

## BRIGHT LEADED FREE CUTTING STEEL – AISI 12L14

---

**AISI 12L14 Low Carbon Leaded Free Cutting Steel**, bright drawn or smooth turned with a consistently excellent level of machinability. The lead improves machinability greatly with little affect on the mechanical properties.

### Typical Applications:

Very heavily machined components or parts subject to low stress levels, low shock loading, limited forming and very limited welding

### Related specifications:

AS 1443-1994	12L14
BS 970-3-1991	230M07Pb
EN 10277	1.0718 11SMn30Pb
JIS G 4804	SUM22L / SUM23L
SAE & UNS	12L14 & G12144

### Dimensional Tolerances:

Bright drawn / Smooth turned: **h10**

### Typical Chemical Analysis

<b>Carbon</b>	<b>0.07%</b>
<b>Silicon</b>	<b>0.01%</b>
<b>Manganese</b>	<b>1.00%</b>
<b>Phosphorus</b>	<b>0.05%</b>
<b>Sulphur</b>	<b>0.30%</b>
<b>Lead</b>	<b>0.25%</b>

Manganese/Sulphides plus the lead addition assist chip formation, friction and wear on cutting tool is reduced, allowing higher feeds and/or speeds.

Hot or cold forming is limited due to the high sulphur content.

Not suitable for through hardening flame or induction hardening due to the low carbon content.

Will **Carburise** or **Carbonitride** – Typical surface hardness to **HRC 58**. Ref AISI 1215 for details

**Plating:** Will electroplate but not suitable for hot dip galvanising.

**Welding:** Must be carried out in a well ventilated environment or avoided as the lead will give off toxic fumes. Ref AISI 1215 for details

### Typical Mechanical Properties – for guidance only

<b>Finish</b>	<b>Yield Strength MPa</b>	<b>Tensile Strength MPa</b>	<b>Elongation %</b>	<b>Hardness HB</b>
<b>Bright Drawn</b>	290 – 550	400 – 650	7 min	115 – 200
<b>Smooth Turned</b>	230 – 310	370 – 500	17 min	100 – 150

Material supplied to chemical analysis only