

### 3Cr2MnNiMo

<b>Steel:</b>	1.2738							
<b>Corresponding Steel</b>	Chemical Composition(%)							
<b>Grade and Chemical Composition</b>	Standard/Steel Grade		C	Si	Mn	Cr	Mo	Ni
	GB	3Cr2MnNiMo	0.32 ~ 0.40	0.20 ~ 0.40	1.10 ~ 1.50	1.70 ~ 2.00	0.25 ~ 0.40	0.85 ~ 1.15
	AISI	P20+Ni						
	DIN	1.2738	0.35~0.45	0.20~0.40	1.30 ~ 1.60	1.80 ~ 2.10	0.15 ~ 0.25	0.90 ~ 1.20
	JIS	PDS5S						
<b>Brief Introduction:</b>	Good polishability and photoetch performance.Good machinability, suitable for surface treatment (like chrome-plating).Even material hardness, high purity degree.Good abrasion resistance, longer life of mould.Suitable for large scale, especially plastic mould with thickness ≥ 400MM, require for even hardness, high toughness and good surface polishability. Such as large scale mould TV shell, copier shell, bumper, shock absorber, instrument panel, also mold of trash can and casting mould frame.							
<b>Shape &amp; Dimension:</b>	Forged: Flat: 200-400mm*200-1500mm							
	Rolled: Flat: 20-190mm*205-2000mm							
<b>Delivery Condition:</b>	Forged/Rolled, QT, Black/Milled							
<b>Note:</b>								

## 3Cr2Mo

**Steel:** P20

**Corresponding Steel**

Chemical Composition(%)

**Grade and Chemical**

Standard/Steel Grade

C

Si

Mn

Cr

Mo

Ni

**Composition**

GB

3Cr2Mo

0.28 ~ 0.40

0.20 ~ 0.80

0.60 ~ 1.00

1.40 ~ 2.00

0.30 ~ 0.55

0.85~1.15

AISI

P20

0.28 ~ 0.40

0.20 ~ 0.80

0.60 ~ 1.00

1.40 ~ 2.00

0.30 ~ 0.55

Cu+Ni≤0.75

DIN

35CrMo7  
-1.2311

0.30 ~0.40

0.30~0.70

0.60~1.00

1.50~2.00

0.35~0.55

JIS

-

**Brief Introduction:**

Even hardness, good polishability, photoetch performance and machinability.VD refining is applied, thus with high purity. Suitable for plastic mould requires polishing and photo etching.Delivery on pre-hardening condition, heat treatment is not needed, can apply to mould machining directly, thus shorter the working time.After forging and rolling, has fine and close organization, 100% UT, no defect like gas hole and needle eye.Suitable for large & medium scale and precision mould, also Sn, Zn, Pb alloy die casting mould with low melting point.

**Shape & Dimension:**

Forged:

Flat: 200-400mm\*200-1500mm

Rolled:

Flat: 20-190mm\*205-2000mm

**Delivery Condition:**

Forged/Rolled, QT, Black/Milled

**Note:**

## 10Ni3MnCuAl

**Steel:** 10Ni3MnCuAl

**Corresponding Steel**

Chemical Composition(%)

**Grade and Chemical**

Standard/Steel Grade

C

Si

Mn

Mo

Ni

P

S

**Composition**

GB

10Ni3MnCuA

0.05 ~ 0.18

0.15 ~ 1.00

1.00 ~ 2.00

0.10 ~ 0.40

2.50 ~ 3.50

≤0.030

≤ 0.030

AISI

-

DIN

-

JIS

NAK80

**Brief Introduction:**

Hardness can reach 37 ~ 43HRC after solid solution and ageing strengthen, can apply die milling and machining at original condition without heat treatment. Ni-Al-Cu series ageing hardening steel has following characteristics: (1) Good machinability (2) Very easy to grind after EDM (3) Good welding permeability (4) Even hardness of surface and core, can keep precision degree during using. Because special melting is applied, has compact structure, very few inclusion, has following characteristics: (1) Excellent mirror face abrasive property, can get satisfied luminance (2) Good erode machinability, fine and nice surface after EDM. Applied in mirror polish mould, dust proof, light filter plate of TV, cosmetic box, business automation equipment, auto parts EDM mould. Crystal product or smooth finish required product. Like crystal product mould on automobile, camera, computer and etc.

**Shape &** Forged:

**Dimension:** Round: 60mm-300mm; Flat: 40-240mm\*100-610mm

**Delivery Condition:**

Forged, Turned, QT

**Note:**

## Cr12Mo1V1

<b>Steel:</b>	1.2379								
<b>Corresponding Steel</b>	Chemical Composition(%)								
<b>Grade and Chemical Composition</b>	Standard/Steel Grade		C	Si	Mn	Cr	Mo	V	Co
	GB	Cr12Mo1V1	1.40 ~ 1.60	≤ 0.60	≤ 0.60	11.00 ~ 13.00	0.70 ~ 1.20	0.50~ 1.10	≤ 1.00
	AISI	D2	1.40 ~ 1.60	0.10~ 0.60	0.10~ 0.60	11.00 ~ 13.00	0.70 ~ 1.20	0.50~ 1.10	
	DIN	1.2379	1.45 ~ 1.60	0.10~ 0.60	0.20~ 0.60	11.00 ~ 13.00	0.70 ~ 1.00	0.70~ 1.00	
	JIS	SKD11	1.40 ~ 1.60	≤ 0.40	≤ 0.60	11.00 ~ 13.00	0.80 ~ 1.20	0.20~0.50	
<b>Brief Introduction:</b>	D2 is a versatile high-carbon, high-chromium, air-hardening tool steel that is characterized by a relatively high attainable hardness and numerous, large, chromiumrich alloy carbides in the microstructure. These carbides provide good resistance to wear from sliding contact with other metals and abrasive materials. Although other steels with improved toughness or improved wear resistance are available, D2 provides an effective combination of wear resistance and toughness, tool performance, price, and a wide variety of product forms. Widely application including rolls, punches, dies for blanking, forming, trimming, and thread rolling, shear knives, food-processing knives, and gages. Application for easy cuttings, shaft knives, circular saw, stamping dies, rolls, punches, milling tool, molds for plastic materials, etc.								
<b>Shape &amp; Dimension:</b>	Forged Products: Round: 60mm-400mm Flat: 40-240mm*100-610mm  Rolled Products: Round: 8mm-50mm Flat: 12-60mm*205-610mm								
<b>Delivery Condition:</b>	Forged / Rolled, Annealed, Turned/Milled								
<b>Note:</b>									

## 3Cr17NiMo

<b>Steel:</b>	1.2316									
<b>Corresponding Steel</b>										
<b>Grade and Chemical Composition</b>	Chemical Composition(%)									
	Standard/Steel Grade		C	Si	Mn	Cr	Mo	Ni	P	S
	GB	3Cr17NiMo	0.30 ~ 0.40	≤ 1.00	≤ 1.00	16.00 ~ 17.50	0.80 ~ 1.30	0.60~1.00	≤ 0.035	≤ 0.020
	AISI	422								
	DIN	1.2316	0.33~0.45	1.00Max	1.50Max	15.5-17.5	0.80~1.30	1.00Max	0.030Max	0.030Max
	JIS	-								

**Brief Introduction:** Strong corrosion resistance, better than S-136 .Even material hardness, high purity, good mirror surface polishability.Easy to do heat treatment, size is stable after Q+T pre-hardened. Good thermal fatigue resistance.Good abrasion resistance and toughness, can rival with S-136, easy to weld up.Apply for producing plastic mould requires chemical corrosion resistance.Especially suitable for thermoplastic corrosion plastic.Suitable for small scale mould.

**Shape & Dimension:** Forged Products:  
Round: 60mm-300mm Flat: 40-240mm\*100-610mm

**Delivery Condition:** Forged, Turned, Q+T

**Note:** Milled first and then make Q+T

## 3Cr13

**Steel:** 420

**Corresponding Steel**

Chemical Composition(%)

**Grade and Chemical**

Standard/Steel Grade

C

Si

Mn

Cr

Ni

P

S

**Composition**

GB	3Cr13	0.26~0.35	≤ 1.00	≤ 1.00	12.00~14.00	≤ 0.60	≤0.035	≤0.030
AISI	420	≥0.15	≤ 1.00	≤ 1.00	12.00~14.00	≤ 0.75	≤0.040	≤0.030
DIN	1.4028	0.26~0.35	≤ 1.00	≤ 1.50	12.00~14.00		≤0.040	≤0.015
JIS	SUS420J2	0.26~0.40	≤ 1.00	≤ 1.00	12.00~14.00	≤ 0.60	≤0.040	≤0.030

**Brief Introduction:**

It is martensitic stainless steel which has good machinability, corrosion resistance and abrasion resistance. Even hardness, high purity degree, good surface finish. Stable hardenability and low rate of deformation. It can get the best polish performance after quenching and tempering, good performance of thermal stress fatigue resistance. It's suitable for plastic mold and crystal plastic mold, which need to bear high load, high abrasion resistance and work under aggressive medium. It is suitable for abrasion resistant mold, including thermoset plastic extrusion mold. With etching medium, like mold for PVC. Long service life mold, like mold for disposable tableware and snack box. Production of optical product parts, like camera and lens of sunglasses. Mold for medical treatment container.

**Shape & Dimension:**

**Delivery Condition:**

**Note:**

## 4Cr13

<b>Steel:</b>	1.2083								
<b>Corresponding Steel</b>	Chemical Composition(%)								
<b>Grade and Chemical Composition</b>	Standard/Steel Grade		C	Si	Mn	Cr	Ni	P	S
	GB	4Cr13	0.36~0.45	≤ 0.60	≤ 0.80	12.00~14.00	≤ 0.60	≤0.035	≤0.030
	AISI	-							
	DIN	1.2083	0.36~0.42	≤ 1.00	≤ 1.00	12.50~14.50		≤0.030	≤0.030
	JIS	-							

**Brief Introduction:** It is martensitic stainless steel which has good machinability, corrosion resistance and abrasion resistance. Even hardness, high purity degree, good surface finish. Stable hardenability and low rate of deformation. Can get the best polish performance after quenching and tempering; good performance of thermal stress fatigue resistance. It's suitable for plastic mold and crystal plastic mold, which need to bear high load, high abrasion resistance and work under aggressive medium. It is suitable for abrasion resistant mold, including thermoset plastic extrusion mold. With etching medium, like mold for PVC. Long service life mold, like mold for disposable tableware and snack box. Production of optical product parts, like camera and lens of sunglasses. Mold for medical treatment container.

**Shape & Dimension:** Forged Products:  
 Round: 60mm-400mm  
 Block/Flat: 40-240mm\*150-610mm

**Delivery Condition:** Forged, Annealed, Turned/Milled

**Note:** P:0.025Max  
 S:0.008Max  
 Hardness: <225HB  
 UT 1921 C/c

<b>Steel:</b>	1.2312							
<b>Corresponding Steel</b>	Chemical Composition(%)							
<b>Grade and Chemical Composition :</b>	Standard/Steel Grade		C	Si	Mn	Cr	Mo	S
	DIN 17350	1.2312(40Cr MnMoS8-6)	0.35~0.45	0.30~0.50	0.40~0.60	1.80~2.00	0.15~0.25	0.05~0.10
<b>Brief Introduction:</b>	Plastic mould steel with additional sulphur, usually supplied in a quenched and tempered condition. Polishable, better machinability compared to 1.2311, similar to AISI P20+S. Application: Plastic moulds, frame for plastic pressure dies, hydro-forming tools.							
<b>Shape &amp; Dimension:</b>	Forged Products: Flat: 200-400mm*200-1500mm  Rolled Products: Flat: 20-190mm*205-2000mm							
<b>Delivery Condition:</b>	Forged / Rolled, QT, Turned/Milled							
<b>Note:</b>								



<b>Steel:</b>	1.2085								
<b>Corresponding Steel</b>	Chemical Composition(%)								
<b>Grade and Chemical Composition :</b>	Standard/Steel Grade	C	Si	Mn	Cr	Ni	P	S	
	DIN	1.2085(X33CrS16)	0.28~0.38	≤ 1.00	≤ 1.40	15.0~17.0	≤ 1.00	≤0.030	0.05~0.10
<b>Brief Introduction:</b>	Resistant to the corrosion, Martensite steel with the high content of chrome. The steel has good resistance to the wear, good workability and polishability. Application: Molds for pressing of chemically-aggressive plastic substances, corrosion-proof clamping frames of molds etc.								
<b>Shape &amp; Dimension:</b>	Forged Products: Round: 600mm-400mm Die Block/Flat: 40-240mm*150-610mm								
<b>Delivery Condition:</b>	Forged, QT, Turned/Milled								
<b>Note:</b>									