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# AD-Tseries



2017-1

Ningbo Chuangji Machinery Co.,Ltd



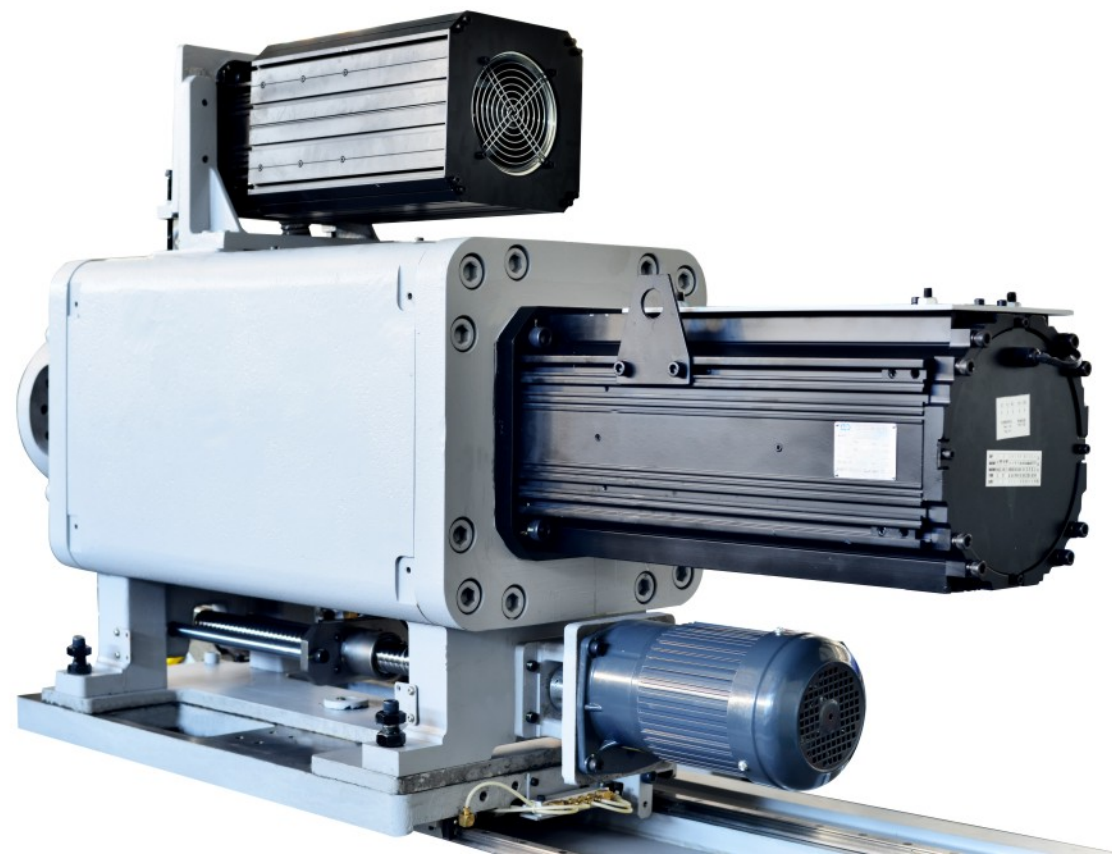
# Direct Drive Mechanism For Injection

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.

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 .

Applied rotation mechanism for the injection unit,which is more convenient for disassembling screw components and effectively reduce the operation time.



## 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.



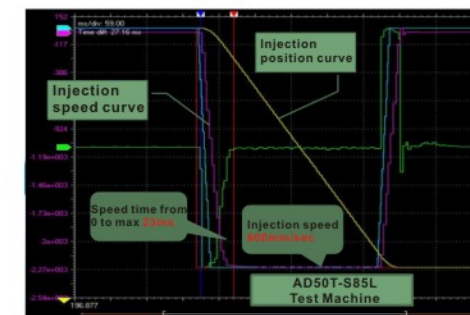
### Three-color alarm light

- 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.

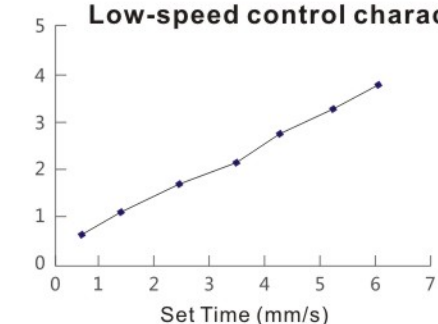


## Injection speed controlled

- Applied low inertia load design which could strengthen basic characteristics of injection speed responsiveness and low speed injection traceability.



Low-speed control characteristics



# Advantageous Hi-precision Clamping Mechanism

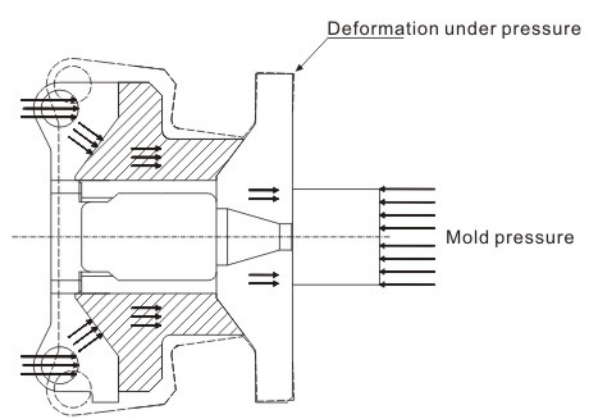
Highest mold opening/closing speed 1500mm/s **1500** mm/s

Mold service life extended by 2-3 times **+** 2~3 times

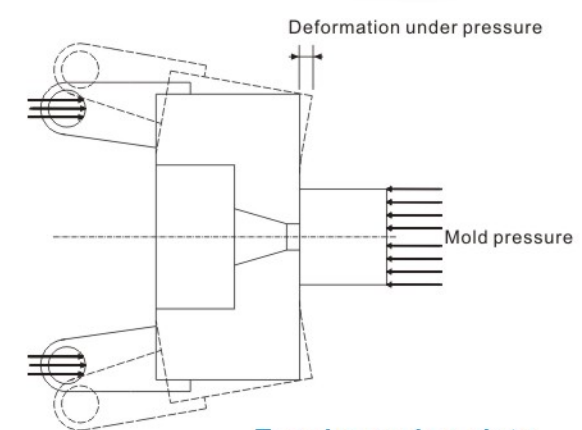
Direct-drive mechanism with high response which make the precision of pausing opening and closing mold to less than 0.02mm ,besides ,it has excellent control of mold low pressure and significantly extend the mold service life.

## Optimized plate design

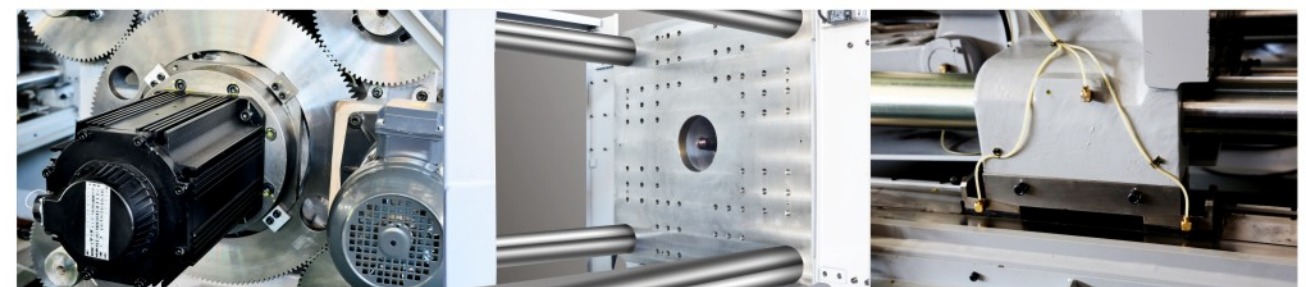
Stress concentration plate design unifies clamping force of the mold bears,improving the issues of inadequate venting and nonuniform of pressure on mold surface,what occurs on traditional toggle machines,significantly increasing the mold service life.



**Stress concentration moving plate**



**Toggle moving plate**



**Direct-drive closing mold**

Direct drive mechanism,quick response for opening and closing mold.excellent protection for low pressure.

**High standard clamping unit**

High standard clamping force and parallelism adjustment are achieved with stable clamping state and reduced mold losses.

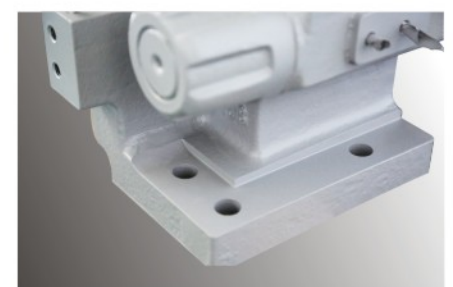
**Support plate**

High wear resistance and low friction of the movable plate supports sliding block, extends mold service life.



**Full-automatic lubricating device**

Reduce cost of maintenance



**Fixed plate structure**

Optimized fixed plate structure, reduces the tilting deforming of plate



**Stress concentration moving plate**

Optimized moving plate structure, significantly improving the precision of locking face.

**Machinery safety bar**

Reliable machinery safety bar.

**Frame**

High strength frame design and adopt thick wall structure steel components, reducing the vibration of fast opening and closing.

# 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 Anstrength 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.

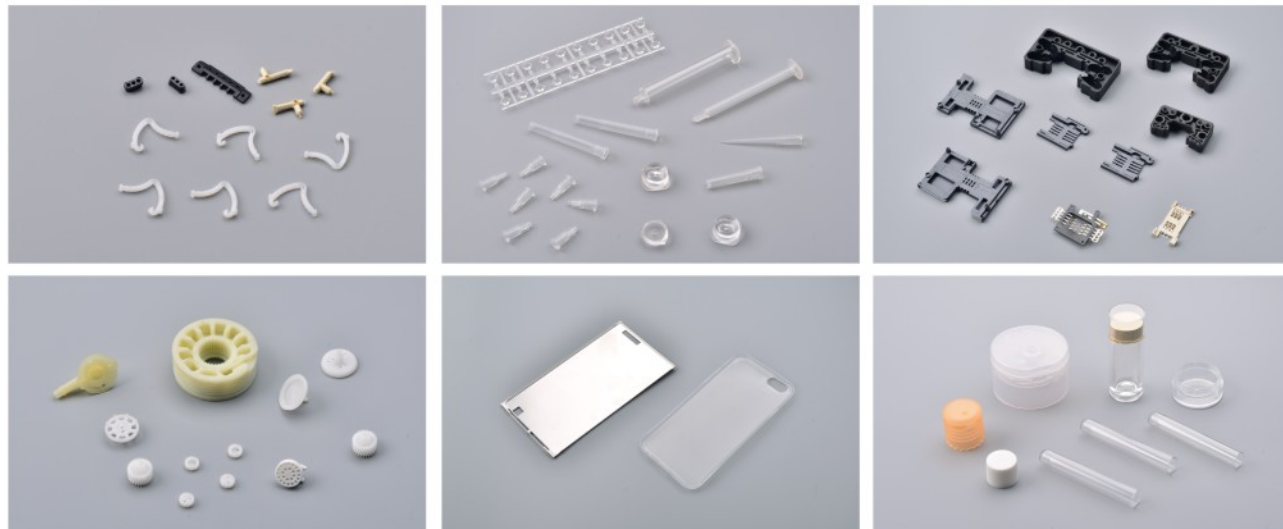
## Screw Options Of Various Types

Type Of Screw	Nitrogen Treated	Plated	NCW1	NCW2	NCW3	NTW
Wear Resistance	○	○	◎	●	●	◎
Corrosion Resistance	○	○	◎	◎	●	◎
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 30% glass fiber 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 type, to improve product quality and extend the service life of the equipment.

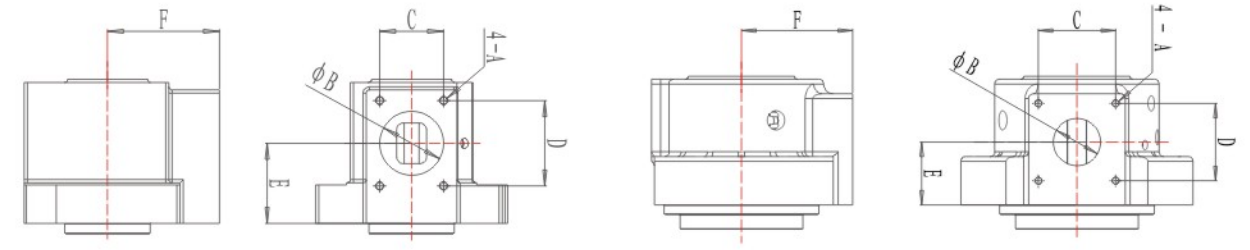
## Diversified Products



# AD-Tseries

## Platen specification

## Hopper erecting bed size



### Small sized water-cooled flange

A	M8	D	80
B	49	E	65
C	80	F	115

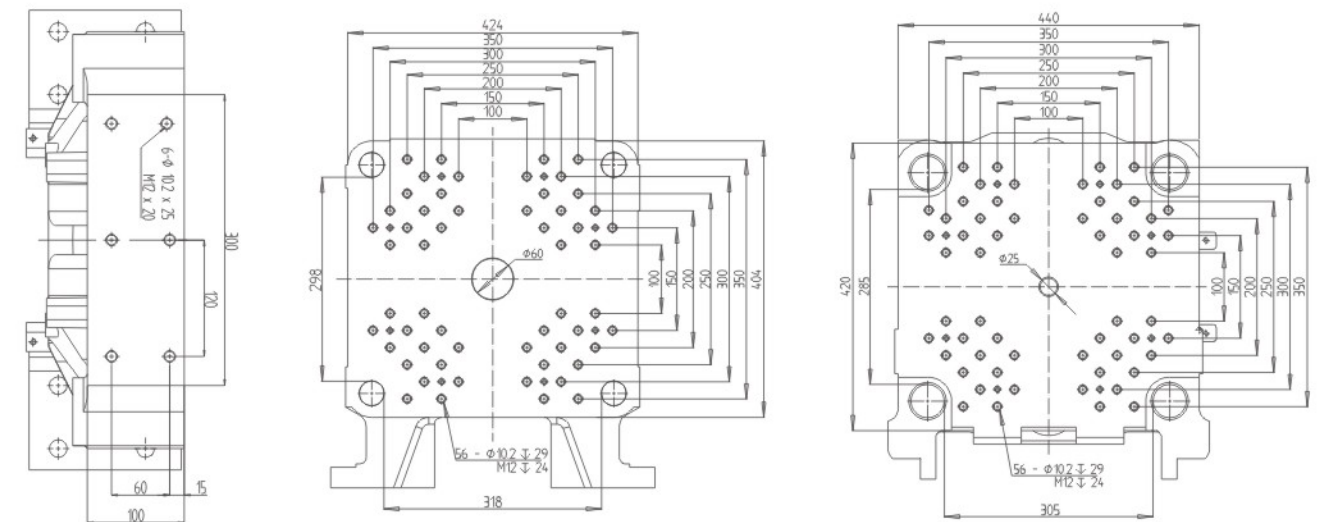
Suitable for S67, S85, S105, S135 injection units

### Mid sized water-cooled flange

A	M8	D	80
B	60	E	75
C	60		

Suitable for S175, S219, S263, S307 injection units

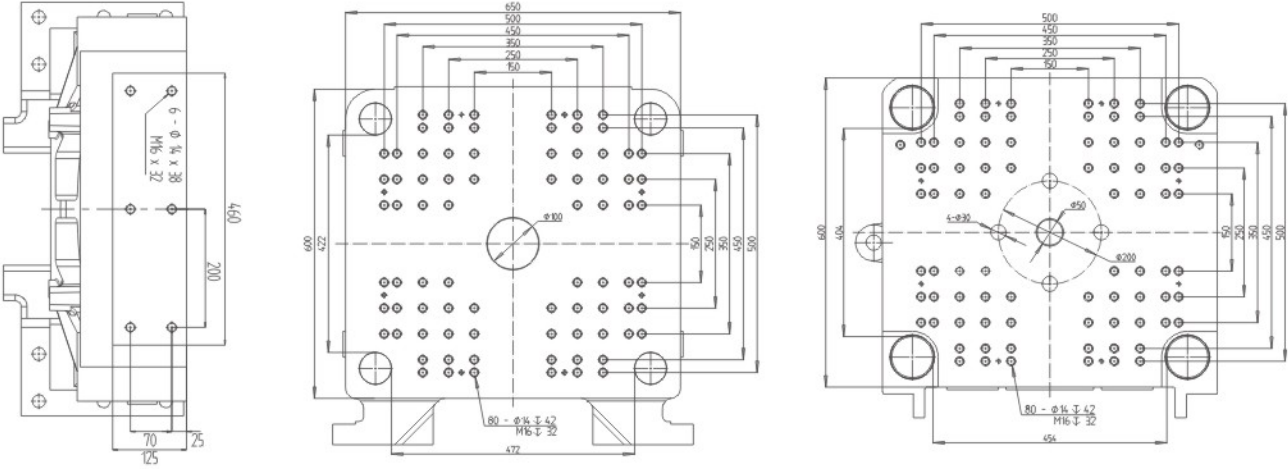
## Robot mounting holes



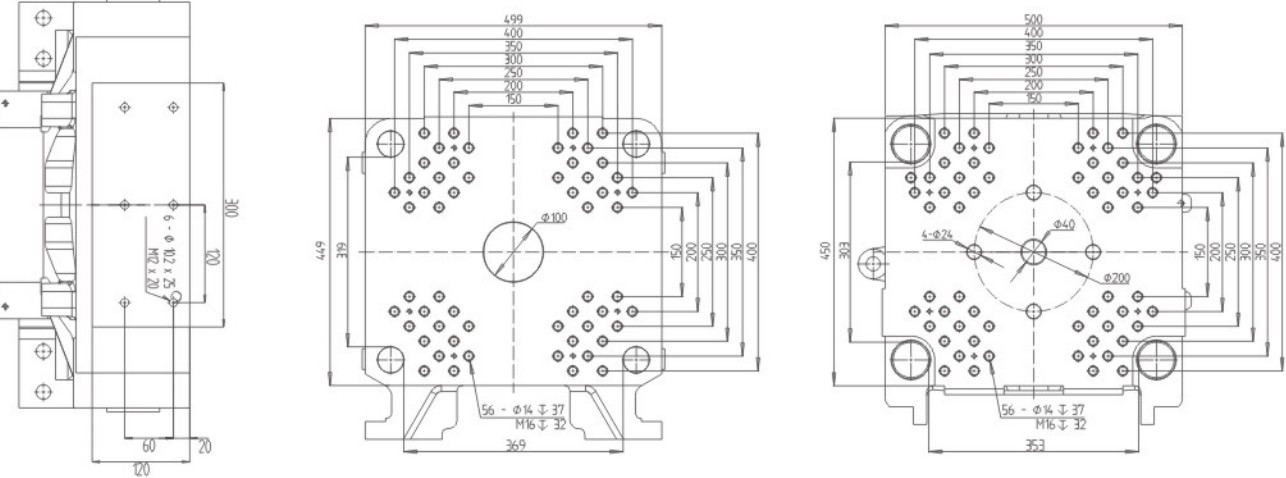
AD30T

# Platen specification

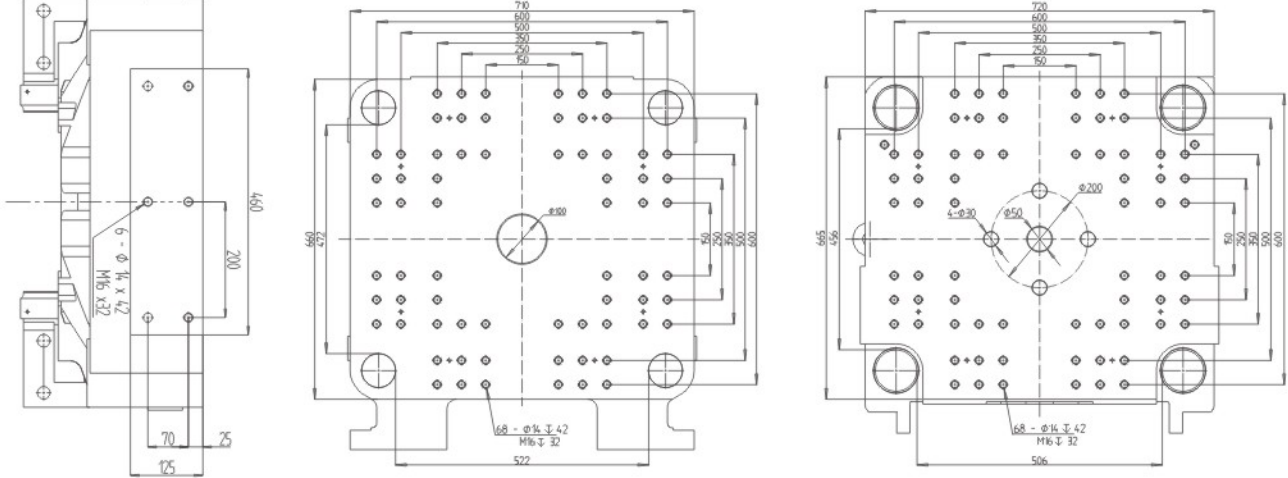
## Robot mounting holes



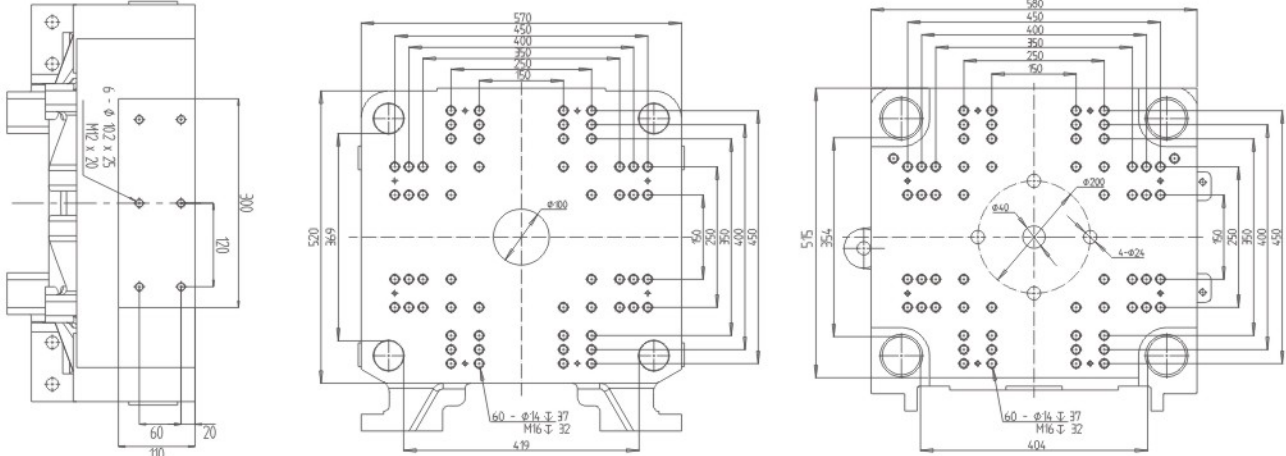
AD110T



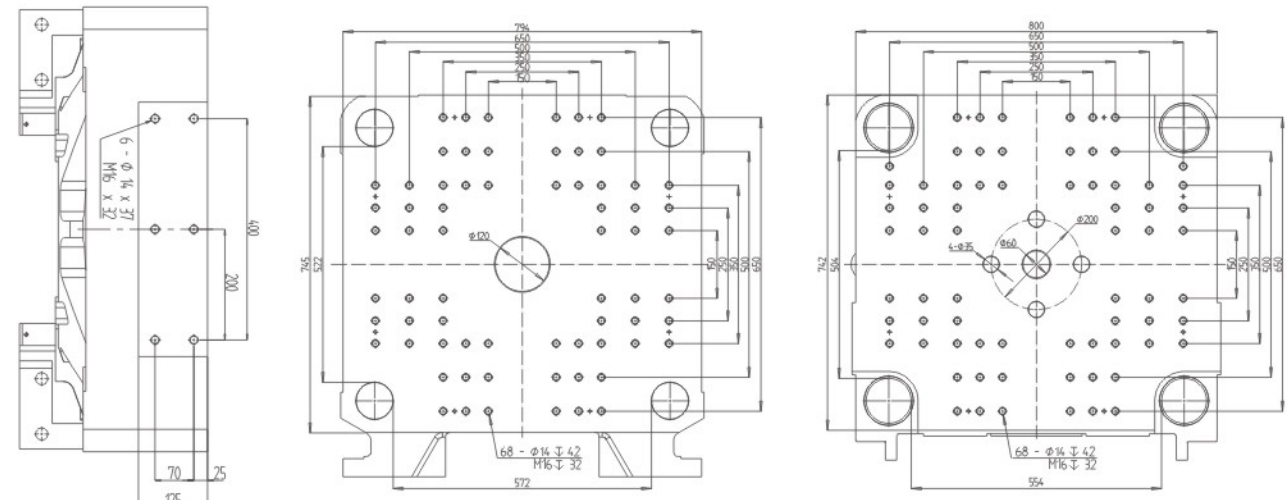
AD55T



AD140T



AD80T



AD185T

# List Of Standard Types

Model		AD30T						AD55T												AD80T										
Clamping Force	kN(tf)	290(30)						540(55)												780(80)										
Space between tie bar	mm*mm	310*290						360*310												410*360										
Plate Dimension	mm*mm	440*420						500*450												580*530										
Opening Stroke	mm	230						250												300										
Mold Thickness	mm	150~300						160~350												160~410										
Positioning Ring	mm	60						100												100										
Ejection Force	kN(tf)	9(1)						21(2.1)												26(2.7)										
Ejection Stroke	mm	50						70												80										
Injection Unit System																														
Screw Diameter	mm	18	20	22	20	22	25	18	20	22	20	22	25	22	25	28	25	28	32	22	25	28	25	28	32	28	32	36		
Shot Weight(gpps)	oz	0.63	0.77	0.95	0.91	1.12	1.44	0.63	0.77	0.945	0.91	1.12	1.44	1.33	1.72	2.14	1.72	2.14	2.80	1.33	1.72	2.14	1.72	2.14	2.80	2.91	3.78	4.80		
	g	18	22	27	26	32	41	18	22	27	26	32	41	38	49	61	49	61	80	38	49	61	49	61	80	83	108	137		
Rubber Melting Speed	r/min	400			400				400			400			400			400			400			400			400			
Injection Distance	mm	73			87				73			87			104			104			104			104			140			
Nozzle Protruding	mm	30			30				30			30			30			30			30			30			45			
Nozzle Contact Force	kN	11			11				11			11			12			12			12			12			24			
Injection unit		S67L			S85L				S67L			S85L				S105L			S135L			S105L			S135L			S175M		
Injection Speed	mm/s	600			600				600			600				500			500			500			500			400		
Injection Rate	cm³/s	153	188	228	188	228	294	153	188	228	188	228	294	190	245	308	245	308	402	190	245	308	245	308	402	246	322	407		
Injection Pressure	MPa	280	224	179	280	224	179	280	224	179	280	224	179	285	221	144	282	224	172	285	221	180	282	224	172	285	218	172		
Holding Pressure	MPa	224	179	143	224	179	143	224	179	143	224	179	143	228	177	180	225	179	138	228	177	144	225	179	138	227	174	137		
Plasticization Capacity	kg/h	10	13	18	13	18	26	10	13	18	13	18	26	18	26	37	26	37	53	18	26	37	26	37	53	37	53	86		
Injection unit		S67M			S85M				S67M			S85M				S105M			S135M			S105M			S135M			S175S		
Injection Speed	mm/s	300			300				300			300				250			250			250			250			200		
Injection Rate	cm³/s	76	94	114	94	114	147	76	94	114	94	114	147	95	123	154	123	154	201	95	123	154	123	154	201	123	161	203		
Injection Pressure	MPa	280	224	179	280	224	179	280	224	179	280	224	179	285	221	180	282	224	172	285	221	180	282	224	172	285	218	172		
Holding Pressure	MPa	224	179	143	224	143	143	224	179	143	224	179	143	228	177	144	225	179	138	228	177	144	225	179	138	227	174	137		
Plasticization Capacity	kg/h	10	13	18	13	18	26	10	13	18	13	18	26	18	26	37	26	37	53	18	26	37	26	37	53	37	53	86		
Other																														
Machine Dimension	mm*mm*mm	3370*900*1680			3370*900*1680				3820*990*1700			3820*990*1700				3820*990*1700			3820*990*1700			4690*900*1680			4690*990*1700			4690*990*1700		
Machine Weight	T	1.9			2				2.2			2.3				2.4			2.4			3.4			3.4			3.6		

# List Of Standard Types

Model		AD110T													AD140T										AD185T												
Clamping Force	kN(tf)	1080(110)													1370(140)										1810(185)												
Space between tie bar	mm*mm	460*410													510*460										560*510												
Plate Dimension	mm*mm	650*600													720*670										800*750												
Opening Stroke	mm	350													375										450												
Mold Thickness	mm	180~410													180~450										200~500												
Positioning Ring	mm	100													100										120												
Ejection Force	kN(tf)	32(3.2)													36(3.7)										45(4.6)												
Ejection Stroke	mm	100													100										120												
Injection Unit System																																					
Screw Diameter	mm	22	25	28	25	28	32	28	32	36	32	36	40	28	32	36	32	36	40	36	40	45	28	32	36	32	36	40	36	40	45	40	45	50			
Shot Weight(gpps)	oz	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	2.91	3.78	4.80	4.34	5.46	6.76	5.46	6.76	8.89	6.76	8.89	10.57			
	g	38	49	61	49	61	80	83	108	137	124	156	193	83	108	137	124	156	193	156	193	244	83	108	137	124	156	193	156	193	244	193	244	302			
Rubber Melting Speed	r/min	400			400			400			400			400			400			400			400			400			400			400			400		
Injection Distance	mm	104			104			140			160			140			160			160			140			160			160			160			160		
Nozzle Protruding	mm	30			30			45			45			45			45			45			45			45			65			65			65		
Nozzle Contact Force	kN	12			12			24			24			24			24			24			24			24			24			24			24		
Injection unit		S105L			S135L			S175M			S219M			S175M			S219M			S263M			S175M			S219M			S263M			S307M					
Injection Speed	mm/s	500			500			400			400			400			400			300			400			400			300			300					
Injection Rate	cm <sup>3</sup> /s	190	245	308	245	308	402	246	322	407	322	407	502	246	322	407	322	407	502	305	377	477	246	322	407	322	407	502	305	377	477	377	477	589			
Injection Pressure	MPa	285	221	180	282	224	172	285	218	172	280	220	171	285	218	172	280	220	171	260	210	165	285	218	172	280	220	171	260	210	165	265	208	169			
Holding Pressure	MPa	228	177	144	225	179	138	227	174	137	224	176	136	227	174	137	224	176	136	205	166	130	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	37	53	76	53	76	101	76	101	136	101	136	193			
Injection unit		S105M			S135M			S175S			S219S			S175S			S219S			S263S			S175S			S219S			S263S			S307S					
Injection Speed	mm/s	250			250			200			200			200			200			160			200			200			160			160					
Injection Rate	cm <sup>3</sup> /s	95	123	154	123	154	201	123	161	203	161	203	251	123	161	203	161	203	251	163	201	254	123	161	203	161	203	251	163	201	254	201	254	314			
Injection Pressure	MPa	285	221	180	282	224	172	285	218	172	280	220	171	285	218	172	280	220	171	260	210	165	285	218	172	280	220	171	260	210	165	265	208	169			
Holding Pressure	MPa	228	177	144	225	179	138	227	174	137	224	176	136	227	174	137	224	176	136	205	166	130	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	37	53	76	53	76	101	76	101	136	101	136	193			
Other																																					
Machine Dimension	mm*mm*mm	4930*1170*1800			4930*1170*1800			4930*1170*1800			4930*1170*1800			5250*1250*1900			5250*1250*1900			5250*1250*1900			5510*1300*2000			5510*1300*2000			5510*1300*2000			5510*1300*2000					
Machine Weight	T	4			4.1			4.2			4.3			5.4			5.5			5.6			6.4			6.5			6.7			6.8					

# 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. 5 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/rear feed and withdrawal function of the screw(started 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 platen 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 400VAC(30A), 230VAC(15A)(each 2 sets)
17. 3-color LED alarming device
18. Mold return confirmation signal
19. Ejector valve signal (no voltageA setting)
20. Gear core signal (no voltageA setting)
21. Core-pulling signal (2 circuits)(no voltageA setting)
22. Multi-function air-blowing signal(no voltageA setting)
23. Charging signal (no voltageA setting)
24. Automatic lubrication
25. Cooling water 4 circuits

## Spare parts

1. Automatic lubrication oil 700ml 2sets
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
8. Manual

## Control device

1. 15" 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 feed 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. T slot plate
2. High-density type heat insulator
3. Multi-function air-blowing device (including air valve)
4. Oil pressure control circuit (control circuit and oil circuit)(not including oil pressure unit)
5. Thread reversing control circuit(not including motor)
6. Mold thickness extends 100mm

## Control equipment

1. Added backup power
2. Mold temperature monitor (4 step, K 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 3sets)
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.