POWER GENERATION

MASTERING THE SCIENCE OF METALS

FOMAS GROUP

THE GROUP

FOMAS Group is a trusted global partner and industry leader in open die forgings, seamless rolled rings, and metal powders. Since 1956, the Group has combined advanced metallurgy, innovation, and precision engineering to deliver high-performance, sustainable solutions — supported by a strong global footprint.

Our purpose is to enable **sustainable energy, reliable power and limitless motion** by moving the needle in mastering the science of metals with a responsible approach. The Group's Mission is to play to win with **innovation**, responsiveness and a passionate **commitment to long-term partnerships**. Our vision for the future is to be a multicultural, **people-centric** organization leading our core businesses by leveraging cutting-edge competencies in the science of metals and embracing **digital transformation**. Everything we do is underpinned by our core values of proactivity, integrity, meritocracy, accountability, reliability, transparency & trust.

1,400
EMPLOYEES

The Group has around 1,400 employees all around the world. Working with us signifies entering a team which is focused on continuous evolution, a company that measures its success in the achievement of **excellence** at each step of function and process. The attention dedicated by our Group to safeguarding the **health and safety** of its employees and to improving the environmental performance of its activities represents a key reference to the continual improvement of business reliability. We believe this is essential to ensure the long-term health of our business.
FOMAS Group promotes safety and environmental protection in every aspect of its production cycle. This mindset is the foundation on which the company builds the continuous improvement of environmental, safety and health conditions in its sites worldwide. An integrated Group **HSE management system** is the means through which this goal is pursued. In a continuous effort to reduce its impacts, FOMAS Group sustainability process adopts also **energy management best practices**. An example is the adoption of certified energy management systems and best practice sharing between the sites.

Our Core values: proactivity, integrity, meritocracy, accountability, reliability, transparency & trust.

	EUROPE		ASIA		NORTH AMERICA
COUNTRY	ITALY	FRANCE	INDIA	CHINA	USA
PRODUCTION	• FORGINGS • RINGS • METAL POWDERS	• RINGS	• FORGINGS • RINGS	• RINGS	• RINGS
PLANT	• FOMAS • ASFO • HOT ROLL • MIMETE	• LA FOULERIE	• BAY-FORGE	• FOMAS DALIAN	• FOMAS USA

MARKETS
POWER GENERATION powergen@fomasgroup.com
AERONAUTIC, SPACE & DEFENCE aerospace@fomasgroup.com
OIL & GAS oilandgas@fomasgroup.com
INDUSTRIAL industrial@fomasgroup.com

POWER GENERATION SOLUTIONS

FORGINGS, ROLLED RINGS, AND METAL POWDERS

FOMAS Group manufactures open die forgings, seamless rolled rings, and metal powders, for the following Power Generation applications:

- Nuclear
- Steam and Gas
- Aeroderivative
- Geothermal
- Hydroelectric
- Wind

Our decades of experience in the manufacturing of industrial components have made us an essential partner to our clients: our network of **8 production sites**, strategically located across the globe (from America to Asia), allows the delivery of high integrity forgings to all our customers' worldwide locations with excellent lead times.

We share know-how within FOMAS Group, optimizing processes and materials, minimizing cost, and maximizing product quality. Our added value is to provide turnkey solutions, from forging and ring rolling to the finished machine part.

Starting from a thorough analysis of the customer's design, then engineering the production of contour forgings close to net shape up to the finished part. All the required machining processes such as milling, lathe-machining, drilling, sewing and others can be carried out within our manufacturing units.

FORGINGS AND ROLLED RINGS

FORGINGS PRODUCTION RANGES

EUROPE
Max. diameter: 5,500 mm
Max. length: 18,000 mm
Max. ingot: 125-ton ESR (equivalent to 170 tons conventional ingot)
Max. shipped weight: 100-ton

INDIA
Max. diameter: 2,700 mm
Max. length: 6,500 mm
Max. weight (ingot): 30,000 kg

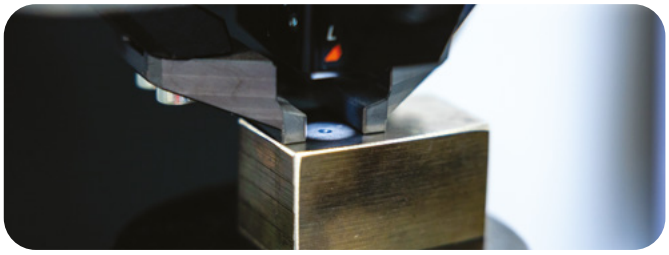
RINGS PRODUCTION RANGES

	WEIGHT		D ext		HEIGHT	
	Kg	Pounds (lb)	mm	inches	mm	inches
EUROPE	1-15,000	2.2 – 33,000	100-7,000[1]	3.9 – 275	25-1,250	0.9 – 49
USA	6-1,306	13-2,879	191-3,048	7.5-120	35-508	1.4-20
CHINA	2-2,500	4.4-5,511.5	160-2,700	6-106	30-750	1-29.5
INDIA[2]	20,000[3]	44,100	5,500	216	1,000	39

(1) 2,500 max / 7,000 max depending on rolling mill
(2) Only max values reported. Minimum values depending on material
(3) Up to 5,500 diameter mm

To guarantee the utmost quality of our forged and rolled products, we process **highly resistant steels**, especially when it comes to tensile and breaking tests. Such materials include carbon manganese steels, conventional and stabilized austenitic and super austenitic steels, as well as high-manganese and high-aluminum steel alloys. All the above have been selected for their **excellent performance** under critical conditions.

Thanks to our experience and expertise, we can offer our support to the **joint development** of new bespoke components, by working together with our customers to achieve the best solution. Our goal is to satisfy the technical specifications requested, while guaranteeing swift and reliable delivery times.



NUCLEAR

FOMAS has successfully provided "High Integrity Open Die Forgings" to **Nuclear Power Plants** for the past 50 years. In the early 70's FOMAS delivered the first main inlet and outlet nozzles steel type ASME SA 508 Class 2 forgings to Breda Termomeccanica (first ever ASME N-Stamp in Europe) for the 850 MW BWR Caorso Power Station. Among our recognitions, FOMAS remains the oldest and most experienced European **Material Organization** with uninterrupted ASME **certification** backing up to the late 1970's.

Today we supply forgings in accordance with:

- ASME
- RCCM
- TÜV
- KTA
- ISO EN
- BS
- GOST
- JAW
- NNSA–HAF604

Forgings and rings for:

- 1st to 4th generation primary/secondary circuit
- Nuclear waste management
- Nuclear hot fusion – ITER project

Typical components

- Steam Generator
  - Primary Heads
  - Main Tubesheets
  - Feedwater Nozzles
- Valve body & auxiliary components
- Inlet - Outlet Super Heater Nozzles
- Manway nozzles
- Sever Accident Safety Valve Nozzles Safe End
- Primary Nozzle Dam Rings
- Core Support Components
- Primary Feedwater Pump Components
- Spray nozzle Transition Rings
- Boron Control System Motor Cases
- Low Pressure Steam Rotors
- Cask

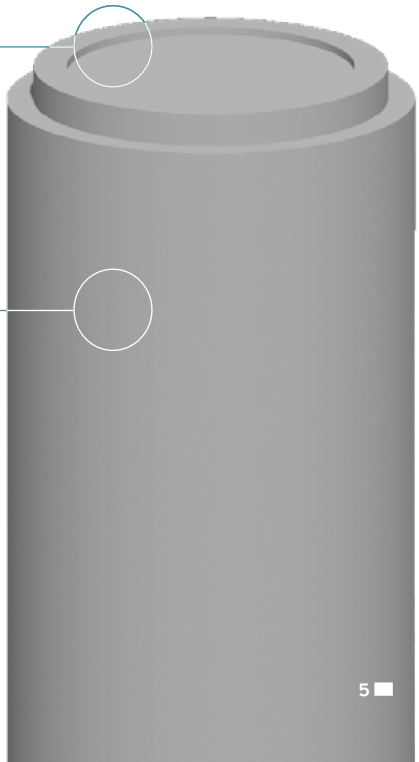
CASK BODY

Plate

- LF2 - LF3 - SA - 508 grade 1A F49 - F347H
- 15 Tons
- 2,3 m

Shell

- LF2 - LF3 - F347H
- 29 Tons
- 2,4 m



CASE STUDY

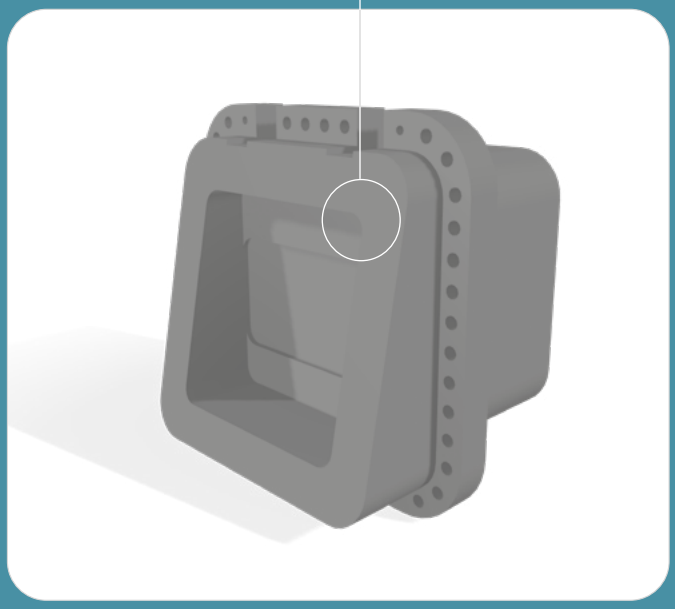
FOMAS UPP AND EPP FORGINGS

ITER Tokamak plant

FOMAS has successfully qualified and produced crucial components for the vacuum vessel of the ITER Tokamak plant, providing the forging to machine out those components in a **monolithic solution**. Mechanical properties and microstructural requirements, in compliance with ITER specifications, have pushed the forged solutions to a high-performance range and integrity, performances where FOMAS is the principal reference on the market, thanks to its modern plants and remarkable know-how. The dimension of the parts, connected to crucial requirements in terms of homogeneity and cleanliness, drove the choice on FOMAS **ESR** high weight ingots. FOMAS has developed dozens of different re-melted steel grades with very good experience in several austenitic alloys over 10 years of activity.
ITER starting material was processed to obtain high levels of structural homogeneity right from the beginning. The forging process at the 12,500 tons press refined the structure, so that mechanical properties and grain size could comply with the challenging requirements of the ITER specifications. The first component of each kind, 100% UT inspected, was completely cut up to verify properties all across the volume. The results outlined a performance comparable with the small plates originally intended for welding. Mastering on forging cycle and heat treatment parameters allowed FOMAS to grant outstanding microstructural homogeneity, all across the component. Mechanical and metallurgical properties were fully compliant with the specification requirements. Very low dispersion in numeric values, both per isotropy and performance, was measured across the forged block. Once more, FOMAS ESR and its forging expertise have demonstrated the actual possibility of projecting performance, expected and well known on small components, to huge scale-up, leveraging on grain size control, cleanliness, soundness of bulk material as well as precise design and control of both Forging and Heat Treatment.

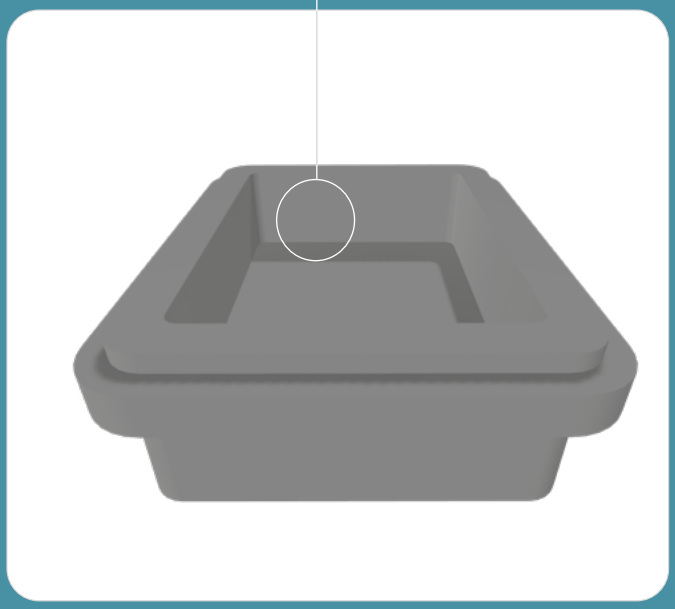
Upper port plug:

- Steel F316L
- 4.8 Tons
- 1.4 m



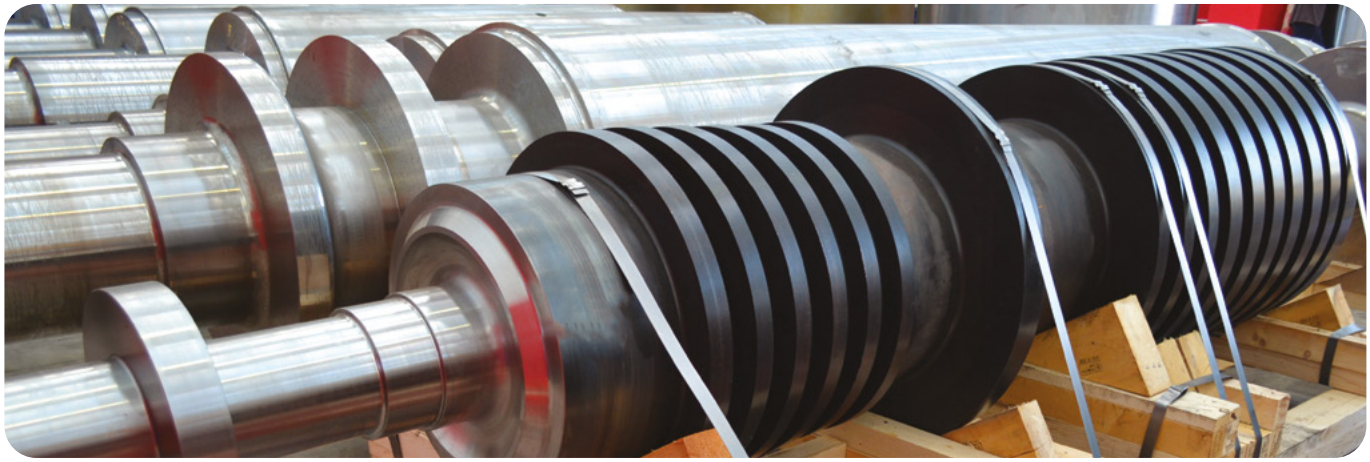
Equatorial port plug:

- Steel F316L
- 11 Tons
- 2.5 m



STEAM AND GAS

FORGINGS	STEAM	Generators
		HP/IP/LP Rotor (Monoblock and welded design) shafts
		Flywheel
	GAS	All alloys and super alloys components
		Forward compressor shafts
		Compressor wheel stages
		After compressor shafts
		Distance pieces
		Torque disk/tubes
		Mid shafts
		Turbine wheel stages
		Spacers
		After turbine shafts
		Couplings
RINGS	STEAM	**STEAM TURBINE**
		Diaphragms
		Guide Van Strips
	GAS	**GAS TURBINE**
		1st and 2nd stage casings
		Heat Shields
		SHROUD RINGS
		Inner / Outer Shield
		Discharge Support Rings
		Inner and outer transition ducts
		Half Rings



AERODERIVATIVE

FORGINGS	LM9000 Shafts
RINGS	Statoric Cases
	Rotor bushing
	Laby seals
	Bearing spring finger
	Coupling flange
	Balance drum

GEOTHERMAL

FORGINGS	Bushing rings
	Triple phase stainless steel shafts
RINGS	Crown Bands
	Labyrinths

HYDROELECTRIC

FORGINGS	Single and double flanged hydro shafts
	Pelton runners up to 100 tons
	Generators shafts
	Bushing Rings
	Hydro casings
	Stay rings
	Upper and lower deck head covers
	Bottom Rings
RINGS	Diaphragms
	Labyrinth Rings
	Francis and Pelton wheels
	Sealing rings

WIND

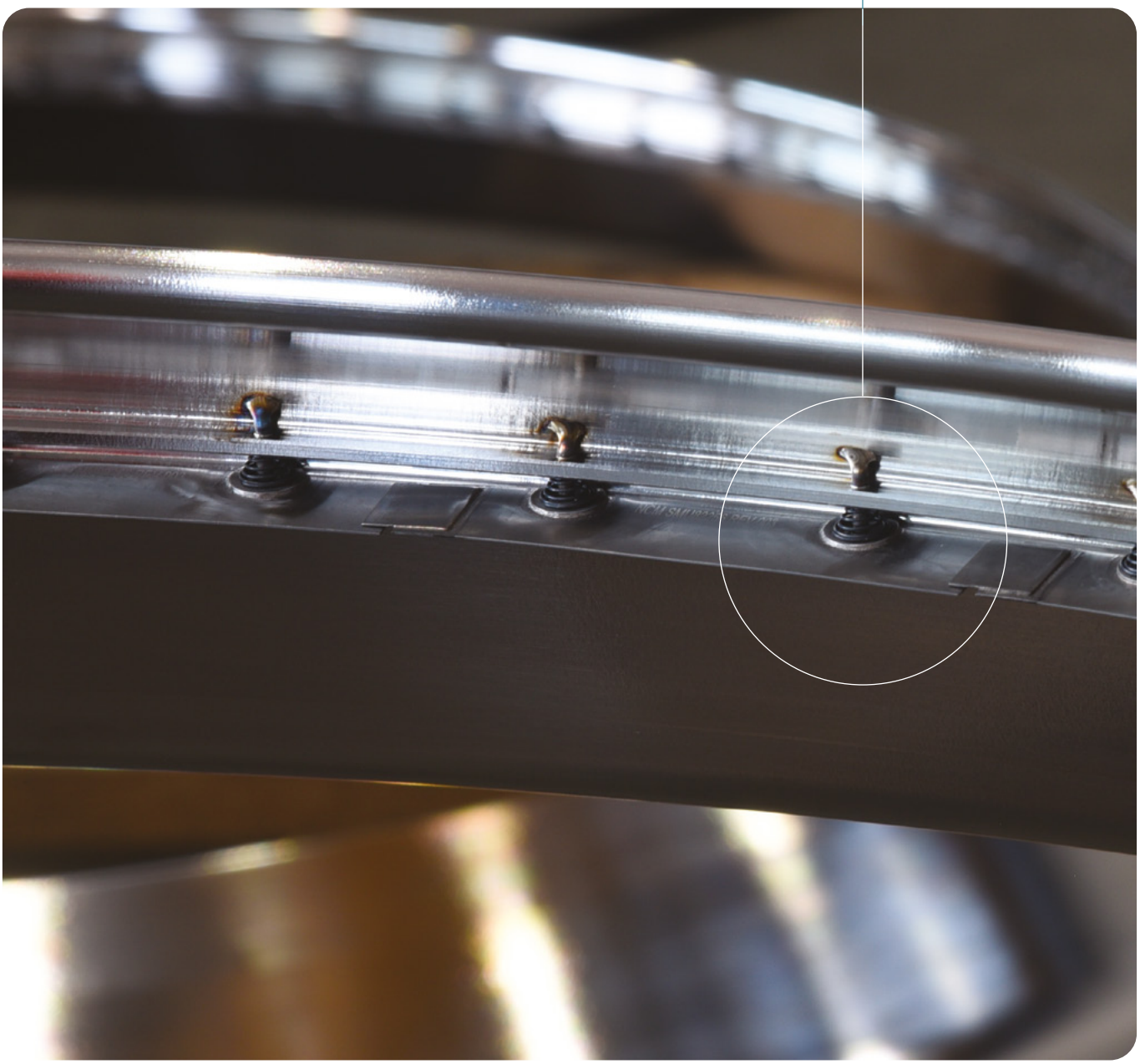
FORGINGS	Main turbine shafts
	MAIN GEARBOX
	Planetary gears
	Hollow shafts
	Ring gears
	TOWER ASSEMBLY
RINGS	Structural flanges
	BEARINGS
	Yaw slewing bearings
	Pitch slewing bearings
	COUPLING
	Flanges

ONE STOP SHOP

FOMAS Group capabilities allow us to supply goods in different delivery conditions from raw/heat treated to rough machined, from pre-cladded/cladded to coated depending on the level of **vertical integration** required by the Customer.

This business model allows us to optimize the overall supply chain, providing an exclusive point of contact and assures us of the shortest possible response time to market requirements.

Supply of **high-quality assemblies**, such as the **Heat Shield** component, made possible by seamless integration of elements like leaf seals, pins, and springs, thereby ensuring optimal **performance** and long-lasting **durability**.



METAL POWDERS

FOMAS Group produces **nickel-, iron- and cobalt-based** alloy atomized metal powders through a **VIGA** (Vacuum induction melting Inert Gas Atomization) plant. Our powders are available for Additive Manufacturing (Powder Bed Fusion, Directed Energy Deposition and Binder Jetting), Thermal Spray and HIP (Hot Isostatic Pressing) manufacturing applications. Furthermore, we can provide four different PSD (Particle Size Distribution), based on the requests of our customers.
Our metal powders stand out with their **sphericity and flowability**, giving a competitive edge in your applications. To ensure the highest standards, each cast undergoes a rigorous testing process, involving over 20 tests.

METAL POWDERS FOR POWER GENERATION

Iron-based alloys

- MIMETE® M 316L

Nickel-based alloys

- MIMETE® V 625
- MIMETE® V 718
- MIMETE® V X

Cobalt-based alloys

- MIMETE® N 75

PARTICLE SIZE DISTRIBUTION

Small 0-20 µm	**Medium** 15-45 µm or 20-60 µm
Large 50-150 µm or 50-100 µm	**One size** 0-150 or 0-300 µm

APPLICATIONS

- 3D printing (PBF)
- Welding
- DED
- Thermal Spray
- Cladding
- HIPping

TECHNICAL SUPPORT

Thanks to our experience and expertise in metallurgy, as well as to our deep knowledge of the relevant processes, we can offer our complete **support to our customers**, during every phase of the purchasing process.

A TAILOR-MADE APPROACH

Our approach focuses on providing our customers with customized services, ensuring **swift and flexible responses to their needs**.

MASTERING THE SCIENCE OF METALS

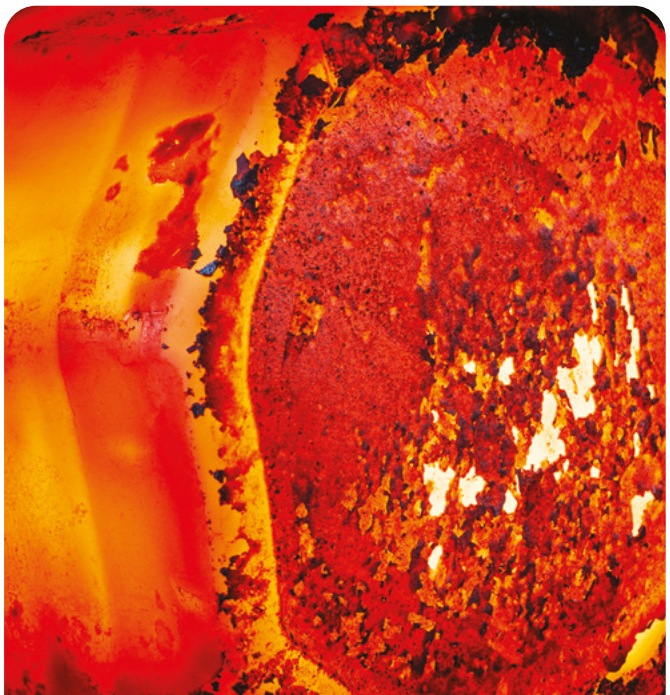
METALLURGY

At FOMAS Group, our deep understanding of metallurgy is rooted in our history and continues to guide our future. For generations, we have cultivated and transmitted extensive knowledge of steels and non-ferrous alloys—encompassing their chemical, physical, and mechanical properties. This heritage is embodied in our slogan, "**Mastering the Science of Metals**," which reflects our advanced **metallurgical expertise** and our **full-process mastery**: from remelting and atomization to forging and hot-rolling. This comprehensive capability allows us to maintain precise control over metal behaviour at every stage of transformation.

Our know-how also enables us to support customers in identifying alternative solutions when needed, leveraging our ability to **predict material response** during deformation and machining processes.

We apply **advanced profiling technologies** to manufacture rolled rings, shaping metal with exceptional precision to achieve geometries that closely match the final product. This approach reduces material waste, machining time, and transportation costs—enhancing overall yield while delivering components with outstanding mechanical performance.

In addition, upon request, we can provide **preassembled solutions**, delivered after final machining, to further streamline our customers' production processes and reduce integration time.



FORGINGS

Presses

The forgings are processed in smaller or larger presses depending on the contours and size.
Our presses for open die forgings (all with integrated manipulators):

- **12,500 tons**
- **6,000 tons**
- **n° 2 - 3,500 tons**
- **2,000 tons**

Across our facilities, we operate six state-of-the-art automatic UT stands, both vertical and horizontal, designed by FOMAS and qualified by major turbine manufacturers, as well as titanium and aluminum heat treatment lines equipped with electric drop furnaces.

RINGS

Rolling Mills

- **19 lines (axial/radial)**

State-of-the-art rolling mills worldwide, delivering precision, reliability, and top-quality forged and rolled components for global industries.

METAL POWDERS

- **Vacuum induction melting and inert gas atomization** ensuring the highest purity and sphericity of the powder.
- Complete **inert post processing** comprehensive of handling, packaging, air classification, and sieving facilities.

All machines are controlled by PLC panels for powder process route integration and maximum control for traceability.

MATERIALS PRODUCTION

Electro Slag Remelting (ESR) plant

Production of defect-free metal ingots

- Three ESR stands.
- New 125-ton ESR ingot equivalent to a conventional ingot of 170 tons.
- Pressurized ESR for top quality remelting of special steel & stainless steel under full inert gas atmosphere.

Vacuum Induction Gas Atomization (VIGA) plant

Production of metal powders

- Able to operate at higher temperatures thanks to standard gas atomizers (argon or nitrogen), suitable for high melting point and refractory alloys.
- High-vacuum pumps for minimum content of oxygen and residuals.
- Special nozzles dedicated to specific alloys and particle size.
- Develop for maximum flexibility.

INNOVATION: DRIVING EFFICIENCY AND SUSTAINABILITY

At FOMAS Group, innovation is at the heart of our operations. We leverage automation and digitization to stay ahead of the curve, utilizing cutting-edge software and tools such as Business Intelligence, Digital Twin, Big Data management and analysis, cloud solutions, and Artificial Intelligence.

LEAN APPROACH FOR OPTIMAL EFFICIENCY

Our approach is centered around lean principles, aimed at minimizing waste and optimizing manufacturing processes. By streamlining our operations, we reduce inefficiencies and promote sustainability. The effective management and analysis of large datasets (mega-data) enable us to identify areas for improvement and implement targeted enhancements.

STATE-OF-THE-ART TECHNOLOGY FOR SUPERIOR QUALITY

As a global leader in the production of forgings, seamless rolled rings, and metal powders, FOMAS Group is committed to driving growth and innovation.
In 2025, FOMAS Group launched the implementation of a 5-ton controlled-atmosphere furnace with vacuum induction melting (VIM) capabilities, dedicated to processing superalloys. The system is expected to be fully operational in 2027. This cutting-edge technology will enable us to achieve unparalleled control over metal quality, develop tailored melting practices for specific alloy compositions, and further support our circular economy goals.

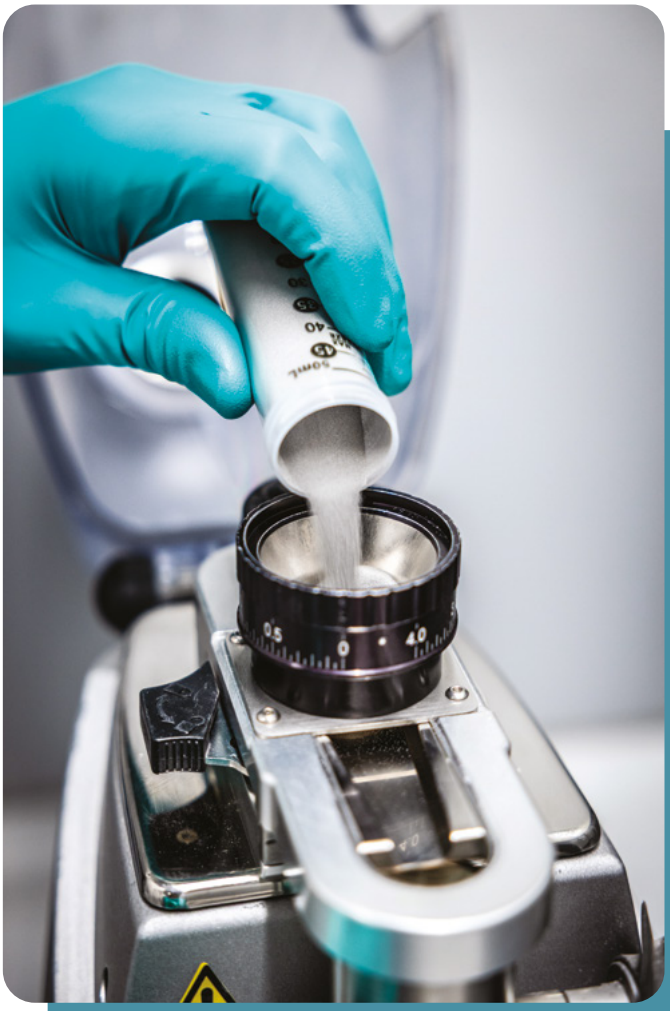
QUALITY

The Group places quality at the core of all its operations, in every step of manufacturing and customer service. Quality means ensuring compliance with all the required standards and customer expectations in terms of performance, reliability and safety.

This commitment translates into a set of practices and standards encompassing:

- **Strict Material Control**: Careful selection of raw materials and constant monitoring of their properties.
- **Advanced manufacturing processes**: Using state-of-the-art technology and procedures to process metals.
- **Testing and continuous verification**: each melt undergoes over 20 tests to ensure the highest quality assurance.
- **International certifications and standards**: Compliance with international standards and obtaining relevant certifications that attest to the quality of FOMAS Group's products and processes because each market has its own dedicated certification requirements and standards.
- **Continuous employee training**: Cyclic training on new manufacturing methods, technologies and quality standards to ensure that our staff is always up to date with the best practices in the industry.
- **Customer feedback and continuous improvement**: FOMAS Group places great importance on customer feedback as a tool for an incremental enhancement process. Through the analysis of feedback, the company strives to refine its processes and products to better meet market needs.

LABORATORIES



IN-HOUSE LABORATORIES

FOMAS Group is equipped with two testing laboratories accredited by ACCREDIA, the Italian national accreditation body, in accordance with ISO/IEC 17025 requirements. One of them is located in our metal powders production facility.

The laboratories are equipped with cutting-edge technology and precision instruments, enabling comprehensive testing, examination, and analysis of materials and final products. We perform comprehensive chemical, morphological, physical, metallographic, and mechanical assessments to uphold the highest quality standards.

Our quality tests guarantee compliance with industry standards and ensure the long-term performance and reliability of our products under various stress regimes and usage conditions. The laboratories are added value that underlines the Group's commitment to providing superior quality and highly reliable solutions, meeting the most stringent requirements of our customers.

OUR CERTIFICATION

FOMAS Group's plants hold various certifications that demonstrate compliance with international standards for quality, safety, and environmental responsibility. These include:

- ISO 9001
- ISO 14001
- ISO 45001
- ISO 50001
- ISO 19443
- ASME NCA-3300
- NNSA HAF 604
- TPG (HTT, NDE (UT))
- PED 2014/68/EU, Annex I, Sect. 4.3

Certifications may vary by production site. For a complete list of certifications and accreditations, scan the QR code to access our dedicated webpage.

SUSTAINABILITY

Our sustainability strategy is anchored on well-defined pillars that set the framework for short, medium, and long-term targets across departments. This strategic approach enables us to integrate sustainability into every facet of our operations.

THE PILLARS OF OUR ESG STRATEGY:

1

Mastering the science of metals

2

Awareness and commitment for the planet

3

People-centric

4

Creating shared value for the community

5

Embracing the change with our partners

MATERIALS – Special steels, nickel and titanium alloys

Material number	Uns-Designation	Din-Identification	Alloy	Applications
AUSTENITIC STEELS				
~1,4302	S30400	X5CrNi18-10	F304	Nuclear, Oil & Gas
~1,4306	S30403	X2CrNi19-11	F304 L	
-	S30454	X5CrNi18-10	F304 LN	
~1,4841	S31000	X15CrNi25-21	F310	
~1,4401	S31600	X5CrNiMo17-12-2	F316	
~1,4404	S31603	X2CrNiMo17-12-2	F316 L	
~1,4406	S31653	X2CrNiMoN17-11-2	F316 LN	
~1,4541	S32100	X6CrNiTi18-10	F321	
~1,4550	S34700	X6CrNiNb18-10	F347	
~1,4961	S34709	X8CrNiNb18-10	F347 H	
SUPER AUSTENIC STEEL				
~1,4454	S21904	X2CrMnNiN20-9-7	F XM-11 / Nitronic 40	Aerospace, Nuclear, Oil&Gas
no	S20910	X3CrMnNiN22-5-12	F XM-19 / Nitronic 50	
~1,4547	S31254	X1CrNiMoCuN20-18-7	F44	Oil&Gas
~1,4565	S34565	X2CrNiMnMoNbN25-18-5-4	F49	
MARTENSITIC STEELS				
~1,4413	S41500	X3CrNi13-4	F6NM	Oil&Gas, Process Equipment
~1,4006	S41000	X12Cr13	F6 a	
~1,4923	-	X22CrMoV12-1	-	Oil&Gas, Process Equipment, Power Generation
-	-	X4CrNi16-4	Virgo 38	Oil&Gas, Process Equipment
1,4939	-	X12CrNiMo12	Jethete M 152	Oil&Gas, Process Equipment, Power Generation
MARTENSITIC CREEP-RESISTANT STEELS				
-	-	X14CrMoVNbN	Cost F	Power Generation, Gas Steam Turbine components
-	-	X12CrMoWVNbN	Cost E	
-	-	X13CrMoCoVNbNB	FB2	
X10CrMoVNb9-1	K90901	X10CrMoVNb9-1	F91	Power Generation, Steam Valves, Pressure Vessel
-	K92460	-	F92	

Material number	Uns-Designation	Din-Identification	Alloy	Applications
STAINLESS PRECIPIT. HARDENING STEELS				
~1,4545	-	-	15-5 PH	Aerospace, high-strength corrosion resistant components
~1,4542	S17400	X5CrNiCuNb16-4-4	17-4 PH	
DUPLEX & SUPERDUPLEX STAINLESS STEELS				
~1,4462	S31803	X2CrNiMoN22-5-3	F51	Oil&Gas, FSPO platforms
~1,4410	S32750	X2CrNiMoN25-7-4	F53	Oil&Gas, Pumps, Valves
~1,4501	S32760	X2CrNiMoCuWN25-7-4	F55	
~1,4507	S32550	X2CrNiMo25-7-4	F61	
SUPERALLOYS				
-	N08120	NiFeCr	HR120	Power Generation, shrouds, diaphragm, heat shields, turbine stage
2,4683	R30188	CoCr22NiW	Haynes 188 / Udimet 188	
2,4733	N06230	NiCr22W14Mo	Haynes 230	
2,4831 / 2,4856	N06625	NiCr22Mo9Nb	Inconel 625	Pressure Containers, Oil&Gas
2,4642	N06690	NiCr29Fe	Inconel 690	
2,4668	N06718	NiCr19Fe19Nb5Mo3	Inconel 718	Power Generation, Turbine components, Aviation, Oil&Gas, Nuclear
2,4665	-	NiCr22Fe18Mo	Hastelloy X / Inconel HX	
2,465	N07236	NiCo20Cr20MoTi	Nimonic 263	Power Generation, shrouds, diaphragms, heat shields, turbine stage
-	-	-	Nimonic 263	
1,4876	N08810	X10NiCrAlTi32-21	Incoloy 800H	Nuclear, Oil&Gas
1,4944	no	no	A-286	Power Generation, Oil&Gas

CARBON & LOW ALLOYS STEEL				
-	-	-	SA 105	Oil&Gas, General Industry
-	-	-	SA 266	
-	-	-	A 266 CL2	
-	-	-	SA 350 LF2	
-	-	-	SA 508 Grade 3 CL1 /CL2	
-	-	-	A48 CP-APR	
-	-	-	20 Mn 5	
-	-	-	16 MnD 5	
-	-	-	18 MnD 5	
-	-	-	20 MnMoNi 55	
-	-	-	A 694 F52	
-	-	-	A 694 F60	
-	-	-	A 694 F65	
-	-	-	A 694 F70	
-	-	-	A 707 Grade 3W	
-	-	-	15NiCuMoNb5	
-	-	-	SA 350 LF3	
-	-	-	A 350 LF6	
-	-	-	SA 336 F1	
1,5421	K12822	20MnMo3-5	SA 336 F5	
~1,7362	K41545	X11CrMo5	SA 336 F11	
-	K11572	no	SA 336 F12	
~1,7337	K11564	16CrMo4-4	SA 336 F21	
no	K31545	no	A 182 F22	
1,738	K21590	10CrMo9-10	A 182 F22V	
no	K31835	12CrMoV9-10	AISI 4130	
~1,7214	no	30CrMo4	AISI 4140	
1,7225	no	42CrMo4	39NiCrMo3	
-	-	-	A 470 CL8	
-	-	-	A 522 Type1	
-	-	-	20 NCD 12	
-	-	-	15 Mo 3	

Other materials and alloys are available on request.

REFERENCES

POWER GENERATION ROTATING COMPONENTS

SIEMENS Reference List

EUROPEAN DESIGN
SGT5-4000F (FORMER V94.3A), SGT5-8000H (FORMER V94.2), SGT6-2000E (FORMER V84.2), SGT6-4000F (FORMER V84.3A)

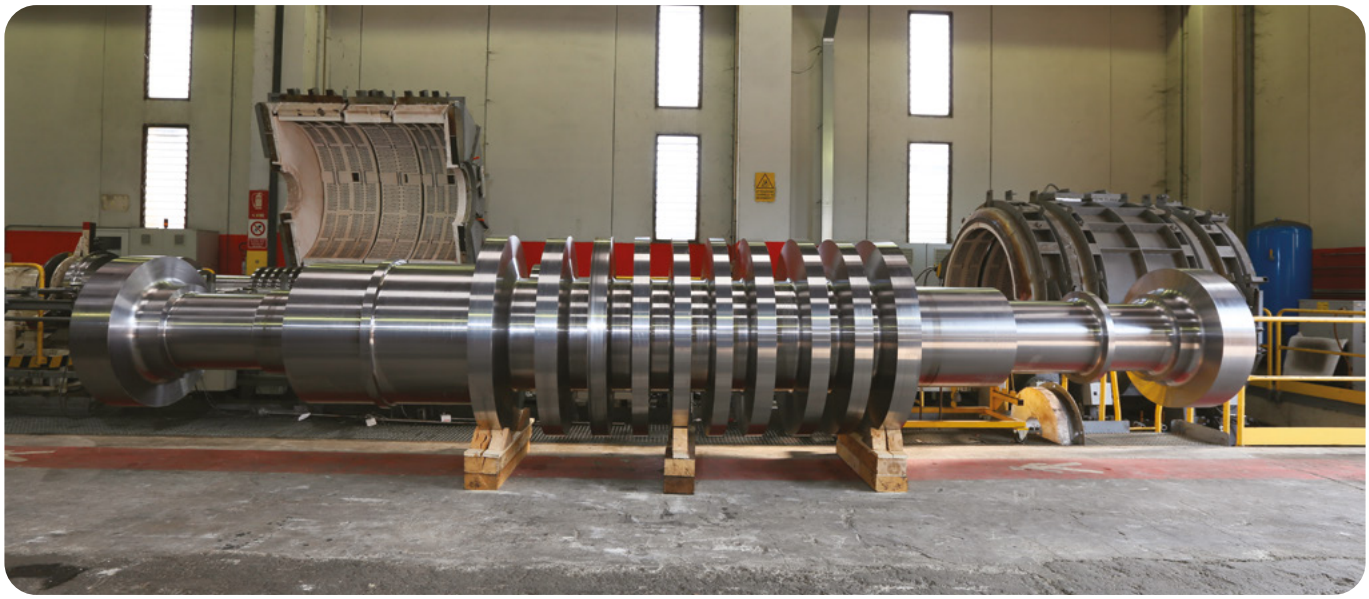
Main components	Materials
Compr. Disks	26NiCrMoV14.5 (Super Clean)
Shafts	26NiCrMoV14.5
Torque Disks	26NiCrMoV11.5
Turbine Disks	X12CrMoWVNbN1011 (COST E)
Nuts / Rings	

FIRST SGT5-7000F

Main components	Materials
Shafts	26NiCrMoV14.5 (SC)
Compr. Disks	26NiCrMoV11.5
Torque Disks	
Turbine Disks	
Nuts	

US DESIGN
SGT6-6000G (former W501G), SGT6-5000F (former W501F), SGT6-3000E (former W501D5/D4)

Main components	Materials
Shafts	30NiCrMoV15
Compr. Disks	30NiCrMoV12
Torque Disks	30NiCrMoV12Mod
Turbine Disks	26CrMoNiVNb8
Nuts	



REFERENCES

POWER GENERATION ROTATING COMPONENTS

GENERAL ELECTRIC Reference List

GAS TURBINES / ALL FRAMES
9 H – 7 H - 9 E – 9FA – 9FB - 9 B – 7FA – 7 E - 7FB - 6 B – 6 C – 6FA – 5/2 E – 5M – 5C – 5D - GT11N2 - GT13E2 – GT24 - GT26

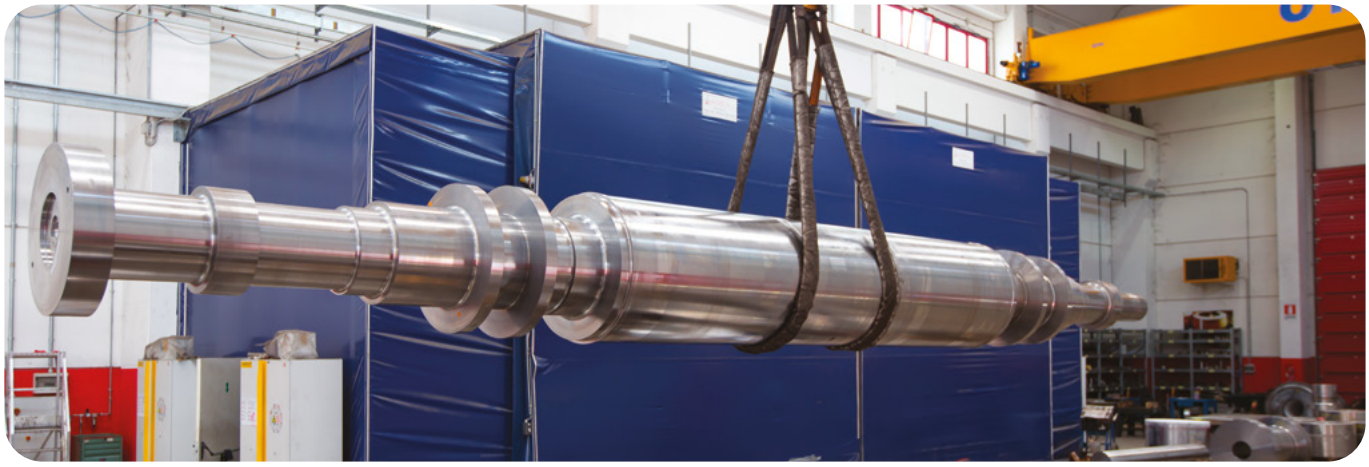
Main components	Main Materials
Shafts	30NiCrMoV12
Compr. Disks	30NiCrMoV15
Turbine Disks	30CrMoV4.11
Spacers	12Cr Type M152

GENERATOR ROTORS **

Main Materials
30NiCrMoV15

STEAM TURBINES *

Main Materials
30CrMoV4.11mod
30NiCrMoV15



** HP's / IP's LP's Rotors max. gashed shipping weight of 80 t*
*** up to shipping weight of 90 t*

POWER GENERATION ROTATING COMPONENTS

Nuclear Rotors Reference List

POLYBLOCK LP'S / IP'S / HP'S ROTORS, CONVENTIONAL ND 30/33/37/41, POLYBLOCK NUCLEAR HP / LP'S

Materials	Weights
22NiCrMoV12.7	from 15 to 105 shipped tons
22Cr2Ni3MoV	
20Cr2NiMo	
20CrNiMo8	

POWER GENERATION ROTATING COMPONENTS

Mechanical Drive Gas Turbines

GENERAL ELECTRIC / PGT10, PGT25, LM2500

Main components	Weights
Compr. Disks	30NiCrMoV12
Turbine Disks	30NiCrMoV15
Shafts	30CrMoV4.11
Spacers	12Cr Type M152
	A 286
	INCONEL 718

GENERAL ELECTRIC / GT8C2

Main components	Materials
Shafts	Alstom grades
Disks	CrMoV
	NiCrMoV

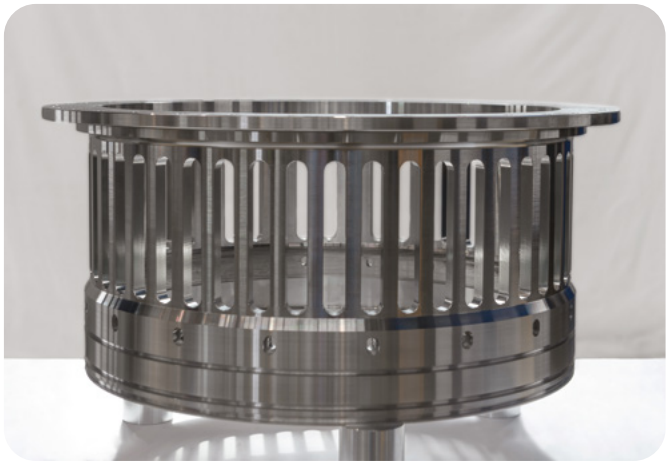
SIEMENS (ENERGY) / W101, W191, W301

Main components	Materials
Shafts	30NiCrMoV15
Compr. Disks	30NiCrMoV12
Torque Disks	30NiCrMoV12Mod
Turbine Disks	26CrMoNiVNb8
	DISCALOY (Ni base alloy)

POWER GENERATION STATORIC COMPONENTS

GENERAL ELECTRIC

Main components	Materials
Heat Shield	Nimonic263
1st & 2st Turbine case	ASTM-A470-CL8
1st & 2st Diaphragm	
1st & 2st Shourds	Ni alloy
	Austenitic Steel
Centrifugal compressor components	



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