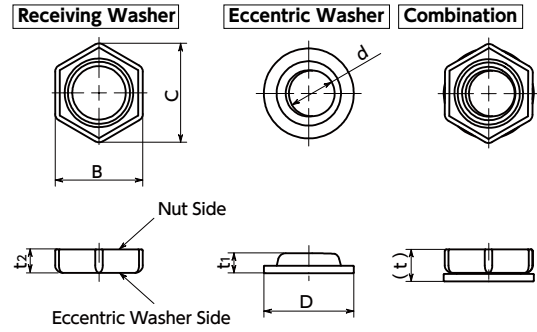
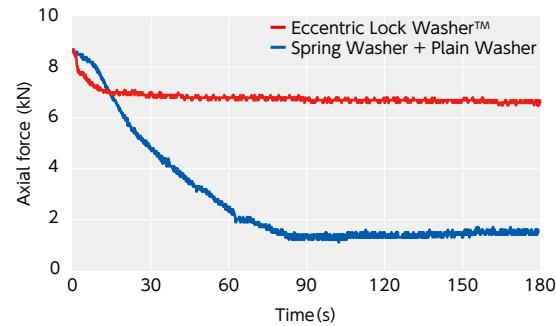


# SWAS-EW Eccentric Lock Washer™ **NEW**

WEB Selection Tool | WEB CAD Download | SUS Stainless steel | Vibration resistant treatment



- Vibration resistant treatment effect can be achieved simply by using commercially available hexagon nuts.
- Hexagon nuts can be tightened by hand until tightening force applies, for simple mounting.
- Use the receiving washer and eccentric washer as a set.
- Passes NAS-type vibration tests (NAS3350).
- Vibration resistant treatment effect has also been confirmed with the Junker test.



- Test conditions
  - Bolt size: M10 - 40
  - Distance between washer surfaces: 24mm
  - Amplitude: ±0.43mm
  - Vibration: 3.3Hz
  - Test time: 180 sec

### Application

Vibration resistant treatment

### Material/Finish

RoHS2 Compliant

	SWAS-EW
Receiving Washer	SUS304
Eccentric Washer	SUS304

Unit : mm

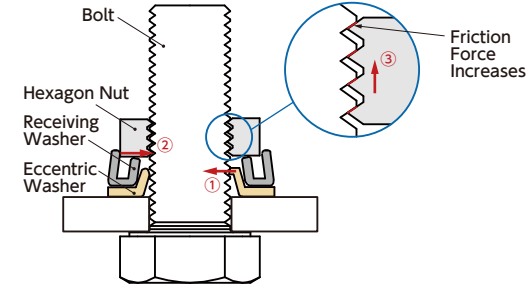
Part Number	Nominal	D	d	B	C	t <sub>1</sub>	t <sub>2</sub>	t	Reference tightening torque (N·m)	Mass (g)	Qty per pack
SWAS-6-EW	6	12	6.05	11.6	13.3	2.65	2.9	3.9	10	1.5	100
SWAS-8-EW	8	17	8.1	15	17.3	3.3	3.9	5.1	28	3.5	100
SWAS-10-EW	10	21	10.2	19.8	22.8	4.05	4.8	6.2	55	7.2	100
SWAS-12-EW	12	24	12.2	22	25.4	4.5	6	7.5	90	11	100

• The minimum order quantity is 1 set. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

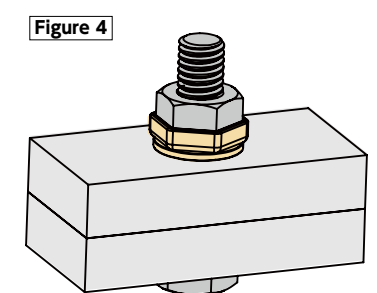
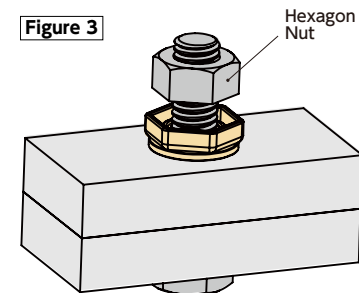
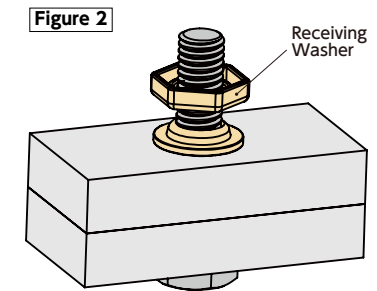
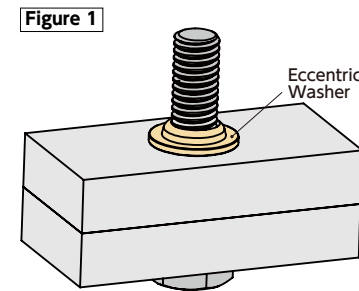
### Structure

- ① Tightening hexagon nuts causes eccentric washers to bite into bolts.
- ② Receiving washers press hexagon nuts into bolts.
- ③ Receiving washers then press hexagon nuts upward, increasing friction between hexagon nuts and bolts and preventing loosening.



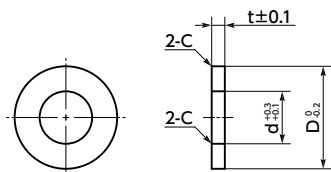
### Installation Method

- ① Mount eccentric washers with convex side upward. **Figure 1**
- ② Mount receiving washers with concave side upward. **Figure 2**
- ③ Screw in hexagon nuts until they lightly contact receiving washers. **Figure 3**
- ④ Check that receiving washers and hexagon nuts are mated, and tighten. **Figure 4**



# SWA-AW Adjust Washer - Steel - Ferrosferric Oxide Film

WEB Selection Tool WEB CAD Download



\*D=16 or less : C0.2 or less  
D=20 or more : C0.5 or less



- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

● Application

Height adjustment / Seating surface fall prevention

● Material/Finish



	<b>SWA-AW</b>
Main body	S45C Ferrosferric Oxide Film (Black)

Unit : mm

Part Number	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-2-8-AW	2	8	●		●			0.38 - 0.75	10
SWA-3-8-AW	3	8	●		●			0.35 - 0.69	10
SWA-4-8-AW	4	8	●	●	●			0.3 - 0.6	10
SWA-4-10-AW	4	10	●		●	●		0.53 - 1.6	10
SWA-4-12-AW	4	12	●		●	●		0.8 - 2.4	10
SWA-4-15-AW	4	15	●		●	●		2.6 - 3.9	10
SWA-5-8-AW	5	8	●	●	●			0.25 - 0.49	10
SWA-5-10-AW	5	10	●		●	●		0.47 - 1.4	10
SWA-5-12-AW	5	12	●		●	●		0.74 - 2.2	10
SWA-5-15-AW	5	15	●		●	●		2.5 - 3.7	10
SWA-5-16-AW	5	16	●		●	●		2.9 - 4.3	10
SWA-5-20-AW	5	20	●		●			2.3 - 4.7	10
SWA-6-10-AW	6	10	●		●	●		0.4 - 1.2	10
SWA-6-12-AW	6	12	●		●	●		0.68 - 2	10
SWA-6-15-AW	6	15	●		●	●		2.4 - 3.5	10
SWA-6-16-AW	6	16	●		●	●	●	2.7 - 6.8	10
SWA-6-20-AW	6	20	●		●	●	●	2.3 - 11	10
SWA-6-25-AW	6	25	●		●	●	●	7.3 - 18	10

\*1 : Also sold separately from 1 piece up. → P.809

Unit : mm

Part Number	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-8-12-AW	8	12			●	●	●	1 - 2.5	10
SWA-8-16-AW	8	16			●	●	●	2.4 - 6	10
SWA-8-20-AW	8	20			●	●	●	4.2 - 10	10
SWA-8-25-AW	8	25			●	●	●	7 - 17	10
SWA-8-30-AW	8	30			●	●	●	10 - 26	10
SWA-10-12-AW	10	12			●	●	●	0.55 - 1.4	10
SWA-10-16-AW	10	16				●	●	2.9 - 4.8	10
SWA-10-20-AW	10	20			●	●	●	3.7 - 9.3	10
SWA-10-25-AW	10	25				●	●	9.8 - 16	10
SWA-10-30-AW	10	30					●	15 - 25	10
SWA-12-16-AW	12	16				●	●	2.1 - 3.5	10
SWA-12-20-AW	12	20			●	●	●	3.2 - 8	10
SWA-12-25-AW	12	25				●	●	9 - 15	10
SWA-12-30-AW	12	30				●	●	14 - 23	10
SWA-16-20-AW	16	20			●	●	●	1.8 - 4.5	10
SWA-16-25-AW	16	25				●	●	6.9 - 11	10
SWA-16-30-AW	16	30				●	●	12 - 20	10

\*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

**SWA-2-8-1-AW**

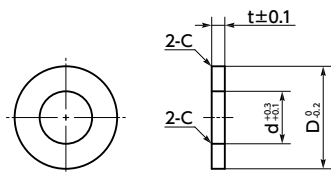
Product Code <sup>1</sup> <sup>2</sup> <sup>3</sup> Product Code

Select the t dimension from the dimension list.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

# SWA-AWEL Adjust Washer - Steel - Electroless Nickel Plating

WEB Selection Tool WEB CAD Download



\*D=16 or less : C0.2 or less  
D=20 or more : C0.5 or less



- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

● Application

Height adjustment / Seating surface fall prevention

● Material/Finish



	<b>SWA-AWEL</b>
Main body	S45C Electroless Nickel Plating

Unit : mm

Part Number	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-2-8-AWEL	2	8	●		●			0.38 - 0.75	10
SWA-3-8-AWEL	3	8	●		●			0.35 - 0.69	10
SWA-4-8-AWEL	4	8	●	●	●			0.3 - 0.6	10
SWA-4-10-AWEL	4	10	●		●	●		0.53 - 1.6	10
SWA-4-12-AWEL	4	12	●		●	●		0.8 - 2.4	10
SWA-4-15-AWEL	4	15	●		●	●		2.6 - 3.9	10
SWA-5-8-AWEL	5	8	●	●	●			0.25 - 0.49	10
SWA-5-10-AWEL	5	10	●		●	●		0.47 - 1.4	10
SWA-5-12-AWEL	5	12	●		●	●		0.74 - 2.2	10
SWA-5-15-AWEL	5	15	●		●	●		2.5 - 3.7	10
SWA-5-16-AWEL	5	16	●		●	●		2.9 - 4.3	10
SWA-5-20-AWEL	5	20	●		●			2.3 - 4.7	10
SWA-6-10-AWEL	6	10	●		●	●		0.4 - 1.2	10
SWA-6-12-AWEL	6	12	●		●	●		0.68 - 2	10
SWA-6-15-AWEL	6	15	●		●	●		2.4 - 3.5	10
SWA-6-16-AWEL	6	16	●		●	●	●	2.7 - 6.8	10
SWA-6-20-AWEL	6	20	●		●	●	●	2.3 - 11	10
SWA-6-25-AWEL	6	25	●		●	●	●	7.3 - 18	10

\*1 : Also sold separately from 1 piece up. → P.809

Unit : mm

Part Number	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-8-12-AWEL	8	12			●	●	●	1 - 2.5	10
SWA-8-16-AWEL	8	16			●	●	●	2.4 - 6	10
SWA-8-20-AWEL	8	20			●	●	●	4.2 - 10	10
SWA-8-25-AWEL	8	25			●	●	●	7 - 17	10
SWA-8-30-AWEL	8	30			●	●	●	10 - 26	10
SWA-10-12-AWEL	10	12			●	●	●	0.55 - 1.4	10
SWA-10-16-AWEL	10	16				●	●	2.9 - 4.8	10
SWA-10-20-AWEL	10	20			●	●	●	3.7 - 9.3	10
SWA-10-25-AWEL	10	25				●	●	9.8 - 16	10
SWA-10-30-AWEL	10	30				●	●	15 - 25	10
SWA-12-16-AWEL	12	16				●	●	2.1 - 3.5	10
SWA-12-20-AWEL	12	20			●	●	●	3.2 - 8	10
SWA-12-25-AWEL	12	25				●	●	9 - 15	10
SWA-12-30-AWEL	12	30				●	●	14 - 23	10
SWA-16-20-AWEL	16	20			●	●	●	1.8 - 4.5	10
SWA-16-25-AWEL	16	25				●	●	6.9 - 11	10
SWA-16-30-AWEL	16	30				●	●	12 - 20	10

\*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

## SWA-2-8-1-AWEL

Product Code <sup>1</sup> <sup>2</sup> <sup>3</sup> Product Code

Select the t dimension from the dimension list.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

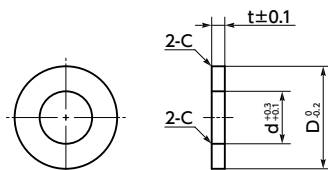
# SWAS-AW Adjust Washer - Stainless Steel

WEB Selection Tool WEB CAD Download SUS Stainless steel

SWAS-AWBK



SWAS-AW



\*D=16 or less : C0.2 or less  
D=20 or more : C0.5 or less

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

• Application

Height adjustment / Seating surface fall prevention

• Material/Finish



	<b>SWAS-AW</b>
Main body	SUS304

Unit : mm

Part Number	d ◀1	D ◀2	t ◀3					Mass (g)	Qty per pack*1
			1	1.5	2	3	5		
SWAS-2-8-AW	2	8	●		●			0.38 - 0.75	10
SWAS-3-8-AW	3	8	●		●			0.35 - 0.69	10
SWAS-4-8-AW	4	8	●	●	●			0.3 - 0.6	10
SWAS-4-10-AW	4	10	●		●	●		0.53 - 1.6	10
SWAS-4-12-AW	4	12	●		●	●		0.8 - 2.4	10
SWAS-4-15-AW	4	15			●	●		2.6 - 3.9	10
SWAS-5-8-AW	5	8	●	●	●			0.25 - 0.49	10
SWAS-5-10-AW	5	10	●		●	●		0.47 - 1.4	10
SWAS-5-12-AW	5	12	●		●	●		0.74 - 2.2	10
SWAS-5-15-AW	5	15			●	●		2.5 - 3.7	10
SWAS-5-16-AW	5	16			●	●		2.9 - 4.3	10
SWAS-5-20-AW	5	20	●		●			2.3 - 4.7	10
SWAS-6-10-AW	6	10	●		●	●		0.4 - 1.2	10
SWAS-6-12-AW	6	12	●		●	●		0.68 - 2	10
SWAS-6-15-AW	6	15			●	●		2.4 - 3.5	10
SWAS-6-16-AW	6	16			●	●	●	2.7 - 6.8	10
SWAS-6-20-AW	6	20	●		●	●	●	2.3 - 11	10
SWAS-6-25-AW	6	25			●	●	●	7.3 - 18	10

\*1: Also sold separately from 1 piece up. → P.809

Part Number	d ◀1	D ◀2	t ◀3					Mass (g)	Qty per pack*1
			1	1.5	2	3	5		
SWAS-8-12-AW	8	12			●	●	●	1 - 2.5	10
SWAS-8-16-AW	8	16			●	●	●	2.4 - 6	10
SWAS-8-20-AW	8	20			●	●	●	4.2 - 10	10
SWAS-8-25-AW	8	25			●	●	●	7 - 17	10
SWAS-8-30-AW	8	30			●	●	●	10 - 26	10
SWAS-10-12-AW	10	12			●	●	●	0.55 - 1.4	10
SWAS-10-16-AW	10	16				●	●	2.9 - 4.8	10
SWAS-10-20-AW	10	20			●	●	●	3.7 - 9.3	10
SWAS-10-25-AW	10	25				●	●	9.8 - 16	10
SWAS-10-30-AW	10	30					●	15 - 25	10
SWAS-12-16-AW	12	16				●	●	2.1 - 3.5	10
SWAS-12-20-AW	12	20			●	●	●	3.2 - 8	10
SWAS-12-25-AW	12	25				●	●	9 - 15	10
SWAS-12-30-AW	12	30				●	●	14 - 23	10
SWAS-16-20-AW	16	20			●	●	●	1.8 - 4.5	10
SWAS-16-25-AW	16	25				●	●	6.9 - 11	10
SWAS-16-30-AW	16	30				●	●	12 - 20	10

\*1: Also sold separately from 1 piece up. → P.809

• Part number specification

## SWAS-2-8-1-AW

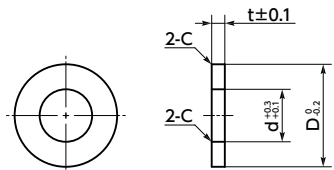
Product Code ◀1 ◀2 ◀3 Product Code

Select the t dimension from the dimension list.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

# SWAS-AWBK Adjust Washer - Stainless Steel Black

WEB Selection Tool | WEB CAD Download | Antireflection | SUS Stainless steel



\*D=16 or less : C0.2 or less  
D=20 or more : C0.5 or less

### Part number specification

## SWAS-5-10-3-AWBK

Product Code: 1 2 3 Product Code  
Select the t dimension from the dimension list.

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

### Application

Height adjustment / Seating surface fall prevention

### Material/Finish

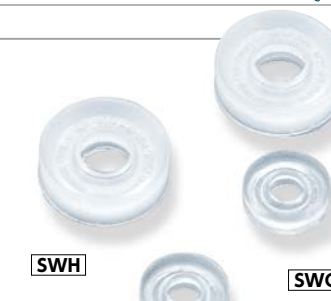
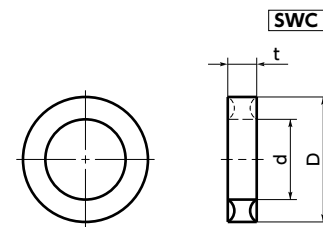
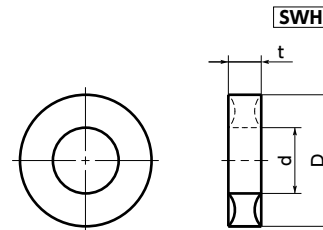
	<b>SWAS-AWBK</b>	RoHS2 Compliant
Main body	SUS304 Stainless Steel Black	

Part Number	d 1	D 2	t 3					Mass (g)	Qty per pack
			1	1.5	2	3	5		
SWAS-3-8-AWBK	3	8	●		●			0.35 - 0.69	1
SWAS-4-8-AWBK	4	8	●	●	●			0.3 - 0.6	1
SWAS-4-10-AWBK	4	10	●		●	●		0.53 - 1.6	1
SWAS-4-12-AWBK	4	12	●		●	●		0.8 - 2.4	1
SWAS-5-8-AWBK	5	8	●	●	●			0.25 - 0.49	1
SWAS-5-10-AWBK	5	10	●		●	●		0.47 - 1.4	1
SWAS-5-12-AWBK	5	12	●		●	●		0.74 - 2.2	1
SWAS-5-16-AWBK	5	16			●	●		2.9 - 4.3	1
SWAS-5-20-AWBK	5	20			●	●		2.3 - 4.7	1
SWAS-6-10-AWBK	6	10	●		●	●		0.4 - 1.2	1
SWAS-6-12-AWBK	6	12	●		●	●		0.68 - 2	1
SWAS-6-16-AWBK	6	16			●	●	●	2.7 - 6.8	1
SWAS-6-20-AWBK	6	20	●		●	●	●	2.3 - 11	1
SWAS-6-25-AWBK	6	25			●	●	●	7.3 - 18	1
SWAS-8-12-AWBK	8	12			●	●	●	1 - 2.5	1
SWAS-8-16-AWBK	8	16			●	●	●	2.4 - 6	1
SWAS-8-20-AWBK	8	20			●	●	●	4.2 - 10	1
SWAS-8-25-AWBK	8	25			●	●	●	7 - 17	1
SWAS-10-12-AWBK	10	12			●	●	●	0.55 - 1.4	1
SWAS-10-16-AWBK	10	16			●	●	●	2.9 - 4.8	1
SWAS-10-20-AWBK	10	20			●	●	●	3.7 - 9.3	1
SWAS-10-25-AWBK	10	25			●	●	●	9.8 - 16	1
SWAS-12-16-AWBK	12	16			●	●	●	2.1 - 3.5	1
SWAS-12-20-AWBK	12	20			●	●	●	3.2 - 8	1
SWAS-12-25-AWBK	12	25			●	●	●	9 - 15	1
SWAS-16-25-AWBK	16	25			●	●	●	6.9 - 11	1

1 Individual Sales → P.809 | Cleanroom Wash & Packaging → P.807 | Screw Length Adjustment → P.811 | Vibration Resistant → P.810 | Modification process for captive use → P.806  
1 pc. in 1 bag | Available / Add'l charge | Not Available | Not Available | Not Available

# SWH/SWC Locking and Sealing Rings

WEB Selection Tool | WEB CAD Download



**SWH For Hex head screws and hex Nuts** Unit: mm

Part Number	Nominal	d	D	t	Mass (g)	Qty*1 per pack
SWH-3	3	3.2	8	2.2	0.1	10
SWH-4	4	4.15	9.5	2.6	0.1	10
SWH-5	5	5.15	10.6	3	0.2	10
SWH-6	6	6.5	12.7	3.5	0.3	10
SWH-8	8	8.1	16.2	4	0.6	5
SWH-10	10	10.2	19.6	4.5	1	5
SWH-12	12	12.2	23.6	5	1.5	5

\*1: Also sold separately from 1 piece up. → P.809

**SWC For Socket Head Cap Screws** Unit: mm

Part Number	Nominal	d	D	t	Mass (g)	Qty*1 per pack
SWC-4	4	4.1	7.7	2	0.1	10
SWC-5	5	5.15	9.8	3	0.2	10
SWC-6	6	6.5	10.5	2.5	0.2	10
SWC-8	8	8.1	14	3.3	0.3	10
SWC-10	10	10.2	17	3.8	0.5	10
SWC-12	12	12.2	19	4.4	0.7	5

\*1: Also sold separately from 1 piece up. → P.809

- For sealing of the bolt tightening section.
- **SWH** — For hex head screws and hex nuts
- **SWC** — For socket head cap screws
- Max. Operating Temperature : -60 to 80 deg C
- Also, **SWT** Toothed Washer for locking and sealing rings is available.



### Application

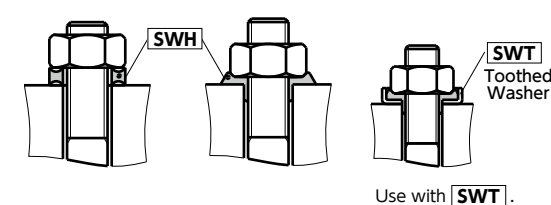
Thread Locking and Thread Sealing

### Material/Finish

	<b>SWH</b>	<b>SWC</b>	RoHS2 Compliant
Main Body	Polyamide (White)	Polyamide (White)	

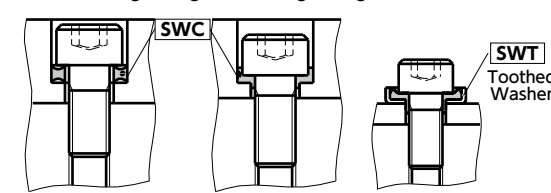
### Installation Method

- Before Tightening
- After Tightening



Use with **SWT**.

- Before Tightening
- After Tightening



Use with **SWT**.

### Part number specification

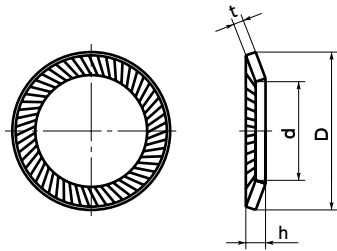
## SWC-10

Order in number of packs.  
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809 | Cleanroom Wash & Packaging → P.807 | Screw Length Adjustment → P.811 | Vibration Resistant → P.810 | Modification process for captive use → P.806  
Available / Add'l charge | Not Available | Not Available | Not Available | Not Available

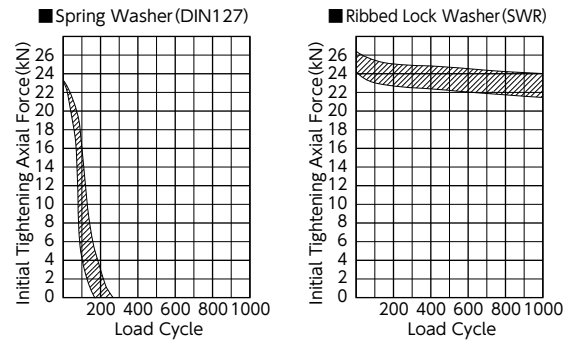
# SWR/SWRS Ribbed Lock Washers Additional Size

WEB Selection Tool | WEB CAD Download | SUS Stainless steel | Vibration resistant treatment



### ● Vibration test comparison

Test Hexagon Screws : DIN933 - 8.8-M10 - 35, Vibration : 15Hz, Amplitude : 0.5mm



- Ribs on both sides of the washer hook onto the bolt bearing surface and intended attachment section to prevent looseness due to vibration.
- Washers for losing prevention. For connecting locations that cannot use other means such as adhesives.
- More effective for losing prevention than standard spring washers.

### ● Application

Vibration Resistant

### ● Material/Finish



	SWR	SWRS
Main Body	SCM435(Hardness: 425 - 495 HV) Ferroferric Oxide Film (Black)	SUS304

### ⚠️ Precautions for Use

Ribs may not hook into some connecting locations, depending on their material. Confirm in advance that the ribs will hook.

### SWR Made of Steel · Ferroferric Oxide Film

Unit : mm

Part Number	Nominal	d	D	t	h	Mass (g)	Qty per pack*1
SWR-2	2	2.2 <sup>+0.3</sup> <sub>0</sub>	4 <sup>-0.3</sup> <sub>0</sub>	0.35	0.6	0.02	10
SWR-2.5	2.5	2.7 <sup>+0.3</sup> <sub>0</sub>	4.8 <sup>-0.3</sup> <sub>0</sub>	0.45	0.9	0.04	10
SWR-3	3	3.2 <sup>+0.3</sup> <sub>0</sub>	5.5 <sup>-0.3</sup> <sub>0</sub>	0.45	0.9	0.05	20
SWR-4	4	4.3 <sup>+0.3</sup> <sub>0</sub>	7 <sup>-0.36</sup> <sub>0</sub>	0.5	1	0.08	20
SWR-5	5	5.3 <sup>+0.3</sup> <sub>0</sub>	9 <sup>-0.36</sup> <sub>0</sub>	0.6	1.1	0.14	20
SWR-6	6	6.4 <sup>+0.36</sup> <sub>0</sub>	10 <sup>-0.36</sup> <sub>0</sub>	0.7	1.2	0.23	20
SWR-8	8	8.4 <sup>+0.36</sup> <sub>0</sub>	13 <sup>-0.43</sup> <sub>0</sub>	0.8	1.4	0.43	10
SWR-10	10	10.5 <sup>+0.43</sup> <sub>0</sub>	16 <sup>-0.43</sup> <sub>0</sub>	1	1.6	0.82	10
SWR-12	12	13 <sup>+0.43</sup> <sub>0</sub>	18 <sup>-0.43</sup> <sub>0</sub>	1.1	1.7	0.89	10
SWR-16	16	17 <sup>+0.43</sup> <sub>0</sub>	24 <sup>-0.52</sup> <sub>0</sub>	1.3	2.1	2	10
SWR-20	20	21 <sup>+0.52</sup> <sub>0</sub>	30 <sup>-0.62</sup> <sub>0</sub>	1.5	2.4	3.4	5

\*1 : Also sold separately from 1 piece up. → P.809

### SWRS Made of Stainless Steel

Unit : mm

Part Number	Nominal	d	D	t	h	Mass (g)	Qty per pack*1
SWRS-1.6	1.6	1.7 <sup>+0.3</sup> <sub>0</sub>	3.2 <sup>-0.3</sup> <sub>0</sub>	0.5	0.75	0.02	10
SWRS-2	2	2.2 <sup>+0.3</sup> <sub>0</sub>	4 <sup>-0.3</sup> <sub>0</sub>	0.5	0.75	0.03	20
SWRS-2.5	2.5	2.7 <sup>+0.3</sup> <sub>0</sub>	4.8 <sup>-0.3</sup> <sub>0</sub>	0.5	0.95	0.04	20
SWRS-3	3	3.2 <sup>+0.3</sup> <sub>0</sub>	5.5 <sup>-0.3</sup> <sub>0</sub>	0.5	0.95	0.05	20
SWRS-4	4	4.3 <sup>+0.3</sup> <sub>0</sub>	7 <sup>-0.36</sup> <sub>0</sub>	0.7	1.2	0.08	20
SWRS-5	5	5.3 <sup>+0.3</sup> <sub>0</sub>	9 <sup>-0.36</sup> <sub>0</sub>	0.7	1.2	0.14	10
SWRS-6	6	6.4 <sup>+0.36</sup> <sub>0</sub>	10 <sup>-0.36</sup> <sub>0</sub>	0.7	1.2	0.23	10
SWRS-8	8	8.4 <sup>+0.36</sup> <sub>0</sub>	13 <sup>-0.43</sup> <sub>0</sub>	1	1.6	0.43	10
SWRS-10	10	10.5 <sup>+0.43</sup> <sub>0</sub>	16 <sup>-0.43</sup> <sub>0</sub>	1	1.6	0.82	5
SWRS-12	12	13 <sup>+0.43</sup> <sub>0</sub>	18 <sup>-0.43</sup> <sub>0</sub>	1.25	1.85	0.89	5
SWRS-16	16	17 <sup>+0.43</sup> <sub>0</sub>	24 <sup>-0.52</sup> <sub>0</sub>	1.5	2.3	2	5
SWRS-20	20	21 <sup>+0.52</sup> <sub>0</sub>	30 <sup>-0.62</sup> <sub>0</sub>	1.8	2.8	3.4	5

\*1 : Also sold separately from 1 piece up. → P.809

### ● Part number specification

## SWR-10

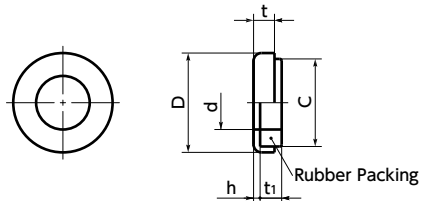


Order in number of packs.  
Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

**SWS Seal washer** *New Variation Added*

WEB Selection Tool WEB CAD Download SUS Stainless steel



● Material/Finish

RoHS2 Compliant

	SWS	SWS-F	SWS-E	SWS-S
Main Body	SUS304	SUS304	SUS304	SUS304
Rubber Packing	NBR	Fluoro-rubber	EPDM	Silicone rubber



- Seal washer incorporating rubber packing in a stainless steel washer.
- Prevents air/liquid leakage from the seating surface of the screw head. Test results for JIS C 0920 protection degree IPX7 are available on the NBK website.
- During screw tightening, the rubber bonds with the screw thread to make the seal rather than slipping out of place.
- Four types of material are used in the rubber packing. They can be selected by the end symbol of the part number.

End Symbol	Rubber Packing Material	Characteristics	Allowable Operating Temperature
No	NBR	Standard	120°C
F	Fluoro-rubber	Chemical-proof/heat-resistance/ozone resistance	200°C
E	EPDM	Weather resistance/water resistance/ozone resistance	120°C
S	Silicone rubber	Heat-resistance/cold-resistance/electrical insulation	180°C

● Application

Seal ring  
Oil hydraulic equipment / Pneumatic device

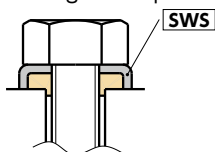
SWS Rubber packing: NBR SWS-F Rubber packing: Fluoro-rubber

SWS-E Rubber packing: EPDM SWS-S Rubber packing: Silicone rubber

Part Number	Part Number	Part Number	Part Number	Nominal	d	D	h	t	t <sub>1</sub>	C	Mass (g)	Qty per pack
<b>SWS-3</b>	<b>SWS-3-F</b>	<b>SWS-3-E</b>	<b>SWS-3-S</b>	3	3.2	7	0.5	2.2	2.2	6.3	0.2	10
<b>SWS-4</b>	<b>SWS-4-F</b>	<b>SWS-4-E</b>	<b>SWS-4-S</b>	4	4.2	8	0.5	2.1	2.3	7.2	0.2	10
<b>SWS-5</b>	<b>SWS-5-F</b>	<b>SWS-5-E</b>	<b>SWS-5-S</b>	5	5.2	9.5	0.8	2.7	2.8	8.2	0.6	10
<b>SWS-6</b>	<b>SWS-6-F</b>	<b>SWS-6-E</b>	<b>SWS-6-S</b>	6	6.2	11.5	1	3	3	9.8	1	10
<b>SWS-8</b>	<b>SWS-8-F</b>	<b>SWS-8-E</b>	<b>SWS-8-S</b>	8	8.2	15.2	1	3.2	3.3	13.4	1.8	5
<b>SWS-10</b>	<b>SWS-10-F</b>	<b>SWS-10-E</b>	<b>SWS-10-S</b>	10	10.2	18	1.5	4	3.8	15.1	3.2	5
<b>SWS-12</b>	<b>SWS-12-F</b>	<b>SWS-12-E</b>	<b>SWS-12-S</b>	12	14.2	24	1.5	4.8	4.6	21.1	6.6	5
<b>SWS-16</b>	<b>SWS-16-F</b>	<b>SWS-16-E</b>	<b>SWS-16-S</b>	16	18.8	30	2	5.3	4.8	26.2	11	5

● Also sold separately from 1 piece up. → P.809

● Usage example



● Part number specification

**SWS-10-F**

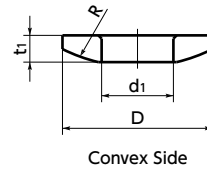


Place order by a bag.  
Also sold separately from 1 piece up. → P.809

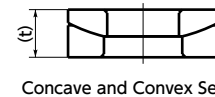
Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

**SQW/SQWS Spherical Washers** *Additional Size*

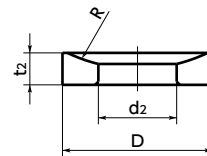
WEB Selection Tool WEB CAD Download SUS Stainless steel



Convex Side



Concave and Convex Set



Concave Side



- Use a concave and convex set.
- Washers can absorb a tilt of the bolt and bearing surface to a maximum of 2°.

● Application

Absorption of misalignment of bolt and bearing surface

**SQW** Made of Steel · Ferrosferic Oxide Film

Unit : mm

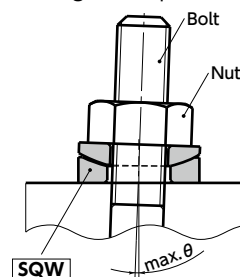
Part Number	Nominal	D	d <sub>1</sub>	d <sub>2</sub>	t <sub>1</sub>	t <sub>2</sub>	t	R	θ (°)	Mass (g)	Qty per pack
<b>SQW-3</b>	3	7.3	3.5	3.8	1.3	1.6	2.3	8	2	0.2	1
<b>SQW-4</b>	4	9.4	4.5	4.9	1.7	2	3	10.2	2	0.3	1
<b>SQW-5</b>	5	11.5	5.5	6	2.1	2.5	3.7	12.5	2	0.5	1
<b>SQW-6</b>	6	13	6.6	7.2	2.3	2.8	4.2	15	2	3	1
<b>SQW-8</b>	8	17	9	9.6	3.1	3.7	5.6	20	2	7	1
<b>SQW-10</b>	10	22	10.5	12	4	3.5	6	25	2	13	1
<b>SQW-12</b>	12	26	13.5	15	5	4	7.5	30	2	22	1

**SQWS** Made of Stainless Steel

Unit : mm

Part Number	Nominal	D	d <sub>1</sub>	d <sub>2</sub>	t <sub>1</sub>	t <sub>2</sub>	t	R	θ (°)	Mass (g)	Qty per pack
<b>SQWS-3</b>	3	7.3	3.5	3.8	1.3	1.6	2.3	8	2	0.2	1
<b>SQWS-4</b>	4	9.4	4.5	4.9	1.7	2	3	10.2	2	0.3	1
<b>SQWS-5</b>	5	11.5	5.5	6	2.1	2.5	3.7	12.5	2	0.5	1
<b>SQWS-6</b>	6	13	6.6	7.2	2.3	2.8	4.2	15	2	3	1
<b>SQWS-8</b>	8	17	9	9.6	3.1	3.7	5.6	20	2	7	1
<b>SQWS-10</b>	10	23	11	12	4.1	4.9	7	25	2	17	1
<b>SQWS-12</b>	12	25	14	15	4.5	5.6	8.4	30	2	21	1
<b>SQWS-16</b>	16	32	17	19.9	6	5	8.8	35	3	38	1
<b>SQWS-20</b>	20	40	21	25	7.5	7	11.4	40	3	76	1
<b>SQWS-24</b>	24	48	25	30	9	8	13.4	50	3	130	1

● Usage example



● Material/Finish

RoHS2 Compliant

	SQW	SQWS
Main Body	S45C (Hardness: 25 - 30 HRC) Ferrosferic Oxide Film (Black)	SUS304

● Part number specification

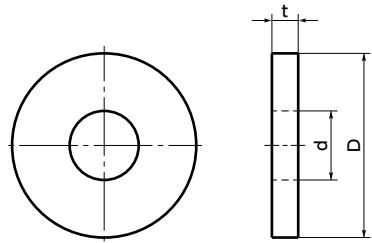
**SQWS-10**



Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

# SWF High Intensity Flat Washers

WEB Selection Tool WEB CAD Download Vibration resistant treatment



- Flat washers for high intensity screws.
- The surface area is twice or more of that of standard washers. Washers eliminate bolt looseness by preventing the sinking of the bearing surface.
- For the connection of materials with low limits for bearing surface pressure such as aluminum and plastic.

• Application

Prevention of bearing surface sinking and loosening

• Material/Finish

RoHS2 Compliant

SWF	
Main Body	SCM435 (Hardness 350 - 430 HV) Ferrosulfuric Oxide Coating (Black)

Part Number	Nominal	d	D	t	Mass (g)	Qty per pack
SWF-6	6	6.4 <sup>+0.3</sup> <sub>0</sub>	17 <sup>0</sup> <sub>-0.43</sub>	3	5	1
SWF-8	8	8.4 <sup>+0.3</sup> <sub>0</sub>	23 <sup>0</sup> <sub>-0.52</sub>	4	11	1
SWF-10	10	10.5 <sup>+0.3</sup> <sub>0</sub>	28 <sup>0</sup> <sub>-0.52</sub>	4	17	1
SWF-12	12	13 <sup>+0.4</sup> <sub>0</sub>	35 <sup>0</sup> <sub>-0.52</sub>	5	33	1
SWF-16	16	17 <sup>+0.4</sup> <sub>0</sub>	45 <sup>0</sup> <sub>-0.62</sub>	6	64	1

Unit : mm

• Part number specification

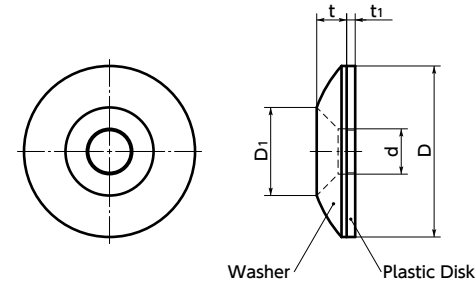
**SWF-8**



Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available

# SWBS Bezel Washers

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Washers are for flat screws. They decorate attachment surfaces beautifully.
- Their smooth slanted shape prevents catching of screw heads.
- The plastic disk prevents damage to the attachment surface.

• Application

Decoration, prevention of catching the screw head, prevention of damage to the intended fastening material

• Material/Finish

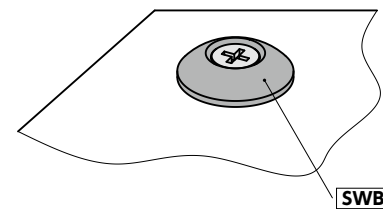
RoHS2 Compliant

SWBS	
Main Body	SUS303
Plastic Disk	Nylon 6 (White)

Unit : mm

Part Number	Nominal	D	d	D1	t	t1	Mass (g)	Qty per pack
SWBS-4	4	18	4.3	8.5	3	0.8	3.6	1
SWBS-5	5	20	5.3	10.3	3.5	1	5	1
SWBS-6	6	22	6.4	12.3	4	1	7.2	1
SWBS-8	8	26	8.4	16.4	5	1	11	1

- Usage example  
For Decoration



• Part number specification

**SWBS-6**

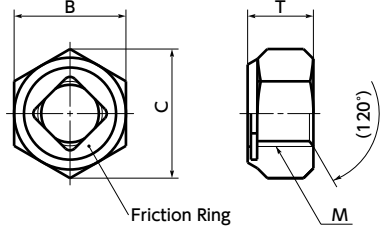


Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



# SWUS Hex Lock Nuts

WEB Selection Tool WEB CAD Download Vibration resistant treatment SUS Stainless steel



- Nuts equipped with a high-performance mechanism of loosening prevention. For loosening caused by vibration.
- Friction ring with very good restoration elasticity and heat resistance tighten the thread peak of the male thread from four sides. Effective for loosening prevention. The male thread is not damaged.
- Glass fiber reinforced polyamide is used for the friction ring. Rings with heat resistance effectively prevent loosening under conditions up to 110 deg C. In addition, they are not affected by gasoline, alcohol, and oil.
- The friction ring retains most of its effects even after repeated use.

### Application

Loosening Prevention

### Material/Finish

RoHS2 Compliant

SWUS	
Main Body	SUS304
Friction Ring	Glass Fiber Reinforced Polyamide

Unit : mm

Part Number <span style="color: red;">1</span>	M	B	C (Approx.)	T	Mass (g)	Qty*1 per pack
SWUS-M6	M6	10	11.5	6	2	50
SWUS-M8	M8	13	15	8	4.6	20
SWUS-M10	M10	17	19.6	10	11	10
SWUS-M12	M12	19	21.9	12	16	10

\*1 : Also sold separately from 1 piece up. → P.809

### Related Products

**SWUT** Hexagon Lock Nut made of titanium is available. → P.642



### Part number specification

## SWUS-M8

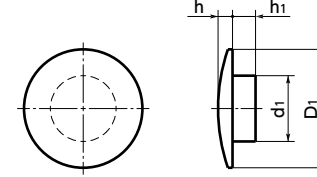


Order in number of packs. Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

# SCC Cover Caps for Hex Socket Head Cap Screws

WEB Selection Tool WEB CAD Download



- Caps protect the hex socket of socket head cap screws from being clogged with foreign matter.

### Application

Protection of screw heads and dust countermeasure

### Material/Finish

RoHS2 Compliant

SCC	
Main Body	Polyethylene (Gray)

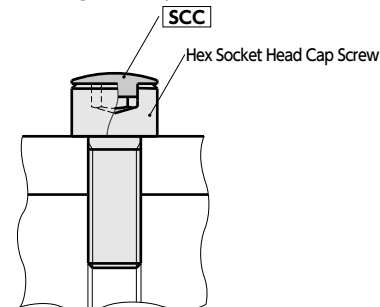
Unit : mm

Part Number <span style="color: red;">1</span>	Nominal of*2 Hex Socket Head Cap Screws	d1	D1	h	h1	Mass (g)	Qty*1 per pack
SCC-4	M5	4.2	9	1.3	2.5	0.1	20
SCC-5	M6	5.2	10	1.4	3.1	0.1	20
SCC-6	M8	6.2	13	1.5	4	0.3	20
SCC-8	M10	8.2	16	1.6	5	0.4	20
SCC-10	M12	10.3	18	1.8	6.4	0.6	10
SCC-14	M16	14.4	24	2.2	7	0.9	10
SCC-17	M20	17.4	30	2.5	9	1.2	10

\*1 : Also sold separately from 1 piece up. → P.809

\*2 : For use with socket head cap screws listed in JIS B 1176 : 2006 (ISO 4762 : 1997) "Hexagon Socket Head Cap Screws".

### Usage example



### Part number specification

## SCC-10

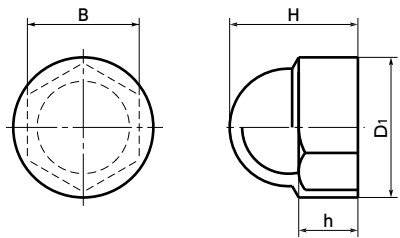


Order in number of packs. Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

# SCH Cover Caps for Hex Head Screw

WEB Selection Tool WEB CAD Download



- Cover caps cover heads of hex head screws and hex nuts to increase the safety of machines and instruments.

● Application

Protection of screw heads and dust countermeasure

● Material/Finish



	<b>SCH</b>
Main Body	Polyethylene (Black)

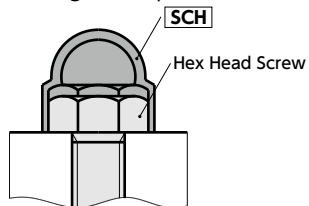
Part Number	Nominal of*2 Hex Socket Head Cap Screws	B	H	h	D1	Mass (g)	Qty*1 per pack
<b>SCH-5</b>	M5	8	9.5	5	10.9	0.3	20
<b>SCH-6</b>	M6	10	13	6	12.9	0.6	20
<b>SCH-8</b>	M8	13	15	9	16.8	1	20
<b>SCH-10</b>	M10	17	19.5	9	21.3	1.9	10
<b>SCH-12</b>	M12	19	21.5	11	23.6	2.4	10
<b>SCH-16</b>	M16	24	27	14	29.8	3.2	10

Unit : mm

\*1 : Also sold separately from 1 piece up. → P.809

\*2 : Confirm the width across flat dimensions of the hex head screws and hex nuts. **SCH-10** and **SCH-12** use the old JIS dimensions.

● Usage example



● Part number specification

## SCH-10



Order in number of packs.  
Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

## Safety Precautions - Special Screws

In order to use our products safely, please read these safety precautions and the precautions and handling methods on each product page before use. After reading the precautions and methods, store this catalog so that it can be reviewed when necessary.

### Warning

If handled incorrectly, personal injury or physical damage may occur.

- Make sure to switch off the power of machines before attaching and removing products. Hands and fingers may touch the machine and cause injury if it is operated suddenly.
- Our products are manufactured for use with general purpose instruments and machines. When using these products with instruments and machines that require safety, use a prototype to confirm usability.
- To prevent danger, check for looseness of screws and perform other maintenance on a regular basis.
- Do not disassemble or modify products.

### Precautions

If handled incorrectly, death or serious injury may occur.

- Do not use products in environments that may negatively affect them.
- Take care when handling products. If products are dropped, they may become damaged or deformed. In addition, take care when performing work to avoid back pain when moving objects or dropping items on feet.
- The mechanical properties, physical properties, chemical resistance, heat resistance temperature, and other data listed on the product pages in this catalog are reference values. These values may change due to performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.
- To prevent a negative impact on the environment, have a professional disposal company dispose of these products.
- Take care to avoid burns when handling products. Heat transferred from the surrounding machines may cause products to reach high temperatures immediately after operation stops.