

# Special Steel

**SĕAH** Besteel



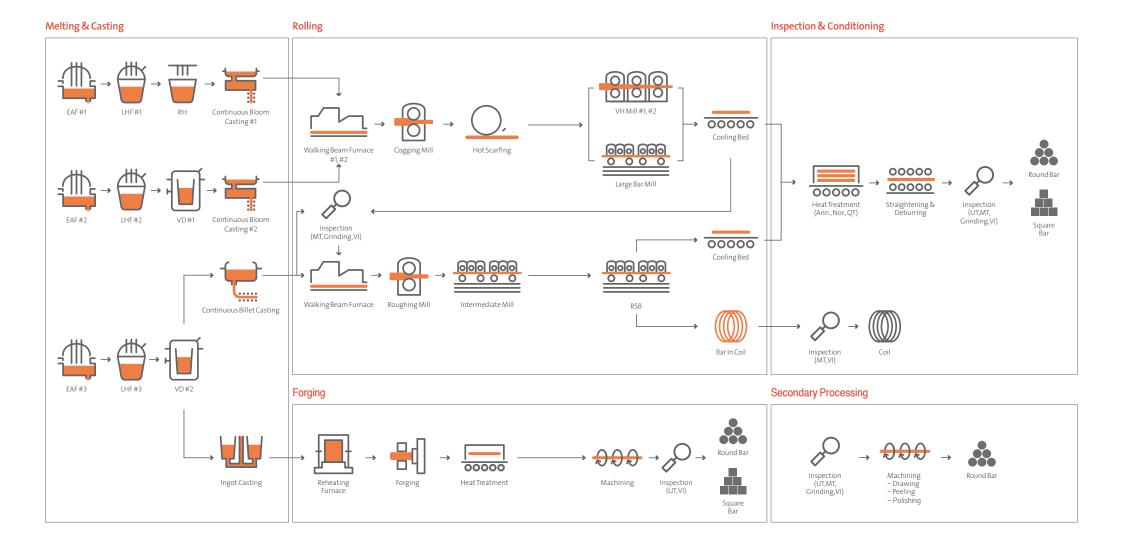


With state-of-art facilities, world-class technologies and craftsmanship, SeAH Besteel supplies more than high-quality products and services, we provide better solutions. Established in 1997, SeAH Besteel provides exceptionally functional high-grade special steels. Equipped with a highly automated-integration manufacturing process and continuous operation excellence initiatives, we aim at being one of the most research-intensive steel-making companies.

Venturing away from the status-quo, we are a global leading special steel supplier providing better solutions and value to customers, through our price and quality competitiveness.

## Manufacturing Process (Special Steels)

SeAH's optimized and continuously-modernized manufacturing process enables us to make unrivalled offers to satisfy customer needs and requirements, and to maintain our leading position in a highly competitive market.



# Material / Application

Business Area	Classification		Steel Specifications Offered (steel product names)	
		Crank Shaft	SCM440H, S40MS1V, 44MNSIVS6	
	Engine	Connecting Rod	S36CVS2,S70CVS1	
		Cam Shaft	SUM43,SM45C,50CRMO4	
Automobile		Piston	38MNSIVS5	
		Pully	SM10C	
	Transmission	Gear	SCR420HB, SCM920HVSI, SCR420H1	
	Iransmission	Shaft	SCM920HVSI, SCR420HB, SCR420H	
	Chassis	Outer Race	UC1, S53CCF, S53CRB	
		Inner Race, Spider	SCR420H,SCM420H	
		Tripod Housing	XC45, XC55, XC48, S53CCF	
		Drive Shaft	38B3,SAE10B38 (M2)	
		Axle Shaft	SAE1038R, SAE51B35, AISI1541	
		Spindle	1524HMOD,SAE1043M	
		Wheel Hub	S40CV,S55CR	
		Knuckle	SCM440H, SCR440H	
		Rack Bar	S45CS1-QD, SAE1141M	
		Tie Rod	SM43C	
		Pinion Gear	SAE1552MOD	
	Undercarriage, Chassis	Link	15B36M (1), SAE10B35M, SMNB3H-1	
		Cylinder Rod	SM45C (S), SBNH75	
		Pin	S43BCH,SCR440B	
	Engine, Transmission	Crank Shaft	SCR440	
Construction,	Breaker	Cylinder, Head	SCM415 (420)	
Heavy Equipment		Through Bolt	SNCM630,SNCM439	
		Chisel	SCM440,AE4140	
		Piston	SNCM26V,SNCM439	
	Construction Material	Tunnel Girder		
	Structural Part	Stay Bolt, Stud Bolt	SCM440,SNCM439	
Shipbuilding		Mooring Chain	R4 (S), R3S, R5	
	Chain	Anchor Chain	SBC690,R3,SBC490	
	Automobile	Inner, Outer Race	STB2,100CRMNSI6-4 (A),SCR420HQ	
Bearing	Heavy Equipment	Bearing Hub	S55CR, GRADESS, GRADE70	
bearing		bearing ridb		
	Industrial Machines	Cam Lobe	100CR6	
	General Machinery	Gear	42CRMO4,18CRNIMO7-6+FP,SM45C	
		Shaft	SM45C,34CRNIMO6	
Industrial Machines		Bolt, Nut	SM45C, SAE10B30	
	Injection Molding Machine	Screw	SALCRMO1	
	Drilling Tool	Drill Collar Bar, Oil Tool	4145M,4145H MOD,AISI4145 MOD	
Petrochemistry		ToolJoint	4137M (A)	
	Oil Transfer Equipment	Seamless Pipe	J55,X52,A106 B&C	
	Automobile	LeafSpring	SUP9 (D,A)	
Spring	Heavy Equipment	Coil Spring	SUP11D, XK92M48S	
	Industrial Machines	Torsion Bar	SAE9254	
Home Appliances		Shaft	SUM32F,SM45C	

# **Manufacturing Capacity**

Category		Surface	Size (mm) From	ТО	Length (m) From	то	Heat Treatment	Note
Rolled Bar	Round Bar	BS	19.0	350.0	4.5	7.2	LA FA	Produced sizes and lengths may differ for each process. Possible non-conditioning production up to 14.5m of over $\Phi$ 200
		PM	20.0	120.0	4.0	6.8	SA — NOR	
		RT	120.0	155.0	4.5	8.0	SRA FPA	RT applied to forgings of over Ф155mm
		CD	20.0	50.8	4.0	6.9	QT	
	Square Bar		83.0	250.0	4.5	7.2	_	
	Wire Rod		16.0	38.0				
Forged Bar	Round Bar	BS	150.0	850.0		8.0	LA	
		RT	130.0	830.0		8.0	FA SA	
	Square Bar		130.0	750.0		8.0	NOR SRA QT	
	Shape Forged Bar					8.0		Quotation upon request
Semi- Finished	Bloom		510 × 390		3.5	5.5		
	Ingot		3.3 ton	23.6 ton			SRA	
	Square Billet		160.0	180.0	8.0	12.0	— LA FA	Non-Conditioning 4.5–11.0m
	Round Billet		150.0	210.0	6.6	12.0		Minimum length of 9.5m for Φ170 or less
Die forgi	Die forging (cold)		Outer Rac	e / Tripod Hou	ısing			

Rolled



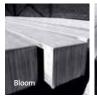


Forged





Semi-Finished









### **Main Facilities**

#### **Electric Arc Furnace**

**Equipment No** 4ea

Type Eccentric Bottom Tapping

(Clean steel production)

Transformer Capacity 65MVA

Electrode Size 22inch (550mm)

Melting Capacity 100ton (3), 150ton (1)



4ea **Equipment No** 

Type Ruhrstahl Heraeus, Vacuum Degassing

Degree of Vacuum 0.8mbar Vacuum Time 10~25min

**Melting Capacity** 100ton (3), 150ton (1)





#### **Continuous Bloom Casting**

**Equipment No** 2ea

Curved Type Type □ 390 x 510mm Bloom Size 3,500 ~ 5,600mm Bloom Length **Casting Speed** 0.4~0.6m/min

Strand 2 strands



Equipment No 1ea

Type CurvedType Billet Size □ 160 & 180mm Billet Length 6,000~12,000mm

Casting Speed 1.4~2.8m/min Strand 3 strands

Continuous Billet Casting 2

Equipment No 1ea

Type Curved Type □ 160 & 180mm Billet Size

Continuous Billet Casting 2

ø150~210mm

Billet Length 6,000~12,000mm Casting Speed 1.4 ~ 2.8 m/min

Strand 5 strands





### **Products**

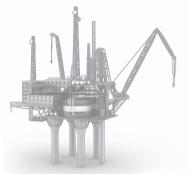
SeAH is a leading supplier of the highest quality steel products that are engineered for operational reliability in various industries, including automotive, industrial machinery and energy. The objective of SeAH's on-going product and process innovation initiative is to strengthen our competitiveness in the high-purity steel market. To that end, we were a pioneer in introducing state-of-art manufacturing facilities in the Koreasteel industry with regard to, for example, RH refining and large continuous bloom casters.

#### **Automotive parts**

#### Construction / Industrial machinery Energy



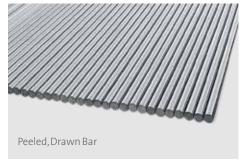












## **Certificates**

#### System







Quality Management System ISO 9001:2015



Environment Management System ISO 14001



Energy Management System Health and Safety Management System ISO 50001 OHSAS 18001

OHSAS 18001



Health and Safety Management System KOSHA18001

#### Classification







NK Ingots & Forgings Rolled Bars



Lloyd's

Ingots & Bloom & Billet

Rolled Bars

Forgings



**DNV GL** Ingots & Bloom Rolled Bars Forgings



RINA Ingots & Bloom Rolled Bars Forgings



ABS Ingots & Bloom & Billet Rolled Bars Forgings



BV Ingots & Bloom & Billet Rolled Bars Forgings



RS Ingots & Forgings Rolled Bars



CCS Ingots Forgings

#### **Product**



KS KS D 3503/3752/3867 (Gunsan) KS D 3752/3867 (Changnyeong)



JIS

JISG

3101/4052/4501/4503

(Gunsan)

JIS G 4501/4503

(Changnyeong)





PED

Forgings,

Forged Bars and

Rolled Bar



ASME

N, N3, NPT Stamps





## KEPIC

As a Material organization Manufacturing and Supplying of Forging

#### BIS Hot rolled bars Carbon steel round bars

## **SěAH** Besteel

#### Changnyeong Plant