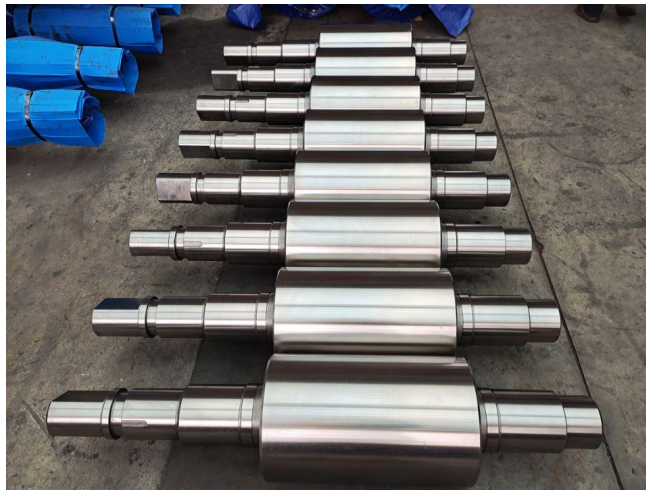


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High Speed Steel Roll Introduction



Using HSS roll can reduce the times of re-grinding rolls.

Due to the high wear resistance of high-speed steel rolls, the amount of wear is much less under the same rolling conditions than the unlimited chilled cast iron rolls and the high-chrome cast iron rolls, ensuring that the original roll forms are relatively stable with multiple uses Rolling a good cross-section accuracy.

Using HSS roll can improve the surface quality of rolled products.

High-speed steel roll wear is small, can improve the strip section accuracy, while high-speed steel roll oxide film retention is good, but also can effectively reduce the oxide film rolling caused by the oxide scale into the defect. High-speed steel roll working layer high compressive strength to ensure the surface quality of rolled pieces, suitable for the production of hard-rolled steel species, but also can be realized without schedule rolling.

Using HSS roll can enhance economic efficiency.

Compared with the infinite chill cast iron rolls and high-chrome cast iron rolls of the traditional materials, the number of rolls and the amount of grinding rolls of the high-speed steel roll are significantly reduced, the roll consumption is obviously reduced, the capacity of the rolling mill is improved, and the production planning and organization are facilitated. Therefore, Roll promotion

is undoubtedly conducive to reducing rolling costs, improve mill work efficiency, increase economic efficiency.

High-speed steel roll horizontal centrifugal compound casting process, the high-hardness steel working layer and the core ball iron metallurgy fusion roll.

High-speed steel contains a lot of Mo, V, Cr and other alloying elements. Tempering martensite dispersed with MC, M2C and M6C high hardness eutectic carbide, which has excellent high temperature wear resistance and thermal cracking resistance. At the same time, anti-rough surface type is also very good. In the hot-rolled conditions, high-speed steel surface wear-resistant oxide film, the friction characteristics and the surface quality of the strip played a good role.

The use of high speed steel roll on mill effect:

Compared with traditional ductile iron roll and high Ni-Cr roll, high-speed steel roll has higher wear resistance and higher single-pass over-steel volume, saving the roll change time, improving mill operating rate, reducing roll consumption and reducing Production costs, improve the overall efficiency of the factory. General one groove carrying capacity is 3 to 5 times than nickel-chromium roll. The following table is the use of high speed steel roller and bainitic ductile iron bar in the bar machine on the effectiveness of the comparison.

Table 1, high-speed steel roll in the bar rolling mill effect:

Steel products size/mm	Using stand	HSS Roll		SGA Roll
		One groove carrying capacity/ t	Grinding capacity/ mm	One groove carrying capacity/t
φ 12 round steel	finished	400	1~2	80
φ 12rib steel	finished	350	2~3	100
φ 14rib steel	Pre-slitting	2500	2~3	500
φ 20rib steel	Pre-slitting	5000	2~3	800
φ 16rib steel	finished	1000	2~3	200
φ 16round steel	finished	1500	1~2	300
φ 18rib steel	finished	1100	2~3	250
φ 20rib steel	finished	1200	2~3	300
φ 22rib steel	Pre-finished	3500	1~2	800
φ 25rib steel	Pre-finished	4500	1~2	1000
φ 28round steel	finished	2500	1~2	500
φ 35round steel	finished	3000	1~2	600
Two groove spring flat steel	finished	300~400	0.4	20~50

Cooling conditions and requirements for high speed steel roll.

Because high-speed steel is sensitive to cracks at high temperature, therefore, in any case, water pressure, water volume and nozzle angle should be controlled. The final cooling effect is based on roller surface temperature. Usually when rolling mill stops rolling 20~30min, the roller surface temperature is no more than 55 degrees.

The ideal cooling system should be the annular distribution of the nozzle and the continuous and sufficient flow of water into the groove. In these nozzles, the main nozzle near the outlet shall be the main nozzle, and the amount of water from the main nozzle is 30% of the total amount of water on the whole groove, and the injection angle is 20 ~30 degrees. The role of the main nozzle is to ensure that the cooling water is quickly sprayed to the part of the rolling groove that has just separated from the parts of the rolled piece. The water pressure is controlled in 0.4~0.6MPa, and the water volume per slot is not less than 500L/min, and the flow can not be scattered. The cooling water needs to be precipitated, so as to reduce the content of the solid particles as much as possible.

Maintenance of high speed steel roll

Due to the high brittleness and poor accident resistance of high-speed steel, we must strengthen management to ensure normal operation of rolling mill and reduce damage to rollers caused by rolling accidents. When the card or steel pile of steel, will be quickly roll up, and continue to cool roll, when the rolling temperature is reduced, water can be disposed of; because of accidents such as the high speed steel roll in dry cooling condition, running a period of time, this time must be unloaded roll, let it slow cooling, re grinding and then put into use.

In a word, the key to the use of high speed steel rolls is the use conditions of the rolls and the maintenance of the rolls.

HSS Roll Chemical composition:

C	Si	Mn	Cr	Ni	Mo	W	V
1.50~2.40	0.50~1.20	0.50~0.80	4.00~7.00	0.50~1.20	3.00~8.00	Max3.00	3.50~8.00

Application of HSS roll on rolling mill,

Bar rolling mill stands : rough, medium, finished, pre-finished , pre-slitting .

High-speed wire rod mill stands: finished, pre-finished

Hot rolling narrow strip and sheet mill stands: rough, finished

Spring flat steel mill stands: finished

Small profile steel mill stands: all

Juncheng HSS Rolls size scope :

Max barrel diameter: 1000mm , Max barrel length: 3000mm

Juncheng Corp. Ltd. HSS ROLL INSPECTION CERTIFICATE

轧辊种类

Kind of Roll: HSS Roll

材质种类

Kind of Material: HSS

生产号

Product No: JC-01

检验日期

Inspection Date: 2017-06-15

用 户

Customer: KAMACHI

图 号

Drawing: 055-144-0100-001

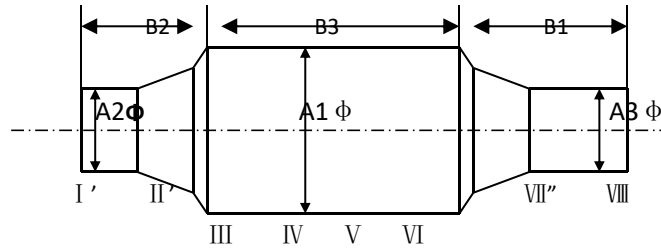
定单号

Customers Order: JC20170315-IN

轧辊规格

Kind of Roll: 340*630*1775

DIMENSION 尺寸 (MM)



A1Φ	A2Φ	A3Φ	B1	B2	B3
340+2	200+0.065	200+0.065	655	490	630+0.3

HARDNESS 硬度 (HSD)

I	II	III	IV	V	VI	VII	VIII
37	36	84	83	81	81	37	36

抗拉强度

≥450 MPa

Tensile Strength

化学成分 Chemical Analysis(%)

工作层深度 Working

Depth

C	Si	Mn	P	S	Cr	Mo	V		Top side	Bottom side
1.65	0.79	0.52	0.035	0.03	4.55	3.59	3.72		35	40

探伤检验 UL TRASONIC INSPECTION CERTIFICATE

Type Of Detector: CTS -22

Flow Detection Sensitivity: GB/T1504-2008

Kind Of probe: Single Crystal Normal

Testing Velocity: <150mm/s

Testing Frequency: 2.5MHZ

Testing Method: Single Probe

No Defect in the Composite Layer

INSPECTED BY 检验员:

CHECKED BY 复审:

Production Photos





CNC Grinding Machine



Ultrasonic



Metallographic



Hardness



Packing



Ready for shipment

Contact Information

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