

## 1.0 DESCRIPTION

Steel - Alloy with 1E2661B Cleanliness

## 2.0 APPLICATION

Carburized Parts requiring 1E2661B Cleanliness

## 3.0 QUALIFYING SPECIFICATIONS

1E0024      Wrought Steel - Sampling and Testing  
1E0038      Wrought Steel - General Requirements  
1E2661B     Steel Cleanliness - Ladle Refining  
1E2177      Mill Tolerances  
1E2700C     Strand Cast Steel - Caster Class 1B

## 4.0 FORM AND QUALITY

Semifinished for Forging  
Hot Rolled Bars  
Cold Finished Bars  
Seamless Tubing

## 5.0 COMPOSITION, % (HEAT ANALYSIS)

Carbon	0.18-0.22
Manganese	0.90-1.10
Phosphorus	0.020 MAX
Sulfur	0.015 - 0.025
Silicon	0.08 MAX
Chromium	0.85-1.00
Molybdenum	0.40-0.45
Nickel	0.10 MAX
Copper	0.10 MAX
Titanium	0.02 MAX
Aluminum	0.020 MIN

If D.I. (calculated by 1E0038 multiplying factors) is 80.0 mm (3.15 Inches) to 97.8 mm (3.85 Inches), based on ladle chemistry or 77.5 mm (3.05 inches) to 100.3 mm (3.95 inches) based on product chemistry, then the heat can be exempted from the 1E0024 requirement for Jominy hardness testing.

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STEEL - ALLOY  
(SAE 4122 MOD - SPECIAL CLEANLINESS)

DATE  
05 MAY 1998

CHG NO  
04

NUMBER  
1E1727

**6.0 STEEL CLEANLINESS**

This steel must be ladle refined per 1E2661B.

**7.0 AUSTENITIC GRAIN SIZE**

5 or finer.

**8.0 HARDENABILITY**

Normalizing Temperature 925°C

Austenitizing Temperature 925°C

<b>Jominy Distance (Inch)</b>		<b>1/16</b>	<b>4/16</b>	<b>10/16</b>
	MAX	47	--	38
RKW C				
	MIN	42	39	--
<b>JOMINY DISTANCE (mm)</b>		<b>1.5</b>	<b>7.0</b>	<b>15.0</b>
	MAX	47	--	38
RKW C				
	MIN	42	39	--

**9.0 SUBSIDIARY SPECIFICATIONS (FOR CATERPILLAR INC. REFERENCE ONLY)**

At the time of release of 1E1727, Change 04 no subsidiary versions of 1E1727 were in use by Caterpillar Facilities outside of the United States. Subsidiary versions may be released without a change to this version of 1E1727. The Engineering Data System (EDS) provides information on the status of subsidiary version specifications and should be referenced for current information.

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