DP-N Series Two-platen Injection Molding Machine

(550-3500 US Tons)
Yizumi-HPM Corporation is a manufacturer of high quality hybrid injection molding machinery from 60 to 3500 tons, and hot and cold chamber die casting machinery from 200 to 4500 tons. HPM has been supplying injection molding machinery and support services to the plastic industry since 1931, and has thousands of Injection Molding and Die Casting Machines in operation throughout North America.

HPM Company was incorporated in 1877 as the Hydraulic Press Manufacturing Company in Mount Gilead, Ohio, with the purpose to design and build hydraulic presses for the extraction of apple cider. Through the sales efforts of its founders, the company marketed its products to most fruit-growing areas in the United States and Canada, gaining credibility primarily through word-of-mouth advertising. HPM started to manufacture hydraulic presses that were used in a number of markets, including textiles, railroads, and food processing.

In March of 2011, YIZUMI Precision Machinery Co., Ltd, located in China, acquired all HPM intellectual properties. Shortly after the purchase, HPM North America Corporation was set up in Marion, Ohio. In 2017 HPM North America changed its name to Yizumi-HPM Corporation to be representative of the formidable international company that we are a part of today.

Yizumi-HPM Corporation sells and manufactures injection molding machines and die casting machines based upon the HPM designs but utilizing the engineering, manufacturing and financial strengths of YIZUMI. It is not only the service and technical center of YIZUMI in North America; it’s also a very important step of the globalization strategy of the company. I hope with further global operation of HPM and YIZUMI brands, we can provide our customers worldwide with our best products and services. - Richard Yan, CEO of Yizumi

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About Yizumi-HPM Corporation

DP-N Series Two-platen Injection Molding Machine

Yizumi-HPM’s cost-effective two-platen injection molding machine not only brings high productivity for injection molding production, but also higher return on use value to customers through stable performance and high product quality. DP-N series is your trustworthy better choice in the long term.

Three Value Propositions

Precision & Stability
- High-response servo valve control technology and ultrasonic displacement sensor are applied to mold closing and opening, with accurate position control and mold-open repeatability up to ±0.1mm.
- Fully-closed-loop control of the injection and hold (pressure and velocity) stages, numerically-controlled proportional back pressure and part repeatability ≤ 3%.

High Efficiency & Energy Saving
- Clamping unit is highly rigid. There is no contact and frictional resistance between the movable platen and tie bars so that motion becomes faster. With the diagonally-positioned high-speed cylinders, four short-stroke high-pressure cylinders and synchronous locking nut mechanism, mold closing and closing and generation of clamping force happen in less time and dry cycle becomes very short, reducing cycle time and improving productive efficiency by 22%.
- The high-performance Ecoservo drive and piston variable pump system can provide pressure and flow as needed and has merits of strong power and fast response, consuming 56% less energy than traditional drive systems.

Special Processes
- Based on Germany modular design and excellent equipment structure, a variety of special processes solutions, such as injection compression molding (ICM) technology, FoamPro microcellular foam technology, precision mold-open technology, secondary mold-close technology, carbon fiber-based lightweighting technology, long glass fiber (LGF) injection molding technology and multi-material micro injection molding technology are available.
Modular Design

Precise, Efficient, Energy-saving

High-rigidity platen and precise mold opening
Box-shape platen is designed for high rigidity and high parallelism. Mold closing and opening are controlled by high-response servo valve with mold-open repeatability up to ±0.1mm.

Higher efficiency
With further optimized clamping unit, mold closing and opening and generation of clamping force happen in shorter time and dry cycle time (EUROMAP 6, dry cycle time of UN1000DP up to 4.1sec) is reduced, with productive efficiency up by 22%.

More reliable and stable clamping unit
The high-pressure clamping cylinder, parallel locking nut mechanism and tie bars are made of high-quality materials and subject to special technical processing so that they are durable and reliable. Tie bars are designed with uniform stress distribution, which ensures the clamping unit works reliably and stably.

Steadier mold support
The moving platen is supported by extended rigid sliding shoes with the function of tilt adjustment and L-shape guide design, providing steady support and precise guidance for the mold.

More accurate position control
Measurement of stroke is performed by the ultrasonic displacement sensor which is resistant to interference and durable, with accuracy up to 0.001%/F.S.

Professional control system
Austria’s KEBA controller works faster and it is powerful enough to offer a variety of control software solutions for special processes.

Better injection precision
Double parallel cylinders and patented dual proportional closed-loop control technology are applied to injection, with high injection repeatability and repeatability of part weight ≤ 3%.

Lower energy consumption
High-performance Ecoservo drive technology, a standard feature for the DP series, is integrated with the piston variable pump system to offer strong power and fast response, resulting in 56% less energy consumption.

※ Data above are reference criteria for factory test.
DP-N Series Two-platen Injection Molding Machine

Offer You Multiple Solutions

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*Calculation of injection unit model based on international standards: shot volume [cm³] × max. injection pressure [bar]/1000
*Larger platens are optional (see specifications).

Application Examples

- Car grille
- Car light
- Bumper
- Washing machine tub
- TV frame
- Air conditioner panel
- Plastic pallet
- Rubbish bin
Clamping Unit

- High-rigidity platens are designed as box structures with high degree of parallelism, large space between tie bars, large mold thickness and long mold-open stroke.
- Mold closing and opening are controlled by high-response and high-speed proportional valves, with mold opening repeatability up to ±0.1mm.
- Diagonally-positioned high-speed cylinders enable mold closing and opening to be faster and effectively shorten dry cycle.
- Clamping force is quickly generated thanks to the synchronous locking nut mechanism and four short-stroke high-pressure cylinders.
- Compact two-platen clamp unit saves space by 20%.

- No contact between tie bars and movable platen
  No frictional resistance, faster mold opening and closing, no need of tie bar lubrication and clean mold area without oil stain.
- High-pressure mold opening
  High-pressure cylinders offer large mold opening force, which solves the problem of difficult mold opening in the production of deep-cavity parts.
- Synchronous locking nut mechanism
  The fast, reliable and durable synchronous locking nut mechanism is driven by patented impact-cushioning cylinders and performs movements accurately.
- Highly-rigid extended platen supports
  The moving platen is supported by exceptionally long, rigid sliding shoes with the function of tilt adjustment and L-shape guide design, providing steady support and precise guidance for large molds.
- Safety foot plates
  Large areas of safety foot plates that harbor no oil or water are mounted in the areas of front and rear safety gates and mold. Separate safety switches are connected to the controller for safety, completely conforming to GB22530-2008 national safety standard.
- Open ejector mechanism
  The open double-cylinder ejector mechanism is easy to install and maintain. Ejection synchronized with mold opening and forced ejector-backward are available.
- Automatic tie bar retraction
  The automatic tie bar retraction function is optional and designed with stability and reliability. It can remove the restriction of factory ceiling height.
Injection Unit

Thanks to modular design, each clamping unit can be combined with different injection units to meet diversified needs of injection molding applications.

Combination of advanced drive technology and further optimized plasticizing unit brings better plasticizing effect, so that molding of precision parts is no longer difficult.

Double-parallel-cylinder injection, fully-closed-loop control of the injection and hold (pressure and velocity) stages, numerically-controlled proportional back pressure and stable injection end position ensure part repeatability is less than or equal to 3‰.

Ceramic heater bands are used for barrel heating and it is under self-tuning PID temperature control performed by Austria’s KEBA controller, with control accuracy up to ±0.5℃. The heater bands have long service life and low energy consumption.

Specialized bi-metallic barrel assembly resistant to wear and corrosion is optional to meet requirements of different materials.

- Carriage supports and linear guide rails
  - High-rigidity carriage supports and double-deck guide rails are designed with low resistance and ensure high injection precision.

- Ultrasonic digital displacement sensor
  - Injection and injection carriages are equipped with ultrasonic displacement sensors which are resistant to interference and durable, with measurement accuracy up to 0.001%/F.S.

- Quick barrel change mechanism
  - Barrel is mounted with a press plate. The injection unit and barrel assembly are detachable as a whole, which greatly shortens the barrel unit replacement time.

- Injection carriage cylinder
  - Two injection carriages are parallel located. The universal coupling used for connection ensures stable nozzle contact and no plastic leak.

09 10
Hydraulic System

◆ The excellent performance of DP-N series benefits from the high-performance Ecoservo drive technology and the piston variable pump, which has strong power, fast response, little internal leak and significant energy savings.

◆ The drive system and injection unit will be matched in the form of modules so as to customize the power for machine and minimize energy loss.

◆ Mold opening during plasticizing, ejection or core pulling is a standard feature that reduces cycle time.

① Precision filtration and cooling system
The hydraulic system includes Germany’s HYDAC low-pressure oil filter and cooling system, with separate filtration and cooling. Filter fineness up to 5μm ensures clean hydraulic circuit, stable oil temperature and reliable, durable hydraulic components.

② Humanized design
The cabinet of the drive unit is designed with L-shape covers available to opened, which is maintenance-friendly.

③ Fast response
With the use of advanced Ecoservo drive technology, the system response time is only 50ms.

④ Strong power
The power system employs Italy’s branded servo motor and imported piston variable pump, with fast response, high overload capacity, double energy savings and energy consumption reduction up to 56%.

Data above are reference criterions for factory tests.
**Control System**

- DP-N series employs Austria’s KEBA control system with user-friendly interface and higher processing speed. It is also powerful and capable of providing multiple control software solutions for special processes.
- 12” TFT color touch screen, visualized graphic parameter setting, actual parameter values recorded and displayed with curves, more accurate online process analysis.
- Free programming is available to meet the needs of special molds and processes. The sequence of machine movements also can be freely edited.
- Extensible I/O modules can integrate with more functions, including temperature control and sequence valve as needed.
- Communication ports for printer, auxiliary equipment and automation.

**Professional control system**

**Powerful and accurate in control**

Quick process parameters setting and easy operation

- **Stable, fast and accurate control**
  - Double-CPU control, 1ms of scan cycle, faster response and high reliability
  - Real-time accurate control of mold closing and opening and injection by the intelligent high-response closed-loop controller

- **Easy to operate**
  - Networked remote control
  - Online conversion of multiple languages and units
  - Multiple means of quick input, such as graph and virtual keyboard
  - Easy and convenient process parameter setting

- **Data and safety**
  - Storage of process data without limit
  - Memory of alarm and process parameter change
  - Process quality control (PDP), statistical process control (SPC) and data export
  - Multi-level user access ensuring data safety, multiple protections of equipment and operator through software and hardware

- **Networked remote control**

- **Production process data control**

- **Sequence of machine movements**

- **Mold closing settings**

- **Injection curve**
### DP-N Series Two-platen Injection Molding Machine

**Special Processes**

With the use of rigorous and innovative Germany processes, DP-N series gives every material distinctive properties and provides new ideas of application and efficient, intelligent material combinations.

Yizumi-Hpm is committed to becoming a leader in China’s injection molding machine industry and provide you with cost-saving injection molding solutions and the best investment return.

#### Low-pressure injection molding technology

![Diagram of low-pressure injection molding technology]

**Technical points:**

- Injection compression molding (ICM) function
- SmartClamp technology realizes automatic calibration of platen parallelism, with response accuracy up to ±0.015mm/2ms.

#### FoamPro microcellular foam technology

![Diagram of FoamPro microcellular foam technology]

**Technical points:**

- SmartClamp technology
- Alternative temperature technology (ATT)
- Aircraft aluminum mold technology
- FLEXflow servo-driven hot runner system

> Data above are reference criteria for factory test.

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### High-pressure mold opening

- Mold opening driven by high-pressure cylinders with large opening force
- Solution to difficult mold-open in the manufacture of deep-cavity parts

Applied to production of deep-cavity parts, including washing machine drum, rubbish bin and storage box.

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### Secondary mold closing

- Mold closing for the second time with larger pressure
- Effectively prevent possible internal stress in molded parts and air trap
- Improve the accuracy and appearance quality of molded parts for higher QC passing rate

For automotive applications, such as car lights and applications in household appliances industry.

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### Molded part repeatability

![Chart of molded part repeatability]

Test part: automotive lampshade
Repeatability
Without secondary mold closing: 0.725%
With secondary mold closing: 0.715%
Carbon fiber molding

Carbon fiber has been widely used in passenger cars. The greatest advantage of carbon fiber as an automotive material is light and strong, which will facilitate breakthroughs in automotive lightweighting and bring a social benefit: energy saving. In the future, “high carbon fiber” will become increasingly popular.

Reaction technology

◆ HP-RTM (high-pressure resin transfer molding), completed with the use of preform, steel mold, vacuum-aided exhaust, high-pressure injection and high pressure, thermoset composites impregnation and solidification technologies
◆ In situ polymerization technology

Injection molding technology

◆ Carbon fiber composite preform
◆ Processes such as heating, press forming, back injection and trimming of preform

Technology of multi-material micro injection molding via second injection unit

◆ Higher added value of molded part
◆ Enhanced mechanical property of molded part
◆ Better appearance of molded part
◆ Improved productive efficiency
◆ Less investment cost

Technical points:

◆ Accurate horizontal rotator positioning and control technology
◆ Spray painted part surface replaced by high-gloss appearance
### Main Part List

<table>
<thead>
<tr>
<th>(Standard) Part Name</th>
<th>Brand / Specifications</th>
<th>Place of Brand</th>
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<tbody>
<tr>
<td>Control system</td>
<td>KEBA</td>
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<td>Servo motor</td>
<td>PHASE</td>
<td>Italy</td>
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<td>Rexroth</td>
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<td>Proportional valve</td>
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<td>Seal</td>
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<tr>
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<td>Suction filter</td>
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<td>Japan</td>
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### Standard and Optional Features

#### Injection Unit
- Standard pressure: 2200 bar (optional: 2500 bar)
- Standard injection speed: 1500 cm³/min (optional: 1700 cm³/min)
- Standard injection pressure: 1500 bar (optional: 1800 bar)
- Standard injection speed: 3000 cm³/min (optional: 3500 cm³/min)
- Standard injection pressure: 3000 bar (optional: 3500 bar)

#### Other
- Standard auxiliary equipment
- Optional auxiliary equipment

### Standard

- Injection unit
- Clamping unit
- Electrical control system
- Ejection / tie bar reset / plasticizing / core pulling during mold opening
- Statistical process control (SPC) interface
- Auto-protection of mold closing monitoring
- Auto-protection of injection monitoring
- PDP interface
- Automatic heat preserving, automatic heating and group heating settings
- 12"TFT color touch screen
- Online cycle monitoring
- Safety gate emergency stop function
- Unlimited technical parameter storage
- Built-in software with the oscilloscope function
- Protective light grid of central safety foot plate
- Protective light grid of safety gates
- Central (networked) monitoring system
- Electric unscrewing device interface
- Auxiliary emergency stop
- Hot runner control system
- Electric unscrewing device
- Robot interfaces based on EUROMAP 67
- Oil cleanliness monitoring
- Phase sequence protection
- 16-level password security
- Time/ position/ time + position control modes for switchover to holding pressure
- Input and output inspection interface

### Optional

- 10-stage injection speed/ pressure/ position control
- Other auxiliary equipment
- Mold temperature controller
- 4 sets of lifting rings
- Adjustable leveling pad
- Operation Manual
- Quick connector for core puller and hydraulic gate
- Gate pressure relief
- Core puller pressure relief
- Enlarged multi-capacity pump motor
- Automatic oil temperature inspection and alarm
- Imported branded seal
- Automatic pressure and flow calibration
- High-pressure mold opening
- Differential mold opening circuit
- Oil pre-heating system
- Modular combination of power
- Low-noise energy-saving hydraulic circuit
- Imported-brand hydraulic valve
- High-precision low-pressure oil filter
- 8 sets of hydraulic sequence valve (bi-directional)
- Second injection unit for micro injection molding
- Enlarged plasticizing motor
- Hopper sliding device
- Auxiliary ladder
- Hopper loading platform
- System dedicated to UPVC pipe fitting
- MuCell system
- Special low-pressure injection molding system
- Servo injection system
- Increased injection stroke
- Spring shut-off nozzle
- Special screw components
- Swivel injection unit
- Bi-metallic screw
- Ceramic heater band
- Manual central lubrication system of injection unit
- Suck back function
- Protective cover of injection unit
- Double-deck injection unit
- Linear guides for injection
- Linear guides for injection carriage
- Selectable suck-back before or after plasticizing

### Standard

- Injection unit
- Clamping unit
- Electrical control system
- Ejection / tie bar reset / plasticizing / core pulling during mold opening
- Statistical process control (SPC) interface
- Auto-protection of mold closing monitoring
- Auto-protection of injection monitoring
- PDP interface
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- Oil cleanliness monitoring
- Phase sequence protection
- 16-level password security
- Time/ position/ time + position control modes for switchover to holding pressure
- Input and output inspection interface

### Optional

- 10-stage injection speed/ pressure/ position control
- Other auxiliary equipment
- Mold temperature controller
- 4 sets of lifting rings
- Adjustable leveling pad
- Operation Manual
- Quick connector for core puller and hydraulic gate
- Gate pressure relief
- Core puller pressure relief
- Enlarged multi-capacity pump motor
- Automatic oil temperature inspection and alarm
- Imported branded seal
- Automatic pressure and flow calibration
- High-pressure mold opening
- Differential mold opening circuit
- Oil pre-heating system
- Modular combination of power
- Low-noise energy-saving hydraulic circuit
- Imported-brand hydraulic valve
- High-precision low-pressure oil filter
- 8 sets of hydraulic sequence valve (bi-directional)
- Second injection unit for micro injection molding
- Enlarged plasticizing motor
- Hopper sliding device
- Auxiliary ladder
- Hopper loading platform
- System dedicated to UPVC pipe fitting
- MuCell system
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- Servo injection system
- Increased injection stroke
- Spring shut-off nozzle
- Special screw components
- Swivel injection unit
- Bi-metallic screw
- Ceramic heater band
- Manual central lubrication system of injection unit
- Suck back function
- Protective cover of injection unit
- Double-deck injection unit
- Linear guides for injection
- Linear guides for injection carriage
- Selectable suck-back before or after plasticizing

### Standard

- Injection unit
- Clamping unit
- Electrical control system
- Ejection / tie bar reset / plasticizing / core pulling during mold opening
- Statistical process control (SPC) interface
- Auto-protection of mold closing monitoring
- Auto-protection of injection monitoring
- PDP interface
- Automatic heat preserving, automatic heating and group heating settings
- 12"TFT color touch screen
- Online cycle monitoring
- Safety gate emergency stop function
- Unlimited technical parameter storage
- Built-in software with the oscilloscope function
- Protective light grid of central safety foot plate
- Protective light grid of safety gates
- Central (networked) monitoring system
- Electric unscrewing device interface
- Auxiliary emergency stop
- Hot runner control system
- Electric unscrewing device
- Robot interfaces based on EUROMAP 67
- Oil cleanliness monitoring
- Phase sequence protection
- 16-level password security
- Time/ position/ time + position control modes for switchover to holding pressure
- Input and output inspection interface

### Optional

- 10-stage injection speed/ pressure/ position control
- Other auxiliary equipment
- Mold temperature controller
- 4 sets of lifting rings
- Adjustable leveling pad
- Operation Manual
- Quick connector for core puller and hydraulic gate
- Gate pressure relief
- Core puller pressure relief
- Enlarged multi-capacity pump motor
- Automatic oil temperature inspection and alarm
- Imported branded seal
- Automatic pressure and flow calibration
- High-pressure mold opening
- Differential mold opening circuit
- Oil pre-heating system
- Modular combination of power
- Low-noise energy-saving hydraulic circuit
- Imported-brand hydraulic valve
- High-precision low-pressure oil filter
- 8 sets of hydraulic sequence valve (bi-directional)
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- Auxiliary ladder
- Hopper loading platform
- System dedicated to UPVC pipe fitting
- MuCell system
- Special low-pressure injection molding system
- Servo injection system
- Increased injection stroke
- Spring shut-off nozzle
- Special screw components
- Swivel injection unit
- Bi-metallic screw
- Ceramic heater band
- Manual central lubrication system of injection unit
- Suck back function
- Protective cover of injection unit
- Double-deck injection unit
- Linear guides for injection
- Linear guides for injection carriage
- Selectable suck-back before or after plasticizing
**UN550DP-N Machine Dimensions**

- **UN550DP-N Platen Dimensions**

**UN550DP-N Technical Specifications**

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<td>Cooling water flow</td>
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<td>72.5~87</td>
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</table>

1. Screw thread size corresponds to DIN 690.  
2. The load bearing capacity of the moving plates is 1.25 times the total mold weight.  
3. The shot weight is calculated by GPPS and it is 0.92 times of the theoretical shot volume.  
4. The injection unit data is in international units and calculated as follows: shot volume = [m³]/injection pressure [bar]/725.5.  
5. Plastics density is calculated by GPPS.  
6. The maximum shot weight is calculated by [injection pressure [bar] x injection volume [m³]] / 725.5.  
7. Because of constant technical improvement, the machine specifications are subject to change without notice.
Technical Specifications of UN770DP-N

### Machine Dimensions

- **UN770DP-N Machine Dimensions**
  - Cooling water in/outlet for moving mold halves
  - Cooling water in/outlet for fixed mold halves
  - Water in/outlet for oil cooler
  - Robot mounting holes according to Euromap 18/E14

### UN770DP-N Platen Dimensions

![UN770DP-N Platen Dimensions Diagram](image-url)

### Clamping Unit

- **Clamping force**
  - US tons: 767.4
  - KN: 7000
- **Opening stroke**
  - US tons: 50.34
  - KN: 500
- **Platen size**
  - m: 650 x 650
  - mm: 1552 x 1552
- **Space between tie-bars**
  - mm: 430 x 378.50
- **Mold thickness**
  - mm: 170 x 30 x 40
  - in: 6.7 x 1.2 x 1.6
- **Max. opening stroke**
  - m: 120
  - mm: 472
- **Max. clamping force**
  - in: 74.8
  - mm: 1900
- **Ejector force**
  - US tons: 11
  - KN: 755
- **Ejector stroke**
  - m: 3.84
- **Ejector number**
  - PCS: 21

### Electrical & Hydraulic Units

- **System pressure**
  - psi: 2584, 3821
  - bar: 180, 270
  - MPa: 17.5, 30
  - bar: 145.77
  - psi: 2187
- **Motor**
  - hp: 4.5
  - kW: 3.37
  - rpm: 1450
  - hp: 4.8
  - kW: 3.62
  - rpm: 1428
  - hp: 5.0
  - kW: 3.71
  - rpm: 1377
  - hp: 5.5
  - kW: 4.13
  - rpm: 1450

### General

- **Oil tank capacity**
  - gal: 36
  - L: 135
- **Dry cycle**
  - min: 5.6
  - sec: 350
  - mm: 100
  - sec: 600
- **Max. mold weight**
  - lbs: 340
  - kg: 154
- **Machine weight (excluding injection unit, oil)**
  - lbs: 3020
  - kg: 1368
- **Machine dimensions**
  - in: 72 x 72 x 72
  - mm: 1830 x 1830 x 1830

### Notes:

1. All cycle times are with 10% ton load
2. The load bearing capacity of the moving platen is 10% of the total load weight
3. The load bearing capacity is calculated by (MPa) x (in²)/10
4. The injection unit data are in international units and calculated as follows: theoretical shot volume [㎝³] x injection pressure [MPa]/100
5. Plasticizing capacity is calculated by [HP(Hp)/3.6] x (in²)/10
6. Bearing capacity [t/m²] = [16500 (10+10) x (11+11) x 2.90]
7. Of course, the technical data are subject to change without notice.
Technical Specifications of UN990DP-N

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### Clamping Unit

| Clamping force | kN | 900/250 | 900/250 |
| Opening stroke | mm | 800/900 |
| Platen size | mm | 690x90x35 |
| Space between tie-bars | mm | 465x45x16 |
| Mold thickness | mm | 135x30 |
| Max. opening stroke | mm | 64.56 |
| Ejector stroke | mm | 213.8 |
| Ejector number | PCS | 17 |

### Electrical & Hydraulic Units

| System pressure | psi | 150.5 | 150.5 | 150.5 | 150.5 | 150.5 | 150.5 | 150.5 |
| Motor | hp | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 |
| Total power | hp | 180.5 | 180.5 | 180.5 | 180.5 | 180.5 | 180.5 | 180.5 |
| Oil tank capacity | gal | 315.8 |
| Dry cycle | min | 4.8/5.5 | 4.8/5.5 |
| Max. mold weight (clamping unit only) | Lbm | 3000 |
| Machine dimensions | in | 413.39×129.52×114.17 |

1. Screw thread accuracy with 10° conicity.
2. The load-bearing capacity of the moving platen is 2/3 of the total mold weight.
3. Full-load pressure is calculated by formula (MPa)= (injection pressure [MPa]/0.9) for oil cooler (MPa). For all other units in this table, the values are given in US tons, US tons, US tons, US tons, US tons, US tons, US tons, US tons.
4. The injection units are not considered in the total weight.
5. The injection capacity is calculated by formula (injection capacity [cm³/s]) = (injection pressure [MPa]×injection volume [cm³]/10). For all other units in this table, the values are given in US tons, US tons, US tons, US tons, US tons, US tons, US tons, US tons.
6. The above data and specifications are subject to change without notice.
UN1200DP-N Machine Dimensions

UN1200DP-N Platen Dimensions

Technical Specifications of UN1200DP-N

### General
- **Injection Unit**
  - **Description**
  - **Unit**
  - **Volume**
  - **Power**
- **Clamping Unit**
  - **Clamping force**
  - **Opening stroke**
  - **Platen size**
  - **Space between tie bars**
  - **Mold thickness**
  - **Max. opening stroke**
  - **Max. daylight**
- **Ejector force**
- **Ejector stroke**
- **Ejector number**

### Electrical & Hydraulic Units
- **System pressure**
- **Motor**
- **Total power**
  - **Motor**
  - **Injection unit**
  - **Injection unit**
  - **Injection unit**

### Oil Tank
- **Oil tank capacity**
- **Dry cycle**
- **Max. mold weight**
- **Machine weight**

### Technical Specifications
- **Model**
- **Dimensions**
- **External dimensions**
- **Weight**
- **Number of injection Nozzles**
- **Casting water flow (mm/s)**
- **Casting water pressure**
- **Component size**

---

1. The technical data is subject to change without notice.
2. The above data is subject to continuous improvement.
3. The technical data is subject to change without notice.
4. The shot weight is calculated by GPPS and it is 0.92 times of the theoretical shot volume.
5. The injection unit data are international units and calculated as follows: theoretical shot volume (in US tons) x 0.98.
6. The injection unit data are international units and calculated as follows: theoretical shot volume (in US tons) x 0.98.
7. The injection unit data are international units and calculated as follows: theoretical shot volume (in US tons) x 0.98.
### Technical Specifications of UN1650DP-N

#### General
- **Model:** UN1650DP-N
- **Injection Unit:**
  - **Unit:** US tons
  - **Capacity:** 9000, 12050, 15000, 23750

#### Platen Dimensions
- **UN1650DP-N Platen Dimensions**

#### Machine Dimensions
- **UN1650DP-N Machine Dimensions**

#### Injection Unit
- **Screw diameter:**
  - m: 3.571, 4.252, 4.567
- **Theoretical shot volume:**
  - cu/in: 285.827, 347.54, 347.54
  - cm³: 434.935, 454.222, 454.222, 454.222
- **Shot weight:**
  - oz: 17.91, 21.6, 21.6, 21.6
  - g: 0.979, 0.979, 0.979, 0.979
- **Injection pressure:**
  - psi: 74.55, 21.6, 21.6, 21.6
- **Screw L/D ratio:**
  - 21.6
- **Injection rate:**
  - cu/in/hr: 40.255, 40.255, 40.255
  - cm³/min: 623.8, 623.8

#### Clamping Unit
- **Clamping force:**
  - US tons: 978.56, 1280.26
  - kN: 527.56

#### Electrical & Hydraulic Units
- **Power consumption:**
  - kw: 14.6, 14.6
  - hp: 20.1, 20.1

#### System specifications
- **System pressure:**
  - psi: 396, 396
  - Bar: 27.5, 27.5
- **Oil tank capacity:**
  - gal: 396
  - l: 1500
- **Dry cycle:**
  - sec: 7.242, 4.42, 4.42

#### Cooling system
- **Number of cooling water lines:**
  - (10+10)×2.90
- **Cooling water flow:**
  - L/min gal/min: 160, 42.24
  - (mold excluded) MAX.94.88
- **Cooling water pressure:**
  - bar psi: 9.84, 140

#### Note:
1. Any tolerance exceeds ±1%.
2. The load bearing capacity of the moving platen is 1/2 of the total mold weight.
3. The mold weight is calculated by (g/cm³ x 10) of the theoretical shot volume.
4. The injection unit data is in international units and calculated as follows: theoretical shot volume/[(injection pressure) x (injection unit model 18500 and smaller ones) or PP (for injection unit above model 18500)].
5. Plasticizing capacity is calculated by (cm³/1000x10 (injection unit model 18500 and smaller ones) or PP (for injection unit above model 18500)).
6. Because of constant technical improvement, the machine specifications are subject to change without notice.

### Screw L/D ratio
Because of constant technical improvement, the machine specifications are subject to change without notice.

### Shot weight
The shot weight is calculated by GPPS and it is 0.92 times of the theoretical shot volume.

### Plasticizing capacity
Plasticizing capacity is calculated by GPPS (for the injection unit model 18500 and smaller ones) or PP (for injection unit above model 18500).

### Injection unit data
The injection unit data are in international units and calculated as follows: theoretical shot volume/[(injection pressure) x (injection unit model 18500 and smaller ones) or PP (for injection unit above model 18500)].
### Technical Specifications of UN2000DP-N

#### Machine Dimensions

- **Model**: UN2000DP-N
- **Clamping Unit**
  - **Clamping force**: 1912.0/1913.5
  - **Opening stroke**: 165.3
  - **Platen size**: 2040x2400
  - **Space between tie-bars**: 730x620.10
  - **Mold thickness**: 225x340x34
  - **Max. opening stroke**: 120.3
  - **Max. daylight**: 135.9
- **Ejector force**: 34
- **Ejector stroke**: 40
- **Ejector number**: 33

#### Electrical & Hydraulic Units

- **System pressure**: 2538.0/2539.5
- **Motor**: 17.5
- **Total power**: 280.32
- **Max. mold weight**: 3600
- **Machine weight (clamping, injection units, no oil)**: 160000
- **Machine dimensions**: 4400x1650x1780

#### Injection Unit

- **Screw diameter**: 3.097
- **Theoretical shot volume**: 5.111
- **Shot weight**: 26.0
- **Injection pressure**: 130.9
- **Ejector force**: 1912
- **Max. injection speed**: 3.484
- **Max. screw speed**: 23.0
- **Screw torque**: 1470
- **Heating capacity**: 132.62
- **Bearing heating zone number**: 8
- **Noselet contact force**: 38
- **Electrical & Hydraulic Units**
  - **System pressure**: 2538.0/2539.5
  - **Motor**: 17.5
  - **Total power**: 280.32
  - **Max. mold weight**: 3600
  - **Machine weight (clamping, injection units, no oil)**: 160000
  - **Machine dimensions**: 4400x1650x1780

---

1. This data is applicable with maximum mold weight (100% full mold weight).
2. Theoretical clamping capacity is calculated by HMS and our standard clamping press.
3. Full load current is defined as Full load current (HP) / 0.75 (kW) / 1.2 (KVA) for the electrical and hydraulic units.
4. Bearing capacity is calculated by HMS for the screw and hydraulic units.
5. Because of constant technical improvement, the machine specifics may be subject to change without notice.
### UN2500DP-N Technical Specifications

#### UN2500DP-N Machine Dimensions

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| Electrical & Hydraulic Units

#### UN2500DP-N Clamping Unit

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#### Oil tank capacity

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#### Dry cycle

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#### General

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<th>UN2500DP-N</th>
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<tbody>
<tr>
<td>Frame dimension</td>
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<td>80.46x4+74.55</td>
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</table>

1. Dry cycle time recorded with 80% MPP & 15% load.
2. The load bearing capacity of the moving platen is 2/3 of the total load weight.
3. Max. load weight is calculated by MPP & 80% is the theoretical shot volume.
4. The injection unit data are in international units and calculated as follows: theoretical shot volume (cm³) x injection pressure (MPa) / 1000
5. Plasticating capacity is calculated by MPP & (the injection unit speed x 80% mold weight x 42% for the 145x145x145 cavity)
6. Because of constant technical improvement, the machine specifications are subject to change without notice.
### Technical Specifications of UN3000DP-N

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1. Dry cycle time includes aux. 80W/500RPM.
2. The mold clamping force is calculated by 25% of the maximum clamping force.
3. The mold clamping force is calculated by 30% of the theoretical shot volume.
4. The injection unit and oil unit are in internal units and calculated as follows: theoretical shot volume / injection pressure = [injection pump] / [injection unit speed].
5. Plasticizing capacity calculated by (MPa) x (injection unit speed) x (stator area or (injection opening area - bore area)).
6. Because of constant technical improvement, the machine specifications are subject to change without notice.

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#### UN3000DP-N Machine Dimensions

- **Cooling water inlet/outlet**
  - 648.5mm (25.5"")
- **Max. injection speed**
  - 2.94m/s (11.6")
- **Screw stroke**
  - 334.5mm (13.2"")
- **Max. screw speed**
  - 110rpm
- **Screw torque**
  - 161.220Nm (117.5"")
- **Heating capacity**
  - 1142.2kW
- **Max. opening stroke**
  - 3150mm (124.0")
- **Max. daylift**
  - 153mm (6.0")
- **Ejector force**
  - 114kN (25915lb)
- **Ejector stroke**
  - 114mm (4.5")
- **Ejector number**
  - 11PCS

---

#### UN300DP-N Platen Dimensions

- **Cooling water inlet/outlet** for making mold halves
- **Max. injection speed**
  - 2.94m/s (11.6")
- **Screw stroke**
  - 334.5mm (13.2"")
- **Max. screw speed**
  - 110rpm
- **Screw torque**
  - 161.220Nm (117.5"")
- **Heating capacity**
  - 1142.2kW
- **Max. opening stroke**
  - 3150mm (124.0")
- **Max. daylift**
  - 153mm (6.0")
- **Ejector force**
  - 114kN (25915lb)
- **Ejector stroke**
  - 114mm (4.5")
- **Ejector number**
  - 11PCS

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#### UN3000DP-N Platen Dimensions

- **Cooling water inlet/outlet** for making mold halves
### UN3500DP-N Machine Dimensions

- **Cooling water inlet/outlet for moving mold halves**
- **Water inlet/outlet for fixed mold halves**

### UN3500DP-N Platen Dimensions

- **Robot mounting holes according to Amorper 10/E122**
- **Power port**

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### Technical Specifications of UN3500DP-N

#### Machine Dimensions

- **UN3500DP-N Machine Dimensions**
- **UN3500DP-N Platen Dimensions**

#### Clamping Unit

- **Clamping force**
- **Opening stroke**
- **Platen size**
- **Space between tie bars**
- **Mold thickness**
- **Max. opening stroke**
- **Max. daylight**
- **Ejector force**
- **Ejector stroke**
- **Ejector number**

#### Electrical & Hydraulic Units

- **System pressure**
- **Motor**
- **Total power**
- **Oil tank capacity**
- **Dry cycle**
- **Max. mold weight**
- **Machine weight (clamping injection, ejector units, no oil)**
- **Machine dimensions**

---

1. Dry cycle time according to B190/7 with 100% MFR.
2. The load bearing capacity of the moving mold halves is 2/3 of the total mold weight.
3. The load bearing capacity is calculated by SMP and is 1/3 of the theoretical shot volume.
4. The injection unit data are in international units and calculated as follows: theoretical shot volume [cm³] × injection pressure [MPa]/100
5. Platenizing capacity is calculated by [6×(theoretical shot volume×MFR)+17.5]/25 (mm³/min) for [6×(theoretical shot volume×MFR)+30]/65 (mm³/min) for [6×(theoretical shot volume×MFR)+40]/95 (mm³/min) for [6×(theoretical shot volume×MFR)+50]/125 (mm³/min) for [6×(theoretical shot volume×MFR)+60]/155 (mm³/min) for [6×(theoretical shot volume×MFR)+70]/185 (mm³/min) for [6×(theoretical shot volume×MFR)+80]/215 (mm³/min) for [6×(theoretical shot volume×MFR)+90]/245 (mm³/min) for [6×(theoretical shot volume×MFR)+100]/275 (mm³/min) for [6×(theoretical shot volume×MFR)+110]/305 (mm³/min)
6. Because of constant technical improvement, the machine specifications are subject to change without notice.