

**PRODUCT MANUAL**
**ALLOY STEELS - 3312**
**AISI /SAE 3312 (UNS G 33106)**
**A 3-1/2% NICKEL-CHROMIUM CASE HARDENING ALLOY STEEL**
**TYPICAL ANALYSIS**

<b>C.</b>	<b>Mn.</b>	<b>P. MAX.</b>	<b>S. MAX.</b>	<b>Si.</b>	<b>Ni.</b>	<b>Cr.</b>
0.08/0.13	.045/0.60	0.025	0.025	0.20/0.35	3.25/3.75	1.40/1.75

A HIGH ALLOY CARBURIZING STEEL POSSESSING SUPREME TOUGHNESS AND FATIGUE RESISTANCE IN BOTH CARBURIZED AND NON-CARBURIZED CONDITION. ITS ALLOY CONTENT PROVIDES EXTREMELY HIGH CORE STRENGTH, ALLOWING THIS STEEL TO BE USED FOR TOUGHER APPLICATIONS THAN THE WIDELY USED **AISI 8620**. IT CAN BE AIR HARDENED FOR MINIMAL DISTORTION WHEN HEAT TREATING INTRICATE SHAPES. IT RETAINS EXCELLENT LOW-TEMPERATURE PROPERTIES, AND AS SUCH IS USEFUL FOR SHOCK RESISTANT MACHINE PARTS IN AREAS SUBJECT TO INTENSE COLD. IT MAY BE USED IN THE HEAT-TREATED NON-CARBURIZED CONDITION FOR APPLICATIONS REQUIRING EXTRA STRENGTH AND TOUGHNESS. NORMALLY, THIS GRADE IS SUPPLIED IN THE ANNEALED CONDITION.

**TYPICAL APPLICATIONS**

HEAVY DUTY GEARS, TRANSMISSION COMPONENTS, PINIONS, PISTON PINS, SPLINE SHAFTS, ROCK DRILLING BIT BODIES, PLASTIC MOLDS, ETC.

**MECHANICAL PROPERTIES - ANNEALED**

THE FOLLOWING ARE AVERAGE VALUES AND MAY BE CONSIDERED AS REPRESENTATIVE:

<b>TENSILE STRENGTH, PSI</b>	<b>105,000</b>
<b>YIELD STRENGTH, PSI</b>	<b>78,000</b>
<b>ELONGATION, %</b>	<b>24</b>
<b>REDUCTION IN AREA, %</b>	<b>64</b>
<b>BRINELL HARDNESS</b>	<b>212</b>

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