

CHEN HSONG

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TP-SMART



202401

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About Chen Hsong

Chen Hsong, established in 1958, is one of the largest manufacturers of injection moulding machines in the world, with annual sales exceeding 20,000 sets.

For over 65 years, Chen Hsong sold to more than 85 countries across the globe, supplying injection moulding machines with clamping force from 20 tons to 6,500 tons. In 1991, Chen Hsong became listed on the Hong Kong Stock Exchange (stock code: 00057). Headquartered in Hong Kong, Chen Hsong operates numerous manufacturing and research facilities in China, including Shenzhen, Shunde, Ningbo and Taiwan, as well as in Japan.

Since 2011 when Chen Hsong and Mitsubishi Plastics Technology of Japan entered into a worldwide strategic partnership, Chen Hsong has been progressively upgrading its internal management, production and quality systems with industry best practices, including TPS (lean manufacturing), M-System (Mitsubishi quality system) and a Japanese “perfect quality” focus towards all R&D, procurement and production activities. For over a decade since then, and leveraging its superior supply chain and production capabilities, Chen Hsong also supplied Mitsubishi, as OEM, with world-renowned “MMX” large-tonnage two-platen injection moulding machines (up to 3,500 tons).

To provide customers with even better peace-of-mind, Chen Hsong insists on being the only fully vertically-integrated maker of injection moulding machines globally, starting from basic ductile iron casting to high-end fabrication and machining, and all major production steps until the completed assembly of each machine. Only through absolute control of each fine step of the manufacturing process would customers be best served with professionalism, quality and perfection.

65 Years of Excellence
Since 1958

300+ Patented technologies

20+ Software IP

20,000 Sets / year
One of the largest producers of injection moulding machines in the world

Operates 800,000m²
Production facilities with global presence



Global Customers

AEQUS[®]
ecosystems of efficiency

arcelik

BYD

beko

CHINT

CHANGHONG长虹

DAIKIN

ONLiM

FOXCONN

FUYAO GLASS

GREE

三菱重工

TTI

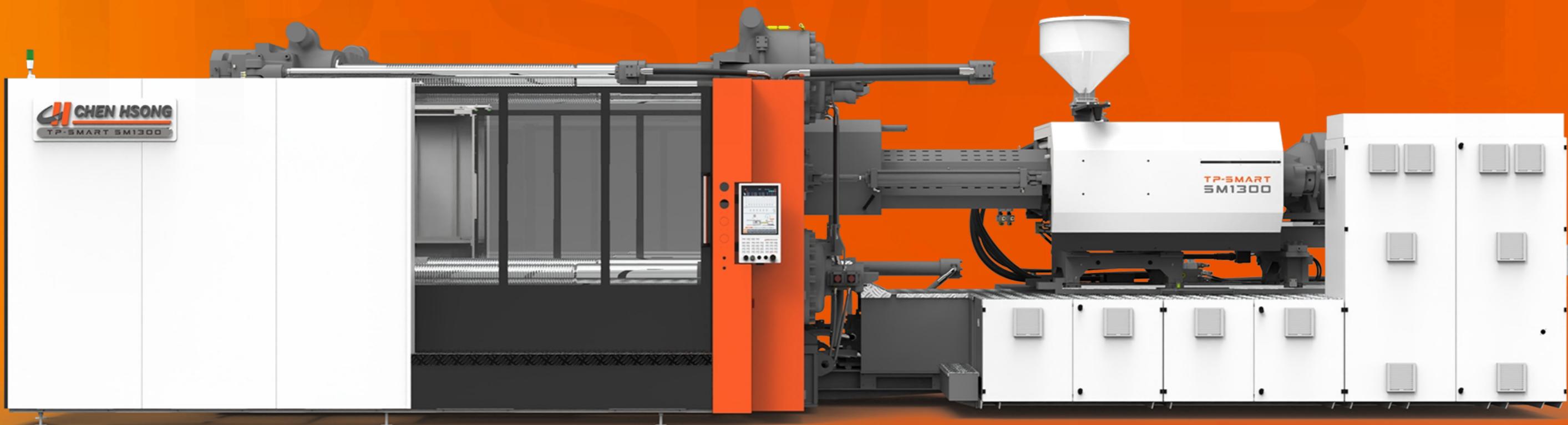
TAKATA

vtech

中国一汽

The above rankings are in no particular order

Smarter, Stronger, Better...
The TP-SMART has evolved to be smarter
beyond your expectations



Photos are for reference only



Wide Adaptability – A Machine for All Seasons



Automotive



Electronics



Logistics

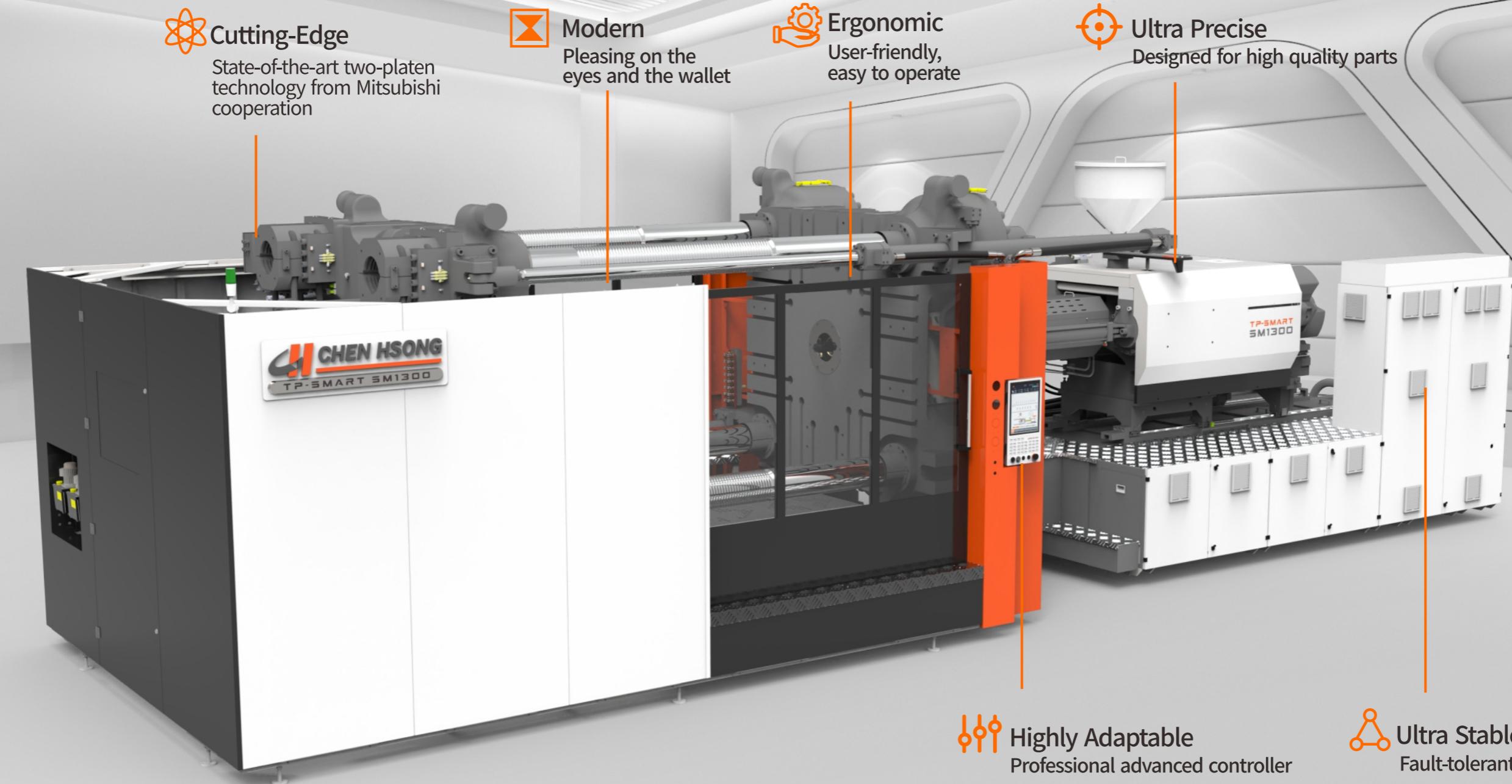


Construction

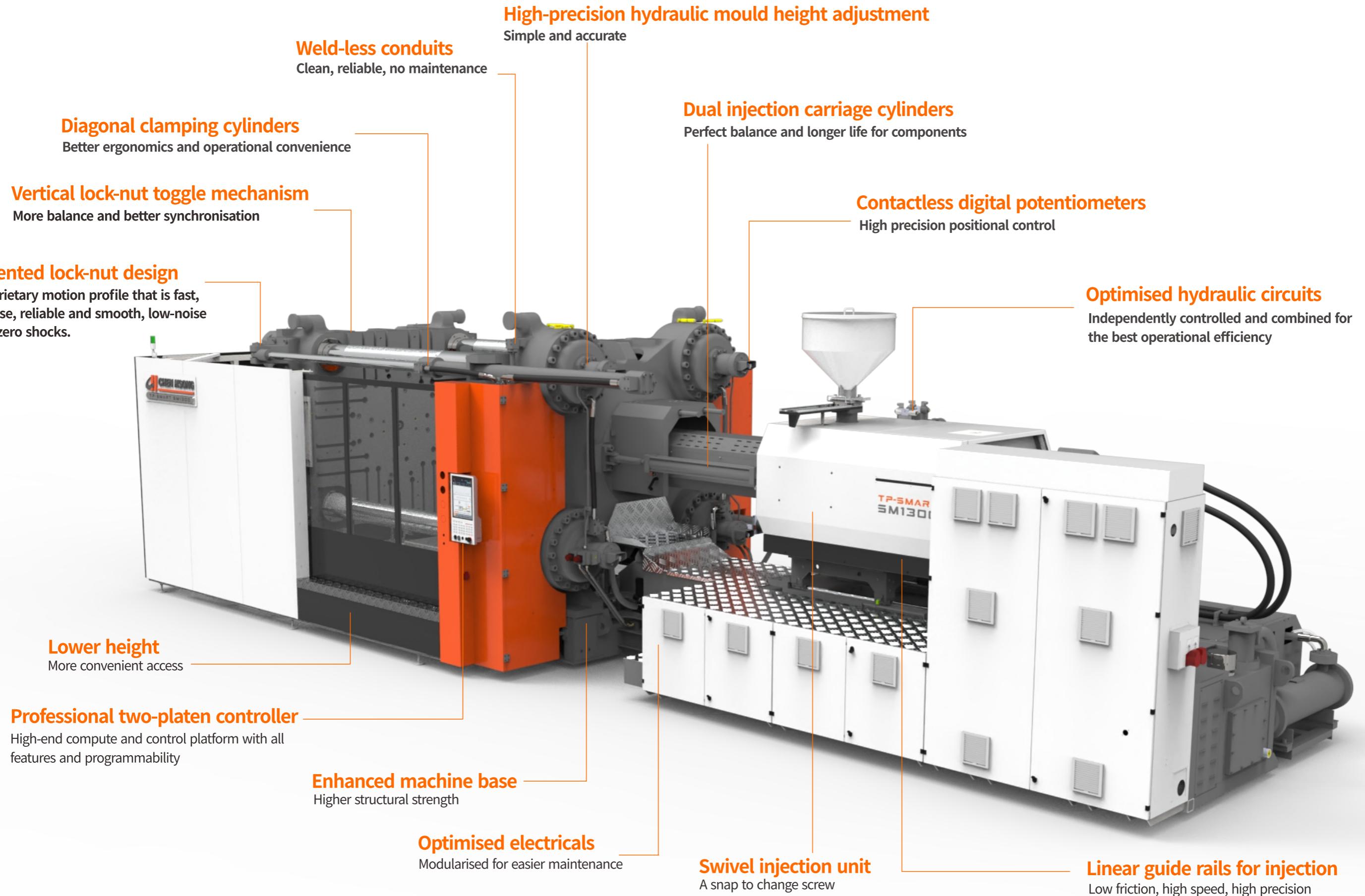


Smart Performance

TP-SMART



Smart Designs



Smart Technologies

Cutting-edge two-platen technology from Mitsubishi Cooperation

Japanese Design

Advanced two-platen design provides the largest stroke and daylight into the smallest foot print possible

Chen Hsong and Mitsubishi joined forces in a global partnership to create state-of-the-art two-platen technology with unprecedented value proposition.

Non-Stop™

Advanced fault-tolerant technology. Annual Down-Time as Low as 0.5%!

Precision Hydraulic®

A team of Japanese and European technical experts took the time-tested hydraulic circuits in our machinery and relentlessly fine-tuned/optimised them to perfection, aided by the latest fluid dynamics simulation software.

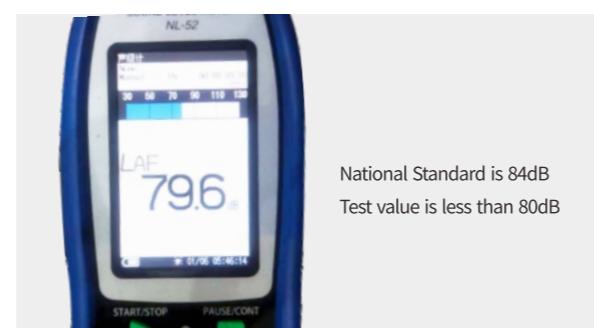
Electric plasticising (optional)

Servo electric plasticising is more energy-efficient, with total efficiency of 90% compared to the traditional hydraulic motor.

Servo electric plasticizing meets the higher production demands of the automotive industry by utilizing synchronous movements.

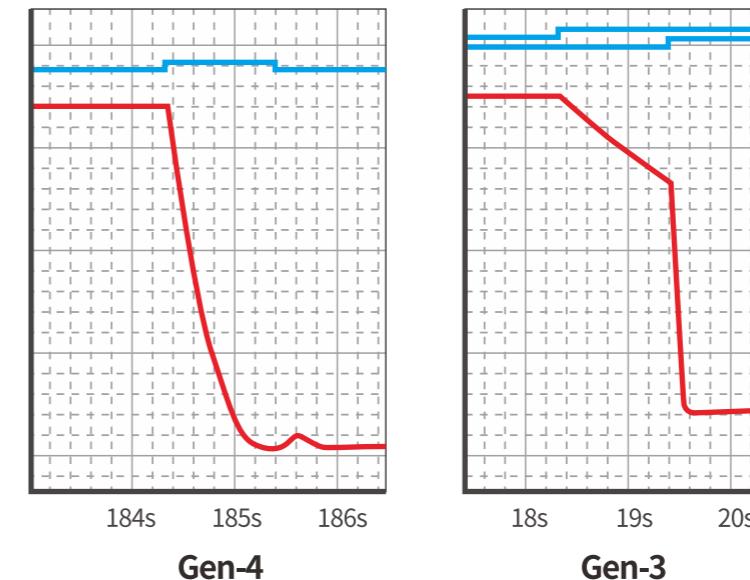


Equipped with servo electric plasticising for quieter operation



Gen-4 Servosystem

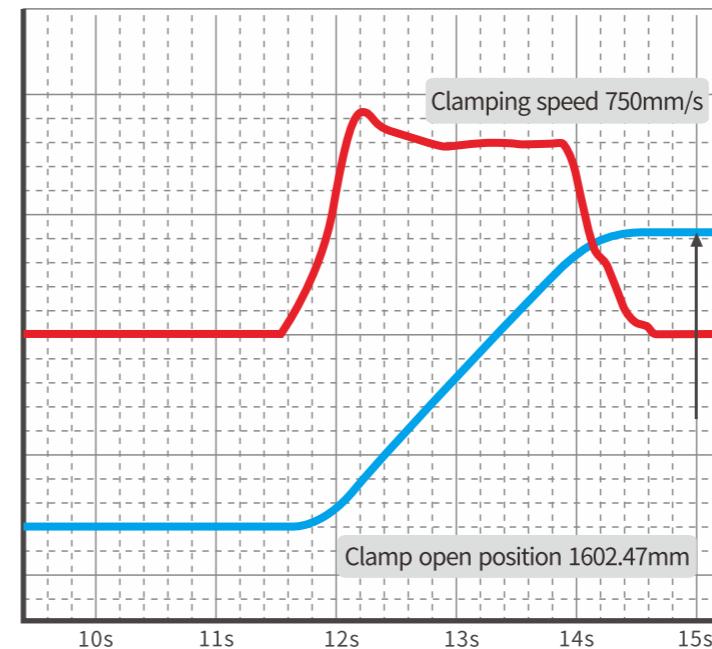
Reduce impact, protect mould and machine



High pressure release speed
2x

High pressure duration (max.)
2x

Clamping Unit



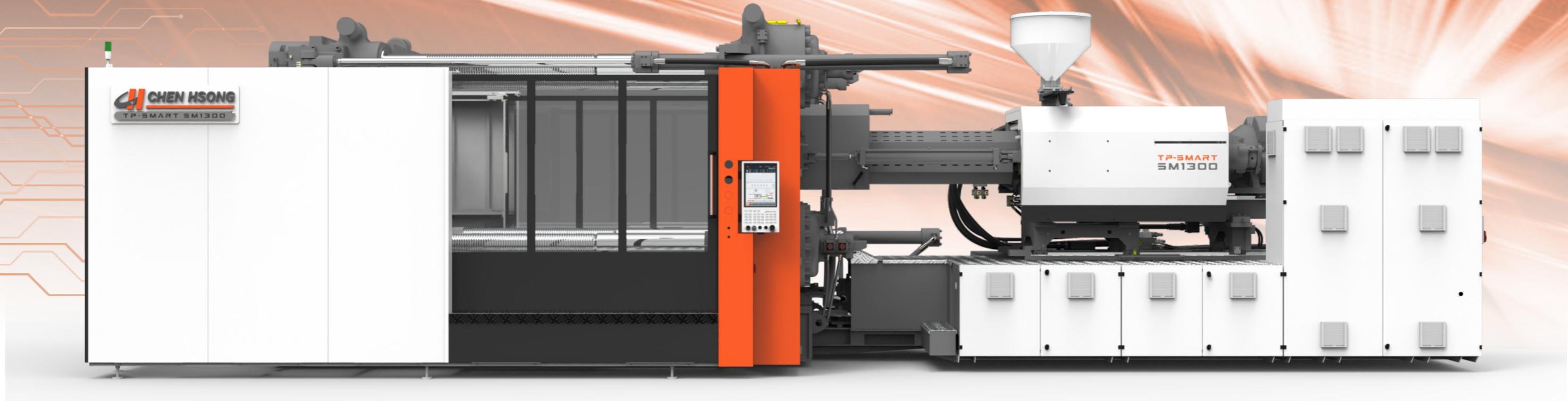
Clamp open position precision
+60%

Sample	1	2	3	4	5	6	7	8	9	10	Average
Position	1602.6	1602.6	1602.6	1602.6	1602.1	1602.6	1602.5	1602.1	1602.4	1602.6	1602.47

Smart Control

High-end professional computer controller

A perfect match between advanced software, optimised hydraulics and superb hardware design.



15" touch-screen HMI

Smart

Packed full of intelligent automation features

Fast

204MHz CPU clock enables <200uS closed-loop response

Fluid

512MB DDR3 RAM and 8GB EMMC Flash memory provide ample system resources for smooth operation and data storage

Strong

High-performance Cortex-M4 CPU

Reliable

Modularised power supply channels for electrical stability

Easy

All-digital controls for easy settings

Safe

Isolated I/O's for additional fault tolerance

Precise

Digital main bus with unlimited expandability

Efficient

User-friendly, simple-to-use HMI with little training required

Standard Features

Injection Unit

1. 10-stage injection speed/pressure	2. Digital back pressure control	3. Nozzle guard
4. Central lubrication points	5. Barrel guards	6. Screw RPM display
7. Linear transducer for injection	8. Ceramic heater bands	9. Nitrided screw and barrel
10. Injection barrel support mount	11. Swivel injection unit	12. Dual injection carriage cylinders

Clamping Unit

1. Automatic mould thickness adjustment	2. High-tensile steel tie-bars	3. Proprietary moving platen slider mechanism
4. High-end ductile casted platens	5. Motorised guard doors	6. Contactless potentiometers for positional control
7. High-end potentiometers for ejector control	8. T-slots	9. Safety platform
10. Hydraulic core pulls on moving platen (2 sets)	11. Water manifold (D12, 8 channels each on moving and stationary platens)	12. Multi-stage clamping speed and pressure control
13. Advanced low-pressure mould protection	14. Standard-conforming hydraulic/electrical safety interlocks	15. Euromap 13 ejector/core pull interface

Controller

1. 15" intelligent panel	2. Rapid-response servosystem	3. PID temperature control
4. Tri-color status indicator	5. Real-time monitoring	6. I/O signals monitor
7. PLC step monitor	8. Broken thermocouple detection	9. Cold-start prevention
10. Blocked nozzle and leakage detection	11. Auto-purge	12. Robot interface (non-Euromap)
13. Emergency stop switches on both guard doors	14. Pre-wired core pull slot on moving platen	

Hydraulic System

1. Internal gear pump	2. Proportional valve for clamping	3. Ejector-on-fly / core-pull-on-fly
4. Clamping force transducer	5. Boost-mode fast clamp open	6. Hydraulic oil level indicator
7. Multiple sets of hydraulics are independently controlled and combined for optimal output requirements and power efficiency		
8. Internal inlet oil filter	9. External return oil filter	10. Core pulls on moving platen (2 sets)

Optional Features

1. Larger injection screw	2. Professional screw & barrel designs (e.g. for PC/ABS/PVC)
3. Automatic lubrication system for injection unit	4. Longer nozzle (50/100/150/200mm)
5. Cooling ring with temperature control	6. EDrive – servo-driven recovery
7. Loading platform	8. Hydraulic oil temperature control
9. Additional power sockets (4/6/8 sets)	10. Core-pull-on-fly/ejector-on-fly
11. Hot-runner control (8/16/24/32/40/48 channels)	12. Enlarged oil cooler
13. Hydraulic valve gates control (5/10/12/16 channels)	14. Additional core pulls on moving platen (3/4 sets)
15. Water manifold (8/16 channels)	16. Closed-loop injection
17. Bimetallic screw & barrel	18. Additional core pull interface on moving platen (Euromap 13)
19. Recovery-on-fly	20. Hydraulic oil pre-heat
21. Enlarged recovery motor	22. Core pulls on stationary platen (1/2/3/4 sets)
23. E67/E12 interface	24. Hopper slider
25. Hopper	