

# **SRT Flexible Soft Gripper**

# **BONDY**

INDUSTRIAL EQUIPMENT SUPPLIER

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# SOFT GRIPPER SELECTION MANUAL

Soft Robot Tech Co.,Ltd.

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# 1 About SRT

## Introduction

Soft Robot Tech Co., Ltd. (SRT) is the high-tech corporation taking R&D in soft robotics as the core. The main team members are from Harvard University, Northeastern University and BeiHang University.

SRT focus on the general application of soft robotics technology in industrial automation field. Being on a fundamental mission to provide simple, reliable and flexible gripping solutions and constantly creating considerable value for global users. SRT has passed the certification of ISO9001:2015 international quality management system. And SRT is national high-tech enterprise of Beijing and the member of China food and packaging machinery industry association (CFPMA).

SRT launched the soft gripper which got several domestic and international patents. Soft gripper can perfectly solve high-speed sorting problems for different sizes, shapes and fragile goods, especially be suitable for packing and sorting segment of food, 3C products etc..



**HARVARD**  
UNIVERSITY



**北京航空航天大学**  
BEIHANG UNIVERSITY



**Northeastern University**



USA/JAPAN FDA



EU CE safety certification



ISO9001 international quality certification



EU AP Food Testing Certification



**RoHS-II**

EU RoHS Safety Testing Certification



## 2 Product

### Introduction

The soft gripper is a new type of flexible actuator launched by SRT that can simulate the grasping action of human hand and manipulate objects of different size, shape and weight with a single gripper.

Distinguished from the traditional rigid gripper, soft gripper has soft pneumatic 'fingers', which can adaptively wrap the object without presetting according to the exact size and shape of the object, getting rid of size requirements of products on traditional assembly. Additionally, the fingers are made of soft materials and the grasping action is so gently that will not cause any damage to the workpiece, therefore the gripper is especially suitable for vulnerable and soft amorphous objects.

In gripping industry, it is common to use mechanical grippers and vacuum suckers and other traditional grasping equipment. However, these tools are easily affected by shape, material and position of the products. Soft grippers provided by SRT based on soft robotic tech, can perfectly solve this problem, making a big stride to assembly automation.



### Operating Principle

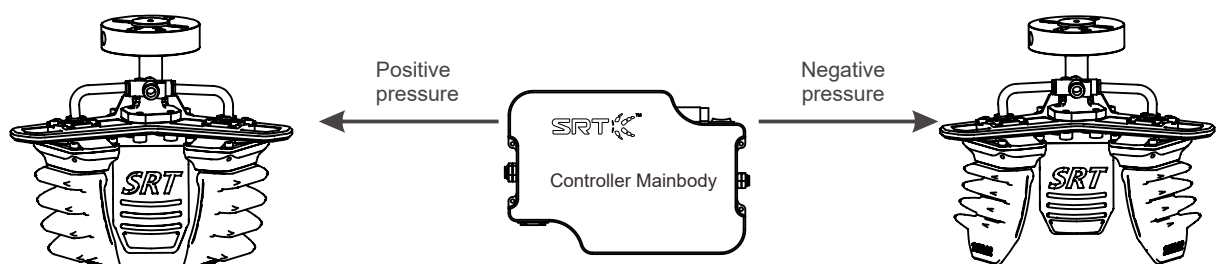
Soft gripper owns special inner structure with air bags so it will achieve different actions as the input of differential pressure changes.

#### Positive pressure

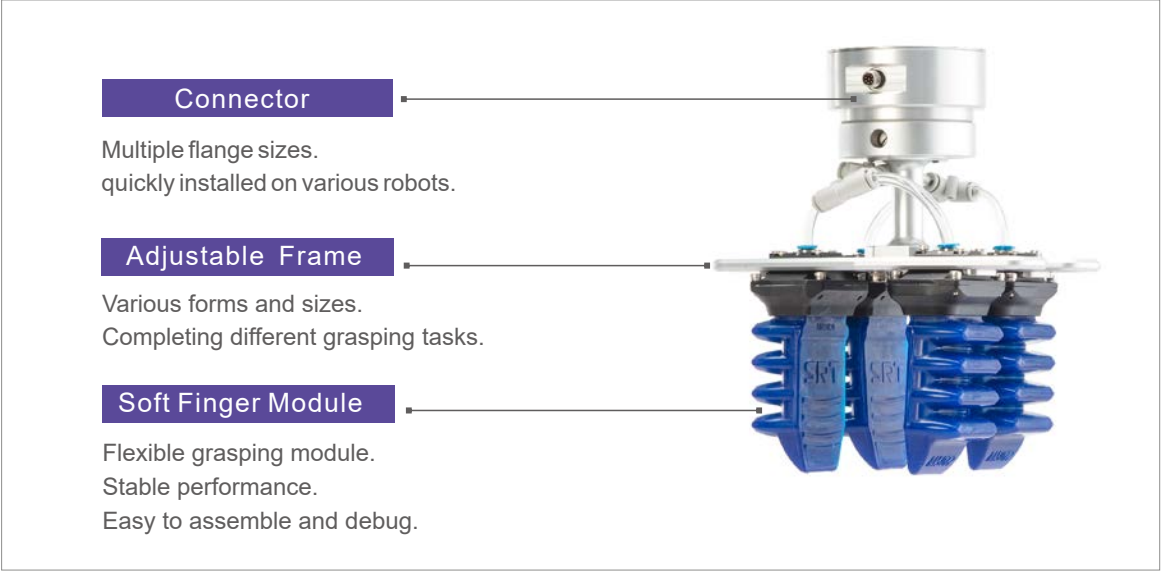
grasping,  
wrapping the outer surface of the object,  
and completing the grasping action;

#### Negative pressure

releasing,  
in some special occasions,  
it can pick object from inner side.

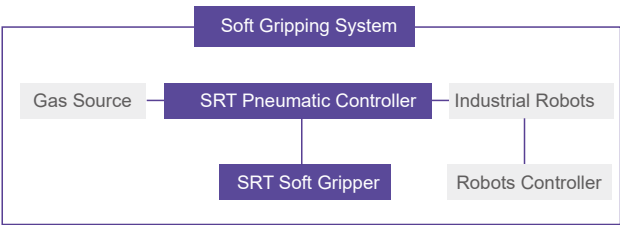


# Gripper Structure



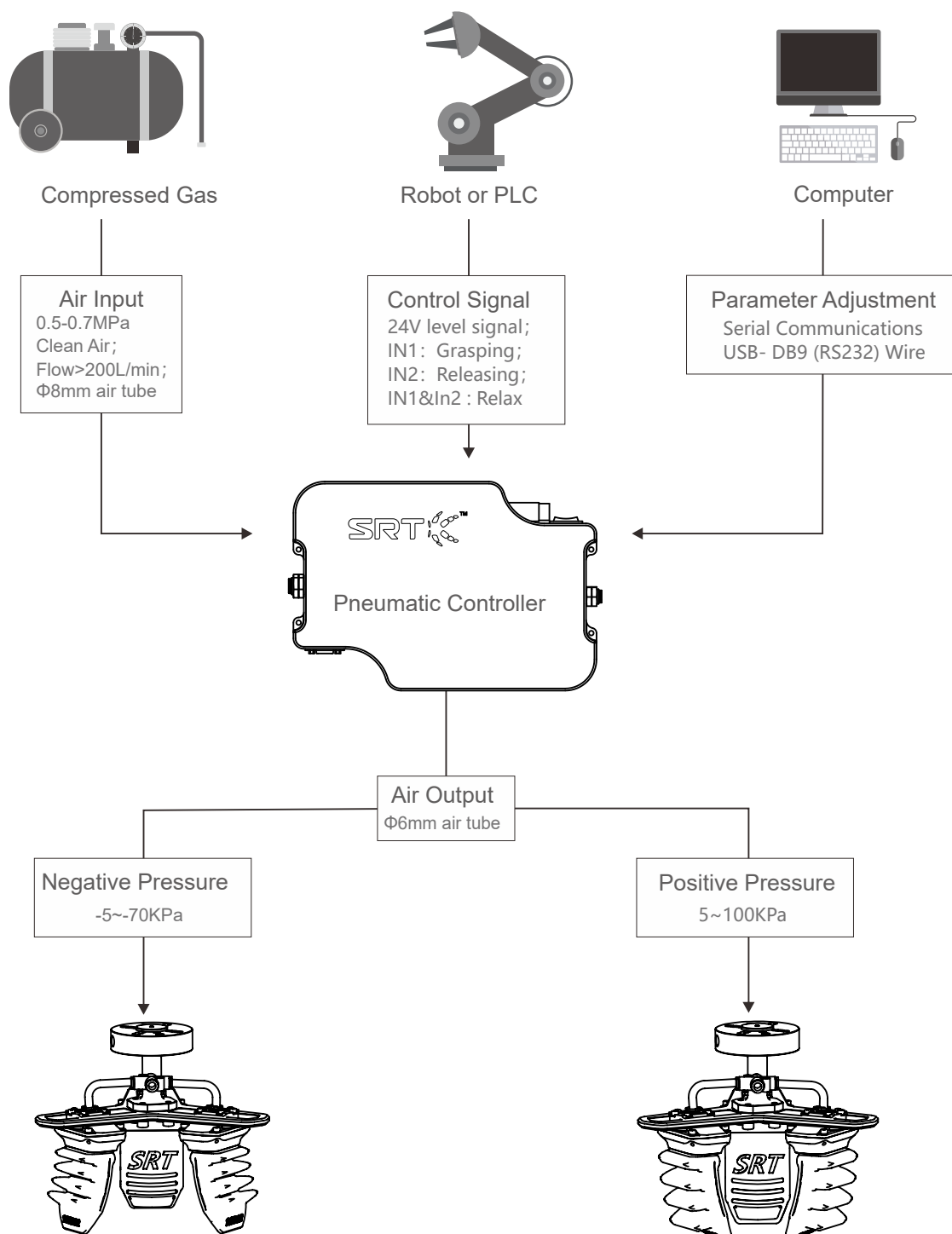
# Soft Gripping System

Soft gripping system is composed of soft gripper, pneumatic controller, compressed gas source, industrial robot and its control system. By communication protocol provided by SRT, industrial robots can work well with the soft gripper and complete complex grasp task smoothly.



The SRT soft gripping system does not include compressed gas source, industrial robot and its control system, which requires users to purchase separately.

## Control System



## Gripper

SRT has designed multiple grippers to better accomplish the grasping tasks of different objects. Depending on distribution form of fingers, the grippers can be divided into three categories: circular gripper, symmetric gripper and compact gripper. Furthermore, the fingers of the gripper have two colors, the M30 finger is blue and 30mm in width, the M50 finger is red and 50mm in width.

### Compact Gripper

#### SFG-FTN

The Compact structure is particularly suitable for small volume and special-shaped objects.



### Circular Gripper

#### SFG-FCA

The circular-distributed and adjustable structure suits sphere and flat cylinder workpiece.



### Symmetric Gripper

#### SFG-FMA

The mirror-distributed and adjustable structure suits cuboid and long cylinder items.



## Feature



### One Gripper for All Sorts of Products

Soft grippers can grasp all kinds of goods of different shapes, sizes and weight, totally covering the range of traditional grippers can grasp. Due to its soft properties, success grasping can be guaranteed although the object moves within some positions, which significantly decreasing locating precision of gripping system. Also, the grippers have good stability and sealing, so they can work under conditions where dust, oil/liquid exist.



### Cladding for Multiple Security

Integrated with biomimic mechanism, the covering grasp can simulate human hands to grasp, which is more stable. Soft fingers are totally made of soft materials, and will not produce rigid impulse when touching goods. Not only doesn't cause damage to products being grasped, but also be safe to operators. In the meantime, our products have passed US FDA food certificate, and can directly contact with foods without contaminating.



### High Accuracy and Speed

Frequency of operation can be 90CPM, and the maximum repeating accuracy can be 0.08mm. The maximum load can be 5kg and its lifespan can be more than 3million, which can satisfy the needs of most assemblies.



### Lower Costs and Higher Returns

The design of soft grippers totally subverts traditional one. Only one support bracket and circuit can control. No need to adjust original assembly so the cost of producing and maintenance can be minimized.



### Extremely Convenient

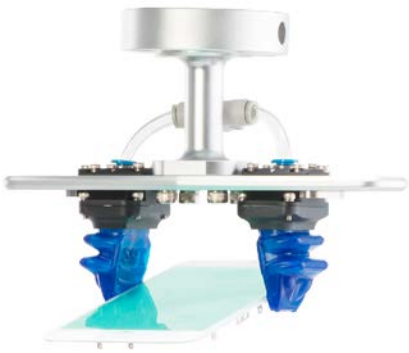
Modularization design of fingers, extremely simplifies the installation, modification and maintenance of complicated mechanical arm. Only one support bracket is needed to be installed and only one pneumatic circuit is needed to modify. Disassembling the finger module to do maintenance.

- ※ The grasping force is related to the grasping posture, the number of fingers, fingers size, etc.
- ※ There is a little discrepancy in working frequency between different grippers with diverse sizes. The bigger gripper is, the lower frequency is.



# 3 Applications

The grasping motion of soft gripper is similar to human fingers, which is flexible and can adaptively wrap objects without causing any physical damage. It is the ideal choice for customers who demand intelligent, undamaged, highsecurity and high adaptability gripping.



## Electronics

Easy to protect the objects from scratches, applicable to assembly, testing, packaging, and sorting electronic products, and also used as jig and fixture of mobile phones.



## Daily Chemical

Daily chemical industry with a great variety of special-shaped products. Application applied sorting and packaging Suitable for big bottle of shampoo, shower gel, etc.



## Automobile

Automobile industry with various special-shaped, easy-scratched and fragile parts. And suitable for parts manufacturer to sort and handle mold.



## logistics storage

Be applicable to different size and different material of package, soft gripper can grab it gently and firmly. Moreover it can finish a series of action like marking, sorting and inbox effectively and efficiently.





## Food

Small and medium food processing enterprises with various products. Applicable to garden stuff, seafood, pastry, beverage, etc.



## Medicine

Suitable for automated sorting and packaging of medical consumables, injections, and medicines. Applied to production and disinfection of surgical instruments.

## The fresh

Can be used for sorting and packing of seafood, fruit, vegetables, cooked food etc. Be applicable to the automation production line on which the product to be produced change frequently or the product has several types.



## Industry

The improved soft gripper can not only guarantee its flexibility but also prevent it from tilting and turning, so that it can be vertically inserted into the isordered part box, grab multiple parts at one time, complete the load-ing and unloading, and can be applie-dto processes of different shapes and sizes object.



## Others

Glass industry Toy manufacturing. Logistics storage industry . Catering and Service.

## 4 Soft Gripper

### Compact Gripper SFG-FTN

Clamped installation gripper is specifically designed for small volume goods with special shape. It has small finger spacing, good grasping adaptivity, high accuracy and stability.



SFG-FTN

#### Application Fields



#### Specification

Ambient temperature	-40~150°C
Driving medium	Clean Air
Lifespan	> 3 million cycles
Input air pressure	-100~100KPa
Repeatability	0.08mm

※ The standard working life is measured at room temperature and varies at other temperatures.

#### Application Examples

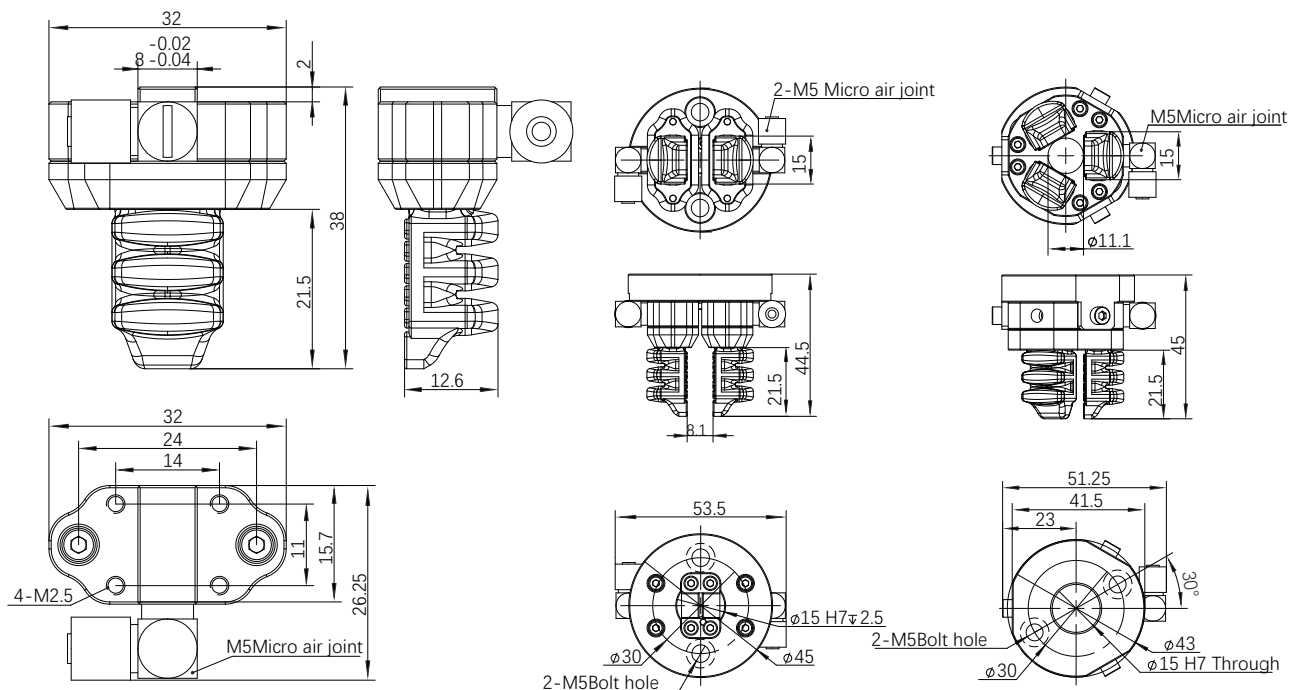




## Compact Gripper

### SFG-FTN-M1520

M1520 series gripper is specially designed for light weight and small size products. The gripper is small in shape and size, and can be applied in small space grabbing with strong adaptability, high precision and high stability.



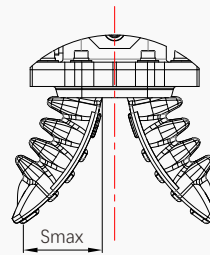
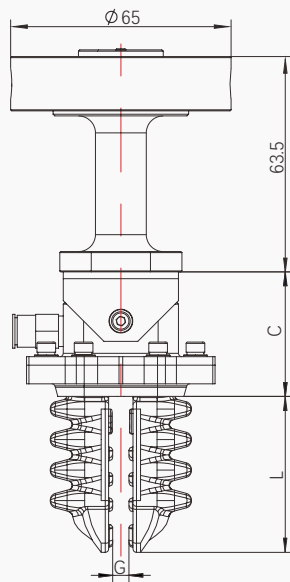
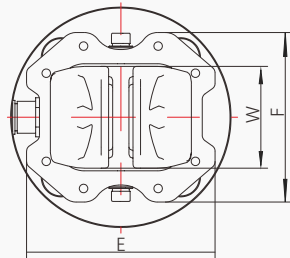
SFG-FTN

## Specification

	Load (g)	Net weight (g)	Ambient temperature (°C)	Lifespan (million cycles)	Repeatability (mm)	Frequency (cpm)	Input air pressure (KPa)	Driving medium
Singlefinger	—	38	-40 ~ 150	3 million times	0.08	≤ 110	-100 ~ 100	Clean Air
Two fingers	≤ 100	104						
Three fingers	≤ 150	80						

## Compact Gripper

Model: SFG - FTN2



Unit: mm

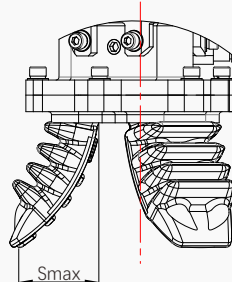
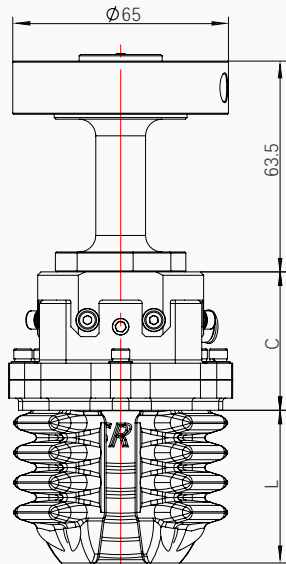
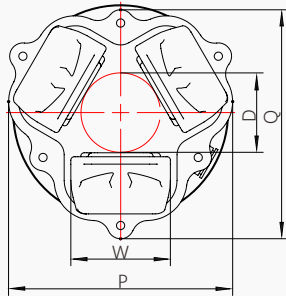
## Specification

Model		Dimensions(mm)							Gripping Capacity			Net weight (g)
		W	L	C	E	F	G	Smax*	G+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FTN2-	M3028	30	28	40	56	50	5	8	21	250	≤110	147
	M3037		37					13	31	300		154
	M3046		46					21	47	200		160
	M3064		64					42	89	150		170
	M5043	50	43	43	75	70	11	20	51	800	≤80	319
	M5058		58					30	71	900		347
	M5072		72					42	95	700		371
	M5086		86					55	121	600		389
	M50115		115					85	181	400		419

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## Compact Gripper

Model: SFG - FTN3



Unit: mm

SFG-FTN

## Specification

Model		Dimensions(mm)							Gripping Capacity			Net weight (g)
		W	L	C	P	Q	D	Smax	D+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FTN3-	M3028	30	28	42	68	69	24	8	40	350	≤110	242
	M3037		37					13	50	400		253
	M3046		46					21	66	300		261
	M3064		64					42	108	250		320
	M5043	50	43	47	104	101	43	20	83	1200	≤80	560
	M5058		58					30	103	1300		603
	M5072		72					42	127	1100		640
	M5086		86					55	153	1000		594
	M50115		115					85	213	900		711

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## Circular Adjustable Gripper SFG-FCA

Fingers are circular distributed, and the spacing of fingers are adjustable so it has very strong self-adaptivity. It can adaptively grasp various of special sized and fragile goods, especially spherical like and plain cylindrical goods.



### Application Fields

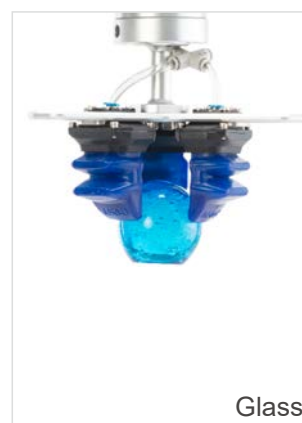
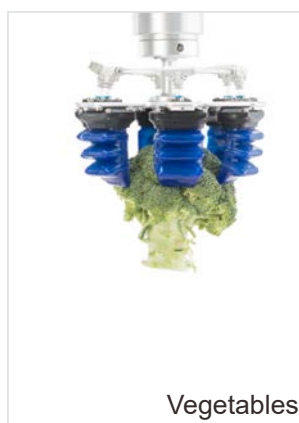


### Specification

Ambient temperature	-40~150°C
Driving medium	Clean Air
Lifespan	> 3 million cycles
Input air pressure	-100~100KPa
Repeatability	0.08mm

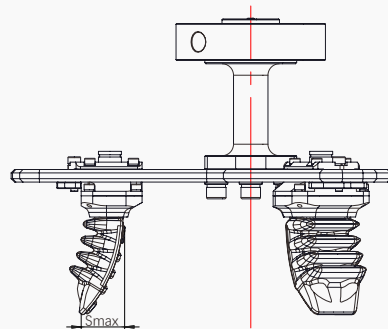
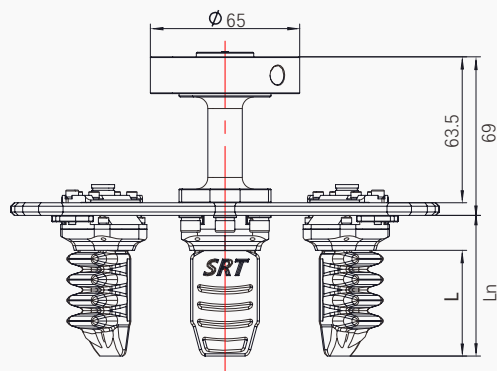
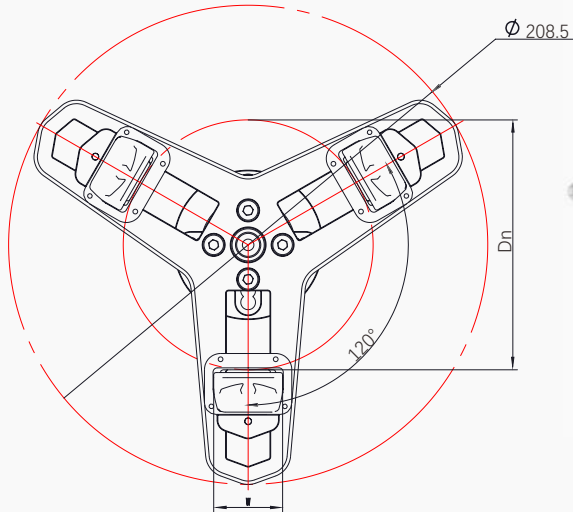
※ The standard working life is measured at room temperature and varies at other temperatures.

### Application Examples



Circular Adjustable Gripper

Model: SFG - FCA3



Unit: mm

Specification

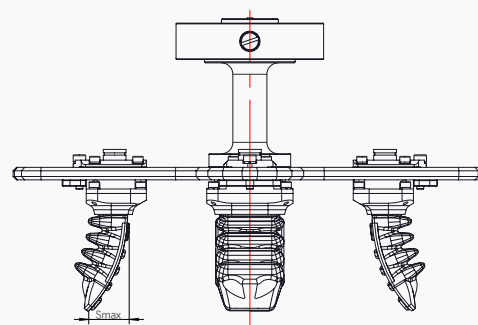
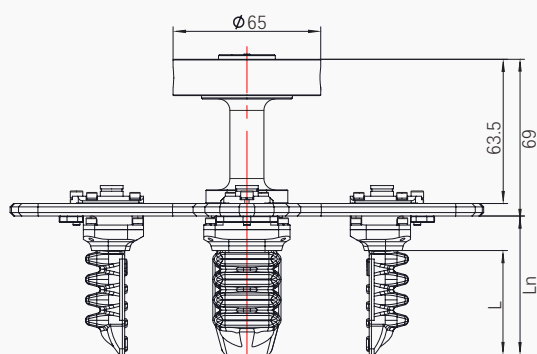
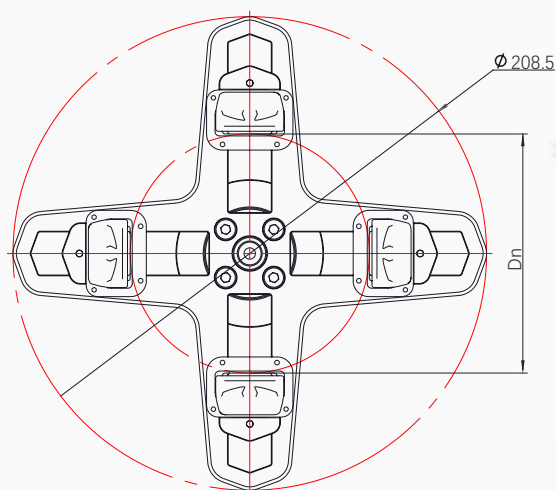
SFG-FCA

Model		Dimensions(mm)					Gripping Capacity			Net weight (g)
		W	L	Ln	Dn	Smax	Dn+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FCA3-	M3028	30	28	43	54-141	8	70-157	300	≤110	511
	M3037		37	53		13	80-167	400		519
	M3046		46	61		21	96-183	500		530
	M3064		64	79		42	138-225	600		548
	M5043	50	43	64	61-135	20	100-175	2000	≤80	709
	M5058		58	78		30	121-195	2500		746
	M5072		72	93		42	145-221	2000		779
	M5086		86	107		55	171-245	1800		814
	M50115		115	136		85	231-305	1500		861

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## Circular Adjustable Gripper

Model: SFG - FCA4



Unit: mm

## Specification

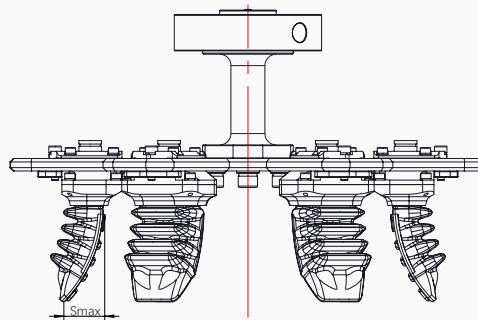
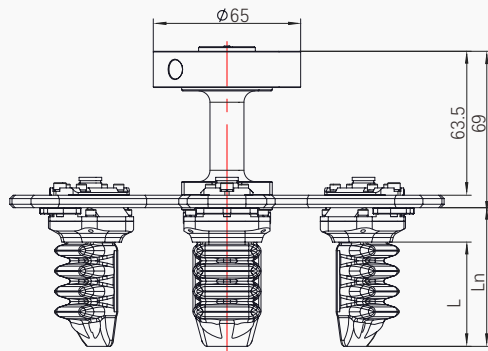
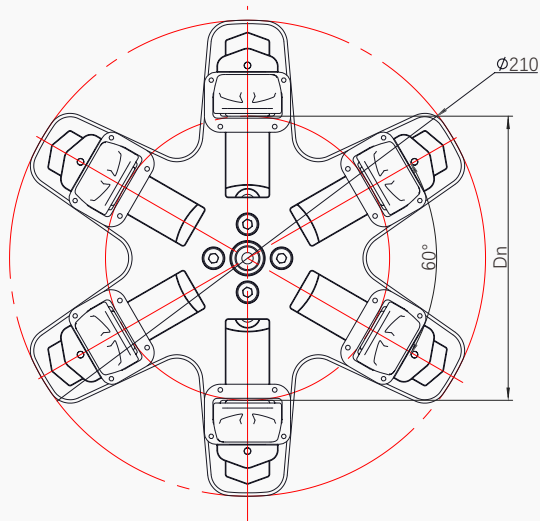
Model		Dimensions(mm)					Gripping Capacity			Net weight (g)
		W	L	Ln	Dn	Smax	Dn+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FCA4-	M3028	30	28	43	50-147	8	66-163	400	≤110	594
	M3037		37	53		13	76-173	550		605
	M3046		46	61		21	92-189	700		619
	M3064		64	79		42	134-231	800		643
	M5043	50	43	64	70-141	20	110-181	3000	≤80	858
	M5058		58	78		30	130-201	3500		907
	M5072		72	93		42	154-225	3000		951
	M5086		86	107		55	180-251	3000		997
	M50115		115	136		85	240-311	2500		1060

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.



## Circular Adjustable Gripper

### Model: SFG - FCA6



Unit: mm

## Specification

Model		Dimensions(mm)					Gripping Capacity			Net weight (g)
		W	L	Ln	Dn	Smax	Dn+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FCA6-	M3028	30	28	43	70-155	8	86-171	600	≤110	771
	M3037		37	53		13	96-181	800		788
	M3046		46	61		21	112-197	1000		809
	M3064		64	79		42	154-239	1200		845
	M5043	50	43	64	113-150	20	153-190	4500	≤80	1168
	M5058		58	78		30	173-210	5000		1241
	M5072		72	93		42	197-234	4000		1308
	M5086		86	107		55	223-260	4000		1377
	M50115		115	136		85	283-320	3500		1471

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

# Meristic Adjustable Gripper SFG-FMA

Fingers are symmetric distributed, and the spacing of fingers are adjustable. It can adaptively grasp various of special sized and fragile goods, especially cubic like and long cylindrical goods.



## Application Fields

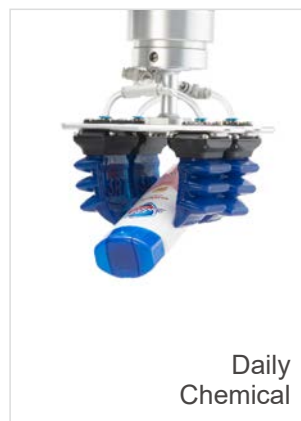


## Specification

Ambient temperature	-40~150°C
Driving medium	Clean Air
Lifespan	>3 million cycles
Input air pressure	-100~100KPa
Repeatability	0.08mm

※ The standard working life is measured at room temperature and varies at other temperatures.

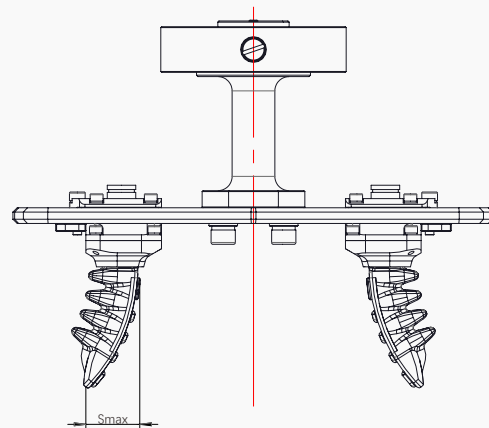
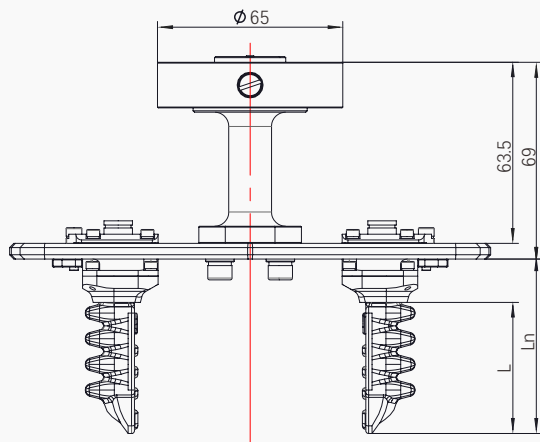
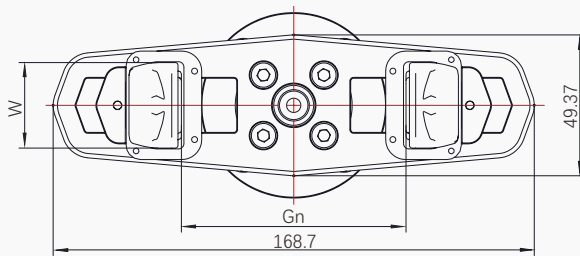
## Application Examples





## Meristic Adjustable Gripper

Model: SFG - FMA2



Unit: mm

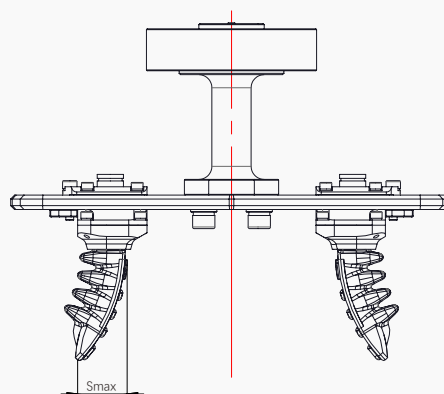
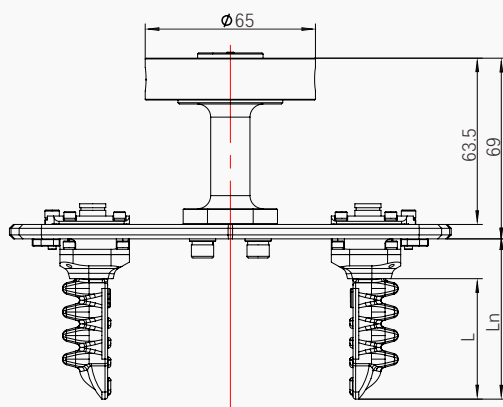
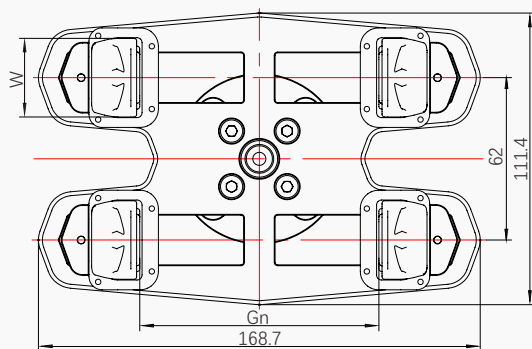
## Specification

Model		Dimensions(mm)					Gripping Capacity			Net weight (g)
		W	L	Ln	Gn	Smax	Gn+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FMA2-	M3028	30	28	43	54-106	8	70-122	200	≤110	410
	M3037		37	53		13	80-132	300		415
	M3046		46	61		21	96-148	350		422
	M3064		64	79		42	138-190	400		432
	M5043	50	43	64	52-100	20	92-140	1500	≤80	542
	M5058		58	78		30	112-160	1600		566
	M5072		72	93		42	136-184	1400		589
	M5086		86	107		55	162-210	1300		611
	M50115		115	136		85	222-270	1000		643

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## Meristic Adjustable Gripper

Model: SFG - FMA4



Unit: mm

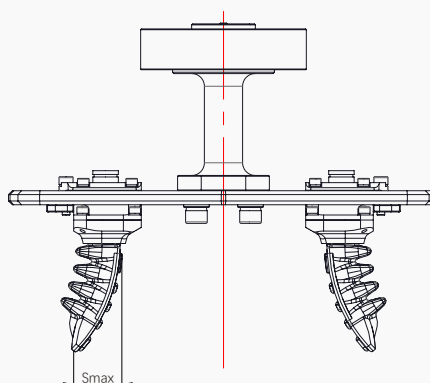
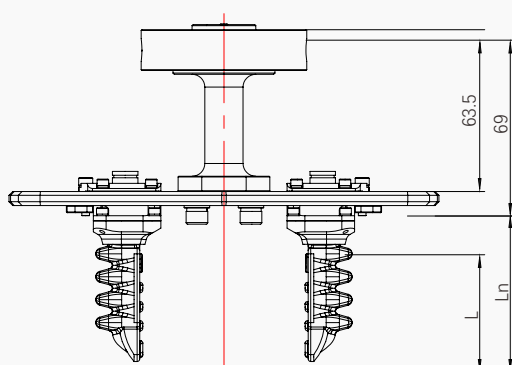
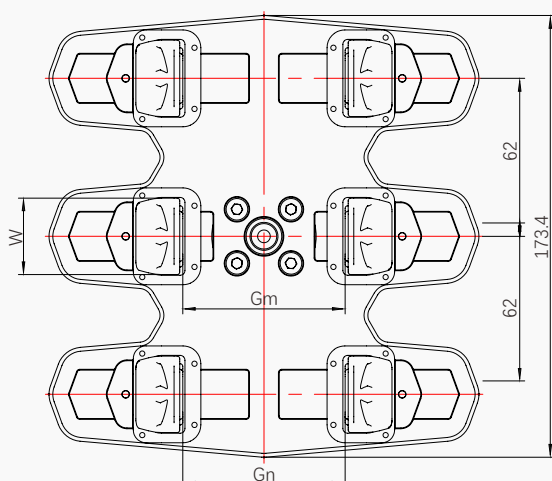
## Specification

Model		Dimensions(mm)					Gripping Capacity			Net weight (g)
		W	L	Ln	Gn	Smax	Gn+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FMA4-	M3028	30	28	43	35-102	8	51-118	400	≤110	603
	M3037		37	53		13	61-128	600		614
	M3046		46	61		21	77-144	700		628
	M3064		64	79		42	119-186	800		652
	M5043	50	42	64	52-100	20	92-140	3000	≤80	867
	M5058		58	78		30	112-160	3500		916
	M5072		72	93		42	136-184	3000		961
	M5086		86	107		55	162-210	2800		1006
	M50115		115	136		85	222-270	2500		1067

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## Meristic Adjustable Gripper

Model: SFG - FMA6



Unit: mm

## Specification

Model		Dimensions(mm)						Gripping Capacity			Net weight (g)
		W	L	Ln	Gm	Gn	Smax	Gm+2Smax (mm)	Load (g)	Frequency (cpm)	
SFG-FMA6-	M3028	30	28	43	54-103	26-103	8	70-119	600	≤110	812
	M3037		37	53			13	80-129	900		829
	M3046		46	61			21	96-145	1000		850
	M3064		64	79			42	138-187	1200		885
	M5043	50	43	64	52-100	21-100	20	92-140	4500	≤80	1208
	M5058		58	78			30	112-160	5000		1282
	M5072		72	93			42	136-184	4500		1349
	M5086		86	107			55	162-210	4200		1417
	M50115		115	136			85	222-270	4000		1511

Smax is the fingertip unilateral offset when negative pressure is -70KPa, and for reference only.

## 5 Pneumatic Controller

As the core of the flexible gripping system, the pneumatic controller realizes the precise control of the grasping force and frequency of grippers by adjusting output pressure and delay. Moreover, the controller can communicate with the manipulator control system to achieve a complete point-to-point grasping and releasing action.

### | Function Distinguish Form

Model	Manual control	IO control	Pressure releasing	Air pressure display	State display	Communication control	Communication voltage regulation	Gear control	Power protection	Over pressure protection	Gas supply check	Gas leakage check	Alarm output	Output completed	232	485	TCP
16STD	●	●	●			●	●			●		●			●		
18PRO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○
18IAS	●	●	●	●		●	●								●		

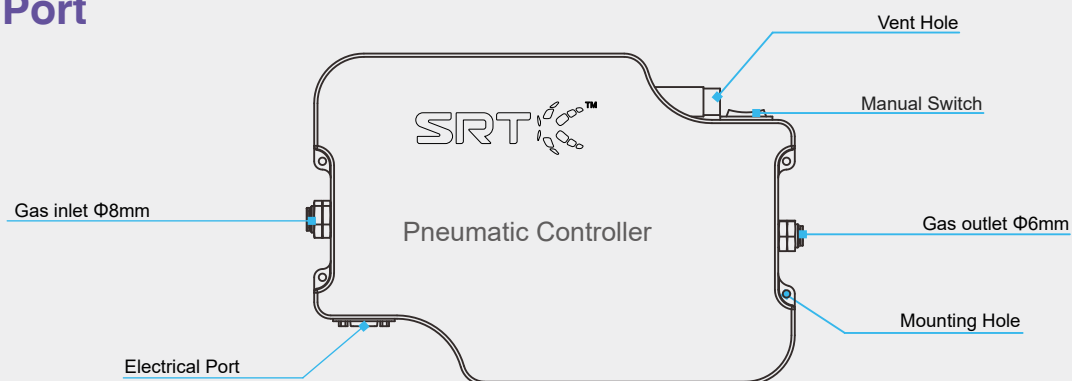
\*Choose one communication interface from three kinds.

### | Parameters Distinguish Form

Model	SCB-16STD	SCB-18PRO	SCB-18IAS
Parameters			
Positive pressure flow(L/min)	150	160	25
Negative pressure flow(L/min)	60	65	25
Shape&size(mm)	290*200*60	300*200*100	220*206*80
Protection grade	Ip43	Ip41	Ip31
State display	x	Real-time gas pressure, alarm, operational pressure reached	Real-time gas pressure
Reset function	x	Reset button, reset terminal	x
Electrical port	Wiring terminal	Wiring terminal, aerial interpolation	Wiring terminal
Debugging port	DB9(RS232)	USB-B	DB9(RS232)
Pressure adjustment method	Pressure adjustment of host computer communication (gear position 1)	Pressure adjustment of host computer communication (gear position 8)	Pressure adjustment of host computer communication (gear position 1)
Communication port	232(recombined with debugging port)	232, 485, TCP(supporting UR+)	232(recombined with debugging port)
Gear function	x	Eight editable gears	x
Protection function	Over pressure overflow	Overpressure overflow, power protection, gas supply check, gas leakage alarm, earthing protection	x

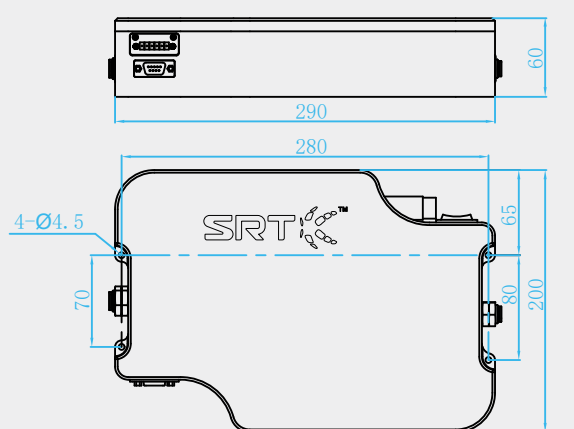
## Standard version of passive controller SCB-16STD

### Port



Unit: mm

### Dimension

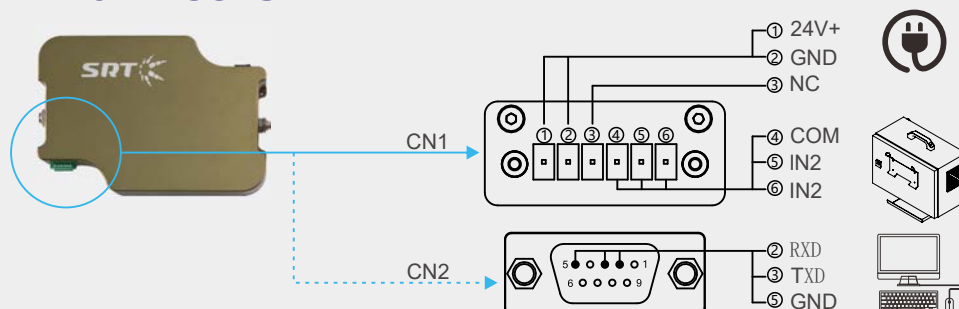


Unit: mm

### Working Parameter







Input Voltage	24V $\pm$ 10%DC
Current Consumption	3A
Air Source Input	0.5-0.7MPa clean Air, flow>200L/min
Output Pressure	-70-100KPa
Cooling Mode	Natural cooling
Ambient Humidity	<85%RH(No Condensation)
Ambient Temperature	0-45 $^{\circ}\text{C}$
Environment	Avoid dust, oil contamination and corrosive gas
Level of Protection	IP43
Net Weight	2,200g
Dimensions	290*200*60mm

### Terminal Blocks



# High Performance Version of Passive Controller SCB-18PRO

## | Characteristic

 Accurate, high speed response	 Multiple communication methods	 Customized service
 UR+ function	 Multiple pressure adjustment methods	 Real-time state display

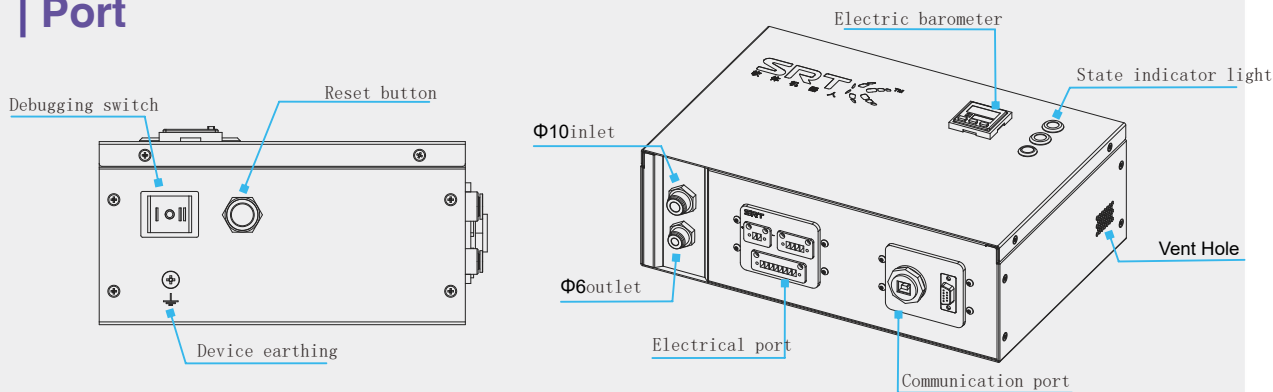
## | Coding Rules

① Product code			
② Specific model			
③ Electrical port		④ Communication port	
Code	Description	Code	Description
A	Wiring terminal	R	DB9 (RS232)
B	Aerial plug	U	Ethernet port
		T	3P terminal (RS485)

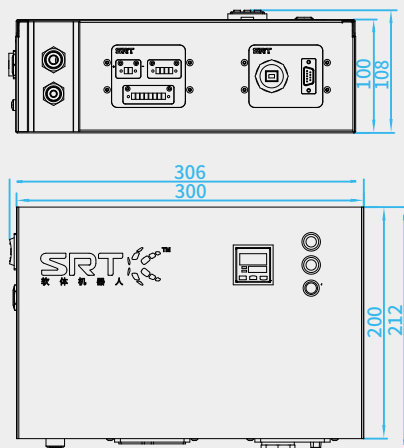
## | Model Selection Specifications



## | Port



## Dimension



## Working Parameter

Dimensions	300*200*100mm
Net Weight	3885g
Input Voltage	DC24V±5%
Current Consumption	3A
Input gas pressure	0.5~0.7Mpa clean Air, flow>200L/min
Gas Input	-70~100Kpa
Positive pressure output flow	160L/min
Negative pressure output flow	65L/min
Protection function	Overpressure overflow, power protection, gas supply check, gas leakage alarm
Level of Protection	Ip41

Unit: mm

## Terminal Blocks

### Power Supply Port

PIN2	Name	Function instructions	Detailed introduction
1	DC24V	24V	DC24V power supply port
2	GND	0V	

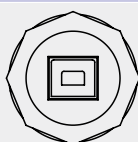
### Input Port

PIN8	Name	Function instructions	Detailed introduction
1	INCOM	Common end of signal input	COM
2	IN1	Positive pressure triggering port	Positive pressure signal input
3	IN2	Negative pressure triggering port	Negative pressure signal input
4	SW1	Pressure select 1	Every gear corresponds to 8 positive/negative pressure value
5	SW2	Pressure select 2	
6	SW3	Pressure select 3	
7	VP	NC	Reserved port
8	MS	NC	Reserved port

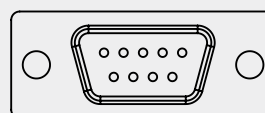
### Output port

PIN4	Name	Function instructions	Detailed introduction
1	OUTCOM	Common end of signal output	COM
2	PASS	Positive pressure completed	Positive pressure signal output completed
3	NSS	Negative pressure completed	Negative pressure signal output completed
4	WS	Alarm state	Gas leakage alarm Over pressure alarm

### Communication port



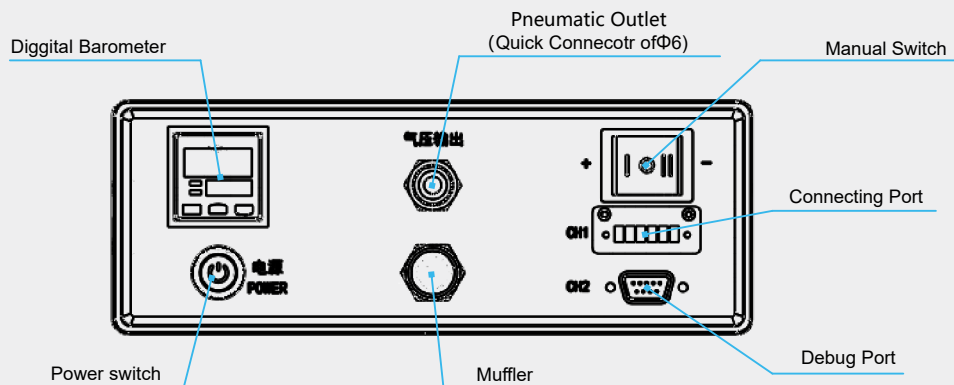
USB-B: Device debugging port  
(pressure modification software on PC uses this)



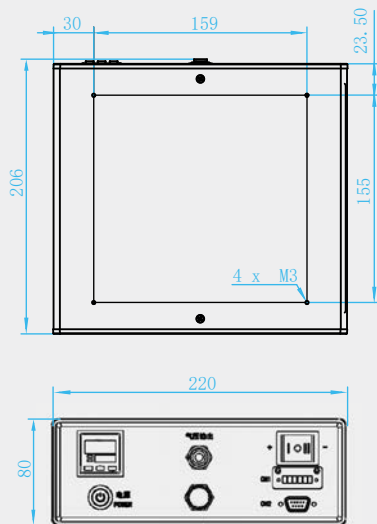
Rs232 protocol port(reserved developing port)

# Active Controller SCB-18IAS

## | Port



## | Structure Size

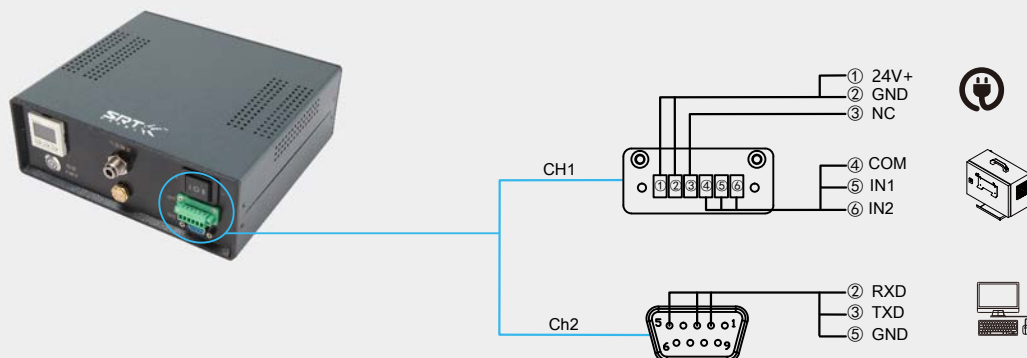


## | Working Parameter

Dimensions	220*206*80mm
Net Weight	2680g
Input Voltage	DC24V±5%
Current Consumption	3A
Gas Input	-70~100Kpa
Positive pressure output flow	25L/min
Negative pressure output flow	25L/min
Protection function	NO
Level of Protection	Ip31

Unit: mm

## | Terminal Blocks

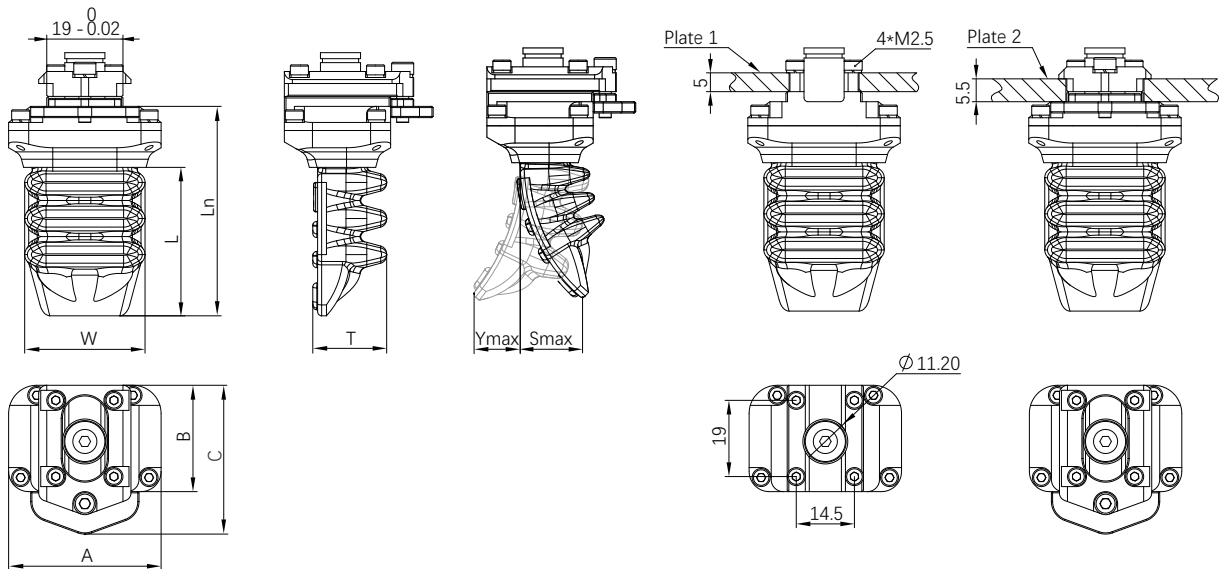




## 6 Soft Finger Module










Soft finger modules are the core components of soft gripper. You can separately purchase and assemble them according to your requirements.

It is recommended to cooperate with SRT pneumatic controller and avoid directly accessing to gas source.



Unit: mm

### Specification

Model	M3028	M3037	M3046	M3064	M5043	M5058	M5072	M5086	M50115
Illustration									
W/mm	30				50				
L/mm	28	37	46	64	43	58	72	86	115
T/mm	18.5				28.5				
A/mm	38				59				
B/mm	26.5				37.5				
C/mm	37.1				43.8				
Ln/mm	43	53	61	79	64	78	93	107	136
Smax	8	13	21	42	20	30	42	55	85
Ymax	6	10	19	34	16	27	51	63	—
Net weight/g	58	60	64	70	124	136	147	159	174
Operation pressure/KPa	-100~100								
Inlet pipe diameter/mm	Φ6								

Input Air pressure should be within the working range of the finger, otherwise it will affect the product life and even lead to product damage.

## Finger anti-static

Based on conventional materials, anti-static fingers add static dissipative silicon rubber layer, significantly increasing volume resistivity of interface. Scraping volume resistivity of surface material is up to  $10^5$  conforming to the national military standard for electronic products .(GJB/Z 86~1997 antistatic packaging manual).

In view of the electrostatic sensitive electronic components, the use of special formula of static dissipative silicone rubber compound layer, prevents electrostatic accumulation, guarantees the electronic components in the process of picking up from the damage of electrostatic discharge.

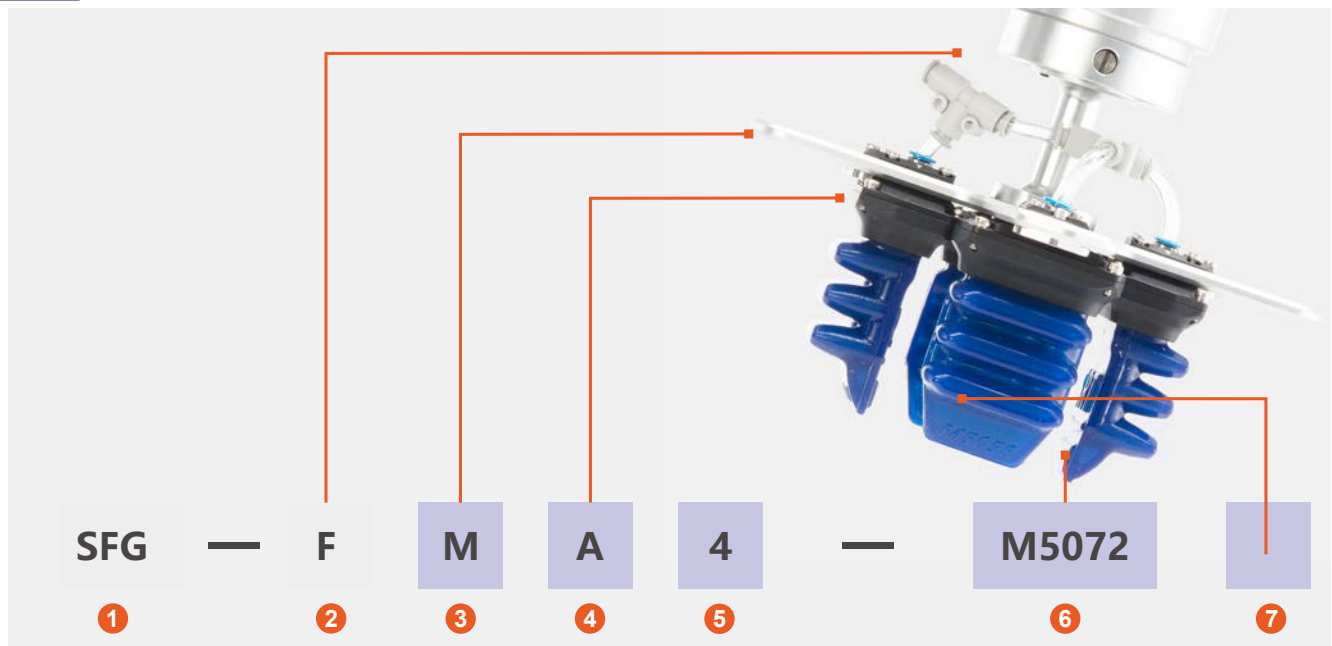


## Finger anti-wear

Used in high abrasion resistant flexible fingers wear environment, increasing the containing special enhance the wear resistance of silicone rubber of components, the surface strength is far higher than the conventional silicon rubber. Under the same experimental conditions (based on standard wear test of akron abrasion tester), the erosion rate is only 1/5 of the conventional silicon rubber.



# 7 Code and Order



## Code Of Model Designations

1 SFG Series mark

2 Fixed to the mechanical arm

3 Installation method of finger module

Mark	Description
C	Circular symmetry
M	Mirror symmetry
T	Compact

4 Position adjustment method of finger module

Mark	Description
N	Nonadjustable
A	Manually and individually

5 The Number of finger modules

Mark	Description
2	2 fingers
3	3 fingers
4	4 fingers
6	6 fingers

6 Finger Type

Mark	Description Unit: mm	
	Width	Length
M3028	30	28
M3037		37
M3046		46
M3064		64
M5043	50	43
M5058		58
M5072		72
M5086		86
M50115		115
M1520	15	20

7 Finger type

Mark	Description
Null	Standard type
※	Special finger type

3 + 4 + 5

Mark	2	3	4	6
CA	—	CA3	CA4	CA6
MA	MA2	—	MA4	MA6
TN	TN2	TN3	—	—

## Order

After deciding finger type according to coded specifications, customers can submit to the SRT sales to continue purchasing. If special type or kind of fingers are needed to know, or there are difficulties in type selection, please contact SRT technicians directly.

## 8 Guide Case


The type of SRT soft gripper is various, targeting different shapes, sizes, weight to provide exact solutions.

1.Circular distributed gripper is used for spherical like and plain goods. Symmetric gripper is suitable for long thin goods.

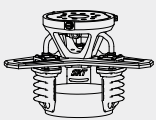
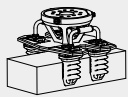
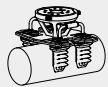
2.Clamped gripper with short fingers are suitable for small sized goods. Adjustable gripper with long fingers is for bigger goods.

3.Less number of fingers and small sized grippers are chosen for light goods and more number of fingers and big sized gripper is for heavy goods



Shape of Object	Diameter/mm	Applications	Recommend products	Max load*/g
<b>Sphere Objects</b> 	4~15	Soybean	SFG-FTN2-M3028	250
		Jewelry	SFG-FTN2-M3046	200
	15~30	Electronic element	SFG-FTN3-M3046	300
		Chocoball	SFG-FCA3-M3046	500
	25~50	Cherry tomato	SFG-FCA3-M3046	500
		Golf	SFG-FCA4-M3046	700
	40~110	Apple	SFG-FTN3-M5072	110
		Yoghourt	SFG-FCA4-M5072	3000
	80~200	Melon	SFG-FCA6-M5072	4000

This is for your reference only.

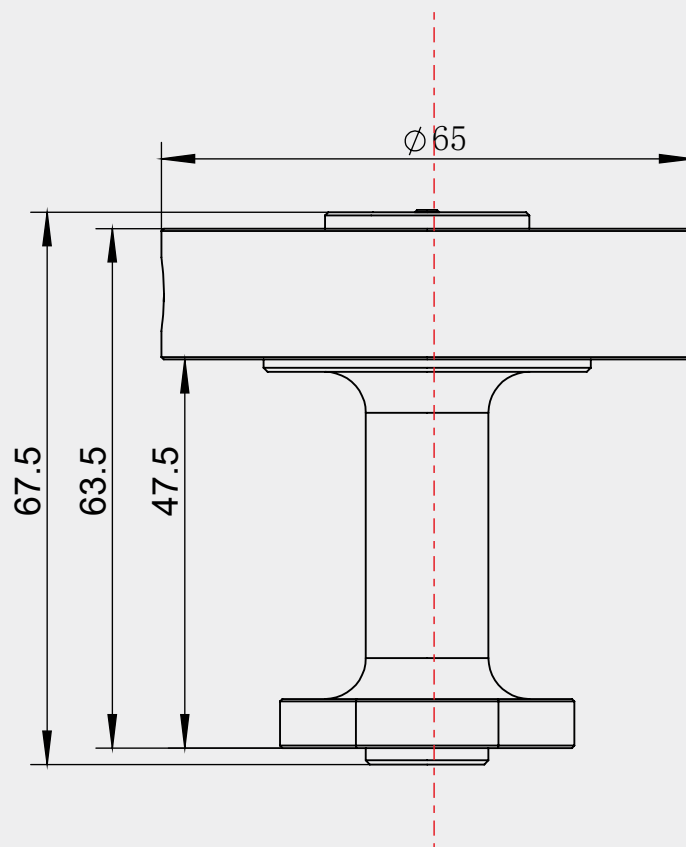
Shape of Object	Diameter/mm	Applications	Recommend products	Max load*/g
<b>Flat Objects</b> 	5-20	Finger ring	SFG-FTN2-M3028	250
			SFG-FTN3-M3028	350
	10-35	Bottle cap	SFG-FTN2-M3046	200
		Seal	SFG-FTN3-M3046	300
	25-50	Dried persimmon	SFG-FTN2-M5072	700
	40-60	Cup	SFG-FCA4-M3046	700
			SFG-FCA4-M5043	3000
	50-120	Instant noodles	SFG-FCA4-M3046	700
			SFG-FCA4-M5072	3000
	80-200	Bowl	SFG-FCA4-M5072	3000
			SFG-FCA6-M5072	4000
	80-200	Flowerpot	SFG-FMA6-M5072	4500
			SFG-FMA4-M50115	2500
<b>Slender Objects</b>  	5-20	Pen	SFG-FTN2-M3028	250
	15-30	Crab stick	SFG-FTN2-M3046	200
		Chocolate Bars	SFG-FTN2-M5043	800
	25-50	Remote control	SFG-FTN2-M3064	150
		Facial cleanser	SFG-FTN2-M5072	700
	50-100	Phone	SFG-FMA4-M3028	400
	40-120	Mouse	SFG-FMA2-M3046	350
		Power adapter	SFG-FMA4-M3064	800
		Tea caddy	SFG-FMA4-M5043	3000
		Goblet	SFG-FMA4-M5072	3000
	100-300	Pineapple	SFG-FMA6-M50115	4000

This is for your reference only.

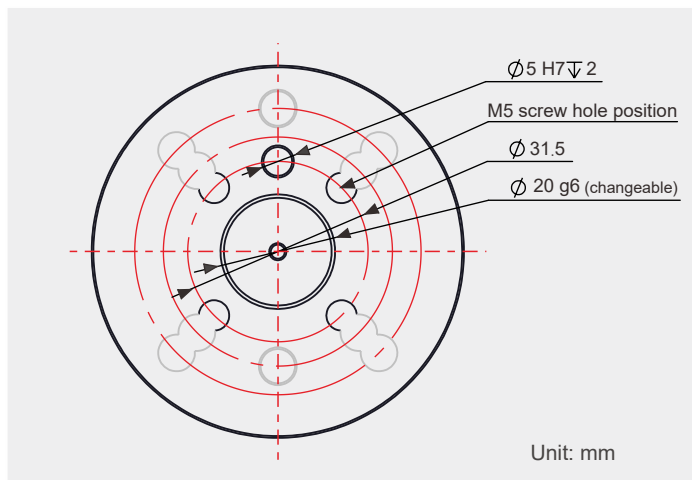
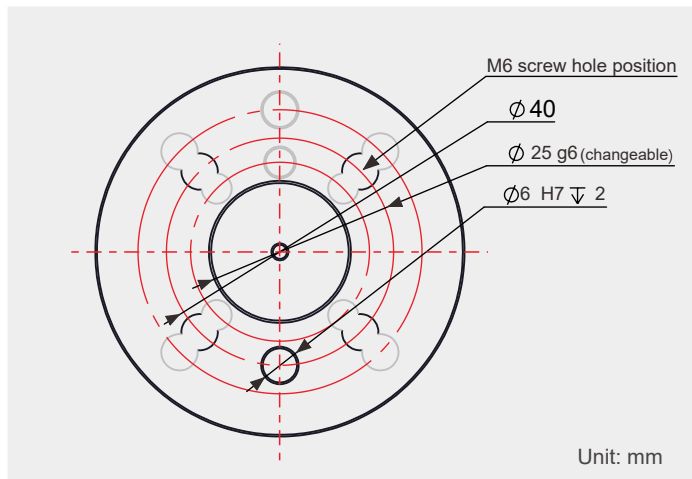
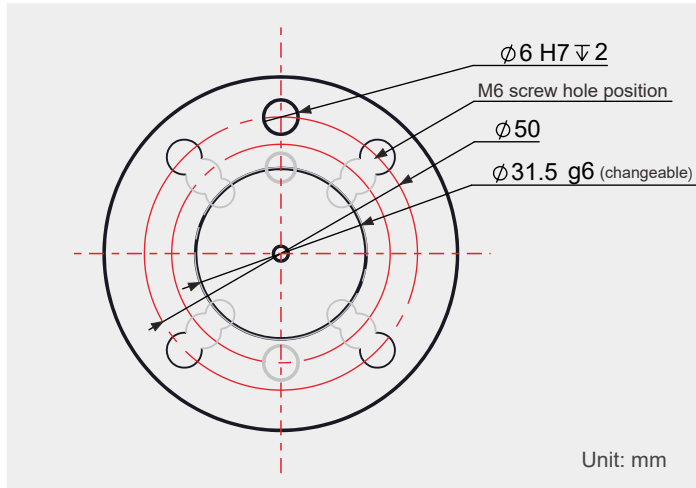
## 9 Mounting Dimension

### Mounting Dimension of the Gripper

The flange size between SRT soft gripper and robots is compatible with ISO9409-1:2004 (the same as GB/T14468.1:2004) international standard. We also provide non-standard customized service. Currently, SFG gripper series can be compatible with robots of UR, ABB and SIASUN.



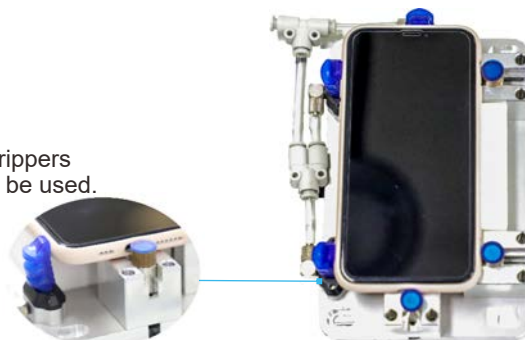
Unit: mm



# 10 Solutions

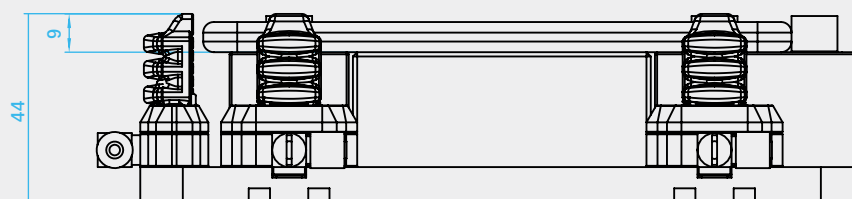
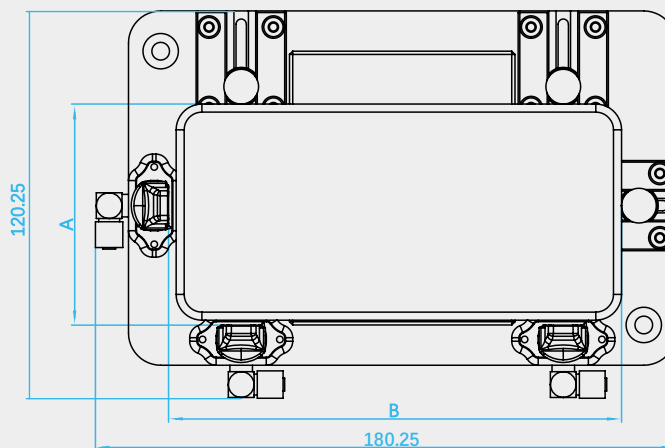
## | Mobile Phone Clamp Fixture

Non-standard products can be customized, cooperating with soft grippers to grip. Double-station structure. SFG-FTN-M1520 soft gripper can be used.



## | Structure size

A		B	
MAX	MIN	MAX	MIN
88	61.25	148	121.25



Unit: mm

## | Specification

Maximum load (g)	Product weight (g)	Temperature range (°C)	Working lifespan (10 thousand times)	Repetition accuracy (mm)	Working pressure (Kpa)	Working frequency (cpm)	Activating media
—	—	-40~150	3 million times	0.08	≤110	-100~100	Clean air

※ It is recommended to cooperate with SRT pneumatic controller and avoid directly accessing to gas source.



## Customization service

The special customization can be made when existing products cannot meet the demand. According to actual task requirements, we can assist customers in choosing the right gripper and suitable robot system, as well as, provides turnkey services, including visual recognition, manual teaching, gas path building, programming, etc.



## Finger custom

We can customize the gripper according to customer requirements to grasp certain objects.



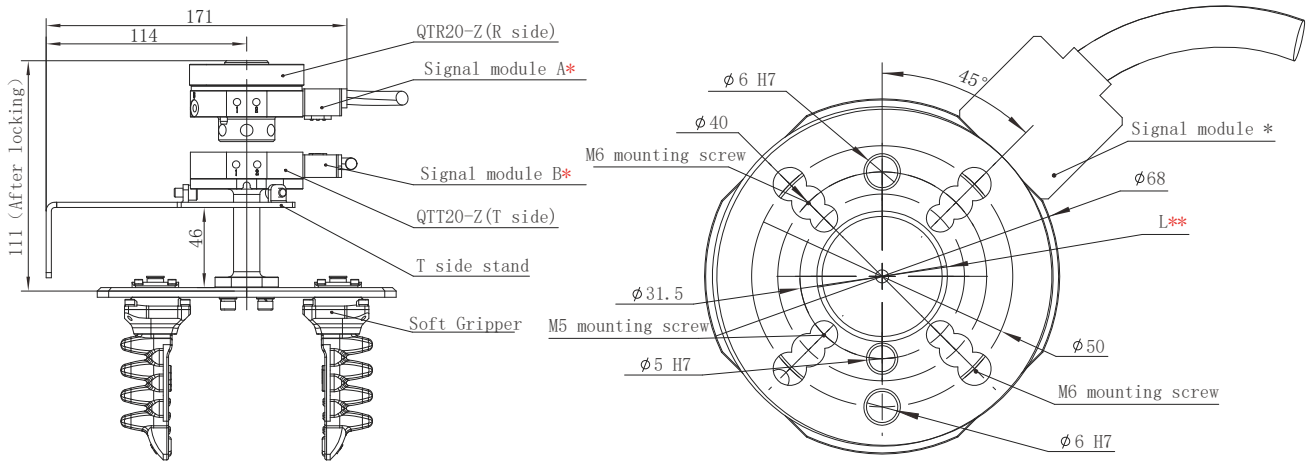
## Support custom

Mounting plate of the soft fingers can be customized for large size or special-shaped workpiece.



## Quick changer

Quick changer is a device which makes the industrial robot more flexible by automatically changing the soft gripper or other end-effector of the robot. It can complete the replacement of the soft gripper in few seconds. It can also be installed with other back-up grippers for automation production line, effectively reducing the shutdown time. The quick-changer device consists of a robot side (R side) mounted on the mechanical arm, a tool side (T side) mounted on the flexible gripper or other end-effector.



### Note

\*:8PIN或12PIN,  $\leq 3A$

\*\* :L=20/25/31.5



## Product feature

- 1、Support three ISO and GB robot interfaces (ISO9409-1-2004、GB/T14468.1-2006)
- 2、seamless with SRT Soft Gripper
- 3、With a steel ball lock, the margin of error can be fully locked
- 4、Self - locking, with air - break protection function
- 5、Small size, light weight and convenient installation

# 11 Honor

## | Patent certificates



## | High-tech enterprise



## | Food hygiene and safety certification



## | Certificate of registration



## | Others



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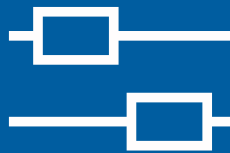
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