LIENYU
THE SPIRIT OF TECHNOLOGY

TF SERIES
TOGGLE MACHINES

WELCOME TO LIENYU
PROFESSIONAL INJECTION MOLDING MACHINE

LIENYU
THE SPIRIT OF TECHNOLOGY

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CONTENTS

INTRODUCTION

Founded in 1985. Since then, Lien Yu has been specialized in manufacturing “Injection Machines” and has been dedicated in explored international market. In order to be competitive, Lien Yu brought in advanced skills and has had technique cooperation with British A&A Industrial Ltd. for over ten years. Lien Yu was a pioneer that conducting CAD/CAM system to design international standard-matching Injection Machine. Meanwhile, keep improving and growing, Lien Yu strived to gather talents in the fields of Machinery, Engineering, Computer and Information Technology. Recent years, all the industries such as electronic engineering, machinery, optoelectronics and biomedical engineering all aim on the development of Miniaturization. Hence, Lien Yu considers that the miniaturized injection would be significant. Therefore, Lien Yu is researching and developing the techniques.

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TF SERIES-SV TOGGLE MACHINES

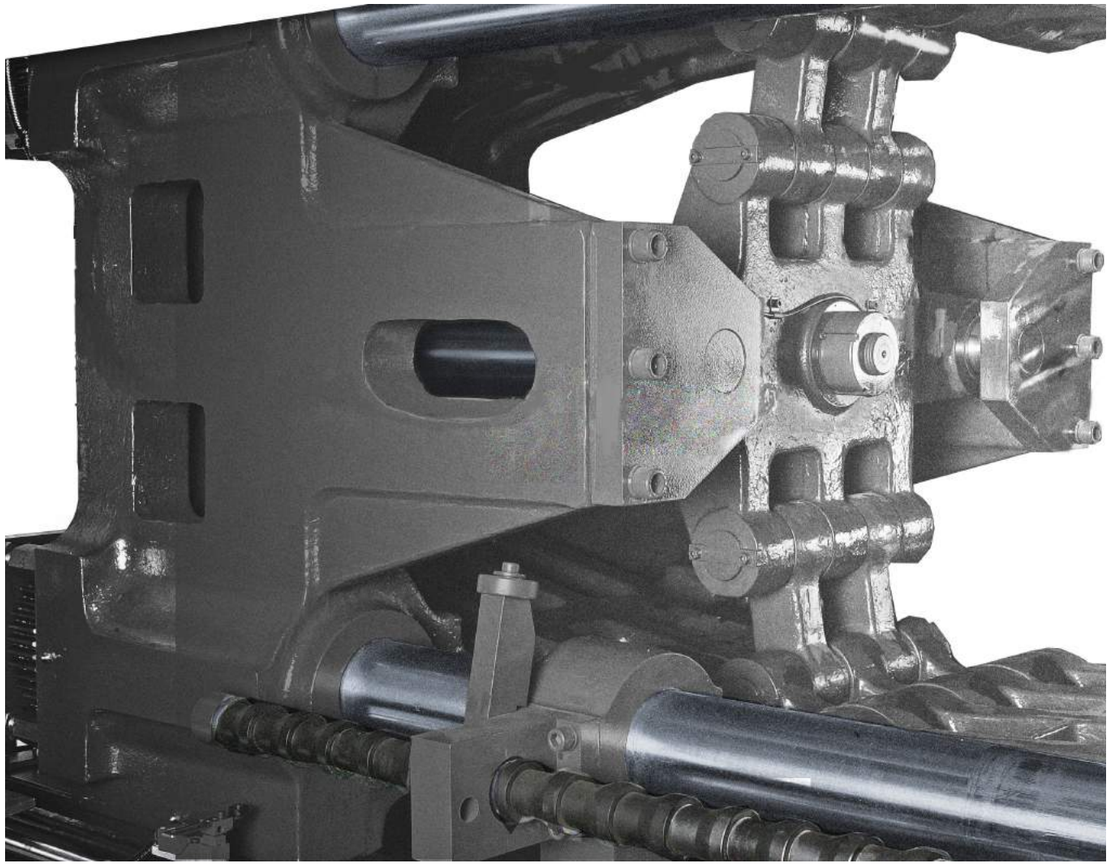
TF SERIES

Been manufacturing for many decades, Lien Yu has accumulated plenty of knowledge on injection molding machine and customer's need. Hence, Lien Yu decided to have a fully review on our own machines, examining all the pros and cons. At last, we conclude the result and re-design a whole new series, TF series. TF series not only gets rid of the blemishes of our old series but get improvement in such as structure, appearance, movement and control.

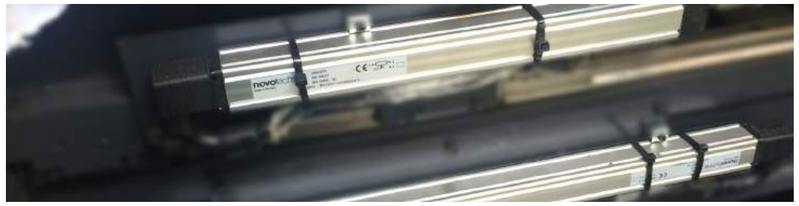
> People often say that motivation doesn't last. Well, neither dows bating That's why- we recommend it daily

SV MODULE

The SV motor conducts proportional–integral–derivative controller (PID controller) to detect the movement of an injection molding machine.
A PID controller is a control loop system and frequently used in industrial control system. A PID controller continuously calculates an error value as the difference between a desired setpoint and a measured process variable and applies a correction based on proportional, integral, and derivative terms which give their name to the controller type. PID controller could be adjusted the input data by the historical data and the difference, which makes the system accurate and stable.



CLAMPING UNIT



Work With us for Better Business

FASTER MOVEMENT/ HIGHER CAPABILITY

We move back the toggle joint. According to the principle of Moment of Inertia, the angular velocity is proportional to the radius. The longer the radius is, the faster velocity will be. Thus, the back forward joint point make the radius long, which lead to quicker velocity. Due to the speedy toggle movement, the speed of the close and open mold could improve and produce more goods.

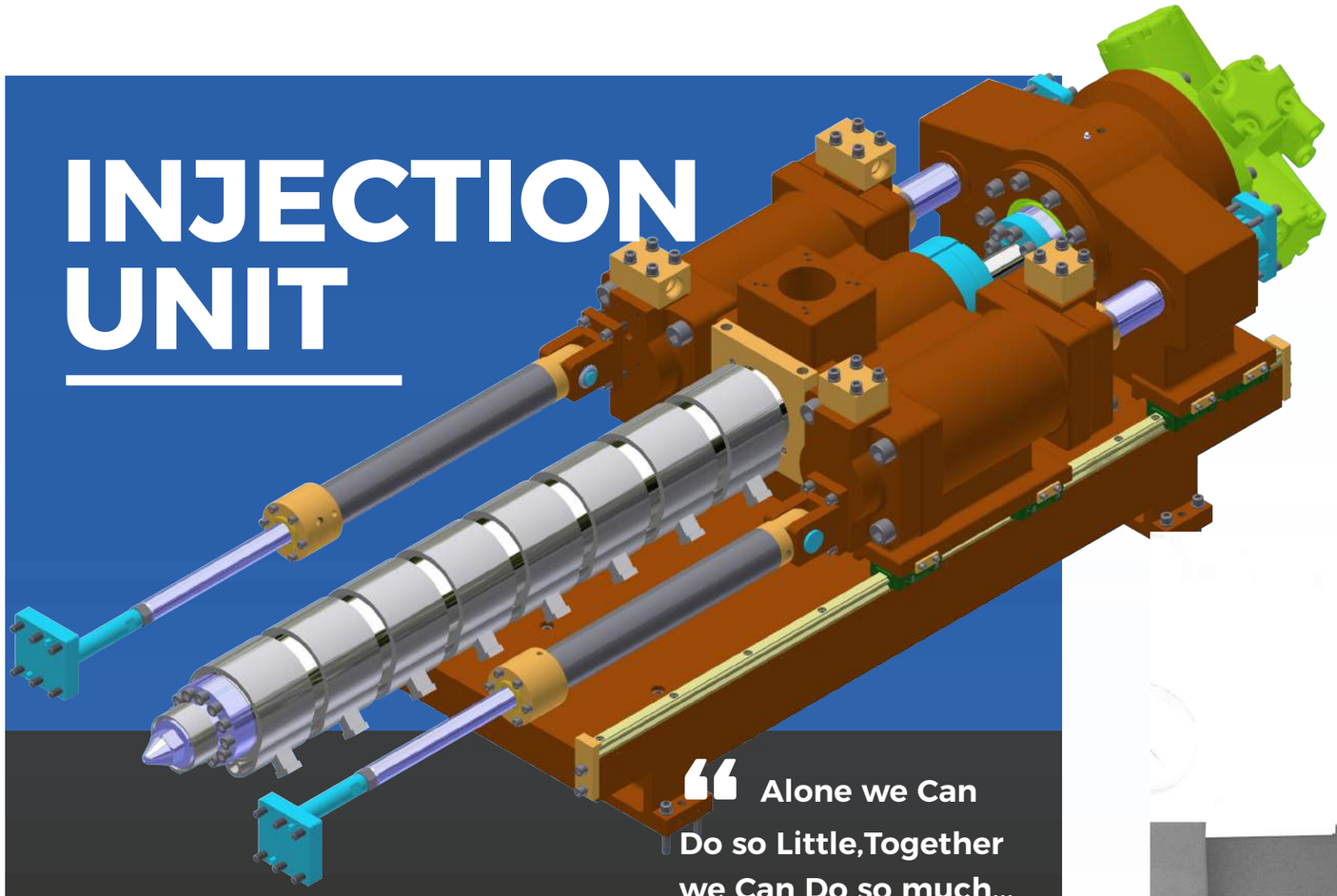
CONVENIENT POSITIONING

T slots design help operators to lock molds more flexibly and adjust molds easily. Operators could choose either screw holes or slots to fix molds. Additionally, Lien Yu machines has automatic clamping control, which could help operators to reduce the set-up time.

DURABILITY

To achieve durability, the machine structure has made a few changes. We enlarge the tie bar nut, thicker platens, and modify the toggle to four-three claws to enhance the entire clamping structure. Also, the larger tie bar nuts are allowed tie bars to be locked deeper and firmly, which could better sustain tie bars. Regarding the four-three claws toggle, comparing with the past three-two claws, it could bear the force generating by open-close mold action more efficiently. Furthermore, the toggle part engages in Five Point Toggle System. The method could balance the movement force and the mold locking.

INJECTION UNIT



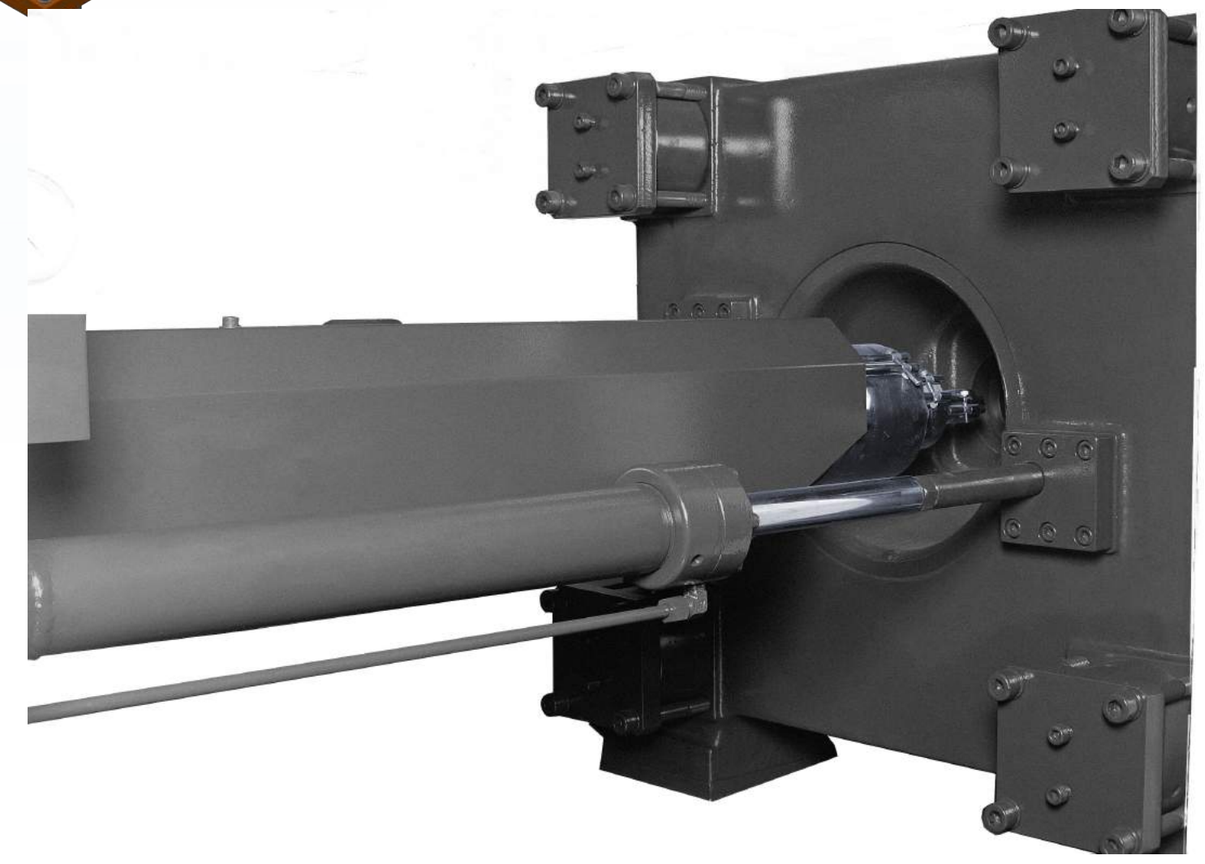
> “Alone we Can Do so Little,Together we Can Do so much...

PRECISE INJECTION

We design two diagonal cylinders to pull the injection part. The advantage is to divide the force and to avoid the sway caused by the injection movement. That is, the injection basement could be better held on the right position. As the result, it could decrease the possibility of barrel damage.

SMOOTH MOVEMENT

The usage of linear guideway assist the injection side to act to the accuracy motion.



KEBA CONTROLLER

ADVANTAGES

Extensive technology libraries

Part of the powerful software framework is the extensive range of technology functions for controlling the injection molding process and for implementing all of the injection molding functions

EASY CONFIGURATION OF THE MACHINE SEQUENCE

KePlast MachineSequencer is a graphical online programming interface for machine sequences. Its intuitive design allows the sequence program to be adapted quickly and cost-effectively.

CONFIGURING INSTEAD OF PROGRAMMING

Pre-programmed software elements allow applications to be created quickly. By selecting the machine equipment such as clamping unit, injection unit, ejector or machine options such as core pullers and hot-runner controllers in a predefined query matrix the wizard automatically creates the entire control software in the background..

INTERACTIVE SOFTWARE WIZARD

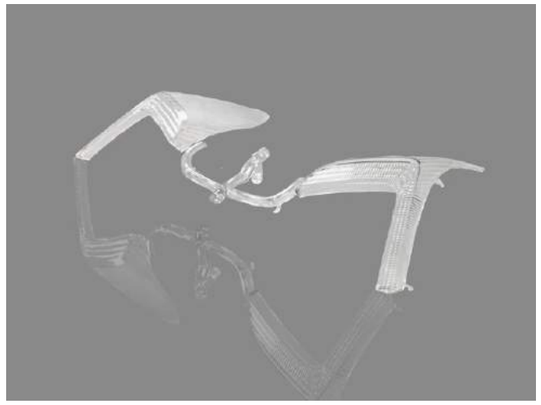
KePlast EasyMold is an interactive software wizard for quickly determining the correct process setting when commissioning a tool and requires no special practical experience by the user. Within a very short time, employees without specialist injection molding know-how can use KePlast EasyMold to commission a tool and find the optimum operating point.

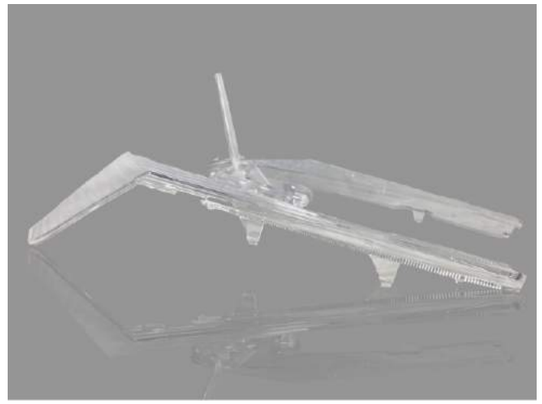
The headquarters are in Linz, Austria. KEBA AG is represented by subsidiaries around the world.

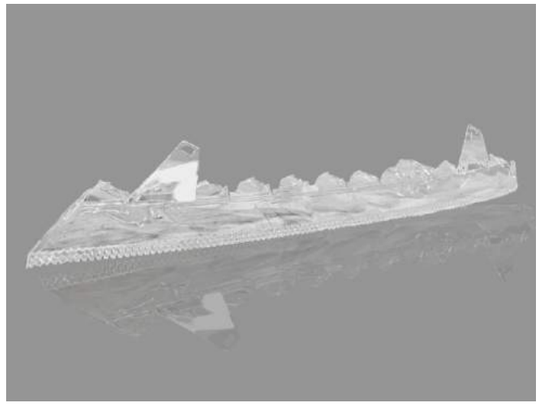
CUSTOMIZE POINTS

- MULTIPLE LOOPS
- FAST MACHINE
- PET MACHINE
- PVC MACHINE
- THERMO MACHINE
- PC MACHINE
- IML WITH ACCUMULATOR

For the past 30 years, Lien Yu machinery has never gave up breakthrough.
We realize that clients various challenge by time to time. With the improvement of technology and mechanical skills, clients might face challenges such as different character of plastic materials, better product quality requirements, producing capacity raising, High-tech dedicate products and so on. Hence no matter what kinds of requirements clients bring out, we are always happy to find out a solution to assist clients.







SPECIFICATION

	Mode	Unit	TF80			TF100			TF120			TF160			TF220			TF300			TF360			TF420		
INJECTION	Screw diameter	mm	28	32	36	32	36	40	36	40	45	40	45	50	50	55	60	55	60	65	60	65	70	65	70	75
	Screw L/D Ratio	L/D	25.1	22.0	19.6	24.8	22.0	19.8	24.4	22.0	19.6	24.8	22.0	19.8	24.2	22.0	20.2	24.0	22.0	20.3	23.8	22.0	20.4	23.7	22.0	20.5
	Swept volume	cc	99	129	163	145	183	226	204	251	318	276	350	432	511	618	735	665	792	929	877	1029	1193	1128	1308	1502
	Max shot weight (P.S)	g	89	116	147	130	165	204	183	226	286	249	315	389	459	556	662	599	713	836	789	926	1074	1015	1178	1352
	Max injection pressure	bar	2650	2029	1603	2505	1979	1603	2250	1822	1440	2431	1921	1556	2189	1809	1520	2340	1967	1676	2211	1884	1625	2186	1884	1642
	Injection speed	mm/sec	122			130			137			121			119			118			119			113		
	Max injection rate	g/sec	68	88	112	94	119	147	125	155	196	137	174	214	211	255	304	252	300	352	302	354	411	338	392	450
	Screw stroke	mm	160			180			200			220			260			280			310			340		
CLAMPING	Max locking force	Tonne	80			100			120			160			220			300			360			420		
	Max opening stroke	mm	300			345			410			445			510			560			610			660		
	Min mold height	mm	140			150			180			200			230			240			260			280		
	Max mold height	mm	360			400			460			500			600			650			720			800		
	Max daylight	mm	660			745			870			945			1110			1210			1330			1460		
	Space between tie bars	mm	360 x 320			410 x 360			460 x 410			510 x 460			560 x 510			610 x 560			660 x 610			710 x 660		
	Max ejector forward force	Tonne	3.44			3.44			4.16			4.95			6.73			8.8			11.13			13.74		
	Max ejector stroke	mm	80			90			110			130			140			165			180			200		
POWER / HEATING	Pump drive motor	kw(HP)	11(15)			15(20)			18(25)			22(30)			30(40)			46(60)			56(75)			56(75)		
	Hydraulic pressure	bar	171			171			171			171			171			171			171			171		
	Heater capacity	kw	4			4.6			6.5			7			17			13			16			19		
	Number of heating zones	qty	3+N			3+N			3+N			3+N			4+N			4+N			4+N			4+N		
	Oil filling	Liter	200			220			250			280			370			600			700			900		
	Machine dimensions(LxWxH)	m	3.81 x 1.06 x 1.7			4 x 1.12 x 1.8			4.6 x 1.25 x 1.9			5.4 x 1.3 x 1.9			6.2 x 1.34 x 1.84			6.6 x 1.9 x 2.1			7.2 x 2.0 x 2.2			7.8 x 2.0 x 2.3		
	Machine weight, dry	kgs	4000			5000			5300			7000			8000			11000			15000			19000		

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SPECIFICATION

	Mode	Unit	TF520			TF600			TF800			TF1000			TF1200			TF1500			TF1800			TF2300		
INJECTION	Screw diameter	mm	70	75	80	75	80	90	85	95	105	95	105	115	100	110	120	115	125	140	125	140	150	150	160	170
	Screw L/D Ratio	L/D	23.6	22.0	20.6	23.5	22.0	19.6	24.6	22.0	19.9	24.3	22.0	20.1	24.2	22.0	20.2	23.9	22.0	19.6	24.6	22.0	20.5	23.4	22.0	20.7
	Swept volume	cc	1424	1635	1860	1811	2061	2608	2610	3261	3983	3615	4416	5297	4555	5512	6560	6440	7609	9544	8590	10776	12370	15021	17090	19293
	Max shot weight (P.S)	g	1282	1471	1674	1630	1855	2347	2349	2935	3585	3253	3974	4768	4100	4961	5904	5796	6848	8590	7731	9698	11133	13519	15381	17363
	Max injection pressure	bar	2226	1940	1705	2202	1936	1530	2437	1951	1597	2203	1803	1503	2229	1842	1548	2244	1899	1514	2252	1976	1564	2090	1837	1627
	Injection speed	mm/sec	116			117			113			111			114			106			108			108		
	Max injection rate	g/sec	403	463	527	466	530	671	577	721	880	710	868	1041	806	975	1160	988	1167	1464	1196	1500	1722	1718	1955	2207
	Screw stroke	mm	370			410			460			510			580			620			700			850		
CLAMPING	Max locking force	Tonne	520			600			800			1000			1200			1500			1800			2300		
	Max opening stroke	mm	760			920			1060			1150			1300			1450			1640			1800		
	Min mold height	mm	320			350			400			500			600			700			750			800		
	Max mold height	mm	900			1000			1130			1200			1300			1400			1640			1700		
	Max daylight	mm	1660			1920			2190			2350			2600			2850			3280			3500		
	Space between tie bars	mm	810 x 760			910 x 860			1060 x 960			1160 x 1060			1260 x 1160			1360 x 1260			1520 x 1420			1800 x 1600		
	Max ejector forward force	Tonne	16.63			19.79			23.23			26.94			30.93			35.19			39.72			44.53		
	Max ejector stroke	mm	225			275			300			300			350			400			450			450		
POWER / HEATING	Pump drive motor	kw(HP)	78(100)			78(100)			56+56(75+75)			78+56(100+75)			78+78(100+100)			56+56+56(75+75+75)			78+78+78(100+100+100)			78+78+78+78(100+100+100+100)		
	Hydraulic pressure	bar	171			171			171			171			171			171			171			171		
	Heater capacity	kw	22			25			30.7			38			48.1			49.2			82			105		
	Number of heating zones	qty	5+N			5+N			5+N			5+N			5+N			6+N			6+N			6+N		
	Oil filling	Liter	1000			1200			1600			1800			2400			3000			3000			3500		
	Machine dimensions(LxWxH)	m	8.5 x 2.1 x 2.25			9.7 x 2.3 x 2.25			10 x 2.4 x 2.8			11.6 x 2.3 x 3.0			13.3 x 2.5 x 3.1			14.4 x 2.6 x 3.2			15.8 x 2.8 x 3.2			16.8 x 3.8 x 3.7		
	Machine weight, dry	kgs	24500			31000			50000			62000			84000			96000			123000			185000		

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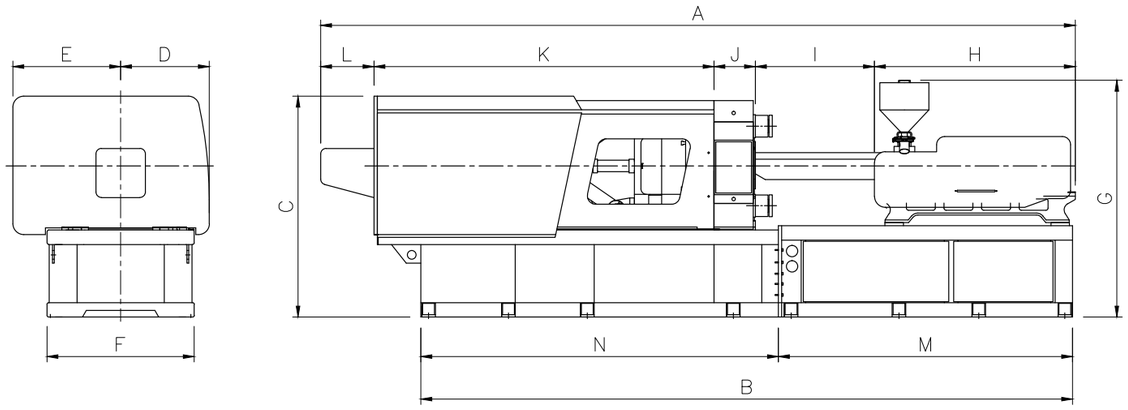
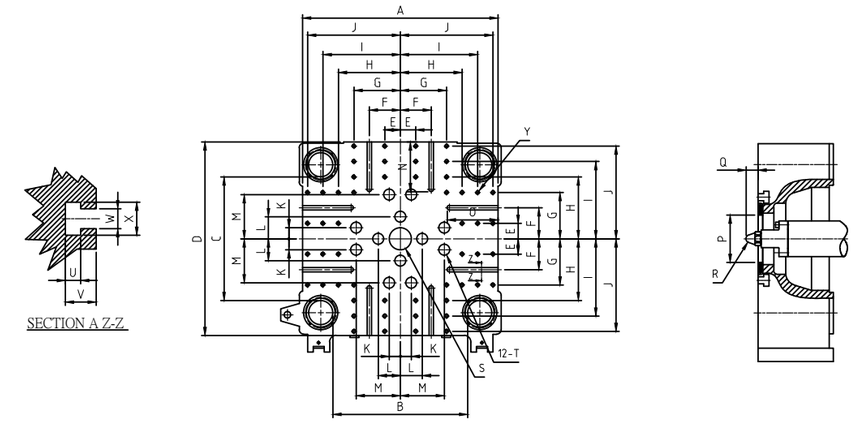
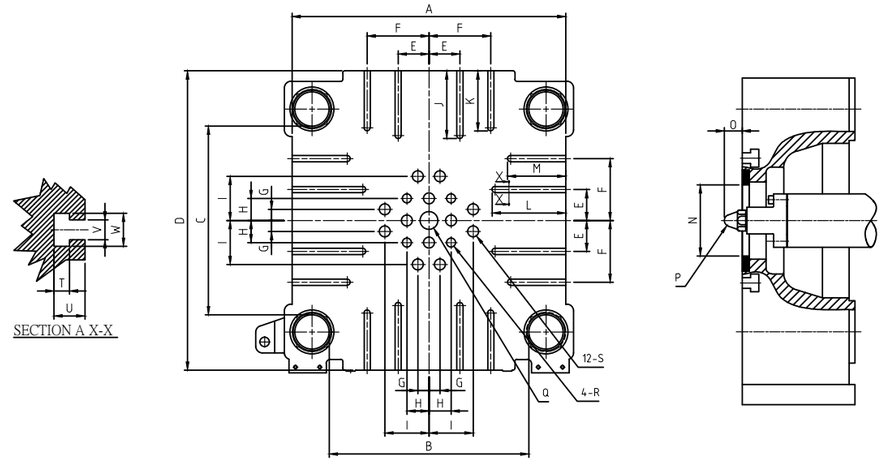
MOLD SIZE



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
TF080	3614	3225	1557	410	610	820	1863	835	641	190	1792	156		
TF100	4003	3430	1615	445	645	890	1893	840	820	200	1946	197		
TF120	4720	3982	1703	595	735	970	1945	1200	890	230	2130	270		
TF160	5093	4250	1789	633	812	1060	2045	1511	594	260	2355	374		
TF220	5858	4888	1838	680	836	1130	2101	1637	851	290	2630	450		
TF300	6375	5457	1957	757	908	1175	2132	1778	917	340	2858	481		
TF360	6925	5980	2026	813	989	1350	2172	1843	1092	380	3120	490		
TF420	7484	6514	2121	830	1030	1430	2222	2041	1110	410	3378	544		
TF520	8312	7637	2050	970	1070	1560	2293	2222	1217	440	3758	675	3269	4368
TF600	9720	8940	2271	1069	1093	1760	2426	2814	1231	470	4455	750	3895	5045



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
TF080	480	360	320	522	70	105	140	175	210		100			131	110	Φ120	30	R10	Φ80	Φ35	14	28	18	30	M12
TF100	540	410	360	572	70	105	140	175	210		100			146	130	Φ120	30	R10	Φ80	Φ35	14	28	18	30	M16
TF120	620	455	405	638	70	140	175	210	245		100			139	150	Φ120	30	R10	Φ80	Φ35	14	28	18	30	M16
TF160	660	510	460	710	70	140	175	210	280		100			154	164	Φ120	30	R10	Φ100	Φ35	14	28	18	30	M16
TF220	780	560	510	778	70	140	210	280	350		100			189	225	Φ120	30	R10	Φ100	Φ35	14	33	20	34	M18
TF300	885	610	560	877	70	140	210	280	350		50	100	200	225	230	Φ150	30	R10	Φ100	Φ50	14	33	20	34	M18
TF360	950	660	610	952	140	210	280	350	420		50	100	200	220	220	Φ150	30	R10	Φ100	Φ50	16	40	22	37	M20
TF420	1020	705	655	1032	140	210	280	350	420		50	100	200	260	260	Φ150	30	R10	Φ100	Φ50	16	40	22	37	M20
TF520	1115	805	755	1164	140	210	280	350	420	490	140	100	200	280	277	Φ150	30	R15	Φ100	Φ50	16	40	22	37	M20



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
TF600	1240	905	855	1356	140	280	50	100	200	307	272	334	264	Φ150	30	R15	Φ80	Φ40	Φ50	20	20	50	28	46