



**LINEAR MOTION**



## **LUDE TRANSMISSION**

High-speed Bevel Gear Screw Jack



Figure 1

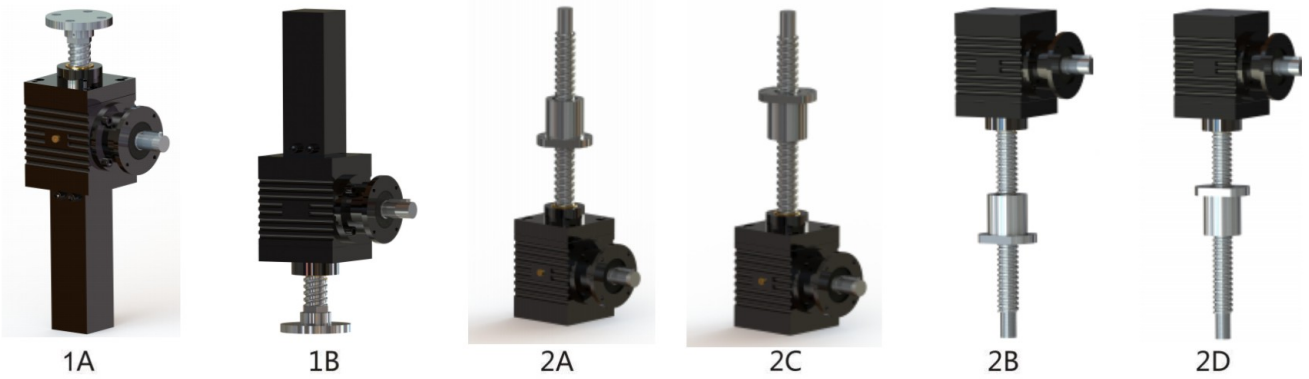


Figure 2

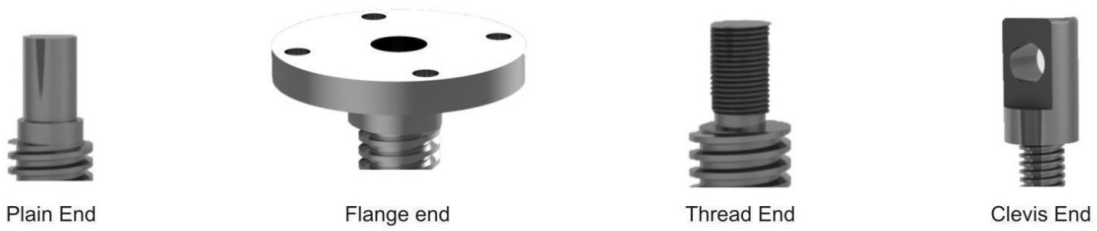


Figure 3

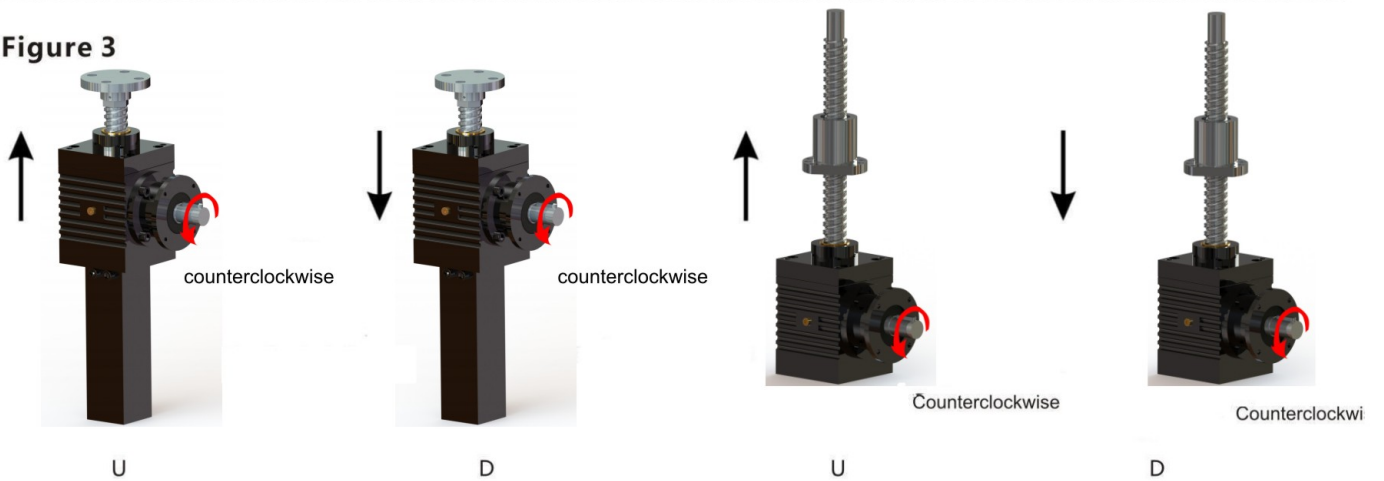
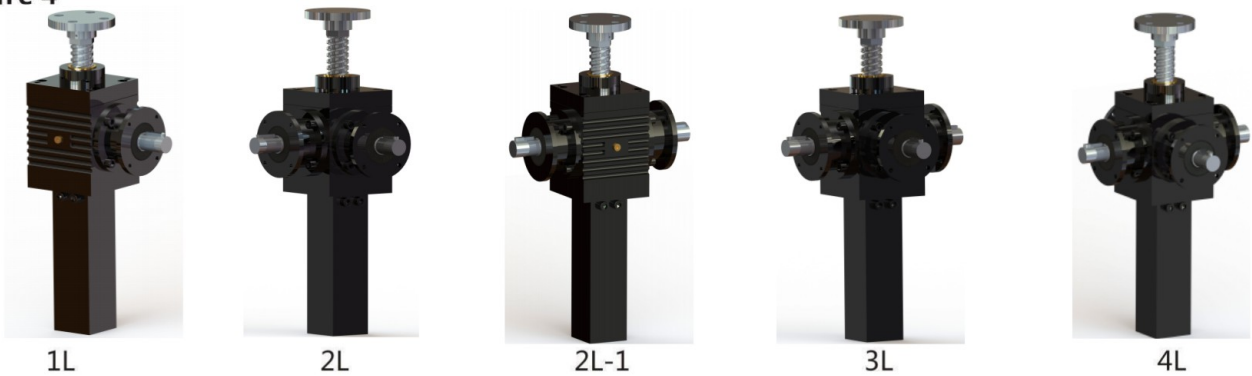


Figure 4





### Use example (elevation diagram)

#### Two synchronous lifts



2I



2U

#### Four synchronous lifts

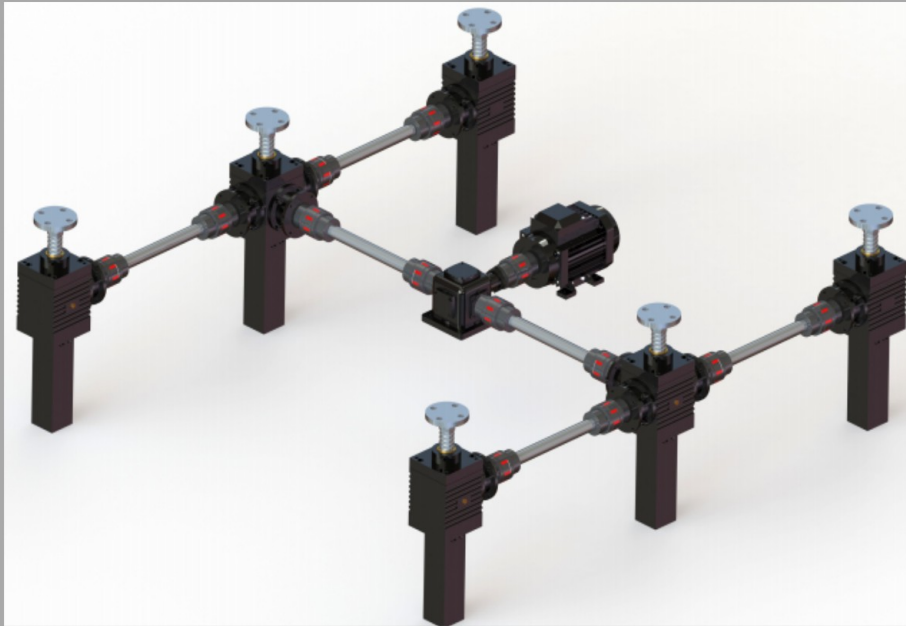


4U



### Use example (elevation diagram)

Six synchronous lifts



6H

Eight synchronous lifting



8H



## LINEAR MOTION

LUDE High-Speed-Screw-Jacks supplement our offer of worm gear screw jacks. They are more efficient and may be used in a broader field of applications. They may be used in a medium load range(15 kN-150 kN), with a high lifting speed and longer operating time.

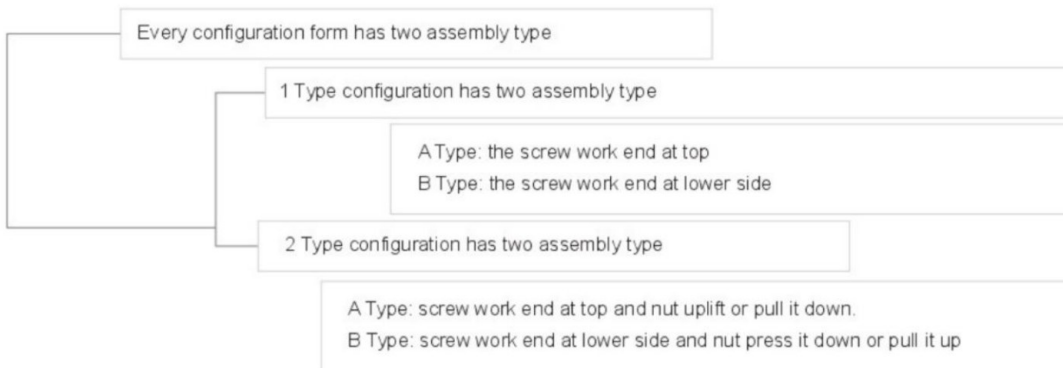
All high speed screw jacks are equipped with hardened, sharpened and spiral-toothed bevel gear transmissions. Therefore, they attain high lifting speeds and improved efficiency. The models GT and GB are available in seven sizes with 2:1 and 3:1 transmissions. With ball screws, high Speed Screw Jacks become even more dynamic. With this better performance values new applications are opened. All high-speed screw jacks are functional in every installation position and can be mounted flexibly thanks to the cubic form. According to the customer's request they are delivered with up to four drive shafts. Lifting assemblies with several High-Speed-Screw-Jacks do not therefore require additional bevel gears.

### TYPE:

#### 2.1. Configuration Form

- 1 Type--worm gear and screw is threaded and coupled, and screw does axial motion;
- 2 Type--worm gear joins screw by key, the screw assembled with nut, and the nut does axial motion.

#### 2.2. Assembly Type



#### 2.3. Screw Head Form

- 1 Type configuration form- screw head form is:
  - I Type(Cylinder), II Type(Flange),III Type(Thread),IV Type(U Head).
- 2 Type configuration form- screw heard form is:
  - I Type(Cylinder), II Type(Thread).

#### 2.4. Drive Ratio

The screw jack is divided into two types: Normal (P) and Slow(M).

#### 2.5. Load Capacity KN

15,25,50,70,90,120,150



LINEAR MOTION

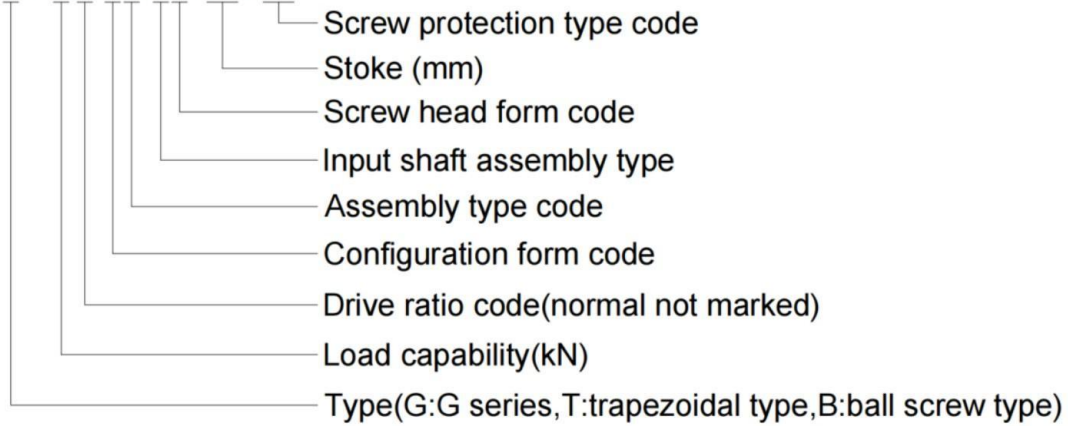
2.6. Protection of Screw

Protection of screw for 1 Type jack: Normal, Protection rotation(F) and Protective cover(Z).

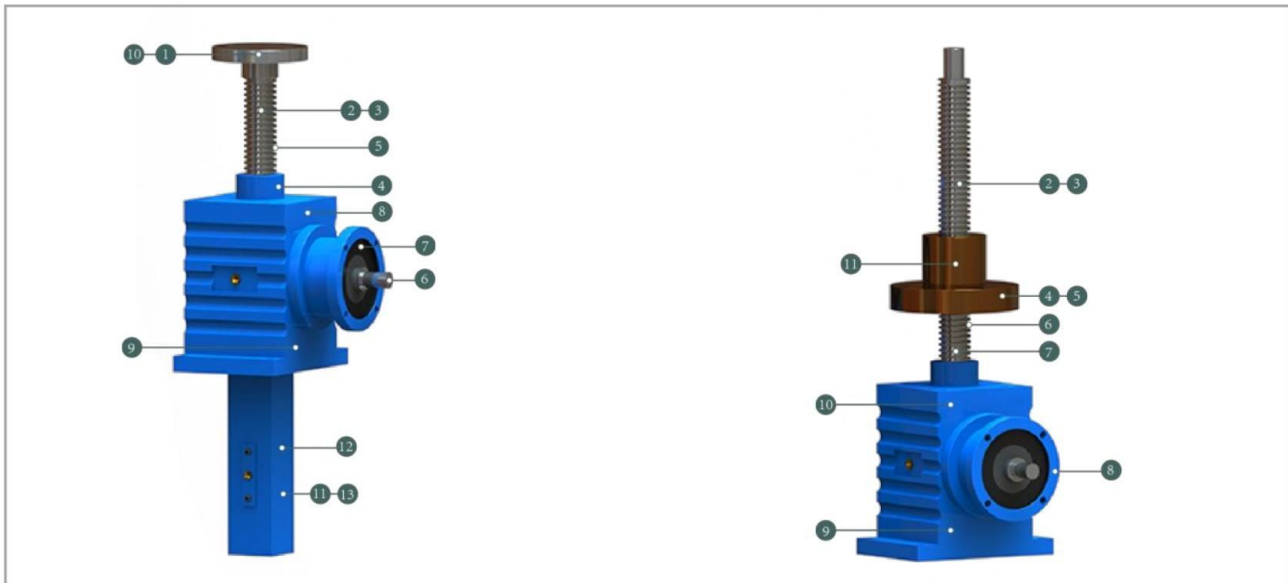
Protection of screw for 2 Type jack: Normal and Protective cover(Z).

2.7. Mark Sample

GT-15L-1A-2II-500-FZ



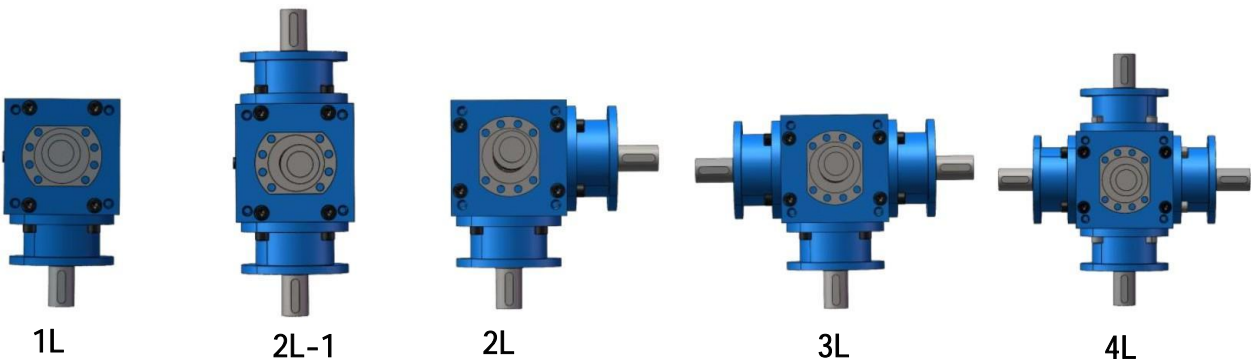
Configuration form



Type 1

Type 2

Input shaft assembly type ( 5 styles )





## Trapezoidal spiral bevel gear parameter table:

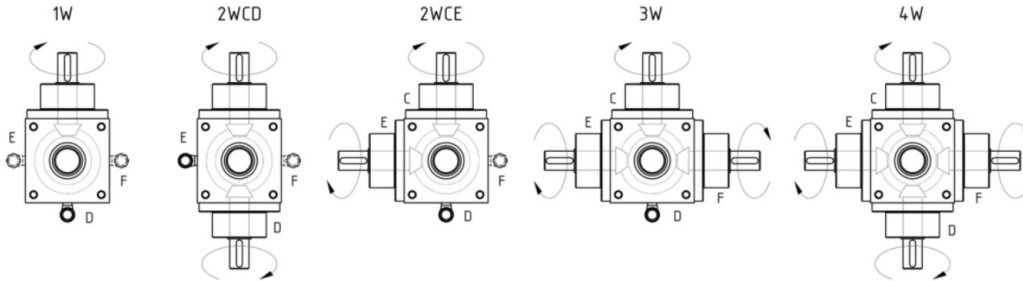
Model		GT15	GT25	GT50	GT70	GT90	GT120	GT150
Max. Lifting strength	[kN]	15	25	50	70	90	120	150
Max.pull force	[kN]	15	25	50	70	90	120	150
Screw thread size	[Tr]	25×5	30×6	40×7	50×10	60×9	80×12	100×20
Ratio		2:1	2:1	2:1	2:1	2:1	2:1	2:1
Stroke per revolution	[mm/U]	2.5	3	3.5	5	4.5	6	10
General efficiency	[%]	0.22	0.26	0.25	0.22	0.21	0.2	0.19
Maximum allowable torque of driveshaft	[Nm]	50	125	175	900	1600	1900	2200
Maximum allowable input shaft torque	[Nm]	150	270	600	1000	1764	2450	2800
Case material		cast iron	cast iron	cast iron	cast iron	cast iron	cast steel	cast steel
Screw+tube weight per 100mm	[kg]	0.5	0.75	1.5	2.5	3.02	4.5	6.8
Lubrication volume	[kg]	0.15	0.9	1.3	2	3.5	4	5
No-load torque	[Nm]	2	3	4	5	7	10	20

## Ball spiral bevel gear parameter table:

Model		GB 15		GB 25			GB 50		GB 70		GB 90			GB 120		GB 150
Max. Lifting strength	[kN]	17	29	19	34	48	39	53	57	60	94	67	87	73	129	143
Max.pull force	[kN]	17	29	19	34	48	39	53	57	60	94	67	87	73	129	143
Screw thread size	Φ	2505	2510	3120	3132	3210	3820	4010	4820	5010	5050	6310	6320	8006	8020	10020
Ratio		2:1		2:1			2:1		2:1		2:1			2:1		2:1
Stroke per revolution	[mm/U]	2.5	5	10	16	5	10	5	10	5	25	5	10	5	10	10
General efficiency	[%]	48	65	70	75	64	69	62	67	61	75	60	65	60	60	60
Maximum allowable torque of drive shaft	[Nm]	50		125			175		900		1600			1900		2200
Maximum allowable input shaft torque	[Nm]	150		270			600		1000		1764			2450		2800
Case material		cast iron		cast iron			cast iron		cast iron		cast iron			cast steel		cast steel
Screw+tube weight per 100mm	[kg]	0.5		0.75			1.5		2.5		3.02			4.5		6.8
Lubrication volume	[kg]	0.15		0.9			13		2		3.5			4		5
No-load torque	[Nm]	2		3			4		5		7			10		20



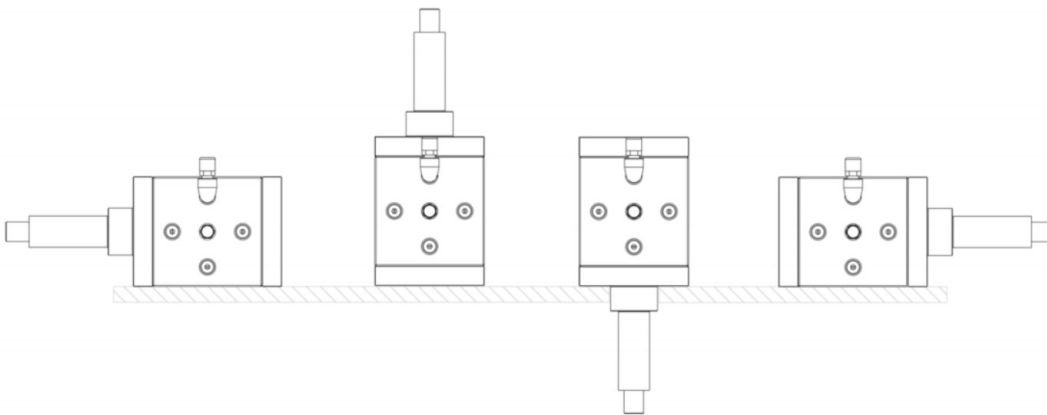
## Shaft assemblies & Location of oil armatures



### Shaft assemblies

Selection of shaft assemblies and position of oil armatures. The standard positions of the oil armatures is shown in bold. The shaft assemblies and the position of oil armatures can be selected via the product code. Please pay attention that the direction of rotation of the output shaft changes if there are more than one shaft selected.

## Installation position of vent valve according to the mounting position



### Location of vent valve

Please make sure that the vent valve in the mounted position is above oil level. At speeds below 1500 rpm the High Speed Screw Jack can be operated without vent valve. In case of swing operation make sure that the vent valve in all times of operating is above the oil level. It consists a risk of oil leakage.





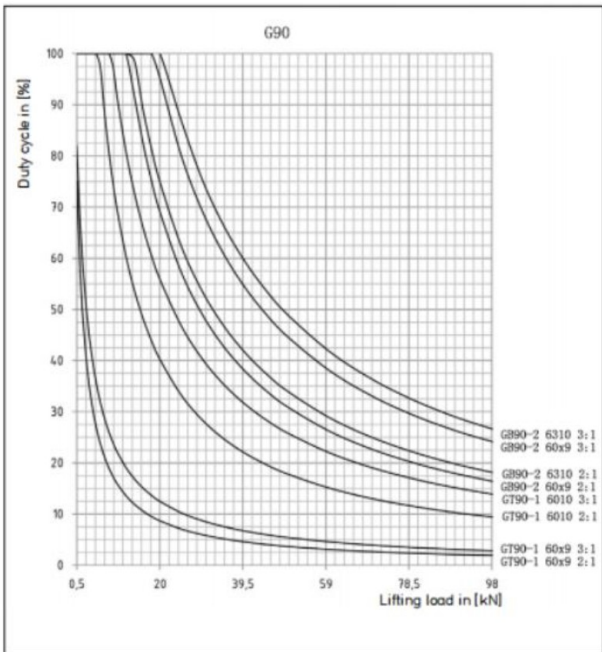
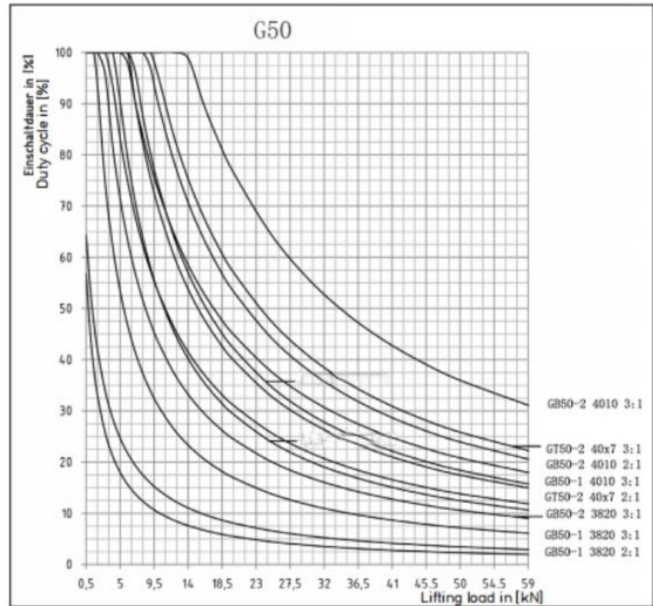
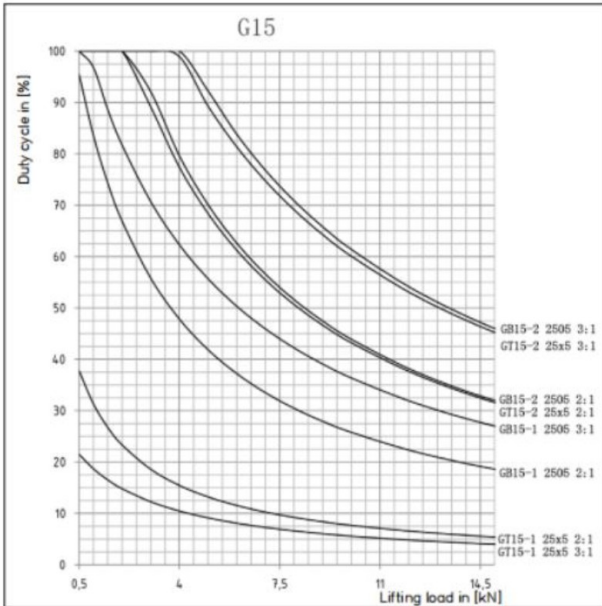




**LINEAR MOTION**

High-speed screw jacks G15-G150

Operating time-Chart at 1500 rpm and 20°C ambient temperature



To calculate the Operating time  $ED_{\alpha}/h$  for other speeds, multiply the Operating time in [%] with the speed-factor  $f_n$  :

$$ED_{\alpha}/h \text{ in } [\%] = ED_{\alpha}/h \times f_n$$

If different speeds determine the average of speed:

$$n_m = n_1 \times q_1 + n_2 \times q_2 + \dots + n_i \times q_i / 100$$

$n_1, n_2, \dots$  = Speed in [1/min] during the clearance

$q_1, q_2, \dots$  = Dues of load duration in [%]

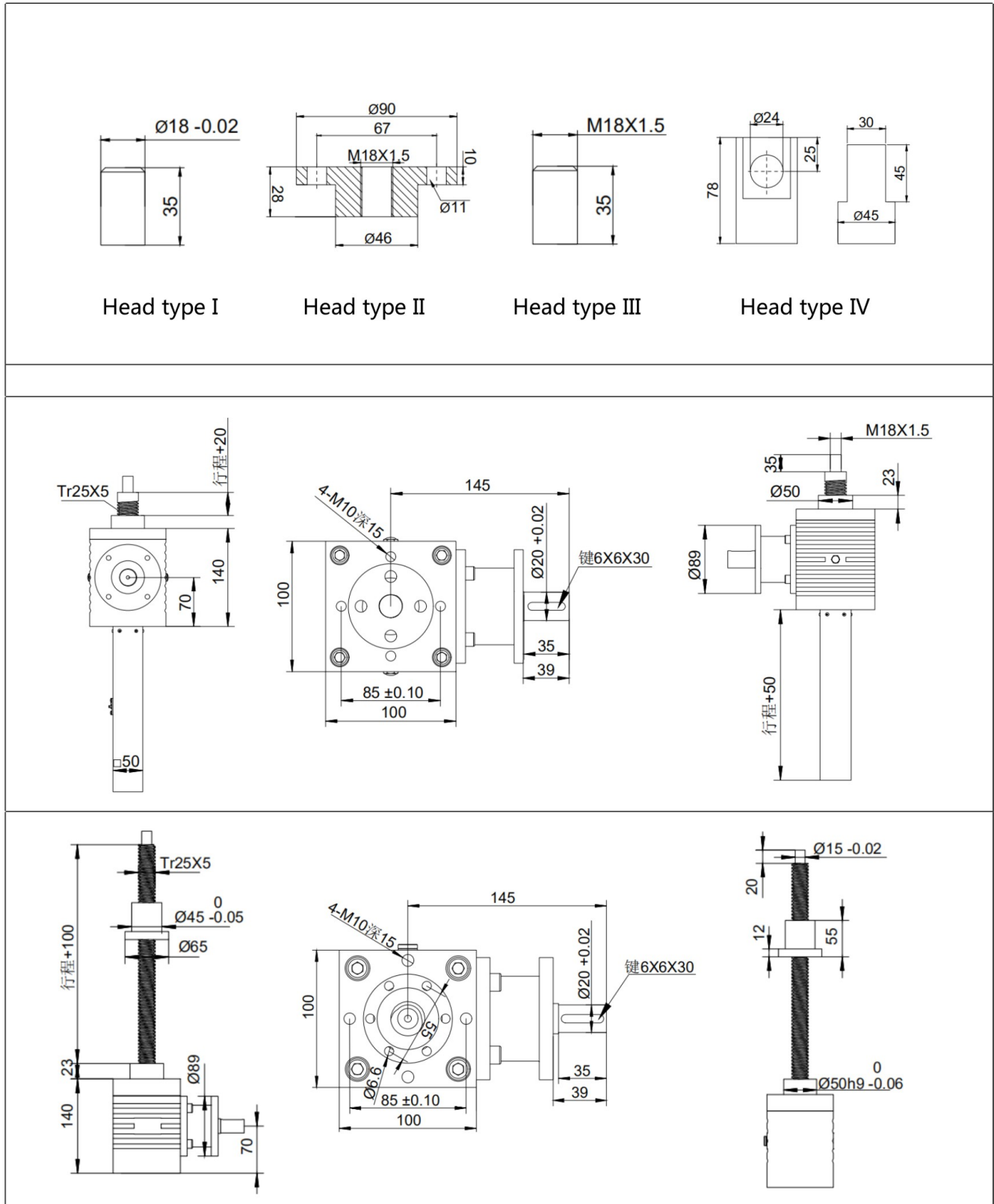
$n_m$  = Average speed in [1/min]

speed	speed factor $f_n$
3000	0,5
2500	0,6
2000	0,75
1000	1,5
750	2
500	3
250	6



LINEAR MOTION

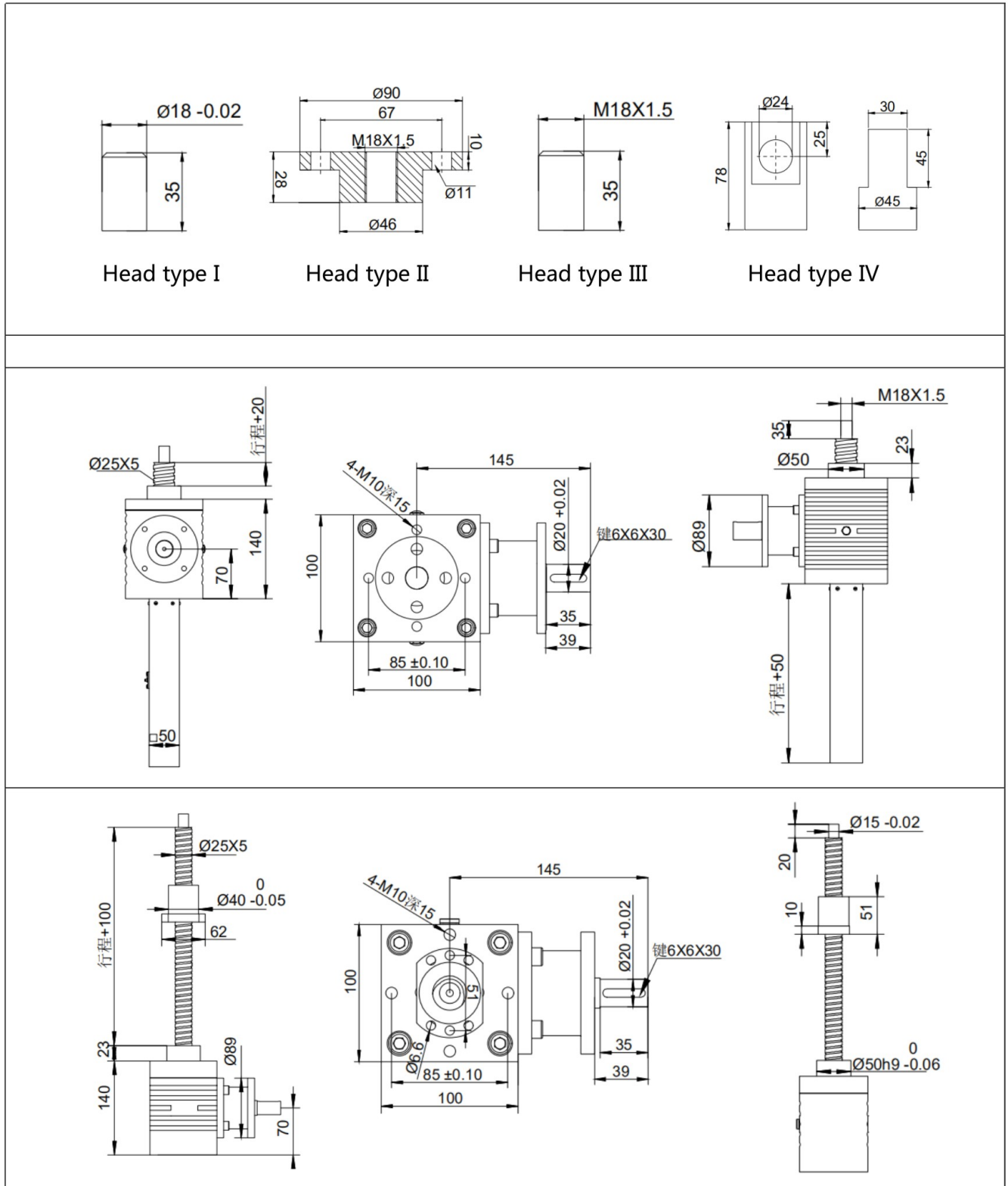
### 5. Outline dimension chart GT15 Trapezoidal screw





LINEAR MOTION

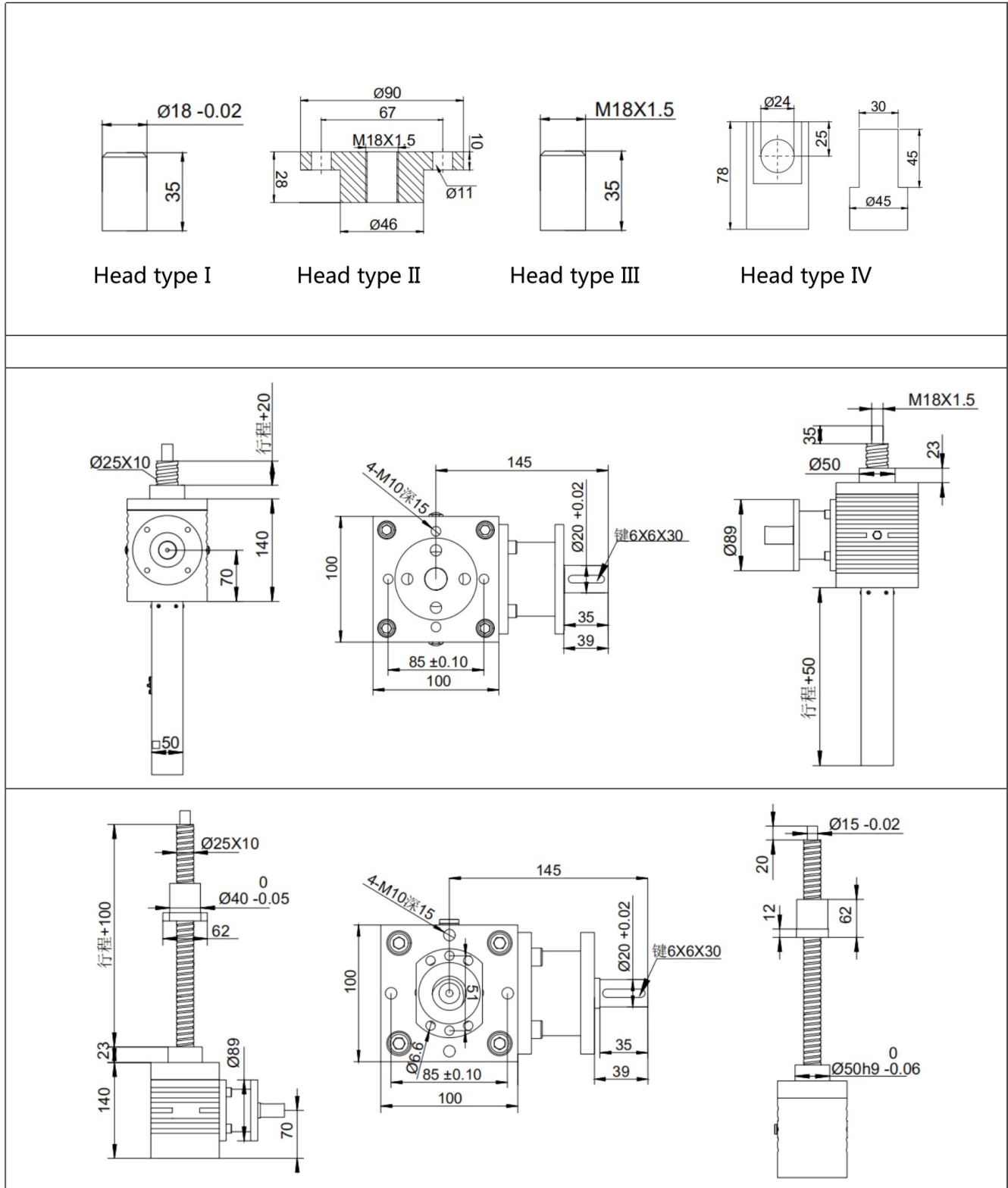
# GB15 Ball screw 2505





LINEAR MOTION

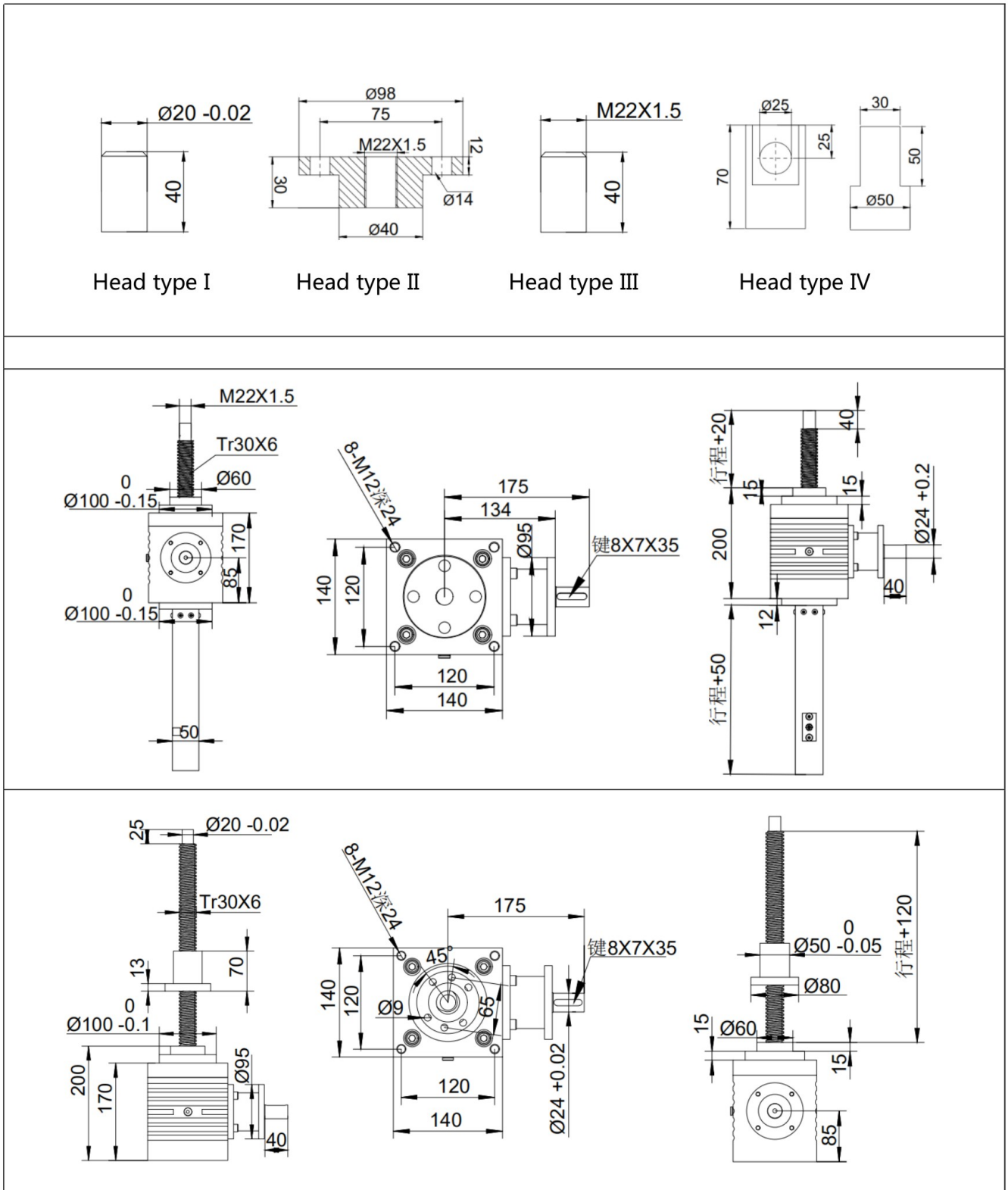
# GT15 Ball screw 2510





LINEAR MOTION

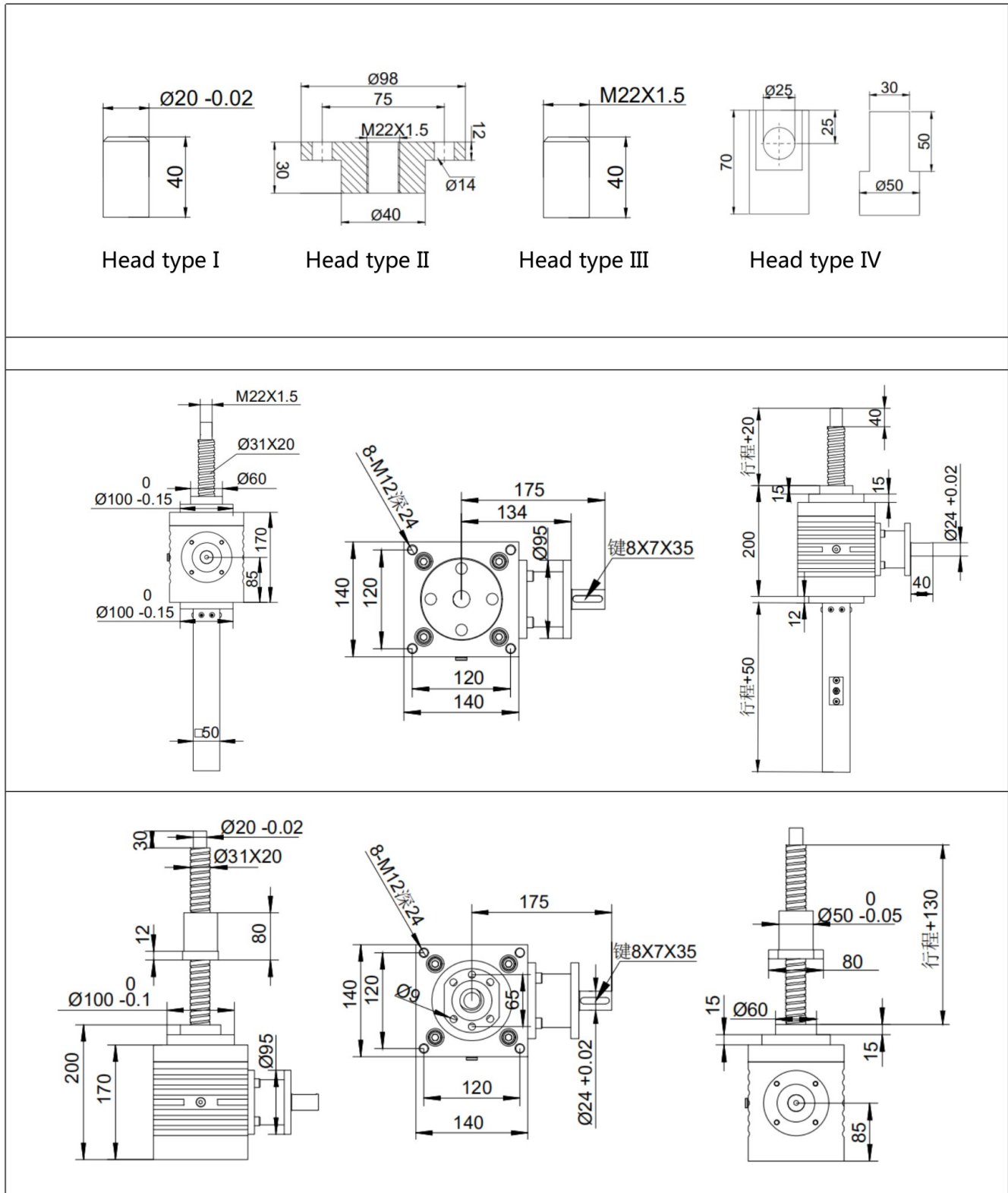
# GT25 Trapezoidal screw





LINEAR MOTION

# GB25 Ball screw 3120

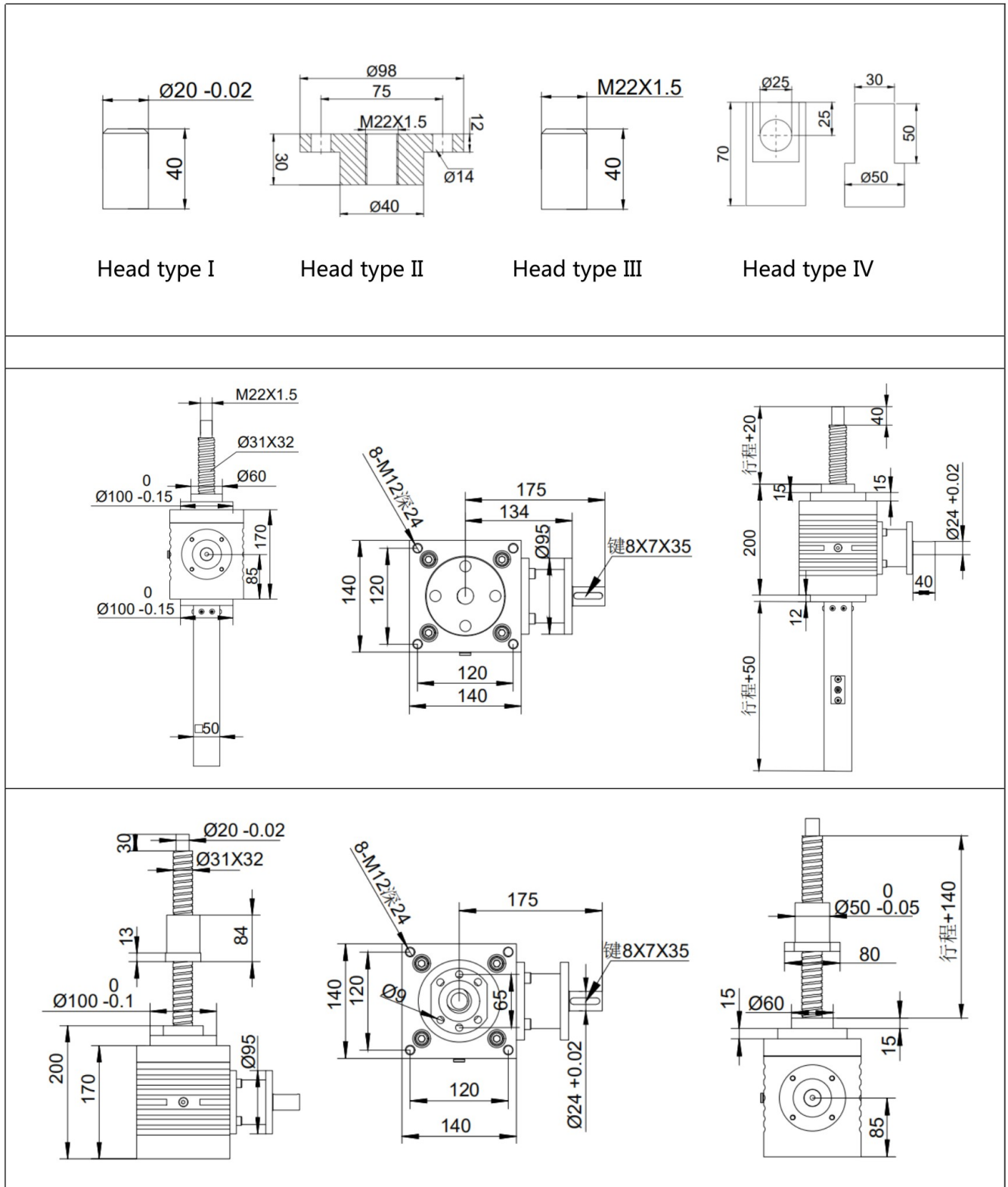






LINEAR MOTION

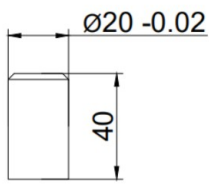
# GB25 Ball screw 3132



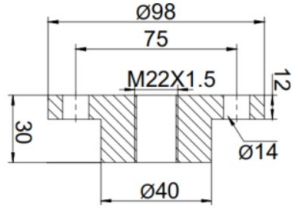


LINEAR MOTION

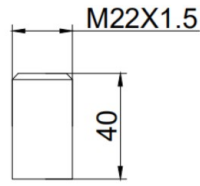
# GB25 Ball screw 3210



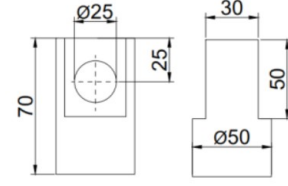
Head type I



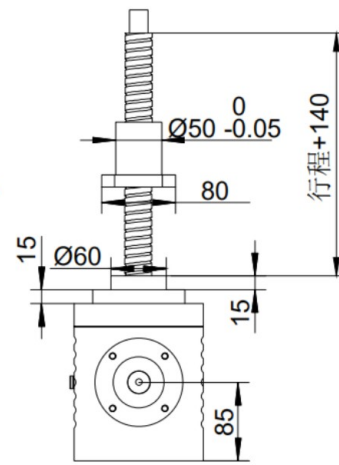
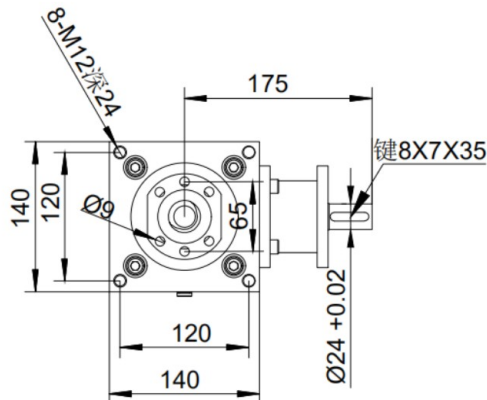
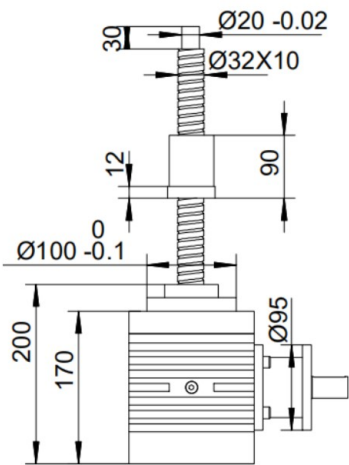
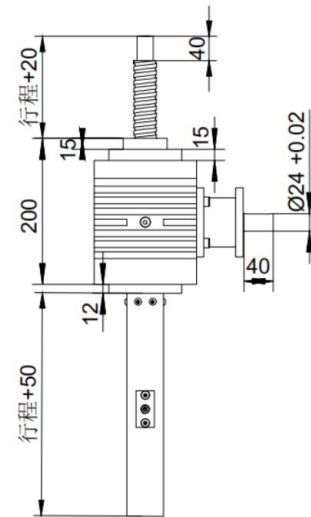
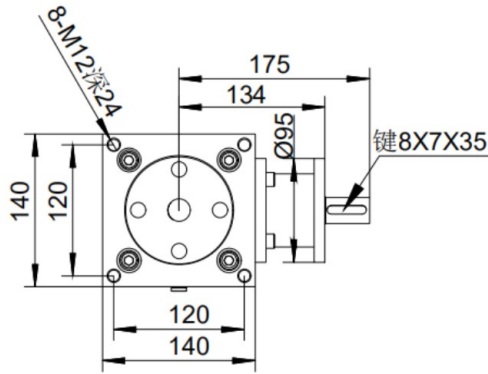
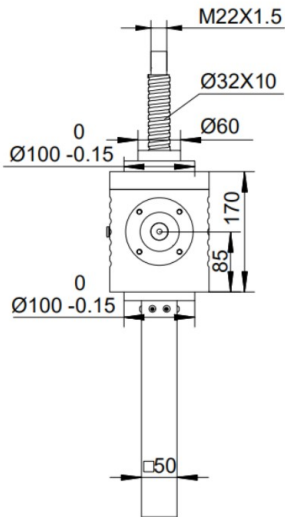
Head type II



Head type III



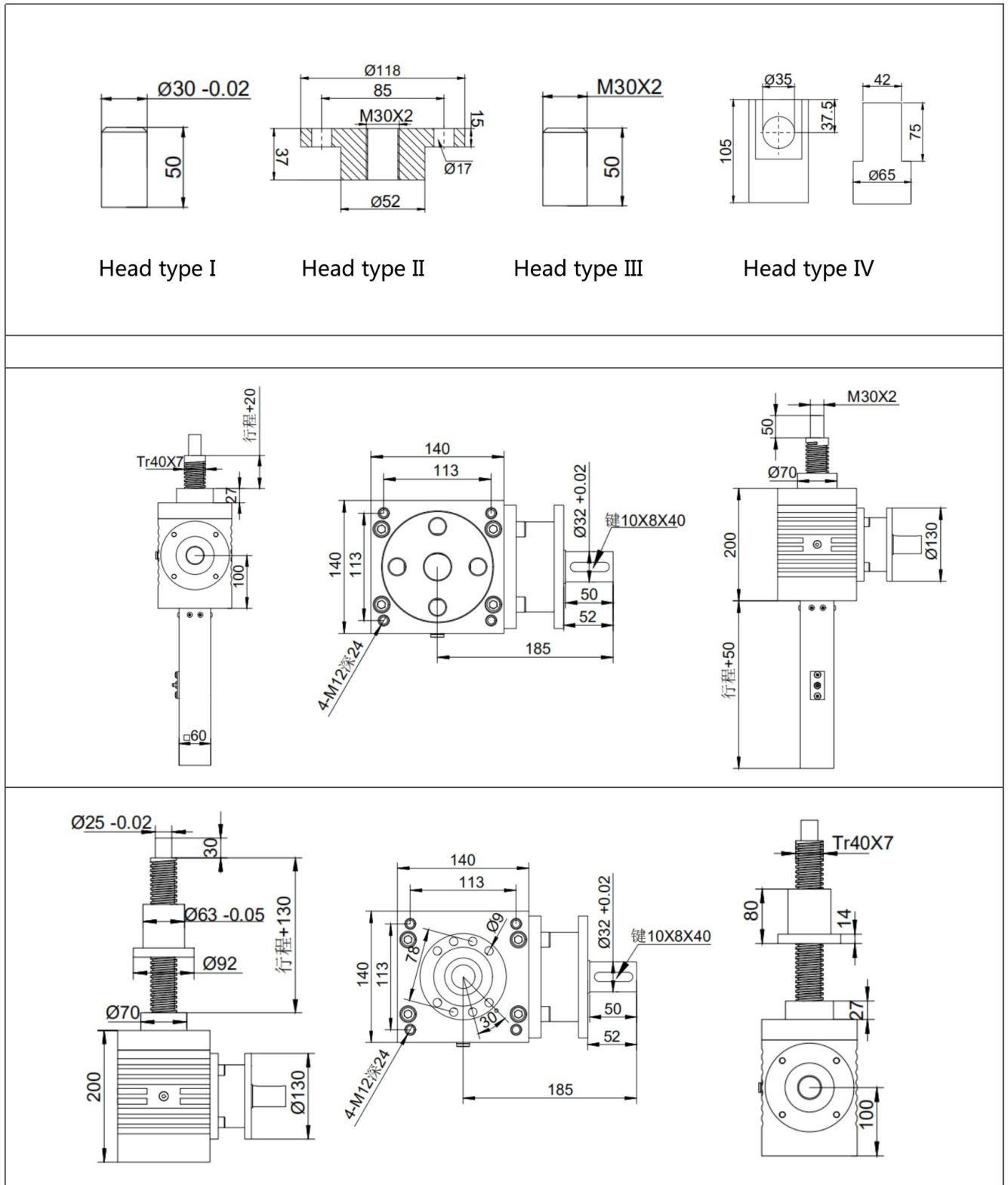
Head type IV





LINEAR MOTION

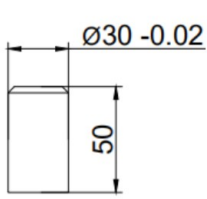
# GT50 Trapezoidal screw



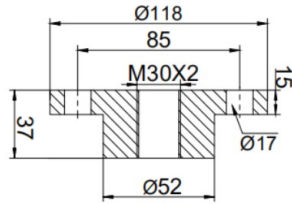


LINEAR MOTION

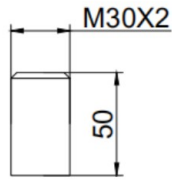
# GB50 Ball screw 3820



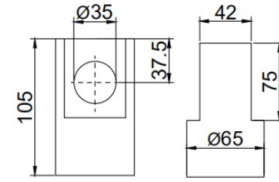
Head type I



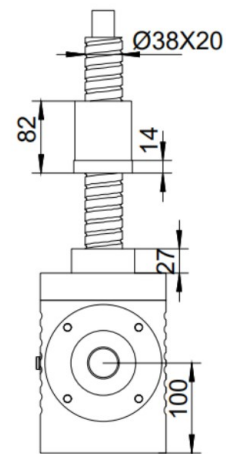
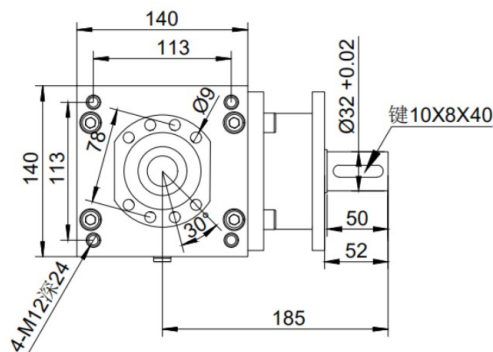
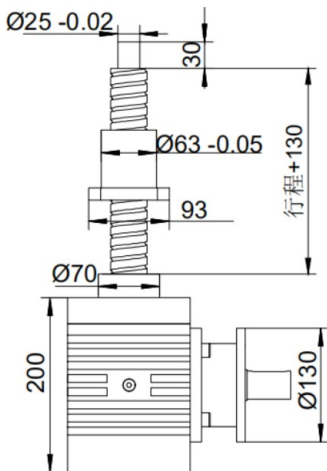
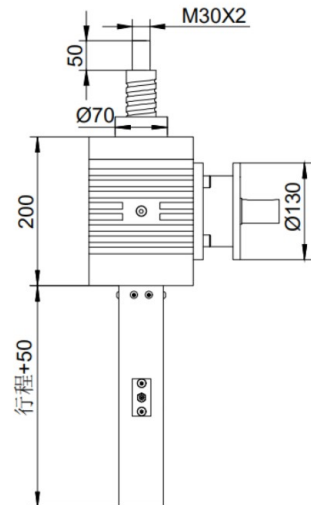
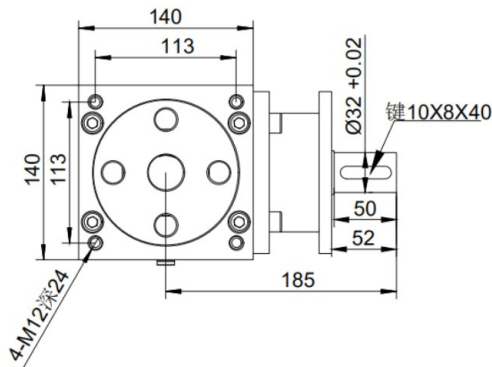
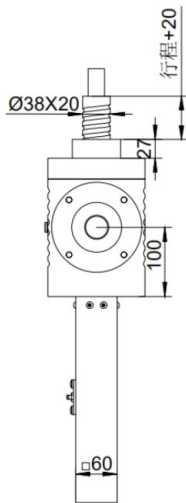
Head type II



Head type III



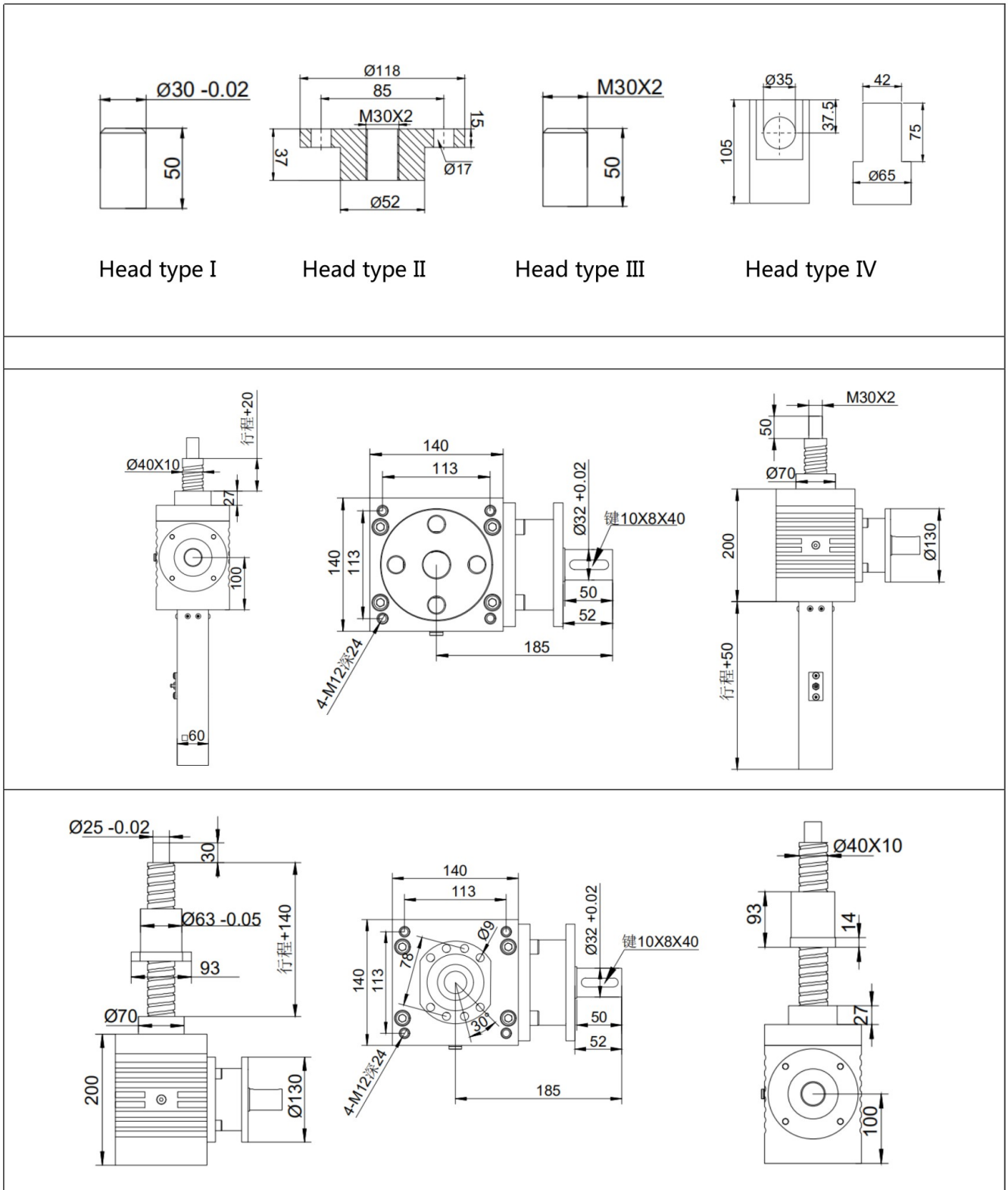
Head type IV





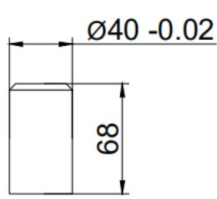
LINEAR MOTION

# GB50 Ball screw 4010

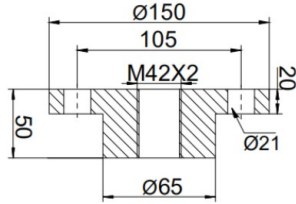




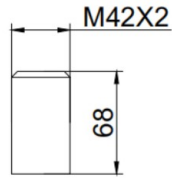
# GT70 Trapezoidal screw



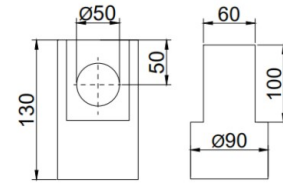
Head type I



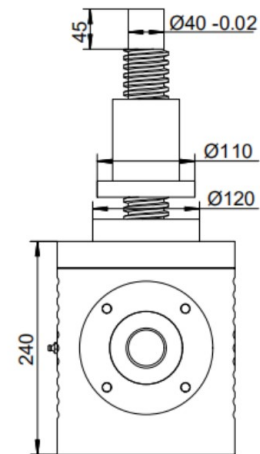
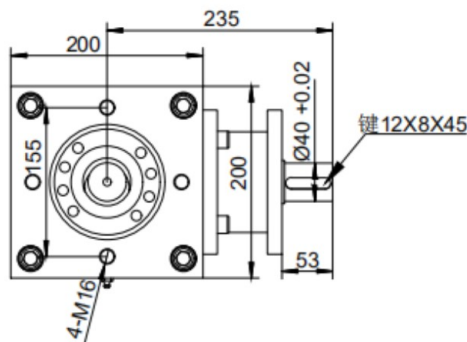
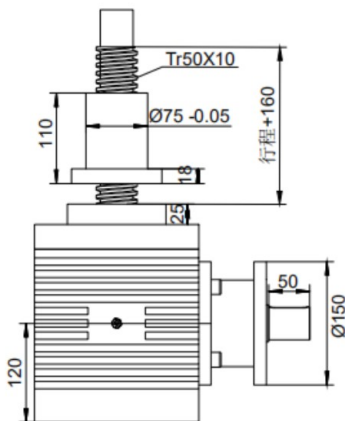
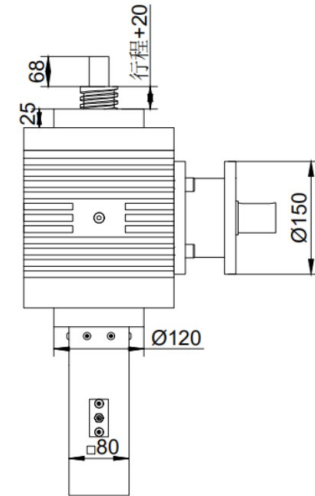
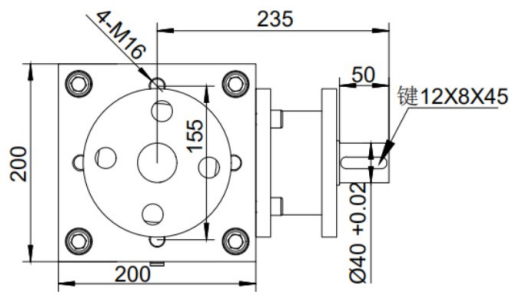
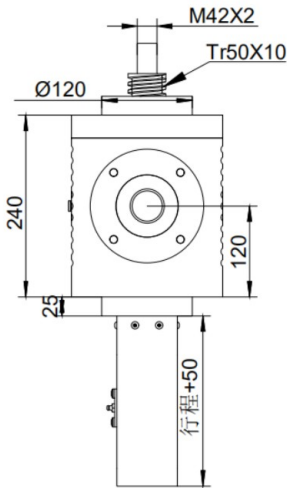
Head type II



Head type III



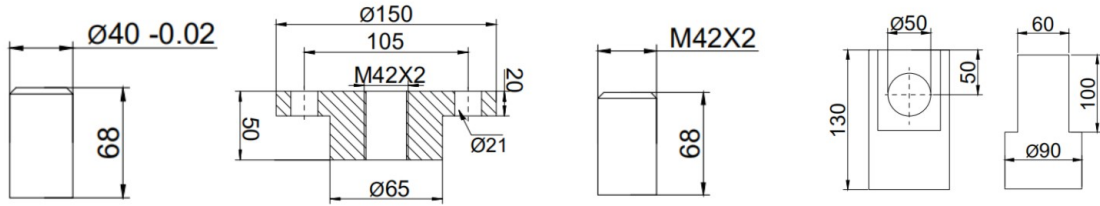
Head type IV





LINEAR MOTION

## GB70 Ball screw 4820

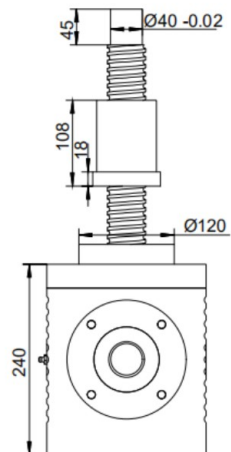
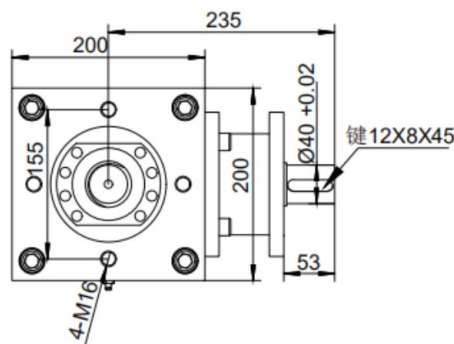
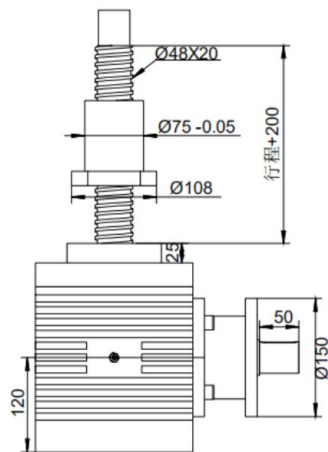
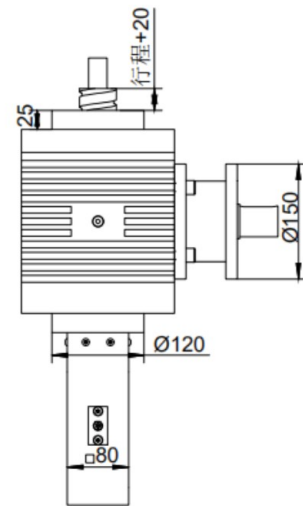
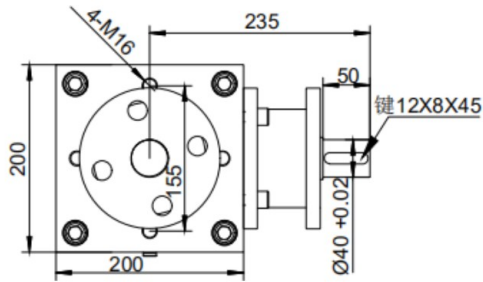
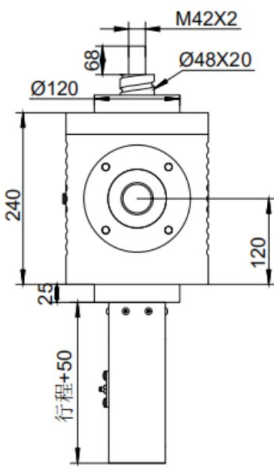


Head type I

Head type II

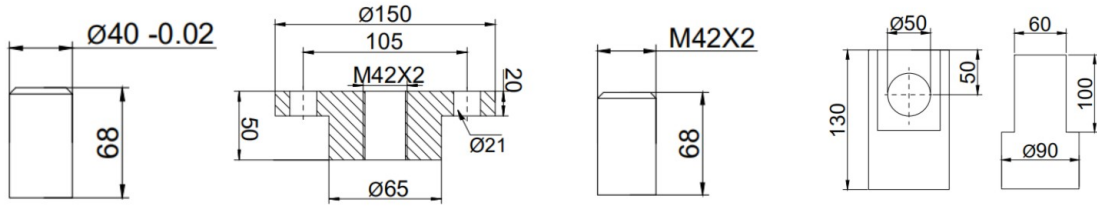
Head type III

Head type IV





# GB70 Ball screw 5010

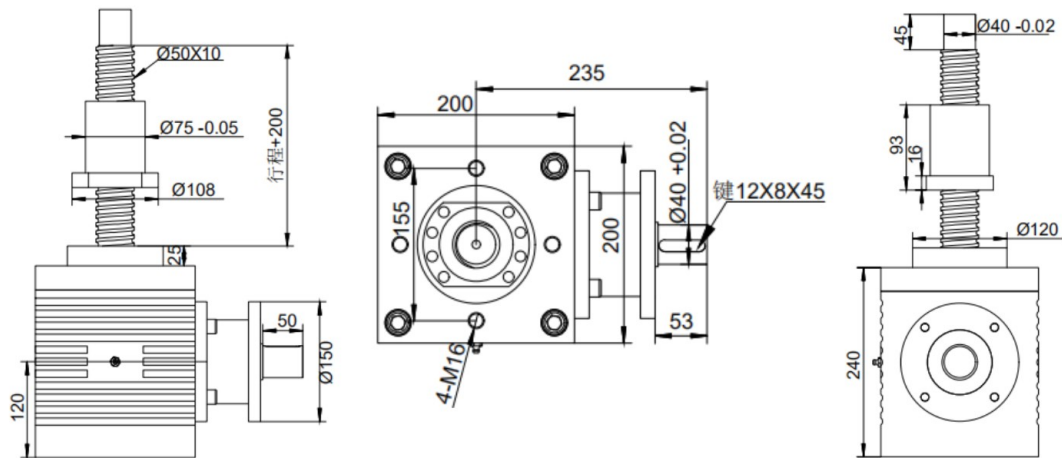
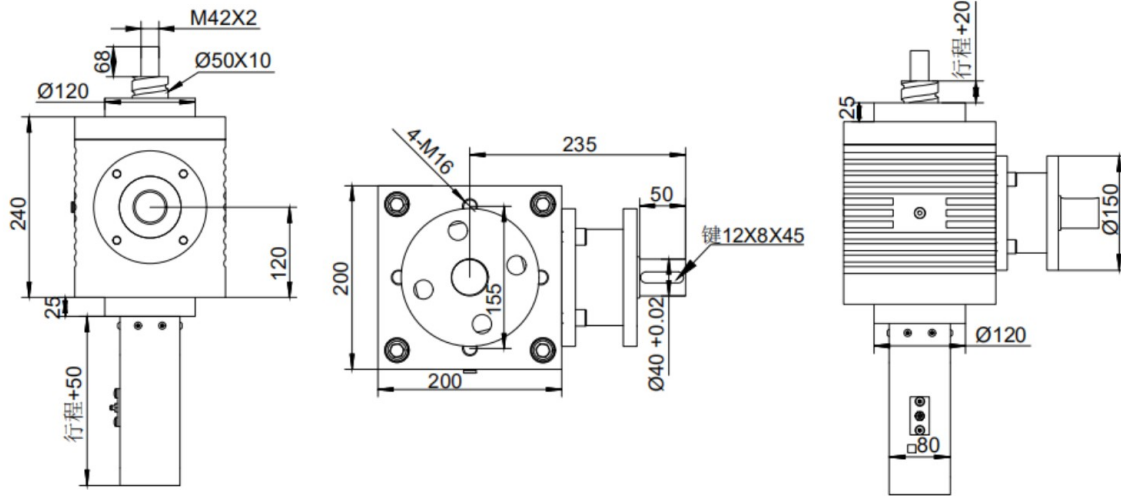


Head type I

Head type II

Head type III

Head type IV

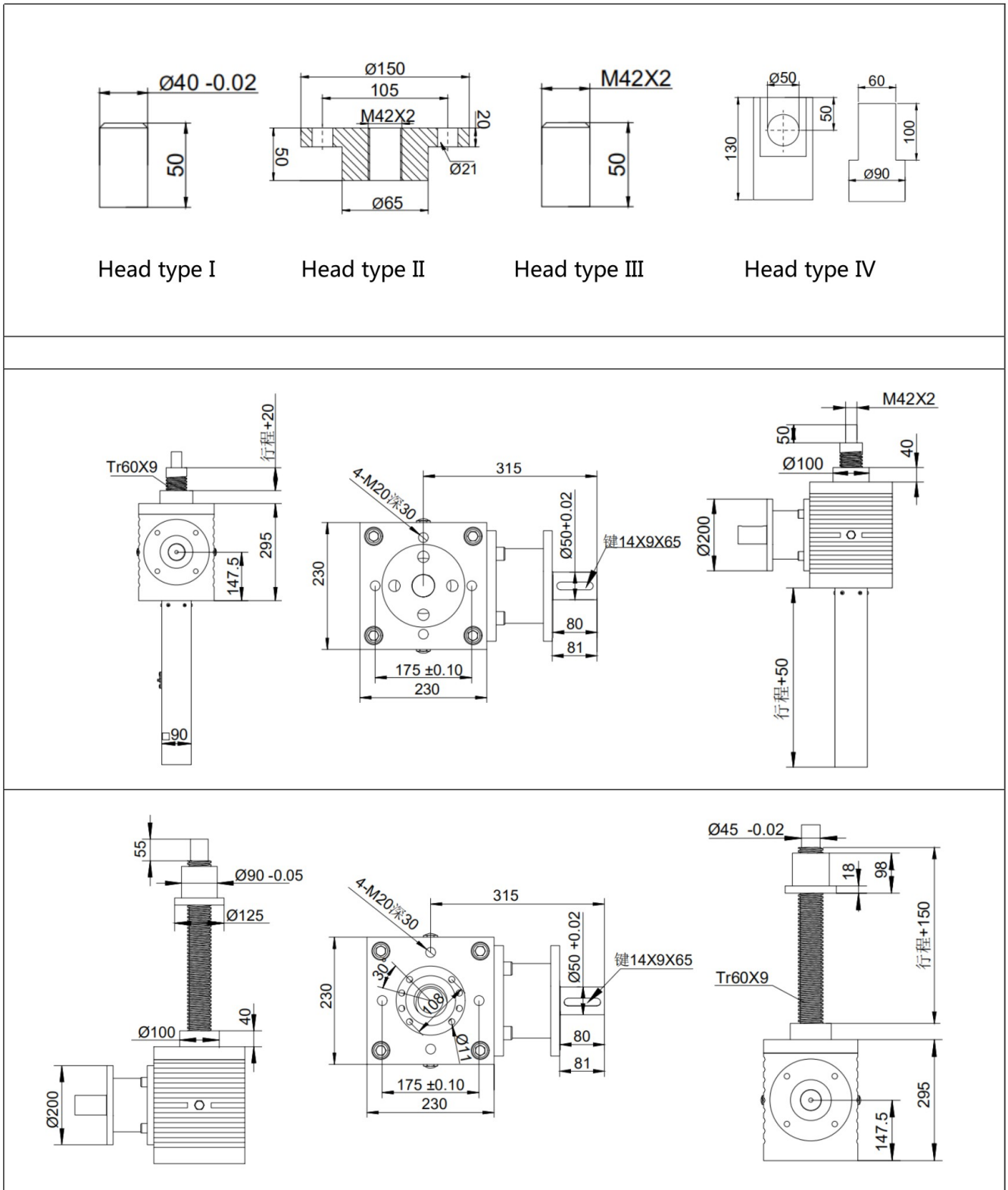






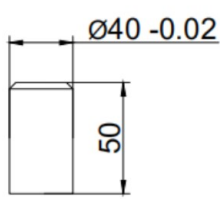
LINEAR MOTION

# GT90 Trapezoidal screw

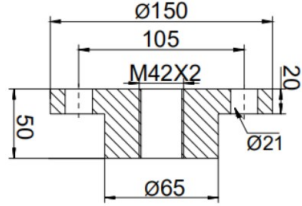




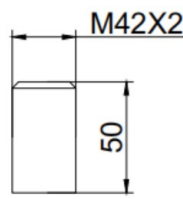
### GB90 Ball screw 5050



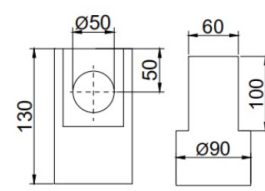
Head type I



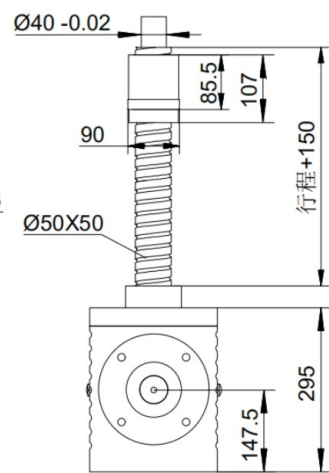
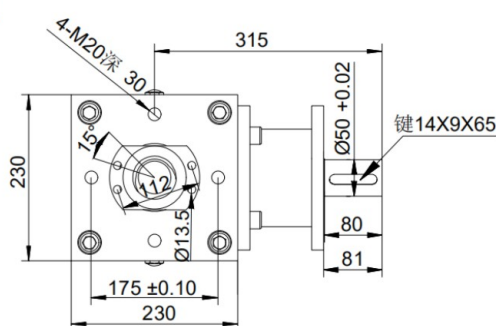
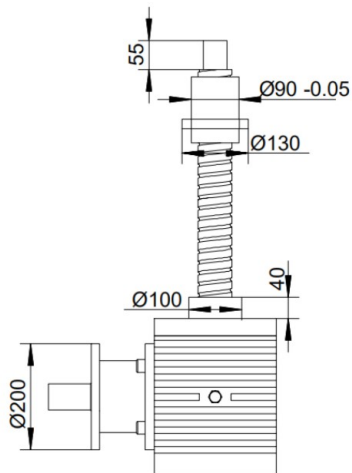
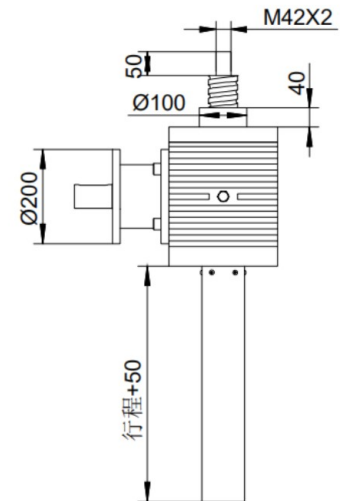
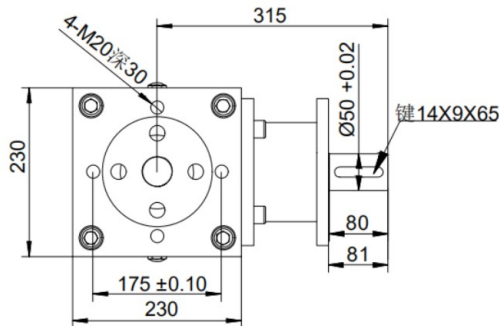
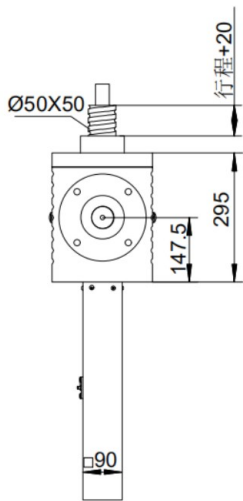
Head type II



Head type III



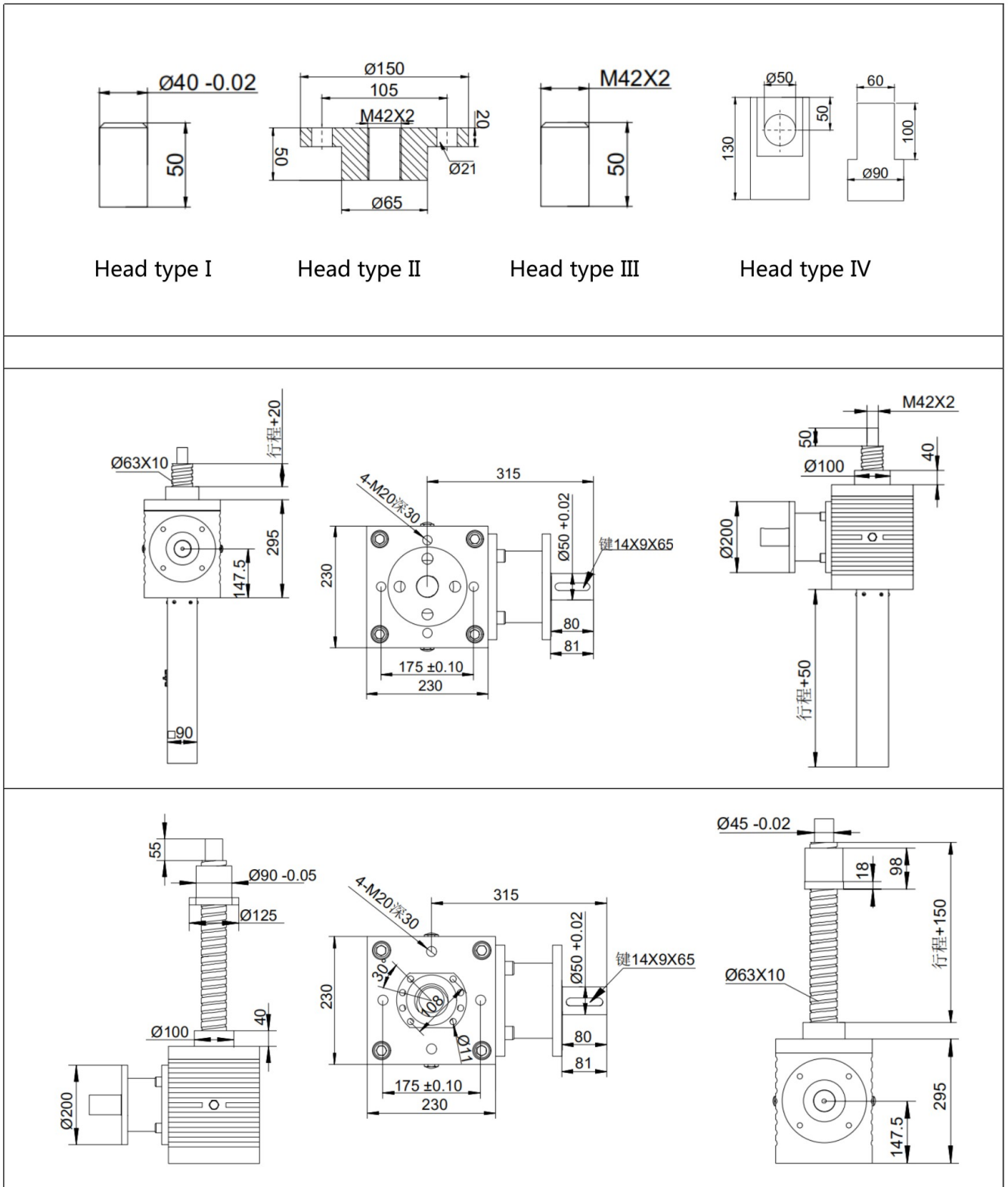
Head type IV





LINEAR MOTION

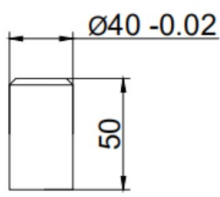
## GB90 Ball screw 6310



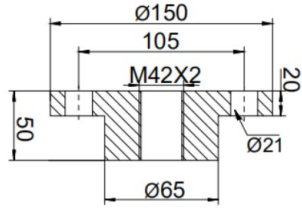


LINEAR MOTION

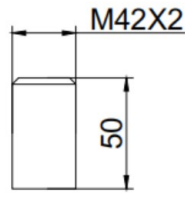
### GB90 Ball screw 6320



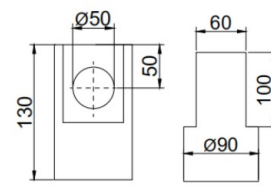
Head type I



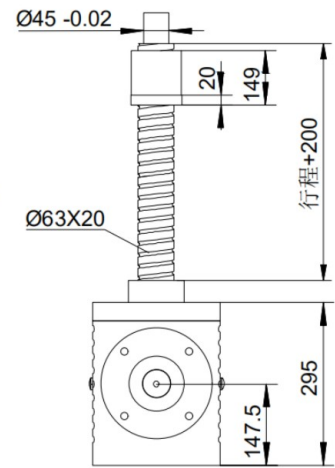
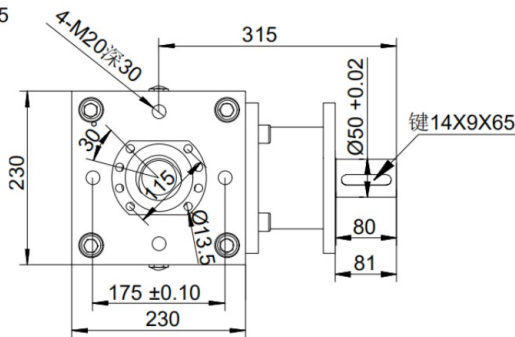
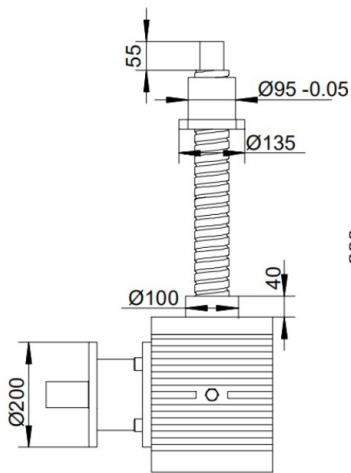
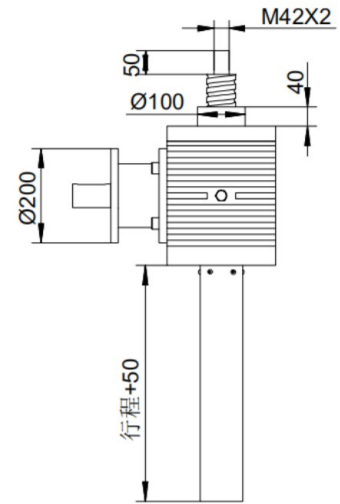
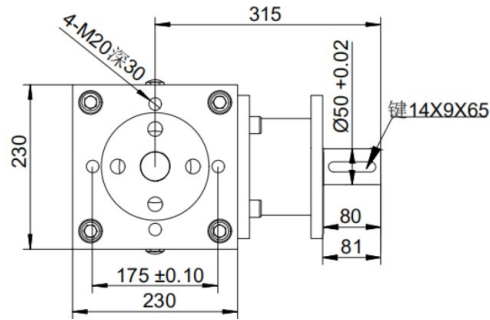
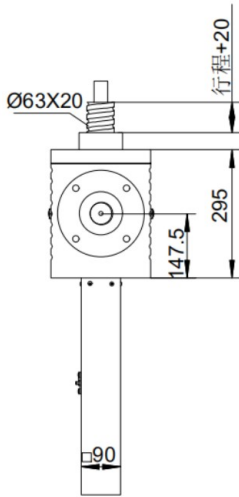
Head type II



Head type III



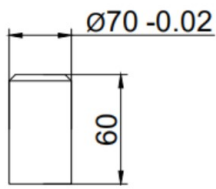
Head type IV



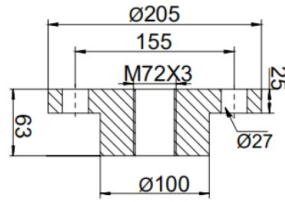


LINEAR MOTION

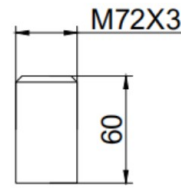
# GT120 Trapezoidal screw



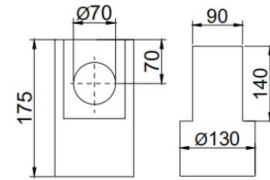
Head type I



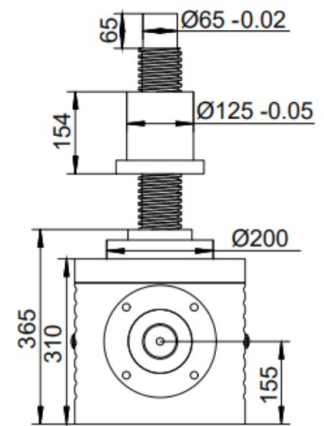
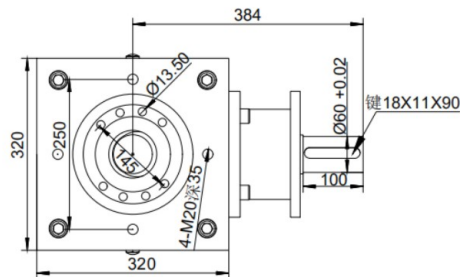
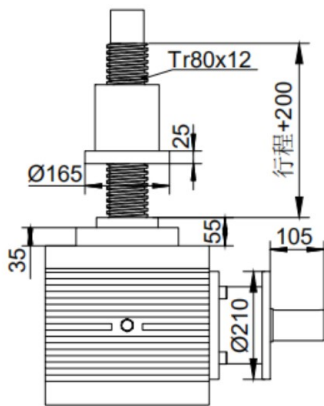
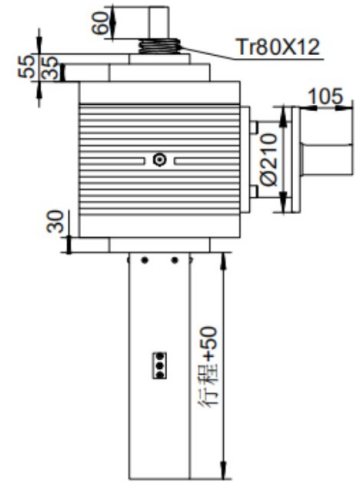
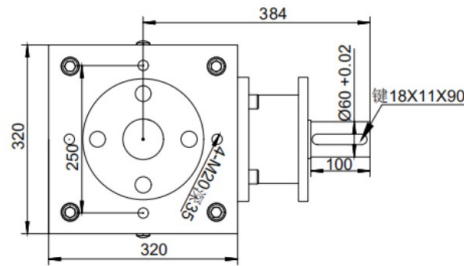
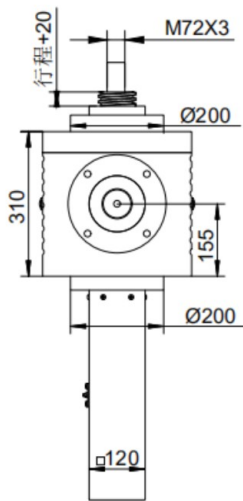
Head type II



Head type III



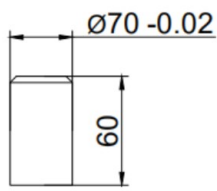
Head type IV



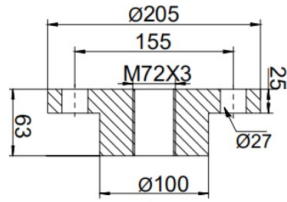


LINEAR MOTION

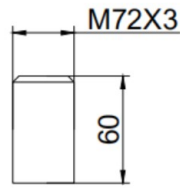
### GB120 Ball screw 8010



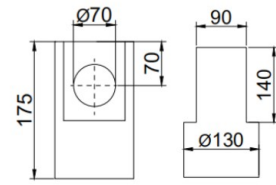
Head type I



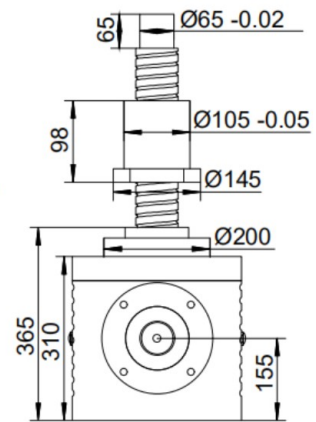
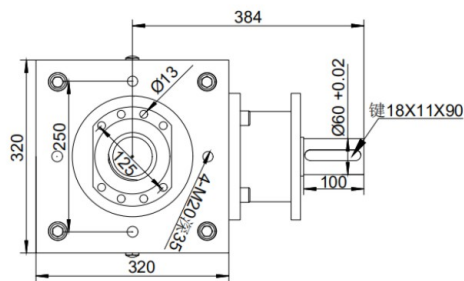
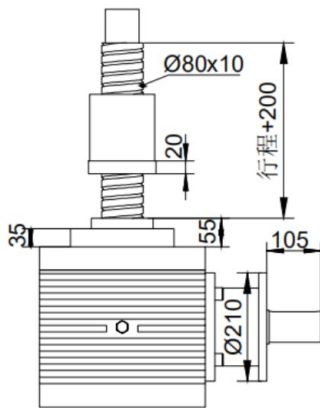
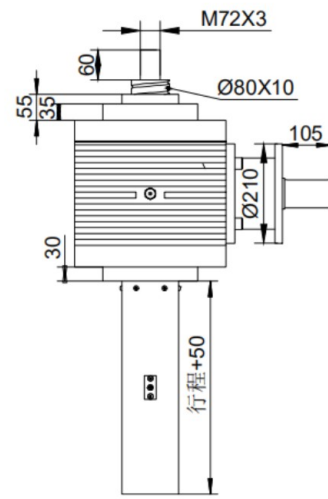
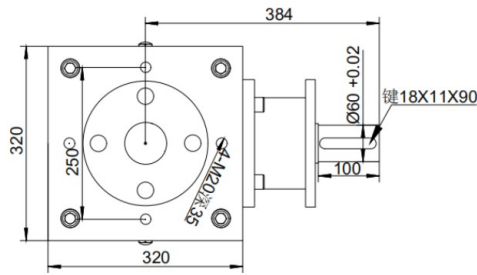
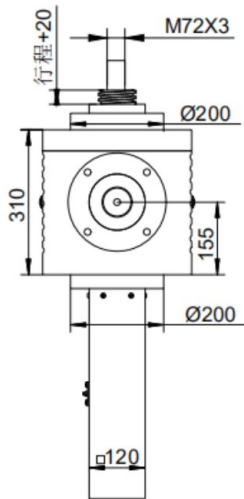
Head type II



Head type III



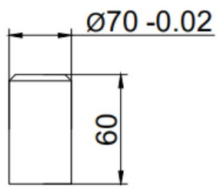
Head type IV



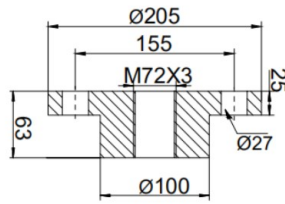


LINEAR MOTION

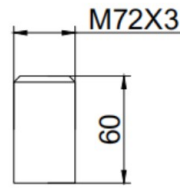
## GB120 Ball screw 8020



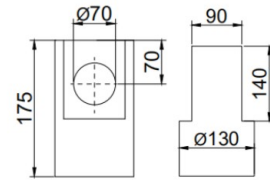
Head type I



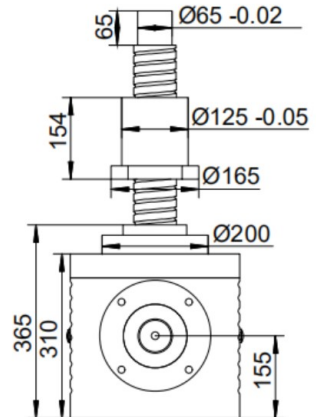
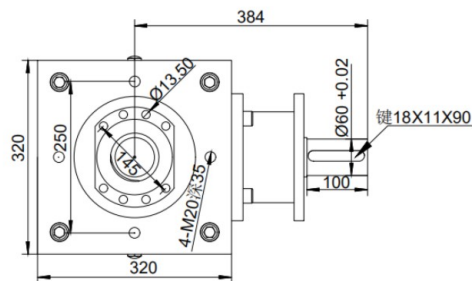
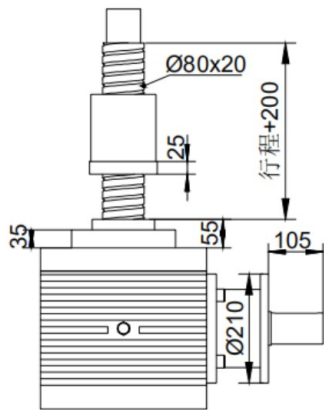
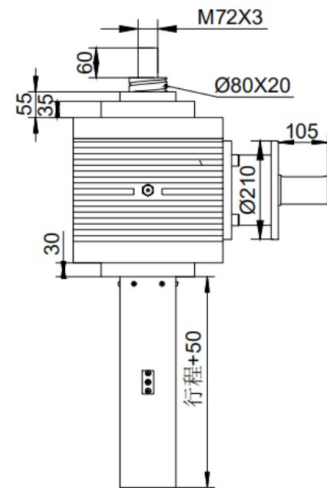
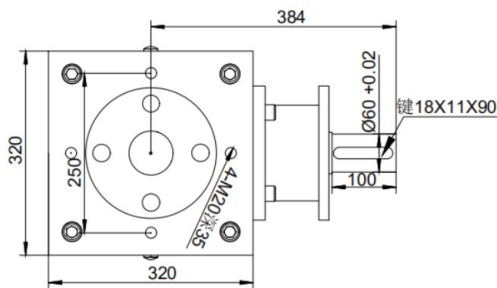
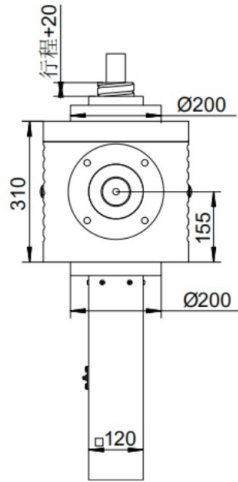
Head type II



Head type III



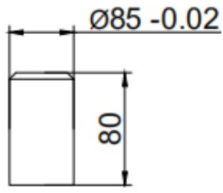
Head type IV



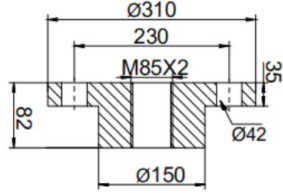


LINEAR MOTION

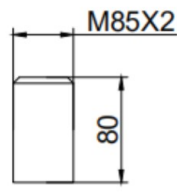
# GT150 Trapezoidal screw



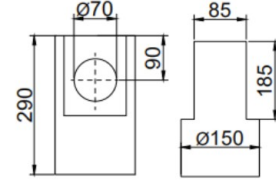
Head type I



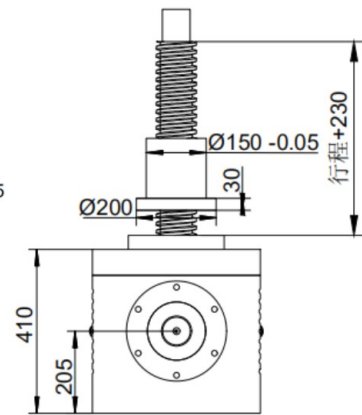
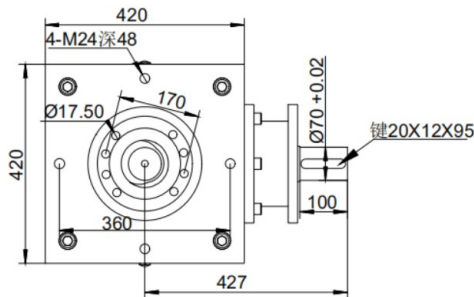
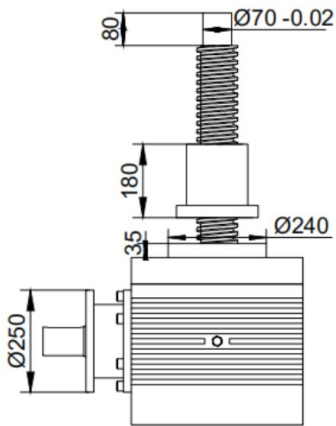
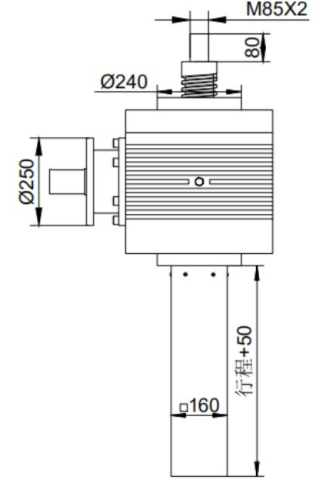
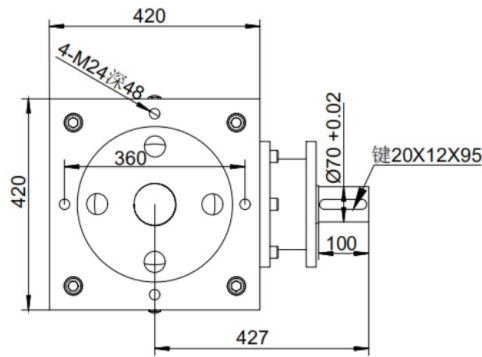
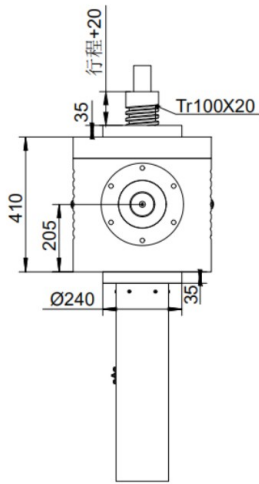
Head type II



Head type III



Head type IV

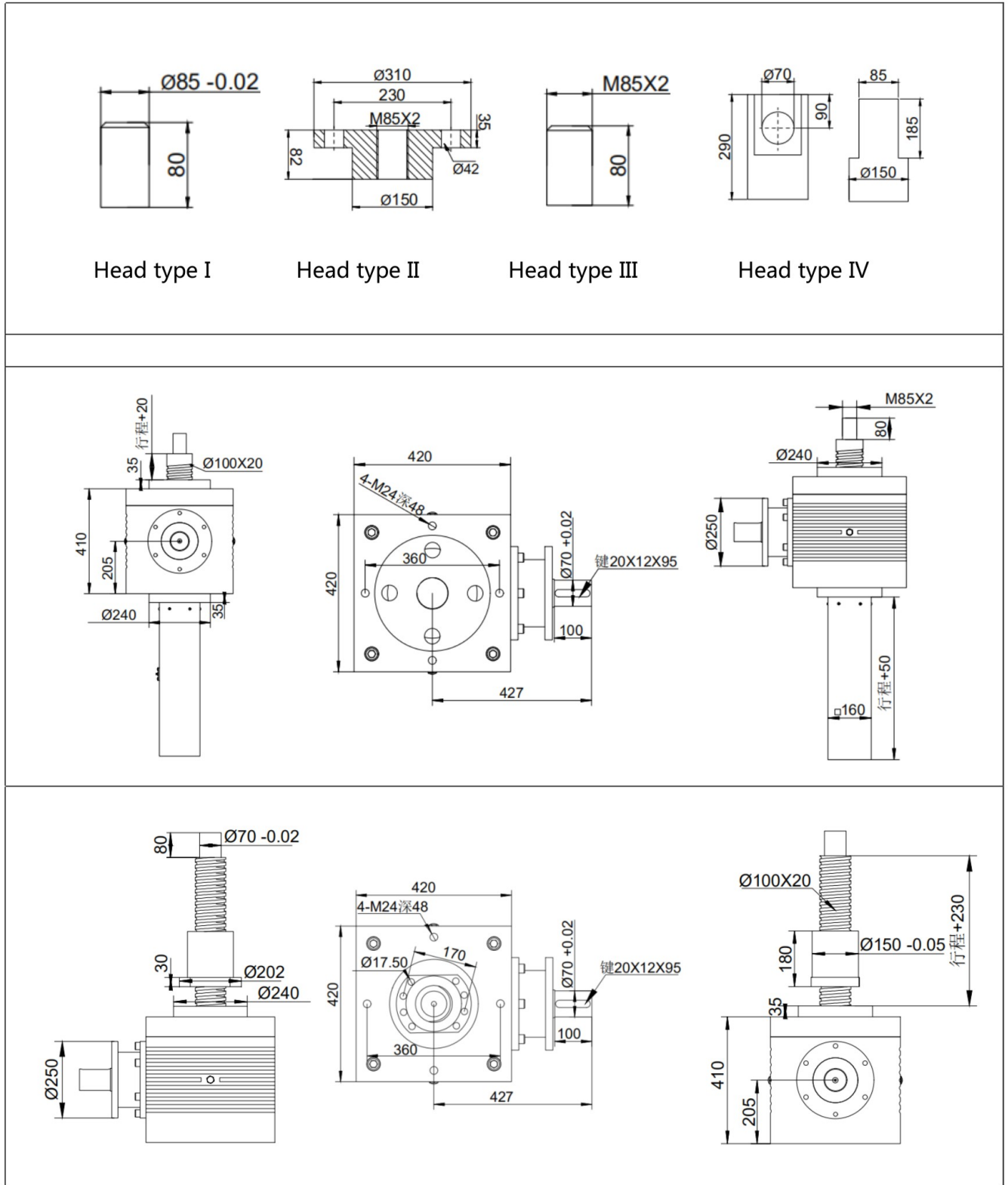






LINEAR MOTION

# GB150 Ball screw 10020



头部形式 : head type    行程 : stroke    深 : X    键 : key



## **LINEAR MOTION**

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