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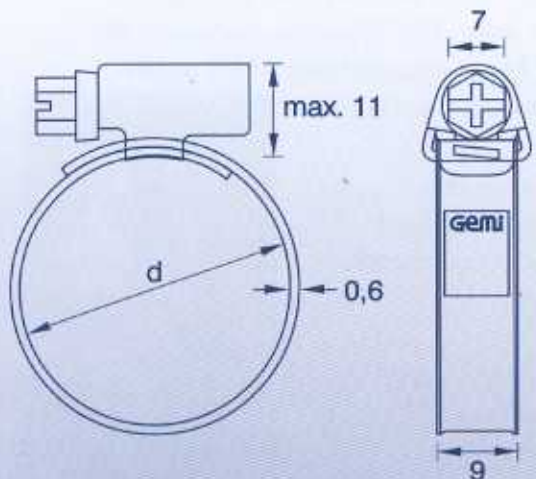


**SPECS &  
INFORMATION**



# SX 9 Series

The SX clamp is a high performance "FE" clamp for multiple applications. The non-perforated band prevents hose damage and premature wear and tear of the hose. The SX clamp distributes the clamping force evenly over the hose's circumference, which makes the SX clamp highly efficient for any application.



SX 9 is our best selling clamp, which has a 9 mm (3/8") bandwidth, rolled-up band edges and a 7 mm hex head screw. The 9 mm band allows for a higher concentration of clamping force since the pressure is concentrated on a narrow area of the hose.

SX 9 applications: automotive and truck, industrial, heating-ventilation (HVAC), and many more areas.



Standard Reference SAE J1508 "FE" and "FEO" clamps and DIN 3017

ABA Part Number	SAE Size	Clamping Range (d)		Pieces per Packaging Unit		Net Weight per 100 Pieces		Recommended Tightening Torque (Nm)
		inch	mm			lbs	kg	
SX09012-W2 or -W4	1	5/16-1/2	8-12	100	1000	2.0	0.9	2.0   2.0 - 2.5   2.5 - 3.0 
SX09016-W2 or -W4	2	3/8-5/8	10-16	100	1000	2.2	1.0	
SX09020-W2 or -W4	4	1/2-3/4	12-20	100	1000	2.9	1.3	
SX09025-W2 or -W4	8	5/8-1	16-25	100	1000	3.1	1.4	
SX09032-W2 or -W4	12	3/4-1 1/4	20-32	100	1000	3.3	1.5	
SX09040-W2 or -W4	16	1-1 5/8	25-40	100	500	3.5	1.6	
SX09050-W2 or -W4	24	1 1/4-2	32-50	50	500	4.0	1.8	
SX09060-W2 or -W4	30	1 5/8-2 3/8	40-60	50	500	4.2	1.9	
SX09070-W2 or -W4	36	2-2 3/4	50-70	50	500	4.4	2.0	
SX09080-W2 or -W4	42	2 3/8-3 1/8	60-80	50	500	4.8	2.2	
SX09090-W2 or -W4	48	2 3/4-3 1/2	70-90	50	500	5.1	2.3	
SX09100-W2 or -W4	54	3 1/8-4	80-100	25	500	5.3	2.4	
SX09110-W2 or -W4	60	3 1/2-4 3/8	90-110	25	500	5.5	2.5	
SX09120-W2 or -W4	68	4-4 3/4	100-120	25	250	5.9	2.7	
SX09130-W2 or -W4	74	4 3/8-5 1/8	110-130	-	250	6.2	2.8	
SX09140-W2 or -W4	80	4 3/4-5 1/2	120-140	-	250	6.6	3.0	
SX09150-W2 or -W4	86	5 1/8-5 7/8	130-150	-	250	6.8	3.1	
SX09160-W2 or -W4	92	5 1/2-6 1/4	140-160	-	250	7.3	3.3	

**W2 Material** = Band and housing manufactured from AISI 430 stainless steel. The screw is manufactured from zinc plated low carbon steel.  
Screw head design =

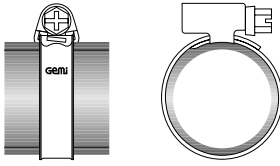
**W4 Material** = Manufactured entirely from AISI 304 stainless steel.  
Screw head design =

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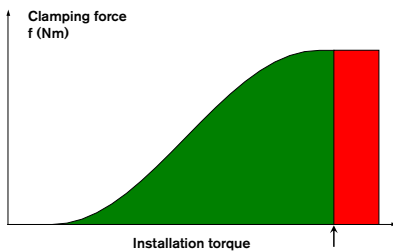
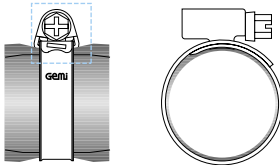


# Gemi Clamping Technology

Correct fitting according to static tightening torque.



Incorrect fitting caused by excessive tightening.



The optimum clamping force is different for all clamps. If you need special advice regarding the right choice of clamps or installation parameters – please contact us.

## SX Clamps

The SX Clamp is a multi-purpose clamp designed to cover a wide range of hose diameters. Thanks to its wide clamping range, the clamp can be used for compensating the normal thickness tolerances of hoses. This is facilitated by the relatively thin, closely fitting band.

Radial forces are particularly evenly spread out with the SX Clamp, ensuring an optimum quality of seal, even on hoses which are subject to high levels of stress.

SX 9 and SX 12 Clamps perform well above the test torques required by DIN 3017. All of Gemi's SX Clamps excel in terms of their low idle torque, which means that the screw can be tightened or loosened quite smoothly. This, in turn, brings about a high degree of efficiency. The force applied is passed directly from the screw to the band and the hose with minimum friction loss. A well sealed hose tightening connection is achieved, even at low tightening torques.

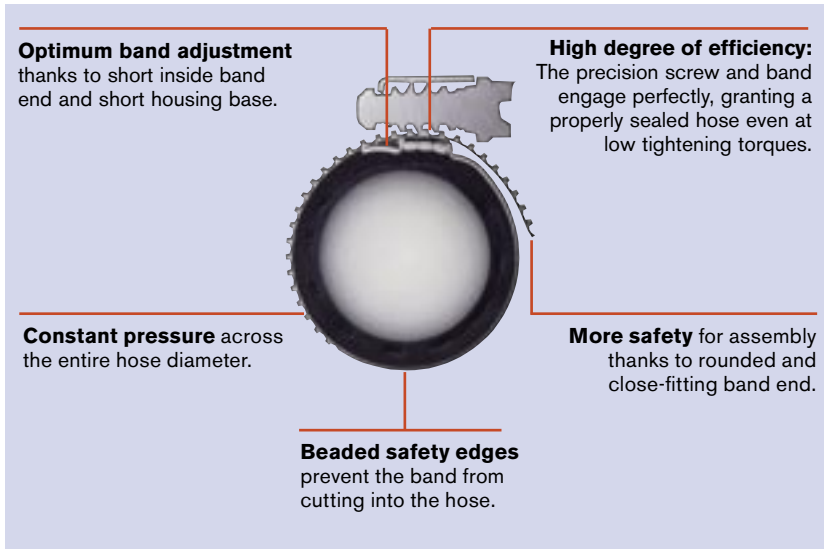
## Optimum tightening torque for assembly

The optimum tightening torque (▶) for a worm drive hose clamp conforming to DIN 3017 depends on the diameter and material of the hose. From experience we know that the optimum tightening torque of SX 9 is 2.5 Nm for rubber hoses with diameters of up to 25 mm. This value is 3.0 Nm for rubber hoses with larger diameters. If the optimum tightening torque value is significantly exceeded, the hose becomes compressed, thus endangering the seal.

The Torque Gauge Indicator (left) shows the importance of **exactly defined tolerance ranges in respect of free torque (idle torque) and tightening torque**. If these ranges overlap, the function of the clamp would not be guaranteed. The degree of efficiency of the clamp is constant when these values remain constant. Gemi clamps are produced to a maximum degree of process stability in order to be able to reproduce this performance from clamp to clamp. The technical parameters change for different types of hose clamps, but the basic philosophy is the same in order to obtain a leakage free and safe connection that lasts over time.

	Germany DIN	Europe EN	France AFNOR	Great Britain BS	Italy UNI
<b>W1</b>	Coated steel (band: minimum tensile strength 400 N/mm <sup>2</sup> - worm screw as W2)				
<b>W2</b>	Material for band/housing W3 (1.4016) - screw made of Cq 15 steel (DIN 1654) or,...				
<b>W3</b>	1.4016	X6Cr17	Z 8 C 17	430 S17 430 S 18	X8 Cr 17
<b>W4</b>	1.4301	X5CrNi1810	Z7 CN 18-09	304 S 15 304 S 16 304 S 31	X5 CrNi 18 10
<b>W5</b>	1.4571 (1.4401)	X6CrNiMoTi17122 (X5CrNiMo17122)	Z6 CNDT 17-1 2 (Z7 CND 17-12-02)	320 S 18 320 S 31 (316 S 31)	X 6 CrNiMoTi 17 12 (X5 CrNiMo 17 12)

## Advantages of Gemi clamps – for example SX 9 plus



### Material overview

Most frequently used are clamps in W2. For improved corrosion resistance, where needed, we recommend W4 and for environments with high corrosion W5.

On the right you will find more details about the different materials and from the table below you will easily find the corresponding national standards to W1-W5.

Spain	Sweden	Czech Rep.	Russia	Japan	USA		
					SAE	AISI	UNS
UNE	SS	CSN	GOST	JIS			
...comparable, zinc plated steel to DIN 50961							
F.3113	2320	417040	12Ch17	SUS 430	51430	430	S43000
F.3504	2332	417240	8Ch18N10	SUS 304	30304	304	S30400
F.3535 (F.3534)	2350 (2347)	– (417646)	10Ch17N13M2T –	SUS 316 Ti (SUS 316)	– (30316)	316Ti (316)	S31635 (S31600)



Made completely from coated steel. Low requirements in terms of corrosion resistance.

**Application:**  
*Household appliances, indoor plumbing work.*



Band and housing are made from Chrome-Steel AISI 430. The screw is made from zinc plated mild steel. Low to average requirements in terms of corrosion resistance, ensuring that corroded connections can be loosened.

**Application:**  
*Cars, lorries, mechanical engineering with low requirements in terms of corrosion resistance.*



Made entirely from Chrome-Steel AISI 430. W3 is seldom used – exclusively in original equipment. Medium requirements in terms of corrosion resistance.

**Application:**  
*Automotive sector.*



Made entirely from Nickel-Chrome-Steel AISI 304 (or a comparable steel), also known as V2A. A special feature of this austenitic steel is its shiny, durable surface. High requirements in terms of corrosion resistance and design.

**Application:**  
*For critical connections in cars such as petrol pipes (SM 9 Clamps made from W4), top grade mechanical engineering, agricultural machinery, motorbikes, for attaching signs and hoses outdoors, stainless steel chimneys.*



Made entirely from Nickel-Chrome-Molybdenum-Steel AISI 316, also known as V4A. W5 is salt water resistant and can hardly be magnetised. Maximum requirements in terms of corrosion resistance. Used close to critical and electronic circuit arrangements.

**Application:**  
*In shipbuilding, defence technology, the foodstuffs industry, sewage treatment works, the chemical industry and mechanical engineering entailing top requirements.*



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