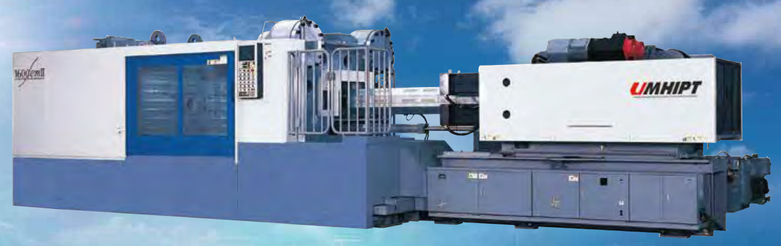
Meeting the Needs of a New Generation and Shaping the Future



1600emII

Systems pictured in this brochure include optional equipment.

emII Series Specifications

	Item		Unit	1050emII		1300emII		1600emII		2000emII		2500emII	3000emII	3500emII
				100	160	160	240	160	240	240	340	340	470	
Injection Unit	Screw diameter		mm	90	105	105	120	105	120	120	135	135	150	
	Theoretical injection volume		cm^3	2860	4540	4540	6780	4540	6780	6780	9660	9660	13200	
	Injection shot mass	Polystyrene (PS)	g	2630	4180	4180	6240	4180	6240	6240	8890	8890	12100	
		Polyethylene (PE)		2120	3360	3360	5020	3360	5020	5020	7150	7150	9770	
	Max. injection pressure		MPa (kgf/cm^2)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	177 (1800)	
	Max injection hold pressure		MPa (kgf/cm^2)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	147 (1500)	
	Injection rate		cm^3/sec	1015	1385	1385	1415	1385	1415	1415	1790	1790	2030	
	Plasticizing capacity	Polystyrene (PS)	kg/hr	470	630	630	785	630	785	785	1010	1010	—	
		Polypropylene (PP)		—	—	—	475	—	475	475	610	610	1000	
	Screw speed		rpm	160	152	152	138	152	138	138	132	132	167	
	Injection power		kW (PS)	180 (245)	244 (332)	244 (332)	250 (340)	244 (332)	250 (340)	250 (340)	316 (429)	316 (429)	359 (488)	
	Injection speed		mm/s	160	160	160	125	160	125	125	125	125	115	
	Nozzle touch force		kN (tf)	59 (6.0)	59 (6.0)	59 (6.0)	59 (6.0)	59 (6.0)	59 (6.0)	59 (6.0)	98 (10.0)	98 (10.0)	98 (10.0)	
	Screw L/D		—	22	22	22	22	22	22	22	22	22	22	
Clamp Unit	Max. mould clamping force		kN (tf)	10290 (1050)		12749 (1300)		15691 (1600)		19613 (2000)		24517 (2500)	29420 (3000)	34320 (3500)
	Mould opening force		kN (tf)	608 (62)		785 (80)		971 (99)		1549 (158)		1549 (158)	1824 (186)	
	Mould opening and closing speed		m/min	50		50		60		60		55	50	
	Platen size (H×V)		mm	1900×1900		2000×2000		2500×2000		2500×2250		2550×2300	3200×2500	
	Clearance between tie-bar (H×V)		mm	1300×1300		1450×1400		1850×1520		1850×1650		2000×1650	2050×1900	
	Max. clamp stroke		mm	1750		1850		2400		2400		2700	2700	
	Max. daylight		mm	2250		2500		3200		3200		3500	3700	
	Mould thickness		mm	500～1100		650～1300		800～1500		800～1500		800～1700	1000～1900	
	Ejector	Force	kN (tf)	198 (20.2)		294 (30.0)		294 (30.0)		294 (30.0)		392 (40.0)	392 (40.0)	
		Stroke	mm	200		250		250		250		350	350	
		Speed	m/min	12.6		15		15		15		12.5	12.5	
	Max. mould weight		t	14		20		25		30		30	30	
General	Heater capacity		kW	33.7	47.5	47.6	53.6	47.6	53.6	53.6	68.4	68.4	84.9	
	Overall dimensions (L×W×H)		m	10.3×3.2×2.9	10.3×3.2×2.9	11.2×3.5×3.2	11.9×3.5×3.2	12.3×3.9×3.3	12.5×3.9×3.3	12.7×4.0×3.4	13.3×4.3×3.4	13.7×4.5×3.6	15.2×4.8×4.0	
	Machine weight		t	51	53	68	72	83	88	105	118	136	183	

Standard specification

[Injection unit]
1. UB screw
2. Screw cylinder
3. Nozzle
4. Screw cylinder cover
5. Screw unit swivel device
6. Auto melt decompress
7. Manual melt decompress
8. Sprue break circuit
9. Manual injection unit
10. Screw back pressure circuit
11. Screw cold start prevention circuit
12. Automatic color change circuit (Jet purge circuit)
13. Cylinder jacket cooling circuit
14. Safety cover on injection unit
15. Auto. lubrication system to injection unit
16. Plasticizing mould open/close lap circuit
17. Screw position indicator
18. Purging cover

[Clamp unit]
1. Mould setting operation circuit
2. Mould protection circuit with try again
3. Ejector
4. Take out robot interface
5. Automatic mould thickness adjusting system
6. Front safety door
7. Rear door
8. Tapping fabrication for take out robot
9. Locating ring for mould alignment
10. Platen support device
11. Ejector retraction waiting circuit
12. Auto. lubrication system to clamp unit
13. Mechanical safety device
14. Hydraulic core pull device (2 systems)
15. Safety mat
16. Center press platen (3000/3500emII)

[Hydraulic unit]
1. Pump system (Energy saving type)
2. Hydraulic oil filtration device
3. Solenoid valve with indicator
4. Hyd. oil temperature display
5. Hyd. oil level decreasing alarm unit
6. Hyd. oil heat up circuit
7. Hyd. oil temperature controller

[Electric unit]
1. MAC-VIII$^+$ control device
2. Presetting circuit for next moulding condition
3. Setting value change prevention circuit
4. Nozzle heater controller (1 zone)
5. Cylinder heater controller (4 zones)
6. Pushbutton switch for emergency stop
7. Running hour meter
8. Alarm buzzer
9. Alarm for battery exchange
10. Cycle start switch

[Control unit]
1. Auto. memory of moulding conditions (Internal memory type for 64 moulds)
2. Injection speed and pressure programed control (6 stages for speed and 9 stages for pressure)
3. Holding pressure switch control
4. Screw rotation control (3 stages)
5. Screw back pressure control (3-point folded-line)
6. Injection holding pressure ramp control
7. Nozzle/cylinder temperature PID control
8. Mould opening/closing speed programed control
9. Ejector programed control
10. 2-step clamping injection system
11. Safety interlock for PL compliant
12. International system of units (SI) display

[Screen]
1. Setting value display screen
2. Injection support function (Easy setting of conditions)
3. Machine operating status display

[General]
1. Specifically dedicated tools
2. Spare parts (fuses, lamps, grease cartridge)
3. Ejector rods
4. Instruction manual, drawings

Optional Specifications

[Injection unit]
1. MD type UB screw
2. MF type UB screw
3. Anti-abrasive, anti-corrosive screw
4. Anti-abrasive, anti-corrosive screw cylinder
5. Extension nozzle
6. Cylinder blower cooling unit
7. Hopper
8. Hydraulic shut-off nozzle
9. Ceramic heater bands
10. Flow meter of cylinder jacket
11. Temperature control of feed throat wafer jacket
12. Screw rotation torque up

[Clamp unit]
1. Locating ring for easy alignment of mould
2. Automatic opening and closing device for front safety door
3. Automatic opening and closing device for rear door
4. Air ejector device
5. Hydraulic core pull device (4 systems)
6. Air core pull device
7. Piping for mould cooling water
8. T-slotted platens
9. Lifting device inside platens
10. Confirmation circuit of in-mould-ejector refraction
11. Rotating core circuit
12. Mould alignment V-block
13. Ejector and core pull motion no-link to clamp motion
14. Interface for mould clamper
15. Mould changer interface
16. Gate valve device
17. Gate cut circuit
18. Magnetic filter (for eco-servo-pump system)
19. Center press platen (2500emII)

[Electrical unit]
1. Heater burn-out detector
2. Outlet circuit
3. Printer with interface
4. Patrol light
5. Recording jack
6. Heater subset control
7. Automatic cycle stop circuit
8. Link memory with take-out robot
9. Material feeding stop signal
10. Insert circuit
11. Unmanned operation circuit
12. Case change circuit
13. Automatic heat up circuit
14. Quality judging circuit
15. External signal output circuit

[Control unit]
1. Holding pressure change over control (mould internal pressure/external signal)
2. External memory (128 moulds, USB memory device)
3. Shot step circuit
4. Auto. momery of temperature (mould, cylinder jacket)
5. Hot runner temperature control
6. Foreign language
7. MOLD24i
8. Web MAC
9. packet MAC
10. SCS circuit
11. Screenshot

[General]
1. Machine color option
2. Spare parts for 2 years
3. Tools
4. Spare grease cartridge

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Specifications are subject to change without prior notice.

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U-MHIPT ELECTRIC INJECTION MOULDING MACHINES

emII SERIES

1050/1300/1600/2000/2500/3000/3500

U-MHI PLATECH

As of August 1st, 2020, U-MHI Platech Co., Ltd. have merged as UBE Machinery Co., Ltd.

The Standard for a New Generation

The new and improved *em*II series.
Offering stronger performance and better environmental characteristics than its highly regarded predecessor, the *em* series.
With major upgrades to most of the *em*-series components and mechanisms, the *em*II series offers upgrades in both quality and performance.

Compact, Faster, and Environmentally Conscious

- ●Two-platen clamping mechanism — Compact, Faster, and Highly Precise
- ●Eco-servo-pump — Lower energy usage; lower CO_2 emissions
- ●Direct-drive injection — Ideal for thin-wall moulding
- ●UB Screw — Lower material costs
- ●MAC-VIII+ — User friendly, Easy to operate

ELECTRIC INJECTION MOULDING MACHINES
1050/1300/1600/2000/2500/3000/3500
emII SERIES

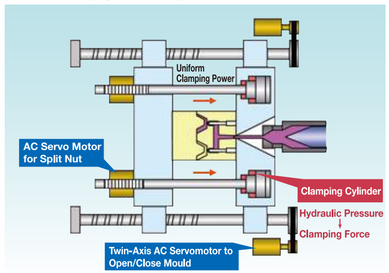
Meeting the Needs of a New Generation and Shaping the Future

High Speed, High Precision, Small Footprint

Two-Platen Clamping Mechanism

- ●Featuring a short 2-platen clamping mechanism, the machine's dimensions allow for an efficient factory layout.
- ●Four-point clamping design maintains precision over the long term, extending the life cycle of your moulds. This design works very well even with offset moulds and single moulding.
- ●Dual controlled ball screws provide synchronously driven, highly responsive mould opening and closing motions.
- ●AC servomotor driven tie-bar split nuts operate at high speed. Simultaneous actuation of the four split nuts keeps cycle time to a minimum.
- ●Mould open/close dry cycle reduced by 20% (compared with U-MHIPT hydraulic models).
- ●Built-in hydraulic power unit features large-capacity supply and reduces core actuation time.

[2-Platen Clamping Mechanism]

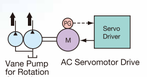


Additional Energy Savings and Reduced CO_2 Emissions

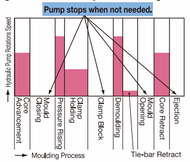
Eco-Servo-Pump System

- ●Built-in eco-servo-pump system uses a rotation-controlled vane pump with AC servomotor drive.
- ●Designed to achieve energy savings for each set of operating conditions through highly precise and extremely responsive pump rotation control. The pump system can be stopped when hydraulic operation is not needed.

[System Concept]



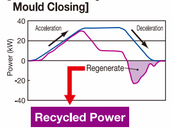
[Pattern of Pump Actuation]



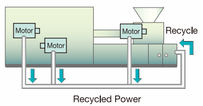
Power Recycling System

- ●The motor operates as a generator during deceleration (braking), sending power back to the power source.

[Power Use during Mould Closing]



[Power Recycling System]

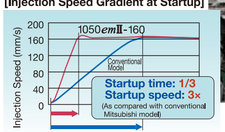


Ideal for Thin-Wall Moulding

Direct-Drive Injection Mechanism

- ●Direct-drive mechanism uses Mitsubishi Heavy Industries original high-torque, low-rev AC servomotor. (Synchronous drive through control of 2 or 4 ball screws.)
- ●Top-class high-speed injection startup. Ideal for thin-wall moulding. (Speed response is on a par with high-speed hydraulic servo valve systems.)

[Injection Speed Gradient at Startup]

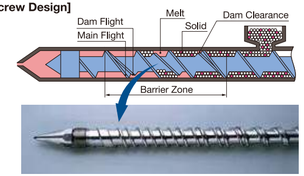


Lower Material Costs

UB Screw

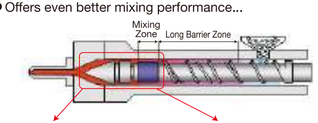
- ●Our original screw design features long barrier zone and dam configuration for separation of the melted and solid resin. The design offers superlative and energy-efficient kneading and plasticizing performance.
- ●Solid-free plasticizing enables high-multiple master batch moulding and significantly expands the range of usable colorants—contributing to lower overall material costs.

[Screw Design]



Super Mixing Screw (option)

- ●Offers even better mixing performance...



MD (multi-dam) UB Screw

Polygonal multi-dam configuration delivers excellent shearing and separation of unmelted resin.

MF (multi-finned) UB Screw

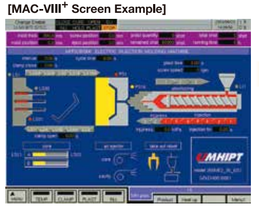
Optimally designed Dulmadge-type tip delivers efficient dispersion of melted resin.

Easy Operation

New MAC-VIII+ Control Unit

- ●Easy input for setup data.
- ●Full range of screens to support moulding and maintenance functions.
- ●Direct touch-screen operation does not require any cursor manipulation. All screens show alarm information and current processing stage, and offer easy switching to other main pages.

[MAC-VIII+ Screen Example]



[Display of Screen Image Saved to USB Memory]

- ●MAC-VIII+ screens may be saved as image files into USB memory and then loaded into a computer for further editing. (Optional feature)