

Capabilities within Scana Industriers Steel Works in Sweden and Norway

Scana Steel Björneborg AB

Scana Steel Söderfors AB

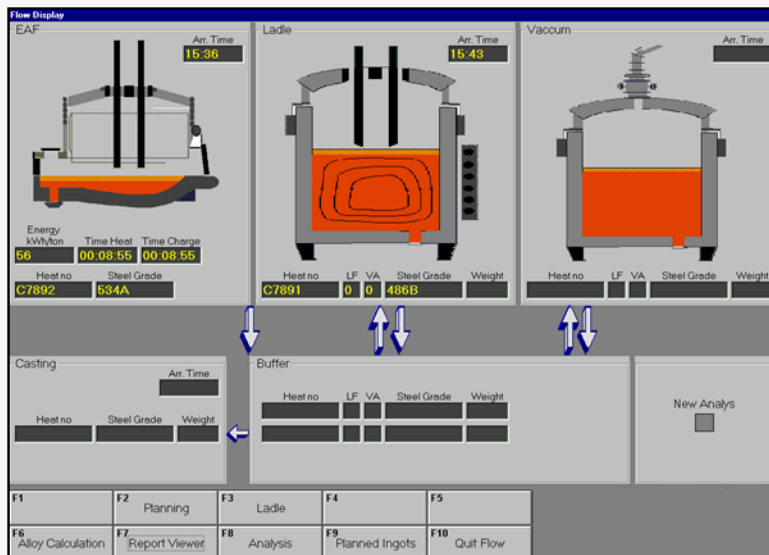
Scana Steel Booforge AB

Scana Steel Stavanger AS

Steel Plant

Scana Steel Björneborg AB

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- Annual Production Capacity: 95 000 ton ingots/year
- Furnace capacity 60 ton
- 100% Uphill teeming
- 4 - 75 ton ingot
- 40 different mould sizes

Forging Shop

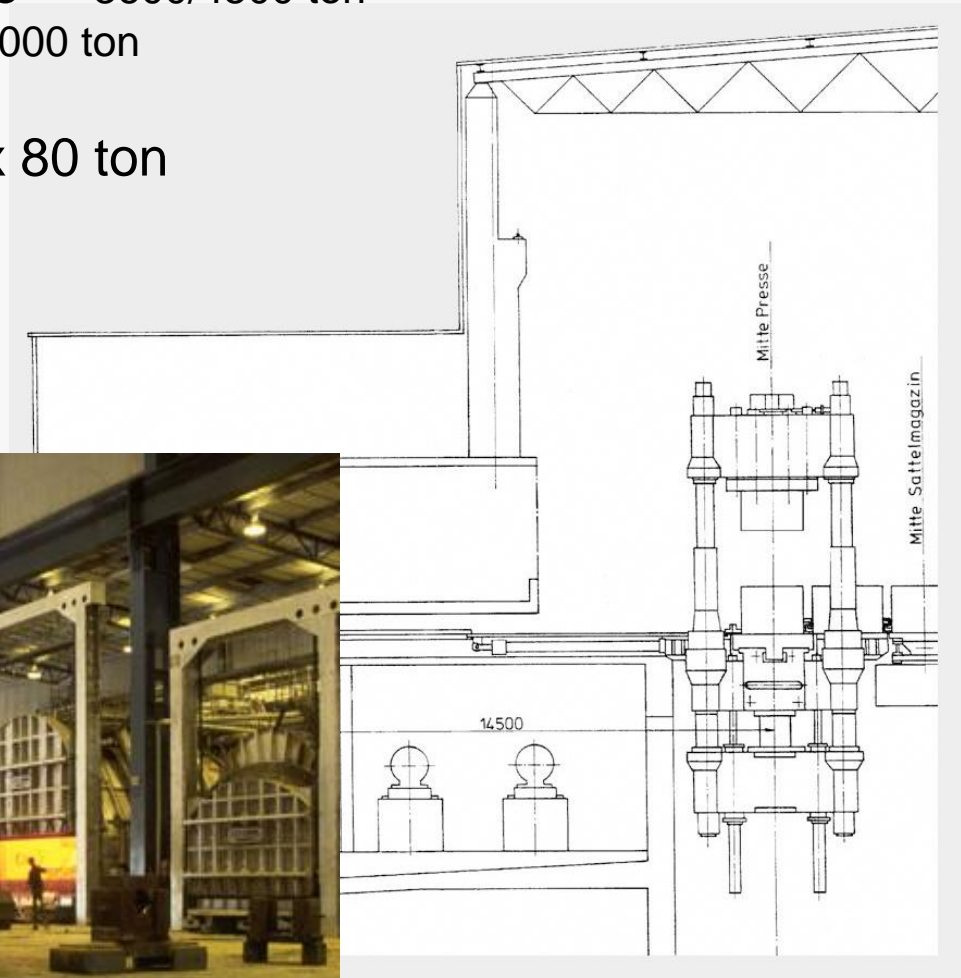
Scana Steel Björneborg AB

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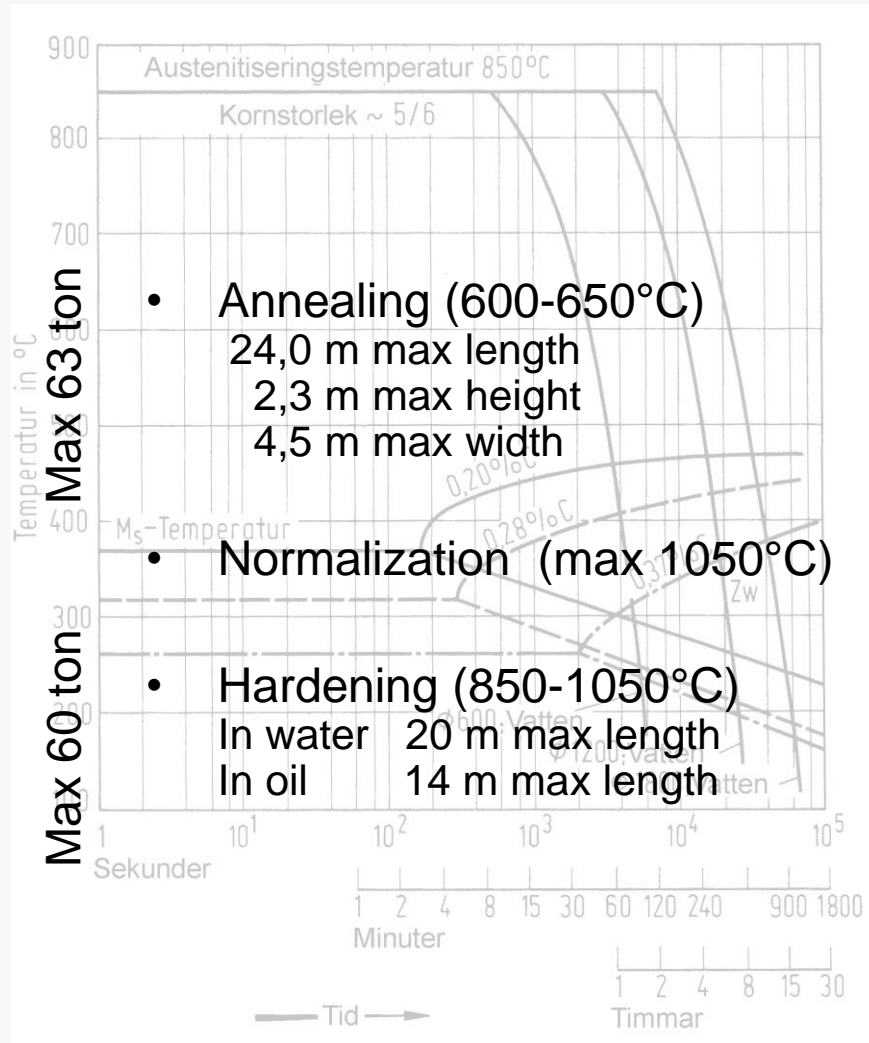
Forging press; pull down type 3600/4500 ton
forging/upsetting. Capacity: 50 - 60 000 ton

Dimensions and weight: Max 80 ton

24,0 m max length
2,5 m max height
2,5 m max width
3,1 m (diameter) for rings



Heat Treatment

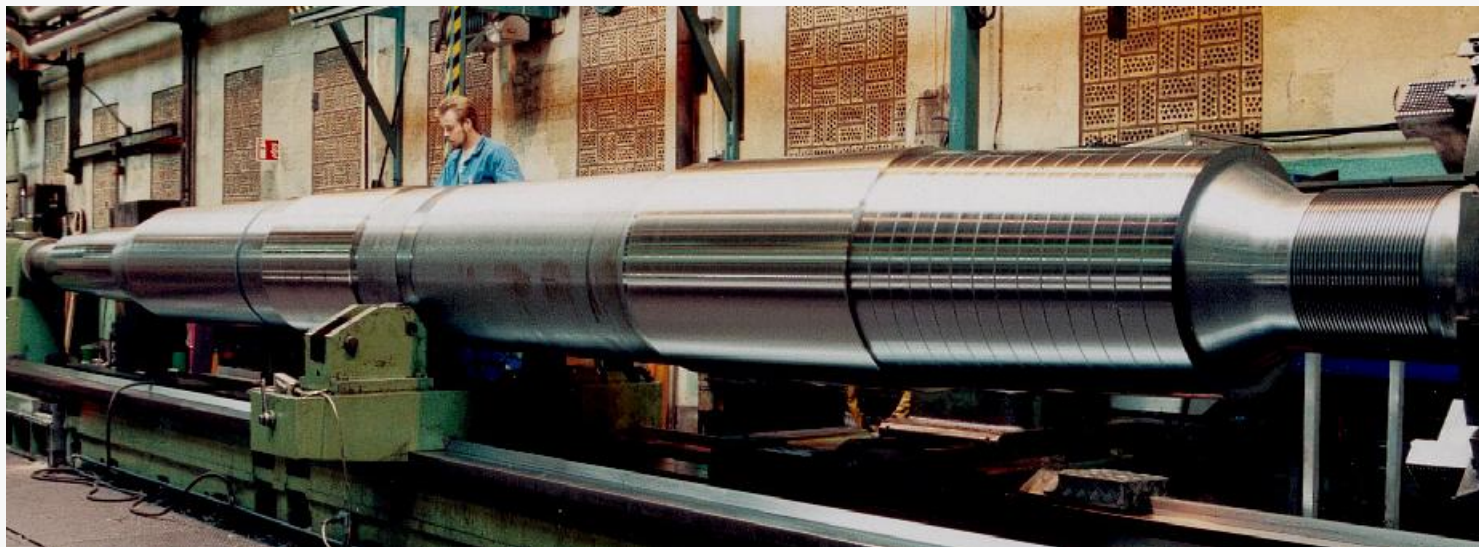


Machine Shop

Scana Steel Björneborg AB

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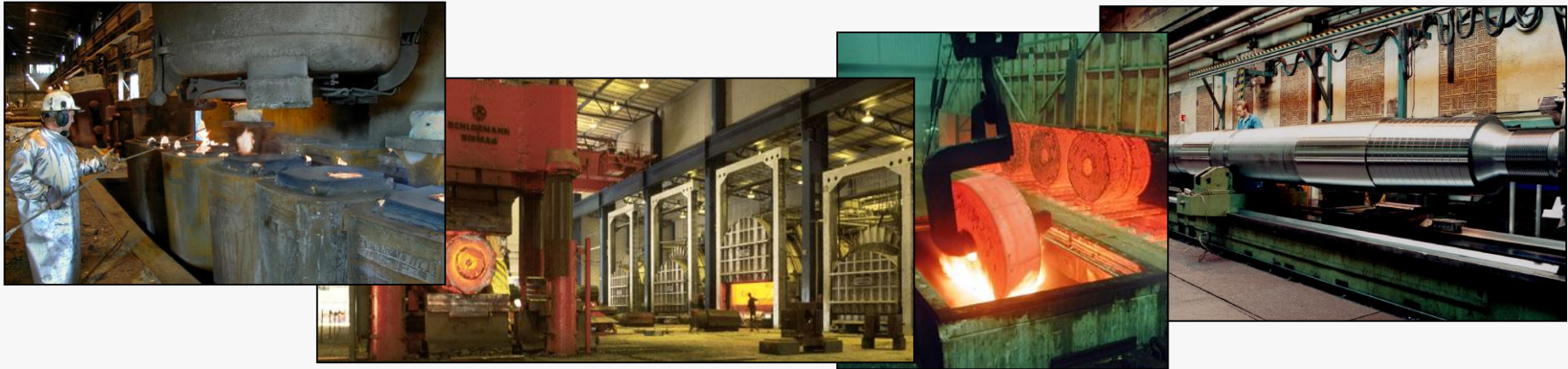
- Heavy duty lathes for rough machining
 - Max. Length 25 000 mm
 - Max. Diameter 2 250 mm
 - Max. Weight 63 ton
- Vertical lathes for milling
 - Max. Diameter 2 600 mm
 - Max. Weight 16 ton
- Lathes for finish machining
- Boring, max 40 t
- Band saws, 50 t 1460*1360 mm



Production Flow

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Steelwork



- Arc furnace
- Ladle furnace
- Vacuum tank degassing
- Teeming:
40 mould sizes,
4000 – 75 000 kg ingot's
- Production capacity approx
95 000 t ingot's/year

Forging shop



- Ingot heating in
boogie type furnace
up to 1150 -1250°C
- Forging press with
Integrated manipulator
- Equipment for grinding
and gas cutting

Heat treatment



- 11 furnaces
- Hydrogen annealing
- Normalizing
- Annealing
- Quenching water/oil
- Stress relieving

Machine Shop

- Lathes for rough &
finish machining
- Vertical Lathes
- Milling Machines
- Band saws
- Boring machine

Forge

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- ***Oil fired pusher type furnace***
- ***Gas fired batch furnace***
- ***1000 tonne hydraulic press***
- ***4 tonne pneumatic hammer***
- ***6 tonne and 5 tonne manipulator***
- ***Grinding facility***

FORGING SIZES

Round : 85-500 mm diameter

Flanges: 900 mm

Flat : 100-675 mm width

35-200 mm thickness

Length: 8 m

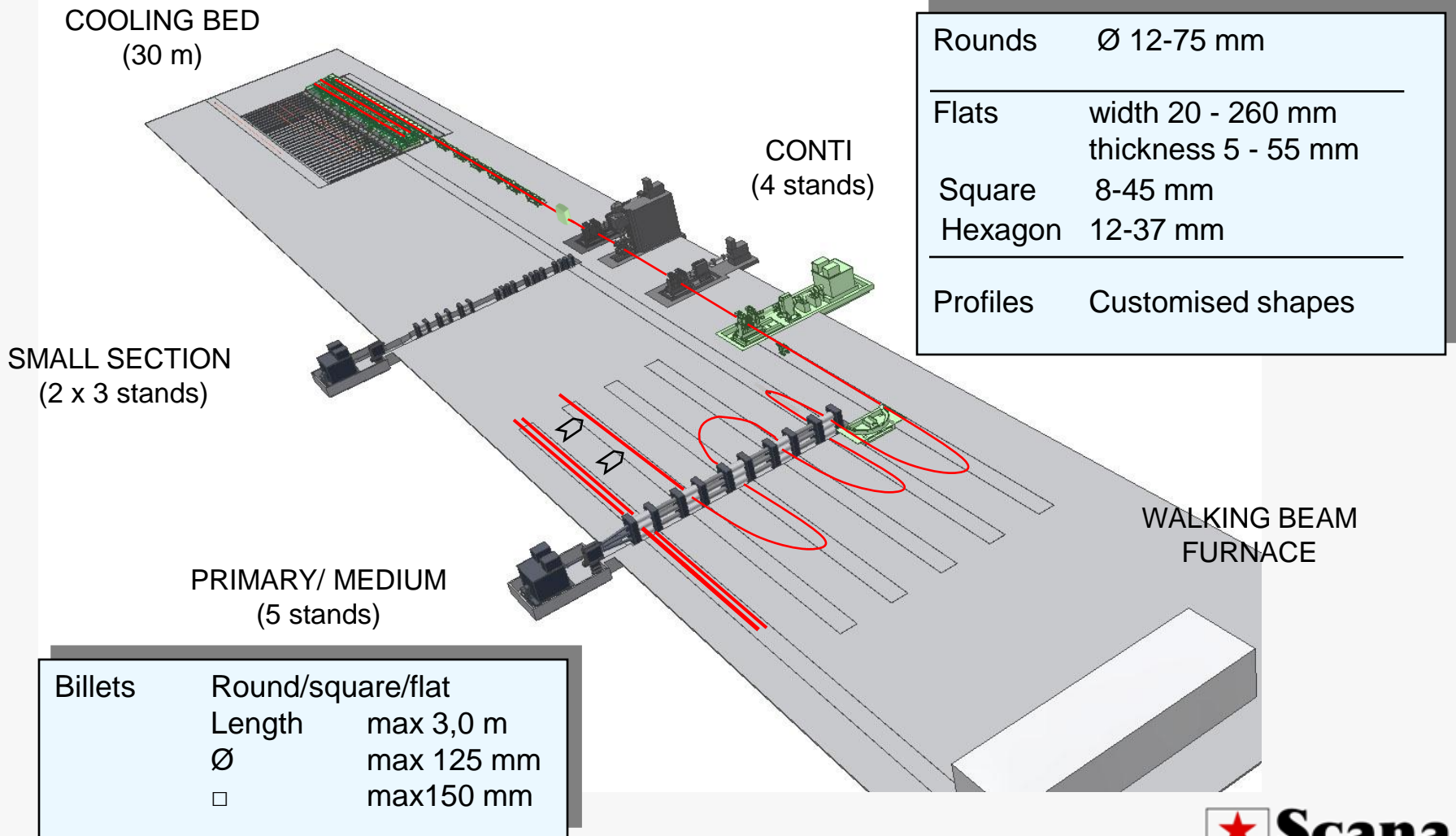
Ingot : max. 6 tonne



Rolling Mill

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Heat Treatment

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**Qualified for heat treatment
according to ISO 10423:1994-E
and NORSOK M-650**

- *10 electric furnaces*
- *Max. 5 tonne per charge*
- *Max. length 6 m*
- *Max. temperature 1120°C*
- *Protective gas Nitrogen/Mono*

- *Gas fired batch furnace*
- *Max. 25 tonne per charge*
- *Max. length 8 m*

- *Solution heat treatment*
- *Soft annealing*
- *Hardening*
- *Tempering*
- *Quenching*

Finishing

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- *Straightening*
- *Polishing*
- *Rough turning and peeling*
- *Fine turning*
- *Milling*
- *Sawing and cutting*
- *Ultrasonic testing*
- *Mechanical testing*
- *Metallurgical examination*
- *Magnetic powder testing*
- *X-ray defect detection*


Forging

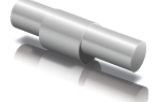
Equipment consists of 4-ton, 2-ton och 750 kg hammers.
 The product range includes rings, discs, washers with pins, stub axles, shafts with flanges, eccentric shafts, round rods and square and flat rods.
 The components are delivered as forged, rough machined or finished machined.

Product groups


Axles


Shafts with flanges	
MODEL	SPECIFICATIONS
	D flange max: 350 mm D shaft max: 300 mm L max: 5000 mm Weight max: 3000 kg


Stub axles	
MODEL	SPECIFICATIONS
	D flange max: 800 mm D shaft max: 190 mm H max: 1500 mm Weight max: 400 kg

Eccentric shafts	
MODEL	SPECIFICATIONS
	D eccentricity max: 350 mm D shaft max: 200 mm L max: 5000 mm Weight max: 3000 kg

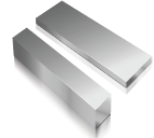
Round products


Discs	
MODEL	SPECIFICATIONS
	Dy max: 1100 mm T min: 50 mm Weight max: 1000 kg

Rings	
MODEL	SPECIFICATIONS
	Dy max: 1100 mm Di max: 900 mm H max: 420 mm Weight max: 450 kg

Washers with pin	
MODEL	SPECIFICATIONS
	Dy max: 600 mm Dy max (pin): 500 mm H max: 500 mm Weight max: 700 kg

Rods

Square and flat rods	
MODEL	SPECIFICATIONS
	DimWidth max: 480 mm L max: 7000 mm Weight max: 3000 kg

Round rods	
MODEL	SPECIFICATIONS
	D max: 350 mm L max: 7000 mm Weight max: 3000 kg

The above data is intended as a guideline

Heat Treatment

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Common heat-treatment methods performed are hardening, normalisation, tempering, solution heat treatment, ageing, stress relieving, step annealing, soft annealing, regeneration annealing and quench annealing. Slagging and ultrasonic sampling is used. Quenching is performed in oil, water or a polymer bath. Unique facility for straightening heavy castings. Hot straightening can be performed for minimum residual tension.

Equipement

- 20 furnaces, batch and vaccum type
- Sizes up to 12x4x2m and max weight 60 ton
- Quenching in water, oil or polymer
- Straightening presses, 1200 ton and 250 ton max work piece 5x3x3 m



Machine shop

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Typical used for fork lift truck components

- Welding of beams and large pieces
- Straightening of beams
- Milling
- Turning
- Testing
- Sand blasting and painting
- Assembly



Melting Shop

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- 2 Herault Electric Arc Furnaces 7-15 tons
- AOD Converter 10-17 tons
- Affival; Cored wire in-ladle treatment system
- Scrap Steel, alloying elements (Cr, Ni, Mo, Mn, Si, W, V, Ti, Nb, B, etc.)

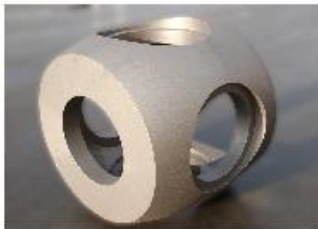


Foundry

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Cast products

In-house: Pattern shop, moulding and melting shops, maintenance welding, heat treatment, machining, NDE/QC dept.
Patterns: Made of wood or plastic
Mould system: Chemical bounded Olivin sand and Sodium Silicate Ester
Unit weight: 500-10000 kg



Forging Shop

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- 16 MN hydraulic press

Pre-heat and solution
annealing furnaces with
quenching bath

Round \varnothing 150-450 mm
Length max 7000 mm
Weight max 4000 kg

Flat 200-600 mm
Length max 7000 mm
Weight max 5000 kg

Square
Width max 450 mm
Length max 7000 mm
Weight max 5000 kg
DIN 7527

Hollow bars
 \varnothing 130-450
wall thickness min 10 mm
length max 7000 mm



Machine Shop

Scana Steel Stavanger AS

For forged and cast steel products

- Rough machining
- Finish machining
- Lathes
 - centre and copying
 - 7000 x 1230/ 870mm
- Vertical mills
 - $\varnothing 3200$ x 2000 mm
- Horizontal drill and turning mill:
 - Table 1800 x 2000 mm
 - Movement XYZ
 - 5600 x 2500 x 1025 mm

