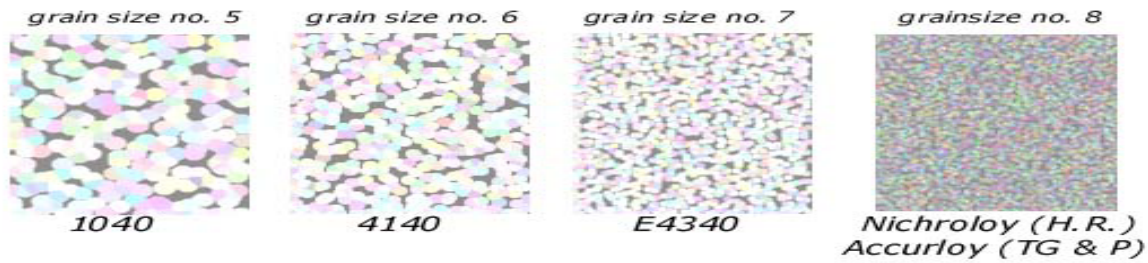


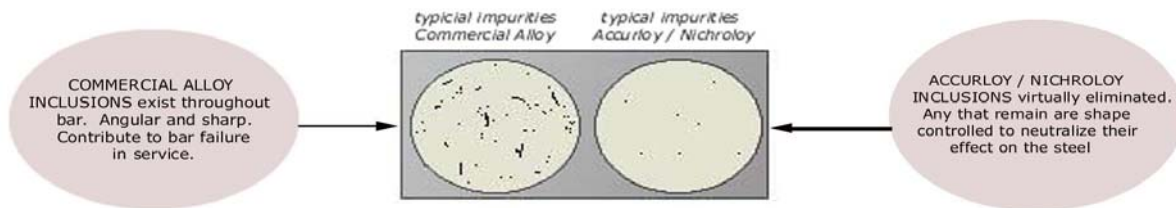
Commercial Grade Steels vs Custom Grade Steel



ACCURLOY and **NICHROLOY** are refined, high-strength alloys engineered specifically for severe maintenance service. These products incorporate every significant mill refinement process that enhances toughness and predictability of performance. Made to fine grain electric furnace practices, Accurloy and Nichroloy incorporate bottom pouring, vacuum degassing, and low-sulfur inclusion shape control. These steels are delivered micro-clean, exhibiting extremely low sulfur and phosphorous levels, which encompass the largest percentage of elemental impurities. Often these levels are lower than those found in aircraft quality generics in the 41XX and 43XX classes.

FOR: EQUIPMENT MAINTENANCE - MACHINE REPAIR - PRODUCTION TOOLING

FACTORS	4140	ACC/NICH	BALDWIN ADVANTAGE
Usual Manufacturing process	Open Hearth Furnace; Large heats, little uniform control	Small Electric Furnace heats	Greater control, less defects, cleaner steel which increases toughness and service life
Tensile Strength	125,000 PSI	155,000 PSI typical (higher on smaller diameters)	Approximately 25% higher strength
Yield Strength	100,000 PSI	130,000 PSI typical (higher on smaller diameters)	Approximately 25% higher strength
Stress-relieved	Optional – must be specified	Stress-relieved at mill	Minimizes bowing and walking during machining
Machine Straightened	Optional – must be specified	Machine straightened at mill	Machine-straightened at mill
Low Sulfur Vacuum Degassed	Not a commercial practice	Builds toughness by removing impurities	Builds toughness by removing impurities



Fatigue Resistance	Low Toughness	High Degree of Toughness	Higher Endurance Limit. Will minimize fatigue caused by twisting and flexing in use (high degree of toughness)
Wear Resistance	Hard and Soft Spots Uneven Wear	Uniform hardness	Uniform hardness and less decarburization gives increased wear life. Tends to work-harden with wear
Machinability	Inconsistent	Uniform	Uniform grain and hardness offer better machinability

*ACCURLOY turned, ground and polished, precision finished bars are made from heat-treated NICHROLOY hot rolled alloy steel bars. Size, finish and diameter tolerances are rigidly controlled.



Baldwin International

Specialty Steels for Industry

30403 Bruce Industrial Pkwy | Solon, Ohio 44147 USA

Ph: (440) 248-9500 | Fax: (440) 248-7899 | BaldwinInternational.com