

TEK

series

TEK series

High-performance full electric injection molding machine at an affordable price.

Simple, Powerful and Reasonable

It has servo motor system which controls the movement individually. By controlling individually it can control opening and closing of the mold during charging at the same time. It will increase the productivity, save energy, and decrease the noise level.



| Model | Clamping force | Tie-bar distance (H×V) | Unit No. | Injection unit [Screw diameter in mm] | | | | | | | | | | | |
|--------|----------------|------------------------|----------|---------------------------------------|----|----|----|----|----|----|----|----|----|----|----|
| | | | | 18 | 20 | 22 | 25 | 28 | 32 | 36 | 40 | 45 | 50 | 55 | 60 |
| TE50K | 490kN | 360 × 360 | IE 0.7 | S | O | A | B | | | | | | | | |
| TE110K | 1079kN | 410 × 410 | IE 1.5 | | | S | O | A | B | | | | | | |
| TE170K | 1667kN | 510 × 510 | IE 3.0 | | | | | S | O | A | B | | | | |
| TE220K | 2157kN | 560 × 560 | IE 4.0 | | | | | | S | O | A | B | | | |
| TE280K | 2746kN | 610 × 610 | IE 7.8 | | | | | | | | | O | A | B | |
| TE330K | 3236kN | 720 × 720 | IE 10.0 | | | | | | | | | | O | A | B |

At a glance

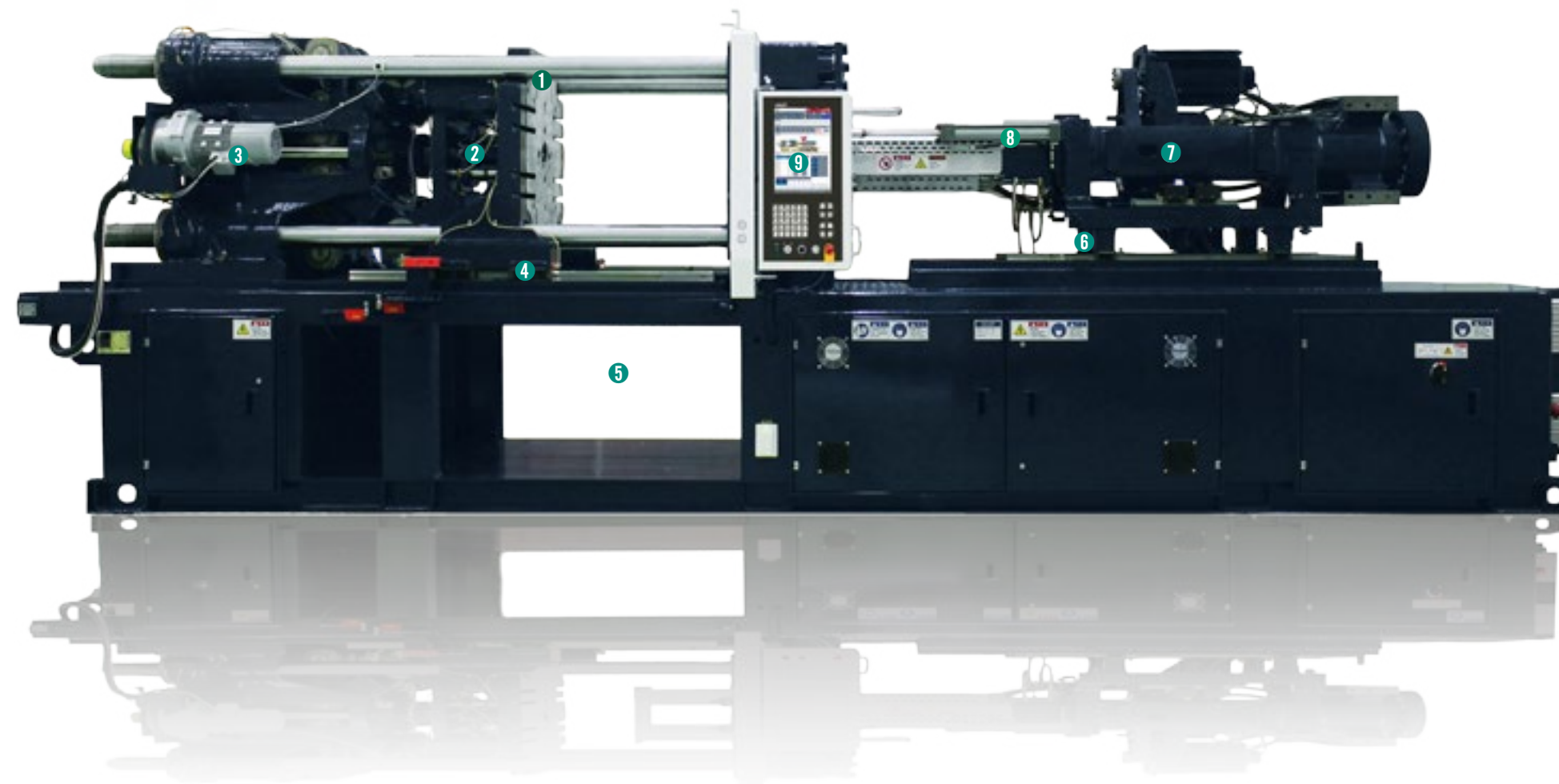
Electric injection molding machine

Strong performance and energy efficiency for superior precision and silent

TE-K series is operated with servo motor system that is all electrical.

High power servo motor which controls the mold opening & closing, ejecting, charging, injection simultaneously. With multi movement control it can reduce the cycle time.

All electric injection molding machine is featuring preciseness and high speed so it would be better for products that need to be precise.



9

Controller

Touch screen.
15 inch TFT color monitor (768 x 1024)
USB 2.0 Interface (3-Slot)
VNC Servo internal (Remote control)
Support up to 1Gbps internet
Water proof: Front(IP65), Back(IP20)

8

Dual pull nozzle touch cylinder

Bilateral symmetry designed dual nozzle touch cylinder delivers same force to the platen while nozzle touching so that I can prevent platen's damage. Also it is realized to touch the nozzle precisely to solve decreasing reproducibility.

7-3

Injection RAM BOX LM Guide

LM guide that is located on injection RAM BOX can stabilize its movement. Easily detect charging & injection volume by using.

1

Clean Tie bar

With improved moving platen design the tie bar doesn't need guide bush, so it doesn't need grease and decrease the friction to improve energy usage.

2

Center press moving platen

Center press type moving platen delivers equal clamping force into the mold and prevent deformations of mold and damage of platen.

- Prevent flash and width change
- Equal delivery of clamping force
- Extend the mold's life time
- Low clamping force availability

3

Gear motor and clamping sensor

At the end of back platen there is a gear motor which can control the clamping distance by user's setting. If the distances of the clamping change, clamping sensor will sense the distance of the clamping in real time and change automatically.

4

Lower friction linear guidance

By maintaining constant parallelization of platen, precision of platen's movement is enhanced and mold's damage is minimized and cycle time is reduced.

5

Open 3 sides for products

With open 3 sides for products it has more freedom of putting the conveyer. Also by using product slide device, it can prevent product's damage.

6

Injection unit moving LM guide

LM Guide is equipped in injection RAM part lowers the mechanical resistance and enhances precision, offering the optimal structure for high quality molding.

7-1

In-line screw type injection unit

High durability with In-line screw type injection unit. Stable injection process available and endures high pressure.

7-2

Detecting injection pressure mechanic (Load cell)

When operator manually input injection pressure, load cell can detect the injection pressure in real time and constantly maintain the pressure. Response time of load cell is 1ms.

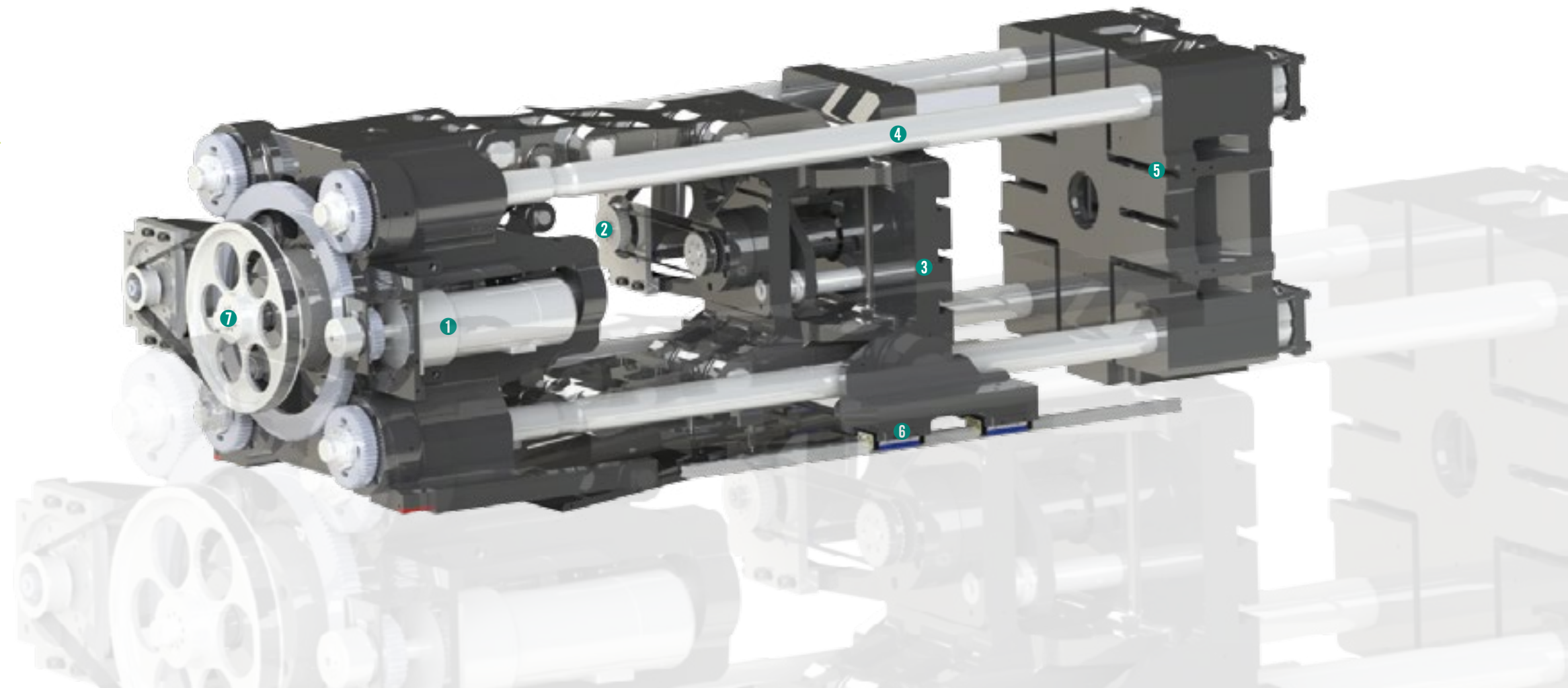
Smart clamping unit

5-Point double toggle system

Excellent durability is standard, with precise position control and excellent uniformity of surface pressure.

Electric 5-point double toggle system suitable for precise molding can realize stable and effective mold opening and closing, precise motion control.

Center press type moving platen delivers equal clamping force into the mold. Gear motor and clamping sensor will automatically set clamping force.



1 Automatic setting of mold clamping force (Optional)

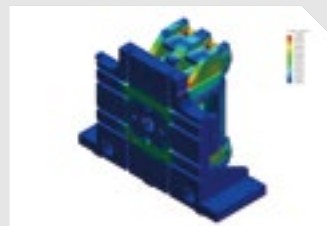
It automatically reacts to the change of clamping force due to thermal expansion and keeps the clamping force constant.

- $\pm 2\%$ Automatic adjustment
- Exact clamping force can be checked



2 High precision electric ejector

Servo motor directly controls the movement of the ejector, it is possible to perform fast and precise ejection.



3 Center press integrated moving platen

FEA structural analysis design provides excellent clamping force transferring and uniformity of surface pressure.



4 Clean tie bar

The moving platen structure without tie bar guide bush eliminates the need for grease, so the tie bar is clean.



5 Convenient Mold setting

T-shaped slots on the moving and fixed platens make it easy to attach and detach the mold.



6 Low friction linear motion guide

It keeps constant platen parallelism even in high speed opening and closing operation, and energy efficiency is excellent because the coefficient of static and reverse friction is very low.



7 Electric type clamping unit

Precise and accurate position control is possible by the ball screw rotation method by servo motor.



8 Automatic grease supplying device / manual grease supplying device / lubricant supplying device

Various type of grease and lubricant supplying devices are installed to facilitate machine maintenance.

Dynamic, precise injection unit

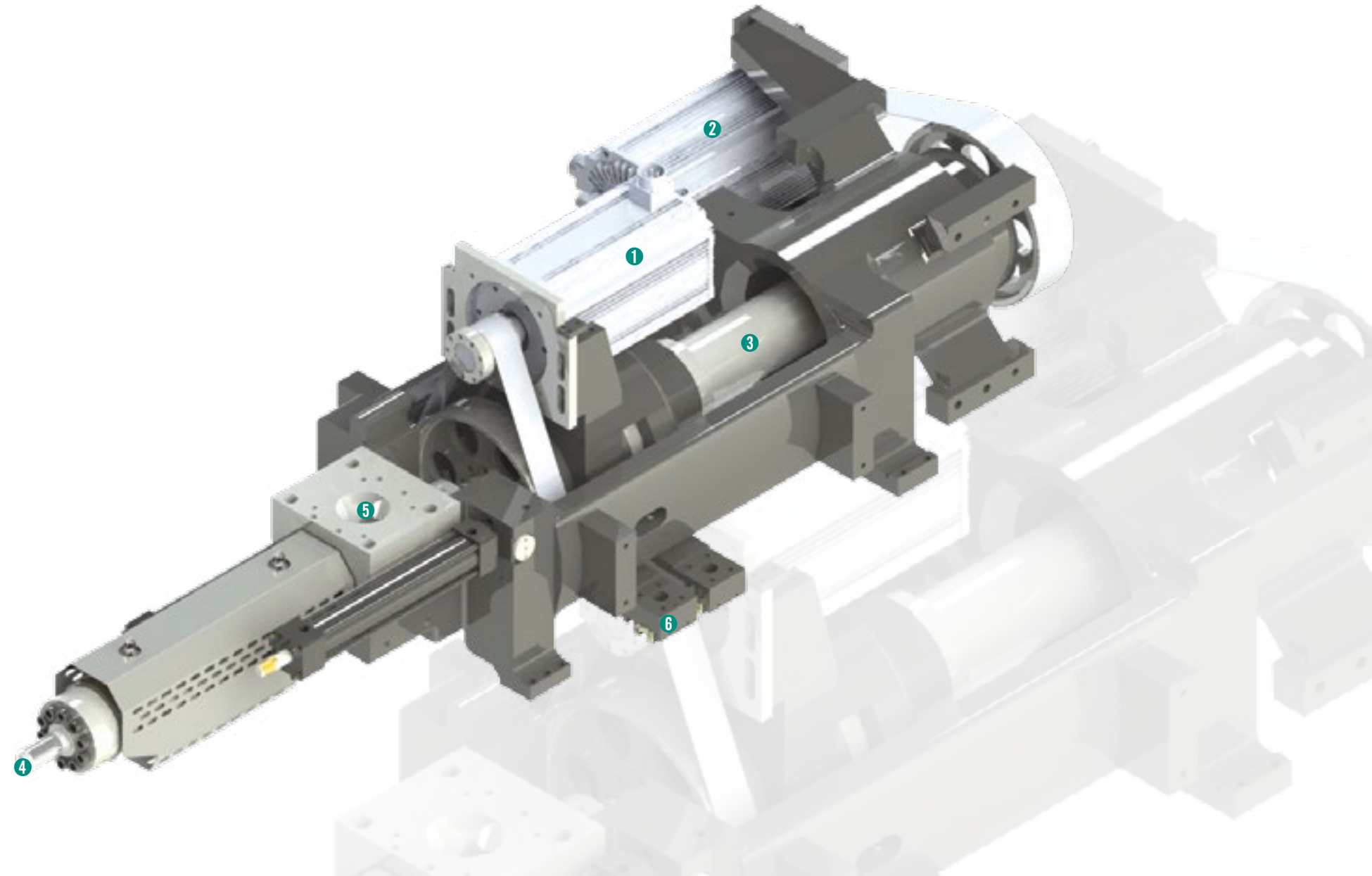
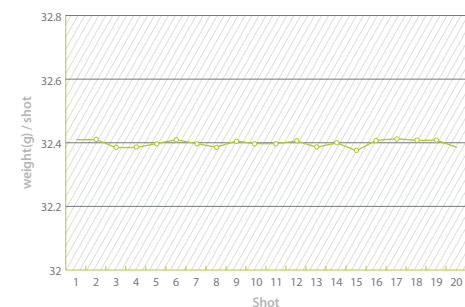
High rigid in-line screw injection unit

Precise and stable injection performance is achieved.

In-line type injection structure for stabilized precision molding products.

PID synchronous temperature control and separate front nozzle temperature sensor will improve quality of the products.

▼ TE220K Shot weight coefficient of variation ($\sigma/x=0.0372\%$)



1 Powerful electric charging motor

Fast and precise screw rotation control ensures stable mixing and melting of resin. In addition, it is possible to control simultaneous operation such as mold opening during charging, thereby improving productivity and saving energy consumption.



2 Exceptional injection servomotor applied for long-term back pressure

Increased the capacity of the injection servomotor and improved the cooling performance of the motor to realize the long-term pressure performance levels of the hydraulic injection molding machine



3 High accuracy injection pressure detection by load cell application

The injection motion control should be constant and precise even in long repeat cycles. The high-precision load cell transmits injection pressure and back pressure information in real time, contributing to improvement of control performance.



4 Precise resin temperature control

A temperature sensor is mounted at the tip of the nozzle to control the temperature of the resin precisely until the resin is injected into the mold.



5 Hopper throat chrome coated

The hopper throat is coated with chrome to prevent rust and contamination.



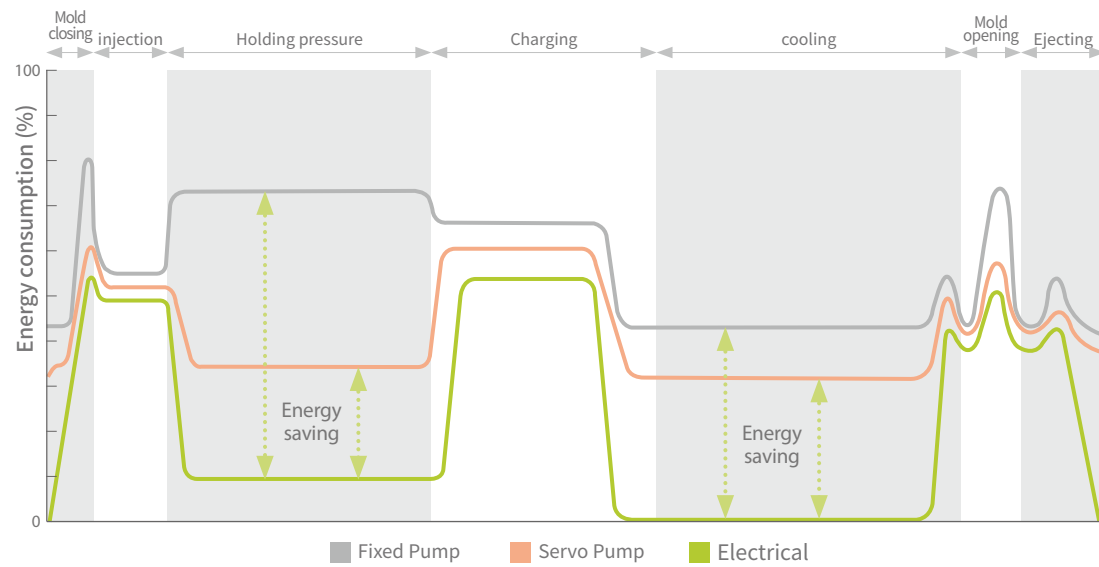
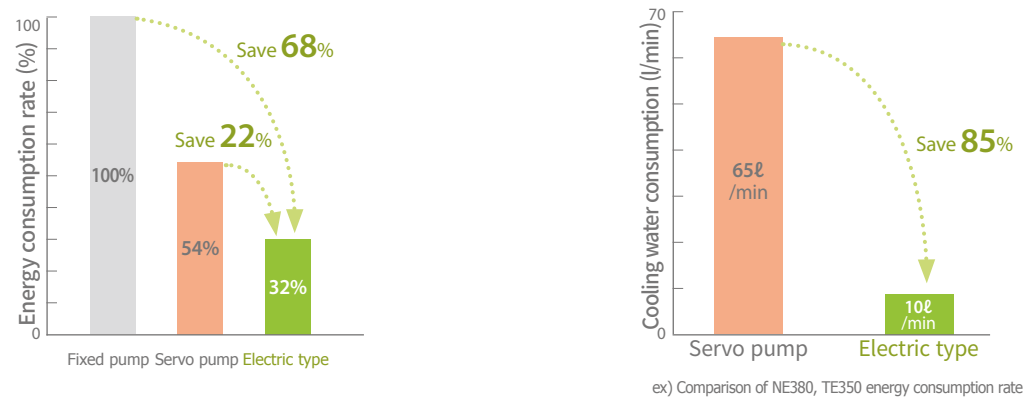
6 Injection ram box linear motion guide.

The low friction linear motion guide located in the injection ram box keeps the stable movement stability of the in-line screw structure. It is easy to check the weight because it is equipped with a gradation to check charging and injection volume.

Energy efficiency

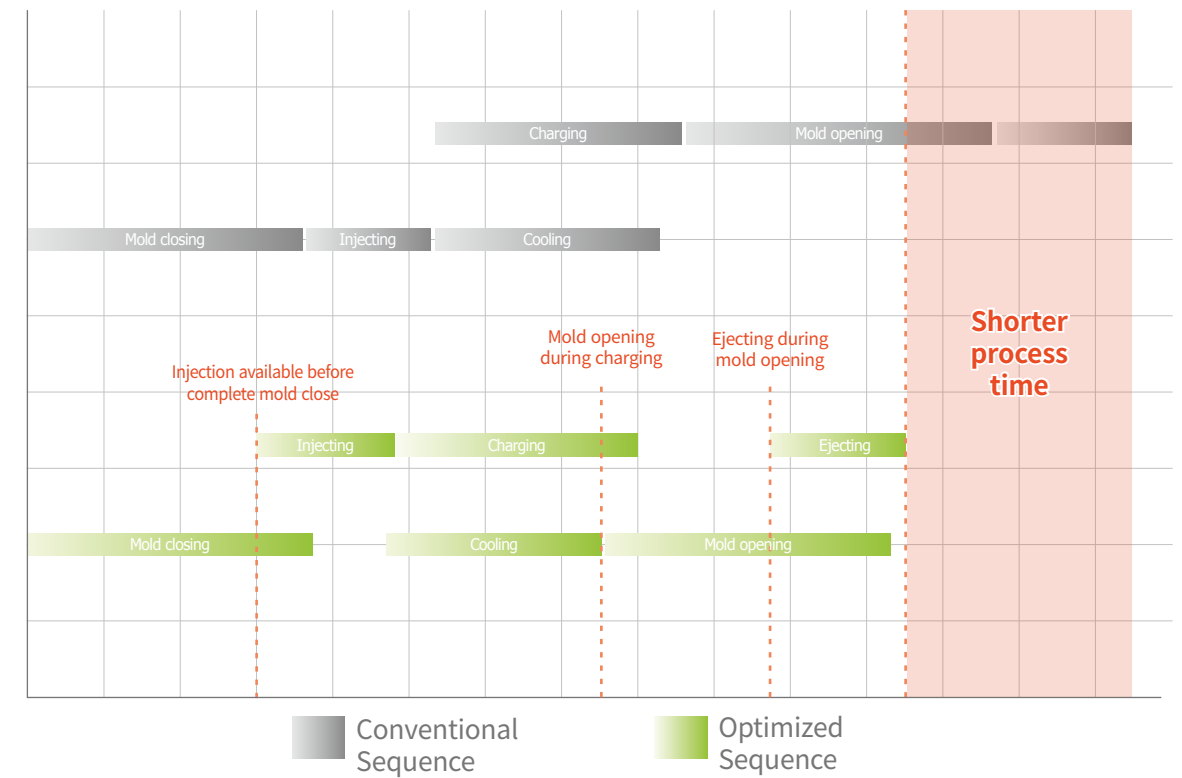
Stop worrying about energy cost!!!!

By fully controlling the energy usage in the holding pressure and cooling sections, energy savings by up to 60 ~ 80% are achieved.



Overwhelming production capacity

Optimizing the production process is essential for productivity and energy savings. The TE-K series reduces the processing time by implementing simultaneous operation such as mold opening during ejecting, mold opening during charging to shorten the process time



Specification

- ① Theoretical injection volume : screw cross section area x screw stroke.
- ② Minimum mold size must be over 60% of distance between tie-bar.
- ③ This data based upon the 60Hz electricity frequency.
- ④ Specifications can be changed for improvement without prior notice.

| | TE50K | | | | TE110K | | | | TE170K | | | | TE220K | | | | TE280K | | | TE330K | | | |
|------------------------------|--------------------|------|------|------|--------|------|------|------|--------|------|------|------|--------|------|------|------|--------|------|------|---------|------|------|------|
| | IE 70 | | | | IE 150 | | | | IE 300 | | | | IE 400 | | | | IE 780 | | | IE 1000 | | | |
| Injection Unit | | | | | | | | | | | | | | | | | | | | | | | |
| Screw & Barrel type | S | O | A | B | S | O | A | B | S | O | A | B | S | O | A | B | S | O | A | S | O | A | |
| Screw diameter | mm | 18 | 20 | 22 | 25 | 22 | 25 | 28 | 32 | 28 | 32 | 36 | 40 | 32 | 36 | 40 | 45 | 45 | 50 | 55 | 50 | 55 | 60 |
| Injection pressure | kg/cm ² | 3300 | 3059 | 2528 | 1958 | 3300 | 2819 | 2248 | 1721 | 3300 | 2600 | 2055 | 1664 | 3020 | 2386 | 1933 | 1527 | 2285 | 1850 | 1530 | 2443 | 2019 | 1697 |
| | MPa | 324 | 300 | 248 | 192 | 324 | 276 | 220 | 169 | 324 | 255 | 202 | 163 | 296 | 234 | 190 | 150 | 224 | 181 | 150 | 251 | 207 | 174 |
| Injection holding pressure | kg/cm ² | 2640 | 2447 | 2022 | 1566 | 2640 | 2255 | 1798 | 1377 | 2640 | 2080 | 1644 | 1331 | 2416 | 1909 | 1546 | 1222 | 2057 | 1665 | 1377 | 2199 | 1817 | 1527 |
| | MPa | 259 | 240 | 198 | 154 | 259 | 221 | 176 | 135 | 259 | 204 | 161 | 131 | 237 | 187 | 152 | 120 | 202 | 163 | 135 | 216 | 178 | 150 |
| Theoretical injection volume | cm ³ | 23 | 28 | 34 | 44 | 42 | 54 | 68 | 88 | 92 | 121 | 153 | 188 | 129 | 163 | 201 | 254 | 318 | 393 | 475 | 432 | 522 | 622 |
| Shot weight (PS) | g | 21 | 26 | 31 | 40 | 38 | 49 | 62 | 81 | 84 | 110 | 139 | 172 | 117 | 148 | 183 | 232 | 289 | 358 | 432 | 393 | 475 | 566 |
| Injection rate | cm ³ /s | 51 | 63 | 76 | 98 | 76 | 98 | 123 | 161 | 108 | 141 | 178 | 220 | 121 | 153 | 188 | 239 | 239 | 295 | 356 | 295 | 356 | 424 |
| Screw stroke | mm | 90 | 90 | 90 | 90 | 110 | 110 | 110 | 110 | 150 | 150 | 150 | 150 | 160 | 160 | 160 | 160 | 200 | 200 | 200 | 220 | 220 | 220 |
| Injection speed | mm/s | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 175 | 175 | 175 | 175 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Plasticizing capacity (PS) | kg/h | 16 | 21 | 27 | 38 | 29 | 41 | 56 | 80 | 45 | 64 | 88 | 116 | 64 | 88 | 116 | 159 | 119 | 158 | 203 | 131 | 170 | 214 |
| Screw rotation speed | rpm | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 300 | 300 | 300 | 250 | 250 | 250 |

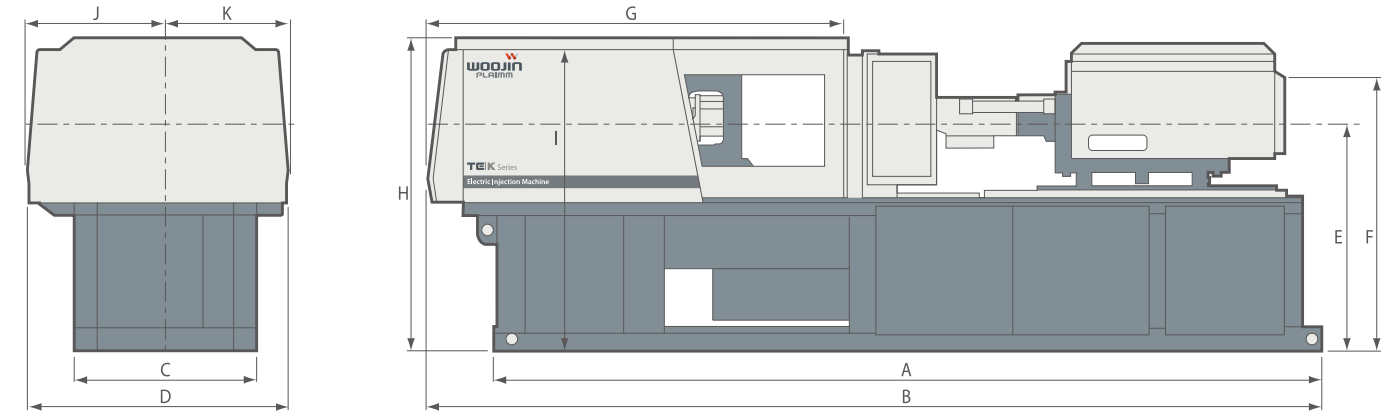
Clamping Unit

| | | | | | | | |
|----------------------------------|---------|---------|-----------|-----------|-----------|-----------|-----------|
| Clamping force | ton(kN) | 50(490) | 110(1079) | 170(1667) | 220(2157) | 280(2746) | 330(3236) |
| Distance between tie-bar (H x V) | mm | 360x360 | 410x410 | 510x510 | 560x560 | 610x610 | 720x720 |
| Platen dimension (H x V) | mm | 530x530 | 630x630 | 750x750 | 840x840 | 900x900 | 1090x1090 |
| Opening stroke | mm | 250 | 350 | 410 | 470 | 540 | 630 |
| Daylight | mm | 600 | 750 | 910 | 1070 | 1190 | 1380 |
| Min. mold height | mm | 130 | 150 | 180 | 200 | 250 | 300 |
| Max. mold height | mm | 350 | 400 | 500 | 600 | 650 | 750 |
| Ejector force | ton(kN) | 2(20) | 3.3(32) | 3.5(34) | 3.5(34) | 4.5(44) | 6(59) |
| Ejector stroke | mm | 70 | 80 | 100 | 120 | 130 | 140 |

Generals

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|-----|-------------|------|------|------|-------------|------|------|------|-------------|------|------|------|-------------|------|------|------|-------------|------|------|------|-------------|------|--|--|
| Total heater capacity | kW | 4.2 | 4.9 | 5.6 | 6.4 | 6.3 | 8.2 | 9.2 | 8.8 | 9.7 | 9.4 | 11.2 | 11.4 | 9.4 | 11.2 | 11.4 | 13.0 | 13.5 | 15.1 | 16.6 | 15.1 | 16.6 | 19 | | |
| Motor capacity | kW | 10.0 | | | | 15.0 | | | | 20.0 | | | | 20.0 | | | | 30.0 | | | | 54.0 | | | |
| Total electric power capacity | kW | 14.2 | 14.9 | 15.6 | 16.4 | 21.3 | 23.2 | 24.2 | 23.8 | 29.7 | 29.4 | 31.2 | 31.4 | 29.4 | 31.2 | 31.4 | 33.0 | 43.5 | 45.1 | 46.6 | 69.1 | 70.6 | 73.0 | | |
| Machine weight | ton | 3.6 | | | | 4.3 | | | | 6.2 | | | | 8 | | | | 12 | | | | 15 | | | |
| Machine dimension (L x W x H) | m | 3.9*1.2*1.6 | | | | 4.6*1.3*1.7 | | | | 5.3*1.4*1.8 | | | | 6.1*1.6*2.0 | | | | 6.6*1.7*2.0 | | | | 8.0*1.9*2.0 | | | |

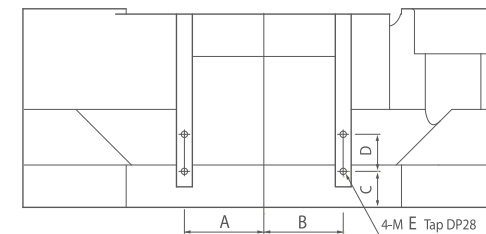
Machine dimensions



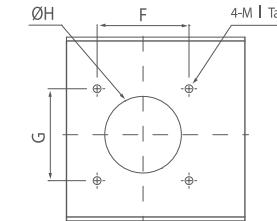
Unit: mm

| | A | B | C | D | E | F | G | H | I | Jzzz |
|--------|------|------|------|------|------|------|------|------|------|------|
| TE50K | 3540 | 3935 | 715 | 1202 | 1125 | 1225 | 1775 | 1550 | 1400 | 629 |
| TE110K | 4225 | 4628 | 850 | 1317 | 1220 | 1340 | 2123 | 1635 | 1545 | 676 |
| TE170K | 4755 | 5343 | 970 | 1437 | 1278 | 1413 | 2423 | 1758 | 1663 | 736 |
| TE220K | 5028 | 5779 | 1140 | 1642 | 1375 | 1510 | 2743 | 1910 | 1805 | 856 |
| TE280K | 5765 | 6726 | 1190 | 1701 | 1370 | 1530 | 3012 | 2023 | 1835 | 901 |
| TE330K | 7105 | 7582 | 1380 | 1886 | 1425 | 1585 | 3666 | 2098 | 1980 | 988 |

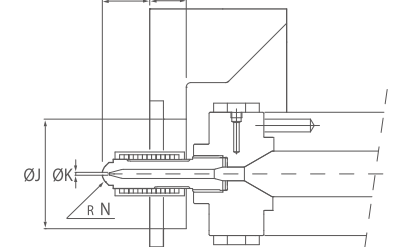
▼ Automatic extractor installation drawing



▼ Hopper installation drawing



▼ Nozzle size

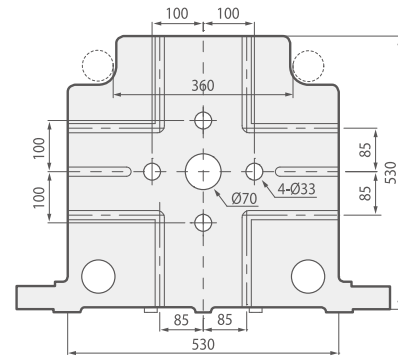


Unit: mm

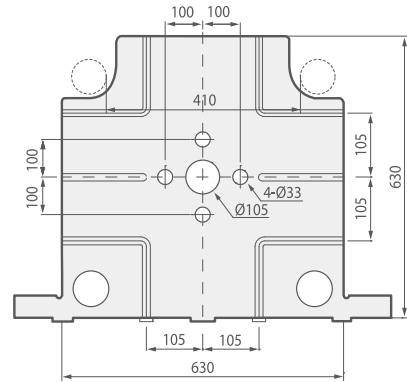
| | Hopper installation drawing | | | | | Hopper installation drawing | | | | Nozzle size | | | | |
|--------|-----------------------------|-----|----|-----|----|-----------------------------|-----|-----|----|-------------|----|----|----|----|
| | A | B | C | D | E | F | G | ØH | I | ØJ | ØK | L | M | N |
| TE50K | 85 | 85 | 50 | 35 | 12 | 80 | 80 | 70 | 8 | 90 | 30 | 25 | 9 | 9 |
| TE110K | 105 | 105 | 47 | 40 | 12 | 100 | 100 | 85 | 12 | 100 | 50 | 30 | 10 | 10 |
| TE170K | 150 | 150 | 62 | 70 | 14 | 120 | 120 | 95 | 12 | 100 | 50 | 30 | 10 | 10 |
| TE220K | 150 | 150 | 70 | 70 | 14 | 120 | 120 | 95 | 12 | 100 | 50 | 30 | 15 | 15 |
| TE280K | 150 | 150 | 86 | 70 | 14 | 120 | 120 | 100 | 12 | 120 | 50 | 40 | 15 | 15 |
| TE330K | 190 | 190 | 67 | 100 | 20 | 120 | 120 | 100 | 12 | 120 | 50 | 40 | 15 | 15 |

Platen dimensions

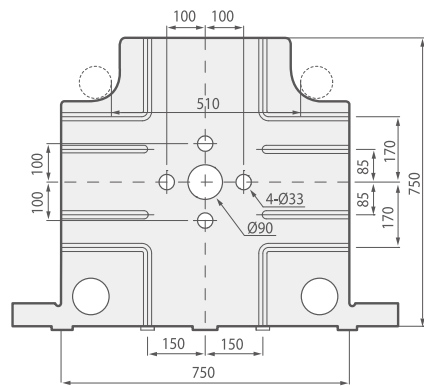
50 ton



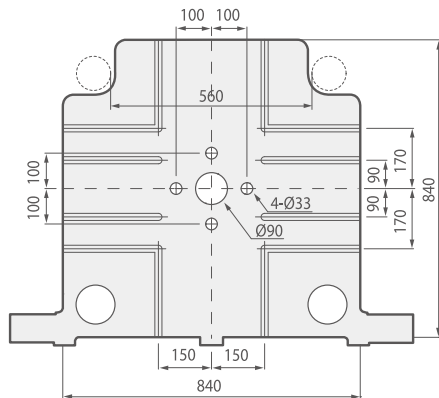
110 ton



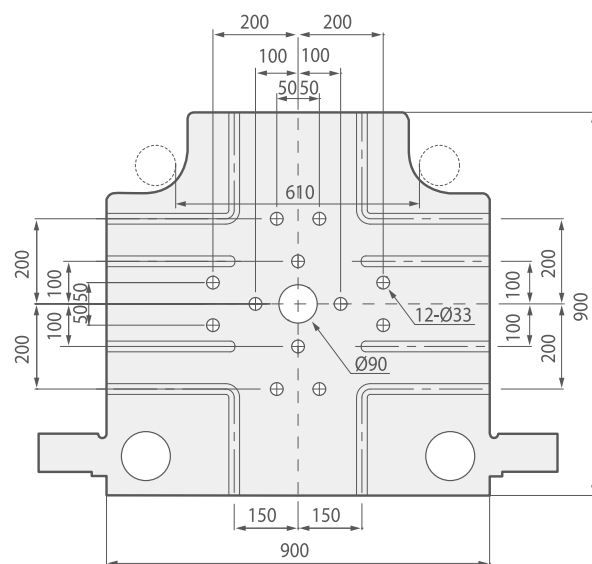
170 ton



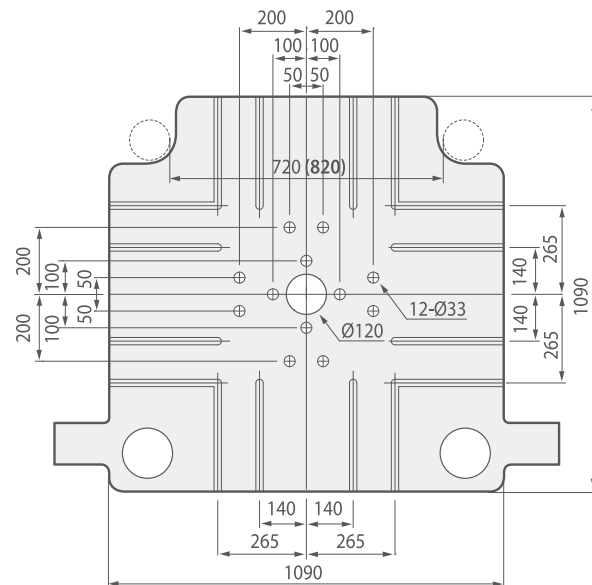
220 ton



280 ton



330 ton



Option lists

S: Standard O: Option

| Injection Unit | | Clamping Unit | | General | |
|--------------------------------------------------|---------|-----------------------------------------------------|---------|-----------------------------------------------------|---------|
| Standard | | | | | |
| 01 Screw RPM display | S | 01 Automatic mold height adjustment | S | 01 Alarm history display & saving | S |
| 02 Auto purge circuit | S | 02 Mold opening during core operation | S | 02 Record of setting - value changed | S |
| 03 Alarm of over time charging process | S | 03 Mold opening during ejecting | S | 03 Statistical function (1000) | S |
| 04 Heater pre-heating timer (Weekly) | S | 04 Product chute | S | 04 I/O circuit display | S |
| 05 Heater temperature abnormal display & alarm | S | 05 Air blow off unit | S | 05 Multi language display | S |
| 06 PID heater temperature control device | S | | | 06 Robot interlock circuit | S |
| 07 Cylinder temperature keeping mode | S | | | 07 Reserved injection molding number and alarm | S |
| 08 Charging on fly(Mold opening during charging) | S | | | 08 Hopper throat temperature control device | S |
| 09 Valve gate (1 stage) | S | | | 09 Auto lubricating oil for clamping unit | S |
| | | | | 10 Auto grease oil (injection unit /clamping unit) | S |
| | | | | 11 Shot data file saving by external way | S |
| | | | | 12 Leveling pads | S |
| | | | | 13 3 stage alarm lamp | S |
| | | | | 14 Maintenance tools | S |
| | | | | 15 Spare parts | S |
| | | | | 16 single phase electrical outlet (1ea) | S |
| | | | | 17 Electrical outlet (5 socket)-2set | S |
| Option | | | | | |
| 01 Shut-off nozzle (Hydraulic/Spring/Pneumatic) | O | 01 Hydraulic core puller (1 stage / 2 stage) | O | 01 Auto safety door open & close device | O |
| 02 Antiwear screw & barrel | O | 02 Unscrewing device | O | 02 Recycling device for lubricating oil | O |
| 03 Antiwear & corrosion screw & barrel | O | 03 Daylight extention | O | 03 Robot interlock interface (Euromap 67/SPI) | O |
| 04 Double flight screw | O | 04 Auto clamps (Quick Die Changer) | O | 04 Product drop confirmation device | O |
| 05 Hopper moving device | O | 05 Insulation plate for mold | O | 05 Product good or bad check device | O |
| 06 Heater disconnection detector | O | 06 Automatic adjustment of clamping force | O | | O |
| Other | | | | | |
| 01 Mold opening control stage (Speed/Pressure) | 8 stage | 01 Injection process control stage (Speed/Pressure) | 6 stage | 01 Molding data memory capacity (Internal/External) | 1000 ea |
| 02 Mold closing control stage (Speed/Pressure) | 8 stage | 02 Holding process control stage (Speed/Pressure) | 6 stage | | |
| 03 Ejector control stage (Speed/Pressure) | 8 stage | 03 Charging process control stage (Speed/Pressure) | 3 stage | | |
| 04 Back pressure control stage | 8 stage | | | | |

