



PRODUCT MANUAL

ALLOY STEELS - 3312

AISI /SAE 3312 (UNS G 33106)

A 3-1/2% NICKEL-CHROMIUM CASE HARDENING ALLOY STEEL

TYPICAL ANALYSIS

C.	Mn.	P. MAX.	S. MAX.	Si.	Ni.	Cr.
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:

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

(CONTINUED)