

More precision



We have added advanced positioning precision and high rigidity to the pneumatic actuator.

The Koganei Alpha Series further enhances the drive module concept, supporting superior applications and labor savings in FA line design and manufacturing with higher performance.

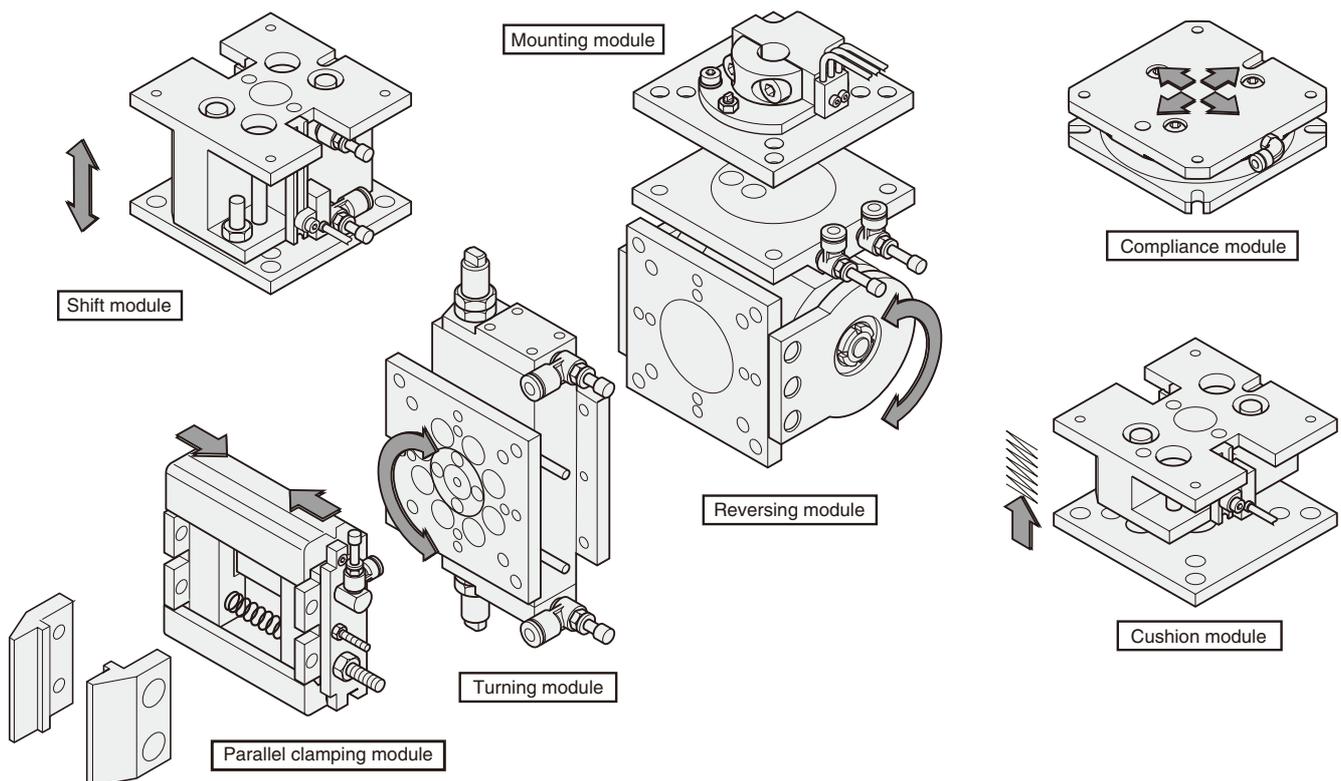
Systematic Handling Module

The handling module has mounting, turning, linear motion, positioning error correction, and gripping functions, which serve to shorten the design time regarding the material handling process, to reduce costs, and to deliver performance for the early set-up of automated lines.

Standardized modules

The handling operation is classified, standardized, and modularized into 7 functions.

As a result, designers can immediately complete the handling unit by combining modules organized by functions.

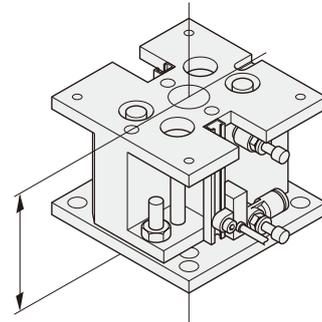


Assure high accuracy

High machining and assembly precision of the module ensure high accuracy in single-unit use or combination use.

Repeatability in each module	
Turning module	$\pm 0.03^\circ$
Reversing module	$\pm 0.03^\circ$
Shift module	$\pm 0.05\text{mm}$ [$\pm 0.0020\text{in.}$]
Cushion module	$\pm 0.05\text{mm}$ [$\pm 0.0020\text{in.}$]
Compliance module	$\pm 0.02\text{mm}$ [$\pm 0.0008\text{in.}$]
Parallel clamping module	$\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$]

● Tolerance of the contact surface parallelism between mounting surface and mounted surface
= S : 0.04, M : 0.05, L : 0.06



● Tolerance of the coaxiality with the hypothetical center, as restricted by the locating pin = S : $\phi 0.04$, M : $\phi 0.05$, L : $\phi 0.06$

Commonality of mounting pitch

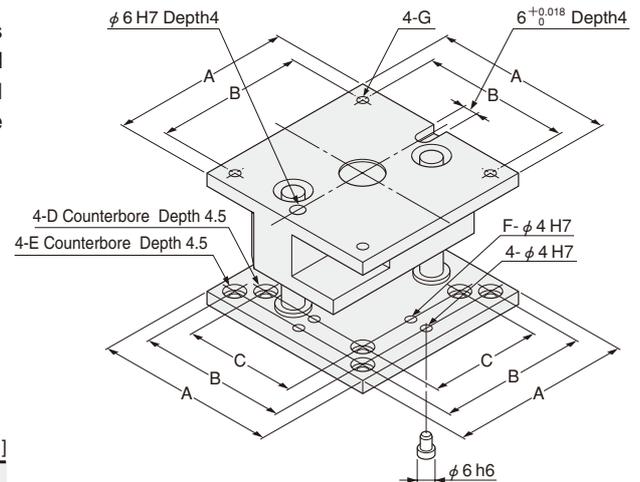
● Full choice mounting method

The Systematic Handling Module is a standard module that provides handling operations in the precision assembly field by 7 classified functions, for a complete series. Moreover, the module uses the full choice mounting method that makes any combinations possible while keeping the excellent positioning accuracy.

Features

- ① Common mounting dimensions for each size
- ② Bottom surfaces can be used to mount the same size or one smaller sized module.
- ③ To ensure accurate positioning of the handling modules, there are dowel pin holes on contacted surface of each modules, and locating pins are available (2 locating pins supplied with each module, with the exception of the parallel clamping module).

	mm [in.]						
	A	B	C	D	E	F	G
S size	60 [2.362]	50 [1.969]	—	—	—	—	—
M size	80 [3.150]	65 [2.559]	50 [1.969]	—	M4	—	M4
L size	100 [3.937]	85 [3.346]	65 [2.559]	M4	M5	4 [0.157]	M5



Optimum load mass

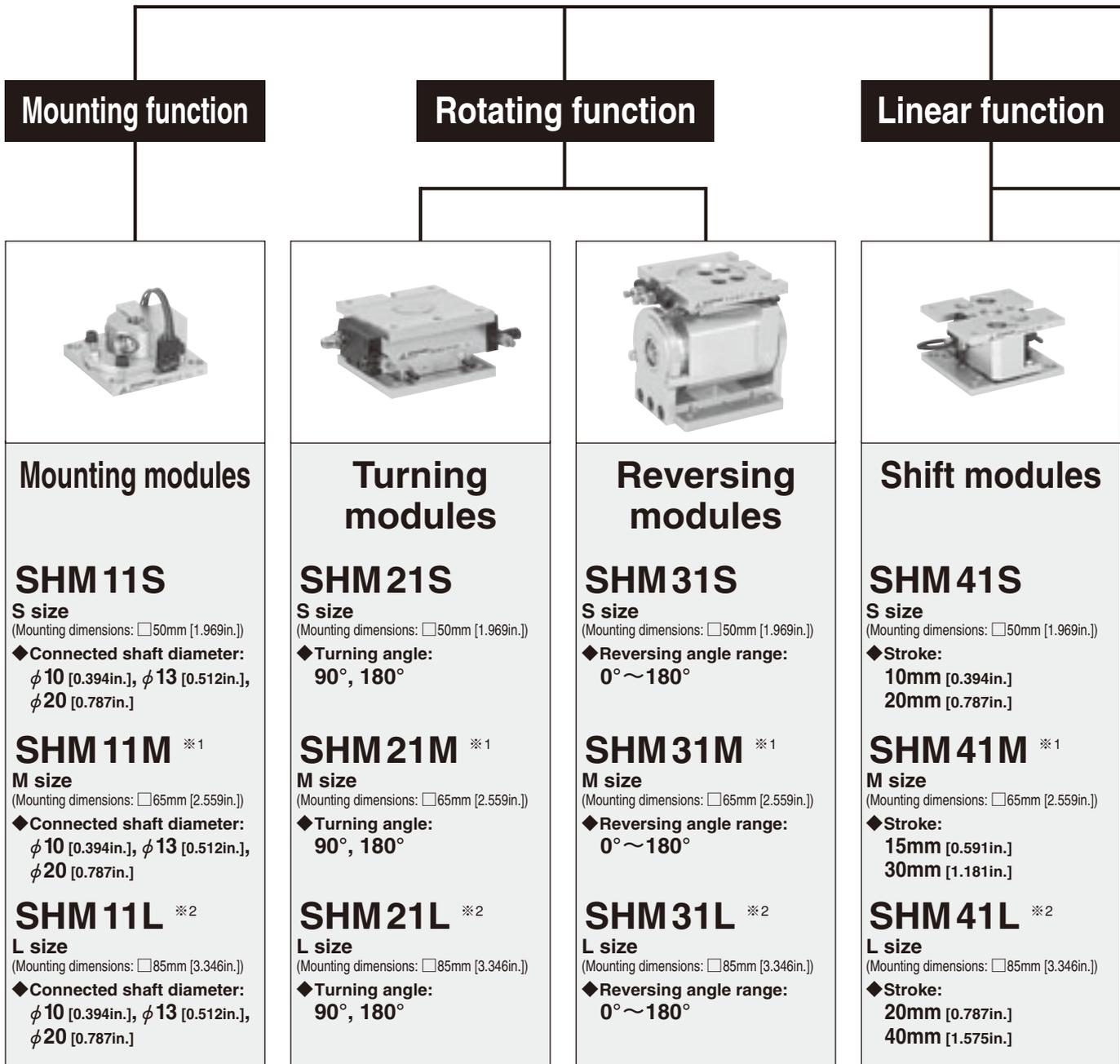
For the Systematic Handling Module, use the load masses shown below as a guide.

- S size 250g [8.82oz.]
- M size 500g [17.64oz.]
- L size 1000g [35.27oz.]

● To calculate the maximum load mass, use the formula below.

Robot load capacity	—	Hypothetical mass with all connected modules	—	Load ratio	=	Load mass
S size : 3kg [6.6lb.] M size : 6kg [13.2lb.] L size : 9kg [19.8lb.]		S size : 1.5kg [3.3lb.] M size : 3kg [6.6lb.] L size : 5kg [11.0lb.]				S size : 250g [8.82oz.] M size : 500g [17.64oz.] L size : 1000g [35.27oz.]

The leading runner on the automated line, the Handling Module
This will be the STANDARD from now on.

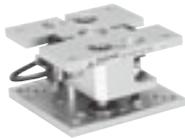


※1 : In addition to M size, S size mountings are also possible.
 ※2 : In addition to L size, M size mountings are also possible.

Systematic HandlingModule

Positioning error correction function

Gripping function



Cushion modules

SHM 51S

S size
(Mounting dimensions: □50mm [1.969in.])

◆Stroke:
5mm [0.197in.]
10mm [0.394in.]

SHM 51M ※1

M size
(Mounting dimensions: □65mm [2.559in.])

◆Stroke:
8mm [0.315in.]
15mm [0.591in.]

SHM 51L ※2

L size
(Mounting dimensions: □85mm [3.346in.])

◆Stroke:
10mm [0.394in.]
20mm [0.787in.]



Compliance modules

SHM 61S, 62S

S size
(Mounting dimensions: □50mm [1.969in.])

SHM 61M, 62M

M size
(Mounting dimensions: □65mm [2.559in.])

SHM 61L, 62L

L size
(Mounting dimensions: □85mm [3.346in.])



Parallel clamping modules

SHM 71S

S size
(Mounting dimensions: □50mm [1.969in.])

◆Gripping width:
42mm [1.65in.]

SHM 71M

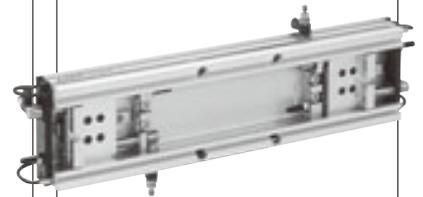
M size
(Mounting dimensions: □65mm [2.559in.])

◆Gripping width:
57mm [2.24in.]

SHM 71L

L size
(Mounting dimensions: □85mm [3.346in.])

◆Gripping width:
73mm [2.87in.]



Parallel clamping long modules

SHM 72S

S size
(Mounting dimensions: □50mm [1.969in.])

◆Gripping width:
140, 240, 340mm
[5.51, 9.45, 13.39in.]

SHM 72M

M size
(Mounting dimensions: □65mm [2.559in.])

◆Gripping width:
176, 276, 376mm
[6.93, 10.87, 14.80in.]

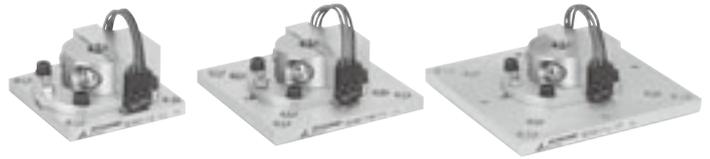
SHM 72L

L size
(Mounting dimensions: □85mm [3.346in.])

◆Gripping width:
318, 418, 518mm
[12.52, 16.46, 20.39in.]

● SHM62 is NZ specification.
For details, see p.1521.

MOUNTING MODULES



This module serves as the joint between the shaft end of the robot and the hand (gripper) unit.

● Shear bolt

Excessive force by a collision, etc., will break the shear bolt, separating the shaft holder and plate.

Note: Fasten the shear bolt to the tightening torque shown below.

Connected shaft diameter mm [in.]	Tightening torque
φ 10 [0.394]	31.4N·cm [2.78in·lbf]
φ 13 [0.512]	63.47N·cm [5.62in·lbf]
φ 20 [0.787]	107.9N·cm [9.55in·lbf]

● Plate

● Angle adjusting screw

Loosening the shear bolt and rotating the adjusting screw clockwise or counterclockwise allows the mounting angle of the plate to be adjusted within a range of ±1°.

● Shaft holder

● Locating hole

Secures the module accurately onto the spline groove of the shaft.

● Falling detection sensor

Detects the falling of a plate due to breaking of the shear bolt.

Normally ON (OFF when falling)

Black wire — Blue wire
Red wire

● Locating pin

(Apply locking adhesive and insert it into the required hole.)

● Falling prevention stopper

Prevents the plate from falling completely.



Specifications

Item	Model										
	SHM11S			SHM11M			SHM11L				
Mounting specification	Connected shaft diameter ^{Note1} mm [in.]	10 [0.394]	13 [0.512]	20 [0.787]	10 [0.394]	13 [0.512]	20 [0.787]	10 [0.394]	13 [0.512]	20 [0.787]	
	Mounted surface	S			M or S ^{Note2}			L or M ^{Note3}			
Operating temperature range	°C [°F]		0~60 [32~140]								
Lubrication	Not required										
Range of mounting adjustment angle	±1°										
Sensor switch	Falling detection×1 (OMRON : D2JW-011-MD)										
Mass	g [oz.]	200 [7.1]	190 [6.7]	210 [7.4]	250 [8.8]	240 [8.5]	260 [9.2]	320 [11.3]	310 [10.9]	330 [11.6]	

Notes: 1. Consult us for sizes other than the shaft diameters shown in the table.

2. Both M and S sizes can be mounted on SHM11M.

3. Both L and M sizes can be mounted on SHM11L.

Order Codes

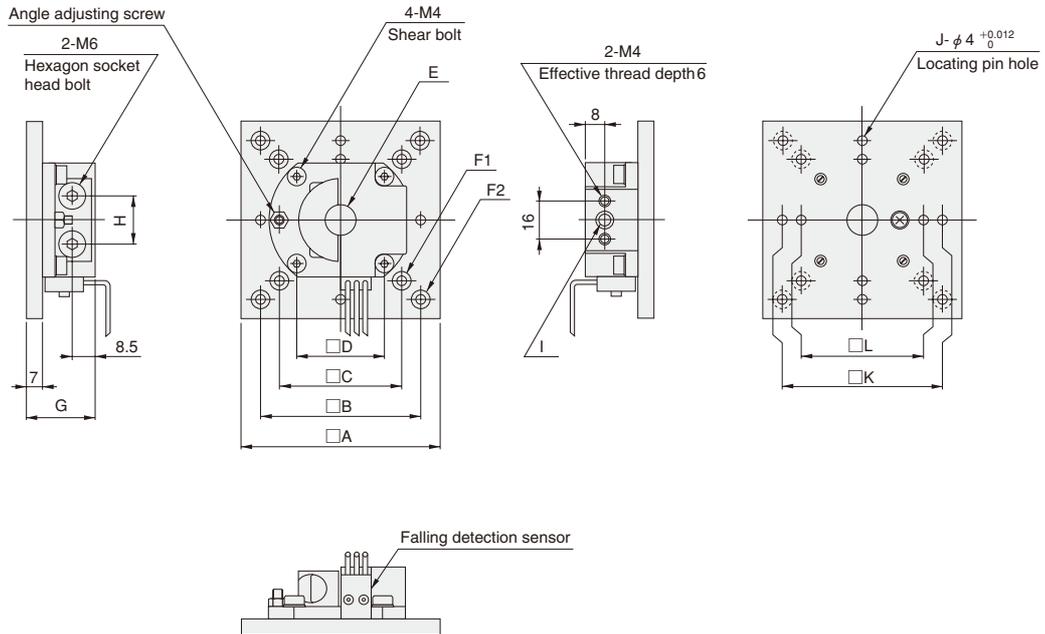
SHM	11	□	—	□
		Connected shaft diameter		
		10 : φ 10 [0.394in.]		
		13 : φ 13 [0.512in.]		
		20 : φ 20 [0.787in.]		
		Mounting specification		
		S : Mounting pitch 50mm [1.969in.]		
		M : Mounting pitch 65mm [2.559in.]		
		L : Mounting pitch 85mm [3.346in.]		
		Module		
		Mounting module		
Alpha series systematic handling module				

※ Two locating pins are included.

Dimensions of SHM11S, M, L (mm)



SHM11 Mounting specification Connected shaft diameter

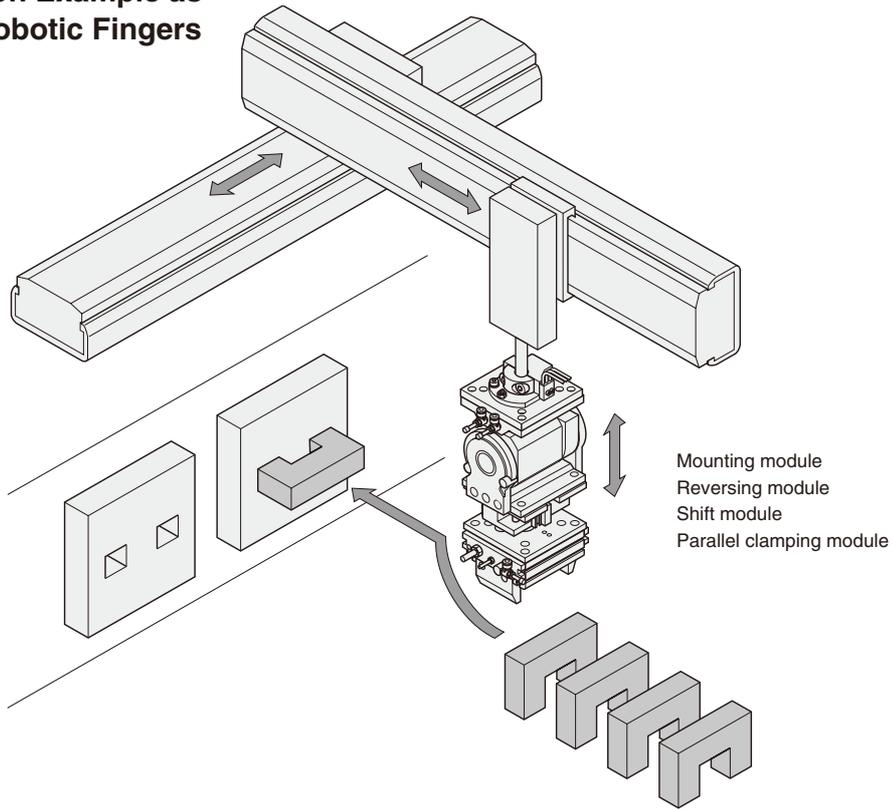


- Remarks: 1. Perpendicularity tolerance between the connected shaft center and mounted surface is 0.05.
 2. Coaxiality tolerance between the hypothetical center and the mounted shaft center, as restricted by the locating pin = S : ϕ 0.04, M : ϕ 0.05, L : ϕ 0.06

Code Model	A	B	C	D	E	F1	F2	G	H	I	J	K	L
SHM11S-10	60	50	—	36	ϕ 10 ^{+0.015/0}	—	4- ϕ 4.5 4- ϕ 8 Counterbore Depth 4.4	28	20	ϕ 4 ^{+0.012/0} (Opening ϕ 6 Depth 10)	4	50 \pm 0.03	—
SHM11S-13					ϕ 13 ^{+0.018/0}					ϕ 5 ^{+0.012/0} (Opening ϕ 6 Depth 10)			
SHM11S-20					ϕ 20 ^{+0.021/0}					ϕ 6 ^{+0.012/0}			
SHM11M-10	80	65	50	36	ϕ 10 ^{+0.015/0}	4- ϕ 4.5 4- ϕ 8 Counterbore Depth 4.4	4- ϕ 5.5 4- ϕ 9.5 Counterbore Depth 3.5	28	20	ϕ 4 ^{+0.012/0} (Opening ϕ 6 Depth 10)	8	65 \pm 0.03	50 \pm 0.03
SHM11M-13					ϕ 13 ^{+0.018/0}					ϕ 5 ^{+0.012/0} (Opening ϕ 6 Depth 10)			
SHM11M-20					ϕ 20 ^{+0.021/0}					ϕ 6 ^{+0.012/0}			
SHM11L-10	100	85	65	36	ϕ 10 ^{+0.015/0}	4- ϕ 4.5 4- ϕ 8 Counterbore Depth 4.4	4- ϕ 5.5 4- ϕ 9.5 Counterbore Depth 3.5	28	20	ϕ 4 ^{+0.012/0} (Opening ϕ 6 Depth 10)	8	85 \pm 0.05	65 \pm 0.03
SHM11L-13					ϕ 13 ^{+0.018/0}					ϕ 5 ^{+0.012/0} (Opening ϕ 6 Depth 10)			
SHM11L-20					ϕ 20 ^{+0.021/0}					ϕ 6 ^{+0.012/0}			

Either single use or various combinations are possible.

● **Application Example as Robotic Fingers**



● **Application Example for Conveyor Line**

