

SEM SCREWS - CAPTIVE WASHER SCREWS

SEM SCREWS: MOUNTING SYSTEM

In order to increase the speed and efficiency of your assembly processes, Inserco Fasteners provides a very diverse range of fasteners commonly used in the field of electronics.

SEM screws, also called captive fasteners are fasteners associated with one or more permanently fixed washers.

The washers are installed during the manufacturing process on the screw blank before rolling the thread.

As the outer diameter of the thread is greater than the inner diameter of the washers, they cannot separate from the screw.

This design eliminates the need to place the washer(s) on the screw by hand during installation, greatly facilitating the installation and thus gaining in productivity.

MOUNTING CONSTRAINTS FOR ELECTRONICS APPLICATIONS

■ TEMPERATURE VARIATIONS

Cause expansion and loosen fasteners

■ VIBRATION

- Internal: electro-magnetism, motors
- External: vehicles, motion

Loosens fasteners

■ PRESSURE ON THE MOUNTING SURFACE OF THE PART TO FASTEN

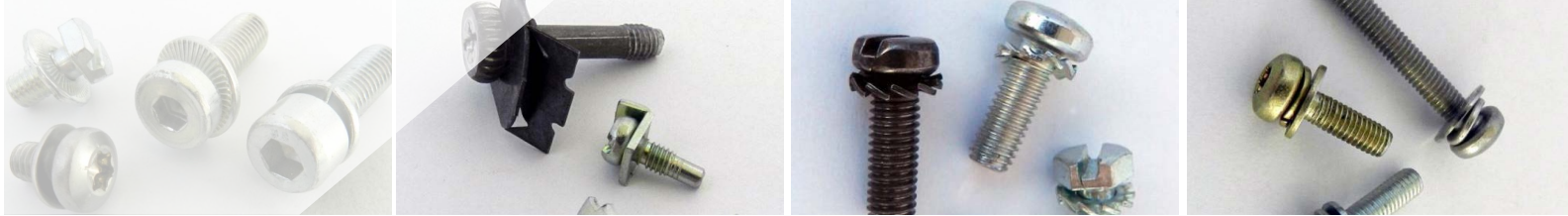
Expands the material and causes a loss of tension in the assembly

BENEFITS

THE PRE-ASSEMBLED FASTENER HAS MANY ADVANTAGES :

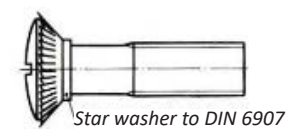
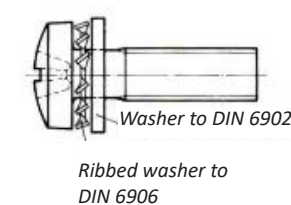
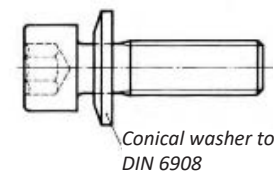
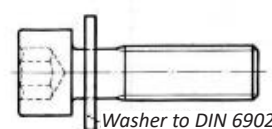
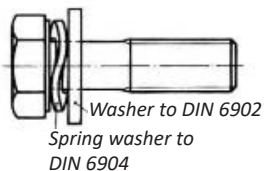
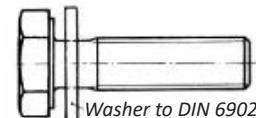
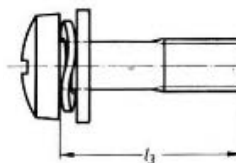
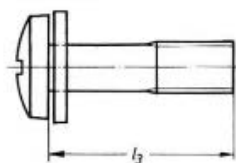
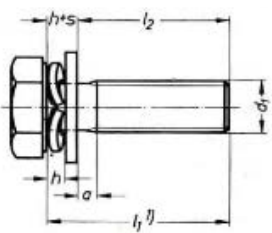
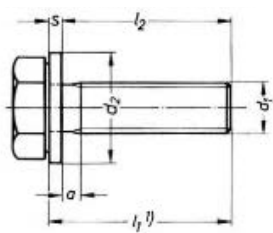
- Guarantees locking and resists loosening
- Facilitates assembly and disassembly (parts are pre-assembled)
- Simplifies stock management and logistics
- Eliminates non-compliance related to improper assembly or missing washers
- Let's you combine washers without forgetting any on circuits (DC)
- Improves productivity: no need to fit washers prior to assembly
- Improves quality

We supply fasteners that meet ISO, DIN or NFE requirements and we can also produce bespoke products to your drawings.



CHARACTERISTICS - SEM SCREWS SPECIALLY MADE

THREAD DIAMETER D1	a max.	MIN. USEFUL SCREW LENGTH l2 ²	IN EXCESS OF THE LENGTHS STATED PARTIAL THREADING l3		WASHER DIMENSIONS															
					Washer to DIN 6902				Spring washer to DIN 6904		Split lock washer to DIN 6905		Ribbed washer to DIN 6906		Star washer to DIN 6907		Conical washer to DIN 6908			
			Hex. / hollow head screws		Slotted screws and philips/ pozi screws		Shape A		Shape B											
			s	d2	s	d2	h	d2	h	d2	h	d2	h	d2	h	d2	h	d2		
M 2,5	0,9	5	16	25	0,6	6,5	0,8	8	-	-	1,1	4,55	0,8	5,5	1,2	5,5	1	6		
M 3	1	6	22	25	0,6	7	0,8	9	1,05	8	1,3	5,65	0,8	6	1,2	6	1,2	7		
(M 3,5)	1,2	7	25	25	0,8	8	0,8	11	1,15	8	1,3	6,1	1	7	1,5	7	1,2	8		
M 4	1,4	8	25	30	0,8	9	1	12	1,65	9	1,4	6,95	1	8	1,5	8	1,5	9		
M 5	1,6	10	35	35	1	10	1,6	15	1,75	11	1,7	8,55	1,2	9	1,8	9	1,8	11		
M 6	2	12	35	35	1,6	12,5	1,6	18	2	12	2,2	11	1,4	11	2,1	11	2	14		



CHARACTERISTICS - SEM SCREWS FROM STOCK

	SCREW STANDARD	WASHER STANDARD	MATERIAL	DIAMETER	PICTURES
PAN HEAD SCREW WITH FLAT WASHER	DIN 84	DIN 6902A	CL 4,8 + ZN	M3-M5	
PAN HEAD SCREW WITH SPRING WASHER	DIN 84	DIN 127B	CL 4,8 + ZN	M3-M4	
ROUNDED HEAD PHILIPS SCREW WITH FLAT WASHER	DIN 7985	DIN 6902A	CL 4,8 + ZN	M3-M5	
ROUNDED HEAD SCREW WITH RIBBED WASHER	ISO 7048	DIN 6797A	CL 4,8 + ZN	M3-M4	



WIDE RANGE

SEM screws offer a wide range of assembly options. Inserco can meet all your needs by working to your drawings and/or specifications.

	TYPE	STANDARD	MATERIAL & TREATMENT	DIAMETERS / DIMENSIONS	COMBINATIONS
SCREW	TH, CS, CHC, CZX, ...	ISO, DIN, NFE, UNC/ UNF, ...	steel, zinc plated steel, stainless steel, etc.	M2,5-M6	
WASHER	flat, wave, conical, star, Grower, CS	DIN 6900 or non-standard	steel, zinc plated steel, stainless steel, etc.	To DIN 6900 or other	flat + wave, flat + Grower, etc.

WHICH WASHER AND WHY?

FLAT WASHER

- Used to spread the load for tightening
- No lock function



TOOTHED WASHER

- The teeth have an anti-slackening function
- Partially damages the pressure side



SPRING WASHER

- Compensates for longitudinal motion due to material expansion or creeping
- Assembly tension is maintained



DUAL-FUNCTION WASHER

- Grower (spring + one tooth)
- Contact (spring + teeth)

QUALITY

All our sites are ISO 9001 certified and our quality systems meet the specific requirements of the automotive and aerospace industries.

