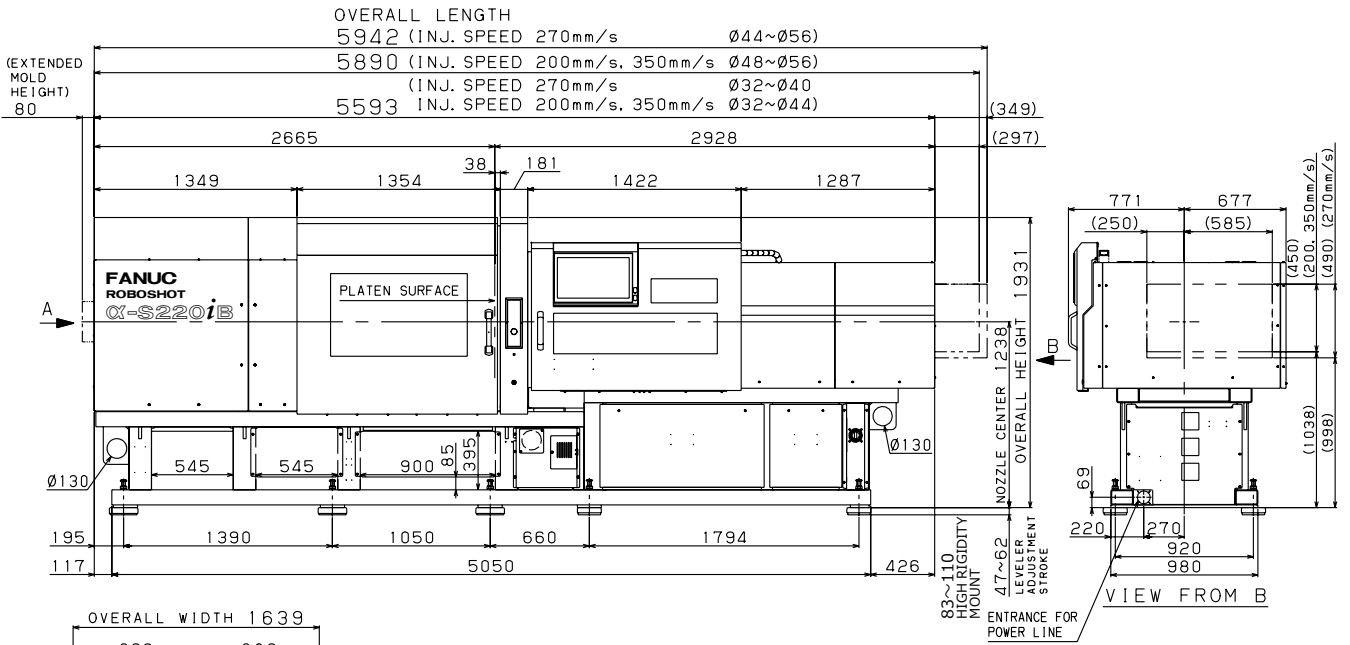
\*13 Connect power cable to the machine's main breaker directly.

\*14 With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Inferrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used.

All specifications are subject to change without notice.

# FANUC ROBOSHOT $\alpha$ -S220iB



# Features of $\alpha$ -SIB series

Item		Suitable category						Detail
		Thin-wall	Lens	Connector	Automotive	Medical	Container	
<b>High Performance</b>								
FANUC standard CNC	Selectable injection acceleration profile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-13
	Precise injection/Pack switch over	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-17
	Decompression control in Injection/Packing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-58
	Backflow monitor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-20
	Precise metering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-21
	AI pressure profile trace control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-22
	AI metering control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-24
High rigidity, Low friction mechanism	Selectable 2 types of moving platen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A-24
	Moving platen support by Linear Guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A-20
Additional servo axes control	Suitable feeding device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-86
	Servo nozzle touch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Mold core drive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High Reliability</b>								
Safety, Usability	Fully covered mechanism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A-1
Operation rate improvement	AI mold protection	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	B-33
	Start up function	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-23
Global support	Conformation to safety requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A-13
	Multi language display	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-4
<b>High Productivity</b>								
Energy saving	Low electricity heat up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-45
	Power consumption monitor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-57
	Precise clamping force control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-30
Cycle time reduction	Simultaneous motion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-32
	Cycle diagnosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-56
Product/Quality management	<b>ROBOSHOT-LINKi2</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	B-62
System integration	Customizable machine status signals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-66
	Customizable core motion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-67
	External sensor connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	B-89

# Standard and Optional features (Mechanical unit) 1/2

Std: Standard feature

●: Option with no retrofitting capability

○: Option with retrofitting capability

Refer to the other pages for the barrel/screw options

No.	Item	α-S50iB	α-S100iB	α-S130iB	α-S150iB	α-S220iB			
<b>Injection unit</b>									
A-1		① Slide type safety gate	Purge shield	Std	Std	Std	Std	Std	
A-2	Safety gate, covers	② Injection unit top cover	Covering mechanical portion away from dust	Std	Std	Std	Std	Std	
A-3		③ Purge cover	Prevention of contact with high temperature part	Std	Std	Std	Std	Std	
A-4	Injection unit swivel	Swivels the injection unit to the operator's side in changing screw/barrel. With the safety stopper.			Std	Std	Std	Std	Std
A-5	Closed loop feed throat temperature control	Using the solenoid valve with strainer. Effective in reducing the deviation of the metering time			Std	Std	Std	Std	Std
A-6	Feed throat surface temperature	Thermometer mounted on the side of the water jacket			○	○	○	○	○
A-7	Increased nozzle touch force	3ton type	Standard 1.5→3ton (Sprue break function is not available)	○	○	○	○*5	--	
		5ton type	Standard 3→5ton (Sprue break function is not available)	--	--	--	○*6	○	
A-8	Suitable feeding device	Additional servo axisi control achieves optimal amount of resin supply with feedback control and long term molding repeatability			●	●	●	●	●
A-9	Hopper	① 15L aluminum or stainless hopper with shutter (φ28 or smaller diameter)		○	○	○	○	○	
		② 30L aluminum or stainless hopper with shutter (φ32 or larger diameter)		--	○	○	○	○	
		③ 50L aluminum or stainless hopper with shutter (φ32 or larger diameter)		--	○	○	○	○	
A-10	Feed throat safety block	With safety pin			Std	Std	Std	Std	Std
A-11	Thermal insulation cover	Heat cover with the thermal insulator (Thermal insulation cover cannot be used on ceramic heater)			○	○	○	○	○
A-12	Additional temperature control zone for nozzle or barrel	Add nozzle temperature control (2 Zone) or barrel temperature control (4 Zone)			○	○	○	○	○
<b>Clamp unit</b>									
A-13	Safety gate, covers	① Operator's side safety gate	Locked with an electromagnetic lock during operation, unlocked after stopping	Std	Std	Std	Std	Std	
A-14		② Non-operator's side safety gate	Locked with an electromagnetic lock during operation, unlocked after stopping	Std	Std	Std	Std	Std	
A-15		③ Die cover	For safety and die protection		Std	Std	Std	Std	--
A-16		④ Clamp unit top cover	For safety, Covering mechanical portion away		Std	Std	Std	Std	Std
A-17		⑤ Parts drop area covers	For safety		Std	Std	Std	Std	Std
A-18	Mechanical safety	Prevent moving platen advance when open the operator's side safety gate			●	●	●	●	●
A-19	Ejector servo motor equipped with brake	Keep position when safety gate open and emergency stop condition			Std	Std	Std	Std	Std
A-20	Platen support	Improves parallelism at mold open/close and preciseness at mold touch Further advanced parallelism at mold open/close by using linear guide			●	●	●	●	●
A-21	Robot mounting holes	Refer to the other page for the detail dimension			Std	Std	Std	Std	Std
A-22	Clamp force sensor	Optimize clamp force automatically			Std	Std	Std	Std	Std
A-23	Clamp force variation	65ton package		○	--	--	--	--	
		125ton package		--	●	--	--	--	
		180ton package		--	--	--	○	--	
A-24	Extended die height Clamp stroke and minimum die heght have no change	Double platen	Max. die height 350→400mm / Min. die height 150mm	○	--	--	--	--	
		Single platen	Max. die height 410→460mm / Min. die height 210mm	--	○	--	--	--	
		Double platen	Max. die height 450→550mm / Min. die height 150mm	--	○	--	--	--	
		Single platen	Max. die height 520→620mm / Min. die height 220mm	--	--	●	--	--	
		Double platen	Max. die height 500→600mm / Min. die height 200mm	--	--	--	●	--	
		Single platen	Max. die height 575→675mm / Min. die height 275mm	--	--	--	--	●	
A-25	Air ejector	Independent 3 outputs control (One on the stationary platen / Two on the moveable platen)			○	○	○	○	○
A-26	Insulator plate	Package for both halves. Made by LOSSNA, PGE-6771, PGX-595 or HEG. Select thickness from either 5 or 10mm			○	○	○	○	○

# Standard and Optional features (Mechanical unit) 2/2

Std:Standard feature

●:Option with no retrofitting capability

○:Option with retrofitting capability

Refer to the other pages for the barrel/screw options

No.	Item	α-S50iB	α-S100iB	α-S130iB	α-S150iB	α-S220iB
<b>Auxiliary unit</b>						
A-27	Manifolds for piping	4 lines (with flow control valves)				
A-28	Mold heater controller*1	4kW×4ch Total 8plugs				
A-29	200V outlets One unit can be selected*1	① 30A×2 No link or Selectable (link or no link) with alarm ② 30A×4 ③ 30A×6 (MENNEKES plugs)				
A-30	Alarm lamp*4	Red colored with selectable blinking/no blinking. LED type. Mounted on clamp top cover				
A-31	Multiple color signal tower*4	Three different colors with selectable flashing/no flashing. LED type. Mounted on clamp top cover				
<b>Overall</b>						
A-32	Audible buzzer	Std	Std	Std	Std	Std
A-33	Machine mount	Std	Std	Std	Std	Std
A-34	High rigidity mount	High rigidity mount (Leveller adjustment stroke is different from a standard machine mount.)				
A-35	Emergency stop buttons	Emergency stop buttons on both operator and non-operator side				
A-36	Central lubrication	Electric type automatic lubrication system performs periodical automatic lubrication which is demanded to maintain the machine accuracy for long term. Grease shortage or tube disconnection can be detected by valve switch. Cartridge grease provides easy refill. One spare cartridge is attached.				
A-37	Grease cartridge for maintenance	Specially developed high performance grease for central lubrication (1or 6 units)				
A-38	Tool kit Select from ① to ⑤	① Grease gun only ② Tool set Hex wrench set (1.5-14mm), Spanners (for nozzle detaching, width 19/24/32), Screwdriver and Tool box (Std.) ③ Tool set Hex wrench set (1.5-19mm), Spanners (for nozzle detaching, width 17/19/24/27/32/36), Screwdriver, T-shape hex wrench (5mm), Precision screwdriver(2.3mm) and Tool box (Full) ④ Grease gun+Tool set (Std.) ⑤ Grease gun+Tool set (Full)				
A-39	Fuse kit	Fuse set for control unit and heater				
A-40	Robot interface	SPI / EUROMAP67 interface				

\*1 The total amperage has to be below 100A (30kW) for S50iB~S220iB.

\*2 The retrofit option after the machine shipment requires additional construction and tuning fee.

\*3 Cannot be installed with mold heater controller option

\*4 Cannot be installed alarm lamp and multipol color signal tower at the same time

\*5 Only for small capacity injection specification.

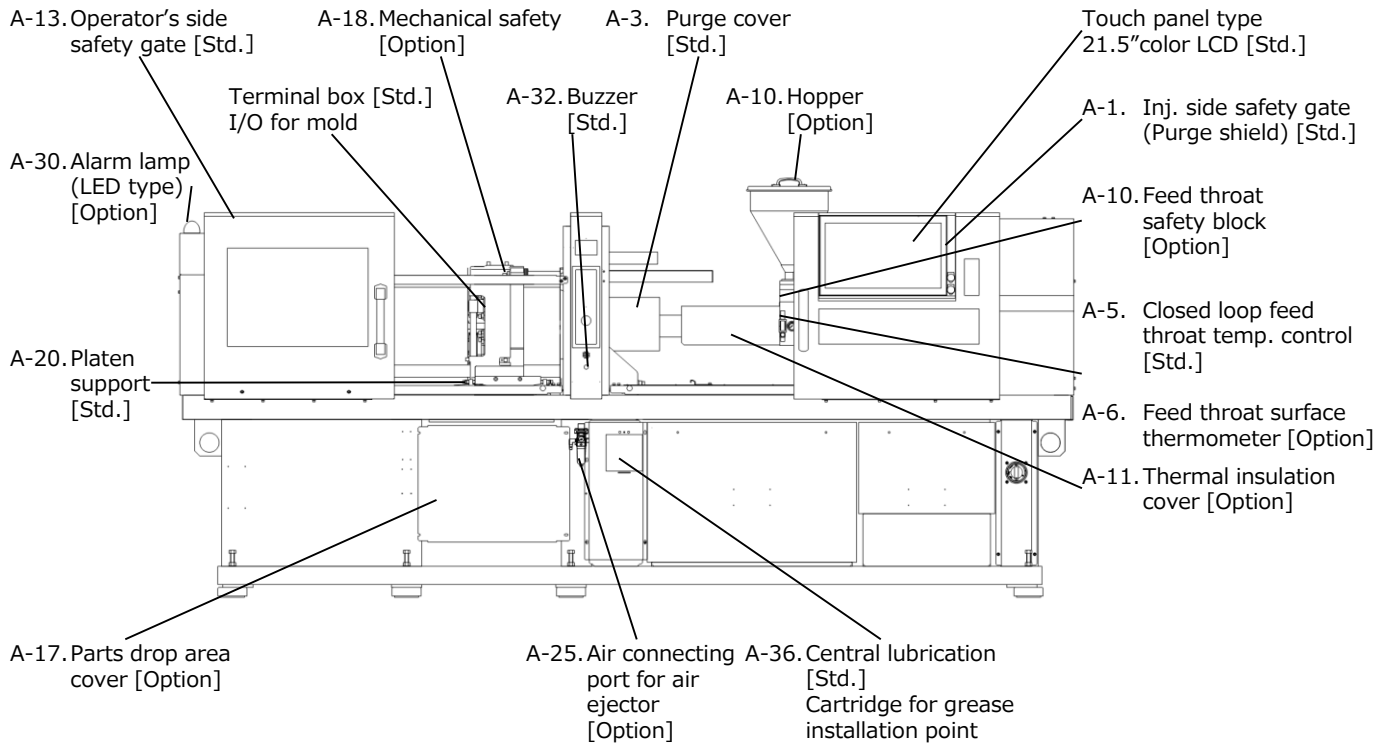
\*6 Except small capacity injection specification.



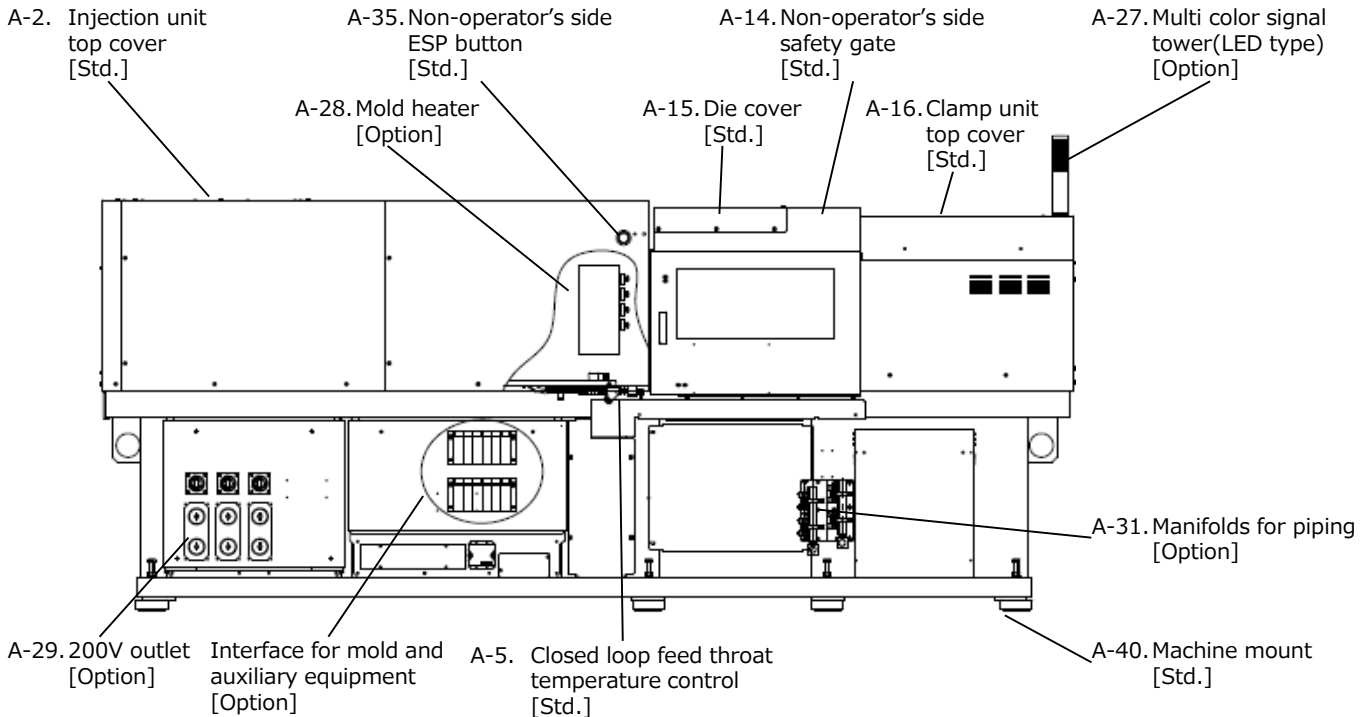
# Standard and optional features location

**ROBOSHOT**  $\alpha$ -S50iB/ $\alpha$ -S100iB/ $\alpha$ -S130iB/ $\alpha$ -S150iB/ $\alpha$ -S220iB

## Operator's side



## Non-operator's side



The numbers in above drawing meet with those in the table in "Standard and Optional features (Mechanical unit)".

## Standard / Optional features (Control unit and Software) 1/2

No.	Item	Description	
<b>Display and Input</b>			
B-1	Display unit	FANUC PANEL iH Pro which is display unit with PC functions (21.5" color LCD with touch panel)	Standard
B-2	Display mode	Simultaneous display of setting screen and monitoring screen / Display of ROBOSHOT-LINKi2	Standard
B-3	Systems of measurement	SI unit (kN, MPa etc.), Metric, Inches capability	Standard
B-4	Display languages	23 languages (Japanese, English, Simplified Chinese, Traditional Chinese, Korean, Thai, Vietnamese, Indonesian, German, French, Italian, Spanish, Spanish(Mexico), Finnish, Portuguese, Czech, Dutch, Hungarian, Danish, Polish, Turkish, Swedish, Russian)	Standard
B-5	Input mode	Numeric input, increment input, character input(23languages support)	Standard
B-6	Input lock function with password	Input lock Manage 200 operators with languages by password. Operator name is recorded in Last Change Log	Standard
B-7	Customization of menu buttons	Custom menu Operator management with ID card instead of password	Option
B-8	Setting profile display		Standard
B-9	iHMI home screen	Injection, Packing, Extruder, Clamp open/close, Eject, Temperature	Standard
B-10	Help function	New graphical user interface	Standard
B-11	Manual viewer	Context-sensitive help function for settings, signal, alarm	Standard
B-12	VNC client function	Display Operator's manual and Maintenance manual on ROBOSHOT screen	Standard
B-12	VNC client function	Remote operation of VNC available devices (Virtual Network Computing)	Option
<b>Injection and Extruder control</b>			
B-13	Injection control	Injection response Injection/Pack switch over	
		10 steps of pressure and speed control (step can be specified), Constant injection acceleration ratio, Gate flow control	Standard
		FFF, A, B, C, user setting	Standard
		Position, Pressure, Time, Cavity pressure, Nozzle pressure, Signal, Filling Position	Standard
B-14	Packing control		
		6 steps of pressure and time control (step can be specified), Maximum pack speed control, Extruder delay timer	Standard
B-15	Extruder control	Pre-suck back	
		6 steps of screw RPM and back pressure control (step can be specified), Suck back function	Standard
		Decompression before extruder	Standard
B-16	Maximum pressure monitoring in Injection/Packing	Injection pressure alarm	
		Injection pressure, Cavity pressure, Nozzle pressure (No cavity pressure sensor, nozzle pressure sensor, amplifier or cable is included)	Standard
B-17	Decompression control in Injection/Packing	HR mode	
		Selectable 8 modes pressure response	Standard
B-18	Automatic purging of resin	Auto purge	
		Normal mode/Refresh mode. Automatic calibration of injection pressure sensor is also available.	Standard
		Change purge condition sequentially	Option
B-19	Sprue break		Standard
B-20	Backflow prevention control	Precise metering control	
		Decompression after metering (Precise metering 2), Compression before injection (Precise metering 3)	Standard
B-21	Pressure curve repeating at good parts molding	AI pressure profile trace control	
		Injection pressure	Standard
		Cavity pressure, Nozzle pressure	Option
B-22	Recovery process repeating at good parts molding	AI metering control	
			Standard
B-23	Automatic start up parameter change	Start up function	
		5 steps : A part of injection, packing, extruding and temperature parameter	Standard
<b>Clamp/Ejector</b>			
B-24	Clamp close/open control		
		Close 6 steps /open 5 steps of position and speed control (Step can be specified), Cycle time reduction by automatic acceleration control	Standard
B-25	Ejector control	2 stage ejector Ejector delay timer	
		Maximum 10 pulses ejection	
		2 stage ejector (4 patterns of ejector motion profile)	Standard
B-26	In-mold degating	Pre-ejector	
		0.001 mm position settings,0.001 sec time settings	Option
B-27	Ejector compression function *2	Ejector compression	Option
B-28	Clamp compression function	Clamp compression	Option
		Clamp compression control with clamp force sensor, Mold opening sensor	Option
B-29	Automatic adjustment of die height	Automatic die height adjustment	
		Automatic die height adjustment with clamp force sensor (0kN~Maximum clamp force)	Standard
B-30	Automatic adjustment of optimum clamping force	Precise clamping force control	
		Automatic detection of optimum clamping force by clamp force sensor, Automatic mold clamp force correction during automatic operation	Standard
B-31	Reduction of setup time	Auto production change Setup confirmation	
		Efficient molding setup support with bar code or two-dimensional code (QR Code)*3	Option
B-32	Simultaneous motion	Ejection in clamp opening Pre-injection Clamp open and extruder Ejector override	
		Simultaneous ejector forward and clamp open	Standard
		Simultaneous clamp and injection	Standard
		0.001 sec time settings	Option
		Simultaneous clamp open and extruder	Standard
		Simultaneous ejector retract and clamp close	Option
B-33	Protection of mold and ejector	AI mold protection AI ejector	
		Clamp open and close	Standard
		Ejector forward and backward	Standard
<b>Temperature control</b>			
B-34	Nozzle/Barrel temperature control		
		High precision PID loop temperature control (0.01°C resolution,0.1sec period)	Standard
B-35	Closed loop feed throat temperature control		
		Solenoid valve ON/OFF control	Standard
B-36	Temperature alarm detection		
		Upper/lower band setting	Standard
B-37	PID parameters tuning	Auto-tuning function Self-tuning function	
		Automatic tuning after heat up end	Standard
		Automatic tuning during heat up	Standard
B-38	Synchronous nozzle/barrel heat up		Standard
B-39	Selectable temperature control ON/OFF	Manned/Unmanned operation Heater management	
		At alarm occurrence or production end	Standard
		At specified time (set for each date)	Standard
B-40	Nozzle tip protection by cold resin	Soak timer	Standard
B-41	Nozzle/Barrel temperature holding	Low temperature holding	Standard
B-42	Resin residence time monitoring	Residence time monitor	Standard
		Heater control when residence time becomes long	Standard
B-43	Thermocouple break detection		Standard
B-44	Heater disconnection detection		Standard
		Heat up rate detection by software	Standard
		Heater current detection by special hardware	Option
B-45	Reduction of maximum electricity power	Low electricity heat up	Standard
		Suppress heater output by 50% or 70%	Standard
B-46	Automatic transition to stop mode	Shutdown sequence	Standard
		Temperature control/Clamp close/Nozzle touch/Auxiliary outlet	Standard

## Standard / Optional features (Control unit and Software) 2/2

No.	Item	Description	
<b>Output/Input of mold conditions</b>			
B-47	Mold file	500 files. File name, comment, memo input, reference wave is available.	Standard
B-48	Mold file storage	Output device:USB flash device, Format:PNG / text	Standard
B-49	Screen image output	Output device:USB flash device, Format:PNG	Standard
<b>Monitor/Alarm/Diagnosis</b>			
B-50	Process monitor	Process monitoring alarm judgement Cycle alarm, Parts rejection for 40 items, Trend chart (100,000 shots), Process monitor	Standard
B-51	Self-diagnostic message/ Alarm message	Additional monitoring range for 1 cycle alarm of defective product	Standard
B-52	Log management	Alarm log Last change log Operation log Production log Alarm (50,000 logs), Output:USB flash device, Format:CSV Parameters (100,000 logs), Output:USB flash device, Format:CSV Operation (100,000 logs), Output:USB flash device, Format:CSV Production number (100 logs)	Standard
B-53	Production management	Production management Good product rate alarm Container management Counter stop function Production number, Start up NG, Consecutive bad cycles, product completion date calculation Cycle end stop in case of the lower good product rate Number of parts-filled container Stops production counter temporarily	Standard Option Standard Standard
B-54	Production information entry	Mold ID, Mold model number, Parts model number, Resin name, Resin grade, Cavity number and Memo	Standard
B-55	Preventive maintenance	Preventive maintenance AI Backflow monitor *7 Displays load and temperature of the machine part Preventive maintenance for check ring by adoption of machine learning	Standard Option
B-56	Graphical timing chart display of each molding process	Cycle diagnosis Display with reference data, elapsed time measurement	Standard
B-57	Power consumption monitoring	Power consumption monitor Power consumption and regeneration of ROBOSHOT	Standard
B-58	Graphical display of waveform	Wave monitor Position (screw, clamp, eject), Speed (screw, clamp, eject), Pressure (injection), Rotation, Backflow, Load (clamp, eject) 5 points pressure monitor(Reject and alarm), 6 sections metering monitor(Reject)	Standard
B-59	Signal output for sampling inspection *6	Manual sampling Automatic sampling Sample signal output by manual sample operation Sample signal output by designated interval (shot count or time)	Standard Standard
<b>Interface</b>			
B-60	Function selectable input signals	Machine status input Standard 12 inputs	Standard
B-61	Function selectable output signals	Machine status output Standard 8 outputs	Standard
B-62	Ethernet port	100BASE-TX/1000BASE-T 2 ports (ROBOSHOT-LINKi2, Peripheral devices)	Standard
B-63	FL-net port	100BASE-TX, FANUC Robot communication	Option
B-64	Ethernet HUB	100BASE-TX (5 ports)	Option
B-65	USB slot *4	USB3.0/2.0/1.1 USB connector compatible (2 ports)	Standard
B-66	Configurable machine signals	Custom signal function Maximum 32 points available (Character input of signal name)	Standard
B-67	Configurable core sequence	Custom core function Maximum 6 systems are available.	Standard
B-68	Picker interface	12 outputs (clamp open limit, etc.), 8 inputs (clamp permission signal, etc.)	Standard
B-69	Core interface	4 systems for each core pull/set	Standard
B-70	Shut off nozzle interface *6		Standard
B-71	Vacuum device interface *6		Standard
B-72	Valve gate interface *6	8 circuits 16 circuits Injection, clamp closing interlock by external signal	Standard Option Option
B-73	Parts removal detector interface *6		Standard
B-74	Monitor camera interface *6	Interlock with ejector is available	Standard
B-75	Air ejector interface	Maximum 6 outputs	Option
B-76	Unscrewing interface *6	2 inputs, 2 outputs	Option
B-77	Injection interface *6	Injection permission Injection permission signal	Standard
B-78	Extruder interface *6	Extruder permission Extruder permission signal	Option
B-79	Clamp interface *6	External signal clamp Clamp open and close	Standard
B-80	Ejector interface *6	Ejector interlock Ejector skip External signal ejector Motion permission Motion skip Eject start, advanced, retracted, middle in advance and middle in retract	Standard
B-81	Ejector retract confirmation signal *6	Ejector plate retract confirmation	Standard
B-82	Cycle stop by external signals *6	Alarm signal input Immediate stop signals, Cycle end stop signals, Display only	Standard
B-83	Data communication with auxiliary device by SPI protocol	Auxiliary device communication Mold temperature controller, dryer, loader, chiller Hot runner	Standard Option
B-84	Forced rejection when bad parts occurs	Bad parts reject function	Standard
B-85	Non-operator's side parts unloading	EUROMAP 73 (HARTING connector is option)	Option
B-86	Additional axes control	Suitable feeding device *2 Servo nozzle touch *2 Mold core drive, Unscrewing Rotary table Servo door*2 Achieves optional amount of resin supply by feedback control, Achieves long term molding repeatability Controls nozzle touch force during mold cycle optimally High-speed and accuracy positioning by FANUC servo technology No additional control equipment required, Integrated into ROBOSHOT screen Rotate mold, index table Safety gate open/close by servo motor	Option Option Option Option Option
B-87	Stationary side ejector signal	Ejector signals Ejector forward, retract (hydraulic ejector)	Option
B-88	Waveform data output by voltage	Analog output Maximum 4 points of injection pressure, position (screw, clamp, eject), speed (screw, rotate, clamp, eject)	Option
B-89	External sensor connection	Analog input Maximum 2 boards of voltage input board (Max 4 points), current input board (Max 4 points) are available. Waveform display, Parts rejection	Option
B-90	Mold ID number signal output	Mold ID number output function Picker data link function Mold ID output by 8 points of binary data (0-255) Mold ID output to picker by 8 points of binary data (0-255)	Option
B-91	Shot counter signal output	Shot counter output function Current shot count output by 4 points of binary data (0-15)	Option
B-92	Barrel cooling fan control signal output	Maximum 4 points are available.	Option
B-93	Magnetic mold clamp interface		Option

\*1 The retrofit option after the machine shipment requires additional construction and tuning fee.

\*2 Please contact FANUC for the detail because mechanical modification is required.

\*3 QR Code is a registered trademark of DENSO WAVE INCORPORATED.

\*4 Commercial USB flash device which work with standard Windows® drivers are available. Some device may not work.

\*5 Please contact FANUC for available device. Commercially available USB flash device can be used, but it may not function properly.

\*6 Machine status signals are available as input/output signal.

\*7 ROBOSHOT-LINKi2 Machine Learning Function (Option) is required.

# Cylinder / Screw / Nozzle Specification

## 1. Cylinder / Screw / Screw Head / Nozzle

Purpose	Major polymer (Moldings)	Cylinder (Barrel)		Screw		Screw head*5	Nozzle	
				Shape	Material		Shape	Material
General purpose	PP, PS, PE	PAL(Wear-resistance)	Max Setting Temp. 350°C*3	Max. injection & pack prs.2*4	Single flight/ Double flight	Nitride	Std.	Std./Chrom e plating
Transparent polymer I	PS, ABS, AS					Chrome plating		YPT42
Transparent polymer II	PMMA, PC, COC, COP				H503	Max Setting Temp. 400°C*3	Max. injection & pack prs.1*4	Lens(In case of φ32 and over, Double flight screw is recommended)
Lens	PMMA, PC, COC, COP	PAL(Wear-resistance)	Max Setting Temp. 400°C*3	Max. injection & pack prs.1*4				
High cycle I	PP, PS, PE				H610	Max Setting Temp. 400°C*3	Max. injection & pack prs.1*4	Single flight/ Double flight
High cycle II	PP, PS, PE	C900 φ44 and under	Max Setting Temp. 400°C*3	Max. injection & pack prs.1*4				
General(Flame retardant)	PS, ABS(with flame retardant)				KH	Max Setting Temp. 400°C*3	Max. injection & pack prs.1*4	α-S50iB~ α-S150iBs : KAM31 α-S150iB : YPT71
Wear-resistance and anti-corrosion	POM(Polyacetal) PC(GF reinforced), PBT, Nylon	Special spec. α-S50iB~α-S150iBs	Max Setting Temp. 400°C*3	High pres. mode*4				
High wear-resistance and anti-corrosion (High W/C)	LCP, PPS(GF under 30%) High GF-Filler concentration resin Materials for MIM				KH	Max Setting Temp. 400°C*3	High pres. mode*4	YPT42
Ultra wear-resistance and anti-corrosion (Ultra W/C)	LCP, PPS(GF 30% and over) Aromatic nylon, Halogen free flame-retardant resin	C900	Max Setting Temp. 400°C*3	High pres. mode*4				
Semi-high pressure	Thin wall parts				C900	Max Setting Temp. 400°C*3	High pres. mode*4	Single flight
Optical high pressure	Light guide panel	KH	Max Setting Temp. 400°C*3	High pres. mode*4				
Connector I	PPS, PBT, Nylon, LCP (GF 30% and under)				C900/KH(High temp.)	Max Setting Temp. 450°C*3	Max. injection & pack prs.1*4	Single flight
Connector II	PPS, Nylon, LCP (GF 30% and over) φ22 and under	H610(High temp.) C900(High temp.) α-S50iB~α-S150iBs KH(Ultra W/C)	Max Setting Temp. 450°C*3	Max. injection & pack prs.1*4				
Connector III	Heat resistant LCP				H610(High temp.) C900(High temp.) α-S50iB~α-S150iBs KH(Ultra W/C)	Max Setting Temp. 450°C*3	Max. injection & pack prs.1*4	Single flight
High temperature	PEEK, PES, PSU, Heat resistant PPS	H610(High temp.) C900(High temp.) α-S50iB~α-S150iBs KH(Ultra W/C)	Max Setting Temp. 450°C*3	Max. injection & pack prs.1*4				

\*1 Materials and combination of cylinder-screw may be changed to improve without any information.

Manufacturer : Hitachi Metals, Ltd. (YPT42, YPT71, PAL, H610, H503), Asai Sangyo co., Ltd. (KAM31, C900), Kohan Kogyo co., Ltd. (KH)

\*2 For other molding materials(Thermo-sets, PVC, Silicon etc), other cylinder-screw manufacturers and other cylinder-screw materials are also available.

\*3 Refer to "3. Setting Temperature"

\*4 The maximum injection pressure setting depends on the cylinder specifications. For details, please check the specifications of each model.

\*5 Screw head is Non-castle type except for [Nitride] and [W/C Surface treatment].

\*6 In the case of peak pressure is higher than catalog max. pressure, mount Semi-high press. or Optical high press. resistance barrel. (High pressure filling mode goes to usable.)

## 2. Screw Type

Choice of suitable screw type for your resin.

Screw type	Purpose
Single flight screw	General purpose
Double flight screw	POM, High distributive mixing, Homogenization of melt temp, Prevention of non-melting pellet
High plasticating screw*8	High cycle for PP, PS, PE, etc.
Lens specification screw	PC, PMMA(Anti-Contamination)
Smear head screw	Thermo-sets, PVC

\*7 Custom profile or other surface treatment are also available.

\*8 Long L/D specification is available for φ36 of S100iA-S150iAs, φ48 of S150iA-S220iA.

## 3. Setting Temperature

Screw Dia. φ14 - φ56		Setting Temperature(°C)					
		Nozzle	Barrel 1	Barrel 2	Barrel 3	Barrel 4	Feed throat
Standard	Max Setting Temp. 350°C	0~350	0~350	0~350	0~350	0~350*12	0~95
Wear-resistance and anti-corrosion	Max Setting Temp. 400°C	0~400	0~400	0~400	0~350*11	—	0~95
					0~400*12	0~350*12	
High Temperature	Max Setting Temp. 450°C	0~450	0~450	0~450	0~430*11	—	0~95
					0~450*12	0~430*12	

\*9 The temperature may not rise to the maximum setting temperature depending on the molding condition.

Especially, the rear zone (Barrel 3) temperature may not rise to the setting temperature because it is close to the cooling water line under hopper.

\*10 By a molding condition, there is sometimes a difference in displayed Temperature and resin Temperature.

\*11 Screw diameter φ14 - φ52

\*12 Screw diameter φ56 or over

#### 4. Nozzle Type

Nozzle type		Material/Surface treatment	Resin	Purpose	Application	Shape
Standard Nozzle*13	Short/Long	Std.	General	General purpose	φ22 and under	Reference Fig.1
		Chrome plating	PP, PS	Carbide reduction		
		TiCN	PC, PMMA Transparent resin	Carbide reduction High injection pressure	φ26 and over	Reference Fig.4
		KH	High GF-Filler concentration resin	Wear-resistance		
Slender Nozzle*14	Short/Long	Std.	LCP	Short sprue mold Residence amount reduction	α-S50iB~α-S150iBs φ22 and under	Heater out.dia.22mm Reference Fig.2
		TiCN				
Middle Dia. Nozzle*14	Short/Long	Std.	PA, PBT	Short sprue mold Low pressure loss Prevention of stringy and drooling	α-S50iB~α-S150iBs φ22 and under	Heater out.dia.28mm Reference Fig.3
		TiCN	Transparent Polyolefin			
		KH	High GF-Filler concentration resin		α-S50iB~α-S150iBs φ26 and over	Heater out.dia.28mm Reference Fig.5

\*13 2 Piece nozzle is available.

\*14 In case of slender or a middle diameter nozzle is selected, adjustments may need to reduce the nozzle touch force.

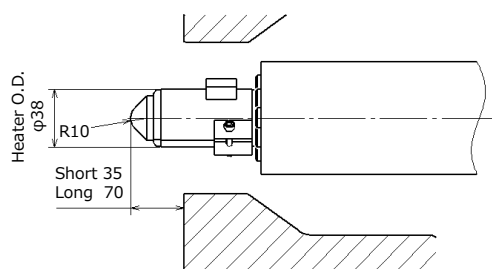


Fig.1 Standard Nozzle (φ22mm and under)  
(Orifice Dia. φ1.5, φ2, φ2.5, φ3, φ4)

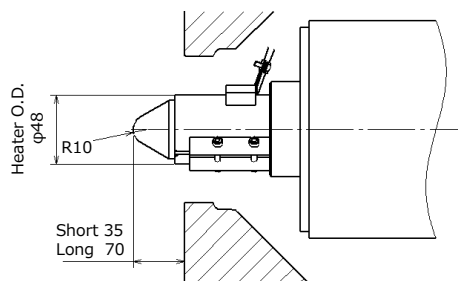


Fig.4 Standard Nozzle (φ26 and over),  
Large Machine Nozzle (φ68 and over)  
(Including High press. resist., Semi-high press. resist.,  
Optical high press. resist. Nozzle for φ22 and under)  
(Orifice Dia. φ1.5, φ2, φ2.5, φ3, φ4, φ5, φ6)

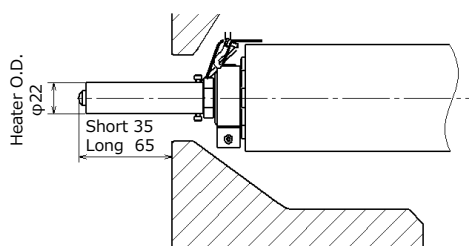


Fig.2 Slender Nozzle  
(Orifice Dia. φ1.5, φ2, φ2.5)

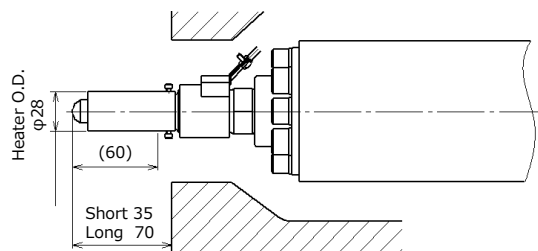


Fig.5 Middle Dia. Nozzle (φ26 and over)  
(Orifice Dia. φ1.5, φ2, φ2.5, φ3, φ4)

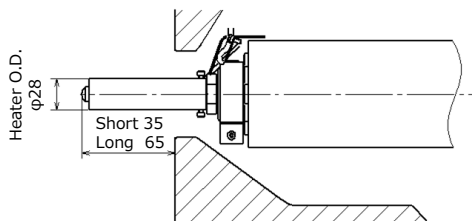


Fig.3 Middle Dia. Nozzle (φ22 and under)  
(Orifice Dia. φ1.5, φ2, φ2.5, φ3, φ4)

## 5. Dimensions of Water jacket and Hopper attachment

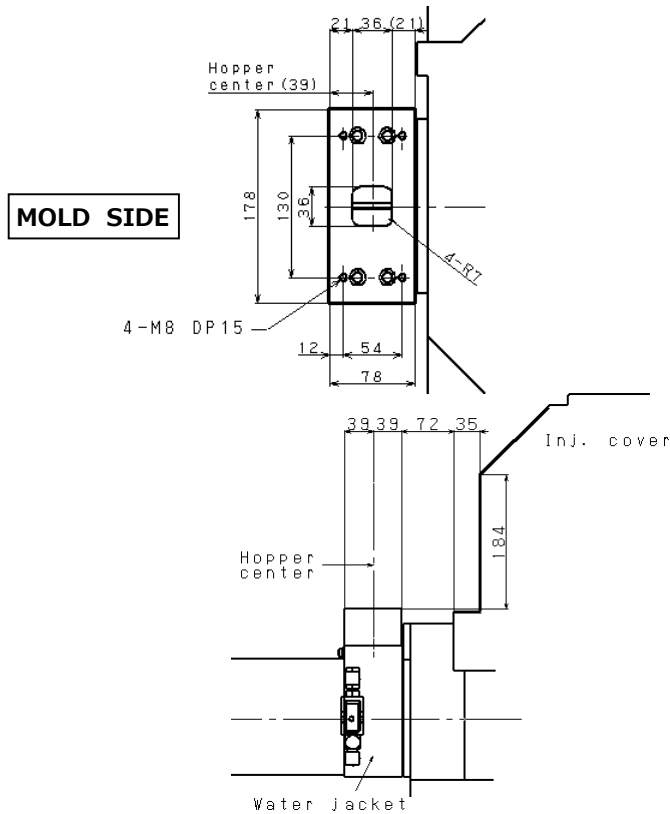


Fig.1  $\alpha$ -S50iB/ $\alpha$ -S100iB  
 $\alpha$ -S150iB (Small capacity injection)  
 Screw Dia.  $\phi$ 22 and under <sup>note1)</sup>  
 note1) except for High press. resist., Semi-high press. resist.,  
 Optical high press. resist. (refer to Fig.2)

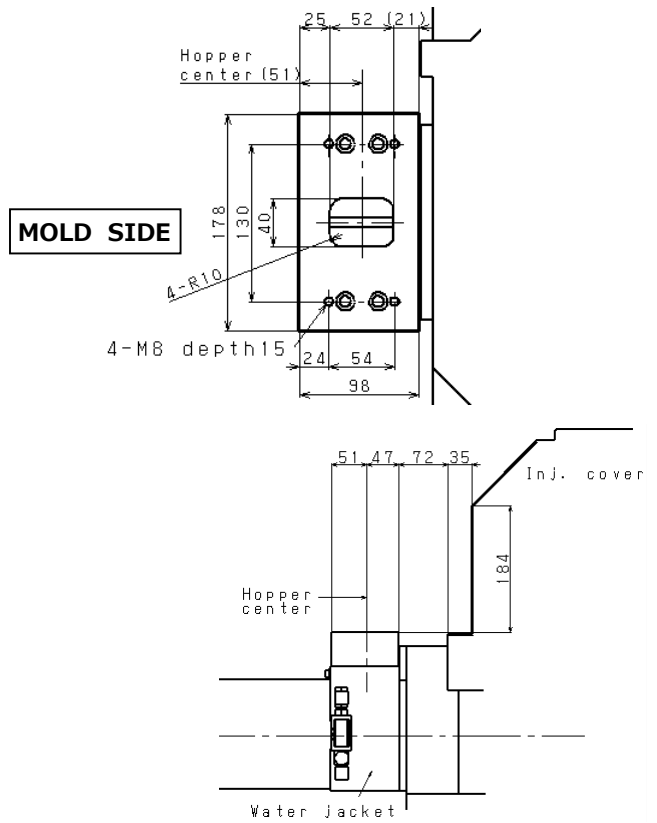


Fig.2  $\alpha$ -S50iB/ $\alpha$ -S100iB  
 $\alpha$ -S150iB (Small capacity injection)  
 Screw Dia.  $\phi$ 26, 28  
 Screw Dia.  $\phi$ 22 and under (High press. resist.,  
 Semi-high press. resist, Optical high press. resist.)

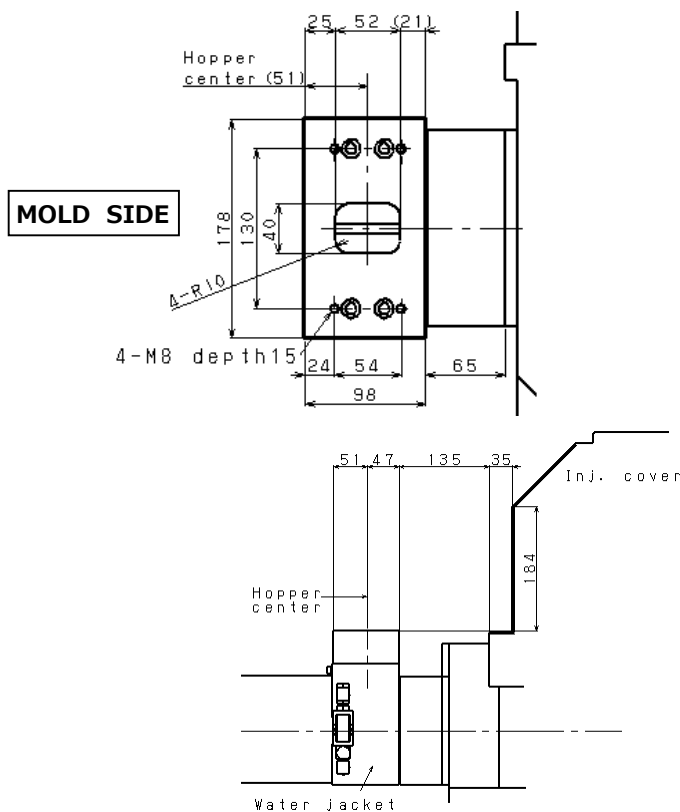


Fig.3  $\alpha$ -S50iB/ $\alpha$ -S100iB/ $\alpha$ -S130iB  
 $\alpha$ -S150iB (Small capacity injection)  
 Screw Dia.  $\phi$ 32, 36, 40

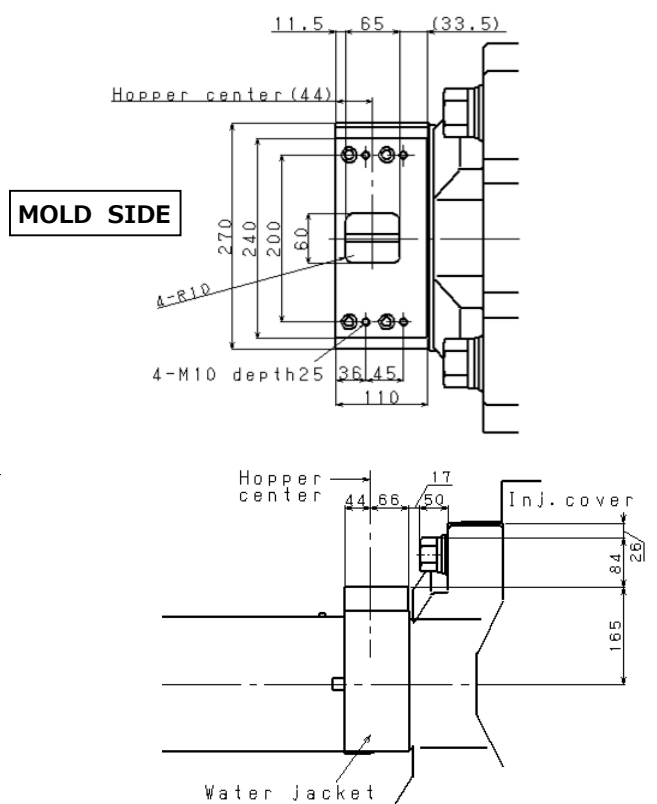


Fig.4  $\alpha$ -S150iB/ $\alpha$ -S220iB  
 Screw Dia.  $\phi$ 48 and under

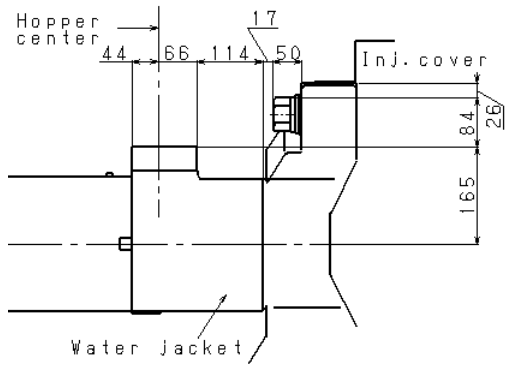
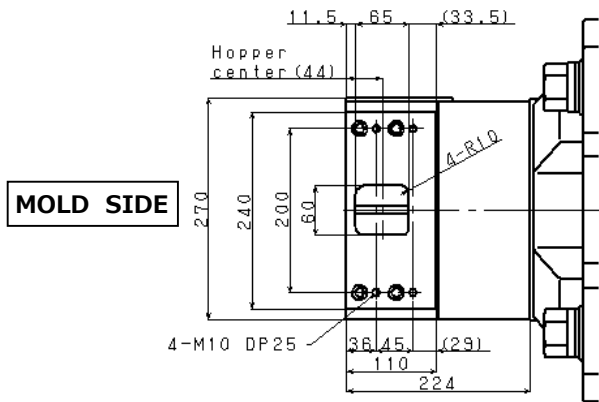


Fig.5  $\alpha$ -S150iB/ $\alpha$ -S220iB  
Screw Dia.  $\phi$ 52 and over

# Floor Plan

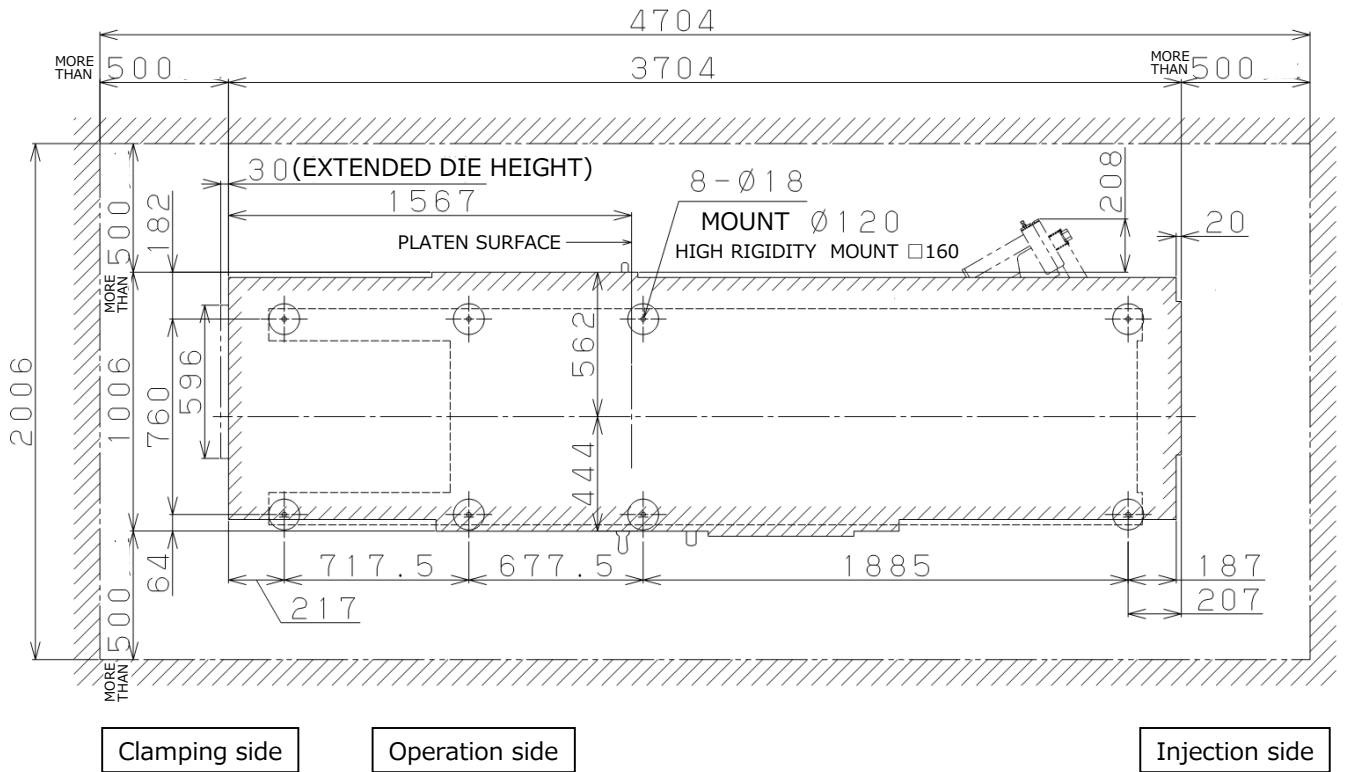


Fig.1 α-S50iB

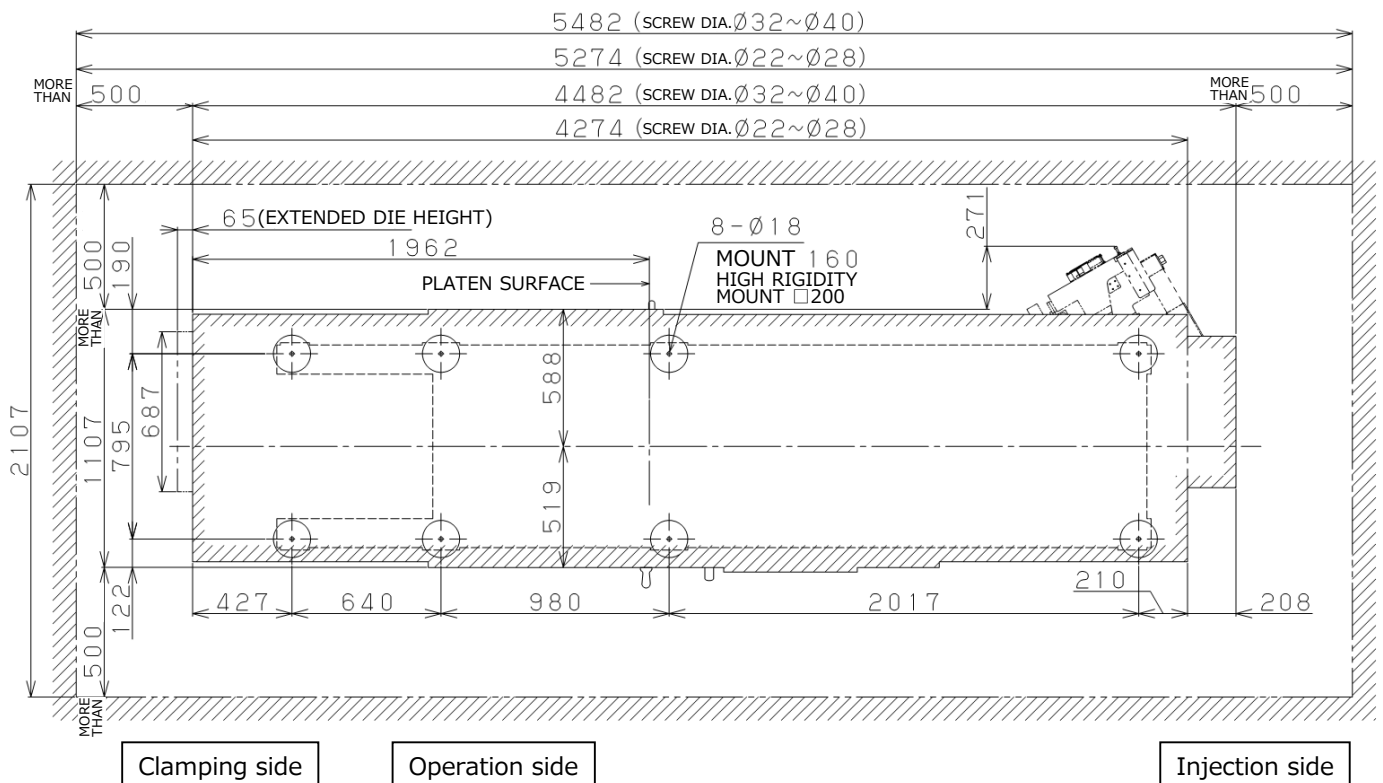


Fig.2 α-S100iB



# Floor Plan

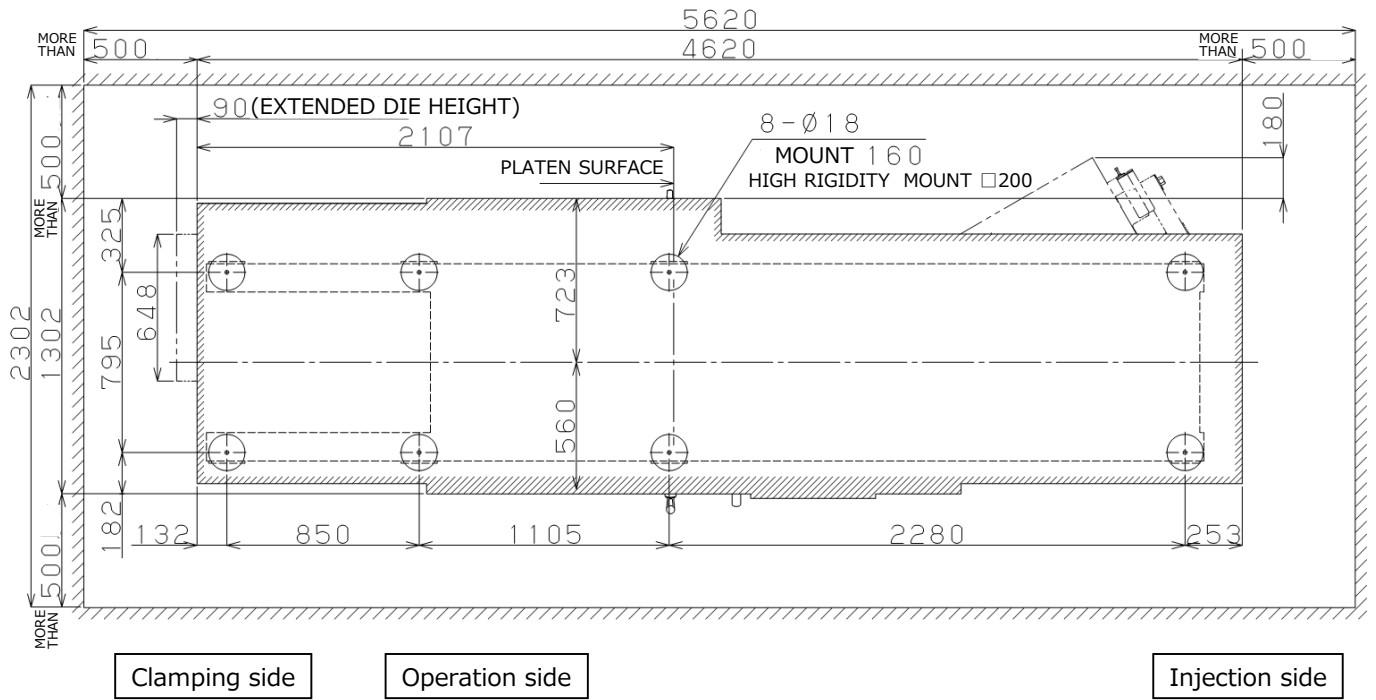


Fig.3 α-S130iB

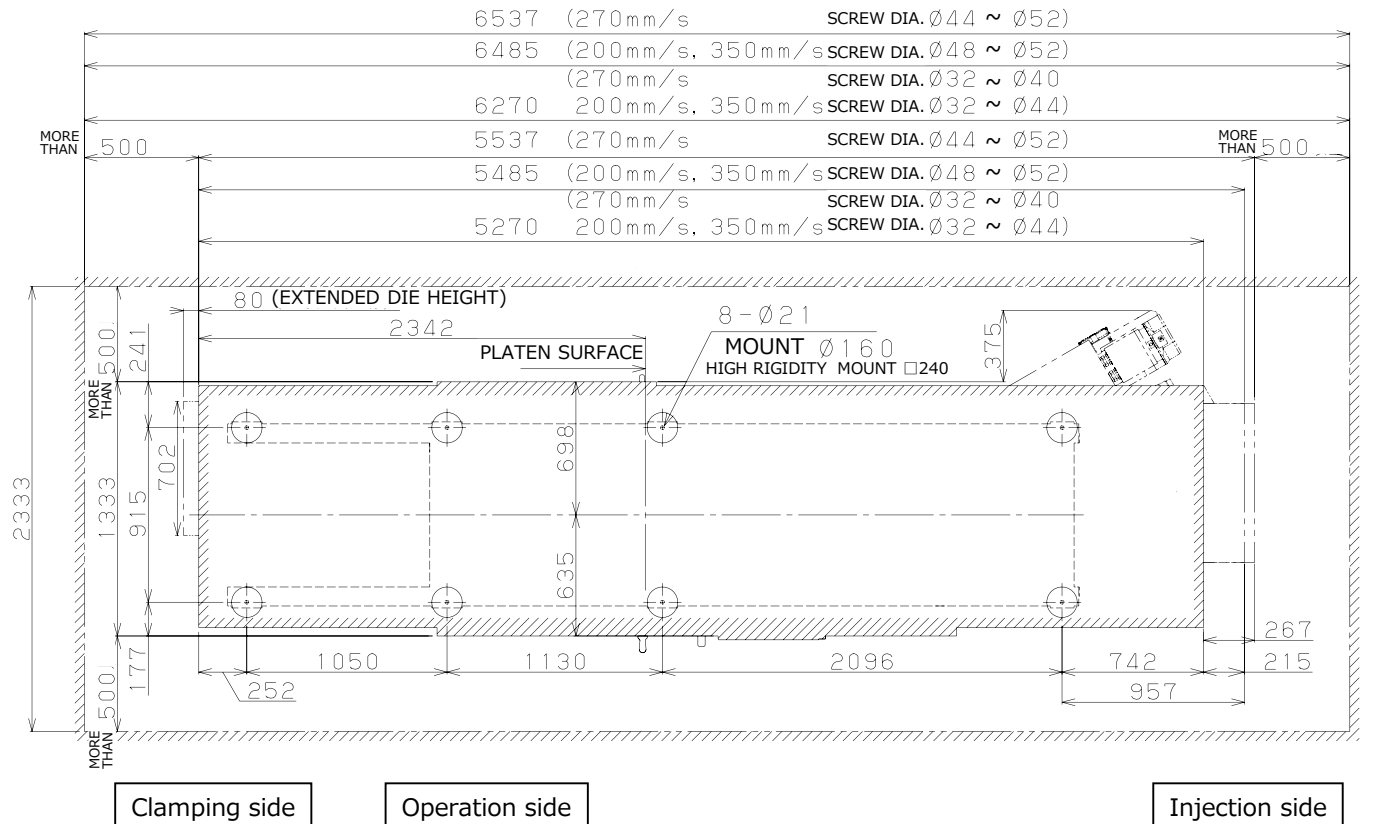


Fig.4 α-S150iB

# Floor Plan

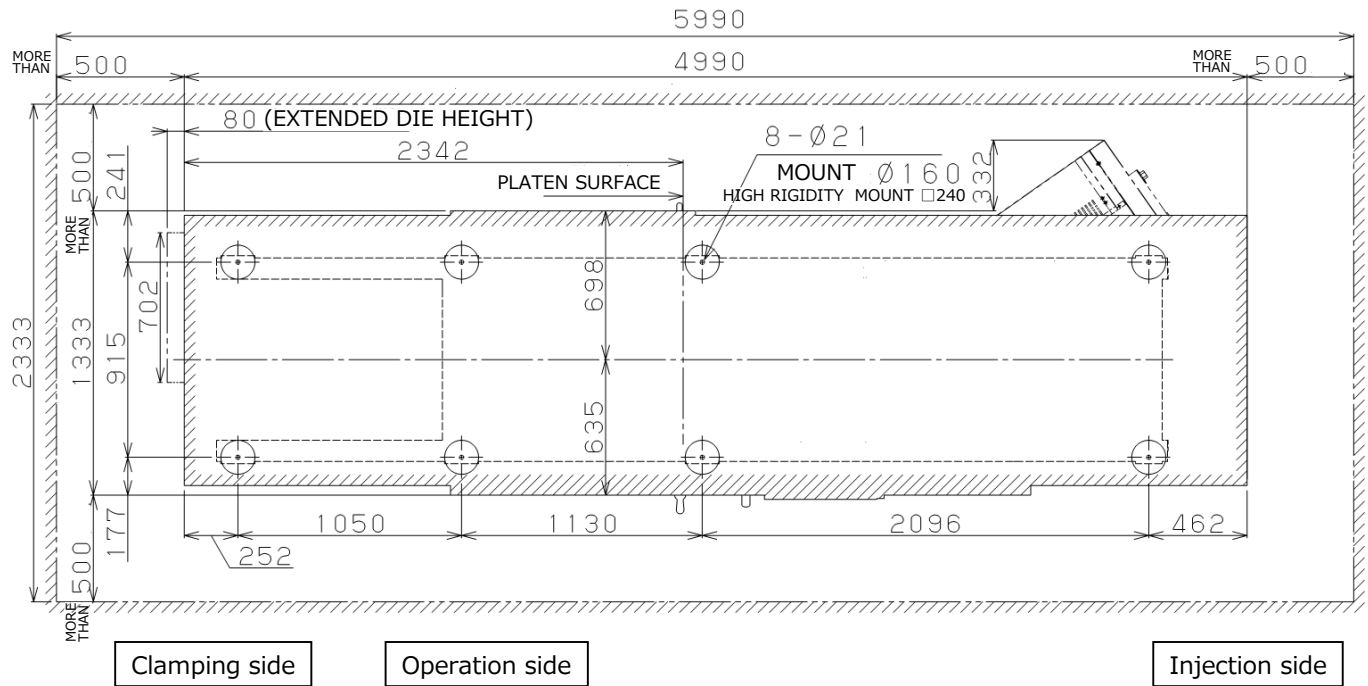


Fig.5 α-S150iB Small capacity injection specification

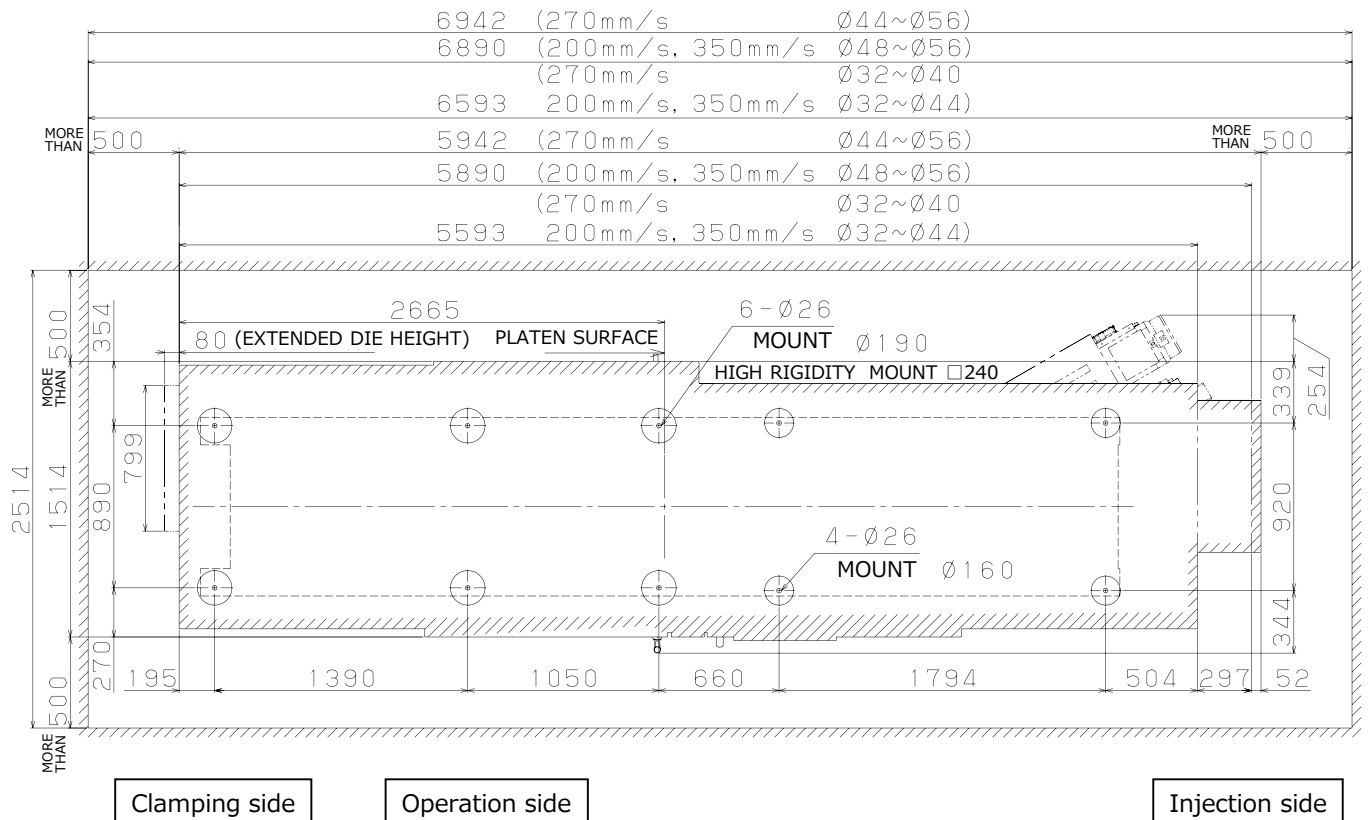


Fig.6 α-S220iA

# Utility

## 1. Main breaker and primary side power cable

Items	α-S50iB			
	Inj.speed 350mm/s		Inj.speed 550mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	50A	150A	50A
Size of primary side power cable*2	50-60mm <sup>2</sup>	8-14mm <sup>2</sup>	50-60mm <sup>2</sup>	8-14mm <sup>2</sup>
Terminal size of primary side power cable	M8	M5	M8	M5
Terminal size of grounding cable	M8	M8	M8	M8
Power supply capacity*4	46.8kVA	16.8kVA	46.8kVA	16.8kVA
Power transformer capacity*5	50kVA	30kVA	50kVA	30kVA

Items	α-S100iB					
	Inj.speed 200mm/s		Inj.speed 200mm/s (High duty)		Inj.speed 350mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	60A	150A	60A	150A	60A
Size of primary side power cable*2	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>
Terminal size of primary side power cable	M8	M6	M8	M6	M8	M6
Terminal size of grounding cable	M8	M8	M8	M8	M8	M8
Power supply capacity*4	48.9kVA	18.9kVA	48.9kVA	18.9kVA	48.9kVA	18.9kVA
Power transformer capacity*5	50kVA	30kVA	50kVA	30kVA	50kVA	30kVA

Items	α-S100iB	
	Inj.speed 550mm/s	
	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	60A
Size of primary side power cable*2	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>
Terminal size of primary side power cable	M8	M6
Terminal size of grounding cable	M8	M8
Power supply capacity*4	48.9kVA	18.9kVA
Power transformer capacity*5	50kVA	30kVA

Items	α-S130iB					
	Inj.speed 200mm/s		Inj.speed 200mm/s (High duty)		Inj.speed 350mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	60A	150A	60A	150A	60A
Size of primary side power cable*2	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>
Terminal size of primary side power cable	M8	M6	M8	M6	M8	M6
Terminal size of grounding cable	M8	M8	M8	M8	M8	M8
Power supply capacity*4	48.9kVA	18.9kVA	48.9kVA	18.9kVA	48.9kVA	18.9kVA
Power transformer capacity*5	50kVA	30kVA	50kVA	30kVA	50kVA	30kVA

Items	α-S130iB	
	Inj.speed 550mm/s	
	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	60A
Size of primary side power cable*2	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>
Terminal size of primary side power cable	M8	M6
Terminal size of grounding cable	M8	M8
Power supply capacity*4	48.9kVA	18.9kVA
Power transformer capacity*5	50kVA	30kVA

Items	α-S150iB					
	Inj.speed 200mm/s		Inj.speed 270mm/s (High duty)		Inj.speed 350mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	175A	75A	225A	125A	225A	125A
Size of primary side power cable*2	60-70mm <sup>2</sup>	22-60mm <sup>2</sup>	100mm <sup>2</sup>	38-60mm <sup>2</sup>	100mm <sup>2</sup>	38-60mm <sup>2</sup>
Terminal size of primary side power cable	M8	M8	M8	M8	M8	M8
Terminal size of grounding cable	M8	M8	M8	M8	M8	M8
Power supply capacity*4	55.9kVA	25.9kVA	72.0kVA	42.0kVA	72.0kVA	42.0kVA
Power transformer capacity*5	60kVA	30kVA	80kVA	50kVA	80kVA	50kVA

Items	α-S150iB Small capacity injection specification			
	Inj.speed 350mm/s		Inj.speed 550mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	150A	60A	150A	60A
Size of primary side power cable*2	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>	50-60mm <sup>2</sup>	14-22mm <sup>2</sup>
Terminal size of primary side power cable	M8	M6	M8	M6
Terminal size of grounding cable	M8	M8	M8	M8
Power supply capacity*4	48.9kVA	18.9kVA	48.9kVA	18.9kVA
Power transformer capacity*5	50kVA	30kVA	50kVA	30kVA

Items	α-S220iB					
	Inj.speed 200mm/s		Inj.speed 270mm/s (High duty)		Inj.speed 350mm/s	
	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1	With peripheral devices*1	With no peripheral devices*1
Main breaker	175A	75A	225A	125A	225A	125A
Size of primary side power cable*2	60-70mm <sup>2</sup>	22-60mm <sup>2</sup>	100mm <sup>2</sup>	38-60mm <sup>2</sup>	100mm <sup>2</sup>	38-60mm <sup>2</sup>
Terminal size of primary side power cable	M8	M8	M8	M8	M8	M8
Terminal size of grounding cable	M8	M8	M8	M8	M8	M8
Power supply capacity*4	55.9kVA	25.9kVA	72.0kVA	42.0kVA	72.0kVA	42.0kVA
Power transformer capacity*5	60kVA	30kVA	80kVA	50kVA	80kVA	50kVA

\*1 The machine with peripheral devices and that with no peripheral device have the following machine specifications, respectively.

With peripheral devices : When the molding machine equipped "External outlet", "Mold heater controller" or "Integrated hotrunner controller". ("Mold heater controller" and "Intefrated hotrunner controller" cannot be selected simultaneously.)

With no peripheral device : When only the molding machine is used

\*2 The wire sizes are based on the values of the maximum permissible current of 600V vinyl-insulated wires in exposed wiring at an ambient temperature of 40°C that are listed in Table 1 in Annex 4 in JIS B 6015.

\*3 When connecting the input power supply to the machine, be sure to connect the ground wire. When installing the machine in a country other than Japan, follow relevant laws and standards of the country.

\*4 The power requirement depends on the screw diameter. Contact FANUC for details.

\*5 When installing a power transformer, be sure to select a transformer having the recommended capacity or more.

## 2. Cooling water (for feed throat control)

Model	Flux	Pressure	Connection
S50iB / S100iB / S130iB / S150iB / S220iB	More than 3.0L/min (Normal)	0.15~0.49MPa	The socket (for I.D.=φ9mm horse) is attached with ROBOSHOT

## 3. Dry air (for air ejector)

Connection	The connection coupler is attached with ROBOSHOT
Required air pressure	0.5MPa
Flux	More than 200L/min(Normal)

# ROBOSHOT-LINKi2

## 1. Platform configuration

Items	Contents	
Server PC	<ul style="list-style-type: none"> <li>·OS*2</li> <li>·CPU</li> <li>·Main memory</li> <li>·Storage (Built-in)</li> <li>·Ethernet port</li> <li>·USB port</li> <li>·DVD drive</li> <li>·Display</li> <li>·UPS</li> <li>·Database / Web server*4</li> <li>·Microsoft Office</li> </ul>	Windows® 10 Pro 64bit / Windows® 10 Enterprise 64bit / Windows® Server 2016 Standard 64bit / Windows® Server 2016 Datacenter 64bit / Windows® Server 2019 Standard 64bit / Windows® Server 2019 Datacenter 64bit Intel® Core™ i9/i7 Processor 3.6GHz 6 cores or more or Xeon Number of connected machines 20 or less:16GB or more, 50 or less:32GB or more, 100 or less:64GB or more recommended SSD recommended. 10GB + (10GB+6.5GB)×connected machine number*3 1 Gbit/sec or faster Ethernet card One USB port is required for the license activation. Required to install ROBOSHOT-LINKi2 1,920×1,080(Full HD) or higher Recommended for installation on a server PC PostgreSQL 9.6 / IIS10.0 Excel®:Required for a report output function or ID tag print.
Client device for data display	<ul style="list-style-type: none"> <li>·OS</li> <li>·Display</li> <li>·Web browser</li> </ul>	OS that can run Google Chrome or Chromium Edge 1,920×1,080(Full HD) or higher Google Chrome, Chromium Edge
Client device for data I/O	<ul style="list-style-type: none"> <li>·OS*2</li> <li>·Main memory</li> <li>·Storage</li> <li>·Ethernet port</li> <li>·DVD drive</li> <li>·Microsoft Office</li> </ul>	Windows® 10 Pro 64bit / Windows® 10 Enterprise 64bit / Windows® Server 2016 Standard 64bit / Windows® Server 2016 Datacenter 64bit / Windows® Server 2019 Standard 64bit / Windows® Server 2019 Datacenter 64bit 16GB or more recommended Requires 200MB or more free space 1 Gbit/sec or faster Ethernet card Required to install ROBOSHOT-LINKi2 Excel®:Required for a report output function.
Network	<ul style="list-style-type: none"> <li>·LAN</li> <li>·Ethernet cable</li> <li>·HUB</li> </ul>	Recommends to prepare independent LAN for this system. Shielded twisted pair (STP) cable (Category 6 or higher recommended) Wire: Stranded wire or single wire up to 10m / Single wire from 10m to 100m Connector: Cable shield connected to metal cover Recommends switching HUB 1Gbit/sec or more. (Metal housing, Built-in power supply, Metal cover of connector can be grounded)

## 2. System configuration

Items	Contents	
Number of PCs	<ul style="list-style-type: none"> <li>·Server PC</li> <li>·Client PC*5</li> </ul>	1 PC(Mandatory) Any
Connectable number*6	<ul style="list-style-type: none"> <li>·ROBOSHOT*7</li> <li>·Hydraulic injection</li> <li>·FANUC Robot*7</li> </ul>	Unlimited machines or 20 machines per one set of ROBOSHOT-LINKi2(Depend on the package). RS-232C/Ethernet converter and cable is required to connect ROBOSHOT a-C series or earlier machine.*8 IO / Ethernet converter required*8 Control unit (R-30iB or R-30iB Mate), FANUC Robot PC Developer's Kit runtime library required

## 3. Main functions

### 3.1 Standard functions

Functions	Contents	
<b>Multi language support</b>	Japanese/English/Chinese(Simplified, Traditional)/Korean/Germany/French	
<b>Data display</b>	<b>Display of data collected by ROBOSHOT-LINKi2</b>	
Planning	Mold file	Mold file can be loaded from ROBOSHOT to PC/Mold file can be sent from PC to ROBOSHOT/Display contents
	Work Scheduler	Register job plan in calendar format
Molding	Process monitor	Real-time display of ROBOSHOT status. Real-time display of ROBOSHOT screen on PC (α-SiA, α-SiB).
	Molding result	Production and molding result display per shift, per day, per week or per month, per lot, per job code.
	Work Manager	Display a list of machines that require work (stop by alarm, completion of production), Display the contents registered in work scheduler, Save the work results
Improve ment	Log	Displays the past operating status of ROBOSHOT and each log data (alarm log, molding parameter log, operation log, monitor data)
	Wave data display and analysis	Various wave data are drawn in a colored graph or a pile, and 3 dimensional graph. Search for wave data out of the threshold. (Available:S-2000iB, α-SiA, α-SiB)
	Resin evaluation	Resin characteristic analysis function/Database of resin
Utility	System diagnostics	Show system operating status
	File output	Molding(Production) results/Monitor data/Wave form data/Alarm log/Molding parameter change log/Molding parameter output/iRvision image output
	Document	PDF file registration and display, Procedure manual (PDF) for job plan can be registered
<b>Data Input/Output</b>	<b>Input/output of data collected by ROBOSHOT-LINKi2</b>	
	E-mail sending	Reports the machine stop caused by an alarm and periodical operational status. (SMTP only)
	Report output	Quality data report (shift/daily), Production report (shift/daily/weekly/monthly) Molding parameter output in Excel format, Report customization capability
	Data interface for external quality management	Data output for external quality management system The data includes the followings. Molding(Product) result/Monitor data/Molding parameter/Alarm log/Molding parameter change log
<b>Data maintenance</b>	<b>Setting of information necessary for operating ROBOSHOT-LINKi2 and maintenance of database</b>	
	Data migration	Migrate existing data from ROBOSHOT-LINKi or MOLD24i to ROBOSHOT-LINKi2
	Database backup	Data backup (Periodical / manual), Backup reference

### 3.2 Optional functions

Functions	Contents	
EUROMAP MES I/F function	Quality monitor data and molding parameter interface according to EUROMAP63, EUROMAP77(OPC 40077)	
Machine learning function	Estimate monitor data of ROBOSHOT by using machine learning (AI Backflow monitor)	

\*1 Windows® and Excel® are a registered trademark of U.S.A. Microsoft Corp.

\*2 Use an OS that is within the support period of Microsoft.

\*3 Storage capacity of monitor data for 1 year (Cycle time 8 seconds) ≈ 10GB, storage capacity of 15 items of waveform data for 7 days (During automatic operation) ≈ 6.5GB

\*4 Do not run software that uses a database or WEB server on the same PC.

\*5 The number of clients allowed for simultaneous connection differs depending on the Windows OS of the server PC. Please check the Windows license information.

\*6 The connectable machine number depends on communication environment or equipment. According to number of connection machine, the environment of a mass high-speed hard disk, a high-speed personal computer, and high-speed LAN is required.

\*7 Function may be restricted by machine type or installed software.

\*8 RS-232C/Ethernet converter:Comm Assist-100XP (iND Co., Ltd) or NPort5110A (MOXA Inc.)

IO/Ethernet Converter:Comm Assist-i404 (iND Co., Ltd) or CONPROSYS M2M Controller CPS-MC341-ADSC1-931 (CONTEC Co., Ltd.)



# REVISION RECORD

Edition	Date	Contents
02	2021/03	Error correction (150ton 270mm/s, 220ton 270mm/s all over length), Renewal screw/cylinder spec.
01	2020/12	New

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