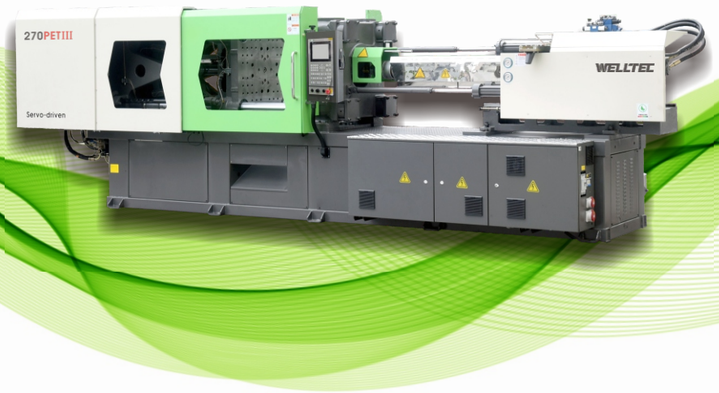
Our offices and agents

Special Injection for PET



Welltec Machinery Ltd

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Version: PETIII-202308W

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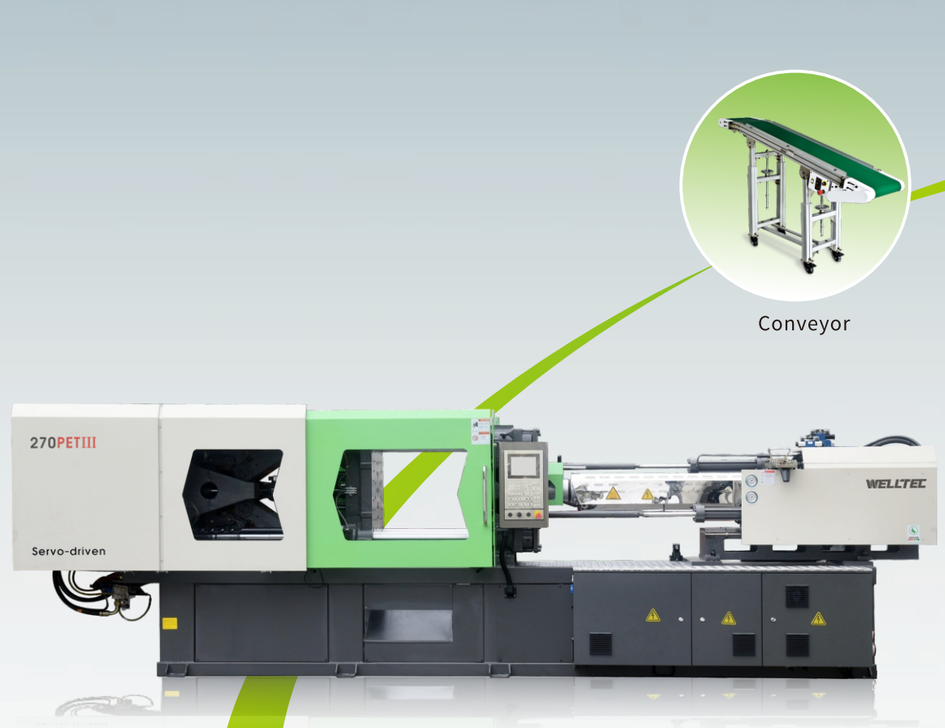
PET Preform Injection Moulding System / Process Diagram



Conveyor


Robot


Raw material


Dehumidifying feeder


Hopper


Preform

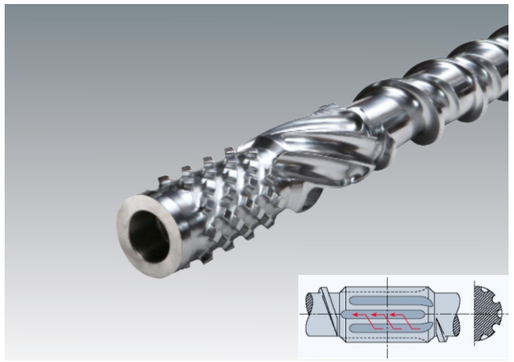

Mould


Chiller


Cooling tower


Crusher

Machine Features

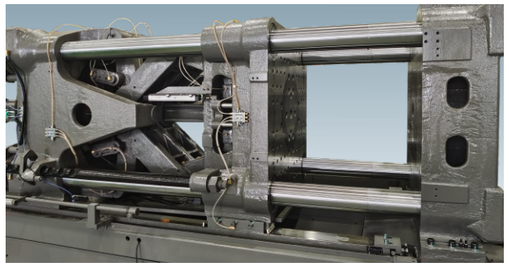


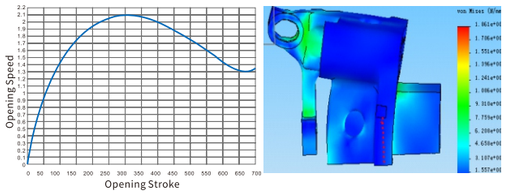
Efficient and high-performance screw

The design of low shear and high L/D ratio increases the plasticising efficiency by more than 30%, and effectively reduces acetaldehyde level.

Excellent plasticising effect

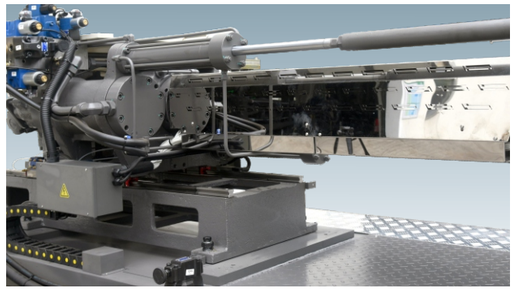
It ensures the high transparency of the preform.
Even colouring by mixing master batch, pigment or liquid colourant is attainable.
Resins with higher proportion of recycled plastics can be also evenly plasticised.





Advanced design of clamping structure

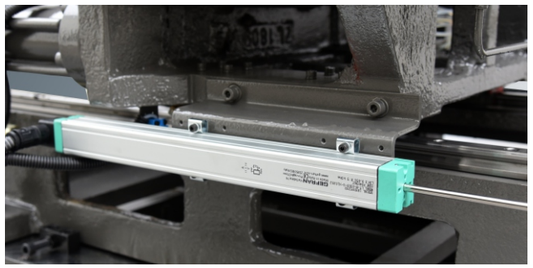
Extra durability achieved through even mould platen stress dispersion and high-strength clamping structure.
Extra large opening stroke satisfy the production of long depth preform.

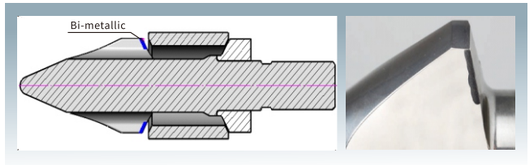


Linear guide rail injection unit

Linear guide rail greatly reduces mechanical back pressure and energy consumption.

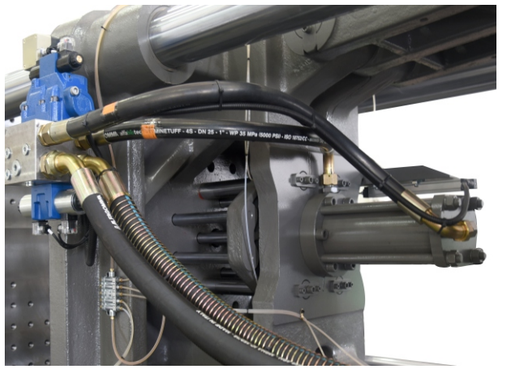
Machine Features





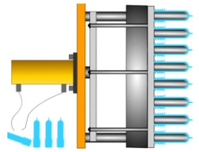
Stable and precise injection

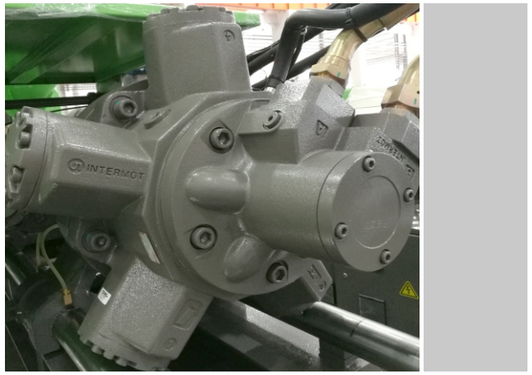
Wear-resistant bi- metallic tip set is provided.



Strong ejector design

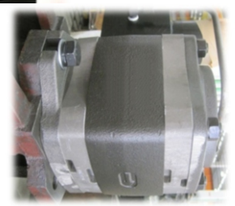
Enlarged ejector hydraulics to enhance ejector speed, force and stroke.





Large torque hydraulic motor

Stable and continuous output of high torque to meet the requirement of high speed plasticising for PET.
Some of the standard equipment are with high torque motor of 210 bar.



Excellent energy saving

Precise, energy saving servo motor and high performance gear pump.
Large diameter hydraulic pipeline.

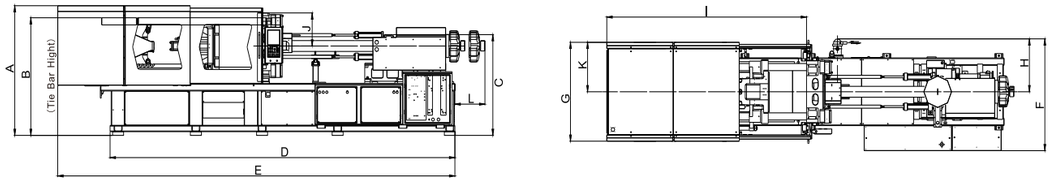
PET servo pump parameters

ITEM	UNIT	170PETⅢ	210PETⅢ	270PETⅢ	
International specification		1700–620	2100–870	2700–1500	2700–1930
INJECTION UNIT					
Screw diameter	mm	50	60	65	75
Theoretical shot volume	cc	442	707	995	1436
Shot weight (PET)	g	517	827	1165	1680
Shot weight (PP/PE)	g	323	516	727	1048
Length/Diameter ratio	L/D	24	24	24	24
Injection pressure	MPa	142	123	151	134
Injection rate(PET)	g/s	264	401	397	447
Injection stroke	mm	225	250	300	325
Max. screw speed	rpm	180	160	155	125
Plasticizing capacity (PET)	g/s	45.4	72.8	87.9	127.9
Injection unit force	Ton	5.7	9.1	9.1	9.1
Carriage stroke	mm	320	350	350	400
CLAMPING UNIT					
Clamping force	Ton	170	210	270	
Max. daylight	mm	1000	1090	1210	
Clamping stroke	mm	480	540	600	
Distance btwn. Tie bars	mm	470X470	535X535	580X580	
Min mould dimension	mm	320x320	370x370	400X400	
Mould thickness range	mm	150–520	175–550	195–610	
Ejector force	Ton	7.7	9.9	11.1	
Ejector stroke	mm	160	170	195	
No. of ejector holes	unit	5	9	13	
POWER UNIT					
Major motor	kW	23	31.4	32	32
No. of heater zones	unit	5+1	5+1	5+1	5+1
Heater input power	kW	15.70	22.34	26.00	37.24
Ultimate capacity	kW	39.7	54.74	59.00	70.24
Current	A	54.3	74.9	80.7	96.0
GENERAL DATA					
Machine dimensions(LxWxH)	m	5.4x1.5x1.8	5.9x1.6x1.9	6.7x1.7x2.0	7.1x1.7x2.0
Net weight	Ton	5.9	7.4	9.0	9.3
Oil filling capacity	L	280	300	450	450

■ We are always working on improvement and reserve the rights to change design and specifications without prior notice

Machine Dimensions

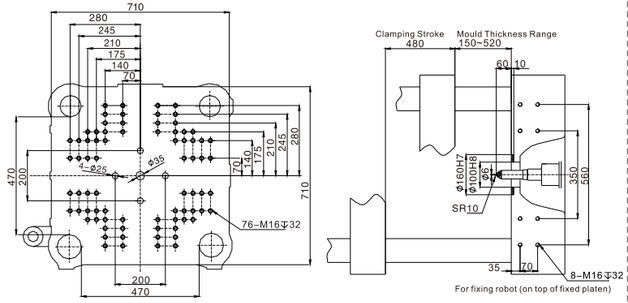
170PETⅢ– 270PETⅢ



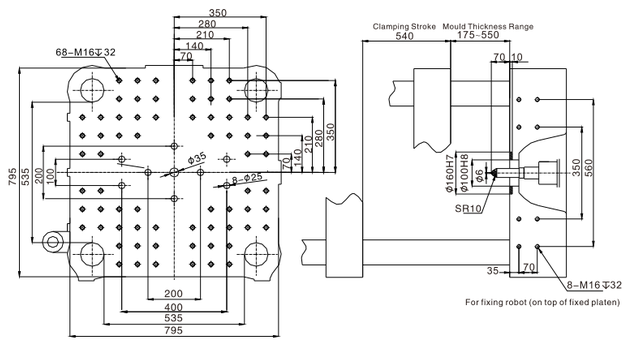
Model	DIA	A	B	C	D	E	F	G	H	I	J	K	L
170PETⅢ	50	1758	1567	1377	4513	5215	1506	1302	669	2730	375	651	254
210PETⅢ	60	1833	1645	1430	4778	5623	1576	1414	752	3008	413	707	422
270PETⅢ	65	1961	1757	1512	5125	6056	1660	1462	810	3245	468	731	564
270PETⅢ	75	1961	1757	1527	5475	6406	1660	1462	810	3245	468	731	651

Platen/Nozzle Dimensions

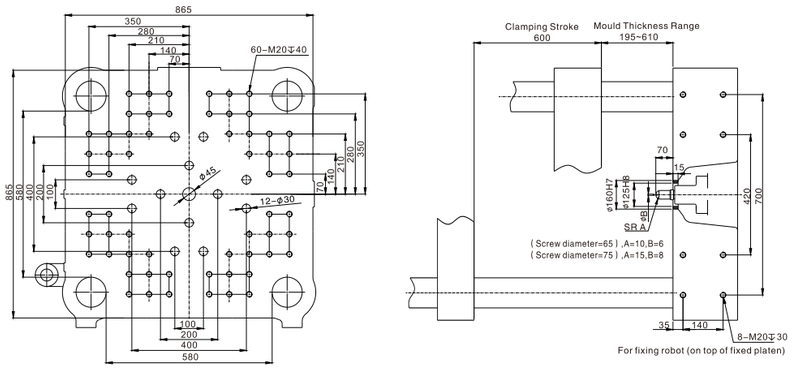
170PETⅢ



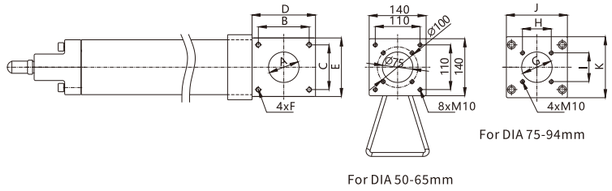
210PETⅢ



270PETⅢ



Hopper mounting surface



SCREW DIAMETER	DIA	A	B	C	D	E	F	G	H	I	J	K
620	50	68	125	110	145	230	M12					
870	60	75	125	110	150	220	M12					
1500	65	80	125	110	155	230	M12					
1930	75	85	125	110	185	230	M12					
2860	85	95	135	135	195	230	M12	120	110	110	180	190
3500	94	105	135	135	205	240	M12	120	110	110	180	190
4760	105	120	180	180	320	330	M16	117	180	180	220	220
6500	120	120	190	190	300	350	M16					

PET servo pump parameters

ITEM	UNIT	300PETⅢ	330PETⅢ			420PETⅢ		
International specification		3000-3500	3300-1930	3300-2860	3300-3500	4200-2860	4200-3500	4200-4760
INJECTION UNIT								
Screw diameter	mm	94	75	85	94	85	94	105
Theoretical shot volume	cc	2776	1436	2128	2776	2128	2776	3810
Shot weight (PET)	g	3248	1680	2490	3248	2490	3248	4458
Shot weight (PP/PE)	g	2026	1048	1553	2026	1553	2026	2781
Length/Diameter ratio	L/D	24	24	24	24	24	24	24
Injection pressure	MPa	126	134	135	126	135	126	125
Injection rate(PET)	g/s	967	559	696	967	696	967	978
Injection stroke	mm	400	325	375	400	375	400	440
Max. screw speed	rpm	115	130	120	115	120	115	96
Plasticizing capacity (PET)	g/s	203.6	133.7	165.1	203.6	165.1	203.6	218.8
Injection unit force	Ton	12	9.1	12	12	12	12	20.4
Carriage stroke	mm	480	400	435	480	435	480	480
CLAMPING UNIT								
Clamping force	Ton	300	330			420		
Max. daylight	mm	1160	1400			1530		
Clamping stroke	mm	500	700			780		
Distance btwn. Tie bars	mm	660X860	680X680			740X740		
Min mould dimension	mm	460X660	470X470			520X520		
Mould thickness range	mm	300-660	250-700			250-750		
Ejector force	Ton	19.8	19.8			23.2		
Ejector stroke	mm	180	215			230		
No. of ejector holes	unit	13	13			13		
POWER UNIT								
Major motor	kW	73.3	46.1	56.5	73.3	56.5	73.3	73.3
No. of heater zones	unit	5+1	5+1	5+1	5+1	5+1	5+1	5+1
Heater input power	kW	62.73	37.24	45.94	62.73	45.94	62.73	77.21
Ultimate capacity	kW	137.03	84.34	103.44	137.03	103.44	137.03	151.51
Current	A	187.4	115.3	141.4	187.4	141.4	187.4	207.2
GENERAL DATA								
Machine dimensions(LxWxH)	m	8.1x1.9x2.2	7.5x2.1x2.1	8.0x2.1x2.2	8.5x2.1x2.1	8.5x2.1x2.2	8.9x2.1x2.2	9.2x2.1x2.2
Net weight	Ton	14.4	12.0	12.3	12.7	15.2	15.6	16.5
Oil filling capacity	L	660	535	535	635	660	660	660

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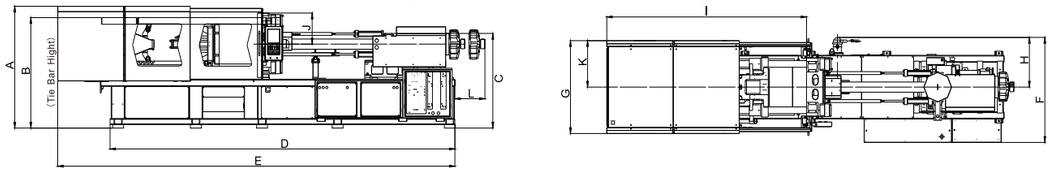
Machine Dimensions

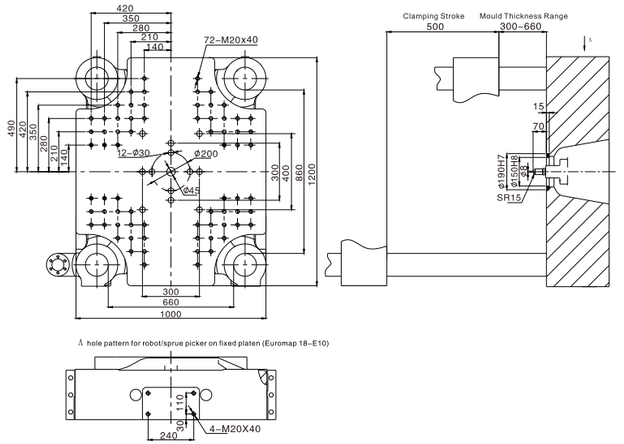
300PETⅢ– 420PETⅢ



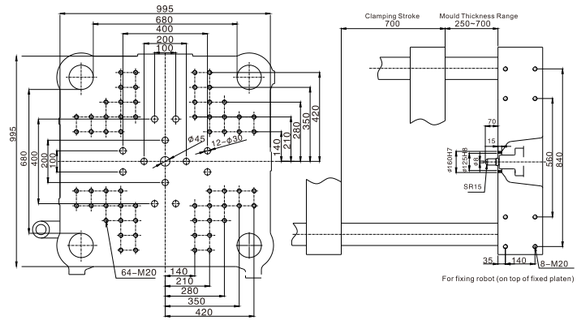
Model	DIA	A	B	C	D	E	F	G	H	I	J	K	L
300PETⅢ	94	2158	2000	1558	6689	7836	1745	1796	836	3449	610	896	440
330PETⅢ	75	2078	1884	1594	6300	7256	1814	1852	865	3649	533	1056	244
330PETⅢ	85	2078	1884	1604	6300	7256	1814	1852	865	3649	533	1056	693
330PETⅢ	94	2078	1884	1610	7025	7981	1814	1852	865	3649	533	1056	270
420PETⅢ	85	2176	1923	1552	7421	8439	1745	1980	836	4054	580	1100	0
420PETⅢ	94	2176	1923	1558	7421	8439	1745	1980	836	4054	580	1100	440
420PETⅢ	105	2176	1923	1568	7906	8869	1703	1980	787	4054	580	1100	302

Platen/Nozzle Dimensions

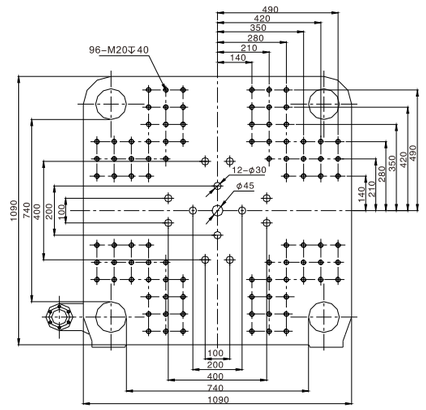
300PETⅢ

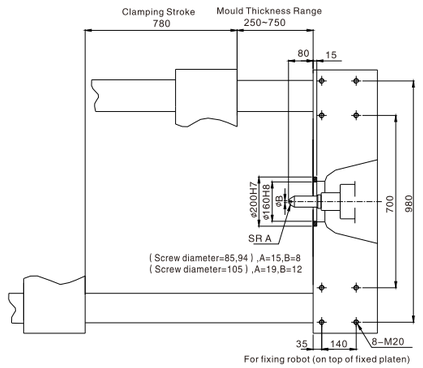


330PETⅢ

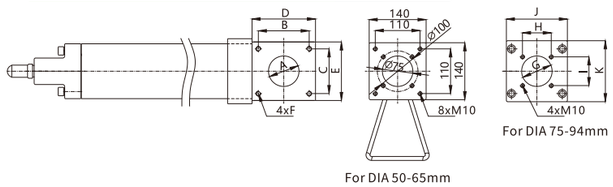


420PETⅢ





Hopper mounting surface



SCREW DIAMETER	DIA	A	B	C	D	E	F	G	H	I	J	K
620	50	68	125	110	145	230	M12					
870	60	75	125	110	150	220	M12					
1500	65	80	125	110	155	230	M12					
1930	75	85	125	110	185	230	M12					
2860	85	95	135	135	195	230	M12	120	110	110	180	190
3500	94	105	135	135	205	240	M12	120	110	110	180	190
4760	105	120	180	180	320	330	M16	117	180	180	220	220
6500	120	120	190	190	300	350	M16					

PET servo pump parameters

ITEM	UNIT	480PETⅢ		530PETⅢ		660PETⅢ
International specification		4800–3500	4800–4760	5300-3500	5300-4760	6600–6500
INJECTION UNIT						
Screw diameter	mm	94	105	94	105	120
Theoretical shot volume	cc	2776	3810	2776	3810	5316
Shot weight (PET)	g	3248	4458	3248	4458	6219
Shot weight (PP/PE)	g	2026	2781	2026	2781	3880
Length/Diameter ratio	L/D	24	24	24	24	24
Injection pressure	MPa	126	125	126	125	123
Injection rate(PET)	g/s	967	1129	967	1129	1532
Injection stroke	mm	400	440	400	440	470
Max. screw speed	rpm	115	110	115	110	100
Plasticizing capacity (PET)	g/s	203.6	250.1	203.6	250.1	314.1
Injection unit force	Ton	12	20.4	12	20.4	20.4
Carriage stroke	mm	480	480	480	480	600
CLAMPING UNIT						
Clamping force	Ton	480		530		660
Max. daylight	mm	1600		1700		1830
Clamping stroke	mm	780		850		910
Distance btwn. Tie bars	mm	820X800		840X830		920X920
Min mould dimension	mm	570X560		580X580		645X645
Mould thickness range	mm	300–820		300-850		350–920
Ejector force	Ton	23.2		23.2		23.2
Ejector stroke	mm	270		250		300
No. of ejector holes	unit	13		13		21
POWER UNIT						
Major motor	kW	73.3	87.9	73.3	87.9	113
No. of heater zones	unit	5+1	5+1	5+1	5+1	5+1
Heater input power	kW	62.73	77.21	62.73	77.21	92.54
Ultimate capacity	kW	137.03	166.11	137.03	166.11	206.54
Current	A	187.4	227.1	187.4	227.1	282.4
GENERAL DATA						
Machine dimensions(LxWxH)	m	9.1x2.2x2.3	9.4x2.2x2.3	9.3x2.2x2.3	9.6x2.2x2.3	10.2x2.3x2.3
Net weight	Ton	17.3	18.3	19.3	20.5	32.5
Oil filling capacity	L	660	1000	660	1000	1000

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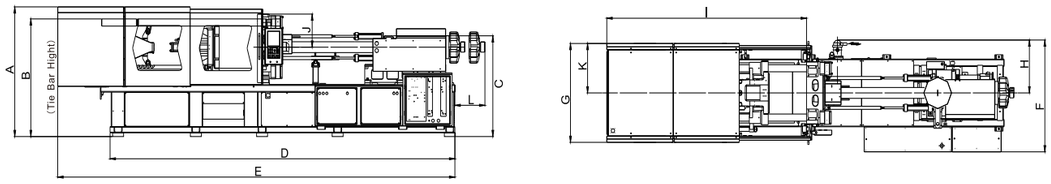
Machine Dimensions

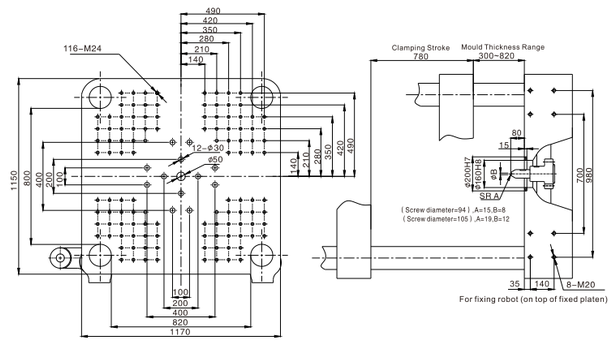
480PETⅢ– 660PETⅢ



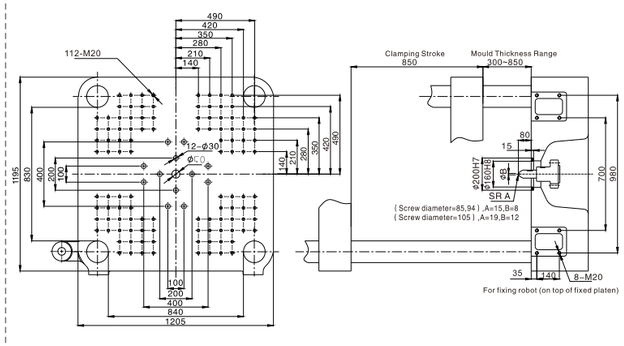
Model	DIA	A	B	C	D	E	F	G	H	I	J	K	L
480PETⅢ	94	2246	1985	1636	7216	8180	1849	2087	907	4249	600	1150	858
480PETⅢ	105	2246	1985	1646	9216	9250	2051	2087	1135	4249	600	1150	190
530PETⅢ	94	2244	2005	1636	7416	8380	1849	2100	907	4474	625	1150	858
660PETⅢ	120	2280	2075	1740	8372	9746	2239	2180	1335	4690	688	1209	880

Platen/Nozzle Dimensions

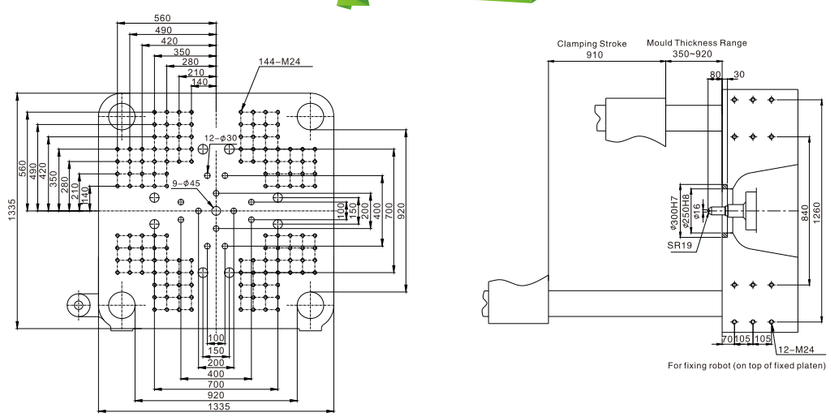
480PETⅢ



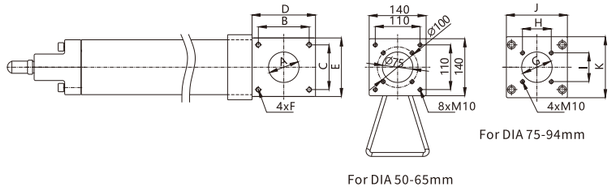
530PETⅢ



660PETⅢ



Hopper mounting surface



SCREW DIAMETER	DIA	A	B	C	D	E	F	G	H	I	J	K
620	50	68	125	110	145	230	M12					
870	60	75	125	110	150	220	M12					
1500	65	80	125	110	155	230	M12					
1930	75	85	125	110	185	230	M12					
2860	85	95	135	135	195	230	M12	120	110	110	180	190
3500	94	105	135	135	205	240	M12	120	110	110	180	190
4760	105	120	180	180	320	330	M16	117	180	180	220	220
6500	120	120	190	190	300	350	M16					

PET servo pump parameters

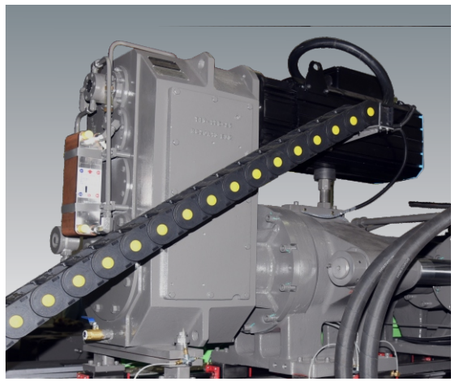
ITEM	UNIT	330PETIII/e		420PETIII/e			480PETIII/e			530PETIII/e			500PP-SeIII
International specification	UNIT	3300-1930	3300-2860	4200-2860	4200-3500	4200-4760	4800-3500	4800-4760	4800-5630	5300-4760	5300-5630	5300-8300	5000-4760
INJECTION UNIT													
Screw diameter	mm	75	85	85	94	105	94	105	110	105	110	125	110
Theoretical shot volume	cc	1436	2128	2128	2776	3810	2776	3810	4942	3810	4942	7363	4181
Shot weight (PET)	g	1680	2490	2490	3248	4458	3248	4458	5782	4458	5782	8615	4892
Shot weight (PP/PE)	g	1048	1553	1553	2026	2781	2026	2781	3607	2781	3607	5375	3052
Length/Diameter ratio	L/D	24	24	24	24	24	24	24	26	24	26	25	24
Injection pressure	MPa	134	135	135	126	125	126	125	114	125	114	113	114
Injection rate(PET)	g/s	559	557	696	743	751	967	978	1073	978	1073	1083	1073
Injection stroke	mm	325	375	375	400	440	400	440	520	440	520	600	440
Max. screw speed	rpm	138	134	134	122	110	122	110	100	110	100	88	125
Plasticising capacity (PET)	g/s	141.3	185.0	185.0	216.2	250.1	216.2	250.1	253.6	250.1	253.6	350.4	240.2
CLAMPING UNIT													
Clamping force	Ton	330			420			480			530		500
Max. daylight	mm	1400			1530			1600			1700		1700
Clamping stroke	mm	700			780			780			850		730
Distance btwn. tie bars	mm	680X680			740X740			820X800			840X830		920X1120
Min.mould dimension	mm	470X470			520X520			570X560			580X580		640X780
Mould thickness range	mm	250-700			250-750			300-820			300-850		450-970
Ejector force	Ton	19.8			23.2			23.2			23.2		49.4
Ejector stroke	mm	215			230			270			250		180
No. of ejector pins	unit	13			13			13			13		16
POWER UNIT													
Pump motor power	kW	46.1	46.1	56.5	56.5	56.5	73.3	73.3	73.3	73.3	73.3	73.3	73.3
Plasticising motor power	kW	46.1	62.8	62.8	73.3	83.8	73.3	83.8	83.8	83.8	83.8	100.5	94.2
No. of heating zones	unit	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1
Heating power	kW	44.54	57.93	57.93	62.73	77.21	62.73	77.21	82	77.21	82	99	68.98
Total power	kW	137.74	167.83	178.23	193.53	218.51	210.33	235.31	240.10	235.31	240.10	273.80	237.48
Total current	A	188.4	229.5	243.7	264.6	298.8	287.6	321.8	328.3	321.8	328.3	374.4	324.7
GENERAL DATA													
Machine dimensions (LxWxH)	m	8.0x2.1x2.1	8.1x2.1x2.1	8.5x2.1x2.2	9.0x2.1x2.2	9.3x2.1x2.2	9.3x2.2x2.3	9.5x2.2x2.3	10.0x2.2x2.3	9.6x2.2x2.3	10.3x2.2x2.3	11.0x2.2x2.3	10.2x2.4x2.6
Net weight	Ton	12.0	12.3	15.2	15.6	16.5	17.3	18.3	19.5	20.8	22.3	26.0	35.0
Oil filling capacity	L	535	635	660	660	660	660	660	660	660	660	660	700

■ We are always working on improvement and reserve the rights to change design and specifications without prior notice

Simultaneous electric plasticising

The features of simultaneous electric plasticising

- The synchronisation of plasticising, mould opening and product take-out shortens the cycle time.
- 20-40% energy saving is attained. Reduction in hydraulic oil and cooling water consumption.
- High-power motor and driver ensure stable plasticising.
- Low-noise.



Application

Preform of mineral water bottle

- One mould with 64 cavities.14g each
- Cycle time: 15 seconds
- Machine model 420PETⅢ/s
  Screw diameter of 94 mm

Preform of cooking oil bottle

- One mould with 32 cavities. 105g each
- Cycle time: 40 seconds include robot take-out time
- Machine model 480 PETⅢ/e
  Screw diameter of 105 mm

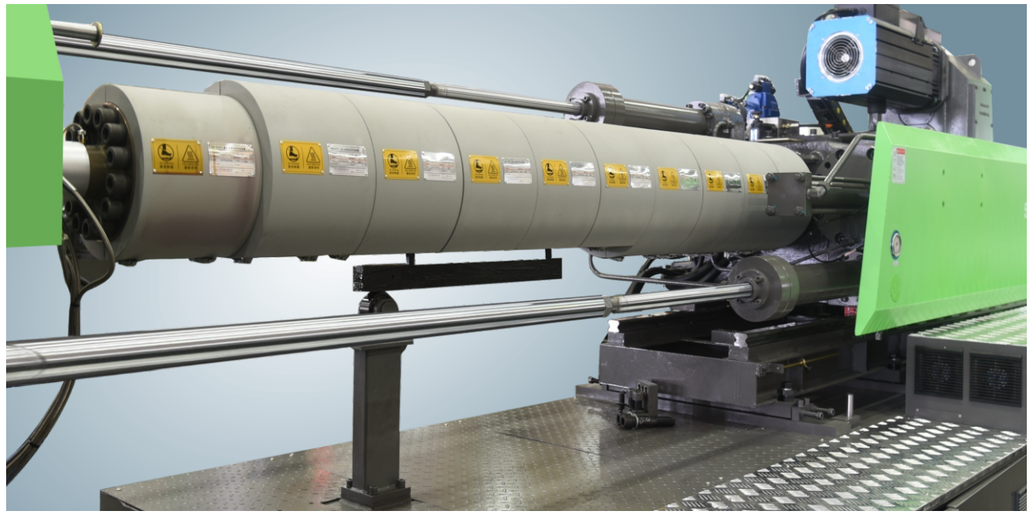
Preform of wide mouth bottle

- One mould with 32 cavities
  Bottle diameter of 76mm, 37g each
- Cycle time: 27 seconds
- Machine model 480PETⅢ
  Screw diameter of 94 mm

Preform of PP beverage bottle

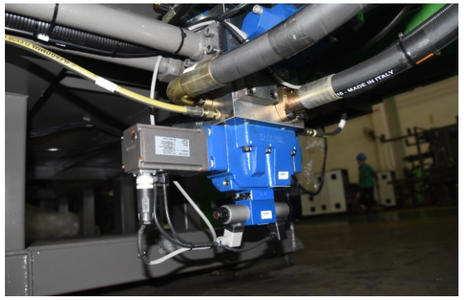
- One mould with 48 cavities. 35g each
- Cycle time: 35.8 seconds
- Machine model 320PETⅢ/h
  Screw diameter of 100 mm

Optional Items

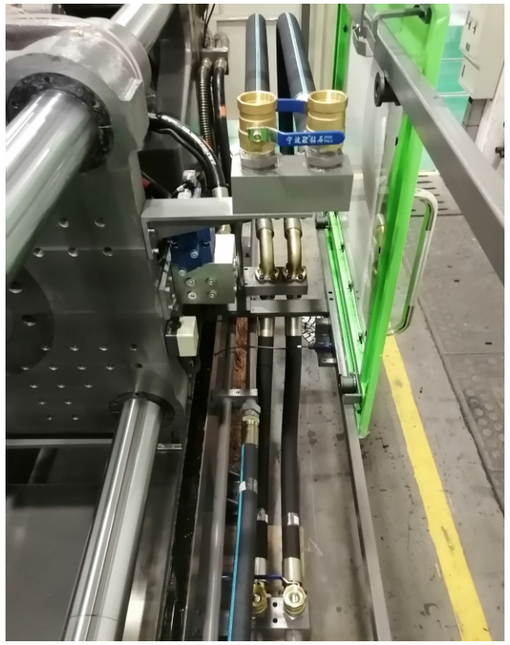


▲ Nano infrared heater bands

▲ Side entry robot



▲ Proportional valves for mould open/close



▲ Integrated cooling water circuits