



LS Hybrid Injection Molding Machine



High energy efficiency | Greater productivity | High repeatability







LS Group

- Spun off from LG Group in 2003
- A leading company in the areas of industrial electricity and electronics, materials, machinery, components, and energy



History

A history of success based on endless efforts to become the best. LS Mtron's challenge to the future.



Compact hybrid injection molding machine

WIZ-T series (90/110/140/160/200/250/280/320/400)

Model WIZ-T is compact hybrid series of 2017 which is designed and produced by LS Mtron, it adopts high performance servo motor and KEBA controller, so it can reduce energy consumption and increase power-saving effect by providing optimized control to oil flow and pressure





Energy saving through controlling servo pump

Servo energy saving system

• 50~60% energy saving with closed loop control for rpm and pressure of servo motor & pump



Shortens dry cycle time and improves weight repeatability

2.5sec dry cycle time (WIZ 160T), machine performance improvement

- Quick response servo system
- Quick scan time controller
- · Optimization of hydraulic circuit
- Decreases movement shock

Improves mold open location repeatability (Deviation ±0.5mm)









High speed and precision IMM using quick response servo motor

- · Closed loop is a combination of quick response servo motor and pressure sensor
- Decreases the rate of defectives and ensures productivity by high molding repeatability
- Quick response speed (35ms) and movement change without shock



Acceleration reaction velocity (constant load condition)



(Pressure : 0 ~ 17.5mpa)

High stiffness and ultralight clamping unit

- Stable frame structure and improved fueling for durability
- 5-point toggle clamping unit for quick performance
- Adopts 'ultralight CENTER PRESS high stiffness platen' through FEA

Optimal design through FEA

• Deformability of platen and mold can be minimized by developing high stiffness and ultralight platen through Finite-Element Analysis





LS Mtron standard screw

Nordson Xaloy's pulsar screw is being applied as the standard screw, and a dedicated screw design is applied when customers require



Classification of Design Criteria

Туре		Main Features	Remarks	Screen Type	HRC1	Characteristic	
Standard	Pulsar	Dedicated to the Resin Sensitive to Shear Stress	PC, Rigid PVC, PPS etc.	Conorol		Pre Hardened Steel	
		Respond to General Purpose, General Crystalline / Amorphous Resin	ABS, PEEK, PET, SAN, PEI, PPO, HIPS, GPPS, PA+GF, PP+GF etc.	(No Electric)	30 ~ 24		
		For High Shear Stress, Crystalline Resin	LCP, PA, PBT, PEEK, HDPE, LDPE, LLDPE, PP, POM etc.			Alloy Tool Steel	
Dedicated		Optical PC Dedicated, Low Compression, Low Detention Time		Anti-Wear			
		TPU Dedicated Low Shear		(7,11)			
		PP+Long Glass Fiber Dedicated		Anti-Corrosion			
	S	(Possible to Use General PP, PC, ABS)	Carry Out a Design with Client Company's	Anti-Wear	56 ~ 60	Hi-Steel	
		Dedicated to Silicon	Requirements	(AWAC)			
		Dedicated to PA6 / 66	on a Single Type Design basis	Supor Anti		Powdorod Hi Stool	
		SAN / PETG (Dedicated to Cosmetics)		Corrosion Anti-		Particle Sintering	
	Mixing	PP / PE / PS High Mixing Dedicated Screw		Wear (SAWAC)		Special Steel	

LS Mtron special mixing screw (option)

Analyzes resin's melting, flow, additives' dispersion and roll mixing milling through PSI simulation in plasticization cylinder, we made high roll mixing milling/high plasticization LS Mixing screw, using screw design technology which LS Mtron only has



KTP Members: Interchange of technology with Europe's advanced companies

Germany Paderborn Univ. research institute KTP

- Europe's advanced IMM manufacturer and resin company registered as a member
- Designs and Analyzes screw for various resins through PSI simulation
- . LS Mtron is doing plasticization research as the only member of KTP in Asia

Spiral Maddock Mixer

· Spiral type mixer which doesn't interrupt resin's transfer Stably melts additives through shearing heating

Classification By Material

- Saving raw material cost by reducing additives usage - Additives usage could be reduced up to 50%
- 'Low back pressure, high RPM' condition for improving

Control System (KEBA Controller)

User Sequence changed : easy maintenance & flexible for user demand



Applies KEBA Controllers

Quick response and user interface reinforcement

- Easy to convert units
- Function to search data on molds
- Easy and various graphic functions
- Users can change the sequence of cycles
- Possible to communicate with peripheral devices and monitor them
- An easy-to-analyze cycle monitoring screen



- Possible to monitor I/O and turn On/Off the forced output on the touch screen
- Provides operation convenience for users by increasing the screen size Adds a memo function - possible to make an independent memo and
- linked to mold data

Hybrid Injection Molding Machine

WIZ-T Series

Major Specification

		WIZ90T			WIZ110T			1	WIZ140T		WIZ160T		WIZ200T			WIZ250T			WIZ280T			WIZ320T			WIZ400T			
INJECTION UNIT																						·			·			
Injection Unit		i2.2			i3.2		i4.8		i6.7		i9.6		i9.6		i13.5			i13.5			i17.2							
Screw code		Y	A	В	Y	А	В	Y	А	В	Y	А	В	Y	A	В	Y	A	В	Y	А	В	Y	А	В	Y	А	В
Screw diameter	mm	28	32	36	32	36	40	36	40	45	40	45	50	45	50	55	45	50	55	50	55	60	50	55	60	55	60	65
Injection Capacity Calculate	ed cm ³	88	115	146	130	165	204	204	251	318	279	353	436	394	487	589	394	487	589	599	725	862	599	725	862	784	933	1095
Injection Capacity (PS)	g	81	106	134	120	152	187	187	231	293	257	325	401	363	448	542	363	448	542	551	667	793	551	667	793	721	858	1007
Injection pressure	kg/cm ²	2480	1898	1500	2492	1969	1595	2370	1920	1517	2405	1900	1539	2430	1968	1626	2430	1968	1626	2253	1862	1564	2253	1862	1564	2190	1840	1568
Injection rate	cm ³ /s	85	111	141	106	134	166	111	138	174	138	175	216	174	215	260	174	215	260	234	284	338	234	284	338	241	287	337
Plasticizing Capacity (PS)	kg/hr	64	87	114	80	102	134	92	115	155	116	147	193	119	147	188	119	147	188	161	197	247	161	197	247	163	196	250
Injection speed mn		138			132		109		110		109		109		119			119			101							
Max screw speed	rpm	380			340			290		275		210			210			220			220			175				
CLAMPING UNIT																												
Clamping force	ton	90			110			140		160		200		250			280			320			400					
Distance between Tie-bars mm			360 x 360			410 x 410			460 x 460		480 x 480		530 x 530		580 x 580			630 x 630			680 x 680			730 x 730				
Die Plate Dimension mm			540 x 540			605 x 605			670 x 665			710 x 710		790 x 790		870 x 870			930 x 930			1030 x 1030			1100 x 1100			
Clamping Stroke mm			320			350			380			435		495		540			590			660			720			
Daylight mm		670			765			860			955		1025		1110			1235			1380			1500				
Minimum Mold Thickness mm			140		150			160			180		200		200			200			250			250				
Maximum Mold Thickness mm		350		415		480			520		530		570			645			720			780						
Ejector Force ton			3			3.8		5		5		7		7			7			7			11					
Ejector Stroke mm			90		100			120			135			140		150			150			160			190			
OTHER																												
Max pump pressure	kg/cm ²	160		160		160		160		160		160			160			160			160							
Utilized Oil Quantity			180		200		265		300		300			380			390			680			770					
Motor power kW		11.6		17.6		17.6		23		29		29		39.4			39.4			39.4								
Heating power	kW	5	.5	6.2	6	.2	6.8	9.	7	10.9	10	.9	12.1	12	.8	14	12	2.8	14	16	5.1	17.7	16	.1	17.7	17	.7	19.3
Machine Dimension	m	3.8	1 x 1.19 x	1.70	4.15 x 1.12 x 2.00		2.00	4.51 x 1.16 x 1.87		5.20 x 1.30 x 1.80		1.80	5.22 x 1.60 x 2.21		5.82 x 1.60 x 2.24			6.11 x 1.81 x 2.41			7.08 x 1.99 x 2.38			7.56 x 2.00 x 2.52				
Net weight to		2.9			3.4				4		5.6			6.4			7.5			8.8			12.8			15.4		

Note

Injection capacity calculated : Screw Area x Screw Stroke.
Clamping system is double 5-point toggle structures.
The maximum injection and holding pressures are maximum pressure that can be set on the machine. Actual setting pressure will be restricted by molding condition and cycle time.
The maximum injection rate and speed are calculated values. Actual injection rate and speed will be restricted by an injection pressure.
The mold size should be bigger than 60% of the Tie-bar distance. (HxV)
Due to continuous improvements, specifications are subject to change without notice.
Plasticization actual ability can be different with theory value.









Realization of precision molding with Cutting edge technology system



High energy efficiency, Greater productivity, Leakage prevention It is **WIZ-T**





Overseas Sales Head Office

7F, LS Mtron Hi–Tech Center, 39, LS–ro 116beon–gil, Dongan–gu, Anyang–Si, Gyeonggi–Do, 14118, Korea Tel: 82–31–8045–9758

USA Sales Head Office 6670 Jones Mill Ct, Suite:G Norcross ,GA 30092 Tel : 678–395–4389 , 770–674–7446 Fax : 770–696–5361

LS Machinery CHINA

LS Industrial Park, Lexing Road, National High-tech Industrial development Zone, Wuxi, Jiangsu 214028 CN Tel: 86–510–8299–3877

 PT. LS Mtron Machinery INDONESIA
 Jl.Samsung 2 Blok D3A Jababeka UKM Center Segitiga Emas, Cikarang Utara, Bekasi 17550
 Tel: 62–812–1812–4819 Email: Is,indonesia@Ismtron.com

LS Mtron BRASIL

Rua Doutor Melo Nogueira, 105 – Sala 715, Vila Baruel–São Paulo–SP–Brazil, 02510–040 Tel: 55–11–5052–1052

LS Mtron POLAND

ul, Legnicka 17/7, 53-671 Wrcolaw Poland Tel: 48-71-349-77-58