8620

Analysis	
Carbon	.18/.23
Manganese	.70/.90
Phosphorus	.035 Max.
Sulphur	.040 Max
Silicon	.15/.35
Chromium	.40/.60
Nickel	.40/.70
Molybdenum	.15/.25

Critical Range	
Ac_1	1380ºF
Ac_3	1520ºF
Ar_3	1400ºF
Ar_1	1200ºF

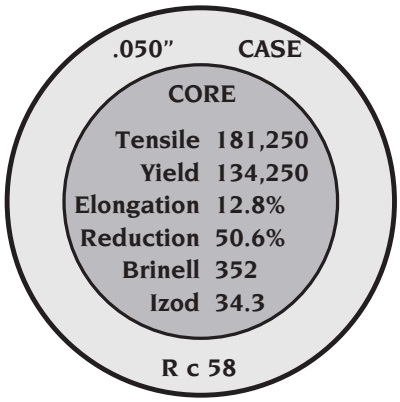
Thermal Treatment	
Forge	2150º - 2250ºF
Normalize	1650º - 1750ºF
Anneal	1550º - 1600ºF

MECHANICAL PROPERTIES

	Tensile Strength	Yield Strength	Elongation in 2″	Red. Area	Brinell	Izod
As Rolled	97,000	57,000	25	58	201	—
Annealed	78,000	56,000	31	62	156	82

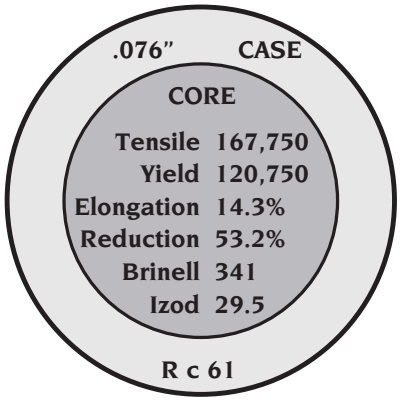
FOR MAXIMUM CORE TOUGHNESS

Size Treated, .565” Rd.



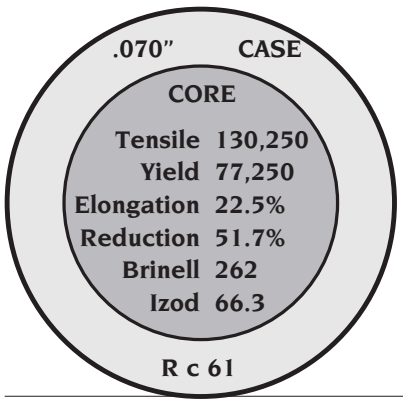
Direct Quench from Pot

1. Carburized at 1700ºF for 8 hours.
2. Quenched in oil.
3. Tempered at 450ºF.
   For maximum case hardness, temper at 300ºF for Rc 63.



Single Quench and Temper

1. Carburized at 1700ºF for 8 hours.
2. Pot Cooled.
3. Reheated to 1550ºF.
4. Quenched in oil.
5 Tempered at 450ºF.
   For maximum case hardness, temper at 300ºF for Rc 64.



Double Quench and Temper

1. Carburized at 1700ºF for 8 hours.
2. Pot Cooled.
3. Reheated to 1550ºF and quenched in oil.
4. Reheated to 1475ºF and quenched in oil.
5. Tempered at 450ºF.
   For maximum case hardness, temper at 300ºF for Rc 64.

MASS EFFECT DATA

The following are actual values from a single heat, the hardenability curve of which is indicated by the broken line in the End-Quench Hardenability chart below.

	Tensile Strength	Yield Strength	Elongation in 2"	Red. Area	Brinell	Izod
Normalized at 1675°F; air cooled						
1/2" Rd.	96,500	54,250	26.3	62.5	197	62.5
1" Rd.	91,750	51,750	26.3	59.7	183	73.5
2" Rd.	87,250	51,500	27.8	62.1	179	81.3
4" Rd.	81,750	51,500	28.5	62.3	163	74.0
Mock-carburized at 1700°F for 8 hours; reheated to 1550°F; quenched in oil; tempered at 300°F						
1/2" Rd.	199,500	157,000	13.2	49.4	388	13.5
1" Rd.	126,750	83,750	20.8	52.7	255	42.3
2" Rd.	117,250	73,000	23.0	57.8	235	48.8
4" Rd.	98,500	57,750	24.3	57.6	207	49.5
Mock-carburized at 1700°F for 8 hours; reheated to 1550°F; quenched in oil; tempered at 450°F						
1/2" Rd.	178,500	139,500	14.6	53.9	352	11.5
1" Rd.	124,250	80,750	19.5	54.2	248	23.0
2" Rd.	114,500	72,250	22.0	59.0	229	38.0
4" Rd.	98,000	55,500	25.5	57.8	201	43.4

END-QUENCH HARDENABILITY