



# Standard Internally Gaged Hex Head Cap Screws, SXS Series

Steel Alloy (SAE Grade 9)

*To measure accurate  
preload, service load  
and overload of bolted  
assemblies*

*For maximum uniformity,  
efficiency and reliability  
in bolted assemblies*

*For effective research,  
testing and manufacturing  
of bolted assemblies*



U.S. Patent No. 2,873,341

## MECHANICAL SPECIFICATIONS

<b>Material</b>	SAE 4140 or equivalent
<b>Hardness</b>	Rockwell C38 to C42
<b>Ultimate Tensile Strength</b>	180,000 psi Minimum; (SAE Grade 9)
<b>Threads</b>	Class 2A, rolled
<b>Thread Length</b>	2-diameters + 1/4 inch full threads + 3/16 inch maximum imperfect threads.
<b>Finish</b>	Zinc Dichromate plated. Corrosion Protection per Federal Spec. QQ P-416 Type II, Class 3

## ELECTRICAL SPECIFICATIONS

ITEM	CHARACTERISTIC
<b>Gages Type</b>	Metal Foil
<b>Gage Factor</b>	2.00
<b>Service Temperature</b>	150°F or 300°F
<b>Non-Linearity</b>	±1% of Allowable Load
<b>Non-Repetition</b>	±0.1% F.S.
<b>Bridge Resistance</b>	350 or 120 Ohms (Nominal)
<b>Configuration</b>	Quarter-Bridge (QB) or Full-Bridge (FB)
<b>Output Signal</b>	FB: 3.5 to 4 mv/V
<b>(nominal, at allowable load)</b>	QB: 1.3 to 1.5 mv/V
<b>Excitation</b>	350-ohm FB: 12V (Maximum) 350-ohm QB: 6V (Maximum) 120-ohm FB: 3V (Maximum)

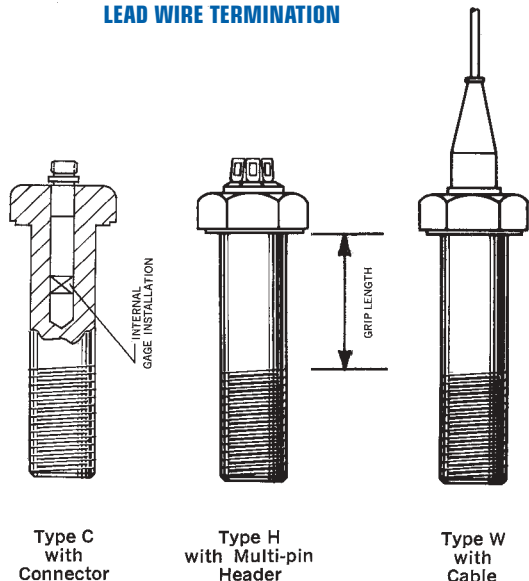
## ALLOWABLE LOADS

Allowable loads for Strainert Hex Head Cap Screws, as tabulated below, are based on approximately 70% Yield Strength of the threads, in pounds.

SCREW DIA.	LOAD CAPACITY LBS.	
	FINE THREADS	COARSE THREADS
1/4	2,800	2,800
5/16	5,400	5,000
3/8	7,800	7,500
7/16	11,000	10,000
1/2	15,000	14,000
9/16	20,000	18,000
5/8	26,000	23,000
3/4	38,000	33,500
7/8	52,500	46,000
1	70,000	62,000
1-1/8	88,000	78,000
1-1/4	110,000	97,000
1-1/2	160,000	144,000

Each cap screw is proof-loaded to above indicated load as part of quality control procedure. Both the value of proof-load and mv/V signal obtained are furnished to customer on a no-charge basis. See calibration section for additional calibration certification.

**LEAD WIRE TERMINATION**

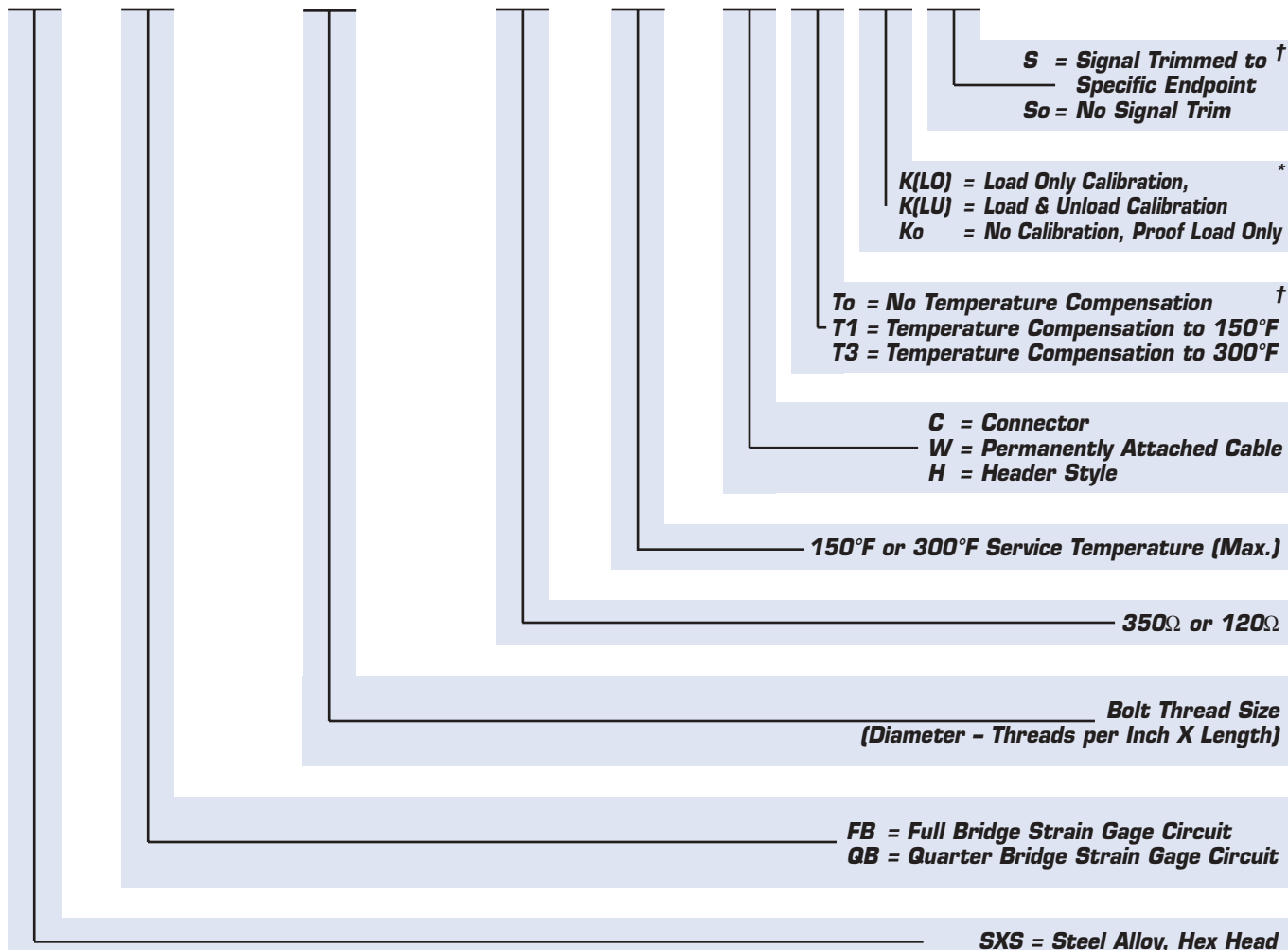


- Type C – screw type miniature connector, requires mating cable assembly.
  - Type H – a multi-pin header for soldered lead wire connections
  - Type W – factory installed cable
- Over 190 different STRAINsert Hex Head Cap Screws are stocked, ready for gaging.

U.S. patent #2,873,341

**ORDERING INFORMATION**

**SXS - FB 1/2-13NCx4 (350Ω / 300°F) C T3 K(LO) So**



\* See Strainsert Calibration Services (Page 94)

† Not Available for Quarter-Bridge Bolts.