

NINGBO ZHAFIR PLASTICS MACHINERY MANUFACTURING CO., LTD.

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ZE-F

FAST CYCLING INJECTION
MOLDING MACHINE

1,500 – 4,500 kN

ZF-20240104-V



TECHNICAL DATA ZE1500F

		ZE1500F						
CLAMPING UNIT	Clamping force	kN					1500	
	Mold opening stroke	mm					420	
	Mold height min.	mm					180	
	Mold height max.	mm					520	
	Max. daylight	mm					940	
	Dist. between tie bars (H×V)	mm					520×520	
	Min. mold dimension	mm					335×335	
	Ejector stroke	mm					120	
	Ejector force	kN					33	
	Size of mold platen (H×V)	mm					770×770	
INJECTION UNIT			A	B	C(op) ³	A	B	C(op) ³
	Screw diameter	mm	36	40	45	40	45	50
	Screw L/D ratio	L/D	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	173	213	270	252	319	394
	Screw speed	rpm	400		350			
	Plasticizing rate (HDPE) ¹	g/s	43	54	68.6	47.3	60	74.4
	Nozzle contact force	kN	63.7		63.7			
	Heating power	kW	18.1	19.9	21.7	20.7	24.9	26.3
	INJECTION UNIT		430h			640h		
	Injection speed	mm/s	350		350			
OTHERS	Injection rate ²	cm ³ /s	341	422	534	422	534	659
	Injection pressure	MPa	247	200	158	253	200	162
		bar	2470	2000	1580	2530	2000	1620
	INJECTION UNIT		430hs			640hs		
	Injection speed	mm/s	500		500			
	Injection rate ²	cm ³ /s	488	602	763	602	763	942
	Injection pressure	MPa	247	200	158	253	200	162
		bar	2470	2000	1580	2530	2000	1620
	Connection power	kW/A	430h:37/63 430hs:51/85		640h:46/77 640hs:61/102			
	Pressure	MPa	17.5		17.5			
Flow	l/min	45		45				
Oil tank	l	93		93				
Hopper capacity	l	25		25				
Machine dimension	m	6.1×1.5×2.2		6.3×1.5×2.2				
Machine weight	t	7.7		7.8				

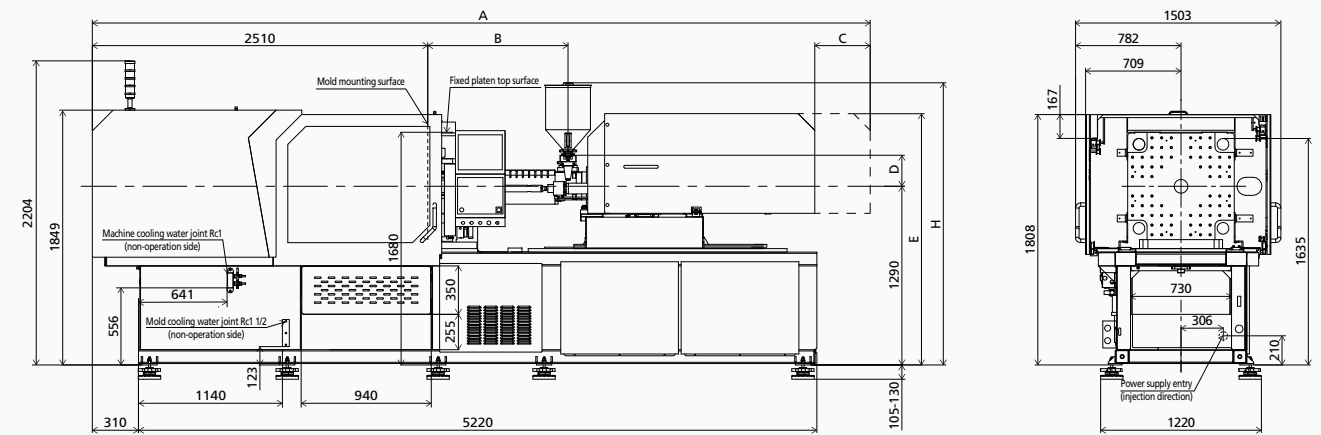
NOTE: ¹ Plasticizing capacity (HDPE): with standard packaging screw configuration, tested according to EUROMAP 19.

² Theoretical value at max. injection speed.

³ Op means optional plasticizing assembly.

The above data are only for ZHAFIR standard machines, and the data for customized are slightly different. We reserve the right to make changes as a result of further technical advances.

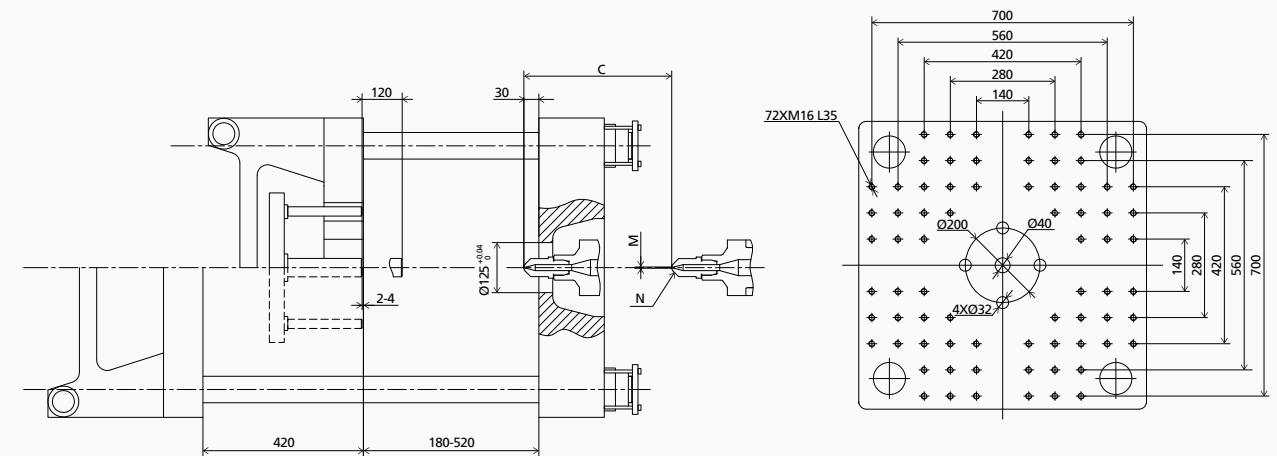
MACHINE DIMENSIONS



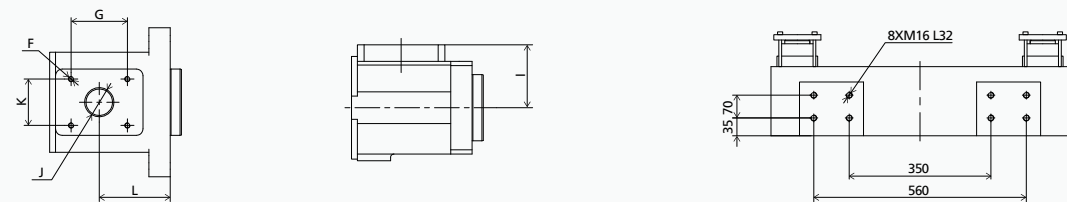
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
430h,430hs	5785/5902/6022	1093/1210/1330	400	224	1815	4×M8 L15	85	2038	135	Ø50	70	99	Ø4	SR10
640h,640hs	5943/6108/6220	1211/1376/1488	400	214	1815	4×M8 L15	85	2038	125	Ø50	70	138	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS



OTHERS DIMENSIONS



TECHNICAL DATA ZE1900F

		ZE1900F						
CLAMPING UNIT	Clamping force	kN					1900	
	Mold opening stroke	mm					470	
	Mold height min.	mm					200	
	Mold height max.	mm					550	
	Max. daylight	mm					1020	
	Dist. between tie bars (H×V)	mm					570×570	
	Min. mold dimension	mm					370×370	
	Ejector stroke	mm					150	
	Ejector force	kN					55	
	Size of mold platen (H×V)	mm					840×840	
INJECTION UNIT			A	B	C(op) ³	A	B	C(op) ³
	Screw diameter	mm	40	45	50	45	50	55
	Screw L/D ratio	L/D	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	252	319	394	333	412	498
	Screw speed	rpm	350			320		
	Plasticizing rate (HDPE) ¹	g/s	47.3	60	74.4	55	68	86
	Nozzle contact force	kN	63.7			88.2		
	Heating power	kW	20.7	24.9	26.3	27.1	32	34.1
	INJECTION UNIT		640h			830h		
	Injection speed	mm/s	350			350		
Injection rate ²	cm ³ /s	422	534	659	534	659	797	
Injection pressure	MPa	253	200	162	247	200	165	
	bar	2530	2000	1620	2470	2000	1650	
INJECTION UNIT		640hs			830hs			
Injection speed	mm/s	500			500			
Injection rate ²	cm ³ /s	602	763	942	763	942	1139	
Injection pressure	MPa	253	200	162	247	200	165	
	bar	2530	2000	1620	2470	2000	1650	
Connection power	kW/A	640h:46/77 640hs:61/102			830h:56/95 830hs:76/128			
Pressure	MPa	17.5			17.5			
Flow	l/min	74			74			
Oil tank	l	115			115			
Hopper capacity	l	25			50			
Machine dimension	m	6.6×1.7×2.3			6.9×1.7×2.3			
Machine weight	t	9.1			9.7			

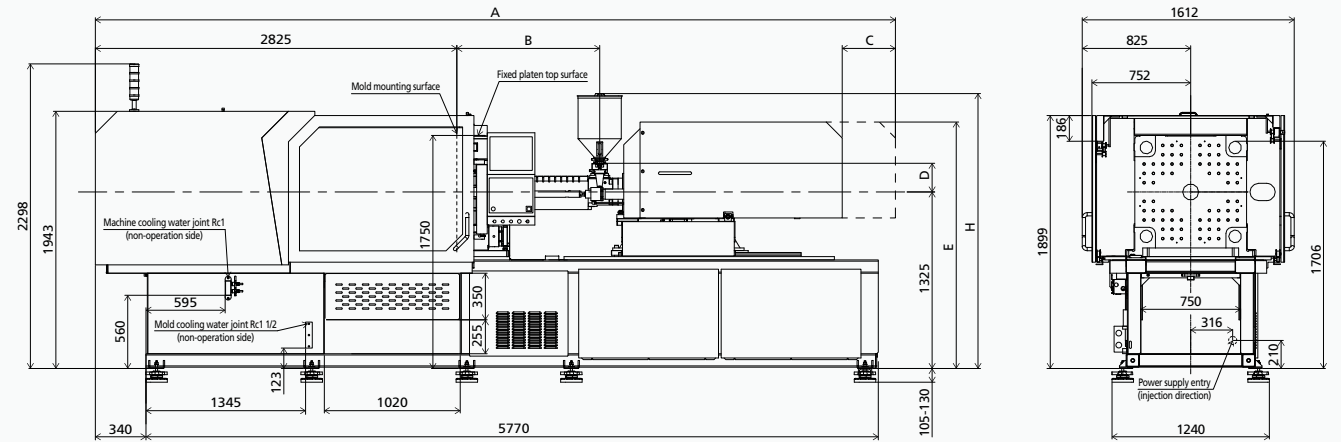
NOTE: ¹ Plasticizing capacity (HDPE): with standard packaging screw configuration, tested according to EUROMAP 19.

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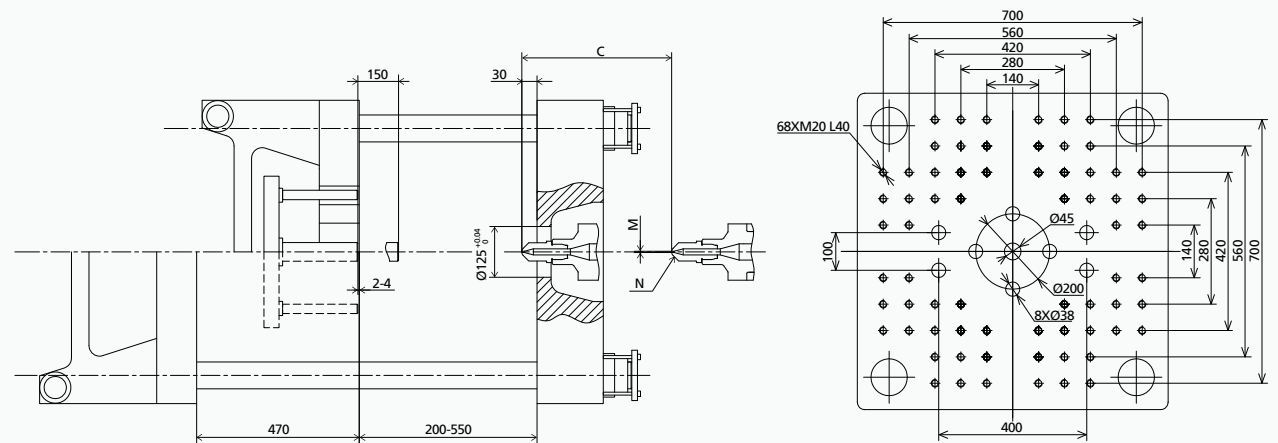
MACHINE DIMENSIONS



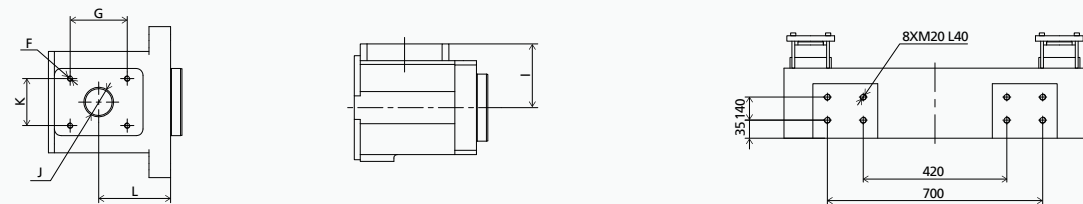
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
640h,640hs	6257/6422/6534	1211/1376/1488	400	214	1850	4×M8 L15	85	2063	125	Ø50	70	138	Ø4	SR10
830h,830hs	6546/6716/6813	1332/1502/1599	430	255	2019	4×M10 L20	115	2183	153	Ø60	115	122.5	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS



OTHERS DIMENSIONS



TECHNICAL DATA ZE2300F

		ZE2300F						
CLAMPING UNIT	Clamping force	kN	2300					
	Mold opening stroke	mm	550					
	Mold height min.	mm	220					
	Mold height max.	mm	600					
	Max. daylight	mm	1150					
	Dist. between tie bars (H×V)	mm	620×620					
	Min. mold dimension	mm	400×400					
	Ejector stroke	mm	150					
	Ejector force	kN	55					
	Size of mold platen (H×V)	mm	920×920					
			A	B	C(op) ³	A	B	C(op) ³
INJECTION UNIT	Screw diameter	mm	45	50	55	50	55	60
	Screw L/D ratio	L/D	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	333	412	498	471	570	678
	Screw speed	rpm	320		320			
	Plasticizing rate (HDPE) ¹	g/s	55	68	86	68	86	117.3
	Nozzle contact force	kN	88.2		88.2			
	Heating power	kW	27.1	32	34.1	33.7	40.7	44.2
	INJECTION UNIT		830h			1100h		
	Injection speed	mm/s	350		350			
	Injection rate ²	cm ³ /s	534	659	797	659	797	949
	OTHERS	Injection pressure	MPa	247	200	165	230	190
bar			2470	2000	1650	2300	1900	1590
INJECTION UNIT		830hs			1100hs			
Injection speed		mm/s	500		500			
Injection rate ²		cm ³ /s	763	942	1139	942	1139	1356
Injection pressure		MPa	247	200	165	230	190	159
		bar	2470	2000	1650	2300	1900	1590
Connection power		kW/A	830h:56/95 830hs:76/128			1100h:70/117 1100hs:89/149		
Pressure		MPa	17.5		17.5			
Flow		l/min	74		74			
Oil tank		l	122		122			
Hopper capacity	l	50		50				
Machine dimension	m	7.0×1.8×2.4			7.3×1.8×2.4			
Machine weight	t	12.9			12.9			

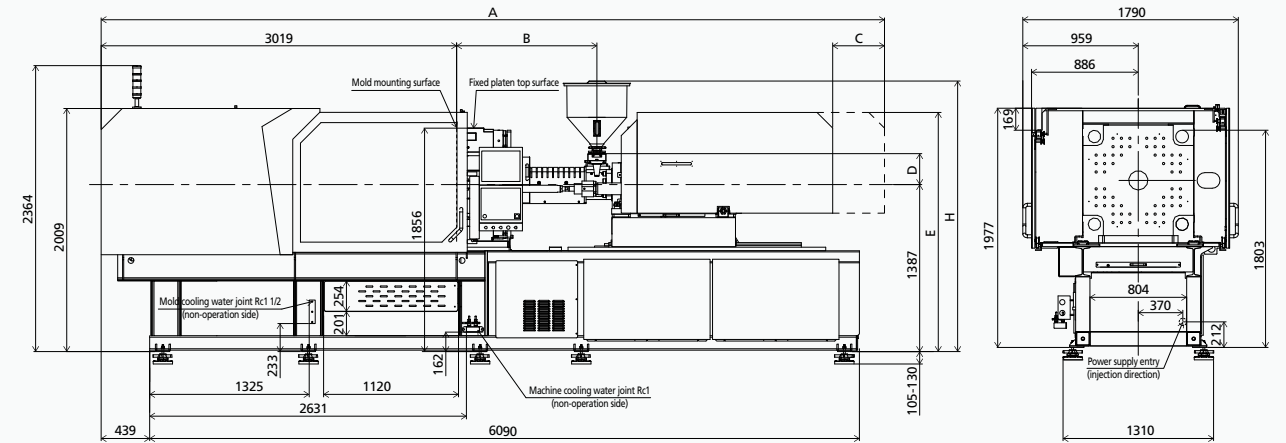
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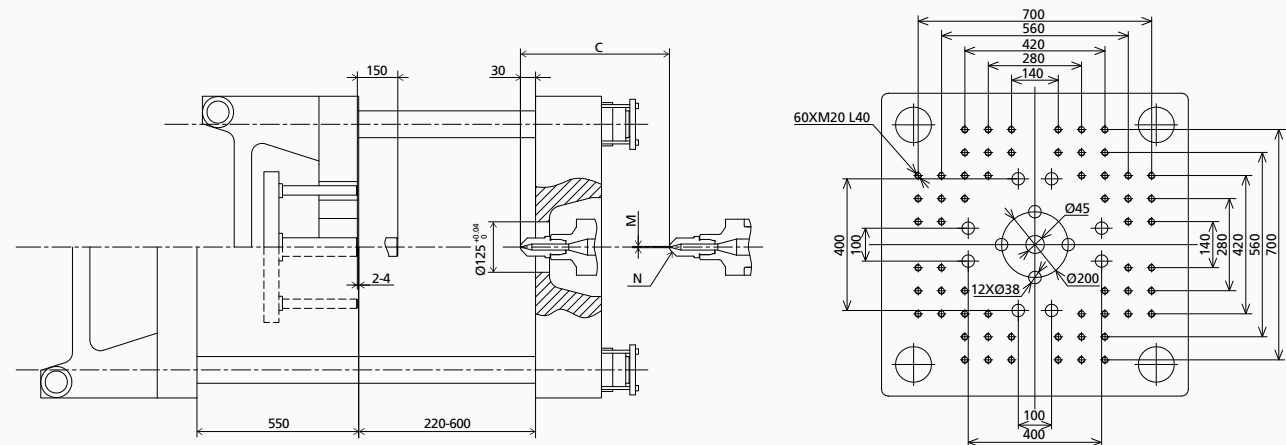
MACHINE DIMENSIONS



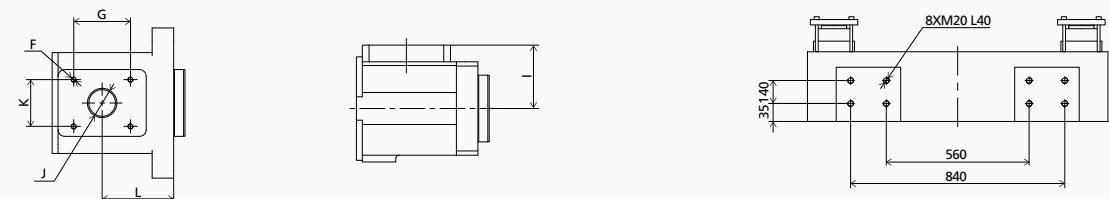
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
830h,830hs	6738/6908/7005	1330/1500/1597	430	255	2081	4×M10 L20	115	2245	153	Ø60	115	122.5	Ø4	SR10
1100h,1100hs	6930/7110/7223	1465/1645/1758	430	245	2081	4×M10 L20	115	2235	143	Ø60	115	180	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS



OTHERS DIMENSIONS



TECHNICAL DATA ZE3000F

		ZE3000F									
CLAMPING UNIT	Clamping force	kN	3000								
	Mold opening stroke	mm	600								
	Mold height min.	mm	250								
	Mold height max.	mm	650								
	Max. daylight	mm	1250								
	Dist. between tie bars (H×V)	mm	670×670								
	Min. mold dimension	mm	435×435								
	Ejector stroke	mm	160								
	Ejector force	kN	68.6								
	Size of mold platen (H×V)	mm	1000×1000								
INJECTION UNIT			A	B	C(op) ³	A	B	C(op) ³	A	B	C(op) ³
	Screw diameter	mm	50	55	60	55	60	65	60	65	70
	Screw L/D ratio	L/D	25	25	25	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	471	570	678	617	735	862	791	929	1077
	Screw speed	rpm	320			300			250		
	Plasticizing rate (HDPE) ¹	g/s	68	86	117.3	80.6	110	144	91.7	120	155
	Nozzle contact force	kN	88.2			88.2			88.2		
	Heating power	kW	33.7	40.7	44.2	41.5	47.2	51.1	47.1	51.2	55.1
	INJECTION UNIT		1100h			1400h			1700h		
	Injection speed	mm/s	350			350			350		
Injection rate ²	cm ³ /s	659	797	949	797	949	1114	949	1114	1292	
Injection pressure	MPa	230	190	159	230	193	164	210	180	155	
	bar	2300	1900	1590	2300	1930	1640	2100	1800	1550	
INJECTION UNIT		1100hs			1400hs			1700hs			
Injection speed	mm/s	500			450			450			
Injection rate ²	cm ³ /s	942	1139	1356	1025	1220	1432	1220	1432	1661	
Injection pressure	MPa	230	190	159	230	193	164	210	180	155	
	bar	2300	1900	1590	2300	1930	1640	2100	1800	1550	
Connection power	kW/A	1100h:70/117 1100hs:89/149			1400h:77/130 1400hs:91/152			1700h:93/156 1700hs:106/179			
Pressure	MPa	17.5			17.5			17.5			
Flow	l/min	90			90			90			
Oil tank	l	135			135			135			
Hopper capacity	l	50			50			50			
Machine dimension	m	7.7×2.0×2.5			8.2×2.0×2.5			8.4×2.0×2.5			
Machine weight	t	15.8			16.6			16.6			

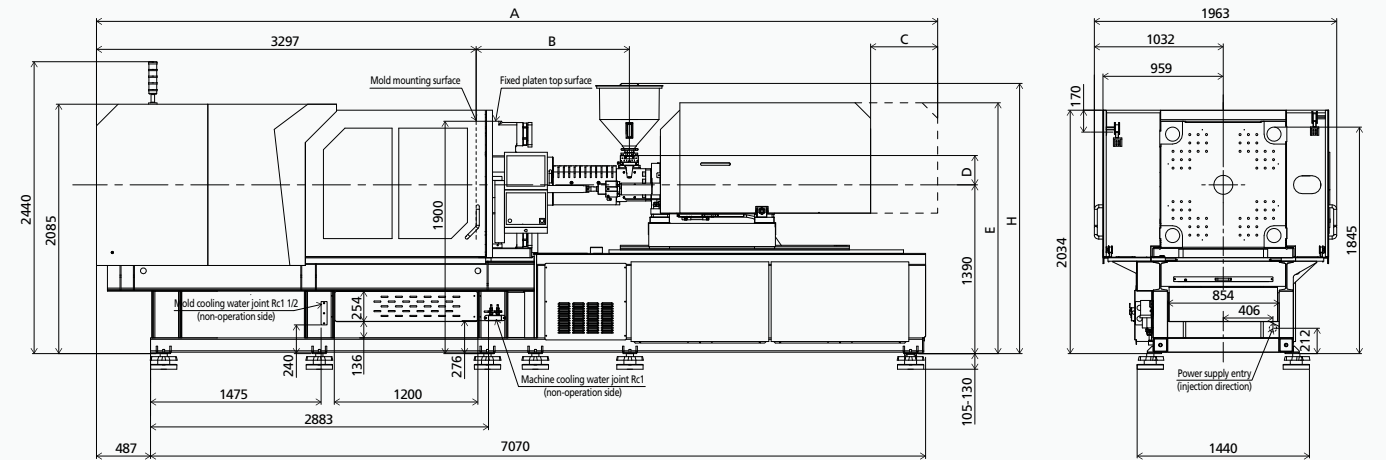
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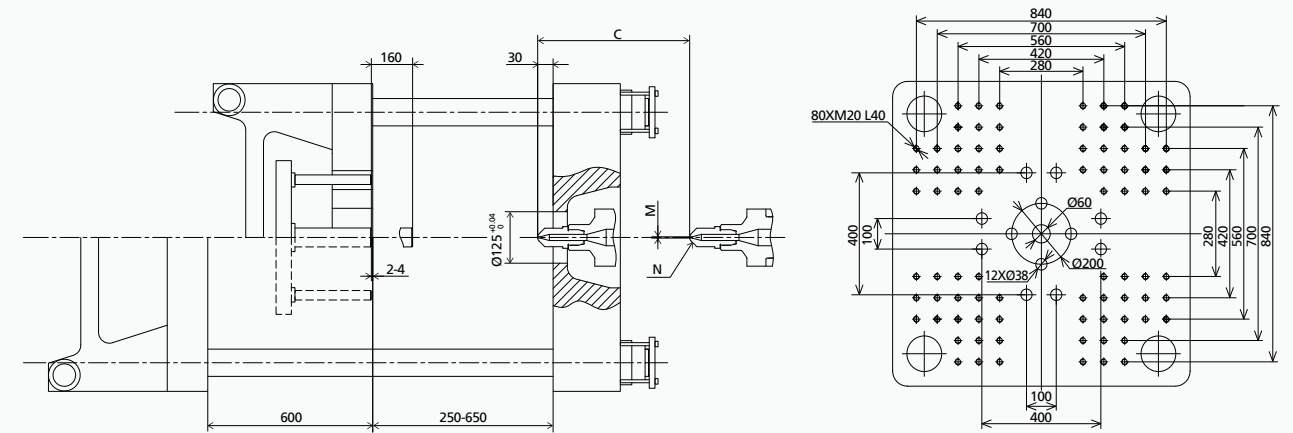
MACHINE DIMENSIONS



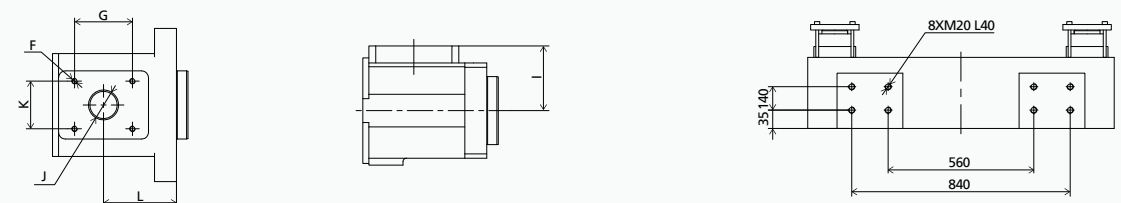
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1100h,1100hs	7338/7518/7631	1465/1645/1758	560	245	2084	4×M10 L20	115	2238	143	Ø60	115	180	Ø4	SR10
1400h,1400hs	7903/8064/8185	1614/1775/1896	610	251	2095	4×M10 L20	115	2244	149	Ø80	115	184	Ø4	SR10
1700h,1700hs	8076/8238/8359	1754/1916/2037	610	250	2095	4×M10 L20	115	2244	148	Ø80	115	217	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS



OTHERS DIMENSIONS



TECHNICAL DATA ZE3800F

		ZE3800F									
CLAMPING UNIT	Clamping force	kN	3800								
	Mold opening stroke	mm	700								
	Mold height min.	mm	300								
	Mold height max.	mm	710								
	Max. daylight	mm	1410								
	Dist. between tie bars (H×V)	mm	770×770								
	Min. mold dimension	mm	500×500								
	Ejector stroke	mm	160								
	Ejector force	kN	68.6								
	Size of mold platen (H×V)	mm	1150×1150								
INJECTION UNIT			A	B	C(op) ³	A	B	C(op) ³	A	B	C(op) ³
	Screw diameter	mm	50	55	60	55	60	65	60	65	70
	Screw L/D ratio	L/D	25	25	25	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	471	570	678	617	735	862	791	929	1077
	Screw speed	rpm	320			300			250		
	Plasticizing rate (HDPE) ¹	g/s	68	86	117.3	80.6	110	144	91.7	120	155
	Nozzle contact force	kN	88.2			88.2			88.2		
	Heating power	kW	33.7	40.7	44.2	41.5	47.2	51.1	47.1	51.2	55.1
	INJECTION UNIT		1100h			1400h			1700h		
	Injection speed	mm/s	350			350			350		
Injection rate ²	cm ³ /s	659	797	949	797	949	1114	949	1114	1292	
Injection pressure	MPa	230	190	159	230	193	164	210	180	155	
	bar	2300	1900	1590	2300	1930	1640	2100	1800	1550	
INJECTION UNIT		1100hs			1400hs			1700hs			
Injection speed	mm/s	500			450			450			
Injection rate ²	cm ³ /s	942	1139	1356	1025	1220	1432	1220	1432	1661	
Injection pressure	MPa	230	190	159	230	193	164	210	180	155	
	bar	2300	1900	1590	2300	1930	1640	2100	1800	1550	
Connection power	kW/A	1100h:70/117 1100hs:89/149			1400h:77/130 1400hs:91/152			1700h:93/156 1700hs:106/179			
Pressure	MPa	17.5			17.5			17.5			
Flow	l/min	90			90			90			
Oil tank	l	135			135			135			
Hopper capacity	l	50			50			50			
Machine dimension	m	8.0×2.1×2.6			8.5×2.1×2.6			8.7×2.1×2.6			
Machine weight	t	20.8			21.6			22.1			

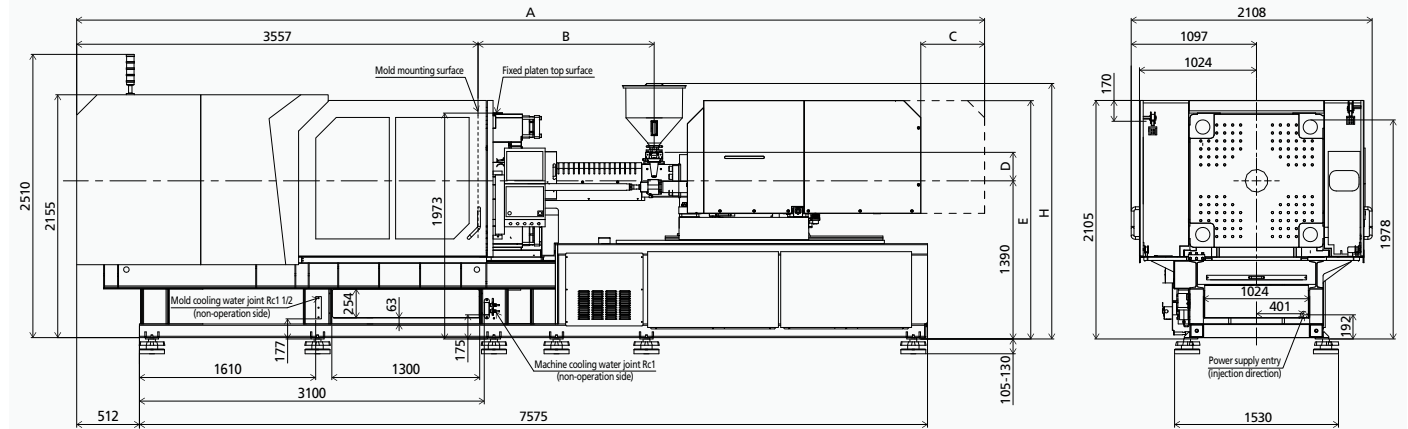
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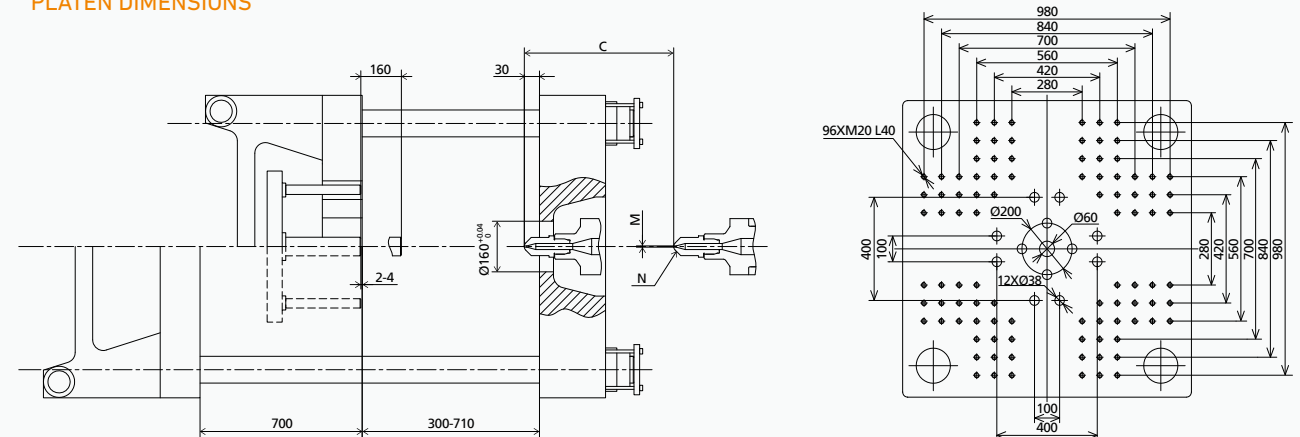
MACHINE DIMENSIONS



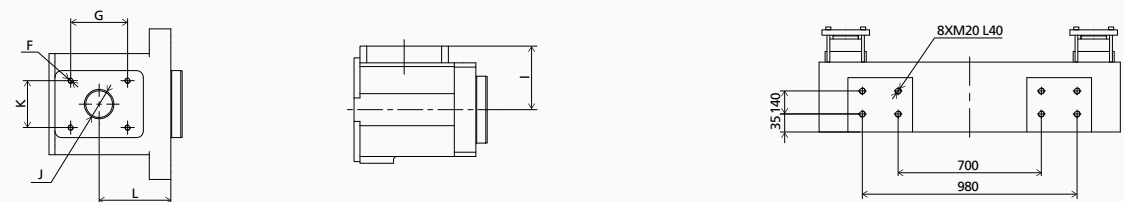
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1100h,1100hs	7649/7829/7942	1467/1647/1760	610	245	2084	4×M10 L20	115	2238	143	Ø60	115	180	Ø4	SR10
1400h,1400hs	8163/8324/8445	1615/1776/1897	610	251	2095	4×M10 L20	115	2244	149	Ø80	115	184	Ø4	SR10
1700h,1700hs	8336/8498/8619	1754/1916/2037	610	250	2095	4×M10 L20	115	2244	148	Ø80	115	217	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS



OTHERS DIMENSIONS



TECHNICAL DATA ZE4500F

		ZE4500F						
CLAMPING UNIT	Clamping force	kN	4500					
	Mold opening stroke	mm	800					
	Mold height min.	mm	400					
	Mold height max.	mm	820					
	Max. daylight	mm	1620					
	Dist. between tie bars (H×V)	mm	820×820					
	Min. mold dimension	mm	540×540					
	Ejector stroke	mm	180					
	Ejector force	kN	98					
	Size of mold platen (H×V)	mm	1260×1260					
INJECTION UNIT			A	B	C(op) ³	A	B	C(op) ³
	Screw diameter	mm	55	60	65	60	65	70
	Screw L/D ratio	L/D	25	25	25	25	25	25
	Injection volume (theoretical)	cm ³	617	735	862	791	929	1077
	Screw speed	rpm		300			250	
	Plasticizing rate (HDPE) ¹	g/s	80.6	110	144	91.7	120	155
	Nozzle contact force	kN		88.2			88.2	
	Heating power	kW	41.5	47.2	51.1	47.1	51.2	55.1
	INJECTION UNIT			1400h			1700h	
	Injection speed	mm/s		350			350	
OTHERS	Injection rate ²	cm ³ /s	797	949	1114	949	1114	1292
	Injection pressure	MPa	230	193	164	210	180	155
		bar	2300	1930	1640	2100	1800	1550
	INJECTION UNIT			1400hs			1700hs	
	Injection speed	mm/s		450			450	
	Injection rate ²	cm ³ /s	1025	1220	1432	1220	1432	1661
	Injection pressure	MPa	230	193	164	210	180	155
		bar	2300	1930	1640	2100	1800	1550
	Connection power	kW/A		1400h:77/130 1400hs:91/152			1700h:93/156 1700hs:106/179	
	Pressure	MPa		17.5			17.5	
Flow	l/min		132			132		
Oil tank	l		280			280		
Hopper capacity	l		50			50		
Machine dimension	m		8.9×2.3×2.6			9.1×2.3×2.6		
Machine weight	t		27.5			27.5		

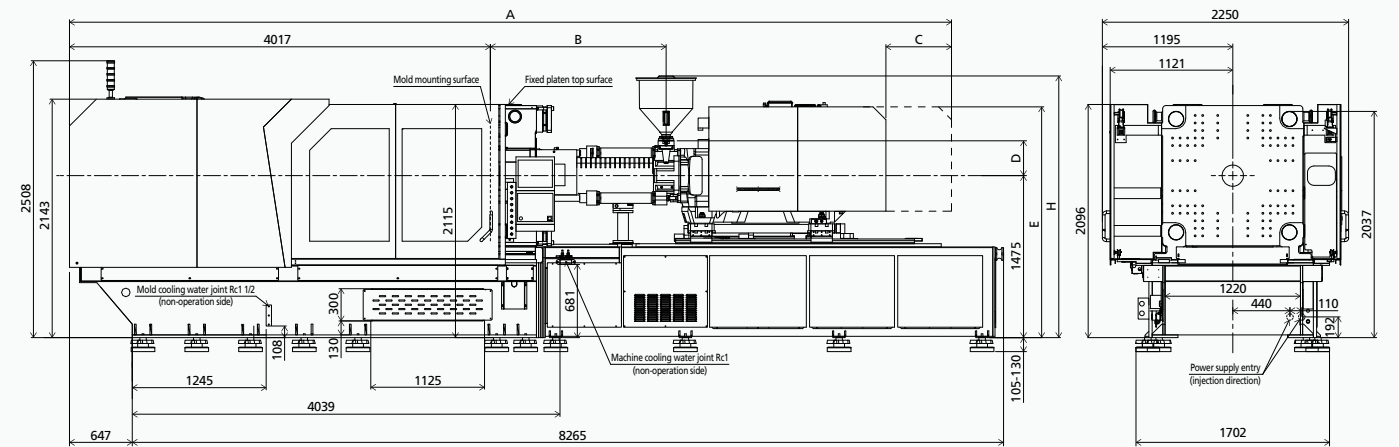
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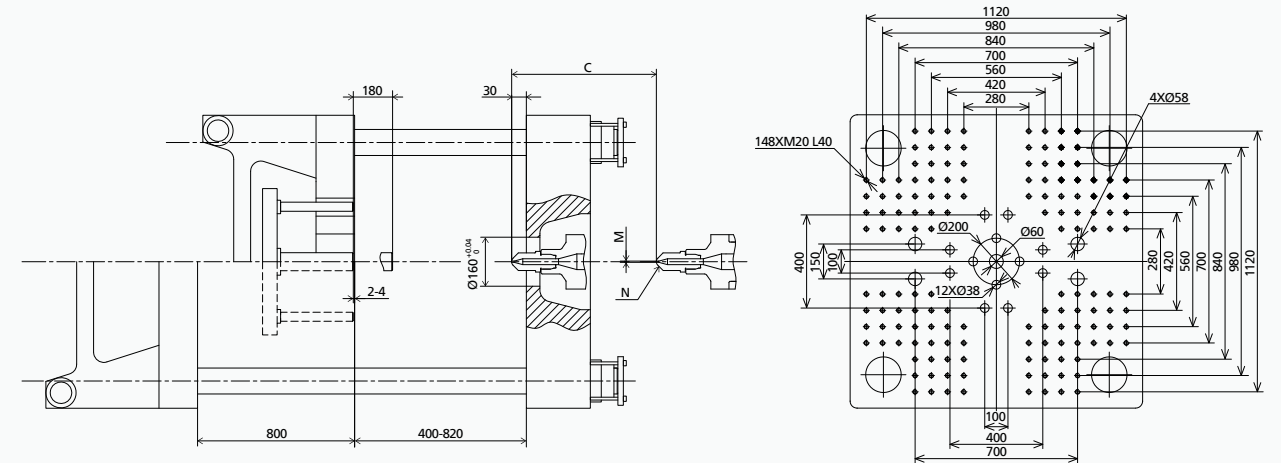
MACHINE DIMENSIONS



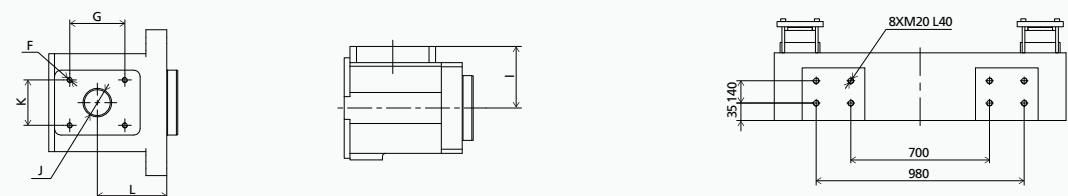
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1400h,1400hs	8623/8784/8905	1614/1775/1896	610	251	2135	4×M10 L20	115	2329	149	Ø80	115	184	Ø4	SR10
1700h,1700hs	8796/8958/9079	1754/1916/2037	610	250	2135	4×M10 L20	115	2329	148	Ø80	115	217	Ø4	SR10

Figures at "A,B" refers to the respective size of screw A/B/C on the injection unit.

PLATEN DIMENSIONS

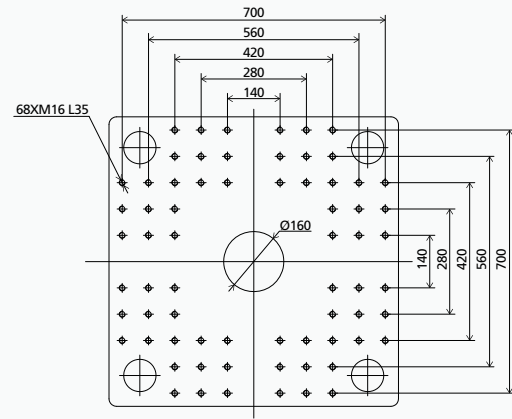


OTHERS DIMENSIONS

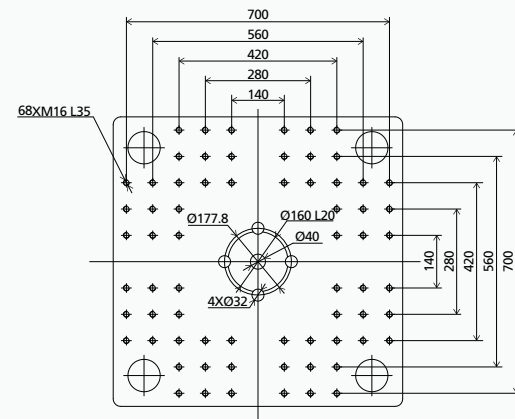


PLATEN LAYOUT ZE1500F

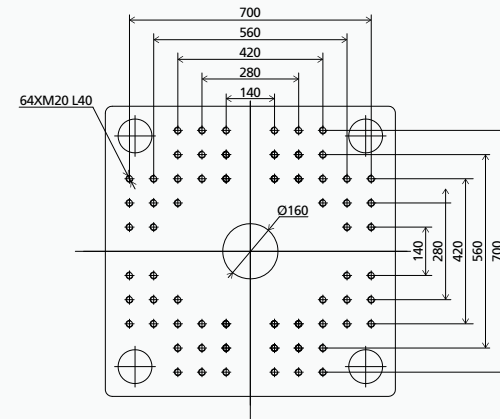
EUROPEAN VERSION FIXED PLATEN



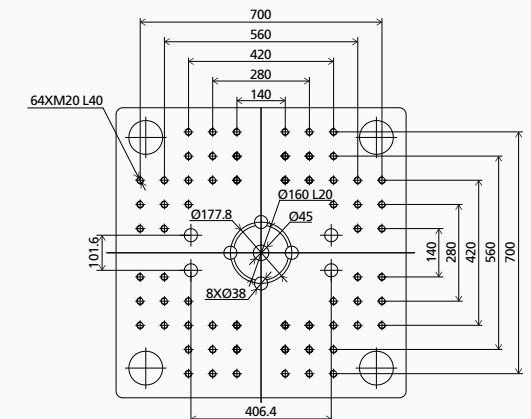
MOVABLE PLATEN



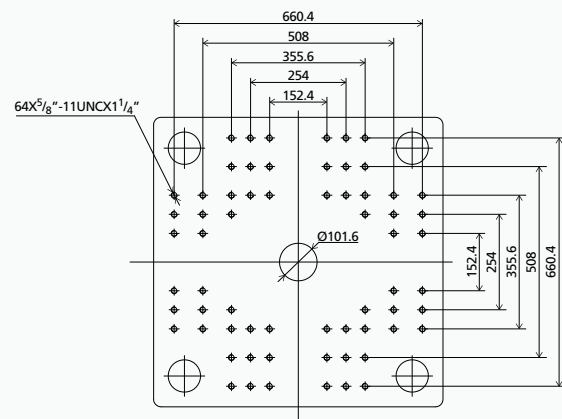
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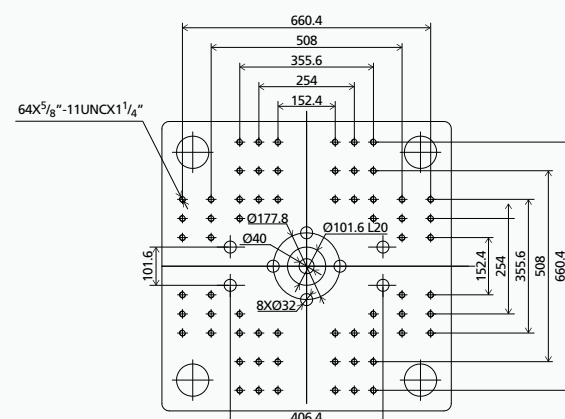
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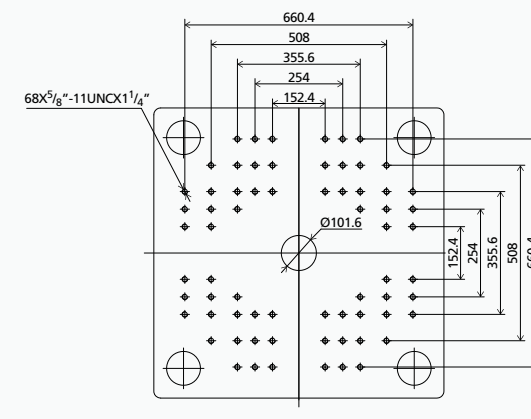
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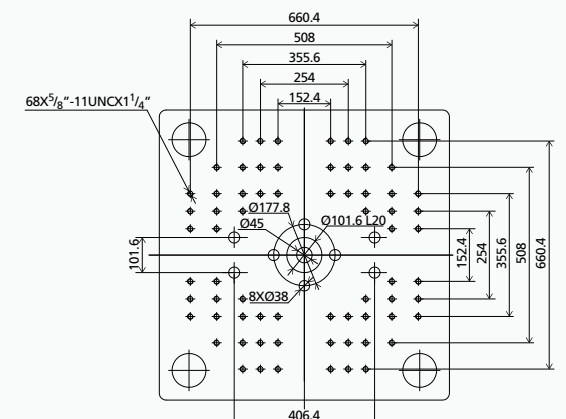
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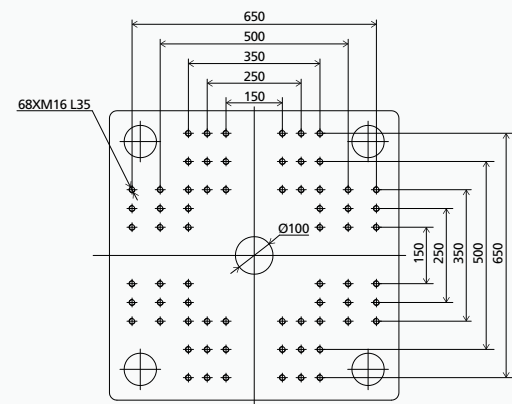
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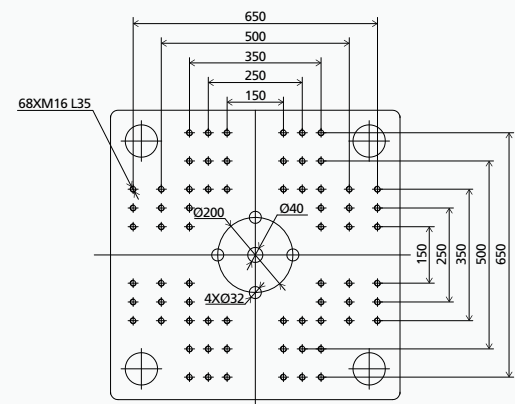
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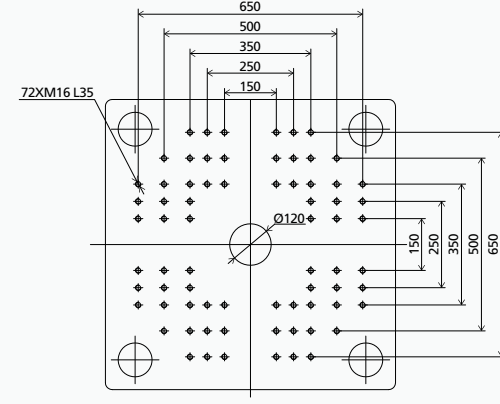
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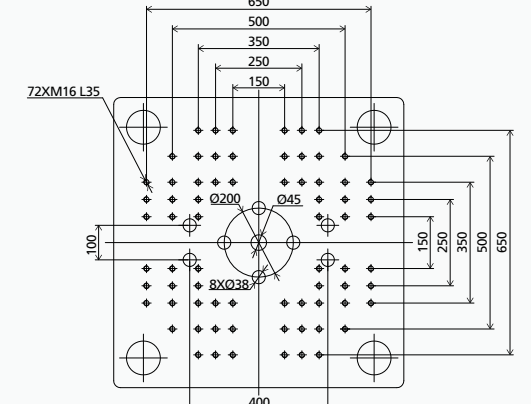
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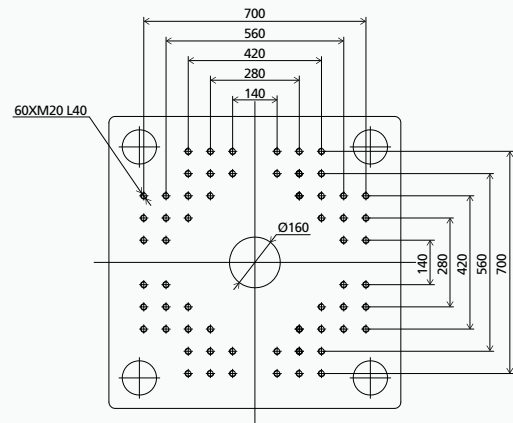
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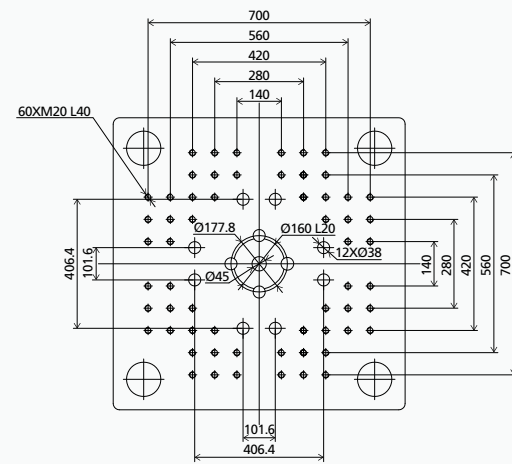
We reserve the right to make changes as a result of further technical advances.

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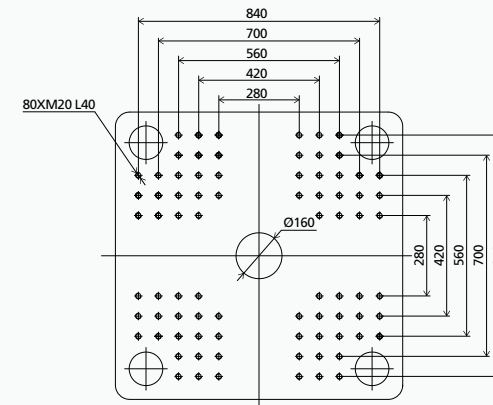
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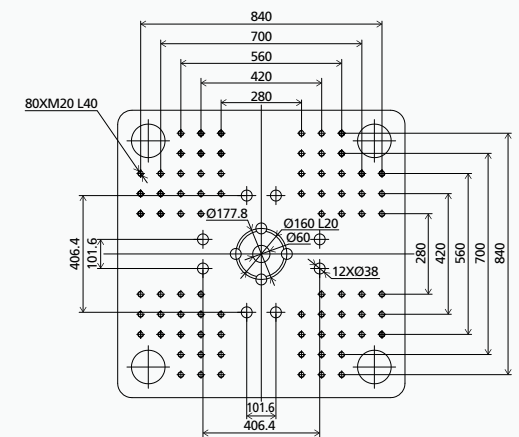
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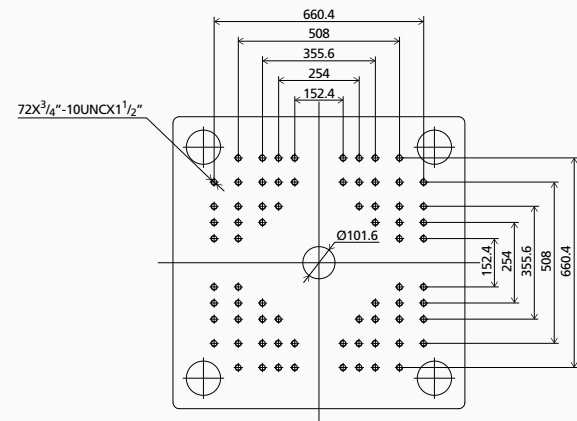
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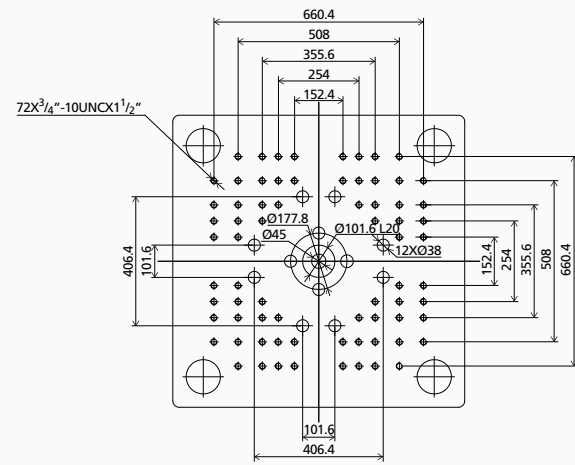
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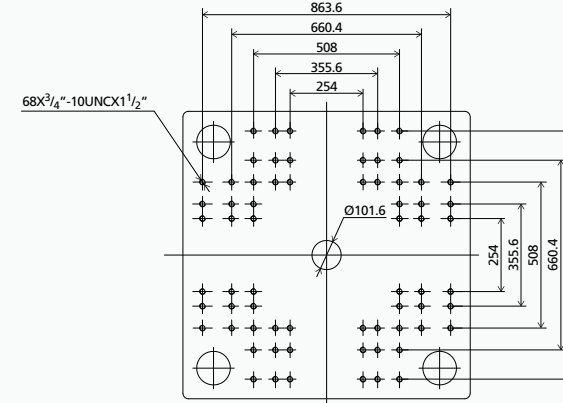
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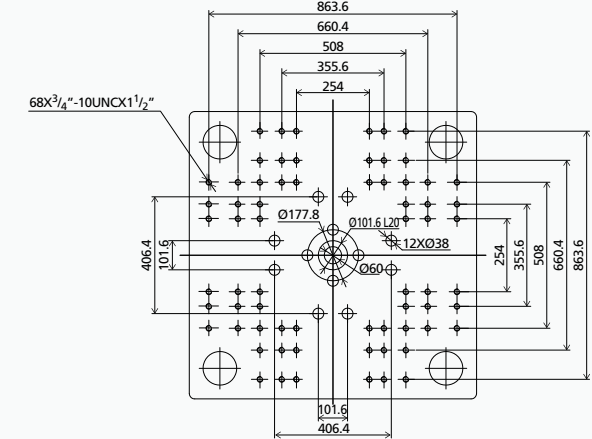
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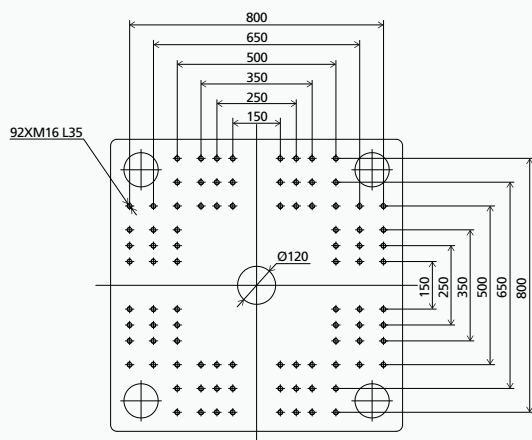
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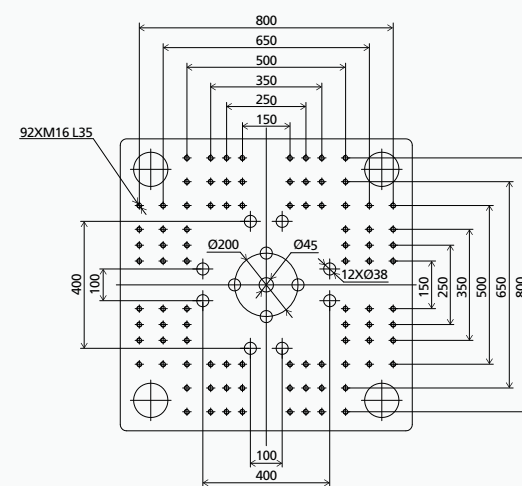
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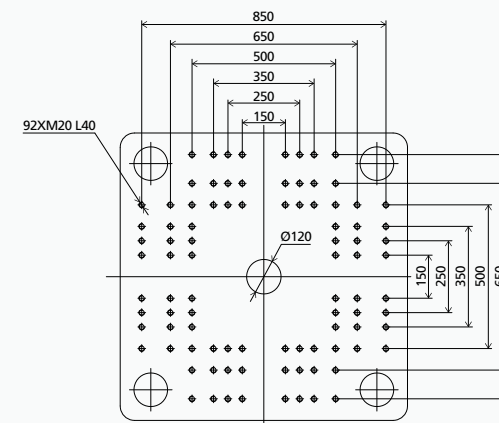
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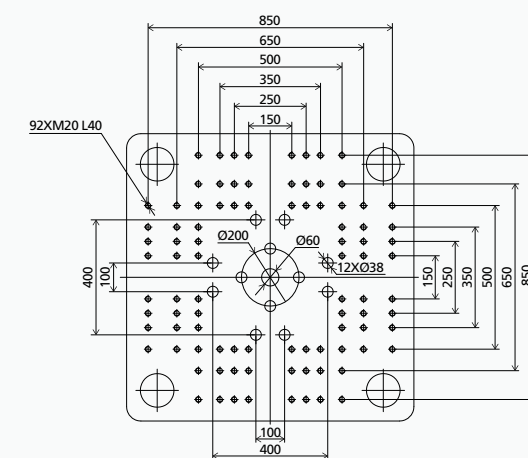
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JAPANESE VERSION FIXED PLATEN



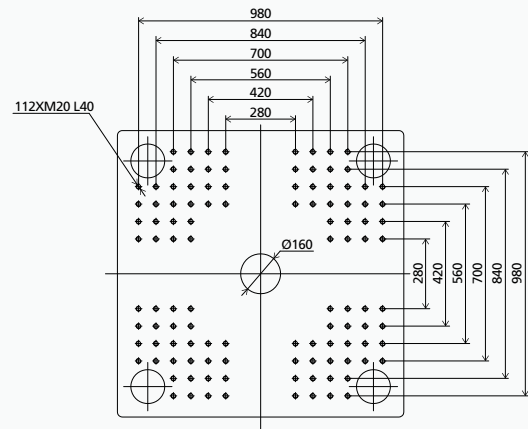
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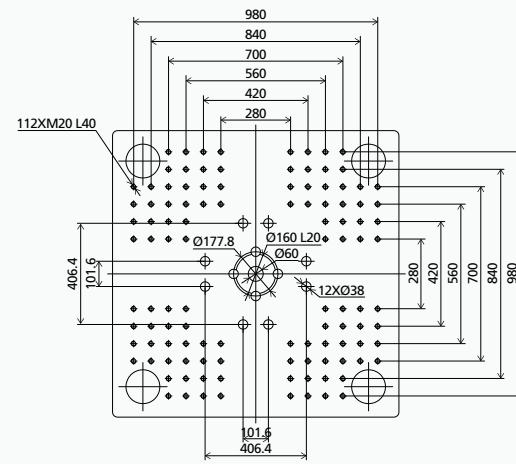
We reserve the right to make changes as a result of further technical advances.

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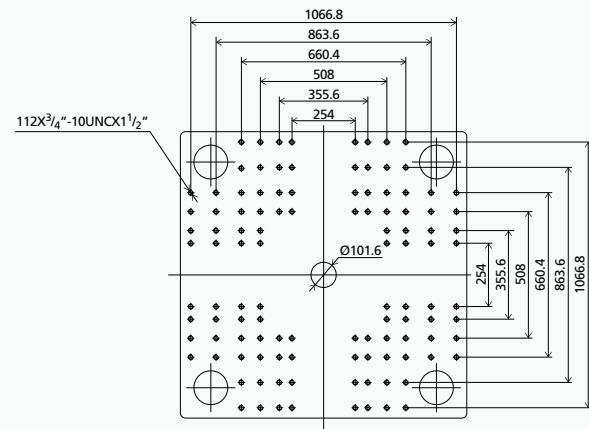
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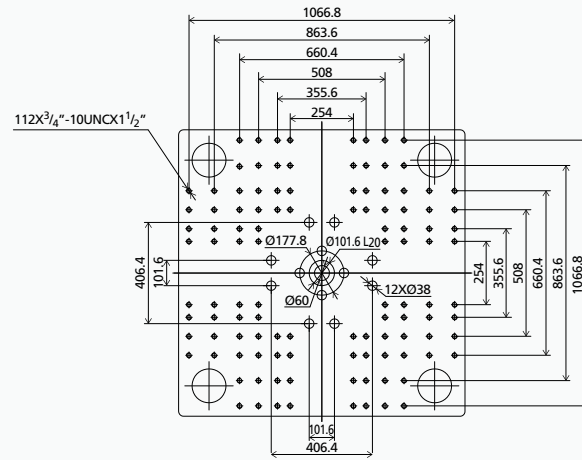
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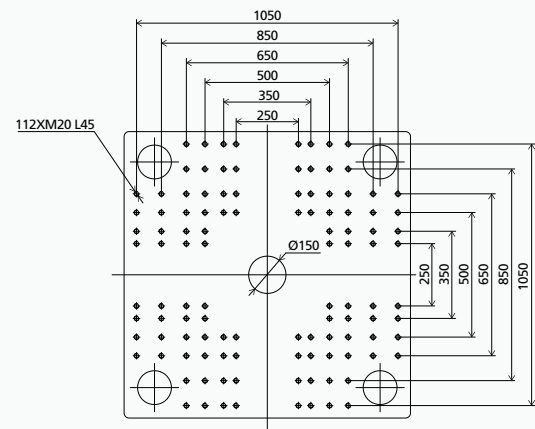
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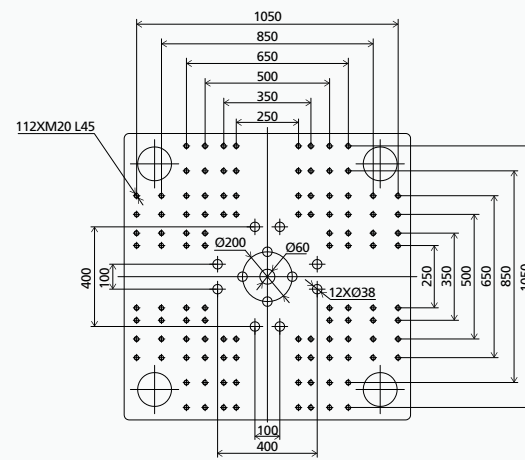
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JAPANESE VERSION FIXED PLATEN

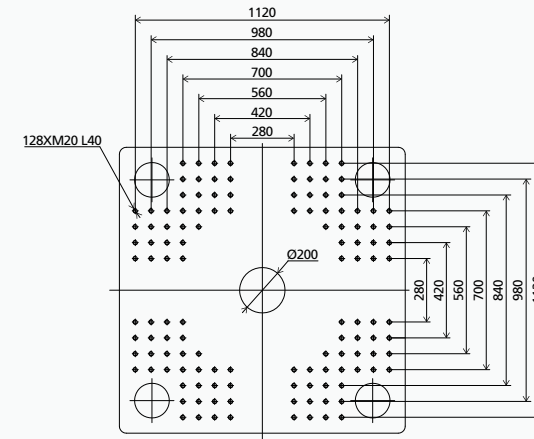


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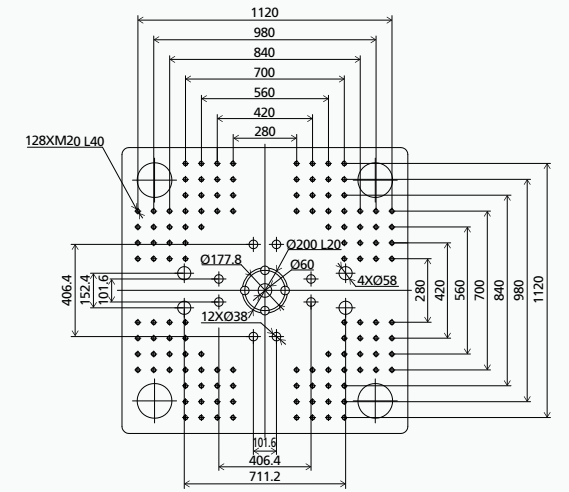


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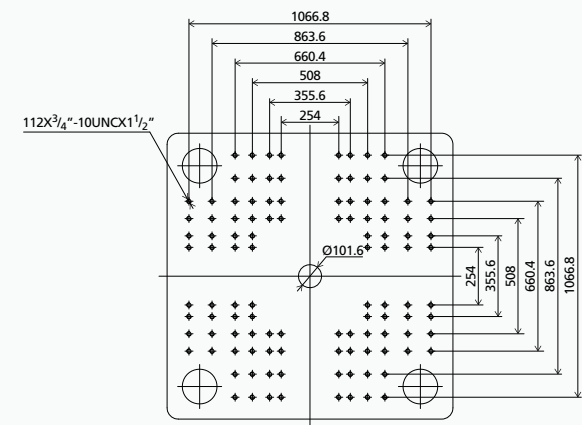
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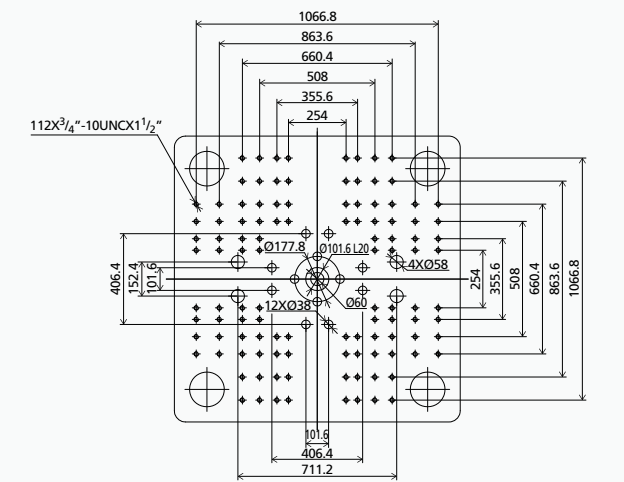
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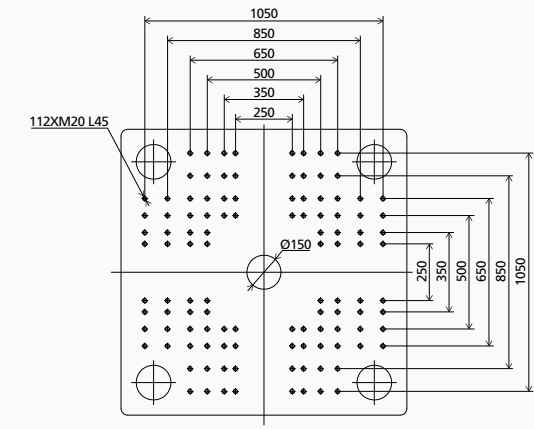
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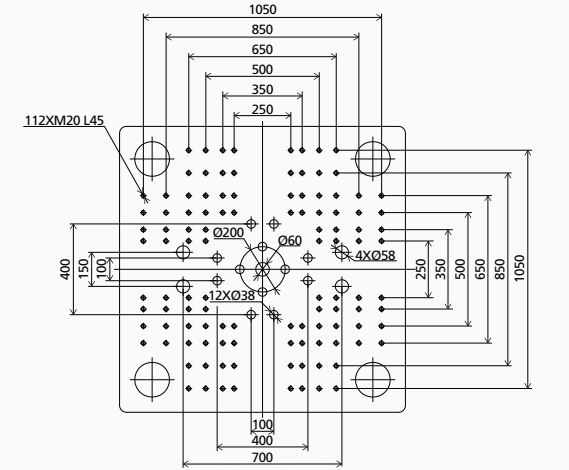
MOVABLE PLATEN



JAPANESE VERSION FIXED PLATEN



MOVABLE PLATEN



We reserve the right to make changes as a result of further technical advances.

STANDARD EQUIPMENT LIST

GENERAL EQUIPMENT

- » Basic safety device according to GB/22530-2010.
- » ZHAFIR colors: RAL9010, RAL5003
- » Power supply: 380VAC, 3PH+N+PE
- » Sigmatek controller, 15.1 inch touch screen
- » Injection, dosing and platen movement driven independently by servo motor, optical encoder position detection.
- » LUBE central lubrication system
- » Integrated servo hydraulic pack for ejection and carriage movement

INJECTION UNIT

- » High plastic screw set
- » Open nozzle
- » Barrel heating temperature PID control, SSR
- » Extended nozzle, temperature PID control independently
- » Feeding zone temperature closed-loop control
- » Injection speed 6 steps
- » Speed responding mode adjustable
- » Holding pressure 4 steps
- » Pressure responding mode adjustable
- » V/P switch over methods by position/ time/ pressure combinations
- » Dosing rotation speed 3 steps
- » Back pressure 3 steps
- » HPM over-filling protection function
- » Screw retraction before and/or after dosing
- » Auto purge
- » Nozzle sealing force programmable control
- » Swiveling injection unit

CLAMPING UNIT

- » 5-point twin toggle mechanism
- » Center pressing platen
- » Clamping force closed-loop control
- » Automatic mold-height adjustment
- » Platen moving speed 6 steps
- » Full stroke mold protection
- » Clamping force pre-release
- » Ejector speed 3 steps
- » Ejector pressure 3 steps
- » Multi ejection function
- » Mold cooling water circuit 1 set

FUNCTIONS & CONTROLS

- » Multi-language available
(Chinese, German, English, Japanese etc.)
- » Metric/Imperial unit selectable
- » Dosing parallel to mold opening
- » Injection compression
- » Production assistant device function
- » Maintenance alert
- » 5000 cycles process data recording
- » Amendment report
- » Alarm record
- » Quality control function
- » Mold profile data memory (up to 200 sets)
- » 3 USB interface
- » USB printer interface
- » Injection speed & pressure curve
- » 1 free programmable I/O
- » Mold ejector protection interface
- » EUROMAP 12 interface for handling device
- » Auxiliary socket 3PH/380V 32A×1, 16A×2
- » 3 color alarm lamp (red/yellow/green)

OTHERS

- » Tool kit & spare parts package
- » Leveling pads
- » Documents with machine
- » Operating manual

NOTE:

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