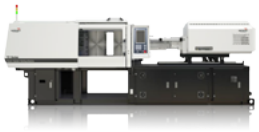


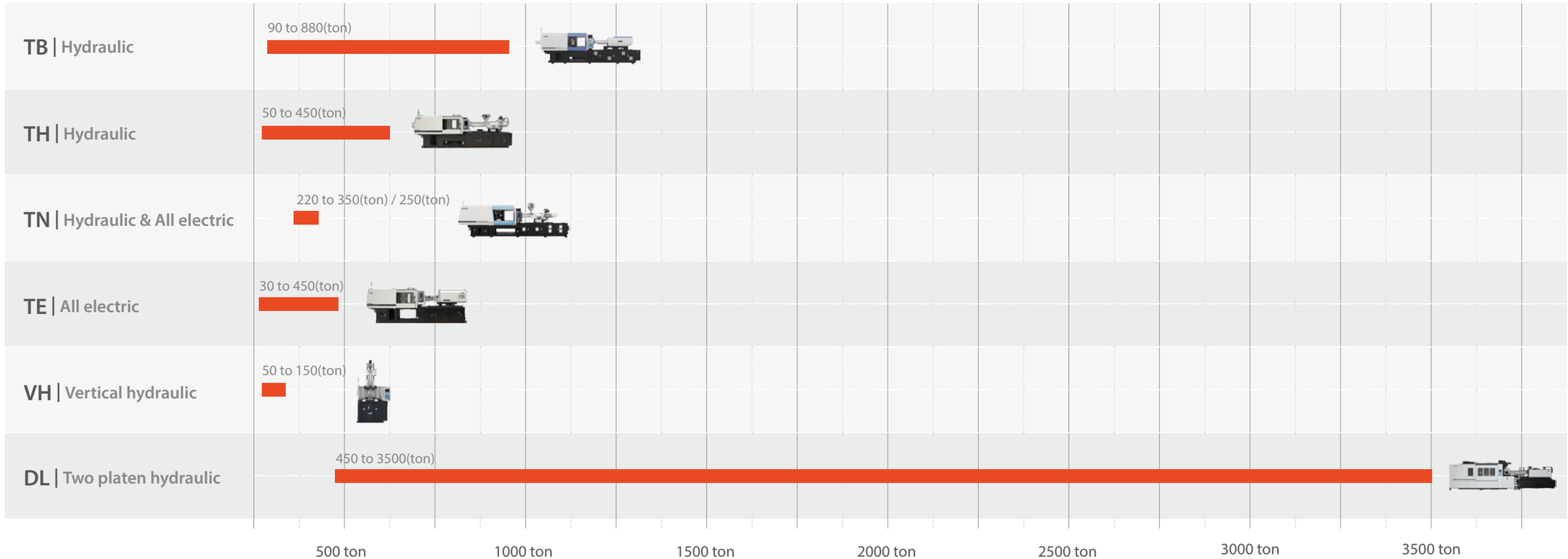
TE series

Toggle and Electric Type Injection Molding Machine

- High Speed
- High Precision
- Energy Saving

WOOJIN PLAIMM

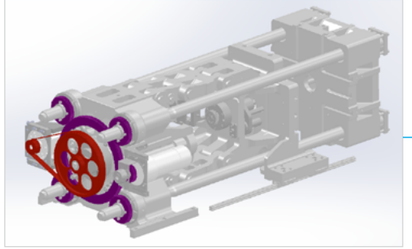
Machine series



TE series

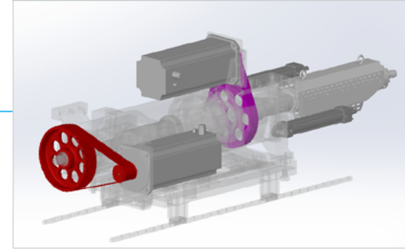
It guarantees high speed precision configuration using high output and rapid response AC servo motors.
Servo Motor System allows separate control to save energy while enhancing productivity and reducing noise, manipulating the mlod opening and closing during charging.

Center Press Type High Rigid High Speed Configuration

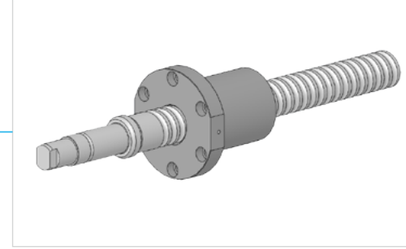


Ejector dedicated servo motor

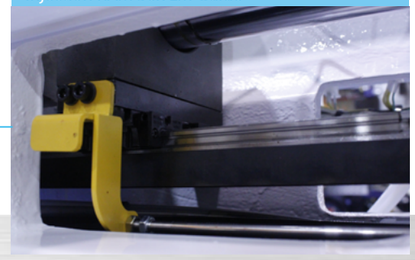
High Rigidity In-line Injection Unit



High Load Ball Screw Type



Injection RAM Box LM Guide



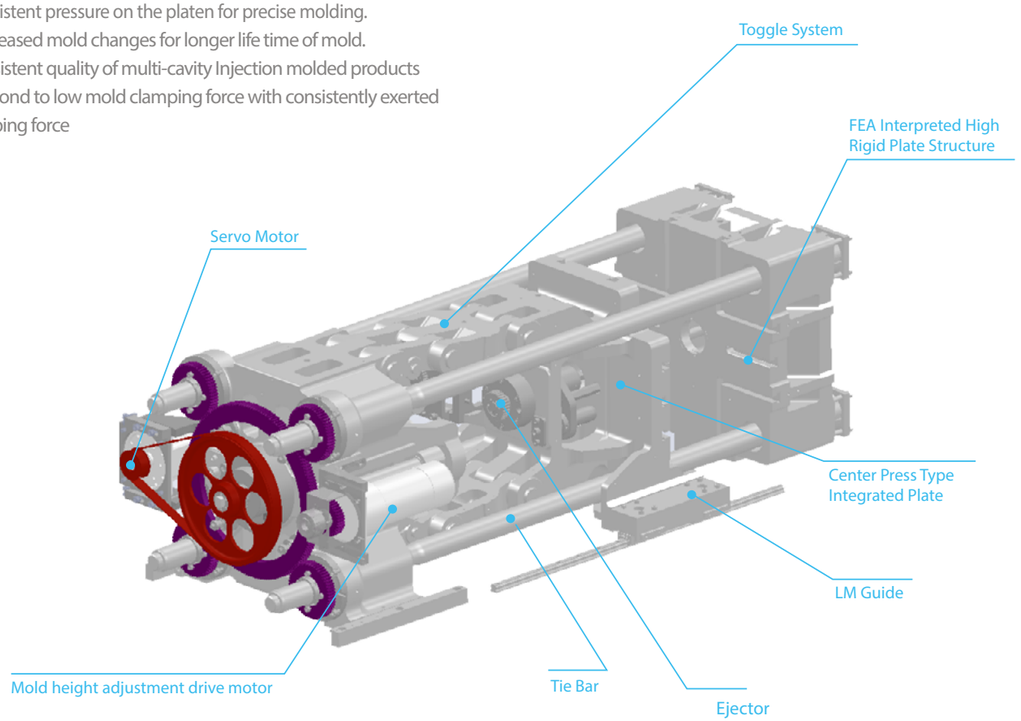
TE series _ Clamping / Injection Matrix

Model	Clamping force	Tie-bar distance(HxV)	Unit No.	Injection unit [Screw diameter in mm]															
				14	16	18	20	22	25	28	32	36	40	45	50	55	60	65	70	80
TE30	294kN	310×310	IE 0.2	O	A	B														
TE50	490kN	360×360	IE 0.7			S	O	A	B											
TE110	1079kN	410×410	IE 1.5					S	O	A	B									
TE150	1471kN	510×510	IE 3.0							S	O	A	B							
TE200	1961kN	560×560	IE 4.0								S	O	A	B						
TE250	2452kN	610×610	IE 7.8											O	A	B				
TE300	2942kN	720×720	IE 10												O	A	B			
TE350	3432kN	820×820	IE 15														O	A	B	
TE450	4413kN	870×870	IE 23															O	A	B

Clamping Unit

Plate structure innovation with computer
Assisted structure interpretation (FEA)

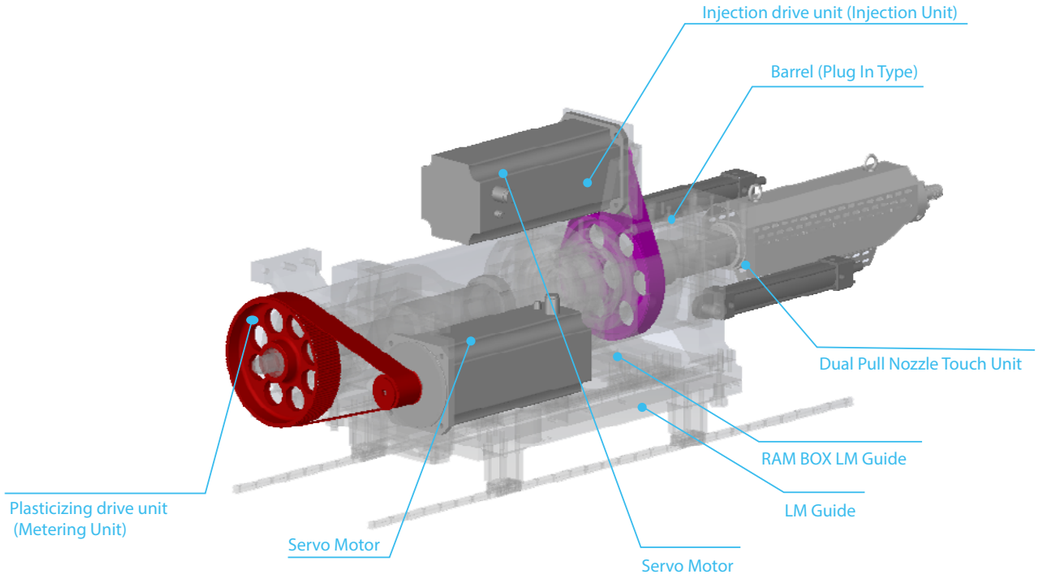
- Consistent pressure on the platen for precise molding.
- Decreased mold changes for longer life time of mold.
- Consistent quality of multi-cavity Injection molded products
- Respond to low mold clamping force with consistently exerted clamping force



Injection Unit

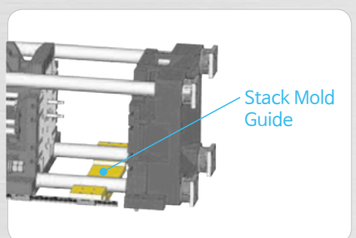
Injection unit structure innovation to enhance precision

- In-line type injection structure for stabilized precision molding products
- Suitable for fast-cycle molding with high speed precision position control
- Equipped with high load ball screw for longer product life cycle
- Positioning and adjusting mold opening & closing by encoder.



Stack Mold Guide (Optional)

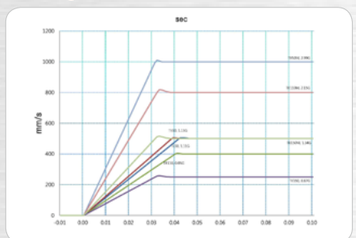
- Apply dedicated type of LM Guide for safe and solid support for stack mold
- Lengthens product life cycle to prevent sagging due to the weight of general 3 stage molding
- Able to use a jig for precise installation of a molding (required for insert automation)



Your Advantages

1 Excellent performance for injection acceleration

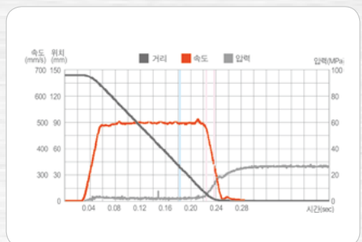
- Four times more rapid response than the previous model improving the acceleration and deceleration features
- Design the Injection's Single Ball Screw for longer product life cycle
- Lower friction LM Guide
- Low inertia motor applied
- Center Press type high rigid and high speed configuration



2 Precise location control and ultra precision configuration

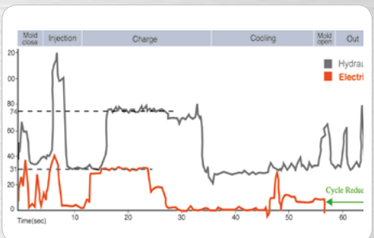
- Precise location control and ultra precision configuration
- Ultra precision safe configuration of the injected products • Closed-loop control (controller + AC Servo Drive)
- In-Line Type injection structure

Position precision	±0.01mm
Injected product's weight variation coefficient	Within 0.02 (depending on the injected products)
System Reproducibility	Within 0.1%



3 Energy Saving and Green System

- Energy Saving : Within 70% (comparing to hydraulic type)
- Remove environmentally harmful factors and reduce noise by (by AC Servo Motor)



Controller (B&R)

The controller is possible to realize the high precision control and built in statistic module and user friendly interface of a touch screen.

System Features

- Geode LX800 500MHz
- 128MB DRAM, 512KB SRAM
- 0.4ms scan time
- 15 inch TFT color monitor (768×1024)
- PID automatic temperature control
- In&Out put module type
- 1×USB2.0
- Touch screen type

Built-in VNC servo function for dual display

Remote access for a same display of controller

Remote Dual Display

Real time monitoring of controller display anytime and anywhere.

Touch Screen

15 inch TFT color monitor attached to the controller is easy to manipulate and manage the information.

Multilingual Operation

It supports multilingual services in languages like English, Chinese, Turkish, Czech, and others for a person from other part of the world can easily manipulate the system.

Central Monitoring System (Optional)

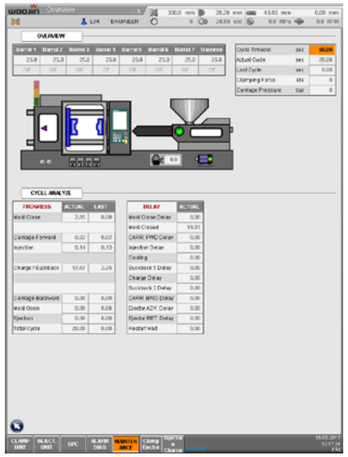
Central Monitoring Computer can have access to maximum 200 injection molding machines at the same time to facilitate the data transmission and management. Such injection related data will be converted into excel files for easier data management and retrieval.

Functions

- Various core drive
- Production data storage
- Production data analysis
- Molding condition alterations and changes or alert details stored
- Injection speed graph print
- Transporter interface circuit
- Automatic control of motor and heater for unmanned operation
- Easy to upgrade injection unit for large volume of Injection
- Weekday heater reservation
- Heat insulation mode for cylinder to prevent carbonization of resin carbide
- System state monitoring:communications state, module operation state etc
- Internal mold data storage:1000 data files
- External mold data storage system:USB memory storage
- Display storage:converts the current display into a hard copy to store the data in USB memory
- Injection speed, holding pressure closed-loop (Optional)
- Back pressure closed-loop (Optional)
- Injection pressure graph (Optional)

Process Management

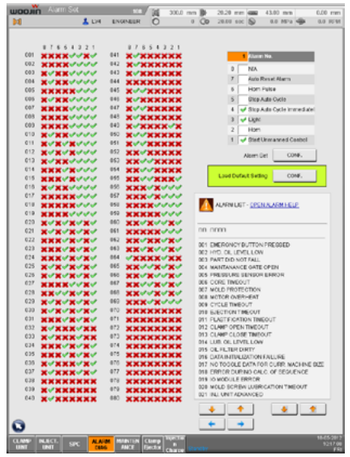
The Snapshot of Process Management



It offers a snapshot of the entire monitoring of equipments in operation.

Alarm Function

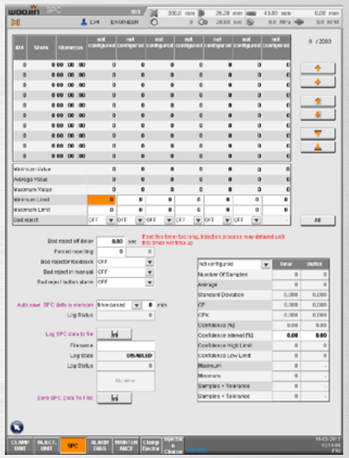
Wide range of management on errors and glitches



All the information is provided on possible errors and glitches during operation for accurate maintenance and repair.

Quality Management

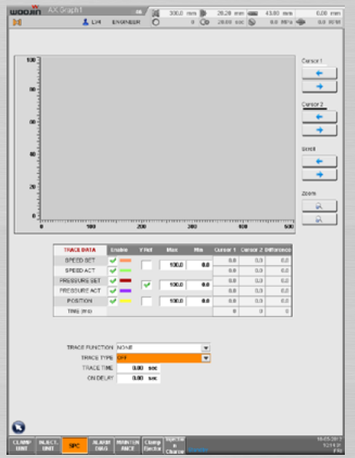
Accurate product management



Selective data storage and management for quality assurance under maximum 7 categories.

User Friendly Function

Convenient monitoring on work processing



Detailed data on measured sections that a user may want are displayed in graph.

TE series | Eletric Injection Machine

Injection Unit

		TE 30			TE 50				TE 110				TE 150			
		IE 0.2			IE 0.7				IE 1.5				IE 3.0			
Screw & Barrel Type		O	A	B	S	O	A	B	S	O	A	B	S	O	A	B
Screw Diameter	mm	14	16	18	18	20	22	25	22	25	28	32	28	32	36	40
Injection Pressure	kg/cm²	2600	2580	2039	2800	2643	2184	1691	3330	2579	2056	1574	3397	2601	2055	1655
	MPa	255	253	200	275	259	214	166	327	253	202	154	333	255	202	163
Injection Back Pressure	kg/cm²	2080	2064	1631	2240	2114	1747	1353	2664	2063	1645	1259	2718	2081	1644	1332
	MPa	204	202	160	220	207	171	133	261	202	161	123	267	204	161	131
Theoretical Injection Volume	cm³	9.2	12.1	15.3	23	28	34	44	42	54	68	88	92	121	153	188
Injection Weight (PS)	g	9	11.1	14.1	21	26	32	41	39	50	62	81	85	111	141	174
Screw Stroke	mm	77	101	127	127	157	190	245	152	196	246	322	154	201	254	314
Injection Speed Standard	mm/s	154	201	254	254	314	380	491	304	393	493	643	308	402	509	628
High Speed	mm/s	60	60	60	90	90	90	90	110	110	110	110	150	150	150	150
Injection Rate Standard	cm³/s	500	500	500	500	500	500	500	400	400	400	400	250	250	250	250
High Speed	cm³/s	1000	1000	1000	1000	1000	1000	1000	800	800	800	800	500	500	500	500
Plasticizing Capacity (PS)	kg/h	8	12	16	16	21	27	38	27	38	52	74	46	66	91	120
Screw rotation	rpm	500	500	500	500	500	500	500	500	500	500	500	450	450	450	450

Clamping Unit

Mold Clamping Force	ton(kN)	30 (294)	50 (490)	110 (1079)	150 (1471)
Tie Bar Distance (H x V)	mm	310 x 310	360 x 360	410 x 410	510 x 510
Platen Dimension (H x V)	mm	460 x 460	530 x 530	630 x 630	750 x 750
Daylight	mm	210	250	350	410
Max Daylight	mm	460	600	750	910
Min Mold Thickness	mm	110	130	150	180
Max Mold Thickness	mm	250	350	400	500
Ejector Force	ton(kN)	1.0 (10)	2.0 (20)	3.3 (32)	3.5 (34)
Ejector Stroke	mm	50	70	80	100

Generals

Heater Capacity	kW	4.3	4.7	5.3	6.8	7.6	8.4	8.8	5.7	7.7	8.6	8.2	8.5	8.8	9.7	10.6
Total eletiric power capacty Standard	kW	13.7	14.1	14.7	19.3	20.0	20.7	21.5	23.5	25.5	26.4	26.0	26.3	26.6	27.5	28.4
High Speed	kW	23.1	23.5	24.1	34.4	35.1	35.8	36.6	41.3	43.3	44.2	43.8	44.1	44.4	45.3	46.2
Machine Weight	ton	2.8			3.6				4.3				6.2			
Machine Size (L x W x H)	m	3.6 x 1.1 x 1.5			3.9 x 1.2 x 1.6				4.6 x 1.3 x 1.7				5.3 x 1.4 x 1.8			

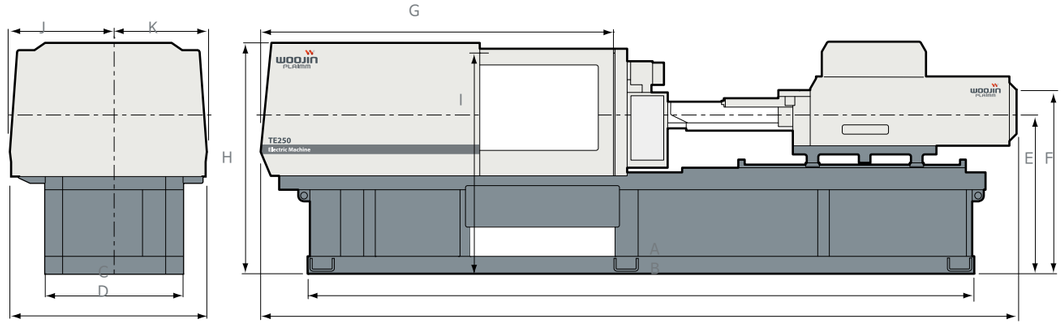
1. Theoretical injection capacity : cross section of a screw x screw stroke
2. The specification is based on the standard 60Hz data and specification.
3. Due to continuous improvements, specifications are subject to change without notice.

TE 200				TE 250			TE 300			TE 350			TE 450			TE 850
IE 4.0				IE 7.8			IE 10			IE 15			IE 23			IE 78
S	O	A	B	O	A	B	O	A	B	O	A	B	O	A	B	O
32	36	40	45	45	50	55	50	55	60	60	65	70	65	70	80	105
3148	2488	2015	1592	2552	2067	1708	2443	2019	1697	2303	1962	1692	2389	2060	1577	2006
309	244	198	156	250	203	167	240	198	166	226	192	166	234	202	155	197
2518	1990	1612	1274	2042	1654	1366	1954	1615	1358	1842	1570	1354	1911	1648	1262	1605
247	195	158	125	200	162	134	192	158	133	181	154	133	187	162	124	157
129	163	201	254	318	393	475	432	522	622	735	862	1000	995	1325	1507	4330
119	150	185	234	293	362	438	398	481	573	677	795	922	917	1063	1389	3940
161	204	251	318	239	295	356	295	356	424	424	498	577	498	577	754	1299
322	407	503	636	477	589	713	589	713	848							
160	160	160	160	200	200	200	220	220	220	260	260	260	300	300	300	500
200	200	200	200	150	150	150	150	150	150	150	150	150	150	150	150	150
400	400	400	400	300	300	300	300	300	300							
59	81	107	146	137	182	234	151	195	246	212	262	319	219	267	381	495
400	400	400	400	300	300	300	250	250	250	215	215	215	180	180	180	138

200 (1961)				250 (2452)			300 (2942)			350 (3432)			450 (4413)			850(8336)
560 x 560				610 x 610			720 x 720			820 x 820			870 x 820			1060x1060
840 x 840				900 x 900			1090 x 1090			1180 x 1180			1260 x 1210			1590x1590
470				540			630			690			730			1200
1070				1190			1380			1440			1530			2300
200				250			300			300			350			500
600				650			750			750			800			1100
3.5 (34)				4.5 (44)			6 (59)			6 (59)			10 (98)			24(235)
120				130			140			140			180			200

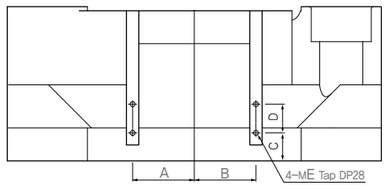
8.8	9.7	10.6	12.6	13.5	15.1	16.6	15.1	16.6	19.0	23.0	24.9	26.8	18.4	20.7	23.5	50
26.6	27.5	28.4	30.4	40.7	42.3	43.8	45.3	46.8	49.2	77.5	79.3	81.2	72.9	75.1	77.9	180
44.4	45.3	46.2	48.2	67.9	69.5	71	75.4	76.9	79.3							
8.0				12.0			15.0			18.5			22.0			56
6.1 x 1.6 x 2.0				6.6 x 1.7 x 2.0			7.4 x 1.8 x 2.1			8.2 x 1.8 x 2.2			8.5 x 1.9 x 2.3			11.3 x 2.6 x 2.6

Machine Dimensions

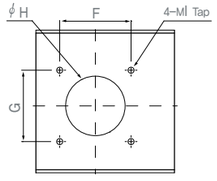


	A	B	C	D	E	F	G	H	I	J	K
TE 30	3207	3622	620	1084	1065	1135	1640	1519	1383	572	512
TE 50	3580	3895	715	1180	1110	1210	1770	1557	1445	620	560
TE 110	4280	4593	850	1316	1205	1325	2125	1644	1532	688	628
TE 150	4665	5230	970	1377	1263	1442	2424	1744	1648	689	689
TE 200	5538	6010	1140	1600	1385	1564	2850	1905	1815	820	780
TE 250	5850	6628	1190	1700	1370	1579	3047	1993	1835	900	800
TE 300	7000	8000	1400	1750	1465	1675	4020	2140	2000	900	850
TE 350	7185	8180	1470	1976	1475	1675	4080	2200	2080	1033	943
TE 450	8200	9000	1580	2170	1505	1705	4430	2248	2125	1130	1040

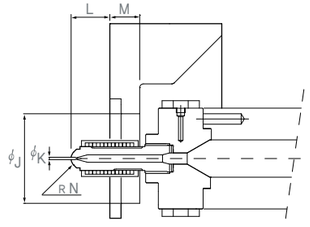
Robot Installation Drawing



Hopper Installation Drawing



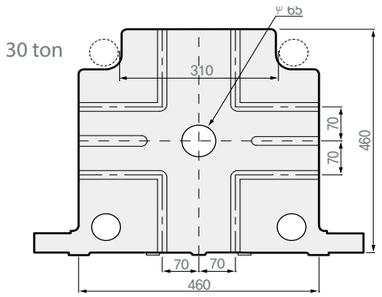
Nozzle Size



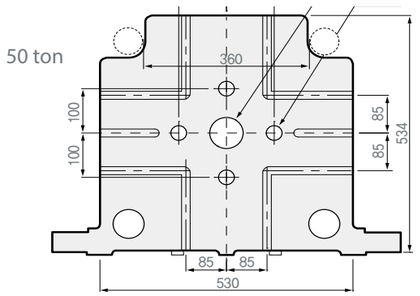
	A	B	C	D	E	F	G	H	I	J ϕ	K ϕ	L	M	N
TE 30	70	70	50	35	12	80	80	50	8	90	1.5	30	30	9
TE 50	85	85	50	35	12	80	80	70	8	90	1.5	30	25	9
TE 110	105	105	47	40	12	100	100	85	12	100	2.5	50	30	10
TE 150	150	150	62	70	14	120	120	95	12	100	3.0	50	30	10
TE 200	150	150	70	70	14	120	120	95	12	100	3.0	50	30	15
TE 250	150	150	68	70	14	120	120	100	12	120	3.5	50	40	15
TE 300	190	190	67	100	20	120	120	100	12	120	3.5	50	40	15
TE 350	210	210	67	100	20	127	127	120	12	120	3.5	50	40	15
TE 450	210	210	67	100	20	165	165	68	12	200	4.0	50	60	19

Platen Dimensions

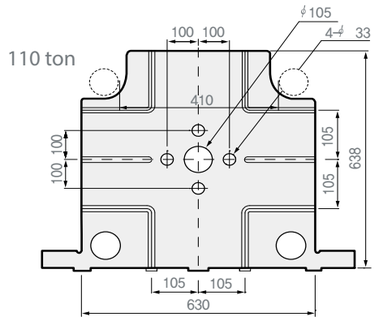
30 ton



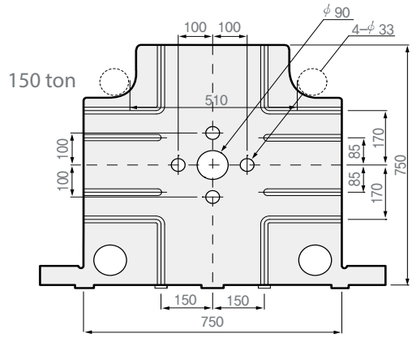
50 ton



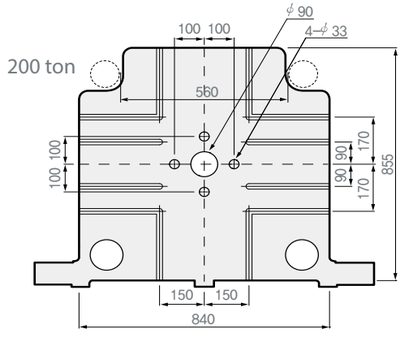
110 ton



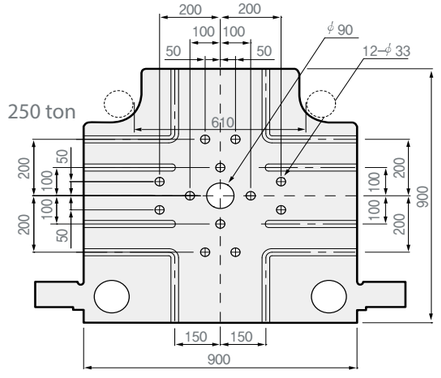
150 ton



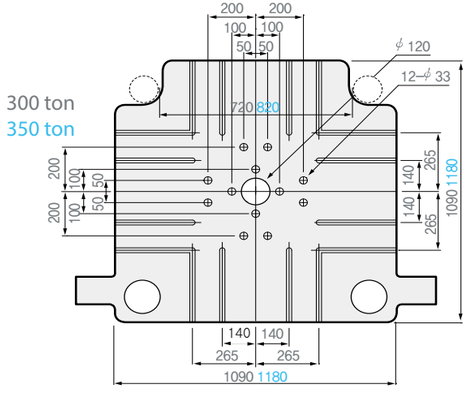
200 ton



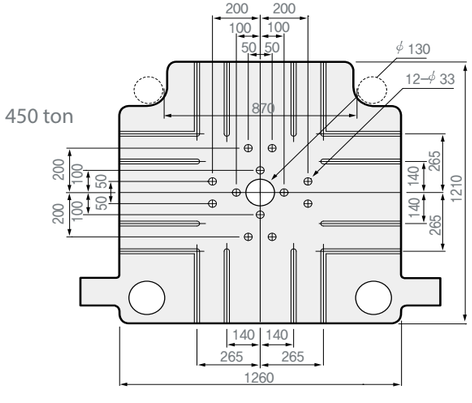
250 ton



300 ton
350 ton



450 ton



Feature List

S : Standard O : Option

Injection Unit

	TE 30 ~ 450
1. Injection process control stage (Speed/Pressure)	10
2. Holding process control stage (Speed/Pressure)	5
3. Charging process control stage (Speed/Pressure)	3
4. Back pressure control stage	3
5. Suck-back control (before injection)	S
6. Suck-back control (After injection)	S
7. Closed-loop of injection pross	S
8. Cushion amount display & alarm	S
9. Screw RPM display	S
10. Auto purge circuit	S
11 Aram of over charging time	S
12. Screw cold start prevention device	S
13. Heater pre-heating timer (for weekly)	S
14. Heater temperature abnormal display & alarm	S
15. PID heater temperature control	S
16. Cylinder temperature keeping mode	S
17. Charging on fly (Mold opening during charging)	S
18. Shut-off nozzle (Hydraulic type)	O
19. Shut-off nozzle (Spring type)	O
20. Shut-off nozzle (pneumation type)	O
21. Valve gate 1 stage	S
22. Antiwear screw & barrel	O
23. Antiwear and anticorrosion screw & barrel	O
24. Double barrier mixing screw (SB screw)	O

Clamping Unit

1. Mold open speed control stage	5
2. Mold close speed control stage	5
3. Ejector speed control stage	2
4. Automatic mold height adjustment	S
5. Hydraulic core puller (1 stage)	O
6. Core moving during mold opening	S
7. Core moving during mold ejecting	S
8. Unscrewing device	O
9. Air blow off unit	O
10. Daylight extention	O

Generals

	TE 30 ~ 450
1. Molding data memory capacity (Internal / External)	1000/usb
2. Alarm history display & saving	S
3. Record of setting - value changing	S
4. Statistical function	S
5. I/O circuit display	S
6. Multi language display (English,Chinese,Portuguish/Czech)	S
7. Robot interlock circuit	S
8. Robot interlock interface (Euromap 12/SPI)	O
9. Alarm of the reservation injection molding number	S
10. Hopper throat temperature control device	S
11 Automatic lubricating device	S
12. Auto grease for injection unit	S
13. Shot data file saving	S
14. Hopper swievel & moving device	O
15. Auto safety door open	O
16. Auto safety door close	O
17. Recycling device for lubricator	O
18. Auto clamps(Quick Die Changer)	O
19. Insulatino plate for mold	O
20. Product drop confirmation device	O
21. Product good / bad check device	O
22. Product chute	S
23. Leveling pads	S
24. 3 stage alarm lamp	S
25. Maintenance tools	S
26. Spare parts	S

* Specifications can be changed for improved development without prior notice.

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