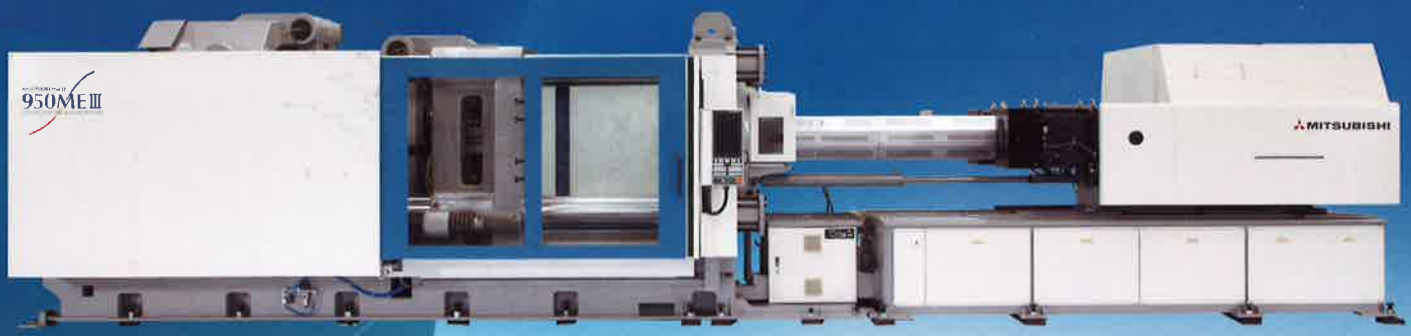


MITSUBISHI

ELECTRIC INJECTION MOLDING MACHINES

MEIII SERIES

610/720/950/950W

MITSUBISHI HEAVY INDUSTRIES
PLASTIC TECHNOLOGY CO., LTD.

Evolved to lead the next generation

The Mitsubishi Electric Injection Molding Machine "MEIII series" has added wide platen specs for the new lineup and is equipped with new MAC-IX controller.
The MEIII provides high reliability and takes advantage of the latest in integrated technology by Mitsubishi.

- New MAC-IX Controller
- Fast-respone, high-powered injection, dedicated DD Motor
- High rigidity wide platen
- Highly reliable ball screw
- Varied screw line-up
- Electric regeneration system

MITSUBISHI
MEIII SERIES
ELECTRIC INJECTION MOLDING MACHINE

610/720/950/950W

N M O L D I N G M A C H I N E

950MEIII

※The pictures shown in this catalog include optional equipment.

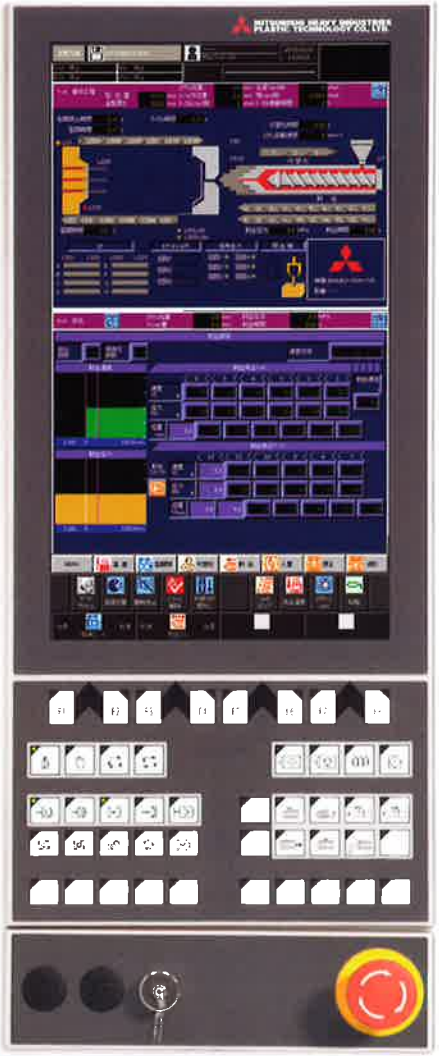
Machine line-up of MEIIIseries

Clump unit	Injection unit	Injection unit (in)	Injection speed (in/sec)
	For large capacity injection		
Renewed wide platen machine NEW 950MEIIIW	NEW 200DD	Standard ϕ4.53	6.3 (H spec.)
950MEIII	160DD	Standard ϕ4.13	6.3 (H spec.)
		Increased pressure ϕ3.54	
720MEIII	100DD	Standard ϕ3.54	6.3 (H spec.)
		Increased pressure ϕ3.15	4.9 (S spec.)
610MEIII	70DD	Standard ϕ3.15	6.3 (H spec.)
		Increased pressure ϕ2.76	4.9 (S spec.)
	50DD	Standard ϕ2.76	9.8 (U spec.)
			6.3 (H spec.)
		Increased pressure ϕ2.44	4.9 (S spec.)

The new and improved MAC-IX Controller

950ME III

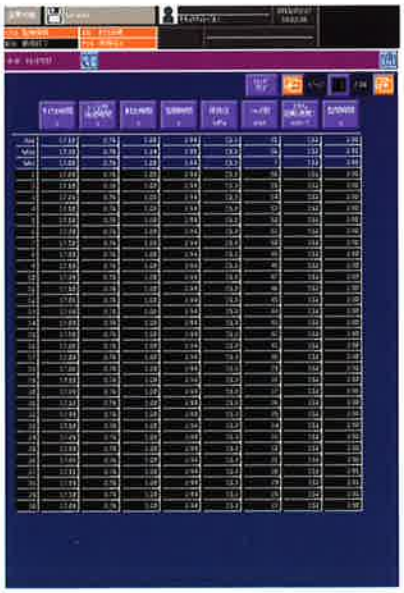
■Exceptional operability with two separate screens implemented in 15.6 inch large screens.
■An upgraded security funtion that uses ID card authentication is equipped as standard.
■Stable molding by high-speed control that is six times that of a conventional system



Separated dual-screen control panel

Upgraded Operability

- **Pivoting mechanism, two separate large LCD screens**
  Two screens are selectable as you choose, and allows for an unprecedented user-friendly operation environment.
- **Injection waveform memory**
  Comparable to good item's waveform, and helpful for good producing.
- **Vertically long screen**
  Long, vertical screens can display twice the trend data compared to a conventional system.



30shot-trend data is displayed by long screen layout.

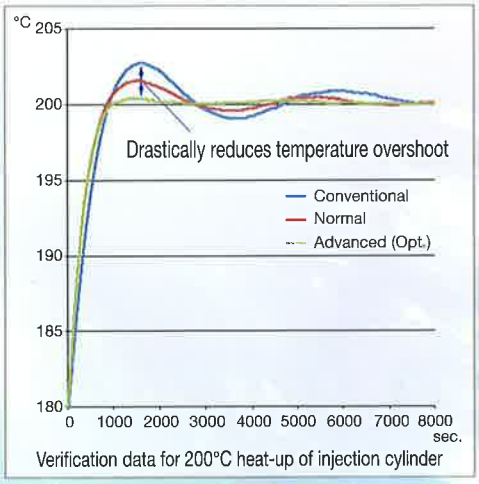
Injection conditions can be changed while reviewing process records

High speed, Highly accurate Control

- **Shortened scan time**
  Scan time is shortened to a sixth of a conventional system by using EtherCAT®
  High-speed communication which provides for stable weight of the molded product.
- **Highly accurate pressure control**
  Highly accurate control of Injection and back pressures is achieved by digitized injection pressure sensing circuit.
- **16 stages of injection profile**
  The injection profile is settable in up to 16 stages which allows for a more detailed profile setting and enhances the product quality.
- **Mitsubishi Rapid Convergent Temperature Control**
  The temperature variation is reduced by a unique control algorithm.
- **The Mitsubishi Rapid Convergent Temperature Control advanced is an optional feature (patent-pending)**
  By acquiring the heat-up data, the controller achieves the shortest heat-up time with no overshoot in temperature

※EtherCAT® is a registered trademark of Beckhoff Automation GmbH.

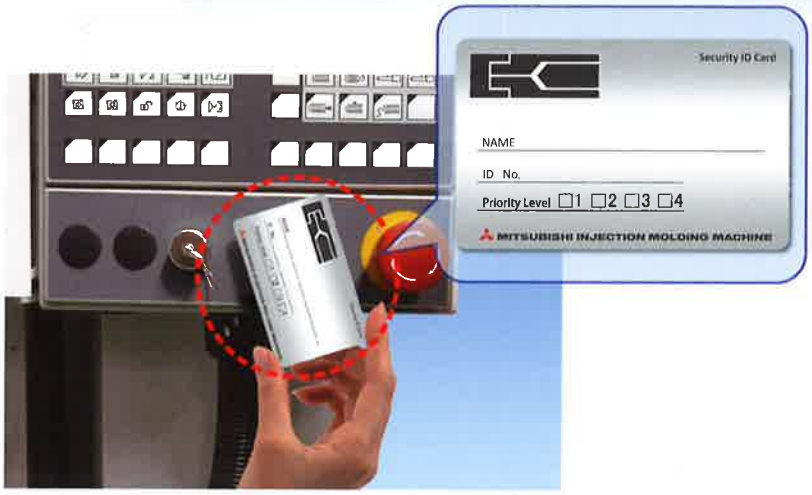
Verification data of Mitsubishi Rapid Convergent Temperature Control advance



Verification data for 200°C heat-up of injection cylinder

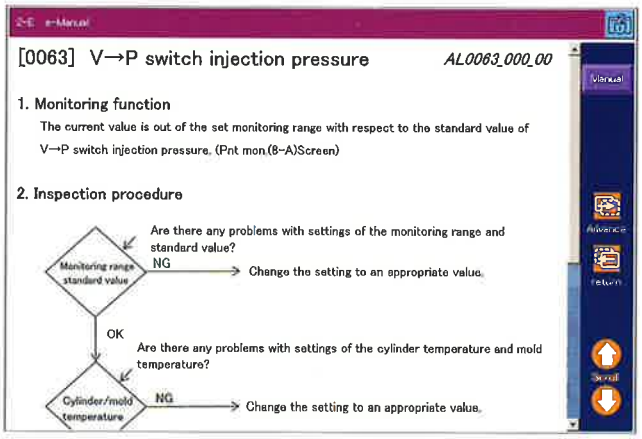
Upgraded Security Function

- **Security ID Card System**
  Login by ID card which can be assigned to an operator.
  Automatic change of languages and units
  Prevention of password loss
- **Traceability management**
  Operator's information is added to the operational/setting records
- **Control of operator access**
  4 levels of access can be set for each operator.



User Support Function

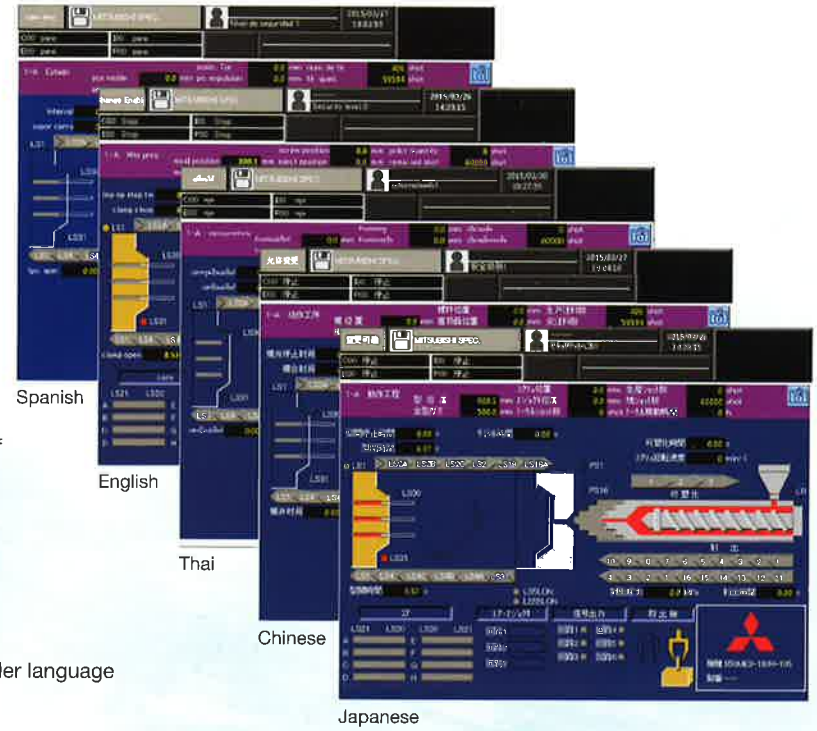
- **Alarm guidence**
  Actions for alarm resolution by using a flow chart which can be restored easily.
  Easy identification of faults by improved alarm messages
- **Fault record function**
  Input-output data both pre and post trouble is automatically stored to a large-capacity HDD, and helps to reduce the time for troubleshooting.
- **e-manual**
  The machine manual is available for viewing on screen



Alarm guidence on screen

Global Reliability

- **An uninterruptable power supply (UPS) is standard equipment**
  Prevents trouble caused by voltage drop or brownout, even in areas having an unstable electric power supply
  Data can be safely backed-up in case of power outage
- **A surge suppressor is standard equipment**
  Protects the control system from lightning strikes
- **Multi-language selection**
  The standard languages available are Japanese, English, Chinese, Spanish, and Thai (new addition).
  Eight other languages are available as an option.
  A maximum of three languages is selectable from a total of 13 languages.
- **Pictographic switches (ISO-compliant)**
  Easy to operate by pictographic switches
- **Various International Standard compliance**
  Complies with JIMS, ANSI, EN, GB, and KCS standards.
- **IEC 61131-3-compliant ladder**
  The operation sequence is created by global standard ladder language

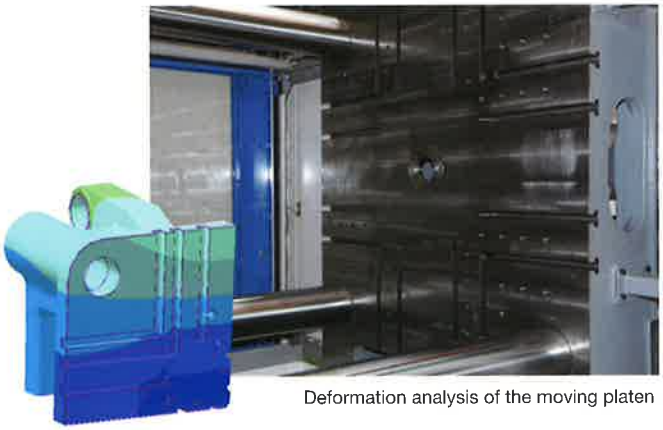


Spanish
English
Thai
Chinese
Japanese

High rigidity wide platen

Platen design is optimized for high rigidity

A new 850MEIIIW model is added to the lineup, and a the 650MEIII is standarized with a wide platen



Deformation analysis of the moving platen

High-respone, high-powered injection, dedicated DD Motor

Featuring high-powered AC servo motors developed with Mitsubishi's power electronic technology specifically for injection molding applications

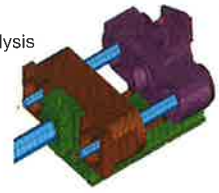
The DD (Direct Drive) mechanism directly connects the injection drive ball screw and the motor, making thin-wall molding possible by low inertia, highly responsive, and high acceleration/deceleration performance. Maintenance costs are reduced by the beltless mechanism, and thick-wall molding, which needs longer holding pressure times is also possible. The benefits of the DD System are useful for a broad range of process conditions.

DD (Direct Drive) Motor

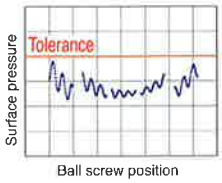
Highly reliable ball screw

The estimated ball screw service life is based on long-term endurance testing developed by Mitsubishi.
The surface pressure testing system and Mitsubishi's unique overall structural analysis methods ensure long ball screw service life and lower maintenance cost.

Structual analysis



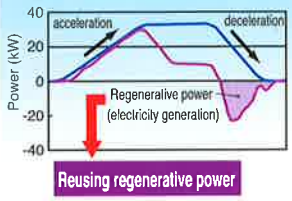
<Ball screw surface pressure distribution>



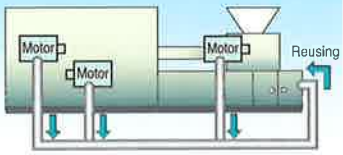
Electric regeneration system

During the braking phase of motion, the motors act as a generators, and the generated power is converted to electric power for reuse by the system.

<Power waveform during clamping>



<Electric regeneration system>

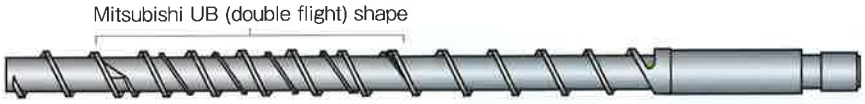


Power regenerating

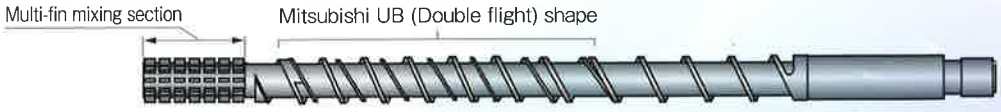
Variety of screw sizes available

The highly regarded UB screw with outstanding mixing and plasticizing capacity properties is standard equipment.
Various screw designs tailored to the wide-ranging needs of the industry are also available.

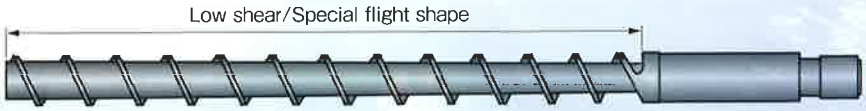
For high-cycle, general-purpose,
「UB screw」(Standard equipment)



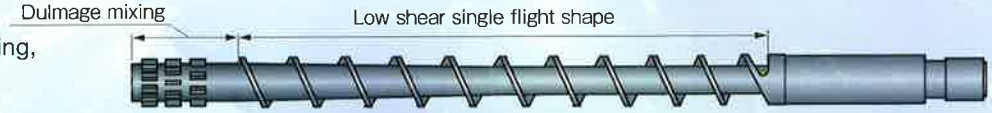
For super-high color mixing,
「MF-UB screw」(Optional)



For Long fiber Thermoplastics,
「LFT screw」(Optional)



For low shear, low heat generating,
「F screw」(Optional)

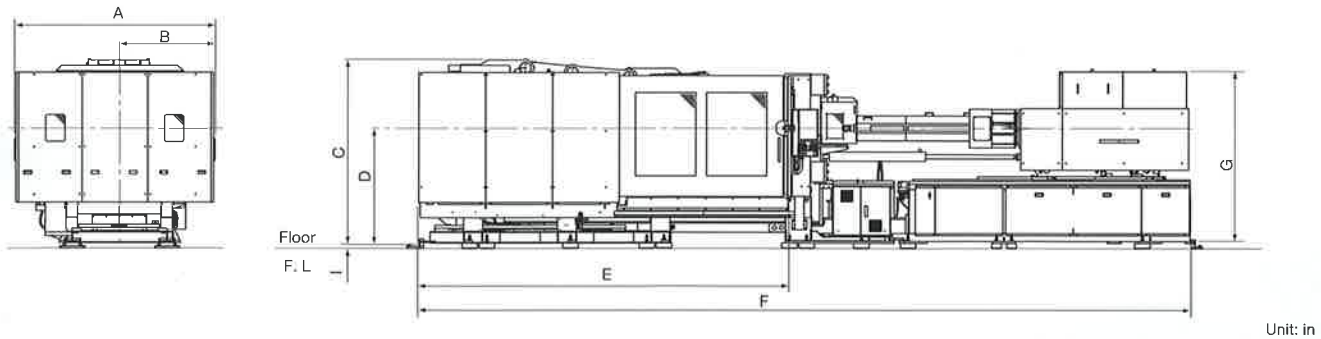


Machine specifications

Model			610MEIII						720MEIII							950MEIII					950MEIII W				
Injection unit size			50		70		100		70		100		160		200	100		160		200	100		160		200
			Increase Pressure	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Standard	Increase Pressure	Standard	Increase Pressure	Standard	Standard
Injection Unit	Screw Diameter	inch	2.44	2.76	2.76	3.15	3.15	3.54	2.76	3.15	3.15	3.54	3.54	4.13	4.53	3.15	3.54	3.54	4.13	4.53	3.15	3.54	3.54	4.13	4.53
	Theoretical Injection Volume	cu. in	64.4	82.1	94.0	122.7	137.9	174.5	94.0	122.7	137.9	174.5	203.8	227.0	332.6	137.9	174.5	203.8	227.0	332.6	137.9	174.5	203.8	227.0	332.6
	Injection Shot Mass (PS)	oz	34.2	43.7	49.7	65.1	73.4	92.8	49.7	65.1	73.4	92.8	108.3	147.4	176.7	73.4	92.8	108.3	147.4	176.7	73.4	92.8	108.3	147.4	176.7
	Injection Shot Mass (PP)	oz	27.5	35.1	40.2	52.6	58.9	74.8	40.2	52.6	58.9	74.8	87.1	118.5	142.2	58.9	74.8	87.1	118.5	142.2	58.9	74.8	87.1	118.5	142.2
	Max. injection Pressure	psi	29880	25670	29880	25670	29880	25670	29880	25670	29880	25670	29880	25670	21320	29880	25670	29880	25670	21320	29880	25670	29880	25670	21320
	Max. Holding Pressure	psi	25670	21320	25670	21320	25670	21320	25670	21320	25670	21320	25670	21320	17840	25670	21320	25670	21320	17840	25670	21320	25670	21320	17840
	Injection Rate Standard (S) 125mm/sec	cu. in/sec	22.88	29.29	29.29	38.44	38.44	48.51	29.29	38.44	38.44	48.51	61.94	84.52	101	38.44	48.51	61.94	84.52	101	38.44	48.51	61.94	84.52	101
	Injection Rate High Speed (H) 160mm/sec	cu. in/sec	29.60	37.53	37.53	49.12	49.12	61.94	37.53	49.12	49.12	61.94	-	-	-	49.12	61.94	-	-	-	49.12	61.94	-	-	-
	Injection Rate Super High Speed (U) 250mm/sec	cu. in/sec	46.07	58.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Plasticizing Capacity (PS)	lbs/hr	397	551	507	705	772	1036	507	705	772	1036	981	1389	1345	772	1036	981	1389	1345	772	1036	981	1389	1345
	Plasticizing Capacity (PP)	lbs/hr	231	331	298	419	463	628	298	419	463	628	595	838	816	463	628	595	838	816	463	628	595	838	816
	Screw Speed	rpm	210	210	200	200	160	160	200	200	160	160	152	152	113	160	160	152	152	113	160	160	152	152	113
Clamp Unit	Mold Clamping Force	US tonf	605						715							935					935				
	Platen Size (HxV)	inch	52.36x52.36						60.24x55.51							62.60x62.60					74.80x74.80				
	Clearance Between Tie Bars (HxV)	inch	35.43x35.43						42.13x38.19							42.13x42.13					51.97x51.97				
	Max. Clamp Stroke	inch	35.43						39.37							47.24					47.24				
	Max. Daylight	inch	66.93						78.74							90.55					90.55				
	Mold Thickness	inch	31.50 (Max.) 15.75 (Min.)						39.37 (Max.) 15.75 (Min.)							43.31 (Max.) 19.69 (Min.)					43.31 (Max.) 19.69 (Min.)				
	Ejector Ejector Force	US tonf	14.3						22.0							22.0					22.0				
	Ejector Ejector Stroke	inch	7.09						7.87							7.87					7.87				
General	Heater Capacity	kW	17.2		24.7		31.1		24.7		31.1		43.9		-	31.1		43.9		-	31.1		43.9		-
	Overall Dimension (LxWxH)	ft	27.9x7.5 x7.2		28.9x7.5 x7.2		31.5x7.5 x7.5		30.8x8.5 x7.9		33.5x8.5 x7.9		35.1x8.5 x7.9		35.8x8.5 x7.9	35.8x8.5 x8.5		37.4x8.5 x8.5		38.1x8.5 x8.5	35.8x9.5 x8.5		37.4x9.5 x8.5		38.1x9.5 x8.5
	Weight	lb	64000		68400		77200		79400		88200		97000		97000	110200		116900		116900	121300		130100		130100

Note: 1. Above values are subject to change due to modification without prior notice. 2. The Value of plasticizing capacity are taken form the company's standard testing conditions.
3. Injection weight, Injection rate, and plasticizing capacity are depending on the used resin and molding conditions.

External dimensions of machine



Unit: in

Model	A	B	C	D	E	F	G	I
610MEIII-50	90.39	44.21	88.39	55.12	165.35	333.07	79.21	2.76
610MEIII-70	90.39	44.21	88.39	55.12	165.35	346.42	83.15	2.76
610MEIII-100	90.39	44.21	92.32	59.06	165.35	376.73	89.65	2.76
720MEIII-70	103.27	49.13	94.68	59.06	189.02	370.12	87.09	2.76
720MEIII-100	103.27	49.13	94.68	59.06	189.02	400.43	89.65	2.76
720MEIII-160	103.27	49.13	94.68	59.06	189.02	422.09	91.81	2.76
720MEIII-200	103.27	49.13	94.68	59.06	189.02	430.75	91.81	2.76
950MEIII-100	103.27	49.13	102.76	59.06	216.34	427.76	89.65	2.76
950MEIII-160	103.27	49.13	102.76	59.06	216.34	449.41	91.81	2.76
950MEIII-200	103.27	49.13	102.76	59.06	216.34	458.07	91.42	2.76
950MEIIIW-100	115.47	55.24	102.76	59.06	216.34	427.76	89.65	2.76
950MEIIIW-160	115.47	55.24	102.76	59.06	216.34	449.41	91.42	2.76
950MEIIIW-200	115.47	55.24	102.76	59.06	216.34	458.07	91.42	2.76

MITSUBISHI ELECTRIC INJECTION MOLDING MACHINES

MITSUBISHI ME III SERIES
ELECTRIC INJECTION MOLDING MACHINE

Standard Specification

[Injection Unit]

1. Injection system
2. UB screw
3. Check ring
4. Barrel
5. Nozzle
6. Heater/Control
   - and heater
   - SSR control
   - Temperature monitoring function
   - Mitsubishi Rapid Convergent Temperature Control
7. Injection control
   - Inj. speed programmed control (1-16 stages)
   - Inj. pressure programmed control (1-4 stages)
   - Inj. holding pressure switching control (position, time, or pressure)
   - Inj. holding pressure slope control
8. Screw rotation speed programmed control (3stages)
9. Screw back pressure control (3stages)
10. Melt decompression circuit (after injection, after plasticizing)
11. Nozzle advance/retract control
    - Injection unit swivel device
    - Sprue break circuit (timer system)
12. Cylinder jacket cooling circuit
13. Trial molding circuit (manual injection circuit)
14. Auto.color change circuit (Jet purge circuit)
15. Hot runner purge circuit (color change circuit for mold)
16. Screw cold start prevention circuit
17. Shot step circuit
18. Plasticizing mold opening and closing lap circuit
19. Screw indicator
20. Automatic lubrication device (Injection side)
21. Barrel cover
22. Purge cover

[Clamp Unit]

1. Clamp system
2. Ejector device
3. Automatic mold thickness adjusting device
4. Mold close-open control
   - Mold setting operation circuit
   - Mold close-open speed programmed control (4stage for opening, 4stage for closing)
   - Mold close-open automatic deceleration circuit
   - Mold protection circuit
   - Link motion of ejector and core pull with mold motion
5. Ejector control
   - Ejector programmed control (2stage, Max. 8times ejection)
   - Ejector block circuit (w/motor break)
   - Ejector on fly (at any mold opening position)
   - Ejector retract wait motion
6. Take-out Robot interface
7. Mounting holes for Take-out Robot (MHI std spec)
8. Locating ring for mold centering
9. Automatic lubrication device (Clamp side)
10. Front safety door
    - Manual opening and closing device (-950MEIII)
    - Auto.powered opening and closing device (950MEIIIW only)
11. Rear door
    - Manual opening and closing device
12. Safety device for mold area
    - Safety platform
    - Safety confirmation switch in mold area
    - Emergency stop botton in mold area
13. Mechanical safety device (for deliverying to Japan only)

[Hydraulic Unit]

1. Hydraulic pump unit (14MPa/20L/min(60Hz))
2. Oil temperature gauge
3. Hydraulic oil level alarm

[Electric Unit]

1. MAC-IX Contriol device
2. Automatic temperature storage
   - Heater burn-out detector
3. Automatic memory for mold condition
   - Internal memory (480 molds)
   - External memory interface (1008 molds)
4. Data security function
   - RF-ID card
   - Data protection by multilevel passward
   - Setting value change prevention circuit
   - Setting value change history display
5. Molding condition data setting/display function
   - Injection speed/pressure waveform display
   - Screw roration waveform display
   - Injection speed/pressure waveform memory
   - Process support function (Easy setting condition)
   - Entire setting value display
   - Preset circuit for next molding condition
   - Unit conversion
   - Foreign language (Displayed language switching, select 3 languages from Japanese, English, Chinese, Spanish, Thai)
6. Production management function
   - Production management data input
   - Production monitor
   - Process monitor function
   - Trend data display
   - External signal output circuitII
7. Alarm fuction
   - Operating condition OK monitor
   - Alarm indication
   - Input and output display
   - Alarm buzzer
8. Maintenance information
   - Grease supply alarm
   - Lubrication oil supply alarm
   - Battery exchange alarm
   - Alarm history display
   - Operation history display
   - Running hour meter
9. Screen shot (Screen image storage)
10. Safety/Energy saving function
    - Emergency stop buttons switch
    - Cycle start push botton
    - Power supply regeneration function
11. Heater subset temperature control
12. Automatic heat-up circuit
13. Automatic cycle stop circuit
14. Material feeding stop alarm
15. Production completion pre-notice circuit
16. Data maintenance (UPS, lighting surge suppressor)
17. Setting value direct input (Actuak value/percentage(%) input switching)

[General]

1. Mounting/Leveling pad
2. Accessories
   - Specialized tools
   - Spare parts (fuses, grease cartridges)
   - Ejector rod
3. Instruction manuals, drawings (one Data CD each)

Option Equipment Spec

[Injection Unit]

1. Screw
   (1) Material
   Anti-abrasive & anti-corrosive screw
   (2) Screw type
   HC-UB screw (above 100DD)
   MF-UB screw
   F screw
   LFT screw
2. High-responsive check ring (for low viscosity resin)
3. Barrel
   - Anti-abrasive barrel
   - Anti-abrasive & anti-corrosive barrel
4. Extension nozzle
5. Shut off valve
   - Hydraulic shut off valve (Rotary type)
   - Hydraulic shut off valve (Needle type)
   - Pneumatic shut off valve (Needle type)
6. Barrel heater
   - Brass type heater
   - Ceramit type heater
7. Barrel cover
   - Insulated heater cover
   - ECO cylinder cover
   - Barrel cover with blower
8. Feed throat cooling water circuit
   - Flow meter
   - Temperature control device
9. Melt decompression circuit (after plasticizing, after cooling, both)
10. Hopper stage
    - Ladder type
    - Large floor type
11. Hopper (Steel/Stainless)
12. Nozzle advance/retract control
    - Sprue break circuit (proximity switch)
    - Nozzle retract stop circuit
13. Material shortage detection circuit
14. Screw torque up

[Clamp Unit]

1. Mold ejector (1line)
2. Mold ejector retract confirmation circuit
3. Air ejector (2 lines)
4. Hydraulic core pull (2, 4 lines)
   - Mold ejector circuit (Hydraulic core)
   - Hydraulic core decompression circuit
   - Hydraulic core cylinder block circuit
5. Air core pull (2 lines)
6. Hydraulic gate valve (2, 4 lines)
7. Air gate valve (2, 4 lines)
8. Ejector/Core link motion inhibition circuit
9. Piping for mold cooling water
   - Main piping type
   - Manifold type
10. Auto.powered opening device for front safety door (except 950MEIIIW)
11. Auto.powered opening and closing device for front safety door (950MEIIIW is Std)
12. Auto.powered opening and closing device for rear door
13. Safety device for mold area (950MEIIIW is Std)
14. Locating ring for easy alignment of mold
15. T-slotted mold platen
16. Automatic mold clamper interface
17. Magnet clamper interface
18. One-touch detachable ejector rod
19. Daylight extension (+110mm)
20. Heat insulation board for mold

[Hydraulic Unit]

1. High flow hydraulic pump unit (14MPa/60L/min(60Hz))
2. Hydraulic oil temp monitor

[Electric Unit]

1. Main breaker
2. Earth leakage breaker
3. Outlet circuit
   - 100V outlet circuit
   - 200V outlet circuit
   - Main power source outlet circuit
4. Hot runner control device
5. Signal light
   - Red color signal light
   - Three (3) color signal tower
6. Recording terminal (injection speed, pressure,position)
7. Acceptance check circuit
8. Memory data communication with take-out robot
9. Ancillary equipment alarm
10. Plug switch (located at operation side and anti-operation side)
11. Unmanned operation circuit
12. Product stocker change circuit

[Control Unit]

1. Holding pressure switching control (mold cavity pressure, external signal)
2. Injection conpression circuit (coining circuit)
3. Mold cavity pressure monitor
4. Mold temperature control circuit
5. Gate cut circuit for in-mold ejector
6. Rotating core circuit
7. Product drop circuit interlock
8. Clamp force display circuit
9. Automatic clamp force correction circuit
10. Mitsubishi Rapid Convergent Temperature Control advance
11. packet MAC(LAN/USB)
12. Production control
    - LINKi

[For special molding]

1. SCS molding circuit
2. Gas assist molding
   - AGI circuit interface
   - Air mold circuit interface
   - Cinpres circuit interface
3. Active temperature control system
   - Interface for active temperature control unit
   - Active temperature control circuit
4. Core back circuit
5. MuCell molding circuit
6. D-LFT system
7. Double mold circuit

[General]

1. Special paint color
2. Spare parts for two (2) years
3. Tools
4. Instruction manual, drawings (document file)
5. Name Plate in foreign language
   - English name plate
   - Chinese name plate
6. Oil tank water filling test
7. Grease cartridge for spare
8. Mounting by foundation bolt

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