SPECIFICATIONS
C24156PT

SPECIFICATIONS

PLASTAR Si-850-7

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TOYO INNOVEX

TOYO INNOVEX Co., Ltd.

APPROVED	CHECKED	DRAWN
井上 '25.03.17 誠	佐 '25.03.17 藤義	設計 '25.03.17 平木

PLASTAR Si-850-7 Specifications

Injection	Screw diameter	mm	68	75	83	83	90	100	100	110	110	120
	Injection stroke	mm	306	375	375	420	450	450	500	500	500	550
	Theoretical injection capacity	cm^3	1111	1656	2028	2272	2862	3534	3926	4751	4751	6220
	Injection unit	–	K600F			L750F ※1			M750F		N1100F	
	Max. injection speed	mm/s	180			170			150		150	
	Injection rate	cm^3/s	653	795	973	919	1081	1335	1178	1425	1425	1696
	Max. injection pressure	MPa	221	182	150	216	192	156	187	152	177	148
	Max. injection holding pressure	MPa	196	157	128	196	167	138	167	138	155	130
	Injection unit	–	K750F			–			–		–	
	Max. injection speed	mm/s	250			–			–		–	
	Injection rate	cm^3/s	907	1104	1352	–	–	–	–	–	–	–
	Max. injection pressure	MPa	221	182	150	–	–	–	–	–	–	–
	Max. injection holding pressure	MPa	196	157	128	–	–	–	–	–	–	–
	Recovery rate (PS)	kg/h	225	297	397	337	450	612	576	756	614	780
	Screw revolution speed	min^{-1}	200			170			160		130	
	Heater capacity	kW	24.8	31.2	38.8	38.8	49.4	53.4	53.4	61.4	61.4	72.1
	Nozzle pressing force	kN	39.0			39.0			39.0		58.8	
Clamping	Clamping system	—	Double toggle									
	Clamping force	kN	8330									
	Clamping stroke	mm	1000									
	Min. mold height	mm	450									
	Max. mold height	mm	1100									
	Tie bar clearance (H × V)	mm	1145 x 1145									
	Die plate size (H × V)	mm	1540 x 1540									
	Ejector force	kN	177									
	Ejector stroke	mm	280									
Other	Machine dimensions (L)	mm	10676	10676	10676	10676	10676	10765	11010	11242	11492	11794
	Machine dimensions (W × H)	mm	2443 × 2486			2443 × 2486			2443 × 2514		2443 × 2511	
	Power source	–	3-phase AC200V±10% 50Hz / AC200V±10% 60Hz / AC220V±10% 60Hz									
	Main breaker capacity	A	K600F:400【200】 K750F:400【225】			400【225】			500【250】		600【350】	
	Total electric capacity	kVA	K600F:98 K750F:113			124			130		179	
	Incoming supply wire size	mm^2	K600F:325【100】 K750F:325【150】			325【150】			400【150】		250×2【250】	
	Protective earthing wire size	mm^2	K600F:200【60】 K750F:200【100】			200【100】			200【100】		150×2【150】	
	Machine weight	t	40.4 [Inj : 9.5t / Clamp : 30.9t]			43.4 [Inj : 12.5t / Clamp : 30.9t]			45.4 Inj : 14.5t Clamp : 30.9t		46.9 Inj : 16.0t Clamp : 30.9t	
	Noise (L_{pA})	dB	79.4 dB									

Note
- The information in this document is subject to change without any legal obligation on the part of the manufacture.
- Specifications are expressed in SI units. (1MPa=10.2kgf/cm² 1kN=0.102tonf)
- Max. injection pressure, max. injection holding pressure, and screw revolution speed shown above are the maximum allowable setting for the values.
- There may be limitations of max. injection pressure, max. injection holding pressure, and screw revolution speed depending on the molding conditions, cycle, material (resin), etc.
- The injection rate and the maximum injecting speed are calculated values. These values may be limited by set injecting pressures.
- When the machine is attached with an option, the capacity of the breaker may be changed.
- Figures in【 】are 400V class (a transformer (Option) is necessary for the machine) values.
- Noise values determined according to the noise test code given in JIS B 6711:2021 (ISO 20430:2020). Values will be changed by the operating condition.
- Incoming supply wire size is calculated on the condition that three insulated wires with a rated temperature of 60℃ and ambient temperature is 30℃ and metallic conduit work is made.
- Protective earthing wire size is selected based on the incoming supply wire size.
- The total electric capacity is calculated based on the maximum performance of he drive unit. The operating conditions of the injection unit may reduce the total electric capacity.

※1 The heat barrel (φ83) for the L750F Injection unit is not compatible with that of the K600F.

② PLASTAR Si-7 Equipment

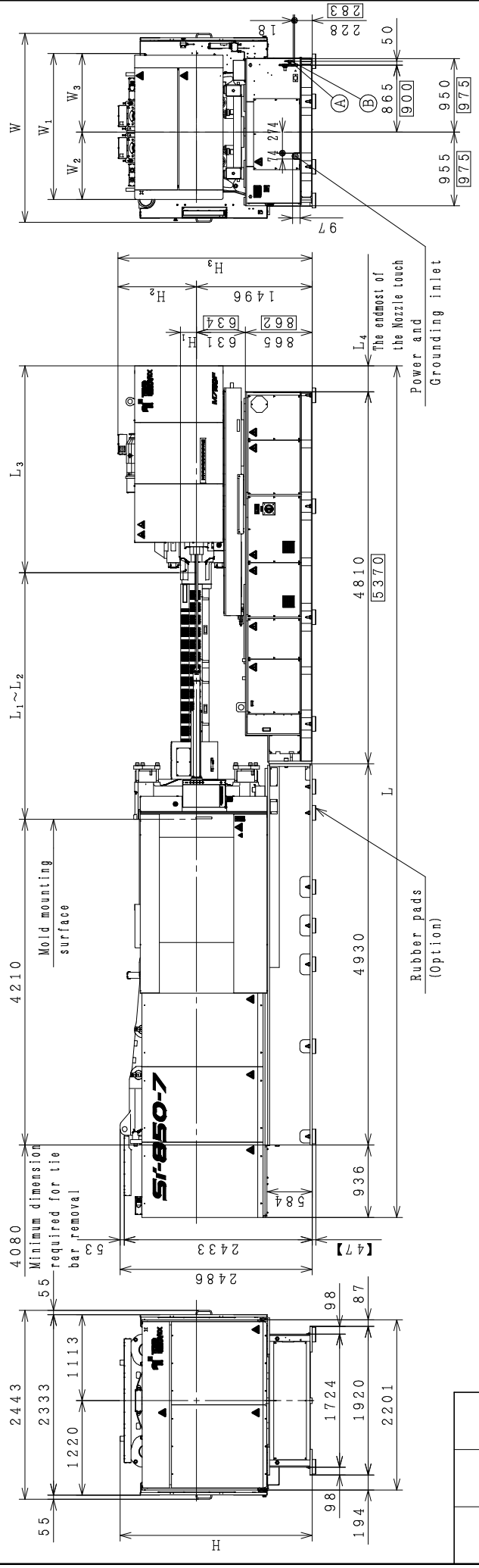
	Standard	Option
Injection / Plastication unit	・S-TMC system ・Just pack injection control ・V mode (response variable) Injection control ・SRC-Ⅱ metering system ・SNF injection control ・Closed-loop control for injection speed, position and pressure ・Programmable injection control (2 to 7 steps) ・Programmable metering control (1 to 3 steps) ・Holding pressure changeover via position, time and pressure ・Multistep, slope injection control (Speed/Pressure) ・1st injection pressure overshoot suppression control ・Back pressure overshoot suppression control ・Suck-back system (Before and after metering) ・Automatic purge system (Standard, TWAP, purge without screw forward/back, purge without back pressure control) ・Hopper throat temperature control (PID) ・No-back pressure metering in manual mode ・Nozzle reciprocating function ・Injection during high pressure clamping ・Injection unit swiveling mechanism (with nozzle alignment mechanism) ・No material warning function ・Melt remaining monitor control ・Load cell zero point monitor function (Zero adjustment function available) ・6 zones heater control (4 zones/under φ24, 5 zones/φ28～36) ・Heater SSR control ・Heater temperature holding control ・Purge cover (with interlock) ・Wear-resistant screw and barrel (under φ40) ・Heat-insulated heater cover	・SRC-Ⅲ screw check triplet ・Pneumatic shut-off nozzle ・Different screw and barrel diameter ・Wear-resistant screw and barrel (over φ46) ・Unique design screw for specific materials ・Long nozzle (Select the protrusion amount(mm) from below) Si-50 to 130-7 : 85 / 120 Si-180-7 or larger φ28 to φ50 : 85 / 120 / 150 φ55 to φ120 : 90 / 120 / 150 ・Small diameter long nozzle (over φ24) ・Separate type long nozzle (under φ36) ・High temperature use band heater (up to 500℃) ・Hopper (with shutter) 20ℓ : φ16 to φ28 40ℓ : φ32 to φ40 55ℓ : φ46 to φ55 125ℓ : φ60 to φ120 ・Hopper swiveling device ・Hopper sliding device ・Maintenance step for hopper area / Auxiliary step ・2-zone temperature control for nozzle ・Purged material receiver (with folded) ・Clear cover for the checkup of the injection unit
Clamping unit	・Closed-loop control of speed and position for mold open and close ・Closed-loop control of ejection speed and position ・V mode (response variable) Mold open/close control ・V mode (response variable) Ejector control ・Programmable control of mold open (2 to 5 steps) ・Programmable control of mold close (3 to 5 steps) ・Programmable control of ejector (Forward : 1 to 3 steps / Backward : 1 to 2 steps) ・2-step ejector ・Mold exchanging mode (low pressure, low speed) ・Automatic clamping force setup system ・Low pressure mold protection system ・HSP mold protection system ・Ejector during mold opening (by position setting) ・Movable plate supporting device (Si-50 to 450-7 : Linear guide/ Over Si-550-7 : low resistance guide) ・Emergency stop switch (operator side and non-operator side) ・Core-back molding control (3 steps) ・Mold clamping force display (standard accuracy) ・Automatic mold clamping force adjustment system ・Ejector pull-back system ・T slot platen : over Si-230-7 ・Mold locating ring Si-280-7 to 450-7 (100/120) Si-550-7 to 700-7 (150/185) Si-700-7W to 1300-7 (150/250)	・Air ejector (1 to 4 lines) ・3-way valve for air ejector (1 to 4 lines) ・Air-driven core system (1 to 4 lines) ・Air-driven valve gate (1 to 4 lines) ・Hydraulic core system (independent hydraulic unit) 2 lines : Si-50 to 1300-7 4 lines : Si-280 to 1300-7 ・Mold ejector plate return detector (metal contacts / plug socket contacts) ・Mold temperature display (2 channels; with magnet sensor) ・Mold temperature control (2 channels; with magnet sensor) ・Mold locating ring Si-50-7 (60/100) Si-80-7 to 230-7 (100/120) ・Heat insulating board General : Si-50 to 1300-7 High precision : Si-50 to 350-7 ・Unscrewing device with the servo motor (Si-50 to 230-7) ・Ejector pull-back connecting rod and pin ・Clamping force display (High precision) ・Clear cover for the checkup of the clamping unit ・Double roller type movable plate supporting device (Si-130 to 450-7) ・Mechanical safety device (mold closing)

Note
・The standard band heater can be used for temperatures up to 350℃. For higher temperatures, use the high temperature band heater.
・When a specially designed mold is used, consult us.
・Some of the standard equipment controls require switching ON/OFF on the screen before use. Please refer to the operation manual for details.

PLASTAR Si-7 Equipment (2)

	Standard	Option
Control	・SYSTEM800 SE control system with TFT liquid color display and full touch panel ・Graphic display of injection, metering and waves ・Digital setting of all setup parameters ・Internal memory of 400 mold setups ・Molding process parameter pre-view function ・USB interface (2 ports) ・Media play function ・Files reference function ・Hour meter (operating hour indication) ・Power consumption display ・Production control function (job completion ratio, prospective time of job completion, etc.) ・Multiple counter (cycle NO., lot NO., repeating lot NO., warning bell, initial reject, continuous failures, operation NO. etc.) ・Monitoring function (up to 32 items from 96 items position, speed, pressure, time, rotation speed etc.) ・Statistical processing of monitored data ・Monitoring graphic indication ・Manned/Unmanned mode switching function ・Alarm function (cycle time, monitoring data with up-down tolerance, heater and thermocouple disconnection, safety door etc.) ・Machine conditions display (operation mode, completion of mold closed, ejector back position) ・Maintenance function (1 cycle graphic, alarm history, grease supply notice, servo amplifier communication etc.) ・Record of the setting value ・Security function ・Screw cold-start prevention system ・Fine PID temperature control (with slope starting, step control function) ・1 week automatic heater on/off calendar ・Local language display (English, Chinese (Simplified/Traditional), Thai, Spanish, Korean, Hebrew) ・Injection compression control (position control; 1 to 5 steps) ・Injection compression control (clamp force control; 1 to 5 steps) ・Gate cutting function ・SMART MOLDING (molding condition setting navigation system) ・Automatic melt viscosity control program (*meltcon*) ・Check ring ware measuring function	・Indicator light in one color (red) ・Indicator light in three colors (red, yellow, green, with mode select function) ・Unscrewing motor connecting circuit (with socket) ・100V power supply (2 sockets), supplied by customer ・100V power supply (2 sockets), with 10A transformer ・200V power supply (4 sockets, 30A 2 lines) ・200V power supply (4 sockets, 30A 2 lines) with circuit protector ・Vacuum device interface ・Valve gate interface (Multi lines) ・Conveyor starting interface ・Automatic mold clamping device interface ・Various signal output (4 items; non-voltage normally-open contacts) ・Various analog signal output (8 items) ・Various signal input (8 items) ・Quality control system (A++) ・Molding process parameter control software ・Molding machine monitoring system (T-Station lite) ・Local language display (Czech, French, Italian, Portuguese) ・Compatibility with various voltage source (with transformer) ・High temperature environment cooling system ・Regenerate system ・User identify system (Card reading) ・Tool for check ring wear measuring function
Other	・Automatic grease lubricating device ・USB memory (Our specification) (400 molding setups in case of stored molding parameter only) ・Interface for take-out robot ・Standard accessories (mold clamp, specialized tool, spare grease) ・Global safety standard (JIS B 6711:2021 (ISO 20430:2020))	・Rubber pads ・Cooling water flow gauge (Select type from below) Water flow gauge on machine base : 4 lines/8 lines Inlet with manual valve : 4 lines/8 lines Inlet/Outlet with manual valve : 4 lines/8 lines ・Tool(Wrench, hexagon wrench, screw driver) ・Hand grease pump ・Chute (under Si-350-7) ・Reversible Chute (Under 100-7)

Note
・When a specially designed mold is used, consult us.
・Some of the standard equipment controls require switching ON/OFF on the screen before use. Please refer to the operation manual for details.



Ⓐ Water for hopper throat IN:Rc3/8 (Location:Non-OP side)
(Nomal water volume:5 to 10 ℓ/min. with Y-type strainer)
Ⓑ Water for hopper throat OUT:Rc3/8 (Location:Non-OP side)

Injection unit	(Screw diameter)	L	W	H	L_1	L_2	L_3	L_4	W_1	W_2	W_3	H_1	H_2	H_3
K600F K750F	φ68	10676	2443	2486	2211	1621	2108	-1211	1510	680	830	180	920	2416
	φ75	10676	2443	2486	2442	1852	2108	-980	1510	680	830	180	920	2416
	φ83	10676	2443	2486	2616	2026	2108	-806	1510	680	830	180	920	2416
L750F	φ83	10676	2443	2486	2686	2026	2430	-414	1764	800	964	210	983	2479
	φ90	10676	2443	2486	2962	2302	2430	-138	1764	800	964	210	983	2479
	φ100	10765	2443	2486	3189	2529	2430	89	1764	800	964	210	983	2479
M750F	φ100	11010	2443	2514	3189	2529	2675	334	1888	874	1014	210	1018	2514
	φ110	11242	2443	2514	3421	2761	2675	566	1888	874	1014	210	1018	2514
N1100F	φ110	11492	2443	2511	3421	2761	2925	256	1884	790	1094	210	1015	2511
	φ120	11794	2443	2511	3723	3063	2925	558	1884	790	1094	210	1015	2511

Figures in 【 】 show dimensions with options.
Figures in □ show dimensions with N1100F.

Note
※ The primary piping connection for hopper throat should be made with flexible material. (Ex. Hoses)
Similarly, connect the power supply inlet using a cabtyre cable. etc too.
※ Overall machine height increases by approx. 47mm with rubber pads attached.

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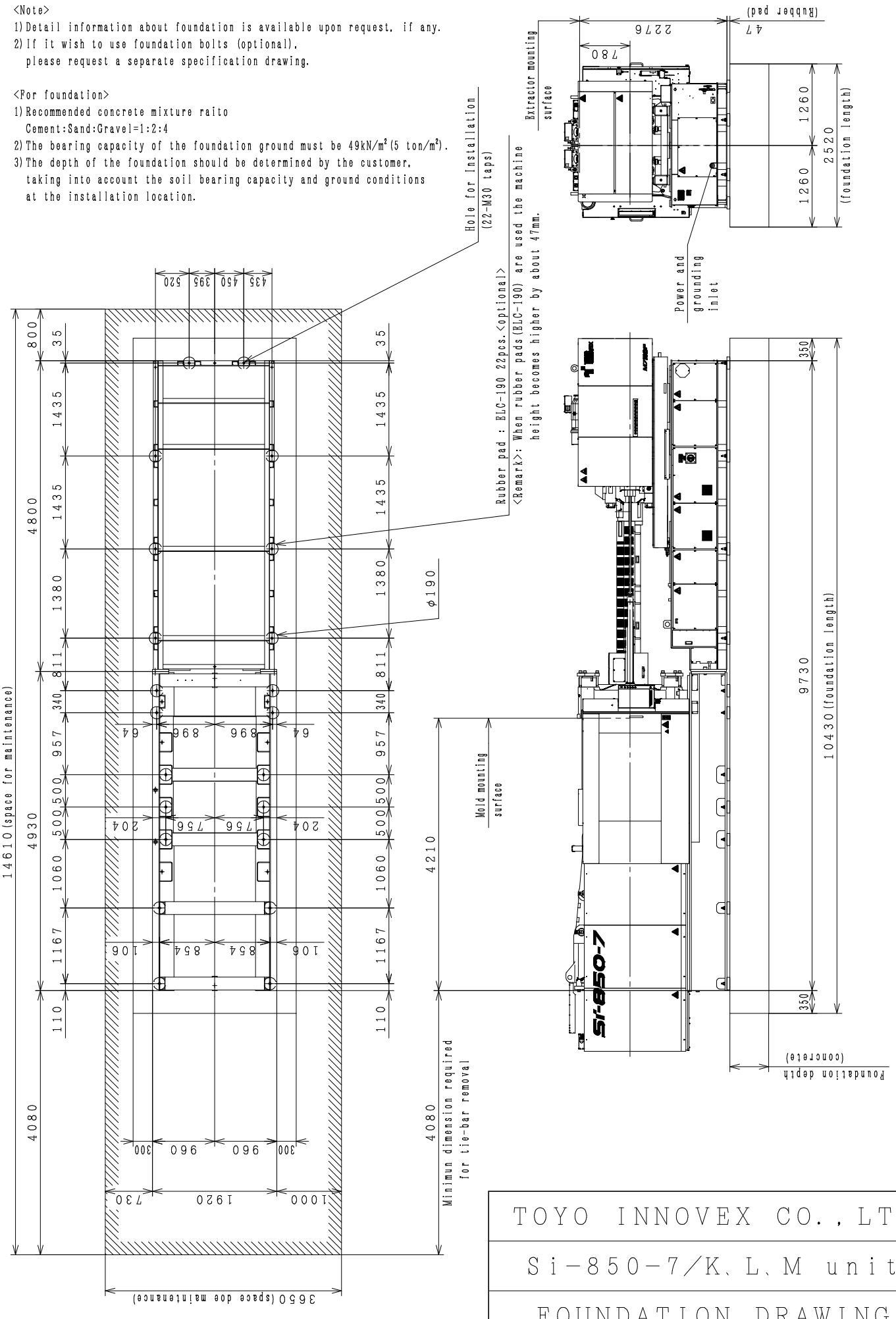
PLASTAR Si-850-7

OUTSIDE VIEW

<Note>
1) Detail information about foundation is available upon request, if any.
2) If it wish to use foundation bolts (optional),
please request a separate specification drawing.

<For foundation>
1) Recommended concrete mixture raito
Cement:Sand:Gravel=1:2:4
2) The bearing capacity of the foundation ground must be 49kN/m²(5 ton/m²).
3) The depth of the foundation should be determined by the customer,
taking into account the soil bearing capacity and ground conditions
at the installation location.



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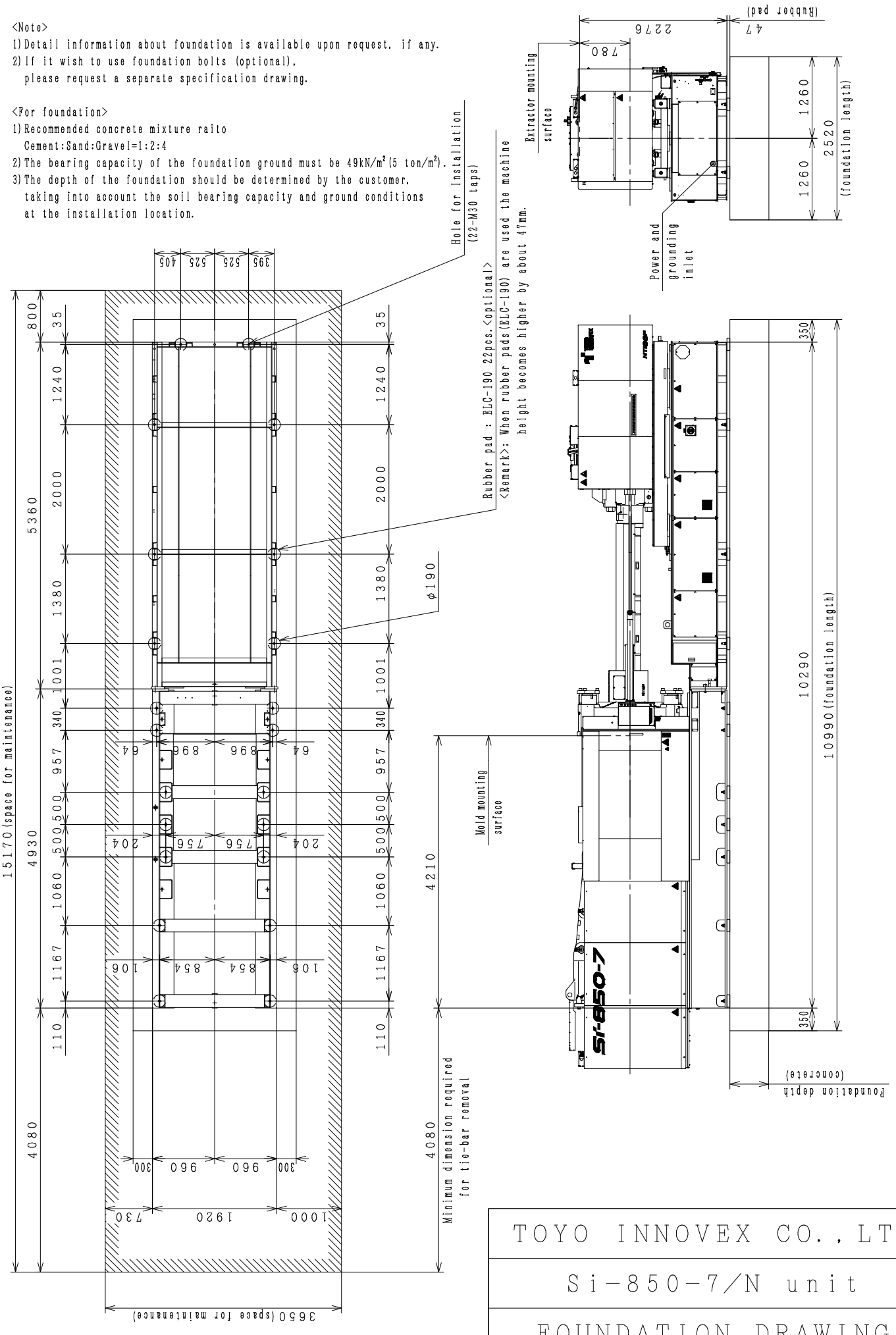
Si-850-7/K、L、M unit

FOUNDATION DRAWING

<Note>
1) Detail information about foundation is available upon request, if any.
2) If it wish to use foundation bolts (optional),
please request a separate specification drawing.

<For foundation>
1) Recommended concrete mixture raito
Cement:Sand:Gravel=1:2:4
2) The bearing capacity of the foundation ground must be 49kN/m²(5 ton/m²).
3) The depth of the foundation should be determined by the customer,
taking into account the soil bearing capacity and ground conditions
at the installation location.



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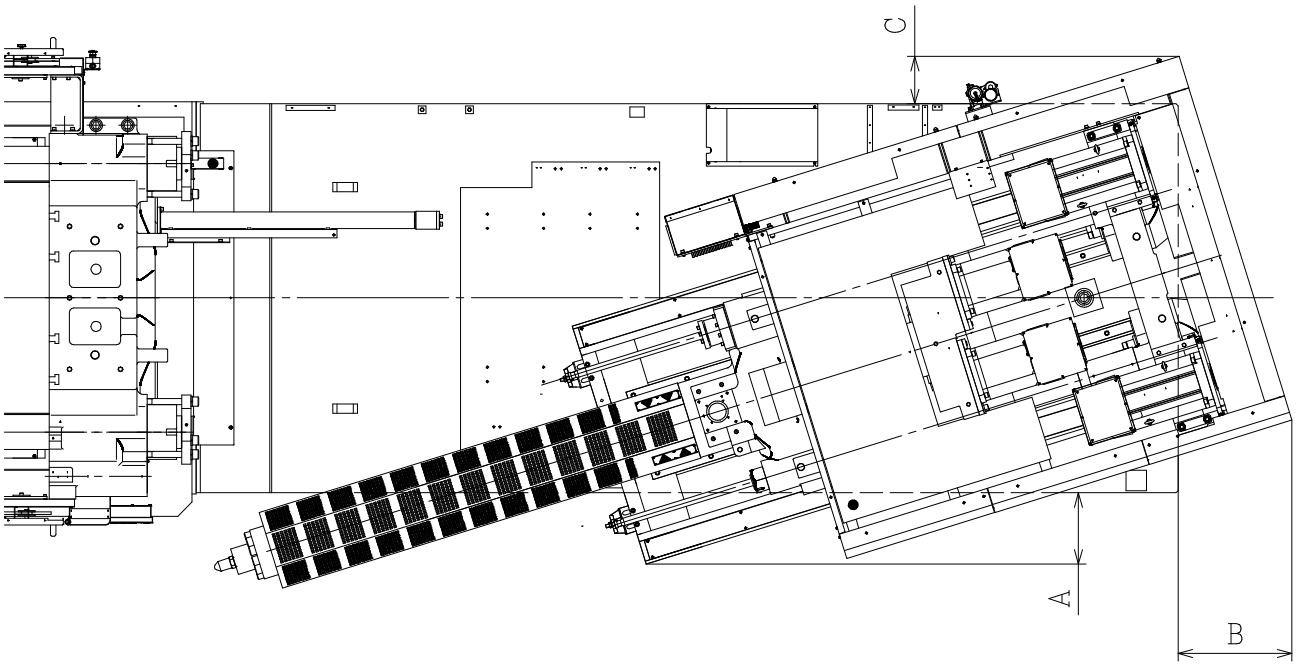
Si-850-7/N unit

FOUNDATION DRAWING



Injection unit	Screw diameter	A	B	C
K600F K750F	φ68	152	−1024	71
	φ75	152	−793	71
	φ83	152	−619	71
L750F	φ83	276	−194	190
	φ90	276	82	190
	φ100	276	309	190
M750F	φ100	350	571	237
	φ110	350	803	237
N1100F	φ110	366	496	307
	φ120	366	798	307

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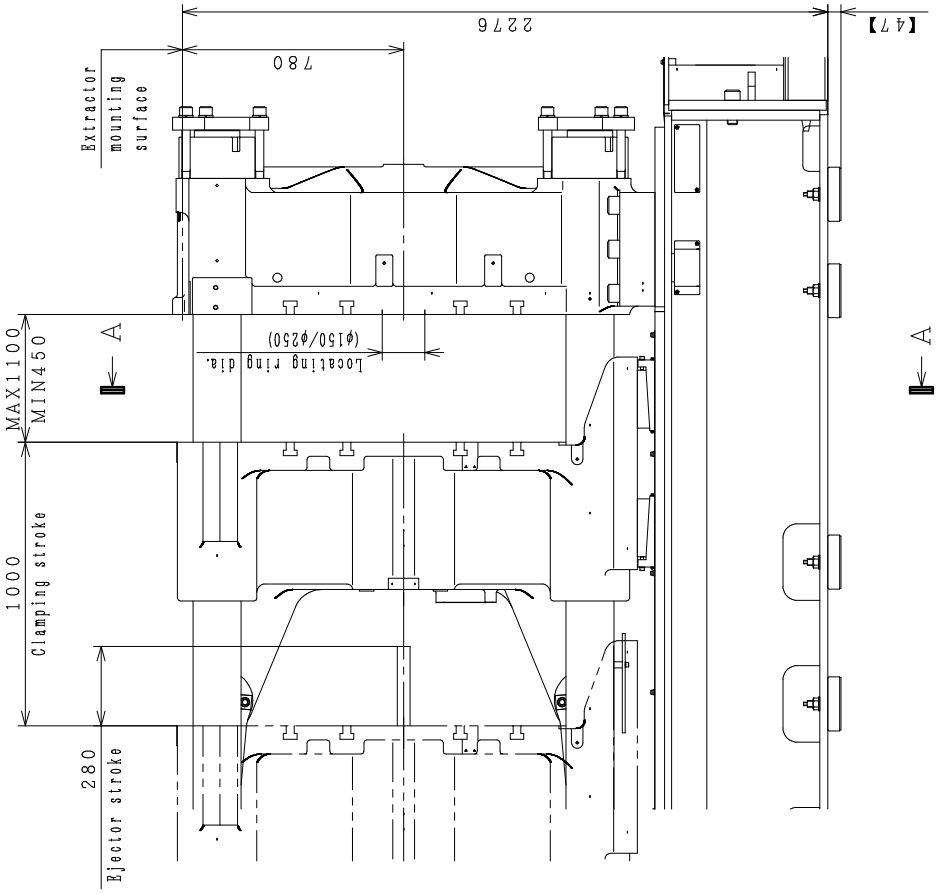
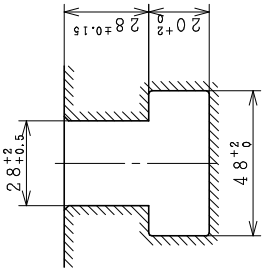
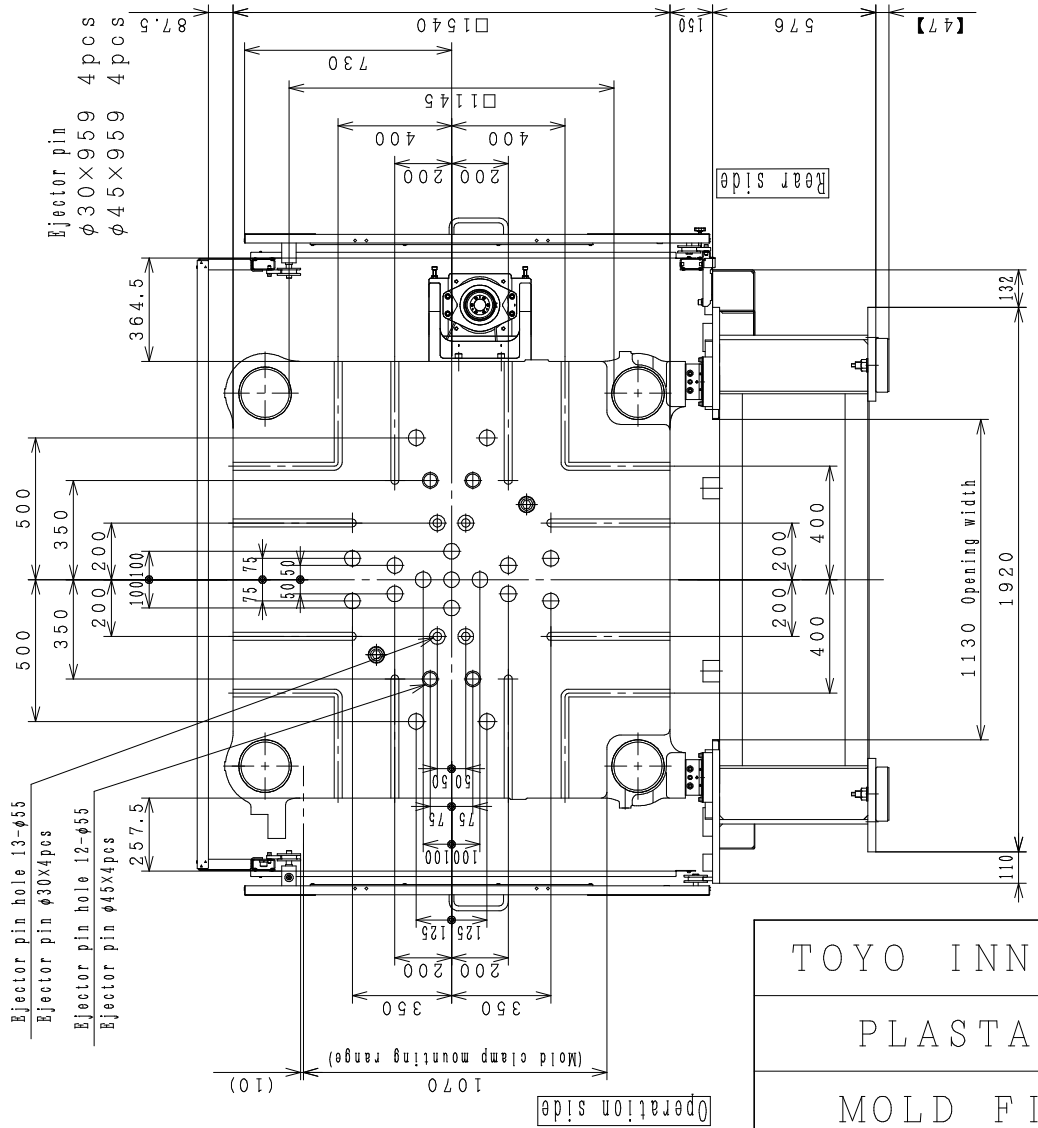
PLASTAR Si−850−7

INJECTION UNIT TURNING DWG.







1) Chute cannot be installed.
2) Figures in 【 】 show dimensions with options.

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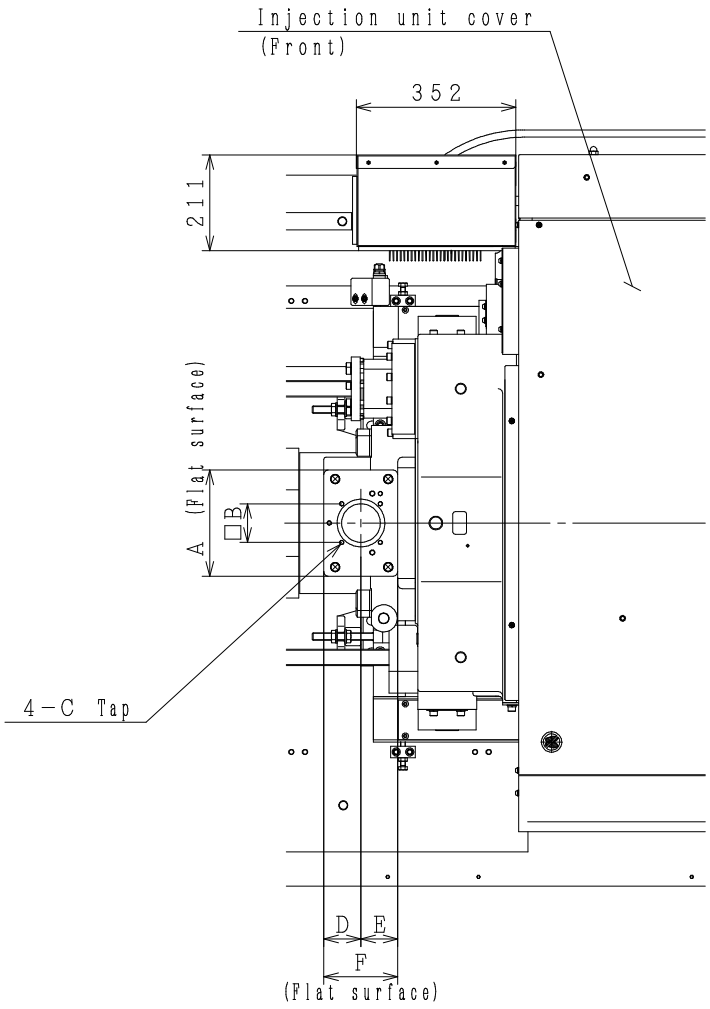
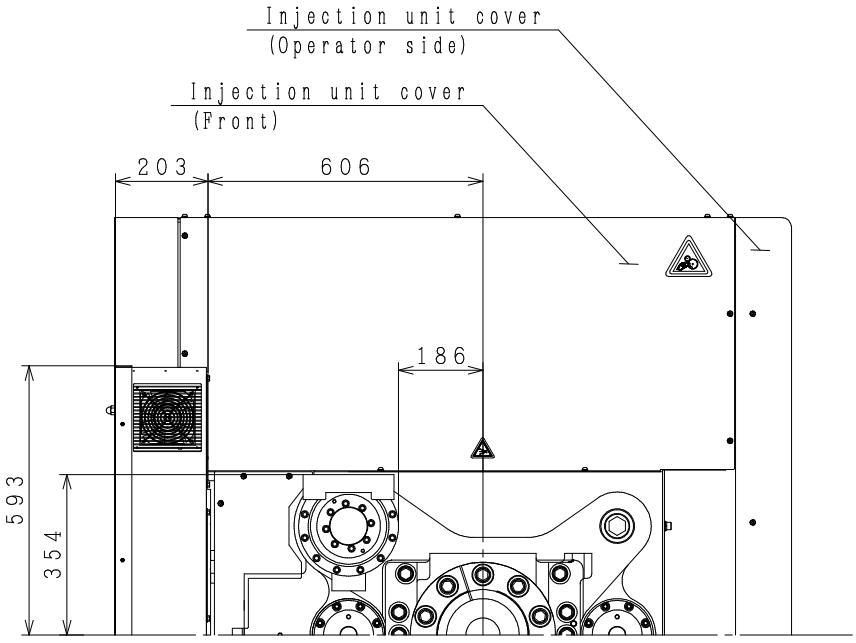
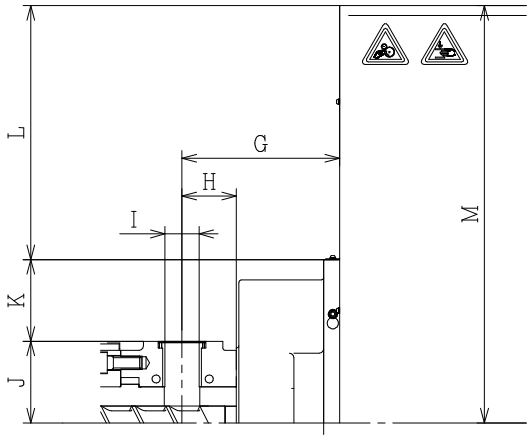
PLASTAR Si-850-7
MOLD FITTING DWG.

	K600F·K750F		
	φ68	φ75	φ83
A	234	234	234
B	85	85	85
C	M10×18ℓ	M10×18ℓ	M10×18ℓ
D	85	82	82
E	90	81	81
F	175	163	163
G	347.5	347.5	347.5
H	125	125	125
I	φ75	φ75	φ75
J	180	180	180
K	180	180	180
L	560	560	560
M	920	920	920







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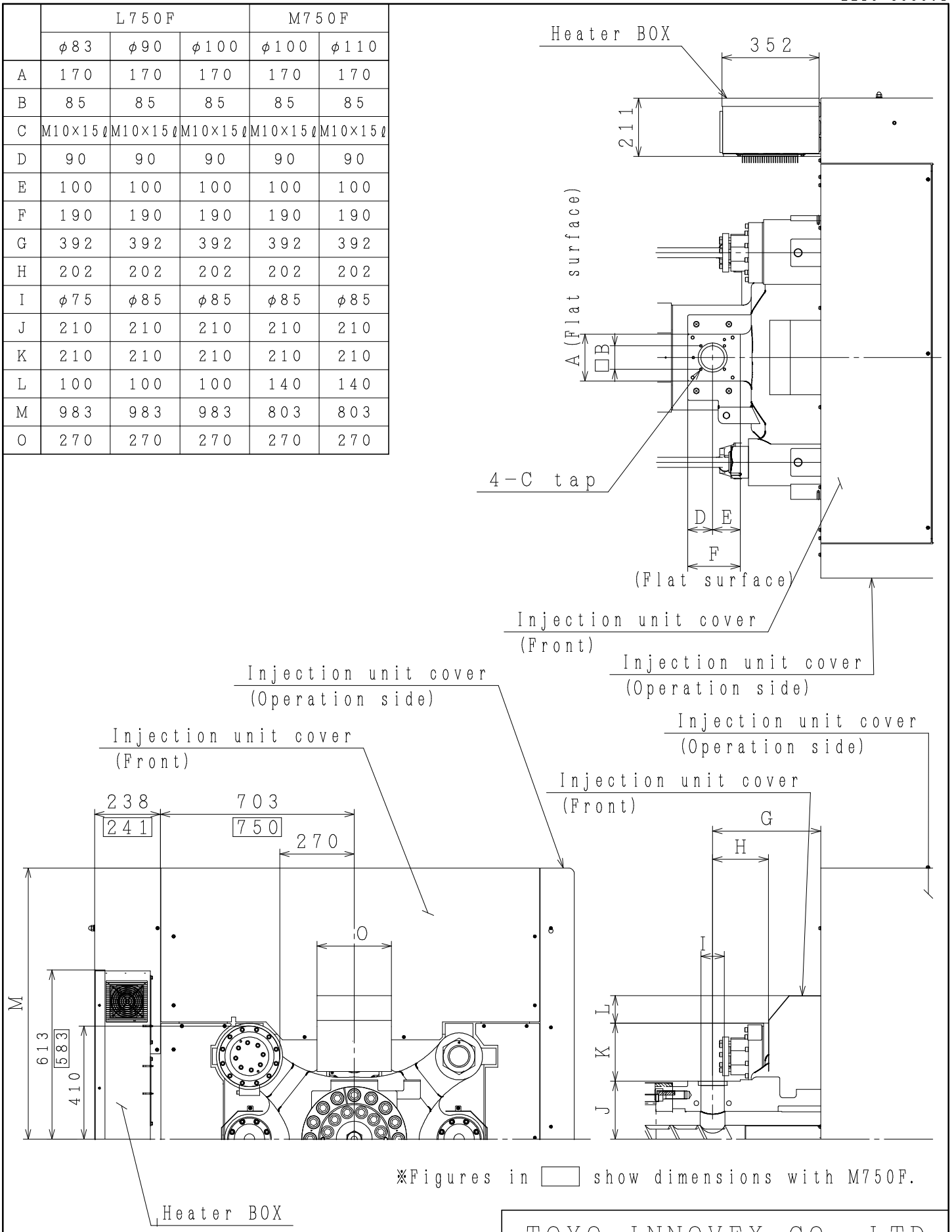
PLASTAR Si－7 K unit

DETAIL DWG. OF HOPPER PART

	L750F			M750F	
	φ83	φ90	φ100	φ100	φ110
A	170	170	170	170	170
B	85	85	85	85	85
C	M10×15ℓ	M10×15ℓ	M10×15ℓ	M10×15ℓ	M10×15ℓ
D	90	90	90	90	90
E	100	100	100	100	100
F	190	190	190	190	190
G	392	392	392	392	392
H	202	202	202	202	202
I	φ75	φ85	φ85	φ85	φ85
J	210	210	210	210	210
K	210	210	210	210	210
L	100	100	100	140	140
M	983	983	983	803	803
O	270	270	270	270	270



※Figures in □ show dimensions with M750F.

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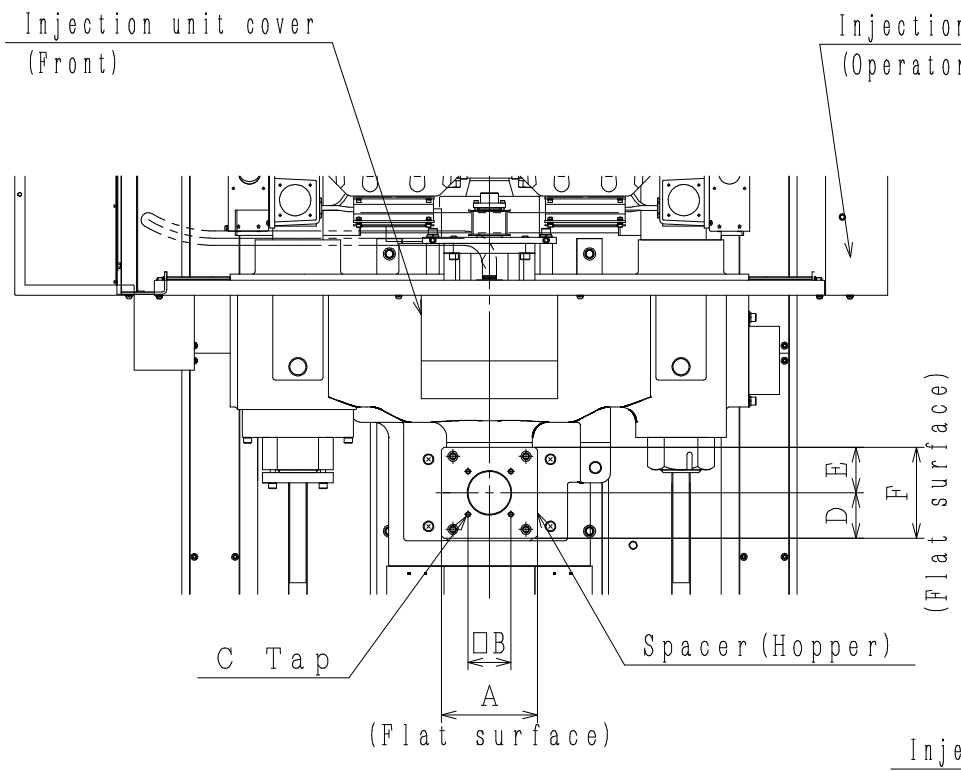
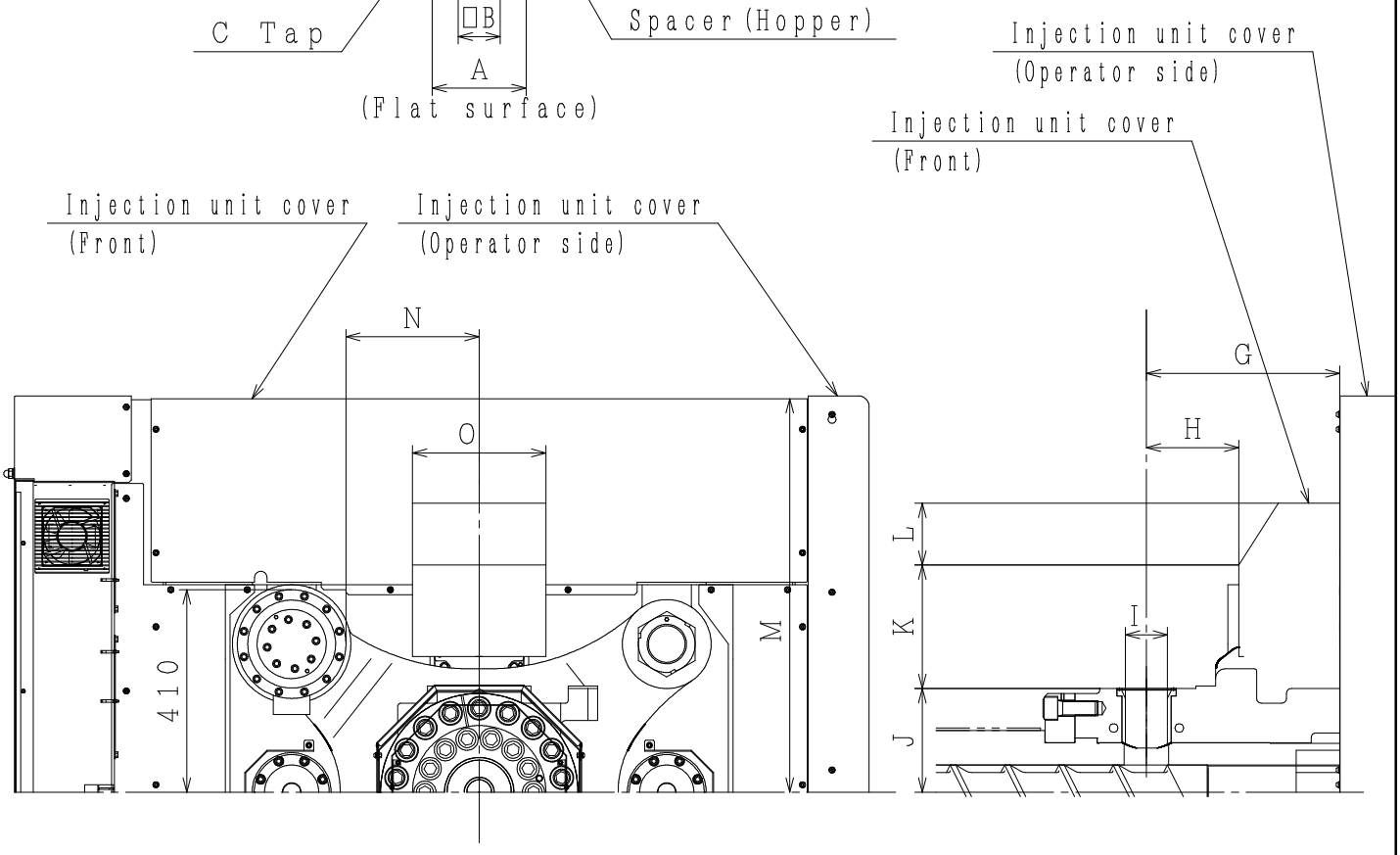
PLASTAR Si−7 L、M unit

DETAIL DWG. OF HOPPER PART

	N1100F	
	φ110	φ120
A	180	180
B	85	85
C	M10×15ℓ	M10×15ℓ
D	95	95
E	95	95
F	190	190
G	392	392
H	187	187
I	φ85	φ85
J	210	210
K	250	250
L	125	125
M	797	797
N	270	270
O	270	270





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PLASTAR Si-7 N unit
DETAIL DWG. OF HOPPER PART

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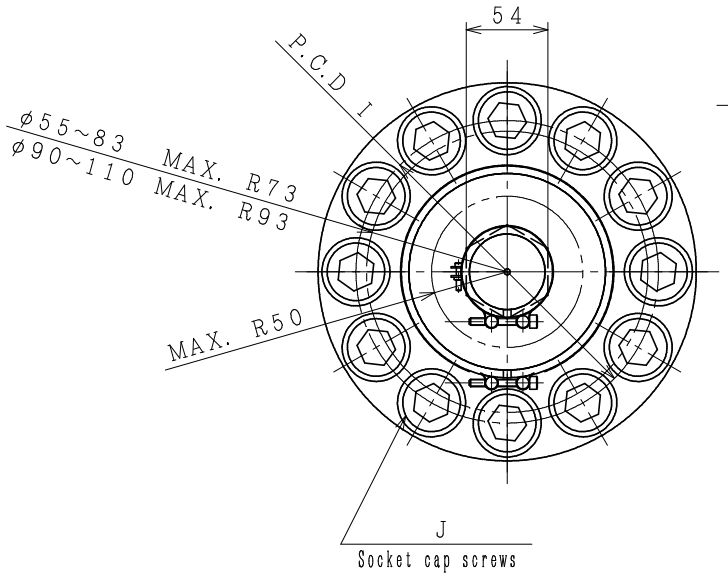
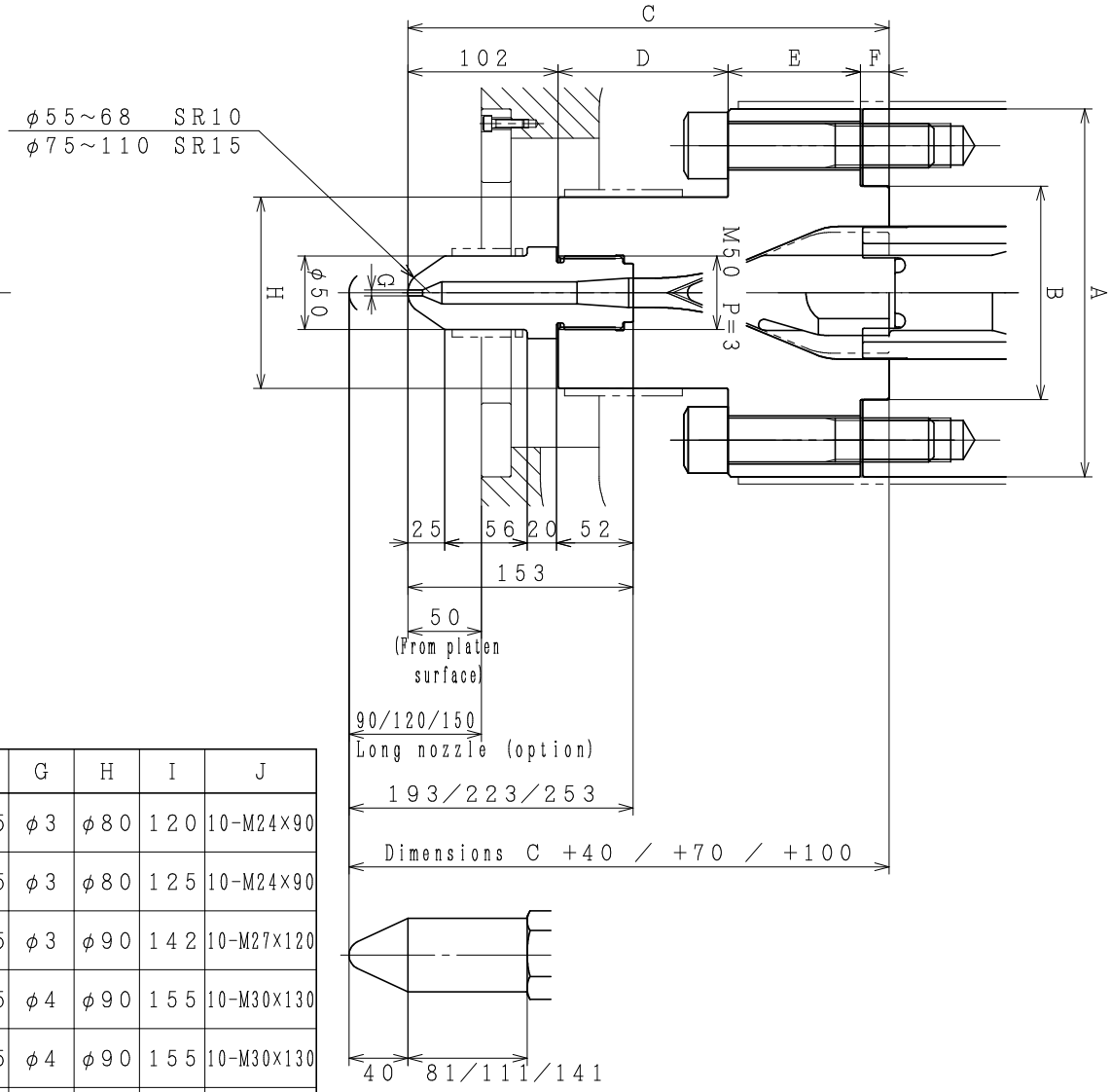
PLASTAR Si-7 (J~M unit)

DETAIL DWG. OF NOZZLE (Separated (Bolt-fixed type))

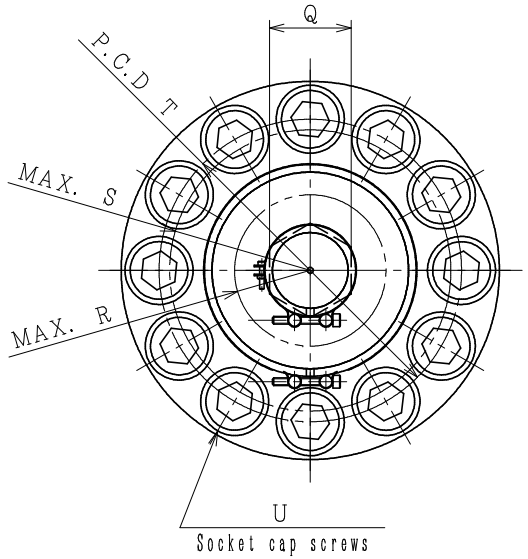


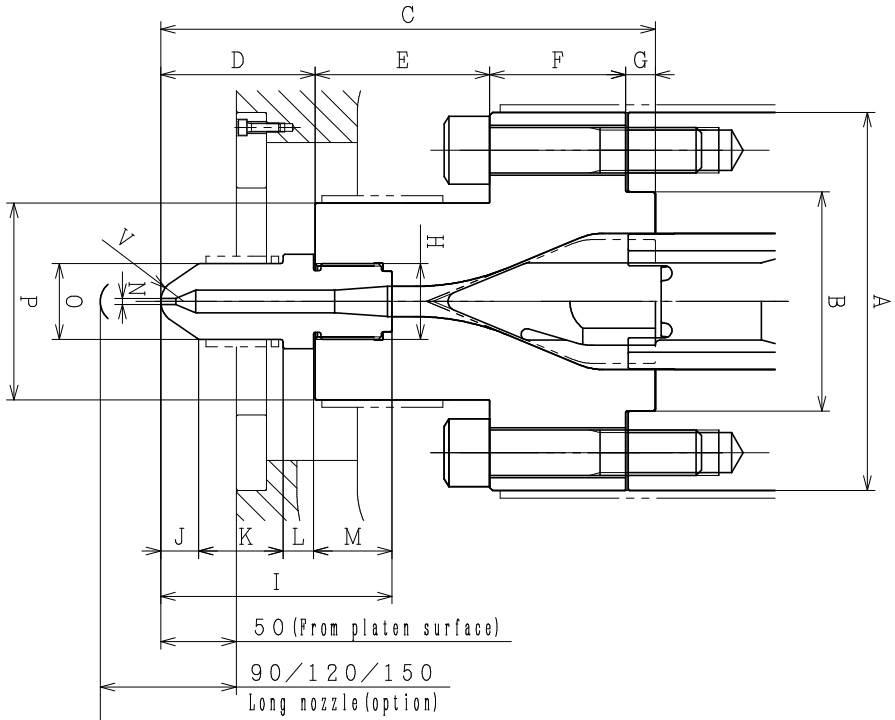


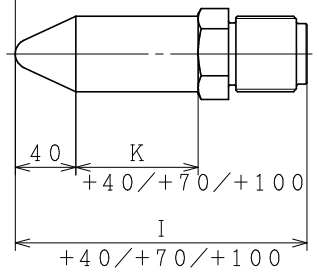
Injection unit (screw diameter)		A	B	C	D	E	F	G	H	I	J
J370F J450HF・JH600F	φ55	φ160	φ90	252	83.5	50	16.5	φ3	φ80	120	10-M24×90
J370F・J450HF JH600F・J450F・JH750F	φ60	φ170	φ95	252	83.5	50	16.5	φ3	φ80	125	10-M24×90
J450HF・JH600F・J450F JH750F・K600F・K750F	φ68	φ185	φ100	282	93.5	70	16.5	φ3	φ90	142	10-M27×120
J450F・JH750F K600F・K750F	φ75	φ200	φ110	292	93.5	80	16.5	φ4	φ90	155	10-M30×130
K600F・K750F L750F	φ83	φ215	φ110	292	93.5	80	16.5	φ4	φ90	155	10-M30×130
L750F	φ90	φ250	φ145	327	115.5	90	19.5	φ4	φ130	200	12-M30×140
L750F・M750F	φ100	φ250	φ145	327	115.5	90	19.5	φ4	φ130	200	12-M30×140
M750F	φ110	φ250	φ150	329.5	118	90	19.5	φ4	φ130	200	12-M30×140

The long nozzle (optional equipment) can be selected from three types of protrusion.

2213-881701







The long nozzle (optional equipment) can be selected from three types of protrusion.

Injection unit (screw diameter)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
N1100F	φ110	φ250	φ150	329.5 【369.5】	102 【142】	118	90	19.5	M50P=3	153	25	56	20	52	φ4	φ50	φ130	54	R50	R93	200	12-M30×140	SR15
	φ120	φ265	φ160	405 【445】	155 【195】	118	112.5	19.5	M65P=4	222	30	98	25	69	φ5	φ60	φ130	60	R55	R93	215	14-M30×160	SR15

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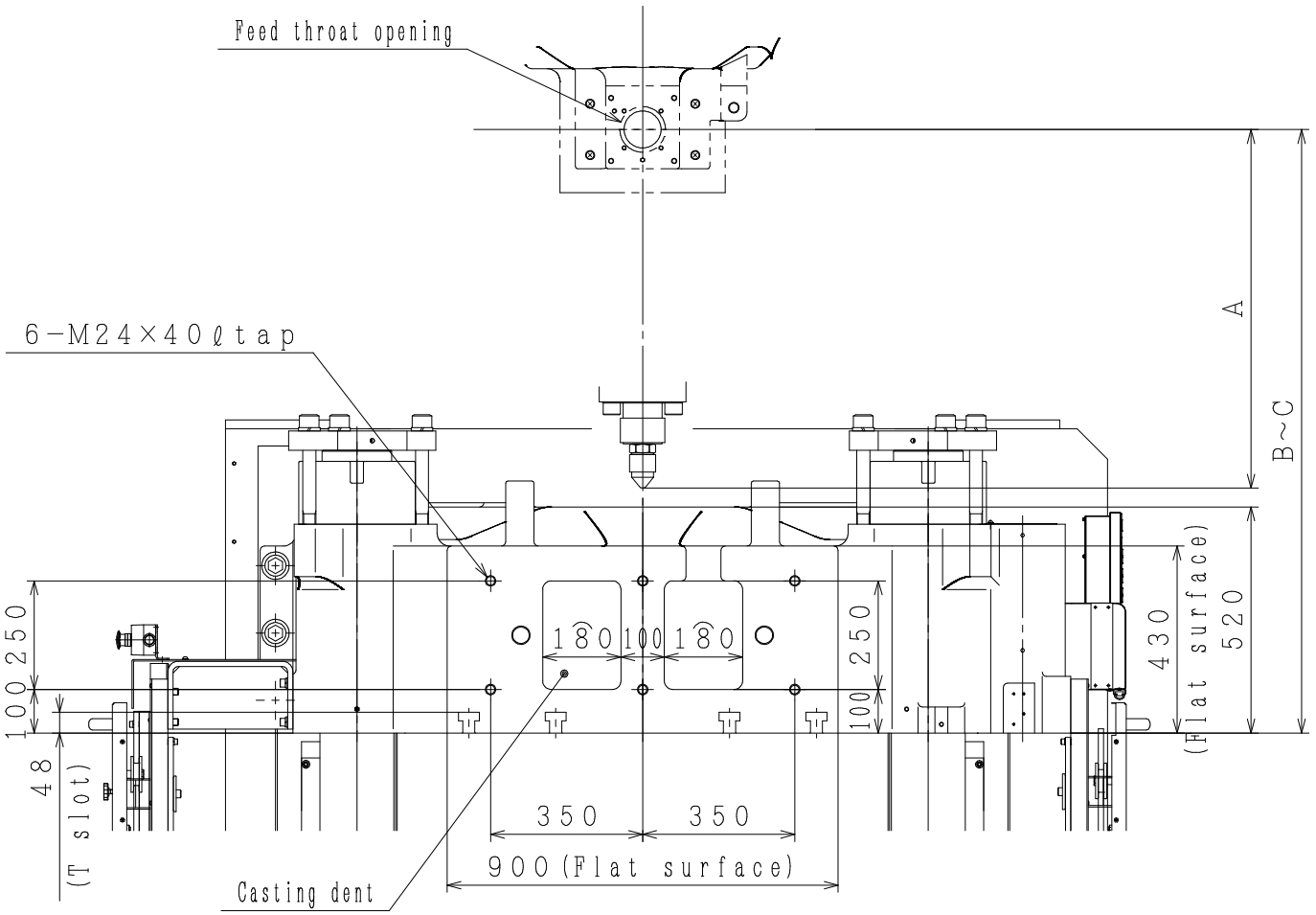
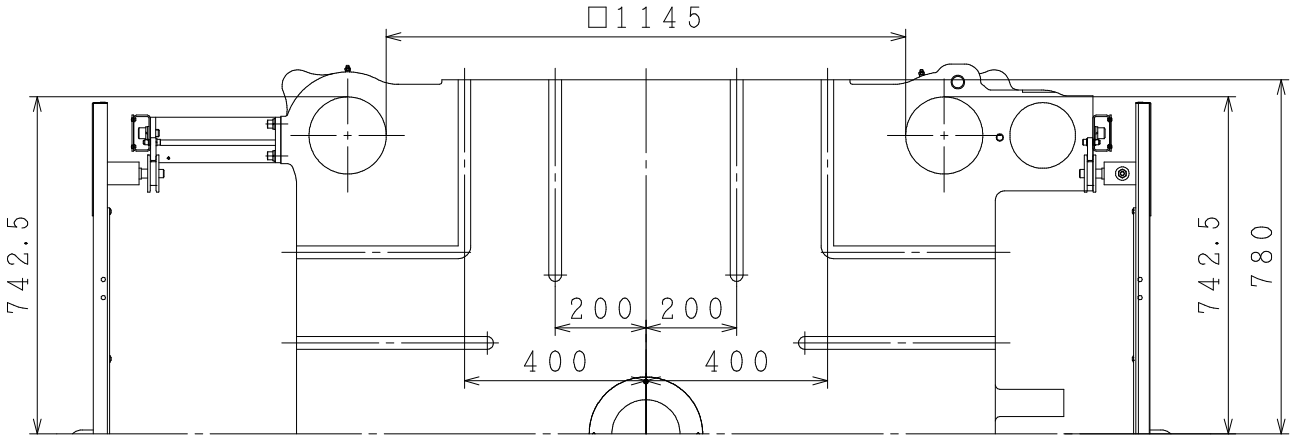
PLASTAR Si-7 (N unit)

DETAIL DWG. OF NOZZLE (Separated (Bolt-fixed type))

2213-919701





	K600F・K750F			L750F			M750F		N1100F	
	φ68	φ75	φ83	φ83	φ90	φ100	φ100	φ110	φ110	φ120
A	1671	1902	2076	2076	2352	2579	2579	2811	2811	3113
B	1621	1852	2026	2026	2302	2529	2529	2761	2761	3063
C	2211	2442	2616	2686	2962	3189	3189	3421	3421	3723

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PLASTAR Si−850−7

EXTRACTOR FITTING RELATED DIMENSION