



High-Quality Special Alloys
Made in Germany



Saarschmiede GmbH Freiformschmiede manufactures forgings for the highest demands in a particularly broad range and in an abundance of different qualities, heat-treatment conditions as well as machining stages. As we can melt our alloys ourselves and have comprehensive possibilities for processing at our disposal, we are able to fulfill each customer's requirements individually.

We make use of the advantage of the experience we have gained from many decades of development work, and

thus offer our customers a high potential for innovation and participation in international research projects, always striving to contribute to the development of forward-looking technologies.

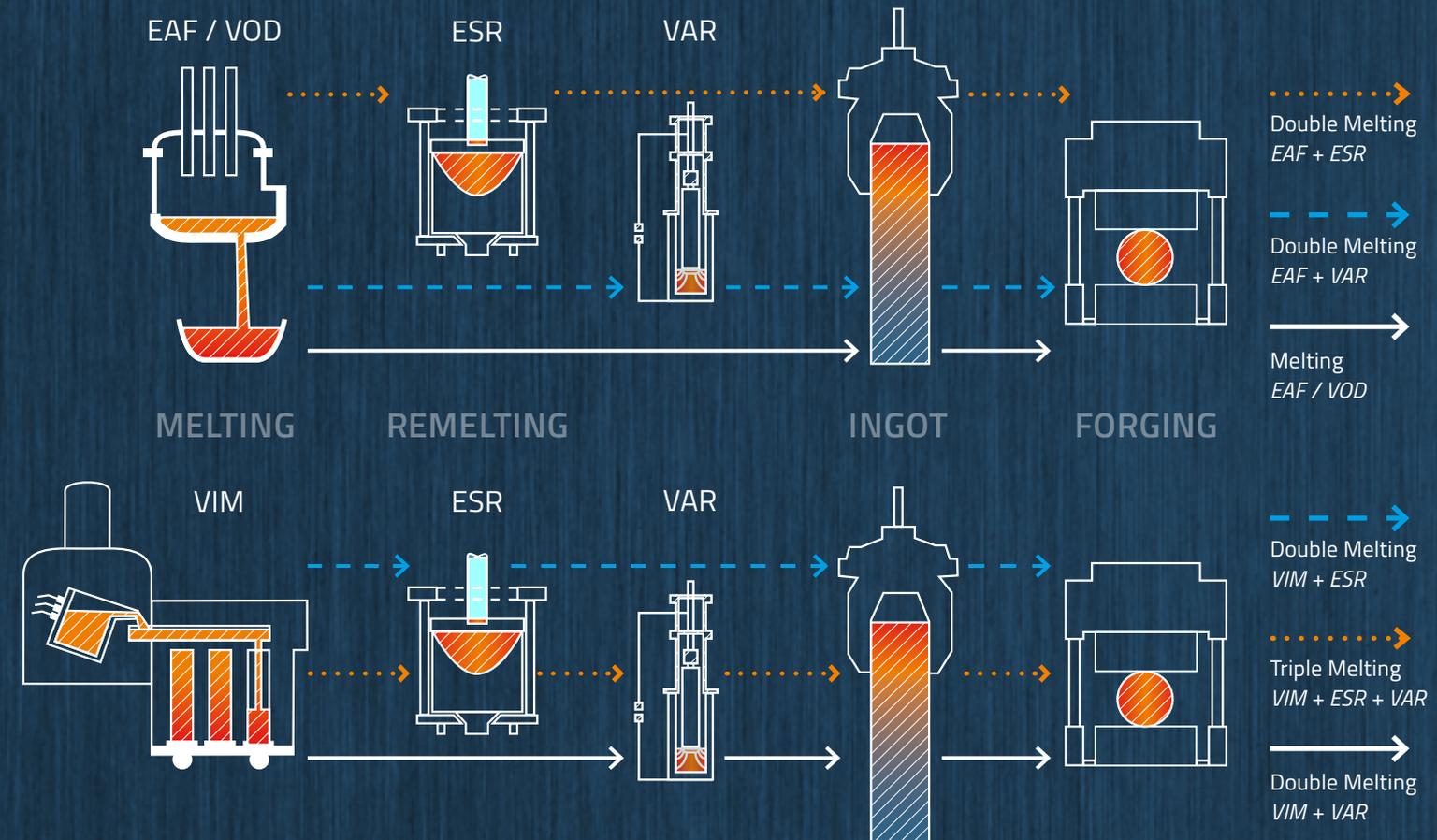
Saarschmiede supplies a wide range of markets, including aerospace, nuclear, chemical and petrochemical, offshore, oil and gas, power generation, marine applications, and many others.

Our Daily Routine: Melting and Forging

Saarschmiede has the complete production line at its disposal – from melting, forging and heat treatment through to machining on CNC-controlled equipment.

We thus have the ideal basis for controlled and reproducible quality, starting from the raw material and ending with the finished product.

The broad range of facilities and the processing techniques for producing various steel grades are outstanding. Additionally, we are constantly investing in our facilities, guaranteeing our customers state-of-the-art technology. VIM, VAR and ESR qualities as well as triple melting qualities form the basis of our cutting edge materials.



Our Melting Facilities

ELECTRO-SLAG REMELTING FACILITIES (ESR)

Ingot format sliding crucible	max. ϕ 2,400 mm
	min. ϕ 1,000 mm
Ingot format stationary crucible	max. ϕ 1,300 mm
	min. sq. 350 mm
Ingot weight	max. 220 t
Year of construction / modernization	2010

ELECTRIC ARC FURNACE (EAF)

Primary extraction	approx. 100,000 m ³ /h
Secondary extraction	approx. 60,000 m ³ /h
Ingot weight max.	230 t

VACUUM INDUCTION FURNACE (VIM)

Tap weight	8 t or 16 t (2 crucibles)
Melting performance	max. 3,000 kWh
Pressure	< 0.05 mbar
Year of construction	2001

VACUUM ARC REMELTING FURNACES (VAR)

VL 2	max. ϕ 600 mm
Remelting weight	max. 5.5 t
Year of construction	1992
Modernization of the steering	2009
VL 3	max. ϕ 1,275 mm
Remelting weight	max. 30 t
Year of construction	2008

Special Facilities for Special Alloys

Today, Saarschmiede is one of the world's top suppliers of stainless steels and special alloys, such as nickel and cobalt-based alloys. From ingots weighing between 2 t and exceeding even 100 t, we produce any dimension from 200 mm up to workpieces of impressive dimensions processed to the narrowest tolerances.

In addition to our current product line we can respond flexibly to all customer inquiries. Furthermore, the large variety of services we offer is supplemented by commissioned work. The broad range of facilities and the various possibilities of our vacuum metallurgy allow us to manufacture materials that meet the highest demands.

FORMING FACILITIES		85-MN PRESS	120-MN PRESS
Type of construction		4 column underfloor press	4 column underfloor press
Drive system		oil-hydraulic	oil-hydraulic
Operating pressure max.		400 bar	420 bar
Press force stretching max.		75 MN	100 MN
Press force upsetting max.		85 MN	120 MN
Stroke		2,100 mm	3,000 mm
Clear opening	Height	6,000 mm	7,000 mm
	Width	3,400 mm	4,500 mm
Number of strokes		40 strokes/min	40 strokes/min
Furnaces max.		300 t	400 t
Manipulator		80 mt / 250 mt	200 mt / 500 mt and 100 mt / 250 mt
Crane capacity max.		240 t	300 t
Year of construction		2003	2010



Special Materials for Special Purposes

The various materials are processed to make bar material, discs, rings, shafts, hollow parts and pre-machined parts of almost any shape. Our nickel and cobalt-based workpieces have to withstand particularly high temperatures and show a high degree of stability. Our stainless and special steels

are used under adverse conditions, which are characterized by high humidity, corrosion or strong abrasion, which is why special demands are placed on the resistance of the steels. Due to the possibility of melting our own material, we also offer ingots and billets.

SUPER ALLOYS AND SPECIAL MATERIALS

GRADE	WDL (DIN)	AIR (AFNOR)	AMS (UNS)	DTD (BS)	DESIGNATION
BEARING STEELS					
1.2581.02	X20WCr10-3	E-Z20WC10			RBD
1.3552	80MoCrV42-16	E-80DCV40	6491		M50
1.3590			6278, K91231		M50NiL
SOFT MARTENSITIC STEELS					
1.4313	X5CrNiMo13-4		S41500		F6NM
1.4057	X17CrNi16-2	Z15CN16-02	S43100	431S29	
1.4306	X2CrNi19-11	Z3CN19-11	S30403	304S11	
1.4454			S21904		FXM-11
1.4006	X12Cr13	Z10C13/Z13C13	S41000	410S21	
DUPLEX STEELS					
1.4462	X2CrNiMoN22-5-3	Z3CND 22-05Az	S31803	318S13	F51
1.4410	X2CrNiMoN25-7-4	Z3CND25.07Az	S32750		F53
PRECIPITATION-HARDENING STEELS (PH)					
1.4534	X3CrNiMoAl13-8-2	Z3CNDA13-08	5629, S13800		PH13-8Mo
1.4545	X5CrNiCu15-5	Z5CNU15	5659, S15500		15-5PH
1.4548	X5CrNiCuNb17-4-4	Z5CNU17	5622, 5643, S17400		17-4PH
1.4594	X5CrNiMoCuNb14-5		S45000	460S52	14-5PH
CREEP-RESISTANT STEELS					
1.4911	X8CrCoNiMo10-6	Z10CKD10		S152	FV535
1.4914			5616	S150	Greek Ascology
1.4939	X12CrNiMo12	Z12CNDV12	5719, S64152	S151	Jethete M152
1.4944 / 1.4980	X6NiCrTiMoV26-15	E-Z6NCT25	5732, S66286	HR51	A286
MARAGING STEELS					
1.6359	X2NiCoMo18-8-5	E-Z2NKD18	6512, 6520	5212, 5232	Grade 250
1.6354	X2NiCoMo18-9-5	E-Z2NKD18-9	6514, 6521		Grade 300
1.6356	X2NiCoMoTi18-12-4				Grade 350
HIGH-STRENGTH STEELS					
1.6747.06		35NCD16		Z5146	
1.6944.01			6417, 6419, K44220	S155	300M
1.6944.02			6431, K24728		D6AC
CREEP-RESISTANT ALLOYS					
2.4654	NiCr20Co13Mo4Ti3Al	NC20K14	5704, 5706, 5708, 5709 N07001		Waspaloy
2.4663	NiCr23Co12Mo		N06617		617
2.4668	NiCr19Fe19Nb5Mo3	NC19FeNb	5662, 5663, N07718	HR8	718
2.4669	NiCr15Fe7TiAl	NC15FeTNbA	5669, N07750		X750
2.4816	NiCr15Fe	NC16FeT	5665, N06600		600
2.4856	NiCr22Mo9Nb	NC22DNb	5599, 5666, N06625	NA21	625
2.4973	NiCr19CoMo	NC20KDTA	5712, 5713, N07041		Rene 41
2.4989	NCoCr20Ni20W	KCN20DNbW	5765, R30816		S816



We Know Quality – Down to Every Little Detail

For more than 100 years Saarschmiede GmbH Freiformschmiede has been successfully meeting demanding challenges associated with high-quality forgings for various applications. Our technical expertise enables us to manufacture innovative products economically and conserve resources.

In order to constantly improve its processes and products Saarschmiede introduced a quality management system early on, which has gradually been supplemented by a safety

management as well as an environmental and energy management system.

Our current integrated management system (IMS) is certified by independent external bodies, which regularly review and confirm our compliance with the standards ISO 9001, ISO 14001 and ISO 50001. Furthermore, there are customer and industry-specific approvals, confirming the conformity of our IMS with the relevant requirements.



ABS



DNV



KTA 1401



EN 9100



DIN EN ISO 14001



DIN EN ISO 9001

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You can obtain further information at
www.saarschmiede.com

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