Shibaura Machine

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Shibaura Machine

View the Future with You

FIVE POINT TWIN TOGGLE SERIES

TD SERIES

INJECTION MOULDING MACHINE

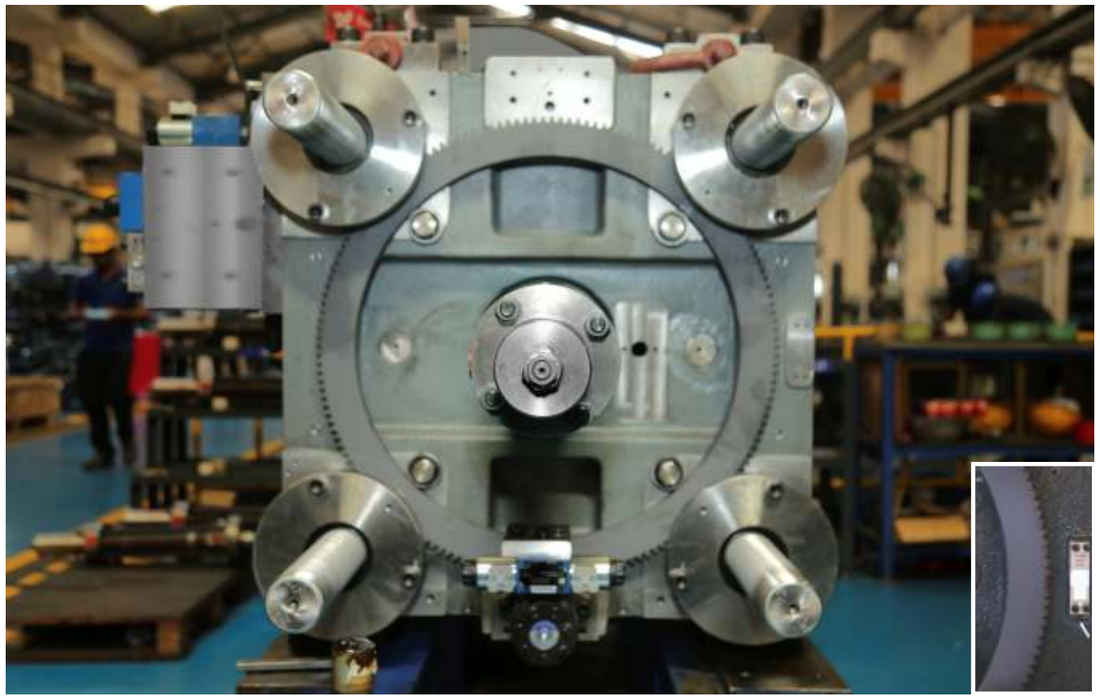
60 - 1300 T

TD-00-2025-25 T

Clamping unit

Fast, Accurate and Rigid

Shibaura Machine TD series offers rugged and proven five point twin toggle clamping mechanism with stroke amplification for faster cycling. Additional reserve locking force helps avoid mould breathing. Mechanical drop bar provided for additional safety.



Sun and planetary gear mechanism for mould height adjustment

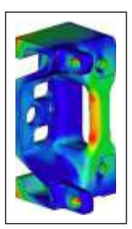
Load cell on end platen for closed loop control of set clamp force

Highlights of Clamping unit

- Computer - optimized breaking and acceleration profiles providing accurate control of high speed movements
- Precise control of mould sensing force by optimized tuning of servo pump system response for low pressure control duly supported by optimized hydraulic circuit
- Less foot print due to optimum use of stroke amplification
- Graphite impregnated bushes for toggles ensuring efficient lubrication and low maintenance
- Automated centralized lubrication system for toggles
- Anti-friction roller bearings for moving platen
- Safer hydraulic actuated grease cylinder
- Motorized mold height adjustment through optimized gear mechanism

Moving platen supported on anti-friction roller bearings

Manifold blocks closer to the actuator for faster response



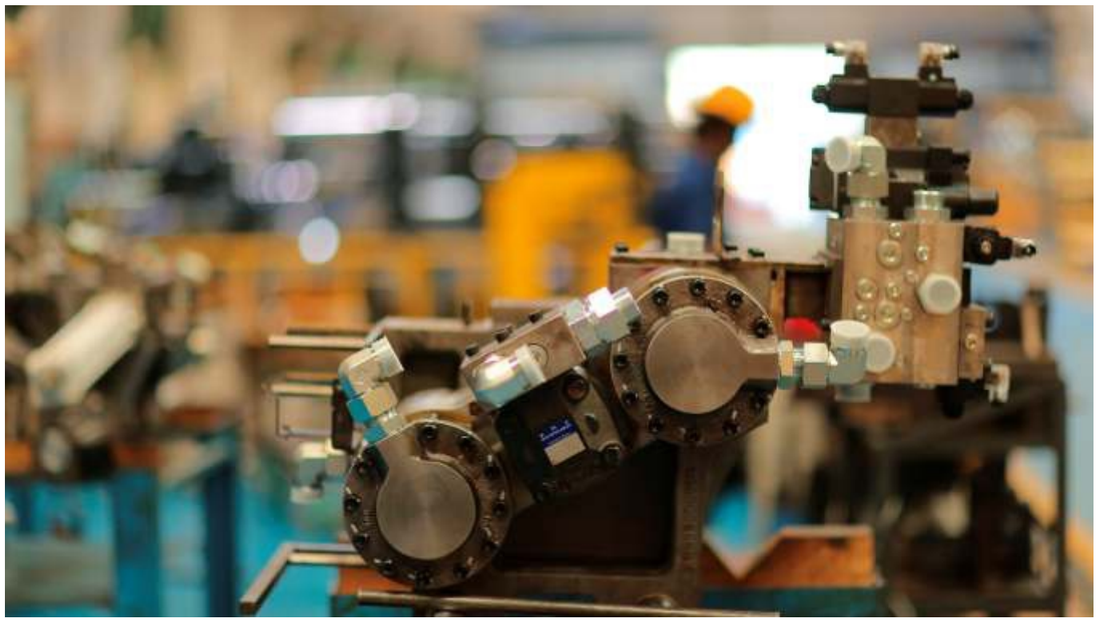
High fatigue strength castings optimised with FEA software

Manifold

Injection unit

Precise and Modular

Shibaura Machine TD series comes with robust construction of injection unit with higher injection power suitable for thin wall applications and also helps in the moulding of highly viscous resin. Modular concept in the selection of the injection unit offers a high degree of flexibility, for each clamping unit there is a choice of three different injection units and each injection unit is available with three alternative choices of screws. Different screw geometries are available for plasticizing resin like RPVC / CPVC / PET etc.



Twin injection cylinder

Highlights of Injection unit

- Injection unit movement on anti-friction bushes
- Well supported barrel assembly for easy alignment
- Larger cooling water channels to minimize effect of scale formation
- Hopper throat temperature control
- Nozzle residual force for long life of mould sprue
- Modular selection of injection unit
- Latest control architecture with graphical monitoring, to produce precision parts to closest tolerances on dimensional stability and weight
- Excellent melt homogeneity with low shear heat
- Specially designed Sub flight DBG screw offers best processing condition
- Uniformity in cavity end peak pressure
- Minimum variation in the melt temperature
- Wear-less high response screw tip
- Ceramic heater band

Powered Injection unit swivel for easy screw cleaning (From 450T)

VCON Control

User friendly and fast

Shibaura Machine is now offering highly advanced VCON controller for its TD series of Injection moulding machines.

- VCON controller for 60-1000T
- Injectivisor-V50 controller for 1300T

VCON high performance controller

Standard upto 1000 T

- Compact in size but with a large 12" touch screen
- Graphical representation of Injection and Dosing profile
- 5 stage mould open and close speeds
- Networking of machines
- 2 USB ports for mould data and software changes
- 300 Nos of mould data storage in memory
- Two position ejection retraction for multi stage ejection
- Self-tuned PID for temperature control
- Flexible temperature shift program

Injectivisor-V50 high performance controller

Standard for 1300 T, Optional for 60 - 1000 T

- High performance HMI (Human-Machine Interface)
- Wide split screen
- Signal customizing function
- Remote monitor/ managerial system "iPAQET"
- Enables plug-in of peripheral and rationalization equipments and facilitates integrated management including rationalization equipments

Drive unit

Silently Efficient

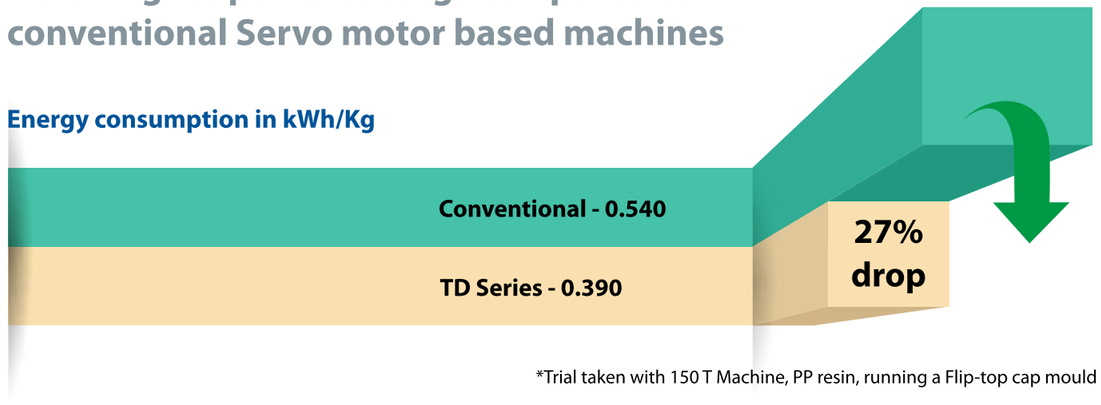
Lower power consumption through actuator level fine-tuned hydraulic circuit with high dynamic SERVO motor driven pump.

Highlights of TD Series Drive unit

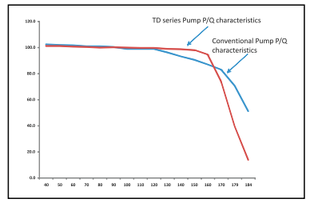
- Optimised drive parameters for dynamic response and long life
- Reliable combination of pump, drive and servo motor
- Unique hydraulic circuit to minimize pressure drop and hence energy loss
- Backlash free coupling for efficient transmission of power
- Pressure and speed stability leading to consistent performance
- Optimised P-Q characteristics (Combined efficiency of pump and servo motor)

Much higher power savings compared to conventional Servo motor based machines

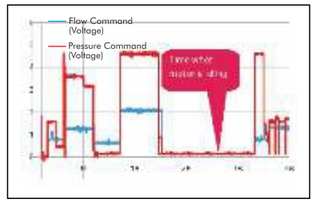
Energy consumption in kWh/Kg



*Trial taken with 150 T Machine, PP resin, running a Flip-top cap mould



Delivery of maximum flow even at high pressure



Pressure / flow curve during cycle

Hydraulic UPS

(Patent no. 27/CHE/2006) - optional

- Complete the machine cycle in case of power failure during processes after start of injection
- Cost effective technology - Avoids costlier electrical power

TD 60 VCON

Technical data

Clamping unit		$60/_{320}$								
Clamping force	kN	600								
Locking force	kN	660								
Mould opening stroke	mm	310								
Mould height (Min/Max)	mm	180/410								
Max. daylight between platens	mm	720								
Overall size of platens (HxV)	mm	480x480								
Distance between tiebars (HxV)	mm	320x320								
Total mould carrying capacity	kg	400								
Max. mould weight in moving platen	kg	260								
Hydraulic ejector stroke	mm	100								
Min. mould dimensions (HxV)	mm	200x200								
Ejection Force / Retraction Force	kN	28/13								
Injection unit size		**120**			**200**			**310**		
Screw cylinder		A	B	C	A	B	C	A	B	C
Screw diameter	mm	22	25	28	25	28	32	32	36	40
L/D Ratio		20								
Injection pressure	bar	2591	2006	1599	2740	2184	1672	2421	1913	1550
Cylinder head volume	cc	42	61	77	61	93	121	121	178	220
Shot weight in Polystrene (PS)	g	38	56	70	56	84	110	110	162	200
Rate of injection #	cc/s	78	101	127	71	89	116	84	106	131
Plasticising flow in PS # (Stage I)*	g/s	8.4	10.2	-	10.2	12.6	-	17.1	23	-
Plasticising flow in PS # (Stage II)*	g/s	7.4	10.1	12.6	7.9	11	17.3	13.7	20	30
Screw stroke	mm	110	125	125	125	150	150	150	175	175
Max. nozzle dipping depth (SVO)	mm	20			45			45		
Nozzle contact force	kN	37								
Carriage stroke	mm	200								
Heating capacity	kW	5.8	7	8	7	8	8.6	8.6	11.8	12.6
Pump unit - Induction motor (Equivalent Servo motor)	kW	11								
Water requirement	LPM	40								
Oil tank capacity	L	180								
Net weight (Without oil)	kg	3200								
Dimensions of machines (L)	mm	4300								
(B)	mm	1400								
(H)	mm	2200								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 80 VCON

Shibaura Machine

Clamping unit		$80/_{400}$								
Clamping force	kN	800								
Locking force	kN	880								
Mould opening stroke	mm	350								
Mould height (Min/Max)	mm	200/480								
Max. daylight between platens	mm	830								
Overall size of platens (HxV)	mm	580x580								
Distance between tiebars (HxV)	mm	400x400								
Total mould carrying capacity	kg	700								
Max. mould weight in moving platen	kg	450								
Hydraulic ejector stroke	mm	120								
Min. mould dimensions (HxV)	mm	250x250								
Ejection Force / Retraction Force	kN	49/24								
Injection unit size		**200**			**310**			**430**		
Screw cylinder		A	B	C	A	B	C	A	B	C
Screw diameter	mm	25	28	32	32	36	40	36	40	45
L/D Ratio		20								
Injection pressure	bar	2740	2184	1672	2421	1913	1550	2501	2026	1601
Cylinder head volume	cc	61	93	121	121	178	220	178	231	293
Shot weight in Polystrene (PS)	g	56	84	110	110	162	200	162	210	266
Rate of injection #	cc/s	112	140	183	132	168	207	128	158	200
Plasticising flow in PS # (Stage I)*	g/s	-								
Plasticising flow in PS # (Stage II)*	g/s	10.2	12.6	17.3	17.3	23	30	23	30	33
Screw stroke	mm	125	150	150	150	175	175	175	184	184
Max. nozzle dipping depth (SVO)	mm	45								
Nozzle contact force	kN	37								
Carriage stroke	mm	250			250			350		
Heating capacity	kW	7.0	8.0	8.6	8.6	11.8	12.6	11.8	12.6	12.8
Pump unit - Induction motor (Equivalent Servo motor)	kW	22								
Water requirement	LPM	40								
Oil tank capacity	L	285								
Net weight (Without oil)	kg	3800								
Dimensions of machines (L)	mm	4650								
(B)	mm	1450								
(H)	mm	2250								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 100 VCON

Technical data

Clamping unit		100/420								
Clamping force	kN	1000								
Locking force	kN	1100								
Mould opening stroke	mm	380								
Mould height (Min/Max)	mm	200/530								
Max. daylight between platens	mm	910								
Overall size of platens (HxV)	mm	600x600								
Distance between tiebars (HxV)	mm	420x420								
Total mould carrying capacity	kg	850								
Max. mould weight in moving platen	kg	550								
Hydraulic ejector stroke	mm	120								
Min. mould dimensions (HxV)	mm	260x260								
Ejection Force / Retraction Force	kN	49/24								
Injection unit size		**310**			**430**			**600**		
Screw cylinder		A	B	C	A	B	C	A	B	C
Screw diameter	mm	32	36	40	36	40	45	40	45	50
L/D Ratio		20								
Injection pressure	bar	2421	1913	1550	2501	2026	1601	2448	1934	1567
Cylinder head volume	cc	121	178	220	178	231	293	231	323	399
Shot weight in Polystrene (PS)	g	110	162	200	162	210	266	210	294	363
Rate of injection #	cc/s	132	168	207	128	158	200	132	167	207
Plasticising flow in PS # (Stage I)*	g/s	-								
Plasticising flow in PS # (Stage II)*	g/s	17.3	23	30	23	30	33	29	33	44
Screw stroke	mm	150	175	175	175	184	184	184	203	203
Max. nozzle dipping depth (SVO)	mm	45								
Nozzle contact force	kN	37								
Carriage stroke	mm	250			350			350		
Heating capacity	kW	8.6	11.8	12.6	11.8	12.6	12.8	12.6	12.8	19.4
Pump unit - Induction motor (Equivalent Servo motor)	kW	22								
Water requirement	LPM	40			40			40		
Oil tank capacity	L	285			285			285		
Net weight (Without oil)	kg	4300			4300			4300		
Dimensions of machines (L)	mm	5150			5150			5150		
(B)	mm	1525			1525			1525		
(H)	mm	2250			2150			2150		

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 125 VCON

Shibaura Machine

Clamping unit		125/460								
Clamping force	kN	1250								
Locking force	kN	1375								
Mould opening stroke	mm	430								
Mould height (Min/Max)	mm	220/550								
Max. daylight between platens	mm	980								
Overall size of platens (HxV)	mm	700X700								
Distance between tiebars (HxV)	mm	460x460								
Total mould carrying capacity	kg	1100								
Max. mould weight in moving platen	kg	700								
Hydraulic ejector stroke	mm	160								
Min. mould dimensions (HxV)	mm	280x280								
Ejection Force / Retraction Force	kN	49/24								
Injection unit size		**310**			**430**			**600**		
Screw cylinder		A	B	C	A	B	C	A	B	C
Screw diameter	mm	32	36	40	36	40	45	40	45	50
L/D Ratio		20								
Injection pressure	bar	2421	1913	1550	2501	2026	1601	2448	1934	1567
Cylinder head volume	cc	121	178	220	178	231	293	231	323	399
Shot weight in Polystrene (PS)	g	110	162	200	162	210	266	210	294	363
Rate of injection #	cc/s	132	168	207	128	158	200	132	167	207
Plasticising flow in PS # (Stage I)*	g/s	-								
Plasticising flow in PS # (Stage II)*	g/s	17.3	23	30	23	30	33	29	33	44
Screw stroke	mm	150	175	175	175	184	184	184	203	203
Max. nozzle dipping depth (SVO)	mm	45								
Nozzle contact force	kN	37								
Carriage stroke	mm	250			350			350		
Heating capacity	kW	8.6	11.8	12.6	11.8	12.6	12.8	12.6	12.8	19.4
Pump unit - Induction motor (Equivalent Servo motor)	kW	22								
Water requirement	LPM	40								
Oil tank capacity	L	350								
Net weight (Without oil)	kg	6200								
Dimensions of machines (L)	mm	5700								
(B)	mm	1575								
(H)	mm	2175								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 150 VCON

Technical data

Clamping unit		150/510									
Clamping force	kN	1500									
Locking force	kN	1650									
Mould opening stroke	mm	450									
Mould height (Min/Max)	mm	200/550									
Max. daylight between platens	mm	1000									
Overall size of platens (HxV)	mm	720x720									
Distance between tiebars (HxV)	mm	510x510									
Total mould carrying capacity	kg	1250									
Max. mould weight in moving platen	kg	800									
Hydraulic ejector stroke	mm	160									
Min. mould dimensions (HxV)	mm	310x310									
Ejection Force / Retraction Force	kN	49/24									
Injection unit size		430			600			900			
Screw cylinder		A	B	C	A	B	C	A	B	B+	C
Screw diameter	mm	36	40	45	40	45	50	45	50	55	60
L/D Ratio		20								22	20
Injection pressure	bar	2501	2026	1601	2448	1934	1567	2496	2022	1670	1404
Cylinder head volume	cc	178	231	293	231	323	399	358	442	535	636
Shot weight in Polystrene (PS)	g	162	210	266	210	294	363	326	402	486	579
Rate of injection #	cc/s	128	158	200	132/186	167/236	207/291	128/181	159/223	192/270	228/322
Plasticising flow in PS # (Stage I)*	g/s	-	-	-	-	-	-	33/33	44/44	53/-	-/-
Plasticising flow in PS # (Stage II)*	g/s	23	30	33	29/30	33/33	44/44	20/29	27/38	40/53	43/56
Screw stroke	mm	175	184	184	184	203	203	225	225	225	225
Max. nozzle dipping depth (SVO)	mm	45									
Nozzle contact force	kN	37									
Carriage stroke	mm	350			350			400			
Heating capacity	kW	11.8	12.6	12.8	12.6	12.8	19.4	12.8	19.4	24.3	24.3
Pump unit - Induction motor (Equivalent Servo motor)	kW	22			22/30			22/30			
Water requirement	LPM	40			40/60			40/60			
Oil tank capacity	L	350									
Net weight (Without oil)	kg	6500									
Dimensions of machines (L)	mm	5700			5700			6100			
(B)	mm	1575									
(H)	mm	2200									

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 180 VCON

Shibaura Machine

Clamping unit		180/500									
Clamping force	kN	1800									
Locking force	kN	1980									
Mould opening stroke	mm	450									
Mould height (Min/Max)	mm	200/550									
Max. daylight between platens	mm	1000									
Overall size of platens (HxV)	mm	720x720									
Distance between tiebars (HxV)	mm	500x500									
Total mould carrying capacity	kg	1250									
Max. mould weight in moving platen	kg	800									
Hydraulic ejector stroke	mm	160									
Min. mould dimensions (HxV)	mm	310x310									
Ejection Force / Retraction Force	kN	49/24									
Injection unit size		430			600			900			
Screw cylinder		A	B	C	A	B	C	A	B	B+	C
Screw diameter	mm	36	40	45	40	45	50	45	50	55	60
L/D Ratio		20								22	20
Injection pressure	bar	2501	2026	1601	2448	1934	1567	2496	2022	1670	1404
Cylinder head volume	cc	178	231	293	231	323	399	358	442	535	636
Shot weight in Polystrene (PS)	g	162	210	266	210	294	363	326	402	486	579
Rate of injection #	cc/s	128	158	200	132/186	167/236	207/291	128/181	159/223	192/270	228/322
Plasticising flow in PS # (Stage I)*	g/s	-	-	-	-	-	-	33/33	44/44	53/-	-/-
Plasticising flow in PS # (Stage II)*	g/s	23	30	33	29/30	33/33	44/44	20/29	27/38	40/53	43/56
Screw stroke	mm	175	184	184	184	203	203	225	225	225	225
Max. nozzle dipping depth (SVO)	mm	45									
Nozzle contact force	kN	37									
Carriage stroke	mm	350			350			400			
Heating capacity	kW	11.8	12.6	12.8	12.6	12.8	19.4	12.8	19.4	24.3	24.3
Pump unit - Induction motor (Equivalent Servo motor)	kW	22	22	22	22/30	22/30	22/30	22/30			
Water requirement	LPM	40			40/60			40/60			
Oil tank capacity	L	350									
Net weight (Without oil)	kg	6500									
Dimensions of machines (L)	mm	5700			5700			6100			
(B)	mm	1575									
(H)	mm	2200									

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 200 VCON

Technical data

Clamping unit		200/545										
Clamping force	kN	2000										
Locking force	kN	2200										
Mould opening stroke	mm	500										
Mould height (Min/Max)	mm	250/685										
Max. daylight between platens	mm	1185										
Overall size of platens (HxV)	mm	800x800										
Distance between tiebars (HxV)	mm	545x545										
Total mould carrying capacity	kg	2500										
Max. mould weight in moving platen	kg	1600										
Hydraulic ejector stroke	mm	160										
Min. mould dimensions (HxV)	mm	325x325										
Ejection Force / Retraction Force	kN	59/34										
Injection unit size		**600**			**900**				**1400**			
Screw cylinder		A	B	C	A	B	B+	C	A	A+	B	C
Screw diameter	mm	40	45	50	45	50	55	60	50	55	60	70
L/D Ratio		20					22	20		22	20	
Injection pressure	bar	2448	1934	1567	2496	2022	1670	1404	2565	2115	1780	1309
Cylinder head volume	cc	231	323	399	358	442	535	636	530	689	820	1116
Shot weight in Polystrene (PS)	g	210	294	363	326	402	486	579	482	627	746	1016
Rate of injection #	cc/s	132/186	167/236	207/291	128/181	159/223	192/270	228/322	176/246	213/298	253/355	345/483
Plasticising flow in PS # (Stage I)*	g/s	-	-	-	33/33	44/44	53/-	-/-	27/38		43/56	-/-
Plasticising flow in PS # (Stage II)*	g/s	29/30	33/33	44/44	20/29	27/38	40/53	43/56	19/27		30/43	50/71
Screw stroke	mm	184	203	203	225	225	225	225	270	290	290	290
Max. nozzle dipping depth (SVO)	mm	45			45				45			
Nozzle contact force	kN	37			37				70			
Carriage stroke	mm	350			400				450			
Heating capacity	kW	12.6	12.8	19.4	12.8	19.4	24.3	24.3	19.4	24.3		27
Pump unit - Induction motor (Equivalent Servo motor)	kW	22/30			22/30				30/37			
Water requirement	LPM	40/60			40/60				60/80			
Oil tank capacity	L	350			350				500			
Net weight (Without oil)	kg	7500			7500				8500			
Dimensions of machines (L)	mm	6130			6530				6900			
(B)	mm	1650			1650				1720			
(H)	mm	2225			2225				2225			

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 250 VCON

Shibaura Machine

Clamping unit		250/580										
Clamping force	kN	2500										
Locking force	kN	2750										
Mould opening stroke	mm	575										
Mould height (Min/Max)	mm	340/790										
Max. daylight between platens	mm	1365										
Overall size of platens (HxV)	mm	860x860										
Distance between tiebars (HxV)	mm	580x580										
Total mould carrying capacity	kg	2500										
Max. mould weight in moving platen	kg	1600										
Hydraulic ejector stroke	mm	180										
Min. mould dimensions (HxV)	mm	350x350										
Ejection Force / Retraction Force	kN	69/31										
Injection unit size		**600**			**900**				**1400**			
Screw cylinder		A	B	C	A	B	B+	C	A	A+	B	C
Screw diameter	mm	40	45	50	45	50	55	60	50	55	60	70
L/D Ratio		20			20		22	20	20	22	20	
Injection pressure	bar	2448	1934	1567	2496	2022	1670	1404	2565	2115	1780	1309
Cylinder head volume	cc	231	323	399	358	442	535	636	530	689	820	1116
Shot weight in Polystrene (PS)	g	210	294	363	326	402	486	579	482	627	746	1016
Rate of injection #	cc/s	186	236	291	181/253	223/313	270/378	322/450	176/246	213/298	253/355	345/483
Plasticising flow in PS # (Stage I)*	g/s	-	-	-	33/-	44/-	/-	/-	27/38	40/53	43/56	-/-
Plasticising flow in PS # (Stage II)*	g/s	30	33	44	29/33	38/44	53/53	56/56	19/27	29/40	30/43	50/71
Screw stroke	mm	184	203	203	225	225	225	225	270	290	290	290
Max. nozzle dipping depth (SVO)	mm	45										
Nozzle contact force	kN	37			37				70			
Carriage stroke	mm	350			400				450			
Heating capacity	kW	12.6	12.8	19.4	12.8	19.4	24.3	24.3	19.4	24.3	24.3	27
Pump unit - Induction motor (Equivalent Servo motor)	kW	30			30/37				30/37			
Water requirement	LPM	60			60/80				60/80			
Oil tank capacity	L	500										
Net weight (Without oil)	kg	10000			10000				11000			
Dimensions of machines (L)	mm	6850			6850				7000			
(B)	mm	1925										
(H)	mm	2225										

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 300 VCON

Technical data

Clamping unit		300/660										
Clamping force	kN	3000										
Locking force	kN	3300										
Mould opening stroke	mm	650										
Mould height (Min/Max)	mm	310/790										
Max. daylight between platens	mm	1440										
Overall size of platens (HxV)	mm	965x965										
Distance between tiebars (HxV)	mm	660x660										
Total mould carrying capacity	kg	3300										
Max. mould weight in moving platen	kg	2100										
Hydraulic ejector stroke	mm	200										
Min. mould dimensions (HxV)	mm	400x400										
Ejection Force / Retraction Force	kN	70/39										
Injection unit size		**900**				**1400**				**2350**		
Screw cylinder		A	B	B+	C	A	A+	B	C	A	B	C
Screw diameter	mm	45	50	55	60	50	55	60	70	60	70	80
L/D Ratio		20		22	20		22	20				
Injection pressure	bar	2496	2022	1670	1404	2565	2115	1780	1309	2557	1878	1438
Cylinder head volume	cc	358	442	535	636	530	689	820	1116	919	1251	1634
Shot weight in Polystrene (PS)	g	326	402	486	579	482	627	746	1016	836	1138	1487
Rate of injection #	cc/s	253	313	378	450	246/301	298/364	355/433	483/590	230/281	313/383	409/500
Plasticising flow in PS # (Stage I)*	g/s	-	-	-	-	38/44	53/53	56/-	-	46/56	73/-	-/-
Plasticising flow in PS # (Stage II)*	g/s	33	44	53	56	27/33	40/40	43/52	71/73	35/43	59/72	81/88
Screw stroke	mm	225	225	225	225	270	290	290	290	325	325	325
Max. nozzle dipping depth (SVO)	mm	45										
Nozzle contact force	kN	37				70				70		
Carriage stroke	mm	400				450				450		
Heating capacity	kW	12.8	19.4	24.3	24.3	19.4	24.3	24.3	27	24.3	27	30.6
Pump unit - Induction motor (Equivalent Servo motor)	kW	37				37/45				37/45		
Water requirement	LPM	80										
Oil tank capacity	L	650										
Net weight (Without oil)	kg	12000				13000				13500		
Dimensions of machines (L)	mm	7400				7400				7700		
(B)	mm	1950										
(H)	mm	2300										

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 350 VCON

Shibaura Machine

Clamping unit		350/720										
Clamping force	kN	3500										
Locking force	kN	3850										
Mould opening stroke	mm	710										
Mould height (Min/Max)	mm	330/830										
Max. daylight between platens	mm	1540										
Overall size of platens (HxV)	mm	1040x1040										
Distance between tiebars (HxV)	mm	720x720										
Total mould carrying capacity	kg	5000										
Max. mould weight in moving platen	kg	3300										
Hydraulic ejector stroke	mm	200										
Min. mould dimensions (HxV)	mm	440x440										
Ejection Force / Retraction Force	kN	70/31										
Injection unit size		**1400**				**2350**			**i39**			
Screw cylinder		A	A+	B	C	A	B	C	Y	A	B	
Screw diameter	mm	50	55	60	70	60	70	80	70	80	90	
L/D Ratio		20	22	20		20			22.8	20	20	
Injection pressure	bar	2565	2115	1780	1309	2557	1878	1438	2435	1865	1475	
Cylinder head volume	cc	530	689	820	1116	919	1251	1634	1636	2136	2704	
Shot weight in Polystrene (PS)	g	482	627	746	1016	836	1138	1487	1480	1940	2460	
Rate of injection #	cc/s	246/301	298/364	355/433	483/590	230/281	313/383	409/500	277	361	458	
Plasticising flow in PS # (Stage I)*	g/s	38/44	53/53	56/-	-	46/56	73/-	-/-	59	82	109	
Plasticising flow in PS # (Stage II)*	g/s	27/33	40/40	43/52	71/73	35/43	59/72	81/88	48	66	89	
Screw stroke	mm	270	290	290	290	325			425			
Max. nozzle dipping depth (SVO)	mm	45				45			45			
Nozzle contact force	kN	70				70			57			
Carriage stroke	mm	450				450			460			
Heating capacity	kW	19.4	24.3	24.3	27	24.3	27	30.6	29.5	29.5	29.5	
Pump unit - Induction motor (Equivalent Servo motor)	kW	37/45				37/45			45			
Water requirement	LPM	80										
Oil tank capacity	L	740										
Net weight (Without oil)	kg	15400				16000			17000			
Dimensions of machines (L)	mm	8100				8100			9000			
(B)	mm	2150										
(H)	mm	2425				2425			2475			

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 450 VCON

Technical data

Clamping unit		450/830								
Clamping force	kN	4500								
Locking force	kN	4950								
Mould opening stroke	mm	820								
Mould height (Min/Max)	mm	350/850								
Max. daylight between platens	mm	1670								
Overall size of platens (HxV)	mm	1200x1200								
Distance between tiebars (HxV)	mm	830x830								
Total mould carrying capacity	kg	5600								
Max. mould weight in moving platen	kg	3700								
Hydraulic ejector stroke	mm	230								
Min. mould dimensions (HxV)	mm	500x500								
Ejection Force / Retraction Force	kN	90/45								
Injection unit size		**i19**			**i27**			**i39**		
Screw cylinder		Y	A	B	Y	A	B	Y	A	B
Screw diameter	mm	50	60	70	60	70	80	70	80	90
L/D Ratio		24	20	20	23	20	20	22.8	20	20
Injection pressure	bar	2765	1920	1410	2525	1855	1420	2435	1865	1475
Cylinder head volume	cc	647	933	1269	1088	1481	1935	1636	2137	2704
Shot weight in Polystrene (PS)	g	589	849	1155	990	1348	1761	1480	1940	2460
Rate of injection #	cc/s	245/302	353/435	480/593	297/347	404/472	528/617	276/341	361/446	457/564
Plasticising flow in PS # (Stage I)*	g/s	44/-	56/-	-	56/56	73/-	95/-	59/73	82/95	109/-
Plasticising flow in PS # (Stage II)*	g/s	33/41	52/56	73/73	35/44	59/73	82/95	48/59	66/82	89/109
Screw stroke	mm	330			385			425		
Max. nozzle dipping depth (SVO)	mm	45			45			45		
Nozzle contact force	kN	57								
Carriage stroke	mm	460			460			550		
Heating capacity	kW	22.5			22.5			29.5		
Pump unit - Induction motor (Equivalent Servo motor)	kW	45/55			45/55			45/55		
Water requirement	LPM	80/100			80/100			80/100		
Oil tank capacity	L	840								
Net weight (Without oil)	kg	20000			20500			22000		
Dimensions of machines (L)	mm	8300			8400			8900		
(B)	mm	2200								
(H)	mm	2450								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 550 VCON

Shibaura Machine

Clamping unit		550/870								
Clamping force	kN	5500								
Locking force	kN	6050								
Mould opening stroke	mm	980								
Mould height (Min/Max)	mm	380/900								
Max. daylight between platens	mm	1880								
Overall size of platens (HxV)	mm	1265x1265								
Distance between tiebars (HxV)	mm	870x870								
Total mould carrying capacity	kg	6200								
Max. mould weight in moving platen	kg	4000								
Hydraulic ejector stroke	mm	230								
Min. mould dimensions (HxV)	mm	530x530								
Ejection Force / Retraction Force	kN	90/45								
Injection unit size		**i27**			**i39**			**i59**		
Screw cylinder		Y	A	B	Y	A	B	Y	A	B
Screw diameter	mm	60	70	80	70	80	90	80	95	105
L/D Ratio		23	20	20	22.8	20	20	23	20	20
Injection pressure	bar	2525	1855	1420	2435	1865	1475	2610	1850	1510
Cylinder head volume	cc	1088	1481	1935	1636	2137	2704	2236	3154	3853
Shot weight in Polystrene (PS)	g	990	1348	1761	1480	1940	2460	2034	2870	3506
Rate of injection #	cc/s	347	472	617	341/468	446/612	564/774	437/515	616/727	753/888
Plasticising flow in PS # (Stage I)*	g/s	56	-/-	-/-	73/-	95/-	-	88/88	111/-	129/-
Plasticising flow in PS # (Stage II)*	g/s	44	73	95	59/73	82/95	109/111	64/76	96/111	124/129
Screw stroke	mm	385			425			445		
Max. nozzle dipping depth (SVO)	mm	45			45			45		
Nozzle contact force	kN	57			57			57		
Carriage stroke	mm	460			550			550		
Heating capacity	kW	22.5			29.5			44.9	44.9	50
Pump unit - Induction motor (Equivalent Servo motor)	kW	55			55/75			75/90		
Water requirement	LPM	100			100/140			140/160		
Oil tank capacity	L	1040			1040			1300		
Net weight (Without oil)	kg	CU-20800/ IU-7500			CU-20800/ IU-7500			CU-20800/ IU-8300		
Dimensions of machines (L)	mm	9350			10400			10450		
(B)	mm	2450								
(H)	mm	2500								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 650 VCON

Technical data

Clamping unit		650/1000								
Clamping force	kN	6500								
Locking force	kN	7150								
Mould opening stroke	mm	930								
Mould height (Min/Max)	mm	450/1070								
Max. daylight between platens	mm	2000								
Overall size of platens (HxV)	mm	1430 x 1350								
Distance between tiebars (HxV)	mm	1000 x 900								
Total mould carrying capacity	kg	7800								
Max. mould weight in moving platen	kg	5100								
Hydraulic ejector stroke	mm	300								
Min. mould dimensions (HxV)	mm	600x550								
Ejection Force / Retraction Force	kN	139/57								
Injection unit size		**i39**			**i59**			**i110**		
Screw cylinder		Y	A	B	Y	A	B	Y	A	B
Screw diameter	mm	70	80	90	80	95	105	105	115	125
L/D Ratio		22.8	20	20	23	20	20	22	20	20
Injection pressure	bar	2435	1865	1475	2610	1850	1510	2170	1810	1530
Cylinder head volume	cc	1636	2137	2704	2236	3154	3853	5472	6564	7755
Shot weight in Polystrene (PS)	g	1480	1940	2460	2034	2870	3506	4979	5973	7057
Rate of injection #	cc/s	341/468	446/612	564/774	437/515	616/727	753/888	654/807	784/968	927/1143
Plasticising flow in PS # (Stage I)*	g/s	73/-	95/-	-	88/88	111/-	129/-	129/129	150/150	164/164
Plasticising flow in PS # (Stage II)*	g/s	59/73	82/95	109/111	64/76	96/111	124/129	86/106	109/135	129/159
Screw stroke	mm	425			445			632		
Max. nozzle dipping depth (SVO)	mm	45			45			45		
Nozzle contact force	kN	57			57			95		
Carriage stroke	mm	550			630			695		
Heating capacity	kW	29.5			44.9	44.9	50	61	64	64
Pump unit - Induction motor (Equivalent Servo motor)	kW	55/75			75/90			90/110		
Water requirement	LPM	100/140			140/160			160/200		
Oil tank capacity	L	1040			1300			1870		
Net weight (Without oil)	kg	CU-24000/ IU-7500			CU-24000/ IU-8300			CU-24000/ IU-13000		
Dimensions of machines (L)	mm	10480			10530			11180		
(B)	mm	2600								
(H)	mm	2500								

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 850 VCON

Shibaura Machine

Clamping unit		850/1120										
Clamping force	kN	8500										
Locking force	kN	9350										
Mould opening stroke	mm	1030										
Mould height (Min/Max)	mm	500/1170										
Max. daylight between platens	mm	2200										
Overall size of platens (HxV)	mm	1620 x 1500										
Distance between tiebars (HxV)	mm	1120 x 1000										
Total mould carrying capacity	kg	10800										
Max. mould weight in moving platen	kg	7200										
Hydraulic ejector stroke	mm	350										
Min. mould dimensions (HxV)	mm	680x615										
Ejection Force / Retraction Force	kN	139/57										
Injection unit size		**i59**			**i110**			**i150**			**i200**	
Screw cylinder		Y	A	B	Y	A	B	Y	A	B	A	B
Screw diameter	mm	80	95	105	105	115	125	115	125	140	140	160
L/D Ratio		23	20	20	22	20	20	22	20	20	20	
Injection pressure	bar	2610	1850	1510	2170	1810	1530	2220	1880	1500	1890	1440
Cylinder head volume	cc	2236	3154	3853	5472	6564	7755	7140	8435	10580	11850	15480
Shot weight in Polystrene (PS)	g	2034	2870	3506	4979	5973	7057	6495	7670	9625	10780	14085
Rate of injection #	cc/s	437/515	616/727	753/888	654/807	784/968	927/1143	664/968	941/1144	1181/1435	880/1070	1150/1395
Plasticising flow in PS # (Stage I)*	g/s	88/88	111/-	129/-	129/129	150/150	164/164	/-	/-	/-	/-	/-
Plasticising flow in PS # (Stage II)*	g/s	64/76	96/111	124/129	86/106	109/135	129/159	97/116	114/137	150/180	125/150	171/205
Screw stroke	mm	445			632			687.5			770	
Max. nozzle dipping depth (SVO)	mm	45			45			45			45	
Nozzle contact force	kN	57			95			95			132	
Carriage stroke	mm	630			695			800			800	
Heating capacity	kW	44.9	44.9	50	61	64	64	69.1	69.1	84.1	84.1	114
Pump unit - Induction motor (Equivalent Servo motor)	kW	75/90			90/110			110/135			110/135	
Water requirement	LPM	140/160			160/200			200			200/200	
Oil tank capacity	L	1300			1870			1870			1870	
Net weight (Without oil)	kg	CU-32600 / IU-8300			CU-32600 / IU-13000			CU-32600 / IU-18000			CU-32600 / IU-20000	
Dimensions of machines (L)	mm	11110			11900/12960			13100			13100	
(B)	mm	2800			2800			2800			2800	
(H)	mm	2550			2550			2550			2900	

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 1000 VCON

Technical data

Clamping unit		1000/1400										
Clamping force	kN	10000										
Locking force	kN	11000										
Mould opening stroke	mm	1250										
Mould height (Min/Max)	mm	500/1200										
Max. daylight between platens	mm	2450										
Overall size of platens (HxV)	mm	1950x 1670										
Distance between tiebars (HxV)	mm	1400x 1120										
Total mould carrying capacity	kg	16000										
Max. mould weight in moving platen	kg	10700										
Hydraulic ejector stroke	mm	350										
Min. mould dimensions (HxV)	mm	950x750										
Ejection Force / Retraction Force	kN	196/94										
Injection unit size		**i59**			**i110**			**i150**			**i200**	
Screw cylinder		Y	A	B	Y	A	B	Y	A	B	A	B
Screw diameter	mm	80	95	105	105	115	125	115	125	140	140	160
L/D Ratio		23	20	20	22	20	20	22	20	20	20	
Injection pressure	bar	2610	1850	1510	2170	1810	1530	2220	1880	1500	1890	1440
Cylinder head volume	cc	2236	3154	3853	5472	6564	7755	7140	8435	10580	11850	15480
Shot weight in Polystrene (PS)	g	2034	2870	3506	4979	5973	7057	6495	7670	9625	10780	14085
Rate of injection #	cc/s	437/515	616/727	753/888	654/807	784/968	927/1143	664/968	941/1144	1181/1435	880/1070	1150/1395
Plasticising flow in PS # (Stage I)*	g/s	88/88	111/-	129/-	129/129	150/150	164/164	/-	/-	/-	/-	/-
Plasticising flow in PS # (Stage II)*	g/s	64/76	96/111	124/129	86/106	109/135	129/159	97/116	114/137	150/180	125/150	175/205
Screw stroke	mm	445			632			687.5			770	
Max. nozzle dipping depth (SVO)	mm	45			45			45			45	
Nozzle contact force	kN	57			95			95			132	
Carriage stroke	mm	695			695			800			800	
Heating capacity	kW	44.9	44.9	50	61	64	64	69.1	69.1	84.1	84.1	114
Pump unit - Induction motor (Equivalent Servo motor)	kW	75/90			90/110			110/135			110/135	
Water requirement	LPM	140/160			160/200			200			200/200	
Oil tank capacity	L	1300			1870			1870			1870	
Net weight (Without oil)	kg	CU-52500 / IU-8300			CU-52500 / IU-13000			CU-52500 / IU-18000			CU-52500 / IU-20000	
Dimensions of machines (L)	mm	11960			12900/13100			13800			13800	
(B)	mm				3200							
(H)	mm	2900										

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

TD 1300 V50 HYBRID

Shibaura Machine

Clamping unit		1300/1700										
Clamping force	kN	13000										
Locking force	kN	-										
Mould opening stroke	mm	1500										
Mould height (Min/Max)	mm	650/1300										
Max. daylight between platens	mm	2800										
Overall size of platens (HxV)	mm	2300x2000										
Distance between tiebars (HxV)	mm	1700x1400										
Total mould carrying capacity	kg	20000										
Max. mould weight in moving platen	kg	11000										
Hydraulic ejector stroke	mm	250										
Min. mould dimensions (HxV)	mm	970x820										
Ejection Force / Retraction Force	kN	280										
Injection unit size		**i59**			**i110**			**i150**			**i200**	
Screw cylinder		Y	A	B	Y	A	B	Y	A	B	A	B
Screw diameter	mm	80	95	105	105	115	125	115	125	140	140	160
L/D Ratio		23	20	20	22	20	20	22	20	20	20	
Injection pressure	bar	2610	1850	1510	2170	1810	1530	2220	1880	1500	1890	1440
Cylinder head volume	cc	2236	3154	3853	5472	6564	7755	7140	8435	10580	11850	15480
Shot weight in Polystrene (PS)	g	2034	2870	3506	4979	5973	7057	6495	7670	9625	10780	14085
Rate of injection #	cc/s	437/515	616/727	753/888	654/807	784/968	927/1143	664/968	941/1144	1181/1435	880/1070	1150/1395
Plasticising flow in PS # (Stage I)*	g/s	88/88	111/-	129/-	129/129	150/150	164/164	/-	/-	/-	/-	/-
Plasticising flow in PS # (Stage II)*	g/s	64/76	96/111	124/129	86/106	109/135	129/159	97/116	114/137	150/180	125/150	171/205
Screw stroke	mm	445			632			687.5			770	
Max. nozzle dipping depth (SVO)	mm	45			45			45			45	
Nozzle contact force	kN	57			95			95			132	
Carriage stroke	mm	895			895			895			895	
Heating capacity	kW	44.9	44.9	50	61	64	64	69.1	69.1	84.1	84.1	114
Pump unit - Induction motor (Equivalent Servo motor)	kW	75/90			90/110			110/135			110/135	
Water requirement	LPM	140/160			160/200			200			200	
Oil tank capacity	L	1300			1870			1870			1870	
Net weight (Without oil)	kg	CU-75000 / IU-8300			CU-75000 / IU-13000			CU-75000 / IU-20000			CU-75000 / IU-20000	
Dimensions of machines (L)	mm	13550			14010/14490			15300			15300	
(B)	mm	4100										
(H)	mm	3100										

Achieved in air injection, theoretical value, actual value depends on material grade, melt density and residence time. Specifications are subject to change due to continuous improvements.
* Plasticizing flow as per EUROMAP standard

Clamping unit

Features and options

	60 - 180T	200 - 350T	Above 450 T
• Computer optimised 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	□	□	□
• Moving platen supported on the machine bed by anti-friction roller bearings	□	NA for 300T Std for others	–
• Mould opening and ejector forward with safety guard open/closed position (Motion/ No Motion)	□	□	□
• Threaded holes for mould mounting on fixed platen and moving platen as per EUROMAP layout.	□	Std upto 250 T NA above 250 T	–
• T-slot platen upto 180T, Integrated platen from 200/530 as per EUROMAP	●	Opt upto 250T Std from 300 T	□
• T-Slotted mould platens as per JIS	●	●	●
• Threaded holes mould platens as per JIS layout	●	●	●
• Multipoint ejector plate as per EUROMAP & JIS	□	–	–
• Multipoint ejector plate as per EUROMAP	–	□	□
• Multipoint ejector plate as per JIS	–	●	●
• Central Ejector rod	□	□	□
• Multipoint Ejector Rods	●	●	●
• Tapped holes on fixed platen top for take-out robot	□	□	□
• Chrome plated tie bars	□	□	□
• Toggle bushings grease lubricated automatically: lubrication signals computer optimized under adaptive control	□	□	□
• Motorized mould height adjustment through optimised gear mechanism	□	□	□
• Automatic mould height adjustment by Proximity Switch	□	□	□
• Automatic mould height adjustment by Linear potentiometer	●	●	●
• Consistent mould open stop position using mould open proportional valve	●	●	□
• Consistent mould open stop position using stroke adjustment mechanism in cylinder set manually	□	□	–
• Closed loop clamp force control on control panel with display and correction every cycle, settable using load cell	□	□	□
• Closing and opening speeds independently set: each programmable in 5 stages	□	□	□
• Regenerative circuit in mould closing for higher speeds	□	□	□
• Low pressure mould safety, settable	□	□	□
• Low pressure and slow speed circuit for mould set up	□	□	□
• Mould protection with stroke dependent change over with time monitoring and repeat of a clamping cycle aborted in the protected range	□	□	□
• Central hydraulic ejector with multiple stroke features ; pressure and speed independently set in both directions, ejector speed programmable in 2 stages forward & one stage retraction	□	□	□
• Hydraulic and electrical interlocks for safety gates	□	□	□
• Insulation sheets for fixed and moving platen	●	●	●
• Automatic electric safety door with safety light curtain	–	–	□
• Automatic pneumatic safety door with safety light curtain	●	●	–
• Core puller via black and white valve upto 4 circuits	●	●	●
• Residual pressure release for core	●	●	●
• Additional connections for 2 core pulls at fixed platen	●	●	●

	60 - 180T	200 - 350T	Above 450 T
• Pneumatic 5/2 valves upto 3 nos. on FP and MP	●	●	●
• NRV for spring loaded ejector	□	□	□
• Ejector parallel to mould opening, with flow and pressure manual adjustable	●	●	●
• Ejector on fly using seperate DFE pump with induction motor	●	●	●
• Ejector on fly using seperate servo pump with settable flow and pressure	●	●	●
• Closed loop hot runner control with 1,2,3,5,7,9,12 and 16 zones integrated: 2.75kW-16A	●	●	●
• SS Cooling Water Manifold 4 in 4 out on machine	□	–	–
• SS Cooling Water Manifold 6 in 6 out on machine	●	□	□
• SS Cooling Water Manifold 8 in 8 out on machine	●	●	●
• SS Cooling Water manifold 12 in 12(2 x 6) out, 16 in 16(2 x 8) out on machine	●	●	●
• Cooling Water Controller 4 circuits on machine	●	–	–
• Cooling Water Controller 6, 8, 12(2 x 6) circuits on machine	●	●	●
• SS Cooling water manifold 12 in 12 out, 16 in 16 out, 20 in 20(2x10) out and 24 in 24(2x12) out on separate stand.(Standalone)	●	●	●
• Mould cooling water switch off interruption of cycle with settable timer	●	●	●
• Mould sweat protector(MSP cover)	●	●	●
• Extended Mould Height	●	●	●
• Mechanical Drop Bar for safety	□	□	□
• Shut off nozzle Hydraulic (for Hot runner system)	●	●	●
• Shutoff nozzle Pneumatic (for Hot Runner system)	●	●	●

Injection unit

• Modular Selection of Injection Units	□	□	□
• Injection Unit Speed of nozzle advance and retraction programmed in two stages forward and one stage retraction	□	□	□
• Injection speed, holding pressure and screw speed controlled by fast response servo pump	□	□	□
• High Torque Charging Hydromotor	□	□	□
• Screw cylinder fitted with chrome plated high kneading DBG screw and nitrided barrel	□	□	□
• Wear resistant through hardened screw and bimetallic barrel for abrasive materials	●	●	●
• Enhanced Rotating screw tip assembly – Quick response and wearless design	□	□	□
• Screw cylinder suitable for L/D ratio 20:1 for all diameters	□	□	□
• Ceramic cylinder heating bands	□	□	□
• PID controlled barrel heater bands	□	□	□
• Self-optimising temperature control circuits for the cylinder and nozzle heating system with adjustable tolerance monitoring of deviation from set point and thermocouple break indication; operating range of up to 400°C	□	□	□
• Injection speed profile programmable in 10 position dependent interpolation stages	□	□	□
• Holding pressure profile programmable in 10 time dependent interpolation stages	□	□	□

□ Standard ● Optional

Injection unit

Features and options

	60 - 180T	200 - 350T	Above 450 T
• Holding pressure switching activated as a function of position or time or Hydraulic Pressure	□	□	□
• Screw speed and back pressure control, profile programmable in 6 position dependent interpolation steps	□	□	□
• Screw speed input in %	□	□	□
• Injection speed input in mm/s	□	□	□
• Screw suck back before/after screw rotation to prevent melt drooling	□	□	□
• Delay feature for commencement of plasticising and nozzle retraction	□	□	□
• Barrel temperature shift mode- Reduction of temperature during no operation	□	□	□
• Nozzle guard with electrical interlock for operator safety	□	□	□
• Intrusion and cold slug removal	□	□	□
• Cold start prevention for screw	□	□	□
• Servo valve controlled Fast injection with accumulator	●	●	●
• Fast injection with accumulator - Open loop	●	●	●
• SS hopper with sliding arrangement	□	□	□
• Hopper sliding arrangement - without hopper	●	●	●
• Extended nozzle tip with heater-75mm (1" extension), 105mm (2.25" extension) and 160mm (4.5" extension) dipping depth	●	●	●
• Melt Filter Nozzle from screw dia 32mm 1.2micron	●	●	●
• Insulated heater bands for PU	●	●	●
• Thermoset package and sequence for screw 32mm dia & above	●	●	●
• 25 L/D screw	●	●	●
• Injection Unit Swivelling with Interlocks for easy screw change	–	–	□
• Movement of IU on LM Rails for faster injection	–	Std for i-series NA for others	□

Control unit

• Intelligent operator terminal - with large multi-color LCD display (12.1") with touch screen	□	□	□
• Actual Graphic display: Injection pressure, Back pressure, screw speed	□	□	□
• Mould condition memory 300	□	□	□
• Number of history (Alarm, stop and setting) 1000 alarms	□	□	□
• USB interface	□	□	□
• Digital display (position, speed, pressure, temperature, servo motor speed, torque & temperature)	□	□	□
• Quality monitoring (CPC)	□	□	□
• Down time log	□	□	□
• Auto purging	□	□	□
• Process data statistics- graphical display	□	□	□
• Processing alarm	□	□	□

Control unit

	60 - 180T	200 - 350T	Above 450 T
• Diagnostic function-alarm help menu	□	□	□
• Sequence ladder display for trouble shooting	□	□	□
• Shift and batch production counters with rejection monitoring with automatic switch off feature	□	□	□
• LAN port for machine networking	□	□	□
• Hourly production data – 1 year	□	□	□
• Operation indicator	□	□	□
• Process data statistics – 25000 shots	□	□	□
• Protection against surges and high voltages	□	□	□
• LED on solenoid to indicate status of valves	□	□	□
• Power on indication on control panel	□	□	□
• Energy meter- display on HMI	●	●	●
• Position measuring system using linear potentiometers for mould, ejector and screw movements, MHA	□	□	□
• Heater current monitoring upto 900IU	□	□	□
• Process parameter change history	□	□	□
• Multi-level password function	□	□	□

Hydraulic unit

• Energy saving and close loop controlled pressure and flow rates by pump with servo motor and drive	□	□	□
• Low noise drive with quiet and fast responding pumps for hydraulics	□	□	□
• Additional energy saving by high efficiency hydraulic Circuit	□	□	□
• All manifold blocks & valves mounted close to the actuators for faster response	□	□	□
• Oil tank with large opening for cleaning	□	□	□
• Pre-heating circuit for hydraulic oil	□	□	□
• Oil temperature regulated with temperature indication	□	□	□
• Connectors for external oil filtration during production	□	□	□
• Pump unit switched off if minimum oil level is reached	□	□	□
• Production stopped if oil temperature exceeds maximum value	□	□	□
• High pressure filter with automatic monitoring of clogging with advance warning and stoppage	□	□	□
• External oil cooler	□	□	□
• Fast responding cartridge logic elements	□	□	□
• Proportional pressure relief valve for back pressure control	□	□	□
• Suction strainer with magnetic filtration and facility to inspect strainer without emptying the oil tank	□	□	□
• Fast responding hydraulic safety interlock for guard door	□	□	□
• Hydraulic UPS for completing the moulding cycle in case of power shut down	●	●	●
• Bypass filtration	●	●	●

□ Standard ● Optional

Functions / Interfaces

Features and options

	60 - 180T	200 - 350T	Above 450 T
• Chiller/peripheral fault interface	□	□	□
• Freely programmable I/0's (Max. 2I/0)	□	□	□
• Freely programmable I/0's upto 6 I/0's	●	●	●
• Sequential Valve gate control:Hydraulic- 2,4,6 and 8nos.	●	●	●
• Sequential Valve gate control:Pneumatic- 2,4,6 and 8nos.	●	●	●
• Ejector back with door open (only in semi auto mode)	●	●	●
• Three color lamp	●	●	●
• TPM software	●	●	●
• Down Time analysis	●	●	●
• Insert loading sequence	●	●	●
• Injection compression sequence	●	●	●
• Breathing sequence	●	●	●
• Heater current monitoring	Std upto IU 900 Opt from IU 1400	●	●
• Process data storage through USB	□	□	□
• Switch off program with purging	●	●	●
• Switch ON program for oil preheating and cylinder heating	●	●	●
• Flexible motion sequence of core and ejector with CU & IU movements	●	●	●
• Amendment Report on IBED	□	□	□
• SPC + CPK software	●	●	●
• Holding pressure switching activated as a function of hydraulic pressure	□	□	□
• Energy monitoring	□	□	□
• Interface for dehumidified Air drier-Potential free error input	●	●	●
• Interface for MTC-Potential free error input upto 2 nos.	●	●	●
• Interface for Chiller-Potential free error input	●	●	●
• Interface for MTC-Thermocouple upto 2 Nos	●	●	●
• Interface for Chiller-Thermocouple	●	●	●
• Interface for Hot Air drier-RS485	●	●	●
• Interface for dehumidified Air drier-RS485	●	●	●
• Interface for MTC-RS485 upto 2 Nos	●	●	●
• Interface for Chiller-RS485	●	●	●
• Graphical display of injection velocity	●	●	●
• Process data collection for networking through FTP	●	●	●
• Magnetic QMC Interface as per Euromap 70.0	●	●	●
• Electrical Rotating core interface	●	●	●
• Electric Rotating core interface with motor power contactor	●	●	●
• Interface for ejector limit switch in mould - 2 limit switch inputs(1 each Forward & Backward)	●	●	●
• Interface for mould protection (1 LS in mould for ejector back position sensing)	●	●	●

	60 - 180T	200 - 350T	Above 450 T
• Interface for slide core safety control	●	●	●
• ROBOT interface - as per EUROMAP 12 (32-pole)	●	●	●
• Robot interface as per JIS	●	●	●
• ROBOT interface as per EUROMAP-67	●	●	●
• Fault peripheral interface	□	□	□
• Interface for add. nozzle heater band (plug only)	●	●	●
• Add. controller nozzle / sprue ; 1 circuit (2-point) Dh2	●	●	●
• Interface for ejection monitoring (Interface for discharge control)	●	●	●
• Blending unit interface(Parallel to Dosing via Relays)	●	●	●
• Interface mould temperature display on IBED upto 2 mould circuits	●	●	●
• Good Bad part selector	●	●	–
• Discharge control - interface + photocell assembly	●	●	●

General

• Single control cabinet for better floor spacing	□	□	□
• Safety equipment as per EN 201	□	□	□
• 3 way part removal	□	□	–
• Flexible machine support with anti-vibration mounts	□	□	□
• Stainless Steel Discharge Chute	●	●	–
• Guarded machine enclosure for protruding moulds and peripheral connections	●	●	●
• Transparent cladding for preventive maintenance	●	●	●
• Funnel type powder coated discharge tube	●	●	–
• Manual Crane for mould loading	●	●	–
• 2L, 5L Adaptor for interfacing 6L Hopper Loader	●	●	●
• Set of Electrical power outlets one each of 3Ø-16A & 1Ø10A on machine	□	□	□
• Additional set of Electrical power outlets 3Ø-32A, 3Ø-16A & 1Ø10A upto maximum of 4 outlets on machine	●	●	●
• Single Phase preventer	●	●	●
• Manually triggered auto lubrication system for IU and CU balance points	●	●	□
• Closed loop injection with servo valve (Only with Induction motor)	●	●	●
• TPM sheet metal + S/W	●	●	●
• Rear emergency stop	□	□	□
• Mould clamps - 8 NOS	●	●	●
• FRL UNIT unit 1/4"	●	●	●
• Elevated base 500T, 650T, 800T & 1000T	–	–	●
• Special Color	●	●	●

□ Standard ● Optional

Melt correction factor

Material	Melt Correcting Factor
LD-PE	0.73
PP	0.73
HD-PE	0.75
PS	0.91
ABS/ABS+FR	0.91
SAN	0.91
PA	0.93
PC/ABS Alloy	0.94
Thermoset - PF	0.96
PC/PC+FR	0.97
PMMA	0.97
CA	1.03
PBT	1.08
PA 6 + 30% GF	1.14

Material	Melt Correcting Factor
POM	1.15
PET	1.18
R-PVC	1.2
C-PVC	1.3
S-PVC	1.05
PP + 30%GF	0.89
PEEK	1.18
PEEK + 30% GF	1.39
DMC	1.65
PPO	0.95
PPS	1.2
PTFE	1.98
PC + 25% GF	1.14
PC + 60% GF	1.2

Notes

Product line

Shibaura Machine

INJECTION MOULDING MACHINES
(Hydraulic / All-electric)

DIE CASTING MACHINES

MACHINE TOOLS
(Vertical boring and turning mill /
Boring machine / Hozirontal machining center /
Double column machining center)

INDUSTRIAL ROBOTS
(SCARA robots /
Vertical articulated robots /
Cartesian coordinate robots /
Special specification robots)

AUXILIARY EQUIPMENT
(Loaders / Dryers / Blenders / Granulators /
Chillers / Temperature controllers / Dosing unit /
Conveyors / Metal separators / PLC controllers

Notes

Notes