1. Non-Alloy Steel

If ③ is not St, ⑦ means tensile strength.

⑥ Teat-Treated Condition :

A	Tempering
G	Soft Annealing
H	Quenching
S	Stress Relief Annealing
N	Normalizing

⑤ Range Covered :

1	Yield Point
2	Flexure Test
3	Impact Toughness
6	Yield point and impact toughness

④ Main value. If ③ are St and C, ④ Will be tensile srength (kgf / mm^2) and carbon content (1/10,000)

③ Main symbol

St	Indicated By Strength
C	By Chemical Ingredients
Cm, Ck control P , S	

③ Melting Method

M	Open-hearth
I	Induction Furnace
LE	Arc Furnace
W	Converter Substitute Steel

② Original Attributes

A	Aging Resistance
R	Killed Steel
U	Semi-killed Steel

Carbon Steel
Generally, it is denoted with C (carbon) in front and followed by number such as“C60”, which would indicate a steel that contains 0.6% carbon. Also, it can be denoted with tensile strength, or other ways. For instance, St50 would be indicating this is a structural carbon steel that features 50kg / mm2 tensile strength. Moreover, CK40 is indicating a carbon steel of 40kg / mm2 tensile strength and low content of phosphorus and sulfur.

2. Low-alloy steel

Heat-treated condition

A	Tempering
G	Soft Annealing
H	Quenching
S	Stress Relief Annealing
N	Normalizing

Element Content (x 1/100)

Prime Alloy Element

Carbon % = x 1/10,000

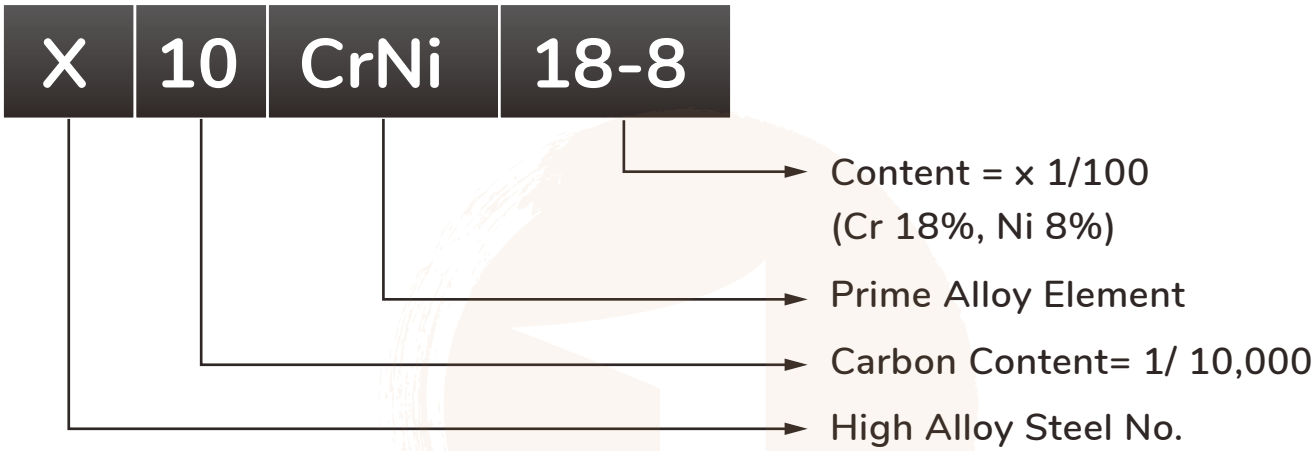
Original Attributes

A	Aging Resistance
R	Killed Steel
U	Semi-killed Steel

Original Attributes

M	Open-hearth
I	Induction Furnace
LE	Arc Furnace
W	Converter Substitute Steel

3. High-alloy steel



4. High-grade steel and Low Alloy Steel

Denotation is consisted of 1. carbon content, 2. alloy elements and 3. element content. To avoid using decimals, the values of all element content are multiplied and appear in only integer. To see actual element content, please divide them with the multiples corresponded.

Part 1: carbon content

Part 2: alloy elements

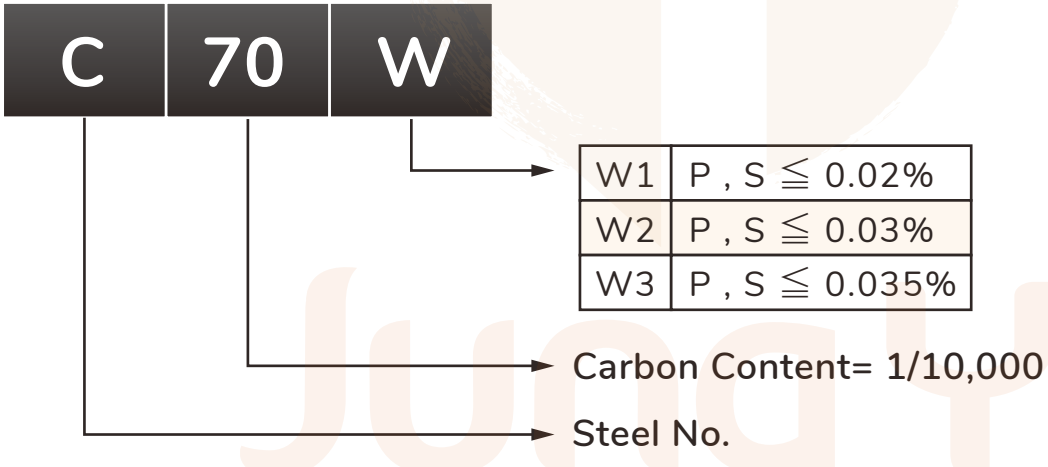
Part 3: elements content

Alloy Element	Multiple
Cr、Co、Mn、Ni、Si、W	4
Al、Be、Pb、Cu、Mo、Nb、Ta、Ti、V	10
P、S、N、Ce、C	100
B	1,000

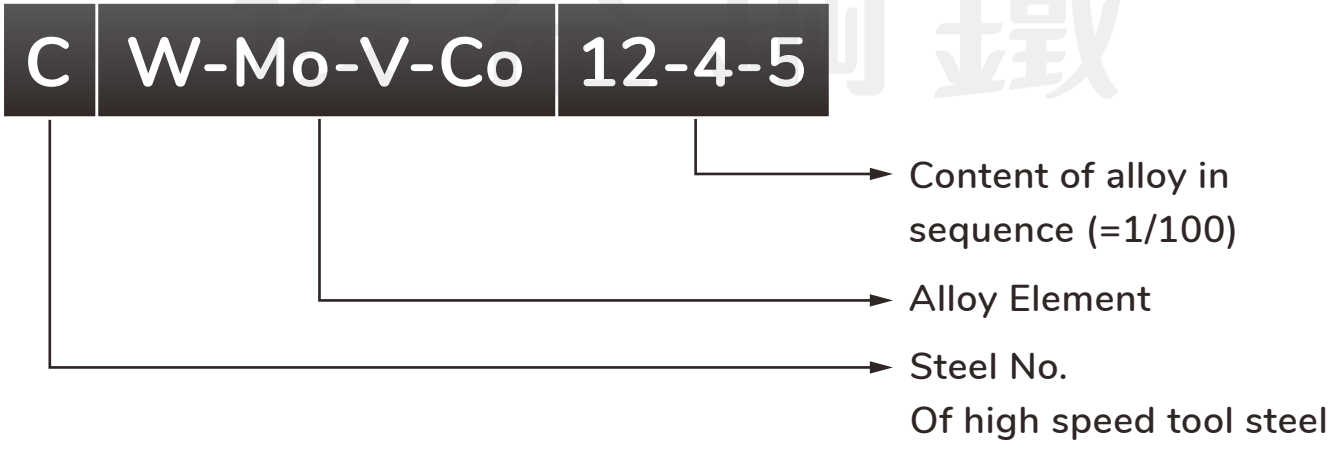
EX : A steel contains 0.34%C and 1%Cr would be named as“34Cr4”.
So, “13CrV53”would indicate the steel contains 0.13%C, 1.25%Cr(5/4) and 0.3%Mn (3/10)

High Alloy Steel
Denotations of high alloy steel is capped with “X” in the front, which means it is high alloy steel (alloy>8%), and the values displayed are actual alloy content, so it will not have to be divided by the multiple corresponded. EX: Detonation “X12CrNi18 8”indicates steel that contains 0.12%C, 18%Cr and 8%

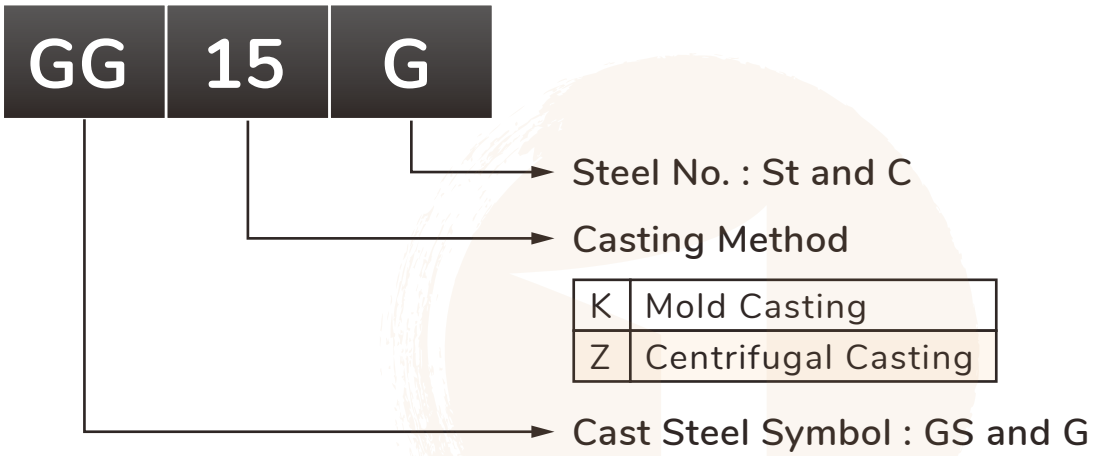
5. Carbon Tool Steel



6. High Speed Tool Steel

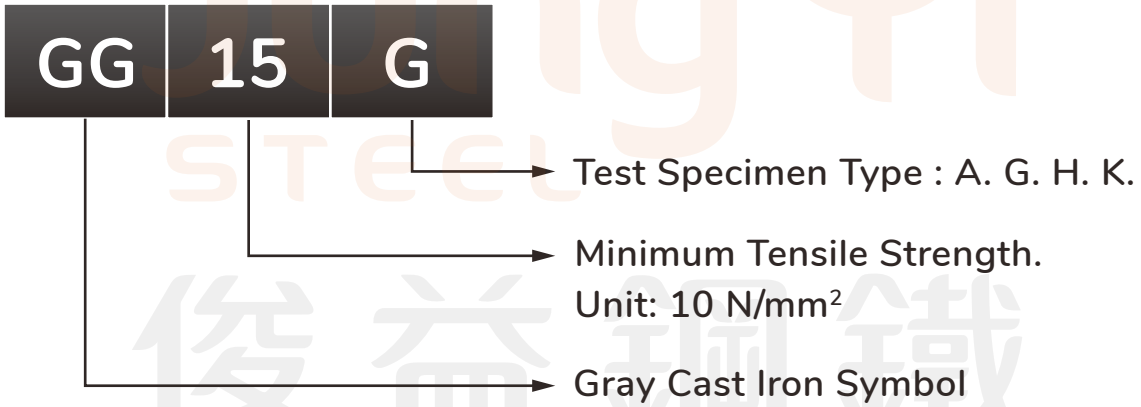


7. Cast Steel



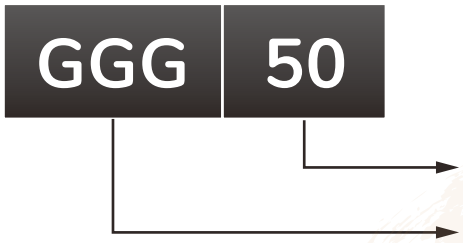
8. Cast Steel

(A) Gray Cast Iron



GS	Cast Steel
GG	Gray Cast Iron
GGL	Flake Graphite Cast Iron
GGG	Ductile Iron
GT	Malleable Cast Iron
GTS	Malleable Gray Cast Iron
GTW	Malleable White Cast Iron

(B) Ductile iron



Trength. Unit : 10 N/mm^2

Ductile Iron Code GGG

GS	Cast Steel
GG	Gray Cast Iron
GGL	Flake Graphite Cast Iron
GGG	Ductile Iron
GT	Malleable Cast Iron
GTS	Malleable Gray Cast Iron
GTW	Malleable White Cast Iron

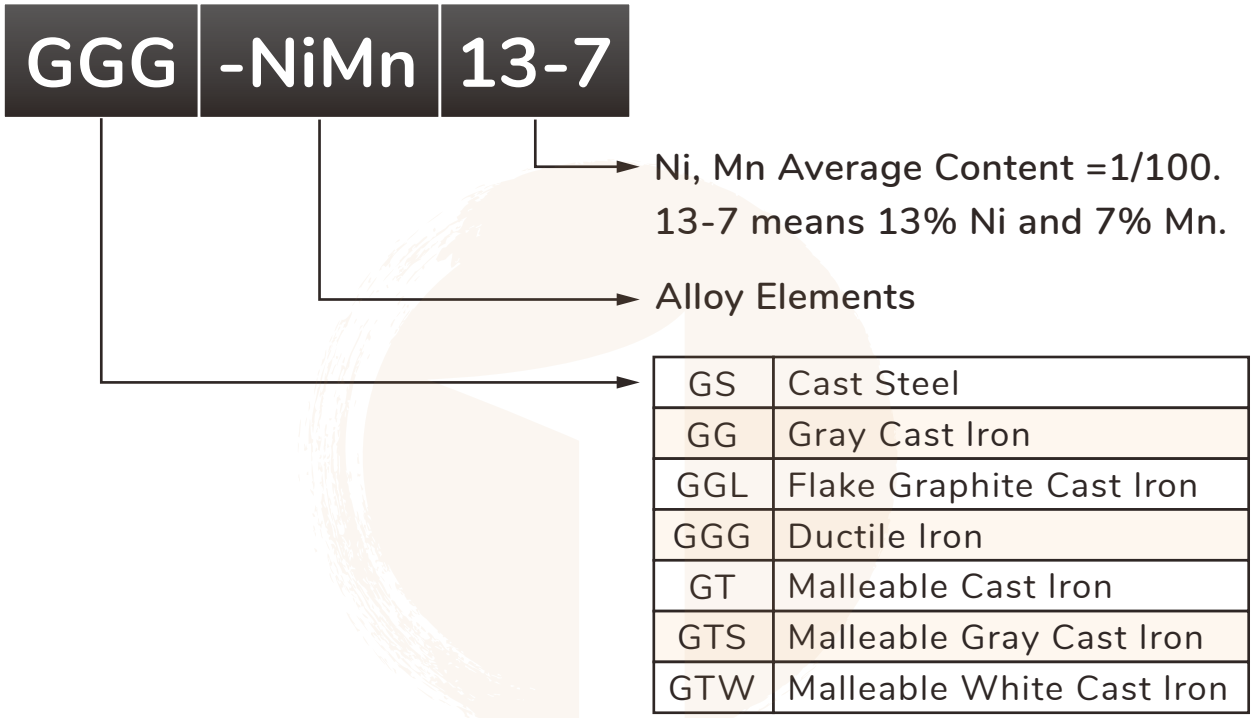
(C) Malleable cast iron

Minimum Elongation Rate (%)

Minimum Tensile Strength.
Unit : 10 N/mm^2

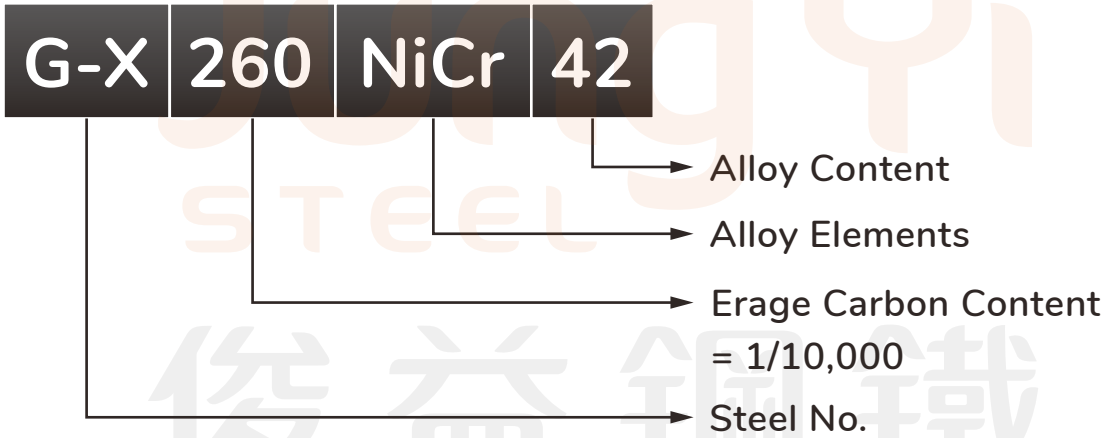
GS	Cast Steel
GG	Gray Cast Iron
GGL	Flake Graphite Cast Iron
GGG	Ductile Iron
GT	Malleable Cast Iron
GTS	Malleable Gray Cast Iron
GTW	Malleable White Cast Iron

(D)Austenite cast iron



GS	Cast Steel
GG	Gray Cast Iron
GGL	Flake Graphite Cast Iron
GGG	Ductile Iron
GT	Malleable Cast Iron
GTS	Malleable Gray Cast Iron
GTW	Malleable White Cast Iron

(E) Corrosion resistant alloy cast iron



Cast iron, Cast Steel

A denotation starts with G stands for general cast, and the 2nd alphabet indicates its material type. The subsequent marking is the same as that of steel.
EX : GS-C30 stands for cast steel of 0.30%C
G-X120Mn12 stands for cast iron of 1.20%C and 12%Mn.