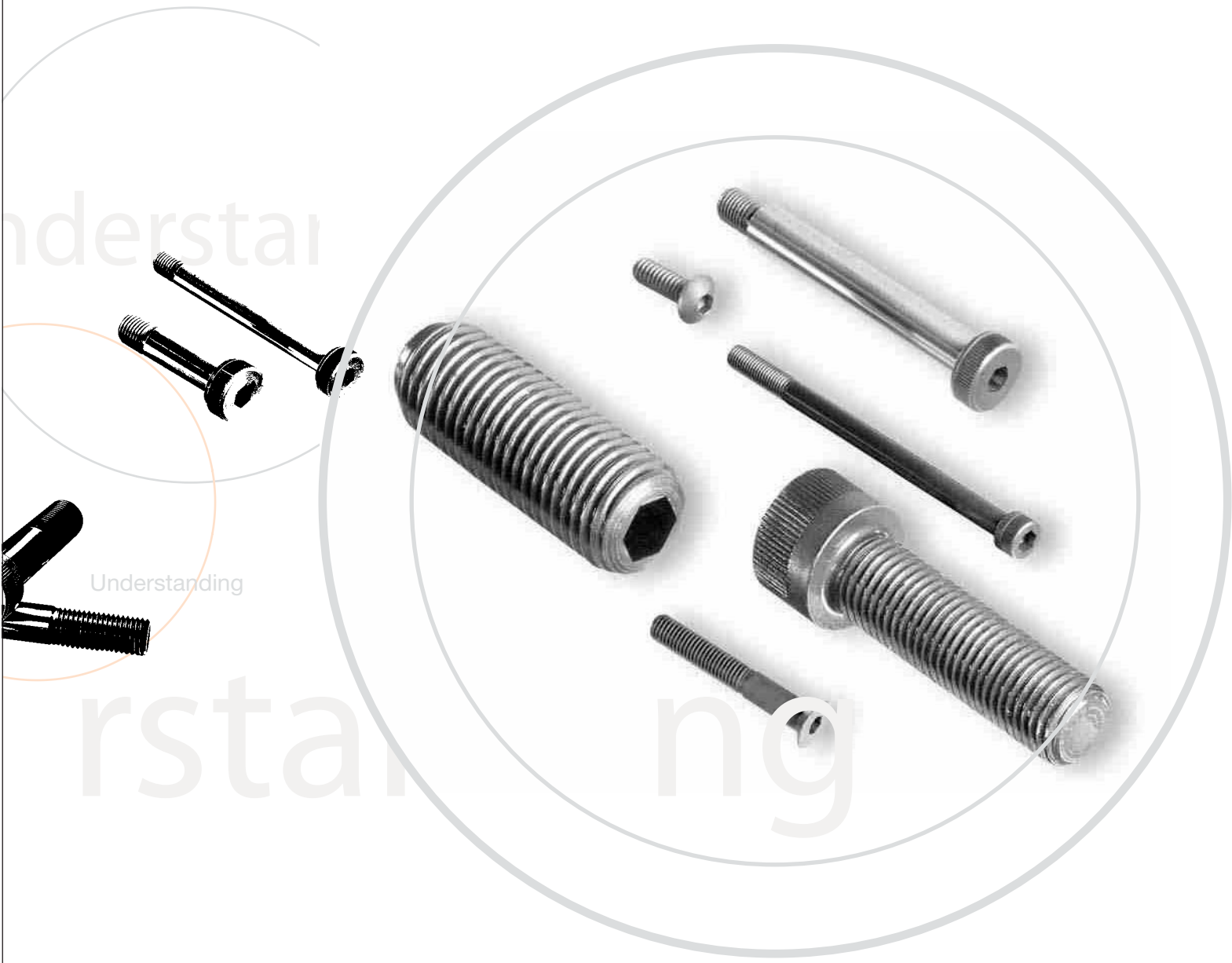


Understanding Unbrako

technical brochure



Understanding

Understanding

COMPANY BACKGROUND

UNBRAKO is the world's largest manufacturer of Precision Mechanical Fasteners and has earned a reputation for quality and performance in the production of Hexagon Socket Screws (and Allied Products), Aerospace and Automotive Fasteners. Special Hot and Cold Forged Components as well as significant business in Speciality and Exotic Alloy materials and magnetic products.

UNBRAKO employs over 4,000 people in 5 manufacturing plants and sales offices in 6 countries spread over 4 continents.

Since its founding in 1903, **UNBRAKO** has sought opportunities for growth through product innovation and technological advances. In pioneering work in metallurgy, testing, design and metal working, the company continues to develop unique capabilities for solving its customers industrial problems.

UNBRAKO is involved with quality control at its specialist steel suppliers, enabling **UNBRAKO** to control the production of high grade alloy steels with metallurgical and chemical characteristics specifically to suit **UNBRAKO** Fasteners. It also allows complete control of material from original steel melt to finished product ensuring ultimate fastener reliability.

UNBRAKO In addition to the well known hexagon socket product range (detailed in this catalogue), **UNBRAKO** also manufactures a wide range of custom designed fasteners for aerospace and other demanding applications. The wide range of Hexagon Wrenches and Wrench Sets are also available.

UNBRAKO standard fasteners-"The widest range in the world" are available from Distributors who have the support of trained sales and application engineers who will solve fastening problems in all types of industrial environments. If necessary **UNBRAKO** will design and develop fasteners to suit the specific requirements of any application.

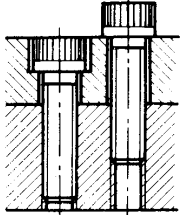
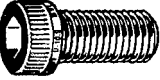
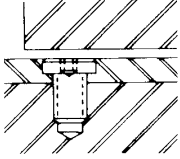
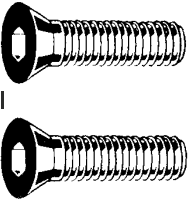
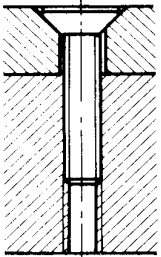
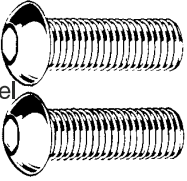
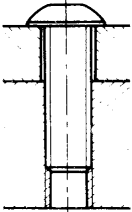
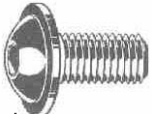
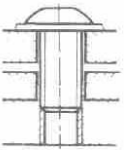
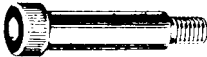
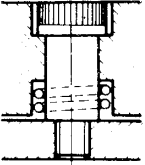
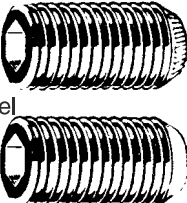
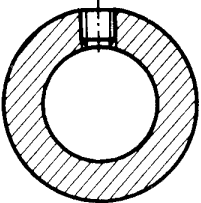
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Due to a continuous policy of research and development Unbrako reserve the right to alter the specification of any product without prior notice.

Performance data listed is for standard production items only. Non stock items may vary due to variables in methods of manufacture. It is recommended that the user verify performance on any non-standard parts for critical applications.

QUICK SELECTION GUIDE

Type	Application	Features
<p>Socket Head Cap Screws</p>  <p>Alloy Steel</p> <p>Stainless Steel</p>		<p>Suitable for all high tensile applications. Use stainless for corrosive-cryogenic or elevated temperatures.</p>
<p>Socket Low Head Cap Screw</p>  <p>Alloy Steel</p>		<p>Suitable for use in parts too thin for std. SHCS; and for applications with limited clearances.</p>
<p>Countersunk Socket Head Screws</p>  <p>Alloy Steel</p> <p>Stainless Steel</p>		<p>Controlled angle under the head ensures maximum flushness and sidewall contact. Non-slip Hex socket prevents marring of material. Note: Inclined angle under the head varies as follows:</p> <p>BSW & BSF Threads - 90°C UNC & UNF Threads - 82°C Metric Threads - 90°C Above M20 - 60°C</p>
<p>Button Head Screws</p>  <p>Alloy Steel</p> <p>Stainless Steel</p>		<p>Low heads streamline design. Use them in materials too thin to countersink; also for non-critical loading requiring heat treated screws.</p>
<p>Flange Button Head Screw ws</p>  <p>Alloy Steel</p>		<p>Allows covering of large diameter holes in sheet metal. Can be used with softer materials.</p>
<p>Shoulder Screws</p>  <p>Alloy Steel</p>		<p>Replaces costly special parts - shafts, pivots, pins, guides, linkages and trunnion mountings. Also standard for tool and die industries.</p>
<p>Socket Set Screws</p>  <p>Alloy Steel</p> <p>Stainless Steel</p>		<p>Fasten collars, sleeves, gears, knobs on shafts. Locate machine parts</p> <p>Cone, half dog, oval, cup and self locking knurled cup points are standard.</p>

**Maximum Operating
Temperature Unplated**

300°C

High Grade
Unbrako
Alloy Steel

**Corrosion
Resistance**

-I

**Magnetic or
Non-Magnetic**

High Grade
Unbrako
Alloy Steel

Plating
Optional