

Europe's largest manufacturer of Silver Steel available from Technobots.co.uk

Insist on STUBS for guaranteed special accuracy at standard prices.

Fine Standard Tolerances

1" and above ± 0.0005 "
below 1" ± 0.0003 "
Over 25mm +0.00mm - 0.02mm
25mm and below +0.00mm - 0.01mm

Closely Controlled Analysis

	min.	max.
Carbon	1.10%	1.20%
Silicon	0.10%	0.25%
Chromium	0.40%	0.50%
Sulphur		0.035%
Manganese	0.30%	0.40%
Phosphorus		0.035%

Uniform machining properties and consistent response to heat treatment.

(All genuine STUBS Silver Steel is to BS 1407 Analysis optional standard, with the addition of 0.4% to 0.5% chrome for uniformity of both machining and consistency of micro structure of hardening/tempering).

Extensive Range of Diameters

Reduces machining costs considerably.

By choosing the right size for a particular job, much preliminary machining can be eliminated.

Exceptional Surface Finish

Eliminates grinding or polishing

The exceptionally high surface finish of genuine STUBS Silver Steel can be utilised without the need for further expensive grinding or polishing.

Controlled Annealing

Maximum degree of spheroidisation

Easier, more uniform machining is possible giving greatly improved machined surface.

Three Standard Lengths

A length to suit the job in hand.

Short lengths (333mm) for 'one off' jobs. Longer lengths (1 metre and 2 metres) for repetition machining.

Chamfered Ends

Prevent scratching.

All ends of genuine STUBS Silver Steel are deburred. This protects other lengths from scratching and ensures safety in handling. Look for the bars marked STUBS.

Bars Marked Stubs

Your guarantee of the finest quality produced.

STUBS is Europe's largest manufacturer of Silver Steel and one of the oldest established. Our experience in tools and with tool steels dates back 200 years, over 100 of which have been spent in the Silver Steel business. Our reputation as European brand leader, is your guarantee of the highest standard of quality and service.

Silver Steel

HEAT TREATMENT

Hardening

For maximum hardness, (66 Rockwell 'C' or 850 DPN), heat to 770°C-790°C (1420°F-1450°F). Soak till uniform then quench in clean water or preferably 10% brine solution. The most satisfactory and efficient method is to heat in a salt bath and it is advisable that the temperature should be carefully controlled. The use of a pyrometer is suggested. If a muffle furnace is used the atmosphere should be slightly reducing to minimise scaling and to avoid soft spots.

Tempering

Minimum 1 hour soak, immediately after hardening.

Temp Range	Hardness
150°C (302°F)	63/65 Rc
200°C (392°F)	60/62 Rc
250°C (482°F)	59/61 Rc
300°C (572°F)	55/57 Rc

Annealing

Heat slowly to 760°C-780°C (1400°F-1436°F). Soak for 1 hour per inch of section and cool slowly in the furnace.

Technical Information

Typical properties as supplied:

Approximate hardness (Brinell)	180-285
Approximate UTS (tons/in ²)	40-60
Approximate yield point (tons/in ²)	35-50
Approximate torsional stress (tons/in ²)	22-33
Approximate shear stress (tons/in ²)	24-36

Approximate elongation % (2" GL)	35-20
Approximate reduction of area %	45-30
Approximate density (g/cc)	7.83

The above figures are for guidance only and do not form part of a specification.

Mean co-efficient of expansion:

Approximate 0°-700°C: 14.69×10^{-6}

Approximate Modulus of elasticity (Youngs) E: $30 \times 10^6 \text{ lb/in}^2$

Approximate Modulus of Rigidity or Modulus of transverse elasticity G : $12 \times 10^6 \text{ lb/in}^2$