Direct Drive Mechanism For Injection

Highly responsive and high speed injection control is achieved with direct-drive structure mechanism as the core of the injection.

- High response, low inertia servo motor with corresponding low inertia load design to achieve the aim of the actual closed cycle and high acceleration.
- Applied rotation mechanism for the injection unit, which is more convenient for disassembling screw components and effectively reduce the operation time.

Equipped with high-precision encoder and injection pressure sensor, which could control screw position with accuracy and stabilize rubber melting, injection pressure holding and back pressure operation.

Content-rich standard configuration

- **Heat cover**
  - Adopt double-deck heat cover of stainless steel.
  - Reduce energy consumption of heating system.
  - Avoid operator be scalded due to mishandling.

- **Injection safety protector**
  - Reasonable design which avoids operator being scalded due to mishandling and facilitates operation, greatly improves work efficiency.

- **Material clean-up plate**
  - Configured stainless steel cleaning plate under the nozzle to facilitate waste removal, avoiding waste being left on the gap of machine while clean-up operation, less troubled during maintenance.

- **Chute type erecting bed for hopper**
  - Humanized design, easily installed: Adopts high-quality steel, stronger and make it more durable, safely and reliably to use.

- **Color touch display**
  - 15 inch HD color touch display. Its clear image makes it handy to operate, rotatable design which is more convenient for technical operation.

- **Three-color alarm light**
  - When emergency occurs, the device will remind you what kind of situation by different colors, you can cope with urgent situations more easily, greatly increase the production management efficiency.

Injection speed controlled

- Applied low inertia load design which could strengthen basic characteristics of injection speed responsiveness and low speed injection traceability.
Advantageous Hi-precision Clamping Mechanism

Highest mold opening/closing speed 1500mm/s
Mold service life extended by 2-3 times

1500 mm/s 2~3 times

Direct-drive mechanism with high response which make the precision of pausing opening and closing mold to less than 0.02mm. Besides, it has excellent control of mold low pressure and significantly extend the mold service life.

Optimized plate design
Stress concentration plate design unifies clamping force of the mold bears, improving the issues of inadequate venting and nonuniform of pressure on mold surface, what occurs on traditional toggle machines, significantly increasing the mold service life.
Advantages Of Diversified Configuration

In Response To Diversified Plastics

With requirement of higher heat resistance for high-precision molded parts and the advent of plastics products that can substitute metal parts, the performance requirements of the molded products are increasing. Depending on the characteristics of the resins, from PO with long molding cycle to PC for optical lenses and ABS for structural parts, specially designed and developed screws by Anstech based on factors such as resin heating temperature and injection speed may be used, together with specialized screw components with special material, special processing and special treatment.

Screw Options Of Various Types

<table>
<thead>
<tr>
<th>Type Of Screw</th>
<th>Nitrogen Treated</th>
<th>Plated</th>
<th>NCW1</th>
<th>NCW2</th>
<th>NCW3</th>
<th>NTW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear Resistance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Applicable Resin
- Wear-free and noncorrosive resin
- Not easily charred and not easily stranded resins
- Retardant resins containing less than 15% glass fiber
- Resins containing less than 50% glass fiber and many other additives
- Resins containing less than 50% glass fiber
- Resins requiring high temperature molding

○ Usable  ○ Suitable  ● Most suitable

Use the most suitable screw components corresponding to the special requirement of resins of various types to improve product quality and extend the service life of the equipment.

Diversified Products

![Diversified Products](image)

AD-T series

Platen specification

Hopper erecting bed size

Small sized water-cooled flange

<table>
<thead>
<tr>
<th>A</th>
<th>M8</th>
<th>D</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>49</td>
<td>E</td>
<td>65</td>
</tr>
<tr>
<td>C</td>
<td>60</td>
<td>F</td>
<td>115</td>
</tr>
</tbody>
</table>

Suitable for S65, S85, S105, S135 Injection units

Mid sized water-cooled flange

<table>
<thead>
<tr>
<th>A</th>
<th>M8</th>
<th>D</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>60</td>
<td>E</td>
<td>75</td>
</tr>
<tr>
<td>C</td>
<td>60</td>
<td>E</td>
<td>75</td>
</tr>
</tbody>
</table>

Suitable for S175, S219, S283, S307 Injection units

Robot mounting holes

![Robot mounting holes](image)
Platen specification

Robot mounting holes

AD55T

AD110T

AD140T

AD80T

AD185T
# List Of Standard Types

<table>
<thead>
<tr>
<th>Model</th>
<th>AD30T</th>
<th>AD55T</th>
<th>AD80T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping Force</td>
<td>290(30)</td>
<td>540(55)</td>
<td>780(80)</td>
</tr>
<tr>
<td>Space between the hole</td>
<td>310*290</td>
<td>360*310</td>
<td>410*360</td>
</tr>
<tr>
<td>Plate Dimension</td>
<td>440*420</td>
<td>500*450</td>
<td>580*530</td>
</tr>
<tr>
<td>Opening Stroke</td>
<td>230</td>
<td>250</td>
<td>300</td>
</tr>
<tr>
<td>Mold Thickness</td>
<td>150–300</td>
<td>160–350</td>
<td>160–410</td>
</tr>
<tr>
<td>Pushing Ring</td>
<td>60</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Ejection Force</td>
<td>9(1)</td>
<td>21(2.1)</td>
<td>26(2.7)</td>
</tr>
<tr>
<td>Ejection Stroke</td>
<td>50</td>
<td>70</td>
<td>80</td>
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### Injection Unit System

<table>
<thead>
<tr>
<th></th>
<th>$\text{S67L}$</th>
<th>$\text{S85L}$</th>
<th>$\text{S67L}$</th>
<th>$\text{S85L}$</th>
<th>$\text{S105L}$</th>
<th>$\text{S135L}$</th>
<th>$\text{S105L}$</th>
<th>$\text{S135L}$</th>
<th>$\text{S175L}$</th>
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<tr>
<td>Speed (rpm)</td>
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<td>600</td>
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<td>600</td>
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<td>500</td>
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<tr>
<td>Injection Rate (cm³/min)</td>
<td>153</td>
<td>188</td>
<td>228</td>
<td>294</td>
<td>153</td>
<td>188</td>
<td>228</td>
<td>294</td>
<td>190</td>
</tr>
<tr>
<td>Injection Pressure (MPa)</td>
<td>280</td>
<td>224</td>
<td>179</td>
<td>280</td>
<td>224</td>
<td>179</td>
<td>280</td>
<td>224</td>
<td>285</td>
</tr>
<tr>
<td>Holding Pressure (MPa)</td>
<td>224</td>
<td>179</td>
<td>143</td>
<td>224</td>
<td>179</td>
<td>143</td>
<td>224</td>
<td>179</td>
<td>228</td>
</tr>
<tr>
<td>Pulsation Capacity (kg/h)</td>
<td>10</td>
<td>13</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>13</td>
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</table>

### Other

<table>
<thead>
<tr>
<th></th>
<th>$\text{S67M}$</th>
<th>$\text{S85M}$</th>
<th>$\text{S67M}$</th>
<th>$\text{S85M}$</th>
<th>$\text{S105M}$</th>
<th>$\text{S135M}$</th>
<th>$\text{S105M}$</th>
<th>$\text{S135M}$</th>
<th>$\text{S175S}$</th>
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</thead>
<tbody>
<tr>
<td>Speed (rpm)</td>
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<td>300</td>
<td>300</td>
<td>300</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
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<tr>
<td>Injection Rate (cm³/min)</td>
<td>76</td>
<td>94</td>
<td>114</td>
<td>147</td>
<td>76</td>
<td>94</td>
<td>114</td>
<td>147</td>
<td>95</td>
</tr>
<tr>
<td>Injection Pressure (MPa)</td>
<td>280</td>
<td>224</td>
<td>179</td>
<td>280</td>
<td>224</td>
<td>179</td>
<td>280</td>
<td>224</td>
<td>285</td>
</tr>
<tr>
<td>Holding Pressure (MPa)</td>
<td>224</td>
<td>179</td>
<td>143</td>
<td>224</td>
<td>179</td>
<td>143</td>
<td>224</td>
<td>179</td>
<td>228</td>
</tr>
<tr>
<td>Pulsation Capacity (kg/h)</td>
<td>10</td>
<td>13</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>13</td>
<td>18</td>
</tr>
</tbody>
</table>

We reserve the right to change the specification without prior notice.
# List Of Standard Types

<table>
<thead>
<tr>
<th>Model</th>
<th>AD110T</th>
<th>AD140T</th>
<th>AD185T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping Force (KNF)</td>
<td>1080(110)</td>
<td>1370(140)</td>
<td>1810(185)</td>
</tr>
<tr>
<td>Space between tie bars (mm)</td>
<td>460*410</td>
<td>510*460</td>
<td>560*510</td>
</tr>
<tr>
<td>Plate Dimension (mm)</td>
<td>650*600</td>
<td>720*670</td>
<td>800*750</td>
</tr>
<tr>
<td>Opening Stroke (mm)</td>
<td>350</td>
<td>375</td>
<td>450</td>
</tr>
<tr>
<td>Mold Thickness (mm)</td>
<td>180–410</td>
<td>180–450</td>
<td>200–500</td>
</tr>
<tr>
<td>Packing Ring (mm)</td>
<td>100</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>Ejection Force (KNF)</td>
<td>32(3.2)</td>
<td>36(3.7)</td>
<td>45(4.6)</td>
</tr>
<tr>
<td>Ejection Stroke (mm)</td>
<td>100</td>
<td>100</td>
<td>120</td>
</tr>
</tbody>
</table>

## Injection Unit System

| Screw Diameter (mm) | 22 | 25 | 28 | 25 | 28 | 32 | 32 | 36 | 32 | 36 | 40 | 28 | 32 | 36 | 32 | 36 | 40 | 36 | 40 | 45 | 40 | 45 | 50 |
| Shot Weight (g)     | 1.33 | 1.72 | 2.14 | 1.72 | 2.14 | 2.80 | 2.91 | 3.78 | 4.80 | 4.34 | 5.46 | 6.76 | 2.91 | 3.78 | 4.80 | 4.34 | 5.46 | 6.76 | 5.46 | 6.76 | 8.89 | 5.46 | 6.76 | 8.89 |
| Shot Weight (oz)    | 0.053 | 0.062 | 0.081 | 0.062 | 0.081 | 0.130 | 0.141 | 0.272 | 0.351 | 0.440 | 0.570 | 0.764 | 0.294 | 0.405 | 0.503 | 0.440 | 0.570 | 0.503 | 0.503 | 0.503 | 0.503 | 0.503 | 0.503 |
| Screw Speed (rpm)   | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Injection Diameter (mm) | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| Injection Distance (mm) | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Nominal Diameter (mm) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |

### Injection Unit

| Injection Unit | $105L$ | $135L$ | $175L$ | $219M$ | $175M$ | $219M$ | $263M$ | $175M$ | $219M$ | $263M$ | $105M$ | $135M$ | $175S$ | $219S$ | $175S$ | $219S$ | $263S$ | $175S$ | $219S$ | $263S$ | $107S$ |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Injection Speed | mm/rev | 500 | 500 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 300 | 400 | 400 | 400 | 300 | 400 | 400 | 300 |
| Injection Rate | cm³/s | 190 | 245 | 308 | 245 | 308 | 402 | 246 | 322 | 407 | 322 | 407 | 502 | 246 | 322 | 407 | 322 | 407 | 502 | 305 | 377 | 477 | 377 | 477 | 589 |
| Holding Pressure | MPa | 228 | 177 | 144 | 225 | 179 | 138 | 227 | 174 | 137 | 224 | 176 | 136 | 227 | 174 | 137 | 224 | 176 | 136 | 205 | 166 | 130 | 212 | 166 | 135 |
| Plasticization Capacity | kg/h | 18 | 26 | 37 | 26 | 37 | 53 | 37 | 53 | 76 | 53 | 76 | 101 | 37 | 53 | 76 | 53 | 76 | 101 | 76 | 101 | 136 | 76 | 101 | 136 |

### Other

<table>
<thead>
<tr>
<th>Molder Diameter (mm)</th>
<th>4930<em>1170</em>1800</th>
<th>4930<em>1170</em>1800</th>
<th>4930<em>1170</em>1800</th>
<th>4930<em>1170</em>1800</th>
<th>5250<em>1250</em>1900</th>
<th>5250<em>1250</em>1900</th>
<th>5250<em>1250</em>1900</th>
<th>5510<em>1300</em>2000</th>
<th>5510<em>1300</em>2000</th>
<th>5510<em>1300</em>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molder Height (mm)</td>
<td>4</td>
<td>4.1</td>
<td>4.2</td>
<td>4.3</td>
<td>5.4</td>
<td>5.5</td>
<td>5.6</td>
<td>6.4</td>
<td>6.5</td>
<td>6.7</td>
</tr>
</tbody>
</table>

We reserve the right to change the specification without prior notice.
List Of Equipment

Injection pre-plasticization device
1. Direct drive of injection (corresponding to high-speed and high-response)
2. Injection load with low inertia design (corresponding to high-speed and high-response)
3. Nitrogen treated screw components (opened nozzle)
4. 3 section control of barrel heating
5. Cooling water temperature monitor and high-temperature alarming device
6. V-P switching (injection pressure, position speed and time switching)
7. Molding during pre-plasticization (choose needle valve type nozzle)
8. Installation of injection guard (with safety interlock function)
9. Front linear feed and withdrawal function of screw (start after pressure holding and pre-plasticization)
10. Preventing the screw from starting mode during cooling
11. Multi-phase switching control of injection
12. Multi-phase switching control of pressure holding
13. Multi-phase switching control of pre-plasticization
14. Maximum pressure holding ability at the highest injection speed
15. Rotational device of the injection unit (easier screw replacement)
16. High-precision injection pressure and back pressure detection
17. Injection holding pressure response switch
18. Minimum display of holding pressure time to 0.01s
19. Minimum display of screw position to 0.01mm
20. Chute type erecting bed

Clamping and ejection device
1. Pressure-at-center plate design
2. Mold opening/closing speed and pressure control setting
3. Low pressure protection device
4. Low-vibration mold opening-closing stop device
5. Movable platens supporting device (wear plate of polymer structure)
6. Mold installation and equipment commissioning preparation mode
7. Clamping force setting automation
8. High-precision automatic clamping
9. Ejection device (multiple ejection speed and pressure control stroke position, etc.)
10. Ejection during mold opening
11. Ejection during mold closing
12. Multi-phase speed control of ejection
13. Connecting circuit for robot
14. Mechanical safety interlock protection
15. Safety protection device with double-block dropping
16. Auxiliary power installation to 400VAC(30A), 230VAC(15A) (each 2 sets)
17. 3-color LED alarm device
18. Mold return confirmation signal
19. Ejector valve signal (no voltage setting)
20. Gear core signal (no voltage setting)
21. Core-pulling signal (2 circuits) (no voltage setting)
22. Multi-function air-blowing signal (no voltage setting)
23. Chargering signal (no voltage setting)
24. Automatic lubrication
25. Cooling water 4 circuits

Spare parts
1. Automatic lubrication oil (700ml) 2 sets
2. Manual lubrication oil 400ml 1 set
3. Nozzle device (Disassembling device)
4. Shock proof foot pad
5. Heater
6. Thermocouple
7. Manual oil gun

Control device
1. 1.5” color touch screen
2. Quality management screen (Statistics of actual values such as pre-plasticization stop position and injection stop position)
3. Production management screen (production counting and automatic production complete, etc)
4. Mechanical performance screen (torque, speed and position wave form for various movements)
5. Fully automatic operation signal output
6. Control setting for automatic lubrication
7. USB connection circuit 1 set
8. Alarm control for abnormal auxiliary equipment
9. Heating barrel temperature monitor
10. Alarm information and time display for abnormal equipment
11. Automatic On/off
12. Motor temperature monitor and automatic fan control
13. Control cabinet temperature monitor and automatic fan control
14. Injection starting signal (no voltageA setting)
15. Good products judgement signal (no voltageA setting)

Optional equipment

Injection pre-plasticization device
1. High temperature heating ring (maximum temperature of 450°C)
2. Needle-valve type closed nozzle
3. Plated fixed opening
4. Plated screw components
5. Optics class special screws components
6. NCW1 screw components (resins containing less than 15% glass fiber)
7. NCW2 screw components (resins containing less than 30% glass fiber)
8. NCW3 screw components (resins containing less than 50% glass fiber)
9. NTW screw components (high-temperature style)<380°C)
10. Double threaded screw components (High mixing type)
11. 4 stage high-capacity heating (charging stage)
12. High-protrusion nozzle

Clamping and ejection
1. High-pressure type heat insulator
2. Multi-function air-blowing device (including air valve)
3. Oil pressure control circuit (control circuit and oil circuit) (not including oil pressure unit)
4. Thermal reversing control circuit (not including motor)
5. Mold thickness extends 100mm

Control equipment
1. Added backup power
2. Mold temperature monitor (4 step X style)
3. Mold temperature control device (4 step)

Optional
1. Tool kit
2. Manual oil gun
3. Automatic lubrication oil 700ml
4. Manual lubrication oil 400ml
5. Mold clamps
6. Proximity switch
7. Thermocouple
8. Positioning ring
9. Ejector (standard 3 sets)
10. Hopper

Notes:
1. Changes may be possible to improve the performance and quality of the equipment.
2. Special engineering proposed by customers require prior permission of the technical personnel before implementation.
3. Equipment shall be selected by the customer with the help of the operation technology department and then be approved by the technical department before it can be manufactured.