

1.0 DESCRIPTION

Steel - Alloy

2.0 APPLICATION

Large carburized piston pins requiring extra cleanliness.

3.0 QUALIFYING SPECIFICATIONS (THE FOLLOWING SPECIFICATIONS FURTHER QUALIFY 1E2766)

1E0024 Wrought Steel - Sampling and Testing
1E1801 Hydrogen Control
1E1861 Approved Steel Supplier
1E2177 Mill Tolerances
1E2661B Steel Cleanliness - Ladle Refining
1E2700C Strand Cast Steel - Caster Class 1B

4.0 FORM AND QUALITY

Semifinished for Forging
Hot Rolled Bars
Cold Finished Bars

5.0 COMPOSITION (%) (HEAT ANALYSIS)

Carbon 0.17 - 0.23
Manganese 1.10 - 1.40
Phosphorus 0.035 MAX
Sulfur 0.035 MAX
Silicon 0.40 MAX
Chromium 1.00 - 1.30

6.0 STEEL CLEANLINESS

This steel must be ladle refined per 1E2661B. Experience has shown that intentional additions of calcium for deoxidation or inclusion shape control can result in scattered large calcium aluminate type inclusions that are not always found by ordinary testing methods. Therefore, intentional calcium additions are prohibited. The use of lime and/or fluorspar in the steel making slag is permitted.

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STEEL - ALLOY (ISO/DIS 683/II GRADE 20MnCr5)

DATE
23 FEB 1996

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00

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1E2766

7.0 AUSTENITIC GRAIN SIZE

5 or finer.

8.0 HARDENABILITY

Normalizing Temperature 925°C

Austenitizing Temperature 925°C

Jominy Distance (mm)	1.5	7.0	13.0
MAX	49	--	41
RKW C			
MIN	41	33	--
Jominy Distance (Inch)	1/16	4/16	8/16
MAX	49	--	41
RKW C			
MIN	41	34	--

9.0 SUBSTITUTE MATERIALS

For purchased finished parts (not subsequently worked by Caterpillar Inc.), the following materials are approved substitutes (per 1E0024) for 1E2766.

These materials may also be substituted for 1E2766 in Caterpillar worked parts when specified on the appropriate planning and purchasing documents. The 1E2349 system for approval of alternate materials (Type B unless otherwise noted) is an acceptable method of documentation.

ISO/DIS 683/II Grade 20 MnCr5

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