CHEN HSONG

MK6e

SERVO DRIVE

INJECTION MOULDING MACHINES

evolution

Precision

Stability

Pursuit of Perfection

202103

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CHEN HSONG

❶ Superb energy-saving

Grade 1 in national energy efficiency scale

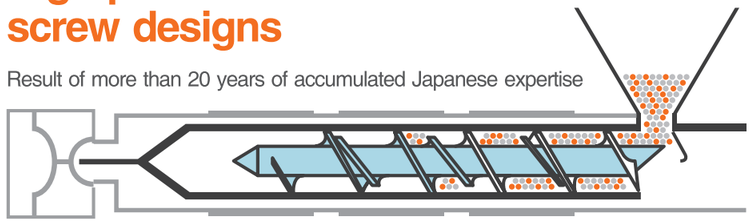
中国节能型注塑机能耗标记识
China energy saving injection molding machine identification

❷ Superior stability and reliability

- Patented circular platen reduces platen deformation and evenly distributes stress
- World-class servo-driven hydraulic system

❸ High-performance and versatile screw designs

Result of more than 20 years of accumulated Japanese expertise



❹ Silent operation

Average noise level 76.5dB(A) for JM200-MK6e

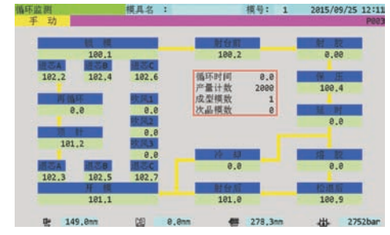
❺ High speed, shorter cycle time

One of the fastest clamping, injection and ejection movements among competition

❻ High precision

- Accurate pressure and speed control
- Quick and easy automatic mould height adjustment

❼ CPC-6.0 – The new standard in intelligent computer controller



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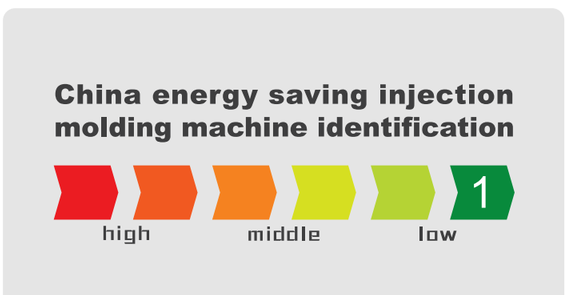
❶ Superb energy-saving

Highly-optimised hydraulics design leverages advanced servo-control system and leading-edge pump technology, resulting in reduced energy consumption

Servomotor and advanced gear pump

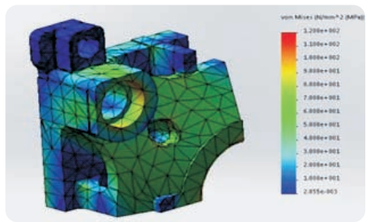


Grade 1 in national energy efficiency certification

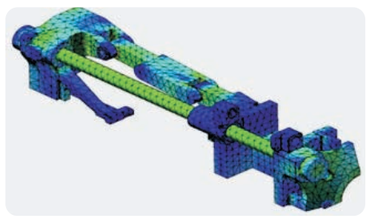
Optimised machine base structure - strong and stable

❷ Superior stability and reliability

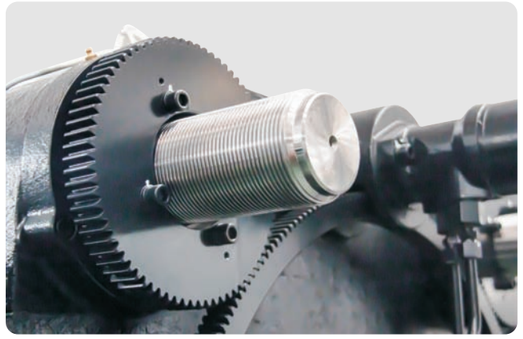
Patent number:ZL 2019 2 1456799.X
Unique patented circular platen design, high rigidity and lowest deformation



Circular platen design evenly distributes stress



Tie-bars made with high-grade high-tensile steel



High-precision gear-based mould adjustment mechanism ensures stability and part quality

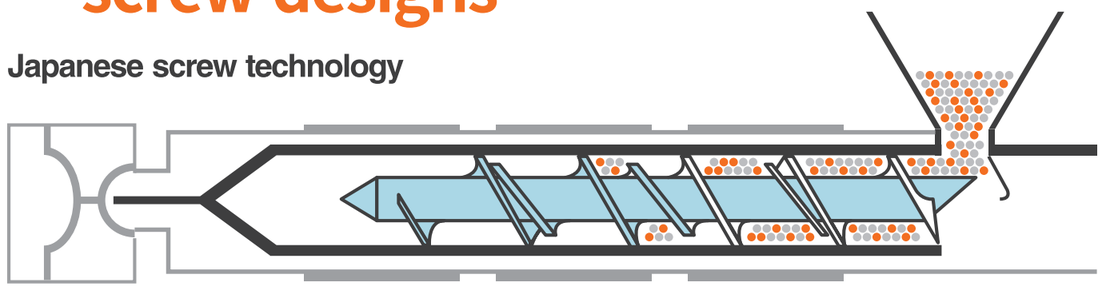
Optimised lubrication design

Named-brand servo-drive system

Named-brand hydraulic components

❸ High-performance and versatile screw designs

Japanese screw technology



Variations based on process requirements

Standard nitrided screw

UPVC screw – chrome-plated, corrosion-resistance, high surface finish (optional)

PC screw – chrome-plated, 42CrMo alloy steel (optional)

Mixing screws for high mixing demands

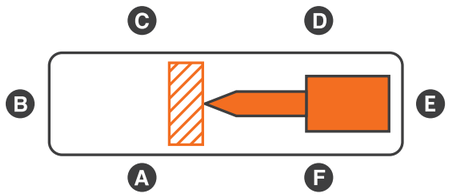
Standard mixing screw (optional)

Strong mixing screw (optional)

*For reference only

❹ Silent operation

Advanced servo-control system contributes to extremely low operating noise



Noise level of JM200-MK6e (Euromap)

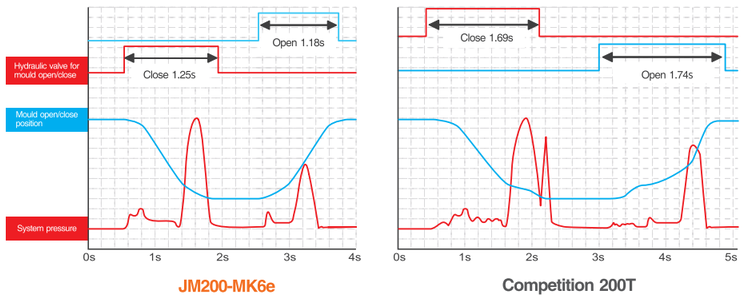
Test position	1	2	3	4	5	Average level
A	79	78.2	78.4	78.6	79	78.64
B	75.8	77.4	77.6	77.4	76.2	76.88
C	76.5	77.1	77.8	76.9	77.4	77.14
D	75.7	74.9	75	74.9	74.9	75.08
E	76.4	76.4	76.3	76	76.2	76.26
F	75.3	75.3	75	74.9	74.6	75.05
Ambient	53				Average level	76.5dB(A)

❺ Higher speed, shorter cycle time

Anatomy of a single dry cycle compared

Model	Clamping	Opening	Total Time	Stroke
JM200-MK6e	1.25	1.18	2.43s	330mm
Competition 200T	1.69	1.74	3.43s	330mm

Test mould specifications
Weight: 400kg
Dimensions: 450mmx400mmx300mm (LxWxH)



Cycle time: 29% shorter
Speed: 40% faster (1.4x)

Advantages of shorter cycle time

1.Increased production efficiency 2.Higher energy efficiency 3.Smoother and more stable motions

❻ Automatic mould-height/clamping force adjustment

Fully-automatic mould-height adjustment process is fool-proof and simple to use.
You no longer need to measure the thickness of the mould, or manually adjust clamping force.
With the new algorithm you simply put on a new mould, enter the desired clamping force,
then press “OK”. The machines does the rest, speedily and accurately, without mistakes.
Complexity is greatly reduced and operating personnel training is mostly eliminated.

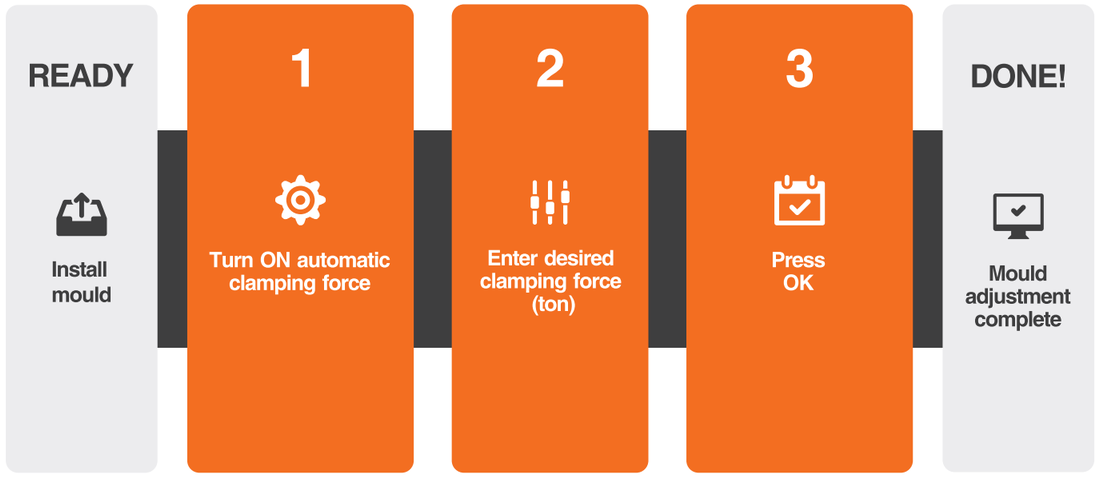
Clamping force is accurate

15s
Very little time required (can be as short as 15 seconds)

Fool-proof, single-screen, one-click operation

No training required

Automatic adjustment to the required clamping force

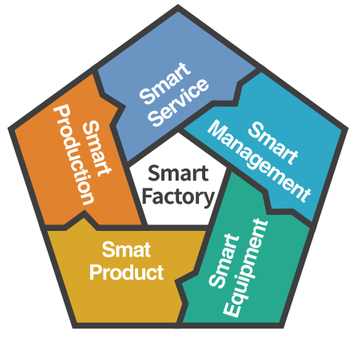


One screen, one button.

❼ All new intelligent computer controller: CPC-6.0

Characteristics

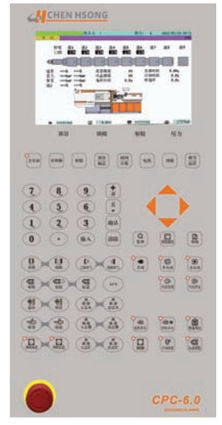
1. Designed and developed in Japan
2. Complies with JIS and IEC testing standards
3. Named-brand high-definition 7"TFT color LCD screen
4. Wide power range: AC110V~AC280V, 50/60Hz
5. LED backlight with high brightness and long life
6. Advanced SMT technology with highest stability and reliability
7. Multiple languages
8. Intelligent fault diagnostics
9. Online operational instructions
10. Full suite of networking features as per Industrie 4.0



Industrie 4.0 meta-environment

Standard Features

1. Storage for 150 sets of mould data
2. Multi-stage authorization allows fine-grained access control
3. 8 sets of high-accuracy PID barrel temperature control (30ºC~500ºC)
4. Cold start prevention, automatic pre-heat, blocked nozzle alarm, overflow detection
5. Temperature range detection and broken thermocouple detection
6. 6-stage injection, 6-stage holding
7. 20 channels of sequential injection control (valve gates) by position and time
8. 6-stage plasticizing, 6-stage back pressure
9. Up to 6 core pulls and 6 air blows
10. Alarms history storage for maintenance and troubleshooting
11. Production quantity and batch control settings; automatically stops production when quantity reached
12. Automatic toggle lubrication with alarms
13. Cycle time monitor
14. Injection speed/pressure curves, compare with standard, and injection end position statistics.
15. Status monitor screens show all inputs, outputs, timers and counters, convenient for maintenance and troubleshooting
16. Retrieval and storage of mould data internally or on external SD card (optional)
17. Intelligent fault diagnostics and online operating instructions
18. Hot-runners control (up to 60 zones) (optional)
19. Networking features for industrie 4.0 shop-floor integration (optional)
20. Data amendment can be saved to server via network



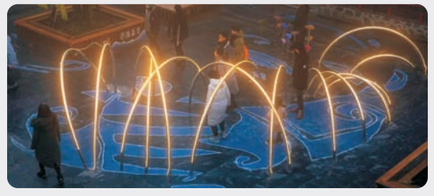
Wide applications window, ideal for a wide range of industries and parts!

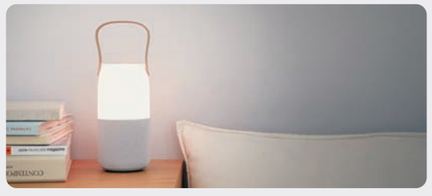
Automotive

Electronics

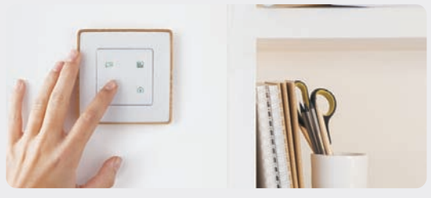
Medicals

Optics





Home Appliances



Standard features

	Clamping unit
1	Automatic toggle lubrication
2	Adjustment-free mechanical safety lock
3	Automatic mould thickness and clamping force adjustment
4	High-tensile chrome-plated tie bars
5	Safety door with mechanical and electrical safety interlock protection
6	Differential boost for high-speed clamping
7	EUROMAP ejector

	Injection unit
1	Nitrided screw and barrel
2	Automatic PID temperature control
3	Screw RPM display
4	Back pressure control
5	Nozzle guard
6	Cold start prevention
7	Broken thermocouple detection alarm
8	Blocked nozzle and overflow detection
9	Barrel safety cover
10	Movable hopper
11	Lock-type tipset

	Power pack
1	Speed and pressure control via servo drive
2	Low noise internal gear pump
3	AC servomotor
4	High efficiency oil cooler
5	Suction and return line filter

	Controller
1	See operation manual

Optional features

	Clamping unit
1	Additional core pulls
2	Robot mounting plates
3	EUROMAP 67 robot interface with connectors
4	T-slots
5	EUROMAP/SPI holes pattern
6	Air blows
7	Oil-less bushings for toggles system
8	Ejection-on-fly / core-pull-on-fly
9	Increase ejector stroke

	Injection unit
1	Barrel thermal insulation cover
2	Reduced / enlarged injection unit
3	Cooling ring with temperature control
4	Bimetallic screw
5	Bimetallic barrel
6	Extended nozzle
7	Shut-off nozzle
8	Chrome plated nozzle
9	PVC and UPVC specialized injection units
10	Galvanized hopper
11	Ceramic heater bands
12	Mixing head

	Hydraulics unit
1	Oil temperature control, with or without alarm
2	Oil level alarm
3	Unscrews
4	Return line filter
5	External return line filter
6	External suction filter
7	Enlarge plasticizing motor
8	Enlarge oil cooler
9	Enlarge servo pump system
10	Hydraulic oil preheat

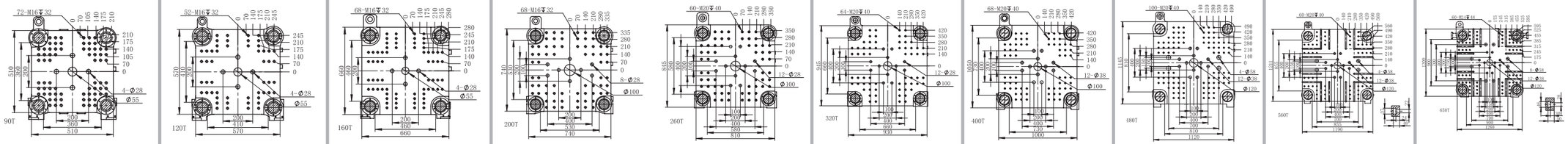
	Controller
1	Voltage stabilizer
2	Beckhoff CBmold/B&R controller
3	Multi-zone hot-runners control

Specifications

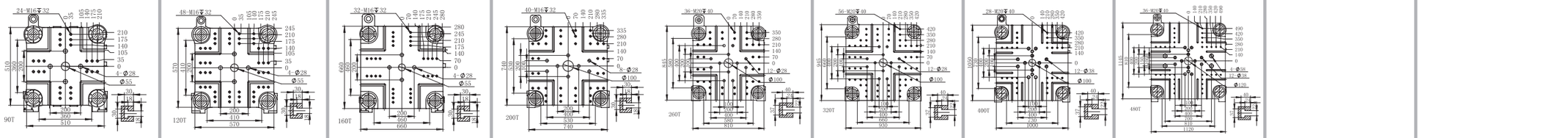
		JM90-MK6e			JM120-MK6e			JM160-MK6e			JM200-MK6e			JM260-MK6e			JM320-MK6e			JM400-MK6e			JM480-MK6e			JM560-MK6e			JM650-MK6e		
INJECTION UNIT																															
Screw Diameter	mm	31	36	41	36	41	46	41	46	52	46	52	60	52	60	67	60	67	75	67	75	83	75	83	90	75	83	90	83	90	98
Screw L/D Ratio	L/D	24.4	21.0	18.4	23.9	21.0	18.7	23.6	21.0	18.6	23.7	21.0	18.2	24.2	21.0	18.8	23.5	21.0	18.8	23.5	21.0	19.0	23.2	21.0	19.4	23.2	21.0	19.4	23.9	22.0	20.2
Screw Stroke	mm	180			205			230			260			300			335			375			415			415			450		
Swept Volume	cm^3	135	183	237	208	270	340	303	382	488	431	551	734	636	847	1057	946	1180	1479	1321	1655	2027	1832	2244	2638	1832	2244	2638	2433	2861	3392
Shot Weight (PS)	g	123	166	216	189	246	309	276	347	444	393	502	668	579	771	962	861	1074	1346	1202	1506	1845	1667	2042	2401	1667	2042	2401	2214	2603	3087
	oz	4.4	5.9	7.6	6.7	8.7	10.9	9.7	12.3	15.7	13.9	17.7	23.6	20.4	27.2	33.9	30.4	37.9	47.5	42.4	53.2	65.1	58.8	72.0	84.7	58.8	72.0	84.7	78.1	91.8	108.9
Injection Pressure (Max.)	kgf/cm^2	2367	1755	1353	2302	1775	1410	2233	1774	1388	2295	1796	1349	2365	1777	1425	2263	1815	1448	2230	1780	1453	2165	1768	1504	2165	1768	1504	2114	1798	1516
Injection Rate	cm^3/s	76	103	133	98	128	161	127	160	204	155	199	265	192	255	318	251	313	392	318	399	488	419	514	604	419	514	604	483	568	674
Screw Rotation Speed (Max.)	rpm	207			225			220			180			183			190			178			190			190			175		
Screw Nozzle Force (Max.)	ton	4.5			4.5			4.5			4.5			9			9			9			9			9			9		
Nonzzle Stroke	mm	250			250			250			280			330			360			420			420			420			460		
CLAMPING UNIT																															
Clamping Force (Max.)	ton	90			120			160			200			260			320			400			480			560			650		
Opening Stroke	mm	330			370			420			490			530			600			670			770			835			920		
Space between tie bars (HxV)	mm	360x360			410x410			460x460			530x530			580x580			660x660			730x730			810x810			855x855			900x900		
Mould Thickness (Min.-Max.)	mm	130-380			145-450			160-520			180-550			195-610			220-660			250-730			275-810			330-850			350-900		
Max.Daylight	mm	710			820			940			1040			1140			1260			1400			1580			1685			1820		
Ejector Force	ton	2.8			4.2			4.2			6.7			7.7			7.7			11.1			11.1			16.6			18.2		
Ejector Stroke	mm	100			120			140			150			170			170			220			220			250			265		
Mould Register Hole	mm	100			100			100			160			160			160			200			200			200			200		
POWER/HEATING UNIT																															
System Pressure	kgf/cm^2	175			175			175			175			175			175			175			175			175			175		
Motor Pump	kW	11			16			16			24			36			48			68			72			72			84		
Electrical Heating Power	kW	6.4			10.1			12.2			15.5			18.9			24.8			30.4			35.9			35.9			43		
Temperature Control Zone		3+1			3+1			3+1			3+1			4+1			4+1			5+1			5+1			5+1			6+1		
OTHERS																															
Machine Dimension LxWxH(m)	mxmxm	4.3x1.2x1.8			4.6x1.3x1.8			5.2x1.4x2			5.7x1.5x2.1			6.4x1.6x2.3			6.7x1.7x2.4			7.5x1.8x2.3			8.3x1.9x2.3			8.6x2.0x2.3			9.6x2.2x2.5		
Oil Tank Capacity	liter	160			190			250			320			410			540			670			800			800			870		

Mould Platen Dimensions

Mounting Holes



T slots with mounting holes (Optional)



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